

OWNER'S MANUAL

and Installation Instructions

Series QP55-G

AIR-COOLED RECREATIONAL VEHICLE GENERATORS

Model No. 00862-1

GENERAC[®]
POWER SYSTEMS, INC.

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.

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 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.

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 connect 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 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 first aid 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, etc.

Do not smoke around the generator. Wipe up any fuel and oil 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 fuel 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.

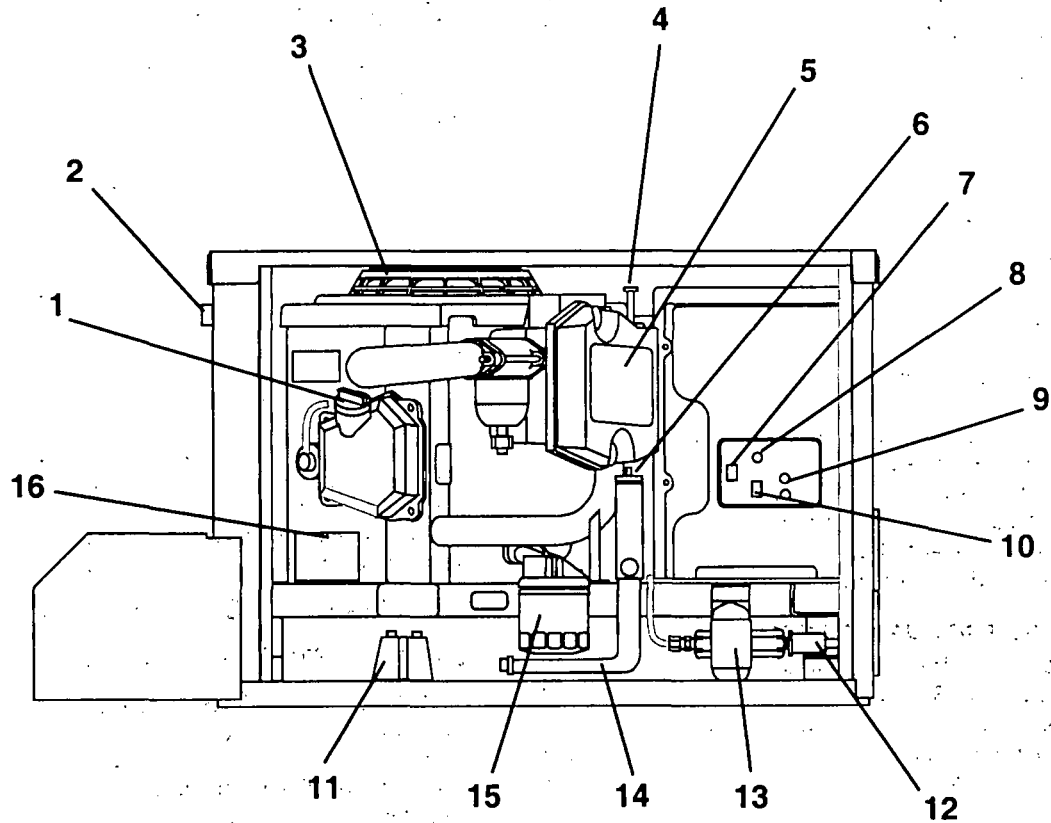
These generators can be converted to use LP gas (propane) as a fuel. LP gas is highly EXPLOSIVE. The gas is heavier than air and tends to settle in low areas where even the slightest spark can ignite the gas and cause an explosion.

- 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 AND GENERATOR FEATURES

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

- | | |
|-----------------------|------------------------|
| 1. Model Number _____ | 2. Serial Number _____ |
| 3. kW Rating _____ | 4. Rated Voltage _____ |
| 5. Phase _____ | 6. Hertz _____ |



REFERENCE NUMBER IDENTIFICATION

- | | |
|-----------------------------------|--|
| 1. Oil Filler Cap | 10. Fuel Primer Switch |
| 2. Optional Remote Panel-Receiver | 11. Starter Contactor |
| 3. Generator Air Intake Screen | 12. Fuel Inlet |
| 4. Winter/Summer Heat Riser | 13. Fuel Pump |
| 5. Air Cleaner | 14. Oil Drain Hose |
| 6. Oil Dipstick | 15. Oil Filter |
| 7. Engine Start/Stop Switch | 16. Data Decal |
| 8. Fuse | 17. Generator AC output leads (on rear, not shown) |
| 9. Circuit Breakers | |

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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 decals affixed to the generator, DANGER, WARNING, CAUTION and NOTES 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, WARNING, CAUTION and NOTES found throughout the manual.



DANGER: After this heading you can read handling, installing, operating or servicing instructions that, if not strictly complied with, will result in personal injury.



WARNING: 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 recreational vehicle 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 RV 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.

SERVICE DEALER LOCATION

TO LOCATE THE NEAREST GENERAC SERVICING DEALER, PLEASE CALL OUR 800 NUMBER.

ONLY DEALER LOCATION INFORMATION CAN BE OBTAINED AT THIS NUMBER.

1-800-333-1322

GENERATOR FAMILIARIZATION

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 volt, single phase, 60 Hertz, electrical loads. These loads can require up to 5500 watts (5.5 kW) of power, but cannot exceed 46.0 AC amperes at 120 volts.



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

SAFETY

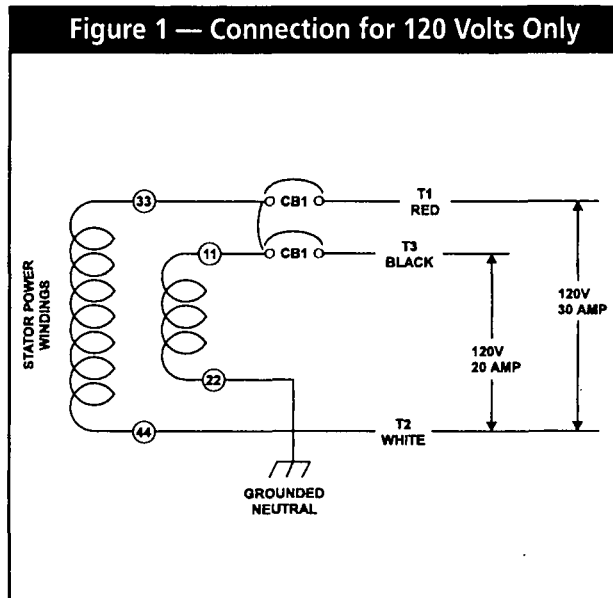
Before using the generator set, carefully read GENERAL SAFETY RULES inside the cover. Comply with these RULES to prevent accidents and damage to equipment and/or property. Generac suggests copying and posting the GENERAL SAFETY RULES in potential hazard areas of the recreational vehicle. Safety should be stressed to all operators of this equipment.

GENERATOR AC CONNECTION SYSTEM

This air-cooled QP Series generator 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 have been installed so that units only power 120 volt AC loads (Figure 1).

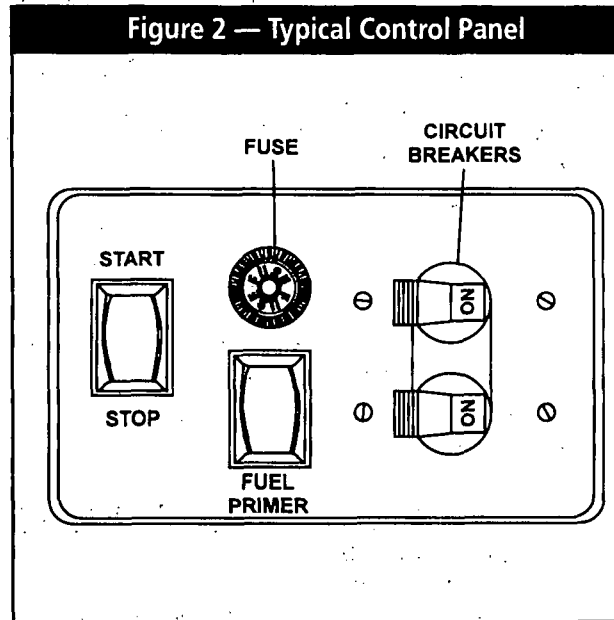
Figure 1 — Connection for 120 Volts Only



OPERATING INSTRUCTIONS

GENERATOR CONTROL PANEL

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



■ FUEL 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 carburetor. This rocker type switch springs back to 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.

■ CIRCUIT BREAKERS

Protects generator's AC output circuit against overload, i.e., prevents unit from exceeding wattage/ampere capacity.

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 engine starts, the choke cycling stops.

■ PRECHOKE

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

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

■ 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

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 the start/stop switch on the generator control panel, turn OFF loads by setting the panel's circuit breakers to their "OFF" or "OPEN" position. Electrical load circuits can be turned ON after the generator has started, stabilized and warmed up.

NOTE: You only need to use the fuel primer during the initial startup, after the unit has not been used for an extended period of time (two weeks) or the fuel line has been disconnected. The primer is used to prime fuel pump and carburetor.

2. 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 may damage the starter motor.

3. Let the engine run at no-load for a few minutes to stabilize and warm up the engine.

4. Turn ON electrical loads, using whatever means provided (such as a main circuit breaker or transfer switch).

NOTE: If you start a warm generator engine, you may press the start switch only slightly to engage the ignition system. However, you should press and hold the starter switch for a minimum of two (2) seconds to energize the field boost system. If you start the engine without energizing the field boost system, the generator produces no AC output.

STOPPING THE GENERATOR

1. Turn OFF all electrical loads, using whatever means provided (such as a main circuit breaker or transfer switch).
2. Let the generator run at no-load for a few minutes, to stabilize internal engine-generator temperatures.
3. Hold Start/Stop switch in its STOP position until engine comes to a 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.

■ LETTING ENGINE STABILIZE

The generator supplies correctly 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.

ATTENTION REQUIRED AFTER SUBMERSION

If the recreational vehicle 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 recreational vehicle 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.



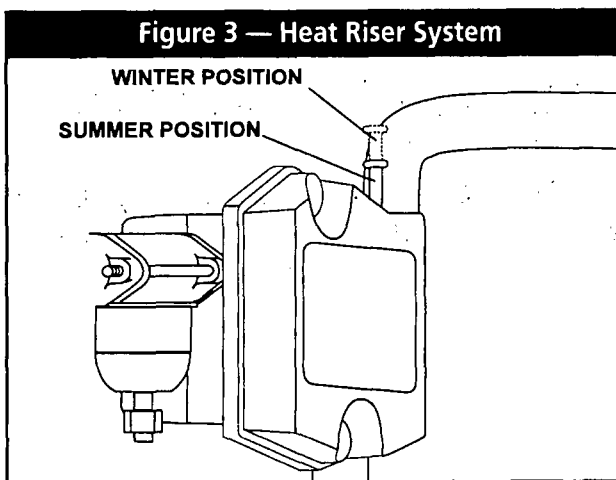
The generator's exhaust system gives off DEADLY carbon monoxide gas. This dangerous gas, if breathed in sufficient concentrations, can cause unconsciousness and even death. Never operate the generator set with the vehicle inside any garage or other enclosed area. Never operate the generator if it has 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.

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.

The Summer/Winter Lever (Figure 3) should be in the WINTER position for ambient temperatures below 40°F and in the SUMMER position for ambient temperatures above 40°F.



When the heat riser is in the SUMMER (DOWN) position (Figure 3), air is drawn into the air cleaner from the upper intake tube.

When the heat riser is in the WINTER (UP) position, air is drawn from the lower intake tube, which is positioned to draw the heated air near the exhaust manifold.

To prevent carburetor icing the owner/operator should physically position the heat riser to the proper position dependent on the temperature.

EFFECTS OF MOISTURE AND DIRT

Keep the generator set as clean and dry as possible. Protect 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.

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.

DO NOT OVERLOAD THE GENERATOR

You can read the rated wattage/ampere capacity of your generator on the generator data decal (see "Identification Record" on Page 1).

Applying electrical loads in excess of the unit's rated capacity will cause the engine-generator to disconnect the AC output.

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.

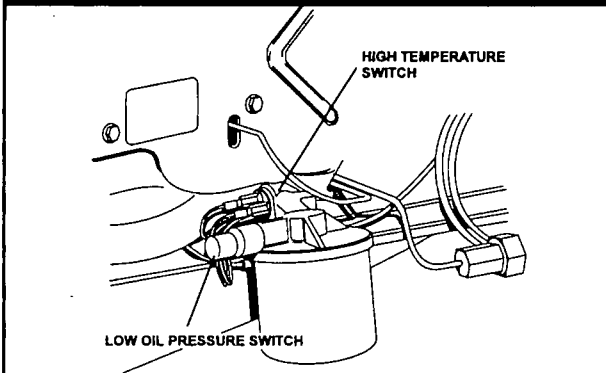
- Most lighting, appliance, tool and motor loads indicate their required watts on their nameplate or data plate. For light bulbs, simply note the wattage rating of the bulb.
- If a load does not show its rated wattage, multiply that load's rated VOLTS times AMPS to obtain WATTS.
- Induction type motors (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.
- On a new generator do not apply heavy electrical loads for the first two or three hours of operation.

ENGINE PROTECTIVE DEVICES

AUTOMATIC LOW OIL PRESSURE SHUTDOWN

The engine is equipped with a normally closed (N.C.) oil pressure switch (Figure 4). Engine oil pressure holds the switch open during cranking and operation. Should oil pressure drop below about 7.5-12 PSI, the switch contacts close and the engine automatically shuts down.

Figure 4 — Switches for Engine Shutdown



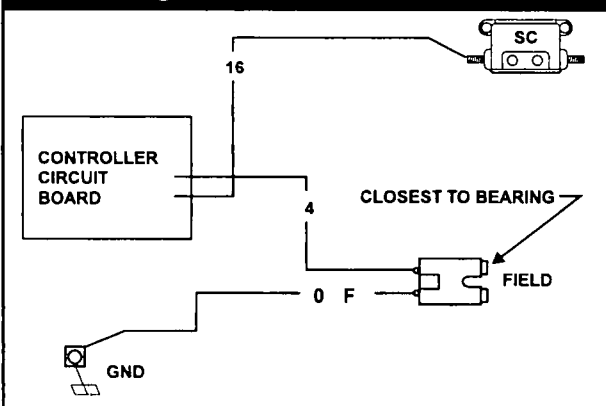
HIGH TEMPERATURE SHUTDOWN

A temperature switch (Figure 4) with normally closed (N.C.) contacts is mounted near the oil filter. If the 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 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 is started makes sure that a sufficiently strong magnetic field is available to produce the required "pick up" voltage in the stator windings.

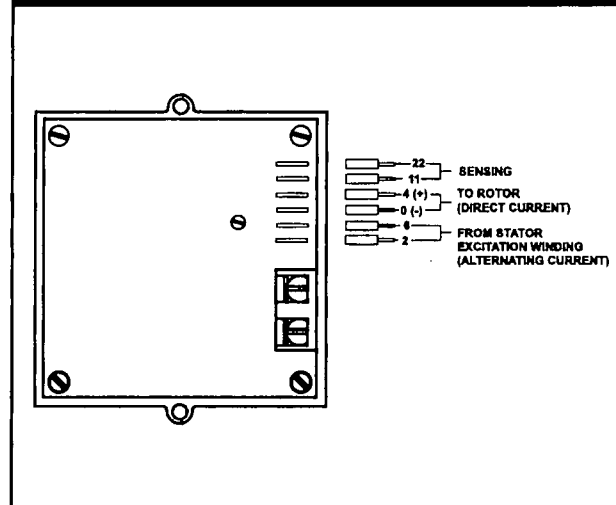
Figure 5 — Field Boost Circuit



OVER VOLTAGE PROTECTION

A solid state voltage regulator (Figure 6) controls the generator's AC output voltage. This regulator controls 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 6 — 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.

ENGINE OVERSPEED

If engine speed is increased manually or otherwise, the circuit controller board will disable the system and shut down the engine.



WARNING: Do NOT attempt to physically adjust or control the engine speed. Equipment damage or personal injury may result.

SPECIFICATIONS

FUEL REQUIREMENTS

This 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: 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 for 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, 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 only high quality detergent oil rated with API service classification SF, SG or SH. The recommended oil weights include the following:

- During summer months: SAE 30. An acceptable substitute is SAE 10W-30.
- During winter months: SAE 5W30. DO NOT USE SAE 10W-40.

Crankcase and oil filter capacity is about 1400ml or about 1.5 U.S. quart. Use no special additives. See "Maintenance" section for oil level check and fill procedures.

ENGINE SPECIFICATIONS

Type of Engine	GN-410, single-cylinder
Cooling Method	Air-cooled
Rated Horsepower	14.5 at 3600 rpm
Displacement.....	410cc
Cylinder Block	Aluminum with cast iron sleeve
Engine RPM	2571-2830
Type of Governor	Electronic
Air Cleaner	Paper element with foam pre-cleaner
Starter.....	12 volt DC electric
Ignition System.....	Solid state with flywheel magneto
Recommended Spark Plug	
Champion.....	RC12YC
AC	R45S
Autolite	65
Spark Plug Gap	0.030 inch (0.76mm)

GENERATOR SPECIFICATIONS

Rotor RPM	3600
Rotor Poles	2
Rated Maximum Continuous	
AC Power Output.....	5500 watts (5.5 kW)
Rated Voltage.....	120 volts AC
Rated Maximum Continuous	
Current at 120 volts.....	46.0 AC amperes
Phase.....	Single Phase
Rated AC Frequency.....	60 Hz.
Weight (w/oil)	271 pounds (93 kg)
Width	20.5 inches (520mm)
Length	32.5 inches (825mm)
Height.....	17.4 inches (442mm)
Maximum Battery	
Circuit Current.....	15 AMPS
Recommended Battery	
Cranking Current	400AMPS
Battery Charge Current.....	2 AMPS
Battery Charge Voltage.....	14 VOLTS

Fuel Consumption:

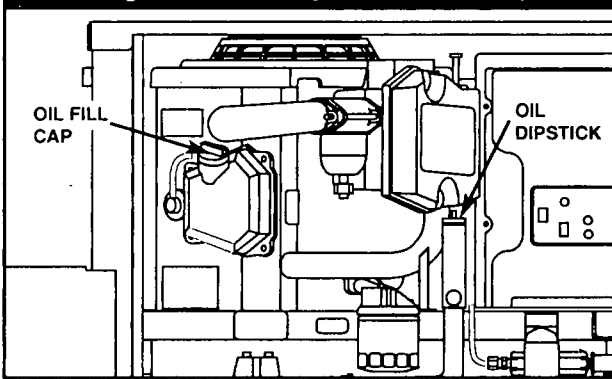
LOAD	GALLONS/HOUR
NO	0.29
HALF	0.53
FULL	0.77

MAINTENANCE

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

- Checking the engine oil level.
- Changing the engine oil.
- Changing the oil filter.
- Cleaning the air cleaner.
- Cleaning the spark plug.
- Changing the fuel filter.
- Cleaning the spark arrestor
- Servicing the drive belt.

Figure 7 — Oil Dipstick and Fill Cap



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 level should be within the cross-hatched area on the dipstick. If necessary, remove oil fill cap and add the recommended oil to the cross-hatched area only. **DO NOT FILL ABOVE CROSS-HATCHED AREA.**
- Install and tighten oil dipstick and oil fill cap before operating the engine.

NOTE: See "Engine Oil Requirements" on Page 9 for recommended oils.

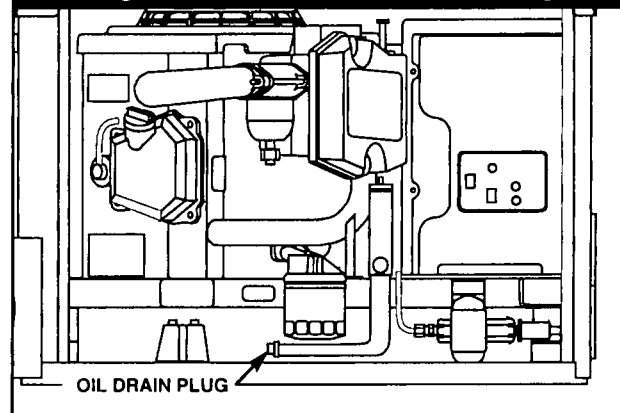
CHANGE ENGINE OIL

Change engine oil after the first 25 hours of operation. 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 8). Drain oil completely into a suitable container.

- When oil has drained, install and tighten oil drain plug.
- Remove oil fill cap (Figure 7) and fill crankcase with the recommended oil (See Page 9). The engine crankcase can hold about 1.5 U.S. quarts (1.6 liters). **DO NOT FILL ABOVE THE CROSS-HATCHED AREA.**
- Install and tighten oil fill cap before operating engine.

Figure 8 — Location of Oil Drain Plug



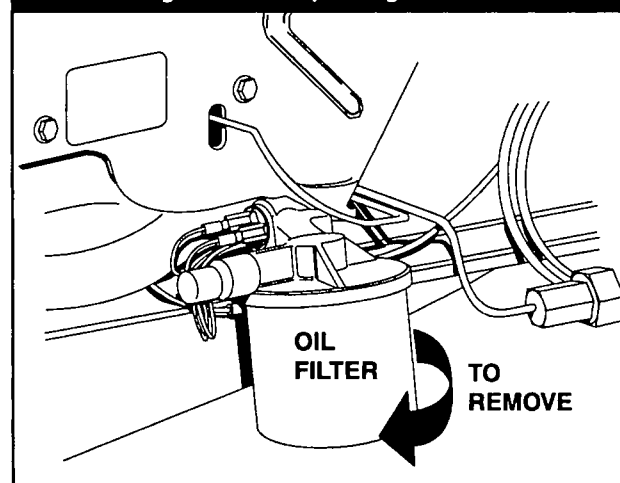
CHANGE OIL FILTER

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 lightly with the filter adapter. Then tighten an additional 3/4 to one turn.
- Run engine and check for leaks.

NOTE: Check the oil level and fill to the cross-hatched area on dipstick after checking for leaks. The filter will retain some oil.

Figure 9 — Replacing Oil Filter



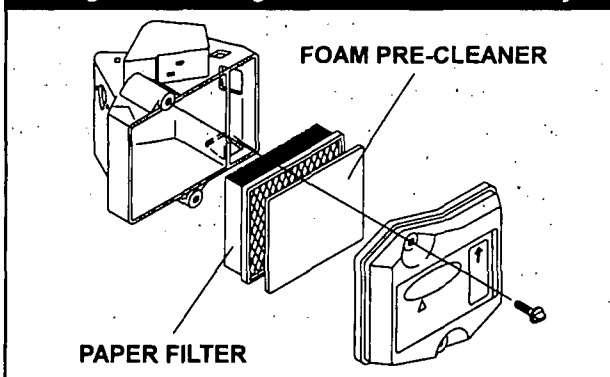
ENGINE AIR CLEANER

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 10).

- Turn the two screws 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 distribute oil (DO NOT TWIST).
- Install foam pre-cleaner into cover, followed by paper filter.
- Install cover, foam pre-cleaner and paper filter.
- Tighten the two screws to retain filter in place.

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.

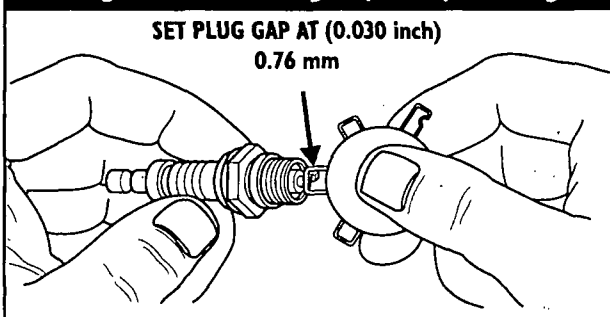
Figure 10 — Engine Air Cleaner Assembly



ENGINE SPARK PLUG

Clean or replace engine spark plug and set gap to 0.030 inch (0.76mm) every 100 hours of operation (Figure 11). Clean by scraping or wire brushing and washing with commercial solvent. DO NOT BLAST CLEAN SPARK PLUG.

Figure 11 — Setting Gap on Spark Plug

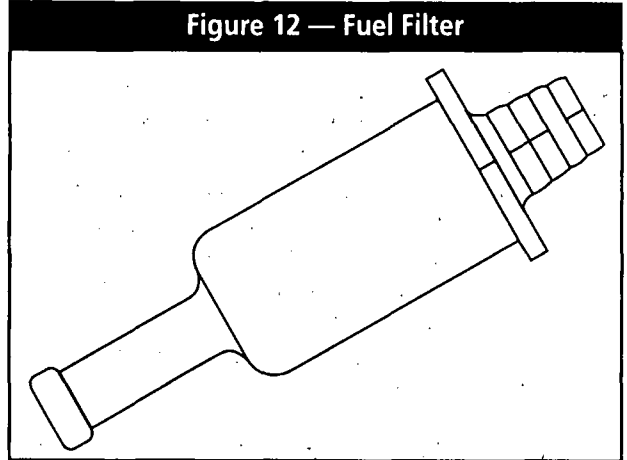


CAUTION: Sparking can occur if wire terminal does not fit firmly over spark plug terminal end. If necessary, reform wire terminal to obtain a tight fit.

FUEL FILTER

Remove and replace fuel filter (Figure 12) every 100 operating hours or once each year, whichever comes first.

Figure 12 — Fuel Filter



SPARK ARRESTOR MUFFLER

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.

DRIVE BELT

The engine drives the generator rotor by means of a pulley and drive belt arrangement. The 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.

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 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 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.

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 fuel!"
- While the engine is still warm from running, drain the oil completely. Refill crankcase with the required oil. See Page 9 for engine oil requirements.
- Attach a tag to the engine indicating the viscosity and classification of the oil in the crankcase.
- Remove spark plug and add about 1/2 ounce (15ml) of clean, fresh engine oil into spark plug threaded opening. Crank engine several times to distribute oil, then install and tighten spark plug.
- Remove the battery and store in a cool, dry room on a wooden board. Never store the battery on any concrete or earthen floor.
- Clean and wipe the entire generator.

RETURN 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, turn on fuel supply. Use primer switch to prime fuel, 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.

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 **SERIAL NUMBER**.

SERVICE DEALER LOCATION

TO LOCATE THE NEAREST GENERAC SERVICING DEALER, PLEASE CALL OUR 800 NUMBER.

ONLY DEALER LOCATION INFORMATION CAN BE OBTAINED AT THIS NUMBER.

1-800-333-1322

INSTALLATION SAFETY RULES



DANGER: For fire safety, installation of a generator into a recreational vehicle must comply strictly with article 551, NFPA 70; ANSI C1-1975; AND, ANSI A119.2-1975/NFPA 501C "STANDARD FOR RECREATIONAL VEHICLES" (PART 3, "INSTALLATION OF ELECTRICAL SYSTEMS"). In addition, the manufacturer's instructions and recommendations must be complied with.




NOTICE TO INSTALLER

The Installation Instructions have been published by Generac Corporation to aid in the installation of the products described in this manual. Generac assumes that installation personnel are familiar with the procedures for installing such products, or similar products that Generac manufactures. Generac also assumes that personnel have been trained in the recommended installation procedures for these products and that such training includes (a) use of common hand tools, (b) use of special Generac tools, and (c) use of any tools and/or equipment from other suppliers.

We could not possibly know of and advise the recreational vehicle trade of all conceivable methods, procedures or techniques by which to perform an installation. We could not know of the possible hazards that might result from each installation method, procedure or technique. We have not undertaken any such wide evaluation. Therefore, people who use a method, procedure or technique that Generac does not specifically recommend must first completely satisfy themselves that their safety, the safety of the vehicle's occupants and the product's safety is not endangered by the method, procedure or technique selected.


Information, illustrations, specifications, etc., contained in this Installation Manual are based on the latest information available at the time of publication. Every effort has been expended to be sure that such data is both accurate and current. However, the manufacturer reserves the right to change, alter or otherwise improve this product at any time without prior notice.

SAFETY RULES

 Gasoline is extremely **FLAMMABLE** and its vapors are **EXPLOSIVE**. Do not permit smoking, open flame, sparks or any source of heat in the vicinity while handling gasoline. Comply with all laws governing the storage and handling of gasoline.


Fuel lines must be properly installed, properly fastened and free of leaks. There must be no possibility of gasoline vapors entering vehicle interior.

- You are required to install an approved, flexible, non-conductive fuel line between the generator fuel connection point and rigid fuel lines.


 If the generator is equipped with a liquid propane (LP) gas fuel system, install the unit so it complies with all codes, standards and regulations pertaining to such systems. LP gas is highly explosive. The gas tends to settle in low areas where even the slightest spark can ignite it and cause an explosion. Do not allow gas vapors to enter the vehicle.


- Engine exhaust gases contain **DEADLY** carbon monoxide gas. This dangerous gas, if breathed in sufficient concentrations, can cause uncon-

sciousness or even death. Install the exhaust system in strict compliance with applicable codes, standards and regulations. There must be no possibility for exhaust gases entering the vehicle interior and endangering people or animals.

 The generator set produces dangerously high electrical voltage. Contact with bare wires, bare terminals, etc., will result in extremely hazardous and possibly lethal electrical shock.

- All applicable electrical codes, standards and regulations must be strictly complied with in the installation and use of this equipment.
- The generator must be properly grounded (bonded) to the vehicle chassis or frame.


 If the vehicle electrical circuits can be powered by any other source of electricity (such as a "dockside" power receptacle), there must be no possibility of connecting the different power sources to the vehicle circuits at the same time. The "dockside" (utility) power source must be positively isolated from the vehicle circuits whenever the generator is operating. Failure to isolate the vehicle circuits from the dockside power supply when the generator is running may result in damage to the generator or serious injury or death to dockside (utility) power workers due to backfeed of electrical energy.

 Never work on the equipment while standing in water, while barefoot, or while hands or feet are wet. Dangerous electrical shock will result.

Jewelry conducts electricity, which can cause dangerous electrical shock. Remove all jewelry (such as rings, watches, or bracelets) before working on this equipment.

- The generator requires an adequate flow of air for cooling and ventilation. Without sufficient cooling air flow, the engine-generator quickly overheats, which causes serious damage to the generator, a fire or an explosion. Generator air inlet and outlet openings must be provided in strict compliance with the manufacturer's recommendations.

- Never work on this equipment while physically or mentally fatigued. Stay alert at all times.

 Storage batteries give off **EXPLOSIVE** hydrogen gas while charging. The battery used for cranking and starting this generator should be installed in its own vented compartment. Provide adequate ventilation for the battery, to prevent explosive hydrogen gas from accumulating.

- Never insert any tool or other object through openings in the generator interior, even if the unit is not running. You might seriously injure yourself or damage the equipment.
- Staying alert and using "common sense" are major measures for preventing accidents.

GENERAL INSTALLATION INFORMATION

PURPOSE AND SCOPE OF MANUAL

These Installation Instructions have been prepared especially for the purpose of familiarizing installers and owners of the applicable equipment with the product's installation requirements. Give serious consideration to all information and instructions in the manual, both for safety and for continued reliable operation of the equipment.

Because of the different recreational vehicle models and the variations between the models, it would be extremely difficult, if not impractical, to provide detailed instructions on every installation possibility. For that reason, instructions and illustrations in this manual are general in nature. Illustrations are not intended to serve as detailed installation blueprints.

The installation should comply strictly with all applicable codes, standards and regulations pertaining to the installation and use of this product. If any portion of this manual appears to be in conflict with such codes, standards or regulations, the applicable codes, standards or regulations must take precedence over the manual.

SAFETY

Before handling, installing, operating or servicing this equipment, be sure to read carefully the "Notice to Installer" and "Safety Rules" at front of this manual. Comply with all SAFETY RULES to prevent death, personal injury or damage to equipment and/or property. Stress safety to all installers, operators and service technicians who work on this equipment.

STANDARDS BOOKLETS

Installation, use and servicing of this equipment should comply strictly with published standards, as well as the manufacturer's recommendations. The following standards booklets (latest revision) are available from the sources indicated:

1. NFPA Standard 501C, "Standard for Recreational Vehicles", available from the National Fire Protection Association, Batterymarch Park, Quincy, MA 02269.
2. NFPA 70, "NFPA Handbook of the National Electric Code", obtained from same address as Item 1.
3. ANSI C1-1975 and ANSI 119.2-1975, available from the American National Standards Institute, 1430 Broadway, New York, NY 10018.
4. ANSI A119.2/NFPA 501C, available from the Recreational Vehicle Association, 1896 Preston White Drive, Reston, VA 22090.
5. California Administrative Code, Title 25, available from the State of California, Documents Section, P.O. Box 1015, North Highlands, CA 95660.
6. CSA Electrical Bulletin 946, available from the Canadian Standards Association, Housing and Constructions Materials Section, 178 Rexdale Boulevard, Rexdale, Ontario, Canada, M9W 1R3.

EQUIPMENT DESCRIPTION

Instructions and information in this section pertain to Generac air-cooled generators. These generators are designed specifically for installing in recreational vehicles. They operate 120 volt, single phase, 60 Hertz, AC electrical loads that require 46.0 amps at 120 volts.

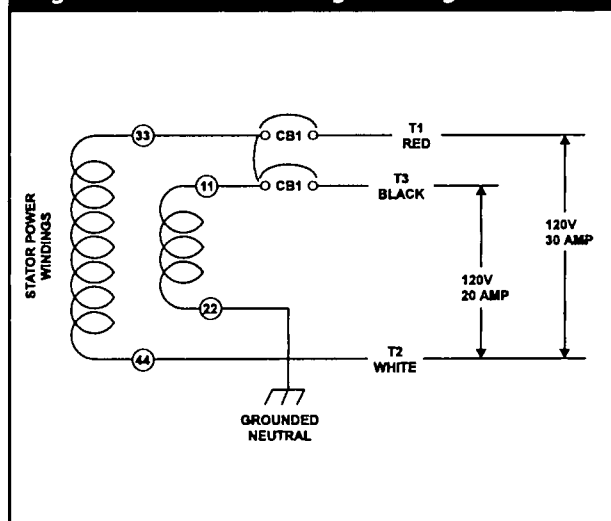
ENGINE GENERATOR OPERATING SPEED

The generator's revolving field (rotor) is driven by a single-cylinder, 4-cycle engine through a pulley and drive belt arrangement. The generator supplies 120 volts AC at 60 Hertz when the rotor is operating at 3600 rpm. The drive belt arrangement allows the engine to operate at a lower speed than the rotor.

GENERATOR AC CONNECTION SYSTEM

The generator is equipped with dual stator power windings as shown in figure 13.

Figure 13 — 120 Volt Single Voltage Connection



- The AC connection system on all air-cooled QP series generators uses a GROUNDED neutral.
- A separate green ground wire is connected to the recreational vehicle's junction box.
- For these QP55 units, loads connected across T1 (red) to T2 (white), MUST NOT exceed 30 amperes or 3600 watts and loads connected across T3 (black) and T2 (white) MUST NOT exceed 20 amperes or 2400 watts each at 120 volts. The combined loading of the two breakers should not exceed 5500 watts.

**IMPORTANT: DO NOT CONNECT LOADS IN EXCESS OF
CIRCUIT BREAKER RATINGS.**

LOCATION AND SUPPORT

GENERATOR LOCATION

The most desirable location for the generator set is between the vehicle's main frame members. However, this is seldom possible. Most units must be installed on the side of the vehicle and are difficult to reinforce.

Many recreational vehicles have been factory equipped with an area for the generator set. Some vehicles may even have a generator compartment, provided by the vehicle manufacturer.

Plan the generator location based on the following:

- The generator set must be installed on a framework that is part of the recreational vehicle, as outlined in the paragraph entitled "Generator Support."
- The location must provide an access opening that is large enough to permit generator removal (unless the generator is to be removed from underneath the supporting framework).
- The location must provide easy access to frequently serviced components, such as filters, oil drains, spark plugs and other common maintenance parts.
- The location must provide sufficient room to allow minimum clearances as outlined in the "Generator Compartments" section. If sound insulation is to be used on compartment walls and ceiling, the minimum recommended applies to the space between the generator and such insulation.
- The location must provide adequate cooling and ventilating air flow for the generator without a great deal of work and expense.

GENERATOR SUPPORT

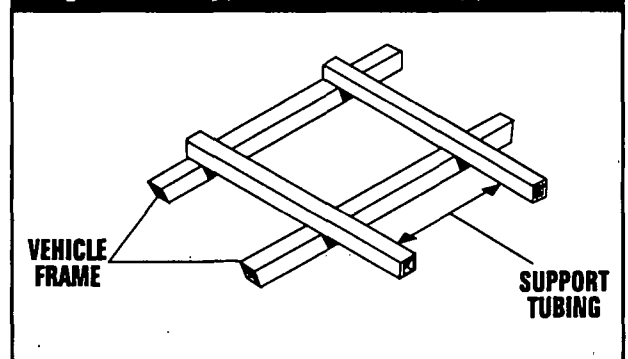
The generator must be securely attached to a metal framework that has been made part of the vehicle frame structure by bolting or welding. The metal framework on which the generator will rest and which will restrain the generator set should consist of at least two horizontal beams. These beams should consist of (a) 1-1/2 inch square, 11 gauge steel tubing OR (b) 1-1/2 inch, 11 gauge angle iron. A typical supporting frame with horizontal support tubing, is shown in Figure 14.

The generator can be installed so that it sits on top of the horizontal support tubing, if the vehicle design permits. Another method is to suspend the generator below the horizontal support tubing by means of suitable, structurally sound metal framework. The following general rules apply:

- Vehicle construction **MUST** be capable of supporting the weight of the generator.
- Whether the generator is mounted above the horizontal support tubing or suspended below the tubing, the supporting frame used must be structurally sound.
- If the generator cannot be bolted directly to the supporting frame or support tubing, consider using additional

tubing, angle brackets or other supports to give the supporting frame sufficient strength.

Figure 14 — Typical Horizontal Support Frame



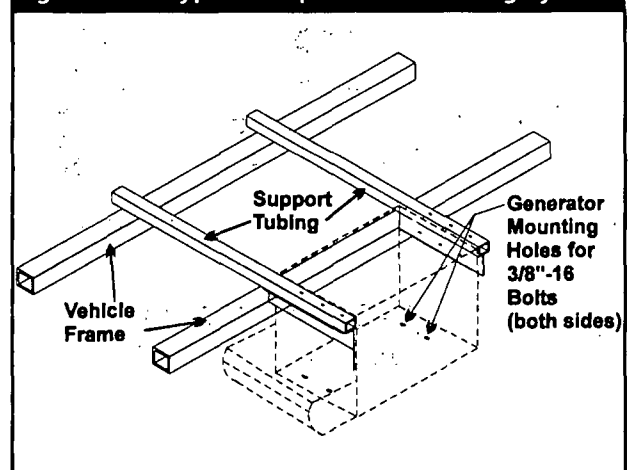
SUSPENDED MOUNTING

The location of a suspended mounting system must be carefully planned, keeping the following general rules in mind:

- Protect the generator against road splash and debris. Baffles or splash guards may be required to protect certain areas of the generator. To make sure the generator is adequately protected, road test the installation through mud, water and slush.
- The installer must make certain that selected location will permit adequate cooling and ventilating air flow to be supplied.

Supplied with your generator are two brackets that may be used for the suspended system as shown in Figure 15. Use the provided bolts and washers to attach the brackets to the genset.

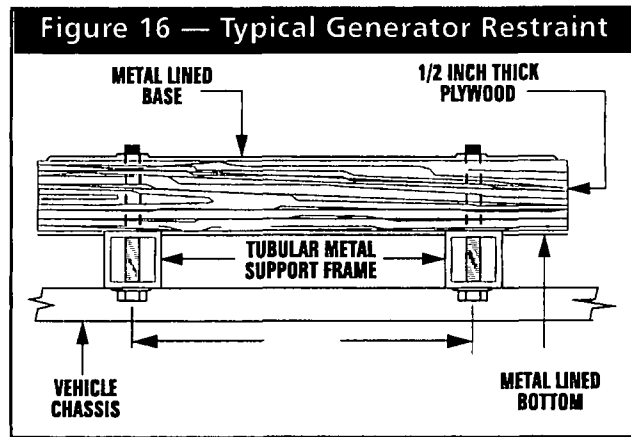
Figure 15 — Typical Suspended Mounting System



IMPORTANT: If supplied brackets are used for suspended mounting, four 3/8"-16 bolts, lockwashers and flatwashers must be tightened in the generator mounting holes.

GENERATOR RESTRAINT

Use four 3/8"-16 hardened steel bolts (Grade 5) to fasten the generator to the supporting frame or the support tubing. These bolts must pass through (a) the generator mounting base, (b) the compartment floor, if a compartment is used, and (c) the supporting framework (Figure 16). All bolts must be long enough so that when tight, at least 3 threads are visible past the retaining lock nuts. Refer to "COMPARTMENT" section for location of generator mounting holes.



GENERATOR COMPARTMENTS

The generator set may or may not be installed inside a compartment that is constructed specifically for housing a generator. This section applies to generator compartments when they are installed. The following general rules apply to compartments:

- The generator compartment should be either constructed of, or lined with, 26 gauge galvanized steel.

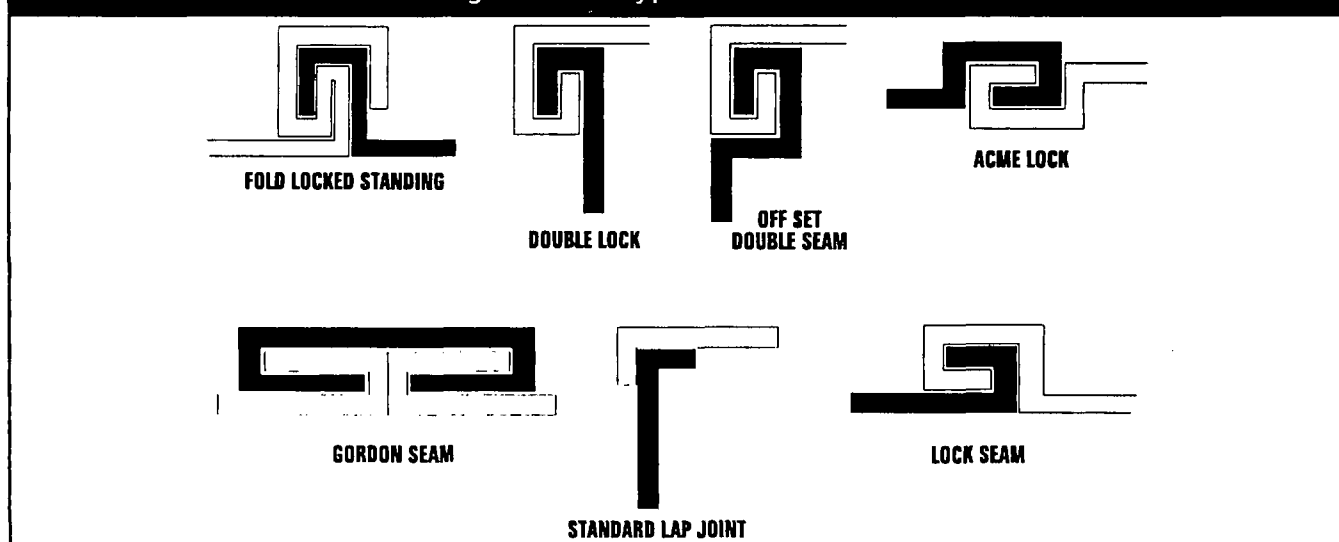
IMPORTANT: ALUMINUM IS NOT AN ACCEPTABLE ALTERNATIVE TO GALVANIZED STEEL, DUE TO ALUMINUM'S LOW MELTING POINT.

- If the compartment is lined with galvanized steel, it may be constructed of any material. Generac recommends that the compartment be constructed of 1/2-inch thick plywood, with the floor made of a double thickness of plywood for added strength.
- All seams, splices and joints of the compartment walls (unless vapor tight by design) should be caulked.

IMPORTANT: CAULKING MUST BE DONE SO THAT THE CAULKING MATERIAL WILL STAY IN PLACE PERMANENTLY. PRESSING SUCH MATERIALS AS PUTTY TAPE ONTO JOINTS AND SEAMS WILL NOT MEET THAT REQUIREMENT. A HIGH QUALITY SILICONE RUBBER SEALANT IS RECOMMENDED.

- Holes and openings through the compartment walls for passage of electrical conduit, conductors, etc, into vehicle living area must be sealed vapor-tight with silicone rubber base sealant.
- If you use flexible metal conduit, seal the conduit at the end where it terminates inside the junction box. Flexible metal conduit is NOT vapor tight along its entire length.
- Seams and joints of the galvanized steel (whether used as a liner or the compartment itself) must be lapped and mechanically secured. Such seams may be manufactured, welded, bolted, riveted, or screwed. Manufactured lock seams are shown in Figure 17.

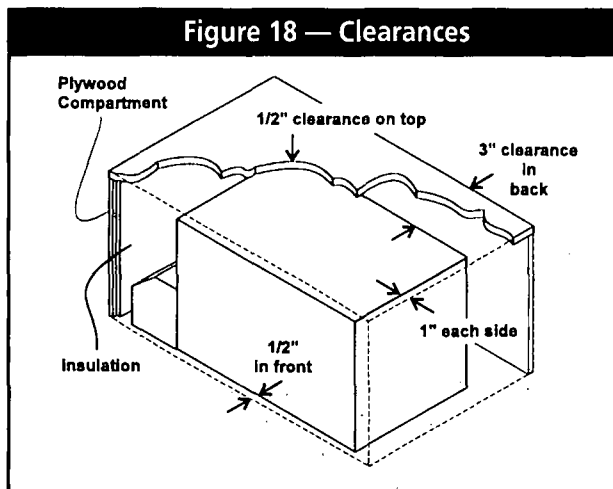
Figure 17 — Types of Lock Seams



COMPARTMENT SIZE

Plan the compartment size carefully. Provide a minimum clearance of 1/2 inch on the front and top, 1 inch on the sides, and 3 inches from the back for air circulation AFTER the compartment has been lined with metal and sound insulation (Figure 18).

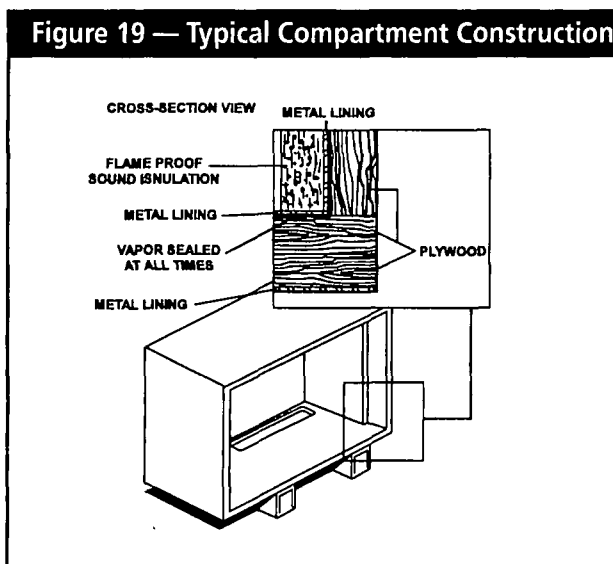
NOTE: Refer to the "Dimensions and Features" drawing in the back of this manual.



COMPARTMENT CONSTRUCTION

The generator is supplied with a sound attenuated enclosure. For additional noise abatement, refer to the "Acoustics" section for compartment construction.

- The generator compartment should be constructed of 1/2 inch thick plywood. Make the compartment floor a double thickness of 1/2 inch plywood with the grain of the wood at cross section for added strength (Figure 19).



- Line the entire compartment interior with 26 gauge galvanized steel as described above.

- Line the exterior (underside) of the compartment floor with 26 gauge galvanized steel.
- Vapor seal all compartment seams and joints, to prevent poisonous, flammable or explosive vapors from entering the vehicle interior. Refer to the sealant information as noted below.

NOTE: Silicone rubber base sealant is an acceptable caulking material. Pressing putty tape onto compartment joints and seams is NOT acceptable.

- After the compartment has been metal lined and vapor sealed, line the compartment interior walls and ceiling with an approved, non-flammable sound insulating material. See "Sound Insulating Materials."
- Openings in compartment walls for passage of electrical conduit, conductors, hoses, cables, etc., must be made vapor tight with suitable caulking material.
- Flexible conduit must be sealed internally at the end where it terminates inside a compartment's electrical junction box.

NOTE: The preceding is required because flexible conduit, due to its unique construction, is not vapor-tight along its entire length.



DANGER: Do not install any flammable material directly above or around the compartment. Heat, transferred through the compartment structure, may be sufficient to ignite, char or discolor seat cushions, fiberboard and other flammable materials. You may need to use approved non-flammable insulating materials in high temperature areas.

SOUND INSULATING MATERIALS

Once installers have determined that compartments are properly constructed and metal lined, they can add acoustical material. This may include additional sealant or insulating material, to reflect noise away from the vehicle interior.

Sound insulating materials should be of a non-flammable type. One excellent insulating material is a 1 inch thick fiberglass having a 2-pound density. When fiberglass is used, its coated side should face toward the compartment interior.



DANGER: Do not install sound insulation or any absorbent material on the compartment floor interior. Such materials will become soaked with combustible or explosive vapors and liquids and will become a fire hazard.

Using a combination of sound insulating materials can often reduce noise more effectively than a single material. For example, a sheet of lead or visco-elastic material, along with a layer of other acoustical material, is more effective than when a single material is used.

ACOUSTICS

For additional noise abatement the installer may wish to consider the following:

- Using special sound insulating materials.
- Construction of a special noise abatement compartment.

IMPORTANT: ANY METHOD USED TO REDUCE NOISE MUST NOT ADVERSELY AFFECT THE FLOW OF COOLING AND VENTILATING AIR INTO OR OUT OF THE COMPARTMENT.

In addition to the effective use of sound insulating materials, construction of a special noise abatement compartment might be considered to reduce noise levels. Such a compartment might be constructed as follows (Figure 20):

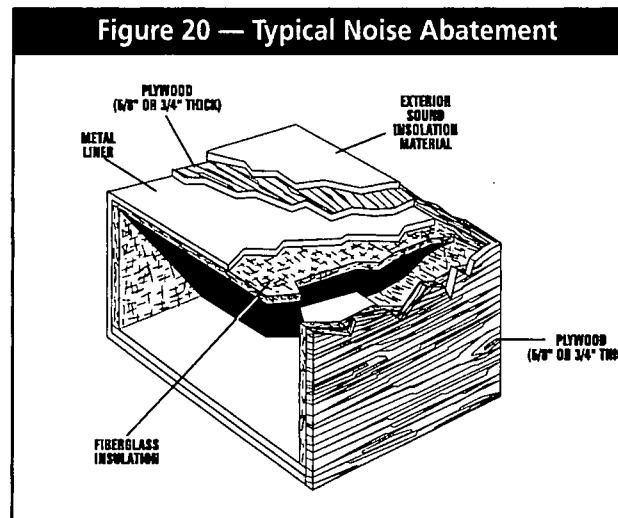
- Use 5/8-inch thick or 3/4-inch thick plywood in the compartment.
- Construct the compartment floor of a double thickness of 5/8-inch or 3/4-inch plywood.
- Line the compartment interior walls and floor, as well as the underside of the floor, with 26-gauge galvanized steel.
- Vapor seal all compartment seams and joints.
- Over the galvanized steel lining, install a selected combination of acoustical materials as mentioned in "Sound Insulating Materials."



DANGER: Do not install any insulation or other absorbent materials on the interior or underside of the compartment floor.

- Seal all compartment door edges to prevent noise leakage around the door perimeter.

- Line the compartment door interior (except for air openings) with suitable, fire proof sound insulation (such as 1-inch thick fiberglass with a 2-pound density).



COMPARTMENT FLOOR CUTOUTS

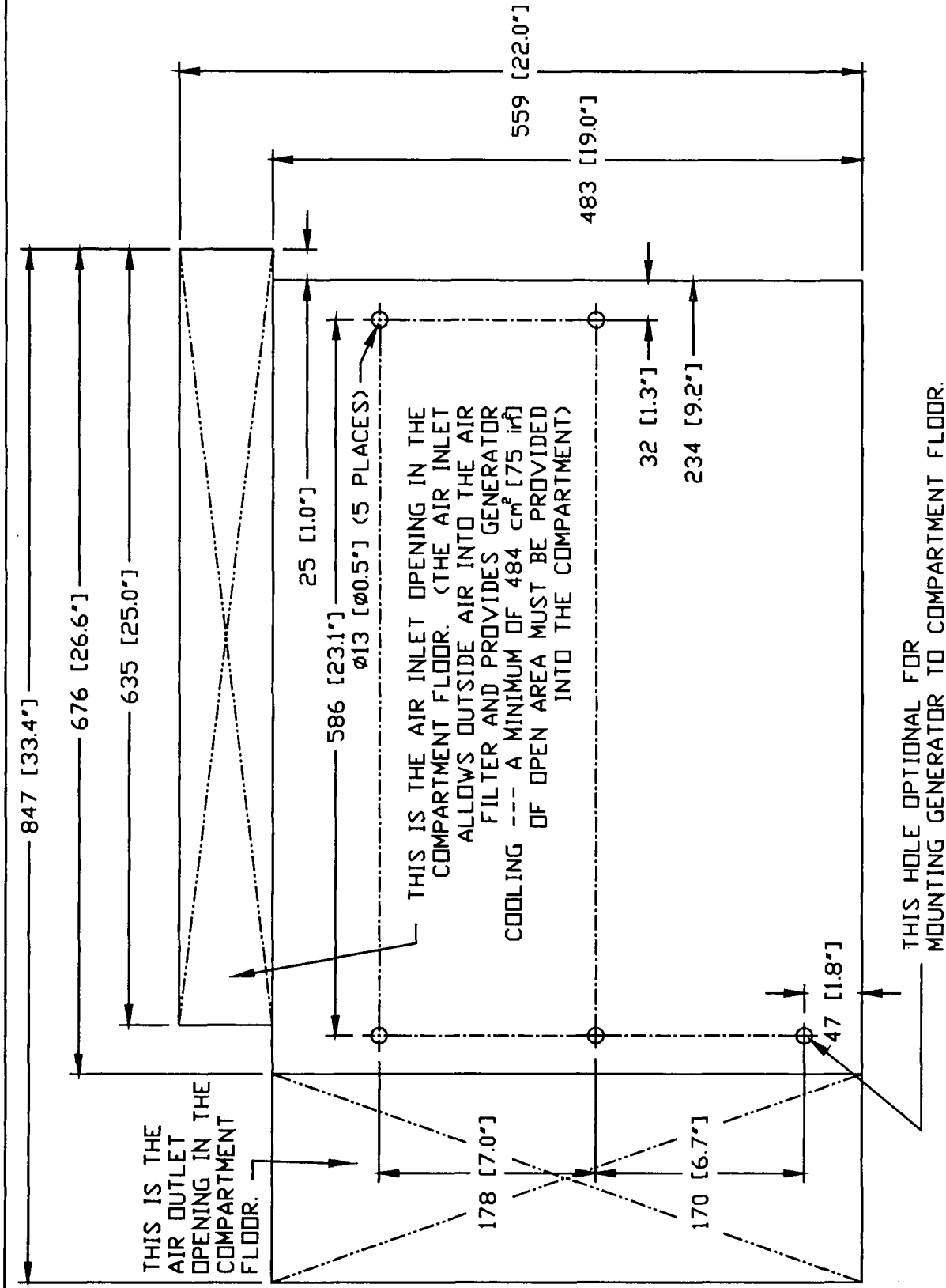
You must provide openings in the generator compartment for the following items (Figure 21):

- Engine exhaust and cooling air outlets
- Generator cooling air inlet
- Four holes for passage of generator mounting bolts. See "Generator Restraint" on Page 16.



DANGER: Fuel lines and exhaust piping must not penetrate into vehicle living area.

Figure 21 — Compartment Floor Cutout



NOTE: FOR A FULL SIZE TEMPLATE, CONTACT GENERAC SERVICE DEPARTMENT AT: 1-414-473-5514

COOLING AND VENTILATING AIR

It is absolutely essential that an adequate flow of air for cooling, ventilating and engine combustion be supplied to the generator set. Without sufficient air flow, the engine-generator quickly overheats. Such overheating can cause serious operating difficulties and may also cause fire and personal injury. The installer must make sure that sufficient air is available to the generator for cooling, ventilating and combustion. The installer must also provide for a path for exhausting the cooling air to the exterior of a compartment, if so equipped.

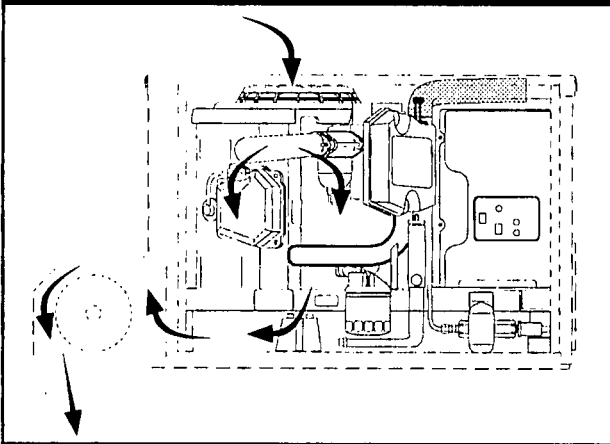


DANGER: Never use discharged cooling air for heating or permit such air to enter the vehicle interior. This air contains deadly carbon monoxide gas and other poisonous, flammable or explosive gases.

GENERATOR AIR FLOW

Engine operation drives cooling fans for the 2-stage cooling air system. A pressure fan draws cooling air into the top of generator (Figure 22). This air flow cools the engine-generator and electronic components. The second part of the cooling system, a suction fan, draws air that is heated from a hot engine into a collector pan at the base of the unit. This heated air (although cooler than exhaust muffler) is directed across the muffler to cool it. The heated air flow is then deflected out the bottom toward the ground.

Figure 22 — Air Flow Through Engine-Generator

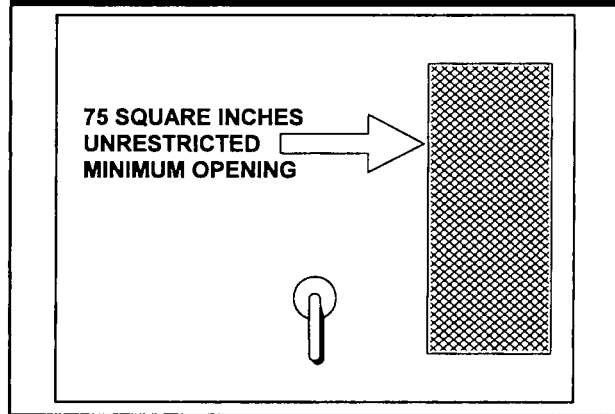


COOLING AIR INLET OPENINGS

The air inlet opening is illustrated in the compartment floor cutout in Figure 21. If the vehicle will be parked on a concrete surface for an extended period of time with the generator running, an additional air inlet may be provided in the compartment door as shown in Figure 23.

NOTE: Screening, louvers, or expanded metal that cover air openings restrict air flow that you must compensate for by making the actual air opening proportionately larger. See "Compensating for Restrictions."

Figure 23 — Air Inlet in Compartment Door

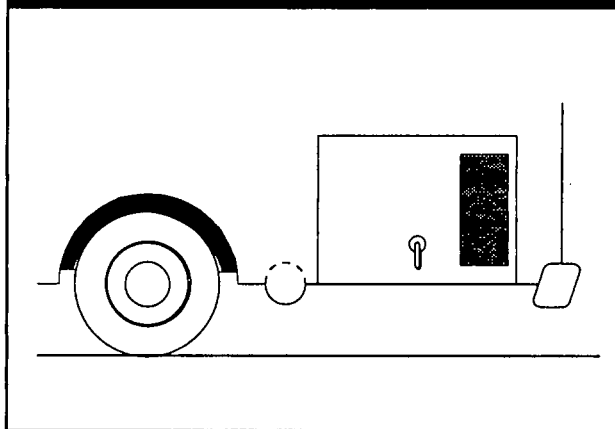


IMPORTANT: BE SURE TO MEET THE MINIMUM CLEARANCES ILLUSTRATED IN FIGURE 18.

When the unit is installed on a suspended mounting system, one of several different methods of supplying air flow may be used as follows:

- Provide a door in the vehicle skirt having an air inlet opening (Figure 24).

Figure 24 — Suspended Mount: Inlet Door



- Using ductwork (Figure 25). The installer must be sure air is available to the back of the generator since air inlets are located at the back.
- By providing an opening in the vehicle skirt and space behind the generator for cooling air flow (Figure 26). Recommended clearance behind the back of the generator is at least 3 inches.

Figure 25 — Air Inlet Using Ductwork

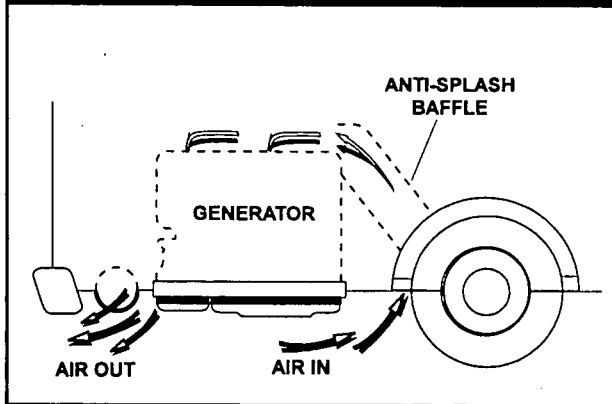
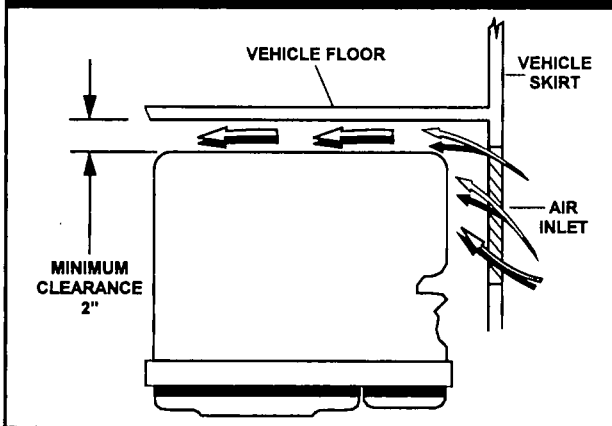


Figure 26 — Air Inlet in Vehicle Skirt



COMPENSATING FOR RESTRICTIONS

Such materials as screening, louvers, or expanded metal can restrict the free flow of air. Compensate for this restriction by making the actual air opening proportionately larger.

Some materials may offer only a 60 percent "free air inlet area." Other more efficient materials may provide up to a 90 percent free air inlet area. The percentage of free air inlet opening is usually available from the material supplier or manufacturer.

TO DETERMINE THE ACTUAL AIR INLET OPENING SIZE REQUIRED, DIVIDE 75 SQUARE INCHES BY THE PERCENTAGE OF FREE AIR INLET AREA FOR THE MATERIAL YOU WILL USE.

For example: If you plan to use screening with an 80% free air inlet area, divide 75 by 0.8, which results in 94 square inches. Minimum actual size of air inlet opening in this case is 94 square inches.

TESTING THE INSTALLATION

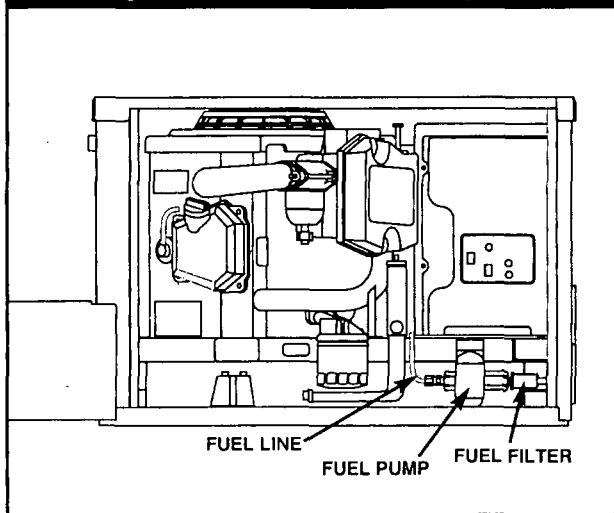
Generac recommends testing the installation to be sure adequate cooling air flow is available to the unit before placing the unit into service. If the unit shows signs of overheating, you will need to enlarge the air openings. Never place a unit into service until absolutely certain that cooling and ventilation is adequate.


IMPORTANT: YOU MUST TEST THE INSTALLATION ESPECIALLY IF YOU BRING IN AIR FROM BELOW THE GENERATOR SET.

GASOLINE FUEL SYSTEM

Installing a gasoline fuel system (Figure 27) for recreational vehicle generator sets must comply with applicable codes, standards and regulations. The entire fuel system must be completely free of leaks. There must be no possibility of gasoline vapors entering the vehicle interior.

Figure 27 — Generator Fuel System



 **DANGER:** Gasoline is highly flammable and its vapors are explosive. Comply with all codes, standards and regulations pertaining to gasoline fuel systems used in recreational vehicle generators. Properly install and maintain the fuel system and keep it entirely free of leaks. Gasoline vapors must not enter the vehicle interior.

Factory installed generator fuel system components include (a) fuel filter, (b) 12-volt DC electric pump, (c) engine carburetor, and (d) interconnecting lines and fittings. Connect a fuel supply line to the fuel filter inlet. Use a flexible length of approved fuel hose between the fuel filter inlet connection and rigid fuel lines.

FUEL TANK

Either the generator must share the vehicle engine's fuel tank, or you must install a separate fuel tank for the generator set. All fuel tanks installed on the vehicle must be constructed, installed, and restrained so it complies with applicable codes, standards and regulations.

If the generator is to share the vehicle engine's tank, separate fuel pickup tubes are required for the engine and the generator. Generac recommends that you make the fuel pickup tube 2 to 3 inches shorter than the vehicle engine's pickup tube. This prevents the generator from depleting the entire fuel supply during prolonged generator operating periods.



CAUTION: Do NOT tee the generator fuel supply line into the vehicle engine fuel supply line. If this is done, the generator will be starved of fuel when both engines are operating at the same time. Also, while the vehicle engine is not running, generator operation may drain the vehicle engine supply line, making it difficult to start the vehicle engine.

GENERATOR FUEL SUPPLY LINE

■ RIGID FUEL LINES

Those lines used to supply fuel from a tank to the generator must comply with applicable codes, standards and regulations. The following general rules apply to rigid fuel lines:

- Rigid lines should be of annealed, seamless, drawn aluminum or steel.
- Lines and fittings must comply with SAE J512F, "Standard Automotive Fittings", or with ANSI B126.26 (latest edition).
- Route the fuel line so that at least 2 inches of clearance is maintained between the line and any exhaust system parts.
- Do not attach electrical wiring to fuel lines. Route the wiring so it cannot come into contact with any fuel line.
- Route fuel lines so if they leak, fuel does not drip onto any electrical or exhaust system parts.
- Use non-ferrous metal straps without sharp edges to secure fuel lines.

■ FLEXIBLE FUEL LINE

Use an approved flexible length of fuel hose between the generator fuel inlet connection and rigid fuel lines. This prevents breaking of the line caused by vibration, shifting, settling or movement. The following rules apply:

- The flexible hose must comply with SAE J30B, "Standard for Fuel and Oil Hose". It must be approved for use with gasoline.
- The hose should be at least 6 inches longer than is needed to prevent the hose from rupturing if the generator shifts or settles.

EXHAUST SYSTEM

The generator exhaust system must be safely and properly installed. Only approved mufflers and other exhaust system parts must be used. A properly installed exhaust system must be vapor tight, quiet and completely safe.



CAUTION: Never tee the generator engine exhaust pipe into the vehicle engine exhaust piping. This causes excessive back pressure on the generator engine. Also, water from one engine can damage the other engine.



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. Do not operate the generator until its exhaust system has been inspected and properly repaired.

MUFFLERS AND SPARK ARRESTORS

This muffler meets code and standard requirements of the U.S. Forest Service. Use only mufflers and parts approved by Generac. Any person(s) installing an unapproved muffler, or an unapproved exhaust system part, or modifying an exhaust system in any way that might cause a hazard, is liable for any damage, injury or warranty expense that might be caused by such unapproved installation or modification.

Failure to maintain a spark arrestor may be in violation of the law. The vehicle owner or operator must maintain this device in good condition. In the State of California, the preceding is required by law (Section 4442 of the California Public Resources Code). Other states may have similar laws. Federal laws apply on federal lands.

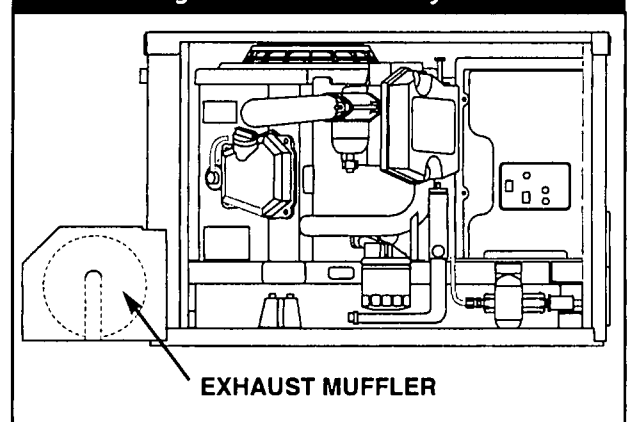
TYPE OF EXHAUST SYSTEM

The QP55 generator has a configuration for a side out exhaust system and is equipped with such an exhaust muffler (Figure 28).

EXHAUST SYSTEM SAFETY

- Maintain a clearance of at least 3 inches (76mm) between exhaust system parts and any combustible material (such as wood, felt, cotton, organic fibers or other like material). If you cannot maintain the 3-inch clearance, locate, insulate or shield the exhaust part(s) so that the temperature of any combustible material is not raised more than 117°F (65°C) above the ambient air temperature.
 - Extend the exhaust system at least one inch (25mm) past the outer edge of the vehicle. Do not terminate the exhaust system under the vehicle.
 - Terminate the exhaust tailpipe such that exhaust gases will not be drawn back into the generator compartment and recirculated.
 - If there is any possibility of the tailpipe or muffler being damaged, protect these damage prone areas by means of a protective device (such as a "skid bar").
 - Install the generator exhaust system according to safe automotive practices.
 - Use enough exhaust system hangers to prevent any part of the system from being dislocated.
 - Use exhaust system parts recommended by Generac. Using unapproved exhaust mufflers and exhaust system parts is the responsibility of the person(s) installing such unauthorized parts.
 - Do not terminate the exhaust system under any opening, window or vent which can be opened or is not permanently sealed from the vehicle interior.
 - Exhaust piping must be large enough to prevent excessive back pressure on the generator engine.
 - Never tee the generator engine exhaust pipe into the vehicle engine exhaust piping. This causes excessive back pressure on the generator engine. Also, water from one engine can damage the other engine.
- Plan exhaust system installation carefully. Comply with all applicable codes, standards and regulations.

Figure 28 — Exhaust System



ELECTRICAL CONNECTIONS

Be sure to read "Generator AC Connection System" on Page 14.

The following general rules apply to electrical connections in a recreational vehicle:

- Qualified electricians who are familiar with applicable codes, standards and regulations should install electrical wiring.
- The wiring should comply with codes, standards and regulations. The National Electric Code (NFPA 70), as well as state and local codes, apply.
- Switches and circuit breakers should be of a type approved for use in recreational vehicles and must be mounted and installed to prevent damage from road shock.
- Wiring must be of adequate size, with approved insulative qualities, and properly supported.
- Conduit and wire openings into generator compartment (if used) must be vapor-sealed, to prevent entry of flammable, explosive or poisonous gases into the vehicle.

ELECTRICAL JUNCTION BOX

Install an approved, square electrical junction box that has a blank cover on the interior or exterior wall of the area you plan to install the generator (NOT on the generator). Route the generator's AC output leads into this junction box through approved flexible conduit, and into this junction box. This is the point of first termination for generator AC output leads.

WIRING

- Wiring should be of stranded copper to reduce chance that vibration may cause breakage.
- Wire gauge size should be large enough to handle at least 115% of the installed generator's rated maximum current.
- If neutral conductors are used, they must be the same size as other leg wires.
- Route power supply conductors from generator AC output leads T1 (red), T2 (white), T3 (black) and the green ground wire through approved flexible conduit to the electrical junction box on the compartment wall.

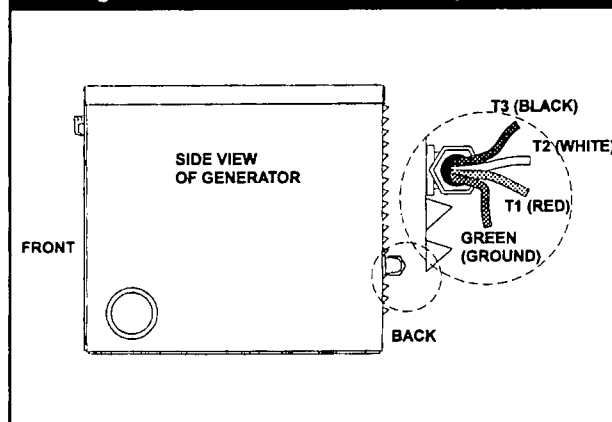
If flexible metal conduit is used between the generator and the compartment junction box, the conduit end that terminates the compartment junction box, must be vapor-sealed. Flexible metal conduit is NOT vapor tight along its entire length.

- From the junction box route power supply wires through approved conduit to either (a) double-pole, double-throw transfer switch, or (b) approved isolation receptacle. Connecting to a transfer switch or isolation receptacle must prevent vehicle electrical circuits from being connected to two different power supplies at the same time (such as generator and dockside power).
- Conductors must be rated 221°F (105°C) or must be of a larger conductor size.

GENERATOR AC CONNECTIONS

Generator AC output leads T1 (red), T2 (white), T3 (black) come out of the generator as shown in Figure 29. Lead T1 (red) and T3 (black) are "hot" while T2 (white) is the grounded "neutral" lead. There is also a green lead that connects to ground in the junction box of the recreational vehicle.

Figure 29 — Generator AC Output Leads



Line T1 (red) to T2 (white) is protected against overload by a 30 amp circuit breaker (CB1). Use this line-to-neutral connection separately to operate 120 volts, single phase, 60 Hz, AC loads requiring up to 3600 watts (3.6 kW) of power. Line T3 (black) to T2 (white) is also protected against overload by a 20 amp circuit breaker (CB2). Use this line-to-neutral connection separately to operate similar loads. However, be sure the total unit load does NOT exceed the maximum rating of the generator. The neutral line (T2, white) on all units is a grounded neutral.



CAUTION: Do NOT connect electrical loads in excess of any circuit breaker rating or you will develop problems with circuit breaker tripping, which causes a loss of AC output. Also, do NOT exceed the generator's rated wattage capacity. Add the watts or amperes of all lighting, appliance, tool and motor loads the generator will operate at one time. This total should be less than the unit's rated wattage/ampere capacity.

CONDUIT

Route the connections between the generator and the junction box through approved, flexible conduit. The following general rules apply:

- Cut wiring to the required length and allow extra wire for junction box connections.
- Carefully prepare conduit ends, to prevent sharp edges from cutting through wiring insulation.
- Route conduit so it does not interfere with generator movement.

- If you use metallic conduit, vapor seal the end of the conduit where it enters the junction box. Do this because flexible metallic conduit is not vapor proof along its entire length.

ISOLATING DIFFERENT POWER SOURCES

Connections from the junction box must terminate in a double pole, double throw transfer switch (Figure 30). An alternate method for isolating different power sources is by using an isolating receptacle (Figure 31 on Page 26). Whichever method you use, you must be certain that both power sources are NOT connected at the same time.

POWER SUPPLY CORD

The power supply cord must comply with all applicable codes, standards and regulations. It must be large enough to handle the full amperage to which it will be subjected.

GROUND FAULT CIRCUIT INTERRUPTERS

The National Electric Code (NFPA 70, 551-7) requires that you install ground fault circuit interrupters (GFCIs) on all external and some internal electrical receptacles. Contact your manufacturer or dealer for recommendations.

Figure 30 — Transfer Switch Isolation Method

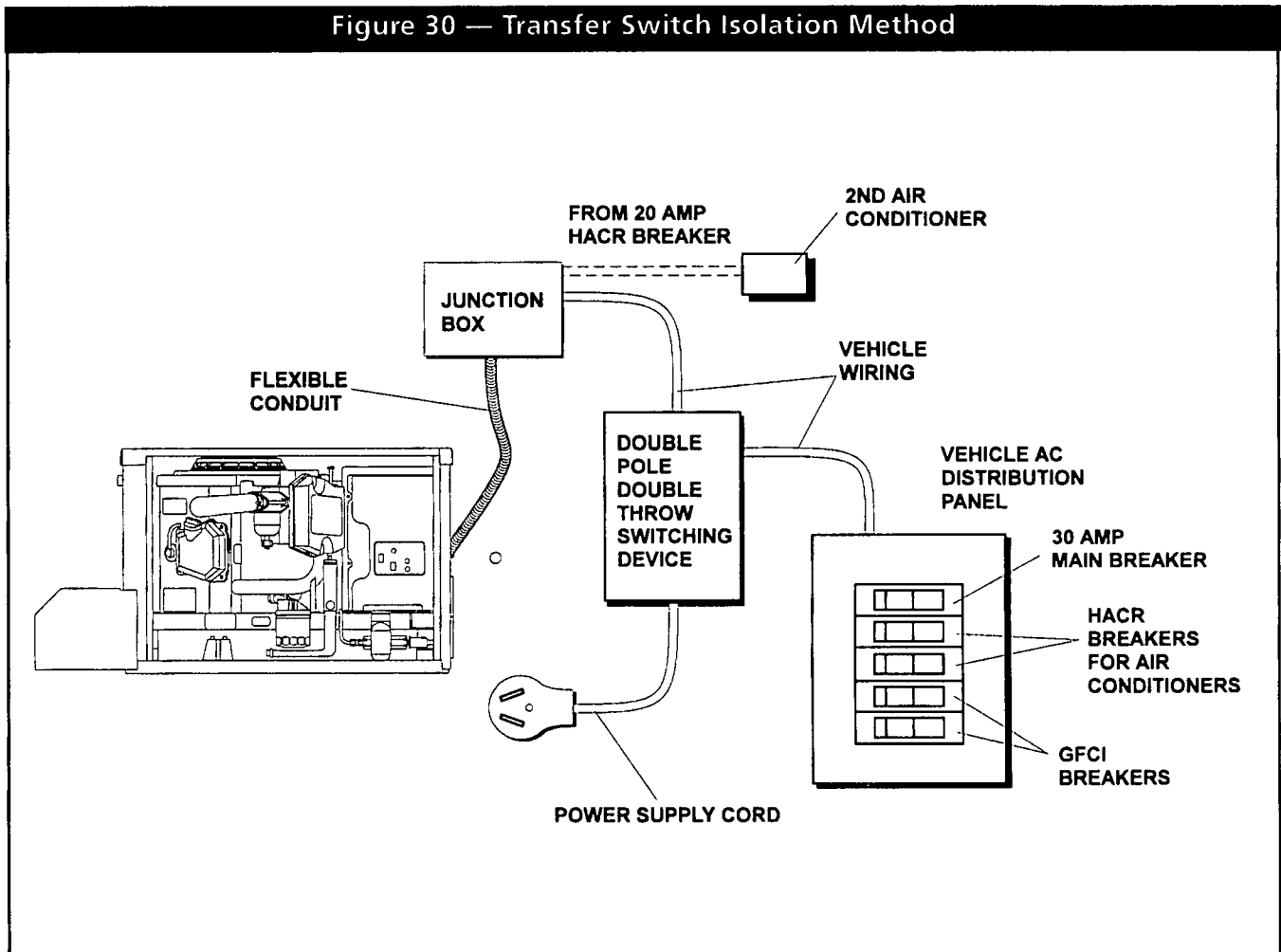
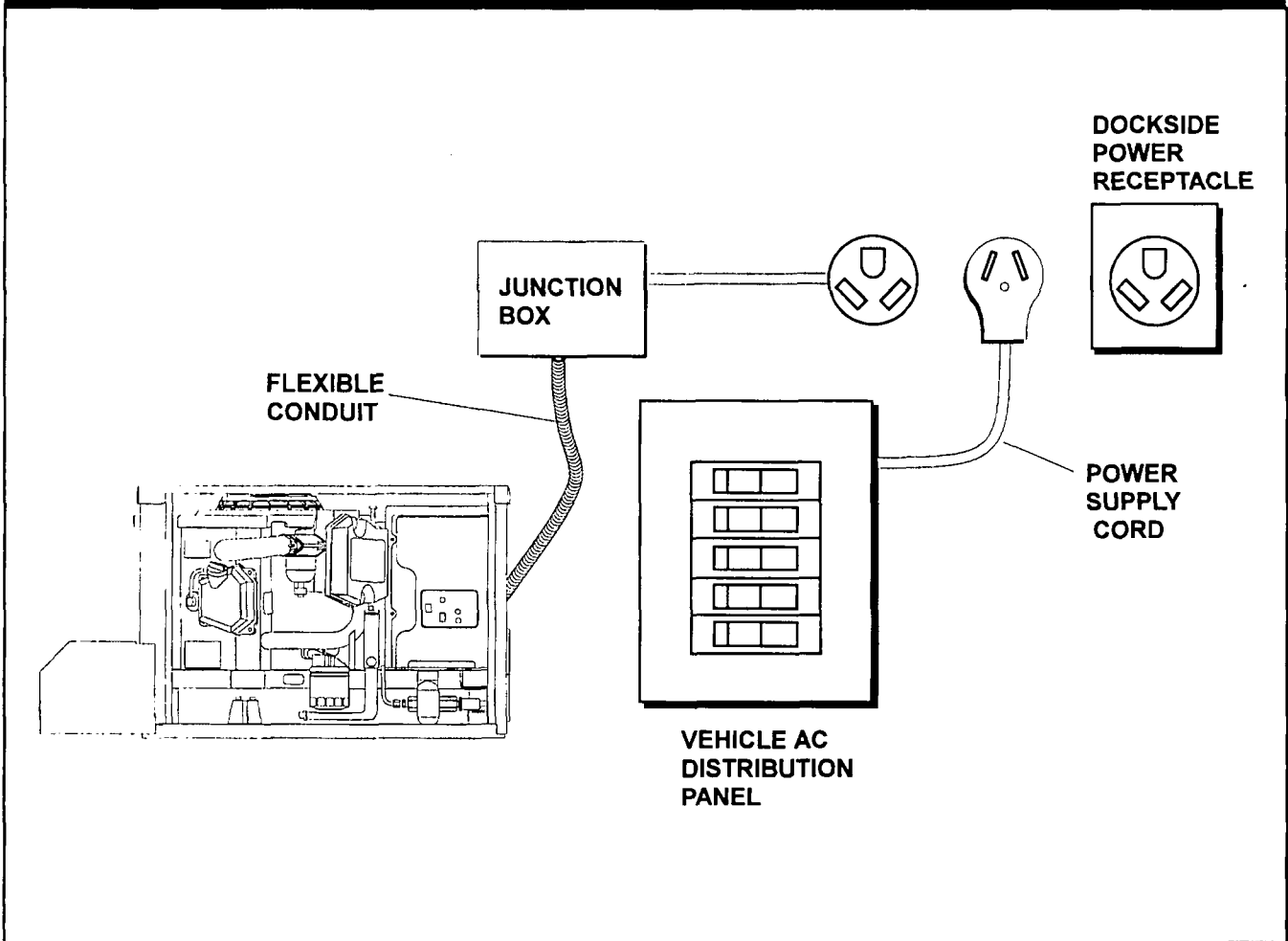


Figure 31 — Installation with Isolation Receptacle



BATTERY INSTALLATION

RECOMMENDED BATTERY

Install a battery that meets the following requirements:

- Battery must be a 12 volt, automotive type storage battery.
- For prevailing ambient temperatures above 32°F (0°C), use a battery rated 70 amp-hours and capable of delivering 400 cold cranking amperes.
- For prevailing ambient temperatures below 32°F (0°C), use a battery rated 95 amp-hours and capable of delivering 400 cold cranking amperes.

IMPORTANT: IF THE BATTERY IS TO BE USED TO POWER OTHER VEHICLE ACCESSORIES, AS WELL AS START THE GENERATOR, YOU MAY NEED A BATTERY WITH A LARGER CAPACITY.

BATTERY CABLES

Using battery cables that are too long or too small in diameter may cause a drop in voltage which causes starting problems. For best cold weather starting, the voltage drop between battery terminals and the generator connection point should not exceed 0.12 volts per 100 amperes of cranking current.

QP55 generators are rated at about 100DC amperes of cranking current.

Select battery cables based on (a) cable length, and (b) prevailing ambient temperatures. Generally, the longer the cable and the colder the weather, the larger the cable size must be, as shown in the chart.

CABLE LENGTH in Feet (meters)	CABLE SIZE
0 to 10 (0 to 3)	2*
11 to 15 (3.4 to 4.5)	0
16 to 20 (4.5 to 6)	000

*For warm weather, use No. 2 cable up to 20 feet.

BATTERY CABLE CONNECTIONS

1. Connect the battery cable from the battery post or terminal indicated by a POSITIVE, POS or (+) to the lug on the starter contactor (Figure 32).

NOTE: Check to be sure the battery cable boot for the starter cable has been installed.

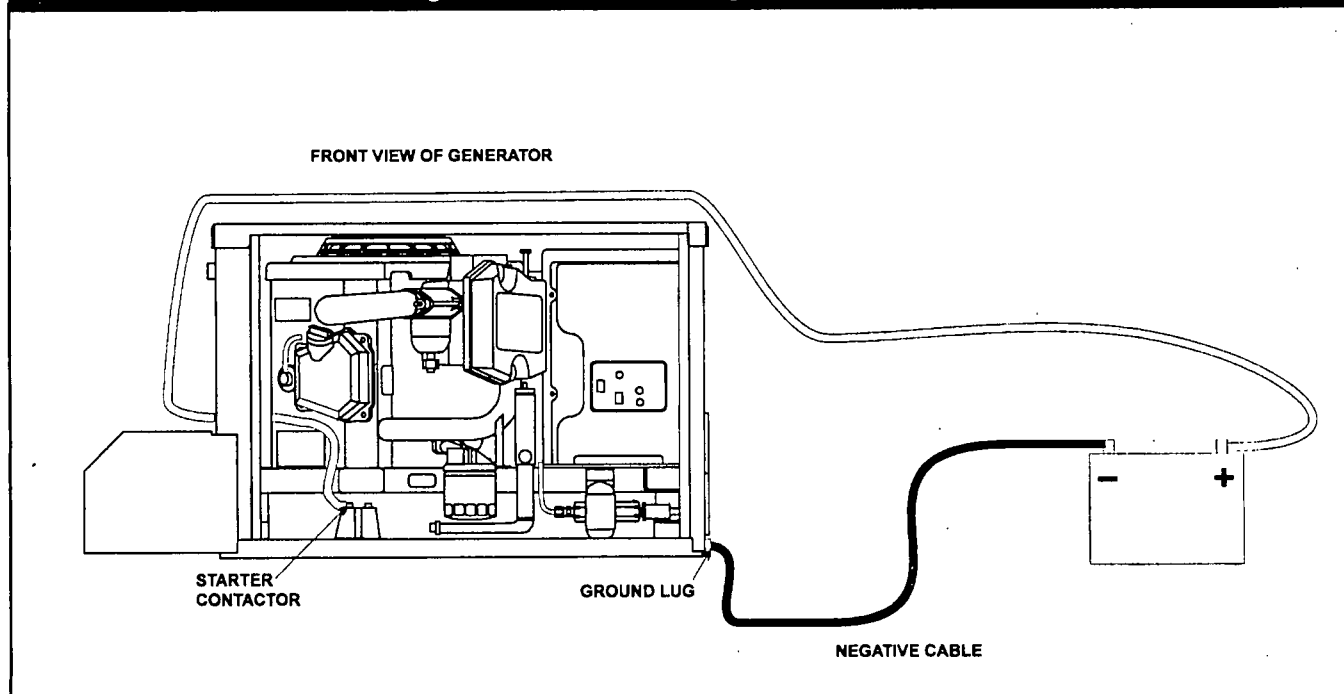
2. Connect the battery cable from the battery post indicated by a NEGATIVE, NEG or (-) to the frame ground connection (Figure 32).
3. Connect cables so the connectors are clean and tight.

BATTERY COMPARTMENT

Install the generator battery in its own, vented compartment. Place the battery compartment away from any source of heat, sparks or flame.

Provide ventilation openings in the battery compartment. The minimum size of openings should be 2 square inches at the top of the compartment. Mount the battery on a strong, rigid supporting structure, where leaks and spills of battery fluid will not cause damage.

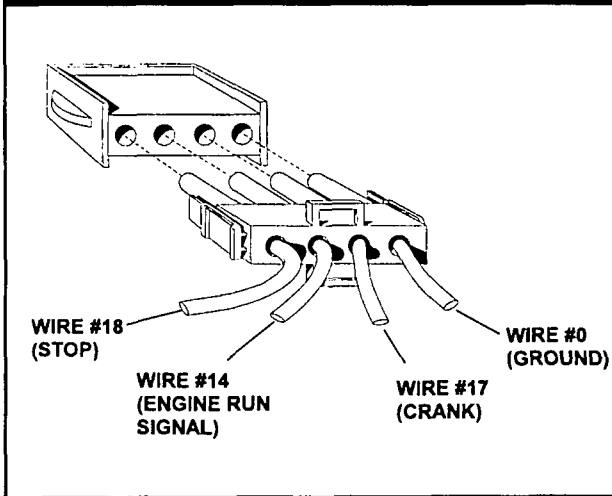
Figure 32 — Connecting Battery Cables



OPTIONAL ACCESSORIES

A plug-in receptacle (Figure 33) is provided on the generator set, above the muffler enclosure. Use this receptacle to connect an optional remote-mounted start/stop panel to the generator. Installation of such a panel will permit you to start and stop the generator engine from any convenient location inside the vehicle.

Figure 33 — Remote Panel Plug-in Receptacle

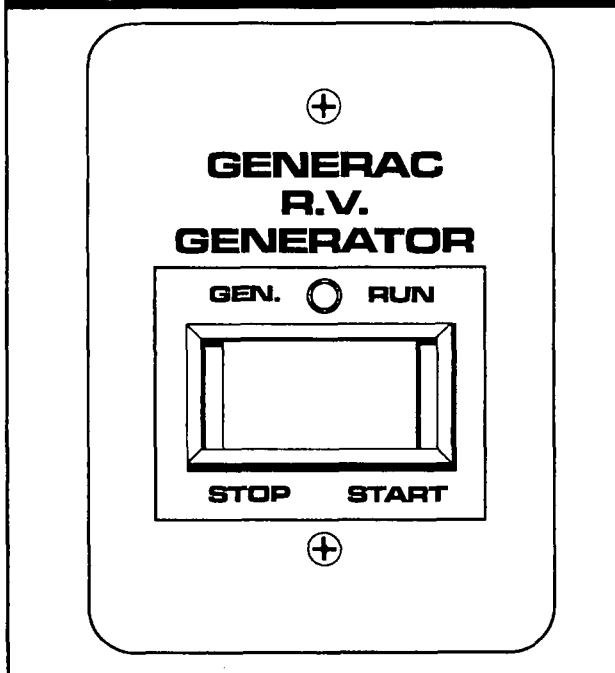


REMOTE PANEL MODELS

■ MODEL 9042

This remote panel (Figure 34) mounts a rocker type start/stop switch and a "Generator Run" advisory lamp. The lamp will turn on to indicate the engine is running.

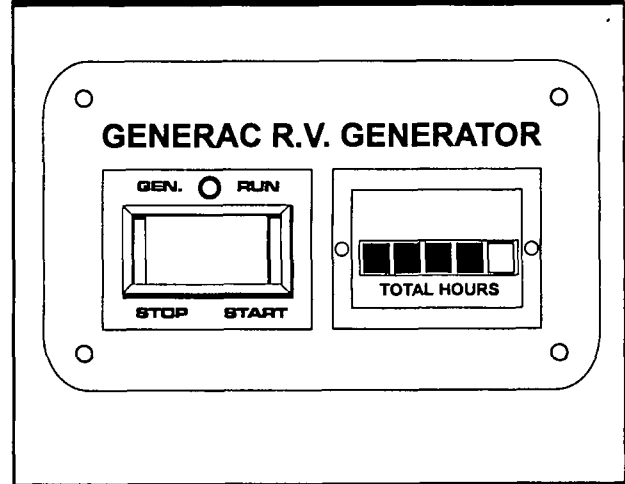
Figure 34 — Model 9042 Remote Panel



■ MODEL 9043

This remote panel mounts a rocker type switch, a "Generator Run" lamp and an hourmeter (Figure 35). Use the hourmeter in conjunction with the periodic maintenance schedule for your generator.

Figure 35 — Model 9043 Remote Panel



REMOTE PANEL CABLES

Interconnection cables are available from Generac for connecting the optional remote panels to the generator receptacle.

- To order a 10-foot long, 4-wire cable, specify Model 9045.
- To order a 30-foot long, 4-wire cable, specify Model 9046.

POST INSTALLATION TESTS

The air cooled generator set was factory tested and adjusted using gasoline as a fuel. You should not be required to adjust the unit any further except under special circumstances.



WARNING: Do not make any unnecessary adjustments. Factory settings are correct for most applications. When making adjustments, however, be careful to avoid overspeeding the engine.

BEFORE INITIAL START UP

Before starting, complete the following:

1. Check engine crankcase oil level and, if necessary, fill to dipstick cross-hatched area with the recommended oil. Do not fill above cross-hatched area.
2. Check the fuel supply. Gas fuel lines must have been properly purged and leak tested in accordance with applicable fuel codes. All fuel shutoff valves in the fuel supply lines must be open.



DANGER: If an LP (propane) gas fuel system has been installed, it must have been properly tested for leaks before operating the system in compliance with ANSI A119.2/NFPA 501C. No leakage is permitted. You must be sure no gasoline fuel vapors enter the vehicle interior.

INITIAL START

When absolutely certain that the unit has been properly installed and prepared for use, start the engine as follows:

1. Turn off all electrical loads. Do this by setting the generator main circuit breakers to their "OFF" or "OPEN" position.
2. Refer to the "Starting" section (Page 6) for cranking and starting instructions. The engine may require more cranking for initial starting since the fuel lines have to be primed (use of the Primer Switch will shorten this time).

3. Let the engine warm up for about five minutes to allow internal temperatures to stabilize.

4. Carefully inspect the engine-generator for fuel, oil and exhaust system leaks. Before proceeding to the next step, correct any leakage immediately.

5. When all tests and adjustments at no-load are completed, apply electrical loads and check for proper operation under load. See "Testing Under Load". Run the unit at least 30 minutes with loads applied.

6. Turn off all electrical loads by setting the generator main circuit breakers to "OFF" or "OPEN."

7. Let the unit run at no-load for a few minutes to stabilize internal engine-generator temperatures. Then, shut down the engine.

IMPORTANT: The generator set was thoroughly tested and adjusted at the factory before shipping. No additional adjustment should be necessary. Only qualified service technicians who have been trained should perform adjustments outlined in this manual.

TESTING UNDER LOAD

Apply electrical loads equal to about 75-100% of the unit's rated wattage/ampere capacity.

Let the unit run at least 30 minutes with load applied. During this part of the test, check that the unit is not running excessively hot and that adequate cooling air flow is available. You must not allow the unit to over-heat during prolonged operation.

NOTE: The generator engine is equipped with a high temperature switch. The switch has normally closed (N.C.) contacts. When the engine temperature is too high, switch contacts close, and engine shuts down automatically.

IMPORTANT: Generac recommends that you test the generator for adequate cooling.

INSTALLATION CHECK LIST

LOCATION AND SUPPORT

- 1. The generator is properly located.
- 2. The generator is properly supported.
- 3. The generator is properly restrained.

COMPARTMENT

- 1. Compartment construction is proper.
- 2. Holes/openings are vapor-sealed.
- 3. Compartment size is correct.
- 4. Compartment is vapor-sealed.
- 5. Sound insulation is O.K.
- 6. Floor cutouts properly completed.

COOLING and VENTILATING AIR

- 1. Air flow is adequate.
- 2. Air inlet opening is correct.
- 3. Compensate for restrictions
- 4. Installation has been tested

GASOLINE FUEL SYSTEM

- 1. Fuel tank complies with code.
- 2. Fuel system properly installed.

EXHAUST SYSTEM

- 1. Complies with code requirements.
- 2. Properly and safely installed.

ELECTRICAL CONNECTIONS

- 1. Comply with code requirements.
- 2. Junction box properly installed.
- 3. Wiring meets all standards.
- 4. All connections are correct.
- 5. Conduit properly installed and sealed.
- 6. Generator properly bonded to vehicle.

BATTERY INSTALLATION

- 1. Recommended battery is installed.
- 2. Recommended cables are installed.
- 3. Cables are clean and tight.
- 4. Cables are properly connected.
- 5. Proper ventilation is provided.

POST INSTALLATION TESTS

- 1. All tests properly completed.

OPTIONS AND ACCESSORIES

Check that remote start/stop panels (if used) are properly installed.

If an hourmeter kit is installed, check that job was done properly.

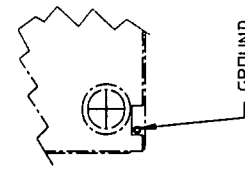
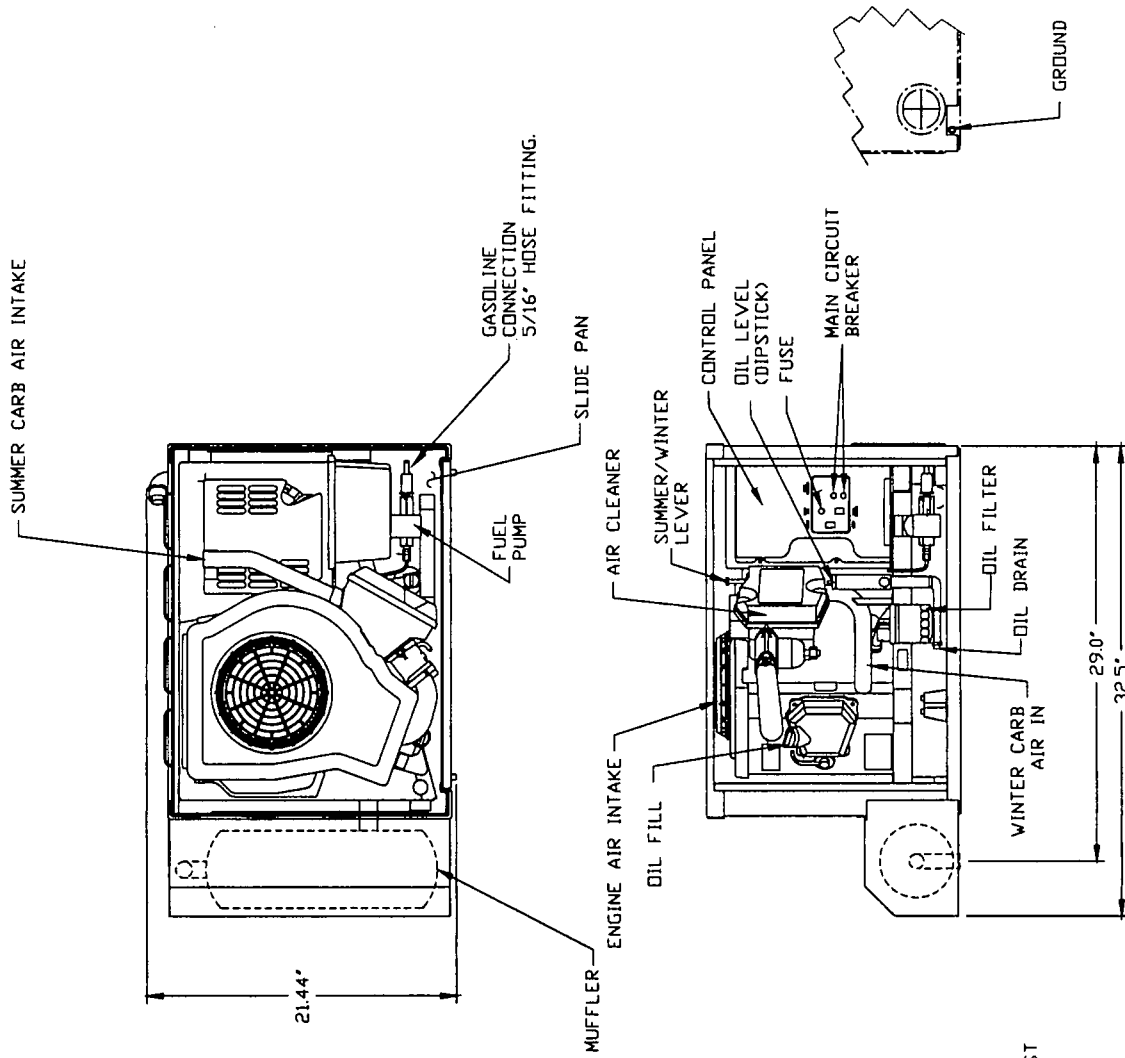
If any other options and accessories are installed, check that they were installed properly.

DATE OF INSTALLATION

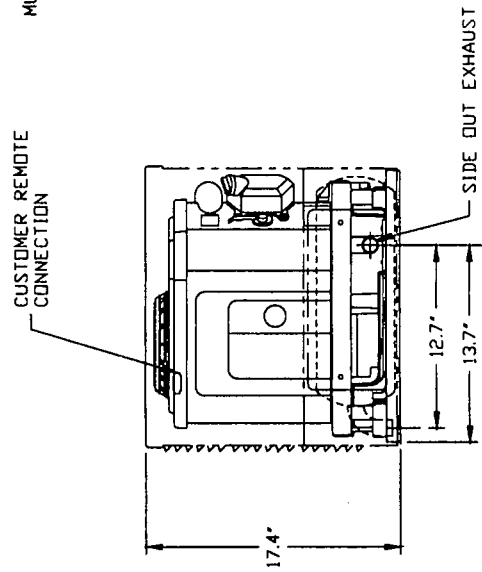
NAME OF INSTALLER

SIGNATURE OF INSTALLER

MAJOR FEATURES AND DIMENSIONS



MAJOR FEATURES AND DIMENSIONS
DRAWING FILE: OP55-FET.DWG



TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSES	REMEDY
Engine won't crank.	<ol style="list-style-type: none"> 1. Fuse is blown. 2. Loose corroded or defective battery cables. 3. Defective engine Start/Stop switch. 4. Defective starter contactor. 5. Defective starter motor. 6. Low or defective battery. 	<ol style="list-style-type: none"> 1. Replace fuse. 2. Tighten, clean or replace as necessary. 3. Replace Start/Stop switch. 4. Replace contactor. 5. Replace starter motor. 6. Charge or replace battery.
Engine cranks but won't start.	<ol style="list-style-type: none"> 1. Out of fuel. 2. Fuel pump is defective. 3. Open Wire #14 from Eng. Control Bd. 4. Engine is flooded. 5. Spark plug defective. 6. Fuel line shut-off closed. 7. Plugged fuel filter. 	<ol style="list-style-type: none"> 1. Replenish fuel tank. 2. Replace fuel pump. 3. Reconnect wire. 4. Wait 5-10 min. before trying. 5. Clean, regap or replace plug. 6. Open fuel line shut-off. 7. Clean or replace fuel filter.
Engine starts hard, runs rough, will not pull full load.	<ol style="list-style-type: none"> 1. Air cleaner plugged or damaged. 2. Defective spark plug. 3. Spark plug boot is loose. 	<ol style="list-style-type: none"> 1. Clean or replace as needed. 2. Clean, regap or replace plug. 3. Fully install boot onto spark plug.
Engine starts, shuts down when Start/Stop switch is released.	<ol style="list-style-type: none"> 1. Engine oil is low. 2. Engine is overheated. 3. Defective Low Oil Pressure System. 	<ol style="list-style-type: none"> 1. Check oil; add as needed. 2. Check air flow openings are adequate. 3. Have serviced/replaced.
Start/Stop switch at Stop, engine continues to run.	<ol style="list-style-type: none"> 1. Defective Start/Stop switch. 2. Open/disconnected wire #18 between Start/Stop switch and Engine Control. 3. Open/disconnected wire #0 between Start/Stop switch & Engine Control Bd. 4. Defective Engine Control Board. 	<ol style="list-style-type: none"> 1. Replace switch. 2. Reconnect or close wire. 3. Reconnect or close wire. 4. Replace board.
No AC output from generator.	<ol style="list-style-type: none"> 1. Check circuit breaker. 2. Check vehicle circuit breaker & fuses. 3. Transfer sw. set to NORMAL position. 4. Generator internal failure. 5. Start switch not held long enough to flash the field. 	<ol style="list-style-type: none"> 1. Reset to ON or CLOSED. 2. Reset and replace if necessary. 3. Set to GENERATOR position. 4. Take generator to an Authorized Generac facility. 5. Stop, then restart engine (Hold Start switch for at least 2 seconds.)

NOTES

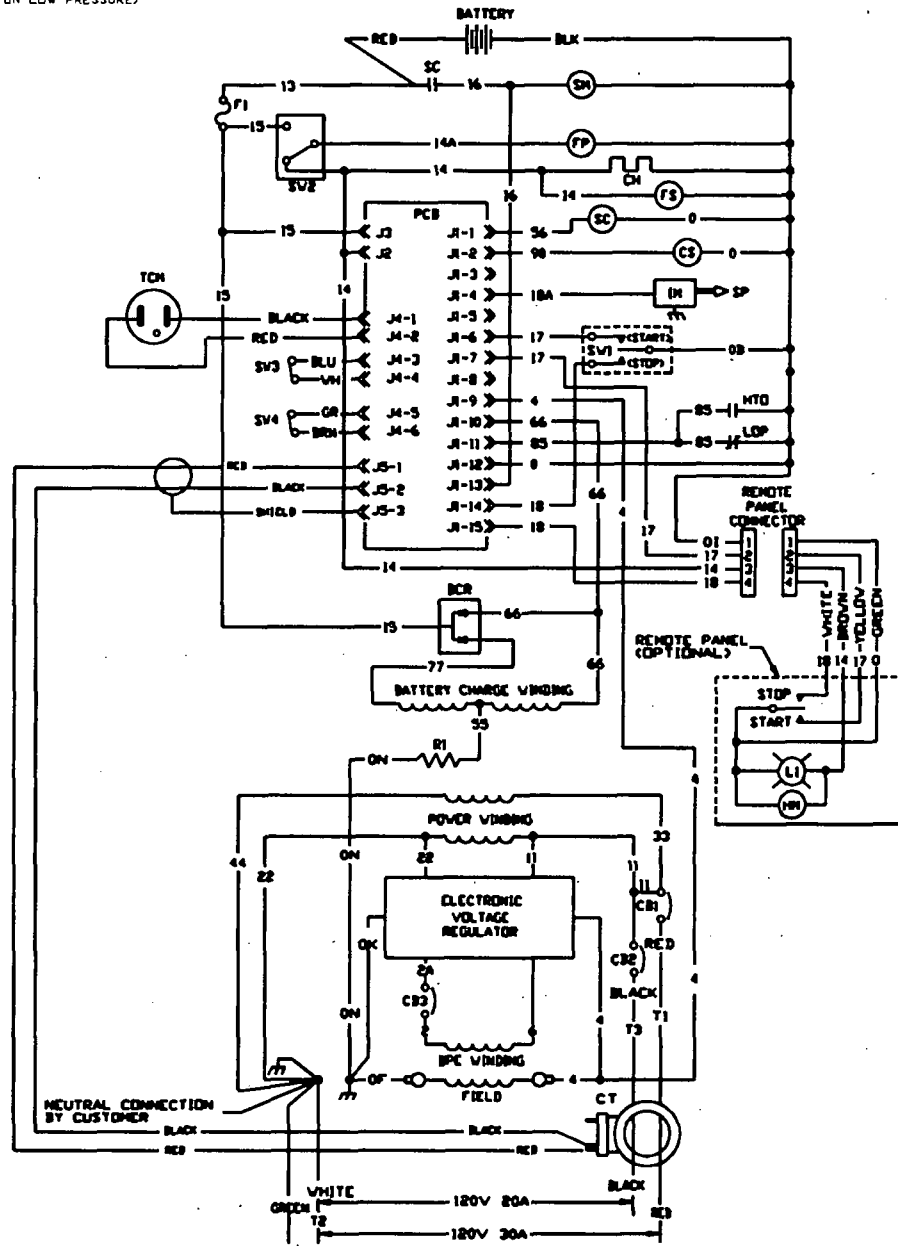
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ELECTRICAL DATA

Drawing No. A6692 Rev. A

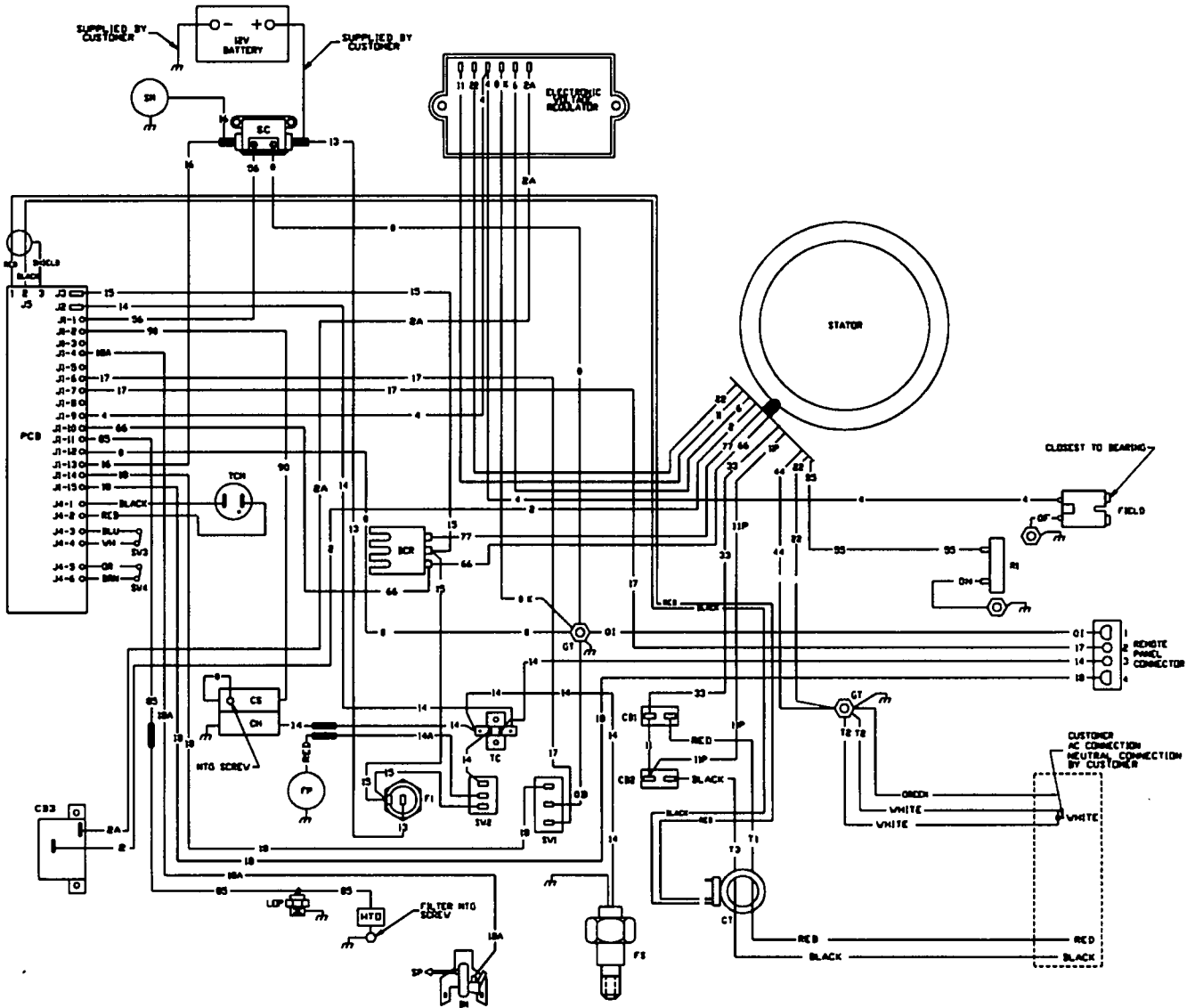
LEGEND

- BCR - BATTERY CHARGE RECTIFIER
- CB1 - CIRCUIT BREAKER, 30A
- CB2 - CIRCUIT BREAKER, 20A
- CB3 - CIRCUIT BREAKER, 2.5A
- CH - CHOKE HEATER (GASOLINE MODELS ONLY)
- CS - CHOKE SOLENOID (GASOLINE MODELS ONLY)
- CT - CURRENT TRANSFORMER
- F1 - FUSE, 15A
- FP - FUEL PUMP-DR-LPG SHUT OFF VALVE
- FS - FUEL SOLENOID
- GT - TERMINAL, GROUND 4-TAB
- HM - METER, HOUR (OPTIONAL)
- HTB - SWITCH, HIGH TEMP. OIL (CLOSES ON HIGH TEMP.)
- IM - IGNITION MAGNETO
- L1 - LIGHT, RUN (OPTIONAL)
- LDP - SWITCH, LOW OIL PRESSURE (CLOSES ON LOW PRESSURE)
- PCB - ENGINE CONTROLLER
- R1 - RESISTOR, 1 OHM 25W
- SC - STARTER CONTACTOR
- SM - STARTER MOTOR
- SV1 - SWITCH, START/STOP
- SV2 - SWITCH, FUEL PRIMER
- SV3 - TOP LIMIT SWITCH
- SV4 - BOTTOM LIMIT SWITCH
- SP - SPARK PLUG #1 CYL.
- TC - TERMINAL, CONN. 4-TAB
- TCH - THROTTLE CONTROL MOTOR



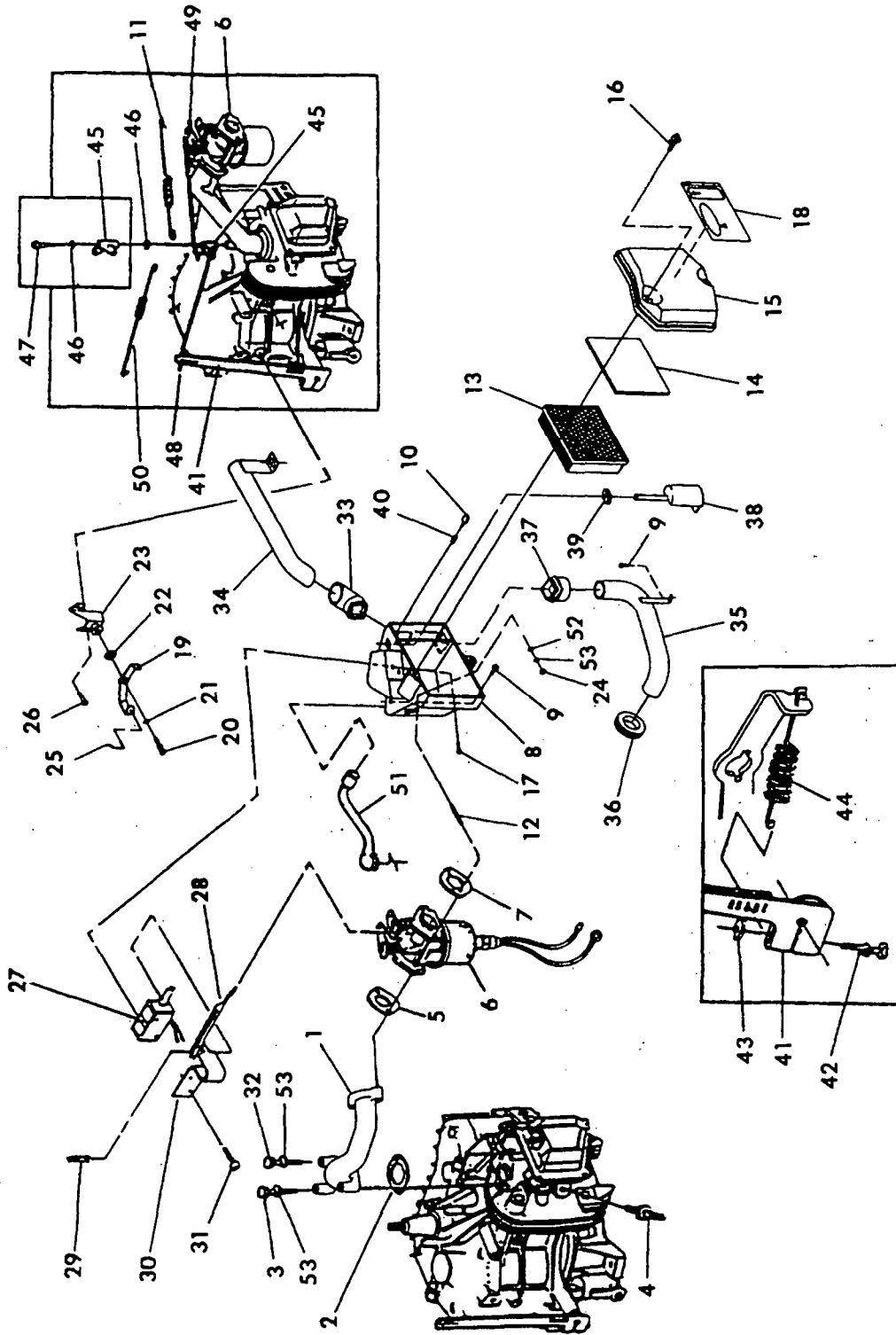
ELECTRICAL DATA

Drawing No. A6692 Rev. A



EXPLODED VIEW — ENGINE ACCESSORIES

Drawing No. A7235



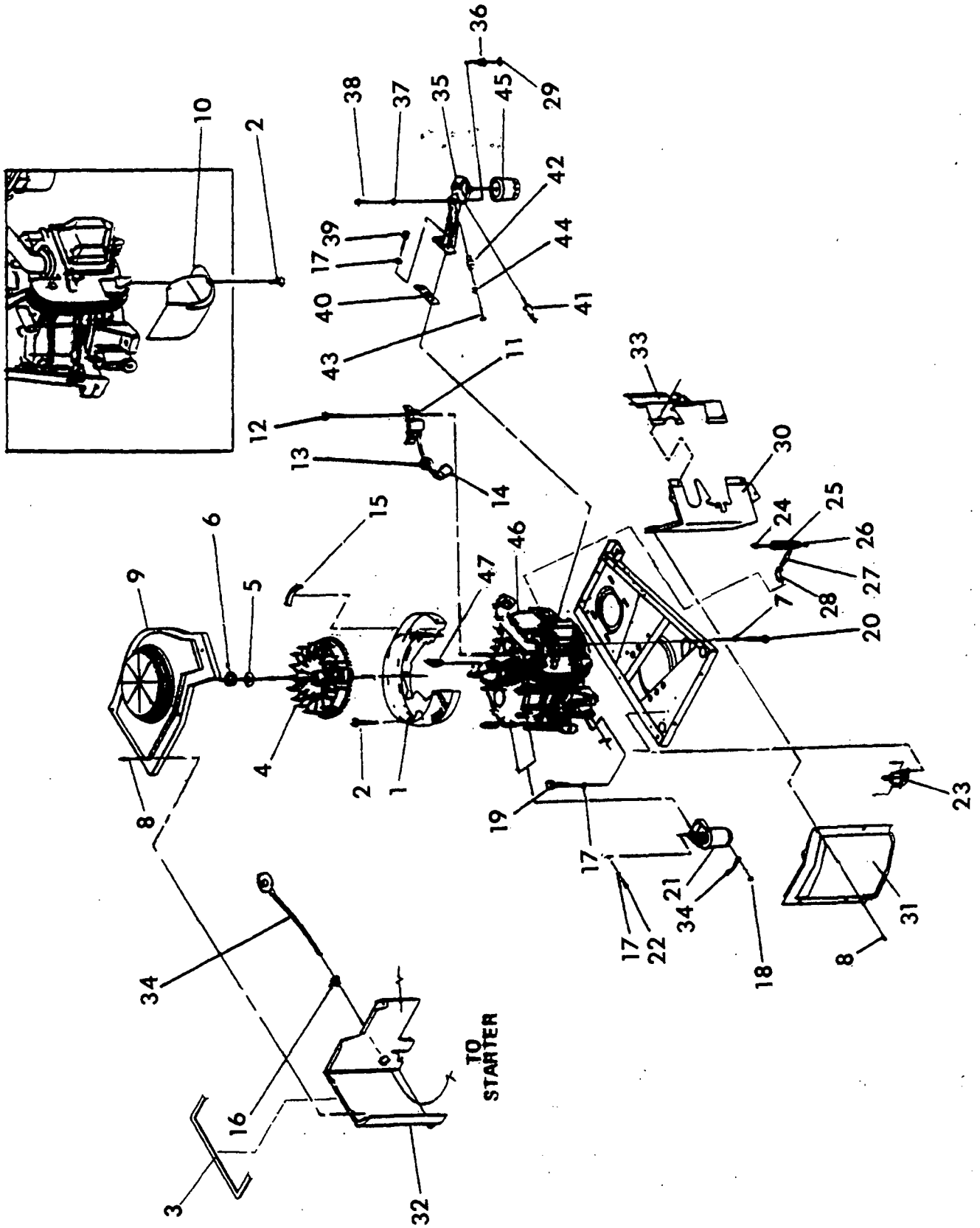
REPAIR PARTS — ENGINE ACCESSORIES

Drawing No. A7235

ITEM	PART NO.	QTY.	DESCRIPTION
1	A6532	1	MANIFOLD, INTAKE
2	91039	1	GASKET, MANIFOLD/HEAD
3	51753	1	HHCS-M6-1.0 x 40 LG
4	72347	1	SPARK PLUG, CHAMP #RC12YC
5	89228	1	GASKET, CARB./MANIFOLD
6	A6562	1	CARBURETOR
7	90970	1	GASKET, CARB./AIR FILTER
8	A6564	1	BASE, AIR FILTER
9	56893	3	CRIMPTITE-#10 x 1/2" LG
10	A6566	1	DETENT
11	A6780	1	SPRING, A/L BELLCRANK-CARB.
12	96290	2	BOLT, CARB. MOUNT 90 LG
13	73111	1	FILTER, AIR
14	81646	1	PRE-CLEANER, AIR FILTER
15	A6563	1	COVER, AIR FILTER
16	72300	2	BOLT, AIR FILTER COVER
17	A7095	2	RHMS-#4-40 x .312
18	A7139	1	DECAL, AIRBOX QP55
19	A6269	1	BELLCRANK, ELEC. GOV.
20	66482	1	HHCS/LW-M5-0.8 x 10 LG
21	23897	1	FLAT WASHER-#10-M5
22	A7173	1	BUSHING, GOV. ADJ. BRACKET
23	A6270	1	BRACKET, PIVOT
24	49813	2	M6-NUT
25	A6365	1	ROD, GUIDE
26	83512	2	TAPTITE-M8-1.25 x 15 LG
27	A6239	1	ASSEMBLY, CHOKE SOLENOID
28	A6584	1	LINKAGE, CHOKE
29	36544	1	PIN, COTTER
30	89473	1	ASSEMBLY, CHOKE HEATER
31	A7094	2	SCREW, PHILIPS PAN HD. MACH.-#4-40 x .25" LG
32	20753	1	HHCS-M6-1.0 x 60 LG
33	A6754	1	GROMMET, SUMMER AIR
34	A6583	1	TUBE, SUMMER INLET
35	A6582	1	TUBE, WINTER INLET
36	A6503	1	GROMMET-1/16"-1 1/2"
37	A6569	1	GROMMET, WINTER/SUMMER VALVE
38	A6565	1	VALVE, WINTER/SUMMER
39	A6568	1	GROMMET, WINTER/SUMMER VALVE
40	A6567	1	SPRING, DETENT
41	90968	1	LEVER, GOVERNOR ARM
42	83532	1	BOLT, HEX HD. WASHER/LOCK WASHER-M6 x 30 LG
43	86681	1	NUT, M6 SPECIAL
44	A7325	1	SPRING, GOVERNOR
45	A6753	1	BELLCRANK, GOV. RODS
46	92586	2	WASHER, FELT
47	91161	1	BOLT, SHOULDER M6 x 15 LG
48	A6913	1	ROD, LINKAGE GOV. LEVER-BELLCRANK
49	A6785	1	ROD, LINKAGE BELLCRANK-CARB.
50	A6778	1	SPRING, A/L GOV. LEVER-BELLCRANK
51	A6581	1	BREATHER TUBE
52	22473	2	M6-FLAT WASHER
53	22097	4	M6-LOCK WASHER

EXPLODED VIEW — SHEET METAL

Drawing No. A7233



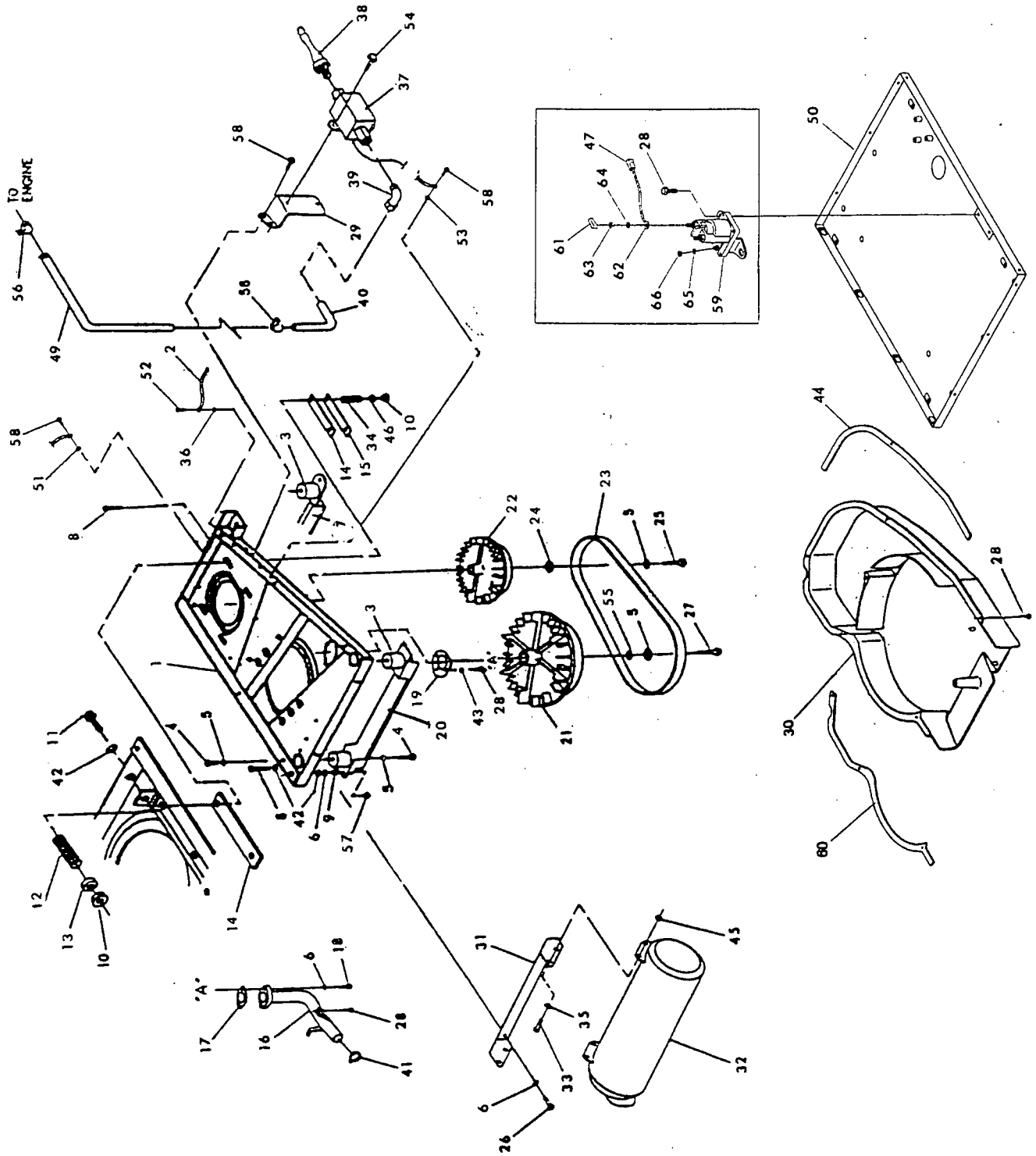
REPAIR PARTS — SHEET METAL

Drawing No. A7233

ITEM	PART NO.	QTY.	DESCRIPTION
1	A4323	1	SCROLL, FLYWHEEL
2	45756	9	SCREW, TAPTITE M6-1.0 x 10 LG
3	29289	2.5ft.	FOAM TAPE
4	91222-D	1	FLYWHEEL (20 DEG.)
5	67198-N	1	WASHER, BELLVILLE M20
6	67890	1	NUT, M20 x 1.5
7	A4456	1	3/8" SPECIAL LOCK WASHER
8	56893	21	SCREW, CRIMPTITE #10-24 x .5 LG
9	A6358	1	COVER, TOP FLYWHEEL
10	91646	1	DEFLECTOR, EXHAUST PORT
11	92572	1	ASSEMBLY, IGNITION COIL
12	92079	2	SCREW, TAPTITE M6-1.0 x 25MM
13	89685	1	GROMMET, RUBBER
14	82422	1	BOOT, SPARK PLUG
15	A6760	1.5ft.	TRIM
16	89685	1	GROMMET, RUBBER
17	22129	6	LOCK WASHER-M8
18	22127	1	HEX NUT-1/4-20
19	57821	2	CAPSCR., HEX HD.-M8-1.25 x 40 LG
20	59637	2	SCREW, TAPTITE 3/8-16 x .75 LG
21	21544	1	MOTOR, STARTER-12VOLT
22	40976	2	SOCKET HD. CAPSCR., M8-1.25 x 20 LG
23	A6370	1	ASSEMBLY-ELECTRONIC GOV.
24	A4970	1	ASSEMBLY, DIPSTICK & CAP
25	A6877	1	OIL DRAIN/DIPSTICK TUBE
26	A7039	1	PIPE PLUG, HEX HEAD 3/8
27	31580	1	PIPE NIPPLE, 3/8 x 8.5" LONG
28	38593	1	BRASS STREET ELBOW, 3/8"
29	22473	1	FLAT WASHER, 1/4-M6
30	A6357	1	WRAPPER, ENGINE SPARK PLUG
31	A6360	1	WRAPPER, STARTER SIDE
32	A6489	1	WRAPPER, REAR GEAR CASE
33	A6359	1	WRAPPER, CARB. SIDE
34	10-74260	1	ASSEMBLY, WIRE-STARTER(#16)
35	90892	1	SUPPORT, OIL FILTER
36	91159	1	BUSHING, RUBBER
37	91160	1	WASHER, RUBBER
38	91161	1	BOLT, SHOULDER-M6 x 15 LG
39	49821	2	BOLT, SOCKET HD. CAPSCR.-M8-1.25 x 30 LG
40	86999	1	GASKET, OIL FILTER SUPPORT
41	60108	1	SWITCH, OIL PRESSURE-10 PSI
42	75281	1	SWITCH, OIL TEMPERATURE
43	70728	2	SCREW, PHILIPS PAN HD. MACH.-M3-.5 x 5 LG
44	43182	2	LOCK WASHER-M3
45	70185	1	FILTER, OIL
46	A7629	1	ENGINE, LONG BLOCK-GN410VSRV
47	82774	1	KEY, WOODRUFF 4 x 19 DIA.

EXPLODED VIEW — BASE AND PULLEYS

Drawing No. A9650



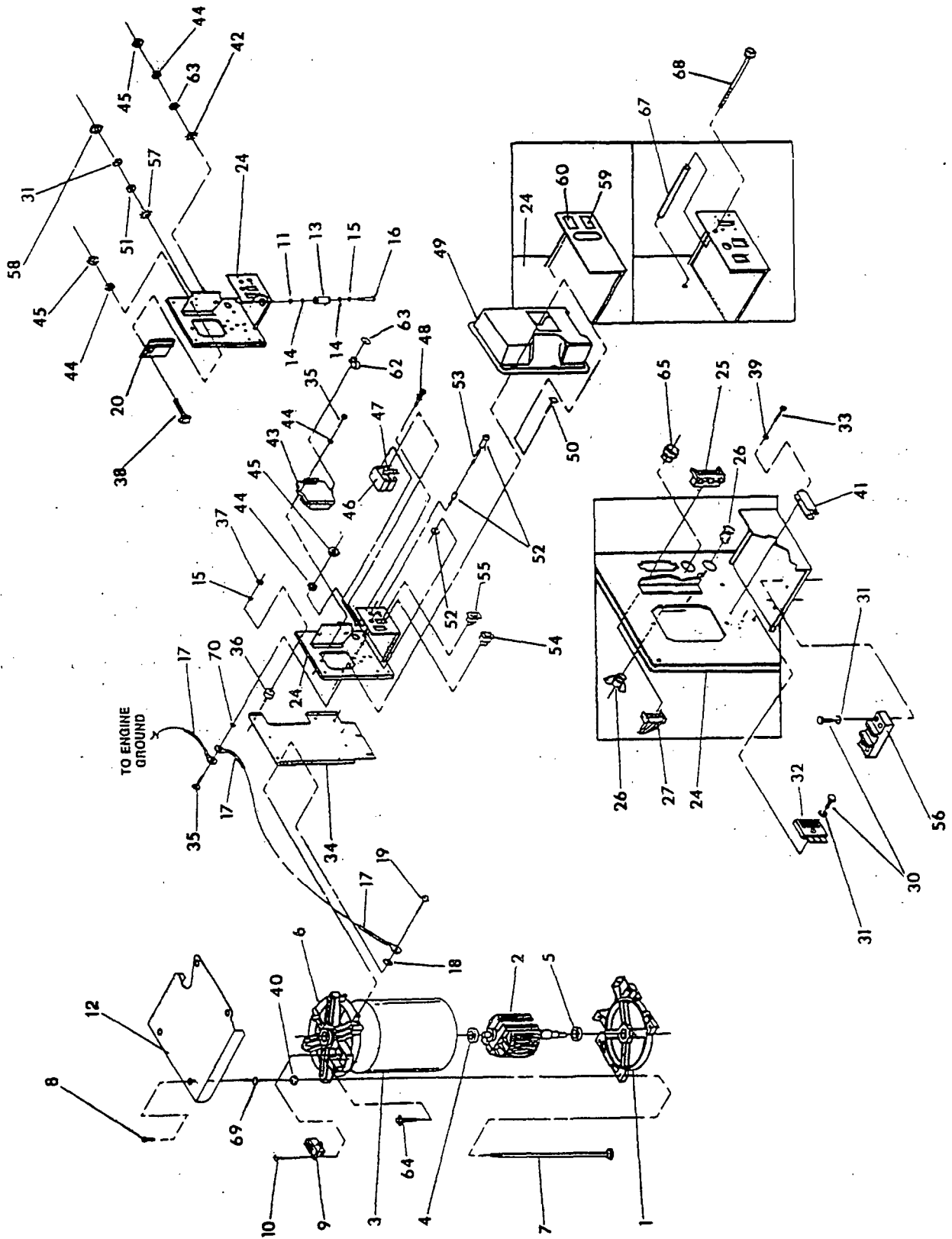
REPAIR PARTS — BASE AND PULLEYS

Drawing No. A9650

ITEM	PART#.	QTY.	DESCRIPTION	ITEM	PART#.	QTY.	DESCRIPTION
1	A5855	1	BASE, MOUNTING	33	51756	2	CAPSCR. HEX HD.-M10-1.50 x 20
2	53407	1	GROUND CABLE	34	75242	4	SPRING, GENERATOR SET MT
3	46911	4	MOUNT, (RUBBER)	35	46526	2	LOCK WASHER-M10
4	25017	7	CAPSCREW, HEX HD.-3/8"-16 x 1/2"	36	A4456	1	3/8" SPECIAL LOCK WASHER
5	22237	4	LOCK WASHER-3/8"	37	90475	1	FUEL PUMP
6	22129	6	LOCK WASHER-M8	38	87769	1	FUEL FILTER
7	A6479	1	SKID, RUBBER MOUNT	39	A7695	1	FITTING-1/8" PIPE TO 1/4" TUBE
8	77603	2	SAFETY BOLT 5/16"-18 x 3 1/2"	40	A6922	1	FUEL TUBE, METAL
9	22259	2	NUT, HEX-5/16"-18	41	96289	1	CLAMP, EXH. PIPE-1-1/4" DIA.
10	52858	6	NUT, FLANGED LOCK-M8-1.25	42	22145	4	FLAT WASHER-M8-5/16"
11	51730	2	CAPSCR. HEX HD.-M8-1.25 x 60MM	43	38150	3	FLAT WASHER-#8
12	29459	2	SPRING, BELT TENSION	44	A8010A	1	GASKET
13	75215	2	WASHER, SPRING CNTR.	45	52859	2	FLANGE NUT-M10
14	73146	4	SLIDE (NYLON)	46	75237	4	WASHER, SPRING RETAINER
15	75209	2	SUPPORT, NYLON SLIDE	47	75763-A	1	BOOT, BATTERY CABLE
16	A6138	1	MANIFOLD, EXHAUST	49	30340	6 IN.	HOSE, FUEL
17	90239	1	GASKET, EXHAUST MANIFOLD	50	A5922	1	PAN, SLIDE
18	40976	2	SOCKET HD. CAPSCR.,-M8-1.25 x 16 LG.	51	23762	2	SHAKEPROOF WASHER
19	A6858	1	GASKET, COLLECTOR PAN	52	23152	1	CAPSCR., HEX HD.-3/8"-16 x 3/4"
20	A5921	1	SKID, RUBBER MOUNT	53	23762	1	SHAKEPROOF-M5
21	75224-G	1	PULLEY, ENGINE	54	45756	2	SCREW, TAPTITE-M5-1.0 x 10 LG.
22	73106-B	1	PULLEY, ALT.	55	22131	1	FLAT WASHER-M10
23	75216	1	BELT (POLY V 4L)-40"	56	48031-C	2	CLAMP, HOSE
24	49451	1	WASHER, PULLEY RETAINER	57	81105	2	NUT, FLANGE-5/16"-18 (SPECIAL)
25	42633	1	CAPSCR., SOCKET HD. 3/8"-24 x 1" (GRADE 5)	58	74908	4	SCREW, TAPTITE M5-0.8 x 10 LG.
26	42907	2	CAPSCR., HEX HD.-M8-1.25 x 16	59	86729	1	STARTER CONTACTOR
27	A8250	1	CAPSCR., HEX HD.-3/8"-24 x 2"	60	A8010	1	GASKET
28	56893	14	CRIMPTITE-#10-24 X 1/2"	61	75763A	1	BOOT, BATTERY CABLE
29	A6851	1	BRACKET-FUEL PUMP	62	10-74260	1	STARTER CABLE
30	A6380	1	HOUSING, BLOWER	63	22127	2	HEX NUT-1/4"-18
31	A6488	1	MUFFLER SUPPORT	64	22097	2	LOCK WASHER-1/4"
32	A6095	1	MUFFLER	65	22264	2	LOCK WASHER-M4
				66	22471	2	HEX NUT-#8-32

EXPLODED VIEW — ALTERNATOR AND CONTROL PANEL

Drawing No. A9649



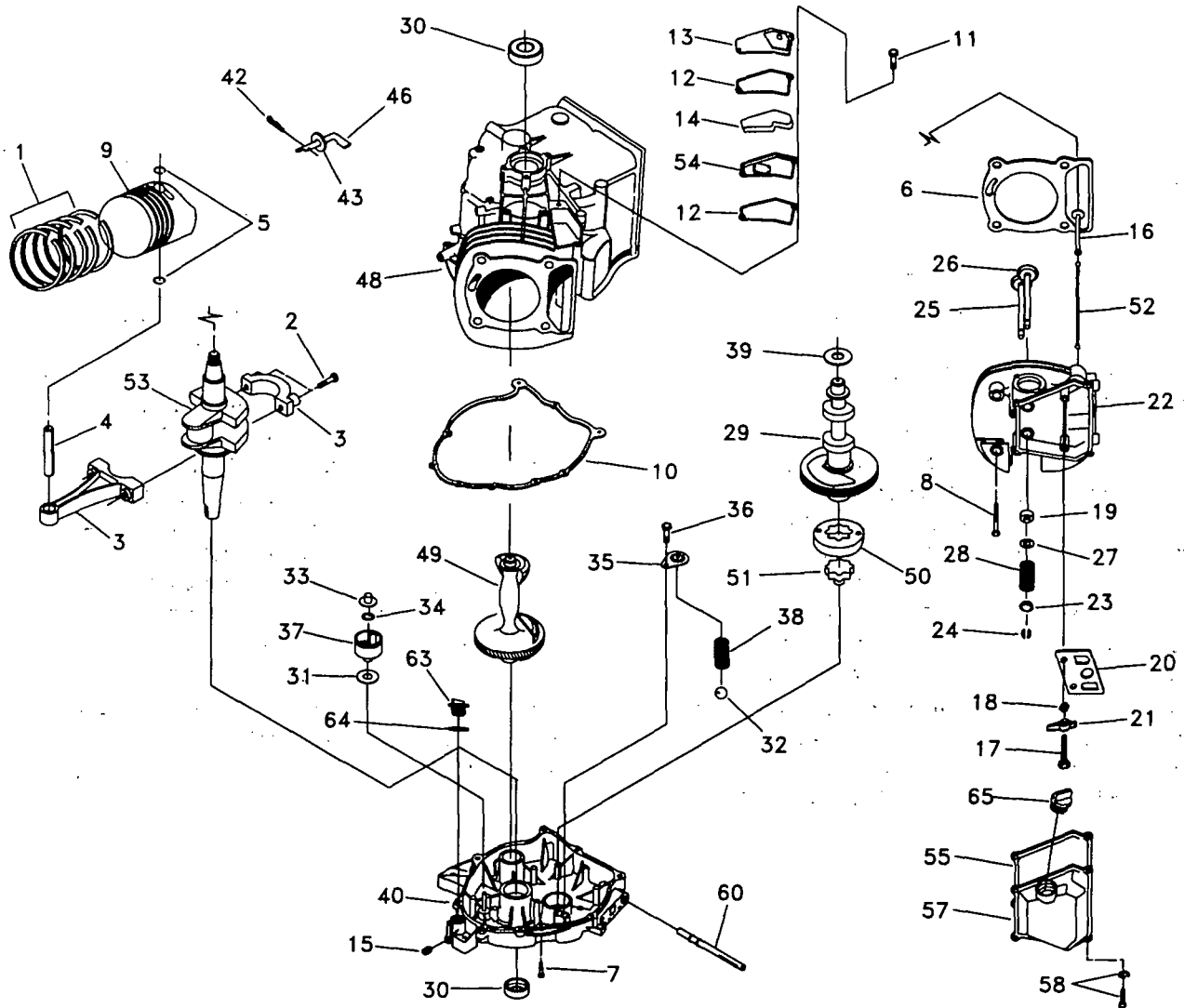
REPAIR PARTS — ALTERNATOR AND CONTROL PANEL

Drawing No. A9649

ITEM	PART#.	QTY.	DESCRIPTION	ITEM	PART#.	QTY.	DESCRIPTION
1	75995	1	LOWER BEARING CARRIER	39	43182	2	M3-LOCK WASHER
2	A5649H	1	ROTOR ASSEM.	40	45771	4	HEX NUT, M8
3	A5646H	1	STATOR ASSEM.	41	53623	1	C/BREAKER 2.5A.-ON
4	73159	1	BALL BEARING	42	22769	1	M5-SHAKEPROOF WASHER
5	31971	1	BALL BEARING	43	83049	1	REGULATOR VOLTAGE
6	72379-B	1	UPPER BEARING CARRIER	44	22152	5	M5-LOCK WASHER
7	A6529	4	STUD-STATOR	45	51716	3	M5-0.8 HEX NUT
8	52858	4	M8-1.25 FLANGE LOCK NUT	46	90144	1	C/BREAKER 20A.
9	66386	1	BRUSH HOLDER	47	90145	1	C/BREAKER 30A. ALL UNITS
10	66849	3	M5-0.8 x 16 LG. TAPTITE	48	25105	4	#6-32 W/LOCK WASHER SCREW
11	26850	1	SHAKEPROOF EXTERNAL-M6	49	86315	1	PANEL COVER
12	A6543	1	GENERATOR TOP HOUSING	50	90734	4	M4-0.7 x 12 LG. CAPSCR.W/LOCK- WASHER & FLAT WASHER
13	75234	1	RESISTOR	51	22985	1	M4-FLAT WASHER
14	22473	2	M6-FLAT WASHER	52	32300	1	FUSE HOLDER
15	22097	5	M6-LOCK WASHER	53	22676	1	FUSE AGC-15A.
16	A2053	1	M6-1.0 x 65 LG. CAPSCREW	54	87798	1	SWITCH S.P.D.T. 6A.- (START-STOP)
17	90141	2	GROUND CABLE	55	92113	1	SWITCH S.P.D.T.-(FUEL PUMP)
18	22447	1	SHAKEPROOF LOCK WASHER	56	75210-A	1	TERMINAL BLOCK
19	74906	4	M6-1.0 x 20 LG. TAPTITE	57	23365	1	M4-SHAKEPROOF WASHER
20	A6536	1	CONTROLLER P.C.B.	58	51715	1	M4-0.7 HEX NUT
24	86316	1	PANEL SHEET METAL	59	90157	1	DECAL, CB RATING 30A.
25	53650	1	4-PIN CONNECTOR	60	90156	1	DECAL, CB RATING 20A.
26	22206	1	CONNECTOR	62	31791	1	CLAMP, HOSE
27	A7135	1	REMOTE HARNESS	63	23365	2	M5-FLAT WASHER
30	75476	3	M4-0.7 x 16 LG. CAPSCREW	64	74908	2	M5 x 10 LONG TAPTITE
31	22264	4	M4-LOCK WASHER	65	23484-S	1	BUSHING
32	65795	1	BATTERY CHARGE RECTIFIER	67	94070	1	SPACER-PLASTIC
33	90987	2	M3-0.5 x 12 LG. CAPSCREW	68	94071	1	M6-.08 x 110 LG. PPHMS
34	86317A	1	PANEL SUPPORT BRACKET	69	27756	4	NYLON WASHER
35	75235	3	M5-0.8 x 30 LG. CAPSCREW	70	A8475	1	M5-SPECIAL LOCK WASHER
36	82737	4	VIBRATION MOUNT				
37	49813	4	M6-1.0 HEX NUT				
38	55440	2	M5-08 x 25 LG. HEX HD. CAPSCR.				

EXPLODED VIEW — ENGINE PARTS

Drawing No. A7894



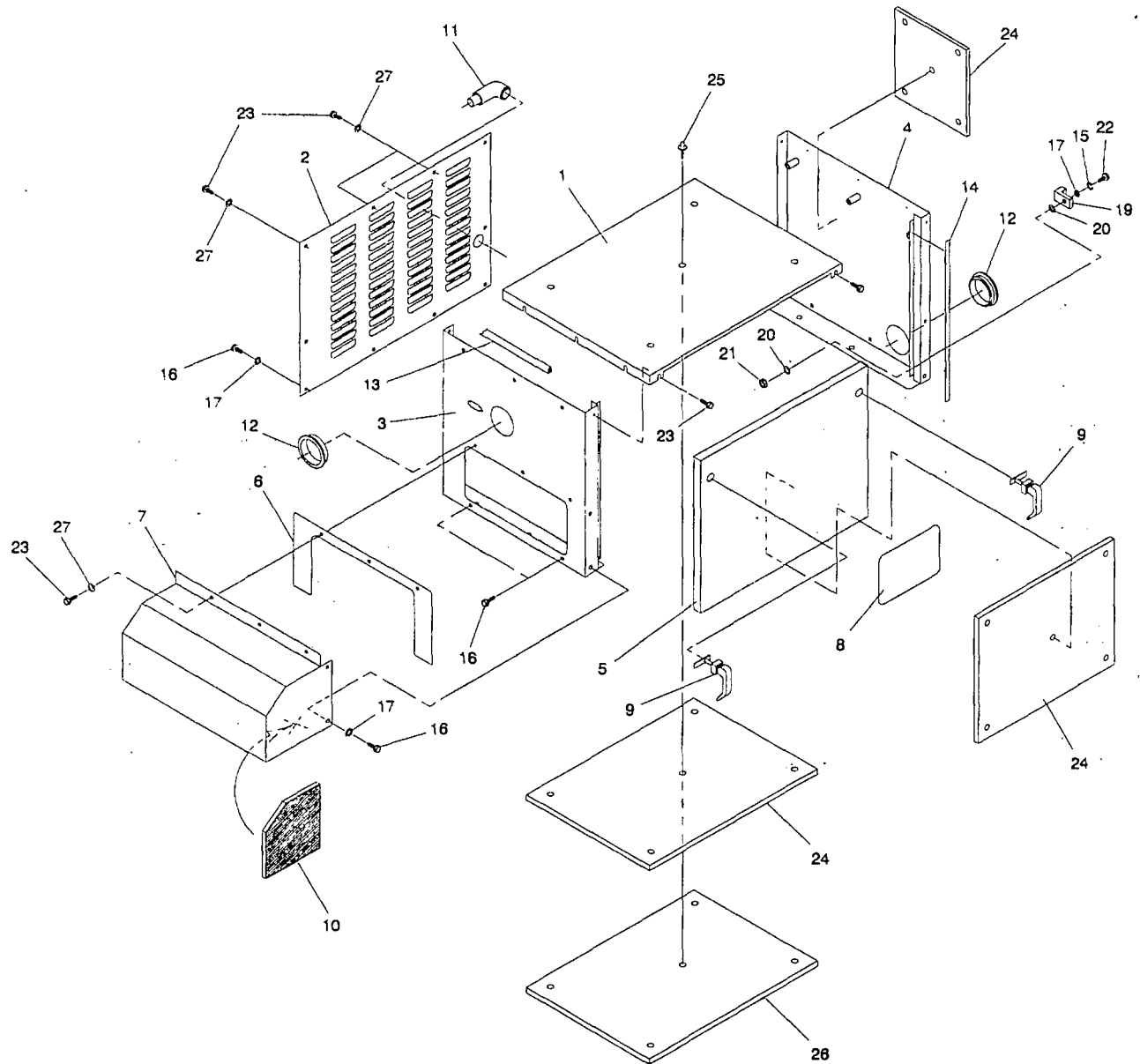
REPAIR PARTS — GN410 ENGINE

Drawing No. A7894

ITEM	PART#.	QTY.	DESCRIPTION	ITEM	PART#.	QTY.	DESCRIPTION
1	21533	1	PISTON RING SET	33	A7308	1	GOVERNOR SPOOL
2	71979	2	CONNECTING ROD BOLT	34	78645	1	GOVERNOR RETAINER (C-RING)
3	71978	1	CONN. ROD WITH CAP & BOLT	35	78691	1	OIL PRESSURE SPRING RETAINER
4	71980	1	PISTON PIN	36	74908	1	M5-0.80 x 8MM SCR. (THD.FORMING)
5	71983	2	PISTON PIN RETAINER	37	83912	1	GOVERNOR GEAR ASSEMBLY
6	21713B	1	CYLINDER HEAD GASKET	38	A5771	1	OIL PRESSURE SPRING
7	73144	8	FLANGED HEX HD. CAPSCREW	39	B2104	1	SPRING WASHER
8	73149	4	M10 x 100MM HEAD BOLT	40	A1198	1	OIL SUMP
9	96699	1	PISTON	41	72654	1	SLEEVE BEARING
10	76701	1	CRANKCASE GASKET	42	78658	1	GOVERNOR ARM "R" PIN
11	45756	2	M6 SCREW (THD. FORMING)	43	78659	2	THRUST WASHER
12	80308	2	BREATHER GASKET	44	78699B	1	SLEEVE DOWEL PIN DIA. 12
13	80309	1	BREATHER COVER	45	78699C	2	SLEEVE DOWEL PIN DIA. 14
14	80338	1	OIL BREATHER SEPARATOR	46	83948	1	GOVERNOR ARM
15	26925	1	PIPE PLUG-3/8"	47	88590	1	DOWEL PIN DIA. 12 x 20 LONG
16	83897	2	TAPPET	48	89288C	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	SEAL, VALVE STEM	51	86026	1	INNER GEROTOR
20	79694	1	PUSH ROD GUIDE PLATE	52	88396B	2	PUSH ROD
21	83907	2	ROCKER ARM	53	90416A	1	CRANKSHAFT ASSEMBLY
22	21714	1	CYLINDER HEAD W/VALVE SEATS AND GUIDES	54	90747	1	BREATHER VALVE ASSEMBLY
23	86514	2	VALVE SPRING RETAINER	55	71987	1	ROCKER COVER GASKET
24	91308	4	VALVE SPRING KEEPER	57	92362	1	ROCKER COVER W/FILL
25	86516	1	EXHAUST VALVE	58	79246	4	M6-1.00 x 16MM PAN HD. SCR. AND LOCKWASHER
26	86517	1	INTAKE VALVE	59	83921	1	BEARING TUBE SHAFT
27	89673	2	WASHER, VALVE SPRING	60	77158	1	OIL SCREEN PICKUP ASSEMBLY
28	91308	2	VALVE SPRING	61	80342	2	"O" RING 14 I.D. x 2.4 THICK
29	A7081	1	CAMSHAFT ASSEMBLY	63	76329	1	OIL FILL PLUG
30	72655	2	CAMSHAFT SEAL	64	86254	1	"O" RING 17.8 I.D. x 2.4 THICK
31	76361	1	THRUST WASHER	65	93064	1	OIL FILL CAP ASSEMBLY
32	A5776	1	PRESSURE RELIEF BALL				

EXPLODED VIEW — ENCLOSURE

Drawing No. A9648



REPAIR PARTS — ENCLOSURE

Drawing No. A9648

ITEM	PART NO.	QTY.	DESCRIPTION
1	A9131	1	PANEL, TOP COVER
2	A9127	1	LOUVERED BACK COVER
3	A9129	1	PANEL, ENGINE SIDE
4	A9128	1	PANEL, ALTERNATOR SIDE
5	A9130	1	PANEL, FRONT COVER
6	A6796	1	GASKET, MUFFLER
7	A6433	1	MUFFLER, ENCLOSURE ASSEMBLY
8	A7138	1	DECAL
9	A6917	2	LATCH, LIFT & TURN
10	A7163	1	HEAT SHIELD, MUFFLER
11	20107	1	SEALTITE 90 DEG. 1/2" ELBOW
12	A6859	2	GROMMET
13	A6760	5 FT.	TRIM
14	29451	6 FT.	RUBBER TAPE
15	22097	11	LOCK WASHER, M6-1/4"
16	79246	10	M6-1.0 x 16 W/LOCK WASHER
17	22473	3	FLAT WASHER, 1/4"-M6
19	62684	1	GROUND LUG
20	A1658	2	LOCK WASHER, SPECIAL 1/4"
21	52857	1	FLANGE NUT-M6
22	49721	1	M6-1.0 x 35
23	A2437	18	1/4" x 5/8" SWAGE FASTENER
24	A7835	3	PAD, SOUND DAMPENING
25	A7836	5	RIVET
26	A8011	1	SUPPORT, SOUND PAD
27	A2115	18	1/4"NYLON 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 equipment 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 equipment for the periods of time listed below provided there has been no abuse, neglect, unapproved modification, or improper maintenance of your recreational vehicle equipment 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 equipment 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 utility and lawn and garden equipment 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 equipment 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 equipment 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 equipment engine owner, you should, however, be aware that Generac Corporation may deny you warranty coverage if your recreational vehicle equipment engine or a part thereof has failed due to abuse, neglect, improper maintenance or unapproved modifications.

You are responsible for presenting your recreational vehicle equipment 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) 473-5514
P.O. BOX 8 FX: (414) 473-3626
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.

EMISSION CONTROL SYSTEM WARRANTY

Emission Control System Warranty ("ECS Warranty") for 1995 and Later Model Year Utility and Lawn and Garden Equipment Engines:

- Applicability: This warranty shall apply to 1995 and later model year utility and lawn and garden equipment 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 utility and lawn and garden equipment 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.
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. Carburetor assembly and its internal components.
 - a. Fuel filter
 - b. Carburetor gaskets
 - c. Fuel pump (if so equipped)
2. Air cleaner assembly
 - a. Air filter element
 - b. Intake pipe/manifold
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 Generators

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

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

THREE YEAR WARRANTY SCHEDULE

1. All generators used in a recreational vehicles 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 belt and pulleys (if so equipped) on 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 belt and pulley 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 drive belt 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.
4. This transferable warranty is in effect for all Recreational Vehicle Generators purchased after Jan. 1, 1998.

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 expense.
- 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.

****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 exclusion or limitation 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 1-800-526-2871. 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 Power Systems, Inc.

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