

GENERAC[®]

POWER SYSTEMS, INC.

Owner's Manual

GUARDIAN[™]

by **GENERAC** POWER SYSTEMS

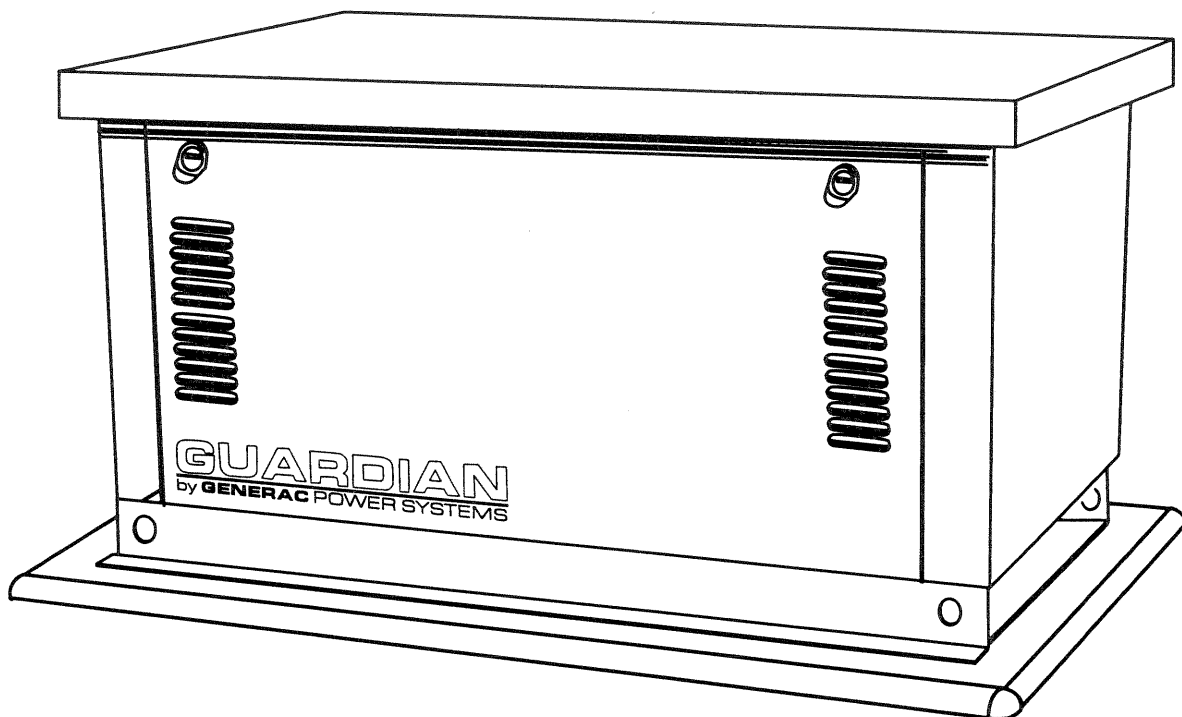
**Air-cooled, Prepackaged
Standby Generators**

Models:

04077-3 (6 kW)

04109-3 (8 kW)

04079-3 (10 kW)



— **⚠ DANGER ⚠** —
**DEADLY EXHAUST FUMES.
OUTDOOR INSTALLATION ONLY!!**

INTRODUCTION

Thank you for purchasing this model of the Guardian product line by Generac Power Systems Inc. This model is a compact, high performance, air-cooled, engine-driven generator designed to automatically supply electrical power to operate critical loads during a utility power failure.

This unit is factory installed in an all-weather, metal enclosure that is intended exclusively for outdoor installation. This generator will operate using either vapor withdrawn liquid propane (LP) or natural gas (NG).

◆ READ THIS MANUAL THOROUGHLY

If you do not understand any portion of this manual, contact Generac or your nearest Generac/Guardian Authorized Dealer for starting, operating and servicing procedures.

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



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



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




After this heading, you can read instructions that, if not strictly complied with, could result in damage to equipment and/or property.


NOTE:

After this heading, you can read explanatory statements that require special emphasis.


These safety warnings cannot eliminate the hazards that they indicate. Common sense and strict compliance with the special instructions while performing the service are essential to preventing accidents.

Four commonly used safety symbols accompany the DANGER, WARNING and CAUTION blocks. The type of information each indicates follows:

 This symbol points out important safety information that, if not followed, could endanger personal safety and/or property of you and others.

 This symbol points out potential explosion hazard.

 This symbol points out potential fire hazard.

 This symbol points out potential electrical shock hazard.

Generac® Power Systems, Inc.

The operator is responsible for proper and safe use of the equipment. 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 users to properly start and operate the unit. This prepares them if they need to operate the equipment in an emergency.

◆ CONTENTS

This manual contains pertinent owner's information, including warranty, electrical diagrams, exploded views and lists of repair parts, for three different Guardian models:

- 04077-1 – 6 kW, single-cylinder GN-410 Engine
- 04109-1 – 8 kW, V-twin GN-724 Engine
- 04079-1 – 10 kW, V-twin GN-724 Engine

◆ OPERATION AND MAINTENANCE

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

Proper maintenance and care of your generator ensure a minimum number of problems and keep operating expenses at a minimum. See your Generac/Guardian Authorized Dealer for service aids and accessories.

◆ HOW TO OBTAIN SERVICE

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

When contacting a Generac/Guardian Authorized Dealer 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, which is located on your generator. See Figure 1.1 or Figure 1.2 in Section 1.6 (Page 5) for decal location.

Model No. _____ Serial No. _____

AUTHORIZED DEALER LOCATION

To locate the GENERAC/GUARDIAN AUTHORIZED
DEALER nearest you, please call this number:

1-800-747-1530

DEALER LOCATION INFORMATION
CAN BE OBTAINED AT THIS NUMBER.

IntroductionInside Front Cover

Read This Manual Thoroughly	IFC
Contents	IFC
Operation and Maintenance.....	IFC
How to Obtain Service	IFC
Authorized Dealer Locator Number	IFC

Safety Rules2

Section 1 – General Information.....4

1.1 Unpacking/Inspection	4
1.2 Protection Systems	4
1.3 Additional Generator Features	4
1.4 Fuel Requirements and Recommendations.....	4
1.5 Fuel Consumption	4
1.6 Your Generator	5
1.7 Specifications	6
1.7.1 Generator	6
1.7.2 Engine	6
1.8 Reconfiguring the Fuel System	6
1.9 The Battery	7

Section 2 – Operation8

2.1 Break-in Procedure	8
2.2 Using the Auto/Off/Manual Switch	8
2.2.1 “Auto” Position.....	8
2.2.2 “Off” Position.....	8
2.2.3 “Manual” Position	8
2.3 Automatic Transfer Operation.....	8
2.4 Sequence of Automatic Operation	8
2.5 Manual Transfer Operation.....	9
2.5.1 Transfer to Generator Power Source	9
2.5.2 Transfer Back to Utility Power Source	9
2.6 Setting the Exercise Timer	10
2.7 Protection Systems	10
2.7.1 Low Oil Pressure Switch	10
2.7.2 High Temperature Switch	10
2.7.3 Overcrank	10
2.7.3.1 Approximate Crank Cycle Times	10
2.7.4 Overspeed	10

Section 3 – Maintenance11

3.1 Fuse	11
3.2 Checking the Engine Oil Level.....	11
3.3 Changing the Engine Oil	11
3.3.1 Engine Oil Recommendations	11
3.3.2 Oil Change Procedure	11
3.4 Changing the Oil Filter	12
3.5 Changing the Engine Air Cleaner.....	12
3.5.1 6 kW Generators	12
3.5.2 8 kW and 10 kW Generators.....	12
3.6 Spark Plug(s)	12
3.7 Battery Maintenance	13
3.8 Cooling System	13
3.9 Drive Belt	14
3.10 Attention After Submersion.....	14
3.11 Out of Service Procedure	14
3.11.1 Removal From Service.....	14
3.11.2 Return to Service.....	14
3.12 Service Schedule	15

Section 4 – Troubleshooting16

4.1 Troubleshooting Guide	16
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Section 5 – Notes17

Section 6 – Electrical Data19

**Section 7 – Exploded Views and
Parts Lists24**

Section 8 – Warranty40



Important Safety Instructions

Guardian Air-cooled 6 kW, 8 kW and 10 kW Generators

! SAVE THESE INSTRUCTIONS – The manufacturer suggests that these rules for safe operation be copied and posted near the unit's installation site. Safety should be stressed to all operators and potential operators of this equipment. **!**



WARNING:



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



WARNING:



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

Study these SAFETY RULES carefully before installing, operating or servicing this equipment. Become familiar with this *Owner's Manual* and with the unit. The generator can operate safely, efficiently and reliably only if it is properly installed, operated and maintained. Many accidents are caused by failing to follow simple and fundamental rules or precautions.

Generac cannot possibly anticipate every possible circumstance that might involve a hazard. The warnings in this manual, and on tags and decals affixed to the unit are, therefore, not all-inclusive. If 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 also must make sure the procedure, work method or operating technique that you choose does not render the generator unsafe.

— **! DANGER !** —

! Despite the safe design of this generator, operating this equipment imprudently, neglecting its maintenance or being careless can cause possible injury or death. Permit only responsible and capable persons to operate or maintain this equipment.

! Potentially lethal voltages are generated by these machines. Ensure all steps are taken to render the machine safe before attempting to work on the generator.

! Parts of the generator are rotating and/or hot during operation. Exercise care near running generators.



GENERAL HAZARDS



- For safety reasons, Generac recommends that the installation, initial start-up and maintenance of this equipment is carried out by a Generac/Guardian Authorized Dealer.
- The engine exhaust fumes contain carbon monoxide, which can be DEADLY. This dangerous gas, if breathed in sufficient concentrations, can cause unconsciousness or even death. This exhaust system must be installed properly, in strict compliance with applicable codes and standards. Following installation, you must do nothing that might render the system unsafe or in noncompliance with such codes and standards.
- Keep hands, feet, clothing, etc., away from drive belts, fans, and other moving or hot parts. Never remove any drive belt or fan guard while the unit is operating.
- Adequate, unobstructed flow of cooling and ventilating air is critical to correct generator operation. Do not alter the installation or permit even partial blockage of ventilation provisions, as this can seriously affect safe operation of the generator. The generator **MUST** be installed outdoors.
- When working on this equipment, remain alert at all times. Never work on the equipment when you are physically or mentally fatigued.
- Inspect the generator regularly, and contact your nearest Generac/Guardian Authorized Dealer for parts needing repair or replacement.
- Before performing any maintenance on the generator, disconnect its battery cables to prevent accidental start up. Disconnect the cable from the battery post indicated by a **NEGATIVE**, **NEG** or **(-)** first. Reconnect that cable last.
- Never use the generator or any of its parts as a step. Stepping on the unit can stress and break parts, and may result in dangerous operating conditions from leaking exhaust gases, fuel leakage, oil leakage, etc.



ELECTRICAL HAZARDS

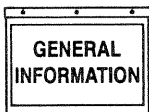
- All generators covered by this manual produce dangerous electrical voltages and can cause fatal electrical shock. Utility power delivers extremely high and dangerous voltages to the transfer switch as does the standby generator when it is in operation. Avoid contact with bare wires, terminals, connections, etc., while the unit is running. Ensure all appropriate covers, guards and barriers are in place before operating the generator. If you must work around an operating unit, stand on an insulated, dry surface to reduce shock hazard.
- Do not handle any kind of electrical device while standing in water, while barefoot, or while hands or feet are wet. **DANGEROUS ELECTRICAL SHOCK MAY RESULT.**
- The National Electrical Code (NEC) requires the frame and external electrically conductive parts of the generator to be connected to an approved earth ground. Local electrical codes also may require proper grounding of the generator electrical system.
- After installing this home standby electrical system, the generator may crank and start at any time without warning. When this occurs, load circuits are transferred to the STANDBY (generator) power source. To prevent possible injury if such a start and transfer occur, always set the generator's Auto/Off/Manual switch to its OFF position before working on equipment and remove the fuse.
- In case of accident caused by electric shock, immediately shut down the source of electrical power. If this is not possible, attempt to free the victim from the live conductor. **AVOID DIRECT CONTACT WITH THE VICTIM.** Use a nonconducting implement, such as a rope or board, to free the victim from the live conductor. If the victim is unconscious, apply first aid and get immediate medical help.
- Never wear jewelry when working on this equipment. Jewelry can conduct electricity resulting in electric shock, or may get caught in moving components causing injury.

FIRE HAZARDS

- For fire safety, the generator must be installed and maintained properly. Installation always must comply with applicable codes, standards, laws and regulations. Adhere strictly to local, state and national electrical and building codes. Comply with regulations the Occupational Safety and Health Administration (OSHA) has established. Also, ensure that the generator is installed in accordance with the manufacturer's instructions and recommendations. Following proper installation, do nothing that might alter a safe installation and render the unit in noncompliance with the aforementioned codes, standards, laws and regulations.
- Keep a fire extinguisher near the generator at all times. Extinguishers rated "ABC" by the National Fire Protection Association are appropriate for use on the standby electric system. Keep the extinguisher properly charged and be familiar with its use. If you have any question pertaining to fire extinguishers, consult your local fire department.

EXPLOSION HAZARDS

- Do not smoke around the generator. Wipe up any fuel or oil spills immediately. Ensure that no combustible materials are left in the generator compartment, or on or near the generator, as FIRE or EXPLOSION may result. Keep the area surrounding the generator clean and free from debris.
- Gaseous fluids such as natural gas and liquid propane (LP) gas are extremely EXPLOSIVE. Install the fuel supply system according to applicable fuel-gas codes. Before placing the home standby electric system into service, fuel system lines must be properly purged and leak tested according to applicable code. After installation, you must inspect the fuel system periodically for leaks. No leakage is permitted.



Section 1 – General Information

Guardian Air-cooled 6 kW, 8 kW and 10 kW Generators



Only qualified electricians or contractors should attempt such installations, which must comply strictly with applicable codes, standards and regulations.

1.1 UNPACKING/INSPECTION

After unpacking, carefully inspect the contents for damage.

- This standby generator set has been factory supplied with a weather protective enclosure that is intended for outdoor installation only.
- This standby generator set is packaged with an automatic transfer switch.
- This UL listed, two-pole switch is rated at 100 AC amperes at 250 volts maximum. This transfer switch is for indoor use only.



If this generator is used to power electrical load circuits normally powered by a utility power source, you are required by code to install a transfer switch. The transfer switch must effectively isolate the electrical system from the utility distribution system when the generator is operating (NEC 701). Failure to isolate an electrical system by such means will result in damage to the generator and also may result in injury or death to utility power workers due to backfeed of electrical energy.

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

If you note loss or damage after delivery, separate the damaged materials and contact the carrier for claim procedures.

“Concealed damage” is understood to mean damage to the contents of a package that is not in evidence at the time of delivery, but is discovered later.

1.2 PROTECTION SYSTEMS

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

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

There are LED readouts on the control panel to notify you that one of these faults has occurred. There is also a “System Set” LED that is lit when all of the following conditions are true:

1. The Auto/Off/Manual switch is set to the AUTO position.
2. The “Not In Auto” dip switch is set to the OFF position on the control board.
3. No alarms are present.

1.3 ADDITIONAL GENERATOR FEATURES

Your generator offers additional features that are not factory preset:

1. Remote Start – This allows you to remotely start your generator with the Auto/Off Manual switch set to AUTO.
2. Remote/Common Alarm – This allows for an alarm, light, horn, etc., to activate when any fault has occurred.
3. Remote Not Auto – The generator will not automatically start during a utility failure.

These options may be set up by your nearest Generac/Guardian Authorized Dealer.

1.4 FUEL REQUIREMENTS AND RECOMMENDATIONS

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

The engine has been fitted with a fuel carburetion system that meets the specifications of the 1997 California Air Resources Board for tamper-proof dual fuel systems. The unit will run on natural gas or LP gas, but it has been factory set to run on natural gas. Should the primary fuel need to be changed to LP gas, the fuel system needs to be reconfigured. See Section 1.8 (Page 6) for instructions on reconfiguration of the fuel system.

Recommended fuels should have a Btu content of at least 1,000 Btus per cubic foot for natural gas; or at least 2,520 Btus per cubic foot for LP gas. Ask your fuel supplier for the Btu content of your fuel.

Fuel pressure for both natural gas and liquid propane set ups should be 11 inches to 14 inches of water column (0.6 psi) at all load ranges.

1.5 FUEL CONSUMPTION

Model #	Nat. Gas (*)		LP Vapor (**)	
	1/2 Load	Full Load	1/2 Load	Full Load
04077 (6 kW)	74.1	105.3	0.86/31.30	1.08/39.30
04109 (8 kW)	79.7	140.0	1.07/38.94	1.56/56.77
04079 (10 kW)	100.8	177.9	1.16/42.21	2.15/78.24

*Natural gas is in cubic feet per hour.

**LP is in gallons per hour/cubic feet per hour.



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

1.6 YOUR GENERATOR

Figure 1.1 – 6 kW, Single-cylinder GN-410 Engine

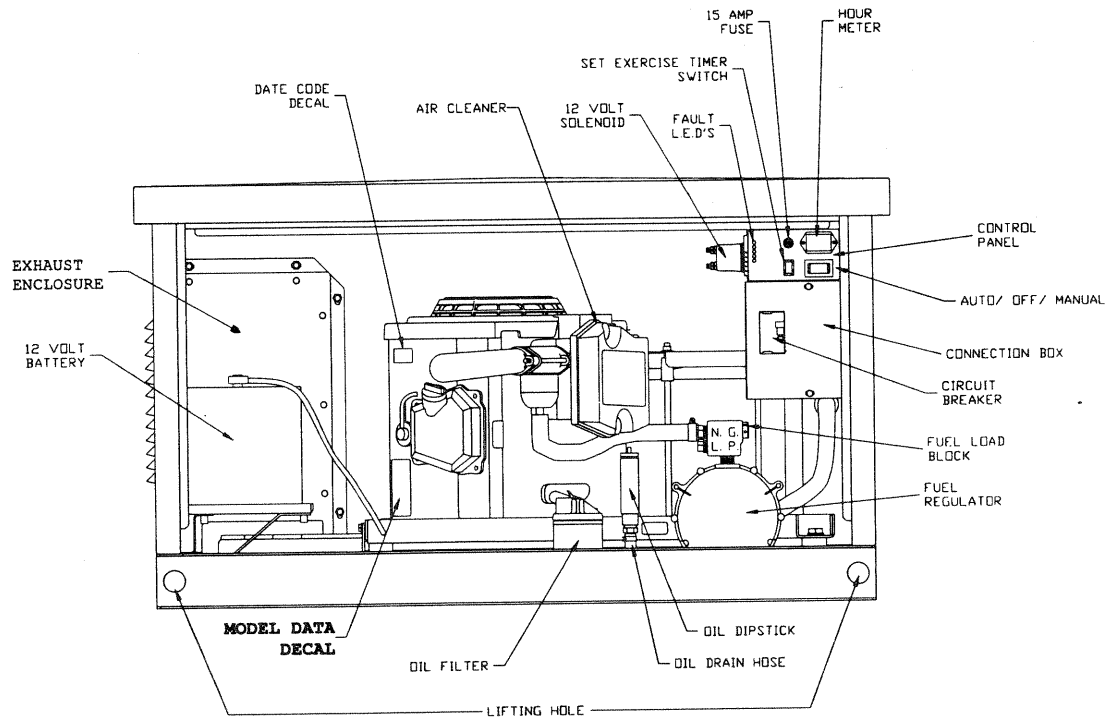
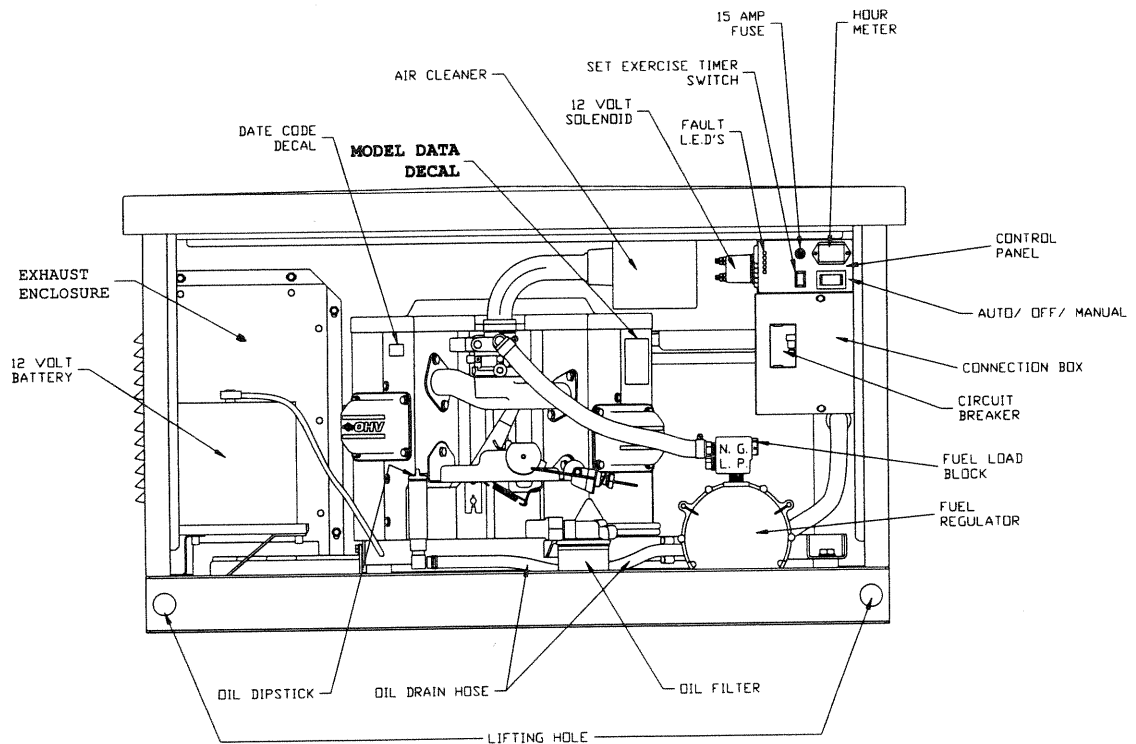


Figure 1.2 – 8 kW/10 kW, V-twin GN-724 Engine



1.7 SPECIFICATIONS

◆ 1.7.1 GENERATOR

	Model 04077 (6 kW)	Model 04109 (8 kW)	Model 04079 (10 kW)
Rated Maximum Continuous Power Capacity	6,000 Watts*	8,000 Watts*	10,000 Watts*
Rated Voltage	120/240	120/240	120/240
Rated Maximum Continuous Load Current			
120 Volts	50 Amperes	66.7 Amperes	83.3 Amperes
240 Volts	25 Amperes	33.3 Amperes	41.6 Amperes
Phase	1	1	1
Number of Rotor Poles	2	2	2
Rated AC Frequency	60 Hz	60 Hz	60 Hz
Power Factor	1	1	1
Recommended Air Filter	Generac Part # 73111	Generac Part # 70941	Generac Part # 70941
Battery Requirement	Group 26/26R 12 Volts and 350 Cold-cranking Amperes Minimum	Group 26/26R 12 Volts and 350 Cold-cranking Amperes Minimum	Group 26/26R 12 Volts and 350 Cold-cranking Amperes Minimum
Weight	327 Pounds	357 Pounds	373 Pounds

*Maximum wattage and current are subject to and limited by such factors as fuel Btu content, ambient temperature, altitude, engine power and condition, etc. Maximum power decreases about 3.5 percent for each 1,000 feet above sea level; and also will decrease about 1 percent for each 12° C (10° F) above 15.5° C (60° F).

◆ 1.7.2 ENGINE

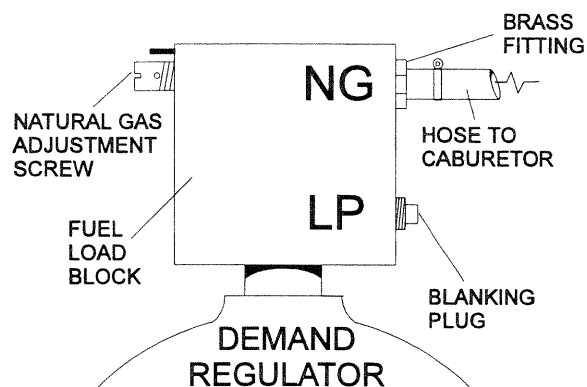
	Model 04077 (6 kW)	Model 04109 (8 kW)	Model 04079 (10 kW)
Type of Engine	GN-410	GN-724	GN-724
Number of Cylinders	1	2	2
Rated Horsepower	14.5 @ 3,600 rpm	25 @ 3,600 rpm	25 @ 3,600 rpm
Displacement	410cc	724cc	724cc
Cylinder Block	Aluminum w/Cast Iron Sleeve	Aluminum w/Cast Iron Sleeve	Aluminum w/Cast Iron Sleeve
Valve Arrangement	Overhead Valves	Overhead Valves	Overhead Valves
Ignition System	Solid-state w/Magneto	Solid-state w/Magneto	Solid-state w/Magneto
Recommended Spark Plug	RC12YC	RC12YC	RC12YC
Spark Plug Gap	0.76 mm (0.030 inch)	0.76 mm (0.030 inch)	0.76 mm (0.030 inch)
Compression Ratio	8.6:1	8.6:1	8.6:1
Starter	12 Vdc	12 Vdc	12Vdc
Oil Capacity Including Filter	Approx. 1.7 Qts	Approx. 2.0 Qts	Approx. 2.0 Qts
Recommended Oil Filter	Generac Part # 70185	Generac Part # 70185	Generac Part # 70185
Operating RPM	3,600	2,900	3,600

1.8 RECONFIGURING THE FUEL SYSTEM

To reconfigure the fuel system from NG to LP, follow these steps:

1. Remove the carburetor fuel hose from the natural gas port of the fuel load block and the brass fitting (Figure 1.3).
2. Remove the blanking plug from the LP port of the load block (Figure 1.3).

Figure 1.3 – Natural Gas Setup

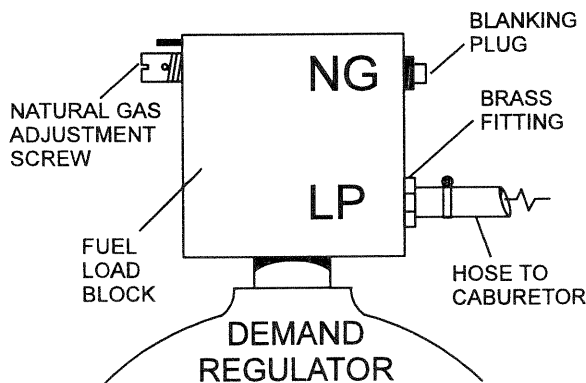


3. Refit the fitting and hose to the LP port and the blanking plug to the natural gas port (Figure 1.4).
4. Reverse the procedure to convert back to natural gas.

NOTE:

The natural gas adjustment screw is preset during installation and should not need any further adjustment.

Figure 1.4 – LP Gas Setup



1.9 THE BATTERY

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

When replacing the battery, use the following type of battery: Group 26/26R 12-volt battery with a rating of 350 cold-cranking amps at -17.8° C (0° F) minimum. When using a maintenance-free battery, it is not necessary to check the specific gravity or electrolyte level. Have these procedures performed at the intervals specified in the "Service Schedule." A negative ground system is used. Battery connections are shown on the wiring diagrams. Make sure the battery is correctly connected and terminals are tight. Observe battery polarity when connecting the battery to the generator set.

NOTE:

Damage will result if the battery connections are made in reverse.

Your generator is equipped with a battery trickle charger that is active when your unit is set up for automatic operation. The trickle charger is designed to help extend the life of your battery by maintaining the battery when the unit is not running.

⚠ DANGER ⚠

- ⚠ Do not dispose of the battery in a fire. The battery is capable of exploding.
- ⚠ A battery presents a risk of electrical shock and high short circuit current. The following precautions are to be observed when working on batteries:
 - Remove watches, rings or other metal objects;
 - Use tools with insulated handles;
 - Wear rubber gloves and boots;
 - Do not lay tools or metal parts on top of the battery; and
 - Disconnect charging source prior to connecting or disconnecting battery terminals.

⚠ WARNING ⚠

- ⚠ Do not open or mutilate the battery. Released electrolyte has been known to be harmful to the skin and eyes, and to be toxic.
- ⚠ The electrolyte is a dilute sulfuric acid that is harmful to the skin and eyes. It is electrically conductive and corrosive. The following procedures are to be observed:
 - Wear full eye protection and protective clothing;
 - Where electrolyte contacts the skin, wash it off immediately with water;
 - Where electrolyte contacts the eyes, flush thoroughly and immediately with water and seek medical attention; and
 - Spilled electrolyte is to be washed down with an acid neutralizing agent. A common practice is to use a solution of 1 pound (500 grams) bicarbonate of soda to 1 gallon (4 liters) or water. The bicarbonate of soda solution is to be added until the evidence of reaction (foaming) has ceased. The resulting liquid is to be flushed with water and the area dried.
- ⚠ Lead-acid batteries present a risk of fire because they generate hydrogen gas. The following procedures are to be followed:
 - DO NOT SMOKE when near the battery;
 - DO NOT cause flame or spark in battery area; and
 - Discharge static electricity from your body before touching the battery by first touching a grounded metal surface.
- ⚠ Be sure the Auto/Off/Manual switch is set to the OFF position before connecting the battery cables. If the switch is set to AUTO or MANUAL, the generator can crank and start as soon as the battery cables are connected.
- ⚠ Be sure the utility power supply is turned off, or sparking may occur at the battery posts as you attach the cables and cause an explosion.



2.1 BREAK-IN PROCEDURE

Once the unit has been installed and all electrical checks have been made, it is strongly recommended that the following "Break-in Procedure" be completed to ensure correct generator operation in the future.

1. Set the generator's Auto/Off/Manual switch to AUTO.
2. Turn OFF the utility power supply to the transfer switch using the means provided (such as a utility main line circuit breaker).
3. The unit will start, and the transfer switch will transfer to standby.
4. Using the main distribution panel or the emergency distribution panel (if so equipped), turn on circuits to load the generator to approximately 25 percent load and run the unit for one hour.
5. Run the unit for one hour at 50 percent load.
6. Run the unit for one hour at 75 percent load.
7. Run the unit for one hour at 100 percent load.
8. Turn ON the utility power supply to the transfer switch, which will allow the transfer switch to transfer back to utility power. The unit will continue to run for one minute and then shut down.
9. Allow the unit to cool.
10. Drain the oil and remove the oil filter. Replace the oil filter according to Section 3.4, "Changing the Oil Filter" (Page 12). Replace the oil with synthetic oil as recommended in Section 3.3, "Changing the Engine Oil" (Page 11).
11. The generator is now ready for service.

2.2 USING THE AUTO/OFF/MANUAL SWITCH (FIGURE 2.1)

◆ 2.2.1 "AUTO" POSITION

Selecting this switch position activates fully automatic system operation. It also allows you to start and exercise the engine every seven days with the setting of the exercise timer (see Section 2.6, Page 10). This position also is used for remote starting, when it is set up.

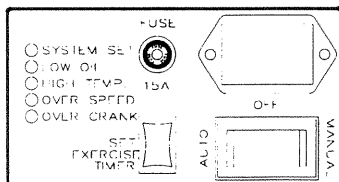
◆ 2.2.2 "OFF" POSITION

This switch position shuts down the engine. This position also prevents automatic operation.

◆ 2.2.3 "MANUAL" POSITION

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

Figure 2.1 – Generator Control Panel



⚠ WARNING ⚠

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

2.3 AUTOMATIC TRANSFER OPERATION

To select automatic operation, do the following:

1. Make sure the transfer switch main contacts are set to their "Utility" position, i.e., loads connected to the utility power source (Figure 2.2, Page 9).
2. Be sure that normal utility power source voltage is available to transfer switch terminal lugs N1 and N2.
3. Set the generator's Auto/Off/Manual switch to AUTO.
4. Set the generator's main circuit breaker to its ON (or closed) position.

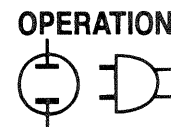
With the preceding steps complete, the generator will start automatically when utility source voltage drops below a preset level. After the unit starts, loads are transferred to the standby power source. Refer to "Sequence of Automatic Operation."

2.4 SEQUENCE OF AUTOMATIC OPERATION

The generator's control panel houses a control logic circuit board. This board constantly monitors utility power source voltage. Should that voltage drop below a preset level, circuit board action will signal the engine to crank and start. After the engine starts, the circuit board signals the transfer switch to activate and connect load circuits to the standby power supply (load terminal lugs T1/T2 connect to terminal lugs E1/E2).

Upon restoration of utility source voltage above a pre-set level, generator circuit board action signals the transfer switch to transfer loads back to that power supply. After retransfer, the engine is signalled to shut down.

The actual sequence of operation is controlled by sensors and timers on a control logic circuit board, as follows:



A. Utility Voltage Dropout Sensor

- This sensor monitors utility source voltage.
- If utility source voltage drops below about 60 percent of the nominal supply voltage, the sensor energizes a 15-second timer.
- Once the timer has expired, the engine will crank and start.

B. Engine Warm-up Time Delay

- This mechanism lets the engine warm up for about 10 seconds before the load is transferred to a standby source.

C. Standby Voltage Sensor

- This sensor monitors generator AC output voltage. When the voltage has reached 50 percent of the nominal rated voltage, transfer to standby can occur.

D. Utility Voltage Pickup Sensor

- This sensor monitors utility power supply voltage. When that voltage is restored above 80 percent of the nominal source voltage, a retransfer time delay starts timing.

E. Retransfer Time Delay

- This timer runs for about 15 seconds.
- At end of a 15-second delay, circuit board action de-energizes transfer relay in the transfer switch.
- Retransfer to utility power source then occurs.

F. Engine Cool-down Timer

- When the load is transferred back to utility power source, the engine cool-down timer starts timing.
- The timer will run for about one minute, and the generator will then shut down.

2.5 MANUAL TRANSFER OPERATION

◆ 2.5.1 TRANSFER TO GENERATOR POWER SOURCE

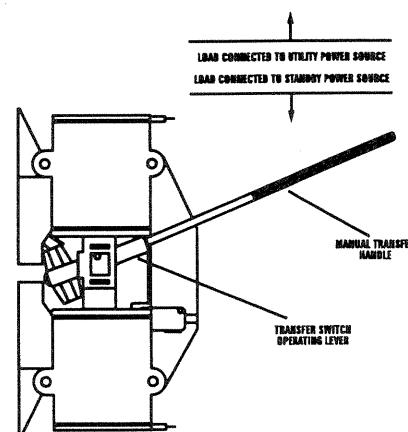
To start the generator and activate the transfer switch manually, proceed as follows:

1. Set the generator's Auto/Off/Manual switch to OFF.
2. Set the generator's main circuit breaker to its OFF (or open) position.
3. Turn OFF the utility power supply to the transfer switch using the means provided (such as a utility main line circuit breaker).



- ⚠ Do not attempt to activate the transfer switch manually until all power voltage supplies to the switch have been positively turned off. Failure to turn off all power voltage supplies may result in extremely hazardous and possibly fatal electrical shock.

Figure 2.2 – Manual Transfer Switch Operation



4. Use the manual transfer handle inside the transfer switch to move the main contacts to their "Standby" position, i.e., loads connected to the standby power source (Figure 2.2).
5. Turn ON the utility power supply to the transfer switch using the means provided (such as a utility main line circuit breaker).
6. To crank and start the engine, set the Auto/Off/Manual switch to MANUAL.
7. Let the engine stabilize and warm up for a few minutes.
8. Set the generator's main circuit breaker to its ON (or closed) position. The standby power source now powers the loads.

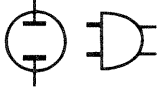
◆ 2.5.2 TRANSFER BACK TO UTILITY POWER SOURCE

When utility power has been restored, you will want to transfer back to that source and shut down the generator. This can be accomplished as follows:

1. Set the generator's main circuit breaker to its OFF (or open) position.
2. Let the engine run for a minute or two at no-load to stabilize the internal temperatures.
3. Set the generator's Auto/Off/Manual switch to its OFF (or open) position. The engine should shut down.
4. Check that utility power supply to the transfer switch is turned OFF.



- ⚠ Do not attempt to activate the transfer switch manually until all power voltage supplies to the switch have been positively turned off. Failure to turn off all power voltage supplies may result in extremely hazardous and possibly fatal electrical shock.
5. Use the manual transfer handle inside the transfer switch to move the main contacts back to their "Utility" position, i.e., loads connected to the utility power source (Figure 2.2).



6. Turn ON the utility power supply to the transfer switch using the means provided.
7. Set the system to automatic operation as outlined in "Automatic Transfer Operation," Section 2.3 (Page 8).

2.6 SETTING THE EXERCISE TIMER

Your generator is equipped with an exercise timer. Once it is set, the generator will start and exercise once every seven days, on the day of the week and at the time of day you complete the following sequence. During this exercise period, the unit runs for approximately 12 minutes and then shuts down. Transfer of loads to the generator output does not occur during the exercise cycle.

A switch on the control panel (see Figure 3.1, Page 11) allows you to select the day and time for system exercise. To select the desired day and time of day, proceed as follows:

1. Verify that the Auto/Off/Manual switch is set to AUTO.
2. Hold down the set timer switch until the generator starts (approximately 10 seconds) and then release.
3. The generator will start and run for approximately 12 minutes and then shut down on its own. The exerciser will then be set to run at that time of day every week.

NOTE:

The exerciser will only work in the AUTO mode and will not work unless this procedure is performed. The exerciser will need to be reset every time the 12-volt battery is disconnected and then reconnected. The exerciser WILL NOT work if dip switch 2 (Remote Not Auto) is ON.

2.7 PROTECTION SYSTEMS

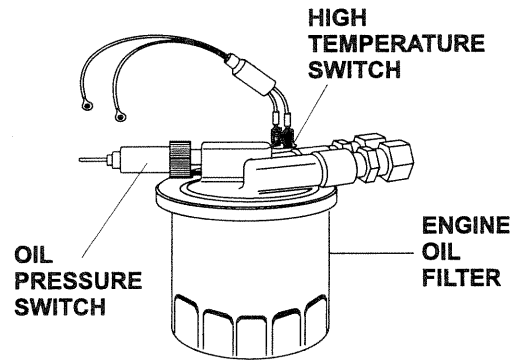
◆ 2.7.1 LOW OIL PRESSURE SWITCH

This switch (Figure 2.3) has normally closed contacts that are held open by engine oil pressure during cranking and operating. Should oil pressure drop below the 8 psi range, switch contacts close, and the engine shuts down. The unit should not be restarted until oil is added, and the Auto/Off/Manual switch must be turned to OFF and then back to AUTO.

◆ 2.7.2 HIGH TEMPERATURE SWITCH

This switch's (Figure 2.3) contacts close if the temperature should exceed approximately 140° C (284° F), initiating an engine shutdown. Your generator will automatically restart and the LED will reset once the temperature has returned to a safe operating level.

Figure 2.3 – Low Oil Pressure and High Temperature Switches



◆ 2.7.3 OVERCRANK

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

NOTE:

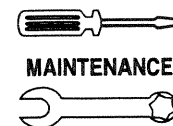
If the fault is not repaired, the overcrank feature will continue to activate.

2.7.3.1 Approximate Crank Cycle Times

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

◆ 2.7.4 OVERSPEED

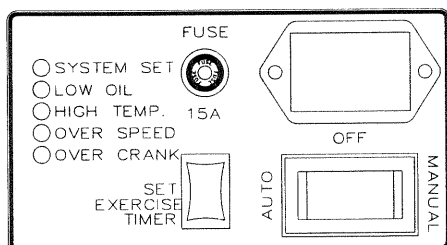
This feature protects the generator from damage by shutting it down if it happens to run faster than the preset limit. This protection also prevents the generator from supplying an output that could potentially damage appliances connected to the generator circuit. Contact your nearest Generac/Guardian Authorized Dealer if this failure occurs.



3.1 FUSE

The generator panel's 15-amp fuse (Figure 3.1) protects the DC control circuit against overload. The fuse is wired in series with the battery output lead to the panel. If the fuse element has melted open, you cannot crank or start the engine. You should replace the fuse using only an identical 15-amp replacement.

Figure 3.1 – Generator Control Panel



3.2 CHECKING THE ENGINE OIL LEVEL

For oil capacities, see "Specifications," Section 1.7 (Page 6). For engine oil recommendations, see Section 3.3.1. To check the engine oil level, proceed as follows (Figure 3.2):

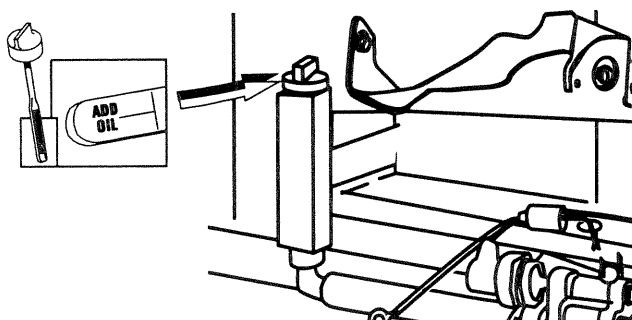
1. Start the generator by moving the Auto/ Off/Manual switch to the MANUAL position. Allow it to run for a short while and then shut it down by moving the switch to the OFF position.
2. Remove the dipstick and wipe it dry with a clean cloth.
3. Install and tighten the dipstick cap; then, remove it again. The oil level should be at the dipstick "Full" mark. If necessary, add oil to the "Full" mark only. DO NOT FILL ABOVE THE "FULL" MARK.



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

4. Install and tighten the dipstick.
5. Reset the Auto/Off/Manual switch to its original position.

Figure 3.2 – Oil Dipstick and Fill



3.3 CHANGING THE ENGINE OIL

◆ 3.3.1 ENGINE OIL RECOMMENDATIONS

Use oil of American Petroleum Institute (API) Service Class SG, SH or SJ. Select the viscosity based on the air temperature at the time of operation. See the following chart:

Temperature	Oil Grade (Recommended)
Above -7° C (20° F)	SAE 10W-30 or SAE 30
Below -7° C (20° F)	SAE 5W-20 or 5W-30
All Seasons	SAE 5W-30 Synthetic*

*Organic break-in oil is required before using synthetic oil.

NOTE:

The unit is supplied with "break-in" oil. See the "Break-in Procedure," Section 2.1 (Page 8), for the first required oil change.



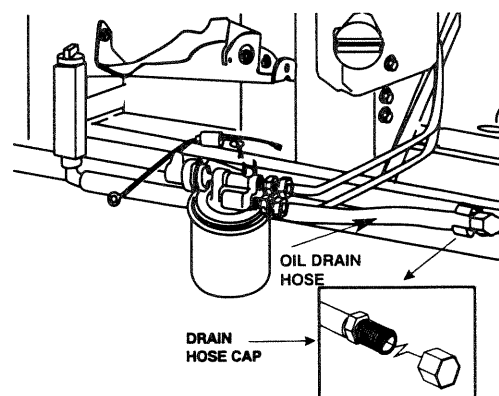
Any attempt to crank or start the engine before it has been properly serviced with the recommended oil may result in an engine failure.

◆ 3.3.2 OIL CHANGE PROCEDURE

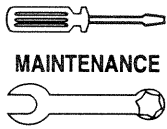
To change the oil, proceed as follows:

1. Run the engine until it is thoroughly warmed up then shut OFF the engine.
2. Immediately after the engine shuts OFF, pull the oil drain hose (Figure 3.3) free of its retaining clip. Remove the cap from the hose and drain the oil into a suitable container.

Figure 3.3 – Oil Drain Hose



3. After the oil has drained, replace the cap onto the end of the oil drain hose. Retain the hose in the clip.
4. Refill with the proper recommended oil (see Section 3.3.1). See Section 1.7.2 (Page 6) for oil capacities.



Section 3 – Maintenance

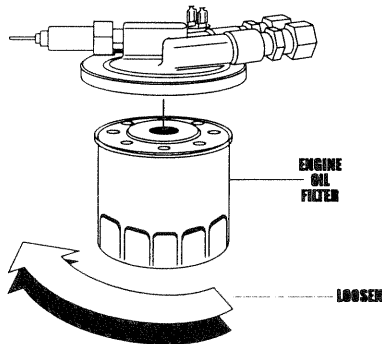
Guardian Air-cooled 6 kW, 8 kW and 10 kW Generators

3.4 CHANGING THE OIL FILTER

Change the engine oil filter as follows:

1. With the oil drained, remove the old oil filter by turning it counterclockwise.
2. Apply a light coating of clean engine oil to the gasket of the new filter. See Section 1.7.2 (Page 6) for recommended filter.
3. Screw the new filter on by hand until its gasket lightly contacts the oil filter adapter. Then, tighten the filter an additional 3/4 to one turn (Figure 3.4).
4. Refill with the proper recommended oil (see Section 3.3.1, Page 11). See Section 1.7.2 (Page 6) for oil capacities.
5. Start the engine and check for leaks.

Figure 3.4 – Engine Oil Filter



3.5 CHANGING THE ENGINE AIR CLEANER

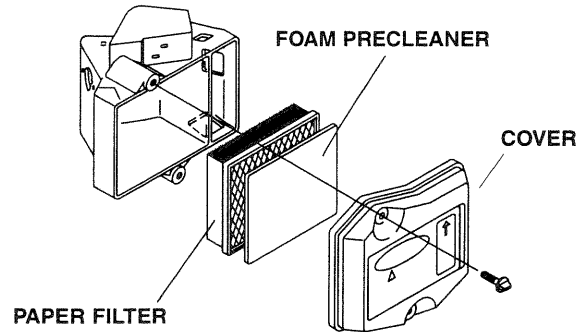
◆ 3.5.1 6 KW GENERATORS

See Figure 1.1 (Page 5) for the location of your air cleaner. Clean and reoil the foam precleaner every three months or every 25 hours of operation, whichever occurs first. Service the foam precleaner more frequently if you operate the generator in extremely dusty or dirty conditions. Use the following procedure (Figure 3.5):

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

See the “Service Schedule,” Section 3.12 (Page 15) for air cleaner maintenance. See Section 1.7.1 (Page 6) for air filter replacement part number.

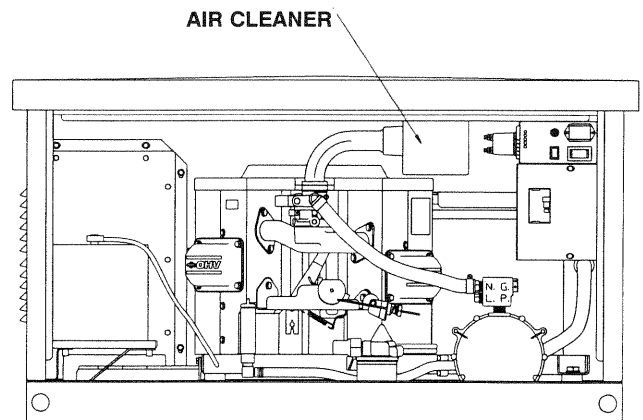
Figure 3.5 – 6 kW Engine Air Cleaner



◆ 3.5.2 8 KW AND 10 KW GENERATORS

To replace the engine air cleaner, simply loosen the hose clamp. This air cleaner should NOT be cleaned and reused. See Section 1.7.1 (Page 6) for air filter replacement part number.

Figure 3.6 – 8 kW and 10 kW Engine Air Cleaner



3.6 SPARK PLUG(S)

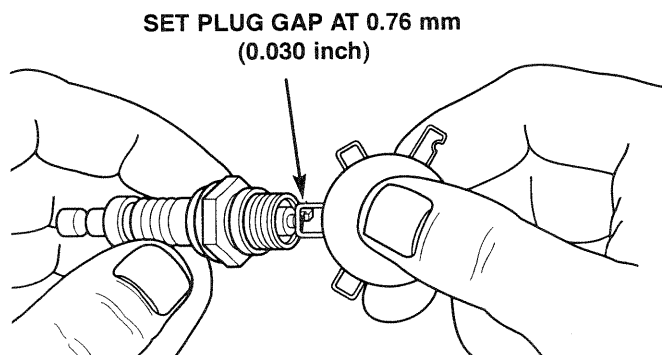
Reset the spark plug(s) gap or replace the spark plug(s) as necessary. See Section 3.12 (Page 15) for maintenance requirements.

1. Clean the area around the base of the spark plug(s) to keep dirt and debris out of the engine. Clean by scraping or washing using a wire brush and commercial solvent. Do not blast the spark plug(s) to clean.
2. Remove the spark plug(s) and check the condition. Replace the spark plug(s) if worn or if reuse is questionable. See Section 3.12 (Page 15) for recommended inspection.



3. Check the spark plug gap using a wire feeler gauge. Adjust the gap to 0.76 mm (0.030 inch) by carefully bending the ground electrode (Figure 3.7).

Figure 3.7 – Setting the Spark Plug Gap



3.7 BATTERY MAINTENANCE

The battery should be inspected per the "Service Schedule," Section 3.12 (Page 15). The following procedure should be followed for inspection:

1. Inspect the battery posts and cables for tightness and corrosion. Tighten and clean as necessary.
2. Check the battery fluid level of unsealed batteries and, if necessary, fill with **DISTILLED WATER ONLY. DO NOT USE TAP WATER IN BATTERIES.**
3. Have the state of charge and condition checked. This should be done with an automotive-type battery hydrometer.

⚠ **DANGER** ⚠

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

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

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

⚠ **WARNING** ⚠

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

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

- Wear full eye protection and protective clothing;
- Where electrolyte contacts the skin, wash it off immediately with water;
- Where electrolyte contacts the eyes, flush thoroughly and immediately with water and seek medical attention; and
- Spilled electrolyte is to be washed down with an acid neutralizing agent. A common practice is to use a solution of 1 pound (500 grams) bicarbonate of soda to 1 gallon (4 liters) or water. The bicarbonate of soda solution is to be added until the evidence of reaction (foaming) has ceased. The resulting liquid is to be flushed with water and the area dried.

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

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

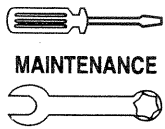
⚠ Be sure the Auto/Off/Manual switch is set to the OFF position before connecting the battery cables. If the switch is set to AUTO or MANUAL, the generator can crank and start as soon as the battery cables are connected.

⚠ Be sure the utility power supply is turned off, or sparking may occur at the battery posts as you attach the cables and cause an explosion.

3.8 COOLING SYSTEM

Air inlet and outlet openings in the generator compartment must be open and unobstructed for continued proper operation. This includes such obstructions as high grass, weeds, brush, leaves and snow.

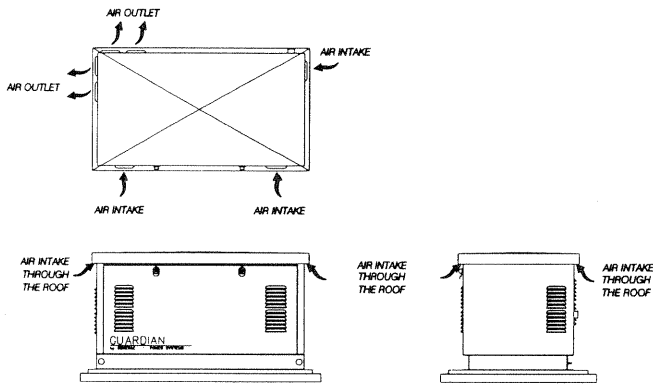
Without sufficient cooling and ventilating air flow, the engine/generator quickly overheats, which causes it to quickly shut down. (See Figure 3.8, Page 14, for vent locations.)



Section 3 – Maintenance

Guardian Air-cooled 6 kW, 8 kW and 10 kW Generators

Figure 3.8 – Cooling Vent Locations



⚠ WARNING ⚠

⚠ The exhaust from this product gets extremely hot and remains hot after shutdown. High grass, weeds, brush, leaves, etc. must remain clear of the exhaust. Such materials may ignite and burn from the heat of the exhaust system.

⚠ CAUTION ⚠

⚠ The maximum ambient temperature for your generator is 48.9° C (120° F).

3.9 DRIVE BELT

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

3.10 ATTENTION AFTER SUBMERSION

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

3.11 OUT OF SERVICE PROCEDURE

◆ 3.11.1 REMOVAL FROM SERVICE

If you cannot exercise the generator every seven days, and it is to be out of service longer than 90 days, prepare the generator for storage as follows:

1. Start the engine and let it warm up.
2. Close the fuel shutoff valve in the fuel supply line and allow the unit to shut down.

3. Once the unit has shut down, it will signal a low oil fault.
4. Set the Auto/Off/Manual switch to OFF and turn off the utility power to the transfer switch.
5. While the engine is still warm from running, drain the oil completely. Refill the crankcase with oil. See "Engine Oil Recommendations," Section 3.3.1 (Page 11).
6. Attach a tag to the engine indicating the viscosity and classification of the oil in the crankcase.
7. Remove the spark plug(s) and spray fogging agent into the spark plug(s) threaded openings. Reinstall and tighten the spark plug(s).
8. Remove the battery and store it in a cool, dry room on a wooden board. Never store the battery on any concrete or earthen floor.
9. Clean and wipe the entire generator.

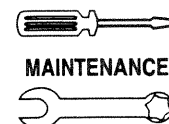
◆ 3.11.2 RETURN TO SERVICE

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

1. Verify that utility power is turned off and that the Auto/Off/Manual switch is set to OFF.
2. Check the tag on the engine for oil viscosity and classification. Verify that the correct recommended oil is used in the engine (see Section 3.3.1, Page 11). If necessary, drain and refill with the proper oil.
3. Check the state of the battery. Fill all cells of unsealed batteries to the proper level with distilled water. **DO NOT USE TAP WATER IN THE BATTERY.** Recharge the battery to 100 percent state of charge, or, if defective, replace the battery. See "Specifications," Section 1.7 (Page 6), for type and size.
4. Clean and wipe the entire generator.
5. Reconnect the battery. Observe battery polarity. Damage may occur if the battery is connected incorrectly.
6. Open the fuel shutoff valve.
7. Start the unit by moving the Auto/Off/Manual switch to MANUAL. Allow the unit to warm up thoroughly.
8. Stop the unit and set the Auto/Off/Manual switch to AUTO.
9. Turn on the utility power to the transfer switch.
10. Your generator is now ready for service.

NOTE:

If the battery was dead or disconnected, you must reset the exerciseW timer.



3.12 SERVICE SCHEDULE

ATTENTION: It is recommended that all service work be performed by your nearest Generac/Guardian Authorized Dealer.

SYSTEM/COMPONENT	PROCEDURE			FREQUENCY
	Inspect	Change	Clean	
X = Action R = Replace as Necessary * = Notify Dealer if Repair is Needed.				W = Weekly M = Monthly Y = Yearly H = Hours
FUEL				
Fuel lines and connections*	X			M
LUBRICATION				
Oil level	X			M
Oil		X		AFTER BREAK-IN, EVERY 100 H AND Y
Oil filter		X		AFTER BREAK-IN, EVERY 200 H AND Y
Oil line leakage*	X			100 H
COOLING				
Enclosure louvers	X		X	W
EXHAUST LINE				
Exhaust outlet	X		X	W
Spark arrestor*	X			Y
BATTERY				
Remove corrosion, ensure dryness	X		X	M
Clean and tighten battery terminals	X		X	M
Check charge state	X	R		EVERY 6 M
Electrolyte level (unsealed batteries only)*	X	R		EVERY 6 M
ENGINE AND MOUNTING				
Air cleaner	X	R		100 H AND Y
6 kW foam precleaner			X	EVERY 25 H OR EVERY 3 M
Spark plug(s)	X	R		100 H AND Y
GENERAL CONDITION				
Vibration, Noise, Leakage, Temperature*	X			M
COMPLETE TUNE-UP*	TO BE COMPLETED BY A GENERAC/ GUARDIAN AUTHORIZED DEALER			Y



Section 4 – Troubleshooting

Guardian Air-cooled 6 kW, 8 kW and 10 kW Generators

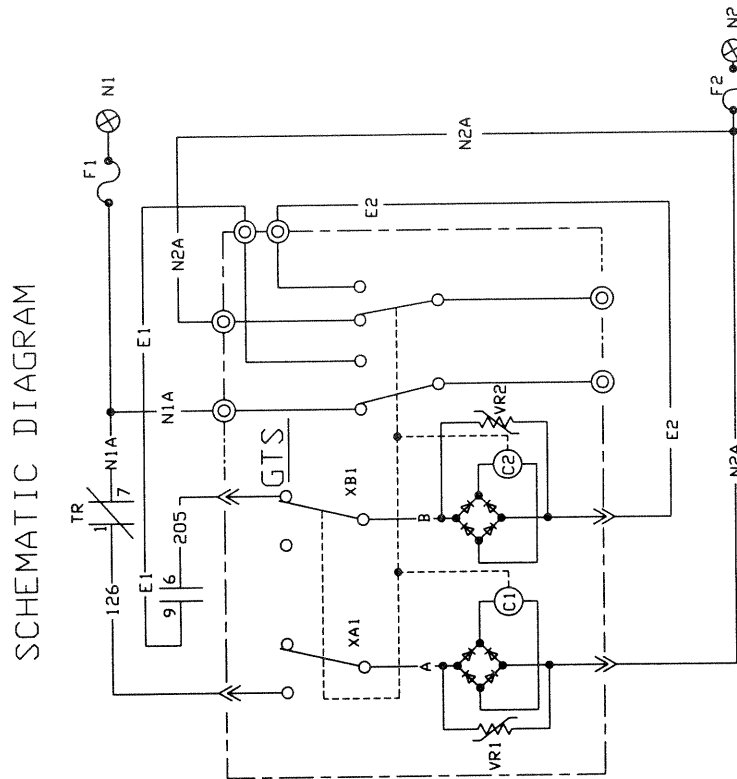
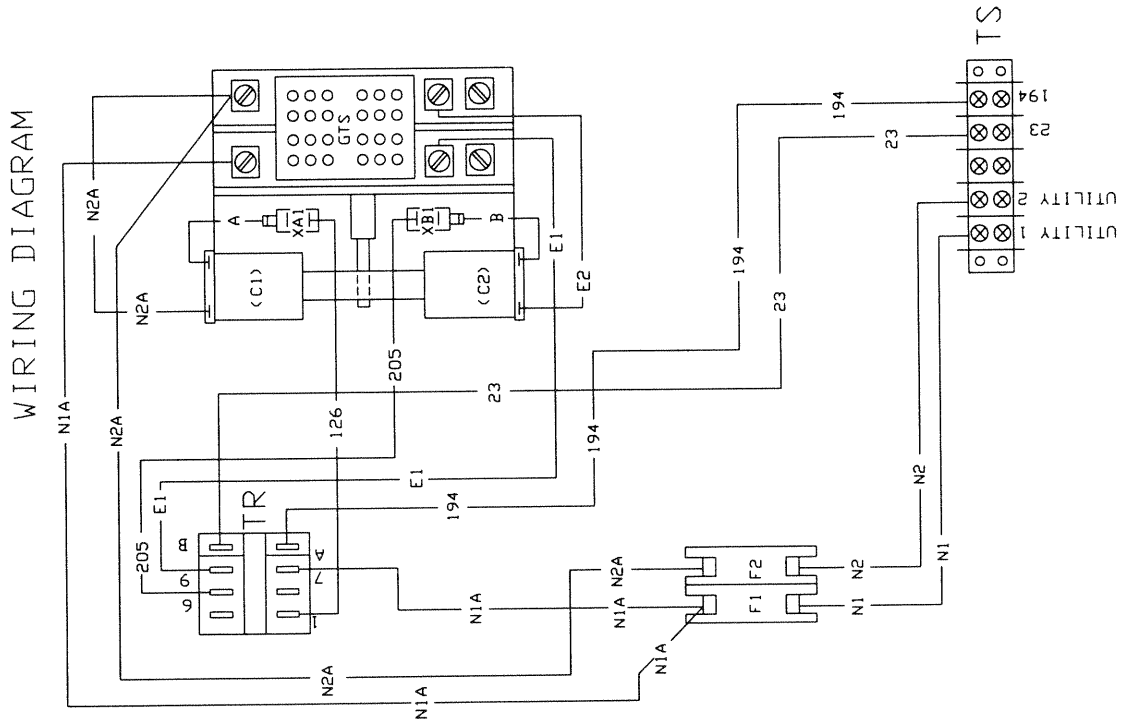
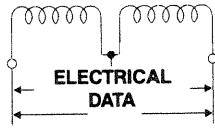
4.1 TROUBLESHOOTING GUIDE

PROBLEM	CAUSE	CORRECTION
The engine will not crank.	<ol style="list-style-type: none"> 1. Fuse blown 2. Loose, corroded or defective battery cables 3. Defective starter contactor 4. Defective starter motor 5. Dead Battery 	<ol style="list-style-type: none"> 1. Replace fuse. 2. Tighten, clean or replace as necessary. 3. * 4. * 5. Charge or replace battery.
The engine cranks but will not start.	<ol style="list-style-type: none"> 1. Out of fuel 2. Defective fuel solenoid (FS) 3. Open #14 wire from engine control board 4. Defective spark plug(s) 	<ol style="list-style-type: none"> 1. Replenish fuel. 2. * 3. * 4. Clean, re-gap or replace plug(s).
The engine starts hard and runs rough.	<ol style="list-style-type: none"> 1. Air cleaner plugged or damaged 2. Defective spark plug(s) 	<ol style="list-style-type: none"> 1. Check, clean or replace air cleaner. 2. Clean, re-gap or replace plug(s).
The engine starts, but shuts down when the Start/Stop switch is released.	<ol style="list-style-type: none"> 1. Engine oil level low 2. Defective low oil pressure switch 3. Defective high temperature switch 4. Defective control board 	<ol style="list-style-type: none"> 1. Check oil and add oil as needed. 2. * 3. * 4. *
The Auto/Off/Manual switch is set to OFF, but the engine continues to run.	<ol style="list-style-type: none"> 1. Defective switch 2. Auto/Off/Manual switch wired incorrectly 3. Defective control board 	<ol style="list-style-type: none"> 1. * 2. * 3. *
There is no AC output from the generator.	<ol style="list-style-type: none"> 1. Main line circuit breaker open 2. Generator internal failure 	<ol style="list-style-type: none"> 1. Reset circuit breaker to ON (or closed). 2. *
There is no transfer to standby after utility source failure.	<ol style="list-style-type: none"> 1. Defective transfer switch coil 2. Defective transfer relay 3. Transfer relay circuit open 4. Defective control logic board 	<ol style="list-style-type: none"> 1. * 2. * 3. * 4. *
Unit consumes large amounts of oil.	<ol style="list-style-type: none"> 1. Break-in procedure not followed (see Section 2.1) 	<ol style="list-style-type: none"> 1. *

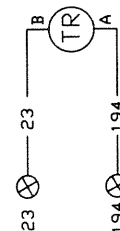
***Contact your nearest Generac/Guardian Authorized Dealer for assistance.**

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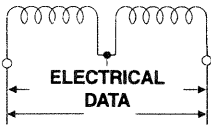
Guardian Air-cooled 6 kW, 8 kW and 10 kW Generators
Transfer Switch Schematic and Wiring Diagrams – Drawing No. C2381-



LEGEND	
C1-	SOLENOID COIL (UTILITY CLOSING)
C2-	SOLENOID COIL (STANDBY CLOSING)
GTS -	TRANSFER SWITCH CONTACTOR
TR -	RELAY, TRANSFER
TS -	TERMINAL STRIP (CUSTOMER CONNECTION)
XA1, XB1-	LIMIT SWITCHES, ACTUATOR
F1, F2 -	FUSE, 5A SENSING
VR1, VR2 -	VARIATOR



NOTE:
ALL CONTACTS SHOWN WITH
TRANSFER SWITCH IN UTILITY
POSITION.



Section 6 – Electrical Data

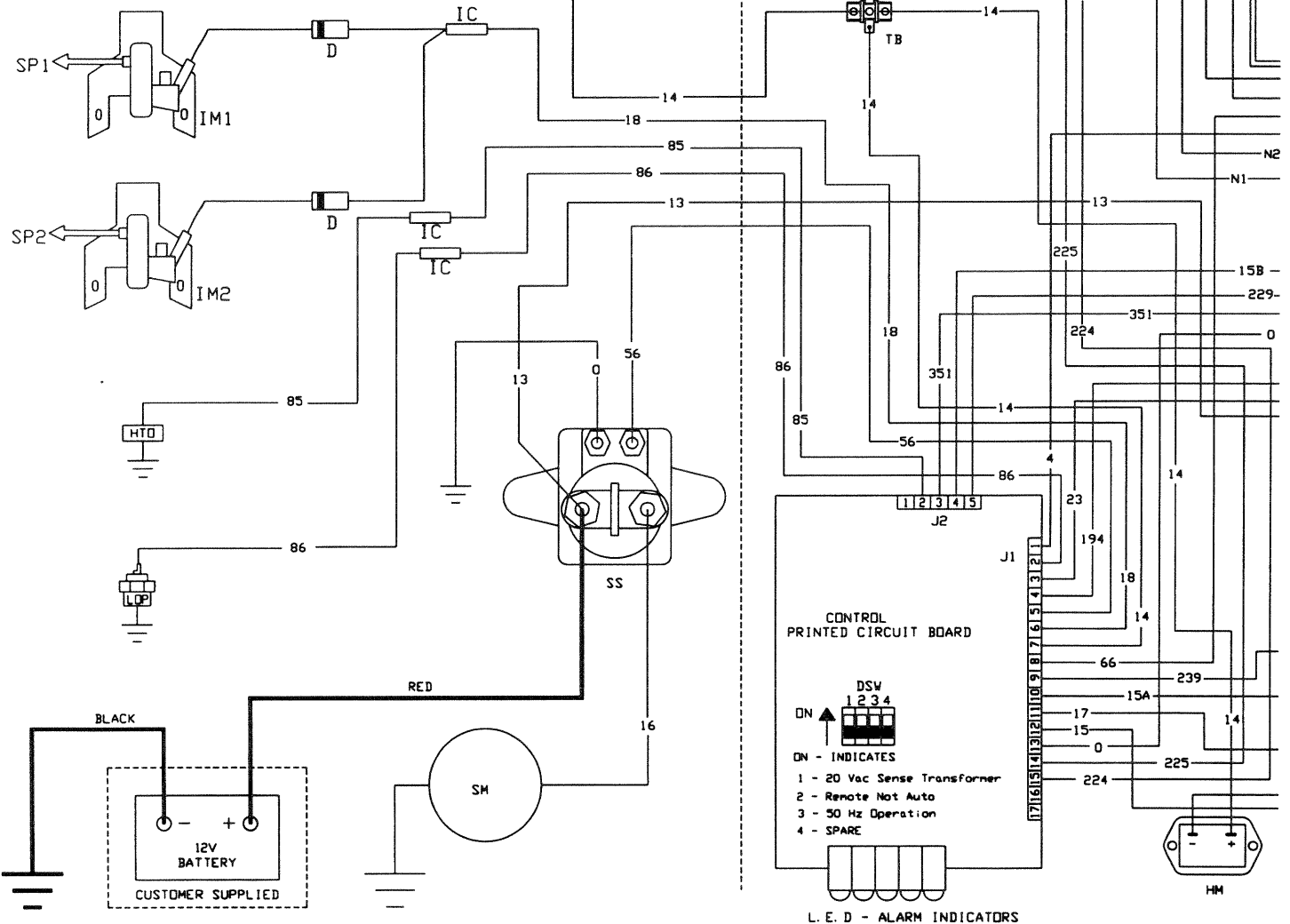
Guardian Air-cooled 6 kW, 8 kW and 10 kW Generators

Wiring Diagram – Drawing No. C2136-E

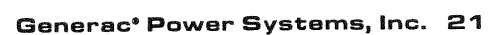
ENGINE WIRING

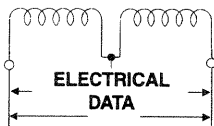
DIAGRAM KEY

- BA - BRUSH ASSEMBLY
- BCR - BATTERY CHARGE RECTIFIER
- CB1 - MAIN OUTPUT BREAKER
- CB2 - CIRCUIT BREAKER, ALTERNATOR EXCITATION
- D - DIODE
- DSW - PCB MOUNTED DIP SWITCH
- FS - FUEL SOLENOID
- F1 - FUSE 15 AMP
- GRD - CONTROL PANEL GROUND
- HTO - HIGH OIL TEMPERATURE SWITCH
- HM - HOUR RUN METER
- IC - INLINE CONNECTOR
- ICT - INTERCONNECTION TERMINALS
- IM1 - IGNITION MODULE, CYLINDER #1
- IM2 - IGNITION MODULE, CYLINDER #2
- LDP - LOW OIL PRESSURE SWITCH
- RAR - REMOTE ALARM RELAY
- R1 - 6KW = 1 OHM, 25W RESISTOR
8KW = 0.5 OHM, 25W RESISTOR
10KW = 2 x 1 OHM, 25W RESISTOR IN SERIES
- SP1, SP2 - SPARK PLUGS
- SW1 - AUTO / OFF / MANUAL SWITCH
- SW2 - SET EXERCISE SWITCH
- SM - STARTER MOTOR
- SS - STARTER SOLENOID
- TB - INSULATED TERMINAL BLOCK
- TX1 - 56 VA TRANSFORMER - 240 / 16 Vac
- TX2 - 6 VA TRANSFORMER - 240 / 16 Vac



ELECTRICAL DATA

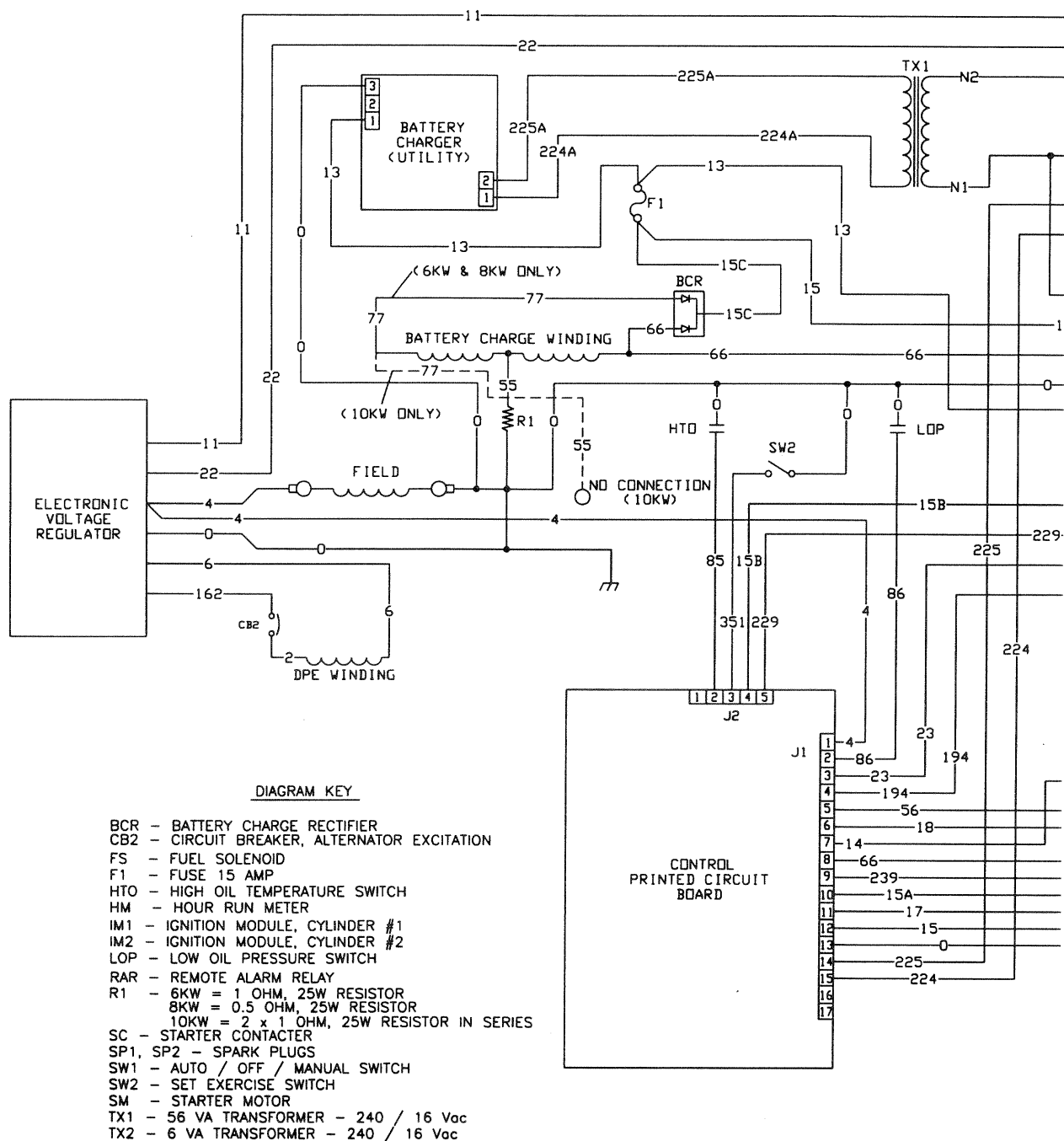




Section 6 – Electrical Data

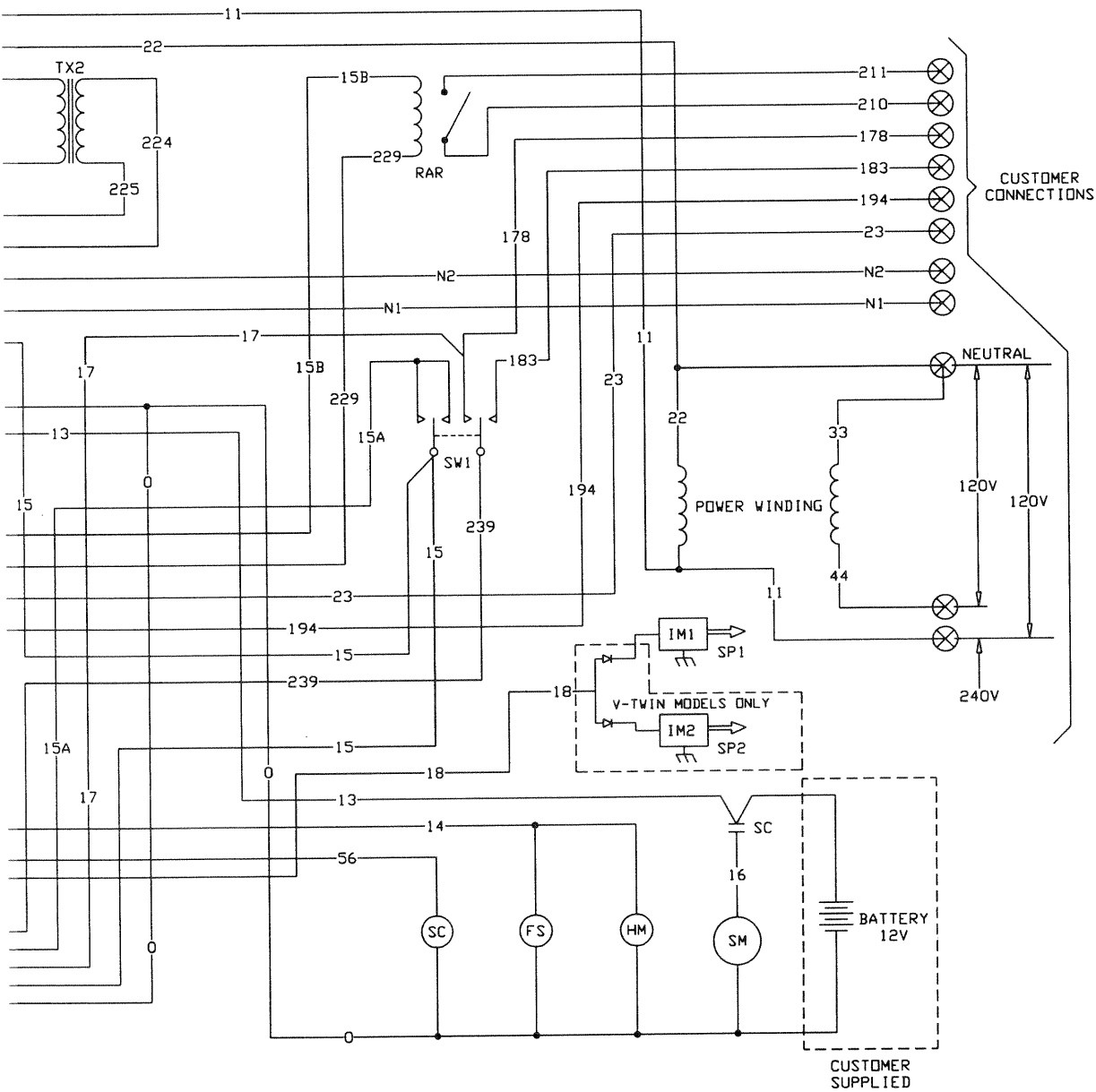
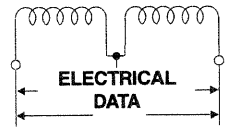
Guardian Air-cooled 6 kW, 8 kW and 10 kW Generators

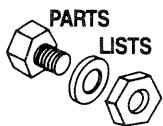
Electrical Schematic – Drawing No. C2666-D



Section 6 – Electrical Data

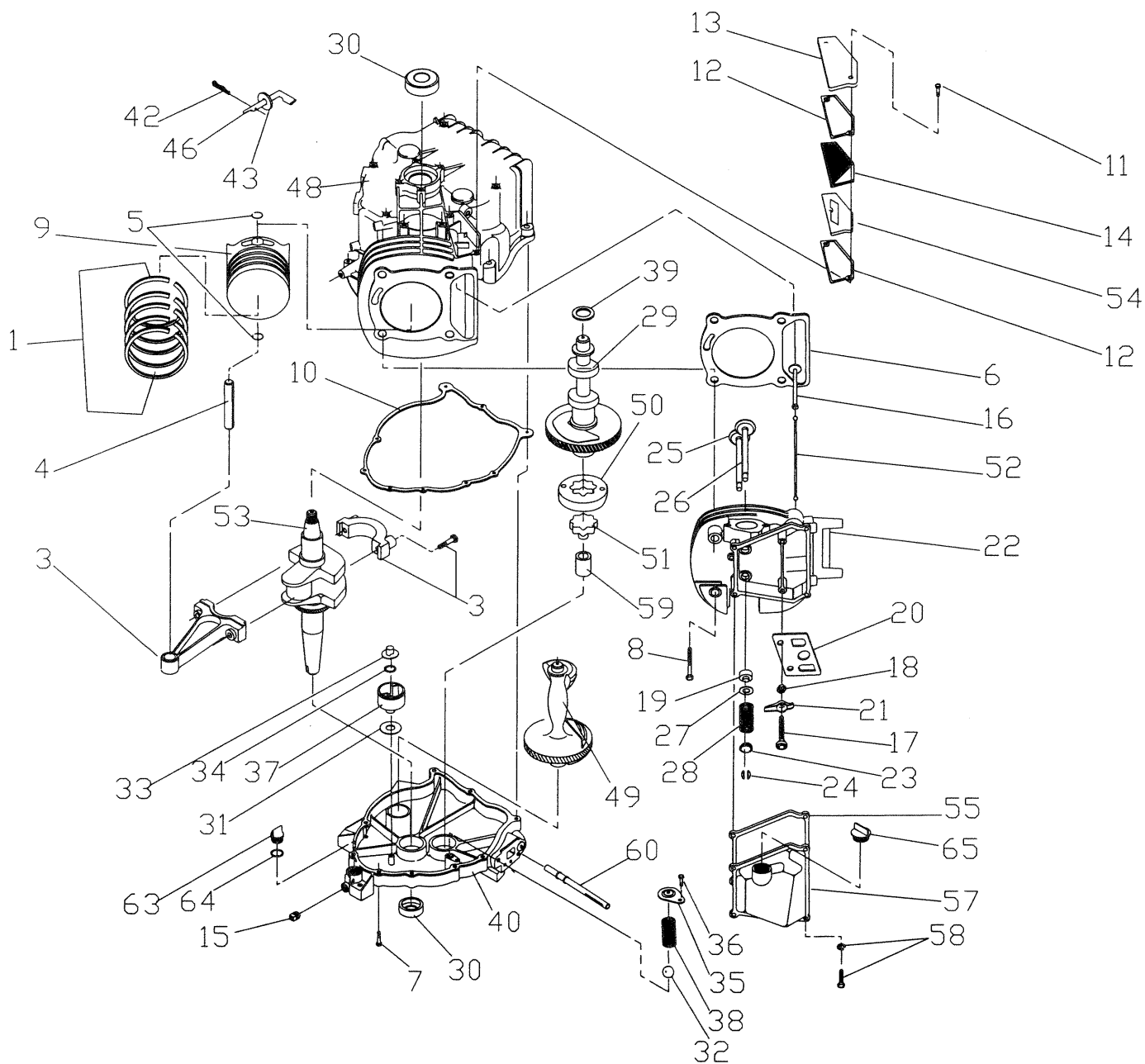
Guardian Air-cooled 6 kW, 8 kW and 10 kW Generators Electrical Schematic – Drawing No. C2666-D





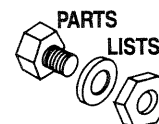
Section 7 – Exploded Views and Parts Lists

Guardian Air-cooled 6 kW Generator
GN-410 Engine – Drawing No. A7894-D



Section 7 – Exploded Views and Parts Lists

Guardian Air-cooled 6 kW Generator
GN-410 Engine – Drawing No. A7894-D

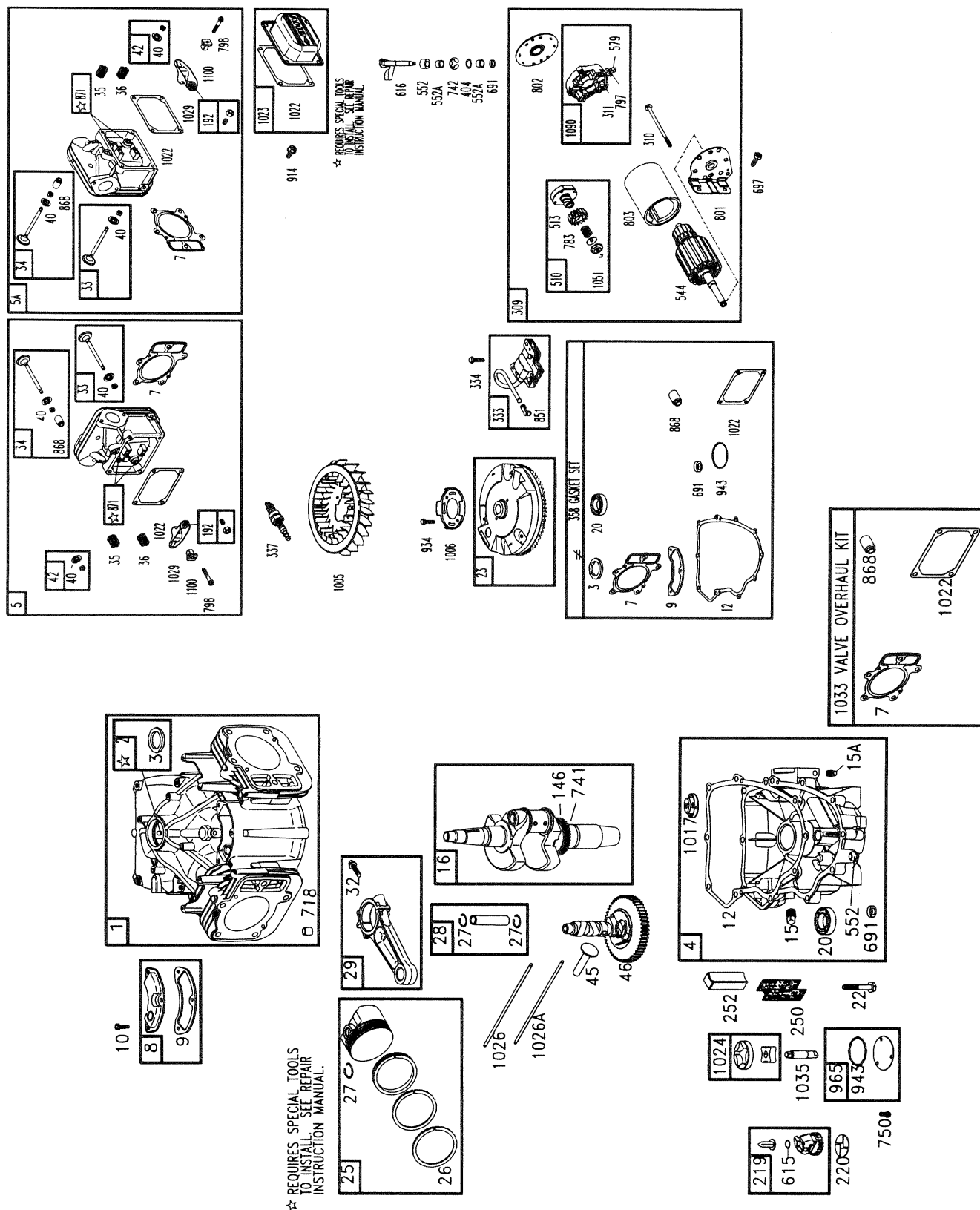


ITEM	PART NO.	QTY.	DESCRIPTION	ITEM	PART NO.	QTY.	DESCRIPTION
1	21533	1	PISTON RING SET	31	76361	1	THRUST WASHER
3	71978	1	CONNECTING ROD WITH CAP AND BOLT	32	A5776	1	PRESSURE RELIEF BALL
4	71980	1	PISTON PIN	33	A7308	1	GOVERNOR SPOOL
5	71983	2	PISTON PIN RETAINER	34	78645	1	GOVERNOR RETAINER (C-RING)
6	21713B	1	CYLINDER HEAD GASKET	35	78691	1	COVER, OIL PRESSURE RELIEF
7	A1442	8	FLANGED HEX HD. CAP- SCREW M8-1.25 x 42	36	74908	1	M5-0.8 x 10MM TAPTITE
8	21742	4	M10 1.5 x 105MM HHFL	37	A8930	1	GOVERNOR GEAR ASSEMBLY
9	96699	1	PISTON	38	A5771	1	OIL PRESSURE SPRING
10	76701	1	CRANKCASE GASKET	39	B2104	1	SPRING WASHER
11	45756	2	M6-1.0 x 10 TAPTITE	40	89280D	1	OIL SUMP ASSEMBLY
12	80308	2	BREATHER GASKET	42	78658	1	GOVERNOR ARM "R" PIN
13	80309	1	BREATHER COVER	43	78659	2	THRUST WASHER
14	80338	1	OIL BREATHER SEPARATOR	46	A7628	1	GOVERNOR ARM RC45
15	26925	1	PIPE PLUG-3/8"	48	C3396C	1	CRANKCASE SUB ASSEMBLY
16	83897	2	TAPPET, SOLID	49	84430	1	BALANCER
17	72694	2	PIVOT BALL STUD	50	86002	1	OUTER GEROTOR
18	72696	2	JAM NUT (ROCKER ARM)	51	86026	1	INNER GEROTOR
19	78672	1	SEAL, VALVE STEM	52	88396B	2	PUSH ROD
20	78694	1	PUSH ROD GUIDE PLATE	53	90416A	1	CRANKSHAFT ASSEMBLY
21	83907	2	ROCKER ARM	54	90747	1	BREATHER VALVE ASSEMBLY
22	21714	1	CYLINDER HEAD W/VALVE SEATS AND GUIDES	55	C3150	1	ROCKER COVER GASKET
23	86514	2	VALVE SPRING RETAINER	57	92362	1	ROCKER COVER W/FILL SCREW. AND LOCK WASHER
24	86515	4	VALVE SPRING KEEPER	58	79246	4	M6-1.0 x 16MM HEX HEAD.
25	86516	1	EXHAUST VALVE	59	83921	1	BEARING TUBE SHAFT
26	86517	1	INTAKE VALVE	60	77158	1	OIL SCREEN PICKUP ASSEMBLY
27	89673	2	WASHER, VALVE SPRING	63	76329	1	OIL FILL PLUG
28	91308	2	VALVE SPRING	64	86254	1	"O" RING 17.8 I.D. x 2.4 THICK
29	A9877	1	CAMSHAFT ASSEMBLY	65	93064	1	OIL FILL CAP ASSEMBLY
30	72655	2	CRANKSHAFT 35 I.D. SEAL				

Section 7 – Exploded Views and Parts Lists

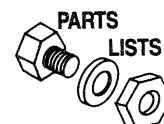
Guardian 8 kW and 10 kW Generators

GN-724 Engine – Drawing No. C2474-A

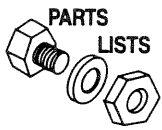


Section 7 – Exploded Views and Parts Lists

Guardian 8 kW and 10 kW Generators
GN-724 Engine – Drawing No. C2474-A



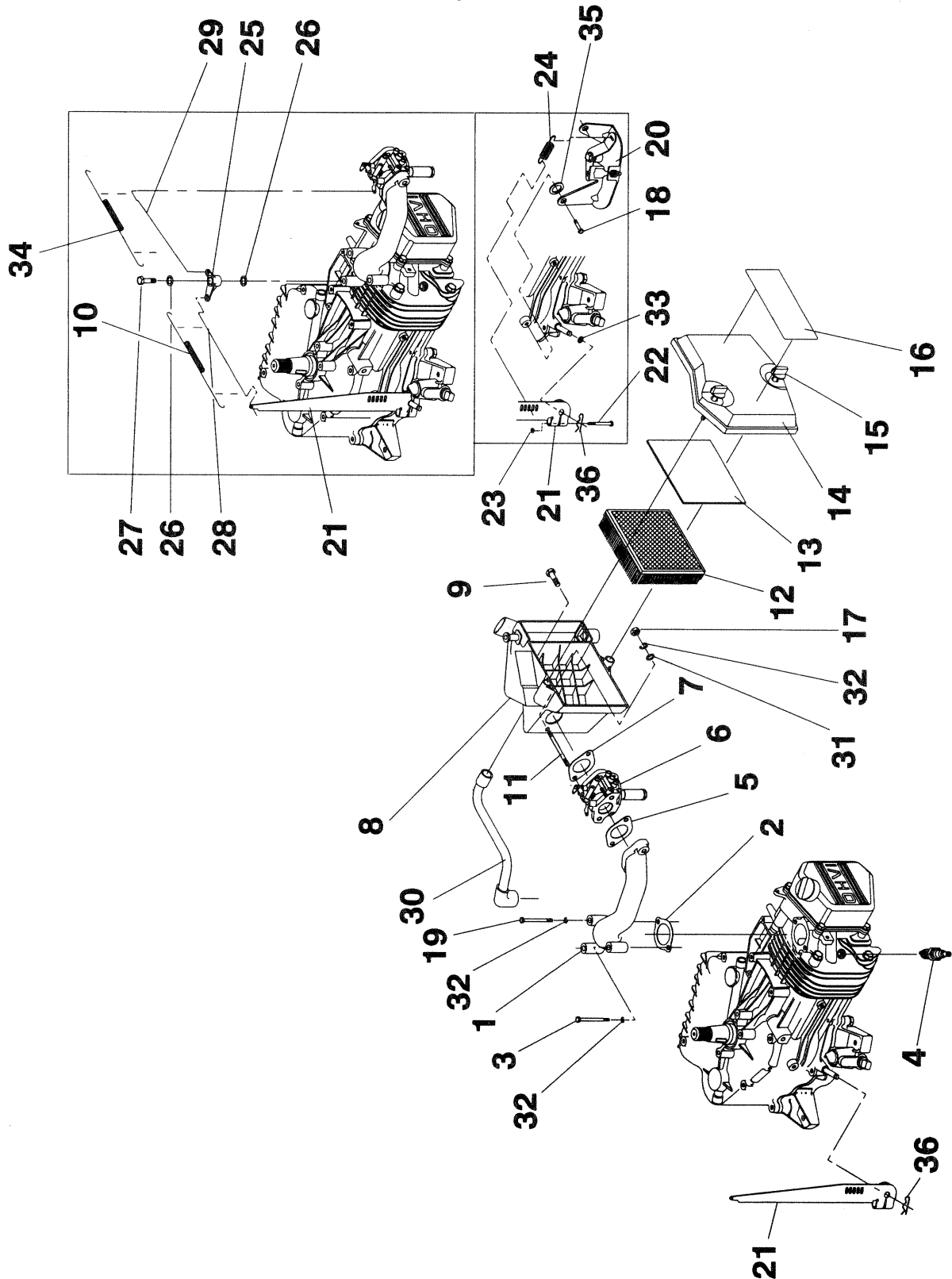
ITEM	PART NO.	QTY.	DESCRIPTION	ITEM	PART NO.	QTY.	DESCRIPTION
*	C1198		GN-724 ENGINE (NOT PICTURED COMPLETE)	310	150-C1198	1	BOLT (STARTER MOTOR)
1	100-C1198	1	CYLINDER ASSEMBLY	311	151-C1198	1	BRUSH SET
2	101-C1198	1	BUSHING/SEAL KIT (MAGNETO SIDE)	333	153-C1198	1	MAGNETO ARMATURE
3	102-C1198	1	OIL SEAL	334	154-C1198	1	SCREW (MAGNETO ARMATURE)
4	103-C1198	1	ENGINE SUMP	337	72347	1	SPARK PLUG
5	104-C1198	1	CYLINDER HEAD (CYLINDER #1)	358	155-C1198	1	ENGINE GASKET SET
5A	105-C1198	1	CYLINDER HEAD (CYLINDER #2)	404	156-C1198	1	WASHER (GOVERNOR CRANK)
7	106-C1198	1	CYLINDER HEAD GASKET	510	157-C1198	1	DRIVE-STARTER
8	107-C1198	1	BREATHER ASSEMBLY	513	75261	1	CLUTCH-DRIVE
9	108-C1198	1	BREATHER GASKET	544	-----	1	STARTER ARMATURE (SERVICED BY 149-C1198 STARTER MOTOR ONLY)
10	109-C1198	1	SCREW (BREATHER ASSEMBLY)	552	158-C1198	1	BUSHING-GOVERNOR CRANK
12	110-C1198	1	CRANKCASE GASKET	552A	159-C1198	1	BUSHING-GOVERNOR CRANK
15	112-C1198	1	OIL DRAIN PLUG	579	160-C1198	1	NUT (STARTER CABLE)
15A	113-C1198	1	OIL DRAIN PLUG	615	161-C1198	1	RETAINER-GOVERNOR SHAFT
16	114-C1198	1	CRANKSHAFT	616	162-C1198	1	CRANK-GOVERNOR
20	115-C1198	1	OIL SEAL	691	165-C1198	1	GOVERNOR SHAFT SEAL
22	116-C1198	1	SCREW (ENGINE SUMP)	697	166-C1198	1	SCREW (DRIVE CAP)
23	117-C1198	1	FLYWHEEL	718	167-C1198	1	PIN-LOCATING
25	119-C1198	1	PISTON ASSEMBLY (STANDARD)	741	168-C1198	1	GEAR-TIMING
	120-C1198	1	PISTON ASSEMBLY (.010 OVERSIZE)	742	169-C1198	1	E-RING RETAINER
	121-C1198	1	PISTON ASSEMBLY (.020 OVERSIZE)	750	170-C1198	1	SCREW (OIL PUMP COVER)
	122-C1198	1	PISTON ASSEMBLY (.030 OVERSIZE)	783	171-C1198	1	GEAR-PINION
26	123-C1198	1	RING SET (STANDARD)	797	173-C1198	1	NUT (BRUSH RETAINER)
	124-C1198	1	RING SET (.010 OVERSIZE)	798	174-C1198	1	SCREW (ROCKER ARM)
	125-C1198	1	RING SET (.020 OVERSIZE)	801	175-C1198	1	CAP-DRIVE
	126-C1198	1	RING SET (.030 OVERSIZE)	802	176-C1198	1	CAP-END
27	127-C1198	1	PISTON PIN LOCK	803	-----	1	HOUSING-STARTER (SERVICED BY 149-C1198 STARTER MOTOR ONLY)
28	128-C1198	1	PISTON PIN (STANDARD)	851	75272	1	SPARK PLUG TERMINAL
29	129-C1198	1	CONNECTING ROD (STANDARD)	868	193-C1198	1	VALVE KEEPER
32	130-C1198	1	SCREW (CONNECTING ROD)	914	109-C1198	1	SCREW (ROCKER COVER)
33	131-C1198	1	EXHAUST VALVE	934	177-C1198	1	SCREW (FAN RETAINER)
34	132-C1198	1	INTAKE VALVE	943	178-C1198	1	O-RING SEAL (OIL PUMP COVER)
35	133-C1198	1	VALVE SPRING (INTAKE)	965	179-C1198	1	OIL PUMP COVER
36	133-C1198	1	VALVE SPRING (EXHAUST)	1005	180-C1198	1	FAN-FLYWHEEL
40	134-C1198	1	VALVE RETAINER	1006	181-C1198	1	RETAINER-FAN
42	193-C1198	1	VALVE KEEPER ASSEMBLY	1017	182-C1198	1	OIL PUMP SCREEN
45	124-85110	1	VALVE TAPPET	1022	183-C1198	1	GASKET-ROCKER COVER
46	136-C1198	1	CAMSHAFT	1023	184-C1198	1	COVER-ROCKER
146	138-C1198	1	TIMING KEY	1024	185-C1198	1	PUMP-OIL
192	139-C1198	1	ROCKER ARM ADJUSTOR	1026	186-C1198	1	ROD-PUSH (STEEL)
219	144-C1198	1	GOVERNOR GEAR	1026A	187-C1198	1	ROD-PUSH (ALUMINUM)
220	145-C1198	1	WASHER (GOVERNOR GEAR)	1029	188-C1198	1	ROCKER ARM
250	146-C1198	1	BREATHER RETAINER	1033	189-C1198	1	VALVE OVERHAUL KIT
252	147-C1198	1	OIL COLLECTOR	1035	190-C1198	1	SHAFT-PUMP
309	149-C1198	1	MOTOR STARTER	1051	191-C1198	1	RING-RETAINING
				1090	192-C1198	1	RETAINER-BRUSH
				1100	230-85110	1	ROCKER ARM PIVOT



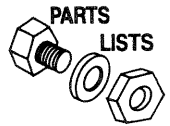
Section 7 — Exploded Views and Parts Lists

Guardian Air-cooled 6 kW Generator

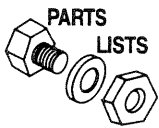
GN-410 Engine Accessories – Drawing No. C2910-B



Section 7 – Exploded Views and Parts Lists
Guardian Air-cooled 6 kW Generator
GN-410 Engine Accessories – Drawing No. C2910-B

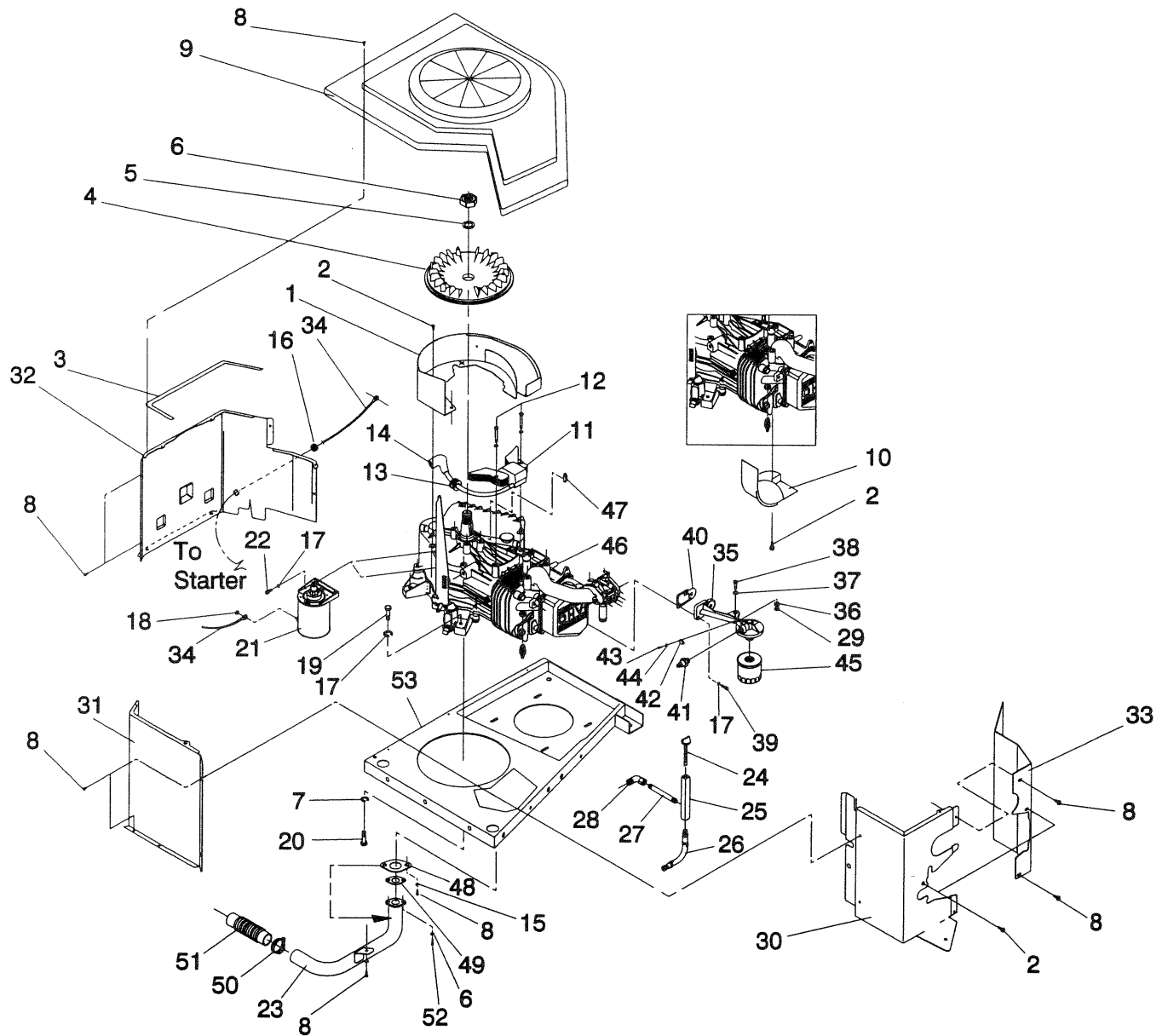


ITEM	PART NO.	QTY.	DESCRIPTION	ITEM	PART NO.	QTY.	DESCRIPTION
1	A6532	1	MANIFOLD, INTAKE	21	91916	1	LEVER, GOVERNOR ARM
2	91039	1	GASKET, INTAKE ADAPTOR	22	83532	1	BOLT, HEX HD. WASHER/LOCK
3	51753	1	HHCS-M6-1.0 x 40 LG				WASHER-M6-1.0 x 30 LG
4	72347	1	SPARK PLUG	23	86681	1	NUT, GOVERNOR LEVER
5	89228	1	GASKET, CARB./MANIFOLD	24	74962C	1	SPRING, GOVERNOR
6	A7336B	1	CARBURETOR	25	91633	1	BELLCRANK, GOV. RODS
7	90970	1	GASKET, AIR CLEANER	26	92586	2	WASHER, FELT-BELLCRANK
8	A6564	1	BASE, AIR CLEANER	27	91161	1	BOLT, SHOULDER M6-1.0 x 15
9	56893	2	CRIMPTITE-#10-24 x 1/2" LG				LG
10	A6778	1	SPRING, ANTILASH	28	A6913	1	ROD, LINKAGE GOV. LEVER-
11	96290	2	STUD, CARB. MOUNT M6-1.0 x				BELLCRANK
			90 LG	29	A6785	1	ROD, LINKAGE BELLCRANK-
12	73111	1	FILTER, AIR				CARB.
13	81646	1	PRE-CLEANER, AIR FILTER	30	A6581	1	BREATHING TUBE, HOSE
14	A6563	1	COVER, CLEANER	31	22473	2	M6-FLAT WASHER
15	C3633	2	SCREW ASSEMBLY, AIR	32	22097	4	M6-LOCK WASHER
			CLEANER	33	A7029	1	NYLON WASHER .31" x .26" x
16	C1228	1	DECAL, AIR CLEANER				.13"
17	49813	2	M6-1.0-NUT	34	A6780	1	SPRING, ANTILASH BELL-
18	83512	2	TAPTITE-M8-1.25 x 16 LG				CRANK TO CARB.
19	20753	1	HHCS-M6-1.0 x 60 LG	35	22145	1	M8-FLAT WASHER
20	92164	1	GOV. SPRING -ADJUSTMENT	36	78658	1	R-PIN
			BRACKET				



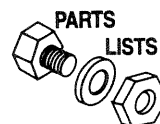
Section 7 – Exploded Views and Parts Lists

Guardian Air-cooled 6 kW Generator
GN-410 Sheet Metal – Drawing No. C2480-B

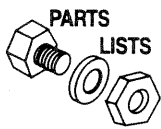


Section 7 – Exploded Views and Parts Lists

**Guardian Air-cooled 6 kW Generator
GN-410 Sheet Metal – Drawing No. C2480-B**



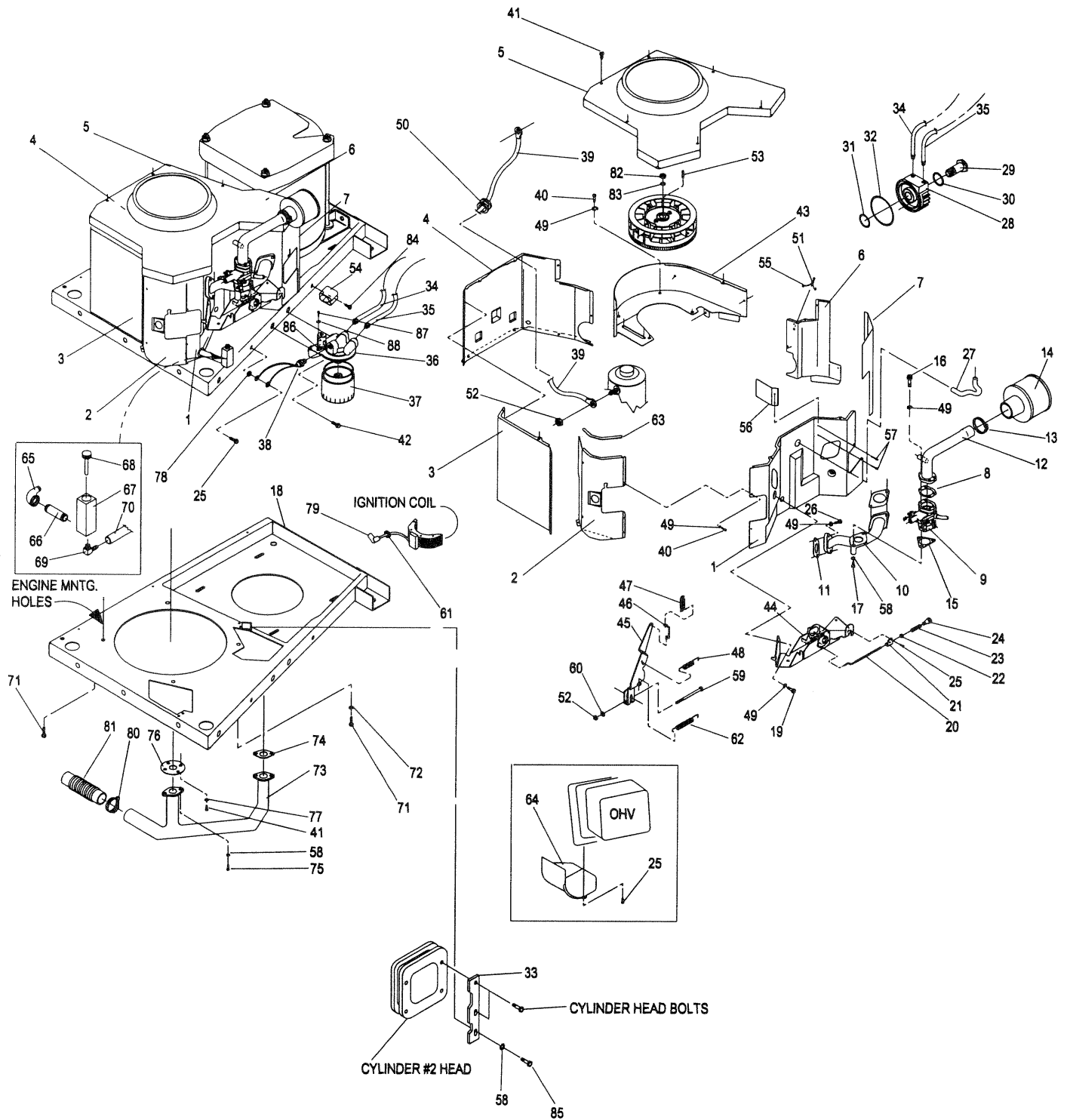
ITEM	PART NO.	QTY.	DESCRIPTION	ITEM	PART NO.	QTY.	DESCRIPTION
1	A4323	1	SCROLL, FLYWHEEL	28	38593	1	BRASS STREET ELBOW, 3/8"
2	45756	9	SCREW, TAPTITE M6-1.0 x 10 LG	29	22473	1	FLAT WASHER, 1/4"-M6
3	29289	2.5 FT.	FOAM TAPE (SOLD BY FOOT)	30	A6357A	1	WRAPPER, ENGINE SPARK PLUG
4	SRV-91222-F	1	FLYWHEEL, MAGNETIZED	31	90954B	1	WRAPPER, STARTER SIDE
5	67198-N	1	WASHER, BELLVILLE M20	32	A6489A	1	WRAPPER, CRANKCASE
6	67890	1	NUT, M20 x 1.5	33	A6359A	1	WRAPPER, CARB. SIDE
7	A4456	1	3/8" SPECIAL LOCK WASHER	34	11-74260	1	ASSEMBLY, WIRE-STARTER (#16)
8	56893	27	SCREW, CRIMPTITE #10-24 x .5" LG	35	90892	1	SUPPORT, OIL FILTER
9	A6358	1	COVER, TOP FLYWHEEL	36	91159	1	BUSHING, RUBBER
10	91646	1	DEFLECTOR, EXHAUST PORT	37	91160	1	WASHER, RUBBER
11	92572	1	ASSEMBLY, IGNITION COIL	38	91161	1	BOLT, SHOULDER-M6-1.0 x 15 LG.
12	92079	2	SCREW, TAPTITE M6-1.0 x 25 LG	39	49821	2	BOLT, SOCKET HD. CAP-SCR.-M8-1.25 x 30 LG
13	22717A	1	GROMMET, RUBBER	40	86999	1	GASKET, OIL FILTER SUP-PORT ADAPTER
14	73132	1	BOOT, SPARK PLUG	41	60108	1	SWITCH, OIL PRESSURE-10 PSI
15	23897	3	#10 FLAT WASHER	42	75281	1	SWITCH, OIL TEMPERATURE
16	89685	1	GROMMET, RUBBER	43	70728	2	SCREW, PHILIPS PAN HD. MACH.-M3-.5 x 5 LG
17	22129	8	LOCK WASHER-M8	44	43182	2	LOCK WASHER-M3
18	22127	1	HEX NUT-1/4"-20	45	70185	1	FILTER, OIL
19	57821	2	CAPSCR., HEX HD.-M8-1.25 x 40 LG	46	C3304	1	ENGINE, LONG BLOCK-GN410VSRV
20	59637	4	SCREW, TAPTITE 3/8"-16 x .75" LG	47	82774	1	KEY, WOODRUFF 4 x 19 DIA.
21	21544	1	MOTOR, STARTER-12VOLT	48	C1951	1	GASKET
22	40976	2	SOCKET HD. CAPSCR., M8-1.25 x 20 LG	49	90239	1	GASKET
23	A9841	1	EXHAUST MANIFOLD	50	C2866	1	CLAMP-1.25"
24	A8875	1	ASSEMBLY, DIPSTICK & CAP	51	A9816	1	EXHAUST FLEX
25	A7299	1	OIL DRAIN/DIPSTICK TUBE	52	40976	2	M8- 1.25 x 20 SOCKET HEAD
26	A9539	1	OIL DRAIN HOSE ASSEMBLY	53	A9736B	1	FRAME
27	31580	1	PIPE NIPPLE, 3/8" x 8.5" LG.				



Section 7 — Exploded Views and Parts Lists

Guardian 8 kW and 10 kW Generators

GN-724 Engine Accessories and Sheet Metal – Drawing No. C4140-B

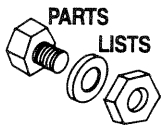


Section 7 – Exploded Views and Parts Lists

Guardian 8 kW and 10 kW Generators
GN-724 Engine Accessories and Sheet Metal – Drawing No. C4140-B

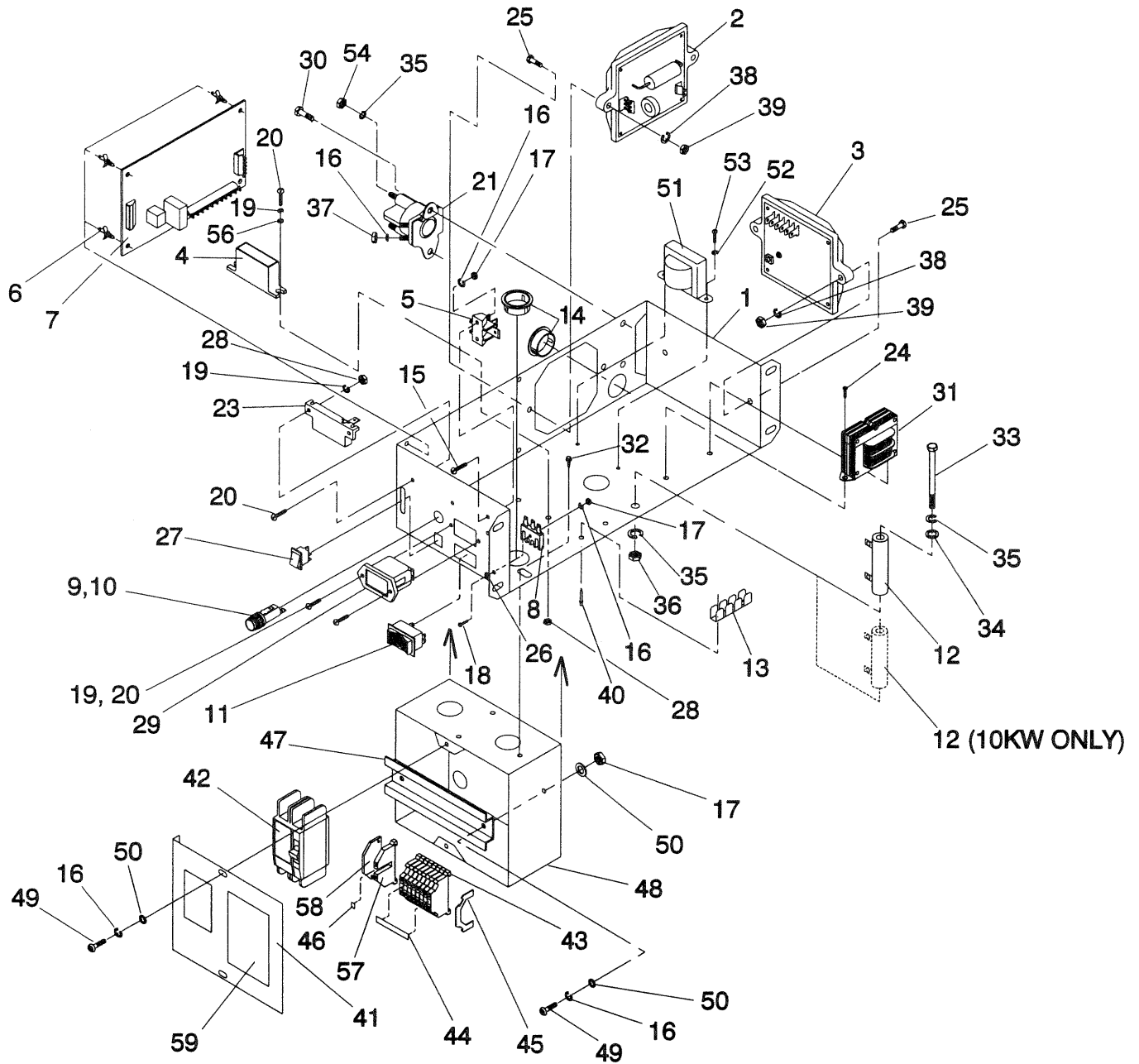


ITEM	PART NO.	QTY.	DESCRIPTION	ITEM	PART NO.	QTY.	DESCRIPTION
1	C1350A	1	WRAPPER, VALLEY	47	C1680	1	SPRING, ANTILASH
2	C1351A	1	WRAPPER, CYLINDER #1	48	C1859	1	SPRING, GOVERNOR
3	C1354A	1	STARTER, WRAPPER				3600RPM 10KW
4	C1353A	1	WRAPPER, CRANKCASE		C4203	1	SPRING, GOVERNOR
5	C1355A	1	COVER, ENGINE (8 KW)				2900RPM 8KW
	C1355	1	COVER, ENGINE (10 KW)	49	22097	18	1/4"- M6 LOCK WASHER
6	C1352A	1	WRAPPER, CYLINDER #2-	50	22717B	1	1/16"- 9/16"GROMMET
			BACK	51	22717A	1	1/16"- 3/8" GROMMET
7	C1468A	1	WRAPPER CYLINDER #2,	52	22127	2	1/4-20 HEX NUT
			FRONT	53	C2420	1	KEY, FLYWHEEL
8	C3218	1	GASKET, AIR CLEANER/ CARB	54	65852	1	CLIP, SPRING
9	C1460	1	CARBURETOR	55	C2441	1	WIRE DIODE ASSEMBLY
10	C1285	1	MANIFOLD INTAKE	56	C1863	1	BAFFLE
11	C1625	2	GASKET, INTAKE	57	36261	2	POP RIVET, 1/8" x .23 S.S.
12	C2784	1	TUBE, INTAKE	58	22129	7	5/16"- M8 LOCK WASHER
13	35685	1	CLAMP, #28	59	27883	1	CARRIAGE BOLT 1/4-20 x 1-1/4"
14	70941	1	FILTER, AIR	60	49811	1	M6 FLAT WASHER
15	C1626	1	GASKET, CARBURETOR	61	91159	2	RUBBER BUSHING
16	64182	4	M6-1.0 x 16 SOCKET HEAD	62	74962A	1	SPRING, GOVERNOR
			SCREW	63	C2145	1	GASKET, SET ENGINE COVER
17	39287	2	M8-1.25 x 45 HEX HEAD BOLT	64	74902	2	BARREL WRAPPER
18	A9736	1	FRAME, 8KW & 10KW	65	38593	1	90 DEG.ST. ELBOW 3/8" NPT
19	22287	2	1/4-20 x 3/4" HEX HEAD BOLT	66	C1983	1	3/8" x 11-1/4" PIPE
20	C2421	1	ROD, SPEED CONTROL	67	A7299	1	DIPSTICK TUBE
21	C2425	1	BRACKET, SPEED CONTROL	68	A8875	1	DIPSTICK & CAP
22	C2424	1	CAP, SPRING	69	43790A	1	90 DEG. HOSE FITTING 3/8" x
23	C2422	1	SPRING, SPEED CONTROL				3/8" NPT
24	C2423	1	NUT, SPEED CONTROL	70	C2078	1	OIL DRAIN HOSE
25	74908	4	M5-0.8 x 10 TAPTITE	71	75246	4	3/8-16 x 1-1/4" TAPTITE
26	22413	4	1/4-20 x 1" HEX HEAD BOLT	72	A4456	1	3/8" SPECIAL LOCK WASHER
27	C1702	1	BREATHER HOSE	73	A9820	1	EXHAUST MANIFOLD
28	A5358	1	OIL ADAPTOR	74	C1624	2	EXHAUST GASKET
29	A9028	1	OIL ADAPTOR BOLT	75	75789	4	5/16-18 x 3/4" SOCKET HEAD
30	C1557	1	O-RING, 13/16" I.D. 1/16" W				SCREW
31	C1547	1	O-RING, 7/8"	76	C1950	2	GASKET, EXHAUST
32	C1546	1	O-RING, 2-3/8"	77	23897	6	#10- M5 FLAT WASHER
33	C3961	1	ENGINE SUPPORT BRACKET	78	A8475	1	#10 SPECIAL WASHER
34	C3562	1	OIL TUBE, RETURN	79	73132	2	BOOT, SPARK PLUG
35	C3561	1	OIL TUBE, OUT	80	C2866	1	CLAMP
36	A5360	1	OIL FILTER SUPPORT	81	A9816	1	EXHAUST FLEX
37	70185	1	OIL FILTER	82	C2418	1	NUT, FLYWHEEL
38	60108	1	OIL PRESSURE SWITCH	83	C2419	1	WASHER, FLYWHEEL
39	11-74260	1	STARTER CABLE	84	C2824	1	TAP-R 10-32 x 9/16"
40	22507	6	1/4-20 x 1/2" HEX HEAD BOLT	85	55173	1	M8-1.25 x 20 HEX HEAD
41	56893	29	10-24 x 1/2" CRIMPTITE				SCREW
42	A2311	2	1/4-20 x 1" SWAGE FASTENER	86	75281	1	HIGH TEMP. SWITCH
43	C1349	1	SCROLL, FLYWHEEL	87	C1085	2	M3-0.5 x 8mm, PAN HEAD
44	C1677	1	GOVERNOR BRACKET,				SCREW
			ASSEMBLY	88	43182	2	M3 LOCK WASHER
45	C1676	1	GOVERNOR LEVER				
46	C1679	1	GOVERNOR ROD, CARB				

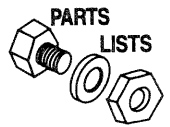


Section 7 – Exploded Views and Parts Lists

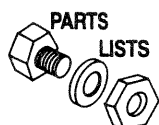
Guardian Air-cooled 6 kW, 8 kW and 10 kW Generators
Control Panel Assembly – Drawing No. C2373-B



Section 7 – Exploded Views and Parts Lists
Guardian Air-cooled 6 kW, 8 kW and 10 kW Generators
Control Panel Assembly – Drawing No. C2373-B

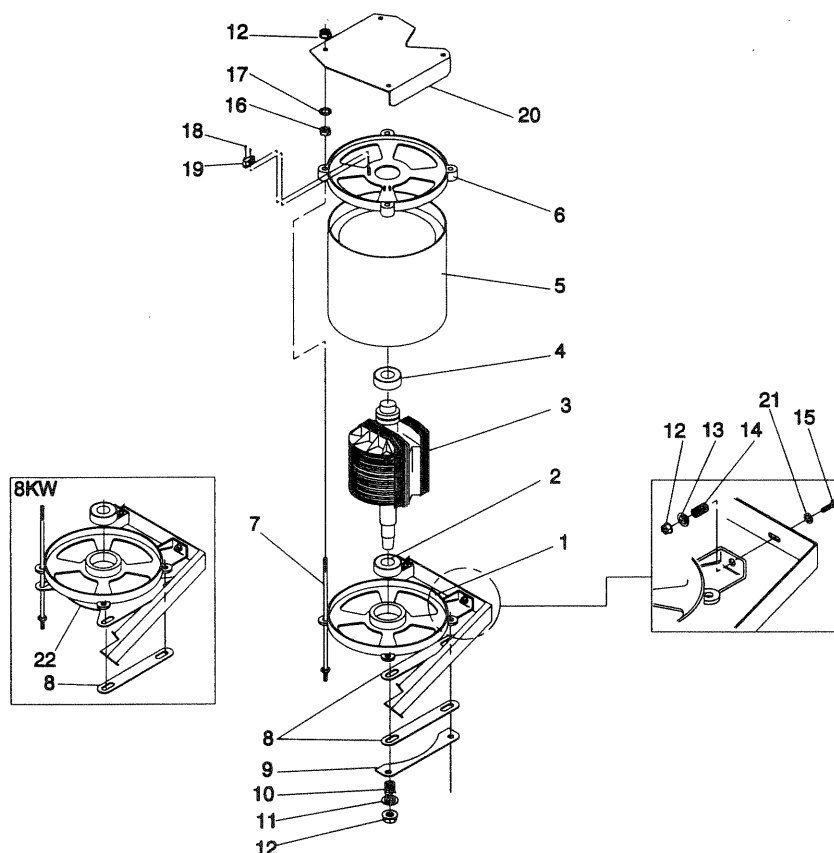


ITEM	PART NO.	QTY.	DESCRIPTION	ITEM	PART NO.	QTY.	DESCRIPTION
1	A9909	1	CONTROL PANEL	29	C1457	1	HOURMETER
2	A1801	1	ASSEMBLY, ENGINE BATTERY CHARGER	30	A2110	2	SWAGEFORM, 1/4"-20
3	83048	1	ASSEMBLY, VOLTAGE REGULATOR	31	99076	1	TRANSFORMER, 16V 56VA
4	C2174	1	RELAY, 12V. 25A SPST	32	74908	3	M5-0.8 x 10 TAPTITE
5	75210A	1	TERMINAL BLOCK	33	A2053	1	M6-1.0 x 65 HEX HEAD (6KW & 8KW)
6	40213	4	PCB SUPPORT, SNAP-IN		C7125	1	M6-1.0 x 120 HEX HEAD (10KW)
7	C1537	1	ASSEMBLY, PCB CONTROLLER	34	22473	1	M6 FLAT WASHER
8	65795	1	RECTIFIER, BATTERY CHARGER	35	22097	3	M6 LOCK WASHER
9	32300	1	HOLDER, FUSE	36	49813	1	M6-1.0 HEX NUT
10	22676	1	FUSE, 15 AMP.	37	22471	2	#8-32 HEX NUT
11	33873	1	SWITCH, DPDT-ROCKER	38	49226	4	M5 LOCK WASHER
12	75234	1	RESISTOR, 1 OHM 25W (6KW)	39	51716	4	M5-0.8 HEX NUT
	75234	2	RESISTOR, 1 OHM 25W (10KW)	40	36261	2	POP RIVET 1/8 x .23
	C7123	1	RESISTOR, 0.5 OHM 25W (8KW)	41	A9896	1	BOX COVER
13	A2769	1	LUG, GROUND 8-TABS	42	A9947B	1	45A CIRCUIT BREAKER (10KW)
14	23484F	3	SNAP BUSHING		A9947A	1	35A CIRCUIT BREAKER (8KW)
15	75476	2	M4-0.7 x 16 PHILLIPS PAN HEAD		A9947	1	25A CIRCUIT BREAKER (6KW)
16	22264	7	M4 LOCK WASHER	43	A9992A	8	TERMINAL BLOCK
17	51715	5	M4-0.7 HEX NUT	44	A9992D	1	NUMBER STRIP
18	80077	1	M4-0.7 x 20 PHILLIPS PAN HEAD	45	A9992B	2	END BRACKETS
19	43182	6	M3 LOCK WASHER	46	A9992F	1	WIRE IDENTIFICATION TAB
20	43181	6	M3-0.5 x 10 PAN HEAD	47	A9872	1	DIN RAIL
21	86729	1	STARTER CONTACTOR	48	A9895	1	CONNECTION BOX
22	C1227	1	DECAL, CONTROL PANEL (NOT SHOWN)	49	75475	4	M4 x 0.7 x 10 PHMS
23	54502	1	CIRCUIT BREAKER AUTO RESET	50	38150	6	M4 FLAT WASHER
24	A1495	2	M4-0.7 x 10 TAPTITE	51	C2657	1	TRANSFORMER, 16V 6VA
25	75235	4	M5-0.8 x 30 HEX HD.	52	22155	2	#6 LOCK WASHER
26	22985	1	M4/#6 FLAT WASHER	53	C1381	2	#6-32 x 1/4" PHILLIPS PAN HEAD, SELF TAPPING
27	92113	1	SWITCH SPDT (MOM)	54	22127	2	1/4"-20 HEX NUT
28	51714	4	M3-0.5 HEX NUT	55	C1226	1	HARNESS (NOT SHOWN)
				56	31879	2	#4 FLAT WASHER
				57	A9992E	1	10mm TERMINAL BLOCK
				58	A9992G	1	10mm INSULATING PLATE
				59	C1229	1	DECAL, CUSTOMER CONNECTION



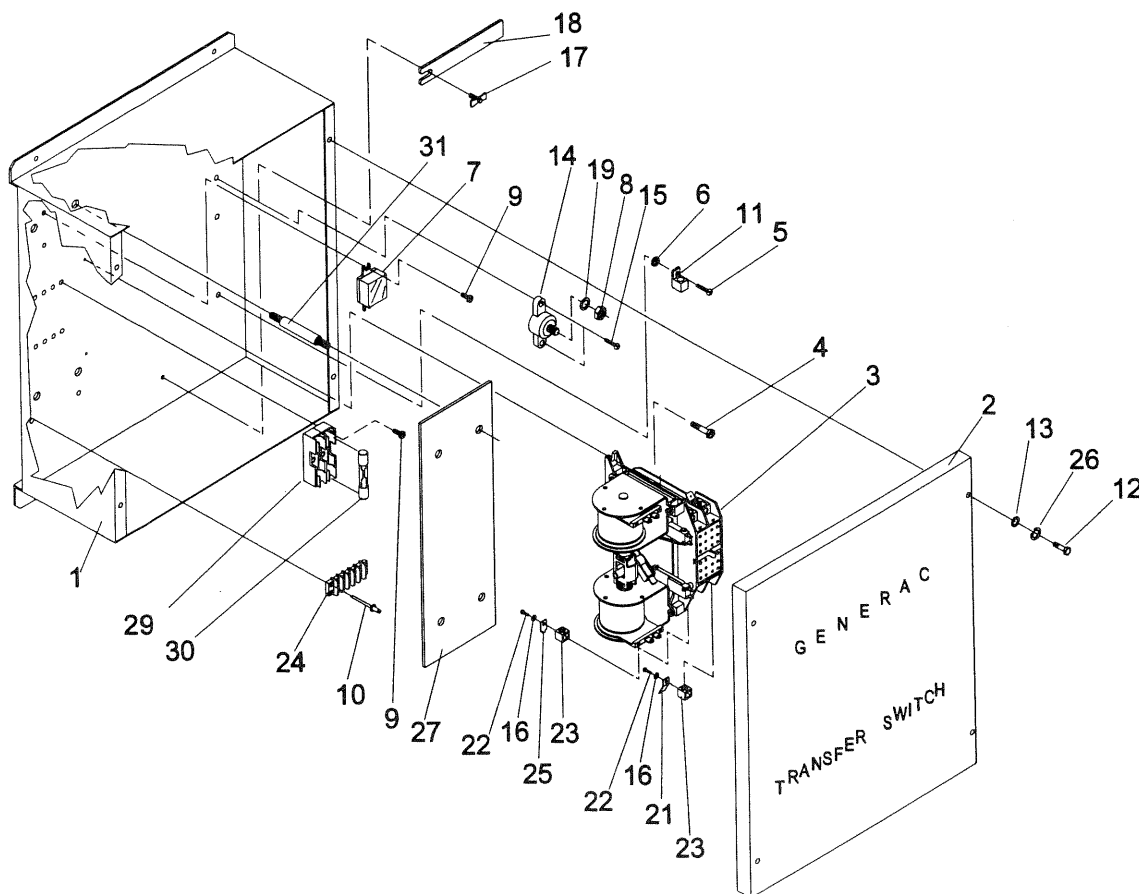
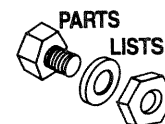
Section 7 – Exploded Views and Parts Lists

Guardian Air-cooled 6 kW, 8 kW and 10 kW Generators
Alternator – Drawing No. C4143-A



ITEM	PART NO.	QTY.	DESCRIPTION	ITEM	PART NO.	QTY.	DESCRIPTION
1	75995	1	6/8KW LOWER BEARING CARRIER	10	75242	4	ALTERNATOR MOUNTING SPRING
	A9226	1	10KW LOWER BEARING CARRIER	11	75237	4	SPRING CENTERING WASHER
2	31971	1	BEARING	12	52858	10	FLANGED LOCKING NUT M8- 1.25
3	A5649H	1	6KW ROTOR ASSEMBLY	13	75215	2	SPRING CENTERING WASHER
	73163H	1	8KW ROTOR ASSEMBLY	14	29459	2	BELT TENSIONING SPRING
	A9064	1	10KW ROTOR ASSEMBLY	15	C2375	2	M8-1.25 x 90 HEX HD. CAP SCREW (6/8KW)
4	73159	1	BEARING		39288	2	M8-1.25 x 55 HEX HD. CAP SCREW (10KW)
5	C1854H	1	6KW STATOR ASSEMBLY	16	45771	4	M8 NUT
	C1855H	1	8KW STATOR ASSEMBLY	17	27756	4	NYLON WASHER
	C1856	1	10KW STATOR ASSEMBLY	18	66849	2	M5-0.8 x 16MM SCREW
6	72379B	1	6/8KW UPPER BEARING CARRIER	19	66386	1	BRUSH HOLDER ASSEMBLY
	A9227	1	10KW UPPER BEARING CARRIER	20	C2094	1	6/8KW ALTERNATOR COVER
7	77006	4	8/10 KW STATOR BOLT		C1696	1	10KW ALTERNATOR COVER
	A6529	4	6 KW STATOR BOLT	21	22145	2	M8 FLAT WASHER
8	73146	4	6KW NYLON SLIDES	22	A5351	1	8KW NYLON SLIDE
	73146	2	8KW NYLON SLIDES				
	A9918	4	10KW NYLON SLIDES				
9	C1878	2	6/8KW SLIDE SUPPORT				
	A9202	2	10KW SLIDE SUPPORT				

Section 7 – Exploded Views and Parts Lists
Guardian Air-cooled 6 kW, 8 kW and 10 kW Generators
Transfer Switch – Drawing No. C2696-

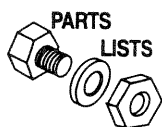


ITEM PART NO. QTY. DESCRIPTION

1	C2259	1	TRANSFER SWITCH ENCLOSURE
2	74975	1	ENCLOSURE COVER
3	C2237	1	TRANSFER SWITCH
4	74908	4	M5-0.8 x 10 TAPTITE
5	24912	1	1/4-20 x 5/8" TAPTITE
6	A1658	1	WASHER 1/4 SHAKEPROOF
7	63617	1	RELAY-10AMP. 12 VOLTS DC
8	27628	1	HEX NUT-3/8"-16
9	24940	4	8-32 x 1/2" TAPTITE
10	A1661	2	POP RIVET, .156 D x .5
11	62684	1	LUG, GROUND
12	42568	4	M6- 1.0 x 20 HEX HEAD BOLT
13	22097	4	LOCK WASHER M6
14	57073	1	NEUTRAL LUG-JUNCTION BLOCK
15	66849	2	M5-.8 x 16 TAPTITE
16	22152	6	LOCK WASHER NO. 10

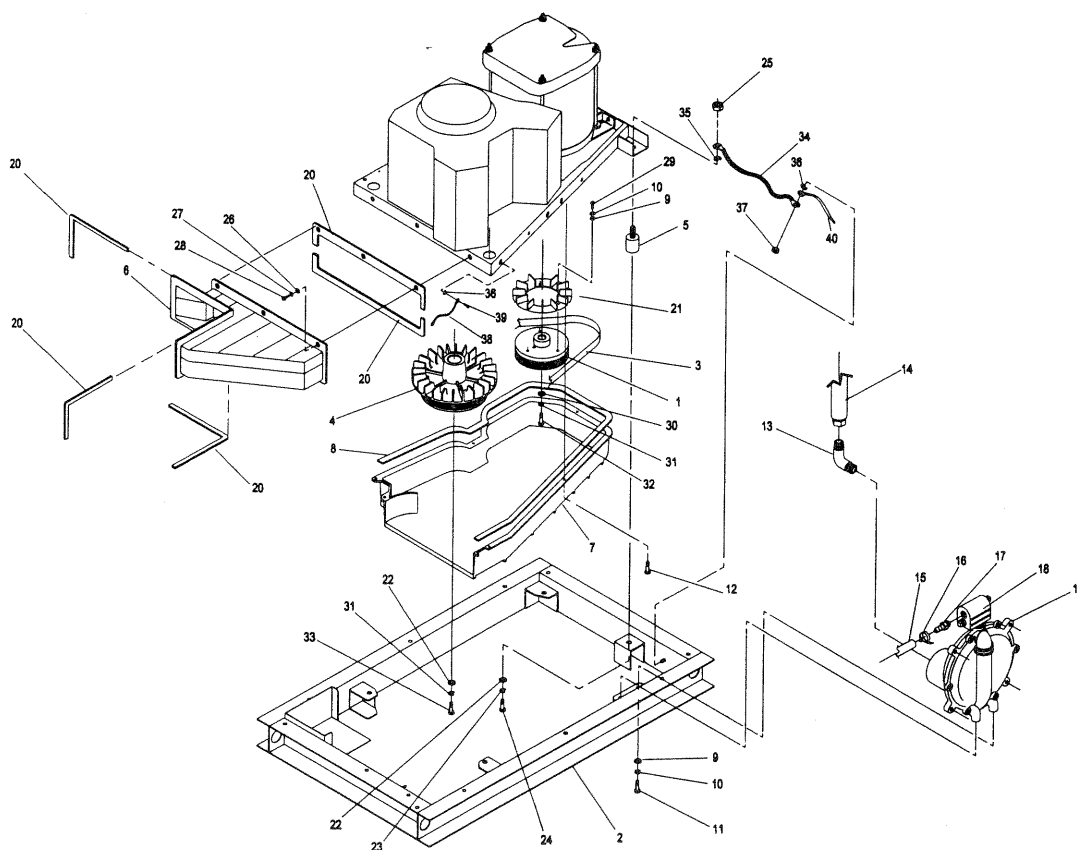
ITEM PART NO. QTY. DESCRIPTION

17	64113	1	WING NUT, M6-1.0
18	77441	1	MANUAL TRANSFER HANDLE
19	22131	1	FLAT WASHER-3/8"
21	74138	4	MALE DISCONNECT ADAPTOR
22	36932	6	SCREW, PAN HEAD NO. 10-32 x 1/4"
23	77033	6	SOLDERLESS LUG
24	48850	1	TERMINAL BLOCK-5 POSITION
25	77052	2	LUG .25-TAB #10-SCRW
26	22473	4	FLAT WASHER-M6
27	C2261	1	COVER
28	C2260	1	TRANSFER WIRE HARNESS (NOT SHOWN FOR CLARITY)
29	73591	2	FUSE HOLDER
30	73590A	2	FUSE, 5A 600 VOLT
31	40213B	4	STAND-OFF



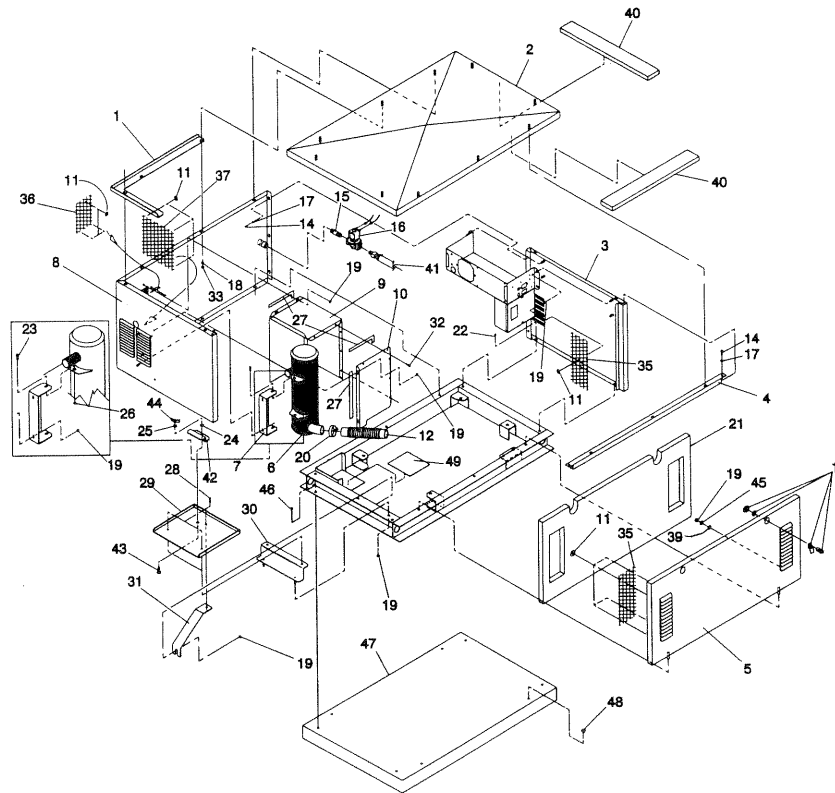
Section 7 – Exploded Views and Parts Lists

Guardian Air-cooled 6 kW, 8 kW and 10 kW Generators
Mounting Base Assembly – Drawing No. C4141-A



ITEM	PART NO.	QTY.	DESCRIPTION	ITEM	PART NO.	QTY.	DESCRIPTION
1	C1753	1	ALTERNATOR PULLEY, 6 KW/ 10 KW	20	C2131	1	GASKET SET, AIR DUCT
	C1753A	1	ALTERNATOR PULLEY, 8 KW	21	C1751	1	ALTERNATOR FAN MODEL, 6 KW/8 KW
2	A9628	1	ASSEMBLY, ENCLOSURE BASE		C1752	1	ALTERNATOR FAN MODEL, 10 KW
3	C1112	1	V-BELT	22	22131	5	3/8"- M10 FLAT WASHER
4	75224D	1	ENGINE PULLEY, 6 KW/10 KW	23	22237	4	3/8" LOCK WASHER
	75224G	1	ENGINE PULLEY, 8 KW	24	23152	4	3/8"-16 x 3/4" HEX HEAD BOLT
5	38353	4	RUBBER MOUNT	25	22241	4	3/8"-16 NUT
6	A9593	1	EXHAUST DUCT ASSEMBLY	26	22145	3	5/16"- M8 FLAT WASHER
7	A9827	1	BLOWER HOUSING	27	22129	3	5/16"- M8 LOCK WASHER
8	C1441	1	GASKET SET, BLOWER HOUSING	28	55173	3	M8-1.25 x 20 HEX HEAD
9	22473	5	1/4"- M6 FLAT WASHER	29	43116	3	M6-1.0 x 12 HHCS
10	22097	5	1/4"- M6 LOCK WASHER	30	49451	1	7 GA. x .41" x 1.62" FLAT WASHER
11	22287	2	1/4"-20 x 3/4" HEX HEAD	31	22237	2	3/8" LOCK WASHER
12	C2824	7	TAP-R #10-32 x 9/16"	32	42633	1	3/8"-24 x 1" HEX HEAD
13	C3117	1	90 DEG. STREET ELBOW-3/4"- 1/2" NPT	33	73118	1	3/8"-24 x 2-1/4" HEX HEAD
14	C3058	1	HOSE ASSEMBLY	34	C2417	1	GROUND STRAP
15	74994	1 FT.	1/2" I.D. HOSE	35	A4456	1	3/8" LOCK WASHER-SPECIAL
16	57822	2	HOSE CLAMP #8	36	A1658	2	1/4" LOCK WASHER-SPECIAL
17	63463	1	BARBED HOSE FITTING 3/8" NPT x 1/2"	37	49813	1	M6-1.0 NUT
18	C1616	1	8/10 KW LOAD BLOCK	38	AB38805	1	CABLE, BLACK-BATTERY
	C1616B	1	6 KW LOAD BLOCK	39	A2311	1	1/4"-20 x 1" FASTENER
19	75211	1	GAS REGULATOR	40	064-91297	1	WIRE, GROUND

Section 7 – Exploded Views and Parts Lists
Guardian Air-cooled 6 kW, 8 kW and 10 kW Generators
Enclosure – Drawing No. C4139-A



ITEM	PART NO.	QTY.	DESCRIPTION	ITEM	PART NO.	QTY.	DESCRIPTION
1	A9962	1	PLATE, INTAKE	29	A9961	1	BATTERY TRAY
2	A9892	1	ENCLOSURE, ROOF	30	A9963	1	BATTERY TRAY SUPPORT
3	C4132	1	PANEL, ENCLOSURE-ALT SIDE	31	A9964	1	ANGLED BATTERY TRAY SUPPORT
4	C4109	1	RAIL, TOP SUPPORT	32	56893	5	CRIMPTITE-#10-24 x 1/2"
5	A9633	1	ENCLOSURE, DOOR	33	69673J	5	5/16"-18 HEX LOCKING FLANGE NUT
6	A9651	1	MUFFLER	34	SRV C3677	1	KEY, REPLACEMENT (NOT SHOWN)
7	A9897	1	SUPPORT, BRACKET MUFFLER	35	C2506A	3	MESH, DOOR PANEL
8	C4131	1	SIDE & BACK ENCLOSURE	36	C2506B	1	MESH, EXHAUST BOX
9	A9631	1	BOX, MUFFLER	37	C2506C	1	MESH, EXHAUST OUTLET
10	A9632	1	COVER, EXHAUST BOX	38	C2309	1	DOOR DECAL (NOT SHOWN) (04077, 04079, 04109)
11	78115	19	SELF LOCKING DOME WASHER		C3176	1	DOOR DECAL (NOT SHOWN) (04178)
12	A9816	1	FLEX-EXHAUST PIPE		C3177	1	DOOR DECAL (NOT SHOWN) (04177)
13	C1023	2	DOOR LATCH	39	063-91297	1	WIRE, GROUND
14	A2110	5	1/4"-20 x 1/2" SWAGE FASTENER	40	C2502	1	BARRIER FOAM
15	26915	1	3/4" NPT CLOSE NIPPLE	41	C3058	1	HOSE ASSEMBLY
16	A2666	1	FUEL SOLENOID	42	C2937	1	BATTERY HOLD-DOWN
17	22473	5	1/4"-M6 FLAT WASHER	43	C3062	1	CARRIAGE BOLT 5/16"-18 x 1"
18	C3168	1	5/16" SPECIAL LOCK WASHER	44	A8379	1	5/16"-18 WING NUT
19	52857	18	M6 -1.0 LOCKING FLANGE NUT	45	A1658	1	1/4" SPECIAL LOCK WASHER
20	C2866	1	EXHAUST CLAMP	46	C5292	4	PLASTITE, 1/4"-10 x 3/4"
21	C3985	1	FOAM DOOR	47	C5084A	1	INSTALLATION PAD
22	C3906	6	M6- 1.0 x 16 HEX HD. & SELF-ALIGNING SCREW	48	C5291	4	PLUG, INSTALLATION PAD- 3/8"
23	51756	2	M10-1.5 x 20 HEX HEAD	49	C5104	1	INSULATION, MUFFLER BOX
24	22145	1	5/16"-M8 FLAT WASHER				
25	22129	1	5/16"-M8 LOCK WASHER				
26	52859	2	M10-1.5 LOCKING NUT				
27	C2310	1	GASKET, SET-MUFFLER BOX				
28	A2393	3	M6 1.0 x 16 FLAT SOCKET HD. CAPSCR.				



Section 8 – Warranty

Guardian Air-cooled 6 kW, 8 kW and 10 kW Generators

NOTE: This Emission Control Warranty Statement pertains to this product only IF the generator size is 15 kW or below.

CALIFORNIA EMISSION CONTROL WARRANTY STATEMENT

YOUR WARRANTY RIGHTS AND OBLIGATIONS

The California Air Resources Board (CARB) and Generac Power Systems, Inc. (Generac) are pleased to explain the Emission Control System Warranty on your new 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 will warrant the emission control system on your engine for the periods of time listed below provided there has been no abuse, neglect, unapproved modification or improper maintenance of your engine.

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

MANUFACTURER'S EMISSION CONTROL SYSTEM WARRANTY COVERAGE:

Emissions control systems on 1995 and later model year engines are warranted for two years as hereinafter noted. If, during such warranty period, any emission-related component or system on your engine is found to be defective in materials or workmanship, repairs or replacement will be performed by a Generac Authorized Warranty Service Facility.

PURCHASER'S/OWNER'S WARRANTY RESPONSIBILITIES:

As the engine purchaser/owner, you are responsible for the completion of all required maintenance as listed in your factory supplied *Owner's Manual*. For warranty purposes, Generac recommends that you retain all receipts covering maintenance on your engine. However, Generac cannot deny warranty solely due to the lack of receipts or for your failure to ensure the completion of all scheduled maintenance.

As the engine purchaser/owner, you should, however, be aware that Generac may deny any and/or all warranty coverage or responsibility if your engine, or a part/component thereof, has failed due to abuse, neglect, improper maintenance or unapproved modifications, or the use of counterfeit and/or "grey market" parts not made, supplied or approved by Generac.

You are responsible for contacting a Generac Authorized Warranty Service Facility as soon as a problem occurs. The warranty repairs should be completed in a reasonable amount of time, not to exceed 30 days.

Warranty service can be arranged by contacting either your selling dealer or a Generac Authorized Warranty Service Facility. To locate the Generac Authorized Warranty Service Facility nearest you, call our toll-free number:

1-800-333-1322

IMPORTANT NOTE: This warranty statement explains your rights and obligations under the Emission Control System Warranty (ECS Warranty), which is provided to you by Generac pursuant to California law. See also the "Generac Limited Warranties for Generac Power Systems, Inc.," which is enclosed herewith on a separate sheet, also provided to you by Generac. The ECS Warranty applies **only** to the emission control system of your new engine. If there is any conflict in terms between the ECS Warranty and the Generac Warranty, the ECS Warranty shall apply except in circumstances where the Generac Warranty may provide a longer warranty period. Both the ECS Warranty and the Generac Warranty describe important rights and obligations with respect to your new engine.

Warranty service can be performed only by a Generac Authorized Warranty Service Facility. When requesting warranty service, evidence must be presented showing the date of the sale to the original purchaser/owner.

If you have any questions regarding your warranty rights and responsibilities, you should contact Generac at one of the following addresses:

For Air-cooled Product ...

**ATTENTION WARRANTY DEPARTMENT
GENERAC POWER SYSTEMS, INC.
P.O. BOX 297
WHITEWATER, WI 53190**

Part 1

For Liquid-cooled Product ...

**ATTENTION WARRANTY DEPARTMENT
GENERAC POWER SYSTEMS, INC.
211 MURPHY DRIVE
EAGLE, WI 53119**



EMISSION CONTROL SYSTEM WARRANTY

Emission Control System Warranty (ECS Warranty) for 1995 and later model year engines:

- (a) Applicability: This warranty shall apply to 1995 and later model year engines. The ECS Warranty Period shall begin on the date the new engine or equipment is purchased by/delivered to its original, end-use purchaser/owner and shall continue for 24 consecutive months thereafter.
- (b) General Emissions Warranty Coverage: Generac warrants to the original, end-use purchaser/owner of the new engine or equipment and to each subsequent purchaser/owner that each of its engines is ...
 - (1) Designed, built and equipped so as to conform with all applicable regulations adopted by the CARB pursuant to its authority, and
 - (2) Free from defects in materials and workmanship which, at any time during the ECS Warranty Period, may cause a warranted emissions-related part to fail to be identical in all material respects to the part as described in the engine manufacturer's application for certification.
- (c) The ECS Warranty only pertains to emissions-related parts on your engine, as follows:
 - (1) Any warranted, emissions-related parts that are not scheduled for replacement as required maintenance in the *Owner's Manual* shall be warranted for the ECS Warranty Period. If any such part fails during the ECS Warranty Period, it shall be repaired or replaced by Generac according to Subsection (4) below. Any such part repaired or replaced under the ECS Warranty shall be warranted for the remainder of the ECS Warranty Period.
 - (2) Any warranted, emissions-related part that is scheduled only for regular inspection as specified in the *Owner's Manual* shall be warranted for the ECS Warranty Period. A statement in such written instructions to the effect of "repair or replace as necessary" shall not reduce the ECS Warranty Period. Any such part repaired or replaced under the ECS Warranty shall be warranted for the remainder of the ECS Warranty Period.
 - (3) Any warranted, emissions-related part that is scheduled for replacement as required maintenance in the *Owner's Manual* shall be warranted for the period of time prior to the first scheduled replacement point for that part. If the part fails prior to the first scheduled replacement, the part shall be repaired or replaced by Generac according to Subsection (4) below. Any such emissions-related part repaired or replaced under the ECS Warranty shall be warranted for the remainder of the ECS Warranty Period prior to the first scheduled replacement point for such emissions-related part.
 - (4) Repair or replacement of any warranted, emissions-related part under this ECS Warranty shall be performed at no charge to the owner at a Generac Authorized Warranty Service Facility.
 - (5) When the engine is inspected by a Generac Authorized Warranty Service Facility, the owner shall not be held responsible for diagnostic costs if the repair is deemed warrantable.
 - (6) Generac shall be liable for damages to other original engine components or approved modifications proximately caused by a failure under warranty of any emission-related part covered by the ECS Warranty.
 - (7) Throughout the ECS Warranty Period, Generac shall maintain a supply of warranted emission-related parts sufficient to meet the expected demand for such emission-related parts.
 - (8) Any Generac authorized and approved emission-related replacement part may be used in the performance of any ECS Warranty maintenance or repairs and will be provided without charge to the owner. Such use shall not reduce Generac ECS Warranty obligations.
 - (9) Unapproved, add-on, modified, counterfeit and/or "grey market" parts may not be used to modify or repair a Generac engine. Such use voids this ECS Warranty and shall be sufficient grounds for disallowing an ECS Warranty claim. Generac shall not be held liable hereunder for failures of any warranted parts of a Generac engine caused by the use of such an unapproved, add-on, modified, counterfeit and/or "grey market" part.

EMISSION RELATED PARTS INCLUDE THE FOLLOWING:

- | | |
|---|---|
| <ol style="list-style-type: none"> 1) Fuel Metering System: 1.2) LPG/Natural Gas carburetion assembly and its internal components. <ol style="list-style-type: none"> a) Fuel controller (if so equipped) b) Mixer and its gaskets (if so equipped) c) Carburetor and its gaskets (if so equipped) d) Primary gas regulator (if so equipped) e) LP liquid vaporizer (if so equipped) 2) Air Induction System including: <ol style="list-style-type: none"> a) Intake pipe/manifold b) Air cleaner | <ol style="list-style-type: none"> 3) Ignition System including: <ol style="list-style-type: none"> a) Spark plug b) Ignition module 4) Catalytic Muffler Assembly (if so equipped) including: <ol style="list-style-type: none"> a) Muffler gasket b) Exhaust manifold 5) Crankcase Breather Assembly including: <ol style="list-style-type: none"> a) Breather connection tube |
|---|---|

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

- 1) Prepackaged Standby Generator
- 2) Auxiliary Power Unit (APU) Generator
- 3) Standby Generator



Section 8 – Warranty

Guardian Air-cooled 6 kW, 8 kW and 10 kW Generators

GENERAC POWER SYSTEMS' "TWO - YEAR" STANDARD WARRANTY FOR GUARDIAN "AIR COOLED, PREPACKAGED STANDBY GENERATORS"

For a period of two years or 2,000 hours of operation from the date of original sale, whichever occurs first, Generac Power Systems, Inc. (Generac) will, at its option, repair or replace any part which, upon examination, inspection and testing by Generac or a Generac Authorized Warranty Service Facility, is found to be defective under normal use and service, in accordance with the warranty schedule set forth below. Any equipment that the purchaser/owner claims to be defective must be returned to and examined by the nearest Generac Authorized Warranty Service Facility. All transportation costs under the warranty, including return to the factory, are to be borne and prepaid by the purchaser/owner. This warranty applies only to Generac Guardian air cooled, prepackaged standby generators sold and rated for use in "Standby" applications, as Generac has defined Standby.

WARRANTY SCHEDULE

YEARS ONE and TWO - 100% (one hundred percent) coverage on mileage*, part(s) and labor as listed (proof of purchase and maintenance is required):

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

***Travel allowance is limited to 300 miles or 7.5 hours maximum round trip and applies only to permanently wired and mounted units.**

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

THIS WARRANTY SHALL NOT APPLY TO THE FOLLOWING:

- Costs of normal maintenance, adjustments, installation and start-up.
- Failures caused by any contaminated fuels or oils.
- Failures due, but not limited, to normal wear and tear, accident, misuse, abuse, negligence or improper installation. As with all mechanical devices, the GH- and GV-Series engines need periodic part(s) service and replacement to perform well. This warranty will not cover repair when normal use has exhausted the life of a part(s) or engine.
- Failures caused by any external cause or act of God, such as collision, theft, vandalism, riot or wars, nuclear holocaust, fire, freezing, lightning, earthquake, windstorm, hail, volcanic eruption, water or flood, tornado or hurricane.
- Products that are modified or altered in a manner not authorized by Generac in writing.
- Any incidental, consequential or indirect damages caused by defects in materials or workmanship, or any delay in repair or replacement of the defective part(s).
- Failure due to misapplication.
- Telephone, telegraph, Teletype or other communication expenses.
- Living or travel expenses of person(s) performing service, except as specifically included within the terms of a specific unit warranty period.
- Rental equipment used while warranty repairs are being performed.
- Overnight freight costs for replacement part(s).
- Overtime labor.
- Starting batteries, fuses, light bulbs and engine fluids.

THIS WARRANTY IS IN PLACE OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. SPECIFICALLY, GENERAC MAKES NO OTHER WARRANTIES AS TO THE MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you.

GENERAC'S ONLY LIABILITY SHALL BE THE REPAIR OR REPLACEMENT OF PART(S) AS STATED ABOVE. IN NO EVENT SHALL GENERAC BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES, EVEN IF SUCH DAMAGES ARE A DIRECT RESULT OF GENERAC'S NEGLIGENCE. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation may not apply to you. Purchaser/owner agrees to make no claims against Generac based on negligence.

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

GENERAC® POWER SYSTEMS, INC.

P.O. BOX 8
WAUKESHA, WI 53187