



# EFI GENERATOR 13000 Starting watts / 10000 Running watts

**SAVE THIS MANUAL:** This manual contains important information regarding safety, operation, maintnance and storage of this product. Before use, read carefully and understand all cautions, warnings, instructions and product labels. Failure to do so could result in serious personal injury and/or property damage.

MODEL NUMBER

Congratulations on your purchase of a SENCI product. SENCI designs, builds, and supports all of our products to strict specifications and guidelines. With proper product knowledge, safe use, and regular maintenance, this product should bring years of satisfyingservice.

Every effort has been made to ensure the accuracy and completeness of the information in this manual, and we reserve the right to change, alter and/or improve the product and this document at any time without prior notice.

Since SENCI highly value how our products are designed, manufactured, operated and are serviced, and also highly value your safety and the safety of others, we would like you to take the time to review this product manual and other product materials thoroughly and be fully aware and knowledgeable of the assembly, operation, dangers and maintenance of the product before use. Fully familiarize yourself, and make sure others who plan on operating the product fully familiarize themselves too, with the proper safety and operation procedures before each use. Please always exercise common sense and always error on the side of caution when operating the product to ensure no accidents, property damage, or injury occurs. We want you to continue to use and be satisfied with your SENCI product for years to come.

#### **PRODUCT SPECIFICATIONS**

#### ENGINE

Engine Type	459cc, EFI
Spark Plug	F6RTC or equivalent
Fuel Volume	6.6 gal.
Engine Lubricant Volume	32 oz.

\*Rated output determined by PGMA Standard G300

#### GENERATOR

Rated Voltage	120 V/240 V
Rated Amps	83.3 A/41.7 A
Rated Output*	10000 W
Starting Watts	13000 W
Rated Frequency	60 Hz

### Have questions or need assistance?

Do not return this product to the store!

### WE ARE HERE TO HELP!

### Visit our website: www.senci.com

– or –

Call our Customer Care Team Toll-Free at: 1-909-923-2068

#### For residents of California:

WARNING: This product contains chemicals known to the State of California to cause cancer or birth defects and other reproductive harm.

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

\*We are always working to improve our products. Therefore, the enclosed product may differ slightly from the image on the cover.

### See this section for all of the figures referenced in the operator's manual.



A - Fuel tank / B - Fuel cap / C - Fuel Gauge / D - EFI / E - Power Panel F - Air filter / G - Recoil starter grip / H - Wheel / I - Oil cap/dipstick J - Foot bracket / K - Battery / L - Handle





- D Bracket
- E Hitch pin



- E Screw
- F Washer
- G Nut
- H Red wires (+)
- I Negative terminal connection
- J Positive terminal connections

### <u>Fig. 7</u>





B - Oil fill hole









D - Air filter unit

# <u>Fig. 11</u>

В



### Fig. 12



A - Spark plug B - Spark plug cap

### Fig. 13





### WARNING:

### **GROUNDING THE GENERATOR**

If this generator will be used **only** with cord and plug-connected equipment, National Electric Code does not require that the unit be grounded. However, other methods of using the generator may require grounding to reduce the risk of shock or electrocution. Consulta qualified electrician, electrical inspector, or local agency having jurisdiction for local codes or ordinances to find out if grounding is needed in your situation before using the generator.

When grounding is required, the nut and ground terminal on the frame are used to connect the generator to a suitable ground source. The ground path should be made with #8 size wire. Connect the terminal of the ground wire between the lock washer and the nut, and tighten the nut fully. Connect the other end of the wire securely to a suitable ground source that is in contact with the soil for a minimum distance of 8 ft.

The National Electric Code contains several practical ways in which to establish a good ground source. If a steel or iron rod is used, it should be at least 5/8 in. diameter, and if a nonferrous rod is used, it should be at least 1/2 in. diameter and be listed as material for grounding. If a rock bottom is encountered before reaching a depth of 8 ft., drive the ground rod in at an angle of up to 45°. If the rock bottom is again encountered, the rod can be buried in a trench that is at least 30 in. deep. In all cases, the upper end of the grounding rod should either be flush with (or below) the ground or must be otherwise protected from physical damage.

All electrical tools and appliances operated from this generator must be properly grounded by use of a third wire or be "Double Insulated."

It is recommended to:

- 1. Use electrical devices with 3-prong grounded plugs.
- 2. Use an extension cord intended for outdoor use with a 3-pole receptacle and a 3-prong plug at opposite ends to ensure continuity of the ground protection from the generator to the appliance.

Check and adhere to all applicable federal, state, and local regulations relating to grounding specifications. Consult a qualified electrician or service personnel if the grounding instructions are not completely understood or if in doubt as to whether the generator is properly grounded.

### **IMPORTANT SAFETY INSTRUCTIONS**

### A DANGER:

**Carbon Monoxide.** Using a generator indoors CAN KILL YOU IN MINUTES.

Generator exhaust contains high levels of carbon monoxide (CO), a poisonous gas you cannot see or smell. If you can smell the generator exhaust, you are breathing CO. But even if you cannot smell the exhaust, you could be breathing CO.

- Never use a generator inside homes, garages, crawlspaces, or other partly enclosed areas. Deadly levels of carbon monoxide can build up in these areas. Using a fan or opening windows and doors does NOT supply enough fresh air.
- ONLY use a generator outdoors and far away from open windows, doors, and vents. These openings can pull in generator exhaust.

Even when you use a generator correctly, CO may leak into the home. ALWAYS use a battery-powered or battery-backup CO alarm in the home.

If you start to feel sick, dizzy, or weak after the generator has been running, move to fresh air RIGHT AWAY. See a doctor. You could have carbon monoxide poisoning.

### WARNING:

**Read and understand all instructions.** Failure to follow all instructions listed below could result in electrocution, fire, and/or carbon monoxide poisoning, which can cause death or serious injury.

### WARNING:

In some applications, National Electric Code requires generator to be grounded to an approved earth ground. Before using the ground terminal, consult a qualified electrician, electrical inspector, or local agency having jurisdiction for local codes or ordinances that apply to the intended use of the generator.

### SAVE THESE INSTRUCTIONS

This manual contains important instructions that should be followed during installation and maintenance of the generator.

- Do not connect to a building's electrical system unless the generator and transfer switch have been properly installed and the electrical output has been verified by a qualified electrician. The connection must isolate the generator power from utility power and must comply with all applicable laws and electrical codes.
- Do not allow children or untrained individuals to use this unit.

- Do not start or operate the engine in a confined space, building, near open windows, or in other unventilated space where dangerous carbon monoxide fumes can collect. Carbon monoxide, a colorless, odorless, and extremely dangerous gas, can cause unconsciousness or death.
- Keep all bystanders, children, and pets at least 10 feet away.
- Wear sturdy and dry shoes or boots. Do not operate while barefoot.
- Do not operate generator when you are tired or under the influence of drugs, alcohol, or medication.
- Keep all parts of your body away from any moving parts and all hot surfaces of the unit.
- Do not touch bare wire or receptacles.
- Do not use generator with electrical cords which are worn, frayed, bare, or otherwise damaged.
- Before storing, allow the engine to cool for 30 minutes and drain fuel from the unit.
- Do not operate or store the generator in rain, snow, or wet weather.
- Store the generator in a well-ventilated area with the fuel tank empty. Fuel should not be stored near the generator.
- Empty fuel tank, close fuel valve, and restrain the unit from moving before transporting in a vehicle.
- Provide a plastic sheet or absorbent pad below the generator to catch any drips of fuel or lubricant when transporting.
- To reduce the risk of fire and burn injury, handle fuel with care. It is highly flammable.
- Do not smoke while handling fuel.
- Store fuel in a container approved for gasoline.
- Position the unit on level ground, stop engine, and allow to cool for five minutes before refueling.
- Loosen fuel cap slowly to release pressure and to keep fuel from escaping around the cap.
- Tighten the fuel cap securely after refueling.
- Wipe spilled fuel from the unit.
- Never attempt to burn off spilled fuel under any circumstances.
- Generators vibrate in normal use. During and after the use of the generator, inspect the generator as well as extension cords and power supply cords connected to it for damage resulting from vibration. Have damaged items repaired or replaced as necessary. Do not use plugs or cords that show signs of damage such as broken or cracked insulation or damaged blades.
- For power outages, permanently installed stationary generators are better suited for providing back-up power to the home. Even a properly connected portable generator can become overloaded. This may result in overheating or stressing the generator components, possibly leading to generator failure.

### **IMPORTANT SAFETY INSTRUCTIONS**

- Use only recommended or equivalent replacement parts and accessories and follow instructions in the *Maintenance* section of this manual. Use of any other parts or failure to follow maintenance instructions may create a risk of shock or injury.
- Maintain the unit per maintenance instructions in this Operator's Manual.
- Inspect the unit before each use for loose fasteners, fuel leaks, etc. Replace damaged parts.

### SPECIFIC SAFETY RULES

### A DANGER:

**Risk of fire and serious burns:** Never remove fuel cap when unit is running. Shut off engine and allow the unit to cool at least five minutes. Remove cap slowly.

### WARNING:

When this generator is used to supply a building wiring system: generator must be installed by a qualified electrician and connected to a transfer switch as a separately derived system in accordance with NFPA 70, National Electrical Code. The generator shall be connected through a transfer switch that switches all conductors other than the equipment grounding conductor. The frame of the generator shall be connected to an approved grounding electrode. Failure to isolate the generator from power utility can result in death or injury to electric utility workers.

- Do not use this generator to provide power for emergency medical equipment or life support devices.
- This generator has a neutral bonded condition. This means the neutral conductor is electrically connected to the frame of the machine.
- Always use a battery-powered carbon monoxide detector when running the generator. If you begin to feel sick, dizzy, or weak while using the generator, shut it off and get to fresh air immediately. See a doctor. You may have carbon monoxide poisoning.
- Place the generator on a flat, stable surface with a slope of no more than 4°.
- Operate outdoors in a well-ventilated, well-lit area isolated from working areas to avoid noise interference.
- Operating the generator in wet conditions could result in electrocution. Keep the unit dry.
- Keep the generator a minimum of 3 feet away from all types of combustible material.
- Do not operate generator near hazardous material.
- Do not operate generator at a gas or natural gas filling station.

- Do not touch the muffler or cylinder during or immediately after use; they are HOT and will cause burn injury.
- Do not allow the generator's gas tank to overflow when filling. Fill to 1 in. below the top neck of the gasoline tank to allow for fuel expansion. Do not cover the fuel tank cap when the engine is running. Covering the fuel tank cap during use may cause engine failure and/or damage to the tool.
- Do not smoke when filling the generator with gasoline.
- Shut down the engine and allow to cool for five minutes before adding gasoline or lubricant to the generator.
- Do not remove the lubricant dipstick or the fuel tank cap when the engine is running.
- Pay close attention to all safety labels located on the generator.
- Keep children a minimum of 10 feet away from the generator at all times.
- The unit operates best in temperatures between 23°F and 104°F with a relative humidity of 90% or less.
- Operating voltage and frequency requirement of all electronic equipment should be checked prior to plugging them into this generator. Damage may result if the equipment is not designed to operate within a +/- 10% voltage variation, and +/- 3 hz frequency variation from the generator name plate ratings. To avoid damage, always have an additional load plugged into the generator if solid state equipment (such as a television set) is used. A power line conditioner is recommended for some solid state applications.
- When battery is not in use, keep it away from other metal objects like paper clips, coins, keys, nails, screws, or other small metal objects that can make a connection from one terminal to another. Shorting the battery terminals together may cause burns or a fire.
- For outdoor use only.
- Save these instructions. Refer to them frequently and use them to instruct others who may use this product. If you loan someone this product, loan them these instructions also.

### SYMBOLS

The following	The following signal words and meanings are intended to explain the levels of risk associated with this product.				
SYMBOL	SIGNAL	MEANING			
	DANGER:	Indicates a hazardous situation, which, if not avoided, will result in death or serious injury.			
	WARNING:	Indicates a hazardous situation, which, if not avoided, could result in death or serious injury.			
	CAUTION:	Indicates a hazardous situation, that, if not avoided, may result in minor or moderate injury.			
	NOTICE:	(Without Safety Alert Symbol) Indicates information considered important, but not related to a potential injury (e.g. messages relating to property damage).			

Some of the following symbols may be used on this product. Please study them and learn their meaning. Proper interpretation of these symbols will allow you to operate the product better and safer.

SYMBOL	NAME	DESIGNATION/EXPLANATION
	Safety Alert	Indicates a potential personal injury hazard.
	Read Operator's Manual	To reduce the risk of injury, user must read and understand operator's manual before using this product.
	Wet Conditions Alert	Do not expose to rain or use in damp locations.
*	Electric Shock	Failure to use in dry conditions and to observe safe practices can result in electric shock.
	Toxic Fumes	Running generator gives off carbon monoxide, an odorless, color- less, poison gas. Breathing carbon monoxide can cause nausea, fainting, or death.
	Fire/Explosion	Fuel and its vapors are extremely flammable and explosive. Fire or explosion can cause severe burns or death.
	Hot Surface and Exhaust Gases	To reduce the risk of injury or damage, avoid contact with any hot surface and do not place any body parts in the path of hot exhaust gases.
	Lifting Hazard	To reduce the risk of serious injury, avoid attempting to lift the generator alone.
	Ground	Consult with local electrician to determine grounding requirements before operation.

### SYMBOLS

Some of the following symbols may be used on this product. Please study them and learn their meaning. Proper interpretation of these symbols will allow you to operate the product better and safer.

SYMBOL	NAME	DESIGNATION/EXPLANATION
V	Volts	Voltage
A	Amperes	Current
Hz	Hertz	Frequency (cycles per second)
W	Watt	Power
hrs	Hours	Time
gal	Gallon	Volume
qt	Quart	Volume

### ELECTRICAL

### **EXTENSION CORD CABLE SIZE**

Refer to the table below to ensure the cable size of the extension cords you use are capable of carrying the required load. Inadequate size cables can cause a voltage drop, which can burn out the appliance and overheat the cord.

Current in	Load in	n Watts	Maximum Allowable Cord Length					
Amperes	At 120V	At 240V	#8 Wire	#10 Wire	#12 Wire	#14 Wire	#16 Wire	
2.5	300	600		1000 ft.	600 ft.	375 ft.	250 ft.	
5	600	1200		500 ft.	300 ft.	200 ft.	125 ft.	
7.5	900	1800		350 ft.	200 ft.	125 ft.	100 ft.	
10	1200	2400		250 ft.	150 ft.	100 ft.	50 ft.	
15	1800	3600		150 ft.	100 ft.	65 ft.		
20	2400	4800	175 ft.	125 ft.	75 ft.			
25	3000	6000	150 ft.	100 ft.				
30	3600	7200	125 ft.	65 ft.				
40	4800	9600	90 ft.					

### **ELECTRIC MOTOR LOADS**

It is characteristic of common electric motors in normal operation to draw up to six times their running current while starting. This table may be used to estimate the watts required to start electric motors; however, if an electric motor fails to start or reach running speed, turn off the appliance or tool immediately to avoid equipment damage. Always check the requirements of the tool or appliance being used compared to the rated output of the generator.

Mater Size (U.D.)	Dumping Wotto	Watts Required to Start Motor				
Motor Size (H.P.)	Running Watts	Universal	Capacitor	Split Phase		
1/8	275	N/A	850	1200		
1/6	275	600	850	2050		
1/4	400	800	1050	2400		
1/3	450	950	1350	2700		
1/2	600	1000	1800	3600		
3/4	850	1200	2600	—		
1	1100	N/A	3300	_		

### NOTICE:

Operating voltage and frequency requirement of all electronic equipment should be checked prior to plugging them into this generator. Damage may result if the equipment is not designed to operate within a +/- 10% voltage variation, and +/- 3 hz frequency variation from the generator name plate ratings. To avoid damage, always have an additional load plugged into the generator if solid state equipment (such as a television set) is used. A power line conditioner is recommended for some solid state applications.

### ELECTRICAL

### **GENERATOR CAPACITY**

Make sure the generator can supply enough continuous (running) and surge (starting) watts for the items you will power at the same time. Follow these simple steps.

- 1. Select the items you will power at the same time.
- 2. Total the continuous (running) watts of these items. This is the amount of power the generator must produce to keep the items running. See the wattage reference chart at right.
- 3. Estimate how many surge (starting) watts you will need. Surge wattage is the short burst of power needed to start electric motor-driven tools or appliances such as a circular saw or refrigerator. Because not all motors start at the same time, total surge watts can be estimated by adding only the item(s) with the highest additional surge watts to the total rated watts from step 2.

#### Example:

Tool or Appliance	Running Watts*	Starting Watts*				
Window AC, 10,000 BTU	1200	1800				
Refrigerator	700	2200				
1/3 HP Well Pump	1000	2000				
27 in. Television	500	0				
Light (75 Watts)	75	0				
	3475 Total Running Watts	2200 Highest Starting Watts				
Total Running Watts 3475						
Highest Starting Watts + 2200						
Total Starting Watta Needed EC7E						

Total Starting Watts Needed 5675

#### **POWER MANAGEMENT**

To prolong the life of the generator and attached devices, it is important to take care when adding electrical loads to the generator. There should be nothing connected to the generator outlets before starting its engine. The correct and safe way to manage generator power is to sequentially add loads as follows:

- 1. With nothing connected to the generator, start the engine as described later in this manual.
- 2. Plug in and turn on the first load, preferably the largest load you have.
- 3. Permit the generator output to stabilize (engine runs smoothly and attached device operates properly).
- 4. Plug in and turn on the next load.
- 5. Again, permit the generator to stabilize.
- 6. Repeat steps 4 and 5 for each additional load.

Never add more loads than the generator capacity. Take special care to consider surge loads in generator capacity as previously described.

### NOTICE:

Do not overload the generator's capacity. Exceeding the generator's wattage/amperage capacity may damage the generator and/or electrical devices connected to it.

Application/Equipment	Estimated Running Watts*	Estimated Starting Watts*
Emergency / Home Standby		
Clock Radio	50	0
Lights (qty. 4 x 75 W)	300	0
Refrigerator	700	2200
Furnace Fan	800	2350
Water Well Pump	1000	1500
Microwave	1000	1000
Sump Pump	1050	2200
Electric Range (per element)	2100	0
Job Site		
Electric Drill – 1/2 HP	600	900
Airless Sprayer – 1/3 HP	600	1200
Quartz Halogen Work Light	1000	1000
Reciprocating Saw	960	1920
Air Compressor – 1 HP	1600	4500
Circular Saw – 7-1/4 in.	1400	2300
Planer/Jointer – 6 in	1800	1800
Miter Saw – 10 in.	1800	1800
Table Saw/Radial Arm Saw – 10 in.	2000	2000

\*Wattages listed are approximate. Check tool or appliance for actual wattage.

### **FEATURES**

#### KNOW YOUR GENERATOR

#### See Figure 1.

The safe use of this product requires an understanding of the information on the product and in this operator's manual as well as a knowledge of the project you are attempting. Before use of this product, familiarize yourself with all operating features and safety rules.

### AC CIRCUIT BREAKERS

The circuit breakers are provided to protect the generator against electrical overload. The circuit breaker may be reset by pressing the circuit breaker reset button.

#### **AIR FILTER**

The air filter helps to limit the amount of dirt and dust drawn into the unit during operation.

#### **DIGITAL DISPLAY**

The digital display shows AC voltage output, frequency, how long the engine has been running during the current usage period, and the total number of hours the unit has been used.

#### **ENGINE SWITCH**

The engine switch is used alone or in combination with the recoil starter grip to start the engine. It is also used to turn the engine off.

#### FUEL VALVE

Fuel flow from the fuel tank to the engine is turned on and off using the fuel valve.

#### **GROUND TERMINAL**

The ground terminal is used to assist in properly grounding the generator to help protect against electrical shock. Consult with a qualified local electrician for grounding requirements in your area.

### LOW OIL SHUT DOWN PROTECTOR

The low oil sensor causes the engine to stop if the level of lubricant in the crankcase is insufficient.

### **OIL CAP/DIPSTICK**

Remove the oil fill cap to check and add lubricant to the generator when necessary.

### **OIL DRAIN PLUG**

When changing the engine lubricant, unscrew and remove the oil drain plug to allow old engine lubricant to be drained.

#### RECEPTACLES

These can be used for operating appropriate appliances, electrical lighting, tools, and motor loads.

#### **RECOIL STARTER GRIP**

The recoil starter grip is used (along with the engine switch) to start the generator's engine.

#### EFI

Electronic fuel injection (EFI), an onboard electronic engine management system that can greatly reduce CO emissions generated by the portable generator's engine. By significantly reducing the amount of CO a portable generator emits, the likelihood of CO poisoning and death is greatly reduced.

#### **CO SENSOR**

The CO Sensor is able to detect the carbon monoxide. If the CO concentration in a certain range, the CO Sensor will immediately "bleep" and the light will blink; If the concentration in a high range, the CO Sensor will shut the generator off.

### ASSEMBLY

#### UNPACKING

This product requires assembly.

Carefully cut the box down the sides then remove the machine and any accessories from the box. Make sure that all items listed in the loose parts list are included.

**NOTE**: This machine is heavy and requires a minimum of two people to lift. To avoid back injury, lift with your legs and not your back.

### **WARNING:**

Do not use this product if any parts in the Loose Parts List are already assembled to your product when you unpack it. Parts on this list are not assembled to the product by the manufacturer and require customer installation. Use of a product that may have been improperly assembled could result in serious personal injury.

- Inspect the unit carefully to make sure no damage occurred during shipping.
- Do not discard the packing material until you have carefully inspected and satisfactorily operated the product.

### ASSEMBLY

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If any parts are damaged or missing do not operate this product until the parts are replaced. Use of this product with damaged or missing parts could result in serious personal injury.

### WARNING:

Do not attempt to modify this product or create accessories not recommended for use with this product. Any such alteration or modification is misuse and could result in a hazardous condition leading to possible serious personal injury.

### WARNING:

Do not attempt to operate the generator until assembly is complete. Failure to comply could result in possible serious personal injury.

### LOOSE PARTS LIST

See Figure 2.

The following items are included with the generator:

#### Key

No.	Description	Qty.
1	Wheel	2
2	Axle	2
3	Washer	2
4	Hitch Pin	2
5	Bolt	2
6	Foot Bracket	1
7	Lock Nut	2
8	Engine Lubricant	1
	Operator's Manual (not shown)	1

#### **TOOLS NEEDED**

See Figure 3.

The following tools (not included or drawn to scale) are needed for assembly:

- Socket Wrenches and/or Combination Wrenches
- Philips Screwdriver

**NOTE**: Do not put fuel or lubricant in the generator before installing the feet, frame support, wheels and handle.

### **INSTALLING THE FEET**

See Figure 4.

- Locate the following items: Foot bracket
  - 2 lock nuts
  - 2 bolts
- Insert bolts through the foot bracket and holes in the generator frame as shown.
- Thread lock nuts onto bolts and tighten one full turn past snug.

NOTE: Be careful not to overtighten so that foot material collapses.

### **INSTALLING THE WHEELS**

See Figure 5.

Wheels are provided to assist in moving the generator to the desired location and should be installed on the same side as the handle.

- Locate the following items:
  - 2 axles
  - 2 hitch pins
  - 2 washers
  - 2 wheels
- Raise the end of the generator where the handle is located high enough to gain access to the frame bottom; securely position props underneath to support.
- Slide the axle through the hole in the center of the wheel.
- Slide a washer onto the axle, then slide the axle into the wheel mounting hole as shown.
- Insert hitch pin to secure.

**NOTE:** The hitch pin should be pushed into the axle until the center of the pin rests on top of the axle.

Repeat with the second wheel.

#### **CONNECTING/DISCONNECTING BATTERY** See Figure 6.

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### WARNING:

To reduce the risk of electrocution or explosion, do not short circuit the battery terminals or charge in a sealed container. Keep sparks and flame away.

### WARNING:

Keep metal objects away from the battery terminals. Metal objects can make a connection from one terminal to another. Shorting the battery terminals together can cause sparks, burns, or a fire.

### ASSEMBLY

### NOTICE:

The battery may require charging before the generator can be started using either the engine switch or the recoil starter. Once the generator is started, the battery will charge as the unit runs.

The battery cables must be connected before the generator can be operated.

#### To connect battery cables:

Connect the red wires to the positive (+) terminal first, then connect the black wire to the negative (-) terminal. Make sure all connections are tight. **NOTE:** Be careful not to short across the terminals when installing. Shorting the terminals together can cause sparks, damage to the battery or generator, or even burns or explosions.

Cover the terminals with the rubber covers.

When removing the battery for replacement: disconnect the negative (black) post, then the positive (red) post, being careful not to short across the terminals. Always abide by the safety warnings provided with the battery. Remove the battery and dispose of according to local and state regulations.

### **OPERATION**

### **DANGER**:

Carbon Monoxide. Using a generator indoors CAN KILL YOU IN MINUTES.

Generator exhaust contains high levels of carbon monoxide (CO), a poisonous gas you cannot see or smell. If you can smell the generator exhaust, you are breathing CO. But even if you cannot smell the exhaust, you could be breathing CO.

- Never use a generator inside homes, garages, crawlspaces, or other partly enclosed areas. Deadly levels of carbon monoxide can build up in these areas. Using a fan or opening windows and doors does NOT supply enough fresh air.
- ONLY use a generator outdoors and far away from open windows, doors, and vents. These openings can pull in generator exhaust.

Even when you use a generator correctly, CO may leak into the home. ALWAYS use a battery-powered or battery-backup CO alarm in the home.

If you start to feel sick, dizzy, or weak after the generator has been running, move to fresh air RIGHT AWAY. See a doctor. You could have carbon monoxide poisoning.

### WARNING:

If this generator will be used **only** with cord and plugconnected equipment, National Electric Code does not require that the unit be grounded. However, other methods of using the generator may require grounding to reduce the risk of shock or electrocution. Consult a qualified electrician, electrical inspector, or local agency having jurisdiction for local codes or ordinances to find out if grounding is needed in your situation before using the generator.

### 

Do not allow familiarity with this product to make you careless. Remember that a careless fraction of a second is sufficient to inflict serious injury.

### 

Do not use any attachments or accessories not recommended by the manufacturer of this product. The use of attachments or accessories not recommended can result in serious personal injury.

### NOTICE:

This product is equipped with a spark arrestor that has been evaluated by the USDA Forest Service; however, product users must comply with Federal, State, and local fire prevention regulations. Check with appropriate authorities. Contact customer service or a qualified service center to purchase a replacement spark arrestor.

### **OPERATION**

### NOTICE:

Before each use, inspect the entire product for damaged, missing, or loose parts such as screws, nuts, bolts, caps, etc. Tighten securely all fasteners and caps and do not operate this product until all missing or damaged parts are replaced. Please contact customer service or a qualified service center for assistance.

### **APPLICATIONS**

This generator is designed to supply electrical power for operating compatible electrical lighting, appliances, tools, and motor loads.

### **BEFORE OPERATING THE UNIT**

- Only use OUTSIDE and at least 20 feet away from windows, doors, and vents as recommended by the U.S Department of Health and Human Services Centers for Disease Control and Prevention. Your specific home and/ or wind conditions may require additional distance.
- NEVER use inside a home or garage, EVEN IF doors and windows are open.
- Always position the generator on a flat firm surface.

#### SPECIAL REQUIREMENTS:

There may be General or State Occupational Safety and Health Administration (OSHA) regulations, local codes or ordinances that apply to the intended use of the generator.

Please consult a qualified electrician, electrical inspector, or the local agency having jurisdiction:

- In some areas, generators are required to be registered with local utility companies.
- If the generator is used at a construction site, there may be additional regulations which must be observed.

#### **RAISING AND LOWERING THE HANDLE**

See Figure 7.

- To raise the handle (for moving the generator)
- To lower the handle (for storing or transporting the generator)

Never use the handle to lift the generator. The handle should only be used for moving the unit by rolling it on its wheels.

#### **CHECKING/ADDING LUBRICANT**

See Figure 8.

#### NOTICE:

Attempting to start the engine before it has been properly filled with lubricant will result in equipment failure.

# NOTE: If a separate engine manual is provided for this product, please follow the instructions provided in the engine manual instead of the information listed below.

Engine lubricant has a major influence on engine performance and service life. For general, all-temperature use, SAE 10W-30 full synthetic is recommended. Always use a 4-stroke motor lubricant that meets or exceeds the requirements for API service classification SJ.

This engine comes with a feature that will shut off the engine when a specific lubricant level is not maintained. The engine will not restart until an appropriate lubricant level is reached.

**NOTE:** Non-detergent or 2-stroke engine lubricants will damage the engine and should not be used.

- Unscrew the oil cap/dipstick and remove.
- Wipe dipstick clean and re-seat in hole; do not re-thread.
- Remove dipstick again and check lubricant level. Lubricant level should fall between the hatched areas on the dipstick.
- If level is low, add engine lubricant until the fluid level rises to the upper portion of the dipstick.
- Replace and secure the oil cap/dipstick.

### USING FUEL STABILIZER

Fuel gets old, oxidizes, and breaks down over time. Adding a fuel stabilizer (not included) extends the usable life of fuel and helps prevent deposits from forming that can clog the fuel system. Follow fuel stabilizer manufacturer's directions for correct ratio of stabilizer to fuel.

Mix fuel stabilizer and gasoline prior to filling the tank by using a gas can or other approved fuel container and shaking gently to combine.

**NOTE:** To control the amount of fuel stabilizer being added to the engine, always mix fuel stabilizer with gasoline before fueling the tank rather than adding fuel stabilizer directly into the generator's fuel tank.

- Replace and secure the fuel tank cap.
- Start and run the engine for at least 5 minutes to allow stabilizer to treat the entire fuel system.

#### ETHANOL-BLENDED FUELS

#### NOTICE:

Do not use E15 or E85 fuel in this product. It is a violation of federal law and will damage the unit and void your warranty. Only use unleaded gasoline containing up to 10% ethanol.

### **OPERATION**

#### **ADDING FUEL**

See Figure 9.

### **DANGER**:

**Risk of fire and serious burns:** Never remove fuel cap when unit is running. Shut off engine and allow the unit to cool at least five minutes. Remove cap slowly.

### A WARNING:

Gasoline and its vapors are highly flammable and explosive. To prevent serious personal injury and property damage, handle gasoline with care. Keep away from ignition sources, handle outdoors only, do not smoke while adding fuel, and wipe up spills immediately.

When adding gas to the generator, make sure the unit is sitting on a flat, level surface. If the engine is hot, let the generator cool for five minutes before adding gas. ALWAYS fill the fuel tank outdoors with the machine turned off.

- Remove the fuel cap slowly.
- Fill the fuel tank to 1 in. below the top of the fuel neck.
- Replace and secure the fuel cap.

### WARNING:

Always shut off engine before fueling. Never remove fuel cap or add fuel to a machine with a running or hot engine. Make sure the unit is sitting on a flat, level surface and only add fuel outdoors. If the engine is hot, let the unit cool for at least five minutes before adding fuel. After fueling, immediately replace fuel cap and tighten securely. Move at least 30 ft. from refueling site before starting engine. Do not smoke and stay away from open flames and sparks! Failure to follow these instructions could result in a fire and cause serious personal injury.

**NOTE**: Always use unleaded gasoline with a pump octane rating of 86 or higher. Never use old, stale, or contaminated gasoline, and do not use a lubricant/gas mixture. Do not allow dirt or water into the fuel tank. **Do not use E85 fuel.** 

### DIGITAL DISPLAY

Press and release the mode button to cycle through the following displays:

Voltage (V) displays the operating voltage of the generator.

**Frequency (F)** displays the frequency in hertz at which the generator is running.

The **Run/Maintenance Timer** displays the amount of time the generator has run since being started. This timer resets each time the generator is shut off. When a cumulative run time of 25 hours has been reached, P25 will display on the meter as a reminder to change the engine lubricant after the initial 25 hours of run time.

When a cumulative time of 50 hours is reached, P50 will display on the meter to remind you to clean the air filter.

When a cumulative time of 100 hours is reached, P100 will display on the meter to remind you to change/clean the fuel filter, clean the air filter, and change the engine lubricant.

### **ELECTRIC START**

This generator model is provided with both electric start and recoil start capabilities. Avoid prolonged cranking, as it can damage the engine.

The battery provided is a nominal 12 volt sealed rechargeable lead-acid battery and can be operated in any position without leakage. It complies with non-spillable battery regulations.

**NOTE:** Brand new generators are shipped with the battery connections disconnected. The positive and negative terminals must be connected to the battery before the Electric Start feature will work.

For initial battery connection, see **Connecting/Disconnecting Battery**.

### STARTING THE ENGINE

#### NOTICE:

On a level surface with the engine off, check the lubricant level before each use of the generator.

**NOTE**: If location of generator is not level, the unit may not start or may shut down during operation.

This generator is equipped with electronic fuel injection. Starting the generator will require a brief wait to allow the fuel to travel from the tank.

- Unplug all loads from the generator.
- To start the engine using the electric start:
  - ① Put the engine switch in the **ON** position.
  - ② Wait 30 seconds to allow fuel to travel through the line.

**NOTE:** The engine will not start until the fuel has reached the fuel injector and the proper operating pressure is acheived.

③ Turn and hold the engine switch to the **START** position. Do not hold the engine switch in **START** position for more than 15 seconds. Allow 1 minute between starting attempts.

**NOTE:** The battery may require charging before the generator can be started using either the engine switch or the recoil starter. Once the generator is started, the battery will charge as the unit runs.

### **OPERATION**

- To start the engine using the recoil starter:
  - ① Put the engine switch in the **ON** position.
  - ② Wait 30 seconds to allow fuel to travel through the line.

**NOTE**: The engine will not start until the fuel has reached the fuel injector and the proper operating pressure is acheived.

③ Pull the recoil starter grip until the engine runs.

**NOTE:** Do not allow the grip to snap back after starting; return it gently to its original place.

#### **STOPPING THE ENGINE**

#### To stop the engine under normal operating conditions:

- Remove any load from the generator.
- Turn the engine switch to the **OFF** position.

### 

While operating and storing, keep at least 3 feet of clearance on all sides of this product, including overhead. Allow a minimum of 30 minutes of "cool down" time before storage. Heat created by muffler and exhaust gases could be hot enough to cause serious burns and/ or ignite combustible objects.

### MAINTENANCE

Normal maintenance, replacement or repair of emission control devices and systems may be performed by any qualified repair establishment or individual with original or equivalent parts. Warranty and recall repairs must be performed by an authorized service center; please contact customer service for assistance.

### WARNING:

Before inspecting, cleaning, or servicing the machine, shut off engine, wait for all moving parts to stop, and disconnect spark plug wire and move it away from spark plug. Allow 30 minutes of cool down time before performing any maintenance. Failure to follow these instructions can result in serious personal injury or property damage.

### 

When servicing, use only recommended or equivalent replacement parts. Service or maintenance performed by unqualified personnel or use of any other parts could result in a personal injury hazard or property damage.

### NOTICE:

Periodically inspect the entire product for damaged, missing, or loose parts such as screws, nuts, bolts, caps, etc. Tighten securely all fasteners and caps and do not operate this product until all missing or damaged parts are replaced. Please contact customer service or a qualifed service center for assistance.

#### **GENERAL MAINTENANCE**

Keep the generator in a clean and dry environment where it is not exposed to dust, dirt, moisture, or corrosive vapors. Do not allow the cooling air slots in the generator to become clogged with foreign material such as leaves, etc.

Do not use a garden hose to clean the generator. Water entering the fuel system or other internal parts of the unit can cause problems that will decrease the life of the generator.

#### To clean the unit:

- Use a soft bristle brush and/or vacuum cleaner to loosen and remove dirt and debris.
- Clean air vents with low pressure air that does not exceed 25 psi.
- Wipe the exterior surfaces of the generator with a damp cloth.

### **CHECKING/CLEANING AIR FILTER**

#### See Figure 10.

For proper performance and long life, keep air filter clean.

- Turn the knob on the bottom of air the filter cover to release. Remove cover and set aside.
- Remove the filter element.
- If the filter element is dirty, clean with warm, soapy water. Rinse and let dry.
- Apply a light coat of engine lubricant to the element, then squeeze it out.
- Replace the element in the air filter unit.
- Replace the air filter cover and latch to secure.

**NOTE**: Do not run the generator without the air filter. Rapid engine wear will result.

### **CHANGING ENGINE LUBRICANT**

See Figure 11.

- Remove the oil cap/dipstick.
- Place a container underneath the oil drain plug to collect used lubricant as it drains.
- Unscrew the oil drain plug and remove.
- Allow lubricant to drain completely.

**NOTE:** Drain the lubricant while the engine is still warm but not hot. Warm lubricant will drain quickly and more completely.

### 

Do not change engine lubricant while it is hot. Accidental contact with hot engine lubricant could result in serious burns.

- Reinstall the oil drain plug and tighten securely.
- Refill with lubricant following the instructions in the Checking/ Adding Lubricant section. For amount of lubricant needed to refill, see Product Specifications earlier in this manual or the accompanying engine manual, if applicable.
- Reinstall the oil cap/dipstick.

**NOTE**: Used lubricant should be disposed of at an approved disposal site. See your local oil retailer for more information.

#### SPARK PLUG MAINTENANCE

See Figure 12.

The spark plug must be properly gapped and free of deposits in order to ensure proper engine operation. To check:

- Remove the spark plug cap.
- Clean any dirt from around base of spark plug.
- Remove spark plug using wrench (not included).
- Inspect spark plug for damage, and clean with a wire brush before reinstalling. If insulator is cracked or chipped, spark plug should be replaced. For replacement spark plug, see **Product Specifications** earlier in this manual or the accompanying engine manual, if applicable.
- Measure plug gap. The correct gap is 0.028–0.031 in. (0.7-0.8 mm). To widen gap, if necessary, carefully bend the ground (top) electrode. To lessen gap, gently tap ground electrode on a hard surface.
- Seat spark plug in position; thread in by hand to prevent cross-threading.
- Tighten with wrench to compress washer. If spark plug is new, use 1/2 turn to compress washer appropriate amount. If reusing old spark plug, use 1/8 to 1/4 turn for proper washer compression.

**NOTE** An improperly tightened spark plug will become very hot and could damage the engine.

Reinstall the spark plug cap.

## CLEANING THE EXHAUST PORT AND MUFFLER

Depending on the type of fuel used, the type and amount of lubricant used, and/or your operating conditions, the exhaust port and muffler may become blocked with carbon deposits. If you notice a power loss with your gas-powered products, you may need to remove these deposits to restore performance. We highly recommend that only qualified service technicians perform this service.

#### SPARK ARRESTOR

See Figure 13.

### NOTICE:

This product is equipped with a spark arrestor that has been evaluated by the USDA Forest Service; however, product users must comply with Federal, State, and local fire prevention regulations. Check with appropriate authorities. Contact customer service or a qualified service center to purchase a replacement spark arrestor.

- Inspect the spark arrestor for breaks or holes. Clean or replace if necessary.
- Use a brush (not provided) to remove carbon deposits from the spark arrestor screen as needed.

#### TRANSPORTING

- Turn the engine switch OFF (O).
- Disconnect any equipment that is plugged into the generator.
- Verify the fuel valve is in the OFF (O) position.
- Allow 30 minutes of "cool down" time before storing the machine. Make sure engine and exhaust of unit are cool.
- For security, insert the pins to secure the handles before transporting.
- Tilt the machine toward you until it balances on the wheels, then roll the machine to the desired location.
- If transporting in a vehicle, drain the fuel tank, close fuel valve, and securely restrain the generator.
- Provide a plastic sheet or absorbent pad below the generator to catch any drips of fuel or lubricant.

### MAINTENANCE

#### STORAGE

When preparing the generator for storage, allow the unit to cool for 30 minutes then follow the guidelines below.

STORAGE TIME	PRIOR TO STORING
Less than 2 months	Drain gasoline from tank and dispose of in a suitable container according to state and local ordinances.
2 months to 1 year	Drain gasoline from tank and dispose of in a suitable container according to state and local ordinances.
1 year or more	<ul> <li>Remove spark plug.</li> <li>Drain gasoline from tank and dispose of in a suitable container according to state and local ordinances.</li> </ul>
	<ul> <li>Put a tablespoon of engine lubricant into the spark plug cylinder. Turn the engine slowly with the pull rope to distribute the lubricant.</li> </ul>
	Reinstall spark plug.
	Change engine lubricant.
	After removal from storage:
	Fill with fresh gasoline.
NOTE: If storing gas	soline in suitable container for later use, make sure gasoline has been treated with fuel stabilizer

NOTE: If storing gasoline in suitable container for later use, make sure gasoline has been treated with fuel stabilizer according to stabilizer manufacturer's instructions.

#### MAINTENANCE SCHEDULE

**NOTE:** If a separate engine manual is provided for this generator, please follow the maintenance schedule provided in the engine manual instead of the maintenance information listed below.

	Before each use	After 1st month or 25 hours of operation	Every 100 hours of operation	Every 200 hours of operation	Every 240 hours of operation	Every 300 hours of operation	Every 400 hours of operation	Every 480 hours of operation	Every 500 hours of operation
Check Engine Lubricant	•								
Change Engine Lubricant <sup>2</sup>		-	•	•	•	•	•	•	•
Check Air Filter	•								
Change Air Filter <sup>2</sup>					•			•	
Check/Adjust Spark Plug			•	•		•	•		
Replace Spark Plug <sup>2</sup>					•			•	
Check/Clean Spark Screen			•						
Check/Adjust Idle Speed		•			•			•	
Check/ Adjust Valve Clearance <sup>1,2</sup>					•			•	
Check/Adjust Head Bolt Torque <sup>1,2</sup>					•			•	
Fuel Filter	Inspect					Replace			

1. These items should only be carried out by a qualified service center.

2. See engine manual for maintenance schedule for this item.

NOTE: Maintenance should be performed more frequently when generator is used in dusty areas.

When generator has exceeded the maximum figures specified in the table, maintenance should still be cycled according to the intervals of time or hours stated herein.

### TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	SOLUTION
Engine will not start.	Battery not charged.	Charge battery.
	Engine switch is OFF.	Turn engine switch to ON.
	No fuel.	Fill fuel tank.
	Stale gasoline or water in gasoline.	Drain entire system and refill with fresh fuel.
	Lubricant level is low.	Engine is equipped with Low Oil Shutoff. If engine lubricant level is low, it must be filled before unit will start. Check engine lubrincant level and fill, if necessary.
	Fuel valve is OFF.	Turn fuel valve ON.
	Spark plug faulty, fouled, or improperly gapped.	Replace spark plug.
	Engine stored without treating or draining gasoline, or refueled with bad gasoline.	Drain fuel. Refuel with fresh gasoline.
	Dirty fuel filter.	Replace fuel filter or contact a qualified service center.
Engine hard to start.	Water in gasoline.	Drain entire system and refill with fresh fuel.
	Weak spark at spark plug.	Replace spark plug or contact a quali- fied service center.
Engine lacks power.	Dirty air filter.	Check air filter element. Clean or replace as needed.
	Engine stored without treating or draining gasoline, or refueled with bad gasoline.	Drain fuel. Refuel with fresh gasoline. If problem continues, contact a qualified service center.
Electric start feature not working.	Battery wires are disconnected.	Connect the battery wires.
	Battery is not charged.	Charge the battery.
AC recepted a dece pet work	Circuit breaker is tripped.	Reset the AC circuit breaker.
AC receptacle does not work.	GFCI is tripped.	Reset the GFCI.
	Item plugged in is defective.	Try a different item.
Generator makes a "spark knock" or		Switch to a different brand of gasoline,
Generator makes a "spark knock" or "pinging" noise.	An occasional light "knocking" or "ping- ing" under heavy load is not a cause for concern. However, if the knocking or pinging occurs under normal load at a steady engine speed, the problem may be with the brand of gasoline being used.	Switch to a different brand of gasoline, making sure that the octane rating is 86 or higher. If problem continues, contact a qualified service center.
If problem persists after trying the above solutions, contact customer service or a qualified service center for assistance.		

#### NOTICE:

As the equipment owner, you are responsible for the performance of the required maintenance listed in the *Maintenance* section. It is recommended that you retain all receipts covering maintenance on your equipment. Neglecting or failing to perform the required maintenance may increase emissions, decrease fuel efficiency, degrade performance, cause irreversible engine damage and/or void your warranty.

### WARRANTY

### CALIFORNIA EMISSION CONTROL WARRANTY STATEMENT

### YOUR WARRANTY RIGHTS AND OBLIGATIONS

The California Air Resources Board, the United States Environmental Protection Agency and A-iPOWER, are pleased to explain the emission control system warranty on your 2018-2019 model year small off-road engine/equipment. In the United States and California, new small off-road engine/equipment must be designed, built and equipped to meet the State's stringent anti smog standards. A-IPOWER must warrant the emission control system on your small off-road engine/equipment for the periods of time listed below provided there has been no abuse, neglect or improper maintenance of your small off-road engine/equipment.

Your emission control system may include parts such as the carburetor or fuel injection system, the ignition system, catalytic converter, fuel tanks, fuel lines, fuel caps, valves, canisters, filters, vapor hoses, clamps, connectors, belts, and other associated emission-related components. For engines less than or equal to 80 cc, only the fuel tank is subject to the evaporative emission control warranty requirements of this section (California only).

Where a warrantable condition exists, A-IPOWER will repair your small off-road engine/equipment at no cost to you including diagnosis, parts and labor.

### MANUFACTURER'S WARRANTY COVERAGE:

This Emissions Control System is warranted for two years. If any emission-related part on your engine/equipment is defective, the part will be repaired or replaced by A-IPOWER.

### **OWNER'S WARRANTY RESPONSIBILITIES:**

As the small off-road engine/equipment owner, you are responsible for the performance of the required maintenance listed in your owner's manual. A-IPOWER recommends that you retain all receipts covering maintenance on your small off-road engine/equipment, but A-IPOWER cannot deny warranty solely for the lack of receipts or for your failure to ensure the performance of all scheduled maintenance.

As the small off-road engine/equipment owner, you should however be aware that A-IPOWER may deny you warranty coverage if your small off-road engine/equipment or a part has failed due to abuse, neglect, improper maintenance or unapproved modifications.

You are responsible for presenting your small off-road engine/equipment to A-IPOWER distribution center as soon as a problem exists. The warranty repairs should be completed in a reasonable amount of time, not to exceed 30 days.

If you have a question regarding your warranty coverage, you should contact Senci Power USA Inc at 1-909-923-2068 or support@a-ipower.com.

### DEFECTS WARRANTY REQUIREMENTS:

(a) The warranty period begins on the date the engine/equipment is delivered to an ultimate purchaser.

(b) General Emissions Warranty Coverage. A-IPOWER warrants to the ultimate purchaser and each subsequent owner that the engine/equipment is:

(1) Designed, built, and equipped so as to conform with all applicable regulations adopted by the Air Resources Board; and

(2) Free from defects in materials and workmanship that causes the failure of a warranted part for a period of two years.

(c) The warranty on emissions-related parts will be interpreted as follows:

(1) Any warranted part that is not scheduled for replacement as required maintenance in the written instructions required by subsection (d) must be warranted for the warranty period defined in Subsection (b)(2). If any such part fails during the period of warranty coverage, it must be repaired or replaced by A-IPOWER according to Subsection (4) below. Any such part repaired or replaced under the warranty must be warranted for the remaining warranty period.

(2) Any warranted part that is scheduled only for regular inspection in the written instructions required by subsection (d) must be warranted for the warranty period defined in Subsection (b)(2). A statement in such written instructions to the effect of "repair or replace as necessary" will not reduce the period of warranty coverage. Any such part repaired or replaced under warranty must be warranted for the remaining warranty period.

(3) Any warranted part that is scheduled for replacement as required maintenance in the written instructions required by subsection (d) must 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 must be repaired or replaced by A-IPOWER according to Subsection (4) below. Any such part repaired or replaced under warranty must be warranted for the remainder of the period prior to the first scheduled replacement point for the part.

(4) Repair or replacement of any warranted part under the warranty must be performed at no charge to the owner at a warranty station.

(5) Notwithstanding the provisions of Subsection (4) above, warranty services or repairs must be provided at all A-IPOWER distribution centers that are franchised to service the subject engine/equipment.

(6) The owner must not be charged for diagnostic labor that leads to the determination that a warranted part is in fact defective, provided that such diagnostic work is performed at a warranty station.

(7) A-IPOWER is liable for damages to other engine/equipment components proximately caused by a failure under warranty of any warranted part.

(8) Throughout the emissions warranty period defined in Subsection (b)(2), A-IPOWER must maintain a supply of warranted parts sufficient to meet the expected demand for such parts.
(9) Any replacement part may be used in the performance of any warranty maintenance or repairs and must be provided without charge to the owner. Such use will not reduce the warranty obligations of A-IPOWER.

(10) Add-on or modified parts that are not exempted by the Air Resources Board may not be used. The use of any non-exempted add-on or modified parts will be grounds for disallowing a warranty claim. A-IPOWER will not be liable to warrant failures of warranted parts caused by the use of a non-exempted add-on or modified part.

### WARRANTY

(11) A-IPOWER issuing the warranty shall provide any documents that describe that manufacturer's warranty procedures or policies within five working days of request by the Air Resources Board.

(d) Emission Warranty Parts List for exhaust (for all displacements).

- (1) Fuel Metering System
- (i) Carburetor and internal parts (and/or pressure regulator or fuel injection system).
- (ii) Air/fuel ratio feedback and control system.
- (iii) Cold start enrichment system.
- (2) Air Induction System
- (i) Controlled hot air intake system.
- (ii) Intake manifold.
- (iii) Air filter.
- (3) Ignition System
- (i) Spark Plugs.
- (ii) Magneto or electronic ignition system.
- (iii) Spark advance/retard system.
- (4) Exhaust Gas Recirculation (EGR) System
- (i) EGR valve body, and carburetor spacer if applicable.
- (ii) EGR rate feedback and control system.
- (5) Air Injection System
- (i) Air pump or pulse valve.
- (ii) Valves affecting distribution of flow.
- (iii) Distribution manifold.
- (6) Catalyst or Thermal Reactor System
- (i) Catalytic converter.
- (ii) Thermal reactor.
- (iii) Exhaust manifold.
- (7) Particulate Controls
- (i) Traps, filters, precipitators, and any other device used to capture particulate emissions.
- (8) Miscellaneous Items Used in Above Systems
- (i) Electronic controls.
- (ii) Vacuum, temperature, and time sensitive valves and switches.
- (e) Emission Warranty Parts List for Evap less than or equal to 80cc.
- (i) Fuel Tank.
- (f) Emission Warranty Parts List for Evap greater than 80cc.
- (1) Fuel Metering System
- (i) Fuel Tank.
- (2) Miscellaneous Items Used in Above Systems
- (i) Fuel caps, valves, canisters, filters, vapor, hoses, clamps, connectors, belts, and and assemblies.

A-IPOWER will furnish with each new engine/equipment written instructions for the maintenance and use of the engine/equipment by the owner.



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