



# ENERGY CUBE

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## PORTABLE GENERATOR

### Owner's Manual



**SAVE THIS MANUAL FOR FUTURE REFERENCE**

IMPORTANT SAFETY INSTRUCTIONS ARE INCLUDED IN THIS MANUAL

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# INTRODUCTION

Thank you for purchasing products from Eenergy Cube. We appreciate your business. Our generator is driven by a compact air-cooled engine with high performance, which can supply electrical power to operate power tools on job sites, or to run home appliances during outage, or provide power to remote locations where utility power is unavailable.

This manual contains safety information to make you aware of hazards and risks associated with generator products and how to avoid them. It is important that you read and understand these instructions thoroughly before attempting to start or operate this equipment. **Save this original instruction for future reference.**

If any portion of this manual is not understood, please contact the nearest authorized dealer for starting, operating and servicing procedures. We also strongly recommend you to instruct any other users who may operate the generator in an emergency.

The Emission Control System within this generator is warranted for standards set by the Environmental Protection Agency (EPA). Every effort has been made to ensure that information in this manual is both accurate and current. However Energy Cube. reserves all rights to change, alter, or otherwise to improve the generator and this documentation at any time without prior notice.

## SAFETY RULES



Read this manual carefully and become familiar with your generator. Know its applications, its limitations, and any hazards involved. Failure to follow

instructions could result in serious injury or death. Throughout this publication, and on tags and decals affixed to the generator, DANGER, WARNING, CAUTION and NOTE symbols are used to alert personnel with special instructions about a particular operation that may be hazardous if performed incorrectly, or carelessly. Observe them carefully. Their definitions are as follows:



This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

### DANGER

**DANGER** indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

### WARNING

**WARNING** indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

### CAUTION

**CAUTION** indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.

### CAUTION

**CAUTION** used without the safety alert symbol indicates a potentially hazardous situation which, if not avoided, may result in property damage.

### NOTE

**NOTE** provides additional information that is useful for proper use and maintenance of this tool. If a NOTE is indicated, make sure it is fully understood.

## Safety Symbols and Meanings



Toxic Fumes



Electrical Shock



Kickback



Fire



Explosion



Hot Surface



Flying Objects



Moving Parts



Owner's Manual

### DANGER

Using a generator indoors **WILL KILL YOU IN MINUTES**. Exhaust contains carbon monoxide, a poison gas you cannot see or smell.



**NEVER** use in the home or in partly enclosed areas such as garages.



**ONLY** use outdoors and far from open windows, doors, and vents.

### WARNING



**Toxic Fumes Hazard.** Running engines give off carbon monoxide, an odourless poisonous gas that can cause nausea, fainting, or death. Do not start or run engine indoors or in an enclosed area, even if windows and doors are open.

- Operate this product **ONLY** outdoors.
- Install a battery operated carbon monoxide alarm near the bedrooms.
- Keep exhaust gas away from entering a confined area through windows, doors, ventilation intakes, or other openings.
- **NEVER** operate this product inside any building, carport, porch, mobile equipment, marine applications, or enclosure, even if windows and doors are open.

**⚠ WARNING**

The engine exhaust from this product, certain components in this product and related accessories contain chemicals known to the State of California to cause cancer, birth defects or other reproductive harm. Wash hands after handling.

**⚠ WARNING**

This generator does not meet U.S. Coast Guard Regulation 33CFR-183 and can not be used on marine applications. Incorrect use of the appropriate U.S. Coast Guard approved generator could result in death or serious injury and/or property damage.

**⚠ WARNING**



Starter cord kickback (rapid retraction) will pull hand and arm toward engine faster than you can let go which could cause broken bones, fractures, bruises, or sprains resulting in serious injury.

- When starting engine, pull cord slowly until resistance is felt and then pull rapidly to avoid kickback.
- NEVER start or stop engine with electrical devices plugged in and turned on.

**⚠ WARNING**



Fuel and its vapors are extremely flammable and explosive which could cause burns, fire or explosion resulting in death, serious injury and/or property damage.

### WHEN ADDING OR DRAINING FUEL

- Turn generator engine OFF and let it cool at least 2 minutes before removing fuel cap. Loosen cap slowly to relieve pressure in tank.
- Fill or drain fuel tank outdoors.
- DO NOT overfill tank, Allow space for fuel expansion.
- If fuel spills, wait until it evaporates before starting engine.
- Keep fuel away from sparks, open flames, pilot light, heat, and other ignition sources.
- Check fuel lines, tank, cap and fittings frequently for cracks or leaks. Replace if necessary.
- DO NOT light a cigarette or smoke.

**⚠ WARNING**

### WHEN STARTING EQUIPMENT

- Ensure spark plug, muffler, fuel cap, and air cleaner are in place.
- DO NOT crank engine with spark plug removed.

### WHEN OPERATING EQUIPMENT

- DO NOT operate this product inside any building, carport, porch, mobile equipment, marine applications, or enclosure.
- DO NOT tip engine or equipment at angle which cause fuel to spill.
- DO NOT stop engine by moving choke control to "OFF" position.

### WHEN TRANSPORTING, OR REPAIRING EQUIPMENT

- Transport/move/repair with fuel tank EMPTY or with fuel valve OFF.
- DO NOT tip engine or equipment at angle which cause fuel to spill.
- Disconnect spark plug wire.

### WHEN STORING FUEL OR EQUIPMENT WITH FUEL IN TANK

- Store away from furnaces, stoves, water heaters, clothes dryers, or other appliances that have light or other ignition source because they could ignite fuel vapors.

**⚠ WARNING**



Generator voltage could cause electrical shock or burn resulting in death or serious injury.

- Use approved transfer equipment to prevent back feed by isolating generator from electric utility workers.
- When using generator for backup power, notify utility company.
- Use a ground fault circuit interrupter in any damp or highly conductive area, such as metal decking or steel work.
- DO NOT touch bare wires or receptacles.
- DO NOT use generator with electrical cords which are worn, frayed, bare or otherwise damaged.
- DO NOT operate generator in the rain or wet weather.
- DO NOT handle generator or electrical cords while standing in water, while barefoot, or while hands or feet are wet.
- DO NOT allow unqualified persons or children to operate or service generator.

**⚠ WARNING**



Exhaust heat/gases could ignite combustibles, structures or damage fuel tank causing a fire, resulting in death, serious injury

and/or property damage. Contact with muffler area could cause burns resulting in serious injury.

- DO NOT touch hot parts and AVOID hot exhaust gases.
- Allow equipment to cool before touching.
- Keep at least 5 feet (1.5m) of clearance on all sides of generator including overhead.
- It could be a violation of to use or operate the engine on any forest - covered, brush - covered, or grass - covered land unless the exhaust system is equipped with a spark arrester.

Contact the original equipment manufacturer, retailer, or dealer to obtain a spark arrester designed for the exhaust system installed on this engine.

- Replacement parts must be the same and installed in the same position as the original parts.

**⚠ WARNING**



Unintentional sparking could cause fire or electric shock resulting in death or serious injury.

### WHEN ADJUSTING OR MAKING REPAIRS TO YOUR GENERATOR

- Disconnect the spark plug wire from the spark plug and place the wire where it cannot contact spark plug.

### WHEN TESTING FOR ENGINE SPARK

- Use approved spark plug tester.
- DO NOT check for spark with spark plug removed.

**⚠ WARNING**

Starter and other rotating parts could entangle hands, hair, clothing, or accessories resulting in serious injury.

- NEVER operate generator without protective housing or covers.
- DO NOT wear loose clothing, jewelry or anything that could be caught in the starter or other rotating parts.
- Tie up long hair and remove jewelry.

**⚠ CAUTION**

Excessively high operating speeds could result in minor injury and/or generator damage.

Excessively low speeds impose a heavy load.

- DO NOT tamper with governor spring, links or other parts to increase engine speeds. Generator supplies correct rated frequency and voltage when running at governed speed.
- DO NOT modify generator in any way.

**NOTE**

Exceeding generators wattage/ amperage capacity could damage generator and/or electrical devices connected to it.

- DO NOT exceed the generator's wattage/ amperage capacity. See Don't Overload Generator in the Operation section.
- Start generator and let engine stabilize before connecting electrical loads.
- Turn electrical loads OFF and disconnect from generator before stopping generator.

**NOTE**

Improper treatment of generator could damage it and shorten its life.

- Use generator only for intended uses.
- If you have questions about intended use, ask dealer or contact local service center.
- Operate generator only on level surfaces.
- DO NOT expose generator to excessive moisture, dust, dirt, or corrosive vapor.
- DO NOT insert any object through cooling slots.
- If connected devices overheat, to turn them off and disconnect them from generator.
  - or electrical output is lost.
  - or equipment sparks, smokes, or emits flames.
  - or unit vibrates excessively.
- to turn them off and disconnect them from generator.

**NOTE**

There is a permanent conductor between the generator (stator winding) and the frame.

## SECTION 2 —GENERAL INFORMATION

### 2.1 UNPACKING

- Set the carton on a rigid, flat surface.
- Remove everything from carton except generator.
- Open carton completely by cutting each corner from top to bottom.
- Leave generator on carton to install wheel kit.

#### 2.1.1 PACKING CONTENTS

1-Owner's Manual  
2-Wheels  
2-Wheel Axles  
1-Hardware Bag  
(Including 1-Spark Plug Socket; 1-Extension)

### 2.2 ASSEMBLY

The generator requires some assembly prior to using it.

#### 2.2.1 ASSEMBLING THE ACCESSORY KIT

The wheels are designed to greatly improve the portability of the generator.

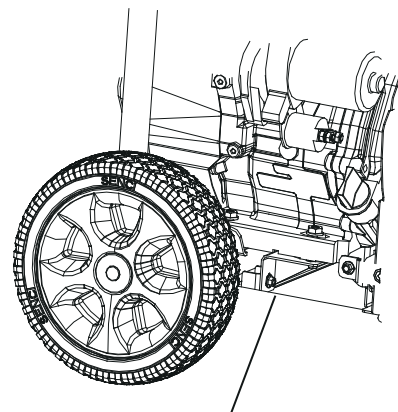
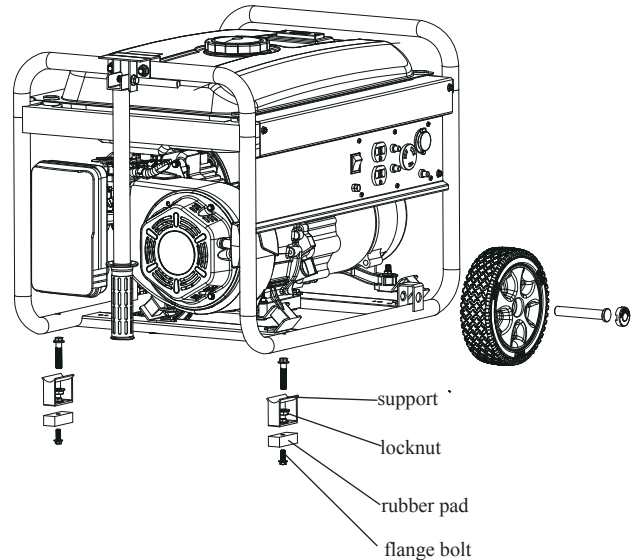
<b>NOTE</b>	The wheels are Not intended for over-the-road use.
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Refer to Figure to install the leg supports as shown.

- Unscrew nut on leg support, install bolt through the generator frame, secure the bolt tightly with wrench(not included).

Refer to Figure to install wheels as shown.

- Slide the axle through the wheel hub, then insert the flat washer.
- Slide the axle through the frame brackets.
- Bend the cotter pin tabs outward to lock the pin in place.



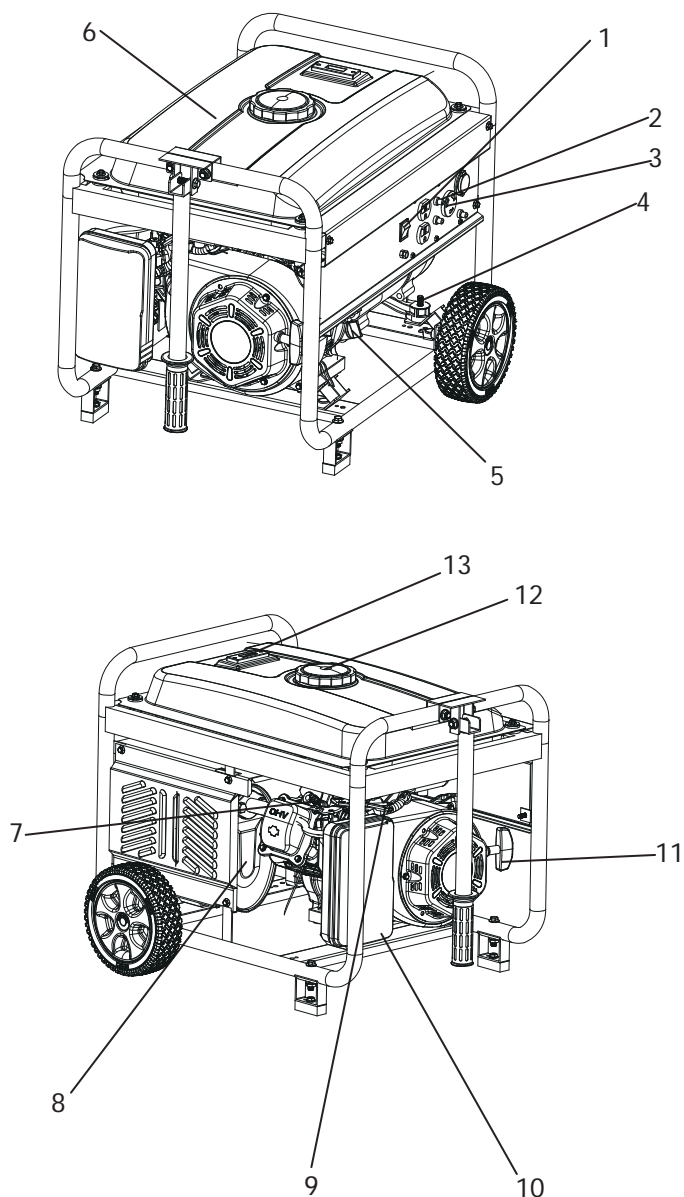
**REMOVE** Red Support Brackets (2 pieces total) Before Use! (They are packing material, will damage engine without removing them.)



## SECTION 3 —FEATURES AND CONTROLS



Read this Owner's Manual and safety rules before operating your generator. Compare the illustrations with your generator, to familiarize yourself with the locations of various controls and adjustments. Save this manual for future reference.



1	ENGINE SWITCH	8	MUFFLER
2	AC CIRCUIT BREAKER	9	CHOKE LEVER
3	AC RECEPTACLE	10	AIR FILTER
4	OIL DRAIN PLUG	11	RECOIL STARTER
5	OIL FILL CAP/DIPSTICK	12	FUEL TANK CAP
6	FUEL TANK	13	FUEL GAUGE
7	SPARK PLUG		

### NOTE

Pictures and drawings used in this manual are for reference only and do not represent any specific model.

## SECTION 4 — PREPARATION BEFORE OPERATION

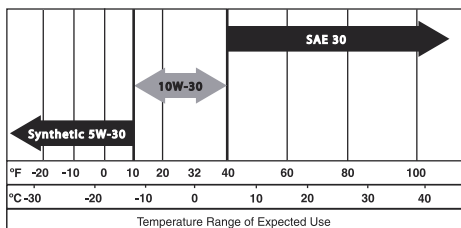
### 4.1 ADDING ENGINE OIL

All oil should meet minimum American Petroleum Institute (API) Service Class SJ, SL or better. Use no special additives. Select the oil's Viscosity grade according to the expected operating temperature (also see chart).

Above 40 °F, use SAE 30

Between 40 °F to 10 °F, use 10W-30

Below 10 °F, use synthetic 5W-30



#### NOTE

Improper treatment of generator could damage it and shorten its life. DO NOT attempt to crank or start the engine before it has been properly serviced with the recommended oil. This could result in an engine failure.

- Place generator on a flat, level surface.
- Clean area around oil fill and remove oil fill cap and dipstick. Wipe dipstick clean.
- Slowly fill engine with oil through the oil filter open until it reaches the full mark on the dipstick. Stop filling occasionally to check oil level. Be careful do not over fill.
- Install oil fill cap and finger tighten securely.
- Check engine oil level before starting each time thereafter.

### 4.2 ADDING FUEL

#### ⚠ DANGER

Never fill tank indoors. Never fill fuel tank when engine is running or hot. Turn generator engine

OFF and allow engine to cool entirely before filling fuel tank. Avoid spilling gasoline on HOT engine. Keep fuel away from sparks, open flames, pilot lights, heat, and other ignition sources. DO NOT light a cigarette or smoke when filling the fuel tank. Fuel is highly FLAMMABLE and its vapors are EXPLOSIVE.

- Fuel must meet these requirements:
- Clean, fresh, unleaded gasoline.  
A minimum of 87 octane/87AKI (91 RON).
- Never use E85 fuel.
- Gasoline with up to 10% ethanol (gasohol) or up to 15% MTBE (methyl tertiary butyl ether) is acceptable.

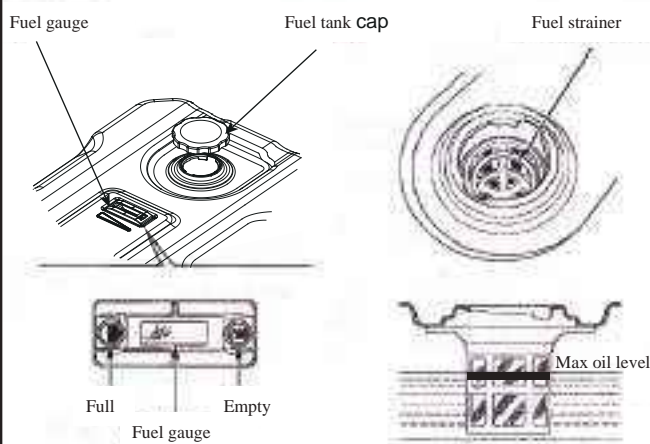
- Do not mix oil with gasoline.
- Install fuel cap and wipe up any spilled gasoline.

#### ⚠ CAUTION



Do not overfill the fuel tank. Allow space for fuel expansion.

IF the fuel tank is overfilled, fuel can overflow onto a HOT engine and cause FIRE or EXPLOSION. If fuel spills, wait until it evaporates before starting engine. Check fuel lines, tank, cap and fittings frequently for cracks or leaks. Replace if necessary.



**IMPORTANT:** It is important to prevent gum deposits from forming in fuel system parts such as the carburetor, fuel hose or tank during storage. Alcohol-blended fuels (called gasohol), ethanol or methanol) can attract moisture, which leads to separation and formation of acids during storage. Acidic gas can damage the fuel system. So the fuel should be emptied before storage of 30 days or longer. See the "Storage" section. Never use engine or carburetor cleaner products in the fuel tank as permanent damage may occur.

### 4.3 GROUNDING THE GENERATOR

The national Electrical Code requires that the frame and external electrically conductive part of this generator be properly connected to an approved earth ground.

Local electrical codes may also require proper grounding of the unit. For that purpose, connecting a No. 10 AWG (American Wire Gauge) stranded copper wire to the grounding lug and to an earth-driven copper or brass grounding rod (electrode) provides adequate protection against electrical shock. However, local codes may vary widely. Consult with a local electrician for grounding requirement in the area.



Proper grounding of the generator will help prevent electrical shock in the event of ground fault condition in the generator or in connected electrical devices. Proper grounding also helps dissipate static electricity, which often builds up in ungrounded devices.

## WATTAGE REFERENCE GUIDE

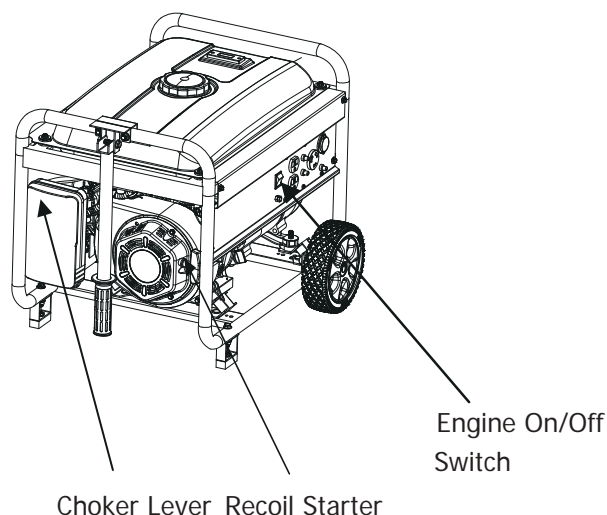
Wattage Reference Guide		
Tool or Appliance	Running* (Rated) Watts	Additional Starting (Surging) Watts
<b>Essentials</b>		
Light Bulb - 75 watt	75	—
Furnace Fan Blower - 1/2 HP	800	2350
Sump Pump - 1/3 HP	800	1300
Refrigerator/Freezer	700	2200
Water Well Pump - 1/2 HP	1000	2100
<b>Heating/Cooling</b>		
Window AC - 10,000 BTU	1200	3600
Humidifier - 13 Gal	175	—
Central AC - 24,000 BTU	3800	11400
<b>Kitchen</b>		
Microwave Oven - 1000 Watt	1000	—
Coffee Maker	1000	—
Electric Stove - 8" Element	2100	—
Toaster	850	—
<b>Family Room</b>		
DVD/CD Player	100	—
VCR	100	—
Stereo Receiver	450	—
Color Television - 27 in	500	—
Personal Computer w/17 in monitor	800	—
<b>Other</b>		
Security System	500	—
AM/FM Clock Radio	100	—
Garage Door Opener - 1/2 HP	875	2350
Electric Water Heater	4700	11700
<b>DIY/Job Site</b>		
Quartz Halogen Work Light	1000	—
Airless Sprayer - 1/3 HP	600	1200
Reciprocating Saw	960	—
Electric Drill - 1/2 HP, 5.4 Amps	600	900
Circular Saw - 7-1/4 in	1400	2300
Miter Saw - 10 in	1800	1800
Table Planer - 6 in	1800	1800
Table Saw/Radial Arm Saw - 10 in	2000	2000
Air Compressor - 1 HP	1600	4500

## SECTION 5 — OPERATION

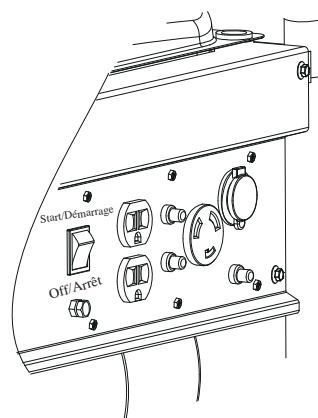
### 5.1 STARTING THE ENGINE

**⚠ WARNING** Never start or stop engine with electrical devices plugged into the receptacles AND devices turned on.

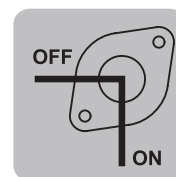
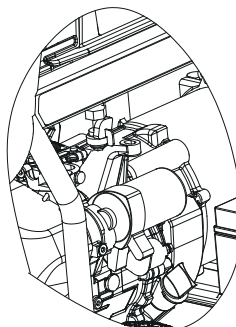
Unplug all electrical loads from the unit's receptacles before starting the engine. Make sure the unit is in a level position.



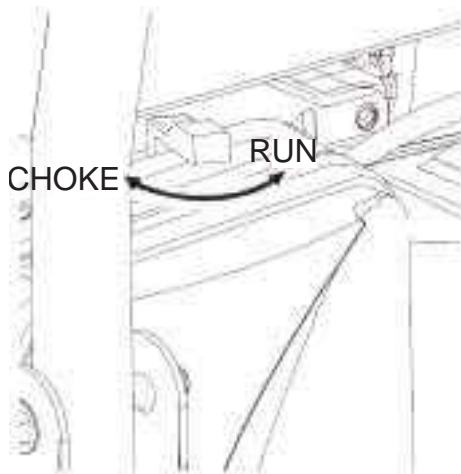
Turn engine switch to ON position for Recoil start.



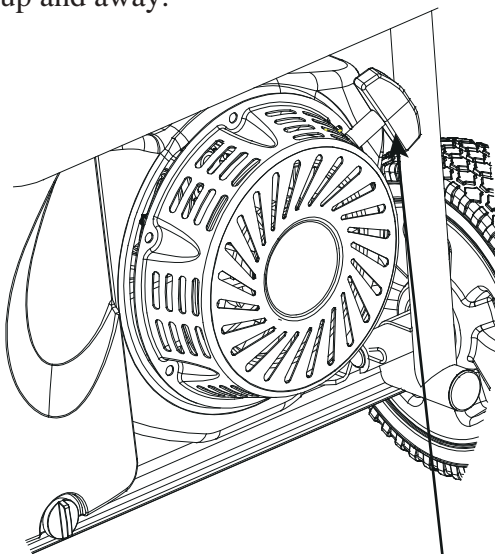
Turn Fuel switch to ON position.



Move engine choke lever to the CHOKE position.

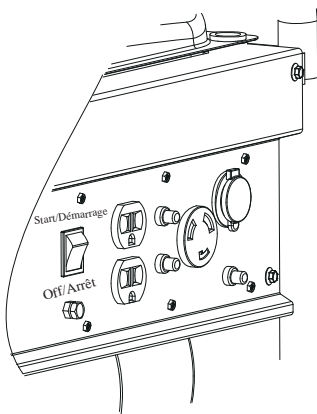


For Recoil start, firmly grasp the recoil handle and pull slowly until increased resistance is felt. Pull rapidly up and away.



Recoil Starter

For electric start, set the switch to the "ON", turn and hold key in start switch to "start" position until generator starts. To prolong the life of starter components, DO NOT hold key in "start" position for more than 15 seconds, and pause for at least 1 minute between starting attempts.



When engine starts, move choke lever to 1/2-CHOKE position until engine runs smoothly and then fully into RUN position. If engine falters, move choke back out to 1/2-CHOKE position until engine runs smoothly and then fully into RUN position.

**NOTE** If battery is discharged, use manual starting instructions.

**NOTE** If engine fires, but does not continue to run, move choke lever to the CHOKE position and repeat starting instructions.

**⚠ WARNING** Starter cord kickback (rapid retraction) will pull hand and arm toward engine faster than you can let go which could cause broken bones, fractures, bruises, or sprains resulting in serious injury. When starting engine, pull cord slowly until resistance is felt and then pull rapidly to avoid kickback. Never start or stop engine with electrical devices plugged in and turned on.

**NOTE** If engine fails to start after 3 pulls, or if unit shut down during operation, make sure unit is on a level surface and check for proper oil level in crankcase. This unit may be equipped with a low oil protection device. If so, oil must be checked at proper level for engine to start and run.

**⚠ WARNING** Exhaust heat/ gases could ignite combustible, structures or damage fuel tank causing a fire, resulting in death, serious injury and/or property damage. Contact with muffler area could cause burn resulting in serious injury. DO NOT touch hot part and AVOID hot exhaust gases. Allow equipment to cool before touching. Keep at least 5 feet (152 cm) of clearance on all sides of generator including overhead. Contact the original equipment manufacturer, retailer, or dealer to obtain a spark arrester designed for the exhaust system installed on this engine. Replacement parts must be the same and installed in the same position as the original parts.

**IMPORTANT:** Do not overload the generator. Also, do not overload individual panel receptacles. These outlets are protected against overload with push-to-reset-type circuit breakers. If amperage rating of any circuit breaker is exceeded, that breaker opens and electrical output to that receptacle is lost.

## 5.2 CONNECTING ELECTRICAL LOADS

- Let engine run stable and warm up for a few minutes after starting.
- Plug in and turn on the desired 120 and/or 240 Volt AC, single phase, 60 Hz electrical loads.
- Add up the rated watts (or amps) of all loads to be connected at one time. This total should not be greater than (a) the rated wattage/amperage capacity of the generator or (b) circuit breaker rating of the receptacle supplying the power.

### NOTE

DO NOT connect 240 Volt loads to the 120 Volt duplex receptacles, and do not do vice versa also. DO NOT connect 3 phase loads to the generator. DO NOT connect 50 Hz loads to the generator.

### NOTE

Start generator and let engine stabilize before connecting electrical loads. Connect electrical loads in OFF position then turn ON for operation. Turn electrical loads OFF and disconnect from generator before stopping generator.

### NOTE

Exceeding generators wattage/amperage capacity could damage generator and/or electrical devices connected DO NOT exceed the generator's wattage/amperage capacity.

- Overloading a generator in excess of its rated wattage capacity can result in damage to the generator and to connected electrical devices. Observe the following to prevent overloading the unit:
    - Add up the total wattage of all electrical devices to be connected at one time. This total should NOT be greater than the generator's wattage capacity.
- The rated wattage of lights can be taken from light bulbs. The rated wattage of tools, appliances and motors can usually be found on a data label

### NOTE

or decal affixed to be the device.

If the appliance, tool or motor does not give wattage, multiply volts times ampere rating to determine watts (volts× amps = watts).

Some electric motors, such as induction types, require about three times more watts of power for starting than for running. This surge of power lasts only a few seconds when starting such motors. Make sure to allow for high starting wattage when selecting electrical devices to connect to the generator:

- Figure the watts needed to start the largest motor.
- Add to that figure the running watts of all other connected loads.

The wattage reference guide is provided to assist in determining how many items the generator can operate at one time.

## 5.3 STOPPING THE ENGINE

Shut off all loads then unplug the electrical cables from generator panel receptacles. Never start or stop the engine with electrical devices plugged in and turned on.

Let engine run at no-load for several minutes to stabilize the internal temperatures of engine and generator.

Move ON/OFF switch to OFF position. Close fuel valve.

## 5.4 LOW OIL LEVEL SHUT DOWN SYSTEM

The engine is equipped with a low oil level sensor that shuts down the engine automatically when the oil level drops below a specified level. If the engine shuts down by itself and the fuel tank has enough gasoline, check engine oil level.

## 5.5 HIGH ALTITUDE

At altitudes over 3,000 feet (914.4 meters), a minimum 87 octane / 87AKI (91 RON) gasoline is acceptable. To remain emissions compliant, high altitude adjustment is required. Operation without this adjustment will cause decreased performance, increased fuel consumption, and increased emissions. See an authorized dealer for high altitude adjustment information. Operation of the engine at altitudes below 2,500 feet (762 meters) with the high altitude kit is not recommended.

## SECTION 6 □ MAINTENANCE

### 6.1 MAINTENANCE SCHEDULE

Follow the calendar intervals shown below. More frequent service is required when operating in adverse conditions.

<b>First 5 Hours</b>
<ul style="list-style-type: none"><li>• Change engine oil</li></ul>
<b>Every 8 Hours or Daily</b>
<ul style="list-style-type: none"><li>• Keep generator clean</li><li>• Check engine oil level</li></ul>
<b>Every 25 Hours or Yearly</b>
<ul style="list-style-type: none"><li>• Clean engine air filter</li></ul>
<b>Every 50 Hours or Yearly</b>
<ul style="list-style-type: none"><li>• Change engine oil</li></ul>
<b>Yearly</b>
<ul style="list-style-type: none"><li>• Replace engine air filter</li><li>• Service fuel valve</li><li>• Service spark plug</li><li>• Inspect muffler and spark arrester</li><li>• Clean cooling system</li></ul>

### 6.2 GENERAL RECOMMENDATIONS

The warranty of the generator does not cover items that have been subjected to operator abuse or negligence. The operator must maintain the generator as instructed in this manual.

Some adjustments will need to be made periodically to properly maintain the generator.

All adjustments in the maintenance section of this manual should be made at least once each season. Follow the requirements in the “Maintenance Schedule”.

#### **NOTE**

Once a year replace the spark plug and replace the air filter. A new spark plug and clean air filter assure proper fuel-air mixture and help the engine run better and last longer.

### 6.2.1 GENERATOR MAINTENANCE

Generator maintenance consists of keeping the unit clean and dry. Operate and store the unit in a clean dry environment where it will not be exposed to excessive dust, dirt, moisture or any corrosive vapors. Cooling air slots in the generator must not become clogged with snow, leaves, or any other foreign material. Check the cleanliness of the generator frequently and clean when dust, dirt, oil, moisture or other foreign substances are visible on its exterior surface.

#### **CAUTION**

Never insert any object or tool though the air cooling slots, even if the engine is not running.

#### **NOTE**

DO NOT use a garden hose to clean generator. Water can enter the engine fuel system and cause problem. In addition, if water enters the generator though cooling air slots, some water will be retained in voids and crevices of the rotor and stator winding insulation. Water and dirt buildup on the generator internal windings will eventually decrease the insulation resistance of these windings.

### 6.2.2 TO CLEAN THE GENERATOR

- Use a damp cloth to wipe exterior surfaces clean.
- A soft, bristle brush may be used to loosen caked on dirt, oil etc.
- A vacuum cleaner may be used to pick up loose dirt and debris.
- Low pressure air (not to exceed 25 psi) may be used to blow away dirt. Inspect cooling air slots and openings on the generator. These openings must be kept clean and unobstructed.

### 6.2.3 ENGINE MAINTENANCE

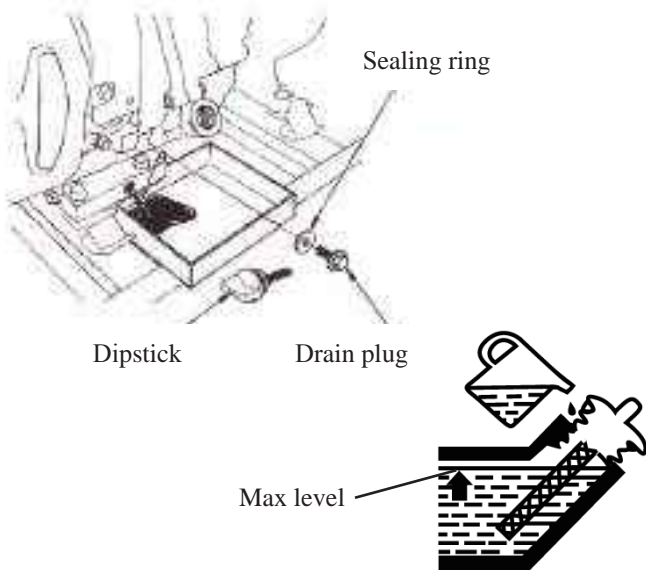
#### **DAANGER**

When working on the generator, always disconnect spark plug wire from spark plug and keep wire away from spark plug.



## 6.2.4 CHANGING THE OIL

Change the oil after the first five hours of operation, then every 50 hours thereafter. If running this unit under dirty or dusty conditions, or in extremely hot weather, to change the oil more often.



### CAUTION

Hot oil may cause burns. Allow engine to cool before draining oil. Avoid prolonged or repeated skin exposure with used oil. Thoroughly wash exposed areas with soap.

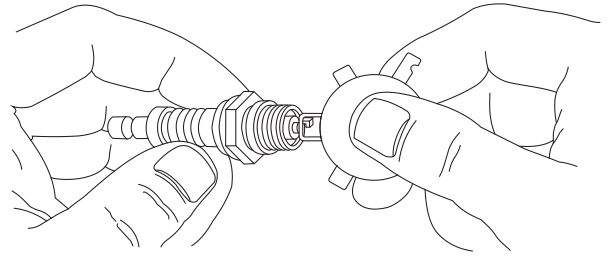
Use the following instructions to change the oil while the engine is still warm:

- Clean area around oil drain plug.
- Remove oil drain plug from engine and oil fill plug to drain oil completely into a suitable container.
- When oil has completely drained, install oil drain plug and tighten securely.
- Fill engine with recommended oil. (See “Before Starting the Generator” for oil recommendations).
- Wipe up any spilled oil.
- Dispose of used oil at a proper collection center.

## 6.2.5 REPLACING THE SPARK PLUG

Use spark plug F6TC, F7TC, BPR4ES or Champion RN14YC. Replace the plug once each year. This will help the engine start easier and run better.

- Stop the engine and pull the spark plug wire off of the spark plug.
- Clean the area around the spark plug and remove it from the cylinder head.
- Set the spark plug's gap to 0.70-0.80 mm (0.028-0.031 in.). Install the correctly gapped spark plug into the cylinder head and torque to 15 ft/lbs.



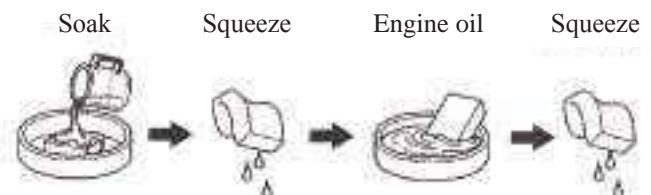
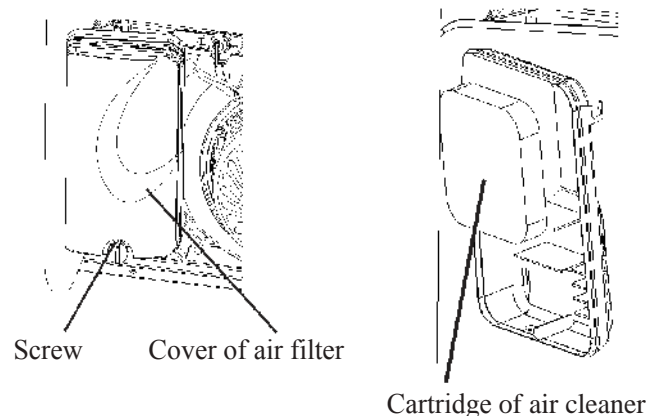
## 6.2.6 SPARK ARRESTER

- Shut off generator and allow the engine and muffler to cool down completely before servicing spark arrester (located on the back of the muffler).
- Remove the clamp and spark arrester screen.
- Clean the spark arrester screen with a small wire brush.
- Replace the spark arrester if it is damaged.
- Installation of the spark arrester screen is the reverse of the removal.

## 6.3 SERVICE AIR FILTER

The engine will not run properly and may be damaged if using a dirty air filter. Replace the air filter once a year. Clean or replace more often if operating under dusty conditions.

- Remove air filter cover.
- Wash in soapy water. Squeeze filter dry in clean cloth (DO NOT TWIST).
- Clean air filter cover before re-installing it.





## 6.4 VALVE CLEARANCE

After the first 50 hours of operation, check the valve clearance in the engine and adjust if necessary. Inlet valve clearance: 0.1-0.15mm; exhaust valve clearance: 0.15-0.2mm.

**Important:** If feeling uncomfortable about doing this procedure or the proper tools are not available, please take the generator to the nearest service center to have the valve clearance adjusted. This is a very important step to ensure longest life for the engine.

## SECTION 7 STORAGE

### 7.1 GENERAL

The generator should be started at least once every seven days and be allowed to run at least 30 minutes. If this cannot be done and the unit must be stored for more than 30 days, use the following information as a guide to prepare it for storage.

**⚠ DANGER** NEVER store engine with fuel in tank indoors or in enclosed, poorly ventilated areas where fumes may reach an open flame, spark or pilot light as on a furnace, water heater, clothes dryer or other gas appliance.

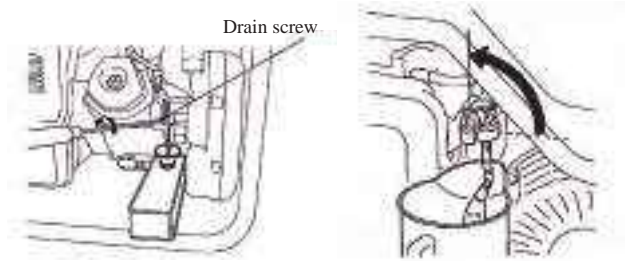
**⚠ CAUTION** Avoid spray from spark plug holes when cranking engine.

**⚠ DANGER** Drain fuel into approved container outdoors, away from open flame. Be sure engine is cool. Do not smoke.

### 7.2 LONG TERM SHORTAGE INSTRUCTIONS

It is important to avoid gum deposits from forming in essential fuel system parts such as the carburetor, fuel hose or tank during storage. Also, experience indicates that alcohol-blended fuels (called gasohol, ethanol or methanol) can attract moisture, which leads to separation and formation of acids storage. Acidic gas can damage the fuel system of an engine while in storage.

To avoid engine problems, the fuel system should be emptied before storage of 30 days or longer, as follows:



- Remove all gasoline from the fuel tank.
- Start and run engine until engine stops from lack of fuel.
- While engine is still warm, drain oil from crankcase. Refill with recommended grade.
- Remove spark plugs and pour about 1/2 ounce (15 ml) of engine oil into the cylinders. Cover spark plug hole with rag. Pull the recoil starter a couple times to lubricate the piston rings and cylinder bore.

### 7.3 OTHER STORAGE TIPS

- Do not store gasoline from one season to another.
- Replace the gasoline can if it starts to rust. Rust and/or dirt in the gasoline will cause problems with the carburetor and fuel system.
- If possible, store the unit indoors and cover it to give protection from dust and dirt. **BE SURE TO EMPTY THE FUEL TANK.**
- If it is not practical to empty the fuel tank and the unit is to be stored for some time, use a commercially available fuel stabilizer added to the gasoline to increase the life of the gasoline.
- Cover the unit with a suitable protective cover that does not retain moisture.

**⚠ DANGER** NEVER cover the generator while engine and exhaust area are warm.

- Install and tighten spark plugs. Do not connect spark plug wires.
- Clean the generator outer surfaces. Check that cooling air slots and openings on generator are open and unobstructed.
- Store the unit in clean, dry place.

## SECTION 8 □ TROUBLESHOOTING

Problem	Cause	Correction
Engine is running, but no AC output is available.	<ol style="list-style-type: none"> <li>1. One of the circuit breakers is off.</li> <li>2. Fault in generator.</li> <li>3. Poor connection or defective cord set.</li> <li>4. Connected device is bad.</li> </ol>	<ol style="list-style-type: none"> <li>1. Turn circuit breaker to ON.</li> <li>2. Contact authorized service facility.</li> <li>3. Check and repair.</li> <li>4. Connect another device that is in good condition.</li> </ol>
Engine runs good without loading, but "bogs down" when loads are connected.	<ol style="list-style-type: none"> <li>1. Short circuit in a connected load.</li> <li>2. Engine speed is too slow.</li> <li>3. Generator is overloaded.</li> <li>4. Shorted generator circuit.</li> <li>5. Clogged or dirty fuel filter.</li> </ol>	<ol style="list-style-type: none"> <li>1. Disconnect shorted electrical load.</li> <li>2. Contact authorized service facility.</li> <li>3. See Don't Overload Generator.</li> <li>4. Contact authorized service facility.</li> <li>5. Clean or replace fuel filter.</li> </ol>
Engine can't be started, or runs rough or shuts down while running.	<ol style="list-style-type: none"> <li>1. Start switch in off position.</li> <li>2. Fuel valve is in "Off" position.</li> <li>3. Failed battery.</li> <li>4. Low oil level.</li> <li>5. Dirty air cleaner.</li> <li>6. Clogged or dirty fuel filter.</li> <li>7. Out of fuel.</li> <li>8. Stale fuel.</li> <li>9. Spark plug wire not connected to spark plug.</li> <li>10. Bad spark plug.</li> <li>11. Water in fuel.</li> <li>12. Flooded.</li> <li>13. Excessively rich fuel mixture.</li> <li>14. Intake valve stuck open or closed.</li> <li>15. Engine has lost compression.</li> </ol>	<ol style="list-style-type: none"> <li>1. Turn key in start switch to on.</li> <li>2. Turn fuel valve to "On" position.</li> <li>3. Replace battery.</li> <li>4. Fill crankcase to proper level or place generator on level surface.</li> <li>5. Clean or replace air cleaner.</li> <li>6. Clean or replace fuel filter.</li> <li>7. Fill fuel tank.</li> <li>8. Drain fuel tank and carburetor; fill with fresh fuel.</li> <li>9. Connect wire to spark plug.</li> <li>10. Replace spark plug.</li> <li>11. Drain fuel tank and carburetor; fill with fresh fuel.</li> <li>12. Wait 5 minutes and re-crank engine.</li> <li>13. Contact authorized service facility.</li> <li>14. Contact authorized service facility.</li> <li>15. Contact authorized service facility.</li> </ol>
Engine lacks power.	<ol style="list-style-type: none"> <li>1. Load is too high.</li> <li>2. Dirty air filter.</li> <li>3. Clogged or dirty fuel filter.</li> </ol>	<ol style="list-style-type: none"> <li>1. See Don't Overload Generator.</li> <li>2. Replace air filter.</li> <li>3. Clean or replace fuel filter.</li> </ol>
Engine "hunts" or falters	<ol style="list-style-type: none"> <li>1. Carburetor is running too rich or too lean.</li> <li>2. Clogged or dirty fuel filter.</li> </ol>	<ol style="list-style-type: none"> <li>1. Contact authorized service facility.</li> <li>2. Clean or replace fuel filter.</li> </ol>

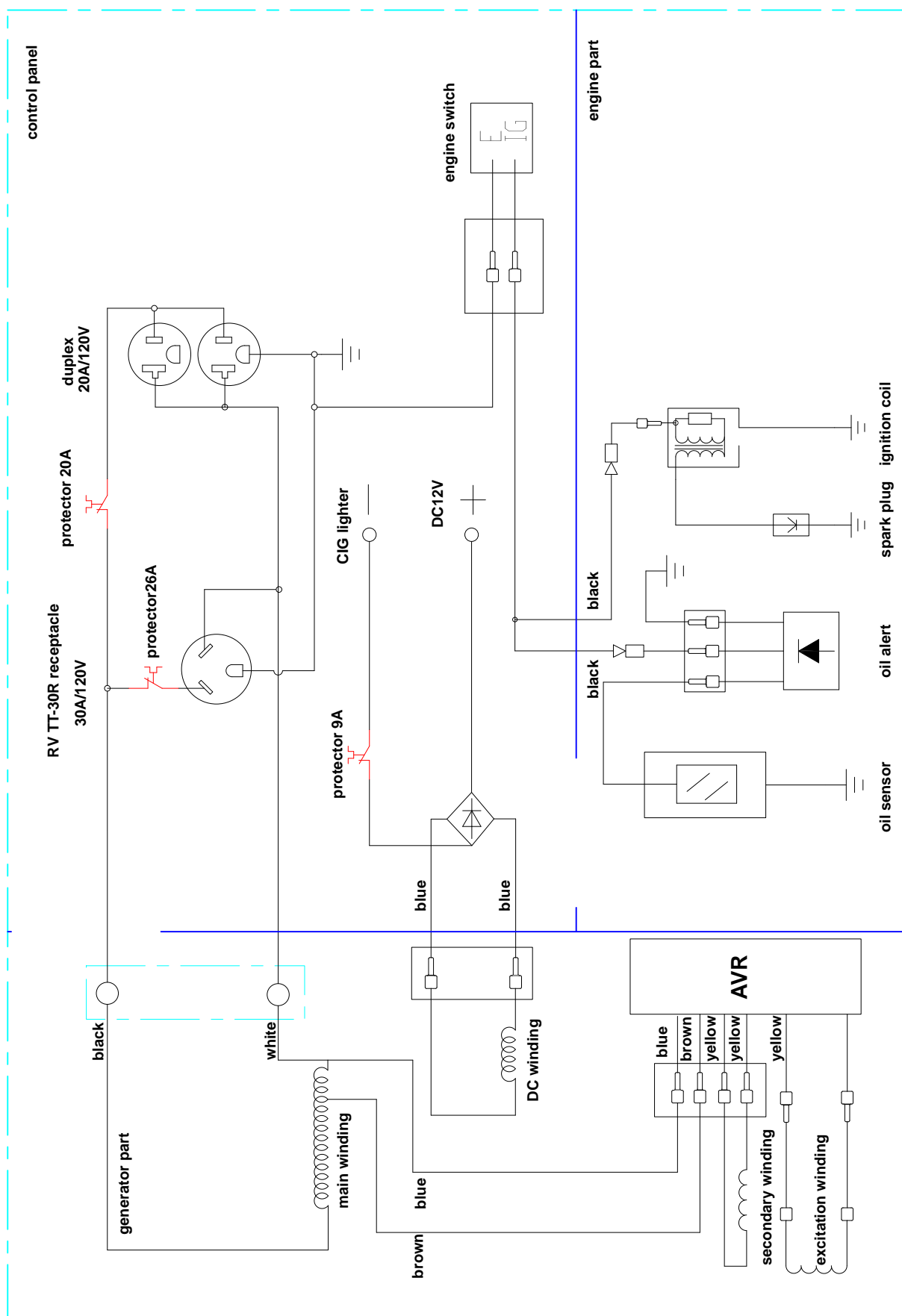
## SECTION 9 □ PARAMETER

### Specification

Model	AP4050
Engine	Kohler 7.0HP
Displacement	208cc
Rated frequency	60Hz
Rated voltage	120V
Running watts	3050W
Starting watts	4050W
Fuel tank capacity	4Gallon
Full load continuum running time	8.0H
1/2 load continuum running time	12.0H

# SECTION 10 □ DIAGRAM

AP4050



## SECTION 11 WARRANTIES

### Energy Cube EMISSION CONTROL DEFECTS WARRANTY COVERAGE

Spark ignited small off-road engines are warranted relative to emission control parts defects for a period of three (3) years, subject to the provisions stated below. If any emission related part on your engine is defective, the part will be repaired or replaced by Energy Cube. The warranty period begins on the date the product is delivered to the initial owner.

### OWNER'S WARRANTY RESPONSIBILITY

As the spark ignited small off-road engine owner, you are responsible for the maintenance required, what are listed in the owner's manual.

Energy Cube recommends that you retain all receipts covering maintenance on your spark ignited small off-road engine, but Energy Cube cannot deny warranty solely for the lack of receipts or for your failure to ensure the performance of all scheduled maintenance.

As the owner of a spark ignited small off-road engine, you should however be aware that Energy Cube may deny you warranty coverage if your spark ignited small off-road engine or part has failed due to abuse, neglect, improper maintenance or unapproved modifications.

You are responsible for presenting your spark ignited small off-road engine to an authorized service center as soon as a problem exists. The undisputed warranty repairs should be completed in a reasonable period of time, not to exceed 30 days. For the location of an authorized service center and any questions you may have regarding your warranty rights and responsibilities, you should **call our parts and technical support group toll free at 888-980-4936, Mon-Fri, 8:00 AM to 5:00 PM Pacific Standard Time.**

The emission warranty is a defects warranty and defects are judged on normal engine performance. The warranty is not related to an in-use emission test.

### EMISSION CONTROL SYSTEM WARRANTED PARTS

Coverage under this warranty extends only to the parts listed below (the emission control system parts) to the extent that these parts were present on the engine purchased.

Fuel Metering System  
Carburetor and/or internal parts  
Intake manifold  
Evaporative System  
Fuel tank, Fuel cap, and tether.  
Air Induction System  
Air cleaner\*  
Intake manifold  
Exhaust System  
Exhaust manifold  
Catalyst  
Ignition System  
Flywheel magneto  
Ignition coil assembly  
Spark plug\*  
Crankcase Emission Control System  
Crankcase breather tube



Oil filler cap  
Miscellaneous parts  
Hoses, seals, gaskets, connectors and assemblies associated with listed parts

Note: \* Covered up to the first required replacement only. See the maintenance schedule in the Owner's Manual.

## COVERAGE TERM

Energy Cube warrants to the initial owner and each subsequent purchaser that the spark ignited small off-road engine is free from defects in materials and workmanship which can cause the failure of an emission warranted part for a period of three (3) years after the engine is delivered to the original retail purchaser. Warranty coverage shall extend to the failure of any engine components caused by the failure of any warranted part still under warranty.

## LIMITATIONS

The Emission Control System Warranty shall NOT cover any of the following:

- (a) Repair or replacement required as the result of misuse or neglect, improper maintenance or unapproved modifications, repairs improperly performed or replacement improperly installed, use of unapproved replacement parts or accessories and modifications not recommended by Energy Cube.
- (b) Replacement parts, other services and adjustments necessary for normal maintenance.
- (c) Transportation to and from the authorized service center or retailer.

## LIMITED LIABILITY

The liability of Energy Cube under this Emission Control System Warranty is limited solely to the remedy of defects in materials or workmanship. This warranty does not cover inconvenience or loss of the spark ignited small off-road engine equipment or transportation of same to an authorized service center. Energy Cube shall not be liable for any other expenses, loss, or damage, whether direct, incidental, consequential (except as listed) or exemplary arising in connection with the sale or use of or inability to use the spark ignited small off-road engine equipment for any other purpose.

No express Emission Control System Warranty is given by Aipower with respect to the engine except as specifically set forth in this document. Any Emission Control System Warranty implied by law, including any warranty of merchantability or fitness for a particular purpose, is expressly limited to the Emission Control System Warranty terms set forth in this document.

## ENERGY CUBE GENERATOR OWNER LIMITED WARRANTY POLICY

Do not return to store. Contact or call 1-888-980-4936 for help.

### OUR WARRANTY

Energy Cube will, at its option, free of charge, repair or replace any part(s) which, upon examination, inspection and testing by Energy Cube or an Energy Cube Authorized Warranty Service Dealer, that is defective in material or workmanship or both. Transportation charges on product submitted for repair or replacement under this warranty must be borne by purchaser. Retain your proof-of-purchase receipt. If you do not provide proof of the initial purchase date, the manufacturer's shipping date of the product will be used to determine the warranty period starting.

### WARRANTY TERM

Any new Energy Cube generator purchased for non-commercial use from an authorized Energy Cube generator dealer in the continental North America will be warranted against defects in material or workmanship for a period of three years, from date of purchase, subject to exclusions noted herein. Commercial and rental applications are warranted for one year. The warranty period begins on the date of purchase by the first retail end-user, and continues for the period of warranty time. Energy Cube customer service will keep on supplying spare parts per request after warranty period with cost charge.

"Consumer Use" means residential household using by a retail consumer. "Commercial Use" means all other uses, including used for commercial, industrial or business or rental purposes. Once equipment has experienced commercial use, it shall thereafter be considered as commercial use for purposes of this warranty.

## HOW TO OBTAIN WARRANTY SERVICE

Please call our customer service number 888-980-4936, or email to: [support@a-ipower.com](mailto:support@a-ipower.com) to contact our support team at first in case of a service needed. Please prepare and provide the model number, serial number and the proof of purchase while contacting us. or mail a request to:

A-iPOWER Corp.  
1477 E. Cedar St. Unit B  
Ontario, CA 91761  
USA

## ABOUT YOUR WARRANTY

We welcome warranty repair and apologize to you for being inconvenienced. Any Authorized Service Dealer may perform warranty repairs. Most warranty repairs are handled routinely, but sometimes requests for warranty service may not be appropriate. For example, warranty service would not apply if equipment damage occurred because of misuse, lack of routine maintenance, shipping, handling, warehousing or improper installation. Similarly, the warranty is void if the manufacturing date or the serial number on the portable generator has been removed or the equipment has been altered or modified. During the warranty period, the Authorized Service Dealer, at its option, will repair or replace any part that, upon examination, is found to be defective under normal use and service. This warranty will not cover the following repairs and equipment:

- **WEAR ITEMS:** Outdoor Power Equipment, as with all mechanical devices, need periodic part(s) service and replacement to perform as designed. This warranty will not cover repair when normal use has exhausted the life-time of a part(s) or engine.
- **INSTALLATION AND MAINTENANCE:** This warranty does not cover the generators or its parts what have been subjected to improper or unauthorized assembled, altered, modified, or damaged due to misusing, negligence, accident, overloading, over-speeding, improper maintenance, repair or storage so as, in our judgment, to adversely affect its performance and reliability. This warranty also does not cover regular maintenance and parts such as air filters,

adjustments, fuel system cleaning and obstruction (due to chemical, dirt, carbon, lime, and so forth).

- **OTHER EXCLUSIONS:** This warranty excludes wearing parts such as o-rings, filters, etc., or malfunctions resulting from accidents, abuse, modifications, alterations, or improper servicing or freezing or chemical deterioration; Damaged related to rodent and/or insect infestation. Accessory parts such as starting batteries, generator adapter cord sets and storage covers are excluded from the product warranty. This warranty excludes used, reconditioned, and demonstration equipment, equipment used for prime power in place of utility power, equipment used in life support applications, and failures due to acts of God and other force majeure events beyond the manufacturers control, such as collision, theft, vandalism, riot or wars, nuclear holocaust, fire, freezing, lightning, earth-quake, windstorm, hail, volcanic eruption, water or flood, tornado or hurricane.

Energy Cube's only liability shall be the repair or replacement of part(s) as stated above in no event shall Energy Cube be liable for any incidental or consequential or consequential damages, even if such damages are a direct result of Energy Cube's negligence. Overnight freight or special shipping costs for replacement part(s) or overtime, holiday or emergency labor will be borne by purchaser.

## THIS IS THE ONLY EXPRESS WARRANTY ON OUR PRODUCTS

We neither assume nor authorize anyone to assume for us any other express warranty. The Energy Cube Distributor/ Dealer have no authority to make any representation or promise on behalf of Energy Cube or to modify the terms or limitations of this warranty in any way.

**THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS. AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM COUNTRY TO COUNTRY.**

# ENERGY CUBE WARRANTY CLAIM FORM

www.a-ipower.com  
support@a-ipower.com

Primary Information			Internal Use	
Circle one:      Consumer      Dealer      Service			Serial Number	
Did you send in your Warranty Card? If not, proof of purchase is required.    Yes    No				
Have you ever had a warranty issue with the same unit before?                      Yes    No			Model	
Name: _____				
Phone: _____			Color	
Address: _____				
_____			Claim Number	
City, State, Zip code: _____				
Date of purchase: _____ Where: _____			Registration Number	

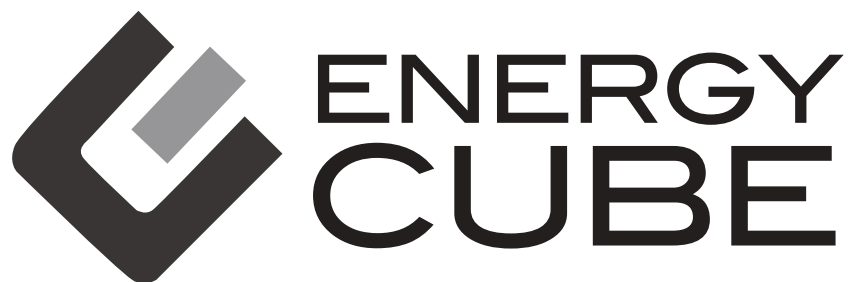
## Problem Description

_____
_____
_____
_____
_____

## Action Take

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

# **We are professional generators!**



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A-iPower Corp.  
1477 E. Cedar Street #B,  
Ontario, CA 91761, U.S.A.  
Phone: 1-888-980-4936  
[support@a-ipower.com](mailto:support@a-ipower.com)  
[www.a-ipower.com](http://www.a-ipower.com)