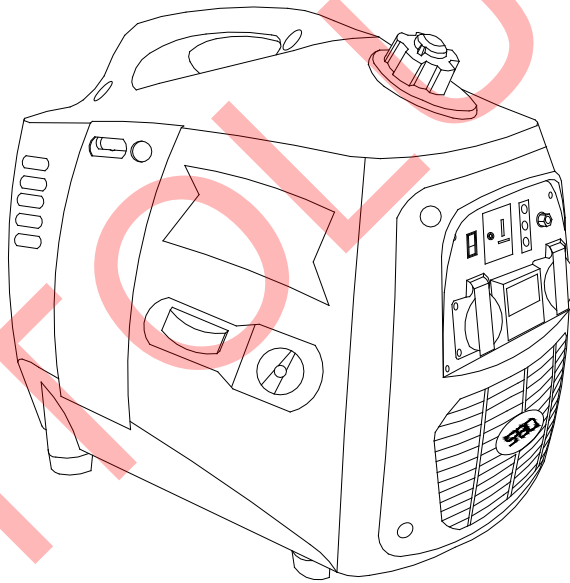


3200ie

DIGITAL INVERTER GENERATOR USER'S MANUAL



MODEL:3200ie

PREFACE

Thank you purchasing the digital inverter generator.

The manual covers operation and maintenance of the 3200i generator.

All information in this publication is based on the latest product information available at the best results from your new generator and to operate it safely. This manual the information on how to do that; please read it carefully.

As you read this manual ,you will find information preceded.

▲NOTICE! symbol. That information is intended to help you avoid damage to your generator, other property, or the environment.

We suggest you read the warranty policy to fully understand its coverage document that should have been given to you by your dealer.

When your generator needs scheduled maintenance, keep in mind that your servicing dealer is specially trained in servicing your generators. Your authorized servicing dealer is dedicated to your dealer.

When your generator needs scheduled maintenance, keep in mind that your servicing dealer is specially trained in servicing your generators. Your authorized servicing dealer is dedicated to your satisfaction and will be pleased to answer questions and concerns.

No part of this publication may be reproduced without written permission.

Keep this owner's manual handy, so you can refer to at any time.

This owner's manual is considered a permanent part of the generator and should remain with the generator if resold.

Pay special attention to statements preceded by the following words.

⚠ WARNING You can be killed or seriously hurt if you don't following instructions.

⚠ CAUTION You can be hurt if you don't follow instructions.

ATTENTION:

The generator is a potential of electrical shock if misused.

Do not expose the generator to moisture, rain or snow.

Do not let the generator gel wet, and do not operate it with hands.

CONTENTS

1. SPECIFICATION CHART.....	4
2. SAFETY LABEL LOCATIONS.....	5
3. SAFETY INFORMATION.....	7
4. CONTROLS.....	10
5. GENERATOR USE.....	18
GROUND SYSTEM.....	18
AC APPLICATIONS.....	19
AC OPERATION	20
DC OPERATION	21
ECO-THROTTLE SYSTEM	24
HIGH ALTITUDE OPERATION.....	25
6. PRE-OPERATION CHECK.....	27
7. STARTING THE ENGINE	31
8. STOPPING THE ENGINE	32
9. MAINTENANCE	33
MAINTENANCE SAFETY	34
10. TRANSPORTING/STORAGE	47
11. TROUBLESHOOTING	51
12. ELECTRICAL WIRING DIAGRAW	53

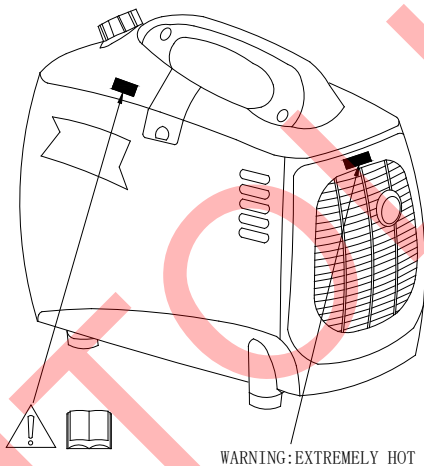
SPECIFICATION CHART

1	TOP ENERGY	3200i		
2	Engine	4 stroke, OHV single cylinder		
3	Displacement	150cc		
4	Compression	8.8:1		
5	Rated rev.	4000Y/mim		
6	Ignition system	Non-contract transistorized ignition		
7	Start system	Recoil hand-operated		
8	Fuel tank capacity	1.32Gallon(5L)		
9	Fuel	Unleaded gasoline		
10	Oil capacity	0.07Gallon(0.5L)		
11	Oil	SF or higher grade		
12	Rated AC frequency	50Hz	60Hz	60Hz
13	Rated AC voltage	220V	120V	240V
14	Rated AC current	12.7 A	23.2A	11.7A
15	Rated AC output	3000VA		
16	Surge AC output	3200VA		
17	DC output	12V 8.3A		
18	Total Harmonic Distortion	$\leq 3\%$		
19	Power factor cos	1.0		
20	Frequency stability	$\pm 0.1\text{Hz}$		
21	Voltage Stability	$\pm 4\text{V}$		
22	Operating Noise Level	68Db(7m)		
23	Continuous Operation at 1/2 Rated Load	6.5h		
24	Dry weight	60 lbs		



SAFETY LABEL LOCATIONS

These labels warn you of potential hazards that can cause serious injury. Read them carefully.




If a label comes off or becomes hard to read, contact your generator dealer for a replacement.

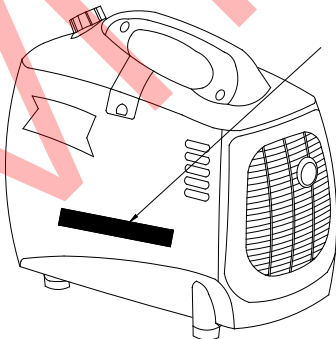


⚠Warning

	<p>The generator should be used outdoors because the gasoline belongs to inflammable and explosive products.</p> <p>The safety of your life and property will be harmed if gasoline is lit.</p> <ul style="list-style-type: none"> ■ Before refuel, please stop engine and be far away from heat source, spark and flame. ■ Please add the fuel only outdoors. ■ Please don't surpass the upper limit of fuel tank when add the fuel ■ Please remove spilled fuel by wiping immediately. ■ After finished using please turn the switch of engine and handgrip of fuel tank cap to the position of "OFF" in case the fuel is leaked.
	<p>Inside an enclosed area, the poisonous carbon monoxide contained in exhaust air will be gathered for the hazard level.</p> <p>Inhalation of carbon monoxide will cause consciousness loss or death.</p> <ul style="list-style-type: none"> ■ Don't operate the generator in the closed or partially closed area.

⚠Warning

	<p>Please never connect to distribution line of electric power company because an electric shock and fire may be caused.</p>
	<p>It is a potential factor to cause electric shock that the generator isn't kept dry.</p> <ul style="list-style-type: none"> ■ Keep generator from moisture, rain water or snow. ■ Don't operate generation with damp hand.
	<p>Please read the user's manual carefully before operate.</p>



SAFETY INFORMATION

These generators are designed to give safe and dependable service if operated according to instructions. Read and understand this owner's manual before operating your generator. You can help prevent accidents by being familiar with your generator's controls, and by observing safe operating procedures.

Operator Responsibility

- Know how to stop the generator quickly in case of emergency.
- Understand the use of all generator controls, output receptacles, and connections.
- Be sure that anyone who operates the generator receives proper instruction. Do not let children operate the generator without parental supervision.

Carbon Monoxide Hazards

- Exhaust contains poisonous carbon monoxide, a colorless and odorless gas. Breathing exhaust can cause loss of consciousness and may lead to death.
- If you run the generator in an area that is confined, or even partially enclosed, the air you breathe could contain a dangerous amount of exhaust gas. To keep exhaust gas from accumulating, provide adequate ventilation.

Electric shock Hazards

- The generator produces enough electric power to cause a serious shock or electrocution if misused.
- Using a generator electrical appliance in wet conditions, such as

rain or snow, or near a pool or sprinkler system, or when your hands are wet, could result in electrocution. Keep the generator dry.

- If the generator is stored outdoors, unprotected from the weather, check all of the electrical components on the control panel, before each use, Moisture or ice can cause a malfunction or short circuit in electrical components which could result in electrocution.
- Never connect any generators for parallel operation.

Fire and burn Hazards

- The exhaust system gets hot enough to ignite some materials.

-Keep the generator at least 3 feet (1 meter) away from buildings and other equipment during operation.

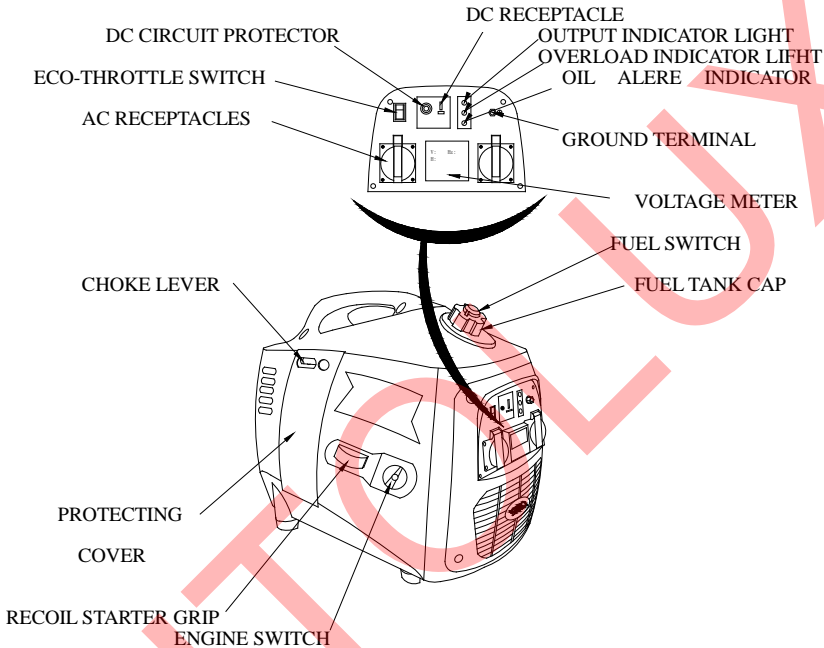
-Do not enclose the generator in any structure.

-Keep flammable materials away from the generator.

- The muffler becomes very hot during operation and remains hot for a while after stopping the engine. Be careful not to touch the muffler while it is hot. Let the engine cool before storing the generator indoors.

- Gasoline is extremely flammable and is explosive under certain conditions. Do not smoke or allow flames or sparks where the generator is refueled or where gasoline is stored. Refuel in a well-ventilated area with the engine stopped.

- Fuel vapors are extremely flammable and may ignite after the engine has started .Make sure that any spilled fuel has been wiped up before starting the generator.



CONTROLS

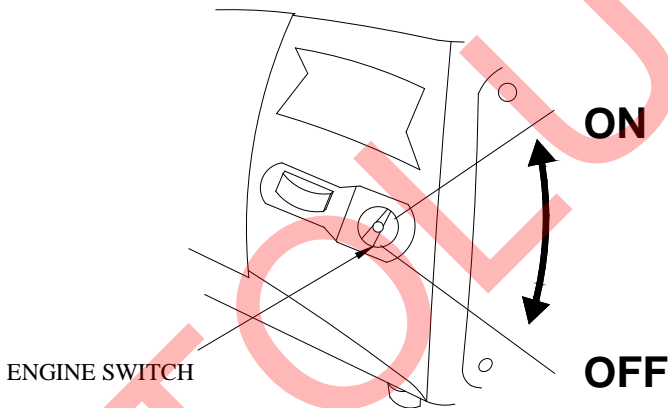
ENGINE SWITCH

To start and stop the engine.

Switch position:

OFF: To stop the engine;

ON: To start and run the engine.



RECOLL STARTER

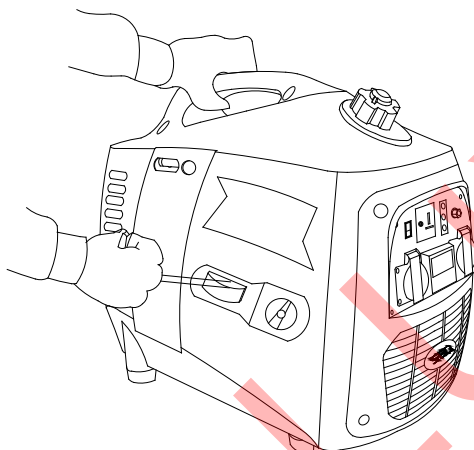
To start the engine, pull the starter grip lightly until resistance is felt, then pull briskly.

⚠ NOTICE!

DO not allow the starter grip to snap back against the engine.

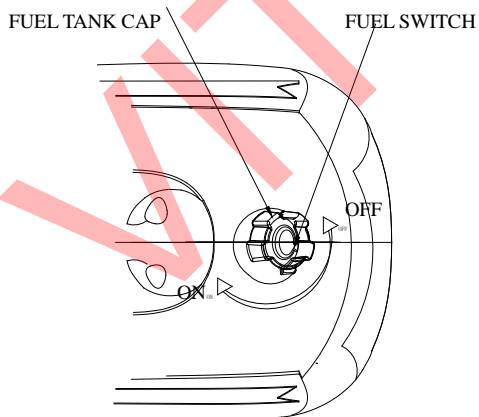
Return

it gently to prevent damage to the starter.



FUEL TANK CAP VENT LEVER

The fuel tank cap is provided with a vent to seal the fuel tank. The vent lever must be in use, leave the vent lever in the OFF position to reduce the possibility of fuel leakage.



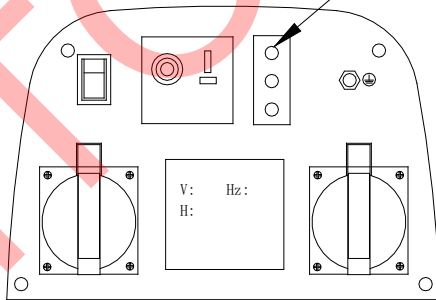
CHOKE LEVER

The choke is used to provide proper starting mixture when the engine is cold. It can be opened and by operating the choke lever manually. Move the choke lever to the CLOSED position to enrich the mixture for cold starting.

OUTPUT INDICATOR LIGHT

The output indicator light(green) is illuminated when the generator is operating normally. It indicates that the generator is producing electrical power at the receptacles.

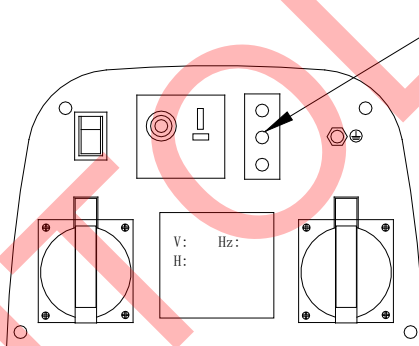
OUTPUT INDICATOR LIGHT(GREEN)



OVERLOAD ALARM LIGHT

If the generator is overloaded (in excess of 3,200VA), or if there is a short circuit in a connected appliance, the overload indicator light (red) will go ON. The overload indicator light (red) will stay ON, and after about four seconds, current to the connected appliances will shut off, and the output indicator light (green) will go OFF.

OVERLOAD INDICATOR LIGHT(RED)

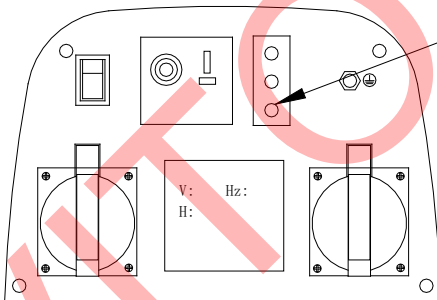


OLL.ALERT SYSTEM

The Oil Alert system is designed to prevent engine damage caused by an insufficient amount of oil in the crankcase. Before the oil level in the crankcase can fall below a safe limit, the oil alert indicator light comes on and the Oil Alert system will automatically stop the engine(the engine switch will remain in the ON position).

If the engine stops or the Oil Alert indicator light comes on when you pull the starter grip, check the engine oil level before troubleshooting in other areas.

OIL ALERT INDICATOR LIGHT (RED)

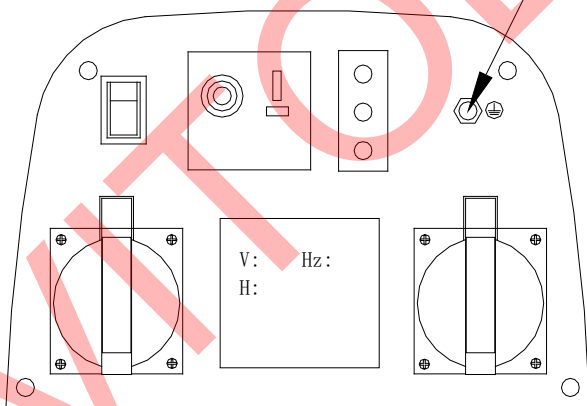


GROUND TERMINAL

The generator ground terminal is connected to the frame of the generator, the metal non-current-carrying parts of the generator, and the ground terminals of each receptacle.

Before using the ground terminal, consult a qualified electrician, electrician inspector or local agency having jurisdiction for local codes or ordinances that apply to the intended use of the generator.

GROUND TERMINAL



ECO-THROTTLE SWITCH

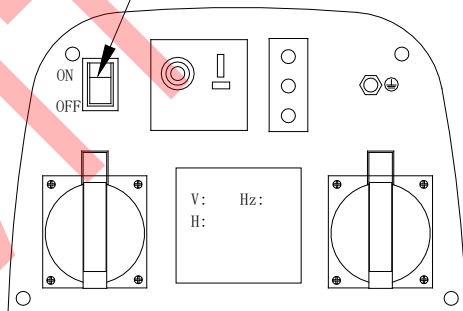
The Eco-Throttle system automatically reduces engine speed when all loads are turned off or disconnected. When appliances are turned on or reconnected, the engine returns to the proper speed to power the electrical load.

If high electrical loads are connected simultaneously, turn the Eco-Throttle switch to the OFF position.

ON: Recommended to minimize fuel consumption and further reduce noise levels when no applied to the generator.

OFF: The Eco-Throttle system dose not operate.

ECO-THROTTLE SWITCH

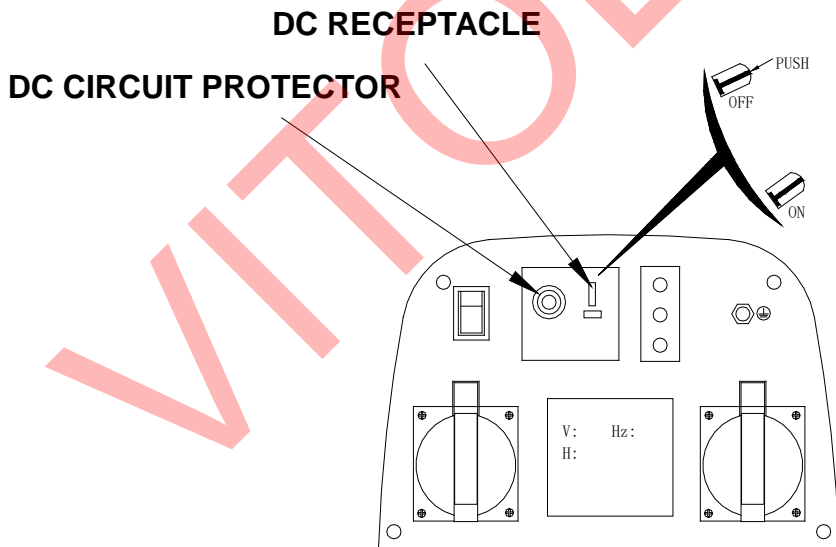


DC RECEPTACLE

The DC receptacle should ONLY be used for charging 12-volt automotive type batteries.

DC CIRCUIT PROTECTOR

The DC circuit protector automatically shuts off the DC battery charging circuit when the DC charging circuit is overloaded, when there is a problem with the battery, or when the connections between the battery and the generator are improper.



GENERATOR USE

CONNECTIONS TO A BUILDING ELECTRICAL SYSTEM

Connections for standby power to a building electrical system must be made by a qualified electrician. The connection must isolate the generator power from utility power, and must comply with all applicable laws and electrical codes.

WARNING

Improper connections to a building electrical system can allow electrical current from the generator to feedback into the utility lines. Such feedback may electrocute utility company workers or others who contact the lines during a power outage, and the generator may explode, burn, or cause fires when utility power is restored. Consult the utility company or a qualified electrician.

GROUND SYSTEM

These portable generators have a system ground that connects generator frame components to the ground terminals in the AC output receptacles. The system ground is not connected to the AC neutral wire. If the generator is tested by a receptacle tester, it will not show the same ground circuit condition as for a home receptacle.

AC APPLICATIONS

Before connecting an appliance or power cord to the generator: Make sure that it is in good working order. Faulty appliances or power cords can create a potential for electrical shock.

If an appliance begins to operate abnormally, becomes sluggish or stops suddenly, turn it off immediately. Disconnect the appliance, and determine whether the problem is the appliance, or if the rated load capacity of the generator has been exceeded.

Make sure that the electrical rating of the tool or appliance does not exceed that of the generator, never exceed the maximum power rating of the generator. Power levels between rated and maximum may be used for no more than 30 minutes.

⚠NOTICE!

Substantial overloading will switch off the AC circuit protector. Exceeding the time limit for maximum power operation OFF, but will shorten the service life of the generator.

Limit operation requiring maximum power to 30 minutes. Maximum power is:

3,200VA

For continuous operation, do not exceed the rated power. Rated power is:

3,000VA

In either case, the total power requirements (VA) of all appliances connected must be considered. Appliance and power tool manufacturers usually list rating information near the model number or serial number.

AC OPERATION

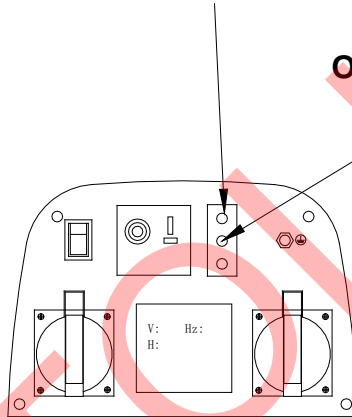
1. Start the engines and make sure the output indicator lights (green)

Comes on.

2.Plug in the appliance require more than their rated wattage for startup.

OUTPUT INDICATOR LIGHT (GREEN)

OVERLOAD INDICATOR LIGHT (RED)



If the generator is overloaded (in excess of 3,200 VA), or if there is a short circuit in a connected appliance, the overload indicator light (red) will go ON. The overload indicator light (red) will stay ON, and after about four seconds, current to the connected appliance(s) will shut off, and the output indicator light (green) will go OFF. Stop the engine and investigate the problem.

Determine if the cause is a short circuit in a connected appliance or an overload. Correct the problem and restart the generator.

Before connecting an appliance to the generator, make sure that it is in good order and that its electrical rating does not exceed that of

the generator. Then start the generator and connect the appliance power cord.

⚠NOTICE!

When an electric motor is started, the overload indicator light(red) may come on, This is normal if the overload indicator light(red) goes off after about four seconds. If the overload indicator light(red) stays on, consult your generator dealer.

DC OPERATION

The DC receptacle should ONLY be used for charging 10-volt automotive type batteries.

When using the DC output, turn the Eco-Throttle switch to the OFF position.

Connecting the battery charging cable(optional equipment):

1. Before connecting the battery cable to a battery that is installed in a vehicle, disconnect the vehicle battery ground cable from the negative(—)battery terminal.

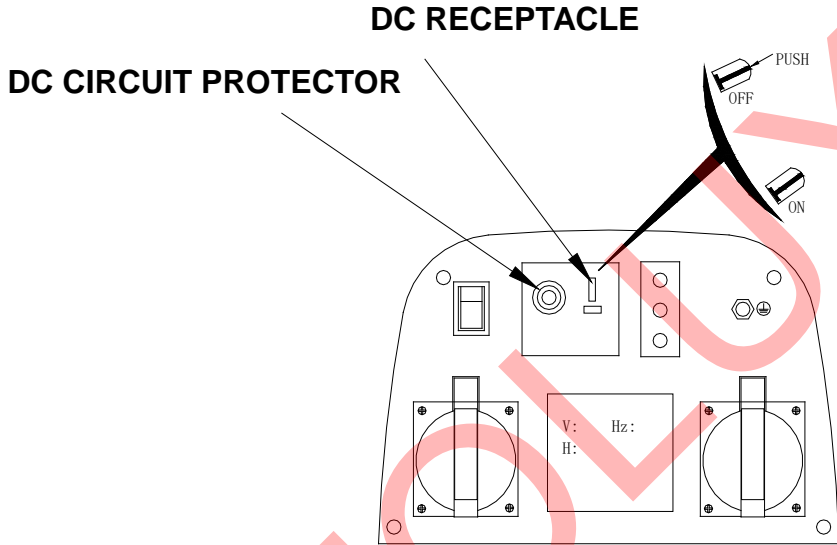
⚠WARNING

A battery can explode if you do not follow the correct procedure, seriously injuring anyone nearby.

Keep all sparks, open flames, and smoking materials away from the battery.

2. Plug the battery charging cable inter the DC receptacle of the generator.
3. Connect the red lead of the battery charging cable to the positive(+)battery terminal and the black lead to the negative(—)battery terminal.

4. Start the generator.



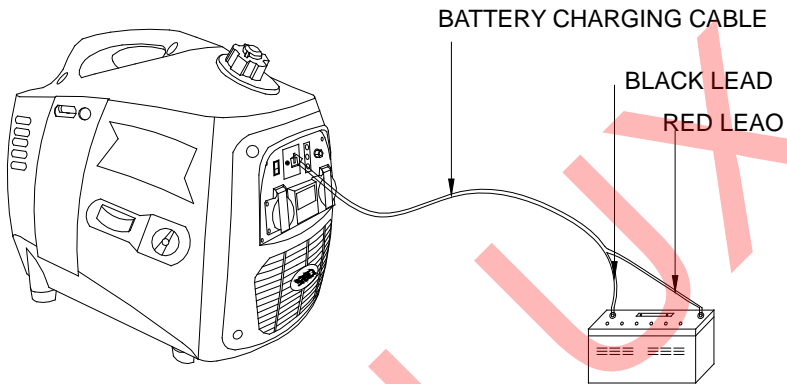
⚠ NOTICE!

Do not start the vehicle while the battery charging cable is connected and the generator is running, The vehicle or the generator may be damaged.

An overloaded DC circuit, excessive current draw by the battery, or a wiring problem will trip the DC circuit protector (push button extends out). If this happens, wait a few minutes before pushing in the circuit protector to resume operation. If the DC circuit protector continues to go OFF, discontinue charging and see your authorized generator dealer.

Disconnecting the battery charging cable:

1. Stop the engine.
2. Disconnect the black lead of the battery charging cable from the negative(—)battery terminal.
3. Disconnect the red lead of the battery charging cable from the positive(+)battery terminal.
4. Disconnect the battery charging cable from the DC receptacle of the generator.
5. Connect the vehicle battery ground cable to the negative(—)battery terminal.
6. Reconnect the vehicle grounded battery cable.



ECO-THROTTLE SYSTEM

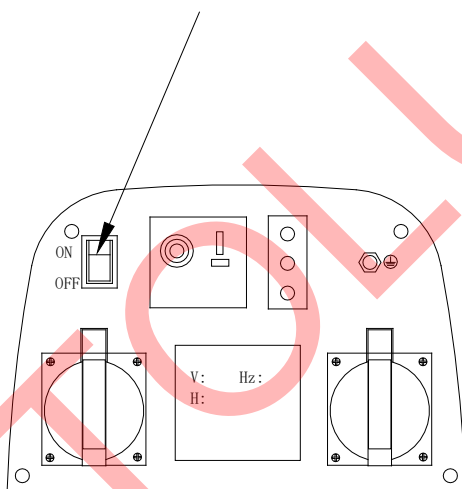
With the switch in the ON position, engine speed is automatically lowered when loads are reduced, turned OFF or disconnected. When appliances are turned ON or reconnected, the engine returns to the proper speed to power the electrical, the engine returns to the proper speed to power the electrical load. In the OFF position, the Eco-Throttle system does not operate.

Appliances with large start-up power demands may not allow the engine to reach normal operating rpm when they are connected to the generator. Turn the Eco-Throttle to the OFF position and connect the appliance to the generator. If the engine still will not reach normal operating speed, check that the appliance does not exceed the rated load capacity of the generator.

If high electrical loads are connected simultaneously, turn the Eco-Throttle switch to the OFF position to reduce voltage changes.

The Eco-Throttle system is not effective for use with appliances that require only momentary power. If the tool OR appliance will be turned ON and OFF quickly, the Eco-Throttle switch to the OFF position.

ECO-THROTTLE SWITCH



HIGH ALTITUDE OPERATION

At high altitude, the standard carburetor air/fuel mixture will be too rich. Performance will decrease, and fuel consumption will increase. A very rich mixture will also foul the spark plug and cause hard starting. Operation at an altitude that differs from that at which this engine was certified, for extended periods of time, may increase emissions.

High altitude performance can be improved by specific modifications to the carburetor. If you always operate your generator at altitudes above 5,000 feet(1,500 meters), have your servicing dealer perform this carburetor modification. This engine, when operated at high altitude with the carburetor modification, engine horsepower will decrease about 3.5% for each 1,000-foot(300-meter) increase in altitude. The effect of altitude on horsepower will be greater than this if no carburetor modification is made.

⚠️ NOTICE!

When the carburetor has been modified for high altitude operation, the air/fuel mixture will be too lean for low altitude use. Operation at altitudes below 5,000 feet(1,500 meters) with a modified carburetor may cause the engine to overheat and result in serious engine damage. For use at low altitudes, have your servicing dealer return the carburetor to original factory specifications.

PRE-OPERATION CHECK

ENGINE OIL

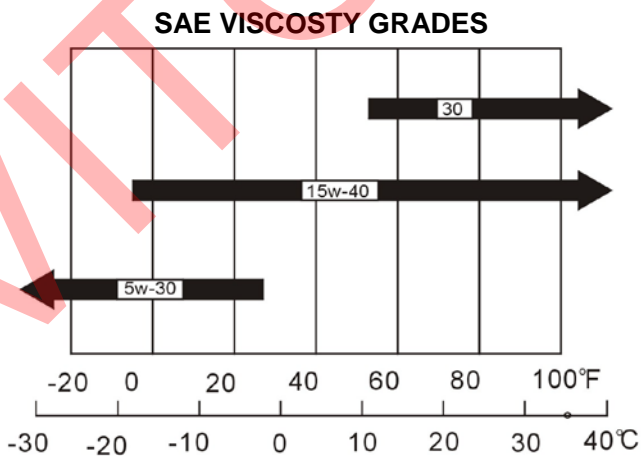
⚠️ NOTICE!

Engine oil is a major factor affecting engine performance service life. Non detergent and 2-stroke engine oils will damage the engine and are not recommended.

Check the oil level before each use with the generator on a level surface and the engine stopped.

Use 4-stroke motor oil that meets or exceeds the requirements for API service classification SF, Always check the API SERVICE label on the oil container to be sure it includes the letter SF.

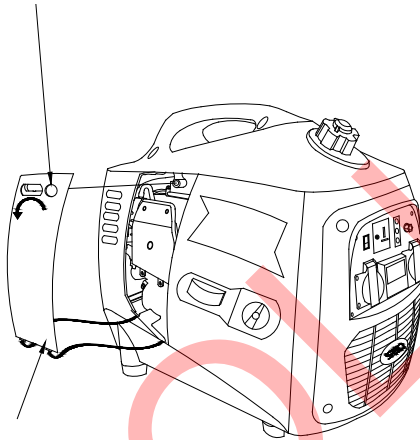
SAE 15W-40 is recommended for generator, all-temperature use. Other viscosities shown in the chart may be used when the average temperature in your area is within the indicated range.



AMBIENT TEMPERATURE

1. Loosen the cover screw and remove the protecting cover.
2. Remove the oil filler cap and wipe the dipstick clean.

COVER SCREW



MAINTENANCE COVER

3. Check the oil level by inserting the dipstick into the dipstick into the filler neck without screwing it in.
4. If the level is low, fill to top of the oil filler neck with the recommended oil.
5. Reinstall the left- side maintenance cover and tighten the cover screw securely.

REFUELING

With the engine stopped, remove the fuel tank cap and check the fuel level. Refill the fuel tank if the fuel level is low.

⚠ WARNING

Gasoline is highly flammable and explosive.

You can be burned or seriously injured when handling fuel.

- **Stop the engine and keep heat, sparks, and flame away.**
- **Handle fuel only outdoors.**
- **Wipe up spills immediately.**

Refuel in a well-ventilated area with the engine stopped. If the engine has been running, allow it to cool first. Refuel carefully to avoid spilling fuel. Do not fill above the upper limit mark. After refueling, tighten the fuel tank cap securely.

Never refuel the engine inside a building where gasoline fumes may reach flames or sparks. Keep gasoline away from appliance pilot lights, barbecues, electric appliances, power tools, etc.

Spilled fuel is not only a fire hazard, it causes environmental damage. wipe up spills immediately.

FUEL RECOMMENDATIONS

Use unleaded gasoline with a pump octane rating of 86 or higher. This engine is certified to operate on unleaded gasoline. Unleaded gasoline produces fewer engine and spark plug deposits and extends exhaust system life.

Never use stale or contaminated gasoline or an oil/gasoline mixture. Avoid getting dirt or water in the fuel tank.

Occasionally you may hear a light "spark knock" or "pinging" (metallic rapping noise) while operating under heavy loads. This is no cause for concern.

If spark knock or pinging occurs at a steady engine speed, under normal load, change brands of gasoline. If spark knock or pinging persists, see an authorized generator dealer.

⚠NOTICE!

Running the engine with persistent spark knock or pinging can cause engine damage.

Running the engine with persistent spark knock or pinging is misuse, and the Distributor's Limited Warranty does not cover parts damaged by misuse.

Oxygenated Fuels

Some conventional gasoline are being blended with alcohol or an ether compound. These gasoline are collectively referred to as oxygenated fuels. To meet clean air standards, some areas of the United States and Canada use oxygenated fuels to help reduce emissions.

If you use an oxygenated fuel, be sure it is unleaded and meets the minimum octane rating requirement.

Before using an oxygenated fuel, try to confirm the fuel's contents. Some states/provinces require this information to be posted on the pump.

The following are the EPA approved percentages of oxygenates:

ETHANOL—(ethyl or grain alcohol) 10% by volume You may use gasoline containing up to 10% ethanol by volume. Gasoline containing ethanol may be marketed under the name "Gasohol".

MTBE—(methyl tertiary butyl ether) 15% by volume You may use gasoline containing up to 15% MTBE by volume.

METHANOL—methyl or wood alcohol 5% by volume You may use gasoline containing up to 5% methanol by volume as long as it also

contains cosolvents and corrosion inhibitors to protect the fuel system. Gasoline containing more than 5% methanol by volume may cause starting and/or performance problems. It may also damage metal, rubber, and plastic parts of your fuel system. If you notice any undesirable operating symptoms, try another service station or switch to another brand of gasoline. Fuel system damage or performance problems resulting from the use of an oxygenated fuel containing more than the percentages of oxygenates mentioned above are not covered under warranty.

STARTING THE ENGINE

STARTING THE ENGINE

1. Make sure that all appliances are disconnected from the AC receptacles.
2. Turn the vent lever to the ON position.
3. To start a cold engine, move the choke lever to the CLOSED position. To restart a warm engine, leave the choke lever in the OPEN position.
4. Turn the engine switch to the ON position.
5. Pull the starter grip lightly until resistance is felt, then pull briskly,

⚠NOTICE!

Do not allow the starter grip to snap back against the engine. Return it gently to prevent damage to the starter or housing.

6. If the choke lever was moved to the CLOSED position to start the engine, gradually move it to the OPEN position as the engine warms up.

7. If you wish to use the Econ-Throttle system, turn the Eco-Throttle switch to the ON position after the engine has warmed up for 2 or 3 minutes.

STOPPING THE ENGINE

STOPPING THE ENGINE

To stop the engine in an emergency, simply turn the engine switch to the OFF position. Under normal conditions, use the following procedure.

1. Unplug appliances from the generator receptacles.
2. Turn the engine switch to the OFF position.
The fuel valve will automatically close.
3. Turn the vent lever to the OFF position.

MAINTENANCE

THE IMPORTANCE OF MAINTENANCE

Good maintenance is essential for safe, economical, and trouble-free operation. It will also help reduce air pollution.

⚠ WARNING

Improper maintenance, or failure to correct problem before operation, can cause a malfunction in which you can be seriously hurt or killed.

Always follow the inspection and maintenance recommendations and schedules in this owner's manual.

To help you properly care for your generator, the following pages include a maintenance schedule, routine inspection procedures, and simple maintenance procedures using basic hand tools. Other service tasks that are more difficult, or require special tools, are best handled by professionals and are normally performed by our technician or other qualified mechanic.

The maintenance schedule applies to normal operating conditions. If you operate your generator under severe conditions, such as sustained high-load or high-temperature operation, or use it in unusually wet or dusty conditions, consult your servicing dealer for recommendations applicable to your individual needs and use.

Remember that your servicing dealer knows your generator best and is fully equipped to maintain and repair it.

To ensure the best quality and reliability, use only new, genuine parts or their equivalents for repair or replacement.

Maintenance, replacement, or repair of the emission control

devices and systems may be performed by any engine repair establishment or individual, using parts that are “certified” to EPA standards.

MAINTENANCE SAFETY

Some of the most important safety precautions follow. However, we cannot warn you of every conceivable hazard that can arise in performing maintenance. Only you can decide whether or not you should perform a given task.

⚠ WARNING

Failure to properly follow maintenance instructions and precautions can cause you to be seriously hurt or killed.

Always follow the procedures and precautions in the owner’s manual.

Safety Precautions

■ Make sure the engine is off before you begin any maintenance or repairs. This will eliminate several potential hazards:

—**Carbon monoxide poisoning from engine exhaust.**

Be sure there is adequate ventilation whenever you operate the engine.

—**Burns from hot parts.**

Let the engine and exhaust system cool before touching.

—**Injury from moving parts.**

Do not run the engine unless instructed to do so.

■ Read the instructions before you begin, and make sure you have the tools and skills required.

- To reduce the possibility of fire or explosion, be careful when working around gasoline. Use only a nonflammable solvent, not gasoline, to clean parts. Keep cigarettes, sparks, and flames away from all fuel-related parts.

EMISSION CONTROL SYSTEM INFORMATION

Source of Emissions

The combustion process produces carbon monoxide, oxides of nitrogen, and hydrocarbons. Control of hydrocarbons and oxides of nitrogen are very important because, under certain conditions, they react to form photochemical smog when subjected to sunlight.

We utilize lean carburetor settings and other systems to reduce the emissions of carbon monoxide, oxides of nitrogen, and hydrocarbons.

The U.S. and California Clean Air Acts

EPA and California regulations require all manufacturers to furnish written instructions describing the operation and maintenance of emission control systems.

The following instructions and procedures must be followed in order to keep the emissions from your engine within the emission standards.

Problems That May Affect Emissions

If you are aware of any of the following symptoms, have your engine inspected and repaired by your servicing dealer.

- Hard starting or stalling after starting.
- Rough idle.
- Misfiring or backfiring under load.
- Afterburning (backfiring).
- Black exhaust smoke or high fuel consumption.

Replacement Parts

The emission control systems on your engine were designed, built, and certified to conform with EPA and California emission regulations. We recommend the use of genuine parts wherever you have maintenance done. These original-design replacement parts are manufactured to the same standards as the original parts, so you can be confident of their performance. The use of replacement parts that are not of the original design and quality may impair the effectiveness of your emission control system.

A manufacturer of an aftermarket part assumes the responsibility that the part will not adversely affect emission performance. The manufacturer or rebuilder of the part must certify that use of the part will not result in a failure of the engine to comply with emission regulations.

Maintenance

Follow the maintenance schedule. Remember that this schedule is based on the assumption that your machine will be used for its designed purpose. Sustained high-load or high-temperature

operation, or use in unusually wet or dusty conditions, will require more frequent service,

Maintenance schedule

REGULAR SERVICE PERIOD(3)		Before Each use	First 3 Months Or 10Hrs.	Every 3 Months Or 50 Hrs.	Every 6 Months Or 100 Hrs.	Every 2 years Or After Each 300 Hrs.
ITEM	Perform at					
	Every indicated Month or operating hour Interval, whichever comes first.					
Engine oil	Check level	◆				
	change		◆		◆	
Air cleaner	Check	◆		◆		
	Clean					
Spark plug	Check-adjust				◆(1)	
	Replace					◆
Spark arrester	Clean				◆	
Valve clearance	Check-adjust					◆(2)
Combustion chamber	Clean	After every 300hrs(2)				
Fuel tank and filter	Clean	Every year(2)				
Fuel line	Check	Every 2 years(Replace if necessary)(2)				

NOTE: ■ Emission related items.

(1) Service more frequently when used in dusty areas.

(2) These items should be serviced by your servicing dealer, unless the owner has the proper tools and is mechanically proficient.

See the Shop Manual.

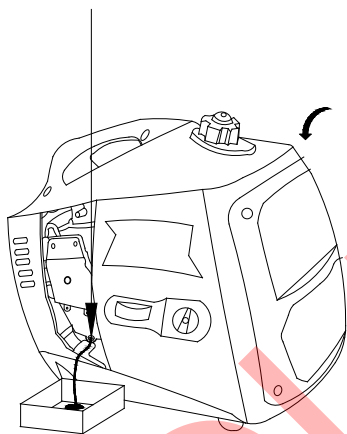
(3) *For commercial use, log hours of operation to determine proper maintenance intervals.*

ENGINE OIL CHANGE

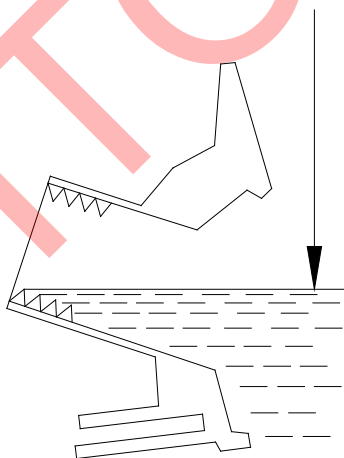
Drain the used oil while the engine is warm. Warm oil drains quickly and completely.

1. Turn the engine switch and vent lever to the OFF position to reduce the possibility of fuel leakage.
2. Loosen the cover screw and remove the protecting cover.
3. Place a suitable container next to the engine to catch the used oil.
4. Remove the oil filler cap/dipstick, and drain the oil into the container by tipping the engine toward the oil filler neck.
5. With the engine in a level position, fill to the top of the oil filler neck with the recommended oil.
6. Reinstall the oil filler cap/dipstick securely.
7. Reinstall the protecting cover and tighten the cover screw securely.

OIL FILLER NECK



UPPER LIMIT



Wash your hands with soap and water after handling used oil.

⚠NOTICE!

Improper disposal of engine oil can be harmful to the environment. If you change your own oil, please dispose of it properly, Put it in a sealed container, and take it to a recycling center. Do not discard it in a trash bin, dump it on the ground, or pour it down a drain.

AIR CLEANER SERVICE

A dirty air cleaner will restrict air flow to the carburetor. To prevent carburetor malfunction, service the air cleaner regularly. Service more frequently when operating the generator in extremely dusty areas.

⚠WARNING

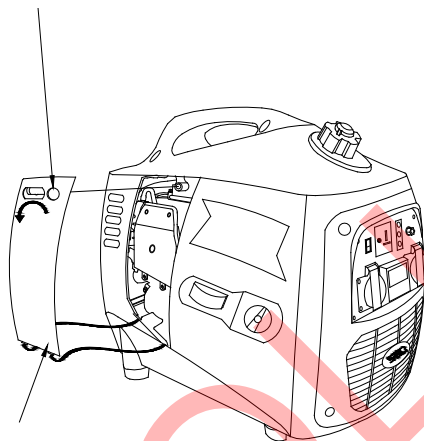
Using gasoline or flammable solvent to clean the air filter can cause a fire or explosion. Use only soapy water or nonflammable solvent.

⚠NOTICE!

Never run the generator without the air filter. Rapid engine wear will result.

1. Loosen the cover screw and remove the protecting cover.

COVER SCREW

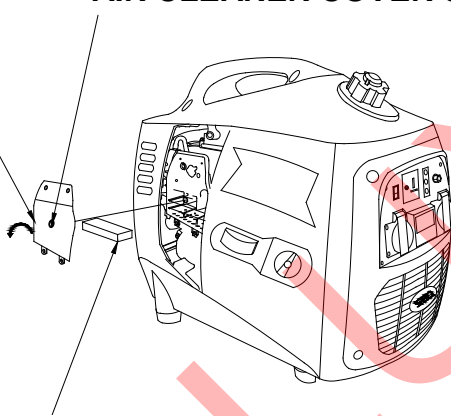


MAINTENANCE COVER

2. Press the latch tab on the top of the air cleaner case, and remove the air cleaner cover.

AIR CLEANER COVER

AIR CLEANER COVER SCREW



OUTER FILTER

3. Wash the air filter in a solution of household detergent, or wash in nonflammable or high flashpoint solvent. Allow the air filter to dry thoroughly.
4. Soak the air filter in clean engine oil and squeeze out the excess oil. The engine will smoke during initial startup if too much oil is left in the air filter.
5. Remove the rubber air guide from the air cleaner case. Clean the air guide and the air cleaner case with a moist rag, then reinstall



the air guide.

6. Reinstall the air filter.
7. Reinstall the air cleaner cover by inserting the lower tab, and the latch tab.
8. Reinstall the protecting cover, and tighten the cover screw securely.

SPARK PLUG SERVICE

In order to service the spark plug, you will need a spark plug wrench (Commercially available).

Recommended spark plug:A5rtc

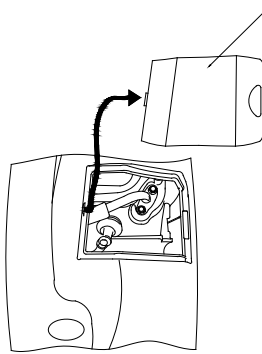
To ensure proper engine operation, the spark plug must be properly gapped and free of deposits.

An incorrect spark plug can cause engine damage.

If the engine has been running, the muffler will be very hot. Be careful not to touch the muffler.

1. Remove the spark plug maintenance cover.

SPARK PLUG MAINTENANCE COVER



2. Remove the spark plug cap.
3. Clean any dirt from around the spark plug base.
4. Use a spark plug wrench to remove the spark plug.
5. Visually inspect the spark plug. Discard it if the insulator is cracked or chipped.
6. Measure the spark plug electrode gap with a wire-type feeler gauge. Correct the gap, if necessary, by carefully bending the side electrode.

The gap should be: 0.024—0.028in(0.60—0.70mm)

**0.024-0.028in
(0.60-0.70mm)**



SEALING WASHER

7. Check that the spark plug sealing washer is in good condition,

- and thread the spark plug in by hand to prevent cross-threading.
8. After the spark plug is seated, tighten with a spark plug wrench to compress the washer.

If installing a new spark plug, tighten 1/2 turn after the spark plug seats to compress the washer. If reinstalling a used spark plug, tighten 1/8—1/4 turn after the spark plug seats to compress the washer.

⚠ NOTICE!

A loose spark plug can overheat and damage the engine. Over tightening the spark plug can damage the threads in the cylinder head.

9. Reinstall the spark plug cap on the spark plug securely.
10. Reinstall the spark plug maintenance cover.

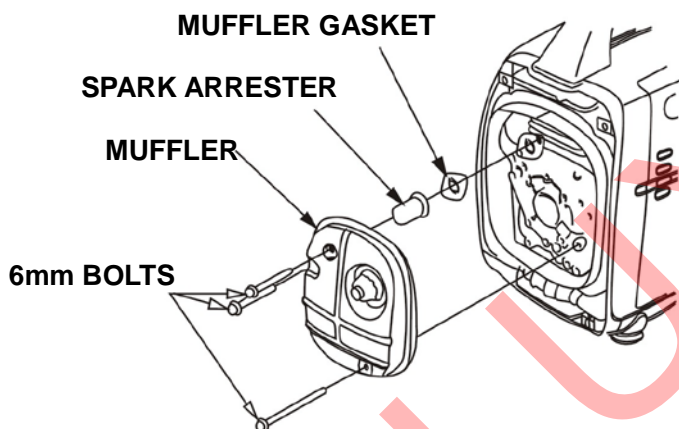
SPARK ARRESTER MAINTENANCE

If the generator has been running, the muffler will be very hot. Allow it to cool before proceeding.

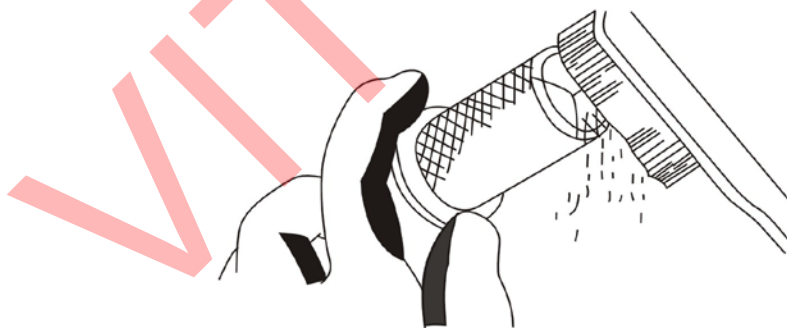
The spark arrester must be serviced every 100 hours to maintain its efficiency.

Clean the spark arrester as follows:

1. Remove the spark arrester



2. Use a brush to remove carbon deposits from the spark arrester screen.



3. Reinstall the spark arrester tightly.

TRANSPORTING/STORAGE

TRANSPORTING

If the generator has been used, allow it cool for at least 15 minutes before loading the generator on the transport vehicle. A hot engine and exhaust system can burn you and can ignite some material. To prevent fuel spillage when transporting, the generator should be secured upright in its normal operating position, with the engine switch OFF and the fuel tank cap vent lever turned fully counterclockwise to the "OFF" position. Take care not to drop or strike the generator when transporting. Do not place heavy objects on the generator.

STORAGE

Before storing the unit for an extended period:

1. Be sure the storage area is free of excessive humidity and dust.
2. Service according to the table below:

STORAGE TIME	RECOMMENDED SERVICE PROCEDURE TO PREVENT HARD STARTING
Less than 1 month	No preparation required
1 to 2 months	Fill with fresh gasoline and add gasoline conditioner
2 months to 1 year	Fill with fresh gasoline and add gasoline Conditioner, drain the gasoline
1 year or more	Fill with fresh gasoline and add gasoline Conditioner, drain the gasoline Remove the spark plug. Put a tablespoon of engine oil into cylinder. Turn the engine slowly with the starter grip to distribute the oil. Reinstall the spark plug. Charge the engine oil. After removal from storage, drain the stored gasoline into a suitable container, and fill with Fresh gasoline before starting.
Use gasoline conditioners that are formulated to extend storage life. Contact your authorized generator dealer for conditioner recommendations.	

Storage Procedure

1. Drain the gasoline.
 - (1) Remove the fuel tank cap, and empty the fuel tank into an approved gasoline container using a commercially available hand siphon. Reinstall the fuel tank cap.
 - (2) Loosen the cover screw and remove the left-side maintenance cover.
 - (3) Loosen the carburetor drain screw.
 - (4) Drain the gasoline from the carburetor into a suitable container.
 - (5) Remove the spark plug maintenance cover.
 - (6) Remove the spark plug cap. Turn the engine switch to the ON position.
 - (7) Pull the starter grip 3 to 4 times to drain the gasoline from the fuel pump into a suitable container.
 - (8) Turn the engine switch to the OFF position.
 - (9) Reinstall the spark plug cap on the spark plug securely.
 - (10) Reinstall the spark plug maintenance cover.
 - (11) Tighten the carburetor drain screw.
 - (12) Reinstall the left-side maintenance cover, and tighten the cover screw securely.

⚠ WARNING Gasoline is highly flammable and explosive. You can be burned or seriously injured when handling fuel.

- **Keep heat, sparks, and flame away.**
- **Handle fuel only outdoors.**
- **Wipe up spills immediately.**

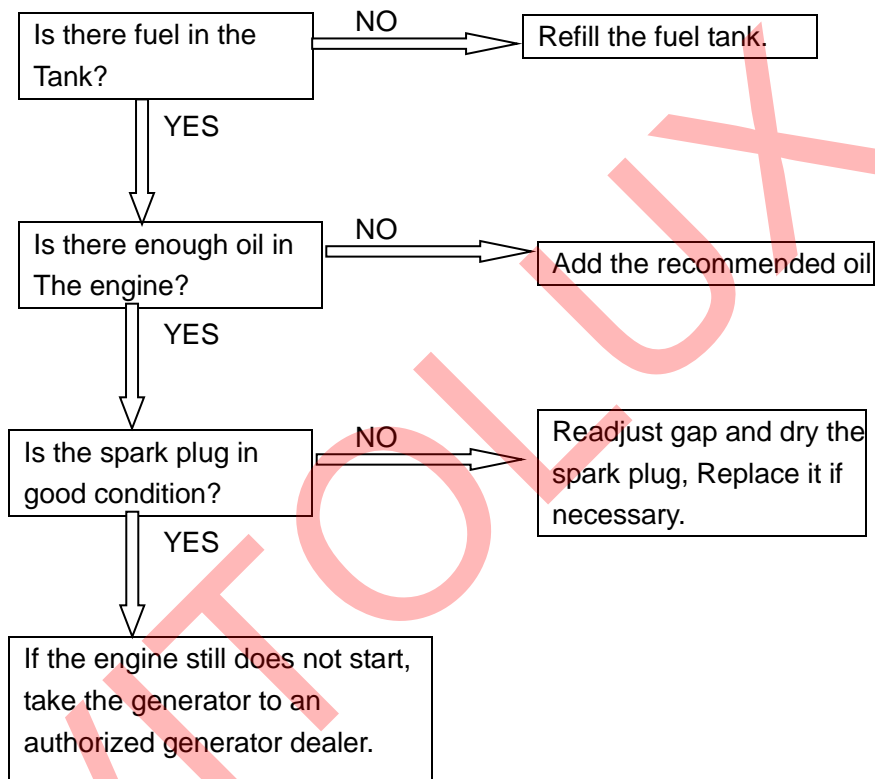
2. Change the engine oil.
3. Remove the spark plug, and pour about a tablespoon of clean engine oil into the cylinder. Crank the engine several revolutions

to distribute the oil, then reinstall the spark plug.

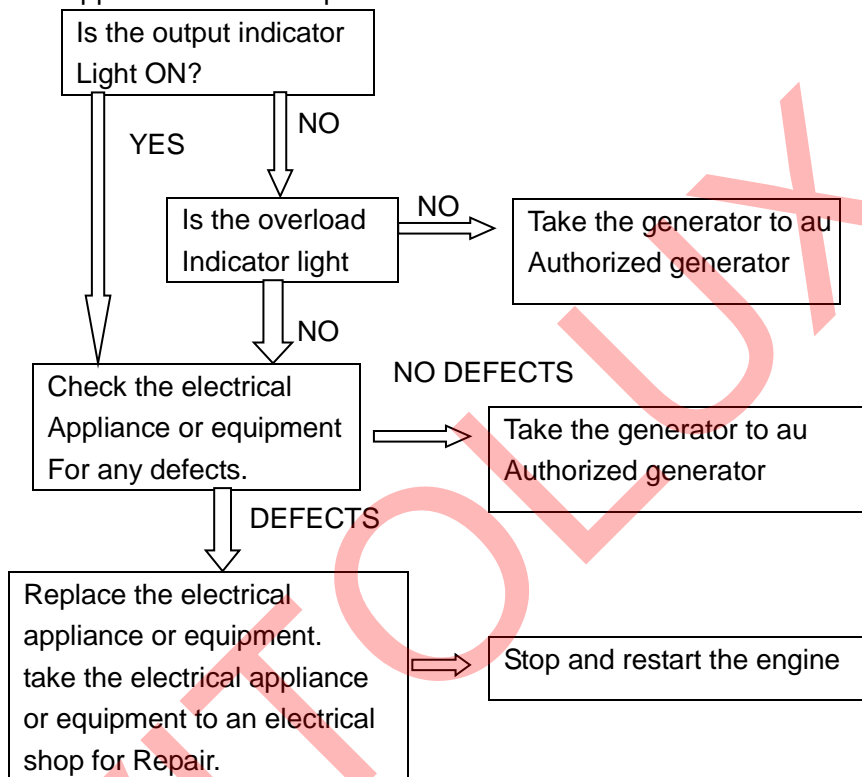
4. Pull the starter grip slowly until resistance is felt then return the starter grip gently. This closes the valves so moisture cannot enter.

TROUBLESHOOTING

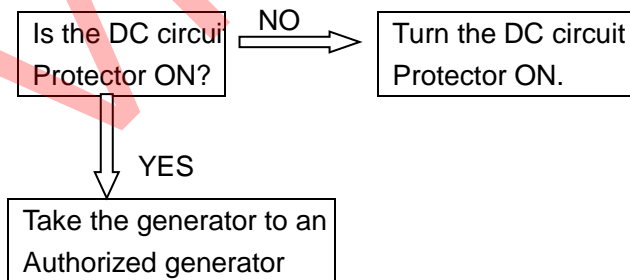
When the engine will not start:



Appliance does not operate:



No electricity at the DC receptacle:



ELECTRICAL WITING DIAGRAM

