SGE3500BSi

INVERTER
PORTABLE GENERATOR

HARD GEAR

Owner's Manual

INVERTER

DAISHIN ダイシン

15750112002

Table of Contents

Introduction

Thank you for purchasing our generator. We would like to help you get the best results from your new generator and to operate it safely. This manual contains the information on how to operate and maintenance of our generator.
Please read it carefully before operating or performing any adjustments on your generator.

All information in this publication is based on the latest product information available at the time of printing. We reserve the right to make change at any time without notice and without incurring any obligation.

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

This manual should be considered a permanent part of the generator and should remain with it if it is resold.

Safety Messages

Your safety and the safety of others are very important. We provided important safety messages in this manual and on the generator. Please have an attention and read instruction. carefully.

These words mean:

A safety message alerts you to potential hazards that could hurt you or others. Each safety message is preceded by a safety alert symbol  and one of three words; **DANGER**, **WARNING**, or **CAUTION**.

⚠DANGER You will be killed or seriously hurt if you don't follow instructions.

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

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

Each message tells you what the hazard is, what can happen, and what you can do to avoid or reduce injury.

Damage Prevention Messages

You will also see other important messages that are preceded by the word **NOTICE**. This word means:

NOTICE Your generator or other property could be damaged if you don't follow instructions.

The purpose of these messages is to help prevent damage to your generator, other property, or the environment.

SAFETY PRECAUTION

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

Operator Responsibility

1.Know how to stop the generator quickly in case of emergency.

2.Understand the use of all generator controls, output receptacles, and connections.

3.Be sure that anyone who operates the generator receives proper instruction.

4.Do not let children operate the generator without parental supervision.

Carbon Monoxide Hazards

1.Exhaust contains poisonous carbon monoxide, a colorless and odorless gas. Breathing exhaust can cause loss of consciousness and may lead to death.

2.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 building up, provide adequate ventilation.

Electric Shock Hazards

1.The generator produces enough electric power to cause a serious shock or electrocution if misused.

2.Using a generator or 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 and away from water.

3.If the generator is stored outdoors, unprotected from the weather, check the all-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.

4.Do not connect to a building's electrical system unless an isolation switch has been installed by a qualified electrician.

Fire and Burn Hazards

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

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

－Do not enclose the generator in any structure.

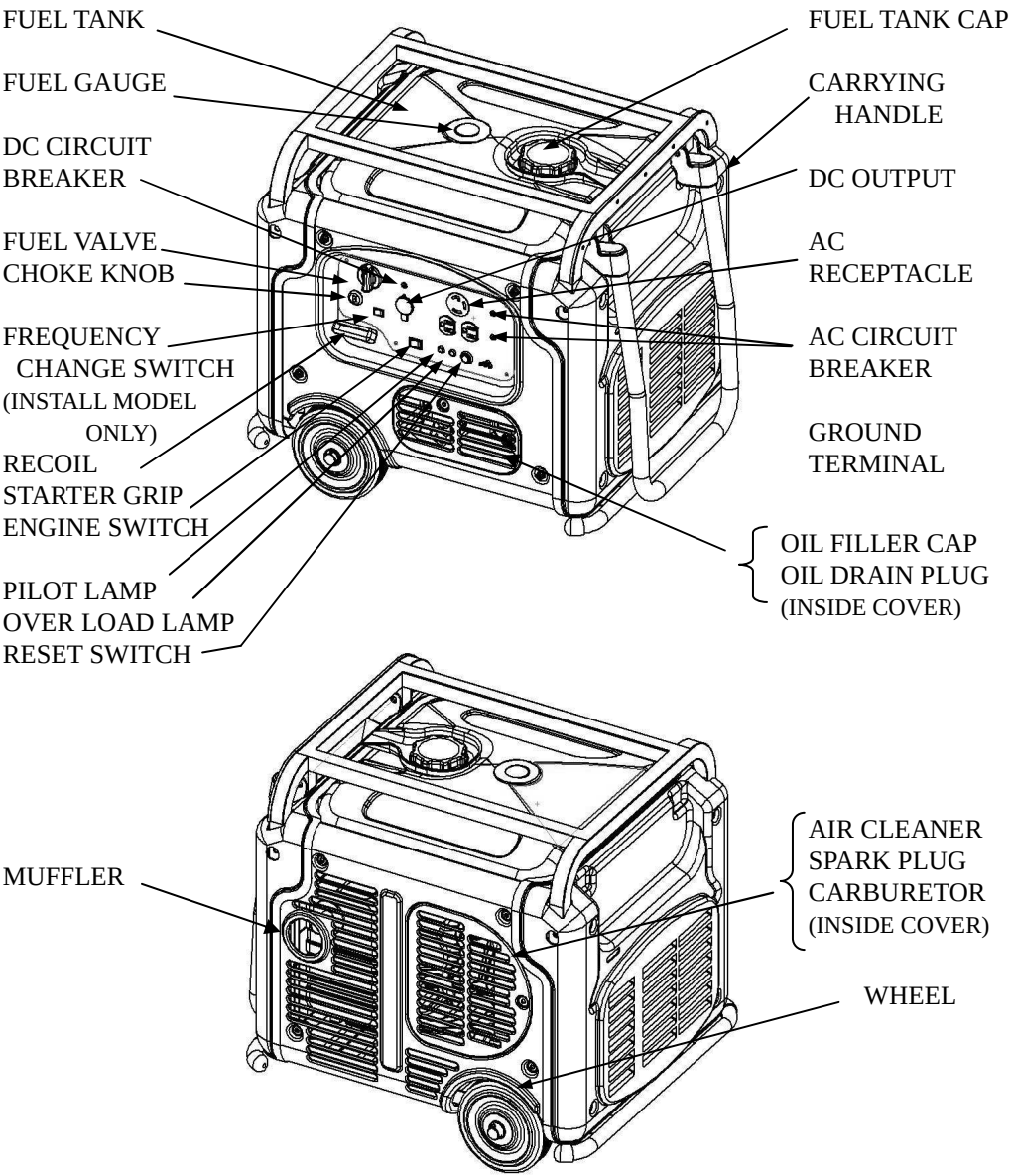
－Keep generator away from the flammable materials.

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

3.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.

4.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.

COMPONENT IDENTIFICATION



CONTROLS

Engine Switch

Switch position

OFF: To stop the engine. ON : To run the engine.

Recoil Starter

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

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

Fuel Valve

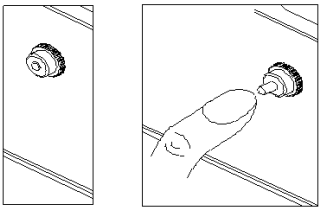
The fuel valve is located between the fuel tank and carburetor. When the valve lever is in "ON" position, fuel is allowed to flow from the fuel tank to the carburetor. Be sure to return the lever to "OFF" position after stopping the engine.

Choke Knob

The choke is used to provide proper starting mixture of fuel and gasoline when the engine is cold. It can be opened and closed by operating the choke knob manually. Pull the knob toward closed to enrich the mixture.

Circuit Breaker

The Circuit breaker will automatically cut off the circuit if there is a short circuit or a significant overload of the generator at the receptacle. If the circuit breaker is OFF automatically, check that the appliance is working properly and does not exceed the rated load capacity of the circuit before breaker switch turns ON to reset the circuit breaker.



position :on position :off

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, electrical

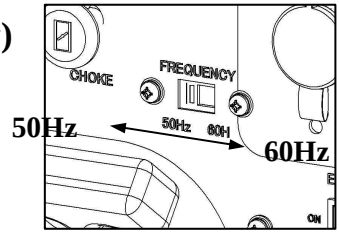
inspector or local agency having jurisdiction for local codes or ordinances that apply to the intended use of the generator

Oil Alert System

The Oil Alert system is equiped 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 system will automatically shut down the engine (the engine switch will remain in the "ON" position).
If the Oil Alert system shuts down the engine, refill engine oil.

Frequency Change Switch (Install model only)

To change frequency, let a switch slide with a driver.



Reset Switch

The inverter unit of this generator will automatically cut output off if there is a short circuit or a significant overload of the generator at the receptacle.

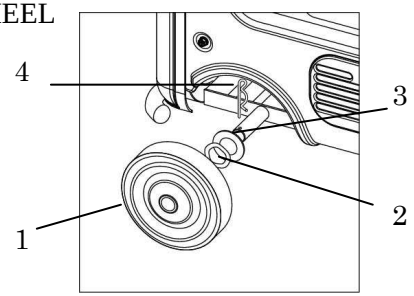
If the generator output is off check that the appliance is working properly.

To restart the generator push reset switch but wait about 10 seconds so that the inverter unit recover its function.

HOW TO ASSEMBLE WHEELS AND STOPPER

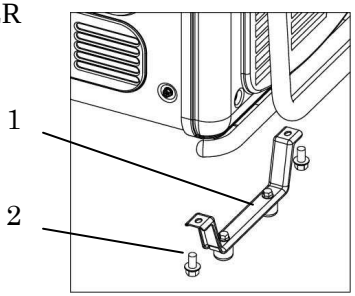
Assemble wheel and stopper as the following pictures show.

WHEEL



No	NAME	Q'TY
1	WHEEL	2
2	WAVE WASHER	2
3	WASHER ϕ20	2
4	PIN	2

STOPPER



No	NAME	Q'TY
1	STOPPER ASSY	1
2	BOLT M8-16	2

HOW TO OPERATE GENERATOR

Connections to a Building's Electrical System

Connections for standby power to a building's 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's electrical system can allow electrical current from the generator to backfeed into the utility lines. Such backfeed may electrocute utility company workers or others who contact the lines during a power outage. Consult the utility company or a qualified electrician.

⚠ CAUTION Improper connections to a building's electrical system can allow electrical current from the utility company to backfeed into the generator. When utility power is restored, the generator may explode, burn, or cause fires in the building's electrical system.

Ground System

The generator has a ground system 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:

1. Make sure that it is in good working order. Faulty appliances or power cords can create a potential for electrical shock.
2. 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.
3. Make sure that the electrical rating of the tool or appliance does not exceed that of the continuous power of the generator.

AC Operation

①Start the engine.

②Plug in the appliance.

NOTICE **Do not exceed the current limit specified for any one receptacle.** An overloaded circuit for a long time causes the receptacle to burn.

Most motorized appliances require more than their rated wattage for startup.

If overloaded of the generator the circuit breaker is off, reduce the electrical load on the circuit, and then breaker switch turns ON to reset circuit breaker.

DC Battery Charging

The generator has a DC outlet for charging 12 volts batteries.

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

Up to 12V-8.3A(100W) of power is provided.

NOTICE Use the DC outlet for battery charging. Use only for the battery sizes of 70Ah and under.

The charging of 12 volt batteries, exceeding 70Ah in size, may activate the circuit breaker.

① Before connecting the battery charging cable to a battery that is installed in a vehicle, disconnect the vehicle's grounded battery cable.

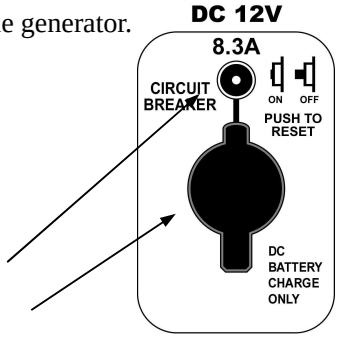
⚠ WARNING **Failure to follow the correct procedures may result in explosion of the battery causing serious injury.**

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

② Connect an attached battery cable to the DC outlet of the generator.

③ Connect the other end of the red lead of the battery charging cable to the positive (+) battery terminal and the other end of the black lead to the negative (-) battery terminal.

④ Start the engine.



DC CIRCUIT BREAKER

DC OUTLET

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.

Make sure that the battery connection is correct.

If the connection is not correct this additional current will flow to the DC circuit, and trigger the DC circuit breaker.

If DC circuit breaker is in the off position, correctly reconnect to the battery and then reset the circuit breaker.

Do not use AC output beyond 2700VA while use DC output.

High Altitude Operation

At high altitude, the standard carburetor air-fuel mixture will be excessively rich. Performance will decrease, and fuel consumption will increase.

Engine horsepower will decrease approximately 3.5% for each 1,000 feet increase in altitude.

PRE-OPERATION CHECKS

Engine oil

NOTICE Engine oil is a major factor affecting engine performance and service life.

Non-detergent and 2-stroke engine oils will damage the engine and are not recommended.

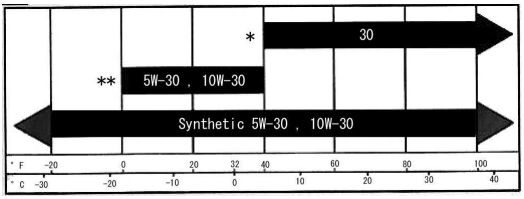
Check the oil level BEFORE EACH USE with the generator on a level surface with the engine stopped.

Use a high quality detergent oil classified "For Service SF,SG,SH,SJ" .

Use no special additives with recommended oils. Do not mix oil with gasoline.

**Air cooled engines run hotter than automotive engines.The use of no-synthetic multi-viscosity oils (5W-30,10W-30,etc.)in temperatures above 40° F(4℃),will result in higher than normal oil consumption. When using a multi-viscosity oil, check oil level more frequently

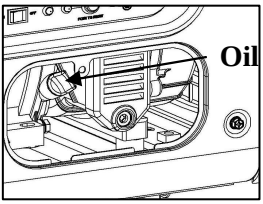
*SAE30 oil,if used below 40° F(4℃),will result in hard starting and possible engine bore damage due to inadequate lubrication.



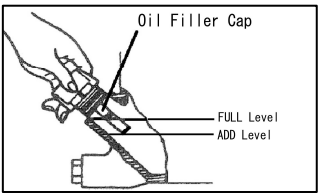
①Remove the oil filler cap and wipe the dipstick clean.

②Check the oil level by inserting the dipstick into the filler neck without screwing it in.

③If the level is low, fill to the top of the oil filler neck with the recommended oil.



Oil Filler Cap



Fuel Recommendation

①Remove the fuel cap.

②Check the fuel level.

③Refill the tank if the fuel level is low. Do not fill above the shoulder of the fuel strainer.

⚠ WARNING

1.Gasoline is extremely flammable and explosive under certain conditions.

2.Refuel in a well-ventilated area with the engine stopped. Do not smoke or allow flames or sparks in the area where the engine is refueled or where gasoline is stored.

3.Do not overfill the fuel tank (there should be no fuel in the filler neck).

After refueling, make sure the tank cap is closed properly and securely. Be careful not to spill fuel when refueling. Spilled fuel or fuel vapor may ignite. If any fuel is spilled clean it out, make sure the area is dry before starting the engine.

4.Avoid repeated or prolonged contact with skin or breathing of fuel vapor.

5.KEEP OUT OF REACH OF CHILDREN.

Use gasoline with a pump octane rating of 86 or higher.

We recommend unleaded gasoline because it produces fewer engine and spark plug deposits and exhaust system life.

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

Occasionally you may hear 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, ask to an authorized your dealer.

NOTICE Running the engine with persistent spark knock or pinging can cause engine damage.
If it continues, consult to your dealer. In case of misuse, Distributor's Limited Warranty does not cover spare parts supply.

Oxygenated Fuels

Some conventional gasolines are being blended with alcohol or an ether compound to increase the octane. These gasolines are collectively referred to as oxygenated fuels. Some areas use oxygenated fuels to help meet clean air standards.
If you use an oxygenated fuel, be sure its pump octane rating is 86 or higher.

Ethanol (ethyl or grain alcohol)

Gasoline containing more than 10% ethanol by volume may cause starting and/or performance problems. Gasoline containing ethanol may be marketed under the name "Gasohol".

Methanol (methyl or wood alcohol)

Gasoline containing methanol must contain cosolvents and corrosion inhibitors to protect the fuel system. Gasoline containing more than 5% methanol by volume may cause starting and/or performance problems and may damage metal, rubber and plastic parts of your fuel system.

MTBE (methyl tertiary butyl ether)

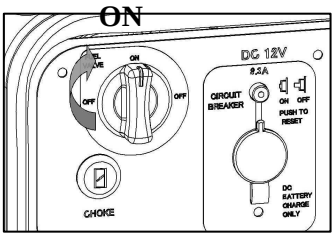
You may use gasoline containing up to 15% MTBE by volume. Before using an oxygenatedfuel, try to confirm the fuel's contents. Some states (provinces in Canada) require this information to be posted on the pump. If you notice any undesirable operating symptoms, switch to a conventional unleaded gasoline. Fuel system damage or performance problems resulting from the use of an oxygenated fuel are not the responsibility of our company and are not covered under warranty.

Oxygenated fuels can damage paint and plastic. Be careful not to spill fuel when filling your fuel tank. Damage caused by spilled fuel is not covered under warranty.

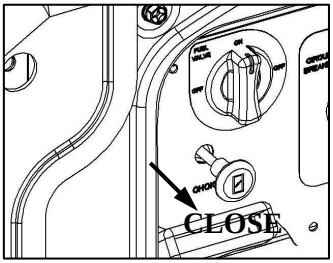
STARTING THE ENGINE/STOPPING THE ENGINE

Starting the engine

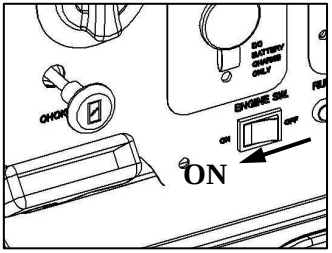
①Turn the fuel valve to the "ON" position.



②Pull the choke knob to the "CLOSE" position



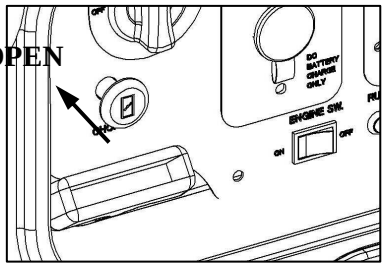
③Move the engine switch to the "ON" position.



④Pull the starter recoil grip until compression is felt, then pull briskly.

NOTICE Do not allow the starter recoil grip to snap back. Return it slowly by hand.

⑤Push the choke knob to the "OPEN" position as the engine warms up.



Stopping the Engine

In an emergency:

To stop the engine in an emergency, move the engine switch to the "OFF" position.

In normal use:

①Move the engine switch to the "OFF" position.

②Turn the fuel valve to the "OFF" position

MAINTENANCE

Periodic maintenance and adjustment is necessary to keep the generator in good operating condition. Perform the service and inspection at the intervals shown in the Maintenance schedule below.

⚠ WARNING Exhaust gas contains poisonous carbon monoxide. Shut off the engine before performing any maintenance. If the engine must be run, make sure the area is well ventilated.

NOTICE Use only genuine BRIGGS&STRATTON and DAISHIN parts for maintenance or repair. Replacement parts which are not of equivalent quality may damage the engine and generator and also Distributor's limited warranty does not cover.

MAINTENANCE SCHEDULE

REGULAR SERVISE PERIOD Performed at every indicated month or operating hour interval, whichever comes first.		Each use	First month or 5Hrs. (3)	Every 1month or 25Hrs. (3)	Every 3month or 50Hrs. (3)	Every 6month or 100Hrs. (3)
ITEM						
Engine oil	Check level	○				
	Change		○		O	
Air cleaner	Check	○				
	Clean			○ (1)		
Spark plug	Check-Clean				O	
Valve clearance	Check-Adjust					○ (2)
Fuel tank and strainer	Clean					○ (2)
Generator air filter	Check				O	
	Clean					O
Fuel line	Check (Replace if necessary)	Every 3 years (2)				

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

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

(3) For professional commercial use, log hours of operation to determine proper

maintenance intervals.

Engine oil change

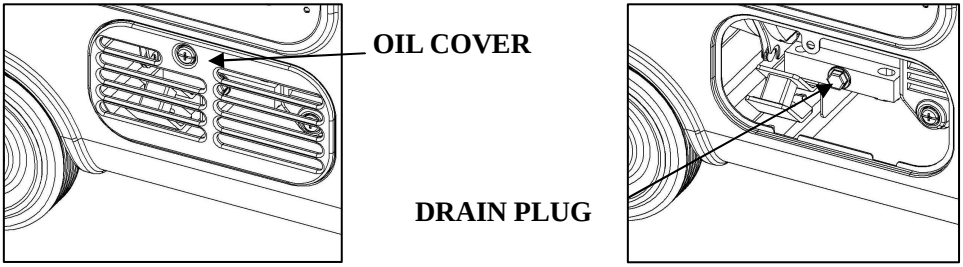
Drain the oil while the engine is warm to assure complete and rapid draining.

①Remove the oil cover , drain plug , oil filler cap, and drain the oil.

②Install the drain plug . Tighten the plug securely.

③Refill with the recommended oil and check the level.

Oil capacity: 0.6ℓ(0.63 US qt, 0.53 lmp qt)



⚠CAUTION Used motor oil may cause skin cancer if repeatedly left in contact with the skin for prolonged periods. Although this is unlikely unless you handle used oil on a daily basis, it is still advisable to thoroughly wash your hands with soap and water as soon as possible after handling used oil.

Please dispose of used motor oil in a manner that is compatible with the environment. We suggest you take it in a sealed container to your local service station or recycling center for reclamation. Do not throw it the trash or pour it on the ground.

Air cleaner service

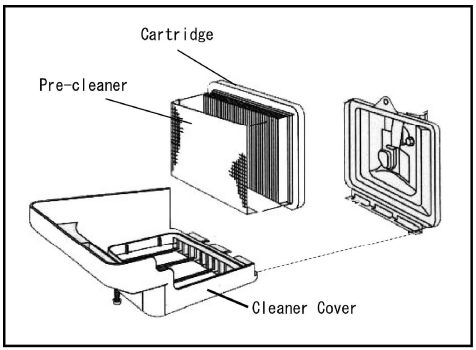
A dirty air cleaner will restrict airflow to the carburetor. To prevent carburetor malfunction, service the air cleaner regularly. Service more frequently when operating the generator in extremely dusty areas.

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

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

①Loosen the air cleaner cover screws, remove the air cleaner cover, and remove the element.

②Wash a pre-cleaner with water and liquid cleanser wipe out with dry cloth.
Tap the flat side of a cartridge for cleaning. After cleaning assemble to the air cleaner.



Spark Plug Service

Recommended spark plugs: RC12YC (CHAMPION)

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

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

①Remove the spark plug cap

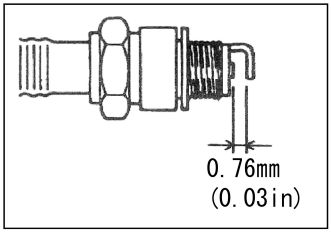
②Clean any dirt from around the spark plug base.

③Use the wrench supplied in the tool kit to remove the spark plug.

④Visually inspect the spark plug. Discard it if the insulator is cracked or chipped. Clean the spark plug with a wire brush if it is to be reused.

⑤Measure the plug gap with a feeler gauge. Correct as necessary by carefully bending the side electrode.

The gap should be: 0.76mm(0.03in)



⑥Check that the spark plug washer is in good condition, and thread the spark plug in by hand to prevent cross threading.

⑦After the spark plug in 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.

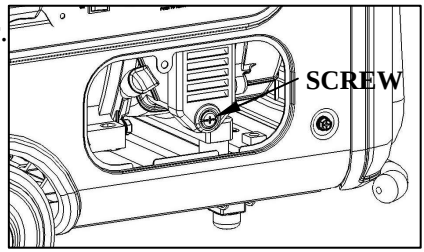
NOTICE The spark plug must be securely tightened. An improperly tightened spark plug can become very hot and could damage the engine. Never use spark plug, which have an improper heat range. Use only the recommended spark plug or equivalent.

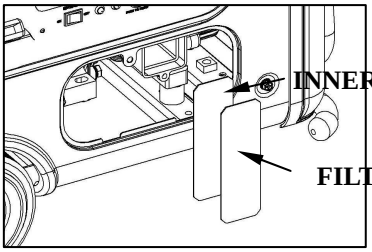
Generator air filter Service

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

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

①Loosen the air filter cover screws, remove the air cleaner cover, and remove the filter.





②Wash a filter with soapy water and liquid cleanser wipe out with dry cloth.

After cleaning assemble to the generator.

TRANSPORTING/STORAGE

When transporting the generator, turn the engine switch "OFF" and the fuel valve "CLOSE". Keep the generator level to prevent fuel spillage. Fuel vapor or spilled fuel may ignite.

⚠ WARNING Contact with a hot engine or exhaust system can cause serious burns or fires. Let the engine cool before transporting or storing the generator.

Take care not to drop or strike the generator when transporting. Do not place heavy objects on the generator.

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 carburetor float bowl.
1 year or more	Fill with fresh gasoline and add gasoline conditioner.* Drain the carburetor float bowl. Remove the spark plug. Put a tablespoon of engine oil into the cylinder. Turn the engine slowly with the pull rope to distribute the oil. Reinstall the spark plug. Change 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 your dealer for conditioner recommendations.

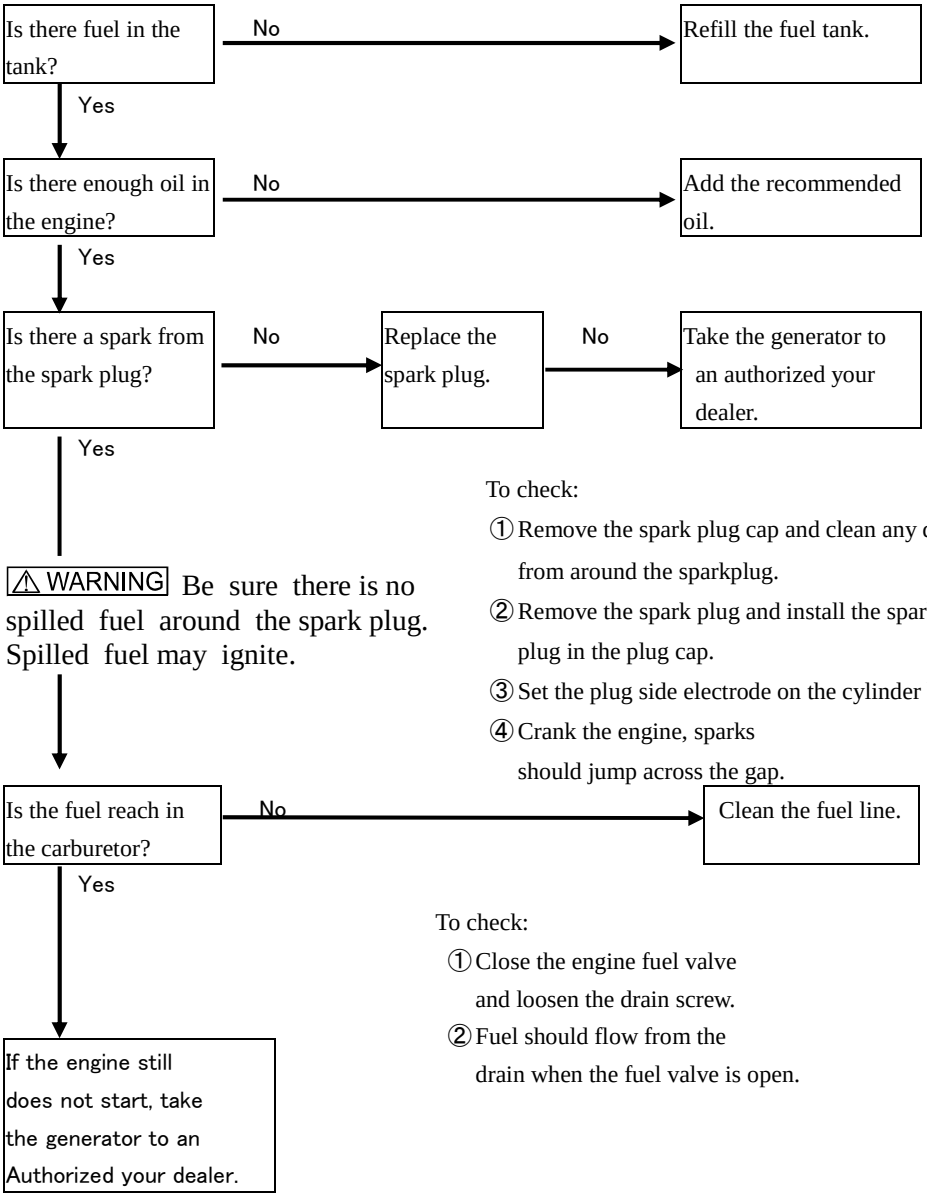
3.Drain the carburetor by loosening the drain screw. Drain the gasoline into a suitable container.

⚠ WARNING Gasoline is extremely flammable and explosive under certain conditions. Perform this task in a well ventilated area with the engine stopped. Do not smoke or allow flames or sparks in the area during this procedure.

4.Change the engine oil.
5.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.
6.Slowly pull the starter grip until resistance is felt. At this point, the piston is coming up on its compression stroke and both the intake and exhaust valves are closed. Storing the engine in this position will help to protect it from internal corrosion.

TROUBLE SHOOTING

When the engine will not start:



To check:

① Remove the spark plug cap and clean any dirt from around the sparkplug.

② Remove the spark plug and install the spark plug in the plug cap.

③ Set the plug side electrode on the cylinder head.

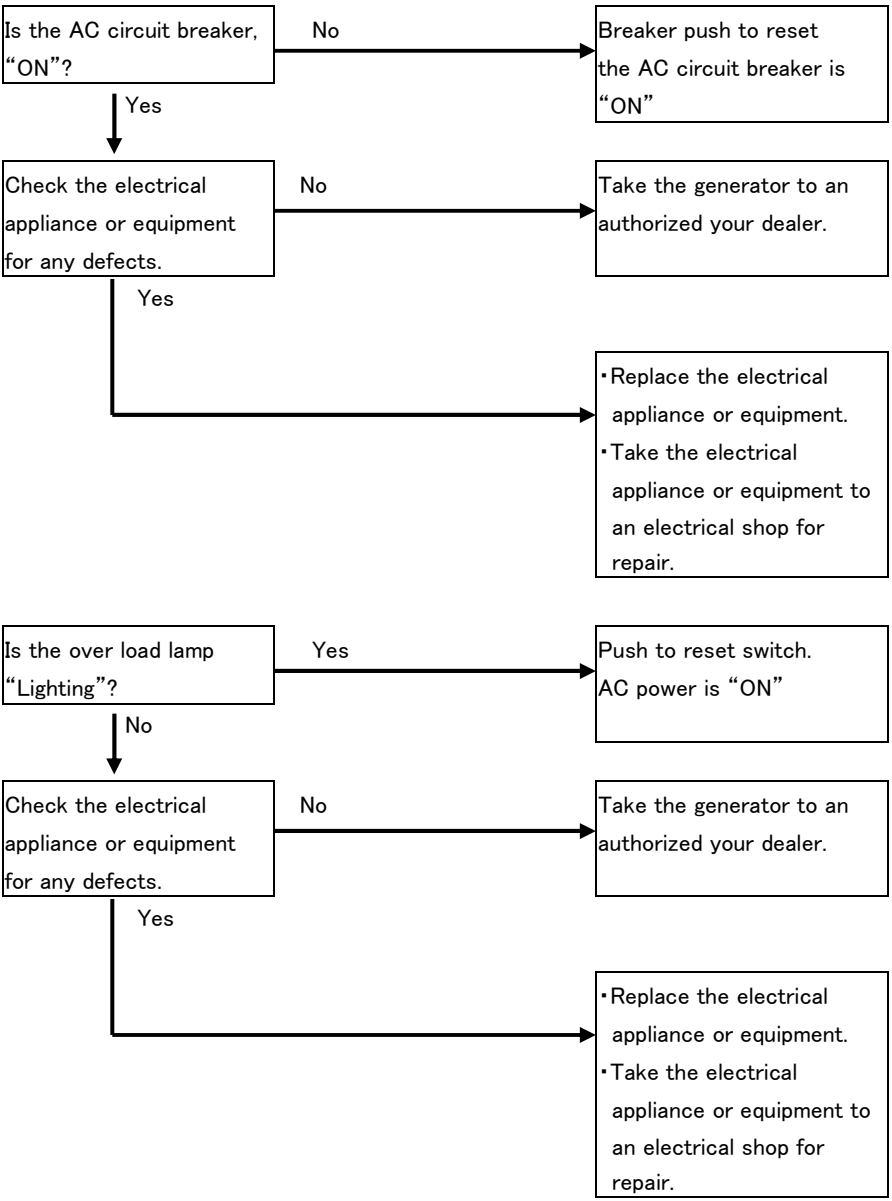
④ Crank the engine, sparks should jump across the gap.

To check:

① Close the engine fuel valve and loosen the drain screw.

② Fuel should flow from the drain when the fuel valve is open.

No electricity at the AC receptacles:



SPECIFICATIONS

Model	SGE3500BSi	
Generator		
AC Frequency	50Hz	60Hz
AC Output Voltage	110,120,220,230V	
Maximum AC Output	3000VA	3000VA
Rated AC Output	2800VA	2800VA
DC Output	12V-8.3A	
Voltage Regulator	Inverter Type	
Engine		
Model	BRIGGS＆STRATTON I/C6.5HP	
Type	Air-Cooled, 4Cycle,OHV Gasoline Engine	
Displacement	206cm^3	
Maximum Power Output	4.8kW / 4000min^{-1}	
Others		
Fuel Tank Capacity (Metal Tank)	16L	
Continuous Operating Hours (100% Load)	8hrs	
Dimensions (L×W×H)	643×529×559	
Dry Weight	58kg	
AC Circuit Breaker	●	
Oil Alert System	●	

HARD GEAR

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