GENFORCE®

Petrol Powered Inverter Generator

User Manual

[Revision 2.0 October 2018]

READ THIS MANUAL CAREFULLY BEFORE USE – FAILURE TO DO SO MAY RESULT IN INJURY, PROPERTY DAMAGE AND MAY VOID WARRANTY. • KEEP THIS MANUAL FOR FUTURE REFERENCE. • Products covered by this manual may vary in appearance, assembly, inclusions, specifications, description and packaging.

The product is NOT supplied with engine oil, although traces of oil from the manufacturing process may be present. It is essential to add adequate engine oil of the correct type to the engine before use. **Failure to add engine oil will void the product warranty**.

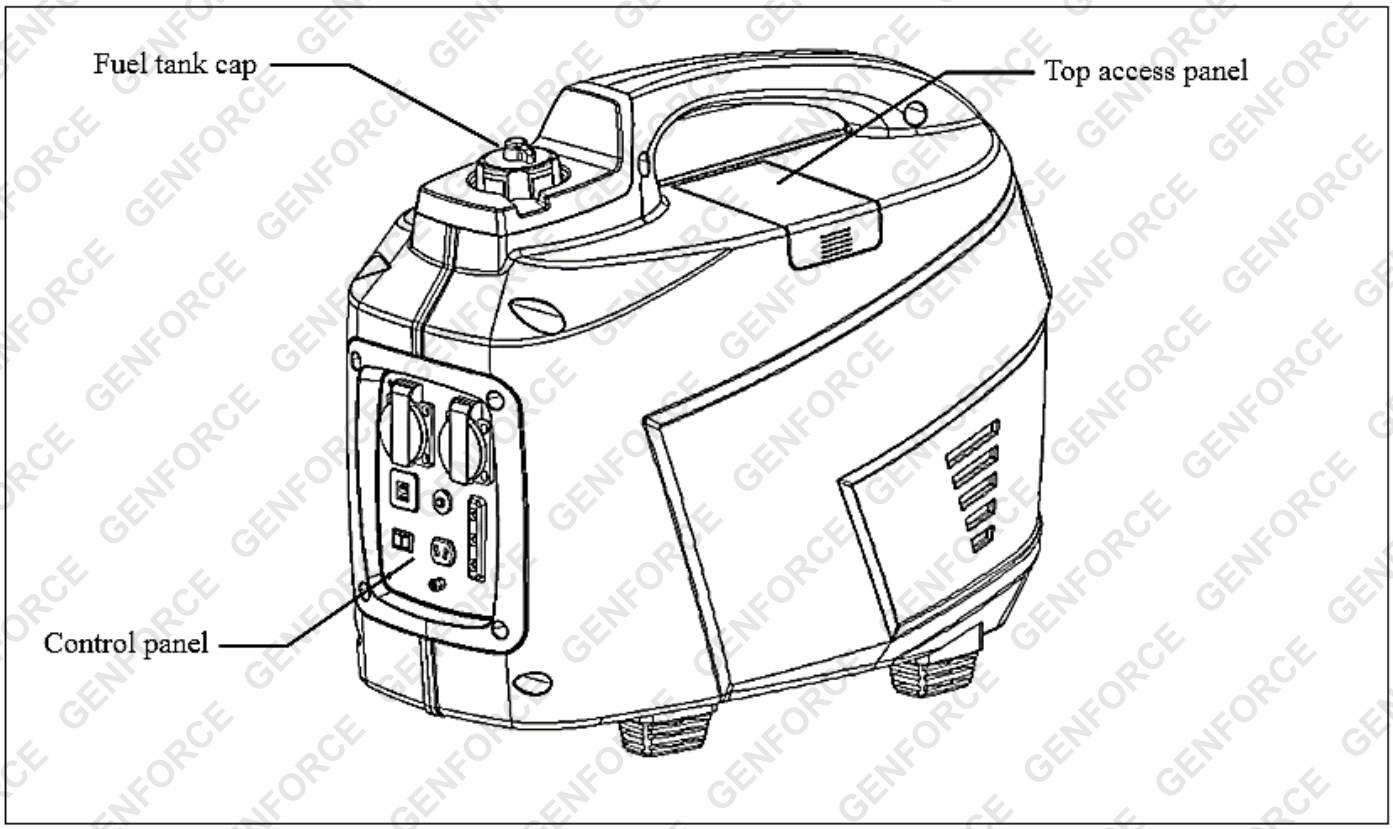
Table of Contents

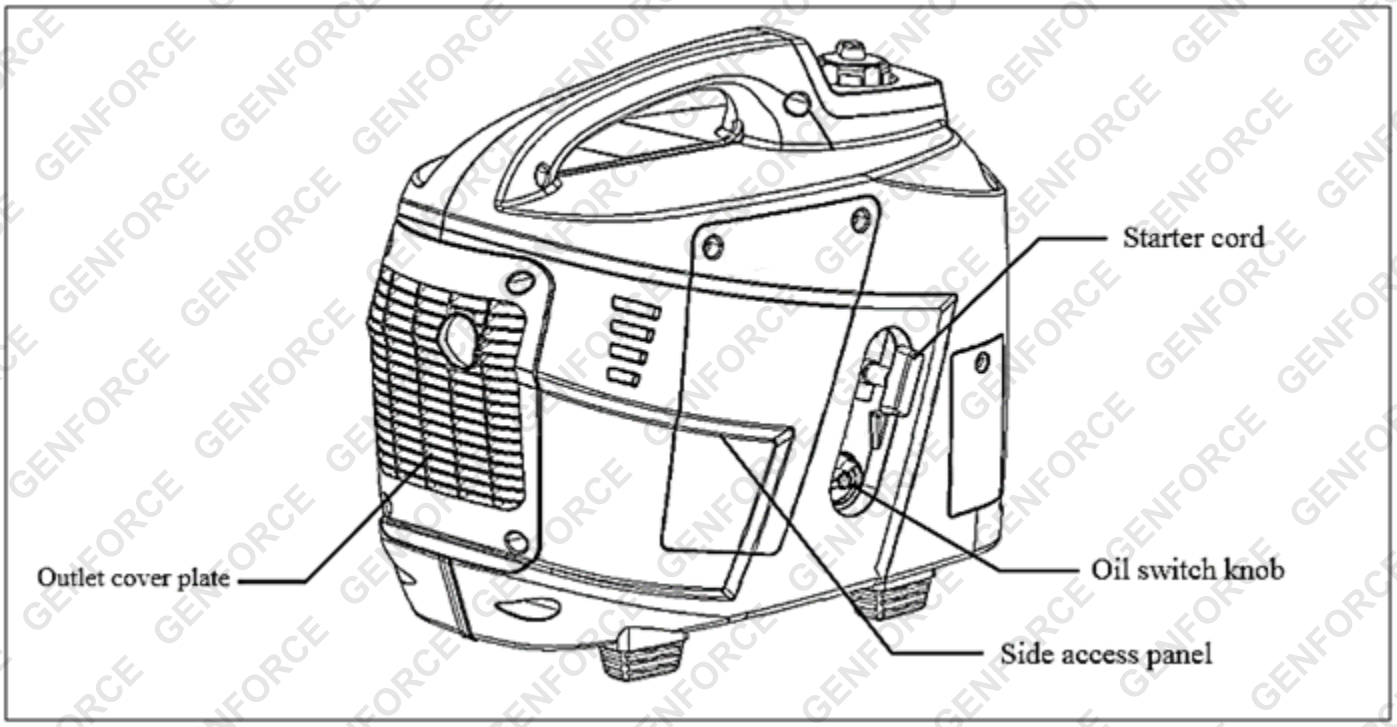
Safety

- Before operating the generator, carefully read and understand this manual, to greatly reduce the chances of personal injury or equipment damage.
- Exhaust contains poisonous carbon monoxide. Do not operate the generator in poorly-ventilated place. Ensure that the generator is located in a dry, airy, clean place.
- When the generator running and the muffler is very hot, be careful not to touch it! Let the generator cool off first.
- To prevent burns, please pay attention to the warning labels on the generator attached to the exhaust system.
- Never connect to the power outlet in parallel wires or application-specific cable after running in parallel, as this may lead to electric shocks.
- **WARNING!** Gasoline is highly flammable! Turn off the generator first before refuelling. Always refuel in a well-ventilated area. Do not smoke when refuelling.
- If the unit is being used as a back-up power generator for buildings, it must be connected to the building's power system only by a qualified electrician and must comply with relevant laws and electrical codes. Otherwise, the power generator could short-circuit, and if people comes in contact with the power transmission wire, the generator may explode, burn or cause fires to the building's electrical equipment.
- Before starting the generator, always perform a pre-operation inspection first to avoid accidents and damages to the equipment.
- The generator must have an allocated space of at least one meter away from objects and/or equipment.
- The generator must remain horizontal during its operation. If the generator is inclined in any way, it could result in fuel spillage.
- Operators of the generator should know how to quickly turn off the generator and to understand the operation of all of its control components. Never allow untrained personnel to operate the generator.
- Children and pets must stay away from the operating area of the generator.
- When the generator is running, keep away from its rotating parts.
- If improperly operated on, the generator can become potentially dangerous. Do not operate the generator with wet hands!
- Store the generator in a dry location, away from rain and snow.

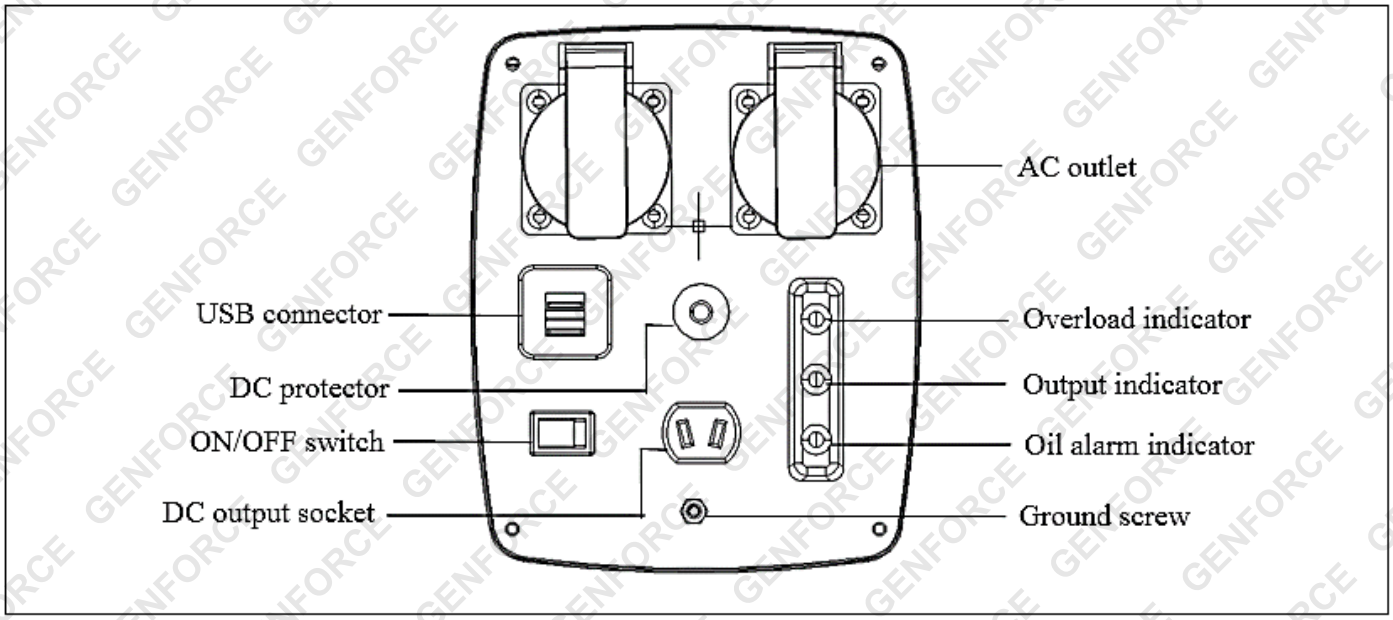
Parts Diagrams

Generator





Control Panel



Set-Up

Pre-Operation Checklist

IMPORTANT! Ensure that the generator is placed horizontally and that it is turned off.

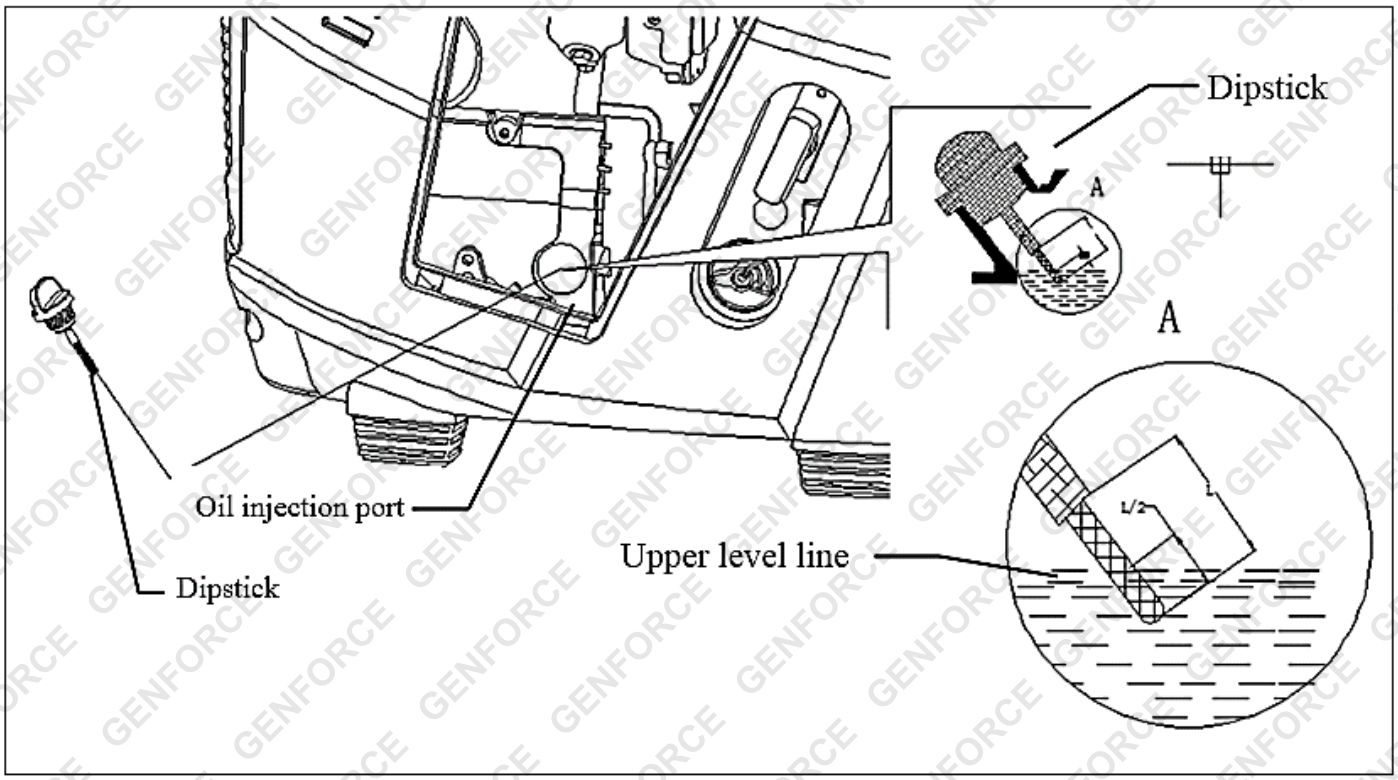
Check the engine oil level

IMPORTANT! Using 2-stroke engine oil could shorten the engine life. Use a high-quality 4-stroke engine oil, which must meet or exceed US automobile manufacturer's requirements for the classification of the American Petroleum Institute, SF level. Select the appropriate viscosity for the average temperature of the oil in your area.

1. Loosen the screws of the side access panel to remove the cover.
2. Remove the dipstick with a clean rag to wipe the oil dipstick, without tightening the dipstick and insert it into the oil port to check the oil level.
3. If the oil level is below the bottom of the dipstick, add more of the recommended oil.

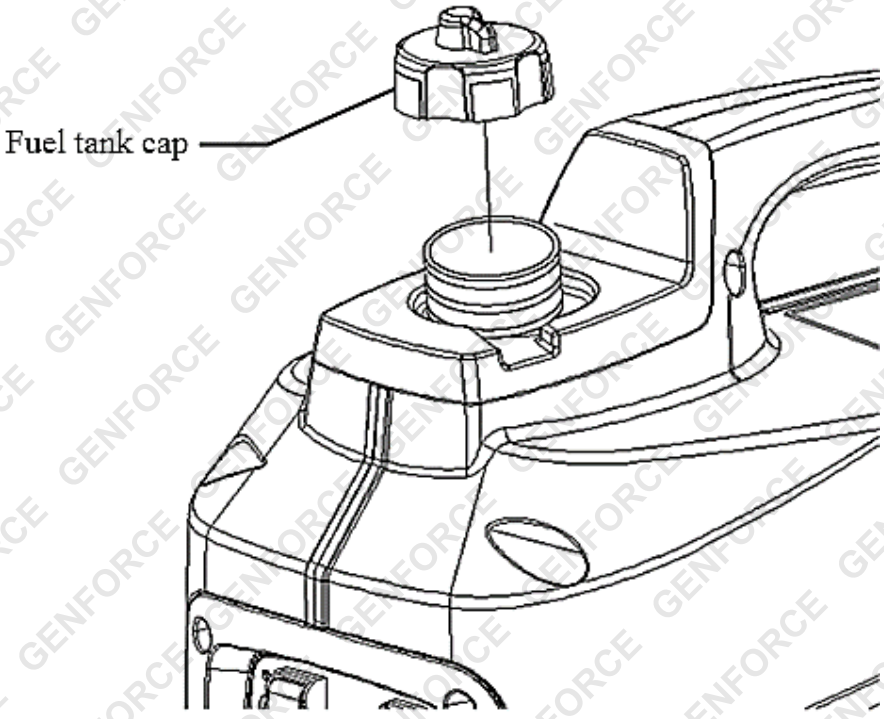
WARNING!

- Insufficient engine oil could seriously damage the engine.
- The Oil Alert system will automatically shut down the engine before the oil level drops below the safety line. But in order to avoid inconveniences caused by unexpected downtime, we recommend that you regularly check the oil level.



Check the Fuel Level

1. Use automotive gasoline (preferably unleaded or low-lead gasoline to reduce combustion and reduce environmental pollution).
2. When the oil level is too low, add fuel to a predetermined level.
3. Never use gasoline or a mixture of oil and gasoline.
4. Do not fill the fuel tank with water.
5. After refuelling, tighten the fuel cap.



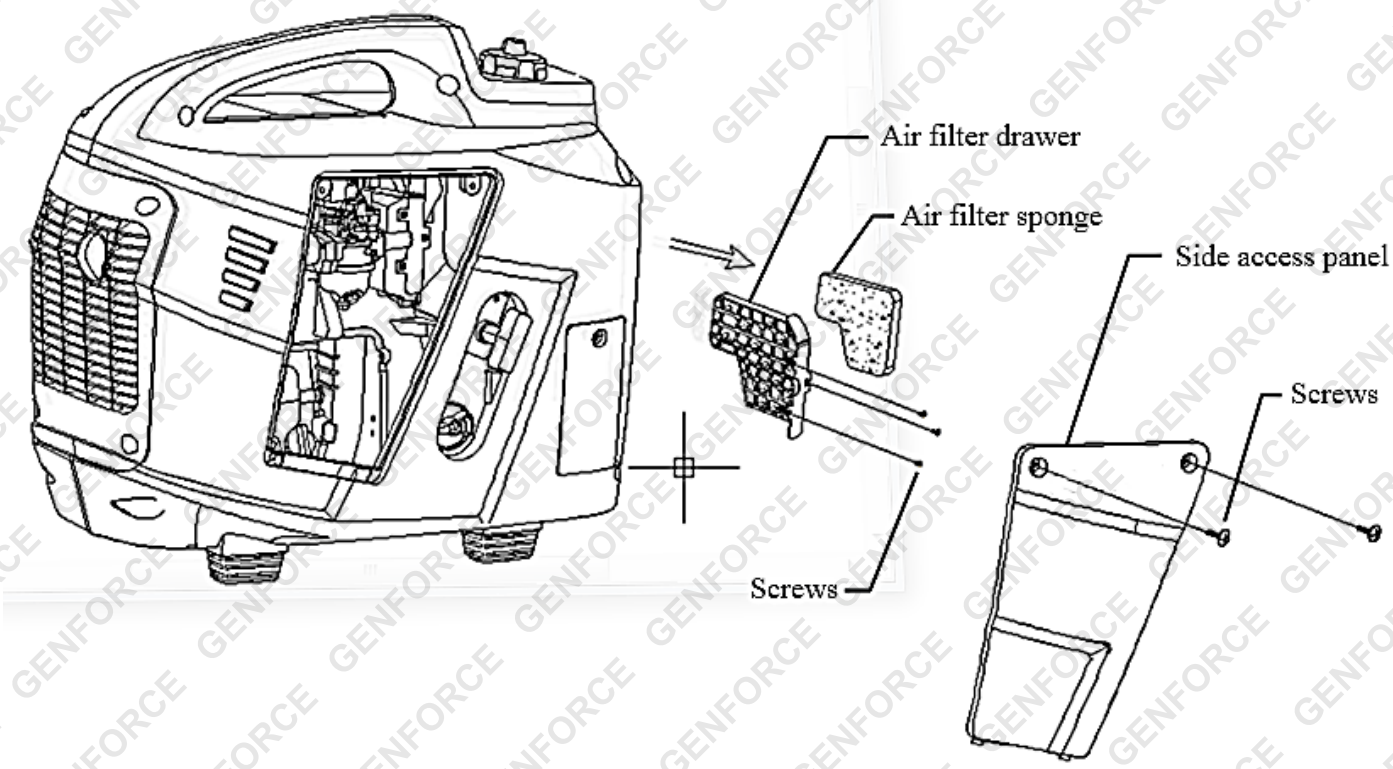
WARNING!

- Gasoline is explosive and flammable under certain conditions.
- When refuelling, turn off the generator and do it in a well-ventilated area. Do not store the generator near fire or areas with strong sources of heat.
- After refuelling, tighten fuel tank cap.
- Be careful not to spill any fuel when refuelling. Spilled fuel may cause fires or explosions. If there is any spilt fuel, ensure that the fuel has evaporated and that the area is completely dry first before starting the generator again.
- Avoid prolonged, repeated exposure to gasoline or inhale its vapour. Keep the generator away from the reach of children.

Check the Air Filter

Check the air filter core, make sure it is clean and that it is operating normally.

1. Unscrew the access panel screws to open the access cover.
2. Remove the three screws on the air filter cartridge.
3. Follow the arrow shown in the figure below to pull out the air filter drawer.
4. Pull out the air filter drawer, check the air filter and, if necessary, clean or replace the filter.
5. Clean or replace the filter before reversing the operation of installing air filtration devices.



WARNING! Do not run the generator when there is no air filter, otherwise it will cause rapid wear of the generator's parts through the carburettor into the generator.

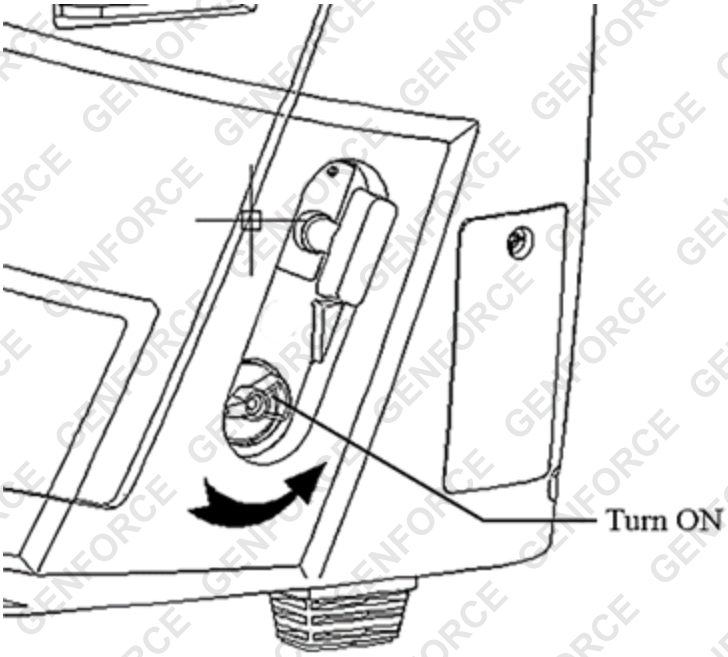
Due to the generator's breathing tube leading to the air filter cartridge, the air filter sponge will have a small amount of oil on it over time. If the generator is in continuous operation for a while now or when there is excess engine oil, the lower air filter cartridge will also have a small amount of oil on it, which is a normal phenomenon. Wipe the oil clean from them when the generator is turned off and has sufficiently cooled down.

Operation

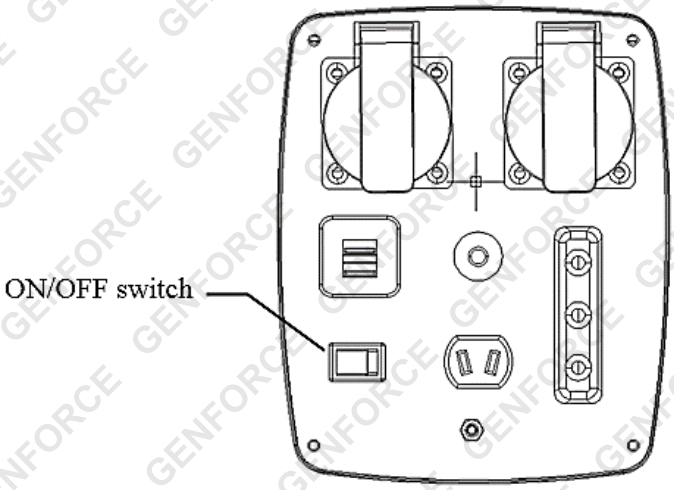
Starting the Generator

IMPORTANT! Before starting the engine, disconnect the load between the DC sockets first.

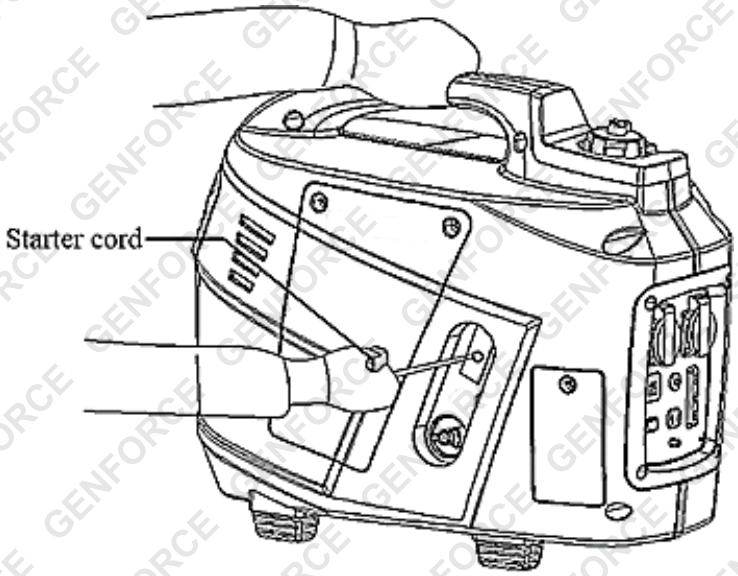
1. **Turn on the Oil Switch**



2. **Set the generator's engine switch to the "ON" position.**



3. **Pull the starter cord until you feel resistance, then following the direction of the arrow indicated in the figure below, quickly pull the handle to start the generator.**



CAUTION!

- Do not let go of the starter cord after pulling it, but rather put it back slowly.
- When pulling the starter cord, hold onto the generator tightly to prevent tipping.

NOTE: If the engine cannot be started, check oil level to the exclusion of other failures first.

Operating at High Altitudes

At high altitudes, the standard carburettor air-fuel mixture will be more concentrated, reducing the generator's operating performance and fuel consumption increases. By placing the carburettor's main jet unto a small point, while adjusting the mixing ratio of the screw, you can change the engine performance in high-altitude areas. If you always use the generator at an altitude of 1,500 meters above sea level, contact an authorised service centre or the manufacturer to make changes to the carburettor.

The use of a suitable nozzle will decrease the engine horsepower by 3.5% and will increase it every 305 meters. If you do not do these adjustments, the impact of altitude on power will be greater.

NOTE: If the engine nozzle is designed for high altitude operation, but will operate at lower altitudes, it may cause a lowering of output power, overheating and can even make the air-fuel mixture too thin. These conditions can severely damage the generator.

Using the Generator

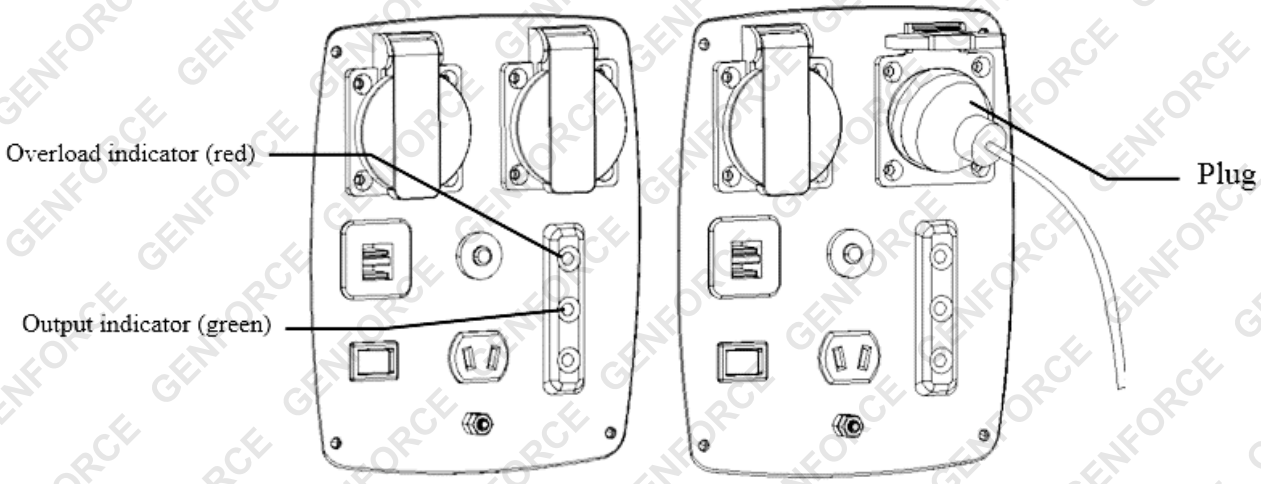
WARNING!

- To prevent electric shocks, the generator should be grounded. A thick cable should be connected between the ground terminal and the external ground-source of the generator.
- If the generator is being used as a power back-up for buildings, ensure that it is connected to the building's power system by a qualified electrician and must comply with relevant laws and electrical codes. Otherwise, the power generator could short-circuit, and if people comes in contact with the power transmission wire, the generator may explode, burn or cause fires to the building's electrical equipment.
- If the generator is continuously used, do not exceed the rated power given. In other cases, you should consider rated total power of the connected device.
- Do not exceed the rated current of the electrical socket.

- Do not connect the generator at home, as this may damage the generator or home appliances.
- Do not use the generator for purposes other than what it were intended to do. Please observe the following additional requirements:
  - Do not do a parallel connection with the generator.
  - Do not lengthen the exhaust pipe.
  - If you are going to use an extension cable, use a rubber sleeve flexible cable (the cable should meet the requirements of local laws and regulations).
  - Minimum length of extension cable: 1.5mm²; cable length of 60m; 2.5 mm² cable length of 100 meters.
  - Keep the generator away from other wires and cables, such as those for a distribution network.
- When using an AC power, DC power can also be used. If you want to use both AC and DC power supply, do not exceed the total power sum of both the AC and DC.
- The motor equipment's power should not be higher than the unit power calibration at the start.

AC Power Applications

1. Ensure that its output indicator (green) is lit.
2. Ensure that the required device connected to the switch is turned off, and then plug in the device at the generator outlet.



WARNING!

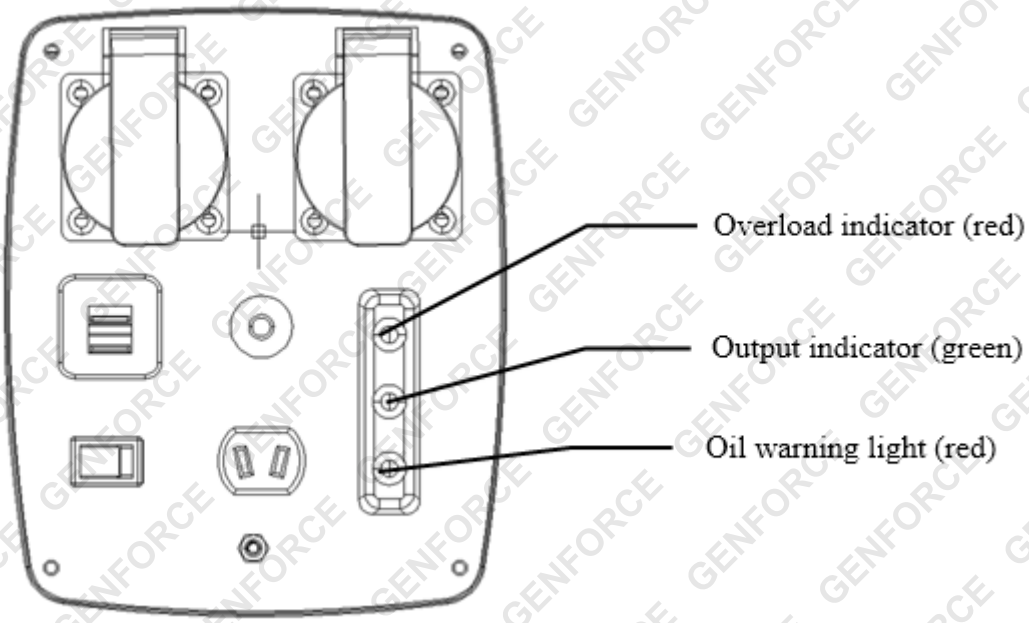
- If the overload indicator light (red) stays on, the generator will be damaged; and if the temporarily mild overload indicator light (red) is lit, it will shorten the life of the generator.
- Before connecting a device to the generator, ensure that it is in good working condition first. If it appears abnormal, suddenly stops or slows down, immediately turn off the generator's power switch, and then disconnect the device.

Output, Overload Indicator, Oil Warning Light

- Under normal operating conditions, the output indicator light (green) will be lit.
- If the generator is overloaded or there is an internal short-circuit in the connected device, the output indicator (green) will be off and the overload indicator (red) will light up instead. If this happens, cut-off the current connection to the device.
- If the red light is lit-up, turn off the generator and check the cause of the overload.
- If the oil alert lamp is lit-up, the engine will automatically shut down. Check and see if oil needs to be added.

NOTE:

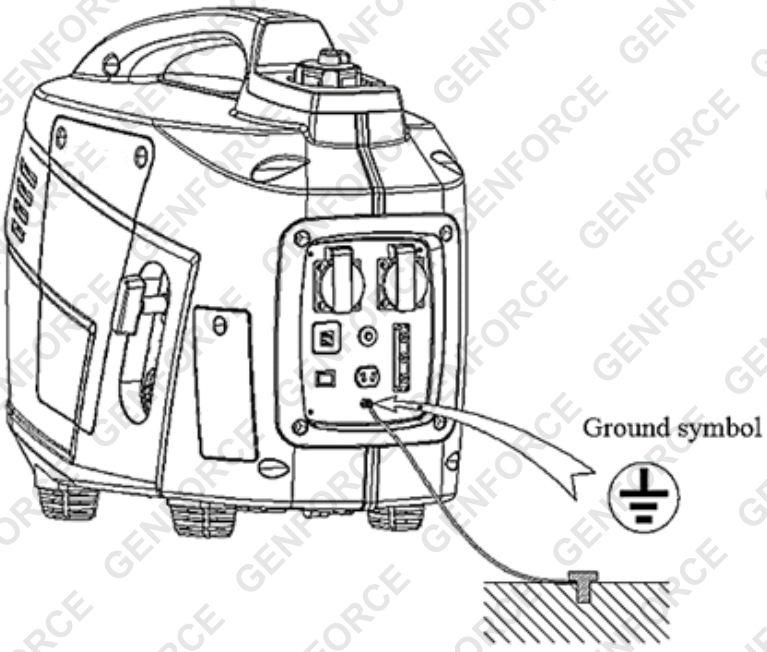
- Before connecting a device to the generator, check whether the device is in good working condition. If the device's required power exceeds that of the generator, connect the needed cable equipment, then start the generator.
- Ensure that the switch is connected to the device before it is put to use in the OFF position.



WARNING! After starting the engine, if the overload indicator light (red) is lit-up, check whether there is a load connected to the AC outlet. If so, unplug the load cable, and then turn off the generator. In this case, the overload indicator light will flash for a few seconds until the overload indicator will stop flashing. Then, start the generator.

If after several consecutive starts the generator overload indicator light is still on, and after checking the AC outlet and ensuring that no load is connected, have the generator serviced by the manufacturer or an authorised service centre.

1. Connect the ground terminal

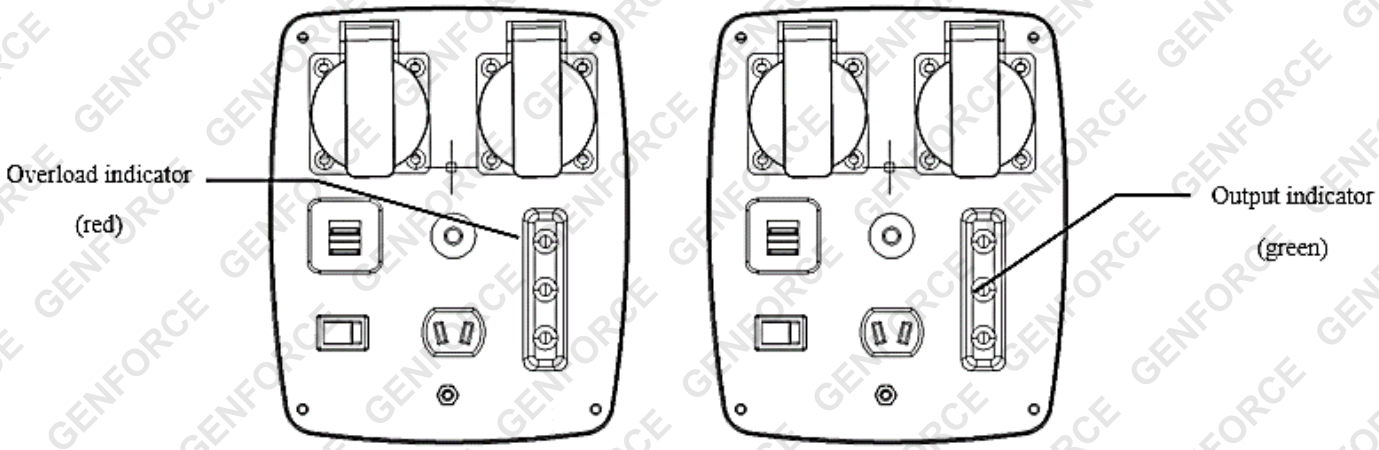


2. **Requirements for starting the generator:**

   When the output indicator light (green) does not light-up, and the overload indicator (red) is lit-up instead, turn off the toggle switch of the engine, then wait after the overload indicator light goes out. After that, follow the Starting the Generator procedure to start the generator again.

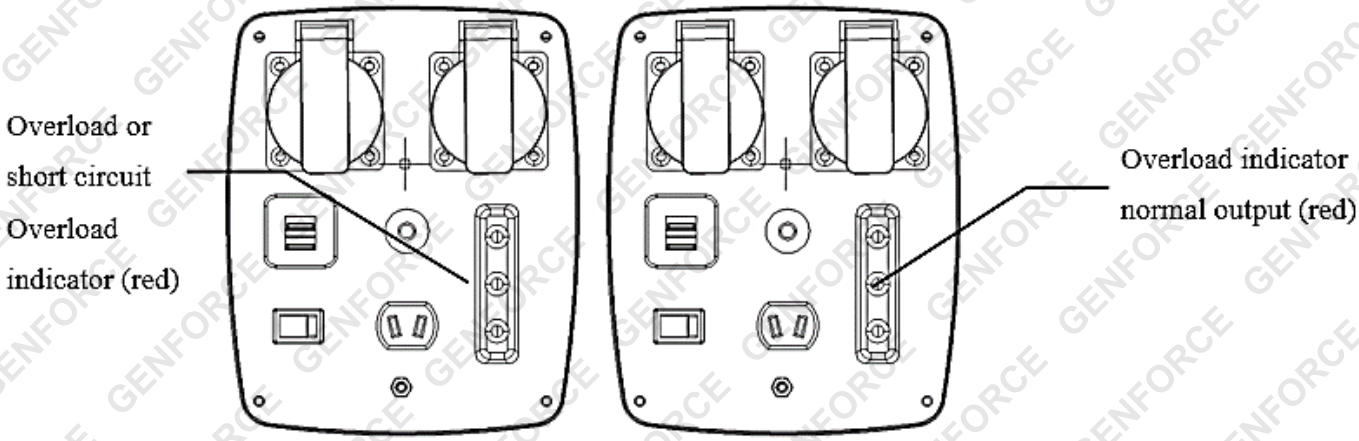
3. **Ensure that the connected device is turned off first, then plug it into the generator AC outlet.**

   CAUTION! If the connected device is turned on before connecting it to the generator, the device will suddenly start, potentially causing injury.



4. **When the output indicator (green) lights up, turn on the generator.**

   NOTE: If there is failure in the overload operation or in the internal equipment, the output indicator (green) will go out and the overload indicator light (red) will then light-up. Also, there is no power output and the engine will not stop, so you must press the engine switch to the “OFF” position to turn off the generator’s engine.



   Match a pure inductive load with the machine with a pure inductive load. The machine cannot be rated power with the same unit of power. The machine-rated power is only 40% to 75% of pure inductive load.

Rated Output

- Altitude: 0 m
- Ambient temperature: 25°C
- Relative Humidity: 30%

Only under specified ambient temperature and cooling can the generator be loaded to the rated power. If the working conditions do not meet these standards or there is poor engine cooling (being run in a limited area), it should be adjusted to reduce the generator’s power.

Ambient Temperature Coefficient: C (30% RH)

Altitude (m)	Ambient Temperature (°C)				
	25	30	35	40	45
0	1	0.98	0.96	0.93	0.90
500	0.93	0.91	0.89	0.87	0.84
1,000	0.87	0.85	0.82	0.80	0.78
2,000	0.75	0.76	0.71	0.69	0.66
3,000	0.64	0.62	0.6	0.58	0.56
4,000	0.54	0.52	0.5	0.48	0.46

NOTE:

- When the relative humidity is 60%, the ambient temperature has an improved coefficient of C-0.01
- When the relative humidity is 80%, the ambient temperature has an improved coefficient of C-0.02
- When the relative humidity is 90%, the ambient temperature has an improved coefficient of C-0.03
- When the relative humidity is 100%, the ambient temperature has an improved coefficient of C-0.04

Algorithm Example:

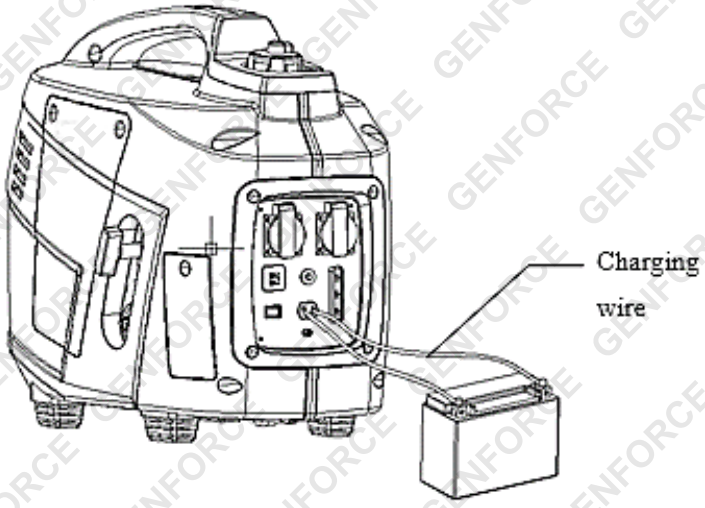
When the generator power rating PN = 2.0KW, altitude is 1000m, the ambient temperature is 35°C, relative humidity is 80%.

In this environment, the generator's rated output of P = PN x (C-0.02) = 2.0 × (0.82-0.02) = 1.6KW

Current Use

NOTE: 12V DC outlets are only for automatic battery charging. A DC socket must be present to monitor the battery voltage. If the battery voltage exceeds 16V, you must immediately stop supplying power to it. Otherwise, it can easily lead the battery to explode.

1. **Connect the charging cable to the generator DC socket, then connect it to the battery terminals.**



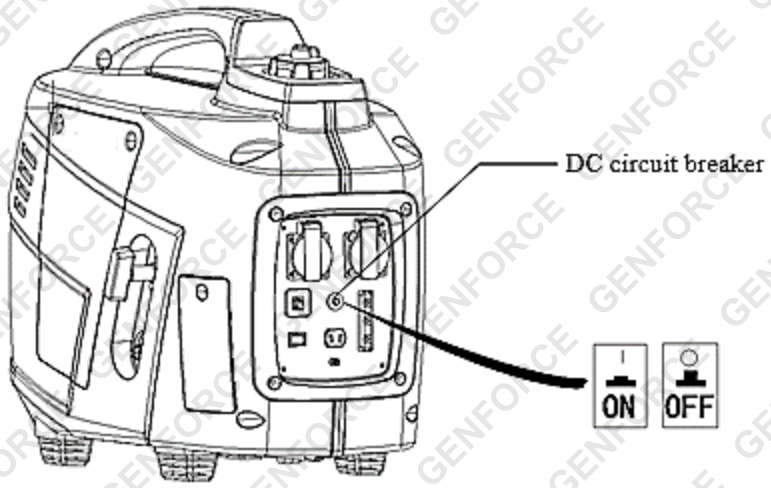
NOTE:

- To disconnect the charging wire when it is connected between the battery and the generator, disconnect it next to the battery to prevent sparks from forming.
- When the charging wire is connected to a battery that is mounted on a car, first disconnect the battery ground cable, charging cable, etc. Then, remove the battery and connect the ground wire. Ensure that the battery terminals do not come in contact with the car chassis case to prevent short-circuitry or sparks from forming.
- When the generator is connected to the battery, do not start the car, otherwise it will damage the generator.
- The charging wire and battery wiring polarity should be correct, otherwise it will damage the generator or the battery.
- While charging, there should be proper ventilation and steer clear from any sources of fire or strong heat. The battery contains extremely volatile and flammable liquids.
- The battery contains sulfuric acid. Contact with skin or eyes may cause burns. Wear protective clothing and face mask.
- Battery liquid is toxic substance! If splashed on skin, wash with water immediately.
- If battery liquid splashes into the eyes, immediately flush them with water for 15 minutes and seek professional medical attention.
- If you accidentally swallow battery liquid, immediately drink plenty of water or milk (you can also mix magnesia or vegetable oil into the milk) and seek professional medical attention.
- The battery should be placed out of reach of children.

2. Start the engine

You can also use the AC, DC socket.

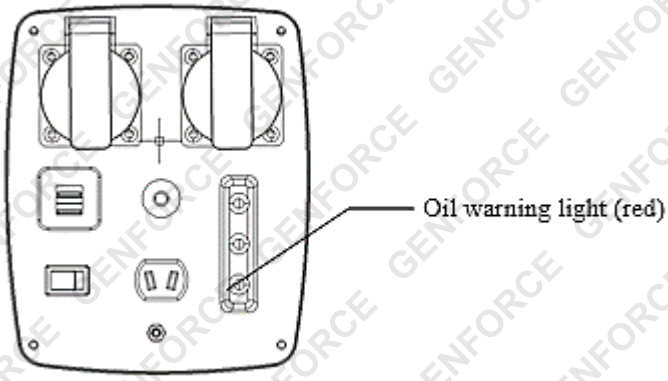
DC overloads can activate the DC current protection switching function. If this happens, reset the switch.



Oil Alert System

The Oil Alert system is designed to prevent engine damage due to lack of lubricant and/or oil. Before the oil falls below the safety line in the crankcase, the oil alert system will automatically shut down the engine (the engine switch will remain in the "ON" position).

The Oil Alert system will turn off the engine if you try to start the engine again. The oil warning light (red) will flash briefly when the engine is no longer running. If this happens, add oil.

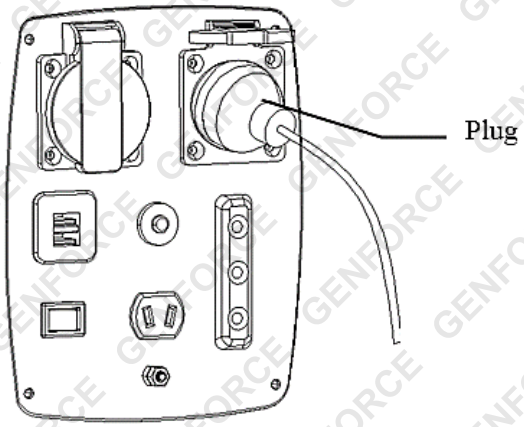


Switching Off the Generator

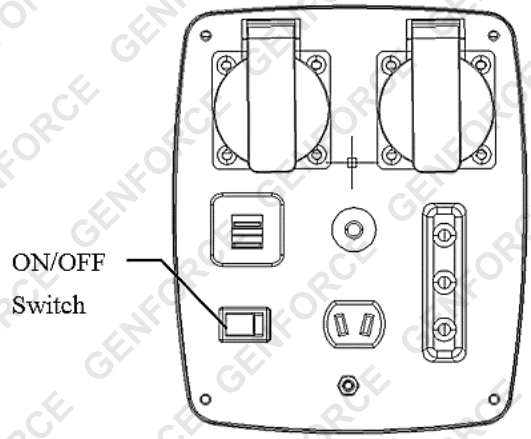
If in case of emergency shutdown, the engine switch should be positioned to “OFF”.

Normal Use

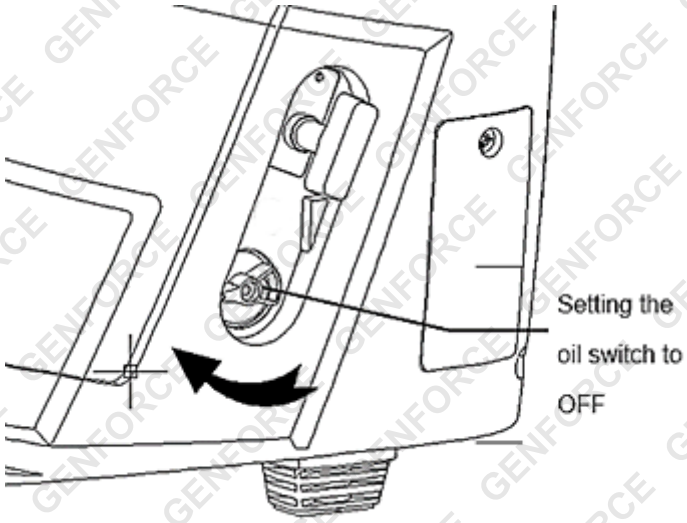
1. **Turn off any connected devices, then pull out the plug.**



2. **Set the switch to the “off” position.**



3. **Set the oil switch to the “OFF” position.**



Maintenance

Maintenance and adjustment schedule was developed to ensure that the generator is kept in the best working condition.

CAUTION! Turn off the generator first before doing any maintenance on it. If the generator needs to be maintained while it is still running, it must be done in a well-ventilated area. **Exhaust from the generator contains poisonous carbon monoxide!** Using inferior or unofficial parts not supplied by the manufacturer can damage the generator.

Maintenance Schedule

Project	Periodic maintenance time[1]	Each Use	Per month or 20 hours	Every three months or 50 hours	Every six months or 100 hours	Every year or 300 hours
Engine oil	Examine	○				
	Replace		○			
Air filter	Examine	○				
	Clean			○[2]		
Muffler	Examine	○				
	Clean		○			
Spark plug	Clean/Adjust				○	
Fuel sediment bowl	Clean				○	
Lash	Check/Adjust					○[3]
Tank and filters	Clean					○[3]
Oil	Examine	Every two years (If necessary, change3)				

NOTES:

[1]Normal maintenance intervals.

[2]Maintain frequently if located in a heavily polluted area.

[3]Periodic maintenance schedule is calculated according to the ambient temperature of 25°C. If the ambient temperature exceeds 30°C, please lessen the load power or shorten the oil change interval.

Changing the Oil

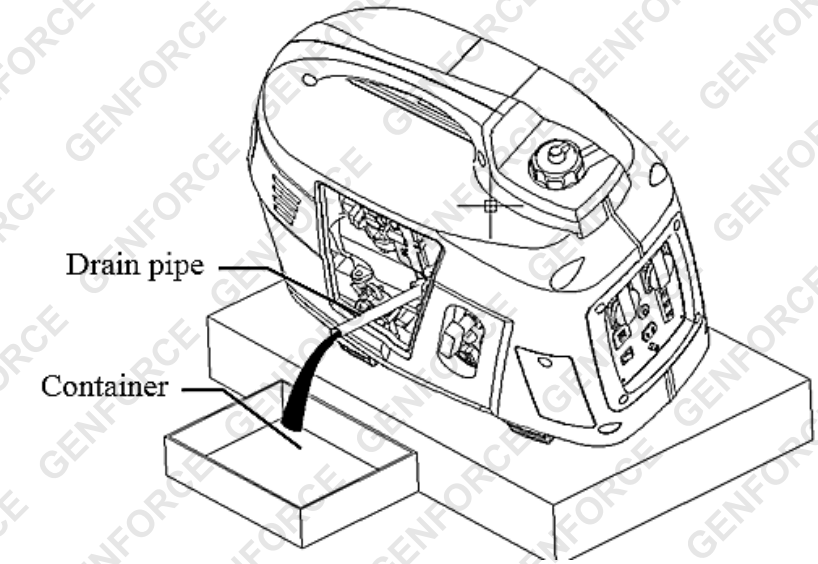
When the engine is hot, the quickly and thoroughly discharge the oil.

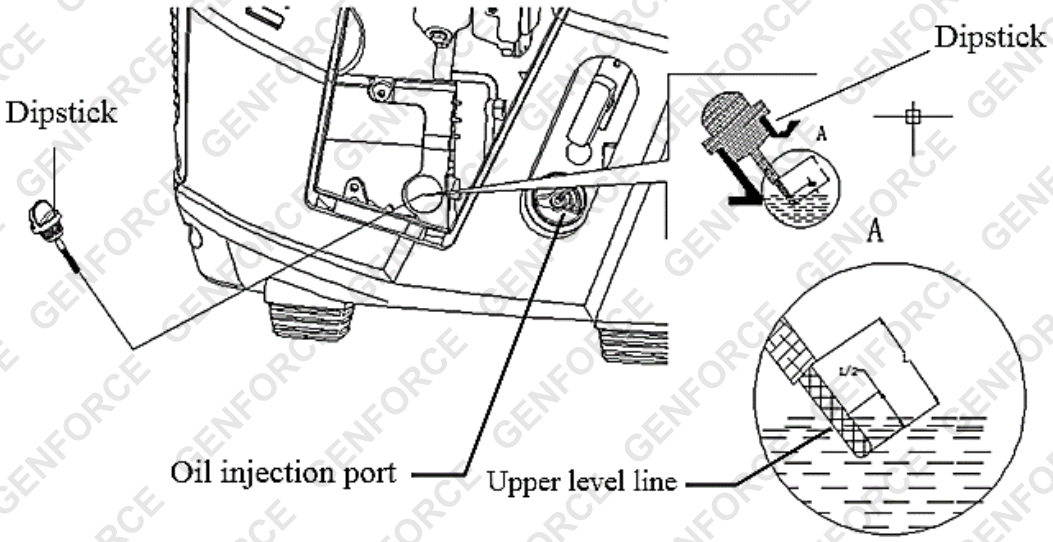
NOTE: Press the stop switch first before changing the oil to ensure that the grip switch is turned off.

1. Discharge pipe into the oil filler neck, and then tighten it (in a random tool bag).
2. Roll the generator, then pour out the oil.
3. Fill with the recommended oil, then check the oil level.

4. After the addition of the new oil, shake the generator from side-to-side a few times to ensure that the oil alarm system will work.

   Oil Capacity: 0.45L





NOTE: Please wash your hands with soap and water after changing the oil.

In order to meet environmental requirements, we recommend that the old oil be sealed in a container and hand it over to your local service station and recycling centre. Do not pour oil onto the ground or in the trash.

Air Filter Maintenance

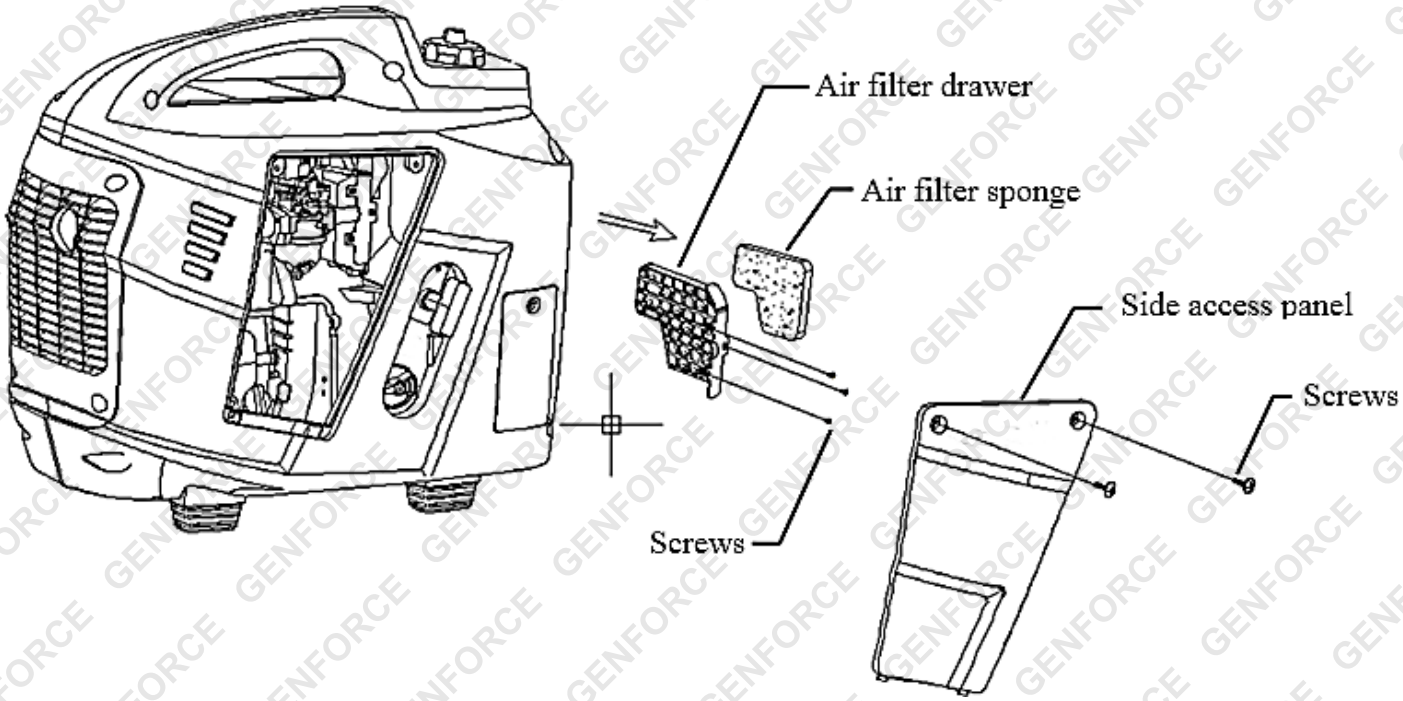
A dirty air filter can block the airflow flowing into the carburettor, which could result in the carburettor malfunctioning. Maintain the air filter regularly, especially if you frequently use the generator in an area with a lot of dust and debris.

CAUTION! Do not use gasoline or low flashpoint solvents to clean the generator! They are highly flammable and explosive under certain conditions.

Check the air filter core, making sure it is clean and performing normally.

1. Remove the access panel to open the access cover.
2. Remove the three screws on the air filter cartridge.

3. Follow the arrow shown in the figure below to pull out the air filter drawer.
4. Pull out the air filter drawer, check the air filter and, if necessary, clean or replace the filter.
5. Clean or replace the filter before following the operation above in reverse.

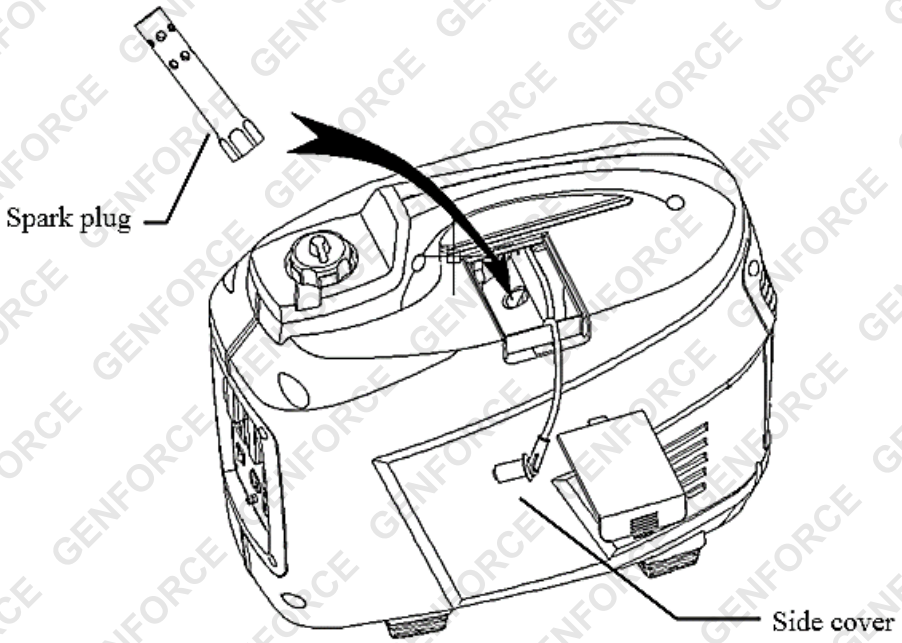


Spark Plug Maintenance

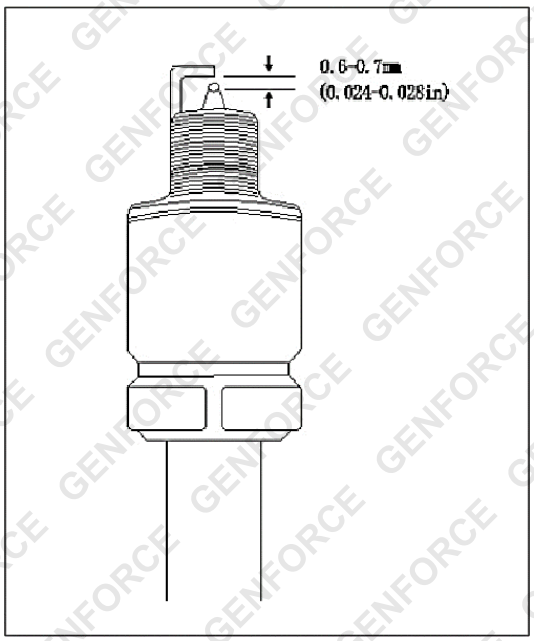
Recommended usage of spark plugs:

In order to ensure the normal operation of the generator, the spark plug gap must be appropriate and no spark plugs are producing any sparks.

1. Remove the top cover screws and open top access panel.
2. Pull out the side cover.
3. Remove the spark plug with a spark plug socket.



4. Visually inspect the spark plug if the insulator is broken, which must be discarded. If you want to re-use the spark plug again, use a brush to clean the spark plug.
5. Measure the spark plug gap with a thickness gauge; the spark plug gap should be between 0.6 – 0.7mm (0.024 – 0.028in).
6. Carefully install the spark plug, being careful not to dislocate it.
7. Install a new spark plug with a wrench and tighten the ½ ring with a good pressure washer. If the old spark plug can still be used, use a wrench to tighten it to ¼ to 1/8 in.
8. Re-install the side cover.
9. Re-install the top access panel.



CAUTION!

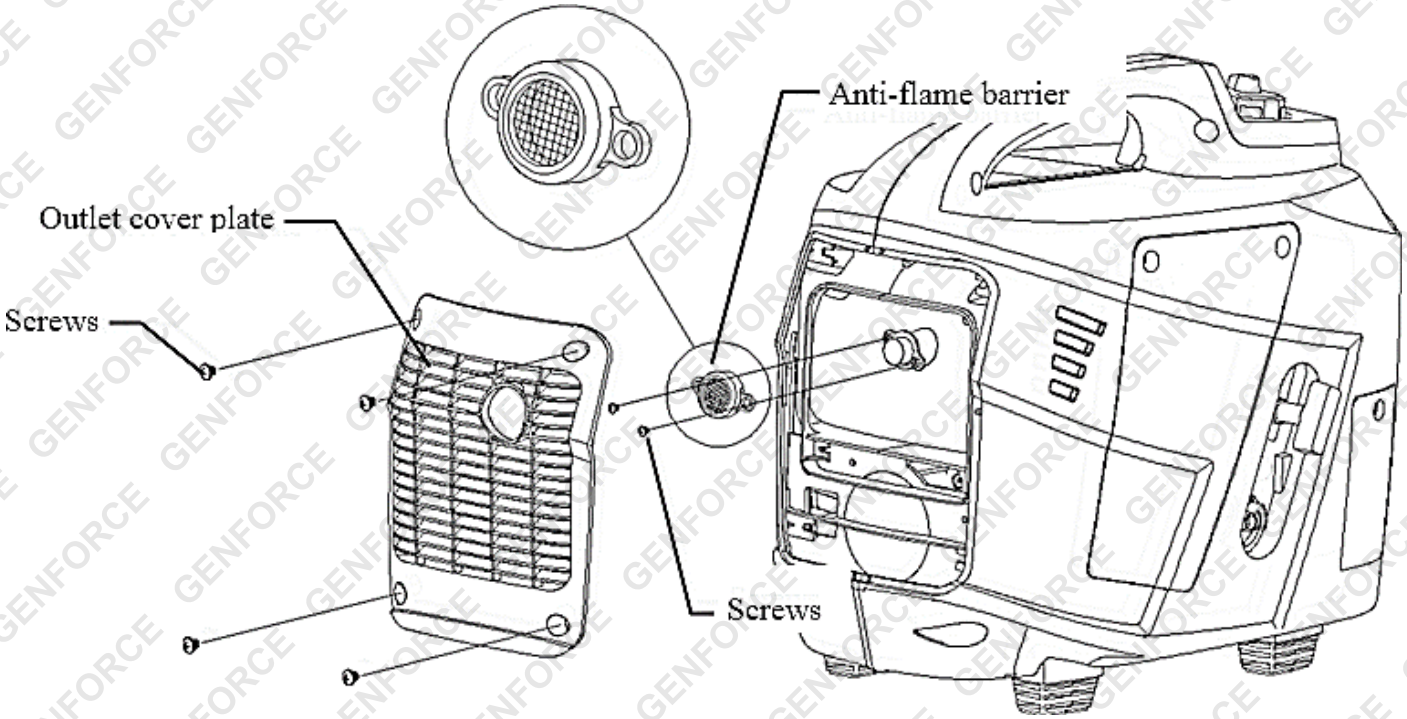
- Spark plug must be installed firmly, otherwise the spark plug can get very hot.
- Do not use the same heating value for different spark plugs.

Muffler Maintenance

A dirty muffler will affect the muffling effect of the generator and the engine power. To ensure the normal operation of the generator, clean the muffler periodically. If you frequently use the generator in an area with a lot of dust and debris, you would need to frequently clean the muffler or, if necessary, replace the muffler.

CAUTION! Clean-up must be done on the generator muffler. Make sure to check the engine muffler when the generator is cold, a hot muffler can cause burns.

1. Remove the hood screws to open the outlet cover plate.
2. Remove the two screws that are securing the muffler.
3. As shown in the figure below, remove the muffler and the anti-flame barrier.
4. Clean or replace the anti-flame barrier, if necessary to avoid any potential fires from starting.
5. Clean or replace the anti-flame barrier and then follow the operation described above in reverse.



Transportation and Storage

NOTE: To prevent fuel leakage during transportation or temporary storage, turn off the oil switch.

When transporting the generator:

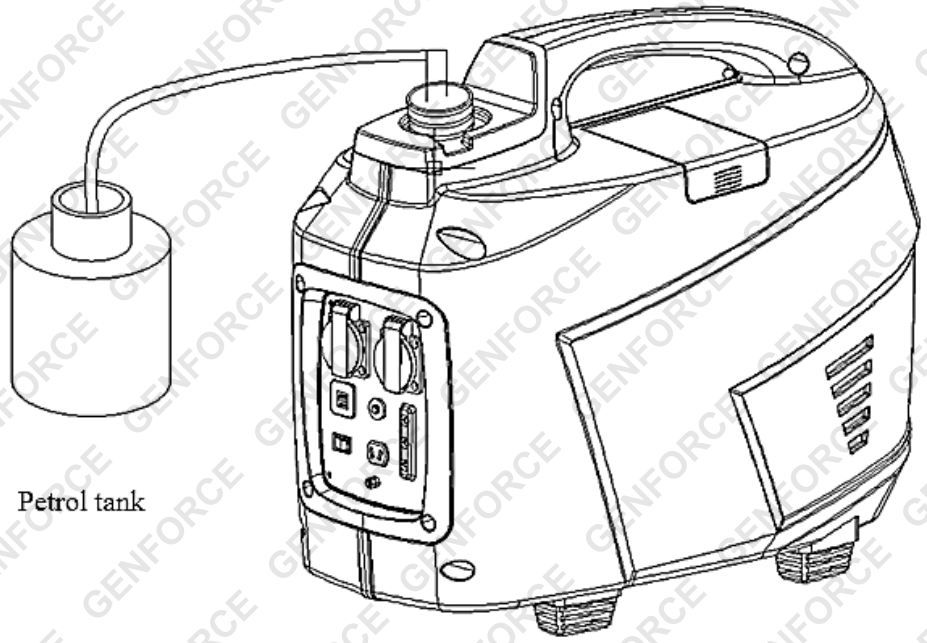
- Do not fill up the fuel tank too much (filler should have no fuel in it).
- If the generator is still being transported, do not operate the generator. When the generator done being transported, store it in a well-ventilated area.
- If the generator is transported in vehicles, avoid exposing it to direct sunlight. If the generator placed inside a sealed compartment, the high temperature inside may lead to the fuel becoming volatile, potentially causing an explosion.
- Do not transport the generator for a long time on rough roads and terrains. If necessary, drain all the fuel first before transporting the generator.

Before storing the generator for an extended time:

- Ensure that the storage area is dry and clean.
- Drain all of the fuel.

WARNING! Under certain conditions, fuel can become extremely flammable! Ensure that there are no sources of fire or strong heat in the storage area of the generator.

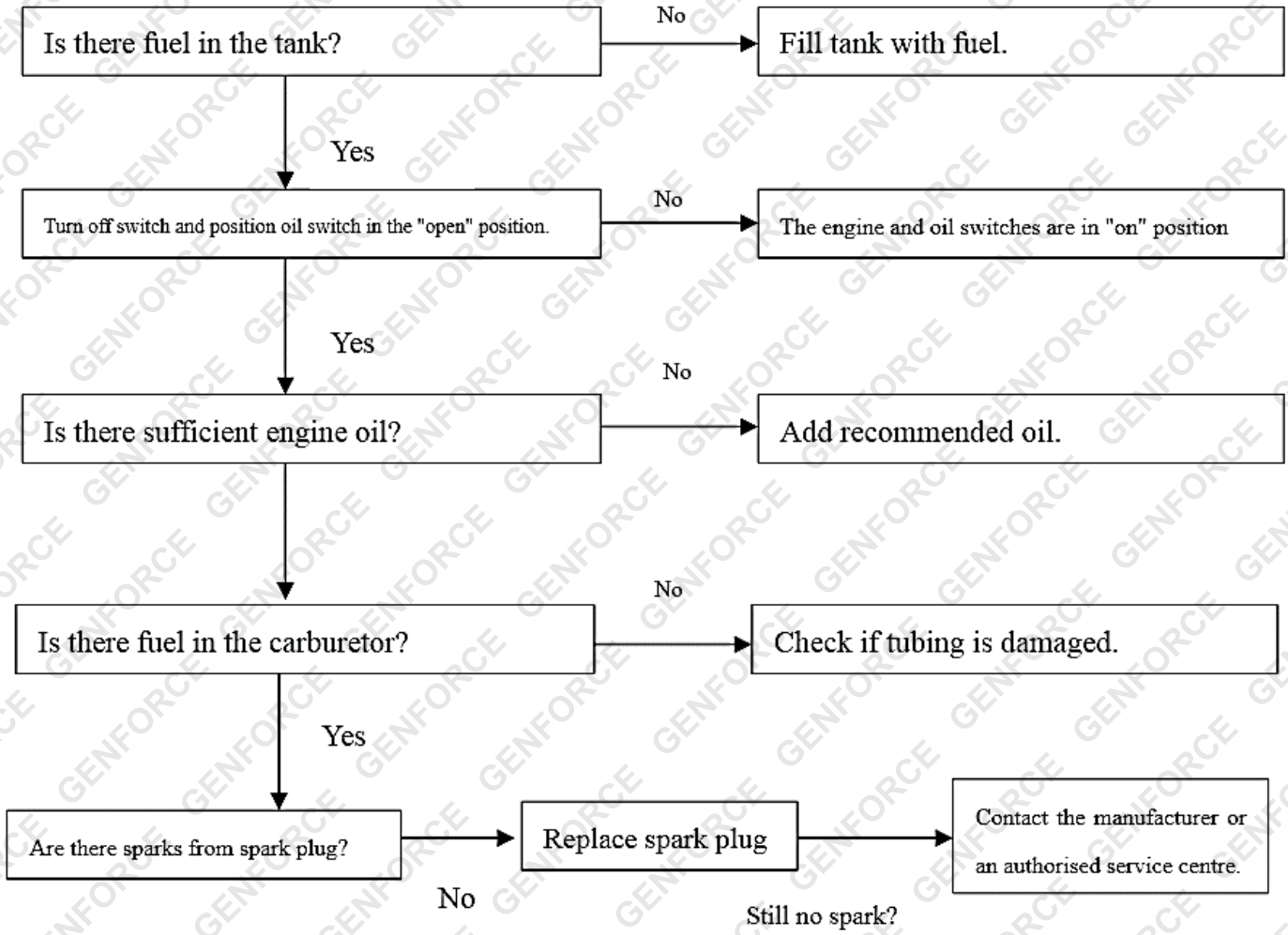
1. Fuel should be kept in a single, spare container. Turn ON the oil switch and start the engine. Run it to burn any remaining fuel. The engine will then automatically turn OFF afterwards.



2. Drain the oil.
3. Remove the spark plug, then pour a tablespoon of clean engine oil into the cylinder, pulling the handle several times to start the bulk of oil spill, and then install the spark plug.
4. Slowly pull the handle to feel the pressure. This time, the piston should be raised to the top of its compression stroke and the exhaust valves should be closed. In this case, the internal storage helps prevent the engine from rusting.

Troubleshooting

Generator Isn't Starting

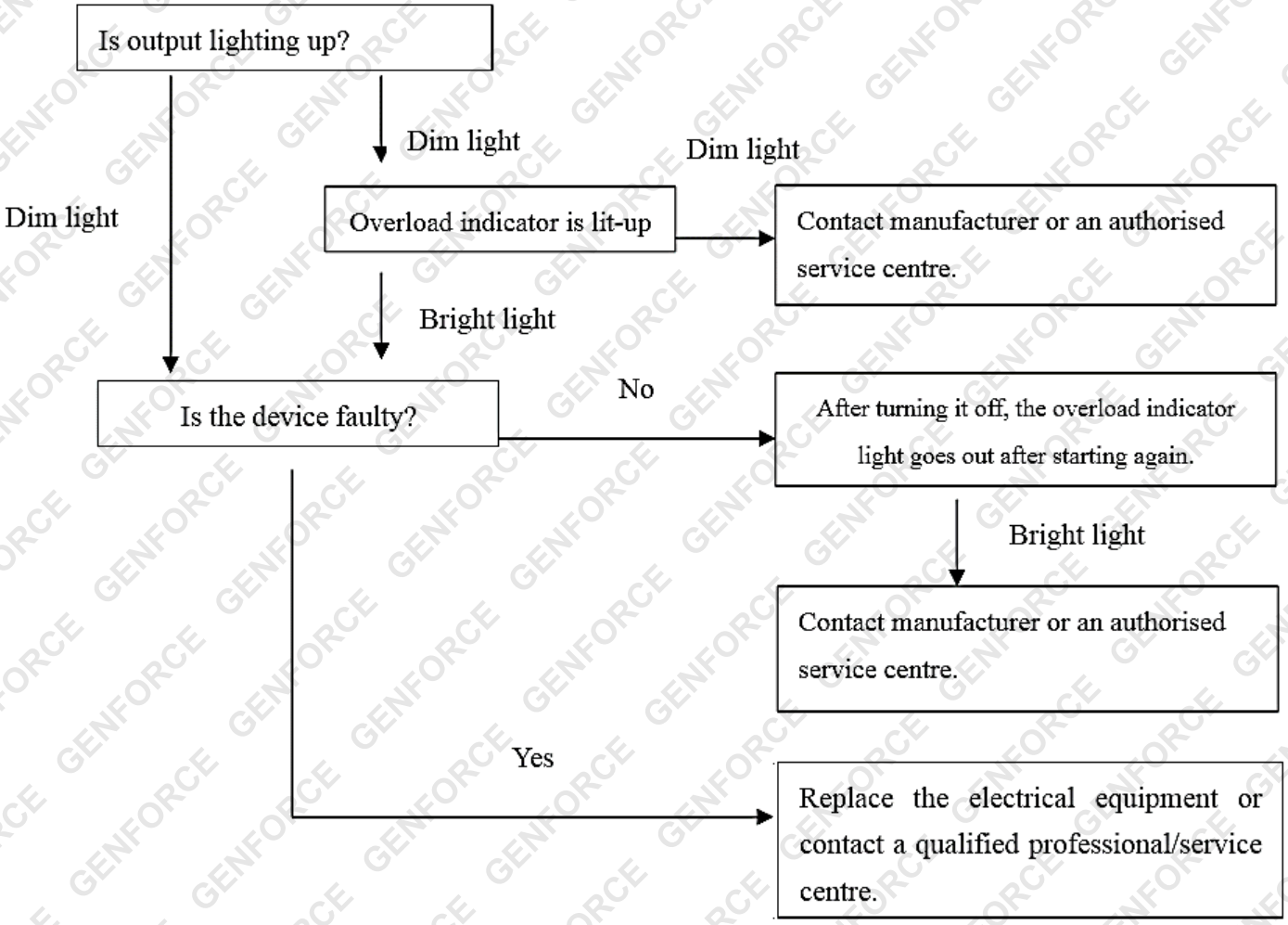


NOTE: If the generator cannot be started when pulling the starting handle oil after the warning light flashes, lightly shake the generator side-to-side a few times to ensure that the oil alarm system is working properly. If you still cannot start the generator, please start troubleshooting. Ensure that no fuel is spilt on the spark plug. Spilled fuel could catch fire.

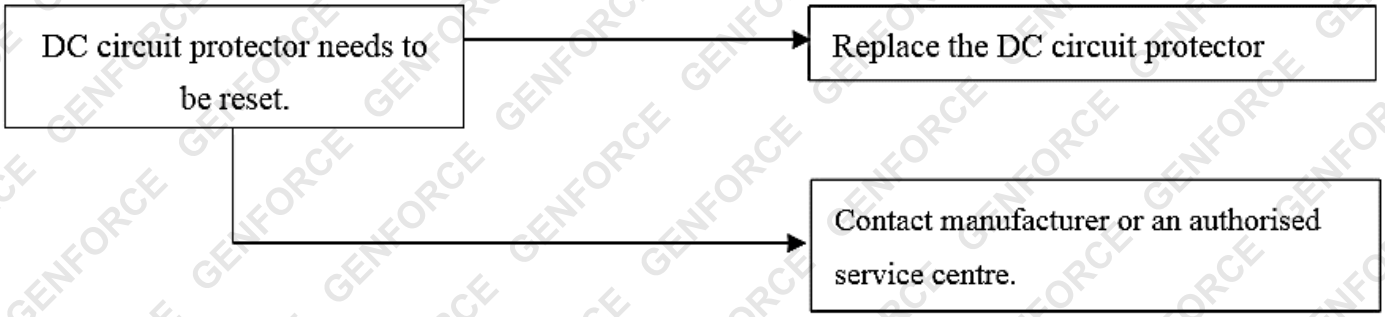
1. Remove the side cover and clean away the dirt around the spark plug.
2. Remove the spark plug, the spark plug will be loaded inside the side cover.
3. With a wire, connect the spark plug side electrode to the metal parts of the engine to the ground. (Available with a DC output line replacement wire with a clip of a clamped metal part of the engine. Plug the other end to the same polarity connected to the spark plug guide posts on the side of the pole).
4. Pull the starting handle, the spark gap should skipped.

CAUTION! Ensure that the engine is cold when checking the spark plug. A hot spark plug can cause burns.

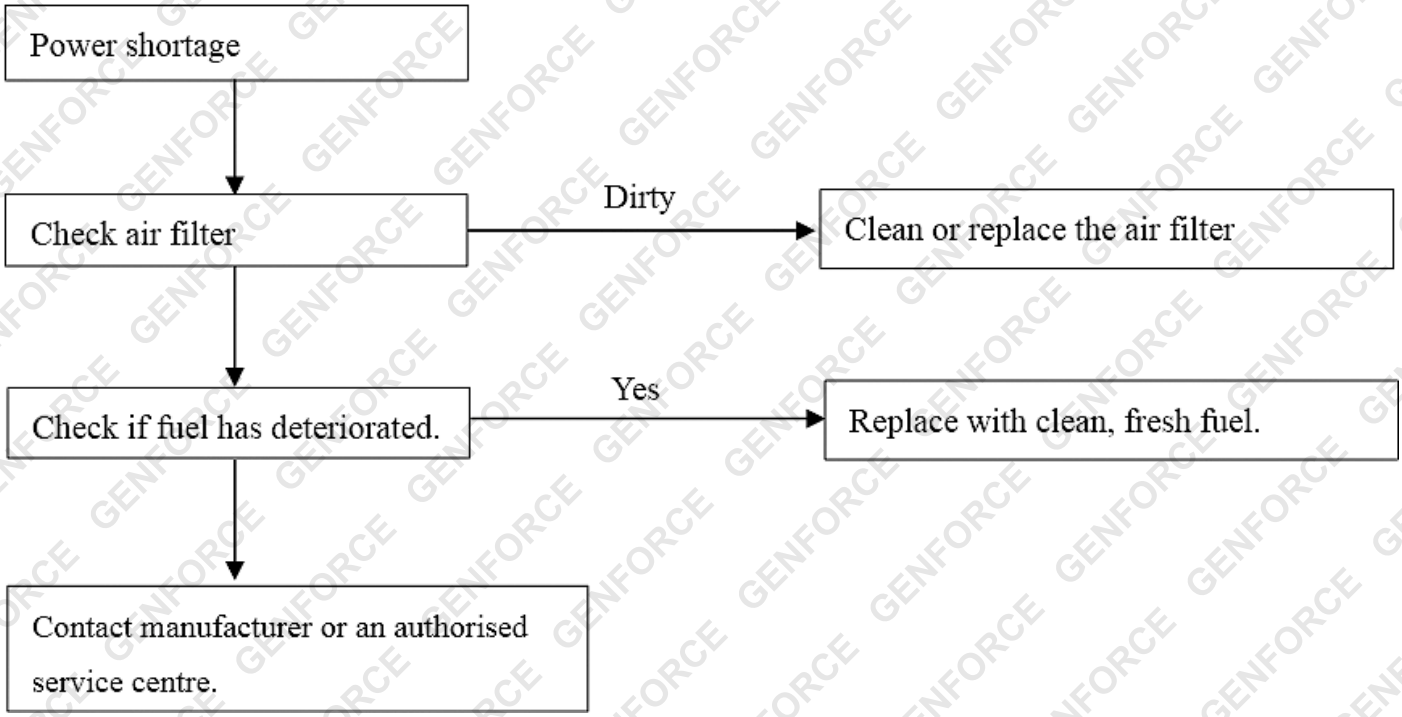
Devices Connected to the Generator Isn't Starting



No Charge in DC Socket



Power Shortage



Technical Specifications

Max Output	3700W / 3.7kW / 3.7kVA
Continuous Rated Output[1]	3200W / 3.2kW / 3.2kVA
AC Voltage	240V 50Hz
Output Type	240V 15Amp socket
DC Output	12V - 8.3A
USB Socket	Dual

[1]PLEASE NOTE: 'Continuous Rated Output' is what power this generator consistently and reliably provide. We strongly recommend that you consider this figure when determining whether this model suits your requirements.

For more information about selecting the right generator view the Buying Guide.

Some experts believe that the incorrect or prolonged use of almost any product may cause serious injury or death. To help reduce your risk of serious injury or death, refer to the information below. For more information, see www.datastreamserver.com/safety

- Consult all documentation, packaging and product labelling before use. Note that some products feature documentation available online. It is recommended to print and retain the documentation.
- Before each use, check the product for loose/broken/damaged/missing parts, wear or leaks (if applicable). Never use a product with loose/broken/damaged/missing parts, wear or leaks.
- Products must be inspected and serviced (if applicable) by a qualified technician every 6 months. This is based on average residential use by persons of average size and strength, and on a property of average metropolitan size. Use beyond these recommendations may require more frequent inspections/servicing.
- Ensure that all users of the product have completed a suitable industry recognised training course before being allowed access to the product.
- The product has been supplied by a general merchandise retailer that may not be familiar with your specific application or description of application. Be sure to attain third-party approval from a qualified specialist for your application before use, regardless of any assurances from the retailer or its representatives.
- This product is not intended for use where fail-safe operation is required. As with any product (for example, automobile, computer, toaster), there is the possibility of technical issues that may require the repair or replacement of parts, or the product itself. If the possibility of such failure and the associated time it may take to rectify could in any way inconvenience the user, business or employee, or financially affect the user, business or employee, then the product is not suitable for your requirements. This product is not intended for use where incorrect operation or a failure of any kind, including but not limited to, a condition requiring product return, replacement, parts replacement or service by a technician may cause financial loss, loss of employee time or an inconvenience requiring compensation.
- If this product has been purchased in error when considering the information presented here, contact the retailer directly for details of their returns policy, if required.

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