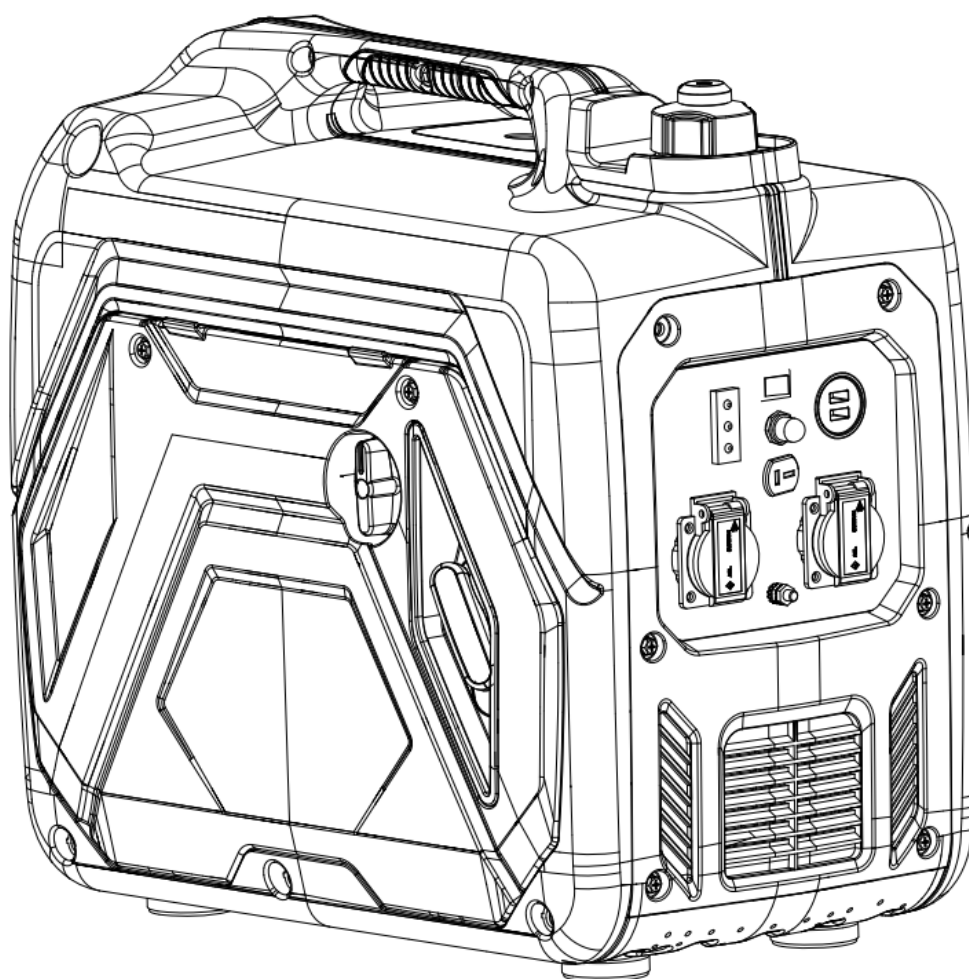


# INVERTER GASOLINE GENERATOR

## USER MANUAL



**Model: EYG4000iN**

Original instructions

# 1. SAFETY INFORMATION

## **WARNING!**

The generator sets 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.

- Engine exhaust gases are toxic. Do not operate the generator set in unventilated rooms. When installed in ventilated rooms, additional requirements for fire and explosion protection shall be observed.
- Don't operate in the wet condition.
- Don't directly connect to the household power supply.
- Please keep it 1m at least far away from the inflammable materials.
- Protect children by keeping them at a safe distance from the generator set,
- Fuel is combustible and easily ignited. Do not refuel during operation. Do not refuel while smoking or near naked flames.
- Do not spill fuel.
- Some parts of the internal combustion engine are hot and may cause burns. Pay attention to the warnings on the generator set.

### 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 areas 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

- Electrical equipment including lines and plug connections should be free from nudity.
- Electrical equipment (including lines and plug connections) should be detective.
- The generator set must not be connected to other power sources, such as the power company supply mains. In special cases where stand-by connection to existing electrical systems is intended, it shall only be performed by a qualified electrician who has to consider the differences between operating equipment using the public electrical supply network and operating the generator set. In accordance with this part of ISO 8528 the differences shall be stated in the instruction manual.
- Precaution against electrical shock depends on circuit breakers specially matched to the generator set. If the circuit breakers require replacement they must be replaced with a circuit breaker having identical ratings and performance characteristics.
- Due to high mechanical stressed only tough rubber-sheathed flexible cable (in accordance with IEC 60245-4) or the equivalent should be used.
- The circuit breakers should be matched with the generator equipment.
- If the circuit breakers require replacement, they must be replaced with a circuit breaker having identical ratings and performance characteristics.
- Don't operate the generator before grounding.
- If using extension lines, the requirement should be met as following: for 1.5mm<sup>2</sup>, the line should not be exceeded 60m; for 2.5mm<sup>2</sup>, the line not exceeded 100m.

#### **NOTICE!**

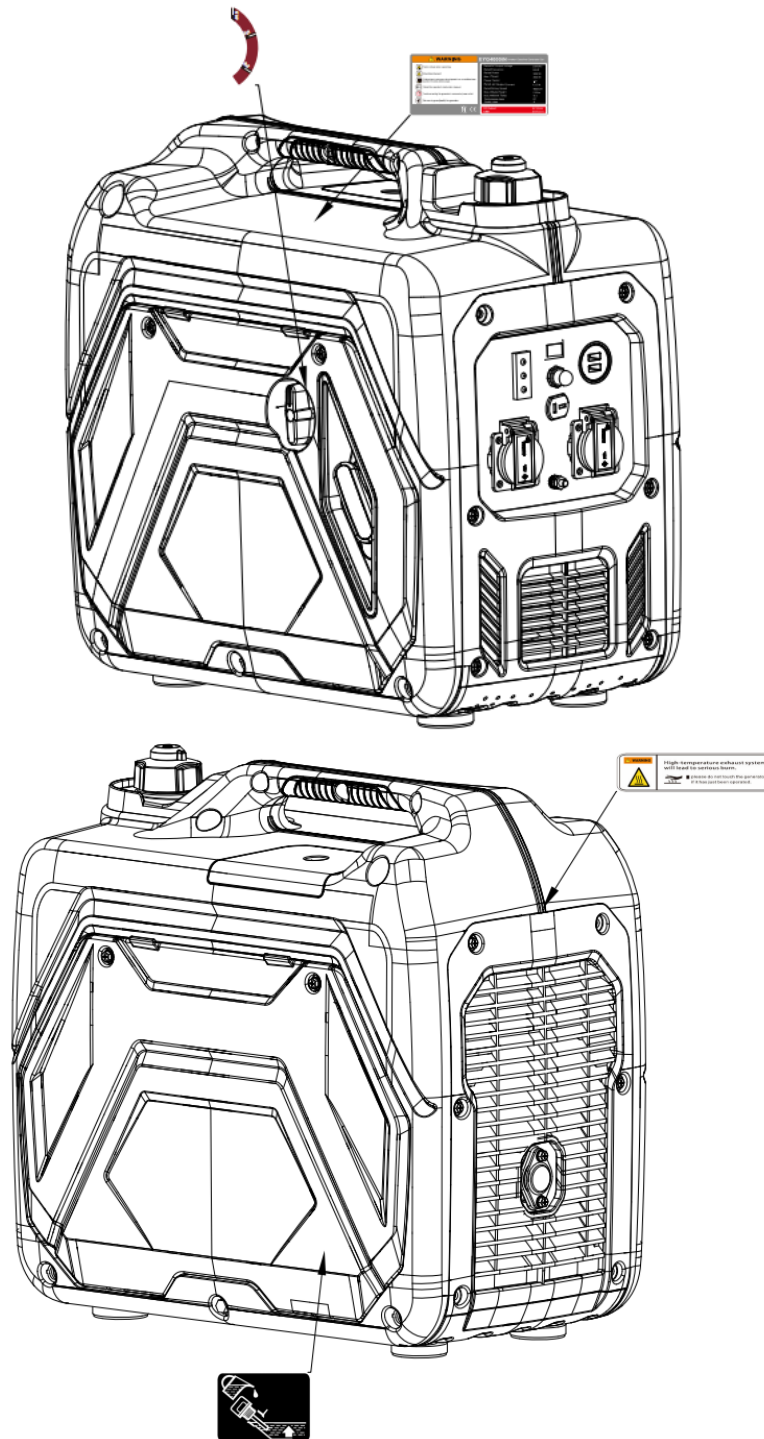
When you operate the generator set, please put on protections such as gloves to protect your hands from high temperature.

## Safety sign

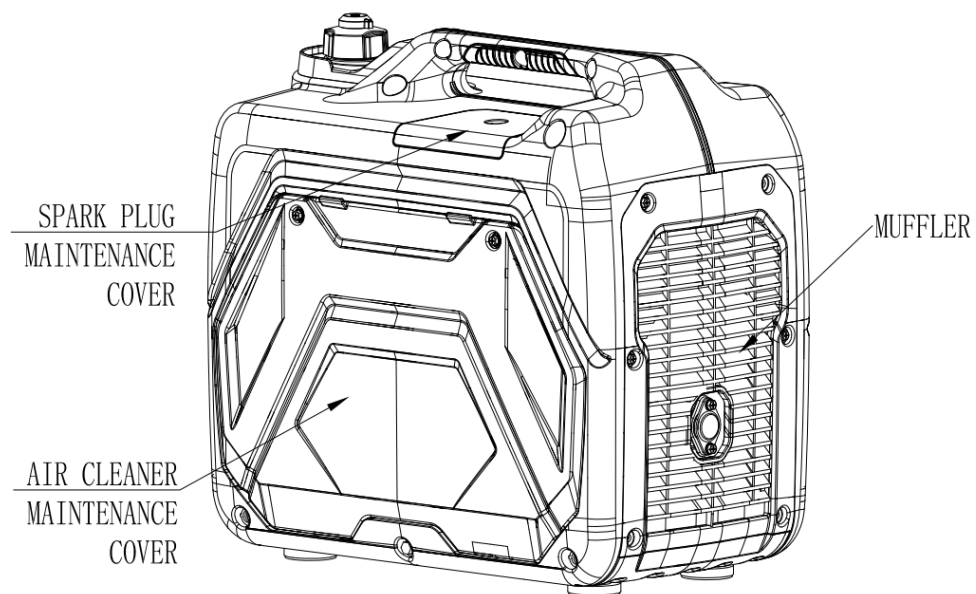
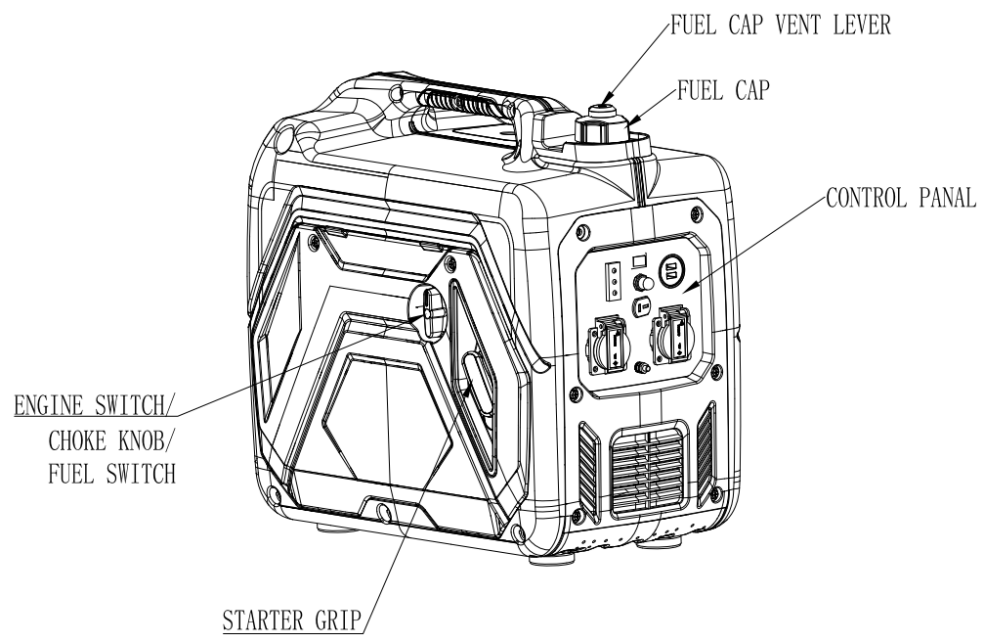
 <b>WARNING</b>	
	Not to refuel when operating.
	Electrical hazard.
	Exhaust gas is poisonous; do not operate in an unventilated area [Carbon monoxide (CO) danger].
	Read the operator's instruction manual.
	Avoid connecting the generator to commercial power outlet.
	Be sure to ground(earth) the generator.

 <b>WARNING</b>	
	<b>High-temperature exhaust system will lead to serious burn.</b>  ■ please do not touch the generator if it has just been operated.

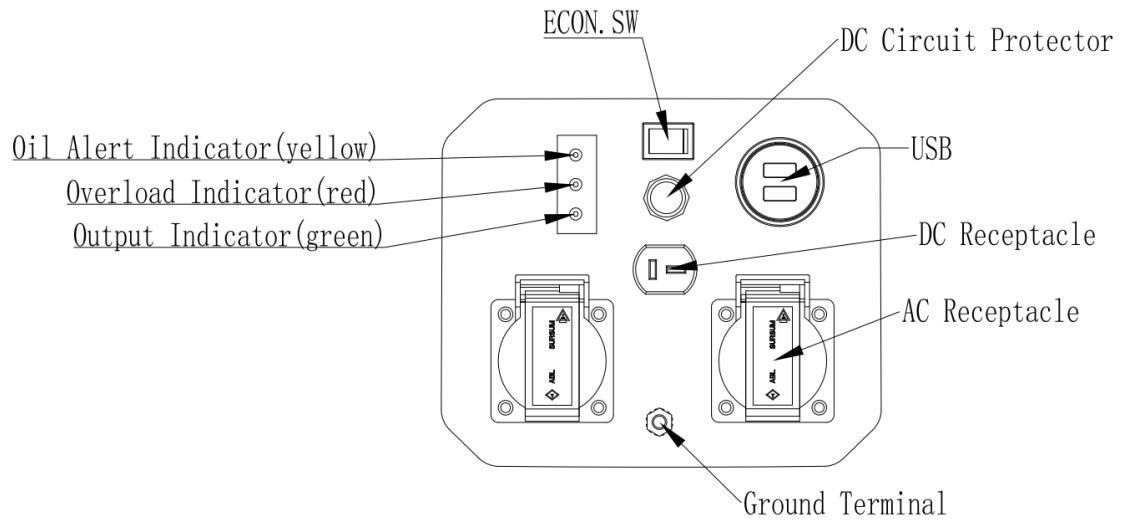
## 2. SAFETY LABEL LOCATION



### 3. COMPONENTS IDENTIFICATION



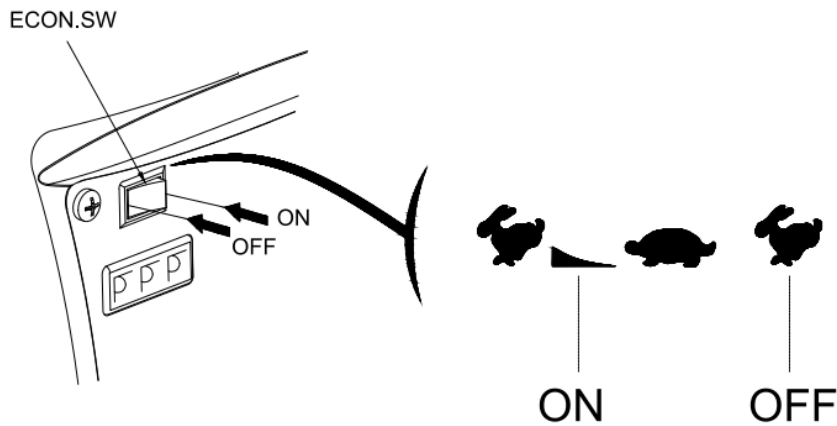
## 1) Control panel



## 2) ECON. SW (Economy control switch):

“ECO” ( 🐢 ).

- When the Economy control switch is turned to “ECO” ( 🐢 ), the engine keeps running at idle state automatically when the electrical appliance is disconnected, and it will return to the proper speed with the requirement of electrical load.
- The “ECO” ( 🐢 ) is recommended to minimize the fuel consumption ( $\leq 50\%$  rated power)



### Note

- When a high load electrical appliance ( $\geq 50\%$  rated power) is connected instantaneously, in order to reduce voltage change, turn the Economy control switch to the “NON -ECO” ( 🐰 ) position.
- In DC operation, turn the Economy control switch to the “NON -ECO” ( 🐰 ) position.
- Connect both AC load and DC load; turn the Economy control switch to the “NON -ECO” ( 🐰 ) position.

### 3) RESET

- Under the condition of protection, the Overload Indicator Light (red) is on, the "RESET" button can recover the output of the generator, and unnecessary to restart engine overall.
- Press and hold the "RESET" button for 5 seconds, until the Overload Indicator Light (red) will be off, and Output Indicator Light (green) will be on.
- Under the non-overloading condition, the "RESET" is supposed to be ineffective.

#### Note

- For Protection condition, the Output Indicator Light (green) is off, and the Overload Indicator Light (red) is on.
- Every starting the engine, the "RESET" button is available within 5 times. Otherwise, you need restart the engine.

## 4. PRE-OPEARTION CHECK

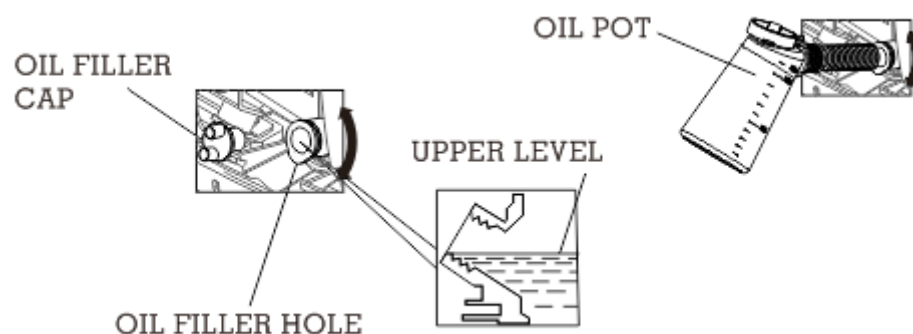
#### Caution

Be sure the generator is on the leveled surface and the generator is stopped.

#### 1) Check Oil Level

Remove the oil filler cap, and clean it with cloths. Reinsert it into the crankcase, and take out to check oil level:

If the oil level reduces at the bottom of the oil filler cap, add the engine oil.



#### Note

- Using non-detergent or 2-stroke oil could shorten the engine's working life.
  - Using the high quality engine oil with strong detergents
  - Using 4-stroke engine oil, certified to meet or exceed API standards: SG, SF
- SAE stickiness rating:

Ambient temperature	Oil brand
-25°C-30°C	10W-30
-15°C-40°C	15W-40

#### Note



Carefully use and store the engine oil, avoid getting dirt or dust into the engine oil.  
Mixing different kinds of engine oil is prohibited.

### Note

- Before the engine oil reduces below the safety margin, Low Oil Alert System will close the engine automatically. The Oil Alert Indicator Light (yellow) will be on.
- To avoid the inconvenience caused by unexpected stopping, it is still advisable to check the engine oil level regularly.

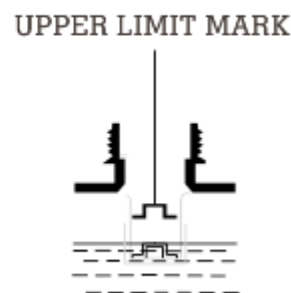
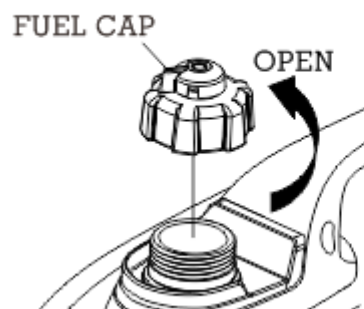
## 2) Check fuel level

Fuel recommendation: use unleaded gasoline (Re-search Octane Number of 92 or higher, Pump Octane Number of 86 or higher)

Never use stale or contaminated gasoline or an oil/gasoline mixture,

Avoid getting dirt or water into the fuel tank.

Do not use a mixture gasoline containing ethanol or methanol; otherwise, it will seriously damage the engine.



### Caution

- Gasoline is extremely explosive and flammable.
- Around the refueling area and fuel storage area, prohibit smoking and firing.
- Do not overfill the fuel tank (no fuel above the upper limit mark). After refueling, make sure the fuel cap is closed properly and securely.
- Do not make fuel spill from fuel tank. (No residual fuel around the neck of tank, before starting engine)
- Avoid contacting with skin or breathing the fuel vapor.
- KEEP OUT OF REACH OF CHILDREN.

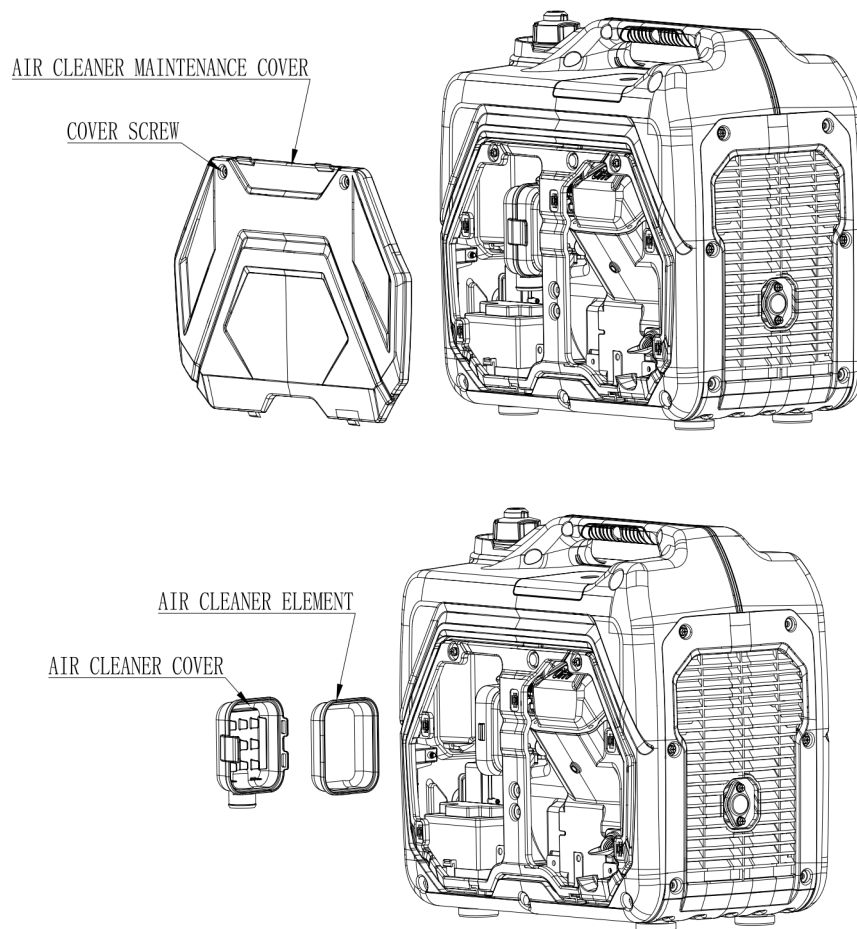
Fuel capacity: 8.5L

## 3) Check Air Cleaner

Check the Air Cleaner Element to be sure it is clean and in good condition.

Loose the cover screw, and remove the maintenance cover. Press the tab on the top of

the Air Cleaner. Remove the Air Cleaner cover. Check the Element.  
Check, clean or replace it, if necessary.



### Note

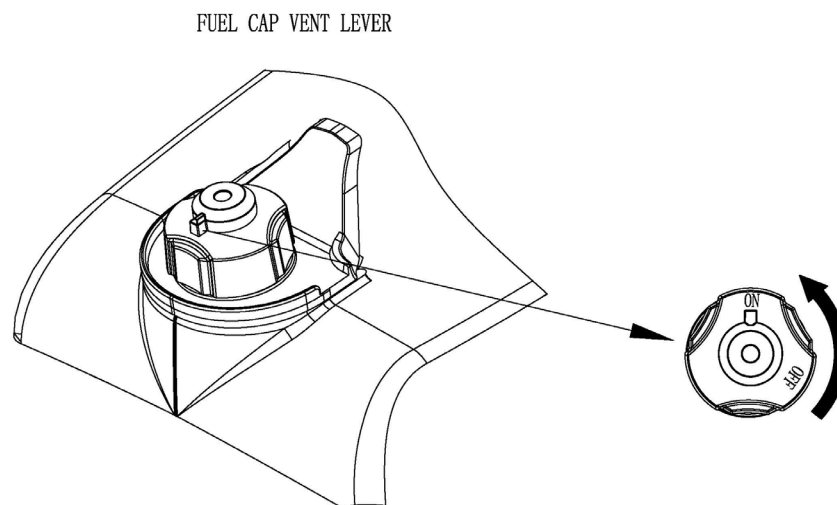
- Do not run engine without air Cleaner element, otherwise that makes engine abrasion.

## 5. STARTING THE ENGINE

### Note

- Before starting engine, disconnect load with AC receptacle.
- Fueling at the first time, refueling, or storing for a long time, the Engine Switch should firstly be opened for ten or twenty seconds, in order to the enough fuel enter into carburetor.

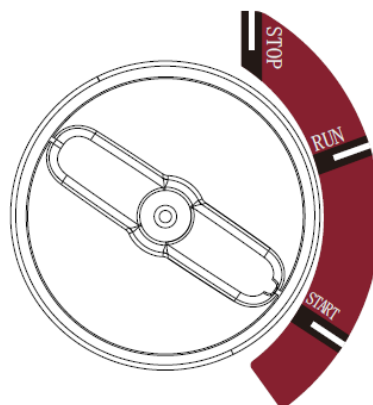
- 1) Turn the fuel cap vent lever fully counter-clockwise to the "ON" position.



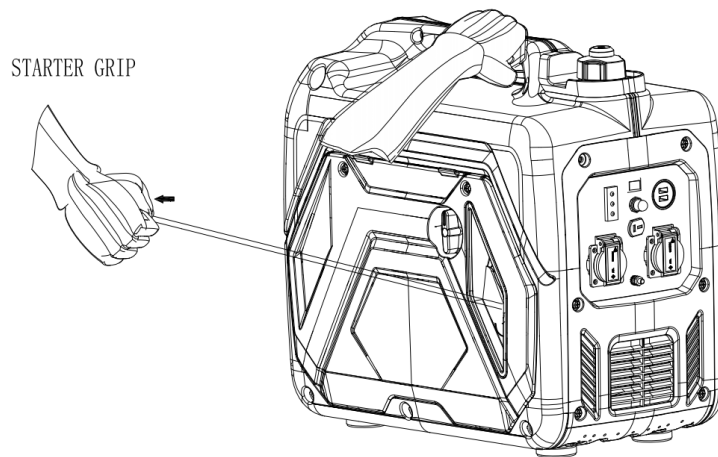
### Note:

- When transporting generator, turn the Fuel Cap Vent Lever to the "OFF" position.

- 2) Turn Engine Switch to the "START" position



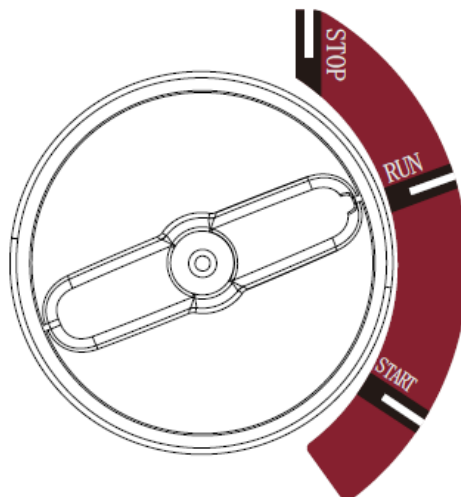
- 3) Pull the Starter Grip lightly until you feel resistance, then pull quickly toward arrow as shown below.



### Note

- Return the Starter Grip slowly by hand. Do not make the Starter Grip spring back quickly.

4) When the temperature of engine increase, Turn Engine Switch to the “RUN” position.



### Note

- If the generator stops and can not restart, check the oil level firstly.

### Carburetor Modification for 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.

If the generator operates at high altitude, change the main-nozzle or adjust the idling-screw of carburetor.

If the generator always operates at altitude above 1,000 meters, contact with an authorized servicing to modify the carburetor.

Generator set output power should be modified according to the altitude and ambient temperature. The correction factor refers to 13-1.

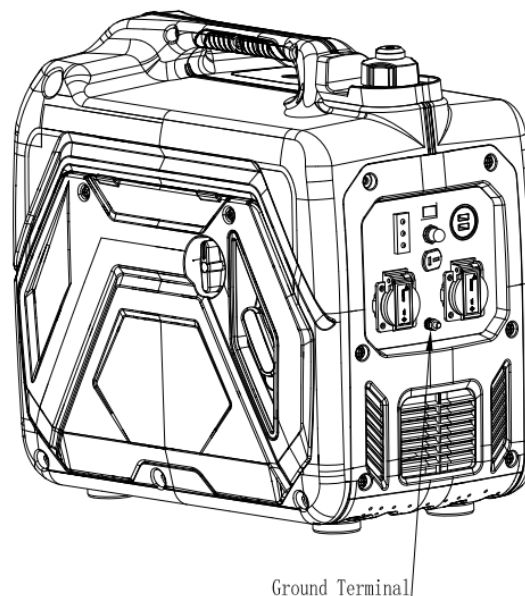
### Caution

- If the carburetor has been modified for high altitude operation, the air-fuel mixture will be too lean for low altitude use. Operation at low altitude may cause the engine to overheat and result in serious engine damage. The carburetor needs return to original specifications.

## 6. GENERATOR USE

### Caution

- Be sure to ground the generator when the connected electrical appliance is grounded.
- Do not connect to the building's electrical system, in order to avoid the electric shocks and fires.



### Note

- For continuous operation, do not exceed the rated out-put power of generator.
- Do not connect the generator to household circuit. This could cause damage to the generator or to electrical appliances in the house.
- Do not make parallel connection with other generators.
- Do not connect an extension to the exhaust pipe.
- When an extension cable is required, be sure to use a tough rubber sheathed flexible cable (according to IEC245 or equivalent standards). The length of the extension cable: 60m for cable of 1.5mm<sup>2</sup>; 100m for cable of 2.5mm<sup>2</sup>
- Keep away from other electric cables or wires. Such as: commercial power supply

lines.

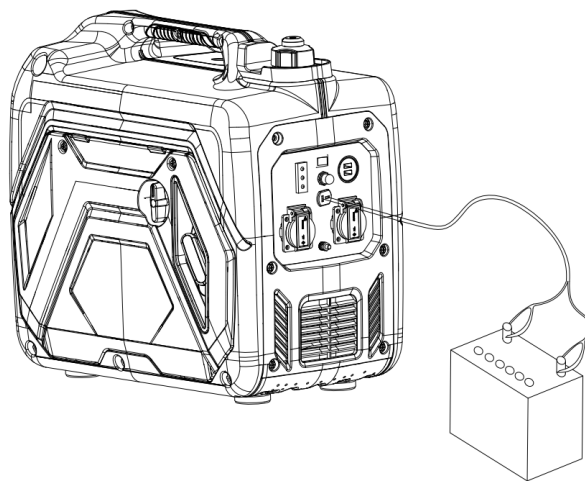
### Note

- The DC receptacle can be used while the AC power is in use. If use both at same time, be sure not to exceed the total power for AC and DC. (AC:3200W, DC:5A)
- Most of motor appliances require more than their rated wattage, when starting.

### 1) DC Application

The DC receptacle, 15-30V under no-load condition, may be used for charging 12 volt automatic-type battery only.

(1) Connect the DC receptacle to battery terminals with the charging cable.



### Caution

- In order to avoid producing the spark at the terminals of battery, connect the charging cable firstly to the battery terminals, and then to the generator. When removing, disconnect to the generator firstly.
- Before connecting the charging cable to a battery that is installed in vehicle, disconnect the grounded cable of battery. Reconnect the grounded cable of battery after the charging cable is removed. This sequence will prevent sparks or short-circuit from happening, if you accidentally contact a battery terminal with the vehicle's frame or body.

### Note

- Do not start the automobile engine when the generator is still connected to the battery, otherwise the generator will be damaged.
- Connect the positive battery terminal to the positive charging cable. Do not reverse the charging cable, otherwise generator or battery will be damaged seriously.

### Caution

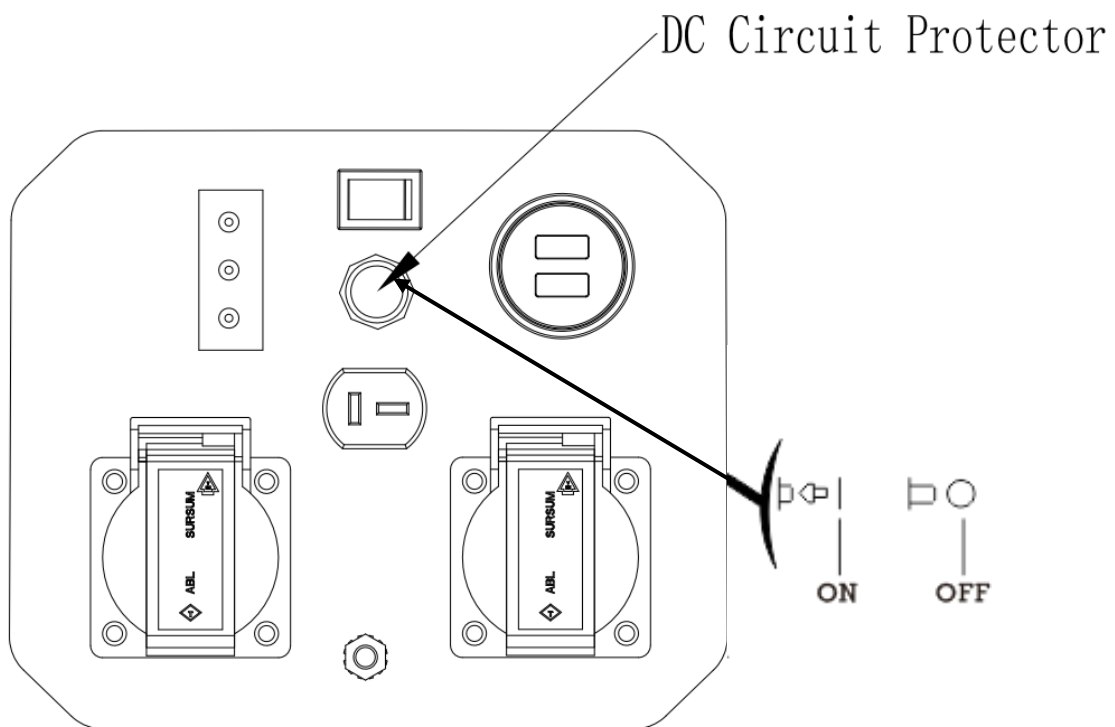
- The battery can release the explosive gases. Keep the battery away from spark/fire. Charge the battery in ventilated condition.

- Battery electrolyte contains sulfuric acid that will cause severe burn of skin and eyes. Therefore it is necessary to wear the protective clothing and mask.
- If battery electrolyte gets into eyes, flush thoroughly with warm water for 15min at least, and call a doctor immediately.
- If you swallow a little of battery electrolyte accidentally, flush thoroughly with water your mouth, and then drink large quantities of water or milk (with magnesia or vegetable oil), and call a doctor immediately.
- KEEP OUT OF REACH OF CHILDREN.

(2) Start the engine

### Note

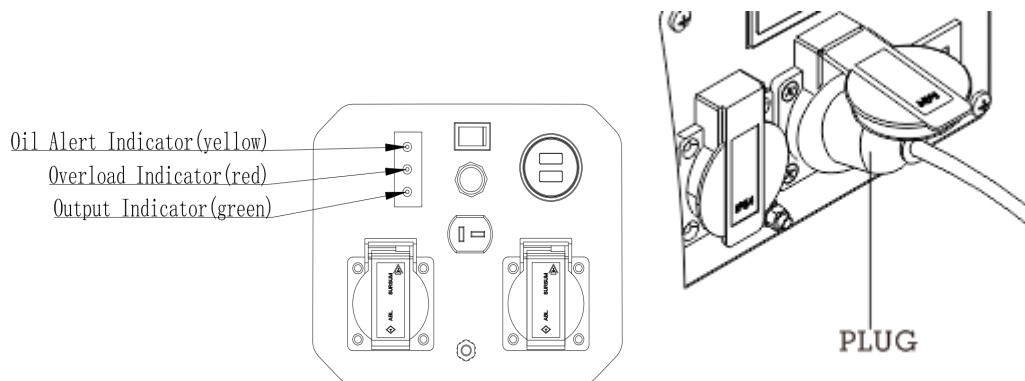
- The DC receptacle can be used while the AC power is in use
- When DC circuit overload will trip the DC circuit protector, remove load firstly, and then reset the protector after a few minutes



## 2) AC applications

- (1) Start engine and make sure the Output Indicator Light (green) is on.
- (2) Confirm all electrical appliances are switched off, and connect the appliance plugs to the generator receptacle.

(3) To obtain the best working efficiency and longest working life of the generator, a new generator is supposed to run for 20 hours at 50% rated load.



## Note

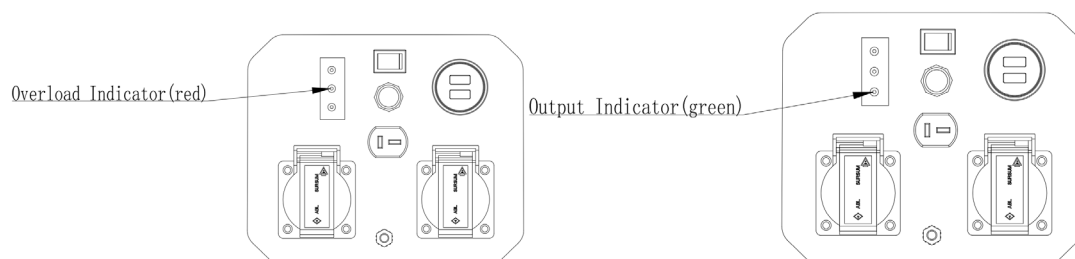
- Confirm all electrical appliances are in good working condition before connecting them to the generator. If an electrical appliance becomes abnormal, sluggish, or stops suddenly, shut off the generator engine immediately, and disconnect the appliance.

## 3) Output and Overload Indicator

In normal operating, Output Indicator Light (green) will remain “ON”.

If the generator is overload (3.2 KVA), or the connected appliance is short-circuit, the Output Indicator Light (green) is OFF, and Overload Indicator Light (red) is ON. The AC power will be switched off, but engine is still running

If the Overload Indicator Light (red) is ON, disconnect the electrical appliances firstly, press and hold the Reset Button 5s at least. If the Overload Indicator Light (red) is OFF and the Output Indicator Light (green) is ON, reconnect the electrical appliances. Otherwise stop the engine and check the generator.



## Note:

- When you start the engine, it is normal that both of the Overload Indicator Light (red) and Output Indicator Light (green) are ON simultaneously. Overload Indicator Light

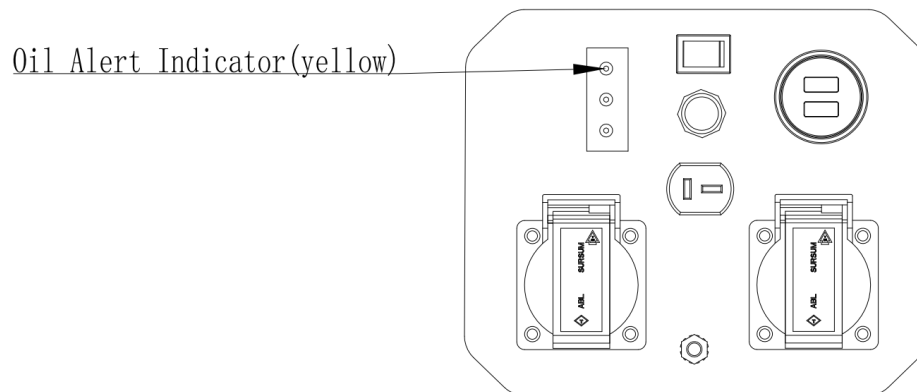


will be OFF after 5 seconds, otherwise contact with your dealer.

#### 4) Oil 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 falls below a safe limit, the Oil Alert System will automatically shut down the engine (the Engine Switch remains in the "ON" position).

If the Oil Alert System shuts down the engine, the Oil Alert Indicator Light (yellow) will be on when you operate the recoil starter, the engine will not run, check the engine oil level.

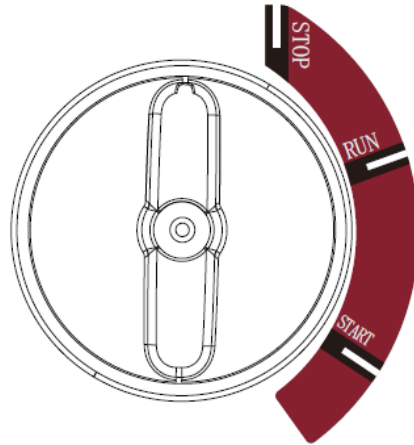


## 7. STOPPING THE ENGINE

To stop the engine in an emergency, turn the Engine Switch to the “STOP” position.

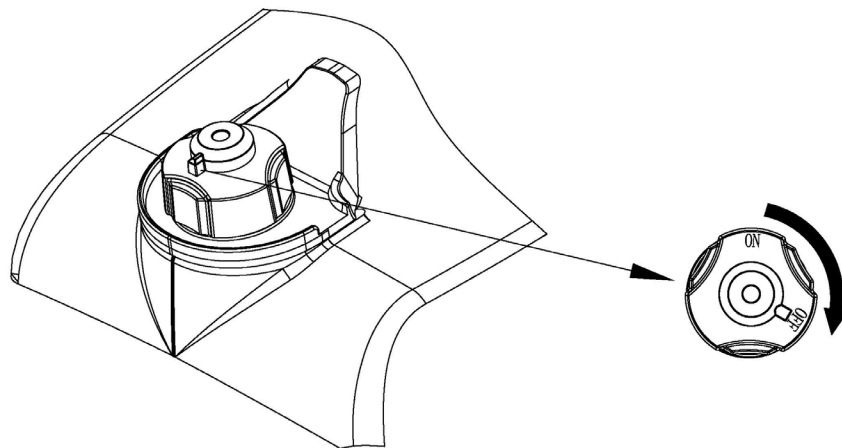
### Normal Operation:

- (1) Switch off the connected electrical appliances, and pull out their plugs.
- (2) Turn the Engine Switch to the “STOP” position.



3. Turn the fuel cap vent lever clockwise to the “OFF” position.

FUEL CAP VENT LEVER



### Note

- Be sure the fuel cap vent lever and Engine Switch locate the “OFF” position, when stopping, transporting and storing the generator.

## 8. MAINTENANCE

The purpose of the maintenance and adjustment schedule is to keep the generator in the beset operating condition.



**Stop the engine before performing any maintenance. If the engine must run, be sure the area is well ventilated. The exhaust contains poisonous carbon monoxide gas.**

### Caution

Use genuine or equivalent quality components to replace the wear components.

#### Maintenance Schedule

Regular Service Period (3) Item		Each use	First month or 10 hrs.	Every 3 months or 50 hrs.	Every 6 months or 100 hrs.	Every 2 years or 300 hrs.
Engine oil	Check level	⊙				
	Change		⊙		⊙	
Air cleaner	Check	⊙				
	Clean			⊙(1)		
Spark plug	Check-adjust				⊙	
	Replace					⊙
Spark arrester	Clean				⊙	
Valve Clearance	Check-adjust					⊙(2)
Combustion Chamber	Clean	After every 300 hrs(2)				
Fuel tank& filter	Clean	Every year(2)				
Fuel line	Check	Every 2 years ( Replace if necessary)(2)				

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

(2) These items should be serviced by your servicing dealer, unless you have the proper tools and are mechanically proficient.

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

### 1) Change Oil

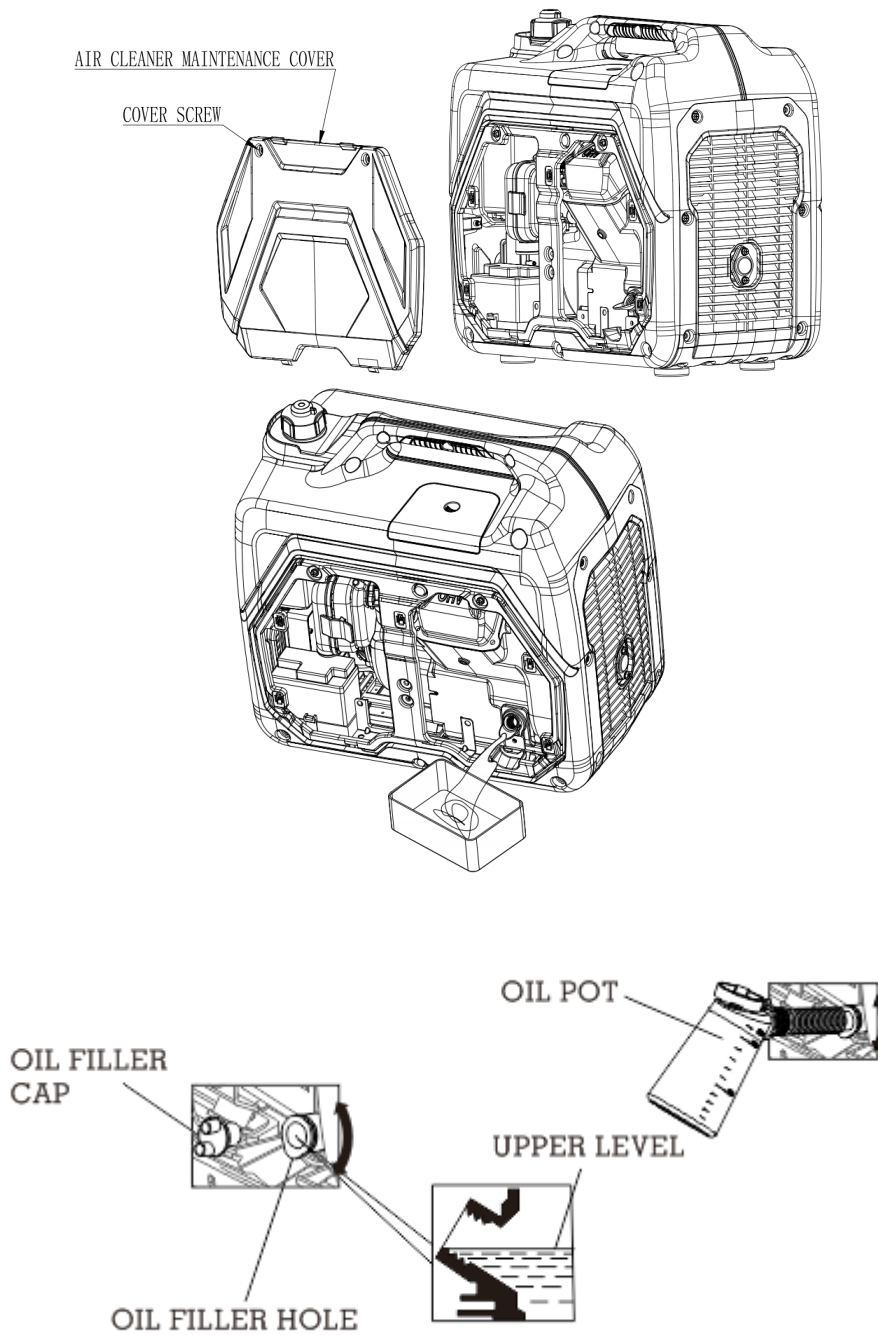
Drain the oil rapidly and completely while the engine is still warm.

(1) Loosen maintenance cover screw and remove maintenance cover.

(2) Remove the oil filler cap.

- (3) Drain dirty oil into a container thoroughly.
- (4) Refill the recommended oil and check the oil level.
- (5) Reinstall the oil filler cap
- (6) Reinstall the maintenance cover and tighten the cover screw.

Oil capacity: 0.6L



After oil change, wash your hands with soap.

### Note

For conforming to the environment requirement, the used oil will be put into a sealed container and then be transported to the service station for recycler. Do not throw it into the trash or pour it on the ground.

## 2) Air Cleaner Service

A dirty Air Cleaner will restrict air flow into the carburetor. Clean and maintain the air cleaner regularly, especially in the extremely dusty areas.

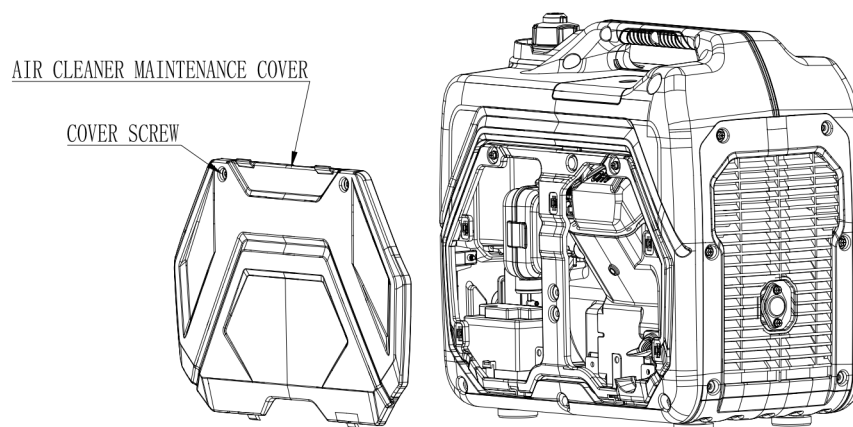


**Do not use gasoline or low ignition point solvents for cleaning. They are flammable and explosive under certain conditions.**

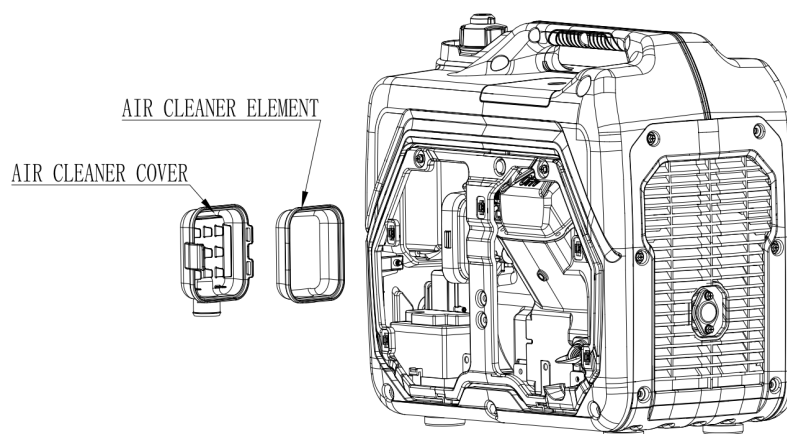
### Note

Never run the generator without air cleaner, otherwise that result in engine abrasion rapidly.

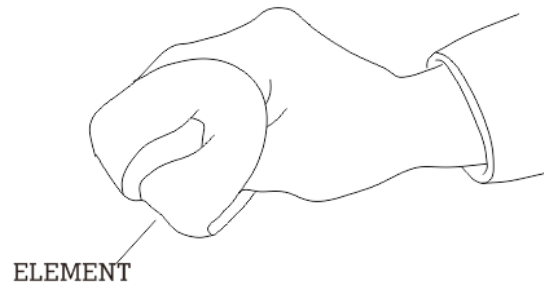
(1) Loosen the maintenance cover screws and remove the maintenance cover.



(2) Press down the locking on the top of the Air Cleaner, and open the Air Cleaner cover.



- (3) Take out the Air Cleaner element, and clean it with non-flammable or high flash point solvent, then dry it.
- (4) Soak the Air Cleaner element in the clean engine oil, and squeeze out the redundant oil.



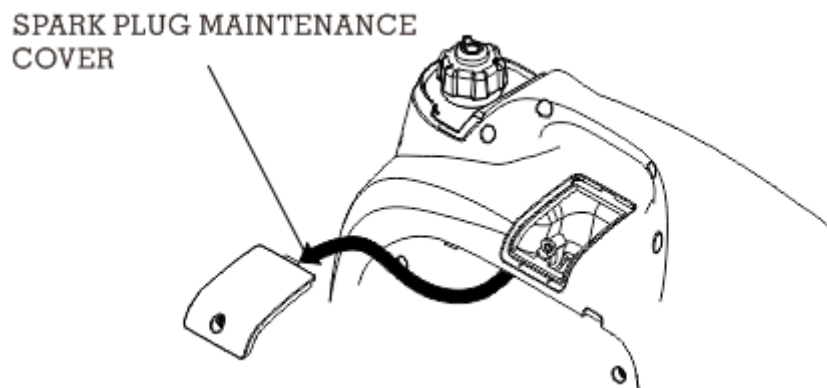
- (5) Reinstall the Air Cleaner element and cover.
- (6) Reinstall the maintenance cover, and tighten the screws.

### 3) Spark Plug Service

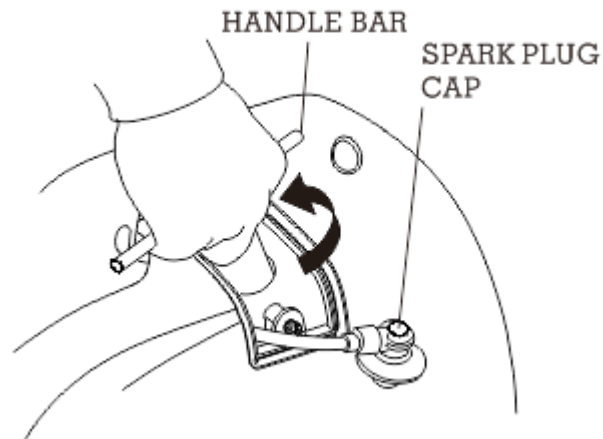
Recommendation Spark Plug: F7RTC

Check the Spark Plug gap and clean the carbon deposition at the bottom of the Spark Plug.

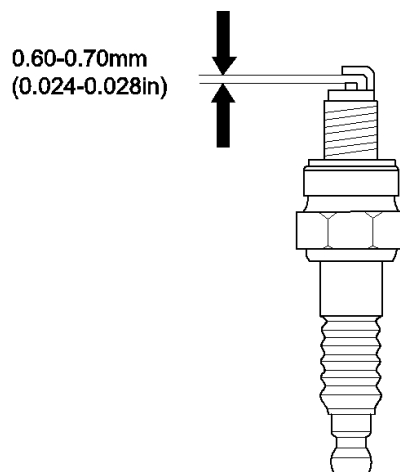
- (1) Remove the spark plug maintenance cover



- (2) Take off the Spark Plug Cap
- (3) Clean the carbon deposition at the bottom of the Spark Plug.



- (4) Take off the Spark Plug with the Spark Plug Spanner.
- (5) Visual inspection the Spark Plug. Change a new one if its insulator cracked or chipped. Clean it with a wire brush if the Spark Plug is reused.



- (6) Measure the Spark Plug Gap with a feeler gauge. The normal value:0.6-0.7mm (0.024-0.028in) . Adjust the gap by bend one of the electrode carefully.
- (7) Reinstall the Spark Plug carefully, by hand, to avoid cross-threading. A new Spark plug should be tightened 1/2 turn with a spanner. A used Spark plug should be tightened 1/8 to 1/4 turn with spanner.
- (8) Reinstall the spark plug cap
- (9) Reinstall the spark plug maintenance cover.

### Note

- The Spark Plug must be securely tightened. Tightening in wrong way will cause Spark Plug hot, even damage the engine.
- Never use a spark plug with an improper heat range.

## 9. TRANSPORTING AND STORING

Avoid fuel spilling during transporting or temporary storing, both the engine switch and the fuel cap vent leveler should turn to “OFF” position, and the generator should place in normal operating position.



### Transporting Generator:

- Do not overfill the fuel tank. (No residual fuel on the neck of tank)
- Do not use the generator on the transport vehicle. The generator should be used under a good ventilated condition.
- Avoid exposing directly in the sunshine when the generator place in the enclosed transport vehicle for a long time. The high temperature inside the vehicle could cause fuel to vaporize resulting in a possible explosion.
- Drain off the fuel, when the generator is transported on rough road.

Storage for a long period:

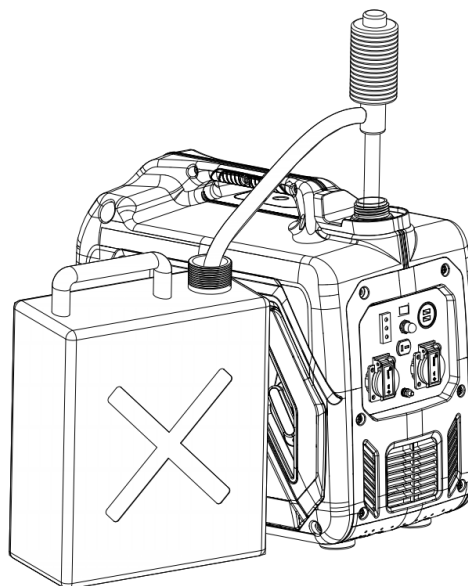
(1) Make sure the storage area without excessive humidity and dust.

(2) Drain off the fuel.



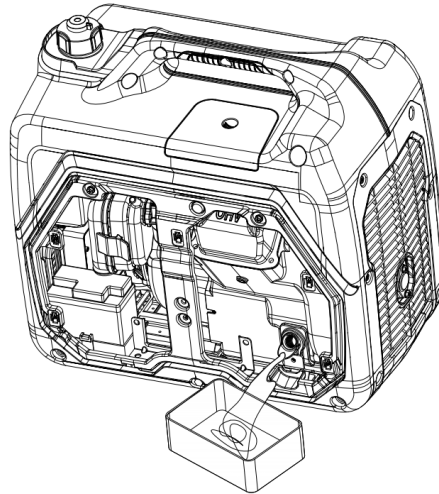
- Keep away from smoking, flames and spark, gasoline is explosive and flammable in the specified condition.

a. Drain off the gasoline in the fuel tank, storing into the suitable containers.

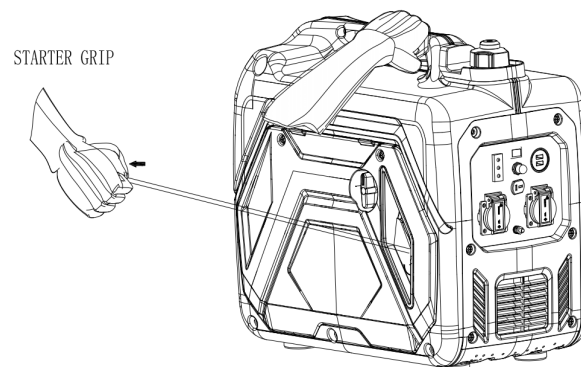




b. Turn the engine switch to “ON” position, and loosen the carburetor drain screw to discharge gasoline inside of carburetor.



- c. Take off the Spark Plug cap, pull the Starter Grip three or four times, discharge the gasoline from the fuel pump
- d. Turn the engine switch to “OFF” position, and tighten the drain screw of carburetor.
- e. Reinstall the Spark Plug cap.



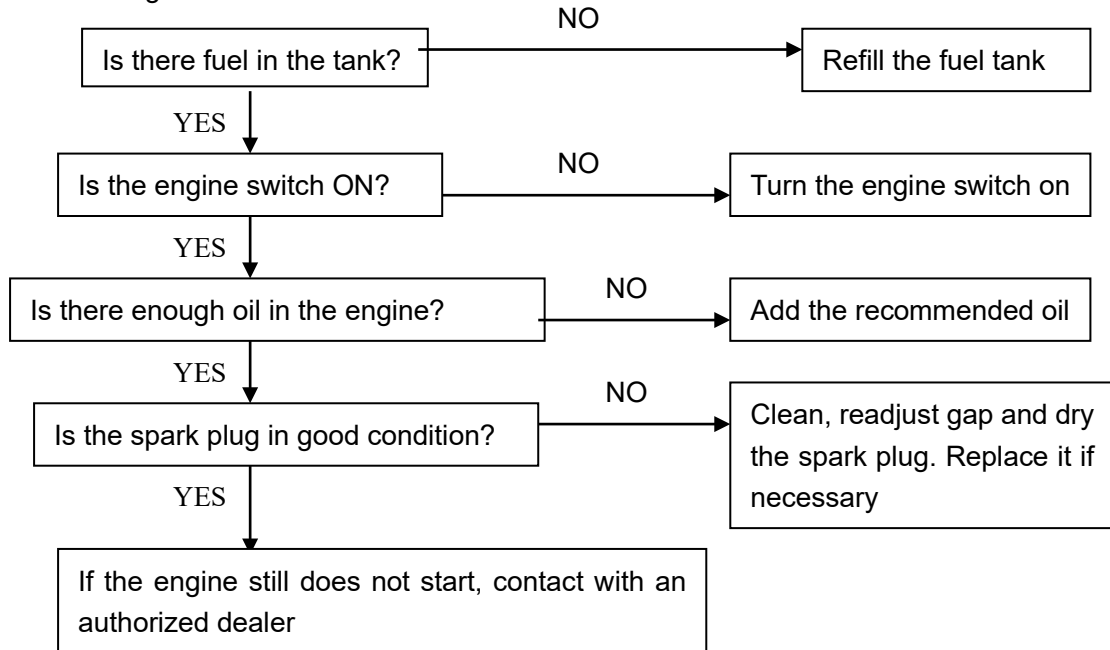
### (3) Change the engine oil

(4) Remove the Spark Plug, and pour a tablespoon of clean engine oil into the cylinder. Crank the engine several times to distribute the oil, and reinstall the Spark Plug.

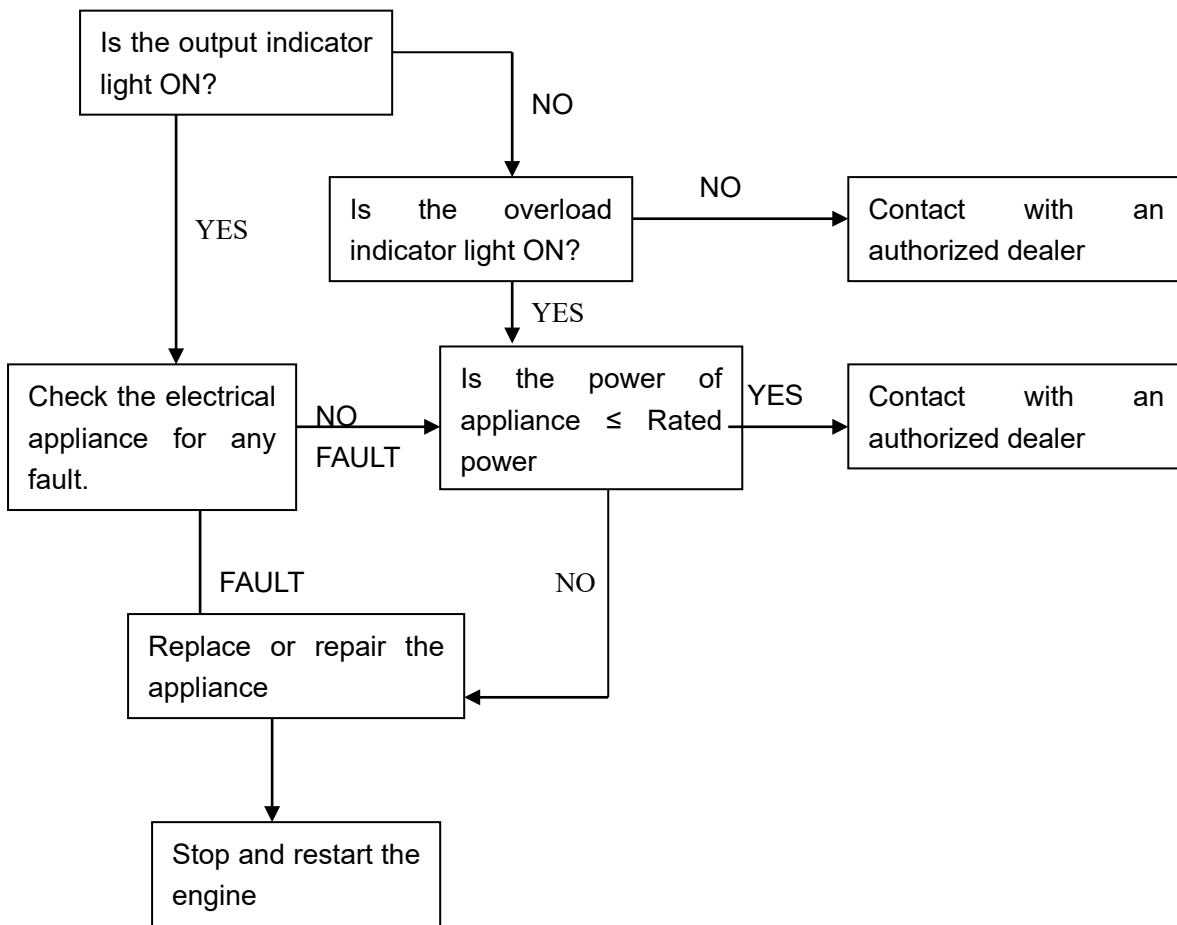
(5) Pull the Starter Grip slowly till resistance is felt. At this point, the piston is coming up on its compression stroke and both the intake and exhaust valves are closed. In this position, it helps to protect the engine from internal corrosion.

## 10. TROUBLESHOOTING

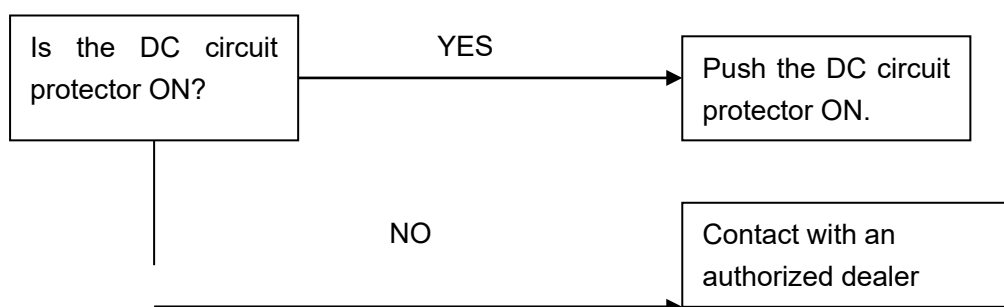
When the engine can not be started:



Appliance does not operate :



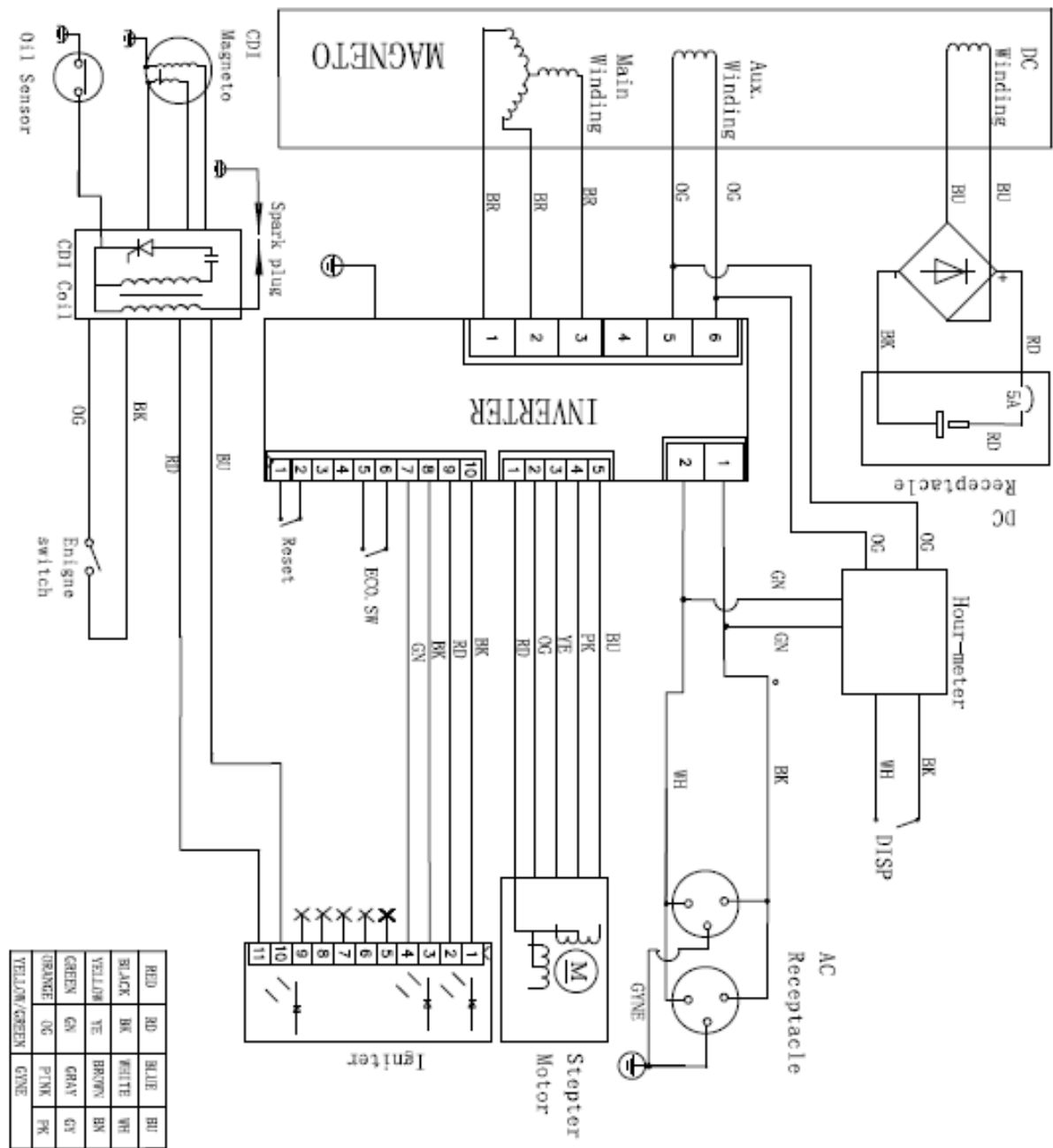
DC receptacle without any electricity:



## 11. TECHNICAL SPECIFICATIONS

	Specifications	Parameters		
ENGINE	Model	LY165F		
	Type	Single cylinder, four stroke, forced air cooling, overhead valve		
	Engine Displacement (cm <sup>3</sup> )	149.3		
	Bore*Stroke (mm)	65*45		
	Compression Ratio	8.2:1		
	Rated Power(kW/min <sup>-1</sup> )	3.8/4600		
	Ignition System	Full transistor		
	Start System	Recoil starter		
	Fuel Type	Gasoline without lead		
	Oil Model	-25℃-30℃:10W-30 / -15℃-40℃:15W-40		
GENERATOR	Model	EYG4000IN		
	Rated Frequency (Hz)	50		
	Rated Voltage (V)	220	230	240
	Rated Current (A)	14.5	13.9	13.3
	Rated Speed (min <sup>-1</sup> )	5000		
	Rated Output Power COP (kW)	3.2		
	Max. Output Power (kW)	3.5		
	DC Output/USB	12V5A/5V2.1A		
GENERATOR SET	Fuel Tank Volume (L)	8.5		
	Continuous Running Time (h)	4.0 (Rated power)		
	Fuel Consumption (g/(kW.h))	≤550		
	Working Ambient Temperature(℃)	-15~40		
	Max. Altitude(m)	0~1000		
	Measured sound pressure (dBA)	74		
	Measured sound power (dBA)	94		
	Measured uncerncy (dBA)	0.78		
	Dimensions (L*W*H) (mm)	505*430*515mm		
	Net Weight(kg)	24.5		

12. ELECTRICAL DIAGRAMS



## 13. ENVIRONMENT CORRECTION

The standard condition of rated power output:

Altitude: 0m

Ambient temperature: 25°C

Relative humidity: 30%

Factor of environment correction:

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
1000	0.87	0.85	0.82	0.80	0.78
2000	0.75	0.73	0.71	0.69	0.66
3000	0.64	0.62	0.6	0.58	0.56
4000	0.54	0.52	0.5	0.48	0.46

**Note:** Relative humidity 60% correction factor C-0.01;

Relative humidity 80% correction factor C-0.02;

Relative humidity 90% correction factor C-0.03;

Relative humidity 100% correction factor C-0.04;

Example:

Rated power ( $P_N$ ) 3.2KW generator, Altitude: 1000m, Ambient temperature: 35°C,

Relative humidity: 80%

$$P = P_N * (C - 0.02) = 3.2 * (0.82 - 0.02) = 2.56 \text{KW}$$