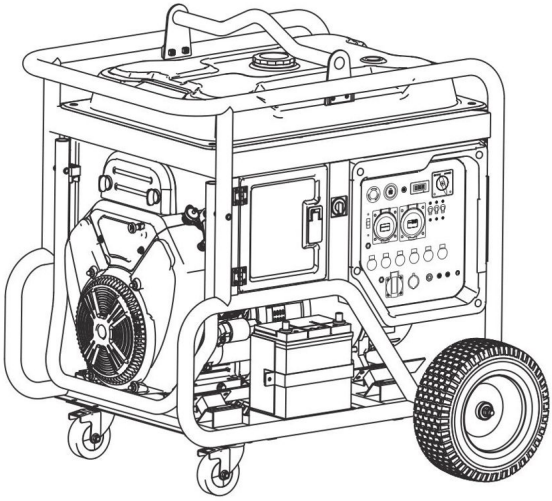
HAHN
& SOHN

GENERATOR
Owner's Manual



Thank you for choosing a generator set of our company.

This manual contains the information on how to do that. Please read it carefully before operating.Operating safely and correctly can help you get the best results.

All information in this publication is based on the latest product information available at the time of printing. The contents in this manual may be different from the actual parts due to revision and other changes.

Our company reserves the right to make changes at any time without notice and without incurring any obligation. No part of this publication may be reproduced without our company's written permission. This manual should be considered a permanent part of the generator and should remain with the generator if it is resold.

SAFETY MESSAGES

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

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. These mean:

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.

NOTICE

1. Your generator or other property could be damaged if you don’ t follow instructions.
2. Generator can not put on the slope which tilted more than 10 degree.

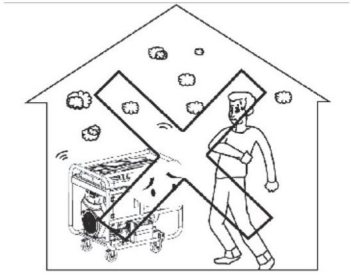
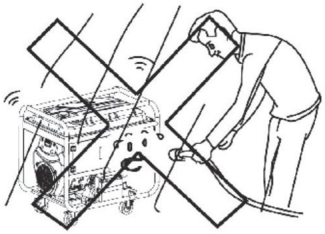
CONTENTS

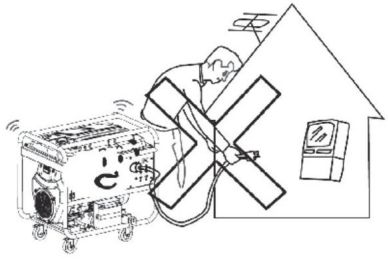
1. SAFETY NOTICE 5
    1. Safety Standard 5
    2. Special Requirements 6
2. COMPONENT IDENTIFICATION 7
    1. Structure Feature 7
    2. Engine Type & Serial Number 9
3. CONTROL 9
    1. Generator Switch 9
    2. Fuel Valve 9
    3. Choke Lever 9
    4. AC Overcurrent Protector 10
    5. Ground Terminal 10
    6. Oil Alert System 10
4. GENERATOR OPERATION 11
    1. Connection to the Household Power Supply 11
    2. Generator Grounding 11
    3. AC Current 11
    4. High Altitude Operation 13
5. PRE-OPERATION CHECK 13
    1. Engine Oil 13
    2. Fuel 14
6. STARTING THE ENGINE 15
7. STOPPING THE ENGINE 15
8. MAINTENANCE 15
    1. Engine Oil Change 16
    2. Air Cleaner Service 17
    3. Spark Plug Service 18
9. STORAGE 18
10. TROUBLESHOOTING 20
11. WIRING DIAGRAM 21
12. SPECIFICATIONS 23

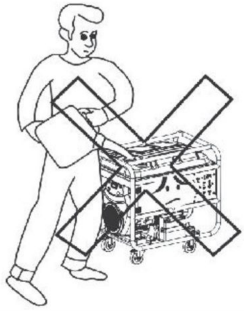
1. SAFETY NOTICE

1. Safety Standard

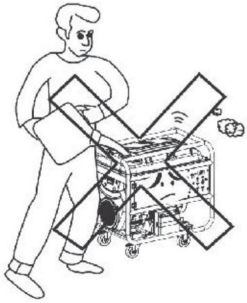
Read and understand this owner’ s manual before operating your generator. You can help prevent accidents by being familiar with your generator’ s controls, and by observing safe operating procedures.

	
Don’ t operate indoors.	Don’ t operate in the wet condition

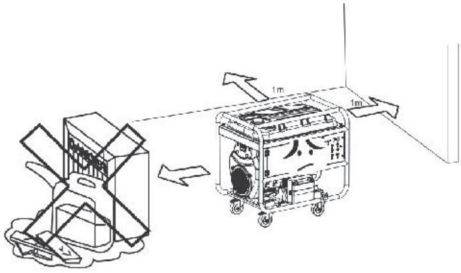
	
Don’ t directly connect to the household	power supply Don’ t smoke when refueling



Don’ t overflow the fuel when refueling.



Stop the engine before refueling



Please keep it 1m at least far away from the inflammable materials

2. Special Requirements

· Electrical equipment including lines and plug connections should be free from nudity.

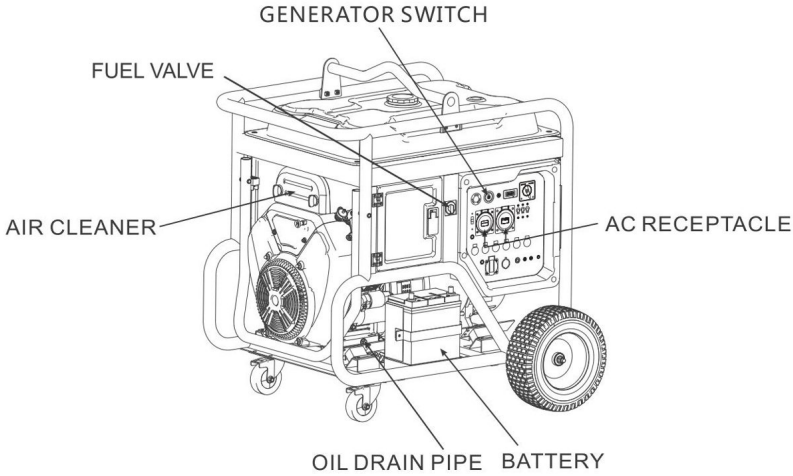
· The circuit breakers should be matched with the generator equipment. If the circuit breakers require replacement, they must be replaced with a circuit breaker having identical ratings and performance characteristics.

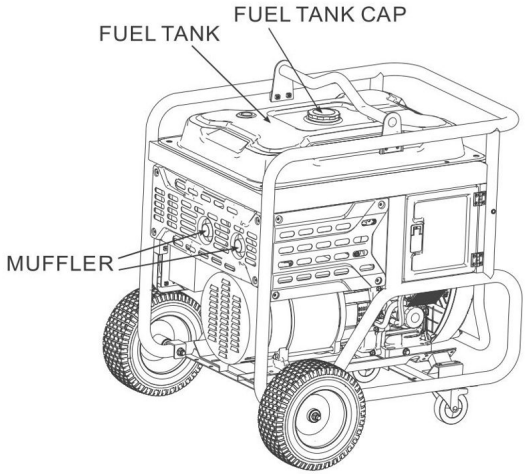
· Don’ t operate the generator before grounding.

· If using extension lines, the requirement should be met as following:for 1.5mm^2, the line should not be exceeded 60m; for 2.5 mm^2, the line not exceeded 100m.

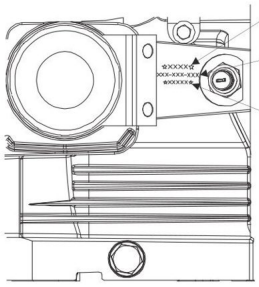
2. COMPONENT IDENTIFICATION

1. Structure Feature





2. Engine Type & Serial Number



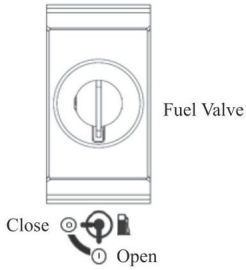
3. CONTROL

1. Generator Switch

Push this button to start generator control panel,push for 1seconds,start generator.

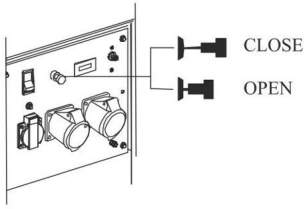
2. Fuel Valve

The fuel valve controls fuel flowing from the fuel tank to carburetor. Be sure to return the lever to "OFF" after stopping the engine.



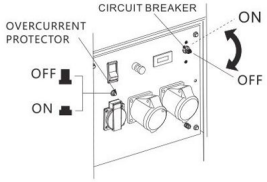
3. Choke Lever

The choke lever is used to provide an enriched fuel mixture when starting a cold engine. Slowly put the choke lever to "OPEN" position after the engine is heated.



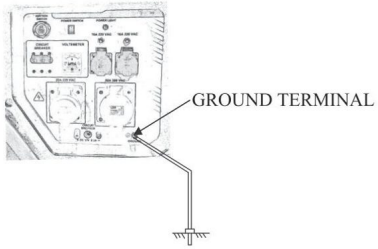
4. Overcurrent Protector/ Circuit Breaker

The overload current will automatically switch off overcurrent protector/ circuit breaker to avoid short circuit of the load or overload. If the indicator of Overcurrent Protector is raised,press the button of Overcurrent Protector to the "ON" position again a few minute later. If the circuit breaker is switched OFF automatically, check load before switching the circuit breaker ON again.



5. Ground Terminal

This ground terminal is dedicated to reliably grounding the whole generator.



6. Oil Alert System

The oil alert system is especially designed to prevent engine damage caused by an insufficient amount of oil in the crankcase. When the oil level in the crankcase fall down below a safe limit, the oil alert system will automatically shut down the engine(though the generator switch still remain in the ON position), so that the engine can't be damaged resulting from the insufficient amount of the oil.

4. GENERATOR OPERATION

Generator operation environment:

· Temperature:-15℃～40℃

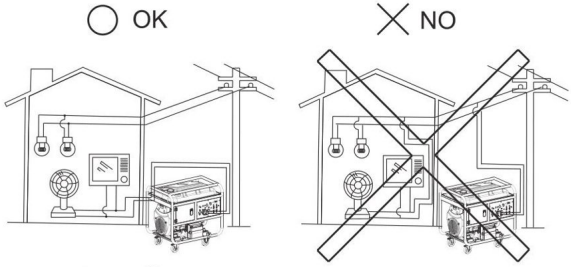
· Humidity: 95% lower.

· Height above sea level: below 1,000 m (If the area is over 1,000 m high,

the power should be lowered for operation).

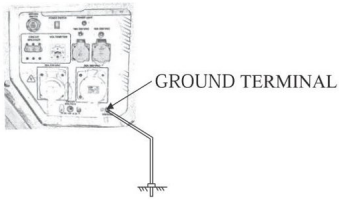
1. Connection to the Household Power Supply

NOTICE **When connecting the generator to the household power supply, connection must be made by a qualified electrician. After connecting, carefully check electric connection for their safety and reliability, if not,will result in generator damaged and burning and firing.**



2. Generator Grounding

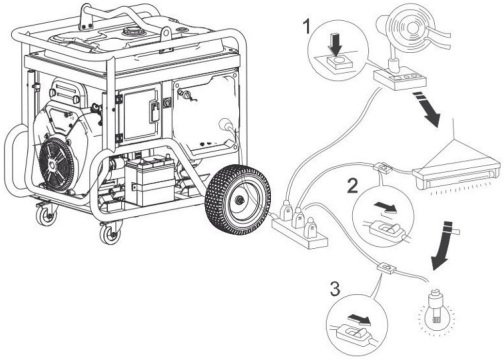
To prevent electrical shock or misuse from faulty appliances, the generator should be grounded with insulated lead.



3. AC Current

Before starting the generator, make sure that. Total load appliance power (Total resistance, capacitive and inductive) does not exceed rated power of the generator.

NOTICE **Overload operation will greatly shorten generator service life. If the generator set is connected to multi- loads or electric appliances,please first connect to current maximum, in turn, current second, and final, current minimum.**



In general, capacitive and inductive load, especially, motor-driven devices have a big starting current when starting. The following table is a reference for when connecting to the electric appliances.

Type	Wattage		Typical Device	Examples		
	Start	Rated		Device	Starting	Rated
Incandescent Lamp Heating Device	X1	X1	Incandescent Lamp Tv Set	Incandescent Lamp 100W	100VA (W)	100VA (W)
Fluorescent Lamp	X2	X1.5	Fluorescent Lamp	40W Fluorescent Lamp	80VA (W)	60VA (W)
Motor Drive Device	X3 ~ 5	X2	Refrigerator Electric Fan	Refrigerator 150W	450 ~ 750VA (W)	300VA (W)

4. High Altitude Operation

At high altitude, the standard carburetor air-fuel mixture will be excessively rich. Output power will decrease, and fuel consumption will increase.Engine performance can be improved by installing a smaller diameter main fuel jet in the carburetor and readjusting the pilot screw. If you always operate the engine at altitudes above sea level 1000 meters, have our company authorized dealer perform this carburetor modification. If not, should lower load power in operating generator. Even equipped with suitable carburetor, engine horsepower will decrease approximately 3.5% for each 300 meter increase in altitude. The effect of altitude on horsepower will be lowered greater than this if no carburetor modification is made.

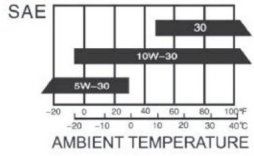
NOTICE **If a carburetor for high altitude is equipped with engine suitable to a lower altitude, the lean air fuel mixture will cause the engine output power lowering, over-heat and seriously damage.**

5. PRE-OPERATION CHECK

1. 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 4-stroke engine oil for API service classification SJ class or equivalent, and always check API service label on the oil container to be sure it includes the letters SJ or equivalent.



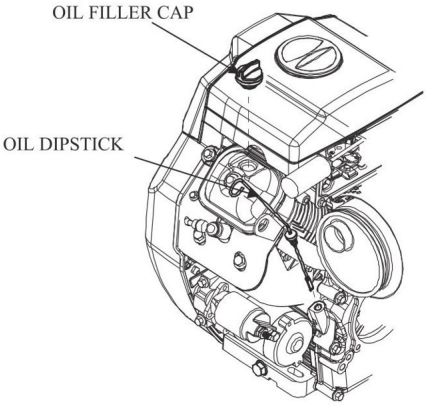
Method of check oil level:

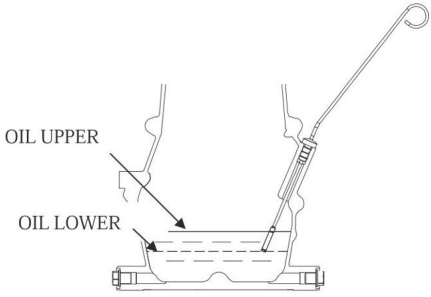
Remove the oil filler cap and wipe the dipstick clean.

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

If the level is low, add the recommended oil to the upper mark on the dipstick.

After adding, don’ t forget refit and screw down the oil dipstick.



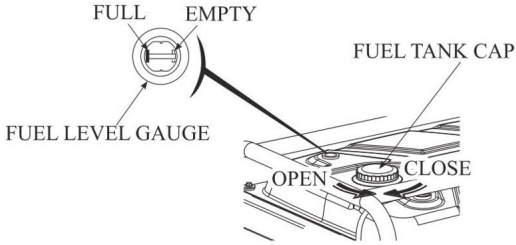


2. Fuel

1) Check the fuel level gauge,

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

3) Refit and screw down the fuel tank cap after refueling.



WARNING **• 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.**

- **Do not overfill the fuel tank.**
- **Avoid repeated or prolonged contact with skin or breathing of vapor.**
- **Keep out of reach of children.**
- **Don' t use the oil and gasoline mixture or gasoline contained impurity.**

Use gasoline with octane rating ≥90 .

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

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

6. STARTING THE ENGINE

(1) Remove all the loads out of the output.
(2) Turn the fuel valve to the "ON" position.
(3) Turn the choke lever to the "CLOSE" position.
(4) Turn the generator switch to the "START" position.

NOTICE **Don' t close the choke when starting the engine in warm state**

(5) Turn the choke lever to the "OPEN" position after the engine is warm.

7. STOPPING THE ENGINE

(1) Turn the generator switch to the OFF position.
(2) Turn the fuel valve to the OFF position.

NOTICE **To stop the engine in an emergency, turn the generator switch to the OFF position.**

8. MAINTENANCE

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

⚠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.**

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:

REGULAR SERVICE PERIOD		Each Use	First Month or 20 Hrs. (3)	Every 3 Months or 50 Hrs. (3)	Every 6 Months or 100 Hrs. (3)	Every Year or 300 Hrs. (3)
Engine oil	Check Level	○				
	Change		○		○	
Air cleaner	Check	○				
	Clean			○ (1)		
Sediment Cup	Clean				○	
Spark plug	Clean				○	renew
Valve clearance	Check-Adjust					○ (2)
Cylinder Cover	Clean	Every 300 Hours (2)				
Fuel tank and strainer	Clean	Every 2 Years (2)				
Fuel line	Replace	Every 2 Years (2)				
Cylinder head and the head of pision	Clean carbon	Every 125 hours(2)				

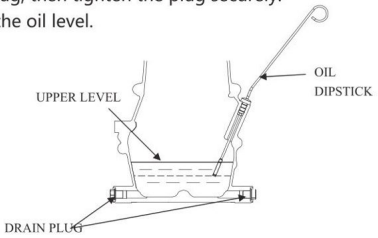
(1) Service more frequently when used in dusty areas.
(2) These items should be serviced by an authorized generator dealer.
(3) When more often use, only servicing according to above correct intervals can insure the generator set long-term use.

⚠WARNING **Improper maintenance, or failure to correct a problem before operation, can cause a malfunction in which you can be seriously hurt or killed. Always follow the inspection and maintenance recommendations and schedules in this owner' s manual.**

1. Engine Oil Change

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

1. Remove the oil dipstick and drain plug to drain the oil.
2.Reinstall the drain plug, then tighten the plug securely.
3. Refill oil and check the oil level.



⚠ CAUTION **Used engine 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 engine 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 in the trash or pour it on the ground.

2. Air Cleaner Service

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

⚠ CAUTION **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. If not, rapid engine wear will result.

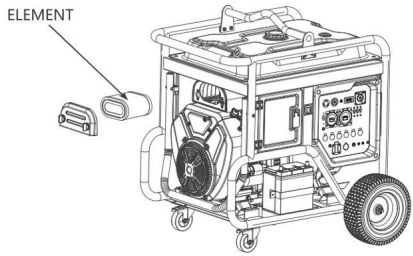
(1) Open the air cleaner clip and open the air cover. Check the air cleaner element for complete and clean.

(2) If the foam element is dirty, please clean the foam element :

Clean in warm water or in non-flammable solvent and high flash point solvent. Allow to dry thoroughly .Drip the several drops of the engine oil into the element and squeeze out all excess oil.

If the paper element is dirty, please tap the element several times on hard surface, then blow compressed air not exceeding 207KPa through the element from the inside. Never try to brush off dirt, so that would bring its vent channel blocked.

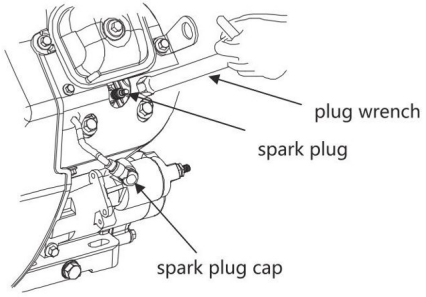
If the element damaged, please replace with new one.



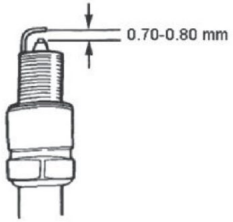
(3) Reinstall the air cleaner element and the cover.

3. Spark Plug Service.

Recommended spark plugs: F6RTC
or other equivalents



(1) Remove the spark plug cap.
(2) Use the plug wrench to remove the spark plug.
(3) Visually inspect the spark plug if the insulator is cracked, if cracked, replace with new the spark plug.
(4) Measure the plug gap with a feeler gauge. Correct as necessary by carefully bending the side electrode. The gap should be: 0.70-0.80 mm.
(5) Check the spark plug washer for good.
(6) Reinstall the spark plug, tighten it with plug wrench and impact the washer.



NOTICE Please use the spark plug with suitable heat range.

9. STORAGE

WARNING In order to contact with a hot engine or exhaust system causing

burns or fires. Let the engine cool before storing the generator.

If storing the unit for an extended period, be sure the storage area is free of excessive humidity and dust.

(1) Drain the fuel in the fuel tank out.

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

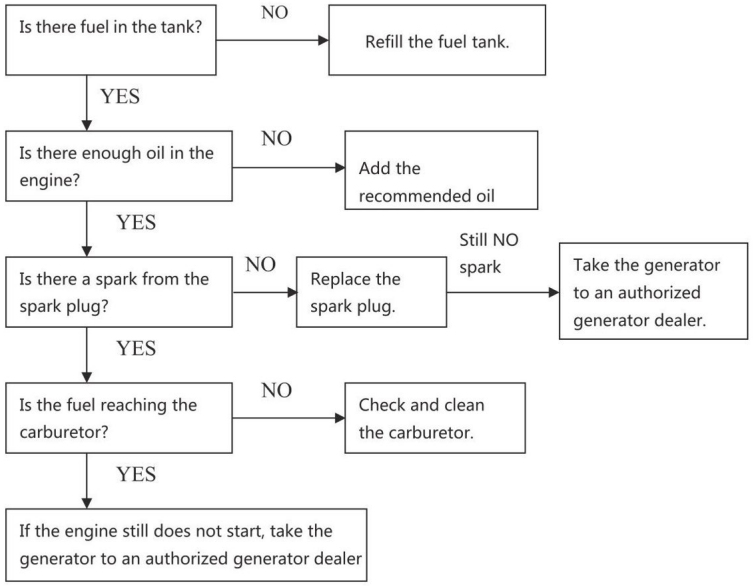
(2) Screw the oil dipstick off and screw the drain bolt off the crankcase to completely drain the oil out. Then screw down the drain bolt and fill fresh oil to upper mark, finally refit the oil dipstick well.

(3) Remove the spark plug, and pour about a tablespoon of clean engine oil into the cylinder. Crank the engine several revolutions to distribute the oil, then reinstall the spark plug.

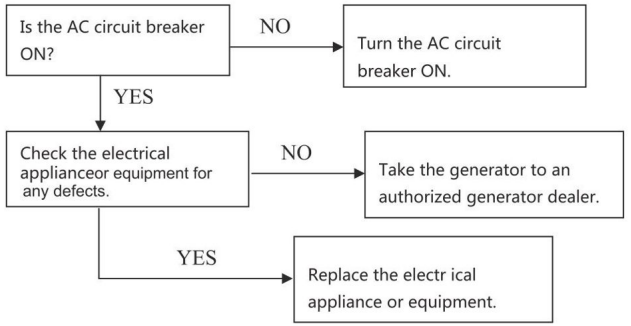
(4) Place the generator in the clean area.

10. TROUBLESHOOTING

Engine not to start:

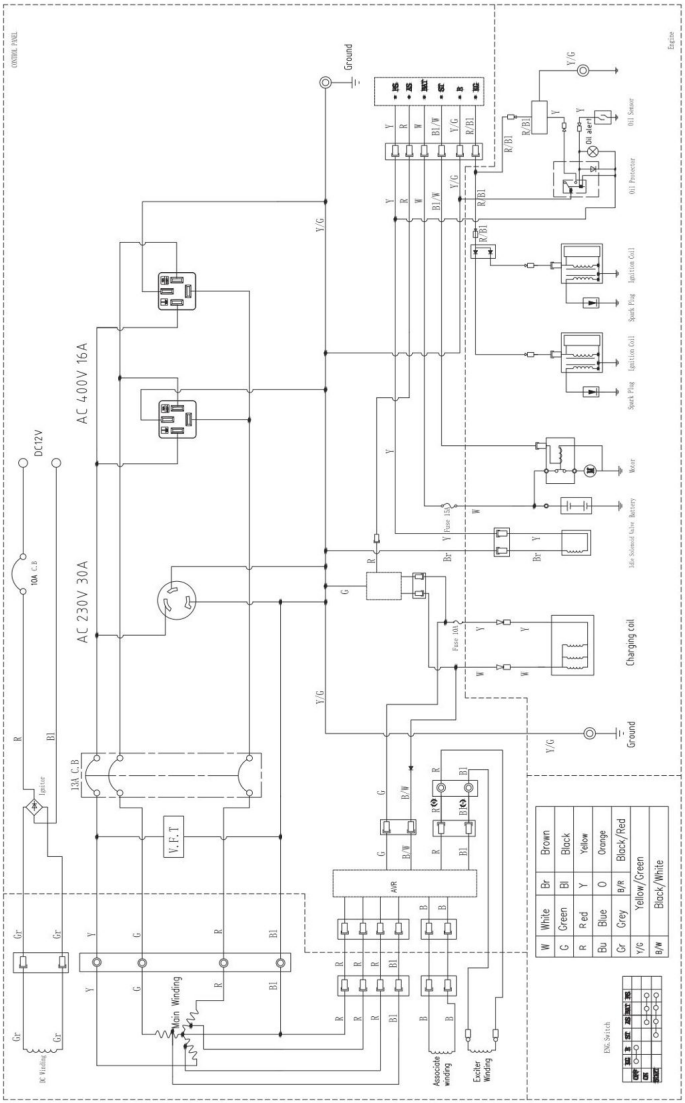


Nopower supply:

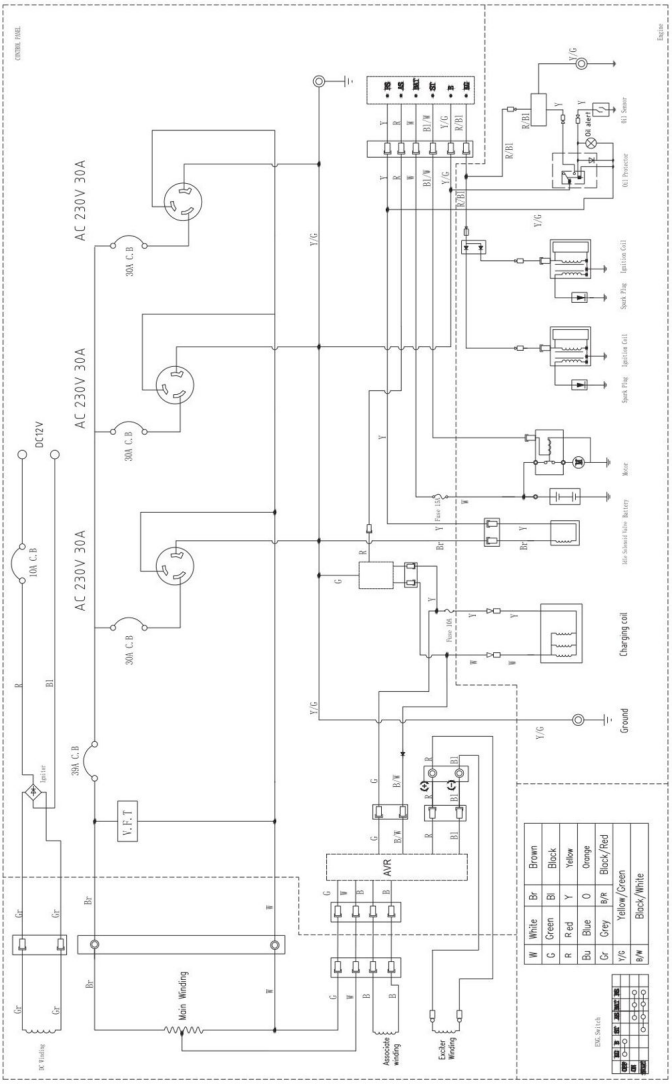


11. WIRING DIAGRAM

SINGLE-PHASE



THREE-PHASER



12. SPECIFICATIONS

	Item	18kW	
Gasoline Engine	Gasoline Engine Style	R999	
	Gasoline Engine Type	2 Cylinders, 4-Stroke, Forced Air	
	Displacement (cc)	999	
	Igniting System	Transistorized Magneto	
	Fuel Volume (L)	50	
	Fuel Consumption(g/(kW·h))	600	
	Chargue continuous time 100%	6h	
Generator	Rated Frequency (Hz)	60	
	Rated Voltage (V)	120, 220, 230, 240, 220/380, 230/400	
	Rated Output Power(kW)	17	
	Maximum Output Power (kW)	19	
Generator Set	Length (mm)	940	
	Width (mm)	683	
	Height (mm)	825	
	Net Weight (kg)	245	
	Phase	Single	Three-phase
General-Purpose Accessory	Large Air Cleaner	●	
	Large Muffler	●	
	Large Fuel Tank	●	
	Fuel Gauge	●	
	Voltmeter	●	
	Automatic Voltage	●	
	Oil Alert System	●	
	Non-fuse Breaker	●	
	Electric Starting Accessory	●	

Remarks: ●means available, - means unavailable