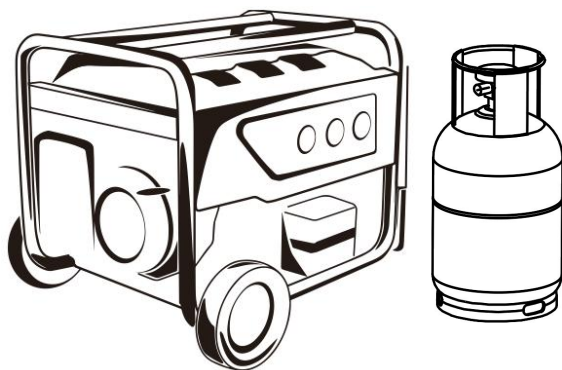




**REDRHINO**  
PRODUCTS

## Generator set instructions



Please read the instructions before using the product

# Safety Warning

The personal and property safety of you and others is very important. Please read carefully the extremely important safety warnings we have written in the manual and the label of the generator set. Safety warnings can alert you to potential dangers that may harm you and others.

There is one of these three symbols: “Danger”, “Warning”, “Notice” in front of safety warning. Details as below:



If you do not follow the instructions, your life will be in danger or you will be seriously injured.



If you do not follow the instructions, your life will be in danger or you will be seriously injured.

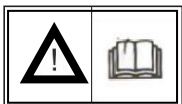


If you do not follow the instructions, you will be slightly injured.  
If you do not follow the instructions, your generator set and other property may be damaged.

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## 1. Security matters



Please read and understand this manual carefully before operating the generator set, otherwise it may cause personal injury or equipment damage.

- Before starting the generator set each time, the inspection before operation must be done.
- In order to prevent fire, good ventilation must be ensured and inflammable articles should not be placed beside the generator set.
- Children and pets must stay away from the operating area to prevent being scalded by generator set components.
- Fuel oil should be added in a well-ventilated place, and the generator set should stop running when refueling.
- The fuel tank should not be overfilled, and there should be no fuel on the neck of

the fuel outlet. Make sure the tank cover is tight.

- If there is fuel spatter, it must be completely eliminated and start the generator set after they volatilize.
- Smoke or open fire and sparks are not allowed in the place where the generator set is added with fuel or where the fuel is stored.
- The exhaust gas of the generator set contains carbon monoxide. It is strictly prohibited to use the generator set indoors or in places with poor ventilation.
- Operate the generator set on a stable surface. The inclination of the generator set cannot exceed 20 degrees of the horizontal plane, otherwise it may cause combustion overflow.
- Do not cover anything on the generator set to prevent fire.
- When the generator set is running, the muffler temperature is very high, and touch and coverage are prohibited.

### **Electrical Safety**

1)Electrical equipment (including the connection parts of cables and plugs) shall be trouble-free.

2)The generator set cannot be connected with other power sources, such as the main power grid of the power company. When the standby unit intends to connect with the current power system, it should be completed by qualified electricians (technicians).

3)Motor protection depends on the circuit breaker, especially the matching between the short circuit and the generator set. If the circuit breaker is to be replaced, it must be replaced with a circuit breaker with the same quota and performance characteristics.

4)Due to the high mechanical stress, only flexible cables or equivalent products can be used.

5)The generator must be grounded.

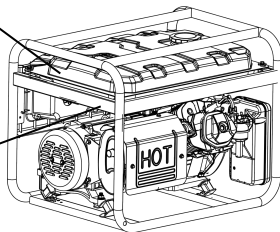
6)When using lengthened wire or mobile power distribution cabinet, the total length of wire with cross-sectional area of 1.5mm should not exceed 60m; The total length of wire with cross-sectional area of 2.5mm should not exceed 100m.

### **Security label**

Pay attention to the label reminder, you may cause potential danger of injury, please read carefully.

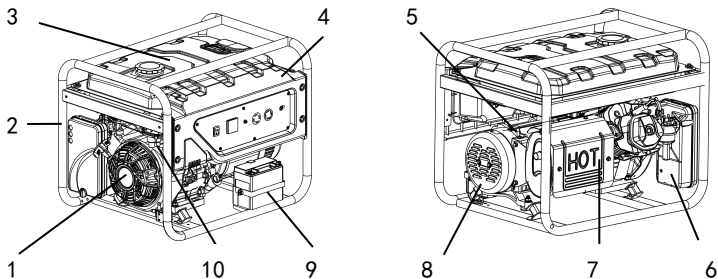
If the label falls off or the content cannot be seen clearly, please contact a special service store authorized by our company for replacement.。

## Warning label and schematic diagram



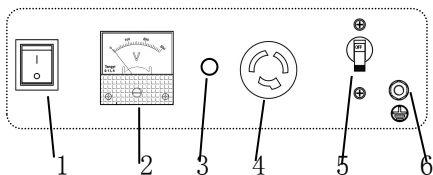
## 2. Part name

### 2.1 Unit parts



- 1、 petrol engine power 2、 Frame 3、 Fuel tank 4、 Control panel combination 5、 Electric motor  
6、 Air filter 7、 Muffler parts 8、 Tail cover 9、 Storage cell 10、 LPG interface

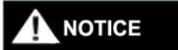
## 2.2 Electrical device identification



- 1、 Start switch
- 2、 Voltmeter
- 3、 Gas Conversion
- 4、 Socket
- 5、 Circuit-breaker
- 6、 Ground Terminal

## 3. Check before operation

### 3.1 Engine lubricating oil

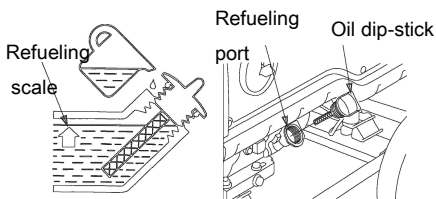
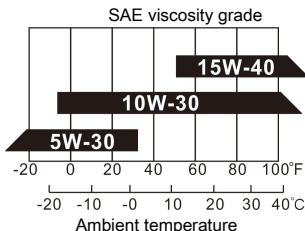


• Engine lubricating oil is the main factor affecting the performance and service life of generator sets. Two-stroke lubricating oil is not allowed because they lack sufficient lubricating characteristics.

• When checking the engine lubricating oil, make it stop running well at level.

Use lubricating oil that meets or exceeds the SAEIOW-30 of SG and SF, and use lubricating oil with other viscosity when the average temperature in your area is within the range shown in the chart.

- 1) ensure that the generator set is in the horizontal position.
- 2) remove the oil gauge and clean the oil on it
- 3) insert the oil gauge into the refueling port, but do not twist it. If the oil level is too low, add the recommended oil until the oil gauge is inside the scale line.
- 4) put back the oil gauge.



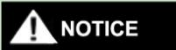
Running the generator set at low oil level will cause engine damage

### 3.2 Petrol、 gas

- 1)、 Remove the tank cover and add 92# or higher unleaded petrol .
- 2)、 When adding fuel, the oil level should not exceed the calibration position of filter mesh.
- 3) When using gas, it must be ensured that the pipeline is normal without leakage, and the gas switch(reset) must be closed after the gas used up.



- Petrol and gas are flammable and toxic, which can explode under certain conditions.
- Make sure that the gas pipe joint is connected reliably before connecting the gas. If there is gas leakage, pipeline damage, etc., please close the gas source immediately and overhaul.
- Refuel in a well-ventilated place. When refuel, the generator set should stop running. Smoking is not allowed in refueling places, and open flames and sparks are strictly prohibited in places where petrol is stored.
- The fuel tank should not be overfilled (the neck of the fuel outlet should be free of fuel). After refueling, check whether the fuel tank cover is well covered.
- Be careful not to let the fuel spill out when refueling. The spilled fuel or volatile gas of petrol may burn. If there is excessive splash of fuel oil, make sure that the place has volatilized or dried before starting.
- Avoid repeated or long-term contact with skin and inhalation of volatile gas. Do not let children touch them.



**Fuel oil may damage paint and plastics. Be careful not to overflow when refueling. Damage caused by fuel overflow is not covered by warranty.**

We recommend that you use 92# or higher unleaded petrol .

Recommended LPG: Commercial Propane



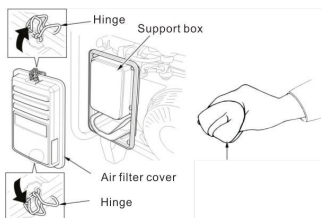
The generator will be damaged by continuous collision or explosion during operation. The continuous collision sound or explosion sound during operation is misused petrol . The seller and the company do not bear the damage of parts caused by misuse of petrol .

### 3.3 Air filter



Never transfer the generator set without air filter, otherwise it will accelerate the abrasion of the generator set.

- 1) Remove the air filter cover;
- 2) Check whether the cabin filter is too dirty or blocked. Clean the cabin filter if necessary.



## 4. Starting generator set

In order to achieve safe operation, the operator must fully understand the function and position of each control device, display or instrument before starting.

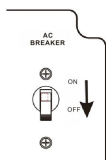
Note: the generator set can only be loaded to the rated power under calibrated environmental conditions. If the working environment conditions of the generator set do not meet the requirements on the parameter nameplate or this specification, or the cooling of the engine or generator set is poor, for example, it is necessary to reduce the power when operating in a limited area.

**4.1 Remove all loads on the AC socket (close the circuit breaker)**

**4.2 Turn ON the fuel switch (ON position)**

**4.3 Close the wind door and place the handle of the wind door in the "off" position.**

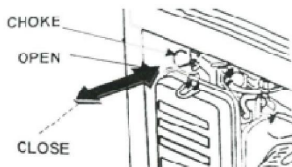
Circuit-breaker



Fuel switch



Windproof door



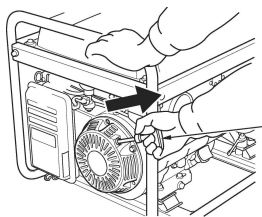


Note: When the generator set starts in the heat engine state, please do not close the air barrier door.

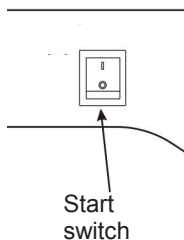
If the dual-fuel model you are using is a non-electric starter product, or the battery has run out of power and is not enough to start the generator normally, and the engine cannot be started with gas at this time, you must ensure that there is petrol in the tank, and start the pneumatic drive with petrol first. After starting the generator, press the gas switch(reset) button on the control panel for 3 seconds, at this time the system will switch to using gas and cut off the petrol supply.

#### **4.4 Place the generator set switch in the "on" position.**

**4.5 Gently pull the starting handle to have a sense of resistance, and then pull it quickly. Open the air barrier door after starting the generator set.**



Starting handle



#### **Electric start (optional type)**

Connect the battery line correctly, twist the electric switch of the generator set to the START position and last for no more than 5 seconds until the generator set starts.



In order to prevent damage to the starting motor, each time using electric starting should not exceed 5 seconds, if the generator set can not start, open the starting switch, wait for 15 seconds and try again. When the generator set starts, reset the start switch to the ON (ON) position.

#### **4.6 Connecting device**

Connect the external plug to the corresponding socket on the panel.

#### **4.7 Switch on circuit breaker**

When using the generator, put the breaker board to the open position.

## 5. Fuel switching

This series of dual-fuel generator sets has the function of non-stop fuel switching. By default, gas will be consumed first. If the gas is turned on and there is petrol in the tank, when the system is working normally, the petrol will be automatically turned off and the gas will be turned on when the engine is started. The system will automatically switch to the petrol supply when the gas is used up. If you want to switch to using petrol at this time, you only need to turn off the air supply.

When need use gas during operation with petrol, you need to connect the gas pipe, turn on the gas source, press the gas switch(reset) button on the control panel for 3 seconds, the system will switch to using gas and cut off the petrol supply.

## 6. Stop the generator

Stop the machine in case of emergency, and put the switch board of the generator set to the OFF position. In general, follow these steps:

**6.1 Close the circuit breaker**

**6.2 Turn OFF the switch of the generator set**

**6.3 Turn the oil switch to the OFF position**

**6.4 Disconnect all electrical equipment and turn off the gas source.**

## 7. Maintenance Schedule

To keep the generator set in good performance, regular maintenance and adjustment must be carried out. Please follow the following maintenance and inspection cycle table to carry out.



Turn off the generator set before any maintenance. If the generator set is in operation, please keep good ventilation. The exhaust gas emitted by the generator set contains toxic carbon monoxide gas, and inhalation will cause Shock and even death.



Using pure parts of our company, if using substitutes of poor quality, the generator set will be damaged.

## Maintenance cycle table

The maintenance cycle arrives first by month or actual operation hours.		Use each time	The first month or 20 hours	Quarterly or 50 hours	Every 6 months or 100 hours	Annual or 300 hours
Project						
Generator set lubricating oil	Check the oil level	○				
	Change		○		○	
Air filter	Check	○				
	Cleaning			○ (1)	○ (1) *	
	Change					○
Precipitation Cup	Cleaning				○	
Valve clearance	Check-adjust					○ (2)
Spark Plug	Cleaning-adjustment				○	
	Change					○
Fuel tank and filter net	Cleaning				○	
Oil pipe	Check	Every two years (change if necessary)(2)				
Combustion Chamber	Cleaning	After every 500 hours (2)				

Note: ○: maintenance items.

\*: replace only the paper filter core type.

(1) : If used in dusty places, pay more attention to maintenance.

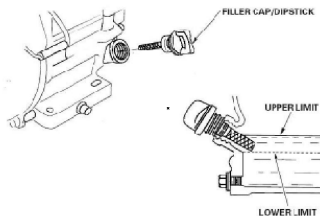
(2) :Unless users have appropriate tools and machine repair capabilities, these items should

## 8. Maintenance

### 8.1 Change lubricating oil

Discharge oil when the generator set is still hot to ensure rapid and thorough discharge of oil.

- (1) unscrew the oil gauge and the oil discharge Bolt to discharge the lubricating oil. Install the oil Bolt and tighten it.
- (2) Re-add the recommended lubricating oil and check the oil level.
- (3) Install the oil gauge.



Note: Please use the method of environmental protection to dispose waste lubricating oil. We recommend that you put waste oil into a sealed container and send it to the local waste oil recycle bin. Do not throw it into a junk box or fall on the ground.

### 8.2 Air filter maintenance

A dirty air filter will restrict air from entering the carburetor. In order to prevent carburetor from malfunction, the air filter must be maintained regularly. If the generator set operates in dusty places, it will be maintained more frequently.



The air filter must not be cleaned with petrol or low-burning detergent, otherwise it may lead to explosion.



The generator set must not be operated without the air cabin filter, otherwise foreign matters such as dust will be inhaled into the carburetor and enter the engine, resulting in accelerated wear and tear of the engine.

- 1) Remove the air filter cover and cabin filter;
- 2) Clean with household detergent solution and warm water, and then rinse thoroughly.

Or clean with non-flammable solvent. The high burning point solvent can also be used for cleaning. After washing, let the cabin filter dry thoroughly. Make the cabin filter penetrate the clean engine lubricating oil, and then squeeze out the extra oil, otherwise the generator set will smoke in the initial starting stage.

- 3) Reinstall the cabin filter and air filter cover.

### 8.3 Sedimentation Cup cleaning



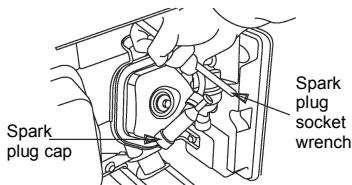
petrol is flammable, and it will explode under certain conditions. Smoking, open fire or sparks are strictly prohibited. After installing the sedimentation Cup, check whether there is leakage. Make sure the surroundings are dry before starting the engine. Turn OFF the oil switch (OFF), remove the precipitating Cup and Type 0 RS, clean them in non-flammable or high-burning solvent, and put them back after drying thoroughly. Turn ON the oil switch (ON) and check for leakage.

### 8.4 Spark plug maintenance

Recommended spark plug: F6TC, F6RTC, F7TC, F7RTC in order to ensure the normal operation of the generator set, the gap of the plug must be correct and there is no sediment.

- 1) unplug the spark plug cap.
- 2) Clean the dirt around the Spark base.

- 3) Remove the spark plug with a special socket wrench.

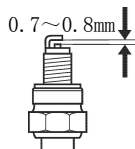


**! WARNING**

The muffler will be very hot during the running process of the engine and within a period of time after the engine stops running. Please do not touch it.

- 4) visual inspection spark plug. If the insulator has cracks or defects, replace it with a new one. If the spark plug needs to be used again, it can be cleaned by wire brush.

- 5) Use thickness gauge to measure the gap of spark plug. If it needs to be adjusted, it can be adjusted by bending side electrode. The correct gap should be 0.70~0.80mm.



- 6) Check whether the spark plug washer is in good condition. To prevent thread dislocation, screw the spark plu

- 7) After the spark plug is screwed to the end, tighten it with a special socket wrench and press the washer tightly. If a new spark plug is installed, screw one or two times more after pressing the washer. If the used spark plug is reinstalled, screw 1/8-1/4 times more after pressing the washer.

**! WARNING**

The spark plug must be tightened. Improper tightening of the spark plug may be extremely hot and damage the engine. Use the recommended spark plug or equivalent product. Incorrect heat value range of spark plug will cause engine damage.

## 9. Handling and Storage

**! WARNING**

- In order to prevent scald or fire, let the generator set cool down before moving or storing into the room.
- When carrying the generator set, move the oil switch to the OFF position.

Ensure the level of generator set to prevent fuel overflow. Fuel volatilization or overflow can cause fire.

Preparations that need to be made to store the generator set for a long time:

**9.1 Make sure that the storage place is not highly damp and mild, and is full of dust.**

Storage time	In order to prevent starting difficulties, maintenance procedures are recommended.
Less than one month	No preparation is required.
One to two months	Add fresh petrol
Three months to one year	Add the fresh Cup oil to drain the petrol in the carburetor Cup drain the petrol in the sedimentation Cup
More than one year	Add fresh petrol , drain the petrol in the carburetor Cup, drain the petrol in the sedimentation Cup, move out of the storage room, first put the stored petrol into the appropriate container, after adding fresh petrol , start

1) After turning off the oil switch, remove the sedimentation cup and pour the fuel in the Cup. Reinstall the sedimentation Cup and tighten it.

2) Loosen the oil discharge Bolt and release the fuel oil in the carburetor. Discharge the fuel into the appropriate container and tighten the oil discharge Bolt.



petrol is flammable and will explode under certain conditions. Smoking, open fire or sparks are strictly prohibited at the operation site.

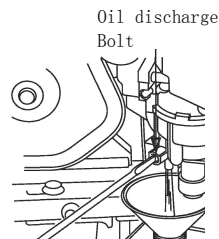
1) Change the lubricating oil of the generator set when using it again.

2) Remove the spark plug and inject a small spoon of clean lubricating oil into the cylinder. Turn the engine several times to distribute the oil, and then put it back to the spark plug.

3) Slowly pull the starting handle until there is resistance, and let the inlet and exhaust valves close, which helps to prevent internal corrosion of the engine.

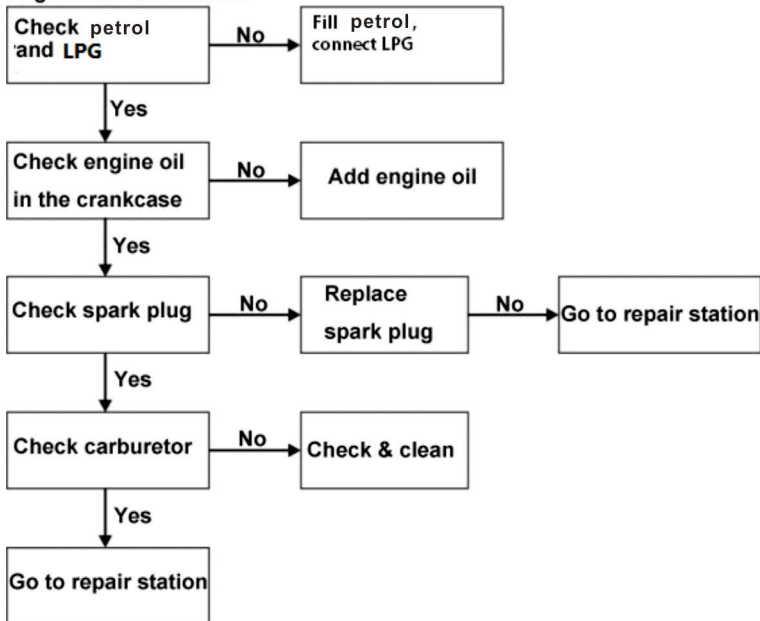
4) Electric starting type: remove the battery and store it in a cool and dry place. Charge once a month.

5) Cover the generator set to prevent dust.

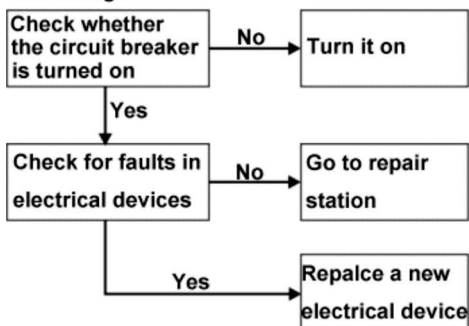


## 10.Troubleshooting

Engine can't be started:



No voltage



## 11.Specification

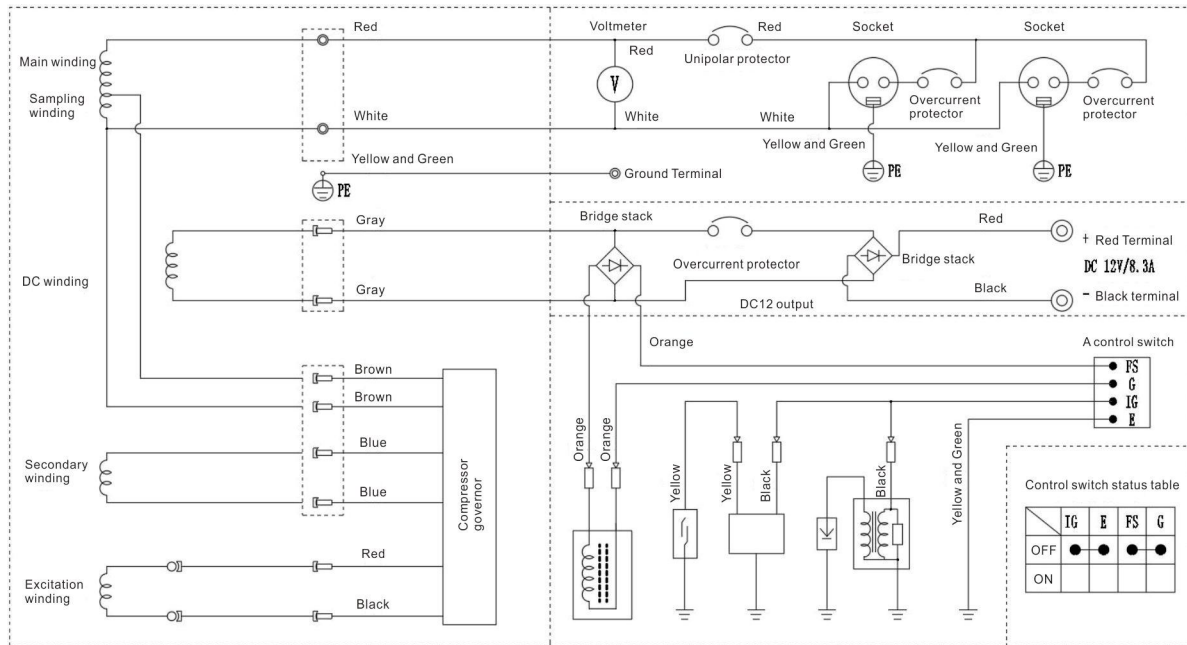
Model		RGL3150D	RGL6250D	RGL7500D	RGL9000D	RGL10000D
Power	Power model	H210	(H390) H420	H420	H460-1	H460-1
	Form	Single cylinder, four-stroke, forced air cooling, valve overhead type				
	Capacity (CC)	212	(389) 420	420	460	
	Fuel consumption rate (g/kW·h)	≤374	≤374	≤374	≤374	
	Startup mode	Hand/electric start				
	Fuel volume (L)	15	25	25	25	25
	Engine oil volume (L)	0.6	1.1	1.1	1.1	1.1
	Rated voltage (V)	230/400				
Generator set	Rated frequency (Hz)	50	50	50	50	50
	Rated Power(kVA)	Petrol: 2.8 Gas: 2.5	Petrol: 5.0 Gas: 4.5	Petrol: 6.0 Gas: 5.5	Petrol: 7.2 Gas: 6.5	Petrol: 8.0 Gas: 7.2
	Maximum power(kVA)	Petrol: 3.0 Gas: 2.7	Petrol: 5.5 Gas: 5.0	Petrol: 6.5 Gas: 6.0	Petrol: 7.7 Gas: 7.2	Petrol: 8.5 Gas: 8.0
	Net Weight(kg)	44~49	85~90	87~92	92~99	94~101



## 12. Electrical Diagrams

According to different features , factory may adjust without prior notification. )

### Hand start



# Electric start

