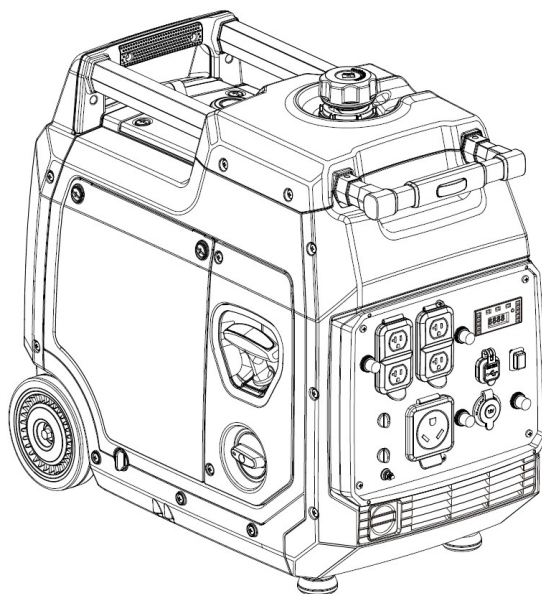


VARI®



ORIGINAL INSTRUCTIONS FOR USE

ECV 3500 W

INVERTER GENERATOR

INSTRUCTIONS FOR USE



Read this manual carefully before operation.
This manual includes important guidance for safety operation.

This Manual contains important safety information and instructions for operating this generating set. **PLEASE READ THIS MANUAL CAREFULLY.**

Failure to do so could result in property damage and/or personal INJURY/DEATH.

Provide this manual to any operator of this generating set. This manual should be considered as a permanent part of your generating set and should remain with it when you sell it.

All pictures & figures are only one example of series generating set. It shall be only for reference and perhaps there will be difference between pictures & figures and physical products.

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

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

Write down the generating set's serial number and purchase information. Keep this manual and the receipt for future reference.

Model:

Serial number:

Date of purchase:

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I. Operator safety

1. Safety rules



Pay attention to this safety alert symbol. Obey all safety messages that followed by this symbol to avoid possible property damage. INJURY or DEATH.

Each safety message is preceded by a safety alert symbol and one of three words, DANGER, WARNING, or CAUTION.

DANGER

Indicates a hazardous situation which, if not strictly complied with, will result in substantial property damage, serious injury or DEATH.

WARNING

Indicates a hazardous situation which, if not strictly complied with, may result in property damage, serious injury or DEATH.

CAUTION

Indicates a hazardous situation which, if not strictly complied with, could result in property damage or injury.



WARNING

READ THIS MANUAL COMPLETELY BEFORE OPERATING.

DO NOT operate this generating set until you have read ALL safety, Operation, and maintenance instructions listed in this manual.

Failure to follow the instructions may result in property damage, INJURY or DEATH.

The warnings and precautions discussed in this manual cannot cover all possible conditions and situations that may occur. It must be understood by the operator that common sense and caution are factors which cannot be built into this product, but must be possessed by the operator.

WARNING

This generating set is intended for residential consumer use only.

Air cooled generating sets cannot be run full time.

No personal-modified any part of the generating set or any unsuitable usage is allowed.



⚠ DANGER

TOXIC FUMES

The exhaust of the engine contains carbon monoxide, an odorless, colorless, poison gas. Using engine indoors **CAN KILL YOU!**

NEVER use inside any building or any kind of enclosure, **EVEN IF** doors and windows are open.

Place the engine in a well-ventilated area and carefully consider wind and air currents when positioning the engine.

⚠ WARNING

Lithium battery is maintenance free, if you have any question, please contact a local authorized dealer.



⚠ WARNING

FIRE

Operation of this engine may create sparks that can start fires around flammable material.

This engine may not be equipped with a spark arresting muffler. If the engine will be used around flammable materials, or on land covered with materials such as agricultural crops, forest, brush, grass, or other similar items, then an approved spark arrester must be installed.

In some area, a spark arrester is required by law.

Please contact local fire agencies for laws or regulations relating to fire prevention requirements.



Flammable materials can catch fire when they come into contact with hot surfaces. Do not place flammable objects within 1.5 meters.



WARNING

HOT SURFACE

Running engines produce heat. Severe burns can occur on contact.

DO NOT touch engine while operating or just after stopping. Avoid contact with hot exhaust gases.



WARNING

KICKBACK

Rapid retraction of the starter cord will pull hand and arm towards the engine faster than you can let go.

Unintentional startup can result in accident.



DANGER

FIRE OR EXPLOSION

Gasoline is highly flammable and extremely explosive.

Fire or explosion can cause severe burns or death.

Keep flammable items away while handling gasoline.

Fill fuel tank outdoors and in a well-ventilated area with the engine stopped.

Always wipe off spilled fuel and wait until the fuel has dried before starting the engine.

DO NOT operate the engine with known leaks in the fuel system.

Use proper fuel storage and handling procedures.

DO NOT store fuel or other flammable materials nearby.

Empty the fuel tank before storing or transporting this generating set.

Keep fire extinguisher handy and be prepared if a fire starts.

WARNING

Before each use, check for loose or damaged parts, signs of oil or fuel leaks, and any other condition that may affect proper operation.

Repair or replace all damaged or defective parts immediately.

Locate all operating controls and safety labels.

Make sure all the safety instructions are in right and working condition. Operate only on level surfaces.

DO NOT expose generating set to excessive moisture, dust, or dirt.

Keep all safety guards in place and in proper working order at all times.

DO NOT allow any material to block the cooling slots.

DO NOT allow children or untrained persons to operate the generating set.

DO NOT run the generating set unattended. Turn off the generating set before leaving the area.

Allow 0.9 meter of space around the generator to ensure good cooling.



DANGER

MOVING PARTS

Moving parts can cause severe injury. Keep hands and feet away.

DO NOT operate generating setl. with covers, shrouds, or guards removed.

DO NOT wear loose-fitting clothing, dangling drawstrings or items that could be caught. Tie up long hair and remove jewelry.

The moving parts may catch operator's hand, feet, hair or clothes that will cause traumatic amputation or broken bones, fracture.

NEVER place fingers, hands, or body near the generating setl. when it is running.



⚠ DANGER

ELECTRIC SHOCK

This generating set produces powerful voltage and the electricity **CAN KILL YOU**.

This generating set must be properly connected to an appropriate ground to help prevent electric shock.

Failure to properly ground generating set can result in electrocution, especially if the generating set is equipped with a wheel kit.

Consult an electrician for local grounding requirements.

Installation should be performed by a certified electrician.

Improper Installation can result in electric shock and death.

To reduce the risk of electric shock. **DO NOT** use electrical cords that are worn, frayed, bare or otherwise damaged.

DO NOT touch bare wires or receptacles.

DO NOT operate generating set in wet weather. Keep the

generating set dry.

DO NOT handle generating set or electrical cords while standing in water, while barefoot, or while hands or feet are wet.

Keep children or pets away from the generating set.

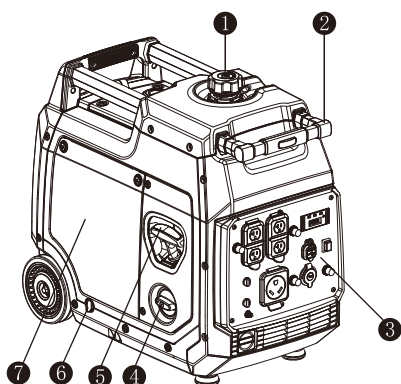
DO NOT hook up any generating set to a building electrical system without the proper use and installation of a transfer switch installed by a qualified electrician.

When using generating set for backup power, notify utility company. Use approved transfer generating set to isolate generating set from electric utility.

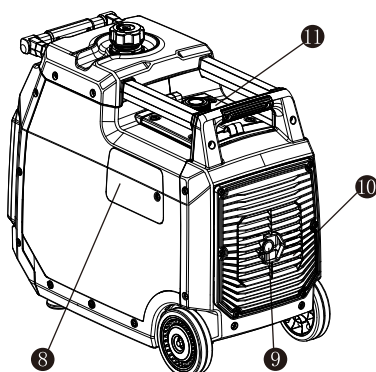
Failure to isolate generating set from power utility can result in death or injury to electric utility workers due to backfeed of electrical energy.

II. Features and controls

(applicable model)

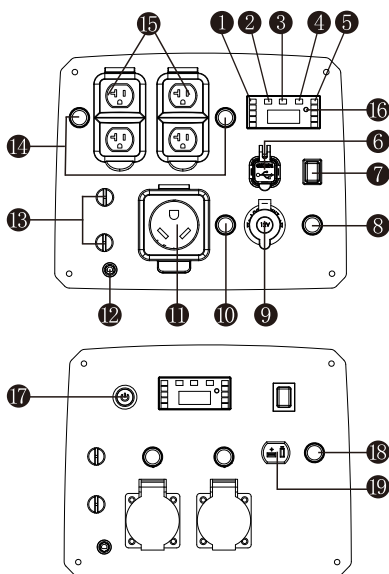


- ① Fuel tank cap
- ② Telescoping Handle
- ③ Control Panel
- ④ Combination switch (STOP&OFF&RUN&CHOKE)
- ⑤ Recoil starter
- ⑥ Oil drain plug



- ⑦ Air filter maintenance cover
- ⑧ Battery maintenance cover
- ⑨ Muffler
- ⑩ Muffler blind window
- ⑪ Spark plug maintenance cover

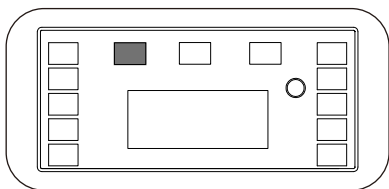
Control Panel



- ① Power indicator
- ② Overload indicator
- ③ Running indicator
- ④ Oil alarm lamp
- ⑤ Fuel display
- ⑥ USB port
- ⑦ Energy-saving switch
- ⑧ DC Circuit breaker
- ⑨ 12V DC
- ⑩ AC Circuit breaker
- ⑪ AC American-type three-hole receptacle
- ⑫ Ground terminal
- ⑬ Parallel kit terminal
- ⑭ AC 20A Circuit breaker
- ⑮ AC output receptacle
- ⑯ Reset button
- ⑰ Push-button start
- ⑱ Circuit breaker
- ⑲ T-type DC output

Overload indicator (red)

When the overload indicator is on, it indicates that the generating set is overload and then the AC protector works. It will stop the output of generating set to protect the electric equipment and the generating set itself. At this time, the running indicator (green) is off and the overload indicator (red) is on, but the engine is still in running state.

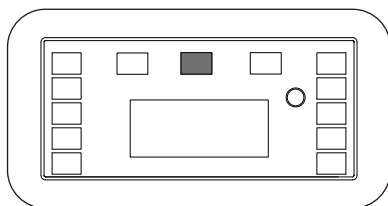


When the generating set has no output and the overload indicator is on, please take the following steps:

1. Lower the total power of the connected electric devices to the rated output range of generating set.
2. Check the air intake for impurities and check the control parts for abnormal situation. Handle immediately if necessary.
3. Press the reset button.

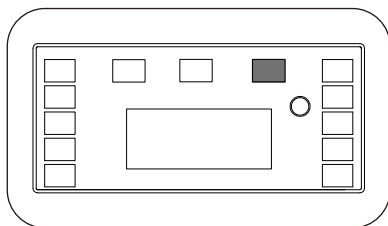
Running indicator (green)

The running indicator lights up when generating set starts and has normal output.



Oil alarm lamp (yellow)

When the oil level drops below the lower limit, the oil protection system will stop the engine automatically and oil alarming lamp will blink by pulling the recoil starter. The engine will not run until the oil has been filled to the proper level.



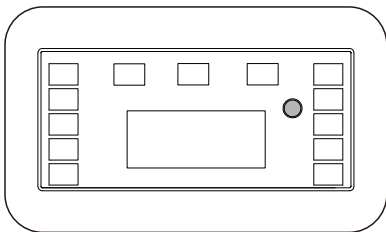
Note: If engine flames out or fails to start, turn the combination switch to “RUN” position and then pull the recoil starter. If the oil alarming lamp lights up, it shows lack of oil. Please add appropriate oil and restart the engine.

Reset button

The reset button is used to restore output if an overload occurs. To restore output, reduce the loads and press the reset button.

During normal operation, press Reset button to

alternatively display voltage, frequency, running time, etc.

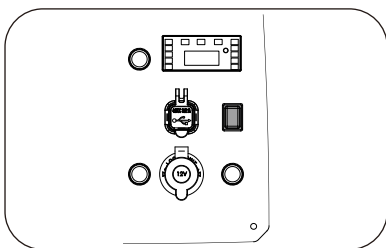


Energy-saving switch

When the energy-saving switch is in “ON” position, the energy saving equipment controls the engine rotate speed according to the connected loads. There will be good fuel consumption and low noise.

When the energy-saving switch is in “OFF” position, the engine will always run in rated rotate speed no matter it is connected to the loads or not.

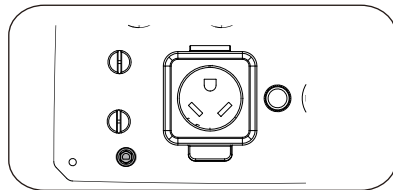
Note: Please set the energy-saving switch to “OFF” position when connect to air compressor, sinking pump etc., because these equipments need large starting current.



Grounding terminal

The grounding terminal is designed to prevent electric shock by connecting it to

the grounding wire. The generating set must be properly grounded before operation.



Combination switch (STOP&OFF&RUN&CHOKE)

Stop: The stop position of the generator.

Note: After the generating set is unloaded, please run for 3 minutes at no load to stabilize the temperature, then stop the generating set.

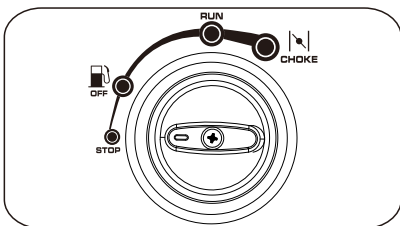
Off: Fuel off without stop. This feature will burn off the remaining fuel in the carburetor, improve the reliability of the generating set.

Note: If you do not plan to use the generator in the near future, please use this function, or drain the fuel inside the carburetor through the carburetor drain bolt.

Run: The generating set operates normally.

Choke: Close the choke.

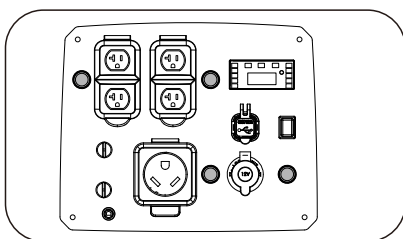
Note: Turn to choke position to start when engine is cold, and turn to Run position to start when engine is hot.



Circuit breaker

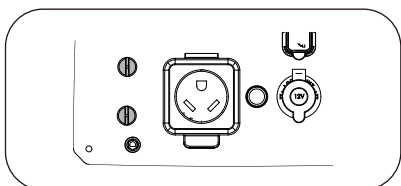
When the generator is overloaded or overheated for a long time, the thermal protector works. Under protected, please reduce the load or run it for a few minutes without load. Press the thermal protector button, then output recovers.

Note: The thermal protector is influenced by factors, such as operation current and ambient temperature, so the protection time varies.



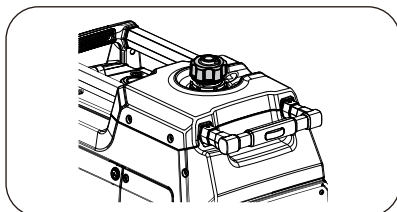
Parallel kit terminal

It is used for parallel operation with another inverter (parallel kit sold separately).

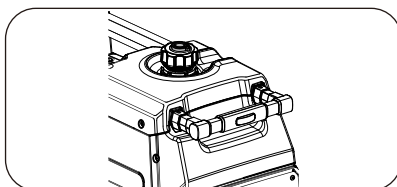


Fuel tank cap

Remove the fuel tank cap by rotating it anticlockwise.



Ventilation knob (If applicable)



The fuel cap is equipped with a ventilation knob to prevent fuel leakage. During operation, the ventilation knob must be in the "ON" position for the generator to operate normally. When the generator will not be used for a long time or needs to be transported, turn the ventilation knob to the "OFF" position to prevent fuel leakage.

Telescoping handle

When moving the generator, please hold the telescoping handle and press the button on it, and pull it outward.

Note: Before moving, please turn off the generator and fuel switch. Please move the generator on a relatively flat ground. Do not perform the movement on a surface where the pit exceeds 40mm.

III. Operating

1. Operating checklist

1 Operating Location

Only use OUTSIDE and place the generating set in a well-ventilated area.

Only operate the generating set on a flat, level surface and in a clean, dry operating environment.

Allow two feet clearance on all side of the generating set while operating it outdoors.

Operate in specified area, if any problem on applicable occasion, please consult the authorized local dealers. In some areas, generating set must be registered with the local utility. Generating set used to construction sites may be subject to additional rules and regulations.



⚠ DANGER

TOXIC FUMES

The exhaust of the generating set contains carbon monoxide, Using engine indoors **CAN KILL YOU!**

NEVER use inside any building or any kind of enclosure, **EVEN IF** doors and windows are open.

Place the generating set in a well-ventilated and clean area. Note the wind direction

and air current when place the generating set.

High altitude

This generating set may require a high altitude carburetor kit to ensure correct operation at high altitudes. Consult the authorized local dealer for high altitude kit information if you always operate your engine at altitudes above 5, 000 feet (1,500 meters).

⚠ CAUTION

Even with carburetor modification, generating set horsepower will decrease about 3.5% for each 1,000 feet (300 meters) increase in altitude. The effect of altitude on horsepower will be greater than this if no carburetor modification is made.

⚠ CAUTION

Operation the engine at altitude below 5, 000 feet (1,500 meters) with modified carburetor may cause the generating set to overheat and result in serious engine damage. Please restore factory specifications of the carburetor at the dealer when using the engine in a low altitude area.

2 Operating Condition

Check for loose or damaged parts, signs of oil or fuel leaks, and any other condition that may affect proper operation.

Repair or replace all damaged or defective parts immediately.

⚠ WARNING

Failing to correct problem(s) before operation could result in property damage, serious injury or DEATH.

Clean the dirt or foreign objects on the surface around exhaust and air intake of generator.

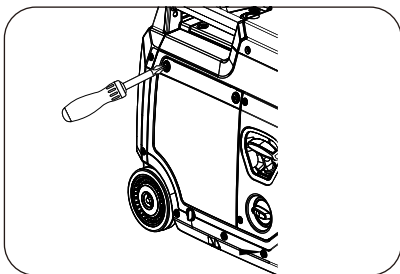
DO NOT move or tip the generating set during operation.

Use generating set only for intended uses. If you have questions about intended use, ask your local dealer.

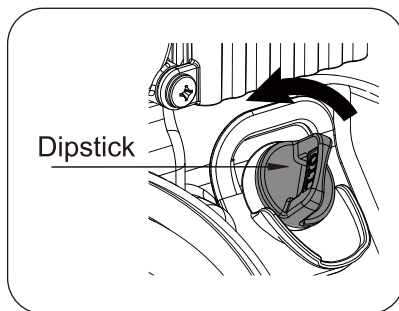
3 Engine oil check

Place the engine on a level surface with engine stopped. Check the engine oil level.

Remove the oil maintenance cover.



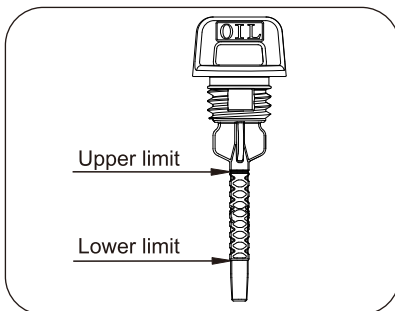
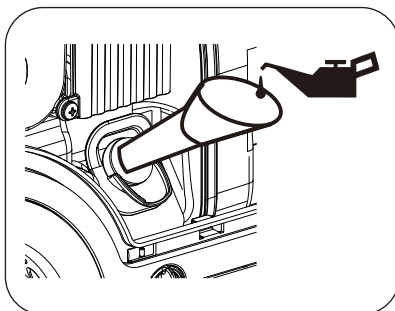
Remove the dipstick and wipe it clean.



Reinstall dipstick into hole; rest on oil fill neck, DO NOT thread cap into hole.

Remove the dipstick again and check oil level. Level should be between the upper and lower limit.

Fill to the upper limit of the dipstick with the recommended oil if the oil level is too low.



Reinstall and fully tighten the dipstick.

Refer to **add oil** instruction in **MAINTENANCE** section for more information.

Oil capacity(rated):

See Parameters

WARNING

Oil is a major factor affecting performance and service life. Use 4-stroke automotive detergent oil recommended in the **MAINTENANCE** section of this manual.

CAUTION

Operate generating set only on leveled surfaces. The engine is equipped with a low oil sensor (applicable types) that will automatic stop the engine when the oil level falls below the safe limit. To avoid the inconvenience of an unexpected shutdown. Fill to the upper limit and check the oil level regularly.

WARNING

This engine is not filled with oil before send out from the factory. Any attempt to crank or start the engine before it has been properly filled with the recommended type and amount of oil may result in engine damage and void your warranty.

4 Generating set fuel check

With the engine stopped, check the fuel level. Refill the fuel tank if necessary.

Use clean, fresh, regular unleaded gasoline.

DO NOT mix oil with gasoline. Always wipe up any spilled fuel.

CAUTION

Pressure can build up in the fuel tank. Allow the generating set to cool for at least two minutes before removing fuel cap.

Loosen the fuel cap slowly to relieve any pressure in the tank.

Be sure not to fill above the upper limit mark. Always allow room for fuel expansion.

Fuel capacity (rated):

See parameters.



⚠ DANGER

FIRE OR EXPLOSION

Gasoline is highly flammable and extremely explosive.

Keep flammable items away while handling gasoline.

Fill fuel tank outdoors and in a well-ventilated area with the generating set stopped.

Always wipe off spilled fuel and wait until the fuel has dried before starting the generating set.

DO NOT operate the generating set with known leaks in the fuel system. Regularly check if there is any leak on fuel system.

Use proper fuel storage and handling procedures. DO NOT store fuel or other flammable materials nearby.

Keep fire extinguisher handy and be prepared if a fire starts.

NEVER use engine or carburetor cleaner products in the fuel tank or permanent damage may occur.

It is important to prevent gum deposits from forming in essential fuel system parts,

Such as the carburetor, fuel filter, fuel hose or tank during storage. Also, experience indicates that alcohol-blended fuels (called gasohol, ethanol or methanol) can attract moisture, which leads to separation and formation of acids during storage.

Acidic fuel can damage the fuel system of the generating set while in storage. Be sure to review the instructions given in "Storage" section.

Gasoline/Alcohol blends: up to 10% alcohol, 90% unleaded gasoline by volume is approved as a fuel. Other gasoline/alcohol blends are not approved.

Effects of old, stale or contaminated fuel are not warrantable.

⚠ DANGER

Do not fill the fuel tank above the upper limit. Over fill will result in engine die or damage the carbon canister (if equipped) and void your warranty.

⚠ CAUTION

To minimize gum deposits in your fuel system and to insure easy starting, do not use gasoline left over from the previous season.

⚠ CAUTION

Allow the generating set to cool for at least two minutes before removing fuel cap when adding fuel.

Loosen the fuel cap slowly to relieve any pressure in the tank.

5 Generating set grounding

The generating set must be properly connected to an appropriate ground. It helps prevent electrical shock if a ground fault condition exists in the generating set or in connected electrical devices, especially when the unit is equipped with a wheel kit.

Proper grounding also helps dissipate static electricity, which often builds up in ungrounded devices.



⚠ DANGER

Electrical Shock

Failure to properly ground the generating set can result in electric shock.

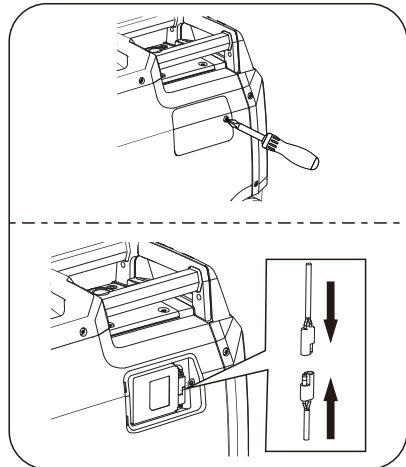
A ground terminal has been provided on the generating set.

For remote grounding, connect a length of heavy gauge (4mm^2) copper wire between the generating set ground terminal and a copper rod driven into the ground.

Local electrical codes may also require proper grounding of the unit. We strongly recommend that you consult with a qualified electrician for grounding requirements in your area.

6 Battery connection (If applicable)

Remove the battery maintenance cover, connect the battery terminal to the motor terminal, and reinstall the maintenance cover.



2. Starting the generating set

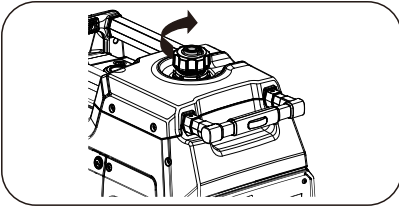
Pull the starter handle 6-8 times to prefill fuel system before initial operation or removal from long term storage. Failure to do so could result in bad starting experience.

1

Perform operating checklist (see page 10) and remove all loads.

2 (Applicable types)

Turn the ventilation knob of fuel cap to the “ON” position to ensure fuel flow.



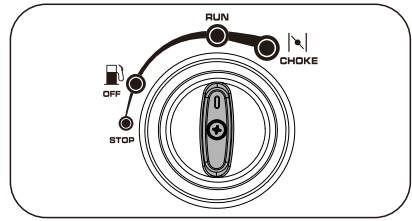
3 (Suitable for hand start)

Cold start

Turn the combination switch to “CHOKE” position to shut off the choke.

Warm start

Turn the combination switch to “RUN” position, if not started, please turn the combination switch to “CHOKE” position before restarting.

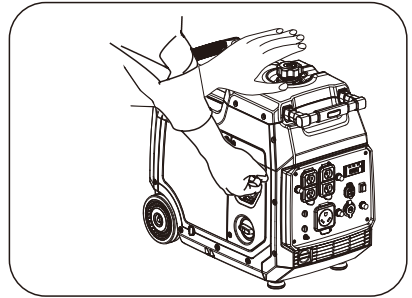


4 Manual start

⚠ WARNING

Check starter cord conditions before operating. Have it replaced immediately by local authorized dealer if cord is frayed.

1. When starting engine, grasp the recoil starter handle and pull slowly until resistance is felt. Then pull rapidly to avoid kickback. When pulling the recoil starter, firmly grasp the generator to avoid tumble of generator or personal injury caused by tumble.





⚠ WARNING

KICKBACK

Rapid retraction of the starter cord will pull hand and arm towards the engine faster than you can let go.

Unintentional startup can result in entanglement, traumatic amputation or laceration. Broken bones, fractures, bruises or sprains could result.

2. Turn the combination switch to "RUN" position.

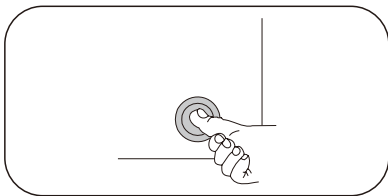
5

electric starting

(Model used)

Cold / hot engine start (electric start): Turn the combination switch to "Run" position.

Press the engine switch and release it after the engine starts.



If it fails to start, release the switch. The unit will restart by itself. If it fails to start after repeated 5 times, please allow the generator to cool for 1 minute and start again.

⚠ CAUTION

Never continue to start the generator without removing the fault.

It's forbidden to start the generator after changing to another battery without authorization.

⚠ CAUTION

If after three attempts to start, the generator still fails to start or stops after starting, please search and solve the fault.

⚠ WARNING

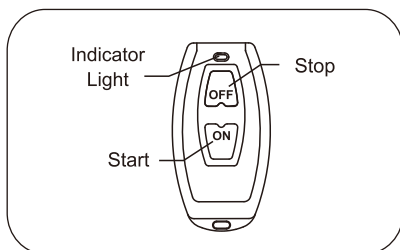
The engine shall not exceed 15 seconds for each continuous start. If it fails to start, please allow the generator to cool for 1 minute before next attempt to start. Failure to do so will damage the starter motor.

⚠ WARNING

When the generator is idle for a long time or improper use or other factors, the lithium battery is undercharging so that the generator cannot be electrically started, follow the manual start steps to control the choke and start the generator manually. The generator will automatically charge the lithium battery during operation.

Wireless remote control

(If applicable)



Press and hold the “ON” key for 1 second and release it to start the generator.

If it fails to start, the generator will restart by itself. If it fails to start after repeated 5 times, please allow the generator to cool for 1 minute and start again.

NOTE: Sometimes the generator can take a few attempts to start in cold weather. If machine does not start in the first 10 seconds, wait for 30 seconds before attempting again.

If the motor turns a little then stops when you press the Start key, it may indicate a low battery. Charge the battery before operation or start by recoil start.

⚠ WARNING

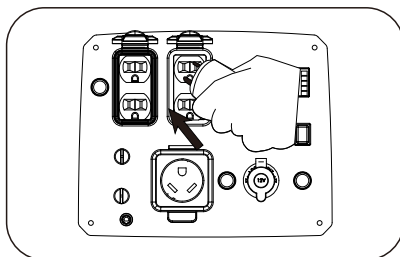
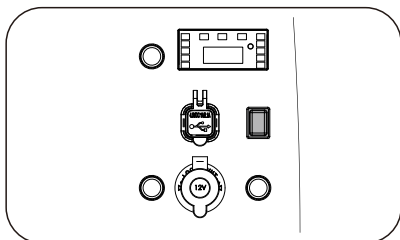
Remote transmitter and generator learning

The generator and the remote controller have been successfully matched at the factory, and users do not need to perform matching when use.

If you need to re-match the remote transmitter, press and hold the start button for 5S and release, then press the “ON” button of remote control transmitter for 1S, if the generator starts, the remote transmitter is successfully matched.

When electrical device requires a large starting current, please put the energy-saving switch in the “OFF” position; When the starting current required by electrical device is small, put the energy-saving switch in the “ON” position.

After completing the operations above, the generator can be connected to electrical devices.



⚠ WARNING

It is prohibited to start or close the generating set when the output terminal of generating set is connected to an electric device and the electric device is in “ON” state.

3. Connect to electrical devices

1. Inspect power cord for damage before using. There is a hazard of electrical shock from crushing, cutting or heat damage.
2. Make sure that the generating set has been properly grounded. If the electric devices require grounding, the generating set must ground.
3. Make sure that the electric devices are in “OFF” position.
4. Allow the engine to stabilize and warm up for a few minutes after starting.
5. Connect and start the electric devices.
6. Turn off all electric devices and disconnect them from the generating set.
7. If the generating set supplies for several loads or electric devices, start the smallest one first and the largest one last.

⚠ DANGER

If connected devices overheat, turn them off and disconnect them from generating set.



⚠ DANGER

ELECTRICAL SHOCK

To reduce the risk of electrical shock, **DO NOT** use electrical cords that are worn, frayed, bare or otherwise damaged.

DO NOT touch bare wires or receptacles.

DO NOT handle generating set or electrical cords while standing in water, while barefoot, or while hands or feet are wet.

Loading capacity

⚠ WARNING

DO NOT overload the generating set.

Exceeding the generating set's capacity can damage the generating set and/or electric devices connected to it.

You must make sure your generating set can supply enough rated (running) and (starting) watts for the electrical devices at the same time. Follow these simple steps to calculate the running and starting watts necessary for your purposes.

a. Count the electrical devices you will power at the same time.

b. The amount of power you need to run with the devices is the total rated (running) watts of these items.

c. Starting power is the power needed shortly when electric devices start. Since not all devices start at the same time, starting power can be estimated by the maximum power of all devices plus the total power counted in step b.

⚠ WARNING

It is necessary to equip with circuit protector or switch to isolate the generating set from the electric utility when the generating set is mainly used for backup. Failure to isolate the generating set from the power utility may result in injury or death to electric utility workers and damage to the generating set due to back feed of electrical energy.

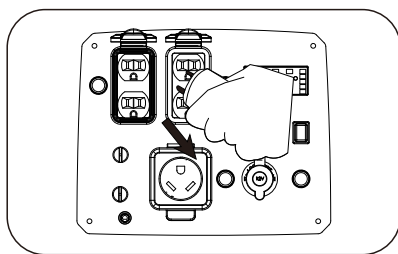
Wattage Reference Chart

| Electric equipment | | Rate power(W) | Starting power(W) |
|--------------------|--------------------------|---------------|-------------------|
| Appliances | Tablet TV 27" | 80 | 100 |
| | Energy saving lamp | 5-50 | 5-50 |
| | Electric cooker | 1000 | 1000 |
| | Computer | 250 | 250 |
| | Electric fan | 50 | 100 |
| | Washing machine | 250 | 500 |
| | Refrigerator | 50 | 300 |
| | Air-conditioner | 1600 | 3200 |
| Electric tooling | Electric hammer | 1000 | 1500 |
| | Impact Hammer | 3000 | 6000 |
| | Water pump | 2200 | 5000 |
| | Electric welding machine | 5000 | 7500 |
| | Air compressor | 5000 | 10000 |

4. Stopping the generating set

1

Remove the connectors of all electric equipment from the generating set panel.



⚠ WARNING

NEVER stop the engine with electrical devices connected and running.

2

Turn the combination switch to the “stop” position, the generator stops operation.

NOTE: If you need to burn off the remaining fuel in carburetor, please turn the engine switch to the FUEL OFF position. This feature will burn off the remaining fuel in the carburetor, helping to combat fuel degradation and prolong engine life. You may also choose to shut off the engine quickly (e.g. for refueling, moving the generator," etc.) by turning the engine switch to the OFF

position, but this option will let fuel remain in the carburetor. Be sure to drain the carburetor after use to prolong engine life.

Wireless remote shutdown (if applicable)

Press and hold the “OFF” button for at least 0.3 seconds to stop the generator. After the generator stops, turn the combination switch to the “stop” position.

Note: When the control distance is shortened or the indicator light is on but the remote control function is not available, Wireless remote replace the battery. Contact your local dealer for more information.

One-button start-stop (if applicable)

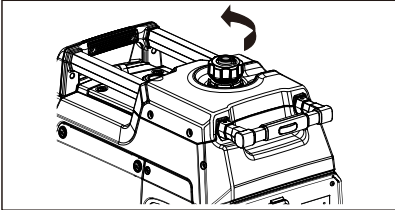
Press the start-stop button to turn off the generator. After the generator shutdown, turn the combination switch to “stop” position.

⚠ WARNING

If the generator will not be used for a long time, please turn the combination switch to the “off” position. After the fuel in the carburetor oil cup to runs out and the generator automatically shuts down, turn the knob to the “stop” position. If the combination switch knob is not turned to the “stop” position, there is a risk of fuel

3 (If applicable)

After the generator stops and cools down, turn the fuel tank cap ventilation knob to “OFF” position.



5. Parallel operation

(If applicable)

During parallel operation, energy-saving switches of generating sets should be in the same position.

1

Connect one generating set to other generating set(s) in parallel. Use the parallel kit to make the parallel connection (the parallel kit needs to be purchased separately).

2

Insert the plug of the parallel kit into the parallel socket on the panel, and start the generators in turn. Make sure that the output indicator of each generator is in normal state (green).

⚠ WARNING

When connecting, please connect the plug to the panel socket of the same color.

3

Connect the plug of electric devices to the AC sockets of the parallel kit.

4

Run the electric devices.

CAUTION

The total power of electric devices cannot exceed the rated power of generating set. The manufacturers of electric devices or tools always list the rated power of similar models or serial number.

When slightly overload, the load indicator flashes continuously, which may shorten the life of the generator. When severe overload, the load indicator light keeps on, which may cause damage to the generator.

WARNING

Improper maintenance or failure to correct a problem before operation can cause a malfunction and result in property damage, serious injury or DEATH.

Improper maintenance will void your warranty.



DANGER

Accidental starts can cause Severe injury or death. Remove the spark plug cap and ground generating set before performing any service.

CAUTION

The filter element may contains PAHs, PAHs are harmful for your health. Please wear gloves for protection during air filter maintenance.

IV. Maintenance

It is the operator's responsibility to complete all scheduled maintenance in a timely manner. Correct any issue before operating the generating set. Always follow the inspection and maintenance recommendations and schedules in this manual.

1. Maintenance schedule

Stop the generating set before serving, disconnect all electric devices and battery (If equipped), and cool down the generating set completely.

Serve the generating set in a clean, dry and flat area, so that no accident would happen during the serving. Please make the wheel in brake state to stop accidental movement of generating set.

Follow the service intervals indicated in the chart below. Service your generating set more frequently when operating in adverse conditions.

Contact your local authorized service dealer for your generating set or engine maintenance needs.

| | | Each time before use | The first month or 10 hours ^{note2} | Every three months or 50 hours ^{note2} | Every six months or 100 hours ^{note2} | Every year or 300 hours ^{note2} |
|--|---------------------------|----------------------------------|--|---|--|--|
| Engine oil | Inspection | √ | | | | |
| | Replacement | | √ | | √ | |
| Air filter | Inspection | √ | | | | |
| | Cleaning | | | √ ^{note3} | | |
| Spark plug | Inspection and adjustment | | | | √ | |
| | Replacement | | | | | √ |
| Spark Extinguisher ^{note1} | Cleaning | | | | √ | |
| Idle speed | Inspection and adjustment | | | | | √ ^{note4} |
| Valve clearance | Inspection and adjustment | | | | | √ ^{note4} |
| Carbon canister ^{note1} | Inspection | Every two years ^{note4} | | | | |
| Low permeability oil tube ^{note1} | Inspection | Every two years ^{note4} | | | | |
| Oil tube | Inspection | Every two years ^{note4} | | | | |

NOTE :

Note1: Applicable types (If available).

Note2: Before each season and after then (whichever comes first).

Note3: Service more frequently under severe, dusty, dirty conditions.

Note4: To be performed by knowledgeable, experienced owners or the authorized dealer.

2. Generating set maintenance

Use a damp cloth to clean exterior surfaces of the generating set. Use a soft brush to clean the dirt and oil.

Use an air compressor (25 PSI) to clear dirt and debris from the generating set.

Inspect all air vents and cooling slots to ensure that they are clean and unobstructed.

WARNING

DO NOT use water to clean the generating set. Water can enter the generating set through the cooling slots and damage the generating set windings.

WARNING

It is forbidden to tamper with the generator in any of the above ways.

Do not tamper with the inverter speed. The generator is set to the correct rated frequency and voltage before factory. Tampering with the factory settings of the inverter without authorization will void your product warranty.

3. Engine maintenance

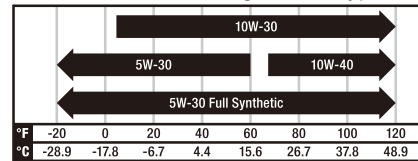
Engine oil

Only use four-stroke engine oil of SJ, SL or equivalent level which are in accordance with or higher than API standard.

Check the API label on oil bottle or other container, and make sure the “SJ, SL” or equivalent level letter is in the label.

SAE 10W-30 is recommended for general, all-temperature use. Other viscosities shown in the chart may be used when the average temperature in your area is within the indicated range.

Recommended Engine Oil Type



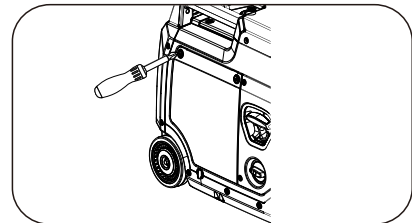
Ambient temperature

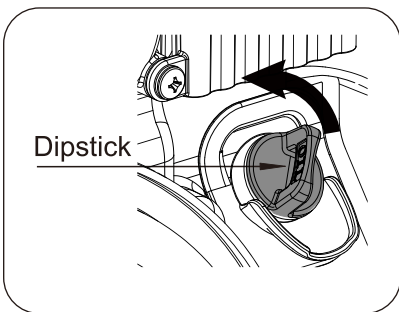
Oil capacity (rated):

See parameters

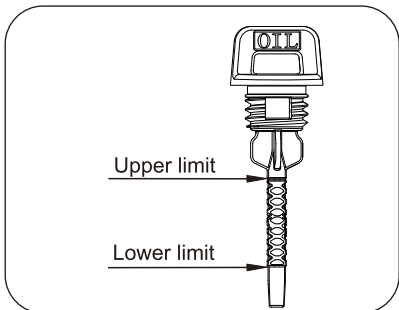
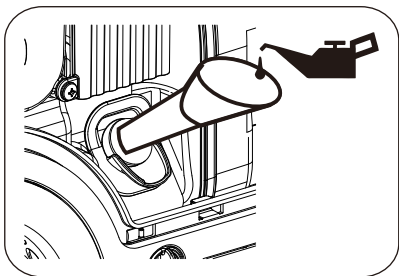
Add oil

- Place the engine on a level Surface.
- Remove the air filter maintenance cover and dipstick, wipe it clean.





c. Add recommended oil to the upper limit.



d. Fully tighten the dipstick and reinstall the air filter maintenance cover.

⚠ CAUTION

Oil level check

Insert the dipstick into filler port and stay at the filler neck. Do not screw the dipstick into the port, then remove the dipstick and check the oil level.

e. Properly dispose of any used oil at an approved waste management facility.

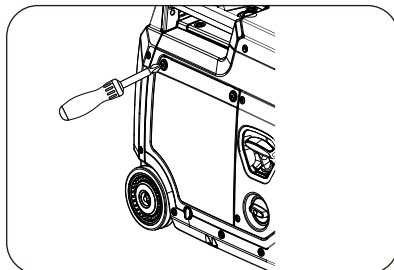
Change oil

⚠ CAUTION

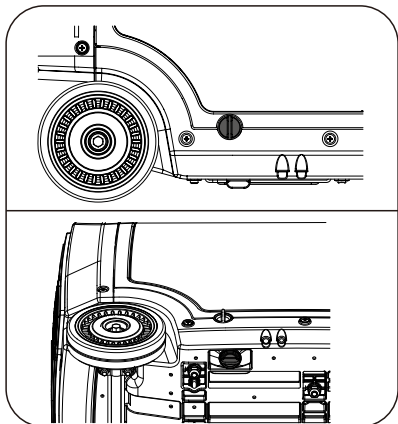
Change oil when the engine is warm from operation.

a. Place the machine on a level surface which is 300mm higher than the ground.

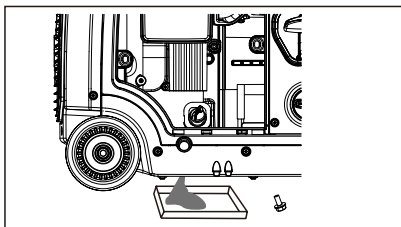
b. Remove the air filter maintenance cover.



c. Remove the oil drain plug.

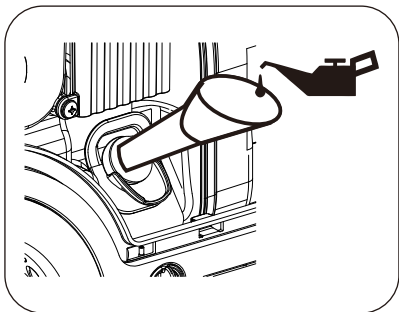


d. Place the oil container box under the oil drain hole of the generator and remove the drain bolt to drain out all the used oil.



e. Fully tighten the drain bolt before reinstalling the drain plug.

f. Add recommended oil to the upper limit.



g. Fully tighten the dipstick and install the air filter maintenance cover back in place.

h. Properly dispose of any used oil at an approved waste management facility.

⚠ WARNING

The engine is not filled with oil at the factory. Any operation before it has been properly filled with the recommended type and amount of oil may result in engine damage and void your warranty.

Air filter

a. Remove the Air filter maintenance cover.

b. Loosen the filter fix clamp and remove the cover of the air filter.

c. Remove the foam filter element.

d. Wash in liquid detergent and warm water.

e. Squeeze thoroughly dry in a clean cloth.

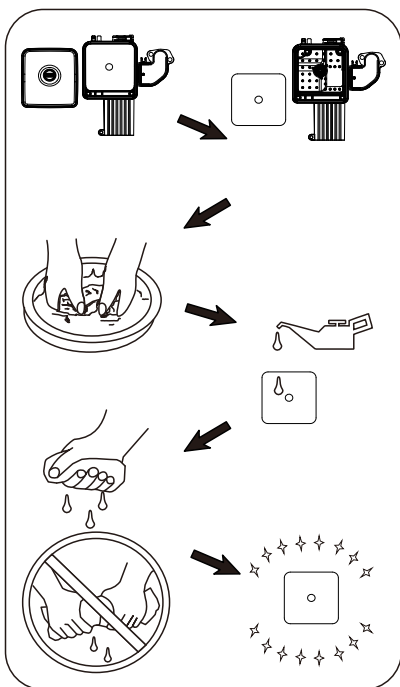
f. Saturate in clean engine oil.

g. Squeeze in a clean absorbent cloth to remove excess oil.

h. Assemble the filter element onto the filter unit

i. Assemble the filter fix clamp.

j. Reinstall the Air filter maintenance cover.



⚠ WARNING

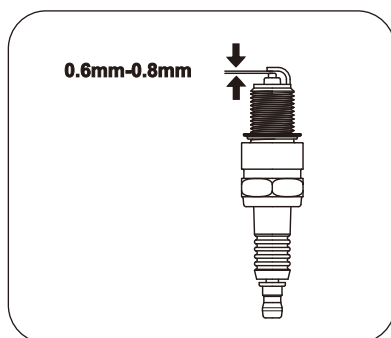
DO NOT run the engine without the air filter, or serious danger can result.

Spark plug

- Remove the maintenance cover of spark plug.
- Remove the spark plug cap.
- Using socket wrench to loose and remove the spark plug.
- Inspect the spark plug and spark plug washer, if it was broken or worn, replace with a new one. Clean the spark plug with wire brush if reuse it.
- Check spark plug gap. Carefully bend side electrode to adjust the gap if necessary.

Spark plug gap:

0.6mm-0.8mm



- Carefully thread the plug into the engine **by hand**.
- After the spark plug is seated, use spark plug wrench to tighten the plug.

Spark Plug Tighten Torque:

15-20 N.m

- Attach the spark cap to the plug and connect the spark plug wire to the plug.

⚠ WARNING

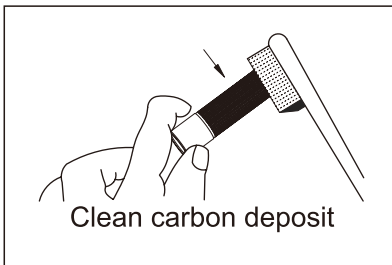
Only use recommended spark plug or equivalent. DO NOT use spark plugs that have improper heat range.

- Install spark plug maintenance cover.

Spark Arrester

(Applicable types)

- a. Allow the generating set to cool completely before servicing the spark arrester.
- b. Remove the muffler blind window first.
- c. Remove the spark arrester screen.
- d. Carefully remove the carbon deposits from the spark arrester screen with a wire brush.
- e. Replace the spark arrester if it is damaged.
- f. Reinstall the spark arrester in the muffler and reinstall the muffler blind window.



V. Trouble-shooting

| Failure | Trouble | Solution |
|-------------------------------|---|---|
| Generating set fails to start | Combination switch is in "OFF" or "STOP" position. | When engine is cold, turn switch to "CHOKE", and follow starting procedure to start the generating set. When engine is hot, turn switch to "RUN", and follow starting procedure to start the generating set, |
| | Lack of fuel. | Fill fuel tank per instructions in this manual. |
| | Lack of engine oil. | Check oil level. This engine is equipped with a low oil sensor. The engine cannot be started unless the oil level is above the prescribed lower limit. |
| | No ignition. | Remove the spark plug cap. Clean any dirt around the plug base, and then remove the spark plug. Install the spark plug in the plug cap. Turn the combination switch to "RUN" position. Grounding the electrode to any engine ground, pull the recoil starter to see if sparks jump across the gap. If there is no spark, replace the plug. Reinstall the plug and start engine according to instructions in this manual. Consult Customer Service if necessary. |
| | Spark plug is splashed by fuel | Remove the spark plug and wipe the fuel. |
| | The generating set flames out after running for a certain time. | Turn the ventilation knob on the fuel tank cap to "ON" position; Check the fuel and oil level. Add them if necessary. |
| | Battery undercharge (electric start) | Charge the battery by starting the generator manually (at least 30 minutes). After closing the choke manually, start the generator according to the manual startup steps. |
| Generating set has no output | Breaker trip | Reset circuit breakers. |
| | Inadequate cord sets or extension cords. | Check cord sets or extension cords capabilities in section controls; cable size in this manual. Consult Customer Service if necessary. |

VI. Storage and transportation

Storage

The generating set should be started at least once every 2 weeks and allowed to run for at least 20 minutes. Follow the instructions below for longer term storage if the generating set will be out of service for 2 months or more.



Fire or explosion

Gasoline is highly flammable and extremely explosive.

Empty the fuel tank and shut off fuel valve before storing or transporting this generating set.

1. Allow the generating set to cool completely before storage.
2. Clean the generating set according to instructions in Maintenance section.
3. Drain all fuel completely from the fuel tank, fuel hose and carburetor to prevent gum from forming.
4. Turn the combination switch in "STOP" position to cut off the fuel.
5. Remove the oil drain plug to drain out the oil (See steps c, d, e at page 23).
6. Remove the spark plug and pour about 15 ml of fresh oil into the cylinder. Pull the recoil starter slightly to distribute the oil and lubricate the cylinder. And then

attach the spark plug.

7. Store the unit in a clean, dry area out of direct sunlight.

8. please disconnect the battery.

Transportation

When generator transportation or short term storage, the generator should be in the normal operating position and fixed vertically to prevent fuel leakage. The combination switch should be in the "stop" position and knob of the fuel cap should be turned to the "OFF" position.

WARNING

When transporting:

Do not overfill the tank. Do not operate the generating set while it is on vehicle. Take the generating set off the vehicle and use it in a well-ventilated place. Avoid a place exposed to direct sunlight when putting the generating set on a vehicle. If the generating set is left in an enclosed vehicle for many hours, high temperature inside the vehicle could cause fuel to vaporize resulting in a possible explosion. Do not drive on a rough road for an extended period with the generating set on board. If you must transport the generating set on a rough road, drain the fuel from the generating set beforehand.

VII. Specification

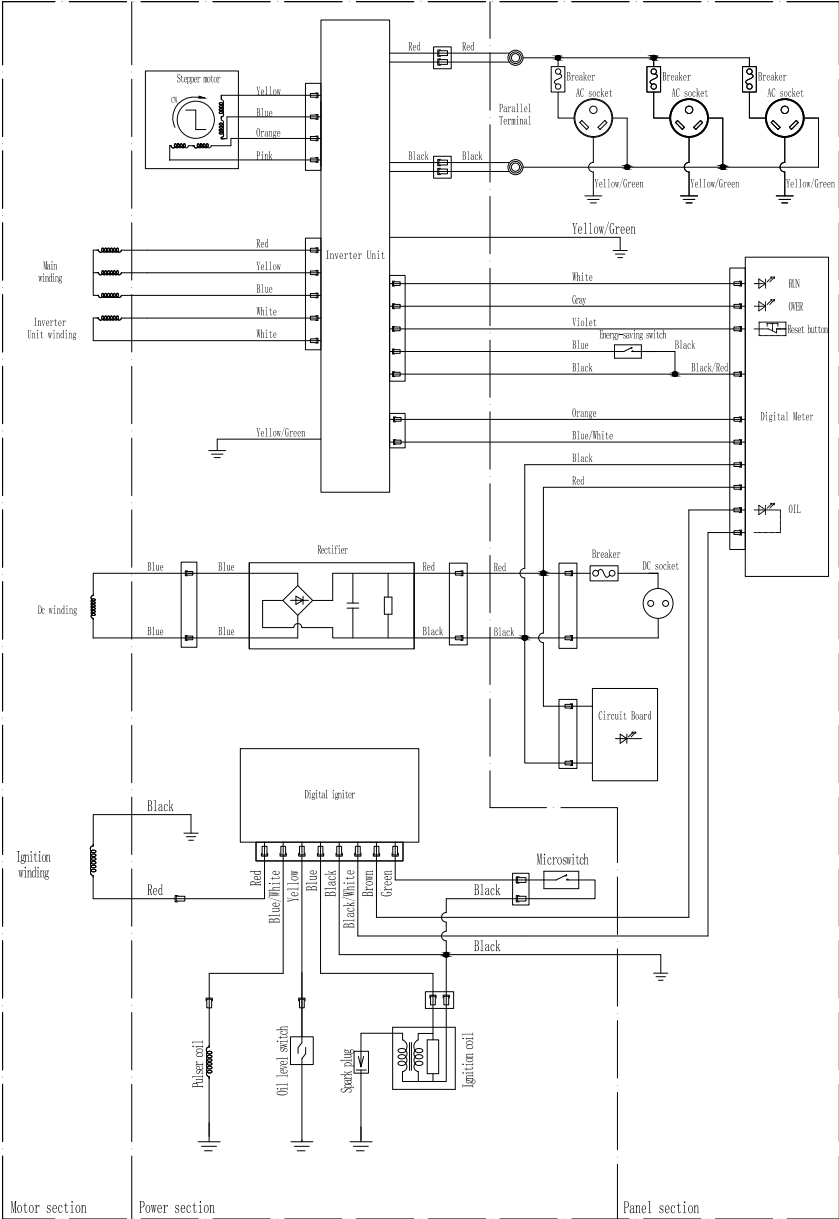
1. Specification parameter table

| Model | | BQH3500(E) | | BQH4000(E) | |
|------------------|---------------------------------------|----------------------------------|---------|-------------------------------|---------|
| Feature | | | | | |
| Engine parameter | Engine model | NH225(E)-2 | | NH225(E)-2 | |
| | Style | OHV | | | |
| | Displacement (cm ³) | 224 | | | |
| | Ignition system | CDI | | | |
| | Start style | Hand recoil or electric starting | | | |
| | Oil capacity(L) | 0.6 | | | |
| Series parameter | Frequency(Hz) | 50 | 60 | 50 | 60 |
| | Voltage(V) | 230 | 120/220 | 100/220/230 | 110/120 |
| | Rated power(kW) | 3.2 | | 3.6 | |
| | Maximum power(kW) | 3.5 | | 3.8 | |
| | Power factor | 1 | | 1 | |
| | Insulation rate | F | | F | |
| | Fuel capacity(L) | 7.8/7.2(Reversal Valve) | | 7.8/7.2(Reversal Valve) | |
| | Operating temperature(℃) | -10~40 | | -10~40 | |
| | Max. site altitude of installation(m) | 1500 | | 1500 | |
| | Measured sound pressure level(dB(A)) | ≤71 | | ≤71 | |
| | Measurement uncertainty(dB(A)) | ≤1.5 | | ≤1.5 | |
| | Guaranteed sound power level(dB(A)) | ≤92 | | ≤92 | |
| | Net weight(kg) | BQH3500:32.5 BQH3500E:34.5 | | BQH4000:32.5 BQH4000E:34.5 | |

Note: The generating set with different specification and configurations may have different parameters and may change at any time without notice.

2. Wiring diagram

BQH35000/BQH4000 recoil start



[illegible]

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Producer:

CHONGQING ZONGSHEN GENERAL POWER MACHINE CO., LTD.

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Phone: 0086-23-66372525

Hot Line: 0086-4001380026

<http://www.zongshenpower.com>

1596#/V1.7



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