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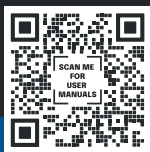
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# USER MANUAL



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Löwenzahn Germany GmbH  
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LZ2250iS

LZ3150iS

LZ4500iE

LZ6250iE

LZ4500i

LZ4500iD

LZ9000iD

SILENT

OPEN FRAME

# INHALT

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## 1. SAFETY INSTRUCTIONS

To ensure the safety of persons and property, please read the following information carefully.

- Fill gasoline into the red ring in the tank before use!
- Check the oil level before use!
- The muffler is hot when the generator is in operation and just stopped. Be careful not to touch it.
- Under certain conditions, gasoline is highly flammable and explosive.
- Be sure to fill gasoline in a well-ventilated area. Stop the engine and allow it to cool before adding gasoline.
- Stay away from open flames when refueling.
- If oil is spilled while refueling, wipe up the spilled gasoline immediately.
- Use should be prohibited in places with high fire risk.
- Do not connect the generator to the mains, otherwise there is a risk of people being electrocuted if they come into contact with the cable, or damage to the generator or household appliance.
- A check must be made before starting the engine to avoid accidents or damage to the equipment.
- Generators must be operated at least one meter away from the building and other equipment.
- Please place the generator on the horizontal ground. If the generator is tilted, it may cause gasoline overflow.
- Make sure you are proficient in shutting down the generator quickly and understand the operation of all control components.
- Children and pets must be kept away from the work area. While the engine is running, all persons must stay clear of the rotating parts.
- Improper operation creates a potential hazard to the generator. Do not operate the generator with wet hands.
- Do not operate the generator when it is raining or snowing to prevent it from getting wet.
- Have the generator serviced by qualified personnel only.
- Do not use in explosive environments.
- Operation and maintenance of the unit requires the wearing of personal protective equipment such as gloves, hearing protection, etc.

## ⚠️ WARNUNG

- The exhaust gases from the engine contain carbon monoxide, and it is strictly forbidden to operate the generator in a place where the room air or ventilation is not good.
- Make sure that adequate ventilation is provided when the generator is in operation.
- Use indoors or in enclosed spaces is strictly prohibited.
- Do not use in explosive environments.
- Operation and maintenance of the unit requires the wearing of personal protective equipment such as gloves, hearing protection, etc.

## 2. COMPONENTS

### 2.1. Overview

Model: LZ2250iS



Model: LZ3150iS



Model: LZ4500iE



Model: LZ6250iE



- 01** Fuel gauge
- 02** Fuel tank cap switch
- 03** Fuel tank cap
- 04** Control panel
- 05** Engine switch
- 06** Starter handle
- 07** Spark plug maintenance cover
- 08** Air filter / oil maintenance cover

- 09** Maintenance cover
- 10** Multifunction switch
- 11** Rotary knob
- 12** Handle
- 13** Handle bar
- 14** Shock absorber
- 15** Wheel
- 16** Tank

- 17** Choke lever
- 18** Fuel tap
- 19** Oil nozzle
- 20** Oil drain screw
- 21** Air filter
- 22** Cable starter
- 23** Cylinder head
- 24** Exhaust system

- 01** Fuel gauge
- 02** Fuel tank cap switch
- 03** Fuel tank cap
- 04** Control panel
- 05** Engine switch
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- 11** Rotary knob
- 12** Handle
- 13** Handle bar
- 14** Shock absorber
- 15** Wheel
- 16** Tank

- 17** Choke lever
- 18** Fuel tap
- 19** Oil nozzle
- 20** Oil drain screw
- 21** Air filter
- 22** Cable starter
- 23** Cylinder head
- 24** Exhaust system

Model: LZ4500i



Model: LZ9000iD



Model: LZ4500iD



- 01** Fuel gauge
- 02** Fuel tank cap switch
- 03** Fuel tank cap
- 04** Control panel
- 05** Engine switch
- 06** Starter handle
- 07** Spark plug maintenance cover
- 08** Air filter / oil maintenance cover

- 09** Maintenance cover
- 10** Multifunction switch
- 11** Rotary knob
- 12** Handle
- 13** Handle bar
- 14** Shock absorber
- 15** Wheel
- 16** Tank

- 17** Choke lever
- 18** Fuel tap
- 19** Oil nozzle
- 20** Oil drain screw
- 21** Air filter
- 22** Cable starter
- 23** Cylinder head
- 24** Exhaust system

- 01** Fuel gauge
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- 18** Fuel tap
- 19** Oil nozzle
- 20** Oil drain screw
- 21** Air filter
- 22** Cable starter
- 23** Cylinder head
- 24** Exhaust system

## 2.2. Control panel

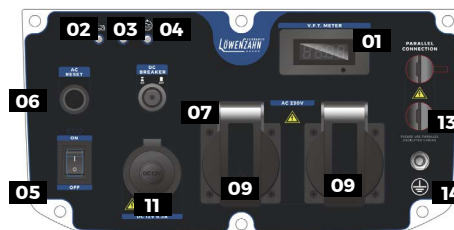
Model: LZ2250iS



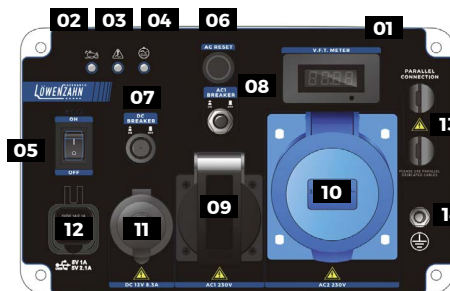
Model: LZ3150iS



Model: LZ4500iE



Model: LZ6250iE



Model: LZ4500i



Model: LZ4500iD



Model: LZ9000iD



- 01 Digital display
- 02 Engine oil alarm light (yellow)
- 03 Overload indicator (red)
- 04 Power indicator (green)
- 05 ECO switch
- 06 Reset button
- 07 DC circuit breaker
- 08 AC circuit breaker
- 09 AC socket 230V 16A
- 10 AC socket 230V 32A
- 11 DC socket 12V 8.3A
- 12 USB port
- 13 Parallel connection
- 14 Ground terminal
- 15 Multifunction switch

## 3. CONTROL SYSTEM & CONTROL

### 3.1. Engine oil alarm light (yellow)

- The oil level alarm system is designed to prevent engine damage due to low oil in the crankcase. The low oil level alarm system automatically shuts down the engine before the oil level in the crankcase has dropped to a safe level (the generator engine switch remains on).
- If you restart the engine after it has been shut down by the low oil alarm system, the low oil warning indicator (yellow) will light up and the engine will not be able to run. In this case, please top up the oil.

#### NOTICE

If the engine oil warning light flashes for a few seconds, it means that the oil level is too low. Top up the oil and restart the engine.

### 3.2. Overload indicator (red)

- When the overload indicator lights up, the generator detects that the output of the phase-side electrical device has been overloaded, causing the inverter to overheat or the AC voltage to rise. In this case, the AC protection will shut down the generator to protect the generator and connected equipment. The AC indicator light (GREEN) is off, but the overload indicator light (RED) is on, the engine will not shut down. If the overload indicator is on and the generator is not producing power, please take the following actions:
1. turn off the connected electrical equipment and stop the engine.
  2. reduce the total power of the connected electrical equipment to the rated power range.
  3. check whether the cooling air inlet is blocked by foreign bodies and whether the corresponding control parts are not in order. If there is a problem, remove it immediately.
  4. restart the engine after checking.

#### NOTICE

In the case of electrical equipment with a high starting current (e.g. compressor and submersible pump), the overload indicator may light up for a few seconds. However, this is not associated with the problems mentioned above.

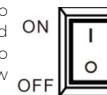
### 3.3. Power indicator (green)

The AC indicator light is on while the engine starts and maintains normal power.

### 3.4. ECO switch

„ON“: When the ECO switch is set to „ON“, the unit regulates the speed according to the connected load to achieve good fuel economy and low noise level.

„OFF“: When the ECO switch is in the „OFF“ position, the engine runs at the rated speed regardless of the load.



### 3.5. Ground terminal

The ground terminal establishes the connection to the ground line to avoid electric shock. If the connected electrical equipment is grounded, the generator must also be grounded.



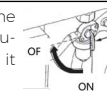
### 3.6. AC circuit breaker

Overload current can automatically turn off the breaker protection. The load is shortened and overload should be avoided. If the breaker protection is closed automatically, the load must be checked before opening.



### 3.7. Fuel tap

The fuel tap is a device that controls the flow of fuel from the tank to the carburetor. Make sure it is set to „OFF“ when it is no longer in operation.



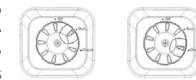
### 3.8. Ignition switch

When the ignition switch is set to the „ON“ position, the generator can start and operate normally. When the ignition switch is set to the „OFF“ position, the secondary coil of the generator's ignition coil is connected to ground and the spark plug will not fire. connected to ground and the spark plug will not fire. Turn the switch to the „OFF“ position during shutdown.

### 3.9. Choke valve

Models: LZ2250iS, LZ3150iS, LZ4500iD, LZ4500iE

The choke valve is used to supply a gasoline engine with a rich oil mixture when the cold engine is started. When the cold gasoline engine starts, turn the start switch to move the start button to the „START“ position. When the gasoline engine warms up, turn the start switch to move the start button to the „RUN“ position.



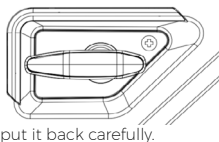
#### Models: LZ4500i, LZ4500iD & LZ9000iD

When the choke lever is in the „ON“ position, the choke of the carburetor is the choke of the carburetor is open to ensure that the carburetor draws in enough air to operate the generator. When the engine is running, and when restarting the hot engine or in high ambient temperatures, the choke lever should be in the „ON“ position. When the choke lever is in the „OFF“ position, the choke of the carburetor is in the closed state. At this time, the intake power of the carburetor decreases and the concentration of the oil-gas mixture in the engine combustion chamber increases. When the ambient temperature is low, it is necessary to move the choke lever to the „OFF“ position to increase the engine starting ability.



### 3.10. Cable starter

Gently pull the starter handle up until you feel resistance, then pull it out suddenly. After starting, do not let the starter handle snap back suddenly, but put it back carefully.



## 4. PREPARATION

### ⚠ ATTENTION

Before start-up, make sure that the generator is on the level ground and do not start the engine.

### 4.1. Oil

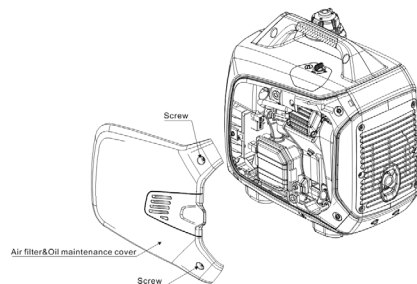
### ⚠ WARNING

- The generator is not filled with engine oil on delivery. Please do not start it until you have filled it with sufficient engine oil
- Operating the engine when the oil level is low can severely damage the engine.
- The engine oil alarm system automatically shuts down the engine before the oil level drops to the safety limits. However, to avoid inconvenience caused by an unexpected shutdown, we recommend that you check the oil level regularly.

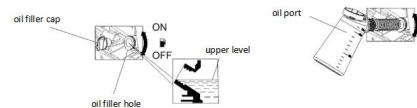
### ⚠ ATTENTION

- Do not use 2-stroke oil or detergent-free oil or engine life will be shortened.
- Use high quality 4-stroke oil that meets or exceeds the American Petroleum Association SJ classification required by U.S. automakers.
- Select the viscosity of the oil according to the average temperature in your area.
- Store and use oil carefully to prevent dirt or dust from getting into the oil. When refilling oil, wipe the area around the filler hole.
- Do not mix different types of oil to avoid negative effects on oil performance.

#### Models: LZ2250iS & LZ3150iS

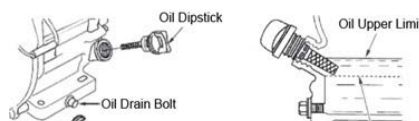


1. Loosen the screw of the air filter maintenance cover and remove the air filter maintenance cover.
2. Remove the dipstick.
3. Fill engine oil to the correct level.
4. Replace the air filter maintenance cover and tighten the dipstick.



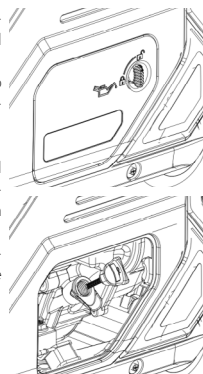
#### Models: LZ4500i, LZ4500iE, LZ9000iD & LZ4500iD

1. Please place the generator on the horizontal level.
2. Remove the oil level indicator, open the oil drain plug by ten turns and drain the oil.
3. Replace the oil drain plug and tighten it.
4. Fill engine oil to the correct level.
5. Reattach the oil level indicator.



#### Model: LZ6250iE

1. Please place the generator on the horizontal level.
2. Turn the rotary knob to and remove the oil maintenance flap.
3. Open the oil tank lid.
4. Fill in the indicated quantity of the recommended oil and tighten the oil cap.
5. Replace the oil maintenance flap and turn the knob closed.



### 4.2. Fuel

### ⚠ WARNING

- Under certain circumstances, gasoline is highly flammable and explosive.
- Please refuel in a well-ventilated area and turn off the engine. No pyrotechnics are allowed in the refueling area of the engine and in the gasoline storage area.
- Gasoline must not overflow the tank (oil level is lower than the red oil level indicator).
- After refueling, close the fuel cap tightly and dry the remaining gasoline with a clean and soft cloth.
- Avoid prolonged, repeated contact with gasoline or inhalation of gasoline vapors.
- Do not allow children to come into contact with gasoline.

### ⚠ ATTENTION

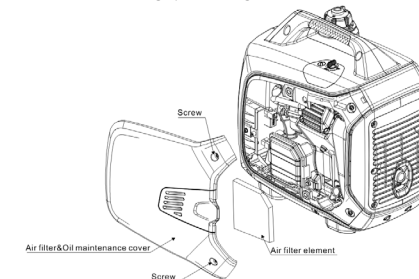
- Please use unleaded gasoline.
- Use or dirty gasoline.
- Prevent dirt and water from getting into the tank.
- Do not use gasoline with an ethanol content of more than 10% or gasoline containing methanol, otherwise the engine will be seriously damaged.

### 4.3. Air filter

### ⚠ WARNING

The engine must not be operated without the air filter insert, otherwise the dirt will enter the engine through the carburetor and cause rapid wear.

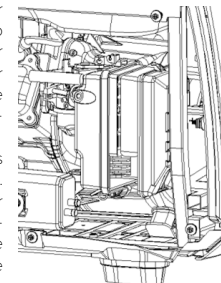
#### Models: LZ2250iS & LZ3150iS



1. Loosen the screw of the air filter maintenance cover and remove the air filter maintenance cover.
2. Flip open the air filter maintenance cover and remove it.
3. Remove the air filter element. Clean or replace the filter element as needed.

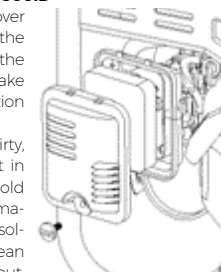
#### Models: LZ4500iE & LZ6250iE

1. Open the air filter cover connection knob and open the air filter cover. Check the filter element and make sure it is in good condition and clean.
2. If the foam filter is dirty, please clean it. Wash it in hot water with household cleaner or non-flammable or highly flammable solvent. Then rinse with clean water and squeeze it out. Then drip a few drops of oil and squeeze evenly.
3. Insert the filter element and cover the air filter cover.



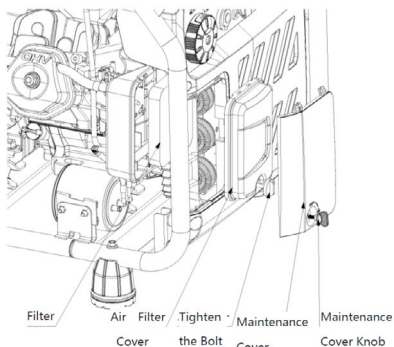
#### Models: LZ4500i & LZ4500iD

1. Open the air filter cover locking bolt and open the air filter cover. Check the filter element and make sure it is in good condition and clean.
2. If the foam filter is dirty, please clean it. Wash it in hot water with household cleaner or in non-flammable or highly volatile solvent. Then rinse with clean water and squeeze it out. Then drip a few drops of oil and squeeze evenly.
3. Insert the filter element and cover the air filter cover, then tighten the locking screw.



### Models: LZ9000iD

1. Set the maintenance cover knob to the „ON“ position and remove the maintenance cover. 2. Open the air filter cover connection knob and open the air filter cover. Inspect the filter element and make sure it is in good condition and clean.
3. If the foam filter is dirty, please clean it. Wash it in hot water with household cleaner or in non-flammable or highly volatile solvent. Then rinse with clean water and squeeze it out. Then drip a few drops of oil and squeeze evenly.
4. Insert the filter element and cover the air filter cover.



## 5. STARTING THE ENGINE

### WARNING

- Disconnect electrical equipment from the alternator AC outlet before starting the engine.
- When using for the first time (not used for a long time, start after gasoline has been consumed), turn the engine shift knob to the „ON“ position for 10 to 20 seconds before starting to allow gasoline to enter the engine carburetor.
- Use indoors is strictly prohibited.

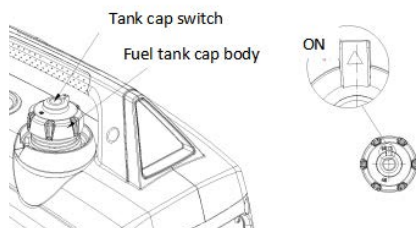
### 5.1. Manual start

### WARNING

- Be sure to pull the start handle at an angle that is not too steep to prevent the handle from wearing down the housing.
- Do not let the start handle snap back automatically to avoid damage to the housing. Pull the start handle back slowly.

### Models: LZ2250iS & LZ3150iS

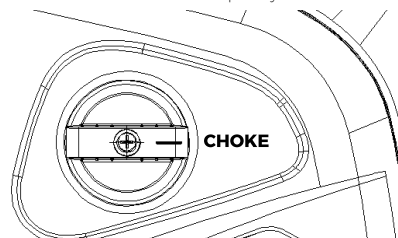
1. Turn the fuel cap switch to the „ON“ position.



### NOTICE

Be sure to pull the start handle at an angle that is not too steep to prevent the handle from wearing down the housing.

2. Turn the engine switch knob of the generator to the „CHOKE“ position.
3. Pull out the choke lever completely.



### NOTICE

When the engine is hot or the ambient temperature is higher, the choke lever does not need to be pulled out.

4. Gently pull the start handle until you feel resistance, then pull quickly in the direction indicated by the arrow in the figure.
5. When the motor is running, switch the motor switch to the operating position.

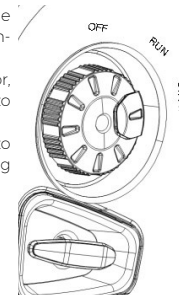
### Models: LZ4500i & LZ4500iE

1. Remove all loads from the output.
2. Set the ignition switch to „ON“.
3. Set fuel tap to „ON“ position.
4. Turn the AC circuit breaker to the position „OFF“ (if equipped).
5. Set the choke lever to the „OFF“ position.

### NOTICE

Do not close the choke flap when starting the gasoline engine while it is hot.

6. Gently pull the starter handle upwards until you feel resistance and quickly pull it out.
7. After starting the generator, slowly move the choke lever to the „ON“ position.
8. Turn the AC circuit breaker to the „ON“ position before using the electrical load (if any).



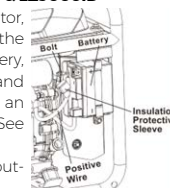
### 5.2. E-Start

### WARNING

- Do not switch the generator breaker to the electrical start position for more than 5 seconds, otherwise the start engine will be damaged.
- If the starting process is not successful, there should be 10 seconds between each start.
- If the speed of the start engine decreases more after a certain time, it means that the battery must be charged.

### Models: LZ4500iE, LZ4500iD & LZ9000iD

Before starting the generator, connect the positive cable to the positive terminal of the battery, secure it with a suitable tool and cover the connection with an insulation protection cover. See illustration.



1. Remove all loads from the output side.
2. Turn the start switch to move the start button to the „START“ position.
3. Turn the AC BREAKER to „OFF“.

### NOTICE

If the gasoline engine starts when the engine is warm, please turn the start switch to put the start button in the „RUN“ position.

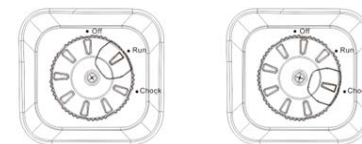
4. Press the „ON“ button.
5. After starting the motor, turn the motor switch to move the start button to the „RUN“ position.
6. To use electrical equipment, the AC circuit breaker should be set to the „ON“ position.

### Models: LZ6250iE

Multifunction switch

(Fuel switch/electric start switch/choke)

1. Fuel switch is the device that controls the fuel flow from the tank to the carburetor. Make sure the start button on the start switch is in the „OFF“ position after shutdown. The rotary fuel switch cuts off the fuel supply when the



- start button points to the off position, and the fuel supply when the start button is in the „RUN“ and „CHOKE“ state.
2. The electric start button is a control device that controls the battery installed in the unit to start the engine. When the rotary start switch moves the electric start switch to the „RUN“ or „START“ position and you press the electric start switch button, the electric start motor drives the engine.
3. The choke supplies the gasoline engine with an oil-rich mixture during cold start. When the gasoline engine starts cold, the rotary start switch moves the start button to the „CHOKE“ position, but after starting, the start switch must be turned to the „RUN“ position. When the gasoline engine starts hot, turn the start switch to move the start button to the „RUN“ position.

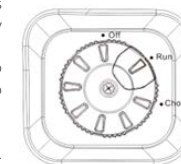
### 5.3. Remote start

### ATTENTION

- When the lithium-ion battery leaves the factory, it is required that the storage capacity can be more than 50% of the capacity. When you start the remote configured generator for the first time, please start the engine manually and run the machine continuously for more than 2 hours to complete the charging process, otherwise the battery life will be shortened.
- If the remote generator cannot be started after more than three start operations, please press the „OFF“ button of the remote key, stop the repeated start and switch to manual start or perform the remote operation after troubleshooting, otherwise the starting engine and battery will be damaged.
- If the alternator is not used for a long time, please set the start button of the start switch to the „off“ position, in case the alternator is in standby state and the battery loses power, which will cause the remote start to fail and the fuel supply to be shut off to prevent oil leakage.

### Models: LZ2250iS & LZ3150iS

1. Check that the load is within the rated capacity range of the generator.
2. Turn the start switch to move the start button to the „RUN“ position.
3. Open the fuel tap.
4. Open the ignition system.
5. Turn on the remote control.
6. Press the „START“ button of the remote control key, and the generator will start by itself. (to avoid wrong operation, the function of operation delay is provided, please press the remote control key for about 1-2 seconds when operating the remote control);
7. When the generator starts, set the AC circuit breaker to „CONNECTED“ position, then the electric load can be used.





## NOTICE

In order to protect the starting battery and prolong the battery life, the following points should be observed in the daily use of the starting battery of the generator:

- The battery power should be kept above 60%, which will prolong the battery life.
- When starting the generator, be careful not to start the generator several times in a short time to avoid damage to the battery or circuit. If the generator fails to start 5 times in a row, please stop the unit for inspection or send it to the special service center for inspection and maintenance.
- If not used for a long time, please disconnect the negative terminal of the battery wiring after the battery is fully charged, and store the unit in a dry and cool place. The self-discharge of the battery is affected by the ambient temperature and humidity, high temperature and high humidity accelerate the self-discharge of the battery. The battery should be recharged and supplemented monthly to keep the battery performance more than 60% to avoid irreversible capacity loss due to low capacity caused by battery self-discharge.
- If you find that the battery of the device cannot be charged or cannot be started, please check whether the battery is exhausted or damaged.
- If only the battery is exhausted, start the generator to charge the battery or charge the battery via the charger; if the battery is damaged or the capacity is too low, replace the battery

## NOTICE

If the battery is dead or damaged, the generator can still be started in the following way:

- Connect the DC12V output socket of the control panel to the external DC12V power supply. Connect the external DC12V power supply to the DC12V output socket or Post terminal of the generator control panel via the cable connector. Then the generator can be started by normal hand pull on the start handle. This method is used to supply power to the system so that the generator set control system works and cooperates with the operator to start the generator. Please note that remote start or electric start cannot be used at this time to avoid damage to the electrical system.
- Connect a DC12V battery or external DC12V power supply in parallel to the generator battery. After removing the maintenance cover. Connect the DC12V standby battery or DC12V power supply in parallel to the battery terminal 16 17. This will provide power to the system to allow the generator control system to function and work with the operator to start the generator. Note that the generator can be started manually, electrically, or by remote control if the specification of the selected battery or power supply is not less than that of the supplied DC12V battery. If the low power DC12V power supply is used, the generator can only be started by hand to avoid damage to the electrical system or DC12V power supply, because the current supplied by the general low power DC12V power supply is not enough to start the generator. When the engine is running, turn the engine switch to the „RUN“ operating position.

## WARNING

- If you use the generator at an altitude higher than 1500 meters above sea level, please contact our dealer to replace the plateau carburetor. (The plateau carburetor cannot be used at low altitude, otherwise the engine will be damaged due to overheating).
- After replacing the plateau carburetor, the power correction of the generator refers to chapter 13 of this manual.

## 6. GENERATOR OPERATION

### WARNING

- To avoid electric shock due to improper use, the generator must be grounded.
- As a backup power source, the generator cannot be connected to the utility grid.
- Do not overload the generator.
- Do not connect the generator to the utility power grid. Otherwise, there is a risk of people being electrocuted if they come into contact with the cable and damage to the generator or household appliances.
- Do not operate the generator in parallel with other generators.
- Do not extend the exhaust pipe of the engine.
- For longer cables, use flexible cables such as rubber sleeves (according to IEC245 or equivalent requirements). Limit cable length: 2.5mm<sup>2</sup> cable length 60 m; 4.0 mm<sup>2</sup> cable length 100 m.
- Keep generators away from other lines and cables, such as distribution networks.
- If you use AC power, you can use DC power at the same time.
- If you use both AC and DC output sockets, make sure that the total power does not exceed the sum of AC and DC power

### 6.1. Grounding

To prevent the generator from being damaged by electric shock or the use of inferior electrical equipment, the generator should be grounded by a well-insulated conductor.

### 6.2. DC application

### NOTICE

- If the device is operated with alternating current, direct current can also be used.
- If the DC current is overloaded, the DC overload protection may respond. First remove the DC load, wait a few minutes and then reset the DC overload protection button.
- The output voltage of the DC socket is 15-20 V.
- Only for 12V DC load.
- Start the motor to use the DC output.

## 6.3. AC application

### WARNING

Before connecting the generator output, make sure that the electrical system is working properly. If the electrical system suddenly fails or does not function properly during operation, the electrical system should be disconnected immediately and the engine stopped.

1. Start the engine and make sure that the AC output light (green) is on.
2. Turn off the power supply switch and plug the unit into the generator output socket.
3. For best operating effect and maximum generator life, run the new generator under 50% load for at least 20 hours to optimize engine performance.

## 6.4. House power supply

### WARNING

- When the generator is connected to the mains as an emergency power supply, it should be connected by an electrician or a person familiar with electricity.
- After connecting the load to the generator, carefully check that the electrical connection is safe and reliable. Incorrect electrical connection may cause damage to the generator, burns or fire.

## 7. SHUTTING DOWN THE ENGINE

### NOTICE

To stop the motor in an emergency, set the motor switch to „OFF“.

**Models: LZ2250iS & LZ3150iS**

### NOTICE

Make sure that the fuel cap switch and the engine switch are in the „OFF“ position when shutting down, transporting or storing the generator.

1. Switch off the connected electrical equipment and disconnect the output plug of the generator.
2. Turn the engine switch to the „OFF“ position.
3. After the engine has cooled down completely, turn the tank cap switch counterclockwise to the „OFF“ position.

**Models: LZ4500iE & LZ9000iE**

1. Set the ECO switch to „OFF“.
2. Switch off the AC breaker.
3. Set the motor switch to „OFF“.
4. Disconnect all electrical devices.

**Models: LZ6250iE & LZ4500iD**

1. Turn the ECO energy saving switch to „OFF“;
2. Turn off the AC circuit breaker;
3. Turn the start switch to the „OFF“ position.
4. Turn the tank cap vent switch to the „OFF“ position.
4. Disconnect all electrical devices.

**Model: LZ4500i**

1. Switch off the AC circuit breaker (if present).
2. Switch off the ignition switch of the generator.
3. Turn off the fuel tap.
4. Disconnect all electrical equipment.

## 8. MAINTENANCE

The purpose of maintenance and regular servicing is to keep the generator in optimum operating condition.

### WARNING

- Stop the engine before performing any maintenance. If the engine must be run, make sure the area is well ventilated as the exhaust gases contain toxic carbon monoxide.
- To ensure quality, please use our original spare parts or parts of the same quality when replacing damaged parts.

### 8.1. Maintenance plan

To document maintenance, use the Maintenance plan on page 29.

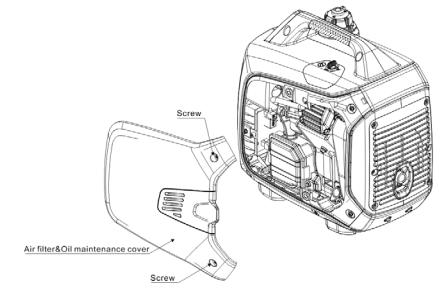
### 8.2. Oil change

### ATTENTION

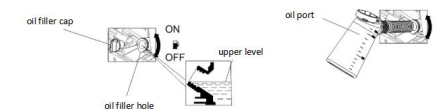
- To meet environmental requirements, put the used oil in a sealed container and then take it to a service station for recycling. Do not throw it in the garbage or pour it on the ground.
- Long-term and frequent skin contact with engine oil can lead to skin cancer. It is recommended that skin that has come into contact with oil be washed immediately and thoroughly with soap and water.

**Models: LZ2250iS & LZ3150iS**

When the engine is switched off, the oil should be removed quickly and completely.



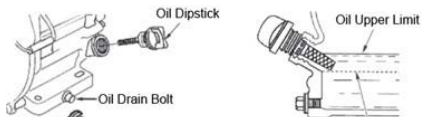
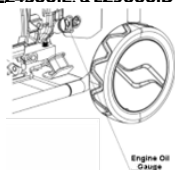
1. Loosen the screw of the air filter maintenance flap and remove the air filter maintenance flap.
2. Take out the dipstick and drain the dirty oil.
3. Refill with the recommended oil and check the oil level.
4. Replace the air filter maintenance cover and tighten the dipstick.



**Models: LZ4500i, LZ4500iD, LZ4500iE, & LZ9000iD**

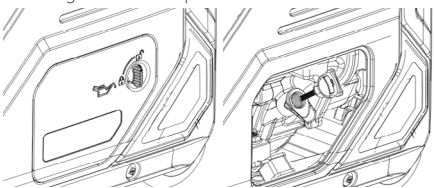
Please drain the engine oil after starting the gasoline engine. It can ensure that the oil is drained quickly and cleanly.

1. Remove the oil level gauge, open the oil drain plug by ten turns and drain the oil.
2. Install the oil drain plug and tighten it.
3. Fill engine oil to the correct level.
4. Install the oil level indicator.



**Model: LZ6250iE**

1. Please place the generator on the horizontal level.
2. Turn the rotary knob to and remove the oil maintenance flap.
3. Open the oil tank lid.
4. Drain the dirty oil.
5. Fill in the specified quantity of the recommended oil and tighten the oil cap.



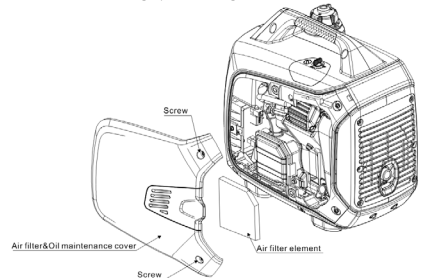
**8.3. Air filter**

A dirty air filter obstructs the flow of air into the carburetor. Please clean and service the air filter regularly to prevent the carburetor from breaking down. If the generators are frequently used in dusty areas, they must be serviced more frequently.

**WARNING**

- Do not use gasoline or solvents with a low ignition point for cleaning. They are flammable and explosive under certain conditions.
- Never operate the generator without an air filter, otherwise this will quickly lead to engine wear.

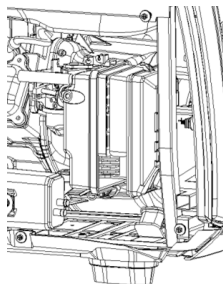
**Models: LZ2250iS & LZ3150iS**



1. loosen the maintenance cover screws and remove the maintenance cover.
2. Snap open the air filter cover and remove it.
3. Remove the air filter element and clean it with a non-flammable solvent with a high flash point (e.g., kerosene, oil, etc.), then dry it.
4. Clean the filter element with clean oil and squeeze out the excess oil.
5. Reinstall the air filter element and cover.
6. Reinstall the maintenance cover and tighten the screws.

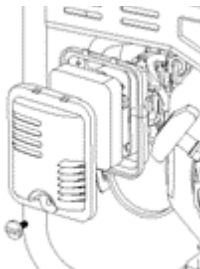
**Models: LZ4500iE & LZ6250iE**

1. Open the air filter cover connection knob and open the air filter cover. Check the filter element and make sure it is in good condition and clean.
2. If the foam filter is dirty, please clean it. Wash it in hot water with household cleaner or in non-flammable or highly volatile solvent. Then rinse with clean water and squeeze it out. Then drip a few drops of oil and squeeze evenly.
3. Insert the filter cartridge and cover the air filter cover.

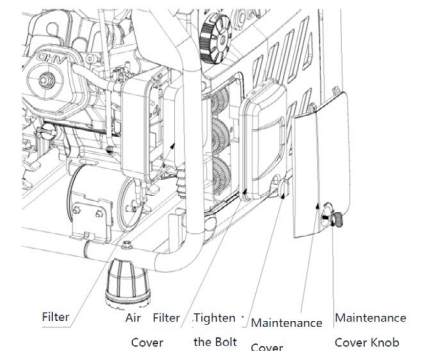


**Models: LZ4500i & LZ4500iD**

1. Open the air filter cover connection knob and open the air filter cover. Check the filter element and make sure it is in good condition and clean.
2. If the foam filter is dirty, please clean it. Wash it in hot water with household cleaner or in non-flammable or highly volatile solvent. Then rinse with clean water and squeeze it out. Then drip a few drops of oil and squeeze evenly.
3. Insert the filter cartridge and cover the air filter cover.



**Model: LZ9000iD**



1. Set the maintenance cover knob to the „ON“ position and remove the maintenance cover.
2. Open the air filter cover connection knob and open the air filter cover. Inspect the filter element and make sure it is in good condition and clean.
3. If the foam filter is dirty, please clean it. Wash it in hot water with household cleaner or in non-flammable or highly volatile solvent. Then rinse with clean water and squeeze it out. Then drip a few drops of oil and squeeze evenly.
4. Insert the filter element and cover the air filter cover.

**8.4. Spark plug**

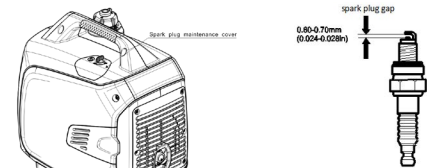
To ensure normal engine operation, the spark plug clearance must be adequate, the spark plug must not contain carbon.

**ATTENTION**

- The spark plug must be tightened firmly. If tightened incorrectly, the spark plug will become hot and may even damage the engine.
- Please use spark plugs with appropriate calorific value.

**Models: LZ2250iS & LZ3150iS**

1. Remove the maintenance cover of the spark plug.

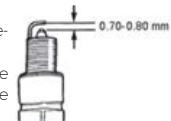


2. Remove the spark plug connector.
3. Remove the spark plug with the spark plug wrench.
4. Visually inspect the spark plug. Replace a new one if its insulator is cracked or chipped. Clean it with a wire brush if the spark plug is reused.
5. Measure the spark plug gap with a standard gauge. The normal value should be: 0.6-0.7mm (0.024-0.028in).
6. Install the spark plug carefully by hand to avoid over-torquing.
7. A new spark plug should be hand tightened 1/2 turn with a wrench, and press the washer. A used spark plug should be tightened 1/8 to 1/4 turn with a wrench.
8. Replace the spark plug cap.
9. Reinstall the spark plug maintenance cap and tighten the screws.

**Models: LZ4500i, LZ4500iD, LZ4500iE, LZ6250iE & LZ9000iD**

Please replace the spark plug according to the original type: F71C

1. Remove the spark plug cap.
2. Use the spark plug wrench to remove the spark plug.
3. Visually check if the insulator of the spark plug is damaged. Replace the spark plug if it is damaged.
4. Measure the spark plug clearance with a thickness gauge. Bend the side electrodes to adjust the clearance. The clearance must be between 0.70 and 0.80 mm.
5. Check that the spark plug gasket is in good condition.
6. Insert the spark plug, tighten it with the spark plug socket wrench and press the spark plug gasket. Cover the spark plug cap.



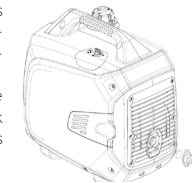
**8.5. Spark arrester**

**NOTICE**

The spark arrester must be serviced every 100 hours of engine

**Models: LZ2250iS & LZ3150iS**

1. When the exhaust has cooled down, loosen the exhaust outlet screws and remove the spark arrester.
2. Use a brush to clean the carbon deposits on the spark arrester. If the spark arrester is damaged, replace it.
3. Reinstall the spark arrester.



**9. TRANSPORT / STORAGE**

**9.1. Transport**

**ATTENTION**

- When you transport the generator:
- Do not overfill the fuel tank. (No residual fuel at the tank neck).
  - Do not use the generator on the transport vehicle. The generator should be removed from the vehicle. The generator should be operated in a well ventilated area.
  - Avoid exposing the generator directly to the sun.
  - If the generator is left in an enclosed transport vehicle for an extended period of time, the high temperature inside the vehicle may cause the fuel to vaporize, resulting in an explosion.
  - Do not transport the generator on rough roads for a long period of time. If you must drive on such a road, drain the gasoline and oil beforehand.

To avoid fuel spillage during transportation or temporary storage, both the engine switch and the tank cap breather should be turned to the „OFF“ position and the generator should be placed in the normal operating position. After the engine has cooled completely, turn the fuel cap switch counterclockwise to the „off“ position.

**9.2. Storage**

**ATTENTION**

- When storing for a longer period of time, make sure that the storage room is not too humid and dusty.
- To avoid combustion or misfire due to contact with high temperature components of the generator, allow the generator to cool before packing and storing.
- Drain the gasoline from the fuel tank before storage.
- Empty the oil tank.

**WARNING**

- Under normal circumstances, gasoline is flammable and explosive. Please drain the fuel after stopping in a well-ventilated area.
- No open fire while emptying the fuel tank.

**Models: LZ2250iS & LZ3150iS**

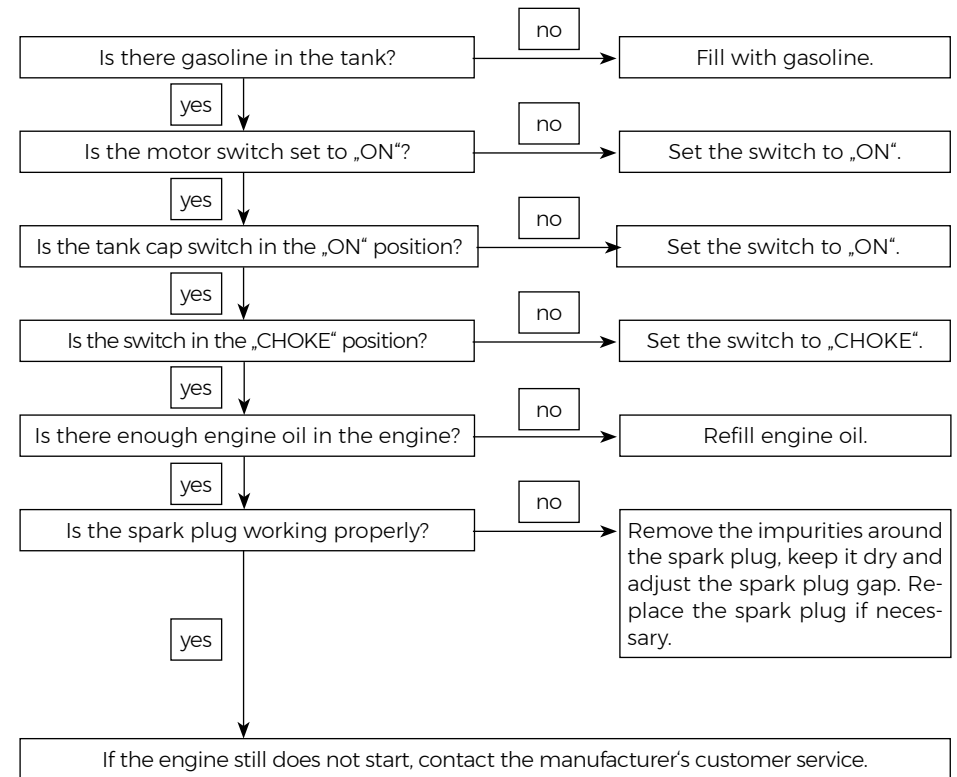
1. Drain the gasoline in the fuel tank and store it in suitable containers.
2. Switch the engine to „ON“ and loosen the carburetor drain screw to drain the gasoline into a suitable container.
3. Remove the spark plug cap, pull 20-21 the starter handle three or four times, drain the gasoline from the fuel line and carburetor.
4. Turn the engine switch to „OFF“ and tighten the carburetor drain plug.
5. Reinstall the spark plug cap.

**Models: LZ4500i, LZ4500iD, LZ4500iE, LZ6250iE & LZ9000iD**

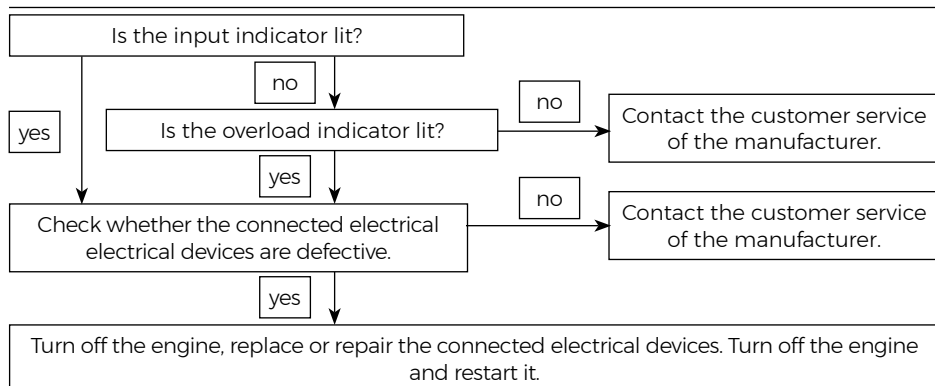
1. Drain fuel from the fuel tank. Clean the fuel filter, O-ring seal, and precipitation cup after reassembly. Unscrew the carburetor drain plug, completely drain the fuel from the carburetor, and replace and tighten the carburetor drain plug.
2. Unscrew the oil level gauge and oil drain plug on the crankcase, and drain the oil in the crankcase. Then tighten the drain plugs, fill new oil to the upper limit, and then install the oil level gauge.
3. Remove the spark plug and pour a tablespoon of clean engine oil into the combustion chamber. Rotate the crankshaft several times to distribute the oil. Replace the spark plugs.
4. Gently pull the crank handle until you feel resistance and leave the intake and exhaust valves closed.
5. Place the generator in a clean and dry place.

**10. GENERAL TROUBLESHOOTING**

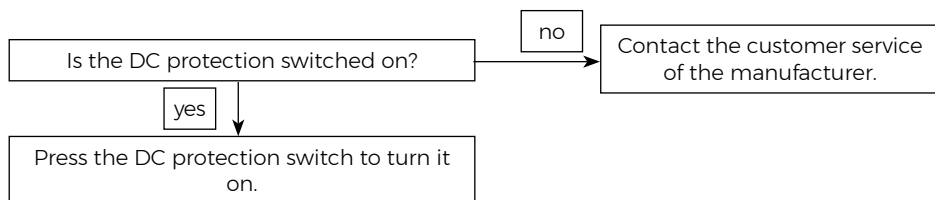
**10.1. Engine does not start**



### 10.2. Connected devices cannot be started



### 10.3. Direct current (DC) socket has no current



## 11. TECHNICAL DATA

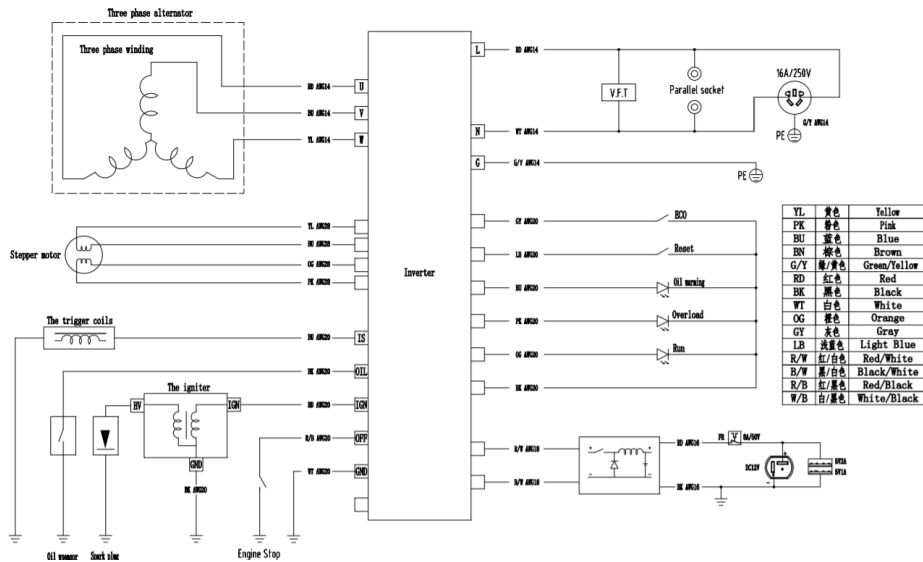
	Specifications	Parameter						
		Model	LZ2250iS	LZ3150iS	LZ4500i	LZ4500iD	LZ4500iE	LZ6250iE
<b>MOTOR</b>	Type	Einzyylinder-4-Takt-Motor; Luftkühlung						
	Displacement (ccm)	79	120	223		225		460
	Start system	Cable start			E-Start			
	Fuel type	Gasoline						
	Fuel tank-volume (L)	4	6	7	12,5	12	11	20
	Engine oil type	SE 10W-30						
	Engine oil tank volume (L)	0,35	0,4	0,6			1,1	
	Rated power (kW/kVA)	1,8	2,5	3,2	3,6	3,5	5,0	7,2
Maximum power (kW/kVA)	2,0	2,8	3,5	4,0	4,0	5,5	8,0	
Power factor	1							
AC frequency (Hz)	50							
AC output voltage (V)	230							
Max. voltage deviation (+/-%)	3							
AC socket	1x 230V 16A	2x 230V 16A				1x 230V 16A; 1x 230V 32A		
DC socket	1x 12V 8,3A							
Socket IP protection type	IP44							
Running time at 50% load	8	9	6	10	10	8	8	
Running time at 100% load	4	4,5	3	5	5	4	4	
Weight(kg)	18	19,5	25	35,5	38,5	39	65	
Dimensions (mm)	480*285*460	490*285*470	432*345*460	533*416*423	595*440*515	590*390*547	595*500*553	
Generator IP protection type	IP23M							
Sound pressure level (dB(A))	67	73	73	77	71	73	N	
Sound power level (dB(A))	87	93,3	96	97	91	94,8	N	

The volume of the gasoline tank may vary depending on the unit type. During the noise test, the generator is in energy saving mode and the energy saving switch is set to „Energy saving“. LWA tests the sound power guarantee value at a height of 4 m according to the hemispherical method of 2000 / 14 / EG. \* LPA is the measured sound pressure value at 7m from the unit and is tested in four directions from idle to full load. Directions tested from idle to full load. The noise value of the device is different in different environments.

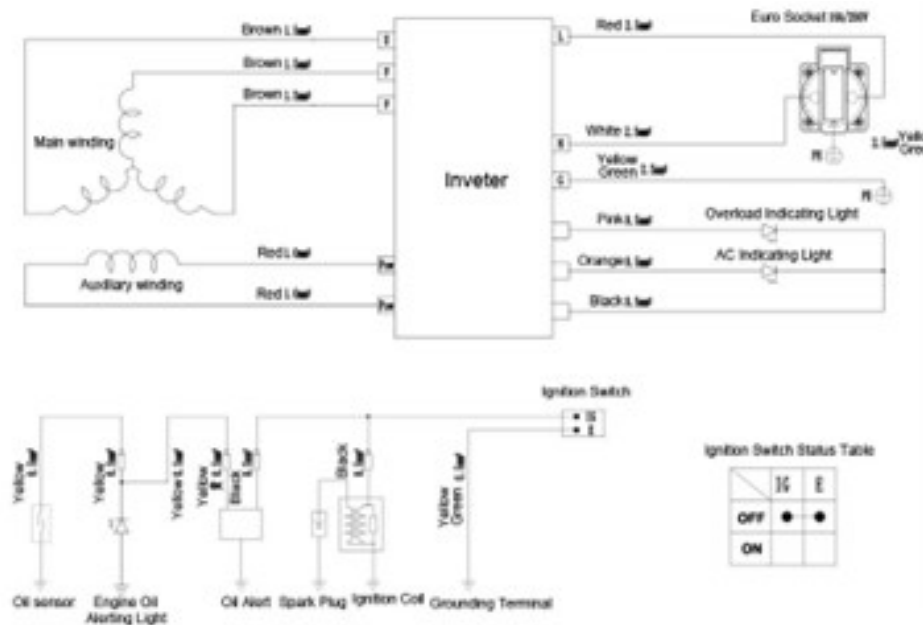
## 12. ELECTRICAL CIRCUIT DIAGRAMS

### 12.1. Manual start

Models: LZ2250IS & LZ3150IS

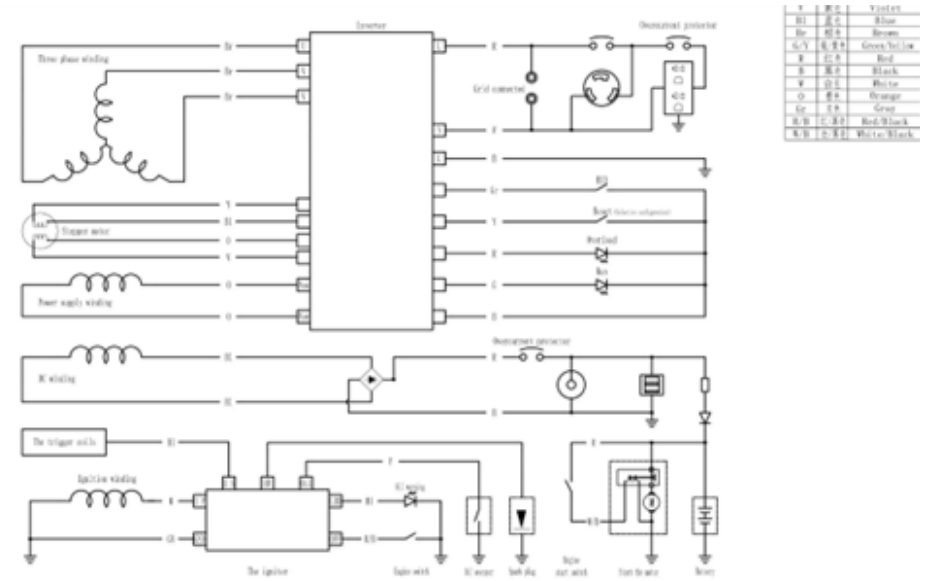


Models: LZ4500I

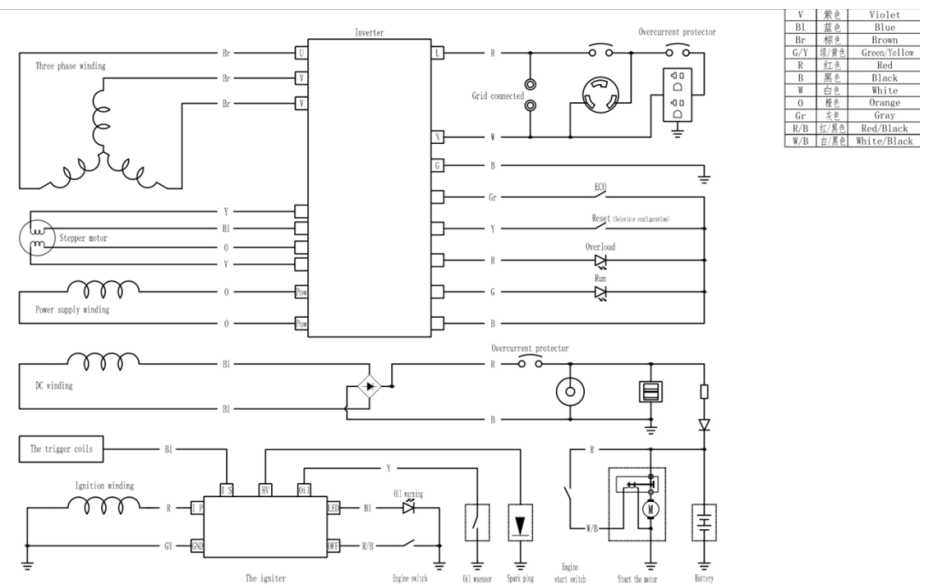


### 12.2. E-Start

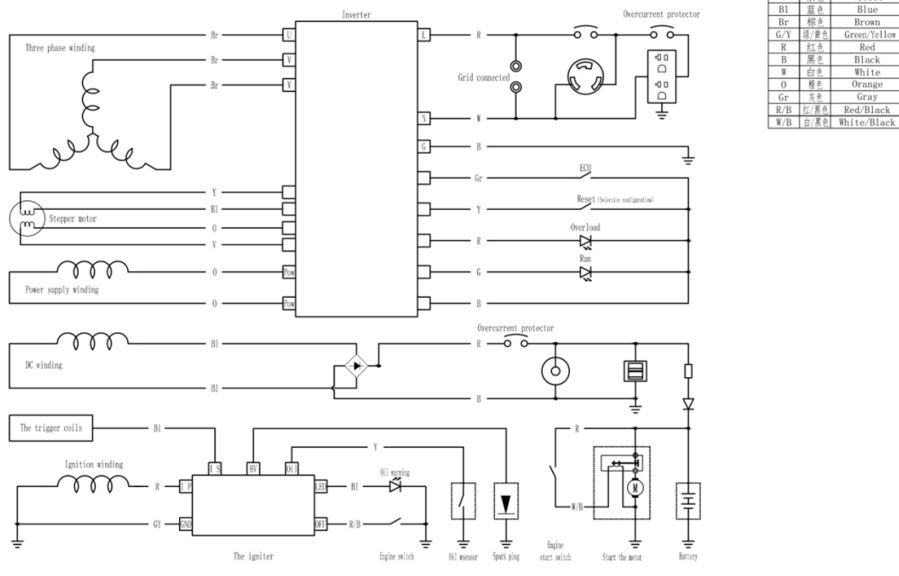
Model: LZ4500IE



Model: LZ4500ID

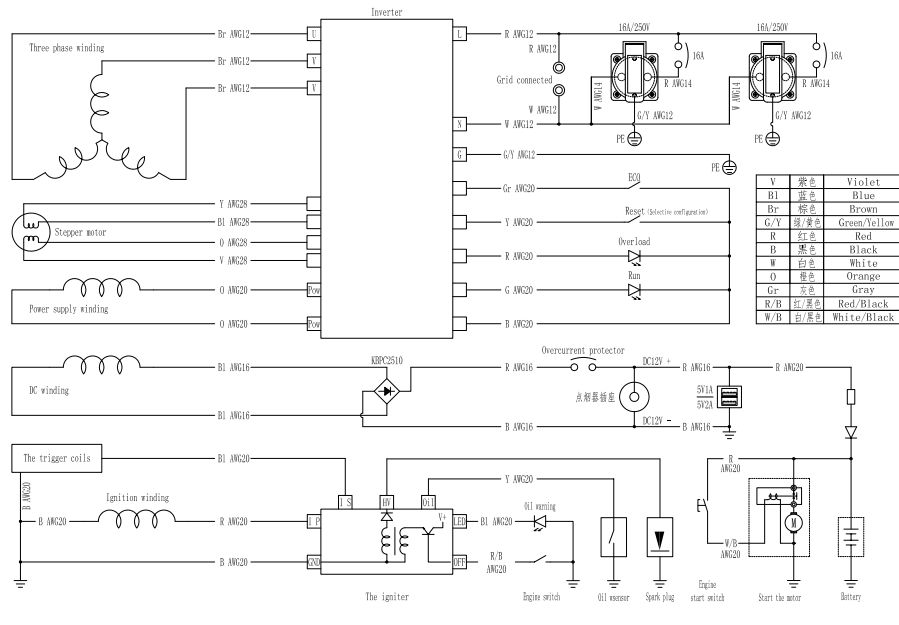


**Model: LZ6250iE**



V	紫色	Violet
B1	蓝色	Blue
Br	棕色	Brown
G/Y	绿/黄色	Green/Yellow
R	红色	Red
B	黑色	Black
W	白色	White
O	橙色	Orange
Gr	灰色	Gray
R/B	红/黑色	Red/Black
W/B	白/黑色	White/Black

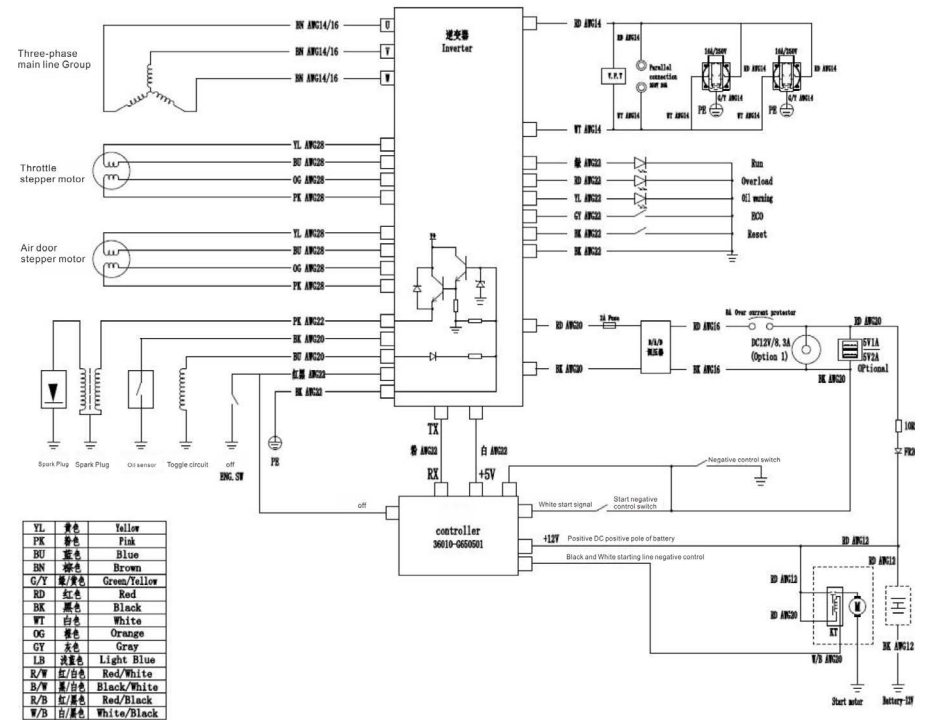
**Model: LZ9000iD**



V	紫色	Violet
B1	蓝色	Blue
Br	棕色	Brown
G/Y	绿/黄色	Green/Yellow
R	红色	Red
B	黑色	Black
W	白色	White
O	橙色	Orange
Gr	灰色	Gray
R/B	红/黑色	Red/Black
W/B	白/黑色	White/Black

**12.3. Remote controlled start**

**Models: LZ2250iS & LZ3150iS**



YL	黄色	Yellow
PK	粉色	Pink
BU	蓝色	Blue
BN	棕色	Brown
G/Y	绿/黄色	Green/Yellow
RD	红色	Red
WT	白色	White
OG	橙色	Orange
GY	灰色	Gray
Lb	浅蓝色	Light Blue
R/W	红/白色	Red/White
B/W	黑/白色	Black/White
R/B	红/黑色	Red/Black
W/B	白/黑色	White/Black

## 13. APPENDIX

### 13.1. Environment correction

The standard conditions for the specified nominal power:

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

Factor of the environment correction:

Altitude (m)	Ambient temperature (°C)				
	25	30	35	40	45
0	1	0,98	0,96	0,93	0,90
500	0,93	0,91	0,89	0,87	0,84
1000	0,87	0,85	0,82	0,80	0,78
2000	0,75	0,73	0,71	0,69	0,66
3000	0,64	0,62	0,6	0,58	0,56
4000	0,54	0,52	0,5	0,48	0,46

Relative humidity (%)				
	60	80	90	100
Correction factor C	-0,01	-0,02	-0,03	-0,04

Example:

- Rated power: 1.6KW
- Generator altitude: 1000m
- Ambient temperature: 35°C
- Relative humidity: 80%
- Nennausgangsleistung:  $P=P_n \cdot (C-0.02)=1.6 \cdot (0.82-0.02)=1.28\text{KW}$

### 13.2. Noise pollution

- Noise measurement according to GB 2820-10, EN ISO 3744, European Directive 2000/14/EC and amendment 2005/88/EC
- Power unit model: 2250iS/E 2750iS/E 3150iS/E 4350iS/E
- Sound pressure level: 69 dB(A) 73 dB(A) 77 dB(A)
- Sound power level: 89 dB(A) 93 dB(A) 97 dB(A)
- Measurement uncertainty K: 1.7 dB(A)

The values given are emission levels and not necessarily safe working levels. There is a correlation between the emission and exposure levels, but it is not possible to reliably infer from this whether or not further precautions are required. Factors that influence the actual level of worker exposure include the characteristics of the work area, other noise sources, etc., i.e., the number of machines and other adjacent processes, and the duration of the worker's exposure to noise. The permissible exposure level may also vary from country to country. However, this information enables the machine user to better assess the hazard and risk.

### 13.3. Maintenance plan (checklist)

Regular Maintenance period (3)		With each use	First month or first 10 hours	Every 3 months or every 50 hours	Every six months or every 100 hours	Every year or every 300 hours
Engine oil	check fill level	○				
	change				○	
Air filter	check	○				
	clean			○ (1)		
Spark plug	check / adjust			○		
	change					○
Spark arrestor	clean				○	
Valve clearance	check / adjust					○ (2)
Fuel tank and filter	clean				○	
Cylinder	clean					○
Fuel line	check	Every two years (replace if necessary) (2)				

(1) Maintenance more frequent when used in dusty areas.

(2) The maintenance items in this part require professional maintenance tools and skills.

(3) Maintenance frequency may be increased for commercial use due to long-term use.

**LÖWENZAHN**<sup>GERMANY®</sup>  
\*\*\*\*\*

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