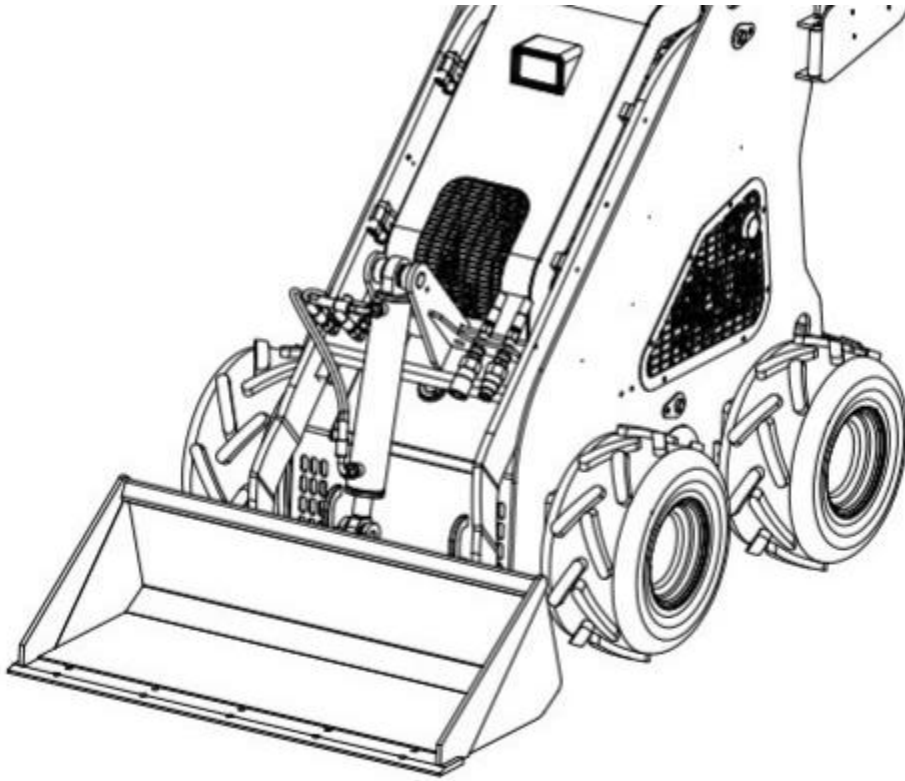


# TYPH-0506 Skid Steer Loader Operation Manual





Instructions for use and maintenance guide for the sliding loader Machine

Serial Number:

Engine Serial Number:

# Customer instructions

Please read the use instructions in this manual carefully to ensure the efficient operation of the machine. The manual describes how to operate and maintain the slip loader. All instructions are for reference only.

See the words "caution", "warning" or "danger" in this manual. Please be sure to read the instructions given after the words carefully to prevent the possibility of personal injury or machine damage.



The word "danger" is the most important, indicating that if the preventive measures are taken correctly, it will cause serious injuries and even death.

The word "warning" is generally used to indicate

potential hazards that may lead to serious personal injury.

The word "careful" is usually used to indicate a risk of minor injuries or equipment damage.

The left and right sides determine the direction facing the sliding loader operation. The work end is called "head", the standing end is called "tail".

Note: In accordance with their own policies, they will continue to improve the product. The information, specifications and illustrations in this manual are all information valid for printing. Therefore, it reserves the right to change the design and make improvements at any time while convinced that the efficiency of the machine can be improved, and has no obligation to integrate such improvements into any machine that has been delivered or is in use.

## Safety operation procedures for the sliding loader

1. Daily pre-operation inspection before the operation
  1. Check whether all parts of the machine are in good condition, whether they are loose, oil leakage and other phenomena.
  2. Check whether the power supply, cable and other electrical equipment of the machine are in good condition, and whether there is damage or aging phenomenon.
  3. Check whether the hydraulic system of the machine is normal, and whether the oil pipes and cylinders have oil leakage, damage and other phenomena.

4. Check whether the walking system of the machine meets the requirements, whether there is wear, cracks and other phenomena.
5. Check the cleanliness of the driving control console to ensure that there is no debris and no safety risks.

## 2. Operational safety regulations

### 1. Operators' requirements

1.1. Operators must be professionally trained and familiar with the machine performance, operation procedures and safety precautions.

1.2. Operators must wear complete personal protective equipment, such as safety helmet, safety shoes, protective clothing, etc.

1.3. Operators must observe the prescribed operating rules and shall not operate in violation of regulations.

1.4.1 Operators must understand the emergency handling measures and be able to deal with simple emergencies.

1.5. Operators must be skilled in using various functions of the machine, including lifting, rotating, walking, etc.

## 2. Before starting:

.12 storage safety rod, only in the safety rod storage, the whole machine can be started.

2.2 It must be confirmed that there is no working personnel around the machine, and honking the horn to remind the people around to stand to the safe part before starting the machine.

## 3. The work must be done as follows:

.13 No part of the body must leave the driver's position. Before leaving the driver's position, you must drop the bucket to the ground, or lock the arm safety lever and turn off the engine.

3.2 When shoveling materials, the speed should be reduced to below 4km / h. Working on rough ground, when the bucket is full, slow down as slowly as possible to avoid losing control or even rollover. 3.3 During loading operations and transportation, the bucket should be kept as low as possible to keep the driver's vision open and keep the machine stable.

3.4 Do not move the arm steering high, otherwise it is prone to rollover accident.

3.5 When shoveling materials, reduce the boom to the minimum, increase the engine speed to the highest level, and then shovel into the material at a speed of 2.5km / h.

.63 In the process of shoveling operation, when the bucket blade and teeth encounter obstacles, avoid obstacles, keep the bottom of the bucket to the ground level, and the speed should not be too fast.

.73. When working on the slope, you must be very careful not to cut the sliding machine near the edge of the slope to prevent overturning.

3.8 The operation of the sliding machine when climbing must be done as:

3.8.1 If the bucket is filled with materials, it should go up the uphill and reverse the downhill.

.8.23 If the bucket is empty, downhill should be forward, uphill should be inverted uphill.

3.9 The bucket is not allowed to be lifted to the highest position for carrying materials. When carrying materials, the boom grounding point should be kept about 400 mm off the ground to ensure stable driving.

## 4. After the operation should be done to:

4.1 If the machine has been running at full load, let the engine idle for 2-3 minutes to allow parts of the engine to cool slowly.

4.2 Turn the start key to "off" to turn off the engine and unplug the key.

4.3 Drop the boom to the ground before leaving the machine.

4.4 Try to park the machine on the horizontal ground, and place the pads before and after the tires to prevent the machine from sliding. If the machine needs to be parked on the slope, a stable pad should be placed below the wheel to prevent the machine from sliding.

## 3. Maintenance and maintenance

1. Check all parts of the machine regularly, and deal with or repair in time.

2. Clean the hydraulic system of the machine regularly to keep the hydraulic oil clean.

3. Check the machine's walking system regularly. If the track tension is too loose, check the tensioning assembly and add appropriate grease.

4. Lubricate the machine regularly to ensure the normal operation of each moving part.

5. Replace the hydraulic oil and filter regularly to ensure the normal operation of the hydraulic system.

## Iv. Emergency treatment

1. In case of emergency, the operation should be stopped immediately, and appropriate emergency measures should be taken.

2. In case of electrical failure, you should cut off the power supply immediately, and contact the professional personnel for maintenance.

3. In case of hydraulic system failure, check the hydraulic oil and oil immediately

Whether the filter is normal, and replace it in time if there is any problem.

4. In case of damage or falling off, the track should stop immediately for inspection and replace the

tire if necessary.

5. In case of injury to the operator, call the emergency number immediately and take necessary first aid measures.

6. In case of fire and other situations, you should immediately alarm and stop away from the scene and wait for rescue.

#### Other safety precautions

1. For your safety, please follow the following precautions for operation

empyrosis

When the engine is still a heat engine, do not open the water injection mouth cover of the radiator, otherwise the ejected steam and hot water will burn you. After closing the engine, after the radiator is completely cooled, wrap the water injection mouth cover with a rag, and then slowly unscrew the cover.

After checking the radiator, the water injection mouth cover is tightened. If the cover is not tightened, water steam will be ejected during the engine operation.

Proper ventilation of the storage battery area

The area around the battery must be well ventilated. Be careful to keep the battery away from the fire source, as the battery emits flammable hydrogen during charging.

Fuel fire causes fire

Use the correct model of diesel oil. If using gasoline or its similar products will cause the fuel to catch fire. Be sure to shut it first and then refuel.

If accidentally spilled fuel, the spilled fuel must be wiped clean.

Do not bring fuel oil or other flammable items close to the engine or cause them to catch fire.

Exhaust toxic

Do not close the windows, air vents, or other ventilation facilities. Good ventilation must be maintained during the engine operation. Inhalation of the exhaust gas is harmful to your health.

Do not operate the engine in narrow rooms, passageways, basement or cabins. Exhaust in these places is difficult to eliminate, which is very harmful to personal health. Stay away from moving parts

Be very careful not to touch the moving parts when the engine is running. If let the hand, other parts of the body or clothes close to the moving parts, once the cooling fan, flywheel or output shaft hook, may cause personal injury. Do not operate the engine if there is no protective cover on the moving parts.

Before starting the engine, be sure to check that any tools or clothes are forgotten near the engine during maintenance.

Burds resulting from contact with hot parts of the engine

When the engine is running or after the engine is just stopped, be particularly careful not to let the body, hands or clothes touch the muffler, the exhaust pipe, and the engine body. Because then the whole engine is hot, once contact can cause burns. Do not operate the engine after drinking. Do not operate the machine when you are unwell or sick, otherwise you are prone to accidents.

## 2. Safety precautions for the inspection

Never touch the electrolyte of the battery

Be careful not to touch the eyes and skin with the electrolyte. The electrolyte of the battery is dilute sulfuric acid, which burns the skin. If you accidentally touch the electrolyte, rinse with a lot of water.

Fire caused by a short circuit

Always close the battery switch or remove the negative lead before checking the electrical system. Otherwise, it will cause a short circuit and cause a fire.

Stay away from moving parts

Always off the engine before repairing the engine. If you must check the engine while the engine is running, do not allow it

Hands, bodies or clothing contact or approach to moving parts, otherwise if caught by moving parts. Avoid scalding when discharging hot oil and hot water

If the lubricating oil must be discharged during the heat machine, be careful not to let the oil splash on people to prevent burns. Before discharging the cooling water, you must wait for the water temperature to come down, otherwise the hot water may splash on people, causing scald accidents.

Be careful of the dirt that you blow about

When using compressed gas, wear protective products: such as goggles to protect the eyes, because dust or flying debris can harm the eyes.



Machinery shall not be reformed without  
authorization Disposal of the waste materials

Install the waste oil into a suitable container. Do not pour the waste oil directly into the  
outdoor,  
sewer, river or sea. Waste disposal must comply with the relevant laws and regulations. Submit  
waste to professional waste recycling companies for centralized disposal



# catalogue

## chapter one

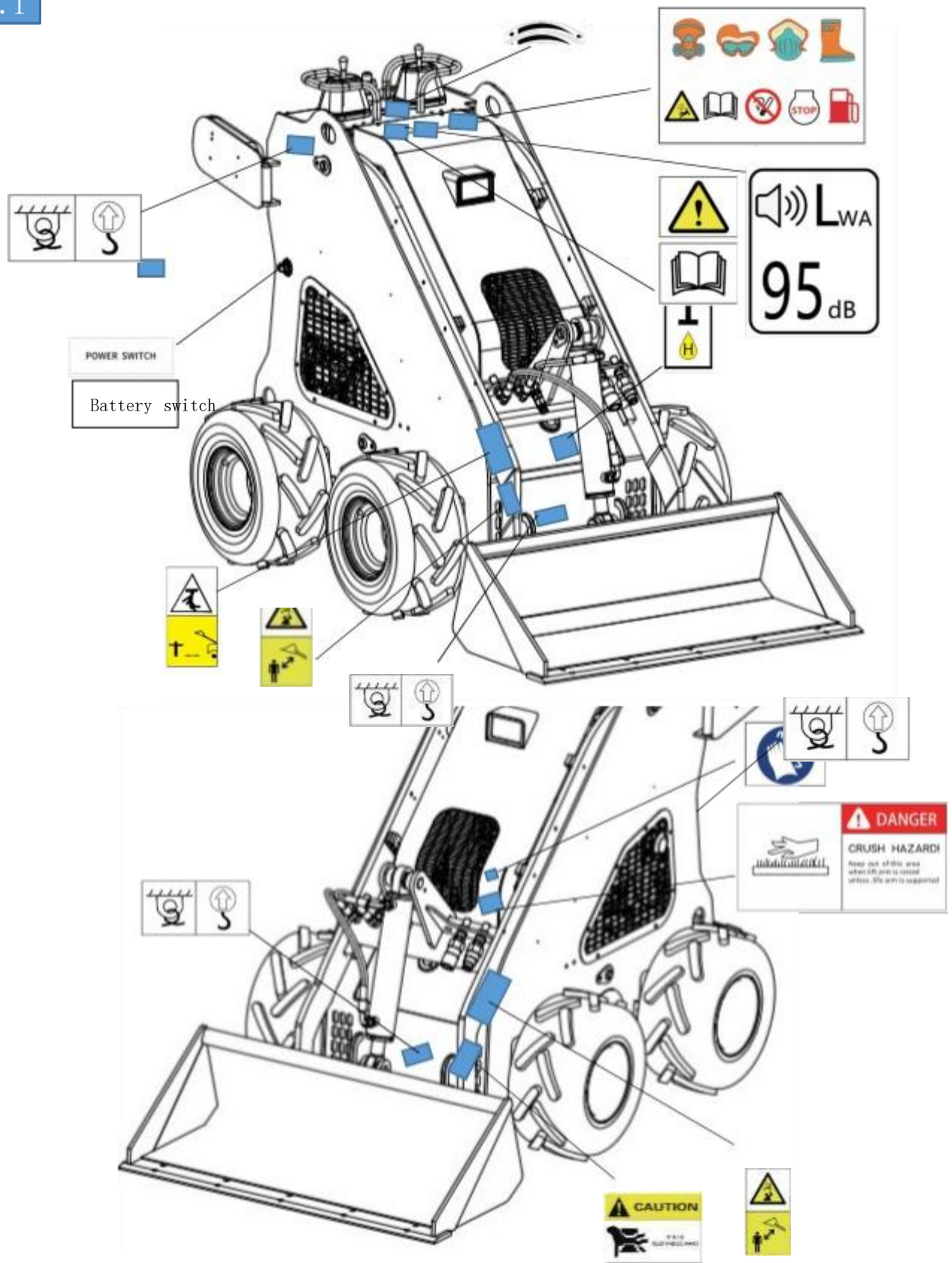
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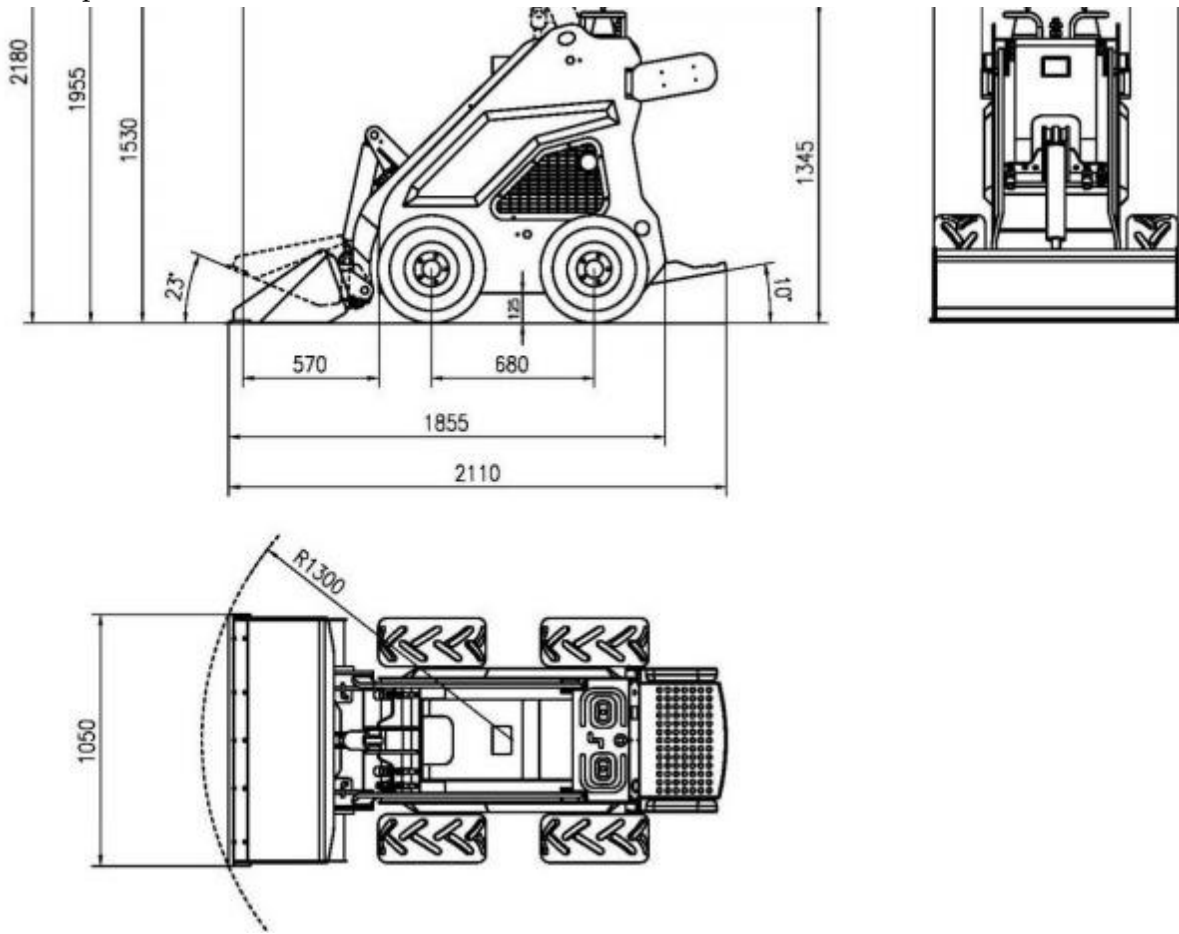
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1.2

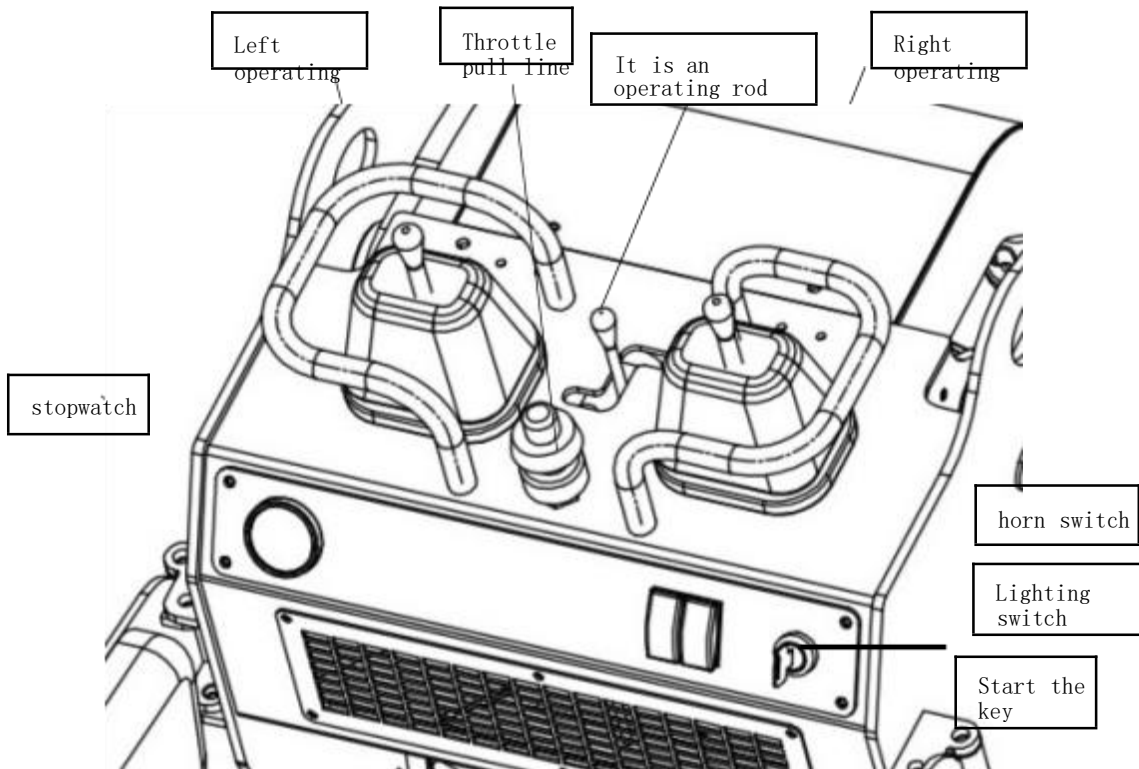
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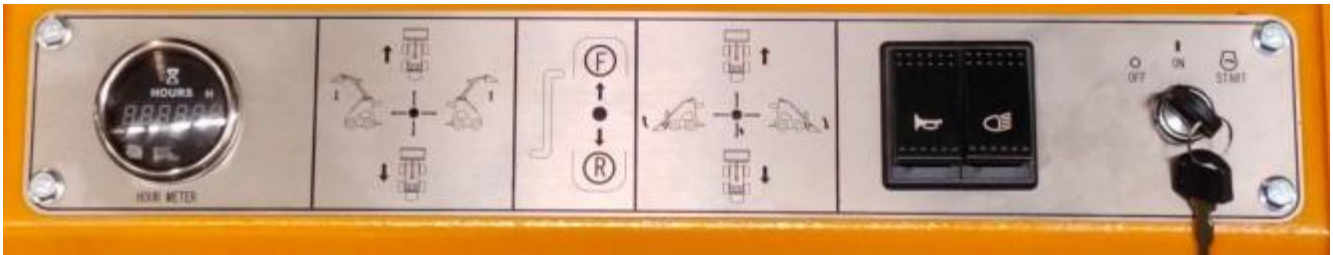


|          |                      |                |      | performance parameter |  |
|----------|----------------------|----------------|------|-----------------------|--|
| model    |                      |                | 360L |                       |  |
| function | burden rating        | kg             | 238  |                       |  |
|          | Shovel bucket volume | m <sup>3</sup> | 0.13 |                       |  |
|          | Maximum lift         | kg             | 600  |                       |  |
|          | working speed        | km/h           | 0~5  |                       |  |
|          | rated pressure       | Mpa            | 17   |                       |  |
|          | Raise the time       | s              | 3.6  |                       |  |
|          | drop-out time        | s              | 2.5  |                       |  |
|          | Fold time            | s              | 2.4  |                       |  |
|          | climbing capacity    | %              | 30   |                       |  |
|          | working              | kg             | 690  | 700                   |  |
| Weight   |                      |                |      |                       |  |

|          |                    |     |  |  |
|----------|--------------------|-----|--|--|
| engine   | brand              |     | Bailitong                                    | Run through                                  |
|          | model              |     | 25T2   | R 420  |
|          | type               |     | Gasoline engine, single-cylinder air cooling | Gasoline engine, single-cylinder air cooling |
|          | output power       |     | 13.5HP /3600rpm                              | 15HP /3600rpm                                |
|          | fuel consumption   | L/h | ≤3.8   | ≤4.2   |
|          | starting mode      |     | Electric start                               | Electric start                               |
| capacity | fuel tank          | L   | 6.6  | 6.7  |
|          | Engine oil         | L   | 1.1  | 1.1  |
|          | hydraulic oil tank | L   | 20   |  |

### 1.3 Control





# hardware operation

## 2.1 Main power supply to start

### 2.1.1. Insert the start switch knob



.2.2.1 Turn the switch from the OFF position and clockwise to the ON position.

### .22 Start switch

2.2.1 Starting switch is a second-stage rotary switch. Insert the key into the lock slot to rotate the key to locate the start switch.

Off: When the engine is shut down, all the current is cut off. The key

can be inserted or pulled out in this position. On: This position is in the normal operating condition. The current flows through the instrument devices and the warning devices.

Start: This position is the starting position. The starter motor rotates up to drive the engine.

Release the key after starting, release the key when

the key

The key automatically returns to the On position. engine shutdown

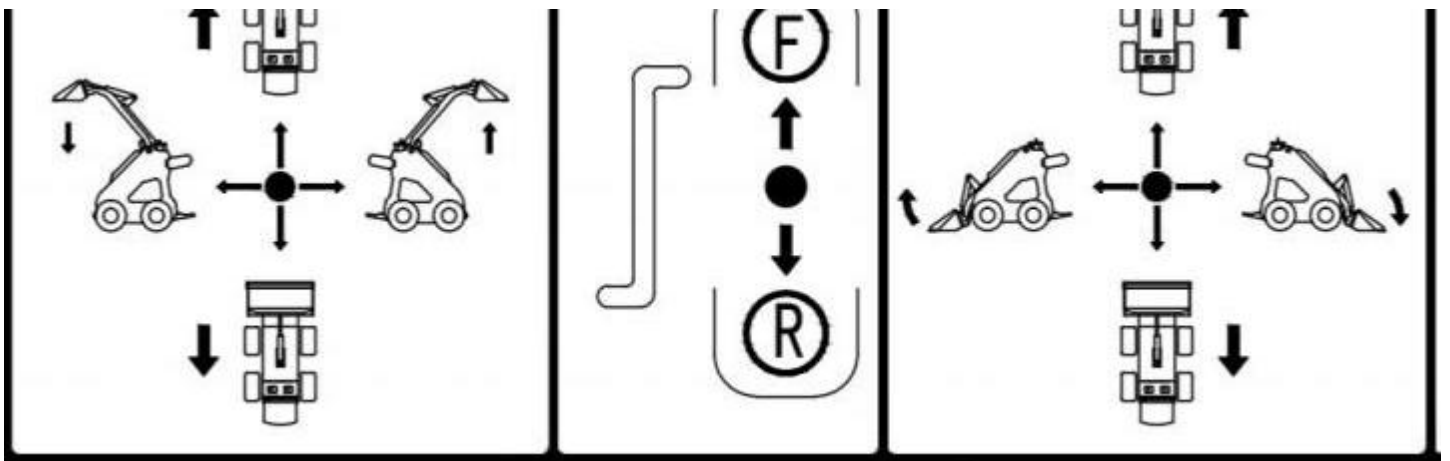
device

Turn off the engine when the start switch goes to turn off the position

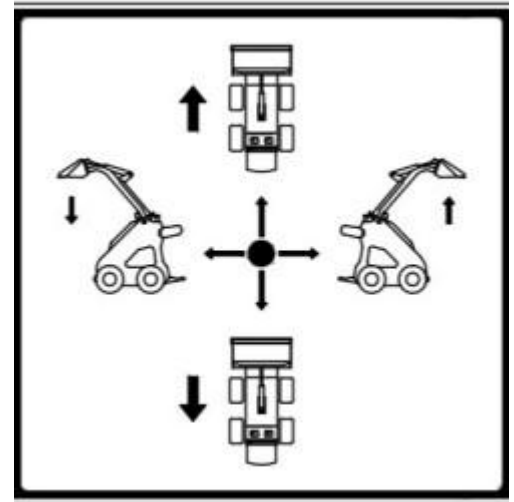
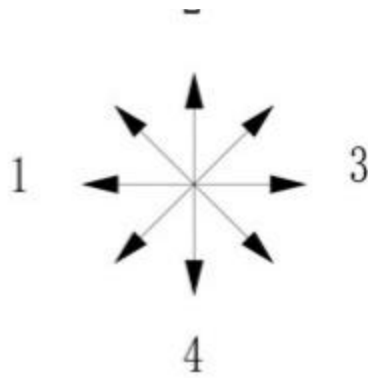


Note: When the gasoline engine is started, the diesel engine shall be properly accelerated to start successfully

## 2.2 Operation instructions:







.2.12 Left-hand handle action control:

The handle pushes in the 2 direction, the left wheel advances, the walking speed matches the handle propulsion range; the handle moves in the 4 direction, the left wheel retreats, the walking speed matches; the handle moves in the 3 direction, the lifting arm rises, the ascending speed and the handle propulsion range match; the handle advances in the 1 direction, the lifting arm drops, and the descending speed matches the handle propulsion range;



When the engine is closed, the handle pushes in the 1st direction and the

goes

prevent accidents

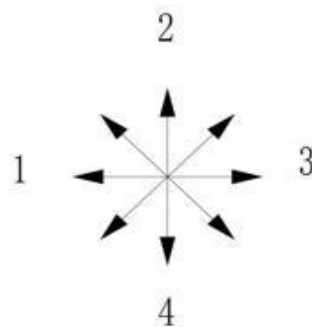
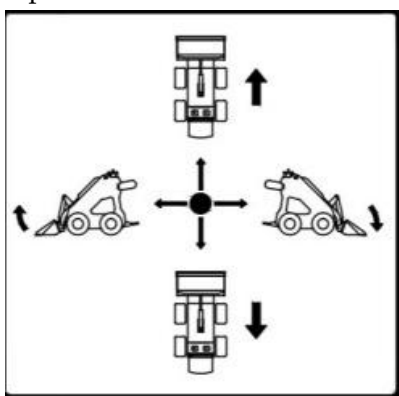
the engine is closed,

large

safe

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operato



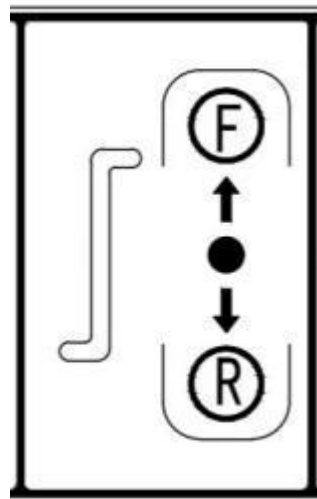


.2.22. Right-hand handle action control:

The handle pushes in the 2 direction, the right wheel advances, the walking speed matches the handle propulsion range; the handle moves in the 4 direction, the right wheel retreats, the walking speed matches the handle propulsion range; the handle moves in the 1 direction, the flip speed, the flip speed matches the handle propulsion range; the handle moves in the 3 direction, the flip speed matches the handle propulsion range;



When the engine is closed, handle pushes in 3 direction and the handle turns down to prevent accidents. Before closing the engine, put the handle in a safe position to avoid causing damage to the operator.



.2.32. Action control:

The handle forward, and fixed to the right in the horizontal groove, can achieve single direction rotation or single direction action; the handle backward propulsion, and fixed to the left in the horizontal groove, can realize single direction rotation or single direction

action;

.2.42 Chronograph: record the working time of the machine

2.2.5 Horn switch: reset the switch, after pressing, the vehicle horn rings, release the horn sound stops.

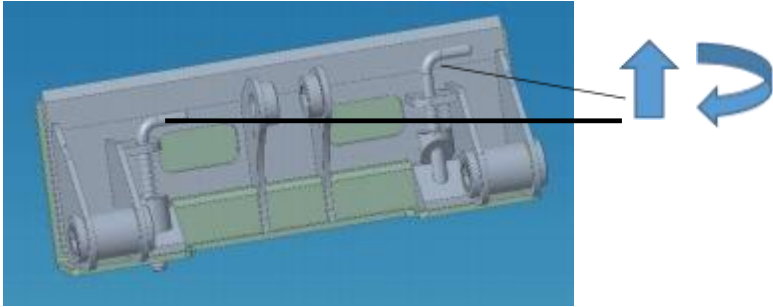
2.2.6 Lighting switch: self-lock switch, press, LED lighting on

2.2.7 Start key: with preheating function, position OFF, position ON, position START.

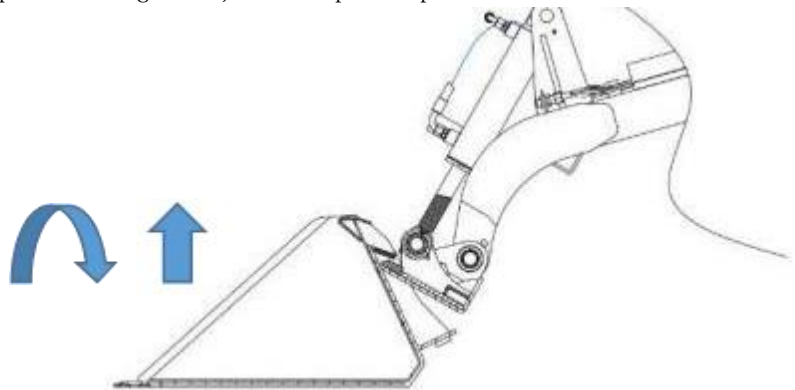
.2.82 Throttle cable: control the engine speed, counterclockwise rotation speed increase, clockwise engine speed reduction, and fast throttle function.

## 2.3 Quick replacement device for the lifting plate

2.3.1 Before replacing the device, pull out the quick lock pin on the lifting plate upward and rotate it by 90 degrees, and be firmly stuck on the positioning plate.

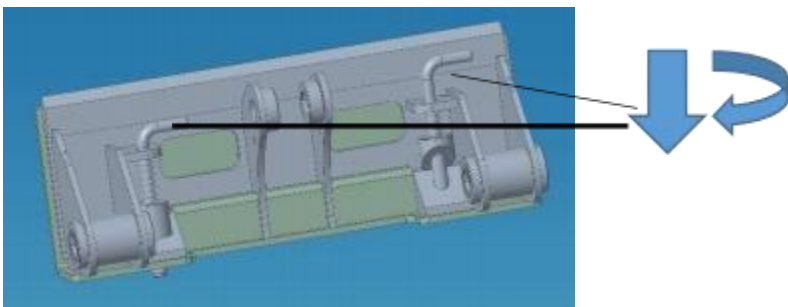


2.3.2. Example: Place the tool smoothly on a stable plane, adjust the lifting plate to the front tilt state, card the upper part in the tool positioning slot, lift up and point to the machine



Flip the lifting plate inside the inside,

.3.32 After replacing the device, it is necessary to rotate the fast lock pin on the lifting plate by 90 degrees, so that the pin shaft is firmly stuck in the positioning slot.



## 2.4 Any joint



With the oil return

The working oil port A

Working oil port B

Connect different working tools, pay attention to the connection of the working oil port. For the original shell unloading oil, connect the working oil return interface.



Note: After connecting the device, run at small engine speed to ensure correct and normal steering and movement to prevent accidents from improper operation and operator injury.

## 2.5 Engine use:

### .5.12 Fuel selection

1. Fuel oil must meet these requirements: Clean, fresh, unleaded gasoline.

At least 87 octane / 87 pressurized octane (AKI) (91 study octane (RON)). Use at high altitude areas (see below).

If you use ethanol gasoline, gasoline can contain up to 10% alcohol. pay attention to

Do not use unapproved gasoline, such as E15 and E85. Do not mix other oils

into the gasoline, or change the engine to use other fuels. Using unapproved fuel will damage the engine assembly and is not covered by the warranty.

To prevent fuel system cementation and second test, mix alcohol-free fuel

stabilizer and ethanol treatment into the fuel. See the Storage section. Fuel oil is not all the same.

If there is a start or performance problem, please

change the fuel supplier or brand. This engine is certified to use only

gasoline. The emission control system for carburetor engines is EM (engine

modification). The emission control systems for the electronic fuel injection engine include the ECM (engine control module), MF 1 (multiport fuel

injection), TB1 (throttle body fuel injection), and O2S (oxygen sensor) (if equipped).

high altitude

In an elevation of over 5,000 feet (1,524 m), at least 85 / 85 pressurized octane (AKI) (85 (RON)).

For chemical oil engines, high altitude regulation is required to maintain performance. Direct operation without this adjustment will lead to a decline in performance, increased fuel consumption, and increased emissions. For

information on high altitude conditioning, consult an authorized Briggs &

Stratton dealer. High altitude regulation is not recommended if engines are operating below 2500 ft (762 m).

No high altitude adjustment for electronic fuel injection (EFI) engines.

pour:

If the fuel specification used is incorrect, it may cause the engine performance to decline and part failure.

(2) Use of fuel oil

Use clean containers to store the fuel oil.

Store the fuel in a clean bucket beyond the rain. Once the fuel is mixed with water or dirt, it can cause an engine failure.

Hold the tank for 24 hours until the water and dirt in the fuel settle at the bottom of the container. Pump the clean fuel from the upper part of the container.

.5.22 Lubricating oil

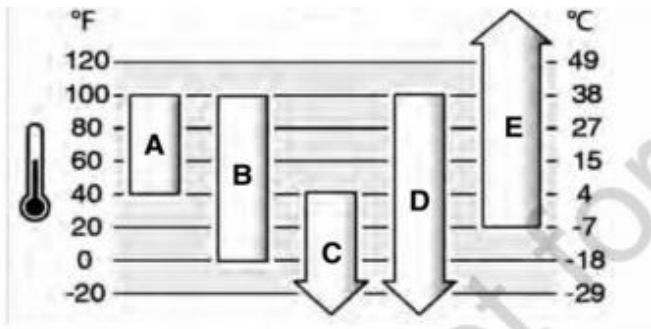


If the lubricating oil used is not correct, it may cause the engine internal parts to bite or wear prematurely, thus shortening the service life of the engine.

(1) Lubricating oil specifications:

To ensure optimal performance, quality cleaning oils of "SF, SG, SH, SJ grade" or better grade can be used. Do not use special additives. Select the best viscosity for the expected outdoor temperature range using the chart.

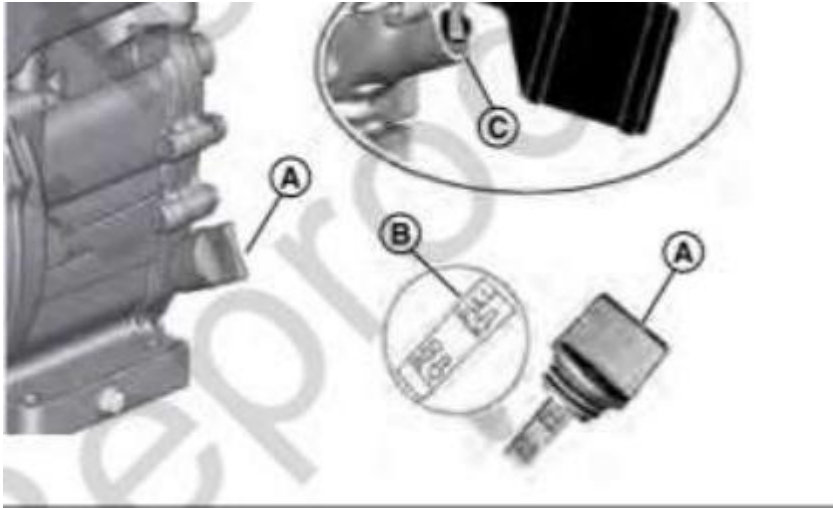
Most engines on most outdoor power equipment use 5W-30 synthetic oil. For equipment operating at high temperatures, the Vanguard® 15W- The 50 Synthetic engine oil has the best protection effect.



|   |  |
|---|--|
| A | SAE 30 Below 40 ° F (4 ° °C), using SAE 30 will be difficult to start.   |
| B | The 10W-30 is above 80 ° °F (27 ° °C), and using the 10W-30 will result in increased oil fuel consumption. Check the machine frequently Oil level. |
| C | 5W -30   |

|   |                            |
|---|----------------------------|
| D | Synthetic 5W-30            |
| E | Vanguard Synthetic 15W -50 |

Check the machine, the oil oil level



Before checking the engine oil level Ensure that the engine remains level.

Clean the oil injection port site and remove unnecessary materials.

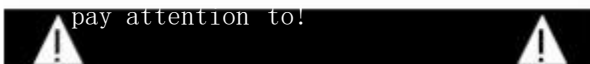
Short oil caliper (if installed) 1. Remove the oil caliper. Wipe the oil off the oil chipstick with a cloth.

2. Install the oil oil gauge. Do not rotate or tighten the oil gauge.

3. Remove the oil gauge and check the oil level. The correct oil level should be on the top of the oil gauge indication.

4. If the oil level is low, slowly inject the oil into the engine oil injection gauge. Never inject too much engine oil. Wait a minute, and then check the oil level again. Ensure that the oil level is correct.

5. Install and tighten the oil tropstick.



Do not mix different specifications of lubricating oil to prevent a negative impact on the lubrication performance.

## 2.6. Fuel oil supply



Be careful of the fuel oil being on fire

Make sure that the fuel specification is correct before refueling. If gasoline or similar products is misplaced, it may cause the fuel to catch fire. Always off the engine before refueling.

If the fuel overflows, carefully wipe the overflow fuel.

Do not bring fuel or other flammable products close to the engine, otherwise the fuel will catch fire.

.6.12 Come on Add  
gasoline



Fuel oil and its steam are flammable and explosive. A fire or explosion may cause burns or death.

When you need to add the fuel oil,

Please stop the engine. Wait at least two (2) minutes to ensure the engine cooling before removing the tank cap.

Fuel the fuel tank outdoors or in well-ventilated places.

Do not place too much fuel in the fuel tank. Considering the expansion of gasoline, do not make the oil level above the lower part of the neck of the fuel tank.

Gasoline should be away from sparks, open fires, constant fires, heat and other sources of fire.

Check fuel lines, fuel tanks, tank caps and connections for cracks or leaks. Replace the damaged parts.

If fuel splashes, start the engine until dry.

1. Remove the dust and debris in the gasoline injection area. Remove the fuel tank cap.



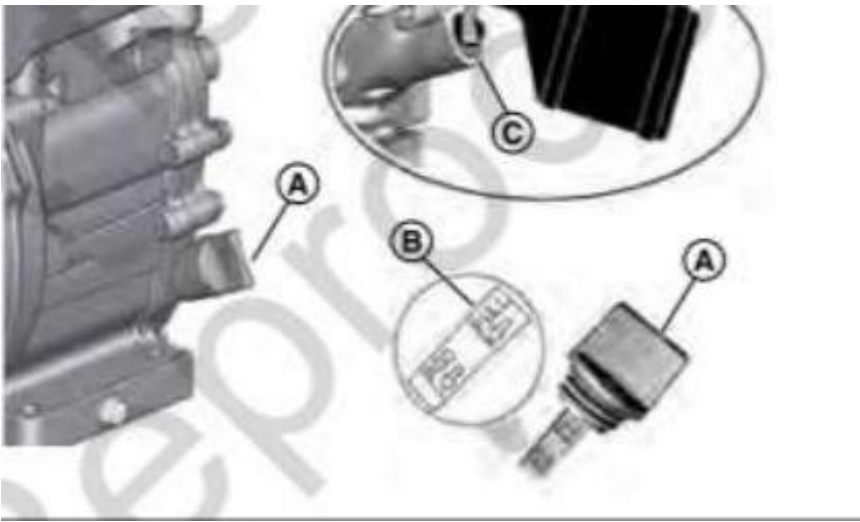
2. Fill the fuel oil into the fuel tank. Considering the expansion of the fuel, never push the oil level above the lower neck of the fuel tank.

3. Install the oil tank cap.

start the engine

Be careful not to spill the fuel out when refueling.

## 2.7. Lubricating oil supply



Lubricate oil to the specified oil level according to the following procedure:

- (1) Place the engine in the horizontal plane position.
- (2) Unscrew the oil ruler on the engine side.
- (3) Check the oil level with a marked oil ruler. Lubricating oil shall be added to the upper limit of the oil gauge.
- (4) Tighten the oil ruler.



Do not rotate the oil gauge when checking the oil level. Do not overdo the engine oil.

Maintenance and maintenance

### 3.1 Inspection

#### (1) Regular inspection

The engine performance will deteriorate due to operating conditions and operating duration. Neglect of performance and functional deterioration can lead to unexpected failures that can interfere with your work, increase fuel and lubricant consumption, increase emissions and noise, and thus shorten

the life of the engine. Routine and regular inspections can keep engine efficiency and prevent failure.

#### (2) Check before daily operation:

Do a daily inspection before the operation. Check before daily operation and implement it as a rule. (3) Interval for regular inspection:

It is recommended that you make an operation diary to record the daily operations and check the results. When the operation hours or the timer reading approaches the specified value, perform periodic checks as

indicated in the book.

#### (4) Use of authentic parts:

For the replacement of engine parts must use authentic parts. Using other

components will reduce the performance and shorten the life of the machine.

#### (5) Maintenance tools must be available:

Maintenance tools should be stored near the engine and ready for use.

#### (6) Torsional torque of bolts and nuts:

Screw the bolts and nuts to the specified torque.

If the bolt is screwed too tightly, it will damage the thread; if screwed too loose, it will cause oil leakage or machine from the joint surface Disarmament failure.

For important components, a torque wrench shall be used and the bolts shall be tightened to the specified torque in three times according to the specified procedure.

If repair or repair is required, consult your agent or distributor.

### 3.2 Clean the air filter.



When the filter element on the air filter is blocked by dust, the performance of the engine will be greatly affected. Therefore, a regular cleaning is required. When the engine is operating in a dusty place, the filter element should be cleaned more frequently.



1. Release the fastener (A) of the fixing lid (B).
2. Open the lid (B) and remove the filter (C).
3. Wash the foam filter element (C) with liquid detergent and water. Squeeze the foam components in a clean cloth.
4. Soak the foam filter element with clean engine oil (C). To remove the excess oil, squeeze out the foam filter element with a clean cloth.
5. Install the filter (C).
6. Install the lid (B) and close it with the fastener (A).

Check once every 100 run hours

(1) Replace the lubricating oil and the lubricating oil filter element (for the second time and later)

Replace the lubricating oil every 100 operation hours from the second time. At the same time, replace the lubricating oil

filter element. (6) Replace the air filter element (optional part)

The damaged filter element the suspended matter in the air into the combustion chamber, causing rapid wear of the engine and shortening the service life of the engine. The filter element of the air filter covered with heavy dust will also reduce the power output of the engine and emit black smoke. Every time a new air filter element should be replaced.

### 3.3 Notes for long-term storage

To store the engine for a long time, please note the following points. Inspection and maintenance in long-term storage

(1) Regular inspection

If the next periodic check is coming, perform the check before storage.

(2) External cleaning, oil release.

Wipe away the dirt and grease marks from the engine casing.

(3) Waterproof and dustproof

Cover the air filters, mufflers, and electrical components (AC motor, starting motor, switch) with a sealed plastic cover to prevent water or dust. Store the engine in good places to avoid wet dust.

(4) Measures to deal with the battery discharge itself

Turn off the battery switch or disconnect the ground wire for the battery (-). Charge the battery once a month to compensate for the battery self the body discharge.

For long-term storage operations, prepare the same as the first operation, see preceding chapter.

### 3.4, periodic checklist

|  |  |
|--|--|
|  | The first 5 hours                                |
|  | Replace the engine oil.                          |
|  | Every 8 hours or daily intervals                 |
|  | Check the engine oil level.                      |
|  | Clean the area around the silencer and controls. |
|  | Clean the air inlet grille.                      |
|  | Every 25 hours or every year                     |
|  | Clean the air filter.                            |
|  | Clean the prefilter.                             |
|  | Every 50 hours or every year                     |
|  | Repair the exhaust system.                       |
|  | Every 100 hours or annually                      |
|  | Replace the engine oil.                          |
|  | annually   |
|  | Replace the spark plug.                          |
|  | Replace the empty filter element.                |
|  | Replace the prefilter.                           |
|  | Repair the cooling system.                       |

Change the engine oil after the first 5 hours of operation

### 3.5 Engine FAQs

| phenomenon  | probable cause  | resolvent  |
|---|---|--|
| The engine does not start up                        | No fuel   | Supplemental fuel  |
|   | Water in the fuel system  | Replace the fuel oil and repair it or more<br>Change the fuel system |
|   | Fuel pipe blockage  | Clean or replace   |
|   | Fuel filter is blocked  | renewal  |
|   | Low-temperature timing oil, the viscosity is too high           | Use the prescribed oil   |
|   | Improper oil injection timing                                   | regulate   |
|   | The nozzle is blocked   | Clean or replace   |
|   | Crank in the crankshaft, camshaft, piston, cylinder, or bearing | Repair or replacement  |
|   | Piston ring and cylinder wear                                   | renewal  |
|   | Excessive valve clearance                                       | regulate   |
| The starter is not running                          | accumulator discharge   | charge   |
|   | The starter has failed  | Repair or replacement  |
|   | The key switch is faulty  | renewal  |
|   | The wiring is disconnected                                      | linkage  |
|   | The air cleaner is blocked                                      | Clean or replace   |
| There is white or blue exhaust exhaust              | Excessive oil   | Reduce it to the specified oil level                                 |
|   | The piston rings and cylinders are worn or stuck                | Repair or replacement  |
| There are black or dark gray exhaust exhaust go out | overload  | Reduce the load  |
|   | Low-quality fuel oil was used                                   | Use the specified fuel oil   |
|   | Fuel filter is blocked  | renewal  |
|   | The air cleaner is blocked                                      | Clean or replace   |
| Output is insufficient                              | The moving parts of the engine seem to get stuck                | Repair or replacement  |
|   | Compression leakage   | Check the compression pressure and repair it                         |
|   | Air leakage of exhaust system                                   | Repair or replacement  |
|   | Air leakage at the compressor exhaust side                      | Repair or replacement  |
|   | The air cleaner is dirty or blocked                             | Clean or replace   |
| Excessive lubricating oil consumption               | The piston ring opening gap is oriented in the same direction   | Change the direction of the ring opening gap                         |
|   | Oil ring is worn or stuck                                       | renewal  |
|   | Wear of the piston ring groove                                  | Replace the piston   |
|   | The valve lever and the valve guides are worn                   | renewal  |

|                                   |   |  |
|-----------------------------------|---|--|
|                                   | Oil leakage due to seal or seal ring failure    | renewal                                    |
| Low oil pressure                  | Insufficient oil                                | replenish                                  |
|                                   | The oil filter is blocked                       | cleaning                                   |
|                                   | Oil channel blockage                            | cleaning                                   |
|                                   | Different types of oil                          | Use the specified type of engine oil       |
| engine overheat                   | Insufficient oil                                | replenish                                  |
|                                   | Dust blocks the heat net and cooling blades     | cleaning                                   |
|                                   | The radiator is corroded                        | Clean or replace                           |
|                                   | Radiator cover failure                          | renewal                                    |
|                                   | Overload operation                              | derating                                   |
|                                   | Cylinder head liner fault                       | renewal                                    |
|                                   | The fuel oil used is not suitable               | Use the specified fuel oil                 |
| The battery soon ran out of power | Insufficient electrolyte of the storage battery | Supplement with distilled water and charge |
|                                   | The wiring is disconnected                      | linkage                                    |
|                                   | The rectifier fails                             | renewal                                    |
|                                   | Alternator failure                              | renewal                                    |
|                                   | Battery failure                                 | renewal                                    |