



# S150 Skid Steer Loader

## Instruction Manual



**广西玉柴装备科技有限公司**  
GUANGXI YUCHAI EQUIPMENT TECHNOLOGY CO., LTD.

## Warning

Improper operation of this machine can cause injury or death. Before using this machine, the following points should be observed:

- Memorize the machine's safety procedures and correct operating guidelines.
- Read and understand the relevant sections of the instruction manual regarding safe operation of the machine.
- Understand and familiarize yourself with all safety signs on the machine.
- Keep unauthorized personnel away from the work area.
- Pre-operation safety training for this machine should have been conducted beforehand at the work site.

You are responsible for complying with the relevant laws and regulations and following the instructions of Yuchai Equipment regarding machine operation and maintenance.

# YUCHAI

YUCHAI 此乃中国广西玉柴装备科技有限公司之注册

# CONTENTS

|                                                                                                 |      |
|-------------------------------------------------------------------------------------------------|------|
| 1. Introduction                                                                                 |      |
| To Users-----                                                                                   | 1-2  |
| Safety Tips-----                                                                                | 1-3  |
| Product Information-----                                                                        | 1-4  |
| Machine Composition-----                                                                        | 1-6  |
| Technical Specifications-----                                                                   | 1-7  |
| 2. Safety Procedures                                                                            |      |
| General Safety Principles-----                                                                  | 2-2  |
| Safety Tips-----                                                                                | 2-3  |
| Safety Equipment-----                                                                           | 2-4  |
| Safety Signs-----                                                                               | 2-5  |
| Workplace Safety-----                                                                           | 2-11 |
| Safe Operation-----                                                                             | 2-12 |
| Shutdown Maintenance-----                                                                       | 2-15 |
| Fire Prevention, Electric Shock Prevention, Explosion Prevention, and Poisoning Prevention----- | 2-16 |
| Lithium Battery Box-----                                                                        | 2-18 |
| Hydraulic System-----                                                                           | 2-19 |
| 3. Component Introduction                                                                       |      |
| Overview of Control Devices-----                                                                | 3-2  |
| Control Panel-----                                                                              | 3-8  |
| Working Device and Travel Controls-----                                                         | 3-9  |
| Safety Belts and Safety Bars-----                                                               | 3-11 |

### 3. Component Introduction

Overview of Control Devices-----3-2

Control Panel-----3-8

Working Device and Travel Controls-----3-9

Safety Belts and Safety Bars-----3-11

### 5. Maintenance and Care

Maintenance and Care Basics-----5-2

Maintenance Cycle-----5-3

Boom Lifting Support Equipment-----5-4

Safety Belts-----5-5

Safety Handrails-----5-6

Cab Tilting-----5-7

Hydraulic System-----5-8

Tire Maintenance-----5-10

Battery System-----5-11

Travel Reducer-----5-12

Lubrication-----5-13

**1**

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# Preface

## To Users

Dear User,

Welcome to Yuchai skid steer loaders. Thank you for your cooperation with Yuchai.

This manual is primarily intended for the operators and maintenance personnel of this skid steer loader. We urge you to carefully read this manual before operating and maintaining the machine, and strictly adhere to the safety procedures, operating methods, lubrication, and regular maintenance specified herein. Properly mastering the operating methods and performing regular maintenance are essential guarantees for reliable machine operation, extended lifespan, and maximized work efficiency.

Please entrust major overhauls and adjustments to our machines to our authorized service stations or dealerships, and use genuine parts and spare parts provided by our company. Using non-genuine parts or components may not have an immediate impact on the machine, but it is likely to cause a series of adverse consequences later. Even within the warranty period, Yuchai will not provide warranty coverage for machine malfunctions caused by the use of non-genuine parts or components or repairs at unauthorized institutions.

Yuchai adheres to the principle of "customer first" and continuously improves its products to provide users with the best possible service. Improvements may be implemented at any time. For products that were being sold at the time, we will not change the information or provide prior notice.

We sincerely hope that with your proper use and careful maintenance, this machine will better serve you and create greater value.

Guangxi Yuchai Equipment Technology Co., Ltd

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## Safety Tips

### 1.Warning signs



This warning sign in this manual indicates important safety information. When you see this sign, you should carefully read the information and advice following it to avoid potential injuries or fatalities.

### 2.Safety Tips

This manual provides precautions, markings, and descriptions of potential hazards for safe use of the machine. Operators must carefully read this manual and the safety markings affixed to the machine before operating, maintaining, or repairing it, and must follow the relevant procedures.

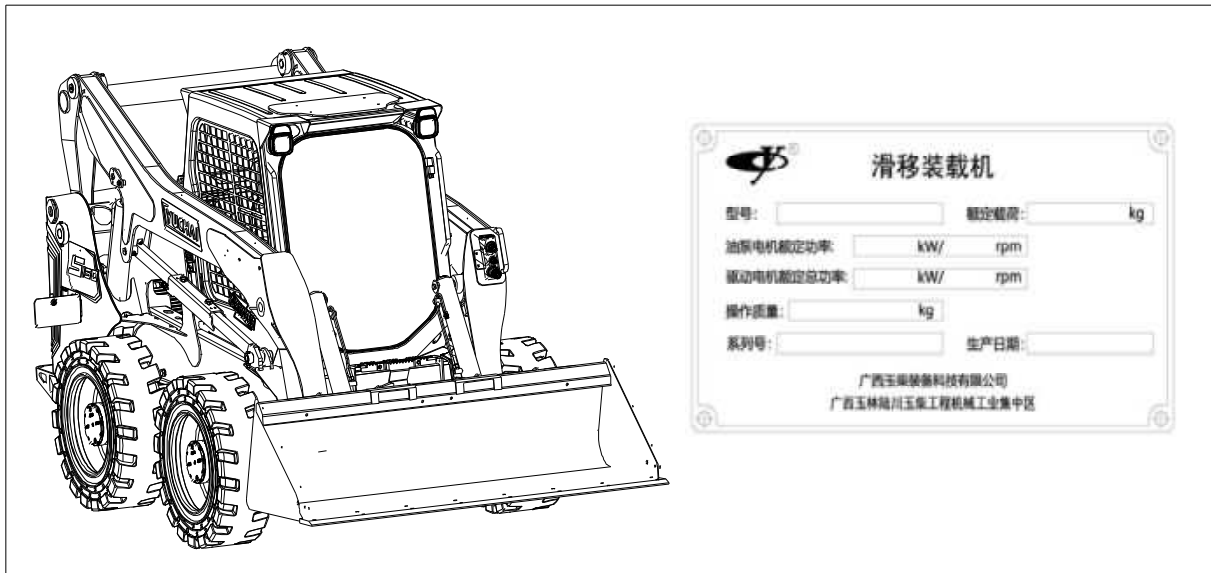
Safety warnings for this machine are indicated using words such as "Danger," "Warning," or "Caution." Their corresponding explanations are as follows:

-  **Danger:** Indicates that failure to avoid the danger will result in death or serious injury; applies only to a few situations where the most serious danger exists.
-  **Warning:** Indicates that failure to avoid a potentially dangerous situation could result in death or serious injury.
-  **Note:** Indicates that failure to avoid a potentially dangerous situation could result in minor or moderate injury. It can also be used to warn of unsafe practices that could lead to personal injury.

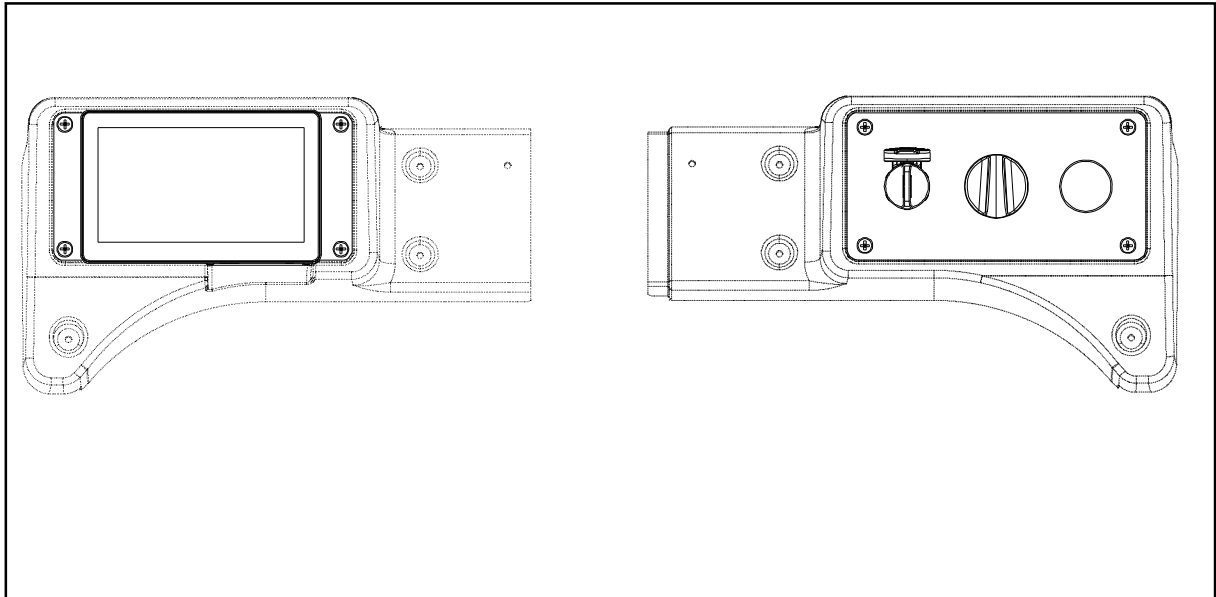
## Product Information

When you need to know the basic information about the machine, you can check the location shown in the diagram.

- Machine information (the machine nameplate is located on the inside right side of the cab).



- Machine operation information (located on the color monitor in the cab).



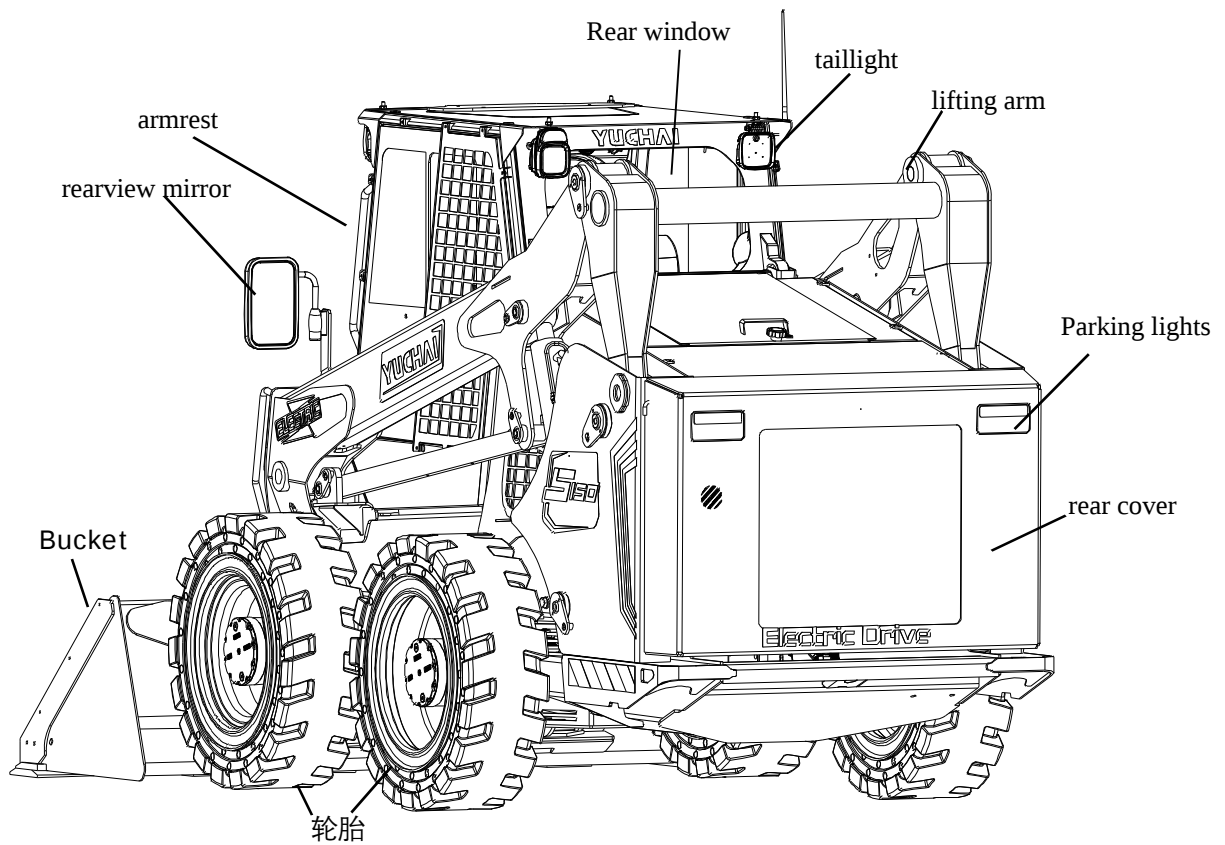
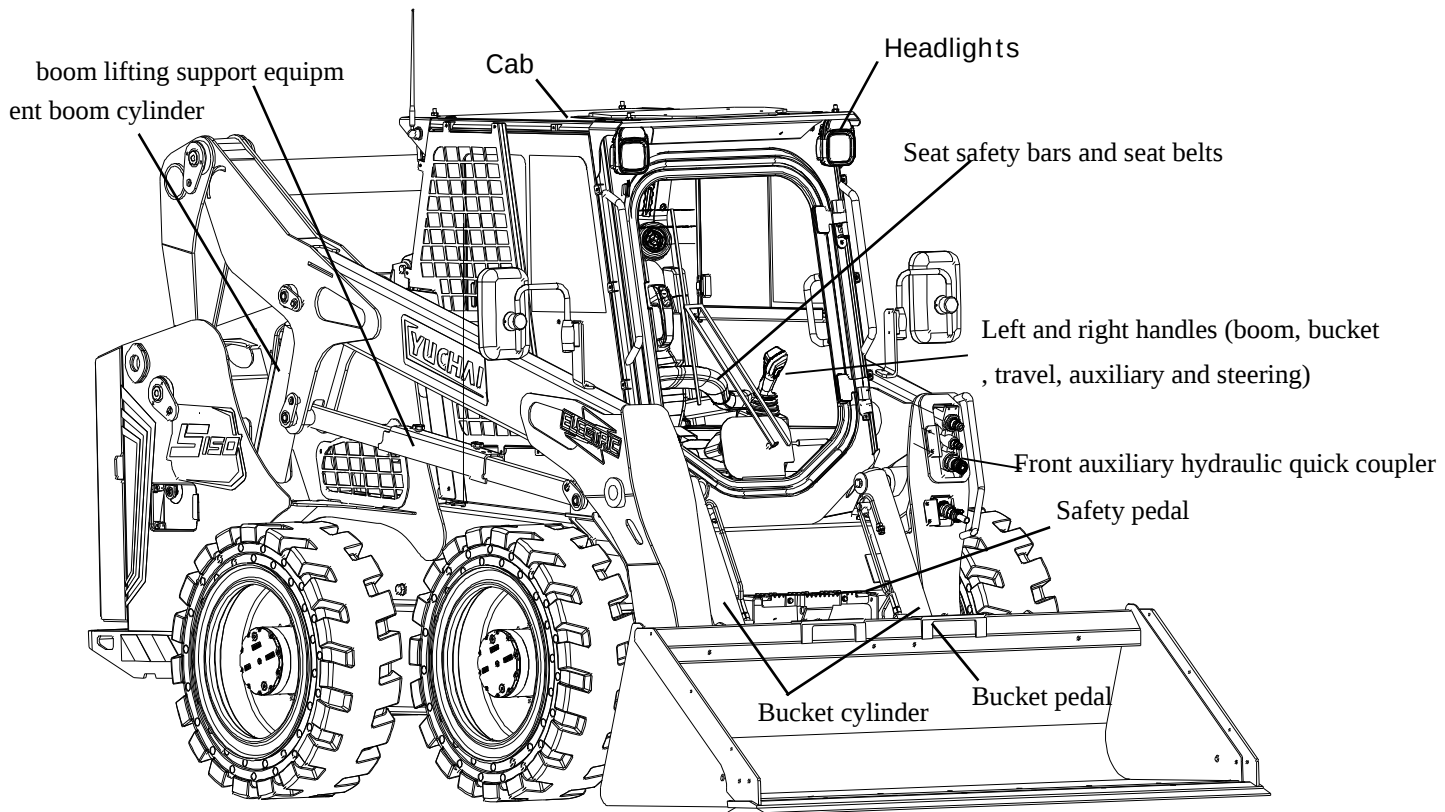
## Machine Files

Please fill in your machine's serial number and other data in the table below. When you need to purchase spare parts or request relevant information, you can provide these codes to Yuchai.

Please record these numbers and keep them safe along with the product certificate. If your machine is stolen, you can submit this information to the local public security bureau.

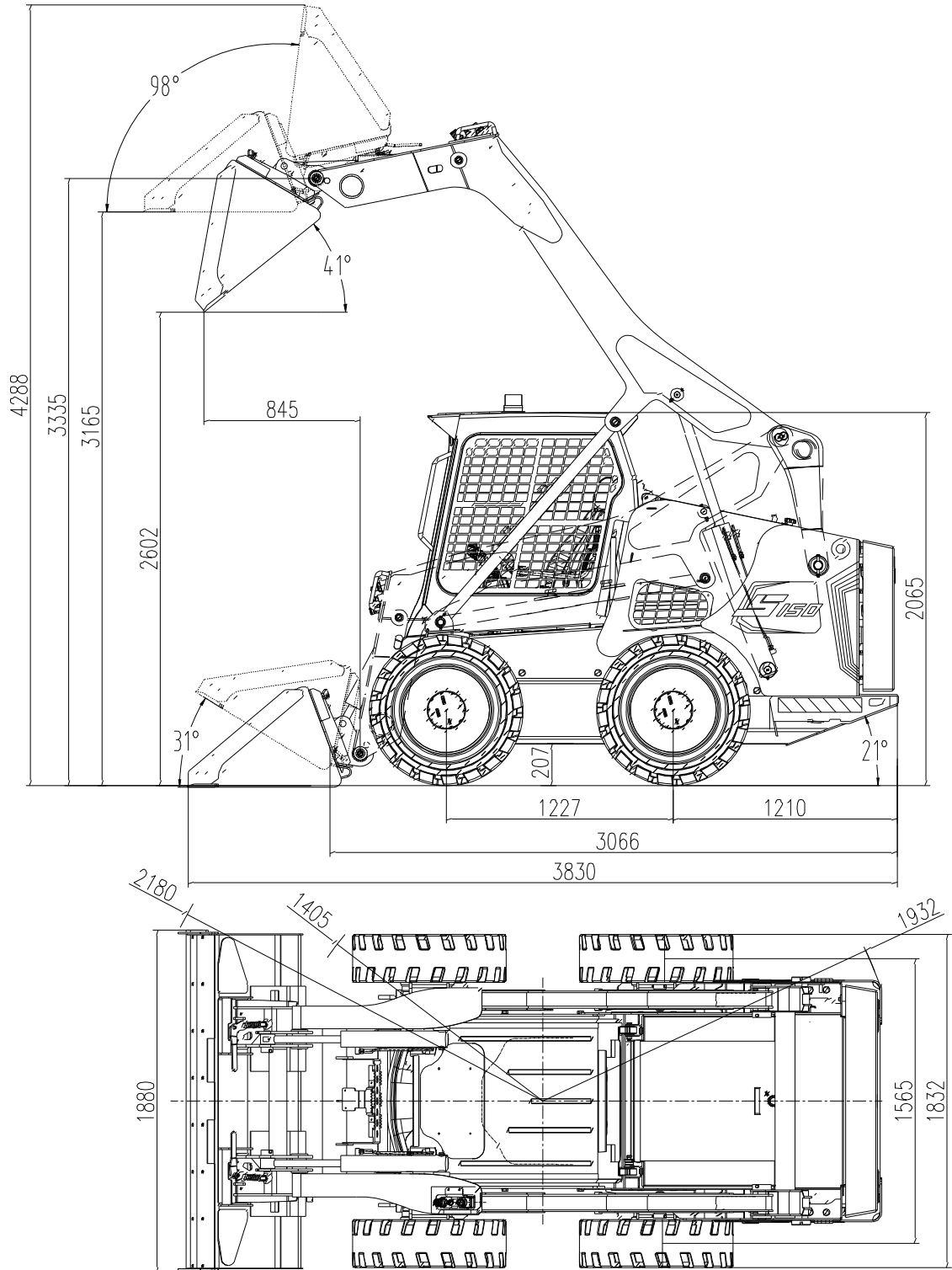
|                                                                                     |                           |       |
|-------------------------------------------------------------------------------------|---------------------------|-------|
|  | ● Machine Model           | _____ |
|                                                                                     | ● Product serial number   | _____ |
|                                                                                     | ● Motor power information | _____ |
|                                                                                     | ● Distributor information | _____ |
|                                                                                     |                           | _____ |

## Machine composition



## Technical Specifications

## S150 Skid Steer Loader Specifications



## Performance

Rated Load: 1620kg

Tipping Load: 3250kg

Operating Weight: 4800kg

Bucket Capacity: 0.5 m<sup>3</sup> (cubic meters)

Endurance: 5 – 7 hours

Travel Speed: 0 – 19.8 km/h

## Battery System

Nominal Capacity: 105 kWh

Nominal Voltage: DC 347.76V

## Motor

Oil Pump Motor (Rated/Peak Power): 32 kW / 60 kW

4×Drive Motors (Rated/Peak Power per Motor): 4×10 kW / 4×20 kW

## Slow Charging & Discharging

Power: 3.3 kW

Input Voltage/Current: AC 220V / 15A

Output Voltage/Current: DC 347V / 10A

## Fast Charging

Power: 40 kW

Input Voltage/Current: AC 380V / 80A

Output Voltage/Current: DC 347V / 115A

## Hydraulic System

Rated Pressure: 23.5 MPa

Rated Flow: 87.1 L/min (liters per minute)

High Flow: 138.2 L/min

Hydraulic Tank Capacity: 33 L

## Tires

Solid Tires: 33X12-20

# **2**

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## Safety Procedures

## General Safety Rules

Following the safety procedures outlined in this manual can prevent most accidents that could endanger machine operation and maintenance. Before operating or repairing the machine, you should thoroughly read and understand all safety information in this manual and the relevant machine safety diagrams.

The safety aspects of this manual describe situations that may arise during normal operation and maintenance of the machine and provide possible solutions for these situations.

Safety information is found in various chapters of this manual and, together with this chapter, forms a comprehensive safety guide for this manual.

This manual and the safety information on the machine do not cover all potential hazards and possible countermeasures. If you use methods or actions not recommended or permitted in this manual or on the machine, it is your responsibility to take the necessary precautions to ensure safety.

Under no circumstances should this manual be used for any purpose or operation prohibited by its instructions. This machine must not be used to transport or lift personnel. During machine startup and operation, no one other than the operator is allowed in the cab, and no one else is allowed to enter the machine's operating radius.

This machine operates on high voltage. Operation, installation, and maintenance must be performed by qualified personnel with appropriate safety precautions. Unauthorized operation is strictly prohibited. Operators and maintenance personnel must be trained and qualified.

Before starting work, check all machine functions. If any malfunction is found, stop the machine immediately, investigate the cause, and only resume operation after troubleshooting.

Strictly follow the inspection, maintenance, and upkeep procedures outlined in this manual. Operators must operate the machine according to the operating methods, safety regulations, and working range specified in this manual.

Do not operate or maintain the machine while under the influence of alcohol or drugs, as this will endanger you and others.

Understand the meaning of relevant signals and hand gestures.

When walking on public roads, be familiar with and strictly adhere to the relevant laws and regulations of your country or region.

This machine is for normal ground-based operation only. Do not use it underwater, in culverts, on high platforms without guardrails, in explosive locations, or in toxic environments.

Do not take narcotic drugs or alcoholic beverages while working, as these will impair dexterity and coordination. Operators must consult their doctor while taking prescription medications to determine if it is safe to operate the machine.

## Safety Tips

### 1.Warning signs



This warning sign in this manual indicates important safety information. When you see this sign, you should carefully read the information and advice following it to avoid potential injuries or fatalities.

### 2.Safety Tips

This manual provides precautions, markings, and descriptions of potential hazards for safe use of the machine. Operators must carefully read this manual and the safety markings affixed to the machine before operating, maintaining, or repairing it, and must follow the relevant procedures.

Safety warnings for this machine are indicated using words such as "**Danger**," "**Warning**," or "**Caution**." Their corresponding explanations are as follows:

-  **Danger:** Indicates that failure to avoid the danger will result in death or serious injury; applies only to a few situations where the most serious danger exists.
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# Safety Equipment

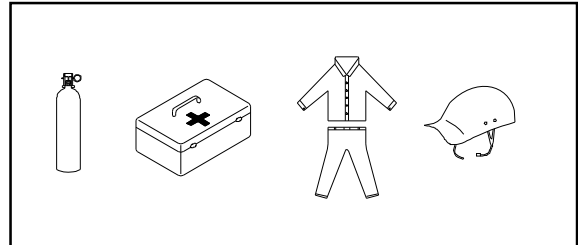
## 1.Operator protective equipment

1) Before operating or repairing the machine, operators must wear appropriately sized work clothes, a safety helmet, work shoes, and other necessary safety protective equipment (such as earplugs, gloves, safety glasses, and a safety belt).

2) If the operator's hair is too long, please tie it up and cover it with a safety helmet to prevent it from getting tangled in the machine.

3) Users must keep first-aid supplies in the machine and check them regularly, adding supplies as needed for emergency use.

4) Before operating or repairing the machine, please always check that all protective equipment is functioning properly.



## 2.Escape Exit

The escape hammer is installed on the rear side wall panel of the driver's cab.

When trapped in the driver's cab and unable to enter or exit normally, and need to escape, use the pointed end of the escape hammer to strike the glass until it shatters. When striking the glass, please take precautions to protect your eyes and face.

## Safety Signs



**Warning:** Failure to understand safety signs or loss of safety signs may result in injury or death. Please replace any missing or damaged signs promptly and keep all safety signs clean and legible.

Before operating, maintaining, or repairing the machine, carefully read the instruction manual and the warning labels affixed to the machine to ensure you fully understand their contents and follow the relevant procedures.

Check the labels before starting the machine each day. Clean them if they are illegible.

When cleaning the labels, use only cotton cloth, water, and soap. Do not use organic solvents or gasoline, as these can easily cause the labels to fall off.

Replace any damaged, missing, or illegible labels. If the label is located on a part that needs to be replaced, ensure that the label is fitted onto the new part. Please contact your Yuchai dealer for new safety labels.

### 1. Safety sign classification

Safety markings in this instruction manual and on the machine include both illustrative safety markings and textual safety markings.

#### A. Illustrative Safety Markings

These safety signs use graphics to represent safety warnings, making them simple, easy to understand, and readily apparent.

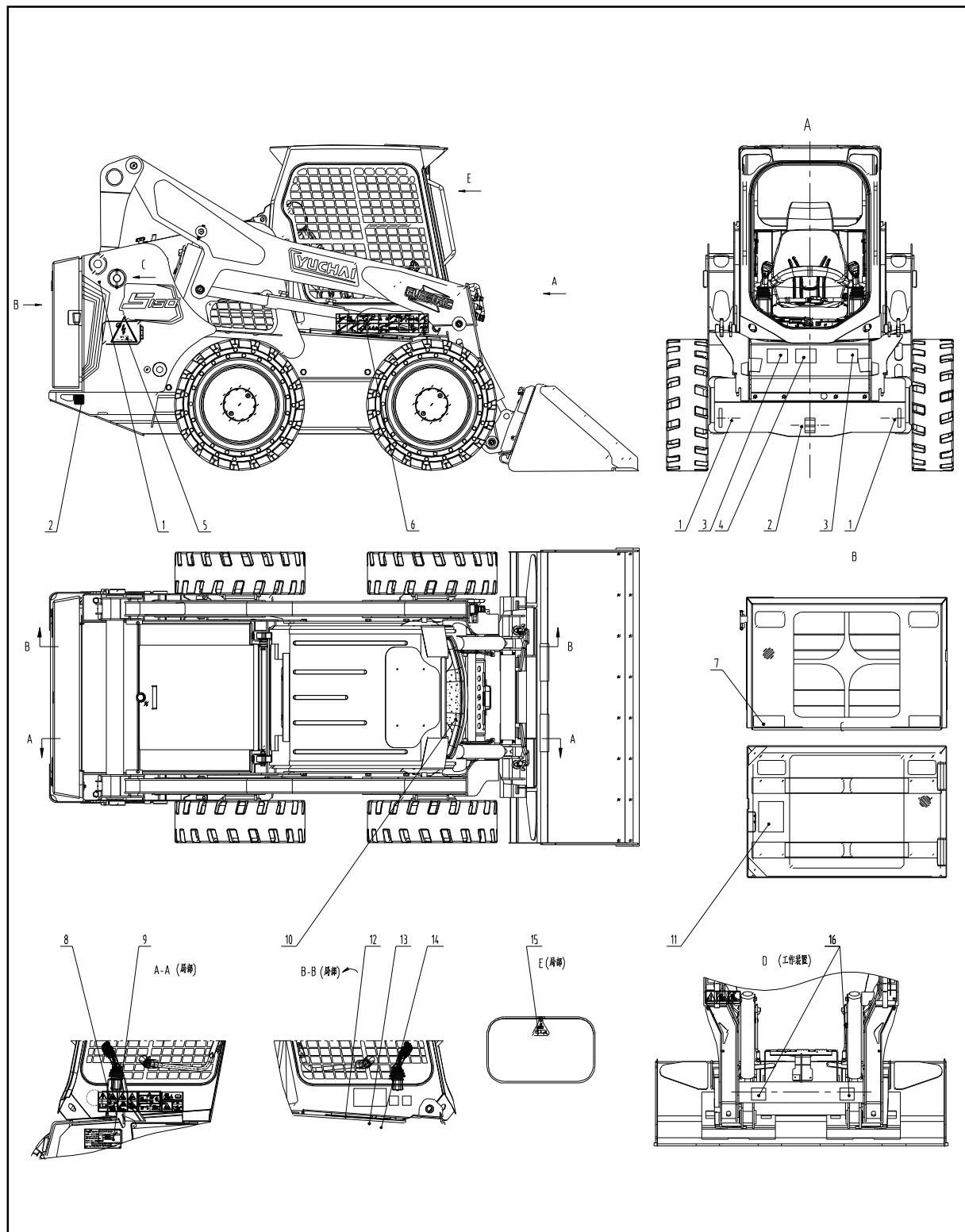


#### B. Text-based safety signs:

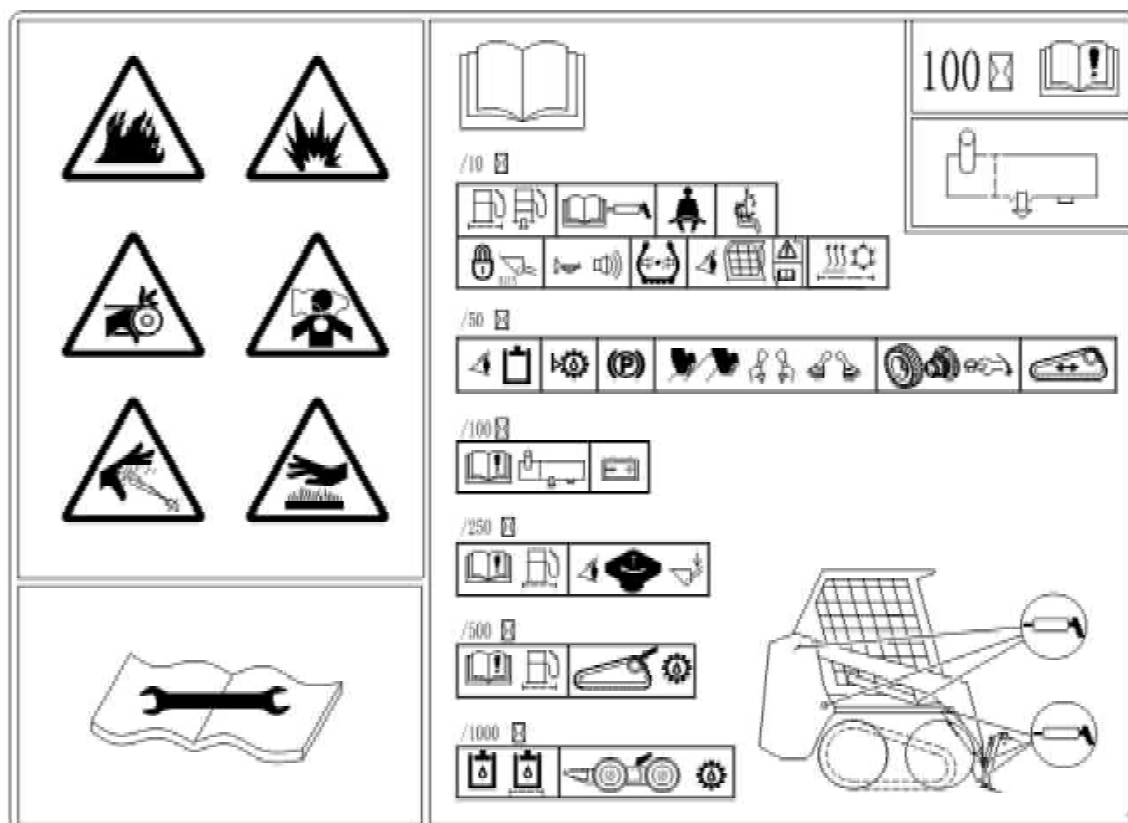
These safety signs directly explain the precautions that must be taken using the corresponding text, making them more intuitive.

## 2.Safety sign placement

The illustration shows only the "safety symbols" section of all symbols; the other functional symbols will be introduced in later chapters.

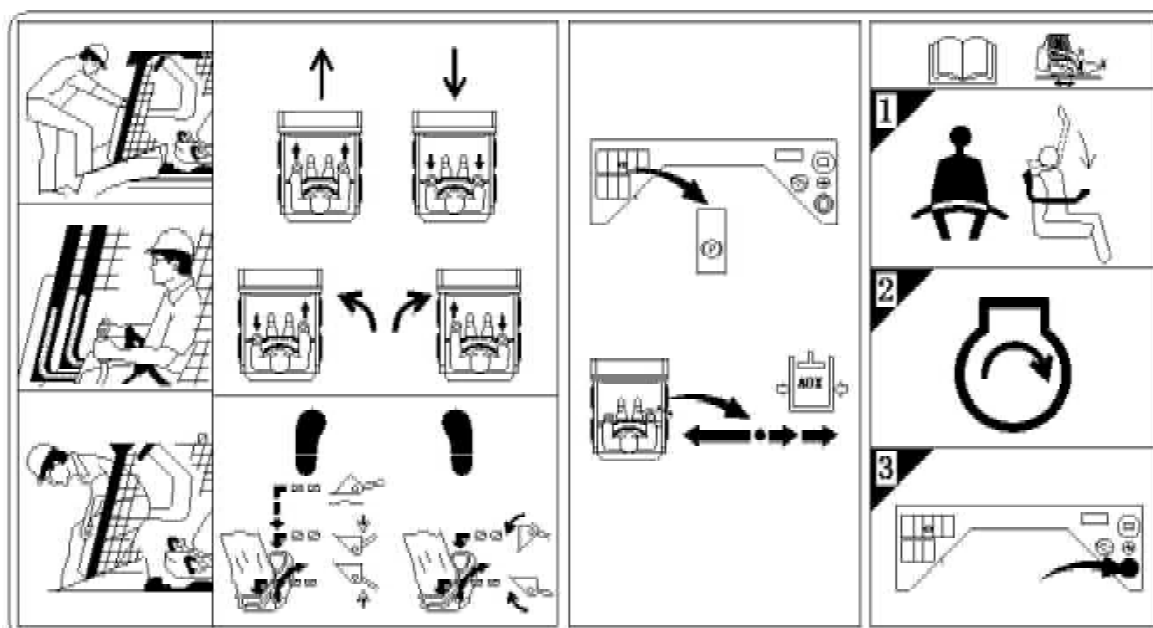


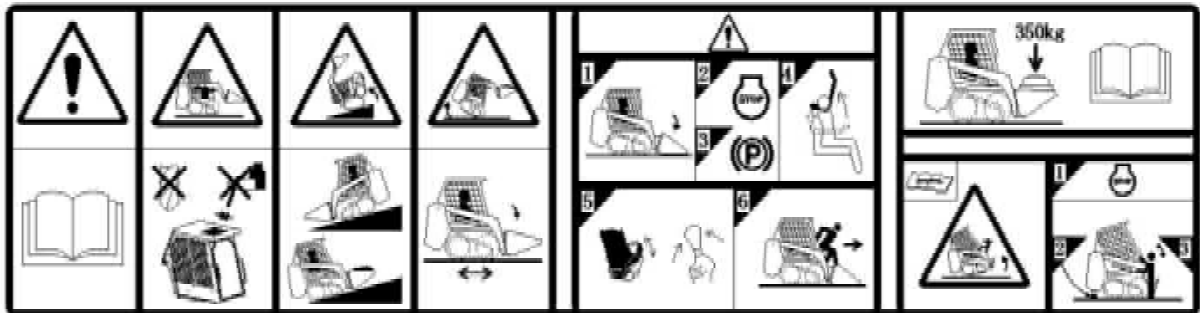
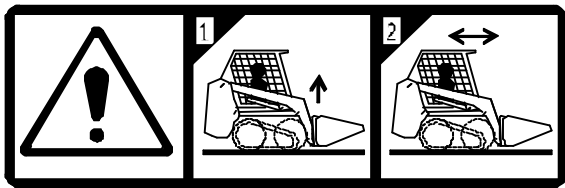
## 1. Safety information to be aware of during operation and maintenance



Before performing any maintenance, please be sure to read the instruction manual.

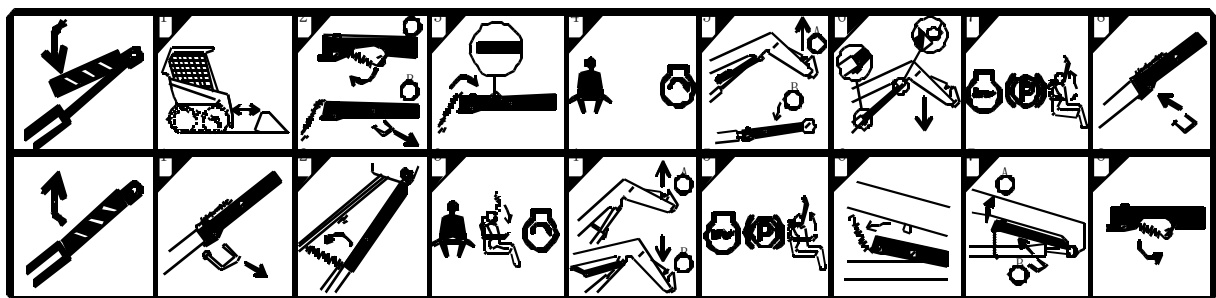
## 2. Pay attention to the markings before operating the machine.



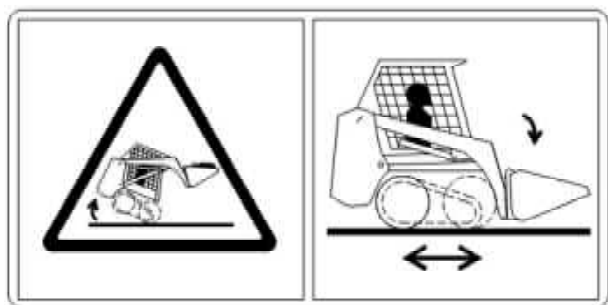


Before operating, maintaining, disassembling, assembling, or transporting the machine, please be sure to read the instruction manual.

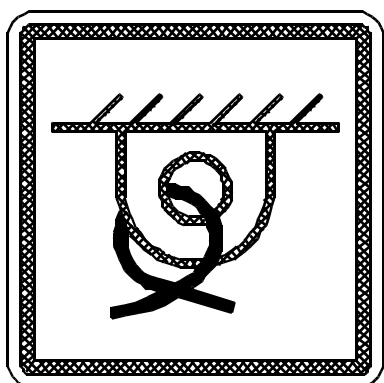
### 3.Boom lifting support equipment operation markings



5. Pay attention to load balance.



6. Crane hook marking



7. Beware of electric shock.

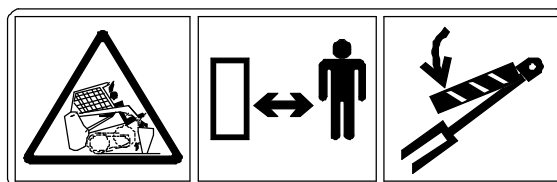


Electrical repairs require the skills of a professional.

8. Climbing is prohibited

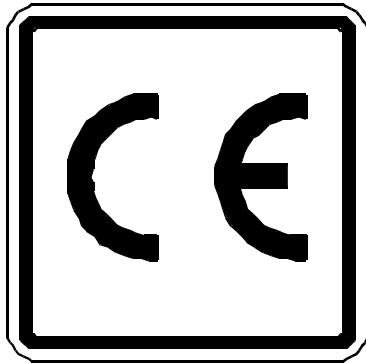


9. Crane hook marking

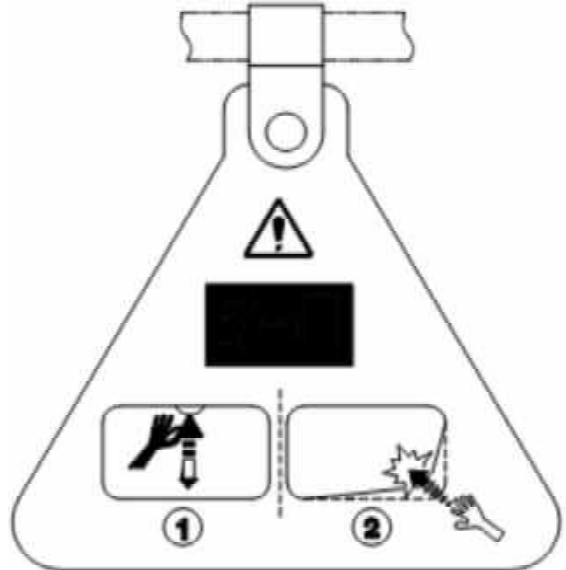


Mobile work equipment can cause personal injury.  
A safe distance must be maintained from the area where the work equipment is located.

## 10.CE certification mark



## 12.Escape route warning signs



## 11.Complete machine nameplate

|                                                                                                                                                                                                          |                      |                      |                      |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|----------------------|----------------------|
|  <b>COMPACT SKID STEER LOADER</b>  |                      |                      |                      |
| Model:                                                                                                                                                                                                   | <input type="text"/> | Rated load:          | <input type="text"/> |
| Rated power of pump motor:                                                                                                                                                                               | <input type="text"/> |                      |                      |
| Rated total power of drive motor:                                                                                                                                                                        | <input type="text"/> |                      |                      |
| Operating mass:                                                                                                                                                                                          | <input type="text"/> |                      |                      |
| Serial No.                                                                                                                                                                                               | <input type="text"/> | Date of manufacture: | <input type="text"/> |
| <b>GUANGXI YUCHAI EQUIPMENT TECHNOLOGY CO., LTD</b><br>Address: Yuchai Engineering Machinery Industry Center, Luchuan, Yulin, China                                                                      |                      |                      |                      |

## Workplace safety

Familiarize yourself with the area you will be working on beforehand. Please check:

1. The location of slopes, open ditches, fallen or hanging objects.
2. Soil conditions (soft or hard), waterlogged and marshy areas.
3. Rocks and tree stumps, boundaries of buried foundations, root posts or walls, boundaries of buried debris or fill.
4. Holes, obstacles, mud or ice.
5. Traffic volume.
6. Dense dust, smoke, or fog.
7. The exact location of buried or hanging electrical, gas, telephone, water, sewage, or other utility lines. If necessary, have the utility company mark them, shut them down, or relocate them before you begin work.



**Warning: Please contact your local utility services system and department before commencing any project.**

8. When working inside a building, ascertain the clearance overhead, in doorways, corridors, etc., as well as the load-bearing capacity of floors and ramps. Ensure adequate ventilation when working indoors. What you don't know can cause you harm.

9. Know the precise distances between electrical and telephone lines and machinery, and between machinery and the ground. If possible, disconnect the power supply. If the power cannot be disconnected, request guidance from a signalman.



**Warning: Touching or approaching a power source or a machine connected to a power source may cause electric shock. Do not allow any part of the machine to come near an overhead power cord unless necessary safety precautions have been taken. Exercise extreme caution.**

10. It is essential to maintain the legally mandated minimum distance from underground gas pipes, cables, telephone lines, and water pipes.



**Warning: If you look into the damaged cable end, the severed fiber optic cable can seriously damage your eyes.**

11. This machine is prohibited from operation in culverts or underground.
12. Operation is prohibited in mud, swamps, and marshes.
13. Operation is prohibited in water; do not pass through areas or roads with water exceeding 200mm.
14. Operation is prohibited in areas containing hazardous chemicals.
15. Operation is prohibited in areas with explosive or flammable/explosive potential.
16. Operation is prohibited on high platforms without guardrails. If operation is necessary, sturdy guardrails at least the radius of the tires must be installed, and must meet relevant national standards.

Please consult your local dealer before use in the following environments:

1. Environments containing explosive materials such as ammunition.
2. Environments with excessive dust.
3. Harbors or waterfront areas with a risk of salt corrosion.
4. Chemical plants that may be affected by acids or other chemicals.
5. Environments containing combustible dust or flammable gases.
6. Environments containing certain toxic substances.

## Safe Operation

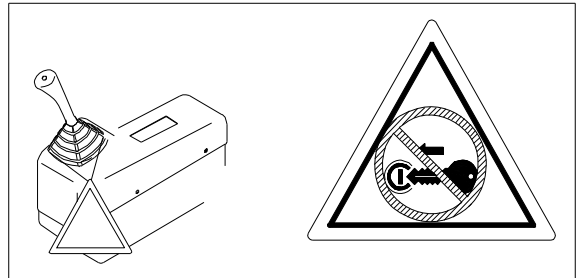


**Warning:** Before operating the machine, you must fasten your safety belt, sound the horn, and confirm that no one is in the work area before starting work. This machine is prohibited from use in culverts/underground areas, in areas with hazardous chemicals, or in areas with a risk of explosion.

### 1. Starting the Machine

#### A. Safety Rules for Starting the Machine

- 1) Before starting the machine, a warning horn must be sounded.
- 2) No one other than the operator is allowed to ride on the machine.
- 3) The machine may only be operated while seated.



**Warning:** Do not start the machine if a "Do Not Start" warning sign is displayed on the control handle.

#### B. After starting the machine

After starting the machine, the following must be checked:

- 1) Is the safety belt fastened?
- 2) Are the working devices, walking mechanisms, and other moving parts functioning normally?
- 3) Are there any abnormalities in the machine's sound, vibration, odor, or instruments?
- 4) Are there any leaks in the oil lines?

## 2. Before Operation

Understand the weight of the object before operation to avoid exceeding the machine's rated lifting capacity. High-density objects are heavier than objects of the same volume. When handling high-density objects, reduce the size of the load.

## 3. Maintenance Safety

First, turn off the manual power switch/key switch of the entire machine to ensure the machine is powered off.

When performing any maintenance work under the machine, ensure it is properly supported. Do not use the hydraulic cylinders to support the machine; if the control lever moves or the hydraulic lines rupture, the machine will fall.

Do not work under the cab unless the cab is well supported.

Do not touch wiring harness ends or other high-voltage electrical components directly with bare hands to avoid the risk of electric shock.

Unless otherwise instructed, do not adjust the machine while it is moving or running.

Hot oil and hot parts can cause personal injury. Do not allow hot oil or hot parts to come into contact with your skin.

The hydraulic oil filter can only be removed after the machine has stopped running. The hydraulic filter must be cooled to a temperature safe to touch with bare hands. Follow the steps in the manual to remove the hydraulic oil tank filter.

Shards and other debris may fly out of the object if you strike it. Before striking the object, ensure no one will be injured by flying debris.

## 4. Pneumatic Tires

The introduction of hot gases into the tire can cause an explosion of the gas inside.

Tire explosions can be caused by heat from welding, heated rim components, external ignition sources, and excessive braking.

Tire explosions are much more violent than ordinary explosions, capable of ejecting the tire, rim, and axle up to 500 meters away from the machine. All the explosive impact and flying debris can cause corresponding hazards, personal injury, and death.

Do not approach hot tires; maintain a safe distance.

It is recommended to use dry nitrogen to cool inflated tires. If the tire was originally inflated, nitrogen can still be used to correct the pressure.

Inflating with nitrogen reduces the risk of explosion because nitrogen does not support combustion. Nitrogen prevents oxidation and aging of rubber, as well as corrosion of the rim.

To avoid overinflating tires, it is best to use appropriate nitrogen inflation equipment. It is essential to use the correct equipment and be trained on its proper use. Tire blowouts or rim failures can be caused by unsuitable equipment or incorrect usage.

When inflating tires, stand behind the tire tread and use the provided padding.

Tire maintenance is a dangerous task and should only be performed by personnel trained in the proper use of tools and procedures. Failure to follow proper procedures can result in the explosive force of a tire explosion, which can eject parts and cause serious personal injury or death. Carefully follow the professional instructions of your tire dealer.

## 5. Preventing Thunderstorm Injuries

If lightning strikes the vicinity of the machine, the operator should not attempt the following:

Get on the machine

Get off the machine

If you are operating the machine when a thunderstorm strikes, remain in the driver's seat. If you are standing on the ground when a thunderstorm strikes, move away from the vicinity of the machine.

## 6. Operation

Only operate the machine while seated. Always fasten your seatbelt while operating.

Before moving the machine, ensure it will not endanger others.

When operating the machine and its working devices slowly in an open area, check that all safety devices and control levers are functioning properly.

During machine operation, record any repairs required. Record any repairs performed.

Refer to the user manual for information on bucket and lifting limits.

Lower the bucket and boom to their lowest position during transport, tilt the bucket to keep it off the ground, and do not place the machine near cliffs, caves, or the edges of protrusions.

If the machine slips on a slope, immediately unload the load and turn the machine downhill.

Avoid any conditions that could cause the machine to tip over. The machine may tip over when driving on muddy terrain, riverbanks, or when crossing ditches, ridges, or other unpredictable obstacles.

Avoid operating the machine on muddy terrain; if possible, operate the machine around muddy areas.

Maintain the machine's control parts and do not exceed its rated load capacity.

Do not cross cables, and do not allow others to cross cables.

Know the maximum width of your machine.

Use rollover protection devices when operating the machine.

Daily inspection of protective devices is necessary to check for bending, cracking, or loosening of the structure. Do not operate machines with dangerous structures.

Improper use of the machine or lack of operating skills will put the operator in danger, even if the machine is equipped with appropriate safety protection devices. Follow the instructions in the manual.

## Shutdown for maintenance



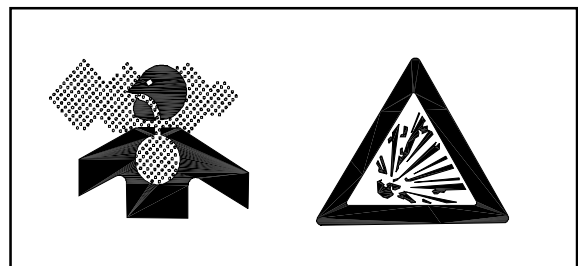
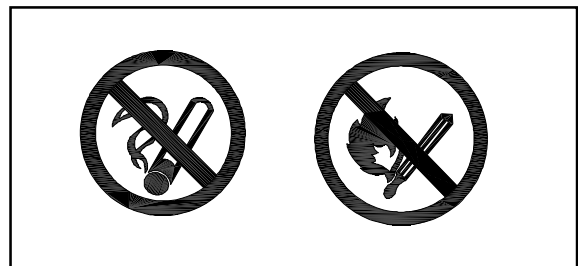
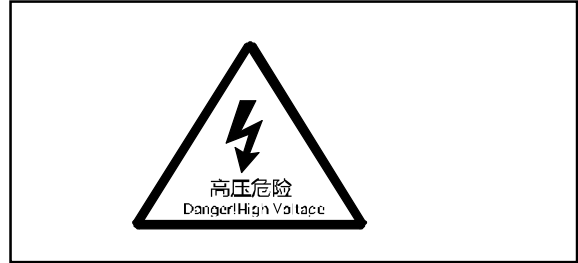
**Warning:** Do not open the cab, install or remove the battery, electrical control and motor high-voltage wiring harness, or battery case without a qualified professional present and under supervision. A "Do Not Operate" warning sign must be displayed on the control levers before performing any maintenance work on the machine.

- The machine must be parked on firm, level ground.
- After the machine has come to a complete stop, the bucket must be lowered to the ground, and the machine's manual power switch must be turned off.
- If it is unavoidable to stop the machine on a slope, sufficient obstacles should be placed under both tires or tracks.
- Always maintain a safe distance from other machines when parking.
- Emergency exits should only be opened during maintenance; they should be closed at other times.
- Welding or grinding of painted parts should be done in a well-ventilated environment. When welding, wear welding goggles; when grinding painted parts, wear a respirator.
- Before performing maintenance, if the machine or attachments need to be supported, ensure they are securely supported. Do not work with only one jack supporting the machine.
- Removing or loosening any hydraulic lines, joints, or components, or if any parts fail, will cause the boom to fall. When the boom is raised, do not work under the boom without adequate support.
- High-pressure liquid may splash into eyes or onto skin; avoid doing so during maintenance.
- Dispose of waste liquids properly. Do not pour oil onto the ground, into drains, streams, ponds, or lakes. Other hazardous waste and the disposal of plastics should comply with environmental regulations.
- Do not maintain or calibrate the machine while it is running.
- Do not place heavy objects or conductors on the battery pack. Keep batteries away from arcs, sparks, flames, and cigarette butts.
- Remove all debris from inside the machine to prevent potential malfunctions that could cause injury or damage.
- If maintenance work is to be performed while the machine is running, it must be supervised by a designated person.
- After starting the machine, do not lubricate or perform maintenance. Do not allow hands, feet, or clothing to come into contact with rotating or high-temperature parts.
- When the machine is running or the working device is in use, wear safety goggles to protect against springs, high-pressure liquid, and flying debris.

**Note:** When the machine malfunctions and cannot operate, please hoist the machine onto a truck and remove it from the malfunction site before repairing it. For hoisting procedures, please refer to the "Hoisting Machine" section.

## Fire prevention, electric shock prevention, explosion prevention, and poisoning prevention

- Avoid contact with electrical wires during machine transportation, movement, and excavation, as this could lead to serious injuries or fatalities.
- Regularly inspect the machine's electrical components and wiring. Replace any damaged, worn, or aged parts immediately to prevent short circuits, electric shocks, or fires.
- Keep electrical connections clean and securely fastened. Check for loose or damaged wires daily, tighten any loose connections or clamps, and repair any damaged wires.
- Do not place flammable or explosive materials inside the machine to prevent fires.
- Promptly remove any accumulated or adhered blades, wood chips, paper scraps, or other flammable materials from the machine compartment.
- Do not place oil-soaked rags inside the machine to prevent spontaneous combustion.
- Users should keep a fire extinguisher inside the machine, within easy reach.
- Welding on the machine is strictly prohibited without isolating the hydraulic oil lines and wiring harnesses.
- Prevent fires caused by hydraulic lines: Check that all hoses and pipe clamps, covers, and cushioning pads are securely fastened in place. If the hose is loose, it will vibrate and rub against other parts during operation, causing damage to the hose, high-pressure oil spraying out, and resulting in fire hazards or serious injury.
- Keep the machine away from fire sources and avoid high temperatures, otherwise it may cause an explosion.
- Do not operate in poorly ventilated areas to prevent the operator from suffocating.
- In case of fire, do not use water to extinguish it. Use a powder fire extinguisher or smother the fire with sand. You can also use a covering or tarpaulin to extinguish the fire.



- Some parts of the machine and its accessories operate at high temperatures under normal conditions. The main sources of high temperatures are the controller, motor, and reducer. Electrical systems, if damaged or improperly maintained, can become sources of electric arcs or sparks.

- Clean the machine regularly. Flammable debris (such as leaves and straw) must be removed periodically. Accumulation of this debris can lead to a fire hazard.

- Clean dirt and dust from the surfaces of parts promptly. Use compressed air to blow away dust from the surfaces of parts inside the compartment. Do not wash the motor, controller, or other electrical components inside the compartment with water.

- Do not operate the machine if it is exposed to flammable materials, explosive dust, or gases. If necessary, inspect and clean the cab, battery box insulation, etc., daily to prevent fire and overheating.

- Inspect all electrical wiring and connections. Keep battery connections clean and tight. Repair and replace any damaged parts.

- Inspect all hydraulic pipes, hoses and components for damage and leaks. Tighten or replace any leaking parts. Clean spilled liquids frequently. Do not use gasoline or diesel to clean parts. Use commercial non-flammable solvents for cleaning.

- Before welding, turn off the manual power switch/key switch, cover hoses, batteries, and other flammable parts, disconnect the vehicle's ground wire, and keep a fire extinguisher nearby while welding. Ensure good ventilation when sanding or welding painted parts, and wear a protective mask when sanding painted parts as toxic dust or gases may be generated.

- Know the location of fire extinguishers, which can be obtained from your dealer.

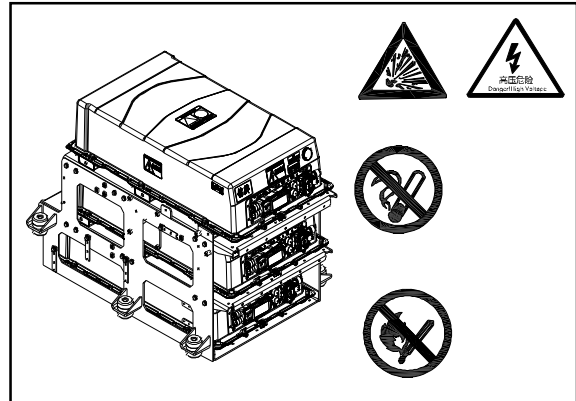
- Do not smoke while maintaining the air conditioner, or in areas where there may be a leak of refrigerant. Injecting liquids into the air conditioner in an environment with sparks can cause serious injury or death if the gaseous refrigerant comes into contact with the liquid. Adding refrigerant to the air conditioner while there is a burning cigarette can also cause serious injury or death.

## Lithium battery box

### Lithium Battery Usage Instructions

Lithium battery cells contain chemicals; incorrect operation can lead to serious injury or fire. Therefore, please be sure to know the following:

- Please use the dedicated charger and charge according to the instruction manual.
- Before charging, please turn off the vehicle's manual power switch/key switch.
- To stop charging, press the pause button on the charger first, then unplug the charging gun.
- When the lithium battery level is below 20 %, please charge it promptly.
- Under normal use, it is recommended to fully charge the battery at least once a week.
- If the battery will not be used for more than 3 months, it should be recharged once a month.



### Precautions



**Notice: To prevent accidents, please note the following:**

- Do not use lithium batteries in environments exceeding 55°C or below -25°C.
- Do not directly wash the lithium battery case.
- Do not place heavy objects or conductors on the surface of the lithium battery case.
- Do not over-discharge, overcharge, or over-charge.
- Do not subject the lithium battery case to external impacts or shocks.
- Keep the lithium battery case away from children and other animals.
- Unauthorized personnel should not disassemble the lithium battery pack to prevent damage to internal components.
- In case of a lithium battery fire, immediately move away from the fire. Try to control the fire with water while maintaining a safe distance, and simultaneously notify firefighters for professional handling.

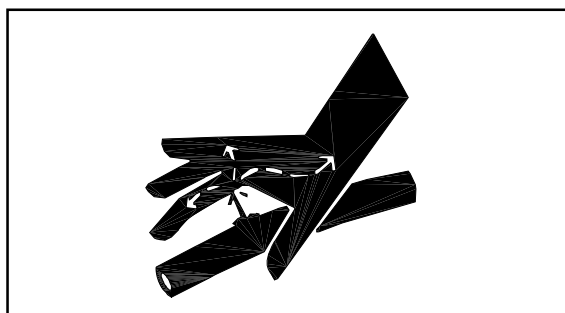
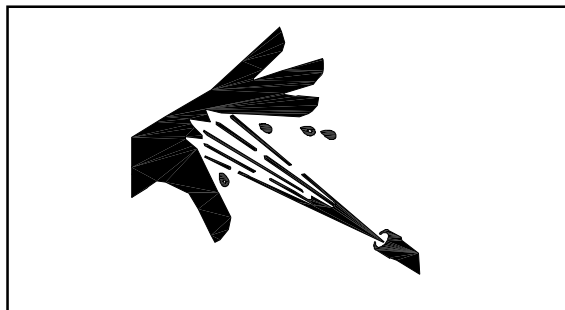
**Note: When repairing electrical equipment or performing welding operations, turn off the manual power switch/key switch of the entire machine to prevent electric shock.**

## Hydraulic system

### 1. Safety rules for high-pressure oil

Hydraulic systems are always pressurized. When inspecting or replacing pipes or hoses, always check that the pressure in the hydraulic lines has been released. If the lines are still pressurized, it can cause serious injury or damage. Therefore, follow these guidelines:

- 1) Do not perform inspections or replacements while the hydraulic system is pressurized.
- 2) If there are any leaks in pipes or hoses, the surrounding area will be wet. Therefore, check for ruptures in the pipes or hoses, and for any bulging in the hoses. When performing inspections, wear safety goggles and gloves.
- 3) High-pressure oil leaking from small orifices can penetrate the skin. Direct contact with the eyes can cause blindness. If you are injured by a jet of high-pressure oil hitting your skin or eyes, rinse with clean water and contact a doctor immediately.



### 2. Safe operation of high pressure hoses

If the high-pressure hose leaks oil or fuel, it can cause a fire or operational malfunction, resulting in serious injury or damage. If loose bolts are found, stop work and tighten them to the specified torque. Welding on the machine must never be performed without isolating the hydraulic lines (hooks). If any damage to the hoses is found, stop work immediately and contact your Yuchai dealer.

Replace the hose if any of the following problems are found:

- 1) Damaged or leaking hydraulic hose fittings;
- 2) Worn or broken cladding, or exposed reinforcing wires;
- 3) Expanded cladding in some areas;
- 4) Twisted or crushed movable parts;
- 5) Impurities inside the cladding.

### 3. Hydraulic oil safety rules

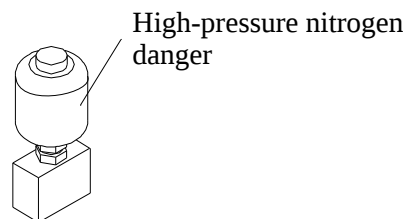
Hydraulic oil that has not been cooled during or after operation is at high temperature and high pressure. To prevent burns from sprayed oil or contact with hot parts when checking or draining the oil, wait until the oil is cool enough to touch the cap or plug before starting operation. Even if the oil has cooled, loosen the cap or plug slowly before removing it to release the pressure inside the hydraulic oil tank.

## 4.Safe operation of accumulators



**Warning:** The accumulator is a component filled with high-pressure nitrogen gas. Improper use may cause explosions and other hazards. Do not disassemble the accumulator, nor perform drilling, welding, or other operations on it. Keep the accumulator away from heat sources and avoid impacts or shocks. Dispose of the accumulator only by qualified professionals.

The machine is equipped with an accumulator in the control line, which is a device for storing pressure. When these devices are installed, the control line can be operated for a short time even after the machine has stopped.



### Depressurization method for machine control lines equipped with accumulators

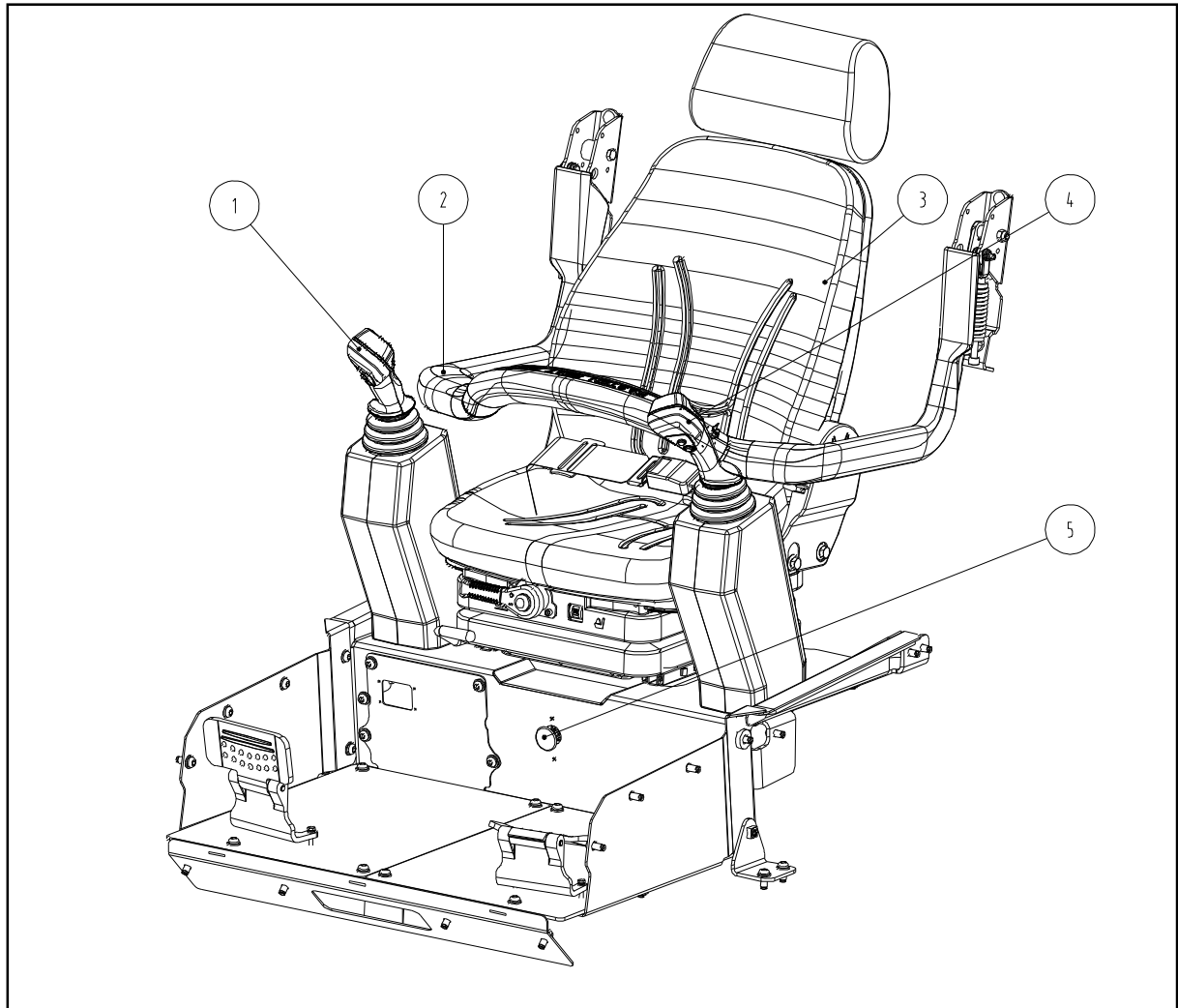
- 1) Lower the working device to the ground, then turn off the accessories.
- 2) Press the parking brake switch.
- 3) Turn the one-button start switch counterclockwise to OFF.

# 3

---

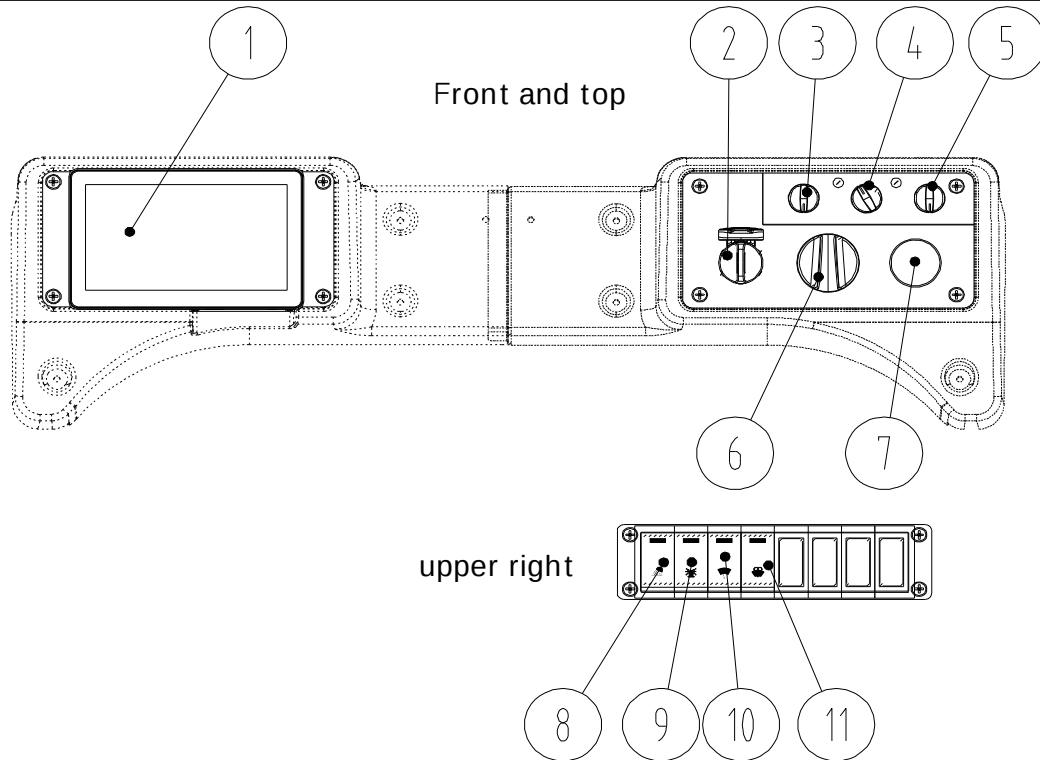
## Component Introduction

## Overview of Control Devices



1. Right handle
2. Safety armrest
3. Driver's seat
4. Left handle
5. Boom bypass control handle

## Operation panel



|    |                                   |                                                                                                                                                                                   |
|----|-----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1  | Touch display                     | It displays the vehicle's status information and allows for related function settings.                                                                                            |
| 2  | Start switch                      | Turn right to ACC to power on the vehicle, turn to START to start the oil pump motor, and turn left to OFF to power off the vehicle.                                              |
| 3  | Fan speed switch                  | Adjust the fan airflow.                                                                                                                                                           |
| 4  | Cooling/Heating Switch            | Selects the air conditioner's cooling/heating mode.                                                                                                                               |
| 5  | Temperature adjustment settings   | Cooling temperature control/heating power setting adjustment.                                                                                                                     |
| 6  | Oil pump motor speed control knob | There are 10 settings in total. Note that the oil pump motor speed is unrelated to the vehicle's travel speed.                                                                    |
| 7  | Emergency stop switch             | In an emergency, pressing the switch will stop the entire vehicle (movement and hydraulic operation). In an emergency stop, the vehicle can be powered on, but cannot be started. |
| 8  | Work light switch                 | Controls the front lights.                                                                                                                                                        |
| 9  | Rear light switch                 | Controls the rear lights and warning lights.                                                                                                                                      |
| 10 | Dual-speed wiper switch           | Controls the high and low speed operation of the wipers.                                                                                                                          |
| 11 | Window washing switch             | Control the windshield washer spray.                                                                                                                                              |

## 1. Dashboard display



## 2. Security bar status icon



When " " is displayed , the safety bar is lowered and the engine can be started.

## 3. Hydraulic lock icon



When " " is displayed , the hydraulic system is unlocked and hydraulic operations can now be performed.

## 4. Translation speed status icon



When " " is displayed , the machine is in low speed travel mode.

When " " is displayed , the machine is in high speed travel mode.



To switch between high and low speed, use the " " keypad on the dashboard. The initial state is low speed travel.

## 5. Power saving mode status icon



When " " is displayed , the machine is in energy-saving mode. The main pump motor starts and stops automatically according to operating conditions.



To switch between power saving modes, use the " " keypad on the dashboard. The default initial state is non-power saving mode.

## 6. Parking and braking status icon



When " " is displayed , the car is in parking or braking state.

## 7. Operating mode status icon H



When "H" is displayed, the machine is in ISO operating mode, where the left lever controls the travel and the right lever controls the working device.



When "H" is displayed, the machine is in H operating mode, where the left lever controls the left wheel travel and bucket action, while the right lever controls the right wheel travel and boom action.

## 8. Exclusion mode status icon



When "C" is displayed, the machine is in normal travel mode. If the parking release pressure is insufficient, the machine cannot travel.



When "C" is displayed, the car is in override mode. If the parking release pressure is insufficient, the car may roll in an emergency. This may cause the brake discs to wear out.

Operating mode change setting procedure: Menu - User settings - Function settings - Travel override settings.

## 9. Tamper-proof status icon



Not available at the moment.

## 10. Voltage alarm icon



When the high voltage of the machine is too low or too high, the display will show " " as a warning.

## 11. Hydraulic oil temperature alarm icon



When the machine's hydraulic oil temperature is too high, the display will show " " as a warning.

## 12. Parking unlock pressure alarm icon



When the parking pressure is insufficient, the display will show " " as a warning.

## 13. Parking unlock pressure alarm icon



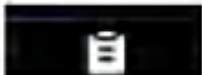
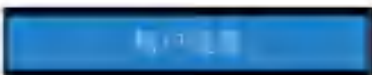
When the oil level is too high or too low, the display will show " " as a warning.

## 14. H Mode

The vehicle is initially in ISO mode. Once a mode is selected, the current selection is stored and will be resumed after a restart.

ISO mode: The left lever controls the translation and the right lever controls the working device.

H Mode: The left lever controls the left wheel travel and bucket action, while the right lever controls the right wheel travel and boom action.

Mode switching procedure: Menu "  " - User settings "  "

--Function settings "  "--Mode "  "

### 15. How to exclude the transfer

--The vehicle automatically switches to normal travel mode every time it is turned on. The selected mode is valid only for the current ignition cycle and the default mode will resume after a restart.

--Normal travel mode: When the parking release pressure is insufficient, the car will not be able to move to protect the brake discs.

--Travel override mode: When the parking release pressure is insufficient, the vehicle can move, but this may cause brake disc wear. Note: Use only in an emergency!

Mode switching path: Menu "  " - User Settings "  "

--Function settings: "  "--Select the mode: "  "

### 16. External discharge function (VTOL)

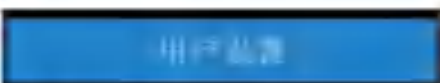
--The VTOL function is disabled by default every time the vehicle is started. It is only effective during the current ignition cycle and will return to the default setting after a restart.

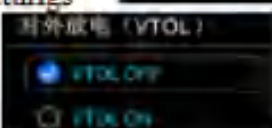
--VTOL OFF: The vehicle's external 220V AC discharge function is disabled.

--VTOL ON: At this point, the vehicle's 220V AC external discharge function is enabled.

--Function operating procedure:

(1) Insert the discharge gun into the external discharge port of the vehicle.

(2) Instrument Settings: Menu "  " - User Settings "  "

Function settings: "  "--Select VTOLON mode "  "

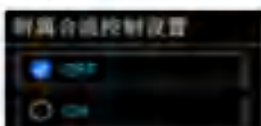
### 17. Auxiliary convergence control

--The vehicle automatically switches to OFF mode every time it is turned on. The selected mode is valid only for the current ignition cycle and the default mode will resume after a restart.

--OFF mode: The auxiliary convergence solenoid valve is closed.

--ON mode: The auxiliary convergence solenoid valve is open.

Mode switching path: Menu "  " - User Settings "  "

--Function settings: "  "--Select the mode: "  "

## 18. Cleaning Mode

--The sweeper defaults to OFF mode upon each power-on. Mode selection is only valid for the current power-on cycle and reverts to default after a restart.

--OFF Mode: Cleaning-related controls are not executed.

--ON Mode: In this mode, the sweeper can be started and stopped using the A4 button on the right handle.

--Cleaning Mode Usage Procedure:

1) Menu "



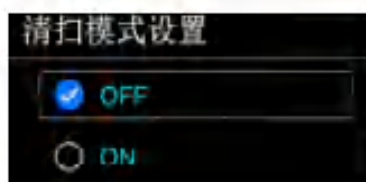
--User Settings"



--Function settings"



--Mode selection ON"



2) Right handle A4 button"



" , Pressing the button once will start the sweeper, and pressing it a second time will turn it off, and so on in a regular cycle.

3) After use, please follow the steps in step one to select OFF, or restart the machine so that it can return to normal control mode.

## 19. Floating Function

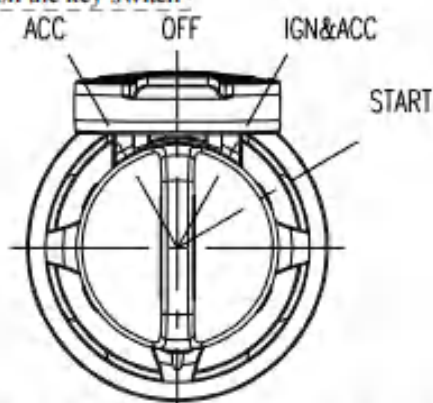
First, place the bucket flat on the ground.



Right controller A3 button"

" , After pressing and holding the A3 button for 3 seconds, the boom enters a floating state and cannot be raised or lowered. While in floating state, briefly press the A3 button to de-float.

## 20. Turn on the key switch



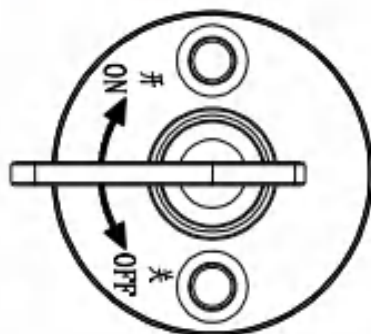
OFF; Vehicle power off and parking position

ACC; Full vehicle power switch

START; Starter

Turn right to ACC to power on the vehicle, turn to START to start the vehicle, and turn left to OFF to power off the vehicle.

## 21. Manual ignition switch

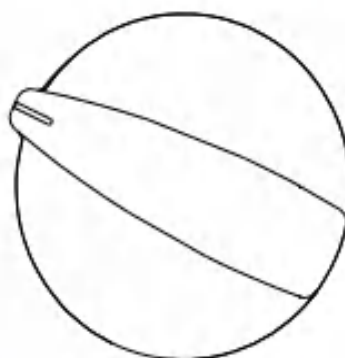


Manual power switch (Note: on the left side of the battery compartment)

Turn to ON: Turn on the vehicle before turning it on.

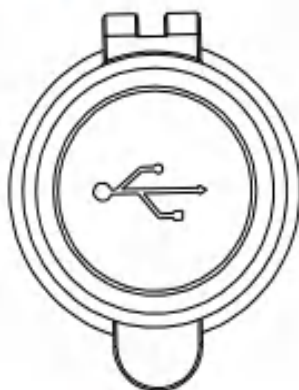
Turn OFF: Turn it off when it is left idle for more than 8 hours or when charging.

## 22. Oil pump engine speed control knob



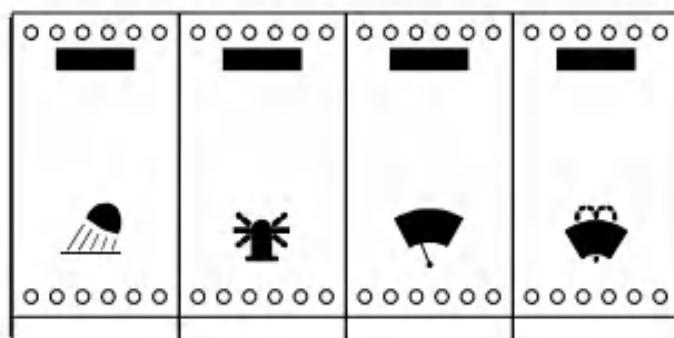
Turn left to decelerate, right to accelerate.

## 23. USB power socket



5V output of 2.1A+1A

## 24. Rocker switch: work light switch, taillight and warning light switch, two-speed wiper switch, windshield washer switch



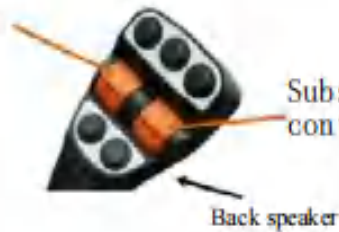
## Working device and travel control

The control button layout for the left and right levers is as follows:

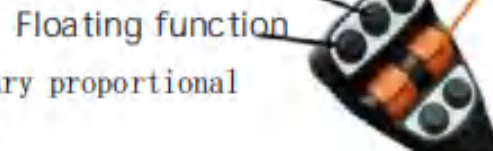
Button on the left lever

Button on the right lever

Up: Right turn signal  
Down: Left turn signal



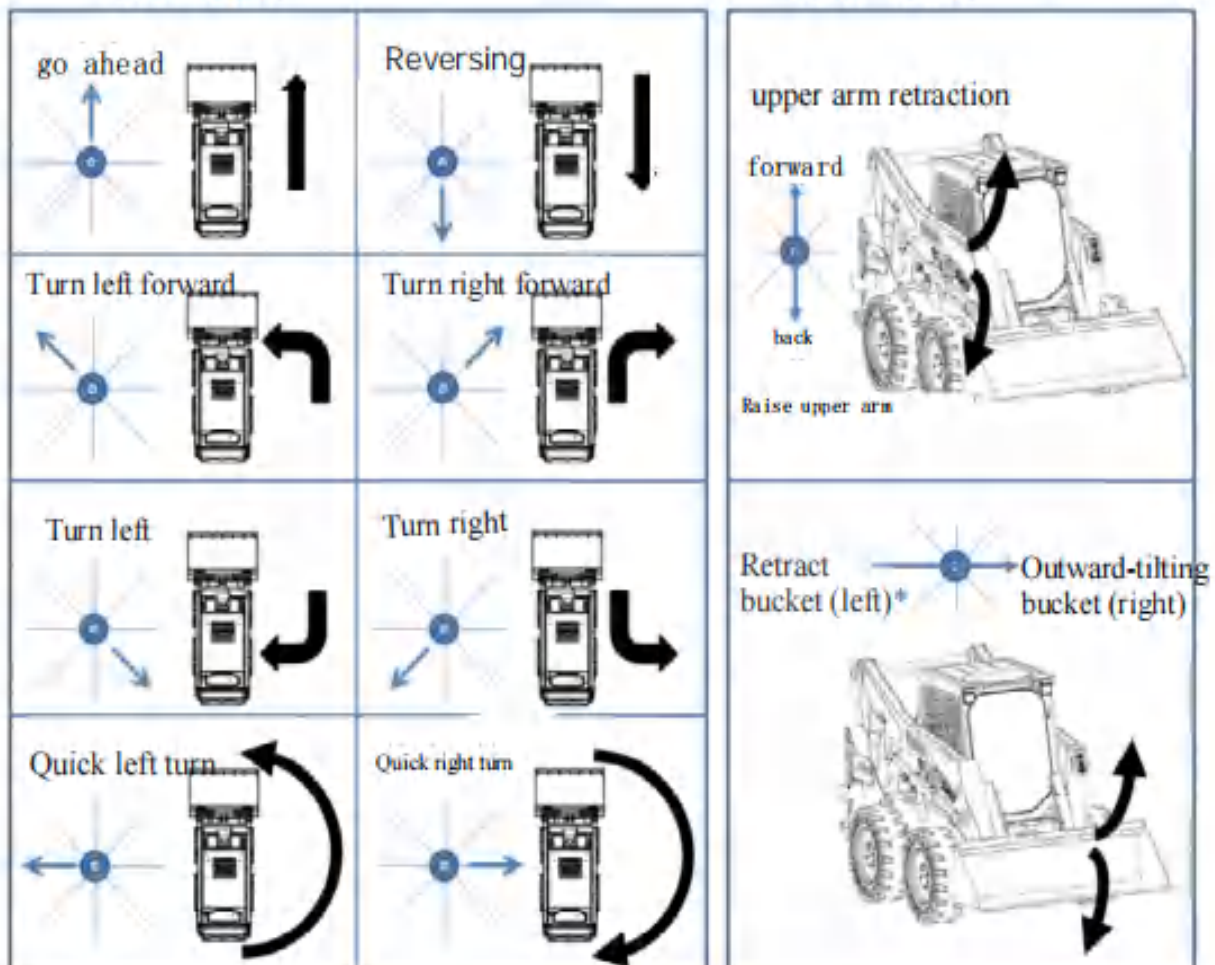
Cleaning mode  
Floating function  
Up: Hazard lights



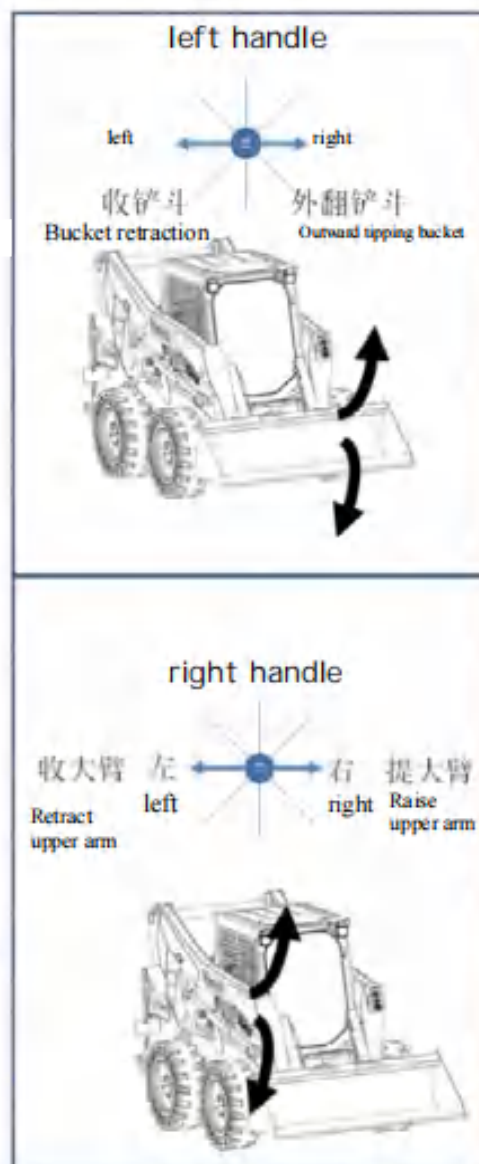
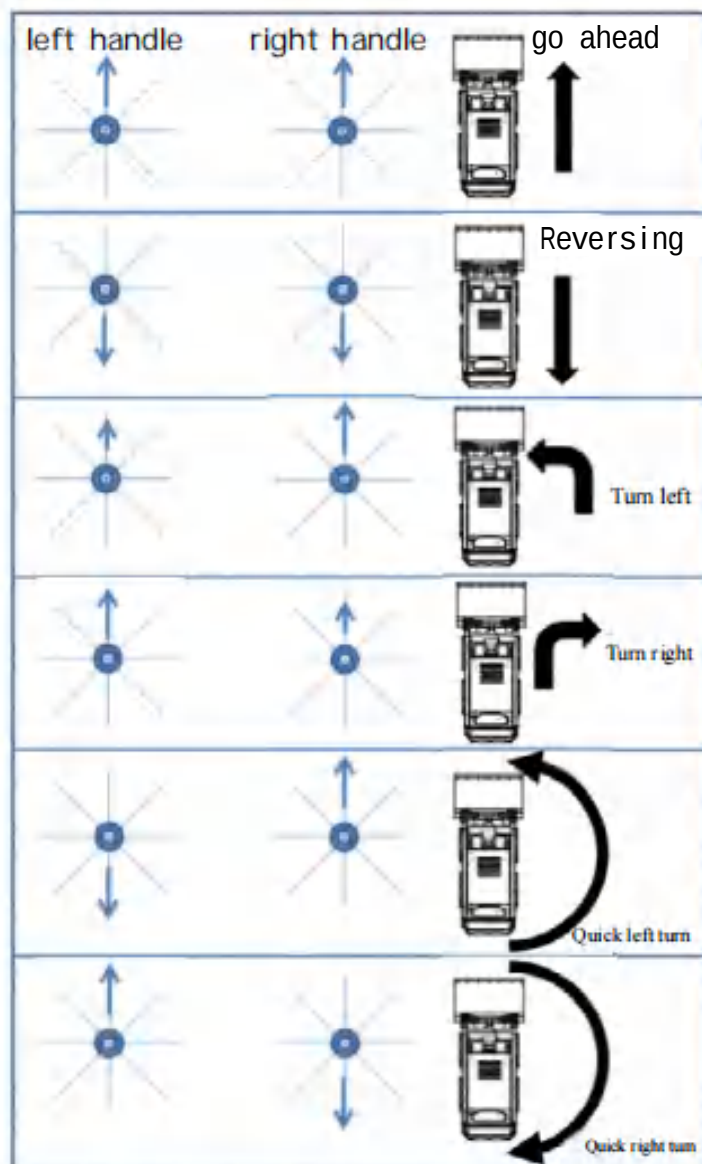
Sound the horn before operating the machine and confirm that no one is in the work area before starting work. The diagram below illustrates the left and right handle operation in ISO mode:

left handle

right handle



The lever control buttons in D mode are as follows: left lever (left - retract the bucket; right - extend the bucket), right lever (left - retract the upper arm; right - extend the upper arm), left and right levers (forward at the same time - forward travel, backward at the same time - reverse travel, forward with different strokes - steering left or right; one forward and one backward - quickly steering left or right), as shown in the diagram below:



## Seat belt and safety bar



**Warning:** The seat belt is an important part of the machine's safety system. Before operating the machine, you must fasten the seat belt. In the event of a rollover, the cab or machine could crush the operator, causing injury.



**Warning:** Before using the seat belt, check that it is installed correctly. Replace any worn or damaged seat belt.

- Even if you don't notice any abnormalities in your seat belt, it should be replaced every 3 years. The seat belt's manufacturing date is shown on the seat belt's factory date label.
- Be sure to wear your seat belt during operation.
- Do not twist the seat belt when wearing it.

### 1. Fastening your seat belt

Hold the seat belt buckle to ensure it is not twisted, adjust the length of the belt, and insert the tongue firmly into the buckle. Gently pull the belt to ensure it is properly locked.

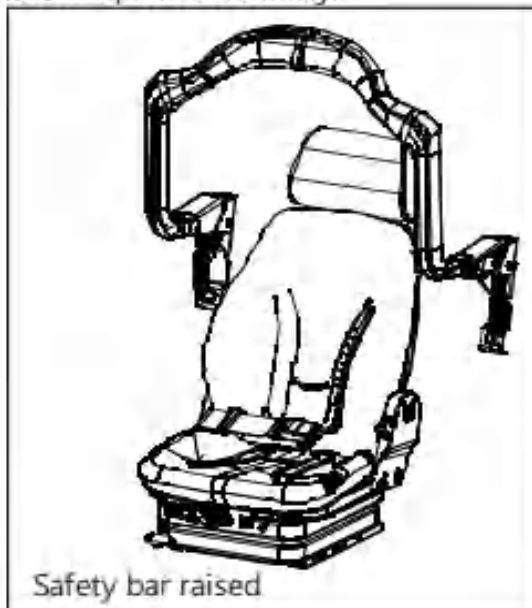
### 2. Releasing the Seat Belt

Press the red button on the buckle and withdraw the tongue; the seat belt is then released.

### 3. Raising and Lowering the Safety Bar

Safety bar UP: hydraulic circuits are interrupted; left and right control levers are disabled.

Safety bar DOWN: hydraulic circuits are connected; left and right control levers operate normally.



Safety bar raised



Safety bar lowered

# 4

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## Operation Instructions

## Pre-Operation Preparation

- 1) Only trained operators who meet local licensing requirements may operate the loader independently.
- 2) Do not operate until you have thoroughly read and understood this manual.
- 3) Wear close-fitting clothing and appropriate PPE: safety helmet, leather shoes, gloves, safety glasses, seat belt, etc.
- 4) Carry out the daily pre-start inspection as specified.
- 5) Check work equipment, cylinders and hoses for damage.
- 6) Remove foreign matter from battery pack and cylinder rods.
- 7) Inspect hydraulics—tank, hoses and couplings—for leaks (look for oil puddles under the machine).
- 8) Examine under-carriage parts, tyres, reducers and motors for damage; ensure bolts are tight.
- 9) Confirm all gauges and monitors are undamaged.
- 10) Clean mirrors, check for cracks and adjust for correct rear view.
- 11) Inspect seat belt for cuts or fraying.
- 12) Verify that all scheduled maintenance has been completed.



**WARNING:** Before operating, you must fully understand and remember the safety rules given in the " Safety Regulations" section of this manual.

## Starting Procedure



**WARNING:** Before starting, review all safety details in this manual and read every safety decal on the machine. Clear all personnel from the work area. Learn and practise safe operating techniques. Follow the operation and maintenance sections of the manual and comply with all applicable regulations.

### 1.Pre-Start Checks

- 1)Fasten seat belt, sound horn and confirm no one is in, on or around the machine.
- 2)Ensure windows and mirrors give unobstructed visibility.
- 3)Remove any foreign material from battery pack and cylinder rods.
- 4)Inspect work equipment, cylinders and hoses for cracks, excessive wear or free play; replace or repair as required.
- 5)Check hydraulic tank, hoses and fittings for oil leaks.
- 6)Examine tyres/wheels and reducers for damage, wear, loose bolts or oil leakage.
- 7)Verify gauge displays are normal, all work lights operate, and wiring is free of opens or shorts.
- 8)Confirm hydraulic-oil level is between the upper and lower marks.
- 9)In freezing weather, check that hydraulic and lubricating oils are not frozen; thaw if necessary before starting.
- 10)Ensure controls are in the locked position.
- 11)Note machine status, direction and position to establish reference for operation.
- 12)Use the bucket step and handrails when entering/exiting the cab—do not jump.
- 13)Read and understand the operation manual before starting.
- 14)Lower the safety bar to the locked position.
- 15)Fasten the seat belt.

## 2.Starting the Machine

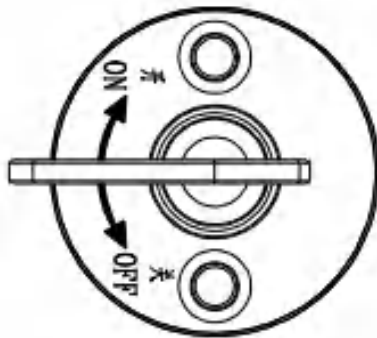


**WARNING:** Do NOT start if a " DO NOT OPERATE" tag is hung on any control lever.

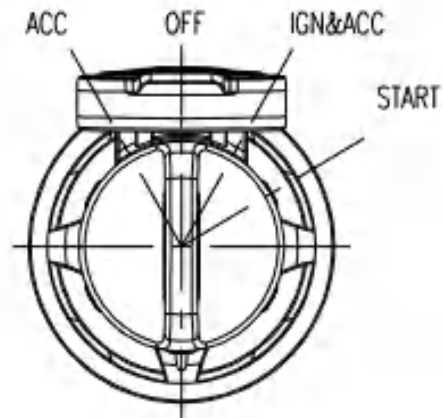
Starting procedure:

- 1)Set the battery-compartment manual power switch to ON.
- 2)Turn the key switch clockwise to ACC; wait until the self-test finishes (display shows "Initialisation complete—start machine!"). Confirm all warning lamps are normal, then press the START push-button—the pump motor begins to crank.
- 3)Lower the safety bar to the locked position; the safety-bar indicator lamp goes out.
- 4)Press the START push-button again: the pump motor runs and the work-equipment lock indicator extinguishes; the foot pedals now control attachment functions.
- 5)The parking-brake lamp is on—travel system is locked; machine cannot move.
- 6)Press the parking-brake button on the left panel; the "P" lamp goes out—parking brake released. For safety, cycle boom or bucket once to ensure full release. If the parking warning lamp on the right panel flashes after release, pressure is low—cycle boom or bucket again to build pressure.

Manual Power Switch



Key Switch



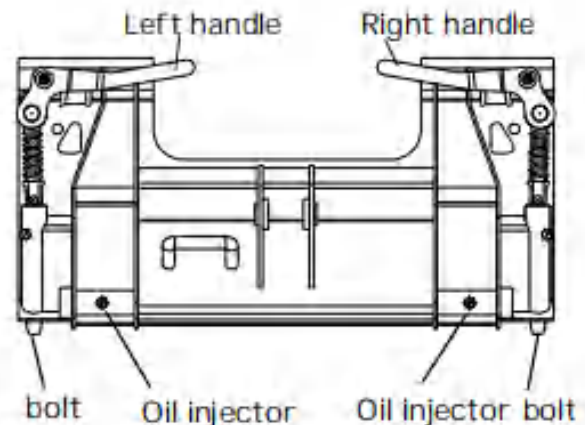
## Bucket & Attachment Installation / Removal

Please use the loader within its rated load capacity. Exceeding the rated load will cause the following problems:

- 1) difficult steering,
- 2) faster tyre wear,
- 3) loss of stability,
- 4) reduced machine life.

### 1. Installing Bucket

- 1) Lift quick-hitch lever.
- 2) Align hitch with bucket mounts.
- 3) Press both hitch handles down until pins (grease nipples visible) fully enter bucket bosses and seat against lower edge—bucket locked.

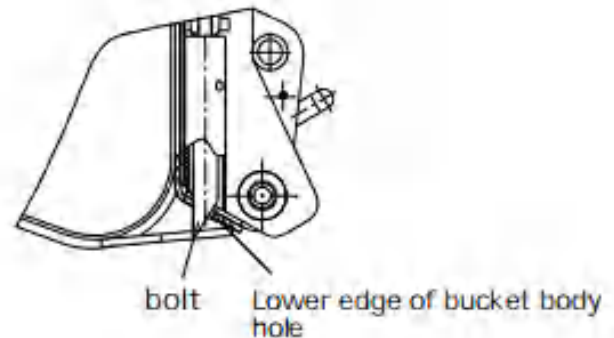


### 2. Removing Bucket

- 1) Place bucket flat on ground.
- 2) Lift quick-hitch lever—bucket released.

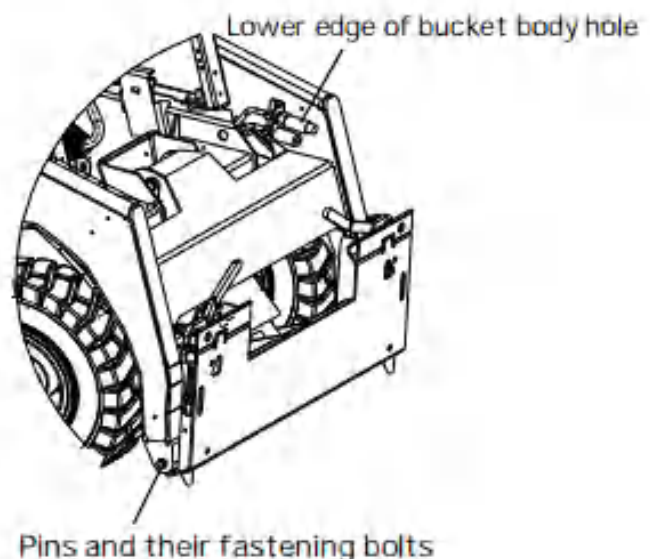
### 3. Quick-hitch Removal / Installation

- 1) Lay the quick-change unit flat on the ground.
- 2) Remove the grease fittings and pin fastening bolts at both ends. Drive the pin in to remove the quick-change unit.
- 3) During installation, reinstall the grease fittings and push the pin into the quick-change unit hole, aligning it with the corresponding hole on the boom. Apply grease until the pin is fully inserted into the boom hole, then install the fastening bolts.



### 4. Auxiliary Hydraulic Connection

- 1) Connect the quick coupler to the corresponding pipeline.
- 2) Lift the handle on the quick-change device to remove the bucket.



## Bucket Operation

### A Operation when the bucket is fully loaded

When working on roads or highways, comply with local laws and regulations.

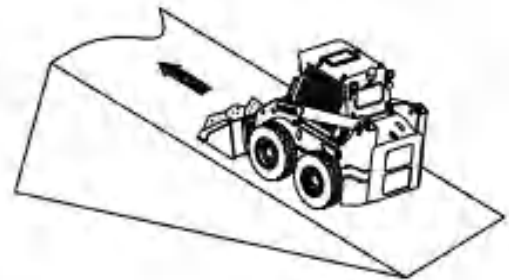
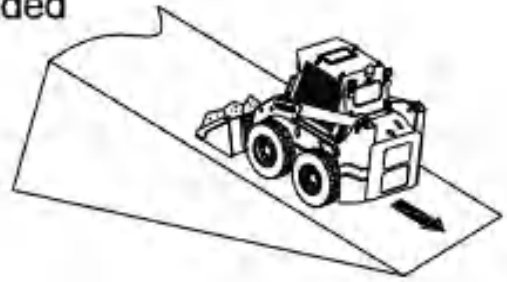
Preheat the hydraulic system before starting work.

**Note:** Using medium speed and light load can extend the machine's lifespan.

Operate the machine at maximum power and full speed, moving the joystick slowly to move the machine.

New operators must operate the machine in an open, unobstructed area. Operators must be trained repeatedly until they can operate effectively under various working conditions and loads.

When going uphill or downhill under full load, the heavier end should face the uphill direction.



### B Operating the empty bucket

**Operating an empty bucket:** When operating an empty bucket uphill or downhill, the heavier end should face the uphill direction.

**Warning:** Lower the boom as much as possible.

Do not move or turn while the boom is raised.

Turn on level ground.

Do not move laterally when going uphill or downhill.

The heavier end of the machine should face uphill.

Do not overload.

Failure to follow these warnings will cause the machine to tip forward or sideways, resulting in serious personal injury and death.

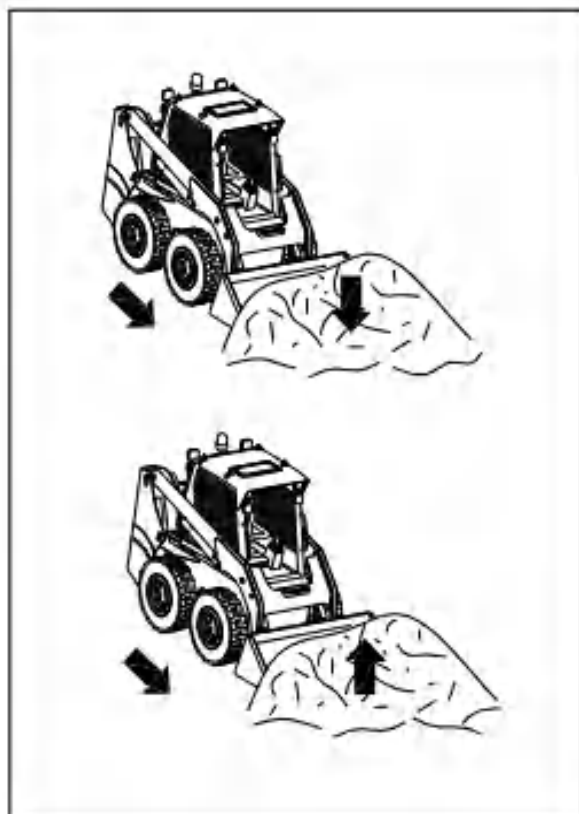
When traveling on uneven surfaces, raise the boom appropriately to avoid obstacles.



### **C Fill the bucket**

Lower the boom. Tilt the bucket forward until the front edge of the bucket touches the ground, then slowly move it forward to insert the bucket into the load. Tilt the bucket backward until it is full.

Warning: Loading and unloading steering must be performed on level ground. Do not exceed the rated load, otherwise the machine may tip forward or sideways, resulting in serious personal injury and death.



### **D Unloading bucket**

Raise the boom. Tilt the bucket forward so that the front edge of the bucket overlaps the edge of the loading chute. Slowly move forward, tilting the bucket to unload the load until the bucket is empty.

Warning: Loading and unloading must be done on level ground. Do not exceed the rated load, otherwise the machine may tip forward or sideways, resulting in serious personal injury and death.



## Parking machines

**Parking Environment Requirements:** The parking area should be dry and well-ventilated, avoiding damp environments to prevent electrical components from getting damp and damaged or causing leakage hazards; keep away from fire sources, heat sources, and areas where flammable and explosive materials are stored, with a temperature range of -10 to 40°C, and take precautions against rodents; for outdoor parking, consider taking waterproof and sun protection measures to avoid affecting the service life.

### Shutdown Procedure

- 1) Drive the entire machine to a firm, level surface and completely level the working device on the ground.
- 2) Turn the main pump motor speed control knob counterclockwise to the lowest setting.
- 3) Turn the key switch counterclockwise to OFF. The entire machine will then lose power.
- 6) Raise the safety bar.
- 7) If the machine will be parked for more than 8 hours, turn the manual power switch to OFF.
- 8) Inspect the working device, the exterior of the machine, and the chassis, checking for leaks of water or oil, and loose bolts. Repair any abnormalities found.
- 9) Check the rear of the machine for paper scraps and debris. Remove any paper scraps and debris to prevent fire.



Manual switch

## Machine charging

### Charging Requirements:

1. Use the original charger. The charging location should be dry, well-ventilated, and away from flammable and explosive materials. Avoid charging in high temperature, high humidity, or water-filled areas. During charging, observe the charger indicator lights to understand the charging status. The original charger allows for charging current setting (power adjustable from 0 to 80KW). Fast charging power supply: 380VAC\*15% (three-phase four-wire system), frequency 50Hz. The power cabinet must have overload protection and meet the charging power requirements set by the charger.

### 2. Charger Settings

#### 1) Main Interface



Click the icon:  Start charging

Click the icon:  Pause charging

Click the icon:  Stop charging

Click the icon:  Reservation: Enter password to access the reservation interface, where you can set charging time and capacity

Click the icon:  Settings: Enter password to access the settings interface, where you can set parameters such as language and clock

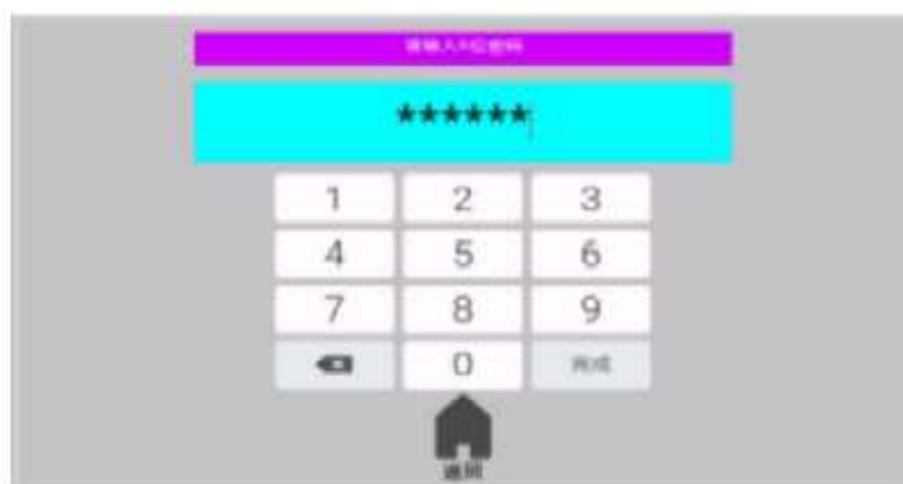
Click the icon:  Fault Codes: View fault codes and their corresponding descriptions



**Warning: 1) Do not charge while the machine is running.**

**2) Do not start the machine while dragging it.**

## 2) Password input interface



Enter the password to access the reservation or settings interface.  
The initial password is "123456".

## 3) Reservation Interface



Click "Reservation" and enter the password to enter the reservation interface. You can turn the reservation charging function on and off, set the reservation charging time and capacity, and the charger will start charging after the set charging time is reached. Charging will stop after the set capacity is reached. The reservation function needs to be restarted every time the machine is turned on, and the reservation function will be automatically turned off when the machine is turned off.

#### 4) Settings Interface



Click "Settings," enter your password, and enter the settings interface:

Language: Click the language switch to toggle between Chinese and English display.

Version: View the charger's hardware and software version numbers.

Time: Long press the clock display area to set the system clock's year, month, day, hour, minute, and second.

Charger Parameters: Module quantity, maximum voltage, and maximum current are the charger's system parameters. Users must not modify them without authorization. Improper parameter settings will prevent the machine from functioning properly. Our company is not responsible for charger malfunctions caused by unauthorized parameter modifications. If modifications are necessary, please contact the manufacturer to confirm that the values to be modified meet the product's parameters before making any changes.

#### 5) Password change interface



Click "Reset Password" on the right side of the "Settings" interface to change your user password.

3. Perform automatic full charging at least once every three days; for vehicles operating for more than 18 hours per day, perform battery maintenance at least once a month. Do not disconnect the charging gun until the charging is complete. When the vehicle's instrument panel indicates that the battery needs maintenance, please perform "Battery Maintenance" as soon as possible to restore the battery system to normal operating condition. The machine requires battery maintenance at least every three months to prevent battery damage.

4. For machines that have been parked for more than two weeks, 1-3 "battery maintenance" sessions are required before first use. Maintenance procedure: 1) Control the battery charge to between 25% and 40% SOC and leave the vehicle stationary. 2) Turn off the vehicle's power (turn the ignition switch to the OFF position, disconnect the main ignition), then turn the power back on, turn the ignition switch to the ON position, and turn off all electrical equipment such as the air conditioner. 3) Maintain this state for 12-15 hours, then disconnect the vehicle's power. After maintenance, a full charge is required. Note: Do not use the vehicle or any electrical appliances during battery maintenance, otherwise the battery maintenance will be interrupted.

5. Regular inspection: Every 3 months of vehicle operation, a key inspection should be conducted on the high-voltage cables connecting the battery packs for scratches, damage, loosening, and exposed metal; check for any unusual odors, cracks, deformation, bulging, or loose terminals in the packs; check for any loose screws securing the high-voltage positive and negative caps, etc. If any abnormalities are found, please contact CATL after-sales department or service station. Do not attempt to perform any maintenance yourself.

6. Charging Procedure:

- 1) Insert the charging gun into the vehicle's charging port;
- 2) Power on the vehicle and then connect the charger's input power;
- 3) The charger will automatically charge according to the preset parameters and charging mode;
- 4) After charging is complete, the charger will automatically stop;
- 5) Disconnect the charger's input power and unplug the charging gun from the vehicle's charging port;
- 6) For other matters, please refer to the charger's instruction manual.



National standard external  
discharge and slow charging port

National standard  
fast charging port

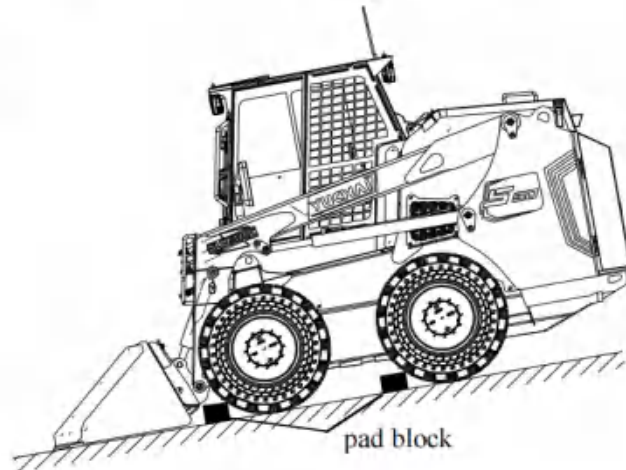
# Transport Machinery

Warning: Do not park the machine on slopes or ramps. If parking temporarily, first secure the machine under the tires with blocks to ensure it does not move (as shown in the image above) before turning the key switch to OFF. Otherwise, the machine may slip and cause injury.

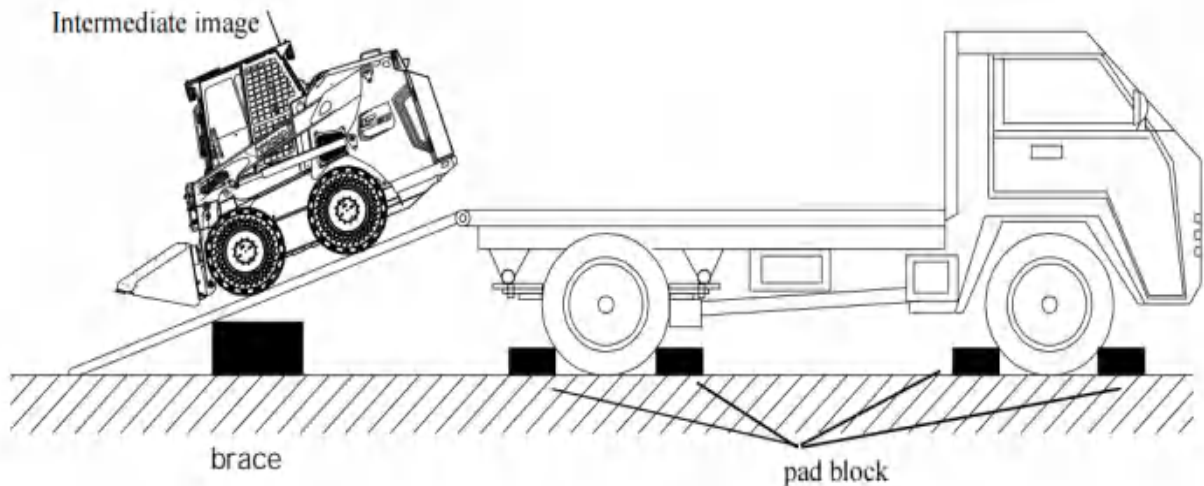
- 1) The machine bucket must be empty.
- 2) The machine's tail section must be facing upwards.
- 3) Apply appropriate braking to the transport vehicle and place blocks under the tires to ensure the transport vehicle does not move (as shown in the middle image).

When transporting the machine, use sufficiently strong ropes to secure it (as shown in the image below). Failure to do so may result in rope breakage and personal injury.

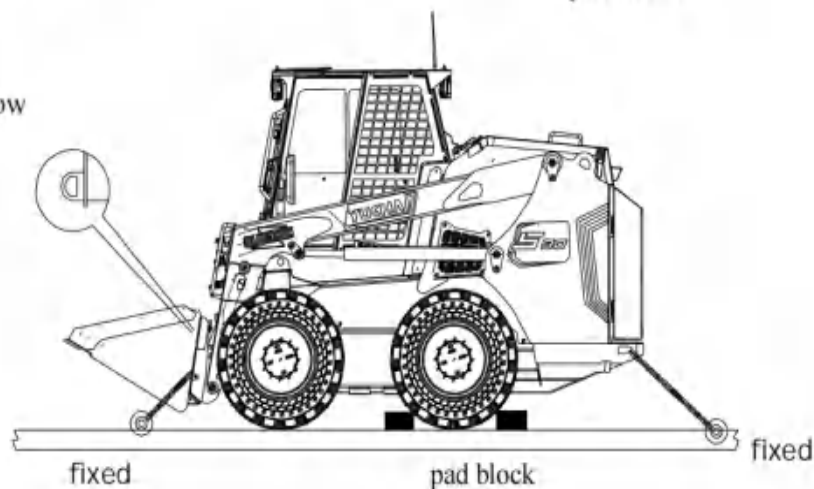
The image above



Intermediate image



The image below



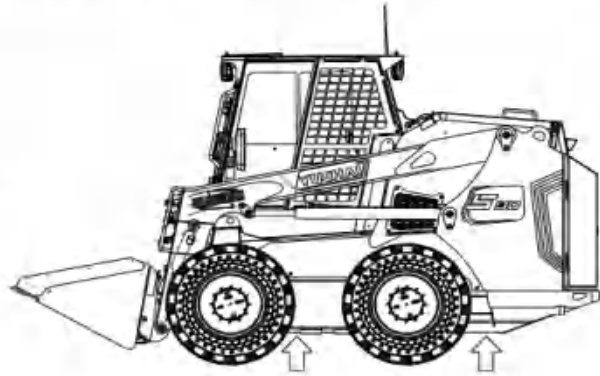
## Towing or lifting machinery

### Traction machine

To prevent damage to the machine's drive system, the machine should only be towed a short distance at low speed (such as towing the machine onto a transport vehicle) while the parking brake is engaged or the machine is unlocked.

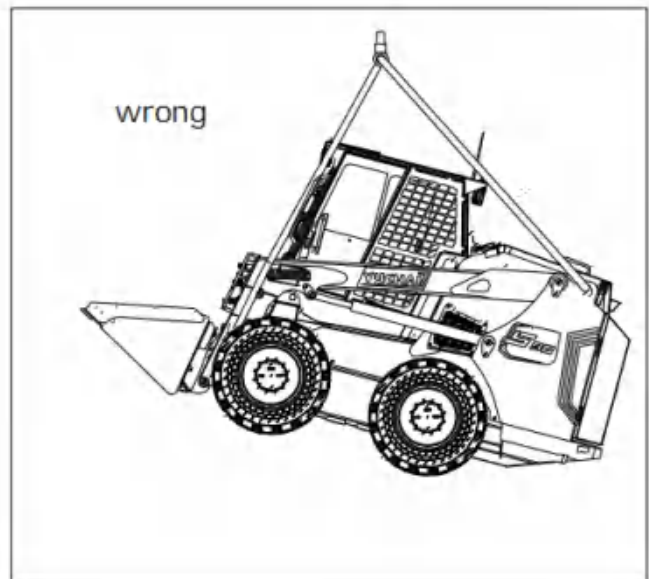
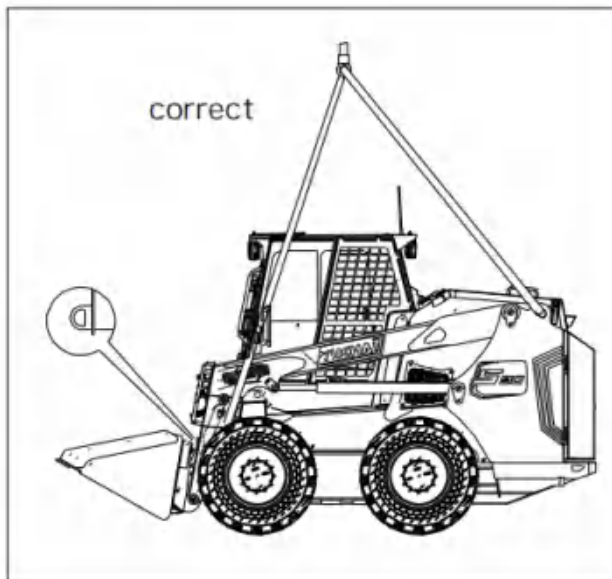
The maximum strength that the traction rope can withstand is 1.5 times the weight of the machine.

If using a forklift to lift the entire vehicle and move it to the corresponding position, be sure to operate according to the specifications. The lifting position is shown in the diagram on the right. Keep the machine balanced to prevent slippage.



### lifting machinery

**Four-point lifting:** The provided single-point lifting kit allows for lifting and supporting the loader without compromising the cab's rollover and falling object protection features. Before lifting, check the fasteners on the four-point lifting equipment to ensure the equipment is large and capable of supporting the loader's weight (see Chapter 1 Technical Specifications). The skid steer loader should be lifted as close to horizontal as possible (as shown in the diagram below), but the angle of suspension must never exceed the departure angle specified in the specifications.



**Note:** 1) Before lifting, check the fasteners on the four-point lifting equipment.

2) No one is allowed in the cab when hoisting the machine, and there must be no pedestrians within a 5-meter radius. 3) The sling support should not touch any part of the crane boom or the cab to prevent damage.

# **5**

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## **Maintenance**

## Maintenance and Care Tips

- **New Machine Break-in:** The first 100 hours of operation is the break-in period. During this period, avoid putting the machine under excessive load or high intensity.
- **Working in Dusty Areas:** Clean all component surfaces regularly, including the motor, lithium battery pack, and hydraulic cylinder piston rod. When checking or changing the oil, move the machine to a dust-free location to prevent dust from entering the oil.
- **Oil and Filters:** After changing the oil or replacing the filter, check the old oil and filter for metal shavings or impurities. If a large amount of metal shavings or impurities is found, report it to the dealer and take appropriate measures. Do not mix different brands of oil. Before changing the oil, drain the old oil completely before adding new oil.
- **Timer Reading:** Check the timer on the dashboard daily to see if it's time for maintenance based on the operating hours.
- **Using Genuine Parts:** Using genuine parts is crucial for ensuring proper machine operation and extending its lifespan.
- **Hazardous Waste Disposal:** Place oil discharged from the machine into a designated container. Do not discharge oil directly onto the ground, or pour it into sewers, drains, rivers, oceans, or lakes. When handling hazardous materials such as oil, plastics, or other hazardous substances, comply with relevant environmental regulations. When the entire machine and its parts become unusable and need to be scrapped, dispose of them in accordance with relevant laws and regulations.
- **Preventing Objects from Falling into the Machine:** When opening the oil tank opening, take precautions to prevent foreign objects from falling in. Otherwise, it may cause damage and malfunction of the machine, and may lead to accidents. If a foreign object falls into the machine, remove it immediately. Before and after inspections, check all tools and parts to ensure that nothing has fallen into the machine.
- **Regular Inspection and Maintenance:** Performing regular inspections and maintenance according to the items listed in the "Regular Inspection and Maintenance Checklist" is an important prerequisite for ensuring the normal operation of the machine and extending its service life. Always adhere to the inspection and maintenance schedule.

Regularly inspect and maintain the machine. Repair, tighten, or replace any loose or damaged parts. Remove any debris tangled in the wheel hubs and tires. Clean any foreign objects stuck to the piston rods, as these will lead to excessive wear and premature failure. Tighten the cab bolts and seat belts.

Perform daily lubrication maintenance at all lubrication points.

Check for leaks in hydraulic lines and the reducer, and ensure connections are secure.

Check for foreign objects tangled in the wheel hubs and tires.

Check for foreign objects stuck to the cylinder piston rods.

Check for scratches, breaks, or deformation on all flexible connectors and accessories.

Check the operation of the operating devices, control indicator lights, and various indicators.

Check for any abnormal noises during operation.

### ● Follow-up Inspection After Inspection and Maintenance

After inspection and maintenance, pay attention to the following:

Check if any parts that should have been inspected and maintained were missed. Ensure all inspection and maintenance items have been performed correctly. Check for any tools or parts that have fallen into the machine. If parts fall into the machine and become stuck in the linkage mechanism, it is extremely dangerous. Walk around the machine to check for leaks or...

## Maintenance Cycle

Maintenance must be performed periodically. Failure to do so will lead to excessive wear and premature failure of parts.

**WARNING:** Before operating and maintaining the machine, you must follow the warnings in the manual and check that all machine functions are working properly. Untrained operators and incorrect operation may result in personal injury and death.

|                                 | Inspection and maintenance contents                                                                                              | Maintenance cycle (total working hours) |    |     |     |      |      |
|---------------------------------|----------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|----|-----|-----|------|------|
|                                 |                                                                                                                                  | 10                                      | 50 | 100 | 250 | 1000 | 2000 |
| Project                         | Maintenance requirements                                                                                                         |                                         |    |     |     |      |      |
| Battery box                     | Inspect cables, connectors, and terminals, and remove dust.                                                                      | ▲                                       |    |     |     |      |      |
| Motors and their controllers    | Check that the installation is secure and that the connectors are fastened tightly.                                              | ▲                                       |    |     |     |      |      |
| boom, hydraulic cylinder        | Use lithium grease lubricant for lubrication.                                                                                    |                                         | ▲  |     |     |      |      |
| tire                            | Check tire wear and tire pressure (except for solid tires).                                                                      | ▲                                       |    |     |     |      |      |
| Seat belts and handrails        | Check the condition of the seat belts, check that the handrails are working properly, and remove dust and debris from the parts. | ▲                                       |    |     |     |      |      |
| Safety signs                    | Replace any worn markings.                                                                                                       | ▲                                       |    |     |     |      |      |
| Cab                             | Check the tightness of the nuts and washers, and inspect the condition of the cab.                                               | ▲                                       |    |     |     |      |      |
| Work light                      | Check if the work lights are working properly                                                                                    | ▲                                       |    |     |     |      |      |
| Hydraulic hoses and rigid pipes | Check the hydraulic oil level and add oil if necessary. Check for wear and leaks and replace if necessary.                       | ▲                                       |    |     |     |      |      |
| Foot pedal control handle       | Check if it can operate normally, and repair it if necessary.                                                                    | ▲                                       |    |     |     |      |      |
| Tire and gearbox bolts          | Check the tightness of the bolts.                                                                                                | ▲                                       |    |     |     |      |      |
| travel reducer                  | Check for wear and leaks.                                                                                                        | ▲                                       |    |     |     |      |      |
|                                 | Change the gear oil.                                                                                                             |                                         |    |     | ▲   |      |      |
| Hydraulic Filter                | Replace the filter.                                                                                                              |                                         |    |     |     | ▲    |      |
| Hydraulic oil tank              | Change the hydraulic oil.                                                                                                        |                                         |    |     |     |      | ▲    |

## Boom lifting support equipment

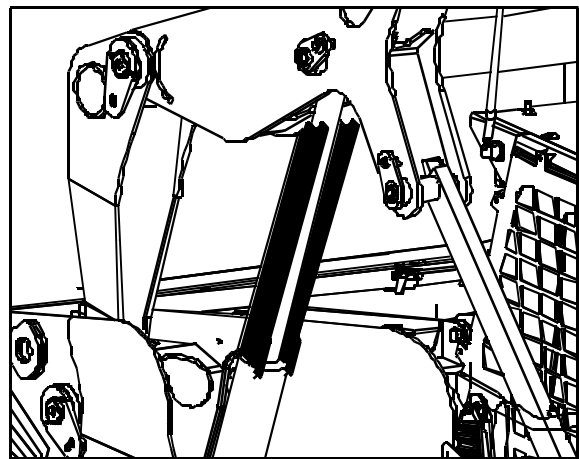
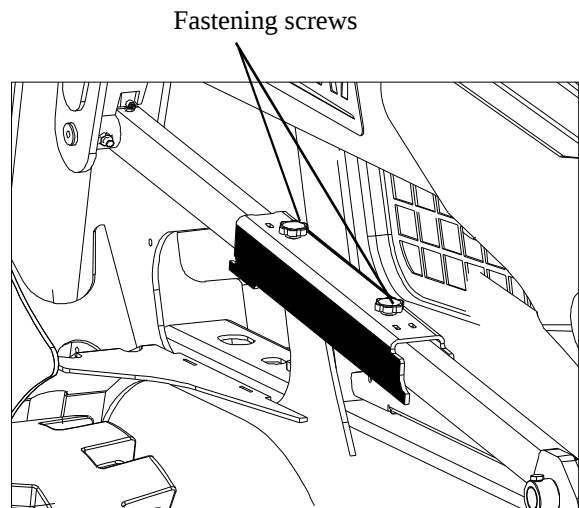
When maintaining and repairing the machine, the boom should be lowered to its lowest position. If it is necessary to work with the boom raised, follow these steps to use and remove the safety bar.

**Warning:** Do not work under the boom unless it is securely supported by the boom lifting support. Incorrect use of the boom lifting support may cause the boom or workpiece to fall, resulting in personal injury or death.

**Warning:** Repair is required if the boom lifting support is damaged or parts are missing. Using a damaged boom lifting support may cause the boom to fall, resulting in personal injury or death.

When using a boom lifting support device, the following steps must be followed:

- 1) Unscrew the fastening screws on the boom lifting support device.
- 2) Raise the boom so that the boom lifting support device rests precisely on the small chamber of the hydraulic cylinder.
- 3) Lower the boom so that the boom lifting support device rests precisely on the end of the large chamber of the hydraulic cylinder.
- 4) Tighten the fastening screws to secure the boom lifting support device.



## seat belt

### Inspection and Maintenance

**WARNING:** Improper inspection and maintenance of seat belts can result in them not tightening securely, leading to personal injury and death. Check your seat belts daily to ensure they are functioning properly.

Inspect the seatbelt system annually; more frequent inspections are necessary in harsh working conditions.

Replace the seatbelt if it is broken, worn, damaged due to overuse or sun exposure, or if other parts are damaged.

1. Inspect the belt for breakage, wear, aging, or dirt.
2. Inspect the belt buckle for proper function and wear.
3. Check if the belt has been exposed to sunlight, dust, or oil. Faded belts or accumulated dust and oil will reduce their strength.

## Safety handrail

### Check the safety handrails

1. Sit in the seat and fasten your seatbelt.
2. Operate the hydraulic control buttons to check if the tilt and lift functions are working properly. Raise the boom until the bucket is 600mm off the ground.
3. Raise the safety handrail and operate the hydraulic control lever. At this point, the boom and bucket should not move.
4. Lower the safety handrail and lower the boom. While the boom is lowering, raise the safety handrail. The boom must stop at this point.
5. Lower the safety handrail, lower the boom, place the bucket on the ground, stop the machine, raise the safety handrail, operate the attached foot pedal to ensure it is locked, and release your seatbelt.

### Maintain safety handrails

Clean any dust and debris from the shaft with compressed air; do not lubricate with lubricating oil. Check all fasteners; the bolt tightening torque is 35 Nm.

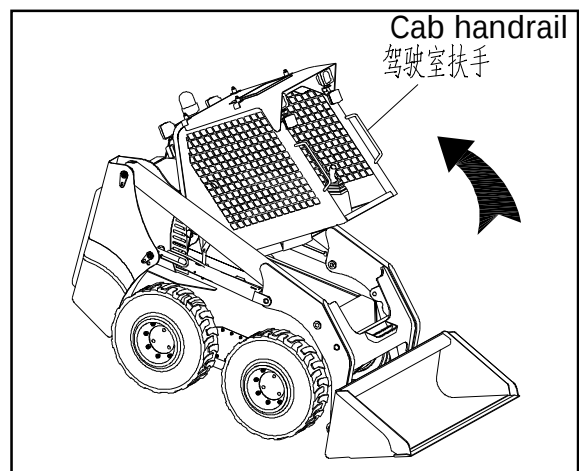
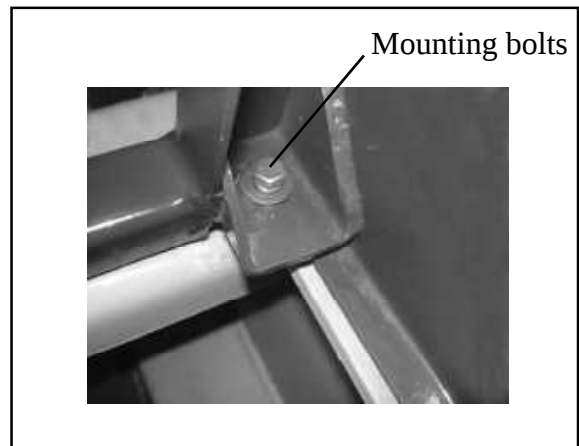
If the safety handrail is not working properly, replace the damaged part. Use genuine Yuchai parts.

Warning: When the safety handrail is raised, the hydraulic system should be inoperable, and the boom bucket should not work. If the hydraulic system is still operational, the safety handrail should be repaired.

## Cab Tilting

The cab must be tilted or lowered only after the machine has stopped running. When tilting the cab for maintenance, the cab must be secured to prevent the driver from falling and causing personal injury or death.

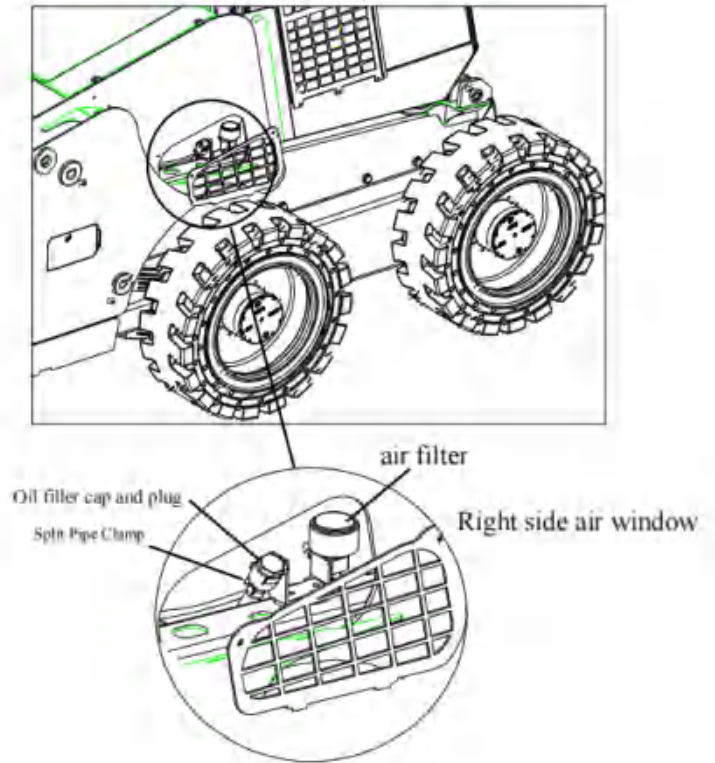
- Park the machine on a level surface.
- Lower the boom to its lowest position. If the cab must be tilted when the boom is raised, a safety bar must be installed.
- Loosen the bolts securing the cab.
- Grasp the cab handrails and slowly tilt the cab to its side.



## Hydraulic System

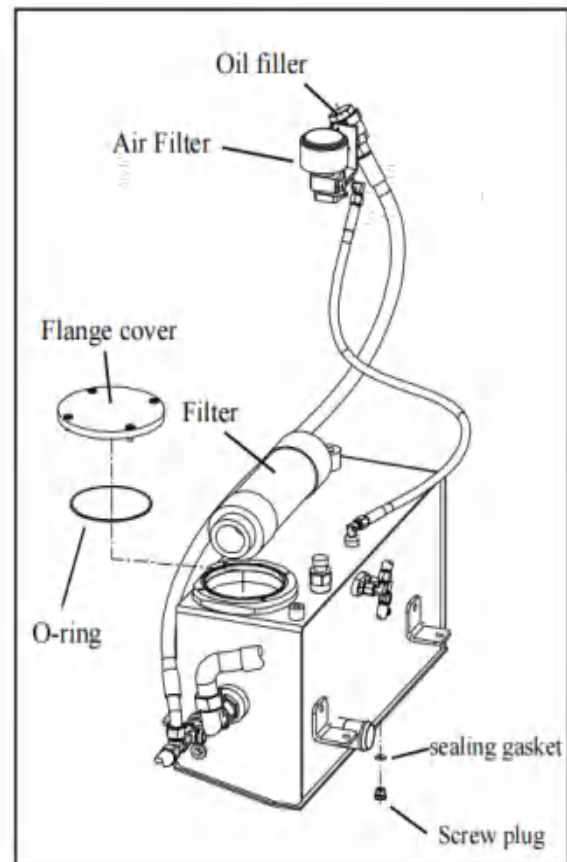
### Check Hydraulic Oil Level

The level is shown by the tank icon on the display: a light-coloured icon means normal, a red icon with text indicates low or high level. Do not over-fill; excess oil can damage circuits or cause spray. If over-filled, stop the machine, let the oil cool, then drain the surplus at the tank drain plug. If the level is low, remove the right side screen, loosen the air breather for venting, release the hose clip and pull the hose end out. Using two spanners, loosen the filler-port plug and add oil slowly through the port until the level is correct.



### Hydraulic Oil & Filter Replacement

- 1) Park the machine on firm, level ground.
- 2) Slowly loosen the air breather on the tank to release stored air pressure.
- 3) Remove the tank flange cover.
- 4) Unscrew the drain plug at the tank bottom and drain the oil into a suitable container.
- 5) Remove the filter element.
- 6) Thoroughly clean the inside of the tank.
- 7) Clean the drain plug and reinstall it.
- 8) Install a new filter element.
- 9) Refill through the fill port with approved hydraulic oil (approx. 33 L; HS46+ for low-temp, HMP46+ for normal climates) to the mid-level mark on the sight gauge.
- 10) Reinstall the flange cover and tighten all bolts evenly.



## Hydraulic System

### Hydraulic-Oil & Filter Change Intervals When Using Attachments (e.g. Hammer)

When a hydraulic hammer is used, system contamination increases and corrosion accelerates. Compared with digging work, oil and filter change intervals must be shortened to protect the pump and other components. Recommended intervals are shown below (hours of operation):

| <b>Hammer Duty Cycle</b> | <b>Oil Change</b> | <b>Filter Change</b> |
|--------------------------|-------------------|----------------------|
| 50 %                     | 1000              | <b>Filter 750</b>    |
| 100 %                    | 500               | <b>Filter 500</b>    |

**NOTE:** When using a hydraulic hammer, adjust system pressure to the hammer manufacturer's specification

## **Tire Maintenance**

Regularly check the lug nuts; the correct tightening torque is 142-156 Nm.

Regularly check tire wear and tire pressure.

Rear tires always wear faster than front tires. To ensure even wear, install front tires on the rear and rear tires on the front.

Always use tires of the same size. Using tires of different sizes will cause oversteering or understeering and lead to excessive tire wear. Tire treads must point in the same direction.

Maintain proper tire pressure to avoid excessive wear and loss of balance and control.

### **Tire Installation**

Tires should only be installed by professionals using the correct procedures and tools.

Before installation, check the tire and rim for correct specifications and inspect the tire and rim flanges for damage.

Rim flanges must be clean and free of rust.

Lubricate the tire flanges and rim flanges with rubber lubricant before tire installation.

Avoid overinflating tires (especially pneumatic tires), as this can cause tire blowouts, resulting in personal injury and death.

Check tire pressure frequently during inflation to avoid overinflation.

## Battery System



### Warning:

- The battery system contains highly corrosive chemicals. Do not disassemble or damage it yourself.
- During charging, contact with an open flame may cause an explosion. Keep away from open flames.
- Avoid external impacts or shocks.

### 1.Storage requirements

- The battery system should be stored in a dry, clean, and well-ventilated environment at 5-25°C, away from direct sunlight and at least 2 meters away from heat sources. Excessive ambient temperature will significantly affect battery performance.
- Do not invert or lay the battery horizontally, and avoid any mechanical impact or heavy pressure.
- The shelf life at room temperature is 3 months. If the battery is not used for more than 3 months, it should be recharged monthly.

### 2.Charging requirements

- Slow charging input voltage and current: AC220V, 15A; Fast charging input voltage and current: AC380V, 80A.
- Please use the dedicated charger and charge according to the instruction manual.
- Please turn off the vehicle's manual power switch before charging.
- To stop charging, press the pause button on the charger first, then unplug the charging gun.
- When the lithium battery level is below 20%, please charge it promptly.
- Under normal use, it is recommended to fully charge the battery at least once a week.
- If the battery is not used for more than 3 months, it should be recharged once a month.

### 3.Other matters

- If the machine is parked for more than 6 hours, the battery system will enter a dormant state and will need to be restarted. Therefore, please turn off the manual power switch.



### Warning: To prevent accidents, please note the following:

- Do not use the lithium battery in environments exceeding 55°C or below -25°C.
- Do not directly rinse the lithium battery case.
- Do not place heavy objects or conductors on the surface of the lithium battery case.
- Do not overcharge or over-charge.
- Do not subject the lithium battery pack to external impacts or shocks.
- Keep the lithium battery pack out of reach of children or other animals.
- Unauthorized personnel should not disassemble the lithium battery pack to prevent damage to internal components.

## Travel Reducer

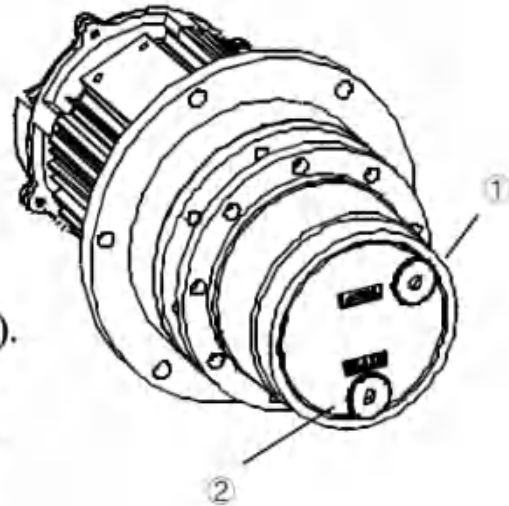
### 1. Check the lubricating oil level in the travel reducer and add oil.



**Warning:** The oil in the gearbox will heat up after the machine has been running for a short time. After stopping the equipment, the gearbox and oil will still be at a high temperature, which can cause severe burns. Before operating, you must wait for the oil to cool down. Loosen the vent plug two to three turns to release the air pressure inside the gearbox before removing the plug. Quickly removing the plug is dangerous.

Check every 10 hours.

- 1) Prepare an Allen wrench.
- 2) Park the machine on a level surface.
- 3) Rotate the travel reducer until the two screw plugs on its outer end face are in the position shown in the diagram, then stop the machine.
- 4) After the oil has cooled, slowly open screw plug ①.
- 5) After releasing the air pressure in the gearbox, continue to unscrew screw plug ①.
- 6) Check the oil level; the oil level should reach the lower edge of the screw plug hole.
- 7) If necessary, add gear oil.
- 8) Clean screw plug ① and reinstall it on the reducer.



### 2. Change the lubricating oil (for each gearbox).

Change the oil after 250 hours of operation. The oil change interval is every 250 hours.

(Approximate capacity: 0.8L, heavy-duty automotive gear oil GL-5 or SAE 80W/90).

- 1) Park the machine on a level surface.
- 2) Rotate the reducer until the screw plug is in the position shown.
- 3) Drain the oil from the reducer while it is still hot.

**Caution:** Do not get burned by hot oil.

- 4) Loosen screw plug ② to drain the oil completely.
- 5) Retighten screw plug ②.
- 6) Add the specified lubricating oil through the filler hole ① until oil flows out of the oil level check hole ①.

### 3. Check the tightening torque of the travel reducer connecting bolts.

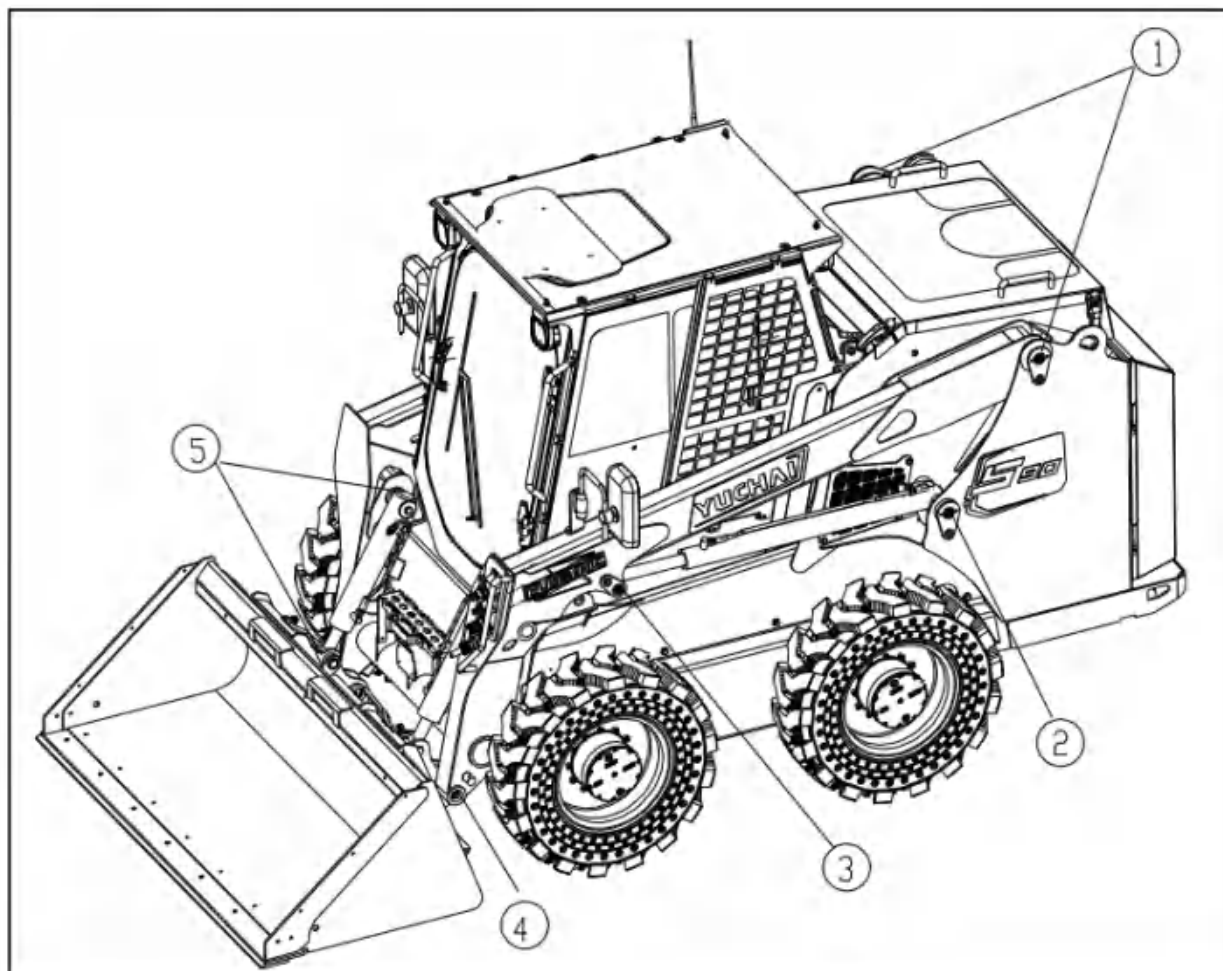
The new machine should be inspected after 10 hours of operation, and then every 10 hours thereafter.

Tighten the bolts connecting the reducer to the chassis and wheel hubs.

## Lubricate

Proper lubrication keeps the machine in good working order. Record the time for each lubrication session.

Please use the recommended lubricant.



1. Boom-tail grease nipple

2. Boom-cylinder rod-end grease nipple

3. Boom-cylinder head-end  
grease nipple

4. Boom-head grease nipple

5. Bucket-cylinder grease nipple



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