



S90 SKID STEER LOADER

Operation & Maintenance 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 may result in serious injury or death. Before using the machine, the following must be observed:

- Memorize all safety regulations and correct operating procedures for this machine.
- Read and understand the safety-related content in the operation manual.
- Recognize and familiarize yourself with all safety labels on the machine.
- Keep unauthorized personnel away from the work area.
- Complete formal safety training before operating the machine in any work environment

It is your responsibility to comply with all applicable laws and regulations and to follow Yuchai Equipment ' s guidelines for 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

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Foreword

To users

Dear Customer,

Welcome to the Yuchai Skid-Steer Loader family and thank you for your continued trust in Yuchai products.

This manual is written for operators and maintenance personnel who work with the skid-steer loader. Please read it carefully before operating or servicing the machine and strictly follow all safety regulations, operating procedures, lubrication requirements and scheduled-maintenance instructions contained herein. Correct operation and regular maintenance are essential for reliable performance, long service life and maximum productivity.

Always entrust major repairs and adjustments to an authorized Yuchai service dealer and use only genuine Yuchai parts and consumables. Non-genuine parts may not produce an immediate problem but can lead to a chain of failures later. Failures caused by non-genuine parts or repairs carried out by unauthorized workshops are not covered by the Yuchai warranty, even if they occur within the warranty period.

Driven by our "Customer-First" principle, Yuchai constantly improves its products to offer you the best possible machine. These improvements may be introduced at any time without prior notice or accompanying documentation updates.

We sincerely hope that, with correct operation and proper care, this machine will serve you efficiently and create even greater value for your business.

Guangxi Yuchai Equipment Technology Co., Ltd.

Safety Notices

1.Warning signs



Throughout this manual, this warning symbol highlights safety-critical information. When you see it, read the accompanying text carefully to prevent possible injury or fatality.

2.Safety Tips

This manual explains safety precautions, hazard symbols and potentially dangerous situations. Operators must read both this manual and all machine safety decals before operating, maintaining or repairing the unit, and must follow the specified procedures.

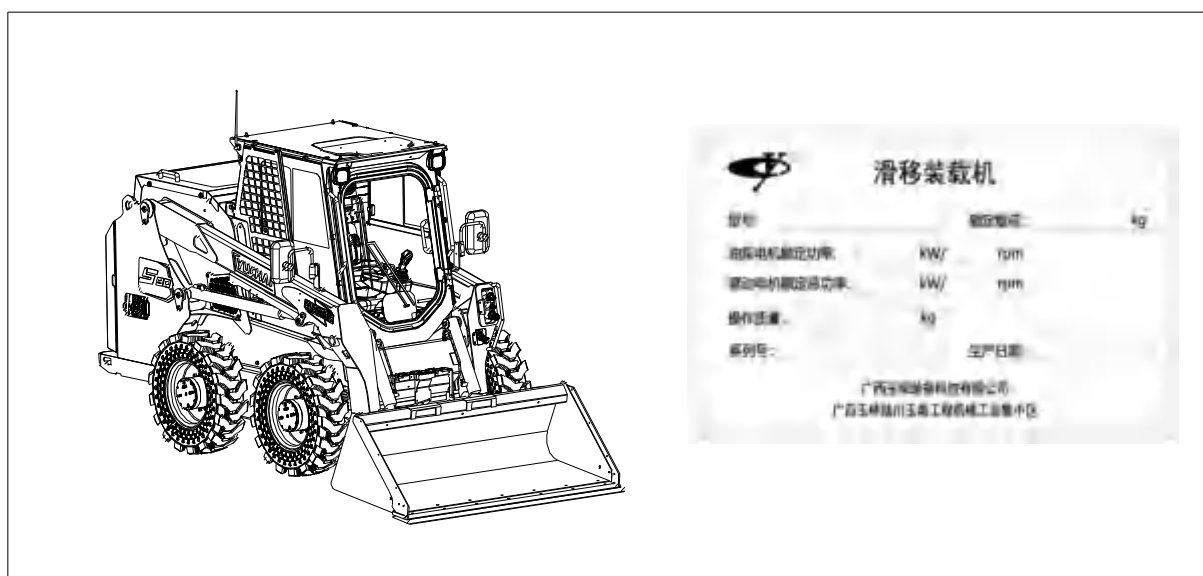
The signal words DANGER, WARNING and CAUTION are used in this manual and on machine decals. Their meanings are as follows:

-  DANGER: Indicates an imminent hazard that, if not avoided, WILL result in death or serious injury. Used only for the most severe hazards.
-  WARNING: Indicates a potential hazard that, if not avoided, COULD result in death or serious injury.
-  CAUTION: Indicates a hazard that, if not avoided, may cause minor or moderate injury, or alerts against unsafe practices that could lead to injury.

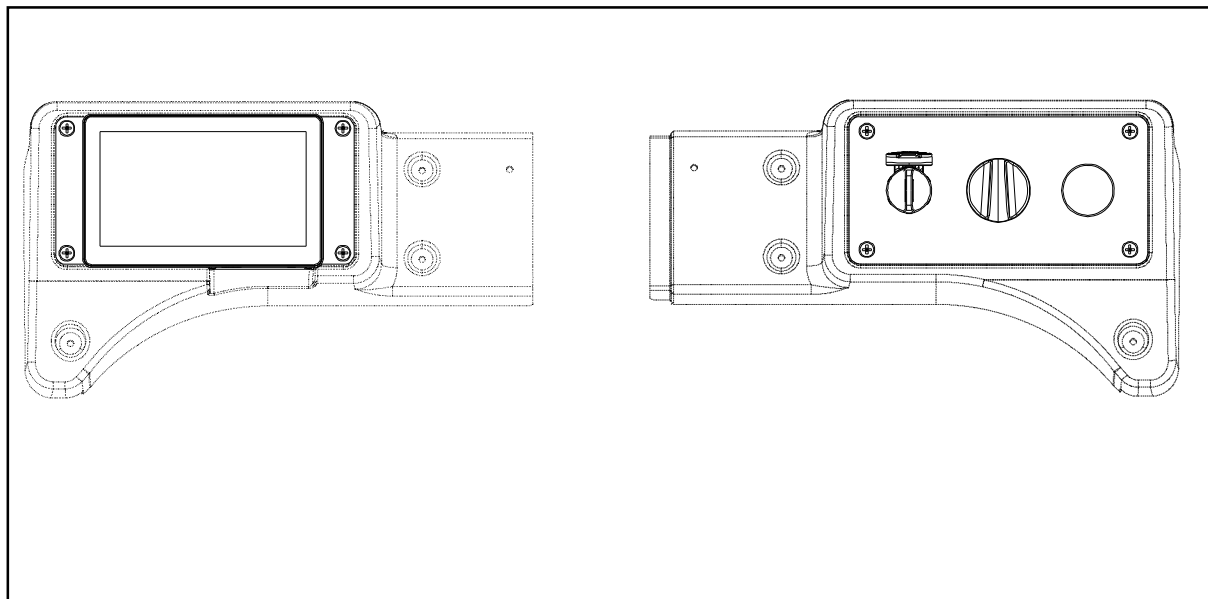
Product Information

Whenever you need the basic data of the machine, refer to the nameplates and labels shown below.

- Machine Information (Machine Nameplate located on the right-hand inside wall of the cab)



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

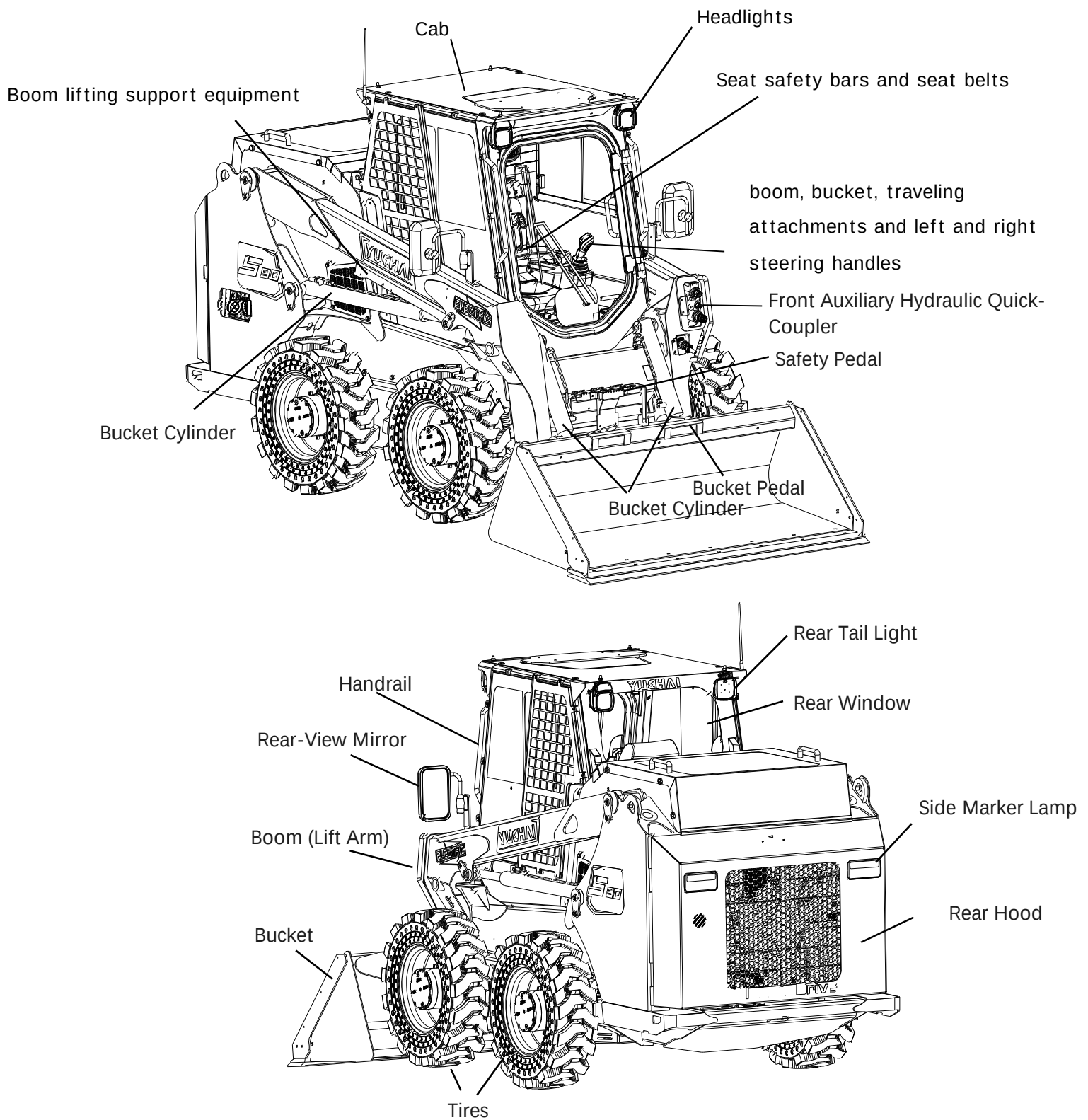


Machine Record

Fill in the table below with your machine 's serial number and other key data. When ordering spare parts or requesting technical documents, quote these numbers to your Yuchai dealer. Keep this record together with the product conformity certificate in a safe place; submit it to the police should the machine ever be stolen.

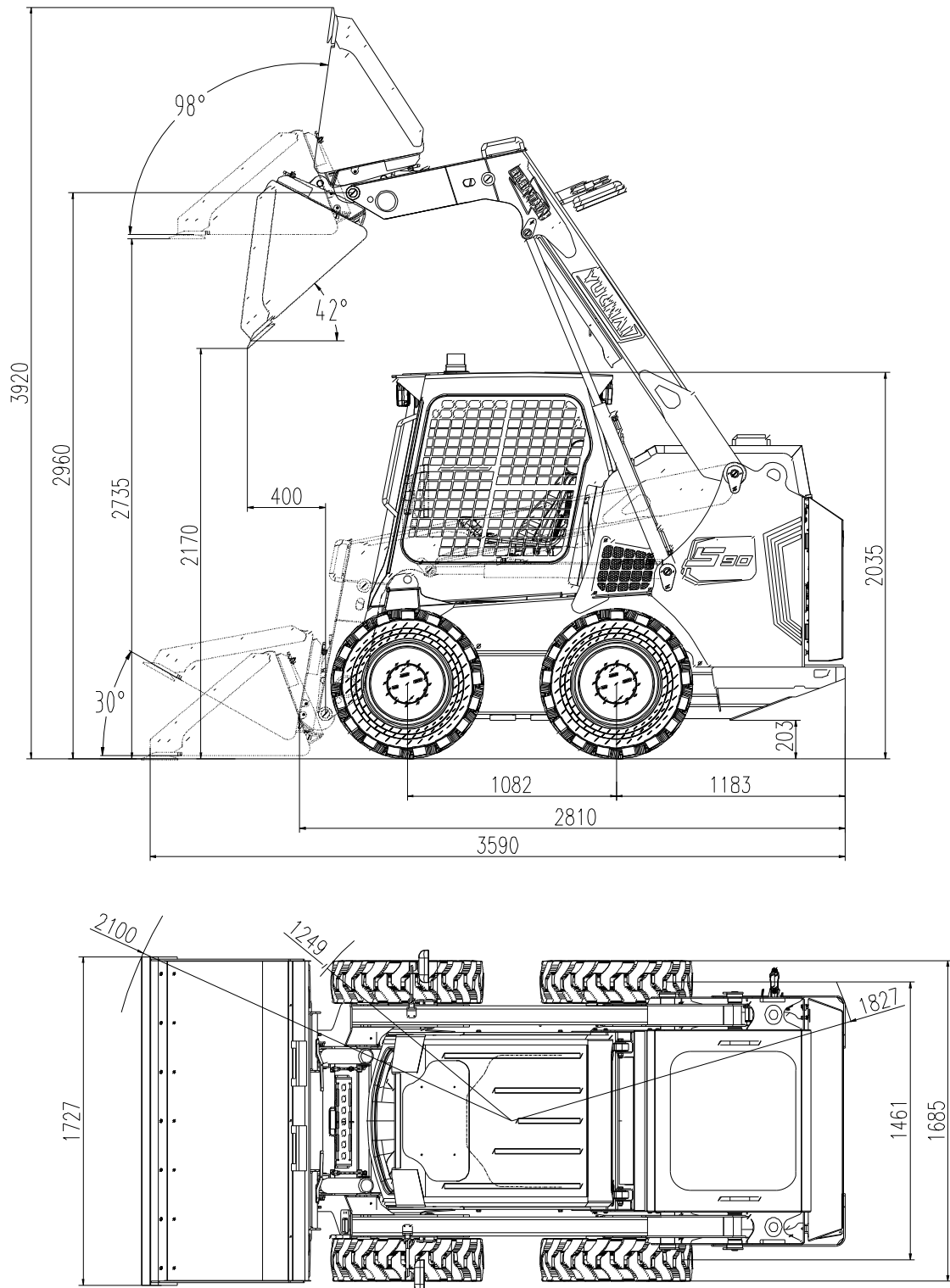
	● Machine Model _____
	● Machine Serial No. _____
	● Motor Power Data _____
	● Dealer Information _____ _____

Machine composition



Technical Specifications

S90 Skid Steer Loader Specifications



Performance Parameters

Rated Load: 900 kg
Tipping Load: 1 800 kg
Operating Weight: 3 800 kg
Bucket Capacity: 0.5 m³
Operating Endurance: 8-9 h
Travel Speed: 0-17.3 km/h

Battery System

Nominal Energy: 105 kWh
Nominal Voltage: DC 347.76 V

Motor

Pump Motor (Rated / Peak): 32 kW / 60 kW
Drive Motors (4× Rated / 4× Peak): 4×8 kW / 4×17 kW
Slow charging and discharging power 3.3kW
Input AC 220 V / 15 A

Output DC 347.76 V / 10 A

Fast-Charge Power: 40 kW
Input AC 380 V / 160 A
Output DC 347.76 V / 115 A

Hydraulic System

Rated Pressure: 23.5 MPa
Rated Flow: 87.1 L/min
High-Flow Option: 138.2 L/min
Hydraulic Tank Capacity: 33 L

Tires

Solid, Size 31×10-16

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Safety procedures

General Safety Principles

Strict compliance with the safety procedures given in this manual will prevent the majority of accidents that could endanger operation and maintenance of the machine. Before operating or servicing the machine, you must thoroughly study and understand every safety statement in this book as well as all safety pictograms affixed to the machine.

The safety sections of this manual describe situations that may arise during normal operation or maintenance and provide the recommended countermeasures.

Safety-related content appears in every chapter; together with this chapter it forms the complete safety guidance for the machine.

Because it is impossible to list every potential hazard, if you adopt any procedure or action not expressly recommended or permitted in this manual or on the machine, you are solely responsible for taking any additional measures necessary to ensure safety.

Under no circumstances shall the machine be used for purposes or operations that this manual prohibits; it must never be used to lift or transport people; no one except the operator is allowed in the cab while the engine is running or the machine is working; unauthorized persons must be kept outside the machine's working radius at all times.

This machine contains high-voltage circuits; operation, installation or repair must be performed only by qualified personnel using proper safety precautions; unauthorized persons are strictly forbidden to operate, maintain or repair the machine; operators and maintenance staff must be trained and certified.

Before beginning work, inspect all machine functions; if any malfunction is found, shut down immediately, locate the cause and correct it before resuming operation.

Inspections, maintenance and servicing must be carried out exactly as specified in this manual; operators must work and control the machine only within its rated limits and in accordance with the methods and safety rules described herein.

Do not operate or service the machine while under the influence of alcohol or drugs; this endangers both you and those around you.

You must understand all jobsite signals and hand gestures.

When travelling on public roads, know and obey all applicable national and local regulations.

This machine is intended only for normal above-ground applications; do not use it under water, inside tunnels or culverts, on elevated platforms without guardrails, or in explosive, flammable, toxic or oxygen-deficient environments.

Never take narcotics or drink alcoholic beverages while working; they reduce alertness and coordination.

When taking prescription medication, consult your physician to verify that you can safely operate the machine.

Safety Notices

1.Warning signs



Throughout this manual, this warning symbol highlights safety-critical information. When you see it, read the accompanying text carefully to prevent possible injury or fatality.

2.Safety Tips

This manual explains safety precautions, hazard symbols and potentially dangerous situations. Operators must read both this manual and all machine safety decals before operating, maintaining or repairing the unit , and must follow the specified procedures.

The signal words DANGER, WARNING and CAUTION are used in this manual and on machine decals. Their meanings are as follows:

-  DANGER: Indicates an imminent hazard that, if not avoided, WILL result in death or serious injury. Used only for the most severe hazards.
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-  CAUTION: Indicates a hazard that, if not avoided, may cause minor or moderate injury, or alerts against unsafe practices that could lead to injury.

SAFETY EQUIPMENT

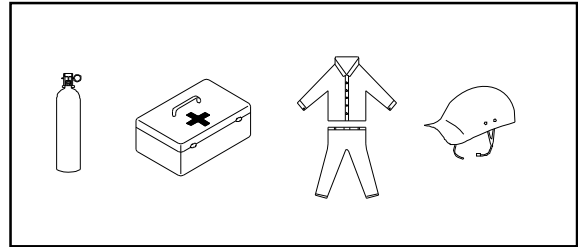
1. OPERATOR'S PERSONAL PROTECTIVE EQUIPMENT

1) Before operating or servicing the machine, the operator must wear close-fitting work clothes, safety helmet, leather work shoes and other applicable PPE (e.g. ear plugs, gloves, safety glasses, seat belt, etc.).

2) If the operator has long hair, it must be tied up and completely covered by the safety helmet to prevent entanglement in moving parts.

3) The owner shall keep a first-aid kit in the machine and inspect it regularly, replenishing supplies as required so that it is ready for immediate use.

4) Always verify that all personal protective equipment is in good working condition before operation or maintenance.



2. EMERGENCY EXIT

An escape hammer is mounted on the rear wall of the cab.

If trapped in the cab and normal exit is impossible, use the pointed end of the escape hammer to strike the side window glass until it breaks. Wear eye and face protection while striking the glass.

SAFETY LABELS



WARNING: If you cannot understand a safety label or if it is missing, injury or fatality may result. Replace any lost or damaged label immediately and keep all labels clean and legible.

Before operating, maintaining or repairing the machine, read this manual and all caution labels on the machine; make sure you fully understand them and follow the specified procedures.

Check labels every day before start-up; clean them if they are not clearly visible. Clean labels only with a soft cloth, water and mild soap. Do not use organic solvents or gasoline—these can cause labels to peel off.

Replace any label that is damaged, missing or illegible. If the label is on a part that must be renewed, install a new label on the replacement part.

Contact your Yuchai dealer to obtain new safety labels.

1. Classification of Safety Labels

This manual and the machine use two types of safety labels: pictorial and text.

A. Pictorial Safety Labels

These labels use graphics to convey the warning; they are simple and immediately understood.

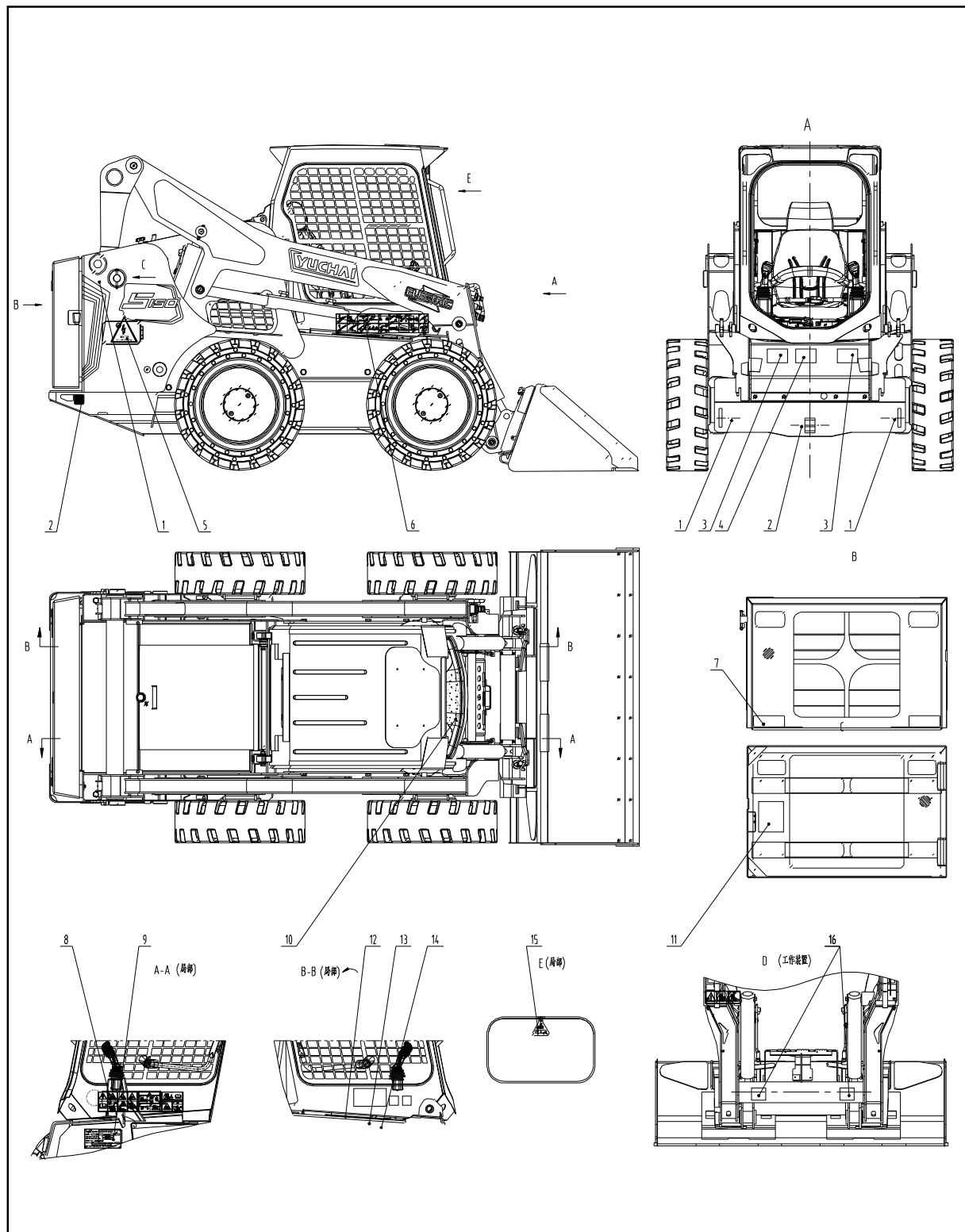
B. Text Safety Labels

These labels use text to describe the hazard directly, making the warning very explicit.

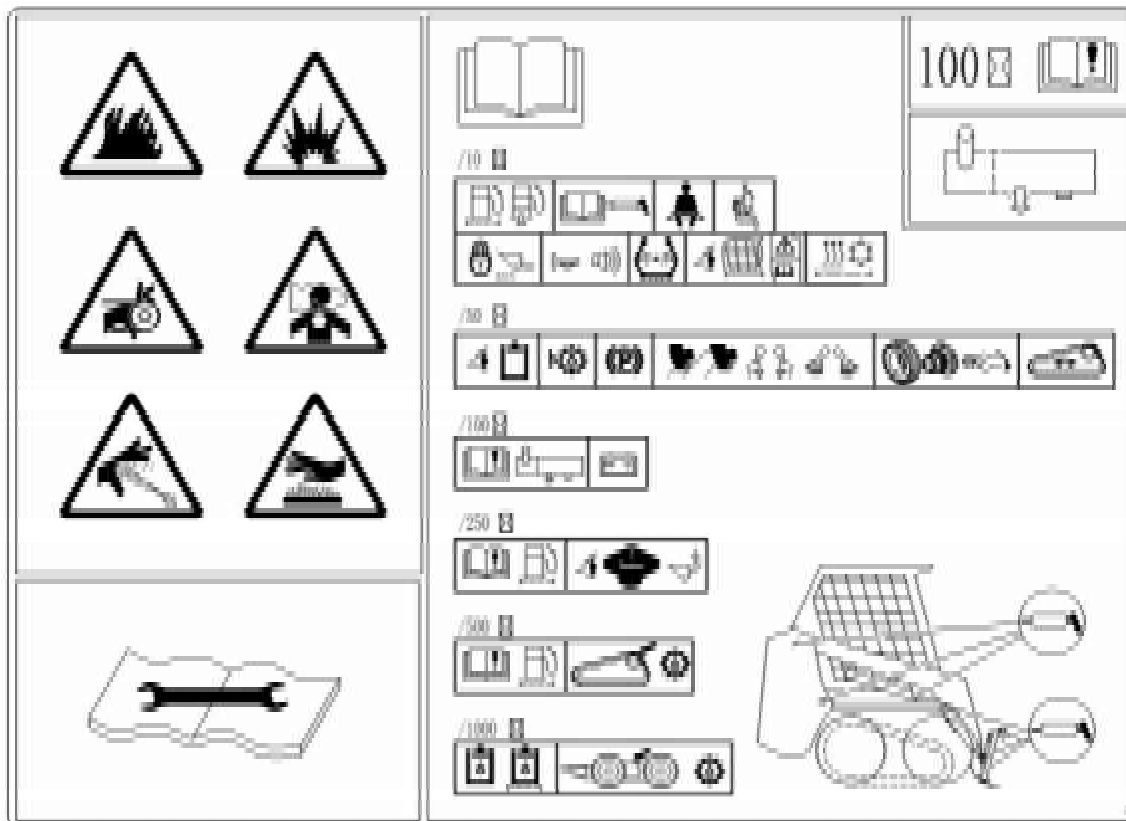


2.Safety sign placement

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

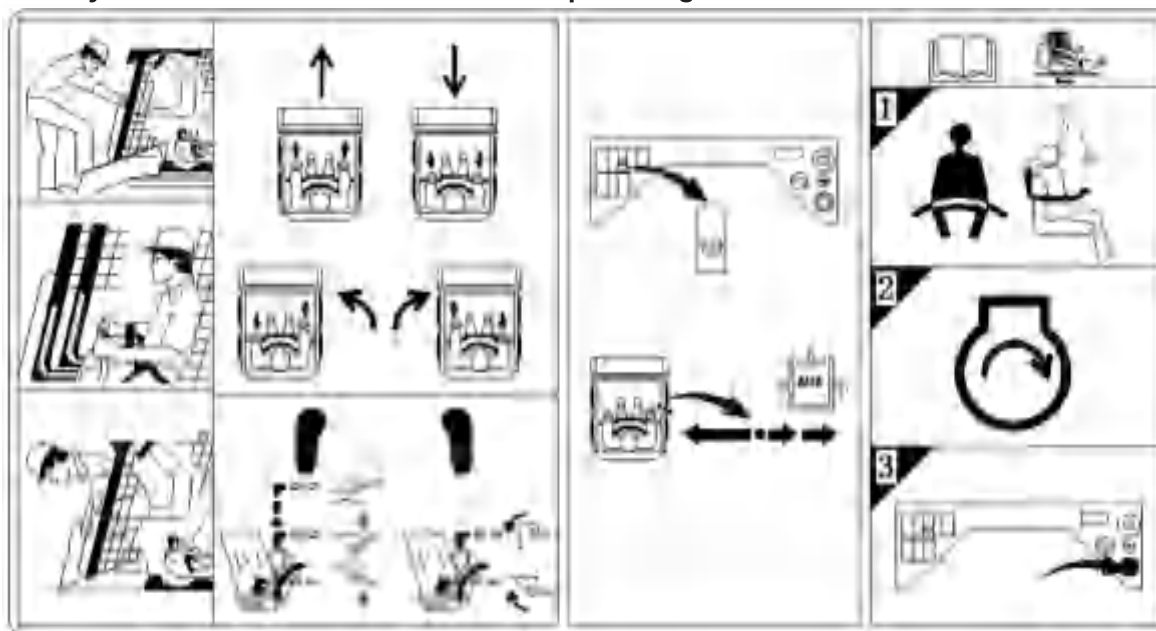


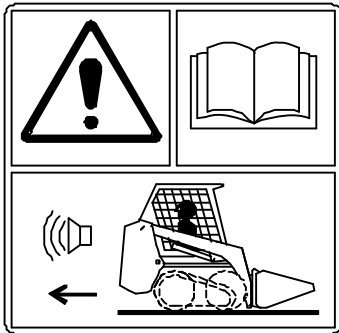
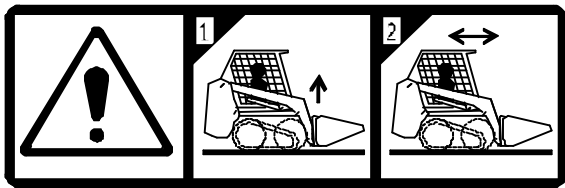
1.Safety information to be aware of during operation and maintenance



Read the Operation Manual before carrying out any maintenance.

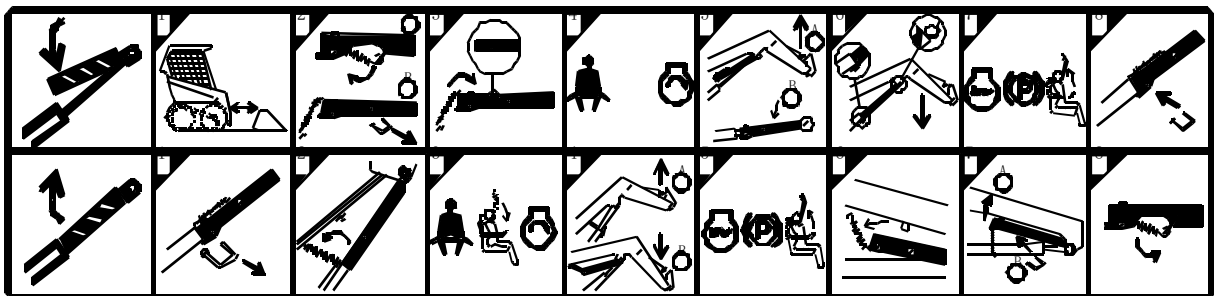
2.Pay Attention to Labels Before Operating the Machine





Before carrying out operation, maintenance, disassembly, assembly, transport or any other handling of the machine, be sure to read the Operation Manual.

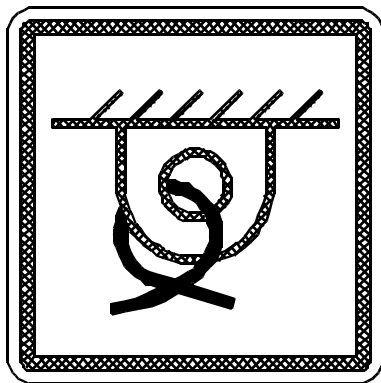
3. Boom Support Device Operation Label



5. Pay attention to load balance



6. Lifting hook label



7. Danger – electric shock hazard

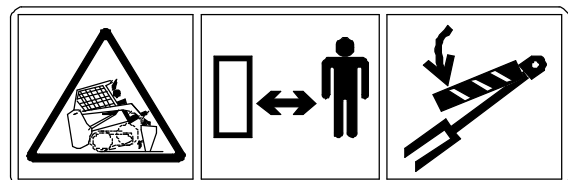


Only qualified personnel may carry out electrical repairs.

8. Climbing prohibited

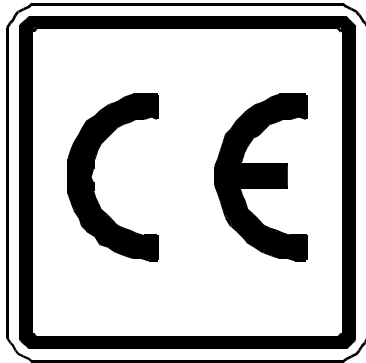


9. Caution – keep clear of working equipment



Moving work equipment can cause personal injury. Always maintain a safe distance from the work equipment area.

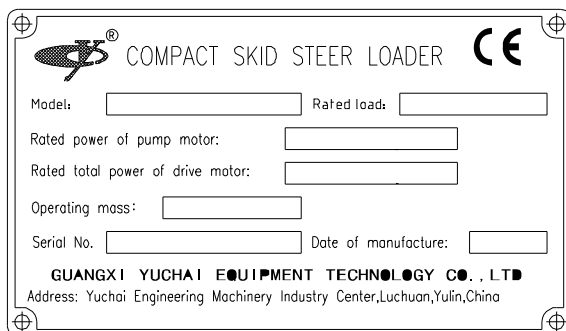
10.CE Certification Mark



12.Emergency Exit Warning Plate



11.Machine Nameplate (Rating Plate)



JOB-SITE SAFETY

Learn as much as possible about the area where you will work. Check for:

- 1.Slopes, open trenches, falling or overhead objects.
- 2.Soil conditions (soft or hard), standing water and marshy areas.
3. Rocks and tree stumps, buried foundations, root pillars or wall edges, buried refuse or fill boundaries.
- 4.Holes, obstacles, mud or ice.
- 5.Traffic density.
- 6.Heavy dust, smoke or fog.
- 7.Exact positions of buried or overhead electric, gas, telephone, water, sewer or other utility lines. If necessary, have the utility companies mark, shut off or relocate these services before you start.



WARNING: Contact local utility services and departments before project commencement.

8. When working inside buildings, determine headroom of ceilings, porches, passageways, and the load-bearing capacity of floors and ramps. Ensure adequate ventilation. What you don't know can hurt you.

9. Know the exact distances between power/telephone lines and the machine, and between the machine and ground. If possible, de-energise the lines. If not, arrange for a signal person to guide you.



WARNING: Contact with or proximity to live lines or machines connected to them can cause electrocution. Keep any part of the machine away from overhead power lines unless all necessary safety measures have been taken. Exercise extreme caution.

10. Maintain the legally prescribed minimum distance from underground gas pipes, cables, telephone lines and water mains.



WARNING: Looking into the end of a damaged cable can cause serious eye injury from cut optical fibres.

- 11.PROHIBITED: Using the machine inside culverts or underground.
- 12.PROHIBITED: Operating in mud, quagmires or swamps.
- 13.PROHIBITED: Working in water or driving through water deeper than 200 mm.
- 14.PROHIBITED: Operating where chemical hazards are present.
- 15.PROHIBITED: Use in explosive, flammable or potentially explosive atmospheres.
- 16.PROHIBITED: Working on elevated platforms without guardrails. If work is essential, install sturdy guardrails at least as high as the tyre radius and in compliance with national standards.

Consult your local dealer before use in the following environments:

- 1.Areas containing ammunition or other explosive substances.
- 2.Excessively dusty environments.
- 3.Harbours or waterfront areas with salt-spray corrosion risk.
- 4.Chemical plants where exposure to acids or other chemicals is possible.
- 5.Areas containing combustible dust or flammable gases.
- 6.Environments with toxic substances.

SAFE OPERATION

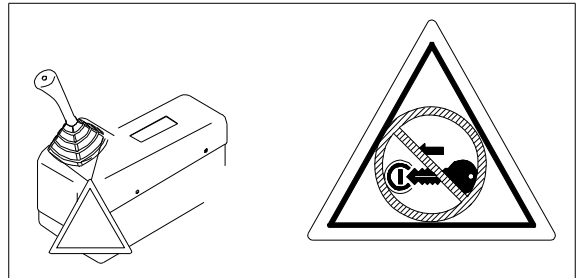


WARNING: Before operating the machine fasten the seat belt, sound the horn and make sure no one is in the work area. Use in culverts/ underground, in chemically hazardous locations or in explosive atmospheres is **PROHIBITED**.

1.Starting the Machine

A.Engine-Start Safety Rules

- 1) Sound the horn to warn others before starting.
- 2) No passengers except the operator.
- 3) Operate only when seated in the driver' s seat.



WARNING: DO NOT start if a “ DO NOT OPERATE ” tag is hung on any control lever.

B. After Engine Start

Immediately check the following after start-up:

- 1) Seat belt fastened.
- 2) Work equipment and travel elements functioning normally.
- 3) No abnormal noise, vibration, odor or gauge readings.
- 4) No hydraulic-oil leaks.

2. Before Work

Find out the weight of the object before handling to avoid exceeding the machine's rated lift capacity. High-density material weighs more per unit volume; reduce load size when handling such objects.

3. Maintenance Safety

First turn the main battery disconnect and key switch to OFF; verify that the machine is de-energised.

Whenever working under the machine, support it solidly with approved stands; never rely on hydraulic cylinders—if a lever is moved or a hose bursts the machine can fall.

Do not work beneath the cab unless the cab is properly supported.

Never touch wiring harness terminals or other high-voltage components with bare hands; risk of electric shock.

Do not adjust the machine while it is moving or running unless another procedure is specified.

Hot oil and hot components can cause burns; keep hot oil and hot parts away from skin.

Remove hydraulic filters only after the machine has stopped and the filter has cooled to bare-hand temperature. Follow manual steps when removing hydraulic tank filters.

Fragments and debris can fly when striking objects; make sure no one will be hit by flying particles before striking.

4. Pneumatic Tyres

Introducing hot gases into the tyre can cause internal gas explosion.

Tyre explosions can be triggered by welding heat, heating the rim, external fire or excessive braking.

A tyre explosion is far more violent than a normal blast; rim and axle parts can be hurled 500 m, causing severe injury or death.

Keep away from hot tyres; maintain a safe distance.

Always use dry nitrogen to cool and inflate hot tyres. Nitrogen reduces explosion risk (non-combustible) and slows rubber oxidation and rim corrosion.

Use dedicated nitrogen inflation equipment to avoid over-inflation; operators must be trained. Wrong equipment or misuse can cause burst tyres or rim failure.

When inflating, stand on the tread side and use a solid barrier.

Tyre maintenance is hazardous; only personnel trained in tools and procedures may perform it. Improper work can eject parts with lethal force. Always follow your tyre supplier's professional instructions.

5. Lightning-Storm Protection

If lightning strikes near the machine, the operator must NOT attempt to:

- climb onto the machine
- climb off the machine

If a storm approaches while you are operating, stay in the seat.

If you are on the ground when the storm arrives, move away from the machine and its immediate vicinity.

6.Operation

Operate only when seated; fasten the seat belt.

Before travelling, ensure no persons are endangered.

In an open area, run the machine and attachment slowly while checking that all guards and levers function correctly. During operation, log every fault and record all repairs performed.

Refer to the manual for bucket and lift limitations.

When transporting, lower the bucket, bring the boom to minimum height, and tilt the bucket so it clears the ground. Keep clear of cliff edges, cave openings or protrusions.

If the machine starts to sideslip on a slope, dump the load immediately and steer downhill.

Avoid any condition that could cause rollover—machine may tip on hillsides, river-bank mud, ditches, field ridges or unseen obstacles.

Bypass muddy areas whenever possible; do not drive through deep mud.

Maintain control components; never exceed rated load capacity.

Do not straddle cables and prevent others from doing so.

Know the maximum width of your machine.

Fit rollover protective structures before operation.

Daily, inspect protective devices for bends, cracks or looseness; do not operate a machine with a compromised structure.

Improper use or lack of operating skill places the operator at risk even if safety devices are installed—always follow the manual.

Shutdown & Maintenance



WARNING: Never tilt the cab, remove the battery, disconnect high-voltage wiring of the controller or motor, or open the battery box unless a qualified technician is present and in charge.

Hang a “ DO NOT OPERATE ” tag on all control levers before any repair work.

Park the machine on firm, level ground.

After stopping, lower the bucket to the ground and switch the main battery disconnect to OFF.

If parking on a slope is unavoidable, place adequate wheel chocks under both tracks or tyres.

Keep a safe distance from other machines when parked.

Open the emergency exit only during maintenance; keep it closed at all other times.

Weld or grind painted parts only in well-ventilated areas; wear welding goggles for welding and a respirator when grinding paint.

If the machine or an attachment must be raised for service, support it solidly; never rely on a single jack.

Never work under the boom unless it is properly supported; releasing hydraulic lines or component failure can let the boom drop.

High-pressure fluid can penetrate skin or eyes; avoid contact during service.

Dispose of waste fluids properly; do not pour oil onto the ground, into drains, streams, ponds or lakes. Handle other hazardous waste and plastics according to environmental regulations.

Never service or adjust 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 cigarettes.

Remove all foreign objects from the machine to prevent unintended movement that could injure people or damage the machine.

If maintenance must be done with the machine running, assign a dedicated attendant.

Do not lubricate or service while the engine is running; keep hands, feet and clothing away from moving or hot parts.

When the machine or attachment is running, wear safety glasses to protect against springs, high-pressure fluid and flying debris.

NOTE: If the machine fails and cannot work or move, load it onto a truck and remove it from the fault site before repairs. Refer to the “ Lifting the Machine ” section for rigging instructions.

Fire, Electric-Shock, Explosion & Poison Prevention

●While transporting, travelling or digging, keep away from overhead lines—contact causes severe injury or death.

●Inspect wiring daily; replace any cables that are crushed, damaged or aged to prevent short circuits, fire or electrocution.

●Keep all terminals clean and tight; check for loose or damaged wires every day, re-secure or repair as required.

●Never store flammable/explosive items inside the machine.

●Remove leaves, wood chips, paper and other combustibles that accumulate in the cab or engine bay.

●Do not leave oil-soaked rags in the machine—spontaneous combustion can occur.

●Carry a 9 kg dry-powder extinguisher within easy reach of the operator.

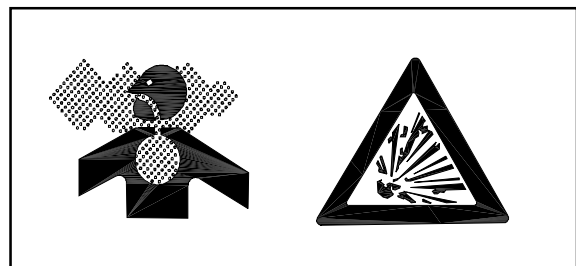
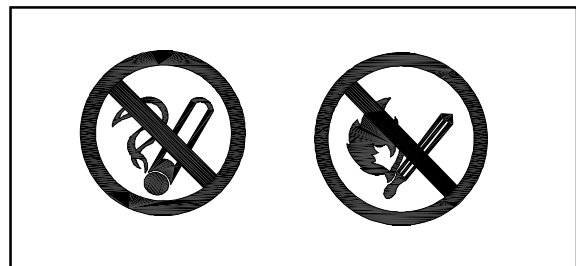
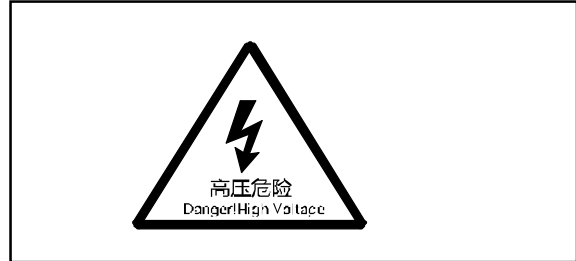
●Before welding, isolate hydraulic lines and wiring harnesses; welding on exposed hoses or looms is prohibited.

●Prevent hydraulic fires: check that all hose clamps, guards and cushions are secure. Loose components can chafe, burst and spray high-pressure oil, causing fire or severe injury.

●Keep the machine away from open flames and high-temperature sources; otherwise explosion may result.

●Never work in poorly ventilated areas—risk of operator asphyxiation.

●If fire occurs, do NOT use water. Extinguish with dry-powder extinguisher, sand, or smother with tarpaulin/blanket.



- Under normal operating conditions the machine and certain attachments contain hot surfaces; the main heat sources are the controller, motors and reducers. A damaged or improperly maintained electrical system can become a source of arcs or sparks.

- Keep the machine clean; combustible debris such as leaves and straw must be removed regularly. Accumulation of these materials creates a fire hazard.

- Clean dirt and dust from component surfaces with compressed air; never wash electrical parts (motors, controllers, etc.) with water.

- Do not operate the machine if arcs, sparks or hot surfaces can reach combustible material, explosive dust or gas. If use is necessary, inspect and clean the cab and battery-box insulation daily to prevent fire and overheating.

- Inspect all electrical lines and connections; keep battery terminals clean and tight; repair or replace damaged parts immediately.

- Check all hydraulic tubes, hoses and components for damage or leaks; tighten or replace leaking parts. Clean spilled fluid regularly; use only non-flammable commercial solvents—never gasoline or diesel.

- Before welding: switch the main battery disconnect OFF, cover hoses, battery and other combustibles, remove the machine ground cable, and place a fire extinguisher within reach. Provide good ventilation when grinding or welding painted parts; wear a respirator—toxic dust or gases may be produced.

- Know the location of all fire extinguishers; obtain replacements from your dealer.

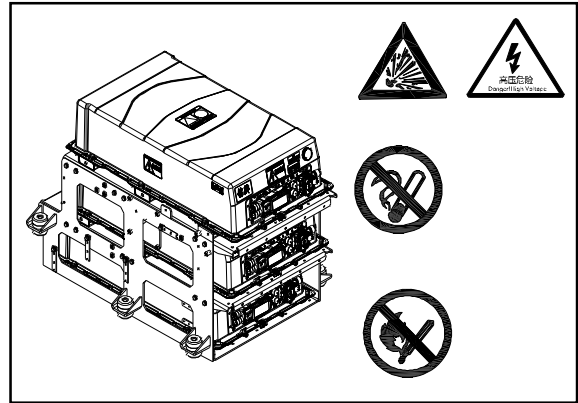
- Do not smoke while servicing the air-conditioning system or in areas where refrigerant may leak. Smoking while charging refrigerant in the presence of sparks can cause serious injury or death.

Lithium-Ion Battery Pack

Instructions for Use

The battery cells contain chemicals; incorrect handling can cause serious injury or fire. Observe the following:

- Use only the dedicated charger and follow the manual for charging.
- Switch the main battery disconnect/key switch OFF before charging.
- To stop charging, press the charger pause button first, then unplug the charge gun.
- Recharge when SOC falls below 20 %.
- Under normal use, fully charge at least once per week.
- If out of use for more than three months, perform a supplementary charge every month.



Precautions



WARNING – To prevent accidents:

- Do not use the battery above 55 °C or below -25 °C.
- Never wash the battery pack with water.
- Do not place heavy objects or conductors on the battery housing.
- Avoid over-discharge, over-charge or over-voltage charging.
- Do not strike or impact the battery box.
- Keep children and animals away from the battery.
- Removal or repair of the battery pack is restricted to authorised personnel only.
- If the battery catches fire, retreat immediately; water may be used from a safe distance while awaiting professional fire-service assistance.

NOTE: Switch the main battery disconnect/key switch OFF before any electrical repair or welding to prevent electric shock.

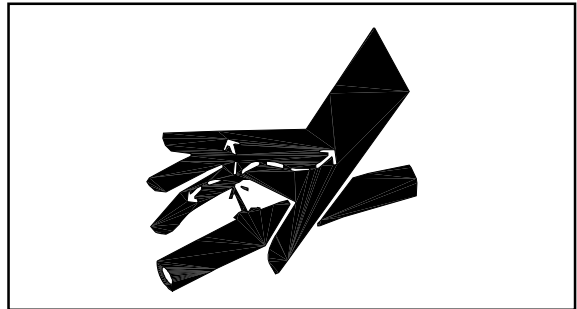
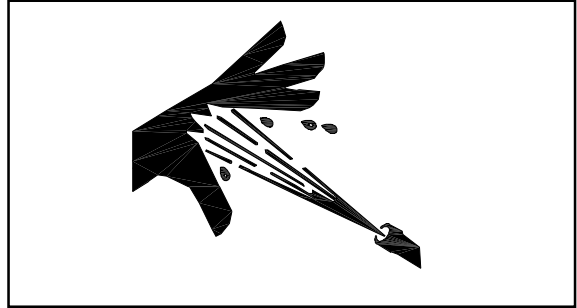
Hydraulic System

1. High-Pressure Oil Safety Rules

(1) The hydraulic circuit remains pressurised at all times. Before inspecting or replacing pipes or hoses, verify that pressure has been relieved; residual pressure can cause serious injury or damage. Observe the following:

(2) Never inspect or replace components while the system is pressurised. If a pipe or hose leaks, the surrounding area will be wet. Check for ruptured lines or ballooning hoses. Wear safety goggles and leather gloves while inspecting.

(3) A high-pressure stream from a pin-hole leak can penetrate skin; contact with eyes may cause blindness. If struck, flush with clean water and seek medical attention immediately.



2. High-Pressure Hose Safe Practice

Leaking oil or fuel from a high-pressure hose can cause fire or loss of control, resulting in serious injury or damage. If a loose fitting is found, stop work and tighten the bolt to the specified torque. Never weld without first isolating hydraulic hoses. If any hose damage is seen, shut down immediately and contact your Yuchai dealer. Replace hoses showing:

- Damaged or leaking fittings
- Abraded, cut or exposed reinforcement wire
- Localised ballooning Twisted or crushed sections
- Foreign material under the cover

3. Hydraulic Oil Safety Rules

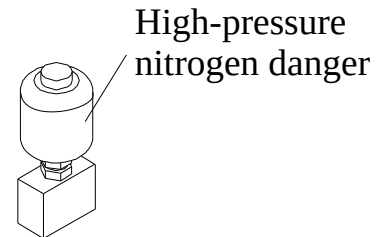
Oil that is still hot after operation is at high temperature and pressure. To prevent burns from hot spray or contact with hot components, wait until the oil has cooled enough to touch the cap or plug. Even when cool, loosen the cap or plug slowly to release any residual tank pressure before removal.

4. Accumulator Safety Procedures



WARNING: The accumulator is charged with high-pressure nitrogen; improper handling can cause an explosion. Do NOT dismantle, drill or weld on the accumulator. Keep it away from open flames and prevent impact or shock. Entrust removal or disposal to qualified personnel only.

An accumulator is installed in the control circuit. It stores pressure and can operate the controls briefly after the machine is shut down.



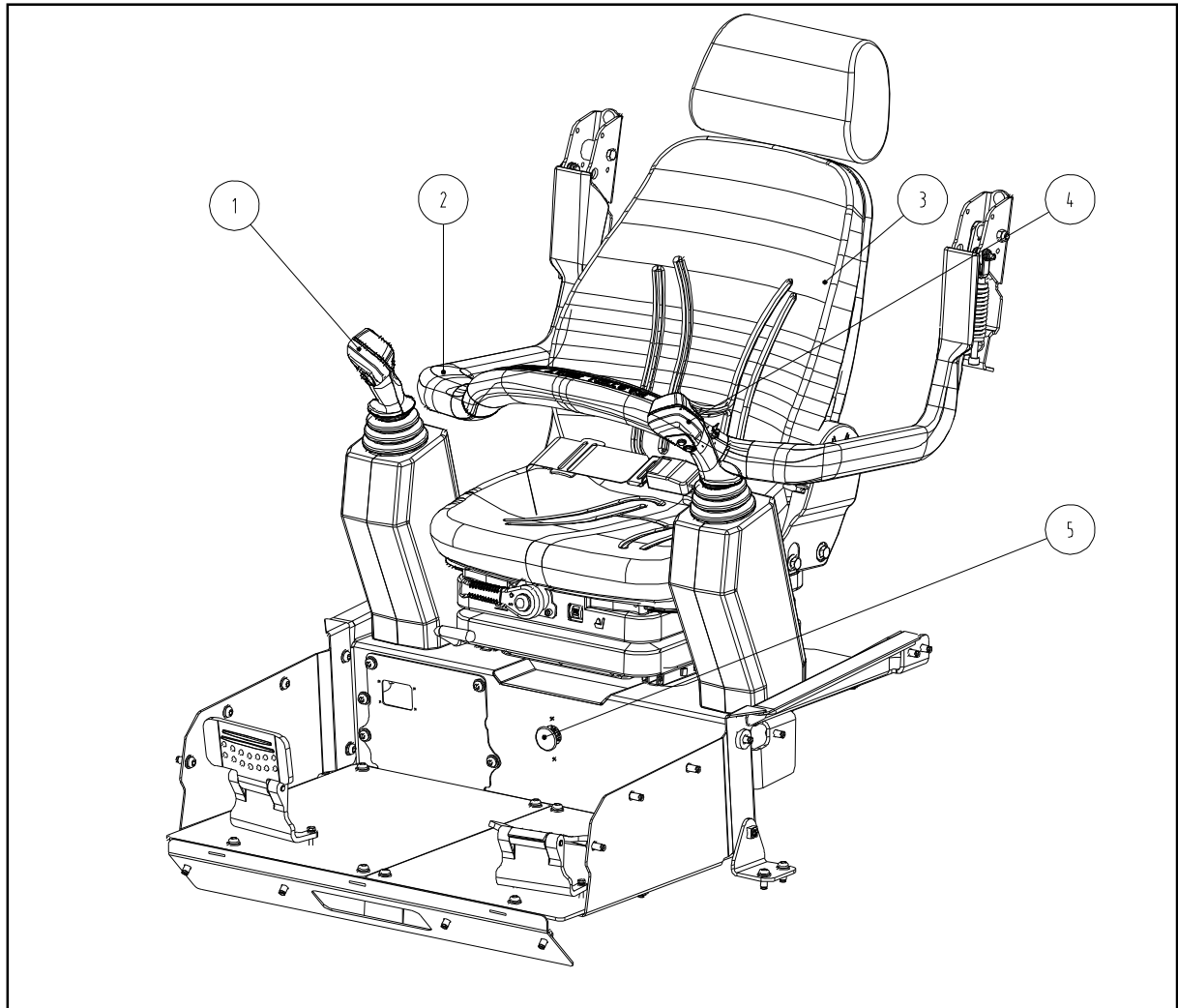
Depressurising procedure for machines fitted with accumulators:

- 1) Lower the attachment to the ground and switch it off.
- 2) Press the parking-brake switch.
- 3) Turn the one-touch start switch fully counter-clockwise to OFF.

3

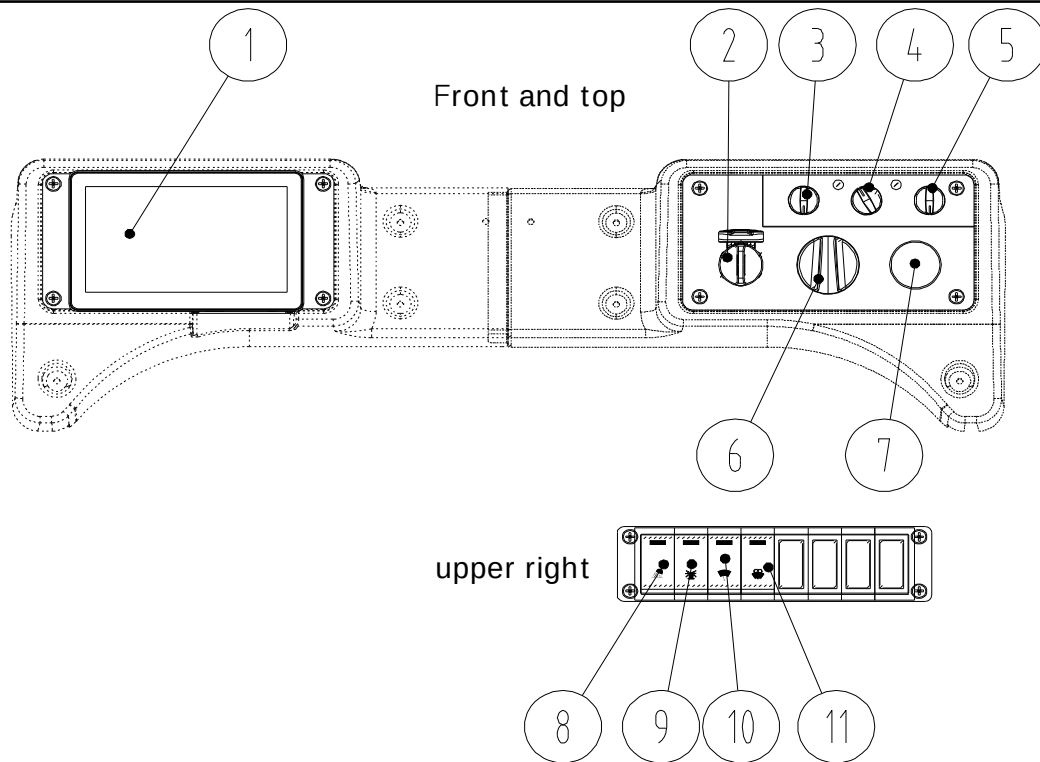
Component Introduction

Overview of Control Devices



- 1.Right-hand joystick 2.Safety handrail 3.Operator seat
4.Left-hand joystick 5.Boom bypass control lever

Operator Panel



1	Touch display	Shows machine status and allows function settings.
2	Start switch	Turn right to ACC (machine powered), to START (pump-motor crank), left to OFF (machine isolated).
3	Fan-speed switch	Adjusts blower airflow.
4	Adjusts blower airflow	Selects A/C cooling or heating mode.
5	Temperature dial	Sets cooling temp / heating power level.
6	Pump-motor speed knob	Ten-step selector. Note: pump speed does not affect travel speed.
7	Emergency-stop switch	Press in emergencies to stop travel and hydraulics. Machine can power up but cannot start while E-stop is engaged.
8	Work-light switch	Controls front lights.
9	Rear-light switch	Controls rear lights and beacon.
10	Two-speed wiper switch	Controls wiper high/low speed.
11	Windshield-wash switch	Controls front 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

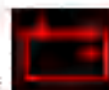


Not available at the moment.

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 "



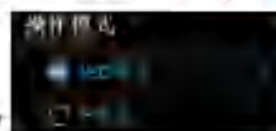
"--User settings "



--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

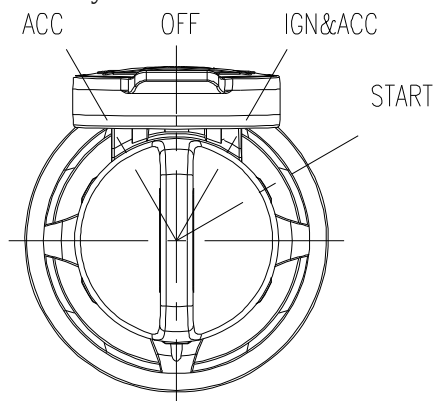
First, place the bucket flat on the ground.



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



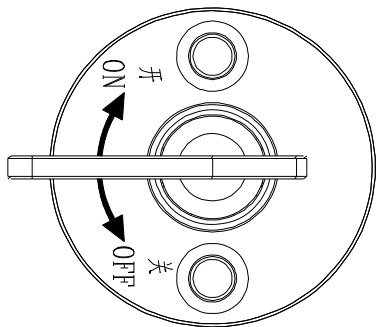
OFF: Vehicle power off and parking position

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

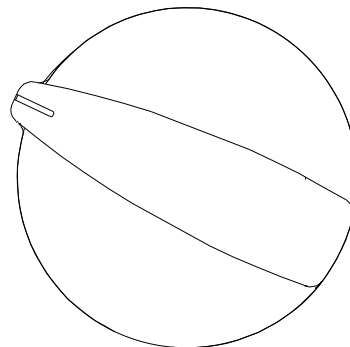


Manual power switch (Note: on the left side of the battery compartment)

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

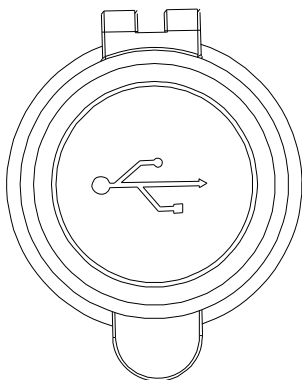
Turn OFF: Turn it off when it is left idle for more than 8 hours or when charging.

22. Oil pump engine speed control knob



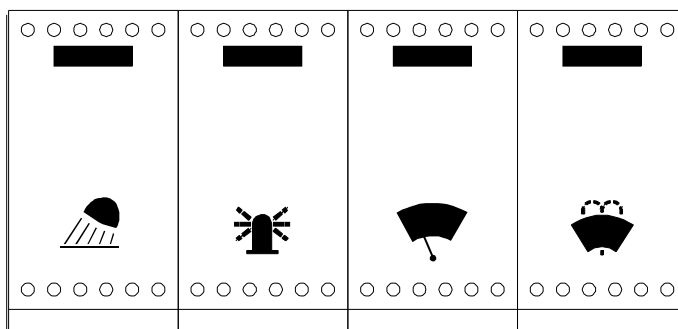
Turn left to decelerate, right to accelerate.

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

Up: Hazard lights

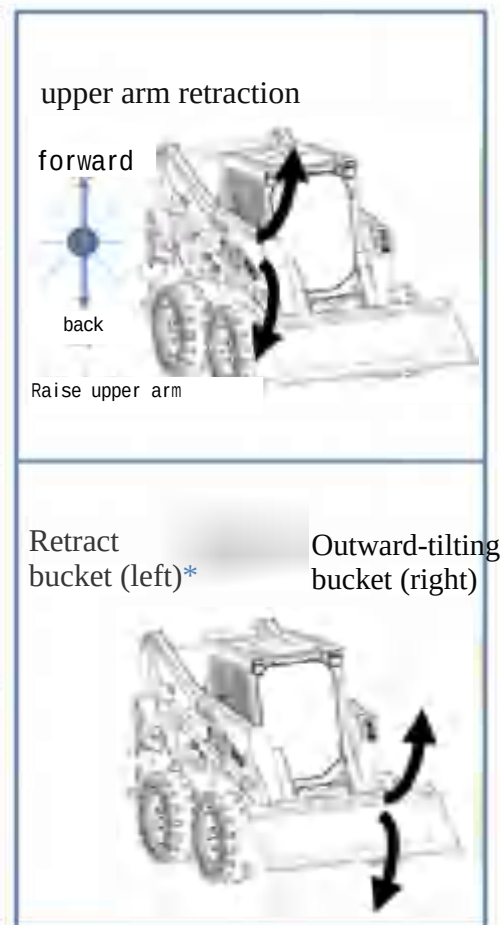
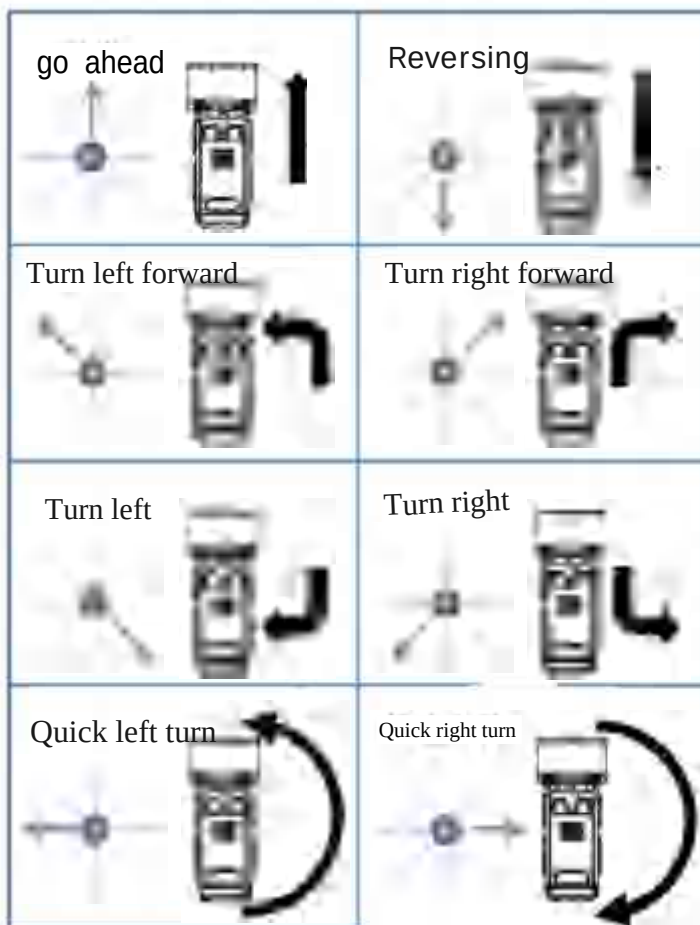
Floating function



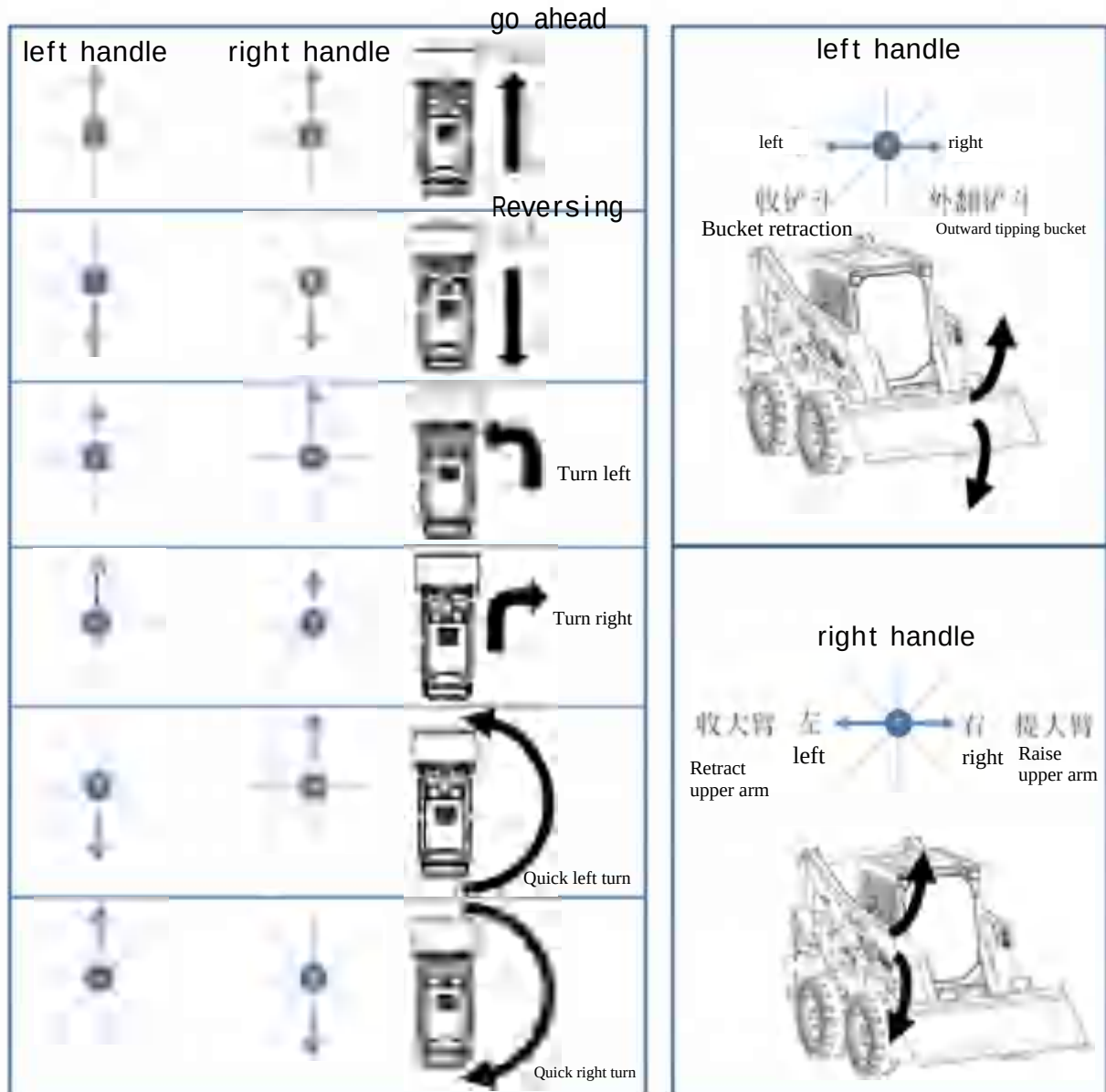
Sound the horn before operating the machine and confirm that no one is in the work area before starting work. The diagram below illustrates the left and right handle operation in ISO mode:

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.

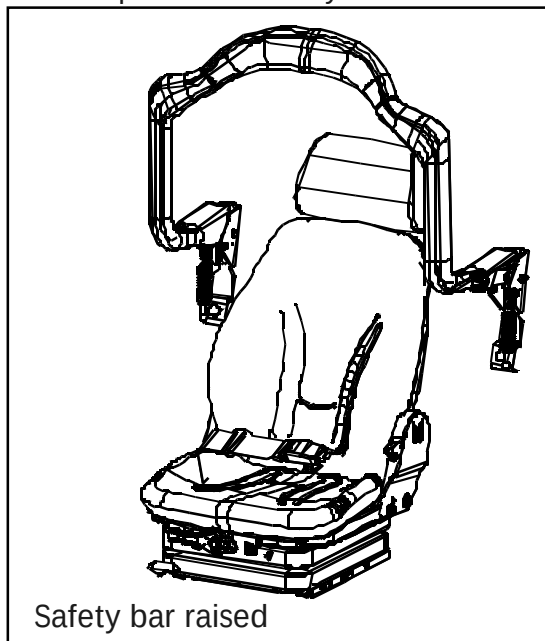
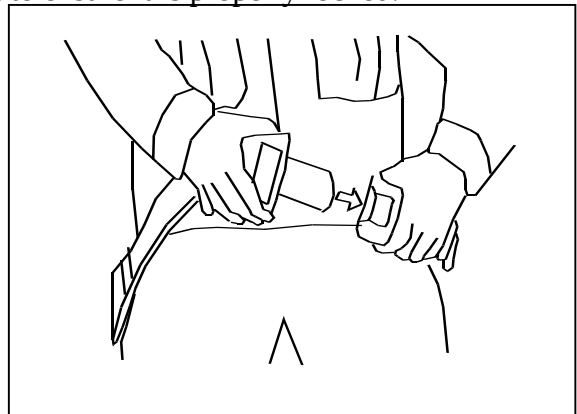
2. Releasing the Seat Belt

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

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

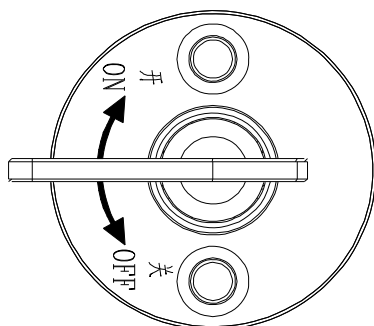


WARNING: Do NOT start if a “ DO NOT OPERATE ” tag is hung on any control lever.

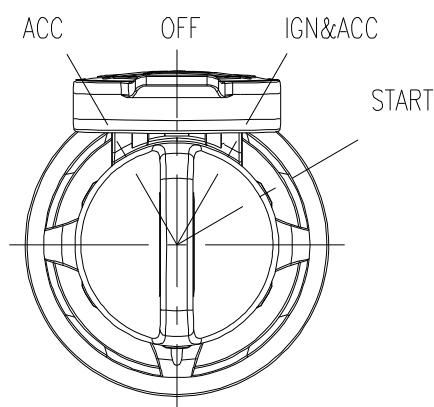
Starting procedure:

- 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



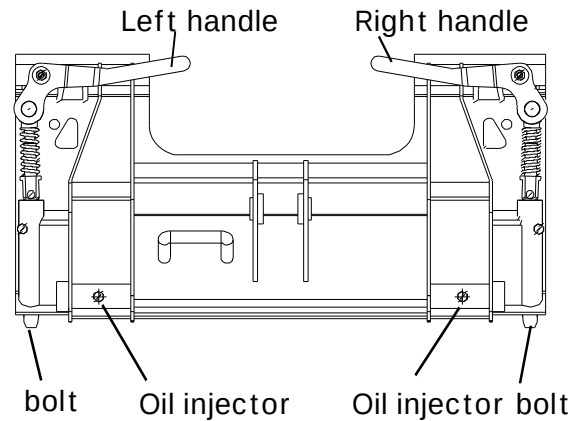
Bucket & Attachment Installation / Removal

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.

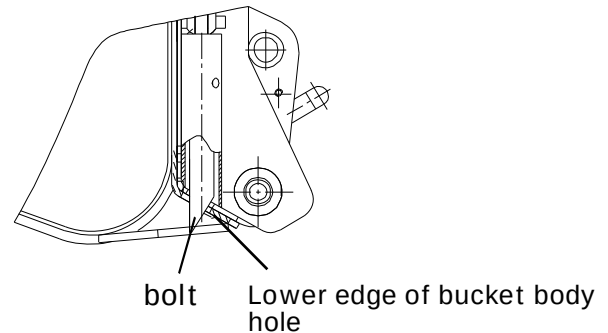
1.Installing Bucket

- 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.

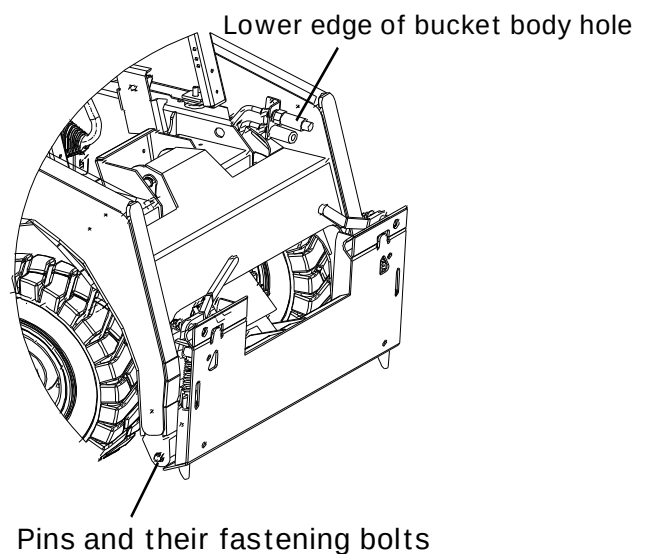


3.Quick-hitch Removal / Installation

- 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.

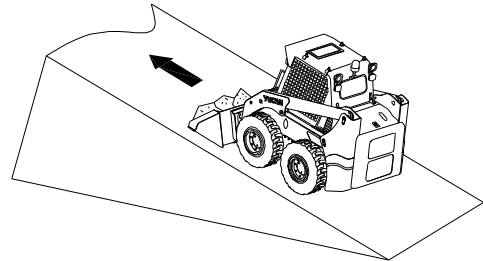
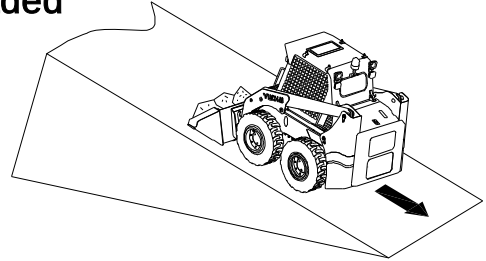
Preheat the hydraulic system before starting work.

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.

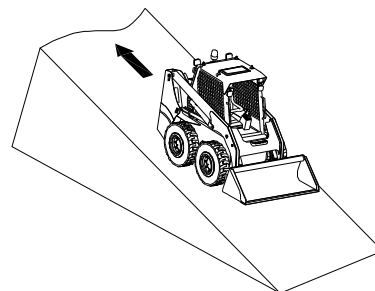
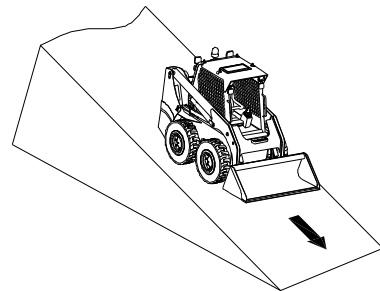
Do not move laterally when going uphill or downhill.

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.

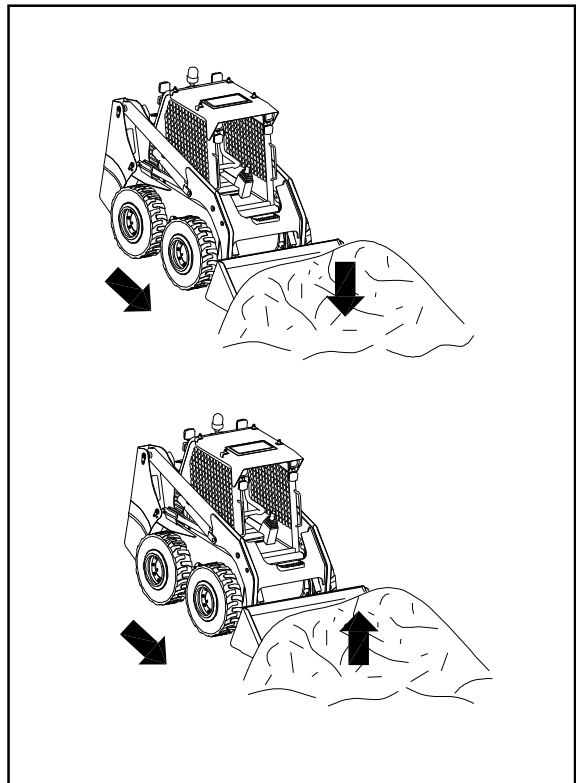
When traveling on uneven surfaces, raise the boom appropriately to avoid obstacles.



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.

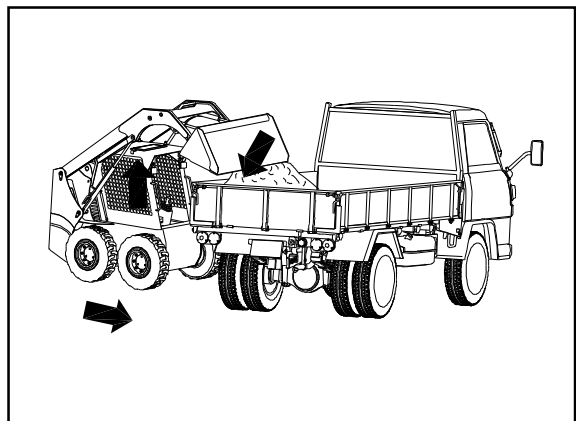
Warning: Loading and unloading steering must be performed on level ground. Do not exceed the rated load, otherwise the machine may tip forward or sideways, resulting in serious personal injury and death.



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.

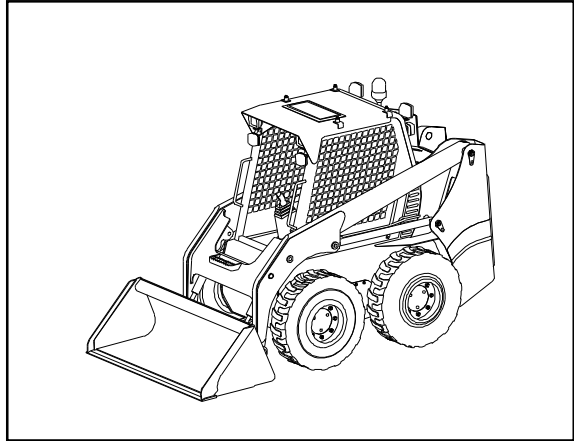


Parking machines

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.

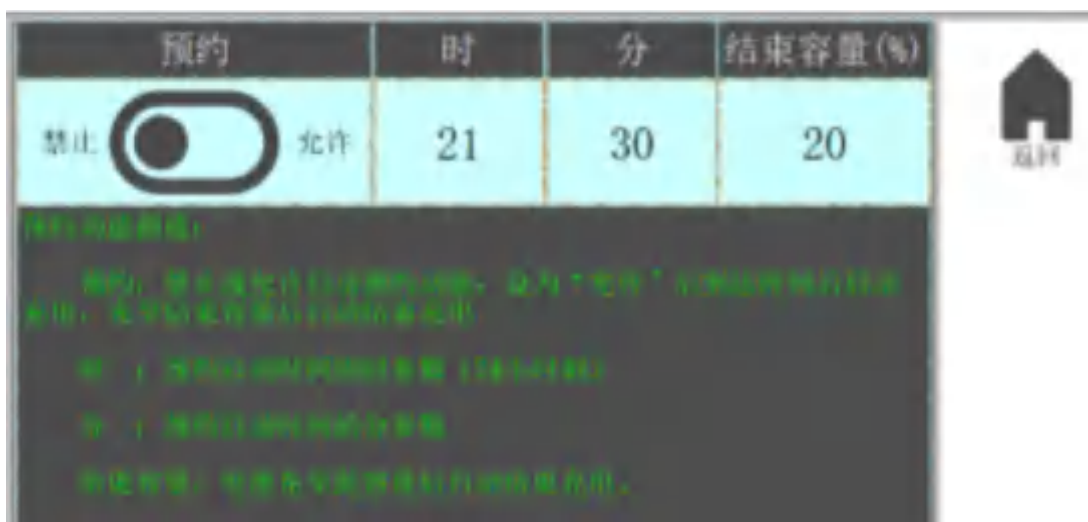
2) Do not start the machine while dragging it.

2) Password input interface



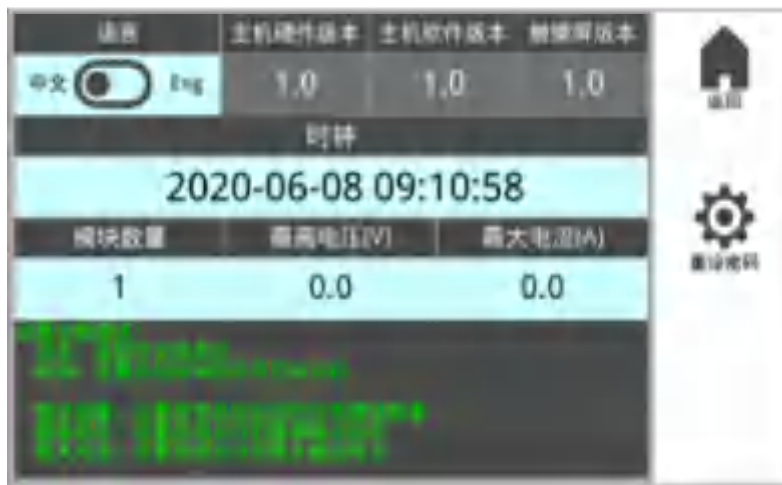
Enter the password to access the reservation or settings interface.
The initial password is "123456".

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

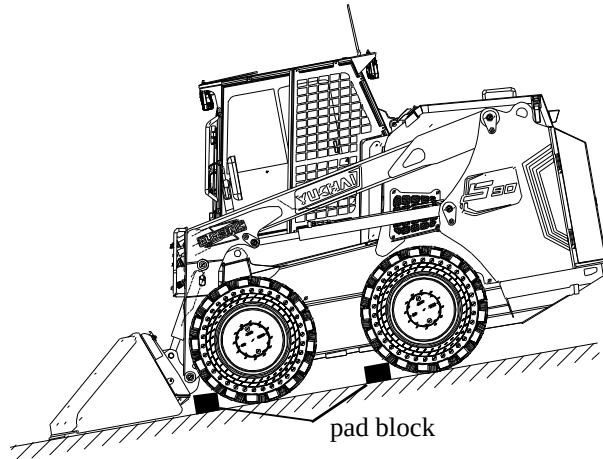
Transport Machinery

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.

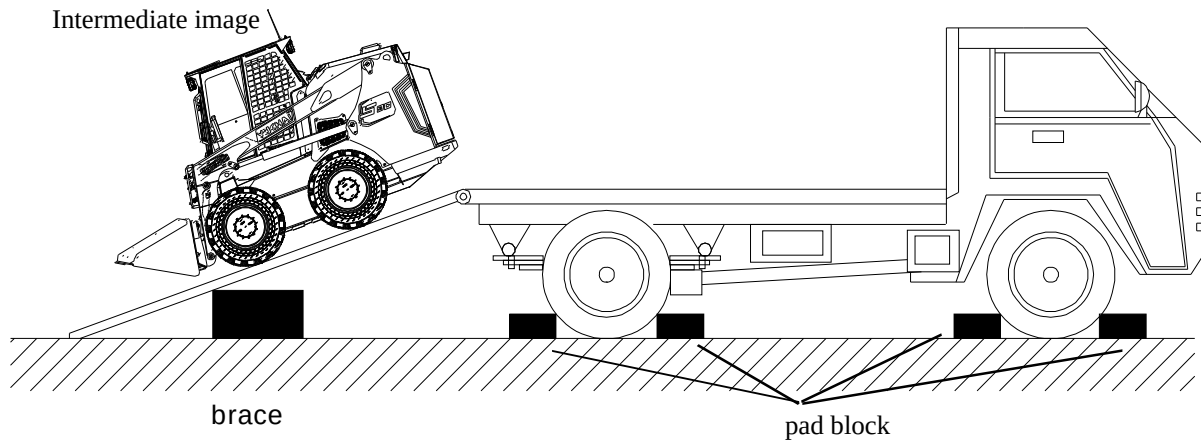
- 1) The machine bucket must be empty.
- 2) The machine's tail section must be facing upwards.
- 3) Apply appropriate braking to the transport vehicle and place blocks under the tires to ensure the transport vehicle does not move (as shown in the middle image).

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.

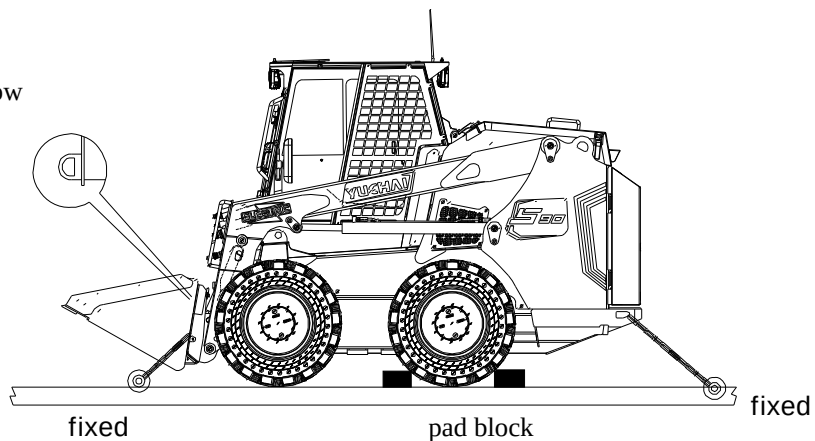
The image above



Intermediate image



The image below



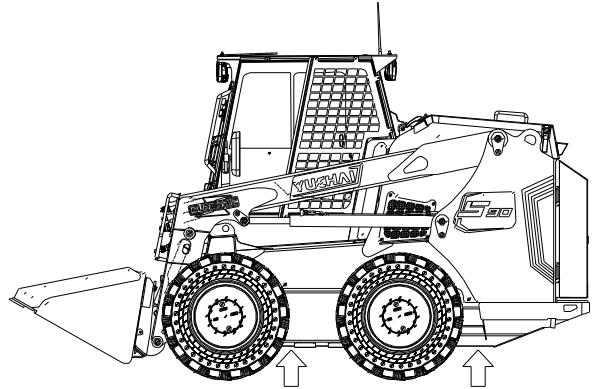
Towing or lifting machinery

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.

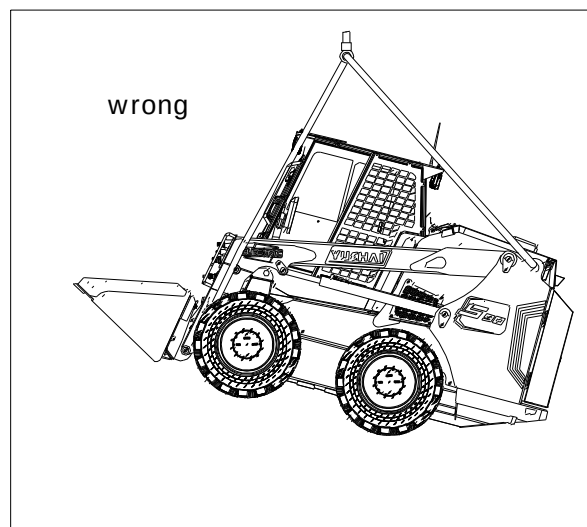
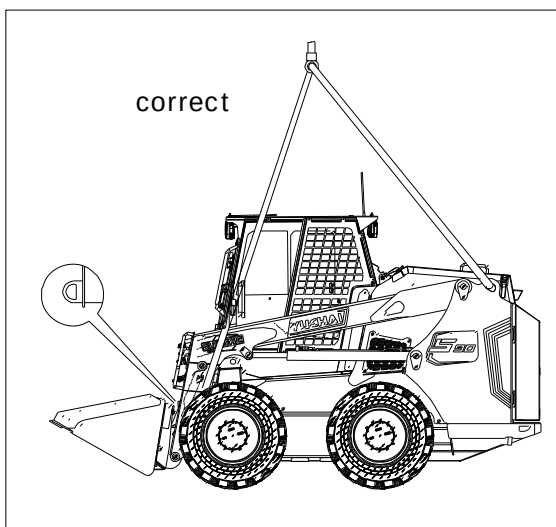
The maximum strength that the traction rope can withstand is 1.5 times the weight of the machine.

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

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)					
Project	Maintenance requirements	10	50	100	250	1000	2000
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

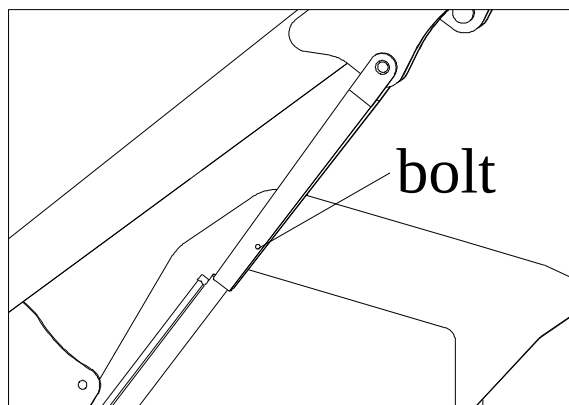
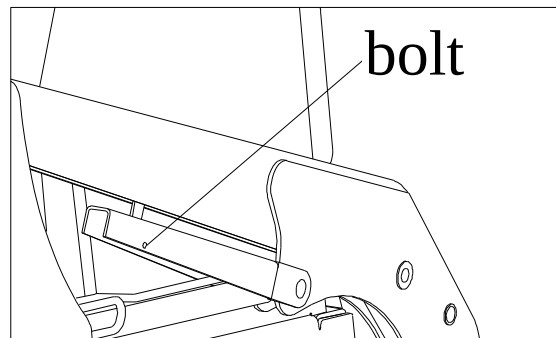
When maintaining and repairing the machine, the boom should be lowered to its lowest position. If it is necessary to work with the boom raised, follow these steps to use and remove the safety bar.

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) Remove the pin from 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) Insert the pin 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.

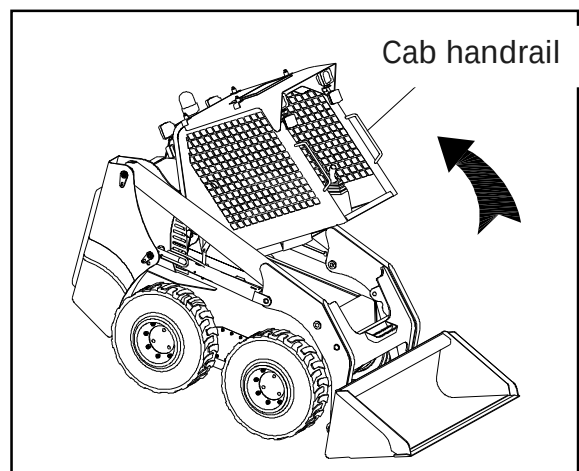
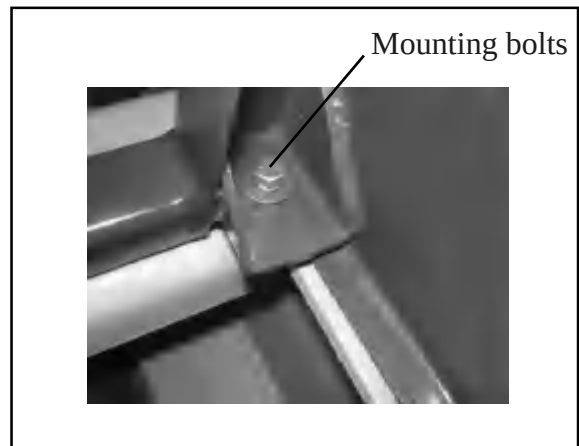
If the safety handrail is not working properly, replace the damaged part. Use genuine Yuchai parts.

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

Never tilt or lower the cab until the machine has been completely shut down. When tilting the cab for service, always secure it with the factory-supplied safety strut to prevent accidental dropping, which can result in serious injury or death.

- Park the machine on firm, level ground.
- Lower the boom fully; if the cab must be tilted with the boom raised, install the boom safety prop first.
- Remove the cab mounting bolts.
- Grasp the cab handrail and tilt the cab up slowly and under control.



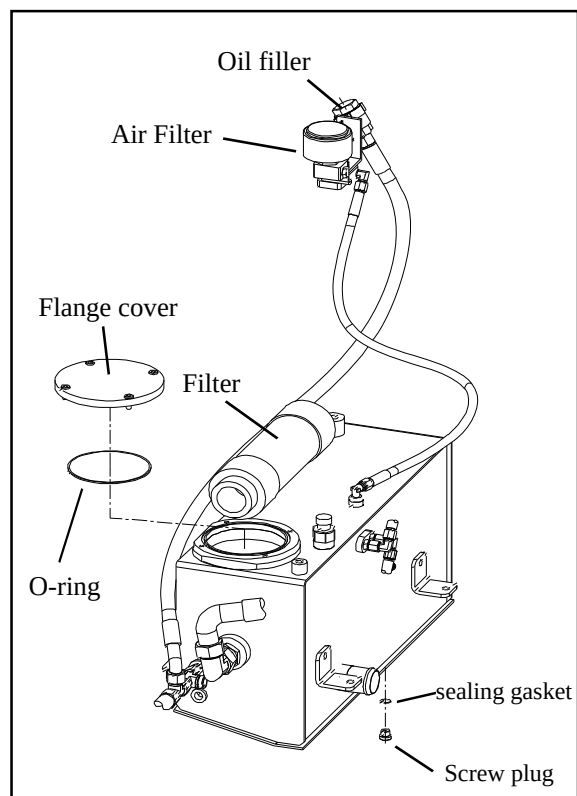
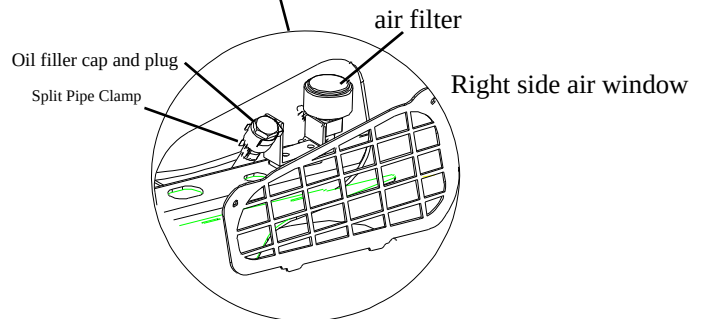
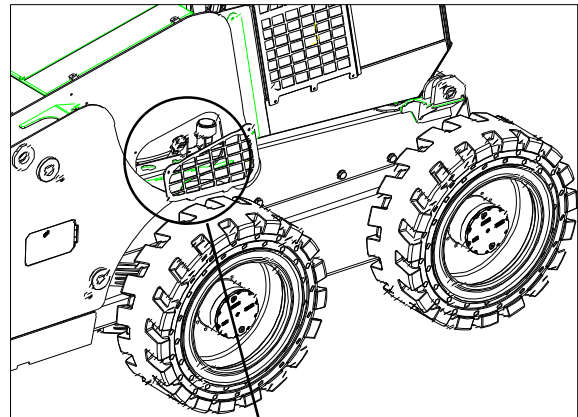
Hydraulic System

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):

Hammer Duty Cycle	Oil Change	Filter Change
50 %	1000	Filter 750
100 %	500	Filter 500

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

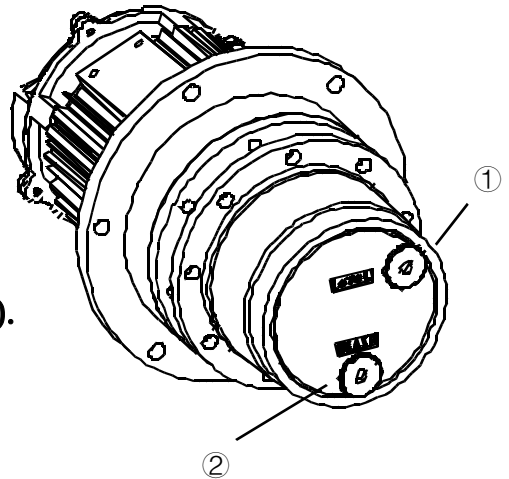
1. Check the lubricating oil level in the travel reducer and add oil.



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.

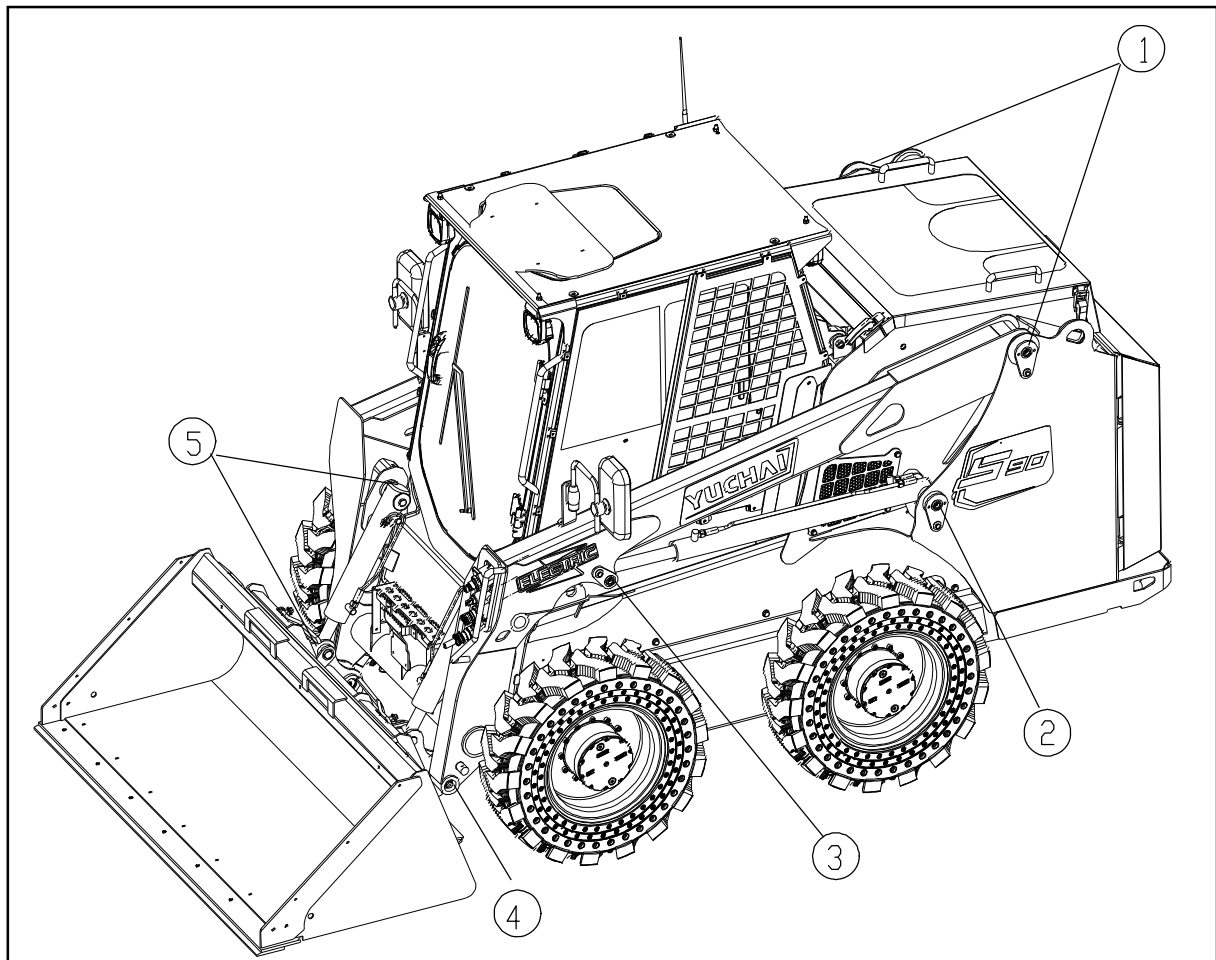
The new machine should be inspected after 10 hours of operation, and then every 10 hours thereafter.

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



SJ008/S90E-AE01

SJ008/S90E-AE51

出版日期：2025年2月

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