

TYPHON MACHINERY | Typhon Terror LXV Manual

TYPHON

TYPHON MACHINERY

Typhon Terror LXV 6.6 Ton Excavator Operation & Maintenance Manual



PREFACE

Dear Users,

Thank you for your trust and support of our products.

The mini excavator manufactured by our company is a compact construction machine primarily designed for excavation, lifting, loading, and unloading operations. With its compact structural design, reliable power performance, excellent stability, and high cost-effectiveness, this machine is built to meet the requirements of various working environments, including plains, hills, forests, farmland, and small construction sites.

This mini excavator is widely suitable for use in brick and tile factories, kiln factories, river dredging, building construction, road maintenance, desilting work, farmland operations, and other small-scale engineering projects. It is an ideal machine for both agricultural and construction applications.

This manual has been prepared to ensure the safe, efficient, and proper operation of the machine.

Before operating the machine, please read this manual carefully and make sure you fully understand all instructions related to operation, inspection, and maintenance.

All data, charts, and technical specifications in this manual are based on the latest product information available at the time of publication. Our company reserves the right to make changes or improvements at any time without prior notice.

Improper or accidental operation of this machine may result in serious injury or even death. Therefore, all operators and maintenance personnel must carefully read and fully understand the contents of this manual before performing any operation or service work.

For convenient access, please keep this manual in a safe place for regular reference by qualified machine operators.

If this manual is lost or damaged, please contact our authorized agents or after-sales service department immediately to request a replacement.

When transferring ownership of this machine, please ensure this manual is transferred together with the machine to support the proper use by the next owner.

For your safety, please pay special attention to all **safety precautions and warnings** described in this manual.

MANUFACTURER'S WARRANTY STATEMENT

The warranty coverage of this machine shall be subject to the quality assurance terms provided by the manufacturer.

If any machine failure is determined to be the responsibility of the manufacturer, such as defects causing loss of normal function or operational failure, repairs will be carried out free of charge by the manufacturer.

However, the manufacturer shall not be responsible for failures, damages, or loss of function caused by user negligence, misuse, or failure to follow the instructions outlined in this manual.

If users encounter any service-related issues, please contact our after-sales service department immediately.

USER NOTICE

If any part of this manual does not match the machine you are using, or if you have any questions, please contact our after-sales service department immediately.

SAFETY INFORMATION

Most accidents related to operation, inspection, maintenance, and repair are caused by failure to follow basic safety precautions and by insufficient hazard awareness.

Many accidents can be prevented by identifying dangerous conditions in advance and taking appropriate preventive measures.

To perform any operation, inspection, or maintenance task safely, personnel must have the required training, skills, and proper tools.

Improper operation, inspection, or maintenance is extremely dangerous and may result in serious personal injury or death.

Please carefully read and fully understand all safety precautions, warnings, and hazard notices provided in this manual and on the machine before performing any work.

The safety warnings in this manual and the safety labels on the machine indicate the level of potential hazards and provide preventive measures to reduce risks.

Because it is impossible to predict every possible hazard in all working environments, the warnings provided in this manual cannot cover every situation. If a procedure is not specifically described in this manual, users are responsible for taking all necessary safety precautions.

BASIC SAFETY PRECAUTIONS

Please observe the following safety instructions at all times:

1. Read all warnings, notices, and labels before operation, maintenance, or repair.
2. Always wear appropriate personal protective equipment (PPE), including safety goggles, protective footwear, gloves, welding masks, head covers, and protective clothing where necessary.
3. Remove the battery negative cable and place a “DO NOT OPERATE” warning sign in front of the cab before starting repairs.
4. Park the machine on firm and level ground before performing any maintenance work.

Do not operate the machine until you read and understand this manual. Because the incorrect operation of the machine is dangerous and can result in injury or death.

5. Never work on a machine that is only suspended. Ensure it is properly supported and stabilized.
6. Release all system pressure (air, hydraulic oil, cooling system pressure, etc.) before disconnecting any hoses, plugs, or components.
7. Lower all working attachments to the ground before beginning service work.
8. Always use steps, handrails, and walkways when climbing on or off the machine.
9. Use proper lifting equipment for parts weighing more than **23 kg (50 lbs)**.
10. Be cautious of hot machine parts to avoid burns.
11. Use extra care when removing cover plates, especially where springs or pressure-loaded parts may be installed.
12. Open radiator caps, oil caps, and pressure plugs slowly to release internal pressure safely.
13. Keep all tools in good working condition and use the correct tool for each task.
14. Replace fastening clips and parts only with original parts of the same specification.
15. Welding and repair work must only be performed by qualified personnel.
16. Prevent damage to electrical wires during removal and reinstallation.
17. Ensure all protective guards and safety covers are properly reinstalled after repairs.
18. During maintenance, always lower the boom and arms to the ground.
19. Damaged fuel, oil, or hydraulic hoses are extremely dangerous and may cause fire or injury.

Never check for hydraulic leaks by hand. Use cardboard, paper, or wood to locate leaks safely.

20. Tighten all pipe joints using the correct torque specifications.
21. Stop machine operation immediately if any rotating part is damaged or interfering with another component.
22. Special care is required when working on crawler systems, as pins or debris may eject during disassembly.
23. If asbestos-containing materials are present, follow strict dust-control procedures:
 - Do not use compressed air
 - Avoid dry brushing
 - Use wet cleaning or HEPA vacuum equipment
 - Wear a protective mask
 - Follow local environmental disposal regulations

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TYPHON Machinery

Safety Precautions

It is the operator's responsibility to comply with all applicable safety regulations, local laws, and industry standards, and to operate, inspect, and maintain the mini excavator in accordance with the manufacturer's instructions.

In most cases, accidents are caused by failure to follow basic safety rules and precautionary procedures. Many accidents can be prevented by identifying potential hazards in advance and taking appropriate preventive measures.

Please read and fully understand all safety instructions and accident prevention guidelines before operating the machine. Do not operate the mini excavator until you are confident that you fully understand the correct procedures for operation, inspection, and maintenance.

The mini excavator must only be operated, inspected, and maintained by properly trained and qualified personnel.

All rules, regulations, warnings, precautions, and safety procedures must be fully understood and strictly followed during operation, inspection, and maintenance.

Do not operate, inspect, or service the mini excavator if the operator is under the influence of alcohol, medication, drugs, fatigue, or lack of sleep.

Abnormal Operating Conditions

If any abnormal condition is detected during operation, inspection, or maintenance, such as unusual noise, excessive vibration, unusual odors, oil leakage, warning alarms, or any other malfunction, stop operation immediately and shut down the machine.

Do not resume operation until the issue has been properly identified and corrected.

Operating Temperature Guidelines

To maintain optimal machine performance and prevent premature wear or damage, always observe the following operating temperature limits:

- Do not operate the mini excavator when the outdoor temperature exceeds **113°F (45°C)**
- Do not operate the mini excavator when the outdoor temperature is below **5°F (-15°C)**

If the outdoor temperature exceeds **113°F (45°C)**, the engine may overheat, which can reduce engine oil performance and potentially damage engine components.

In addition, hydraulic oil temperatures may rise excessively, which can cause damage to the hydraulic system and related equipment.

If the outdoor temperature falls below **5°F (-15°C)**, rubber components such as seals and gaskets may harden, leading to premature wear, reduced sealing performance, or damage to the machine.

If operation outside the above temperature range is required, please consult your authorized dealer or after-sales service representative before use.

Personal Protective Equipment (PPE)

Always wear appropriate clothing and personal protective equipment while operating, inspecting, or servicing the machine, as shown in the referenced figure.

Recommended protective equipment includes:

- Safety helmet
- Protective gloves
- Safety glasses or goggles
- Steel-toe safety boots
- High-visibility workwear
- Hearing protection when required



Do not wear loose clothing, jewelry, or accessories that may become caught on the control levers or moving parts. Loose items may accidentally contact the operating controls, causing unintended machine movement and possible collision.

Before operating the mini excavator, walk completely around the machine and ensure that no people, animals, or obstacles are nearby.

Fire Extinguisher Installation

Ensure that an approved fire extinguisher is properly installed on or near the machine and that operators know how to use it correctly in case of fire or emergency.



Safety Devices

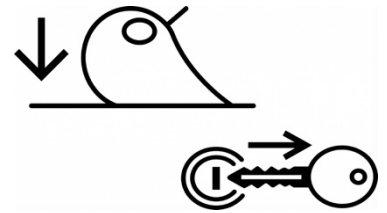
Do not remove, modify, or disable any safety devices.

Make sure all guards, protective barriers, covers, and safety devices are securely installed before operating the machine.

Before operation, inspect all safety devices to confirm they are in good condition and properly secured.



When excavation work is completed or the machine is shut down, always lower the bucket to the ground and remove ignition key.



Signal Person and Spotter

Learn and use the standard hand signals required for the specific job site.

A designated signal person or spotter must be clearly identified before operation begins.

All personnel involved in the operation must fully understand all hand signals.

The operator must respond only to signals given by the designated signal person, except for an emergency stop signal, which must be obeyed immediately regardless of who gives it.

The signal person must stand in a clearly visible and safe location while giving signals.



Fire and Explosion Hazard Prevention



Do not smoke or allow open flames near the machine, especially during refueling or when working around the fuel system.

Do not carry ignition sources, flammable materials, or explosive items near the mini excavator.

Never leave the machine unattended while refueling or adding lubricating oil.

Do not remove the fuel tank cap or refuel while the engine is running or before the engine has cooled down.

Do not allow fuel to spill onto hot surfaces or electrical system components.

Before operation, inspect the machine for oil stains or fuel residue. If any are found, check immediately for leaks. After confirming there are no leaks, clean the area thoroughly before starting the machine.

Remove all debris, trash, oily rags, and flammable materials from the machine.

Use solvents and chemical cleaning products only in well-ventilated areas and follow all manufacturer instructions.

Never use fuel as a cleaning agent. Always use approved nonflammable cleaning solvents.

Store all flammable liquids and materials in a safe, dry, and well-ventilated location.

Electrical short circuits may cause fire. Regularly inspect all wiring and electrical connectors for looseness or damage.

Retighten loose connectors and cable clamps immediately.

Repair or replace damaged wiring without delay.

Hydraulic Lines and Oil Circuit Inspection

Regularly inspect all hoses, pipes, and hydraulic lines.

Make sure clamps, guards, and protective sleeves are securely fastened.

Loose hoses or pipes may be damaged by vibration or contact with other components during operation.

This may cause high-pressure hydraulic oil to spray out, creating a serious fire hazard or risk of personal injury.

Protection Against Harmful Gases

When working in enclosed or poorly ventilated areas, always wear an approved respiratory mask and use proper exhaust or ventilation equipment.

When operating in dusty environments, wear a dust mask at all times.

Avoid prolonged exposure to dusty environments, as it may be harmful to your health.



Caution harmful gas poisoning

Crush Hazard Warning



Keep hands, feet, and all other body parts away from the track assembly and moving components.

Never allow personnel to stand within the machine's operating radius while the mini excavator is running.

Do not place materials or objects within the working radius that may interfere with operation.

Failure to follow these precautions may result in crushing, collision, or serious injury.

Precautions Before Preparation and During Start-Up

Pre-Operation Preparation

Before operation, fully understand the work environment and ensure that the area is safe for machine use.

Inspect the terrain and ground conditions carefully.

For indoor operations, inspect the building structure and take additional safety measures if necessary.

Remove or identify all hazardous objects and obstacles, including:

- Ditches
- Underground pipelines
- Trees
- Cliffs or slopes
- Overhead power lines
- Falling rocks
- Landslide risks



Start-Up Precautions

Before starting the mini excavator, walk around the machine and make sure there are no workers, bystanders, or obstacles within the machine's swing radius.

When climbing on or off the machine, always face the machine and use the handrails and steps.

Maintain **three-point contact** at all times using both hands and one foot, or both feet and one hand.

Do not use control levers as handholds.

Check for any **"DO NOT OPERATE"** warning tags or similar signs on the cab, brake controls, or ignition switch.

If such a warning sign is present, do not start the engine or touch any controls.

Contact the responsible personnel to confirm whether the machine is safe to operate.

After confirmation, fasten your seat belt before starting the machine.

Sound the horn to alert nearby personnel before engine start.

Before starting, make sure all operating levers are in the neutral (center) position.

After starting the engine, verify that the machine can operate safely without personnel or obstacles nearby.

If any malfunction is detected, shut down the machine following proper shutdown procedures and report the issue immediately.

Post-Start Inspection Checklist

- Preheat the engine and hydraulic oil
- Check all gauges and warning devices
- Confirm all alarms are functioning normally
- Listen for unusual noises
- Test engine speed control
- Test all control levers for proper function



Warning: Before starting the mini excavator, always fasten your seat belt.

Use in Cold Climates

Use extra caution when operating in severe cold weather conditions.

The ground, steps, pedals, and handrails may become slippery due to ice, frost, or snow, increasing the risk of slips and falls.

Do not touch metal parts of the mini excavator with bare hands in freezing temperatures. Skin may freeze to the metal surface and cause serious injury.

Do not use ether, starting fluid, or any similar starting aids on the engine unless specifically approved by the manufacturer. Improper use may result in explosion, serious injury, or death.

Before operation in cold weather, preheat both the engine and hydraulic fluid.

After starting the mini excavator in cold weather, allow the engine to idle for **2 to 5 minutes** before operating any controls.

Operating the control levers before proper warm-up may cause delayed or improper machine response, which could lead to accidents.



Schematic Diagram for Safety Signs

The warning labels and safety signs installed on the mini excavator are critical for safe operation. If any label becomes damaged, dirty, unreadable, or detached, it must be replaced immediately.

Replacement labels should be obtained from your authorized dealer or after-sales service provider and installed in the designated location.

Safety Sign Locations

1. Track Tension Adjustment Warning

Located on both sides of the track frame.

The pressure inside the track tensioning cylinder is extremely high.

Adjustment or disassembly must be performed strictly according to the operator's manual.

Improper handling may result in serious personal injury.

2. Grease Filling Label

Located on the key structure lubrication diagram.



3. General Warning Labels

Includes warnings for:

- Diesel replacement precautions
- Load capacity warning
- Movement and operation warning
- High-voltage line warning
- Read instructions warning
- Transport lock warning
- Height clearance warning

Located on the seat base cover.



<p>Matters needing attention</p>	<p>Be Careful</p> <p>To prevent serious injury or death, please observe the following precautions before moving or working the machine.</p> <ul style="list-style-type: none"> • Please sound your horn to inform the people around you • Please confirm whether there is no one above, around or in the rotating area of the machine • Please set up surveillance personnel in places with poor vision. For the above matters, please also abide by the criminal warning and install mirrors
<p>Matters needing attention</p> <p>The excavator will replace the D40 diesel oil and machine filter for 30 hours after the first work, and then replace the oil and machine filter for about 90 hours. Often check whether the oil ruler oil level is normal, whether the coolant is missing, air filter element is not regularly blown with air soap, about 90 hours to replace the air filter element. The diesel filter element needs to be replaced for 100 hours. The hydraulic oil shall be filled with 46 anti-rust hydraulic oil, which shall be replaced twice a year, and the butter shall be filled every eight hours of operation. Attention! Replace the water in your tank with anti-freeze before it freezes in winter. Machine work to maintain balance, to avoid engine over work, so as not to back oil level, engine start before checking oil gauge in level, water tank coolant is normal. The temperature below 5 degrees to start prevent. (May switch left six seconds, repeated twice)</p>	<p>Pay attention to</p> <ol style="list-style-type: none"> 1. Only trained or designated personnel can operate and maintain the machine. No one is allowed to ride on the machine except the operator. 2. The hydraulic oil shall be changed 500 hours after the new car or overhaul, and the secondary oil change shall be changed about 1500 hours according to the degree of oil pollution. 3. During winter operation, the engine shall be idled for 15-20 minutes before normal construction, otherwise the engine and seals will be damaged. 4. Each pin shaft and slewing support of the whole vehicle shall work for 15-20 minutes, and then the construction shall be normal, otherwise the engine and seals will be damaged. 5. Frequently check the gear oil level of slewing and travelling reducer, and replenish it immediately if it is found to be lacking, otherwise the machine will be damaged.
<p>CAUTION</p> <p>Caution! It's harmful to excavator while the hydraulic oil temperature is below 25°C.</p> <p>Warming-up operation:</p> <ol style="list-style-type: none"> 1. Run the engine at low idling for 5 minutes. 2. Speed to the idling and operate bucket lever for 3 minutes. 3. Run the engine at the high speed and operate the boom lever, bucket lever, arm lever, slewing and travelling. Operate the excavator several times in each movements to ensure that hydraulic oil temperature is above 25°C, then the warming-up operation completely. 	<p>warning</p> <p>In order to safely carry out loading and unloading operations to (from) the transport vehicle, the following matters shall be strictly observed.</p> <ul style="list-style-type: none"> • The brake of the transport vehicle must be used, and a stop shall be added to the tire. • The loading and unloading plate shall be made of steel plate with very long, width, strength and non-slippery surface. • In order to ensure that the transport vehicle is consistent with the vehicle center, the loading plate shall be fixed properly. • Cushion blocks or pillars must be added under the loading and unloading plate. • The angle of the loading and unloading plate is less than 15 degrees. • Carry out professional operation in a flat and hard place.

4. Swing Radius Warning

Located on the rear counterweight.

No one is allowed to stand within the machine's swing radius.

Do not remove or damage this label.

5. Fuel Warning Label

Located near the fuel tank filler.

- Shut off the engine before refueling
- Keep away from open flames
- Follow all fuel label precautions

Do not remove or damage this label.

6. Battery Warning Label

Located above the battery access pedal.



- Batteries produce explosive gases, Should be away from Mars and open flame, in the storage of electricityThe pool should be well ventilated when used.
- Metal items such as tools or flammable items do not put together with the battery. Waste batteries should be disposed according to local environmental laws and regulations.
- The electrolyte in the battery is highly corrosive, which can erode the skin and clothing. If it is splashed in the eyes, it will lead to blindness. If sulfuric acid is spilled on the body, it should be:
 1. Rinse the skin with water.
 2. Neutralize the acid with soda or lime.
 3. Rinse eyes with water for 10-15 minutes and treat immediately.



7. No Personnel in Work Area

Located on both sides of the boom.

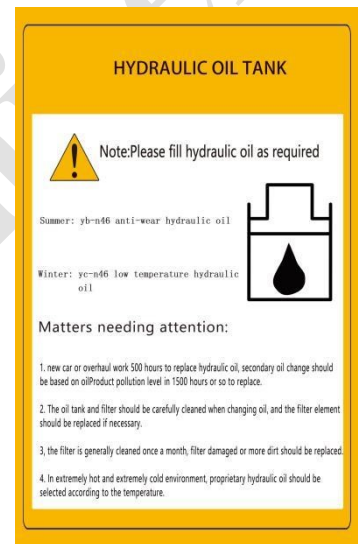
8. Stay Clear of Excavation Area

Located on both sides of the arm.



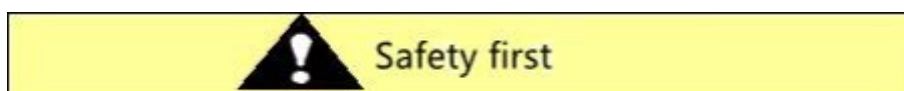
9. Hydraulic Tank Label

Located on the hydraulic oil tank housing.



10. Hydraulic Tank Danger Label

Located on the tank cover plate.



Safety Sign Precautions

This operation manual identifies important safety notices and items requiring special attention during the use of the mini excavator as follows:

Warning: This means that failure to observe the precautions may result in death or serious injury.

Note: This means that there is a risk of injury if the precautions are not followed.

Precaution: This means that if the precautions are not observed, the mini-excavator may be damaged or may malfunction.

Supplement: This means other supplementary instructions that are helpful for use.

Before using the mini excavator, please read and fully understand this operation manual to ensure safe and proper operation.

For safe use, always follow all safety signs, warnings, and precaution labels attached to the machine.

1. Battery Maintenance Sign



Note:

When the machine is not in use, turn off the main power switch promptly to prevent unnecessary battery discharge and loss of battery power.

2. Daily Inspection

Before each operation, inspect the machine for any abnormal conditions, including but not limited to:

- Oil leakage
- Loose bolts and nuts



- Loose electrical wiring
- Damaged wires or terminals
- Abnormal wear or damage

If any fault is found, correct it immediately before operating the machine.

Use only the specified fuel and grease recommended by the manufacturer.

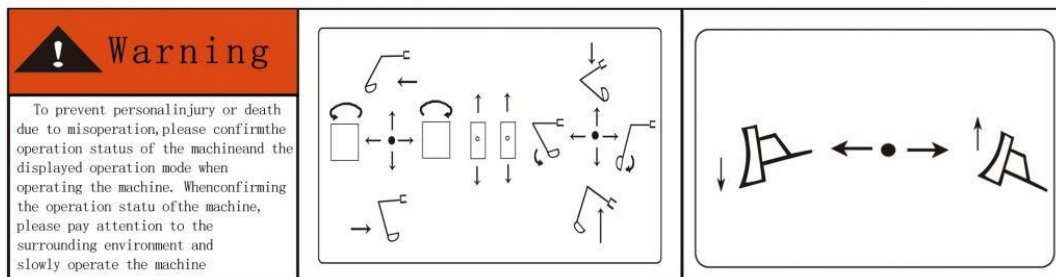
3. Working Device Operation Diagram

Check that the mini excavator control pattern matches the control diagram shown on the label.

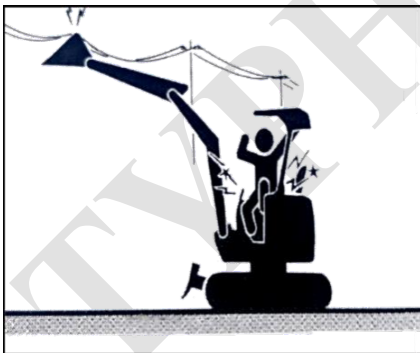
If the control pattern does not match, replace the label before operating the machine.

Operating the machine with an incorrect control diagram may result in serious injury or death.

Mechanical Operating System (Forehand Pattern)



4. Bucket Lift Safety Warning



When raising the bucket, no one is allowed to stand or pass underneath the bucket.

Do not allow the bucket or boom to come into contact with overhead power lines, structures, or other obstacles.

Contact with power lines may result in **electrocution, serious injury, or death.**

5. Operator Condition Warning

Safety must always come first.

Do not operate the mini excavator while under the influence of alcohol, medication that may impair judgment, or while in poor physical condition.



Failure to follow this precaution may result in accidents causing injury or death.

6. Hot Exhaust Warning

The engine exhaust outlet and surrounding components become extremely hot during operation.

Do not touch these areas to avoid burns or scald injuries.



Precautions During Operation

Ensure clear visibility at all times.

When working in low-light conditions, turn on the work lights and headlights.

Install additional lighting when necessary.

Stop operation during fog, heavy rain, snow, or poor visibility conditions.

Never carry passengers on any part of the mini excavator.

Do not exceed the machine's rated operating limits.

Use a designated signal person whenever visibility is limited.

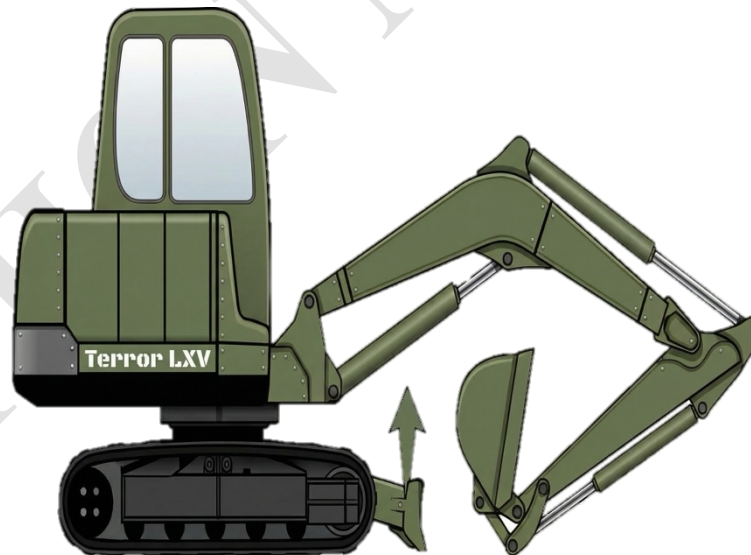
Before moving, check all blind spots, especially the rear area.

Sound the horn before movement.



Safe Walking

The bulldozer blade should be raised when traveling.



Avoid crossing obstacles as much as possible. If it is necessary to cross an obstacle, keep the bucket assembly close to the ground and travel slowly.

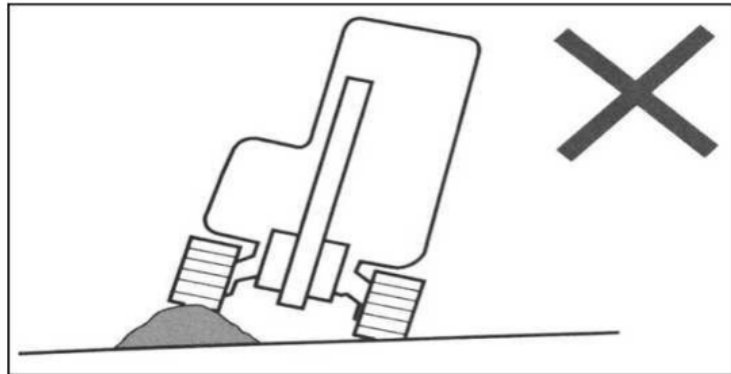
Do not cross obstacles that may tilt the mini-excavator by **10° or more**.

On uneven roads, keep the mini-excavator traveling at a low speed to avoid sudden starting, stopping, or changing direction.

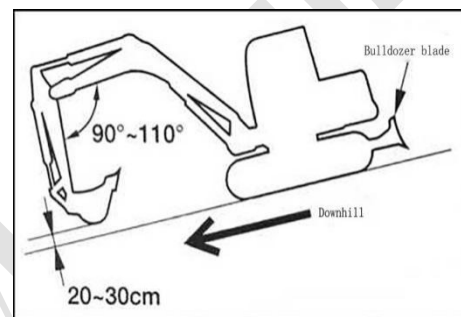
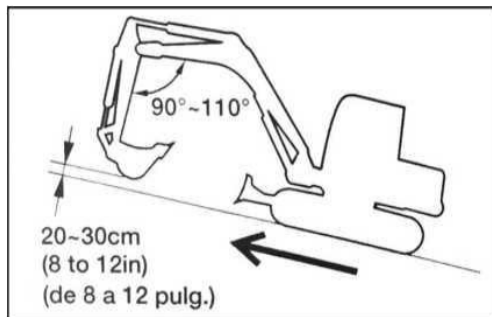
Otherwise, the working device may come into contact with the ground, causing the mini-excavator to lose balance and potentially damage surrounding structures.

Precautions for Walking on Slopes

Please be careful to prevent the mini-excavator from overturning or sliding when traveling on a slope or ramp.



Do not operate the mini-excavator on an excessively steep slope where it cannot maintain stability.



- **Maximum forward/backward slope: 30°**
- **Maximum lateral slope: 10°**

Please note that actual stability may be lower depending on working conditions.

When climbing, keep the operator's seat facing uphill.

When descending, keep the operator's seat facing downhill.

In both cases, pay close attention to the ground conditions ahead of the mini-excavator.

When moving on a slope, lower the bucket **8–12 inches (20–30 cm) above the ground**.

When climbing a steep slope, extend the bucket unit in front of the mini-excavator.

In an emergency, lower the bucket to the ground immediately and stop the engine.

Drive slowly at low speed on all slopes and ramps.

Reduce engine speed when traveling downhill.

Do not reverse down a slope.

Do not change the direction of travel on a slope or side slope.

Return to flat ground first, then choose another route.

When moving on grass-covered slopes, wet steel plates, dead leaves, snow, or frozen ground, the mini-excavator may slip sideways.

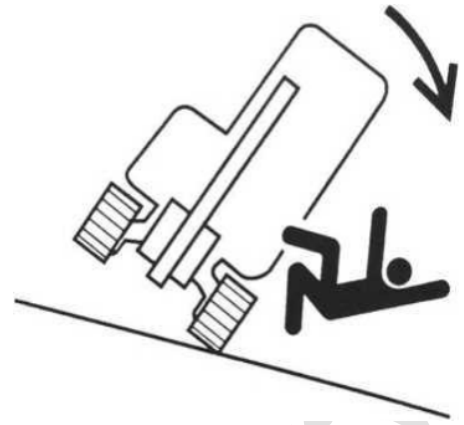
Do not park the mini-excavator sideways on a slope.

If the machine stalls on a slope, return all control levers to the neutral position and restart the engine.

Use extreme caution when operating on snow or ice.

Drive at low speed to avoid sudden starts, stops, or turns.

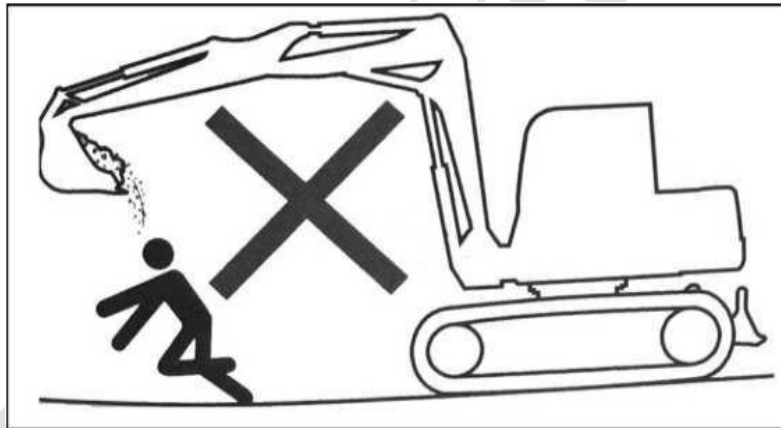
The bulldozer blade should be lowered when parking on unstable ground.



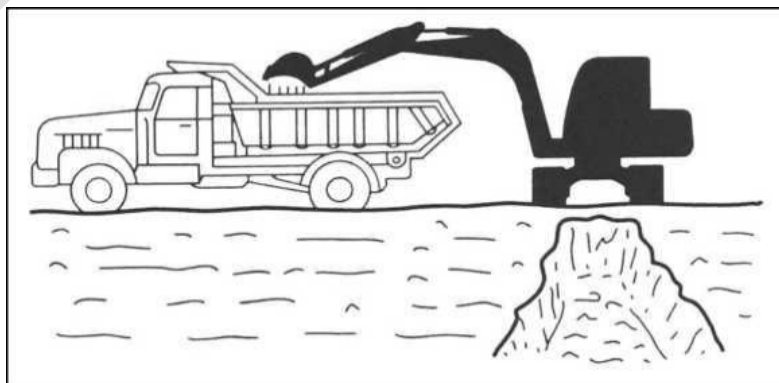
Bucket and Work Zone Safety

Do not move the bucket over any worker's head.

If the operator moves the bucket over personnel, there is a risk that material may fall or the bucket may suddenly drop.



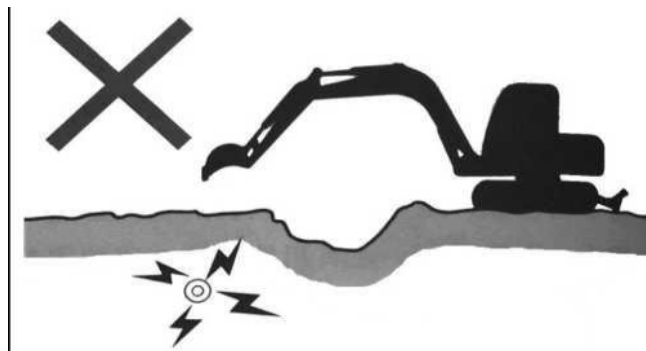
Operator safety must be fully ensured during loading operations.



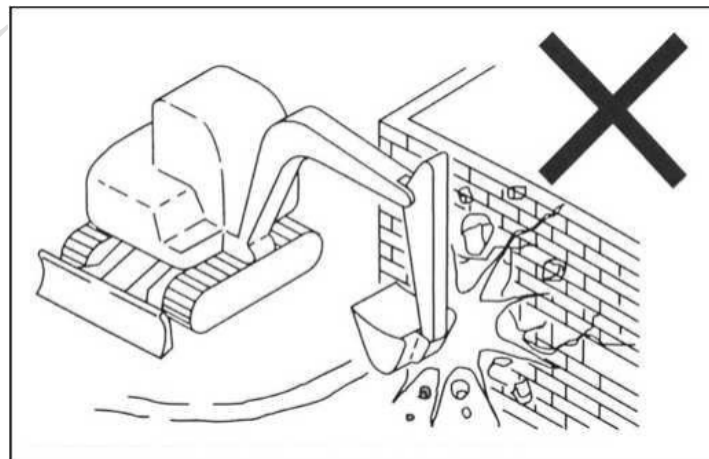
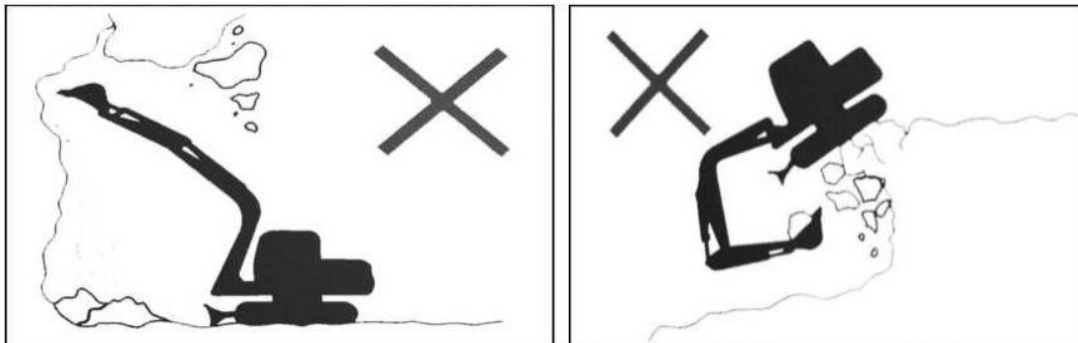
Maintain a safe distance from high-voltage cables during travel and operation.



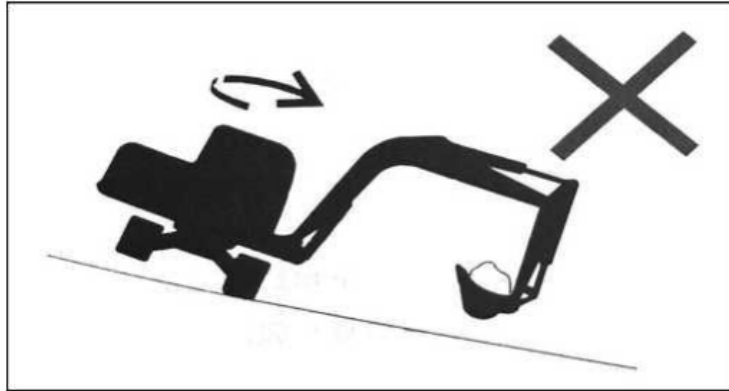
Before excavation, confirm whether there are underground high-voltage cables at the construction site.



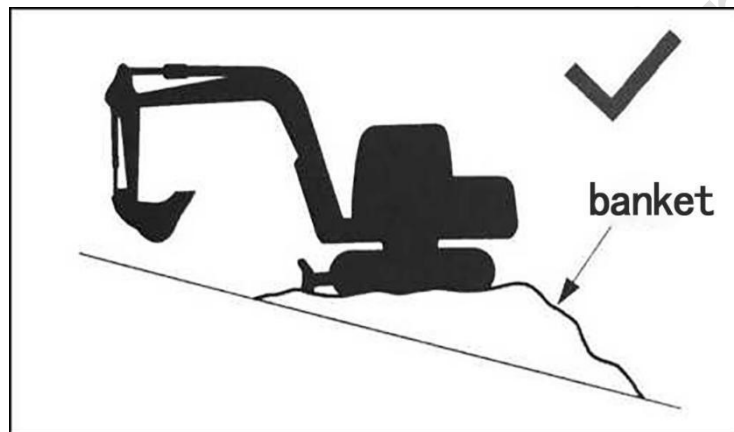
Do not work in areas with collapse or rockfall hazards unless proper protective measures are in place.



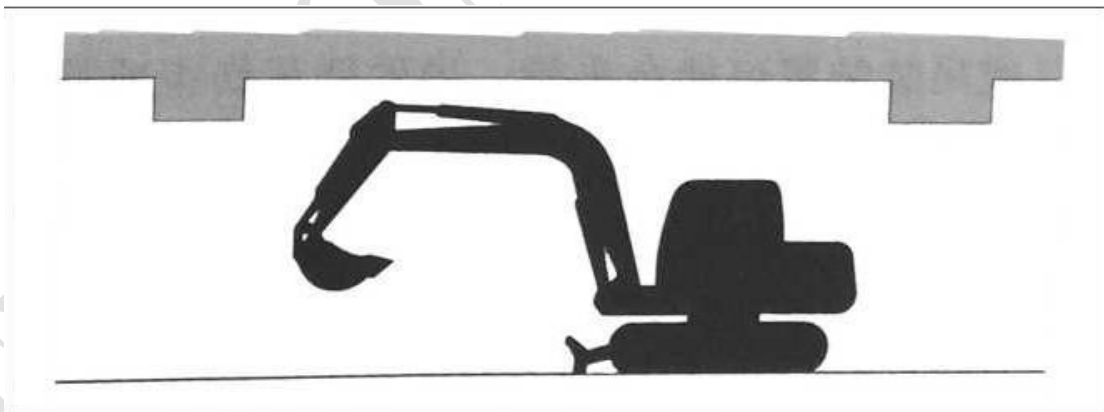
When operating on slopes or ramps, swinging or operating the attachment may cause the machine to lose stability and overturn.



Avoid operating on slopes whenever possible.



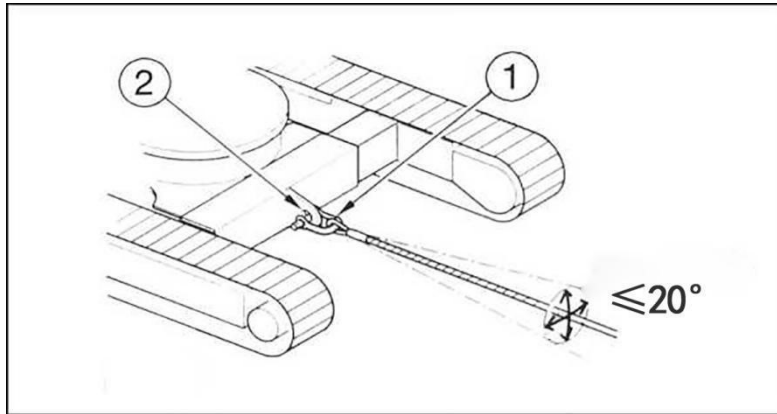
Pay attention to overhead clearance when the mini-excavator is operating under structures or in confined construction areas.



Do not overload or exceed the rated lifting reach during hoisting. Overloading may cause the mini-excavator to overturn, resulting in serious injury or death.



Traction Precautions



Improper towing procedures, incorrect cables, or poor inspection may result in serious injury or death.

A broken or detached cable is extremely dangerous.

Use only steel wire ropes that match the required towing force.

Do not use twisted, kinked, worn, or damaged cables.

Do not apply sudden heavy loads to the cable.

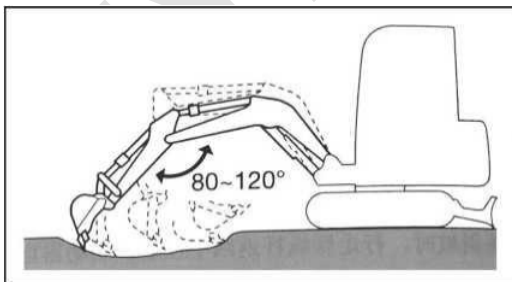
Wear safety gloves when handling cables.

Ensure that there is an operator on both the towing and towed mini-excavators.

Do not tow the mini-excavator on slopes.

Keep all personnel away from the cable during towing.

Excavation



When excavating with the arm and bucket, keep the digging depth shallow and the digging stroke long.

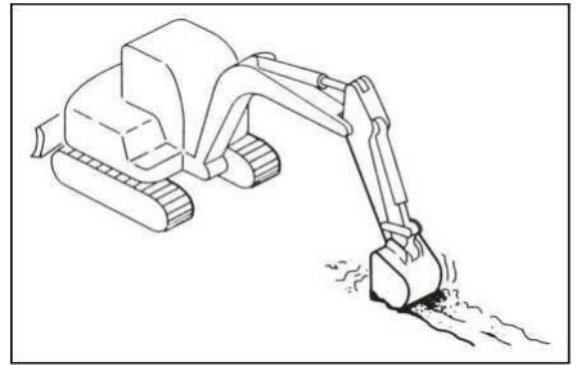
Maximum digging force is achieved when the angle between the boom and arm is **80° to 120°**.

This angle should be used for the most effective excavation.

Digging Ditches

For better efficiency, install a bucket suitable for trenching and align the track parallel to the trench line.

When digging a wide trench, excavate the side sections first, then the center section.



Leveling

1. Keep the bucket working device close to the mini-excavator body.
2. Slowly push soil away from the side of the mound.
3. When the mound height is low, push the soil from the top.

If the load is too heavy, adjust the bulldozer blade height accordingly.

Rubber Track Handling

Because rubber tracks have lower strength than steel tracks, observe the following precautions to prevent damage or derailment.

Prohibited Areas

Do not operate the mini-excavator on:

- Gravel
- Extremely rough or hard rock
- Steel beams
- Scrap metal
- Steel plate edges

These surfaces may damage the rubber tracks.



Pebbles or stones may become trapped in the tracks and cause damage or derailment.

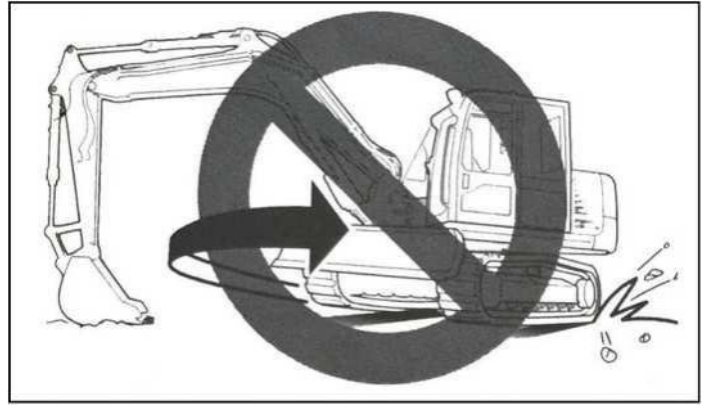
Do not operate near the seaside, as salt may corrode the machine.

Precautions

Please observe the following precautions when operating this mini-excavator:

Do not use the bucket operating device to rotate the machine frame while the bucket is raised in front of the mini-excavator.

Otherwise, the load will be concentrated on the rubber track at a single point, which may twist the track and result in rapid damage or cause the rubber track to come off.



Avoid track derailment, as this may cause severe impact damage to the rubber track.

When storing the rubber track for a long period (**three months or more**), store it indoors in a dry area away from direct sunlight and rain.

Hydraulic Breaking Hammer

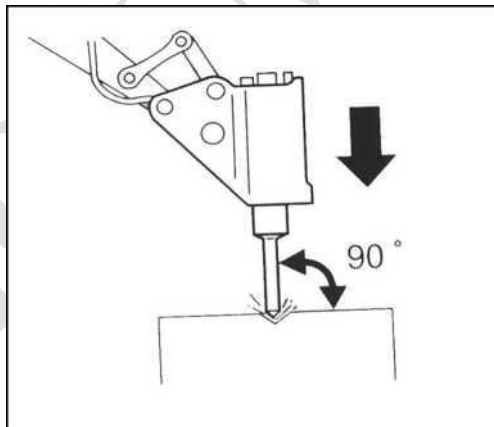
Refer to the separate hydraulic breaker manual for operation instructions.

Ensure that all attachments such as breaker, tilt bucket, or grapple bucket are compatible with the machine model.

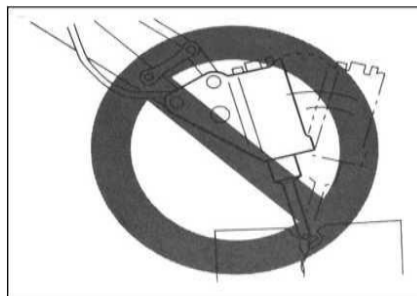
Consult sales or after-sales service personnel before installation.



The hammer head must be perpendicular to the working surface.



Align the hammer properly with the object being broken to avoid dry firing.

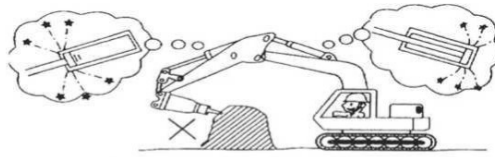


Do not pry with the hammer.

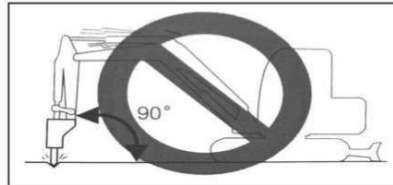
Do not strike the same surface continuously for more than **30 seconds**.

Do not operate when the cylinder is fully extended or fully retracted.

Maintain at least **50 mm clearance**.



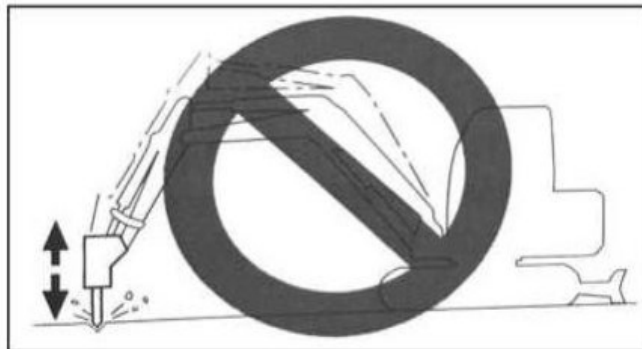
The bucket rod shall not be damaged when placed perpendicular to the ground



Do not use the breaker to move rocks or objects.

If abnormal vibration occurs in the hydraulic hose, nitrogen may be leaking from the accumulator.

Inspect immediately.

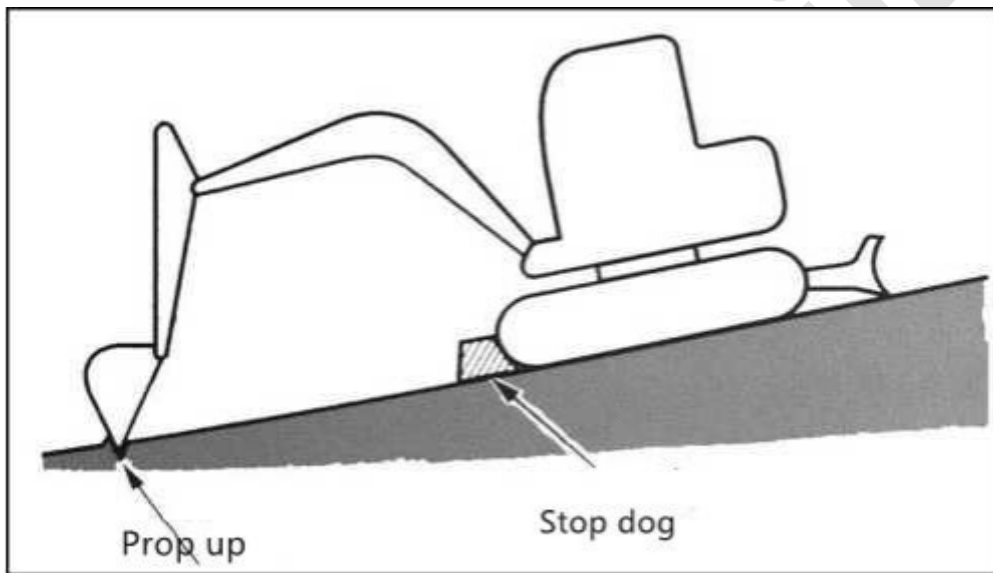


Precautions When Stopping

Safe parking



Park the mini-excavator on flat, firm, and safe ground.



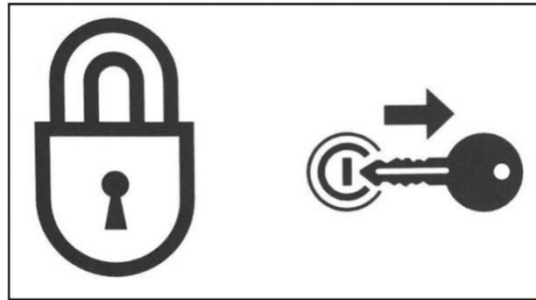
If parking on a slope is unavoidable, secure the machine to prevent movement.

When parking on streets, use warning signs, lights, and barriers so the machine is visible at night.

After work is completed, lower the bucket to the ground and remove the ignition key.

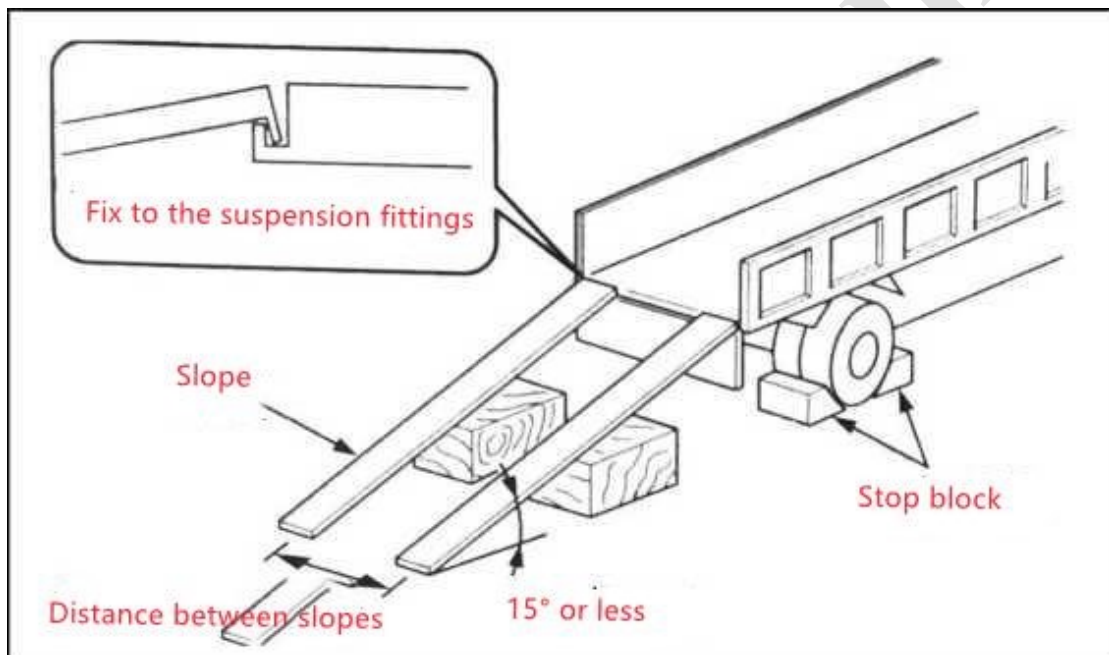
Precautions During Transportation

Safe Loading / Unloading



During loading and unloading, the machine may overturn or fall.

Please follow these precautions:



- Use solid and level ground
- Ramp angle must not exceed **15°**
- Keep truck bed clean and free of oil, snow, or sand
- Clean tracks before loading
- Chock transporter wheels
- Follow the signalman's instructions
- Move slowly in low gear
- Do not turn or swing on the ramp
- Secure the machine with chains or cables

Lift slowly and keep personnel clear during hoisting.

Never hoist the machine with an operator inside.

Maintenance Precautions

Attach a “DO NOT OPERATE” warning tag before maintenance.



Turn off the engine and remove the key.

Inspect hoses carefully.

Do not use twisted, cracked, or bent hoses.

Retighten all loose fittings.

High Temperature and Pressure Precautions

Allow the machine to cool completely before maintenance.

The engine, exhaust pipe, hydraulic pipes, and moving parts may remain extremely hot after shutdown.

Hydraulic oil and coolant may remain under pressure.

Release pressure completely before opening any caps or fittings.

Hot oil spray may cause severe burns.

High-Pressure Grease Warning

Track tension grease is under extremely high pressure.

Loosen the grease relief valve slowly and **no more than one turn**.

Do not position any part of your body in front of the valve.

Do not remove the tensioning device.

Precautions for Battery:

1. Disconnect the battery line before electronic system operation or welding. First, disconnect the negative battery cable, and finally, reconnect the negative battery cable when reconnecting.
2. When starting the engine with the battery charging line, do not touch the positive (+) and negative (-) clamps of the battery charging line or contact the mini-excavator. Wear goggles and gloves when maintaining the battery.
3. If having any questions to consult during use and maintenance, you can contact the company's sales or after-sales personnel at any time to learn more about the use and maintenance of the equipment.

Vibration Undertaken by Operators:

The test results on the vibration transmitted by the mini-excavator to the operator indicate that the vibration on the upper limb of the operator is less than 2.5m/s^2 . In the seat, the vibration borne by the body is less than 0.5m/s^2 .

Regular Inspection and Maintenance

In order to ensure good performance of the mini-excavator, the mini-excavator shall be maintained on time according to the nature of work during use.

The following figure shows simple routine maintenance procedures:

Periodic Inspection List for Mini-excavator														After this	
No	Items	Time	Timer display time												
			50	100	100	150	200	300	350	400	450	500	550		
1	Working device	Grease													Every day
2	Fuel oil	Drainage	○	○	○	○	○	○	○	○	○	○	○	○	Every 50 hours
3	Engine oil	Replacement	○			○					○				Every 250 hours
4	Oil filter	Replacement	○			○					○				Every 250 hours
5	Diesel filter	Replacement	○			○					○				Every 200 hours
6	Air filter element	Replacement	○				○						○		Every 300 hours
7	Hydraulic oil	Replacement											○		Every 800 hours
8	Hydraulic oil filter	Replacement											○		Every 500 hours
9	Line	Inspection													Every 1,000 hours
10	Anti-freezing liquid	Inspection													Every year
Note	1: Clean or replace the air filter element in time according to the working environment (at least every 50 hours).														
	2: Add anti-freezing liquid in time when it is reduced.														
	3: When not working for a long time, the negative pole of the battery needs to be removed, and the negative pole connector can be wrapped with insulating tape to prevent oxidation and corrosion of the connector.														
	4: When working with a crushing hammer, the maintenance cycle is halved.														
	5: Genuine original maintenance filter element shall be used for machine maintenance accessories.														

See the next page for more details of precautions.

Remarks:

1. When using hydraulic front-end working devices such as a breaking hammer, please replace the hydraulic front-end working device in the following way, according to the service times of the hydraulic front-end working device:

Use time ratio of hydraulic auxiliary device	Replacement time of hydraulic oil	Replacement time of the return oil filter
Standard operation (backhoe operation)	Every 1,000 hours	Every 500 hours (initial 4,250 hours)
Use ratio of breaking hammer is 20%	Every 800 hours	Every 200 hours
40%	Every 400 hours	Every 200 hours
60%	Every 300 hours	Every 200 hours
More than 80%	Every 200 hours	Every 200 hours

Note: after changing the filter, the operator must check the oil level.

2. According to the different working environment, the engine air filter element shall be cleaned and replaced in time. When working in a dusty environment, in order to ensure the normal operation of the engine, the engine air filter element must be cleaned for 10 to 20 hours. When changing the hydraulic oil, the normal barrel hydraulic oil (46#) must be used. Because there are impurities in the bulk hydraulic oil, the high-speed operation of the hydraulic system will damage the hydraulic components.

Recommended Lubricants:

Manufacturer	Engine oil	Hydraulic oil	Gear oil / Automotive gear oil
Mobil	Delvac MX (15W-40)Delvac Super Multigrades (10W-30 / 15W-40)	DTE 25 (VG46)	Mobilube HD 80W-90
ESSO	Superfl (10W-40)	NUTO H46	Gear oil GX80W-90
SHELL	RIMULA (SAE 10W-30)	Tellus ST46	SPIRAX EP90
Castrol / CALTEX	RX Super SAE 15W-40RX Super SAE 10W-30	Hydraulic series fluid (VG46)	—
TEXACO	Havoline Motor Oil	—	Havoline Gear Oil
JOMO	10W-30 High-grade diesel engine oilJOMO DIESEL CF (SAE 15W-40)JOMO DIESEL CD (SAE 10W-30)	JOMO Hydlux (VG46)	80W-90 Premium automotive gear oilJOMO GEAR 5

***When changing the oil, please drain all the oil and inject new oil.

Waste Disposal

Collect all waste oil in approved containers.

Dispose of lubricants, coolant, solvents, filters, and batteries in accordance with local regulations.

Avoid direct contact with hazardous chemicals such as:

- Grease
- Battery electrolyte
- Coolant
- Paint
- Adhesives



Warranty & Service Information

Thank you for choosing **TYPHON Mini Excavator**.

To ensure safe operation and long-term performance, please follow all operation, inspection, and maintenance instructions provided in this manual.

For technical support, spare parts, warranty claims, or maintenance assistance, please contact our authorized sales or after-sales service team.

Customer Support Contact

Customer Service Hotline:

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Logistics Contact:

+1 (626) 389-2472

Email:

sales@typhonmachinery.com

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TYPHON

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