Model: MATHFT10 MATHFT12



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NB: This Manual includes MATHFT10 and MATHFT12

Parts

Always use original spare parts, otherwise the warranty will lapse! You can easily find the spare parts that fit the machine by scanning the scan code which is on your machine's QR plate.



Safety

General considerations.

It is your responsibility to follow the relevant departmental safety regulations and laws. Inspect and maintain the machine in accordance with the manufacturer's instructions.

In fact all accidents are caused by non-compliance with basic safety regulations and precautions.

Most accidents can be avoided by identifying potential hazards in advance.

Read and understand all safety information that describes how to prevent accidents. Do not operate the machine until you are sure that you understand how to properly inspect and maintain the machine.

Comply with all safety regulations.

The machine must be inspected and maintained by trained and qualified personnel.

When performing machine operation inspection and maintenance. All rules regulations, precautions and safety measures must be understood and observed.

Do not operate the machine for inspection and maintenance in the event of adverse effects of alcohol, drug ,fatigue or lack of sleep.

But when the machine is abnormal

In the operation or inspection and maintenance of the machine, if the machine is found to be abnormal(noise vibration, odor, oil leakage, false alarm, etc.

The sales or service agent should be notified immediately and reasonable action taken. Do not operate the machine until the abnormality is eliminated.

Operating temperature range

To maintain machine performance and avoid premature wear, please observe the following operating conditions.

Do not operate the machine if the outdoor temperature exceeds +45 C or below-15°C.

Operate if the outdoor temperature exceeds +45C. The engine may overheat.

Resulting in a decline in engine oil performance. and Hydraulic oil can get very hot. Damage to hydraulic equipment.

Operate at an outside temperature below-15 C. Rubber parts such as gaskets may become hard. Causes the machine to wear out or be damaged prematurely.

If it is necessary to operate the machine outside of the above outdoor temperature range. Please consult your sales or service agent.

Wear suitable clothing and protective gear.



Do not wear loose clothing or accessories that may hang on the joystick or moving parts.

Do not wear clothing that is prone to fire oil or fuel contaminants.

According to the requirements of the work environment. Wear safety shoes safety helmets, safety glasses, filter masks, thick gloves, ear protectors and other protective gear. When using a grinder to break the hammer or compressed air. Wear appropriate protective gear. Such as safety glasses and filter masks. Serious damage can result from splashing metal chips or other objects.

Use a hearing protection device when operating the machine Being exposed to high noise for a long time can damage your hearing or even completely.

Install fire extinguisher and first aid kit.



Do a good job in fire and accident preparation.

Install fire extinguishers and first aid kits and learn how to use them.

Learn how to extinguish and deal with accidents.

Know how to contact emergency assistance and make an emergency contact list.

Never remove the safety device.

Make sure that all guard rails, etc. are in place and secure. Before operating the machine.

Please repair or replace the damaged part.



Do not remove any safety devices except for inspections. Always use all safety devices to maintain good working conditions.

For signal sources and signal bearers



Learn how to use the gestures required for a particular job. And identify the person responsible for gesturing.

All personnel must fully understand all gestures.

The operator must respond only to the gesture of the designated person. Butyou must obey the stop gesture from anyone at any time.

When the signaller signals, he must stand in a clearly visible place.

Precautions when starting or leaving from the driver's seat.

When standing up from the drivers seat, lower the work unit to the ground and stop the engine.



Inadvertently touching any control handle can cause the machine to move and cause serious injury or death.

Please pay attention to the dozer blade swing and auxiliary hydraulic control please do not touch these controls.

Before leaving the drivers seat, the work unit should be lowered to the ground and the engine should be turned off. Also be sure to remove the key and carry it with one key. Then store it in the designated place.

Avoid fire and explosion hazards.



Maintain fuel oil grease and antifreeze principle flame. Contains

flammable., very dangerous.

When dealing with these combustibles. keep away from lit cigarettes and lighters and other sources of flame or fire.

Do not smoke or open flames when handling fuel or doing fuel system work.

Do not leave the job site when refueling or lubricating oil.

Do not remove the fuel tank cap or refuel when the engine is running or has not cooled. Also, do not splash fuel on the hot surface of the machine or on electronic system components.

Clean up spilled fuel and lubricant immediately.

Check for fuel and lubricant leaks. Remove leaks and clean the machine before handling.

During polishing or welding operations. Move flammable items to a safe place.

Do not cut and weld on pipes and tubes containing flammable liquid inside.

Before cutting or welding. Please wash thoroughly with a non-flammable solvent.

Remove all rubbish or debris from the machine. Make sure that there are no oily rags or other flammable materials on the machine.

Dispose of various containers and dry chemicals (foam fire extinguishers) according to the procedures on the manufacturers container. In a well ventilated area.

Do not use fuel for cleaning purposes, always use non-flammable solvents.

Keep all flammable liquids and materials in a safe and well-ventilated area.

A short circuit in the electronic system may cause a fire. Check the wire connections for loose or damaged daily.Retighten the loose connector and the rip line snap. Repair or replace damaged wires.

Fire caused by pipes.

Make sure the hoses and tubes are fastened, the guards and the cushions are securely fastened. If it is loose. Hose and tubing may be damaged during operation due to vibration or contact with other components. This may cause high pressure oil to be ejected. Fire or injury.

The exhaust gas from the aircraft is toxic



Do not operate the engine in a closed, poorly ventilated location.

If natural ventilation is not possible, install a ventilating fan to lengthen the exhaust pipe or other venting device

Handle asbestos dust.

Lung cancer may be caused by inhalation of asbestos dust. In handling, materials that may contain asbestos are subject to the following safety measures.

Do not use compressed air for cleaning.

Avoid polishing or sanding, as well as asbestos parts.

Use vacuum equipment with a high-efficiency particulate air filter when cleaning.

If there is no other way to control dust, wear the prescribed respirator. When working indoors, install a ventilation system with a polymer filter.

Do not allow unauthorized personnel to enter the work area while working.

Please strictly observe the rules and environmental standards applicable to this area of operation.

Be careful to avoid crushing



Never place your hands, feet or other body parts between the upper and lower workshops or tracks. Between the body and the work unit, or between the cylinder and the moving part. These gaps can change as the machine moves.potentially causing serious injury or death.

Use the option product.

Consult the manufacturer before installing the option product. Depending on the type of attachment or a combination of them. Attachments may accepted into the cab or other parts of the machine.

Make sure that the installed options are not in contact with other parts before use.

Do not use accessories approved by MSG manufacturers, as this may endanger safety or adversely affect the operation and service life of the machine.

The company is not responsible for any injury or product damage caused by the use of unauthorized accessories.

Do not modify the machine.

Unauthorized modifications to the machine can cause injury or death. Do not make unauthorized modifications to any part of the machine.

Safety signs.

To ensure the safety of the operators and the workers around the work area.

Place a safety sign on some parts of the machine. Carry this manual to walk around the machine. View the contents and placement of these security IDS.

Review these markings and operating instructions in this manual with your machine driver.

The safety sign should be kept clean and legible. If any security label falls off or is damaged, it becomes illegible. Replace with the new one. When ordering a new identity from a service agent. Provide your product serial number.

The part/body that has been posted by the safety label has been replaced.

Post a new logo on the new part/body.

Precautions when preparing.

Understand the work area

Before starting the operation, you should know the situation in the work area to ensure safety.

Check the terrain and ground conditions of the work area. The building structure should be checked during indoor work. And take safety measures when necessary.

It is important to avoid hazards and obstacles such as gutter under ground pipelines, trees, overhead climbing wires or dangerous sections with falling rocks or landslides.



Check the location of the buried gas pipe and power cable with the administrator.

If necessary, negotiate with the administrator and determine that specific security measures must be taken to ensure security.

When working on the road. Please consider the safety of pedestrians and vehicles.

Use a signaller or signal. Isolate the work area. Unauthorized personnel are not allowed to enter.

When working in the water or driving through a shallow stream, you should check in advance whether the water depth is solid and the water flow rate.

Check the strength of the bridge.

When walking on a bridge or structure. Please check the allowable load. If the strength is insufficient, the bridge or structure should be strengthened



Always keep the machine clean.



Wipe off grease, grease dirt, snow or ice to prevent accidents caused by slipping.

Remove all loose animals and unnecessary equipment in the machine.

Remove dust, oil or grease from the engine parts to prevent fire.

Clean around the operator's seat and remove any unwanted objects from the machine.

Check maintenance daily.



Abnormal conditions that are not identified or repaired can be damaged and can cause an accident.

Perform the specified check before operation. Repair immediately if necessary.

If an accident occurs and cannot be operated, or the engine fails. Please stop immediately according to the shutdown procedure. Hold the machine securely until it is repaired.

Precautions in the drivers cab.

Remove dirt and grease from the soles before entering the drivers cab. Operating the machine pedal with the dirt and grease adhering to the sole can cause an accident due to slipping under the foot.

Do not place parts or tools around the driver's seat.

Do not place any plastic bottles in the drivers cab or install any suction cups.

Plastic bottles or suction cups act as lenses and can cause fires.

Security measures at start up.

Support your weight in a three-point safe posture when going up and down the machine.

Do not jump on/off the machine. Do not try to move up and down the machine that is moving.

When moving up and down the cab, first open the door completely to the locked position. Also check that the door cannot move(in a machine with a cab).



Face the machine to climb up/down the pedals and hold the armrests. The three safety postures(hands and feet)support your weight.

Never use the lever as a handle.

Please let any unauthorized personnel leave the area before starting the machine.

By checking the following items, it is determined that the machine can be started safely before it can be started.

Go around the machine for a week. Warn the maintenance crew and the people walking around the machine. Make sure the machine is not started until there is no one around the machine.

Check the drivers cab, control or start switch for warning signs or similar signs that do not operate. Do not start the engine or touch any of the joysticks.

A horn sounds to warn people around the machine.

Sit in the cab and start the engine.

Adjust the seat and lock it securely.



fasten your seatbelt.

Check if the parking device is turned on. Are all levers and pedals in neutral?

Make sure there are no people near the machine.

The machine can only be started and operated from the drivers seat.

Never attempt to start the engine by shorting the starter terminal.

Start with a jumper cable



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Booting with a jumper cable can only be done in the recommended way.

Improper use of jumper cables can cause battery explosions or unexpected machine actions.

After starting the engine.

After starting the engine, perform the following operations and inspections in the absence of personnel or faulty objects. If any fault is found, shut down according to the program and report the fault.

Preheat the engine and hydraulic oil.

Check that each meter and alarm device is working properly.

Check for noise.

Test engine speed control.

Operate the controls to make sure they are working properly.

Used in cold climates.



Carefully freeze the floor and the pedals and handles are slippery.

In the case of severe cold weather. Do not touch any metal parts of the machine with bare hands.

The skin will freeze onto the metal, causing serous Injury.

Do not use ether or starter fluid on the engine. The starter fluid can cause an-explosion and serious injury or death.

Preheat the engine and hydraulic oil. Operate the lever if it is not warmed up.

The machine does not react or move quickly or properly. Causing an accident.

User specifications



- 1 EXHAUST
- 2 DOZER BLADE
- **3** TENSIONSER
- 4 HYDRAULIC OUTLET



USER SPECIFICATIONS

- 1 THROTTLE
- 2 SWING ARM
- 3 LIGHTS ON/OFF
- 4 DIGGER ARM CONTROL
- 5 DIGGER ARM CONTROL
- 6 DOZER BLADE CONTROL
- 7 LEFT CATERPILLAR
- 8 RIGHT CATERPILLAR
- **9** TIME COUNTER
- **10** IGNITION KEY





USER SPECIFICATIONS

- **1** DIESEL LEVEL
- **2** HYDRAULIC LEVEL
- **3** TANK COVER DIESEL



CONNECTION BREAKER



HYDRAULIC TANK COVER

1. Work device operation.

This logo is located on the front inside of the cab.

Check that the machine control mode is consistent with the identification. If it is different, replace the label before operating the machine to match the machine control mode.

Failure to do so may result in personal injury or death.



2. Adjust the track tensioning precautions. *caveat.

This mark is located on both sides of the track beam. *The pressure in the cylinder of the track tension device is very high. It must be adjusted or disassembled in accordance with the operators manual. Incorrect operation can cause personal injury.



3. Operation warning, loading warning, movement and operation warning, warning before opening the window, pay attention to the high voltage line, read the instruction manual, oil circuit lock, height and other warning signs.

Only the logo is located in the lower right of the cab.



*Caveat

* To prevent personal injury or death from malfunctioning. When operating the machine, check the operating status of the machine and the displayed operating mode. When checking the operation status of the machine, pay attention to the surrounding area And slowly operate.

*In order to carry out the loading and unloading operations on the transport vehicle safely, the following matters must be strictly observed. The brakes of the transporter must be activated and there should be stops on the tyres.

The loading and unloading plate should use a steel plate with a very long length, a wide strength and a non-slip surface.

In order to make the transport vehicle consistent with the vehicle center. Fix the loading plate.

Pads and struts must be placed under the loading and unloading plate.

The angle of the loading and unloading plate is 15 degrees or less.

Loading and unloading work in a flat and hard place.

*To prevent serious injury or death, please observe the following before moving the machine and working machine.

Please honk to inform the people around you.

Please confirm whether there are no people around the top of the machine and in the promotion area.

Ensure the field of view in the forward direction. Rotate the upper part if necessary.

For the above matters, please follow the driving warning to install the mirror.

When opening or closing the front window or disassembling the lower window, be sure to turn the safety lock lever to the locked position before standing from the drivers seat.

In case of accidental touch operation, the lever mechanism will suddenly move, which may cause a major personal accident

4. Keep away from the area of the swing area.

This mark is located on the rear weight.

It is strictly forbidden to stand in the area of the machines revolving area.

Do not damage or remove the logo from the machine.



5. Fuel identification.

This symbol is on the fuel tank.

Turn off engine fuel when refueling, and keep fuel from all open flames.

*The minimum temperature is 4C.-5°C.-14°C.-29°C.

*Diesel number 0# -10# -20# -35#.



6. Fuel precautions.

*note

Fuel tank. When filling the machine with fuel or maintaining the fuel system. no smoking. Do not refuel or maintain near the flame spark zone Before refueling, the engine must be stopped and fueled outdoors.

A	注	意	1.1.2
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7. Battery use precautions.

The logo is located in the lower right corner of the cab platform.



*Danger.

*The battery will generate explosive gas. Keep away from Mars and open flames. When the battery is used, it should be well ventilated.

*Metal objects such as tools or flammable materials should not be placed with the battery. Waste batteries should be disposed of in accordance with local environmental laws

*The electrolyte in the battery is highly corrosive and can corrode skin and clothing. If it is splashed into the eyes, it can lead to blindness.

Inadvertently spilled sulfuric acid on your body. 1. Rinse the skin with water. 2. Neutralize acid with soda or lime. 3. Rinse eyes with water for 10 to 15 minutes. And immediately treated.

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8. It is strictly forbidden to stand in the scope of work

This logo is located on both sides of the boom.



9. Stay away from the excavation range.

The logo is located on both sides of the stick.



10. Adjust the tension of the track.

The logo is located on either side of the track beam.



*caveat.

*The pressure in the cylinder of the track tension device is very high. It must be adjusted or disassembled in accordance with the operators manual. Incorrect operation can cause personal injury.

11. The dozer blade operation is indicated.

This logo is located on the front inside of the cab.



12. Battery accumulator, maintenance warning sign.

The logo is located on the swivel platform, in the upper right corner.



13. Keep away from the engine belt markings.

This mark is located on the hood.

Do not open the hood while the engine is running.

Do not touch the exhaust pipe to prevent burns.



14. Hydraulic oil mark.

This logo is located on the hydraulic tank.



15. Hydraulic tank precautions.

This logo is located on the hydraulic tank.

*Danger

Hydraulic tank.

Stop the engine before opening the cover and slowly lower the fuel tank cap.

To release hydraulic tank pressure to prevent hot oil burns.



16.Get on and off the car.

This mark is located on the inside of the door.



*caveat

In order to prevent injuries, the following matters must be strictly observed when getting on and off the vehicle

Get on and off the car. it should face the vehicle.

The pedal armrest must be used.

Hands and feet are often used, and the armrests are grasped by three or morepedals to support the body.

Do not grab the lever or the lever to get on or off the vehicle.

Do not get on and off the vehicle while on the move.

Don't jump up and down the vehicle.

17. Electric shock hazard identification.

This logo is located on the right outside of the cab.

*Danger

Keep away from the machine. If you are near the power cord, the machine load and the ground may be killed by electric shock.



18. Anti-skid warning sign.

This logo is located on the front hood.



19. Please stay away from the danger zone.



Precautions during operation.

Make sure you have a good view.



When working in a dark place, turn on the machines work lights and headlights, and install additional lighting if necessary.

The machine should be stopped when the line of sight is poor due to bad weather(fog, snow or rain). Until the line of sight improves.

Do not upload people on the machine.

No one is allowed to ride anywhere on the machine at any time while the machine is walking or operating.



Check that the work area is safe and reliable before operation.



Confirm the performance limit of the machine.

A signaller is used in a narrow place between roads or where the line of sight is blocked.

Never allow anyone to enter the radius and path of the machine.

Indicate the intent you want to move by honking.

There is a blind spot in the rear of the machine. Please check the safety behind the back and make sure there is no one behind.

Check the position of the driving track before walking.



*Bulldozer

Before operating the travel lever/pedal, make sure the dozer blade is in front of the drivers seat, remember. When the dozer blade is behind the drivers seat the travel lever pedal must be operated in the opposite direction to the dozer blade in front of the drivers seat.

Walk safely.



The dozer blade is raised when walking. Retract the bucket operating device as shown above. Raise the bucket to 30 cm to 40 cm above the ground.

Do not turn while walking. If you are walking, you must operate the bucket handler and the speed should be slow enough Allows you to have complete control at all times.



Try to avoid crossing obstacles. If this is necessary, keep the bucket operating device close to the ground. Walk slowly and never cross obstacles that tilt the machine by ten degrees or more.

Keep walking at low speed on uneven roads to avoid sudden start or stop or change direction. Otherwise the working device may come into contact with the ground, causing the machine to lose balance and damage or damage the structure in the surrounding area.

Precautions for walking on a slope.

Be careful not to tip or slide the machine while walking on a slope or ramp.

Never walk on a steeply steep slope where the machine cannot maintain its stability. The maximum slope is 30 degrees, and the inclination angle is 10 degrees.

Please note that the stability value of the machine will actually be lower than the above values depending on the working conditions.


*Bulldozer.

*downhill.

When climbing a mountain. Keep the drivers seat facing the hillside and keep the driver's seat facing downhill when going downhill. In both cases, you must pay attention to the ground in front of the machine.

When walking on a slope. Lower the bucket to 20 cm to 30 cm above the ground. When climbing a steep slope. Extend the bucket work unit to the front.

In case of emergency. Lower the bucket to the ground and turn the machine off..

When walking on a slope or ramp. Drive slowly at low speeds. When going down the slope. Reduce engine speed.

Do not reverse the vehicle downhill.



Do not change direction on a slope or cross slope, first return to a flat surface and then pick another path.

The machine may skid on a gentle slope covered with grass or dead leaves, or on a wet metal plate or frozen ground. Make sure the machine does not stop laterally on the slope.

If the machine is turned off on a slope, return each lever to the neutral position and restart the engine.

Be careful when operating the machine on snow or ice.

When driving on snow or icy ground, drive at low speed. Avoid sudden start stops or change direction.

In snowy areas, objects placed on the shoulders and on the side of the road are buried in the snow and cannot be seen. There is also the danger of the machine tipping over or colliding with the object. So always be careful.

If the machine enters thick snow. Risk of overturning or burying in the snow, be careful driving. Do not exceed the shoulders or be trapped in the snow.

For frozen soil surfaces, the ground softens as the temperature rises, which can cause the machine to tip over and cause the operator to be trapped in the machine.

Lower the dozer blade when parking the machine on unstable ground.

Do not move the bucket over the top of the persons head.



If you move the bucket above the top of the persons head, there is a danger of scattering the load or the bucket falling suddenly.

The driver should be safe when loading.



Do not load the driver until it reaches a safe place.

Never swing or park the bucket on a person or cab.

Loaded from the back of the truck.

Keep a safe distance from overhead high voltage cables.



Never place any part of the machine or loading material close to the high voltage cable. Unless all security measures required by local and national agencies have been taken. If the person is close, the machine is discharging a spark or approaching or touching the power source. There is a danger of electric shock and death.

Always maintain a safe distance between the machine and the high voltage cable.

Before starting the operation, check with your local power company for procedures related to safe operation.

All cables are considered high voltage cables, even if they are known or believed to be powered off and the cables are clearly grounded, as a live cable.

If the machine is too close to the high voltage wire, use the signalman to issue a warning.

Note that all personnel in the work area are not allowed to access the machine or the loaded material.

Please also pay special attention to the high voltage cable buried in the ground.



Pay close attention to dangerous working conditions.



Do not dig at the bottom of the high bank, which may cause the ground to collapse and is therefore dangerous.

Do not operate in a place where there is a risk of falling rocks.

Keep the safety distance between the machine and the edge of the excavation site. Do not ground the front of the excavator.



When approaching a cliff or shoulder, it is easier to escape in the event of a problem. During operation, place the track on the cliff, or the shoulder at right angles, and place it on the front.



Do not enter the soft ground area. Doing so may cause the machine to tilt due to its own weight, causing it to tip over or fall into the ground.

Do not approach unstable grounds, such as deep shoulders on cliffs. If the floor collapses due to machine weight or vibration, there is a danger of the machine falling or tipping over.



Remember that the soil is not strong after heavy rain or blasting.

The ground at the top of the embankment and around the excavation trenches are not strong.



Do not disassemble the machine underneath the machine. The ground may become unstable and the machine may fall.

When working on top of a building or other structure, check the strength and structure before operation. If the building or structure collapses, it can cause serious injury or damage.



When disassembling, do not disassemble it on the top of the head, and there is a risk of serious injury or damage due to damage, replacement, fall, or collapse of the building.



Do not use the impact force of the bucket operating device to perform the demolition work, and there is a risk of serious injury due to spattered material fragments and injured bucket operating devices.

Operating on a slope is dangerous.

When operating on a slope or ramp, turning or operating the work unit may cause the machine to lose stability and tip over. Avoid operating on slopes as much as possible.



*filling

Leveling the work area.



When the bucket is full of material, avoid turning downhill. This will reduce the stability of the machine and may cause overturning.

When the bucket is heavily loaded, do not swing it sideways.

The machine is easier to tip over in the lateral direction than in the longitudinal direction.

When there is heavy load at the end of the bucket working device, do not swing sideways. In particular, do not swing sideways on the slope.



When the machine is equipped with a breaker pulverizer or a long stick, the end of the attachment is heavier than when equipped with a standard bucket.

For such heavy-duty machines, do not operate the stick or boom toward the downhill direction or toward the side.

Please pay attention to the overhead object.



When operating near the cable in the tunnel under the bridge or indoors, be careful not to hit the overhead object with the boom or stick.

The excavator is not designed for lifting.

This machine is specifically designed for excavation work. Therefore, it does not have a safety device for crane work, and care should be taken if the excavator is used for lifting work.



Lifting should not be overloaded. Overloading can cause the machine to tip over, causing serious injury or death.

All rated lifting capabilities are based on the use of the machine on a stable flat floor. For safe lifting operations. For specific working conditions. I hope that users have the right margin. They include soft or uneven ground non-horizontal conditions, lateral loads, dynamic or sudden loads, hazardous environments and personnel experience. Operators and others should be familiar with the operating manual before operating the machine. The safe operating procedures of the equipment should be strictly observed at all times.

If the chain or hoisting device is not connected properly. Bucket linkages or lifting devices may fail. Cause serious injury or death.

When using this machine as a crane. Do not attempt to pull the stump from the ground and use it in a load-safe position on the machine for this purpose.

No one is allowed to stand above or below the hoisted object or near the professional area.

Attention to flying objects.

This machine is not equipped with protective equipment to protect the operator from flying objects. Do not use the machine in a hazardous location where the operator may be subject to flying objects.

Precautions when pulling.



*20 degrees or less.

Improper handling during traction, use of the wrong cable or improper inspection can result in serious injury or death.

A hazard can occur if the cable breaks or disengages. Use a wire rope that matches the traction.

Do not use twisted knots or even damaged cables.

Do not suddenly apply heavy loads to the cable.

Wear safety gloves when handling the cable.

Make sure that there is one operator on each of the machines that are towed or towed.

Do not pull on the slope.

Do not approach the cable when pulling.

Operating procedures.

Prohibited operation.

Do not operate on bedrock.

Do not turn while walking. If you are walking, you must operate the bucket handler and the speed should be slow enough to allow you complete control at all times.

Do not use the turning force for disassembly or leveling.



Do not use a turning force to disassemble the wall or level the floor. Also, do not dig the bucket into the ground during the turning process. Doing so can damage the bucket operating device.

Do not dig while walking.



Do not dig the bucket into the ground and use the walking force to dig.

Use a hydraulic cylinder to be gentle.



Do not extend the hydraulic cylinder to the head, leaving room for operation.



When the body is lowered and the arm cylinder is fully extended, do not use the bucket unit to support the body. Doing so will concentrate the load on the stick cylinder and may damage the stick cylinder.

Do not use the bucket to push or dig through the heavy bucket.

Doing so will shorten the life of the bucket unit. Excavation using hydraulic pressure.



Do not use the sinking force of the machine to perform the operation.



Applying extra tension to the machine will shorten its life. When using the hydraulic pressure of the cylinder, the depth of the hydraulic pressure is required, and the stroke is large.

Excavation bedrock.



For hard bedrock. Before excavation, the rock should be broken into small pieces using a breaker or the like. This prevents damage to the machine and is therefore more economical.

Pay attention to the impact on the dozer blade.



Impacting a rock with a dozer blade can damage the dozer blade.

Carefully retract the bucket work unit.

When the bucket operating device is stowed, be careful not to let the bucket hit the blade.



Do not use the dozer blade as a stand.



Pay attention to the dozer blade when digging.



When performing deep excavation, such as a dozer blade in front, be careful to avoid hitting the boom and bucket against the dozer blade.

Try to keep the dozer blade behind when operating.

Carefully use a dozer blade to dig down.



This dozer blade design is used for simple dozing operations. Do not use a dozer blade to dig deep down, as this may damage the dozer blade and the lower frame.

Operational precautions.

Precautions when walking.



As the obstacle moves up, it may exert a heavy load on the body and may cause damage to it. Try to avoid crossing obstacles. If this is necessary, the shovel should be placed close to the ground and walk at low speed. The center of the track crosses the obstacle.

Precautions when walking at high speed.



Keep walking at low speed on uneven roads. Avoid sudden start stops or change direction.

When telling to walk, the dozer should be in front.

Precautions when using this machine in water.



If shown above, the back of the machine is submerged in water Will cause the radiator fan to rotate in the water. Causes damage to the fan. The rear of the machine must not be submerged in water.



Allow water depth.

Use the machine in water only if the water does not exceed the middle of the track shoe slip.

For those parts that are used in water for a long time, add enough grease. Until the old grease is squeezed out.

Never immerse the slewing ring or body in water or sand. If it is submerged, please contact the company's service agent for inspection.

Drive out of the mud.

If the machine gets stuck in the mud, follow the steps below.

If a track is caught in the mud.



First, the bucket is tilted into the crawler side of the mud.Second, the arm and boom angles are set to 90 degrees to 110 degrees.Third, press the bottom/non-tooth of the bucket on the ground.Fourth, place a piece of wood or similar object under the raised track.The fifth lifting bucket slowly pulls the machine out of the mud.

If both tracks are caught in the mud.



The first two teams of the first team perform the above steps one to four.

Second, dig the bucket into the ground in front of the machine.

When the third is walking forward, the pull rod slowly moves the machine out.

Digging.



First place the dozer blade on the opposite side of the excavation area.

The second is to use the stick and the bucket to excavate. When digging, the depth of the excavation should be shallow, the stroke should be long, and the angle of the boom and the stick is 80 to 120 degrees, and the digging force is the largest. It is best to use this angle for effective digging.

Excavate the ditch.



Install a bucket suitable for digging trenches. Adjust the track to a position parallel to the trench to be dug. To improve efficiency.

When digging a wide trench, first dig the side and then dig the middle.

Leveling.



First, the bucket working device is close to the body.

Second, slowly push the soil away from the side of the mound.

Third, when the mound is low, push the soil from the top, if the load is too heavy for the body. Raise or lower the dozer blade to adjust.

Handle rubber tracks.

Due to the use of rubber, rubber tracks have inherent weaknesses, namely lack of strength. Please be sure to observe the following prohibitions and precautions. In case the track is damaged or falls off.

Ban

Do not walk or operate the machine at the following locations.

Walking and turning on gravel, extremely rough and hard rock, steel beam scrap iron. Or near the edge of the steel plate, it will damage the rubber track.



Walking on a riverbed with a lot of pebbles may cause the stones to get stuck the tracks and damage the tracks, or the tracks may fall off.

Do not use the machine by the sea, salt may corrode the steel core.



Do not allow fuel oil salts or chemical solvents to adhere to the track.

These materials may corrode the weld of the steel core on the track. And cause rust or peeling. If any of these materials stick to the track, clean them immediately with water.



If the unit is walking on an irregular surface. Such as the newly paved asphalt pavement.

Expose to the campfire line or walk on a hot iron plate under the scorching sun.

This can result in unnatural wear or damage to the handle.

Do not move the rubber track and the ground where it may slip. Doing so may accelerate the wear of the handle.

Precautions.

Observe the following precautions when operating this unit.



Do not use the bucket operating device to rotate the lower frame/ on-board without rotation when the front of the fuselage rises. Otherwise, the track will be twisted when the load is concentrated at a single point on the track. Causes rapid damage to the track.

At all times, avoid changing the route or turning in place on the concrete surface as much as possible. Doing so can wear or damage the rubber track.

Avoid falling rubber rails and subject to strong impact.

Salt potassium chloride, ammonium sulfate, potassium sulfate and lime heavy super phosphate can damage the track. If any of these materials are caught on the track, they should be thoroughly cleaned with water immediately.

Do not rub the sides of the rubber track with concrete or walls.

Do not allow the bucket to hit the rubber track, causing damage to the track.

Be specially careful on snow or frozen surfaces in winter. Because the track is easy to slip under such conditions.

Use rubber tracks between-25°C and+55°C.

When storing rubber tracks for a long period of time(three months or longer)store them indoors without direct exposure to direct sunlight or rain.



Since the entire handle is made of rubber Rubber tracks are not as stable as steel tracks. Be especially careful when making lateral turns and swings.



Prevent the rubber track from coming off.

Observe the following precautions to prevent the track from falling off.

Always maintain proper tension on the track.

When the vehicle is to cross large steps such as pebbles or rocks(20 cm or more), climb the steps at right angles And don't change the route above the steps.



When reversing a hill, do not change direction at the beginning of the slope.



Avoid walking when placing one track on a slope or a protruding part while the other track is on a flat surface (the machine is tilted at a ten degree or more angle), and when both tracks are placed on a flat surface walk.



Do not change direction when the track is slack as shown in the illustration.



In this case, if the machine walks backwards, the rubber track will fall off.



In this case, if the machine rotates, the rubber track will fall off.

Pressure breaker.

For the operation of the breaker, please refer to the separate manual of the hydraulic breaker.

When installing, such as when the hammer is tilted or grabbed, make sure it is suitable for the type of machine being used.

When selecting an accessory, please contact your sales or service agent.



Use a hammer head to perform the crushing operation perpendicular to the work surface.

When breaking, the head should be properly aligned with the broken object to avoid hitting the air.



Don't knock with a hammer, don't smash when you break.

Do not move the hammer when breaking.

Do not continue to impact the uniform surface for more than 30 seconds.



When Wu Gang stretches or shrinks completely, don't break it.

Keep at least 50 mm clearance.



Do not break when the stick is placed perpendicular to the ground.



Do not break the broken object by the falling hammer itself.

Do not use a breaker to move objects or rocks to be crushed.

The machine is rotated from time to time to cool the engine.

If the hydraulic pipe is abnormally vibrated, it may be that the nitrogen in the accumulator leaks. Please check as soon as possible.

Precautions when stopping.

Safe parking.



Park the machine on a flat solid and secure floor and set the parking device.





*Stoppers

If you must park or tilt the body on a slope. Park the machine securely and prevent the machine from moving. When parked on the street. The use of grilles, warning signs, lights, etc. makes the machine easy to see even at night, avoiding collisions with other vehicles.



Do a job before leaving the machine.

Lower the bucket and dozer blade to the ground.

Turn off the engine and remove the starter key.

Lock the cab and cover and take the keys.

The main structural components of the machine

Item	Name	
1	Boom	$\uparrow \uparrow \uparrow \heartsuit$
2	Boom cylinder	0 1 10
3	Arm cylinder	
4	Arm	
5	Bucket cylinder	
6	Rocker	
7	Link	
8	Bucket	
9	Slewing platform	
10	Bulldozer	
11	Bulldozer cylinder	
12	Armrest	
13	Hand throttle	
14	Operating handle	
15	Seat	
16	Rubber track	The man
17	Drive wheel	
18	Guide wheel	
19	Top wheel	
20	Chassis	
21	Switch	
22	Key start switch	
		0
		(22)
		•

Precautions when transporting.

Safe handling of the machine.



*Fixed to suspension accessories.

*Bevel.

*distance between slopes.

*Support block

*15 degrees or less.

The machine may tip over or fall during loading and unloading. Please take the following safety measures.

Choose a solid, flat surface and keep it at a sufficient distance from the shoulder.

A bevel with sufficient strength and size is fixed to the truck compartment. The slope of the slope shall not exceed 15 degrees. If the ramp is bent too far, support it with a post or block.

Do not use the work unit, load or unload the machine, as this may cause the machine to tip over or fall.

Keep the truck compartment and loading surface clean and free of oil, sand, snow and other foreign objects to prevent the machine from sliding the track.

Use a wedge to plug the truck and the wheels to prevent movement.

When loading and unloading the machine, follow the signal from the signal officer and walk slowly at low gear.

The route must not be changed on the slope.

Do not swing on the slope and the machine may tip over.

When swinging on a truck compartment, the machine may not be stable enough, so it should be slow.

If possible, lock the door and cover after loading. Otherwise it may open during transportation.

Use a wedge to secure the track and then tie the machine to the truck compartment with a cable or chain.

Safe lifting machine.

Master and apply the correct lifting and lifting gestures.

Check the lifting equipment daily to see if any parts are damaged or missing and replace if necessary.

Use a cable that can lift the weight of the machine when lifting.

The machine is loaded as described below, Do not operate in any other way as this may cause the machine to become unbalanced.

Do not hoist when there are operators on the machine.

Please carry out slowly during lifting to avoid overturning the machine.

All personnel are away from the work area when lifting. Do not place the mobile machine on top of the person's head.

Safe transport machine.

You should understand and follow applicable safety regulations, vehicle codes and traffic rules when transporting machines.

Consider the length, width, height and weight of the truck after loading the machine to choose the best shipping route.

Do not suddenly start or stop or drive at high speed during transportation, as this may cause the loaded machine to move or lose balance.
Maintenance precautions.

Mark the "Do not operate" warning message.

When inspecting or maintaining the machine, if an unauthorized person starts the engine or encounters control, it may cause serious injury.

Before performing maintenance, turn off the engine and remove the key to carry it with you.



*DANGER Do not operate.

In the conspicuous places such as the start switch or lever, mark the "Do not operate" warning message.

Use the right tools.



Do not use tools that are damaged or have poor performance, or tools that are designed for other uses, and use tools that are appropriate for the job.

Replace safety critical components regularly.

Be sure to use the machine safely for a longer period of time, with regular refueling and inspection and maintenance. For increased safety, periodically replace safety-critical components such as hoses and seat belts.

Safety-critical components that are periodically replaced are those that are worn out and degraded after repeated use. And the performance of such components will change over time. These features are characteristic of such components, which can cause serious machine damage or personal injury. It is difficult to judge the remaining service life by visual inspection or manipulation.

If any damage is found when visually observing its appearance, replace the safety-critical components that are periodically replaced. Even if the specified replacement interval has not been reached.

Replace the fuel hose regularly. Fuel hoses wear out over time, even if there are no signs of wear on the surface.

The wear symptoms were found to be replaced immediately, regardless of the replacement schedule.

To use the machine safely, perform regular inspections and maintenance. The following safety critical components need to be replaced regularly to improve safety. Damage to these parts can cause serious injury or fire.

A list of safety critical parts.

Item	Safety critical components that are replaced regularly		The time of replacement		
Fuel system	Fuel pipe	Every two years			
-	Filler on the fuel tank cap				
Hydraulic system	Machine	Hydraulic pipe-pump			
		outlet			
		Hydraulic pipe-pump			
		suction port			
		Hydraulic pipe- Swing			
		motor			
		Hydraulic pipe-travel			
		motor			
	Working equipment	Hydraulic pipe-boom			
		cylinder line			
		Hydraulic pipe-stick			
		cylinder line			
		Hydraulic pipe-bucket			
		cylinder line			
		Hydraulic pipe-swing			
		cylinder			
		Hydraulic pipe-bulldozer			
		cylinder			
		Hydraulic pipe-pilot valve			
		Hydraulic pipe-auxiliary			
		pipe			

Explosion-proof lighting.



When checking fuel oil, coolant or battery electrolyte, use a riot lamp to prevent fire or explosion, otherwise it may explode and cause serious injury or death.

Unauthorized access by persons is strictly prohibited.



Do not allow unauthorized personnel to enter the work area during the work and then grind or use a hammer. Be careful that you may be injured by debris flying from the machine.

Work area preparation..

Choose a stable and flat working area to ensure proper lighting conditions, such as ventilation during indoor work.

Remove obstacles and dangerous goods and eliminate slippery areas.

Always keep the machine clean.



The machine should be cleaned before maintenance.

Turn off the engine to cover the electrical components before cleaning the machine to prevent water ingress. Electrical components may cause a short circuit or malfunction after entering the water. Do not wash the battery, electronic control unit, sensor connector or cab with water or steam.

Turn off the engine before maintenance.

When the machine is running, the machine is not running, but the engine is operated to avoid lubrication or mechanical adjustment.

If maintenance is necessary while the engine is running, arrange two people to work as a team and keep in touch with each other.

A person must sit in the driver's seat so that the engine can be turned off immediately if necessary. This person must pay special attention, except when the lever and pedal are not required.

Another person performing maintenance must ensure that their body or clothing is away from moving parts of the machine.

Keep away from moving parts.



Stay away from all rotating and moving parts. If a hand or tool is caught in a rotating or moving part, it can cause serious injury or even death.

If you throw a tool or other object into it, or insert it into a fan or fan belt. These items can be blown or shredded. Do not throw anything into or into a fan or fan belt.

Secure the machine or any parts that may fall.



All movable work units should be lowered to the ground or at the lowest position before maintenance or repair under the machine.

Fixed track

If you must work under a raised machine or equipment, always use a wooden block jack or other solid, stable support. This procedure is especially important when working with hydraulic cylinders without securing the machine or working device.

Stable working device.

When repairing and replacing the tooth or side tooth, in order to prevent the machine from accidentally moving, the working device should be firmly fixed.

Stabilize the hood or cover closed when you open it.

Be sure to secure the bonnet or cover before working inside the machine.

Keep the hood or cover closed when the weather is heavy or when the machine is parked on a slope.

Place the weight in a stable position.



When temporarily placing heavy objects or accessories on the ground during disassembly or installation, be sure to keep them in a stable place, and do not allow unauthorized personnel to access the place where the items are stored.

Refueling precautions.



Do not smoke or open flames when refueling or near the fueling point.

Do not remove the fuel tank cap or refuel while the engine is running or slightly cooled. Do not spill fuel on the hot surface of the machine.

Fill the fuel tank in a well ventilated area.

Do not fill the fuel tank, there should be room for oil expansion.

The spilled fuel should be wiped clean immediately.

Firmly tighten the fuel tank. If the fuel tank cap is lost, it will be replaced with the original, and the use of an unauthorized and poorly ventilated fuel tank will cause internal pressure in the fuel tank.

Prevent dust from entering.

When installing and removing parts, there should be no dust to clean the work area and clean the parts to prevent dust from entering.

Clean the mounting surface.

When installing and removing parts, please make sure that the contact surface of the parts is clean. If the sealing groove of the contact surface is damaged, please contact your sales or service agent for repair or unpacking.

Sealing ring and cotter pin.

Always replace all removed seals and cotter pins with new ones.

Be careful not to damage or distort the seals during installation.

Sealing ring.



*Sealing ring

*The thread that retains 1 or 2 turns does not wrap around the seal.

When wrapping the threads with sealing tape, clean the old sealing tape on the threads and clean the threads.

Tighten the threads with a sealing ring, taking care to leave one or two at the bottom end of the bolt.

Do not use fuel for cleaning.

Fuel and lubricants use the correct fuel grade according to the season.

Please refer to the table below to select the appropriate fuel oil and grease based on temperature. If it has reached the specified time, if it becomes too dirty, it will be replaced before it deteriorates.

Do not mix different brands of oil when refueling. If you want to change the brand, please replace all fuel oil.

Fuel.

Diesel should meet the following specifications. This table lists several diesel specifications currently in use worldwide.

Diesel specifications	Part	Diesel specifications	Part	
GB252	China	BS2869-A1/A2	UK	
ASTMD975 Numbering:1-D, S15			International	
Biodiesel Biodiesel blending B5 ASTMD6751, D7467	United states Canada	ISO8217DMX		
EN590:96	EU		Lamon	
EU ENI4214, EN590		JIS K2204 2Level	Japan	

Diesel fuel tank.

In order to maintain the performance and service life of the engine, always use clean high quality fuel.

To prevent freezing in cold weather, choose a diesel that is still applicable when the actual temperature is lower than expected and the outdoor temperature is at least 12 °C lower.

Use diesel fuel with a 16-alkylene value of 45 or higher. When used in high-altitude and high-altitude areas, you need a fuel with a higher 16-alkyl value.

Use a fuel with a sulfur content of less than 0.05-0.0015% by volume. In the United States or Canada. due to the use of ultra-low sulfur fuel. The use of high-sulfur fuels may cause sulfuric acid corrosion in the engine cylinders.

Do not use kerosene. Do not mix kerosene, used engine oil or residual fuel with diesel fuel.

Poor quality fuel can degrade engine performance or cause engine damage.

Fuel additives are not recommended. Some fuel additives can cause engine performance degradation.

The metal content such as zinc, sodium, magnesium silicon and aluminum must be limited to one mass ppm(1 mass ppm)or less.

Safety measures when using biodiesel . The engine manufacturers warranty does not apply to machines that use biodiesel that does not meet the standard or has deteriorated .

Lubricating oil.

API standard US Petroleum Organization.

ACEA Standard EU Automobile Manufacturers Association.

SAE Standard American Society of Automotive Engineers.

Part	Туре	Type selected according to oil temperature							Replacement time
		-4	14	32	50	68	86	104"	
		-20	-10	0	10	20	30	40" C	
Oil sump	Diesel fuel API:CD level ACEA:E-3,E-4,E-5								Every 250 hours after the first 50 hours
Hydraulic oil filter	Antiwear hydraulic oil		ISO	VG	32 30 V	GV4	68		Every 2000 hours
Cooling system	Cooling water Water-coolant SAE:J814Cor J1034	50%Coolant mixture 30%Coolant mixture				Every1000 hours			
Travel reduction gear	Gear Oil API:GL-4	SAE 90			Every 1000 hours after the first 250 hours				
Swing motor gear	Lithium-based grease EP-2								Every 50 hours
Slewing ring	NLGI 2								Every 50 hours
Working equipment									Every 10 hours or every day
Rod									When needed

*If the walking time is a high percentage of this operating time, the gear oil should be replaced before the specified time.

*Use tap Water when using water, do not use well water or river water, add coolant antifreeze when the outdoor temperature drops below 0°C. and determine the mixing ratio according to the coolant manufacturers instructions.

*The hydraulic oil change interval depends on the type of hydraulic oil being used. When using ordinary anti-wear hydraulic oil, the hydraulic oil should be replaced every 2,000 hours

Schematic diagram of the lubrication of key structures of the machine.

Item	Connect the pin or butter eye.			
1	The upper frame of the boom is connected to the pin.			
2	On the boom cylinder, the frame connection pin.			
3	Boom cylinder boom connection pin.			
4	Stick cylinder boom connecting pin			
5	Boom stick connecting pin.			
6	Stick cylinder stick connecting pin			
7	Bucket cylinder, stick connecting pin			
8	Pendulum stick connecting pin			
9	Push rod swing rod connecting pin			
10	Stick bucket connecting pin			
11	Pusher bucket connection pin			
12	Bulldozer cylinder fixing pin and connecting pin with lower frame			
13	Slewing the outer tooth butter eye			
14	Slewing bearing, internal tooth butter eye.			



Handling of the hose.

A lubricant or fuel leak can cause a fire.

Do not twist or bend the hose.

Do not use twisted or cracked pipes, metal pipes or hoses. Otherwise a burst may occur.

Retighten the loose Joints.

Be careful when handling high temperature and high pressure components.



Turn off the engine and wait for the machine to cool down before performing maintenance.

Engine exhaust pipes, radiators, hydraulic pipes, sliding parts and many other parts of the machine are very hot when the engine is just turned off. Touching these parts can cause burns.

Engine coolant, hydraulic oil and other oils are also at high temperatures and pressures.

Be careful not to touch the hydraulic oil when loosening the cover or plug.

Operating the machine in this situation can cause burns or injuries due to hot oil squirting.

Be careful when operating a high temperature cooling system.



When the cooling water is hot, do not remove the radiator cover or drain cover, let the engine stop waiting until the engine and cooling water cool down, then slowly loosen the radiator cover, vent the internal pressure, and then remove it.

Be careful of the oil pressure.



After the engine is turned off, the pressure in the hydraulic hose will remain for a long time.

The internal pressure should be completely relieved before performing maintenance work.

The high pressure of hydraulic oil can pierce the skin or eyes, causing serious injuries and leading to insomnia. even death. Keep in mind that the hydraulic oil that seeps out of the holes is almost invisible to the naked eye. Use eyepieces and thick gloves when checking for leaks and use cardboard or plywood to protect the skin. In case the hydraulic oil is sprayed, it is damaged.

If hydraulic fluid enters the skin, it needs to be surgically removed within a few hours by a doctor familiar with such injuries.

Relieve pressure before working on the hydraulic system..

If the hydraulic system is removed before the pressure is released, the hydraulic oil may be ejected if the cover or filter is removed or the pipe is disconnected.

Slowly loosen the vent plug to release the tank pressure.

When removing the plug or screw or disconnecting the hose, stand on one side and slowly loosen it to gradually release the internal pressure before removing it.

The oil or oil plug may be ejected due to the pressure in the travel motor tank.

Please slowly loosen the oil plug to release the internal pressure.

When using a hammer, be careful of splashing debris.

When using a hammer, pins or metal fragments can splash around, which can cause serious injury.

Wear protective gear such as goggles and gloves when hammering hard metal parts such as pins, teeth, side teeth or bearings with a hammer.

When knocking on pins or teeth, make sure that no one is around.

Beware of high pressure grease.

In the track tensioner, when the grease is under high pressure, such as adjusting the tension, if the procedure specified below is not followed, the grease pressure relief valve may fly out, resulting in injury.



Do not loosen the butter fittings.

Slowly loosen the grease relief valve and do not turn it more than one turn.

Do not place your face, arms, legs or body in front of the grease relief valve.

When loosening the grease pressure relief valve, if there is no grease flowing out, the valve will malfunction. Please contact the manufacturer or dealer for repair.

Do not disassemble the track tensioner.



The track tensioner is equipped with a powerful spring. When the track tensioner is inadvertently disassembled, the spring will pop out. As a result serious injuries are caused and the track tensioning device must not be removed.

Disconnect the battery cable.

Disconnect the battery cable before performing electronic system work or welding. First disconnect the negative battery cable. When reconnecting, finally connect the negative battery cable.



Be careful when feeding the battery.

The battery contains sulfuric acid, which can cause eye and skin damage if it is accidentally touched.

If you accidentally get into the eyes, rinse immediately with clean water and seek medical attention promptly.

If you are eating, drink plenty of water or milk and seek medical attention immediately.

If sulfuric acid hits your skin or clothing, wash it off with plenty of water.

Wear goggles and gloves when operating the power supply.

The battery can generate flammable hydrogen, which can cause an explosion, away from fires such as open flames or ignited cigarettes.

Use a flashlight when checking the liquid level of the power supply.

Before checking or handling the battery, be sure to turn the start switch off to turn the engine off.

Be careful not to let metal tools or any metal objects touch the electrodes and cause a short circuit.

An electric spark is generated when the electrode is loose, and it must be tightened.

Make sure the battery cover is tightly closed.

Do not charge or cross the engine when the battery is frozen. Otherwise an explosion may occur. Heat the frozen battery to 15 °C before use.

Do not use the battery when the liquid level is below the lower limit. Failure to do so will speed up the internal aging of the battery and shorten the battery life, which may result in a ruptured explosion.

Do not add distilled water above the upper limit, otherwise the electrolyte will leak out. Contacting the liquid can damage the skin or corrode machine parts.

Clean the area around the electrolyte level line with a damp cloth and check the liquid level. Do not use a dry cloth to clean it, as this may cause static electricity to build up and cause burning or explosion.

Use the battery charging cable to cross the start.

When starting the engine with the battery charging cable, be sure to connect the cable according to the correct procedure described below. If the cable is connected incorrectly, it will cause discharge and battery explosion.

Do not let the problem machine and the rescue machine touch each other.

Do not touch the positive and negative clamps of the battery charging cable or touch the machine.

When connecting, first connect the positive battery charging cable to the positive terminal. When disconnecting, first disconnect the negative cable from the negative terminal/ground.

Be sure to attach the clip securely.

The last clip of the battery charging cable is connected as far as possible from the battery.

When using the battery charging cable to start the engine, always wear goggles and gloves.

Use battery charging cords and clips that are sized for battery capacity. Do not use damaged or corroded battery charging cords and clips.

Make sure the battery of the rescue machine is the same as the battery capacity of the machine.

Please entrust our service agent to carry out welding repair.

When welding must be carried out, it must be carried out by a qualified person in a well-equipped workplace. To prevent damage to any parts of the machine caused by excessive current or sparks, please observe the following.

Disconnect the battery before performing welding.

Do not apply a voltage of 200 volts or more continuously.

The grounding point should be connected within one meter of the welding site.

Do not connect the ground terminal near the electronic control unit/meter or connector.

Make sure there are no seals or bearings between the weld and the ground.

Do not connect the ground terminal around the pin or hydraulic cylinder of the work unit.

To perform welding work on the machine, disconnect the connector of the electronic control unit before working.

Operators vibration

As for the vibration transmitted to the operator by the machine, the test results show that the operator's upper limbs are subjected to vibrations below 2. 5M/S2, while in the seat, the body is subjected to vibrations below 0.5 M/S2.

Waste treatment



Make sure that the waste oil discharged from the machine is collected into the container. Improper disposal of the waste oil will pollute the environment.

When handling hazardous materials such as lubricants, fuel oils, coolants, solvents, filters and batteries, follow applicable laws and regulations.

Treatment of hazardous chemicals.

Direct contact with hazardous chemicals can cause serious Injury.

Harmful chemicals used in this machine, including grease, battery electrolysis, liquid coolant, coatings and adhesives.

Please handle hazardous chemicals carefully and carefully.

Specification of	unit	HFT12
wheel base	mm	1100
Length of track on land	mm	1330
Platform ground clearance	mm	380
Platform back turning radius	mm	933
Chassis Width	mm	1100
Track Width	mm	180
Track height	mm	320
Length of Transport	mm	2870
Height of machine	mm	2200
Max digging radius	mm	3150
Max digging depth	mm	1950
Max digging height	mm	2910
Max dumping height	mm	2050
Max vertical digging depth	mm	1675
Minimum rotation radius	mm	1430
Max upgrade height of bulldozer blade	mm	325
Max digging depth of bulldozer blade	mm	175
Operating weight	kg	1200
Bucket Capacity	M3	0.03
Engine ,rated power	KW	KOOP KD192F EURO V

5-1

Main specifications



- Overall size: mm
- A track 980
- B track total length 1330
- C platform ground clearance 380
- D The radius of the end of the platform. 933
- E Base width. 1100
- F Track width. 180
- H Track height. 320
- I Transport length. 2870
- J Full vehicle height. 2200

Working range



Working range: mm

- A maximum ground excavation radius 2400
- B Maximum digging depth 1950
- C Maximum digging height. 2910
- D Maximum unloading height. 2050
- E Maximum vertical digging depth. 1675
- F Minimum radius of gyration. 1430
- G Dozer blade maximum lifting height. 345
- H Dozer blade maximum digging depth. 225
- 5-3
- Hydraulic system schematic diagram



EF - OVERENSSTEMMELSESERKLÆRING DK

Fabrikant

Shandong HFT HEAVY Industry MAchinery CO., LTD.

West of Anju Road, Jiaming Economic Delvelopment Zone, Dongchangfu District, Liaocheng City, Shangdong Province, China

Erklærer hermed at følgende maskine:

Betegnelse: Minigraver (Digger)

Model:

MATHFT10 MATHFT12 MATHFT14

Beskrivelse: Minigraver (Digger)

Er fremstillet i overensstemmelse med følgende EF-direktiv:

CE

Maskindirektivet 2006/42/EC

Anvendte standarder:

EN ISO 12100:2010 EN 474-5:2006+A3:2013 EN 474-1:2006+A4:2013+AC:2014

For and on behalf of Shandong HFT Heavy Industry Machinery Co., Limited 山東海菲特重工機械有限公司、

Authorized Signature(s)

signature

name and date