



齐陆工贸  
— QILU —

# MINI EXCAVATOR

Product Manual



QL-25PRO

# catalogue

## Symbol of the operating device

### preface

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### Problems of backhoe excavator and treatment measures

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## Symbol of the operating device

The operating device is marked by symbols to facilitate operation and maintenance management. The meaning of the symbol is shown below. Please pay more attention based on the full understanding to avoid misoperation.

|                                                                                     |                                |                                                                                     |                                    |
|-------------------------------------------------------------------------------------|--------------------------------|-------------------------------------------------------------------------------------|------------------------------------|
|    | Shovel bucket dump             |    | Battery rise                       |
|    | Move the arm down              |    | Shovel bucket pull up              |
|    | advance                        |    | Move the hip lift                  |
|    | left-handed                    |    | drawback                           |
|   | The pole pull up               |   | dextrorotation                     |
|  | The push shovel drops          |  | Swing to the right                 |
|  | Engine rotation at a low speed |  | The pole stretched out             |
|  | chassis extension              |  | Meat push soil shovel lift         |
|  | lock                           |  | The engine rotates at a high speed |
|  | Fuel (diesel)                  |  | Track contraction                  |
|  | Teal battery charging arning   |  | unlock                             |
|  | suona                          |  | Engine oil pressure                |
|  | working light                  |  | engine prewarming                  |

Thank you for purchasing the QILU products.

This machine is used for excavation, land preparation and crushing (accessories) operations. Read carefully before the first starting and operating the machine and before repairing the machine. This instruction manual describes the correct use method and simple inspection and repair of the products. Please read and fully understand this content carefully before use, in order to achieve the excellent performance of your purchased products, for safe and comfortable work. The manufacturer cannot directly supervise and guide the use, operation, inspection and maintenance of the machine. Therefore, the user should be well trained and able to operate the machine to operate correctly and safely. In addition, please fully note that the matters not recorded in this instruction manual will sometimes apply to the relevant decrees, regulations, rules and insurance conditions due to the content of the work. After reading this manual, always keep it in the instruction orites for any questions. When the instruction manual collector is damaged, always replace it with a new product. In addition, due to the change of product specifications, the product you buy is sometimes inconsistent with the content of this specification, please understand.



## safety first

The notes recorded in this book and the labels with A symbols posted on the machine are important items that may lead to personal accidents. Be sure to read it carefully and follow it strictly.

Also, if the label with the A symbol is dirty or falls off, please be sure to order it from your local sales store and post it at the designated location.

### Marns on precautions

This instruction manual identifies the following special precautions when using the machine.



Indicates that death or serious injury.



Represents that there is a risk of death or serious injury if

I. Represents a risk of injury if the precautions are not followed.

Important: the precautions are not observed.

Indicates that machine damage or failure

replenish Represents additional supplementary instructions contributing to the use.

---

Before using this machine, please read and understand this operating instruction carefully to ensure safe operation. For a safe operation, the following note is attached in this case



警告



注意

material  
particul

repl  
enis  
h

Flag to  
indicate  
attention.

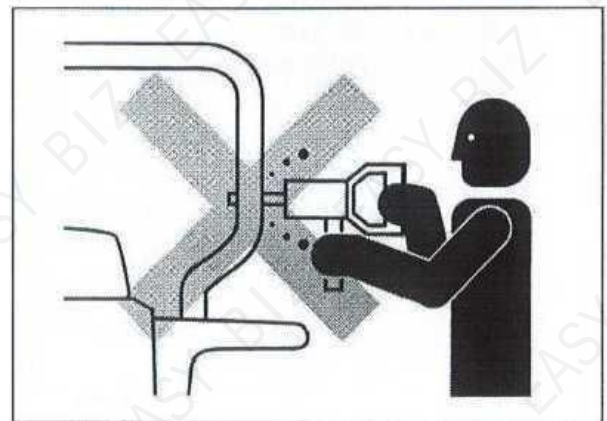
Always observe the following items for safe operation.

#### Basic matters of safety

1. Before using this machine, please read the instruction manual carefully and drive safely with full understanding.
2. When lending this machine to others, please specify how to use it, and guide the receiver to read it carefully before using it  
《 operating instruction 》 .



3. When driving with the 4-leg TOPS roof specification, please always fasten your seat belt.
4. Do not modify the 4-leg TOPS roof. In addition, if the strength of damage, bending and other conditions, do not repair, directly replaced.
5. Do not remove the 4-pillar TOPS canopy for driving.



6. Wear a helmet, safety shoes and safety clothing during operation and maintenance. Please wear protective glasses, dust mask, sound insulation equipment, protective gloves and safety belts according to the work content. Please confirm that the various protective appliances are functioning properly before use. Please keep the driver's seat clean. If the pedal, the armrest is attached with oil, oil, ice, snow and mud, it is easy to cause skid, in addition, check whether the soil is attached to the shoes.

7. Prepare safety supplies. Please prepare safety supplies in advance in case of injury or fire

Please prepare the first aid kit and fire fighting equipment.

Please note the address of emergency doctors, emergency vehicles and fire departments.



8. Please perform a routine inspection. Please confirm whether there are any abnormal phenomena (oil leakage, water leakage, loose bolts and nuts, broken electrical wiring line, loose terminal, etc.). If there is any abnormal phenomenon, please dispose of it accordingly.

Fuel oil and grease should use the designated brand.

9. Be sure to install the safety cover and protection cover before use.



To work safely

Please be sure to read

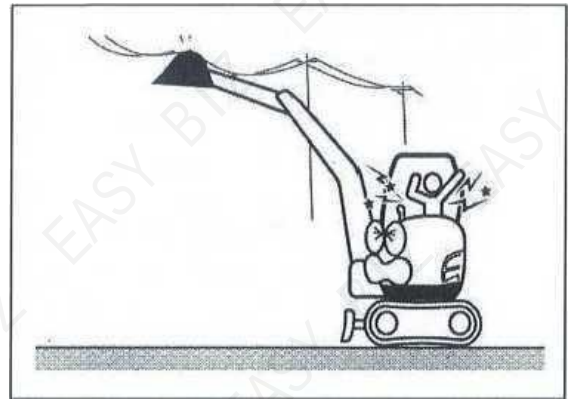
10. Turn off the engine when refueling, filling in lubricating oil, checking, and adjusting.

No fireworks when replenishing fuel. Also, take full care not to spill.

11. When pulling up the bucket, no one is allowed under the bucket.

12. When pulling the bucket up, please do not touch the wires or obstacles overhead. Especially when in contact with wires, death may be due to electric shock, so be careful.

13. Do not drive when drinking, taking medication, and being in poor physical condition. Otherwise, it will cause an accident



- 
1. Please confirm that there is no one around the machine.

## 2. Notes before the work

- \*Always confirm the following items before starting the engine.

- \*Always sit in the driver's seat when starting off.

- \*Verify that each operating handle is in the "neutral" position.

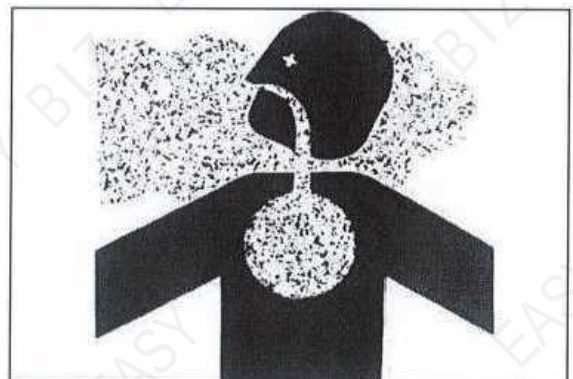
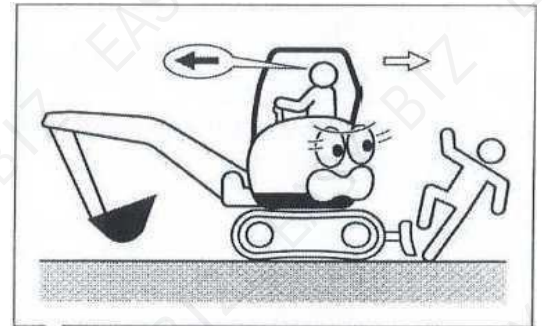
Since the muffler exhaust pipe is facing back, please confirm that there is no one behind the machine. In addition, when working beside the wall or trees,

sometimes the wall will be discharged from the exhaust gas, blackened, and the trees will also be withered caused by the heat discharged from the exhaust gas. Therefore, please take protective measures for the wall or trees before working.

- \*Make sure there is no flammable around the engine.

- \*Verify that the bucket touches the ground.

- \*The discharged exhaust gas is in danger of poisoning, so please conduct adequate ventilation when working indoors. In addition, the inspection work should be carried out outdoors.



3. Please hold the handrail on and off the bus to avoid slipping. Jumping up or down can be very dangerous. Do not be hung by the operation handle when getting on or off the bus.

4. When the local seat is adjustable, adjust the seat in place. Make sure that the seat is cut and fixed after adjustment.

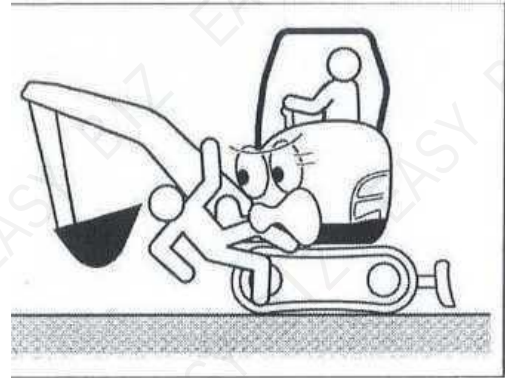
5. Check the direction of the machine before walking. Where is the push shovel The direction of is the front. Without operating the walking lever, the machine may walk in the opposite direction against its will, which is dangerous. In addition, before starting the engine, Jing will confirm whether the operation handle, walking handle and pedal class are bonded or stuck. If there is bonding and other phenomena, it will lead to the handle can not be reset smoothly. When any abnormality is found, please repair it immediately.

6. After starting the engine, check the operation of the bucket, boom, bulldozers, walking and rotation. The inspection shall be conducted in no people, no obstacles and wide places.

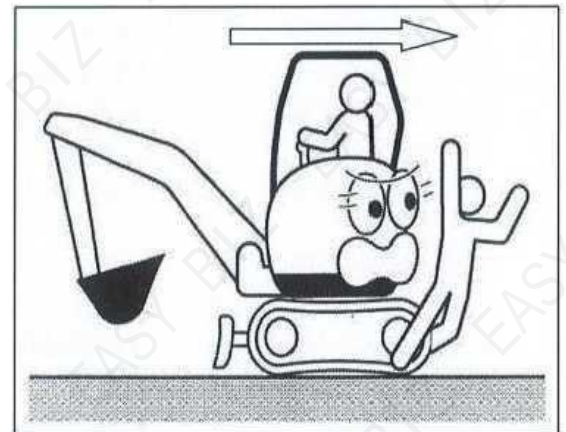
When any abnormality is found, please repair it immediately.

## Precautions during the operation

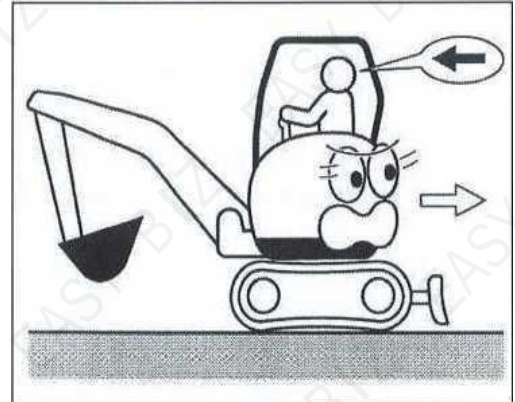
1. Please drive correctly in the driver's seat correctly (do not look around, jump, jump, jump, etc.), do not let anyone other than the driver ride. Do not sit on the bucket.
2. It shall not be used for other purposes. Otherwise, it will not only cause local failure, but also may cause unexpected accidents.



3. When moving the body, please operate after fully confirming whether there are people and obstacles around you. In the process of operation, absolutely no one is allowed to enter the scope of operation.



4. In the front place with poor vision and poor terrain, please set up a commander and work according to the signal of the commander.

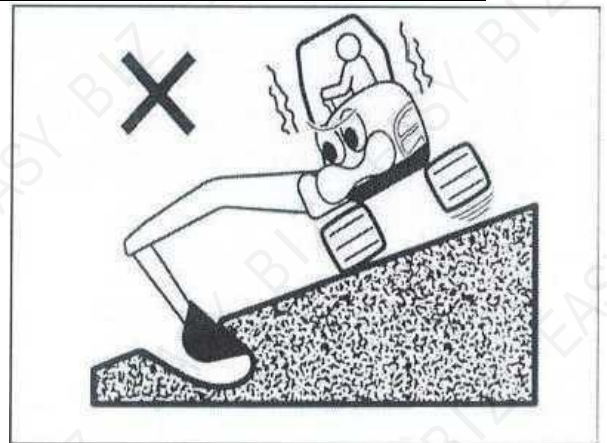


4. In places with poor visibility ahead and in poor terrain  
For site operations,  
please set up a commander and follow the command  
Personnel signals to work.

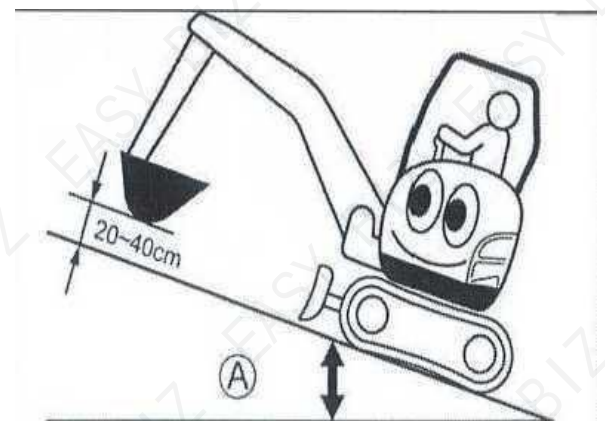
6. Please do not turn (turn around) or cross, otherwise it will cause rollover or slip, which is very dangerous.  
Please turn on the flat ground.  
Walk along the maximum incline up and downhill.



7. Do not swing or turn on the inclined area, otherwise there will be a risk of rollover.  
When operation should not be done on inclined areas, the machine shall be disposed at a level.  
Do not drive cars onto stones or work on soft mounds.  
When climbing up a sloping area, if you drive to the stone or the protrusion, or walk on the uneven road, there is a risk of rollover, so please do not climb in such a place.



8. When walking and climbing, please face the swing frame and working device in front, and take the bucket off the ground for 20-40cm convenience.  
In the current dangerous situation, can be directly lowered to the ground to ensure stable driving.  
Please never go up and down the ramp in a swing state.  
9. In addition, please do not drive diagonally or horizontally in an inclined area above 15 degrees.  
Otherwise, there is a risk of a rollover.



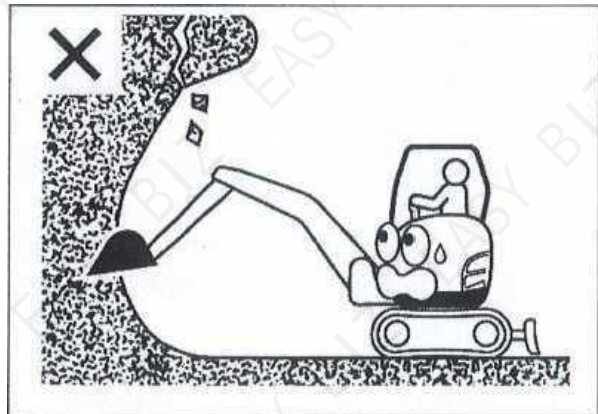
10. When moving near a cliff or embankment, there should be sufficient room or reinforcement to avoid ground collapse. In addition, do not approach the scene near a risk of falling rocks. Walking after the rain is even more dangerous. Do not approach the cliff or embankment without preparation.

11. When digging under the machine, please be sure to pay full attention, otherwise the car will overturn due to the ground collapse.



12. Do not dig holes under the cliff, which is very dangerous. Cliffs, the ground collapse can cause rockfall.

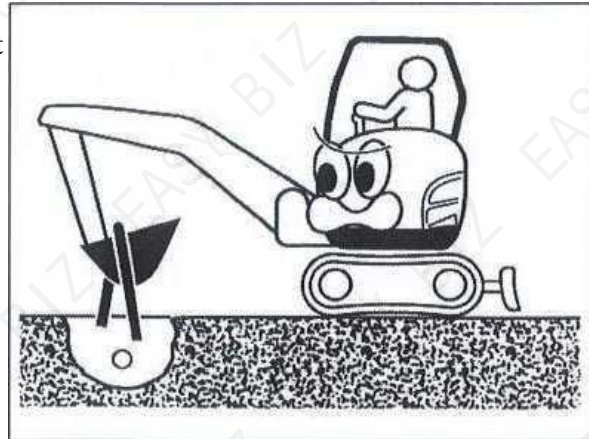
13. If the operation site or road conditions are not good, the stability of the machine will decline, operation errors may cause accidents or even overturned. Therefore, while leveling the operation site, it is also necessary to level the road surface or avoid obstacles to walk. In addition, when walking on the bridge or on the building, the load should be adjusted, and reinforced when the strength is insufficient.



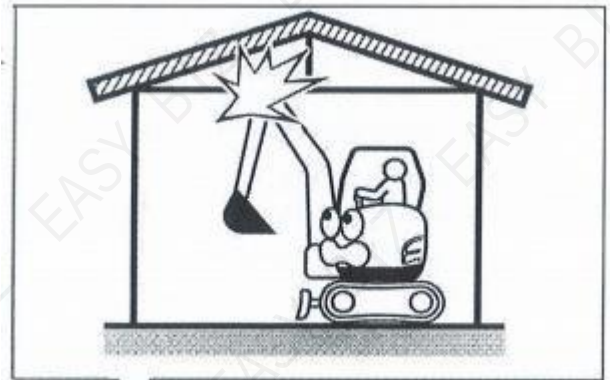
14. Similarly, in the transverse direction is easier to roll over than in the front and rear directions. Therefore, do not perform lateral rotation when the worker is under heavy load.

15. Plate is easy to slip. Please pay full attention to work in such easy to slip.

16. In the electrical wiring, gas pipes, upper sewer and other places for work, experts should be present guidance.
17. When bucket teeth are stuck in stones, or when bucket teeth are removed from stones, they may overturn due to reaction forces. Therefore, please pay full attention to your work. In addition, please do not walk with the bucket into the ground or lift the body, which is very dangerous.



18. When working in buildings, pay full attention to overhead surface, exit, access and floor surface strength.



bulldozer width 1500MM

19. Notes in the process of the foot expansion operation, under the hydraulic action, the expansion range of the foot width is 1300mm

\* - 1500mm

◆ Please only reduce the foot width when passing through flat, narrow places.

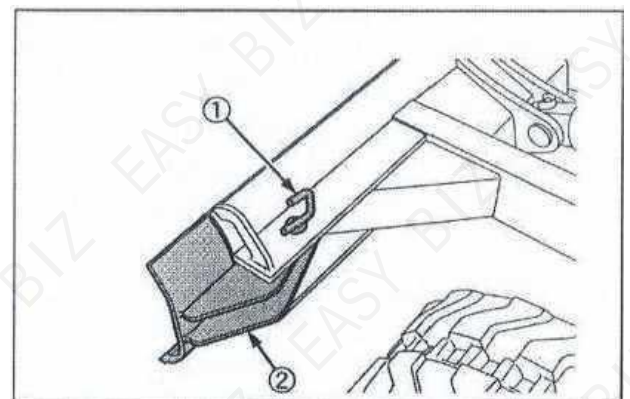
When the

◆ is equipped with extended bulldozers, the body may pass through but hit the bulldozers.

Reduce the bulldozing width for assembly.

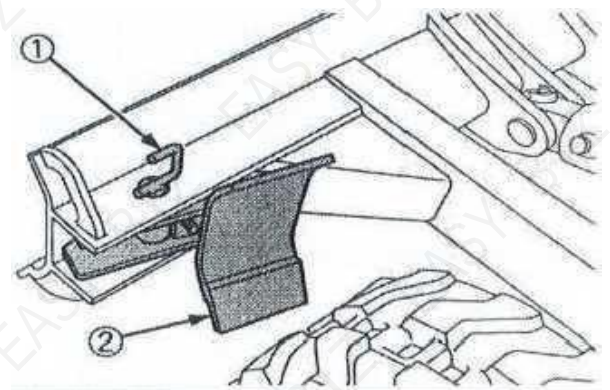
◆ When walking, excavation work, bulldozer work, crushing hammer work, you must maximize the foot width.

Small foot width may cause a rollover.



Bulldozer width 1300MM

- 1 Push soil shovel pin
- 2 Extended push soil shovel



---

20. Either the foot may be a passive armor boom cylinder during swing

nip. Do not extend your feet in front of the machine.

21. About cargo lifting operations

Please absolutely do not carry out the goods lifting operation, otherwise it will cause the goods to fall or overturn, which is very dangerous.

Do not operate with the local crane instead of the crane



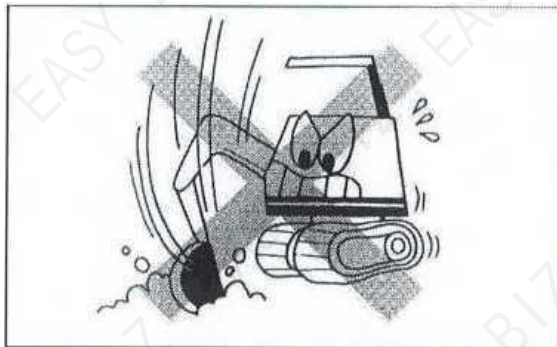
## Operation prohibited by backhoe excavator

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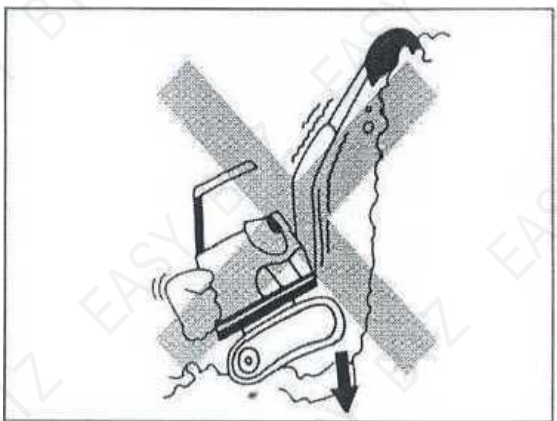
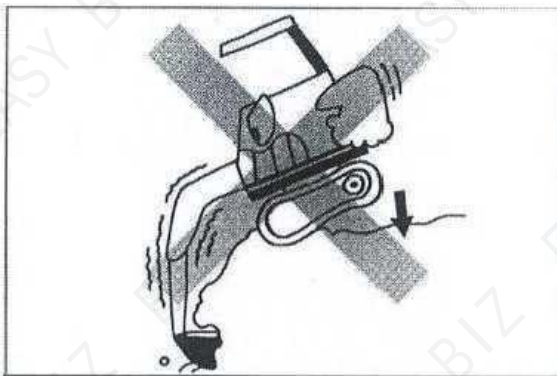
(1) is prohibited from using rotary force for operation.(Using bucket, etc.)



(2) No operation by using the falling gravity of the bucket (pile driving with the bucket, etc.)



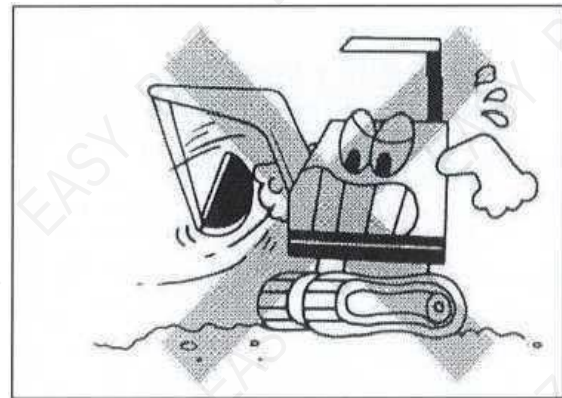
(3) It is forbidden to use the falling gravity of the body for operation. (Using the falling force of the body for excavation operation, etc.)



(4) It is forbidden to use the walking force for the operation. (Push the bucket into the ground for walking, etc.)



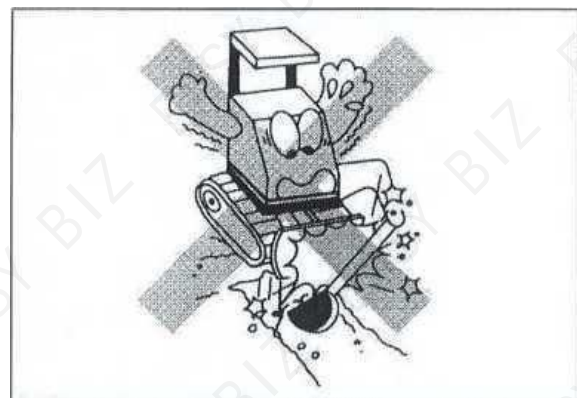
(5) Buckets remove soil. (No removal by bucket end)



### Notes for the operation of the backhoe excavator

---

(1) Pay attention to the bulldozer When digging deep in front of the bulldozers, be careful not to collide the boom and butt tank with the bulldozers.



(2) Pay attention to the folding of the working device

Be careful not to collide the bucket against the shovel when folding the working device during walking and transportation.

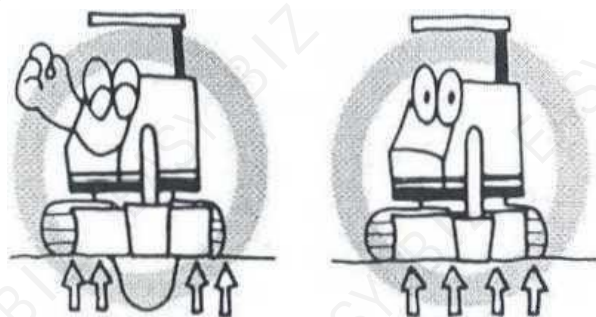
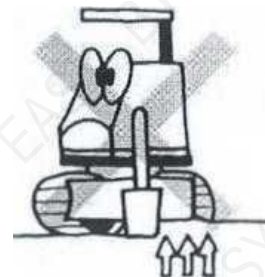


(3) Pay attention to the impact of the bulldozers

Do not strike the bulldozing against the rock. Otherwise, it can cause premature damage to the bulldozers and cylinders.



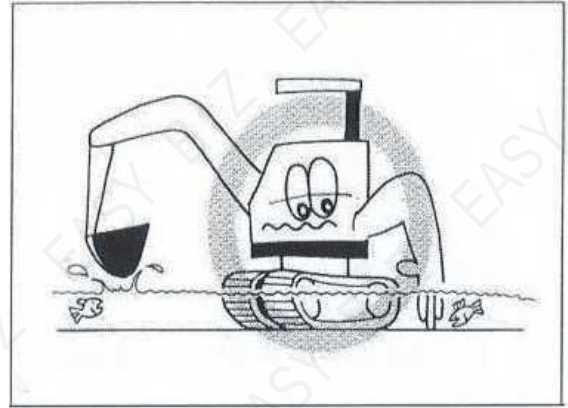
(4) Bilateral support should be used. When the bulldozer is used as a support foot, only one side of the bulldozer should be prohibited for support



To worksafely

Please be sure to read

(5) Pay attention to the allowable water depth  
When working in water, please confirm that the pins  
and plugs are tight. After fixing, the water depth  
does not exceed the upper part of the idler track.



Attention:

After the operation,

be sure to remove the soil and rinse it clean, and then add butter to the fulcrum part.

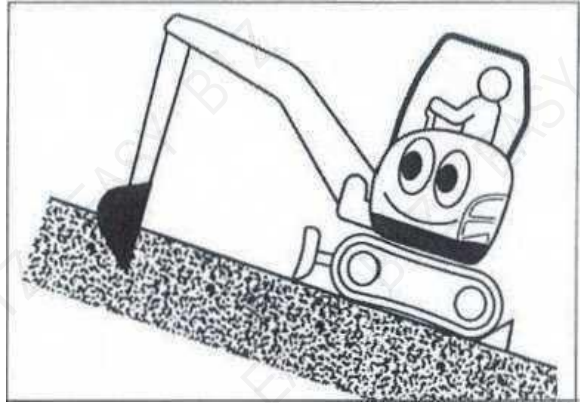
When working on the seashore, please wash the car carefully to remove the adhesive salt.

Also thoroughly maintain the electrical components to prevent corrosion of the mechanical components.

### Notes after the work

---

1. Be sure to park your vehicle on a flat ground.  
When parked on the sloping area, insert the bucket teeth into the ground and brake the tracks.
2. When leaving the driver's seat, Please drop the bucket to the ground Lock the safety lock lever  
Stop the engine, and pull out the key.
3. When keeping the machine, the protective cover should be covered after the muffler is cooled.  
(Otherwise, the risk of fire occurs)



### Notes for maintenance

---

1. When you need to leave the driver's seat due to the inspection and cleaning or the separate inspection and adjustment, please close the engine first. It is very dangerous to check while the engine remains running.  
Please select a solid and flat ground before checking.
2. When maintaining and maintaining the machine, clearly hang the "ongoing maintenance and maintenance" warning plate in the conspicuous position of the machine to avoid inadvertent contact with the machine. In addition, please also hang a warning card around the machine.



3. When maintaining and replenishing fuel, remove items that may ignite fuel and batteries

fire precaution measure:

- \* Please use non-flammable oil products to rinse the parts, etc.

- \* Please eliminate ignition hazards

- \* Please prepare fire extinguishers and other firefighting equipment.

- \* When checking fuel, oil, and battery solutions, etc.

- \* Stay away from the especially during grinding or welding.

4. The gas of the battery may cause a fire and

explosion.

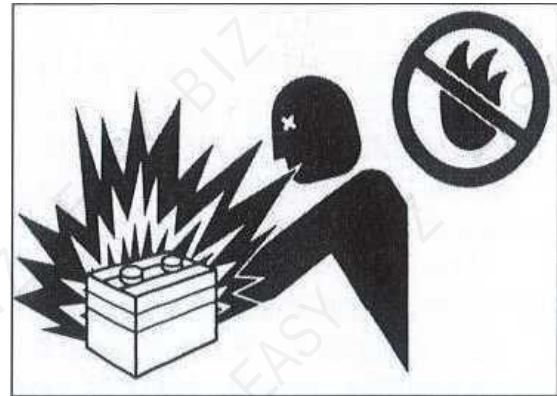
- \* Do not use an open flame near the battery, and do not keep the battery close to the fire source.

- \* Do not check the battery with short-connected metal plates. It's dangerous. Always use a voltmeter or a specific gravity meter to check.

- \* Do not charge the previously frozen battery. Otherwise, there is an explosion risk.

- \* When the battery is frozen, keep the battery temperature above 15 °C.

- \* Battery solution (dilute sulfuric acid) can cause blindness or burns. If the battery solution sticks to your skin and clothes, rinse it with a lot of water immediately. Also, if the battery solution is splashed into the eye, seek medical attention immediately after washing with water.



5.If the battery level is below LOWER (minimum level line), do not use or charge it.

If continued below the LOWER (minimum level line), it will promote the aging of the inside of the battery, not only shortening the service life of the battery, but also leading to an explosion. Supplement water immediately to reach the level between UPPER LEVEL (upper) and LOWER LEVEL (lower). (Water-replenishing batteries)

6.Please maintain adequate ventilation in places with poor ventilation. Especially in the engine exhaust emissions or the treatment of fuel oil, washing oil, paint class, must be fully ventilated.

7.During maintenance, please use the proper tools. If you do not use regular tools during maintenance, then, not only inefficient operation, but also may lead to injury.

8.Maintenance and maintenance around the engine should be carried out after the cover bracket is effectively fixed.

9.When work must be interrupted to remove the hydraulic system section, please shovel Fight, bulldozing shovel down to the ground, and then turn off the engine.

After starting the machine, the equipment and hydraulic oil and lubricating oil are in a high temperature and high pressure state. When the hydraulic oil is in a high temperature state, there is a risk of scald.

The hydraulic oil emitted during pressure has the strength to dip into the skin and can cause damage.

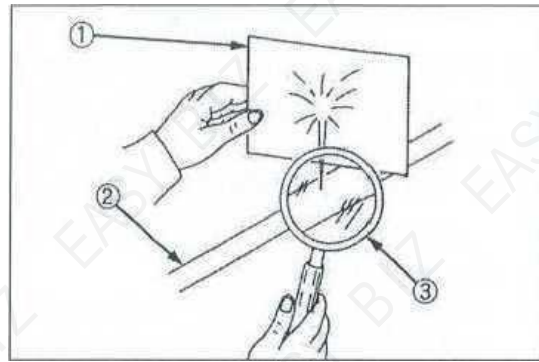
In addition, because the plug or the screw flying out may cause injury, the disassembly of the hydraulic system components must be performed after the temperature of each part drops and the residual pressure is removed.

When loosening the plug or screw, clear the body from the front, and slowly loosen.

In addition, when the fuel and oil are leaking under high pressure, be careful not to keep your hands or face close to the leakage area. It is extremely dangerous to face the leakage site.



- 
10. When looking for oil leakage from invisible holes, wear protective glasses and use cardboard to help locate.  
Once the oil is soaked on the skin, it may cause  
Heavy allergic reactions, in this case, should be doctor.

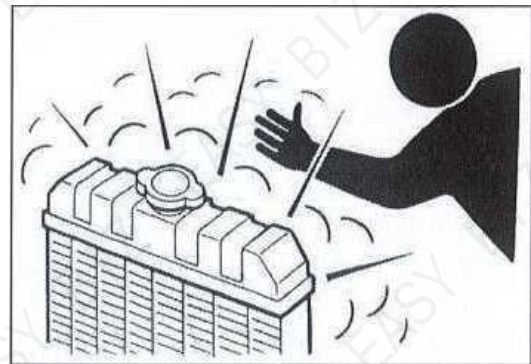


more severe

- 1 Grass paper version
- 2 high-voltage tube
- 3 magnifier

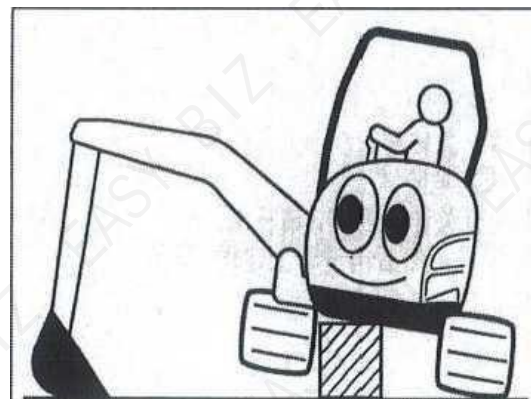
- 
11. Check, replenish, and replace the radiator coolant after the engine is fully cooled.

After the operation, if the radiator cover is loose, steam or hot water will spray out, sometimes causing burns. In addition, the loose discharge plug or plug will sometimes be scalded by hot water. In addition, after the engine has just stopped, the muffler is still in a high temperature state, please be careful not to touch to avoid burns.



12. When welding directly on the body, turn the start switch to at least the "STOP" (off) position. In addition, when welding, due to heat will produce sparks, so do not put between welding, parts and grounding parts may make the cylinder or sealing bearing and other parts and lead to bad conditions.

- 
13. In order to carry out maintenance and maintenance, to use the working device to lift the body, do not enter below at this time. When entering below, safety pads and safety pillars should be placed below to prevent sudden fall. Also, place the safety lock lever in the locked state.
14. If the electrical system is submerged, it may sometimes lead to a short circuit or poor action.



To worksafely

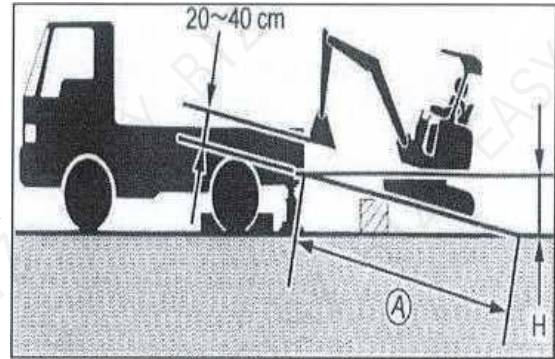
Please be sure to read

Do not wet the electrical components of instruments,  
starting switches, batteries, sensors and connectors.

## Precautions for transportation

Please note: When moving the truck when moving the truck.

1. Please comply by the regulations and walk safely.
2. When loading and unloading, the truck should be parked in a flat place and press the brake, and brake in the front and back of the tire to ensure that the tires will not move, and then set up a sufficient strength and width of the loading platform for loading and unloading. When not using the loading and unloading board, be sure to unload the board and remove the oil



(A) Above 4xH

or substances prone to skid, and then conduct slow loading and unloading.

Turn the working device in the direction of walking, and show the bucket rod and the loading plate in a vertical or slightly pulled position, leaving 2040 cm distance between the bucket and the loading plate. Please use loading plates of more than 4 times the height (H) of the chassis.

If the plate is bent, use Stand (abutment) to prevent the plate from bending.

Do not use the loading and unloading board for loading and unloading in rainy days, because the loading and unloading board is easy to skid, very dangerous.

In the case of not using the loading and unloading platform or loading and unloading board, please refuse, do not load and unload the body through the moving arm, bucket pole, because it may lead to fall, rollover, very dangerous. In addition, it is strictly prohibited to adjust the direction on the loading and unloading board.

3. In the truck, contact the bucket, bulldozers and fix them to the truck, the chassis surface, then brake the track, and fix the body to the truck trunk surface with a wire rope.

In addition, due to the different truck models, some trucks need to shovel, bucket collection in the truck plate of the gear, and the wire rope is fixed to avoid moving the bucket.

4. Please absolutely do not start sharply, stop sharply, or turn sharply during the transportation process, otherwise the machine will move or lose its balance, which is extremely dangerous. (For details, please read the "trucking" project carefully before doing the above operations.)

### On the waste disposal

Donotthrowawayorburnwaste,otherwisenotonly causeenvironmentalpollution, butalsosubjectto legal sanctions.

#### 1. When dealing with waste

Collect the waste liquid discharged from the machinery into the containe rivers, lakes or oceans.

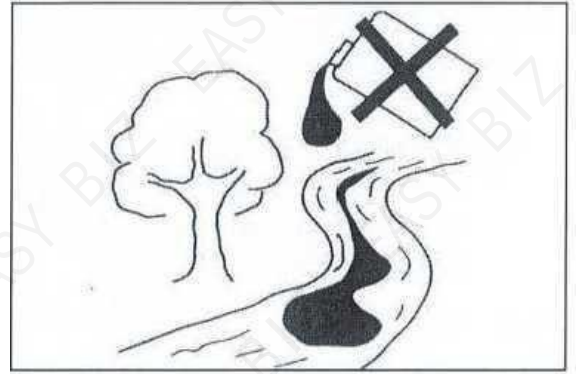
#### 2. When discarding or burning waste oil, fuel oil, coolant

(non-freezing, liquid), refrigerant,

solvent, filters, batteries, oak, rubber and other harmful substances,

please negotiate with thesales storeo rtheindustrial

wastetreatmentunittodisposeofthem inaccordance with the specified rules.



### Fire and explosion prevention

\*Fire and explosions can cause personal injuries. To prevent these accidents, the following precautions must be observed.

\*When attached with fuel,

oil and other flammable

materials,removethemimmediately.



\*Donotpile up flammable materials on the machine.

If flammable liquid leaks and falls on high

\*temperature or electrical parts, it may cause fire and cause serious injury or damage to the parts.

\*Diesel oil and engine oil are all flammable. The antifreeze used in the cooling system is also flammable.

\*Pleasecheck and clean in time to avoid fuel, oil, other flammable materials, (paperscraps, rags, work gloves, fallen leaves, wood chips, etc.) adhesion and accumulation near high temperature parts (engine, turbocharger, silencer, etc.) and electrical components (batteries, etc.).

\*If there are fallen leaves and oily dust inside the body, it may induce the vehicle fire, very dangerous. Please check and clean it up regularly.

\*Please check the electrical wiring daily. Repair the loose or damaged wiring before running the machine. The joints of all electrical wiringshall be kept clean and firmlyconnected.

\* Please check the piping and hose for wear or damage.

The piping and hose must be fixed with proper support and clips and properly arranged.

All connectionsare tightened with the proper torque.

\*Otherwise, a fire will be caused by leakage.

To work safely

Please be sure to read

Please check the engine exhaust related parts (muffler, tailpipe, etc.) for rust or damage. Otherwise, the fire will be caused by the exhaust gas leakage. For damage, replace it with new parts.

The dust produced when repairing the resin parts is flammable and explosive.

When repairing such parts, stay away from fireworks and well ventilated.

Do not weld or air cut pipes or containers containing flammable liquids.

Clean the piping or container with a flame retardant solvent before welding or cutting.

The container containing fuel and oil should be properly marked and prohibited from irrelevant personnel taking out. Put oil debris and flammable materials in a safe container.

Fireworks are prohibited in places where flammable materials are kept.

Please keep the machine away from the place where fireworks exist.

To work safely

Please be sure to read

Regular inspection should be conducted. In order to use the machine safely and prevent accidents, please make a regular inspection. The time recorded in this article is the time indicated by the working hour meter. The actual inspections should be based on the daily, weekly, monthly unit determination date and maintenance.

---

★ above lists the main precautions to prevent prone errors during machine use. In addition In addition, this

article in

this case are attached signs to this

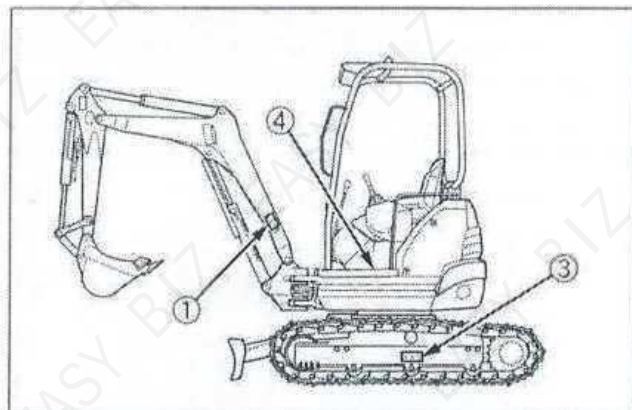
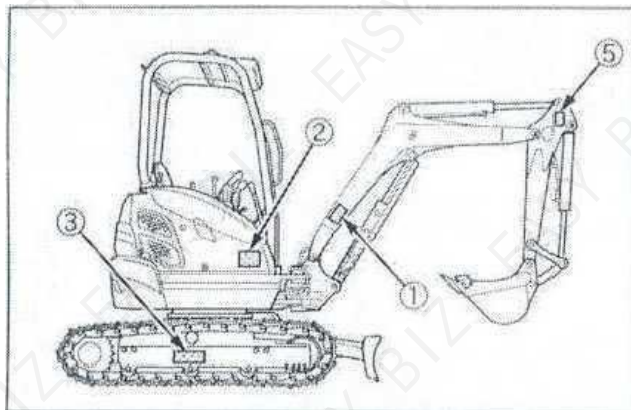


Please read it carefully and follow it strictly.

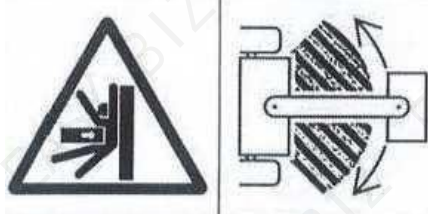
Obtain

## Labeling and posting locations

- ◆ native has posted tags about security. Please drive on a full understanding. The labels are described below,  
Please read it carefully.

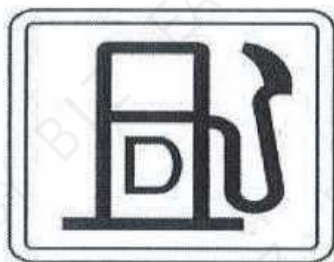


(1) Part No.: QL25-75-00420 (on both sides)

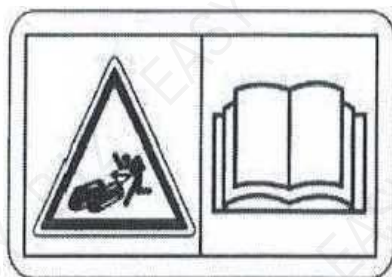


Be careful to clip Do not enter within the rotationrange

(2) Part number: QL25-75-00100



(3) Part No.: QL25-75-00270 (on both sides)



Always read the operating instructions in detail

(4) Part No.: QL25-75-00240



get an electric shock

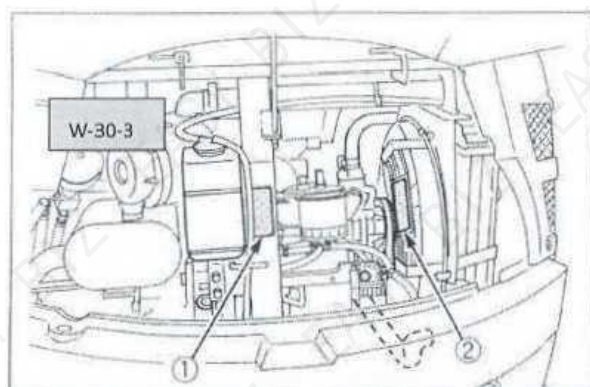
wide berth

(5) Part No.: QL25-75-00160

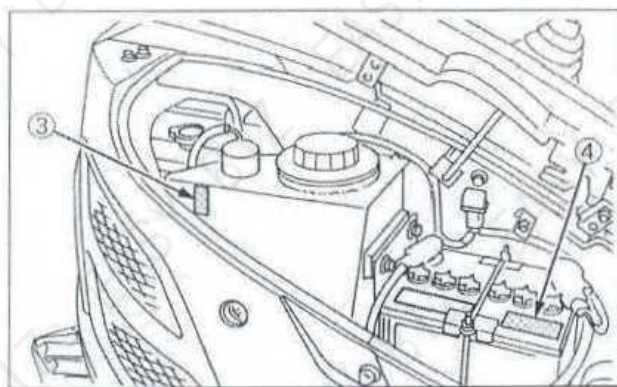


小心被撞

切勿靠近



(1) 零件号: W15-75-00220



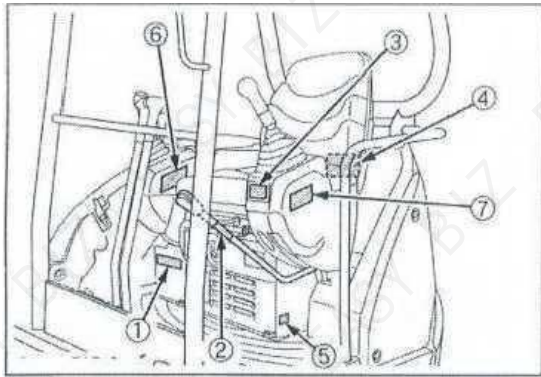
(2) 零件号: W15-75-00210



小心烫伤

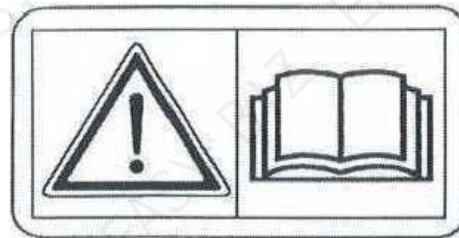
切勿接触





(2) Part No.: QL25-75-00070

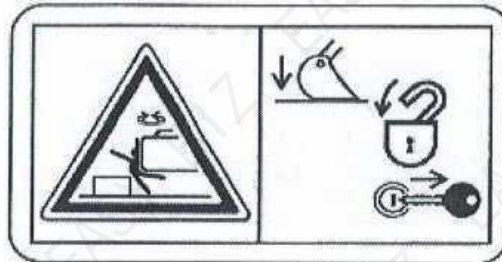
(1) Part No.: QL25-75-00280



警告

务必详读使用说明书

(3) Part No.: QL25-75-00180



Becareful to start suddenly

Put the bucket to, lock the ground, and close the engine

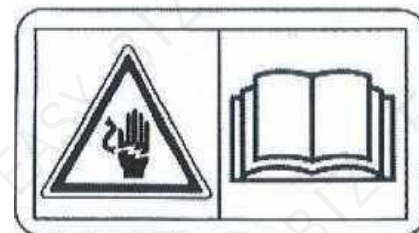
(4) Part No.: QL25-75-00140



Be careful to hook hanging

Start

(5) Part No.: QL25-75-00250



Becareful when operating the cable, and you must read the operating instructions in detail

(6) Part No.: QL25-75-00130

Gingival bell cabinet cabinet, II ao oyster hui, Zhou push Wt small | red flat hole, chang fly "reward" II car 10 competition shame curled up willing to stir the royal

(7) Part No.: QL25-75-00110



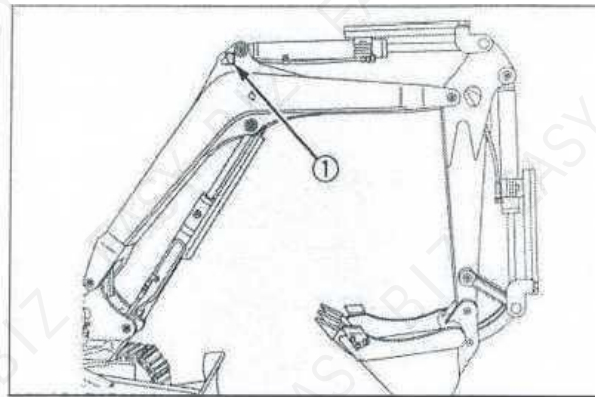
not cum in

a i«fed>;?RI?liGKS±.SrtrIEKlf  
-a kind of dragon  
2 Lin 51 but the boiling catch Juan Nuo cloth like a lamp donkey (0 force color for the department of the winter a two Sakai n? To niis for machine\* to nTj \*.  
ttGSKIHX SIH«  
1-Page # 3! No if yun fen gong  
\*fast zuo ding and machine Hint,

To worksafely

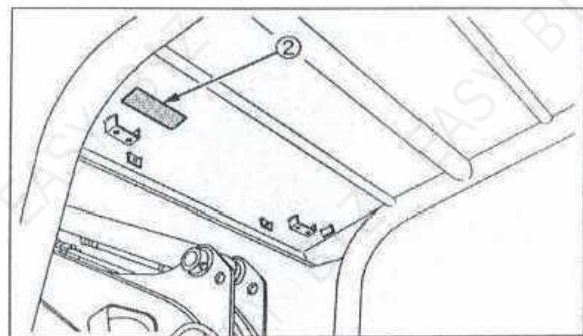
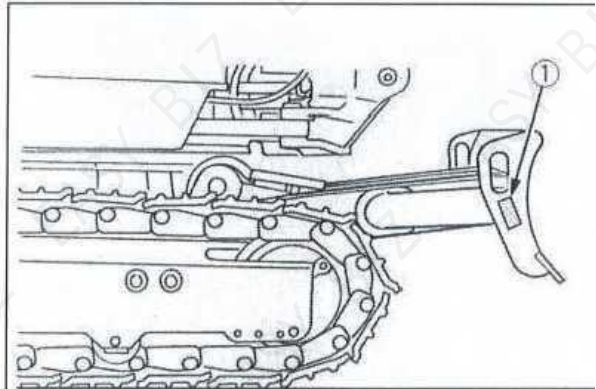
Please be sure to read

(1) Part No.: QL25-75-00190 (onboth sides)



(2) Part No.: QL25-75-00480

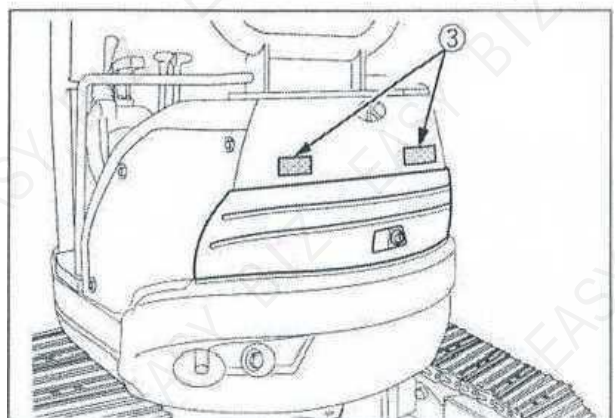
|         |                                                                                                           |
|---------|-----------------------------------------------------------------------------------------------------------|
| Warning | In order to reduce injuries and injuries caused by rollover, M I when safety frame are installed, Control |
|         | When the safety vertebra is damaged, it need not be repaired<br><u>Clear for direct replacement.</u>      |



(3) Partnumber:  
QL25-75-00400



Be careful of pinching, do not approach



## Maintenance of the labels

- 
1. Labels should always be kept clean and be careful not to scratch.

If the label is dirty, rinse with soapy water and wipe it with a soft cloth.

- 2.If you wash your car with a high-pressure washer, the label may be peeled off. Therefore, please do not flush the label directly with high-pressure water.

- 3.If the label is broken or lost, please order from the product sales company and repost the new label.

- 4.When posting new tags, please completely wipe off the posted surface and re-post it in the original position after drying.

5. To replace the labeled part with a new product, also change the labels simultaneously.

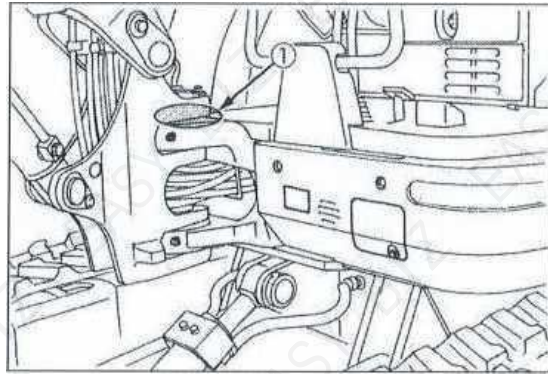
## About repairs and warranty

If there is a failure or confusion during the use process, please contact the sales store where you purchased the product or the repair shop designated by the company.

Please inform the following:

- (1) Model name and chassis number
- (2) Engine name and engine number

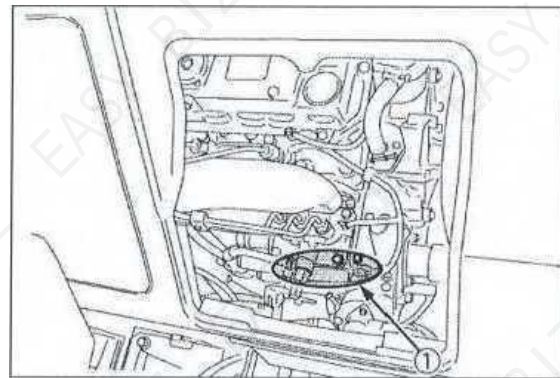
In addition, the sales store has an authentic



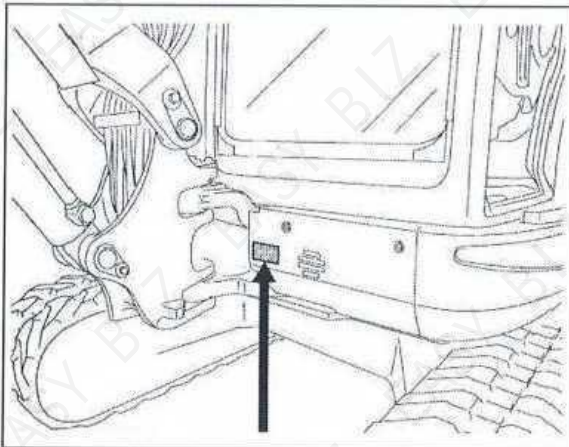
(1) Chassis



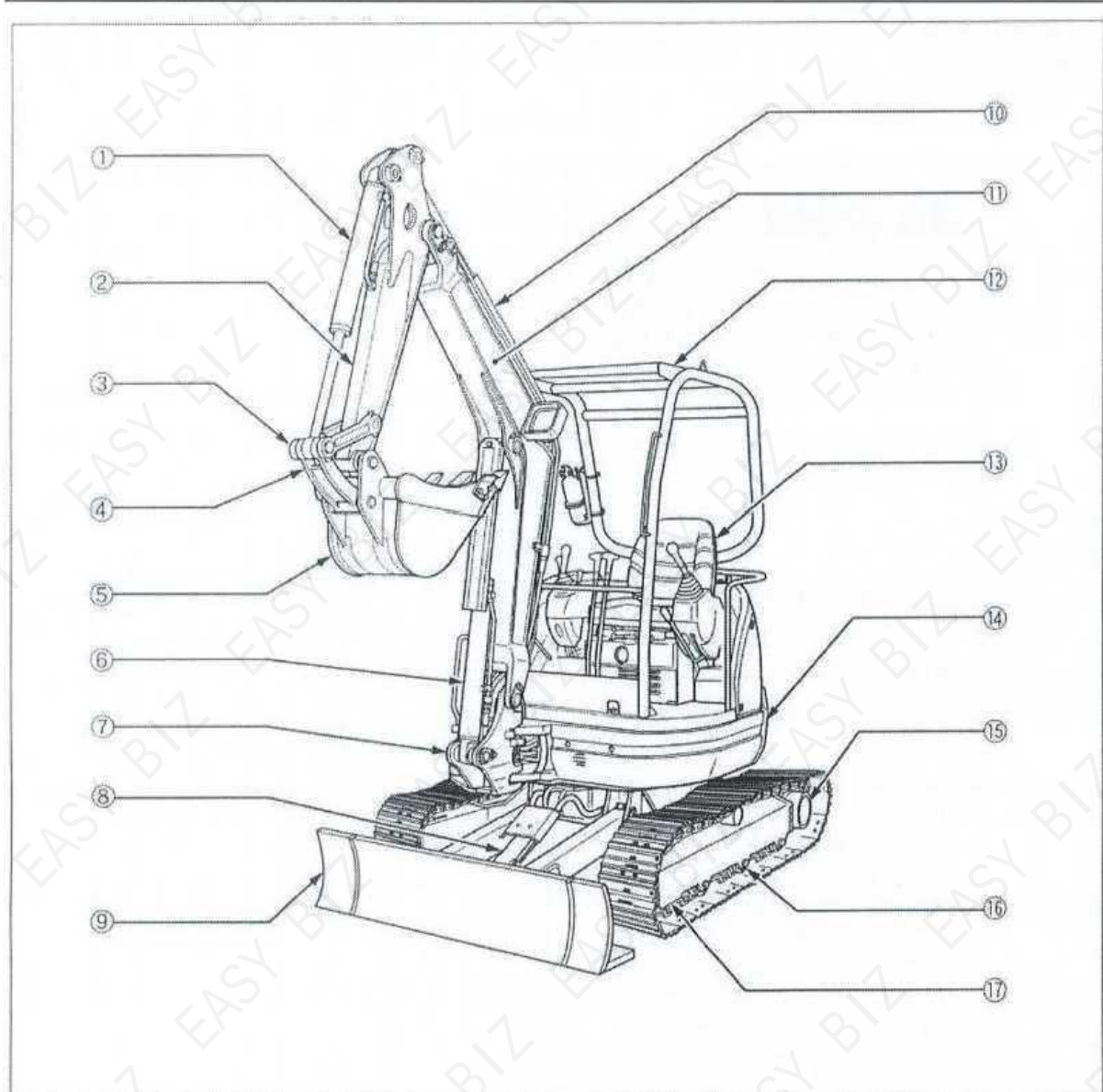
It will be dangerous to transform the machine, so do not modify the machine. Because the purpose of transformation or use is different from the description of the instruction manual, the purpose of use is indeed different, and it does not belong to the scope of the manufacturer's guarantee, so please note.



(1) Engine



## 各装置の説明



- (1) Bucket oil
- (2) The pole
- (3) Bucket
- (4) bucket
- (5) Shovel

- (6) Arm oil cylinder
- (7) Swing the bracket
- (8) Bullet soil
- (9) Push the soil

- (10) Stick cylinder
- (11) Boom
- (12) 4-post TOPS canopy
- (13) Driver's seat

- (14) reve
- (15) Fina
- (16) thru
- (17) id

## About the use of each device

### Use of safety devices

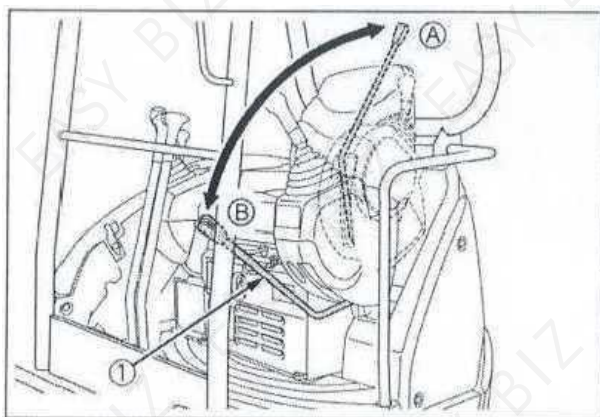
- security lock rod  
(Except for bulldozer and swing part)



When stop or leave the machine, always drop the bucket to the ground and lock the safety lock lever. Otherwise, the working device will be very dangerous. Therefore, be sure to get off after confirming that the lock lever is in the locked position. Also, please pull out the key to prevent others from misoperating the machine.

replenish

- \* The engine cannot start when the safety lock lever is not in the "locked" position.
- \* When the safety lock rod is in the "locked" position (not fixed state), the working device will not operate even if the working device is operated.



(1) Safety lock rod

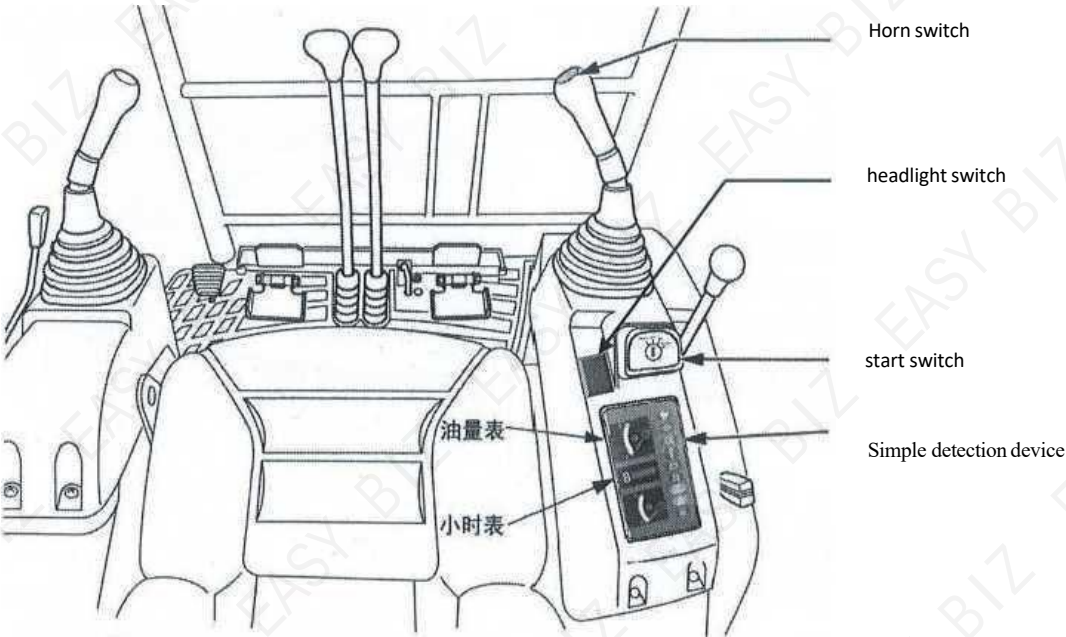
(A) "Release"

(B) "Locking"

replenish

- \* The worker unit will be inoperable when the safety lock lever is pulled up. Pull pull the safety lock bar when getting on and off the bus. Also, when leaving the machine, turn off the engine after the bucket touches the ground. When the safety lock lever is placed in the "lock" position, the walking handle is hydraulically locked and unable to walk.

Function of the switch and instrument indicators



Reference page

|                                  |    |
|----------------------------------|----|
| (1) horn switch.....             | 34 |
| (2) Headlight switch.....        | 32 |
| (3) firing switch.....           | 32 |
| (4) Simple detection device..... | 33 |
| (5) fuel gauge.....              | 33 |
| (6) hourmeter.....               | 32 |

To work safely

■ robbery switch

- "OFF" (Stop)

The key can be inserted in the "OFF" (stop) position.

- "NO" (revolve)

If you turn one gear right from the OFF (stop) position to the NO (Run) position, all circuits are energized and preheating is displayed.

(Note: The preheating time shall not be less than

3 seconds)

At this point, in order to light check, the indicator light for about 1 second.

- "START" (Start)

If you turn the key back to the right from the ON (Run) position and into the START (Start) position, the starting motor rotates and the engine starts.

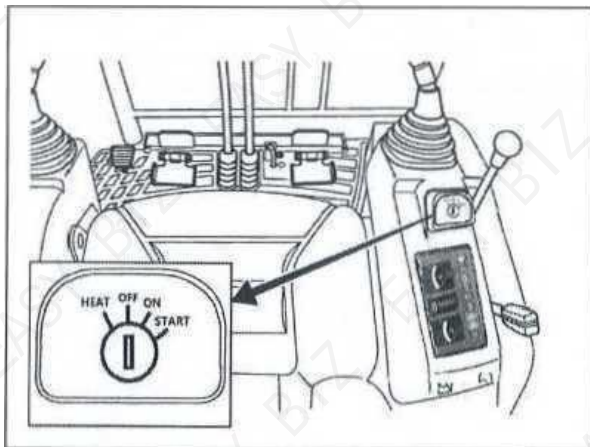
When you release it, the key automatically

returns to the "NO"

(Run) Position, so release the key when the engine is started.

| Application |

- \* When starting the engine, always place the operating handle lock lever in the "lock" position. If in the Release " position, the engine will not start.



| 1K Important Matters |

If a metal key chain is attached to the attached key, it will hinder the signal transmission between the key and the switch,

Please be sure to read

■ hour meter

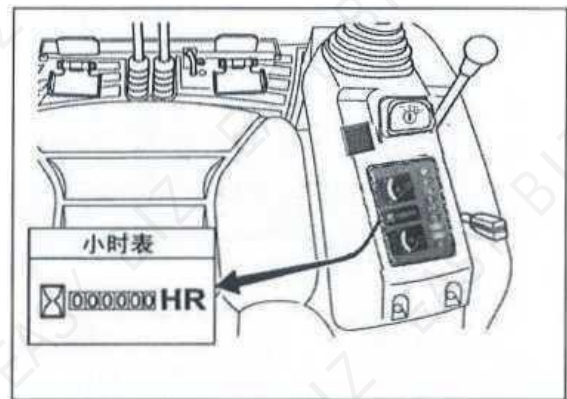
Displays the running time of the local segment meter

- \* Count method of hourly

The number of 1 hour increases about

1.

Since it is an electronic hourly meter, the meter will count stopped, even if the start key is in the "ON" (running) position.

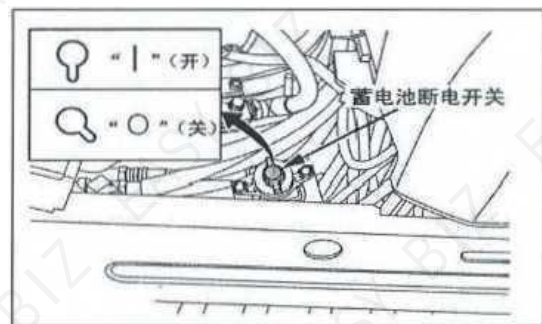


replenish

- \* The inside of the hourly meter cover is sometimes foggy by water droplets, which is not a failure. When the water vapor evaporates, the fog disappears.

■ battery power-off switch

Open the cover plate, you can see the battery power-off switch.



replenish

- \* Put the battery power-off switch in the ON (on) position and put the start key in the ON (on) position.
- \* Battery not powered when battery off switch in "OFF" (off) position.
  - \* The clock function of the battery power switch in the "OFF" (off) position.
- \* After placing the battery power-off switch and the start key in the "OFF" (off) position, most functions will not be available.
- \* Do not turn off the battery power-off switch when the starting key is in the "ON" (on) position, or when the engine is starting. Otherwise may cause the battery power off switch function decline, failure and other electronic parts failure.

## ■ fuel gauge



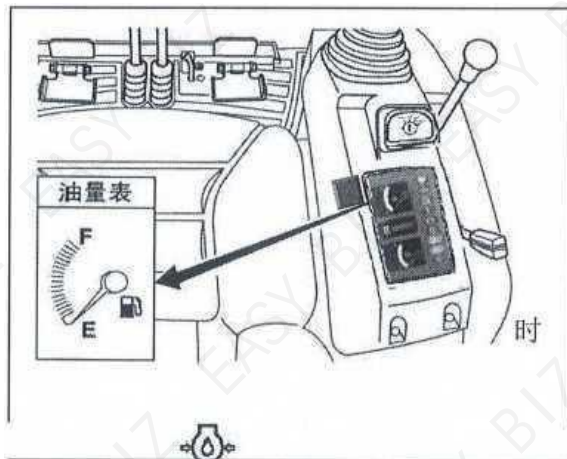
\* Be sure to stop the engine when replenishing the fuel.\*  
Please absolutely never get close to the fire source.

The outh was negligent It can cause a fire.

When the starting key is in the "ON" (running) position, the  
oil scale indicates the amount of oil remaining in the fuel tank.

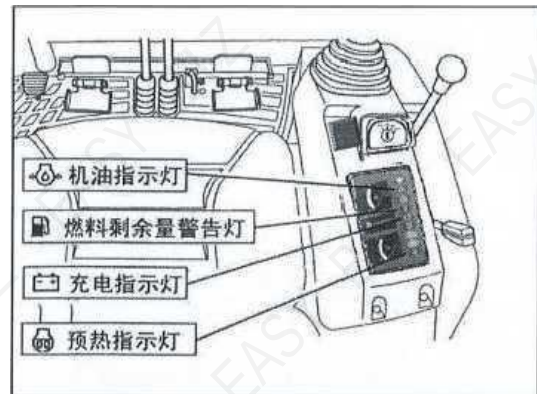
.1  
material particulars I

\* When the pointer of the oil scale approaches "E", please  
replenish the fuel as soon as possible. Otherwise, the body  
tilt may cause a fuel supply



interruption, which causes the engine to stop.

## ■ simple detection device



### charge lamp

During the engine operation, the charging  
warning light remains on when the charging  
system is abnormal. When the engine stops, light  
on the start key in the "NO" (running) position  
and turn off after starting.

### Fuel surplus warning lamp

Light when the fuel surplus is less than that  
shown in the table below

Fuel surplus ~

About 2L

### @ Preheat indicator light

Place the start key in the ON " (Run) position

Turn on the light and turn off at the end of the  
preheating. (About 5 seconds)

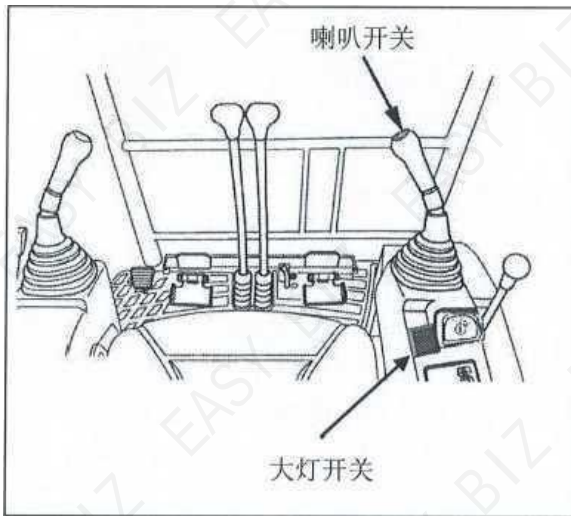
### Oil indicator light

When the lubrication system occurs  
during the engine operation.

Turn the start key in "ON" (running) position  
and the engine goes off. Stop the  
engine and check the engine oil when the engine  
lights is still on.

■ horn switch

When the starting key is in the "ON" (running) position, press the horn switch and the horn rings.



■ Job Light Switch

When the start key is in the ON position (running) position, place the work light switch in the ON position, and the work light is turned on.

## ■ seat adjustment

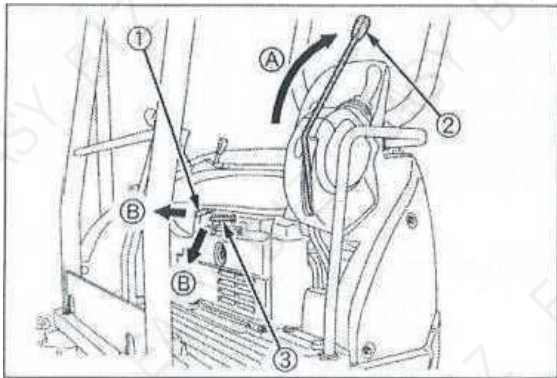
As the seat is turned forward and overturned when the engine starts up, the walking handle may be touched, causing the machine to walk. So be sure to close the engine and hold the safety lock lever locked before turning the seat forward.

Make sure that the seat has been fixed after adjustment

The seat can slide back and forth.

1. Move the forward and rear adjustment lever to the right and move the seat front and rear. Adjust the seat to a position that is easy to operate. Ensure that the seat is fixed after adjustment.

2. When turning the seat forward, put the safety lock lever in the "lock" position, stop the engine, pull the lock lever forward,



- (1) Front and rear seat adjustment
- (2) Safety locking lever
- (3) Seat lock lever



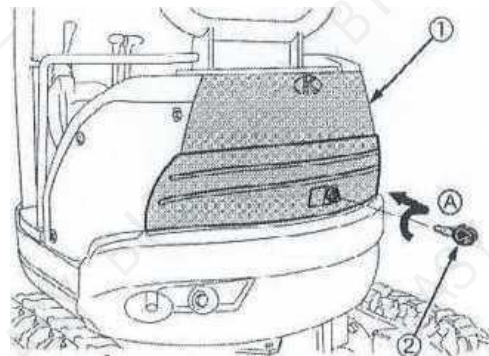
pay attention on to

\*Be careful not to pinch your hands when it comes to the rear hood

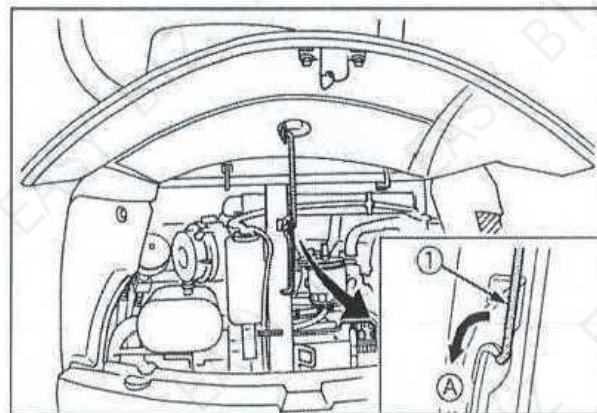
\*After the rear hood is closed, please lock it securely

\*Do not force open the rear hood with the start key

1. Insert the start key into the key hole and turn it to the right, the touch button takes effect. Press down until it locks into contact, then raise the rear hood fully and the struts will automatically snap into place to secure the hood.



2. Bubar, unlock. Remove the hood until you click to make sure the rear hood is closed, then turn the starting key and lock it.



(1) The strut

(A) lock contact

Do not run the machine with the hood open.

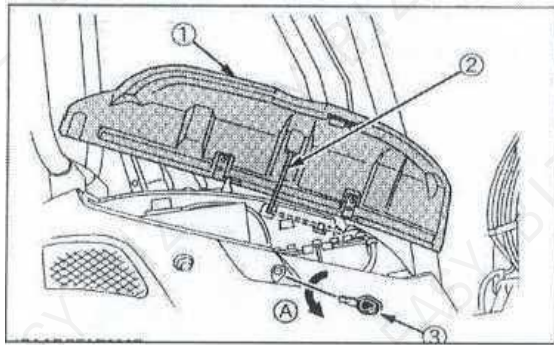
Otherwise, the hood will be damaged.

# right hood on and off



\*Be careful not to clip your hands when closing the right cover. \*When the right hood is disclosed, lock it.

1. When open, insert the start key into the keyhole, turn left and lift it up, and insert the



lever into the right hood for fixation.

2. When closed, lift the right hood slightly and

\* Observe the [seat adjustment] item when turning the seat forward.

\* After restoring the seat, confirm that the seat is locked

pull out the support bar fixing part On the mount, then close the right hood, turn the start key right and lock it.

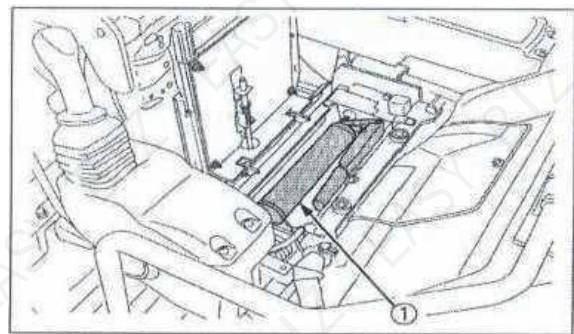
## Butter Gun Collection Parts



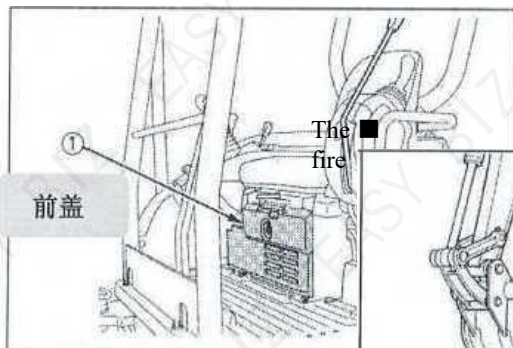
\* Because the seat is turned forward when the engine is starting, the walking handle may be touched, causing the machine to walk. So be sure to close the engine and hold the safety lock lever locked before turning the seat forward.

The lower part of the seat houses the butter gun. Pull the seat lock lever to use the seat forward

1. Insert the front end of the butter gun into the air and separate the main body and handle on the metal parts.
2. Make sure the seat is correct to avoid touching the butter gun.

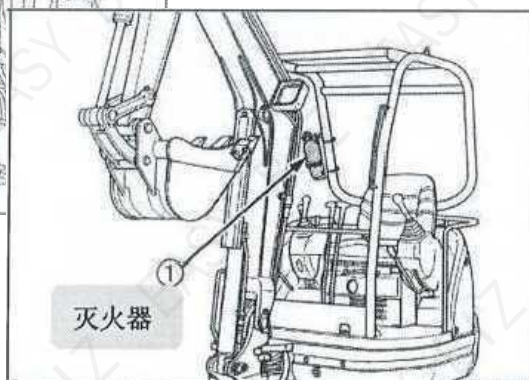


(1) Butter gun

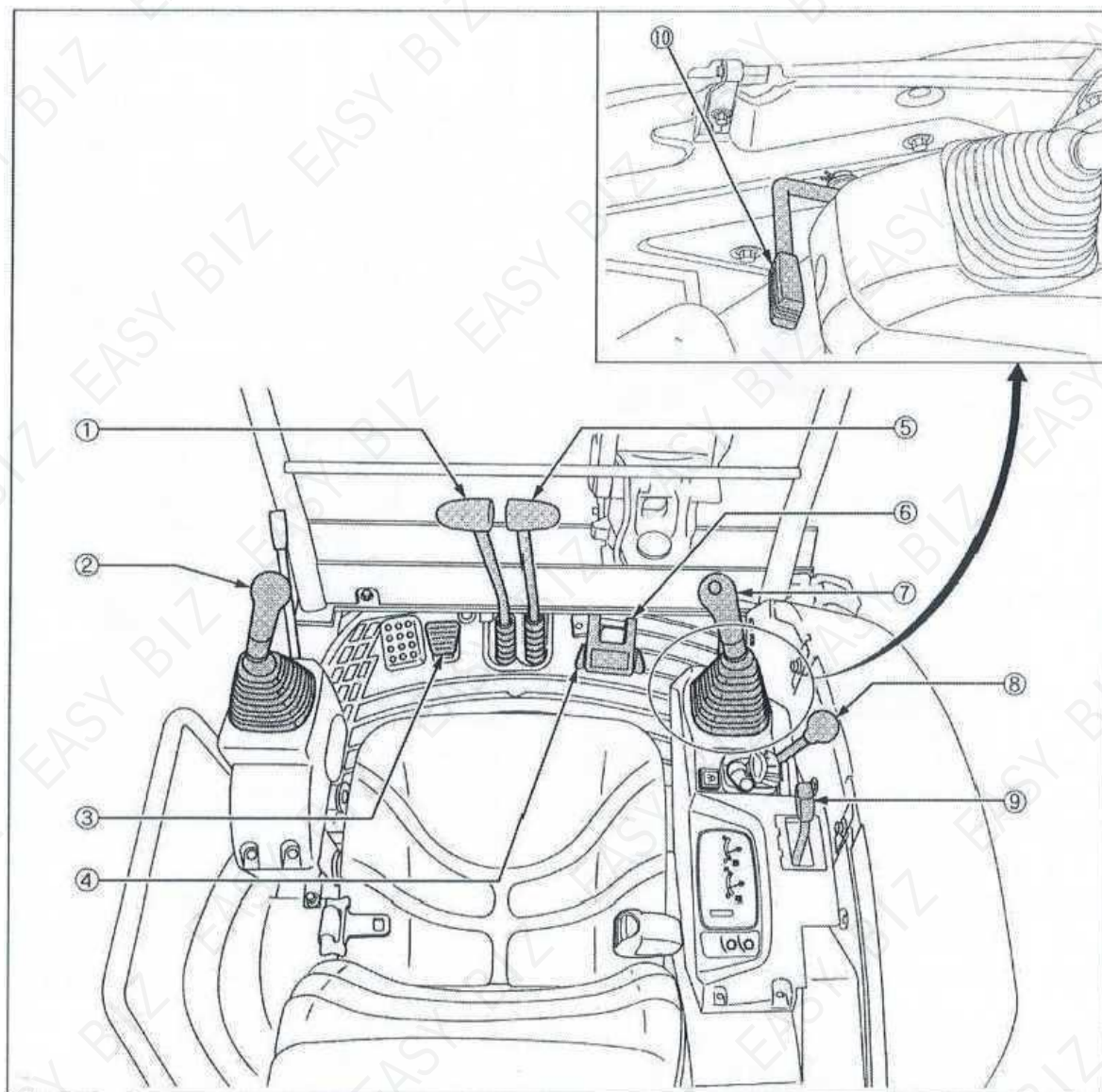


(1) The right hood

(2)



## Use of the operating handle



- (1) Walking handle
- (2) Left-hand
- (3) Walking on the
- (4) Shake the

- (5) Walking handle
- (6) Swing operation of
- (7) Right-hand
- (8) Bullshovel

- (9) The throttle handle
- (10) Leg extension and push

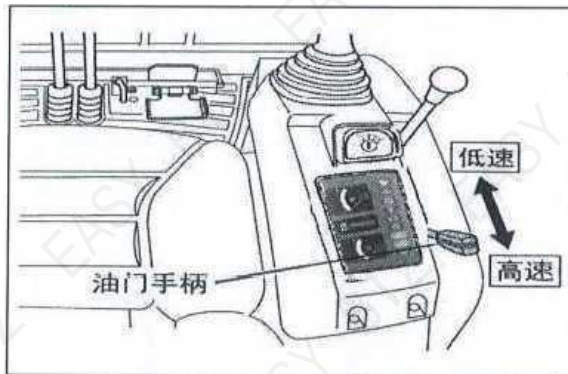
### ■ throttle handle Sitting

in the driver's seat

1. If the throttle handle is pushed (high side),

It increases the engine speed.

2. When closing the engine, turn the throttle handle to the low speed side



### ■ walking handle (left, right)

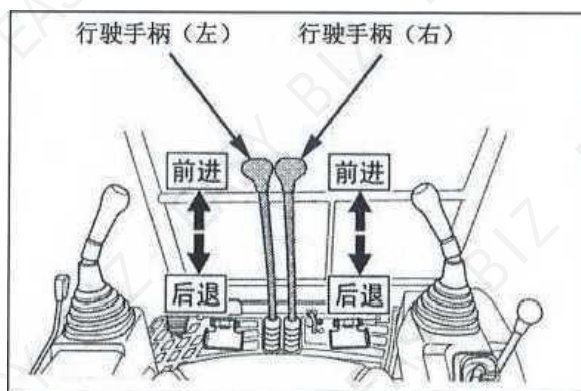
Push to the end and place the start key in the

\* If the bulldozer, idler wheel are placed behind and the handle is operated, the body will walk in the opposite direction to the handle. Please confirm whether the bulldozer shovel and idler wheels face front or rear. (Bulldozer facing front)

If not confirmation.

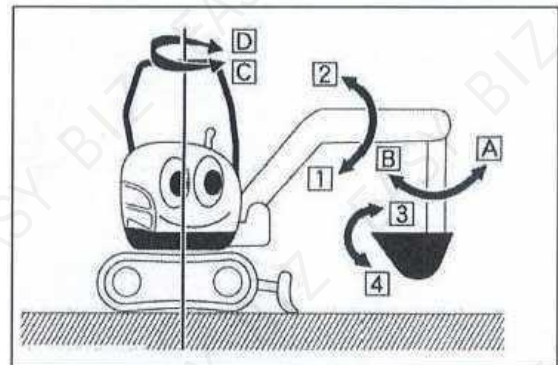
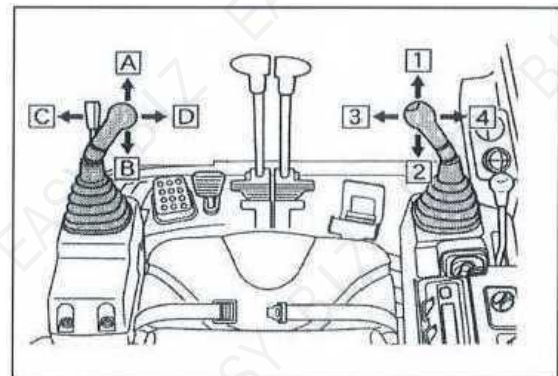
It moves in the opposite direction, sometimes causing injuries.

If sitting in the driver's seat, when the bulldozer, idler in front, the handle backward forward, the handle backward back.



The ■ left and right operating handle

Move arm, bucket, bucket and swing. The handle



| Operation | The left hand operates the |
|-----------|----------------------------|
| A         | The pole stretched out     |
| B         | The pole pull up           |
| C         | anticlockwise              |
| ,D        | right handed rotation      |

| Operation | The right hand operates the |
|-----------|-----------------------------|
| 1         | Move the arm down           |
| 2         | Move arm lift               |
| 3         | Shovel excavation           |
| 4         | Shovel bucket unloading     |

replenish

\*Driving operation cannot be performed when the operating handle lock lever is in the Lock position.



\* Do not rotate in the inclined area, otherwise there will be a danger of rollover. When work should not be done in inclined areas, the machine position shall be leveled before operation.

A If negligent...

It may be an injury accident caused by the rollover.

#### replenish

- \* With the hydraulic pilot system, the operating is operate only when the engine is working. Contact the bucket to the ground before rotating the engine at low speed.
- \* When on and off, pull the handle lock lever and place it in the "lock" position.
- \* If the hydraulic oil temperature is low, the handle veness of the operating device will become worse, so do the operation.
- \* The operating handle is slightly heavy during the low hydraulic oil temperature, which does not affect the operation of the machine.
- \* When removing the hydraulic equipment, follow the following steps:

Reduce the engine speed and that the bucket to

Please wait over 10 minutes to remove the residual pressure of the hydraulic loop. To prevent danger, the above steps are indispensable.

(1) Wwing the pedal cover

#### ■ swing operating pedal



\* Without the swing operation, please cover the swing operation pedal cover.

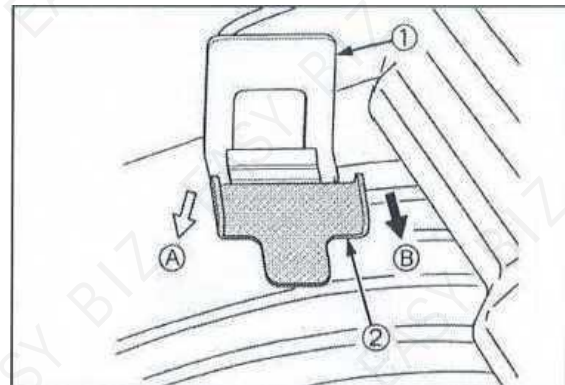
If negligent. . . .

It can cause accidental misoperation, and sometimes it can cause injury accidents.

the ground.

Stop the engine and move the handle full direction.

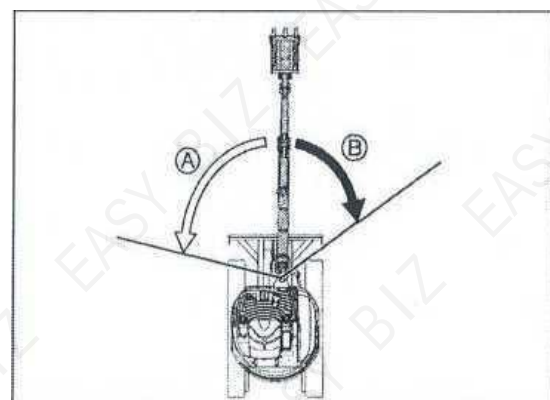
The working device can swing from left to right.



Left swing.. .....Press on the left side of the pedal. Right swing.....Press on the right side of the pedal.

(2) swing  
operating pedal

(B) Right  
swing

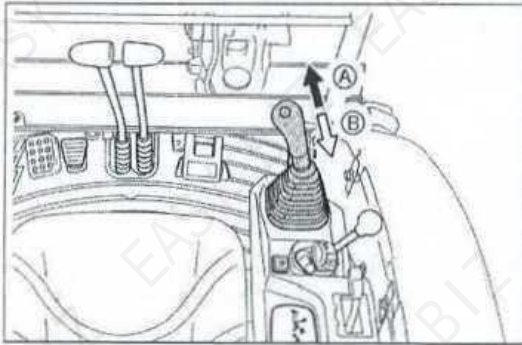


(A) 75 度

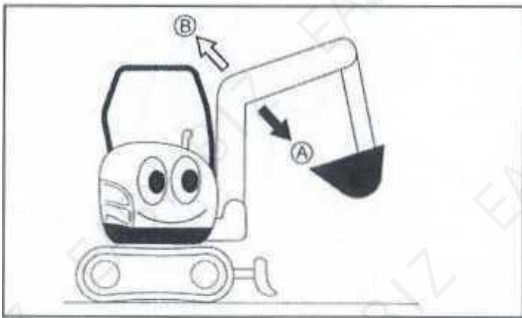
(B) 55 度

◆ moving arm operation

To reduce the soil drop of the bucket, the boom lift end has a buffer structure. When the hydraulic oil temperature is low (such as the engine, etc.), the buffer time is sometimes longer than usual. This



(A) Arm drop (B) Arm lift



Replenish

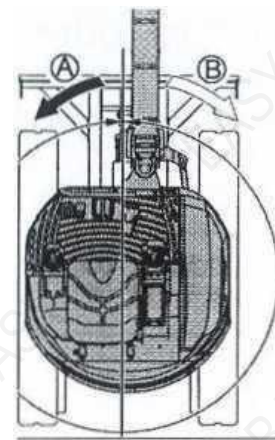
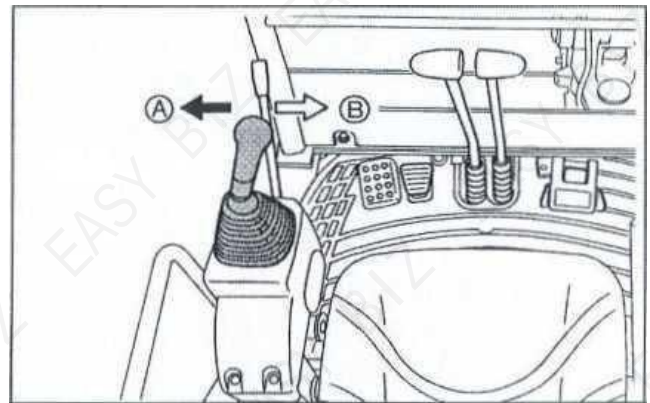
\*When the boom is lowered, be careful not to let the bucket teeth catch the bulldozer

(A) Left rotation

Do not rotate in the inclined area, otherwise there will be a danger of rollover. For rotary and excavation operations in the inclined area, please flatten the ground before the operation.

> If negligent..

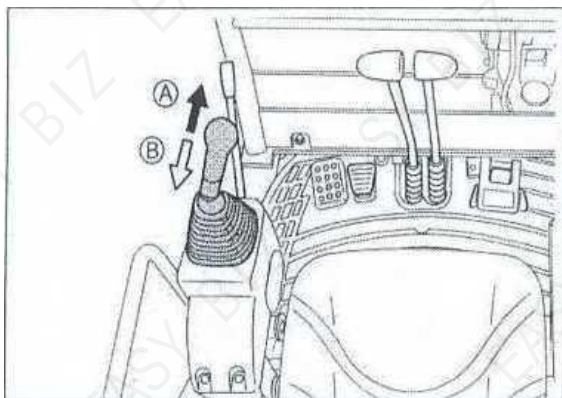
It may be an injury accident caused by the rollover.



(A) turn left

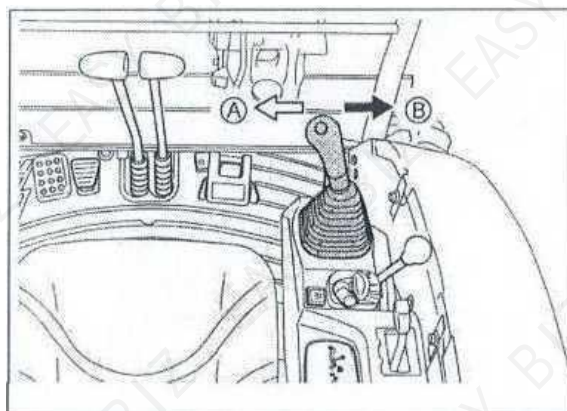
(B) Right

◆ bucket pole operation

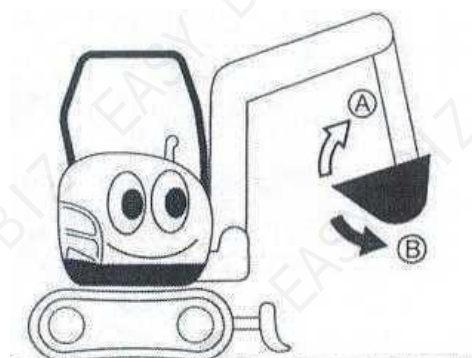
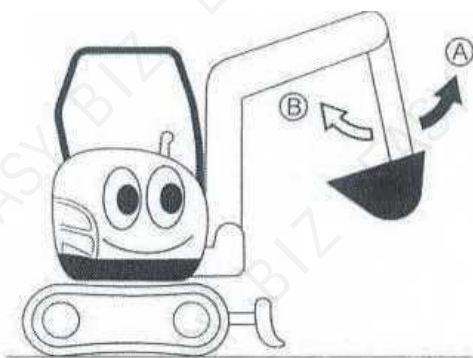


(A) Doupole unloading  
(B) Dock excavation

◆ tackle operation



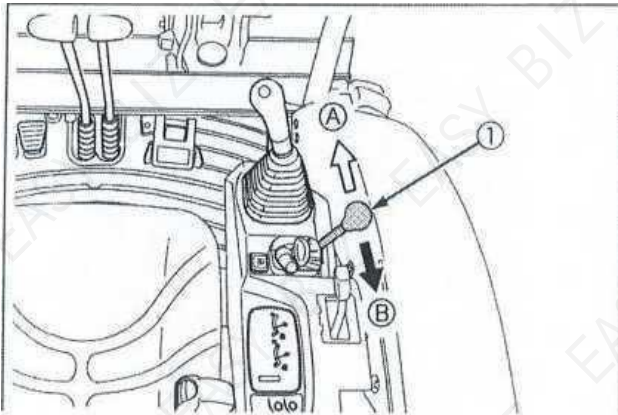
(A) Shovel excavation  
(B) Bucket unloading



重要事項

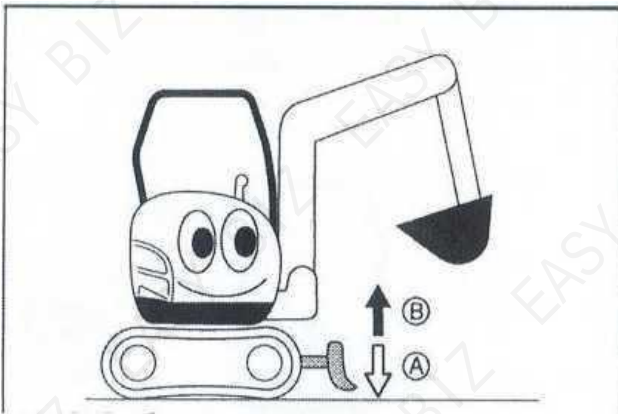
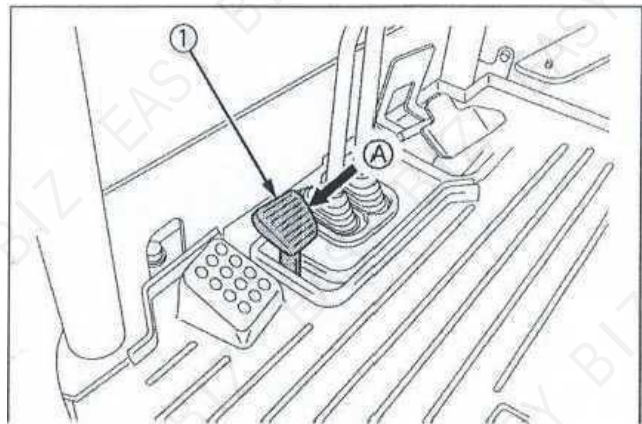
\* When pulling up the bucket stick, if the bucket stick faces directly below, sometimes the action stops instantly. This is not a fault, do not worry.

The shovel handle (switch handle is down) pulls back the shovel handle backward, the



■ walking accelerator pedal When pressing on the walking

accelerator pedal, the walking speed shovel up, the shovel handle forward, and the shovel down.



normal walking speed

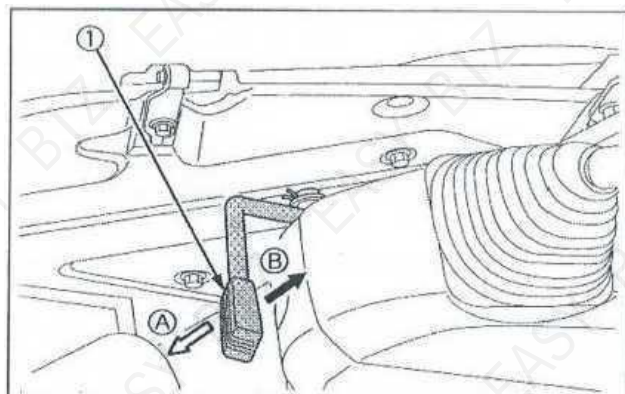
(1) Bulldozer operating handle

(A) drop  
(B) Lift

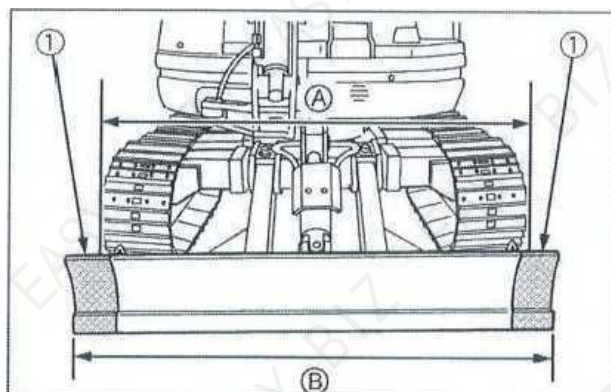
replenish

When the walking resistance is large, even if the walking accelerator pedal, sometimes do not accelerate, this is not a fault.

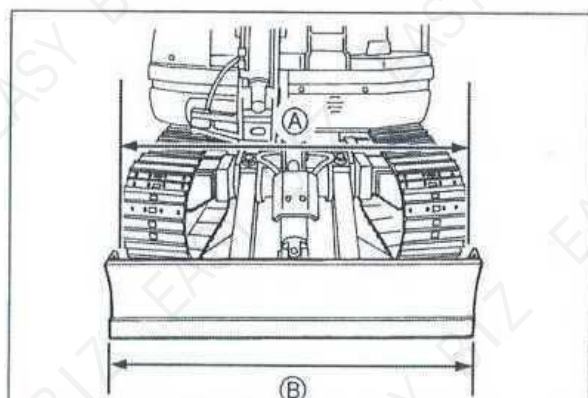
■ foot expansion and shovel switch  
handle to perform foot



(1) Leg extension and dozer switch handle  
(A) Dozer control mode  
(B) Leg extension control mode



(1) Lengthened bulldozer blade  
(A) Foot width 1500mm  
(B) Bulldozer width 1500mm



(A) 支脚宽度 1300mm (B) 推土铲宽度 1300mm

重要事项

If there are obstacles that make the foot difficult to stretch, please remove the obstacles or move to a flat place before operating. When the above measures are still difficult to move, please use the working device and

bulldozer to make the crawler suspended. In addition, the expansion department has soil and other blockage, please remove.

## Impediment detection before operation

### Daily examination of oneself

#### ■ Daily Inspection List

| Daily screening items                              |                         | quantity | Oil and parts to be supplemented or replaced | Reference page |
|----------------------------------------------------|-------------------------|----------|----------------------------------------------|----------------|
| Problem parts during the last use                  |                         | —        | —                                            | —              |
| Check and supplement of the coolant                |                         | 1        | one                                          | 45             |
| The amount of oil in each part                     | (1) fuel inspection and | 1        | Choose the right diesel oil                  | 46             |
|                                                    | (2) oil inspection and  | 1        | engine oil                                   | 47             |
|                                                    | (3) Inspection and      | 1        | hydraulic fluid                              | 17             |
| Check and cleaning of water and sediment of        |                         |          |                                              | 48             |
| Inspection and cleaning of the radiator and the    |                         |          |                                              | 48             |
| Check and clean around the battery, wiring and     |                         | —        | —                                            | 49             |
| Refueling of the crawler frame expansion section   |                         | 4        | Butter pressure EP2                          | 49             |
| Inspection of the 4-column TOPS roof mount section |                         | —        | —                                            | 49             |
| Precautions when washing the car                   |                         | —        | —                                            | 49             |

### Inspection and supplement of ■ coolant

- \* If the radiator cover is opened during operation or just after the operation stops, sometimes the steam or hot water comes out and causes burns. Therefore, clear and then open the radiator cover after the radiator is cooling.

Please check for the specified amount of coolant in the secondary tank. If the water level is at the "FULL" (maximum water level)

Between "LOW" (minimum water level) is

coolant liquid Approximately 3L (about 0.6L in the secondary tank)

normal. When the coolant is insufficient, please replenish the coolant to the secondary water tank.

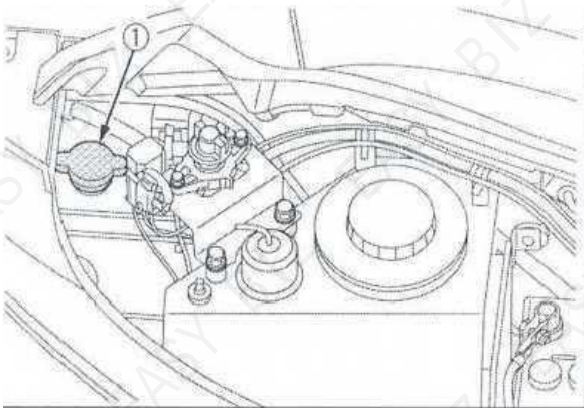
material particulars

- \* When filling the coolant, do not exceed the "FULL" (maximum water level) of the secondary tank.
- \* Please absolutely do not add muddy water, sea water, spring water and other hard water.
- \* In general circumstances, please do not open the radiator cover.

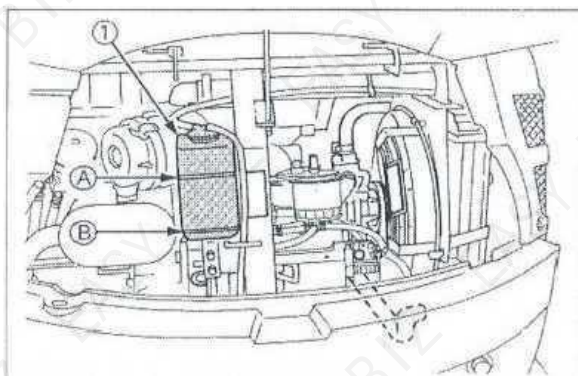
replenish

- \* Please check the secondary tank during engine cooling.

- \* Long-acting coolant was filled as a factory coolant (Mix ratio: antifreeze 50% water 50%).



(1) Radiator cover



(1) Expansion tank

(A) FULL  
(B) LOW

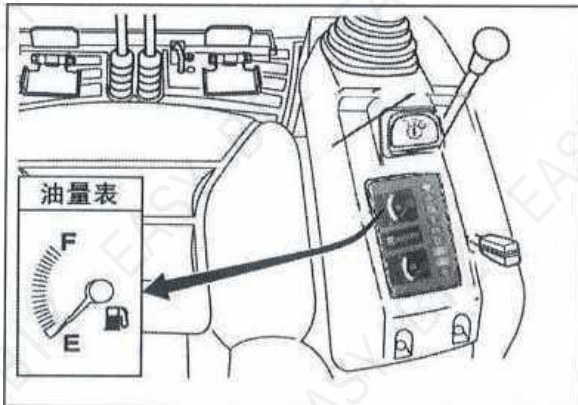
## ■ fuel inspection and supplement

\* Be sure to stop the engine for filling the fuel.

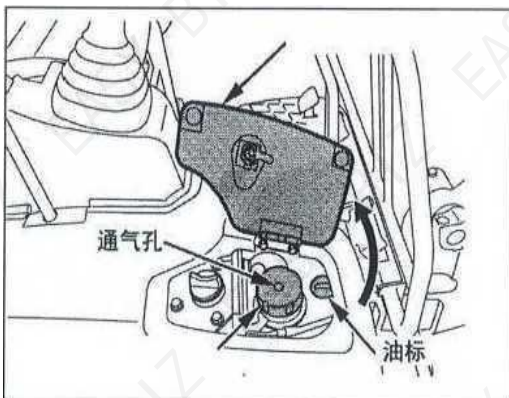
\* Please absolutely never get close to the fireworks.

Check using the oil scale.

ting key is in the ON (Run) position



2. When the fuel is low, please open the fuel tank cover to replenish

replenish

\* Fuel should be replenished until the fuel tank is filled, and then, effectively tighten the fuel tank

\* Be sure to use the fuel tank filter screen when replenishing the fuel.

\* Pay full attention to avoid dust or water mixed into the fuel tank.

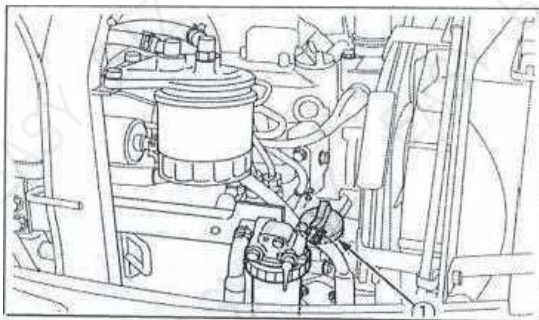
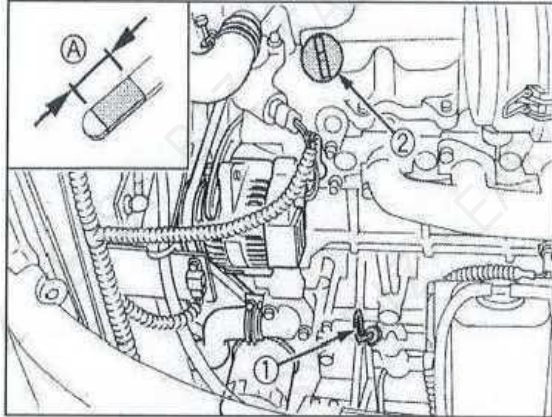
\* The fuel system generally does not enter the air, except when emptying the fuel tank. If mixed with air, going to exhaust. (For exhaust methods, see the "Exhaust of the Fuel System" item in Maintenance.)

\* Fuel tank cover is provided with a hood. Negative pressure will occur in the box when soil is blocked in the hole, so clear when replenishment cover.

oil inspection and supplement Inspection and

1. Please check for the specified amount of oil installed.
2. If the oil gauge is normal within the range shown in the figure.
3. If the oil quantity is insufficient, please supplement it through the refueling port.

See  
the "Recommended lubricating grease" item)



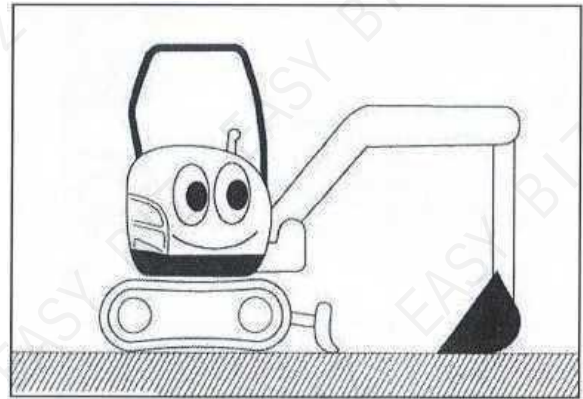
(1) The refueling mouth

(1) Oil <A> In this range is the right  
material particulars

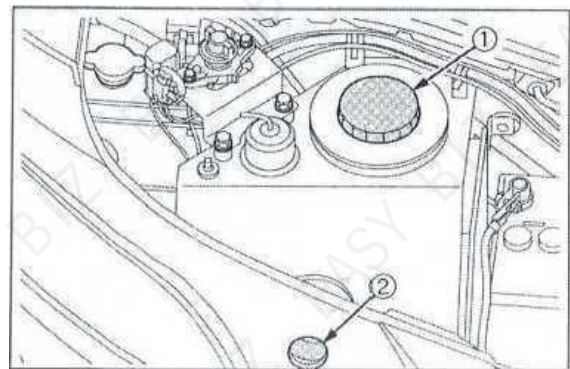
- \* Use oil with proper viscosity as per temperature (see "Recommended Oil, Butter" item)
  - \* After the engine has just stopped, the correct amount of oil cannot be measured because there is still oil remaining in each part. Please keep the body in a horizontal state and wait for at least 5 minutes before checking.
  - \* Please earnestly plug in the oil ruler after the check.
1. Park the body in a horizontal place, extend the piston rod of each cylinder to about the middle position, and make the bucket and bulldozers contact the ground.

\* Jing removes the refueling port of the hydraulic oil tank after the oil

1. Put the body on a level place, stretch the piston rod of each oil cylinder to about the middle position, and make the bucket and bulldozer touch the ground.



2. Please be at room temperature (10% 30. 0 Check whether the hydraulic pressure is in the center of the oil level gauge.
- 3 . It is normal if it is within the red circle range of the oil level gauge.
- 4, When the oil quantity is insufficient, it shall be replenished through the refueling port.
5. When the hydraulic oil is mixed with water and other impurities and must be replaced by all



\* When supplementing, clean the surrounding sand or garbage and be sure to use the same brand of hydraulic oil.  
For the factory hydraulic oil brand, please refer to the "Recommended Oil, Butter" project.  
(Please absolutely do not mix it with other brands of hydraulic oil.)

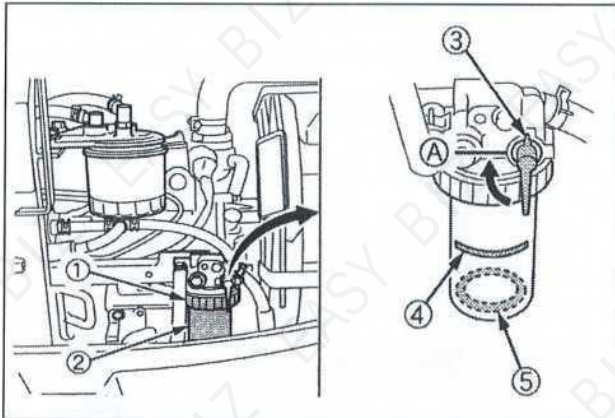
To work safely

Check the water and sediment of the ■ oil-water separator. The water and garbage contained in the fuel oil are deposited in the oil-water separator.

When the water and garbage accumulate, please put the oil and water separator handle in the "CLOSE" (off) state, and then remove the oil cup to remove the water and garbage.

At this point, the fuel system must be deflated.

1. Place the oil-water separator handle in the CLOSE (off) state.
2. Loose the upper protective ring of the oil cup, remove the oil cup and rinse the interior with diesel oil.



(1) Ring protection

(2) Oil cup

(3) Handle of the oil-water separator

(4), marking line

(5) Floating son material particulars

\* Red float during water.

When the float reaches the line mark, please release the water immediately.

\* Be careful not to wear dust or dust when assembly.

\*Be sure to vent the fuel system before running.(See Fuel System Pgo in Maintenance)

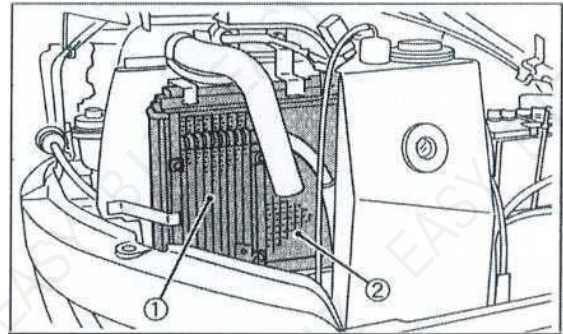
Please be sure to read

Inspection and cleaning of the ■ radiator and the hydraulic oil cooler

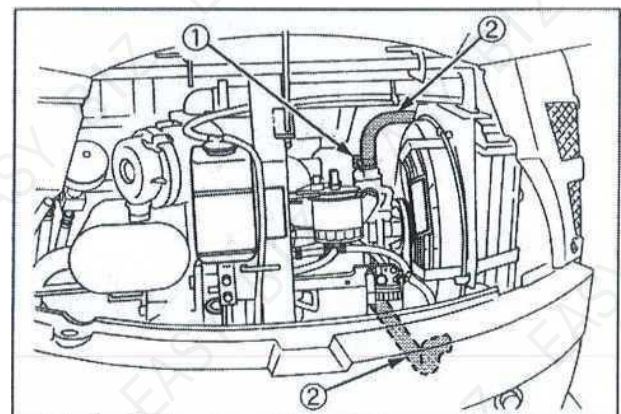
1. Check whether the radiator is blocked. If blocked, purge with compressed air (or steam). Be sure to wear protective glasses at this point.
2. Also check the radiator hose.

If the hose is cracked or brittle, please replace it.

Also, please check whether the tightening hoop is loose



(1) Hydraulic oil cooler (2) radiator



(1) Pipe hoop (2) radiator hose

material particulars

The heat sink of the radiator and the hydraulic oil cooler is easy to deform. Be careful not to deform it when cleaning.

Depending on the degree of deformation, sometimes cause overheating of parts and hydraulic oil heating, resulting in instrument failure.

### ■ battery, wiring and engine

#### pay attention to

- \* If the harness and battery (+) line are damaged, so check.
- \* If garbage and fuel are attached to the battery, wiring, silencer or engine, so check before the daily operation.

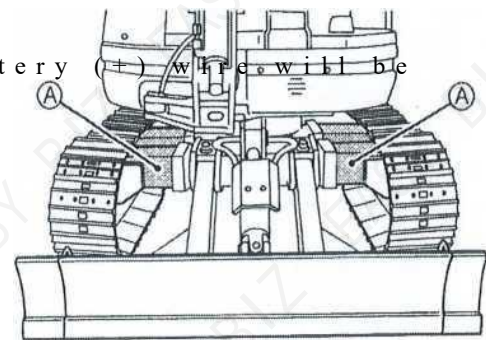
The coating of wire harness and battery naturally aged due to contact and damage with each parts.

Therefore, please check the following items

1. The wire harness shall not be damaged, and the wire clamp shall not be made loose.
2. The connection parts of the terminals and terminal panels (socket) shall not be loose.
3. Each switch must operate normally.

### Refueling of the ■ crawler frame expansion section

1. Please lift the switch handle, push the push-shovel handle forward, and put the foot width at the widest (1500mm) state.
2. Please evenly butter the whole pipe after removing the soil and other foreign bodies in the expansion part. (Front, back, left and right 4)
3. Repeat the foot width expansion operation in the range of the widest (1500mm) to the narrowest (1300mm), and apply butter to the expansion part.



—(A)— Fill with yellow oil.

replenish

- \* 1~3 Use the working device and bulldozers to suspend the tracks

### ■ 4-pillar TOPS canopy

#### warn

- \* Do not remove the 4-column TOPS roof. Otherwise, it will affect the function of the TOPS.

### ■ Notes for doing a local car wash

1. If the electrical system enters the water, it will cause poor action. Do not pour water directly on electrical devices such as sensors and connectors.
2. If the car is washed when the engine is running, the water may be drawn from the suction port of the air filter, causing the engine failure. So please turn off the engine before washing the car. Also, do not pour water on the air cleaner.

## Start and stop of the engine

### Start of the engine



- \* Be sure to sit in the driver's seat and confirm that the handles and pedals are in the neutral " position before starting the engine.

If negligent...

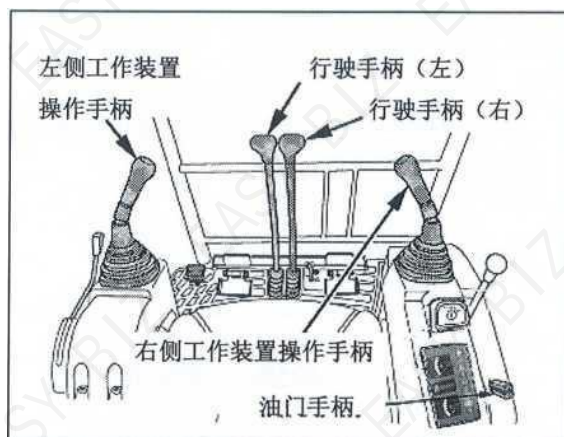
The machine will move while starting the engine, resulting in no normal driving, which is dangerous.

- \* Engine exhaust contains harmful carbon monoxide, which is at risk of poisoning.

Therefore, do not drive the machine indoors

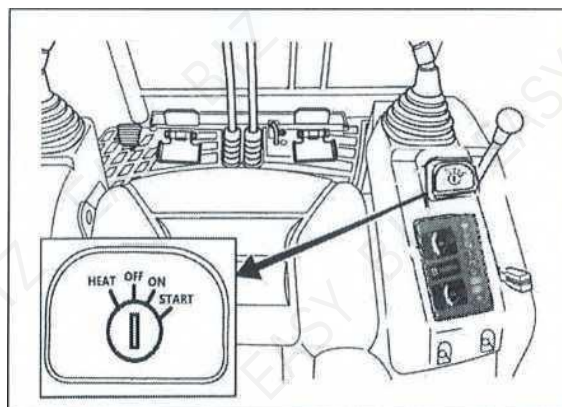
Start up in the following order.

1. Ensure that each handle and pedal are in the "neutral" position before operating the starting switch.  
Place the operating handle lock lever in the Lock " position. If the operating handle lock lever is in the Release position, the engine will not start.



2. Insert the start key into the start switch.
3. Pull the throttle handle back to the end.
4. Place the start key in the "ON" (running) position and position,

Keep in the ON " (running) position and stay (warm up) for at least 3 seconds.



5. Turn the start key to the START (Start) position.
6. Release the key after the engine starts. The key automatically returns to the "ON" (Run) position.

#### material particulars

- \* Place the start key in the START (Start) position during engine operation. Otherwise, the starting motor will fail.
- \* Because the starting motor consumes high current, please avoid continuous use for more than 10 seconds.  
If it does not start within 10 seconds, turn the key to the "Off" (stop) position, wait for more than 20 seconds, and then repeat for 4, 5, and 6.
- \* Always use the 12V battery if the emergency cable is connected to other batteries. Please absolutely do not use a 24V storage battery.

#### material particulars

- \* If the attached key hangs a metal key on the chain, it will hinder the signal transmission between the key and the switch, thus causing the engine not to start properly.

#### . Start in the cold season

1. Pull the throttle handle back to the end.
2. Place the start key in the "ON" (Run) position

And remain in the "ON" (running) position and stay (preheat) for at least 5 seconds.

3. Turn the start key to the "START" (Start) position.
4. Release the key after the engine starts. The key automatically returns to the "ON" (Run) position.
5. If the engine is not started, turn the start key to the Off " (stop) position and repeat operations 2, 3, and 4.

## Check and confirm after starting

### ■ warm-operation

After starting, run the load-free heater to smooth the idle smoothly (about 5 minutes).

replenish

\* If the hydraulic oil temperature is low, the handle veness of the operating device will become worse, so do the operation.

\* The operating handle is slightly heavy when the hydraulic oil temperature is low, which does not affect the operation of the machine.

Inspection of each parts of ■

After the engine is warming, please confirm the following items.

Is the oil indicator light turned off?

Is the battery charge indicator lamp turned off?

Is the exhaust gas color normal?

Is there any abnormal sound or abnormal vibration?

Are the oil, fuel, and water leaking?

◆ Turn off the engine immediately in the following cases.

1. The rotation speed drops sharply or rises sharply.
2. Suddenly make abnormal sound.
3. The exhaust gas color becomes worse.
4. The oil indicator lights on during operation.

material particulars

\* After turning off the engine, please follow the "Backhoe excavator problems and treatment measures".

If unknown, please consult the dealer or the repair plant designated by the company.

### ■ overheating



\* Open the radiator cover during operation or just after operation, sometimes cause burn caused by steam or hot water spray. Therefore, open the radiator cover after the radiator has cooled.

The siren will sound when the coolant temperature approaches or exceeds the boiling point (that is called overheating). At this point, please take the following action.

1. Stop operations in a safe position.  
(Remove the engine load)
2. Do not suddenly turn off the engine. Should be in progress approximately  
Turn off the engine after about 5 minutes of no-load idle operation.
3. Please wait for 10 minutes, or stay away from the machine while it emits steam.
4. After confirming that there is no danger such as scald, please eliminate the cause of overheating according to the instructions in the "backhoe excavator problems and treatment measures".  
Then restart the engine.

## Stop the engine



- \* Do not leave the worker and bulldozers suspended when the engine stops. Otherwise, the device will slowly fall due to its dead weight, resulting in an accident.

Push the throttle handle to the low speed side to the end, allowing the engine to idle for about five minutes, allowing it to cool slowly.

1. Slowly operate the left and right worker operating handle and place the worker on the ground.
2. Place the start key in the Off " (stop) position, stop the engine, and pull out the key.
3. Pull up the operating handle lever and place it in the Lock Up position.

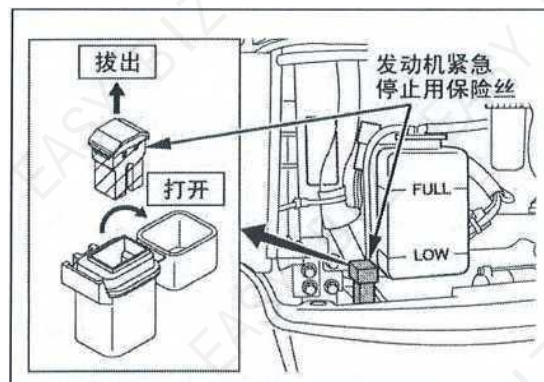
- \* Contact the bucket with the ground before stopping the engine. It cannot rely on the dead weight of the working device to contact the ground.
- \* The engine can sometimes not stop when the throttle handle is at high speed. At this point, always place the throttle handle in the low-speed position, and turn the key to the "off" (stop) position.

The ■ engine emergency stops using fuses



- \* Do not open the engine hood before the engine stops. Only when you cannot stop the engine with the key, open the engine hood and unplug the fuse to stop the engine.

After the safe lid is removed and the internal fuse is removed, the engine will stop putting the fuse back in place, and the engine will start again.



### replenish

- \* Please contact the dealer even with the key engine.

Note: The engine emergency stop and rest fire fuse of this type (i. e., the flameout valve fuse) is installed on the electric control panel below the seat.

## Operation of the backhoe excavator

### burning-in material particulars

- \* The first 100 hours of service status will determine the service life of the machine. Therefore, it should be used with caution. Especially in the case of new cars, do not apply too much load.
- The load remains below 50% before 50 hours. The load remains below 70% before 100 hours.

### Start, walk

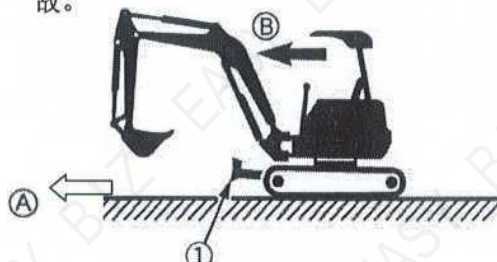


- \* Check the safety situation, front and right before the machine is started.
- \* If the bulldozer, idler wheel are placed behind and the handle is operated, the body will walk in the opposite direction to the handle. Therefore confirm whether the pusher and idler face front or rear. (Bulver facing front)

If negligent...

It will move in the opposite direction, sometimes causing harm

故。



(1) Push the soil shovel

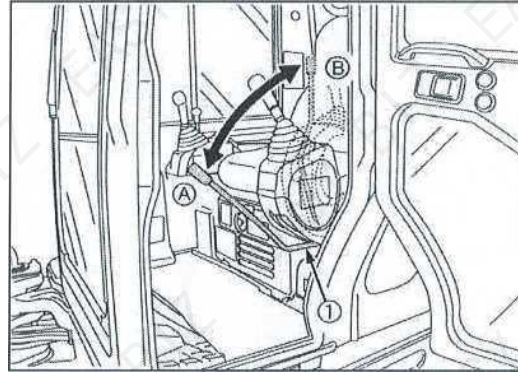
(A) The direction of travel of the body

(B) Operation direction of the walking handle

- \* Please absolutely never walk on a steep slope above 15 degrees. > If negligent...

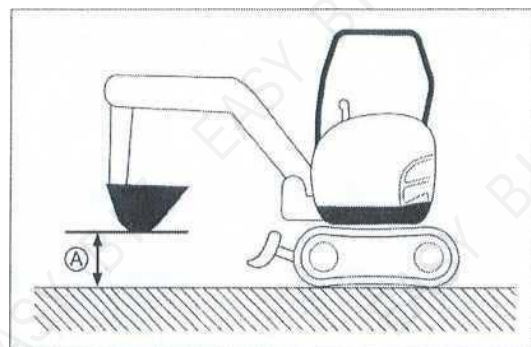
It may lead to a rollover, causing injury accidents

1. Place the safety lock lever in the "release" position, and operate the working device to keep the bucket off the ground at 20-40cm.



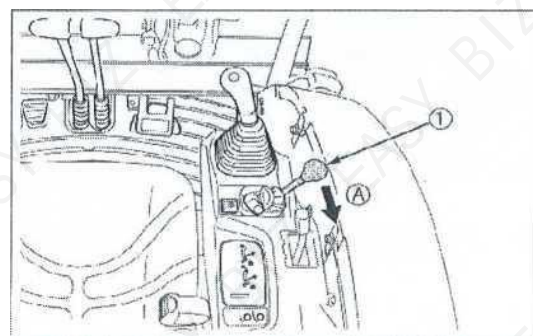
(1) security lock lever (A) "release"

(B) "lock"



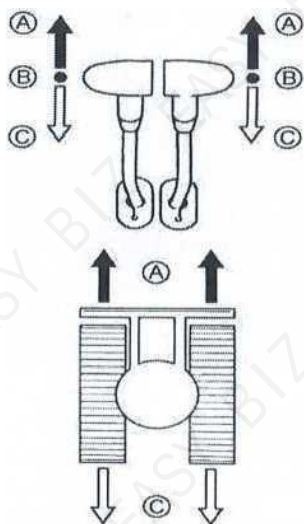
(A) 20~40cm

2. Pull the shovel operation handle back and lift the shovel. (Switch valve handle is depressed)



(1) Bulvel operating handle (A) lift

3. Slowly push the walking handle forward (forward) or back (backward), and start the machine.

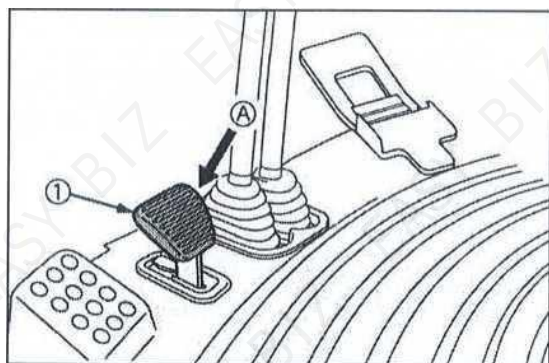


(A) Forward (B) Neutral (C) backward

4. Walk at high speed

The speed will accelerate when pressing down the walking accelerator pedal while operating the walking handle.

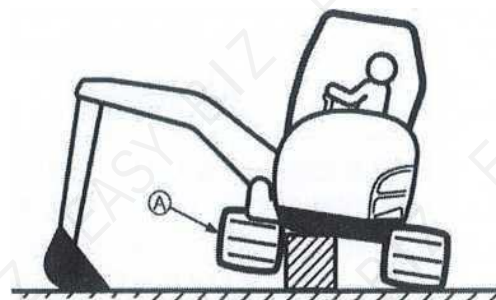
Release the pedal releases the acceleration and returns to the usual walking speed.



The (1) walking accelerator pedal (A) "Step Down (accelerate)"



- \* Do not use the walking accelerator pedal when walking uphill or on an uneven ground, if the walking resistance is high.
- \* When walking on the soft ground, the crawler is filled with soil and sand, making the crawler is abnormally tight and unable to walk, li, use the moving arms, bucket poles, shovels and bulldozers to float the crawler, and make it rotate, remove the soil and sand, until the crawler turns smoothly.



(A) Turn the track to remove the dirt

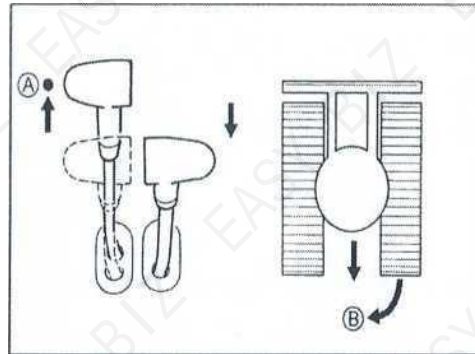
turn



warn

- \* Do not turn (turn around, etc.) when walking on a steep slope, otherwise there is a risk of rollover. Please turn on a flat ground.
- \* Please turn again until you fully confirm that there is no one else around.
- \* Do not turn in situ or turn, by increasing the number of zigzag turns.
  - ▶ if negligent... It may lead to injury accidents.

2. When retreating, if you put the left (right) walking handle in a neutral position, turn left (right).

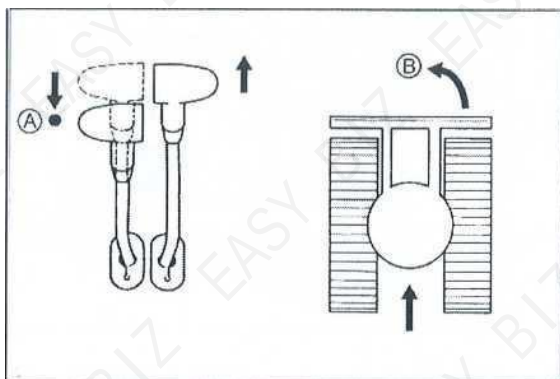


(A) Neutral (B) situ steering

The operating method when the bulldozer is ahead is described below. Steering at the ■ stop (steering in place)

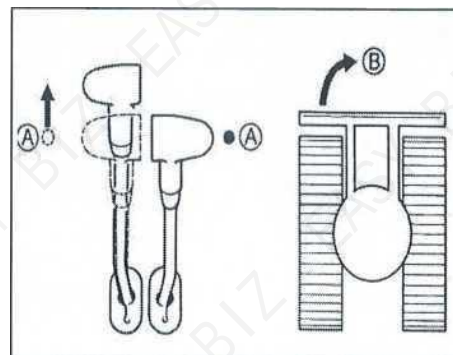
#### ■ Steering while walking (Steering in situ)

1. When advancing, if you place the left (right) walking handle in a neutral position, turn to the left (right).



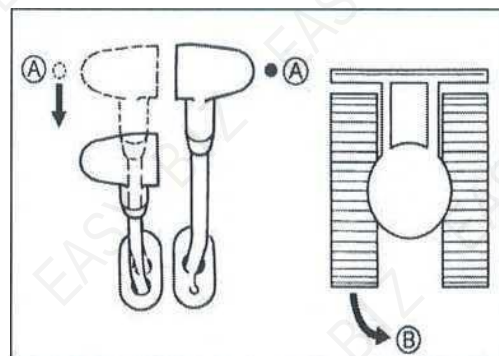
(A) Neutral (B) situ steering

1. If you operate the left (right) walking handle forward, turn the Bulldozer (left).



(A) Neutral (B) situ steering

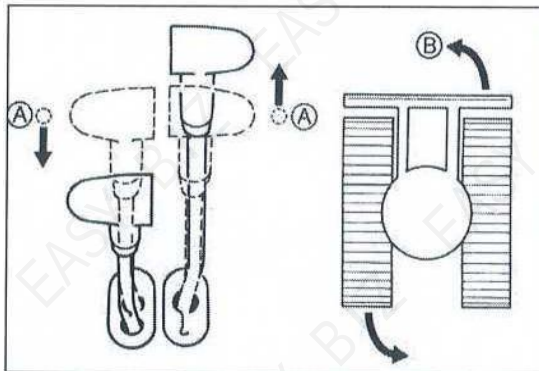
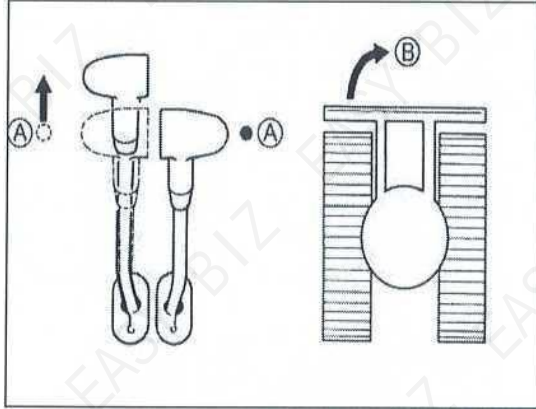
2. If you operate the left (right) walking handle backwards, turn right (left).



(A) Neutral (B) situ steering

### ■ Slim Turn

1. If operating the left (right) walking handle forward and the right (left) walking handle backward, turn the right (left) ground.



### Up and down the ramp



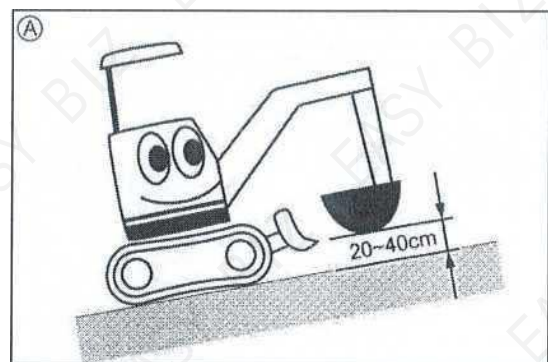
\* When walking on the inclined area, make the parallel frame and the body frame.

If negligent...

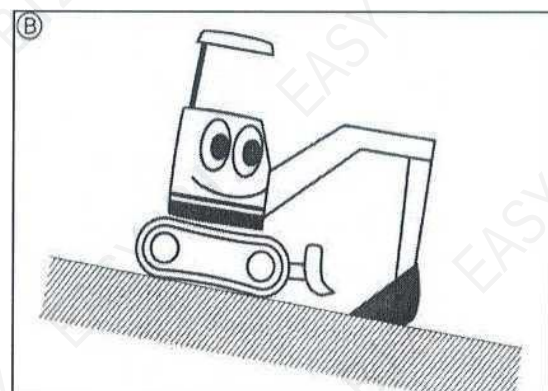
It may turn in the opposite direction, resulting in a rollover and an injury accident.

1. When going uphill, please lift the bucket and make the lower part of the bucket leave the ground for 20~40cm before walking.
2. When descending from a steep slope that is easy to slip on the track, please drop the bucket to the ground and walk down while sliding on it. When descending from a nonsteep slope, place the bucket at a height that will touch the ground immediately.
3. When going up and down, please adjust the throttle handle to walk slowly.

(A) When uphill



(B) When downhill



### Parking of vehicles in sloping areas

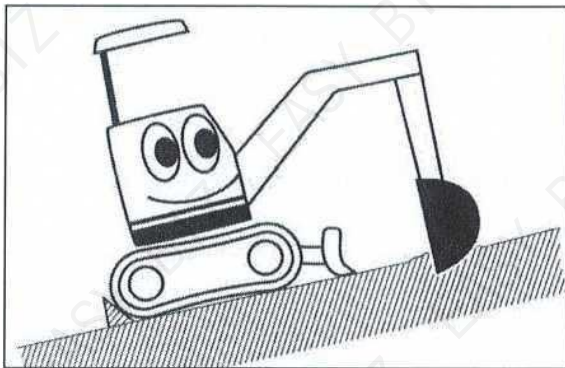


- \* It is dangerous to park vehicles in sloping areas. Therefore, please do not park vehicles in sloping areas.

When parking vehicles in the inclined area, please insert the bucket into the ground and brake the handle in the neutral position.

- ▶ if negligent...

The machine may slip down and cause injuries.



**stop**

1. Park the machine on a flat, solid ground. Keep the bucket bar upright and drop the bucket and push shovel to the ground.
2. Turn the throttle handle to the minimum position on the low speed side and make the engine idle for about 5 minutes to cool the engine slowly.
3. Place the start key in the "STOP" (stop) position, then close the engine, and pull out the key.
4. Pull up the safety lock bar and place it in the Lock " position.
5. Close all the covers and lock the doors when leaving the machine.

### Support leg telescopic operation

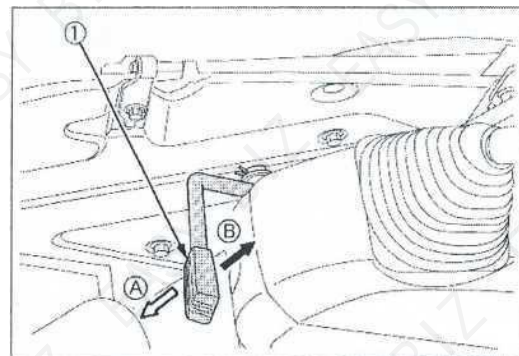
# A

- \* Please use the foot width of the widest (1500mm) or the narrowest (1300mm). When stopped during the telescopic process, the telescopic foot is not fixed, causing the rotary frame to shake.
  - \* Please only reduce the foot width when
  - \* In addition, please maximize the foot width when walking, digging, shoveling, and crushing and hammer.
- Small foot width may cause a rollover.

Operable switch valve handle and bulldozhandle change foot width. Lift the switch valve handle and push the bulldozhandle forward.

.. The foot width is increased. (1300mm — 1500mm)

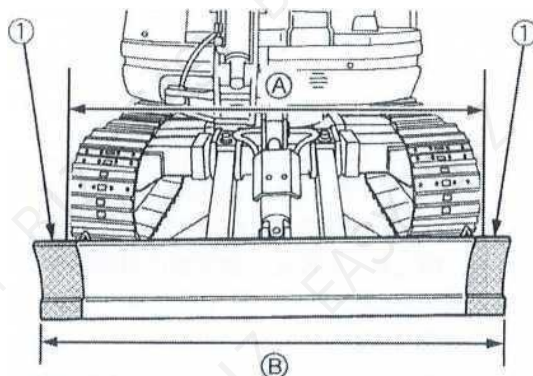
Lift the switch valve Pull back with the same handle,... reduced vertebra soil shovel foot width. hand Che (1500mm — 1300mm)



(1) Foot expansion and push shovel switch handle

(A) Shovel handling mode

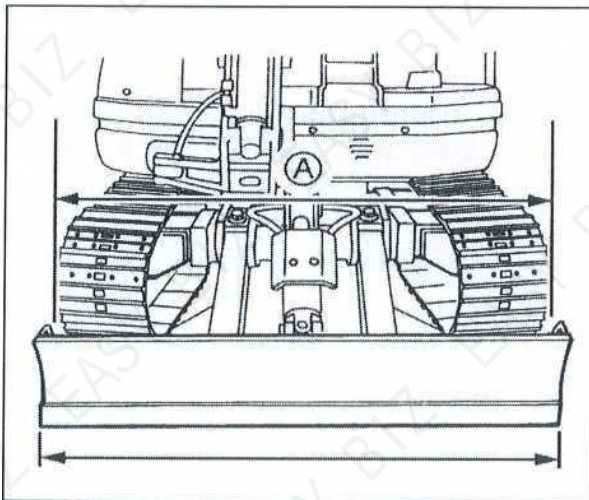
(B) Foot expansion control mode



(1) Longer to push the soil shovel

(A) The foot width is 1,500 mm

(B) The bulldozer shovel width is 1500mm



(A) The foot width is 1,300 mm

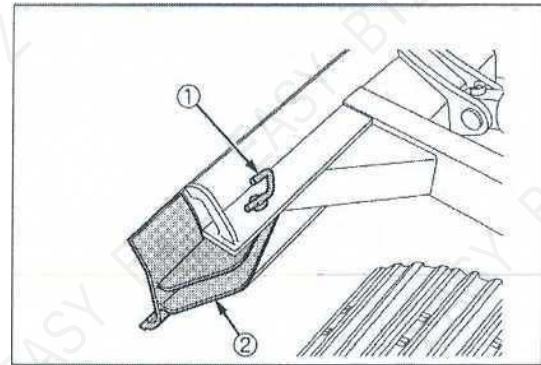
(B) The bulldozer shovel width is 1300mm

material particulars

If there are obstacles that make the foot difficult to stretch, please remove the obstacles or move to a flat place before operating. If the above measures are still difficult to move, please use the working device and soil shovel to make the crawler suspended. In addition, the expansion department has soil and other blockage, please remove.

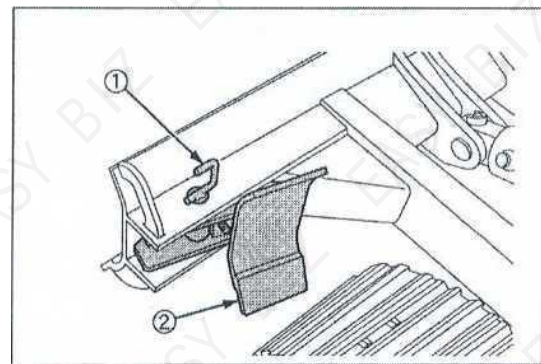
The width of the shovel can be changed by changing the extension shovel. The width of the bulldozers is 1500mm when widening. A bulldozer shovel width of 1300mm without widening.

[Bulldozer shovel width 1500mm]



(1) bulldozer shovel pin (2) extended bulldozer shovel

[Bulldozer shovel width 1300mm]



(1) bulldozer pin (2) extended bulldozer shovel

When changing from widening to no widening:

1. Pull out the shovel pin.
2. Flip the lengthened bulldozing, aim the hole at the unwidened pin and insert the bulldozing pin.

The same operation when never widened to widened.

## Truck transport

warn

\*Please choose the truck that suits the machine weight and size, and do not overload it.

■ if negligent.....

When loading, the driver's seat of the truck will rise up, causing potential safety risks during transportation.

\* Please effectively hang the loading and unloading board on the truck chassis surface with hooks. In addition, the wet loading and unloading plates will slip. Especially the wooden loading and unloading board should pay attention to anti-skid.

If negligent.....

It may cause injury accident due to fall and fall.

\*When not using the loading and unloading platform or the loading and unloading board, it is strictly prohibited to perform loading and unloading operations in the way of lifting the body.

If negligent.....

It may cause injury accident due to fall and fall.

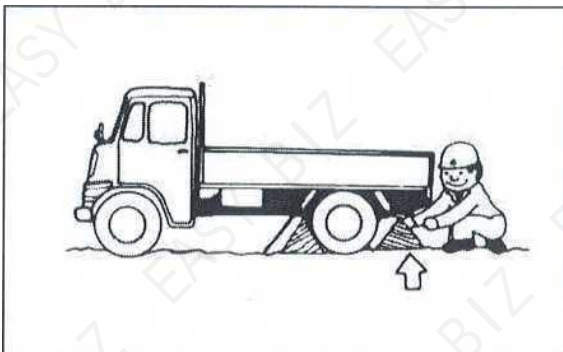
### Loading, transportation



注意

\* If the car is loaded while the bucket bar remains extended, the reaction force caused by the displacement of the center will endanger the driver and those around you, please be

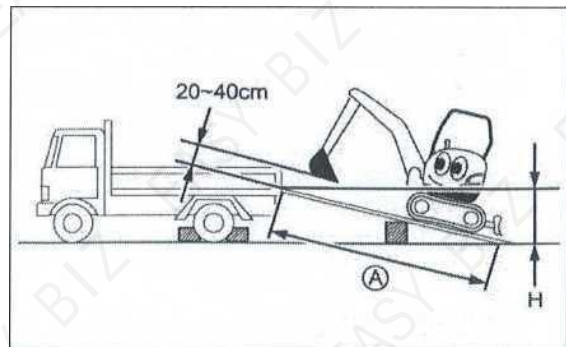
1. Hang the brakes on the truck and brake the tires to ensure The tire does not move.



2. Please set up a loading platform with sufficient strength and width, and then load it.

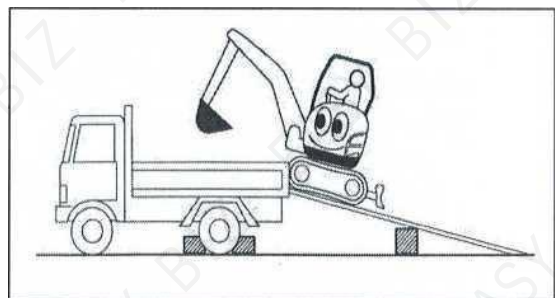
3. When not using the loading and unloading board independently, please operate in a flat and solid place. The handling plates used shall be of sufficient strength, width and length, and shall be left and right parallel and aligned to the tracks. Also, use loading plates more than 4 times the chassis height (H). In addition to using the loading plate with hooks to prevent the loading plate from the truck, check for cracks before use. Also, place a " bracket under the handling plate (Support table) to prevent plate bending.

4. When the machine is loaded on the truck, the working device should be oriented to the direction of travel (upper side), the bucket rod and the loading plate should be vertical or slightly pulled up, and maintain a height of 2040cm between the bucket and the loading plate.



(A) Above 4XH

5. When moving the machine to the truck compartment, stop temporarily in the state shown in the figure below, make the working device gently touch the truck car and then proceed slowly. Then, keep the car body in a horizontal state.

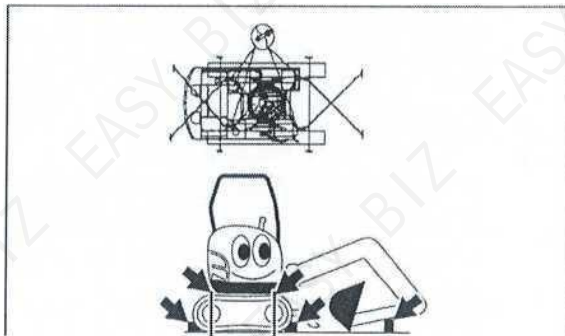


6. It is extremely dangerous to adjust the direction on the loading and unloading board. If necessary, please adjust the loading and unloading board first.

7. After advancing to the designated position on the carriage side of the truck, make the upper rotation body slowly rotate by 180 degrees under the bucket shaft excavation state, while paying attention to the balance state of the truck.

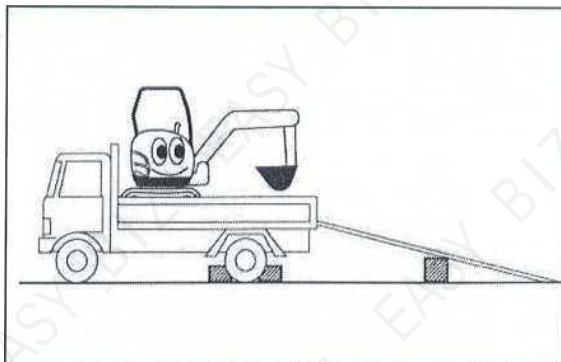
8. Lower the worker device to the truck chassis surface, stop the engine, and place the safety lock lever in the "lock" position.

9. Firmly ure the main engine to the t ruck compartment with wire rope, etc.



### Remove the car from the truck

1. Make the working device face the direction of travel and keep the bucket vertical to the plate surface of the truck compartment or slightly pulled up to the loading and unloading plate.



2. Before moving to the loading and unloading board, stop the machine, make the work load, gently contact the ground or the loading and unloading board, and then move forward slowly to prevent the center of gravity of the machine from moving too fast.
3. When about half of the entire track comes out of the truck compartment, stop the engine and slowly lift the boom to get the engine onto the loading board.
4. Please move down the loading board when the working device gently touching the ground. At this point, please be careful not to hurt the road surface.

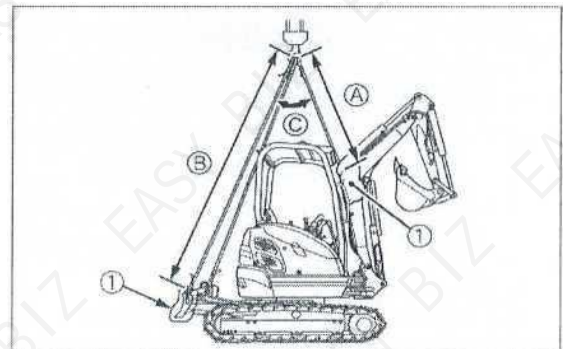
### This machine lifting



\* Do not lift when someone in the car, which is dangerous.\* The sling for lifting has sufficient strength to withstand the weight of the machine.

When lifting the machine, please proceed according to the following essentials.

1. Rotate the upper rotary body to position the bulldozers toward the rear of the machine.
2. Lift the bulldozers to the top position.
3. Lift the boom to maximize the bucket and bucket bar. Then place the safety lock lever in the lockout position.
4. Without swinging the boom arm, place the swing pedal in a neutral position, cover the pedal cover, and stop the engine.
5. Install the lifting hook in the lifting hole (2 places) at both ends of the bulldozer, and effectively hang the steel wire rope, and then hang the steel wire rope in the drawing position of the moving arm.
6. Keep the lifting angle of the wire rope at 30 degrees, and then lift. See the table for wire rope length



(1) Padding

- |     |          |
|-----|----------|
| (A) | About 2. |
| (B) | 2m about |
| (C) | 3. 9m    |
|     | about 30 |
|     | degrees  |

replenish

\*Notice the center of gravity position to maintain adequate balance.\* Do not swing the moving arm or rotate the upper part when lifting.

\*Pket the corners of the boom and both ends of the shovel to avoid scratching the wire rope.

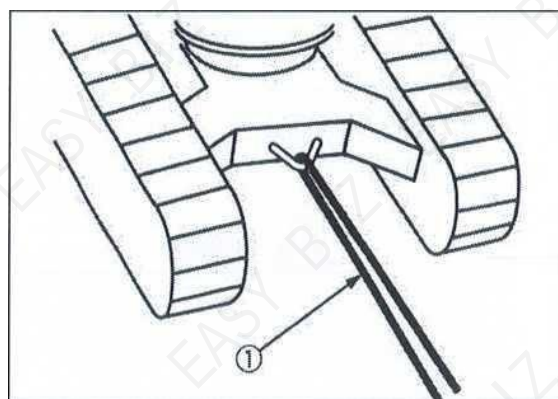
### This machine traction method



注意

\* The wire rope and sling used shall have sufficient strength. Also, confirm for break or cracks before use.

In an emergency where the body is stuck in the mud, use the wire rope or a sling to pull the machine out of the mud as shown in the figure.



(1) Hanging belt or steel wire rope

## maintenance



\* When refueling and maintenance,

1. Place the machine in a flat and spacious place
2. Drop the bucket and bulldozers to the ground
3. Turn off the engine
4. Confirm the work device joystick and bulldozhandle that the residual pressure has been released
5. Pull out the key and confirm the safety before working. Besides, please read the "Precautions during Maintenance" on the ▲ Yellow page carefully before working

### On the waste disposal



Do not casually throw away or burn waste, otherwise it will not only pollute the environment, but also be subject to legal sanctions. When dealing with waste

- \* Collect the waste liquid discharged from the machinery into the container.
- \* Do not pour waste liquid into trenches, rivers, lakes, or oceans.
- \* When discarding or burning waste oil, fuel, coolant (no freeze), refrigerant, solvents, filters, batteries, rubber and other harmful substances, please contact the sales store or industrial waste disposal unit for treatment with the specified rules.

### Precautions during car washing

If the use method of high pressure car wash machine is improper, it will cause, personnel injury, or damage, damage to the machine, make the machine failure, therefore, please carry out according to the manual and label of high pressure car wash machine, correct use.



When washing the car, in order not to damage the machine, please make the cleaning nozzle diffusion spray water, and leave more than 2 meters.

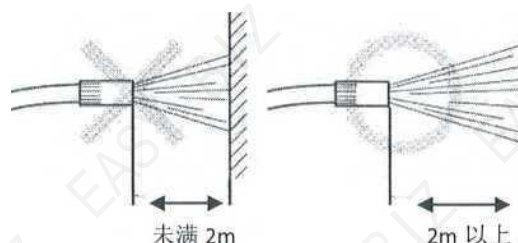
- If spraying water directly or improperly close enough,
1. Fire will be caused by damage to the foreskin of the electrical wiring or broken wiring.
  2. Due to hydraulic hose rupture, due to the ejection of high pressure oil.
  3. Cause damage and damage to the machine, so that the machine failure. Example
    - (1) Seal and label peeling
    - (2) Electronic components, engine, safety cab and other water intake caused by the failure
    - (3) Damage of rubber, oil seal, resin parts and glass
    - (4) Pepping of painting and electroplating layer



Water directly

Diffuse spray water

#### Close car wash



未滿 2m

2m 以上

**Periodic examination of the uterus**

| No | period                                            |                                        | count<br>measure | The hour meter display time |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                                   | thereafter | Reference<br>page |
|----|---------------------------------------------------|----------------------------------------|------------------|-----------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----------------------------------|------------|-------------------|
|    | project                                           |                                        |                  | 50                          | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 550 | 600 | 650 | 700 | 750 | 800                               |            |                   |
| 1  | Working device                                    | Add butter                             |                  |                             |     |     |     |     |     |     |     |     |     |     |     |     |     |     | every day                         | 65         |                   |
| 2  | fuel oil                                          | drain off water                        | 10               | 0                           | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | every 50 hours                    | 66         |                   |
| 3  | Battery liquid                                    | The examination of oneself             | 10               | 0                           | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | every 50 hours                    |            |                   |
| 4  | Rotary bearing tooth surface                      | Add butter                             | 10               | 0                           | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | every 50 hours                    | 68         |                   |
| 5  | engine oil                                        | renewal                                | 1                |                             |     |     | 0   |     |     |     |     | 0   |     |     |     |     | 0   |     | Every 250 hours or every 6 months | 70         |                   |
| 6  | Oil filter element                                | renewal                                | 1                |                             |     |     | 0   |     |     |     |     | 0   |     |     |     |     | 0   |     | Every 250 hours or every 6 months | 71         |                   |
| 7  | Hydraulic oil return filter ☆                     | renewal                                | 1                |                             |     |     | ◎   |     |     |     |     | 0   |     |     |     |     |     |     | every 500 hours                   | 74         |                   |
| 8  | fuel filter                                       | renewal                                | 1                |                             |     |     |     |     |     |     |     | 0   |     |     |     |     |     |     | every 500 hours                   | 73         |                   |
| 9  | Final drive gearbox gear oil                      | renewal                                | 2                |                             | ◎   |     |     |     |     |     |     | 0   |     |     |     |     |     |     | every 500 hours                   | 68<br>73   |                   |
| 10 | fan belt                                          | Check the adjustment                   | 1                |                             |     |     | 0   |     |     |     |     | 0   |     |     |     |     | 0   |     | Every 250 hours                   | 69         |                   |
|    |                                                   | renewal                                | 1                |                             |     |     |     |     |     |     |     | 0   |     |     |     |     |     |     | every 500 hours                   | 73         |                   |
| 11 | air cleaner                                       | Clean up and examination of the uterus | 1                |                             |     |     | 0   |     |     |     |     | 0   |     |     |     |     | 0   |     | Every 250 hours                   | 72         |                   |
|    |                                                   | renewal                                |                  |                             |     |     | 0   |     |     |     |     | 0   |     |     |     |     | 0   |     | Every 250 hours or every year     | 73         |                   |
|    |                                                   | Internal filter                        | 1                |                             |     |     |     |     |     |     |     | 0   |     |     |     |     |     |     | Every 500 hours or every year     | 73         |                   |
| 12 | Turn the rotary bearing ball section              | Add butter                             | 1                |                             |     |     | 0   |     |     |     |     | 0   |     |     |     |     | 0   |     | Every 250 hours                   | 69         |                   |
| 13 | Radiator hose and pipe hoop                       | The examination of oneself             | 2                |                             |     |     | 0   |     |     |     |     | 0   |     |     |     |     | 0   |     | Every 250 hours                   | 72         |                   |
|    |                                                   | renewal                                | 2                |                             |     |     |     |     |     |     |     |     |     |     |     |     |     |     | every 2 years                     | 77         |                   |
| 14 | hydraulic fluid ☆                                 | renewal                                | 1                |                             |     |     |     |     |     |     |     |     |     |     |     |     |     |     | every 1000 hours                  | 74         |                   |
| 15 | Hydraulic oil suction filter element              | renewal                                | 1                |                             |     |     |     |     |     |     |     |     |     |     |     |     |     |     | every 1000 hours                  | 74         |                   |
| 16 | Hydraulic pilot filter                            | renewal                                | 1                |                             |     |     |     |     |     |     |     |     |     |     |     |     |     |     | every 1000 hours                  | 75         |                   |
| 17 | Oil from supporting heavy wheels and inler wheels | renewal                                | 8                |                             |     |     |     |     |     |     |     |     |     |     |     |     |     |     | every 2000 hours                  | 75         |                   |

| No. | period                             |                            | count<br>measure | The hour meter display time |     |     |     |     |     |     |     |     |     |     |     |     |     |     |               | after<br>that | Reference<br>page |
|-----|------------------------------------|----------------------------|------------------|-----------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|---------------|---------------|-------------------|
|     | project                            |                            |                  | 50                          | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 550 | 600 | 650 | 700 | 750 | 800           |               |                   |
| 18  | Alternator, starter motor          | The examination of oneself | -                |                             |     |     |     |     |     |     |     |     |     |     |     |     |     |     | every 2000    | 75            |                   |
| 19  | Use of electrical wiring and fuses | check up                   | -                |                             |     |     |     |     |     |     |     |     |     |     |     |     |     |     | Every year    | 75            |                   |
| 20  | coolant liquid                     | renewal                    | 1                |                             |     |     |     |     |     |     |     |     |     |     |     |     |     |     | Every 2 years | 76            |                   |

1. The © symbol indicates the first implementation only.

2. The ☆ symbol indicates that the replacement time is shortened when using a hydraulic front-end working device such as a crushing hammer.

(Refer to the item Replacement for details.)

## Daily maintenance

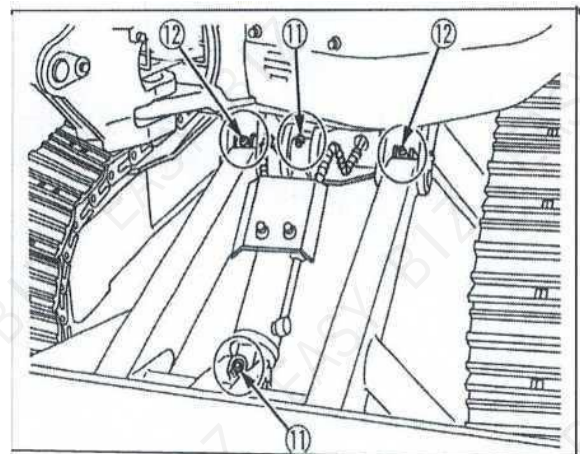
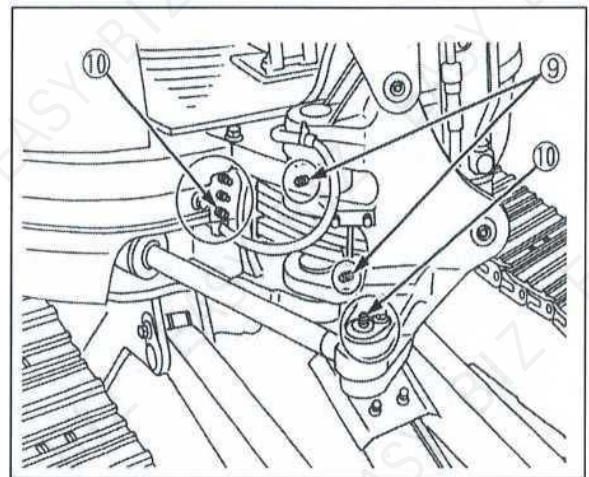
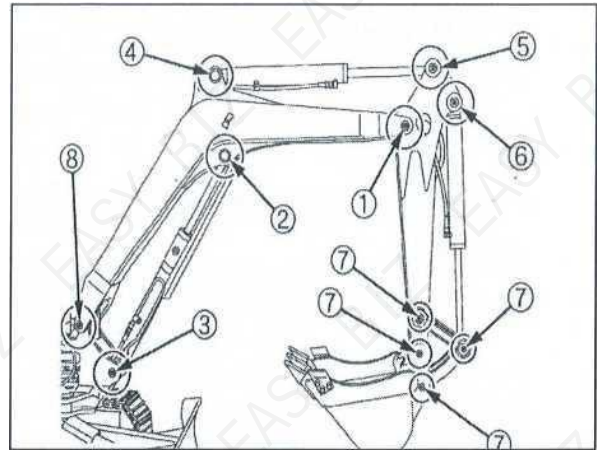
### Refueling of the ■ worker unit section

Please add butter to the butter  
nozzle marked with arrows

- (1) boom root..... One place
- (2) Arm oil cylinder bushing.....  
One place
- (3) Arm oil cylinder pin..... One  
place
- (4) The barrel rod cylinder  
bushing..... One place
- (5) Bucket rod cylinder pin.....  
One place
- (6) Bucket oil cylinder pin.....  
One place
- (7), The bucket pin is..... Four  
places
- (8) boom root pin..... One place
- (9) Swing the fulcrum pin.....  
Two places
- (10), swing cylinder..... Two  
places
- (11) Ter shovel oil cylinder  
bushing..... Two places
- (12) Bullet shovel root bushing.....  
Two places

### material particulars

- \* Adeate butter must be filled before digging in the  
water and must be refueled immediately after the  
operation.
- \* Please fill butter after high pressure car wash.
- \* Butter if sound from the pin during operation.
- \* Fill butter for each excavation and deep excavation  
operation.
- \* After butter the bucket pin, operate the bucket  
several times and butter again.

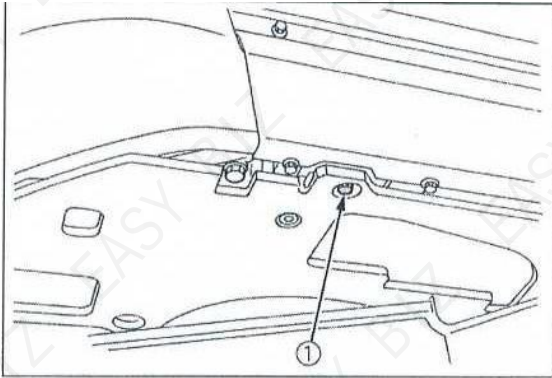


## Every 50 hours of service is used

### Drainage of the ■ fuel tank

#### ◆ fuel tank

Remove the plug at the bottom of the fuel tank from the lower turntable,

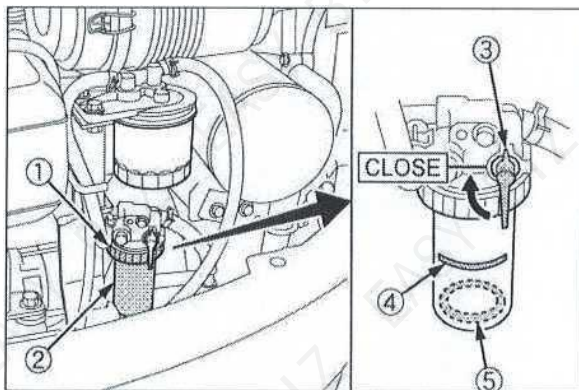


#### ◆ decantor

If there is water, the red float rises, at this time should remove the oil cup, pour down the water.

1. Please place the oil-water separator handle in the "CLOSE" (off) position.

2. Loose the upper protective rim of the oil cup, remove it and pour out the water inside.



- (1) retainer
- (2) oilring
- (3) Oil-water separator handle
- (4) marking line
- (5) floater

### Level check of the ■ battery

**danger**

There are 2 types of batteries, one does not need water, the other needs water. For batteries requiring water replenishment, follow the following items.

- \* Do not use or charge the battery if its level is below LOWER (minimum level line).
- \* If used below the LOWER (minimum level line), it will accelerate the aging inside the battery, not only, shorten the service life of the battery, but also may lead to explosion. Supplement water immediately to reach the level between UPPER LEVEL (upper) and LOWER LEVEL (lower).

**warn**

- \* Do not touch the battery liquid on your body or clothes. If stained, rinse with plenty of water immediately.

A If negligent.....

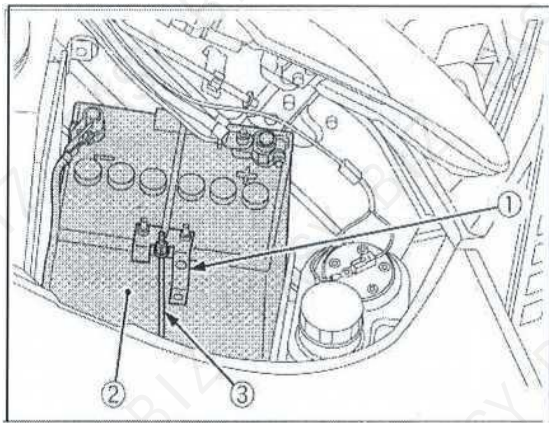
Sparse sulfur fe may cause burns.

- \* When checking and removing the battery, stop the engine, and place the start key in the "STOP" (stop) position.
- \* The gas produced during the charging process is at a risk of fire and explosion. Therefore, please absolutely never get close to the fire source, and also do not produce sparks.

When charging the battery, remove all the liquid port plugs of each battery.

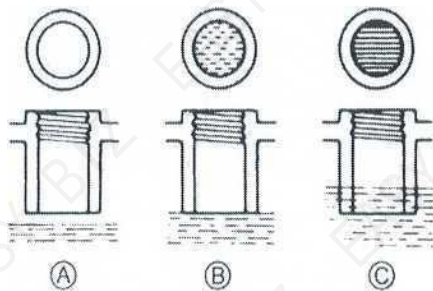
- \* Wear glasses to protect your eyes while working near the battery.

1. Open the right hood and secure the right hood with a bar.
2. Remove the battery cover. When the liquid level does not reach the specified liquid level, please supplement the battery liquid or steam the greedy water.
3. When the electrolyte is reduced due to overflow, please go to the battery store to supplement the same concentration of dilute sulfuric acid.
4. Clean the vent of the battery cover.



(1) Fixed fixture (2) battery (3) battery bolt

Liquid level of battery



(A) Insufficient (B) appropriate (C) too much

#### ◆ removal of ◆ battery

1. Stop the engine and place the start key "STOP"
- (Stop) Position.
2. Remove the (I) pole line of the battery.
3. Remove the (+) pole line of the battery.
4. Remove the nut of the battery bolt and remove the fixture.
5. Remove the battery.

#### pay attention to

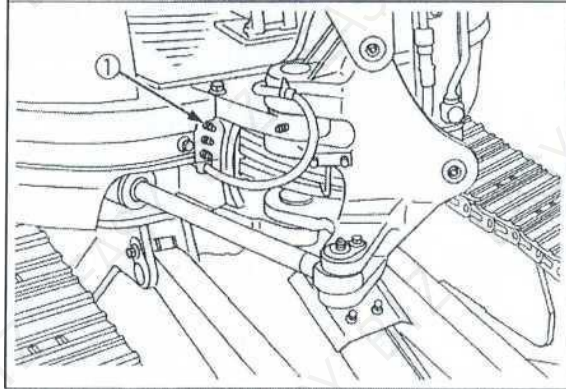
- \* When charging the battery, always remove the battery from this machine and proceed in a well-ventilated place.
- \* When removing the wire from the battery, please remove the (I) pole side first, and install the (+) pole side first when installing. If reversed, the tool will short circuit when it touches the battery.
- \* When charging, please connect the (+) pole of the battery to the (+) pole of the charger, connect the (I) pole of the battery to the (I) pole of the charger, and charge according to the general charging method. Please be careful not to connect the wrong wires.
- \* Please absolutely do not charge when both the battery (I) line and (+) lines are connected to the battery.
- \* Loose terminals can cause spark generation or failure of electrical components. So please tighten it up.
- \* The battery indicator lamp display is for reference only. Therefore, not only to confirm the indicator light display, but also to effectively carry out the liquid level and other inspection.
- \* When replenishing the battery liquid or steaming the greedy water, before opening the cover, you should first clean the garbage and dust on the battery before supplementing.

material particulars

- \* When the battery fluid is insufficient, the battery will be damaged; when too much, it will lead to liquid overflow and thus corrode the metal part of the body. In addition to damaging the electrical parts, sometimes damage the wiring, etc.
- \* Please avoid rapid charging whenever possible. Otherwise, the battery service life will be shortened.
- \* Do not mistake the (+) and (I) pole lines when connecting the wire to the battery. A mistake can cause battery and electrical system failure

### Face of ■ rotary bearing

1. Please inject butter from the butter nozzle marked with arrows.
2. Turn once and refuel four times every about 90 degrees.
3. When refueling the tooth surface, inject about 50g of butter into each butter nozzle  
(Press the butter gun about 20 times) and refuel the entire tooth surface.



(1) Butter mouth

### Every 100 hours of service is used

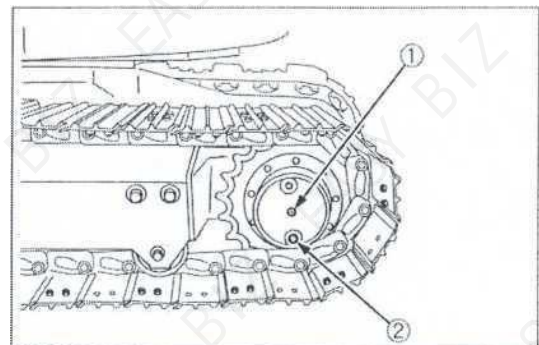
Please maintain every 50 hours of service simultaneously

Replacement of the ■ final drive gearbox gear oil (100 hours after the first time, and every 500 hours after the second time)

1. Turn the track to lower the oil drain bolts of the final drive reducer below.
2. Remove the oil drain bolts and remove the oil.
3. After fastening, remove the oil check and refueling □ plug, and fill the gear oil from the refueling port.
4. The specified oil quantity is shown in the table below.

Final drive gearbox oil quantity | about 0.33L a injection of gear oil until the refueling inlet oil out, and then effectively tighten the plug.

5. Gear oil, please use the gear oil, SAE # 90.  
(See the "Recommended Oil, Butter" item)



- (1) Oil inspection and oil refueling port
- (2) oil discharge bolts

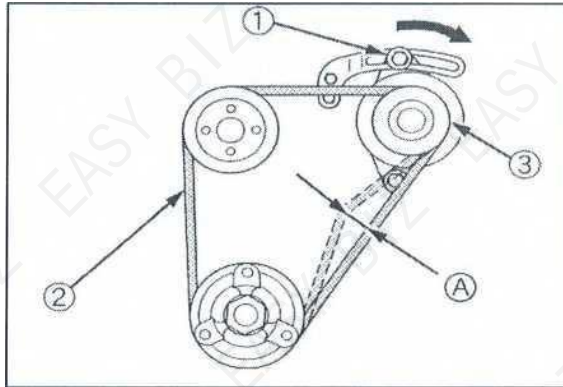
**Every 250 hours of service is used**

Also maintain it for every 50 hours of use.

## Check and adjustment of ■ fan belt tension

1. When pressing on the center of the [58.8-68.6N (6~71Kgf)] belt with the fingertips, the deflection should be 79mm. When the deflection is inappropriate, loosen the bolt and point the alternator to the arrow

Move in the direction to tighten the belt.



- (1) Bolt  
(2) Fan belt  
(3) alternator
- (A) At approx. 7-9mm

2. Check the damage condition of each pulley, the wear condition of V-shaped groove and the wear condition of V-shaped belt, especially whether the V-shaped belt touches the bottom of V-shaped groove.
3. If the belt elongates without adjustment allowance, or has scratches or cracks, please replace it.

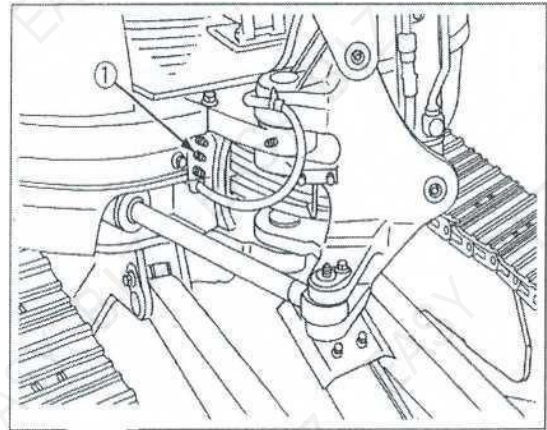
## material particulars

\*If the belt continues to operate in a low-tension state, the belt will slip, which will not only reduce the capacity of the engine, but also shorten its service life, so please check and adjust.

\*When the fan belt breaks, the battery charging indicator will illuminate, so stop the engine immediately

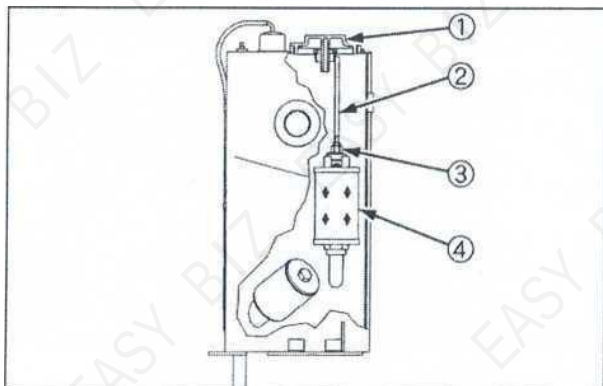
## Ball illing of ■ rotary bearing

1. Please add butter to the butter nozzle marked with arrows.  
(Central grease nozzle)
2. Turn once and refuel four times every about 90 degrees.



Replacement of the ■ hydraulic oil return oil filter  
(250 hours at the first time and every 500 hours after the second time)

Remove the filter after the oil temperature in the hydraulic tank.



(1) Plug (2) filter bracket  
(3) Nut (4) return oil filter

1. Open the right hood and fix it.
2. Remove the rotary plug.
3. Hold the upper part of the filter bracket and remove it from the hydraulic tank.
4. Loose the nuts, remove the return oil filter from the filter bracket, and then replace it with a new filter.

#### material particulars

\*When using the hydraulic working device such as the crushing hammer, which is different from the above situation, please replace the operation according to the use frequency of the hydraulic working device, as shown in the following table.

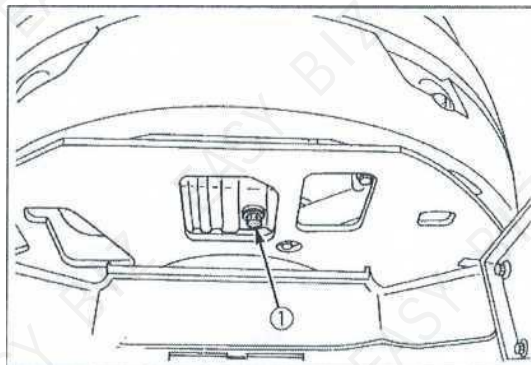
| Service time ratio of the hydraulic worker unit | Hydraulic oil, replacement time | Replacement time of the return oil filter                    |
|-------------------------------------------------|---------------------------------|--------------------------------------------------------------|
| Standard work (Backhoe work)                    | Every 1,000 hours each          | Every 500 hours each<br>(Every 250 hours for the first time) |
| The crushing hammer use ratio is 20%            | Every 800 hours each            |                                                              |
| 40%                                             | Every 400 hours each            | Mother ZUU is less than w                                    |
| 60%                                             | Every 300 hours each            |                                                              |
| More than 80%                                   | Every 200 hours each            | 4 # 1UU small 20                                             |

replenish

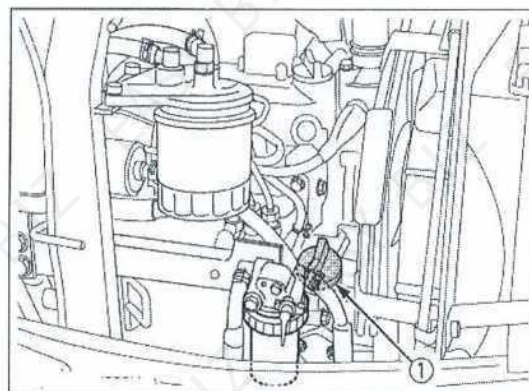
Be sure to check the oil level after replacing the filter.

■ oil change (replaced once every 250 hours, or once every 6 months before 250 hours)

1. Remove the oil drain bolts at the bottom of the engine and remove the oil.
2. After removing the oil, please tighten the oil drain bolts earnestly.



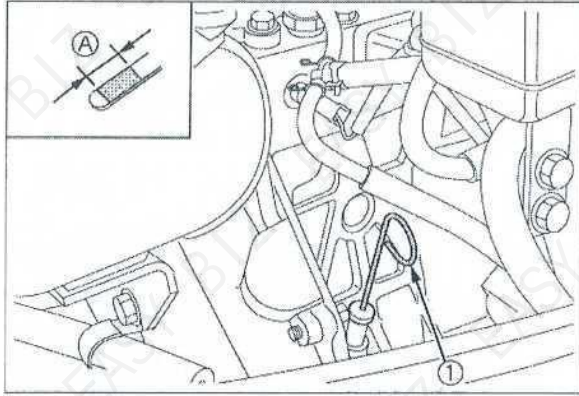
(1) Oil drain bolts



(1) The refueling mouth

4. Idle the engine, and then stop the engine for about 5 minutes

Use the oil gauge after the clock to confirm that the specified oil is added.



(1) Oil ruler

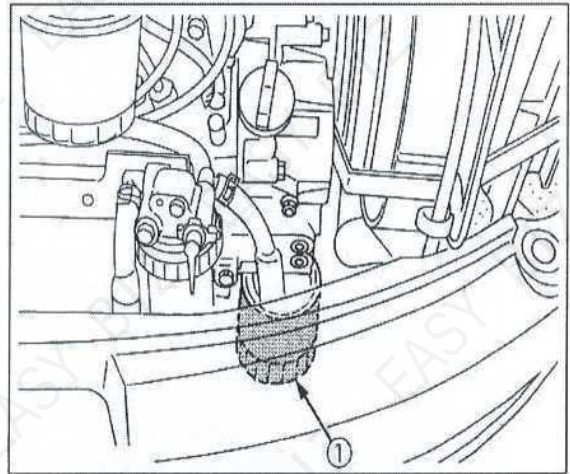
replenish

Oil quantity      Approximately 4.4L (including the filter)

- \* Please use the engine oil recommended in "Recommended Oil, Butter".
- \* Replace once a year before 500 hours.

■ oil filter element replacement (replaced once every 250 hours, or once every 6 months before reaching 250 hours)

1. Go along with the oil change.
2. Use the filter wrench for the disassembly operation.



(1) Oil filter element

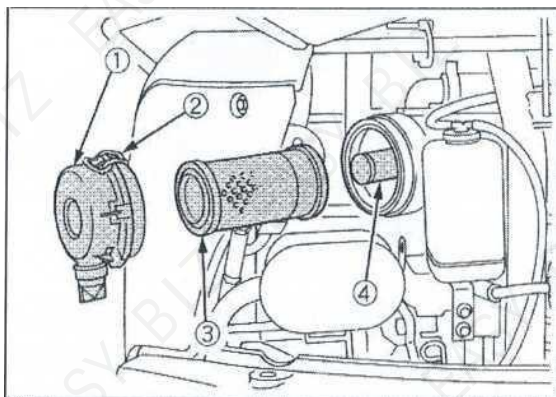
3. Please add it to the new filter element. Apply a thin layer of oil to the ring and hold it in place by hand (without a filter wrench).
4. Supplement the specified amount of engine oil to the engine.
5. Run for about 5 minutes and stop the engine after confirming that the oil indicator is abnormal.
6. Please use the oil ruler again to confirm the oil level, and supplement it if it is insufficient.

### Cleaning and check of the ■ air filter



Remove dust with compressed air, so be sure to wear protective glasses. Especially in the dust and other places work, please clean as soon as possible.

Remove the clip, remove the external filter, clean the external filter and the inside of the housing, install it. Do not remove the internal filter.



(1) Dust cap (2) card clip (3) external filter  
(4) Internal filter

#### ◆ cleaning method

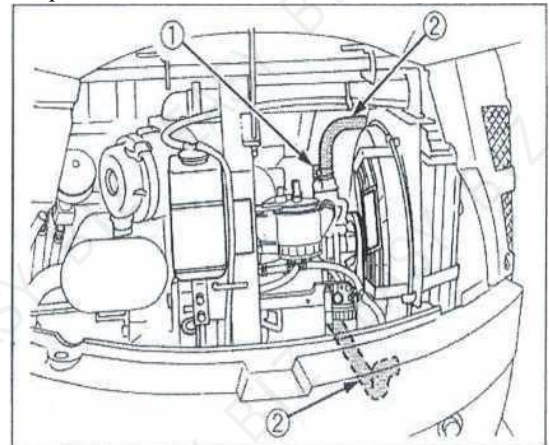
With dry compressed air [205kPa (2.1kgf / cm)<sup>2</sup> Below] Burge the outside of the filter element, forcibly remove the attached dust, and then purge from the inside to the outside to remove all the dust.



### Check the ■ radiator hose and pipe hoop

Check the radiator hose once every 250 hours or every 6 months.

1. When the pipe hoop is loose or leaking, please tighten it earnestly.
2. When the radiator hose expands, harden or cracks, replace the hose and tighten the pipe hoop.



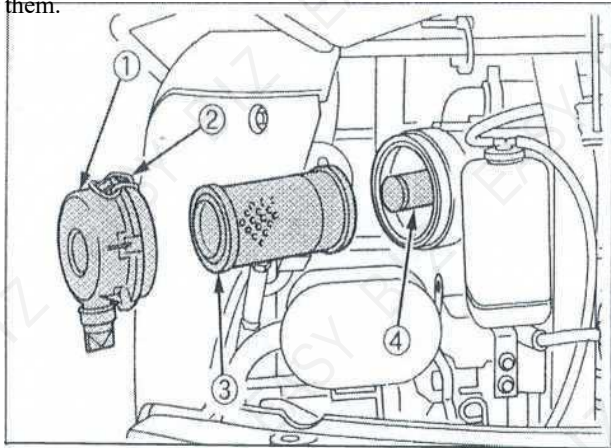
(1) Pipe hoop (2) radiator hose

## Use the for every 500 hours of maintenance

Maintain for every 50,100, and 250 hours simultaneously

### ■ air filter replacement

Remove the clip, remove the external and internal filter elements, replace them with new products, and reinstall them.

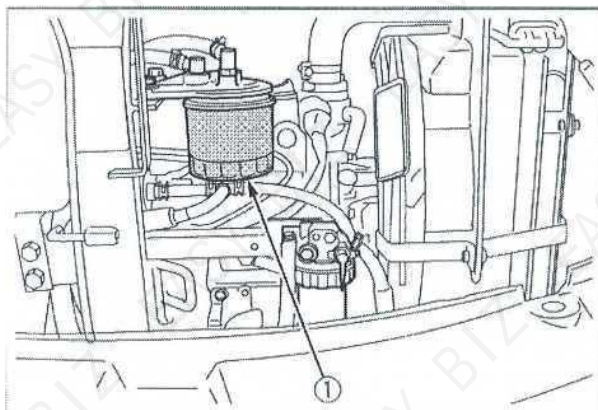


(1) Dust cap (2) card clip (3) external filter  
(4) Internal filter

### ■ fuel filter replacement

1. Remove the filter element by using the filter wrench.
2. After gently applying a layer of fuel to the sealing layer during assembly, tighten the filter element directly with your hand without the filter wrench.
3. Please exhaust the gas.

(See "Fuel, System exhaust" item)



(1) Fuel filter

material particulars

Be careful not to wear dust or dust when assembly.

Replacement of gear oil of ■ drive gearbox (primary

For 100 hours, every 500 hours after time 2.) For

oil replacement methods, see " Every turn

Use the 100 hours of maintenance " program

### ■ Engine Fan Belt Replacement

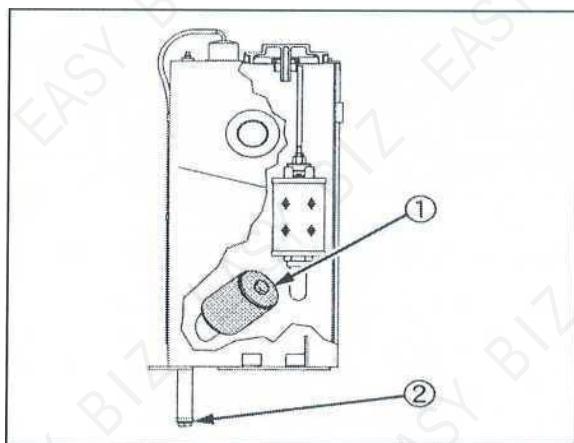
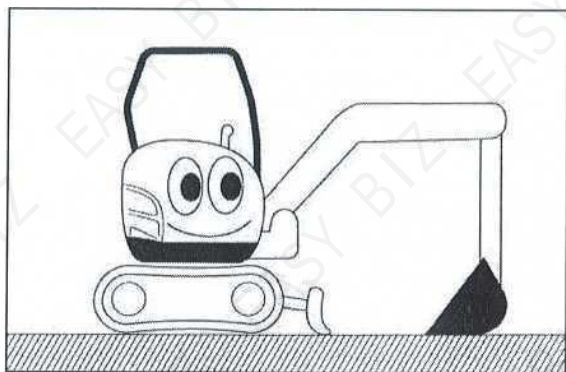
Please entrust the sales store to check and replace it.

### Every 1,000 hours of service is used

Use every 50, 100, 200, 250, and 500 hours of service simultaneously.

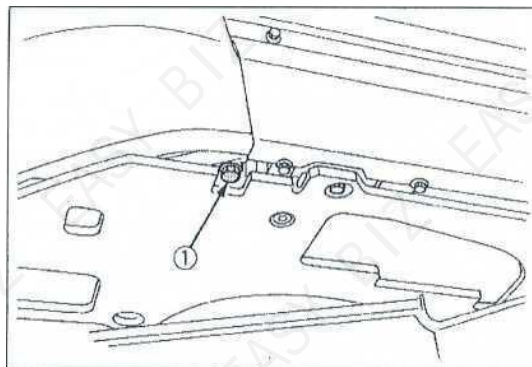
Replacement of ■ hydraulic oil (please replace the suction filter in the hydraulic tank)

1. Park the body in a horizontal place, extend the piston rod of each cylinder to an approximately the middle position, and contact the bucket and bulldozers with the ground.



(1) Oil suction filter element (2) oil drain bolts

2. Remove the oil drain bolts at the bottom of the oil tank and remove the hydraulic oil.



- (1) Oil drain bolts
3. Remove the rotary plug of the hydraulic fuel tank.
4. Remove the oil suction filter element with a wrench and replace it with new parts.
5. Then, please earnestly tighten the oil drain bolts.
6. Please fill in the specified amount of hydraulic oil from the refueling port.
7. Keep the engine running to an idle speed for about 5 minutes, and after stopping the engine, please confirm that the specified amount of hydraulic oil is added.

|                                    |                                                           |
|------------------------------------|-----------------------------------------------------------|
| Hydraulic oil replacement capacity | Total oil volume is 37L                                   |
|                                    | (The oil gauge in the hydraulic oil tank is in the center |
|                                    | Oil quantity: 22.5L)                                      |

replenish

\*Wash the inner surface in the tank.\* Be careful not to get foreign bodies into the tank.

\* When changing the oil absorption filter element, please consult the sales store or the repair factory designated by the company.

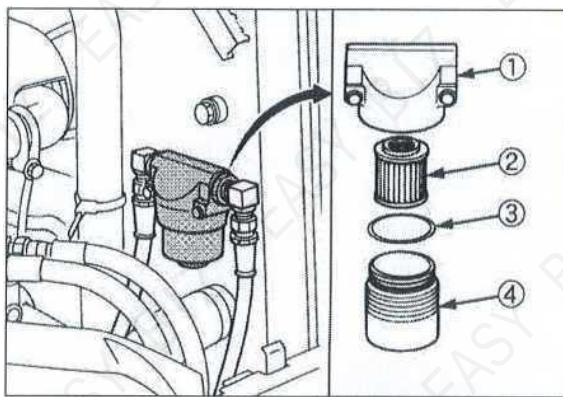
To work safely

Please be sure to read

#### Replacement of the ■ hydraulic pilot filter

Change the filter after a lower oil temperature.

1. Open the rear hood and remove the right hood.
2. Remove the housing of the pilot filter from the end cover.
3. Pull out the filter element while rotating.
4. Please replace the O-ring with a new product.
5. Apply a thin layer of clean hydraulic oil to the O-ring of the new filter element, and then embed it effectively, but do not damage the O-ring.
6. Tighten the housing to the end cover.
7. After replacement, make the engine idle for about 3 minutes and drop the air in the loop side by side.
8. Be sure to check the liquid level of the hydraulic fuel tank.



(1)End  
cover

(2), Filter

(3)Type-O-  
ring

(4) Shell

#### Every 2,000 hours of service is used

Use of every 50,100,200,250,500,1000 hours of service, please should also be performed simultaneously.

#### ■oil oil and inert grease

Please consult the sales store or the repair factory designated by the company.

For ■ alternator and starting motor, please consult the sales store or the repair plant designated by the company.

#### Maintenance for 1 year

##### ■electrical wiring inspection and fuse treatment

A pour

- \* If the wiring harness and battery line are damaged, a short circuit can occur, so always check.
- \* If garbage and fuel are attached around the battery, wiring, silencer, generator, it may cause a fire, and therefore check.

Loose wiring terminal part will lead to poor contact, such as, fruit wiring damage, it not only will damage the electrical components, performance, but also sometimes cause short circuit, leakage or burning and other accidents. Therefore, please replace or repair the damaged wiring as soon as possible.

#### material particulars

\*When the fuse is replaced and it is immediately fused, please do not replace it with metal wire. It should be checked and repaired in the repair factory designated by the company.

\*Because the wiring harness of this machine has been fully tested when wiring, considering the waterproof and other factors, so do not repair without authorization, use, should be checked and repaired in the sales shop or the repair factory designated by the company.

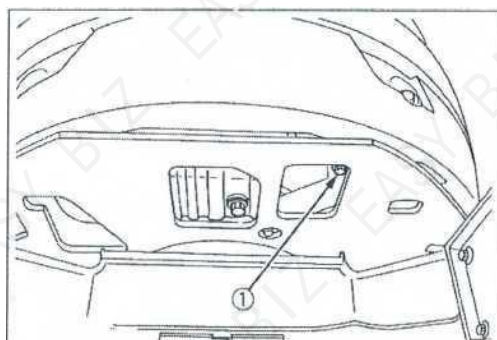
## Maintenance for every 2 years

### ■ Coolant Replacement

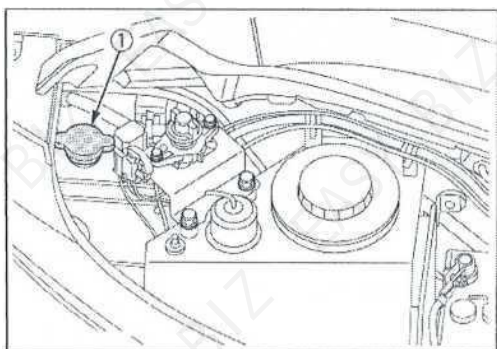


If the radiator cover is opened during operation or just after the operation stops, sometimes hot water. Therefore, open the radiator cover after the radiator has cooled.

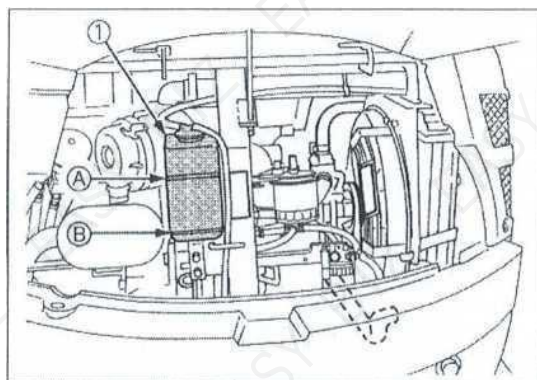
1. Remove the radiator cover, remove the drain plug from the lower radiator, and drain all the coolant. To drain the secondary tank, please remove the secondary tank, unscrew the secondary tank cover, and drain the water.
2. Please drain the water from the radiator water inlet. Continue until the drain flows water.
3. Then, tighten the drainage plug and inject the long-acting coolant into the radiator and secondary water tank. After water injection, tighten the lid, start the engine and idle it for about 5 minutes, and then shut down the engine to confirm whether the specified amount of coolant is added.



(1) Oil drain bolts



(1) Radiator cover



(1) Secondary water tank

### ◆ The use of antifreeze

#### (Except for long-acting coolant)

Antifreeze has the effect of reducing the water freezing temperature, and can prevent the damage to the oil cylinder and radiator caused by the coolant freezing.

When the winter temperature drops below 0 ° C, always mix the permanent type (PT type) antifreeze into the clear water, and then add it to the radiator and the secondary water tank

#### material particulars

- \* The mixing ratio of antifreeze varies by manufacturer and air temperature. Please follow the mix ratio described in the Low Temperature Measures item.
- \* The effective service life of the long-acting coolant is 2 years.
- \* For antifreeze other than long-acting coolant, please replace it once every spring and autumn.
- \* Do not mix the antifreeze from different manufacturers.

#### replenish

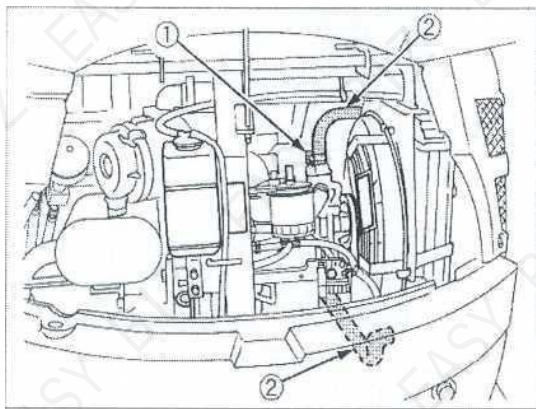
- \* Long-acting coolant (mixing ratio: antifreeze, 50% water and 50% water) o

## ■ radiator hose and pipe hoop replacement



After using the radiator hose and pipe hoop for a long time, it will rupture, resulting in hot water ejection, and sometimes may cause accidental burns. So please replace it early.

Please replace the radiator hose and pipe hoop once every 2 years. If the radiator hose is found to expand, harden or crack, it should be replaced even if it is not yet 2 years.



(1) Pipe hoop (2) radiator hose

### The alarm

- \*Short circuit may occur when removing the battery wire, so always remove the negative line first. In addition, when assembling, please connect the positive electrode line first.
- \*The battery produces flammable hydrogen near the fire source will catch fire and explode, so please absolutely do not get close to the fire source.
- \*Please absolutely do not place metal items such as tools or combustible materials on or around the battery. Otherwise, a short circuit will cause a fire and explosion, cause a fire.
- \*Battery solution (dilute sulfuric acid) can cause blindness or burns. If the battery solution sticks to the skin or clothing, rinse it with plenty of water immediately. In addition, if the battery solution is splashed into the eye, rinse with a lot of water and seek medical attention immediately.
- \*When charging, please remove all the liquid port plugs of each battery.
- \*Wear glasses to protect your eyes while working near the battery.

## Inspection and use of the storage battery

Stop the engine and start the key at "OFF" (stop) Stop) Check and use the battery under the state.

### Maintenance and maintenance of ■ battery

Today's battery has extremely high performance, if used wrongly, will shorten the service life of the battery, resulting in unnecessary overhead. Therefore, use it correctly to maximize the performance of the battery.

1. The battery is the necessary part for the engine start and the indicator light.
2. If the battery charge decreases, the engine cannot be started, and the indicator light will also dim. If you reach this point, sometimes you are too late, so please recharge as soon as possible.
3. Because the water in the electrolyte evaporates, the electrolyte decreases during the battery charging process. When the electrolyte is insufficient, the battery will be damaged, and when too much, it will corrode the body due to liquid overflow.
4. Please check whether the electrode plate separator shows the liquid surface. When the electrolyte is insufficient, please be sure to supplement the battery liquid or steamed filling water.
5. When collecting the machine for a long time, please remove the battery from the machine, charge it, and keep it in a dry place after adjusting it to the correct liquid level.
6. Since the battery also discharges naturally during the storage process, please charge it once a month.
7. When supplementing the battery liquid or steamed filling water, first clean the garbage and dust on the battery before opening the cover.

**Notes when charging the ■****battery**

1. Be sure to remove the battery from transferring the key to "OFF" (stop).
2. When the battery fluid is insufficient, the battery will be damaged; when too much, it will overflow and corrode the metal part of the body.
3. Please avoid rapid charging whenever possible. Otherwise, the battery service life will be shortened.
4. Rapid charging method is a large-current charging method, which is used to store the power in the discharge state in a short time. The pool compensates for the partial discharge amount, so it can only be used in emergency situations.
5. Do not mistake when connecting the wire to the battery  
(+) pole line and (1) pole line. If wrong, it can cause battery and electrical system failure.
6. When removing the wire from the battery, please remove (1) pole side first, and install (+) pole side first when installing. If reversed, the tool will short circuit when it touches the battery.
7. When charging, please connect the (+) pole of the battery to the (+) pole of the charger, and connect the battery, respectively  
(1) The pole is connected to the (1) pole of the charger, and it is charged according to the general charging method.
8. When conducting operations other than liquid volume inspection and specific gravity measurement, the cable connected to the battery must be removed in advance.
9. Remove all the liquid outlet plugs of each battery.

**The liquid level check of the ■**

**battery** For checking battery levels, see "Per Use 50 Hour Maintenance" item.

**■precautions when charging the battery on the body (only when not oneself) The correct approach is to first remove the battery from the body, and then charge it.**

1. If abnormal voltage is applied to the alternator, it will cause damaged. Therefore, the start key should be transferred to the STOP (stop) to remove the battery  
Charge after the (-) extreme child cable.
2. During charging, remove all liquid plugs to remove the generated gas.
3. When the battery overoverheated (liquid temperature exceeds 45 ° C), stop charging.
4. Stop charging immediately after charging. If unnecessary charging continues, the following adverse conditions can occur.
  - \* Battery overheating
  - \* Reduce the battery fluid volume
  - \* The battery is in poor condition otherwise it will cause failure.
5. When connecting the battery, be careful not to reverse polarity  
(Connect (+) and (I), (-) and (+) together).  
Otherwise, damage such as alternator.
6. Charge in this way. After starting the engine, please recharge correctly as soon as possible according to the instructions for using the charger. Otherwise, it will seriously shorten the service life of the battery, please pay attention.

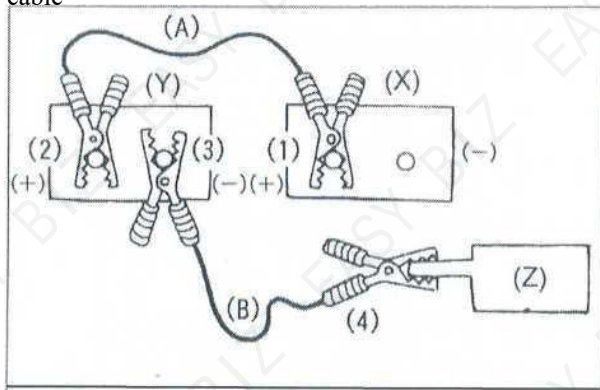
**The ■ starts the engine using a rescue cable**

1. The battery will produce combustible gas, therefore, to produce sparks near the battery or let it close to the fire source, may lead to fire and explosion, very dangerous. Avoid starting the engine with a rescue cable whenever possible.
2. In order to prevent failure, the battery with exhausted life should be replaced with new products as soon as possible.  
When the rescue cable must not be used to start the engine, please use the battery as below to avoid accidents.

**Before ■ connection**

3. Please use the rescue cables and wire clips with the capacity consistent with the battery capacity.
4. Verify that the (+) (-) terminals of cables, clips and batteries are disconnected or corroded.
5. Verify that the start key is in the "OFF" (stop) position.
6. The battery of the normal vehicle shall be the same as that of the faulty vehicle.

### Connection of the ♦ rescue cable



(X) Battery of the faulty vehicle (Y) Battery of the normal vehicle

(C) Frame of the faulty car

1.(1) Connect the wire clamp of the rescue cable (A) to the (+) extreme of the faulty vehicle, and (2) connect one of them to the (+) extreme of the normal vehicle.

2.(3) Connect the clamp of the auxiliary cable (B) to the (1) extreme of the normal car, and (4) effectively connect one of the clips to the body of the faulty car O

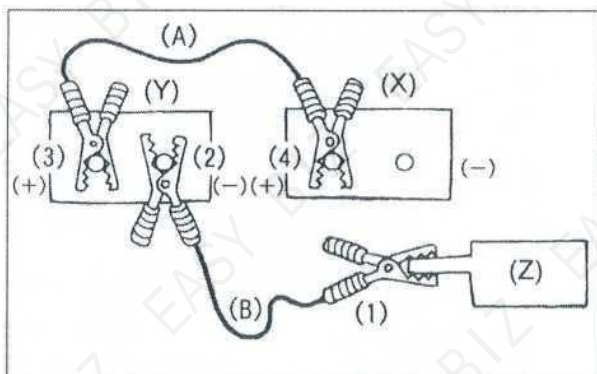
\* The connection to the body is be away from the battery.

#### ♦ starts the engine of the faulty car

1.Start the engine after completing the connection confirmation.

2. When starting fails, wait a moment (23 minutes) and restart the engine.

Removal of the rescue cable



(X) Battery of the faulty vehicle (Y) Battery of the normal vehicle

(C) Frame of the faulty car

1. (1) Remove the wire clamp of the rescue cable (B) from the frame of the faulty vehicle, and (2) then remove the connection with the (1) terminal of the normal vehicle.

2. (3) Remove the wire clip of the auxiliary cable (A) from the (+) terminal of the normal vehicle; (4) remove the (+) terminal of the faulty vehicle.

### When the ■ engine starts, and when the battery is charging

#### Precautions

For engine starting methods when the battery runs exhausted and the battery, proceed as below.

#### material particulars

\* There are charging and starting when the pool runs out

Unhibited prohibited on operation

(In the following cases, if an excessive voltage is applied to the electrical components (including the controller, the instruments), the damage may be caused. Therefore, please pay full attention during the maintenance.)

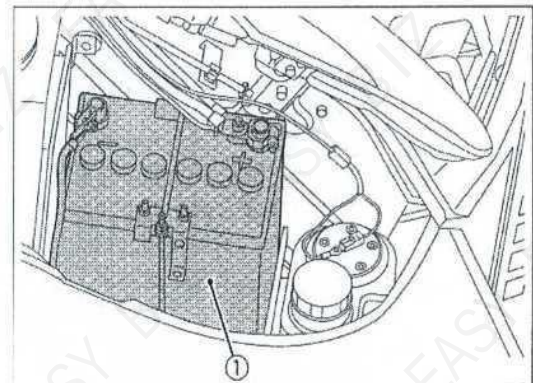
Do not start from a large construction machinery or truck using a 24V battery.(Be sure to start with a 12V battery.)

Do not charge without removing the battery terminal.

(Always remove the terminal when charging.)

Do not start by using the battery charger.

Do not start with the 24V battery.



### About the fuse

\*Be sure to replace the fuse, slow-melt fuse after placing the start key in the STOP (stop) position to stop the engine.

- ▶ if negligent...

It creates sparks, causing danger.

#### ■ Fuse replacement

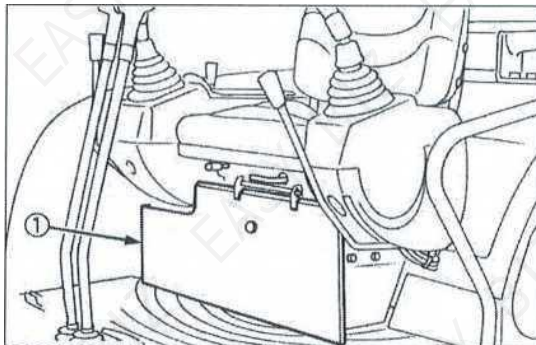
1. Place the start key in the OFF " (Stop) position
2. Remove the cover plate under the seat and open the cover of the fuse box
3. Please replace the fuse with the same capacity as the fused fuse. The fuse can be simply removed through the fuse box cover plate.

\* Do not profit when changing the fuse but fuse immediately

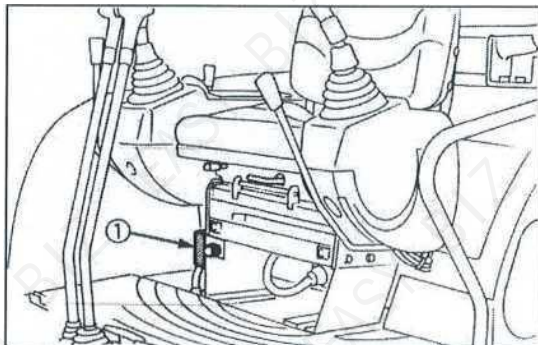
Use wire or silver foil core wire instead, but should be in the sales shop or the repair factory designated by the company

Check and repair it.

Location of the ■ fuse box



(1) The lid

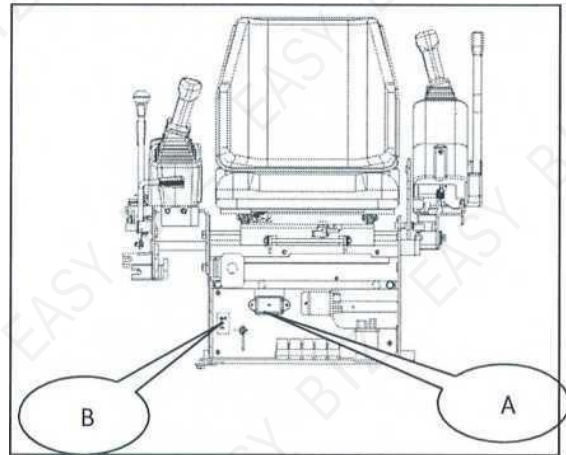


(1) catch holder

### ■ fuse capacity and adapted circuit

#### ■ Slow Melting Fuse Replacement

Slow melting (total power supply) fuse is used to protect the wiring. If the slow melt fuse is fused, be sure to investigate the cause, and do not use substitutes, but use authentic parts.



### ■ preparatory power supply (work lamp, etc.)

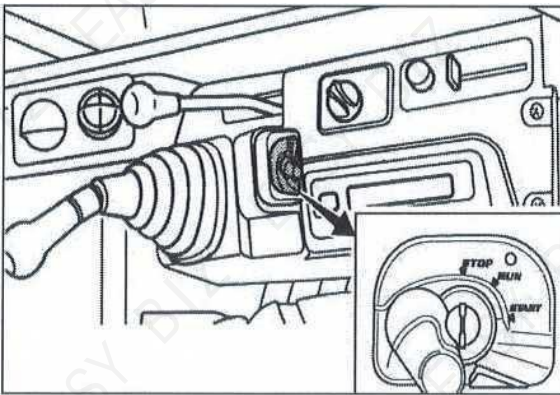
Except the work lamp (55W).

The canopy specification can be a branch on the wiring harness (work light), including the local machine work light can be installed up to 110W.

Please consult the sales store or our designated repair factory for more details

## Exhaust of the fuel system

1. Please add the fuel to the fuel tank.
2. Insert the key into the start switch and turn it to the ON (Run) Position.



3. Air-bleed for about 1 minute.

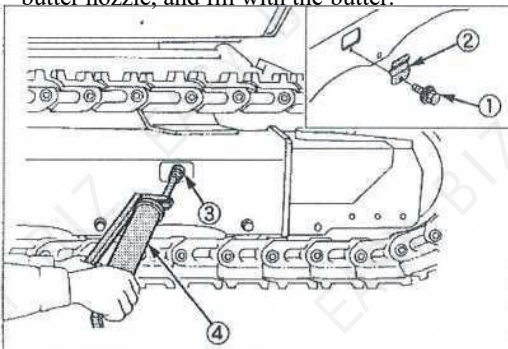
replenish

- \* 1 Repeat operations 2 and 3 when the engine stops after starting.

## Regulation of crawler

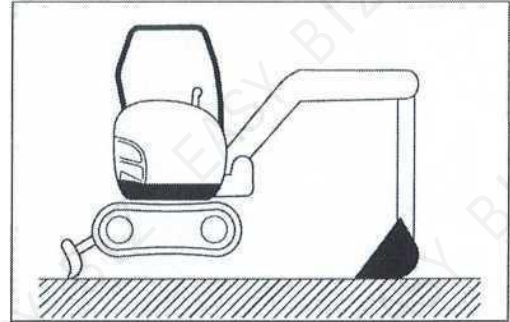
### ■ to adjust the track plate of the iron tracks

1. Remove the cover, insert the butter gun into the butter nozzle, and fill with the butter.



- (1) Bolt (2) cover  
(3) Butter nozzle (4) butter gun

2. As shown in the figure, if the gap between the peripheral end of the central support wheel and the track and the upper surface of the track plate reaches the value of "(A) size", the track tension will be in the best state.



■ When loosening the track plate of iron tracks



\* Because the butter cylinder is high in the tank, if the nozzle of the butter tank is relaxed too much or too fast, the butter nozzle will fly out, or the high pressure oil in the butter tank will be ejected, causing danger. Therefore, do not keep your face close to the nozzle, keep your body away from the nozzle front, and slowly relax the nozzle.

\* When the stone is stuck in the final drive, please remove it before working.

1. Remove the bolts, and then remove the cover.
2. Put the sleeve wrench into the root of the butter cylinder nozzle and turn it slowly 3-4 times to relax the butter nozzle.
3. If the thread flows out of butter, empty the track to fully relax in the air.

After the adjustment

4. Tighten the hexagonal part of the butter nozzle with a sleeve wrench, etc.

The fastening torque is approximately 98-108N m (10-11kgf m).

## ■ shovel bucket replacement

### pay attention to

- \* Please wear helmets, protective glasses and other protective appliances when changing operations.
- \* When working together, we should thoroughly understand the agreed signals, accurately achieve mutual communication, and pay full attention to safety.

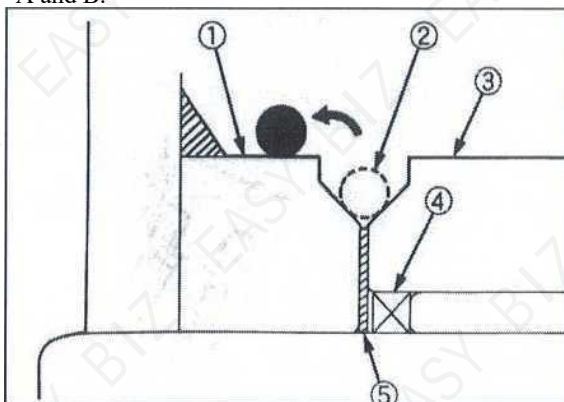
Please change the bucket according to the following tips.

#### material particulars

- \*Be careful not to touch the extracted pins with sand or dirt.
- \*Since a dust seal is placed at both ends of the bushing, be careful not to damage the dust seal when loading and unloading pins.

#### Removal of ■ tackles

- 1.Keep the bucket in contact with the ground in flat and horizontal places.
- 2.Stop the engine and take the pressure off the hydraulic system.
- 3.Remove the 0-ring from the slot and remove pins A and B.

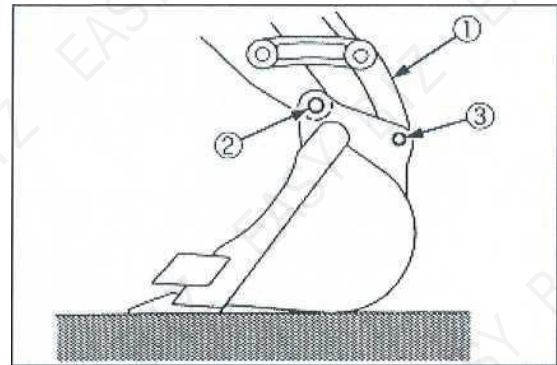


- (1) molding ring
- (3) The pole
- (4) Dust proof seal
- (5) Adjust the gasket

- (1) Bucket (4) dustproof seal

#### material particulars

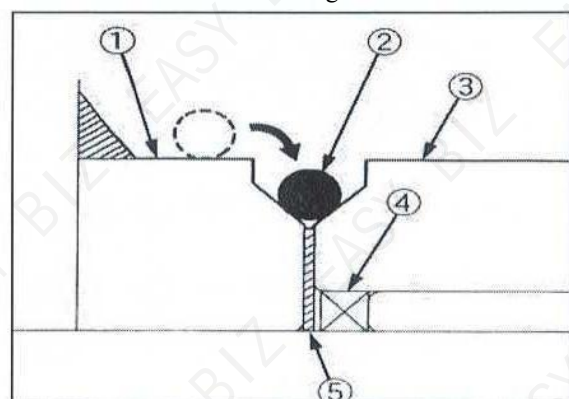
- \* When changing the bucket, confirm that the dust seal at the front of the bucket ring is not damaged. If the damaged dust seal is used, the sand will enter the bush, resulting in rapid wear.



- (1) Link
- (2) A melt
- (3) B pin

#### . Shovel installation

1. Place the 0-ring into the hub part of the bucket.
2. Point the bucket rod at hole A, put the gap sheet when the gap between the two ends of the bucket rod is large, and combine it with the pin. Then, the link is aligned with the B hole, when the gap between the two ends of the link is large, and the pin is combined.
3. Please install the positioning bolts.
4. Please will be. Install the ring into the slot.



- (2) Type 0 ring (5) Filler sheet
- (3) The pole

5. Fill the pin with butter.

## Replacement of bucket teeth and side teeth

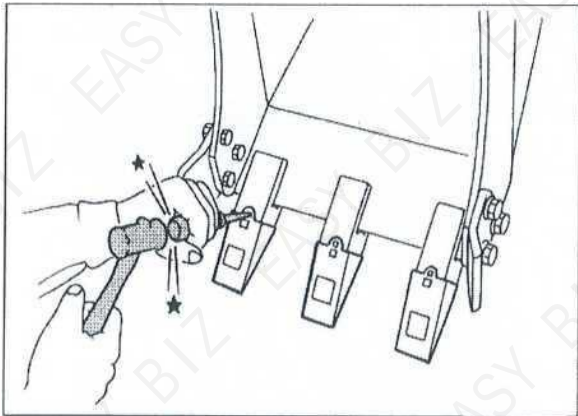
### ■ Dating Replacement



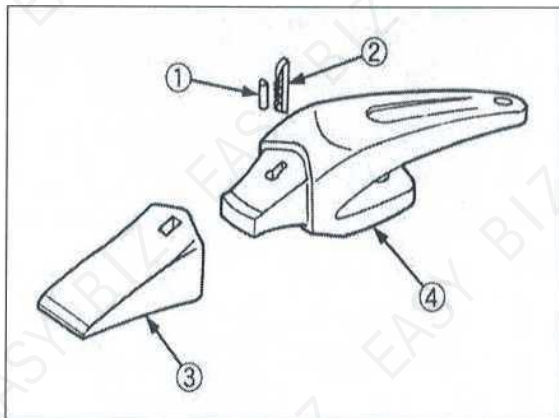
m

\* When working, please always use protective glasses and other protective appliances.

1. Cover the lock pin with a punch, and remove the lock pin with a hammer first.
2. Beat ck worn teeth with a hammer and pull from the seat
3. Get rid of the soil attached to the receiver.

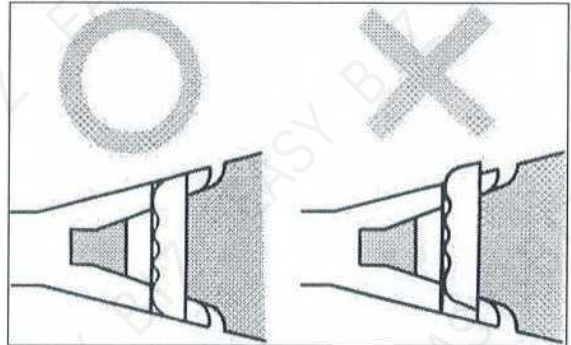


4. Point the new bucket at the bucket seat and insert it into the connector.



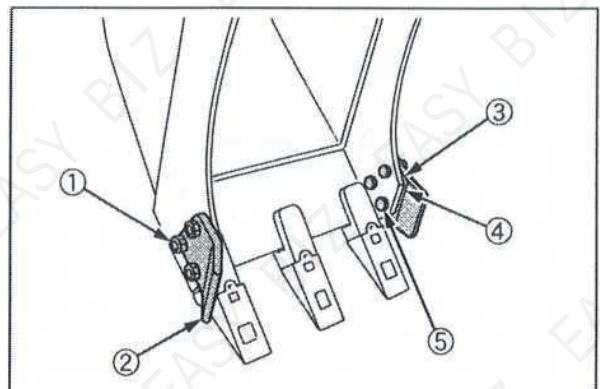
- (1) Rubber plug (2) lock pin (3) bucket tooth (4) bucket tooth seat

5. Push the rubber plug and lock pin when the bucket hole is aimed at the hole of the bucket holder. At this point, please stop until the top of the pin and the top of the joint (in the case of replacement, it is recommended to replace the rubber plug and lock pin every time when the new bucket tooth is installed)



The replacement of the ■ lateral teeth

1. Unscrew the socket mounting bolts with socket wrench, etc.
  2. Please install the new side teeth. And temporarily tighten the bolts.
  3. Please confirm the side tooth contact surface and the bucket metal bucket seat
- After practical contact, tighten the bolts.



- (1) Nut (3) bucket metal joint  
(2) Side teeth (4) contact surface  
(5) Install the bolts

**Tighten the bolts with a tightening torque of 215-245.2N m (22.0 to 25.0kgf m).**

The bolt may become loose when the side tooth contact surface is not contacted with the bucket metal bucket tooth seat or when the fastening force is weak.

### Long-term storage and maintenance

When the ■ stops for a long time, please keep it as described below

1. After washing and cleaning each part, please collect the machine indoors, and do not put it outdoors. When left outdoors, please choose a flat ground, and put it on the wood, and then cover it with a cover.
2. Please don't forget to refuel, add fat and change oil.
3. Fully grease the exposed part of the hydraulic cylinder piston rod.
4. Remove the battery ground cable, or remove the battery from the car, and then save it.

5. When the air temperature drops below 0°C, the antifreeze should be added to the coolant industry, or the water should be discharged completely out. When the ■ is used after long-term parking, please do the following operation

1. Please wipe off the grease applied on the cylinder piston rod.
2. Start the engine, and conduct the action of the working device and the walking device in the no-load state, so that the oil can fully flow everywhere. (When parking for more than 1 month, please each Implement 1 and 2 operations per month.)

### Use during the cold season

#### ■ Low-temperature preparation measures

1. Hydraulic oil  
Replace the oil product with the specified viscosity.
2. Fuel oil  
Select the appropriate oil production according to the air temperature.
3. Battery  
Under low temperature conditions, the battery capacity will be reduced, and when the charging capacity is reduced, we should ensure that the charging rate is more than 75%, and pay attention to thermal insulation for the next morning to start. When supplementing the steamed filling water due to the liquid level bottom, do not supplement it after the end of the operation, but to supplement it before starting the next morning to prevent freezing.
4. Coolant  
Please add antifreeze

If the temperature drops below 0° C during parking, add antifreeze to the coolant and add to the radiator and water tank to prevent freezing.

- \* Antifreeze shall be of a permanent brand name or long-acting coolant.
- \* The mixture of water and antifreeze shall be injected after complete removal of coolant and scale.
- \* Because rust agent has been added to antifreeze, no detergent is added when using antifreeze.
- \* coolant liquid  
See the "Replacement of the Coolant" item

#### Notes after the End of the ■ Job

Clean up the dirt and water attached to the car body, and place the tracks on a concrete ground or in a dry place. In particular, the wheel part attached to the soil, if not completely removed, then, sometimes frozen can not walk. Therefore, if there is proper parking lot, parking can be parked after planplan,

Or park your car on a straw mat. If you stop on the ground, you may not be able to walk after the next morning

Or cause the final transmission deceleration gearbox and other damage.

In particular, to thoroughly clean up the water on the surface of the hydraulic cylinder piston rod. If the soil and the frozen water droplets enter into the seal together, then, it may damage the seal.

### About the regular replacement of important parts

In order to always ensure the operation and operation safety, the machine users must perform regular maintenance. In order to further improve the safety, especially the following important parts concerning safety and fire, the sales store or the maintenance factory designated by the company shall be entrusted for regular replacement.

These components will undergo material changes over time, easy to cause wear or aging. Because it is difficult to determine the use status in the process of regular maintenance operations, so, after a certain use period is reached, even if no abnormality is found, it should be replaced with a new product to ensure that the normal function is always maintained.

However, if some abnormalities are found before the service period is reached, they should also be repaired or replaced with new products. For the hose part, when the hose clip is found to produce deformation, crack and other aging phenomenon, together with the hose clip at the same time.

In addition, the regular replacement of the hydraulic hose outside the following inspection, in the found abnormal, reinforcement, replacement, etc.

When replacing the hydraulic hose, also replace the O-ring and sealing parts. Please replace the important parts to the sales store or the repair factory designated by the company.

Please check the fuel hose and hydraulic hose.

| Classification of urine test                                         | inspection item                                                                                                                           |
|----------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| Daily examination of oneself                                         | Fuel leakage of fuel, hydraulic hose and sbody joint                                                                                      |
| Monthly routine inspection                                           | Oil leakage of fuel oil, hydraulic hose connection, bracelet connection and fuel leakage, hydraulic hose damage (cracking, wear, lifting) |
| Specific autonomous inspection<br>(Annual examination of the uterus) | Oil leakage of fuel and hydraulic hose<br>Fuel oil, hydraulic hose interference, crack, aging, squeeze, damage (crack, wear, hair)        |

#### List of important components

| No. | Replace parts regularly                         | quantity | replacement time                                                   |
|-----|-------------------------------------------------|----------|--------------------------------------------------------------------|
| 1   | Fuel oil hose (fuel tank ~ oil-water separator) | 1        | Replace every 2 years or every 4,000 hours, whichever comes first. |
| 2   | Fuel hose (oil-water separator fuel filter)     | 1        |                                                                    |
| 3   | Fuel Hose (fuel filter fuel pump)               | 1        |                                                                    |
| 4   | Fuel oil hose (bypass pipe)                     | 1        |                                                                    |
| 4   | Fuel Hose (fuel pump to fuel nozzle)            | 2        |                                                                    |
| 5   | Fuel hose (fuel nozzle fuel tank)               | 3        |                                                                    |
| 6   | Hydraulic hose (main pump suction)              | 1        |                                                                    |
| 7   | Hydraulic hose (main pump output)               | 4        |                                                                    |
| 8   | Hydraulic hose (boom oil cylinder)              | 2        |                                                                    |
| 9   | Hydraulic hose (bucket cylinder)                | 2+2      |                                                                    |
| 10  | Hydraulic hose (bucket oil cylinder)            | 4        |                                                                    |
| 11  | Hydraulic hose (swing oil cylinder)             | 2        |                                                                    |
| 12  | Hydraulic hose (shovel cylinder)                | 4        |                                                                    |
| 13  | Hydraulic hose (rotary motor)                   | 4        |                                                                    |

## Problems and handling measures of backhoe excavator

If the small hoe excavator has a bad condition, follow the table to diagnose and take appropriate disposal. If you don't understand, please ask the sales store where you bought the product or the repair factory designated by the company

| phenomenon                                     | cause                                                                                                                           | treatment measure                                                                                                                                  |
|------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| starting difficulty                            | (1) Fuel oil does not flow.                                                                                                     | (1) Check the fuel tank to remove the precipitated impurities Or moisture.<br>(2) Check the fuel filter, if dirty, Please replace the ground line. |
|                                                | (2) Air or water is mixed into the fuel delivery system.                                                                        | (1) Yu Yao pipe and pipe hoop, if damaged, then replace or repair.<br>(2) exhaust C<br>(See "Exhaust for Fuel System")                             |
|                                                | (3) The oil viscosity increases at the cold time, and the rotation of the engine itself is heavy.                               | (1) Inject hot water into the radiator.                                                                                                            |
|                                                | (4) Battery battery is insufficient, the rotating force of the starting horse is weakened, it is difficult to start the engine. | (1) Charge the storage battery.                                                                                                                    |
| Know that the IJ output power is insufficient  | (1) Insufficient fuel oil.                                                                                                      | (1) Fuel replenishment.                                                                                                                            |
|                                                | (1) The air filter is blocked.                                                                                                  | (1) Clean up the filter.                                                                                                                           |
| fetch-up                                       | (1) Insufficient fuel oil.                                                                                                      | (1) Fuel replenishment.                                                                                                                            |
| The tail gas color is unusually black          |                                                                                                                                 | (1) The car is replaced by a future session rush.                                                                                                  |
|                                                | (1) Fuel is not from A (2) excessive oil.                                                                                       | (2) Adjust to the normal amount of oil.                                                                                                            |
| 7k even table, silk "H" (Imachine overheating) | (1) Poor seal of the water pump.                                                                                                | (1) Replacement.                                                                                                                                   |
|                                                | (2) Elongation or fracture of the fan belt.                                                                                     | (2) Adjust or replace it.                                                                                                                          |
|                                                | (3) Bad thermostat.                                                                                                             | (3) Replacement.                                                                                                                                   |
|                                                | (4) Insufficient coolant.                                                                                                       | (4) Supplement to the specified amount.                                                                                                            |
|                                                | (5) The radiator net and heat sink are filled with dust.                                                                        | (5) Clean and sweep.                                                                                                                               |
|                                                | (6)The cylinder head and crankcase rust and pollute the coolant.                                                                | (6)Replace the coolant and add the rust repellent.                                                                                                 |
|                                                | (7) Poor radiator cover (evaporation).                                                                                          | (7) Replacement.                                                                                                                                   |
|                                                | (8) The coolant channel is corroded.                                                                                            | (8) Flushing.                                                                                                                                      |
|                                                | (9)Meet / over cut handcuffs.                                                                                                   | (9) Reduce the load.                                                                                                                               |
|                                                | (10)iK cover broken (coolant).                                                                                                  | (10) Replacement.                                                                                                                                  |
|                                                | (11) Insufficient engine oil.                                                                                                   | (11) Adjust to the normal oil volume.                                                                                                              |
|                                                | (12) Poor timing of fuel injection.                                                                                             | (12) Adjustment.                                                                                                                                   |
|                                                | (13) Poor fuel oil.                                                                                                             | (13) Replace it with high-quality fuel oil.                                                                                                        |

### ■hydraulic aspects

|                                                                                                                      |                                                                                                      |                                                                           |
|----------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|
| Working device (boom, bucket, bucket) swing walking, push ± shovel has insufficient force, slow speed or not random. | (1) The oil drop amount is not Beijing C<br>(2)Oil leakage at the hose and pipe distribution joints. | (1) Remove and drop the pressure oil.<br>(2) Strengthen it or replace it. |
|----------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|

### ■walkin

|                          |                                                                        |                                           |
|--------------------------|------------------------------------------------------------------------|-------------------------------------------|
| g<br>Can't walk smoothly | (1) Crawler stuck into stones C (2) Crawler is too tight or too loose. | (1) Remove the stones.<br>(2) Adjustment. |
|--------------------------|------------------------------------------------------------------------|-------------------------------------------|

## Notes for using the hydraulic crushing hammer

Install a crushing hammer suitable for the machine. If installing crushing hammers other than recommended, it will not only affect the life of the machine, but also cause safety problems.

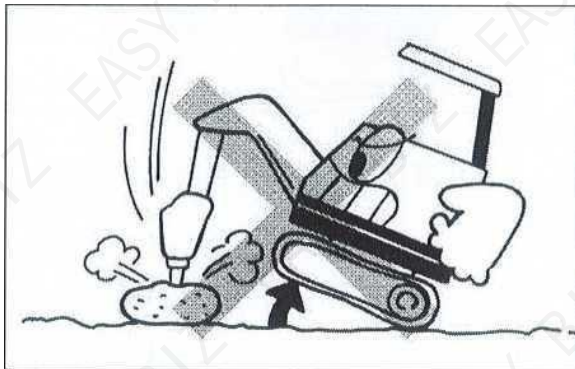
### Safety precautions:

If a crushing hammer is used, devices such as impact resistant materials, mesh protection or equivalent protection effects should be installed. Please contact the sales store when installing.

### Notes for crushing hammer use

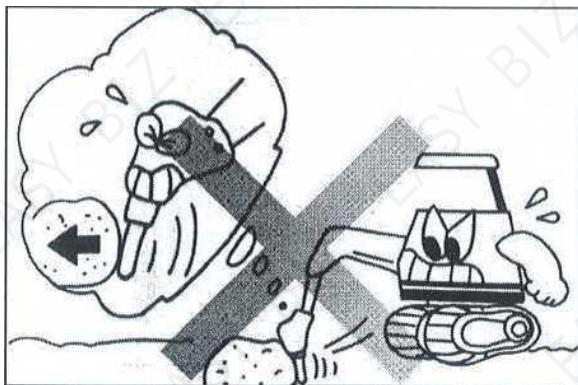
#### 1. Working posture is prohibited

If the blow is lifted by more than 5cm in front of the machine, then, when the rock is broken, the machine also falls sharply forward, making the main body of the crushing hammer or the top part of the bracket hit the rock, sometimes resulting in damage. In addition, since the vibration generated during the strike spreads to the track part, please do not use this strike method to protect the track.



#### 2 No rock, etc

Do not roll or push down the rock with the broken hammer head or bracket side as shown in the figure. If it does so, the crushing hammer installation bolt will break, the bracket is damaged, the crushing hammer rod break or get stuck, thus damaging the bucket rod and boom.

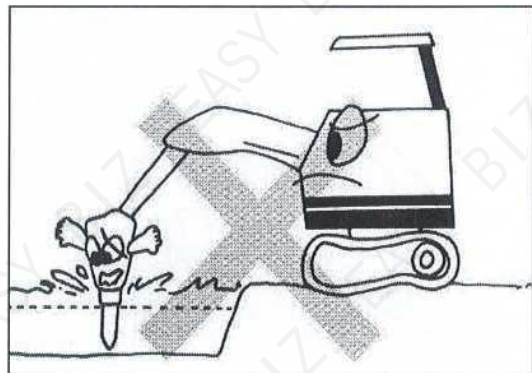


If the rock is broken by the hammer rod skid, it will lead to the contusion of bolts and hammer rod.



#### 4. Do not place the parts other than the hammer rod in the water or mud for the crushing work.

Otherwise, the crushing hammer will fail prematurely due to the piston.



If too large force is applied to the crushing hammer or the machine, it may cause damage to the crushing hammer or various parts of the machine.

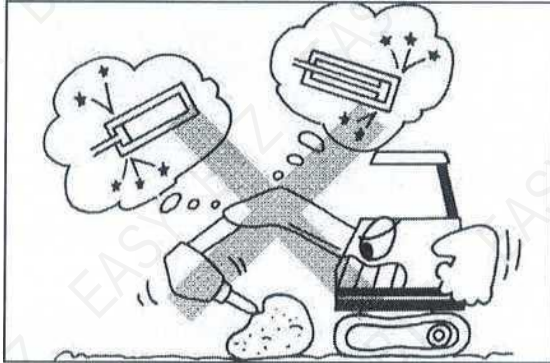


To work safely

Please be sure to read

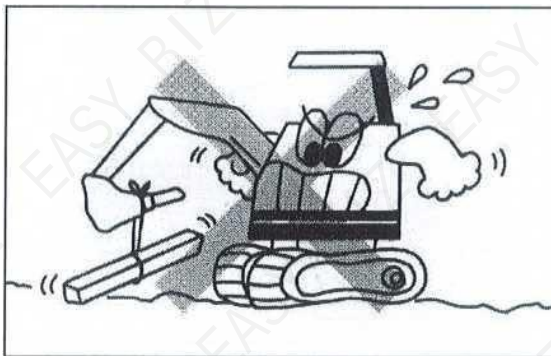
6 No crushing when the hydraulic cylinder is at the end of travel

If the individual hydraulic cylinder of the machine is at the end of the trip (the liquid, the pressure cylinder extends to the maximum position or shrinks to the maximum position), it may cause the damage of the individual hydraulic cylinder or the various parts of the machine.

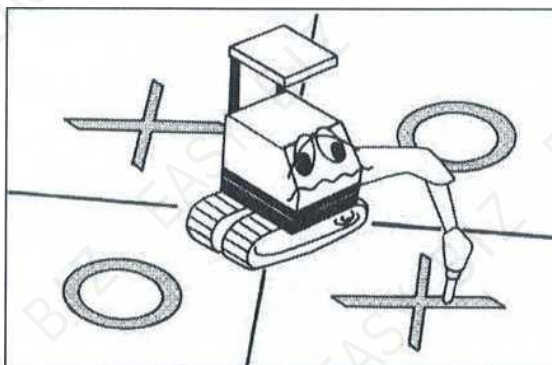


It is prohibited to lift the goods

Do not lift the goods with the hydraulic crushing hammer.



Do not perform the crushing hammer operation towards the side. Otherwise, it may cause the machine to overturn and reduce the service life of the wheel parts.

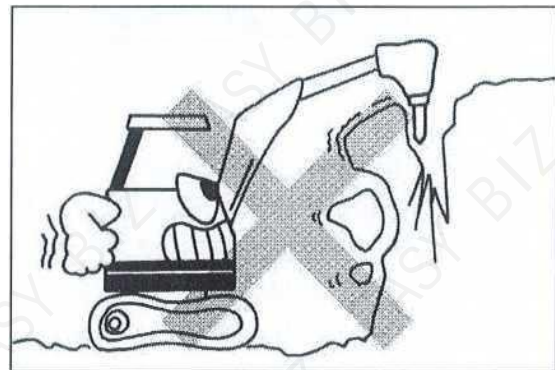


Prohibit 9

Stop the horizontal, facing the upper strike operation.



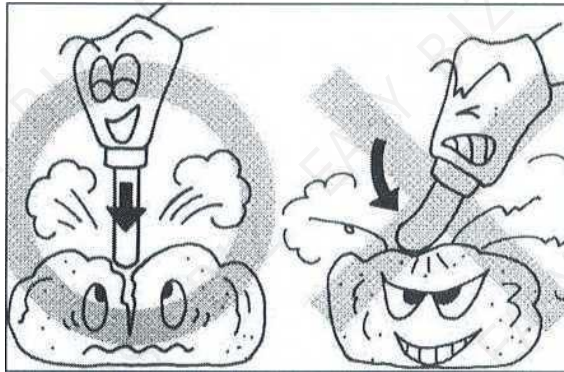
turn over.



No hibit 8 No work when the machine is facing the side

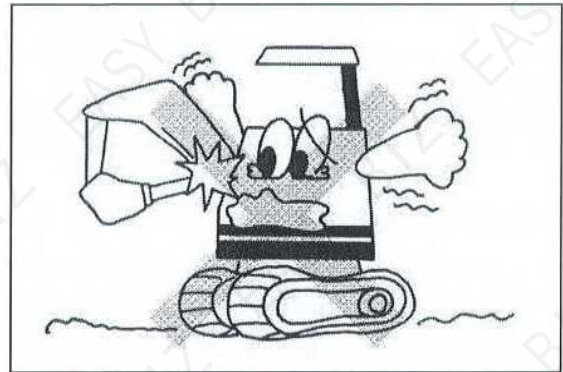
To work safely

Please press the drill rod vertically on the strike surface to strike. In addition, pay attention to always apply thrust during the strike process, do not do air strike.



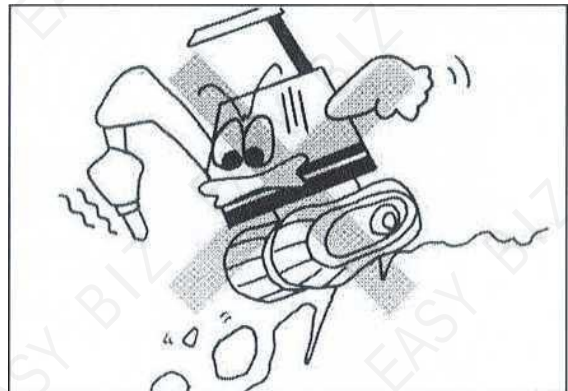
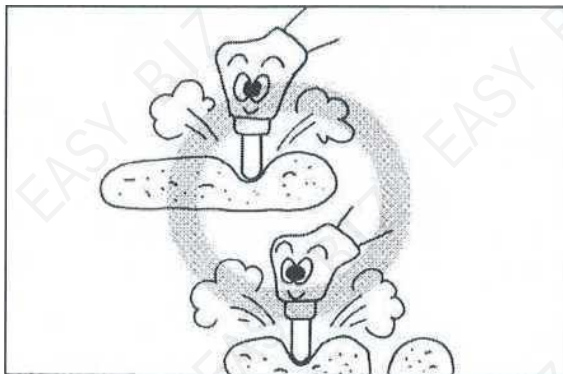
Besure

that when pulling up the hydraulic crushing hammer, be careful not to hit the boom or boom cylinder.



Substantial matter 2

If you hit the same strike surface continuously, but it is not broken within 1 minute, please change the strike surface and chisel it from the top to break it.



## Recommended oil products, oil and butter

Use the Eurid hydraulic and butter shown in the table below.

| vender                    | hydraulic fluid | Universal butter  |
|---------------------------|-----------------|-------------------|
| Source root petrochemical | Eurid L-HM46    | -                 |
| Cartel oil                | -               | General 2 lithium |

### Recommended lubricating grease

| vender        | gear oil                             |
|---------------|--------------------------------------|
| Mobil Mobil   | Vehicle Gear Oil Mobilube HD 80W-90  |
| Eso ESSO      | Gear oil GX 80W-90                   |
| Shell SHELL   | SPIRAX EP90                          |
| Texaco TEXACO | Havoline® Gear oil 80W-90            |
| Orthopma JOM0 | Premium Vehicle Gear oil JOMO GEAR 5 |

### Types of oil

#### CH-4 15W-40

#### material particulars

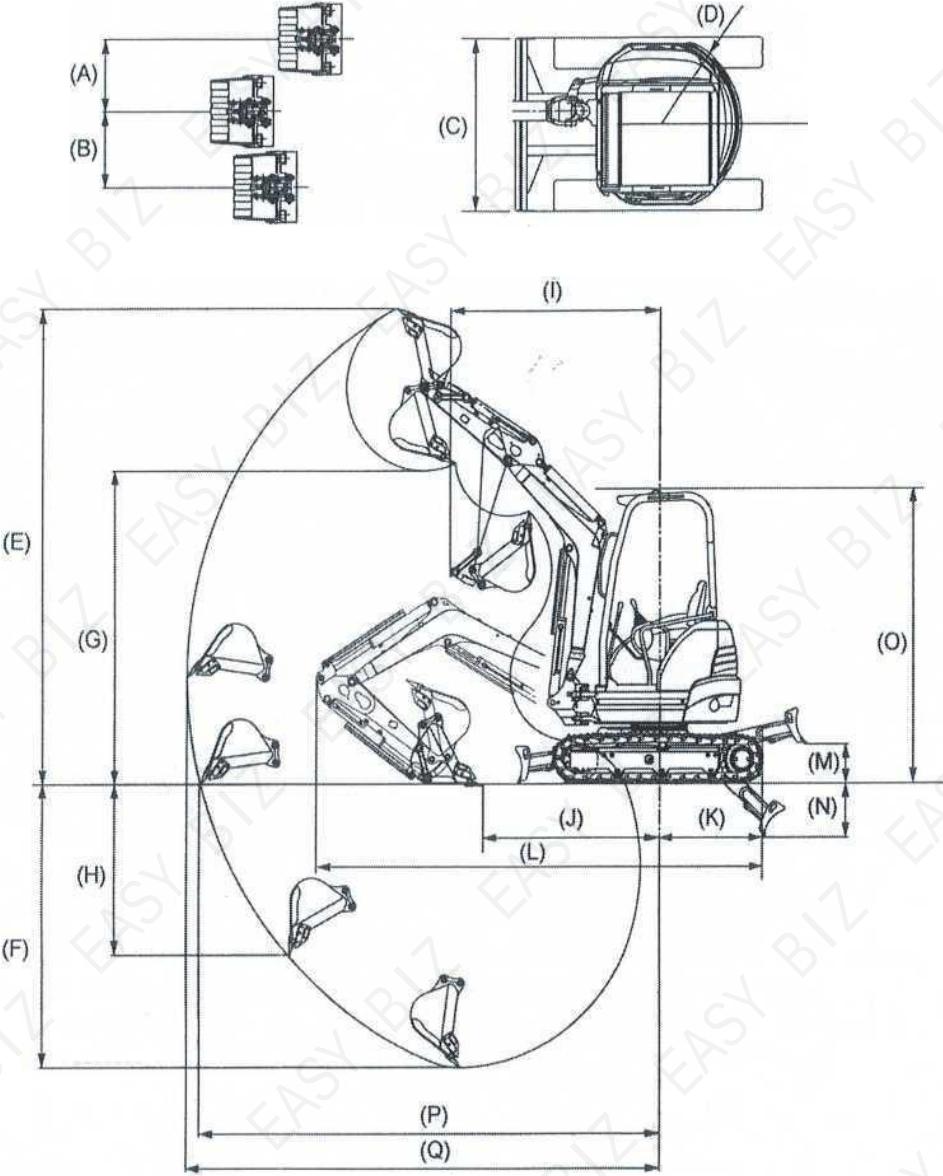
- \* The use of nonspecified oil may cause reduced engine output, abnormal consumption or aging of engine oil, resulting in engine failure.
- \* When changing oil, clean the old oil and inject the new oil.

Please use the following GB compliant fuel, and do not use fuel additives.

- \* No.0 Diesel oil: used in summer
- \* -10, -20, -35 diesel: winter (according to local temperature).

addendum

dimensional drawing



unit:mm

|      |     |           |     |      |      |      |      |      |
|------|-----|-----------|-----|------|------|------|------|------|
| (A)  | (B) | (C)       | (D) | (E)  | (F)  | (G)  | (H)  | (I)  |
| 590  | 620 | 1300/1500 | 710 | 3880 | 2320 | 2550 | 1900 | 1850 |
| (J)  | (K) | (L)       | (M) | (N)  | (O)  | (P)  | (Q)  |      |
| 1505 | 930 | 3850      | 340 | 270  | 2380 | 4015 | 4140 |      |

**main parameter**

|                                   |                                               |                                            |
|-----------------------------------|-----------------------------------------------|--------------------------------------------|
| Model name                        |                                               | W25-5                                      |
| Operating weight: kg              |                                               | 2480                                       |
| Basket                            | capacity m <sup>3</sup>                       | 0.066                                      |
|                                   | width mm                                      | 450<br>(Without lateral teeth: 400)        |
| Engine                            | classify                                      | Three-cylinder water-cooled upright engine |
|                                   | Model name                                    | 3TNV76-P                                   |
|                                   | Total displacement (L (cc))                   | 1.116                                      |
|                                   | Output power: kW (PS)                         | 15(20.4)                                   |
| Performance                       | Turn speed (r/min)                            | 9.5                                        |
|                                   | Walking speed (low speed / high speed) km / h | 2.4/4.2                                    |
|                                   | Ground pressure kPa (kgf / cm <sup>2</sup> )  | 28.4(0.29)                                 |
|                                   | Climbing capacity% (degree)                   | 58(30)                                     |
| Bullshovel (width X height) mm    |                                               | 1300/1500 X 292                            |
| Swing angle (left / right) degree |                                               | 75/55                                      |
| Fuel tank capacity (L (cc))       |                                               | 28                                         |

**List of consumed components**

When ordering parts, please inform the model name and chassis number.

**■ engine**

|  | Part name           | Specification, model / drawing number | remarks |
|--|---------------------|---------------------------------------|---------|
|  | Oil filter element  | 119305-35151                          | engine  |
|  | fan belt            | 25152-003500                          |         |
|  | air cleaner element | 119655-12560                          |         |
|  | Fuel filter element | 119802-55801                          |         |

**■ Electrical Related aspects**

|  | Part name              | Specification, model / drawing number | remarks  |
|--|------------------------|---------------------------------------|----------|
|  | storage battery        | 6-QW-45(46B24RS)                      | 12V 45Ah |
|  | Slow melting fuse      | 60A                                   | 2C-812   |
|  | fuse                   | 5A<br>10A<br>15A<br>30A               |          |
|  | working light          | 2017-11                               | Tai hong |
|  | Operating light switch | KCD4 (27*30)                          |          |

**■ hydraulic aspects**

|  | Part name                  | Specification, model / drawing number | remarks                           |
|--|----------------------------|---------------------------------------|-----------------------------------|
|  | Return oil filter element  | W20-78-03000                          | Hydraulic oil (main oil circuit)  |
|  | Oil suction filter element | W20-78-04000                          | Hydraulic oil (main oil circuit)  |
|  | Pilot oil filter           | MZLQX-11                              | Hydraulic oil (pilot oil circuit) |

## tackle

|  | Part name                  |            | Specification, model / drawing number     | remarks                 |
|--|----------------------------|------------|-------------------------------------------|-------------------------|
|  | O ring                     |            | 05 * 050 (Inner diameter)<br>W20-66-00004 | Shovel pipe seal        |
|  | bucket teeth               |            | QL25-63-00001                             |                         |
|  | Bucket tooth pin (joint)   |            | QL25-63-03000                             |                         |
|  | Left edge                  |            | QL25-63-00002                             |                         |
|  | The right edge             |            | QL25-63-00003                             |                         |
|  | Bolts for T-shaped grooves |            | M10*30                                    | The GB / T37 12.9 level |
|  | nut                        |            | M10                                       | The GB / T6170 12 grade |
|  | grease fitting             | straight   | PS 1/8                                    |                         |
|  |                            | 45 Degrees | PS 1/8                                    |                         |
|  |                            | 90 Degrees | PS 1/8                                    |                         |

## walking

|  | Part name                    | Specification, model / drawing number | remarks |
|--|------------------------------|---------------------------------------|---------|
|  | rubber belt track            | 250*47*84                             |         |
|  | Steel crawler                | 250*90*43                             |         |
|  | driving wheel                | W20-30-00001                          |         |
|  | Guide wheel assembly         | W20-30-12000                          |         |
|  | The tightening device        | W20-30-10000                          |         |
|  | Support heavy wheel assembly | W20-30-09000                          |         |
|  | Branding wheel assembly      | W20-30-11000                          |         |