



Read and understand these instructions.

Failure to do so can cause injury or death.

Product: Takeuchi TB020 Compact Excavator Operators Manual

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TB020

COMPACT EXCAVATOR

OPERATORS MANUAL

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TAKEUCHI MFG.CO.,LTD.

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OPERATOR PRECAUTIONS

If this machine is used by an employee, it is the employer's responsibility to fully instruct each operator in the proper and safe operation of all operative equipment. Both employer and employee should thoroughly familiarize themselves with the following sections.

All operators must be instructed on the proper operation of the excavator before they operate the unit.

● Personnel Precautions

- Avoid loose fitting clothing, loose or uncovered long hair, jewelry and loose personal articles.
- Know and use the protective equipment that is to be worn when operating this machine. Hard hats, protective glasses, protective shoes, gloves, and ear protection are examples of types of equipment that may be required.
- Do not rush. Walk, do not run.
- Know and use the hand signals required for particular jobs and know who has the responsibility for signaling.

● Operator-General Precautions

- It is the responsibility of the operator to read and understand the Operators Manual and other information provided and use the correct operating procedure. Machines should be operated only by qualified operators.
- Wear the seat belt.
- Do not permit riders on the machine.
- Make sure all protective guards, canopies, doors, etc, are in place and secure.
- Remove all loose objects stored in the machine. Remove all objects which do not belong in or on the machine and its equipment.

● Mounting and Dismounting Precautions

- Use the recommended hand holds and steps with at least three points of support when getting on and off the machine. Keep steps and platform clean. Face the access system when climbing up and down.
- Do not jump off the machine.
- Do not dismount while the machine is in motion.

● **Starting and Stopping Precautions**

- Walk around the machine and warn all personnel who may be servicing the machine or are in the machine path prior to starting. Do not start until all personnel are clearly away from the machine.
- Check that the parking device is applied, place the travel levers in neutral before starting the machine.
- Adjust, secure and latch the seat and fasten the seat belt before starting the machine.
- Start and operate the machine only from the operator's station.
- Do not bypass the machine's neutral-start system. The neutral-start system must be repaired if it malfunctions.
- Use jumper cables only in the recommended manner. Improper use can result in battery explosion or unexpected machine motion.
- Do not operate the engine in an enclosed area without adequate ventilation.
- Park the machine on level ground whenever possible and apply the parking device. On grades, park the machine with the crawler belts securely blocked.
- Before leaving the operator's station, place the travel levers in the neutral position, lower the equipment to the ground or put in the locked position, set the parking device and shut off the engine.
- Remove the starter key or disconnect switch key when leaving the machine parked or unattended.

● **Operating Precautions**

- Check brakes, steering and other machine control devices prior to starting operation. Observe all gauges or warning instruments for proper operation. Operate all controls to insure proper operation. If any malfunctions are found, follow the shutdown procedure and report the malfunction for resolution.
- If a failure that causes loss of control such as steering, service brakes or engine occurs, stop the machine motion as quickly as possible, follow the shutdown procedure, and keep machine securely parked until the malfunction is corrected.
- Understand the machine limitations and keep the machine control.
- Operate the machine with care and at speeds compatible with conditions. Use extra caution when operating over rough ground, on slopes, and when turning the machine.
- Note and avoid all hazards and obstructions such as ditches, underground lines, trees, cliffs, overhead electrical wires or areas where there is danger of a slide.
- Carry loads in recommended positions for maximum stability.
- Never lift loads in excess of capacity.
- Use the recommended machine ballast and counterweighting.

- Know and understand the job site traffic flow patterns and obey flagmen, road signs and signals.
- Watch for bystanders and never allow anyone to be under or to reach through the machine and its equipment while operating.
- Select the 1st. speed (low gear) that will prevent excessive speed when going downhill.
- When roading a machine, know and use the signaling devices required on the machine. Provide an escort for roading when required.

● **Maintenance Precautions**

- Do not attempt repairs unless trained. Refer to manuals and experienced repair personnel for help.
- Wear protective glasses and other required safety equipment when servicing or repairing the machine.
- Wear gloves to protect hands when handling cable.
- Disconnect the battery before working on the electrical system.
- Avoid lubrication or mechanical adjustments with the machine in motion or the engine operating. If the engine must be in operation to make certain adjustments, place the travel levers in neutral, apply the parking device, place the equipment in a safe position, securely block the crawler belts and use extreme caution.
- Securely block the machine or any component that may fall before working on the machine or component.
- To prevent unexpected movement, securely block working elements when repairing or changing working tool parts such as cutting edges.
- Never make repairs on pressurized components, fluid, gas or mechanical until the pressure has been relieved.
- Use extreme caution when removing radiator caps, drain plugs, grease fitting or pressure taps. Park the machine and let it cool down before opening a pressurized compartment.
- Release all pressure before working on the hydraulic system. Use a piece of cardboard or wood to check for pressurized leaks to prevent fluid penetrating the skin.
- Observe proper maintenance procedures.
- Whenever servicing or replacing hardened pins, etc, use a brass drift or other suitable material between the hammer and pin.
- Keep the brakes and steering systems in good operating condition.
- Replace all missing, illegible or damaged safety signs. Keep all safety signs clean.

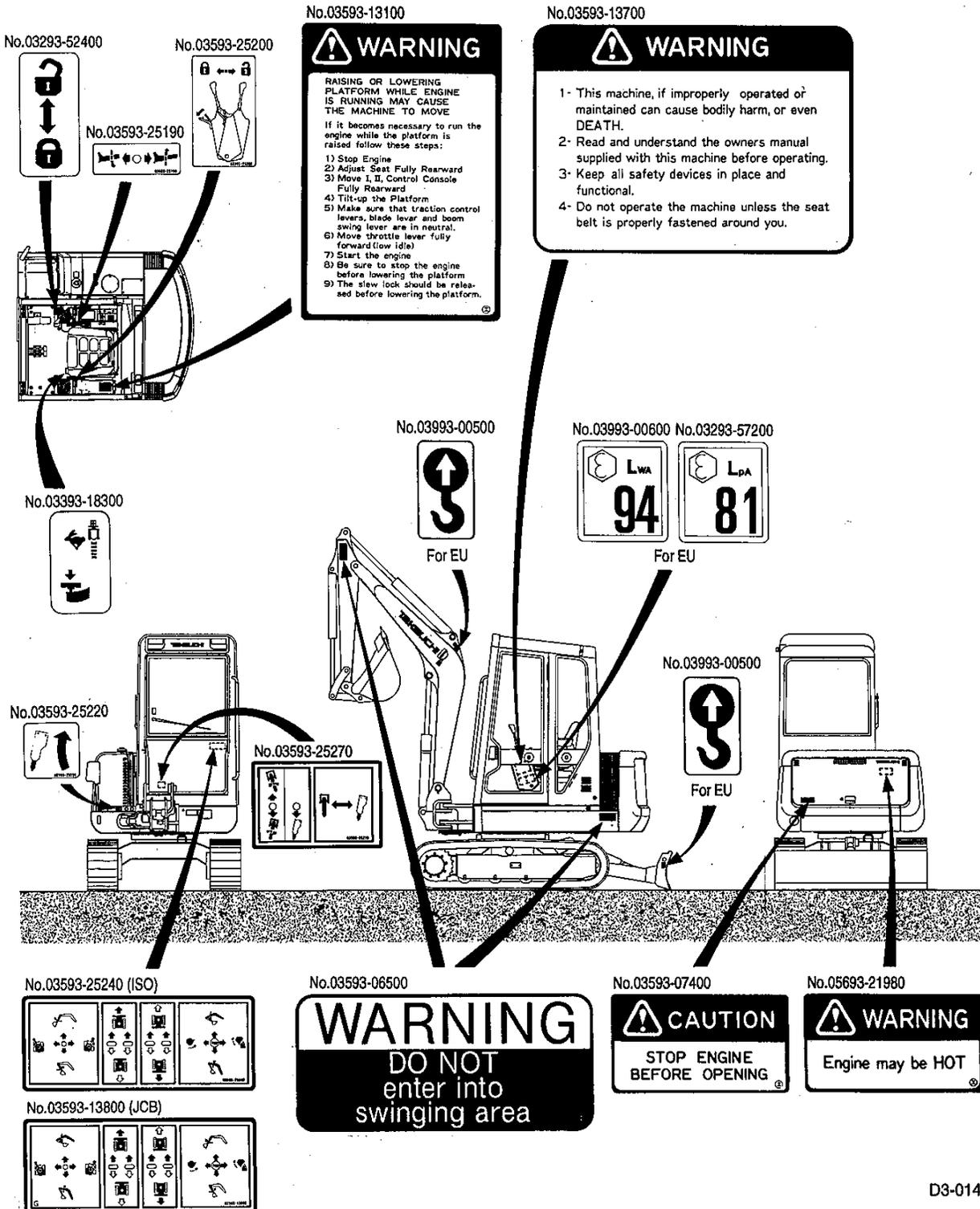
● **Fuel Handling Precautions**

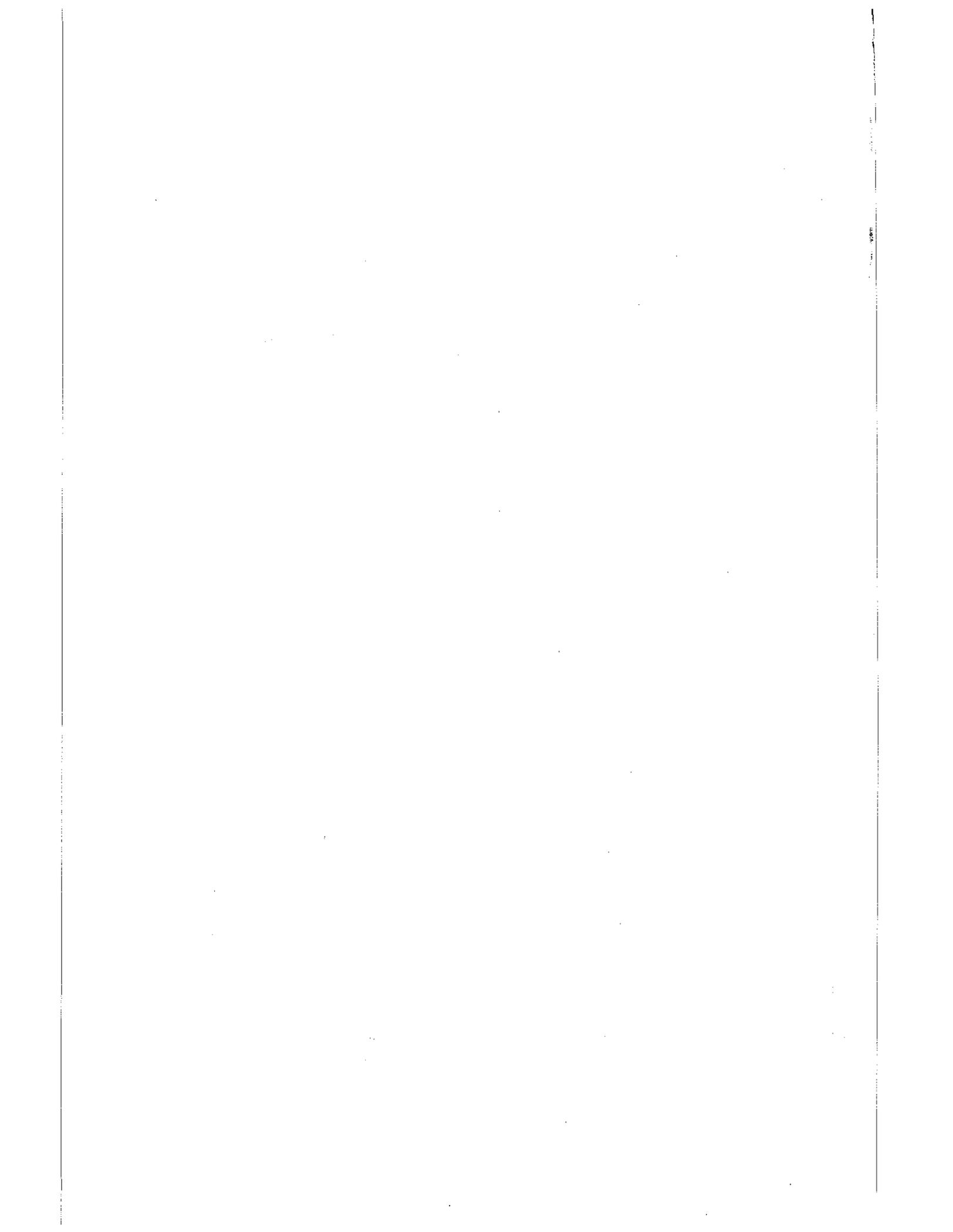
- Do not smoke or permit open flames while fueling or near fueling operations.
- Never remove the fuel cap or refuel with the engine running or hot. Never allow fuel to spill on hot machine components.
- Maintain control of the fuel filler nozzle when filling the tank.
- Do not fill the fuel tank to capacity. Allow room for expansion.
- Clean up spilled fuel immediately.
- Tighten the fuel tank cap securely. Should the fuel cap be lost, replace it only with the original manufacturer's approved cap. Use of a non-approved cap without proper venting may result in pressurization of the tank.
- Never use fuel for cleaning purposes.
- Use the correct fuel grade for the operating season.

SAFETY SIGNS (Decals)

The following safety signs (decals) have been placed on your machine in the areas indicated. They are intended for the personal safety of you, and those working with you. Please take this manual, walk around your machine and note the content and location of these safety signs. Review these signs and the operating instructions in this manual with your machine operators.

- Keep the signs legible. If they are not, obtain replacements from your Service outlet.





Introduction

Congratulations on your purchase of a Takeuchi construction machine. This manual explains operation and maintenance so that you can use your compact excavator efficiently and economically. Read this manual carefully, and operate and service your excavator accordingly. Please note that due to improvements, the explanations and diagrams in this manual may differ in some points from the actual excavator.



This mark indicates important information on safety. Be sure to follow the instructions indicated after this mark.



This mark indicates advice for the operator.

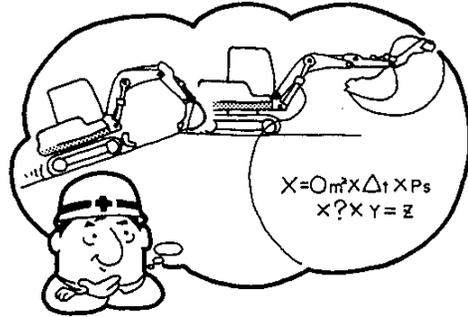
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< BEFORE OPERATION > SAFETY INSTRUCTIONS

⚠ Know your excavator well.

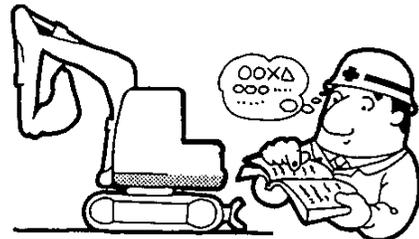
- Make sure you know and understand the excavator's performance, working capacities, sizes, weights, etc.



00-005P

⚠ Read this manual carefully and inspect and service the excavator accordingly.

- Proper handling of the excavator is the basis for safe operation. Read this manual and the stickers on the excavator carefully and make sure you understand them.
- Conduct pre-operation and daily inspections rigorously.



00-006P

⚠ Wear the proper clothing.

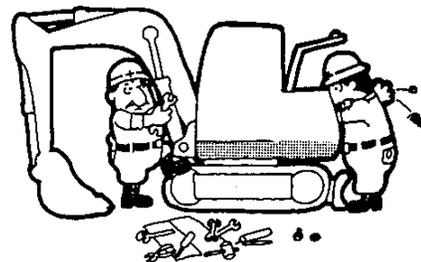
- Always use a helmet, work shoes, protective tools and work clothes.



00-007A

⚠ Service and repair defects or problems carefully before operating the excavator.

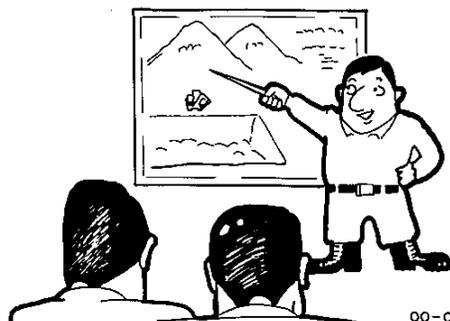
- Mark non-serviced excavators with the words "DO NOT OPERATE".
- Reinspect problem parts serviced or repaired the previous day before operating the excavator.



00-008P

⚠ Perform operations systematically.

- Carefully discuss the work to be done for the day and the procedures.
- Survey the area on which the excavator is to be used, checking the ground, road shoulders, etc., for dangerous places, and prepare plans.



00-032

SAFETY INSTRUCTIONS <BEFORE OPERATION>

⚠ Check the area around the excavator before starting operations.

- Walk around the excavator once to check whether it is safe to move it. While doing so, check the outside of the excavator for scratches or damage.



⚠ Carefully perform the proper inspections before starting.

- Before starting, perform the inspections explained in the section "Before Starting". If you find any problems, adjust or repair them completely before starting.



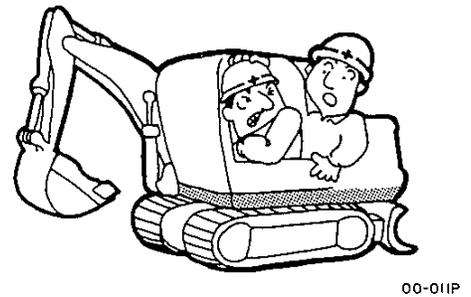
⚠ Do not jump onto or off of the excavator!

- Check that the engine is stopped and hold onto the handrail when climbing off.
- Do not grab operating levers when climbing in or out.
- Keep the floor and pedals clean, as dirt can make them slippery.



⚠ No passengers!

- No one but the operator should be in the excavator.



⚠ Be careful of noise.

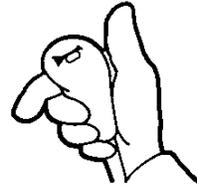
- Loud prolonged noise can cause hearing impairments, even the total loss of hearing. Use ear plugs or ear covers when operating the excavator.



< DURING OPERATION > SAFETY INSTRUCTIONS

▲ Honk the horn as a warning before starting the engine, starting up or slewing.

- To prevent accidents, signal others around the excavator before moving it by honking the horn or flashing the lights.



00-037

▲ Be careful of exhaust gases!

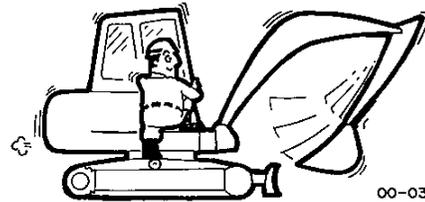
- The exhaust gases from the engine are extremely toxic. Take the following measures:
 - Ventilate thoroughly when working indoors.
 - Extend an exhaust pipe outdoors.



00-038P

▲ Always operate from the operator's seat.

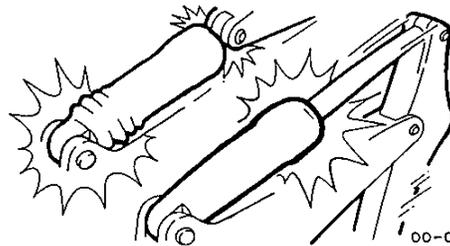
- Do not start the engine or operate the operating or travel levers except when in the operator's seat with the seat belt fastened. Doing so is extremely dangerous.



00-039

▲ Treat the hydraulic cylinders gently.

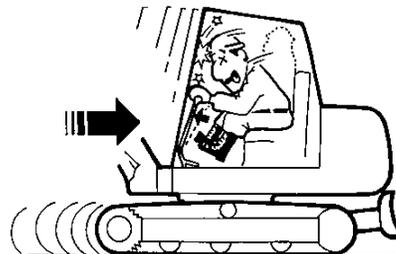
- Whenever possible, do not operate the hydraulic cylinders to the stroke ends. Leave a little leeway.



00-040P

▲ Check the position of the blade before starting to travel.

- The side on which the blade is located is the front of the travel frame. Lift the blade before travelling.
- Travelling long distances in reverse can damage the crawler belts.
- Remember that when the blade is to the rear of the operator's seat, the excavator will move backwards when the travel levers are pushed forwards.
- Be careful not to damage asphalt surfaces which are soft in the summer.



00-041

SAFETY INSTRUCTIONS < DURING OPERATION >

⚠ Never travel sideways or change directions on slopes!

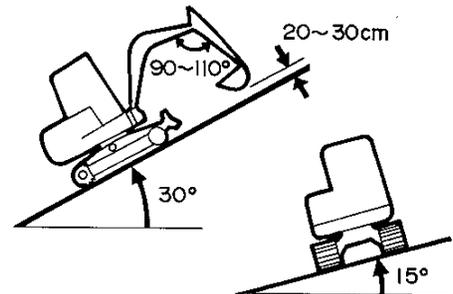
- Doing so is extremely dangerous. First move down the slope, then travel or change directions.
- When slewing on slopes, first pull the boom in as close as possible to the body and lower the bucket, then slew slowly.



00-042P

⚠ Use within the maximum gradeability (30°) and lateral tipping angle (15°).

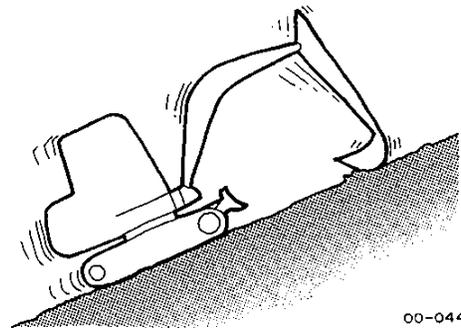
- Never use on slopes steeper than the excavator's specified maximum gradient.
- On slopes, set the bucket 20 or 30cm (8 or 12 in.) from the surface and use it for support in emergencies.
- When travelling down slopes, setting the travel levers to the neutral position provides automatic braking force.



00-043

⚠ Cautions when climbing and descending slopes!

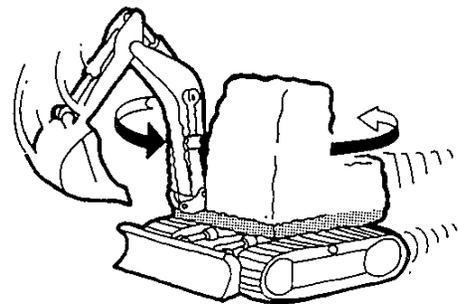
- If the crawlers slip and it is not possible to climb the slope, use the force of the arm pulling in to help.
- Travelling in high speed on slopes or non-leveled ground is dangerous as it could result in tipping or sliding. Always travel slowly in low speed.
- If the engine stops when climbing a slope, set the travel levers to the neutral position, lower the bucket to the ground and stop the excavator before starting the engine back up. Also, never slew when the engine is stopped. The excavator slews from its own weight.



00-044P

⚠ Never slew while travelling!

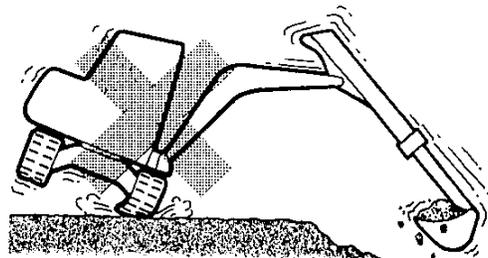
- It is dangerous to slew while traveling, since it is not possible to pay attention to all factors. Also do not operate the hoe attachment while traveling.
- Do not drive the bucket's teeth into the ground while slewing, as this could damage the excavator.



00-015P

⚠ Cautions on using the telescopic arm!

- When using the telescopic arm, stability decreases and the risk of tipping increases, so only operate with the boom swing directly at the front.
- Do not operate the telescopic arm in the slewing or swinging posture.

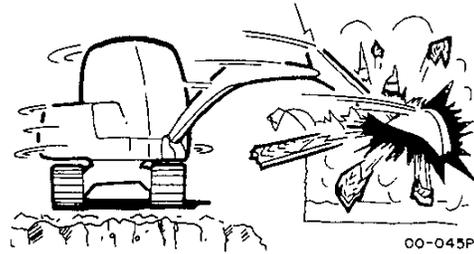


00-081P

< DURING OPERATION > SAFETY INSTRUCTIONS

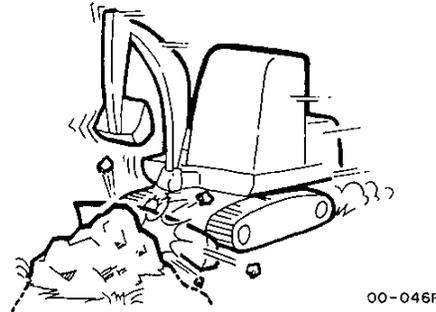
▲ Watch for obstacles!

- Be very careful that the hoe attachment does not come into contact with obstacles while operating the excavator.



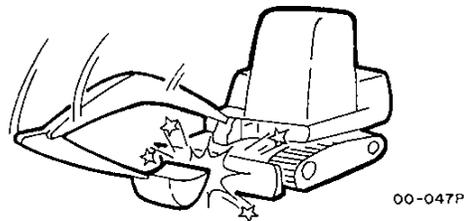
▲ Be careful not to subject the blade to shocks!

- Hitting the blade against large rocks, etc., can damage the blade or blade cylinder.



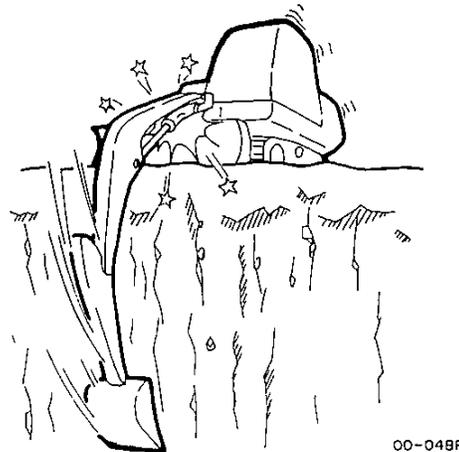
▲ Be careful when folding the hoe attachment!

- When folding the hoe attachment, be careful that the bucket does not hit the blade.



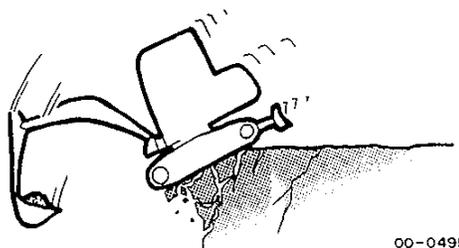
▲ Be careful of the blade when digging!

- When digging deeply with the blade at the front, be careful that it does not hit the boom cylinder or bucket. Always operate with the blade at the back unless otherwise necessary.



▲ Be careful when operating on the edges of cliffs or road shoulders!

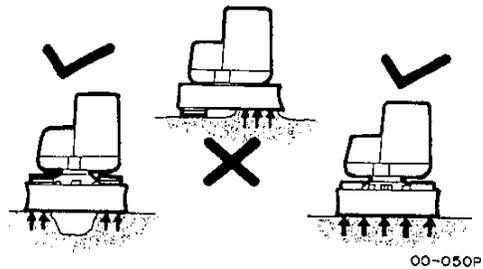
- To avoid unforeseeable situations, keep the crawlers at right angles to the cliff or road shoulder so that it can be moved back easily.
- Check the hardness of the ground beforehand for safety.
- Be careful not to dig the area directly in front of the excavator too deeply.



SAFETY INSTRUCTIONS < DURING OPERATION >

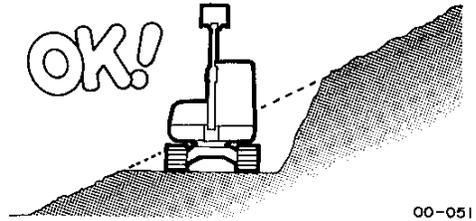
▲ Support the blade on both sides.

- When supporting the blade to stabilize the excavator while digging, do not support it on one side only.



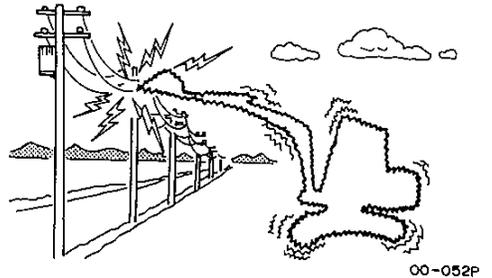
▲ Operating on slopes is dangerous!

- Level the ground on which the excavator is sitting before operating on slopes.



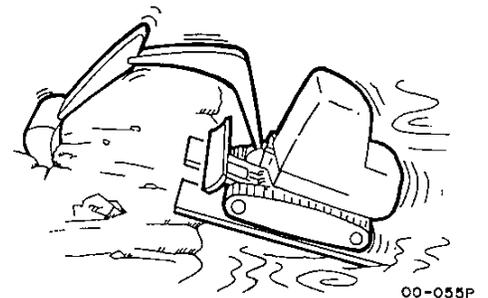
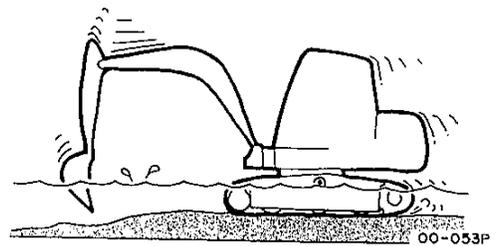
▲ Be careful of electric cables!

- Coming into contact with electric cables can result in shocks. Keep the hoe attachment and excavator body a sufficient distance from electric cables.
- If there are electric cables in the area in which you are to work, consult with the electric company so that work can be done safely.



▲ Cautions on using in water and on soft ground.

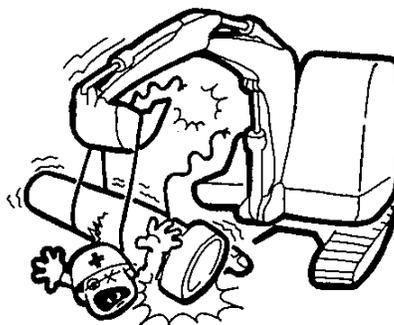
- The excavator can be used in water up to the middle of the carrier rollers. When operating in a river, check the depth of the river floor constantly with the bucket and operate carefully.
- For parts used over long periods of time under water, supply new grease until the old grease is expelled.
- Never let water or sand on the slew bearings or excavator body. If water or sand gets on these, have the excavator inspected at a service factory.
- When leaving water at a steep angle, be sufficiently careful that the back of the excavator does not get in the water, getting the radiator fin wet or damaging it.
- On soft ground, constantly observe the area around the excavator to make sure the excavator does not sink in.
- Getting out of mud
 - If only one side is stuck in mud, lift that side using the hoe attachment then place planks or boards underneath. When doing so, always push on the ground with the bottom of the bucket.
 - When both sides are stuck in the mud, set boards or planks underneath using the above procedure, dig the bucket into the ground in front, then pull the arm in and push the travel levers forward to get the excavator out.



< DURING OPERATION > SAFETY INSTRUCTIONS

⚠ Never use the excavator as a crane!

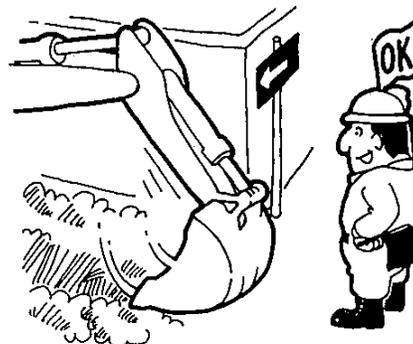
- Do not use the excavator as a crane. The excavator is not equipped for such operations.
- However, lifting operations within the specified limits are possible using the proper attachment.



00-030P

⚠ Use a guide in dangerous places or places where visibility is poor.

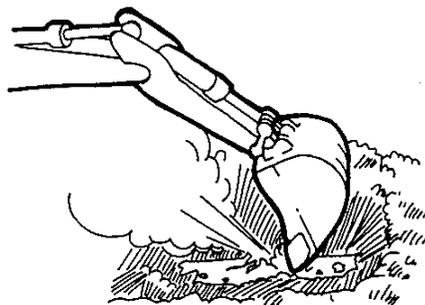
- Establish hand signals, etc., ahead of time.



00-009P

⚠ Watch for buried objects!

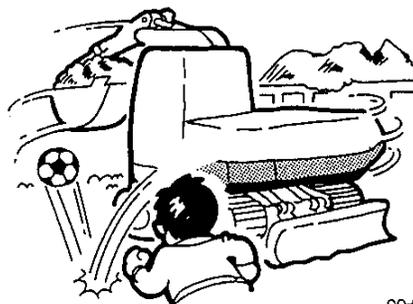
- Dig shallowly first to check for the presence or position of buried objects before starting actual operations.



00-010P

⚠ Do not let anyone within the slewing range!

- Blow the horn as a warning before slewing so that no one but the guide comes near the excavator.



00-012P

⚠ Only use the excavator for its designated purposes!

- Never let people ride in the bucket.

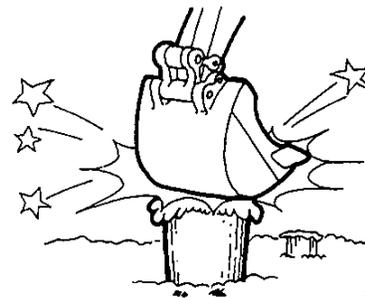


00-013P

SAFETY INSTRUCTIONS < DURING OPERATION >

⚠ Do not try to drive piles or clear away dirt by banging the bucket down!

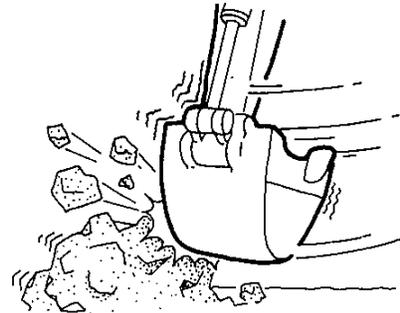
- This can shorten the service life of the hoe attachment parts. Always dig using the hydraulic force.



00-001P

⚠ Do not fill in holes or break earthen walls using the slewing or swinging force!

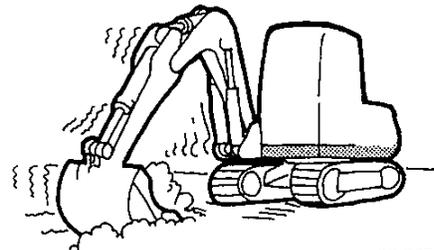
- Subjecting the swing bracket or slew mechanism to excessive force can result in damage.



00-004P

⚠ Do not try to dig while traveling!

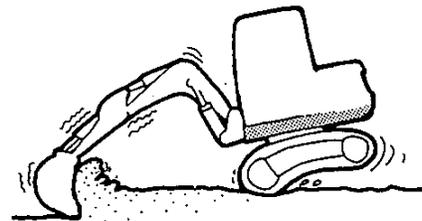
- Do not dig the bucket in first then try to pull it with the motion of the excavator.



00-003P

⚠ Do not try to use the weight of the excavator to add force when digging!

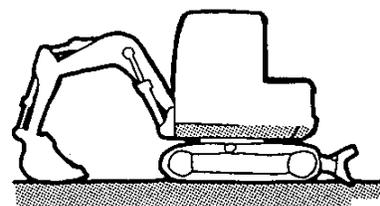
- Use the hydraulic force of the hoe attachment and always dig with shallow, long strokes.



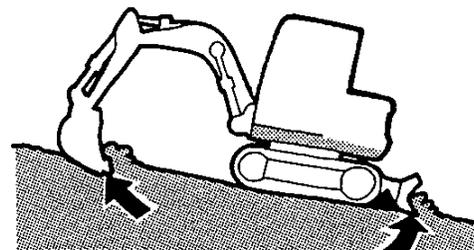
00-002P

⚠ Do the following before leaving the operator's seat:

- When parking or stopping on flat surfaces:
 - Set the bucket and dozer blade against the ground.
 - Stop the engine and lock the operation levers.
 - Lock slewing and store the starter switch key away.
- When parking and stopping on slopes:
 - Do the above and also set stoppers against the crawler belts.



00-016P



00-017P

< DURING INSPECTION AND MAINTENANCE > SAFETY INSTRUCTIONS

Cautions on Inspection and Maintenance

▲ Inspection and maintenance schedule.

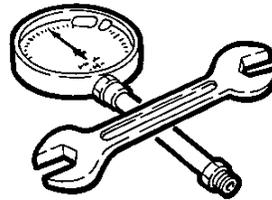
- Perform inspection and maintenance according to the time indicated on the hour meter.

Check and add oil at regular intervals, determined in function of the type of operation, the load, the weather, etc., using as a basis that if the excavator is operated 8 hours a day, the oil should be checked and replenished after 1 week or 50 hours, 1 month or 250 hours, 6 months or 500 hours, 1 year or 1000 hours.



▲ Have a service factory perform major inspections and servicing.

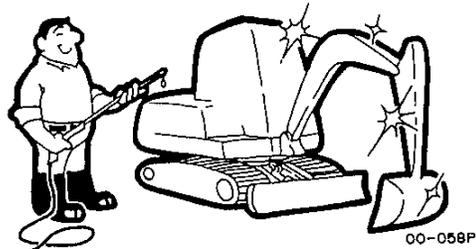
- Have a service factory perform any inspections, maintenance, and adjustments not explained in this manual. Also feel free to contact a service factory should you have any questions.
- If any of the situations for which this manual says to contact a service factory arise, do so as soon as possible.



00-057

▲ Wash the excavator methodically.

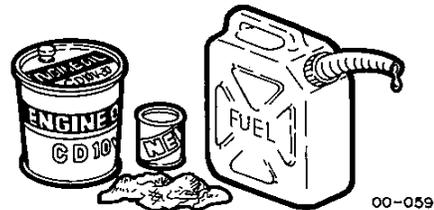
- Make it a habit to wash the excavator every day after using it. Dirt on the pedals can make them slippery, so clean it off carefully.
- When washing the excavator, cover electrical parts with vinyl to protect them from water. If they get wet, this could result in short circuits, malfunction or errors.



00-058P

▲ Handling fuel and oil.

- Fuel and oil are extremely inflammable, so handle them with sufficient care.
 - Replenish fuel outdoors with the engine stopped.
 - Carefully wipe off any fuel which may have spilled while fueling or servicing the excavator.
 - Store fuel and oil in places away from flames.
 - Cloths on which there is fuel or oil may ignite spontaneously, so dispose of them following the prescribed rules.



00-059

▲ Disposing of spent oil!

- Place spent oil in oil barrels, etc. Do not pour the oil on the ground or into rivers or lakes, as this can damage the environment. Dispose of it following the prescribed rules for industrial wastes. Do the same for filters.



00-060

SAFETY INSTRUCTIONS < DURING INSPECTION AND MAINTENANCE >

⚠ Never try to modify the excavator!

- Never try to modify the excavator by yourself, as this could lead to reduced safety, function and service life.

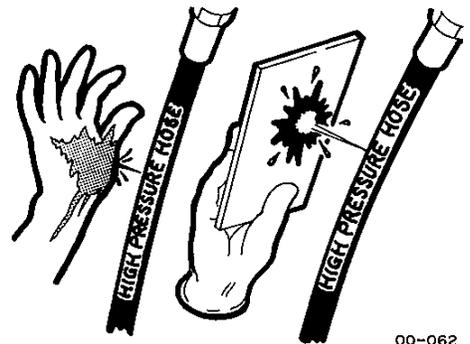
⚠ Have welding repairs done by a service factory.

- Heating hydraulic parts, pipes or nearby areas can generate combustible steam or gases which may explode, so have welding repairs done by a service factory.



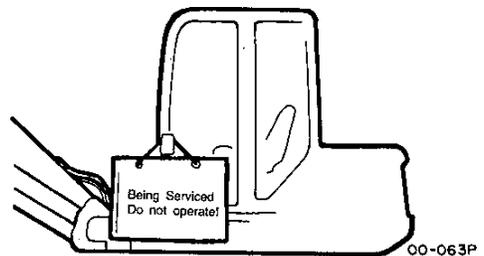
⚠ High pressure oil is dangerous!

- Do not let oil under high pressure spurt out onto the hands or body.
- If high pressure oil spurts out and gets into the skin, it can cause necrosis after several hours. If you should be exposed to high pressure oil, contact a physician immediately.
- Release the remaining oil pressure before removing hydraulic parts and pipes. Inversely, inspect the hoses and pipes carefully before pressurizing.
- Use boards to check for high pressure oil leaks.



⚠ Use signs during inspection.

- To prevent accidents, during inspecting and maintenance, place a sign on an easily visible part such as the door or operating levers saying "Being Serviced Do not operate!" so that others will not touch the excavator inadvertently.



⚠ Cautions on handling the radiator!

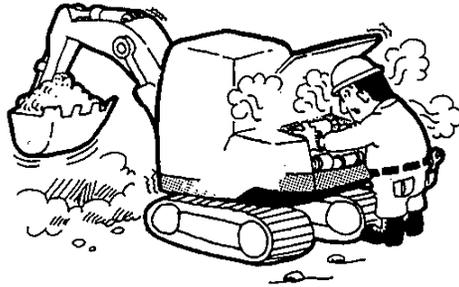
- If the radiator cap is removed inadvertently when the engine is hot, hot water may spurt out, resulting in burns.
 - Let the engine cool down, then slowly turn the cap to release the pressure.



< DURING INSPECTION AND MAINTENANCE > SAFETY INSTRUCTIONS

⚠ Do not service while the excavator is operating!

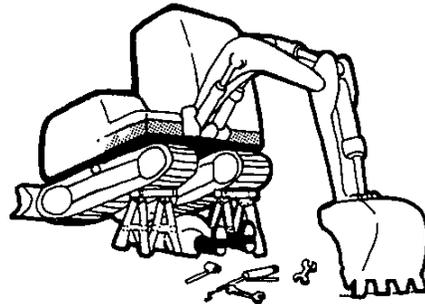
- Be sure to turn the engine off when inspecting or servicing.
- If a problem should arise with the excavator during operation, stop operating it immediately, inspect carefully and find the cause of the problem. Conduct repairs as soon as possible.



00-019P

⚠ Place safety blocks under the body!

- Always set safety blocks under the body when inspecting or servicing underneath the excavator to prevent it from falling.



00-020P

⚠ Keep sources of fire away from the excavator!

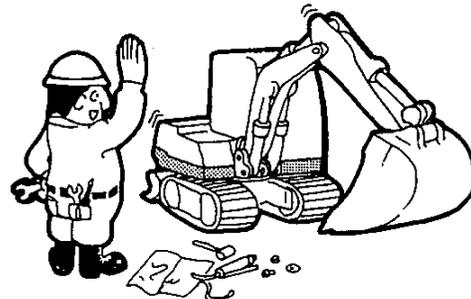
- Always be prepared – check the location and operation of the nearest fire extinguisher.
- Never smoke while inspecting the excavator, as this can cause fires.
- In particular, the battery can explode. Be careful of the following:
 - Inspect and service in a well ventilated place.
 - Keep sparks, cigarettes and other flames away from the battery.
 - Do not charge frozen batteries. Heat up the battery first to melt the battery fluid, and only charge the battery when the temperature is 15°C (59°F) or above.



00-021P

⚠ Use proper signals when inspecting and servicing!

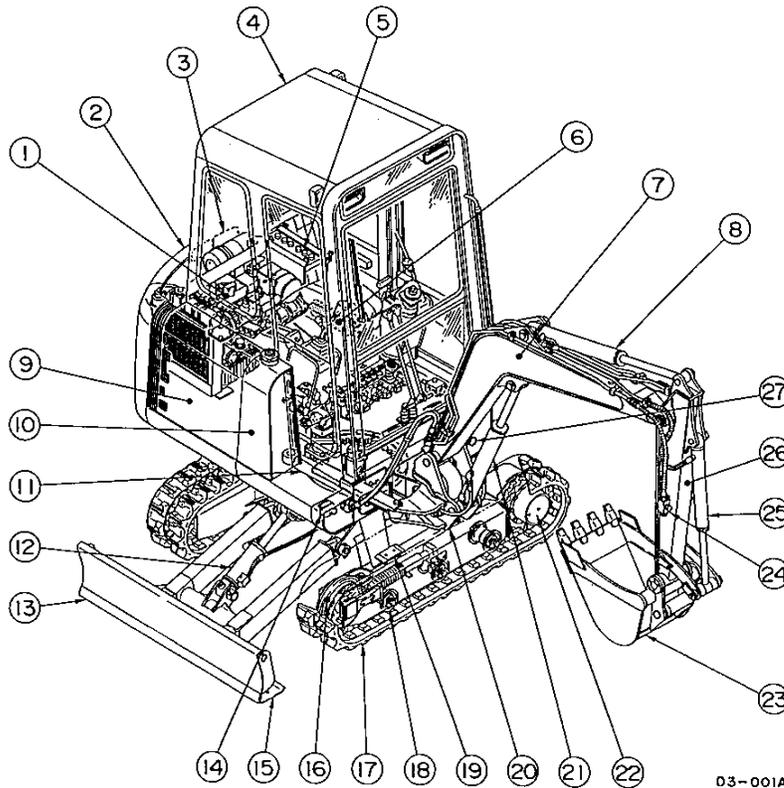
- Inspect and service on a flat, firm surface.



00-018P

PART NAMES AND FUNCTIONS

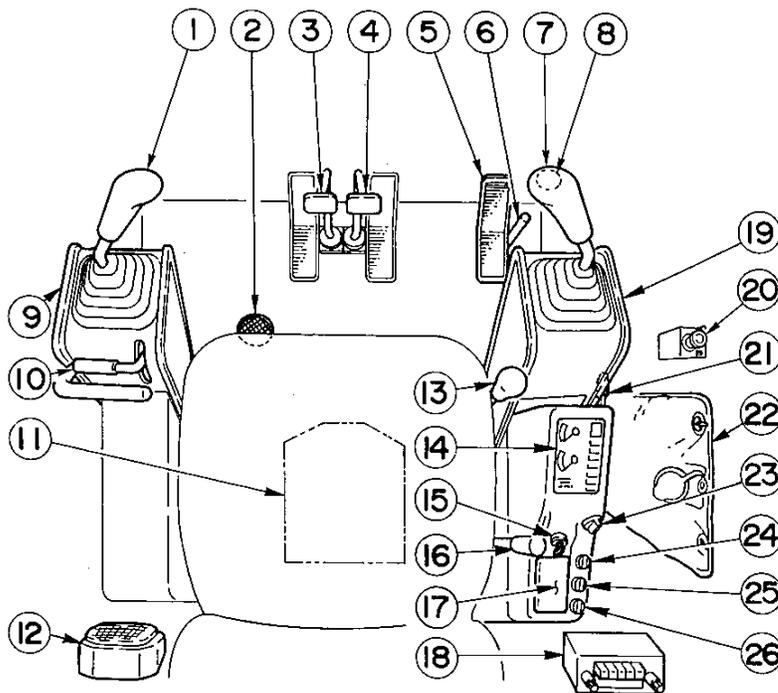
Part Names



03-001A

1. Engine
2. Bonnet
3. Flasher lamp
4. Cab
5. Battery
6. Tools
7. Boom
8. Arm cylinder
9. Hydraulic tank
10. Fuel tank
11. Swing cylinder
12. Blade cylinder
13. Blade
14. Stop valve
15. Road protector*
16. Idler
17. Crawler belt
18. Track roller
19. Slide
20. Swing bracket
21. Boom cylinder
22. Travel motor
23. Bucket
24. Auxiliary port
25. Bucket cylinder
26. Arm
27. Electric socket DC 12V (for EU)

Levers and Instruments



63-0116

1. Left operating lever
2. Acceleration pedal
3. Left travel lever
4. Right travel lever
5. Swing pedal
6. S/A switching lever
7. Right operating lever
8. Horn switch
9. Left lever stand
10. Set knob
11. Heater
12. Speaker
13. Blade lever
14. Monitor
15. Starter switch
16. Throttle lever
17. Fuse box
18. Radio
19. Right lever stand
20. Cigarette lighter (for EU)
21. Slew lock lever
22. Washer fluid tank
23. Flasher switch
24. Light switch
25. Wiper and washer switch
26. Heater switch

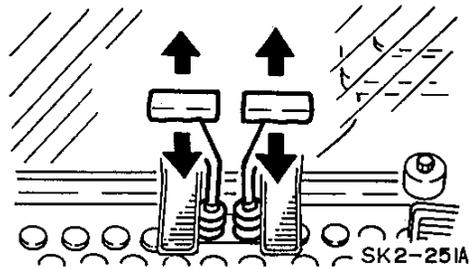
Parts marked "*" are optional.

PART NAMES AND FUNCTIONS

Left and Right Travel Levers

Use these to move the left and right crawlers forward and backward.

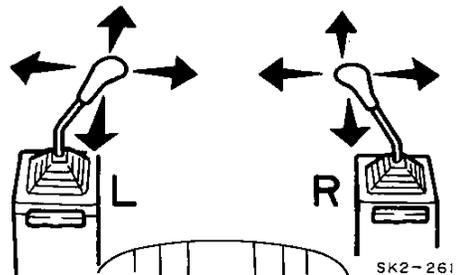
- The crawlers move forward when the levers are pushed forward, backward when the levers are pulled backward. (Refer to pages 28 and 29.)
- ☞ The side with the blade is the front. Remember that when the blade is to the rear of the operator's seat, the excavator will move backwards when the travel levers are pushed forwards.



Left and Right Operating Levers

These levers are for operating the hoe attachment and slewing.

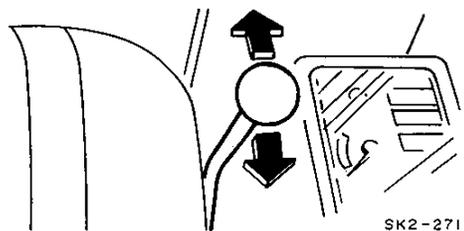
- The speed changes depending on how far the lever is operated. (Refer to pages 28 to 32.)



Blade Lever

This lifts and lowers the blade.

- The blade lowers when the lever is pushed forward, and lifts when the lever is pulled backward. (Refer to pages 28 to 33.)



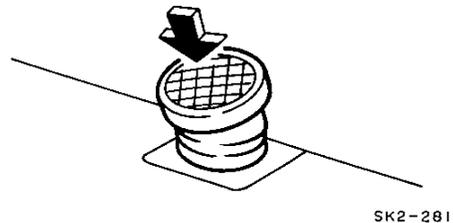
Acceleration Pedal

Use this to change the speed of travel.

- The travel speed increases when the pedal is pressed during travel. The speed decreases when the pedal is released.

⚠ **Never travel at high speeds on slopes and rough surfaces, as this is extremely dangerous.**

(Refer to pages 28 to 29.)



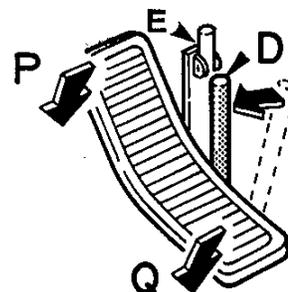
Swing Pedal

Use this pedal to swing the hoe attachment left and right.

- Press on the heel side "Q" to swing to the right.
- Press on the toe side "P" to swing to the left. (Refer to page 31.)

☞ The pedal will not operate unless the S/A switching lever "D" to the right of the pedal is in the position shown on the diagram. Make sure it is set to the "SWING" position (near the pedal).

☞ Operate switching lever lock pin "E" to prevent malfunction.

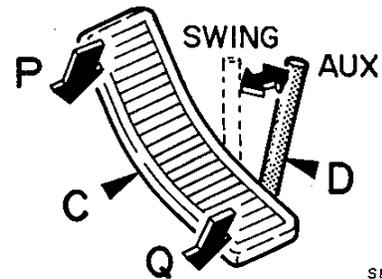


PART NAMES AND FUNCTIONS

S/A (Swing/Auxiliary) Switching Lever

Use this lever "D" when an attachment other than the included one is added to the auxiliary ports to switch the swing pedal "C" for use as the auxiliary port pedal.

- Near pedal (SWING position) → Swing pedal
Outer side (AUX position) → Auxiliary port pedal
- When heel side "Q" is pressed, hydraulic oil flows from port "a".
- When toe side "P" is pressed, hydraulic oil flows from port "b".
- Refer to "Using the Auxiliary Ports" on page 34.



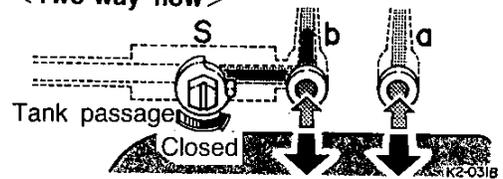
SK2-021A

Stop Valve (for Auxiliary ports)

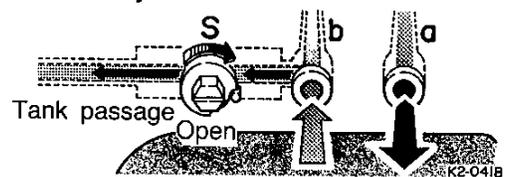
This valve is for switching between two-way flow and one-way flow when using attachments other than the included one.

- **For two-way flow**
Turn stop valve "S" 90° counterclockwise to close the passage to the tank.
 - **For one-way flow**
Turn stop valve "S" 90° clockwise to open the passage to the tank.
- Connect the return side (OUT) of the new attachment to arm port "b", the supply side (IN) to arm port "a". Refer to "Using the Auxiliary Ports" on page 34.

< Two-way flow >



< One-way flow >

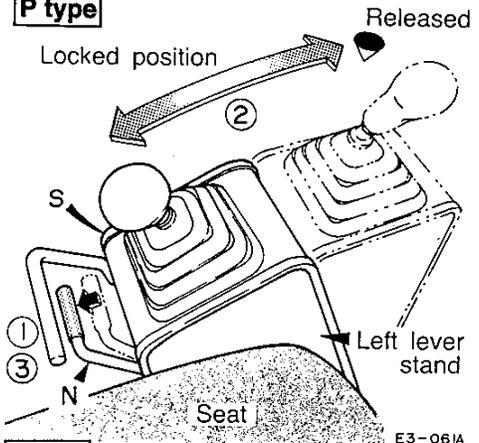


Lever lock

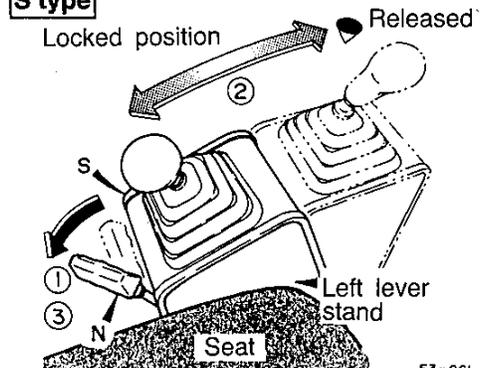
This locks the hoe attachment and slew operation.

- **Locking and unlocking the levers**
 1. Move set knob "N" toward the back of the excavator.
 2. Now move left lever stand "S" to the very front to unlock the levers. Move the stand to the very back to lock the levers.
 3. Release your hand from the set knob to secure the stand.
- ⚠ **When operating the excavator, be sure to set the stand to the very front. If it is even slightly to the back, the levers may lock during operation.**
- ⚠ **When the excavator is not being operated or when the operator leaves the excavator, the attachment should always be grounded, the left lever stand set to the very back to lock the operating levers, and the key removed.**
- ⚠ **The travel, boom swing and blade operations are not locked, even when the stand is set to the lock position.**

P type



S type



PART NAMES AND FUNCTIONS

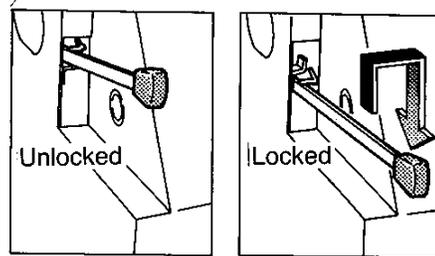
Slew Lock Lever

Use when fixing the turntable to the track frame in order to transport the machine. (Refer to page 38 and 39.)

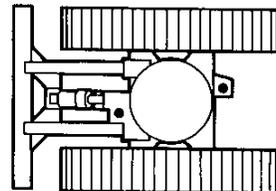
When the turntable is facing straight forward or backward, the turntable can be locked in two locations (marked by black dots).

⚠ Lowering the lock lever while the slew is in progress will damage the machine.

Wait until the slew is fully completed before locking.



E3-042



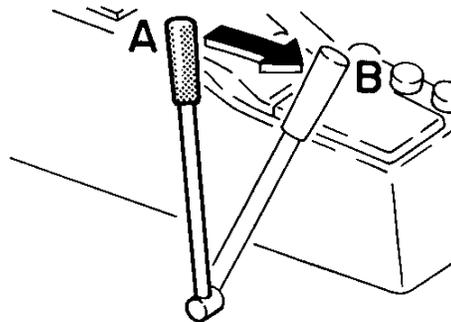
S01-216

Throttle Lever

This controls the engine speed.

A Idling

B Maximum speed



SK2-071A

Horn Switch

Press "H" on the right operating lever grip while the starter switch is ON to sound the horn.

☞ Make it a habit to sound the horn as a signal when starting to operate the excavator.



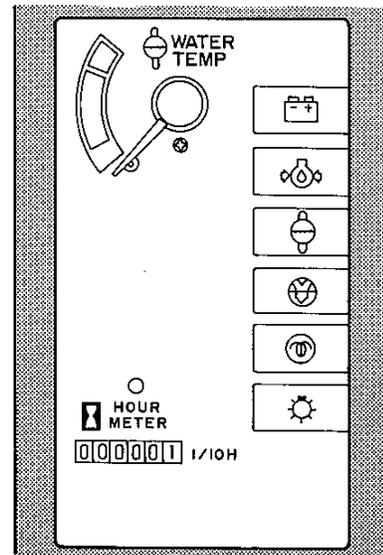
SK2-181

PART NAMES AND FUNCTIONS

Monitor

The monitor displays information sent from sensors positioned at various places on the excavator, making it possible to monitor the excavator's operating status.

- When the starter switch is set to "ON", the battery charge and engine oil pressure lamps on the monitor light and the water temperature meter starts operating. In addition, the battery charge and engine oil pressure lamps light until the engine is started, and turn off once the engine is started.
- ☞ Always pay attention to the gauges and the lamps to prevent problems before they happen.

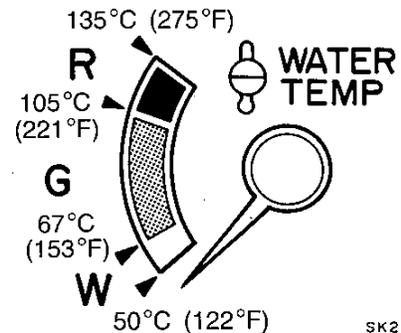


D3-081

WATER TEMP (water temperature meter)

This indicates the temperature of the engine cooling water. The temperature is normal in the green area (approx. 67 to 105°C or 153 to 221°F).

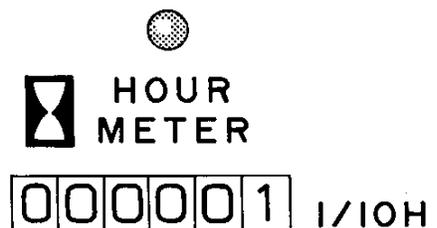
- If the needle rises to the red area, refer to the section on page 19 on the coolant temperature lamp.
- R = red, G = green, W = white



SK2-091

HOUR METER

This indicates the total time the engine has run. Even if the excavator is not moving, the meter continues to count as long as the engine is on.



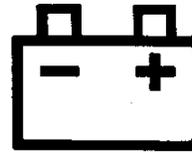
SK2-111

PART NAMES AND FUNCTIONS

Battery Charge Lamp

This lamp lights when a problem arises in the charging system.

☞ Have the excavator inspected at a service outlet.



ST2-016

Engine Oil Pressure Lamp

This lamp lights when a problem arises in the lubricant oil system.

- Stop the engine and check the quantity of engine oil. (Refer to page 25.)
- If the cause is elsewhere, have the excavator inspected at a service outlet.

⚠ **Continued operation of the excavator can cause the engine to burn.**



SF2-104

Coolant Temperature Lamp

This lamp lights when the coolant temperature rises abnormally (above 105°C or 221°F).

- The engine is overheating. Stop operation immediately and let the engine idle (refer to page 26) to let the coolant cool down.
- Once the coolant has cooled down, stop the engine.
- Once the engine has cooled down, inspect the amount of coolant, and check the fan belt for breaks or slack. (Refer to page 25.)
- The coolant temperature may rise abnormally if the engine is run with an excessive load.

☞ Let the coolant cool down as explained above, then start operating the excavator again, being careful not to overdo it.



SF2-103

Air Cleaner Lamp

This lamp lights when the air cleaner filter is clogged.

- Clean the dust cap and element. (Refer to page 49.)



SF2-102

Glow Lamp

This lamp lights when the starter switch is turned to the "GLOW" position, indicating that the power to the glow plug is on. The lamp turns off when the switch is turned to the "OFF" position. Wait for approximately 1 second before starting the engine. (Refer to page 27.)

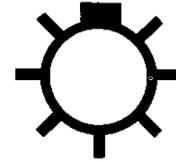


SZ3-091

PART NAMES AND FUNCTIONS

Flasher Lamp Monitor

This indicates whether the flasher lamp is on, making it possible to check whether or not the flasher lamp is on without looking back. (Refer to page 21.)



SK2-131

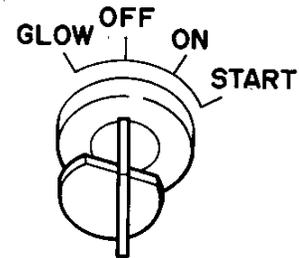
Starter Switch (refer to pages 26 and 27)

GLOW In this position, the air in the combustion chamber is heated, making it easier to start the engine. (The glow lamp lights.)

OFF In this position, the power circuit is interrupted. (Engine stop position)

ON In this position, the power circuit is connected. (Engine on position)

START In this position, the engine is started. (The switch automatically returns to the "ON" position when the hand is released.)



SZ2-041

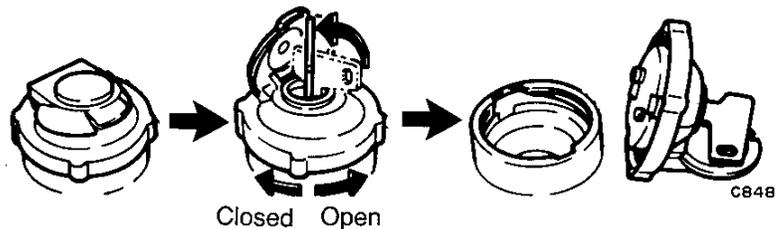
• The key plate can be used for all the following places:

- Starter switch
- Cab door
- Bonnet
- Fuel supply port
- Heater chamber (tool box)

Fuel Supply Port

Opening the Fuel Supply Port

1. Open the lid, insert the key, and turn counterclockwise to unlock.
2. Turn the entire cap counterclockwise and remove it.
3. Follow the above procedure in reverse order to reinstall and lock the cap.

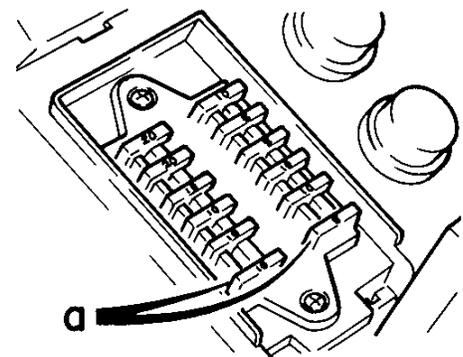


C848

Fuse Box

The fuses are lined up as shown on the table below. If a fuse should blow, turn the starter switch off and replace it with one of the spare fuses "a".

Capacity	Circuit(s) protected	Capacity	Circuit(s) protected
20A	Stop motor	20A	Radio, Room light Heater Cigarette lighter (for EU)
20A		5A	Horn
10A	Limit switch, solenoid valve, feed pump	5A	Monitor
10A	Headlights, boom light, monitor light	10A	Flasher lamp
10A	Wiper, windshield washer	10A	Option Electricsocket (for EU)
10A	Spare fuse "a"	5A	Spare fuse "a"



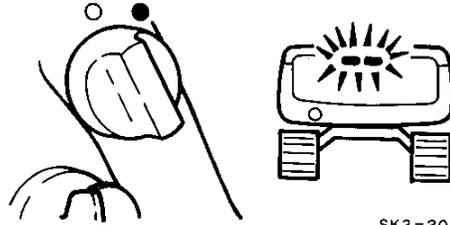
SK2-191

PART NAMES AND FUNCTIONS

Flasher Switch and Lamp

If this switch is turned when the starter switch is set to "ON", the flasher lamp at the rear of the bonnet begins flashing.

- position: Off
- position: Flasher lamp flashes.



SK2-201

Light Switch

- position: Off
- position: Monitor lights, headlights, and boom light turn on.

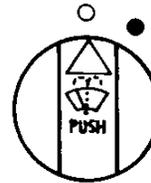


SK2-141

Wiper and Washer Switch (Cab)

- position: Off
- position: Wiper operates.

PUSH: Washer fluid is squirted from the nozzle while pressed, and stops when released.



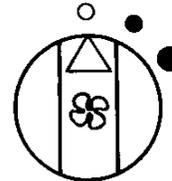
SK2-151

Heater Switch (Cab)

- position: Off
- position: Heater fan rotates at low speed.
- position: Heater fan rotates at high speed.

▲ Ventilate well when using the heater.

(Refer to below)

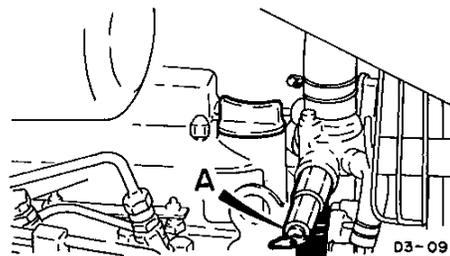


SK2-161

☞ Handle the heater carefully in warm seasons.

The coolant circulates in the heater even when the heater switch is off. When the external temperature becomes warm and the heater is no longer needed, close valve "A" so that the coolant no longer circulates in the heater.

☞ When the external temperature gets cold, remember to open valve "A" before using the heater.



D3-091

Cigarette Lighter (for EU)

▲ Do not leave the cigarette lighter's knob pressed in. Doing so heats up the lighter, and could be dangerous.

▲ If the knob does not pop out after 30 seconds, it may be broken. Pull it out by hand.

▲ Do not use other cigarette lighters, as they may get stuck.

1. Press in the lighter's knob.
2. Release the knob and wait for it to pop out automatically.
3. When the knob pops out, pull on it to pull out the lighter.



L1-751

PART NAMES AND FUNCTIONS

Seat and seat belt

Adjusting the back rest

- Lift up lever "A" and release the lever at the desired position.
- ⚠ **The cab window may break if the back rest is lowered strongly to the back.**

Adjusting the arm rest

- Turn roller "B" to adjust.
 - The arm rest tilts down when roller "B" is turned clockwise, and tilts up when turned counterclockwise.

Sliding the seat forward and backward

- Pull lever "C" towards the outside, slide the seat to a comfortable position, then release the lever.

Adjusting the seat height

- Sit in the seat, pull out knob "D", and move the seat left and right.
- ☞ The knob will not move if the seat is not at the specified height. Loosen the suspension (♣ — side) before moving it.
 - ⊗ : Lowest side Minimum suspension stroke
 - ⊘ : Highest side Maximum suspension stroke

Adjusting the suspension

- Pull out the black part of lever "E" and turn the seat to the front.
 - Now set to "+" or "-", then set the lever back in position.
 - ♣ + : For heavier operators, turn to the inside (to make the suspension harder).
 - ♣ - : For lighter operators, turn to the outside (to make the suspension looser.)

Adjusting the headrest

- Tilt headrest "F" forward by hand. To remove, pull straight up strongly.

Seat belt length adjustment

- Set the belt and buckle at right angles to each other.
- Then the length can be adjusted easily by pulling on the end of the belt.

Always make sure that the seat belt is buckled up tightly so it will not come loose. Release by pressing at "E" with a finger.

- ⚠ **Do not operate the excavator unless the seat belt is properly fastened around you.**

