Read and understand these instructions.
Failure to do so can cause injury or death.

TB007

COMPACT EXCAVATOR

S/N 1074340~

OPERATORS MANUAL

OPERATOR PRECAUTIONS

If this machine is used by an emplyee, 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.

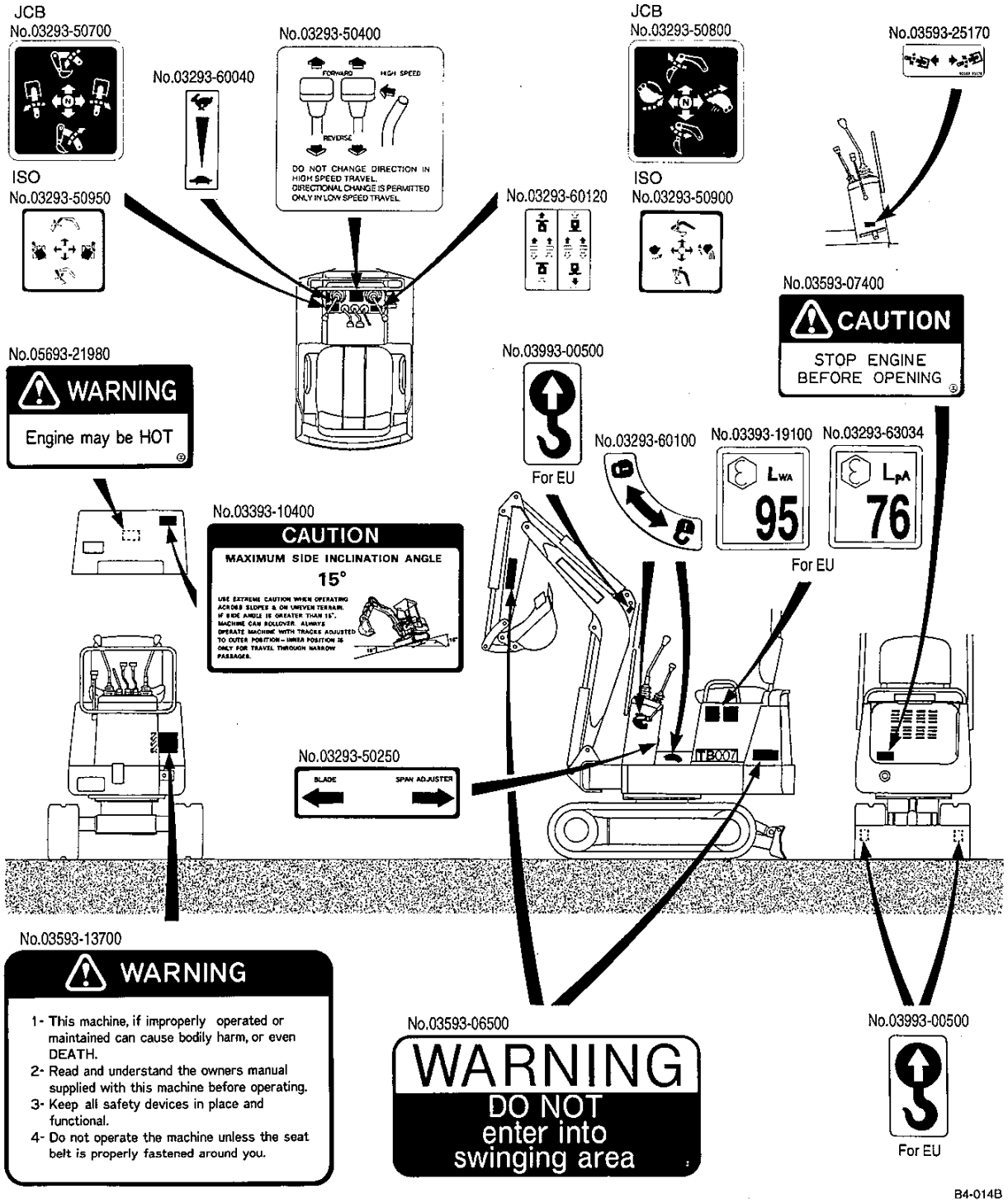
Fuel Handling Precautions

- 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 and the explanations in the engine's manual.

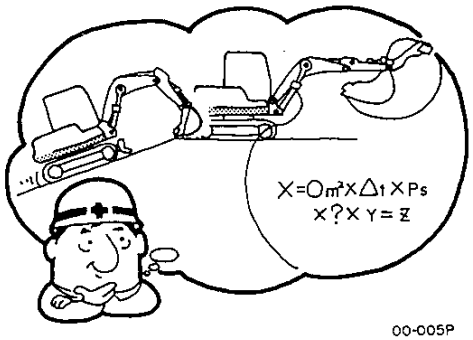

This mark indicates important information on safety. Be sure to follow the instructions indicated after this mark.

☞ This mark indicates advice for the operator.

Contents

⚠Know your excavator well.

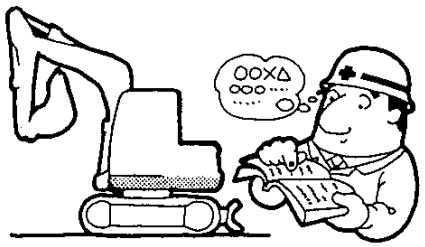
- Make sure you know and understand the excavator's performance, working capacities, sizes, weights, etc.



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

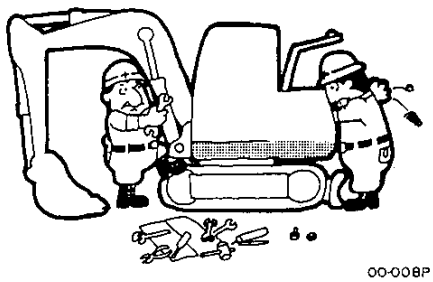
⚠Wear the proper clothing.

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

00-007A

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

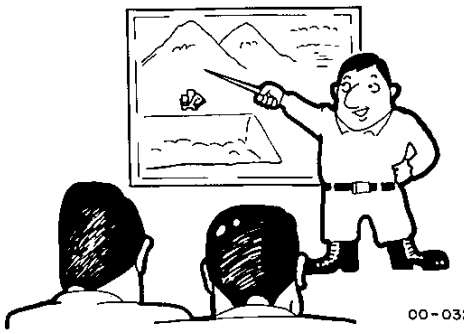
- Mark non-serviced excavators with the words "DO NOT OPERATE".
- Reinspect problem parts serviced or repaired the previous day before operating the excavator.



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.

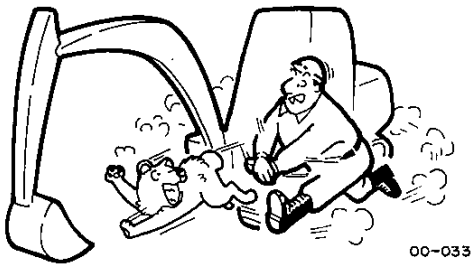


00-032

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.

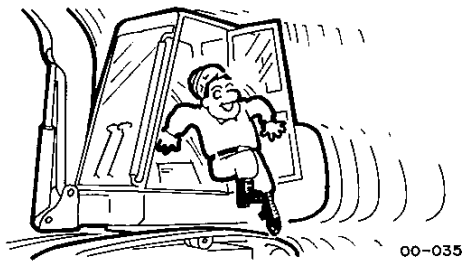


⚠Carefully perform the proper inspections before starting.

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

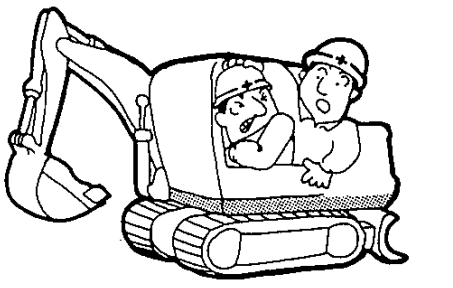
⚠Do not jump onto or off of the excavator!

- 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.

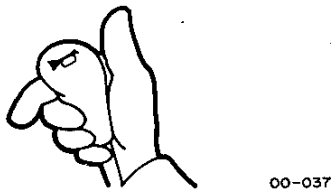


⚠Be careful of noise.

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

⚠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.

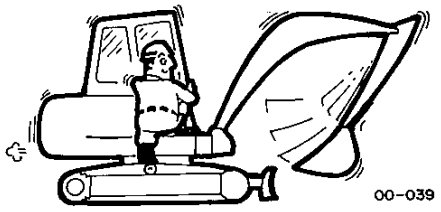


⚠Be careful of exhaust gases!

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

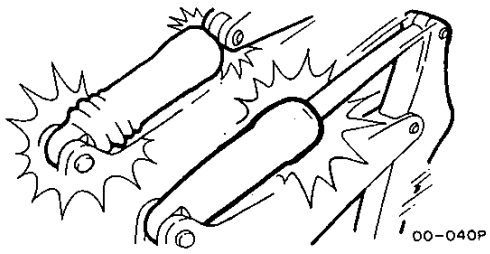
⚠Always operate from the operator's seat.

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



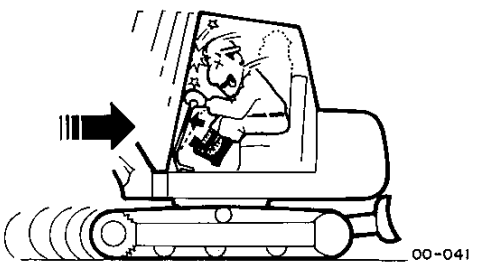
⚠Treat the hydraulic cylinders gently.

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



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

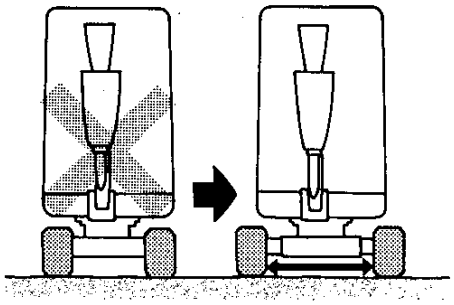
- The side on which the blade is located is the front of the travel frame. Lift the blade before travelling.
- Travelling long distances in reverse can damage the crawler belts.
- Remember that when the blade is to the rear of the operator's seat, the excavator will move backwards when the travel levers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



SAFETY INSTRUCTIONS <DURING OPERATION>

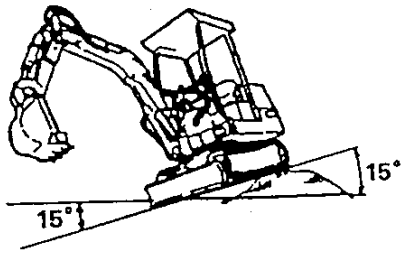
⚠Operate with fully extended crawlers!

- When operating the machine, always extend the crawlers for greater stability. When operating with retracted crawlers the machine may be unstable and tip over.
- When travel with retracted crawlers, position the attachment facing straight forward.
- When operating with the optional attachments such as Breaker, Tilt-Bucket, Cramshell, machine should be operated only in the extended width of 900mm (35.4 in.).



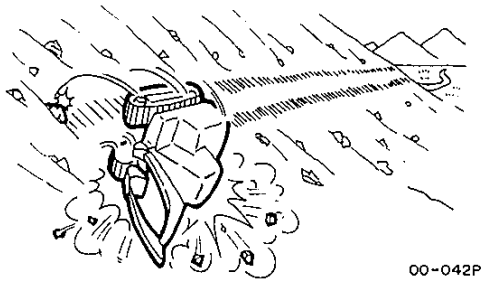
⚠Maximum side inclination angle 15°.

- Use extreme caution when operating across slopes & on uneven terrain.
- If side angle is greater than 15°, machine can rollover.
- Always operate machine with tracks adjusted to outer position – inner position is only for travel through narrow passages.



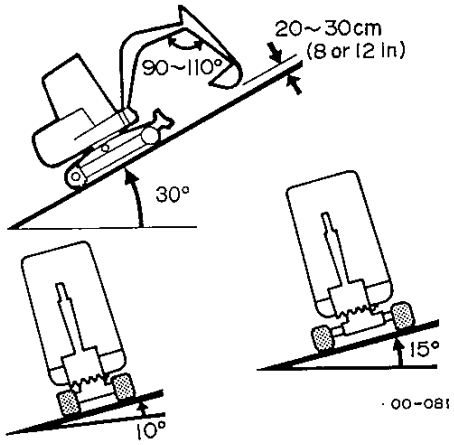
⚠Never travel sideways or change directions on slopes!

- 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.



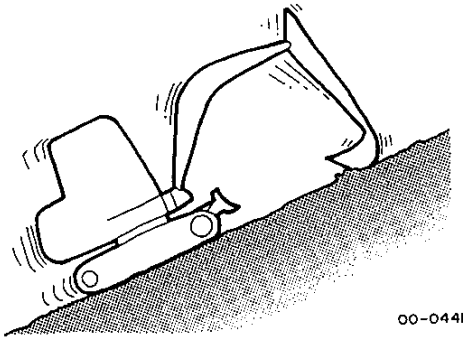
⚠Use within the maximum gradeability 30° and lateral tipping angle 15°. (10° when a retracted crawler width)

- 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.



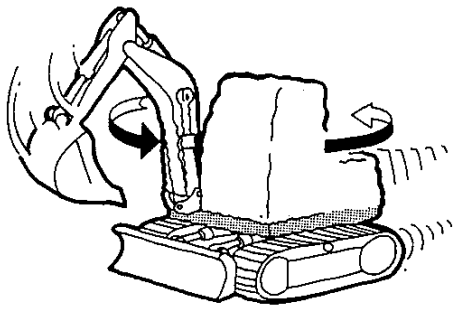
⚠Cautions when climbing and descending slopes!

- 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.



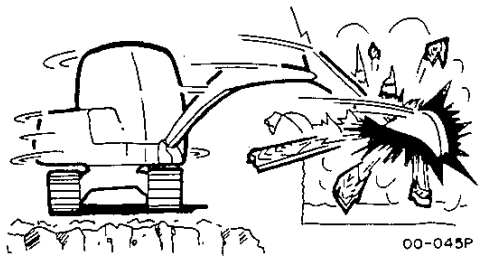
⚠Never slew while travelling!

- 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.



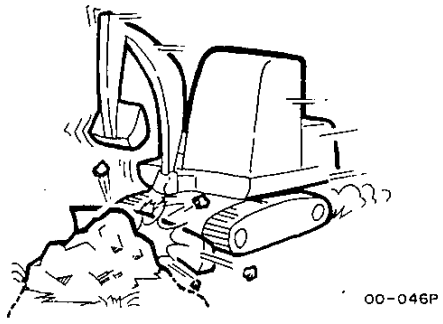
⚠Watch for obstacles!

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



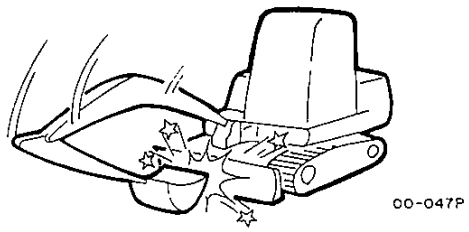
⚠Be careful not to subject the blade to shocks!

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



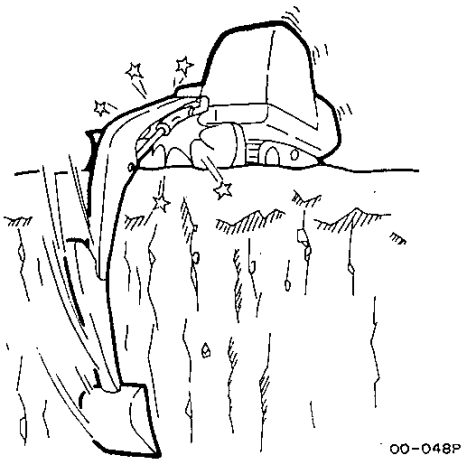
⚠Be careful when folding the hoe attachment!

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



⚠Be careful of the blade when digging!

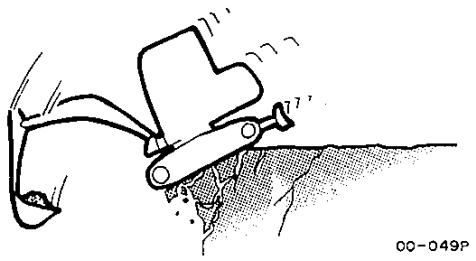
- When digging deeply with the blade at the front, be careful that it does not hit the boom cylinder or bucket. Always operate with the blade at the back unless otherwise necessary.



SAFETY INSTRUCTIONS <DURING OPERATION>

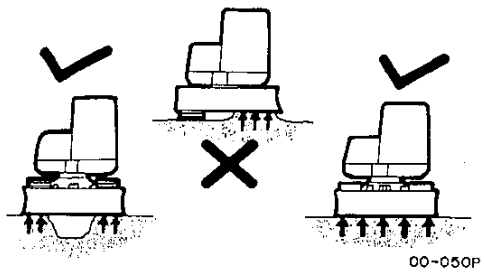
⚠Be careful when operating on the edges of cliffs or road shoulders!

- 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.



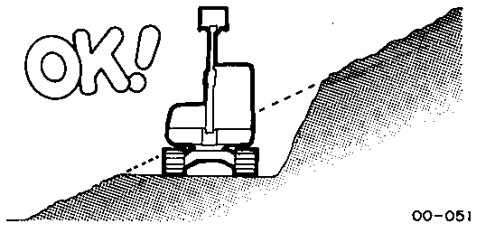
⚠Support the blade on both sides.

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



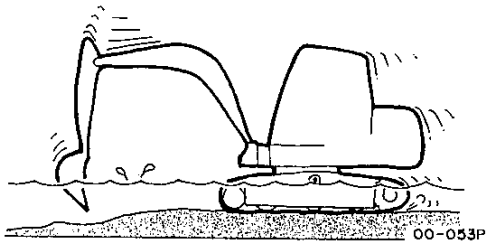
⚠Operating on slopes is dangerous!

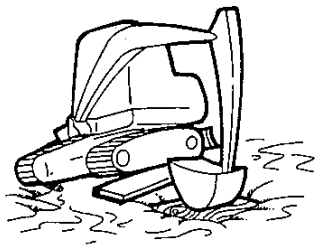
- Level the ground on which the excavator is sitting before operating on slopes.

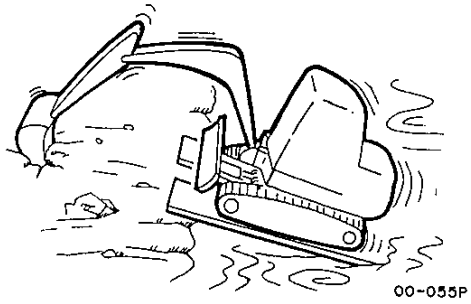


⚠Cautions on using in water and on soft ground.

- 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.

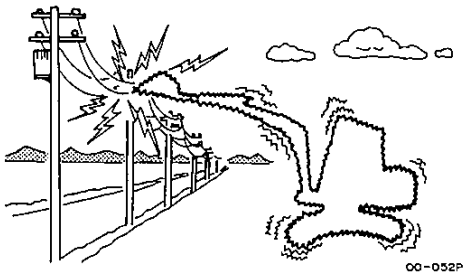






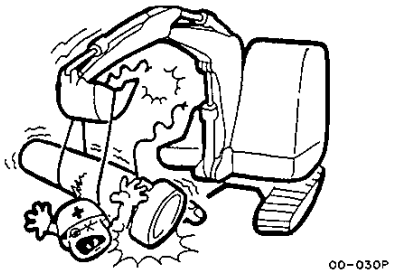
⚠Be careful of electric cables!

- 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.



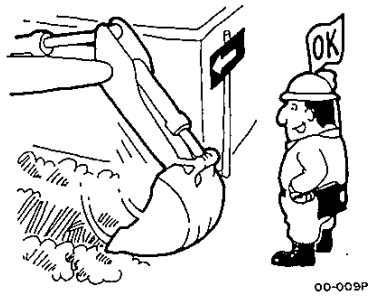
⚠Never use the excavator as a crane!

- 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.



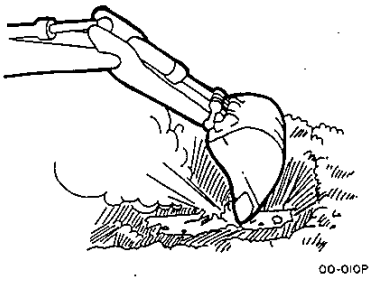
⚠Use a guide in dangerous places or places where visibility is poor.

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



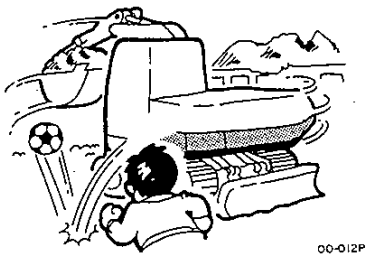
⚠Watch for buried objects!

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



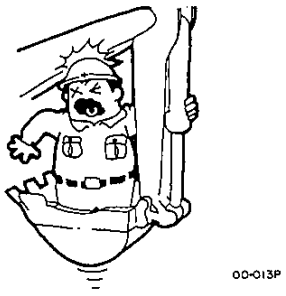
⚠Do not let anyone within the slewing range!

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



⚠Only use the excavator for its designated purposes!

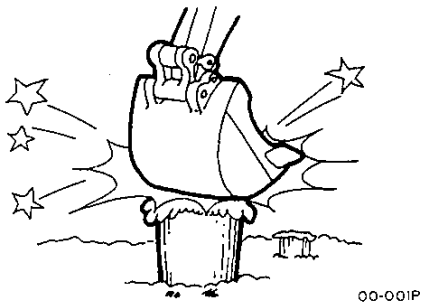
- Never let people ride in the bucket.



SAFETY INSTRUCTIONS <DURING OPERATION>

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

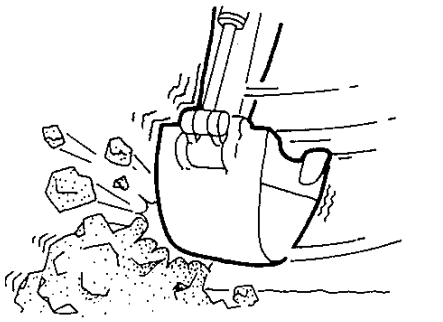
- This can shorten the service life of the hoe attachment parts. Always dig using the hydraulic force.



00-001P

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

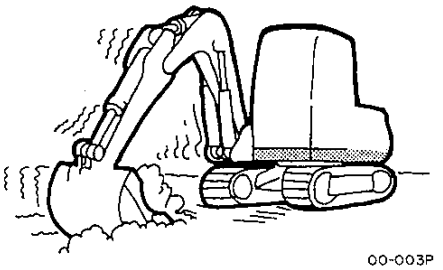
- Subjecting the swing bracket or slew mechanism to excessive force can result in damage.



00-004P

⚠Do not try to dig while traveling!

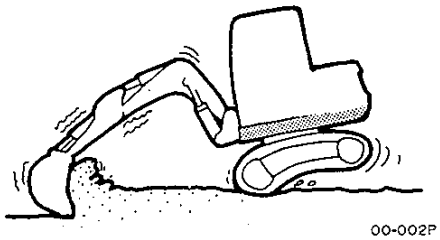
- Do not dig the bucket in first then try to pull it with the motion of the excavator.



00-003P

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

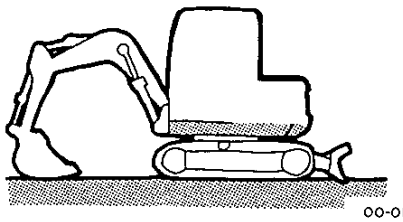
- Use the hydraulic force of the hoe attachment and always dig with shallow, long strokes.



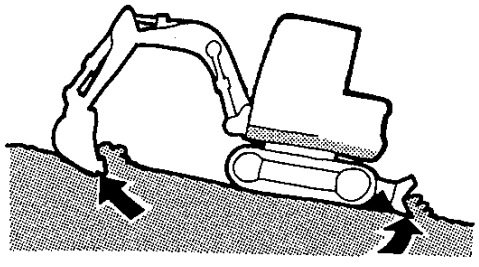
00-002P

⚠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

Cautions on Inspection and Maintenance

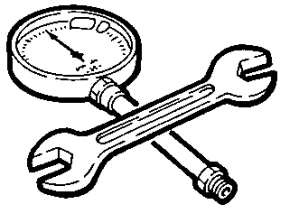
⚠Inspection and maintenance schedule.

- 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.

00-056

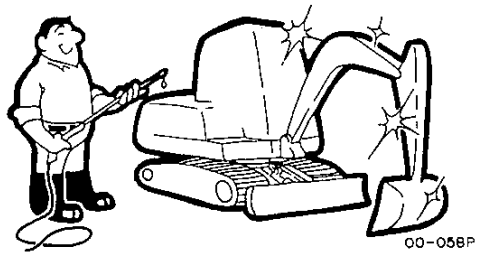
⚠Have a service factory perform major inspections and servicing.

- 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

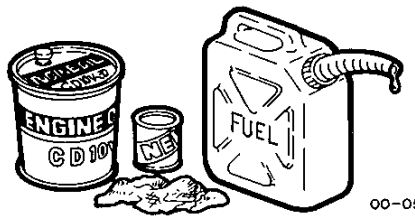
⚠Wash the excavator methodically.

- 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

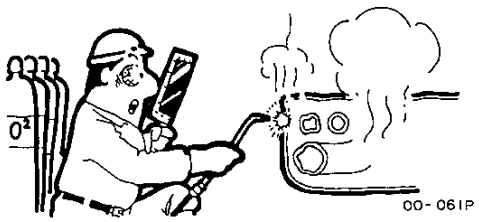
SAFETY INSTRUCTIONS <DURING INSPECTION AND MAINTENANCE>

⚠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.

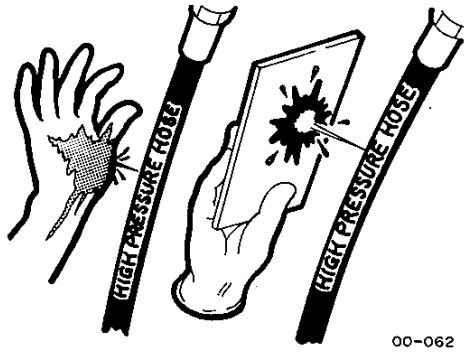
- Heating hydraulic parts, pipes or nearby areas can generate combustible steam or gases which may explode, so have welding repairs done by a service factory.



00-061P

⚠High pressure oil is dangerous!

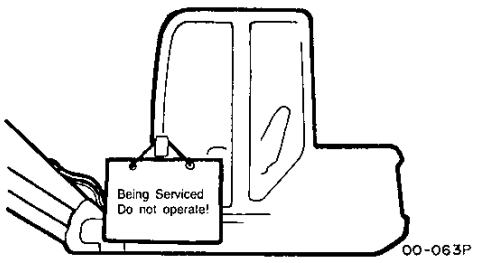
- Do not let oil under high pressure spurt out onto the hands or body.
- If high pressure oil spurts out and gets into the skin, it can cause necrosis after several hours. If you should be exposed to high pressure oil, contact a physician immediately.
- Release the remaining oil pressure before removing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



00-062

⚠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.



00-063P

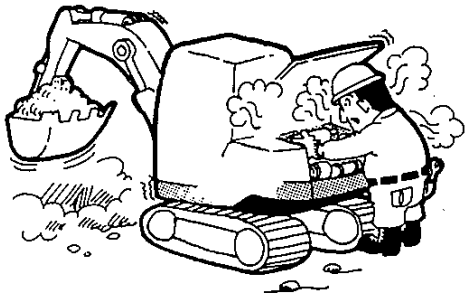
⚠Cautions on handling the radiator!

- 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.


00-064

⚠Do not service while the excavator is operating!

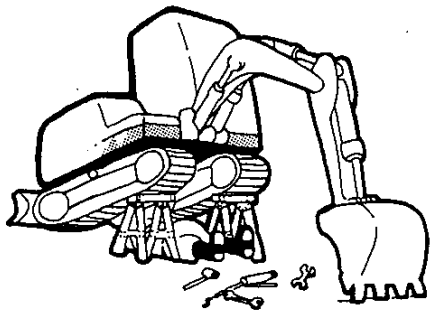
- Be sure to turn the engine off when inspecting or servicing.
- If a problem should arise with the excavator during operation, stop operating it immediately, inspect carefully and find the cause of the problem. Conduct repairs as soon as possible.



00-019P

⚠Place safety blocks under the body!

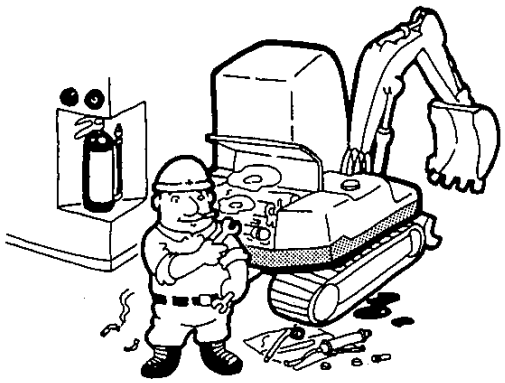
- Always set safety blocks under the body when inspecting or servicing underneath the excavator to prevent it from falling.



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

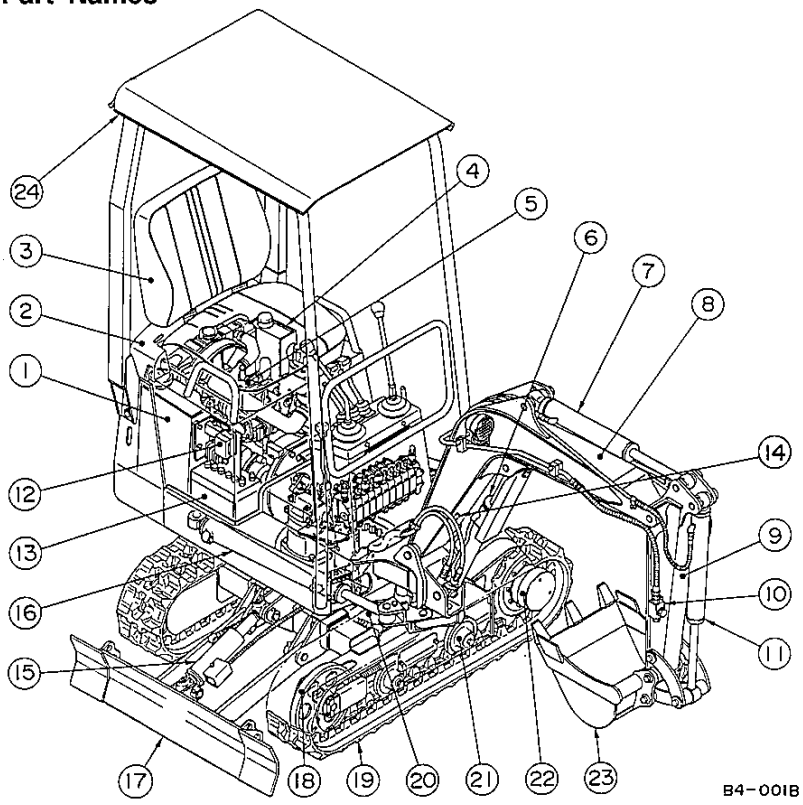
⚠Use proper signals when inspecting and servicing!

- Inspect and service on a flat, firm surface.

00-018P

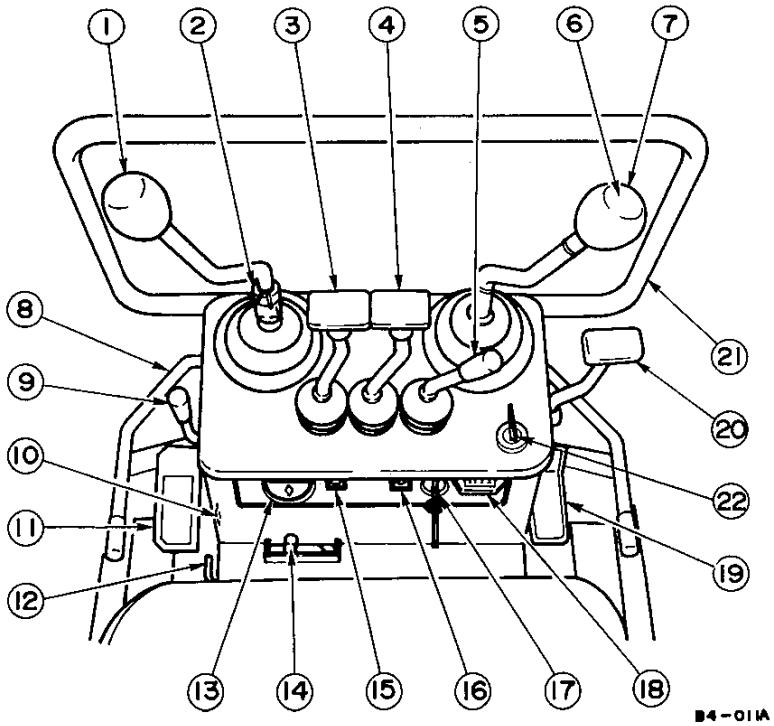
PART NAMES AND FUNCTIONS

Part Names



1. Fuel tank
2. Bonnet
3. Seat (Operator's manual holder)
4. Hydraulic oil tank
5. Engine
6. Boom cylinder
7. Arm cylinder
8. Boom
9. Arm
10. Auxiliary port
11. Bucket cylinder
12. Fuse box
13. Battery
14. Electric socket DC 12V (for EU)
15. Blade cylinder
16. Swing cylinder
17. Blade
18. Idler
19. Crawler belt
20. Spanner cylinder
21. Track roller
22. Travel motor
23. Bucket
24. Canopy

Levers and Instruments



1. Left operating lever
2. A/B selector (for Japan)
3. Left travel lever
4. Right travel lever
5. Acceleration lever
6. Horn switch
7. Right operating lever
8. Operating lever lock (L type)
9. Throttle lever
10. Pedal stopper
11. Auxiliary port pedal
12. Slew lock lever
13. Water temperature meter
14. Blade/Spanner selector lever
15. Battery charge lamp
16. Engine oil pressure lamp
17. Starter switch
    Serial No.1073001 to 107438
18. Hour meter
19. Swing pedal
20. Blade/Spanner lever
21. Front guard
22. Starter switch
    Serial No.1074382 ~

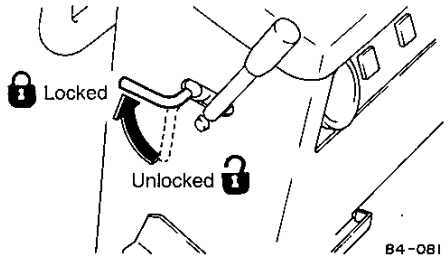
Operating Lever lock

Use this lever to lock and unlock the left and right operating levers.

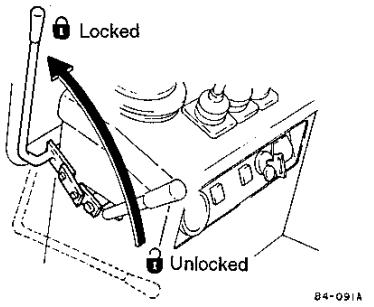
Lock and unlock the levers as shown in the diagram.

⚠ **When the excavator is not operating or when the operator leaves it unattended, set the hoe attachment against the ground and lock the operating levers.**

S type



L type

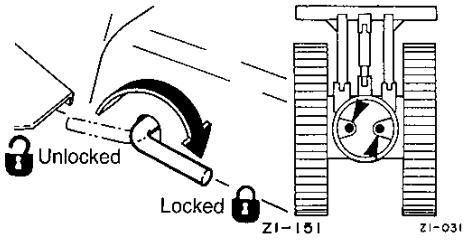


Slew Lock Lever

Use when fixing the turntable to the track frame in order to transport the machine.

When the turntable is facing straight forward or backward, the turntable can be locked in two locations (marked by black dots). (Refer to pages 36 to 37)

⚠ **Locking the lock lever while the slew is in progress will damage the machine.**
Wait until the slew is fully completed before locking.

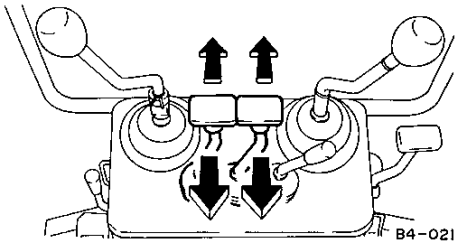


Left and Right Travel Levers

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 25 and 26)

☞ 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.



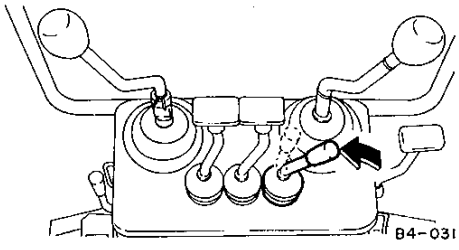
Acceleration Lever

Use this to change the speed of travel.

- The travelling speed is set to high speed when this lever is pushed to the left during travel. When released, the speed returns to low speed. (Refer to pages 25 and 26)

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

⚠ **It is not possible to change directions when travelling at high speed. Return to low speed before changing directions.**



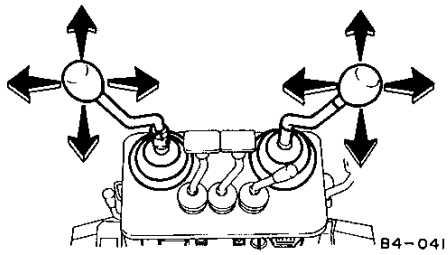
PART NAMES AND FUNCTIONS

Left and Right Operating Levers

These levers are for operating the attachment and slewing.

- The speed changes depending on how far the lever is operated.

(Refer to pages 25 to 30)



Blade/Spanner Lever

This lifts and lowers the blade.

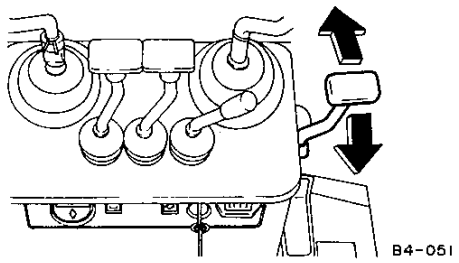
- The blade lowers when the lever is pushed forward, and lifts when the lever is pulled backward.

In addition, this model includes a function for changing the crawler width. The blade/spanner lever is used to do this.

- Set the blade/spanner lever to the "S" (spanner) side.
- Move the lever forward to make the crawler width wider, or pull it backward to make the crawler width narrower.

☞Check the position of the blade/spanner lever before operating it.

(Refer to pages 25 to 31)

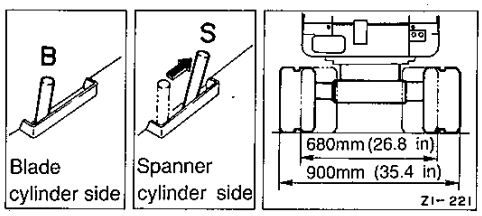


Blade/Spanner selector lever

The crawler width is changed by expanding and contracting the spanner cylinder installed on the lower (travel) frame. This lever switches the flow of the oil between the blade and spanner sides.

- Set the blade/spanner lever to the "S" (spanner) side. Usually keep the lever at the "B" (blade) side.
- The crawler width is made wider and narrower with the blade/spanner lever.

☞Refer to "Changing the Crawler Width" on page 31.

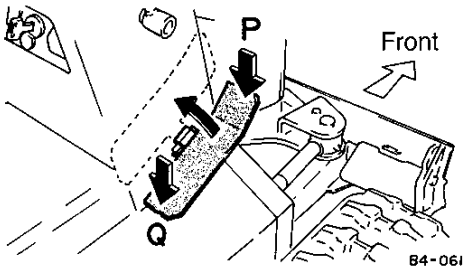


Swing Pedal

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

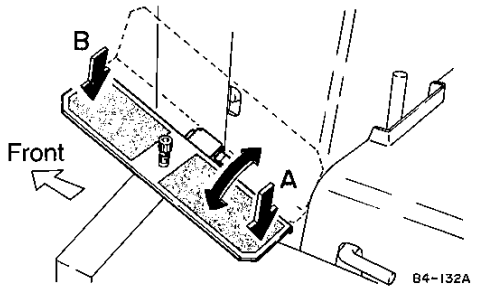
- Press on the heel side "Q" to swing to the right 90°.
- Press on the toe side "P" to swing to the left 90°.

(Refer to page 28)



Auxiliary port pedal

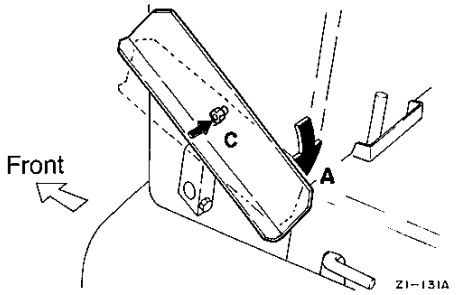
Use this pedal when an attachment other than the included one is connected to the auxiliary ports.
Hydraulic oil flows from port "a" when the heel side "A" is pressed, from port "b" when the toe side "B" is pressed. (See below.)



Pedal stopper

This is a device for fixing the auxiliary pedal to the operating status so that when using with a hand breaker, etc., connected to the auxiliary ports, the hand breaker can be turned on and off using it's own switch.

- Lift the pedal and press on the heel side "A".
- Set the bolt "C" in the hole in the lever stand and lock it.



Auxiliary ports

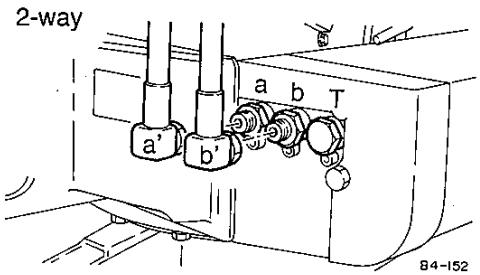
These are output ports for connecting the input hoses of attachment other than the included one.
2-way or 1-way type attachments can be used, depending on the selection of the connection ports.

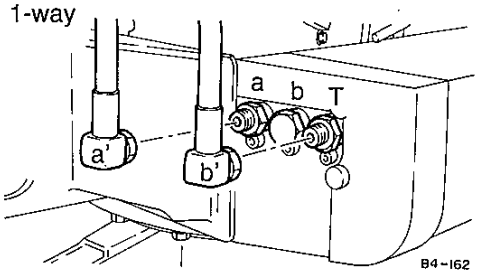
2-way

Connect the attachment's hoses to ports "a" and "b", referring to the direction of flow specified in "Auxiliary port pedal" above.

1-way (single flow circuits of breakers, etc.)

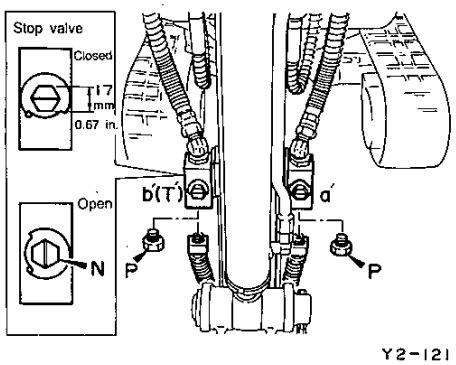
Connect the attachment's hoses to port "a" and port "T" (tank).
a: Supply port T: Return port
Refer to "Cautions on Handling a Hydraulic Breakers" on peges 33 to 35.





Auxiliary piping

The auxiliary piping is used for replacing the bucket with a breaker, crusher, etc. Connect hose "b'" to port "b" for a 2-way circuit, to port "T" (tank) for a 1-way circuit.
Connect the attachment's hoses to stop valves "a'" and "b'(T')" on the tip of the auxiliary piping connected to the auxiliary ports and open the stop valves.
Operate with the auxiliary port pedal.
Refer to "Using the Auxiliary Ports" on page 32.
☞Keep the plugs securely attached to unconnected ports.



PART NAMES AND FUNCTIONS

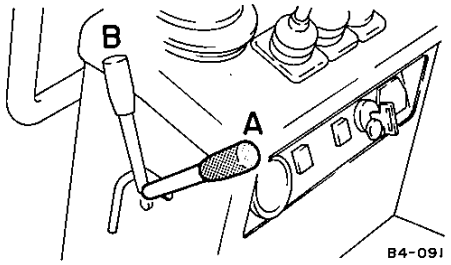
Throttle Lever

This controls the engine speed.

A ..... Low idling

B ..... Maximum speed

(Refer to pages 23 and 24)

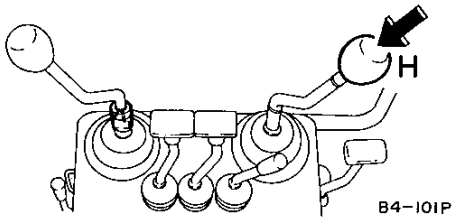


B4-091

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.



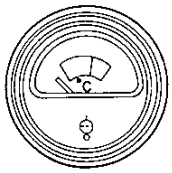
B4-101P

Water temperature meter

This indicates the temperature of the engine coolant water, and operates when the starter switch is turned to the "ON" position.

The temperature is normal in the green area.

- If the needle enters the red area, let the engine idle until the water cools down and the needle moves back into the green area.

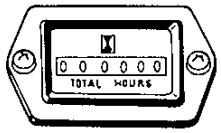


G1-014

Hour meter

This indicates the total time the engine has run.

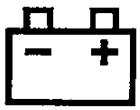
Even if the excavator is not moving, the meter continues to count as long as the engine is running.



Z2-028

Battery charge lamp

This lights when the starter switch is turned to the "ON" position, and should turn off after the engine is started. The lamp lights if a problem arises in the charging system while the engine is running. If this happens, have the excavator inspected at a service outlet.



ST2-061

Engine oil pressure lamp

This lights when the starter switch is turned to the "ON" position, and should turn off after the engine is started. If a problem arises in the lubricant oil system while the engine is running, a warning lamp lights.

- Stop the engine and check the quantity of engine oil. (Refer to page 21)

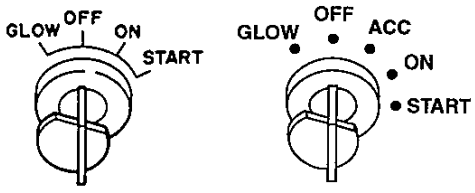
  If the cause is elsewhere, have the excavator inspected at a service outlet.

⚠The engine may burn if the excavator is operated with the engine oil pressure lamp on.

SF2-104

Starter Switch (Refer to pages 23 and 24)

GLOW ..... In this position, the glow plug is heated.
OFF ..... In this position, the power circuit is interrupyed. (Engine stop position)
ACC..... In this position, for listening to the radio or using to the accessories with the engine off. Serial No.1074382 ~
ON ..... In this position, the power circuit is connected. (Engine on position)
START ..... In this position, the engine is stared. (The switch automatically returns to the "ON" position when the head is released.)



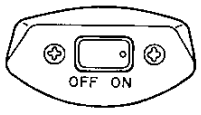
Serial No: 1073001 to 1074381 | Serial No: 1074382~

Z2-041A

Boom light switch

The boom light switch is located on the back of the light. It turns on when the starter switch is set to the "ON" position.

ON ..... Lighting
OFF ..... Goes off



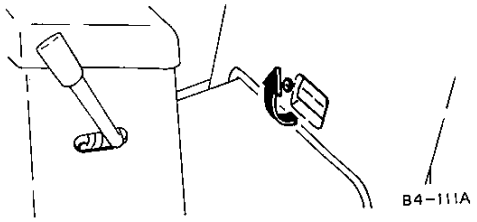
Boom light switch

Z1-181

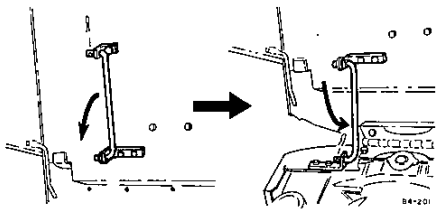
Bonnet

Open the bonnet to inspect and service the engine, hydraulic system, fuel system, etc.

1. Unlock the bonnet with the key, then lift the handle to open it.
2. Undo the stay's R pin and insert the stay into the hole on the bonnet to fasten the bonnet.
3. Fasten the stay with the R pin.



B4-111A



B4-201

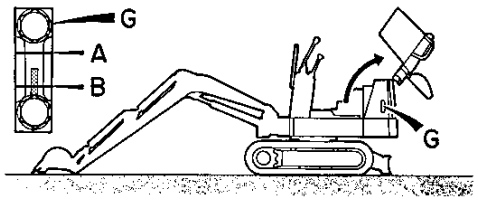
Hydraulic oil level gauge

This indicates the amount of hydraulic oil.

- Inspect level gauge "G" with the excavator in the inspection posture shown on the diagram at the right.

The level is normal if it is between upper limit "A" and lower limit "B" when the oil temperature is approximately 20°C or 68° F, and near upper "A" when the oil temperature is approximately 60°C or 140°F (during operation). (Refer to page 43)

●Hydraulic oil inspection posture

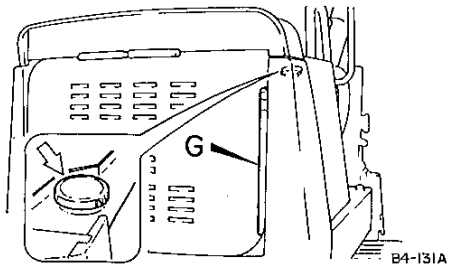


B4-121

Fuel level gauge

The fuel level gauge "G" indicates the amount of fuel remaining in the tank. Open the bonnet to inspect and replenish.

⚠Add fuel as soon as possible when the level starts to get low. Never use substitute fuels.



B4-131A

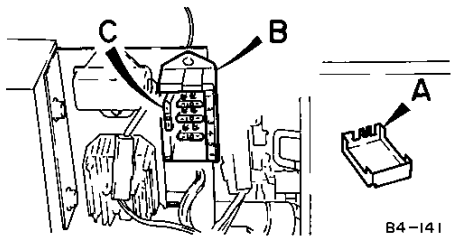
PART NAMES AND FUNCTIONS

Fuse box

The fuses protect the electrical system from excess current. If operation is not normal, a fuse may be blown. Replace blown fuses with the spare fuses as follows:

1. Turn the starter switch to the "OFF" position and stop the engine.
2. Open the bonnet.
3. Remove the cover "A" from the fuse box "B".
4. Replace the blown fuse with one of the spare fuses "C" in the fuse box, using a fuse with the same capacity.

⚠Be sure the starter switch is in the "OFF" position and engine stop when replacing fuses.



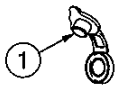
B4-141

Capacity	Circuit(s) protected
10A	Horn
10A	Battery charge lamp Hour meter, water temperature meter, engine oil lamp
10A	Boom light, Electricsocket (for EU)
30A	Stop solenoid

Electric Socket (for EU)

⚠Only use applicable electric products with this socket.
⚠Always replace the cap after using the socket.

Use this socket as an external power supply. When using this socket, be careful not to exceed 12V/10A.
To use, remove the cap "1".

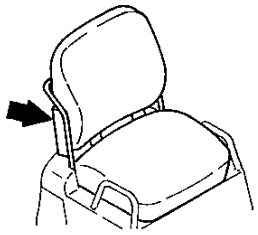


T5B001

Manual Storage Space

This is holder for storing the Operator's Manual.

- Be sure to store this manual in the holder when not using it. If you should lose or damage this manual, order a new one immediately from a sales or service outlet.

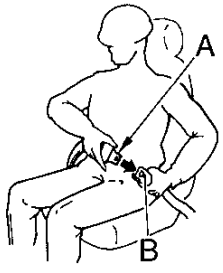

B4-151

Seat Belt

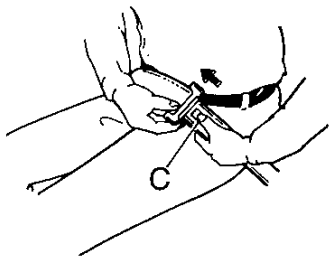
⚠Always fasten the seat belt securely before starting the engine.

Fastening the seatbelt

1. Raise your torso, and sit back firmly into the seat.
2. Pull the seatbelt to the desired length.
3. Adjust the belt so that it is not folded over itself and then insert the tongue plate (A) into the buckle (B) of the seatbelt until you hear a clicking sound as it locks in place.
4. To remove the seatbelt, simply press the button (C) located on the buckle.



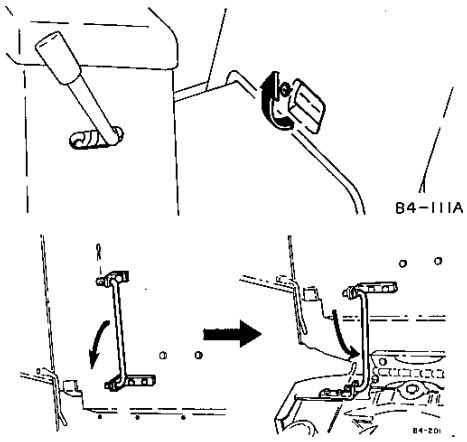
E4B023



E4B024

Before Starting Operation

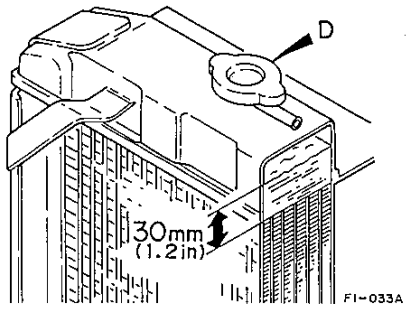
1. Unlock the bonnet with the key, then lift the handle to open it.
2. Undo the stay's R pin and insert the stay into the hole on the bonnet to fasten the bonnet.
3. Fasten the stay with the R pin.



Checking the coolant

Before starting, and with the engine cold, remove radiator cap "D" and inspect amount of coolant.
The coolant level is normal when it is 30mm (1.2 in) above the top of the radiator core. If the level is low, replenish.
(Refer to page 48)

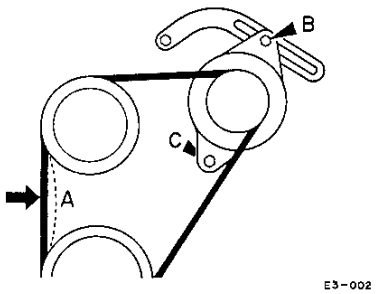
⚠ **Do not remove the radiator cap "D", directly after operating the excavator. Doing so is dangerous, as hot water may spurt out.**



Checking the fan belt

Press strongly on the center of the fan belt with your finger (with a force of approximately 10kg or 22lb). The tension is standard if the deflection "A" is approximately 10mm (0.4in). If the belt is stretched, adjust it. (Refer to page 49)
Replace the belt in the following cases:

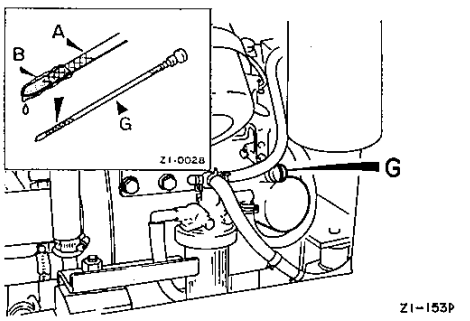
- If the belt stretches and the tension cannot be adjusted.
- If the belt is scratched or cracked.
- If the belt is worn to the bottom of the V groove.



Checking the engine oil

Use the dipstick "G" to check the engine oil as follows:

- Check the engine oil on a flat surface before starting the engine.
- Pull the dipstick out, and wipe it off with a cloth, then reinsert it and pull it back out.
- The level is normal if it is between "A" and "B". If the oil level is near "B", supply oil up to upper limit "A". (Refer to page 47)



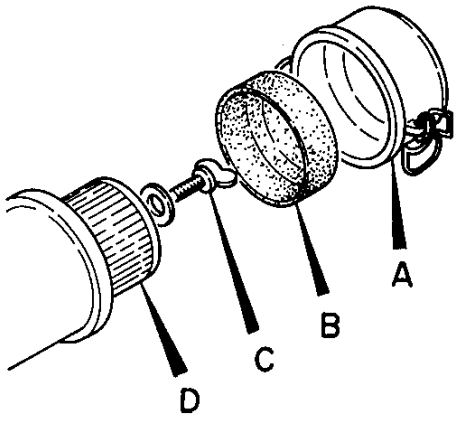
OPERATION

Checking the air cleaner

1. Loosen the clamp and remove the dust cup (A).
2. Remove baffle (B) from the dust cup and remove the dust collected inside.

☞ The arrow on the dust cup must point upwards when the cup is attached.

☞ Remove the dust accumulated in the dust cup once a day, and remove it more often if there is a large amount of dust.



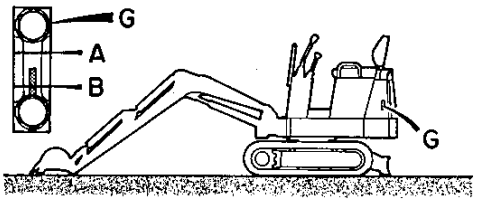
SB2-076

Checking the hydraulic oil

Select a flat place and set the excavator in the posture shown on the diagram at the right.

The oil level differs according to the oil temperature, so use the following as basic criteria and check the level with the level gauge "G".

- Between upper limit "A" and lower limit "B" when the oil is at normal temperature (about 20°C or 68°F).
- Near upper limit "A" when the oil is at the normal operating temperature (about 60°C or 140°F). (Refer to page 43)



B4-002

Miscellaneous

Check all piping for oil leaks, and check to make sure there are no missing bolts, nuts, split pins, etc. If you find that adjustments are necessary after the above checks, refer to the section entitled "Inspection and Maintenance".

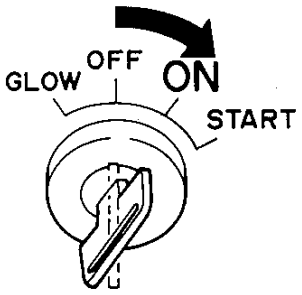
Starting the Engine

⚠**Set the operating levers and pedals to the locked or center positions.**

Use the following procedure to start the engine:

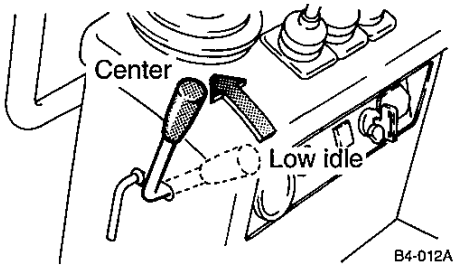
1. Turn the starter switch to the "ON" position.

• The engine oil pressure lamp and battery charge lamp will light and the water temperature meter will start operating.



SZ2-012

2. Push the throttle lever to the center position.



B4-012A

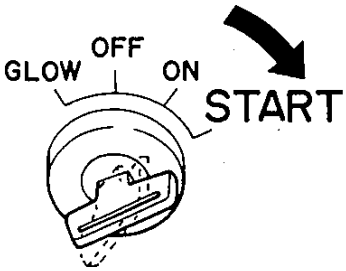
3. Turn the starter switch to the "START" position and start the engine. When released, the switch will automatically return to the "ON" position.
   When the engine starts, the engine oil pressure lamp and battery charge lamp will turn off.

⚠**Do not run the starting motor for more than 15 consecutive seconds.**

⚠**If the engine does not start, wait for about 30 seconds to protect the battery then try again.**

⚠**Operate the starter switch slowly, waiting a little before turning it to the next position.**
In particular, the engine may stop or may not start if the switch is turned immediately from the "START" to the "OFF" position directly after starting the engine.

☞Check the engine oil pressure and battery charge lamps to make sure there are no problems. (Refer to page 21)



SZ2-022

4. Move the throttle lever back to the idling position, then let the engine warm up for about 5 minutes before operating the excavator.

⚠**Never race the engine directly after starting it.**

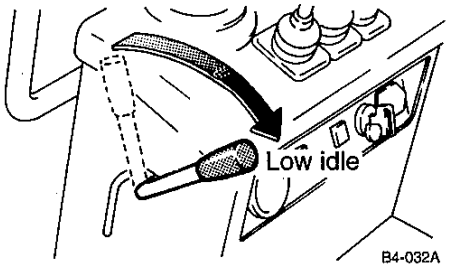
⚠**When using one-way flow attachments such as breakers, do not use with the throttle fully opened. Keep the engine speed at about 80%.**

☞For new excavators, operate gently to break the excavator in. Handling the excavator roughly can shorten its service life or inversely affect performance.

☞Break the excavator in for the first 50 hours.

☞Let the engine warm up sufficiently.

☞After letting the engine warm up, move the attachment with no load for approximately 5 minutes so that the hydraulic oil also warms up.



B4-032A