

OPERATORS MANUAL

TB36
TAKEUCHI BACKHOE

TAKEUCHI MFG. CO., LTD.

Introduction

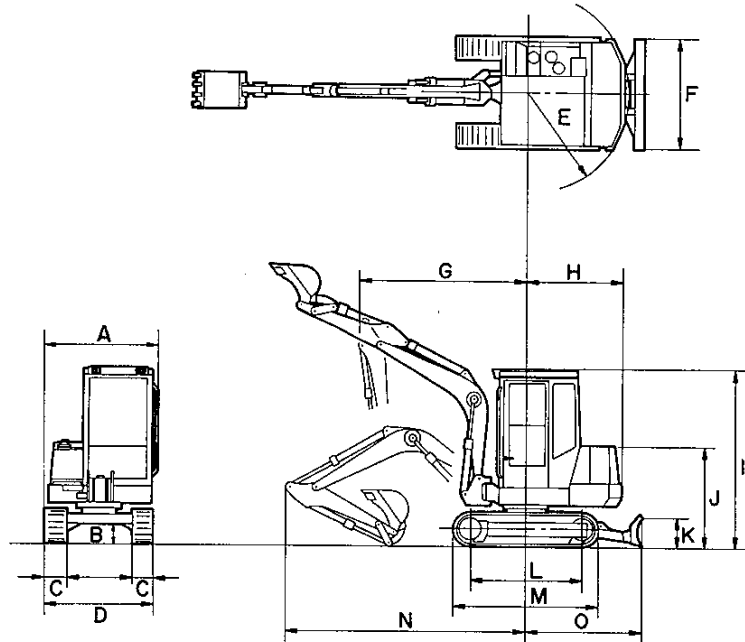
Congratulations on your purchase of your new excavator model **TB36**. This manual explains operation and maintenance so that you can use your new **TB36** efficiently and economically. Please read this manual carefully, and operate and maintain your **TB36** correctly.

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SPECIFICATIONS

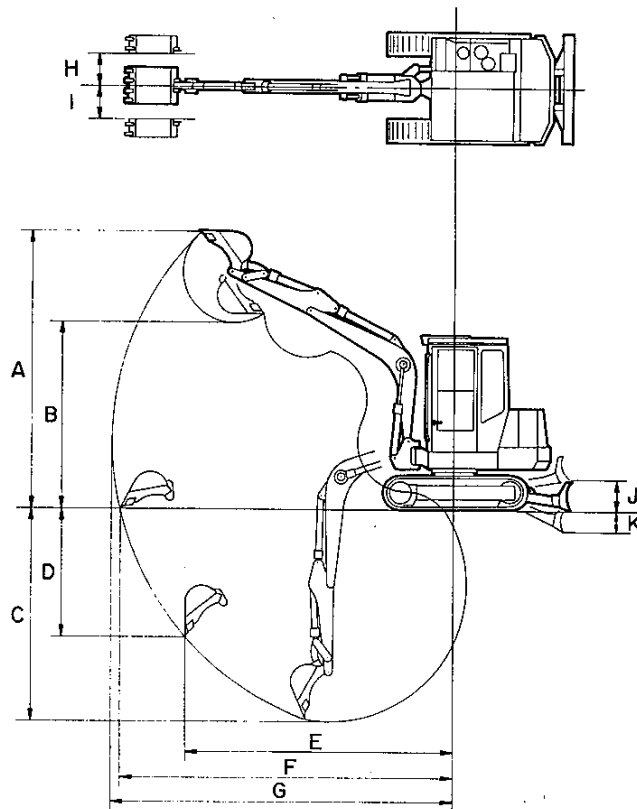
Dimensions



GI-201

	mm	in
A	1615	64
B	295	11.5
C	320	12.5
D	1570	62
E	1455	57
F	1600	63
G	2445	96
H	1375	54
I	2470	97
J	1420	56
K	415	16.5
L	1600	63
M	2080	82
N	3470	136.5
O	1650	65

Working ranges



GI-202

	mm	in
A	3945	155.5
B	2655	104.5
C	3065	120.5
D	1820	71.5
E	3900	153.5
F	4820	189.5
G	4930	194
H	420	16.5
I	420	16.5
J	415	16
K	310	12

SPECIFICATIONS

Performance

Slew speed	8.3 rpm
Travel speed	
high speed	3.3 km/hr (2.05 mph)
low speed	1.6 km/hr (1.00 mph)
Gradeability	30 deg.

Side ditch digging mechanism

Type	Boom offset by hydraulic cylinder
Offset angle	50 deg. (both right and left)

Fuel, lube oil, cooling water

Fuel tank	56 liters (14.8 U.S. gal.)
Hydraulic oil	
tank level	80 liters (21.2 U.S. gal.)
total system	95 liters (25.1 U.S. gal.)
Engine oil	
total capacity	5.6 liters (1.5 U.S. gal.)
effective	2.4 liters (0.6 U.S. gal.)
Cooling water	6.1 liters (1.6 U.S. gal.)

Engine

Model	Yanmar 3T84HTLE-TB diesel
Type	4-cycle, water-cooled overhead valve
Rated output	30 ps (30 hp) @ 2,400 rpm
Maximum torque	11 kgfm (79.6 ft.-lb.) @ 1,900 rpm

Weight

Weight in transport	3,500 kg (7,716 lb.)
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Ground pressure

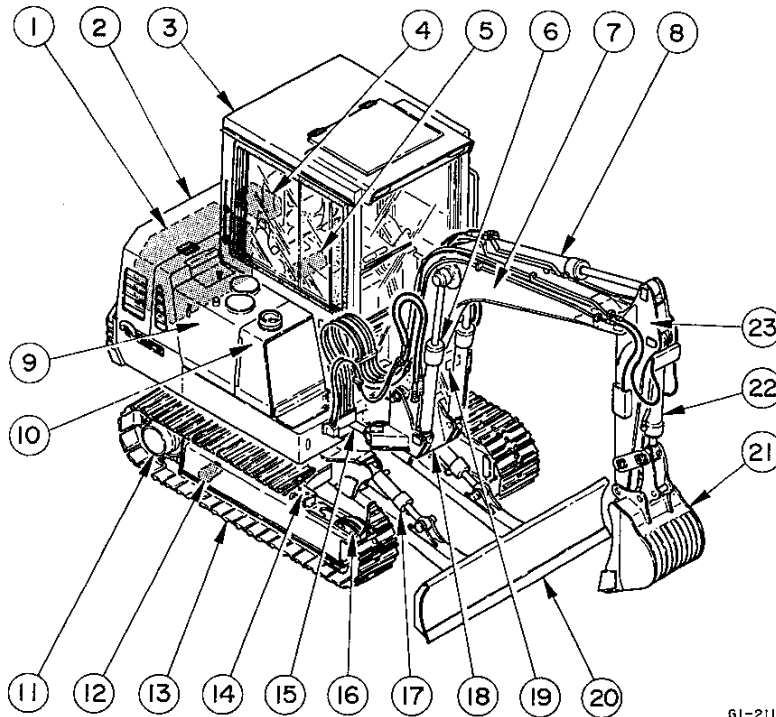
Standard machine	0.32 kg/cm ² (4.55 psi)
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Bucket

Width	SAE Rated capacity	SAE Struck capacity	Weight
mm (in.)	m ³ (cu.yd.)	m ³ (cu.yd.)	kg (lb.)
550 (22)	0.10 (0.13)	0.08 (0.10)	81 (178)

NAMES and FUNCTIONS

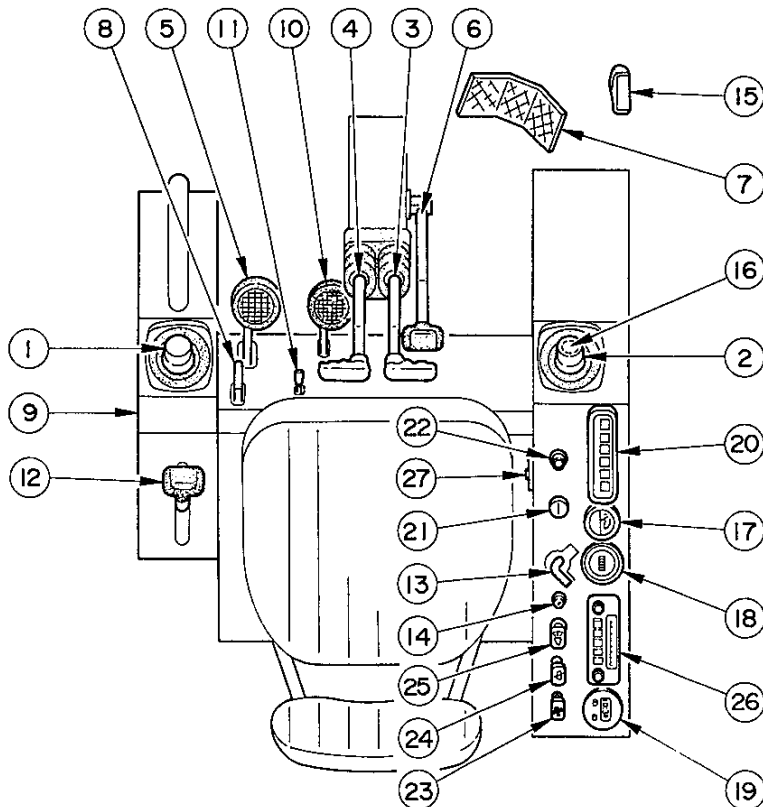
Names of components



GI-211

1. Engine
2. Bonnet
3. Cabin
4. Battery
5. Tools
6. Boom cylinder
7. Boom
8. Arm cylinder
9. Hydraulic oil tank
10. Fuel tank
11. Travel motor
12. Track roller
13. Crawler belt
14. Shoe slide
15. Swing cylinder
16. Front idler
17. Blade cylinder
18. Swing bracket
19. Identification plate
20. Blade
21. Bucket
22. Bucket cylinder
23. Arm

Levers and instruments



GI-212

1. Operation lever (L.H.)
2. Operation lever (R.H.)
3. Travel lever (R.H.)
4. Travel lever (L.H.)
5. Acceleration pedal
6. Blade lever
7. Swing pedal
8. Lever-lock-on lever
9. Left lever stand
10. Breaker pedal
11. Switching lever
12. Throttle lever
13. Slew lock pin
14. Cigarette lighter
15. Ashtray
16. Horn switch
17. Water temperature gauge
18. Hourmeter
19. Clock
20. Monitor lamp
21. Starter switch
22. Windshield washer switch
23. Heater switch
24. Wiper switch
25. Light switch
26. Radio
27. Fuse box

NAMES and FUNCTIONS

Operation lever (L.H.) ...Refer to section on "operation" (pp.15~18)

Operation lever (R.H.) ...Refer to section on "operation" (pp.15~18)

Travel lever (R.H.)Refer to section on "operation" (pp.15~18)

Travel lever (L.H.)Refer to section on "operation" (pp.15~18)

Acceleration pedal ⑤.....Refer to section on "operation" (pp.15~18)

Blade leverRefer to section on "operation" (pp.15~18)

Swing pedalRefer to section on "operation" (pp.15~18)

Lever-lock-on lever ⑧

When this lever is pressed down, the left lever stand drops down backward and the left and right operation lever cannot function.

Left lever stand ⑨

When the left lever stand is dropped backwards, the machine cannot be operated by operating the left and right operation lever.

During operation, move the left stand forward and when the machine is not being operated, or when the operator is away from the machine, press the lever-lock-on lever down and drop the left lever stand down backwards.

Breaker pedal ⑩

When a hydraulic breaker is mounted on the hoe attachment and used, this pedal is depressed after pulling up the switching lever.

Switching lever ⑪

This lever selects whether the hydraulic breaker will be used or whether it will be used as a service port.

If using it as a service port, operate it with the swing pedal after pressing this lever down.

Throttle lever

This controls the engine rpm. Push this lever forward for low speed, push back for high speed.

Slew lock pin

Use when fixing the turntable to the track frame in order to transport the machine. (refer to p.23).

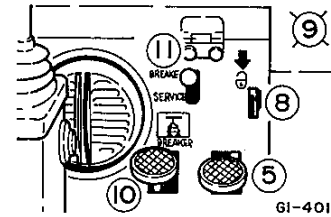
When the turntable is facing straight forward or back, the slew can be locked in two locations (marked by black dots).

CAUTION : If the lock pin is lowered while slew is in progress the machine will be damaged

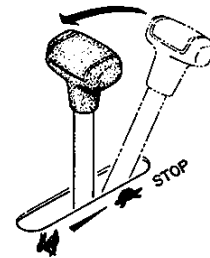
Cigarette lighter

❖Can be used even when the starter switch is OFF.

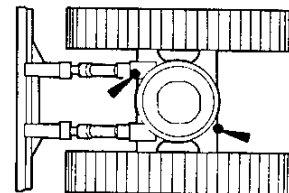
❖Press in by hand; wait until pops out automatically.



GI-401



GI-041



LO-013

NAMES and FUNCTIONS

Ashtray

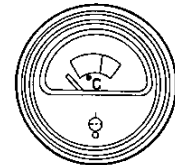
The ashtray can be removed by pressing down the internal spring lightly and pulling the ashtray forward

Horn switch

Press while the starter switch is ON to sound the horn.

Water temperature gauge

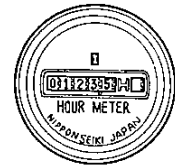
This indicates the temperature of the engine cooling water. In normal operation the needle points to the green zone. If the needle rises to the red zone, let the engine idle until the temperature drops.



G1-014

Hourmeter

Indicates the total number of hours the machine has been operated; advances while the engine is operating.



L0-016

Clock

How to set the clock

- ❖ Turn the starter switch ON.
- ❖ Pressing setting button (A) causes the minute indication to advance.
- ❖ Pressing setting button (B) causes the hour indication to advance.

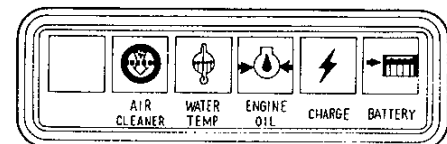


L0-017

CAUTION : There is also an AM/PM indication. Make sure that it is set correctly too.

Monitor lamp

When the starter switch is turned ON the alarm lamps flash and buzzer sounds for 3 seconds. The ENGINE OIL and CHARGE lamps continue to flash until the engine actually starts. If all of the alarm lamps go off when the engine starts, everything is normal.



L0-018

NAMES and FUNCTIONS

Reading alarm indications; action to take

AIR CLEANER

- ❖ When the air cleaner filter becomes clogged, the alarm buzzer sounds for 10 seconds and the lamp flashes.
- ❖ Clean the filter (refer to p.28).



F2-102

WATER TEMP

- ❖ When the cooling water temperature rises abnormally, the warning buzzer sounds for 10 seconds and the lamp flashes.
- ❖ When this happens the engine is liable to overheat, so immediately stop operation and let the engine idle (refer to p.13) until the temperature drops.
- ❖ After waiting for the temperature to drop, stop the engine.
- ❖ After the engine cools check the cooling water level and check the fan belt for breakage or slackness (refer to p.12).
- ❖ Overloading the engine for too long can cause overheating.
- ❖ After letting the engine cool and checking the engine as instructed above, restart operation, taking care not to overload the engine.



F2-103

ENGINE OIL

- ❖ When an abnormal condition occurs in the lubricating oil system, the alarm buzzer sounds for 10 seconds and the lamp flashes.
- ❖ Stop the engine and check the engine oil level (refer to p.12).
- ❖ If low oil level is not the cause of the alarm, have the engine checked by a qualified service station.



F2-104

CAUTION : If operation is continued even though this alarm occurs, the engine is liable to seize up.

CHARGE

- ❖ When an abnormal condition occurs in the charging system, the alarm buzzer sounds for 10 seconds and the lamp flashes.
- ❖ Have the system checked at a qualified service station.



F2-105

BATTERY

- ❖ If the fluid level drops too low, the alarm buzzer sounds for 10 seconds and this lamp flashes.
- ❖ Inadequate fluid.....add distilled water (refer to p.30).

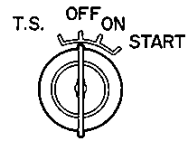


F2-106

NAMES and FUNCTIONS

Starter switch (refer to pp.13,14)

- T.S. Heat the glow plugs red hot.
- OFF This disconnects the power supply circuit (engine stop position).
- ON This connects the power supply circuit (engine operation position).
- START Operate the starting motor to start the engine (when the hand is removed it automatically returns to the ON position).



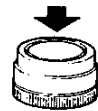
GI-019

NOTE : The key holder has the following 2 types of key plates

1. Engine starting key2 plates
2. Fuel cap key2 plates
Cabin door key, bonnet key

Windshield washer switch

While this is pressed down the window washer operates.



LO-021

Heater switch

When this is pulled the heater fan operates. There are three positions, for high, medium and low heating.



GI-222

Wiper switch

When this is pulled the wiper operates.



GI-223

Light switch

When this is pulled, the headlights and boom light go on.



LO-025

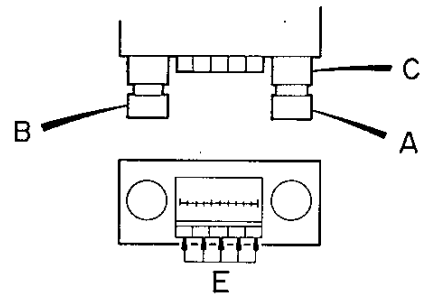
NAMES and FUNCTIONS

Radio

The radio can be used even when the starter switch is OFF.

How to use

- ❖ Press (A) to turn power on.
- ❖ Turn (A) left and right to adjust the volume.
- ❖ Turn (B) left and right to select the station.
- ❖ Turn (C) to adjust the tone quality.



LO-027

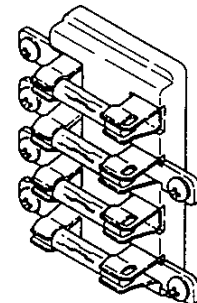
Push button station selection

1. Pull the button (E) which is to be set to a certain station.
2. Turn (B) to the desired station.
3. Push the button that has been pulled out back in until the sound of snapping back into place can be heard.
4. Now the button is set to the desired station.

Fuse box

The fuses are in the following order, from the top down.

Capacity	Circuit (s) protected
20A	Windshield washer, boom light, wiper, head light
15A	Heater
10A	Horn, monitor lamp, water temperature gauge, feed pump
20A	Clock, radio, cigarette lighter, room lamp, hourmeter



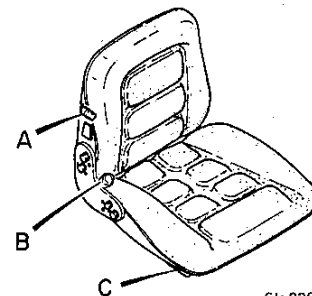
LO-098

Seat and seat belt

Weight adjustment

By pulling lever (A) upwards or downwards, the seat can be adjusted according to operator's weight.

- lever position up light operator
- lever position middle medium weight operator
- lever position down heavy operator



GI-228

Backrest inclination adjustment

Can be effected by turning handle (B).

- adjustment scope of backrest 5deg. -20deg.(B).

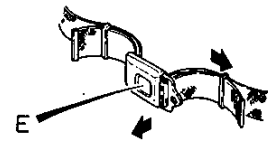
Longitudinal adjustment

After releasing adjustment rails by using lever (C) the seat can be adjusted by 150mm (5.9in.) in increments of 15mm (0.6in.).

NAMES and FUNCTIONS

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.



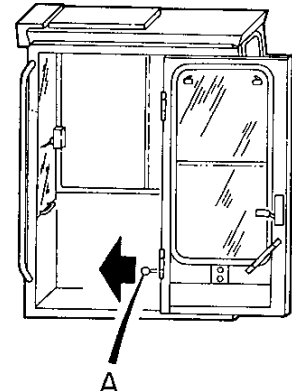
LO-030

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.

Cabin

When the cabin door is pulled all the way open it is locked in that position.

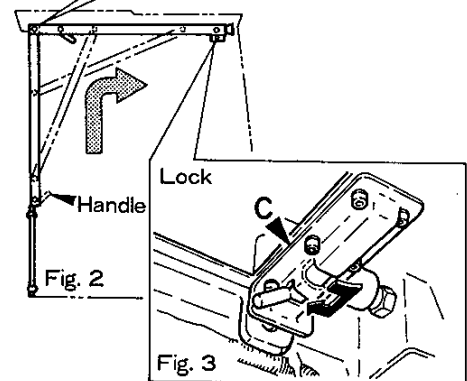
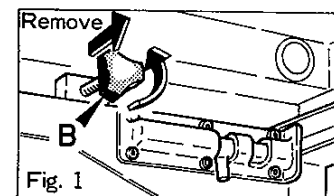
To close the door, pull knob (A) forward to release the lock.



LO-031

How to open the front sash

- ❖ Turn the 2 black knob bolts "B" on top of the front sash counterclockwise and remove them. (Refer to Fig. 1)
- ❖ Take hold of the handle and lift the front sash, then slide the top toward the rear. (Refer to Fig. 2)
- ❖ When the front sash is stowed in the ceiling, lock it securely in place with the 2 latch assemblies "2". (Refer to Fig. 3)



GI-411

How to close the front sash

- ❖ Close the front sash by following the above procedure in reverse.

OPERATION

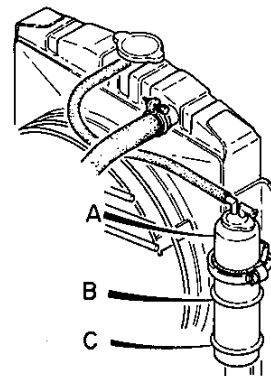
Before starting operation

Check the cooling water.

Check reserve tank (A).

(B) is the upper limit and (C) is the lower limit.

If water needs to be added, add it to the reserve tank.

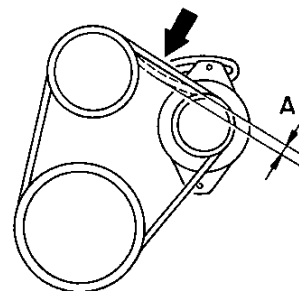


61-033

Check the fan belt.

Press the fan belt down with a finger midway between the fan pulley and the generator pulley. It should normally bend 10mm (0.4 in.) to 15mm (0.6 in.)

For further details please refer to the engine operation manual.

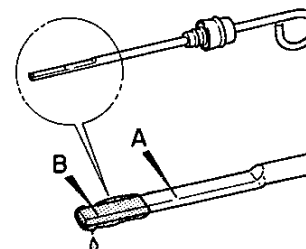


61-034

Check the engine oil.

Check the oil level with the oil level gauge. (A) is the upper limit and (B) is the lower limit.

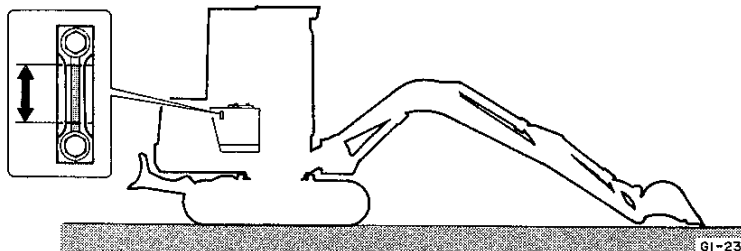
For further details please refer to the engine operation manual.



61-035

Check the hydraulic oil.

Put the machine in the position shown in the figure, then check the oil level with the oil level gauge. It is best if the oil level is within the range shown by the arrows (refer to p.26).



61-236

Miscellaneous

Check the pipes for oil leaks. Check bolts, and split pins to see if any are loose or missing.

If these checks reveal a need for adjustment, adjust in accordance with the instructions in the section on inspection and maintenance.

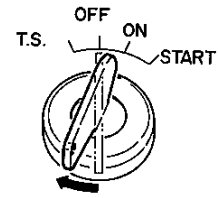
In addition, the operator should adjust the seat and buckle the seat belt tightly before starting operation (refer to p.10).

OPERATION

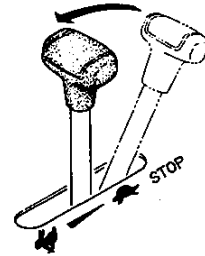
Starting the engine

Start the engine by performing the following operations in the sequence given.

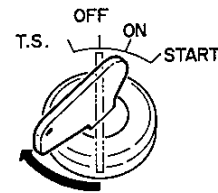
1. Turn the starter switch to the ON position. The buzzer will sound for 3 seconds and the monitor lamps will flash. The engine oil and charge lamps will continue flashing until the engine starts.
2. Pull the throttle lever to an intermediate position.
3. Turn the starter switch to the START position and start the engine. When the switch is released, it automatically returns to the ON position.
4. Return the throttle lever to the idling position (where there is a click), and let the engine warm up for about 5 minutes.



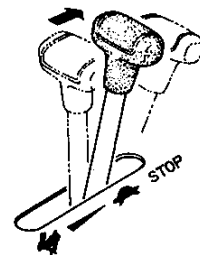
G1-039



G1-041



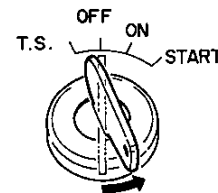
G1-037



G1-042

Starting in cold weather

Turn the starter switch to the T.S. position and let current flow to the glow plug for 10-15 seconds. When the glow plug is hot, start the engine.



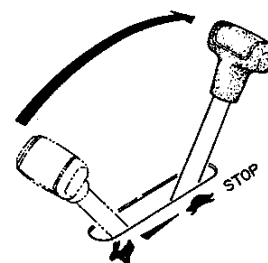
G1-038

OPERATION

Stopping the engine

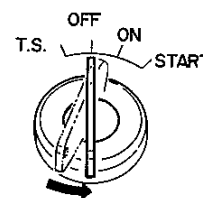
Let the engine idle for 5 minutes. After it cools down, perform the following steps in the sequence given.

1. Return the throttle lever to the STOP position. The engine will stop.



GI-043

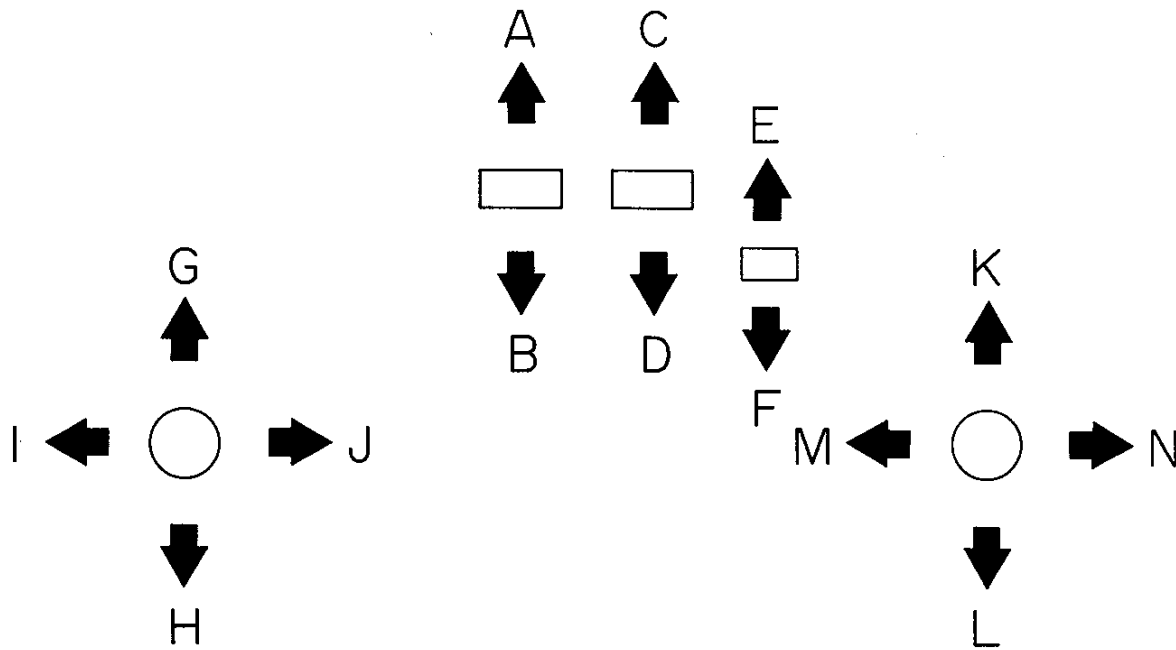
2. Turn the starter switch to the OFF position.



GI-040

Precautions when starting and stopping the engine

1. Do not run the starting motor continuously for more than 10 seconds.
2. If the engine fails to start wait about 30 seconds, to save the battery, before trying to start again.
3. During operation leave the starter switch in the ON position. If it is in the OFF position the electrical system will not work normally. It can also cause a breakdown.
4. Check the monitor lamps to see if there are any abnormal conditions (refer to pp.7,8).

Lever operation

GI-044

A	Left Crawler Forward	H	Arm In (type "A") Boom Raise (type "G")
B	Left Crawler Reverse	I	Slew Left
C	Right Crawler Forward	J	Slew Right
D	Right Crawler Reverse	K	Boom Lower (type "A") Arm Out (type "G")
E	Dozer Blade Lower	L	Boom Raise (type "A") Arm In (type "G")
F	Dozer Blade Raise	M	Bucket Load
G	Arm Out (type "A") Boom Lower (type "G")	N	Bucket Dump

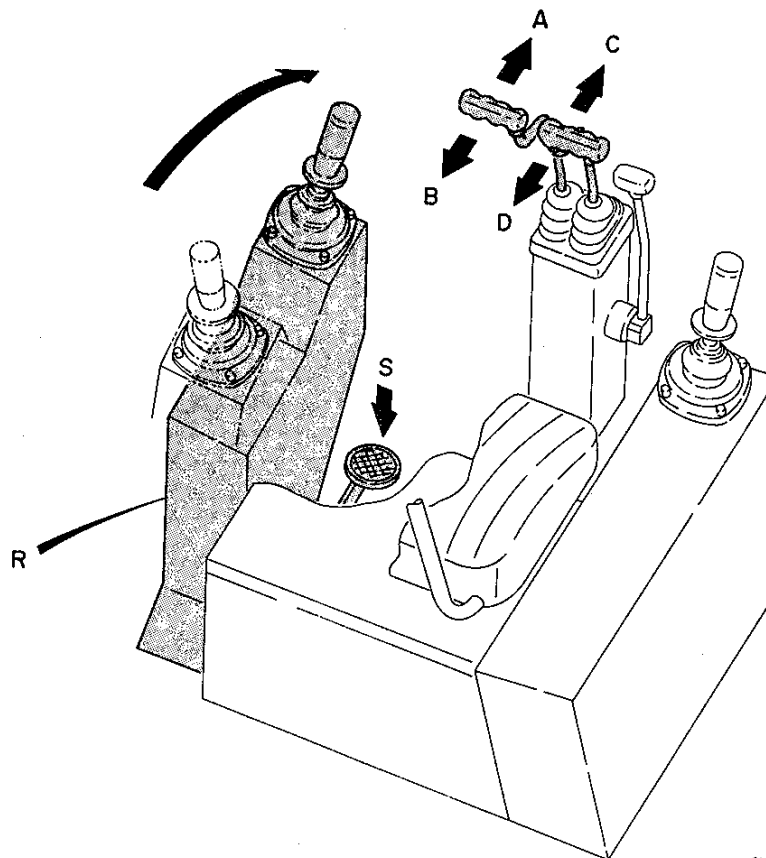
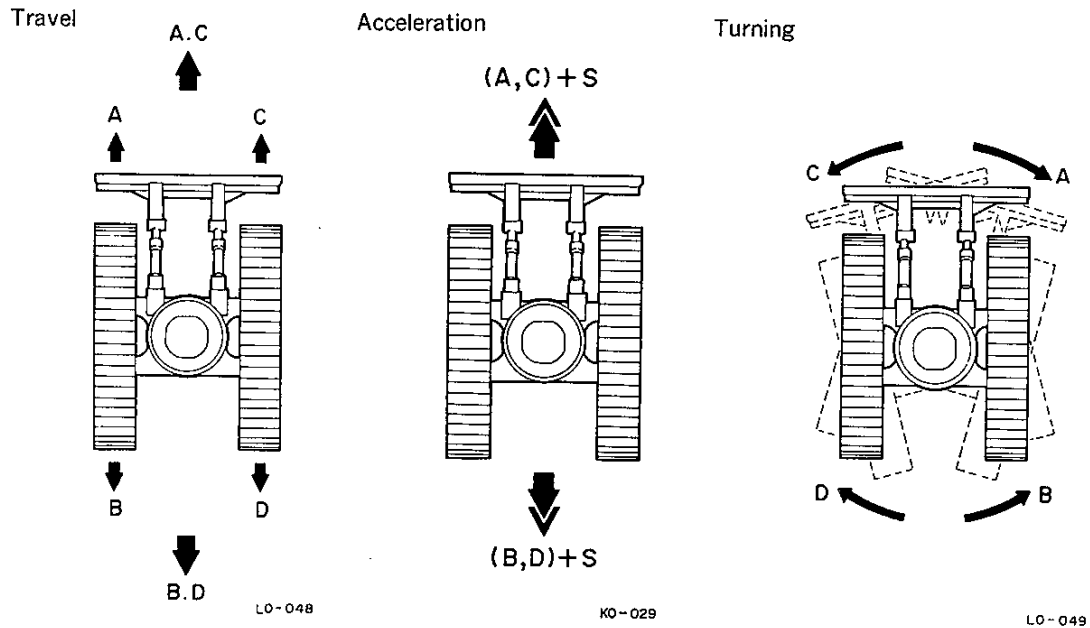
- type "A" = ISO

- type "G" = JCB

OPERATION

Operation : travel

- ❖ The blade is on the forward side.
- ❖ Before driving, move the left lever stand (R) forward. Also, after driving, be sure to press the lever-lock-on lever down and drop the left lever stand down backwards.



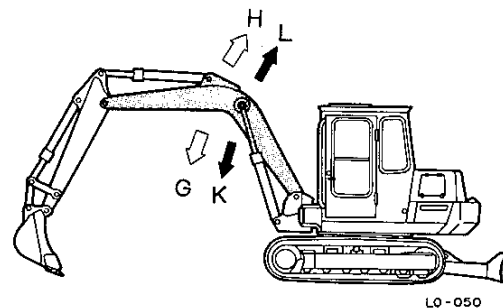
OPERATION

Operation : working equipment

Boom action

Type "A" 

Type "G" 

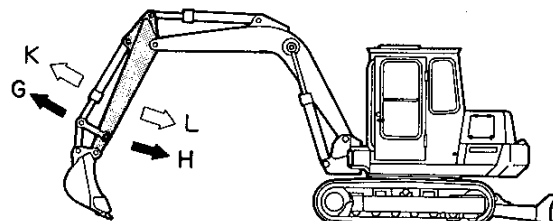


L0-050

Arm action

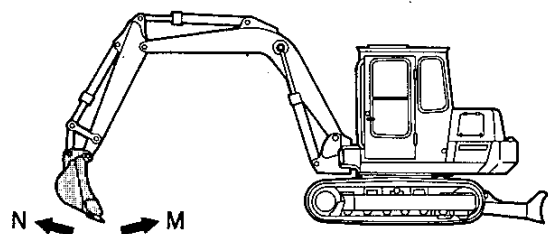
Type "A" 

Type "G" 

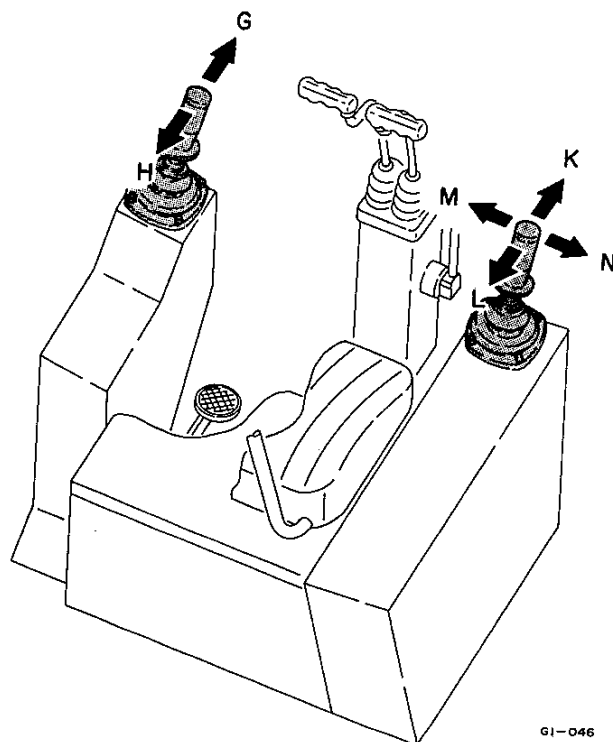


L0-051

Bucket action



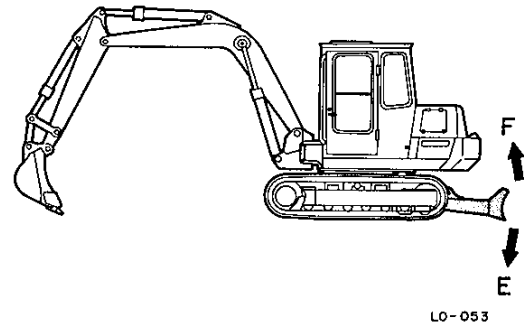
L0-052



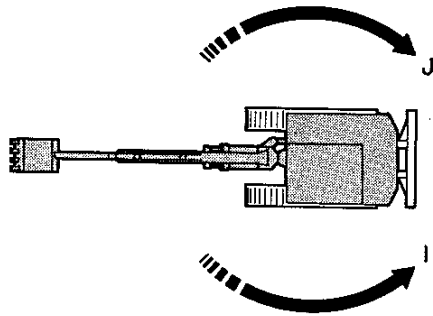
G1-046

OPERATION

Blade action

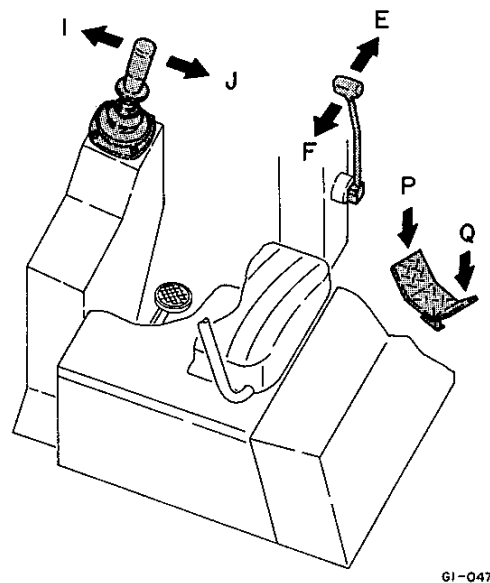
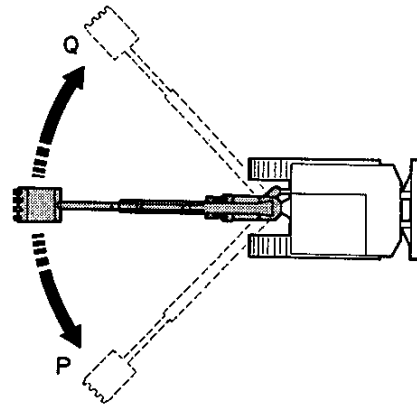


Slew



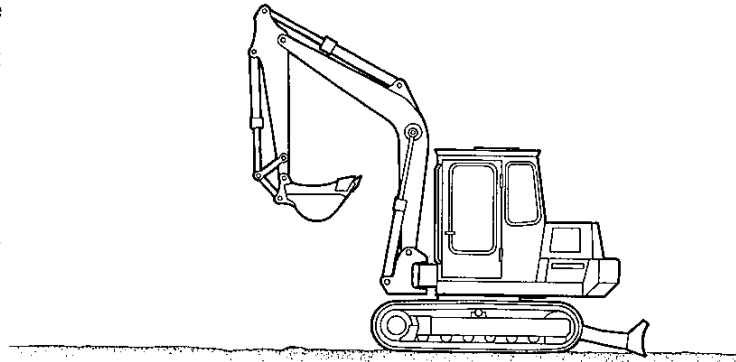
Boom swing

pull up the switching lever, then operate with the swing pedal.



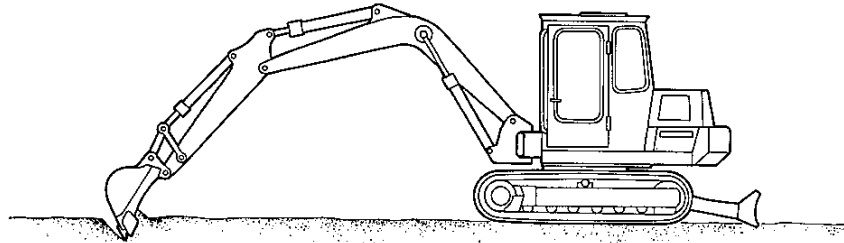
Work operations

Point the blade in the direction opposite to where digging will be done, and drive it slightly into the ground.



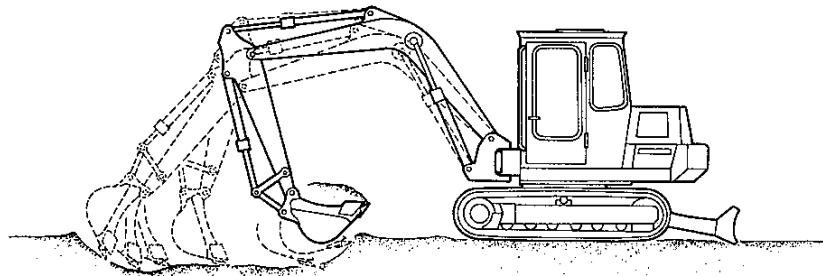
L0-058

Do not extend the attachment out all the way when digging.



L0-056

Dig long and shallow.



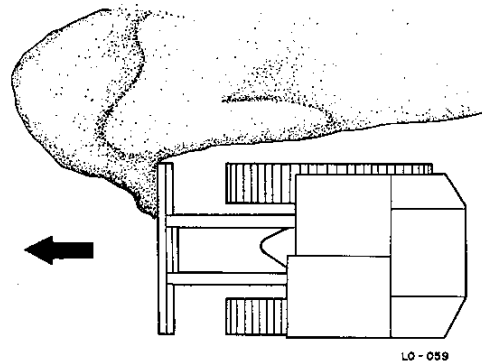
L0-057

OPERATION

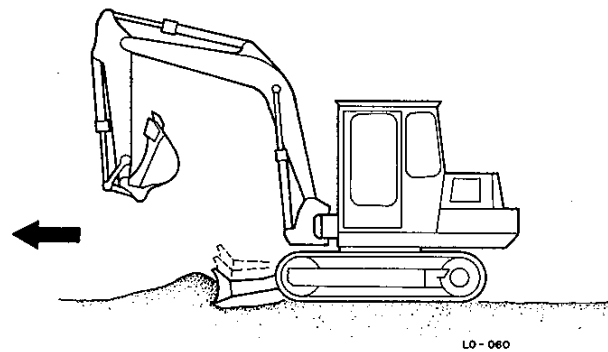
Blade operation

Fold the hoe attachment up against the main body, then start the ground leveling work. If the work is too hard for the machine, adjust the blade up or down.

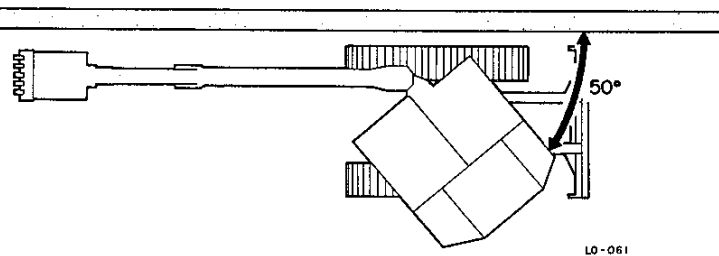
Remove dirt from the sides of dirt piles.



Remove dirt from where its level is raised.



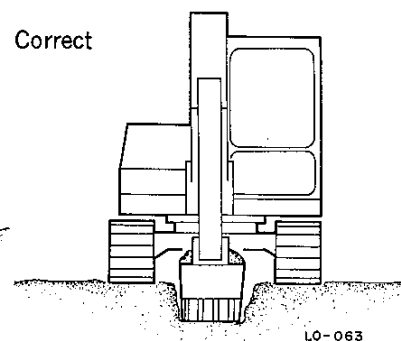
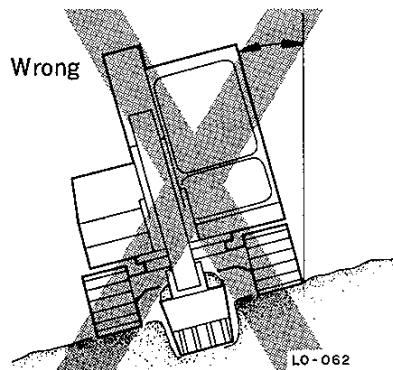
Swing the boom 50 deg to the right or left from where it is attached to the turntable. In this position a side ditch can be dug, as shown in the figure.



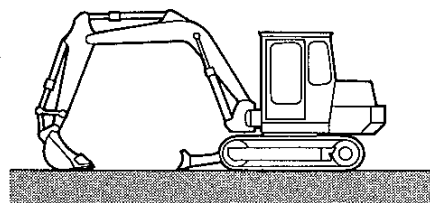
OPERATION

Precautions in working

Work on level ground. If it is necessary to work on sloping ground, level the ground with the blade before starting work.



After finishing work, or when the operator is to leave the machine temporarily, always leave the attachments in contact with the ground. Also, press the lever-lock-on lever down and drop the left lever stand down backwards.



When it is necessary to park on sloping ground, always put stoppers against the crawler belts.

When traveling a long distance, travel in the forward direction.

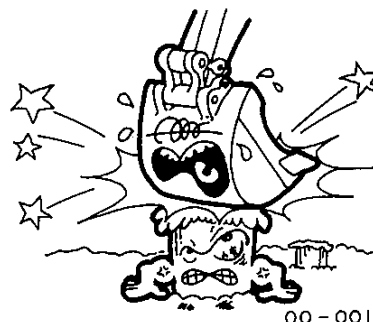
Traveling a long distance in reverse will cause the crawler belts (link bushings) to wear out faster.

CAUTION : When the left lever stand is dropped down backwards, even if the lever is operated, the hoe attachment and slew do not operate. (See p. 6)

OPERATION

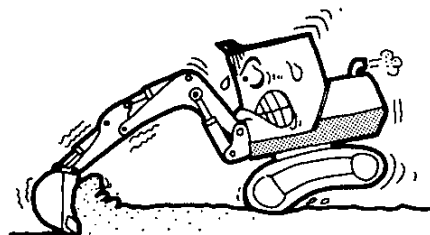
The operation methods listed below should never be used as they will overload the machine and can cause a breakdown.

1. Do not try to drive piles or clear dirt away by banging the bucket down.



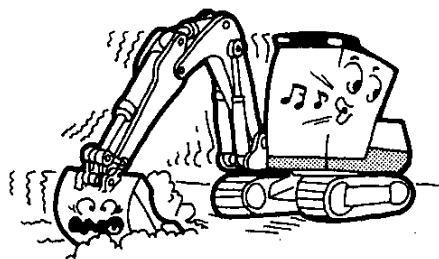
00-001

2. Do not try to use the weight of the machine to add force to a digging operation.



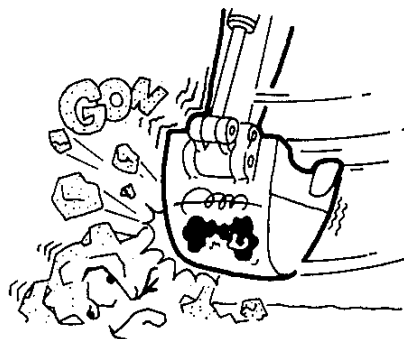
00-002

3. Do not try to dig while traveling.
❖ Do not dig the bucket in first and then try to dig by pulling it with the motion of machine travel.



00-003

4. Do not use the slew or swing to maneuver the bucket while it is in the ground, or try to break on earth wall by slewing or swinging the bucket into it.



00-004

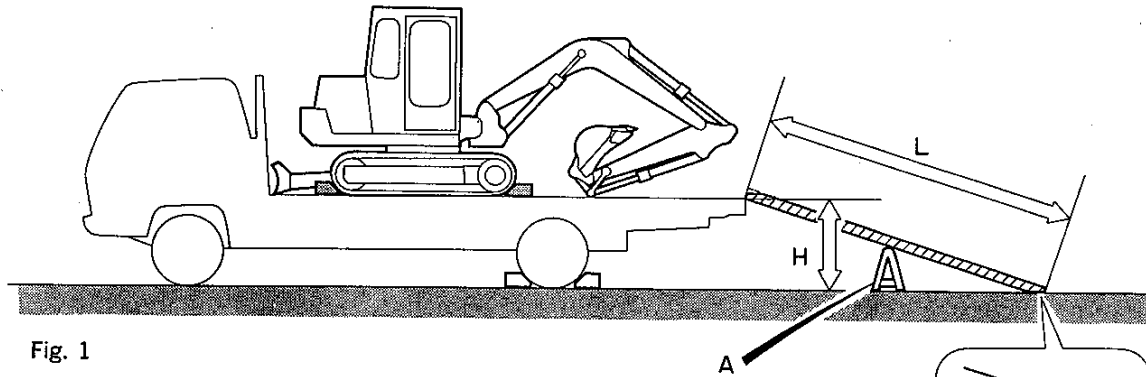
Transporting the machine

Fig. 1

Concerning ramps

- ❖ Choose a length that will keep the slope angle under 15 deg.
- ❖ The ramp width should be at least 1.2 times the shoe width.
- ❖ Bevel the end of the ramp as shown by (B).
- ❖ Fasten the ramp securely to the truck with hardware so it will not slip off.
- ❖ Insert a support (A) under the ramp in the middle for safety.

Maintain the following relation between the height (H) of the truck platform and the length (L) of the ramp.

H	L
1,300mm (4 ft. 3 in.)	4,900mm (16 ft. 1 in), more
1,110mm (3 ft. 8 in.)	4,200mm (13 ft. 9 in), more
930mm (3 ft. 1 in.)	3,500mm (11 ft. 6 in), more
750mm (2 ft. 6 in.)	2,800mm (9 ft. 2 in), more

CAUTION : ❖ Loading and unloading the truck should always be done on firm level ground.

- ❖ Set the truck's parking brake, and set blocks under the wheels.

Machine configuration during transport

- ❖ Lock the slew lock and cabin door lock.
- ❖ Set stoppers under the crawler belts, or tie them in place with wire rope.

How to lock the slew lock

Work the slew lock pin as shown in the diagram to lock the slew lock.

Fig. 2 shows the slew lock unlocked.

Fig. 3 shows the slew lock locked.

CAUTION : If the slew lock is not locked during transport, vibration may cause turntable slew, which is dangerous.

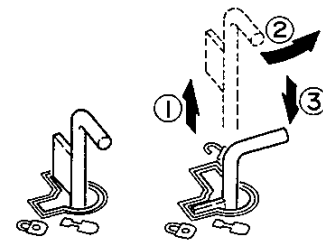


Fig. 2

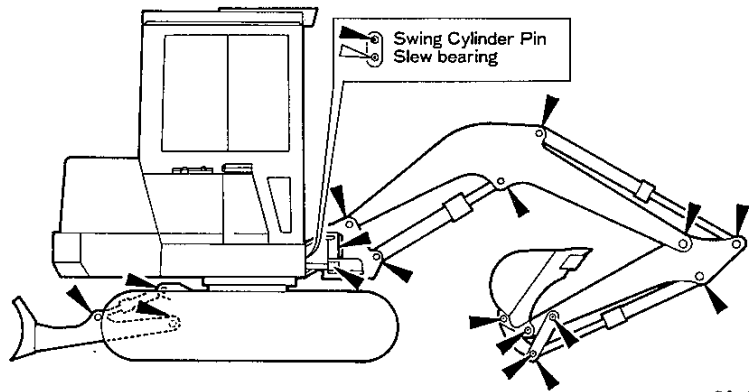
Fig.3

INSPECTION and MAINTENANCE

Greasing

In the case of locations marked " ◀ ", apply grease every day or every 10 hours, and for locations marked " ◁ ", apply grease every 50 hours.

Grease somewhat more often when operating the machine under bad conditions. Use a lithium soap multipurpose grease No. 2.

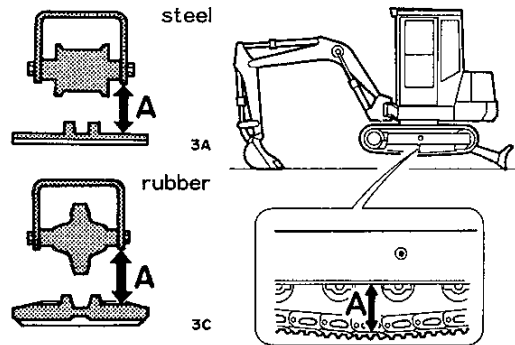


DO-268A

Adjusting crawler belt tension

- ❖ Check the crawler belt tension every 50 hours.
- ❖ Using the hoe attachment and blade, lift the body.
- ❖ Measure the clearance between the frame underside and the shoe plate upper side.
- ❖ Standard Values :

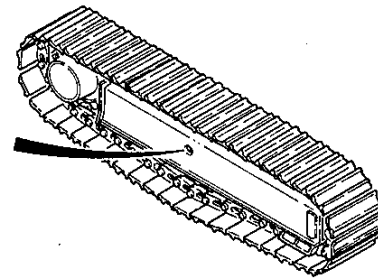
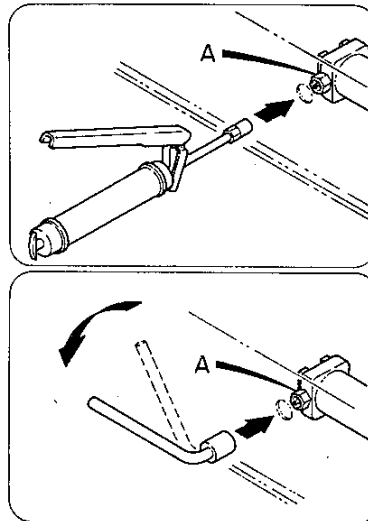
Steel Crawlers	136~156mm
	(5.36~6.14 in.)
Rubber Crawlers	110~120mm
	(4.33~4.72 in.)



GI-290P

ATightening the crawler belt tension : inject grease into check valve (A) until the track tension is correct.

BLoosening the crawler belt tension : loosen check valve(A) and remove grease from the inside. Loosen the check valve a little bit at a time.



GI-069

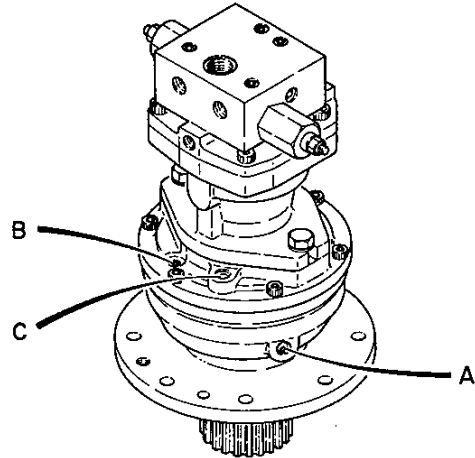
CAUTION : Do not loosen the grease nipple.

INSPECTION and MAINTENANCE

Changing the gear oil

Slew gearbox

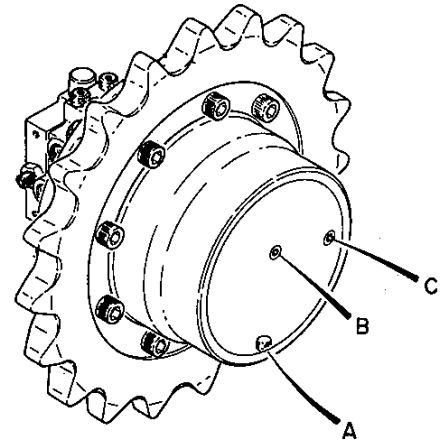
- ❖ Change the oil after every 1,000 hours of operation.
- ❖ Remove oil from drain port (A).
- ❖ Pour oil into oil filling port (C) until oil flows out of oil level check port (B).
- ❖ Type of oil : SAE#90 API GL-4 gear oil
- ❖ Oil capacity : 0.7 liters (1.5 U.S. pt.)



GI-070

Track gearbox.

- ❖ Change the oil after every 1,000 hours of operation.
- ❖ Remove oil from drain port (A).
- ❖ Pour oil into oil filling port (B) until oil starts to flow out of oil level check port (C).
- ❖ Type of oil : SAE#90 API GL-4 gear oil
- ❖ Oil capacity : 0.8 liters (1.7 U.S. pt.)



KO-026

Changing the hydraulic oil

Change the oil after every 1,000 hours of operation.

Type of oil : VG 46 Abrasion resistance
hydraulic oil or equivalent

Total capacity : 95 liters (25.1 U.S. gal.)

Tank capacity : 80 liters (21.2 U.S. gal.)

(refer to P.26)

INSPECTION and MAINTENANCE

How to change the oil (refer to Fig. 1 and Fig. 2)

- ❖ Extend the hoe attachment fully and bring the bucket in contact with the ground.
- ❖ Bring the blade in contact with the ground.
- ❖ Remove plug "A" slowly and release the tank internal pressure.
- ❖ Prepare an oil receptacle then remove plugs "C" and "B" and drain out the oil.
- ❖ Remove cover "C", then pull out the suction strainer "D" and clean it with kerosene.
- ❖ Remove cover "E", then replace the return filter "F".
- ❖ Remove the other parts and clean inside the tank.

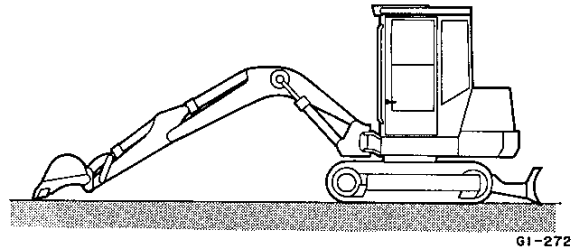


Fig. 1

Pouring in hydraulic oil (Refer to Fig. 2 and Fig. 3)

- ❖ After assembly of each component, fill the tank from the plug "G" portion.
- ❖ Start the engine and drive the machine slowly.
- ❖ Extend the bucket fully and bring the bucket and dozer blade in contact with the ground. (Refer to Fig. 1)Hydraulic oil check posture
- ❖ Using a level gauge, fill the tank until the specified level is reached.

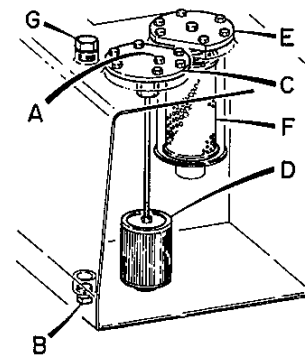


Fig. 2

Pressurizing the hydraulic tank (Refer to Fig. 3)

- ❖ Extend each cylinder fully.
 - (Refer to Fig. 3)Posture during tank pressurization
 - ❖ Install plug "G" last,Tank pressurization ended.
- CAUTION : If the tank is not pressurized, it will damage the hydraulic pump. Be sure to follow the above procedure when pressurizing the tank.

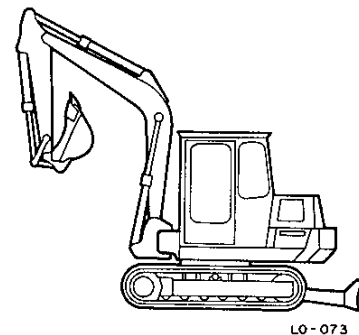


Fig. 3

Replacing the return filter (Refer to Fig. 2 and Fig. 4).

- ❖ First time after 50 hrs.
- ❖ Subsequent times every 500 hrs.

Replacement method

- ❖ Extend the hoe attachment fully and bring the bucket in contact with the ground.
- ❖ Bring the dozer blade in contact with the ground.
- ❖ Remove the plug "A" slowly and release the tank internal pressure, then remove plug "G".
- ❖ Remove the cover "E", then pull out the filter "F" and replace it.
- ❖ Install each component part, then pressurize the tank. (Refer to the tank pressurization method above)

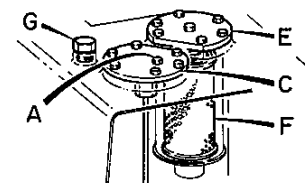


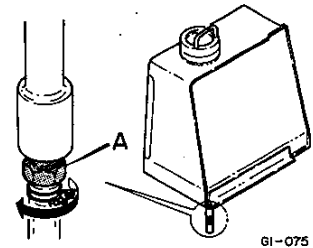
Fig. 4

INSPECTION and MAINTENANCE

Fuel system

Draining the fuel tank

- ❖ Remove water and dirt accumulated in the bottom of the tank from drain cock (A) on the bottom.
- ❖ Do this after every 50 hours of operation.



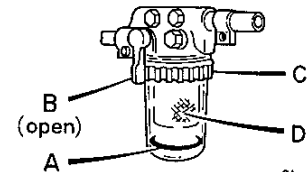
GI-075

Draining and cleaning the water separator

Cleaning Every 100 hours

1. The ring (A) indicates if water is building up in the water separator, so empty it out when necessary.
2. If the water separator cock (B) is closed and the retainer ring (C) removed, the element (D) can be taken out.

Clean the element with light oil.



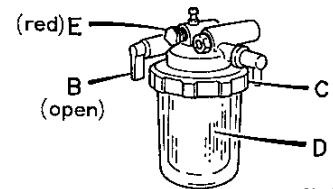
GI-101

Cleaning and replacement of the fuel filter element

Cleaning Every 100 hours

Replacement Every 500 hours

If the cock (B) of the fuel filter is closed and the retainer ring (C) removed, the element (D) can be taken out. Clean the element with light oil.



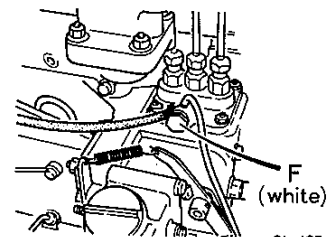
GI-102

CAUTION : After cleaning or replacement, air bleeding is necessary.

Fuel system air bleeding

After cleaning or replacement of the fuel filter element, or when cutting off the fuel supply, bleed the air out by the following procedure

1. Fill the fuel tank up full.
2. Turn the starter switch to the ON position.
3. Press the fuel filter red pushbutton (E) until the air bubbles stop appearing.
(The cock (B) should be opened.)
4. Press the fuel injection pump white pushbutton (F) until air bubbles stop appearing.



GI-103

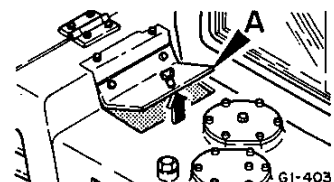
Replacing the engine lube oil filter

First time 50 hours

Subsequent times 250 hours

Open the cover "A" on the back of the hydraulic oil tank, then replace the filter.

For details, see the engine operator's manual.



GI-403

INSPECTION and MAINTENANCE

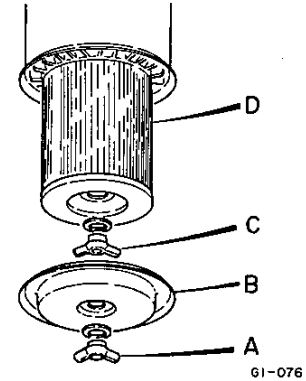
Cleaning and replacing the air cleaner

- ❖ Clean after every 250 hours of operation.
- ❖ Replace after every 500 hours of operation.

Disassemble the air cleaner in the following sequence.

1. Loosen wing nut (A) and remove the end cover (B).
2. Loosen wing nut (C) and remove the element (D).

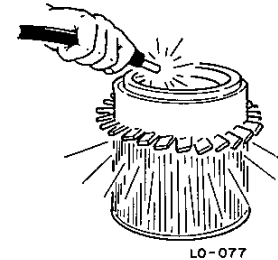
CAUTION : If the packing in the element is deformed or scratched, replace it.



How to clean

Blow clean, dry compressed air (at 7kg/cm²(99psi) or less) directly on the inside of the element, directing it up and down along the grooves. Maintain a suitable distance between the nozzle and the element.

CAUTION : Note that the air cleaner described in the engine operation manual is different from the one in this machine.

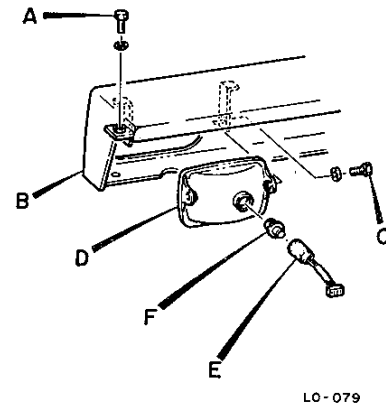


Lights : bulb replacement

Headlight

- ❖ Remove the 5 bolts (A), then remove light cover (B) from the main body.
- ❖ Remove the 2 bolts (C), then remove light (D).
- ❖ Remove light harness (E) then replace bulb (F). To remove the light harness, remove the rubber cover, press in lightly and twist.

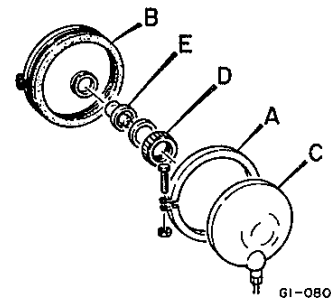
CAUTION : The light bulb and light harness must be installed in a certain direction. Make sure that the protruding and depressed sections fit where they are supposed to when installing.



Boom light

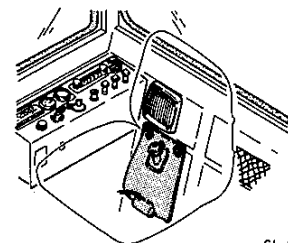
- ❖ Remove band (A), then remove body (B) from light assembly (C).
- ❖ Remove cap (D) from light assembly (B), then remove the old light bulb (E) and replace it with a new one.

CAUTION : When reassembling make sure that the protrusion on (B) fits snugly into the hole in (C). Also make sure that the protrusion on the light bulb fits where it is supposed to.



Filling the windshield washer fluid

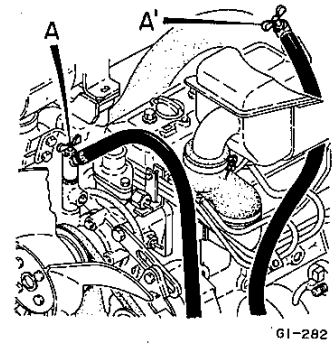
Fill the washer fluid case mounted on the cabin rear panel behind the operator's seat.



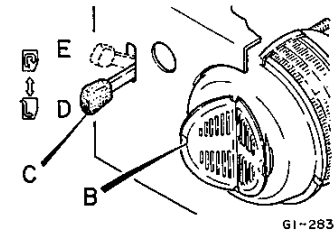
INSPECTION and MAINTENANCE

Handling the heater

- ❖ Open the cocks on valves (A) and (A') which are installed on the engine.
- ❖ Turn the switch on (refer to p.9)
- ❖ When cover (B) is open, warm air will flow into the cabin.
- ❖ Operate lever (C) below the seat to let outside air in or keep it out.
When the lever is in position (D), outside air will flow in.
When the lever is in the position (E), outside air is shut out.



- CAUTION :** ❖ When the lever is in position (E), make sure that the cabin is well-ventilated.
- ❖ Even when the heater switch is off, cooling water circulates inside the heater, so when the outside air is warm and the heater is not used close the valves so that cooling water will not enter.

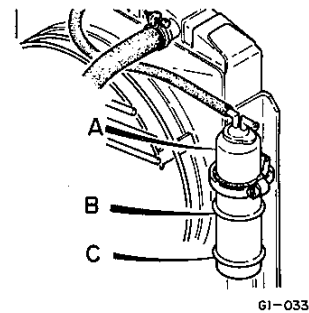


Other inspection and maintenance

Checking the cooling water

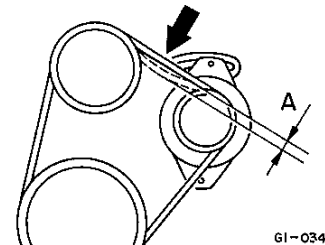
- ❖ Check the cooling water level in the reserve tank. When adding more water add it to the reserve tank.
- ❖ For other details, please refer to the engine operation manual.

CAUTION : The cap on the radiator main body should normally not be opened. Absolutely do not open it immediately after operating the machine.



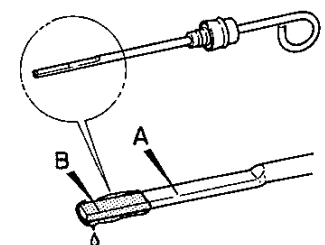
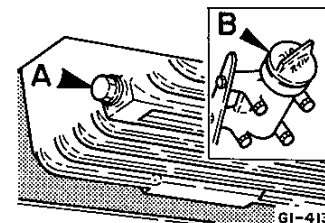
Fan belt adjustment

- ❖ Press the fan belt down in the middle by hand with about 10kg (22lb.) of force.
- Adjust the tension so that there is 10-15mm (0.4-0.6in.) of slack (A).
- ❖ For further details please refer to the engine operation manual.



Engine oil replacement

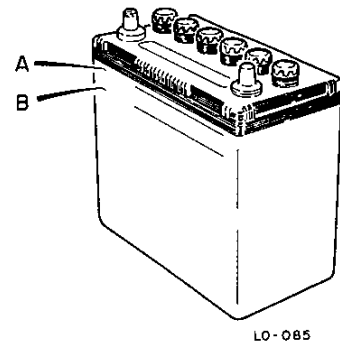
- ❖ First time50 hours
- ❖ Subsequent times250 hours
- ❖ Warm up the engine, then remove the plug "A" on the bottom of the oil pan and drain out the oil.
- ❖ Tighten the drain plug, then turn the red cap on auxiliary filler port "B" to the left to remove it and pour new oil in until the oil level reaches the upper limit "A" on the level gauge.



INSPECTION and MAINTENANCE

Checking the battery fluid

The fluid level should be kept between the upper limit line A and the lower limit line B. If the level is too low add distilled water.



Precautions in battery handling

❖ Ignition explosions happen, so be careful of the following.

1. Check for short circuits, and keep all sparks and burning tobacco away from the battery.
2. Check the water in a well-ventilated location.

❖ If battery fluid should get on the skin or in an eye, flush with a large quantity of water. In the case of an eye, see a physician immediately.

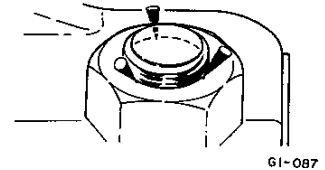
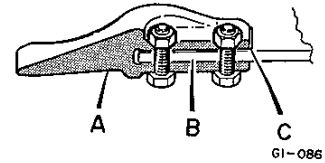
For further details on inspection and maintenance of the engine and related parts, please refer to the engine operation manual.

INSPECTION and MAINTENANCE

Replacing the bucket teeth

How to remove

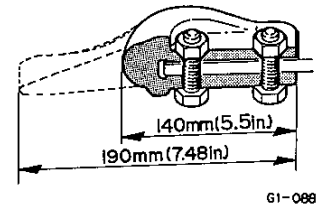
- ❖ To eliminate looseness between each tooth (A) and the bucket (B), insert a shim (C).
- ❖ Pass the bolts through from the outside of the bucket and tighten the nuts. (Tightening torque 10.4kgfm)
- ❖ To keep the nuts from loosening, use a punch to crimp the bolt's threads in 3 places.



Replacement time

If the end of the tooth has worn down so that the total length of the tooth is 140mm (5.5 in.), replace it immediately.

CAUTION : If replacement is delayed, the bucket could be damaged.



Replacing the bucket

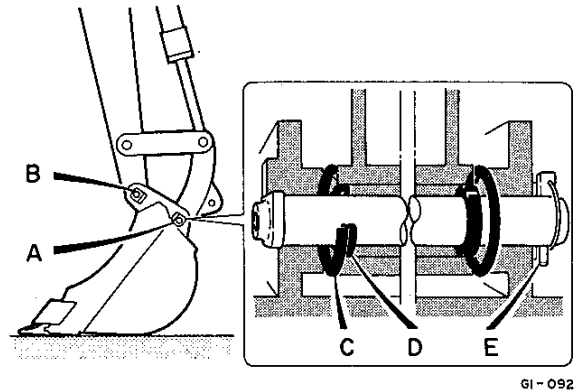
Replace the bucket while the machine is resting on level ground.

Bucket removal

- ❖ Clean around the bucket pins.
- ❖ Set the bucket on the ground as shown in the figure.
- ❖ Pull out the lock pin (E) and drive out the bucket pin (A).

The work can be made easier by lifting up slightly on the bucket.

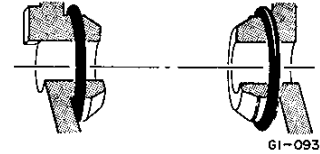
- ❖ Wipe carefully so that dirt will not get on to the pin or into the pinhole.



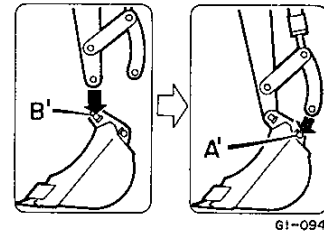
INSPECTION and MAINTENANCE

Bucket installation

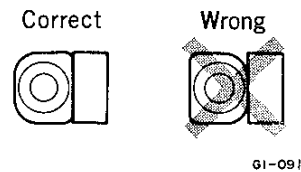
- ❖ Set O-ring (C) as shown in the figure.



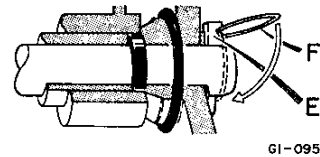
- ❖ Fix in place at pinhole (B').
- ❖ Operate the bucket cylinder to align pinhole (A') with its mating hole, then fix in place.



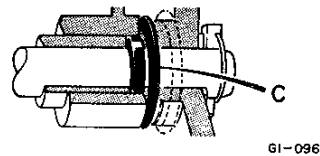
CAUTION : When inserting the bucket pin, set the flange in the proper direction with respect to the turning stopper plate.



- ❖ Install the lock pin (E) and bring the ring (F) down.

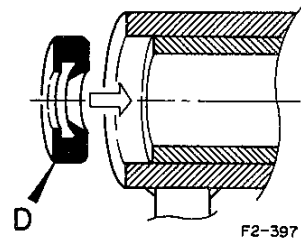


- ❖ Slide an O-ring in and install as shown by (C) in the figure.



CAUTION

- ❖ Unless the pinholes are matched up correctly when the pins are pounded in, the pin seals D will break.
- ❖ Replace an O-ring if the rubber loses its elasticity or becomes cracked.
- ❖ Replace a pin seal if it becomes deformed or scratched.
- ❖ How to replace a pin seal set the pin seal as shown in the figure, and pound it in a little at a time with a wooden hammer. Use caution to make sure that the seal does not become deformed or cracked.



INSPECTION and MAINTENANCE

Handling in cold weather

Battery

- ❖ Check the battery fluid level and specific gravity, and charge the battery, more frequently than usual.

CAUTION : To prevent freezing, do not add distilled water after finishing operation, but rather before starting the next day's operation. Let a qualified service station check the specific gravity and charge the battery.

Cooling water

- ❖ When the temperature drops to or below 0 deg.C (32 deg.F), add anti-freeze to the radiator and reserve tank.

- ❖ Table of ratio of anti-freeze to water.

Minimum Temp. °C (°F)	-5 (+23)	-10 (+15)	-15 (+5)	-20 (-4)	-25 (-13)	-30 (-22)	-35 (-31)	-40 (-40)
Antifreeze lit. (U.S.qt.)	0.92 (0.98)	1.53 (1.62)	1.83 (1.94)	2.14 (2.27)	2.44 (2.58)	2.75 (2.91)	3.05 (3.23)	3.36 (3.56)
Water lit. (U.S.qt.)	5.18 (5.47)	4.57 (4.83)	4.27 (4.51)	3.96 (4.18)	3.66 (3.87)	3.35 (3.54)	3.05 (3.22)	2.74 (2.89)

CAUTION : If the anti-freeze manufacturer recommends a different ratio of anti-freeze to water, follow the manufacture's recommendation.

Precaution after finishing operation

Wipe all mud and water off of the body, park the machine on concrete or another dry surface or lay a wooden platform under it, and cover it with a tarpaulin.

In particular, make sure that all water is wiped off of the surface of the hydraulic cylinder piston rod.

If frozen water and mud get inside the seal, the seal can be broken.

Care in long-term storage

- ❖ Do the following when the machine will not be used for a long time.

- ❖ Clean all of the parts, then dry them and store indoors.

Do not leave the machine outside for a long time. when there is absolutely no choice but to store the machine outdoors, place it on top of wood on level ground and cover it tightly with a tarpaulin.

- ❖ Lubricate all parts carefully and change the oil.

- ❖ Apply grease liberally to the hydraulic cylinder piston rod.

- ❖ Remove the ground cord from the battery, or remove it from the vehicle and store it separately.

- ❖ When the air temperature will drop to or below 0 deg. C (32 deg. F), either add anti-freeze to the cooling water or completely remove the water.

Do the following before using the machine after not using it for a long time.

- ❖ Remove the grease that was applied to the hydraulic cylinder piston rod.

- ❖ Turn the engine on, and run the working equipments and travel system unloaded until the oil has a chance to work its way through the system.

CAUTION : When the machine is not used for a period exceeding one month, perform this unloaded operation once a month.

LUBRICANTS CHART

Lubricated Part	Hydraulic oil	Pump spline section	Track gearbox Slew gearbox	Grease fittings
Capacities	Total system 95 lit. (25.1 U.S.gal.) Tank level 80 lit. (21.2 U.S.gal.)	As required	0.8 lit. (1.7 U.S.pt.) 0.7 lit. (1.5 U.S.pt.)	As required
Interval	Every 1,000 hours		first 500 hours. each succeeding 1,000 hours.	Everyday or every 10 hours and every week or every 50 hours.
Application	—	—	—	—
Takeuchi specification	Antiwear hydraulic oil	Grease with molybdenum disulphide added	API GL-4 or GL-5 SAE 90	EP-2 Lithium soap based grease
ESSO	Nuto H46		Gear oil GP 90	Beacon EP2
MOBIL	DTE 25		Mobilube GX 90	Mobiluxe EP 2
GULF	Harmony 46 AW			Gulfcrown No.2 EP
TEXACO	Regal RO 46		Thuban Universal 90	Multifak EP 2
SHELL	Tellus oil 46	Retinax AM	Spirax EP 90	Alvania EP 2

TIGHTENING TORQUES

Reference figure	Principal parts requiring extra tightening	Tightening torque
1	Travel motor mounting bolts	15.9kgfm (115ft.-lb.)
2	Drive sprocket mounting bolts	15.9kgfm (115ft.-lb.)
3	Track roller mounting bolts	10.4kgfm (75.2ft.-lb.)
4	Shoe slide mounting bolts	5.6kgfm (40.5ft.-lb.)
5	Counterweight mounting bolts	13.8kgfm (99.8ft.-lb.)
6	Slew bearing mounting bolts (turntable side)	10.4kgfm (75.2ft.-lb.)

Re-tighten after the first 50 hours and each succeeding 600 hours of operation.

CAUTION : Thread lock has been applied to the engine installation bolts and slew bearing installation bolts on the lower frame, so do not attempt to tighten these bolts further.

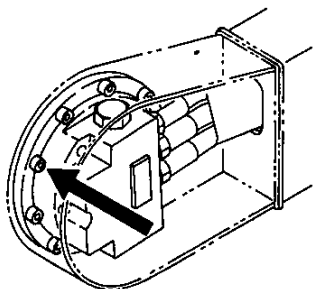


Figure 1

TO-090

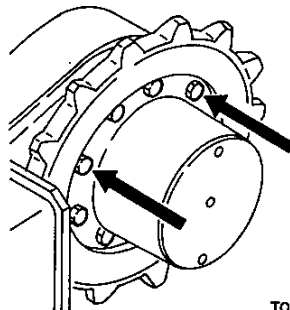


Figure 2

TO-091

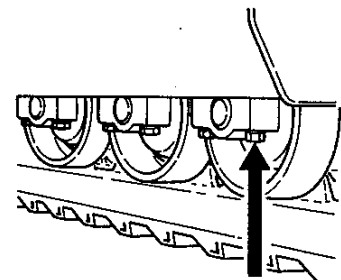


Figure 3

T2-092

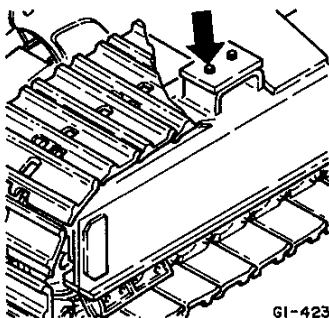


Figure 4

GI-423

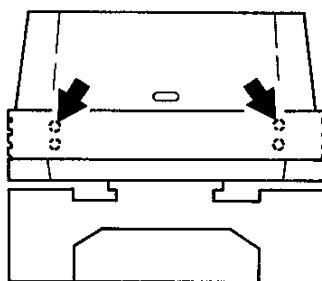


Figure 5

GI-433

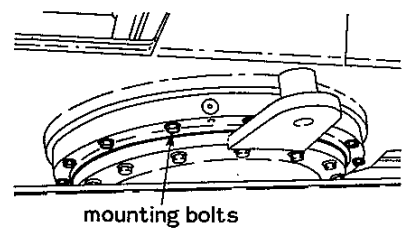


Figure 6

GI-0152

SERVICE SCHEDULE

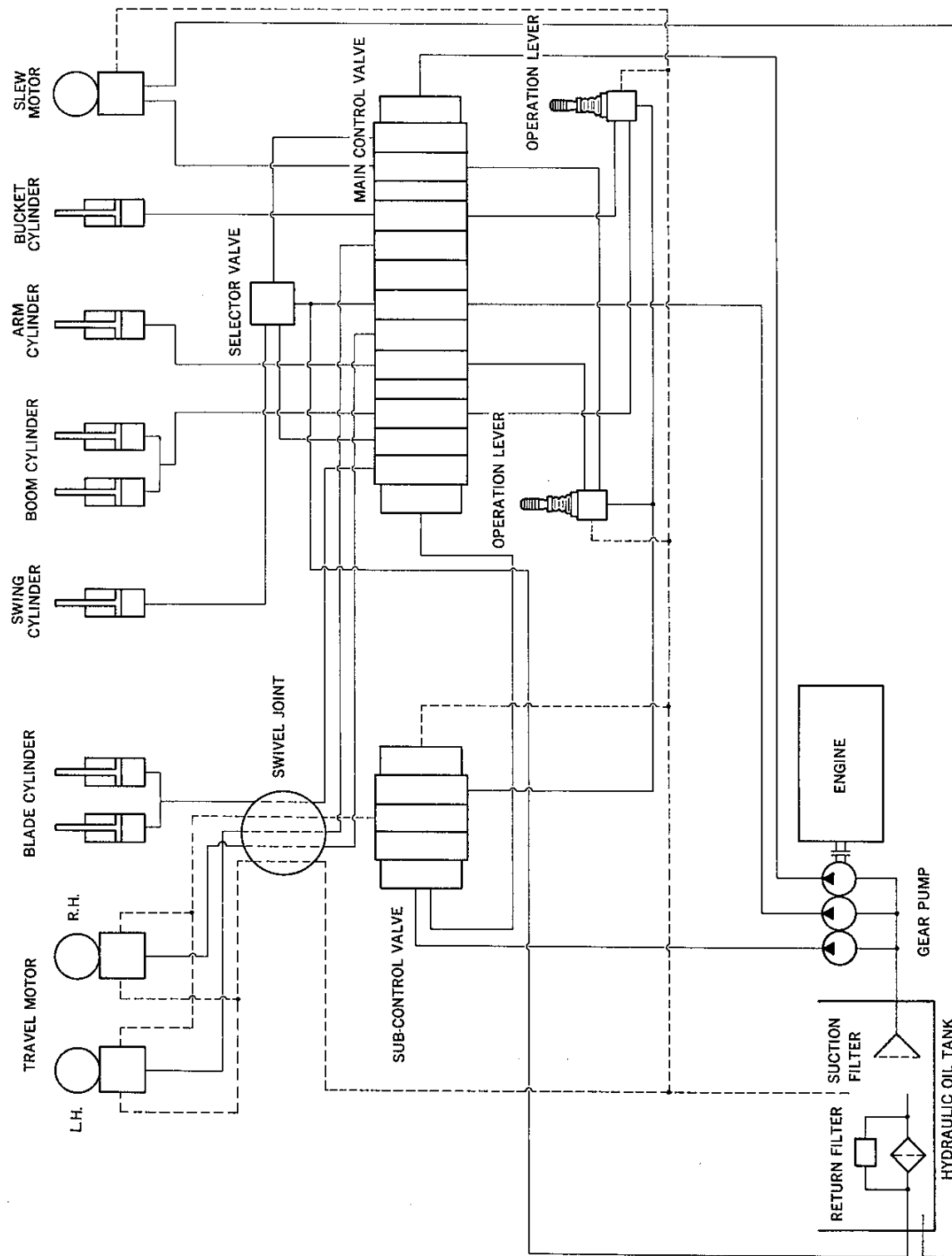
Item	Every day	Every 50h.	Every 100h.	Every 250h.	Every 500h.	Every 1000h.
Grease application	△	△				
Track tension		○				
Trach gearbox oil					X 1st	X
Slew gearbox oil					X 1st	X
Hydraulic oil	○					X
Return filter		X 1st			X	
Suction strainer					□	
Operation lever operation, play	○					
Travel lever operation, play	○					
Water separator	○		□			
Fuel filter			□		X	
Engine lube oil filter		X 1st		X		
Air cleaner				□	X	
Cooling water	○					
Radiator fins					□	
Fan belt	○					
Engine lube oil	○	X 1st	X			
Draining water fuel tank		□				
Illumination and working lights, horn	○					
Hourmeter operation	○					
Charge, oil pilot lamp flashing	○					
Monitor lamp operation	○					
Battery fluid		○			○ (Sp. Gravity)	
Screw re-tightening		○ 1st			○	

○ : Inspection △ : Replenishment □ : Cleaning X : Replacement

TROUBLESHOOTING

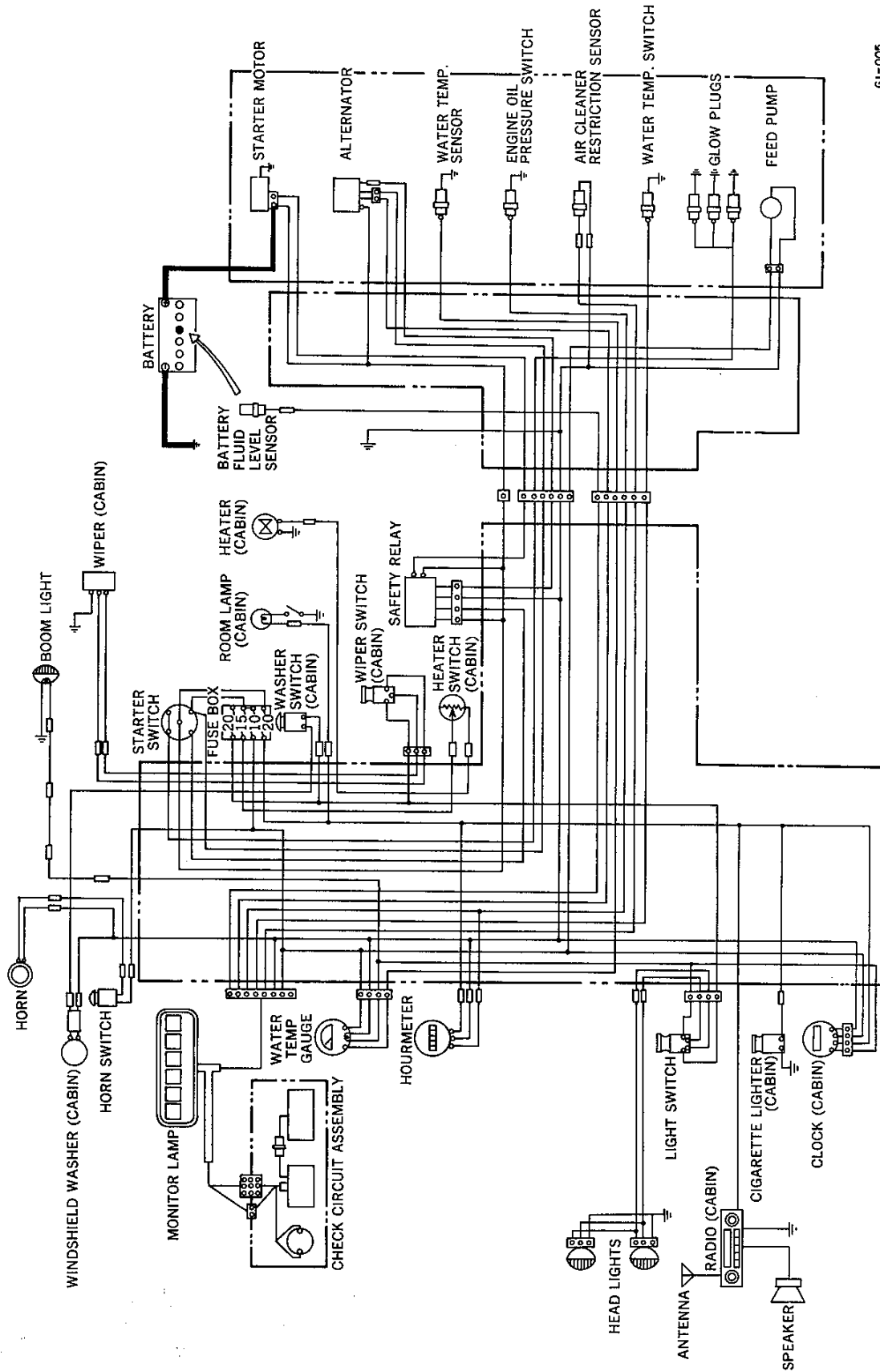
Trouble	Principal causes	Action
Lever is hard to move or fails to return automatically.	❖ Inadequate lubrication of section operated by lever ❖ Bad control valve	❖ Lubricate ❖ Leave repair to qualified service station.
No operations can be performed at all, or operations are too weak.	❖ Insufficient hydraulic oil ❖ Hydraulic oil is not warmed up. ❖ Engine output has dropped. ❖ Bad pump or coupling ❖ Hydraulic oil viscosity is not correct. ❖ Relief valve set pressure is too low. ❖ Bad control valve	❖ Replenish oil ❖ Perform warm-up operation. ❖ Clean air cleaner and inspect fuel system. ❖ Let qualified service station repair. ❖ Replace with the recommended hydraulic oil. ❖ Leave repair to qualified service station. ❖ Leave repair to qualified service station.
Turning left or right, or travel either forward or backward, is impossible.	❖ A foreign object such as a rock has gotten into the machinery. ❖ Bad pump ❖ Bad motor or gearbox ❖ Bad brake valve	❖ Remove the foreign object. ❖ Leave repair to qualified service station. ❖ Leave repair to qualified service station. ❖ Leave repair to qualified service station.
Travel does not proceed in a straight line.	❖ A foreign object such as a rock has gotten into the machinery. ❖ Poor track tension adjustment ❖ Bad pump ❖ Bad motor or brake valve ❖ Bad control valve	❖ Remove the foreign object. ❖ Adjust both left and right tracks to the correct tension. ❖ Leave repair to qualified service station. ❖ Leave repair to qualified service station. ❖ Leave repair to qualified service station.
Slew is impossible or not smooth.	❖ Forget to remove slew lock pin. ❖ Insufficient grease on slew bearings. ❖ Bad brake valve ❖ Bad motor or gearbox	❖ Unlock. ❖ Add grease. ❖ Leave repair to qualified service station. ❖ Leave repair to qualified service station.
Inadequate digging power	❖ Insufficient hydraulic oil. ❖ Hydraulic oil is not warmed up. ❖ Wrong kind of hydraulic oil. ❖ Engine output has dropped. ❖ Bad pump ❖ Drop in relief valve set pressure ❖ Bad hydraulic cylinder ❖ Bad control valve	❖ Replenish oil. ❖ Perform warm-up operation. ❖ Replace with the recommended hydraulic oil. ❖ Clean air cleaner and inspect fuel system. ❖ Leave repair to qualified service station. ❖ Leave repair to qualified service station. ❖ Leave repair to qualified service station. ❖ Leave repair to qualified service station.
Only the hoe attachment and slew cannot be operated.	❖ Forgot to move the left lever stand. ❖ Control valve defective.	❖ Move the left lever stand forward. ❖ Request repairs at the service station.

HYDRAULIC SYSTEM DIAGRAM



61-003

ELECTRICAL SYSTEM DIAGRAM

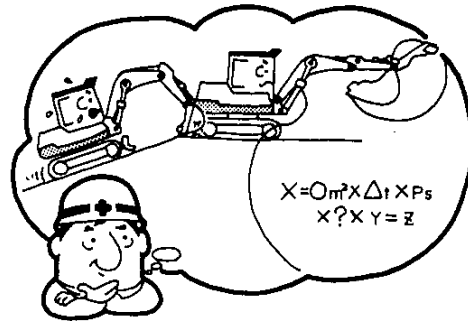


GI-005

SAFETY INSTRUCTIONS

Know the machine well.

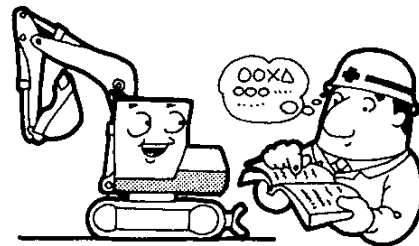
- ❖ know the machine's capabilities, capacity, size and weight well.



00-005

Read this manual well so that you understand it, and carry out inspection and maintenance faithfully.

- ❖ Correct machine operation is the basis of safety.
- ❖ Perform the starting inspection and the daily and other periodic inspections thoroughly and carefully.



00-006

Wear your clothing neatly.

- ❖ Wear a safety hat (or helmet), safety shoes and work clothes.



00-007

Perform all necessary repairs before using the machine.

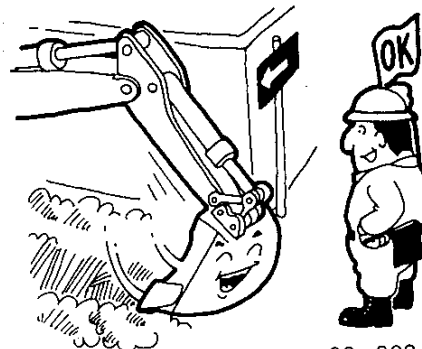
- ❖ Post a "Do not operate" sign on any machine that has not been fully repaired.
- ❖ Repair any problems that were discovered the previous day and inspect the machine thoroughly before starting work.



00-008

Post an assistant wherever the visibility is poor or there is danger.

- ❖ Decide on hand or other signals ahead of time.

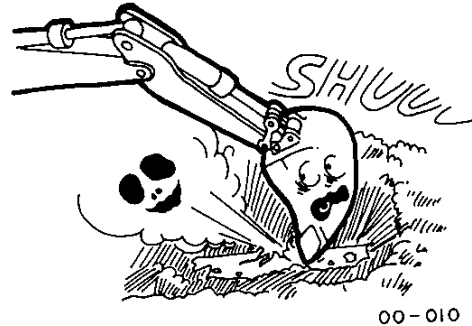


00-009

SAFETY INSTRUCTIONS

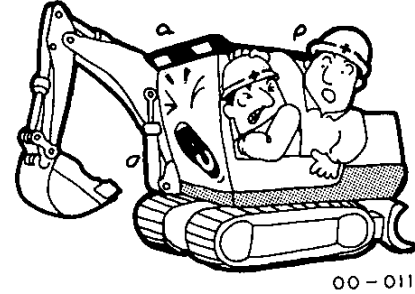
Keep on the lookout for buried objects.

- ❖ First test-dig cautiously to see whether or not there are any buried objects. After confirming that there are not any, or the positions of any objects, proceed with full excavation.



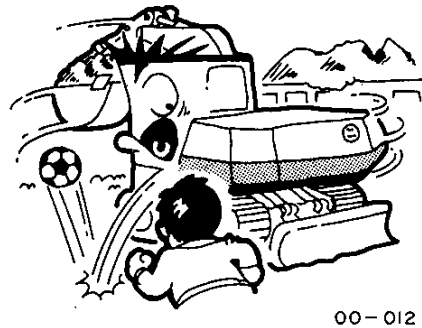
Joy riders are prohibited!

- ❖ There must not be anybody but the operator in the machine during work.



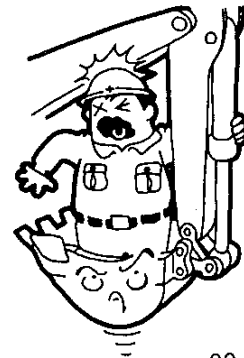
Entering within the swing radius is prohibited!

- ❖ People other than the operator's assistant must not approach the machine while work is in progress.



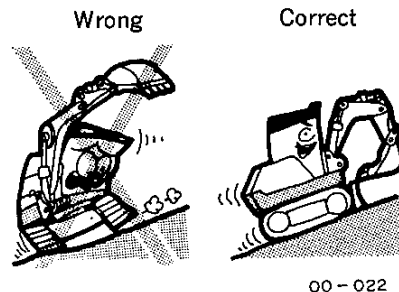
Use for other than the intended purpose is prohibited!

- ❖ Do not use the bucket to raise or lower workers.



Do not travel, work or change direction on sloping ground.

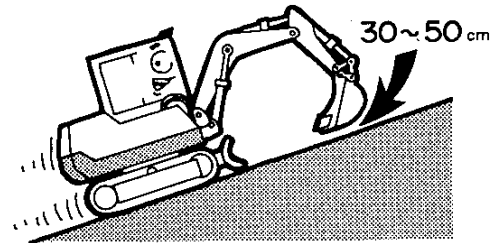
- ❖ The maximum safe slope is 25 deg.



SAFETY INSTRUCTIONS

Keep the bucket 30cm (12in.) to 50cm (20in.) above the ground when ascending or descending a slope.

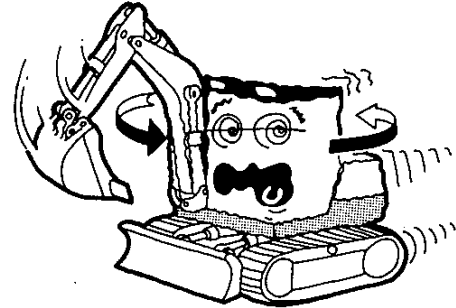
- ❖ This helps to keep the center of gravity low, and if an emergency should occur the bucket can be lowered quickly to provide additional support.



00-014

Do not operate the arm, boom or bucket while travel is in progress.

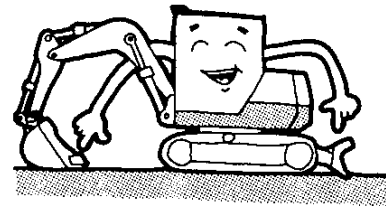
- ❖ If any operation lever other than the travel lever is operated while travel is in progress the machine can swerve or it can become impossible for the operator to keep track of all that is happening, creating danger.



00-015

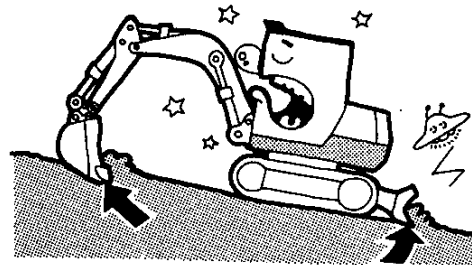
Check the following when parking

- ❖ When parking or stopping on level ground
 - * Make sure that the bucket is resting on the ground.
 - * Make sure that the blade is resting on the ground.
 - * Make sure that the engine is stopped.



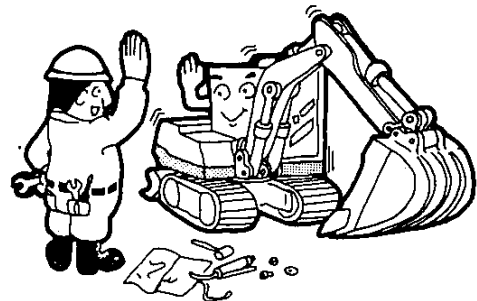
00-016

- ❖ When parking or stopping on sloping ground.
 - * Make sure that the bucket is dug into the ground.
 - * Make sure that the blade is dug into the ground.
 - * Make sure that the engine is stopped.



00-017

Exchange signals for effective communication, and check everything carefully!

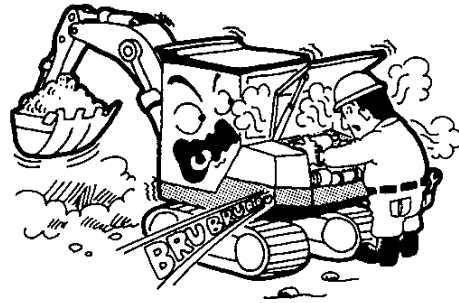


00-018

SAFETY INSTRUCTIONS

Maintenance work during machine operation is prohibited!

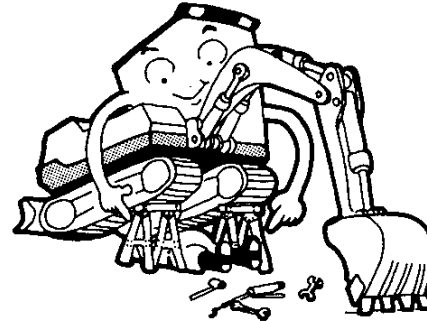
- ❖ Always stop the engine before inspecting rotating parts or anything near them.



00-019

Place safety blocks under the machine !

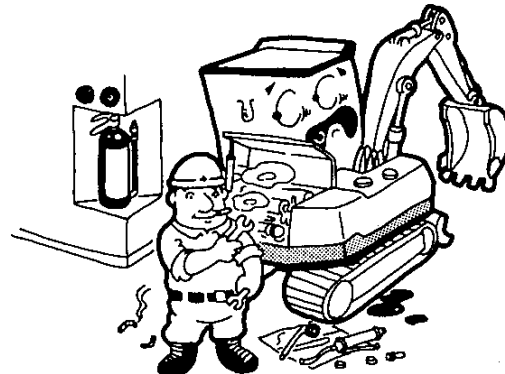
- ❖ When performing inspection and maintenance work underneath the machine, always lay safety blocks under it to prevent it from falling.



00-020

Fire is prohibited !

- ❖ Just in case, make sure that you know where a fire extinguisher is located and how to operate it.
- ❖ Performing inspection and maintenance work while smoking can cause a fire, so don't do it.



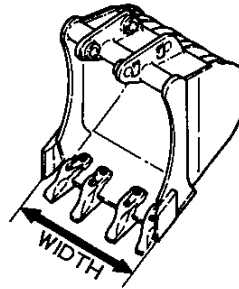
00-021

OPTIONS

The following optional equipments are available for use when circumstances demand.

- Bucket

Width mm (in.)	SAE rated capacity m³ (cu.yd.)	Weight kg (lb.)
350 (14)	0.06 (0.07)	59 (129)
400 (16)	0.07 (0.09)	64 (142)
450 (18)	0.08 (0.10)	68 (150)
500 (20)	0.09 (0.12)	75 (166)
600 (24)	0.12 (0.15)	85 (187)
650 (26)	0.13 (0.17)	92 (202)



DI-300

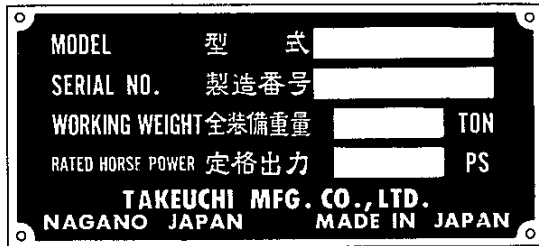
- Mirror

PARTS and SERVICE

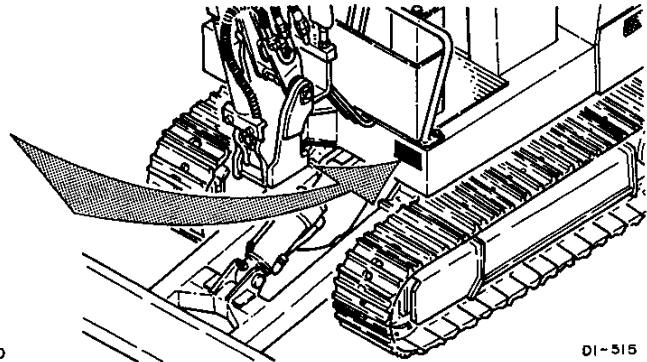
When ordering

When ordering parts or sending notification of trouble, always include the machine model and machine serial number stamped on the machine identification plate. Also include information on the number of hours the machine has been in use.

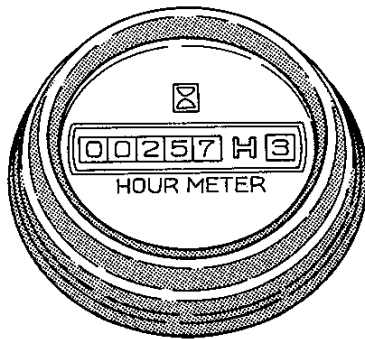
● Identification plate



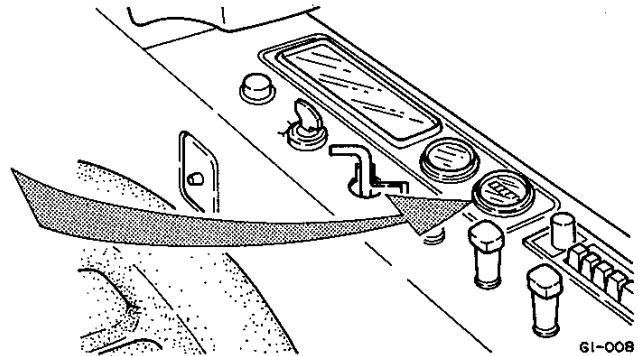
T2-110



● Hourmeter



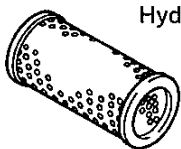
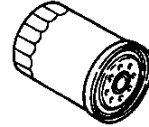
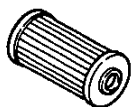
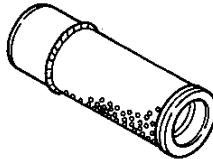
T2-116



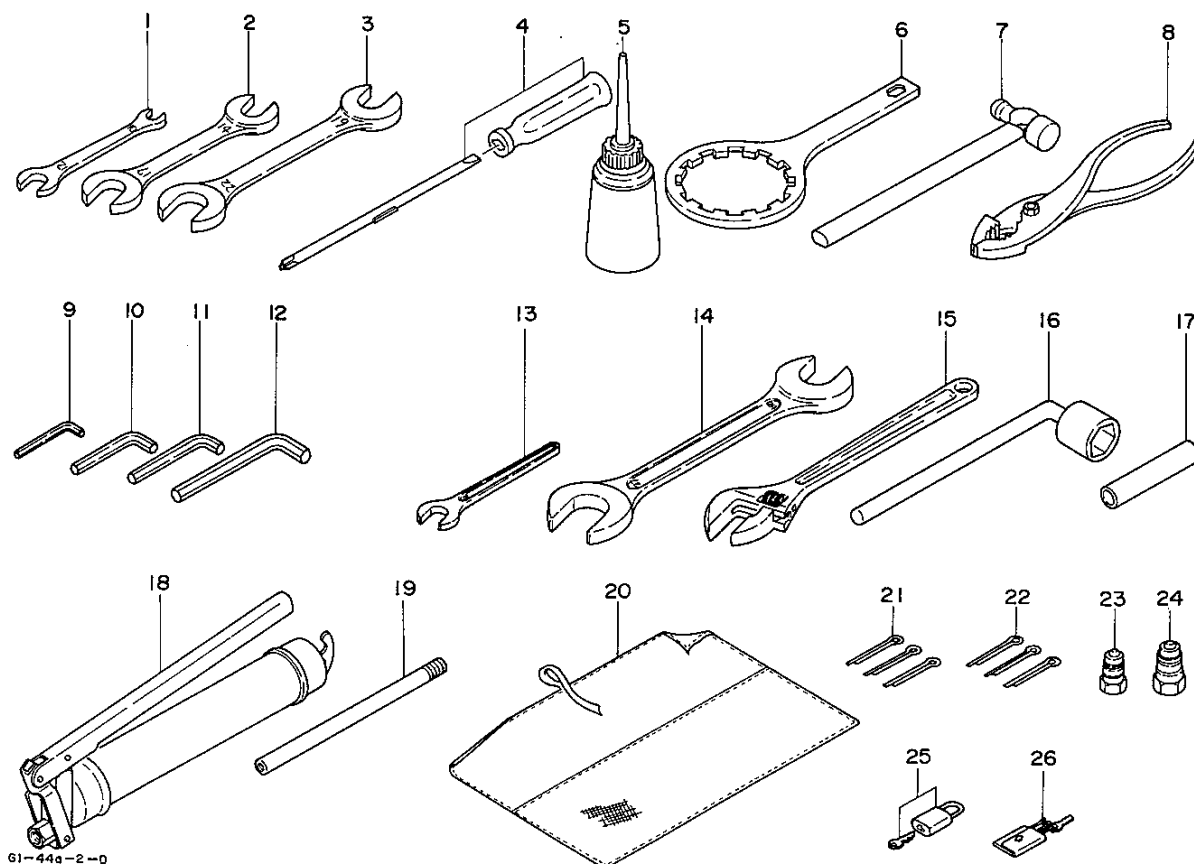
Consumable items

Check and replace consumable items such as filter elements periodically. Periodic replacement of consumable items will prevent many troubles from occurring.

● Major Consumable Items (Items to be periodically replaced)

 Hydraulic oil tank return filter element First time... 50 hrs. Subsequent times...500 hrs. (refer to P.26) Part Number : 15511-00700	 Engine oil filter First time... 50 hrs. Subsequent times...250 hrs. (refer to P.27) Part Number : 124550-35110
 Fuel filter element Cleaning...Every 100 hrs. Replacement...Every 500 hrs. (refer to P.27) Part Number : 124550-55700	 Air cleaner element Cleaning...Every 250 hrs. Replacement...Every 500 hrs. (refer to P.28) Part Number : 129150-12510

STANDARD ACCESSORIES



No.	Part name (Part Number)	Specification	Q'ty
1	Spanner (19100-47081)	10×12	1
2	Spanner (19100-47082)	14×17	1
3	Spanner (19100-47083)	19×22	1
4	Screwdriver (19100-06112)	+ and - reversible	1
5	Oil feeder (19100-06113)		1
6	L.O. filter remover (19100-06114)		1
7	Hammer (16903-00330)	3/4	1
8	Pliers (16905-00200)	200mm	1
9	Hex. wrench (16906-00400)	4mm	1
10	Hex. wrench (16906-00500)	5mm	1
11	Hex. wrench (16906-00600)	6mm	1
12	Hex. wrench (16906-00800)	8mm	1
13	Spanner (16901-00013)	13	1
14	Spanner (16900-02427)	24×27	1

No.	Part name (Part Number)	Specification	Q'ty
15	Monkey wrench (16904-00250)	250mm	1
16	L-type wrench (16908-50026)	26	1
17	Pipe (00079-00009)	20×330	1
18	Grease gun (16910-60600)	600cc	1
19	Nozzle (16911-11505)		1
20	Tool bag (16914-00001)		1
21	Split pin (12100-00860)	φ8×60	3
22	Split pin (12100-00655)	φ5×50	3
23	Coupler plug (15167-00003)	3/8	1
24	Coupler plug (15167-00004)	1/2	1
25	Lock (16550-02500)		1
26	Key holder (16915-00001)		1
27	Operators manual		1
28	Engine operation manual		1

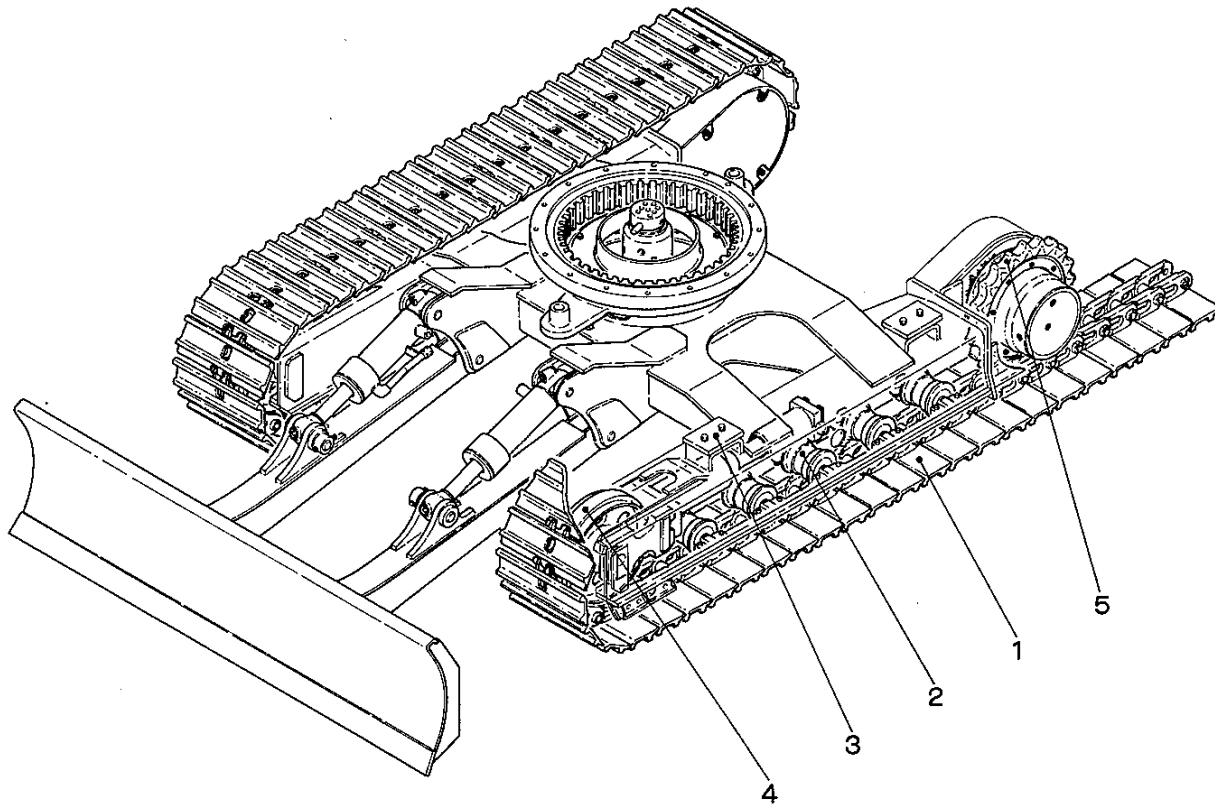
Using the parts list

- This parts list includes mainly consumable items for the TB36 Compact Excavator.
- When ordering parts, include not only the reference number, description and necessary quantity, but also the machine model and serial number together with the number of hours the machine has been used.
- Parts in the with an "X" before the part name are not sold separately.
- Refer to the Engine Parts Catalog concerning engine parts.
- This is subject to change without prior notice due to improvements in performance or design.

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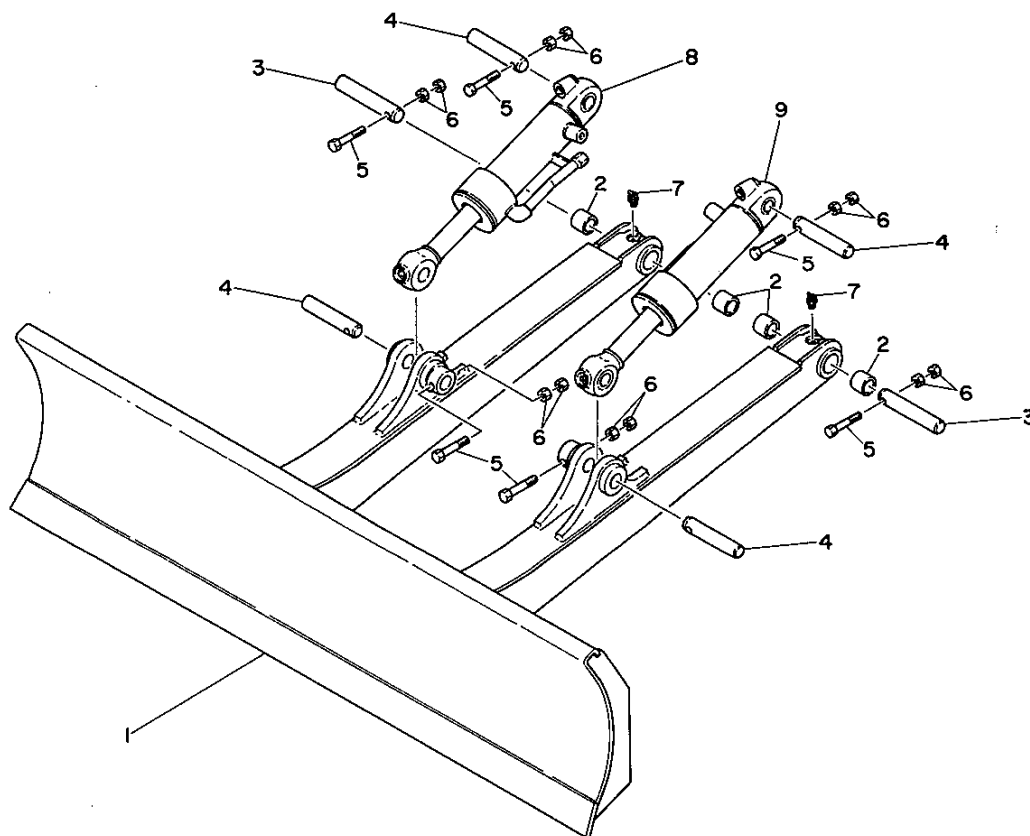
LOWER MACHINERY



G1-B1a-O-D

Item	Part number	Description	Q'ty	Chan.	Serial No.	Remarks
1	19140-28400	BELT, crawler	2			steel
	19140-36000	BELT, crawler	2			rubber
2	01413-90000	ROLLERR ASSY, track	8			steel crawler belt
	01813-90000	ROLLERR ASSY, track	10			rubber crawler belt
3	00910-23300	SLIDE	4			steel crawler belt
	01810-16100	SLIDE	4			rubber crawler belt
4	01814-90000	IDLER, front	2			steel crawler belt
	01814-90010	IDLER, front	2			rubber crawler belt
5	01816-10100	SPROCKET	2			steel crawler belt
	01816-12100	SPROCKET	2			rubber crawler belt

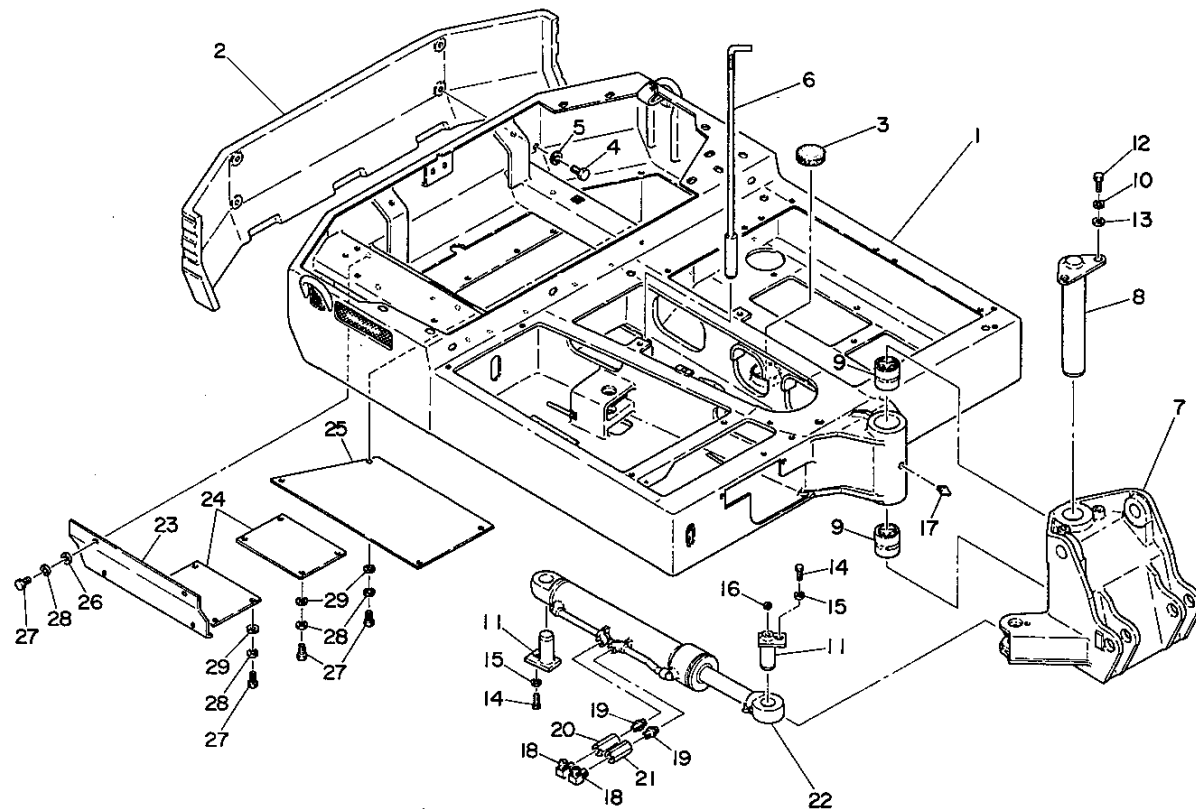
BLADE



G1-08a-0-D

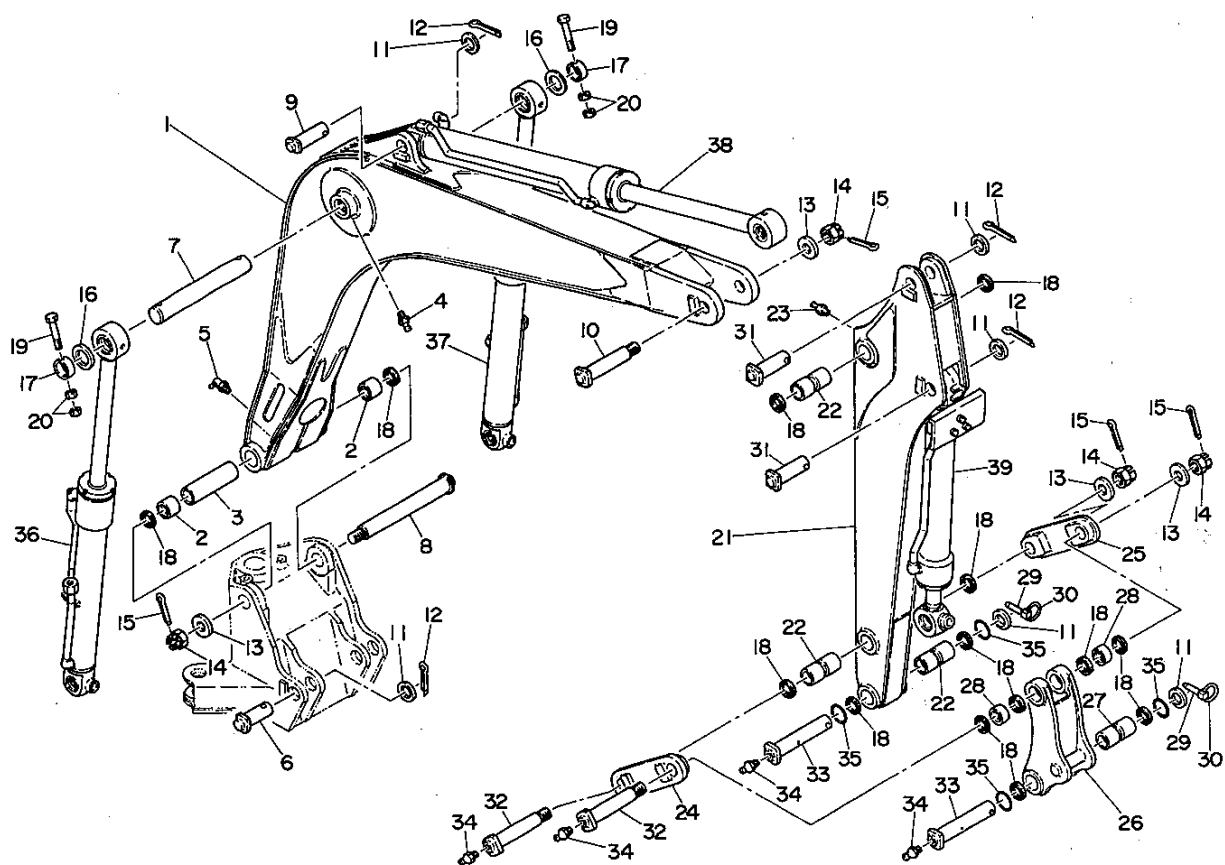
Item	Part number	Description	Q'ty	Chan.	Serial No.	Remarks
0-1	01863-90000	BLADE ASSY	1			
1	X*****	★BLADE	1			
2	00020-30030	★BUSHING	4			
3	01363-00200	PIN	2			
4	01363-00300	PIN	4			
5	11000-51070	BOLT	6			
6	11300-50010	NUT	12			
7	15600-01675	NIPPLE, grease	2			
8	19000-12400	CYLINDER, blade (R.H.)	1			
9	19000-12500	CYLINDER, blade (L.H.)	1			

TURNTABLE



61-11a-0-D

Item	Part number	Description	Q'ty	Chan.	Serial No.	Remarks
0-1	×*****	TURNTABLE ASSY	1			
1	×*****	★TURNTABLE	1			"TAKEUCHI"
2	01830-10400	★COUNTERWEIGHT	1			"TAKEUCHI"
3	01732-16600	★COVER	1			
4	11010-41425	★BOLT	4			
5	11415-40014	★WASHER	4			
6	03022-00100	PIN, lock	1			
7	01831-11100	BRACKET	1			
8	00019-00067	SHAFT	1			
9	00024-00008	BUSHING	2			
10	00931-11300	WASHER	2			
11	00019-00003	PIN	2			
12	11000-41240	BOLT	2			
13	11400-11012	WASHER, spring	2			
14	11000-41030	BOLT	2			
15	11400-10010	WASHER, spring	2			
16	15018-10001	PLUG	1			
17	15600-10000	NIPPLE, grease	1			
18	15111-00003	ELBOW, 90°	2			
19	15015-00003	CONNECTOR	2			
20	15400-10330	VALVE	1			
21	15400-10325	VALVE	1			
22	19000-25100	CYLINDER, swing	1			
23	01882-13200	COVER	1			
24	01882-13300	COVER	2			
25	01882-13400	COVER	1			
26	00036-08252	WASHER	4			
27	11000-40820	BOLT	16			
28	11400-20008	WASHER, spring	16			
29	11411-10008	WASHER, plain	12			

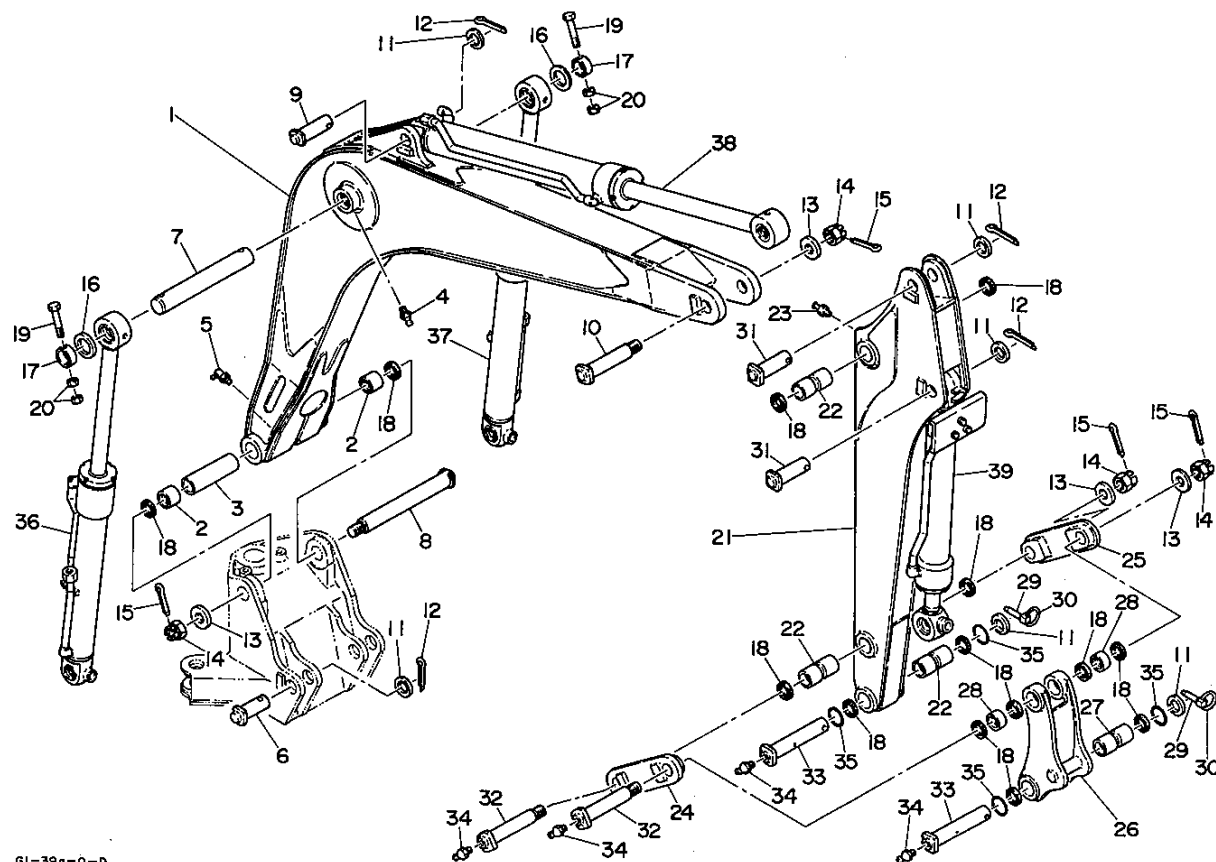


G1-39a-0-0

Item	Part number	Description	Q'ty	Chan.	Serial No.	Remarks
0-1	01760-90000	BOOM ASSY	1			
1	X*****	★BOOM	1			
2	00024-40040	★BUSHING	2			
3	00035-00008	★COLLAR	1			
4	15600-01000	★NIPPLE, grease	2			
5	15600-01900	★NIPPLE, grease	1			
6	00010-40106	PIN	2			
7	00015-00027	PIN	1			
8	00019-00044	PIN	1			
9	00010-00007	PIN	1			
10	00014-04001	PIN	1			
11	00030-40000	COLLAR	AR		t=1.0mm	
	00030-40001	COLLAR	AR		t=1.6mm	
	00030-40002	COLLAR	AR		t=2.3mm	
	00030-40003	COLLAR	AR		t=3.2mm	
	00030-40004	COLLAR	AR		t=4.0mm	
	00030-40005	COLLAR	AR		t=5.0mm	
12	12100-00860	PIN, split	5			
13	00039-00009	WASHER	4			
14	11325-20030	NUT, castle	4			
15	12100-00655	PIN, split	4			
16	00036-51753	WASHER	2			
17	00033-51022	COLLAR	2			
18	14322-00040	SEAL, dust	14			
19	11000-51080	BOLT	2			
20	11300-50010	NUT	4			
0-2	01761-90000	ARM ASSY	1			
21	X*****	★ARM	1			
22	00021-00007	★BUSHING	3			
23	15600-01000	★NIPPLE, grease	1			

G1-39a-1-L

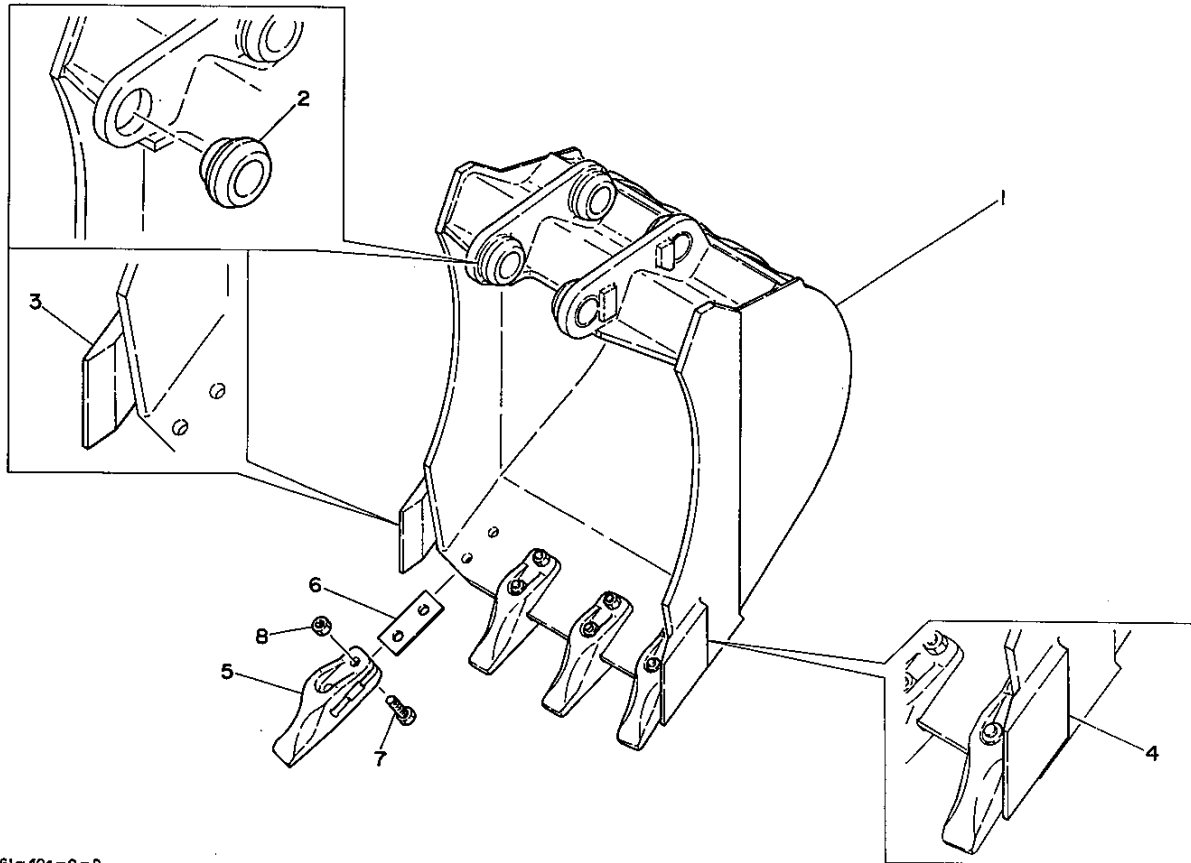
HOE



G1-39a-0-D

Item	Part number	Description	Q'ty	Chan.	Serial No.	Remarks
24	01761-32200	PLATE (R.H.)	1			
25	01761-32300	PLATE (L.H.)	1			
0-3	01861-90001	ARM ASSY, link	1			
26	X*****-*****	★ARM, link	1			
27	00021-00007	★BUSHING	1			
28	00021-00009	★BUSHING	2			
29	01361-48100	PIN, lock	2			
30	01361-48200	RING	2			
31	00010-40125	PIN	2			
32	00014-24001	PIN	2			
33	00013-00001	PIN	2			
34	15600-01000	NIPPLE, grease	4			
35	14329-00003	O-RING	4			
36	19000-11200	CYLINDER, boom (R.H.)	1		#36003~#36261	
	19000-32400	CYLINDER, boom (R.H.)	1		#36262~	
37	19000-11300	CYLINDER, boom (L.H.)	1		#36003~#36261	
	19000-32500	CYLINDER, boom (L.H.)	1		#36262~	
38	19000-11400	CYLINDER, arm	1			
39	19000-24500	CYLINDER, bucket	1		#36003~#36261	
	19000-35400	CYLINDER, bucket	1		#36262~	

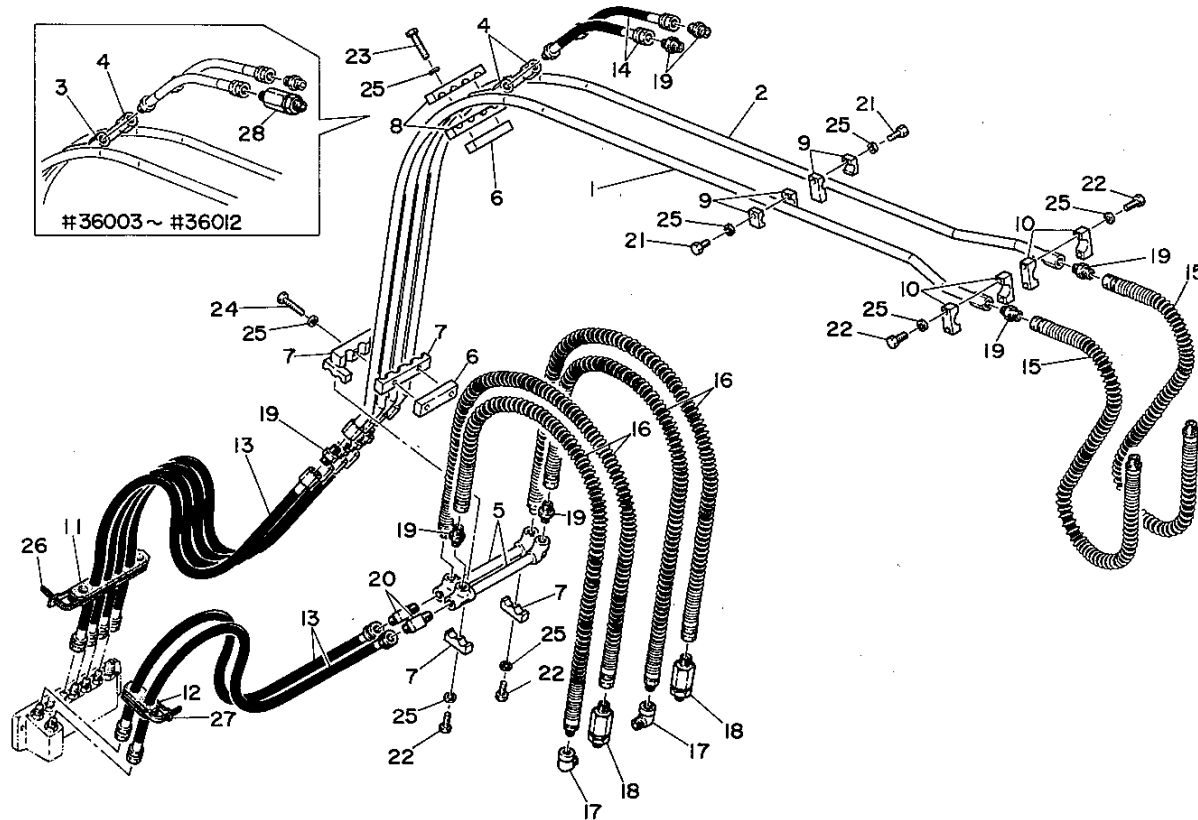
BUCKET



G1-40a-0-0

Item	Part number	Description	Q'ty	Chan.	Serial No.	Remarks
0-1	01862-10400	BUCKET ASSY	1			
1	X*****	★BUCKET	1			
2	00029-00010	★★BUSHING	4			
3	01762-00112	★★CUTTER, side (R.H.)	1			
4	01762-00113	★★CUTTER, side (L.H.)	1			
5	01362-09900	★TOOTH	4			
6	01362-09801	★SHIM	AR			t=0.8mm
	01362-09802	★SHIM	AR			t=1.0mm
	01362-09803	★SHIM	AR			t=1.2mm
7	11010-51245	★BOLT	8		old type	
	11010-41245	★BOLT	8		new type	
8	11305-50012	★NUT	8		old type	
	11305-40012	★NUT	8		new type	

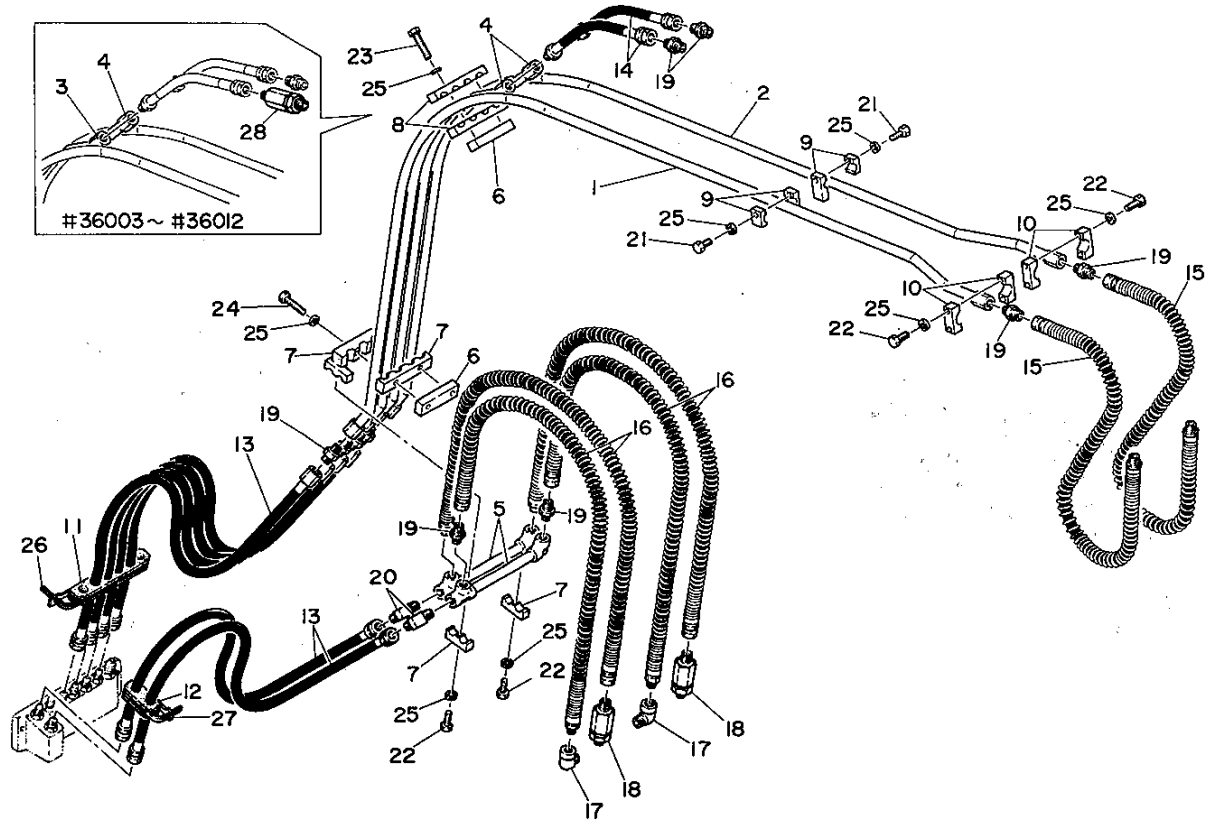
PIPING ; HOE 1



01-41a-0-D

Item	Part number	Description	Q'ty	Chan.	Serial No.	Remarks
1	01873-10100	PIPE	1			
2	01873-10200	PIPE	1			
3	01873-11100	PIPE	1		#36003~#36012	
4	01873-11200	PIPE	1		#36003~#36012	
	01873-11200	PIPE	2		#36013~	
5	01373-47500	PIPE	2			
6	01360-10120	PLATE	2			
7	01373-47100	CLAMP	1			
8	01373-10900	CLAMP	1			
9	01373-41400	CLAMP	2			
10	01373-46700	CLAMP	2			
11	01873-10700	CLAMP	1			
	01873-16100	CLAMP	1		#36 ~	Scandinavia exc. Denmark
12	01873-11400	CLAMP	1			
	01873-16200	CLAMP	1		#36 ~	Scandinavia exc. Denmark
13	19091-09120	HOSE ASSY	6			
	19204-23120	HOSE ASSY	6		#36 ~	Scandinavia exc. Denmark
14	19090-09035	HOSE ASSY	2			
	19204-03035	HOSE ASSY	2		#36 ~	Scandinavia exc. Denmark
15	19092-09085	HOSE ASSY	2		old type	
	19051-09085	HOSE ASSY	2		new type	
16	19092-09080	HOSE ASSY	4			
	19204-03080	HOSE ASSY	4		#36 ~	Scandinavia exc. Denmark
17	15013-00003	ELBOW, 90°	2			
18	19017-07800	VALVE	2			
19	15100-00003	ADAPTOR	9		#36003~#36012	
	15100-00003	ADAPTOR	10		#36013~	
20	15111-00003	ELBOW, 90°	2			
21	11000-50825	BOLT	2			
22	11000-50830	BOLT	6			

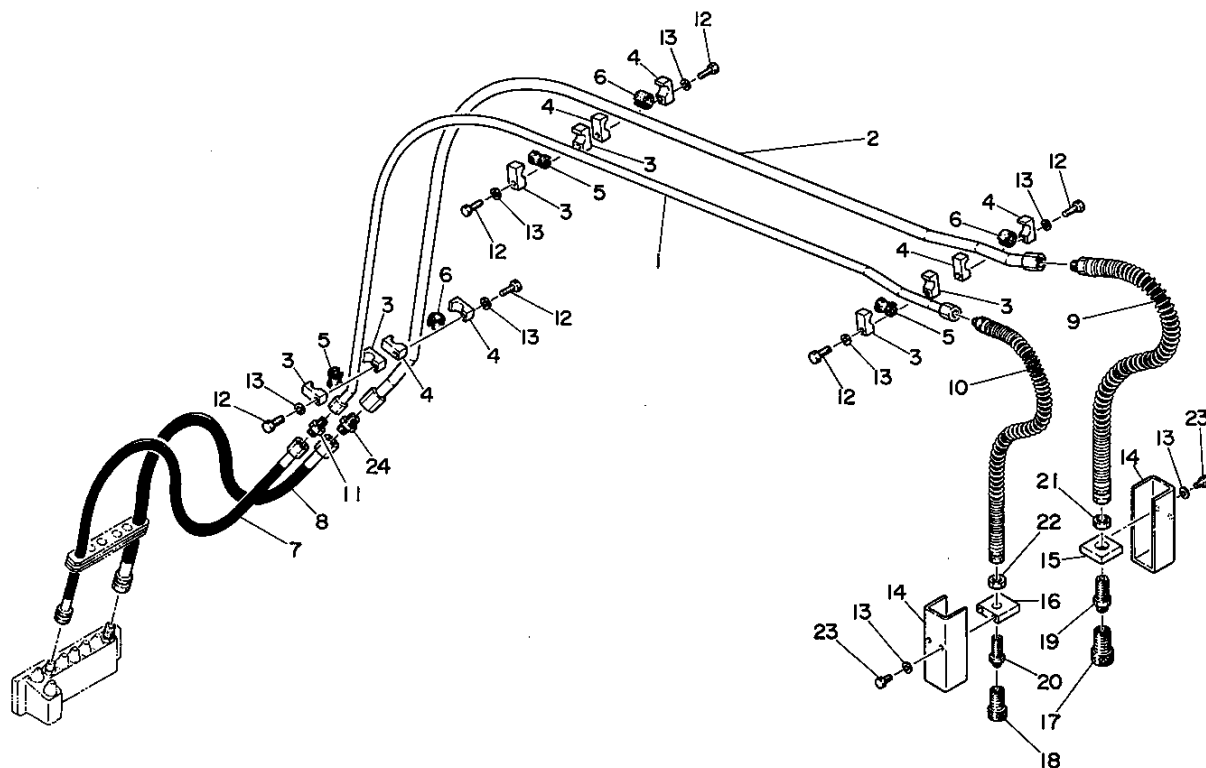
PIPING ; HOE 1



61-41a-0-0

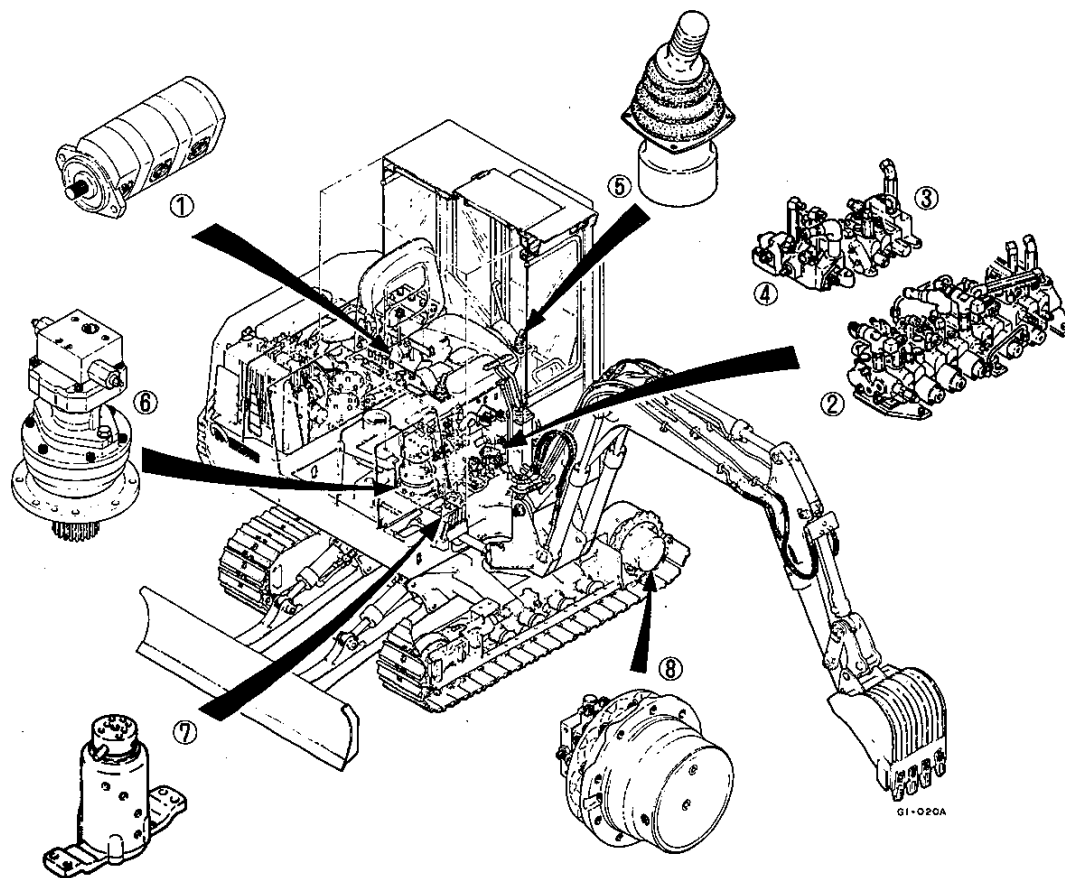
Item	Part number	Description	Q'ty	Chan.	Serial No.	Remarks
23	11000-50845	BOLT	2			
24	11000-50850	BOLT	2			
25	11400-10008	WASHER, spring	12			
26	16522-00007	BAND	2			
27	16522-00005	BAND	1			
28	19017-07900	VALVE	2		#36003-#36012	

PIPING ; HOE 2



G1-42a-0-0

Item	Part number	Description	Q'ty	Chan.	Serial No.	Remarks
0-1	01873-90000	BREAKER PIPING ASSY	1			
1	01873-10500	★PIPE	1			
2	01873-11300	★PIPE	1			
3	03073-00600	★CLAMP	3			
4	03073-00700	★CLAMP	3			
5	01473-51300	★PROTECTOR	3			
6	15314-28019	★PROTECTOR	3			
7	19091-09120	★HOSE ASSY	1			
	19204-23120	★HOSE ASSY	1		#36 ~	Scandinavia exc. Denmark
8	19052-12125	★HOSE ASSY	1			
	19204-24125	★HOSE ASSY	1		#36 ~	Scandinavia exc. Denmark
9	19051-12075	★HOSE ASSY	1			
10	19092-09075	★HOSE ASSY	1			
	19051-09075	★HOSE ASSY	1		#36 ~	Scandinavia exc. Denmark
11	15100-00003	★ADAPTOR	1			
12	11000-50835	★BOLT	6			
13	11400-10008	★WASHER, spring	10			
14	03073-10100	★COVER	2			
15	03073-11500	★PLATE	1			
16	03073-11600	★PLATE	1			
17	15166-00004	★SOCKET, coupling	1			
18	15166-00003	★SOCKET, coupling	1			
19	00072-00155	★ADAPTOR	1			
20	00072-00153	★ADAPTOR	1			
21	00072-00156	★NUT	1			
22	00072-00154	★NUT	1			
23	11000-40816	★BOLT	4			
24	15110-00004	★ADAPTOR	1			



G1-99a-0-D

Item	Part number	Description	Q'ty	Chan.	Serial No.	Remarks
1	19020-06800	PUMP, hydraulic	1			
2	19010-17900	VALVE, control	1			
	19010-16700	VALVE, control	1			Parking brake
3	19010-18200	VALVE, control (Sub)	1			
4	19017-10300	VALVE, selector	1			
5	19017-16700	LEVER, joystick	1			Left
	19017-16800	LEVER, joystick	1			Right
6	19031-02500	MOTOR, slew	1			
7	19040-05000	JOINT, swivel	1			
8	19031-01700	MOTOR, travel	2			steel crawler belt
	19031-02400	MOTOR, travel	2			rubber crawler belt

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