SEAM040500T

Operation & Maintenance Manual

PC58UU-3

HYDRAULIC EXCAVATOR

SERIAL NUMBERS PC58UU - 20001 and up

It is out policy to improve our products whenever it is possible and practical to do so. We reserve the right to make changes or improvements at any time without incurring any obligation to install such changes on products sold previously.

Due to this continuous program of research and development, revisions may be made to this publication. It is recommended that customers contact their distributor for information on the latest revision.

December 2001

CONTENTS

FOREWORD

SAFETY

OPERATION

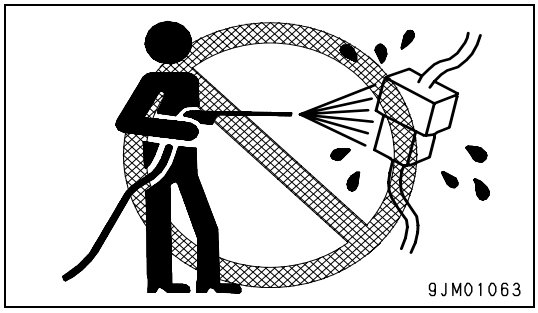
WARNING LABELS AND PICTOGRAMS

The following warning signs and safety labels are used on this machine.

- Be sure that you fully understand the correct position and content of labels.
- To ensure that the content of labels can be read properly. Be sure that they are in the correct place and always keep them clean. When cleaning them, do not use organic solvents or gasoline, there may cause the labels to peel off.
- There are also other labels in addition to the warning signs and safety labels. Handle those labels in the same way.
- If the labels are damaged, lost, or cannot be read properly, replace them with new ones. For details of the part numbers for the labels, see this manual or the actual label, and place an order with your Komatsu distributor.

Keep Machine Clean

- If water gets into the electrical system, there is a danger that it will cause malfunctions or faulty operation. Do not use water or steam to wash the electrical system (sensors, connectors).
- If inspection and maintenance is carried out when the machine is still dirty with mud or oil, there is a hazard that you will slip and fall, or that dirt or mud will get into your eyes. Always keep the machine clean.

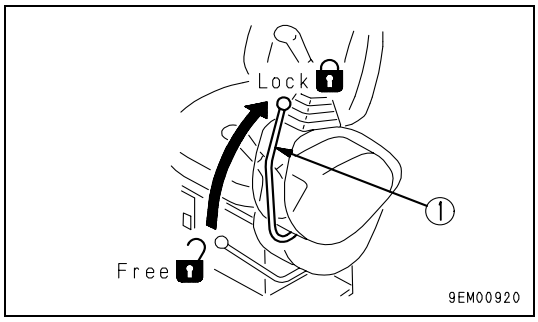


Keep Operator's Compartment Clean

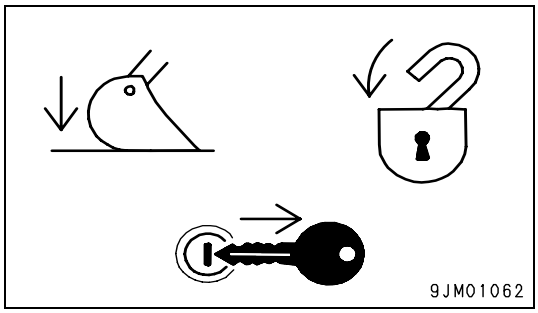
- When entering the operator's compartment, always remove all mud and oil from the soles of your shoes. If you operate the pedal with mud or oil affixed to your shoes, your foot may slip and this may cause a serious accident.
- Do not leave parts or tools lying around the operator's compartment.
- Do not stick suction pads to the window glass. Suction pads act as a lens and may cause fire.
- Do not use cellular telephones inside the operator's compartment when driving or operating the machine.
- Never bring any dangerous objects such as flammable or explosive items into the operator's cab.

Leaving Operator's Seat with Lock

- Before standing up from the operator's seat (such as when opening or closing the front window, installing or removing the bottom window, or adjusting the operator's seat), always lower the work equipment completely to the ground, set safety lock lever (1) securely to the LOCK position, then stop the engine. If you accidentally touch the levers when they are not locked, there is a hazard that the machine may suddenly move and cause serious injury or property damage.



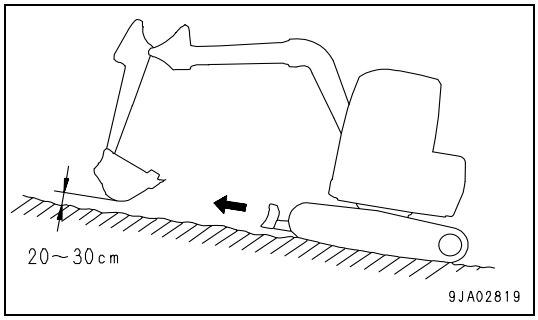
- When leaving the machine, always lower the work equipment completely to the ground, set safety lock lever (1) securely to the LOCK position, then stop the engine. Use the key to lock all the equipment. Always remove the key, take it with you, and keep it in the specified place.

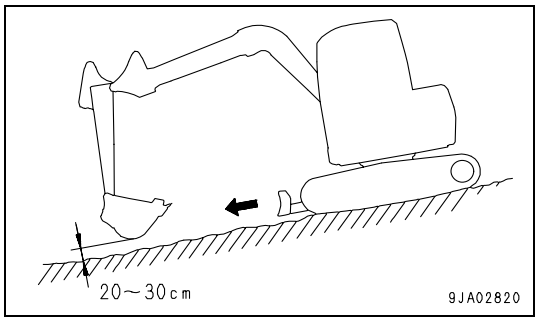


Traveling on Slopes

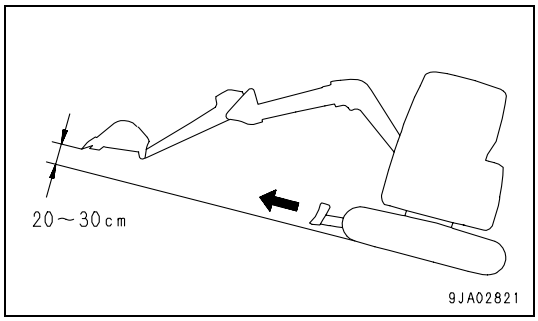
To prevent the machine from tipping over or slipping to the side, always do as follows.

- Keep the work equipment approx. 20 to 30 cm (8 to 12 in) above the ground. In case of emergency, lower the work equipment to the ground immediately to help stop the machine.
- When travel up slopes, set the operator's cab facing uphill, when travel down slopes, set the operator's cab facing downhill. Always check the firmness of the ground under the front of the machine when traveling.

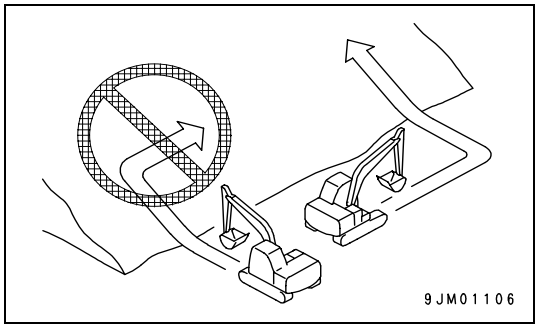




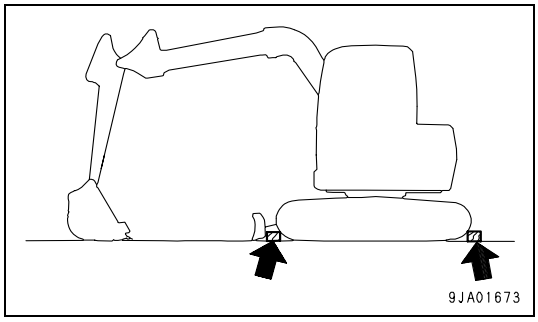
- When traveling up a steep slope, extend the work equipment to the front to improve the balance, keep the work equipment approximately 20 to 30cm (8 to 12 in) above the ground, and travel at low speed.



- When traveling downhill, lower the engine speed, keep the travel lever close to the neutral position, and travel at low speed.
- Always travel straight up or down a slope. Traveling at an angle or across the slope is extremely dangerous.
- Do not turn on slopes or travel across slopes. Always go down to a flat place to change the position of the machine, then travel on to the slope again.
- Travel on grass, fallen leaves, or wet steel plates with low speed. Even with slight slopes there is a hazard that the machine may slip.
- If the engine stops when the machine is traveling on a slope, move the control levers immediately to the neutral position and start the engine again.



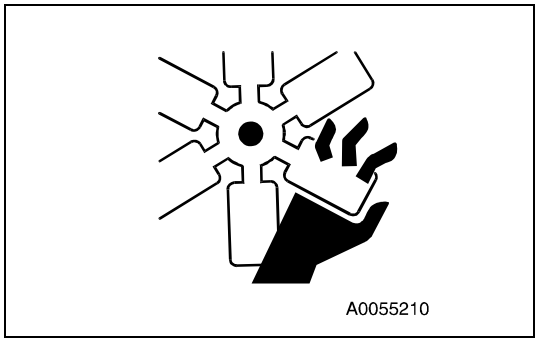
- Put blocks under the track to prevent the machine from moving.



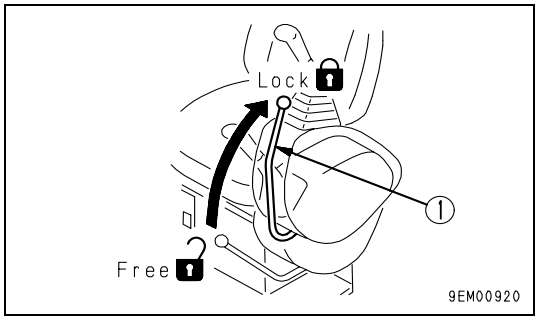
Two Workers for Maintenance when Engine is Running

To prevent injury, do not carry out maintenance with the engine running. If maintenance must be carried out with the engine running, carry out the operation with at least two workers and do as follows.

- One worker must always sit in the operator's seat and be ready to stop the engine at any time. All workers must maintain contact with the other workers.

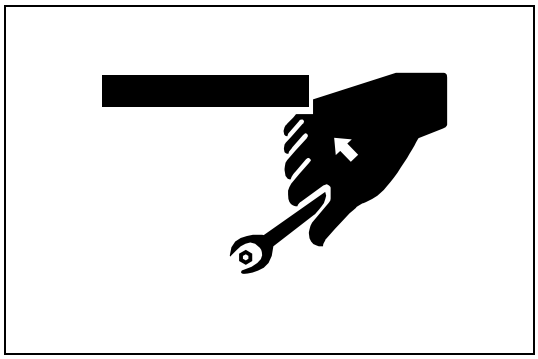


- Set safety lock lever (1) to the LOCK position.
- When carrying out operations near the fan, fan belt, or other rotating parts, there is a hazard of being caught in the parts, so be extremely careful.
- Do not touch any control levers. If any control lever must be operated, give a signal to the other workers to warn them to move to a safe place.
- Never drop or insert tools or other objects into the fan or fan belt. Parts may break or be sent flying.



Proper Tools

Use only tools suited to the task and be sure to use the tools correctly. Using damaged, low quality, faulty, makeshift tools or improper use of the tools could cause serious personal injury.



Personnel

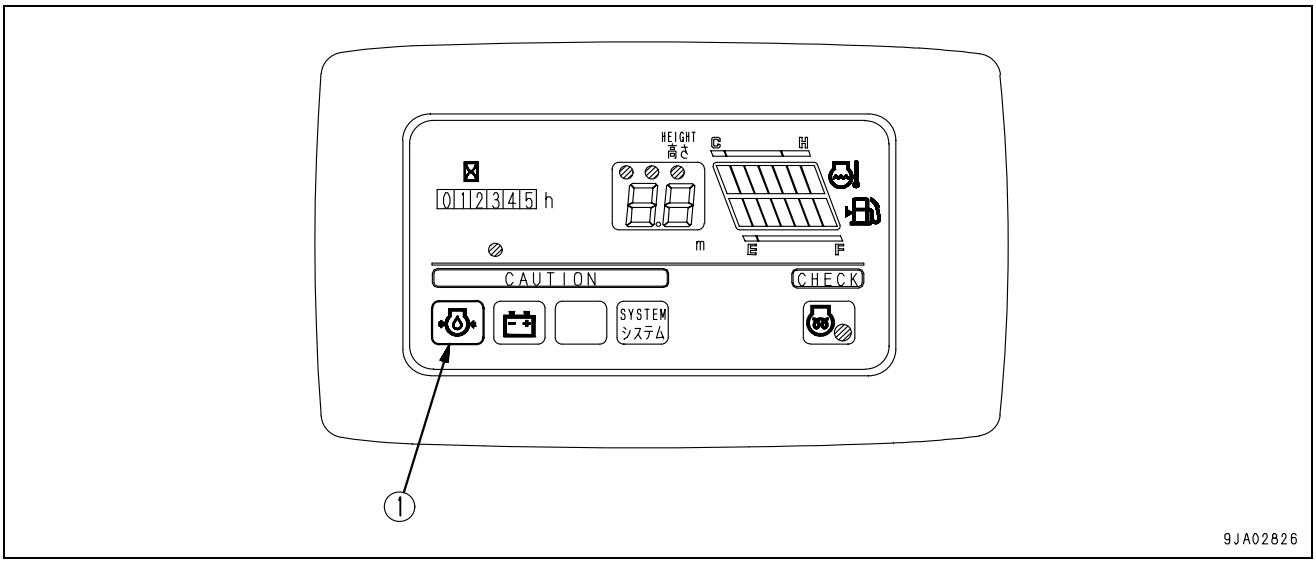
Only authorized personnel can service and repair the machine. Do not allow unauthorized personnel into the area. If necessary, employ an observer.

Emergency Monitors

⚠ CAUTION

If any monitor lamp lights up, stop the engine or run it at low idling, and take the following action.

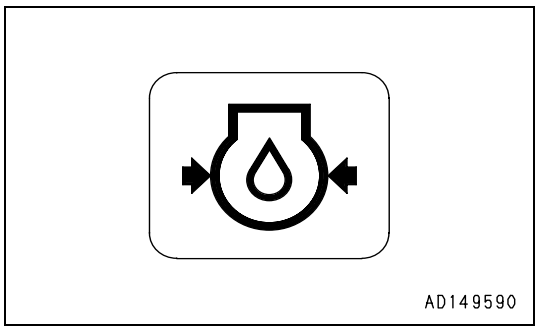
These are items that should be watched when the engine is running. If any abnormality occurs, the monitor for the problem point lights up and the buzzer sounds. Take action immediately.



(1) Engine Oil Pressure Monitor

Engine Oil Pressure Monitor

If the engine lubricating oil pressure goes below the normal value, this monitor when lights up and the buzzer sounds. If the lamp lights up, stop the engine, and check the lubricating system and oil level in the oil pan.



REMARK

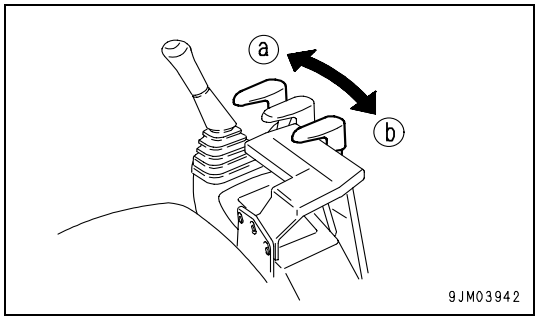
- **This lamp will light up if the starting switch is turned ON when the engine is stopped, but this does not indicate any abnormality.**
- **When the engine is started or stopped with the starting switch at the ON position, the lamp may light up and the buzzer may sound momentarily, but this does not indicate any abnormality.**

Blade Control Lever

NOTICE

- **This lever is not locked even when the safety lock lever is at the LOCK position, so when not operating the blade, be careful not to touch this lever.**
- **When operations using the blade are continued for more than one hour, pay careful attention to the rise in the water temperature.**

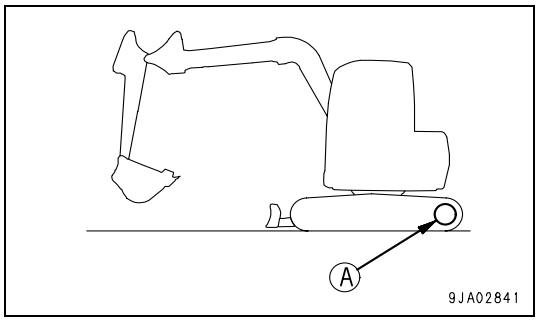
This lever (5) is used to control the blade.
(a) Lower
(b) Raise



Travel Levers

⚠ WARNING

- **Do not put your foot on the pedal unless the machine is traveling. If you leave your foot on the pedal and press it by mistake, the machine will move suddenly. This may lead to a serious accident. Do not rest a foot on the pedal except when traveling or steering the machine using the pedal.**
- **If the track frame is facing the rear, the direction of travel operations will be reversed.**

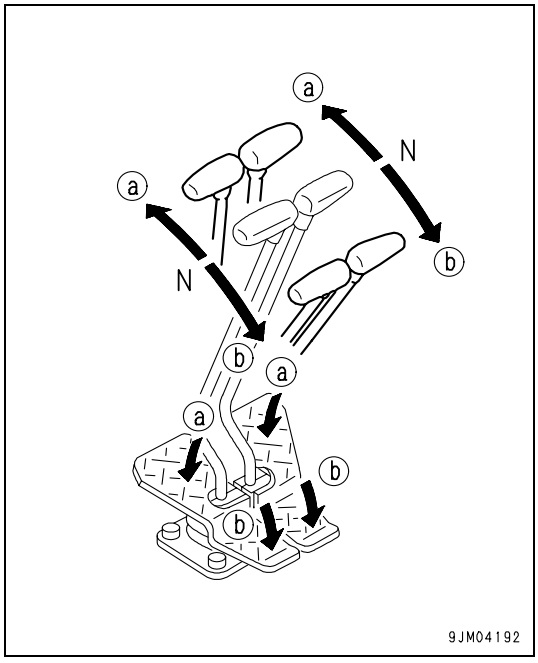


When operating the travel levers, check if the track frame is facing the front or the rear.

- **(If sprocket (A) is at the rear, the track frame is facing the front.)**
- **Be careful when traveling or steering the machine using the pedal.**

This lever (6) is used to change the direction of travel.
( ): This indicates operation of the pedal.
(a) FORWARD: This lever is pushed forward
(The pedal is angled forward)
(b) REVERSE: The lever is pulled back
(The pedal is angled back)
N (Neutral): The machine stops

REMARK
If the lever is shifted to the advance or reverse position from the neutral position, the alarm sounds to warm that the machine is starting to advance.



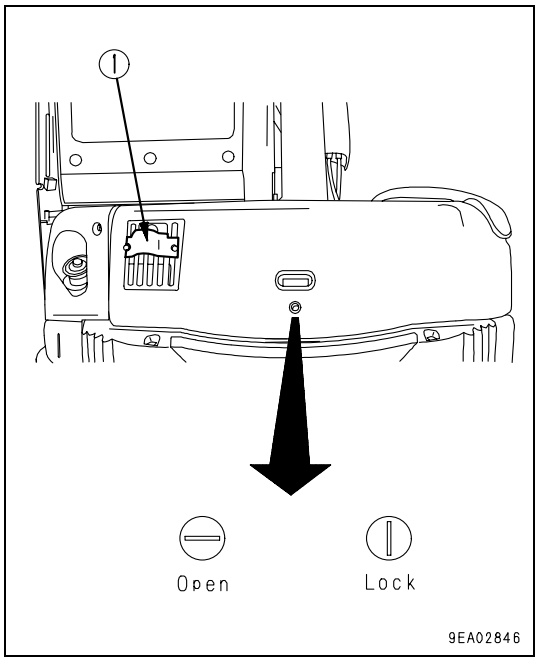
ENGINE HOOD

⚠ WARNING

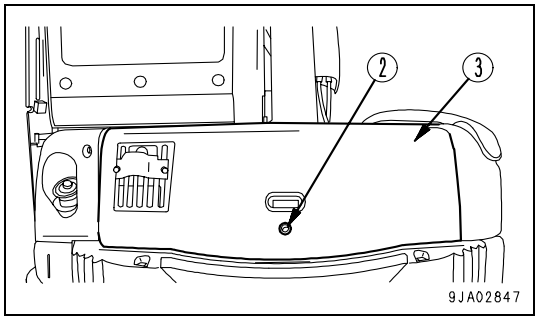
- **An engine exhaust pipe runs through part (1) under the label. This part (1) is hot, while the engine is running or immediately after it is shut off and can cause a burn if touched. Be careful not to touch it.**
- **When performing inspection or maintenance in the engine compartment, pull the engine hood completely open and latch it.**

NOTICE
Always keep the hood locked except when opening it. Check the direction of the key slot in the opening knob to check that it is locked.

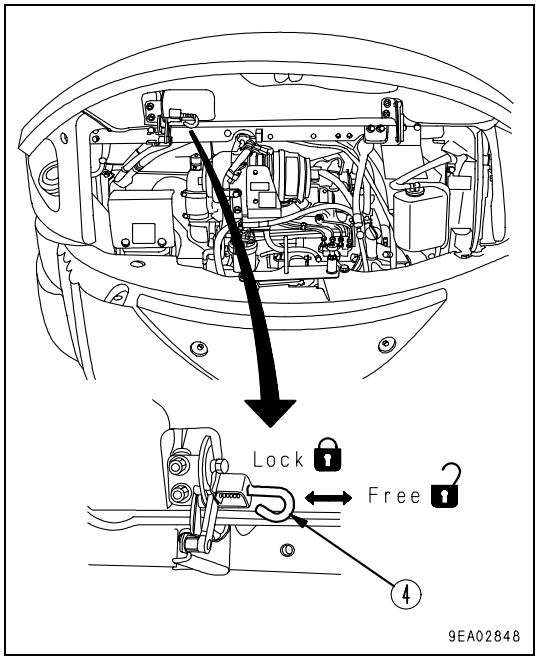
1. Release lock (2) of the engine hood. (For details see "Opening and Closing Covers with Lock (3-25)".)



2. Push engine hood opening knob (2) and open hood (3).



3. Push engine hood (3) fully open. Then stopper (4) automatically clicks in and latches the engine hood (3).
4. When closing engine hood (3), pull stopper (4) supporting the hood, then let down the hood gently and press it down for locking.

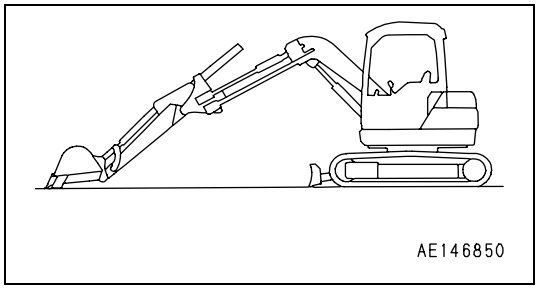


Hydraulic Oil Level - Check/Add

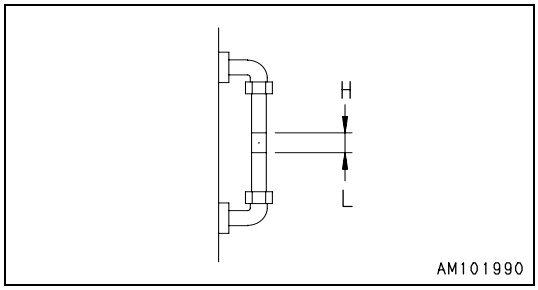
⚠ WARNING

- **The parts and oil are at high temperature after the engine is stopped, and may cause burns.Wait for the temperature to go down before starting the work.**
- **When removing the oil filler cap, turn it slowly to release the internal pressure, then remove it.**

1. If the work equipment is not in the condition shown in the diagram on the right, start the engine, run the engine at low speed, retract the arm and bucket cylinder rods fully, then lower the boom, set the bucket teeth in contact with the ground, and stop the engine.

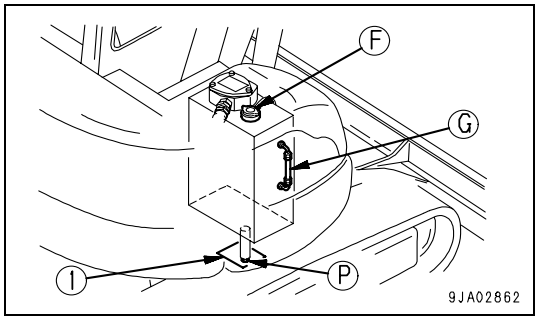


2. Confirm that the oil level is between the H and L marks of sight gauge (G).



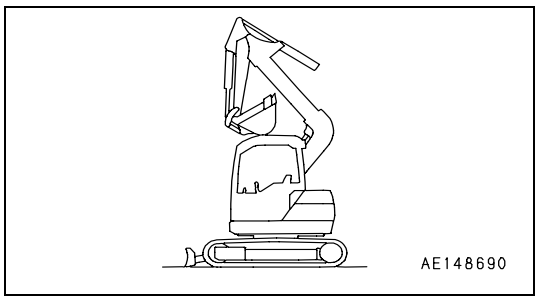
NOTICE
Do not add oil above the H line. This will damage the hydraulic circuit or cause the oil to spurt out.
If oil has been filled exceeding the H level, swing the upper structure until drain plug (P) beneath the hydraulic tank comes between the right and left track shoes and stop the engine. Wait for the oil to cool down sufficiently, then remove cover (1) and drain the excess oil through drain plug (P).

3. If it is below the L level, open the mud cover and add through filler port (F).



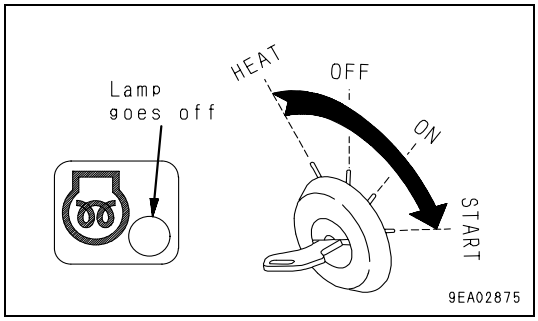
REMARK
The oil level will vary depending upon the oil temperature. Accordingly, use the following as the guide:
- **Before operation: around L level**
- **(Oil temperature 10 to 30ºC (50 to 86ºF))**
- **Normal operation: around H level**
- **(Oil temperature 50 to 80ºC (122 to 176ºF))**

4. Extend the boom, arm, and bucket cylinder fully as shown in the diagram on the right, remove the oil filler cap, then install the cap and pressurize the inside of the tank.

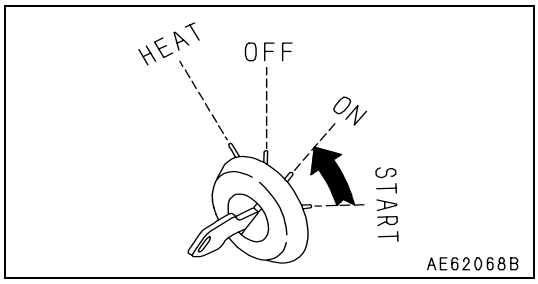


NOTICE
Be sure to pressurize the hydraulic tank. If it is not pressurized, the pump will suck in air, and this will adversely affect the equipment.

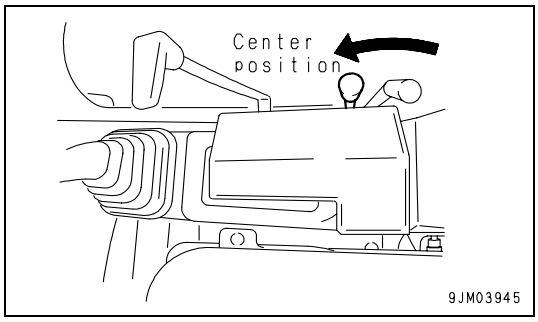
5. When pre-heating monitor (4) goes off, turn the key in starting switch (3) to the START position to start the engine.



6. When the engine starts, release the key in the starting switch (3). The key will return automatically to the ON position.



7. Return fuel control lever (2) to a position midway between the low idling and full speed positions.



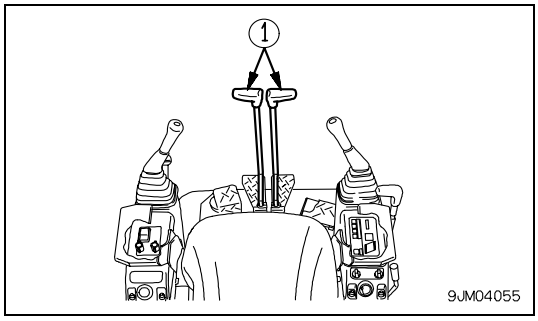
STEERING THE MACHINE

Steering

⚠ WARNING

Before operating the travel levers, check the position of the sprocket. If the sprocket is at the front, the operation of the travel levers is reversed.

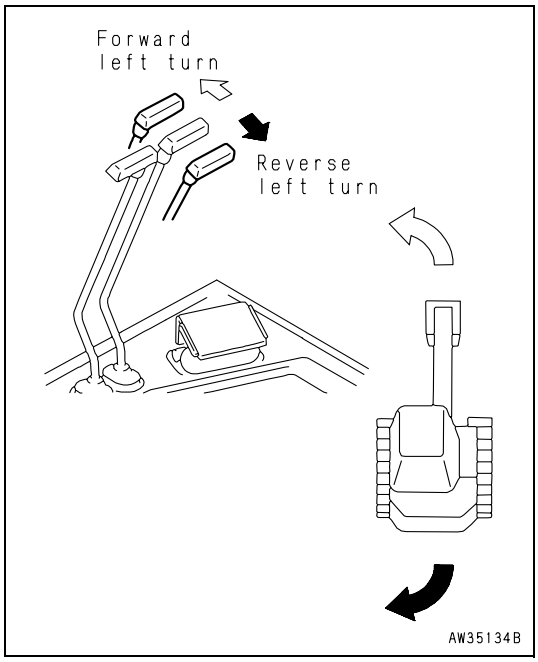
Use the travel levers to change direction.
Avoid sudden changes of direction as far as possible. In particular, when carrying out counter-rotation (spin turn), stop the machine first before turning.
Operate two travel levers (1) as follows.



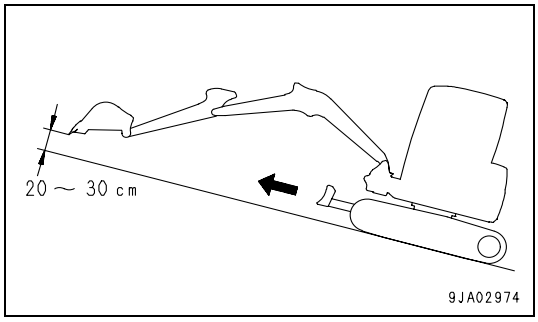
Steering the Machine when Stopped

When turning to the left:
Push the right travel lever forward to turn to the left when traveling forward; and pull it back to turn left when traveling in reverse.

REMARK
When turning to the right, operate the left travel lever in the same way.



2. When traveling up a steep hill of more than 15", set the work equipment to the posture shown in the diagram on the right.



Traveling Downhill

To brake the machine during downhill runs, put the travel lever in the neutral position. This will cause the brake to be automatically applied.

Engine Stopped on Slope

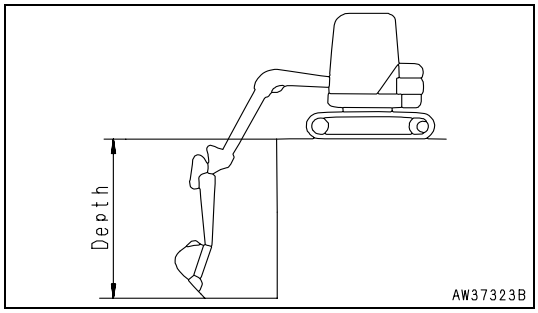
If the engine stops when traveling uphill, move the travel levers to the neutral position, stop the machine, then start the engine again.

Cab Doors on Slope

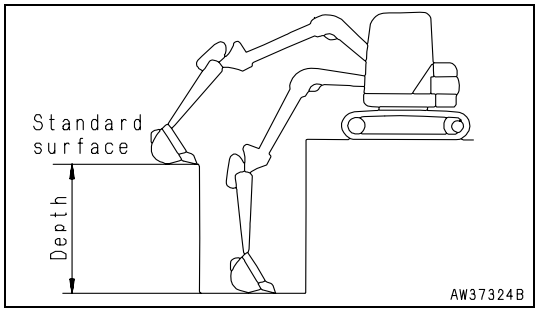
- Do not open or close the sliding door (cab specifications) on slopes when traveling or operating. The operating effort may change suddenly.
  Always keep the sliding door locked.
- Be extremely careful when opening or closing the sliding doors (cab specifications) when the machine is stopped on a slope. There is danger that the weight of the door may cause it to open or close suddenly.

Handling Automatic Control Device

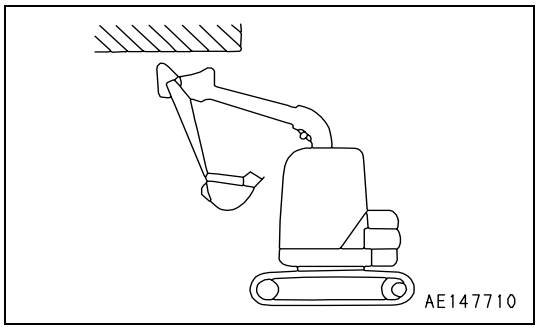
Depth display: This displays the depth from the ground surface.



Depth display 0 set mode: This displays the depth from the standard surface.



Height mode: This sets the amount the boom can be raised.

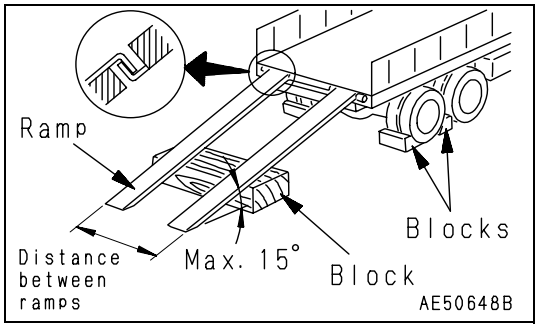


It is possible to set either the depth display or depth display 0 set mode together with height mode, so use these settings to match the operation.

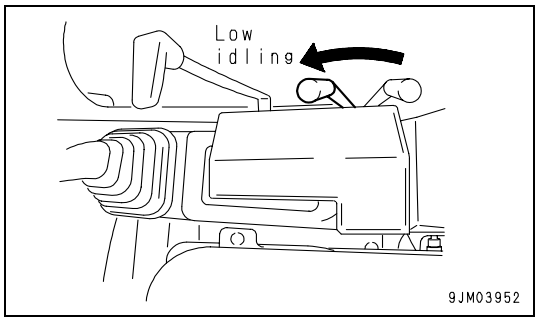
When loading or unloading, always use ramps or a platform and carry out the operation as follows.

Loading

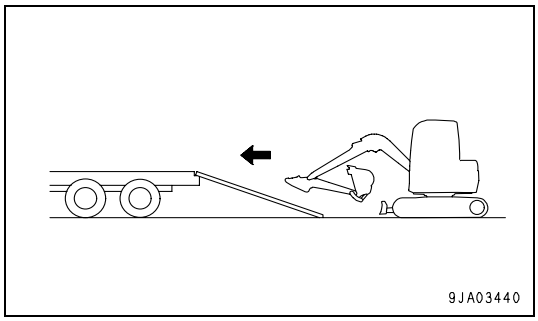
1. Perform loading and unloading on firm, level ground only.
   Maintain a safe distance from the edge of a road.
2. Properly apply the brakes on the trailer and put blocks under the tires to ensure that the trailer does not move.
   Then fix the ramps in line with the center of the trailer and the machine.
   Be sure that the two sides are on the same level.
   Make the slope of the ramps a maximum of 15º.
   Set the distance between the ramps to match the center of the tracks.



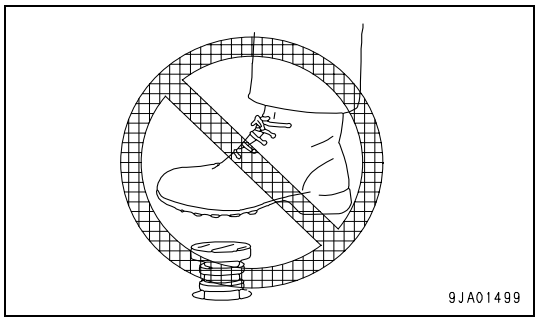
3. Run the engine at low speed.



4. When loading, set the work equipment at the front and the blade at the rear, with the undercarriage and upper structure set parallel.
5. Align the direction of travel with the ramps and travel slowly.
   Lower the work equipment as far as possible without causing interference.
   When on the ramps, operate only the travel lever. Do not operate any other lever or pedal.

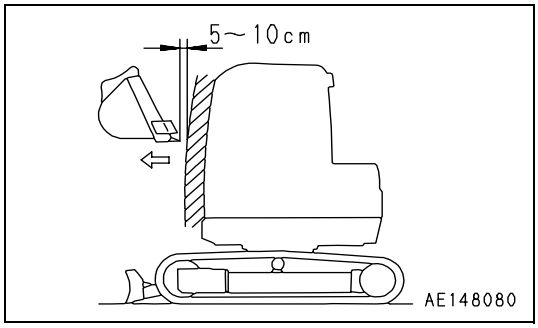


6. Do not the operate the accelerator pedal.

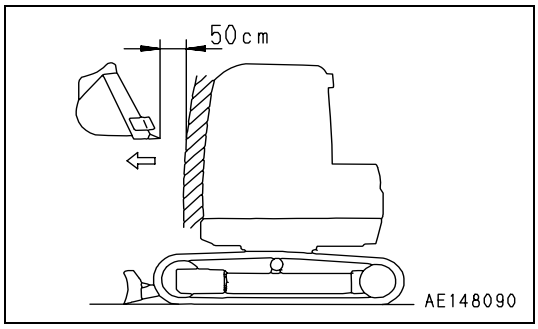


Phenomena That Are Not Failures On The electronic Control System

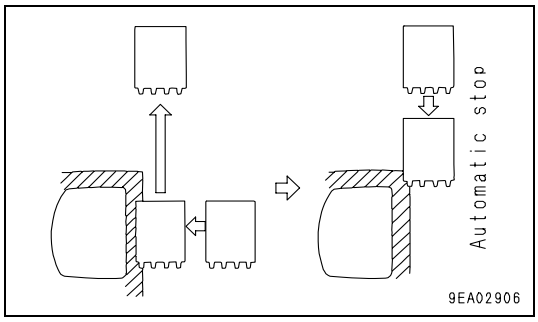
- After automatic stop, even when the work equipment has been moved 5 - 10 cm (2 - 4 in) to the front or right, it is impossible to raise the boom, pull the arm in, or operate the left offset.



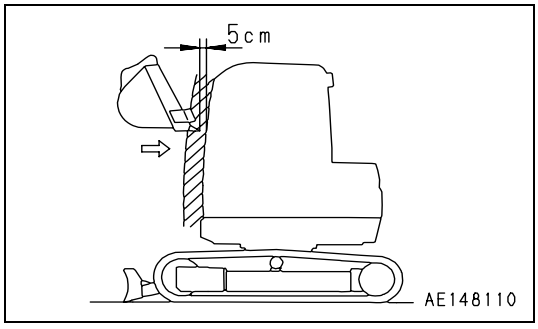
- After automatic stop, when the work equipment has been moved 50 cm (19.7 in) to the front, the speed of the work equipment is slow when the boom is raised or the arm is pulled in.
  (If the engine is running at low idle, it may even be impossible to raise the boom or pull the arm in.)



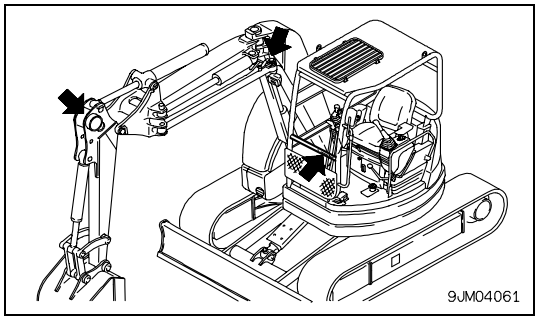
- After automatic stop when the boom is offset to the left, if the work equipment is moved to the front to escape from the condition, and is then returned to the original position, it automatically stops on the way. (If it is offset 5 cm (2 in) to the right, it can be returned to the original posture.)



- After automatic stop, when the cancel switch is turned on and the work equipment is moved closer to the operator's compartment, the controller carries out self diagnosis and it becomes impossible to operate the swing or any of the work equipment. (Error code 61 is displayed. For details, see "Electronic Control System (3-105)".)



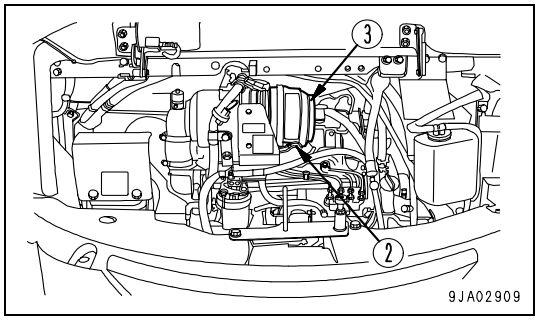
- When the work equipment angle sensor has been removed and installed again, the automatic stop position will change.



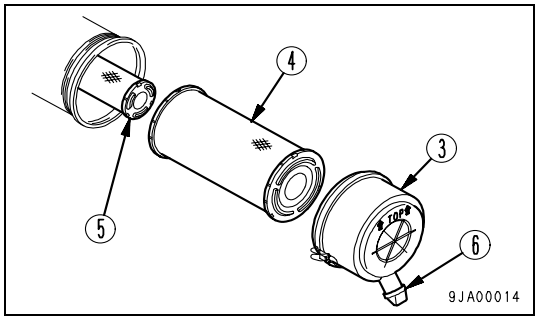
No.	Supplier	Engine Oil [CD or CE] SAE10W, 30, 40 10W30, 15W40 (The 15W40 oil marked * is CE.)	Gear Oil [GL-4 or GL-5] SAE80, 90, 140	Grease [Lithium-Base] NLGI No.2	Anti-freeze Coolant [Ethylene Glycol Base] Permanent Type
9	CONOCO	*Fleet motor oil	Universal gear lubricant	Super-sta grease	-
10	ELF	Multiperformance 3C Performance 3C	-	Tranself EP Tranself EP type 2	Glacelf
11	EXXON (ESSO)	Essolube D3 *Essolube XD-3 *Essolube XD-3 Extra *Esso heavy duty Exxon heavy duty	Gear oil GP Gear oil GX	Beacon EP2	All season coolant
12	GULF	Super duty motor oil *Super duty plus	Multi-purpose gear lubricant	Gulfcrown EP2 Gulfcrown EP special	Antifreeze and coolant
13	MOBIL	Delvac 1300 *Delvac super 10W-30, 15W-40	Mobilube GX Mobilube HD	Mobilux EP2 Mobilgrease 77 Mobilgrease special	-
14	PENNZOIL	*Supreme duty fleet motor oil	Multi-purpose 4092 Multi-purpose 4140	Multi-purpose white grease 705 707L White-bearing grease	Anti-freeze and summer coolant
15	PETROFINE	FINA kappa TD	FINA potonic N FINA potonic NE	FINA marson EPL2	FINA tamidor
16	SHELL	Rimura X	Spirax EP Spirax heavy duty	Albania EP grease	-
17	SUN	-	Sunoco GL5 gear oil	Sunoco ultra prestige 2EP Sun prestige 742	Sunoco antifreeze and summer coolant
18	TEXACO	*Ursa super plus Ursa premium	Multigear	Multifak EP2 Starplex 2	Coda 2055 startex antifreeze coolant
19	TOTAL	Rubia S *Rubia X	Total EP Total Transmission TM	Multis EP2	Antigal/antifreeze
20	UNION	*Guardol	MP gear lube LS	Unoba EP	-
21	VEEDOL	*Turbostar *Diesel star MDC	Multigear Multigear B Multigear C	-	Antifreeze

Replacing element

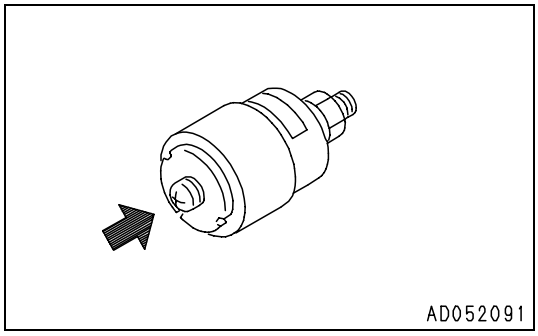
1. Open the engine hood, remove clip (2), then remove cover (3).



2. Remove outer element(4).
   Do not remove inner element(5) at this time, however.
3. Clean the interior of the air cleaner body, cover (3) and evacuator valve (6).
4. Remove inner element(5), then install a new inner element immediately.
5. Set the new outer element (4) in position.
6. Set the arrow mark on cover (3) at the top, install to the air cleaner body, then secure with clip (2).



7. Return the red piston in the dust indicator(1) to its original position.



Rubber Shoe Tension - Check/Adjust

(Machine equipped with rubber shoes)

The wear of the rubber shoe will vary with the work conditions and type of soil, so inspect the wear and track tension whenever necessary. Stop the machine on firm, horizontal ground when carrying out the inspection and maintenance.

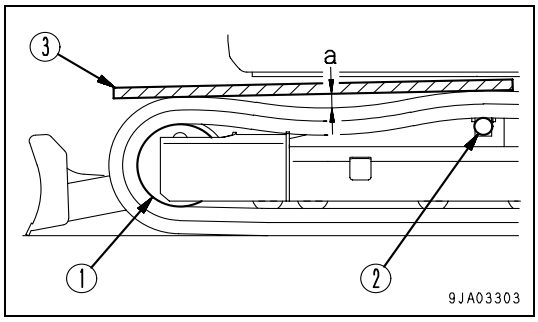
In particular, on new machines or after new tracks have been installed and the tension has been set to the specified value, the track tension will become loose in the first 5 to 30 hours when the machine has been used for a certain amount of repeated

travel. If the track tension is adjusted frequently until the initial loosening no longer occurs, this will prevent the shoes from coming off due to insufficient track tension.

If operations are carried out when the rubber shoe is loose, the track will come off and it will cause premature wear of the core.

Checking

1. Run the engine at low idling, move the machine forward a distance equal to the length of track on ground, then stop the machine.
2. Choose wooden block (3) that will reach from idler (1) to carrier roller (2), then place it on top of the track.
3. Measure the maximum deflection between the top surface of the rubber shoe and the bottom surface of the wooden block.
   - Standard deflection
     Deflection "a" should be 1 to 3 m (3 ft 3 in to 9 ft 10 in).

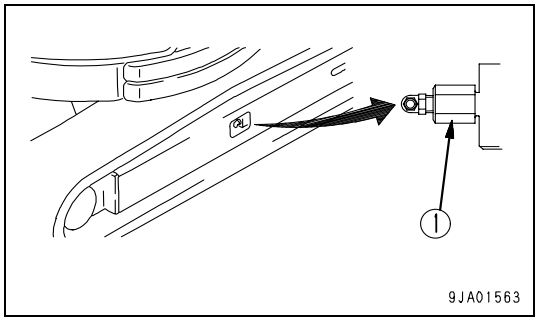


If the track tension is not at the standard value, adjust it in the following manner.

Adjustment

⚠ WARNING

There is danger of the plug flying out under the high internal pressure of the grease. When loosening plug (1), never loosen it more than one turn.
Never loosen any part other than plug (1). Never put your face in line with the mount of plug (1).
If the Rubber shoe tension is not relieved by this procedure, please contact your Komatsu distributor.



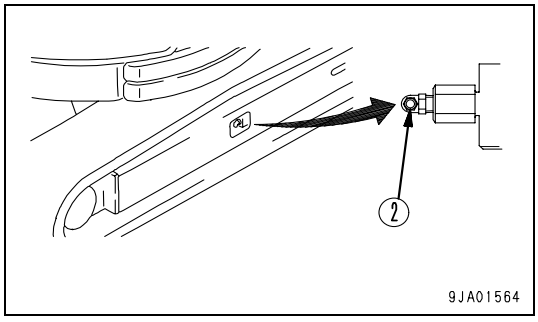
Increasing Track Tension

NOTICE

The standard value is low, so be careful not to tighten the rubber shoe too much.

Prepare a grease gun.

1. Pump in grease through grease fitting (2) with a grease pump.
2. To check that the track tension is correct, run the engine at low idling, move the machine forward a distance equal to the length of track on ground, then stop the machine.
3. Check the rubber shoe tension again, and if the tension is not correct, adjust it again.
4. If the tension is still low after supplied grease, the rubber shoe needs to be replaced or the seal in the cylinder needs to be replaced. Ask your Komatsu distributor for replacement.

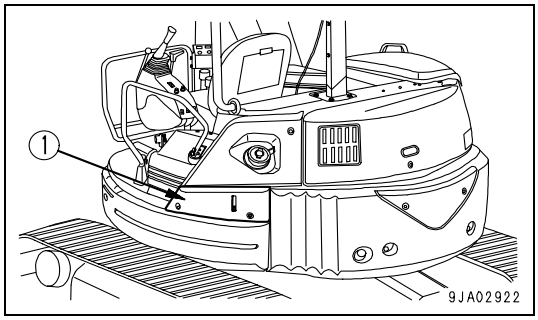


Hydraulic System - Bleed Air

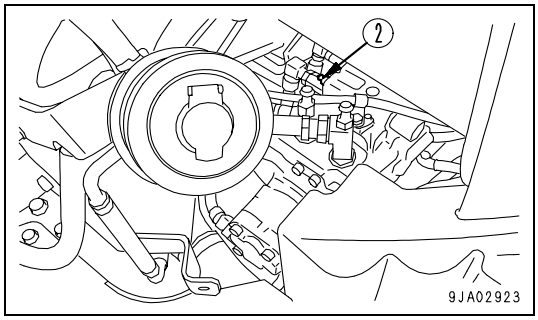
NOTICE

If the pump is operated without filling the pump case with hydraulic oil, there is danger that the pump may be prematurely damaged. Be sure to bleed the air completely.

1. Bleeding air from piston pump
   1) Remove the oil filler cap from the hydraulic oil tank.
   2) Open cover (1) at left side of machine.



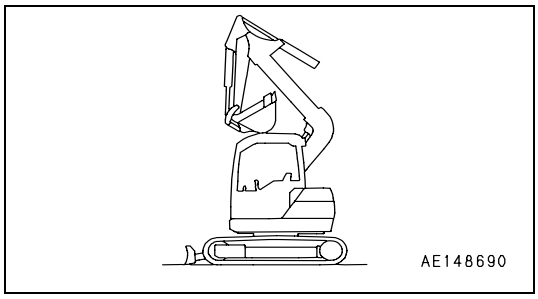
   3) Loosen air bleeder (2) and confirm that oil oozes through it (the all air has been bled.)
   4) After bleeding air, tighten the air bleeder.
      Tightening torque:
      8.83 ± 0.98 N·m (0.9 ± 0.1 kgf·m, 6.5 ± 0.7 lbft)
   5) Tighten the oil filler cap of the hydraulic oil tank.



NOTICE

Be sure to pressurize the hydraulic tank. If it is not pressurized, the pump will suck in air, and this will adversely affect the equipment.

   6) Extend the boom, arm, and bucket cylinder fully as shown in the diagram on the right. Remove the oil filler cap, then install the cap and pressurize the inside of the tank.
   7) After bleeding air from the hydraulic tank, check the oil level. Refer to section "Hydraulic Oil Level - Check/Add (3-36)" in this manual.



NOTICE

If the engine is run immediately at high speed or the cylinder is operated to the end of its stroke, the air inside the cylinder may cause damage to the piston packing.

2. Start the engine. For details, see "STARTING ENGINE (3-43)".
   Run the engine at low idling for 10 minutes, then do as follows.
3. Bleeding air from cylinders
   1) Run the engine at low idling, and extend and retract each cylinder 4 to 5 times. Do not operate the cylinder to the end of its stroke. (Stop at a point approx. 100 mm (4 in) before the end of the stroke.)
   2) Next, operate each cylinder 3 to 4 times to the end of its stroke.
   3) Finally, operate each cylinder 4 to 5 times to the end of its stroke to completely remove the air.

EVERY 500 HOURS MAINTENANCE

Maintenance for every 100 and 250 hours should be carried out at the same time.

Engine Crankcase Oil Filter Cartridge - Replace

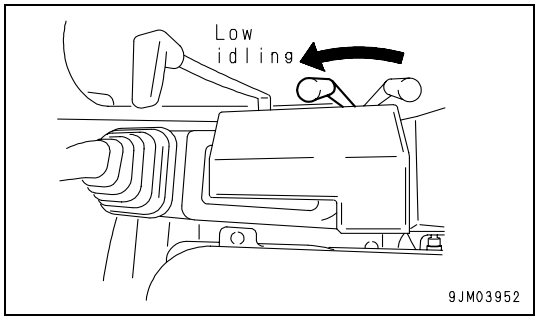
⚠ WARNING

The parts and oil are at high temperature immediately after the engine is stopped, and may cause serious burns. Wait for the temperature to go down before starting the operation.

- Change oil in engine oil pan should be carried out at the same time.
- Filter wrench

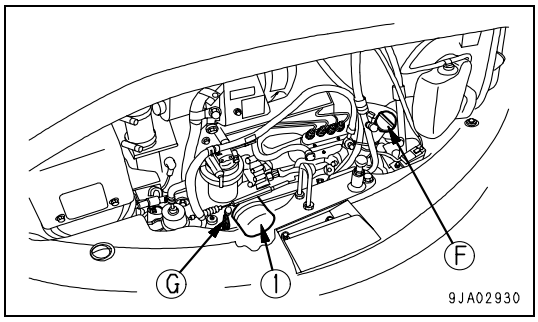
1. Set the fuel control lever at low idling to stop the engine.

REMARK
The reason for setting the fuel control dial at low idling is to provide room for the filter wrench to grip due to the slackening of the fuel cable above the engine oil filter.



2. Drain the engine oil. For details, see "Engine Crankcase Oil - Change (4-44)".
3. Using a filter wrench, turn filter cartridge (1) counterclockwise to remove it.
4. Clean the filter holder, coat the steel surface of the new filter cartridge with clean engine oil (or coat it thinly with grease), then install it.

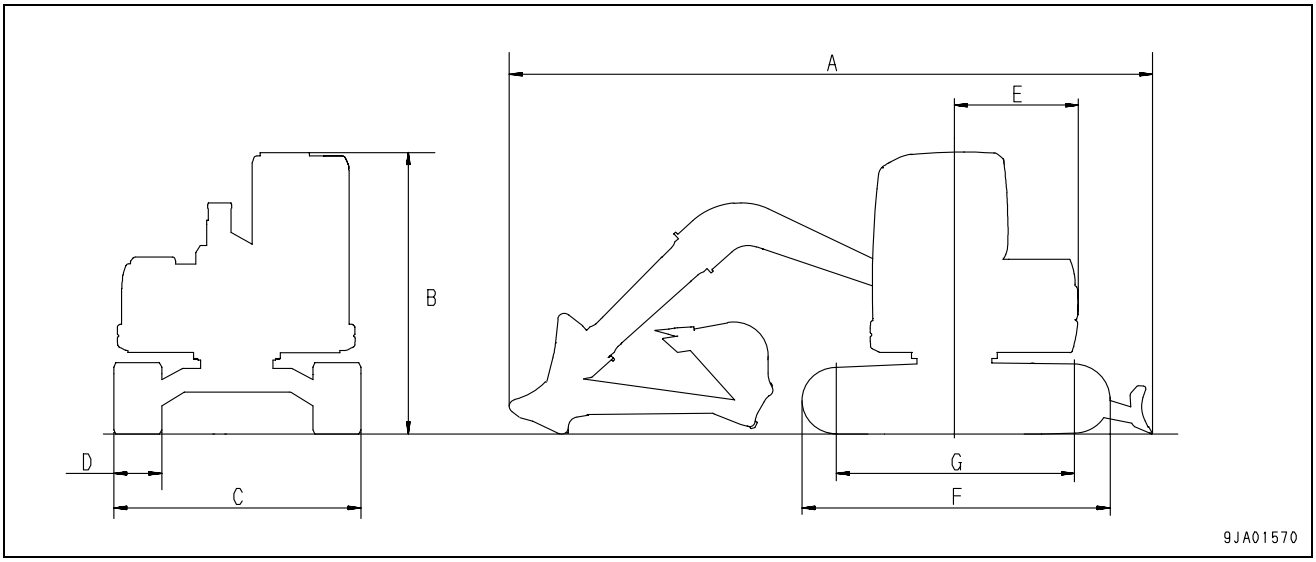
REMARK
Confirm that no remnants of old packing still adhere to the filter holder as this may result in oil leakage.
Check that there is no old packing affixed to the filter holder. If there is any old packing affixed to the filter, it will cause leakage of oil.



5. When installing; tighten until the packing surface contacts the seal surface of the filter holder, then tighten it up 1/2 to 3/4 of a turn.
6. After replacing the filter cartridge, add engine oil through oil filler port (F) so that the oil level is between the H and L marks on dipstick (G).
7. Run the engine at idle for a while, then stop the engine and confirm that the oil level is between the H and L lines according to "Engine Crankcase Oil Level - Check/Add (3-34)".

SPECIFICATIONS

	Item		Unit	Road liner specified	Rubber shoe specified	Steel shoe specified
	Operating weight	Canopy specified	kg (lb)	5,330 (11,753)	5,230 (11,532)	5,280 (11,624)
		Cab specified	kg (lb)	5,390 (11,885)	5,290 (11,664)	5340 (11,775)
	Bucket capacity		m^3 (yd^3)	0.22 (0.29)		
	Name of engine		-	Komatsu 4D88E-3 Diesel engine		
	Engine horsepower		kW (HP)/rpm	29.4 (39)/2,400		
A	Overall length		mm (ft in)	5,335 (17'6")		
B	Overall height	Canopy specified	mm (ft in)	2,625 (8'7")	2,610 (8'7")	2,605 (8'7")
		Cab specified	mm (ft in)	2,625 (8'7")	2,610 (8'7")	2,605 (8'7")
C	Overall width		mm (ft in)	2,000 (6'7")		
D	Track width		mm (ft in)	400 (1'4")		
E	Radius of upper stracture		mm (ft in)	1,035 (3'5")		
F	Length of track		mm (ft in)	2,470 (8'1")	2,460 (8'1")	2,430 (7'12")
G	Tumbler center distance		mm (ft in)	1,910 (6'3")	1,940 (6'4")	1,910 (6'3")
	Min. ground clearance		mm (ft in)	335 (1'1")	320 (1'1")	315 (1'0")
	Travel speed (Low/High)		km/h (MPH)	2.5 (1.6)/4.2 (2.6)	2.7 (1.7)/4.5 (2.8)	2.5 (1.6)/4.2 (2.6)
	Swing speed		rpm	10.0		



AIR CONDITIONER MAINTENANCE

When Required

Refrigerant (Gas) Level - Check

⚠ WARNING

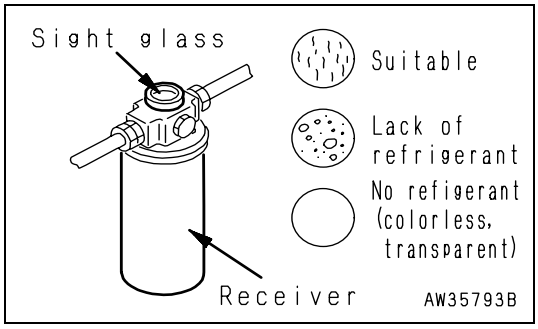
If the refrigerant used in the cooler gets into your eyes or on your hands, it may cause loss of sight or frostbite. Do not touch the refrigerant. Never loosen any part of the refrigerant circuit.
Do not bring any flame close to any point where the refrigerant gas is leaking.

If there is a lack of refrigerant (gas), the cooling performance will be poor. When operating the cooler at high speed with the engine at full throttle, use the receiver sight glass (inspection window) to check the condition of the refrigerant gas (Freon R134a) flowing in the refrigerant circuit.

- No bubbles in refrigerant flow: Suitable

Some bubbles in flow (bubbles pass continuously): Lack of refrigerant

- Colorless, transparent: No refrigerant



REMARK
When there are bubbles, the refrigerant gas level is low, so contact your refrigerant dealer to have refrigerant added. If the air conditioner is run with the refrigerant gas level low, it will cause damage to the compressor.

Off Season Checks

Even during the off-season, run the compressor at low speed for 3 to 5 minutes once a month to prevent the loss of the oil film at the lubricated parts of the compressor.

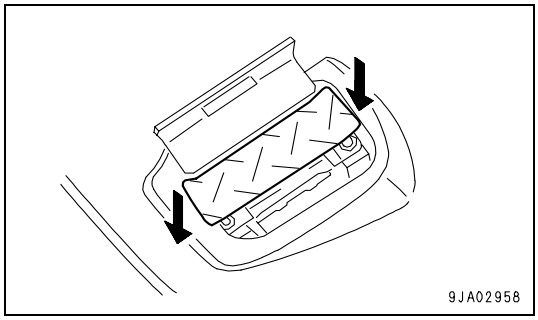
Inspection and Maintenance Items

Check, maintenance items	Content of check, maintenance	Guideline for maintenance interval
Refrigerant (gas)	Charge amount	Twice a year (spring, autumn)
Condenser	Clogged fins	Every 500 hours
Compressor	Operating condition	Every 4000 hours
V-belt	Damage, tension	Every 250 hours
Blower motor, fan	Operating condition (does it When required make abnormal noise?)	When required
Control mechanism	Operating condition (does it function normally?)	When required
Piping mounts	Mounting condition, looseness at tightening or connecting portions, leakage of gas, damage	When required

When Using General Attachment

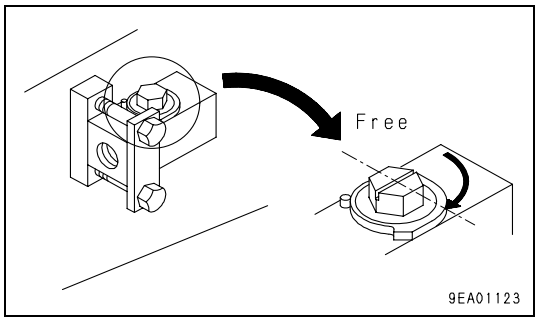
When the pedal is depressed, the attachment is actuated.

REMARK
If it is necessary to adjust the oil flow, please ask your Komatsu distributor to carry out the adjustment.

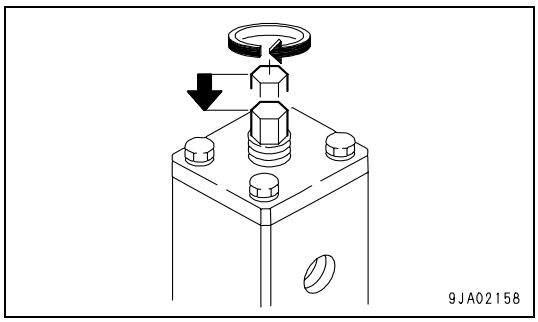


Precautions When Using

- Check that the stopper valve is in the FREE position.



- Check that the selector valve is in the position for general attachments.



- For details of other precautions when handling the attachment, read and use correctly the instruction manual provided by the attachment manufacturer.