TEN00175-06

Operation & Maintenance Manual

HYDRAULIC
EXCAVATOR

PC160LC-7E0

SERIAL NUMBERS 20001 and up

ecot3

⚠ WARNING

Unsafe use of this machine may cause serious injury or death. Operators and maintenance personnel must read this manual before operating or maintaining this machine. This manual should be kept near the machine for reference and periodically reviewed by all personnel who will come into contact with it.

NOTICE

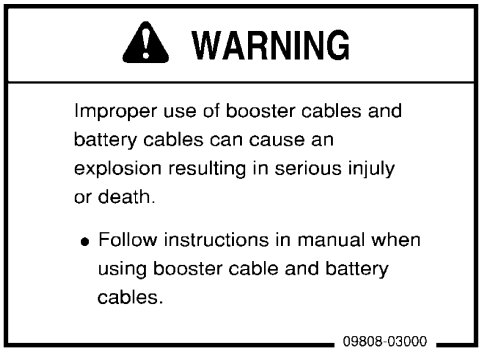
Komatsu has Operation & Maintenance Manuals written in some other languages. If a foreign language manual is necessary, contact your local distributor for availability.

KOMATSU

(10) Caution for handling accumulator and gas spring (09659-53000)

(11) Caution for adjusting track tension (09657-03003)

(12) Caution for handling cable (09808-03000)



(13) Stopping rotation for inspection and maintenance (09667-03001)

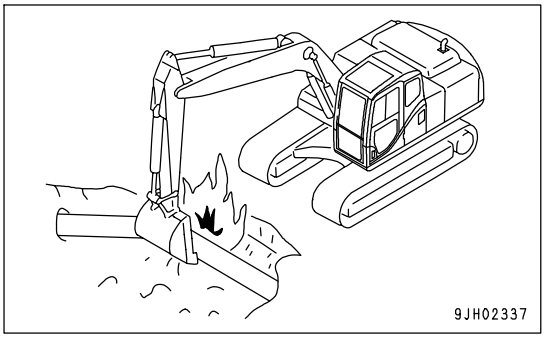
PRECAUTIONS FOR OPERATION

PRECAUTIONS FOR JOBSITE

INVESTIGATE AND CONFIRM JOBSITE CONDITIONS

On the jobsite, there are various hidden dangers that may lead to personal injury or death. Before starting operations, always check the following to confirm that there is no danger on the jobsite.

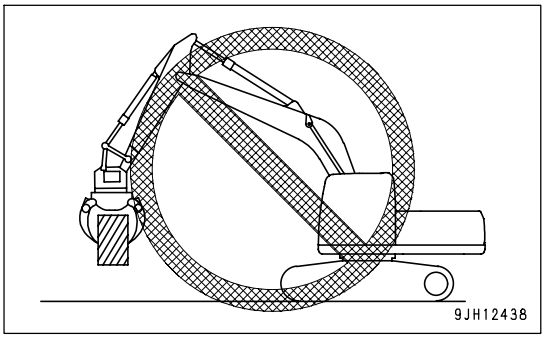
- When carrying out operations near combustible materials such as thatched roofs, dry leaves or dry grass, there is a hazard of fire, so be careful when operating.
- Check the terrain and condition of the ground at the worksite, and determine the safest method of operation. Do not operate where there is a hazard of landslides or falling rocks.
- If water lines, gas lines, or high-voltage electrical lines may be buried under the worksite, contact each utility and identify their locations. Be careful not to sever or damage any of these lines.
- Take necessary measures to prevent any unauthorized person from entering the operating area.
- In particular, if you need to operate on a road, protect pedestrian and cars by designating a person for worksite traffic duty or by installing fences around the worksite.
- When traveling or operating in water or on soft ground, check the water depth, speed of the current, bedrock, and shape of the ground beforehand and avoid any place that will obstruct travel.



WORKING ON LOOSE GROUND

- Avoid traveling or operating your machine too close to the edge of cliffs, overhangs, and deep ditches. The ground may be weak in such areas. If the ground should collapse under the weight or vibration of the machine, there is a hazard that the machine may fall or tip over. Remember that the soil after heavy rain or blasting or after earthquakes is weak in these areas.
- When working on embankments or near excavated ditches, there is a hazard that the weight and vibration of the machine will cause the soil to collapse. Before starting operations, take steps to ensure that the ground is safe and to prevent the machine from rolling over or falling.

- In the operation using the fork or grapple, do not attempt to pick up an object with their tips.
  There is a danger of damage to the machine or personal injury, as the picked - up object can easily slip off.



TRAVELING ON SNOW-COVERED OR FROZEN SURFACES

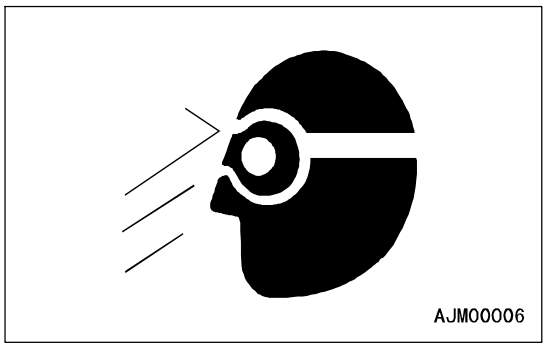
- Snow-covered or frozen surfaces are slippery, so be extremely careful when traveling or operating the machine, and do not operate the levers suddenly. Even a slight slope may cause the machine to slip, so be particularly careful when working on slopes.
- With frozen ground surfaces, the ground becomes soft when the temperature rises, and this may cause the machine to tip over or make it impossible for the machine to escape.
- If the machine enters deep snow, there is a hazard that it may tip over or become buried in the snow. Be careful not to leave the road shoulder or to get trapped in a snow drift.
- When clearing snow, the road shoulder and objects placed beside the road are buried in the snow and cannot be seen. There is a hazard of the machine tipping over or hitting covered objects, so always carry out operations carefully.

- **Danger of sparks**
  There is hazard that sparks will be generated, so always observe the following.
  - Do not let tools or other metal objects make any contact between the battery cables. Do not leave tools lying around near the battery.
  - When removing the battery cables, remove the ground cable (negative (-) cable) first. When installing, connect the positive (+) cable first, then connect the ground.
    Tighten the battery cable terminals securely.
  - Secure the battery firmly in the specified position.

PRECAUTIONS WHEN USING HAMMER

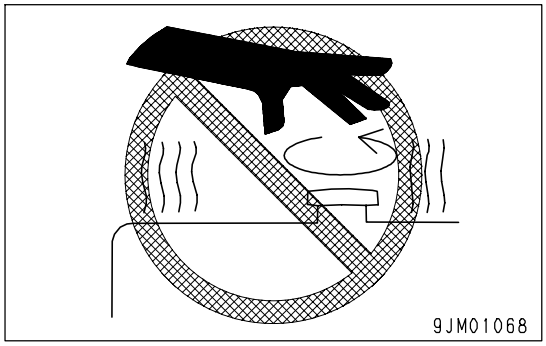
When using a hammer, pins may fly out or metal particles may be scattered. This may lead to serious personal injury or death. Always do as follows.

- When hitting pins or bucket teeth, there is a hazard that broken pieces might be sent flying and injure people in the surrounding area. Always check that there is no one in the surrounding area.
- If hard metal parts such as pins, bucket teeth, cutting edges, or bearings are hit with a hammer, there is a hazard that pieces might be scattered and cause serious personal injury or death. Always wear safety glasses and gloves.
- If the pin is hit with strong force, there is a hazard that it may fly out and injure people in the surrounding area. Do not allow anyone to enter the surrounding area.



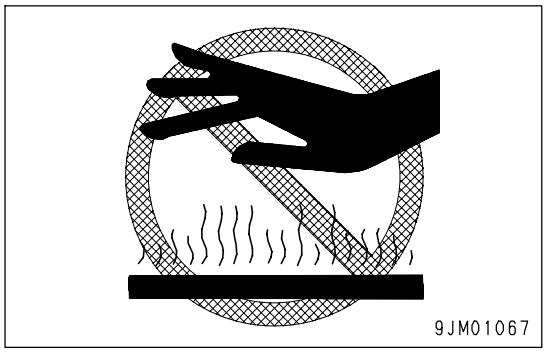
PRECAUTIONS WITH HIGH-TEMPERATURE COOLANT

To prevent burns from boiling water or steam spurting out when checking or draining the coolant, wait for the coolant to cool down to a temperature where the radiator cap can be touched by hand. Then loosen the cap slowly to release the pressure inside the radiator, and remove the cap.



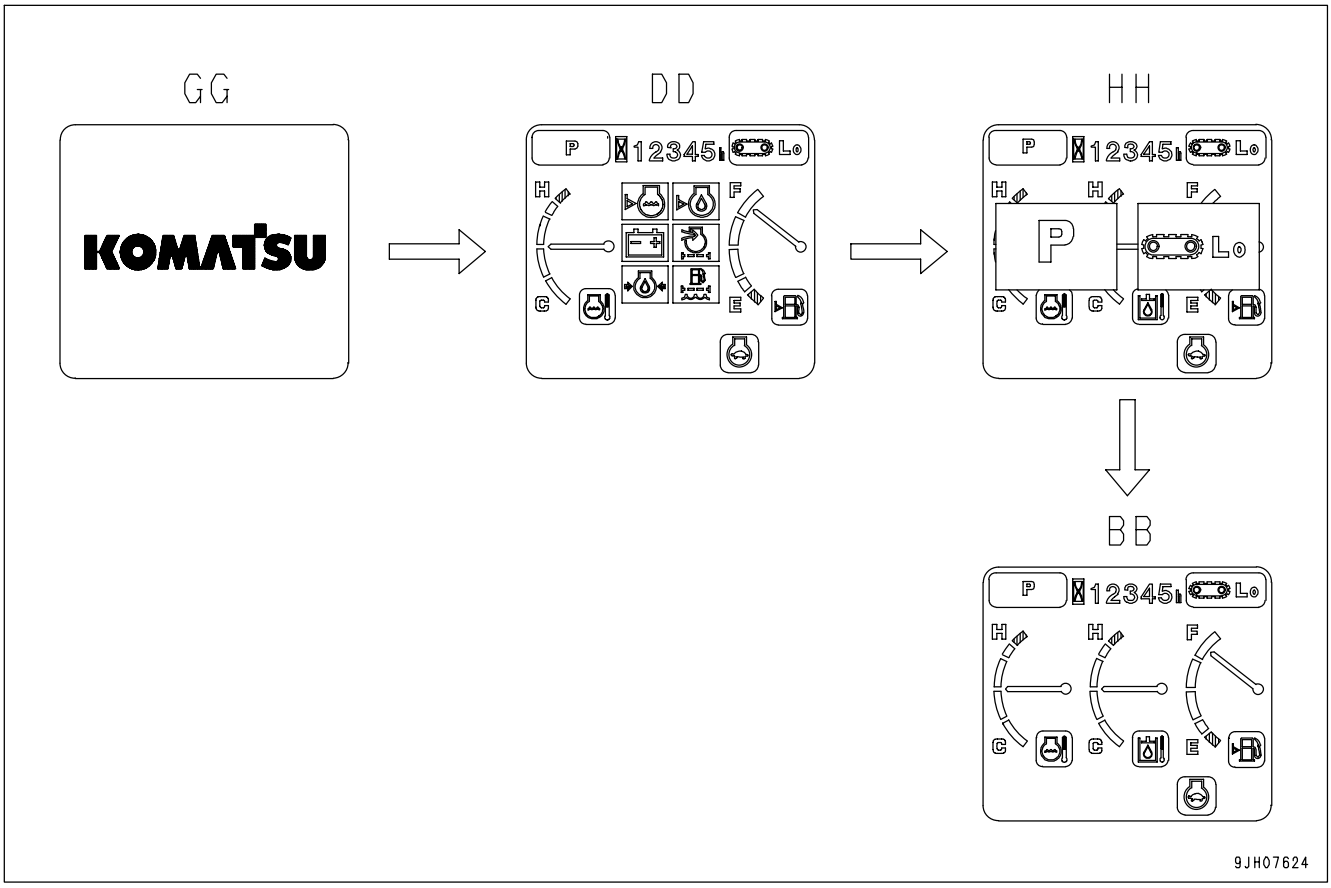
PRECAUTIONS WITH HIGH-TEMPERATURE OIL

To prevent burns from hot oil spurting out or from touching high-temperature parts when checking or draining the oil, wait for the oil to cool down to a temperature where the cap or plug can be touched by hand. Then loosen the cap or plug slowly to release the internal pressure and remove the cap or plug.



Basic Operation of Machine Monitor

Starting Engine When Situation is Normal



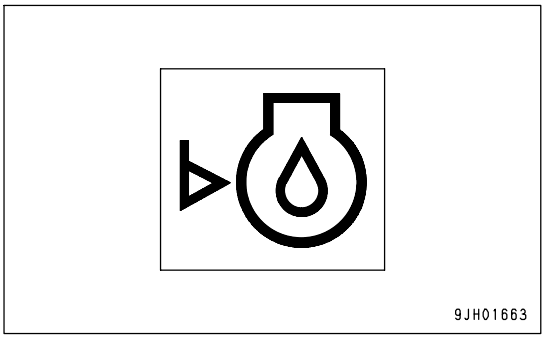
- When the starting switch is turned to the ON position, the opening screen GG is displayed.
- After the opening screen GG is displayed for 2 seconds, the screen switches to the check before starting screen DD.
- After the check before starting screen DD is displayed for 2 seconds, the screen switches to the working mode/travel mode display screen HH.
- After the working mode/travel mode display screen HH is displayed for 2 seconds, the screen switches to standard screen BB.

REMARK

When the engine is started, the battery voltage may suddenly drop depending on the temperature and the battery condition. If this happens, the display on the machine monitor may momentarily go out, but this does not indicate any abnormality.

Engine Oil Level Monitor

Monitor (2) warns the operator that the oil level in the engine oil pan has dropped.
If oil level in the engine oil pan is low, the lamp lights up red, so check the oil level, and add oil.

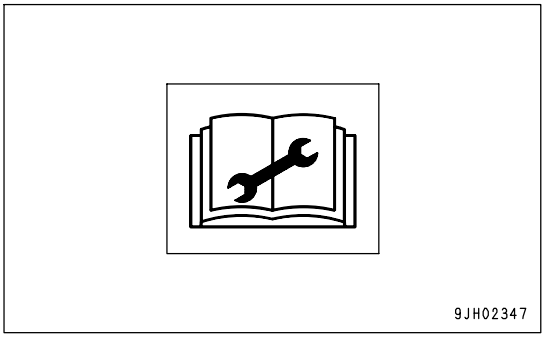


Maintenance Interval Monitor

This monitor (3) lights up when the maintenance time gets close and remains lighted after the maintenance time has already passed.

- Lighted yellow: The maintenance time is due within 30 hours.
- Lighted red: The maintenance time has already passed.

This monitor lights up when the starting switch is turned to the ON position. It goes off after 30 seconds and the display changes to the normal screen.



REMARK

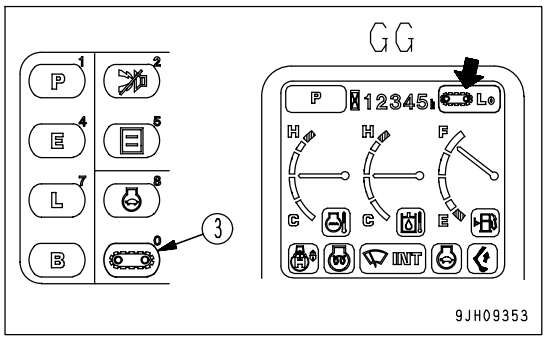
- For details of the method of confirming the maintenance interval, see "Maintenance Switch (PAGE 3-28)".
- If it is desired to change settings for the maintenance interval, have your Komatsu distributor change the settings.

Travel Speed Selector Switch

WARNING

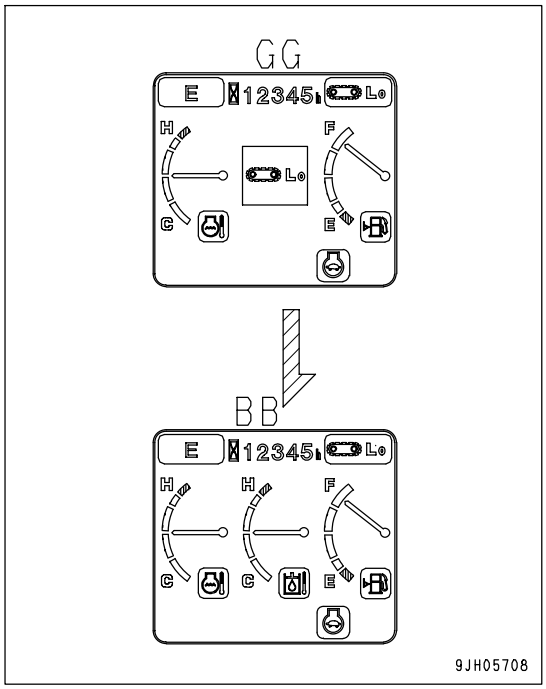
- **When loading or unloading from a trailer, always travel at low speed (with travel speed selector switch (3) at the Lo position). Never operate travel speed selector switch (3) while loading or unloading.**
- **If the travel speed is switched between Hi and Lo when the machine is traveling, the machine may deviate to one side, even when traveling in a straight line.**
  Stop the machine before switching the travel speed.

This switch (3) is used to set the travel speed to 2 stages.
Lo lights up : Low-speed travel
Hi lights up : Hi-speed travel
When the engine is started, the speed is automatically set to Lo.
Each time that the switch is pressed, the display changes Lo → Hi → Lo in turn.

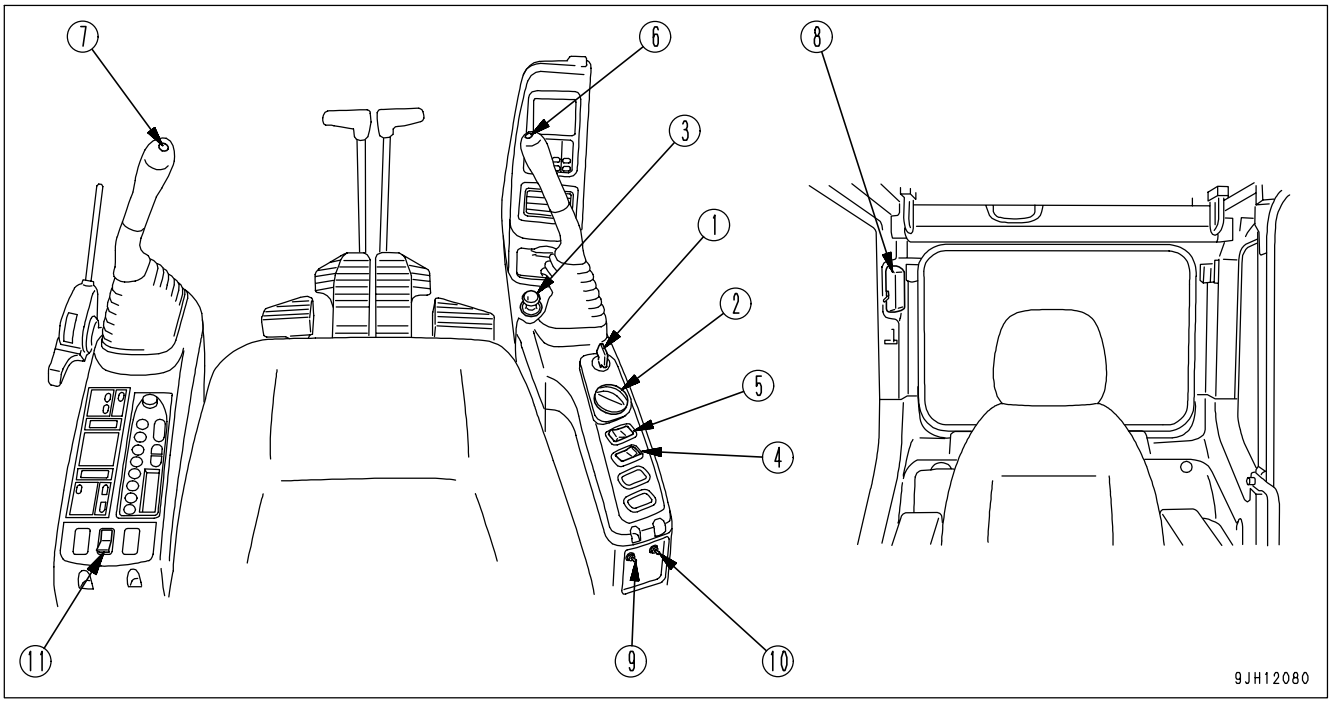


When traveling in high speed (Hi), if travel power is needed, such as when traveling on soft ground or on slopes, the speed automatically switches to low speed (Lo), so there is no need to operate the switch. The monitor display GG stays at Hi.

REMARK
Each time that the travel speed selector switch is operated, the mode is displayed in the center of display portion (GG), and the screen returns to standard screen (BB) after 2 seconds.



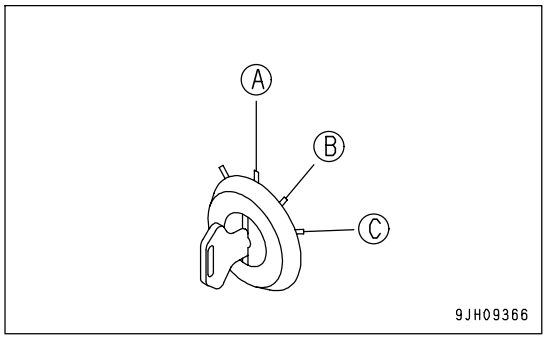
SWITCHES



(1) Starting switch
(2) Fuel control dial
(3) Cigarette lighter
(4) Swing lock switch
(5) Lamp switch
(6) Horn switch
(7) One-touch power max. switch
(8) Room lamp switch
(9) Emergency pump drive switch
(10) Swing parking brake release switch
(11) Revolving warning lamp switch (if equipped)

Starting Switch

Starting switch (1) is used to start or stop the engine.

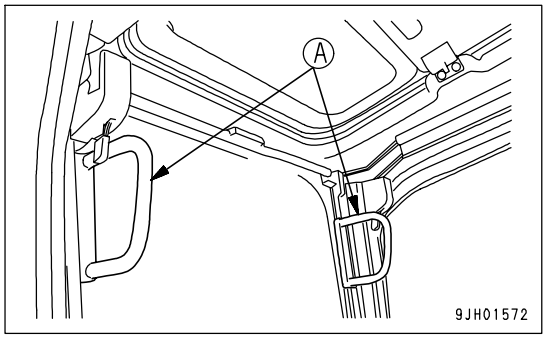


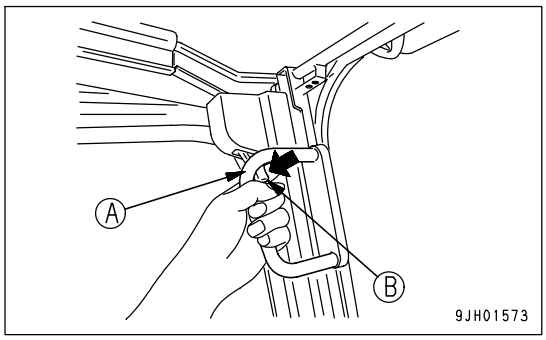
(A): OFF position
The key can be inserted or withdrawn. Switches for the electrical system (except room lamp), are all turned off and the engine is stopped.

(B): ON position
Electric current flows through the charging and lamp circuits. Keep starting switch key in the ON position while the engine is running.

(C): START position
This is the engine-start position. Keep the key at this position during cranking. Immediately after starting the engine, release the key. It will automatically return to the ON position (B).

4. Hold 2 grips (A) on the left and right top sides of the front window, and pull the 2 levers (B) to release the locks at the top of the front window. The top of the front window will come out.

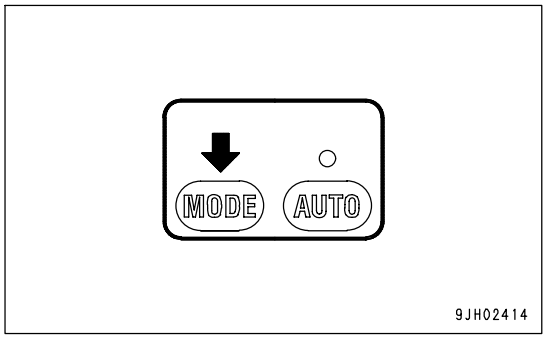




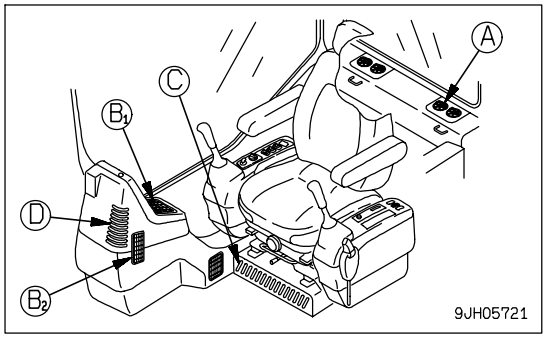
Vent Selector Switch

Switch (4) is used to select the vents.

- When switch (4) is pressed, the display on monitor display (7) switches and air blows out from the vents displayed.
- During automatic operation, the vents are automatically selected.



(A): Rear vent (4 places)
(B1): Face vent (1 place)
(C): Foot vent (1 place)
(D): Front window glass vent (2 place)
(B2): Front window glass vent (1 place)



Liquid crystal display	Vent mode	Vent				Remarks
		Ⓐ	Ⓑ	Ⓒ	Ⓓ	
	Front vent		○			Cannot be selected for automatic operation
	Front and rear vents	○	○			—
	Front, rear and foot vents	○	○	○		—
	Foot vent			○		—
	Foot vent Defroster vent			○	○	Cannot be selected for automatic operation
	Defroster vent				○	Cannot be selected for automatic operation

Note 1: Air blows out from vents marked ○

Use Air Conditioner with Care

NOTICE

- **When running the air conditioner, always start with the engine running at low speed. Never start the air conditioner when the engine is running at high speed. It will cause failure of the air conditioner.**
- **If water gets into the control panel or sunlight sensor, it may lead to unexpected failure, be careful not to let water get on these parts. In addition, never bring any flame near these parts.**
- **For the auto function of the air conditioner to work properly, always keep the sunlight sensor clean and do not leave anything around the sunlight sensor that may interfere with its sensor function.**

Ventilation

- When running the air conditioner for a long time, turn the lever to the FRESH position once an hour to carry out ventilation and cooling.
- If you smoke when the air conditioner is on, the smoke may start to hurt your eyes, so open the window and turn the lever to FRESH for a while to remove the smoke while continuing the cooling.

Temperature Control

When the cooler is on, set the temperature so that it feels slightly cool when entering the cab (5 or 6 °C (9 or 10.8 °F) lower than the outside temperature). This temperature difference is considered to be the most suitable for your health, so always be careful to adjust the temperature properly.

Air Conditioner Maintenance

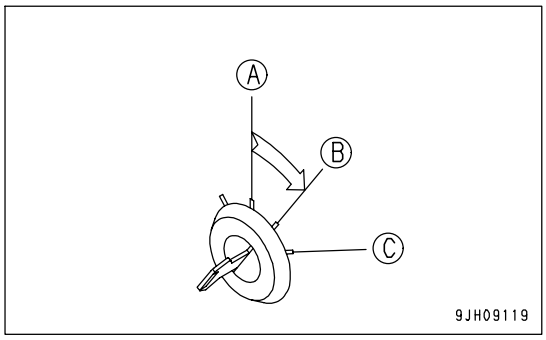
When carrying out an inspection and maintenance of a machine equipped with air conditioner, see "CHECK AND MAINTENANCE AIR CONDITIONER (PAGE 4-38), CHECK AIR CONDITIONER COMPRESSOR BELT TENSION, ADJUST (PAGE 4-50), CLEAN AIR CONDITIONER FRESH/RECIRC FILTERS (PAGE 4-60)" and follow the instruction on the table.

Other Functions

Self-diagnostic Function

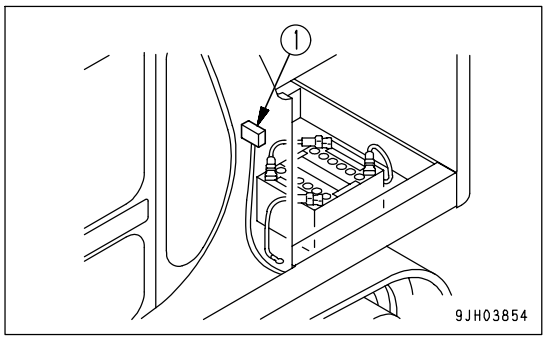
It is possible to perform troubleshooting of various sensors and equipment used on the air conditioner.

1. Turn the starting switch key to the ON (B) position.



FUSIBLE LINK

If the starting motor does not start even when the starting switch is turned to the ON position, wire-shaped fusible link (1) (2 places) has probably melted, so open the battery box cover on the right side of the machine, check the fusible link, and replace if necessary.

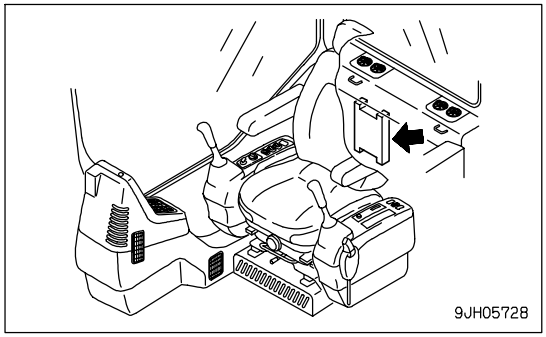


REMARK

A fusible link refers to the large-sized fuse wiring installed in the high current flow portion of the circuit to protect electrical components and wiring from burning, in the same way as an ordinary fuse.

CONTROLLER

Controller installed.

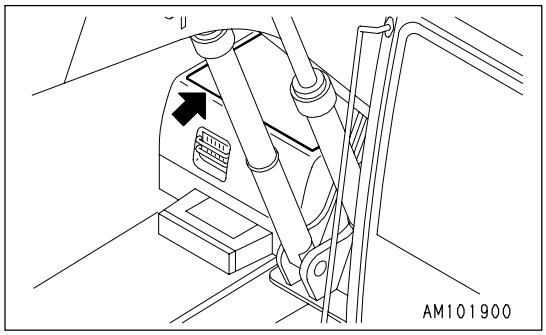


NOTICE

- **Do not let water, mud, or juice spill on the controller. This will cause failures.**
- **If any problem occurs in the controller, do not repair it by yourself. Please contact your Komatsu distributor for repairs.**

TOOL BOX

Store the tools in this box.



Check Electric Wiring

CAUTION

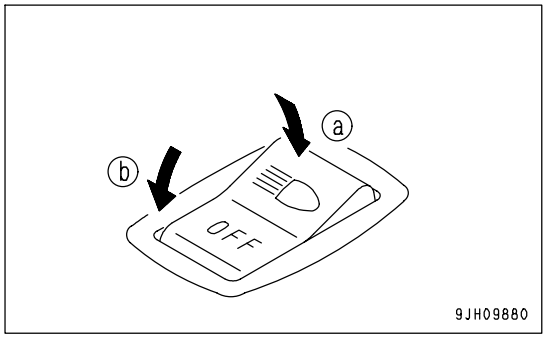
- **If fuses are frequently blown or if there are traces of short-circuiting on the electrical wiring, promptly ask your Komatsu distributor to locate the cause and make the repair.**
- **Keep the top surface of the battery clean and check the breather hole in the battery cap. If it is clogged with dirt or dust, wash the battery cap to clear the breather hole.**

Check that there is no damage to the fuses; that fuses of the specified capacity are used; that there is no disconnection or trace of short-circuiting in the electric wiring and no damage to the covering. Check also that there is no loosened terminals. If any, tighten them.
Moreover, pay particular attention to the electric wiring when checking the battery, engine starting motor and alternator.
Be sure to check that there is no inflammable material accumulated around the battery. If any is found, remove immediately.

Check Working Lamp Switch

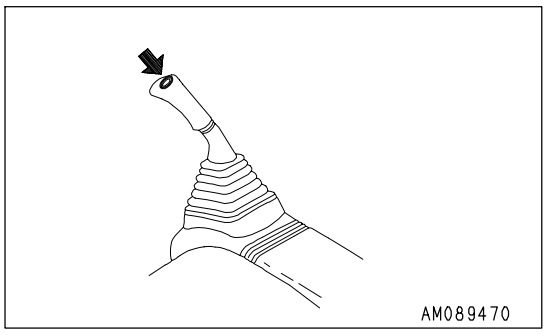
Check that the working lamps and lamps inside the instruments light up properly. Check also that there is no dirt or damage.
If any lamp does not light up, the bulb is probably blown up or there is a disconnection, so ask your Komatsu distributor to carry out repairs.

1. Turn the starting switch to the ON position.
2. Set the lamp switch to ON position (a) and check that the working lamp lights up.



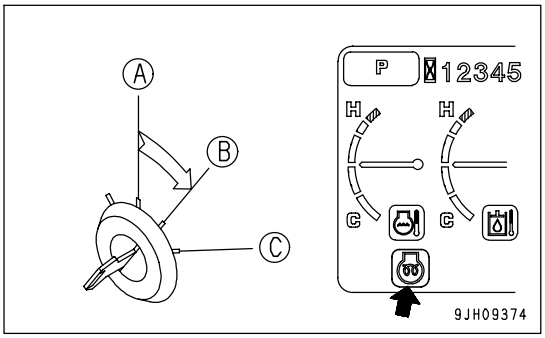
Check Function of Horn

1. Turn the starting switch to the ON position.
2. Confirm that the horn sounds immediately when the horn button is pressed.
   If the horn does not sound, contact your Komatsu distributor for repair.



3. Turn the key in starting switch (3) to ON position (B).

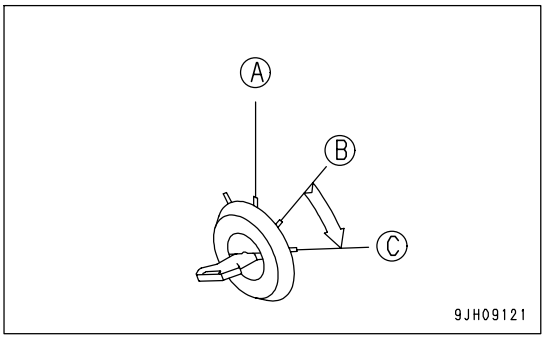
   If the ambient temperature is low, the preheating monitor lights up and automatic preheating is carried out. Keep the key in starting switch (3) at the ON position (B) until the preheating monitor goes out.



The time that the preheating monitor stays lighted up depends on the ambient temperature as shown in the table on the right.

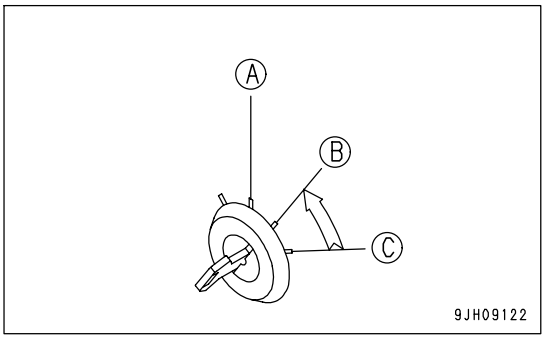
Ambient temperature	The time that the preheating monitor is lighted up
-10°C	15 seconds
-20°C	32 seconds
-25°C	40 seconds

4. If the preheating monitor does not light up, or it lights up and then goes out to inform that the engine preheating has been completed, turn the key in starting switch (3) to the START position (C) and start the engine.

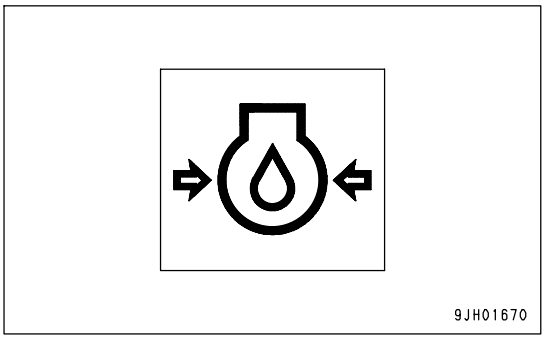


REMARK
If the ambient temperature is low, the engine may not start even when the key in the starting switch (3) is kept at the START position for 20 seconds. If this happens, wait for at least 2 minutes, then start again from the beginning.

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

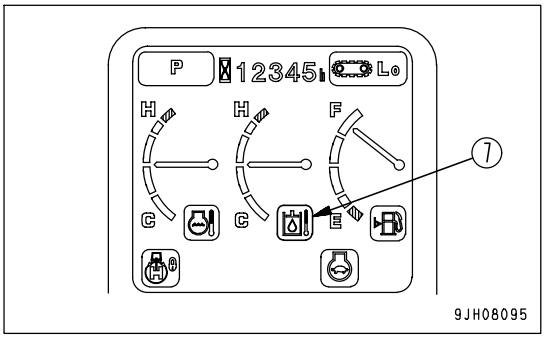


6. Even if the engine starts, wait for the engine oil pressure monitor to go out. Do not touch the control levers or control pedal while the engine oil pressure monitor is lighted up.



NOTICE
If the engine oil pressure monitor does not go out even after 4 to 5 seconds have passed, stop the engine immediately. Check the oil level, check for leakage of oil, and take the necessary action.

18. Check that hydraulic oil temperature monitor (7) is displaying green.
    If the hydraulic oil temperature monitor is not displaying green (it is displaying white), repeat Steps 6 to 10 until the display is green.

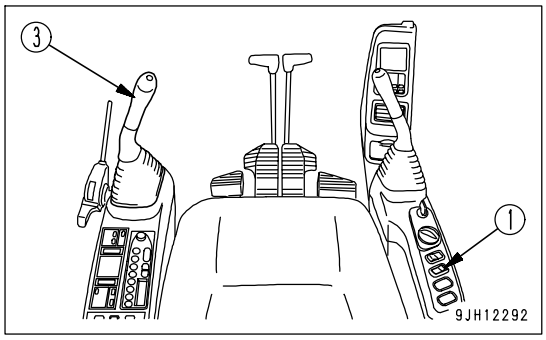


If the hydraulic oil temperature monitor displays green, the hydraulic equipment warm-up operation is completed. After confirming that the hydraulic oil temperature monitor displays green, carry out the following procedure.

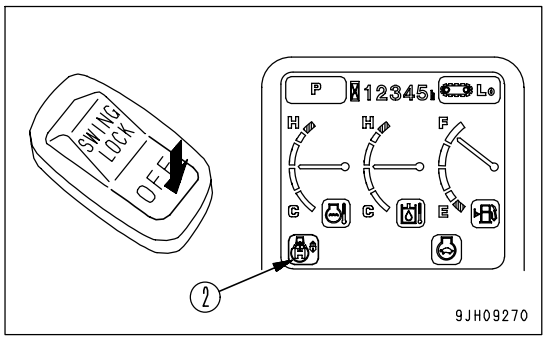
SWINGING

WARNING

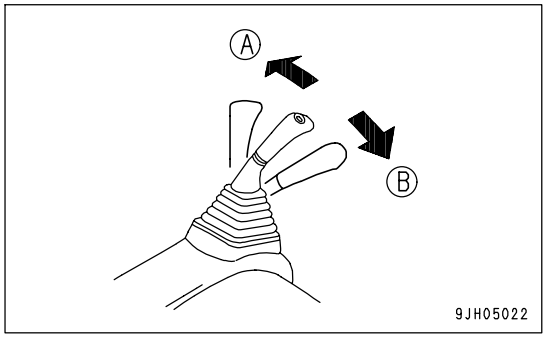
- **The tail of the machine extends outside the tracks. Before operating the swing, check that the area around the machine is safe.**
- **If the lever is operated when the engine speed has been lowered by the auto-deceleration function, the engine speed will suddenly rise, operate the levers carefully.**



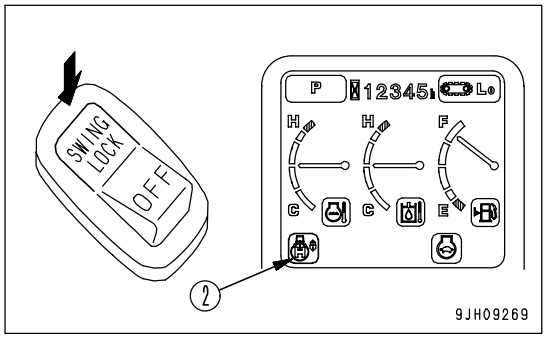
1. Before starting the swing operation, turn swing lock switch (1) OFF and check that swing lock monitor (2) has gone out.



2. Operate left work equipment control lever (3) to swing the upper structure.
   (A): Left swing
   (B): Right swing



3. When not using the swing, turn swing lock switch (1) ON. Check that swing lock monitor (2) lights up.



ESCAPE FROM MUD

Always operate carefully to avoid getting stuck in mud. If the machine does get stuck in mud, do as follows to get the machine out.

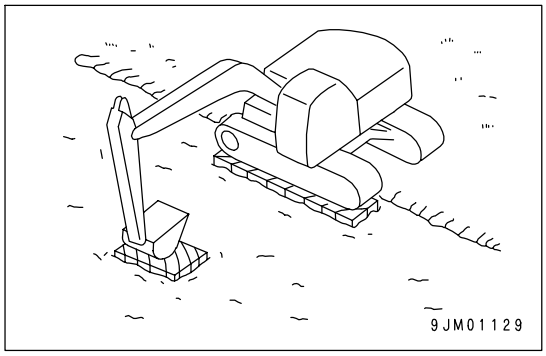
Track on One Side Stuck

NOTICE

When using the boom or arm to raise the machine, always have the bottom of the bucket in contact with the ground. The angle between the boom and arm should be 90° to 110°.

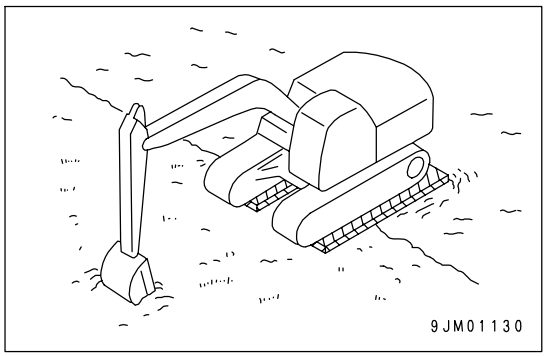
The same applies when using the bucket installed in the reverse direction.

When only one side is stuck in mud, use the bucket to raise the track, then lay boards or logs and drive the machine out.



Tracks on Both Sides Stuck

When the tracks on both sides are stuck in mud and they slip, making it impossible for the machine to move, lay boards or logs as explained above, and dig the bucket into the ground in front. Then pull in the arm as in normal digging operations and put the travel levers in the FORWARD position to pull the machine out.



TRANSPORTATION

When transporting the machine, observe all related laws and regulations, and be careful to assure safety.

TRANSPORTATION PROCEDURE

Select the method of transportation to match the weight and dimensions given in"SPECIFICATIONS (PAGE 5-2)". Note that the weight and dimension given in SPECIFICATIONS may differ according to the type of shoe or arm, or other attachments.

LIFTING MACHINE

WARNING

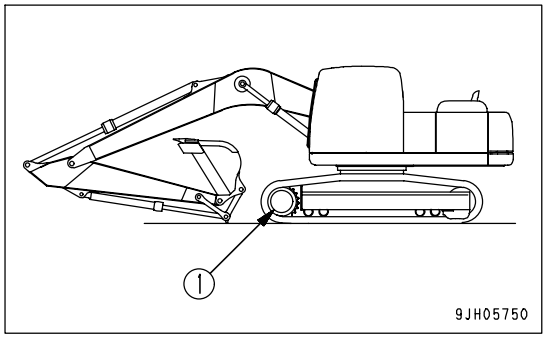
- **The operator carrying out the lifting operation using a crane must be a properly qualified crane operator.**
- **Never raise the machine with any worker on it.**
- **Always make sure that the wire rope is of ample strength for the weight of this machine.**
- **When lifting, keep the machine horizontal.**
- **When carrying out lifting operations, set the lock lever to the LOCK position to prevent the machine from moving unexpectedly.**
- **Never enter the area under or around a raised machine.**

Never try to lift the machine in any posture other than the posture given in the procedure below or using lifting equipment other than in the procedure below.
There is a hazard that the machine may lose its balance.

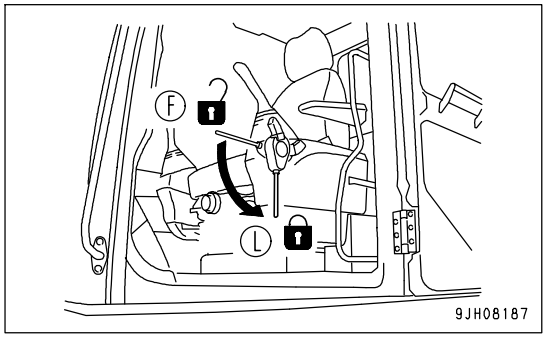
NOTICE
This method of lifting applies to the standard specification machine.
The method of lifting differs according to the attachments and options installed.
For details of the procedure for machines that are not the standard specification, please consult your Komatsu distributor.

For weight, see "SPECIFICATIONS (PAGE 5-2)".
When lifting the machine, carry out the operation on flat ground as follows.

1. Start the engine, then the swing the upper structure so that the work equipment will be on the side of sprocket (1).
2. Extend the bucket cylinder and arm cylinder fully, then lower the work equipment to the ground as shown in the diagram on the right using the boom cylinder.



3. Set the lock lever securely to the LOCK position (L).



4. Stop the engine, check that there is nothing around the operator's compartment, then get off the machine. Close the cab door and front glass securely.

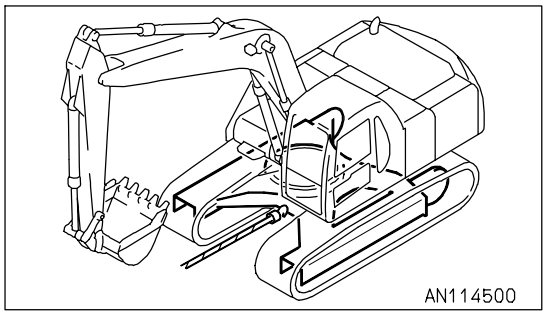
LIGHTWEIGHT TOWING HOLE

WARNING

- **The shackle must always be used.**
- **Hold the wire rope level and direct it straight to the track frame.**
- **Move the machine slowly and be careful not to apply any sudden load to the wire rope.**

There is a hole in the track frame to fit the shackle when towing light objects.

Permissible towing load: Max. 49,000 N (5,000 kg)

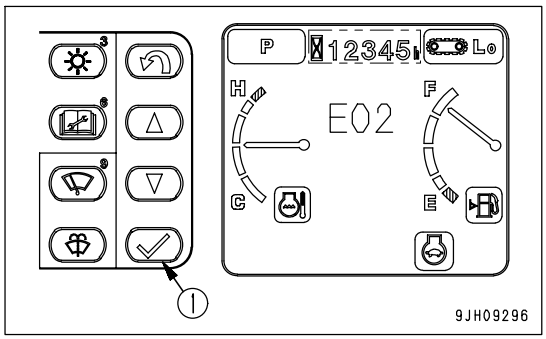


SEVERE JOB CONDITION

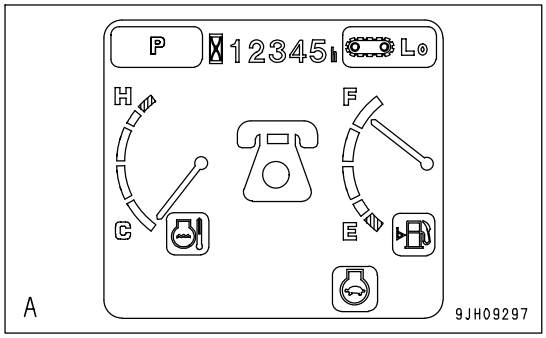
- When carrying out digging operations in water, if the work equipment mounting pin goes into the water, carry out greasing every time the operation is carried out.
- For heavy-duty operations and deep digging, carry out greasing of the work equipment mounting pins every time before operation.
  After greasing, operate the boom, arm and bucket several times, then grease again.

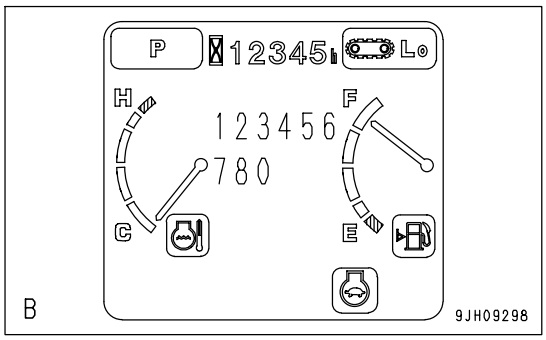
Point of Contact to Telephone when Error Occurs

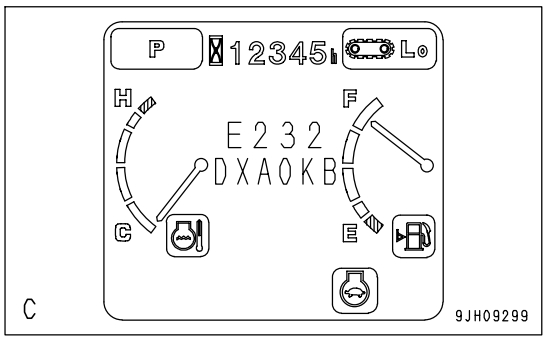
If an error screen is displayed on the monitor, the screen changes as follows each time input confirmation switch (1) is pressed.
Error screen → screen A → screen B → screen C → error screen
Check the point of contact telephone number on screen B.



REMARK
If the point of contact telephone number has not been registered, screen B is not displayed.
If it is necessary to register the point of contact telephone number, ask your Komatsu distributor to register it.







Reservoir	Fluid Type	Ambient Temperature, degrees Celsius -22 -4 14 32 50 68 86 104 122°F -30 -20 -10 0 10 20 30 40 50°C	Recommended Komatsu Fluids
Engine oil pan	Engine oil	(Note.1)	Komatsu EOS0W30
		(Note.1)	Komatsu EOS5W40
			Komatsu EO10W30-DH
			Komatsu EO15W40-DH
			Komatsu EO30-DH
Swing machinery case Final drive case Damper case	Powertrain oil (Note.2)		TO30
Hydraulic system	Powertrain oil		TO10
	Hydraulic oil		HO46-HM
Grease fitting	Hyper grease (Note.3)		G2-T, G2-TE
	Lithium EP grease		G2-LI
Cooling system	Supercoolant AF-NAC (Note.4)		AF-NAC
Fuel tank	Diesel fuel		ASTM Grade No.1-D S15 ASTM Grade No.1-D S500
			ASTM Grade No.2-D S15 ASTM Grade No.2-D S500

• ASTM: American Society of Testing and Material

		Engine oil pan	Swing machinery case	Final drive case (each)	Damper case	Hydraulic system	Cooling system	Fuel tank
Specified capacity	liter	17.9	4.5	3.5	0.85	190	18.5	280
	US gal	4.73	1.19	0.92	0.22	50.20	4.89	73.98
Refill capacity	liter	16.0	4.5	3.3	0.85	121	18.5	-
	US gal	4.23	1.19	0.87	0.22	31.97	4.89	-

NOTICE

Always use diesel oil for the fuel.

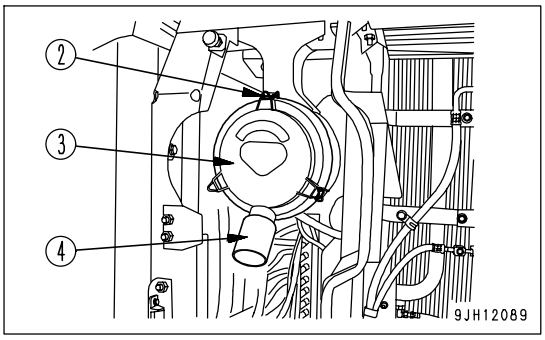
To ensure good fuel consumption characteristics and exhaust gas characteristics, the engine mounted on this machine uses an electronically controlled high-pressure fuel injection device. This device requires high precision parts and lubrication, so if low viscosity fuel with low lubricating ability is used, the durability may drop markedly.

Cleaning Outer Element

NOTICE

Before and after cleaning the element, do not leave or keep it in direct sunlight.

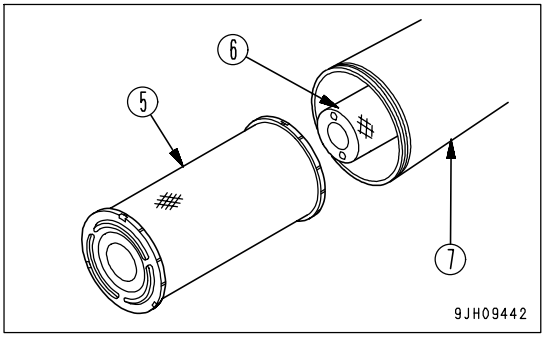
1. Open the door on the left side of the machine, remove 3 hooks (2), then remove cover (3).

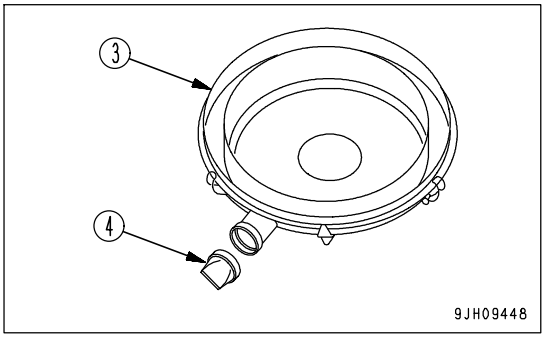


NOTICE

- **Never remove the inner element (6). It will allow dirt to enter and cause failure of the engine.**
- **Do not use a screwdriver or other tool.**

2. Hold the outer element (5), rock it lightly up and down and to the left and right, and rotate the element to the left and right to pull it out.
3. When the outer element (5) has been removed, check that the inner element has not come out of position and is not at an angle. If is is at an angle, insert your hand and push it in straight.
4. After removing the outer element (5), cover the inner element (6) with a clean cloth or tape to prevent dirt or dust from entering.
5. Wipe off or brush off the dirt stuck to cover (3) and the inside of the air cleaner body (7).
6. Remove any dirt or dust that is accumulated to evacuator valve (4) installed to cover (3).

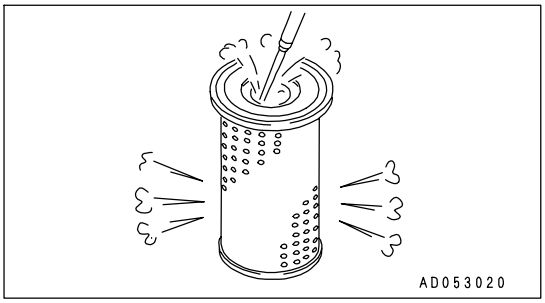




NOTICE

When cleaning the element, do not hit or beat it against anything.

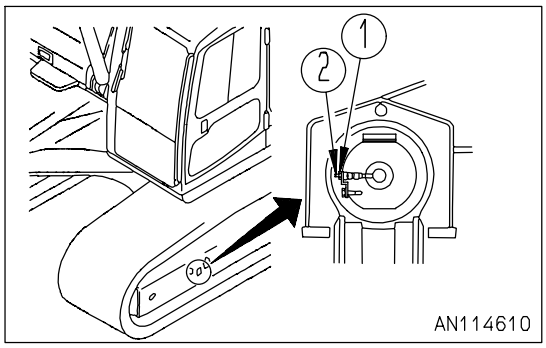
7. Direct dry compressed air (less than 0.69 MPa (7 kg/cm^2, 99.4 PSI)) to the outer element from inside along its folds, then direct it from outside along its folds and again from inside.
   1) Replace the outer element which has been cleaned 6 times repeatedly or used throughout a year. Replace the inner element at the same time.
   2) Replace both inner and outer elements when the air cleaner clogging monitor (1) lights up soon after installing the cleaned outer element even though it has not been cleaned 6 times.



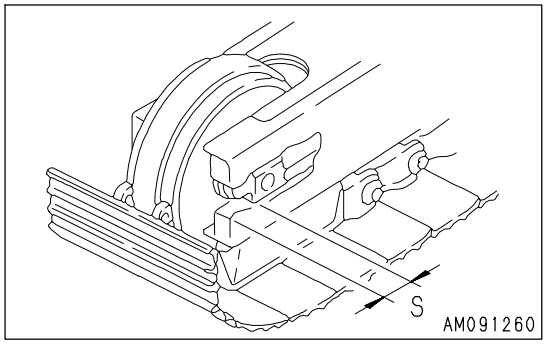
Increasing Track Tension

Prepare a grease pump.

1. Pump in grease through grease fitting (2) with a grease pump. (Grease fitting (2) forms one part with plug (1).)
2. To check if the tension is correct, run the engine at low idle, move the machine slowly forward (by an amount equal to the length of track on ground), then stop the machine.
3. Check the track tension again, and if the tension is not correct, adjust it again.



4. Continue to pump in grease until dimension (S) becomes zero (0). If the tension is still loose, the pin and bushing are excessively worn, so they must be either turned or replaced. Please contact your Komatsu distributor for repairs.

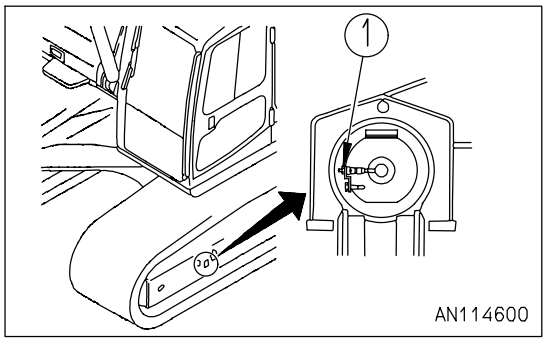


Loosening Track Tension

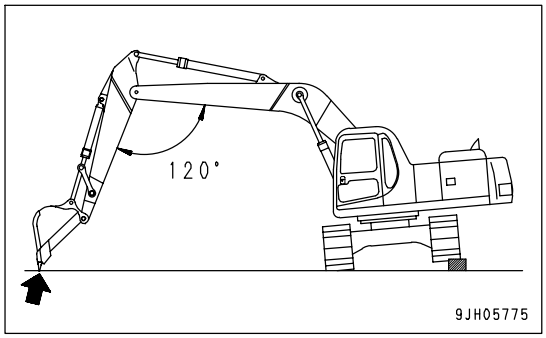
⚠ WARNING

It is extremely dangerous to release the grease by any method except the procedure given below.
If track tension is not relieved by this procedure, contact your Komatsu distributor for repairs.

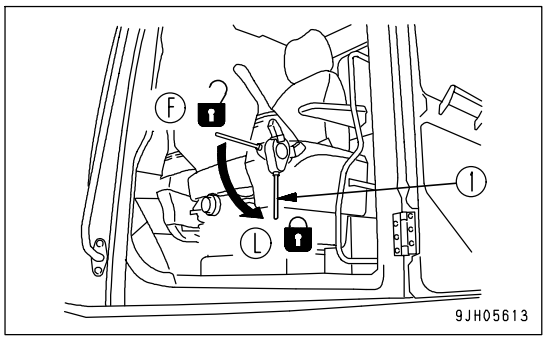
1. Loosen plug (1) gradually to release the grease.
2. When loosening plug (1), turn it a maximum of one turn.
3. If the grease does not come out smoothly, move the machine forwards and backwards a short distance.
4. Tighten plug (1).
5. To check if the tension is correct, run the engine at low idle, move the machine slowly forward (by an amount equal to the length of track on ground), then stop the machine.
6. Check the track tension again, and if the tension is not correct, adjust it again.



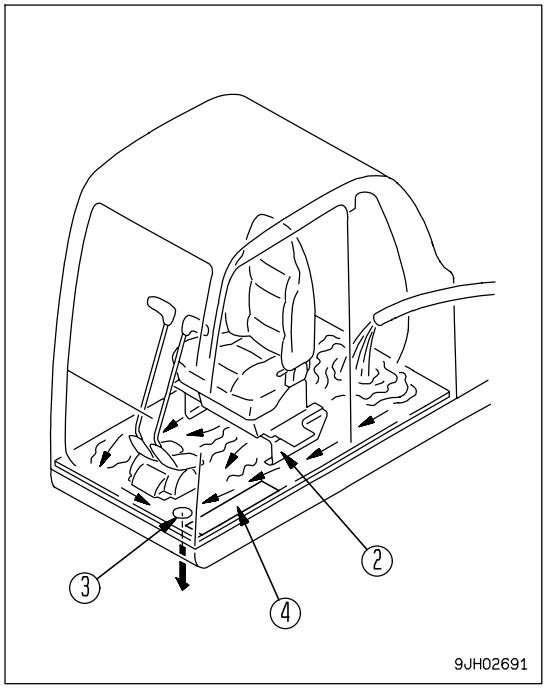
3. Lower the work equipment to the ground and set the machine in a stable condition.



4. Set lock lever (1) to LOCK position (L) and stop the engine.



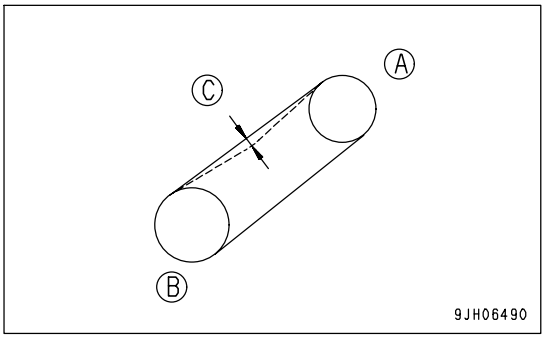
5. Remove the floor mat holder plate (4).
6. Remove the floor mat.
7. Remove the cap from water drain hole (3).
8. Flush out the dirt on the floor directly with water through water drain hole (3).
9. After completing the washing operation, install the cap in water drain hole (3).
10. Fit the floor mat, then secure it with floor mat holder plate (4).



CHECK AIR CONDITIONER COMPRESSOR BELT TENSION, ADJUST

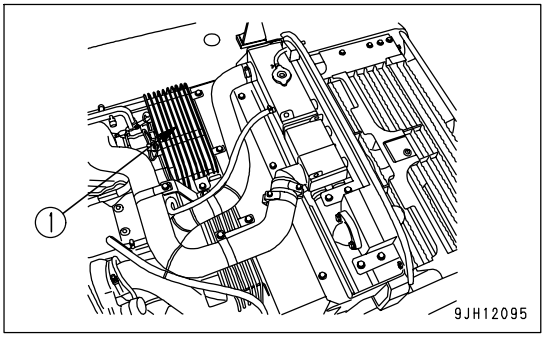
Checking

The deflection of the belt should be 6 to 9 mm (0.23 to 0.35 in) when pressed with a finger force of approx. 58.8N (6 kg) at mid-point (C) between the crankshaft pulley (B) and the compressor pulley (A).



Adjustment

1. Remove guard (1).

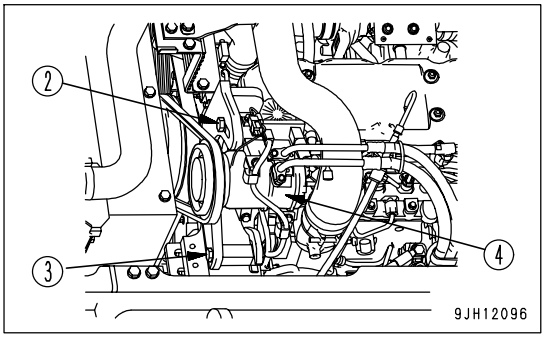


2. Loosen bolts (2) and (3), then move compressor (4) to adjust.

REMARK

When the bolts (2) and (3) are loosened, compressor (4) can move, using the mounting position of bolt (2) as a fulcrum.

3. When the position of the compressor is determined, tighten bolts (2) and (3) to hold it in position.



NOTICE

- **Check each pulley for damage, wear of the V-groove, and wear of the V-belt. In particular, be sure to check that the V-belt is not touching the bottom of the V-groove.**
- **In case any of the following occurs, ask the Komatsu distributor in your territory to replace the belts with new ones.**
  - **The fan belt has elongated, leaving little allowance for adjustment.**
  - **A cut or crack is found on the belt.**
  - **Slipping or creaking sound is heard coming from the belt.**
- **When the new V-belt is set, readjust it after one hour of operation.**

CLEAN AIR CONDITIONER FRESH/RECIRC FILTERS

WARNING

If compressed air scattered around dust and debris, there is danger of injury. Always wear protective equipment such as protective glasses and mask.

NOTICE

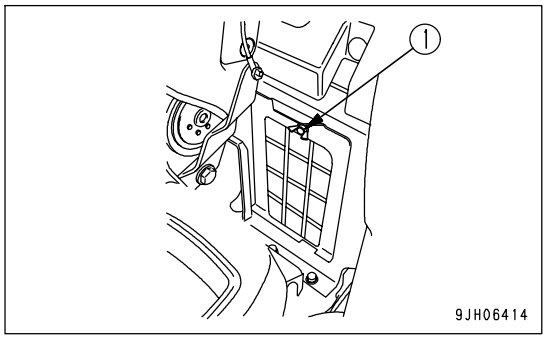
As a guideline, the filters should be cleaned every 500 hours, but on dusty jobsites, clean the filters more frequently.

REMARK

If the filter becomes clogged, the air flow will be reduced, and there will be an abnormal noise from the air conditioner unit.

Cleaning Recirculated Air Filter

1. Remove wing bolts (1) from the inspection window at the bottom rear left on the inside of the operator's cab, then take out the recirculated air filter.
2. Clean the filter with compressed air. If there is oil on the filter, or if the filter is extremely dirty, wash it in a neutral agent. After rinsing it in water, dry it thoroughly before using it again.
   Replace the filter with a new part every year. If the clogging of the filter cannot be removed by blowing with air or washing in water, replace the filter immediately.
   - The RECIRC filter must be installed facing in the correct direction. Install it so that the projecting part faces the front of the machine.



EVERY 2000 HOURS MAINTENANCE

Carry out the periodic maintenance work of every 100, 250, 500 and 1000 hours of operation at the same time.

CHANGE OIL IN FINAL DRIVE CASE

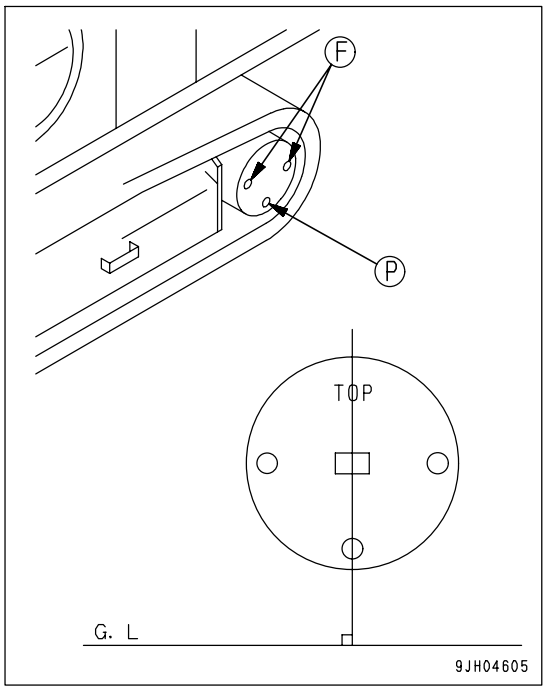
⚠ WARNING

- **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.**
- **If there is still pressure remaining inside the case, the oil or plug may fly out. Loosen the plug slowly to release the pressure.**
- **Please do not stand in front of the plug when you loosen the plug.**

- Oil replacement amount: 3.3ℓ (0.87 US gal) (both left and right)
- Prepare a handle.

1. Set the TOP mark at the top, with the TOP mark and plug (P) perpendicular to the ground surface.
2. Set a container under plug (P) to catch the oil.
3. Remove plugs (P) and (F) with the handle and drain the oil.

REMARK
Check the O-rings in the plugs for damage. If necessary, replace with new ones.



4. Tighten plug (P).
5. Add oil through the hole of plug (F).
6. When oil begins to overflow from the plug (F) hole, install plug (F).
   Tightening torque of plugs (P) and (F):
   68.6 ± 9.8 Nm (7 ± 1 kgm, 50.6 ± 7.2 lbft)

REMARK
There are two plugs (F). Add oil through the one easier to fill oil and through which no internal gears are to be seen.

CHECK OPERATING CONDITION OF COMPRESSOR

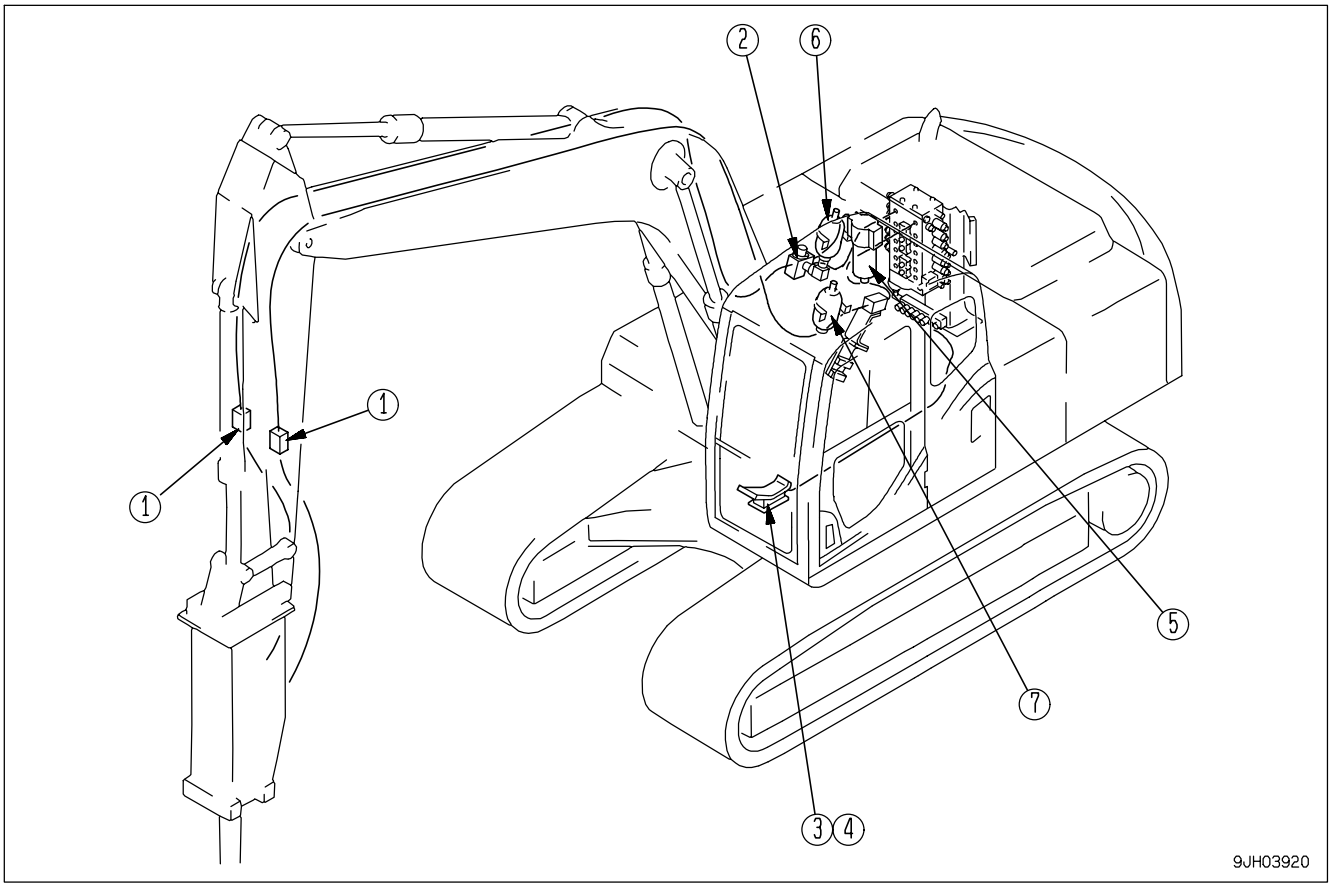
Check the following two items.

1. When the air conditioner switch is turned ON-OFF, do the compressor and magnet clutch also turn ON-OFF?
2. Is any abnormal noise generated by the clutch or compressor body?

If any problem is found, contact your Komatsu distributor to have the parts disassembled, repaired, or replaced.

MACHINE READY FOR ATTACHMENT

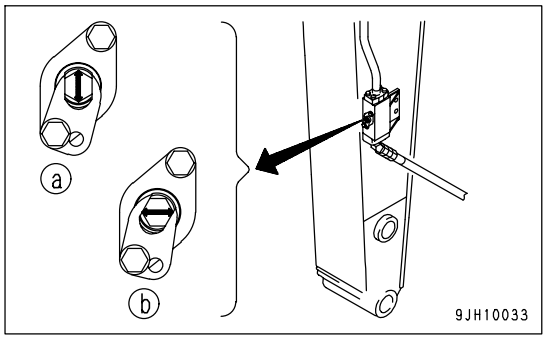
LOCATIONS



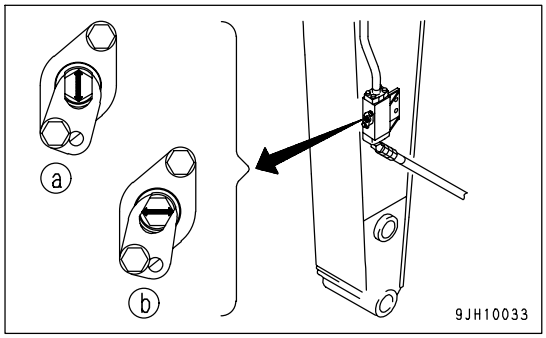
(1) Stop valve
(2) Selector valve
(3) Attachment cotrol pedal
(4) Lock pin
(5) Breaker circuit additional oil filter
(6) Accumulator (low-pressure)
(7) Accumulator (hight-pressure)(if equipped)

Stop Valve

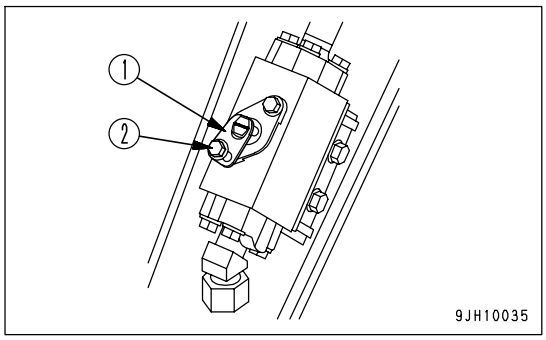
This valve (1) stops the flow of the hydraulic oil.
(a) FREE: Hydraulic oil flows.
(b) LOCK: Hydraulic oil stops.
When removing or installing attachments, set this valve to the LOCK position.



6. After checking that the hydraulic oil temperature has gone down, set the rotor of the stop valve (installed to the piping for the outlet port and inlet port on the side face of the arm) to LOCK position (b).
   (a) FREE: Hydraulic oil flows (direction of arrow is parallel to long direction of arm)
   (b) LOCK: Hydraulic oil does not flow (direction of arrow is at right angles to long direction of arm)



   • When setting the FREE or LOCK position of the stop valve rotor, remove bolt (2), turn over plate (1), then turn the rotor. After setting, install plate (1) again with bolt (2).



7. Remove the hoses on the attachment side. Install the plugs to the two outlets.
   The plugs are used to prevent the attachment from incorrect operation caused by mixing in of foreign matter. After the plugs are correctly installed, store the attachment.
8. Pull out the mounting pins (2 places), remove the attachment, then install the bucket.
   For details of the procedure for installing the bucket, see "BUCKET REPLACEMENT AND INVERSION (PAGE 3-129)".
9. After installing the bucket, check the oil level in the hydraulic tank.