Operation & Maintenance Manual

SEAM045102T

PC158US-2
PC158USLC-2

HYDRAULIC EXCAVATOR

SERIAL NUMBERS PC158US-10001 and up
PC158USLC-10001

⚠ 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

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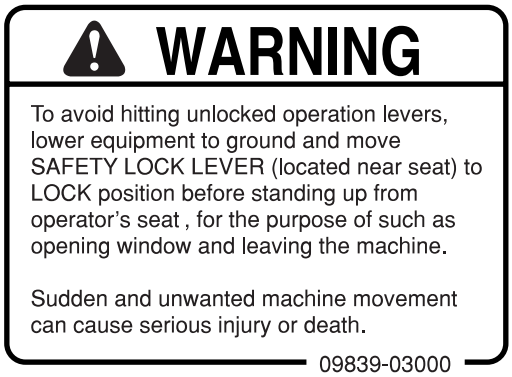
SAFETY

OPERATION

(5) Precautions for opening the window (09839-03000)



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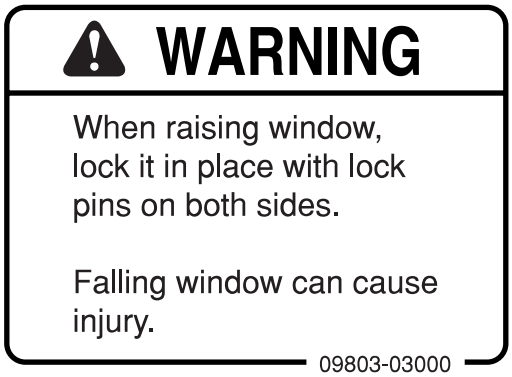

(7) Precautions for high-temperature cooling water (09668-03001)

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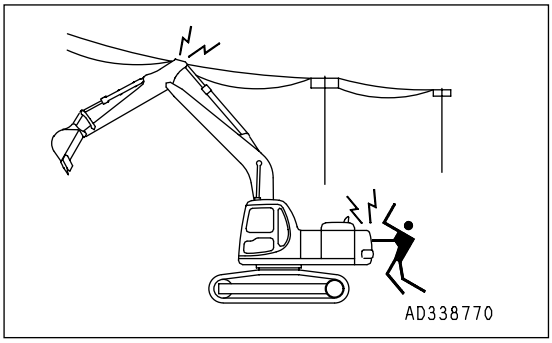
DISTANCE TO HIGH VOLTAGE CABLES

Do not travel or operate the machine near electric cables. There is a hazard of electric shock, which may cause serious injury or property damage. On jobsites where the machine may go close to electric cables, always do as follows.



- Before starting work near electric cables, inform the local power company of the work to be performed, and ask them to take the necessary action.
- Even going close to high-voltage cables can cause electric shock, which may cause serious burns or even death. Always maintain a safe distance (see the table on the right) between the machine and the electric cable. Check with the local power company about safe operating procedure before starting operations.
- To prepare for any possible emergencies, wear rubber shoes and gloves. Lay a rubber sheet on top of the seat, and be careful not to touch the chassis with any exposed part of your body.
- Use a signalman to give warning if the machine approaches too close to the electric cables.
- When carrying out operations near high voltage cables, do not let anyone come close to the machine.
- If the machine should come too close or touch the electric cable, to prevent electric shock, the operator should not leave the operator's compartment until it has been confirmed that the electricity has been shut off.
  Also, do not let anyone come close to the machine.

	Voltage	Min. safety distance
Low voltage	100V 200V	2m
	6,600V	2m
Very high voltage	22,000V	3m
	66,000V	4m
	154,000V	5m
	187,000V	6m
	275,000V	7m
	500,000V	11m

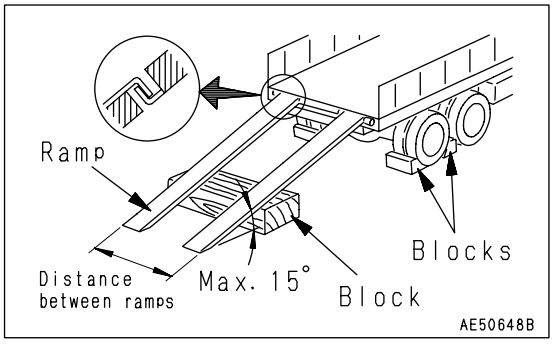
ENSURE GOOD VISIBILITY

- Check for any persons or obstacles in the area around the machine and check the conditions of the jobsite to ensure that operations and travel can be carried out safely. Always do as follows.
  - Position a signalman if there are areas at the rear of the machine where the visibility is not good.
  - When working in dark places, turn on the working lamp and front lamps installed to the machine, and set up additional lighting in the work area if necessary.
  - Stop operations if the visibility is poor, such as in mist, snow, rain, or dust.

TRANSPORTATION

LOADING AND UNLOADING

When loading or unloading the machine, mistaken operation may bring the hazard of the machine tipping over or falling, so particular care is necessary. Always do as follows.



- Perform loading and unloading on firm, level ground only. Maintain a safe distance from the edge of the road or cliff.
- Never use the work equipment to load or unload the machine.
  There is danger that the machine may fall or tip over.
- Always use ramps of adequate strength. Be sure that the ramps are wide, long, and thick enough to provide a safe loading slope.
  Take suitable steps to prevent the ramps from moving out of position or coming off.
- Be sure the ramp surface is clean and free of grease, oil, ice and loose materials. Remove dirt from machine-tracks. On a rainy day, in particular, take extremely careful since the ramp surface is slippery.
- Run the engine at low speed, and operate the machine slowly.
- Never correct your steering on the ramps. If necessary, drive off the ramps, correct the direction, then enter the ramps again.
- When on the ramps, do not operate any lever except for the travel lever.
- The center of gravity of the machine will change suddenly at the joint between the ramps and the track or trailer, and there is danger of the machine losing its balance. Travel slowly over this point.
- When loading or unloading to an embankment or platform, make sure that it has suitable width, strength, and grade.
- When swinging the upper structure on the trailer, the trailer is unstable, so pull in the work equipment and swing slowly. And turn swing lock switch ON to apply swing lock after loading machine.
- For machines equipped with a cab, always lock the door after loading the machine. If this is not done, the door may suddenly open during transportation.
- After loading, block the machine tracks and secure the machine with tie-downs.

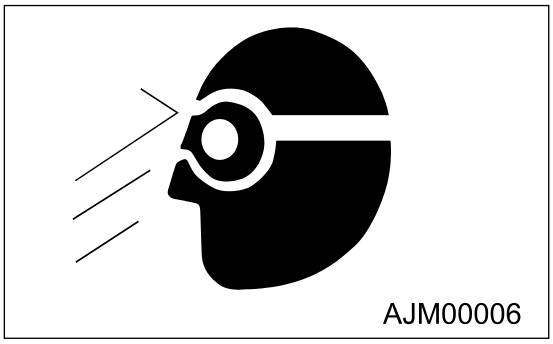
NOISE

If the noise from the machine is too loud, it may cause temporary or permanent hearing problems.

When carrying out maintenance of the engine and you are exposed to noise for long periods of time, wear ear covers or ear plugs while working.

WHEN USING HAMMER

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


AJM00006

- 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 injury. Always wear safety goggles and gloves.
- 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 pins are hit with strong force, there is a hazard that the pin may fly out and injure people in the surrounding area.

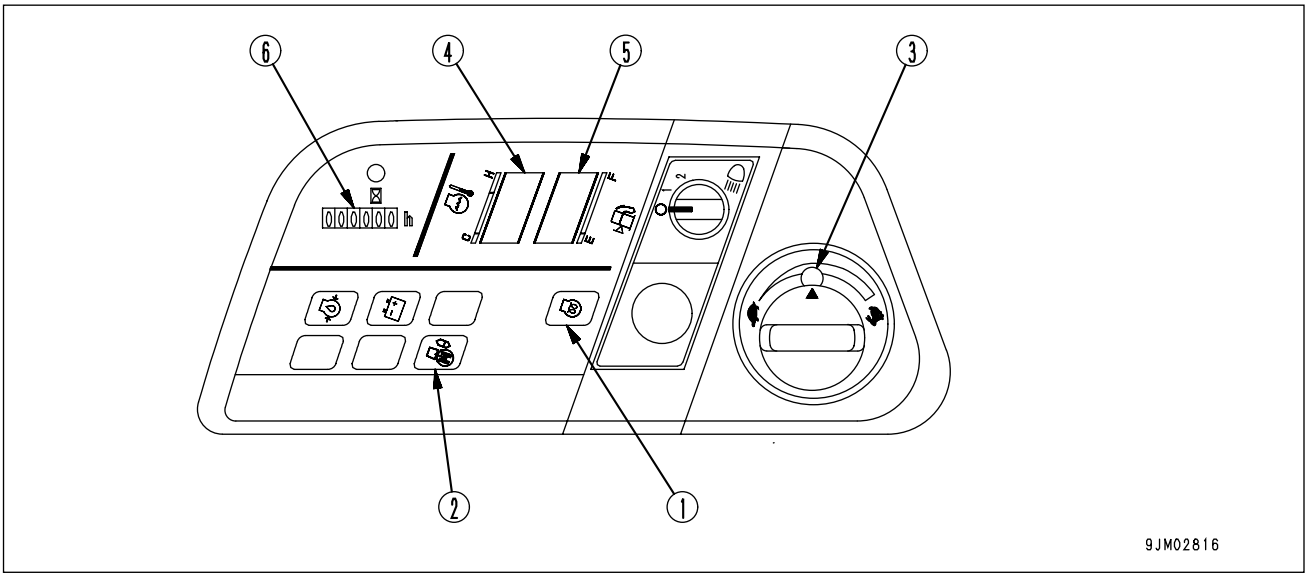
WELDING WORKS

Welding operations must always be carried out by a qualified welder and in a place equipped with a proper equipment. There is a hazard of fire or electrocution when carrying out welding, so never allow any unqualified personnel to carry out welding.

REMOVING BATTERY TERMINALS

When repairing the electrical system or when carrying out electrical welding, remove the negative (-) terminal of the battery to prevent the flow of current.

METER DISPLAY PORTION



Pilot display

(1) Engine pre-heating monitor
(2) Swing lock monitor
(3) Swift deceleration display lamp

Gauges and meter

(4) Engine coolant temperature gauge
(5) Fuel gauge
(6) Service meter

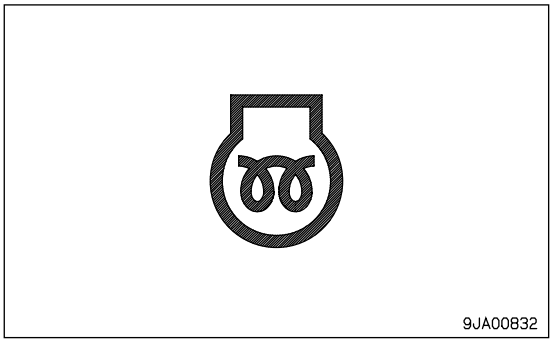
PILOT DISPLAY

When the starting switch is ON, the pilot display lights up when the display items are functioning.

ENGINE PRE-HEATING MONITOR

This monitor lamp(1) indicates the pre-heating time required when starting the engine at an ambient temperature below 0°C (32°F).

The monitor lamp lights when the starting switch is turned to HEAT position and flashes after about 30 seconds to show that the pre-heating is completed. (The monitor lamp will go off after about 10 seconds.)

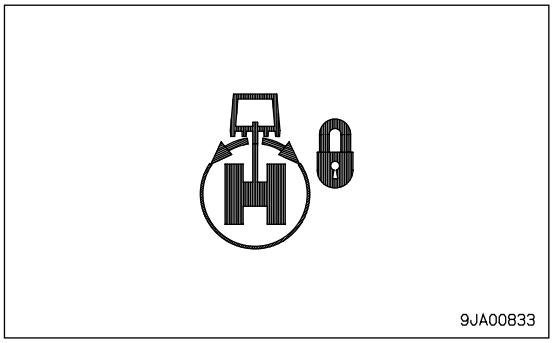


SWING LOCK MONITOR

This monitor (2) informs the operator that the swing lock is being actuated.

Actuated: Lights up

When the swing lock switch is turned ON (ACTUATED), the monitor lamp lights up.



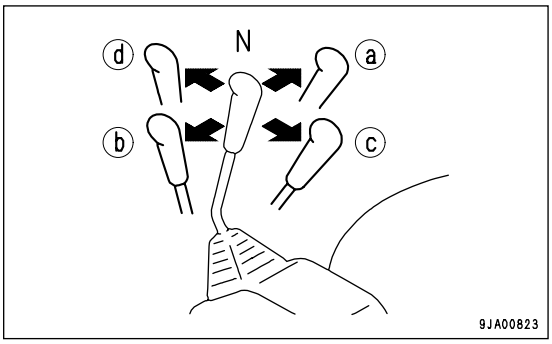
REMARK

The swing motor is equipped with a disc brake that mechanically stops the rotation. When the swing lock monitor lamp is lighted up, the brake remains applied.

WORK EQUIPMENT CONTROL LEVER

(with auto-deceleration device)

This Left work equipment control lever (2) is used to operate the arm and upper structure.

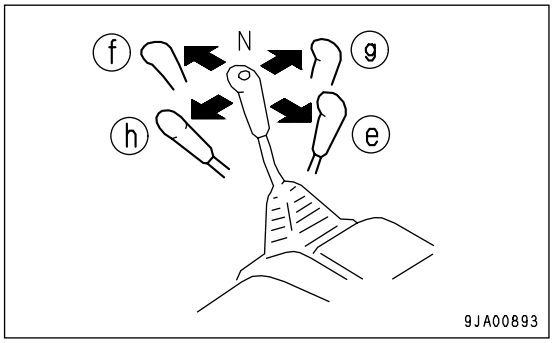


Arm operation Swing operation

(a) Swing to right
(b) Swing to left
(c) Arm IN
(d) Arm OUT

N (Neutral): The upper structure and arm are held in position and do not move.

This Right work equipment control lever(3) is used to operate the arm and upper structure.



Boom operation Bucket operation

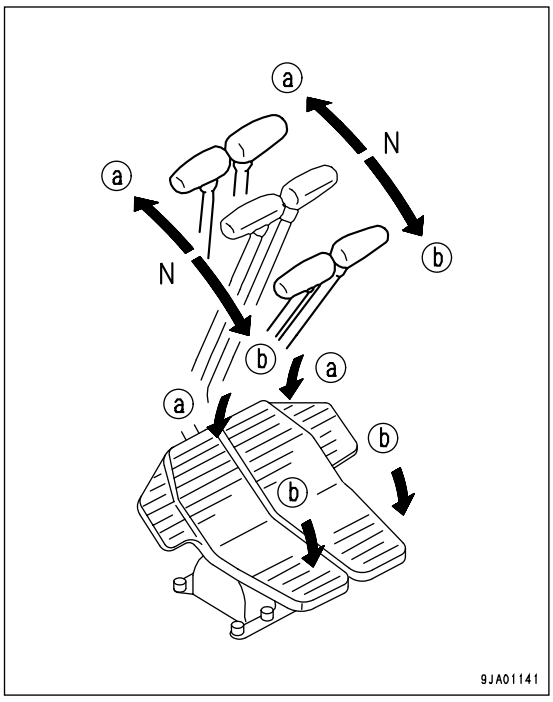
(e) RAISE
(f) LOWER
(g) DUMP
(h) CURL

N (Neutral): The boom and bucket are held in position and do not move.

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, and this may lead to a serious accident.**
- **With the track frame facing to the rear, the machine will move in the reverse direction by forward traveling and in the forward direction by reverse traveling. When the travel lever is used, check to see if the track frame is facing forward or backward. (If the sprocket is located to the rear, the track frame is facing forward.)**



This lever (4) is used to switch the direction of travel of the machine. ( ) shows the operation of the pedal.

(a) FORWARD:
The 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

( ): This indicates operation of the pedal.

PUMP ROOM DOOR, BATTERY ROOM DOOR

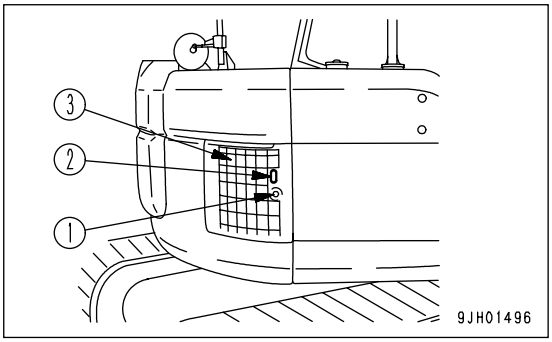
⚠ CAUTION

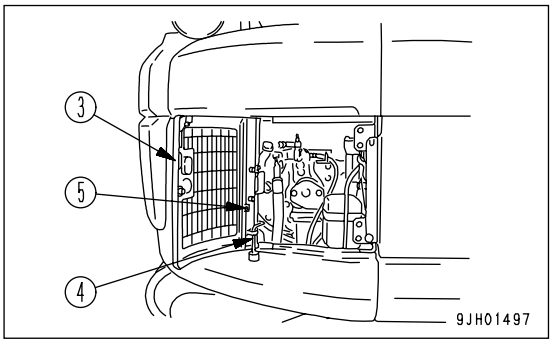
When carrying out inspection and maintenance inside the door, always use the stopper to hold the door open.

NOTICE
Always keep the door locked except when opening it.

1. Release lock (1) of the door.
   For details, see "CAP, COVER WITH LOCK (PAGE 3-24)".
2. Hook your finger in catch (2) and open door (3).
3. Remove stopper (4) from spring catch (5).
4. Set so that the cushion of stopper (4) contacts the outside circumference of the machine, then lower stopper (4).
5. When closing door (3), secure stopper (4) to spring catch (5), then close the door.
6. Lock the door.

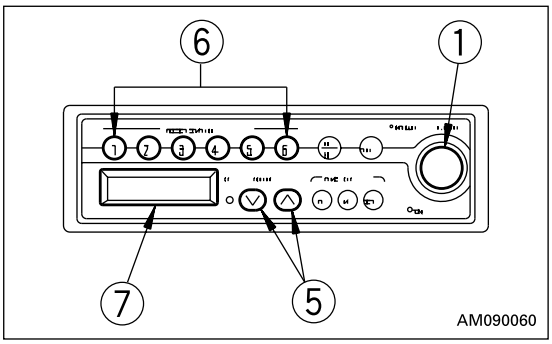
REMARK
The pump room door is on the right side of the machine; the battery room door is on the left side of the machine.





METHOD OF OPERATION

METHOD OF SETTING PRESET BUTTONS



1. Press power switch (1) and display the frequency on display (7).
2. Turn the tuning button (manual, auto) to adjust to the desired frequency.
3. Select a preset button to use for recording the frequency setting, and keep that button pressed for at least 1.5 seconds. The sound will disappear, but when the setting is recorded, the sound will appear and the preset number will appear on display (7) to show that the station has been preset.
   After completion of presetting, press preset button (6), and release it within approx. 1.5 seconds. The setting will change to the frequency of the broadcasting station recorded for that button. One AM station and one FM station can be recorded for each preset button.

MANUAL TUNING

Press tuning button (5) and set to the desired frequency.

Each time the button is pressed, the frequency will move up or down in steps of 9 kHz (AM) or 0.1 MHz (FM).

∨ button: Move to a higher frequency station
∧ button: Move to a lower frequency station

- If the frequency reaches the top or bottom limit, it will automatically change as follows: top limit → bottom limit, or bottom limit → top limit

AUTOMATIC TUNING

Keep tuning button (5) pressed for at least 0.5 seconds. When a broadcasting station is picked up, it will automatically stop. To search for the next station, press tuning button (5) again for at least 0.5 seconds.

∨ button: Move to a higher frequency station
∧ button: Move to a lower frequency station

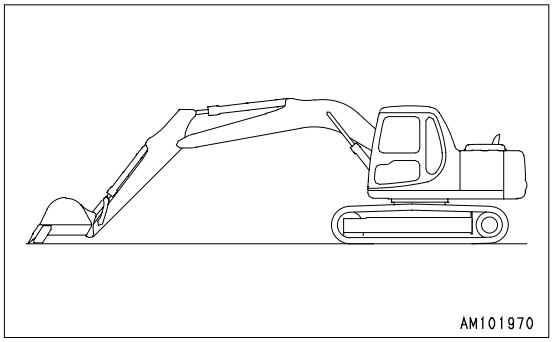
- If tuning button (5) is pressed during auto tuning, the auto tuning will be canceled and the frequency at the point where it is canceled will be picked up.

CHECK OIL LEVEL IN HYDRAULIC TANK, ADD OIL

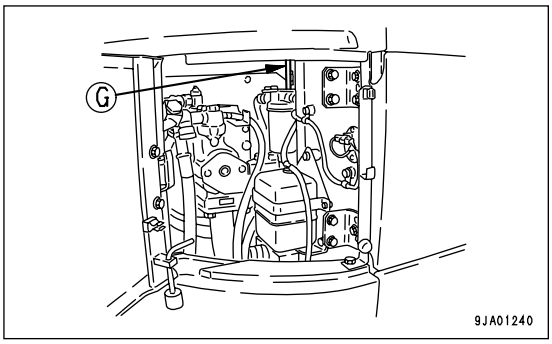
⚠ WARNING

When removing the oil filler cap, oil may spurt out, so turn the cap slowly to release the internal pressure before removing the cap.

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 cylinders, then lower the boom, set the bucket teeth in contact with the ground, and stop the engine.
2. Within 15 seconds after stopping the engine, move each control lever (for work equipment and travel) to the full stroke in all directions to release the internal pressure.

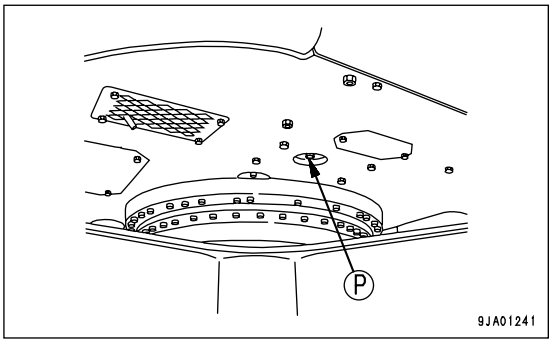


3. Open the door of the pump room on the right side of the machine and check sight gauge (G). The oil level should be between the H and L lines.

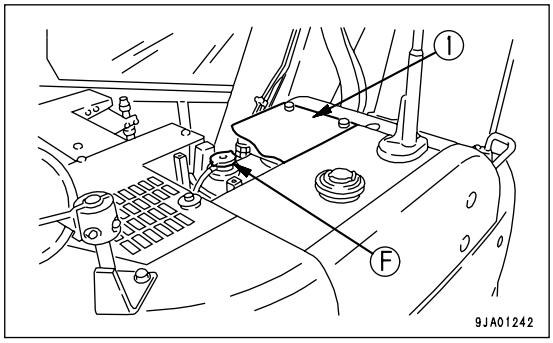


NOTICE

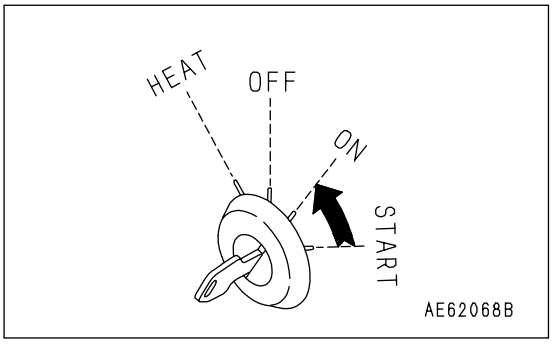
Do not add oil above the H line. This will damage the hydraulic circuit or cause the oil to spurt out. If oil has been added to above the H level, stop the engine and wait for the hydraulic oil to cool down, then drain the excess oil from drain plug (P).



4. If the oil level is below the L line, add oil through oil filler (F) at the top of the hydraulic tank.



4. When the engine starts, release the key in starting switch (2).
   The key will return automatically to the ON position.

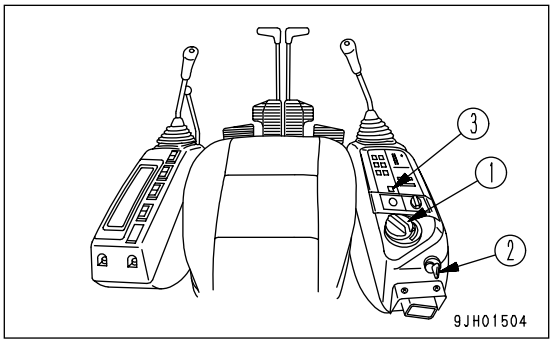


5. Continue idling for 15 seconds after the engine starts. During this time, do not operate the control levers or fuel control dial.

STARTING ENGINE IN COLD WEATHER

⚠ WARNING

- **Check that there are no persons or obstacles in the surrounding area, then sound the horn and start the engine.**
- **Never use starting aid fluids as they may cause explosions.**

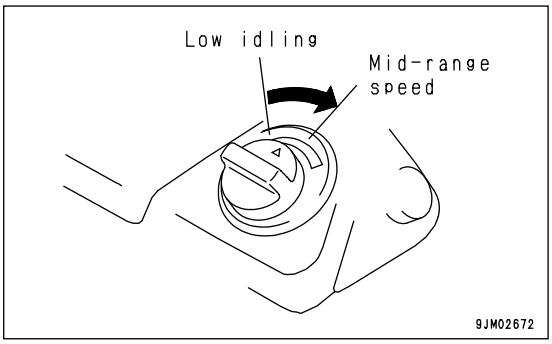


NOTICE
- **If the fuel control dial is at the FULL position, the engine will pick up suddenly and this will damage the engine parts, so always set the fuel control dial to the mid-range or low position.**
- **Do not keep the starting motor rotating continuously for more than 20 seconds.**
  If the engine will not start, wait for at least two minutes before trying to start the engine again.

When starting in low temperatures, do as follows.

1. Before starting the engine, check that fuel control dial (1) is at the low idling position.

2. Turn fuel control dial (1) to the center position between LOW IDLING and HIGH IDLING.



STEERING THE MACHINE

Steering

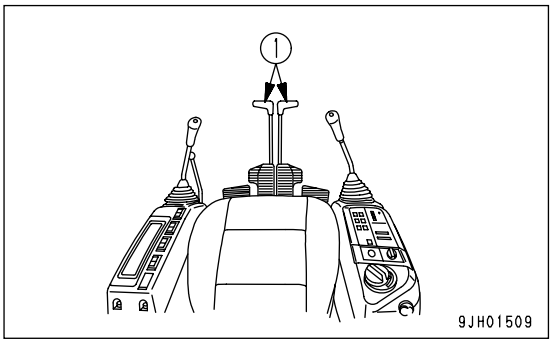
⚠ WARNING

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.

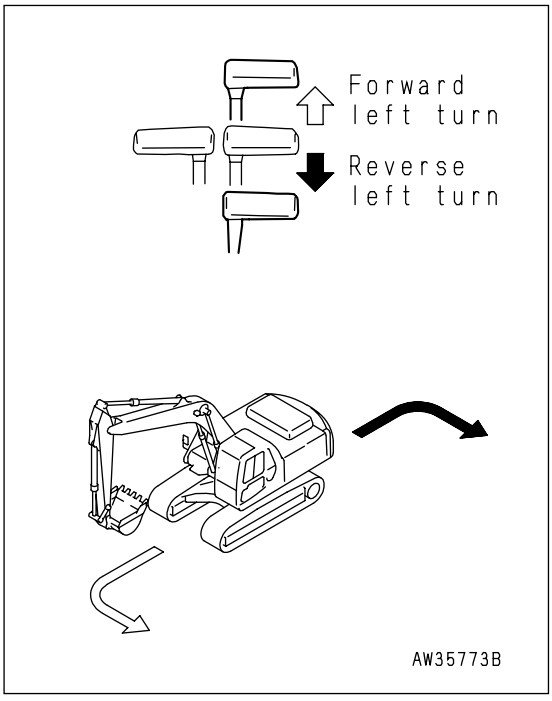


Steering the Machine when Stopped

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.



ESCAPE FROM MUD

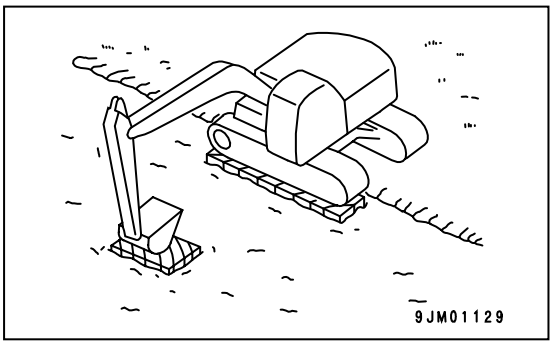
Always operate carefully to avoid getting affixed in mud. If the machine does get affixed in mud, do as follows to get the machine out.

STUCK ONE SIDE OF TRACK

NOTICE

When using the boom or arm to raise the machine, always have the bottom of the bucket in contact with the ground. (Never push with the teeth). The angle between the boom and arm should be 90ºt to 110º. The same applies when using the inverting bucket.

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. If necessary, put a board under the bucket also.



TRANSPORTATION

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

TRANSPORTATION PROCEDURE

As a basic rule, transport the machine by trailer.

Select the trailer to match the weight and dimensions given in "SPECIFICATIONS (PAGE 5-2)".

Note that the value for the weight and transportation dimensions given in SPECIFICATIONS may differ according to the type of shoe or type of arm or other attachments.

BATTERY

⚠ WARNING

- **The battery generates flammable gas. Do not bring fire or sparks near the battery.**
- **Battery electrolyte is dangerous. If it gets in your eyes or on your skin, wash it off with a large amount of water and consult a doctor.**
- **Battery electrolyte dissolves paint. If it gets on the bodywork, wash it off immediately with water.**
- **If the battery electrolyte is frozen, do not charge the battery or start the engine with a different power source. There is danger that the battery may explode.**
- **Battery electrolyte is toxic. Do not let it flow into drainage ditches or spray it on to the ground surface.**

When the ambient temperature drops, the capacity of the battery will also drop. If the battery charge ratio is low, the battery electrolyte may freeze. Maintain the battery charge as close as possible to 100%, and insulate it against cold temperature so that the machine can be started easily the next morning.

REMARK
Measure the specific gravity and calculate the rate of charge from the following conversion table.

Electrolyte Temperature (°C) / Charging Rate (%)	20	0	–10	–20
100	1.28	1.29	1.30	1.31
90	1.26	1.27	1.28	1.29
80	1.24	1.25	1.26	1.27
75	1.23	1.24	1.25	1.26

- As the battery capacity drastically drops in low temperatures, cover or remove the battery from the machine, store the battery in a warm place, and install it again the next morning.
- If the electrolyte level is low, add distilled water in the morning before beginning work. Do not add water after the day's work to prevent diluted electrolyte in the battery from freezing during the night.

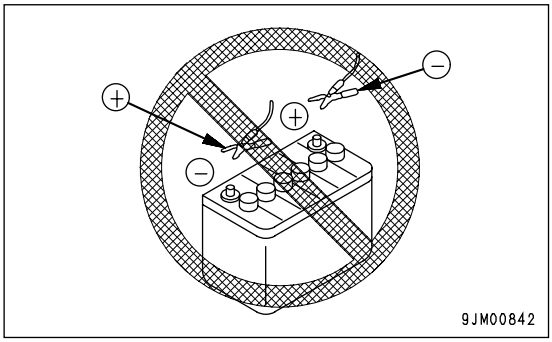
STARTING ENGINE WITH BOOSTER CABLES

When starting the engine with a booster cable, do as follows:

CONNECTING AND DISCONNECTING BOOSTER CABLES

⚠ WARNING

- **When connecting the cables, never contact the positive (+) and negative (-) terminals.**
- **When starting the engine with a booster cable, always wear safety glasses.**
- **Be careful not to let the normal machine and problem machine contact each other. This prevents sparks from generating near the battery which could ignite the hydrogen gas given off by the battery. If hydrogen gas explodes, it could cause serious injury.**
- **Make sure that there is no mistake in the booster cable connections.**
  The final connection is to the revolving frame, but sparks will be generated when this is done, so connect to a place as far as possible from the battery. (However, avoid connecting the cable to the work equipment, as conduction is poor.)
- **Use care when removing the cables from the machine that has been started. To avoid hydrogen explosion, do not allow the cable ends to contact each other or the machine.**



NOTICE

- **The size of the booster cable and clip should be suitable for the battery size.**
- **The battery of the normal machine must be the same capacity as that of the engine to be started.**
- **Check the cables and clips for damage or corrosion.**
- **Make sure that the cables and clips are firmly connected.**
- **Check that the safety lock levers and parking brake levers of both machine are in the LOCK position.**
- **Check that each lever is in the NEUTRAL position.**

OUTLINE OF SERVICE

- Always use Komatsu genuine parts for replacement parts, grease or oil.
- When changing the oil or adding oil, do not mix different types of oil. When changing the type of oil, drain all the old oil and fill completely with the new oil. Always replace the filter at the same time. (There is no problem if the small amount of oil remaining in the piping mixes with the new oil.)
- Unless otherwise specified, when the machine is shipped from the factory, it is filled with the oil and coolant listed in the table below.

Item	Type
Engine oil pan	Engine oil EO15W40DH (Komatsu genuine parts)
Swing machinery case Final drive case PTO gear case	Power train oil TO30 (Komatsu genuine parts)
Hydraulic system	Power train oil TO10 (Komatsu genuine parts)
Radiator	Supercoolant AF-NAC (Density: 30% or above) (Komatsu genuine parts)

HANDLING OIL, FUEL, COOLANT, AND PERFORMING OIL CLINIC

OIL

- Oil is used in the engine and hydraulic equipment under extremely severe conditions (high temperature, high pressure), and deteriorates with use.

  Always use oil that matches the grade and maximum and minimum ambient temperatures recommended in the Operation and Maintenance Manual. Even if the oil is not dirty, always change the oil after the specified interval.
- Oil corresponds to blood in the human body, so always be careful when handling it to prevent any impurities (water, metal particles, dirt, etc.) from getting in.

  The majority of problems with machine are caused by the entry of such impurities.

  Take particular care not to let any impurities get in when storing or adding oil.
- Never mix oils of different grades or brands.
- Always add the specified amount of oil.

  Having too much oil or too little oil are both causes of problems.
- If the oil in the work equipment is not clear, there is probably water or air getting into the circuit. In such cases, please contact your Komatsu distributor.
- When changing the oil, always replace the related filters at the same time.
- We recommend you have an analysis made of the oil periodically to check the condition of the machine. For those who wish to use this service, please contact your Komatsu distributor.
- When using commercially available oil, it may be necessary to reduce the oil change interval.

  We recommend that you use the Komatsu oil clinic to carry out a detailed checks of the characteristics of the oil.

PERIODIC REPLACEMENT OF SAFETY CRITICAL PARTS

To ensure safety at all times when operating or driving the machine, the user of the machine must always carry out periodic maintenance. In addition, to further improve safety, the user should also carry out periodic replacement of the parts given in the table. These parts are particularly closely connected to safety and fire prevention.

With these parts, the material changes as time passed, or they easily wear or deteriorate. However, it is difficult to judge the condition of the parts simply by periodic maintenance, so they should always be replaced after a fixed time has passed, regardless of their condition. This is necessary to ensure that they always maintain their function completely.

However, if these parts show any abnormality before the replacement interval has passed, they should be repaired or replaced immediately.

If the hose clamps show any deterioration, such as deformation or cracking, replace the clamps at the same as the hoses.

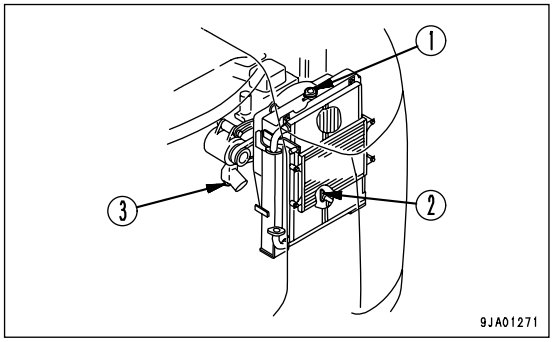
When replacing the hoses, always replace the O-rings, gaskets, and other such parts at the same time.

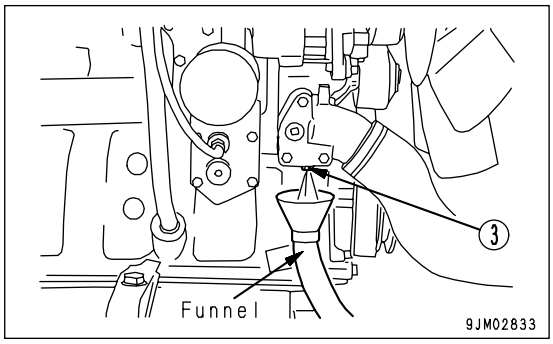
Ask your Komatsu distributor to replace the safety critical parts.

SAFETY CRITICAL PARTS

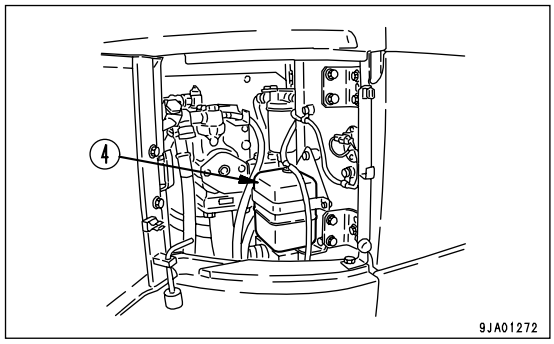
No.	Safety critical parts for periodic replacement	Q'ty	Replacement interval
1	Fuel hose (Fuel tank - Fuel injection pump)	2	Every 2 years or 4000 hours, whichever comes sooner
2	Spill hose (Nozzle - Fuel tank)	1	
3	Turbocharger lubricating oil hose	1	
4	Engine oil filter hose (Engine - Oil filter)	2	
5	Pump outlet hose (Pump - Control valve)	1	
6	Work equipment hose (Boom cylinder inlet)	4	
7	Work equipment hose (Bucket cylinder line - Boom foot section)	2	
8	Work equipment hose (Bucket cylinder inlet)	2	
9	Work equipment hose (Arm cylinder line - Boom foot section)	2	
10	Work equipment hose (Arm cylinder inlet)	2	
11	Additional attachment line hose (Boom foot section)	2	
12	Additional attachment line hose (Boom top section)	2	
13	Swing line hose (Swing motor inlet)	2	
14	Main suction hose	1	
15	Heater hose	2	
16	Seat belt	1	Every 3 years

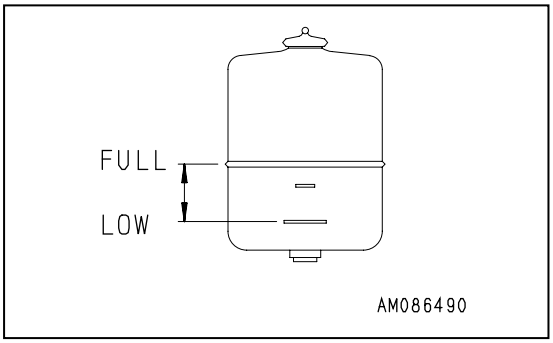
1. Stop the engine.
2. Turn radiator cap (1) slowly and remove it.
3. Remove the undercover, then set the container under drain valve (2) and drain plug (3) to catch the coolant mixture.
   Open drain valve (2) at the bottom of the radiator and drain the coolant. Then open drain plug (3) in the cylinder block and drain the coolant.
4. After draining the coolant, close drain valve (2) and drain plug (3), and fill with city water. When the radiator is full, start the engine and run at low idling to raise the temperature to at least 90°C, then continue to run for approx. 10 minutes.
5. Stop the engine, open drain valve (2) and drain plug (3), and drain the coolant.
6. After draining the coolant, clean the radiator with detergent. For the cleaning method, follow the instruction of detergent.





7. Close drain valve (2), then wrap drain plug (3) with sealing tape and close it.
8. Install the undercover.
9. Add coolant mixed with antifreeze until it overflows from the coolant filler.
   Decide the proportions of antifreeze and water according to the table for the mixing rate of water and antifreeze.
10. To remove air in the cooling system, run the engine for 5 minutes at low idle, then for 5 minutes at high idle. (While doing this, leave the radiator cap removed.)
11. Drain the coolant from sub-tank (4), clean the inside of the sub-tank, then add coolant until the coolant level is between the FULL and LOW marks.
12. Stop the engine, wait for approx. 3 minutes, then add coolant until the coolant level is near the coolant filler port, and tighten the cap. Check the coolant level and add coolant if necessary.



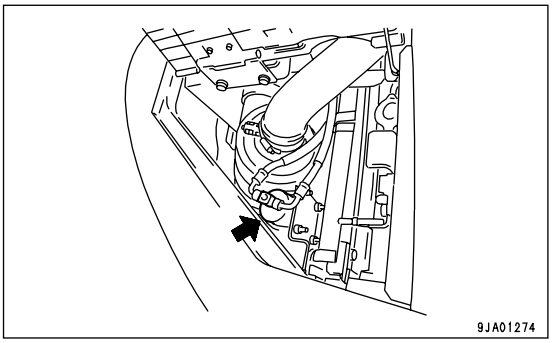


CHECK AND ADJUST AIR CONDITIONER (ONLY MACHINES EQUIPPED WITH AIR CONDITIONER)

CHECK LEVEL OF REFRIGERANT (GAS)

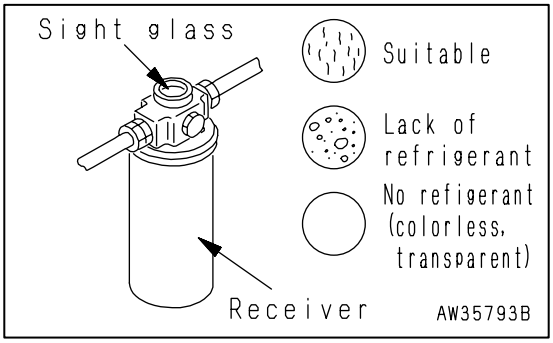
⚠ WARNING

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 (Freon 134a), the cooling performance will be poor.

When operating the cooler at high speed, there should be no bubbles in the sight glass (inspection window) mounted on the condenser unit receiver.



- No bubbles in refrigerant flow: Correct
- Bubbles in refrigerant flow (bubbles continuously pass through): Refrigerant level low
- 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.

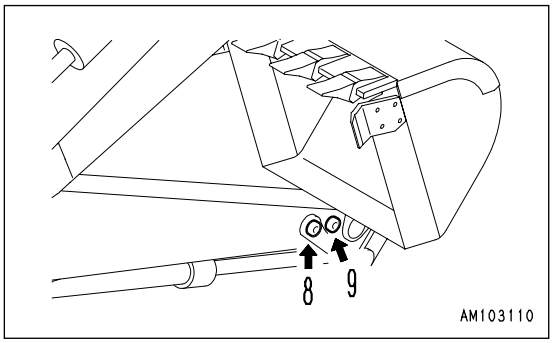
Check in off-season
When not being used for a long period, operate the cooler for 3 to 5 minutes once a month to supply lubricant to each component of the compressor.

Inspection and maintenance items list for cooler

Inspection and maintenance items	Contents	Maintenance interval
Refrigerant (gas)	Filling quantity	Twice a year; spring and autumn
Condenser	Clogging of fin	Every 500 hours
Compressor	Function	Every 4000 hours
V belt	Damage and tension	Every 250 hours
Blower motor and fan	Function (Check for abnormal sound)	When required
Control mechanism	Function (Check for normal function)	When required
Piping for connection	Installation condition looseness of tightening connection portions gas leakage, damage	When required

(8) Arm-Link coupling pin (1 point)

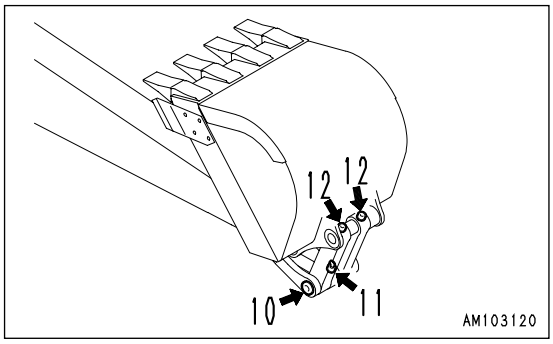
(9) Arm-Bucket coupling pin (1 point)



(10) Link coupling pin (1 point)

(11) Bucket cylinder rod end (1 point)

(12) Bucket-Link coupling pin (2 points)



CLEAN AND INSPECT RADIATOR FINS, OIL COOLER FINS AND CONDENSER FINS (ONLY FOR MACHINES EQUIPPED WITH AIR CONDITIONER)

⚠ WARNING

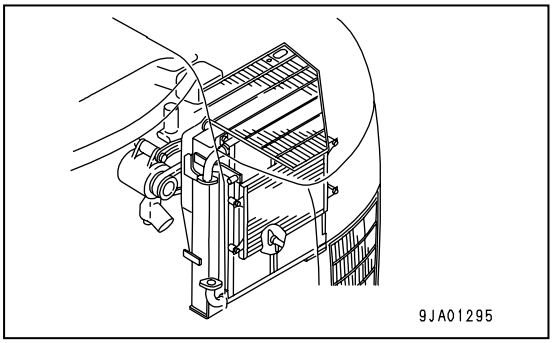
If compressed air, high-pressure water, or steamhit your body directly, or they cause dirt or dust to be blown up, there is a hazard of serious injury. Always use safety glasses, dust mask, or other protective equipment.

NOTICE

When using compressed air, if the nozzle is brought too near the fins, the fins may be damaged. Carry out the cleaning from a reasonable distance to prevent damage to the fins.

Do not direct the jet directly at the core. If the fins are damaged, it will cause leakage of water and overheating. On dusty jobsites, carry out this inspection every day, regardless of the maintenance interval.

1. Open the cover at the rear of the cab and the battery room door at the left side of the machine.
2. Use compressed air to clean the mud, dust, and leaves from the radiator fins, oil cooler fins, and condenser fins. Steam or water may be used instead of compressed air.
3. Check the rubber hose. Replace with a new one if the hose is found to have cracks or to be hardened by ageing. Further, check hose clamps for looseness.



SPECIFICATIONS

ACCUMULATOR (FOR ATTACHMENT OUT CIRCUIT) (IF EQUIPPED)

Accumulator (5) is installed to ensure the number of blows of the breaker when the pump discharge pressure pulse drops when the breaker is used. It also acts to protect the pump.

Consult with your attachment maker to decide if it is possible to install the accumulator.

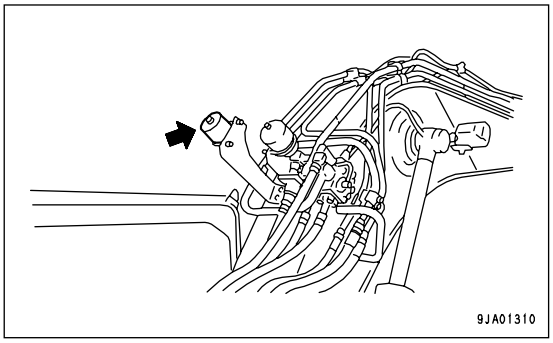


Table of additional circuits, parts supplied with breaker
(○: These parts must be installed)

		Accumulator		Low-pressure safety valve	
	Additional filter	Attachment circuit	Control circuit	Main valve	Selector valve
Hydraulic breaker	○	○ (Attachment out/ return circuit)	○	○	○

- Low-pressure safety valve cracking pressure

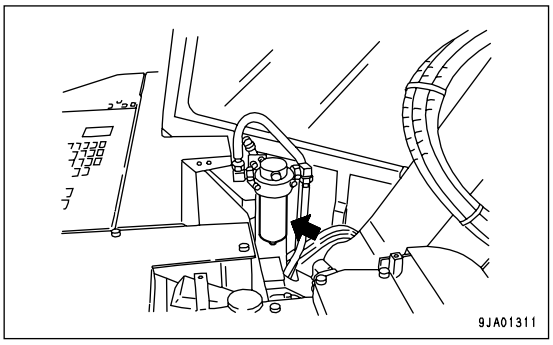
Main valve: 24.53 MPa (250 kg/cm^2)
Selector valve: 17.17 MPa (175 kg/cm^2)

ADDITIONAL FILTER FOR BREAKER

This filter (6) prevents deterioration of the hydraulic oil when the breaker is used.

Oil flows only when the selector valve is turned to the breaker position.

NOTICE
When installing a breaker, always install an additional filter to the return circuit.



ACCUMULATOR (FOR ATTACHMENT RETURN CIRCUIT) (option)

This accumulator (7) is installed to protect the oil cooler when the breaker is used.
Consult with your attachment maker to decide if it is necessary to install the accumulator.