Operation & Maintenance Manual

TEN00077-00

GALEO

WA150-5

WHEEL LOADER

SERIAL NUMBERS WA150-65001 and up

⚠ 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

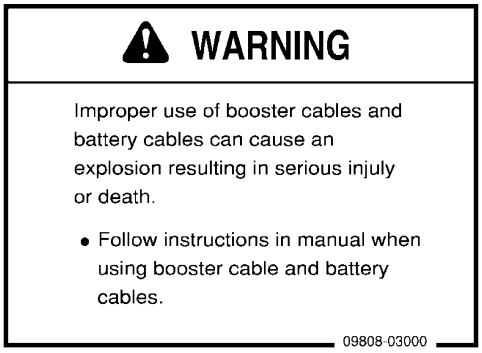
Komatsu has Operation & Maintenance Manuals written in some other languages. If a foreign language manual is necessary, contact your local distributor for availability.

KOMATSU

CONTENTS

(8) Caution when oil is at high temperature (09653-03001)

(9) Caution when handling battery cable (09808-03000)



(10) High pressure warning (09659-53000)

(11) Do not climb on fender (09805-03000)
(Machine equipped with rear fender)

(12) "Do not open when engine is running" sign (09667-03001)

- 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.

Voltage of Cables	Safety Distance
100 V - 200 V	Over 2 m (7 ft)
6,600 V	Over 2 m (7 ft)
22,000 V	Over 3 m (10 ft)
66,000 V	Over 4 m (14 ft)
154,000 V	Over 5 m (17 ft)
187,000 V	Over 6 m (20 ft)
275,000 V	Over 7 m (23 ft)
500,000 V	Over 11 m (36 ft)

- 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.

ENSURE GOOD VISIBILITY

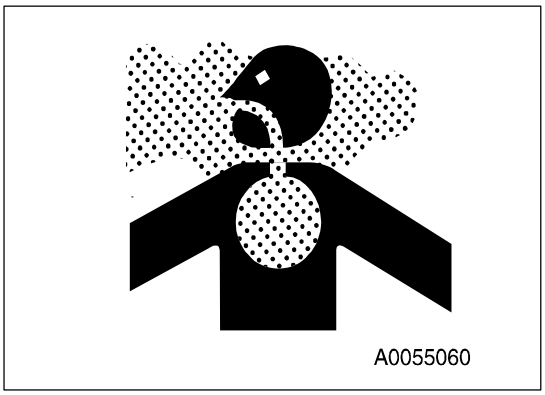
Check for any persons or obstacles in the area around the machine and check the conditions of the jobsite to ensure that operations and travel can be carried out safely. Always do as follows.

- 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.

VENTILATION FOR ENCLOSED AREAS

Exhaust fumes from the engine can kill.

- If it is necessary to start the engine within an enclosed area, or when handling fuel, flushing oil, or paint, open the doors and windows to ensure that adequate ventilation is provided to prevent gas poisoning.



CHECKING SIGNALMAN'S SIGNALS AND SIGNS

- Set up signs to inform of road shoulders and soft ground. If the visibility is not good, position a signalman if necessary. Operators should pay careful attention to the signs and follow the instructions from the signalman.
- Only one signalman should give signals.
- Make sure that all workers understand the meaning of all signals and signs before starting work.

EMERGENCY EXIT FROM OPERATOR'S CAB

Machines equipped with a cab have doors on the left and right sides. If the door on the one side does not open, escape from the door on the other side.

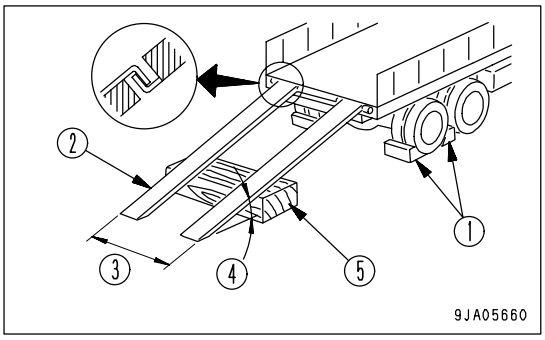
TRANSPORTATION

The machine can be divided into parts for transportation, so when transportating the machine, please contact your Komatsu distributor to have the work carried out.

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.
- 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 the tire of the machine. On a rainy day, in particular, be extremely careful since the ramp surface is slippery.
- Run the engine at low speed and travel slowly.
- Never correct your steering on the ramps. If necessary, drive off the ramps, correct the direction, then enter the ramps again.



(1) Blocks
(2) Ramp
(3) Width of ramps: Same width as track
(4) Angle of ramps: 15°
(5) Block

- When loading or unloading to an embankment or platform, make sure that it has suitable width, strength, and grade.
- For machines equipped with a cab, always lock the door after boarding the machine. If this is not done, the door may suddenly open during transportation.
  Refer to "TRANSPORTATION (PAGE 3-108)".

SHIPPING

When shipping the machine on a trailer, do as follows.

- The weight, transportation height, and overall length of the machine differ according to the work equipment, so be sure to confirm the dimensions.
- When passing over bridges or structures on private land, check first that the structure is strong enough to support the weight of the machine. When traveling on public roads, check first with the relevant authorities and follow their instructions.
- Lock the frame with the frame lock bar to prevent the machine from articulating.
- For details of the shipping procedure, see "TRANSPORTATION (PAGE 3-108)" in the OPERATION section.

COMPRESSED AIR

- When carrying out cleaning with compressed air, there is a hazard of serious injury caused by flying particles.
- When using compressed air to clean elements or the radiator, always wear safety goggles, dust mask, gloves, and other protective equipment.

PERIODIC REPLACEMENT OF SAFETY CRITICAL PARTS

- In order for the machine to be operated safely for a long time, it is necessary to add oil and to carry out service and maintenance at periodic intervals. In order to further increase safety, components with a strong relationship to safety, such as hoses and seat belts, must be replaced at periodic intervals.
  Replacement of safety critical parts: See "PERIODIC REPLACEMENT OF SAFETY CRITICAL PARTS (PAGE 4-13)".
- The material of these components naturally changes over time, and repeated use causes deterioration, wear, and fatigue. As a result, there is a hazard that these components may fail and cause serious injury or death. It is difficult to judge the remaining life of these components from external inspection or the feeling when operating, so always replace them at the specified interval.
- Replace or repair safety-critical parts if any defect is found, even when they have not reached the time specified interval.

ACTION CODE DISPLAY

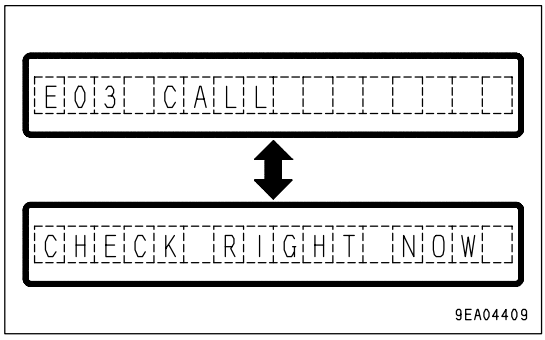
WARNING

If action code E03 is displayed, stop the machine immediately and check the failure code. For details, see "FAILURE CODE DISPLAY (PAGE 3-11)".
Inform your Komatsu distributor of the failure code and ask for repairs.

If there is a failure on the machine, if it is necessary to change the method of operation, or if inspection or maintenance must be carried out, action code E00, E01, E02, or E03 is displayed on the character display in display portion (2).
If different failures occur at the same time, the action code for the more serious problem is displayed.
The level of seriousness is as follows, starting with the most serious: E03, E02, E01, E00.
In the case of action codes E00, E02, and E03, the alarm buzzer sounds intermittently and the central warning lamp lights up.

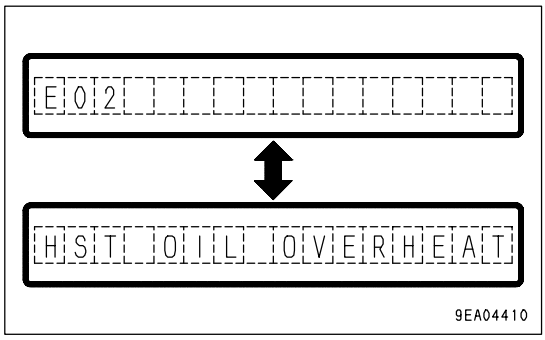
If action codes E00, E01, E02, or E03 are displayed on the character display, stop operations, check the content of the display, and take the following action.

E03: When this code is displayed, stop the machine immediately, check the failure code, and contact your Komatsu distributor for repairs.



REMARK
"E03 CALL" is displayed on the character display, and then "CHECK RIGHT NOW" and "E03 CALL" are displayed in turn for 3 seconds each.

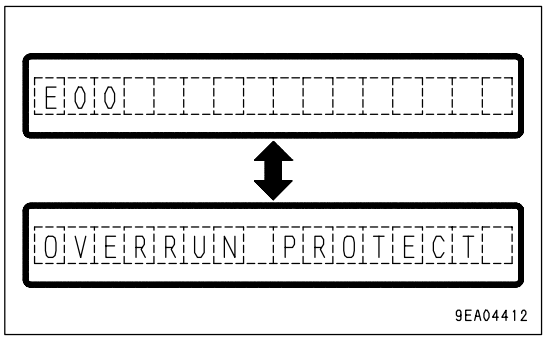
E02: If overrun related information is displayed, reduce the engine speed and the speed of the machine while continuing operations.
If the overheat related display is given, stop the machine and run the engine under no load at a mid-range speed.
If an action code is still displayed after doing this, check the failure code and contact your Komatsu distributor for repairs.



REMARK
"E02" is displayed on the character display, and then the condition of the machine related to the overheating or overrun is displayed in turn with "E02" for 3 seconds each.

WARNING/LIMIT FUNCTIONS FOR TRAVEL SPEED

When the travel speed goes above 40.0 km/h (24.9 MPH), the central warning lamp lights up and the alarm buzzer sounds.
At the same time, "E00" is displayed on the character display, and then "OVERRUN PROTECT" and "E00" are displayed in turn for 3 seconds each.
If the alarm buzzer sounds, ease the accelerator pedal back and reduce speed.



TRAVEL SPEED LIMIT FUNCTION

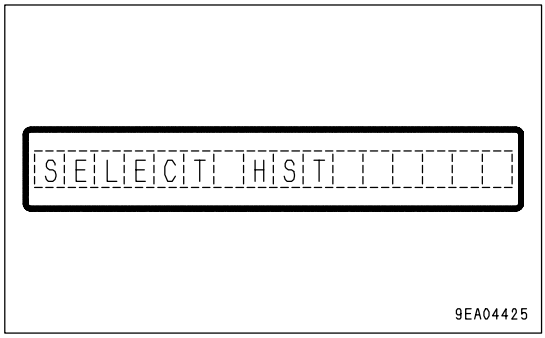
The travel speed is automatically controlled so that it does not go above approx. 42 km/h (26.1 MPH).

METHOD OF SELECTING HST CHANGING FUNCTION

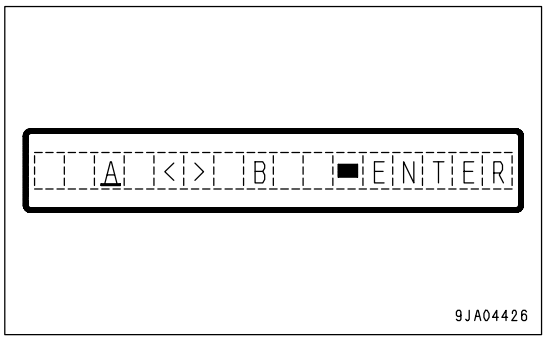
When the speed range selector switch is in 3rd or 4th position, there are two selections available for the HST. Use this when changing the selection.

Function	Speed range selector switch position	
	3rd position	4th position
A (default setting)	F3, R3	F4, R4
B	F3, R2	F4, R2

1. Press the (◇) of monitor panel mode selector switch 1, and display the odometer.
2. Press (>) or (<) of monitor panel mode selector switch 2 and display "SELECT HST".



3. Press the (◇) of monitor mode selector switch 1. The present HST selection is displayed.
4. Press the (<) or (>) of monitor mode selector switch 2, and align the cursor with A or B.
5. Press the (■) of monitor mode selector switch 1.
   The HST selection is confirmed and the screen returns to the previous screen.

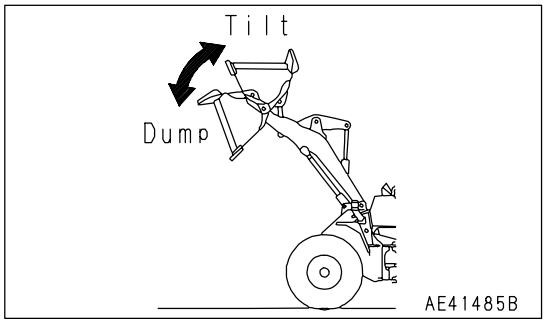


6. When completing the operation, press (■) of monitor panel mode selector switch 1 twice or turn the starting switch OFF.

Position (e): TILT

When the work equipment control lever is pulled further beyond the TILT position, the lever is stopped in this position until the bucket reaches the preset position of the positioner, and the lever is returned to the HOLD position.

Position (f): DUMP



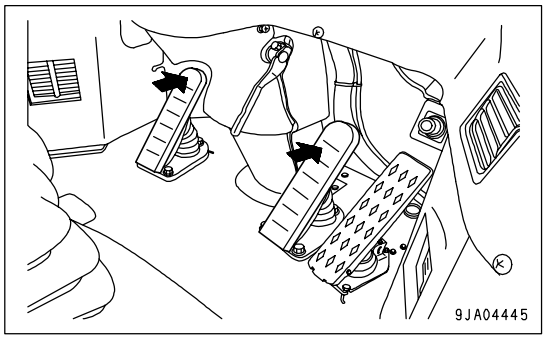
BRAKE PEDAL

WARNING

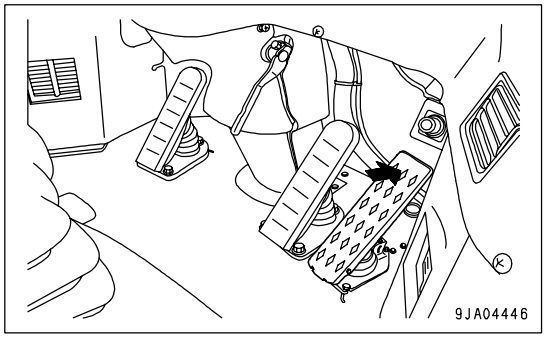
- **When traveling downhill, always use the right brake pedal, and use the braking force of the engine together with the brake.**
- **Do not use the brake pedal excessively. If the brake is used too frequently, the brake will overheat. If this happens, the brakes will not work and may lead to a serious accident.**
- **Do not put your foot on the brake pedal unless necessary.**

These pedals (4) operate the brakes.
Use the brake pedal for normal braking operations.
The left and right pedals are interconnected and work together.

REMARK
When using the brake pedal and accelerator pedal together (applying the brake and easing the accelerator) to reduce the travel speed or stop the machine, it is more convenient to use the left brake pedal.

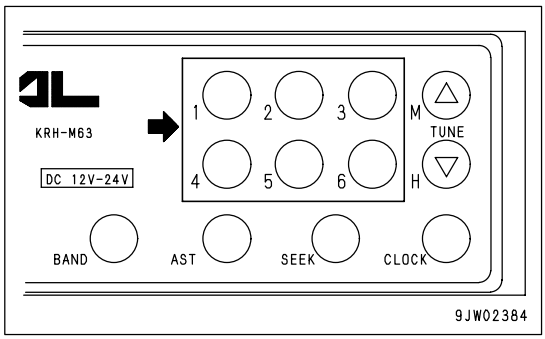


ACCELERATOR PEDAL
This pedal (5) controls the engine speed and output.
The engine speed can be freely controlled between low idling and full speed.



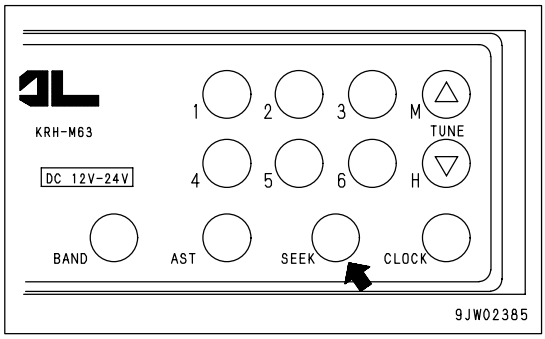
PRESET SWITCH

With this switch (6), each button can be set to one station each for FM and MW (AM). (For details of the method of resetting, see "METHOD OF PRESETTING STATION (PAGE 3-51)".)



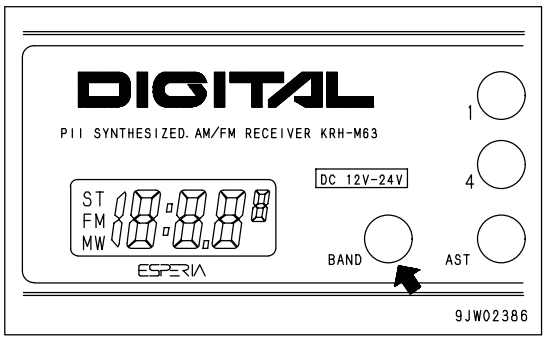
SEEK

When this switch (7) ("SEEK") is pressed, it automatically searches for stations that can be received, and when it receives a station, it stops.



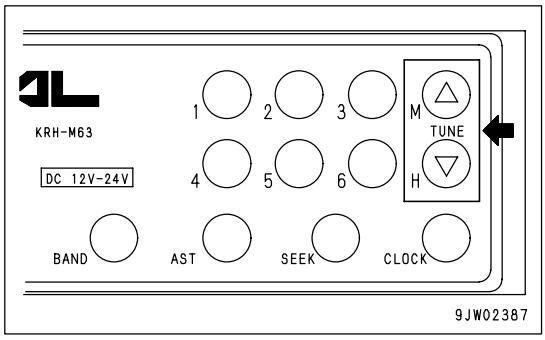
BAND SELECTOR SWITCH

When this switch (8) ("BAND") is pressed, the band is switched between FM and MW (AM).
The reception band and frequency are displayed on the display.



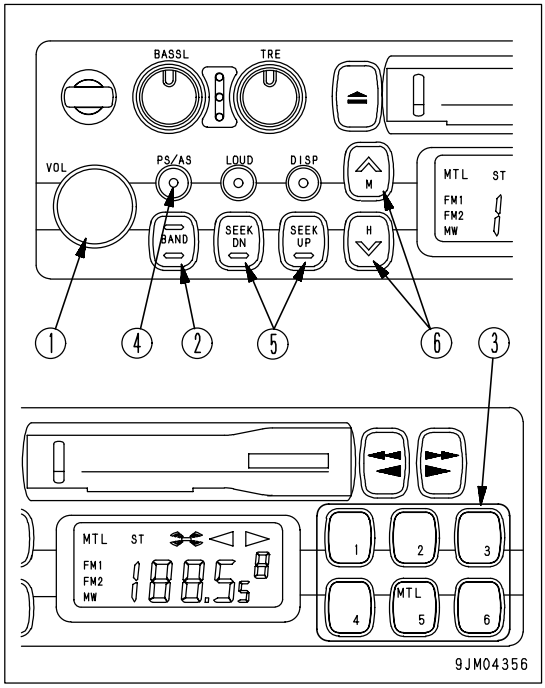
TUNING SWITCH

When the "TUNE" button △ of switch (9) is pressed, the frequency goes up; when the ▽ button is pressed, the frequency goes down. If it is kept pressed, the frequency changes continuously.



LISTENING TO RADIO

1. Turn the starting switch ON, then turn power switch (1) ON.
2. Use band selector button (2) to select MW (AM), FM1 or FM2.
3. Select the station with the preset buttons (3).



REMARK

In case you do not promptly remember the number assigned to a certain preset station, press auto-store/preset scan button (4) for less than 0.5 second. The preset 6 stations will broadcast one after another for 5 seconds each. When the desired station broadcasts, press the button again and scan tuning stops.

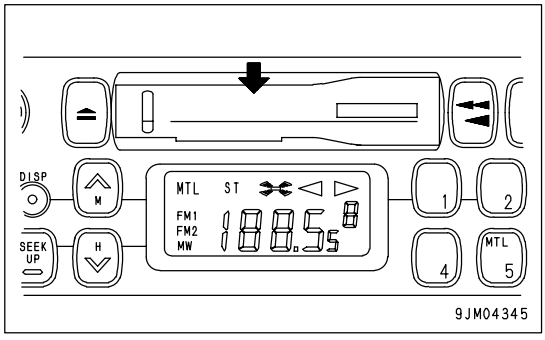
4. If you want to tune in to a station that is not preset, use either seek tuning button (5) or manual tuning button (6).
5. Adjust the volume, balance, and tone as desired.
6. When turning the radio OFF, turn power switch (1) to the left until it clicks.

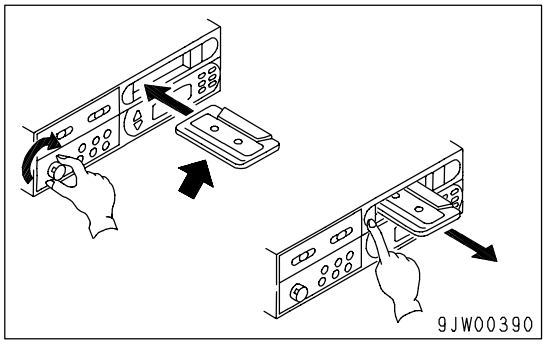
REMARK

- To switch to the radio when listening to a cassette, press the cassette eject button to stop the tape.
- If you insert a cassette when listening to the radio, the tape will start to play.

LISTENING TO CASSETTE TAPE

1. Turn the starting switch ON, then turn power switch (1) ON.
2. Set the cassette with the exposed portion of the tape on the right side and push it past the cassette door. The tape will automatically start playing.
   If the arrow indicating the direction of play is pointing to the right, the top side is being played; if the arrow is pointing to the left, the bottom side is being played.
   When the tape reaches the end, it is automatically reversed and the other side starts to play.
3. When finished with the tape, press the cassette eject button to eject the tape and automatically switch to the radio.





CHECK BEFORE STARTING

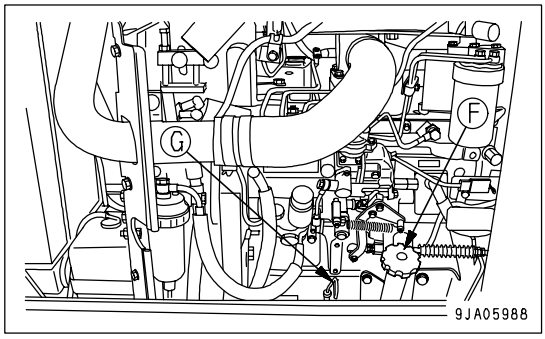
Always perform the procedures in this section before starting the engine each day.

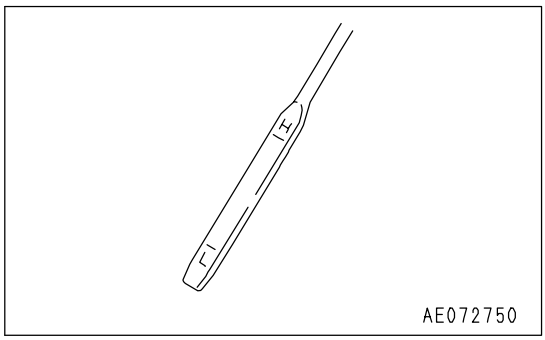
CHECK OIL LEVEL IN ENGINE OIL PAN, ADD OIL

⚠ WARNING

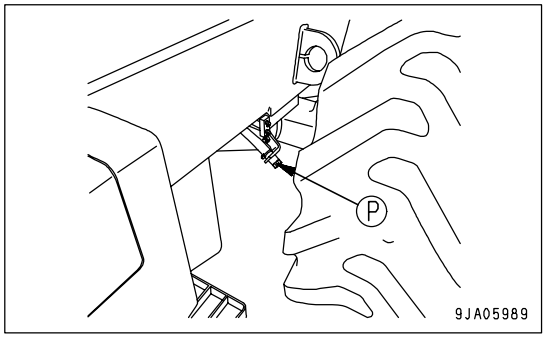
Parts and oil are at high temperature immediately after the engine is stopped and may cause serious burns. Wait for the oil temperature to go down before performing this operation.

1. Open the engine side cover on the right side of the chassis.
2. Take out the dipstick (G) and wipe off the oil with cloth.
3. Fully insert dipstick (G) into filler pipe (F), then remove it.
4. The oil level should be between the H and L marks on dipstick (G).
   If the oil level is below the L mark, add oil through oil filler (F).





5. If the oil is above the H mark, drain the excess engine oil from drain plug (P), and check the oil level again.
6. If the oil level is correct, tighten oil filler cap (F) securely and close the inspection window.



REMARK

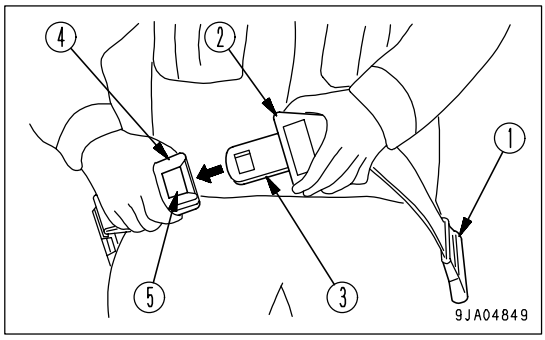
- Wait for at least 15 minutes, after stopping the engine, before checking the oil level.
- If the machine is at an angle, make it horizontal before checking.

FASTENING AND REMOVING WIND-IN TYPE BELT
(If equipped)

This seat belt has a wind-in device, so it is not necessary to adjust the length.

Fastening seat belt

Hold grip (2) and pull the belt out from wind-in device (1), check that the belt is not twisted, then insert tongue (3) into buckle (4) securely.
When doing this, pull the belt lightly to check that it is properly locked.



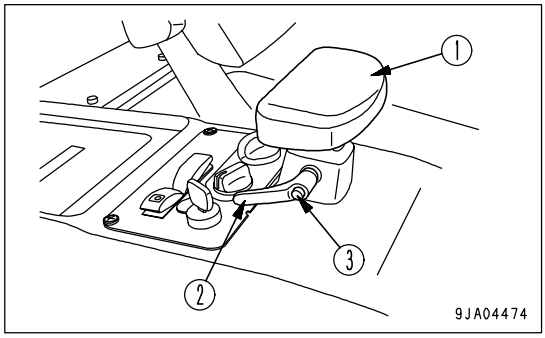
Removing belt

Press button (5) in buckle (4), and remove tongue (3) from buckle (4).
The belt is automatically wound in, so hold grip (2) and return the belt slowly to wind-in device (1).

ADJUST LEVER STAND

ADJUST HEIGHT OF WRIST REST

Loosen lock lever (2) and adjust the height of wrist rest (1).
Amount of adjustment: 60 mm (2.4 in)

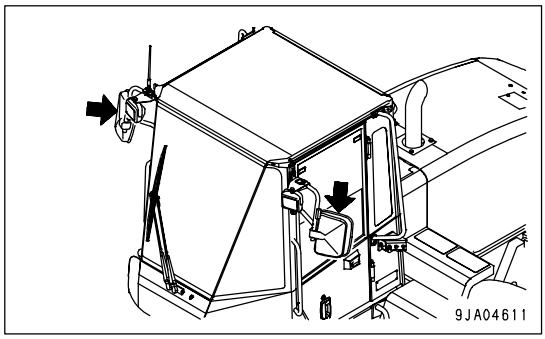


REMARK

Keep button (3) pressed and operate lock lever (2) to the FREE position. The lever can be turned in the desired direction.

ADJUST REAR VIEW MIRROR

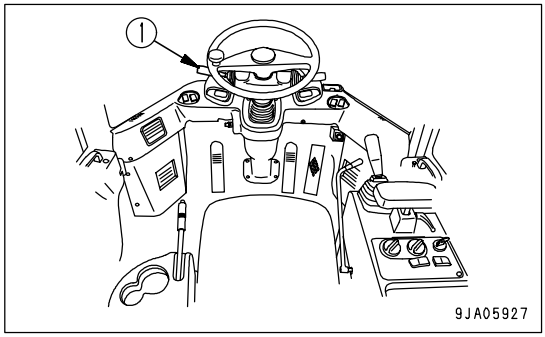
Sit in the operator's seat and adjust the rear view mirror so that you can see properly to the rear.



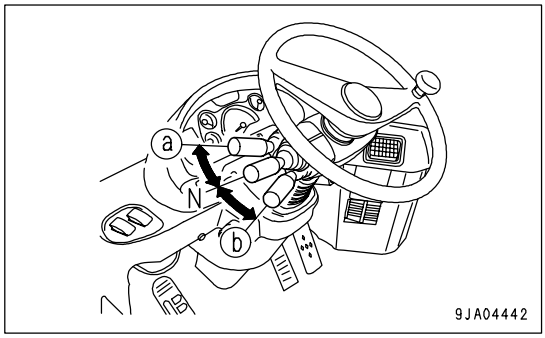
CHANGING DIRECTION

WARNING

- **When changing direction between FORWARD and REVERSE, check that the new direction of travel is safe. There is a blind spot behind the machine, so be particularly careful when changing direction to travel in reverse.**
- **Do not switch between FORWARD and REVERSE when traveling at high speed.**
  When switching between FORWARD and REVERSE, depress the brake to reduce the travel speed sufficiently, then change the direction of travel. (Max.speed for changing direction: 13 km/h (8.1 MPH))



There is no need to stop the machine even when switching between FORWARD and REVERSE.
Place directional lever (1) in the desired position.
Position (a): FORWARD
Position N: NEUTRAL
Position (b): REVERSE

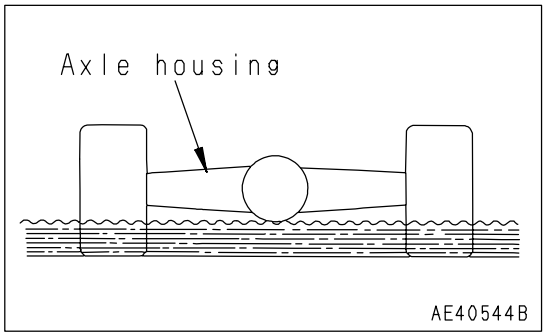


- Check that the backup alarm sounds when the directional lever is set to REVERSE. If the backup alarm does not sound, please contact your Komatsu distributor for repairs.

PRECAUTIONS FOR OPERATION

PERMISSIBLE WATER DEPTH

When working in water or on swampy ground, do not let the water come above the bottom of the axle housing.
After finishing the operation, wash and check the lubricating points.



IF WHEEL BRAKE DOES NOT WORK

If the machine is not stopped by depressing the brake pedal, use the parking brake to stop the machine.

NOTICE

If the parking brake has been used as an emergency brake, contact your Komatsu distributor to have the parking brake checked for any abnormality.

PRECAUTIONS WHEN DRIVING UP OR DOWN SLOPES

LOWER THE CENTER OF GRAVITY WHEN TURNING

When turning on slopes, lower the work equipment to lower the center of gravity before turning. It is dangerous to turn the machine suddenly on slopes.

BREAKING ON DOWNHILL SLOPE

If the foot brake is used frequently when traveling downhill, the brake will overheat and may be damaged. Release the accelerator pedal to make full use of the braking force of the engine when traveling downhill.
Use the right brake pedal for braking.
If the brakes are used excessively, the axle oil temperature caution lamp may light up and the alarm buzzer may sound intermittently. For details of the necessary action to take, see "AXLE OIL TEMPERATURE CAUTION LAMP (PAGE 3-16)" in EXPLANATION OF COMPONENTS.

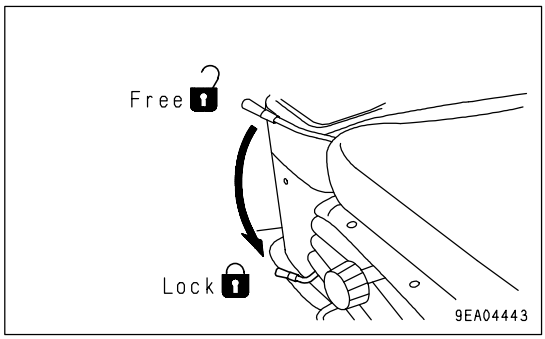
IF ENGINE STOPS

If the engine stops on a slope, apply the parking brake immediately, and lower the work equipment to the ground and stop the machine. Then put the directional lever in neutral position, and start the engine again.

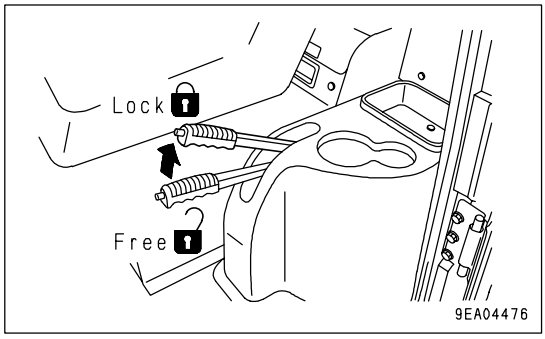
SECURING MACHINE

Load the machine onto a trailer as follows:

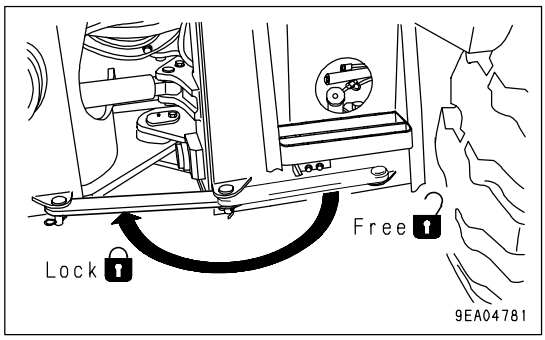
1. Lower the work equipment slowly.
2. Check that the work equipment control lever is at the HOLD position, then set the work equipment lock lever to the LOCK position.



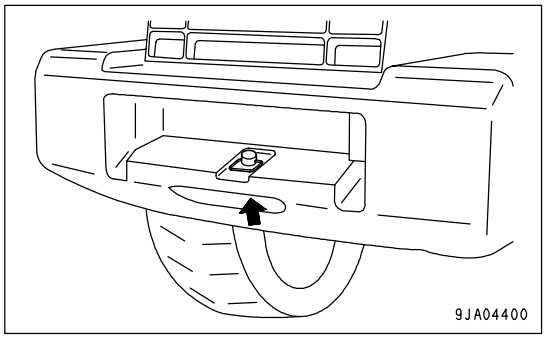
3. Set the parking brake lever to the LOCK position, then apply the parking brake securely.
4. Turn the starting switch to the OFF position to stop the engine, and pull out the starting switch key.



5. Set the frame lock bar to the LOCK position to lock the front frame and rear frame.



- When towing a machine downhill, it may be necessary to connect another machine to the rear of the machine being towed in order to provide ample rimpull and braking power. This makes it possible to prevent the machine from losing control.
- Towing may be carried out under various differing conditions, so it is impossible to determine beforehand the requirements for towing. Towing on flat horizontal roads will require the minimum rimpull, while towing on slopes or on uneven road surfaces will require the maximum rim pull.
- Connect a wire rope to the part indicated with the arrow in the diagram at right.



WHEN ENGINE CAN BE USED

- If the transmission and steering wheel can be operated, and the engine is running, it is possible to tow the machine out of mud or to move it for a short distance to the edge of the road.
- The operator should sit on the machine being towed and operate the steering in the direction that the machine is towed.

WHEN ENGINE CANNOT BE USED

When towing a machine with the engine stopped, use the following procedure.

1. The transfer oil does not lubricate the system, so remove the front and rear drive shafts. If necessary, block the tires to prevent the machine from moving.
2. The steering cannot be operated, so remove the steering cylinder.
   Even if the brakes are in good condition, the brakes can only be used a limited number of times. There is no change in the operating force for the brake pedal, but the braking force is reduced each time the pedal is depressed.
3. Connect the towing equipment securely. When carrying out towing operations, use two machines of at least the same class as the machine being towed. Connect one machine each to the front and rear of the machine being towed, then remove the blocks from the tires and tow the machine.

EMERGENCY TRAVEL OPERATION

The normal gear shifting operation is carried out by electric signals. If there should be a failure in the electrical system and the machine does not move, please contact your Komatsu distributor to have the machine moved.

NOTICE

Always request your Komatsu distributor to carry out the emergency travel operation.

GUIDES TO MAINTENANCE

Do not perform any inspection and maintenance operation that is not found in this manual.

CHECK SERVICE METER:
Check the service meter reading every day to see if the time has come for any necessary maintenance to be performed.

KOMATSU GENUINE REPLACEMENT PARTS:
Use Komatsu genuine parts specified in the Parts Book as replacement parts.

KOMATSU GENUINE OILS:
Use Komatsu genuine oils and grease. Choose oils and grease with proper viscosities specified for ambient temperature.

ALWAYS USE CLEAN WASHER FLUID:
Use automobile window washer fluid, and be careful not to let any dirt get into it.

ALWAYS USE CLEAN OIL AND GREASE:
Use clean oil and grease. Also, keep the containers of the oil and grease clean. Keep foreign materials away from oil and grease.

CHECKING FOR FOREIGN MATERIALS IN DRAINED OIL AND ON FILTERS:
After oil is changed or filters are replaced, check the old oil and filters for metal particles and foreign materials. If large quantity of metal particles or foreign materials are found, always report to the person in charge, and carry out suitable action.

FUEL STRAINER:
Do not remove the strainer from the filler port when adding fuel.

WELDING INSTRUCTIONS:
- Turn off the engine starting switch.
- Do not apply more than 200 V continuously.
- Connect grounding cable within 1 m (3.3 ft) of the area to be welded. If grounding cable is connected near instruments, connectors, etc., the instruments may malfunction.
- If a seal or bearing happens to come between the part being welded and grounding point, change the grounding point to avoid such parts.
- Do not use the area around the work equipment pins or the hydraulic cylinders as the grounding point.

DO NOT DROP THINGS INSIDE MACHINE:
- When opening inspection windows or the oil filler port of the tank to carry out inspection, be careful not to drop nuts, bolts, or tools inside the machine.
  If such things are dropped inside the machine, it may cause damage and/or malfunction of the machine, and will lead to failure. If you drop anything inside the machine, always remove it immediately.
- Do not put unnecessary things in your pockets. Carry only things which are necessary for inspection.

STANDARD TIGHTENING TORQUES FOR BOLTS AND NUTS

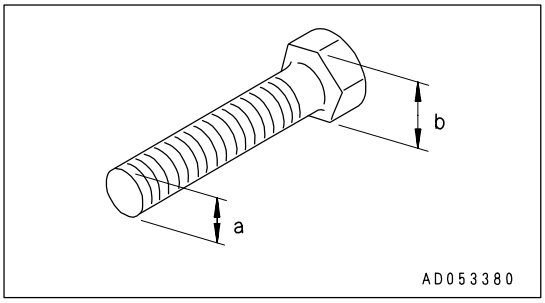
TORQUE LIST

CAUTION

If nuts, bolts, or other parts are not tightened to the specified torque, it will cause looseness or damage to the tightened parts, and this will cause failure of the machine or problems with operation.
Always pay careful attention when tightening parts.

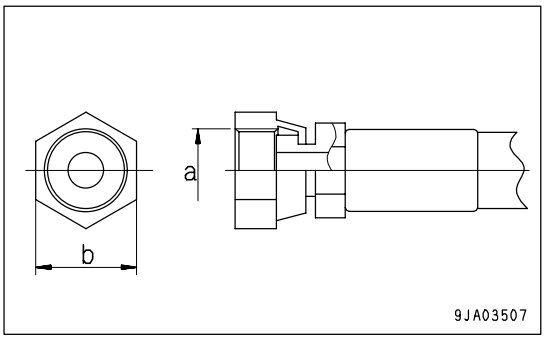
Unless otherwise specified, tighten the metric nuts and bolts to the torque shown in the table below.
If it is necessary to replace any nut or bolt, always use a Komatsu genuine part of the same size as the part that was replaced.

Thread diameter of bolt (a)(mm)	Width across flats (b)(mm)	Tightening torque					
		Target value			Service limit		
		N·m	kgf·m	lbft	N·m	kgf·m	lbft
6	10	13.2	1.35	9.8	11.8-14.7	1.2-1.5	8.7-10.8
8	13	31	3.2	23.1	27-34	2.8-3.5	20.3-25.3
10	17	66	6.7	48.5	59-74	6.0-7.5	43.4-54.2
12	19	113	11.5	83.2	98-123	10.0-12.5	72.3-90.4
14	22	172	17.5	126.6	153-190	15.5-19.5	112.1-141
16	24	260	26.5	191.7	235-285	23.5-29.5	170.0-213.4
18	27	360	37	267.6	320-400	33.0-41.0	238.7-296.6
20	30	510	52.3	378.3	455-565	46.5-58.0	336.3-419.5
22	32	688	70.3	508.5	610-765	62.5-78.0	452.1-564.2
24	36	883	90	651	785-980	80.0-100.0	578.6-723.3
27	41	1295	132.5	958.4	1150-1440	118.0-147.0	853.5-1063.3
30	46	1720	175.0	1265.8	1520-1910	155.0-195.0	1121.1-1410.4
33	50	2210	225.0	1627.4	1960-2450	200.0-250.0	1446.6-1808.3
36	55	2750	280.0	2025.2	2450-3040	250.0-310.0	1808.3-2242.2
39	60	3280	335.0	2423.1	2890-3630	295.0-370.0	2133.7-2676.2

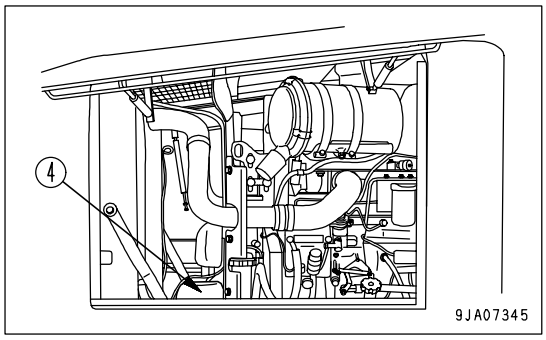


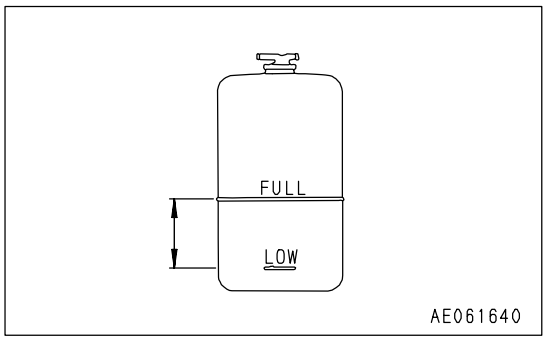
Apply the following table for Hydraulic Hose.

Nominal - No. of threads (a)	Width across flats (b) (mm)	Tightening torque					
		Target value			Permissible range		
		N·m	kgf·m	lbft	N·m	kgf·m	lbft
9/16 -18UNF	19	44	4.5	32.5	35 - 63	3.5 - 6.5	25.3 - 47.0
11/16 -16UN	22	74	7.5	54.2	54 - 93	5.5 - 9.5	39.8 - 68.7
13/16 -16UN	27	103	10.5	75.9	84 - 132	8.5 - 13.5	61.5 - 97.6
1 -14UNS	32	157	16.0	115.7	128 - 186	13.0 - 19.0	94.0 - 137.4
13/16 -12UN	36	216	22.0	159.1	177 - 245	18.0 - 25.0	130.2 - 180.8



10. Replace the corrosion resistor, then open 2 valves (1).
    For details of the procedure for replacing the corrosion resistor, see "REPLACE CORROSION RESISTOR CARTRIDGE (PAGE 4-56)".
    (Machines equipped with corrosion resistor)
11. Add coolant mixed with antifreeze until it overflows from the water filler.
    Decide the proportions of antifreeze and water according to the table for the mixing rate of water and antifreeze.
12. To bleed the air from the cooling system, run the engine at low idle for 5 minutes, and for a further 5 minutes at high idle. (When doing this, leave the radiator cap off.)
13. Drain the coolant from sub-tank (4), clean the inside of the sub-tank, then add water until the coolant level is between the FULL and LOW marks.
14. 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.

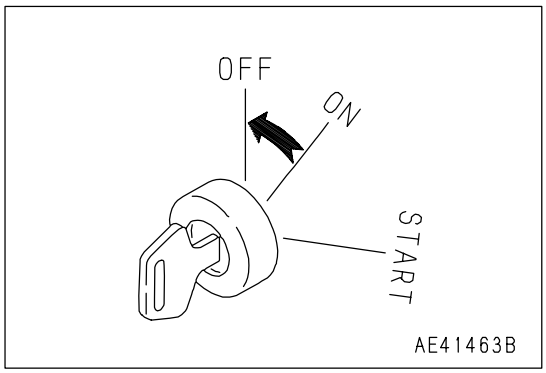




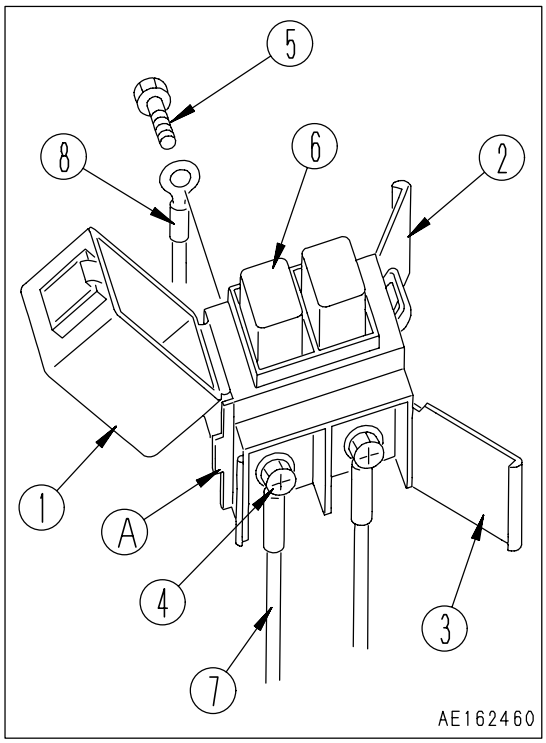
REPLACE SLOW BLOW FUSE

NOTICE

- **Always turn the power OFF when replacing the slow blow fuse (turn the starting switch to the OFF position).**
- **Always replace the slow blow fuse with a fuse of the same capacity.**



1. Turn the starting switch to the OFF position.
2. Remove the slow blow fuse box from the chassis.

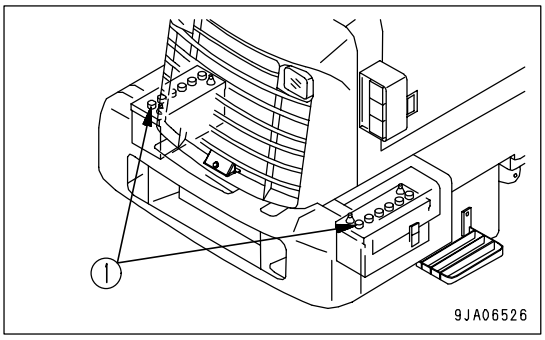


3. Open covers (1), (2), and (3) of the slow blow fuse box.
   Covers (2) and (3) can be removed easily by using protrusion (A) on the body as a fulcrum and levering the catch of the cover with a flat-headed screwdriver to release it.
4. Loosen screws (4) and (5), and remove.
   When screws (4) and (5) are removed, slow blow fuse (6) will also come off together with electric wiring (7) and (8).
5. Using screws (4) and (5), install a new slow blow fuse together with electric wiring (7) and (8) to the slow blow fuse box, then close covers (1), (2), and (3).
6. Install the slow blow fuse box to the chassis.

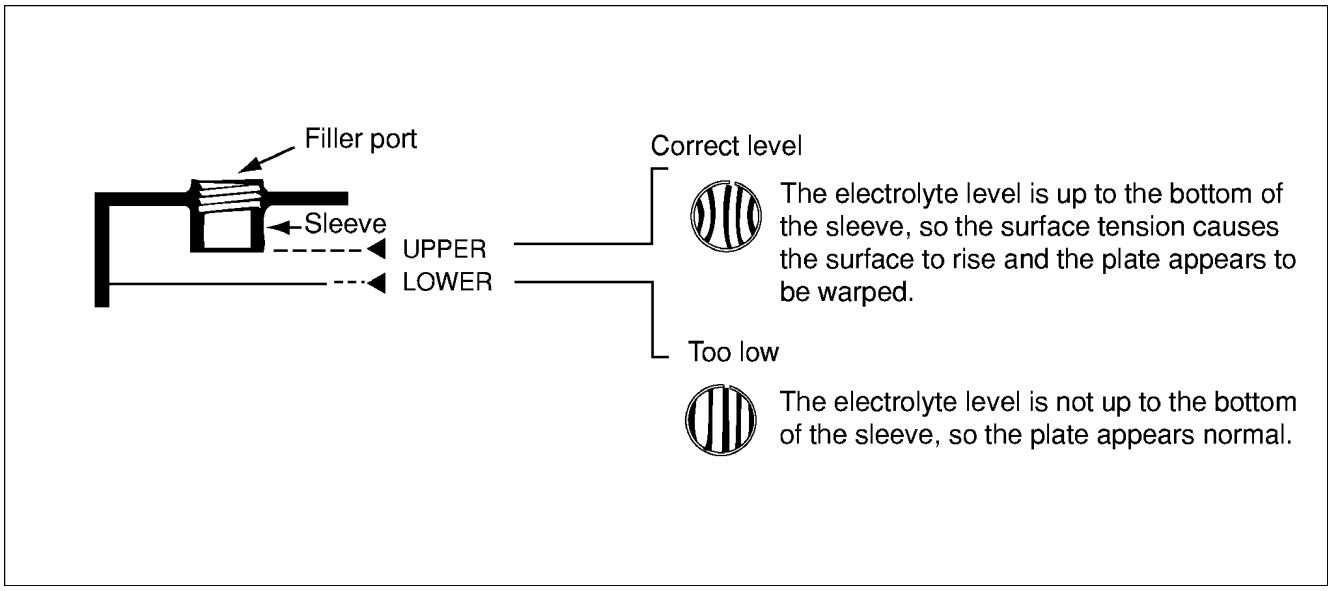
WHEN IT IS IMPOSSIBLE TO CHECK ELECTROLYTE LEVEL FROM SIDE OF BATTERY

If it is impossible to check the electrolyte level from the side of the battery, or there is no display of the UPPER LEVEL line on the side of the battery, check as follows.

1. Open the cover of the battery box.
   There are two battery boxes: One on each side at the rear of the machine.
2. Remove cap (1) at the top of the battery, look through the water filler port, and check the electrolyte surface. If the electrolyte does not reach the sleeve, add distilled water so that the level reaches the bottom of the sleeve (UPPER LEVEL line) without fail.
3. If distilled water has been added to any cell of cap (1), add distilled water also to the other cells.



Use the diagram below for reference, and check if the electrolyte reaches the bottom of the sleeve.



4. After adding distilled water, tighten cap (1) securely.

REMARK

If distilled water is added to above the bottom of the sleeve, use a syringe to lower the level to the bottom of the sleeve. Neutralize the removed fluid with baking soda (sodium bicarbonate), then flush it away with a large amount of water or consult your Komatsu distributor or battery maker.

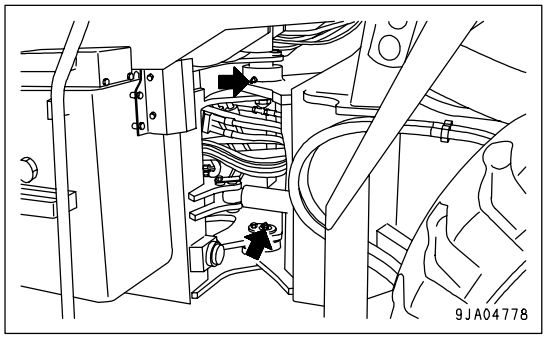
WHEN IT IS POSSIBLE TO USE INDICATOR TO CHECK ELECTROLYTE LEVEL

If it is possible to use an indicator to check the electrolyte level, follow the instructions given.

LUBRICATING

1. Using a grease pump, pump in grease through the grease fittings marked by the arrows.
2. After greasing, wipe off any old grease that was pushed out.

(1) Center hinge pin (2 places)



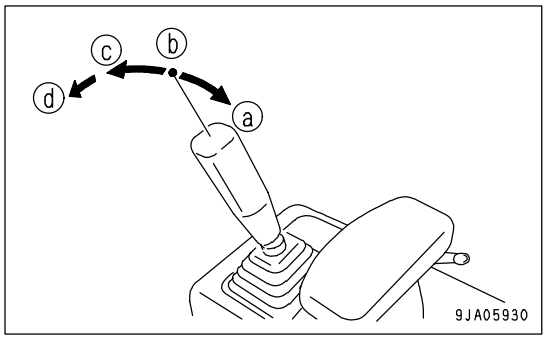
CHECKING FUNCTION OF ACCUMULATOR

For details of handling the accumulator, see Section "ACCUMULATOR (PAGE 2-35)".

PPC ACCUMULATOR

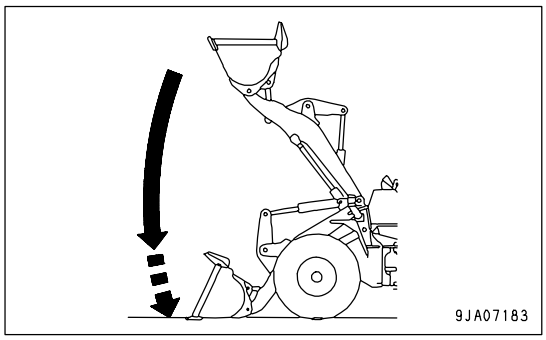
If the engine stops with the work equipment raised, and it is impossible to start the engine again, it is possible as an emergency measure to actuate the valve with the oil pressure stored in the accumulator and lower the work equipment to the ground.

1. Apply the parking brake.
2. Raise the work equipment to the maximum height, then operate the lift arm control lever to HOLD position (b).
3. Stop the engine.
4. Leave the work equipment lock lever in the FREE position.
5. Check that the area around the machine is safe, then operate the lift arm control lever to FLOAT position (d) and lower the work equipment to a point 1m above the ground.
6. When the lift arm comes to the 1m position, return the lift arm control lever to LOWER position (c), and lower the work equipment slowly to the ground.



REMARK

Carry out the check within 2 minutes after stopping the engine. If the machine is left with the engine stopped, the accumulator pressure will drop and it will be impossible to check the cause of the problem.



If the work equipment stops while it is moving, the gas pressure in the accumulator has probably dropped.
Please contact your Komatsu distributor to have the accumulator inspected.
Replace the accumulator every 4000 hours or every 2 years.

CHECK ALTERNATOR, STARTING MOTOR

The brush may be worn or have no grease on the bearing, so contact your Komatsu distributor for inspection or repair.
If the engine is started frequently, carry out inspection every 1000 hours.

CHECK ENGINE VALVE CLEARANCE, ADJUST

As special tool is required for removing and adjusting the parts, request your Komatsu distributor for service.

CLEAN AND CHECK TURBOCHARGER

If there is carbon or oil sludge stuck to the blower impeller, it will lower the performance of the turbocharger or cause it to break, so ask your Komatsu distributor to carry out the cleaning.

CHECK VIBRATION DAMPER

Check that there are no cracks or peeling in the outside surface of the rubber.
If any cracks or peeling are found, contact your Komatsu distributor to have the parts replaced.