Operation & Maintenance Manual

SEAM000819T

HD325-6
HD405-6

DUMP TRUCK

SERIAL NUMBERS HD325-6188 and up
HD405-2087

⚠ 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.

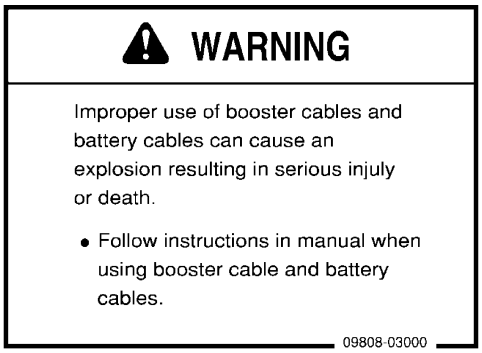
NOTICE

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

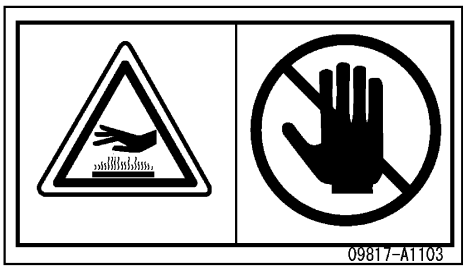
KOMATSU

CONTENTS

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



(10) Exhaust pipe is hot! (09817-A1103)



Sign indicates a burn hazard from touching heated parts, such as engine, motor, or muffler during or right after operation.

Never touch when hot.

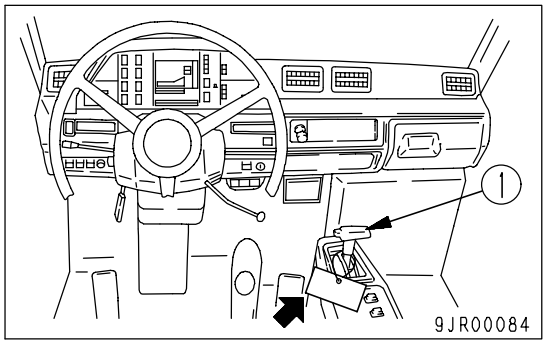
(11) Precautions for avoiding falling down (09805-13000)

(12) Precautions when handling battery
(This plate is stick on the machine by the battery maker.)

PRECAUTIONS DURING OPERATION

STARTING ENGINE

If there is a warning tag hanging from gear shift lever (1), do not start the engine or touch the levers.



CHECKS BEFORE STARTING ENGINE, ADJUST

Carry out the following checks before starting the engine at the beginning of the day's work.

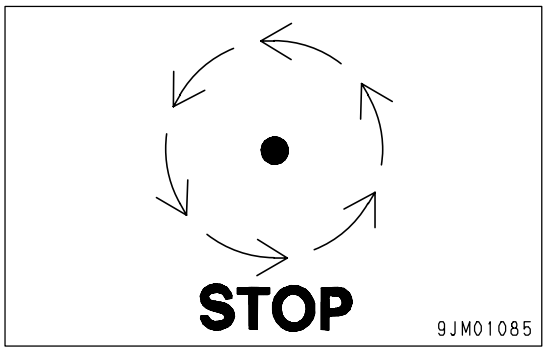
- Remove all dirt from the surface of the window glass to ensure a good view.
- Remove all dirt from the surface of the lens of the front lamps, working lamps, and rear combination lamp, and check that they light up correctly.
- Check the coolant level, fuel level, and oil level in engine oil pan, check for clogging of the air cleaner, and check for damage to the electric wiring.
- Check that there is no mud or dust accumulated around the movable parts of the accelerator pedal or brake pedal, and check that the pedals work properly.
- Adjust the operator's seat to a position where it is easy to carry out operations, and check that there is no damage or wear to the seat belt or mounting clamps.
- Check that the gauges and instruments work properly, check the angle of the mirror, and check that the gearshift lever is at neutral and the dump lever is at HOLD.
- Before starting the engine, make sure that the safety lock lever is in the LOCK position.
- Adjust the mirrors so that the rear of the machine can be seen clearly from the operator's seat.
  Refer to "WALK-AROUND CHECK (PAGE 3-60)".
- Check that there are no persons or obstacles above, below, or in the area around the machine.
- Check that the parking brake valve lever is in the PARKING position.

PRECAUTIONS WHEN STARTING

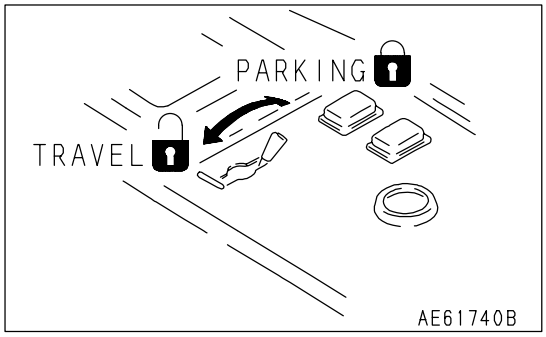
- Start and operate the machine only while seated.
- Do not attempt to start the engine by short-circuiting the engine starting circuit. Such an act may cause a serious bodily injury or fire.
- When starting the engine, sound the horn as a warning.
- If another person is allowed on the machine, that person may sit only in the assistant's seat.
- For machines equipped with a backup alarm, check that the warning device works properly.

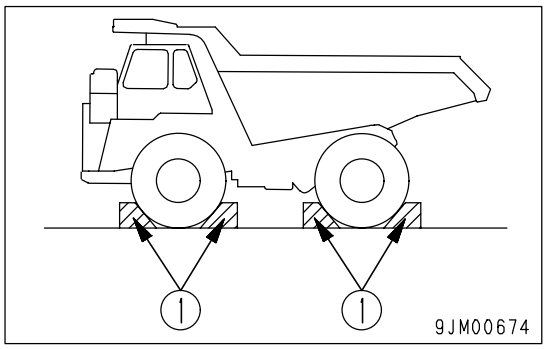
STOP ENGINE BEFORE CARRYING OUT INSPECTION AND MAINTENANCE

- Stop the machine on firm, level ground.
- Select a place where there is no hazard of falling rocks or landslides, or of flooding if the land is low.

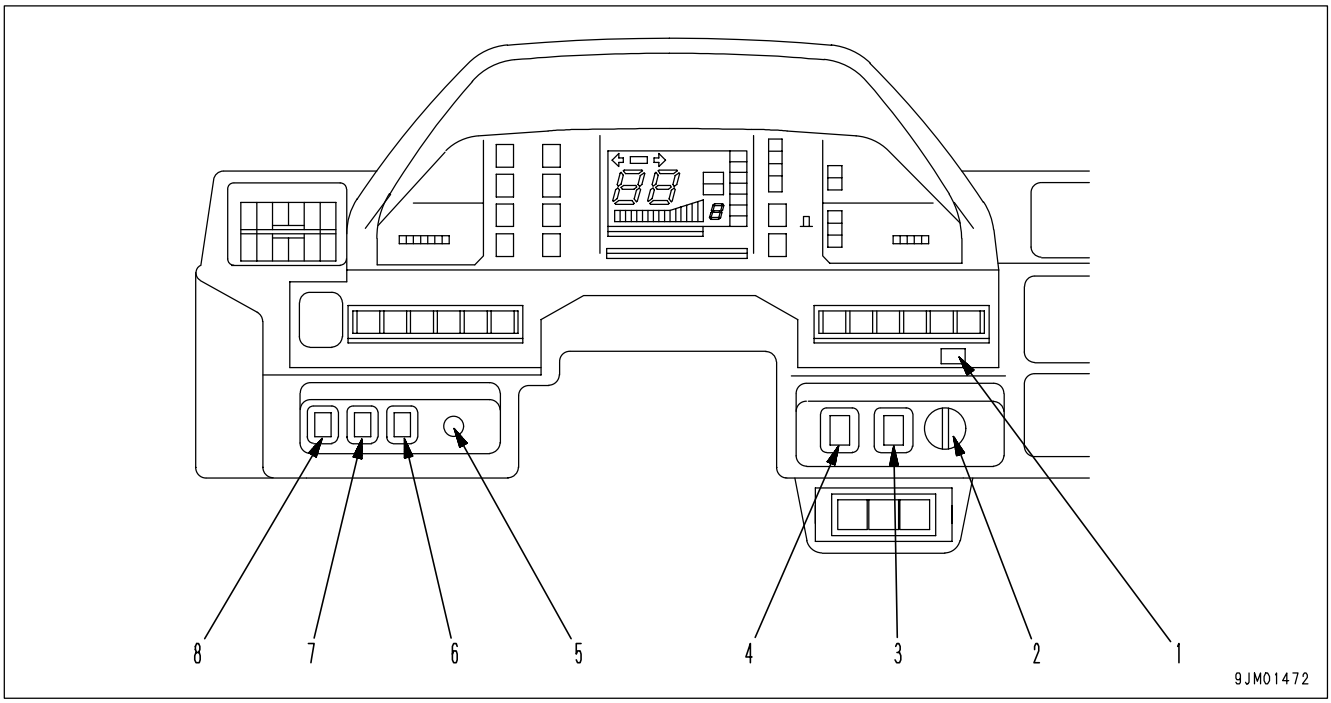


- Lower the dump body and stop the engine.
- Set parking brake valve lever to the PARKING position and put blocks (1) under the tires to prevent the machine from moving.





• Enlargement of machine monitor

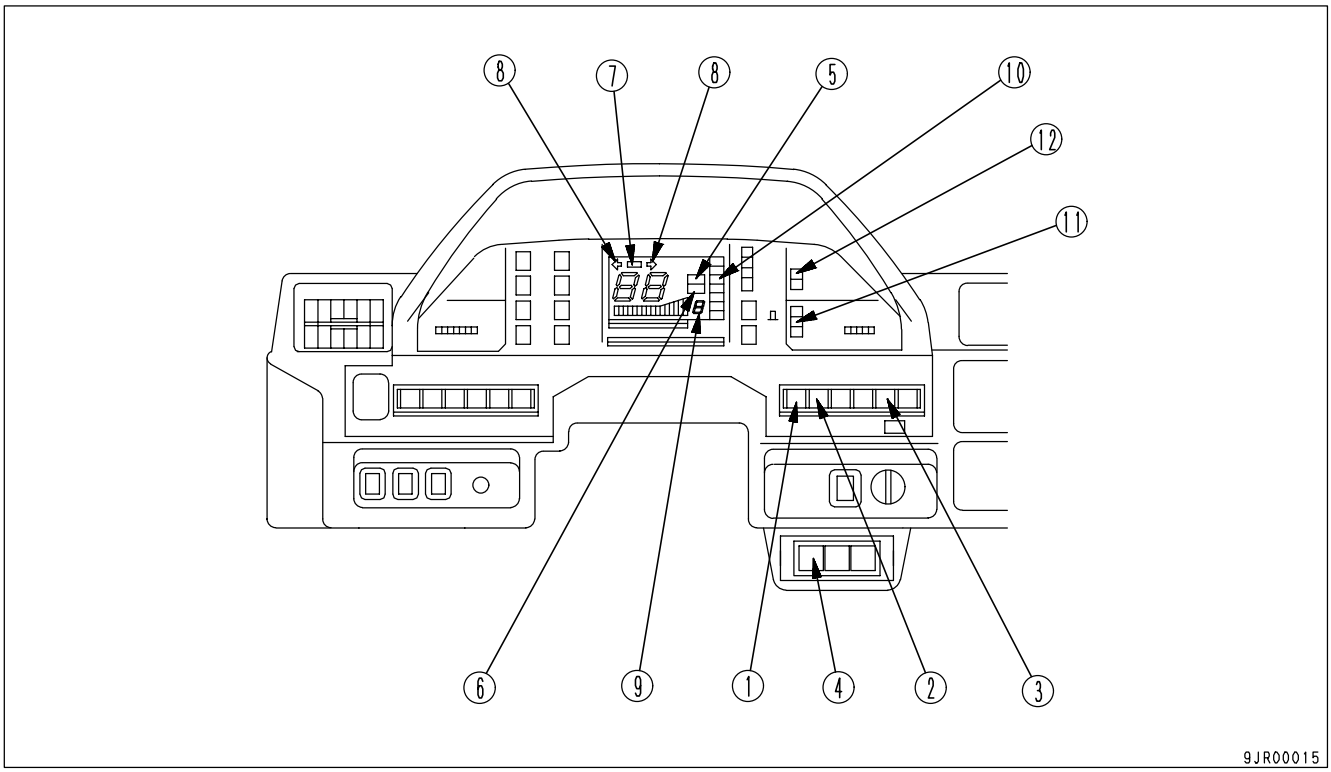


(1) Caution/Pilot lamp bulb check switch
(2) Starting switch
(3) AISS LOW switch
(4) Power mode selector switch
(HD325 The machine of 4WD specifications)
(5) Night lighting dimmer switch
(6) Hazard lamp switch
(7) Front brake cut-off switch
(8) Exhaust brake switch (if equipped)

METER DISPLAY PORTION

PILOT DISPLAY PORTION

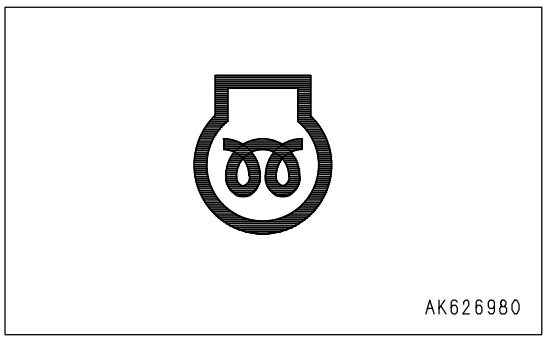
When starting switch is ON, the pilot display lights up when display items are functioning.



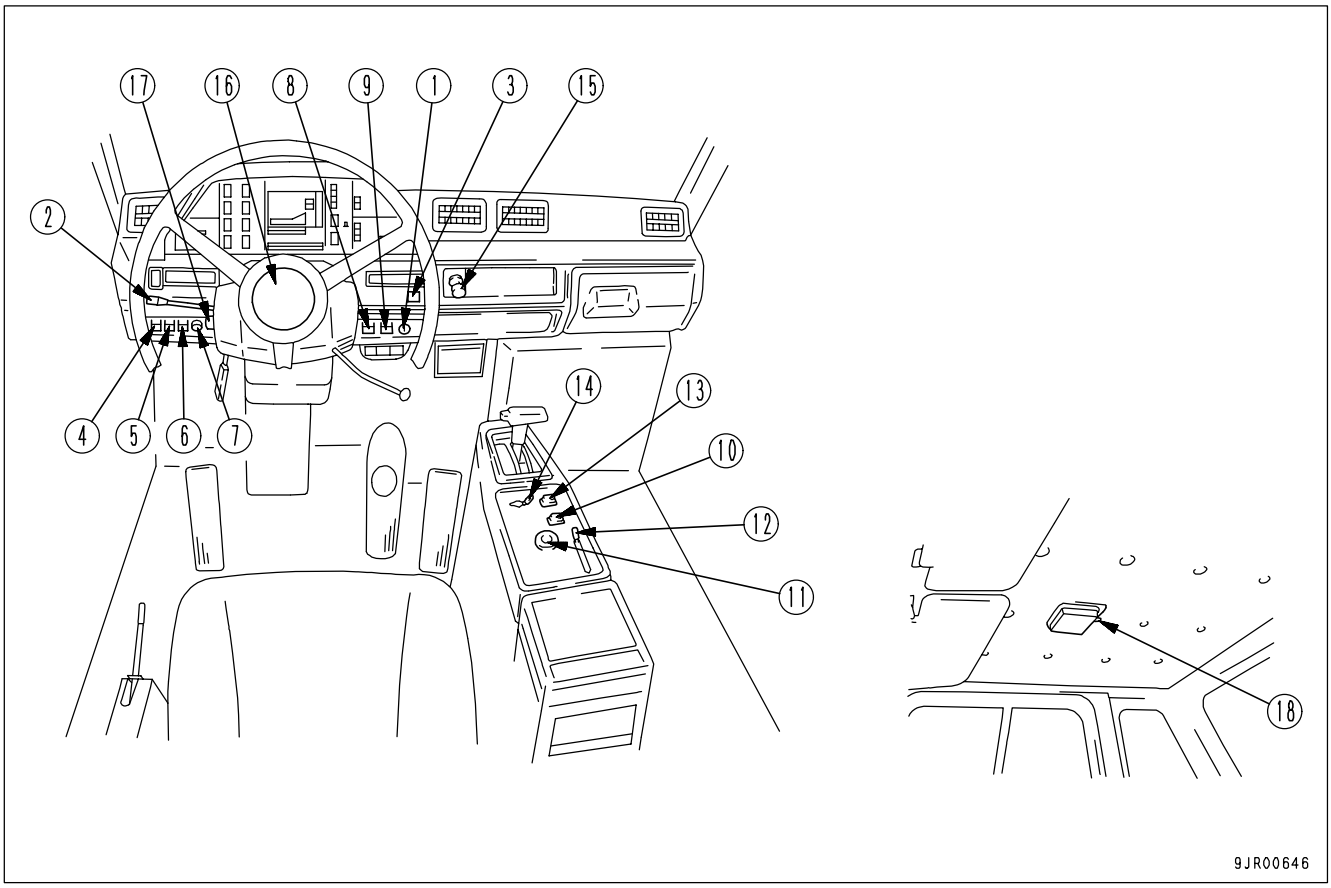
(1) Preheating monitor
(2) Exhaust brake pilot (if equipped)
(3) Rear brake pilot (retarder)
(4) Differential lock pilot (if equipped)
(5) Lockup pilot lamp
(6) Shift limiter pilot lamp
(7) High beam
(8) Turn signal pilot lamp
(9) Shift indicator (with lockup display)
(10) Transmission shift lever position pilot lamp
(11) Auto suspension mode display lamp
(12) Power mode display lamp

PREHEATING MONITOR

This monitor (1) lights up when the electrical heater for preheating the engine is being actuated. When the starting switch is turned to the ON position in cold weather, the monitor lights up. It goes out after 20 - 30 seconds to indicate that the preheating has been completed.



(HD325 The machine of 4WD specifications)



(1) Starting switch
(2) Lamp switch
Turn signal lever
Dimmer switch
(3) Caution/Pilot lamp bulb check switch
(4) Exhaust brake switch (if equipped)
(5) Front brake cut-off switch
(6) Hazard lamp switch
(7) Night lighting dimmer switch
(8) Power mode selector switch
(9) AISS LOW switch
(10) 4WD switch
(11) Emergency steering switch
(12) Emergency brake lever
(13) Shift limiter switch
(14) Parking brake valve lever
(15) Cigarette lighter
(16) Horn button
(17) Wiper switch
(18) Room lamp switch

Before shifting between forward and reverse, stop the machine completely and then run the engine at low idle.
When starting the engine, if the gear shift lever is not at the N position, the engine will not start.
When the starting switch is turned to the ON position, if the shift lever is not at the N (neutral) position, the transmission shift lever position pilot lamp and the central warning lamp will flash and the alarm buzzer will sound.

If gear shift lever is not at N (neutral) position when the parking brake is applied, the central warning lamp will flash and the alarm buzzer will sound.

If the shift lever is set to any position other than N (neutral) when the dump lever is at a position other than FLOAT or the body is still raised, the central warning lamp will light up and the alarm buzzer will sound.

The shift lever must not be returned to the N (neutral) position while traveling.

Release the accelerator pedal and run the engine at low idle when moving the shift lever from the N (neutral) position to the forward or reverse position.

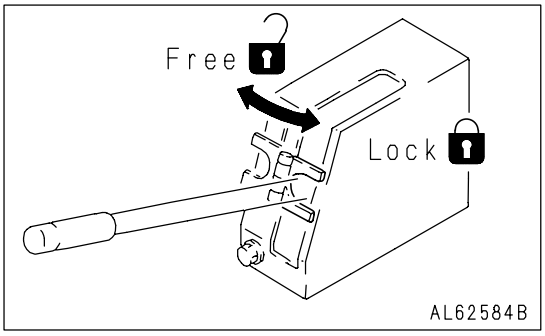
When moving the gear shift lever from the N (neutral) position to the R (reverse) position or from the D positions to position 5 (or other lower position), press the lock button on the gear shift lever before moving it.

SAFETY LOCK

⚠ WARNING

When raising the dump body to inspect the machine, always place the dump lever at the HOLD position, apply the lock, and then use the safety pins.

This device (4) is used to lock the dump lever.

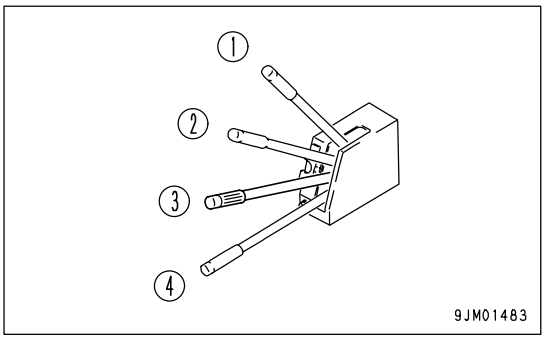


DUMP LEVER

⚠ CAUTION

To prevent damage to the dump body through vibration from the road surface, always lower the dump body and set at FLOAT position before traveling.

This lever (5) is used to operate the dump body.

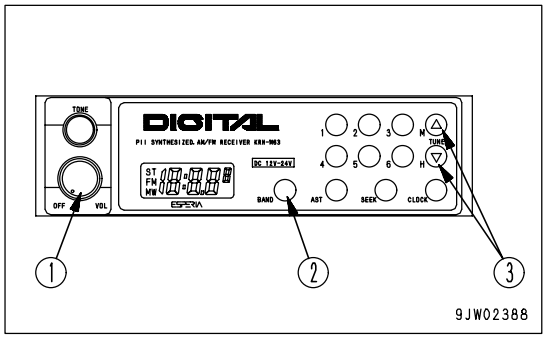


1: RAISE
2: HOLD: The dump body stops and is held in position.
3: FLOAT: The dump body moves freely under external force.
4: LOWER
For details, see "DUMP OPERATIONS (PAGE 3-98)".

METHOD OF OPERATION

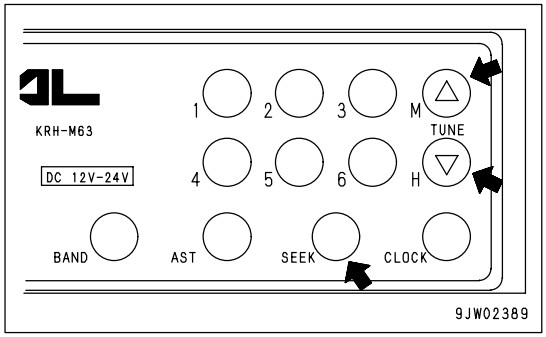
LISTENING TO RADIO

1. This switches on power (1) for the radio.
2. "BAND" switch (2) is used to select MW (AM) or FM.
3. Use the preset switch or tuning switch (3) to select the station.
4. Adjust the volume and tone as desired.
5. To turn the radio OFF, turn VOL knob (1) to the left until a click is heard.



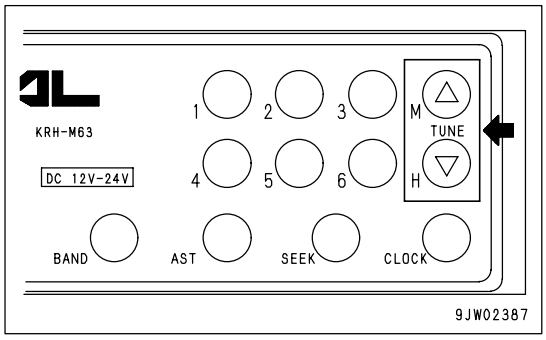
METHOD OF AUTOMATIC TUNING

When the "SEEK" switch is pressed, it moves up to higher frequencies and when it finds a station that can be received, it stops automatically.



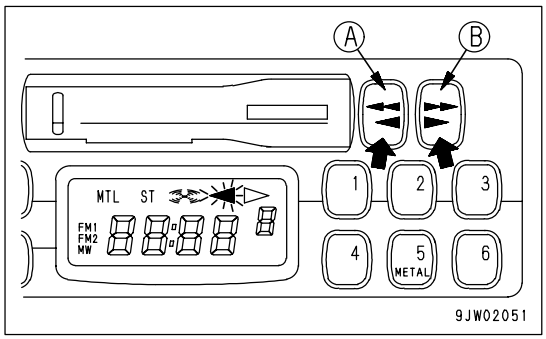
METHOD OF MANUAL TUNING

When the TUNE button △ is pressed, the frequency goes up; when the ▽ button is pressed, the frequency goes down. If it is kept pressed, the frequency changes continuously.



REVERSING TAPE

When listening to the tape, press both FAST FORWARD, REWIND buttons (A) and (B) at the same time lightly.
When this is done, the tape direction display will be reversed.



PRECAUTIONS FOR USE

- Stow the antenna when traveling in places with low overhead clearance.
- To ensure safety during operations, keep the volume at a level where it is possible to hear other machines.
- If water gets inside the speaker case or radio (auto tuning), it may cause a serious problem, take care not to let water get in these items.
- Do not wipe the scales or buttons with benzene, thinner, or any other solvent. Wipe with a soft dry cloth. Use a cloth soaked in alcohol if the equipment is extremely dirty.

NOTICE

Handling cassette tape

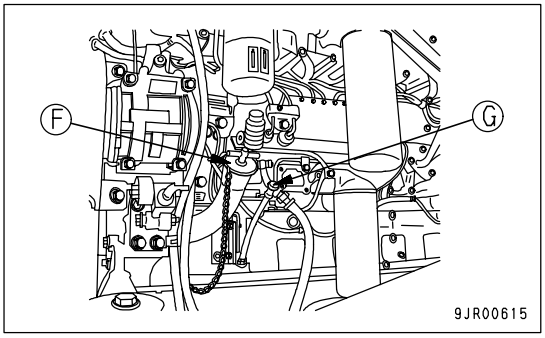
- **Clean the tape head approx. once a month with a commercially available head cleaning tape.**
- **Do not leave the tape any place where it is exposed to direct sunlight, any place that is excessively dusty, or any place where there is a magnetic field.**
- **Do not use 120-minute tapes. The tape is thin and it easily gets caught up inside the machine.**
- **If the tape is slack, it easily gets caught up inside the machine. Use a pencil to wind in the tape to remove any slack.**
- **Do not use any cassette tape if the label has started to come off. It may cause defective rotation, or it may be impossible to get the tape out of the machine.**

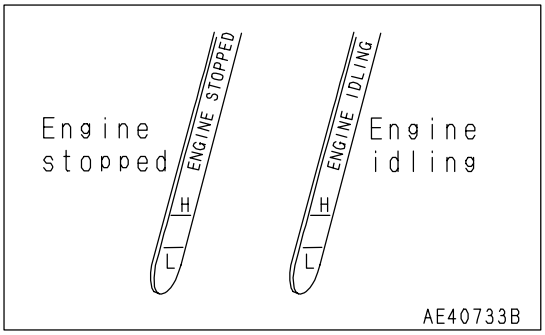
CHECK OIL LEVEL IN ENGINE OIL PAN, ADD OIL

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.

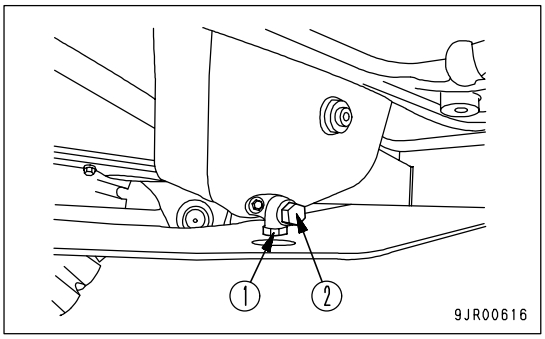
1. Check the oil level with dipstick (G).
2. Take out the dipstick (G) and wipe off the oil with cloth.
3. Fully insert dipstick (G) into filler pipe (F), then remove it.
4. The oil level should be between the H and L marks on the ENGINE STOPPED side of dipstick (G).
   If the oil is below the L mark,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





5. If the oil is above the H mark, remove drain plug (1), and loosen drain valve (2) to drain the excess engine oil, then check the engine oil level again.

6. If the oil level is correct, tighten the handle of the oil filler cap securely.



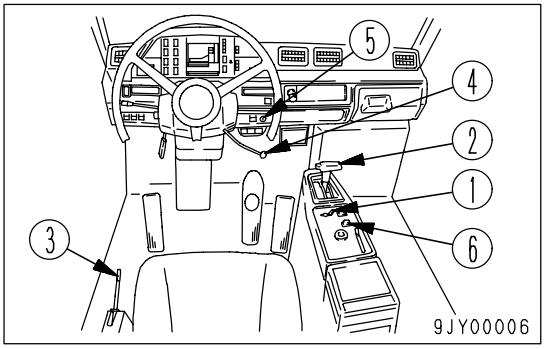
REMARK

- When checking the oil level after the engine has been operated, wait for at least 15 minutes after stopping the engine.
- The dipstick has the oil level marked on both sides: ENGINE STOPPED for measuring when the engine is stopped, and ENGINE IDLING for measuring when the engine is idling.
- When checking the oil level, stop the engine and check with the ENGINE STOPPED side of the dipstick.
  It is also possible to check when the engine is idling, but the following procedure must be used.
  - Check that the engine water temperature is in the green range.
  - Use the ENGINE IDLING side of the dipstick.
  - Remove the oil filler cap.

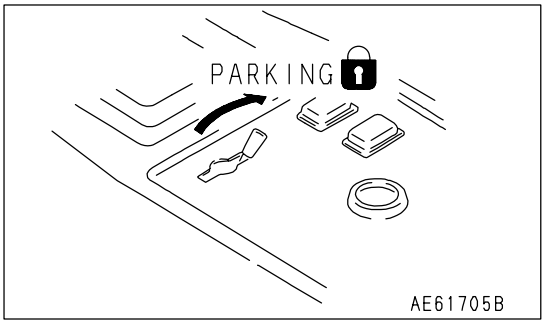
OPERATIONS, CHECKS BEFORE STARTING

⚠ WARNING

- **When starting the engine, check that the shift lever is set in the N (neutral) position and that the parking lever is at PARK position.**
- **Before standing up from the operator's seat, place the gear shift lever at neutral, and set the parking brake lever to the PARK position.**

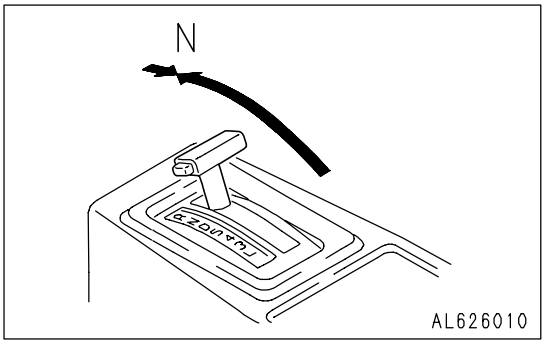


1. Check that parking brake lever (1) is in the PARK position.

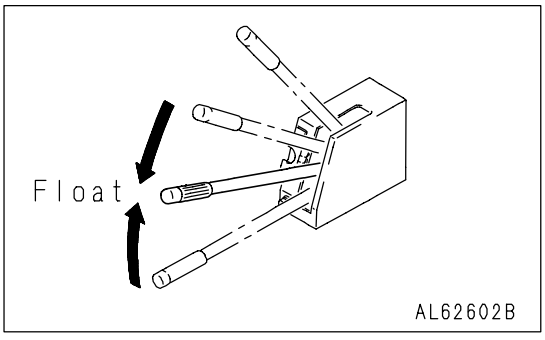


2. Check that gear shift lever (2) is at the N position.

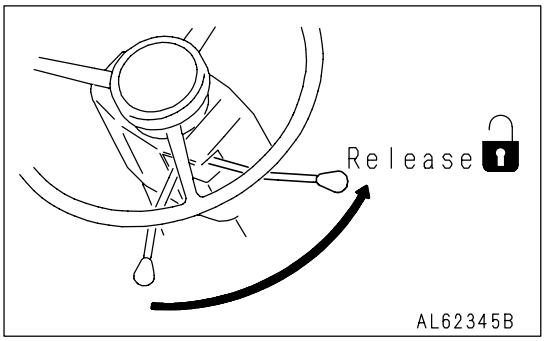
REMARK
If the shift lever is not at the N (neutral) position, the engine will not start. If the starting switch is turned to the ON position when the shift lever is not at N (neutral), the transmission shift lever position pilot lamp and the central warning lamp will flash and the alarm buzzer will sound.



3. Check that dump lever (3) is at the FLOAT position.



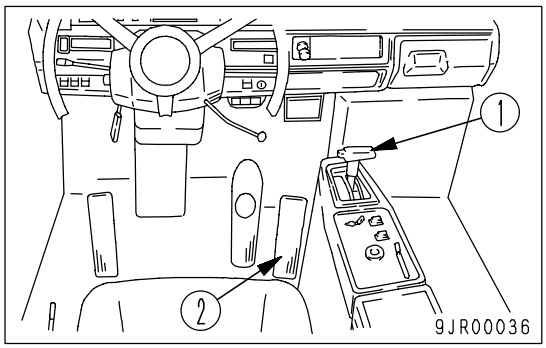
4. Check that retarder control lever (4) is at the RELEASED position.



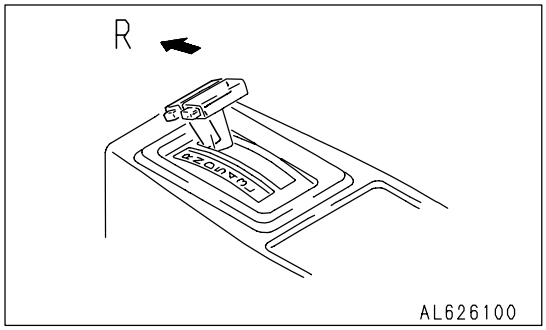
MOVING MACHINE REVERSE

WARNING

- **When switching between FORWARD and REVERSE, check that the new direction of travel is safe.**
  There is a blind spot behind the machine, so use extreme caution when reversing the machine.
- **Always stop the machine completely before shifting between FORWARD and REVERSE.**

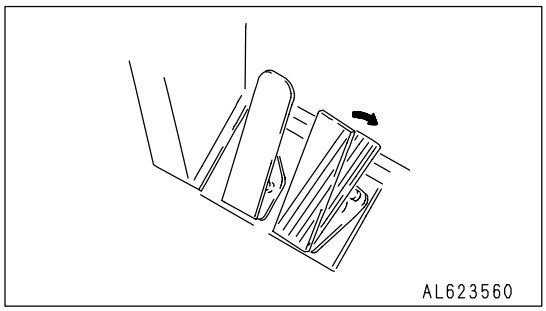


Place gear shift lever (1) in the R position, then gradually depress accelerator pedal (2) to move the machine off.



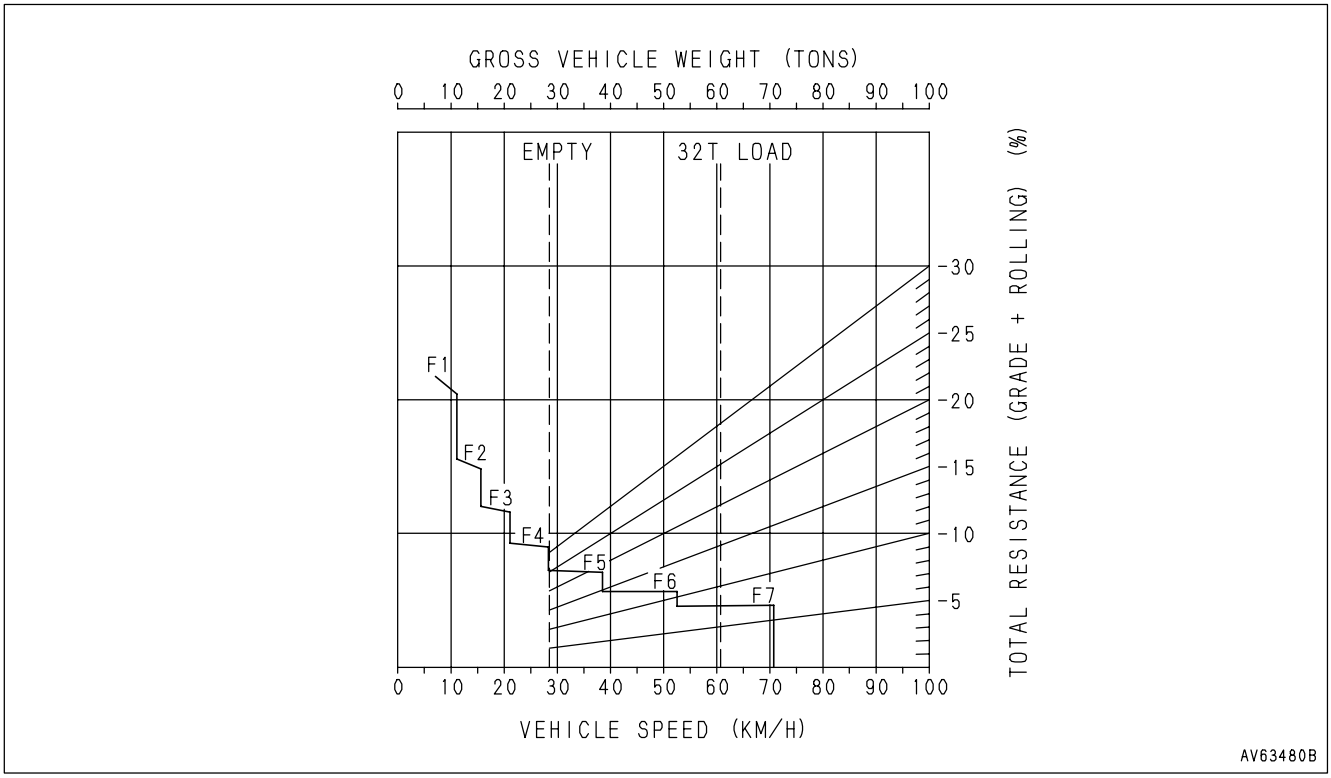
NOTICE

- **The machine cannot travel in reverse if the dump lever is not at the FLOAT position. Place the dump lever at the FLOAT position before operating to the R position.**
- **When shifting between FORWARD and REVERSE, stop the machine completely, and run the engine at low idle when shifting the lever.**
  After moving the gear shift lever, do not depress the accelerator until you detect that the transmission clutch has engaged.
- **Do not operate the gear shift lever with the accelerator pedal depressed. This will cause a big shock, and will also reduce the life of the machine.**

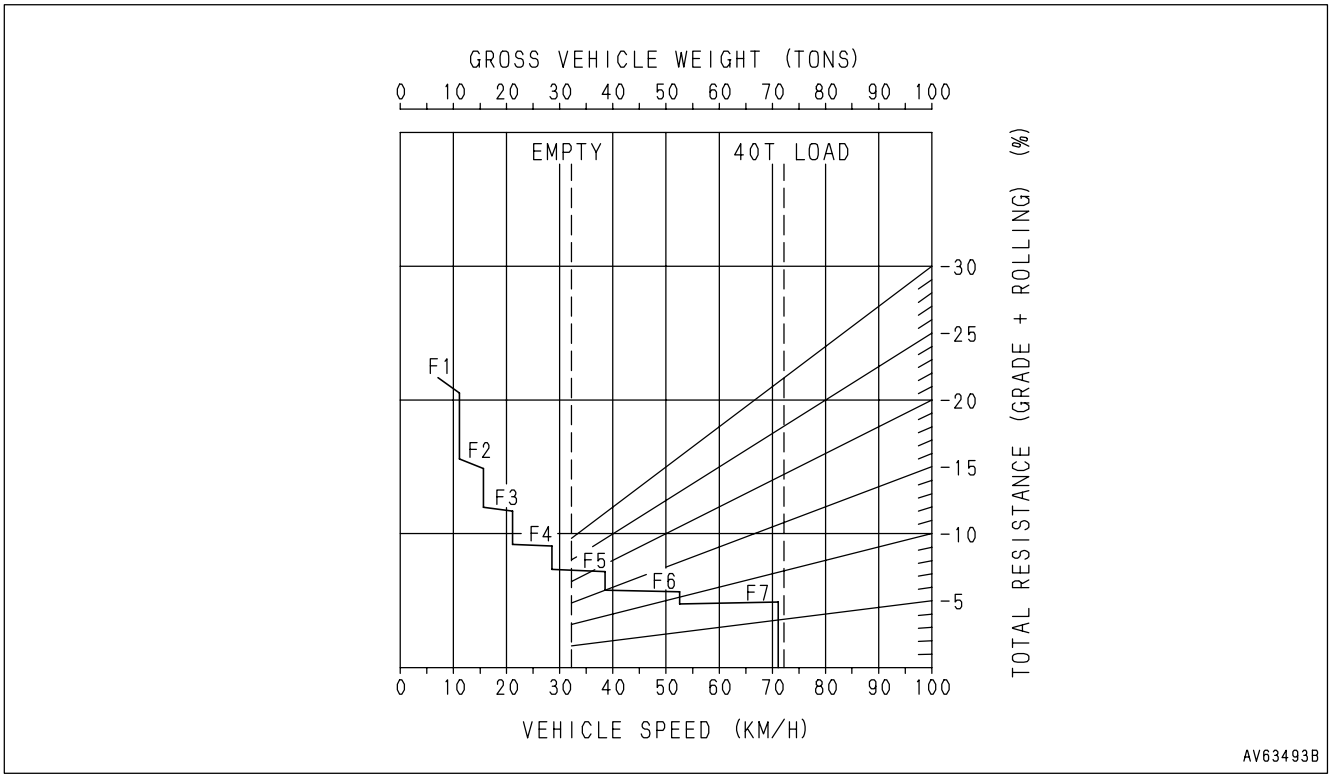


• Brake performance
[Downhill distance: 900 m (2952 ft)]

HD325, HD325 of 4WD specifications



HD405



• HD405

	Tire T.Km.P.H.for ambient temperature				Max.speed for continuous travel for ambient temperature (km/h)				
	16°C	27°C	38°C	49°C		16°C	27°C	38°C	49°C
Size 18.00R33★★ (standard) structure CR Code No.E4 (TRA)	214	192	170	158	When empty (front wheel standard)	27	24	21	20
					When loaded (rear wheel standard)	17	15	14	13

TOWING THE MACHINE

⚠ WARNING

- **If any failure should occur in the brake system and the brakes will not work, then be extremely careful.**
- **If the machine is towed in the wrong way, there is the danger of an accident that could cause death or injury.**
- **Before releasing the brake, always put blocks under the wheels.**
- **Only use wire rope that has enough strength for the weight that it is being towed.**
- **Do not apply a load to the wire rope suddenly.**

The driver of the machine being towed should turn the steering wheel in the direction of the towing line.

This machine must not be towed except in emergencies. When towing the machine, take the following precautions.

WHEN ENGINE RUNS

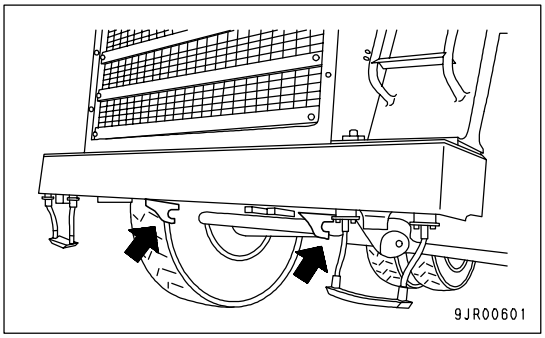
- Always run the engine to allow the steering and brakes to be used.

WHEN ENGINE DOES NOT RUN

NOTICE

Towing of the machine is allowed only for moving it to a place where inspection and maintenance can be carried out.
Do not tow the machine for long distances.

- The machine must not be moved more than 800 m (2624 ft).
  If the machine must be moved more than 800 m (2624 ft), remove the drive shaft between the transmission and differential case before moving the machine.
  When towing, keep the travel speed to less than 8 km/h (5.0 MPH).
- The towing hook is under the front frame.
- If the pressure in the air tank has dropped abnormally because of leakage of air from the air circuit, the parking brake and emergency brake are applied, so release both brakes before towing the machine.
- If the engine does not run, it is possible to steer the machine with the emergency steering, but this can only be used for a maximum of 90 seconds and at a maximum travel speed of 5 km/h (3.1 MPH), so be extremely careful when operating.



ENGINE

- ( ): Always contact your Komatsu distributor when dealing with these items.
- In cases of problem or causes which are not listed below, contact your Komatsu distributor for repairs.

Problem	Main causes	Remedy
Engine oil pressure monitor lights up	• Insufficient oil in oil pan	• Add oil to specified level. See CHECK BEFORE STARTING
	• Clogged oil filter cartridge	• Replace cartridge, see EVERY 500 HOURS SERVICE
	• Oil leakage due to damage caused by defective tightening of oil pan, pipe joint	(• Check, repair)
	• Disconnection, broken wiring to sensor	(• Repair, connect wiring)
Steam spurts out from top of radiator (pressure valve)	• Insufficient coolant, water leakage	• Check, add cooling water. See CHECK BEFORE STARTING
	• Loose fan belt	• Replace belt. See EVERY 250 HOURS SERVICE
Radiator cooling water level monitor lights up	• Dirt or scale accumulated in cooling system	• Change coolant, clean inside of cooling system. See WHEN REQUIRED
Engine water temperature gauge is in red range	• Radiator fins clogged or damaged	• Clean or repair. See EVERY 500 HOURS SERVICE
	• Defective water temperature gauge	(• Replace water temperature gauge)
	• Defective thermostat	(• Replace thermostat)
Engine water temperature monitor flashes	• Defective thermostat seal	(• Replace thermostat seal)
	• Loose radiator filler cap	• Tighten or replace cap
	• Disconnection, broken wiring to sensor	(• Repair, connect wiring)
Engine water temperature gauge display stays at lowest level and does not rise	• Defective water temperature gauge	(• Replace water temperature gauge)
	• Defective thermostat	(• Replace thermostat)
	• In cold weather, cold wind is blowing strongly against engine	(• Install radiator curtain)
Engine does not start even when starting motor is turned	• Insufficient fuel	• Add fuel. See CHECK BEFORE STARTING
	• Air in fuel system	(• Repair place where air is leaking in)
	• No fuel in fuel filter	• Fill filter with fuel. See EVERY 500 HOURS SERVICE
	• Starting motor cranks engine too slowly	• See electrical components
	• Starting motor does not turn	• See electrical components
	• Defective valve clearance (defective compression)	(• Adjust valve clearance)
Fuel stops from time to time	• Crushed fuel tank breather tube	(• Replace breather tube)

Oil sampling

- Sampling interval
  250 hours: Engine
  500 hours: Other components

- Precautions when sampling
  - Make sure that the oil is well mixed before sampling.
  - Perform sampling at regular fixed intervals.
  - Do not perform sampling on rainy or windy days when water or dust can get into the oil.

For further details of KOWA, please contact your Komatsu distributor.

STORING OIL AND FUEL

- Keep indoors to prevent any water, dirt, or other impurities from getting in.
- When keeping drum cans for a long period, put the drum on its side so that the filler port of the drums is at the side to prevent moisture from being sucked in.
  If drums have to be stored outside, cover them with a waterproof sheet or take other measures to protect them.
- To prevent any change in quality during long-term storage, be sure to use in the order of first in - first out (use the oldest oil or fuel first).

FILTERS

- Filters are extremely important safety parts. They prevent impurities in the fuel and air circuits from entering important equipment and causing problems.
  Replace all filters periodically. For details, see the Operation and Maintenance Manual.
  However, when working in severe conditions, replace the filters at shorter intervals according to the oil and fuel (sulfur content) being used.
- Never try to clean the filters (cartridge type) and use them again. Always replace with new filters.
- When replacing oil filters, check if any metal particles are affixed to the old filter. If any metal particles are found, contact your Komatsu distributor.
- When replacing the engine oil filter, fill the new filter with the specified clean oil, then install it.
- Do not open packs of spare filters until just before they are to be used.
- Always use Komatsu genuine filters.

OUTLINE OF ELECTRIC SYSTEM

- It is extremely dangerous if the electrical equipment becomes wet or the covering of the wiring is damaged. This will cause an electrical short circuit and may lead to malfunction of the machine. Do not wash the inside of the operator's cab with water. When washing the machine, be careful not to let water get into the electrical components.
- Service relating to the electric system is checking fan belt tension, checking damage or wear to the fan belt and checking battery fluid level.
- Never install any electric components other than those specified by Komatsu.
- External electro-magnetic interference may cause malfunction of the control system controller, so before installing a radio receiver or other wireless equipment, contact your Komatsu distributor.
- When working at the seashore, carefully clean the electric system to prevent corrosion.
- When installing an operator's cab cooler or any other electrical equipment, connect it to an independent power source connector. The cables to supply power to the optional equipment must never be connected to the fuse, starting switch, or battery relay.

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 parts in the safety-critical parts list on the next page must also be replaced at the specified interval. These parts are particularly closely connected to safety and fire prevention, so please contact your Komatsu distributor to have them replaced.

Material quality of these parts can change as time passes and they are likely to wear out or deteriorate. However, it is difficult to determine the extent of wear or deterioration at the time of periodic maintenance. Hence, it is required to replace them with new ones regardless of their condition after a certain period of usage. This is important to ensure that these parts maintain their full performance at all times.

Furthermore, should anything abnormal be found on any of these parts, replace it with a new one even if the periodic replacement time for the part has not yet arrived.

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

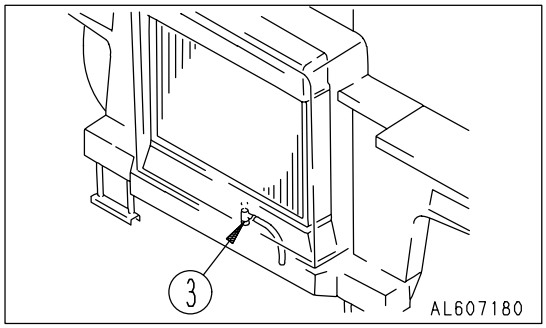
Also perform the following checks with hydraulic hoses which need to be replaced periodically. Tighten all loose clamps and replace defective hoses, as required.

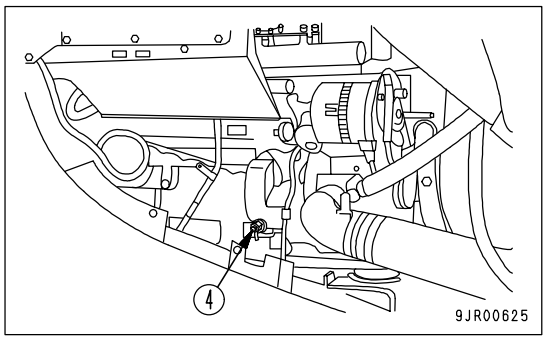
When replacing hoses, always replace O-rings, gaskets, and other such parts at the same time.

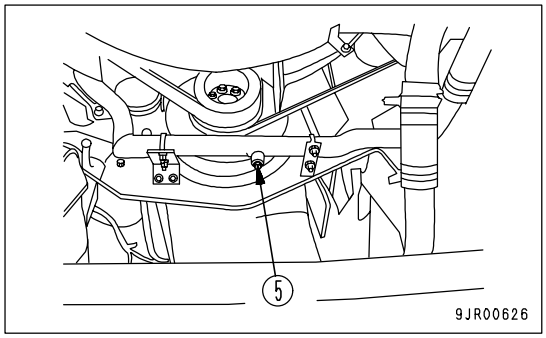
SAFETY CRITICAL PARTS

No.	Safety critical parts for periodic replacement	Replacement interval	Remarks
1	Fuel hose (fuel tank - injection pump)	Every 4000 hours or 2 years, whichever comes sooner	
2	Fuel hose (injection pump - fuel tank)		
3	Spill hose (engine output connector - fuel tank)		
4	Water separator (case, O-ring, plug)		
5	Rubber hoses of brake piping		Replace as assembly
6	High-pressure hoses in steering circuit (pump ←→ demand valve ←→ hoist valve ←→ hoist cylinder)		
7	High-pressure hose in hoist circuit (pump ←→ demand valve ←→ hoist valve ←→ hoist cylinder)		
8	Outlet hose of retarder cooling oil pump		
9	Outlet hose of transmission oil pump		
10	Brake valve parts	Every 2000 hours or every one year, whichever comes first	Replace as a service kit
11	Parking brake valve parts		
12	Relay valve parts		
13	Air governor parts		
14	Retarder control valve parts		
15	Emergency relay valve parts		
16	Emergency brake valve parts		
17	Parking brake chamber parts		
18	Brake chamber parts (Front and rear)		
19	Front caliper brake parts		
20	Slack adjuster parts		
21	Seat belt	Every 3 years	Replace

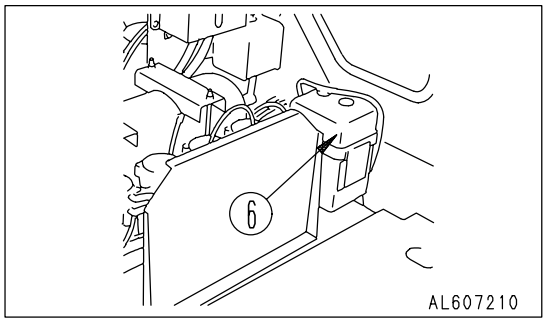
3. Open drain valve (3) under the radiator, drain plug (4) at the side face of the engine, and drain plug (5) under the vibration damper, and drain the water.
4. After draining the water, close drain valve (3) and drain plugs (4) and (5), and fill with city water.
5. When the radiator is full, start the engine, and run it at low idling.
   Keep the engine running at low idling for 10 minutes until the water temperature reaches more than 90°C (194°F).
6. Stop the engine, open drain valve (3) and drain plug (4) and (5), and drain the water. After draining the water, close them.
7. After draining the water, clean the cooling system with cleaning agent.
   For the cleaning method, see the instructions for the cleaning agent.
8. After the cleaning, open drain valve (3) and drain plug (4) and (5), and drain all of the water.
9. Close drain valve (3) and drain plug (4) and (5).
10. Replace the corrosion resistor, then set valve (1) to the OPEN position to open it.
    For replacing corrosion resistor, see "REPLACE CORROSION RESISTOR CARTRIDGE (PAGE 4-64)".
11. Decide the proportions of antifreeze and water according to the table for the mixing rate of water and antifreeze.
12. To remove the air contained in the coolant, run the engine at low idle for 5 minutes, then run for a another 5 minutes at high idle. (When doing this, leave the water filler cap OFF.)
13. Stop the engine. About 3 minutes later, supply city water up to the water filler, then close radiator cap.







14. Drain the cooling water from inside subtank (6), flush the inside of the subtank, then fill with water to a point between the FULL and LOW marks.

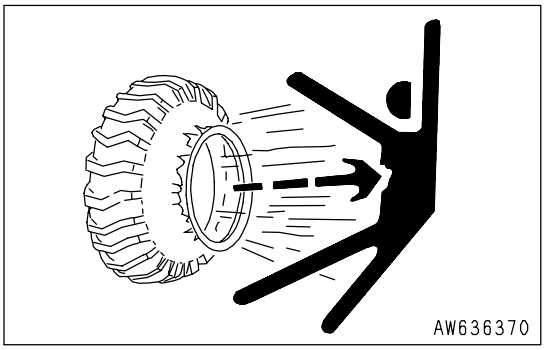


SELECTION AND INSPECTION OF TIRES

⚠ WARNING

If a tire or a rim is handled improperly, the tire may burst or may be damaged and the rim may be broken and scattered, and that can cause serious injury or death.

- **Since maintenance, disassembly, repair and assembly of the tires and rims require special equipment and skill, be sure to ask a tire repair shop to do the work.**
- **Do not heat or weld the rim to which the tire is installed. Do not make a fire near the tire.**



SELECTION OF TIRES

⚠ WARNING

Select the tires according to the conditions of use and the weight of the attachments on the machine. Use only specified tires and inflate them to the specified pressure.

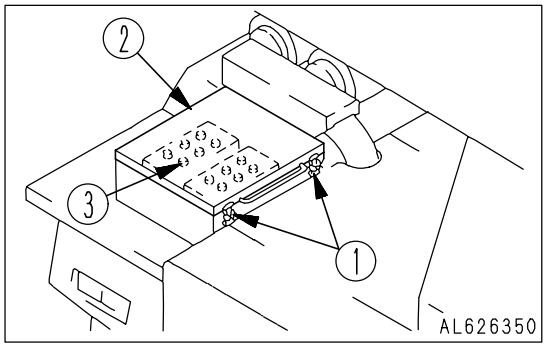
Select the tires according to the conditions of use and the weight of the attachments of the machine. Use the following table.
Since the travel speed indicated on the speedometer varies with the tire size, consult your Komatsu distributor when using optional tires.

	Max. load [kg (lb)]	Size	Operating model	Remarks
Front wheel	10,900 (24,035)	18.00R33★★	HD325: if equipped HD325 4WD specifications: standard HD405: standard	Type 1 for construction equipment
	10,300 (22,712)	18.00-33-32PR	HD325: if equipped HD325 4WD specifications: if equipped HD405: not applicable	
	9,250 (20,396)	18.00-33-28PR	HD325: standard HD325 4WD specifications: if equipped HD405: not applicable	
Rear wheel	10,900 (24,035)	18.00R33★★	HD325: if equipped HD325 4WD specifications: standard HD405: standard	
	10,300 (22,712)	18.00-33-32PR	HD325: standard HD325 4WD specifications: if equipped HD405: not applicable	
	9,250 (20,396)	18.00-33-28PR	HD325: if equipped HD325 4WD specifications: if equipped HD405: not applicable	

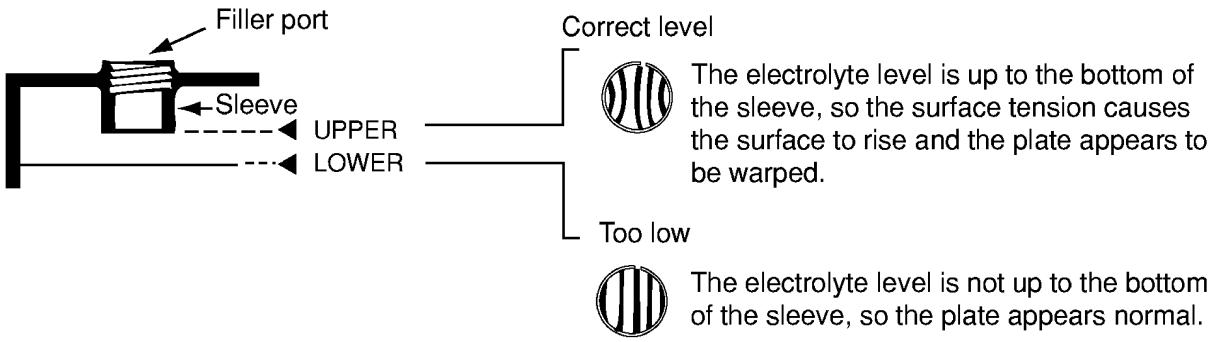
WHEN IT IS IMPOSSIBLE TO CHECK ELECTROLYTE LEVEL FROM SIDE OF BATTERY

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. Remove hook (1), then open inspection cover (2).
2. Remove cap (3) at the top of the battery and look through the filler port to check the electrolyte level. If the electrolyte is not up to the sleeve, immediately add distilled water (or commercially available battery filler solution) to the bottom of the sleeve (UPPER LEVEL).



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



3. After adding distilled water, tighten cap (3) 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.

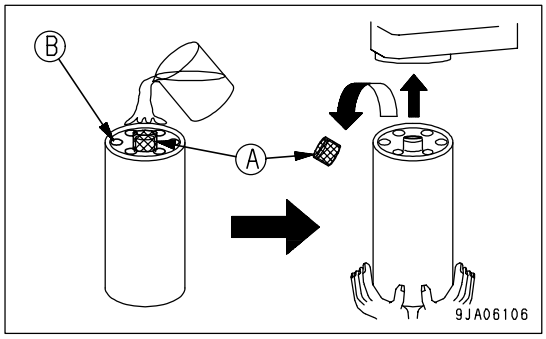
WHEN IT IS POSSIBLE TO USE INDICATOR TO CHECK ELECTROLYTE LEVEL

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

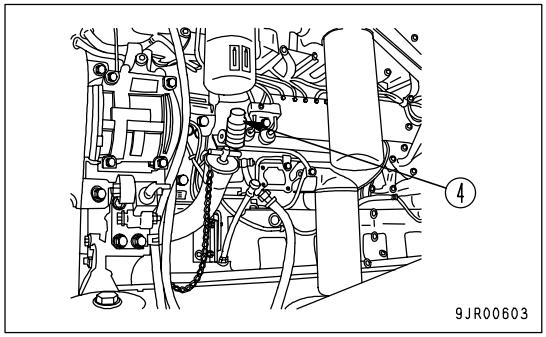
NOTICE

When filling the filter cartridge with fuel, carry out the filling operation with cap (A) fitted.

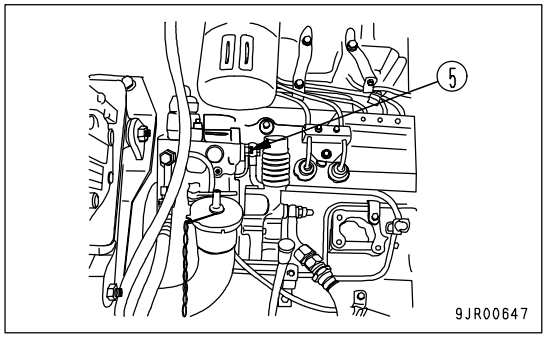
Cap (A) acts to prevent the entry of dirt or dust into the filter cartridge.



5. Fill the filter cartridge with clean fuel through the 8 small holes (B) in the new filter cartridge.
6. Coat the packing surface of the filter cartridge with oil.
7. Remove filter cartridge cap (A) and install to the filter holder.
8. When installing, tighten until the packing surface contacts the seal surface of the filter holder, then tighten it up 1/2 to 3/4 of a turn.
   If the filter cartridge is tightened too far, the packing will be damaged and this will lead to leakage of fuel. If the filter cartridge is too loose, fuel will also leak from the packing, so always tighten to the correct amount.
9. After replacing filter cartridge (2), loosen air bleed plug (3), and open supply valve (1).
10. Loosen the knob of priming pump (4), then pump the knob and check that fuel comes out from air bleed plug (3).
11. Tighten air bleed plug (3).
    Tightening torque: 7.8 to 9.8 N·m (0.8 to 1 kgf·m, 5.8 to 7.2 lbft)



12. Loosen air bleeder (5) of the supply pump.
13. Pump priming pump (4) until no more bubbles come out with the fuel from air bleeder (5), then tighten air bleeder (5).
    Tightening torque: 4.9 to 6.9 N·m
    (0.5 to 0.7 kgf·m, 3.6 to 5.1 lbft)
14. Continue pumping until priming pump (4) becomes stiff.
15. Push in the knob of priming pump (4) and tighten it.
16. After replacing the filter cartridge, start the engine and check that there is no leakage of fuel from the filter cartridge. If there is any leakage of fuel, check the tightening condition of the filter cartridge. If the filter cartridge is properly tightened and there is still fuel leakage, follow Steps 2 and 3 to remove the filter cartridge, and check the packing surface. If damage or foreign material is found in the packing surface, replace the cartridge with a new part, and repeat Steps 4 to 16.



CHANGE OIL IN FRONT FINAL DRIVE

(HD325 only the machine of 4WD specifications)

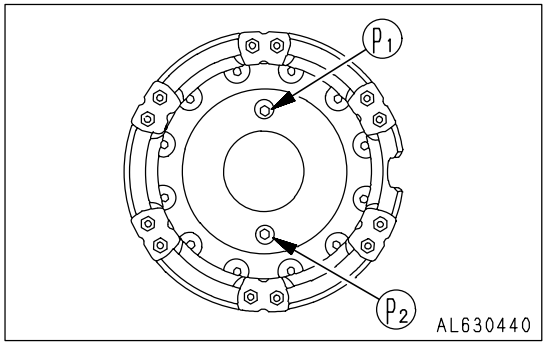
WARNING

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

The oil in the front final drive is the same as the oil for the transmission case, so when changing the oil, change the transmission oil at the same time. The oil is drained from the front final drive cover, but the oil is added and the oil level is checked at the transmission end. Add oil after adding oil at the transmission end.

- Refill capacity: 22 liters (5.8 US gal) each (both left and right)

1. Stop the machine so that drain plugs (P1) and (P2) are at the top and bottom.
2. Remove drain plug (P2), then remove (P1), drain the oil, and tighten (P2) again.
3. Add engine oil through the hole in (P1) to the specified level.
4. Tighten drain plug (P1), start the engine, then run the engine at idling and check that the oil in the transmission is at the specified level.



EVERY 4000 HOURS SERVICE

Maintenance for every 50, 100, 250, 500, 1000 and 2000 hours service should be carried out at the same time.

CHECK WATER PUMP

Check for play in the pulley, leakage of grease or water, or clogging of the drain hole. If any abnormality is found, contact your Komatsu distributor for disassembly and repair or replacement.

CHECK AIR COMPRESSOR

Ask your Komatsu distributor to carry out this work.

CHECK FAN PULLEY AND TENSION PULLEY

Check for play of the pulley and leakage of grease. If any abnormality is found, please contact your Komatsu distributor.

CHECK VIBRATION DAMPER

There is the possibility of drop in the level of the damper fluid and runout of the concave surface. So, please contact your Komatsu distributor to inspect or replace.

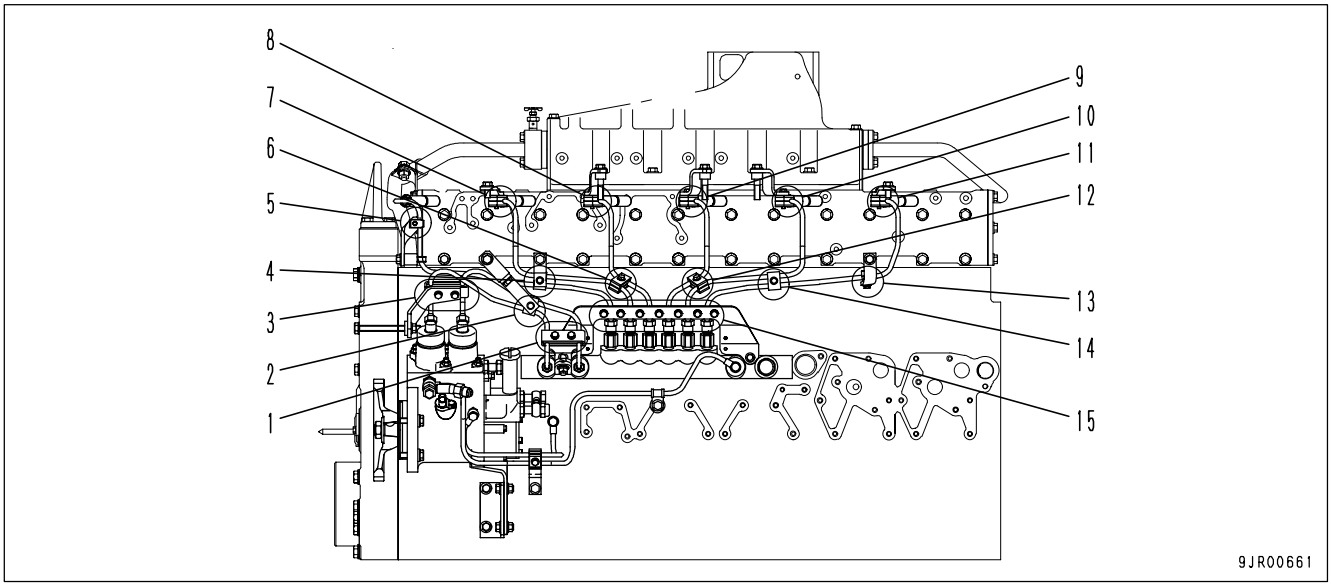
CHECK INJECTOR

See Section "B REGULATION AREA (PAGE 4-20)".

REPLACE INJECTOR ASSEMBLY

See Section "A REGULATION AREA (PAGE 4-20)".

CHECKING FOR LOOSENESS OF HIGH-PRESSURE CLAMP, HARDENING OF RUBBER



Check clamps (1) to (15) for loose bolts and hardening of the rubber parts. If there are any loose bolts or hardened rubber, please contact your Komatsu distributor for replacement.

NOTICE

The fuel spray prevention cap and fuel spray prevention cover are protective parts to prevent fire if leaking fuel should spray on high-temperature parts of the engine.

Always check that the fuel spray prevention cap and fuel spray prevention cover are installed correctly.

OPERATING PAYLOAD METER

Resetting power (the power can be reset by turning the power ON.)

- The display for the first 3 seconds is 88:88, and after that, the time is displayed for 7 seconds.
- After 10 seconds, the normal display is given.
- The printer feeds one line of paper and stops at the home position.

CONTENT OF DISPLAY

- When the dump lever is at FLOAT and the shift lever is at neutral, the actual load is displayed.
- When the load is less than 2.0 tons, or if the dump lever is not at FLOAT, the display is 0.
- If the dump lever is at FLOAT but the shift lever is not at neutral, the time display is given.
  A maximum of 200 cycles of data can be written to memory. If this level is exceeded, FULL is displayed. If FULL is displayed, print out the data and clear the data from the memory. For details, see "DELETING DATA FROM MEMORY (PAGE 6-8)".
- After completion of operations, we recommend that you stop the machine, print out the data, and clear the data from memory.
- There may be a slight change between the load displayed at the loading point and the load displayed at the dumping point.
- Save the data to memory when the dump lever is raised.
  When the machine is completely stopped, it is possible to carry out accurate calculation if the load is dumped when the swaying of the machine has completely stopped. We recommend that the slope at the dumping point be kept to within ±5 degrees.
- When the value displayed by the payload meter becomes stable, move the dump lever to the RAISE position. If the machine is still swaying violently when the dump lever is moved to the RAISE position, ***** is printed when the print out is made.
- When the dump lever is returned from LOWER to FLOAT, wait for at least 5 seconds before turning the starting switch OFF.

OPERATION OF SWITCHES

WHEN CARRYING OUT CALIBRATION

Carry out calibration at the following occasions.

- When the machine is delivered, and once every month after that.
- When the gas pressure and oil have been adjusted in the suspension cylinder.
  (When the suspension has been adjusted.)
- When the machine has been modified and the unladen weight has changed more than 100 kg (221 lb).
- When the suspension pressure sensor has been replaced.
- When other modifications have been made around the suspension.
- When the built-in battery has been replaced.
- When CAL is displayed.

SPEED INDICATOR
This (5) indicates the machine travel speed.

SPEED WARNING LAMP
When the machine exceeds the maximum set speed, the lamp (6) lights up to warn the operator.

Models with the speed warning lamp do not have the speed indication confirmation lamp.

SPEED INDICATION CONFIRMATION LAMP
This lamp (7) is interconnected with the speedometer and is used to confirm the speed indication. When using the confirmation switch to light up the confirmation lamp during checks before starting, always check for any disconnection in the three indication confirmation lamps.

Models with the speed warning lamp do not have the speed indication confirmation lamp.

ODOMETER
This meter (8) displays the total distance (km) traveled by the machine.

PERIOD INDICATING LABEL
This label (9) indicates that it is for 7 days.

SPEED RECORDING STYLUS
This (10) records the momentary speed of the machine on the chart.

OPERATOR CHANGE RECORDING STYLUS
When the operator change key is used, the operator change is recorded on the chart (11).

TRAVEL DISTANCE RECORDING STYLUS
This (12) records the distance travel by the machine on the chart. One up-and-down recording motion is 10 km.

ADJUSTMENT SCREW FOR SPEED WARNING LAMP
The speed at which the lamp gives a warning can be set as desired with this screw (13).

SPEED CONFIRMATION APERTURE FOR SPEED WARNING LAMP INDICATION
This (14) is the speed indication aperture for setting the desired speed.

CLOCK SETTING KNOB
Turn this knob (15) clockwise to advance the hand, and counterclockwise to turn the hand back.

CHART SUPPORT
This (16) is the rotating part of the clock and has teeth to prevent the chart from slipping.

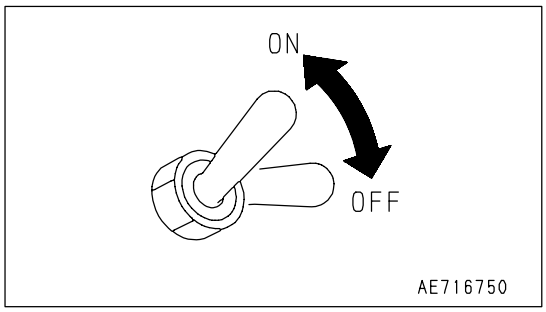
PRESSING RING
This ring (17) is a ring that presses the chart and holds it against the chart support.

CUTTING KNIFE
This knife (18) cuts the tape connecting the charts.

INSTRUMENT LIGHTING LAMP
This lamp (19) is used for light up the instrument.

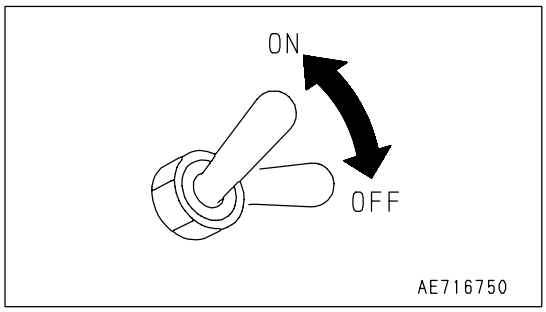
ABS/ASR MAIN SWITCH

This switch (3) is used to turn the ABS/ASR system on/off.



TROUBLESHOOTING SWITCH

This switch (4) is used for troubleshooting.



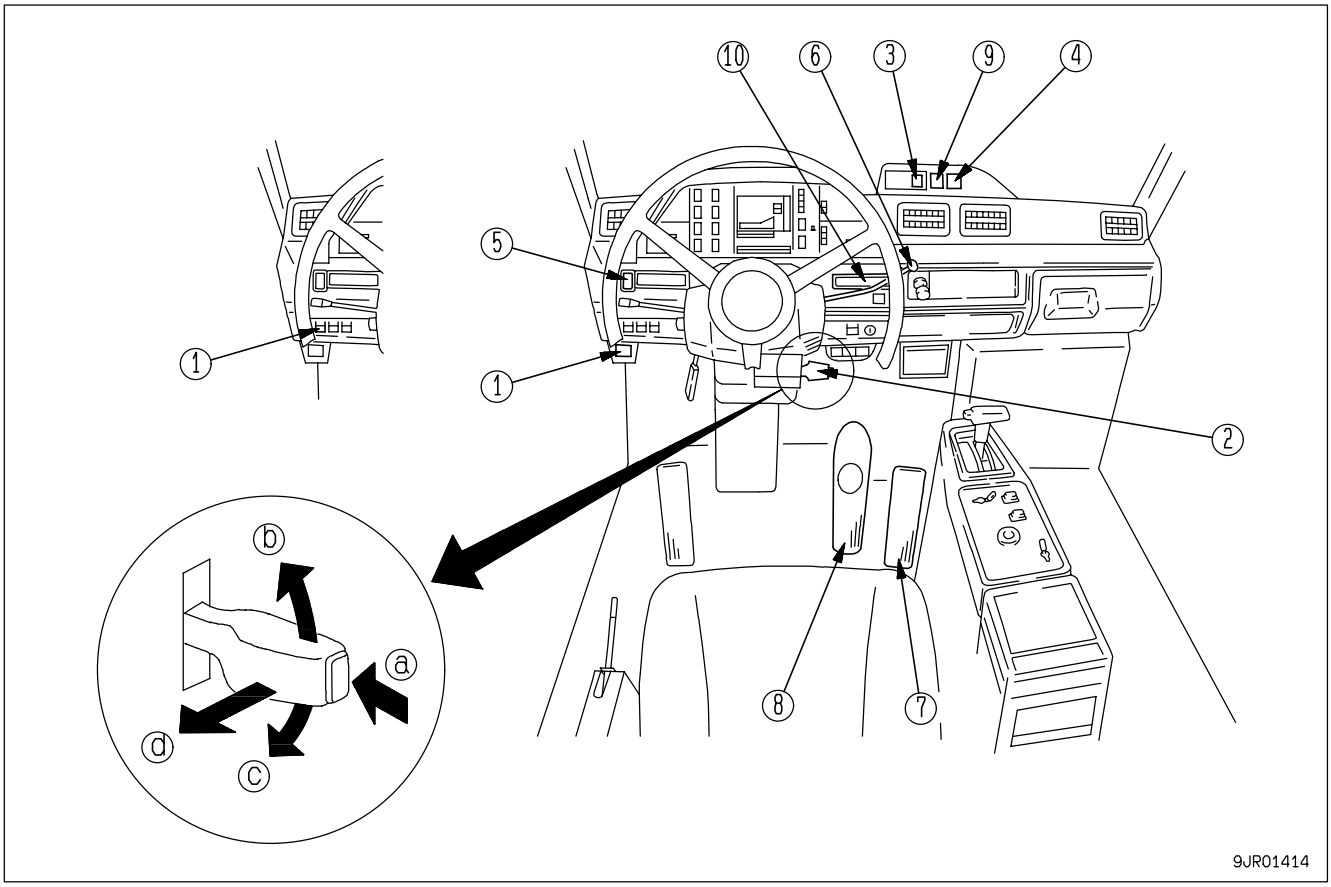
ARSC (AUTOMATIC RETARDER SPEED CONTROL)

When traveling downhill, if the switch is pressed at the speed that is to be maintained, the retarder is automatically actuated to prevent the travel speed from exceeding the set speed, so this makes retarder operations easy.

⚠ WARNING

- **The ARSC system is actuated when the system switch is ON. Before traveling downhill, check that the system switch is ON.**
- **If the speed is set to a speed that exceeds the maximum permissible speed obtained from the brake performance graph, there is danger that there will be overheating and that the retarder brake may be damaged. Always set the speed so that it does not exceed the maximum permissible speed.**
- **When the ARSC is actuated on slippery roads, the tires may lock. If this happens, cancel the ARSC.**
- **If any abnormality occurs in the system and braking cannot be carried out properly, the alarm sounds and the system is turned OFF to cancel the ARSC. If necessary, control the machine with the retarder control lever and foot brake to stop the machine in a safe place, then turn the system switch OFF.**

EXPLANATION OF COMPONENTS



The position of system switch (1) may differ according to the combination of optional equipment.

(1) System switch
(2) ARSC set lever
(3) Set speed display
(4) ARSC caution lamp
(5) Central warning lamp
(6) Retarder control lever
(7) Accelerator pedal
(8) Brake pedal
(9) Ready lamp
(10) Rear brake pilot lamp