

# Operation and Maintenance Manual

# HM350-1L

## ARTICULATED DUMP TRUCK

SERIAL NUMBERS **HM350-1L**                      **A10001**      and UP

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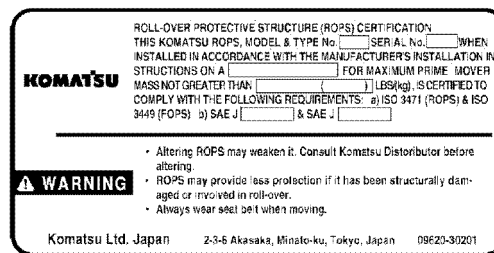
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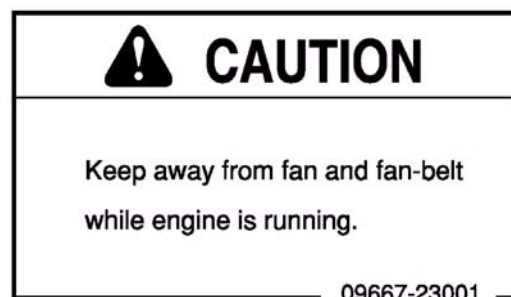
## SAFETY LABELS

## 1. Precaution about modifying ROPS/FOPS (09620-30201)



09620-30201

## 2. Caution for rotation parts (09667-23001)

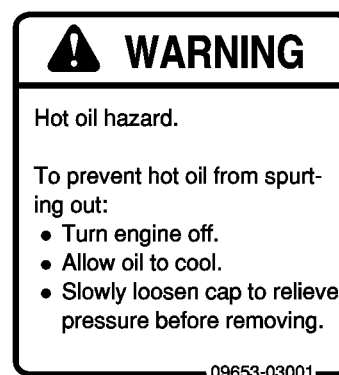


## 3. Precaution when releasing radiator cap. (09658-03001)



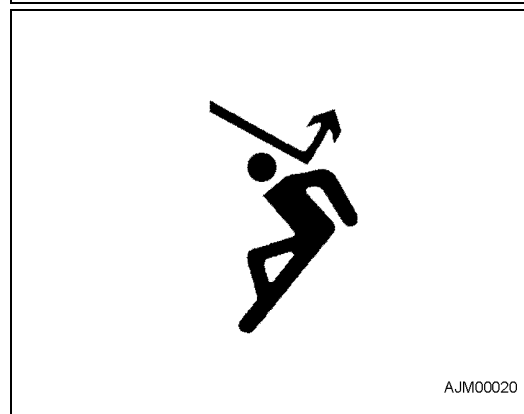
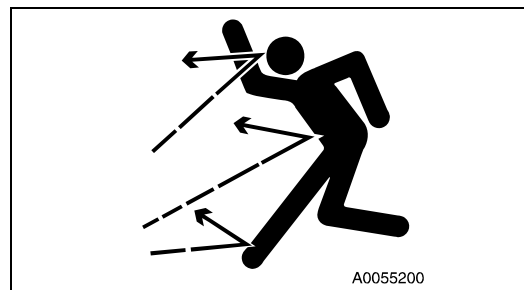
## 4. Warning. Hot oil hazard.

To prevent hot oil from spurting out (09653-03001)



## PRECAUTIONS WHEN USING ROPS

- Install ROPS when working in places where there is danger of falling rocks, such as in mines and quarries, or in places where there is danger of rolling over. If ROPS is installed, do not remove it when operating the machine.
- ROPS is installed to protect the operator if the machine rolls over. If the machine rolls over, ROPS supports its weight and absorbs its impact energy.
- If the ROPS is welded, or holes are drilled in it, or it is modified in any other way, its strength may drop. Consult your Komatsu distributor before performing any modification. If ROPS is damaged or deformed by falling objects or by rolling over, its strength will be reduced and it will not be able to fulfill its function properly. In such cases, always contact your Komatsu distributor for advice on the method of repair.
- Even if ROPS is installed, always fasten your seat belt properly when operating the machine. If you do not use or fasten your seat belt properly, it cannot show its effectiveness.



## PRECAUTIONS FOR ATTACHMENTS

- When installing optional parts or attachments, there may be problems with safety or legal restrictions. Therefore, contact your Komatsu distributor for advice.
- Any injuries, accidents, or product failures resulting from the use of unauthorized attachments or parts will not be the responsibility of Komatsu.
- When installing and using optional attachments, read the instruction manual for the attachment, and the general information related to attachments in this manual.

## UNAUTHORIZED MODIFICATION

Any modification made without authorization from Komatsu can create hazards. Before making a modification, consult your Komatsu distributor.

- Komatsu will not be responsible for any injuries, accidents, or product failures resulting from modifications made without authorization from Komatsu.

## SAFETY AT WORKSITE

Before starting operations, thoroughly check the area for any unusual conditions that could be dangerous.

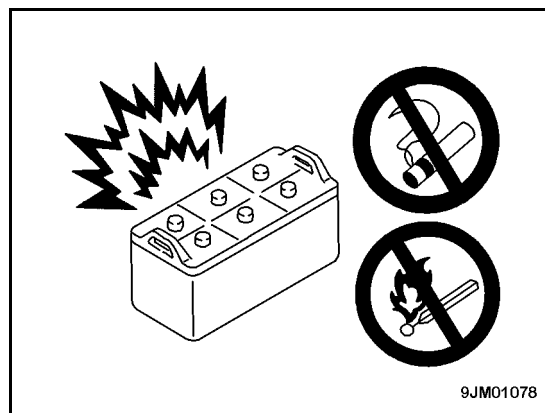
- When carrying out operations near combustible materials such as thatched roofs, dry leaves or dry grass, there is a hazard of fire, so be careful when working.
- Check the terrain and condition of the ground at the work site, and determine the safest method of operation. Do not perform operations at places where there is a hazard of landslides or falling rocks.
- If water lines, gas lines, or high-voltage electrical lines may be buried under the work site, contact each utility and identify their locations. Be careful not to sever or damage any of these lines.
- Take action to prevent unauthorized people from approaching the jobsite.
- When working on public roads, position flagmen and erect barriers to ensure the safety of passing traffic and pedestrians.
- When traveling or operating in shallow water or on soft ground, check the shape and condition of the bedrock, and the depth and speed of flow of the water before starting operations.
- Always design and maintain the roads on the jobsite so that the machines can travel safely.

## BATTERY

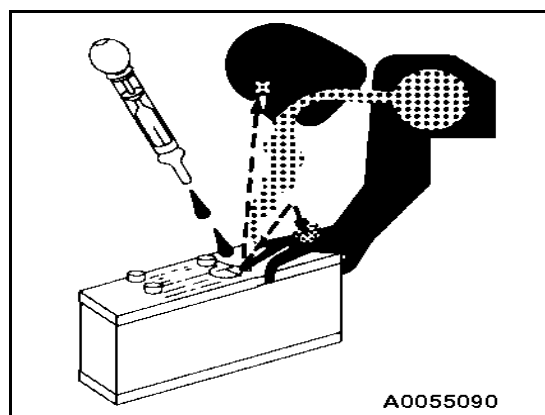
### BATTERY HAZARD PREVENTION

Battery electrolyte contains sulfuric acid, and batteries generate flammable hydrogen gas, which may explode. Improper handling can lead to serious injury or fire. For this reason, always observe the following precautions:

- Do not use or charge the battery if the battery electrolyte level is below the LOWER LEVEL line or an explosion may occur. Always check the battery electrolyte level periodically and add distilled water to bring the electrolyte level to the UPPER LEVEL line.
- When working with batteries, always wear safety glasses and rubber gloves. Never smoke or use any flame near the battery.



- If you spill acid on your clothes or skin, immediately flush the area with large amount of water.
- If acid gets into your eyes, flush them immediately with large amount of water and seek medical attention.



- Before working with batteries, turn the start switch to the OFF position.

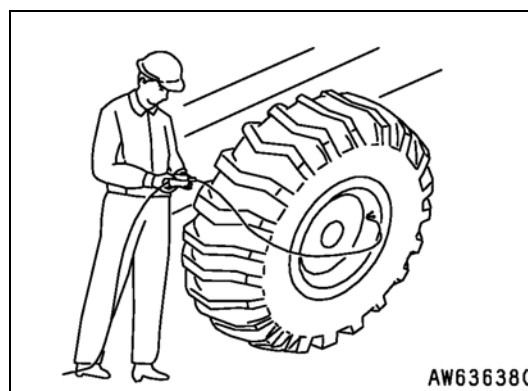
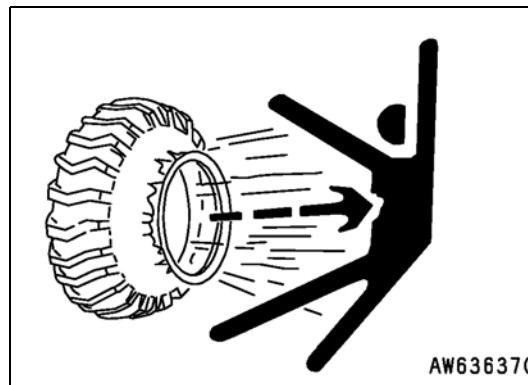
Since there is a hazard that sparks will be generated, always do as follows:

- Do not let tools or other metal objects make any contact between the battery terminals. Do not leave tools or other metal objects lying around near the battery.
- Always disconnect the negative (-) terminal (ground side) first when removing the battery; when installing the battery, connect the positive (+) terminal first, and connect the ground last.
- Attach the battery terminals securely.
- Flammable hydrogen gas is generated when the battery is charged, so remove the battery from the chassis, take it to a well-ventilated place, and remove the battery caps before charging it.
- Tighten the battery caps securely.
- Install the battery securely in the specified place.

## HANDLING TIRES

If tires or rims are handled improperly, there is danger that the tire may explode or be damaged, or that the rim may fly off and cause serious injury or death. To maintain safety, always do as follows:

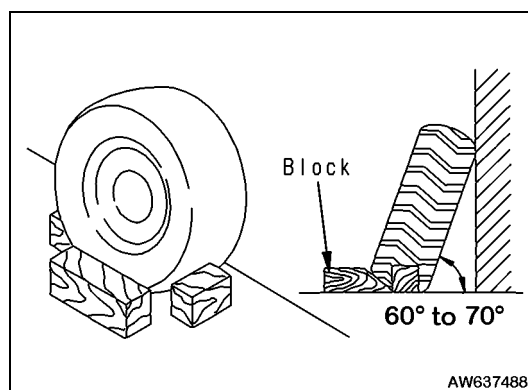
- Maintenance, disassembly, repair, and assembly of the tires and rims requires special equipment and special technology, so always ask your Komatsu distributor to perform these operations.
  - Always use the tires specified by Komatsu and maintain the specified inflation pressure.
  - Tire inflation pressure: see “HANDLING TIRES” on page 2-102.
- 
- When pumping up the tires, check that no other person is standing near the tire, and install an air chuck with a clip that can be secured to the air valve.
  - To prevent the tire inflation pressure from becoming too high, measure the pressure from time to time with an air gauge while pumping up the tire.
  - If the tire pressure decreases abnormally or the rim parts do not fit the tire, there is a problem with the tire or rim parts. Always contact your Komatsu distributor for repairs.
  - If the rim parts are not fitted properly when the tire is being pumped up, there is danger that the rim parts may fly off, so set up a protective fence around the tire, and do not stand directly in front of the rim. Stand beside the tread when pumping up the tire.
  - Do not adjust the tire inflation pressure immediately after traveling at high speed or operating under heavy load.
  - Never do welding or light a fire near the tire.



## PRECAUTIONS WHEN STORING TIRES

Tires for construction equipment are extremely heavy, so they may cause serious personal injury.

- As a basic rule, store the tires in a warehouse which unauthorized persons cannot enter.
- If the tires must be stored outside, always erect a fence and put up “No Entry” signs.
- Stand the tire on level ground, and block it securely so that it cannot roll or fall over if any person should touch it.
- Do not lay the tire on its side. This will deform the tire and cause it to deteriorate.
- If the tire should fall over, do not attempt to stop it. Get out of the way quickly.



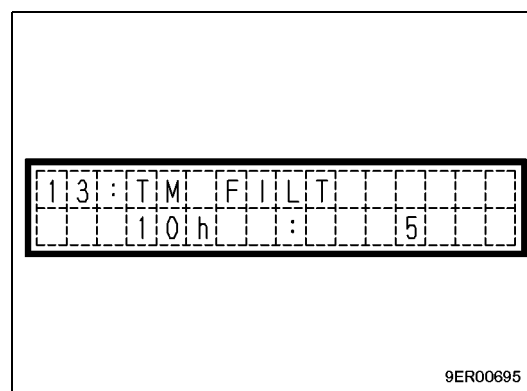
**FILTER, OIL, REPLACEMENT TIME DISPLAY**

After completion of the system check when the starting switch is turned ON, if any filter or oil item is approaching the replacement time, this display (5) shows the item for approximately 30 seconds. When this situation happens, the maintenance caution lamp also flashes or lights.

After replacing the filter or changing the oil, reset the replacement interval. For details, see "RESET METHOD FOR FILTER, OIL REPLACEMENT TIME" on page 2-24.

**Remark**

- The top line of the character display shows the name and ID number of the item needing replacement. The line at the bottom shows the remaining time until replacement and the total number of times the item has been replaced.
- After giving the display for 30 seconds, the display does not appear again until the starting switch is turned again to the ON position.
- If the action code is being displayed, the message in the diagram above is not displayed on the character display.
- If there two or more items to be displayed, they are displayed every three seconds.
- If there are more than 10 items to be displayed, all the items are displayed once each.
- The display is given when the time reaches 30 hours before the filter and oil replacement interval.
- When the replacement interval approaches, the maintenance caution lamp flashes, and if the replacement interval has passed, the lamp lights up.

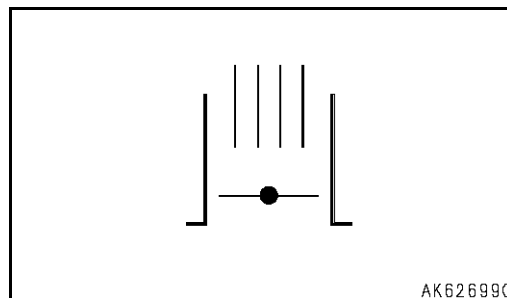


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**EXHAUST BRAKE PILOT LAMP**

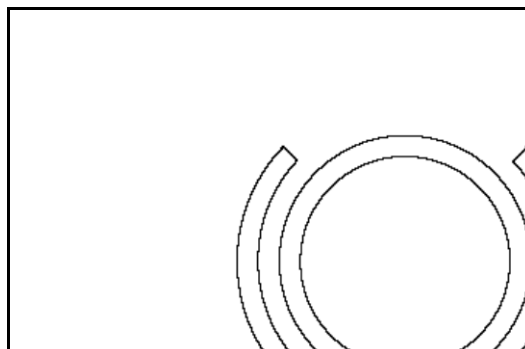
(If equipped)

This monitor (2) lights up when the exhaust brake is actuated.



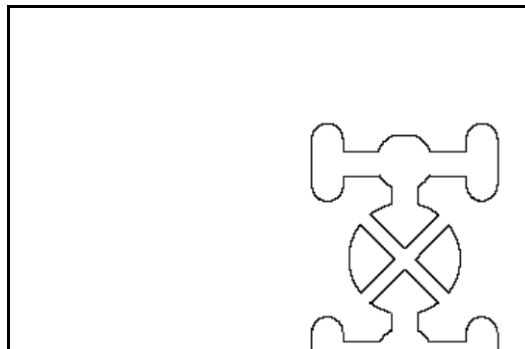
**RETARDER PILOT LAMP**

This monitor (3) lights up when the retarder control lever is pulled and the retarder is actuated.



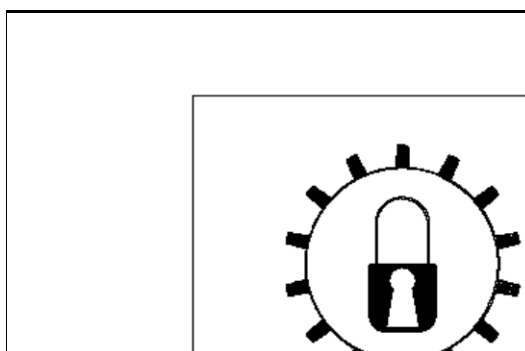
**INTER-AXLE DIFFERENTIAL LOCK PILOT LAMP**

This monitor (4) lights up when the inter-axle differential lock is actuated.



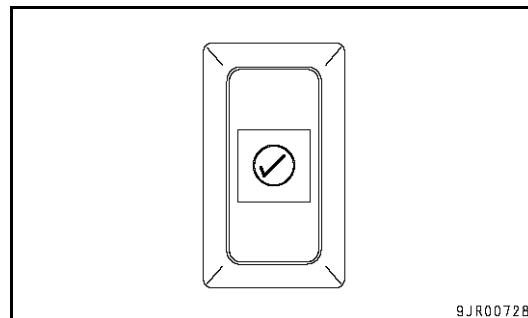
**LOCKUP PILOT LAMP**

This monitor (5) lights up when the torque converter lockup is engaged and the transmission is shifted to direct drive.



## MACHINE MONITOR BULB CHECK SWITCH

Turn the starting switch ON, press this switch (3) and check for any blown bulbs.



## EXHAUST BRAKE SWITCH

(If equipped)

This switch (4) is used to switch the operating condition of the exhaust brake.

Position (a)

When the accelerator pedal is released and the torque converter is in the lock-up condition, the exhaust brake is actuated and the exhaust brake pilot lamp lights up.

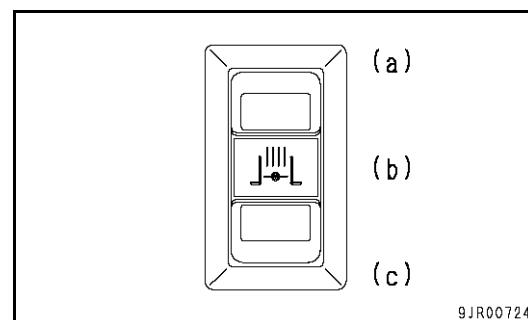
Position (b)

When the accelerator pedal is released and the torque converter is in the lock-up condition, if the foot brake is depressed or the retarder control lever is operated, the exhaust brake is actuated and the exhaust brake pilot lamp lights up.

Position (c)

Exhaust brake is not operated

When working at night, the symbol inside the switch lights up regardless of the selected position of the switch.



## HAZARD LAMP SWITCH

This switch (5) is used to make the left and right turn signal indicators flash.

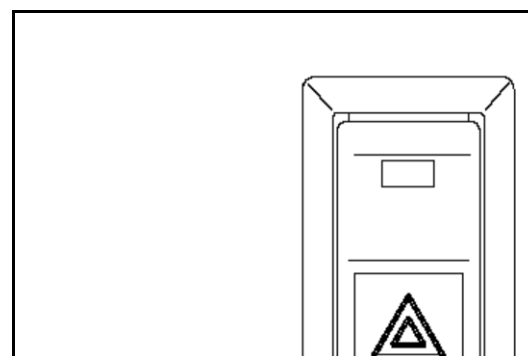
Position (a)

OFF

Position (b)

Turn signal lamp and turn signal pilot lamp flash

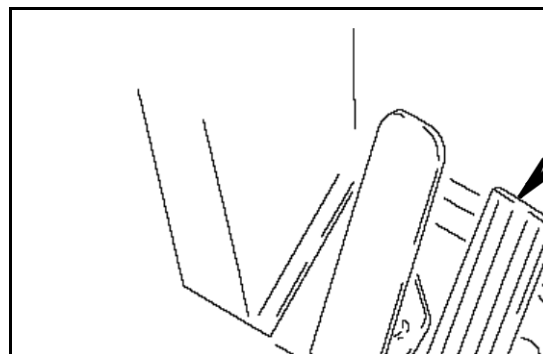
When working at night, the symbol inside the switch lights up regardless of the selected position of the switch.



## ACCELERATOR PEDAL

This pedal (2) is used to adjust the engine speed.

It can be operated freely between the engine low idle position and the full throttle position.



## SHIFT LEVER

The gear range can be selected with this lever (3) to match the travel conditions.

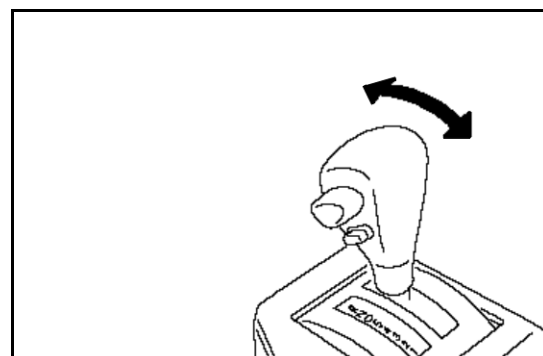
D position:

This is used for normal travel.

If the lever is placed in this position, the transmission is shifted automatically from 2nd torque converter drive to 6th speed to match the travel speed of the machine.

If the dump body is raised, the shift lever is fixed at 2nd. Always lower the dump body when traveling.

The maximum speed in this position is 57.1km/h (35.5 MPH).



Position R1:

This is used when traveling in reverse. When this position is used, the transmission is fixed in R1 and the travel is carried out in torque converter drive or direct drive according to the travel speed. The maximum travel speed in this position is 7.2 km/h (4.5 MPH).

Position R2:

This is used when traveling in reverse. When this position is used, the transmission is fixed in R2 and the travel is carried out in torque converter drive or direct drive according to the travel speed. The maximum travel speed in this position is 17.0 km/h (10.6 MPH).

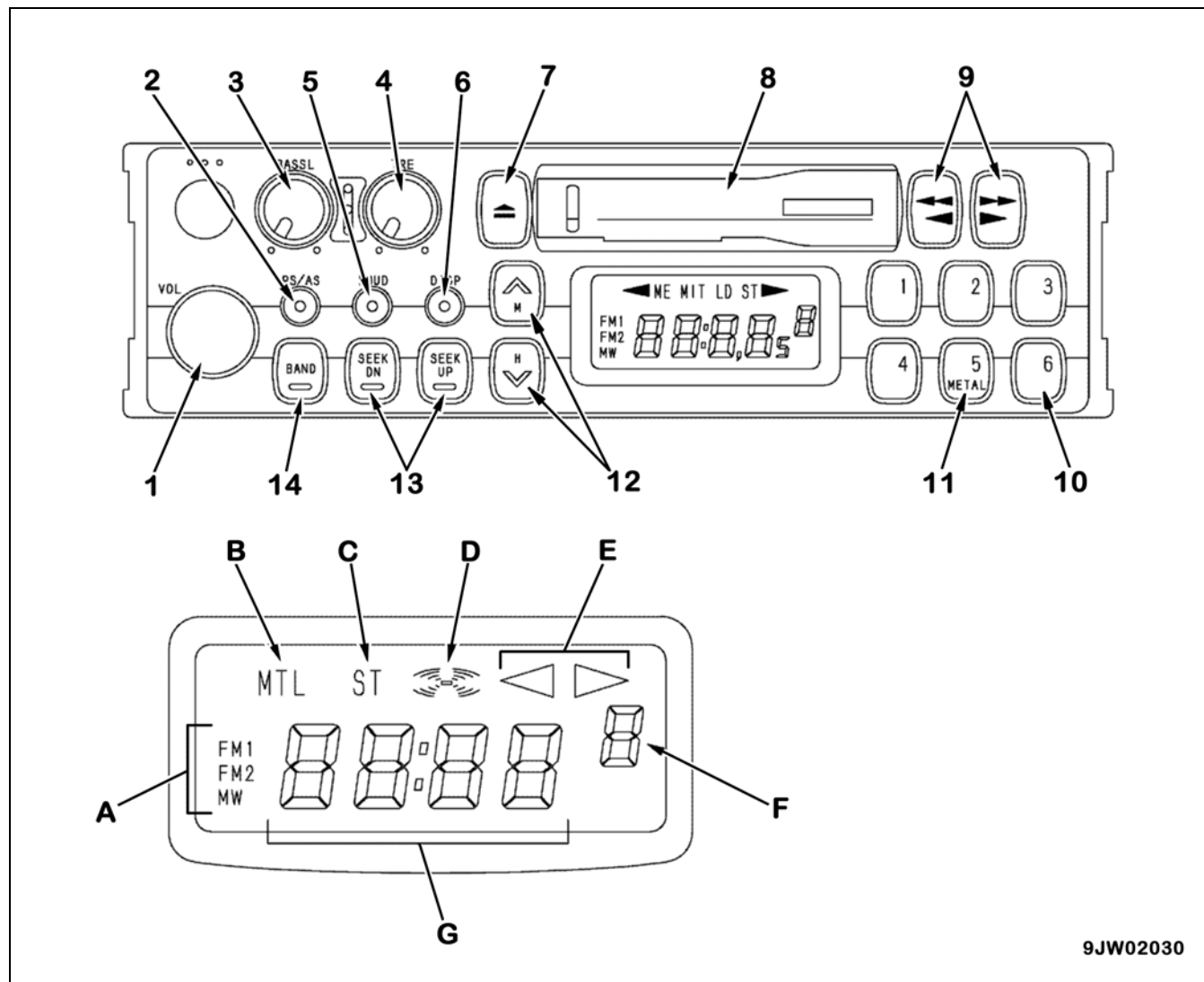
It is impossible to travel in reverse if the dump body is raised. Lower the dump body, set the dump lever to the "FLOAT" position, then set the gearshift lever to the "R1" or "R2" position.

5 - 1 position:

These positions are used in places where it is difficult to travel at high speed, or when traveling on soft ground, or when starting the machine off on a slope when it is loaded. They are also used when going downhill if it is needed to use the braking force of the engine. The speed ranges for each position are as follows:

## AM/FM RADIO-CASSETTE STEREO

The AM/FM radio offers the addition of music and pleasant sounds for the operator to enjoy while operating the machine for long periods of time. However, using the radio during machine operations may lead to distractions. When using the radio always be aware of what you are doing and your operating environment. Do not allow yourself to become distracted by the radio.



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- |                                  |                                       |                           |
|----------------------------------|---------------------------------------|---------------------------|
| 1. Power Switch/volume           | 6. Time/radio Display Selector Button | 11. Metal Tape Button     |
| 2. Auto-store/preset Scan Button | 7. Tape Eject Button                  | 12. Manual Tuning Buttons |
| 3. Bass Control Knob             | 8. Cassette Door                      | 13. Seek Button           |
| 4. Treble Control Knob           | 9. Fast Forward/rewind Button         | 14. Band Select Button    |
| 5. Loudness Button               | 10. Preset Buttons                    |                           |
| A. Band Display                  | D. Loudness Display                   | G. Time/frequency Display |
| B. Metal Tape Display            | E. Tape Direction Display             |                           |
| C. Fm Stereo Reception Display   | F. Preset Channel Display             |                           |

**METHOD OF OPERATION**

		Switch					
		Fan switch	Air conditioner switch	Temperature control switch	FRESH/RECIRC selector switch	Mode selector switch	
Condition of use	Cooling	Rapid	HI	ON	All blue	RECIRC	FACE
		Normal	HI-LO	ON	More than half are blue	FRESH	FACE
	Dehumidifying, heating		HI-LO	ON	More than half are red	FRESH	FOOT
	Heating	Rapid	HI	OFF	All red	RECIRC	FOOT
		Normal	HI-LO	OFF	More than half are red	FRESH	FOOT
	Defroster		HI	ON	More than half are red	FRESH	DEF
Ventilation or pressurizing		HI-LO	OFF	All blue	FRESH	FACE	

When carrying out the defrosting, if the temperature control switch is set so that all lamps are red, this will improve the performance for defrosting and demisting.

With the FACE vents, it is possible to adjust the direction of the air flow and to turn it on or off.

However, do not set to the FACE mode with the vents closed.

**WHEN NOT USING THE AIR CONDITIONER REGULARLY**

To lubricate each part of the compressor, operate cooling, dehumidifying and heating for 3 to 5 minutes once a month at low idle. Also, check the amount of cooling gas twice a year.

**Remark**

*If the temperature inside the cab is low, the air conditioner may not work. In such cases, use the recirculated air to warm up the inside of the cab, then turn the air conditioner switch on. The air conditioner will be run.*

**PRECAUTIONS WHEN USING AIR CONDITIONER**

**Carry out ventilation from time to time when using the cooling.**

- If you smoke when using the air conditioner in the RECIRC mode, your eyes may start to itch or burn. Ventilate the cab ever so often to remove the smoke.
- When using the air conditioner for a long period of time, carry out ventilation process at least once every hour.

**Be careful not to cool the cab too much.**

When using the air conditioner, it is recommended for health reasons, that it should only feel slightly cooler (5 or 6 °C (9 or 10.8°F) lower than the outside temperature) when you enter the cab. Therefore, adjust the temperature to a suitable level.

## ADJUSTMENT BEFORE OPERATION

### ADJUSTING OPERATOR'S SEAT

# ⚠ WARNING

Park the machine in a safe place and stop the engine when carrying out adjustment of the operator's seat.

Adjust the seat before starting operations or when changing operators.

Adjust the position of the operator's seat so that you can depress the brake pedal fully with your back against the seat backrest.

#### (A) Fore-and-aft adjustment

Move lever (1) up, move the seat to the desired position, then release the lever.

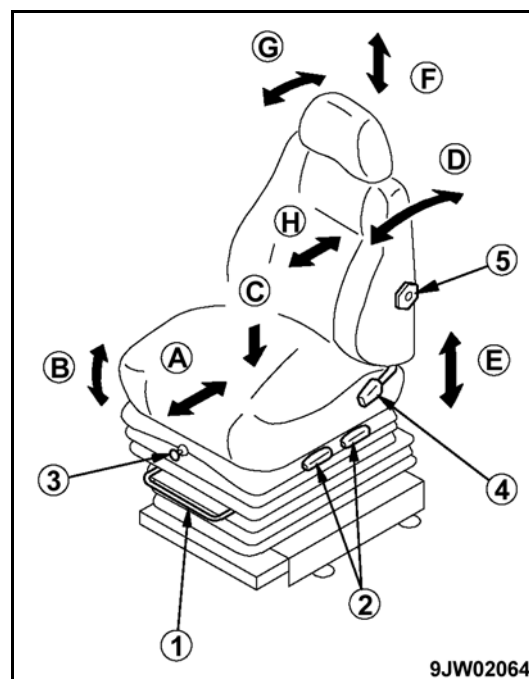
Fore-and-aft adjustment: 180 mm (7.1 in) [10 mm (0.4 in) x 18 stages]

#### (B) Adjusting seat angle

Move lever (2) up and push down on the rear of the seat to tilt it backward.

Move lever (2) down and push down on the front of the seat to tilt it forward.

Adjustment range: 13 degrees (Front tilt, rear tilt: 4 stages each)



#### (C) Setting seat for operator's weight

Sit on the seat and adjust the strength of the suspension with valve (3).

Adjustment range (Target): 50 kg (110 lb) to 120 kg (265 lb)

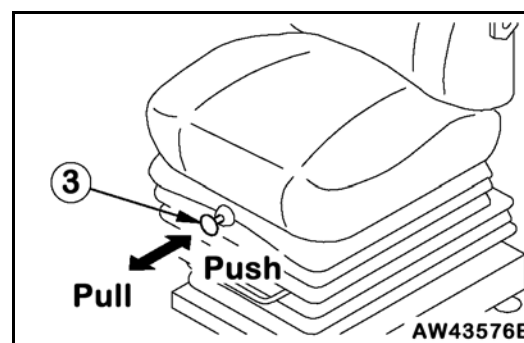
Push: Suspension is strengthened.

Pull: Suspension is weakened.

#### (D) Adjusting backrest angle

Move lever (4) up and move the backrest to the front or rear. When doing this, keep your back pressed against the seat back. If your back is not against the seat back, the seat back may spring back suddenly.

Adjustment range: 66° to the front (3° x 22 stages) 72° to rear (3° x 24 stages)



#### Remark

If the seat back is reclined too far, the seat back may hit the rear glass, so use it in a position where it does not contact the glass.

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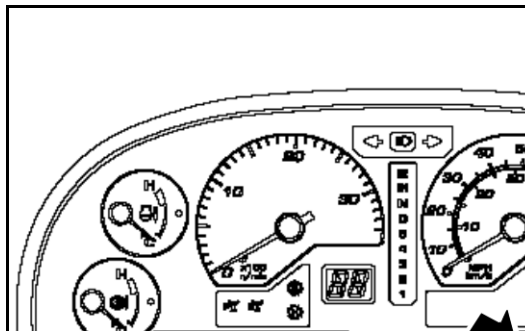
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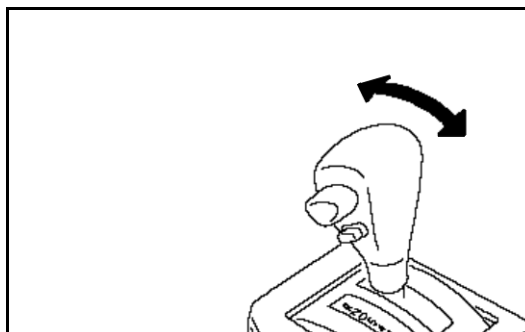
5. Check that retarder pilot lamp (3) is not lit, then set shift lever (4) to the desired position.



**Remark**

*When operating the shift lever, be sure to set it in position securely. If the lever is not placed in position properly, the shift position display on the panel may go out and the transmission warning monitor lamp may light up.*

*Always release the accelerator pedal before shifting from N to R or F.*



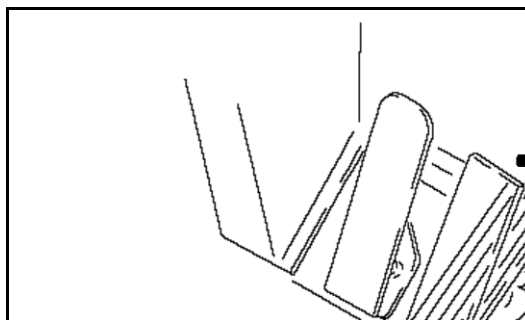
6. Depress accelerator pedal (5) to move the machine.

**Remark**

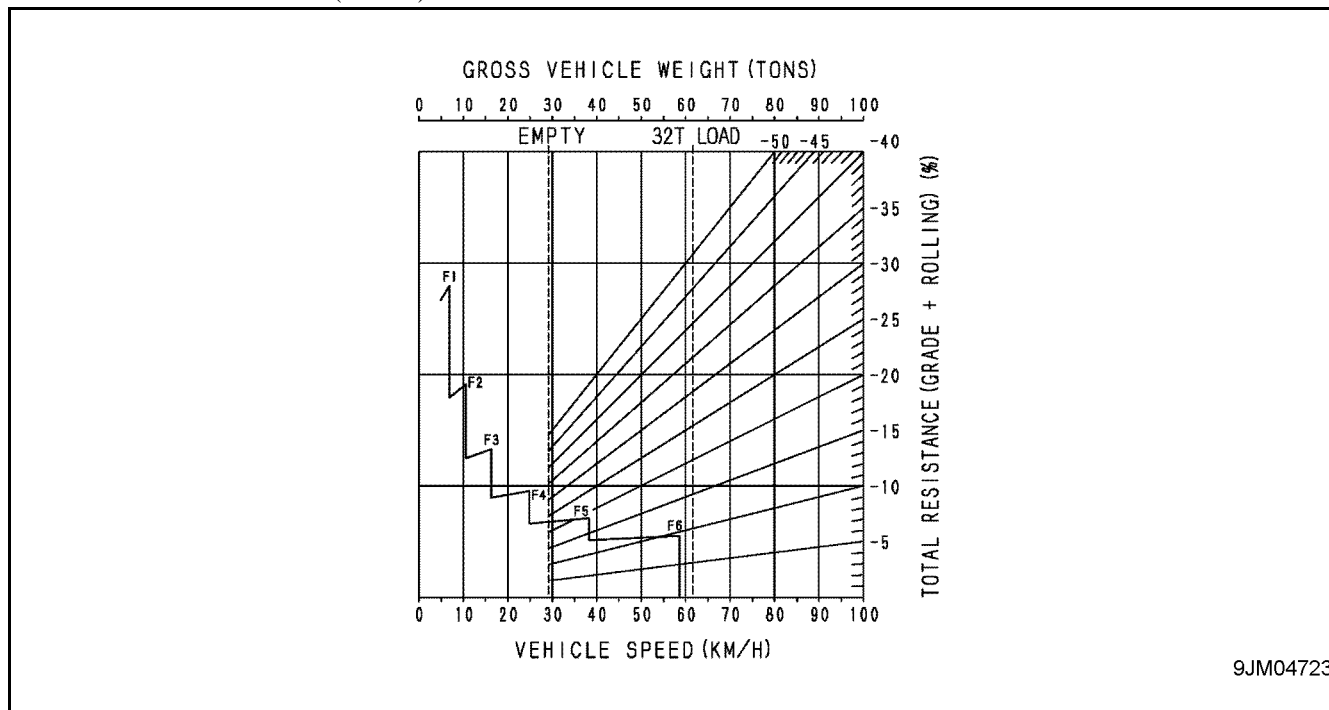
*If the shift lever is shifted to a position other than N when the parking brake has not been released, the central warning lamp will flash and the alarm buzzer will sound.*

*If the shift lever is shifted to a position other than N when the dump lever is at a position other than FLOAT or the body is raised, the central warning lamp will flash and the alarm buzzer will sound.*

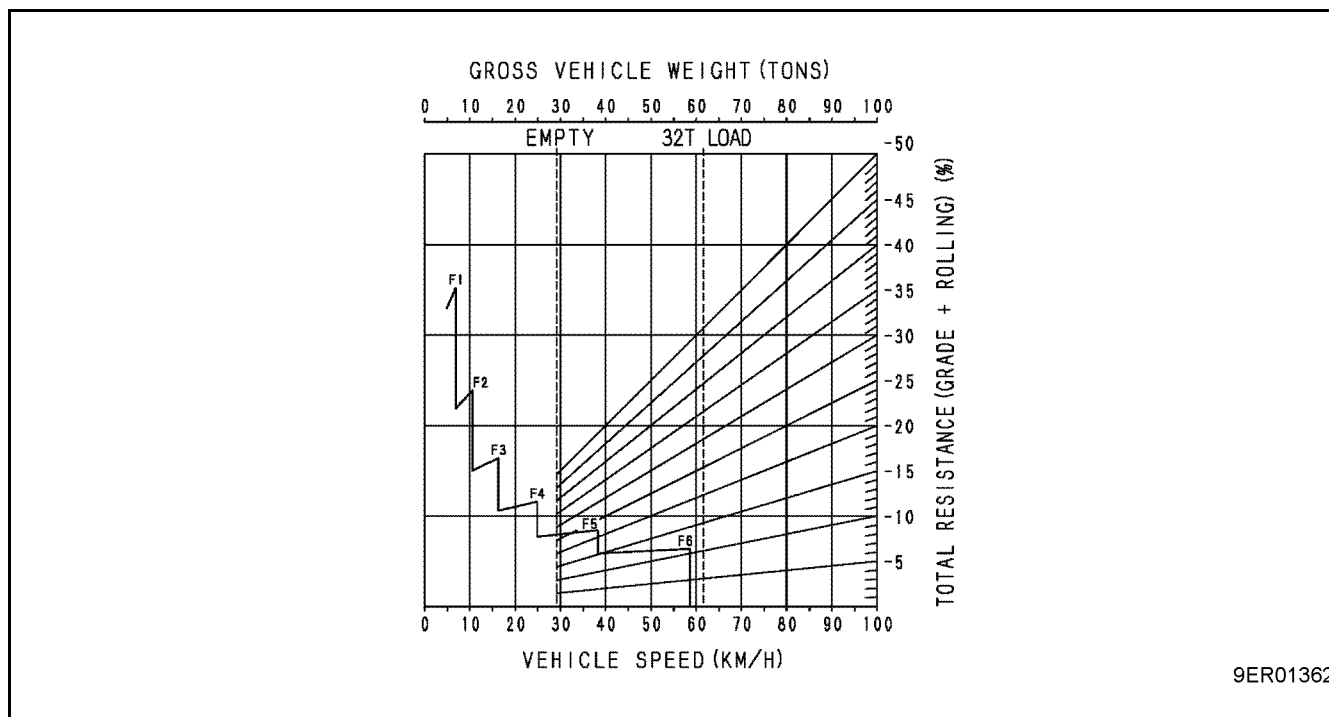
*Do not operate the shift lever with the accelerator pedal depressed. This will cause a big shock and will also reduce the service life of the machine.*



- Brake performance  
Downhill distance: 600 m (1968 ft)

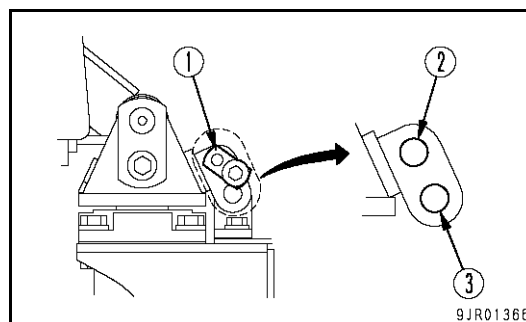


- Brake performance  
Downhill distance: 600 m (1968 ft) (with exhaust brake)

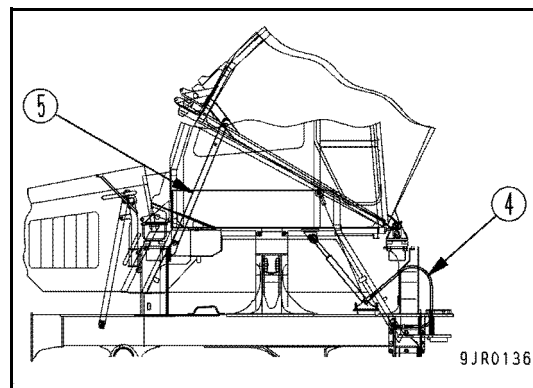


## WHEN USING TILT CYLINDER

1. Remove pin (1) in the mount at the rear of the cab, and insert it in hole (3).



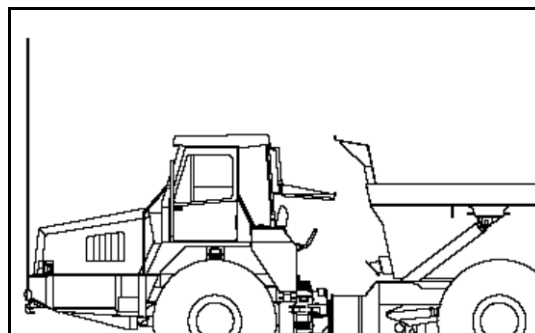
2. Apply hydraulic pressure 20.6 to 34.3 MPa (2980 to 4970 PSI) to hose (4) behind the front right wheel and raise the cab.
3. After tilting up, fixed the cab in position with lock bar (5).
4. After returning the cab to its original position, insert pin (1) in hole (2).



## PRECAUTIONS FOR OPERATION

- When traveling on roads in rain or snow, or when traveling on muddy or soft ground, consider the loaded condition of the machine and be extremely careful not to let the tires slip or the machine spin and sink into the ground.
- If the engine should stop when the machine is traveling, stop the machine immediately, then move the gear shift lever to the N position, and start the engine again.
- If the central warning lamp and pilot lamp for any EMERGENCY item on the machine monitor should flash and the buzzer sounds during operation, stop the machine immediately and investigate the cause.
- For details, see “TROUBLESHOOTING” on page 2-114.
- When loading, be careful to load the dump body uniformly, and be particularly careful to avoid loading too much at the front.
- On slippery road surfaces, apply the retarder control lever slowly and shift the transmission down to prevent the wheels from locking.

4. Select wire ropes, slings, spreader bars and other lifting equipment to match the weight of the machine, and fit the wire ropes to the lifting hooks at the front of the front frame and the rear of the rear frame (lifting hook marks).
5. Fit protector blocks at contact points (2) between the lifting equipment and the body to prevent damage to the lifting equipment.
6. When the machine comes off the ground (raised 10 to 20 cm (3.9 to 7.9 in)), stop the lifting operation, check carefully that the machine is balanced and that the wire ropes are not loose, then continue the lifting operation slowly.



## IF BATTERY IS DISCHARGED

### **⚠ WARNING**

It is dangerous to charge a battery when mounted on a machine. Make sure that it is dismantled before charging.

When checking or handling the battery, stop the engine and turn the starting switch key to the OFF position.

The battery generates hydrogen gas, so there is a hazard of explosion. Do not bring lighted cigarettes near the battery, or do anything that will cause sparks.

Battery electrolyte is dilute sulfuric acid, and it will attack your clothes and skin. If it gets on your clothes or on your skin, immediately wash it off with a large amount of water. If it gets in your eyes, wash it out with fresh water and consult a doctor.

When handling batteries, always wear protective goggles and rubber gloves.

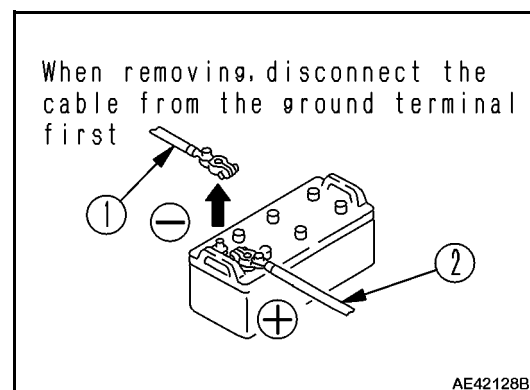
When removing the battery, first disconnect the cable from the ground (normally the negative (-) terminal). When installing, install the positive (+) terminal first. If a tool touches the positive terminal and the chassis, there is danger that it will cause a spark, so be extremely careful.

If the terminals are loose, there is danger that the defective contact may generate sparks that will cause an explosion.

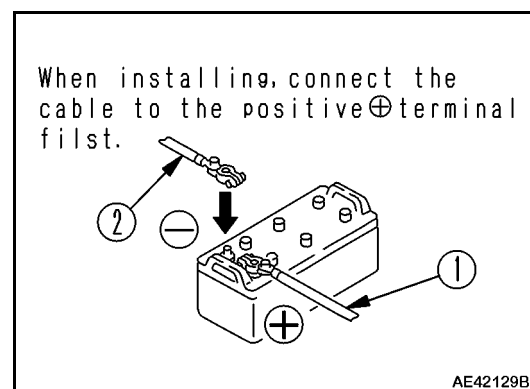
When removing or installing the terminals, check which is the positive (+) terminal and which is the negative (-) terminal.

## REMOVAL AND INSTALLATION OF BATTERY

Before removing the battery, remove the ground cable (normally connected to the negative (-) terminal). If any tool touches between the positive terminal and the chassis, there is a hazard of sparks being generated.

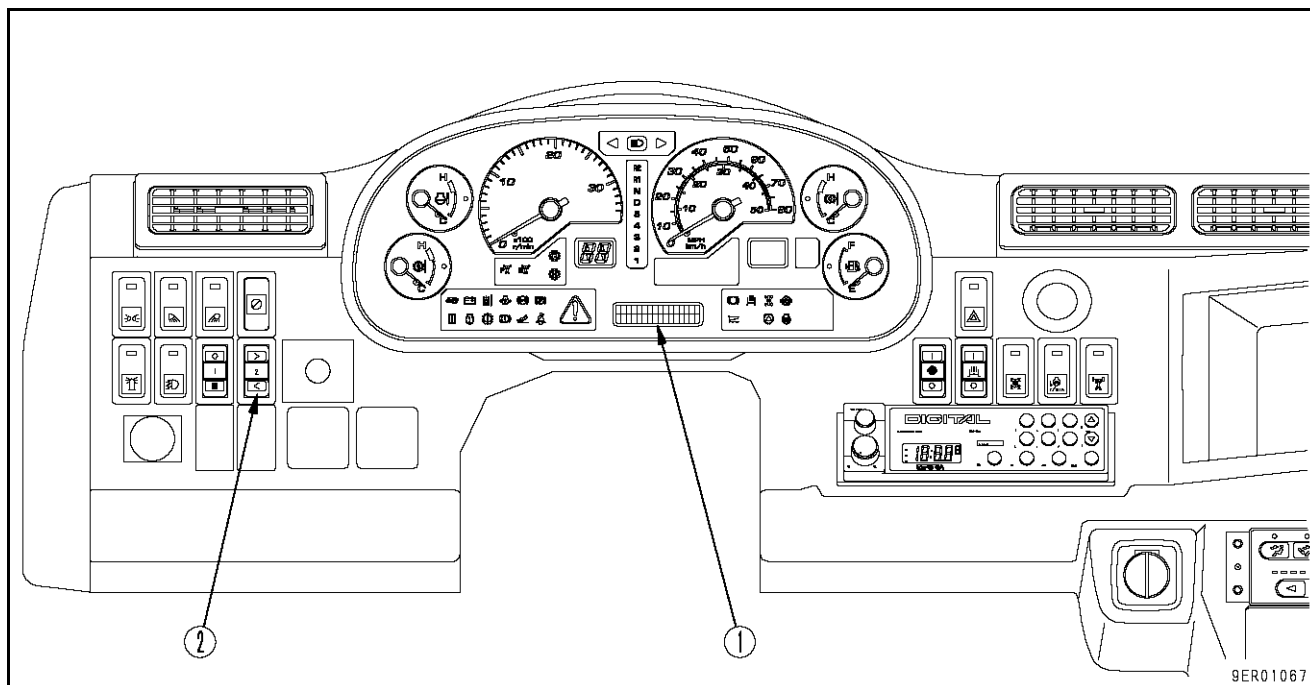


When installing the battery, connect the ground cable last.



## ACTION CODE

If any abnormality occurs, stop the machine, apply the parking brake and check the service code, then contact your Komatsu distributor for repairs.



If action code “E03” is displayed on the character display (1), or if an action code is displayed after taking the remedy when action code “E02” was displayed, or if “MAINTENANCE” is displayed together with action code “E01”, do as follows to check the failure code.

1. If an action code is displayed, pressed the top (>) portion of machine monitor mode selector switch (2) and check the failure code. The failure code is displayed on character display (1).
2. Press the top (>) portion of machine monitor mode selector switch (2) again. The service meter and odometer will be displayed for several seconds, and the screen will then return to the action code screen. If more than one failure has occurred, the next failure code is displayed.
3. Check the failure code, then contact your Komatsu distributor for repairs.

### Remark

- The 6-digit code displayed on the left of the line at the top of the character display is the failure code.
- The code displayed at the right side of the failure code shows the controller that detected the failure code.

MON: Machine monitor

TM: Transmission controller

ENG: Engine controller

BK: Retarder controller

- The line at the bottom of the character display shows the system where the failure was generated.

## **RECOMMENDED FUEL, COOLANT, AND LUBRICANT**

- Komatsu genuine oils are adjusted to maintain the reliability and durability of Komatsu construction equipment and components.  
In order to keep your machine in the best conditioner for long periods of time, it is essential to follow the instructions in this Operation and Maintenance Manual.
- Failure to follow these recommendations may result in shortened life or excess wear of the engine, power train, cooling system, and/or other components.
- Commercially available lubricant additives may be good for the machine, but they may also cause harm.
- Komatsu does not recommend any commercially available lubricant additive.
- Use the oil recommended according to the ambient temperature in the chart below.
- Specified capacity means the total amount of oil including the oil in the tank and the piping. Refill capacity means the amount of oil needed to refill the system during inspection and maintenance.
- When starting the engine in temperatures below 0°C (32°F), be sure to use the recommended multi-grade oil, even if the ambient temperature may become higher during the course of the day.
- If the machine is operated at a temperature below -20°C (-4°F), a separate device is needed, so consult your Komatsu distributor.
- When the fuel sulfur content is less than 0.5%, change the engine oil according to the period inspection table given in this Operation and Maintenance Manual.
- If the fuel sulfur content is more than 0.5%, change the oil according to the following table.

Fuel sulfur content	Engine oil change interval
0.5 to 1.0%	1/2 of regular interval
Above 1.0%	1/4 of regular interval

### ADJUST INJECTOR

This machine uses an engine that conforms with all exhaust gas regulations.

The exhaust gas regulations differ according to the applicable area. To ensure that the engine conforms with the regulations in the area of use and can fully display its performance, keep to the following periodic maintenance intervals when adjusting the injector.

If the periodic maintenance intervals are not observed correctly, the engine may not be able to display its performance fully, and it may also not conform with the regulations.

#### **Remark**

*When transporting a machine from an A regulation area to a B regulation area, always replace all the injector assemblies before*

*transporting the machine to the new area.*

*Check with your Komatsu distributor to confirm if your area of operation is an A regulation area or a B regulation area.*

### A REGULATION AREA

EPA regulation areas and areas with the regulations equivalent to EPA regulations

#### **EVERY 2000 HOURS SERVICE**

##### **Check injector**

Check the exhaust gas color visually. If there is any abnormality in the exhaust gas color, please ask your Komatsu distributor to carry out inspection or replacement. For details of the procedure if any abnormality is found, See “CHECK INJECTOR” on page 3-68.

#### **EVERY 4000 HOURS SERVICE**

Replace injector assembly

Ask your Komatsu distributor to carry out this work.

### B REGULATION AREA

Areas not applying EPA regulations or areas not applying regulations equivalent to EPA regulations

#### **EVERY 4000 HOURS SERVICE**

##### **Check injector**

Check the exhaust gas color visually. If there is any abnormality in the exhaust gas color, please ask your Komatsu distributor to carry out inspection or replacement. For details of the procedure if any abnormality is found, sSee “CHECK INJECTOR” on page 3-68.

#### **EVERY 8000 HOURS SERVICE**

Replace injector nozzle tip

Ask your Komatsu distributor to carry out this work.

**BLEED AIR FROM CENTER BRAKE**

**⚠ WARNING**

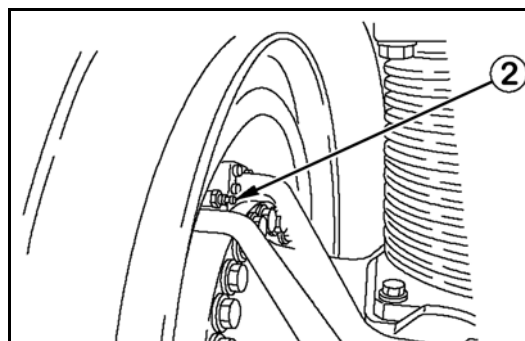
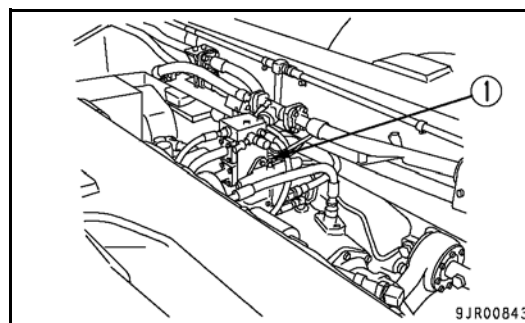
**Stop the machine on level ground and put blocks under the wheels before bleeding the air.**

To make it easier to bleed the air, warm the oil up to a temperature of at least 40 C° (104 F°) before bleeding the air.

1. Start the engine, check that the oil in the transmission case is the specified level, and check if the retarder oil pressure caution lamp is out.
2. Remove the cap installed to bleeder screw (1) of the slack adjuster, then insert a vinyl hose. Prepare a container with oil in it and insert the other end of the hose approx. 50 mm (2.0 in) below the surface of the oil. (Use any commercially available vinyl hose.)
3. Depress the brake pedal and loosen bleeder screw (1) approximately 3/4 turns. Keep the pedal depressed until no more bubbles come out from the vinyl hose.
4. Pull the retarder control lever and loosen bleeder screw (1) approximately 3/4 turns. Keep the retarder control lever depressed until no more bubbles come out from the vinyl hose.
5. After bleeding the air, tighten bleeder screw (1) securely and fit the cap.
6. The procedure for bleeder screw (2) of the center brake is the same as for the slack adjuster (with Step 4 excluded).
7. Check that the oil level in the transmission case is up to the specified level.

**Remark**

*Bleed the air from the center brakes in the same way on both the left and right sides.*



**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 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.

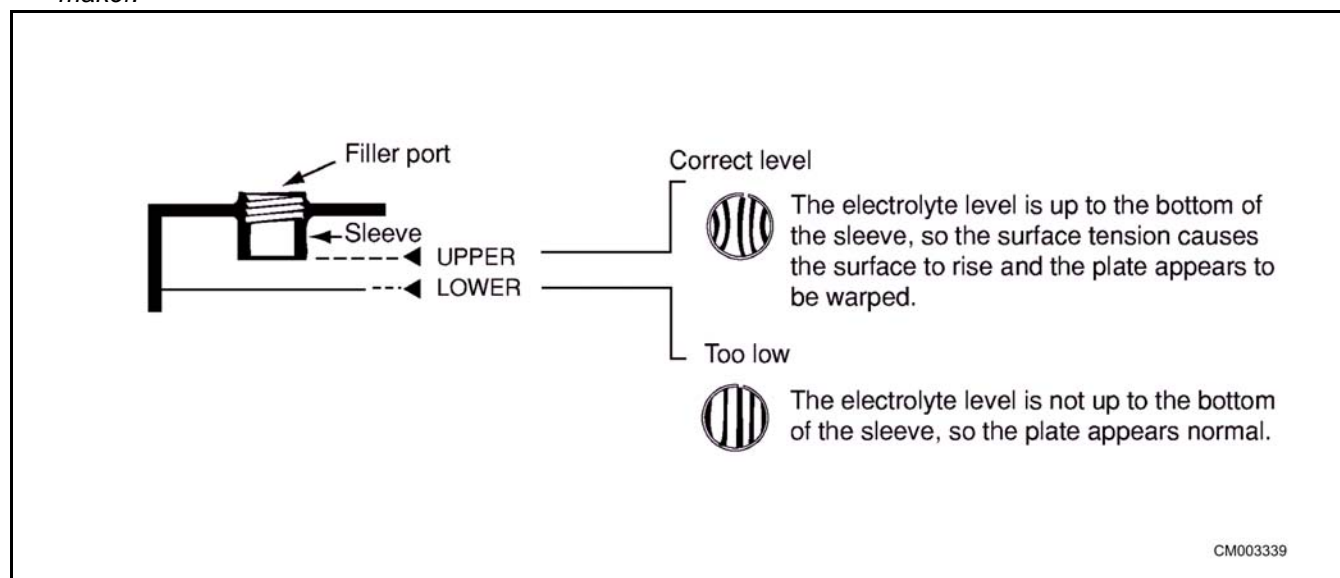
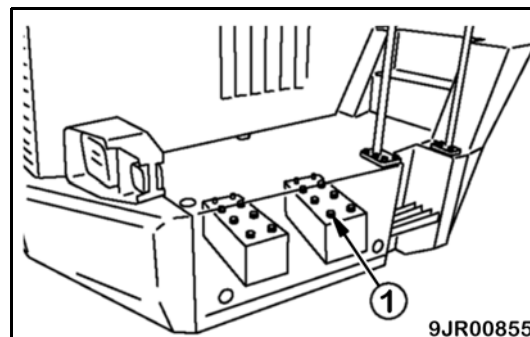
Use the diagram below for reference, and check if the electrolyte reaches the bottom of the sleeve.

2. 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.

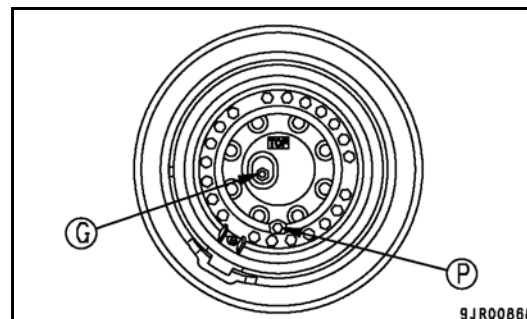
**CHECK OIL LEVEL IN FINAL DRIVE CASE, ADD OIL****! WARNING**

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

If there is still pressure remaining inside the case, the oil or plug may fly out.

Loosen the plug slowly to release the pressure.

1. Stop the machine so that the TOP casting mark is at the top and drain plug (P) is at the bottom.
2. Remove plug (G) and check that the oil level is near the bottom of the plug hole.
3. If the oil level is low, add axle oil until it overflows from the plug hole.
4. Repeat the procedure in steps 1 - 3 and check the oil level and add oil to all the final drive cases (front, center, rear).

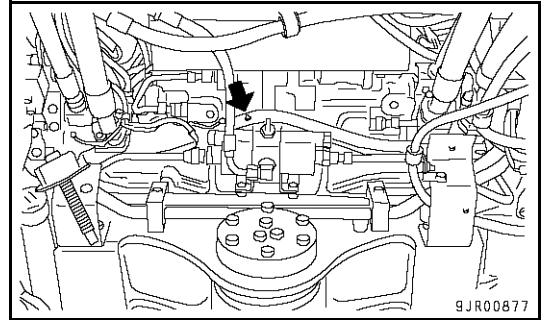


**LUBRICATION**

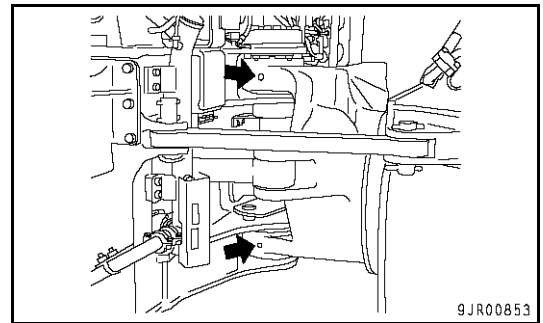
1. Using a grease pump, pump in grease through grease fittings marked by arrows.
2. After greasing, wipe off any old grease that was pushed out.

Carry out the greasing operation every day when operating in places where the grease flows out easily, such as when traveling through mud or water.

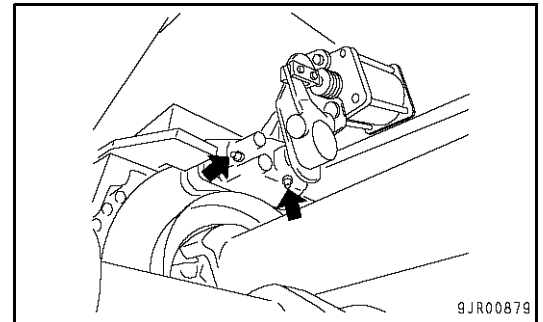
Transmission rear mount (1 place)



Center hinge pin (2 places)

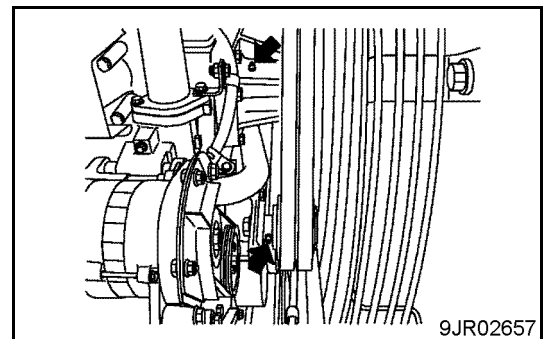


Parking brake (2 places)



Fan pulley (1 place)

Tension pulley (1 place)



## EVERY 4000 HOURS SERVICE

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

### CHANGE OIL IN HYDRAULIC TANK

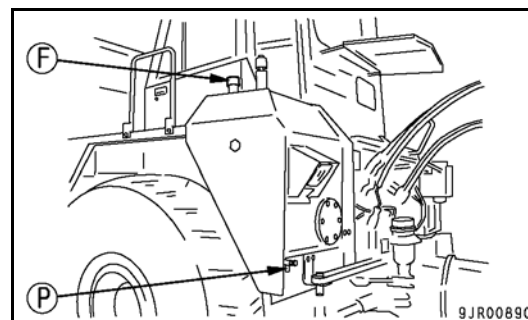
# **WARNING**

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

When removing the oil filler cap, turn it slowly to release the internal pressure, then remove it.

Refill capacity: 180 liters (47.56 US gal)

1. Lower the dump body and stop the engine.
2. Turn the cap of oil filler (F) to release the internal pressure before removing the cap.
3. Taking care not to get any oil on you, remove drain plug (P), drain the oil, then tighten the plug again.
4. Add engine oil through oil filler (F) to the specified level.
5. After adding oil, check that the oil is at the specified level. For details of the oil to use, See "CHECK OIL LEVEL IN HYDRAULIC TANK, ADD OIL" on page 2-65.



### 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.

### REPLACE INJECTOR ASSEMBLY

Ask your Komatsu distributor to carry out this work.

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