TEN00332-00

Operation & Maintenance Manual

DUMP TRUCK

HD465-7E0
HD605-7E0

SERIAL NUMBERS HD465-10694 and up
HD605-10694

ecot3

⚠ WARNING

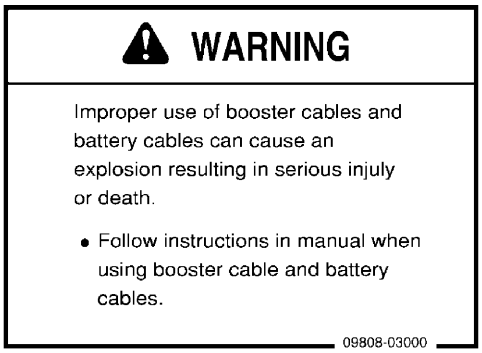
Unsafe use of this machine may cause serious injury or death. Operators and maintenance personnel must read this manual before operating or maintaining this machine. This manual should be kept near the machine for reference and periodically reviewed by all personnel who will come into contact with it.

NOTICE

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

KOMATSU

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



(10) Exhaust pipe is hot! (09817-K088B)

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) Caution for avoiding falling down (09805-13000)

ENSURE GOOD VISIBILITY

This machine is equipped with mirrors to ensure good visibility, but even then there are places that cannot be seen from the operator's seat, so be careful when operating.

When traveling or carrying out operations in places with poor visibility, it is impossible to check for obstacles in the area around the machine and to check the condition of the jobsite. This leads to danger of serious personal injury or death. When traveling or carrying out operations in places with poor visibility, always observe the following.

- Position a signalman if there are areas where the visibility is not good.
- Only one signalman should give signals.
- 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.
- When checking the mirrors installed to the machine, remove all dirt and adjust the angle of the mirror to ensure good visibility.
- If the machine is equipped with cameras, clean off any dirt from the lens and make sure that the camera gives a clear view.

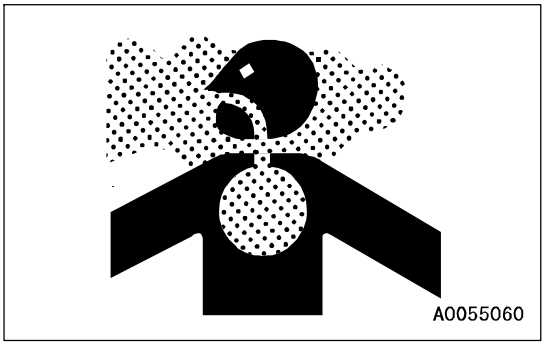
CHECKING SIGNS AND SIGNALMAN'S SIGNALS

- 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.

BEWARE OF ASBESTOS DUST

Asbestos dust in the air can cause lung cancer if it is inhaled. There is danger of inhaling asbestos when working on jobsites handling demolition work or work handling industrial waste. Always observe the following.

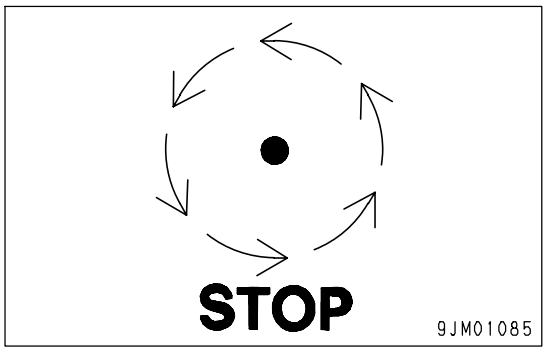
- Spray water to keep down the dust.
- Do not use compressed air.
- If there is danger that there may be asbestos dust in the air, always operate the machine from an upwind position, and make sure that all workers operate on the upwind side.
- All workers should use anti-dust masks.
- Do not allow other persons to approach during the operation.
- Always observe the rules and regulations for the work site and environmental standards.



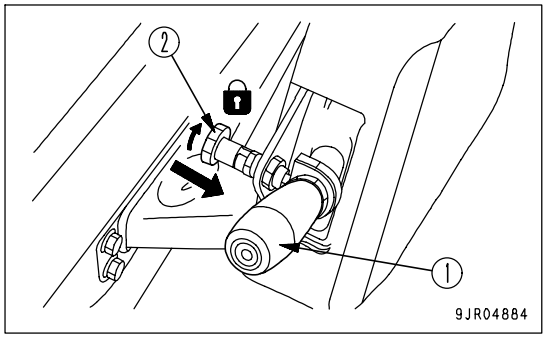
This machine does not use asbestos, but there is a danger that imitation parts may contain asbestos, so always use genuine Komatsu parts.

STOP ENGINE BEFORE CARRYING OUT INSPECTION AND MAINTENANCE

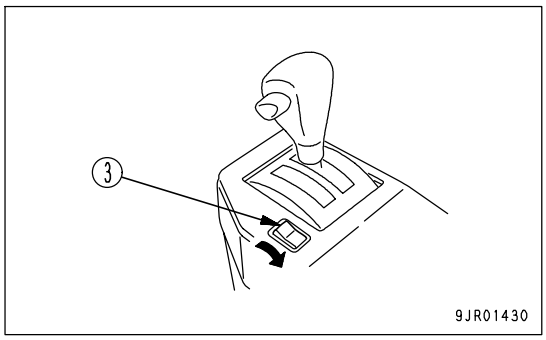
- Always stop the machine before performing any inspection and maintenance.

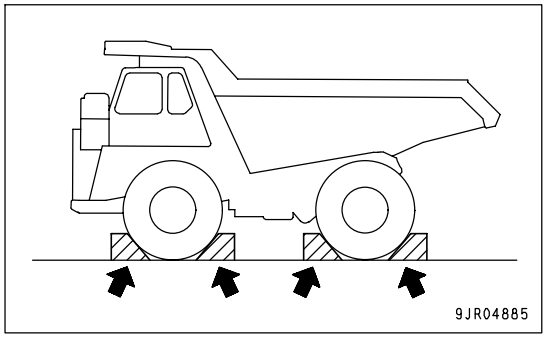


- Lower the dump body completely, set dump lever (1) to the HOLD position, lock with dump lever lock knob (2), then stop the engine.

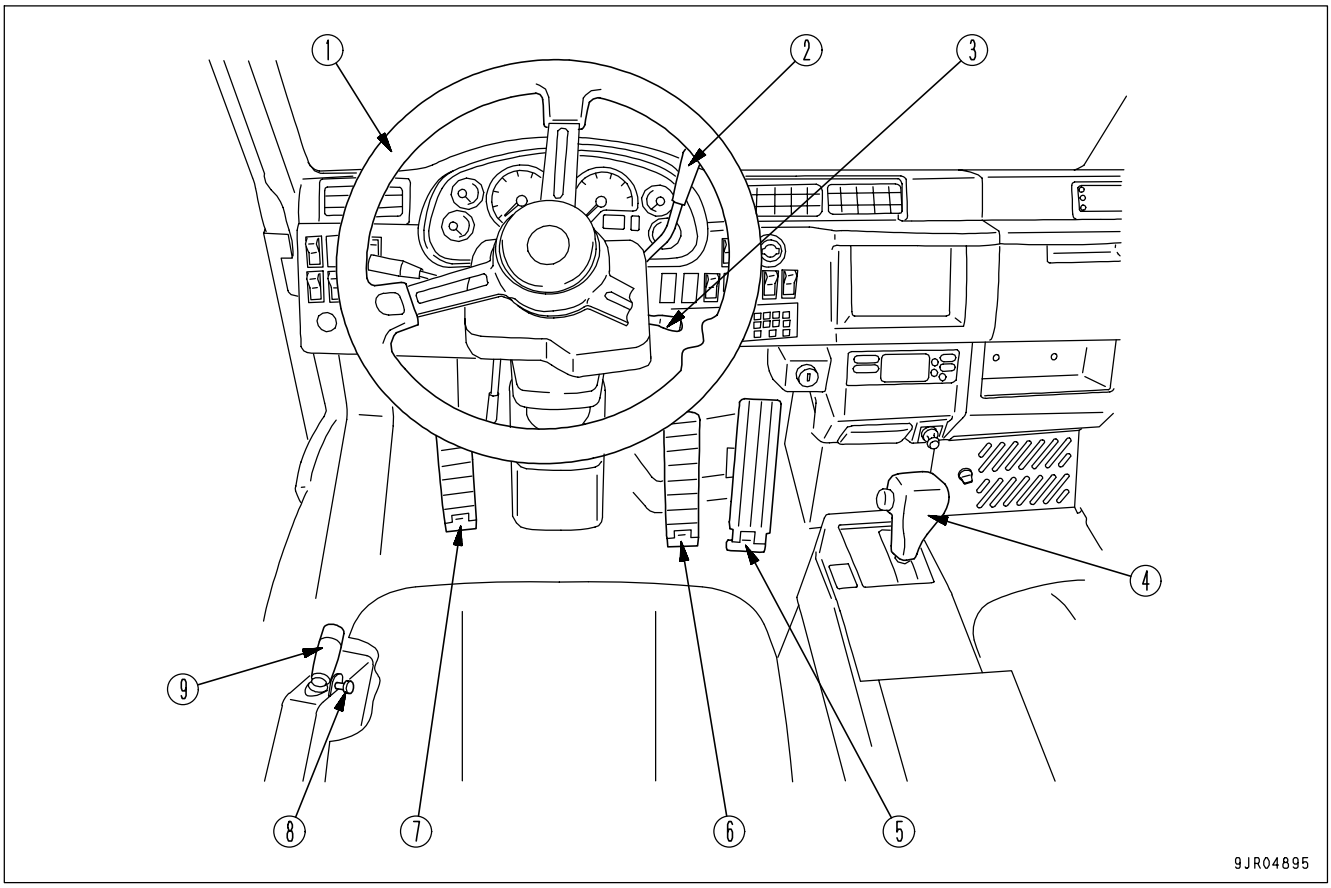


- Set parking brake switch (3) to the PARKING position to apply the parking brake, then put blocks in front of and behind the tires to prevent the machine from moving.





CONTROL LEVERS AND PEDALS



(1) Steering wheel
(2) Retarder control lever
(3) Auto retarder (ARSC) set lever
(4) Gear shift lever
(5) Accelerator pedal
(6) Brake pedal
(7) Secondary brake pedal
(8) Dump lever lock knob
(9) Dump lever

STEERING WHEEL

NOTICE

When the steering wheel is turned fully to the right or left, do not apply force to try to turn it further. The temperature of the steering hydraulic circuit will rise and cause overheating, and this will lead to damage of steering related components.

Use this steering wheel (1) to steer the machine when traveling. When it is turned to the right, the machine turns to the right; when it is turned to the left, the machine turns to the left.

REMARK

The steering for this machine is operated by hydraulic cylinders. When the steering wheel is turned, pressurized oil proportional to the amount of the steering wheel is turned flows from the hydraulic equipment on the steering shaft to the steering hydraulic cylinder, and moves the steering.

AUTO SUSPENSION MODE PILOT LAMP

(If equipped)

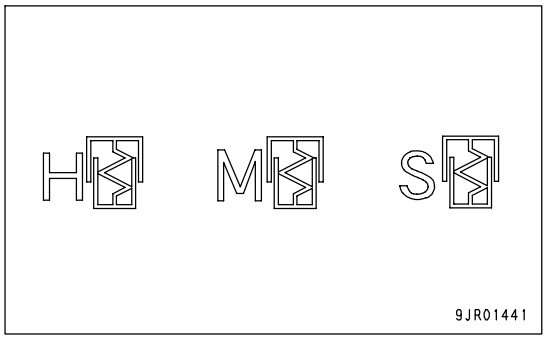
This auto suspension pilot lamp (11) shows the suspension mode being used.

With this machine, an automatic suspension system is available as an option. This system automatically selects the hardness of the suspension according to the condition of the machine load and the operating condition of the brakes, steering, and dump control.

H (hard mode): When the machine is loaded, if the machine is used under hard conditions, the suspension becomes harder.

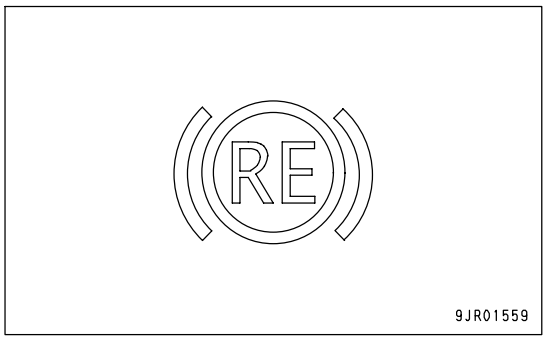
M (medium mode):For normal operations when the machine is loaded, this mode is used and the suspension is set to medium strength.

S (soft mode):When the machine is not loaded, the suspension become softer.



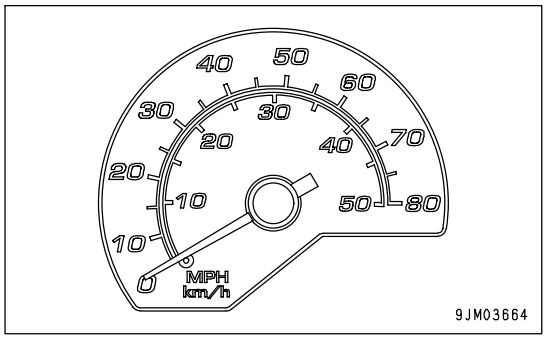
AUTO RETARDER READY PILOT LAMP

This auto retarder ready pilot lamp (12) shows the auto retarder setting. If the auto retarder (ARSC) is being actuated, the lamp lights up to show that the auto retarder speed control is being actuated. When the auto retarder speed control setting is cancelled, the lamp goes out.



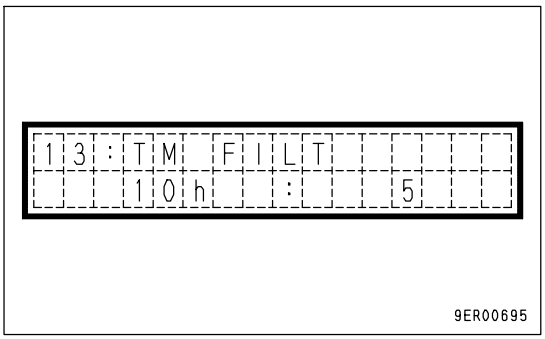
SPEEDOMETER

This speedometer (13) shows the travel speed of the machine.



FILTER,OIL REPLACEMENT TIME DISPLAY

This display appears after completion of the system check. The top line shows the ID number and the filter or oil that is approaching time for replacement. The bottom line shows the remaining time. The display is given for 30 seconds. At the same time, the maintenance caution lamp flashes or lights up.
After replacing the filter or changing the oil, reset the replacement interval. For details, see "RESET METHOD FOR FILTER,OIL REPLACEMENT TIME (PAGE 3-33)".



Items for display of filter, oil replacement time

Item	Replacement interval	Character display	ID number
Fuel prefilter	500	FUEL P FILT	41
Fuel main filter	500	FUEL FILT	03
Engine oil filter	500	ENG FILT	02
Engine oil	500	ENG OIL	01
Transmission oil filter	500	TM FILT	13
Corrosion resistor	1000	CORR RES	06
Torque converter, transmission and rear brake cooling oil	1000	TC/TM/BKOIL	24
Brake oil filter	1000	BK OIL FILT	14
Brake cooling oil filter	1000	BK C FILT	16
Steering, hoist oil filter	2000	HYD FILT	04
Differential case oil	2000	DIFF OIL	11
Final drive oil	2000	FNL OIL	08
Steering, hoist oil	4000	HYD OIL	10

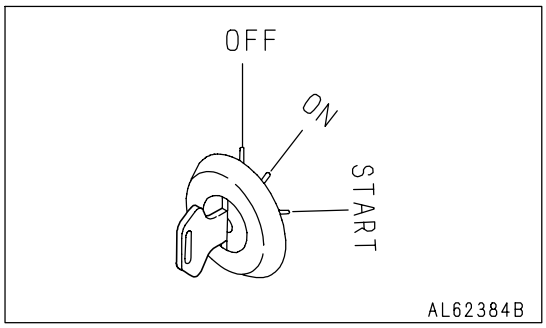
REMARK

1) Displays related to filter and oil replacement time

- The top line shows the ID number and name of the item to be replaced; the bottom line displays in turn the time remaining before replacement and the total number of times that replacement has been carried out.
- The display is given for 30 seconds. When the starting switch is turned again to the ON position, the display does not appear.
- If an action code is being displayed, the message in the illustration above does not appear on the character display.
- If two or more items are displayed, each one is displayed for 3 seconds in turn.
- If there are more than 10 items, all the items are displayed once each.
- The display appears 30 hours before the filter or oil replacement time.
- When the replacement time approaches, the maintenance caution lamp flashes; when the replacement time is exceeded, it lights up.

STARTING SWITCH

Use this starting switch (9) to start or stop the engine.
When the key is inserted in the starting switch, it can be turned to the following positions.



OFF position:

In this position, the key can be inserted or removed. When it is turned to the OFF position, all the electrical systems on the machine are turned off and the engine stops.

ON position:

When the key is at the ON position, electricity flows in the charging circuit and lamp circuits. Keep the key at the ON position when the engine is running.

When turning the starting switch key to the ON and OFF positions, if the key is held between the ON and OFF positions, the controller may detect a problem. If this happens, turn the switch to the OFF position, then turn it again to the ON position in the same way as for normal operations.

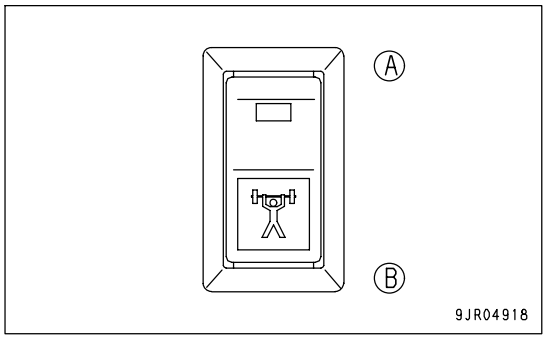
In cold weather, if the key is turned to the ON position, depending on the engine water temperature, the engine preheater may be actuated and the machine monitor preheating pilot lamp may light up. After completion of preheating, the preheating pilot lamp will go out. When it goes out, turn the key to the START position to start the engine.

START position:

Turn the key to this position to start the engine. When the key is turned to the START position, the starting motor is actuated and starts cranking. When the engine starts, release the key. The key will return automatically to the ON position.

POWER MODE SELECTOR SWITCH

Use this power mode selector switch (10) to set the travel system to the most economical travel setting to match the operating conditions.
There are two power modes.



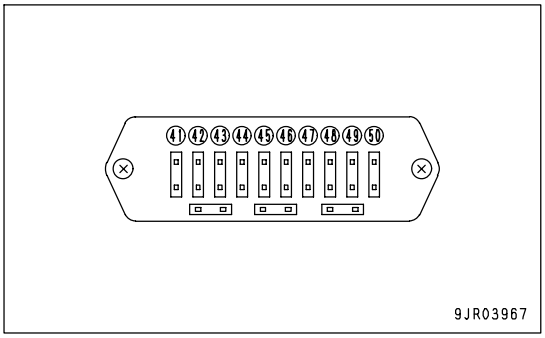
(A): Economy mode (operations on level ground)
Use this position when operating on level ground where high output power is not needed and when the emphasis is on reducing fuel consumption.
(B): High power mode (general operations)
Use this position for normal operating conditions.

When portion (A) of the switch is pressed, the mode switches to the economy mode, the economy mode pilot lamp on the machine monitor lights up, and the monitor lamp inside the switch also lights up.
When portion (B) of the switch is pressed, the mode switches to the high power mode, the power mode pilot lamp on the machine monitor lights up, and the monitor lamp inside the switch goes out.

When the head lamps are turned on, the icon inside portion (B) of the power mode selector switch lights up.

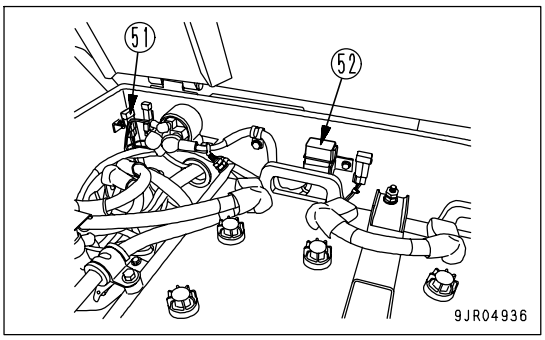
Fuse box BT4

No.	Capacity	Name of circuit
(41)	10A	Room lamp
(42)	10A	Engine preheat power
(43)	20A	Yellow rotating lamp (if equipped)
(44)	20A	Side lamp (if equipped)
(45)	20A	Electric operator's seat heater (if equipped), Air suspension seat (if equipped)
(46)	10A	Payload external display lamp (if equipped)
(47)	10A	Tachograph (if equipped), cigarette lighter
(48)	20A	Air conditioner
(49)	20A	Spare
(50)	20A	Front wiper



Fuse box V (Inside battery box)

No.	Capacity	Name of circuit
(51)	10A	Power source for emergency system
(52)	120A	Power source for engine heater



TEMPERATURE CONTROL SWITCH

Use this switch (7) to adjust the temperature of the air blowing out from the vents. The adjustment can be made to 8 levels from low temperature to high temperature.
The temperature of the air blowing out from the vents is displayed on temperature bar (D) on the monitor. The lower the number of segments lighted up on the bar, the lower the temperature is.

Press the > switch to raise the temperature; press the < switch to lower the temperature.

Even when the starting switch is turned OFF, the settings of each mode are retained in memory. However, in the following cases, the settings must be made again.

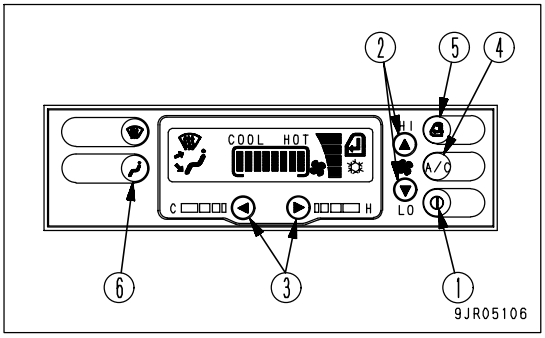
- When there has been abnormal interference from outside

METHOD OF OPERATION

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.

COOLING

1. Press ON/OFF switch (1) to turn on the air conditioner power.
2. Press fan switch (2) to set the air flow to the maximum.
3. Press temperature control switch (3) to lower the temperature.
4. Press air conditioner switch (4) to set to COOLING.
5. Press RECIRC/FRESH selector switch (5) to set to RECIRC.
6. Press mode selector switch (6) to set the vents to FACE.
7. When the temperature inside the cab goes down, set to the desired temperature and air flow.



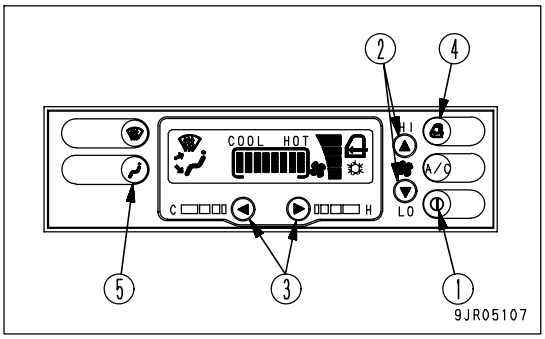
NOTICE

If operations are continued for a long time with the air conditioner set to the lowest temperature and minimum air flow, there is danger that the receiver drier may freeze.

If it freezes and no cold air comes out, stop using the cooling, and set to a higher temperature and the maximum air flow. Run for a short time under these conditions, then return to the cooling operation.

HEATING

1. Press ON/OFF switch (1) to turn on the air conditioner power.
2. Press fan switch (2) to set the air flow to the maximum.
3. Press temperature control switch (3) to raise the temperature.
4. Press RECIRC/FRESH selector switch (4) to set to FRESH.
5. Press mode selector switch (5) to set the vents to FOOT.
6. When the temperature inside the cab goes up, set to the desired temperature and air flow.



REMARK

The heating uses the heat from the engine cooling water, so it is effective only when the cooling water is hot.

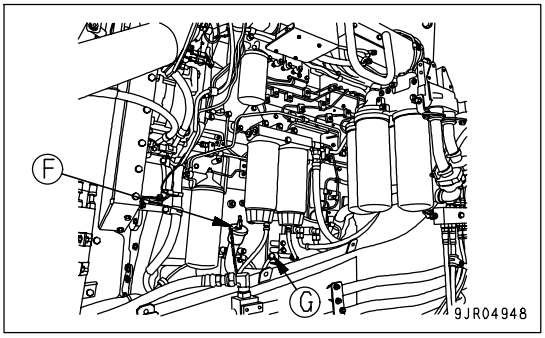
CHECK OIL LEVEL IN ENGINE OIL PAN, ADD OIL

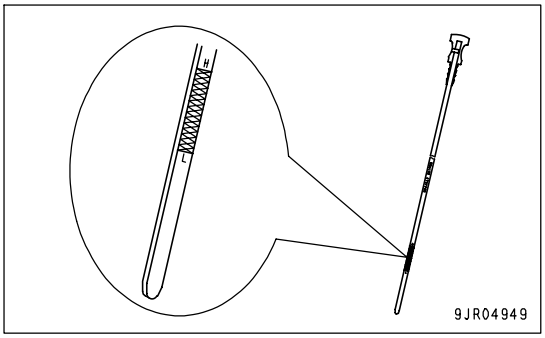
WARNING

Immediately after the engine is stopped, the oil and parts are at high temperature, so there is danger of suffering burns during the operation. Wait for the temperature to go down before starting the operation.

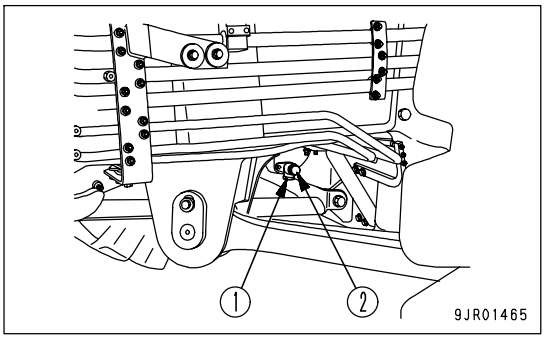
Before starting the engine, check the level of the oil in the engine oil pan with dipstick (G).

1. Take out the dipstick (G) and wipe off the oil with cloth.
2. Insert dipstick (G) fully into the dipstick guide, then pull it out again.
   When inserting the dipstick, insert it so that the "ENGINE STOPPED" mark on the dipstick is facing the engine.
3. The oil level should be between the H and L marks on the ENGINE STOPPED side of dipstick (G).





4. If the oil is below the "L" mark, add oil through oil filler port (F). If the oil is above the "H" mark, set a container in position to catch the oil, remove drain plug (1), then loosen drain valve (2) to drain the excess oil into the container. After draining the excess oil, check the oil level in the engine oil pan again.



REMARK

- If the oil level in the engine oil pan is checked immediately after the engine is stopped, the oil in the oil line has probably not returned to the oil pan, so wait for at least 15 minutes before checking the oil level.
- The dipstick is marked on one side with "ENGINE STOPPED" for checking the oil level when the engine is stopped and on the other side with "ENGINE IDLING" for checking the oil level when the engine is idling. However, for this check, stop the engine and use the side with the "ENGINE STOPPED" mark.
- It is also possible to carry out the check with the engine idling, but in that case, always do as follows.
  - Check that the engine water temperature is in the white range.
  - Use the ENGINE IDLING side of the dipstick.
  - Remove the oil filler cap before carrying out the inspection.

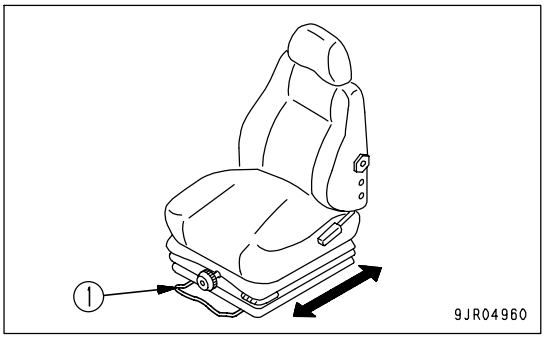
5. If the oil level in the engine oil pan is correct, tighten the handle on the oil filler cap securely.

⚠ WARNING

When standing up from the operator's seat, place the gear shift lever in N position and set the parking brake switch to PARKING position. Place the dump control lever at HOLD and lock with the lock knob, then stop the engine. If you touch the gear shift lever or dump control lever, the machine may suddenly move and cause serious personal injury.

FORE-AND-AFT ADJUSTMENT OF OPERATOR'S SEAT

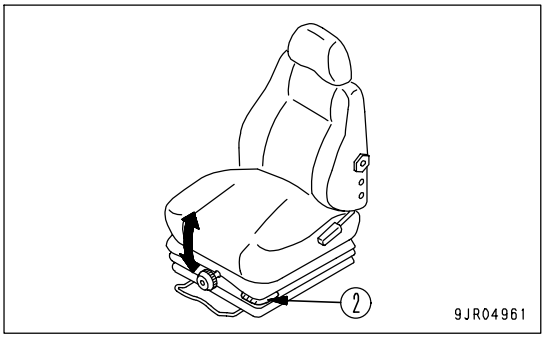
1. Pull up lever (1) and slide the operator's seat to the front or rear.
2. Set the seat to the desired position, then release lever (1).
   Fore-and-aft adjustment: 180 mm (10 mm x 18 stages)



ADJUSTING OPERATOR'S SEAT ANGLE

BACKWARD

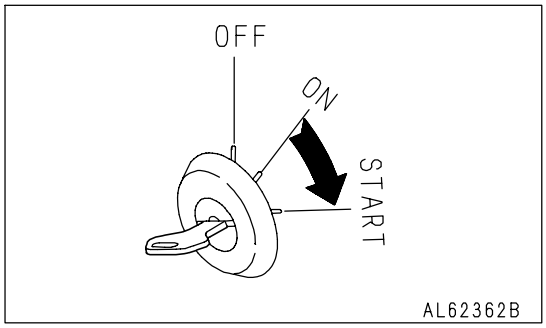
1. Pull up lever (2) and apply your weight to the rear of the seat cushion. The seat cushion will tilt to the rear.
2. Set the seat cushion to the desired angle, then release lever (2).



FORWARD

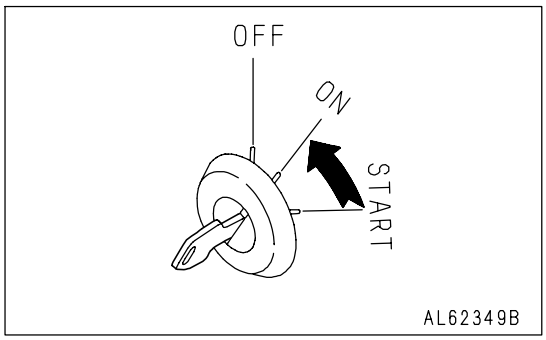
1. Push down lever (2) and apply your weight to the front of the seat cushion. The seat cushion will tilt to the front.
2. Set the seat cushion to the desired angle, then release lever (2).
   Amount of adjustment: 13 degrees

2. Turn the key of starting switch (1) to the START position.
   The engine will start.



REMARK
When the engine is started, the machine monitor may flash while the starting motor is rotating, but if it goes out after the engine starts, there is no problem.

3. When the engine starts, release the key in starting switch (1).
   The key will return automatically to the ON position.



REMARK
- If the engine does not start, turn the key in starting switch (1) to the OFF position, then turn it back to the ON position. The preheating will automatically start again according to the engine water temperature.
- Immediately after the engine is started, the turbo protect function is actuated to prevent the engine speed from rising above 1000 rpm even when the accelerator pedal is depressed.

AUTOMATIC WARMING-UP OPERATION

After the engine starts, if the engine water temperature is low (below 50°C (122°F)), the warming-up operation (engine speed: 945 rpm) is automatically carried out. When the water temperature goes above 50°C (122°F), the warming-up operation is canceled.

TRAVELING DOWNHILL

WARNING

- **Always keep to the permitted speed when going downhill using the retarder. If the permitted speed is exceeded, the brakes will overheat and will make it impossible to provide the braking force. This may lead to serious personal injury. For details of the maximum permitted speed, see the brake performance graph for the downhill distance and grade.**
- **Operate the retarder control lever slowly. If it is operated suddenly, a sudden braking force will be generated. As a result the tires may slip and the machine may turn in one direction or tip over, and this may lead to serious personal injury.**
- **Do not move the gear shift lever to the N position when the machine is traveling or when it is traveling down a slope. Always place the transmission in gear before traveling.**
  · If the transmission is in Neutral, the engine cannot provide any braking effect and the steering wheel will become eavier. In addition, there will be lack of cooling oil for the retarder, so there is danger that it will overheat or that the actuation of the brake will be poor.
  · There may also be damage to the transmission or other parts of the power train, and there is danger of unexpected accidents.

- For the maximum permissible speed when traveling downhill using the retarder, see the brake performance graph for the downhill distance and graph. If the machine continues to travel downhill at a speed greater than the maximum permissible speed on the brake performance graph, there is danger that the retarder will overheat, or even fail.

- If the retarder oil temperature caution lamp on the machine monitor lights up when the retarder is being used, shift down to travel downhill. (When this happens, the central warning lamp lights up and the alarm buzzer sounds.) If the retarder system caution lamp does not go out even when the transmission is shifted down, stop the machine immediately, set the shift lever to the N position, run the engine at 2000 rpm, and wait for the retarder system caution lamp to go out.

- If the retarder loses its effect when it is used for traveling downhill, do as follows.

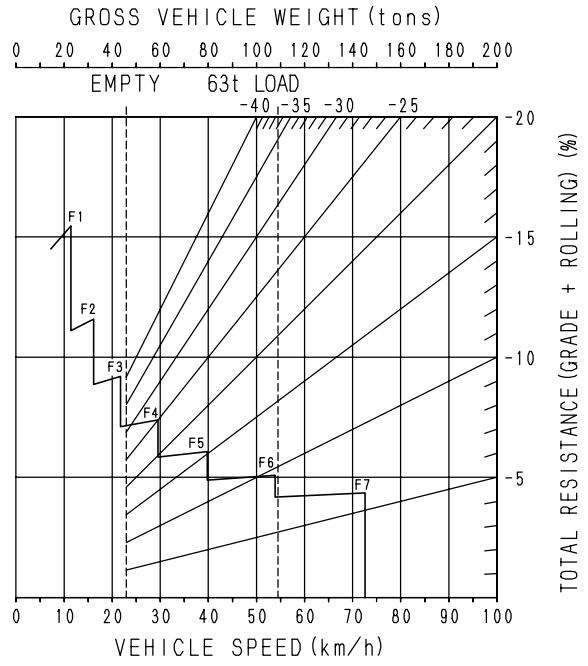
1. Release the retarder control lever completely, then operate the retarder control lever again.
2. If the retarder has no braking effect even when the retarder control lever is operated again, release the retarder control lever completely, depress the brake pedal, stop the machine on flat ground, put blocks under the tires, then ask your Komatsu distributor to carry out repairs.

- If the retarder control lever is operated when traveling downhill, the transmission can be shifted down sooner than with normal deceleration. It is also possible to travel without shifting up.

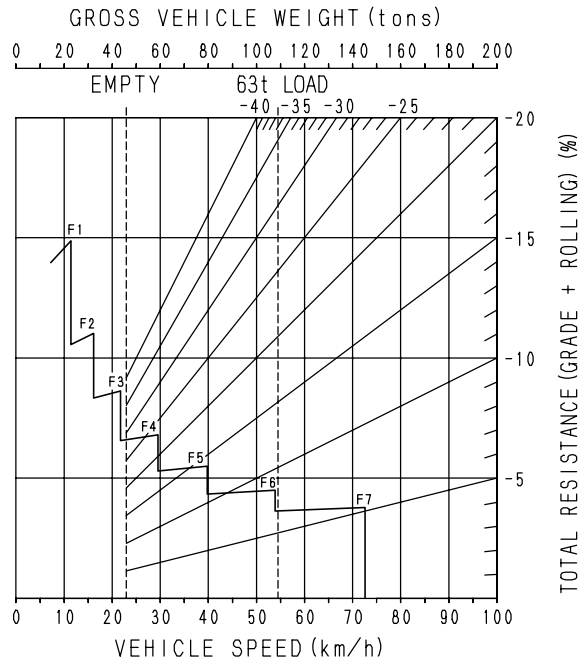
- When traveling downhill, do not use the foot brake except in an emergency. Using the foot brake will cause overheating of the front brake and reduce the life.

REMARK
Do not accelerate or shift up when using the retarder. The engine speed will rise and this may cause the alarm buzzer to sound and the central warning lamp to flash.

• Brake performance
[Downhill distance: 450 m (1,476 ft)]
(Tire size: 24.00R35★★)



• Brake performance
[Downhill distance: 600 m (1,968 ft)]
(Tire size: 24.00R35★★)



TIRE T.Km.P.H.AND MAXIMUM SPEED FOR CONTINUOUS TRAVEL (REFERENCE)

• HD465-7

	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 24.00-35-36PR (standard) structure CR Code No. E3 (TRA)	335	313	292	270	When empty (front wheel standard)	37	35	33	30
					When loaded (rear wheel standard)	23	22	20	19
Size 24.00R35★★ (if equipped) structure CR Code No. E4 (VRLSA)	396	355	314	293	When empty (front wheel standard)	35.1	31.4	27.8	25.9
					When loaded (rear wheel standard)	21.5	19.3	17.0	15.9

• HD605-7

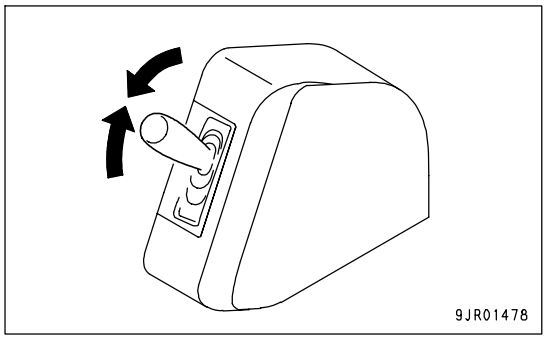
	Tire T.Km.P.H.for ambient temperature				Max.speed for continuous travel for ambient temperature (km/h)				
	16°C	27°C	38°C	49°C		16°C	27°C	38°C	49°C
Size 24.00R35★★ (standard) structure CR Code No. E4 (VRLSA)	396	355	314	293	When empty (front wheel standard)	35.1	31.4	27.8	25.9
					When loaded (rear wheel standard)	21.5	19.3	17.0	15.9
Size 24.00-35-48PR (if equipped) structure CR Code No. E3 (TRA)	335	313	292	270	When empty (front wheel standard)	37	35	33	30
					When loaded (rear wheel standard)	23	22	20	19

LIFTING PROCEDURE

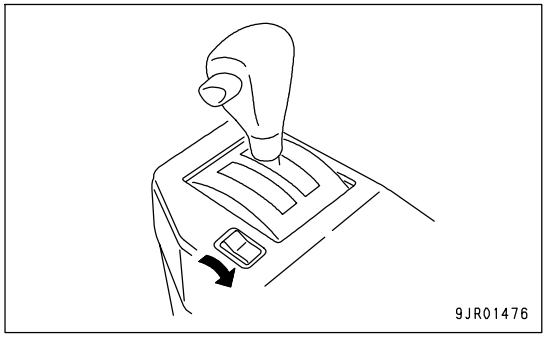
Lifting work can be carried out only with machines displaying a lifting mark.
When carrying out the lifting operation, stop the machine on firm level ground, and do as follows.

1. Start the engine, set the dump lever to the FLOAT position, and check that the body pilot lamp goes out.

2. Stop the engine.



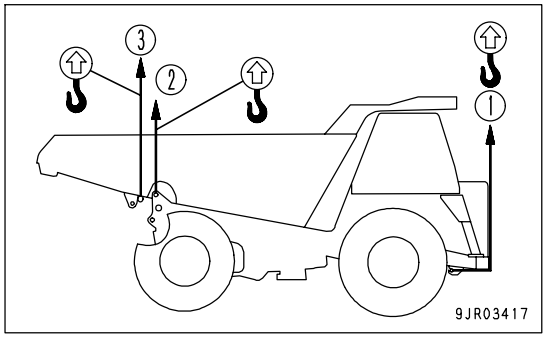
3. Set the parking brake switch to the PARKING position to apply the parking brake, and check that the area around the operator's compartment is safe.



⚠ CAUTION

Always wear leather gloves when handling lifting equipment. You will suffer injury to your hands if you carry out the operation with bare hands.

4. Use wire rope, slings, and spreader bars to match the weight of the machine, and fit the wire rope to the lifting points.



REMARK
The lifting positions for the machine differs according to the conditions.
Machine with body:Positions (1) and (3)
Total:4 places (2 at front, 2 at rear)
Machine without body:Positions (1) and (2)
Total:4 places (2 at front, 2 at rear)

5. Fit protector blocks at the contact points between the lifting equipment and the body to prevent damage to the King equipment.

6. When the machine comes off the ground (raised 10 - 20 cm), stop and check carefully that the machine is balanced and that the wire rope is not loose.

7. Raise the machine slowly, then lower it to the target point.

WHEN PARKING BRAKE HAS BEEN ACTUATED IN EMERGENCY

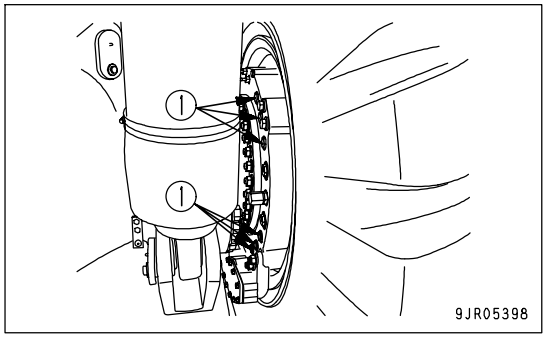
If the pressure in the hydraulic circuit goes down abnormally because of oil leakage or some other problem, the parking brake is automatically applied.
If it is necessary to use the towing machine to move the failed machine, and the parking brake must be released, use the following method to release the brake.
After moving the machine, please ask your Komatsu distributor to carry out repairs.

METHOD OF RELEASING PARKING BRAKE IN EMERGENCY

WARNING

Before releasing the parking brake, always put blocks under the tires. If the tires are not blocked, the machine may suddenly move and cause serious personal injury.

1. When releasing the parking brake manually, prepare 20 M12 bolts (distance under head: 65 to 80 mm (2.6 to 3.2 in); thread pitch: 1.75 mm (0.069 in)(coarse thread)) and 20 M12 washers.
2. Prepare a container to catch the oil.
3. Stop the engine.
4. Put blocks under the wheels.
5. Set the container to catch the oil under the brake portion.
6. Remove plug (1) from the rear axle brake portion.



REMARK
There are 10 plugs on the right side and 10 plugs on the left side.

7. Pass the brake release bolt through the washer and insert it into the plug hole.

NOTICE
If the bolts are not tightened uniformly, the internal piston will be distorted or damaged. Tighten the bolts in turn on diagonally opposite sides.

8. Tighten the brake release bolts uniformly. (Both left and right sides)

Problem	Main causes	Remedy
Excessive oil consumption Exhaust gas is white or bluish	• Oil leakage	(• Check, repair)
	• Excessive oil in oil pan	• Add oil to specified level. See CHECK BEFORE STARTING.
	• Worn piston, ring, cylinder liner	(• Replace)
	• Improper fuel	• Replace with specified fuel
	• Defective turbocharger	(• Check, replace)
Exhaust gas is black	• Clogged air cleaner element	• Clean or replace. See WHEN REQUIRED.
	• Compression insufficient • Valve clearance not adequate • Piston, piston ring or cylinder liner worn out	• See "Valve Clearance Adjustment" above. (• Check, repair)
	• Nozzle defective	(• Nozzle replacement)
	• Defective turbochaeger	(• Check, replace)
Engine hunts	• Air entering suction side of fuel line	(• Repair place where air is leaking in)
Combustion noise ocaasionally makes breathing sound	• Defecyive nozzle	(• Replace nozzle)
There is strange noise (combustion or mechanical)	• Poor quality fuel being used	• Replace with specified fuel
	• Overheating	• See "Water temperature gauge is in red range" above.
	• Valve clearance in excess	(• Valve clearance adjustment)

WASTE MATERIALS:

WARNING

To prevent pollution of the environment, always pay careful attention to proper disposal of waste materials.

- **Always dispose of waste fluids in cans or in a tank. Never allow the waste fluid to drain into the ground; never pour it into rivers, sewerage systems, sea, or lakes.**
- **When dealing with toxic wastes, such as oil, fuel, coolant, solvent, filters, or batteries, dispose of them according to the applicable laws and regulations.**

When changing the oil or coolant, or replacing filters, put all waste coming from the machine in a container. Considering the effect of these waste materials on the environment, ask a specialist disposal company or your Komatsu distributor to dispose of waste materials.

Capacity \ Reservoir		Engine oil pan	Transmission case	Steering, hoist oil tank	Front suspension (each)	Rear suspension (each)	Differential case
Specified	Liters	86	318	180	16.5	11.3	95
	US gal	22.7	84.0	47.6	4.4	3.0	25.1
Refill	Liters	80	215	122	-	-	95
	US gal	21.1	56.8	32.2	-	-	25.1

Capacity \ Reservoir		Final drive case (each)	Fuel tank	Cooling system
Specified	Liters	32	780	157
	US gal	8.5	206.1	41.5
Refill	Liters	21	-	-
	US gal	5.6	-	-

NOTICE

Use only diesel fuel.

The engine mounted on this machine employs electronic control and a high-pressure fuel injection device to obtain good fuel consumption and good exhaust gas characteristics. For this reason, it requires high precision for the parts and good lubrication. If kerosene or other fuel with low lubricating ability is used, there will be a big drop in durability.

Note 1: HTHS (High-Temperature High-Shear Viscosity 150°C), specified by ASTM D4741 must be equal to or higher than 3.5 mPa-S. Komatsu EOS0W30 and EOS5W40 are the most suitable oils.

Note 2: Powertrain oil has different properties from engine oil. Be sure to use the recommended oils.

Note 3: Hyper grease (G2-T, G2-TE) has a high performance.
When it is necessary to improve the lubricating ability of the grease in order to prevent squeaking of pins and bushings, the use of G2-T or G2-TE is recommended.

Note 4: Supercoolant (AF-NAC)

1) Coolant has the important function of anticorrosion as well as antifreeze.
   Even in the areas where freezing is not an issue, the use of antifreeze coolant is essential.
   Komatsu machines are supplied with Komatsu Supercoolant AF-NAC. Komatsu Supercoolant AF-NAC has excellent anticorrosion, antifreeze and cooling properties and can be used continuously for 2 years or 4000 hours. Komatsu Supercoolant AF-NAC is strongly recommended wherever available.
2) For details of the ratio when diluting super coolant with water, see "CLEAN INSIDE OF COOLING SYSTEM (PAGE 4-30)".
   Supercoolant AF-NAC may be supplied in premix. In this case, always top off with premix solution. (never dilute with water)
3) To maintain the anticorrosion properties of Supercoolant AF-NAC, always keep the density of Supercoolant between 30% and 68%.

RECOMMENDED BRANDS, RECOMMENDED QUALITY FOR PRODUCTS OTHER THAN KOMATSU GENUINE OIL

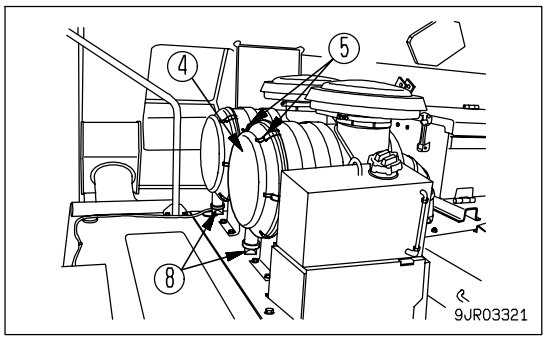
When using commercially available oils other than Komatsu genuine oil, consult your Komatsu distributor.

REPLACE ELEMENT

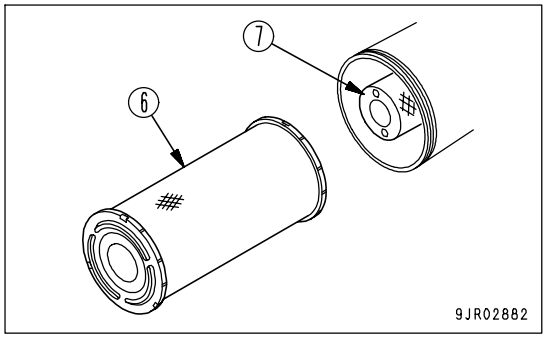
WARNING

When pulling out the air cleaner element, make sure that you are standing on a firm place. If your footing is not secure when you carry out the operation, there is danger of falling and suffering injury.

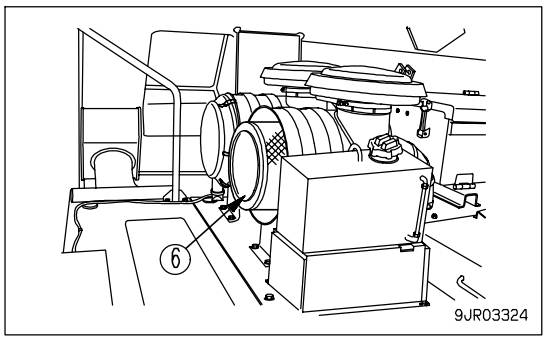
1. Stop the engine.
2. Remove 6 hooks (5) of dust cup (4), then remove the dust cup.



3. Hold outer element (6) with both hands, and move it up and down and to the left and right while pulling it out.
4. Hold inner element (7) so that it does not come out, and clean the inside of the air cleaner body with a dry cloth.
5. Use a dry cloth or compressed air to clean off the dirt stuck to dust cup (4) and vacuator valve (8).
6. Check that there are no cracks in the lip of the vacuator valve (8). If any cracks are found, replace with a new part.



7. Pull out inner element (7) and install a new inner element.
8. Install outer element (6) in the air cleaner body.



BLEED AIR FROM FUEL CIRCUIT

This machine is equipped with an electric priming pump to bleed the air from the fuel circuit. In the following cases, use the procedure below to bleed the air.

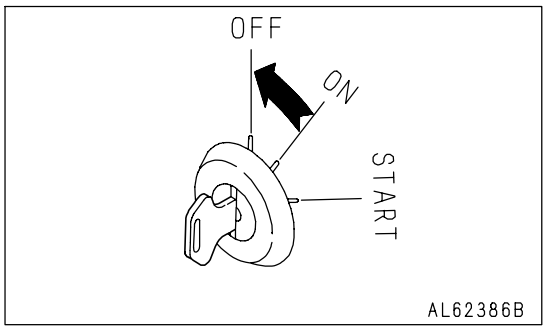
- When fuel filter has been replaced
- When engine has run out of fuel
- When starting the engine for the first time after replacing the supply pump or modifying the piping or any other parts

PROCEDURE FOR BLEEDING AIR

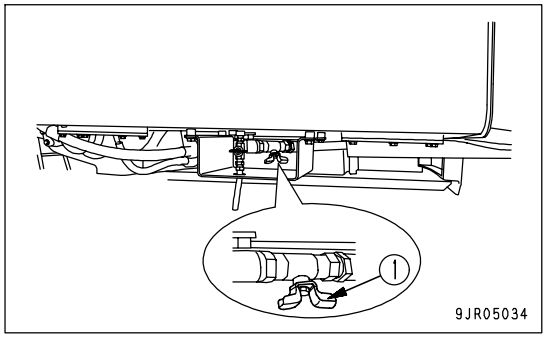
⚠ WARNING

- **For safety, make sure that there is nobody around the machine, and then start the engine. There is a possibility that the machine starts up all of sudden, causing a personal injury.**
- **When using the electric priming pump, do not loosen the air bleed plug for the fuel circuit. When the electric priming pump is operated, pressure is applied to the fuel circuit, so if the air bleed plug is loosened, fuel will spurt out and create a dangerous situation.**

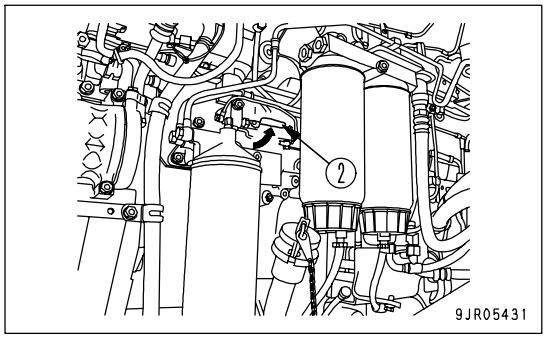
1. Turn the key in the starting switch to the OFF position and stop the engine.



2. Check that fuel tank valve (1) is open.



3. Open air bleeding valve (2).



Inflation of tires

WARNING

Always maintain the tire inflation pressure at the specified value. If the tire is not at the proper inflation pressure, the rim will be damaged. If the rim is damaged, there is danger that the ring may fly off when the tire is inflated and cause serious personal injury.

Adjust the inflation pressure properly.
When inflating a tire, use an air chuck which can be fixed to the air valve of the tire as shown in the figure. Do not work at the side face of tire but work on the tread side of the tire.
The proper inflation pressure is shown below.

- HD465-7

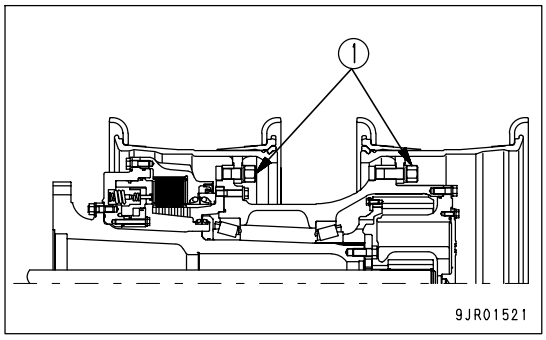
Tire size	Inflation pressure [MPa (kg/cm^2, PSI)]
24.00-35-36PR (standard)	0.47 to 0.50 (4.75 to 5.05, 67.4 to 71.7)
24.00R35★★ (if equipped)	0.69 to 0.72 (7.0 to 7.3, 99.4 to 104)

- HD605-7

Tire size	Inflation pressure [MPa (kg/cm^2, PSI)]
24.00R35★★ (standard)	0.69 to 0.72 (7.0 to 7.3, 99.4 to 104)
24.00-35-48PR (if equipped)	0.64 to 0.67 (6.5 to 6.8, 92.3 to 96.6)

PRECAUTIONS WHEN REPLACING TIRE

If the hub nuts (1) have been tightened again after replacing the tire, travel for 5 to 6 km, then tighten again to settle all the contacting parts.
In particular, there are more contacting parts on the rear wheels than on the front wheels, so it will take time for the parts to settle. For this reason, repeat the tightening process for the first 50 hours after installation.

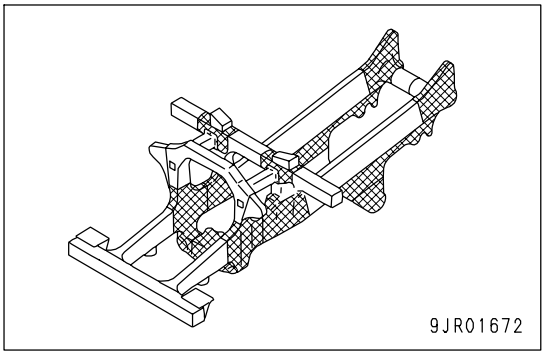


CHECK FRAME

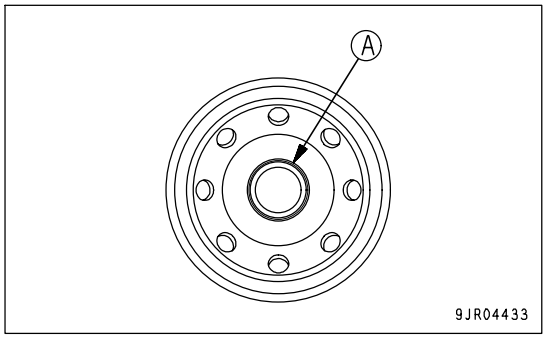
DANGER

- **Always carry out the operation to remove or insert the body pivot pin with at least two workers. This operation is carried out with the dump body raised, so if the dump body goes down during the operation, it will lead to serious injury or even death.**
- **When carrying out inspection with the dump body raised, always set the dump control lever to the HOLD position, set the dump control lever lock knob to the LOCK position, then insert the body pivot pin. If the body pivot pin is not inserted, the dump body may go down when the dump control lever is operated, and catch or cause serious injury or even death to the person carrying out the inspection.**

1. Wash the frame to make it easier to check.
2. Check all parts of the frame for damage.
   In particular, check the colored portions in the diagram and if any cracks or damage are found, repair the damage. Please contact your Komatsu distributor for details of the repair procedure.



6. Remove filter cartridge cap (A) and install to the filter holder.



NOTICE

Do not fill the filter cartridge with fuel.

Cap (A) is installed to prevent dirt from entering the inside of the filter cartridge.

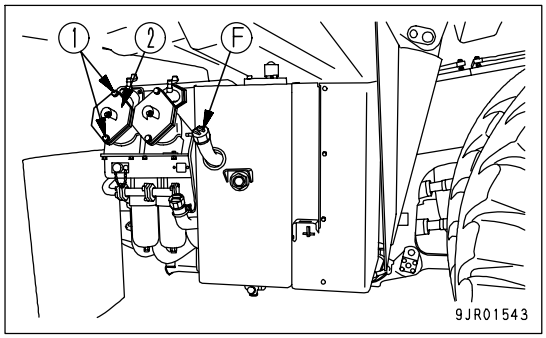
7. When installing, tighten until the packing surface contacts the seal surface of the filter holder, then tighten it 3/4 of a turn.
   If the filter cartridge is tightened too far, the packing will be damaged and this will lead to leakage of fuel. If the filter cartridge is too loose, fuel will also leak from the packing, so always tighten the correct amount.
8. Open fuel valve (1) on the fuel tank.
9. After completing the replacement of fuel filter cartridge (2), bleed the air from the circuit. For details, see "BLEED AIR FROM FUEL CIRCUIT (PAGE 4-38)".
10. After replacing the filter cartridge, start the engine and check that there is no leakage of fuel from the filter seal surface. If any leakage of fuel is found, check that the filter cartridge is tightened properly. If the fuel still leaks, repeat Steps 1 - 3 to remove the filter cartridge, then check the packing surface for damage or embedded dirt. If any problem is found, replace the cartridge with a new part, then repeat Steps 4 - 8 to install the new cartridge.

REPLACE TRANSMISSION AND REAR BRAKE COOLING OIL FILTER ELEMENT

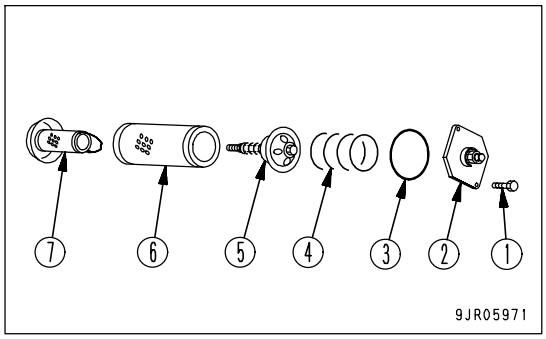
WARNING

- **Immediately after the engine is stopped, the parts and oil are at high temperature, and there is danger that this may cause burns during the oil level check operation. Wait for the temperature to go down before starting the operation.**
- **When loosening the cap, do not loosen it suddenly. Loosen it gradually. The inside of the case is under high pressure, so if the cap is loosened suddenly, oil may spurt out and cause burns.**

1. Turn the cap of oil filler (F) slowly to release the internal pressure, then remove the cap.
2. Remove bolt (1), then remove cover (2).



3. Remove O-ring (3), spring (4), valve (5), element (6), and the strainer (7), then wash the inside of the case and of the valve and strainer.
4. Prepare a new element, then install the strainer, element, valve, and spring.
5. Coat the O-ring thinly with clean oil, then install it.
6. Install cover (2) with bolts (1).



If the filter Maintenance caution lamp (if equipped) lights up when the engine water temperature gauge is in the white range and the engine is running at 1200 to 2100 rpm, replace the element immediately.

CHECK 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 WATER PUMP

Check around the water pump for water leakage. If any part is leaking, ask your Komatsu distributor for inspection/repair.

CHECK FAN PULLEY AND TENSION PULLEY

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

CHECK ACCUMULATOR

At 4000 hours or 2 years, whichever comes sooner, ask your Komatsu distributor to replace the accumulator parts.

KEYHOLE
This keyhole (1) is the keyhole to use when opening the cover to replace the chart paper.

CLOCK SCALE
This clock scale (2) shows the minutes: each mark shows 1 minute.

CLOCK HAND
This hand (3) points to the hours.

MODEL DISPLAY LABEL
The tachograph model is written on this model display label (4).

OPERATOR SHIFT CHANGE KNOB
It is possible to divide into categories for 3 operators with this operator shift change knob (5).
Align the scale on the knob with the set scale (1, 2, 3).

ODOMETER
This odometer (6) shows the total distance (km) travelled by the machine. (It also calculates the distance traveled in reverse.)
The smallest display unit is 0.1 km.

SPEED INDICATOR
This speed indicator (7) shows the travel speed of the machine.

SPEED SCALE
This speed scale (8) is the scale to show the travel speed of the machine. The unit is km/h.

SPEED RECORDING INDICATOR
This speed recording indicator (9) records the travel speed of the machine at each moment on the chart paper.

OPERATOR SHIFT CHANGE RECORDING INDICATOR
This operator shift change recording indicator (10) records by filling in 3 types of width on the chart paper according to operation of the operator shift change knob.

SPARE RECORDING INDICATOR
This spare recording indicator (11) records the desired information (for example: loading, unloading) according to the switch (sold separately) installed on the outside.

ODOMETER RECORDING INDICATOR
This odometer recording indicator (12) records the distance traveled by the machine on the chart paper. One unit is 10 km.

NAMEPLATE
This nameplate (13) shows the model, authorization number, date of manufacture, manufacturing number, and serial number.

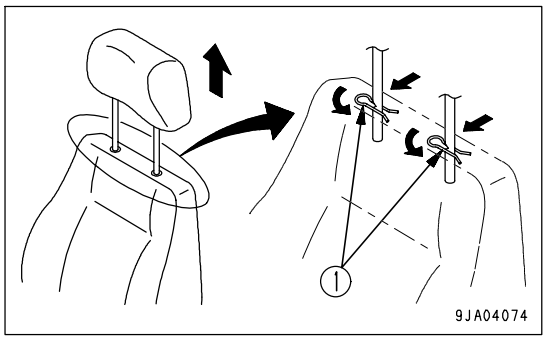
CRIMPED RING
This crimped ring (14) is used to secure the chart paper to the tachograph.

REMOVAL AND INSTALLATION OF HEADREST

REMOVAL

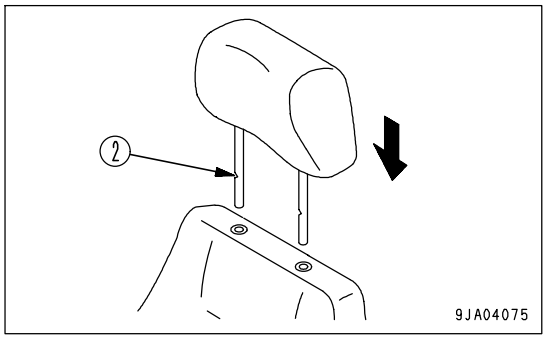
When replacing the headrest, remove it as follows.

1. Pull up the headrest to the position where it stops.
2. From the top of the seat back, turn stopper (1) (under the material at the top of the seat) of the headrest bar on one side in the direction of the arrow, and pull up the headrest.
   When stopper (1) is turned, it will come out of groove (2).
3. Turn stopper (1) on the other side in the direction of the arrow, and pull up the headrest.
   When both stoppers (1) come out of groove (2), the headrest can be removed.

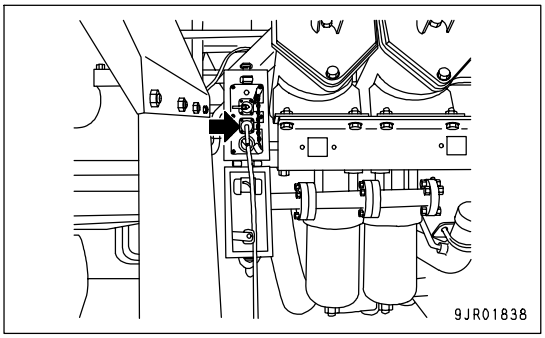


INSTALLATION

1. Insert the bars into the holes in the top of the seat and push down.



- Download connector outside the operator's cab (end marked PLM)



NORMAL OPERATION DISPLAY

Machine condition		Machine monitor display	External display lamps
When starting switch is ON		-	Light up for 30 sec
When empty	Stopped (*1)	Standard display (*2)	OFF
	Traveling	Standard display	OFF
During loading	Stopped	Payload display (*3)	Payload display
	Traveling	Standard display	OFF
When loaded	Stopped	Payload display	Payload display
	Traveling	Standard display	OFF
When dumping	Stopped	Payload display → standard display	Payload display → OFF
	Traveling	Standard display	OFF

(*1)"Stopped" means that the shift lever is at the N position and the travel speed signal is 0.

(*2)For details of the standard display on the machine monitor, see "DISPLAY OF CHARACTER DISPLAY (PAGE 3-28)" and "OTHER FUNCTIONS OF CHARACTER DISPLAY (PAGE 3-32)" in the explanation for components in the OPERATION section.

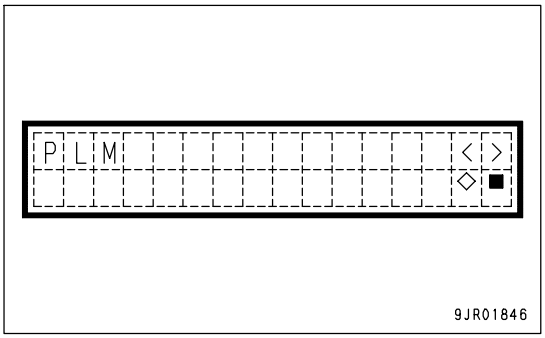
(*3)The machine starts off empty and is being loaded. It is necessary to wait for the load to go above approx. 15% of the max. payload and for the change in the load to stabilize when the machine is stopped.

MACHINE ID, OPEN ID

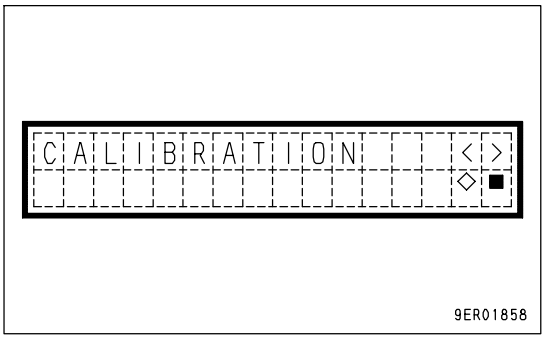
It is possible to change the machine ID and open ID, which are cycle data items. When changing the machine Serial No. for the machine ID or the operator or type of load for the open ID, set the value specified by the customer beforehand to make it possible to use to check the operator and type of load for the applicable cycle afterwards.

METHOD OF SETTING MACHINE ID, OPEN ID

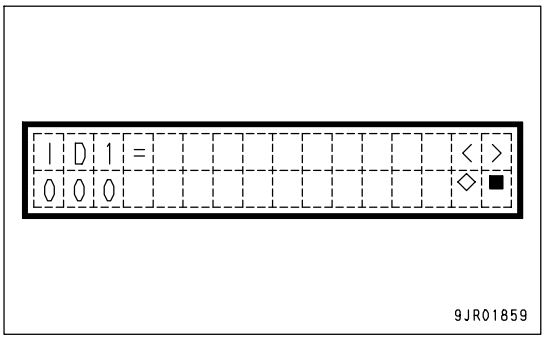
1. When the service meter/odometer is being displayed on the character display of the machine monitor, press the (◇) of machine monitor selector switch 1 to display reverse travel.
   For details, see "OTHER FUNCTIONS OF CHARACTER DISPLAY (PAGE 3-32)".
2. Press the (>) of machine monitor selector switch 2 several times to display "PLM"



3. Press the (◇) of machine monitor selector switch 1 to display "CALIBRATION"



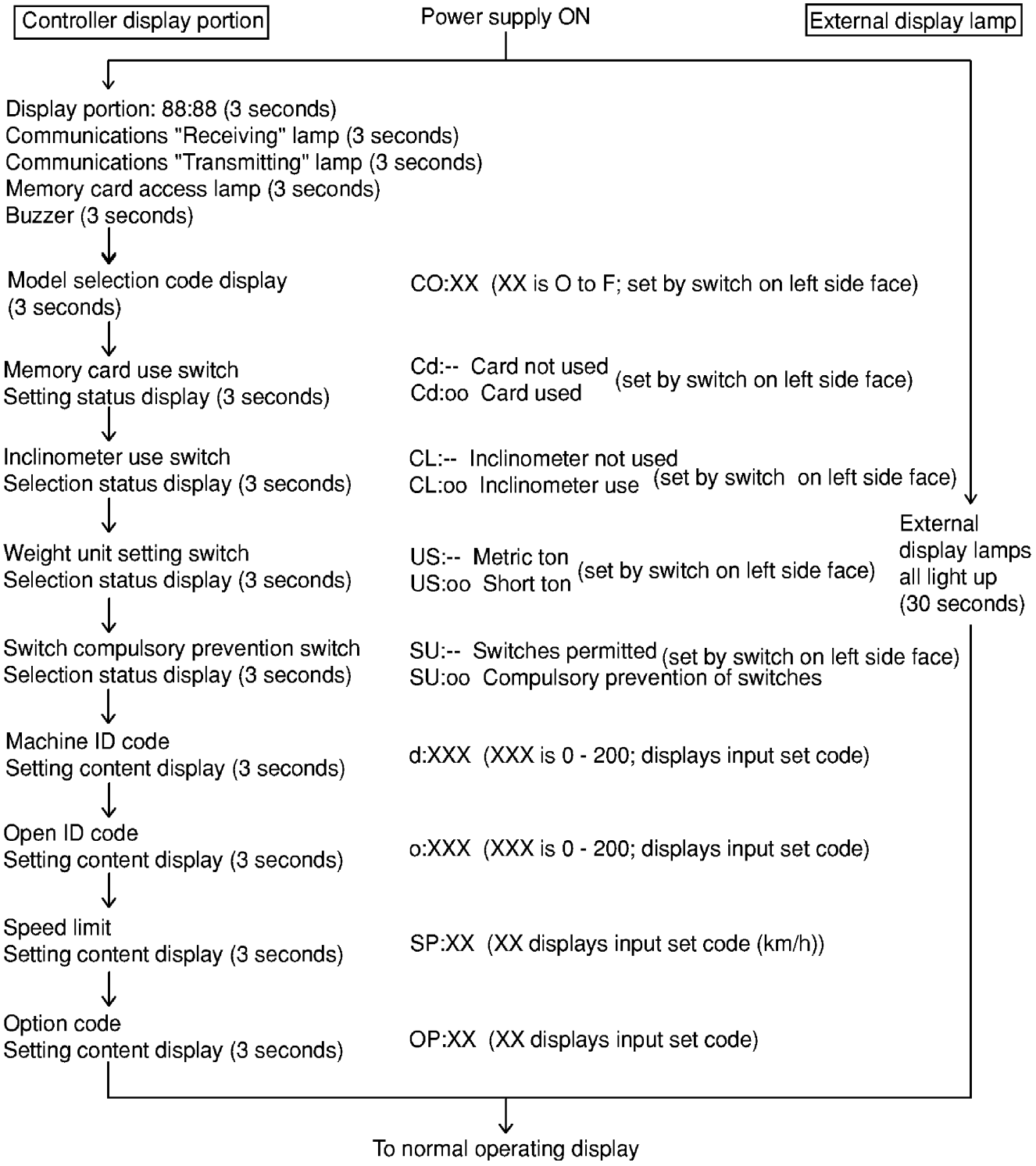
4. Press the (>) of machine monitor selector switch 2 to display the screen shown in the diagram on the right.
   ID1 corresponds to the machine ID.
   The present setting is displayed on the bottom line.



CONTENT OF DISPLAY (CONTROLLER, EXTERNAL DISPLAY LAMPS)

WHEN THE POWER IS ON

When the power is turned ON, the displays on the controller display and external display lamps are as follows.



If the engine is started during this flow of displays, even if there are items remaining which should still be displayed, the display switches after several seconds to the display given during normal operations. The machine ID code, option ID code, speed limit, and option code, see "OPERATOR CHECK MODE (PAGE 6-59)".

TOTAL PAYLOAD, OVERALL NUMBER OF CYCLES DATA

- The total payload and overall number of cycles from any desired time are calculated and are recorded with each act of dumping.
- The calculation of both values is started from the point where the ZERO CLEAR switch is pressed for the total payload and overall number of cycles.
- Both total values can be displayed on the monitor panel by the using the operation given in "FORCED DISPLAY OF TOTAL PAYLOAD AND OVERALL NUMBER OF CYCLES (PAGE 6-57)". (See the same section for details of the method for ZERO CLEAR.)
  The total payload is also displayed automatically when dumping.
- The maximum limit that can be recorded for the total payload and overall number of cycles is 999900.0 metric tons or short tons, and 9999 cycles.

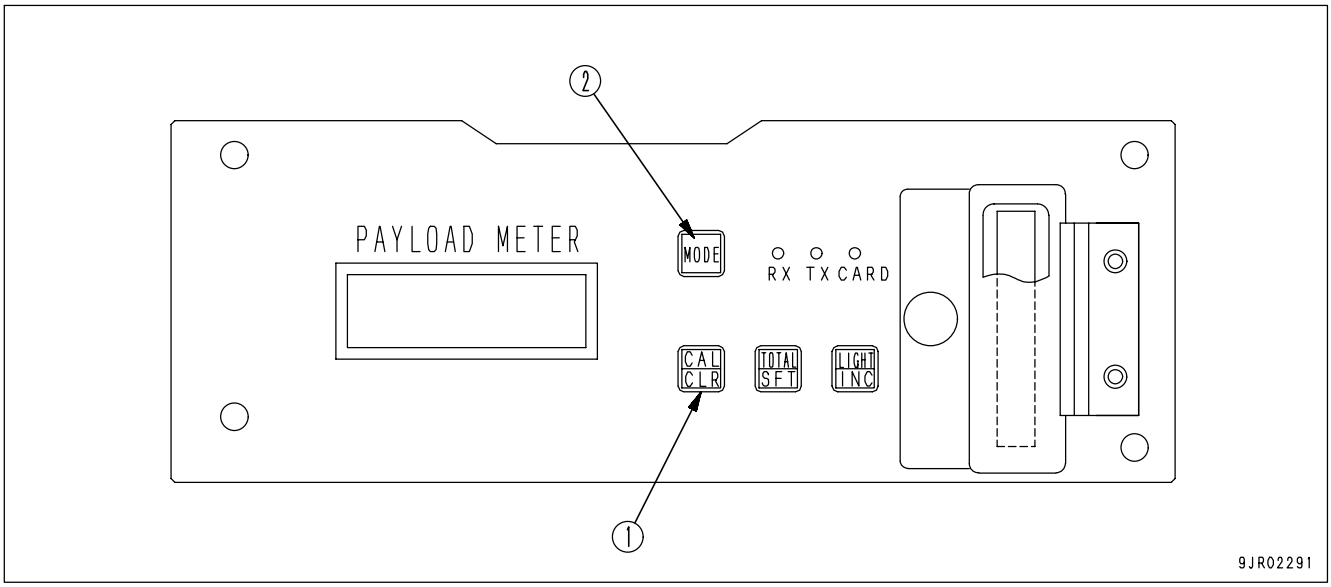
Item	Unit	Range	
Total payload	MT or ST	0 - 999900.0	This shows the total value from the zero clear point
Overall number of cycles	Times	0 - 9999	
Year (last 2 digits)	Year	0 - 99	Data and time shows time of zero clear operation
Month	Month	1 - 12	
Day	Day	1 - 31	
Time Hour	Hour	0 - 23	
Time Min	Minute	0 - 59	

(MT: Metric Ton; ST: Short Ton)

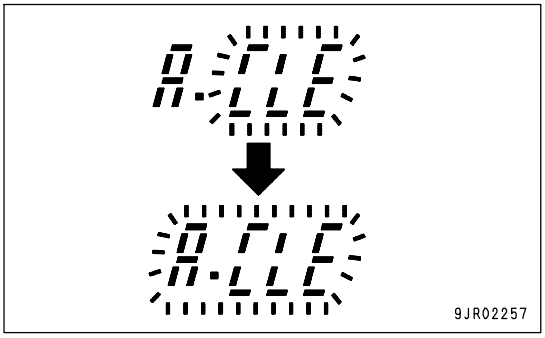
OTHER DATA

Content	Item	Unit	Range	
Set data for operator check mode	Machine ID	Integer	0 - 200	Set using switch input operation
	Open ID	Integer	0 - 200	For details, see section on operator check mode
	Speed limit	km/h	0 - 99	
	Option code	Integer	0 - 11	
Calibration data	Year (last 2 digits)	Year	0 - 99	Data and time when calibration was carried out
	Month	Month	1 - 12	
	Day	Day	1 - 31	
	Time Hour	Hour	0 - 23	
	Time Min	Minute	0 - 59	
Data written by user	Data 1	-	20 characters	Comments which can be written freely to the payload meter. However, they can only be input using the cable communications from the personal computer. (See the software manual.)
	Data 2	-	20 characters	
	Data 3	-	20 characters	
	Data 4	-	20 characters	

(b) Data all clear operation

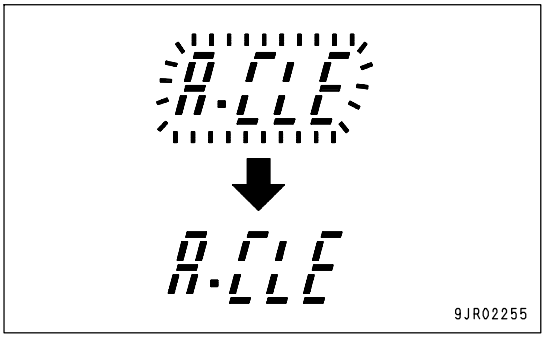


1. When the display is A.CLE (A lights up, CLE flashes), keep CAL/CLR switch (1) pressed for at least 2 seconds. The lighted up A display will change and start flashing.



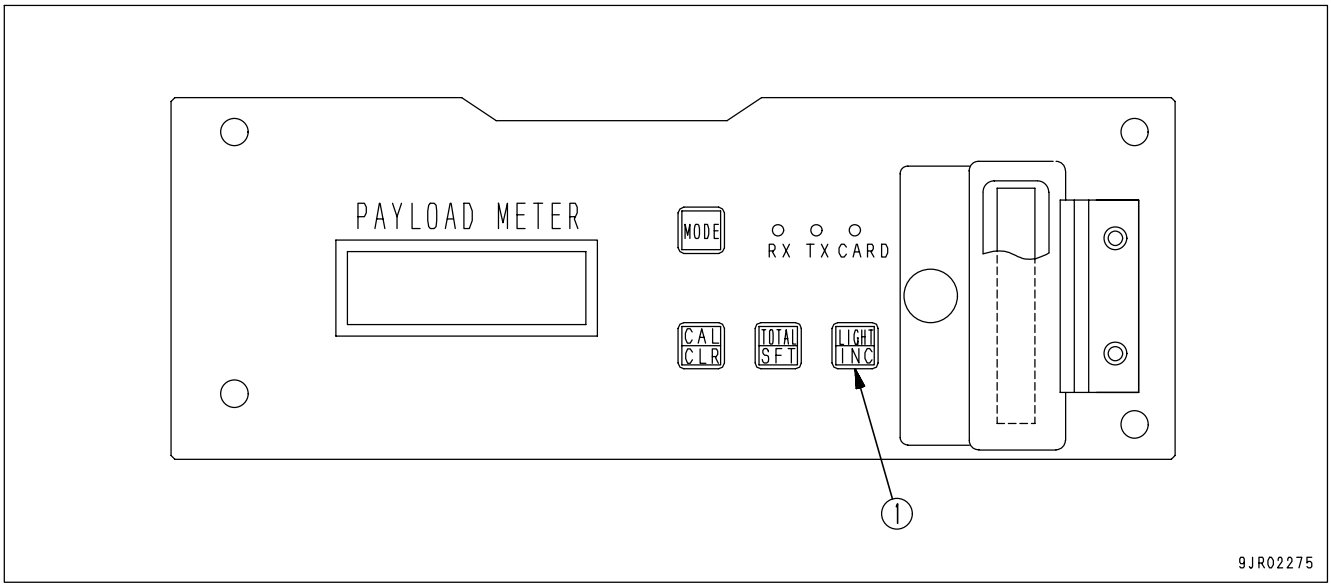
REMARK
If you wish to stop the data all clear operation when the display is A.CLE (both A and CLE are flashing), press MODE switch (2). The data all clear operation is not carried out, and the display returns to the normal operation display.

2. Keep CAL/CLR switch (1) pressed again for at least 2 seconds.
   A.CLE lights up, and when the data clear operation is completed, the display automatically returns to the normal operation display.



REMARK
Before clearing the data, download the necessary data to a personal computer or carry out (a) Memory card dump operation.

DIMMING LIGHTS ON MONITOR DISPLAY



If you want to change the brightness of the monitor display, do as follows.
Press LIGHT/INC switch (1). Each time the switches pressed, the lighting will become one level darker; and if the switches pressed when that the lighting is darkest, it will return to the brightest level.
The brightness can be changed in ten stages.
If the switch is kept pressed, the brightness will change continuously.

ADJUSTING BUZZER SOUND LEVEL

For details, see "LEFT FACE OF CONTROLLER (PAGE 6-40)".

The switches on the left side are set when the machine is shipped from the factory.
Do not touch any switch except No.7 and No.B.
If you wish to adjust any switch except No.7 and No.B to compensate the payload calculation value or speed or distance calculation value, please contact your Komatsu distributer.

SETTING MASS UNIT (SELECTING METRIC TON OR SHORT TON)

For details, see "LEFT FACE OF CONTROLLER (PAGE 6-40)".
The payload display unit changes from the point where the setting for the mass unit is changed.
The values stored in the payload meter memory will also have the unit changed for any data put into memory from the time the setting is changed.
Is not possible to convert units or data already stored in payload meter memory, so before switching the units, we recommend that you download all the data to the personal computer or carry out the memory card dump.

The switches on the left side are set when the machine is shipped from the factory.
Do not touch any switch except No.7 and No.B.
If you wish to adjust any switch except No.7 and No.B to compensate the payload calculation value or speed or distance calculation value, please contact your Komatsu distributer.

SETTING FORCED PROHIBITION FOR SWITCHES

For details, see "LEFT FACE OF CONTROLLER (PAGE 6-40)".
In addition, when setting forced prohibition for the switches, please ask your Komatsu distributor.

WHEN ERROR CODE F-09 IS DISPLAYED (PROCEDURE FOR REPLACING BATTERY)

The payload meter has an internal battery to prevent the recorded data from being deleted when the key in the starting switch is turned to the OFF position.
If the voltage of the battery drops, F-09 is displayed as an error message, so replace the battery as follows.

REPLACING BATTERY

NOTICE

If an error code is displayed, replace the battery within 48 hours. If it is not replaced, the recorded data will be lost.

- Parts to prepare
  Crosshead screwdriver
  New battery (581-86-55710)

- Remove your gloves when carrying out the operation.
- Be careful not to let any dirt or metal particles get inside the controller.
  Be careful not to drop any nuts or washers inside the controller.

⚠ WARNING

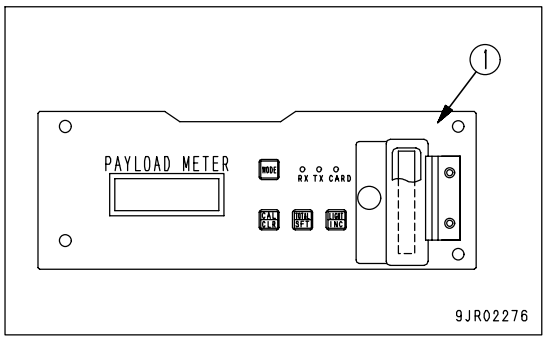
When replacing the battery, turn the starting switch to the ON position but do not start the engine. If the engine starts, the machine may suddenly move during the operation, and this may lead to serious personal injury.

1. Turn the key in the starting switch to the ON position and download the data stored in the payload meter to a personal computer, or carry out the memory card dump operation.

2. Turn the key in the starting switch to the OFF position.

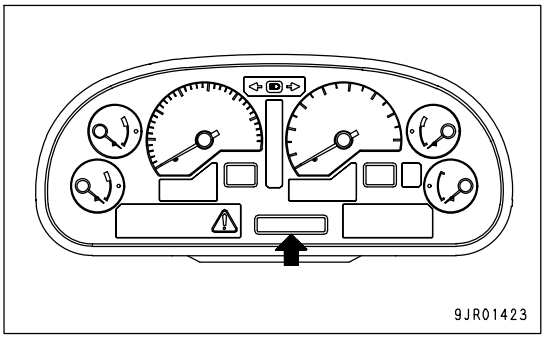
3. Remove 4 screws (1) (M6) holding the payload meter, then pull the payload meter to the front.

4. Remove the connector at the rear face.



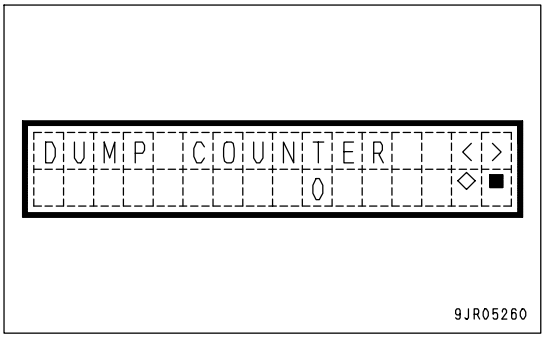
HANDLING DUMPING COUNTER

The dumping counter is an automatic counting function to count the number of loads that have been dumped.
The number of loads dumped is displayed on the character display.



METHOD OF DISPLAYING, RESETTING DUMPING COUNTER

1. Check that the character display is showing the service meter/odometer, or the action code. If it is giving any other display, turn the starting switch OFF, then turn the starting switch to the ON position and wait for the above display to be given.
2. Press (◇) of machine monitor mode selector switch 1. The character display shows the dumping counter.



3. When resetting the number of loads dumped, press (◇) of machine monitor mode selector switch 1. The display shows the screen on the right.
4. Press (◇) of machine monitor mode selector switch 1. The number of loads dumped is reset and the display returns to the previous screen.
   To abandon the resetting operation, press (■) of machine monitor mode selector switch 1 to return to the previous screen.
5. When completing the operation, press (■) of machine monitor mode selector switch 1 or turn the starting switch OFF.