TEN00144-03

Operation & Maintenance Manual

WHEEL LOADER **WA1200-3**

SERIAL NUMBERS 50057 and up

NOTICE

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

⚠ 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.

KOMATSU

POSITION OF SERVICE METER

On the lower right of maintenance monitor.

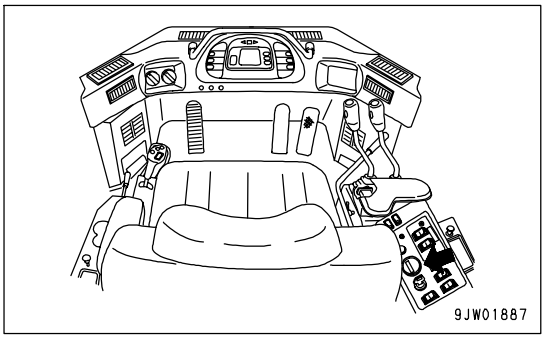


TABLE TO ENTER SERIAL NO. AND DISTRIBUTOR

Machine serial No.	
Engine serial No.	
Product identification number (PIN)	
Distributor name	
Address	
Service Personnel	
Phone/Fax	

(1) Caution before starting

WARNING

Improper operation and maintenance can cause serious injury or death.

Read manual and labels before operation and maintenance.
Follow instructions and warnings in manual and in labels on machine.

Keep manual in machine cab near operator.
Contact Komatsu distributor for a replacement manual.

(2) Caution for lock lever

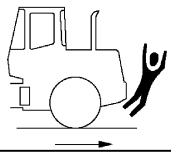
WARNING

To avoid hitting unlocked operation levers, lower equipment to ground and move SAFETY LOCK LEVER (located near seat) to LOCK position before standing up from operator's seat.

Sudden and unwanted machine movement can cause serious injury or death.

(3) Caution when traveling in reverse

WARNING



To prevent SEVERE INJURY or DEATH, do the following before moving machine or its attachments:

- Honk horn to alert people nearby.
- Be sure no one is on or near machine.
- Use spotter if view is obstructed.

Follow above even if machine equipped with back-up alarm and mirrors.

ACTION IF FIRE OCCURS

If a fire occurs, escape from the machine as follows.

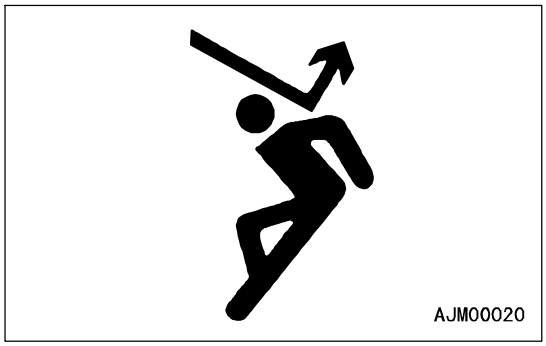
- Turn the start switch OFF to stop the engine.
- Use the handrails and steps to get off the machine.
- If the engine does not stop even when the starting switch is turned OFF, pull the emergency fuel cut lever at the side of the rear left entrance to stop the supply of fuel to the engine.

WINDOW WASHER LIQUID

Use an ethyl alcohol base washer liquid.
Methyl alcohol base washer liquid may irritate your eyes, so do not use it.

PRECAUTIONS WHEN USING ROPS (Roll Over Protective Structure)

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 when machine rolls over. When 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 carrying out 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 Komatsu contact your distributor for advice of the method of repair.
  Even if ROPS is installed, always fasten your seat belt properly when operating the machine. If you do not use your fasten your seat belt properly, it cannot display its effect.

PRECAUTIONS FOR ATTACHMENTS, OPTIONS

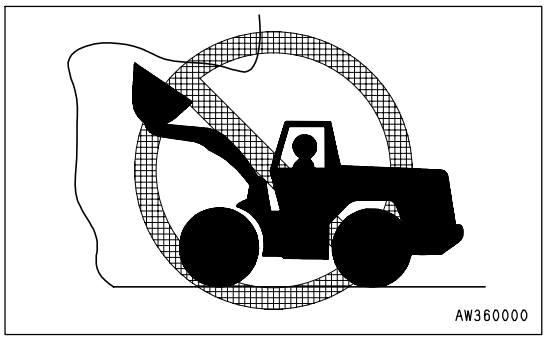
- When installing optional parts or attachments, there may be problems with safety or legal restrictions. Therefore contact your Komatsu distributor for advice.
- Any injuries, accidents, product failures or other property damages resulting from the use of unauthorized attachments or parts will not be 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

If this machine is modified without permission from Komatsu, there is danger that problems may occur with safety and that this may lead to serious personal injury. Modifications may have an adverse effect on items such as machine strength and visibility. Before making any modifications, please consult your Komatsu distributor. Komatsu cannot take any responsibility for accidents, failures, or damage caused by modifications not authorized by Komatsu.

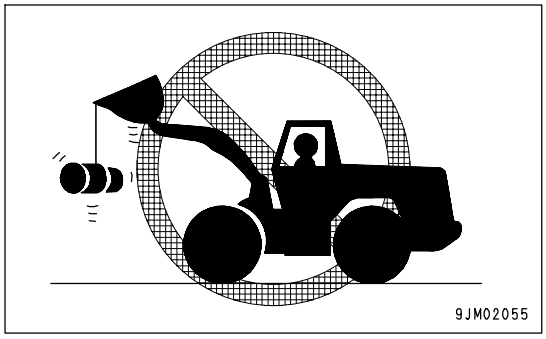
PROHIBITED OPERATIONS

- It is dangerous to excavate the bottom of a rock face. Never do this.



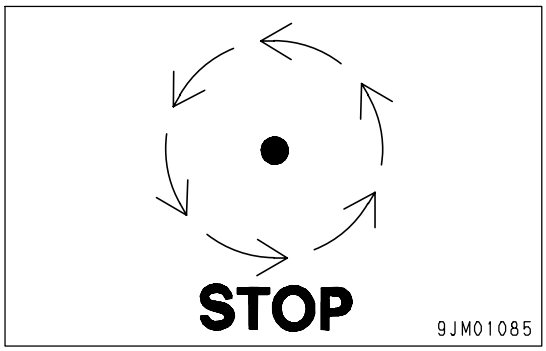
- It is dangerous to use the bucket or lift arm for crane operations, so do not carry out such operations.

- Do not pass the bucket over the head of other workers or over the operator's seat of dump trucks or other hauling equipment. The load may spill or the bucket may hit the dump truck and cause serious personal injury or death.

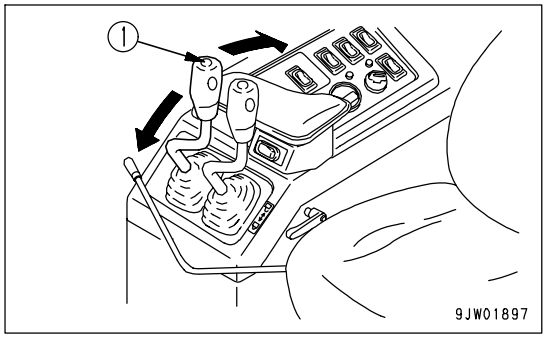


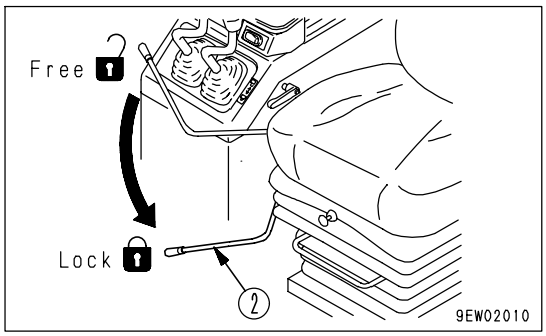
STOP ENGINE BEFORE CARRYING OUT MAINTENANCE

- Stop the machine on firm, level ground.
- Select a place where there is no hazard of landslides, falling rocks, or flooding.
- Lower the work equipment completely to the ground and stop the engine.

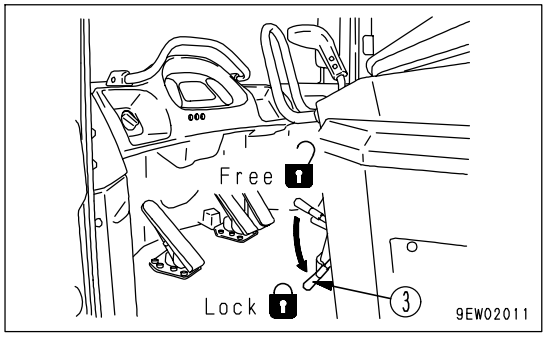


- After stopping the engine, operate work equipment control lever (1) 2 to 3 times fully to the RAISE and LOWER positions to release the pressure inside the hydraulic circuit, then set work equipment lock lever (2) to the LOCK position.



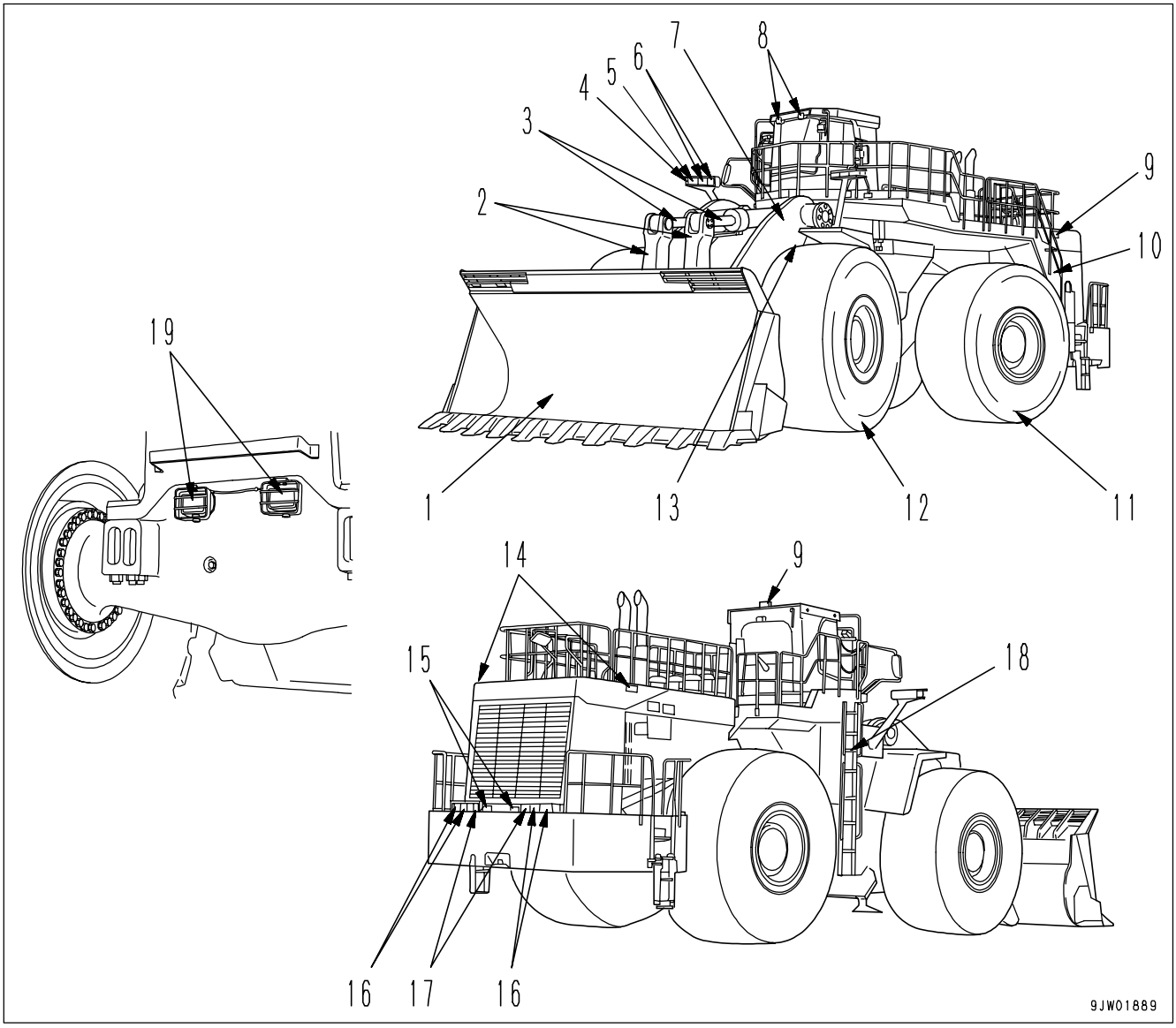


- In addition, set joystick steering lock lever (3) to the LOCK position.



GENERAL VIEW

GENERAL VIEW OF MACHINE



(1) Bucket
(2) Bellcrank
(3) Bucket cylinder
(4) Turn signal lamp
(5) Front working lamp (head lamp side)
(6) Head lamp
(7) Lift arm
(8) Front working lamp (cab side)
(9) Step lamp
(10) Ladder
(11) Rear wheel
(12) Front wheel
(13) Lift cylinder
(14) Engine hood side lamp
(15) Backup alarm
(16) Rear working lamp
(17) Rear combination lamp
(18) Emergency escape ladder
(19) Front working lamp (front axle side)

If a warning is generated, the [Warning screen] and [Screen being used) are displayed in turn. If multiple warnings are generated at the same time, the warning screen is displayed in turn for 5 seconds each.

If the JUMP switch is pressed when the [Warning screen] is being displayed, the [Screen being used] is displayed for 2 minutes.

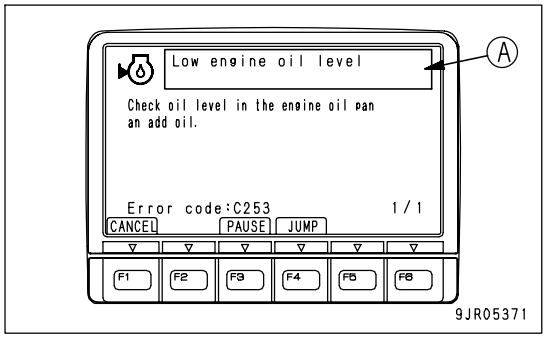
If the PAUSE switch is pressed when the [Warning screen] is being displayed, the [Warning screen] is displayed for 2 minutes. When this is done, the PAUSE switch changes to the RESTART switch. If the RESTART switch is pressed when the warning screen is being displayed for 2 minutes, the following screen is displayed.

If the CANCEL switch is pressed, the [Warning screen] can be temporarily canceled. The [Warning screen] can be canceled even when there is an abnormality on the machine. When the starting switch is next turned to the ON position, or when the user ID is changed, even when this operation is carried out to cancel the warning screen, the warning screen is displayed again if the abnormality has not been removed.

ENGINE OIL LEVEL CAUTION DISPLAY

This caution display (4) warns the operator that the oil level in the engine oil pan has gone down.

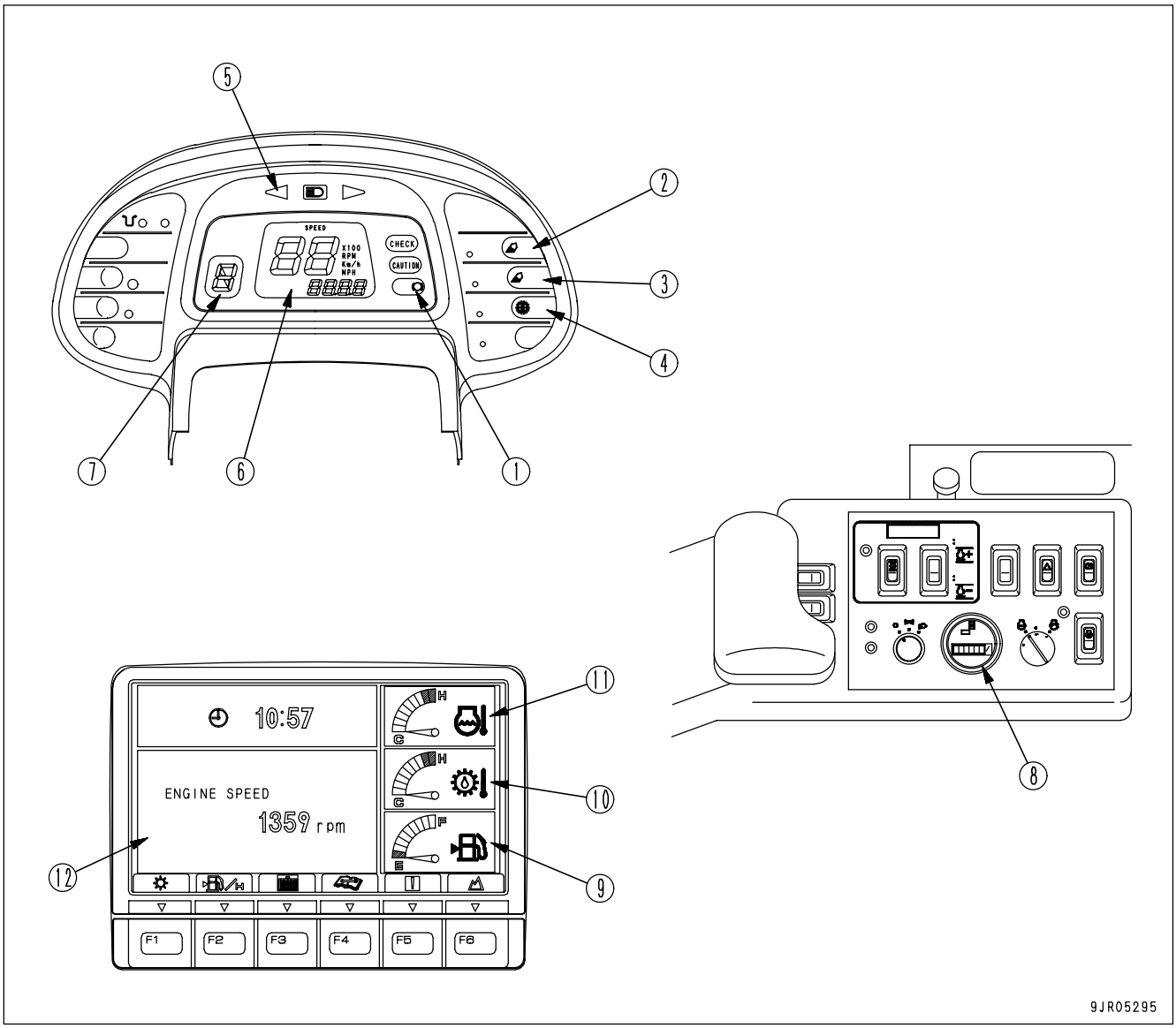
(A) Title screen: Red



During Check before starting (starting switch ON, engine stopped)
If the oil level in the engine oil pan is low, the title and message are displayed as an abnormality display on the multi monitor. When this happens, the title screen changes to red and the main monitor central check lamp (CHECK) also flashes.
If this abnormality is displayed, check the oil level in the engine oil pan and add oil.
Stop the machine on level ground before carrying out the check.

During operations (engine running)
Even if there is any display on the multi monitor or the central check lamp (CHECK) on the main monitor flashes during Check before starting, when the engine is started, the check lamp will go out, the multi monitor display will also go out, and the screen will return to the monitor screen.

METER DISPLAY PORTION



(1) Parking brake pilot lamp
(2) Front working lamp
(3) Rear working lamp
(4) Transmission cut-off pilot lamp
(5) Turn signal pilot lamp
(6) Speedometer
(7) Transmission shift indicator
(8) Service meter

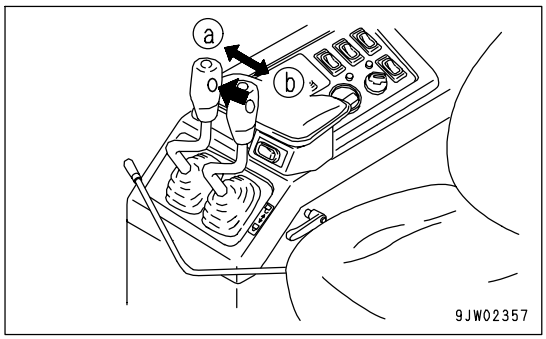
Multi monitor screen
(9) Fuel gauge
(10) Torque converter oil temperature gauge
(11) Engine water temperature gauge
(12) Engine tachometer

TRANSMISSION AUTO SHIFT/MANUAL SELECTOR SWITCH

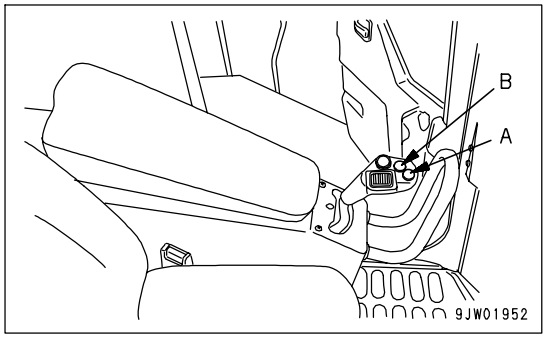
Press this switch (7) to switch the transmission between auto shift and manual shift.

Position (a): This switches to auto shift mode.
If it is set to this position, the speed range last used in the auto shift mode is saved to memory, and that speed range is displayed on the 1st, 2nd, and 3rd indicator lamps at the bottom of the main monitor.

Position (b): This switches to manual shift mode.
If it is set to this position, the transmission speed range is set to 2nd.

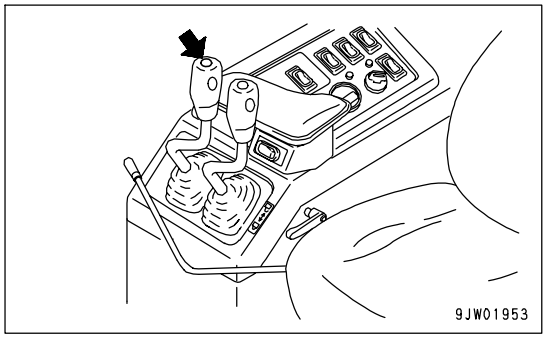


In either position (a) or (b), when shifting gear, use shift up switch (A) or shift down switch (B) at the head of the joystick steering lever.



KICKDOWN SWITCH

When the transmission is in 2nd, if switch (8) at the head of the lift arm control lever is pressed, the transmission shifts down to 1st. Use this when it is desired to increase the traction during digging operations.



REMARK

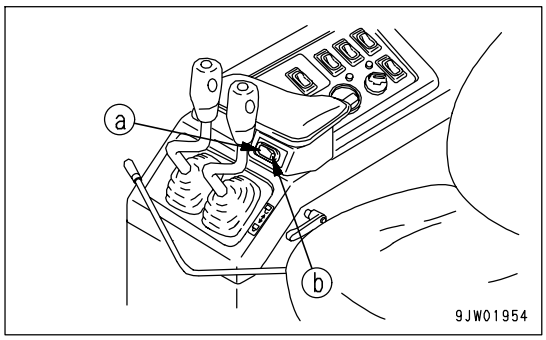
When canceling the kickdown switch, operate the forward-reverse switch to REVERSE or Neutral, or shift the transmission to a speed range other than 2nd. It is also possible to cancel the kickdown switch by actuating the parking brake switch or turning the starting switch OFF.

TURN SIGNAL SWITCH

Use this switch (9) to operate the turn signal lamp.

Position (a): Right turn (operate switch to right)

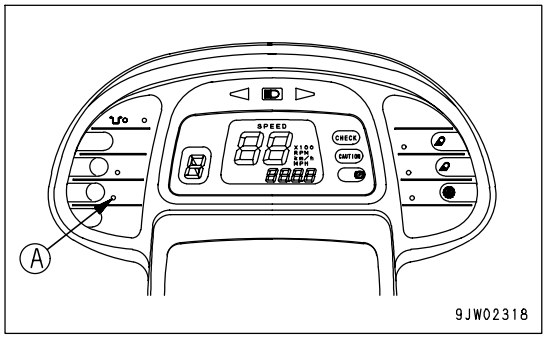
Position (b): Left turn (operate switch to left)



REMARK

- When the switch is operated, the turn signal pilot lamp also lights up.
- The turn signal switch does not return automatically when the joystick steering lever is returned. Return it by hand to the neutral position.

Turn the starting switch ON and check that the auto greasing indicator lamp (A) on the monitor panel lights up.
Lamp lights up: Normal
Lamp does not light up: Disconnection, broken main piping, no grease inside grease pump
In the following cases, the lamp will flash at 0.5 second intervals.
(1) Empty cartridge, broken circuit
The circuit pressure when the pump is actuated does not rise to the set pressure and cannot carry out greeasing
(2) Power supply cut
The power supply is cut and the system cannot function
(3) Defective release of pressure
After completion of greasing, the circuit pressure does not go down and the plunger does not return, so the next greasing cannot be carried out
(4) Even when normal, during period until pressure inside the circuit rises to set pressure

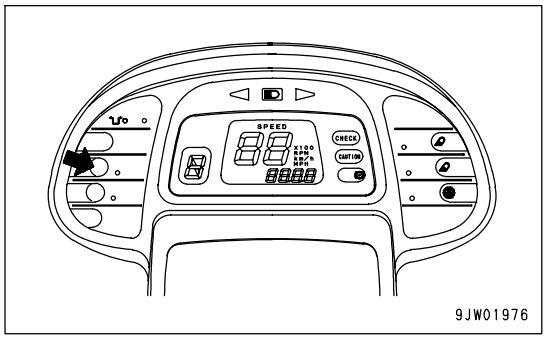


TIRE SLIP CONTROL ON-OFF SWITCH

When this button switch (32) is pressed, the drive force is reduced by the drive force limit system, but compared with when the drive force is large, this system can reduce the tire slippage to the minimum.

⚠ CAUTION

The tire slip control switch should normally be ON.

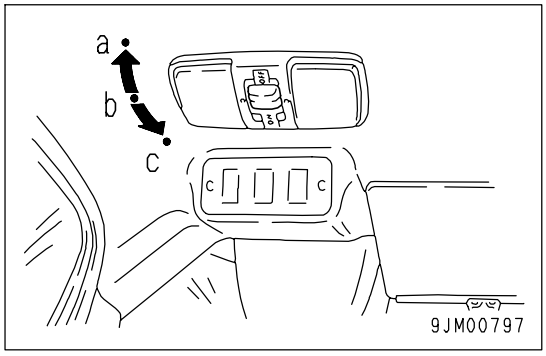


ROOM LAMP SWITCH

Use this switch (33) to turn on the room lamp.
There are two room lamps: at the front left and rear right of the operator's cab.
Position (a): OFF
Position (b): Lamps light up when cab door is open
Position (c): ON

REMARK

- The room lamps light up even when the starting switch is at the OFF position, so when leaving the operator's cab, turn the switch to position (a) (OFF) or position (b).
- When carrying out operations with the operator's cab fully open, turn the switch to position (a) (OFF).



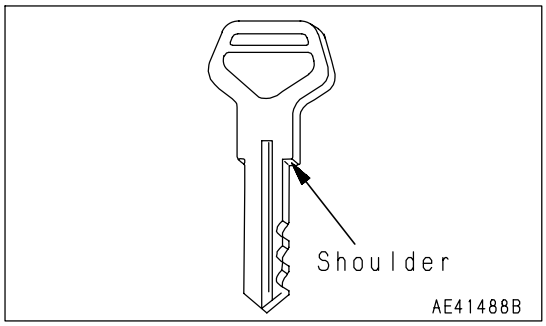
CAP WITH LOCK

If the machine is equipped with a cap with lock for the fuel tank filler and hydraulic tank filler, open and close the cap as follows. Use the starting switch key to open and close the cap.

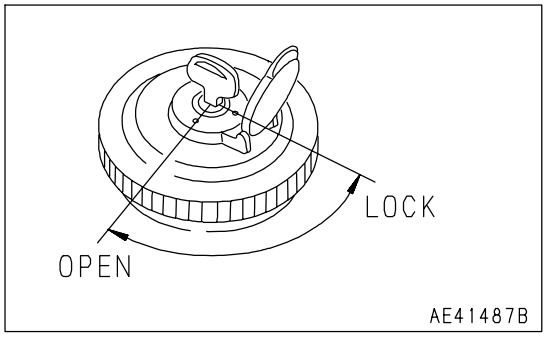
METHOD OF OPENING AND CLOSING CAP WITH LOCK (FOR THE FUEL TANK FILLER PORT)

TO OPEN THE CAP

1. Insert the key in the starting switch securely until the shoulder contacts the keyhole.
   If the key is not inserted fully into the starting switch and is turned, the key may break.



2. Turn the starting switch key clockwise, align the match mark on the cap with the rotor groove, then remove the cap.

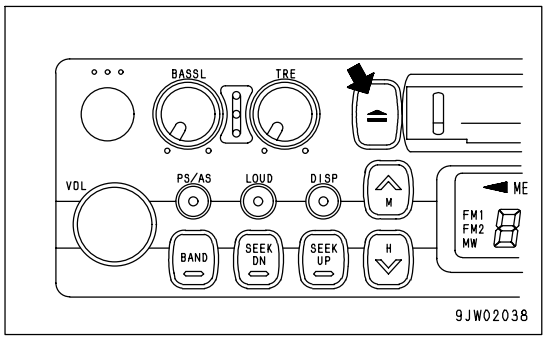


TO LOCK THE CAP

1. Screw the cap into place.
2. Turn the key counterclockwise and take the key out.

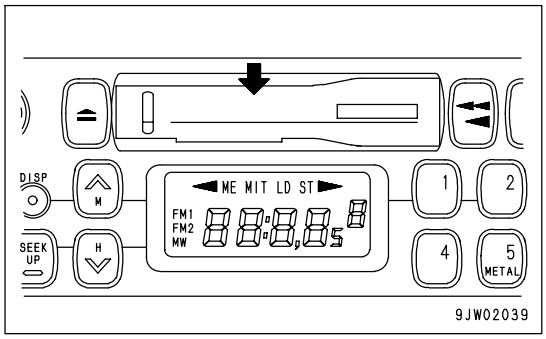
TAPE EJECT BUTTON

This button (7) is used to stop the tape and to eject the cassette. When this button is pressed, the tape is ejected and the radio plays.



CASSETTE DOOR

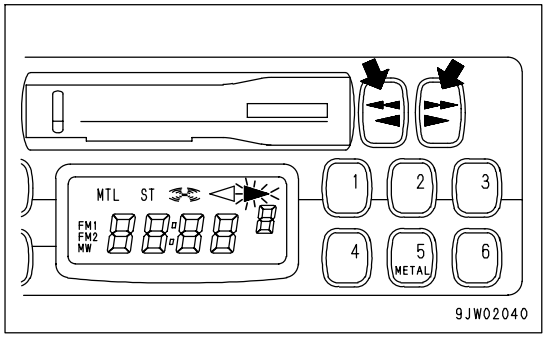
Set the cassette with the exposed portion of the tape on the right side and insert it through the cassette door (8).



FAST-FORWARD, REWIND BUTTONS

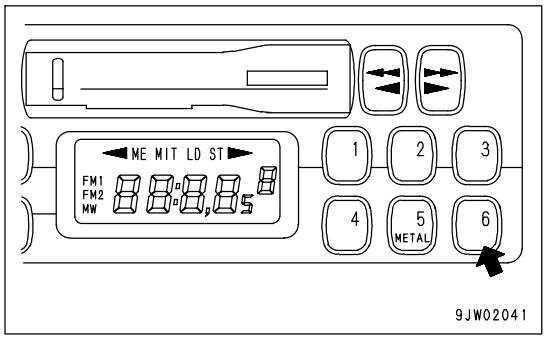
These buttons (9) are used to fast-forward or rewind the tape.

- Fast-forward/rewind
  If you press the button pointing in the same direction as the lighted arrow indicating the direction of play, the tape will be fast-forwarded; if you press the button pointing in the opposite direction, the tape will rewind.
  To stop the tape, lightly press the button that is not locked. The fast-forward or rewind operation will be canceled.
  If the fast-forward and rewind buttons are pressed at the same time, the tape will change sides.



PRESET BUTTONS

These buttons (10) are used to call up the broadcast station frequencies preset in memory for each of buttons No. 1 to No. 6. It is possible to preset 18 stations (FM: 12; AM: 6) with these buttons.



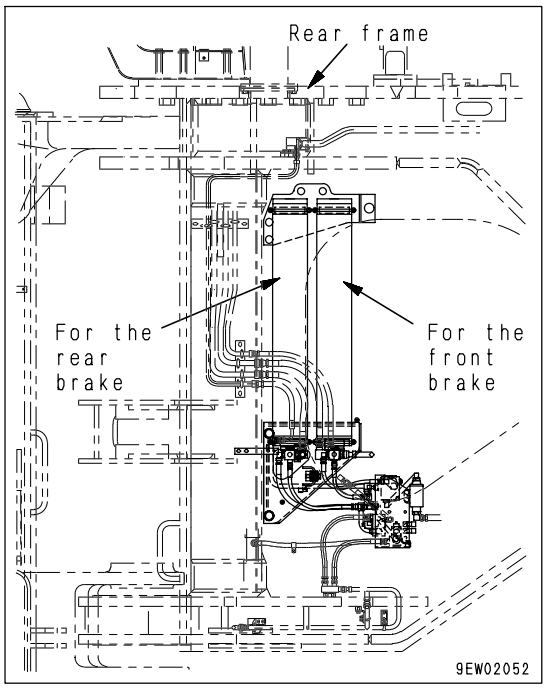
PRECAUTIONS WHEN HANDLING ACCUMULATOR

⚠ WARNING

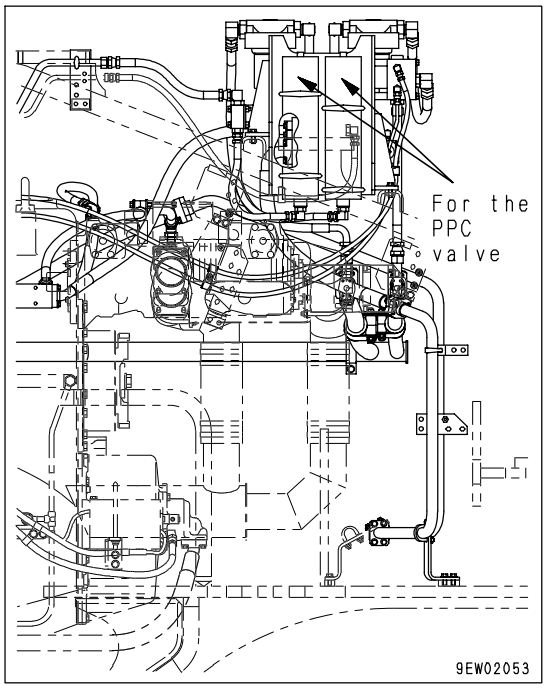
The accumulator is charged with high-pressure nitrogen gas, and it is extremely dangerous if it is handled in the wrong way. Always read the following items and be extremely careful to handle the accumulator properly.

- If there is any failure or problem with the accumulator, contact your Komatsu distributor immediately.
- When charging with gas, the operation should always be carried out by your Komatsu serviceman or by a person licensed to handle high-pressure gas.
- Never hit a charged accumulator or bring flame close to it.
- Do not make any hole or weld any boss to the accumulator.
- Always release the gas before disassembling, servicing, or discarding an accumulator.
- Use the air bleed valve to release the gas.
- Please ask your Komatsu distributor to check the gas pressure every 2000 hours or every one year.

The accumulators for the brakes are on the left inside surface of the rear frame.



The accumulators for the PPC valve are on the left inside surface of the rear frame.
Be extremely careful when handling the accumulators.

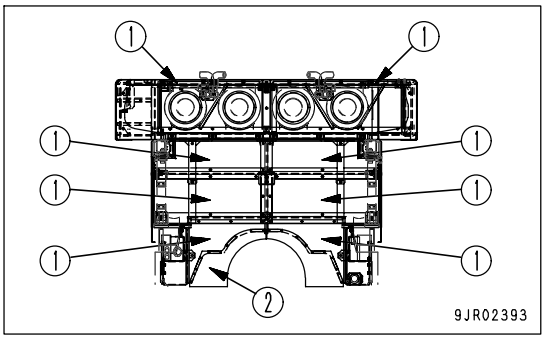


CHECK WATERPROOF/FIREPROOF DIVIDING WALLS

WARNING

If the wall between the engine room and hydraulic pump or the rubber sheet are damaged or have come off, and the hydraulic hose breaks, oil will spray onto the high-temperature parts of the engine, and this will lead to fire or other secondary damage.
If the wall or rubber sheet are damaged or have come off, please contact your Komatsu distributor for repairs.

Check that there is no damage or missing parts of rubber sheet (2) or wall (1) between the engine room and hydraulic pump.
If any damage or missing parts are found, please contact your Komatsu distributor for repairs.



OPERATIONS AND CHECKS AFTER STARTING ENGINE

⚠ WARNING

- **Emergency stop**
  If there is some abnormal movement or breakdown, turn the key in the starting switch to the OFF position.
- **Always carry out of the warming-up operation thoroughly. If the work equipment is operated when of the machine is not properly warmed up, the reaction of the work equipment to the operation of the control levers will be slow or the work equipment may even move in a way not intended by the operator. In particular, be careful to carry out the warming operation thoroughly in cold areas.**

BREAKING-IN THE MACHINE

⚠ CAUTION

This machine has undergone full inspection and adjustment of all parts before shipment from the factory, but if the full load is applied to the machine before all parts have been broken in, there will be adverse effect on the service life and performance of the machine.

Carry out the breaking-in operation for the first 100 hours of the machine (the standard time on the service meter).

Pay particular attention to the following points when carrying out the breaking-in operation.

- **Run the engine at low idling and carry out the warming-up operation for 5 minutes after starting the engine.**
- **Avoid applying any heavy load or running at high speed during operations.**
- **Avoid sudden starting, sudden acceleration, unnecessary sudden stopping, or sudden changes in direction.**

CONTROL FOR CHANGE OF TRAVEL DIRECTION AT HIGH SPEED

When switching between forward and reverse, depress the brake, and reduce the travel speed to a maximum of 11 km/h (6.8 MPH) before changing the direction. Changing direction at high speed will cause damage to the internal parts of the transmission.

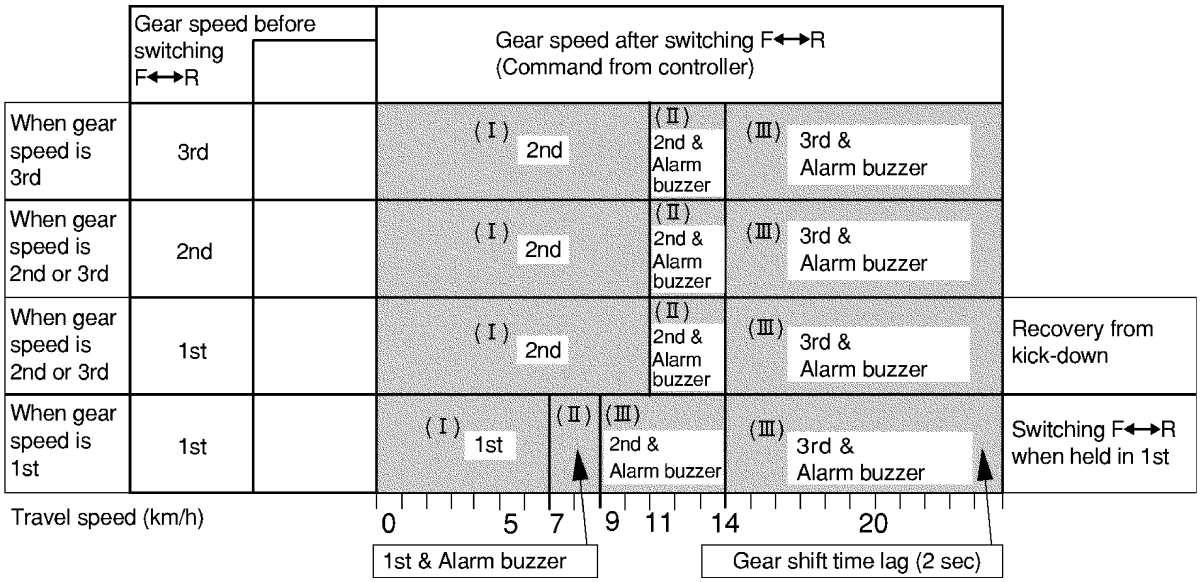
If it is attempted to shift between forward and reverse at high speed, the system takes action to protect the transmission. The alarm buzzer sounds and the controller acts to automatically restrict the gear speed as shown in the chart below,

⚠ CAUTION

If the CONTROL FOR CHANGE OF DIRECTION AT HIGH SPEED is actuated in range (II) in the chart below, the deceleration of the machine becomes weaker than in range (I), so be extremely careful when shifting down.

1. Protection function when using auto shift

- **Limit when changing direction of travel**



(I):Gear speed is changed as operated

(II):Gear speed is changed as operated, but alarm buzzer sounds

(III):Controller restricts gear speed according to travel speed, alarm buzzer sounds

NOTICE

If it is attempted to shift between forward and reverse in range (II), the gear speed is changed according to the operation by the operator. However, the alarm buzzer sounds to inform the operator that the speed has not been reduced sufficiently to switch between forward and reverse.

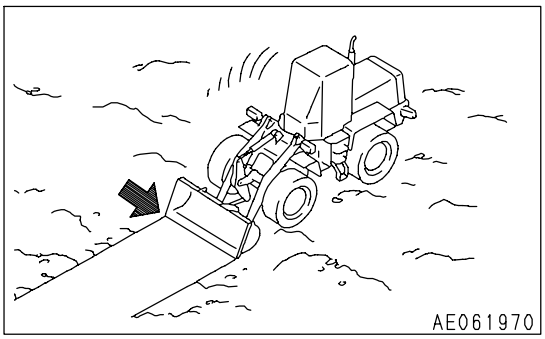
If the alarm buzzer sounds, be careful to carry out sufficient deceleration before switching between forward and reverse.

LEVELING OPERATIONS

NOTICE

Always operate the machine in reverse when carrying out leveling operations.

If it is necessary to carry out leveling operations when traveling forward, do not set the bucket dumping angle to more than 20 degrees.



1. Scoop soil into the bucket. Move the machine backward while spreading soil from the bucket little by little.
2. Go over the spread soil with the bucket teeth touching the ground and level the ground by back-dragging.
3. Scoop some more soil into the bucket, put the lift arm control lever in FLOAT position, level the bucket at ground level, and smooth the ground by moving backward.

PUSHING OPERATION

⚠ CAUTION

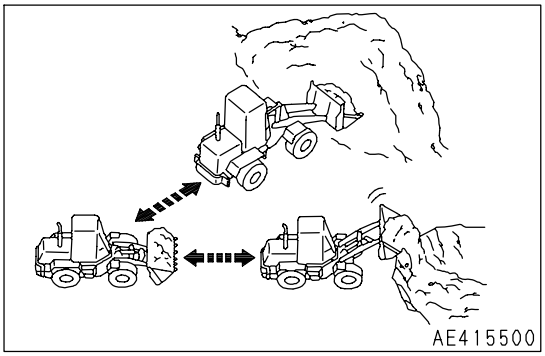
Never set the bucket to the DUMP position when carrying out pushing operation.

When carrying out pushing operations, set the bottom of the bucket parallel to the ground surface.

LOAD AND CARRY OPERATIONS

⚠ WARNING

When carrying a load, lower the bucket to lower the center of gravity when traveling.



The load and carry method for wheel loaders consists of a cycle of scooping -> hauling -> loading (into a hopper, truck, etc.).
Always keep the travel path properly maintained.
When using the load and carry method, see "PRECAUTIONS FOR USING LOAD AND CARRY METHOD (PAGE 3-122)".

LOADING OPERATIONS

Select the method of operation which will give the minimum amount of turning and travel in order to provide the most efficient method for the jobsite.

⚠ WARNING

- **Always keep the working area flat. Do not turn suddenly or apply the brake suddenly when traveling with a raised load. These actions are dangerous.**
- **It is also dangerous to drive the bucket at high speed into a stockpile or pile of rocks.**

NOTICE

- **If the tires slip, the tire life will be reduced, so do not allow the tires to slip during operation.**
- **Avoid excessive bucket shaking.**

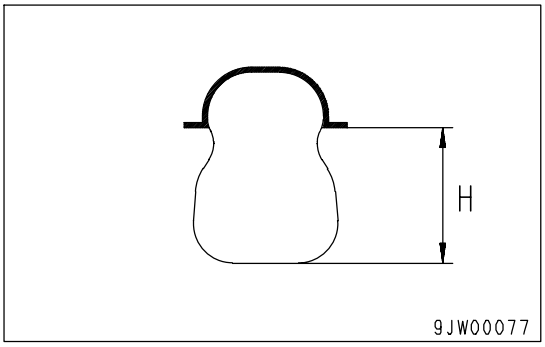
Clearing fallen stones and rocks from the operating area and maintaining the surface will extend the tire life and give improved economy.

- For operations on normal road surfaces, rock digging operations: High end of range in air pressure chart
- Stockpile operations on soft ground: Average pressure in air pressure chart

If the deflection of the tire is excessive, raise the inflation pressure within the limits given in the table to give a suitable deflection (see deflection ratio).

Tire size (pattern)	H Free height (mm)	Inflation pressure (MPa{kg/cm^2}, PSI)		
		Normal road		When shipped from factory
		Stockpile	Digging	
55.5/80-57-68PR (L5 Rock) (Standard)	929	0.54 to 0.59 {5.5 to 6.0, 78.1 to 85.2}	0.54 to 0.59 {5.5 to 6.0, 78.1 to 85.2}	Both front and rear 0.59{6.0, 85.2}
65/65-57-62PR (L5 Rock) (If equipped)	992	0.44 to 0.49 {4.5 to 5.0, 63.9 to 71.0}	0.44 to 0.49 {4.5 to 5.0, 63.9 to 71.0}	Both front and rear 0.49 {5.0, 71.0}

Stockpile operations mean the loading of sand and other loose materials.

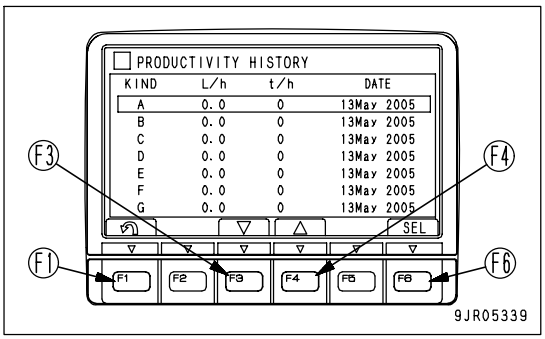


PRECAUTIONS FOR USING LOAD AND CARRY METHOD

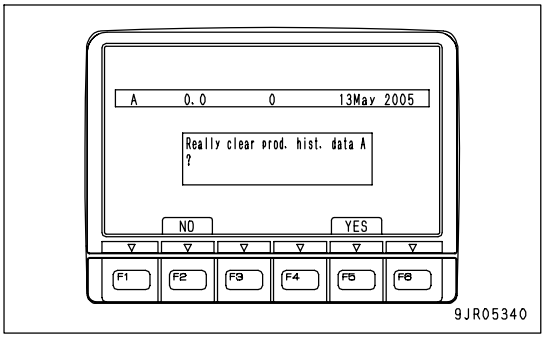
When traveling continuously with load and carry operations, choose the correct tires to match the operating conditions, or choose the operating conditions to match the tires. If this is not done, the tires will be damaged, so contact your Komatsu distributor or tire dealer when selecting tires.

DELETING PRODUCTIVITY HISTORY

1. If you want to delete the KIND data displayed on the PRODUCTIVITY HISTORY screen, use switch (F3) or (F4) to select the KIND data, then confirm the selection with [SEL] switch (F6).



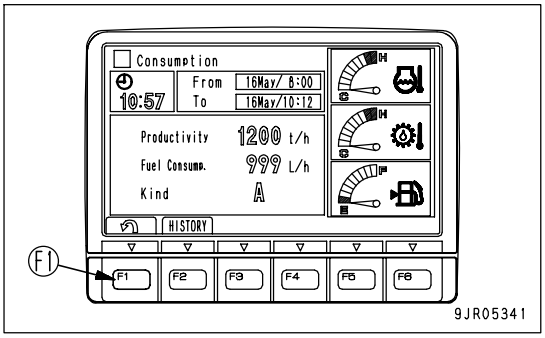
2. The CLEAR PRODUCTION HISTORY DATA screen is displayed.
   Confirm the data to be deleted, then press the [YES] switch.
   The screen will return to the original PRODUCTIVITY HISTORY screen, the cleared data is displayed as 0, and the date changes to the cleared date.



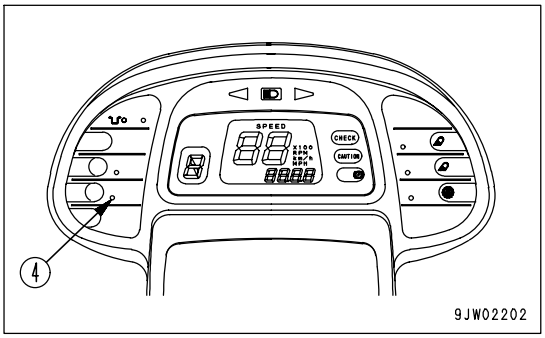
REMARK

Once data have been cleared, they cannot be restored. When clearing data, check carefully that the correct data has been selected, then delete the data.

3. After checking that the data have been cleared, press the [Return] switch (F1) at the bottom left of the screen. The screen returns to the Consumption screen.
4. Press [Return] switch (F1) at the bottom left of the Consumption screen. The screen returns to the original monitor screen.



3. Turn the starting switch ON and check that auto-greasing level indicator lamp (4) on the monitor panel lights up.
   Lamp lights up: Normal
   Lamp does not lights up: Disconnection, broken main piping, no grease inside grease pump.
   In the following cases, the lamp will flash at 0.5 second intervals.
   (1) Empty cartridge, broken circuit
   The circuit pressure when the pump is actuated does not rise to the set pressure and cannot carry out greeasing
   (2) Power supply cut
   The power supply is cut and the system cannot function
   (3) Defective release of pressure
   After completion of greasing, the circuit pressure does not go down and the plunger does not return, so the next greasing cannot be carried out
   (4) Even when normal, during period until pressure inside the circuit rises to set pressure

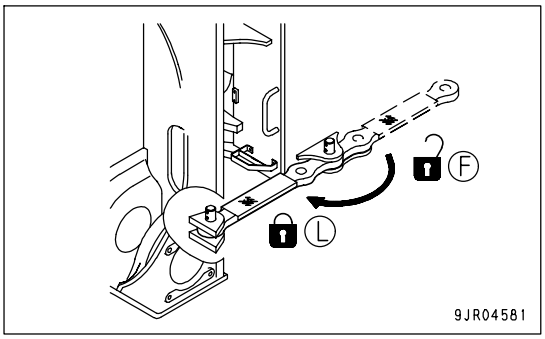


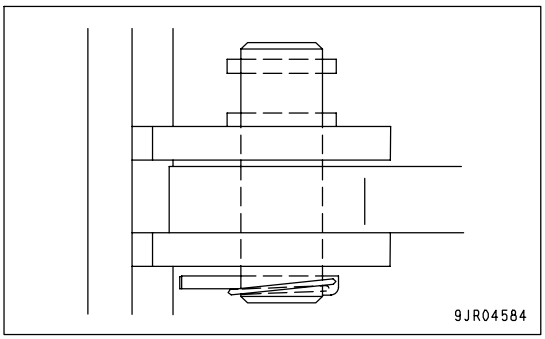
If the lamp still flashes after the grease pump is filled with grease, consult your Komatsu distributor.

WARMING-UP OPERATION FOR STEERING HYDRAULIC CIRCUIT IN COLD WEATHER

⚠ WARNING

If the steering lever is operated and then stopped while the oil temperature is low, there may be a time lag before the machine stops turning.
In this case, use the frame lock bar to ensure safety, and perform the warming-up operation in a wide place.
Do not relieve the hydraulic pressure in the circuit continuously for more than 5 seconds.





When the temperature is low, do not start the operation of the machine immediately after starting the engine.

Warming up steering hydraulic circuit
Slowly operate the steering lever to the left and right to warm up the oil in the steering valve.
(Repeat this operation for about 10 minutes to warm up the oil.)

NOTICE
Operate the steering lever a little and stop in that position. Then confirm that the machine is being steered by an angle equivalent to the amount that the steering lever is operated.

RECOMMENDED OIL
Select the oil from the table below according to the ambient temperature.

RESERVOIR	KIND OF FLUID	AMBIENT TEMPERATURE
		-22 -4 14 32 50 68 86 104 122°F -30 -20 -10 0 10 20 30 40 50°C
Hydraulic system	Engine oil	TO10 SAE 5W-20CD

If SAE5W-20CD is used in the cold season, replace it with TO10 oil when the cold season finishes.

OTHER TROUBLE

ELECTRICAL SYSTEM

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

Problem	Main causes	Remedy
Lamp does not glow brightly even when the engine runs at high speed	• Defective wiring	(• Check, repair loose terminals, disconnections)
Lamp flickers while engine is running	• Defective fan belt tension	• Adjust alternator belt tension, see CHECK ALTERNATOR DRIVE BELT
Charge level caution appears on multi monitor when engine is running	• Defective alternator • Defective monitor	(• Replace) (• Check, repair)
Abnormal noise is generated from alternator	• Defective alternator	(• Replace)
Prelube motor does not work and starting motor does not turn when starting switch is turned to ON	• Defective wiring • Insufficient battery charge	(• Check, repair) • Charge
Pinion of starting motor keeps going in and out (rattles)	• Insufficient battery charge	• Charge
Starting motor turns engine sluggishly	• Insufficient battery charge • Defective starting motor	• Charge (• Replace)
Starting motor disengages before engine starts	• Defective wiring • Insufficient battery charge	(• Check, repair) • Charge
Engine starting aid fluid is not injected	• Defective wiring	(• Check, repair)
Engine oil pressure caution appears on multi monitor while engine is stopped	• Defective wiring • Defective monitor, defective sensor	(• Replace) (• Check, repair, replace)
Battery charge caution appears on multi monitor while engine is stopped	• Defective wiring • Defective monitor	(• Check, repair) (• Replace)

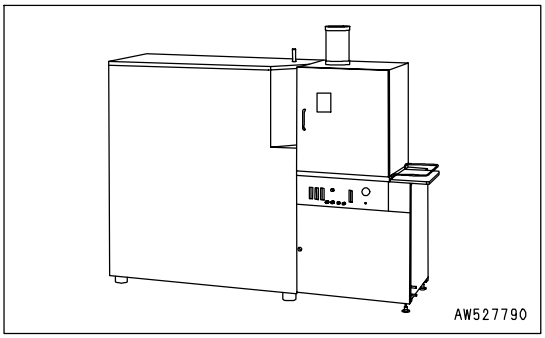
CARRYING OUT KOWA (Komatsu Oil Wear Analysis)

KOWA is a maintenance service that makes it possible to prevent machine failures and downtime. With KOWA, the oil is periodically sampled and analyzed. This enables early detection of wear of the machine drive parts and other problems.

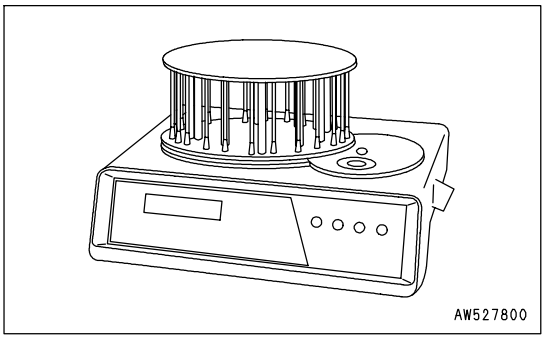
We strongly recommend you to use this service. The oil analysis is carried out at actual cost, so the cost is low, and the results of the analysis are reported together with recommendations which will reduce repair costs and machine downtime.

KOWA ANALYSIS ITEMS

- Measurement of density of metal wear particles
  This uses an ICP (Inductively Coupled Plasma) analyzer to measure the density of iron, copper, and other metal wear particles in the oil.



- Measurement of quantity of particles
  This uses a PQI (Particle Quantifier Index) measurer to measure the quantity of iron particles of 5μm or more, enabling early detection of failures.



- Others
  Measurements are made of items such as the ratio of water in the oil, density of the antifreeze coolant, ratio of fuel in the oil, and dynamic viscosity, enabling a highly precise diagnosis of the machine's health.

OIL SAMPLING

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

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

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

EVERY 250 HOURS SERVICE

EVERY 500 HOURS SERVICE

EVERY 1000 HOURS SERVICE

EVERY 1500 HOURS SERVICE

EVERY 2000 HOURS SERVICE

*: The interval of 2000 hours for changing the axle oil is for standard operations. If the brake is used frequently or the brakes make a sound, change the oil after a shorter interval.

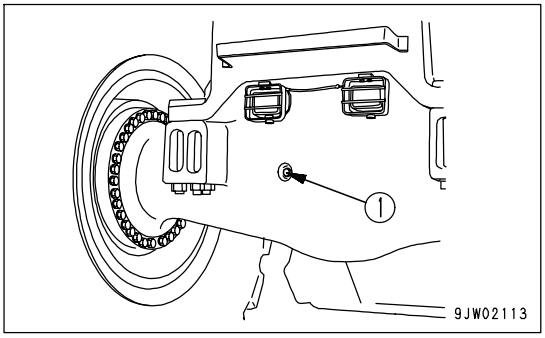
CHECK AXLE OIL LEVEL, ADD OIL

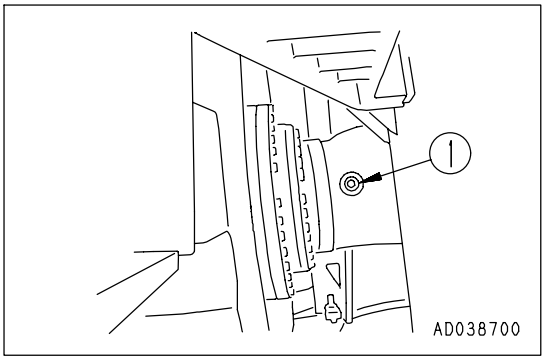
WARNING

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

Perform this procedure if there is any sign of oil on the axle case.
Inspect the machine on a horizontal surface.
(If the road surface is at an angle, the oil level cannot be checked correctly.)

1. Stop the engine and remove level plug (1).



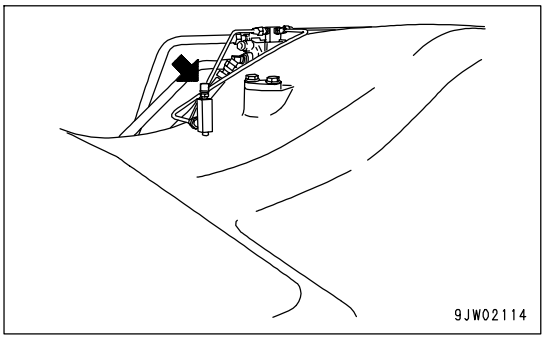


2. Check that the oil level is near the bottom of the plug hole.
3. If the oil is not near the bottom edge of the hole, add oil through oil filler (F).
4. If the oil level is correct, install level plug (1)

Tightening torque: 127 to 177 Nm (13.0 to 18.0 kgm, 94.0 to 130.2 lbft)

CLEAN AXLE CASE BREATHER

Remove all mud and dirt from around the breather with a brush.
After removing the mud or dirt from around the breather, remove the breather, immerse it in cleaning fluid and clean it.
When cleaning the breather, clean the breathers at two places (front and rear).
After removing the breather, take steps to prevent dirt or dust from entering the mount.

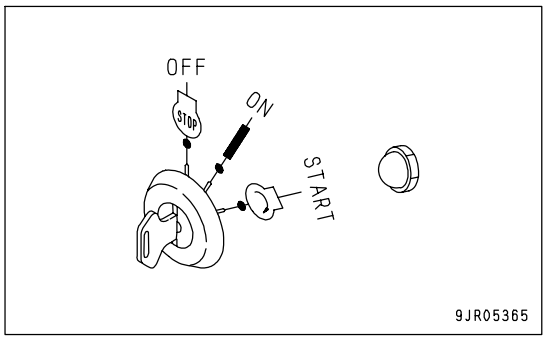


REPLACE SLOW BLOW FUSE

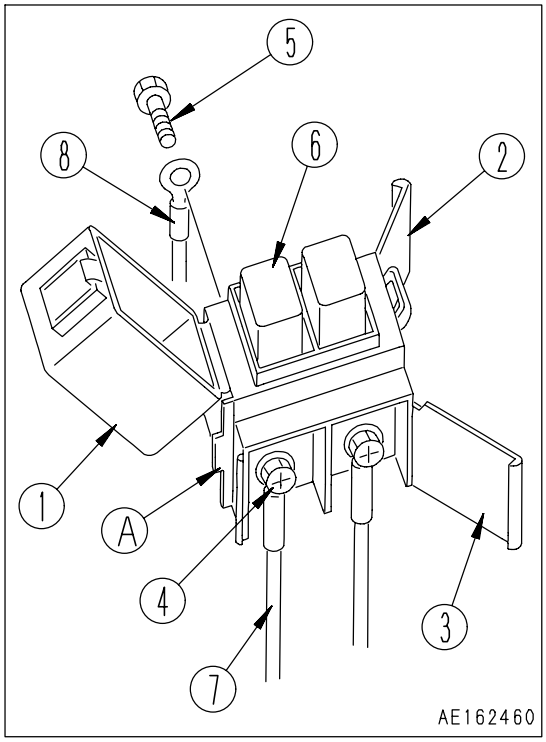
NOTICE

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

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



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



EVERY 250 HOURS SERVICE

Maintenance for every 50 and 100 hours service should be carried out at the same time.

CHECK BATTERY ELECTROLYTE LEVEL

Carry out this procedure before operating the machine.

⚠ WARNING

- **Do not use the battery if the battery electrolyte level is below the LOWER LEVEL line. This will accelerate deterioration of the inside of the battery and reduce the service life of the battery. In addition, it may cause an explosion.**
- **The battery generates flammable gas and there is danger of explosion, do not bring fire or sparks near the battery.**
- **Battery electrolyte is dangerous. If it gets in your eyes or on your skin, wash it off with a large amount of water and consult a doctor.**
- **When adding distilled water to the battery, do not allow the battery electrolyte to go above the UPPER LEVEL line. If the electrolyte level is too high, it may leak and cause damage to the paint surface or corrode other parts.**

NOTICE

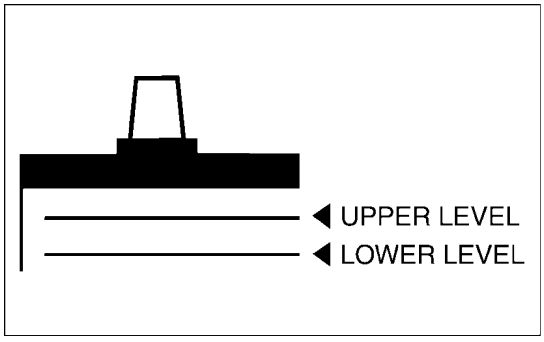
If there is a fear that the battery water may freeze after refilling with purified water (e.g. commercially available replenishment water for a battery), do the replenishment before the day's work on the next day.

Inspect the battery electrolyte level at least once a month and follow the basic safety procedures given below.

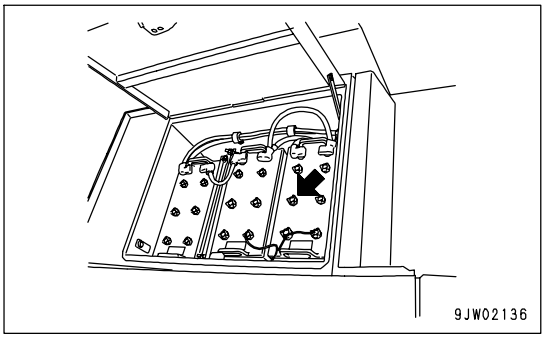
WHEN CHECKING ELECTROLYTE LEVEL FROM SIDE OF BATTERY

If it is possible to check the electrolyte level from the side of the battery, check as follows.

1. Use a wet cloth to clean the area around the electrolyte level lines and check that the electrolyte level is between the UPPER LEVEL (U.L.) and LOWER LEVEL (L.L.) lines.
   If the battery is wiped with a dry cloth, static electricity may cause a fire or explosion.



2. If the electrolyte level is below the mid point of U.L and L.L marks, remove the cap immediately and add the distilled water.
3. After adding distilled water, tighten cap (1) securely.
4. After adding, securely tighten the cap.

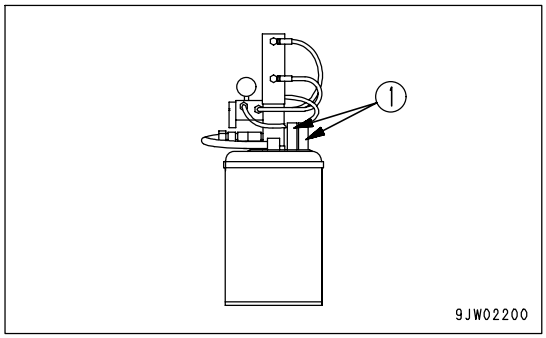


REMARK

If distilled water is added to above the U.L. line, use a syringe to lower the level to the U.L. line. 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.

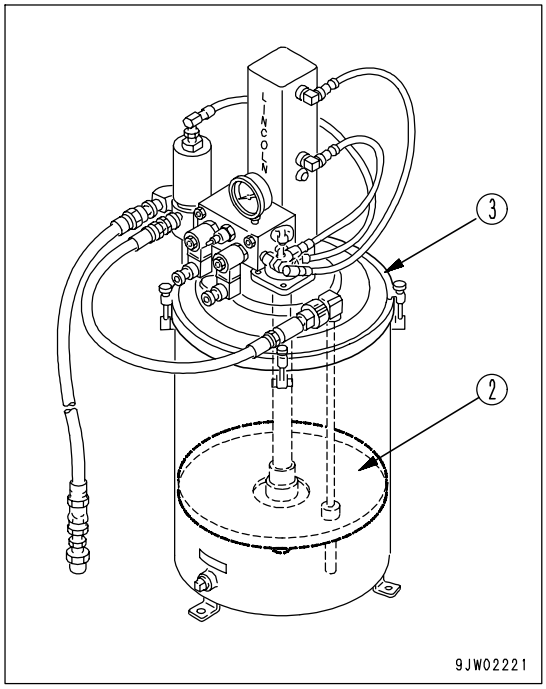
CHECK REMAINING AMOUNT OF GREASE IN AUTO-GREASING TANK, ADD GREASE

Use level gauge (1) to check the remaining amount of grease. If the grease level is low, add grease.
If a pail is not being used: Fill with grease
If a pail is being used: Replace pail

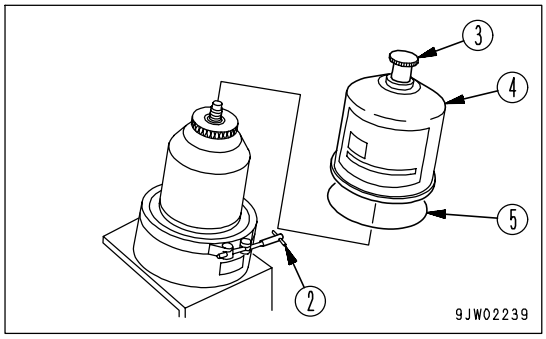


NOTICE

- **Never remove the follower plate. If the follower plate (2) is not used, pump (3) will not be able to suck up the grease even if there is grease remaining in the tank.**
- **Use the appropriate follower plate according to whether a pail is being used or not.**



12. Replace O-ring (5), install housing (4), then tighten knob (3) by hand.
13. Install clamp (2) and tighten it by hand.



14. Check the oil level in the engine oil pan.
15. Start the engine and check for oil leakage.
16. Check that the oil is up to the specified level. For details, see CHECK OIL LEVEL IN ENGINE OIL PAN, ADD OIL (PAGE 3-78).

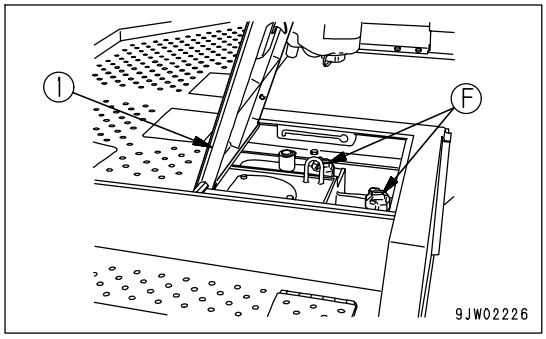
CHANGE BRAKE OIL

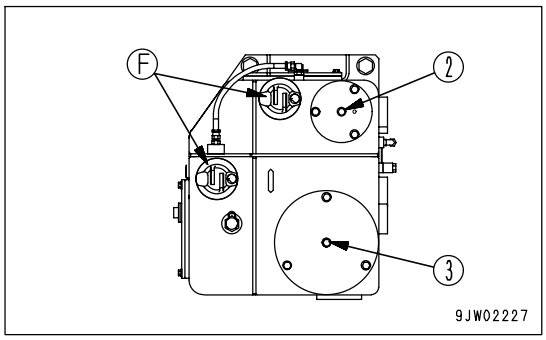
WARNING

- **The parts and oil are at high temperature after the engine is stopped, and may cause serious burns. Wait for the temperature to go down before cleaning the engine breather.**
- **When using compressed air, there is a hazard that dirt may be blown up and cause serious injury. Always use safety glasses, dust mask, or other protective equipment.**

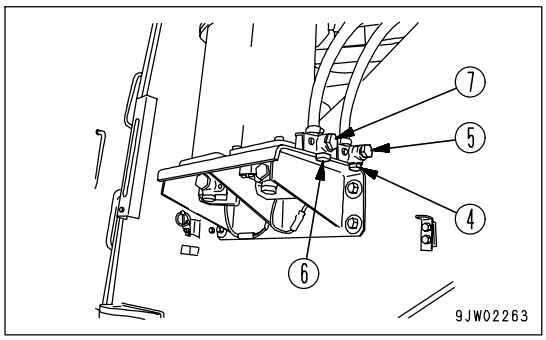
- Refill capacity: Total 315 liters (83.16 US gal)

1. Set the container directly under the brake oil drain valve to catch the oil.
2. Open inspection cover (1) at the top left of the machine, then remove oil filler caps (F) and plugs (2) and (3) in the center of the filter cover.





3. Remove drain plugs (4) and (6), then gradually loosen plugs (5) and (7) and drain the oil from the brake oil tank and brake cooling oil tank.
4. After draining the oil, tighten plugs (5) and (7), then install drain plugs (4) and (6).



SPECIFICATIONS

WA1200-3

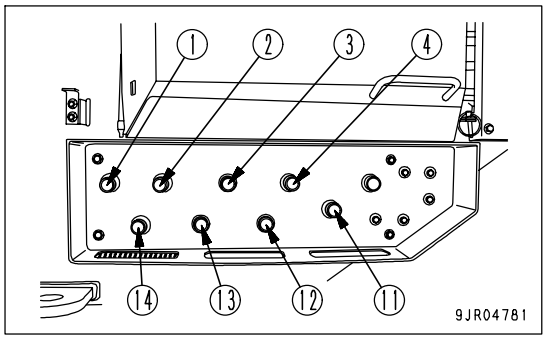
	Item			Unit	Tire size	
					55.5/80-57-68PR	65/65-57-62PR
	Operating weight (including 1 operator: 80kg (176 lb))			kg (lb)	205200 (452466)	210400 (463932)
	Normal load			kg (lb)	36000 (79380)	
	Backet capacity			m^3 (cu.yd)	20 (25.9)	
	Engine model			-	Cummins QSK60	
	Engine horsepower			kW{HP}/rpm	1163 (1560) / 1900	
A	Overall length	Tip of bucket (tip of teeth)		mm (ft in)	17680 (58' 0")	Rock: 18210 (59' 9") Limestone: 18175 (59' 8")
B	Overall height			mm (ft in)	6865 (22' 6")	6930 (22' 9")
C	Max. dimension when shaking bucket			mm (ft in)	11865 (38' 11")	11930 (39' 2")
D	Overall width			mm (ft in)	5710 (18' 9")	5970 (19' 7")
E	Min. ground clearance			mm (ft in)	650 (2' 2")	715 (2' 4")
F	Bucket width			mm (ft in)	6550 (21' 6")	
G	Clearance	Tip of teeth (tip of bucket)		mm (ft in)	Rock: 6285 (20' 7") (6735 (22' 1"))	Rock: 6350 (20' 10") (6800 (22' 4"))
					Limestone: 6325 (20' 9") (6735 (22' 1"))	Limestone: 6390 (21' 0") (6800 (22' 4"))
H	Reach	Tip of bucket (tip of teeth)		mm (ft in)	Rock: 2970 (9' 8") (2665 (8' 9"))	Rock: 2905 (9' 6") (2600 (8' 6"))
					Limestone: 2955 (9' 8") (2665 (8' 9"))	Limestone: 2890 (9' 6") (2600 (8' 9"))
I	Dump angle			degrees	45	
	Min. turning radius	Outside of machine		mm (ft in)	14330 (47' 0")	
		Center of outside tire		mm (ft in)	12015 (39' 5")	
	Travel speed (low speed/high speed)	Forward	1st	km/h (MPH)	6.3 (3.9)	6.5 (4.0)
			2nd		11.5 (7.1)	11.9 (7.4)
			3rd		19.8 (12.3)	20.4 (12.7)
		Reverse	1st	km/h (MPH)	7.4 (4.6)	7.7 (4.8)
			2nd		13.4 (8.3)	13.9 (8.6)
			3rd		22.6 (14.0)	23.2 (14.4)

SIZE OF SCREWS USED IN SERVICE CENTER

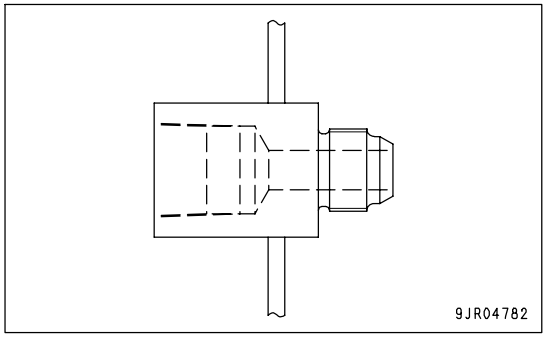
SIZE OF SCREWS USED AT PORTIONS FOR FILLING WITH OIL AND COOLANT AND DRAINING

The size of screws used at the connecting aperture to fill with oil and coolant and drain them is as shown below. Prepare for a connecting hose mouthpiece that fits each specific screw.

(1) Filling brake cooling oil tank with oil and draining
(2) Filling brake oil tank with oil and draining
(3) Filling hydraulic tank with hydraulic oil and draining
(4) Filling engine oil pan with engine oil and draining
(11) Filling auto grease tank with grease
(12) Filling radiator with coolant and draining
(13) Filling torque converter cooler with water and draining
(14) Filling transmission with oil and draining



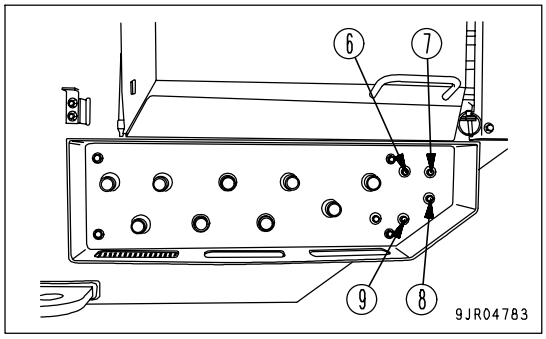
Size of connecting aperture: 3/4 - 14 NPTF



SIZE OF SCREWS FOR OIL SAMPLING AND INTERNAL PRESSURE RELEASING PORTIONS

The size of screws used at the portions of oil sampling and internal pressure releasing is as shown below. Prepare for a connecting hose mouthpiece that fits each specific screw.

(6) Taking a sample of transmission oil
(7) Releasing remaining internal pressure in hydraulic tank
(8) Taking a sample of hydraulic oil
(9) Taking a sample of brake oil



Size of connecting aperture: 3/4 - 18 NPTF