

Operation & Maintenance Manual

BULLDOZER

D475A-5E0

SERIAL NUMBERS 30126 and up

⚠ WARNING

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

NOTICE

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

KOMATSU

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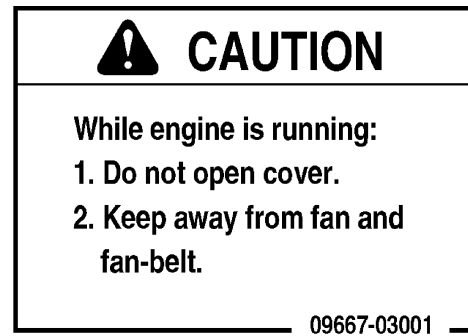


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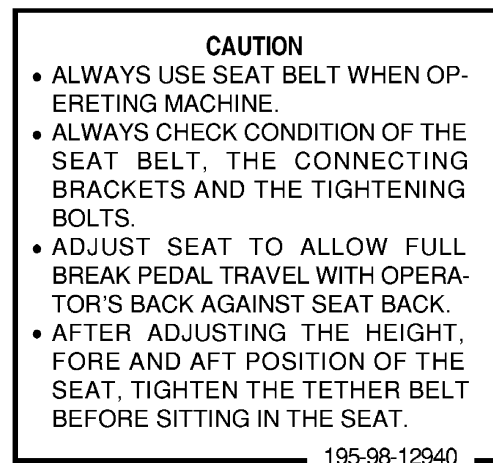
(8) Caution for engine running (09667-03001)



(9) Caution for handling accumulator (09659-53000)



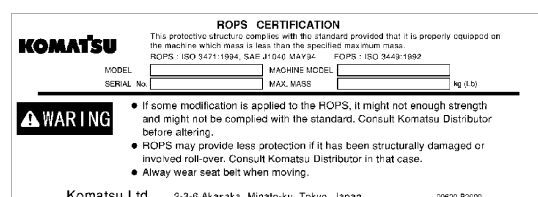
(10) Caution for use of seat belt (195-98-12940)



(11) Caution for approach when machine moving (09812-03000)



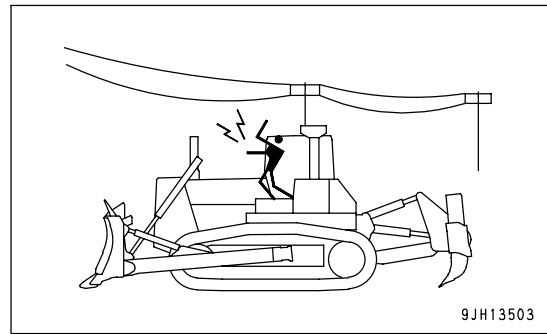
(12) Caution for ROPS (09620-B2000)



DO NOT GO CLOSE TO HIGH-VOLTAGE CABLES

Do not travel or operate the machine near electric cables. There is a hazard of electric shock, which may cause serious personal injury or death. On jobsites where the machine may go close to electric cables, always do as follows.

- Before starting work near electric cables, inform the local power company of the work to be performed, and ask them to take the necessary action.



- Even going close to high-voltage cables can cause electric shock, which may cause serious burns or even death. Always maintain a safe distance (see the table on the right) between the machine and the electric cable. Check with the local power company about safe operating procedure before starting operations.
 - To prepare for any possible emergencies, wear rubber shoes and gloves. Lay a rubber sheet on top of the seat, and be careful not to touch the chassis with any exposed part of your body.
 - Use a signalman to give warning if the machine approaches too close to the electric cables.
 - When carrying out operations near high voltage cables, do not let anyone near the machine.
 - If the machine should come too close or touch the electric cable, to prevent electric shock, the operator should not leave the operator's compartment until it has been confirmed that the electricity has been shut off.
- Also, do not let anyone near the machine.

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

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.

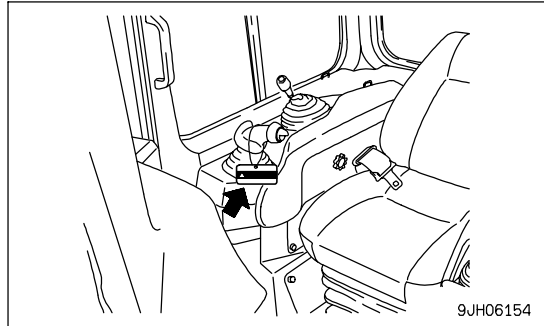
- Position a signalman if there are areas where the visibility is not good.
- Only one signalman should give signals.
- When working in dark places, turn on the working lamp and front lamps installed to the machine, and set up additional lighting in the work area if necessary.
- Stop operations if the 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.

PRECAUTIONS FOR MAINTENANCE

PRECAUTIONS BEFORE STARTING INSPECTION AND MAINTENANCE

DISPLAY WARNING TAG DURING INSPECTION AND MAINTENANCE

When carrying out inspection or maintenance, always attach the "DANGER! Do NOT operate!" warning tag to the work equipment control lever in the operator's cab to alert others that you are working on the machine. If there is any "DANGER! Do NOT operate!" warning tag displayed, it means that someone is carrying out inspection and maintenance of the machine. If the warning sign is ignored and the machine is operated, there is danger that the person carrying out inspection or maintenance may be caught in the rotating parts or moving parts and suffer serious personal injury or death. Do not start the engine or do not touch the levers.

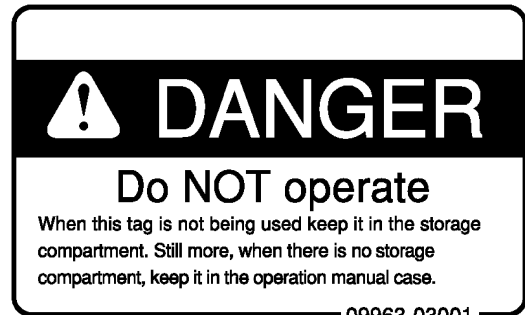


- If necessary, put up signs around the machine also.

Warning tag part number: 09963-03001

When not using this warning tag, keep it in the toolbox.

If there is no toolbox, keep it in the pocket for the Operation and Maintenance Manual



KEEP WORKPLACE CLEAN AND TIDY

Do not leave hammers or other tools lying around in the work place. Wipe up all grease, oil, or other substances that will cause you to slip. Always keep the work place clean the tidy to enable you to carry out operations safely. If the work place is not kept clean and tidy, there is the danger that you will trip, slip, or fall over and injure yourself.

SELECT SUITABLE PLACE FOR INSPECTION AND MAINTENANCE

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

ONLY AUTHORIZED PERSONNEL

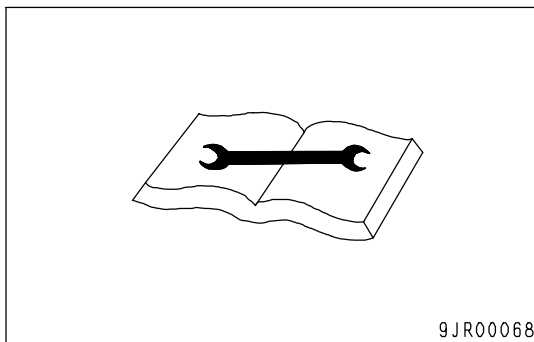
Do not allow any unauthorized personnel into the area when servicing the machine. If necessary, employ a guard.

APPOINT LEADER WHEN WORKING WITH OTHERS

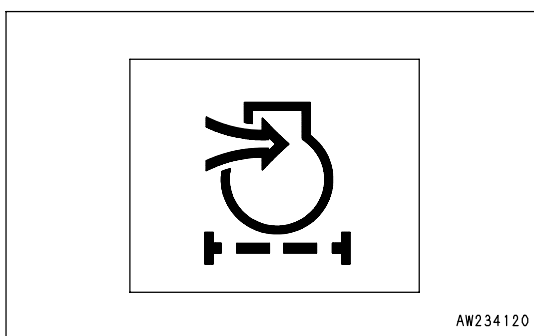
When repairing the machine or when removing and installing the work equipment, appoint a leader and follow his instructions during the operation.

MAINTENANCE CAUTION LAMP

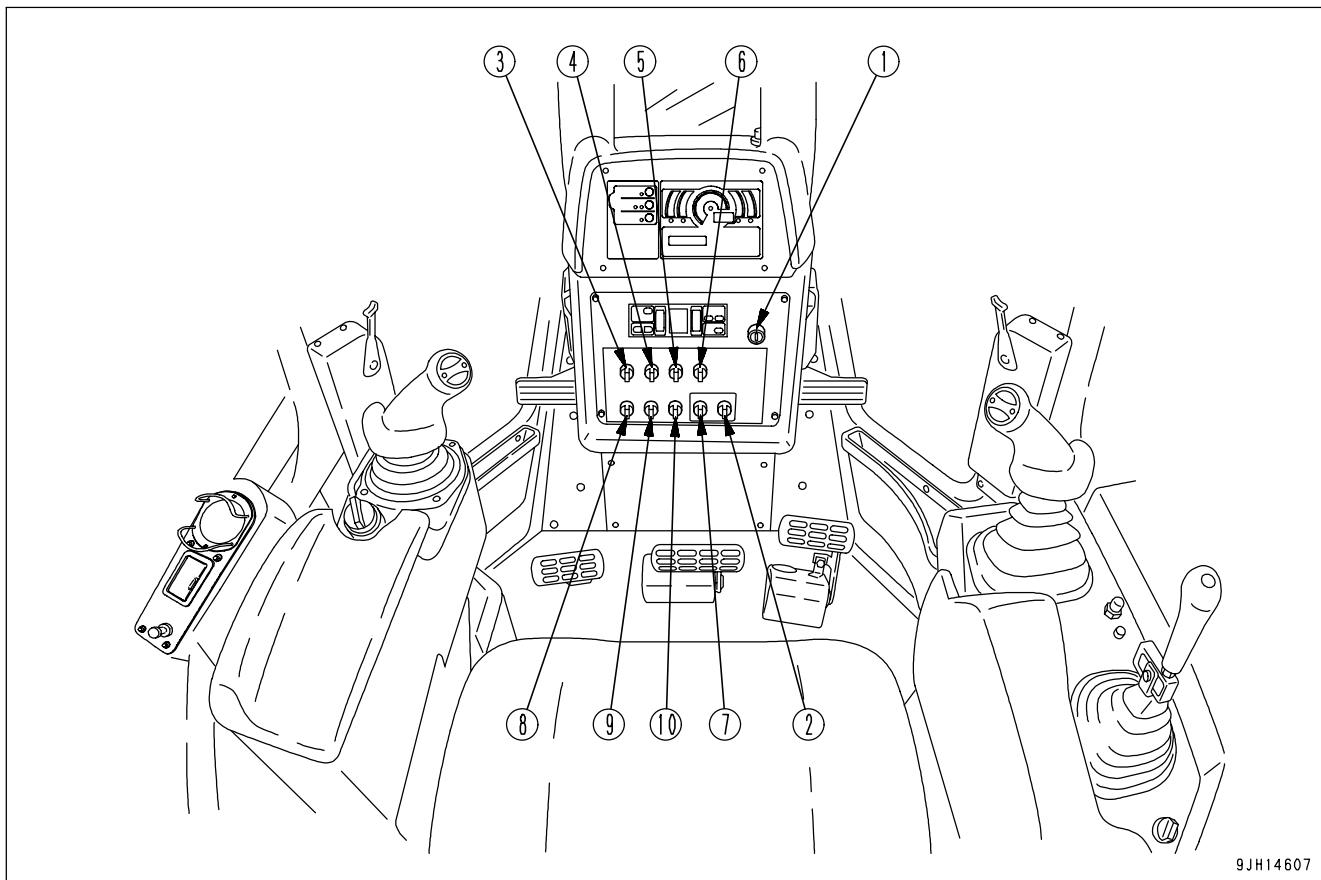
Lamp (2) lights up when the filter or oil change interval has been reached. DISPLAY PANEL B (Multi-information) (PAGE 3-17) to the maintenance mode and check or replace the applicable filter or oil.

**AIR CLEANER CLOGGING CAUTION LAMP**

Lamp (3) warns operator that the air cleaner is clogged. If it flashes, stop the engine, check and clean the air cleaner.



SWITCHES



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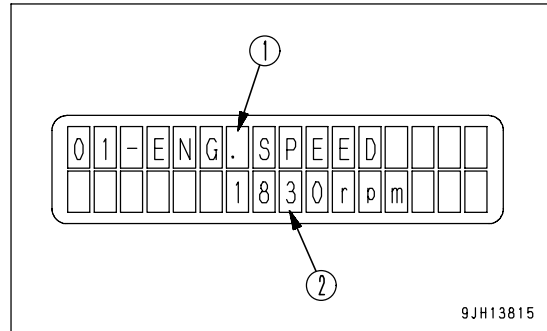
- | | |
|------------------------------------|--|
| (1) Starting switch | (6) Auto shift down switch |
| (2) Buzzer cancel switch | (7) Information switch |
| (3) Front lamp/working lamp switch | (8) Extra strong wind flow switch |
| (4) Rear lamp switch | (9) Additional heater switch (if equipped) |
| (5) Fan rotation selector switch | (10) Working lamp switch inside engine room
(if equipped) |

METHOD OF USING PM CLINIC AUXILIARY MODE

CAUTION

When moving the work equipment or setting the transmission to the travel position for carrying out measurements, check carefully that the situation is safe.

The PM clinic auxiliary mode displays the engine speed, hydraulic oil pressure, and other items on display panel B. Display panel B displays the item on the top line (1), and the measured value on the bottom line (2).



The display items consist of the 11 items in the table below. The items can be selected by operating the information switch (<, >).

Display	Item	Measured value
01-ENG.SPEED	Engine speed	Speed (rpm)
02-COOLANT TEMP	Engine coolant temperature	temperature (°C)
03-ENG OIL PRESS	Engine oil pressure	Pressure (kPa)
04-AMB PRESS	Ambient pressure	Pressure (kPa)
05-BOOST PRESS	Engine boost pressure	Pressure (kPa)
06-BOOST TEMP	Engine boost temperature	temperature (°C)
07-T/C TEMP	Torque converter oil temperature	temperature (°C)
08-HYD TEMP	Hydraulic oil temperature	temperature (°C)
09-HYD.PUMN PRES F	Hydraulic oil pressure (F pump)	Pressure (MPa)
10-HYD.PUMP PRES R	Hydraulic oil pressure (R pump)	Pressure (MPa)
13-BATTERY VOLT	Battery voltage	Voltage (mV)

REMARK

- Items such as the engine speed fluctuate and are difficult to see during the measurement. In such cases, operate the buzzer cancel switch to ◇. This makes it possible to hold the display of the value.
- To cancel this mode, operate the buzzer cancel switch again to ◇.
- To return to the function selection mode, operate the buzzer cancel switch to □.

ENGINE EMERGENCY STOP SWITCH

(Mining specification, if equipped)

Use this switch (8) to stop the engine.

(A) position: Engine stopped

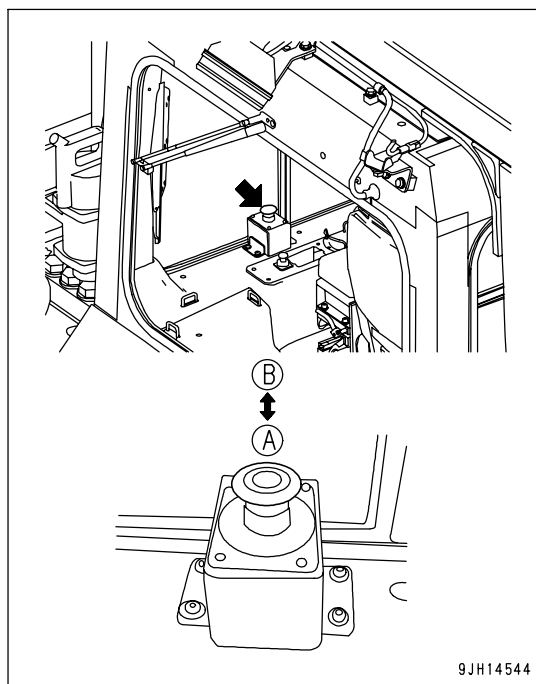
(B) position: Possible to start engine

REMARK

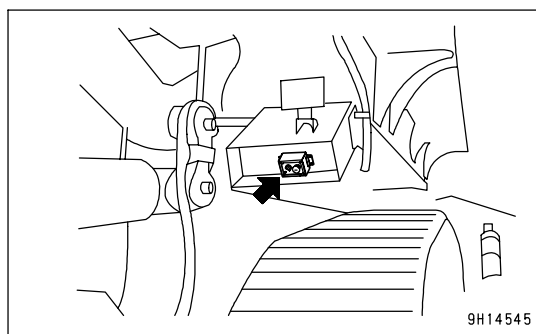
- Both of these switches must be at the (B) position when starting the engine. If they are not at the (B) position, the engine will not start.

When the switch is pressed again, it will return to the (B) position.

- When the engine starting switch is in the engine stop position (A), a sign of STP is shown in the multi-information display. (Ordinary display)

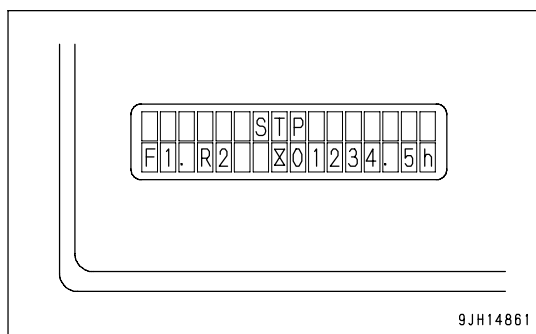


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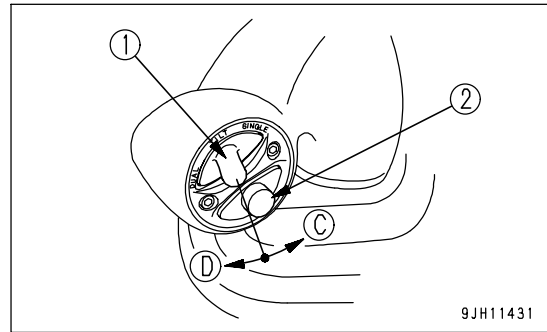
(Ordinary Display)



9JH14861

- Dual tilt operation

Operate the tilt switch (1) to the (D) position.

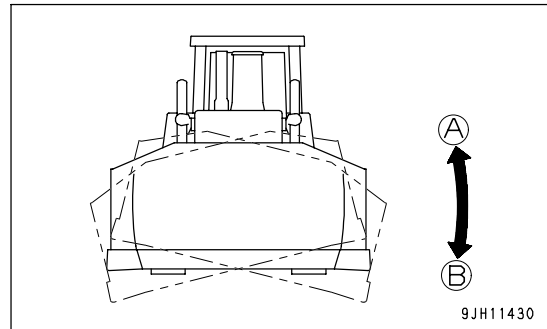


(A) RIGHT TILT

(B) LEFT TILT

REMARK

- With the dual tilt operation, a larger amount of tilt can be obtained than with the single tilt operation.
- With the tilt operation, the blade can be operated to RAISE, HOLD, or LOWER.



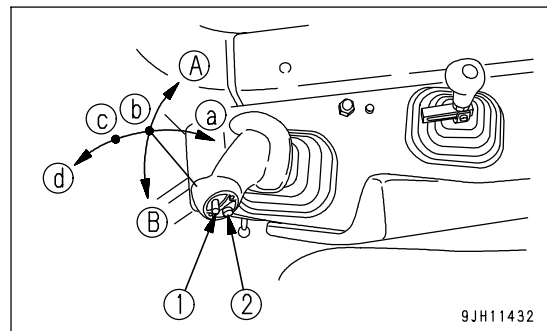
- Pitch control

Rear pitch (R)(cutting angle reduced)

Carry out operation (B) with the pitch button (2) pressed.

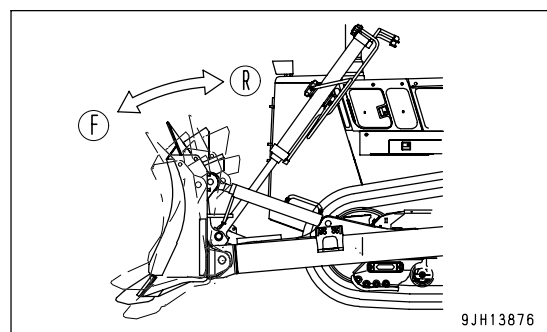
Forward pitch (F)(cutting angle increased)

Carry out operation (A) with the pitch button (2) pressed.



REMARK

- With the pitch operation, the blade can be operated to any of RAISE, HOLD, or LOWER.
- For details of the effective use of the dual tilt/dozer, see "EFFECTIVE METHOD OF OPERATION FOR DUAL TILTDOZER (PAGE 6-5)".
- To operate the pitch, keep the pitch button pressed and operate the blade control lever to the left or right to start the operation.
- The pitch is the priority circuit, so if the pitch button is pressed during tilt operation, the pitch will be actuated.



CAP WITH LOCK

Lock-type caps are available for the radiator water filler, power train case oil filler cap, and hydraulic tank oil filler cap. For details of the locations of the caps with locks, see "LOCKING (PAGE 3-140)".

OPENING AND CLOSING CAP WITH LOCK

Use the starting switch key to open and close the locks on the caps except fuel tank cap. The method of opening or closing the locks on the caps are as follows.

OPENING THE COVER

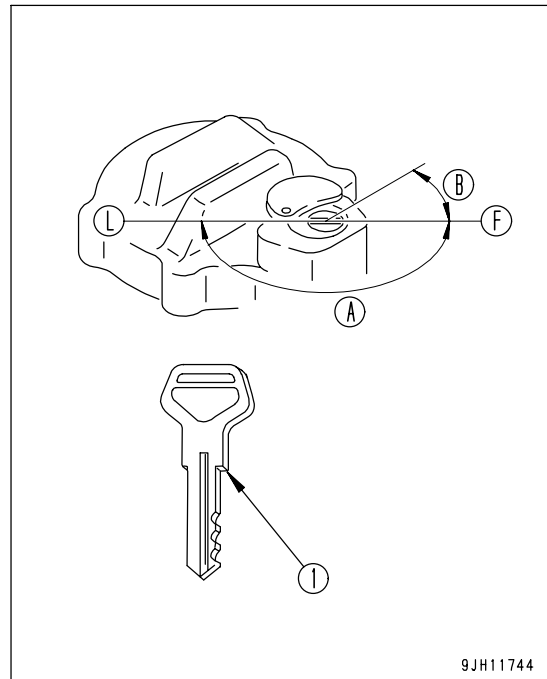
1. Insert the key. Make sure that you have inserted the key fully (1) before turning it. If the key is turned when only partially inserted, it may break.

(L) : Lock position

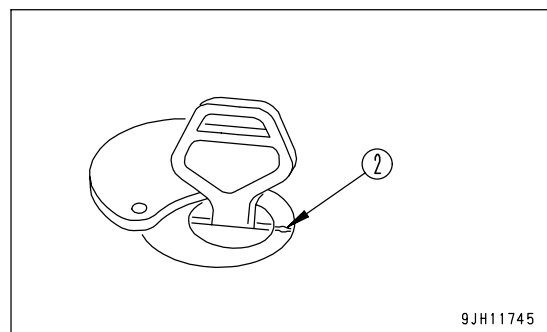
(F) : Open position

(A) : working angle of key 180°

(B) : 45°



2. Turn the key counterclockwise to align the match mark (2) on the cap with the rotor groove, then turn the cap slowly. When a click is heard, the lock is released, enabling the cap to be opened.



LOCKING THE COVER

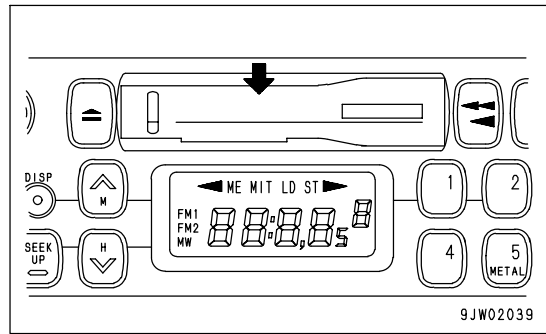
1. Turn the cap into place.
2. Turn the key clockwise and take the key out.

LISTENING TO CASSETTE TAPE

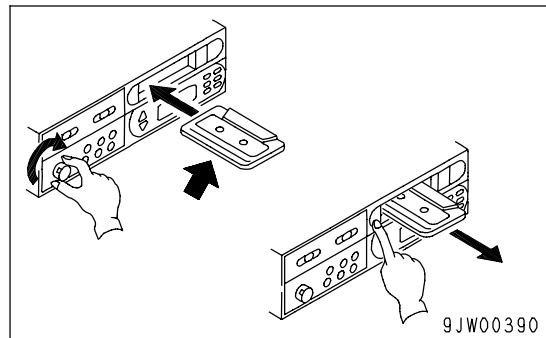
- 1. Turn the starting switch ON, then turn power switch (1) ON.
- 2. Set the cassette with the exposed portion of the tape on the right side and push it past the cassette door. The tape will automatically start playing.

If the arrow indicating the direction of play is pointing to the right, the top side is being played; if the arrow is pointing to the left, the bottom side is being played.

When the tape reaches the end, it is automatically reversed and the other side starts to play.



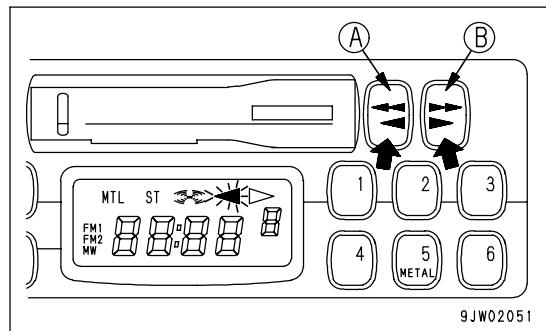
- 3. When finished with the tape, press the cassette eject button to eject the tape and automatically switch to the radio.



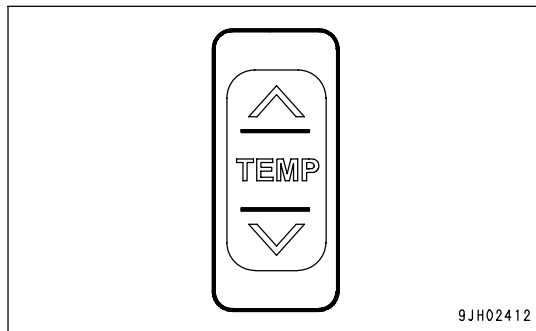
REVERSING TAPE

When listening to the tape, press both FAST FORWARD, REWIND buttons (A) and (B) at the same time lightly.

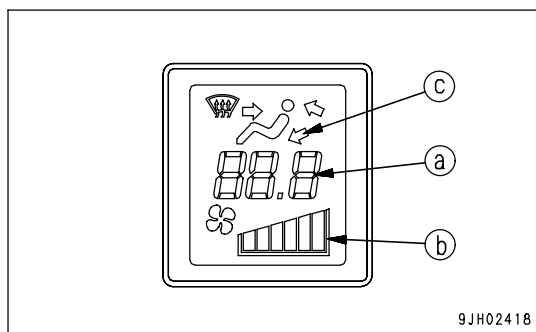
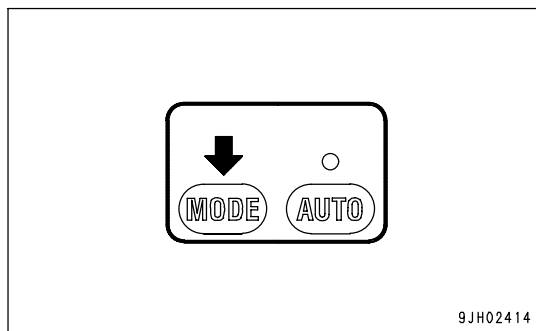
When this is done, the tape direction display will be reversed.



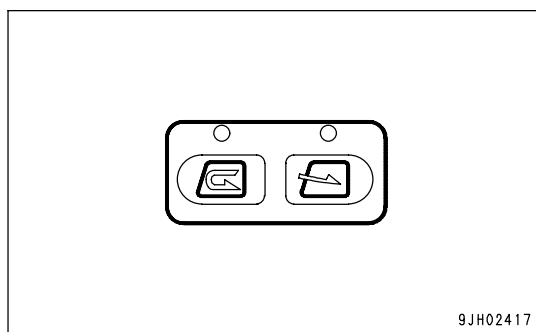
3. Press temperature setting switch (3) and adjust temperature inside the cab.



4. Press vent selector switch (4) and select the desired vents. When this is done, the display for vent (c) of the display monitor changes according to the selection.



5. Press RECIRC/FRESH selector switch (6) and select recirculation of the air inside the cab (RECIRC) or intake of fresh air from outside (FRESH).



8. Check for damage to gauges, lamps on the instrument panel, and loose bolts

Check for damage to the panel, gauges, and lamps. Replace any damaged parts. Clean off any dirt on the surface.

9. Check and cleaning of the rear view mirrors

Check the rear view mirrors for breakage, and replace any broken one. Clean the surface of each mirror and adjust the angle so that the rear view can be seen clearly from the operator's platform.

10. Seat belt and mounting clamps

Check for damage or wear to the seat belt and mounting clamps. If there is any damage, replace with new parts.

CHECK ELECTRIC WIRING

! WARNING

- If fuses are frequently blown or if there is a short circuit in the electrical wiring, locate the cause and repair or contact your Komatsu distributor.
- Accumulation of flammable material (dead leaves, twigs, grass, etc.) around the battery may cause fire, so always check and remove such material.
- Keep the top surface of the battery clean and check the breather hole in the battery cap. If it is clogged with dirt or dust, wash the battery cap to clear the breather hole.

Check for damage and wrong capacity of the fuse and any sign of disconnection or short circuit in the electric wiring. Check also for loose terminals and tighten any loose parts.

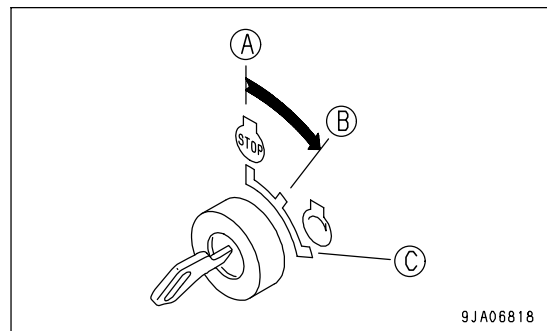
Check the wiring of the "battery", "starting motor" and "alternator" carefully in particular.

Always check if there is any accumulation of flammable material around the battery, and remove such flammable material.

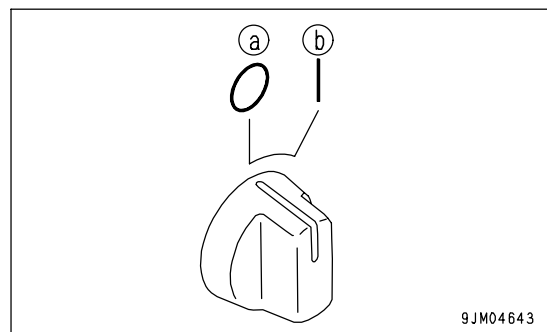
Please contact your Komatsu distributor for investigation and correction of the cause.

CHECK THAT LAMPS LIGHT UP

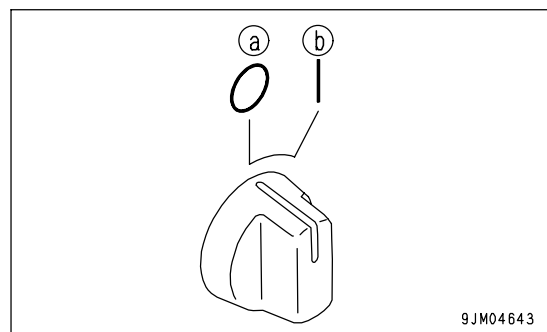
1. Turn starting switch (1) to the ON position (B).



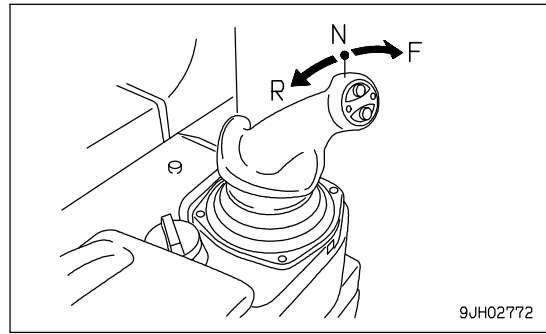
2. Turn the front lamp and working lamp switch to the ON position and check that the front lamps and working lamp light up.



3. Turn the rear lamp switch to the ON position and check that the rear lamps on the left and right fenders light up. If the lamps do not light, check for a broken bulb or disconnected wire, contact your Komatsu distributor for repairs.



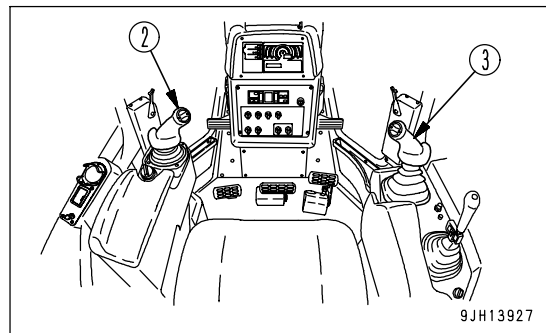
2. Check that joystick (2) is in the N (neutral) position.



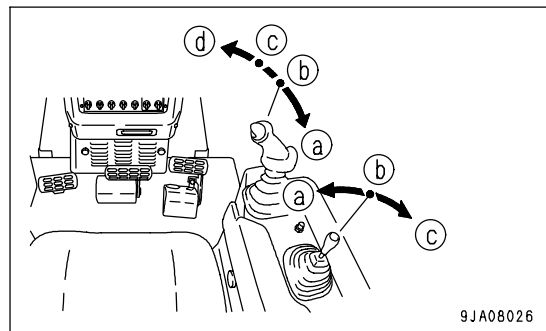
REMARK

The engine cannot be started if joystick (steering, directional, and gearshift lever) (2) is not in the N position. If joystick (steering, directional, and gearshift lever) (2) is in F or R, the letter P on display panel A will flash.

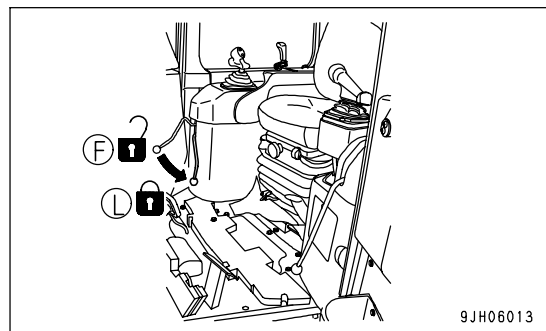
3. Lower the blade to the ground to check that blade control lever (3) is in HOLD position (b).



4. Check that the ripper is lowered to the ground.



5. Check that the work equipment lock lever (4) is LOCK position (L).



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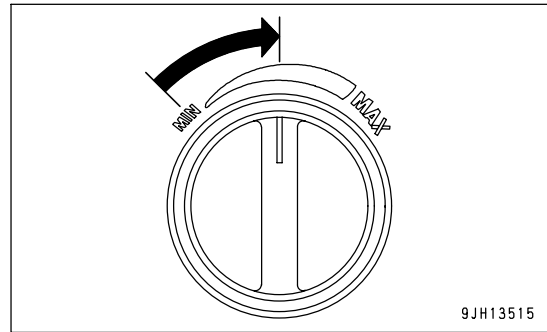
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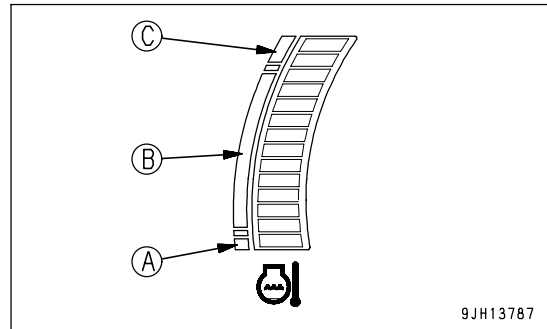
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1. Turn fuel control dial (1) to the center position between low idling (MIN) and high idling (MAX) positions and run the engine at a mid-range speed for 5 minutes under no load.



2. After warm-up is completed, check gauges and caution lamps for proper operation. If any problem is found, repair it. Continue to run the engine under a light load until engine coolant temperature gauge indicator (2) is within the green range (B).

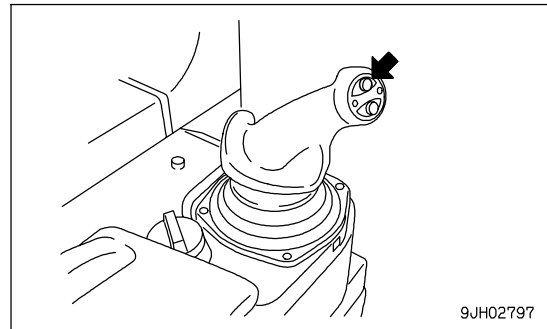
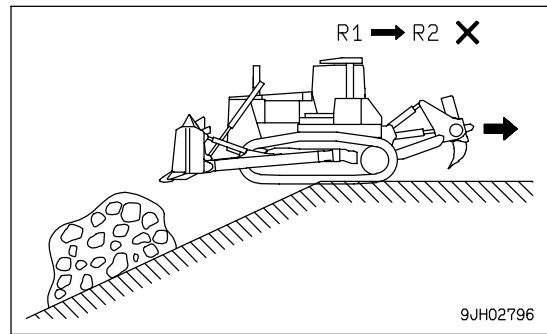
- (A): White range
- (B): Green range
- (C): Red range



3. Check for abnormal exhaust gas color, noise, or vibration. If any problem is found, contact your Komatsu distributor.

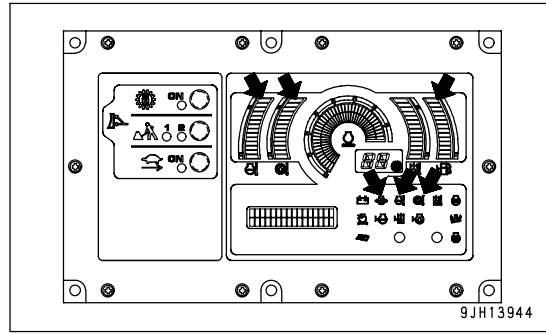
REMARK

- For safety reasons, during auto shift down, the transmission is prevented from shifting up.
- If it is desired to shift up, use manual control and press the UP button on the steering, directional, and gearshift lever.



CHECK AFTER FINISHING WORK

Use the meters and caution lamps to check the engine coolant temperature, engine oil pressure, fuel, and power train oil temperature.

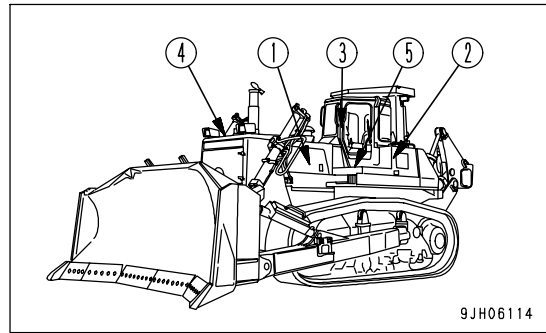


LOCKING

Places that can be locked with the starting switch key.

To prevent vandalism, there are locks in the following places.

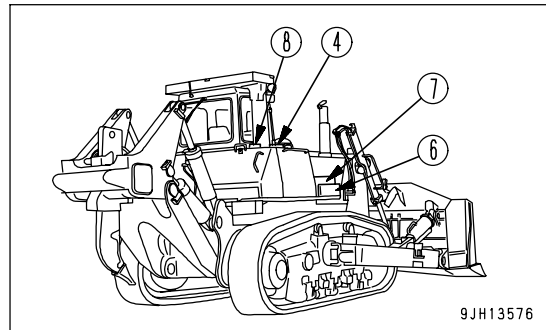
- Left-and-right engine side covers (1)
(left side: 2 places, right side: 2 places)
- Fresh air filter inspection cover (left) (2)
- Cab door opener (3)
- Lock-type caps (4)
 - Radiator cap
 - Hydraulic tank cap
 - Power train oil filler pipe cap
- Battery inspection cover(5), (6)
- Tool box inspection cover (2)



REMARK

It is possible to fit commercially available locks to the following place.

- Power train central pressure inspection, power train oil level inspection cover (7)

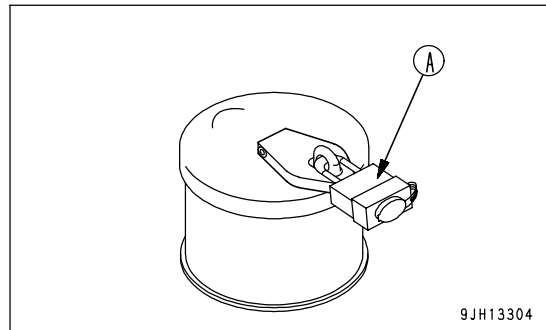


Padlock

- Fuel tank cap (8)

REMARK

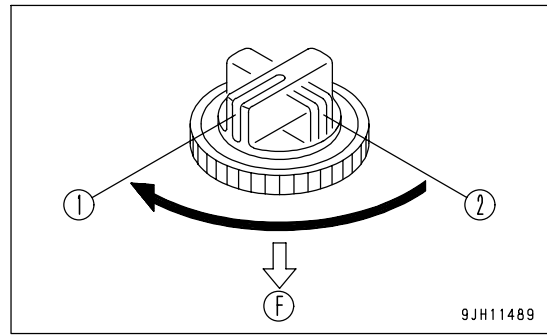
If the padlock (A) is to be used, it is recommended to use the type that has the cover to protect the key hole.



METHOD OF OPERATING PIN PULLER

(Machines equipped with giant-shank ripper)

- 1. Stop the machine in a safe place and lower the shank to the ground.
- 2. Operate the pin puller controller switch to the "PULL OUT" position (1) and remove the mounting pin.

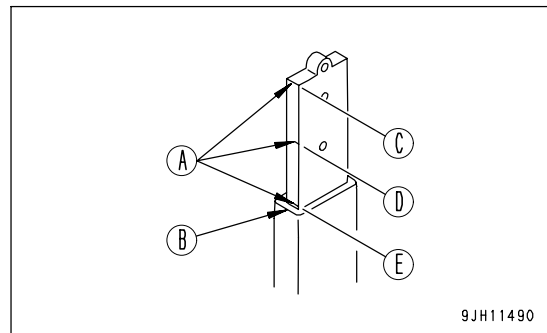


(F)Front of the machine

- 3. Move the ripper up or down to set to the desired shank position.

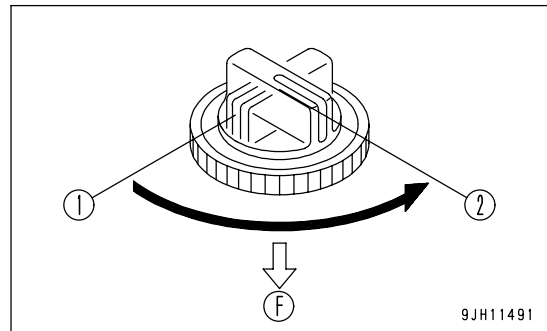
REMARK

Align mark of ripper (A) with top surface of holder (B).



- (C)Depth Max.
- (D)Depth intermediate
- (E)Depth min.

- 4. Operate the pin puller control switch to insert the mounting pin. If the pin does not match the position of the hole in the shank, set the pin puller control switch to the "PUSH IN" position (2) and slowly move the ripper up or down.



(F)Front of the machine

REMARK

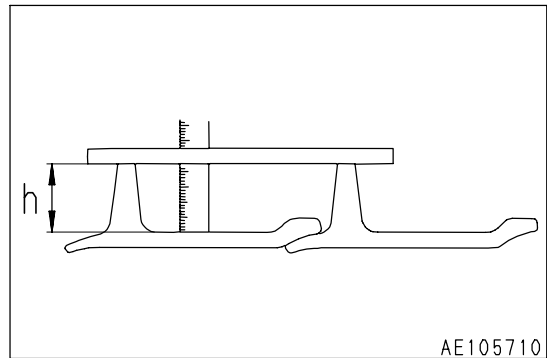
When raising the pin position to increase the digging depth, use a long protector to prevent wear of the shank.

MEASURING HEIGHT OF GROUSER

- After taking up slack in track shoes, measure height at center of shoe as shown below.

Standard height (h): 105 mm (4.1 in)

Repair limit (h): 35 mm (1.4 in)

**MEASURING OUTSIDE DIAMETER OF TRACK ROLLER**

1. Measure the outside diameter of the tread (dimension A).

(1) Double flange roller

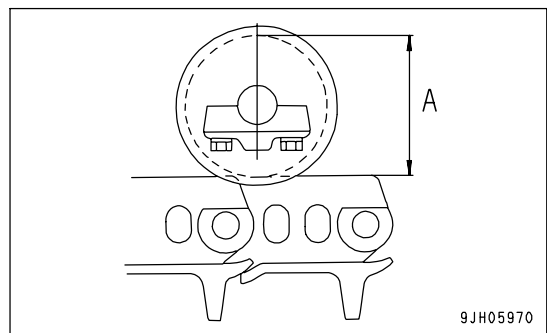
Standard dimension (A): 300 mm (11.8 in)

Repair limit (A): 246 mm (9.7 in)

(2) Single flange roller

Standard dimension (A): 300 mm (11.8 in)

Repair limit (A): 230 mm (9.1 in)



INSTALLATION OF ROPS

Tighten the bolts securely to the following torque.

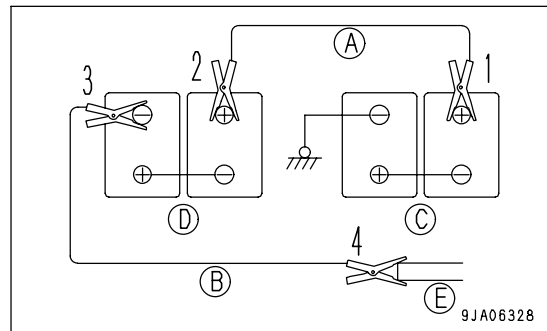
- All 16 bolts: 1960 to 2450 Nm (200 to 250 kgm, 1447 to 1808 lbft)

CONNECTING THE BOOSTER CABLES

Keep the starting switch of the normal machine and problem machine in the OFF position.

Connect the booster cable as follows, in the order of the numbers marked in the diagram.

1. Connect the clip of booster cable (A) to the positive (+) terminal of battery (C) on the problem machine.
2. Connect the clip at the other end of booster cable (A) to the positive (+) terminal of battery (D) on the normal machine.
3. Connect the clip of booster cable (B) to the negative (-) terminal of battery (D) on the normal machine.
4. If the machine is equipped with a battery isolator switch, turn the battery isolator switch on the problem machine to the ON position.
5. Connect the clip at the other end of booster cable (B) to engine block (E) on the problem machine.



STARTING THE ENGINE



WARNING

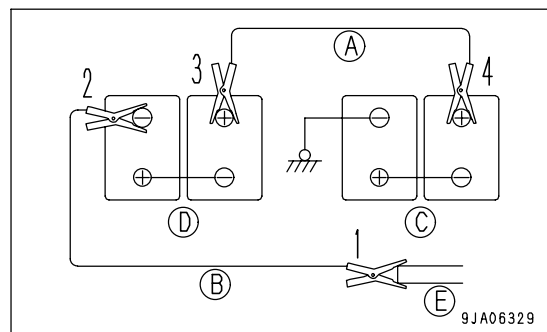
Always check that the work equipment lock lever and Parking brake lever is set to the LOCK position, regardless of whether the machine is working normally or has failed. Check also that all the control levers are in the HOLD or NEUTRAL position.

1. Make sure the clips are firmly connected to the battery terminals.
2. Start engine of the normal machine and run it at high idle speed.
3. Turn the starting switch of the problem machine to the START position and start the engine.
If the engine doesn't start at first, try again after 2 minutes or so.

DISCONNECTING THE BOOSTER CABLES

After the engine has started, disconnect the booster cables in the reverse of the order in which they were connected.

1. Remove the clip of booster cable (B) from engine block (E) on the problem machine.
2. Remove the clip of booster cable (B) from the negative (-) terminal of battery (D) on the normal machine.
3. Remove the clip of booster cable (A) from the positive (+) terminal of battery (D) on the normal machine.
4. Remove the clip of booster cable (A) from the positive (+) terminal of battery (C) on the problem machine.



GUIDES TO MAINTENANCE

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

CHECK SERVICE METER:

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

KOMATSU GENUINE REPLACEMENT PARTS:

Use Komatsu genuine parts specified in the Parts Book as replacement parts.

KOMATSU GENUINE OILS:

For lubrication of the machine, use the Komatsu genuine lubricants. Moreover use oil of the specified viscosity according to the ambient temperature.

ALWAYS USE CLEAN WASHER FLUID:

Use automobile window washer fluid, and be careful not to let any dirt get into it.

CLEAN OIL AND GREASE:

Use clean oil and grease. Also, keep the containers of the oil and grease clean. Keep foreign materials away from oil and grease.

CHECK FOREIGN MATERIAL IN DRAINED OIL:

After oil is changed or filters are replaced, check the old oil and filters for metal particles and foreign materials. If large quantity of metal particles or foreign materials are found, always report to the person in charge, and carry out suitable action.

FUEL STRAINER:

If your machine is equipped with a fuel strainer, do not remove it while fueling.

WELDING INSTRUCTIONS:

- Cut off power. Wait for approx. one minute after turning off the engine starting switch key, and then disconnect the negative (-) terminal of the battery.
- Do not apply more than 200 V continuously.
- Connect grounding cable within 1 m (3.3 ft) of the area to be welded. If grounding cable is connected near instruments, connectors, etc., the instruments may malfunction.
- If a seal or bearing happens to come between the part being welded and grounding point, change the grounding point to avoid such parts.
- Do not use the area around the work equipment pins or the hydraulic cylinders as the grounding point.

OBJECTS IN YOUR POCKETS:

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

RECOMMENDED FUEL, COOLANT, AND LUBRICANT

- Komatsu genuine oils are adjusted to maintain the reliability and durability of Komatsu construction equipment and components.

In order to keep your machine in the best conditioner for long periods of time, it is essential to follow the instructions in this Operation and Maintenance Manual.

- Failure to follow these recommendations may result in shortened life or excess wear of the engine, power train, cooling system, and/or other components.
- Commercially available lubricant additives may be good for the machine, but they may also cause harm. Komatsu does not recommend any commercially available lubricant additive.
- Use the oil recommended according to the ambient temperature in the chart below.
- Specified capacity means the total amount of oil including the oil in the tank and the piping. Refill capacity means the amount of oil needed to refill the system during inspection and maintenance.
- When starting the engine in temperatures below 0°C (32°F), be sure to use the recommended multi-grade oil, even if the ambient temperature may become higher during the course of the day.
- If the machine is operated at a temperature below -20°C (-4°F), a separate device is needed, so consult your Komatsu distributor.
- When the fuel sulfur content is less than 0.2%, change the engine oil according to the period inspection table given in this Operation and Maintenance Manual.

If the fuel sulfur content is more than 0.2%, change the oil according to the following table.

Sulfur content (%)	Oil change interval
Less than 0.2 %	500 hours
0.2 to 0.5 %	250 hours
0.5 and up	Not recommendable (*)

* If these fuels are used, there is danger that serious trouble may occur because of early deterioration of the engine oil or early wear of the internal parts of the engine. If the local situation makes it necessary to use these fuels, always remember the following.

- 1) Be sure to check Total Basic Number (TBN) of oil frequently by TBN handy checker etc., and change oil based on the result.
- 2) Always be aware that oil change interval is extremely shorter than standard.
- 3) Be sure to carry out periodic engine inspection by distributor's expert since change interval of periodic replacement parts and overhaul interval are also shorter.

WHEN REQUIRED

CLEAN INSIDE OF COOLING SYSTEM



WARNING

- Immediately after the engine is stopped, the coolant is at a high temperature and the radiator is under high internal pressure. If the cap is removed to drain the coolant in this condition, there is a hazard of burns. Wait for the temperature to go down, then turn the cap slowly to release the pressure before removing it.
- Cleaning is carried out with the engine running. When standing up or leaving the operator's seat, set the work equipment lock lever and the parking brake lever to the LOCK position.
- For details of starting the engine, see "CHECK BEFORE STARTING ENGINE, ADJUST (PAGE 3-89)" and "STARTING ENGINE (PAGE 3-111)" in the OPERATION section.
- Never enter front the machine when the engine is running.
There is danger of touching the fan.

Stop the machine on level ground when cleaning or changing the coolant.

Clean the inside of the cooling system, change the coolant according to the table below.

Antifreeze coolant	Interval for cleaning inside of cooling system and changing antifreeze coolant
Komatsu supercoolant (AF-NAC)	Every two years or every 4000 hours whichever comes first
Permanent type antifreeze (All-season type, *)	Every year (autumn) or every 2000 hours whichever comes first

*: Permanent type antifreeze shall meet the requirements of ASTM D3306-03.

The coolant has the important function of preventing corrosion as well as preventing freezing.

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.

To maintain the anticorrosion properties of Supercoolant (AF-NAC), always keep the density of Supercoolant between 30% and 68%.

Supercoolant (AF-NAC) is already diluted with distilled water. When using coolant, investigate the lowest temperatures in the past and decide the density for the coolant from the coolant density table below.

When actually deciding the density for the coolant, set it for a temperature 10°C (18°F) below the actual temperature.

The coolant density varies according to the ambient temperature, but it must always be a minimum of 30%.

Coolant density table

Minimum Temp	°C	Above -10	-15	-20	-25	-30	-35	-40	-45	-50
	°F	Above 14	5	-4	-13	-22	-31	-40	-49	-58
Concentration (%)		30	36	41	46	50	54	58	61	64

WHEN LOOSENING TENSION

**WARNING**

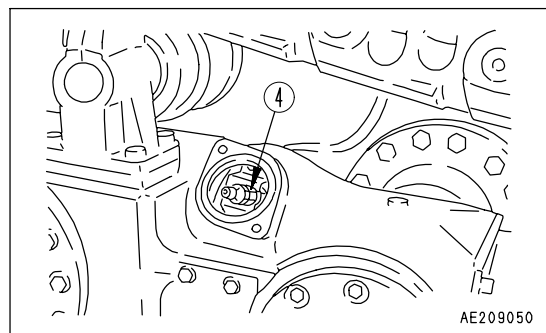
It is extremely dangerous to release the grease by any method except the procedure given below.
If track tension is not relieved by this procedure, contact your Komatsu distributor for repairs.

1. Remove both bolts (1), then remove cover (2).

NOTICE

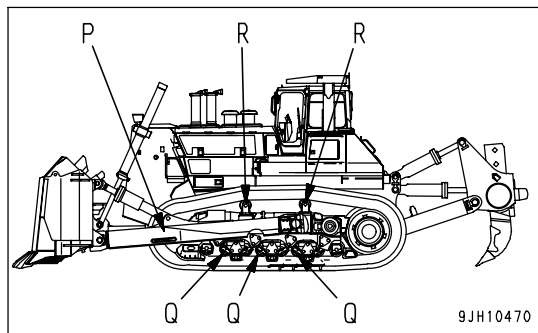
- When removing cover (2), be careful not to let any dirt get inside.
- There is a safety label stuck to the back of cover (2). Be careful not to damage the safety label.

2. Loosen plug (4) gradually to release the grease.
3. Turn plug (4) a maximum of one turn.
4. If the grease does not come out smoothly, move the machine backwards and forwards a short distance.
5. Tighten plug (4).
6. To check that the correct tension has been achieved, move the machine backwards and forwards.
7. Check the track tension again, and if the tension is not correct, adjust it again.

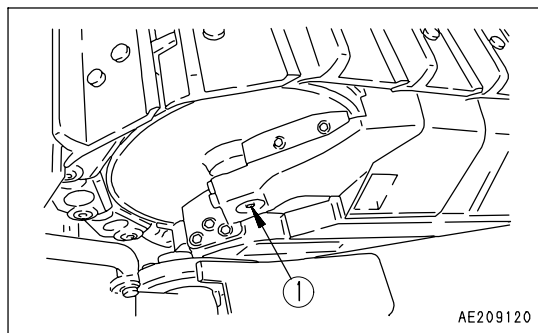


CHECK UNDERCARRIAGE OIL

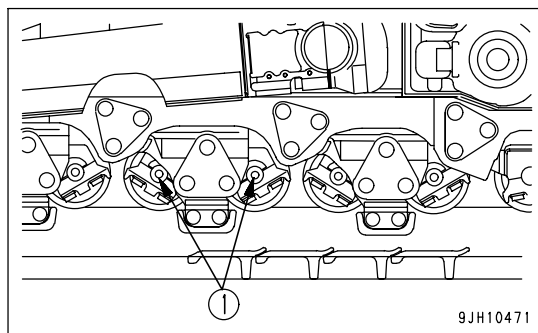
Stop the machine on level ground, and check for any reduction in the oil at the idler (portion P), track roller (portion Q), and carrier roller (portion R).



1. Loosen seal bolt (1) slowly and check if oil oozes out from the thread. If oil oozes out, the oil level has not gone down, so tighten the bolt.

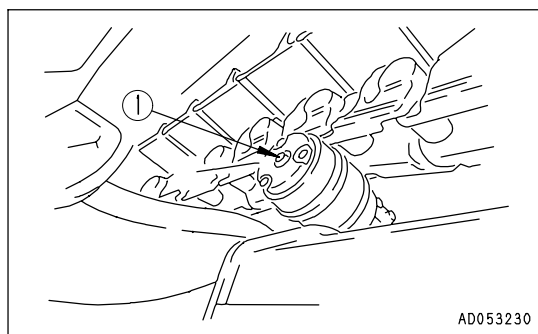


2. If no oil comes out even when seal bolt is removed, the oil level is low. Contact your Komatsu distributor for repairs.

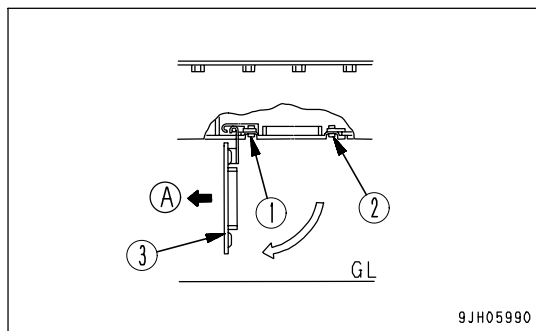


REMARK

Bogie shaft seal bolt (1) is located on both the inside and outside.



(A) Right of machine



9JH05990

EVERY 500 HOURS SERVICE

Maintenance for every 250 hours should be performed at the same time.

CHANGE OIL IN ENGINE OIL PAN, REPLACE ENGINE OIL FILTER CARTRIDGE



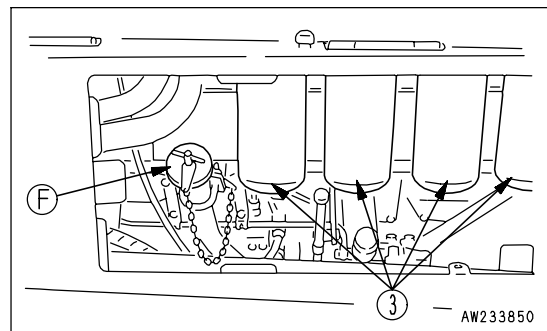
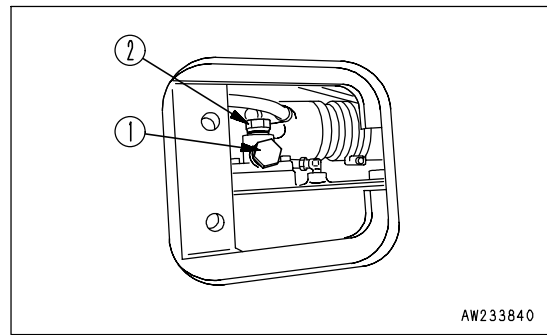
WARNING

The oil is at high temperature after the engine has been operated, so never change the oil immediately after finishing operations. Wait for the oil to cool down before changing it.

NOTICE

If fuel has a high sulphuric content, shorten the replacement interval of engine oil. For more details, see "RECOMMENDED FUEL, COOLANT, AND LUBRICANT (PAGE 4-12)".

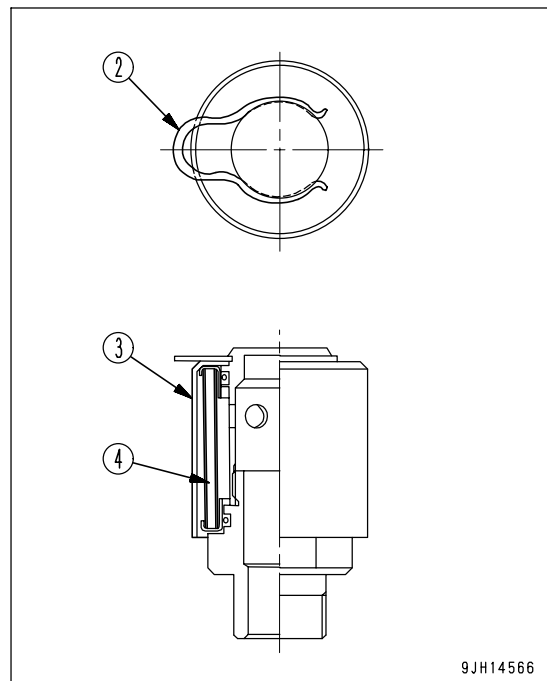
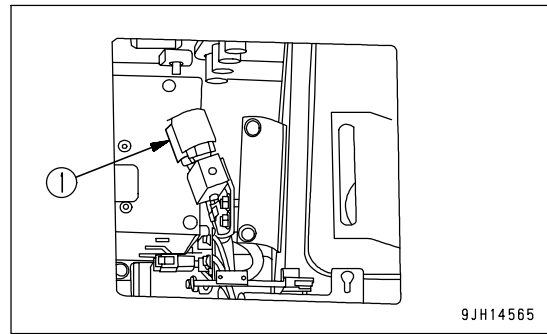
- Use a venturi component type for the engine oil filter.
 - Refill capacity: 121 liters (31.97 US gal)
 - Prepare a socket wrench and filter wrench.
1. Open cover under the chassis. Set a container to catch oil under drain valve (2).
 2. Remove drain plug (1) and slowly open drain valve (2), and drain the oil.
Take care not to open drain valve (2) so much that the stopper pin in the valve is distorted.
Tightening torque for drain plug (1): $68.6 \pm 9.81 \text{ Nm}$
($7 \pm 1 \text{ kgm}$, $50.6 \pm 7.2 \text{ lbft}$)
Tightening torque for drain valve (2): $63.7 \pm 14.7 \text{ Nm}$ ($6.5 \pm 1.5 \text{ kgm}$, $47.0 \pm 10.8 \text{ lbft}$)
 3. Check the drained oil, if there is excessive metal particles or foreign material, contact your Komatsu distributor.
 4. Close drain valve (2) and insert and tighten drain plug (1).
 5. Use a filter wrench and remove each filter cartridge (3) in turn, starting from the front of the machine.
 6. Clean the filter holder, fill the new filter cartridge with engine oil, coat the packing surface and thread with engine oil (or coat it thinly with grease), then install the filter cartridge.
 7. When installing the filter cartridge, bring the packing surface into contact with the filter holder, then tighten a further 3/4 to 1 turn.



REPLACE POWER TRAIN CASE BREATHER

(Mining specification, if equipped)

1. Remove clip (2) from breather assembly (1) at the left fender, then remove cover (3).
2. Replace breather element (4) with a new part.
3. Install cover (3) and clip (2).



CHECK ENGINE VALVE CLEARANCE, ADJUST

Special tools are required for removal and adjustment of the parts, have your Komatsu distributor perform this service.

CHECKING CHARGE PRESSURE OF NITROGEN GAS IN ACCUMULATOR (FOR CONTROL CIRCUIT)**WARNING**

The accumulator is charged with high-pressure nitrogen gas, so mistaken operation may cause an explosion, which will lead to serious injury or damage. When handling the accumulator, always do as follows.

- The pressure in the hydraulic circuit cannot be completely removed. When removing the hydraulic equipment, do not stand in the direction that the oil spurts out when carrying out the operation. In addition, loosen the bolts slowly when carrying out the operation.
- Do not disassemble the accumulator.
- Do not bring it near flame or dispose of it in fire.
- Do not make holes in it or weld it.
- Do not hit it, roll it, or subject it to any impact.
- When disposing of the accumulator, the gas must be released. Please contact your Komatsu distributor to have this work carried out.

NOTICE

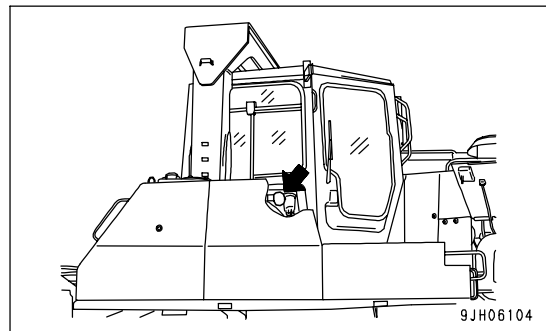
If the nitrogen gas charge pressure in the accumulator is low and operations are continued, it will become impossible to release the remaining pressure inside the hydraulic circuit if a failure occurs on the machine.

FUNCTION OF ACCUMULATOR

The accumulator stores the pressure in the control circuit. Even after the engine is stopped, the control circuit can be operated, so the following actions are possible.

- If the control lever is operated in the direction to lower the work equipment, it is possible for the work equipment to go down under its own weight.
- The pressure in the hydraulic circuit can be released.

The accumulator is installed to the position shown in the diagram on the right.

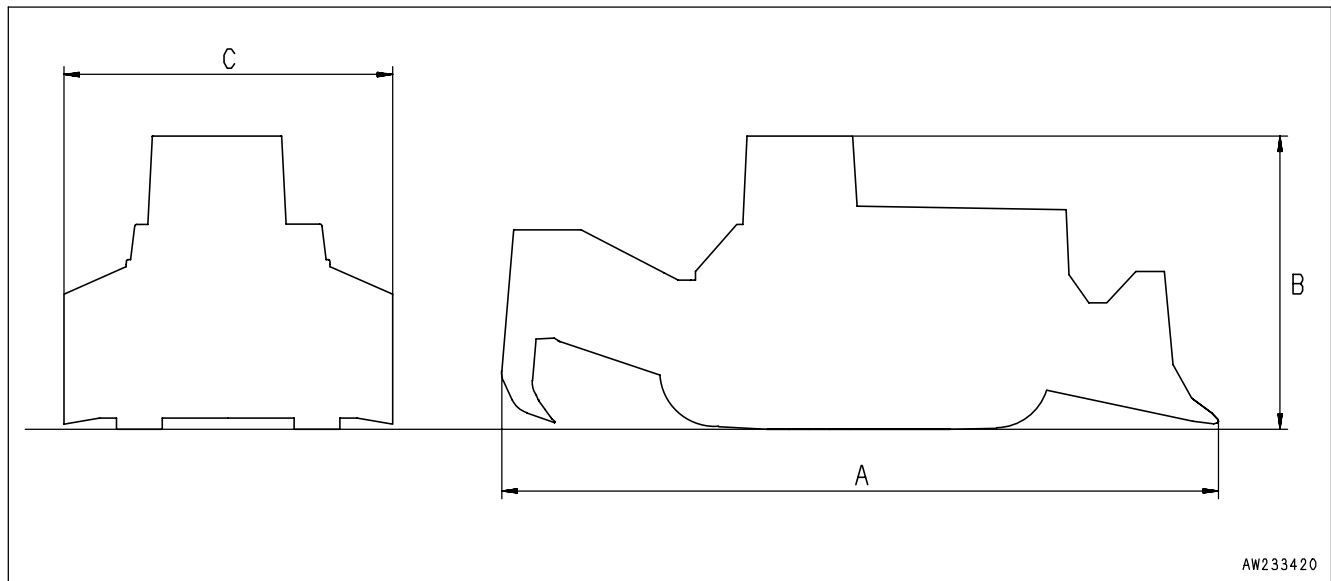


SPECIFICATIONS

Item	Unit	D475A-5E0	
		Semi- U tildozer *1	Full- U tildozer *2
Operating weight (without operator)	kg (lb)	110,670 (224,027)	110,610 (243,895)
Blade Weight of attachment (incl. cylinder)	kg (lb)	16,500 (36,383)	18,800 (41,454)
Ripper Weight of attachment	kg (lb)	9,720 (21,433)	7,360 (16,229)
Engine model	-	Komatsu SAA12V140E-3 diesel engine	
Engine flywheel horsepower	kW (HP) / rpm	664 (890) / 2000	
A Overall length	mm (ft in)	11,335 (37' 2")	12,065 (39' 7")
B Overall height	mm (ft in)	4,646 (15' 3")	
C Overall width	mm (ft in)	5,265 (17' 3")	6,205 (20' 4")
Travel speed (1st / 2nd / 3rd)	Forward	3.3 / 6.2 / 11.2 (2.1 / 3.9 / 7.0)	
	Reverse	4.2 / 8.0 / 14.0 (2.6 / 5.0 / 8.7)	

*1: Including a semi- U tildozer, multi-shank ripper, 710 mm-wide track shoe, ROPS, cab and air conditioner

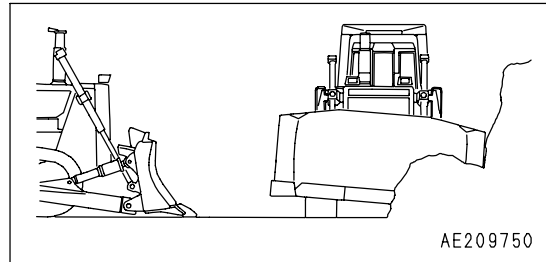
*2: Including a full- U tildozer, giant ripper, 710 mm-wide track shoe, ROPS, cab and air conditioner



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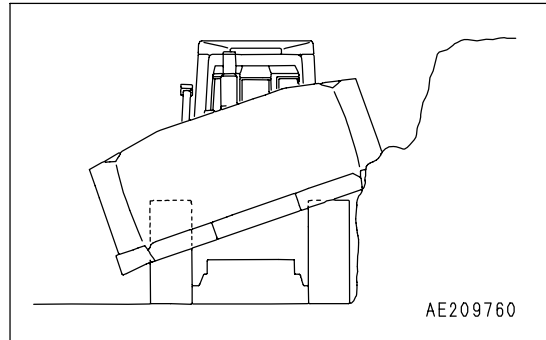
SIDE-CUTTING OPERATIONS

Carry out this operation in R pitch, and set the end face of the end bit in contact with the rock face to carry out cutting.



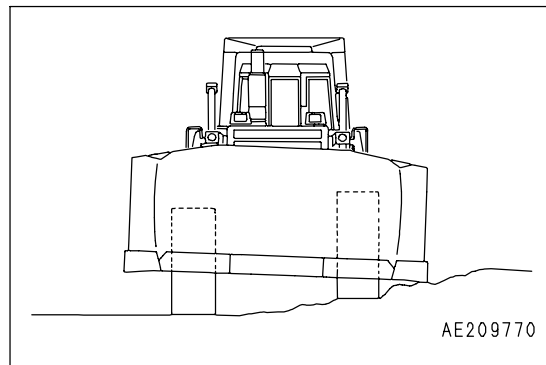
REMARK

With the dual tilt it is possible to increase the amount of tilt and to carry out side-cutting operations on higher walls.



HORIZONTAL DOZING OPERATIONS FROM SIDE SLOPE (ROUGH GROUND)

The dual tilt can give a larger amount of tilt, so when dozing from a side slope, this is effective because the chassis becomes horizontal after a short digging distance.



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