Operation & Maintenance Manual

SEAM018601

avance LOADER

WA800-3

WHEEL LOADER

SERIAL NUMBERS WA800-50001 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

SAFETY

⚠ WARNING

Read and follow all safety precautions. Failure to do so may result in serious injury or death.

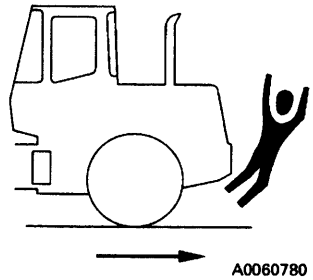
This safety section also contains precautions for optional equipment and attachments.

CHECK WHEN CHANGING DIRECTION

To prevent serious injury or death, always do the following before moving the machine or the work equipment.

- Sound the horn to warn people in the area.
- Check that there is no one near the machine. Be particularly careful to check behind the machine. This area cannot be seen clearly from the operator's seat.
- When operating in the areas that may be hazardous or have poor visibility, designate a person to direct worksite traffic.
- Ensure that no unauthorized person can come within the direction of turning or direction of travel.
- Do not change the travel direction at high speed.

Always be sure to carry out the above precautions even when that machine is equipped with a backup alarm and mirrors.



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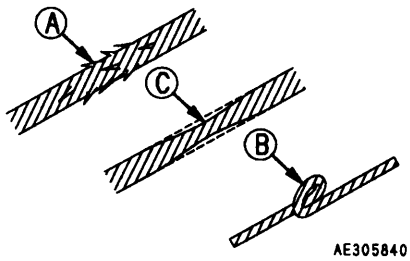
7.5 TOWING

WHEN TOWING

- Injury or death could result if a disabled machine is towed incorrectly or if there is a mistake in the selection of the wire rope, so always do as follows.
- Do not tow in a different way from the method given in the section METHOD OF TOWING.
- Always wear leather gloves when handling wire rope.
- When carrying out the preparation for towing with another worker, agree on signals before starting the operation.
- If the engine on the problem machine will not start or there is a failure in the brake system, please contact your Komatsu distributor for repairs.
- It is dangerous to tow a machine on a slope, so choose a place where there is a gradual slope. If there is no place with a gradual slope, carry out work to make the slope as small as possible.
- If a problem machine is towed by another machine, ALWAYS use a wire rope with a sufficient towing capacity for the weight of the problem machine.
- Do not use a wire rope which has cut strands Ⓐ, kink Ⓑ, or reduced diameter Ⓒ.
- Do not stand astride the towing cable or wire rope.
- When connecting a machine that is to be towed, do not let any one come between the towing machine and the machine that is being towed.
- Set the coupling of the machine being towed in a straight line with the towing portion of the machine, and secure it in position.



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PRECAUTIONS WITH HIGH-PRESSURE OIL

When inspecting or replacing high-pressure piping or hoses, always check that the pressure in the hydraulic circuit has been released. If the circuit is still under pressure, it will lead to serious injury or damage, so always do as follows.

- For details of the method of releasing the pressure, see "8.1 BEFORE CARRYING OUT MAINTENANCE, STOP ENGINE BEFORE CARRYING OUT INSPECTION AND MAINTENANCE". Never carry out inspection or replacement before releasing the pressure completely.
- Wear safety glasses and leather gloves.
- If there is any leakage from the piping or hoses, the piping, hoses, and the surrounding area will be wet, so check for cracks in the piping and hoses and for swelling in the hoses.
  If it is difficult to locate the leakage, always please contact your Komatsu distributor for repairs.
- If you are hit by a jet of high-pressure oil, consult a doctor immediately for medical attention.

INCORRECT

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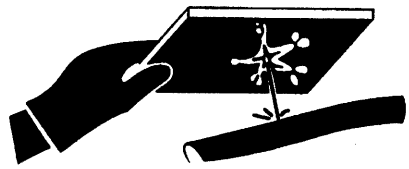
CORRECT



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PRECAUTIONS WHEN CARRYING OUT MAINTENANCE AT HIGH TEMPERATURE OR HIGH PRESSURE

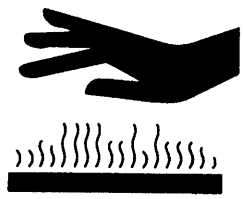
- Immediately after stopping operations, the engine cooling water and oil at all parts is at high temperature and under high pressure.
  In this condition, if the cap is removed, or the oil or water are drained, or the filters are replaced, this may result in burns or other injury. Wait for the temperature to go down, then carry out the inspection and maintenance in accordance with the procedures given in this manual.

Clean inside or cooling system, check lubricating oil level, add oil → see "24.2 WHEN REQUIRED".

Check cooling water level, engine oil pan, oil level, brake oil level, add oil or water → see "24.3 CHECK BEFORE STARTING".

Checking hydraulic oil level, adding oil → see "24.5 PERIODIC MAINTENANCE".

Changing oil, replacing filters → see "24.6 – 9 PERIODIC MAINTENANCE".



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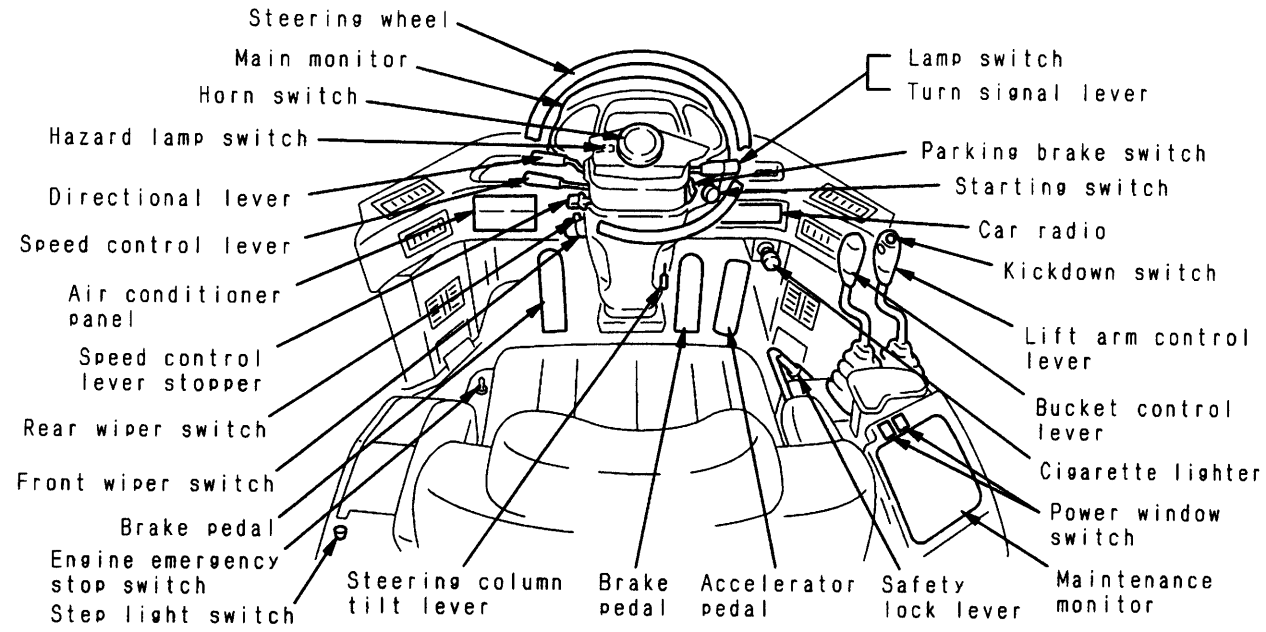
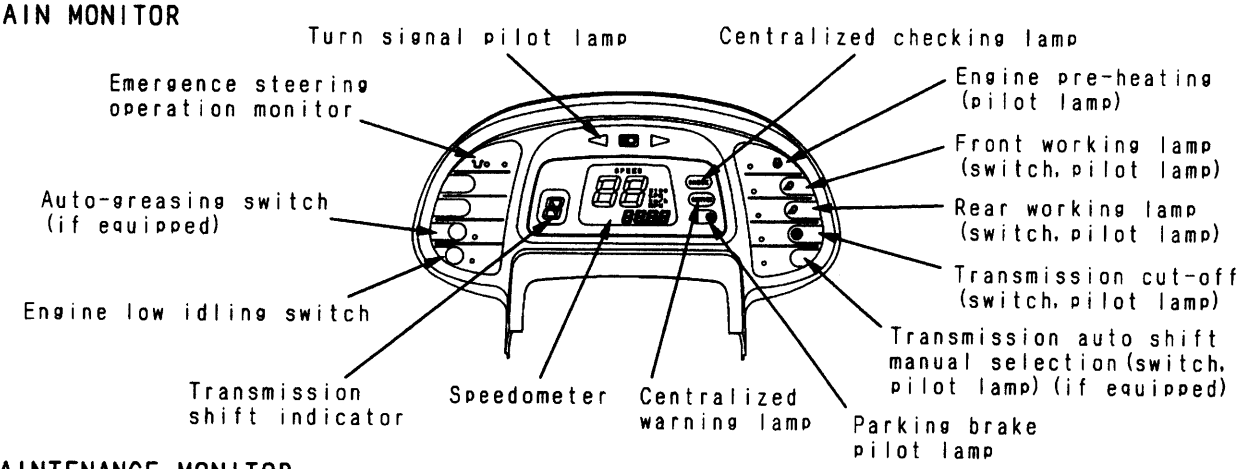
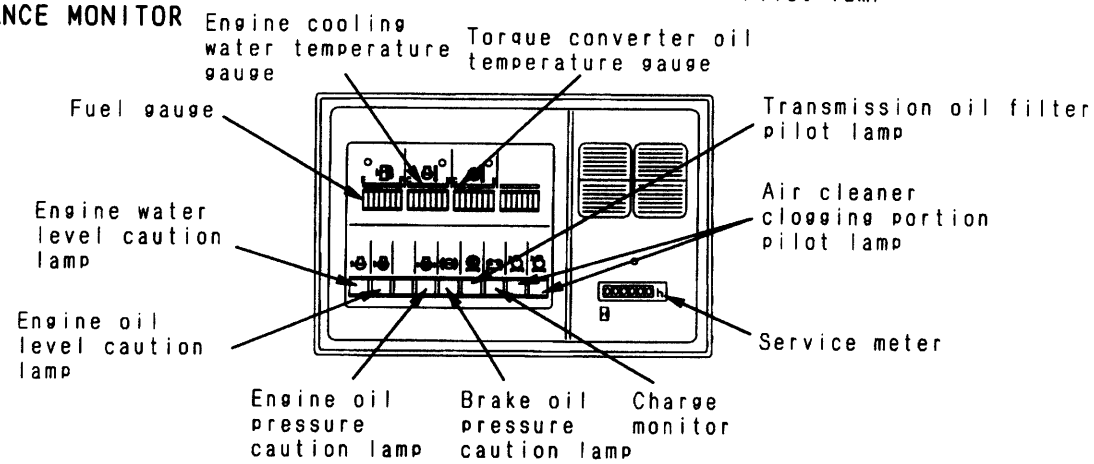
10.2 GENERAL VIEW OF CONTROLS AND GAUGES



MAIN MONITOR



MAINTENANCE MONITOR



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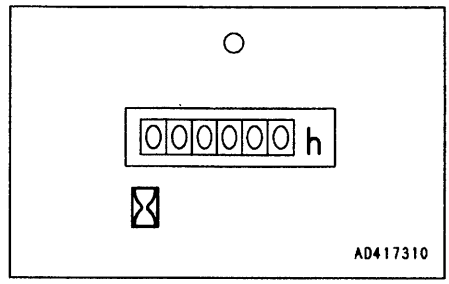
11. SERVICE METER

This meter shows the total operation hours of the machine.

The service meter advances while the engine is running - even if the machine is not traveling.

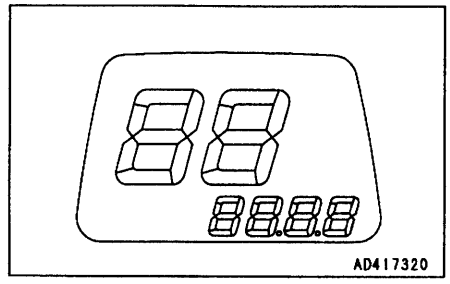
While the engine is running, green pilot lamp on the service meter flashes to show the service meter advances.

The service meter progresses by 1 when the engine is operated for one hour, regardless of the engine speed.



12. SPEEDOMETER

This meter indicates the travel speed of the machine.

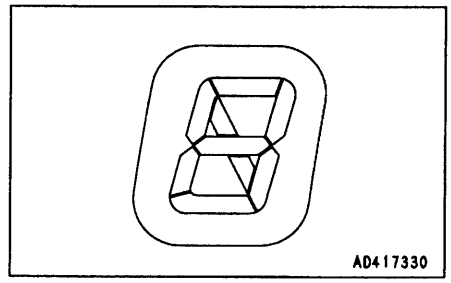


13. TRANSMISSION SHIFT INDICATOR

This indicates the present speed range of the transmission.

When the directional lever is at the N position, N is displayed on the indicator.

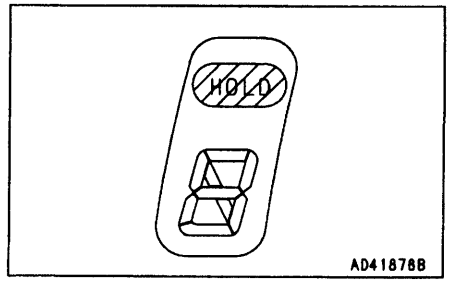
When the directional lever is at the F or R position, the shift position of the speed lever is displayed as a numeral.

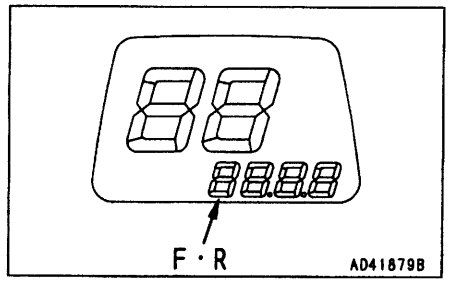


WHEN USING JOYSTICK STEERING SYSTEM (if equipped)

This indicates the transmission speed range. When the N button of the FNR buttons on the head of the joystick lever is pressed, the indicator displays N.

When the F (FORWARD) or R (REVERSE) buttons of the FNR buttons on the head of the joystick lever are pressed, F or R is displayed at the bottom of the speedometer and the shift indicator displays the transmission speed range and N.



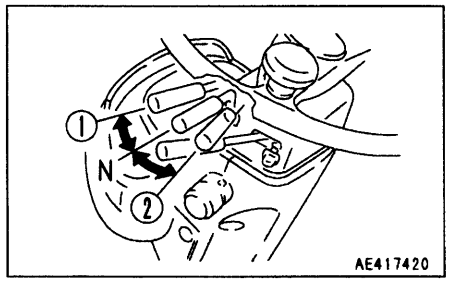


2. DIRECTIONAL LEVER

This lever is used to change the direction of travel of the machine.

The engine cannot be started if the directional lever is not at N (neutral).

Position ① : Forward
Position N : Neutral
Position ② : Reverse



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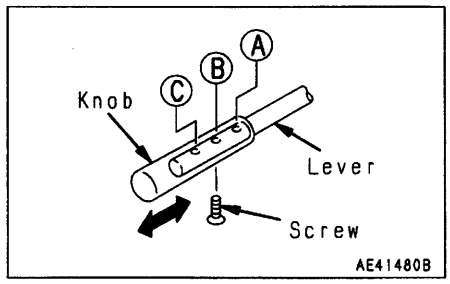
REMARK

The length of the lever can be adjusted to 3 stages (positions Ⓐ, Ⓑ, Ⓒ). To adjust the length, remove the screw at the bottom of the lever knob, slide the knob to the desired position, then tighten the screw again.
(The lever is installed to position Ⓑ when it is shipped from the factory.)



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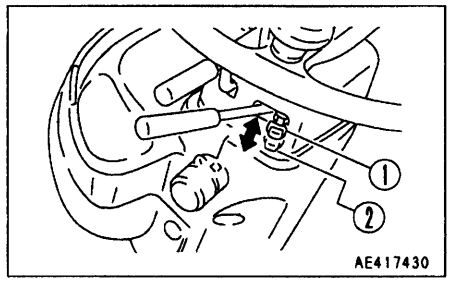
3. SPEED CONTROL LEVER STOPPER

This stopper prevents the speed control lever from entering the 3rd positions when working.
Position ①: Stopper actuated.
Position ②: Stopper released.



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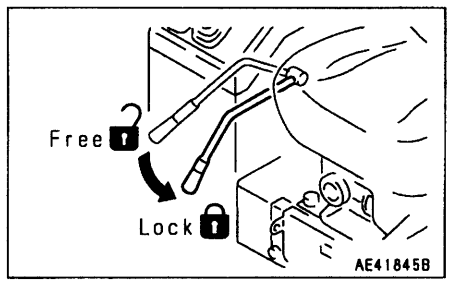
4. SAFETY LOCK LEVER

⚠ WARNING

- **When leaving the operator's compartment, set the safety lock lever securely to the LOCK position. If the control levers are not locked, and they are touched by mistake, this may lead to a serious accident.**
- **If the safety lock lever is not placed securely in the LOCK position, the control levers may not be properly locked. Check that the situation is as shown in the diagram.**
- **When parking the machine or carrying out maintenance, always lower the bucket to the ground and apply the lock.**



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This is used to lock the work equipment levers.
Push the lever down to apply the lock.

12. OPERATION

12.1 CHECK BEFORE STARTING ENGINE

12.1.1 WALK-AROUND CHECK

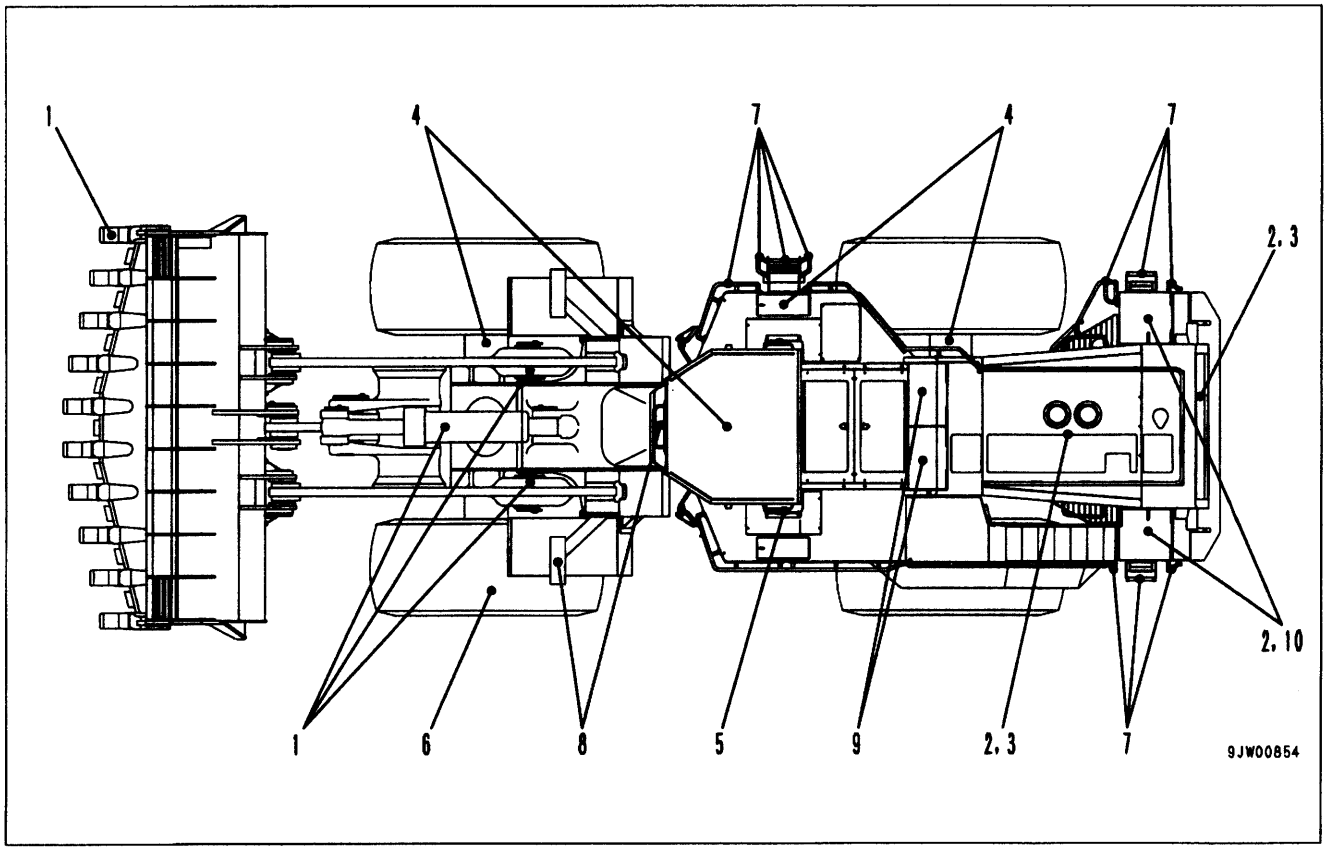
⚠ WARNING

Leakage of oil or fuel, or accumulation of flammable material around high temperature parts, such as the engine muffler or turbocharger, may cause fire.
Check carefully, and if any abnormality is found, repair it or contact your Komatsu distributor.

Before starting the engine, look around the machine and under the machine to check for loose nuts or bolts, or leakage of oil, fuel, or coolant, and check the condition of the work equipment and hydraulic system.

Check also for loose wiring, play, and collection of dust at places which reach high temperatures.

Always carry out the items in this section before starting the engine each day.



CHECK EFFECT OF BRAKE

Drive the machine at a speed of 20 km/h (12.4 MPH) on a dry flat concrete road surface, and check that the stopping distance is less than 7.5 m (24 ft 6 in).

CHECK SOUND OF HORN AND BACKUP BUZZER

CHECK FLASHING OF LAMPS, CHECK FOR DIRT OR DAMAGE

CHECK DIRECTION OF REAR VIEW MIRROR, CHECK FOR DIRT OR DAMAGE

CHECK ENGINE EXHAUST COLOR AND SOUND

CHECK OPERATION OF GAUGES

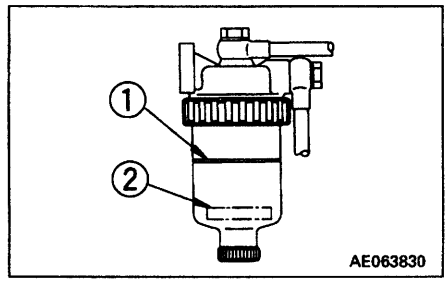
CHECK PLAY OF STEERING WHEEL, CHECK OPERATION OF STEERING

CHECK FOR WATER AND SEDIMENT IN WATER SEPARATOR, DRAIN WATER (IF EQUIPPED)

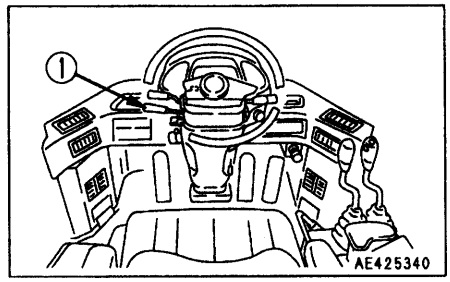
The water separator separates water mixed in the fuel. If float ② is at or above red line ①, drain the water.

For the draining procedure, see section "24.2 WHEN REQUIRED".

Even if a water separator is installed, be sure to check the fuel tank to remove water and sediment in the fuel.



12.5 CHANGING GEAR SPEED



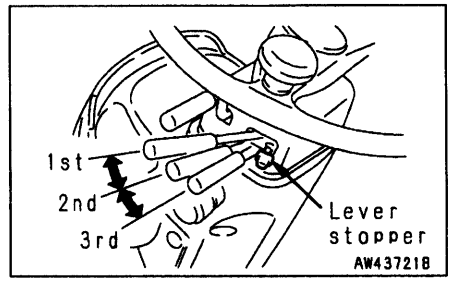
⚠ WARNING

When traveling at high speed, do not change the gear speed suddenly. When shifting gear, use the brakes to reduce the travel speed, then shift gear.

Shift the gear as follows.

Move speed control lever ① to the desired position.

Only 1st or 2nd speeds are used for digging and loading operations, so actuate speed control lever stopper.



REMARK

This machine is equipped with a kickdown switch that shifts the gear down to 1st if the button at the tip of the lift arm control lever is pushed when the machine is traveling in 2nd gear.

We recommend the use of the kickdown switch when carrying out digging or loading operations in 1st or 2nd gear.

For details of use, see "11. EXPLANATION OF COMPONENTS".

REMARK

If the gear shift lever is operated slowly or it is stopped between speed ranges, error code "CALL" may be displayed. This is not a failure: the gear shift lever must be operated to complete the gear shifting within 2 seconds.

12.10.5 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

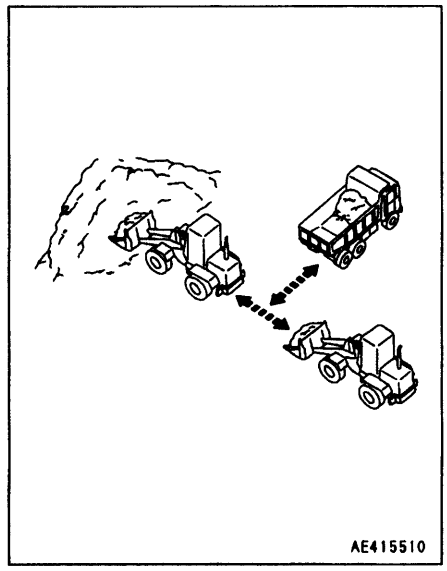
- **Always keep the working area flat. Do not turn suddenly or apply the brake suddenly when traveling with a raised load. These actions are dangerous.**
- **It is also dangerous to drive the bucket at high speed into a stockpile or pile of rocks.**

NOTICE

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

CROSS DRIVE LOADING

Always set the wheel loader facing at a right angle to the stockpile. After digging in and scooping up the load, drive the machine straight back in reverse, then bring the dump truck in between the stock pile and the wheel loader.
This method requires the least time for loading, and is extremely effective in reducing the cycle time.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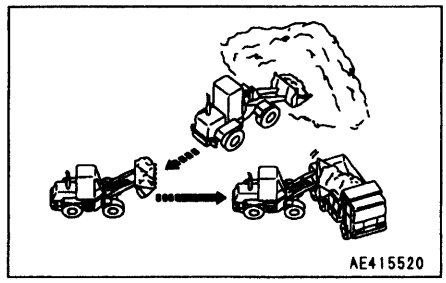
V-SHAPE LOADING

Position the dump truck so that the direction of approach of the wheel loader is approx. 60° from the direction of approach to the stockpile. After loading the bucket, drive the wheel loader in reverse, then turn it to face the dump truck and travel forward to load the dump truck.

The smaller the turning angle of the wheel loader is, the more efficient the operation becomes.

When loading a full bucket and raising it to the maximum height, first shake the bucket to stabilize the load before raising the bucket. This will prevent the load from spilling to the rear.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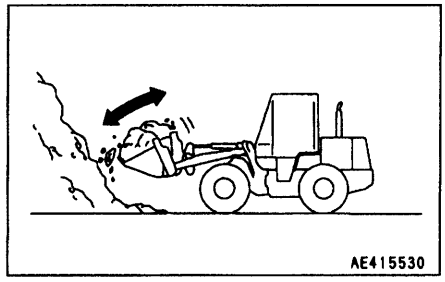
Precautions when piling up loads

When forming products into a pile, be careful not to let the rear counterweight come into contact with the ground.

Do not set the bucket to the DUMP position when carrying out piling-up operations.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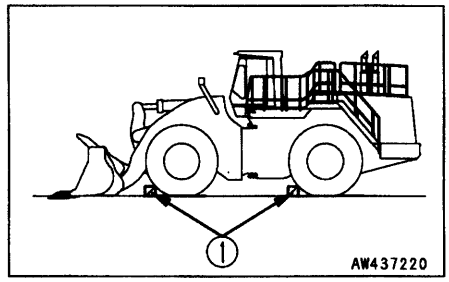
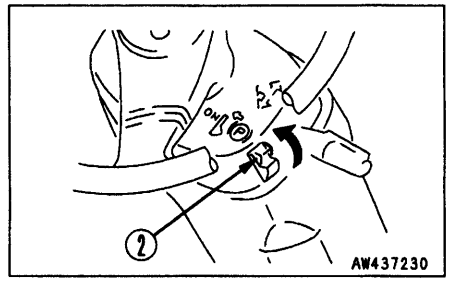
12.19 REMOVAL AND INSTALLATION OF THE BUCKET

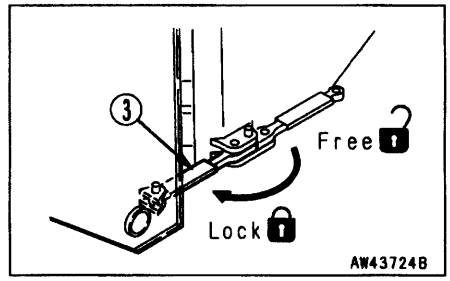
⚠ WARNING

Park the machine on level ground, set safety bar ③ on the frame, ground the bucket, shut down the engine, apply the parking brake ② and place blocks ① under the tires.

Remove or install the bucket in the following manner, if so required for the convenience of transportation.

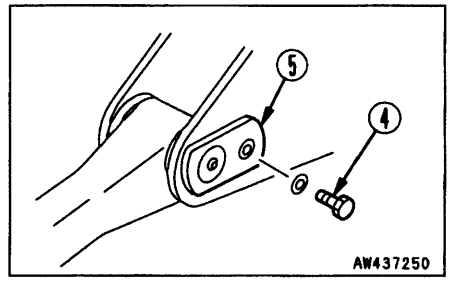




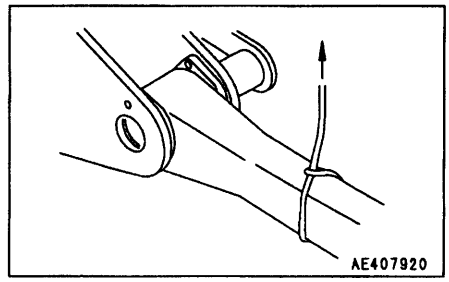


REMOVING THE BUCKET

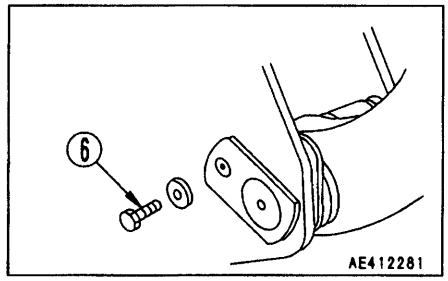
1. Remove mounting bolt ④.



2. Sling the bucket link, then pull out bucket link pin ⑤. Secure the bucket link to the tilt lever with wires.



3. Remove mounting bolt ⑥.



16. TROUBLESHOOTING

16.1 WHEN MACHINE RUNS OUT OF FUEL

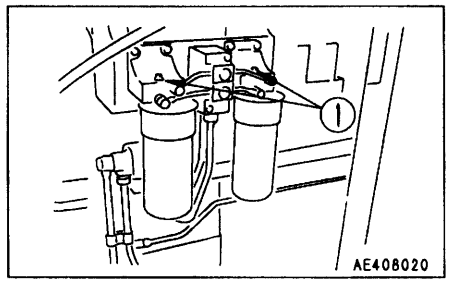
⚠ WARNING

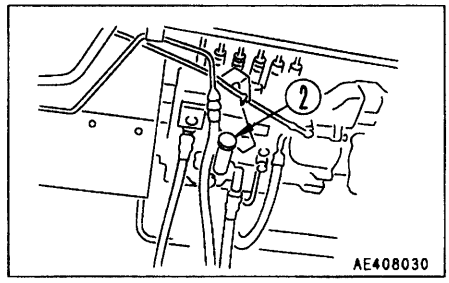
The engine will start, so check carefully that the area around the engine is safe before cranking the engine.

If the machine has run out of fuel, add fuel and then bleed the air from the fuel system before starting the engine.

PROCEDURE FOR BLEEDING AIR

1. Loosen air bleeding plug ①.
2. Loosen feed pump knob ② and move the pump up and down to draw off fuel until air ceases to come out of air bleeding plug ①.
3. After bleeding the air, tighten air bleeding plug ①, then push in the knob of feed pump ② and tighten it.





16.1.2 MAINTENANCE OF AIR COMPRESSOR

- When storing the machine for long time (1 month or longer)

NOTICE

When using the compressor after storing the machine or leaving the air conditioner unused for long time (1 month or longer), warm the inside of the cab to at least 10°C by running the engine idle, then operate the air conditioner at the MAX COOL mode.

The following seizure caused by insufficient lubrication in the compressor can be prevented by this operation.

- If the machine is stored for long time, oil in the compressor is reduced (it flows to another components).

CHASSIS continued (16.4.2)

Problem	Main causes	Remedy
Disc brake		
Brake has no effect even when pedal is depressed	• Low air pressure • Disc has reached wear limit • Defective in hydraulic system o Lack of oil • Air in brake line	• Charge air to specified pressure (• Replace disc) o Add oil to specified level. See CHECKS BEFORE STARTING • Bleed air. See WHEN REQUIRED
Brake drags or remains applied	• Exhaust hole in treadle valve clogged • Power cluster breather clogged • Defective operation of slack adjuster	• Clean • Clean (• Check, repair)
Brakes slip	• Worn disc	(• Replace)
Parking brake		
Braking effect is poor	• Linkage is loose • Pad is wet • Deteriorated air cylinder spring • Worn pad	• Adjust • Clean (• Replace spring) • Adjust or replace
Steering		
Steering wheel heavy	• Steering gear adjustment is too tight • Linkage is stiff	(• Adjust) (• Check linkage, replace if necessary)

18.1.4 GREASE

- Grease is used to prevent twisting and noise at the joints.

- The nipples not included in the maintenance section are nipples for overhaul, so they do not need grease.
  If any part becomes stiff after being used for long time, add grease.

- Always wipe off all of the old grease that is pushed out when greasing. Be particularly careful to wipe off the old grease in places where sand or dirt sticking in the grease would cause wear of the rotating parts.

18.1.5 STORING OIL AND FUEL

- Keep indoors to prevent any water, dirt, or other impurities from getting in.

- When keeping drum cans for a long period, put the drum on its side so that the filler port of the drum can is at the side. (To prevent moisture from being sucked in)
  If drum cans have to be stored outside, cover them with a waterproof sheet or take other measures to protect them.

- To prevent any change in quality during long-term storage, be sure to use in the order of first in - first out (use the oldest oil or fuel first).

18.1.6 FILTERS

- Filters are extremely important safety parts. They prevent impurities in the fuel and air circuits from entering important equipment and causing problems.
  Replace all filters periodically. For details, see the Operation and Maintenance Manual.
  However, when working in severe conditions, it is necessary to consider replacing the filters at shorter intervals according to the oil and fuel (sulfur content) being used.

- Never try to clean the filters (cartridge type) and use them again. Always replace with new filters.

- When replacing oil filters, check if any metal particles are stuck to the old filter. If any metal particles are found, please contact your Komatsu distributor.

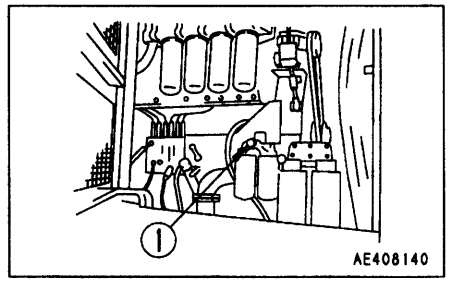
- Do not open packs of spare filters until just before they are to be used.

- Always use Komatsu genuine filters.

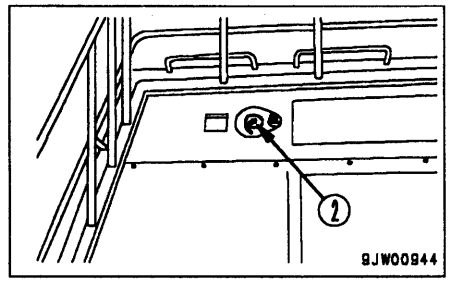
SAFETY CRITICAL PARTS

No.	Part name	Q'ty	Replacement interval
1	Fuel hose (Strainer – L.H. injection pump)	1	
2	Fuel hose (Injection pump – adapter)	4	
3	Fuel hose (L.H. injection pump – fuel tank)	1	
4	Fuel spill hose (Between nozzles)	1	
5	Turbochager lubricating hose	1	
6	Fuel hose (Strainer – R.H. injection pump)	1	
7	Fuel hose (Fuel tank – strainer)	1	
8	Fuel hose (R.H. injection pump – fuel tank)	1	
9	Steering cylinder hose	4	
10	Hose of main suction tube	1	
11	Outlet hoses of steering pump	2	
12	Suction hoses of loader pump and steering pump	2	
13	Outlet hoses of loader pump	2	
14	Suction hoses of switch pump	2	
15	Outlet hoses of switch pump	2	
16	Brake hose (pump – accumulator charge valve)	2	Every 4000 hours or every 2 years, whichever comes sooner
17	Brake hose (accumulator – L.H. tandem valve)	4	
18	Brake hose (accumulator – R.H. tandem valve)	4	
19	Brake hose (charge valve – accumulator)	4	
20	Brake hose (R.H. tandem valve – front brake)	6	
21	Brake hose (L.H. tandem valve – rear brake)	4	
22	Brake hose (L.H. tandem valve – R.H. tandem valve)	6	
23	Brake hose (R.H. tandem valve – drain block)	1	
24	Brake hose (L.H. tandem valve – drain block)	1	
25	Brake hose (drain block – hydraulic tank)	1	
26	Brake hose (brake accumulator – parking solenoid valve)	2	
27	Brake hose (parking solenoid valve – parking brake cylinder)	2	
28	Brake hose (parking solenoid valve – brake tank)	1	
29	Brake hose (charge valve drain – brake tank)	2	
30	Brake hose (brake tank – brake pump)	2	
31	Brake hose (charge valve P.P port – accumulator)	1	
32	Packings, seals, O-rings of steering cylinder	18	
33	Rubber parts for treadle valve	10	
34	Rubber parts for parking brake hydraulic cylinder	10	
35	Rubber parts for slack adjuster	12	
36	Seat belt	1	Every 3 years

1. Stop the engine and tighten corrosion resistor valve ①.

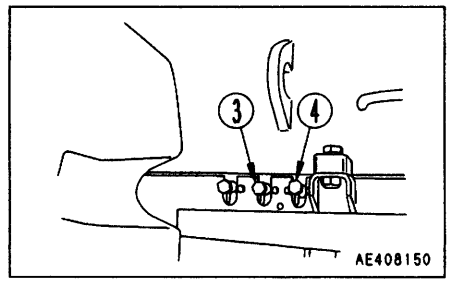


2. Turn radiator cap ② slowly to remove it.
   When removing radiator cap ②, lift the lever to relieve the internal pressure.



3. Prepare a container to catch the coolant, then open drain valve ③ of the radiator and drain valve ④ of the oil cooler to drain the coolant.

4. After draining the water, close drain valves ③ and ④ and fill with city water.



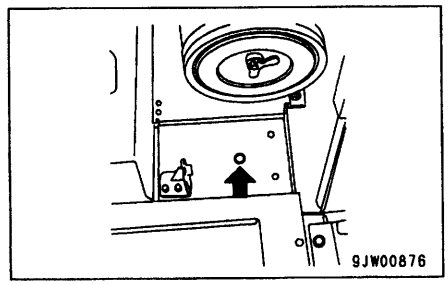
5. When the radiator is full of water, start the engine and run it at low idling.
   Open drain valves ③ and ④, run the engine at low idling, and flush water through the system for 10 minutes.
   When doing this, adjust the speed of filling and draining the water so that the radiator is always full.
   While flushing water through the system, watch carefully that the water inlet hose does not come out of the radiator water filler.

6. After flushing, stop the engine, open drain valves ③ and ④, then close it again after all the water has drained out.

7. After draining the water, clean with a flushing agent.
   For details of the cleaning method, see the instructions given with the cleaning agent.

8. After cleaning, open drain valves ③ and ④ to drain all the cooling water, then close them and fill slowly with clean water.

24.2.12 CHECK AIR CONDITIONER (IF EQUIPPED)

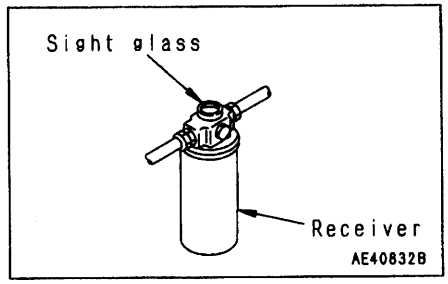


Check levels of refrigerant (gas)

Check twice a year, in spring and autumn.

⚠WARNING

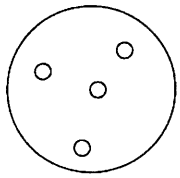
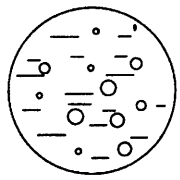
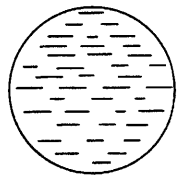
If the liquid gets into your eyes or on your hands, it may cause loss of sight or frostbite, so never loosen any part of the refrigerant circuit.



Operate the cooler of the air conditioner for 5 – 10 minutes, then touch the high pressure portion and low pressure portion of the compressor (or high pressure hose and low pressure hose joint) by hand. At the same time, inspect the flow of refrigerant gas through the sight glass to check the gas level.

Please contact your Komatsu distributor for this inspection.

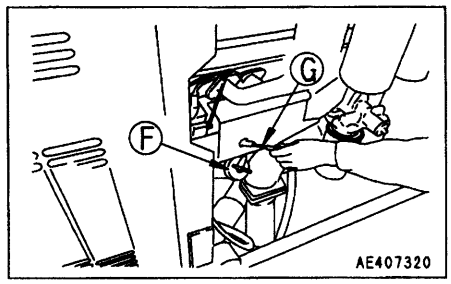
The sight glass is installed to the receiver on the right side of the air cleaner.

Cooler condition	Normal	Abnormal	
Temp. of high and low pressure pipes.	High pressure pipe is hot. Low pressure pipe is cold. Clear difference in temperature	High pressure pipe is warm. Low pressure pipe is cold. Little difference in temperature	Almost no difference in temperature between high and low pressure pipes.
Sight glass	Almost transparent. Any bubbles disappear if the engine speed is raised or lowered. 	Bubbles are always flowing. Sometimes becomes transparent, or white bubbles appear. 	Misty substance is flowing. 
Connections of pipes	Properly connected	Some parts dirty with oil.	Some parts very dirty with oil.
General condition of cooler	Coolant level correct, no abnormalities. Ready for use.	May be a leak somewhere. Call service repair shop for inspection.	Almost all coolant has leaked out. Contact service repair shop immediately.

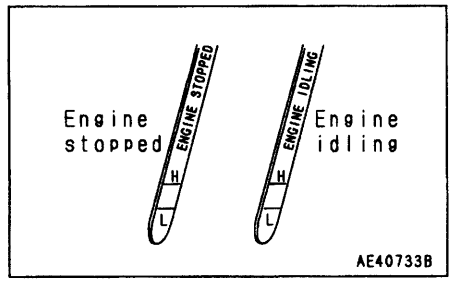
Operating the air conditioner off season

To lubricate each portion of the compressor of the airconditioner during the off-season, operate the airconditioner for 3 – 5 minutes once a month. Be sure to idle the engine at low speed for this purpose.

24.3.3 CHECK OIL LEVEL IN ENGINE OIL PAN, ADD OIL



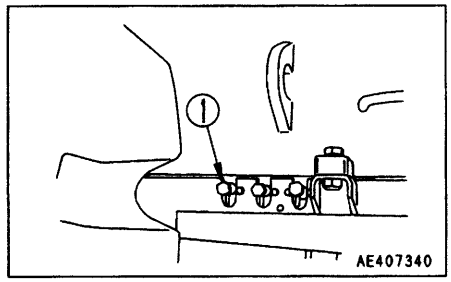
1. Open the inspection window at the rear left side of the machine.
2. Remove dipstick Ⓖ and wipe the oil off with a cloth.
3. Insert dipstick Ⓖ fully in the oil filler pipe, then take it out again.
4. The oil level should be between the H and L marks on dipstick Ⓖ.
   If the oil level is below the L mark, add engine oil through oil filler Ⓕ.



For details of the oil to use, see "20. USE OF FUEL, COOLANT AND LUBRICANTS ACCORDING TO AMBIENT TEMPERATURE".

The dipstick has level markings on both sides. One side gives the levels for measuring when the engine is stopped (ENGINE STOPPED) and the other side gives the levels for when the engine is idling (ENGINE IDLING).

When measuring the oil level, measure with the engine stopped and use the side of the dipstick marked ENGINE STOPPED.



5. If the oil is above the H mark, drain the excess engine oil from drain valve ①, and check the oil level again.
6. If the oil level is correct, tighten the oil filler cap securely and close the inspection window.

REMARK

When checking the oil level after the engine has been operated, for at least 15 minutes after stopping the engine before checking.

Checking the oil level with the engine idling may be allowed, if the following precautions are thoroughly satisfied:

- Check that the engine water temperature gauge shows green range.
- Use the side of the dipstick marked ENGINE IDLING.
- Remove the oil filler cap.
  If the machine is at an angle, make it horizontal before checking.

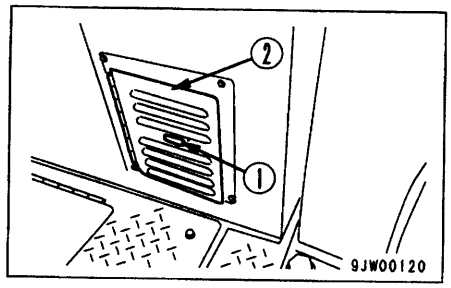
24.5.3 CLEAN ELEMENT IN AIR CONDITIONER FRESH AIR FILTER (IF EQUIPPED)

⚠WARNING

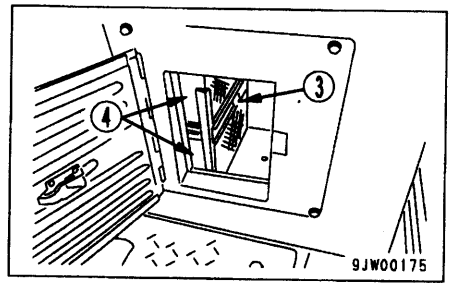
When using compressed air, wear safety glasses and other things required to maintain safety.

If the air conditioner has been used, the air filter should be cleaned.

Stop the air conditioner before cleaning the element.



1. Hold knob ① and open cover ②.
2. Loosen screw ③, then take out element ④ and clean it.
3. Blow dry compressed air (max. 0.69 MPa (7 kgf/cm², 99.4 PSI)) along the folds from the inside of the element. Next, blow air along the folds from the outside, then blow from the inside again.



REMARK

When assembling the element again, install so that the arrow on top of the element is facing the inside of the cab.

24.7.5 CHECK FAN BELT FOR WEAR

Check the V-belt and when the following conditions exist, replace or adjust the V-belt.

- When the V-belt makes contact with the bottom of the groove in each pulley.
- When the V-belt is worn, and its surface is lower than the outer diameter of the pulley.
- When the V-belt is cracked or flaked.
- When the V-belt makes an abnormal noise.

Since an auto-tensioner is installed, the V-belt does not need to be replaced until it is replaced.

For details of the replacement procedure, refer to "24.2 WHEN REQUIRED".

24.9.2 CLEAN HYDRAULIC TANK STRAINER

When changing the oil in the hydraulic tank, drain the oil from the tank and clean the strainer.

1. Loosen bolts ① and ③, then remove covers ② and ④.

2. Loosen bolt ⑤, remove strainer cover ⑥, then remove strainer ⑧ together with spring ⑦.

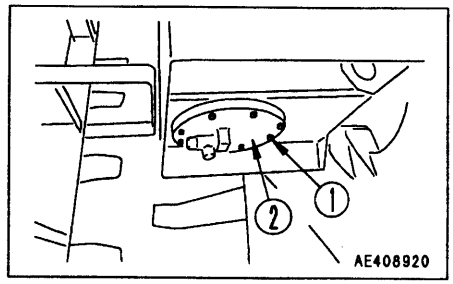
3. Remove any dirt from strainer ⑧, then wash in clean light oil or flushing oil.

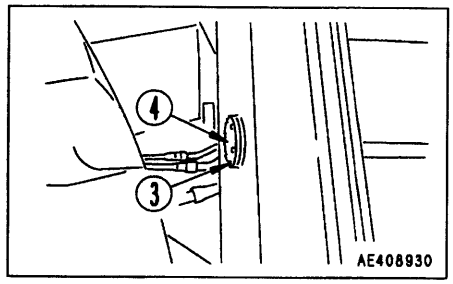
If strainer ⑧ is broken, replace it with a new part.

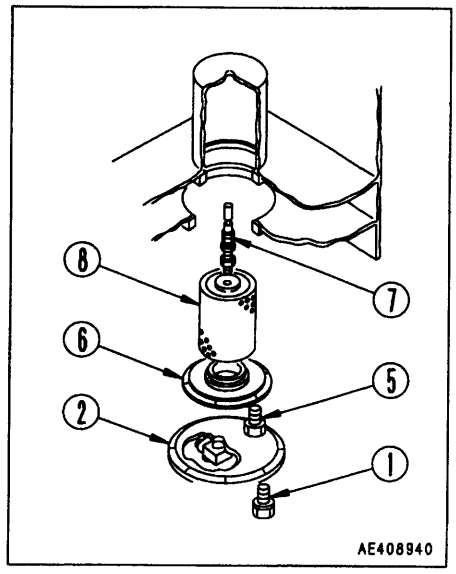
4. Install spring ⑦, strainer ⑧, and cover ⑥. When doing this, look through the mounting hole of cover ④ to check that the strainer guide pin is fitted in the guide hole.

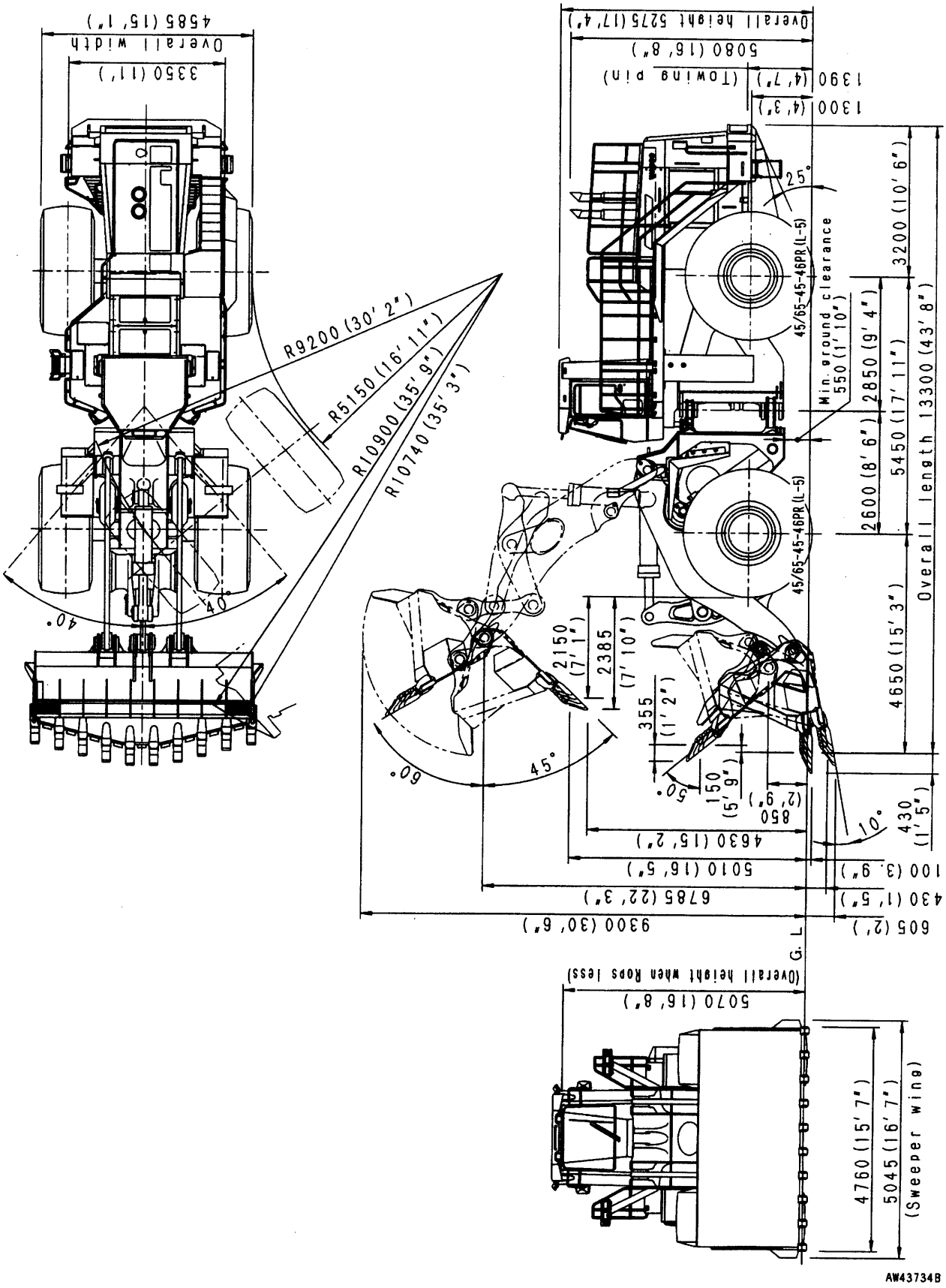
When installing cover ⑥, coat the thread of bolt ⑤ with thread tightener (LT-2) to prevent it from coming loose. If bolt ⑤ becomes loose and drops out, it will be sucked into the piston pump and will damage the pump.
Tightening torque of bolt ⑤:
88 ± 34.3 N·m (9 ± 3.5 kgf·m, 65 ± 25.3 lbft)

5. Install covers ② and ④.
Replace the O-rings of the covers with new parts.

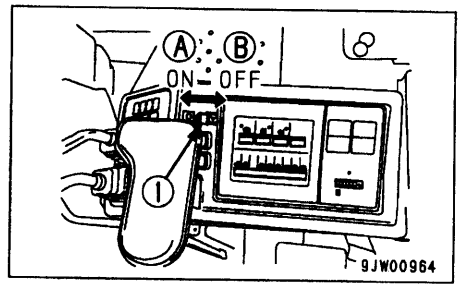


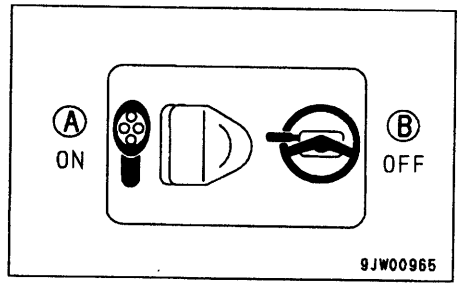





Overall width
4585 (15' 1")
3350 (11')
R9200 (30' 2")
R5150 (16' 11")
R10900 (35' 9")
R10740 (35' 3")
40°
40°
Overall height 5275 (17' 4")
5080 (16' 8")
1390 (4' 7") (Towing pin)
1300 (4' 3")
25°
45/65-45-46PR (L-5)
Min. ground clearance
550 (1' 10")
3200 (10' 6")
2850 (9' 4")
5450 (17' 11")
2600 (8' 6")
45/65-45-46PR (L-5)
Overall length 13300 (43' 8")
4650 (15' 3")
2150 (7' 1")
2385 (7' 10")
355 (1' 2")
60°
45°
50°
150 (5' 9")
850 (2' 9")
10°
430 (1' 5")
4630 (15' 2")
5010 (16' 5")
100 (3' 9")
6785 (22' 3")
430 (1' 5")
9300 (30' 6")
605 (2')
G. L
(Overall height when Rops less)
5070 (16' 8")
4760 (15' 7")
5045 (16' 7")
(Sweeper wing)
AW43734B

29.2 STRUCTURE AND FUNCTION OF JOYSTICK STEERING





If the joystick ON/OFF switch is turned ON, electric current flows to the joystick controller and makes it possible to operate the steering with the joystick.

In addition, the directional (forward or reverse) operation of the transmission can also be carried out from the directional lever by operating the F-N-R button on the top of the joystick.

1. If the joystick steering system is installed, the steering and transmission control methods can be selected with joystick ON/OFF switch ① as shown below.
   The auto-shift position can be selected only when the vehicle is equipped with the automatic shift function (if equipped).
   The functional difference between steering with the joystick steering system and that with the steering wheel is as follows:

Selection		Ⓐ			Ⓑ		
Joystick steering ON/OFF switch		ON (Steering with joy stick)			OFF (Steering with steering wheel)		
Steering		• Steering with joystick (•Steering with steering			• Steering with steering wheel wheel is also possible)		
Transmission	F/N/R	Operated with F/N/R button on joystick head			Operated with transmission control lever		
	Type of transmission	Manual	Auto		Manual	Auto	
	Manual switch	—	Manual ON	Manual OFF	—	Manual ON	Manual OFF
	Selection of gear speed	Speed range changing operation with shift up switch and shift down switch on lift arm control lever	Speed range changing operation with shift up switch and shift down switch on lift arm control lever	Automatic change of speed range in accordance with travel speed	Operation with transmission control lever	Operation with transmission control lever	Automatic change of speed range in accordance with travel speed

30.2 ERROR CODES LIST INDICATED ON MAIN MONITOR

TRANSMISSION CONTROL SYSTEM
Auto/manual transmission control system

Error Code	Item	Problem system	
		Short circuit	Disconnection
10	Back-up lamp relay	o	o
11	None	–	–
12	F Sol.	o	o
13	R Sol.	o	o
14	1st Sol.	o	o
15	2nd Sol.	o	o
16	3rd Sol.	o	o
17	4th Sol.	o	o
18	None	–	–
19 in	Joystick direction switch	o	o
20 in	Direction switch signal	o	o
21 in	Range switch signal	o	o
22 in	Travel speed sensor	X	o
23 in	Engine speed sensor	X	o

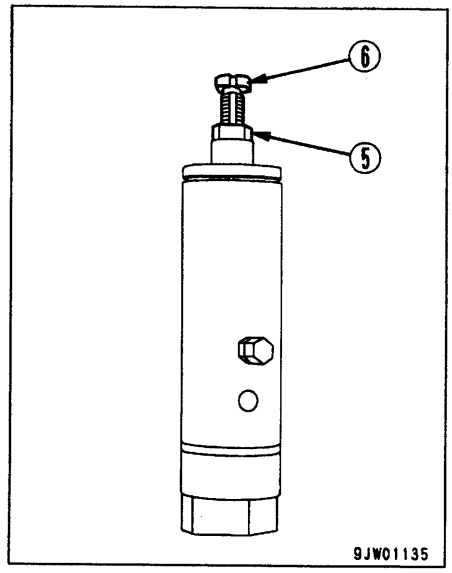
2. Injector (SL11)
   1) The injector is operated by the pressure from the pump, and it feeds grease of the specified quantity to the bearing.

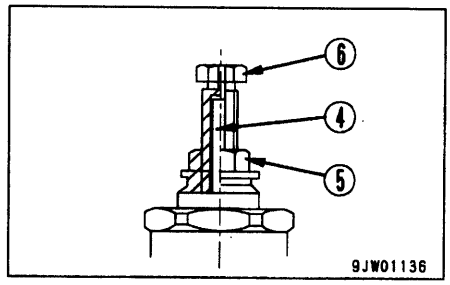
   2) To see if the injector works normally, check the operation of indicator pin ④ on its head. If the injector is normal, the pin is retracted first. If the pump stops and the pressure is lost, the pin returns and it is reset for the next greasing.

   3) Adjust the discharge from the injector with adjustment screw ⑥ on its head.
      1) To reduce the discharge, loosen lock nut ⑤ and turn adjustment screw clockwise. If the adjustment screw stops (at the stopper), the discharge is minimized.

      2) If the adjustment screw is returned by 10 turns from the fully tightened position (minimum discharge) in 1] above, the discharge is maximized (8.2 cc/st).
      After adjusting the discharge from the injector, be sure to tighten lock nut.

   4) Although the injector can be overhauled and repaired, replace it with a spare one, if possible, when it has any trouble.





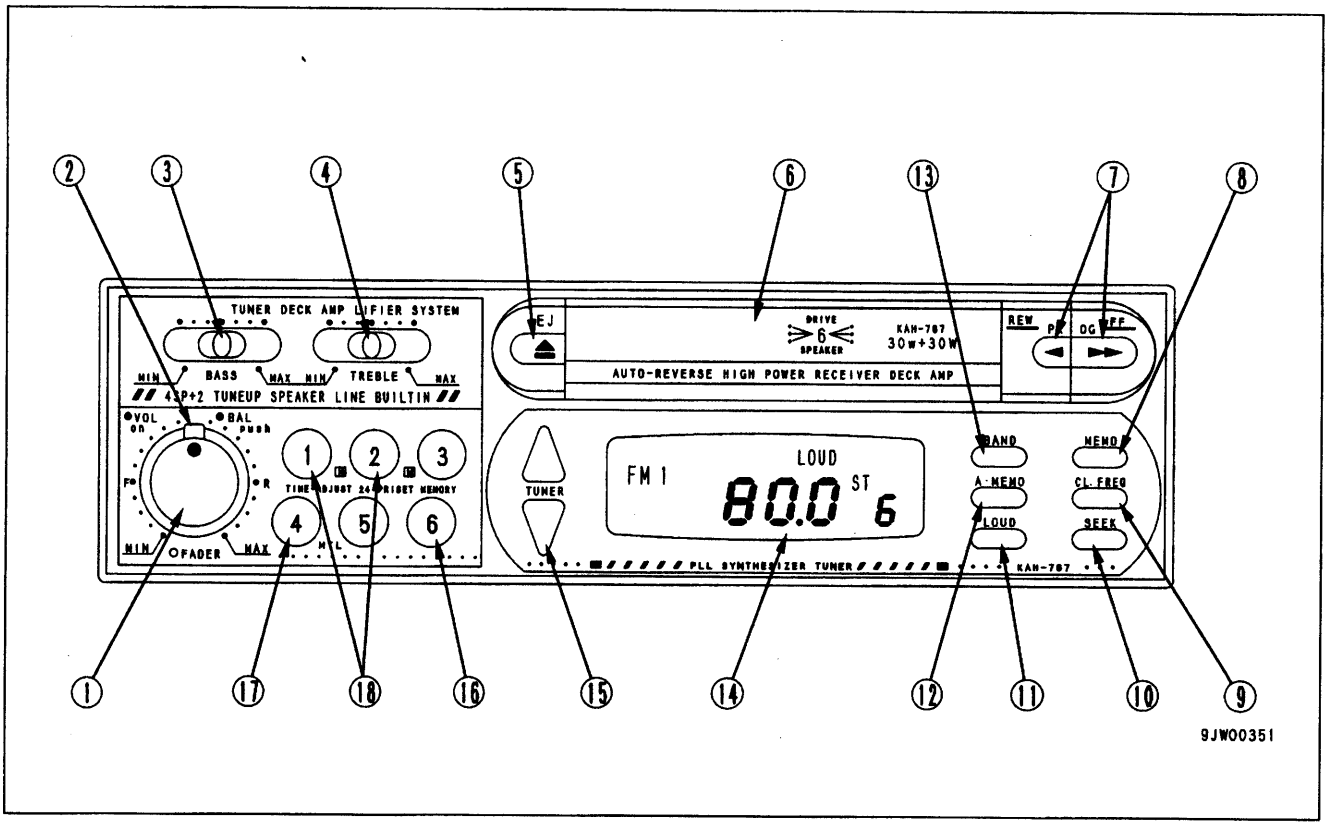
- Discharge adjusting procedure for large-sized injector (SL-11) (Added to bucket pin)
  Loosen lock nut ⑤ and turn adjustment screw ⑥ to adjust the discharge of grease made each time.

	Discharge cc/cycle
Turn clockwise to stopper (Min. discharge)	0.82
Turn counterclockwise by 10 turns from above position (Max. discharge)	8.2

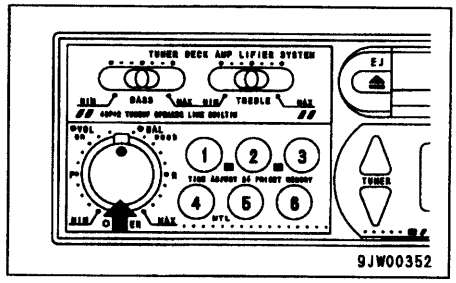
One turn between the maximum and minimum positions change the discharge by 0.82 cc. After adjusting the discharge, be sure to tighten the lock nut.

34. AM/FM RADIO-CASSETTE STEREO

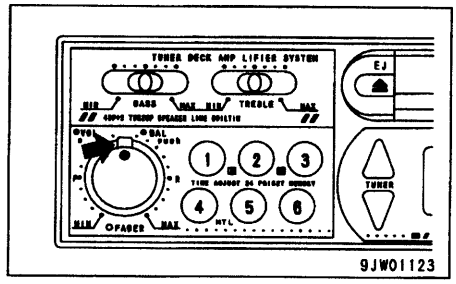
34.1 EXPLANATION OF COMPONENTS



1. **POWER SWITCH/VOLUME CONTROL KNOB**
   Turn this knob clockwise until it clicks, and the power is turned on. Turn it further to increase the sound.



2. **TONE CONTROL KNOB**
   Adjust the tone of the sound by turning this knob.



3. **BASE CONTROL SLIDE-KNOB**
   Slide this knob to the right to increase the bass sound and to the left to decrease the bass.