

Operation & Maintenance Manual

SEAMU4170103



WA180-1

WHEEL LOADER

SERIAL NUMBERS **WA180-10001** and up

KOMATSU

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Position of switch	Parking lamp	Transmission cut-off
①	ON	OFF
②	OFF	OFF
③	OFF	ON

Parking lamp

Position ① : Lamps light

Transmission cut-off selector

(Select the operation of the left brake pedal.)

Position ① , ② :

Depressing the left brake pedal operates the wheel brakes (like right brake pedal).

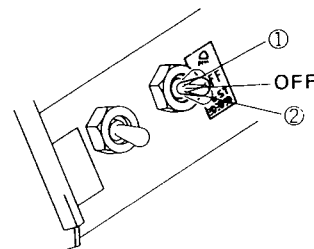
Position ③ :

Depressing the left brake pedal operates the wheel brakes, and also returns the transmission to neutral.

★ Normally, put this switch in ON position.

! If the machine has to be started on a slope, always turn the transmission cut-off selector switch to OFF and depress the left brake pedal. Then depress the accelerator pedal while releasing the left brake pedal to start the machine off slowly.

2. WORKING LAMP AND CLUSTER GAUGE CHECK SWITCH



Position ① :

Front and rear working lamps and pilot lamp light.

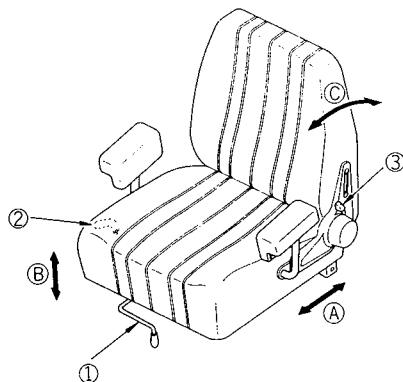
Position ② :

It is possible to check the lamps of the cluster gauge for blown-out bulbs. If the lamps light when the switch is in this position, the bulbs are normal.

! Turn off working lamps when traveling on public roads.

OPERATOR'S SEAT

The seat adjustment should be checked at the beginning of each shift and when operators change.



A: Forward-backward adjustment

Move lever (1) to the right, move the seat to the best position and release the lever. The seat can be moved forward or backward within a range of 140 mm in 8 stages.

B: Seat height adjustment

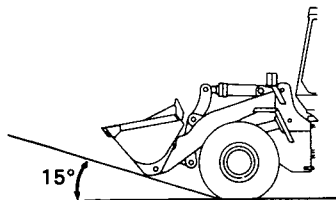
Move lever (2) upward, set the seat to the desired height and release the lever.

The seat can be set within 50 mm. in 5 stages.

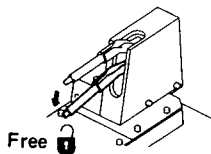
C: Backrest adjustment

Move lever (3) upward, move the backrest to the best position and release the lever. The backrest can be set to 12 steps.

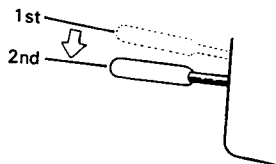
 **Park the machine in a safe place and stop the engine when carrying out adjustment of the operator's seat.**



3. Depress right brake pedal (1), and release the parking brake using parking brake lever (2).



4. Set speed control lever (3) and directional lever (4) to the desired position.

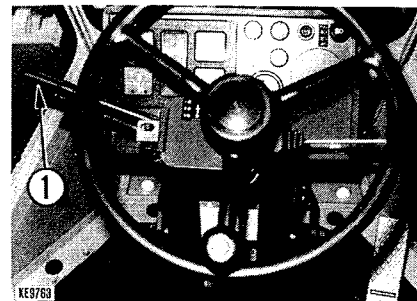


5. Release right brake pedal (1), then depress accelerator pedal (5) to move the machine off.

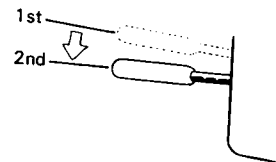


If the machine has to be started on a slope, always turn the transmission cut-off selector switch to OFF and depress the left brake pedal. Then depress the accelerator pedal while releasing the left brake pedal to start the machine off slowly.

CHANGING GEAR SPEED



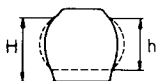
Move speed control lever (1) to the desired position.



- ★ To use 1st or 2nd speeds for digging and loading operations, actuate speed control lever stopper.

- ★ Deflection ratio (deflection/free height)

$$= \frac{H - h}{H} \times 100$$



H: Free height
h: Height when loaded

As a guide for visual checks, the deflection ratio (deflection/free height) of the front tire should be as follows.

Normal loading and carrying operations (lift arm horizontal):
approx. 15 — 25%

Digging operations (rear wheels off ground):
approx. 25 — 35%

- ★ When checking the tire pressure, check also for small cracks and damage, and for wire or small pieces of metal which may cause punctures. Check also for abnormal wear.
- ★ Operating costs can be reduced and tire life increased by keeping the operating area in good condition and free from fallen rocks.

No.	ITEM	SERVICE	PAGE
INITIAL 250 HOURS SERVICE			
a	Fuel filter	Replace cartridge	57
b	Transmission oil filter	Replace element	57
c	Engine oil pan and filter	Change oil and replace cartridge	57
d	Engine valve clearance	Check and adjust	57
EVERY 250 HOURS SERVICE			
a	Lubricating		57
-1	Tilt lever pin	Lubricate 1 point	58
-2	Dump cylinder pin	Lubricate 2 points	58
-3	Lift cylinder pin	Lubricate 4 points	58
-4	Lift arm pivot pin	Lubricate 2 points	58
-5	Steering cylinder pin	Lubricate 4 points	58
b	Wheel hub bolts	Check and retighten	59
c	Fan belt	Check tension	59
d	Engine oil pan and filter	Change oil and replace cartridge	60
e	Battery electrolyte	Check	62

No.	ITEM	SERVICE	PAGE
EVERY 500 HOURS SERVICE			
a	Lubricating		63
-1	Center drive shaft spline	Lubricate 1 point	63
-2	Center hinge pin	Lubricate 2 points	63
b	Fuel filter	Replace cartridge	63
c	Transmission oil filter	Replace element	64
EVERY 1000 HOURS SERVICE			
a	Lubricating		65
-1	Front drive shaft	Lubricate 2 points	65
-2	Drive shaft center support	Lubricate 1 point	65
-3	Center drive shaft	Lubricate 2 points	65
-4	Rear drive shaft	Lubricate 2 points	65
b	Hydraulic tank and filter	Change oil and replace element	66
c	Transmission case breather	Clean	67
d	Transmission oil and strainer	Change oil and clean strainer	67

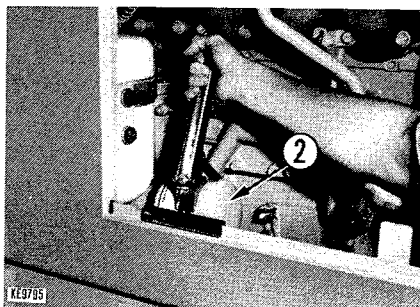
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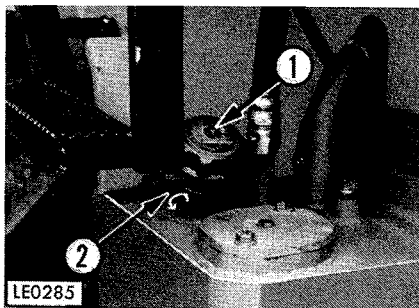
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6. After refilling with oil, start the engine and idle it for a while. Then stop the engine and check the oil level.
7. Close the engine side cover.

- ★ Refill capacity: 10.5 ℓ
- ★ The type of lubricant used depends on the ambient temperature. Select according to the table "FUEL, COOLANT AND LUBRICANTS".
- ★ Be sure to fit a genuine Komatsu cartridge.
- ★ Replace once every 6 months, regardless of the number of hours operated.
- ★ If filter cartridge (2) is removed immediately after stopping the engine, oil will spill. Wait at least 10 minutes after stopping the engine before replacing the filter cartridge.
- ★ Use API category CD class oil. If CC class oil must be used, change the oil and replace the oil filter at half the usual interval (125 hours).

b. HYDRAULIC TANK BREATHER



1. Loosen bolt (1) at the top of the cap.
2. Turn wrench (2) clockwise and hold it, then remove the cap by turning it counterclockwise to take out the element.
3. Coat the O-ring of the new element with grease, then install the element.
4. Align the cap with the body and tighten the bolts.

c. ALTERNATOR AND STARTING MOTOR

As the hours of engine employment indicate that the brushes are already worn out, you should request repair from a Komatsu distributor.

- ★ They should be repaired every 1000 hours, if the machine is frequently operated at night.

d. ENGINE VALVE CLEARANCE

Ask Komatsu distributor to check engine valve clearance because special tools should be used.

e. BRAKE DISC

Ask Komatsu distributor to check and repair brake disc.

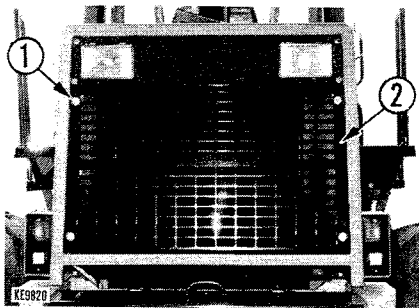
f. VIBRATION DAMPER

Check the vibration damper for cracks or separation on rubber surface.

If there are cracks or separation, contact your Komatsu distributor for replacement.

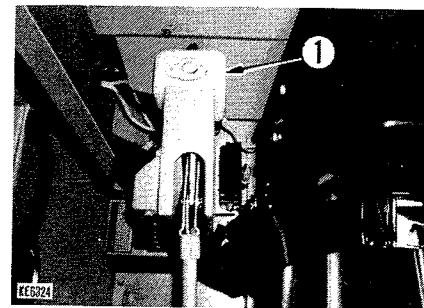
e. CLEAN RADIATOR FINS

Carry out this procedure if there is any mud or dirt seen stuck to the radiator.



1. Loosen bolt (1) and remove radiator grille (2).
2. Clean the radiator fins and oil cooler fins clogged with mud, dust and leaves with compressed air. Steam or water may be used instead of compressed air.

★ The rubber hose should be checked at the same time. If the hose is found to have cracks or to be hardened by ageing, such hose should be replaced by new one. Further, loosened hose clamp should also be checked.

f. WINDSHIELD WASHER TANK

Check the liquid level in washer tank (1).

Add automobile window washer liquid if necessary.

★ Be careful not to let dirt get in the tank when adding the liquid.

CHASSIS

Transmission

Engine is running but machine will not move.

- Release parking brake.
- Put directional lever in position properly.
- Add oil to transmission case to the specified level.

Even at full throttle, machine moves slowly and lacks power.

- Add oil to transmission case to the specified level.
- Disassemble transmission strainer and clean.

Oil overheats

- Add oil to transmission case to the specified level or drain oil.
- Use a suitable gear speed.
- Reduce time using torque converter at stall speed.
- Check engine.

Abnormal noise is produced.

- Add oil to transmission case to the specified level.

Axle

Abnormal noise is produced.

- Add oil to axle case to the specified level.

Disc brake

Brake does not work when pedal is depressed.

- Replace disc.
- Add brake oil.
- Bleed air from brake system.

Brake drags or stays applied

- Adjust brake pedal play.

Brake slips.

- Replace disc.

Parking brake

Brake does not work properly.

- Adjust linkage.
- Clean brake pad.

Steering

Steering wheel is heavy.

- Adjust steering gear.
- Check linkage, replace parts.

Hydraulic system

Bucket lacks lifting power.

Bucket lifting speed is slow.

- Add oil.
- Replace filter in hydraulic tank.

Many bubbles from in oil.

- Replace with specified oil.
- Add oil.
- Bleed air from oil line.

Oil pressure is too low.

- Add oil and bleed air.

Cylinder vibrates when operating.

- Add oil.

CHECKS AFTER STARTING THE ENGINE

- Before starting work, test drive the machine in a safe place and check that the transmission, brakes, accelerator, and steering are working properly. At the same time, check that there is not abnormal noise or vibration, or any abnormality in the instruments and gauges.

DURING OPERATION

- Always sit in the operator's seat when operating the machine.
- Do not allow anyone except the operator on the machine.
- Always be aware of the operating capacity of the machine. Using the machine to do work beyond its capacity will not only damage the machine, but may even cause unexpected accidents.
- The machine condition can be judged from many factors. Changes in the gauges, sound, vibration, exhaust gas color or response of the control levers can indicate the occurrence of some disorder. If any disorder occurs, park the machine immediately in a safe place and take appropriate action.

ATTENTION TO SURROUNDINGS

- To ensure the safety of workers near the machine, always sound the horn to warn them before starting the engine and moving the machine. Be particularly careful to check that the rear is clear before backing the machine.
- Do not allow unauthorized persons into the work area.
- Always concentrate. It is extremely dangerous to allow yourself to be distracted or to think of other things when operating a machine.
- When loading trucks or hoppers, be careful not to hit the truck or hopper with the bucket. Do not bring the bucket over people's heads or over the cab of the truck.

LOADING

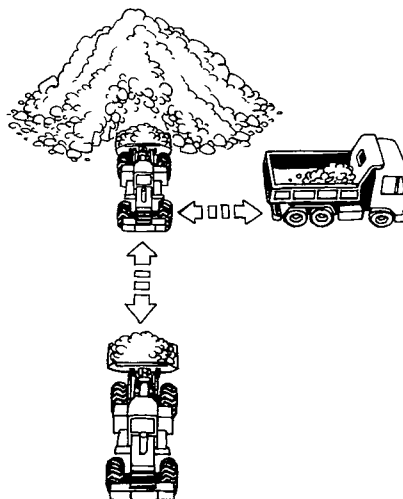
Select and proceed effective operation which avails less turning and the shortest hauling distance according to ground conditions.

CROSS DRIVE LOADING

When a wheel loader is operated, the digging should be made at a right angle toward accumulated soil. When the scooping is completed, the machine should be traveled backwards as it is. Then, bring the truck between the accumulated soil and the wheel loader for the purpose of loading upon the dump truck.

⚠ Provide a flat road free of rocks and hollows. When the boom is raised with the bucket loaded, do not make quick turns or quick braking because it is very dangerous.

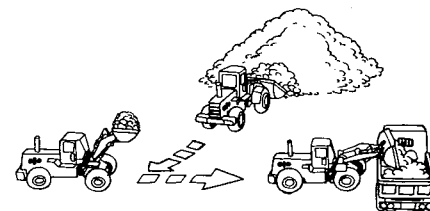
⚠ Do not load the bucket by thrusting into a pile of soil or gravel at high speed because it is dangerous.



V-SHAPE LOADING

Stop the truck with the angle of about 60° toward the scooping direction of the wheel loader. After scooping the soil, back the wheel loader in such a way that it makes a right angle to the truck. The loading on the truck is made by the wheel loader going forward.

The smaller the turning angle, the higher the efficiency. However, turning of 90° can be made if necessary.



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