

Operation & Maintenance Manual

KOMATSU

PW60-3

HYDRAULIC EXCAVATOR

SERIAL NUMBERS
PW60 -2001 and up

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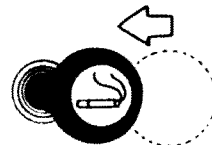
- Do not undercut the machine, unless absolutely necessary. If necessary, always take care to prevent the machine falling.
- When operating at the edge of a cliff or on the shoulder of a road, remember the following points:
 - ★ When operating in a place where there is danger of the machine falling over the side, be doubly careful. Do not approach the edge of the cliff or road shoulder by mistake.
- If you suspect that there are buried facilities (water or gas pipes, etc.) at the work site, check with the companies responsible for looking after such facilities and also try a different method of excavation. Then, after confirming the existence and location of such facilities, carefully carry out excavation work.

- Take care not to swing the bucket against the sides of trenches or dump trucks. Load the truck from the rear.

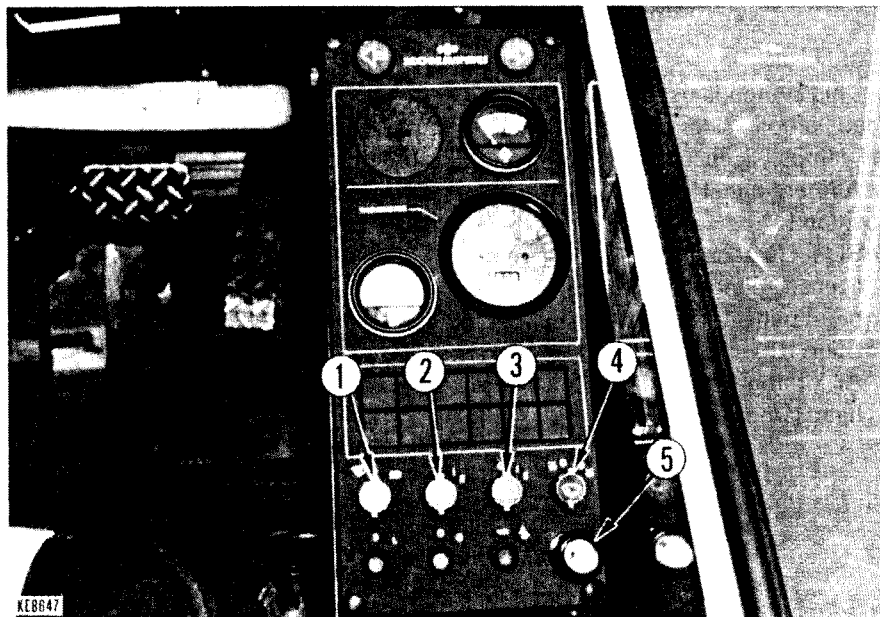
PARKING

- When parking the machine, park it in a safe place outside the working area, or in the specified place. The following factors should be considered when choosing a parking place: it should be on flat, firm ground where there is no danger of rockfalls, landslides or floods. If the machine has to be parked on a slope, it should be parked facing directly up or down the slope, and chocks should be placed under the tracks. When the machine is facing downhill, lower the bucket so that it cuts slightly into the ground to further increase the safety.

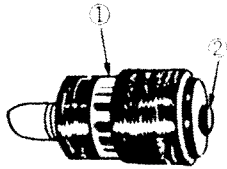
5. CIGARETTE LIGHTER



This is used to light cigarettes. To use, push the lighter in. After a few seconds it will spring back. At that time, remove the lighter and light your cigarette.



DUST INDICATOR

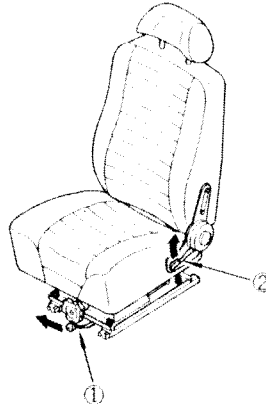


This device indicates clogging of the air cleaner element. When red piston (1) appears in the transparent part of this indicator, the element is clogged. Immediately clean element.

After cleaning, push indicator button (2) to return red piston to original position.

Dust indicator is on air cleaner bracket in engine hood.

OPERATOR'S SEAT



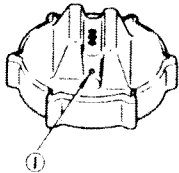
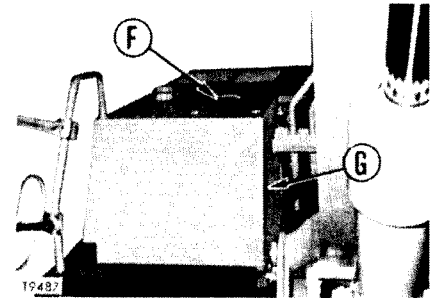
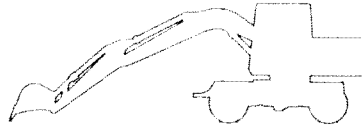
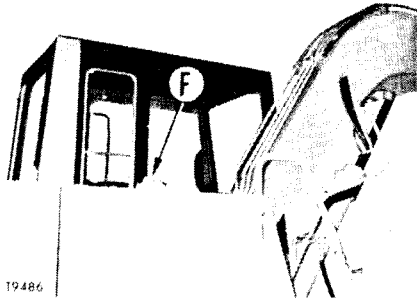
Forward-backward adjustment

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 over 160 mm in 8 stages.

Backrest adjustment

Pull lever (2) in the direction of arrow, move the backrest to the desired position and release the lever.

**e. CHECK OIL LEVEL IN
HYDRAULIC TANK**

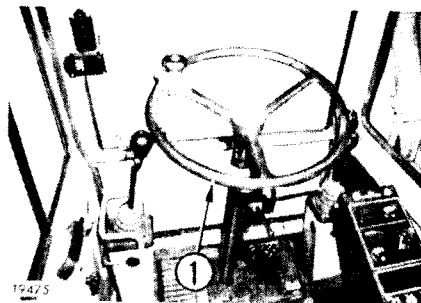


- ★ If breather hole (1) in the cap is blocked up, fuel flow to the engine may stop. Accordingly, clean it from time to time.
- ★ Fuel capacity: 155 ℓ
- ★ When adding fuel, never let the fuel overflow. This may cause a fire.

1. Run the engine at low speed, retract the arm and bucket cylinder, lower the boom until the tips of the teeth touch the ground and then stop the engine.
2. Move each control lever (for work equipment and travel) to its full travel to release the internal pressure.

3. If the level of hydraulic oil is not between top H and bottom L lines of sight gauge (G), pour in additional engine oil from filler (F).
 - ★ The type of lubricant used depends on the ambient temperature. Select according to the table "FUEL, COOLANT AND LUBRICANTS".
 - ★ Do not pour in additional oil if the level is above the top line H of the sight gauge.

STEERING



The machine can be turned by turning steering wheel (1) to the desired direction.

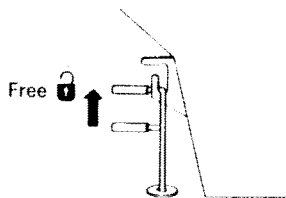
★ If the upper works are turned 180 degrees and the undercarriage is reversed, the machine is steered in the opposite direction of the steering wheel. Therefore, take care of the direction of the chassis.

SWINGING



1. Raise the swing lock lever (1) to unlock the upper works.

★ Before swinging the upper works, make sure that the work equipment levers have been unlocked.

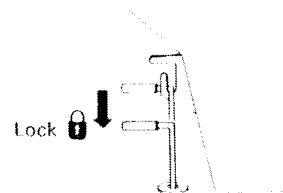


2. To swing the upper works, move the left work equipment lever.

★ Do not push down the swing lock lever during swinging.

3. To lock the upper works, push down the swing lock lever (1) when the upper works and the chassis are parallel.

★ Do not move the swing lock lever if the upper works and the chassis are not parallel.



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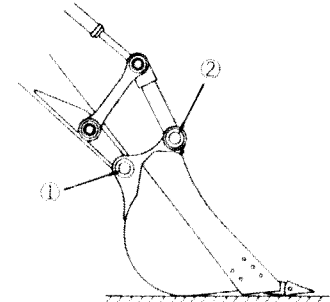
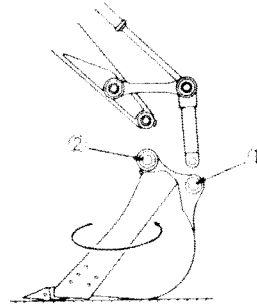
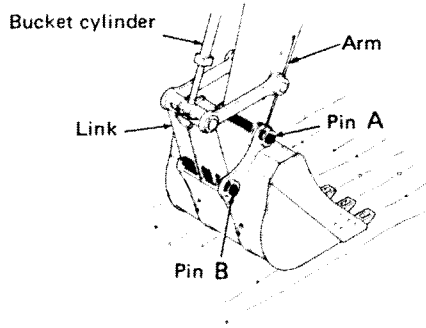


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INVERSION AND REPLACEMENT OF BUCKET

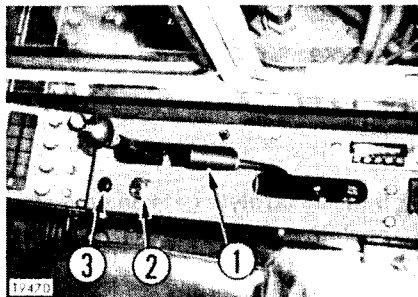
Stop the machine on a firm, flat surface. When performing joint work, make clear signals to each other and work carefully for safety's sake.



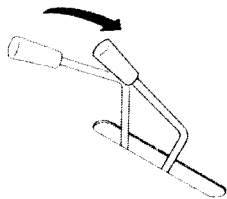
1. Select a flat surface and stabilize the bucket.
2. After removing the stop bolt and nut for each pin, extract pins A and B.
 - ★ After removing the pins, make sure that they do not become contaminated with sand or mud and that the seals of bushing on both sides do not become damaged.
3. Reverse the bucket.
 - ★ After reversing the bucket, correct the direction and inclination of mounting pin holes (1) and (2) then firmly stabilize the bucket so that it does not shake about.
4. Couple the arm to hole (1), then connect the link to hole (2).
5. After mounting the stop bolt and nut for each pin, apply grease to each pin.

STARTING IN COLD WEATHER

For the pre- and post-starting inspection, refer to the section "OPERATING YOUR MACHINE."

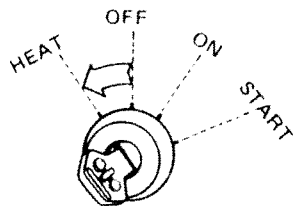


1. Pull fuel control lever (1) to the center position between low idling and high idling.

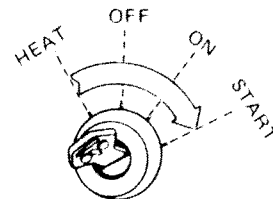


2. Put the starting switch key (2) in the HEAT position to red-hot heater signal (3). The preheating times are as shown below:

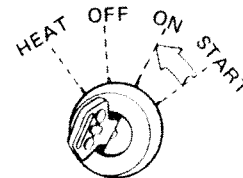
Ambient temperature	Preheat time
Above 0°C	—
0°C to -10°C	20 seconds
-10°C to -20°C	30 seconds



3. When heater signal (3) becomes red, turn starting switch key (2) to START position to start engine.



4. When the engine starts, return the key of starting switch key (2) to the ON position. (The key will return automatically when released.)

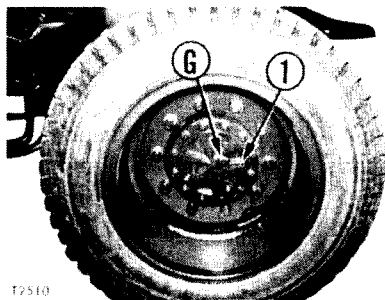


MAINTENANCE TABLE

No.	ITEM	SERVICE	PAGE
CHECK BEFORE STARTING			
a	Walk around check		38
b	Coolant	Check and supply	38
c	Engine oil pan	Check and supply	39
d	Fuel tank	Check and supply	39
e	Hydraulic tank	Check and supply	40
f	Brake fluid tank	Check and supply	41
g	Dust indicator	Check	41
h	Tires	Check air pressure and damage	42
i	Foot brake	Check	42
j	Parking brake	Check	42
k	Lamps and instruments	Check	42
l	Rear view mirror	Check	42
m	Horn and wiper	Check	42
n	Exhaust gas and exhaust sound	Check	42

No.	ITEM	SERVICE	PAGE
o	Door lock	Check	42
p	Unusual part on the previous day	Check	42
q	Electrical wiring	Check	42
r	Clamshell bucket	Lubricate 14 points	42
s	Water separator	Check	43
EVERY 50 HOURS SERVICE			
a	Fuel tank	Drain water and sediment	84
EVERY 100 HOURS SERVICE			
a	Lubricating		84
-1	Boom cylinder foot pin	Lubricate 1 point	85
-2	Boom foot pin	Lubricate 2 points	85
-3	Boom cylinder rod end pin	Lubricate 1 point	85
-4	Arm cylinder foot pin	Lubricate 1 point	85
-5	Boom-Arm coupling pin	Lubricate 1 point	85
-6	Arm cylinder rod end pin	Lubricate 1 point	85

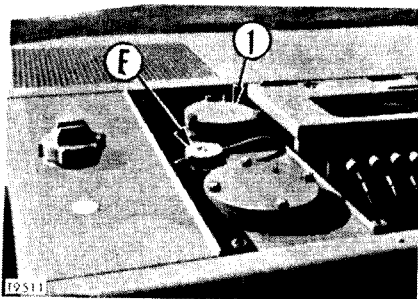
d. FINAL DRIVE CASE



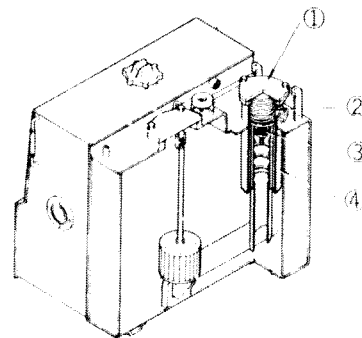
1. Stop the machine so that cast line (1) comes into horizontal.
2. Remove plug (G) and check that the oil level is near the bottom of the plug hole.
If necessary, add gear oil through the plug hole.

★ The type of lubricant used depends on the ambient temperature. Select according to the table "FUEL, COOLANT AND LUBRICANTS".

e. HYDRAULIC FILTER



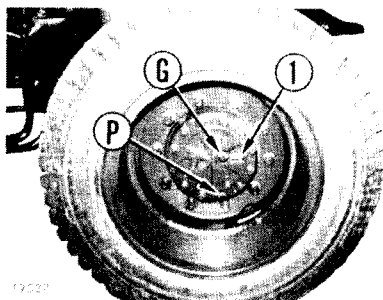
1. Remove cover and remove oil filler cap (F).
 2. Remove cover (1), spring (2) and valve (3) to remove element (4).
 3. Clean the removed parts, then replace it with a new one.
- ★ Be sure to use a genuine Komatsu element.



⚠ When remove cover (1), undo the bolts gradually to prevent the cover flying off under the force of spring (2).

⚠ When removing the cap, turn it slowly to relieve inner pressure.

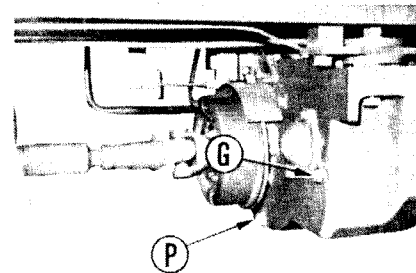
b. FINAL DRIVE CASE



1. Stop the machine so that cast line (1) comes into horizontal.
2. Drain the oil from drain plug (P), then tighten the plug.
3. Refill the gear oil from oil filler (G).

- ★ The type of lubricant used depends on the ambient temperature. Select according to the table "FUEL, COOLANT AND LUBRICANTS".
- ★ Refill capacity: 1 l (Front and rear on each side)
- ★ For details of the method of refilling the oil, refer to the section EVERY 250 HOURS SERVICE.

c. TRANSMISSION CASE

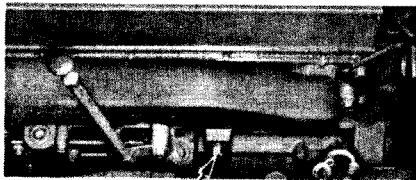


- Drain the oil from plug (P) on the lower body, then retighten it. Refill the engine oil from oil filler (G).
- ★ The type of lubricant used depends on the ambient temperature. Select according to the table "FUEL, COOLANT AND LUBRICANTS".
 - ★ Refill capacity: 8 l
 - ★ For details of the method of refilling the oil, refer to the section EVERY 250 HOURS SERVICE.

WHEN REQUIRED

6. After washing the cooling system, stop the engine. Open drain valve (3) and plug (4) to drain water and close drain valve (3) and plug (4).
7. After draining off the cooling water, wash out the cooling system using commercially available detergent. Follow the instructions on the detergent container.

Drain plug (cylinder block)

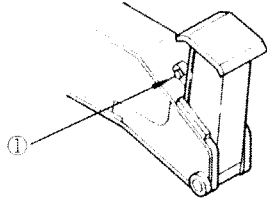


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8. After washing the cooling system, drain off all the water, then close up drain valve and plug, and pour in clean water (ex. city water) slowly up to the vicinity of the water filler.
9. When the water reaches the vicinity of the water filler, put the engine at low idling, open the drain valve and plug, then pass water through the cooling system until clean water comes out from the drain valve and plug.
 - ★ When flushing, adjust the flow so that water is added at the same rate as the water is drained to keep the radiator always full.
10. When the water becomes completely clean, stop the engine and close the drain valve and plug.
11. Replace the corrosion resistor cartridge and open valves (1).
 - ★ For details of replacement of the corrosion resistor, see EVERY 1000 HOURS SERVICE.
12. Supply water until it overflows from water filler.
13. Run the engine 5 minutes at low idling and then for another 5 minutes at high idling to eliminate air trapped in the cooling system (leave radiator cap off during this operation).
14. Stop the engine and wait for about 3 minutes. Supply cooling water up to the specified level tighten the cap.
 - ★ Always replace the corrosion resistor cartridge with a new part.

! Before starting to travel, always check first that the outrigger is locked.

OUTRIGGER LOCK PIN



Be sure to lock the outriggers with lock pin (1).

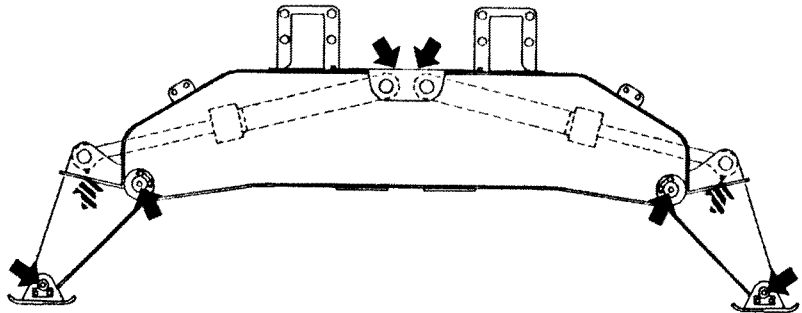
★ Before starting to travel, be sure to pull in and lock the outriggers.

EVERY 250 HOURS SERVICE

a. LUBRICATING

Apply grease to the grease fittings shown by arrows.

1. Outrigger (8 points)



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