

UHO71

Hydraulic Excavator



APPLICABLE MACHINE
SERIAL NO. 0111 ~

EM740-1-2

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FOR THE MOST EFFICIENT OPERATION
FOR
HITACHI HYDRAULIC EXCAVATOR

- (1) To keep always Hitachi Hydraulic Excavator is its highest condition, and to use for a long time under its highest performance, the followings are most important.

- NORMAL OPERATION
- PROPER MAINTENANCE

So that, read through this operation manual to know each part and construction of the machine, and operate it properly and keep it always in good condition.

With regard to the operation and maintenance of the engine, refer [Operation Manual of Diesel Engine, Isuzu type 6BD1] other than the description of this operation manual.

- (2) Keep this operation manual in the operator's seat pocket so that you may refer to it at any time.
- (3) Operate the machine safely with periodic inspection and maintenance service.
- (4) The type and manufacturing number of the machine are marked on the name plate in front of revolving frame.
When asking Hitachi service shop for help or some other things on the machine, let them know the type and number of the machine.

[For example] UH071, 740-0111

Those are provided for getting on and off the cab and the base machine safely. Do not use those to sling the cab or body and to wire the machine when transporting it.



Fig. 2-4

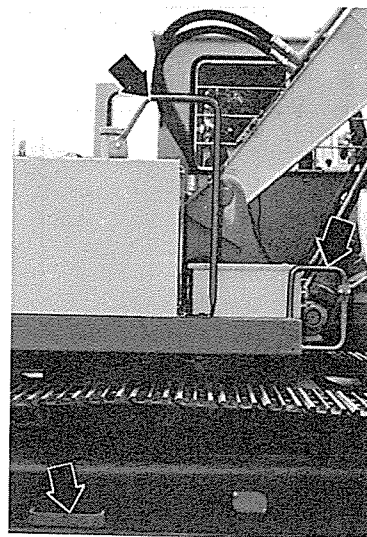


Fig. 2-5

2.2 Hydraulic System

The swing and propelling motions and all attachment motions of the machine are hydraulic driven.

Fig. 2-6 shows the hydraulic circuits.

- (1) The front pump is connected to control the boom (first stage), bucket and right propelling through the right control valve, and the rear pump is connected to control the arm, boom (second stage), swing and left propelling through the left control valve.
- (2) As the right lever is moved in a large angle to the boom hoist direction, the speed of the boom motion will be increased by the joined oil flow from both the front and rear pumps.
- (3) The hydraulic circuit of the machine is equipped with safety valves (relief valves) on both the right and left control valve, and also safety valves on the full flow filter and oil cooler circuits respectively.

The hydraulic oil pumps, control valves, safety valves etc. have been adjusted prior to shipping from factory.

Do not attempt to disassemble or adjust them because readjustment cannot be done if they are disassembled in the field.

If some unusualness is found on them, have them repaired at nearest Hitachi dealer or authorized service shop.

Note 1: Alarm with horn etc. when starting the engine.

2: If the engine does not start in spite of starter switch in "START" position, wait for about 30 seconds before attempting to restart the engine.

Never operate the starting motor more than 10 seconds.

3: Follow the instructions of item ④ given in table 3-2, lest the starting motor should be damaged.

4: When restarting the engine, try it after the starting and the engine motor have been stopped completely.

5: During engine running, be sure to put the starting switch in "ON".

The starting switch in "OFF" may cause the electric system trouble.

6: When leaving the machine for a while with the engine under idling state or when starting the engine, if the engine speed is low, the vibration of the machine may increase due to resonance.

In this case, increase the engine revolution slightly to decrease such vibration.

7: Starting procedure in the cold season

When the engine is hard to start because of cold, put the starter switch in "PRE-HEAT" position and keep it for about 20 seconds for ease of start.

As soon as the heater signal is red heated, start the engine in accordance with the instruction listed in Table 3-2. Never operate the starting switch in "PRE-HEAT" position for over 25 seconds.

(2) After starting the engine, make sure each item listed in Table 3-3 during warming-up operation.

Table 3-3 The Items to be confirmed after Starting Engine

①	The air meter is expected to indicate between 0.7 ~ 1.5 bar (0.7 to 1.5 kg/cm ²).
②	Thermometer is expected to indicate its green range.
③	The engine oil alarm lamp should go off.
④	The battery charging lamp should go off.
⑤	The engine noise and the color of waste gas should be normal.

- (3) On soft ground, take care always of the lower parts of the machine, because the machine may sometimes sink gradually in the soft ground. Even if the track links do not sink deep, soft mud may sometime be built up at the inside of the track frame.

So that, it is recommended to place crossties or plates under the track links as required.

- (4) By any chance, if the swing ring, swing pinion gear and/or center joint are submerged or sunk in soft mud, stop operation, and contact your nearest Hitachi dealer or service shop for replacing grease, or disassembling and servicing them, as soon as possible.

Otherwise, swing ring etc. may be worn out abnormally.

3.12 Things to be done after Operation

- (1) After the operation is over, place the machine on the safe and level ground where falling stone, landslide, flood etc. are not expected, and land the bucket.
- (2) Feed fuel oil into the tank until filled.
- (3) Clean the machine thoroughly.
- (4) If no anti-freezing solution is used in winter, be sure to drain water out of the radiator and engine water jacket.
After draining, post a notice board [Unwatered] on the suitable place.
- (5) Remove the engine key, and be sure to lock the door with the key.
- (6) When washing and cleaning the machine with jet water etc. take care not to put water into the swing ring, swing pinion and/or center joint.

4.2 Recommended Fuel Oil and Lubricants

(1) Fuel oil and lubricants used for new machine

For a new machine, the following fuel oil and lubricants are used.

Part to be applied	Kind of lubricant	Lubricant brand
Fuel tank	Light oil	JIS No. 2 light oil
Oil tank	Hydraulic oil	Idemitsu, Daphne super HYdro 46WR
Engine	Engine oil	Idemitsu Custom Wide 15W-40
Gear box	Gear oil	API Service Class GL-4, SAE 90
Swing gear Swing bearing Front joint pin	Grease	Lithium grease NLGI No. 2

Note: Use same fuel oil and lubricants as those used for new machine.

If another fuel oil or lubricant is used, be sure to replace all quantity of that.

Refer to the following "Recommended fuel oil, Lubricants" if another kinds of fuel oil or lubricant is required.

(2) Recommended fuel oil and lubricants

(a) Recommended fuel oil

-10°C or above	JIS No.2 light oil
Below -10°C	JIS No.3 light oil

(b) Recommended lubricant

Select and use lubricant given in Table 4-1.

Note: The warranty will be voided unless the fuel oil or lubricants specified above are used.

4.3.12 Control lever

The points to be greased are shown in Fig. 4-18.

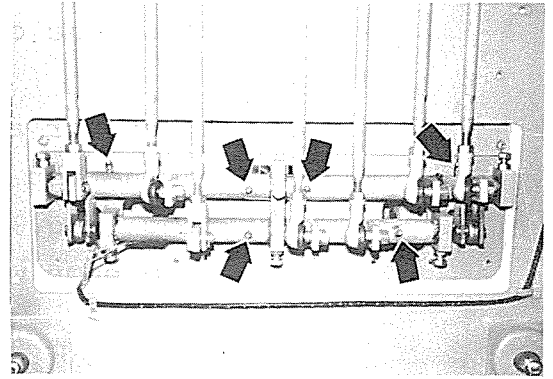


Fig. 4-18

4.3.13 Hydraulic oil

(1) Precautions

- (a) Place the excavator on a firm, level surface where there is no danger of caving and sliding.
- (b) Pay attention to methods of protecting oil from dirt or other particles.
- (c) Do not mix different oils in the system as they are not compatible. Stay with one oil as recommended in this manual. The excavator is shipped with the hydraulic system filled with DAPHNE SUPER HYDRO 46WR. When this oil is not available and different oil must be used, drain the oil thoroughly.
- (d) Do not use oils other than those specified in this manual. Never substitute such oil as gear oil, machine oil, spindle oil, or vegetable oil. (Table 4-1, Page 38)
- (e) Under no circumstances should the engine be started with the hydraulic oil drained.

(2) Replacing hydraulic oil

- (a) Loosen the air vent plug shown in Fig. 4-19 slowly to remove air pressure thoroughly.
- (b) Provide a vessel having about 200 liters in capacity, remove the cover shown in Fig. 4-19, and suck out hydraulic oil with a feed pump.

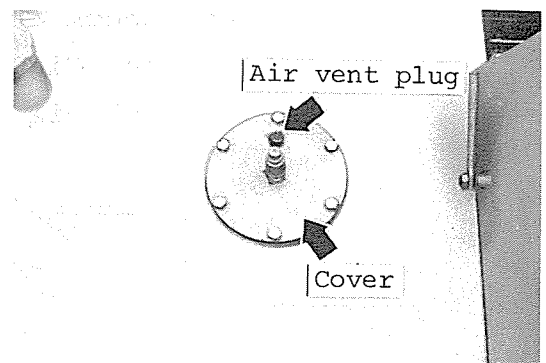
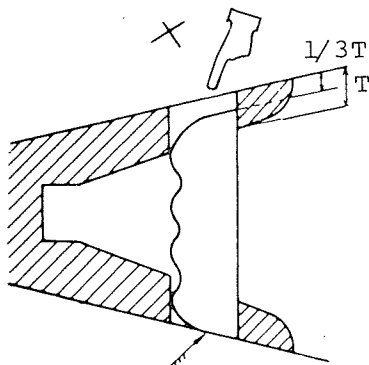
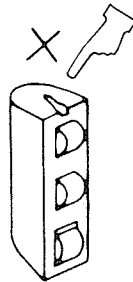


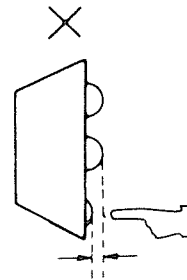
Fig. 4-19



Align bottom of pin with lower face of point.
Pin is too short.



Steel balls will come out due to cracked rubber lock



Steel balls are pushed in by hand easily due to deteriorated rubber lock.

Fig. 4-43

- (c) Using a putty knife or the like, clean the outer surface of the nose thoroughly. (Fig. 4-44)

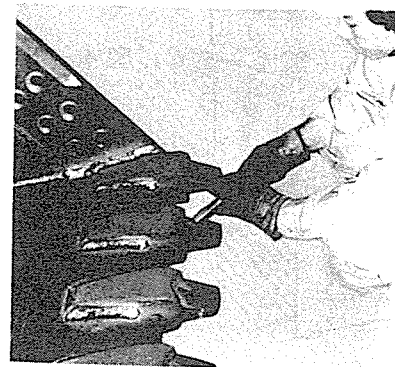


Fig. 4-44

- (d) Push the rubber pin lock into the nose hole so as not to stick out of the nose surface as shown in Fig. 4-45.

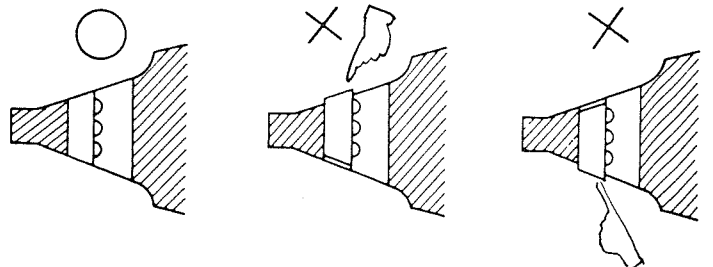


Fig. 4-45

- (e) Put the point over the nose, and make sure that the hole of the point fits to the hole of the nose the rear, when pushing the point strongly.

(See Fig. 4-46)

If it is difficult to make sure above, use a ruler as shown in Fig. 4-47.

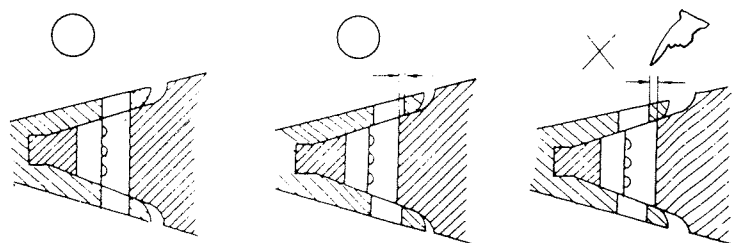


Fig. 4-46

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