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#### **MAINTENANCE**

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**SPECIFICATIONS** 

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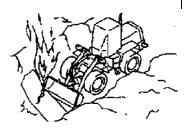


#### 7.1 Before the Engine is Starting

#### Safety on the Field

- Before starting the machine, check if abnormal conditions which can cause danger are existed.
- Check topography and soil texture to select best working manner.
- When working on the highway, it should have special person to command traffic and set the roadblock to ensure safety of transportation and pedestrians.
- · When working on the place where water and gas pipes or high voltage cables are buried underground, it should make contact with responsible departments to define the location of pipelines, and take care not to damage them during the working period.
- When working on water or running through sand dike, first check soil texture, water depth and flow speed to ensure that the allowed depth is not exceeded.

The allowed depth  $\rightarrow$  see "12.11 Attentions in Working".



# Fireproof

- Completely clear out inflammables such as wood bits, leaves and paper scraps which accumulated on the engine and could catch fire.
- Check if there is leakage on fuel, lubrication oil and hydraulic systems, repair any leakage and remove all excess oil, fuel and other inflammable liquids.
  - The Check Position → see "12.11 Touring Check".
- Be ensured that one extinguisher is available.
- Do not operate the machine near the fire.

#### In Driving Cab

- Never put tools or spares carelessly in the driving cab because they could damage or break the operating lever or switches. Keep them in the toolbox on the right side of the machine at any time.
- Keep the floor, operating lever, step tread and arm rail in the driving cab from oil, grease, snow or other dirt...
- Check the safety belt, buckle and parts to see if they are damaged or worn out. Replace all damaged parts. Tie the safety belt (option) well in the driving cab.



#### 7.2 Operate the Machine

#### When Staring the Engine

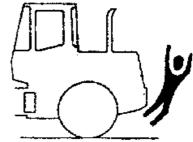
- Before starting the machine, check around the vehicle if there is people or blocks existed.
- Never start the engine if the warning sign is hung on the operating lever.
- Only sitting well can the engine be started.
- Do not let anybody except driver enter into the driving cab or any other place in the vehicle.
- Check if the reverse running buzzer can work normally if it is installed.

#### **Check When Running Back the Vehicle**

First exert following matters when operating the machine or working device:

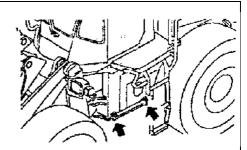
- Warning people around the machine by tooting.
- Be ensured nobody is around and behind the machine.
- It should have special person to check safety if needed, especially when the vehicle is tunning back.
- It should have special person to commend traffic on the field in case in dangerous area or in the place where the view of version is bad.
- Do not allow people to close to the running route of the vehicle.

Above stipulations should be observed even the reverse running buzzer and the rearview mirror are installed.



#### **Safety Check**

Before starting the machine, check and ensure that the Safety lever should be on the neutral position.



#### **Attentions When Running**

- The scraper bowl should be 40 to 50 cm apart from the ground when running on plain road.
- When running on uneven road, keep lower speed and stable steering and avoid sudden turn.
- If the engine goes out when running, the steering wheel cannot be used any more. This is very dangerous and you should brake and stop the vehicle immediately.



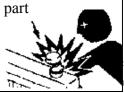
#### Principle to Filling Fuel and Machine Oil

- Spilled fuel and machine oil can cause you to slide down so they must be cleared out on time.
- Be ensured to tighten the cover of the filling port.
- Never use fuel to clean parts.
- Fill fuel at well-ventilated place.



#### **Water Amount in Heat Radiator**

- Check water amount only after the engine is stopped and the engine and the radiator are cooled.
- When taking out the cover, slowly loosen it to release internal pressure.



#### **Use of Lighting**

• Check fuel, machine oil, coolant and electrolyte of batteries, be sure to use explosion-proof lamp, otherwise explosion could occur.



#### **Attentions to Maintain Storage Batteries**

• When repair electrical system or use weld something, it should disconnect the negative pole of the storage batteries to switch off power supply.

precautions.

#### 5. Board for Using Specified Fuel

### 必须使用指定燃料

MUST USE APPOINTED FUEL

#### 6. Board for Attention

# 注意 **TATTENTION**

- 1. This screw plug should be always tight and sealed.
- 2. When repairing, loosen the screw plug 4 to 6 turns the oil supply shall be stopped automatically.
- 3. After repairing is finished, retighten the screw plug again.

#### 7. Warning Board of Oil Tank

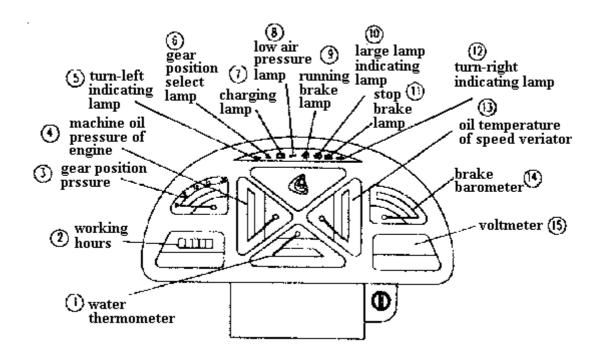
# **警告** ▲ WARNING

- 1. 开盖之前,须先停 机。
- 2. 油温尚高时,决不可开盖。
- 3. 工作油箱盖应缓缓的 卸开以便放泄残压。
- 4. 油温高时,放泄塞决 不可放松。
- 1. MUST STOP ENGINE BEFORE OPENING THE COVER.
- 2. NEVER OPEN THE COEVR WHRN OIL IS IN HIGH TEMPERATURE.
- 4. REMOVE THE COVER SLOWLY TO RELEASE REMAIN PRESSURE.
- 5. DRAIN PLUG CANNOT BE LOOSENED WHEN THE OIL IS IN HIGH TEMPERATURE.

The descriptions of equipments used when operating the machine are as follows.

It is very important to completely understand the operation methods and functions of equipments below so as to make safe, correct and suitable operations.

#### 11.1 Monitors and Lamps of the Vehicle



#### 1. Water Thermometer

Used to monitor temperature of cooling water.

#### 2. Working Hours Meter

The accumulated working hours meter of the machine.

#### 3. Gear Position Pressure

Used to monitor oil pressure of gearbox.

#### 4. Machine Oil Pressure of Engine

Used to monitor oil pressure of the engine.

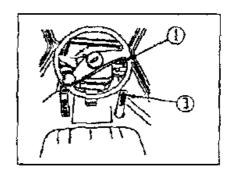
#### 5. (12.) Turn Indicating Lamps (both left and right one each)

To indicating turn direction, it lights as the turn lamp lights at same side at same time.

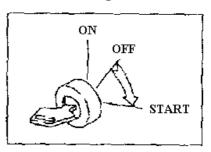
#### 6. Gear Position Select Lamp

When it lights, motive power is not cut-off when braking while it goes out, motive power is

1. Step down the throttle tread 3 slightly.

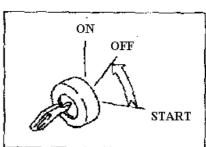


2. Turn the key in the start switch 1 to the position START to start the engine.



3. After the engine is started, release the key in the start switch 1, it will return back to the position ON automatically.

**12.3 Operation and Check after the Engine is Started** After the engine is started, you could not start work immediately, instead, make following operation and check first.



#### **Attention:**

You cannot speed up the engine suddenly in preheating period.

You cannot let the engine run at the neutral gear position at high or low speed for over 20 minutes continuously.

If it is needed to let the engine run at the neutral gear position, you should often apply a load or let it run at middle speed gear position.

1. Step down the throttle tread 1 slightly to let the engine run without load for about 5 minutes



#### 14.1 Attentions under Low Temperature

If temperature is something low, the engine will be too difficult to start and the coolant could be frozen, therefore following points should be met:

#### 14.1.1 Fuel and Lubricant

Fuel and lubricant with low viscosity should be used for all parts. Detailed information about the viscosity can be seen on "20. Apply Fuel, Coolant and Lubrication Oil Depending on Temperature of Environment"

#### **14.1.2** Coolant



#### **ATTENTION**

The antifreeze agent should be far from fire and smoking is not allowed when using coolant.

#### **Attention:**

- Do not use antifreeze agent containing methyl alcohol, ethanol and propyl alcohol etc.
- Absolutely do not use any leak preventive agent whatsoever it is used independently or used together with the antifreeze agent.
- Do not mix antifreeze agents with different brands for use.

When changing coolant, the details of mixing ratio of antifreeze agents can be seen on "24.2 Making Maintenance as Required".

Adopt the permanent antifreeze agent which is in accordance with following standard (mixture of ethylene, ethylene glycol, preservative and defoamer). You do not need to change the coolant if permanent antifreeze agent is used. If you do no know it existing antifreeze agent can meet the requirement of standard, contact the dealer for relative information.

#### Remarks:

If no permanent antifreeze agent, the ethylene and ethylene glycol without preservative can only be used in winter. Thus you should clean cooling system twice a year (spring and autumn). When change coolant, you should add antifreeze agent in autumn and do not add in spring.

Chassis (continued from 16.4.2)

Trouble	Main Causes	Remedies
Manual Brake		
Bad brake effect	• Loose connecting rod • Disc worn out	Adjustment     Adjust or change disc
Steering		1
Large operation fore of steering wheel	Oil hydraulic system has defect O ring is lack of oil	• Fill oil to specified amount. O ring see: "Maintenance Every 100 Hours"
Loose steering wheel	<ul> <li>Clearance in steering oil cylinder pin</li> <li>Oil hydraulic system has defect</li> <li>O ring is lack of oil</li> </ul>	<ul> <li>Lubricating bearings, replace pin or add bush in clearance</li> <li>Fill oil to specified amount. O ring see: "Maintenance Every 100 Hours"</li> </ul>
Hydraulic System		
Bowl lifted powerlessly  Bowl lifted for long time	Lack of oil     Filter of hydraulic oil tank blocked	<ul> <li>Fill oil to specified amount.</li> <li>See: "Maintenance Every 100 Hours"</li> <li>Change filter.</li> <li>See: "Maintenance Every 2000 Hours"</li> </ul>
Excessive bulb in oil	<ul><li>Bad oil used</li><li>Low level of oil</li><li>Air in oil pipe</li></ul>	<ul> <li>Replace with top quality oil</li> <li>Fill oil to specified amount.</li> <li>See: "Maintenance Every 100 Hours".</li> <li>Bleeding air.</li> <li>See: "Maintenance Every 100 Hours"</li> </ul>
Oil pressure too low	Oil level too low, air sucked into the pump	• Fill oil to specified amount. See: "Maintenance Every 100 Hours". Then Bleeding air, See: "Maintenance Every 2000 Hours"
Irregular moving of hydraulic cylinder	Oil level too low	• Fill oil to specified amount. See: "Maintenance Every 100 Hours".

#### Select fuel, coolant and lubricant correctly.

	Type of	Ambient Temperature -32 -4 14 32 50 68 86 104 122°F					Oil Amount							
Device	Medium	l						Stipulated Amount		Adding Amount				
Bottom Casing of Engine	E . 0.1		SAE15W-40						19L		19L			
Gearbox	Engine Oil		8# Hydraulic					Drivi	ng O	il	45L		45L	
II-do1:-			GB1111.1-94 Mineral oil or synthetic hydrocarbon hydraulic oil (L-HM)  Bitter cold 22  In winter 32  In summer 46											
Hydraulic System									220L		220L			
Bridge			Meifu 1330					37L		37	L L			
Brake Oil			SAE 10W						2×1.5L		2×1.5L			
Pin Axle	Lubricating Grease		GB/T5671-1995 universal lithium- base grease SH/T0380-1992			In	wii	nter	ZL-2H		-		_	
			compound lithium- base grease		In	n summer ZL		3H						
Fuel Tank	Diesel	GB252-1994				cold	-35 -20	5 -50						
ruei falik Diesei			Light diesel			In	In summer 0		10	300L		300L		
Cooling System	Water	F	Fill antifreeze liquid						20L		-			

#### **Remarks:**

When sulfur content in fuel is lower than 0.5%, it should be replaced in stipulated period of maintenance in manual.

When sulfur content in fuel is higher than 0.5%, it should be replaced as per following table.

Sulfur content in fuel	Replace Period				
0.5-1.0%	1/2 period of maintenance				
higher than 1.0%	1/4 period of maintenance				

Or you can use compressed air (no higher than 700 kPa (7 kg/cm<sup>2</sup>)) to blow from the inside to the outside to reach fast dry.

Never heat the element.

Use lukewarm (about 40°C) instead of soap water can get better results.

#### 24.2.2 Clean the Inside of the Cooling System

# A

#### **ATTENTION**

- When the engine stops running, cooling water is very hot and can injury persons. So you can drain water only after it is cooled down.
- As cleaning work is done when the engine is running, it is quite dangerous to enter into the lower part of the machine body as the loader could start in a sudden. Therefore when the loader is working, never enter into the lower part of the machine.
- When the loader is at working temperature, never take out the cover on the inlet of the radiator because the boiling water with pressure and steam could come out to injury persons. Only when the engine is cooled down, and touch the cover on the inlet to feel if it is cooled, then turn the cover down slowly to release pressure.
- When clean or replace cooling water, park the loader on the plain ground.
- Adopt the antifreeze agent with fixed brand. If it is impossible due to some reasons, please use the antifreeze agent with ethylene and ethylene glycol.
- Be ensured that the replaced screen is made of stainless steel.
- Clean the cooling system as per following table, and replace cooling liquid and antirust agent.

Type of Coolant	Clean Cooling System and Replace Coolant	Replace Antirust Agent		
Antifreeze agent with fixed brand (used in four seasons)	Every year (in autumn) or every 2000 hours	-		
Non-fixed brand of antifreeze agent with ethylene and ethylene glycol (used in winter)	Every six months (in spring and autumn) (removing preservative in spring and adding preservative in autumn)	Every 1000 hours or when cleaning the inside of the cooling system or replacing coolant		
Antifreeze agent is not in	Every 6 months or every			
use	1000 hours			