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MAINTENANCE

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SPECIFICATIONS

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25: Specifications

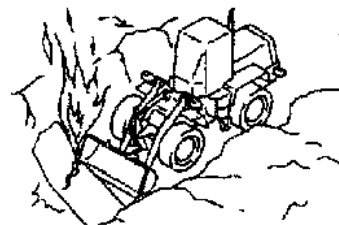
4-2



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 → 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.



7.4 Storage Batteries

Prevent Danger of Storage Batteries

- There are sulfuric acid in the electrolyte of the batteries. If it is splashed, cloths will be burnt out soon. If you are splashed by sulfuric acid, flush with water immediately until it is cleaned.
- If eyes are splashed they could cause blind. Should acid enter into eyes, flush with large amount of water immediately and go to see doctor as soon as possible.
- If you eventually drink acid, drink large amount of water or milk, eggs or vegetable oil immediately and call doctor as soon as possible.
- Always wear glasses or goggles when you treat storage batteries.
- Storage battery can produce hydrogen which is easily exploded and can be ignited by small sparkle or flame.
- Stop the engine and set the ignition switch at OFF position before treating batteries.
- Check positive and negative poles when installing or uninstalling batteries.
- Tighten the cover of batteries reliably.
- Tighten poles reliably otherwise they can catch fire and cause explosion.

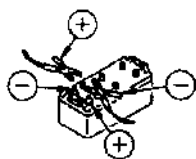


Start with Charging Cable

- When starting with charging cable, be sure to wear safe glasses or goggles.
- When starting with batteries from other machine, do not let two machines to be contacted.
- When using charging cable, be sure to connect positive pole of the cable first, and remove the negative pole of the cable or the ground wire first when uninstalling.
- Sparkles will occur if contact positive pole and the chassis at the same time. This is very dangerous therefore operation should be careful.
- When connecting batteries in parallel, the positive poles should be connected together while the negative poles should be connected as well.
- When connecting the ground wire with the frame of running vehicle, the connection should be reliably.

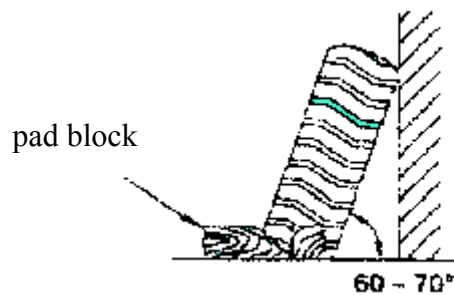
Starting with charging cable → see “16.3 When Battery is Exhausted”.

INCORRECT



**Stacking of Removed Tyres**

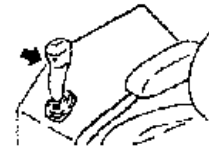
- As a basic rule, tyres should be stored in the warehouse and no person is allowed to enter into without permission. If tyres are stacked in open area, railing should be set around tyres and the warning board of “NO RNTRY” should be hanged on which even child could understand.
- Place tyres vertically on the plain ground and fixed by pads to prevent rolling or falling down.
- If tyres are falling down, you should dodge them as soon as possible. As the tyres of engineering machines are very heavy, you could be injured if you want to give a support.



11. Automatic Speed Reduction Switch

When the gear lever is shifted at Gear II, push down this switch at the top end of the operating handle of the boom, the gearbox can be reduced to Gear I automatically.

This switch can be used to increase drawing force when it is in scraping and excavating operation.



Remarks:

When releasing the automatic speed reduction switch, you can set the operating lever to the neutral or the return position, or set at any gears rather than the gear II, or you can switch off the start switch.

12. Select Switch for Gear Disconnection

When it is set at ON, the indicating lamp on the panel lights and the motive power is not cut-off when braking while it is set at OFF, motive power is cut-off when braking.

13. Main Switch of Power Supply

When pressing down, power supply is on; while pulling up, power supply is off.

Remarks:

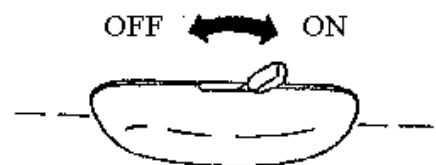
Power supply should be switched off when not working.

14. Lighting Switch in the Driving Cab (not displayed in above drawing)

It is used to switch on the lamp in the driving cab.

Position ON: switch on the lamp.

Position OFF: switch off the lamp.

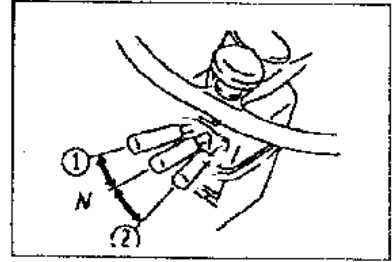


Remarks:

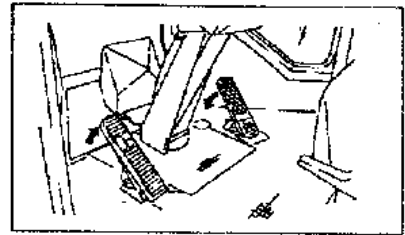
- Even the main switch is switched off, the lamp in the driving cab can be still switched on. So when you leave the driving cab, please set the switch at OFF position.

12: Operation

5. Set the operating levers of speed and direction at intended positions.



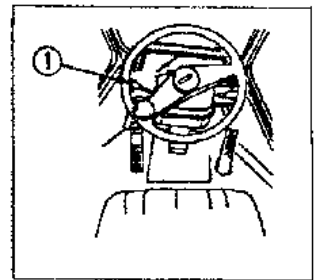
6. Loosen the brake step tread 2, step down the throttle tread 3 to start the loader.



12.5 Shift Gears

WARNING

You cannot change speed when running the load at high speed. If speed change is needed, you should reduce the speed first before changing.



The way to change speed is as follows:

Turn the gearshift lever 1 at the intended position.

Make excavation of load operation at Gear I or Gear II.

Remarks:

The vehicle has an automatic speed reduction switch. When you are in Gear 2 speed, press the button on the end of the operating lever of the boom, the speed can be reduced at Gear I.

When the loader is excavating or loading at Gear I or Gear II, this automatic speed reduction switch is recommended to use.

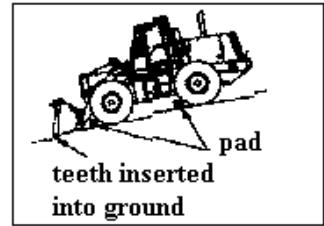
Detailed description can be seen on “11. Descriptions of Parts”.

12.13 Parking of the Machine



WARNING

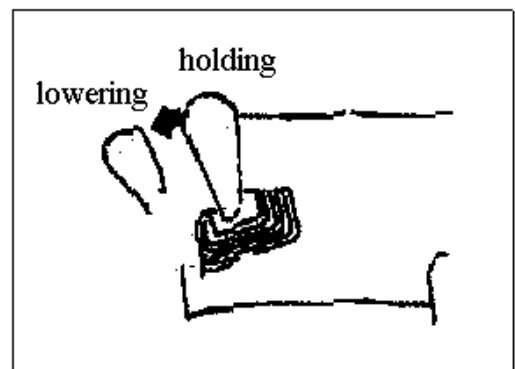
- Avoid to make brake in a sudden. You must leave a spacious room for brake.
- Do not stop the vehicle on a slope. If it is needed, you should make the vehicle towards in descending direction and insert teeth of the scraper into ground, and put pad under wheels to prevent its moving.
- If knocking the operating lever to make the working device and the vehicle moving, it may cause serious accident. Therefore when leaving the driving cab, always set the operating lever at the middle position.



Attentions:

You cannot use the stop brake device to stop the vehicle when it is running except in case of emergency. The lever of the stop brake valve is only used when the vehicle is stopped.

1. Loosen the throttle tread ①, and step down the tread ② to brake.
2. Set the operating lever of direction at position N.
3. Pull up the lever of the stop brake valve to make stop brake.
4. Operate the operating lever of the boom ③, and place the scraper bowl on the ground.



16.3.2 Attentions in Case the Storage Battery is Charging

Charging the Storage Batteries Which are Installed on the Vehicle

- Before charging, first disconnect the cables from the negative terminal of the storage battery, otherwise high voltage will be produced to damage AC generator.
- When charging the storage battery, all screw plugs should be drawn out to keep a good ventilation. Do not let fire or sparkle to approach the battery to avoid explosion of gas.
- If the temperature of electrolyte is above 45°C, stop charging for a while.
- After completion of charging, switch off the charger immediately.

Excess charging can cause following conditions:

- 1) The storage batteries will be overheated.
 - 2) Amount of electrolyte will be reduced.
 - 3) The electrode plate will be damaged
- Do not mix wires (positive and negative terminals), otherwise it can cause damage of AC generator.
 - Do not touch cables of the storage batteries when checking the level of electrolyte and measuring the specific gravity.

Remarks:

The storage batteries are on both sides of the rear part of the loader. The storage battery connecting with the grounding wire is normally on the right side of the vehicle.

16.3.3 Start the Engine By Charging Cables

Following operations should be followed when starting the engine by charging cables:

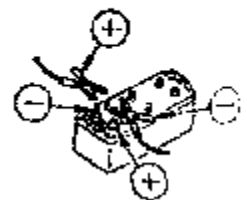
Attentions When Removing and Installing Charging Cables



WARNING

- Do not let both positive and negative terminals to be contacted when connecting cables.
- Wear goggles when starting the engine by charging cables.
- Be care not to let normal loader to be contacted with the loader with trouble as it could produce sparkle near the storage batteries to ignite hydrogen leaked from the storage batteries, thus to cause serious damage.
- Do not connect charging cables wrongly. When connecting with the engine with trouble finally, it can cause sparkle so leave the storage batteries as can as possible.
- When removing cables from started vehicle, do not allow the ends of the cables to be contacted each other or to contact the frame in order to avoid explosion of hydrogen.

INCORRECT



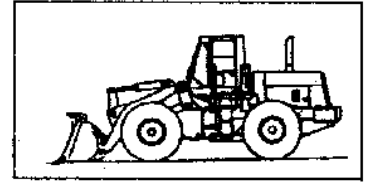
Never adopt check and repair methods which are not described in this manual.

Repair should be done on solid and plain road.

Preparation Before Repair

Following work should be carried out except some special cases.

- Let the working device close to the ground as shown in drawing.
- All operating levers should be set at middle position.
- Pull up the stop brake lever to make brake in work.
- Put pad blocks before and after tyres.
- Lock the front and rear frames by safety lever.



Check all nuts and bolts and tighten or replace as required.

Working Hours Meter:

Check readings on the meter every day to see if the maintenance time is up.

Agrison spare parts:

Take specified spare parts in the spare parts list to make maintenance and change.

Agrison's Oil:

Adopt oil and lubricant recommended by Agrison (select oil and lubricant with suitable viscosity according to ambient temperature).

Clean Washing Liquid:

Adopt window-washing liquid for automobile (do not let dirt come in).

Use Clean Oil and Lubricant:

Keep cleanness of oil tank and lubricant tank. Adopt clean oil and lubricant. Do not let oil and lubricant attach impurities.

Keep cleanness of the machine:

Keeping machine cleanness can make troubles to be found easily. In addition, it should be mentioned that grease nipple, ventilating plug and oil ruler should be clean without impurities.

Pay Attention to Oil and Water with High Temperature:

When the engine stops, it is dangerous to drain high temperature oil and coolant and to take out oil strainer. It should be done when engine is cooled down. The suitable temperature to drain oil is 20 – 40°C. If it is lower than this temperature, it should be heated up to the said range can drain then be carried without.

Check Exhausted Oil and Oil Strainer:

After oil and oil strainer are replaced, check oil and the strainer to see if metal grains or other impurities are existed. Should they are existed in big quantity, contact your Agrison's dealer.

Fuel Strainer:

If the fuel strainer is supplied, do not take it out when adding fuel.

20: Use Fuel, Coolant and Lubricant based on Ambient Temperature

Select fuel, coolant and lubricant correctly.

Device	Type of Medium	Ambient Temperature										Oil Amount									
		-32	-4	14	32	50	68	86	104	122°F	-30	-20	-10	0	10	20	30	40	50°C	Stipulated Amount	Adding Amount
Bottom Casing of Engine	Engine Oil												SAE15W-40						19L	19L	
Gearbox														8# Hydraulic Driving Oil						45L	45L
Hydraulic System		GB1111.1-94 Mineral oil or synthetic hydrocarbon hydraulic oil (L-HM)						Bitter cold		22											
								In winter		32											
								In summer		46	220L		220L								
Bridge					Meifu 1330							37L		37L							
Brake Oil					-																
		SAE 10W										2×1.5L		2×1.5L							
Pin Axle	Lubricating Grease	GB/T5671-1995 universal lithium-base grease SH/T0380-1992 compound lithium-base grease					In winter		ZL-2H	-											
							In summer		ZL-3H												
Fuel Tank	Diesel	GB252-1994 Light diesel					Bitter cold		-35 -50												
							In winter		-20 -10												
							In summer		0 10	300L		300L									
Cooling System	Water	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

20: Use Fuel, Coolant and Lubricant based on Ambient Temperature

23: Schedule Table of Maintenance

23.1 Schedule Table of Maintenance

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Maintenance Items	
Maintenance of First 250 Hours (only after the first 250 hours)	3-19
Replace the filter screen of the fuel strainer	3-19
Replace the cartridge of strainer of the working oil tank	3-19
Check clearance of air valve of the engine and make adjustment	3-19
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Check, clean or replace the cartridge of air filter	3-19
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Check oil level inside the bridge and fill oil	3-24
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