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CEBM017402

Shop Manual

WA380-6

WHEEL LOADER

SERIAL NUMBERS WA380-6

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August 2011
Printed in USA

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FOREWORD SAFETY

SAFETY

Safety Notice

IMPORTANT SAFETY NOTICE

Proper service and repair is extremely important for the safe operation of your machine. The service and repair techniques recommended and described in this manual are both effective and safe methods of operation. Some of these operations require the use of tools specially designed for the purpose.

To prevent injury to workers, the symbol \triangle is used to mark safety precautions in this manual. The cautions accompanying these symbols should always be followed carefully. If any dangerous situation arises or may possibly arise, first consider safety, and take the necessary actions to deal with the situation.

General Precautions

Mistakes in operation are extremely dangerous. Read the *Operation & Maintenance Manual* carefully BEFORE operating the machine. In addition, read this manual and understand its contents before starting the work.

- Before carrying out any greasing or repairs, read all the precautions given on the labels which are fixed to the machine. For the locations of the safety labels and a detailed explanation of precautions, see the *Operation & Maintenance Manual*.
- When carrying out any operation, always wear safety shoes and helmet. Do not wear loose work clothes, or clothes with buttons missing.
 - Always wear safety glasses when hitting parts with a hammer.
 - Always wear safety glasses when grinding parts with a grinder, etc.
- If welding repairs are needed, always have a trained, experienced welder carry out the work. When carrying out welding work, always wear welding gloves, apron, shielding goggles, cap, and other clothes suited for welding work.



WARNING!

Never modify, weld, cut, or drill on any part of a ROPS structure. Doing so may weaken the structure which could lead to possible failure in a rollover situation

4. When carrying out any operation with two or more workers, always agree on the operating procedure before starting. Always inform your fellow workers before starting any step of the operation. Before starting work, hang UNDER REPAIR signs on the controls in the operator's compartment.

- Keep all tools in good condition; learn the correct way to use them; and use the proper ones. Before starting work, thoroughly check the tools, machine, forklift, service car, etc.
- 6. Only qualified workers must carry out work and operations which require license or qualification.
- 7. Decide a place in the repair workshop to keep tools and removed parts. Always keep the tools and parts in their correct places. Always keep the work area clean and make sure that there is no dirt or oil on the floor. Smoke only in the areas provided for smoking. Never smoke while working.
- Avoid continuing work for long hours and take rests at proper intervals to keep your body in good condition.
 Take rests in specified safe places.

Safety Points

1	Good arrangement
2	Correct work clothes
3	Following work standard
4	Making and checking signs
5	Prohibition of operation and handling by unlicensed workers
6	Safety check before starting work
7	Wearing protective goggles (for cleaning or grinding work)
8	Wearing shielding goggles and protectors (for welding work)
9	Good physical condition and preparation
10	Precautions against work which you are not used to or work with which you are too familiar

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Preparations for Work

- Before adding oil or making repairs, park the machine on hard, level ground, and block the wheels or tracks to prevent the machine from moving.
- Before starting work, lower blade, ripper, bucket, or any other work equipment to the ground. If this is not possible, insert the safety pin or use blocks to prevent the work equipment from falling. In addition, be sure to lock all the control levers and hang warning signs on them.
- When disassembling or assembling, support the machine with blocks, jacks, or stands before starting work.
- 4. Remove all mud and oil from the steps or other places used to get on and off the machine. Always use the handrails, ladders, or steps when getting on or off the machine. Never jump on or off the machine. If it is impossible to use the handrails, ladders, or steps, use a stand to provide safe footing.

Precautions During Work

- When removing the oil filler cap, drain plug, or hydraulic pressure measuring plugs, loosen them slowly to prevent the oil from spurting out. Before disconnecting or removing components of the oil, water, or air circuits, first release the pressure completely from the circuit.
- The coolant and oil in the circuits are hot when the engine is stopped; be careful not to get burned. Wait for the oil and coolant to cool before carrying out any work on the oil or water circuits.
- 3. Before starting work, remove the leads from the battery. ALWAYS remove the lead from the negative (-) terminal first.
- 4. When raising heavy components (in excess of 25 kg (55 lb)), use a hoist or crane. Check that the wire rope, chains, and hooks are free from damage. Always use lifting equipment which has ample capacity. Install the lifting equipment at the correct places. Use a hoist or crane and operate slowly to prevent the component from hitting any other part. Do not work with any part still raised by the hoist or crane.
- 5. When removing a cover which is under internal pressure or under pressure from a spring, always leave two bolts in position on opposite sides. Loosen the bolts gradually and alternately to release the pressure, and then remove the cover.

- When removing components, be careful not to break or damage the wiring, Damaged wiring may cause electrical fires.
- 7. When removing piping, stop the fuel or oil from spilling out. If any fuel or oil drips on the floor, wipe it up immediately. Fuel or oil on the floor can cause you to slip, or can even start fires.
- 8. Gasoline or other fuels should never be used to clean parts. Clean parts with appropriate solvents.
- 9. Be sure to assemble all parts again in their original places. Replace any damaged parts or parts that must not be reused with new parts.
 - When installing hoses and wires, be sure that they will not be damaged by contact with other parts when the machine is being operated.
- 10. When installing high pressure hoses, make sure that they are not twisted. Damaged tubes are dangerous, so be extremely careful when installing tubes for high pressure circuits. Also check that connecting parts are correctly installed.
- 11. When assembling or installing parts, always use the specified tightening torques. When installing protective parts such as guards, or parts which vibrate violently or rotate at high speed, be particularly careful to check that they are installed correctly.
- 12. When aligning two holes, never insert your fingers or hand. Be careful not to get your fingers caught in a hole.
- 13. When measuring hydraulic pressure, check that the measuring tool is correctly assembled before taking any measurements.
- 14. Take care when removing or installing the tracks of track-type machines. When removing the track, the track separates suddenly; never let anyone stand at either end of the track.
- 15. When jump-starting the machine, only use a machine of similar size and voltage. Never use an arc welder or other electrical generating equipment to jump-start the machine. Carefully review the safety procedures for jump starting the machine.
- 16. Before starting work, stop the engine. When working on or around a rotating part, stop the engine. When checking the machine without stopping the engine (measuring oil pressure, revolving speed, temperature, etc.), be extremely careful not to get rolled or caught in rotating or moving parts.
- 17. If the engine is operated for a long time in a place which is not ventilated well, you may suffer from gas poisoning. Before starting the engine, open the windows and doors so that the area is well ventilated.