

LS TRACTOR

# SERVICE MANUAL

XU5000-SERIES



**LS** Tractor

LS TRACTOR

# I SAFETY AND GENERAL INFORMATION

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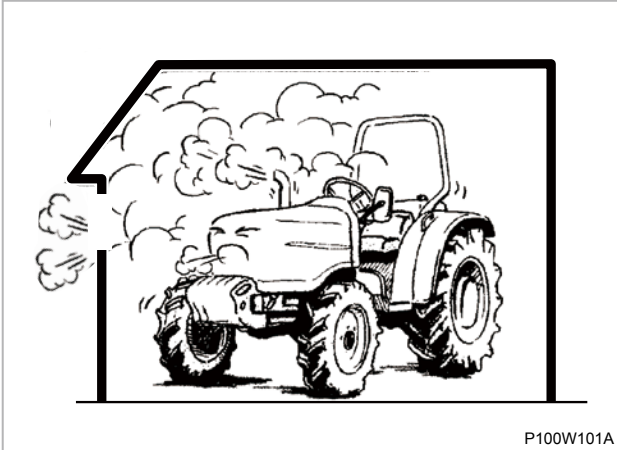
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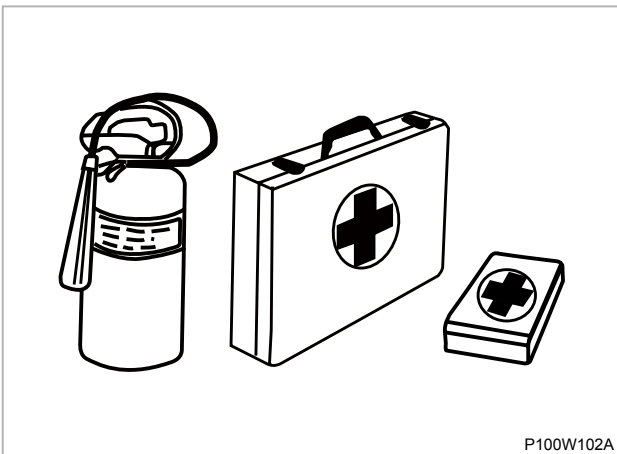
# 1. SAFETY TIPS

## 1.1 GENERAL SAFETY TIPS

Extra attention is needed and the following safety precautions should be strictly followed in your work place for service.



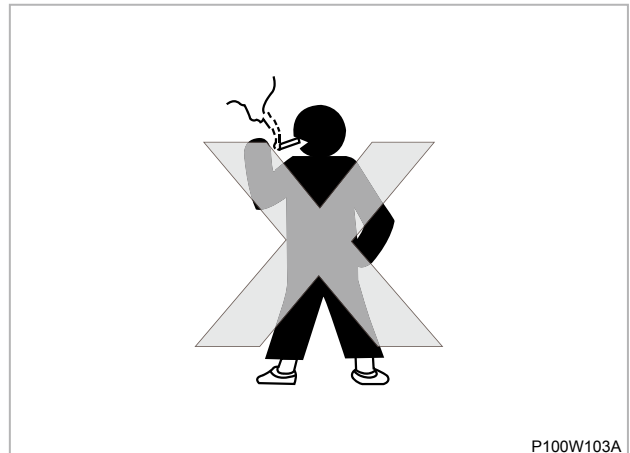
1. Keep your work place and surroundings clean and well-ventilated.



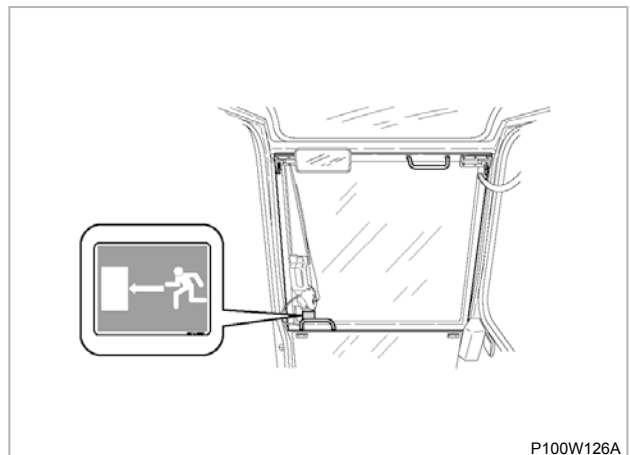
- 2. Keep an emergency kit and appropriate hygiene equipments handy in your workshop.
- 3. Keep a fire extinguisher handy in your workshop. Have your fire extinguisher checked regularly and have yourself well informed on its use.



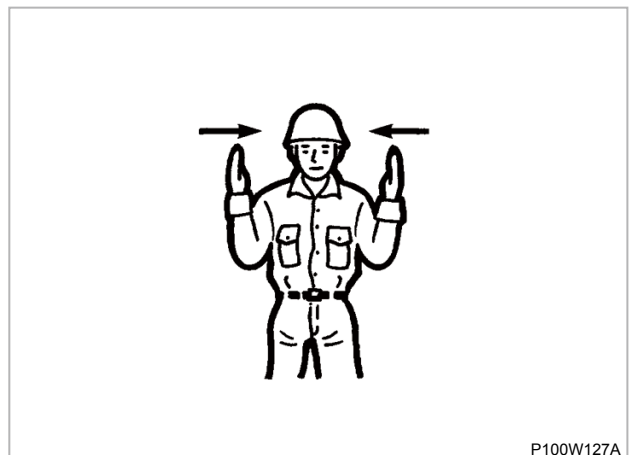
4. Mark the safety symbols and signs for clear view in emergency.



5. Never smoke in the workshop to avoid fire.

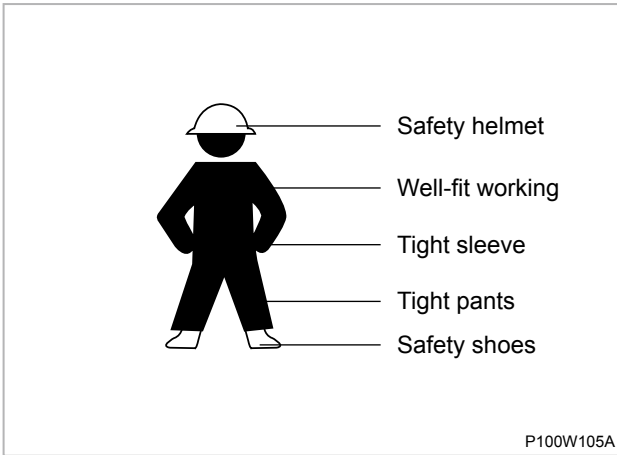


6. There should be an emergency exit and its sign for evacuation in emergency.

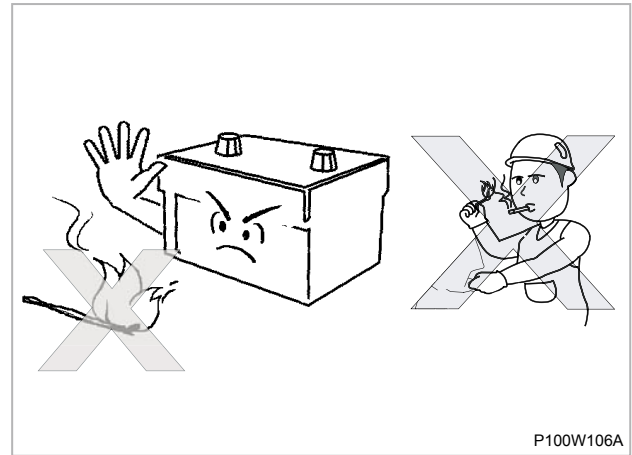


7. Follow helper's guidance for a special service.

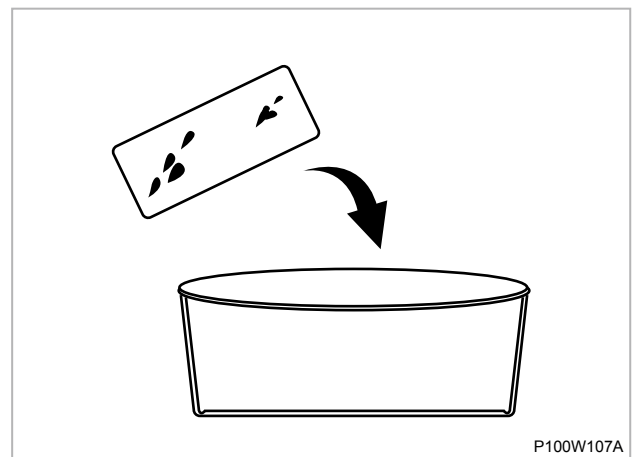
1.2 TO AVOID PERSONAL INJURIES



1. Never wear loose fitting clothing or clothing with wide sleeves when servicing the engine or tractor. The sleeves of the shirt and the hem of the pants should be tightly fitting. Elastic banded sleeve and hem are preferred. Do not wear accessories, such as earrings or necklace.
2. Make sure to wear safety gloves and safety goggles under the following conditions:
  - When handling an antioxidant.
  - When adding or changing oil or lubricant.
  - When handling compressed air or compressed oil. (allowable pressure is 2 bar or below.)



7. When working near the battery or fuel tank, never smoke and avoid sparks.

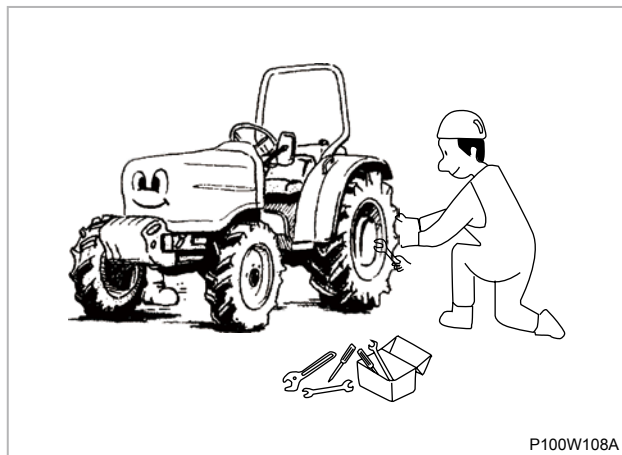


8. Put cloth with oil, diesel fuel or solvent into a separate fireproof container.



3. When working near any lifted part or equipment or working at a level above your head, always wear a safety helmet and fix all parts and equipments firmly.
4. Always wear safety shoes and use protective cream on your hands.
5. If your clothing gets wet, change it as soon as possible.
6. Make sure that ground and electric wirings are intact where the voltage capacity is 48 ~ 60 V. Keep your hands and feet dry and stand on an insulated scaffold.

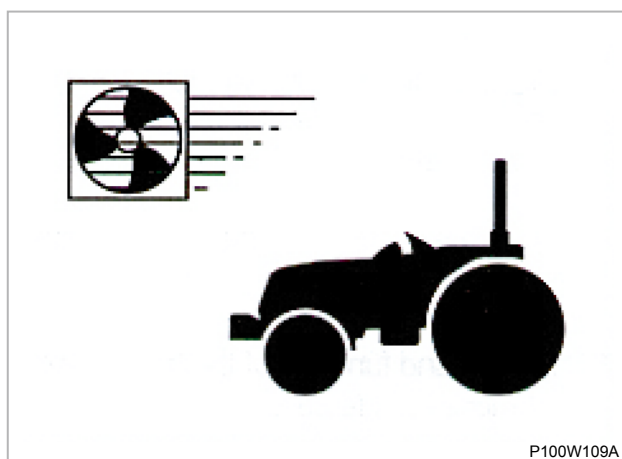
1.3 DURING SERVICING



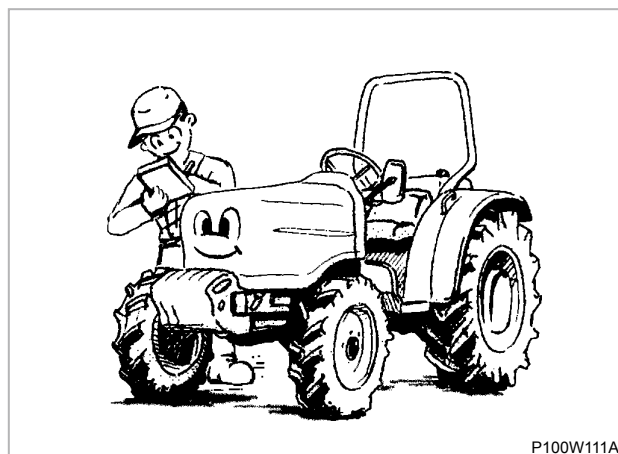
9. Use only specified service tools in a good condition. Check their condition frequently.



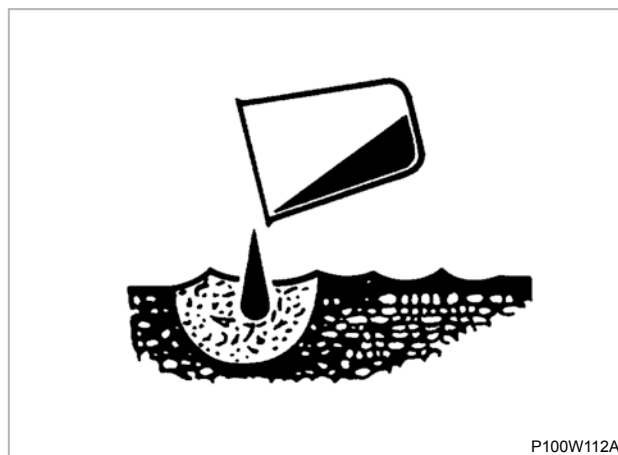
1. Never open the filler cap of the radiator while the engine is hot. Hot steam under a high pressure can be surged, leading to a serious scald. Wait until it is cooled down to 50°C.
2. Never add coolant to the overheated engine.



10. The service should be performed in a well-ventilated area to discharge exhaust gas while checking and servicing the tractor with the engine running.



3. Always perform service with the engine stopped. If it is required to run the engine for a certain service, be aware of every possible hazardous situation during service.



4. When draining engine oil or fuel, drain it in an appropriate container.

I SAFETY AND GENERAL INFORMATION

II ENGINE

III CLUTCH & TRANSMISSION

IV FRONT & REAR AXLE

V BRAKE

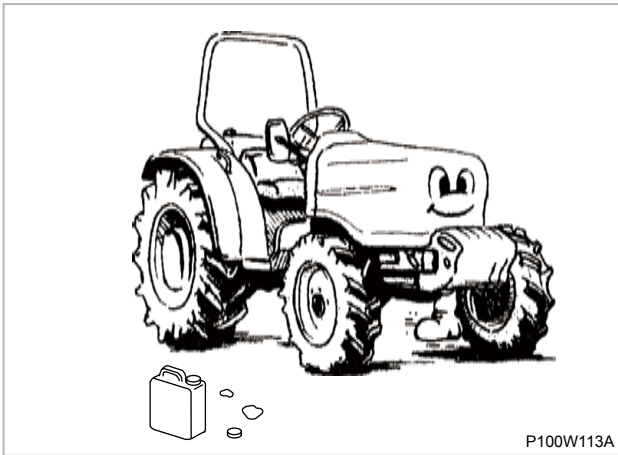
VI HYDRAULIC SYSTEM

VII ELECTRICAL SYSTEM

VIII FRAME & CABIN

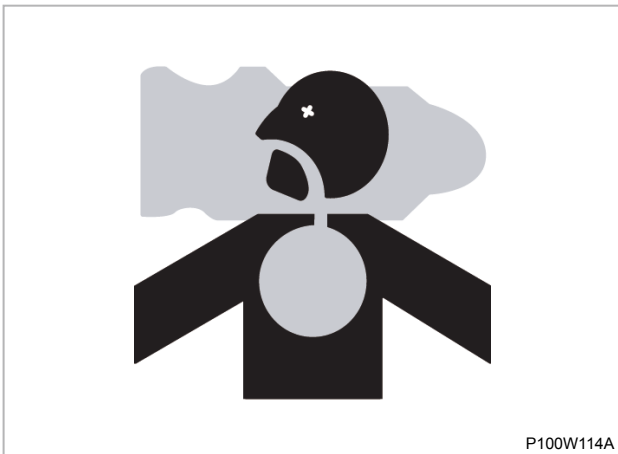
IX AC & HEATER

X INDEX



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5. Wipe any oil, diesel fuel and solvent thoroughly from the engine.



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6. When using solvent or engine cleaner during work, work only in a well-ventilated place and wear a safety mask as they may produce toxic gas.



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- 7. Do not allow any flammable materials to come near the engine.
- 8. Keep toxic oil in an appropriate container and place according to the applicable law.
- 9. Keep rubber parts away from diesel or gasoline fuel.

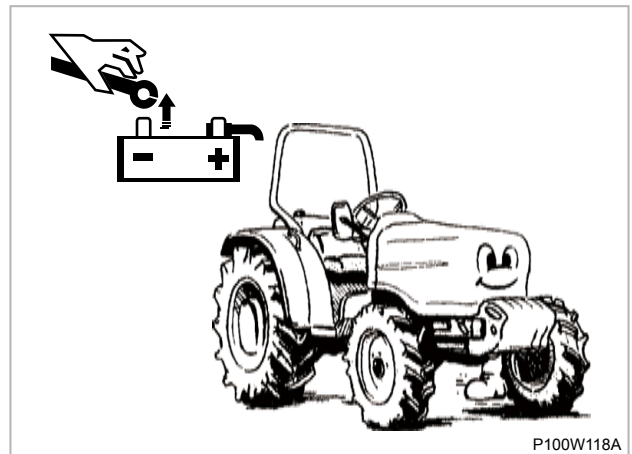


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11. Do not disconnect the battery while the engine is running.

12. Avoid sparks while the circuit is powered.

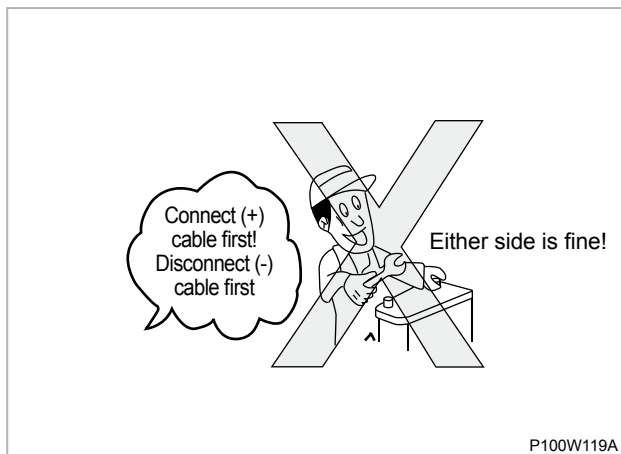
13. Do not use any inappropriate tools, including a wire, screwdriver and clip, to avoid damage to connection and short circuit.



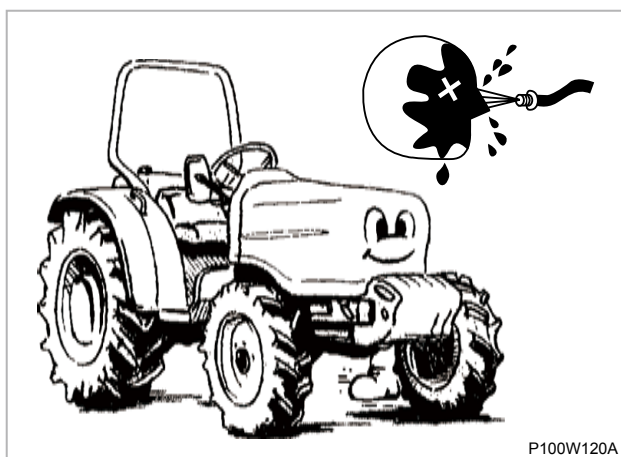
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14. Disconnect the battery in advance before servicing any electric part.

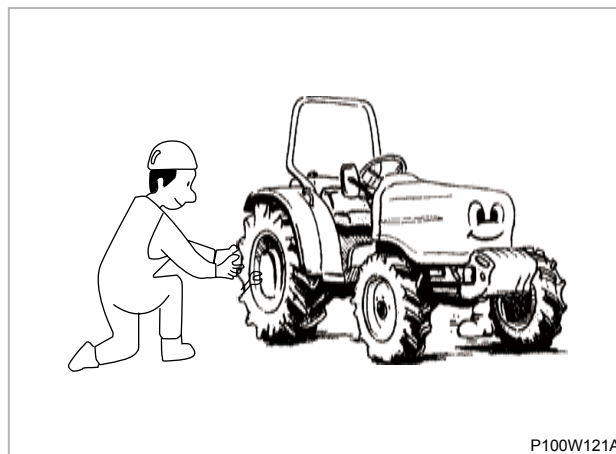
15. Use only sockets and electric parts that meet the applicable safety standards.



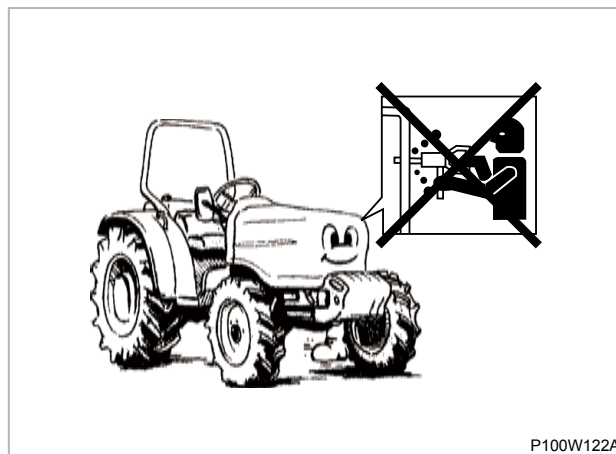
16. Connect the battery cables correctly after servicing the tractor.
17. Tighten the terminal and cable connection firmly to prevent a short circuit and oxidation.
18. Do not connect or disconnect any electric connection while it is powered.



19. When disconnecting a pipe line (pneumatic, hydraulic or fuel pipe), check if it is under pressure in advance.
20. Depressurize the part and turn off the loader valve before work. Also, always wear an appropriate safety mask and safety goggles. If these safety instructions are not followed, a severe injury or toxic gas poisoning can occur.



21. Tighten each connection and coupling firmly. Otherwise, the engine component and its life can be severely damaged and affected.
22. Clean the engine and components thoroughly and check them for any damage before disassembling and inspection them.
23. Keep removed or disassembled parts, bolts and nuts separately in the designated containers.
24. Check the washers and clips for damage. The lock nut with nylon in it should be replaced during service.
25. Never use a quick screw tightening tool.



26. Service work is to restore the tractor and engine's function and efficiency and ensure safety. Connect only approved systems to the engine and electric system.
27. Never modify or alter the fuel system and hydraulic system unless approved. Should this tractor be modified or altered without approval, the warranty will become void and engine durability and performance can be affected.

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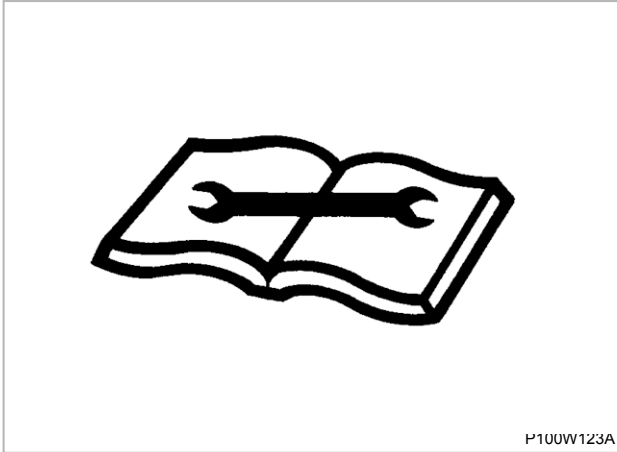
VI HYDRAULIC SYSTEM

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VIII FRAME & CABIN

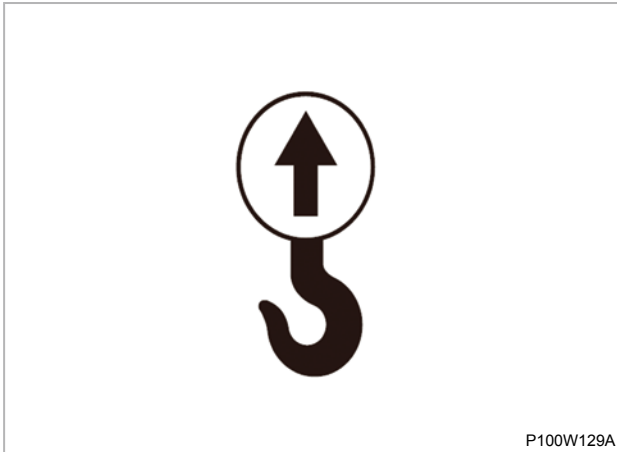
IX AC & HEATER

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28. Have the corresponding manuals and technical materials nearby when servicing, checking or disassembling the tractor.



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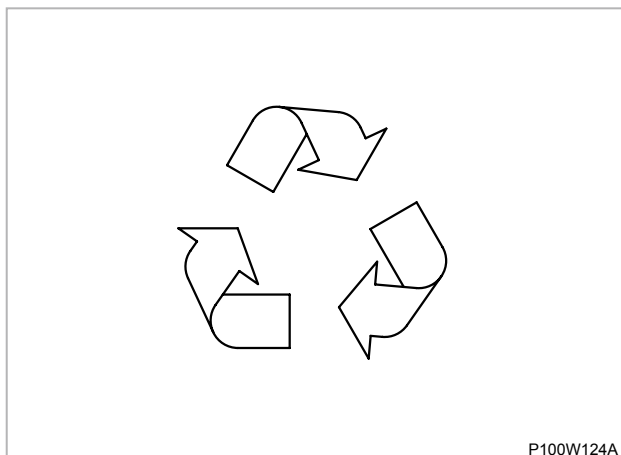
29. When moving a heavy component, check its weight, size and moving route to see if you can move it on your own or an appropriate hoist is needed.
30. When using a hoist, rope or hook, keep its allowable maximum load and check their mounting positions and conditions thoroughly.
31. A hoist should be handled only by well-trained technicians. Never work under a hoisted heavy part and keep a good distance from it.
32. When servicing the engine or component lifted with a hoist, its related manual/automatic safety devices should be activated.
33. When several people are working together, extra attention is required. Avoid a situation that you cannot pinpoint other workers.
34. Do not leave the running engine or tractor during servicing.
35. When servicing the LPG engine, keep its special safety instructions.
36. Replace any worn or damaged part or expendable component with the specified genuine part.

37. When cleaning components with compressed air or high-pressure water/steam, cover electric connections and electronic central system.
38. Never use a copper alloy fuel tank or a tank without a filter.
39. Do not modify cable wires or change their length.

► **ENGINE EQUIPPED WITH ELECTRONIC GEARBOX**

40. Do not perform arc welding before disconnecting the electronic gearbox.
41. Disconnect the electronic gearbox when servicing requires applying heat over 80°C.
42. Do not paint electronic components and connections.
43. Do not modify or repair the data of the engine equipped with the electronic gearbox. Should any electronic component be modified or altered, the warranty of the engine will become void and engine durability and performance can be affected.
44. Insulate the electronic central system before disconnecting its connector.
45. Do not supply power to any component of the electronic central system directly with a device.

## 1.4 ENVIRONMENT PROTECTION



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1. We always need to be active in protecting our environment. Every necessary safety instructions are directly related to your safety and health.



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2. Observe relevant environmental protection regulations when disposing of engine oil and other fluid. Appropriate safety labels should be set in the workshop and such fluids should be disposed by well-trained servicing personnel according to the applicable laws and regulations.
3. Used oil or fluid should be collected in a specially-made sealed container and kept in a cool and well-ventilated area to avoid fire or explosion.
4. The battery should be handled with care and stored in an anti-oxidant container in a well-ventilated area. Substances from the battery are very toxic and can pollute the environment.

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