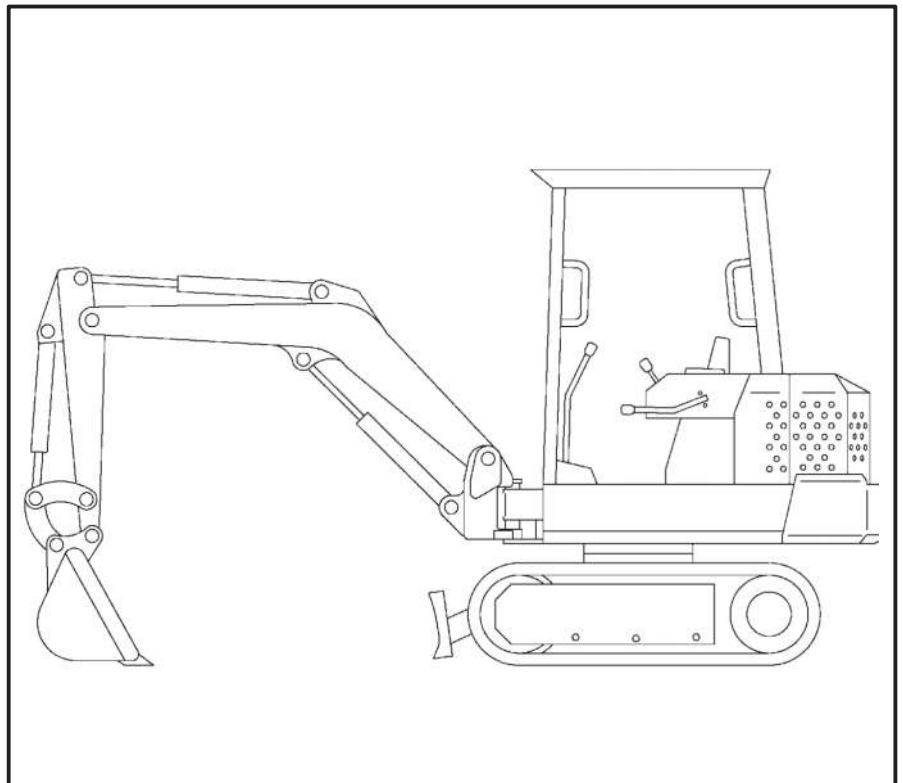


X 231

Excavator

Service Manual

(S/N 508912001 & Above)



MELROE
INGERSOLL-RAND

6722178(3-92)

Printed in U.S.A.



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SAFETY

**PREVENTIVE
MAINTENANCE**

**HYDRAULIC
SECTION**

**DRIVE
SECTION**

**UPPER WORKS
& SWING
SECTION**

**MAIN FRAME
& TRACKS**

**ELECTRICAL
SYSTEM**

**ENGINE
SERVICE**

**TECHNICAL
DATA**

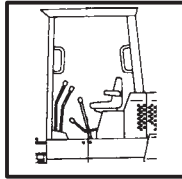


FOREWORD

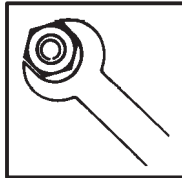
This manual is for the Bobcat hydraulic excavator mechanic. It provides necessary servicing and adjustment procedures for the hydraulic excavator and its component parts and systems. Refer to the Operation & Maintenance Manual for operating instructions, starting procedure, daily checks, etc.

A general inspection of the following items must be made after the hydraulic excavator has had service or repair:

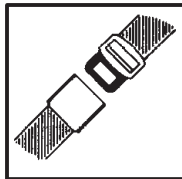
1. Check that the operator canopy is in good condition and is not modified.



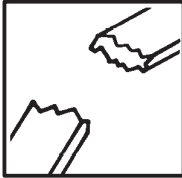
2. Check that ROPS mounting hardware is tightened and is Melroe approved.



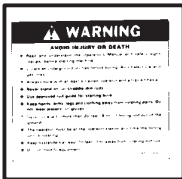
3. The seat belt must be correctly installed, functional and in good condition.



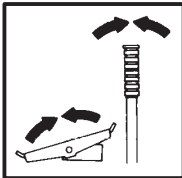
4. Inspect for loose or broken parts or connections.



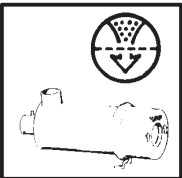
5. Machine signs must be legible and in the correct location.



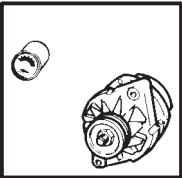
6. Steering levers, control levers and foot pedals must return to neutral. Control lock must lock controls securely.



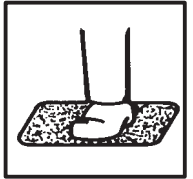
7. Inspect the air cleaner for damage or leaks. Check the condition of the element.



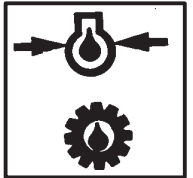
8. Check the electrical charging system.



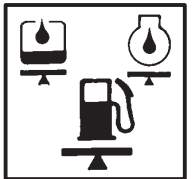
9. Safety treads must in good condition.



10. Check for correct function of indicator lamps.



11. Check hydraulic fluid level, engine oil and fuel supply.



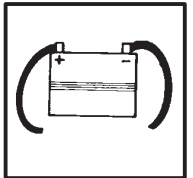
12. Inspect for fuel, oil or hydraulic fluid leaks.



13. Lubricate the hydraulic excavator.



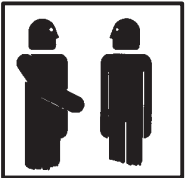
14. Check the condition of the battery and cables.



15. Check for any field modifications not completed.



Recommend to the owner that all necessary corrections be made before the machine is returned to service.





SAFETY

SAFETY

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SAFETY INSTRUCTIONS

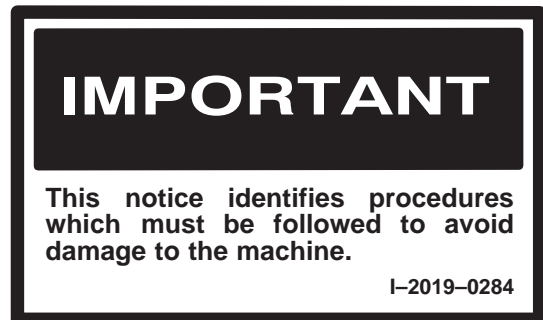
WARNING

Instructions are necessary before operating or servicing machine. Read Operation & Maintenance Manual, Handbook and signs (decals) on machine. Follow warnings and instructions in the manuals when making repairs, adjustments or servicing. Check for correct function after adjustments, repairs or service. Failure to follow instructions can cause injury or death.

W-2003-0797

The following publications provide information on the safe use and maintenance of the excavator and attachments:

- The Delivery Report is used to assure that complete instructions have been given to the new owner and that the machine is in safe operating condition.
- The Operation & Maintenance Manual delivered with the excavator gives operating information as well as routine maintenance and service procedures. It is a part of the excavator and must stay with the machine when it is sold. Replacement Operation & Maintenance Manuals can be ordered from your Bobcat Excavator dealer.
- The excavator has machine signs (decals) which instruct on the safe operation and care. The signs and their locations are shown in the Operation & Maintenance Manual. Replacement signs are available from your Bobcat Excavator dealer.
- The CIMA Safety Manual delivered with the excavator gives information for safe operating and standard signals.
- The Service Manual and Parts Manual are available from your dealer for use by mechanics to do shop-type service and repair work.



Safety Alert Symbol: This Safety Symbol is used for important safety messages. When you see this symbol follow the safety message to avoid personal injury or death.

SAFETY INSTRUCTIONS (Cont'd)

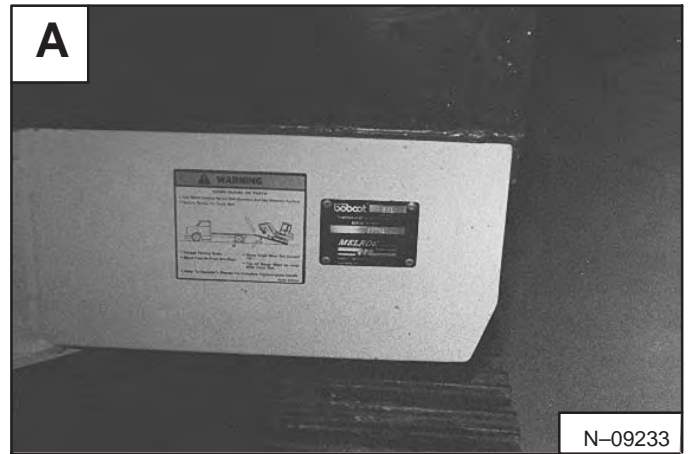
- Wear tight fitting clothing. Always wear safety glasses when maintaining or servicing the excavator. Safety glasses, hearing protection or loader special application kits are required for some work. See your dealer for Melroe Safety equipment.
- Know where fire extinguishers and first aid kits are located and how to use them.
- Do not use the Bobcat excavator where exhaust, arcs, sparks or hot components can contact flammable material, explosive dust or gases.
- The engine compartment and engine cooling system must be inspected every day and cleaned if necessary to prevent a fire hazard and overheating.
- Check all electrical wiring and connections for damage. Keep the battery terminals clean and tight. Repair or replace any damaged part.
- Check fuel and hydraulic tubes, hoses and fittings for damage and leakage. Never use open flame or bare skin to check for leaks. Tighten or replace any parts that show leakage. Always clean fluid spills. Do not use gasoline or diesel fuel for cleaning parts. Use commercial nonflammable solvents.
- Follow any environmental safety regulations when disposing of used fluids such as engine oil, grease or anti-freeze.
- Do not use ether or starting fluids on an engine that has glow plugs. These starting aids can cause an explosion and injure you or bystanders.
- Always clean the excavator and disconnect the battery before doing any welding. Cover rubber hoses, battery and all other flammable parts. Keep a fire extinguisher near the excavator when welding. Have good ventilation when grinding or welding painted parts. Wear a dust mask when grinding painted parts. Toxic dust or gas can be produced.
- Stop the engine and let it cool before adding fuel. No smoking!
- Use the procedure in the Operation & Maintenance or Service Manuals for connecting the battery.

SERIAL NUMBER LOCATIONS

Always use the serial number of the machine when requesting service information or when ordering parts. Early or later models (identification made by serial number) may use different parts, or it may be necessary to use a different procedure in doing a specific service operation.

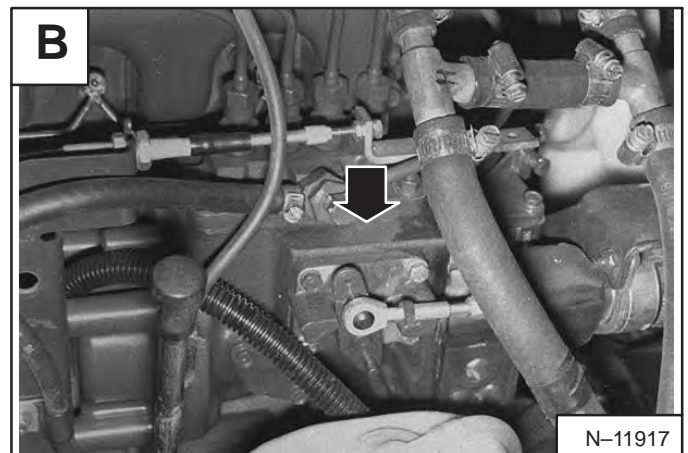
HYDRAULIC EXCAVATOR SERIAL NUMBER

The excavator serial number is on the front of the machine frame, to the left of the boom [A].



ENGINE SERIAL NUMBER

The engine serial number is located on the engine block, near the fuel injection pump [B].



DELIVERY REPORT

All Delivery Report items must be explained to the owner/operator by the dealer. The dealer is to fill out the form and the owner/operator signs the form to indicate his understanding [C].

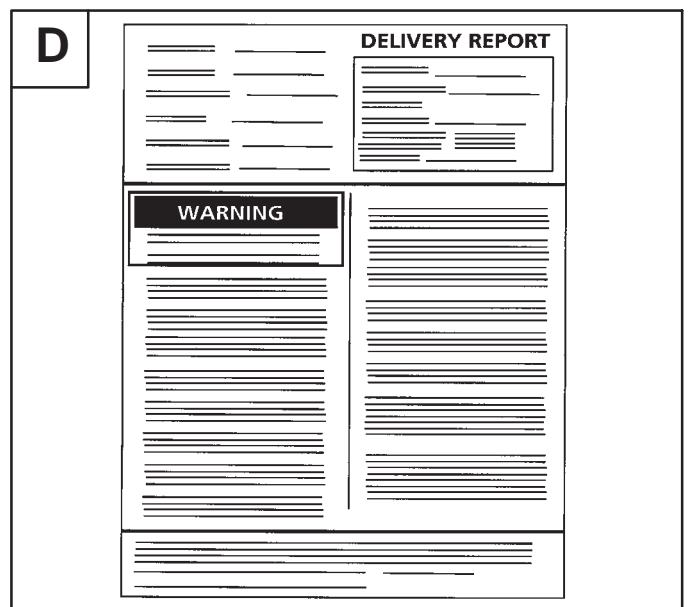
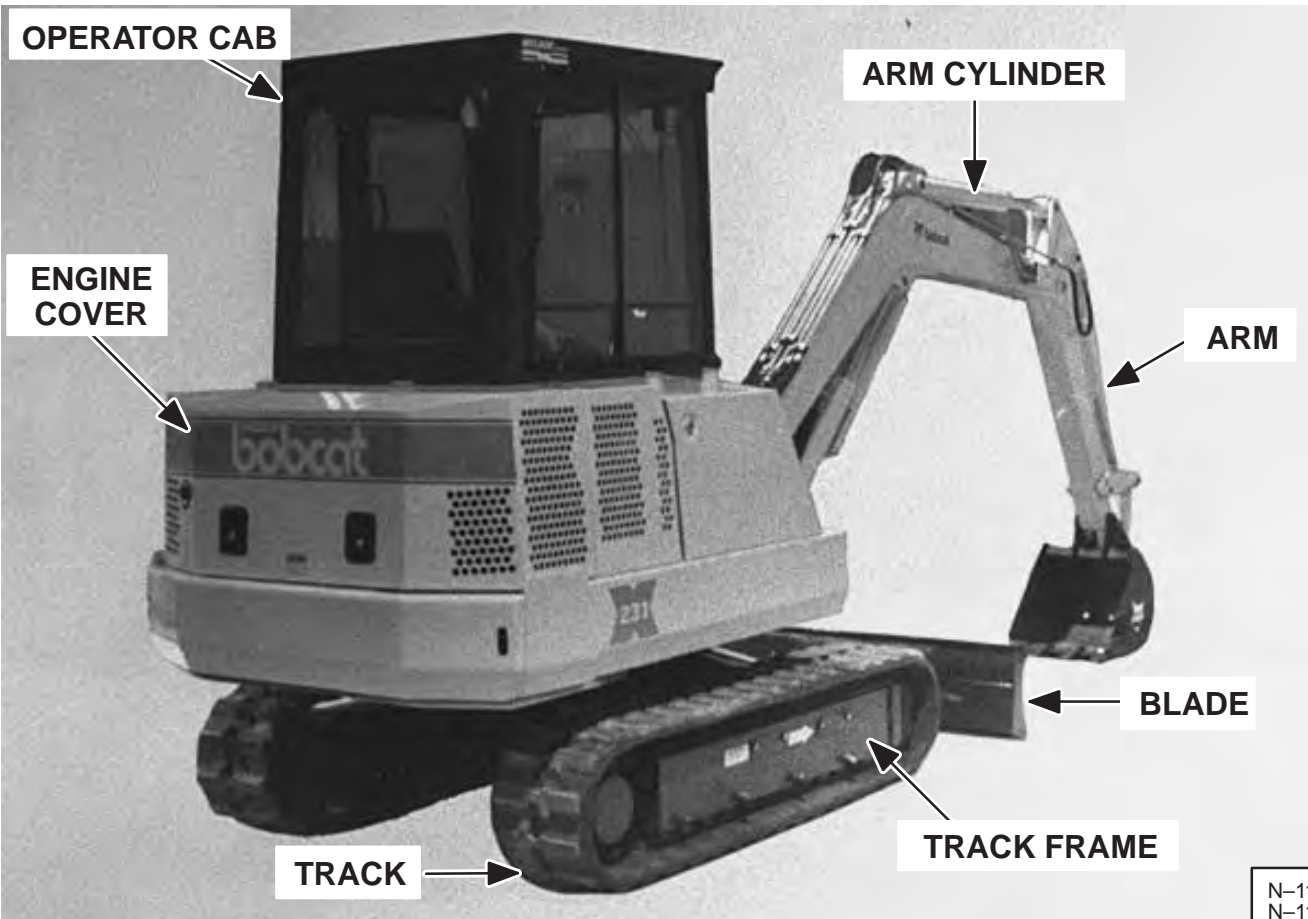
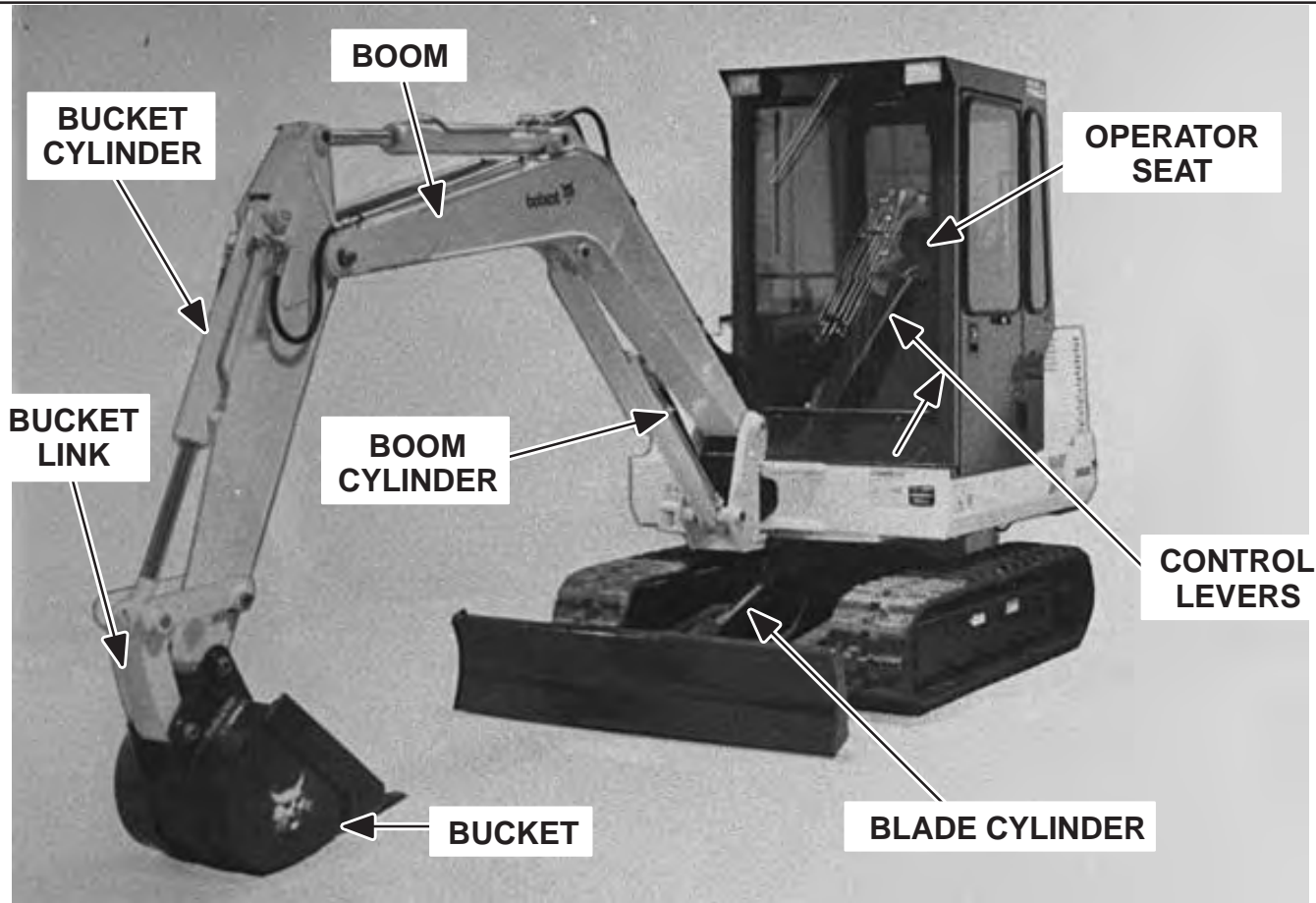


Image D shows a diagram of a delivery report form. The form is divided into sections: 'DELIVERY REPORT' (top right), 'WARNING' (middle left), and a large section for notes or signatures (bottom right). The form is labeled 'D' in the top left corner.

HYDRAULIC EXCAVATOR IDENTIFICATION



N-11918
N-11919

Dear

**Thanks very much for your visiting and
patience.**

Want to get more information,

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**After your payment, you will have instant access to
your download.**

The Download Link will also be sent to your e-mail.

You will get the complete manual

Have any questions

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admin@servicemanualperfect.com