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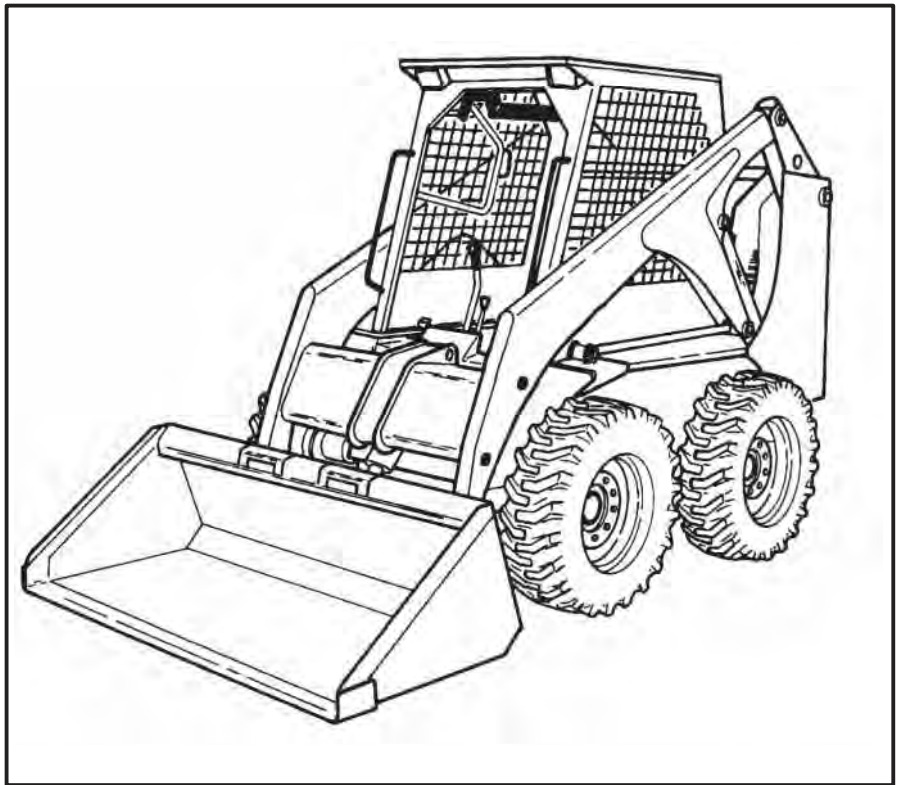
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3



Service Manual



MELROE
INGERSOLL-RAND

6720899(6-91)

Printed in U.S.A.



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MAINTENANCE SAFETY



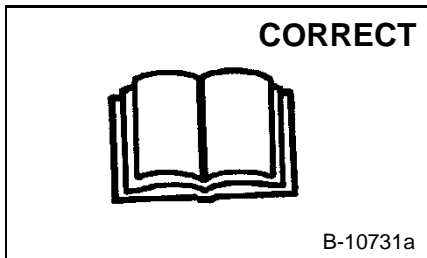
WARNING

Instructions are necessary before operating or servicing machine. Read and understand the Operation & Maintenance Manual, Operator's 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. Untrained operators and failure to follow instructions can cause injury or death.

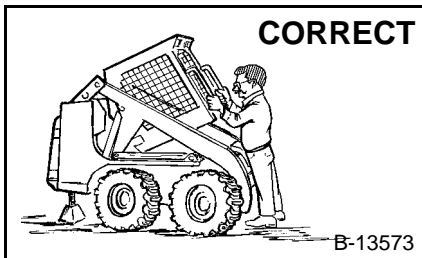
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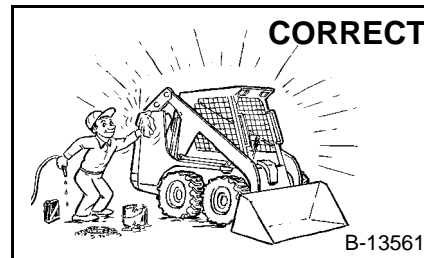
Safety Alert Symbol: This symbol with a warning statement, means: "Warning, be alert! Your safety is involved!" Carefully read the message that follows.



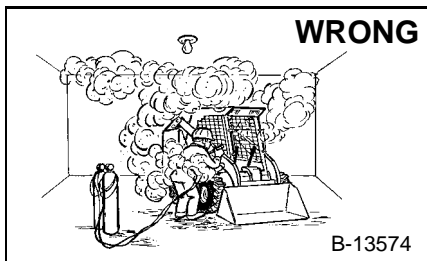
Never service the Bobcat Skid-Steer Loader without instructions.



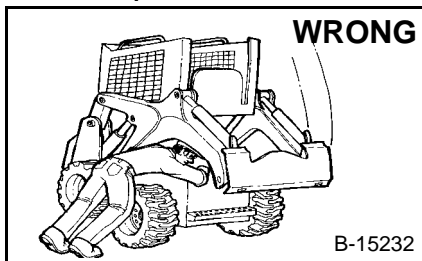
Use the correct procedure to lift or lower operator cab.



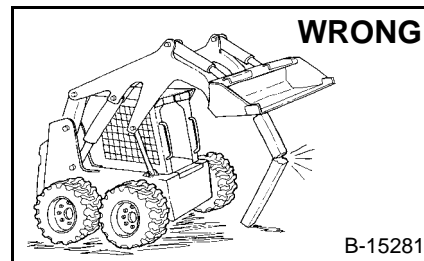
Cleaning and maintenance are required daily.



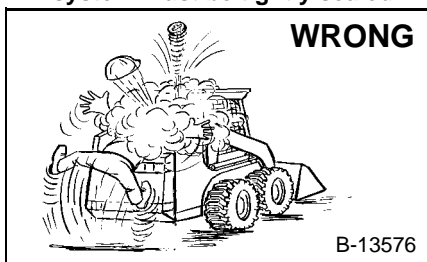
- Have good ventilation when welding or grinding painted parts.
- Wear dust mask when grinding painted parts. Toxic dust and gas can be produced.
- Avoid exhaust fume leaks which can kill without warning. Exhaust system must be tightly sealed.



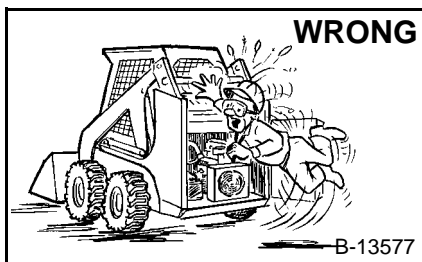
Disconnecting or loosening any hydraulic tubeline, hose, fitting, component or a part failure can cause lift arms to drop. Do not go under lift arms when raised unless supported by an approved lift arm support device. Replace it if damaged.



- Never work on loader with lift arms up unless lift arms are held by an approved lift arm support device. Replace if damaged.
- Never modify equipment or add attachments not approved by Bobcat Company.



- Stop, cool and clean engine of flammable materials before checking fluids.
- Never service or adjust loader with the engine running unless instructed to do so in the manual.
- Avoid contact with leaking hydraulic fluid or diesel fuel under pressure. It can penetrate the skin or eyes.
- Never fill fuel tank with engine running, while smoking or when near open flame.



- Keep body, jewelry and clothing away from moving parts, electrical contact, hot parts and exhaust.
- Wear eye protection to guard from battery acid, compressed springs, fluids under pressure and flying debris when engines are running or tools are used. Use eye protection approved for type of welding.
- Keep rear door closed except for service. Close and latch door before operating the loader.



- Lead-acid batteries produce flammable and explosive gases.
- Keep arcs, sparks, flames and lighted tobacco away from batteries.
- Batteries contain acid which burns eyes or skin on contact. Wear protective clothing. If acid contacts body, flush well with water. For eye contact flush well and get immediate medical attention.

Maintenance procedures which are given in the Operation & Maintenance Manual can be performed by the owner/operator without any specific technical training. Maintenance procedures which are **not** in the Operation & Maintenance Manual must be performed **ONLY BY QUALIFIED BOBCAT SERVICE PERSONNEL**. Always use genuine Bobcat replacement parts. The Service Safety Training Course is available from your Bobcat dealer.

MSW03-0805



Bobcat®

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**PREVENTIVE
MAINTENANCE**

**HYDRAULIC
SYSTEM**

**HYDROSTATIC
SYSTEM**

**DRIVE
SYSTEM**

**MAIN
FRAME**

**ELECTRICAL
SYSTEM**

**ENGINE
SERVICE**

SPECIFICATIONS

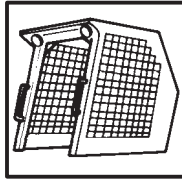


FOREWORD

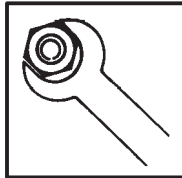
This manual is for the Bobcat loader mechanic. It provides necessary servicing and adjustment procedures for the Bobcat loader and its component parts and systems. Refer to the Operation & Maintenance Manual for operating instructions, starting procedure, daily checks, etc.

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

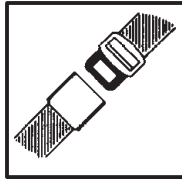
1. Check that the ROPS/FOPS (Including sidescreens) is in good condition and is not modified.



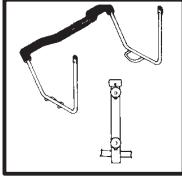
2. Check that ROPS mounting hardware is tightened and is Melroe approved.



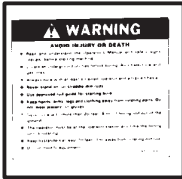
3. The seat belt must be correctly installed, functional and in good condition.



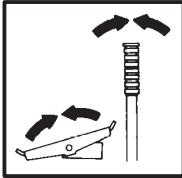
4. The seat bar and pedal interlocks must be correctly adjusted, clean and lubricated.



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



6. Steering levers and foot pedals must return to neutral.



7. Check for correct function of the work lights and travel lights.



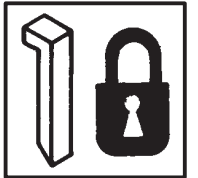
8. The parking brake must function correctly.



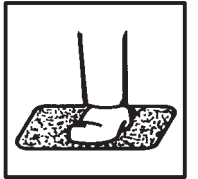
9. Enclosure door latches must open and close freely.



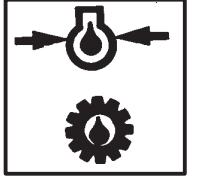
10. Bob-Tach wedges and linkages must function correctly and be in good condition.



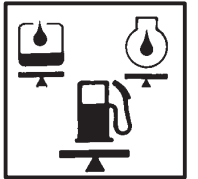
11. Safety treads must in good condition.



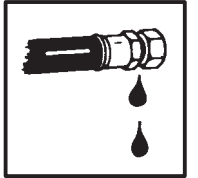
12. Check for correct function of indicator lamps (Optional on some models).



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



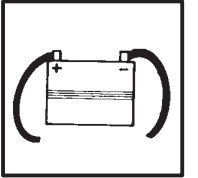
14. Inspect for fuel, oil or hydraulic fluid leaks.



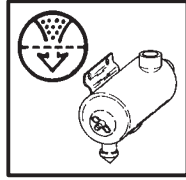
15. Lubricate the loader.



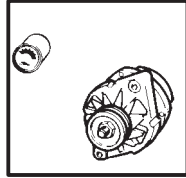
16. Check the condition of the battery and cables.



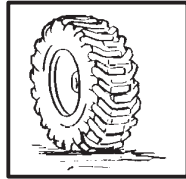
17. Inspect the air cleaner for damage or leaks. Check the condition of the element.



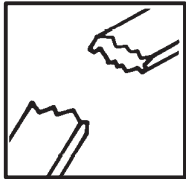
18. Check the electrical charging system.



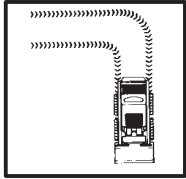
19. Check tires for wear and pressure.



20. Inspect for loose or broken parts or connections.



21. Operate the loader and check all functions.



22. Check for any field modification not completed.



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



SAFETY INSTRUCTIONS

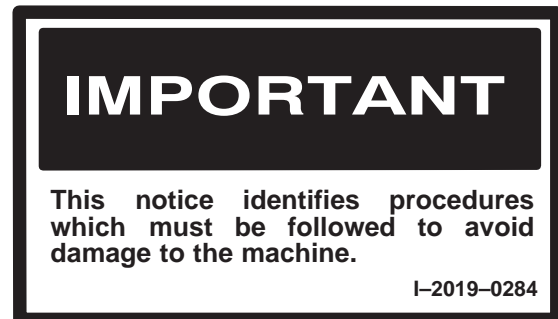
WARNING

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W-2003-0199

The following publications provide information on the safe use of the loader 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 loader gives operating information as well as routine maintenance and service procedures. It is a part of the loader and must stay with the machine when it is sold.
- The loader 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 loader dealers.
- The EM Manual delivered with the loader gives general safety information.
- The Service Manual and Parts Manual are available from Bobcat loader dealers 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.

- Wear tight fitting clothing and any other required safety apparel when operating or servicing the loader.
- Wear safety glasses when maintaining or servicing the loader.
- Exhaust gases can kill, vent engine exhaust outdoors.
- Know where fire extinguisher and first aid kits are located and how to use them.
- Do not run the Bobcat loader where exhaust, arcs, sparks or hot components can contact flammable material, explosive dust or gases.
- 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.
- Clean the loader before doing any welding. Cover rubber hoses, battery and all other flammable parts. Keep a fire extinguisher near the loader when welding.
- Have good ventilation when welding or grinding painted parts. Wear dust mask when grinding painted parts. Toxic dust and gas can be produced.
- Stop the engine and let it cool before adding fuel. No smoking!
- Use the procedure in this Manual for connecting battery.
- Use the procedure in this Manual for cleaning the spark arrestor muffler after each 100 hours of operation.

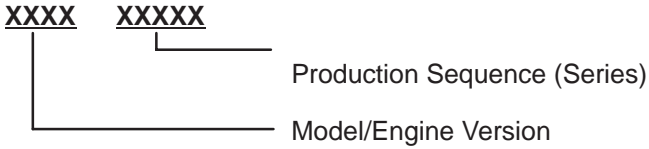
SERIAL NUMBER LOCATIONS

Always use the serial number of the loader 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.

LOADER SERIAL NUMBER

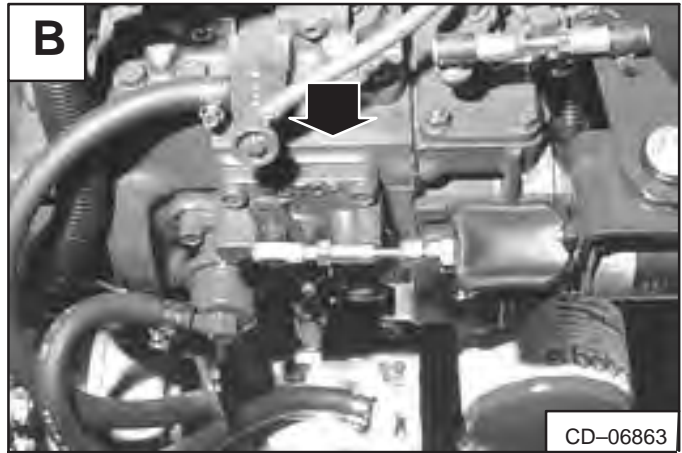
The loader serial number plate is located on the inside of the left upright, above the grill [A].

Explanation of loader Serial Number:



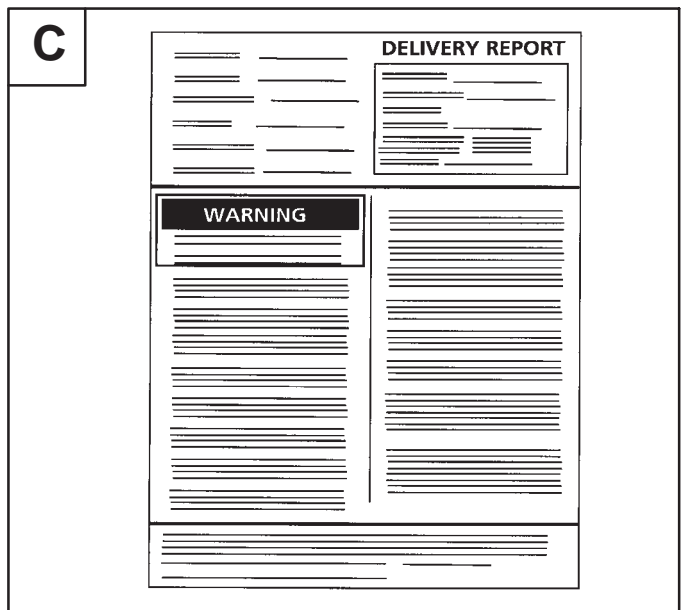
ENGINE SERIAL NUMBER

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

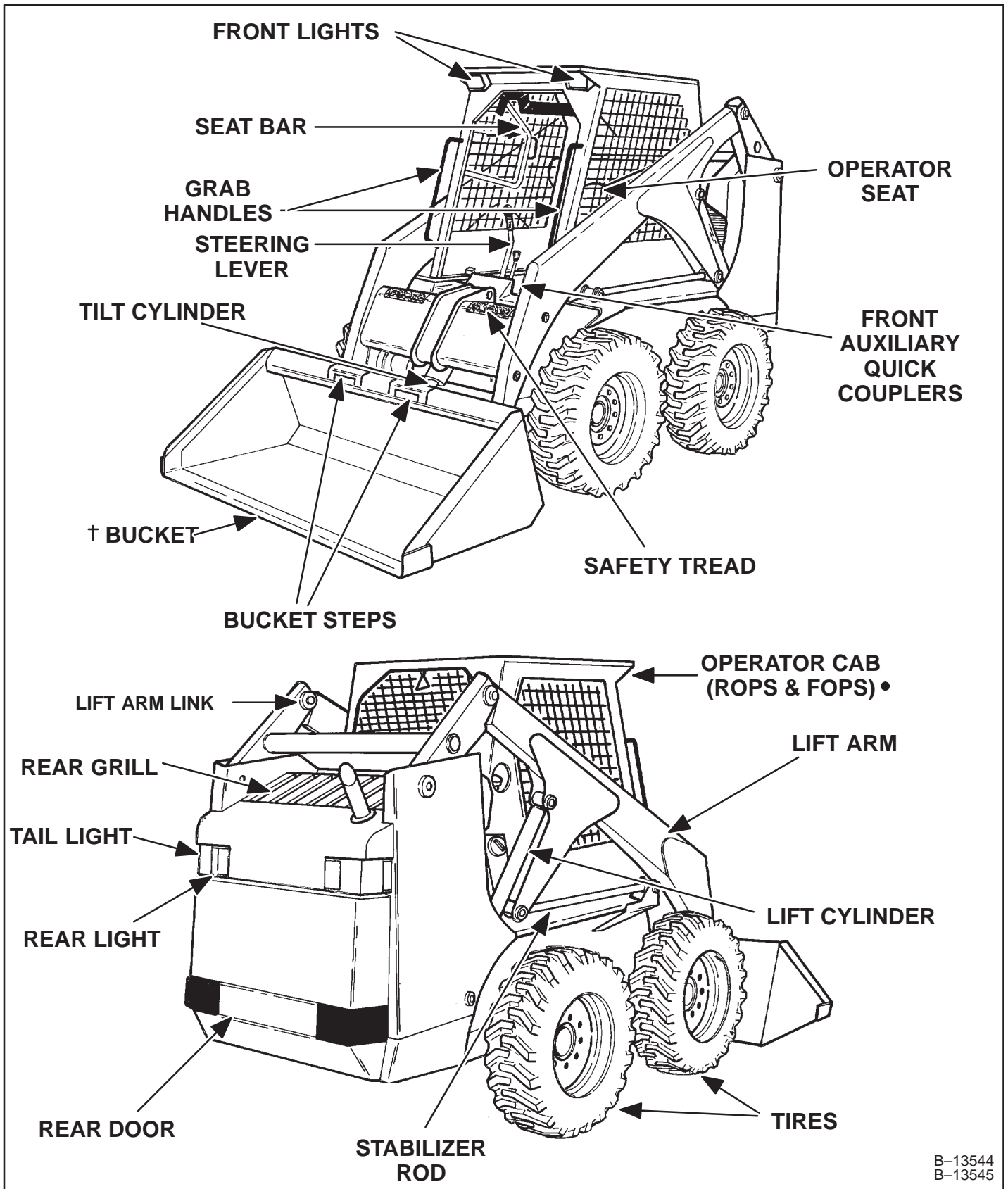


DELIVERY REPORT

The Delivery Report must be filled out by the dealer and signed by the owner or operator when the Bobcat loader is delivered. An explanation of the form must be given to the owner. Make sure it is filled out completely [D].



BOBCAT LOADER IDENTIFICATION



B-13544
B-13545

- † BUCKET – Several different buckets and other attachments are available for the Bobcat loader.
- ROPS, FOPS – Roll-Over Protective Structure, Falling Object Protective Structure, per SAE J1040 and SAE J1043, ISO 3471 and ISO 3449 LLevel 1. Level 2 kit is available from your Bobcat dealer. The Bobcat loader is base-equipped with a standard operator cab as shown.



PREVENTIVE MAINTENANCE

PREVENTIVE MAINTENANCE

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SERVICE SCHEDULE

Maintenance work must be done at regular intervals. Failure to do so may result in excessive wear and early failures. The service schedule is a guide for correct maintenance of the Bobcat loader.



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W-2003-0199

SERVICE SCHEDULE		HOURS				
ITEM	SERVICE REQUIRED	8-10	50	100	250	1000
Engine Oil	Check the oil level & add oil as needed.					
Air Cleaner	Check display. Service only when required.					
Engine Cooling System	Clean debris from oil cooler, radiator & grill. Check coolant level cold in the recovery tank. Add 50/50 ethylene glycol & water as needed.					
Lift Arms, Cyl., Bob-Tach Pivots Pins & Wedges	Lubricate with multi-purpose lithium based grease (20 places).					
Engine Air System	Check for leaks & damaged components.					
Tires	Check for damaged tires & correct air pressure.					
Seat Belt, Seat Bar & Pedal Interlocks	Check the condition of seat belt. Check the seat bar & pedal interlocks for correct operation. Clean dirt & debris from moving parts.					
Safety Signs & Safety	Check for damaged signs (decals) & safety tread. Replace any signs or safety treads that are damaged or worn.					
Operator Cab	Check the fastening bolts, washers & nuts. Check the condition of cab.					
Fuel Filter	Remove the trapped water.					
Hyd. Fluid, Hoses & Tubelines	Check fluid level & add as needed. Check for damage & leaks. Repair & replace as needed.					
Final Drive Trans. (Chaincase)	Check oil level.					
Battery	Check cables & electrolyte level.					
Control Pedals & Steering	Check for correct operation. Repair or adjust as needed.					
Wheel Nuts	★ Check for loose wheel nuts & tighten to 105-115 ft.-lbs. (142-156 Nm) torque.					
Parking Brake	Check operation & adjust as needed.					
Alternator Belt	Check tension & adjust as needed.					
Engine Oil & Filter	Replace oil & filter.					
Spark Arrestor Muffler	Clean the spark chamber.					
Engine/Hydro. Drive Belt	* Check for wear or damage. Make adjustment as needed.					
Fuel Filter	Replace filter element.					
Seat Bar	Grease pivots as needed.					
Steering Shaft	Grease two fittings.					
Hyd. Filter	• Replace the filter element.					
Hyd. Reservoir Breather Cap	Replace the reservoir breather cap.					
Fan Drive Gearbox	Check gear lube level.					
Final Drive Trans.	Replace the oil in the chaincase.					
Hyd. Reservoir	Replace the fluid.					
Case Drain Filters	Replace the filters.					

★ Check wheel nut torque every 8 hours for the first 24 hours.

• Also replace hydraulic/hydrostatic filter element when the transmission warning light comes "ON".

■ Or every 12 months.

* Inspect the new belt after first 50 hours.

1 PREVENTIVE MAINTENANCE

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W-2003-0199

LIFTING AND BLOCKING THE LOADER

Procedure

Always park the loader on a level surface.

WARNING

Put jackstands under the front axles and rear corners of the frame before running the engine for service. Failure to use jackstands can allow the machine to fall or move and cause injury or death.

W-2017-0286

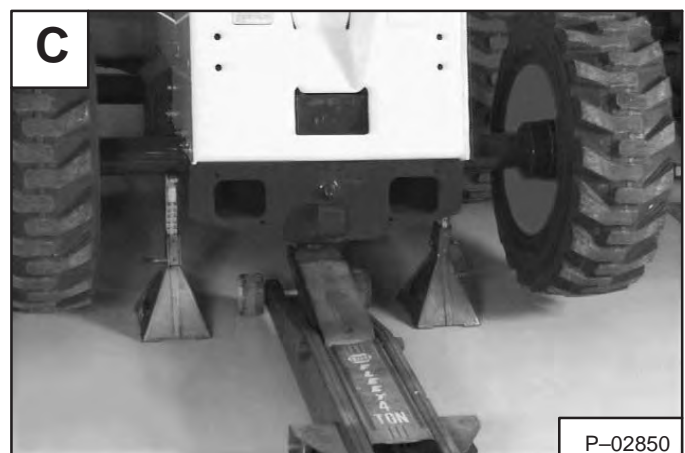
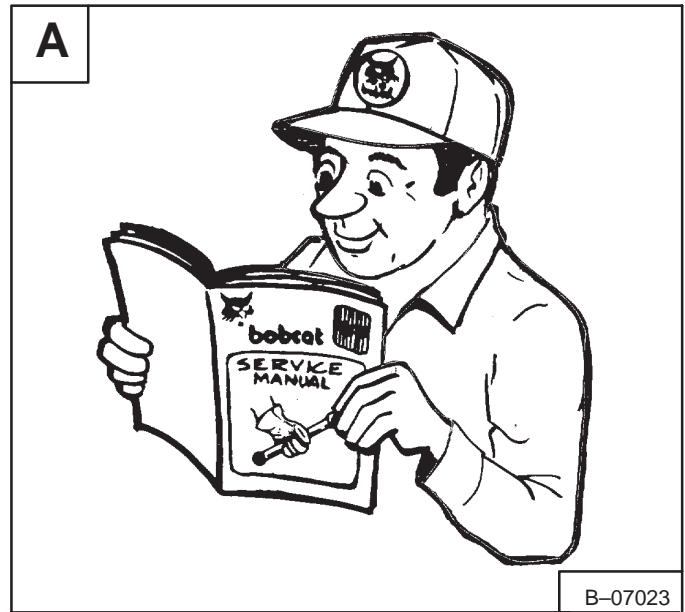
Put the floor jack under the rear of the loader [B].

Lift the rear of the loader and install jackstands [B].

Put the floor jack under the front of the loader [C].

Lift the front of the loader and put jackstands under the axle tubes [C].

NOTE: Make sure the jackstands do not touch the tires.



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