

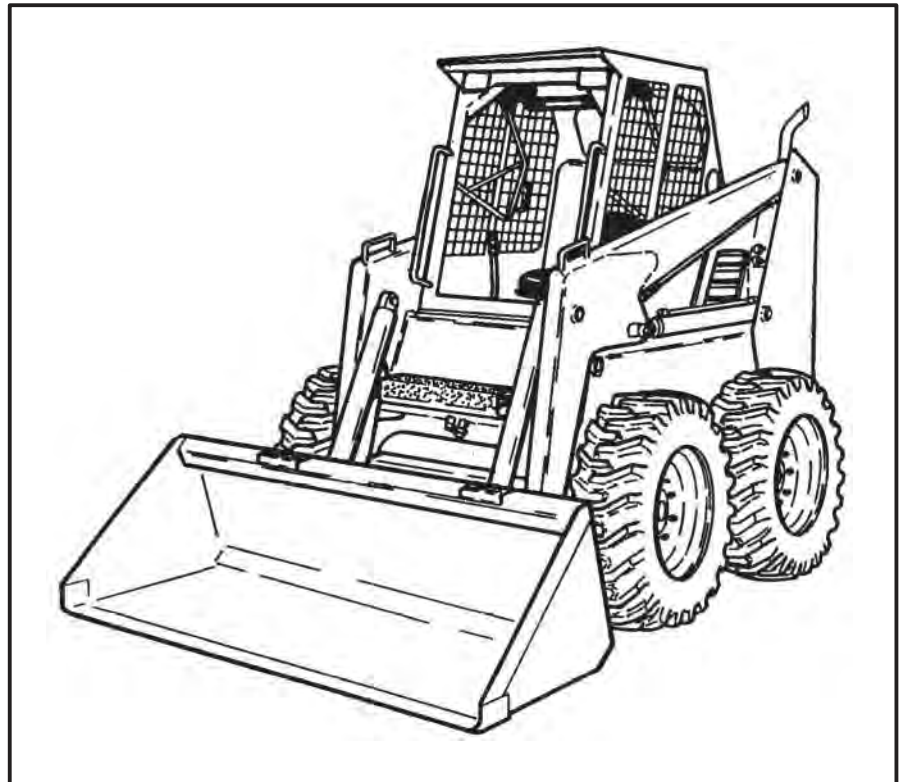
9

5

3



Service Manual



EQUIPPED WITH
BOBCAT INTERLOCK
CONTROL SYSTEM (BICS™)

1 of 342

MELROE
INGERSOLL-RAND

6724352 (11-95)

Printed in U.S.A.



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MAINTENANCE SAFETY



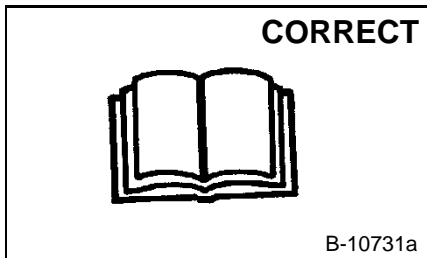
WARNING

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.

W-2003-0903

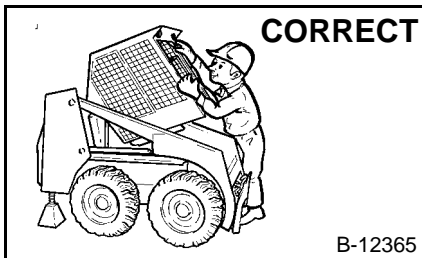


Safety Alert Symbol: This symbol with a warning statement, means: "Warning, be alert! Your safety is involved!" Carefully read the message that follows.



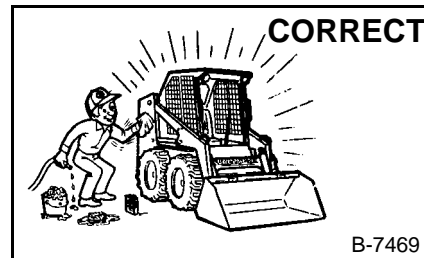
B-10731a

⚠ Never service the Bobcat Skid-Steer Loader without instructions.



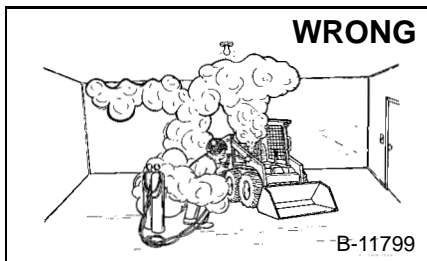
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⚠ Use the correct procedure to lift or lower operator cab.



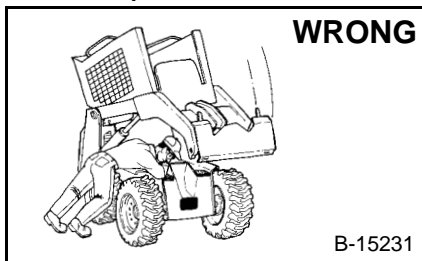
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⚠ Cleaning and maintenance are required daily.



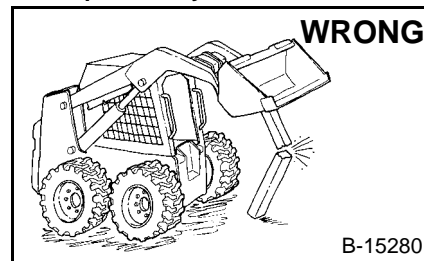
B-11799

- ⚠ 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.



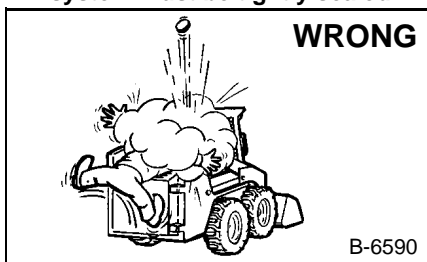
B-15231

⚠ 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.



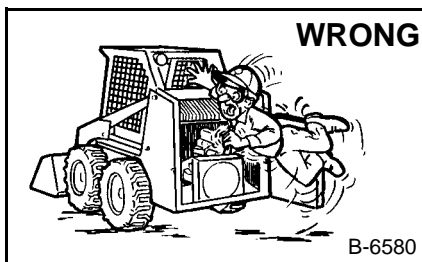
B-15280

- ⚠ 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.



B-6590

- ⚠ 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.



B-6580

- ⚠ 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.



B-6589

- ⚠ 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.

MSW01-0805



Bobcat®

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**PREVENTIVE
MAINTENANCE**

**HYDRAULIC
SYSTEM**

**HYDROSTATIC
SYSTEM**

**DRIVE
SYSTEM**

**MAIN
FRAME**

**ELECTRICAL
SYSTEM**

**ENGINE
SERVICE**

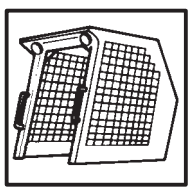
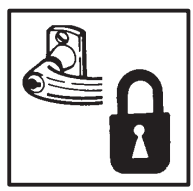
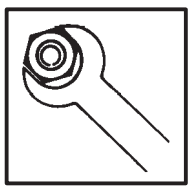
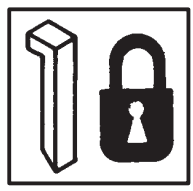
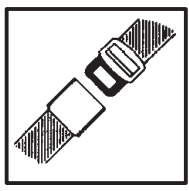
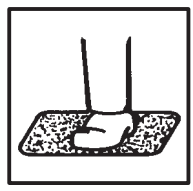
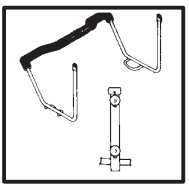
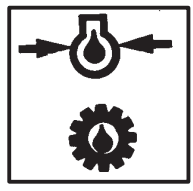
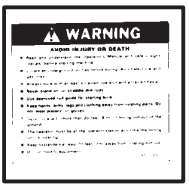
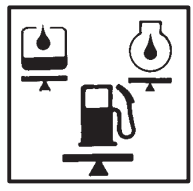
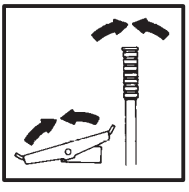
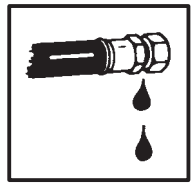



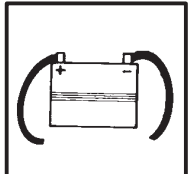
**BICS™
SYSTEM**

SPECIFICATIONS

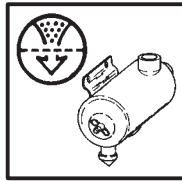
FOREWORD

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.

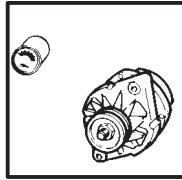
A general inspection of the following items must be made after the loader has had service or repair:

- | | | | |
|---|---|--|---|
| 1. Check that the ROPS/FOPS (Including sidescreens) is in good condition and is not modified. |  | 9. Enclosure door latches must open and close freely. |  |
| 2. Check that ROPS mounting hardware is tightened and is Melroe approved. |  | 10. Bob-Tach wedges and linkages must function correctly and be in good condition. |  |
| 3. The seat belt must be correctly installed, functional and in good condition. |  | 11. Safety treads must in good condition. |  |
| 4. The seat bar and pedal interlocks must be correctly adjusted, clean and lubricated. |  | 12. Check for correct function of indicator lamps (Optional on some models). |  |
| 5. Machine signs must be legible and in the correct location. |  | 13. Check hydraulic fluid level, engine oil level and fuel supply. |  |
| 6. Steering levers and foot pedals must return to neutral. |  | 14. Inspect for fuel, oil or hydraulic fluid leaks. |  |
| 7. Check for correct function of the work lights. |  | 15. Lubricate the loader. |  |
| 8. The parking brake must function correctly. |  | 16. Check the condition of the battery and cables. |  |

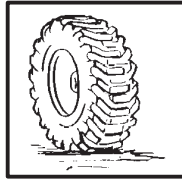
17. Inspect the air cleaner for damage or leaks. Check the condition of the element.



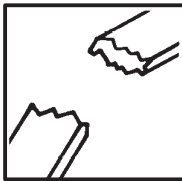
18. Check the electrical charging system.



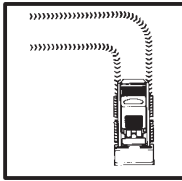
19. Check tires for wear and pressure.



20. Inspect for loose or broken parts or connections.



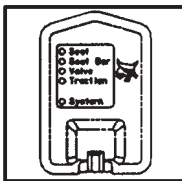
21. Operate the loader and check all functions.



22. Check for any field modification not completed.



23. Check for correct function of the Bobcat Interlock Control System (BICS™) before the machine is returned to the customer.



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





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-2003-1289

The following publications provide information on the safe use and maintenance 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. Replacement Operation & Maintenance Manuals can be ordered from your Bobcat loader dealer.
- 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 dealer.
- The loader has a plastic Operator's Handbook fastened to the operator cab. Its brief instructions are convenient to the operator. The handbook is available from your dealer in English edition or French, German, Italian, Dutch & Spanish editions.
- The EMI Safety Manual (available in Spanish) delivered with the loader gives general safety information.
- The Service Manual and Parts Manual are available from your dealer for use by mechanics to do shop-type service and repair work.
- The Skid-Steer Loader Operator Training Course is available through your dealer. This course provides information for safe and efficient operation of the Bobcat loader. The course is available in English and Spanish versions.



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 loader. Safety glasses, hearing protection or loader special applications kit 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 loader 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 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 this engine. It has glow plugs. These starting aids can cause explosion and injure you or bystanders.
- Always clean the loader and disconnect the battery 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 grinding or welding painted parts. Wear 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.
- Use the procedure in the Operation & Maintenance or Service Manuals for cleaning the spark arrestor muffler.

A fire extinguisher is available from your local dealer. The fire extinguisher can be installed in the location shown [A].



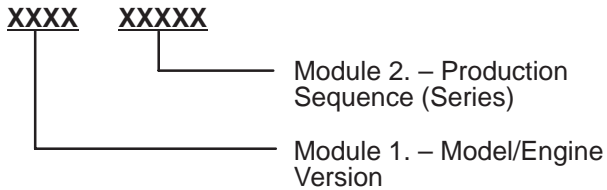
SERIAL NUMBER LOCATIONS

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:

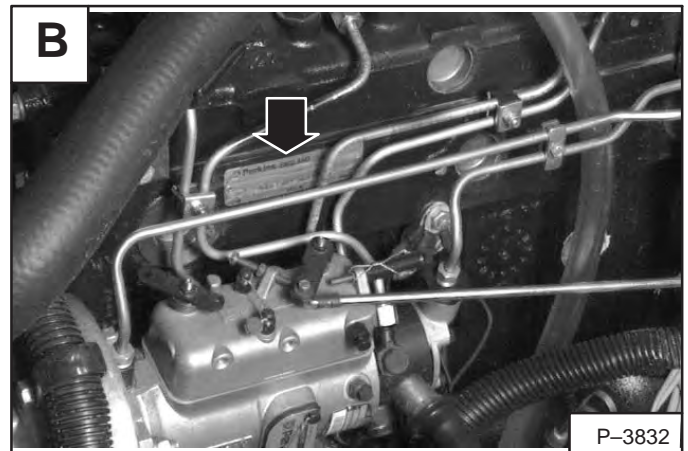
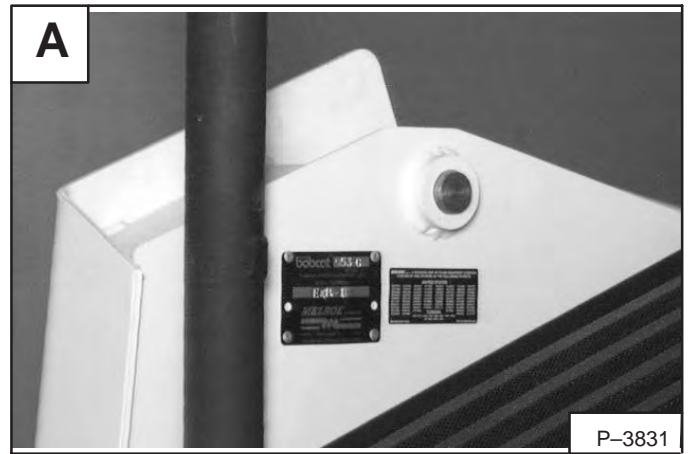


The four digit Model/Engine Combination module number identifies the model number and engine combination. This number (in parenthesis beside the model number) is used in the Service Manual to more easily identify the standard, optional and field accessory equipment included or available for each specific model.

The five digit Production Sequence Number identifies the order which the loader is produced.

ENGINE SERIAL NUMBER

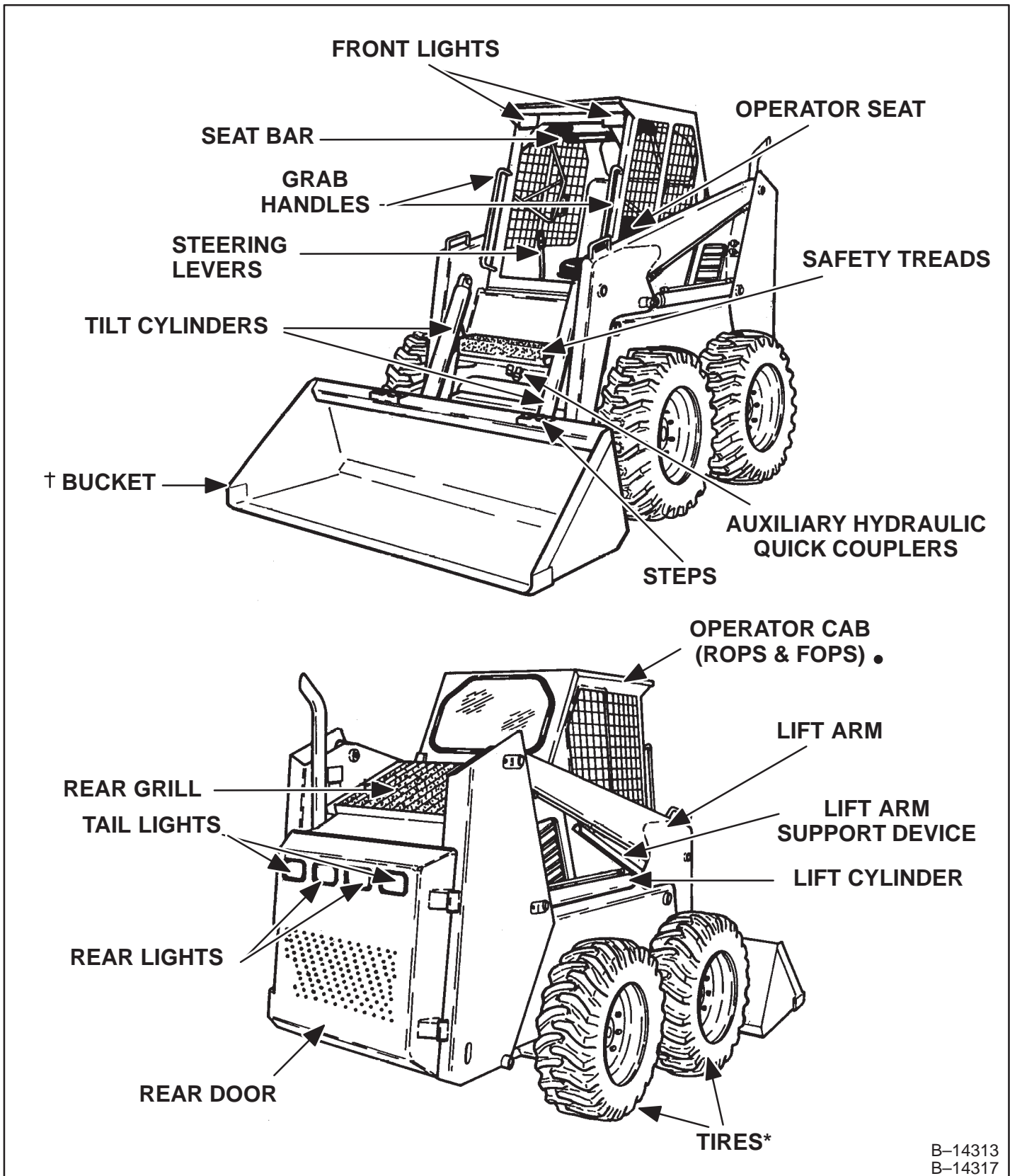
The serial number is located above the starter on the engine block **[B]**.



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 **[C]**.

953 BOBCAT LOADER IDENTIFICATION



B-14313
B-14317

* TIRES – Flotation tires (optional) are shown. The Bobcat loader is factory equipped with standard tires.

† 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 ISO 3471, and Falling Object Protective Structure per SAE J1043 and ISO 3449, Level I. Level II is available. The Bobcat loader is base-equipped with a standard operator cab as shown. Extra insulated cab is available as an option (Reduced noise level).

OPTIONS AND ACCESSORIES

All 953 Bobcat loaders are equipped with the following standard items:

Bob-Tach	Operator Cab
Spark Arrestor Muffler	Seat Belt
Front Auxiliary Hydraulics	Seat Bar
Hydraulic Bucket Positioning	Bobcat Interlock Control System (BICS™)
Parking Brake	Gauges/Warning Lights
Top & Rear Window	Operating Lights

Below is a listing of the optional equipment which is available through your Bobcat Loader dealer.

Tires

8:00–19.5, 8 PR	Std.
14:00–17.5, PR Flotation	Opt.
38 x 20 x 16.1, 8 PR	Opt.
9 x 16 Solid	Opt.

Operator Cab

Suspension Seat	Opt. & FA
Horn	FA
Heated Enclosed Cab	Opt. & FA
Special Applications Kit	FA
Cab Enclosure	FA
Fresh Air Heater w/plumbing	FA

Miscellaneous

Catalytic Purifier Muffler	Opt. & FA
Back-Up Alarm	Opt. & FA
Rear Auxiliary Hydraulics	Opt. & FA
Ether Starting Aid	FA

Std. = Standard Equipment
Opt. = Factory Installed Option
FA = Field Accessory

***Specifications subject to
change without notice***



PREVENTIVE MAINTENANCE

PREVENTIVE MAINTENANCE

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SERVICE SCHEDULE

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



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 manual 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-2003-1289

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 condition indicator. Service only when required.					
Engine Cooling System	Clean debris from oil cooler, radiator & grill. Check coolant level cold in recovery tank. Add coolant as needed.					
Lift Arms, Cylinder, Bob-Tach Pivot Pins & Wedges	Lubricate with multi-purpose lithium based grease (14 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.					
Bobcat Interlock Control System (BICS™)	Check BICS™ functions. Clean dirt, debris or objects from under or behind seat as required.					
Safety Signs & Safety Tread	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. Remove debris from the pedal area through the clean-out holes.					
Fuel Filter	Remove the trapped water.					
Hydraulic Fluid, Hoses & Tubelines	Check fluid level & add as needed. Check for damage & leaks. Repair & replace as needed.					
Final Drive Transmission (Chaincase)	Check oil level.					
Battery	Check battery for damage, hold down, cables, connections & electrolyte level. Add distilled water as needed.					
Control Pedals & Steering	Check for correct operation. Repair or adjust as needed.					
Wheel Nuts	<input type="checkbox"/> Check for loose wheel nuts & tighten to 320-350 ft.-lbs. (434-475 Nm) torque.					
Parking Brake	Check operations of the parking brake.					
Alternator Belt	Check tension & adjust as needed.					
Engine Oil & Filter	† Replace oil & filter. Use CD or better grade oil and Melroe filter.					
Spark Arrestor Muffler	Clean the spark chamber.					
Engine/Hydro. Drive Belt	* Check gap at rod nuts.					
Fuel Filter	Replace filter element & In-Line fuel filter					
Steering Shaft	Grease fitting & oil the cross-shaft.					
Hyd./Hydro. Filters	• Replace the filter elements.					
Hydraulic Reservoir Breather Cap	Replace the reservoir breather cap.					
Final Drive Transission	Replace the oil in the chaincase.					
Hydraulic Reservoir/ Case Drain Filter	Replace the fluid. Replace the case drain filter.					
Bobcat Interlock Control System (BICS™)	Check lift arm by-pass control.					

- 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.
- * Check every 8 hours for the first 40 hours of operation.
- † First oil and filter change must occur at 50 hours; 100 hours thereafter.

Revised Feb. 97

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patience.**

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

You will get the complete manual

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admin@servicemanualperfect.com