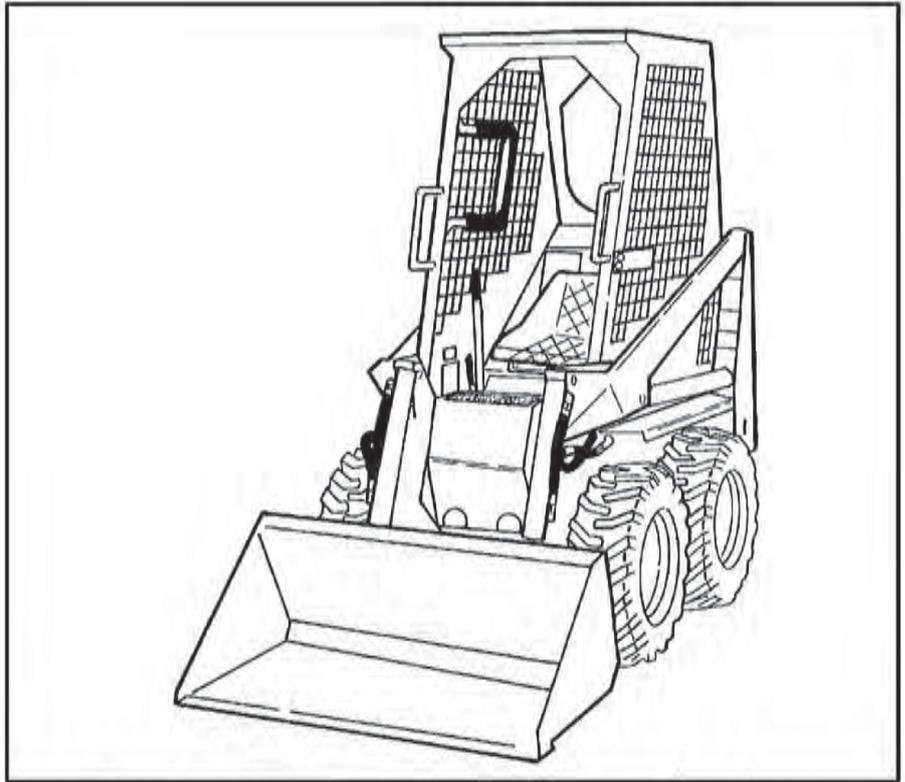


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Service Manual



**MELROE
INGERSOLL-RAND**

6556606 (12-82)

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.

CORRECT



B-10731a

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

CORRECT



B-12365

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

CORRECT



B-7469

⚠ Cleaning and maintenance are required daily.

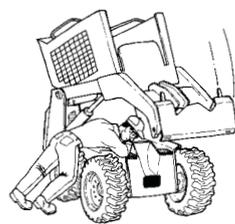
WRONG



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.

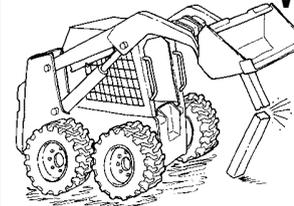
WRONG



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.

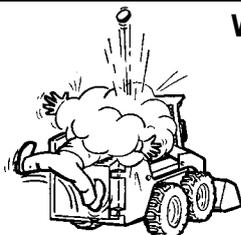
WRONG



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.

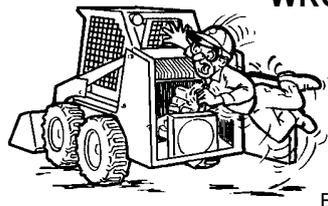
WRONG



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.

WRONG



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.

WRONG



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

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FOREWORD

This manual gives instruction for correct servicing and adjustment of the Bobcat, and overhaul instructions of the, hydraulic system, electrical system, engine and general mainframe parts.

Make reference to the Owner's Manual for operating instructions (Starting Procedure, Daily Checks and Maintenance, Bobcat Operation, etc.).

A general inspection of the following items should be made whenever the loader has had service or repair.

1. Check hydraulic fluid level, engine oil level and fuel supply.
2. Inspect for any fuel, oil or hydraulic fluid leaks.
3. Lubricate the loader.
4. Check battery condition, electrolyte level and cables.
5. Inspect air cleaner system for damage or leaks. Check element and replace as needed.
6. Check electrical charging system.
7. Check indicator lamps.
8. Check tires for wear and pressure.
9. Check the Bob-Tach attachment for condition. Inspect the wedges for damage or wear.
10. Inspect safety items for condition (Operator Enclosure, Seat Belt, Safety Treads, Lamps, etc.).
11. Make visual inspection for loose or broken parts or connections.
12. Operate the loader, checking all functions.

Check the above items, if any are in need of repair tell the Owner:

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PREVENTIVE
MAINTENANCE

HYDRAULIC
SYSTEM

DRIVE
SYSTEM

MAIN
FRAME

ELECTRICAL
SYSTEM

ENGINE
(310)

ENGINE
(313)

TECHNICAL
DATA

ALPHABETICAL
INDEX



PREVENTIVE MAINTENANCE

PREVENTIVE MAINTENANCE

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ELECTRICAL SYSTEM	1-6	1-11
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FUEL SYSTEM	1-5	1-7
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LUBRICATION	1-12	1-19
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TRANSMISSION AND DRIVE SYSTEM ...	1-11	1-18

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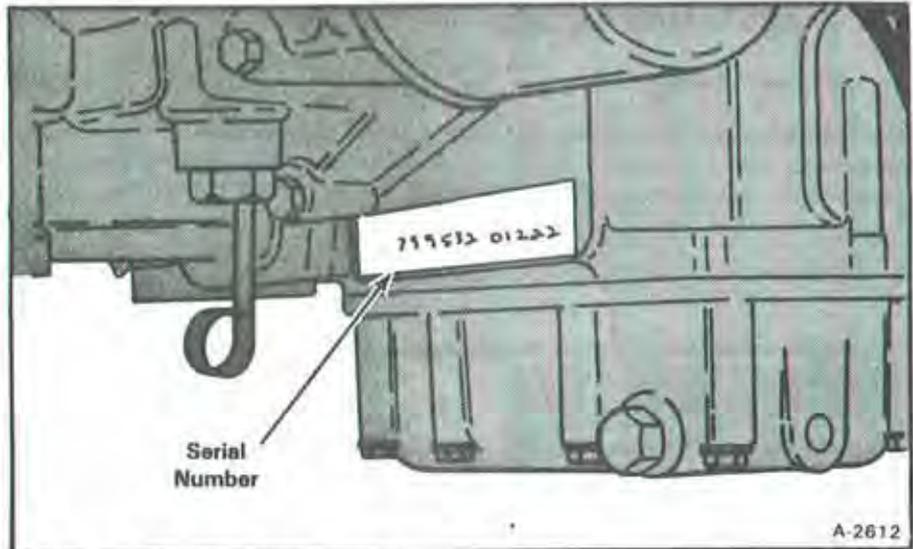
The 313 engine serial number plate is located at the bottom of the engine, near the oil filter (Fig. 1-3).

1-1.5 Pre-Delivery Inspection

The Pre-Delivery Inspection form must be completed by the Bobcat dealer.

The purpose of the pre-delivery inspection is to make sure that the loader is in correct operating condition when it comes to the dealer and before it is delivered to the customer.

The pre-delivery inspection also lets the factory know when something is wrong with the loader so that action can be taken to prevent the problem from happening in the future.



*Fig. 1-3 Engine Serial Number (313)

All items on the inspection form (Fig. 1-4) must be done according to specifications in this manual.

One copy of the completed form is mailed to:

CLARK EQUIPMENT COMPANY
Melroe Division
Quality Control Dept.
Gwinner, ND 58040

The other copy is for the dealer.

1-1.6 30 Hour Inspection

The 30 hour inspection must be made after the first 30 hours of the loader operation.

The purpose of the 30 hour inspection is:

- (1) For adjustment and inspection after the first work period.
- (2) To correct wrong maintenance and operation methods.
- (3) For demonstration of correct service procedures to customer.

All items on the 30 hour inspection form (Fig. 1-5) must be done by the mechanic according to specifications in this manual.

When the 30 hour inspection has been completed, the form must be signed by (1) the mechanic that completed the inspection, (2) the dealer, and (3) the owner or operator.

One copy of the completed form is to be mailed to:

CLARK EQUIPMENT COMPANY
Melroe Division
Service Dept.
Gwinner, ND 58040

One copy is for the owner and one copy for the dealer.

Fig. 1-4 Pre-Delivery Inspection

Fig. 1-5 30 Hour Inspection

1-2 SERVICE SCHEDULE

Maintenance work must be done at regular intervals. Failure to do so will result in damage to the loader or the engine. The service schedule is a guide for correct maintenance of the Bobcat loader. Do not change from service schedule unless to increase frequency of intervals when the Bobcat loader is operated in very hot, cold, dusty or corrosive conditions.

ITEM	SERVICE REQUIRED	HOURS							
		8-10	25	50	100	200	300	500	1000
Engine Air Cleaner	Empty dust cup.	■							
All Loader Pivot, Control Pedals and Levers	Add grease to lubricant fittings until extra grease shows.								
Engine Coolant Level (313)	Check level and add coolant if needed.								
Engine Oil	Check and add as needed.								
■ Engine Air Inlet (310)	Check and clean as needed.	■							
Cooling Fins and Shroud (310)	Clean with air pressure.								
Engine Oil (310)	Change oil.		■						
Tires	Check tire pressure and add air as needed.								
Hydraulic/Transmission Fluid	Check level.								
Engine Oil (313)	Change oil and replace oil filter.				■				
Drive Chains	Check tension and adjust as necessary.								
Battery	Check electrolyte level and add water as needed.								
Lift Arm, Cylinders, Bob-Tach Pivots	Tighten the pivot bolts to 160 ft.-lbs. torque.								
Spark Arrestor Muffler	Remove plug. Clean carbon from muffler.								
Fan and Alternator Belt (313)	Check tension and adjust as needed.								
■ Hydraulic Fluid Filter	Replace element.								
Belt Sheaves	Check to make sure the sheave mounting screws or nuts are tight. Check electric clutch bracket and wires.								
■ Crankcase Breather (310)	Inspect. Service as needed.								
Steering Clutches	Adjust when lever movement is over 3" in either direction.								
Carb. Sed. Bowl (310)	Remove and clean.								
Spark Plugs (310)	Remove, clean and set gap. Install and tighten to specification.								
Breaker Points (310)	Remove cover. Check contacts and replace if necessary.								
■ Engine Air Cleaner	Remove and clean. Replace element when necessary.								
Engine Cylinder (310)	Remove and clear carbon from cylinder head.								
Engine Shroud (310)	Remove to clean cooling fins.								
Injector Nozzle (313)	Remove, clean, test and adjust as needed.								
Cylinder Head Nuts (313)	Tighten to specifications and adjust valves.								
Fuel Filter (313)	Replace the element.								
Spark Plug (310)	Replace.								
Ignition Timing (310)	Check and adjust as necessary.								
Engine Valve Tappets	Check clearance. Adjust as necessary.								
Hydraulic/Transmission Fluid	Drain condensation. Check fluid level. Add as needed.								
Hydraulic/Transmission Fluid	Replace fluid.								
Drive Belts	Check for wear. Replace worn belts.								
Coolant System (313)	Drain system, flush and fill with coolant.								

■ On very dusty conditions, clean more often as needed.

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