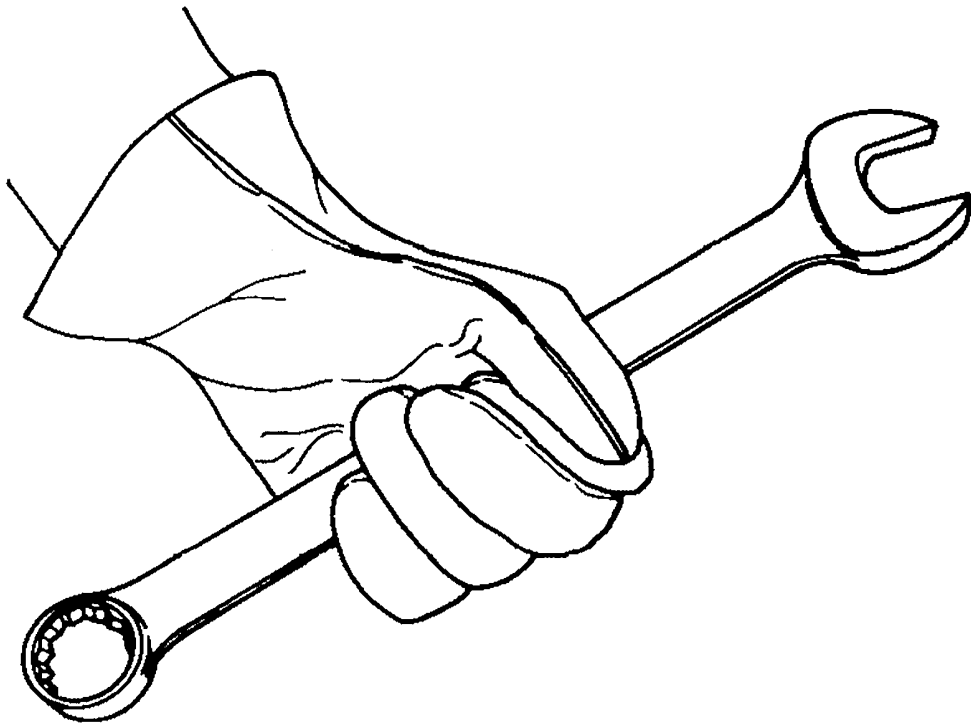




**1600**

# **SERVICE MANUAL**



**MELROE  
INGERSOLL-RAND**

6566906 (8-87)  
1 of 280



Printed in U.S.A.



# MAINTENANCE SAFETY



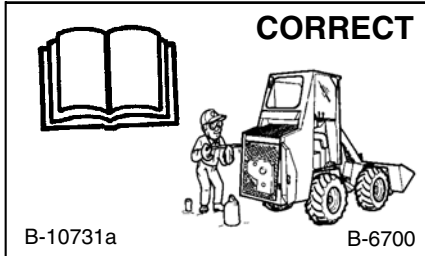
## WARNING

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



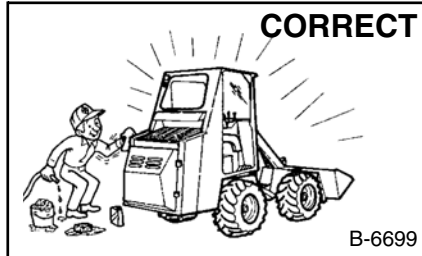
**Safety Alert Symbol:** This symbol with a warning statement, means: "Warning, be alert! Your safety is involved!" Carefully read the message that follows.



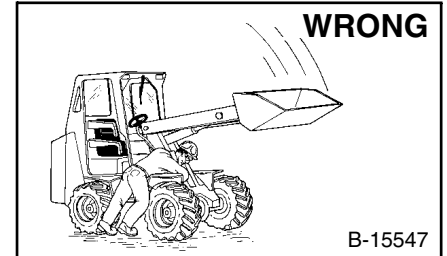
⚠ Never service the Bobcat Loader without instructions. See Service Manual.

⚠ Check engine and hydraulic fluids daily.

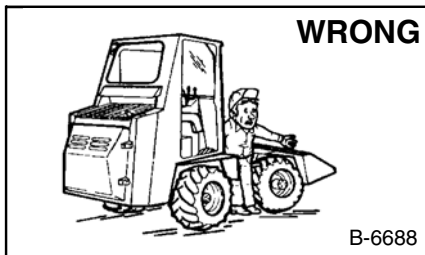
⚠ Use recommended fluids.



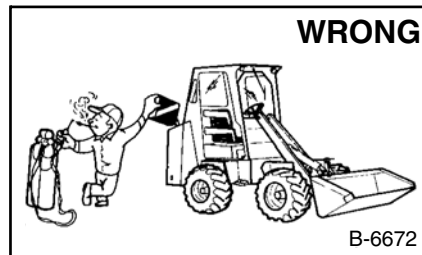
⚠ Cleaning and maintenance are required daily.



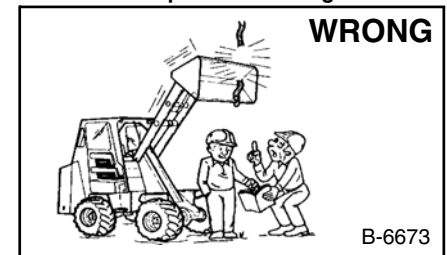
⚠ Disconnecting or loosening any hydraulic tubeline, hose, fitting, component or a part failure can cause lift arms to drop. Do not go under lift arms when raised unless supported by an approved lift arm support device. Replace it if damaged.



⚠ Always connect steering frame lock before working on the loader.

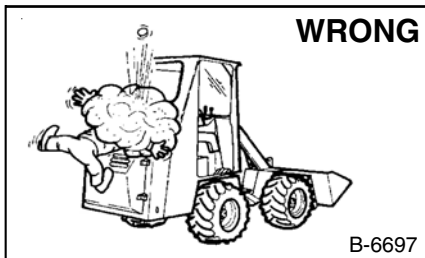


⚠ Do not fill the fuel tank with engine running, while smoking or when near an open flame.



⚠ Never work on loader with lift arms up unless lift arms are held by an approved lift arm support device.

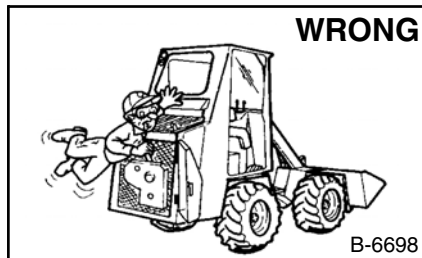
⚠ Never modify equipment or add attachments not approved by Bobcat Company.



⚠ 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.



⚠ 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.

MSW04-0805



**Bobcat®**

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**PREVENTIVE  
MAINTENANCE**

**HYDRAULIC  
SYSTEM**

**HYDROSTATIC  
SYSTEM**

**DRIVE  
SYSTEM**

**MAIN  
FRAME**

**ELECTRICAL  
SYSTEM**

**ENGINE  
SERVICE**

**TECHNICAL  
DATA**



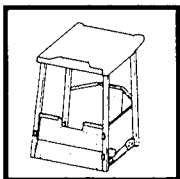
**bobcat**

# FOREWORD

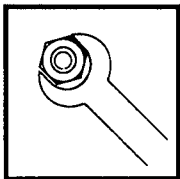
This manual is for the Bobcat loader mechanic. It provides necessary servicing and adjustment procedures for the Bobcat loader and its component parts and systems. Refer to the Operation & Maintenance Manual for operating instructions, starting procedure, daily checks, etc.

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

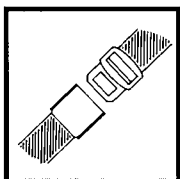
1. Check that the ROPS/FOPS is in good condition and is not modified.



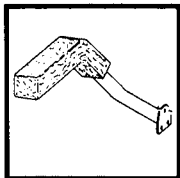
2. Check that ROPS mounting hardware is tightened and is Melroe approved.



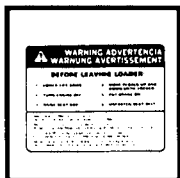
3. The seat belt must be correctly installed, functional and in good condition.



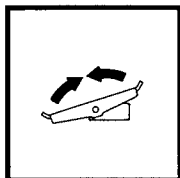
4. The operator restraint arm must function correctly.



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



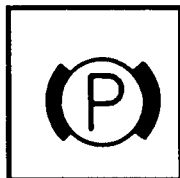
6. Foot pedal must return to neutral.



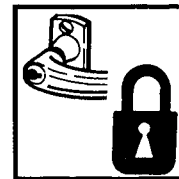
7. Check for correct function of the work lights.



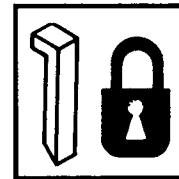
8. The parking brake must function correctly.



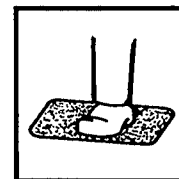
9. Enclosure door latches must open and close freely.



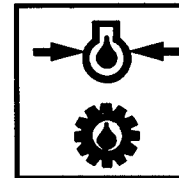
10. Bob-Tach wedges and linkages must function correctly and be in good condition.



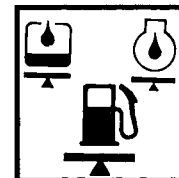
11. Safety treads must be in good condition.



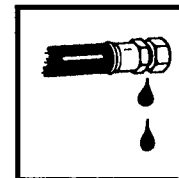
12. Check for correct function of indicator lamps.



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



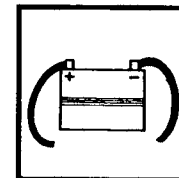
14. Inspect for fuel, oil or hydraulic fluid leaks.



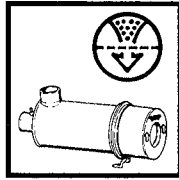
15. Lubricate the loader.



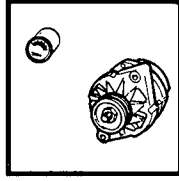
16. Check the condition of the battery and cables.



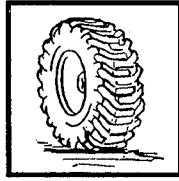
17. Inspect the air cleaner for damage or leaks. Check the condition of the element.



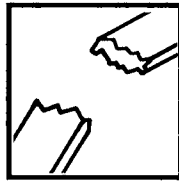
18. Check the electrical charging system.



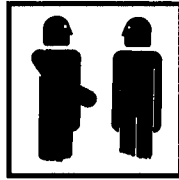
19. Check tires for wear and pressure.



20. Inspect for loose or broken parts or connections.



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 of the loader and attachments:

1. 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.
2. 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.
3. The loader has machine signs (decals) which instruct on the safe care and operation. The signs and their locations are shown in the Operation & Maintenance Manual. Replacement signs are available from Bobcat loader dealers.
4. The FIEI Manual delivered with the loader gives general safety information.
5. 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 extinguishers 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 a 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:

XXXX    XXXXX

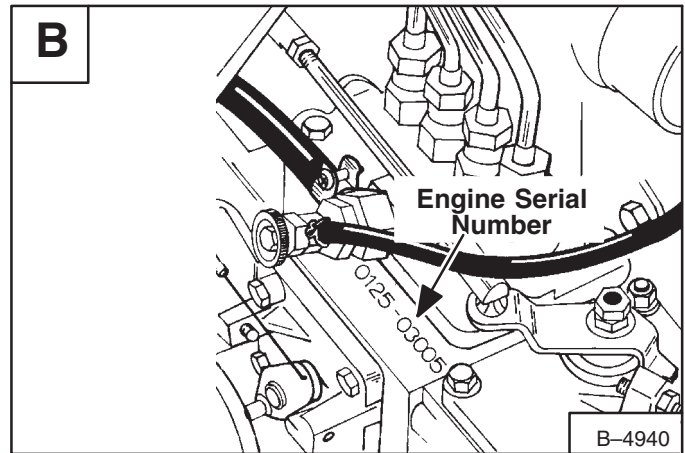
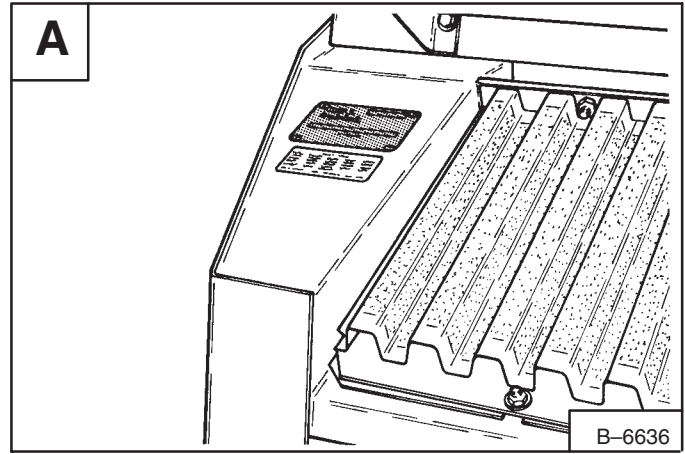
Module 2. – Production Sequence (Series)

Module 1. – Model/Engine Combination

1. 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 Operation & Maintenance Manual to more easily identify the standard, optional and field accessory equipment included or available for each specific model.
2. The five digit Production Sequence Number identifies the order which the loader is produced.

### ENGINE SERIAL NUMBER

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

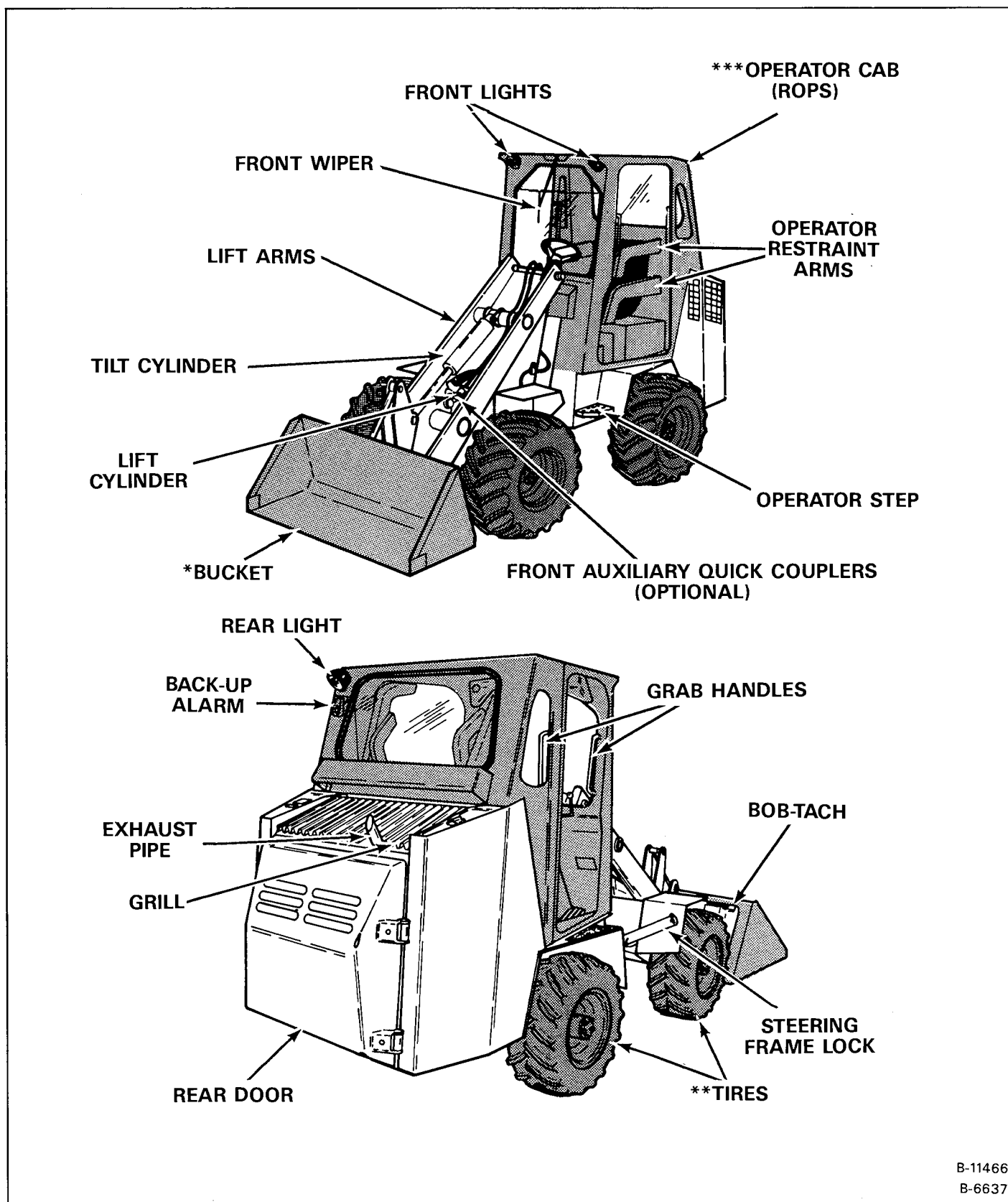


### DELIVERY REPORT

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].

Diagram D shows a form titled 'DELIVERY REPORT'. The form is divided into several sections. At the top right, there is a section labeled 'DELIVERY REPORT' with several lines for text. Below this, there is a section labeled 'WARNING' with several lines for text. The form is labeled 'D' in the top left corner.

# BOBCAT LOADER IDENTIFICATION



B-11466  
B-6637

- \* BUCKET — Several different buckets and other attachments are available for the Bobcat loader.
- \*\* TIRES — Tires shown are optional flotation tires which are not standard for this loader.
- \*\*\* ROPS — Roll Over Protective Structure.



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# PREVENTIVE MAINTENANCE




	Page Number
FRAME LOCK	
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<b>LIFT ARM SUPPORT DEVICE</b>	
Procedure . . . . .	1-3
LIFTING AND BLOCK THE LOADER	
Procedure . . . . .	1-2
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SERVICE SCHEDULE	
Chart . . . . .	1-1
TRANSPORTING THE LOADER	
Procedure . . . . .	1-4
USING AN EXTRA BATTERY (JUMP STARTING)	
Procedure . . . . .	1-6



**bobcat**

**SERVICE SCHEDULE**

You must do maintenance work 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. Follow this service schedule as explained below unless it is to increase the frequency of intervals when the Bobcat is used in very hot, cold, dusty or corrosion conditions.

 <b>WARNING</b>	<p>Instructions are necessary before operating or servicing machine. Read Operator's 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.</p>	<p>W-2003-1285</p>
--	---	--------------------

SERVICE SCHEDULE		HOURS				
ITEM	SERVICE REQUIRED	8-10	50	100	250	1000
Engine Oil	Check the oil & add as needed.					
Air Cleaner Indicator	Replace the outer element when the red ring shows in the condition indicator window.					
Tires	Check tires for damage & correct pressure.					
Seat Belt & Restraint Arms	Check the condition of the seat belt & restraint arms for correct operation.					
Safety Signs (Decals)	Check for damaged decals. Replace any decals that are damaged or missing.					
Loader Pivot Points	Add lubricant to all fittings (See Operator's Manual).					
Hydraulic Fluid Reservoir	Check the fluid level & add fluid as needed.					
Engine Coolant System	Check level & add as needed. Remove any debris from the grill area.					
Wheel Nuts	* Tighten wheel nuts to 115 ft.lbs. (155 Nm) torque.					
Fuel Filter	Remove any trapped water.					
Battery & Cables	Check the battery water level & add as needed. Clean cable ends & cover with grease.					
Hyd. Control Levers	Check the levers for correct operation. Make repairs & adjust as needed.					
Bob-Tach	Check the locking levers & wedges for condition & correct operation.					
Brake	Check the brake for correct operation.					
Alternator Belt	Check condition & tension of belt.					
Engine Oil & Filter	Replace oil & filter.					
Spark Arrestor Muffler	Empty spark chamber.					
U-Joints (Drive Shaft)	Lubricate with the correct grease (See Operator's Manual).					
Hydraulic Filter	Replace the filter element.					
Fuel Filter	Replace the fuel filter element.					
Front & Rear Axle	Check oil level & add as needed.					
U-Joint (Eng. to Hydro. Pump)	Lubricate with the correct grease (See Operator's Manual).					
Hyd./Hydro. System	Replace the fluid & filter. Replace vent filter.					

\* Check the wheel nuts torque every 8 hours for the first 24 hours of operation.

## PREVENTIVE MAINTENANCE



### WARNING

Instructions are necessary before operating or servicing machine. Read Operator's 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-2003-1285

A



B-7023

## LIFTING AND BLOCKING THE BOBCAT LOADER

### Procedure

Always park the loader on a level surface.

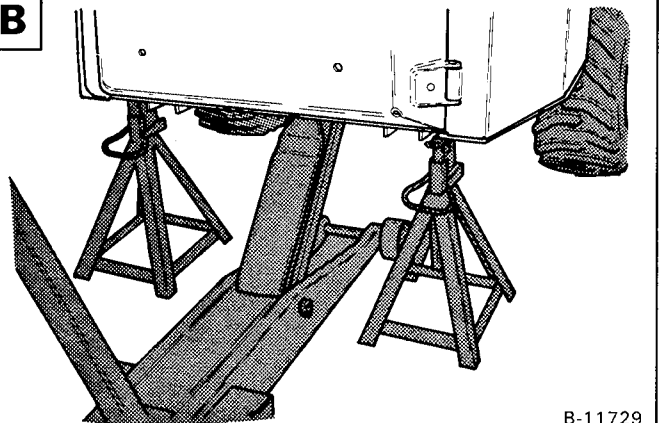


### WARNING

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

B



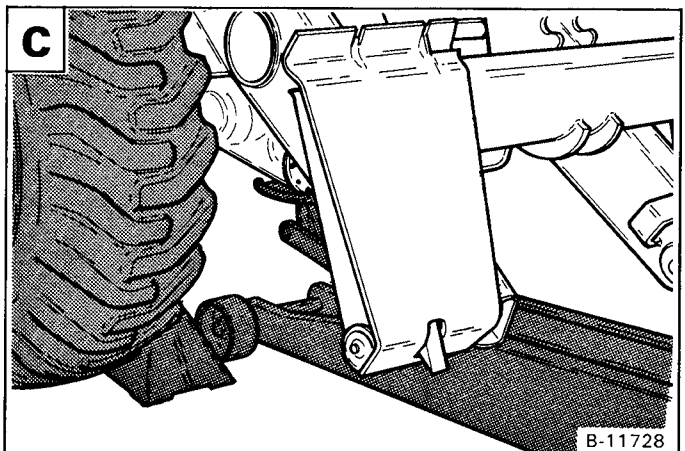
B-11729

Put the floor jack under the rear of the loader **B**.

Lift the rear of the loader and install the heavy duty jackstands **B**.

Put the floor jack under the front axle differential housing **C**.

C



B-11728

Lift the front of the loader and put the heavy duty jackstands under the axle housing **C**.

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



## LIFT ARM SUPPORT DEVICE

### Procedure



# WARNING

Never work on a machine with the lift arms up unless the lift arms are secured by a lift arm support device. Failure to use an approved lift arm support device can allow the lift arms or attachment to fall.

W-2059-0991

**NOTE:** Lift arm support device is available from your Bobcat dealer.

One person must stay in the operator's seat, with the seat belt fastened and operator restraint system lowered, while the other person installs the lift arm support device.

Start the engine and raise the lift arms all the way up.

Have a second person install the lift arm support device over the rod of the lift cylinder **A**.

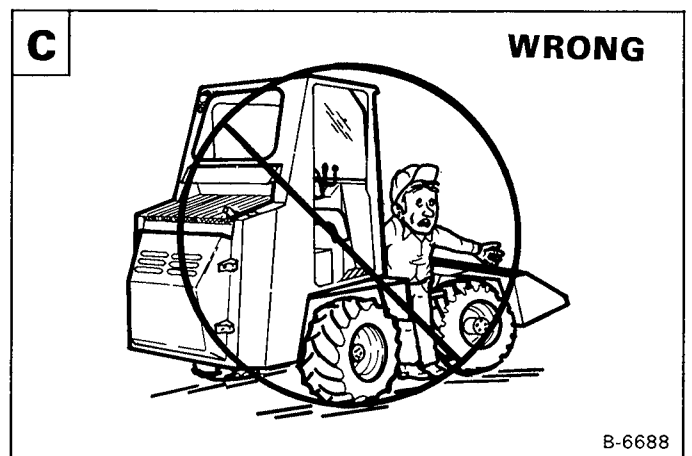
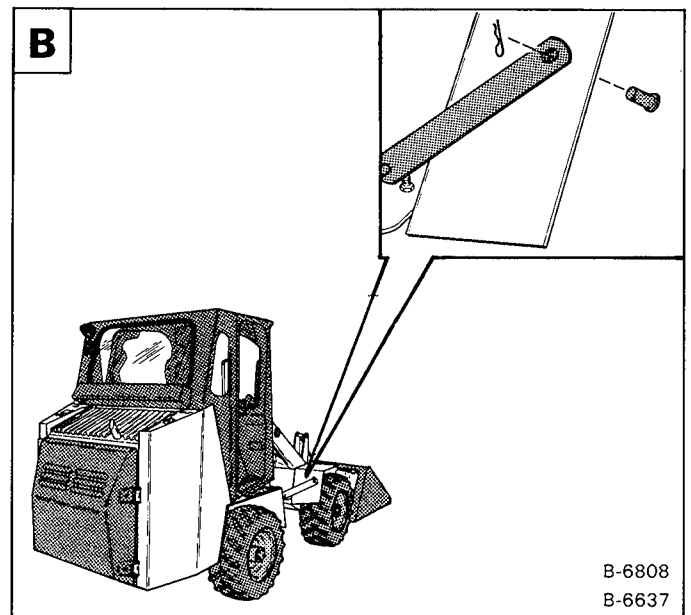
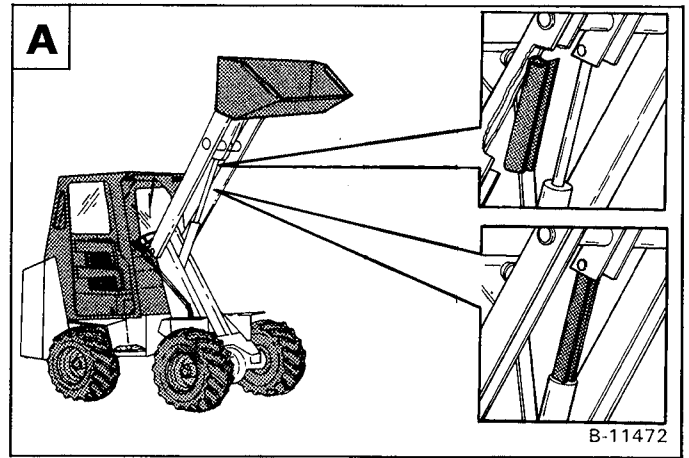
Lower the lift arms slowly until the support device is held between the lift arms and lift cylinder.

## FRAME LOCK

### Procedure

Before any service work is done on the Bobcat loader, always install the frame lock **B**.

Never allow anyone in or near the pivot area unless the frame lock is installed **C**.



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