

5  
4  
0

5  
4  
3

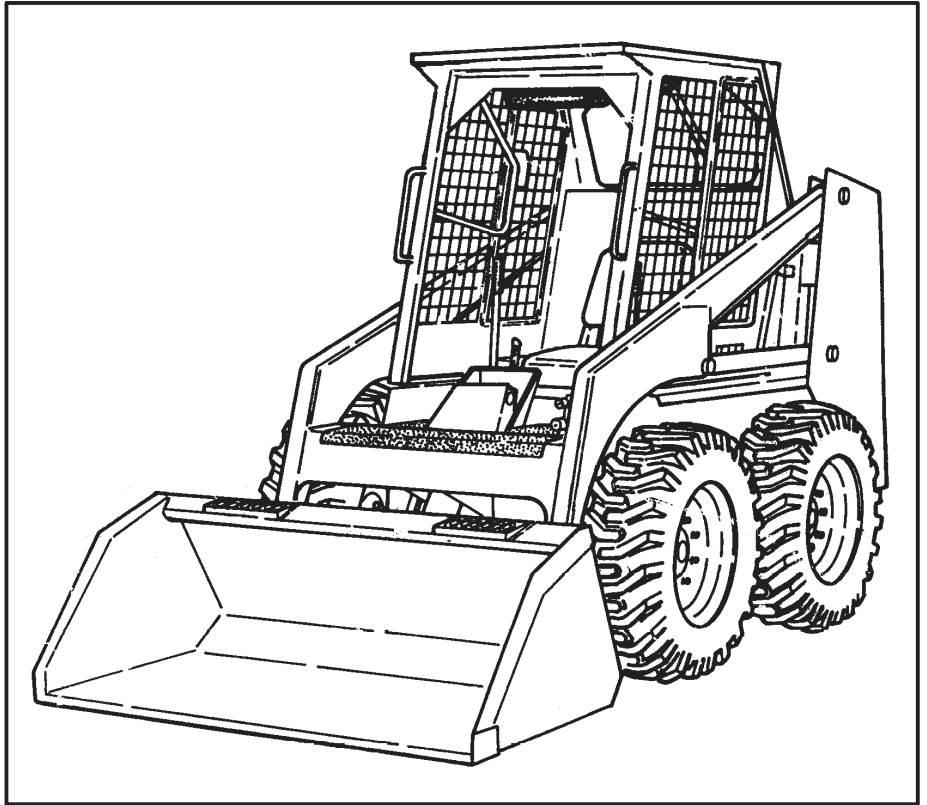
5  
4  
3  
B



# Service Manual

540 (S/N 501012001 & Above)  
543 (S/N 502412001 & Above)  
543B (S/N 511111001 & Above)



**MELROE**  
**INGERSOLL-RAND**

6566532 (11-94)

Printed in U.S.A.



© Melroe Company 1994



# MAINTENANCE SAFETY



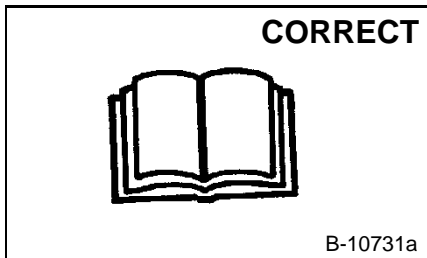
## WARNING

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.

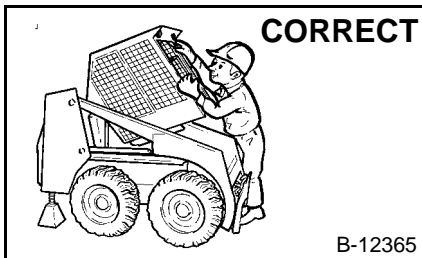
W-2003-0903



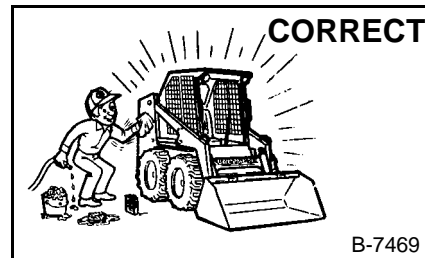
**Safety Alert Symbol:** This symbol with a warning statement, means: "Warning, be alert! Your safety is involved!" Carefully read the message that follows.



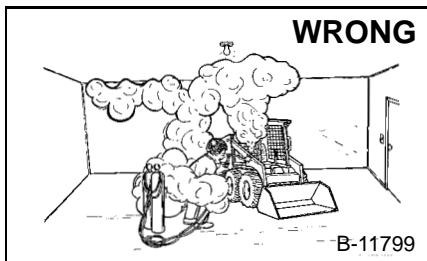
Never service the Bobcat Skid-Steer Loader without instructions.



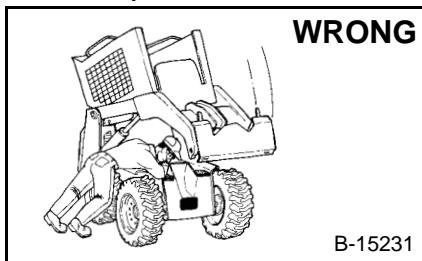
Use the correct procedure to lift or lower operator cab.



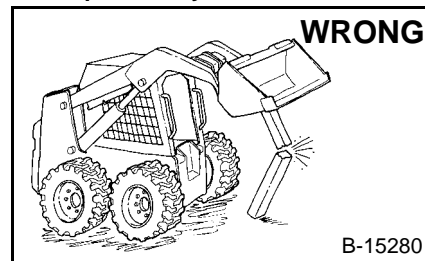
Cleaning and maintenance are required daily.



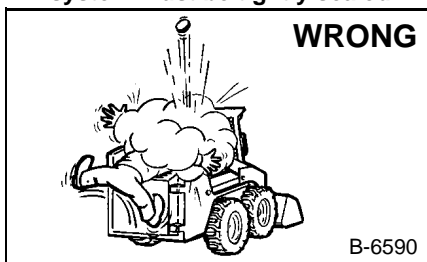
- Have good ventilation when welding or grinding painted parts.
- Wear dust mask when grinding painted parts. Toxic dust and gas can be produced.
- Avoid exhaust fume leaks which can kill without warning. Exhaust system must be tightly sealed.



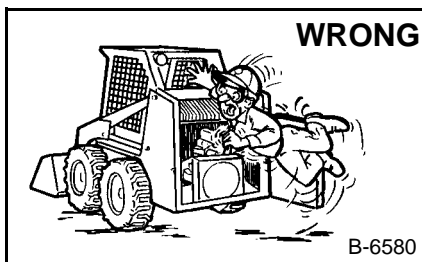
Disconnecting or loosening any hydraulic tubeline, hose, fitting, component or a part failure can cause lift arms to drop. Do not go under lift arms when raised unless supported by an approved lift arm support device. Replace it if damaged.



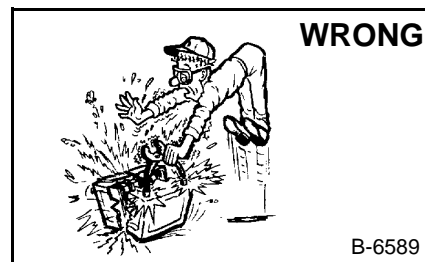
- Never work on loader with lift arms up unless lift arms are held by an approved lift arm support device. Replace if damaged.
- Never modify equipment or add attachments not approved by Bobcat Company.



- 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.



**Bobcat®**

## ALPHABETICAL INDEX

Subject	Page	Subject	Page
AIR CLEANER .....	1-1	REAR DOOR .....	5-1
ALTERNATOR SYSTEM (540) .....	6-1	RECONDITIONING THE VALVES .....	7A-1
ALTERNATOR SYSTEM (543) .....	6-1	REPAIRING THE ENGINE .....	7B-1
ASSEMBLY OF THE ENGINE .....	7B-1	ROLLOVER PROTECTION STRUCTURE (ROPS & FOPS) .....	1-1
AXLES & BEARINGS .....	4-1		
BATTERY .....	6-1	SEAT BAR .....	5-1
BOB-TACH .....	5-1	SEAT BAR SYSTEM .....	5-1
		SERVICE SCHEDULE .....	1-1
CARBURETOR & FUEL SHUT OFF SOLENOID .	7A-1	SPARK ARRESTOR MUFFLER .....	1-1
CHAINCASE FLUID .....	4-1	STANDARD TORQUE SPECIFICATIONS FOR BOLTS .....	8C-1
CHECKS & ADJUSTMENTS FOR THE ENGINE .	7A-1	STARTER (540) .....	6-1
CONTROL PEDAL, LINKAGE AND LOCKS .....	2-1	STARTER (543) .....	6-1
CYLINDER HEAD .....	7A-1	STEERING LEVERS .....	3-1
CYLINDER HEAD .....	7B-1	STEERING LINKAGE .....	3-1
		STOPPING THE BOBCAT LOADER .....	1-1
DECIMAL AND MILLIMETER EQUIVALENTS ...	8C-3		
ELECTRICAL SYSTEM .....	1-1	10 MICRON FILTER BY-PASS VALVE .....	2-1
ELECTRICAL SYSTEM INFORMATION .....	6-1	TILT CYLINDER .....	2-1
ENGINE AND ATTACHING PARTS .....	7B-1	TIMING COVER, TIMING GEARS & CAMSHAFT	7A-1
ENGINE & HEAT SHIELD .....	7A-1	TIRE MAINTENANCE .....	1-1
ENGINE SERVICE (General) .....	1-1	TORQUE SPECIFICATIONS .....	8C-1
ENGINE SERVICE (KOHLEK - 540) .....	7A-1	TOWING THE BOBCAT LOADER .....	3-1
ENGINE SERVICE (KUBOTA - 543) .....	7B-1	TRANSPORTING THE BOBCAT LOADER .....	1-1
ENGINE SPECIFICATIONS		TROUBLESHOOTING .....	2-1, 3-1, 6-1, 7A-1, 7B-1
540 LOADER (KOHLEK) .....	8A-1		
ENGINE SPECIFICATIONS-		U.S. TO METRIC CONVERSION .....	8C-4
543 LOADER (KUBOTA) .....	8B-1		
FINAL DRIVE CHAINS .....	4-1	WIRE HARNESS FOR THE ENGINE .....	6-1
FINAL DRIVE TRANSMISSION (Chaincase) .....	1-1	WIRE HARNESS FOR THE OPERATOR CAB .....	6-1
FLYWHEEL .....	7A-1		
FUEL SYSTEM .....	7B-1		
FUEL TANK .....	5-1		
GOVERNOR .....	7A-1		
HYDRAULIC CONTROL VALVE .....	2-1		
HYDRAULIC CONTROL VALVE (MELROE) .....	2-1		
HYDRAULIC/HYDROSTATIC FLUID SPECIFICATIONS .....	8C-2		
HYDRAULIC/HYDROSTATIC RESERVOIR .....	2-1		
HYDRAULIC/HYDROSTATIC SYSTEM .....	1-1		
HYDRAULIC PUMP .....	2-1		
HYDRAULIC SYSTEM INFORMATION .....	2-1		
HYDROSTATIC .....	3-1		
HYDROSTATIC PUMP .....	3-1		
HYDROSTATIC SYSTEM INFORMATION .....	3-1		
INTAKE & EXHAUST MANIFOLD .....	7A-1		
INTRODUCTION .....	1-1		
LIFT ARMS .....	5-1		
LIFT ARM SUPPORT DEVICE .....	1-1		
LIFT CYLINDERS .....	2-1		
LOADER SPECIFICATIONS-540 .....	8A-1		
LOADER SPECIFICATIONS-543 .....	8B-1		
LUBRICATION OF THE LOADER .....	1-1		
OIL COOLER .....	2-1		
OIL PUMP & RELIEF VALVE .....	7A-1		
OPERATOR CAB .....	5-1		
PARKING BRAKE .....	4-1		
PEDAL LOCK LINKAGE .....	5-1		
PISTONS, ROD AND CRANKSHAFT .....	7A-1		
PORT BLOCK .....	3-1		

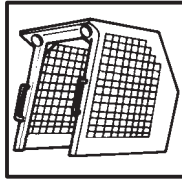


# FOREWORD

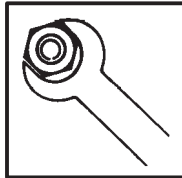
This manual is for the Bobcat loader mechanic. It provides necessary servicing and adjustment procedures for the Bobcat loader and its component parts and systems. Refer to the Operation & Maintenance Manual for operating instructions, starting procedure, daily checks, etc.

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

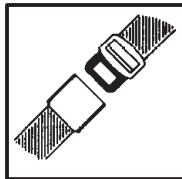
1. Check that the ROPS/FOPS (Including sidescreens) is in good condition and is not modified.



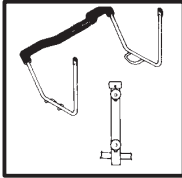
2. Check that ROPS mounting hardware is tightened and is Melroe approved.



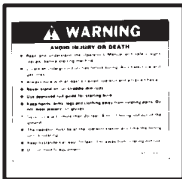
3. The seat belt must be correctly installed, functional and in good condition.



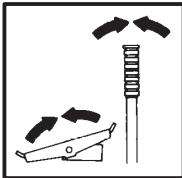
4. The seat bar and pedal interlocks must be correctly adjusted, clean and lubricated.



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.



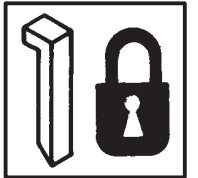
8. The parking brake must function correctly.



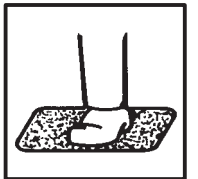
9. Enclosure door latches must open and close freely.



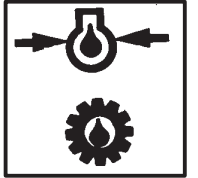
10. Bob-Tach wedges and linkages must function correctly and be in good condition.



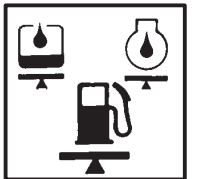
11. Safety treads must in good condition.



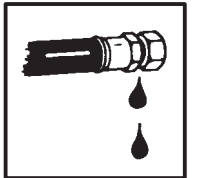
12. Check for correct function of indicator lamps (Optional on some models).



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



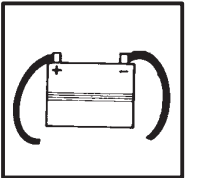
14. Inspect for fuel, oil or hydraulic fluid leaks.



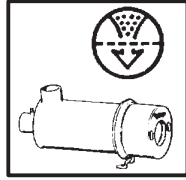
15. Lubricate the loader.



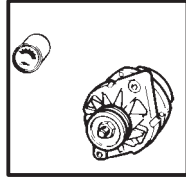
16. Check the condition of the battery and cables.



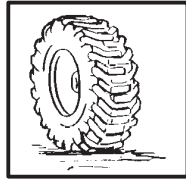
17. Inspect the air cleaner for damage or leaks. Check the condition of the element.



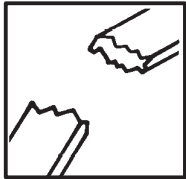
18. Check the electrical charging system.



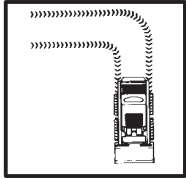
19. Check tires for wear and pressure.



20. Inspect for loose or broken parts or connections.



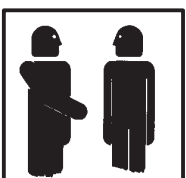
21. Operate the loader and check all functions.



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

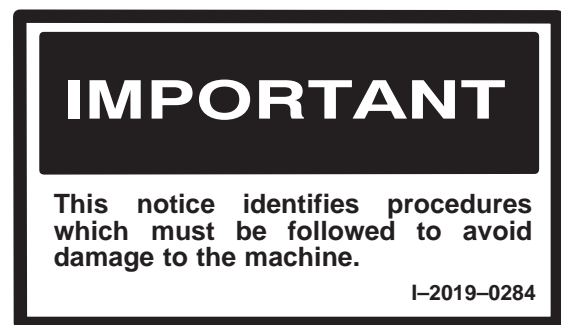
# **WARNING**

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 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 an English edition or one of many other languages. See your Bobcat dealer for more information on translated versions.
- 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 local dealer. This course is intended to provide rules and practices for correct operation of the Bobcat loader. The course is available in English and Spanish version.
- The Bobcat Skid-Steer Loader Safety Video is available from your Bobcat Dealer.



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

## 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 extinguisher and first aid kit 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 engines which have 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.

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



# CONTENTS

DRIVE SYSTEM .....	4
ELECTRICAL SYSTEM .....	6
ENGINE SERVICE .....	7
HYDRAULIC SYSTEM .....	2
HYDROSTATIC SYSTEM .....	3
MAIN FRAME .....	5
PREVENTIVE MAINTENANCE .....	1
TECHNICAL DATA .....	8

**PREVENTIVE  
MAINTENANCE**

**HYDRAULIC  
SYSTEM**

**HYDROSTATIC  
SYSTEM**

**DRIVE  
SYSTEM**

**MAIN  
FRAME**

**ELECTRICAL  
SYSTEM**

**ENGINE  
SERVICE**


**TECHNICAL  
DATA**

**ALPHABETICAL  
INDEX**



**PREVENTIVE MAINTENANCE**

	<b>Paragraph Number</b>	<b>Page Number</b>
ELECTRICAL SYSTEM .....	1-4	1-9
ENGINE SERVICE (General) .....	1-3	1-3
FINAL DRIVE TRANSMISSION (Chaincase) .....	1-7	1-14
HYDRAULIC/HYDROSTATIC SYSTEM .....	1-6	1-13
INTRODUCTION .....	1-1	1-1
LIFT ARM SUPPORT DEVICE .....	1-12	1-19
LUBRICATION OF THE LOADER .....	1-9	1-16
ROLLOVER PROTECTION STRUCTURE (ROPS & FOPS) .....	1-10	1-16
SERVICE SCHEDULE .....	1-2	1-2
SPARK ARRESTOR MUFFLER .....	1-5	1-12
STOPPING THE BOBCAT LOADER .....	1-13	1-19
TIRE MAINTENANCE .....	1-8	1-15
TRANSPORTING THE BOBCAT LOADER .....	1-11	1-17

 <b>WARNING</b>	<p><b>DO NOT</b> service the Bobcat loader without instructions or taking the necessary safety precautions. Before working on the loader, see the warnings and instructions at the beginning of this Service Manual. After making the repair or adjustment, always check the function of the loader. Failure to obey warnings may cause injury or death.</p>
--	--



## PREVENTIVE MAINTENANCE

### 1-1 INTRODUCTION

The Preventive Maintenance Section of this Service Manual gives general maintenance procedure for the Bobcat loader. The other sections of the Service Manual will give the detailed description needed for disassembly and assembly and when replacement parts are needed.

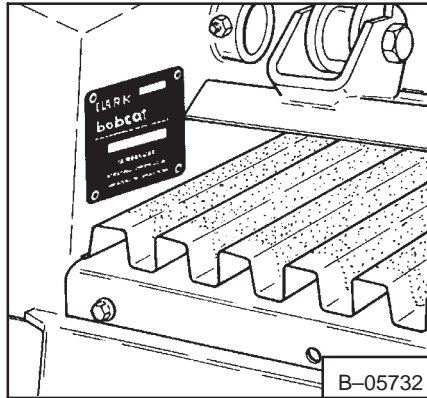


Fig. 1-1 Loader Serial Number

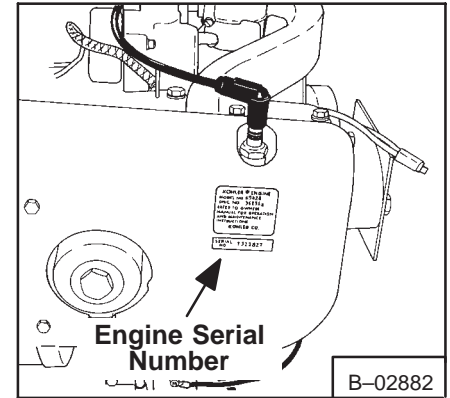


Fig. 1-2 Engine Serial Number (540)

#### 1-1.1 Serial Number Identification

It is important to make correct reference to the Serial Number of the Bobcat loader and/or engine when making repairs or ordering parts. It is possible that the present loaders do not use all the same parts as the earlier loaders. It is possible that different procedures are used for servicing repair.

#### 1-1.2 Loader Serial Number

The Bobcat loader serial number plate location is on the inside of the left upright, above the grill (Fig. 1-1).

Explanation of the Serial Number:

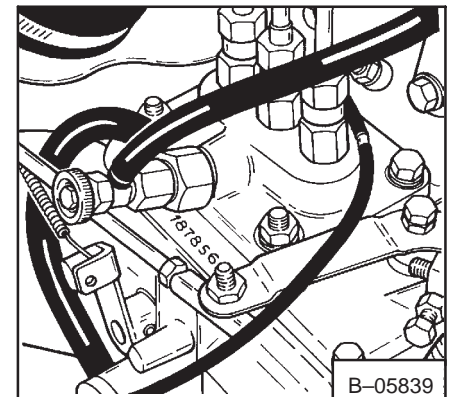
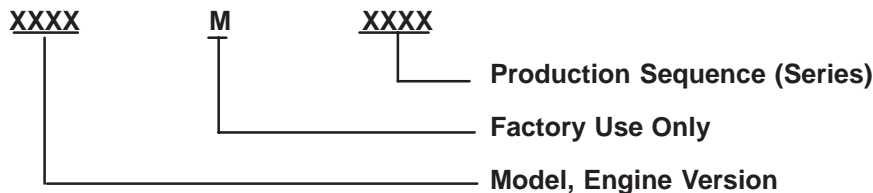


Fig. 1-3 Engine Serial Number (543)

#### 1-1.3 Engine Serial Number

The engine serial number for the 540 (Kohler) Bobcat loader is located on the blower housing at the right side of the engine (Fig. 1-2).

The engine serial number for the 543 (Kubota) Bobcat loader is located at the left side of the engine at fuel injection pump (Fig. 1-3).

#### 1-1.4 Delivery Report

The Delivery Report is to be filled out by the dealer and signed by the owner/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.

Fig. 1-4 Delivery Report

**Dear**

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

**Want to get more information,**

**Please click here, Go back to the page.**

**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**

**please write to me**

**[admin@servicemanualperfect.com](mailto:admin@servicemanualperfect.com)**