

V518



Bobcat®
VersaHANDLER

Service Manual

S/N 367610501, 367611001 & Above
S/N 367711001 & Above



Dealer Copy - Not for Resale

MAINTENANCE SAFETY

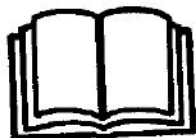


WARNING

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

CORRECT



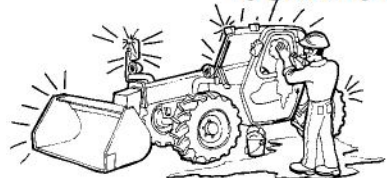
B-10731a

- Never service the Bobcat VersaHANDLER without instructions.



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

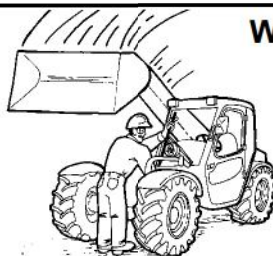
CORRECT



B-16082

- Cleaning and maintenance are required daily.

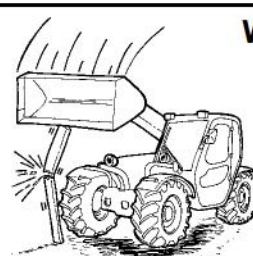
WRONG



B-16080

- Disconnecting or loosening any hydraulic tubeline, hose, fitting, component or a part failure can cause boom to drop. Do not go under boom when raised unless supported by an approved boom stop. Replace if damaged.

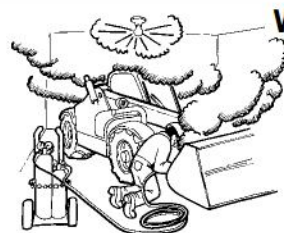
WRONG



B-16079

- Never work on VersaHANDLER with boom up unless boom is held by an approved boom stop. Replace if damaged.
- Never modify equipment or add attachments not approved by Bobcat Company.

WRONG



B-16081

- 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-16078

- 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.

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.

MSW12-0805

Dealer Copy -- Not for Resale

ALPHABETICAL INDEX

ACCUMULATOR.....	20-210-01	EXTENSION CYLINDER.....	20-40-1	
AIR CLEANER	70-40-01	FAN MOTOR	20-140-1	
AIR CLEANER SERVICE	10-60-01	FENDER.....	50-110-1	
AIR CONDITIONING SERVICE.....	80-90-1	FLOW CONTROL VALVE.....	20-240-1	
AIR CONDITIONING SYSTEM FLOW	80-10-1	FLYWHEEL AND HOUSING	70-90-1	
AIR INTAKE COWLING	50-71-1	FRONT AUXILIARY HYDRAULIC PRESSURE RELEASE VALVE..	20-230-1	
ALTERNATOR	60-30-1	FRONT AXLE (FOR S/N 367611001 - 367612000 and S/	N 367711001 - 367712000).....	40-30-1
APPROVED BOOM STOP	10-150-1	FRONT AXLE (FOR S/N 367612001 & ABOVE, S/N	367712001 & ABOVE).....	40-31-1
AXLE AND DIFFERENTIAL (FRONT) (FOR S/N 367611001 -	367612000 AND S/N 367711001 - 367712000).....	40-20-1	FRONT WIPER MOTOR.....	60-110-1
AXLE AND DIFFERENTIAL (REAR) (For S/N 367611001 -	367612000 and S/N 367711001 - 367712000).....	40-21-1	FUEL SYSTEM.....	10-80-1
AXLE AND DIFFERENTIAL (FRONT) (For S/N 367612001 &	Above, S/N 367712001 & Above).....	40-22-11	FUEL TANK	50-80-1
AXLE AND DIFFERENTIAL (REAR) (FOR S/N 367612001 &	ABOVE, S/N 367712001 & ABOVE).....	40-23-1	GEAR PUMP	20-130-1
AXLE PIVOT FRAME	40-01	GENERAL AIR CONDITIONING SERVICE GUIDELINES..	80-60-1	
AXLE TOE-IN (FOR S/N 367611001 - 367612000 and S/	N 367711001 - 367712000)	40-40-1	HEATER ASSEMBLY	80-170-1
AXLE TOE-IN (FOR S/N 367612001 & ABOVE, S/N	367712001 & ABOVE).....	40-41-1	HYDRAULIC CONNECTION SPECIFICATIONS.....	SPEC-50-1
AXLES (FRONT AND REAR) (For S/N 367611001 -	367612000 and S/N 367711001 - 367712000)....	10-110-1	HYDRAULIC CONTROL VALVE	20-170-1
AXLES (FRONT AND REAR) (For S/N 367612001 &	Above, S/N 367712001 & Above).....	10-111-1	HYDRAULIC/HYDROSTATIC FLUID SPECIFICATIONS. SPEC-60-1	
BASIC TROUBLESHOOTING	80-50-1	HYDRAULIC/HYDROSTATIC SYSTEM.....	10-100-1	
BATTERY.....	60-20-1	HYDRAULIC RESERVOIR.....	20-150-1	
BOOM ASSEMBLY	50-30-1	HYDRAULIC SYSTEM INFORMATION	20-10-1	
BRAKE LIGHT SWITCH	60-100-1	HYDROSTATIC DRIVE MOTOR	30-30-1	
BRAKE VALVE.....	20-120-1	HYDROSTATIC PUMP.....	30-40-1	
BUCKET POSITIONING CYLINDER.....	20-30-1	HYDROSTATIC SYSTEM INFORMATION.....	30-10-1	
CANOPY	50-11-1	INCHING SWITCH	60-150-1	
COMPONENTS	80-20-1	INNER BOOM	50-40-1	
COMPRESSOR.....	80-110-1	INSTRUMENT PANEL.....	60-80-1	
CONDENSER	80-120-1	JOYSTICK.....	20-180-1	
CONVERSIONS	SPEC-70-1	JOYSTICK PANEL.....	50-120-1	
DASH COVER/STEERING COLUMN COVER..	50-130-1	LATERAL OPERATOR RESTRAINT SYSTEM (LORS)	10-170-1	
DRIVE BOX (For S/N 367611001 - 367612000 and S/N	367711001 - 367712000).....	20-70-1	LATERAL OPERATOR RESTRAINT SYSTEM (LOR'S™)..	60-50-1
DRIVE BOX (FOR S/N 367612001 & ABOVE, S/N	367712001 & ABOVE).....	20-71-1	LIFT CYLINDER.....	20-20-1
DRIVESHAFT	40-70-1	LIFTING AND BLOCKING THE VERSAHANDLER.....	10-10-1	
ELECTRICAL SYSTEM INFORMATION	60-10-1	LIGHTS.....	60-60-1	
ENGINE AND ENGINE MOUNTS	70-60-1	LUBRICATION (For S/N 367611001 - 367612000 and S/	N 367711001 - 367712000).....	10-120-1
ENGINE COMPONENTS AND TESTING	70-70-1	LUBRICATION (For S/N 367612001 & Above and S/N	367712001 & Above).....	10-121-1
ENGINE COOLING SYSTEM.....	10-70-1			
ENGINE COVER	10-160-1			
ENGINE COVER	50-70-1			
ENGINE/HYDROSTAT ASSEMBLY	70-80-1			
ENGINE LUBRICATION SYSTEM.....	10-01			
ENGINE SPECIFICATIONS.....	SPEC-01			
ENGINE SPEED CONTROL	70-20-1			
EVAPORATOR/BLOWER UNIT.....	80-150-1			
EXPANSION VALVE	80-160-1			

ALPHABETICAL INDEX (CONT'D)

MACHINE TORQUE SPECIFICATIONS	SPEC-30-1	SYSTEM TROUBLESHOOTING CHART	80-70-1
MAIN RELIEF VALVE	20-80-1	TEMPERATURE/PRESSURE	80-80-1
MUFFLER	70-30-1	TIRE MAINTENANCE	10-130-1
OIL COOLER	30-20-1	TILT CYLINDER	20-50-1
OPERATOR CAB/CANOPY	10-20-1	TOP WIPER MOTOR	60-120-1
OPERATOR CAB	50-10-1	TORQUE SPECIFICATIONS FOR BOLTS ...	SPEC-40-1
OPERATOR SEAT	50-20-1	TOW VALVE	20-220-1
PARKING BRAKE	20-190-1	TOWING THE VersaHANDLER (For S/N 367611001 - 367612000 and S/N 367711001 - 367712000)	10-40-1
PARKING BRAKE (FOR S/N 367612001 & ABOVE, S/N 367712001 & ABOVE)	40-51-1	TOWING THE VersaHANDLER (S/N 367612001 & Above, S/N 367712001 & Above)	10-41-1
PARKING BRAKE (FOR S/N 367611001 - 367612000 and S/N 367711001 - 367712000)	40-50-1	TRANSPORTING THE VERSAHANDLER	10-30-1
PEDAL ASSEMBLY	60-140-1	TRAVEL/SIGNAL LEVER	60-70-1
PORT RELIEF VALVES	20-100-1	TROUBLESHOOTING	40-10-1, 70-01
PRESSURE REDUCING VALVE	20-200-1	VersaHANDLER SPECIFICATIONS	SPEC-10-1
PRESSURE SWITCH	80-140-1	WEAR PADS (FRONT)	50-50-1
QUICK TACH	50-90-1	WEAR PADS (REAR)	50-60-1
QUICK TACH CYLINDER	20-90-1		
OIL COOLER/RADIATOR	70-50-1		
REAR AXLE (FOR S/N 367611001 - 367612000 and S/N 367711001 - 367712000)	40-90-1		
REAR AXLE (FOR S/N 367612001 & ABOVE, S/N 367712001 & ABOVE)	40-91-1		
REAR REAR WEIGHTS	50-100-1		
REAR WIPER MOTOR	60-130-1		
RECEIVER/DRIER	80-130-1		
RECONDITIONING THE ENGINE	70-100-1		
REGULAR MAINTENANCE	80-40-1		
SAFETY	80-30-1		
SERVICE BRAKE (FOR S/N 367611001 - 367612000 and S/N 367711001 - 367712000)	40-80-1		
SERVICE BRAKE (FOR S/N 367612001 & ABOVE, S/N 367712001 & ABOVE)	40-81-1		
SERVICE SCHEDULE	10-50-1		
SPARK ARRESTOR MUFFLER	10-140-1		
STARTER	60-40-1		
STEERING ANGLE ADJUSTMENT (FOR S/N 367611001 - 367612000 and S/N 367711001 - 367712000)	40-60-1		
STEERING ANGLE ADJUSTMENT (FOR S/N 367612001 & ABOVE, S/N 367712001 & ABOVE)	40-61-1		
STEERING CYLINDER (FRONT)			
STEERING CYLINDER (FRONT) (For S/N 367611001 - 367612000 and S/N 367711001 - 367612000)	20-60-1		
STEERING CYLINDER (FRONT) (For S/N 367612001 & above, S/N 367712001 & above)	20-61-1		
STEERING CYLINDER (REAR) (For S/N 367611001 - 367612000 and S/N 367711001 - 367712000)	20-61-1		
STEERING CYLINDER (REAR) (For S/N 367612001 and above, S/N 367712001 and above)	20-63-1		
STEERING MODE VALVE BLOCK	20-110-1		
STEERING VALVE	20-160-1		
SWITCH PANEL	60-90-1		
SYSTEM CHARGING AND RECLAMATION	80-100-1		

CONTENTS

DELIVERY REPORT.....	X
FOREWORD.....	III
SAFETY INSTRUCTIONS	V
SERIAL NUMBER LOCATION	IX
BOBCAT VERSAHANDLER IDENTIFICATION	XI
SAFETY AND MAINTENANCE.....	10-01
HYDRAULIC SYSTEM	20-01
HYDROSTATIC SYSTEM.....	30-01
DRIVE SYSTEM	40-01
MAIN FRAME	50-01
ELECTRICAL SYSTEM AND ANALYSIS	60-01
ENGINE SERVICE	70-01
HEATING, VENTILATION, AIR CONDITIONING	80-01
SPECIFICATIONS.....	SPEC-01

**SAFETY &
MAINTENANCE**

**HYDRAULIC
SYSTEM**

**HYDROSTATIC
SYSTEM**

**DRIVE
SYSTEM**

MAIN FRAME

**ELECTRICAL
SYSTEM &
ANALYSIS**

**ENGINE
SERVICE**

HVAC

SPECIFICATIONS

FOREWORD

This manual is for the Bobcat VersaHANDLER mechanic. It provides necessary servicing and adjustment procedures for the Bobcat VersaHANDLER 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 VersaHANDLER has had service or repair:

1. Check that ROPS/FOPS (Including right side window) is in good condition and is not modified.



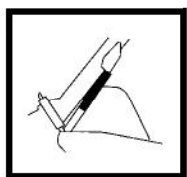
2. Check that ROPS mounting hardware is tightened and is Bobcat approved.



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



4. Check boom support device, replace if damaged.



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



6. Check tires for wear and pressure. Use only approved tires.



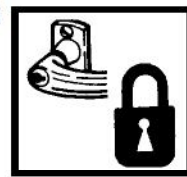
7. Check for correct function of the work lights.



8. The parking brake must function correctly.



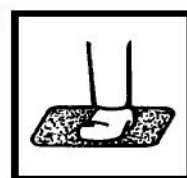
9. Enclosure door latches must open and close freely.



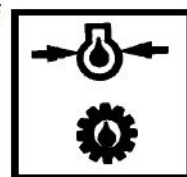
10. Attachment locking pins must function correctly and be in good condition.



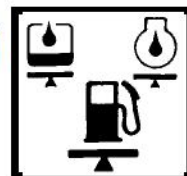
11. Safety treads must be in good condition.



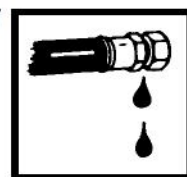
12. Check for correct function of indicator lamps and gauges.



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



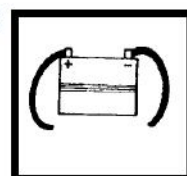
14. Inspect for fuel, oil or hydraulic fluid leaks.



15. Lubricate the VersaHANDLER.

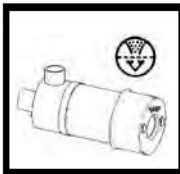


16. Check the condition of the battery and cables.

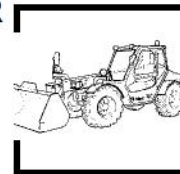


Dealer Copy -- Not for Resale

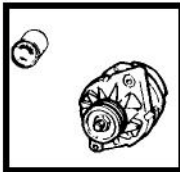
17. Inspect the air cleaner for damage or leaks. Check the condition of the element.



20. Operate the VersaHANDLER and check all functions.



18. Check the electrical charging system.



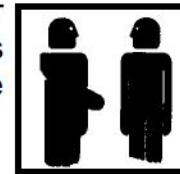
21. Check for any field modification not completed.



19. Inspect for loose or broken parts or connections.



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



23. Check that LORS™ is in good condition and is not modified.



**CALIFORNIA
PROPOSITION 65 WARNING**
Diesel engine exhaust and some of its constituents are known to the State of California to cause cancer, birth defects and other reproductive harm.

SAFETY INSTRUCTIONS



Safety Alert Symbol

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



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



WARNING

Warnings on the machine and in the manuals are for your safety. Failure to obey warnings can cause injury or death.

W-2044-1285

IMPORTANT

This notice identifies procedures which must be followed to avoid damage to the machine.

I-2019-0284

The following publications provide information on the safe use and maintenance of the Bobcat machine 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 machine or attachment contains operating information as well as routine maintenance and service procedures. It is a part of the machine and can be stored in a container provided on the machine. Replacement Operation & Maintenance Manuals can be ordered from your Bobcat dealer.
- Machine signs (decals) instruct on the safe operation and care of your Bobcat machine or attachment. The signs and their locations are shown in the Operation & Maintenance Manual. Replacement signs are available from your Bobcat dealer.
- An Operator's Handbook fastened to the operator cab. It's 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 AEM Safety Manual delivered with the machine 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 VersaHANDLER Operator Training Course is available through your local dealer or at www.training.bobcat.com or www.bobcat.com. This course is intended to provide rules and practices of correct operation of the VersaHANDLER.
- The VersaHANDLER Safety Video is available from your Bobcat dealer or at www.training.bobcat.com or www.bobcat.com.

Dealer Copy -- Not for Resale

SI VH-0206 SM

V518 VersaHANDLER
Service Manual

V

SAFETY INSTRUCTIONS (CONT'D)

Fire Prevention

The machine and attachments have components that are at high temperature under normal operating conditions. The primary source of high temperatures is the engine and exhaust system. The electrical system, if damaged or incorrectly maintained, can be a source of arcs or sparks.

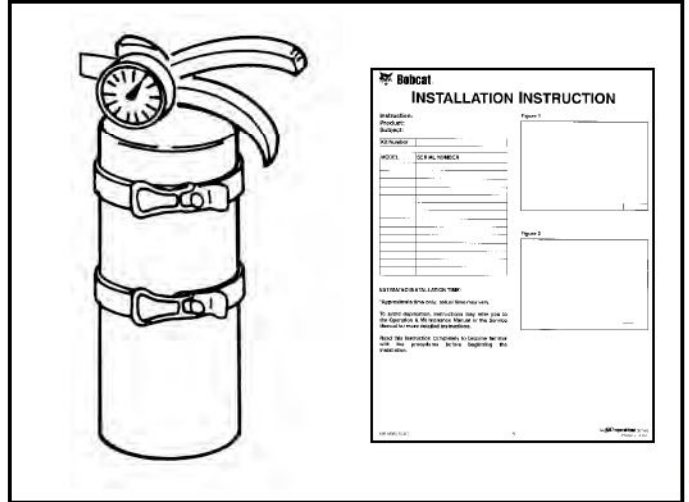
Flammable debris (leaves, straw, etc.) must be removed regularly. If flammable debris is allowed to accumulate, it will increase fire hazard. Clean often to avoid this accumulation. Flammable debris in the engine compartment is a potential hazard.

The spark arrestor muffler is designed to control the emission of hot particles from the engine and exhaust system, but the muffler and the exhaust gases are still hot.

- Do not use the machine where exhaust, arcs, sparks or hot components can contact flammable material, explosive dust or gases.
- The operator cab, 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.
- Do not use ether or starting fluids on any engine which has glow plugs. These starting aids can cause explosion and injure you or bystanders.
- Always clean the machine, disconnect the battery, and disconnect the wiring from the controllers before welding. Cover rubber hoses, battery and all other flammable parts. Keep a fire extinguisher near the machine when welding. Have good ventilation when grinding or welding painted parts. Wear a 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 Manual for connecting the battery and for jump starting.
- Use the procedure in the Operation & Maintenance Manual for cleaning the spark arrestor muffler (if equipped).

Figure 1



- Know where fire extinguishers and first aid kits are located and how to use them. Fire extinguishers are available from your Bobcat dealer [Figure 1].

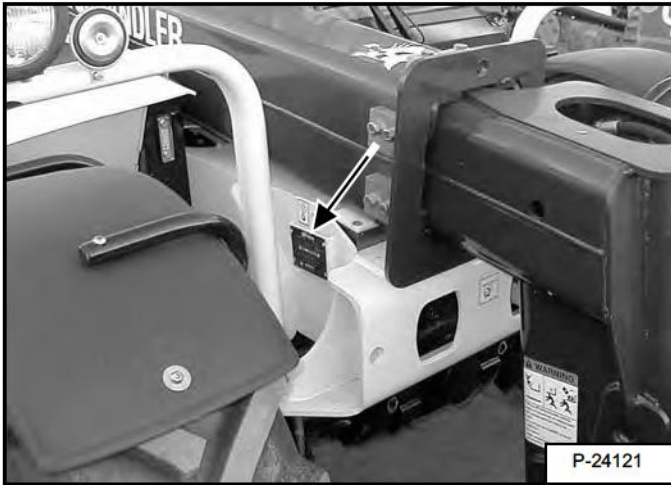
Dealer Copy -- Not for Resale

SERIAL NUMBER LOCATION

Always use the serial number of the VersaHANDLER 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.

VersaHANDLER Serial Number

Figure 2

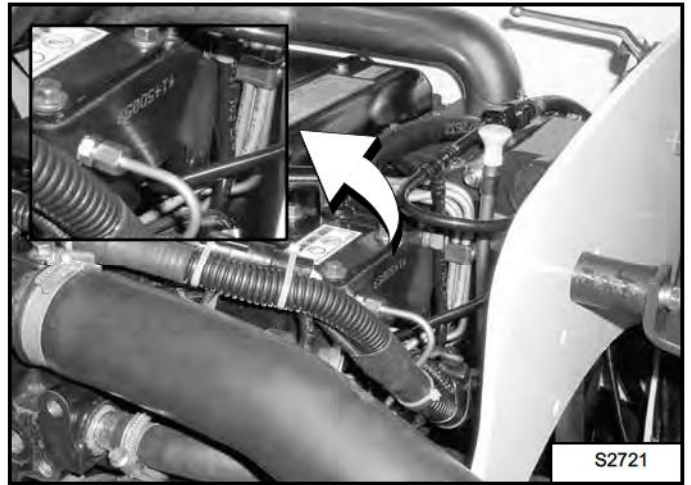


The front, on the right side of the chassis [Figure 2].

Engine Serial Number

Earlier Models

Figure 3



The engine serial number is stamped on a plate near the injection pump or at the rear of the cylinder block [Figure 3]. Always use the full number when ordering replacement parts.

Later Models

Figure 4



The engine serial number can be found on the cylinder block [Figure 4] in front of you when opening the engine cover. Always use the full number when ordering replacement parts.

Other Serial Numbers

Some components may also have serial numbers. Always use these serial numbers when requesting parts.

Dealer Copy -- Not for Resale

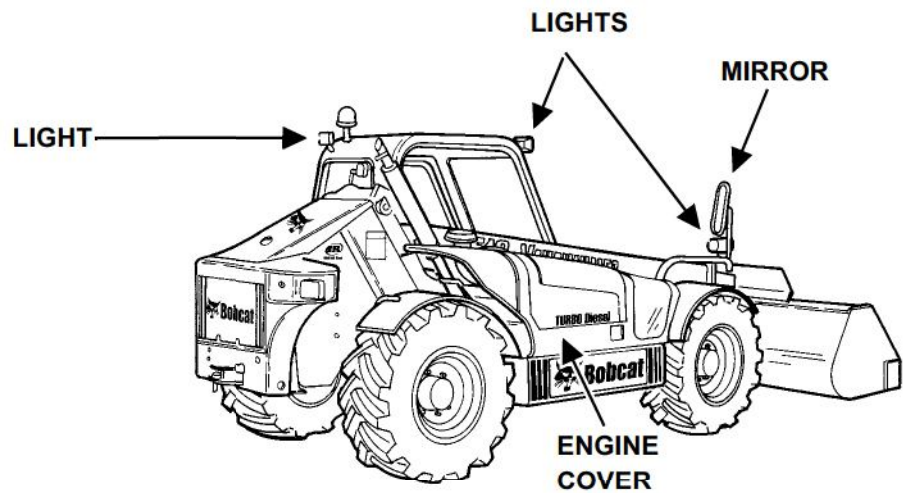
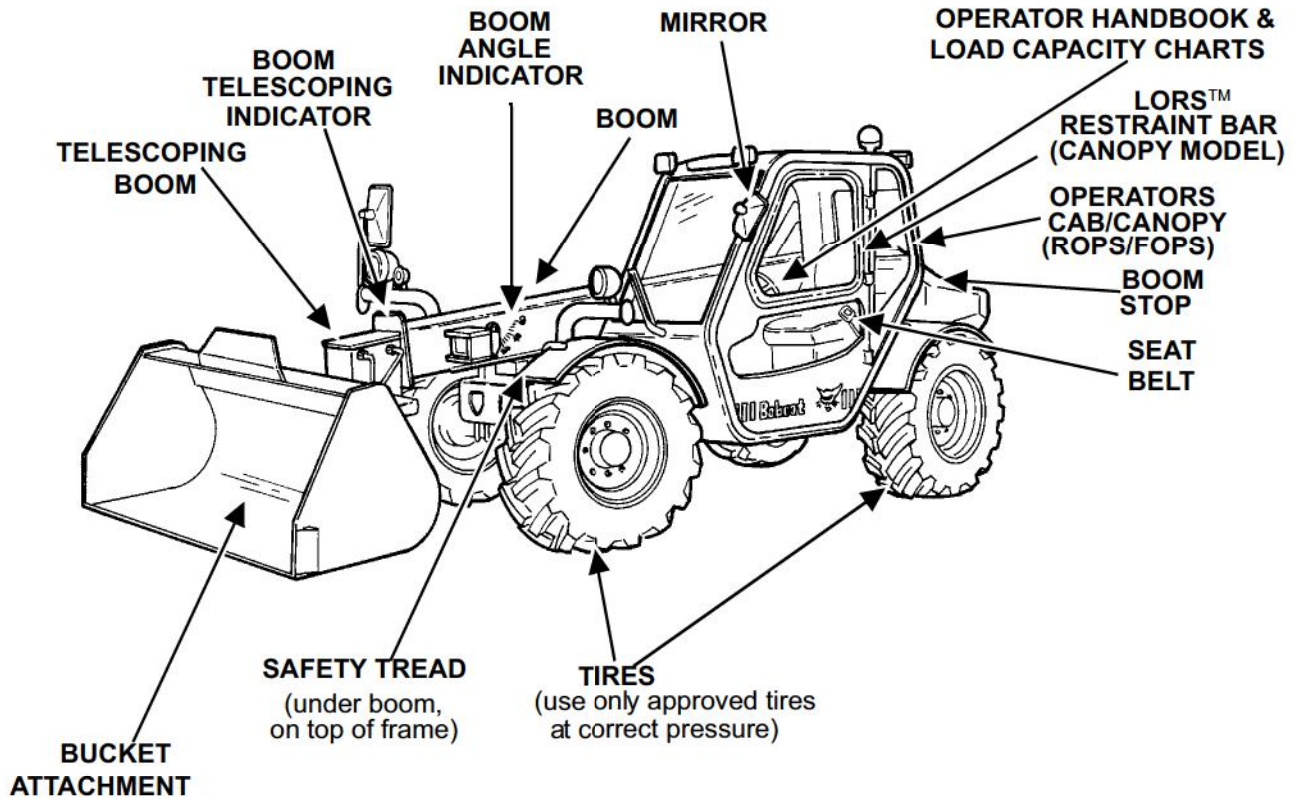
DELIVERY REPORT

Figure 5

The diagram shows a form titled "DELIVERY REPORT". The form is divided into several sections. At the top right, the title "DELIVERY REPORT" is printed. Below the title, there are several horizontal lines representing text input fields. On the left side, there is a prominent box with the word "WARNING" in a dark header, followed by several lines of text. The bottom right corner of the form contains a small box with the alphanumeric code "B-16315".

The Delivery Report must be filled out by the dealer and signed by the owner or operator when the VersaHANDLER is delivered. An explanation of the form must be given to the owner. Make sure it is filled out completely **[Figure 5]**.

BOBCAT VERSAHANDLER IDENTIFICATION



B-15886
B-23131

Dealer Copy -- Not for Resale

AIR CLEANER SERVICE 10-60-1
 Replacing Filter Element 10-60-1

APPROVED BOOM STOP 10-150-1
 Installing The Approved Boom Stop..... 10-150-1
 Removing The Approved Boom Stop 10-150-1

AXLES (FRONT AND REAR) (FOR S/N 367611001 - 367612000 AND S/N 367711001 - 367712000) 10-110-1
 Checking Oil Level (Front Differential)..... 10-110-2
 Checking Oil Level (Planetary Carrier) 10-110-1
 Checking Oil Level (Rear Differential) 10-110-2
 Draining Oil (Front Differential) 10-110-3
 Draining Oil (Planetary Carrier) 10-110-1
 Draining Oil (Rear Differential)..... 10-110-2

AXLES (FRONT AND REAR) (FOR S/N 367612001 & ABOVE, S/N 367712001 & ABOVE) 10-111-1
 Checking Oil Level (Drive Box) 10-111-3
 Checking Oil Level (Front Differential)..... 10-111-2
 Checking Oil Level (Planetary Carrier) 10-111-1
 Checking Oil Level (Rear Differential) 10-111-2
 Draining Oil (Drive Box)..... 10-111-3
 Draining Oil (Front Differential) 10-111-3
 Draining Oil (Planetary Carrier) 10-111-1
 Draining Oil (Rear Differential)..... 10-111-2

ENGINE COOLING SYSTEM 10-70-1
 Checking The Coolant Level 10-70-1
 Cleaning The Cooling System 10-70-1
 Replacing The Coolant 10-70-2

ENGINE COVER..... 10-160-1
 Opening And Closing The Engine Cover..... 10-160-1

ENGINE LUBRICATION SYSTEM 10-90-1
 Checking Engine Oil 10-90-1
 Oil Chart..... 10-90-1
 Replacing Oil And Filter..... 10-90-2

FUEL SYSTEM..... 10-80-1
 Filling The Fuel Tank 10-80-1
 Fuel Filter..... 10-80-1
 Fuel Specifications..... 10-80-1

Continued On Next Page

Dealer Copy -- Not for Resale

Buy Now



Our support email:

ebooklibonline@outlook.com