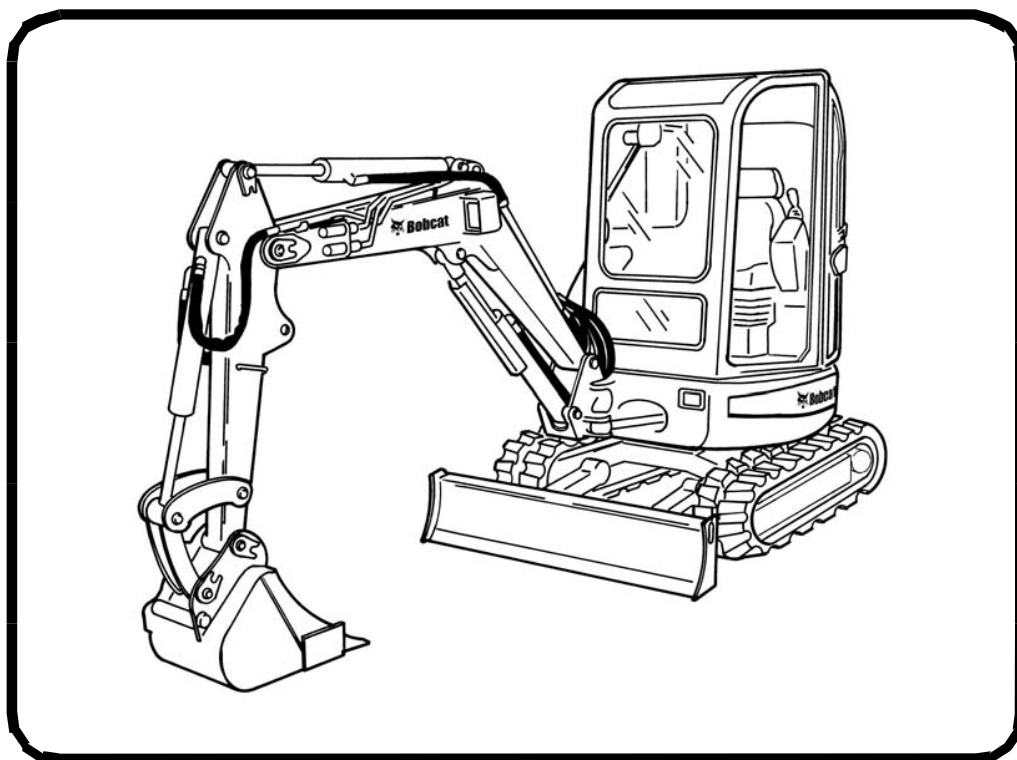




Service Manual

425 Compact Excavator

S/N A1HW11001 & Above



MAINTENANCE SAFETY



WARNING

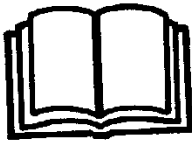
Instructions are necessary before operating or servicing machine. Read and understand the Operation & Maintenance Manual, Operator's Handbook and signs (decals) on machine. Follow warnings and instructions in the manuals when making repairs, adjustments or servicing. Check for correct function after 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 Compact Excavator without instructions.

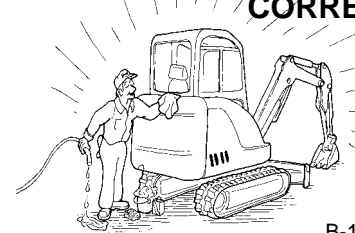
CORRECT



B-19964

- ⚠ Use the correct procedure to lift and support the excavator.

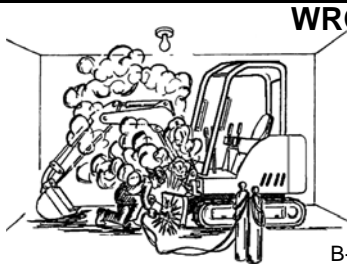
CORRECT



B-19959

- ⚠ Cleaning and maintenance are required daily.

WRONG



B-19965

- ⚠ Have good ventilation when welding or grinding painted parts.
- ⚠ Wear dust mask when grinding painted parts. Toxic dust and gas can be produced.

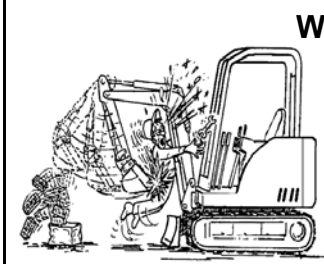
WRONG



B-19960

- ⚠ Vent exhaust to outside when engine must be run for service.
- ⚠ Exhaust system must be tightly sealed. Exhaust fumes can kill without warning.

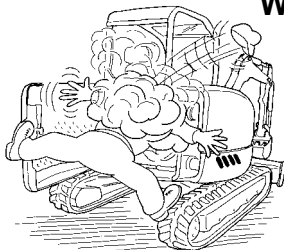
WRONG



B-19966

- ⚠ Always lower the bucket and blade to the ground before doing any maintenance.
- ⚠ Never modify equipment or add attachments not approved by Bobcat Company.

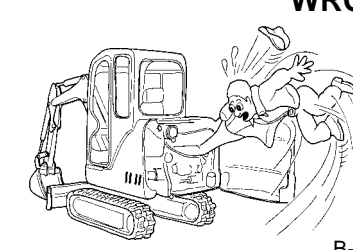
WRONG



B-19962

- ⚠ Stop, cool and clean engine of flammable materials before checking fluids.
- ⚠ Never service or adjust machine 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-19958

- ⚠ 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 protections approved for type of welding.
- ⚠ Keep rear door closed except for service. Close and latch door before operating the excavator.

WRONG



B-19798

- ⚠ 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.

MSW28-0805



Bobcat®

ALPHABETICAL INDEX

AIR CLEANER	60-01	HEATER COIL	70-01
AIR CLEANER SERVICE	10-01	HEATER SYSTEM.....	70-01
ALTERNATOR	50-01	HEATER UNIT.....	70-01
ALTERNATOR BELT	10-01	HEATER VALVE	70-01
ARM	40-01	HORN	40-01
ARM CYLINDER	20-01	HYDRAULIC CONTROL VALVE	20-01
		HYDRAULIC CONNECTION SPECS	SPEC-01
BATTERY.....	50-01	HYDRAULIC FLUID SPECIFICATIONS.....	SPEC-01
BLADE	30-01	HYDRAULIC FILTER.....	20-01
BLADE CONTROL.....	40-01	HYDRAULIC PUMP	20-01
BLADE CYLINDER	20-01	HYDRAULIC RESERVOIR.....	20-01
BLOWER FAN	70-01	HYDRAULIC SYSTEM	10-01
BOOM	40-01	HYDRAULIC SYSTEM INFORMATION	20-01
BOOM CYLINDER.....	20-01	HYDRAULIC X-CHANGE VALVE	20-01
BOOM SWING CYLINDER.....	20-01		
BOOM SWING PEDAL	40-01	LEFT CONTROL LEVER (JOYSTICK)	20-01
BUCKET	40-01	LEFT CONSOLE	40-01
BUCKET CYLINDER	20-01	LEFT SIDE COVER.....	40-01
		LIFTING AND BLOCKING THE EXCAVATOR	10-01
CAB.....	40-01	LIFTING THE EXCAVATOR	10-01
CAMSHAFT AND TIMING GEARS.....	60-01	LIGHTS.....	50-01
CANOPY	40-01	LUBRICATION SYSTEM.....	60-01
CASE DRAIN FILTER	20-01	LUBRICATING THE EXCAVATOR	10-01
CONVERSIONS	SPEC-01		
CONTROL PATTERN SELECTOR VALVE	20-01	MAGNETIC LOCKOUT SENSOR	50-01
COUNTERWEIGHT	40-01	MAIN RELIEF VALVE	20-01
CRANKSHAFT AND PISTONS	60-01	MANIFOLD ASSEMBLY / ACCUMULATOR	20-01
CROSSPORT RELIEF VALVES	20-01		
CYLINDER HEAD.....	60-01	NON-PRESSURIZED ACCUMULATOR	20-01
DIAGNOSTICS SERVICE CODES.....	50-01	OIL COOLER.....	20-01
DIRECT TO TANK VALVE	20-01	OPERATOR CAB (ROPS/TOPS)	10-01
ELECTRICAL SYSTEM INFORMATION	50-01	PIVOT PINS	10-01
ENGINE COOLING SYSTEM.....	10-01, 60-01	PORT RELIEF VALVES.....	20-01
ENGINE INFORMATION	60-01	PRESSURE REDUCING VALVE.....	20-01
ENGINE LUBRICATION SYSTEM.....	10-01		
ENGINE SPEED CONTROL	60-01	REGULAR MAINTENANCE	70-01
EXCAVATOR SPECIFICATIONS	SPEC-01	RIGHT CONTROL LEVER (JOYSTICK)	20-01
EXCAVATOR STORAGE AND RETURN TO SERVICE	10-01	RIGHT CONSOLE	40-01
		RIGHT SIDE COVER	10-01, 40-01
FLOOR MAT AND FLOOR PANELS	40-01		
FLYWHEEL AND HOUSING.....	60-01		
FUEL LEVEL SENDER.....	50-01		
FUEL SYSTEM	10-01, 60-01		
FUEL TANK.....	40-01		

Continued On Next Page

ALPHABETICAL INDEX (CONT'D)

SEAT AND SEAT MOUNT	40-01
SEAT BELT	10-01
SERVICE SCHEDULE	10-01
SPARK ARRESTOR MUFFLER	10-01, 60-01
STARTER	50-01
STOPPING THE ENGINE AND LEAVING	
THE EXCAVATOR	10-01
SWING CIRCLE GEAR	30-01
SWING FRAME	40-01
SWING MOTOR	20-01
SWING MOTOR DRIVE CARRIER.....	20-01
SWIVEL JOINT	20-01
TAILGATE	10-01, 40-01
TORQUE SPECIFICATIONS FOR BOLTS.....	SPEC-01
TRACK FRAME COMPONENTS	30-01
TRANSPORTING THE EXCAVATOR	
ON A TRAILER.....	10-01
TRAVEL LEVER / PEDALS	40-01
TRAVEL MOTOR.....	10-01, 20-01
TROUBLESHOOTING.....	70-01
UPPERSTRUCTURE	40-01
UPPERSTRUCTURE SLEW LOCK	10-01, 40-01
X-CHANGE	40-01
X-CHANGE (HYDRAULIC).....	40-01

CONTENTS

FOREWORD.....	III
SAFETY INSTRUCTIONS	V
SERIAL NUMBER LOCATIONS	IX
DELIVERY REPORT.....	X
EXCAVATOR IDENTIFICATION	XI
SAFETY AND MAINTENANCE.....	10-01
HYDRAULIC SYSTEM	20-01
UNDERCARRIAGE.....	30-01
UPPERSTRUCTURE & SWING SECTION	40-01
ELECTRICAL SYSTEM AND ANALYSIS	50-01
ENGINE SERVICE	60-01
HEATER	70-01
SPECIFICATIONS.....	SPEC-01

**SAFETY AND
MAINTENANCE**

**HYDRAULIC
SYSTEM**

UNDERCARRIAGE

**UPPERSTRUCTURE
& SWING
SECTION**

**ELECTRICAL
SYSTEM AND
ANALYSIS**

**ENGINE
SERVICE**

HEATER

SPECIFICATIONS

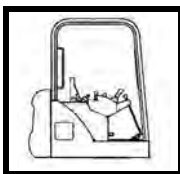


FOREWORD

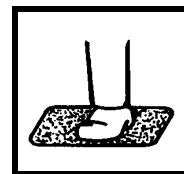
This manual is for the Bobcat Hydraulic Excavator mechanic. It provides necessary servicing and adjustment procedures for the hydraulic excavator and its component parts and systems. Refer to the Operation & Maintenance Manual for operating instructions, starting procedure, daily checks, etc.

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

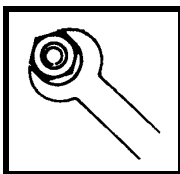
1. Check that the ROPS/TOPS/FOPS is in good condition and is not modified.



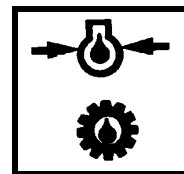
9. Safety treads must be in good condition.



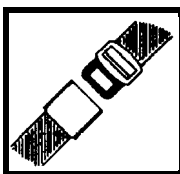
2. Check that ROPS/TOPS mounting hardware is tightened and is Bobcat approved.



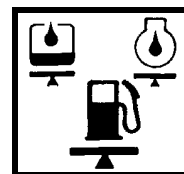
10. Check for correct function of indicator lamps (Optional on some models).



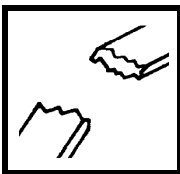
3. The seat belt must be correctly installed, functional and in good condition.



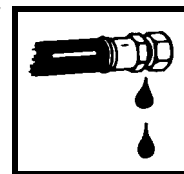
11. Check hydraulic fluid level, engine oil level and fuel supply.



4. Inspect for loose or broken parts or connections.



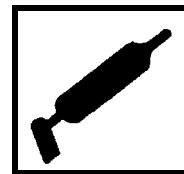
12. Inspect for fuel, oil or hydraulic fluid leaks.



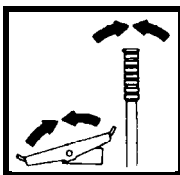
5. Machine signs must be legible and in the correct location.



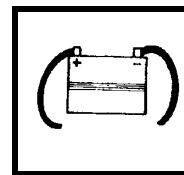
13. Lubricate the excavator.



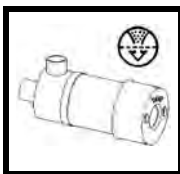
6. Steering levers, control levers and foot pedals must return to neutral. Check that foot pedals lock and control lever locks are in working order.



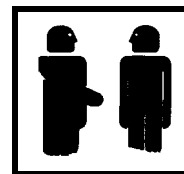
14. Check the condition of the battery and cables.



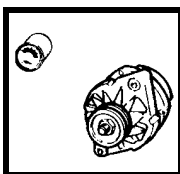
7. Inspect the air cleaner for damage or leaks. Check the condition of the element.



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



8. Check the electrical charging system.





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 Compact Excavator 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 Bobcat Excavator. The course is available in English and Spanish versions.
- Service Safety Training Courses are available from your Bobcat dealer or at **www.training.bobcat.com** or **www.bobcat.com**. They provide information for safe and correct service procedures.
- The Bobcat Compact Excavator Safety Video is available from your Bobcat dealer or at **www.training.bobcat.com** or **www.bobcat.com**.

SI EXC-0206 SM

SAFETY INSTRUCTIONS (CONT'D)

The dealer and owner/operator review the recommended uses of the product when delivered. If the owner/operator will be using the machine for a different application(s) he or she must ask the dealer for recommendations on the new use.



Call Before You Dig

1-888-258-0808

When you call, you will be directed to a location in your state/city for information about buried lines (telephone, cable TV, water, sewer, gas, etc.)

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.

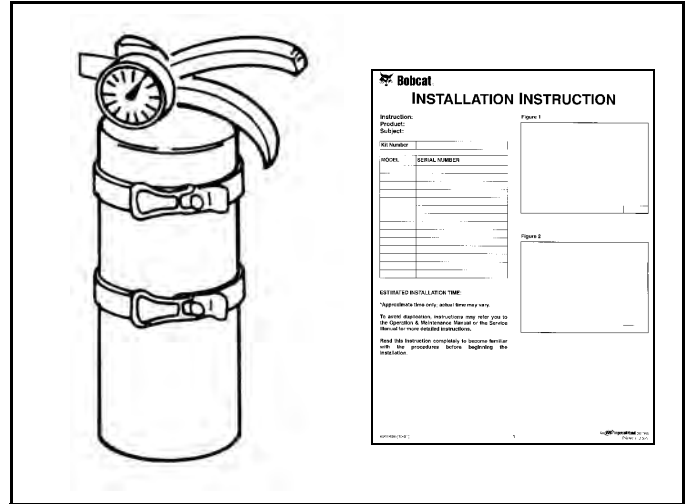
Flammable debris (leaves, straw, etc.) must be removed regularly. If flammable debris is allowed to accumulate, it will increase fire hazard. Clean often to avoid this accumulation. Flammable debris in the engine compartment is a potential hazard.

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].

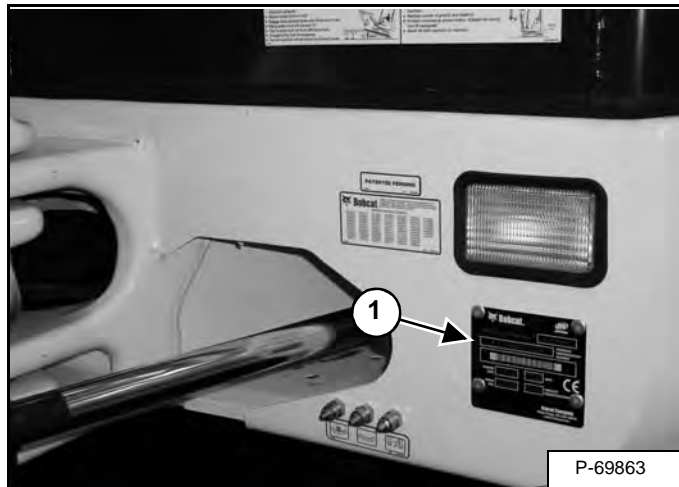


SERIAL NUMBER LOCATIONS

Always use the serial number of the excavator 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.

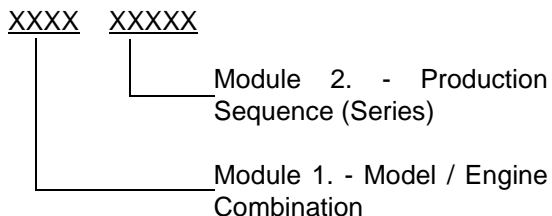
Excavator Serial Number

Figure 1



The excavator serial number plate (Item 1) is located on the frame of the machine in the location shown [Figure 1].

Explanation of Excavator Serial Number:

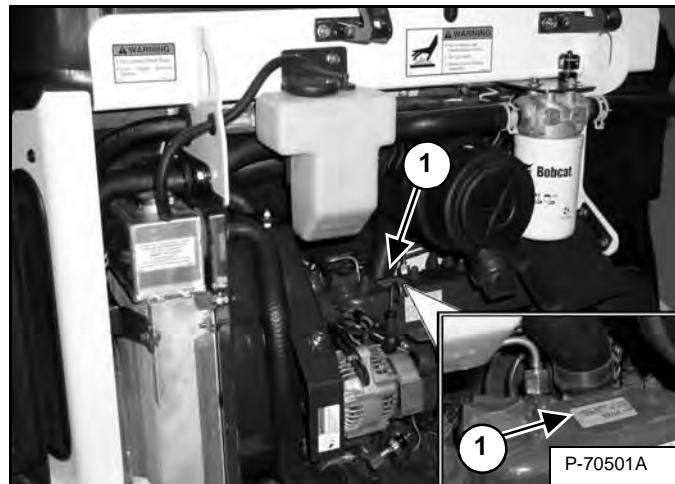


1. The four digit Model/Engine Combination Module number identifies the model number and engine combination.

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

Engine Serial Number

Figure 2



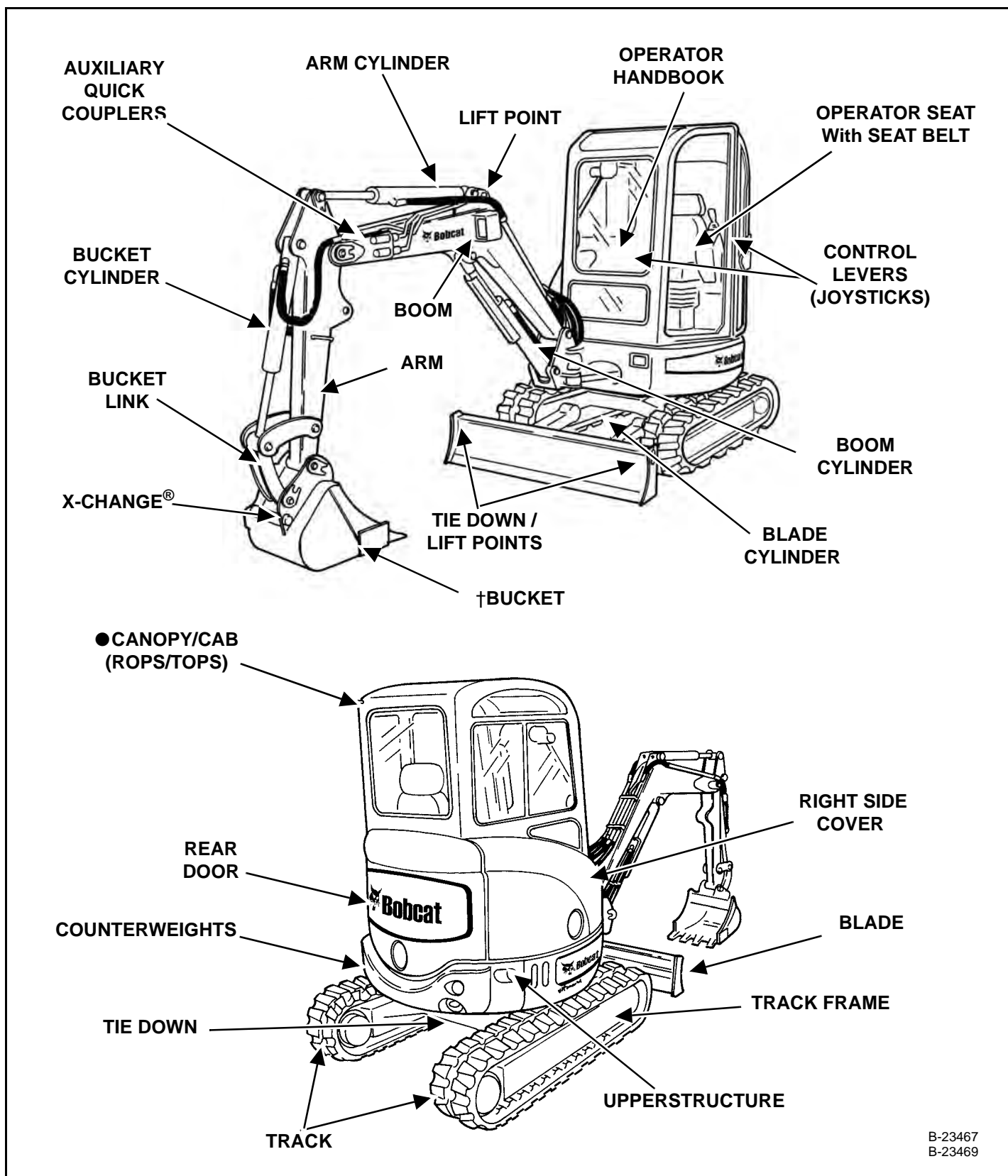
The engine serial number (Item 1) is located on the engine in the location shown [Figure 2].

Figure 3

[illegible]

The delivery report must be filled out by the dealer and signed by the owner or operator when the Bobcat Excavator is delivered. An explanation of the form must be given to the owner. Make sure it is filled out completely **[Figure 3]**.

EXCAVATOR IDENTIFICATION





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