



Bobcat®

Service Manual



E27z

Compact Excavator

S/N B4R711001 & Above



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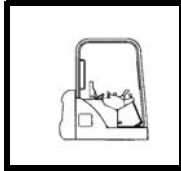
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FOREWORD

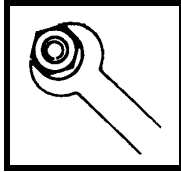
This manual is for the Bobcat excavator mechanic. It provides necessary servicing and adjustment procedures for the Bobcat excavator and its component parts and systems. Refer to the Operation & Maintenance Manual for operating instructions, starting procedure, daily checks, etc.

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

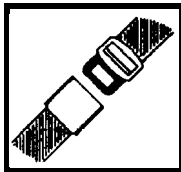
1. Check that the ROPS/TOPS/FOPS is in good condition and is not modified.



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



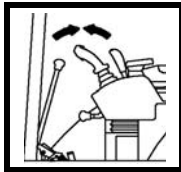
3. The seat belt must be correctly installed, functional and in good condition.



4. Machine signs (decals) must be legible and in the correct location.



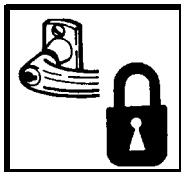
5. Travel levers, control levers and foot pedals must return to neutral. Check that the pedal locks are in working order.



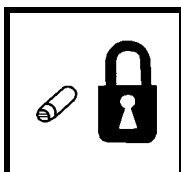
6. Check for correct function of the work lights.



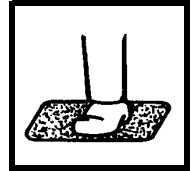
7. Enclosure door latches must open and close freely.



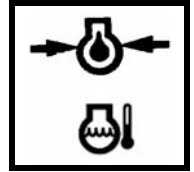
8. Attachment locking pins must function correctly and be in good condition.



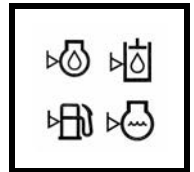
9. Safety treads must be in good condition.



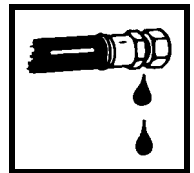
10. Check for correct function of indicator lamps.



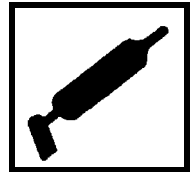
11. Check all machine fluid levels.



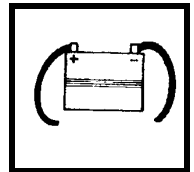
12. Inspect for fuel, oil or hydraulic fluid leaks.



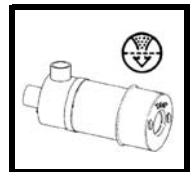
13. Lubricate the excavator.



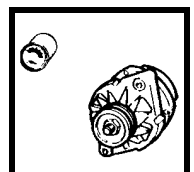
14. Check the condition of the battery and cables.



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

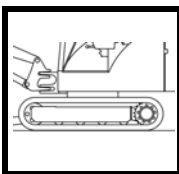


16. Check the electrical charging system.



FW EXC-0617SM

17. Check tracks for wear and tension. Use only approved tracks.



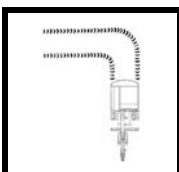
18. Inspect for loose or broken parts or connections.



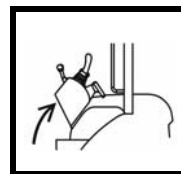
19. Check for any field modification not completed.



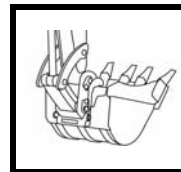
20. Operate the machine and check all functions.



21. Check the control console interlocks for correct function.



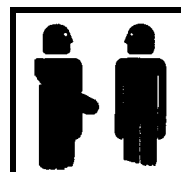
22. Inspect the X-Change™ for wear or damage. Repair or replace damaged parts.



23. Check function or condition of all equipped options and accessories (examples: special applications kit, motion alarm, etc.).



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



**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

AVOID INJURY OR DEATH

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-2003-0807

IMPORTANT

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

I-2019-0284



DANGER

The signal word DANGER on the machine and in the manuals indicates a hazardous situation which, if not avoided, will result in death or serious injury.

D-1002-1107



WARNING

The signal word WARNING on the machine and in the manuals indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

W-2044-1107

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 Service Manual and Parts Manual are available from your dealer for use by mechanics to do shop-type service and repair work.

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.

Avoid Silica Dust



Cutting or drilling concrete containing sand or rock containing quartz may result in exposure to silica dust. Use a respirator, water spray or other means to control dust.

SI EXC EMEA-1114 SM

FIRE PREVENTION



Maintenance

The machine and some attachments have components that are at high temperatures 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 can cause a fire hazard. Clean often to avoid this accumulation. Flammable debris in the engine compartment is a potential fire hazard.

The operator's area, engine compartment and engine cooling system must be inspected every day and cleaned if necessary to prevent fire hazards and overheating.

All fuels, most lubricants and some coolants mixtures are flammable. Flammable fluids that are leaking or spilled onto hot surfaces or onto electrical components can cause a fire.

Operation

Do not use the machine where exhaust, arcs, sparks or hot components can contact flammable material, explosive dust or gases.

Electrical



Check all electrical wiring and connections for damage. Keep the battery terminals clean and tight. Repair or replace any damaged part or wires that are loose or frayed.

Battery gas can explode and cause serious injury. Use the procedure in the Operation & Maintenance Manual for connecting the battery and for jump starting. Do not jump start or charge a frozen or damaged battery. Keep any open flames or sparks away from batteries. Do not smoke in battery charging area.

Hydraulic System

Check hydraulic tubes, hoses and fittings for damage and leakage. Never use open flame or bare skin to check for leaks. Hydraulic tubes and hoses must be properly routed and have adequate support and secure clamps. Tighten or replace any parts that show leakage.

Always clean fluid spills. Do not use petrol or diesel fuel for cleaning parts. Use commercial nonflammable solvents.

Fueling



Stop the engine and let it cool before adding fuel. No smoking! Do not refuel a machine near open flames or sparks. Fill the fuel tank outdoors.

Ultra Low Sulfur Diesel (ULSD) poses a greater static ignition hazard than earlier diesel formulations with higher Sulfur content. Avoid death or serious injury from fire or explosion. Consult with your fuel or fuel system supplier to ensure the delivery system is in compliance with fueling standards for proper grounding and bonding practices.

Starting

Do not use ether or starting fluids on any engine that has glow plugs or air intake heater. These starting aids can cause explosion and injure you or bystanders.

Use the procedure in the Operation & Maintenance Manual for connecting the battery and for jump starting.

Spark Arrester Exhaust System

The spark arrester exhaust system 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.

Check the spark arrester exhaust system regularly to make sure it is maintained and working properly. Use the procedure in the Operation & Maintenance Manual for cleaning the spark arrester muffler (if equipped).

FIRE PREVENTION (CONT'D)

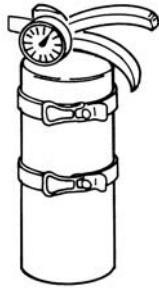
Welding And Grinding

Always clean the machine and attachment, disconnect the battery, and disconnect the wiring from the Bobcat 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 dust mask when grinding painted parts. Toxic dust or gas can be produced.

Dust generated from repairing nonmetallic parts such as hoods, fenders or covers can be flammable or explosive. Repair such components in a well ventilated area away from open flames or sparks.

Fire Extinguishers



Know where fire extinguishers and first aid kits are located and how to use them. Inspect the fire extinguisher and service the fire extinguisher regularly. Obey the recommendations on the instructions plate.

DELIVERY REPORT

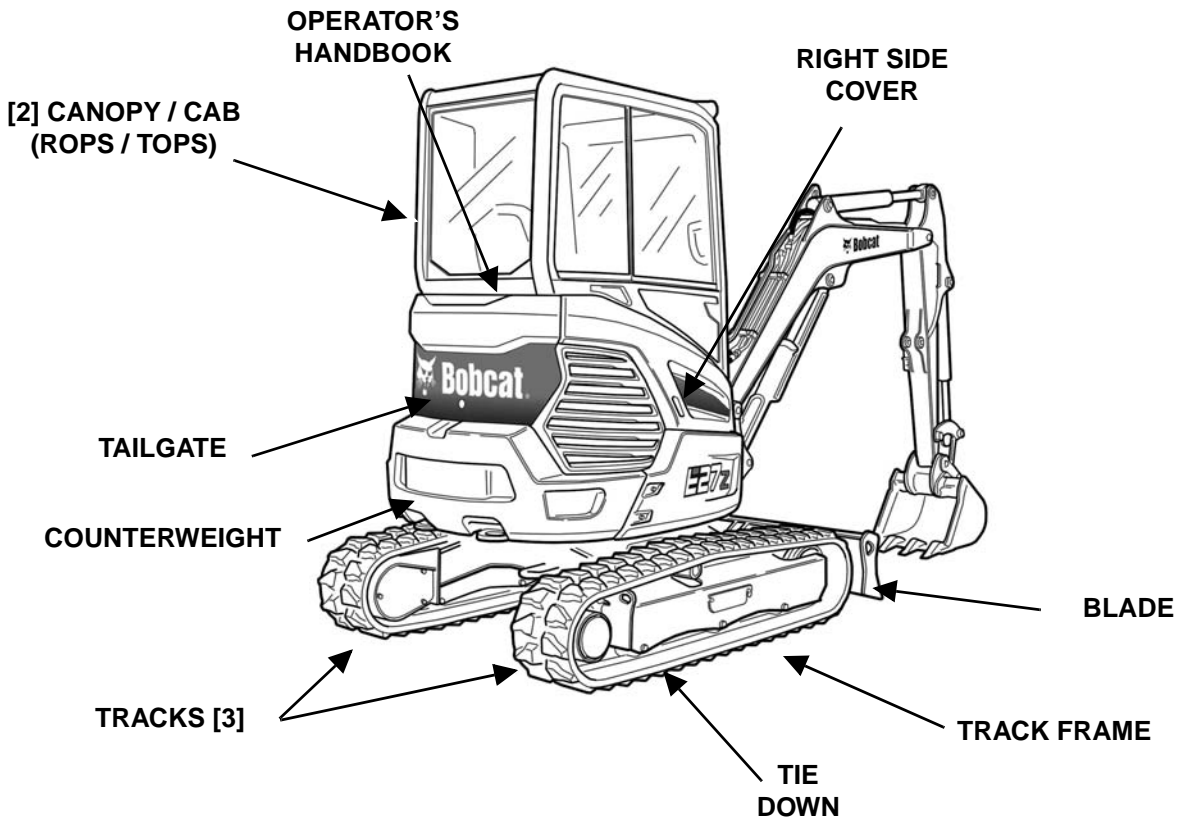
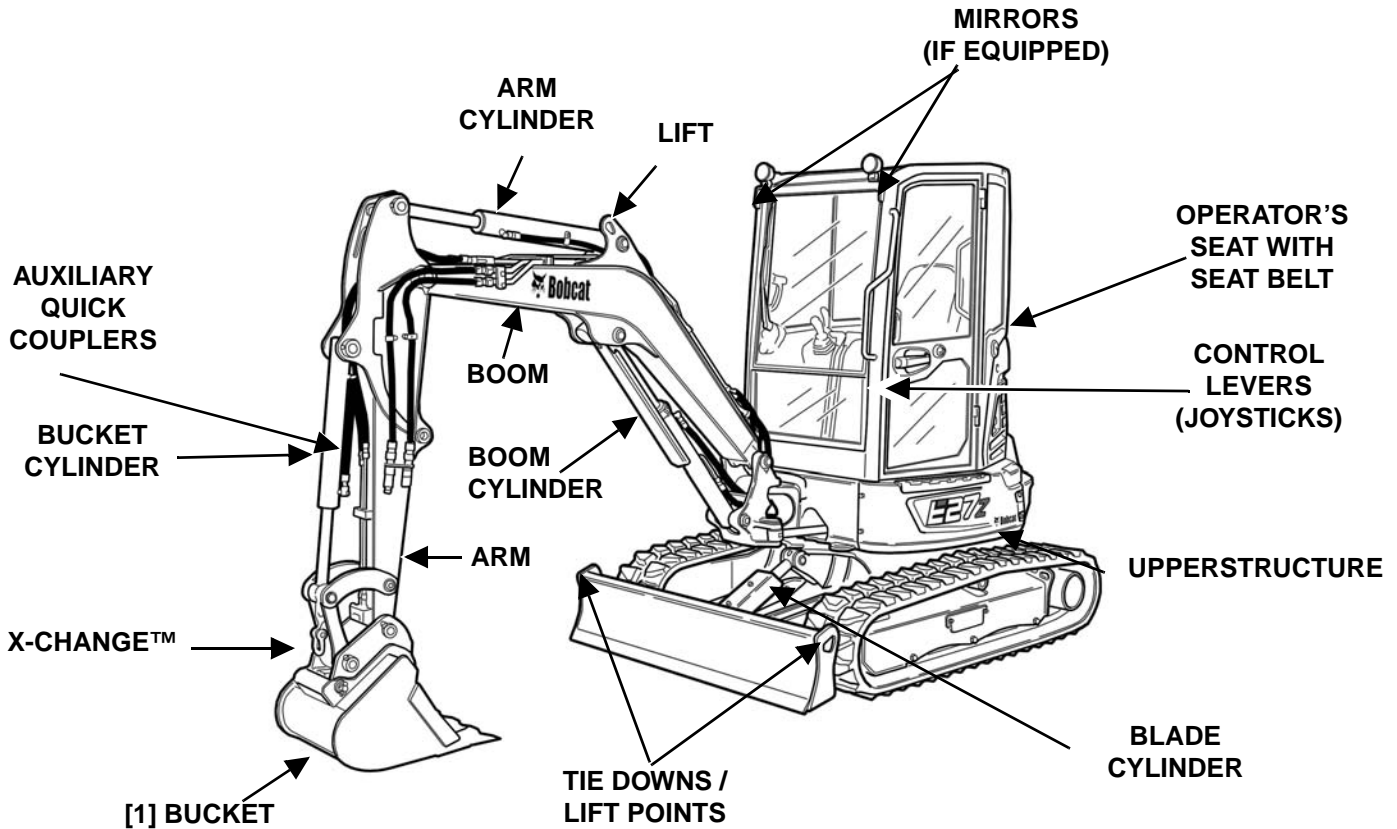
Figure 4

The diagram shows a rectangular form with a border. At the top right, it is titled "DELIVERY REPORT". The form is divided into several sections. The top left section contains several horizontal lines. The top right section contains a grid of lines. The middle left section has a dark header with the word "WARNING" in white, followed by several lines of text. The middle right section contains a grid of lines. At the bottom right of the form, there is a small box containing the text "B-16315".

The delivery report [Figure 4] contains a list of items that must be explained or shown to the owner or operator by the dealer when the Bobcat excavator is delivered.

The delivery report must be reviewed and signed by the owner or operator and the dealer.

EXCAVATOR IDENTIFICATION



- [1] BUCKET - Several different buckets and other attachments are available from the Bobcat excavator.
- [2] ROPS, TOPS - (Roll Over Protective Structure / Tip Over Protective Structure) as standard equipment. The ROPS / TOPS meets ISO 12117-2 AND ISO 12117.
- [3] TRACKS - Optional tracks are available.

NA13926
NA13927

SAFETY AND MAINTENANCE

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LIFTING AND BLOCKING THE EXCAVATOR

Procedure

Always park the machine on a level surface.

WARNING

AVOID INJURY OR DEATH

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-2003-0807

WARNING

Put jackstands under the blade and rear corners of the undercarriage before working under the machine. Failure to block up the machine may allow it to move or fall and result in injury or death.

W-2218-1195

Figure 10-10-1

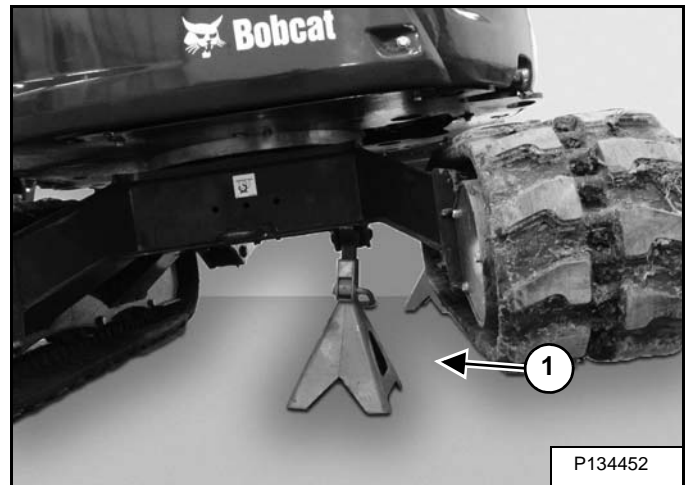
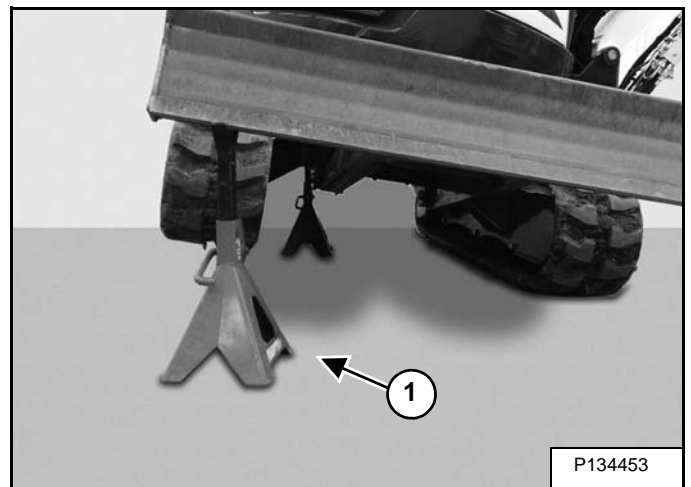


Figure 10-10-2



Raise one side of the machine (approximately 100 mm [4 in]) using the boom and arm **[Figure 10-10-1]** and **[Figure 10-10-2]**.

Raise the blade fully and install jackstands under the blade and track frame (Item 1) **[Figure 10-10-1]** and **[Figure 10-10-2]**. Raise the boom until all machine weight is on the jackstands.

Repeat the procedure for the other side.

Stop the engine.

LIFTING THE EXCAVATOR

Procedure

Figure 10-20-1



Before lifting, fully extend the cylinders of the bucket, arm, and boom. Raise the blade fully. Turn the upperstructure so the boom and blade are at opposite ends of the excavator as shown [Figure 10-20-1].

Put all the control levers in NEUTRAL and stop the machine.

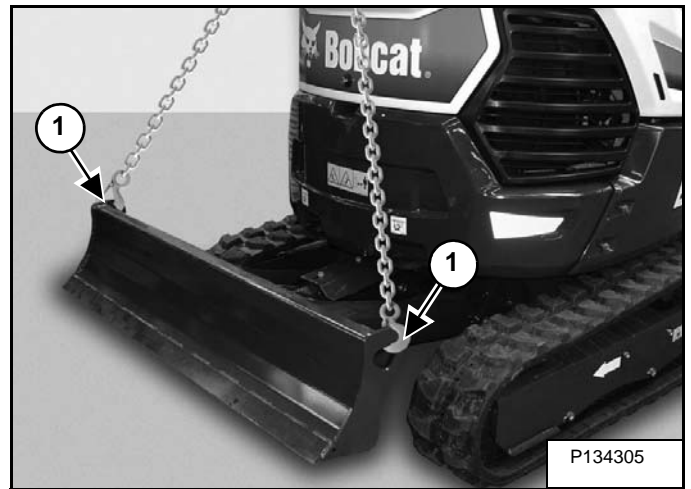
WARNING

AVOID INJURY OR DEATH

- Use a lifting fixture with sufficient capacity for the weight of the excavator plus any added attachments.
- Maintain centre of gravity and balance when lifting.
- Do not swing boom or upperstructure.
- Never lift with operator on machine.

W-2434-EN-0210

Figure 10-20- 2



Fasten chains to the ends of the blade (Item 1) [Figure 10-20- 2] and up to a lifting fixture above the canopy / cab. The lifting fixture must extend over the sides of the canopy / cab to prevent the chains from hitting the ROPS / TOPS.

Figur 10-20 3

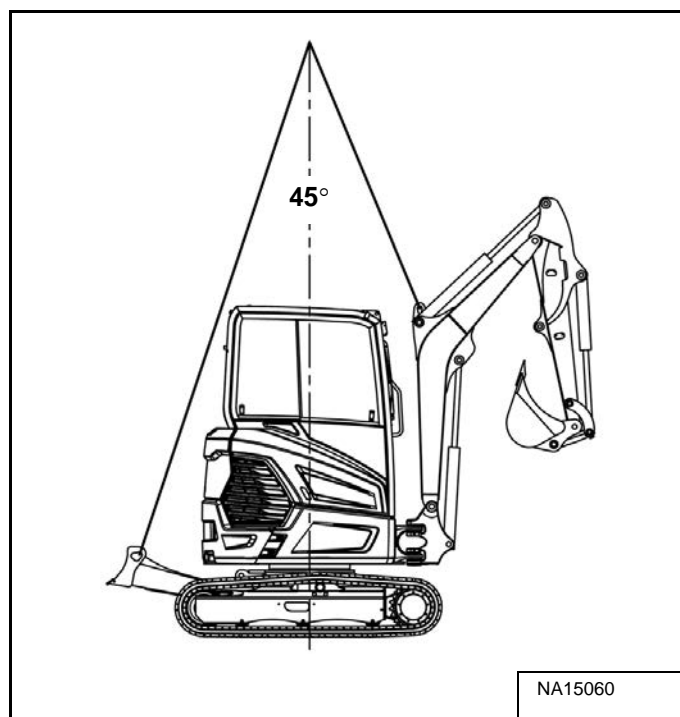


Fasten a chain from the boom to the lift fixture (Item 1) [Figur 10-20 3].

LIFTING THE EXCAVATOR (CONT'D)

Procedure (Cont'd)

Figure 10-20-4



The excavator should remain as close to horizontal as possible while it is lifted. To prevent damage, the chains should not contact any part of the operator canopy / cab. The chains should be at an angle of 45 degrees [Figure 10-20-4].

OPERATOR CAB (ROPS / TOPS / FOPS)

Description

The Bobcat excavator has an optional operator cab (ROPS / TOPS / FOPS) as standard equipment to protect the operator if the excavator is tipped over or from falling objects. The seat belt must be worn for ROPS / TOPS / FOPS protection.

Check the ROPS / TOPS / FOPS cab, mounting, and hardware for damage. Never modify the ROPS / TOPS / FOPS cab. Replace the cab and hardware if damaged. See your Bobcat dealer for parts.

ROPS / TOPS - Roll-Over Protective Structure per ISO 12117-2, and Tip-Over Protective Structure per ISO 12117.

FOPS - Falling Objects Protective structure, Top Guard per ISO 10262 - Level 1.



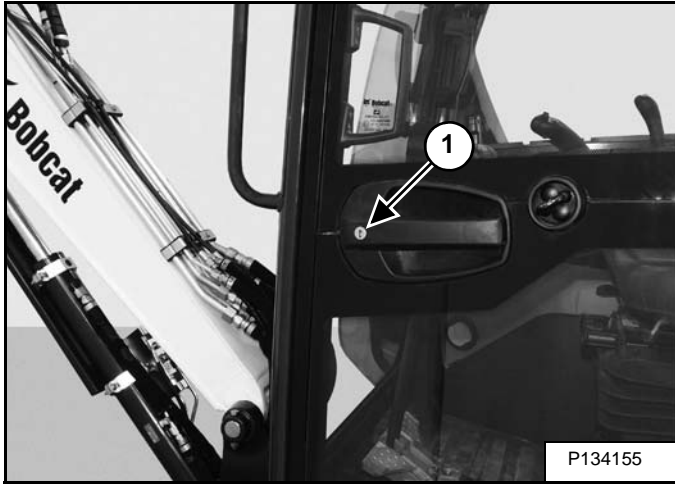
Never modify operator cab by welding, grinding, drilling holes or adding attachments unless instructed to do so by Bobcat Company. Changes to the cab can cause loss of operator protection from rollover and falling objects, and result in injury or death.

W-2069-0200

OPERATOR CAB (ROPS / TOPS) (CONT'D)

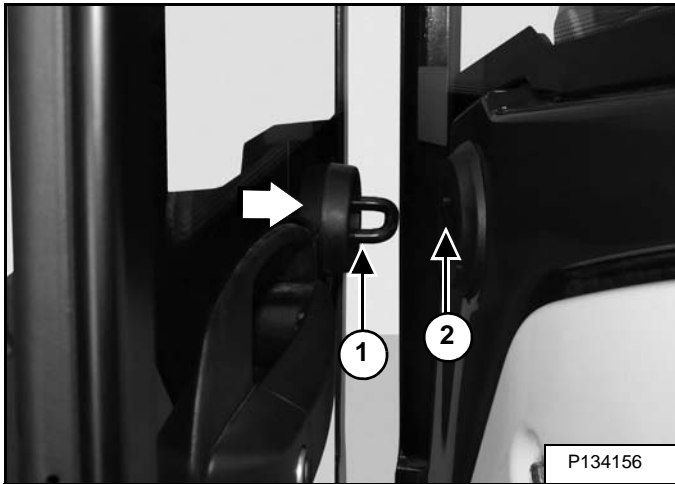
Cab Door

Figure 10-30-1



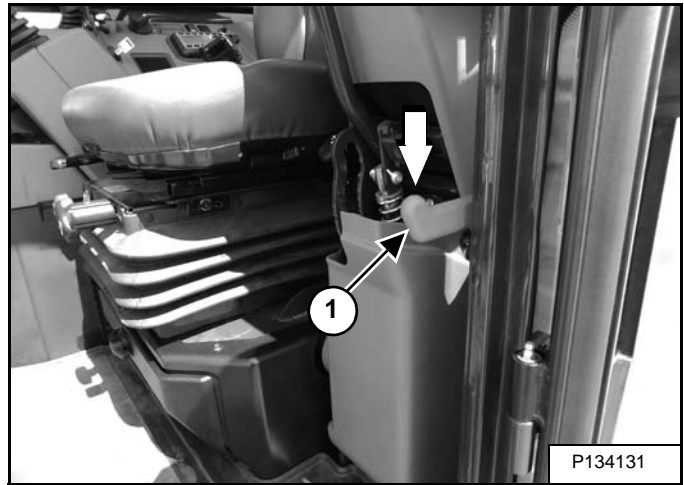
The cab door can be locked (Item 1) [Figure 10-30-1] with the same key as the starter switch.

Figure 10-30-2



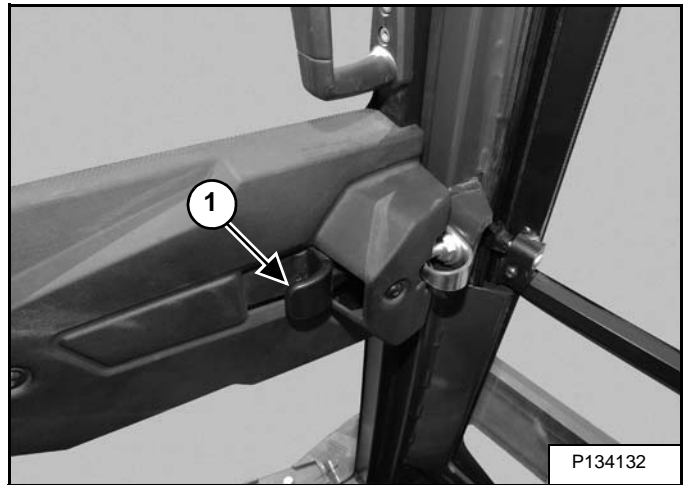
Push the door all the way open until the latch post (Item 1) engages in the latch (Item 2) [Figure 10-30-2] to hold the door in the open position.

Figure 10-30-3



When the door is in the open position, push down on the latch (Item 1) [Figure 10-30-3] and close the door.

Figure 10-30-4



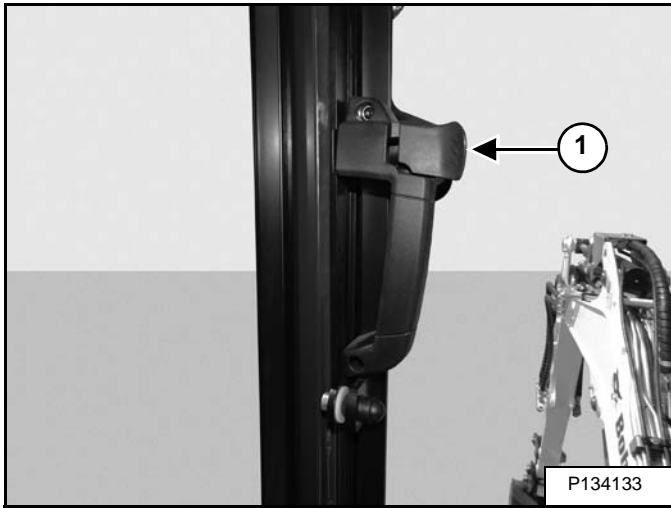
From inside the cab, open the door using handle (Item 1) [Figure 10-30-4].

OPERATOR CAB (ROPS / TOPS) (CONT'D)

Front Window

Opening The Front Window

Figure 10-30-5



Press the window latch button (Item 1) **[Figure 10-30-5]** on both sides.

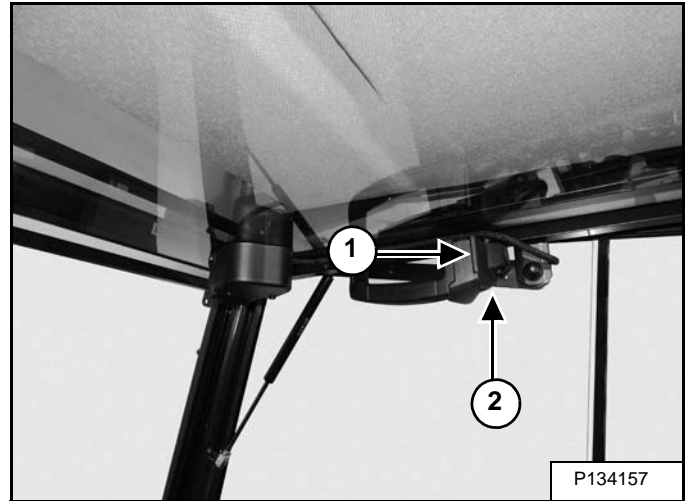
Figure 10-30-6



Use both window grab handles (Item 1) **[Figure 10-30-6]** to pull the top of the window in.

Continue moving the window in and up over the operator's head until the window is fully raised.

Figure 10-30-7



When the window is fully raised, the latch (Item 1) **[Figure 10-30-7]** (both sides) will close on the bracket in the latched position.

Pull down and forward slightly on the window to make sure it is fully latched.

Closing The Front Window

Use both window grab handles to support the window while pressing the window latch button (Item 2) **[Figure 10-30-7]** (both sides).

Use both window grab handles (Item 1) **[Figure 10-30-6]** to pull the window down fully.

Press the top of the window in until the latch locks into the latched position (both sides) **[Figure 10-30-5]**.

Pull inward and upward slightly on the window to make sure it is fully latched in the closed position.

OPERATOR CAB (ROPS / TOPS) (CONT'D)

Front Wiper

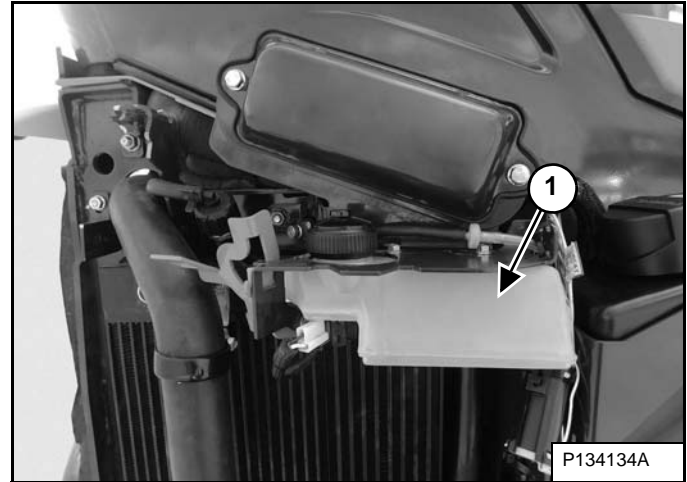
Figure 10-30-8



The front window is equipped with a wiper (Item 1) [Figure 10-30-8] and washer.

Window Washer Reservoir

Figure 10-30-9



The window washer reservoir (Item 1) [Figure 10-30-9] is located under the right side cover.



Suggest:

If the above button click is invalid.

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first, and then click the above link

to download the complete manual.

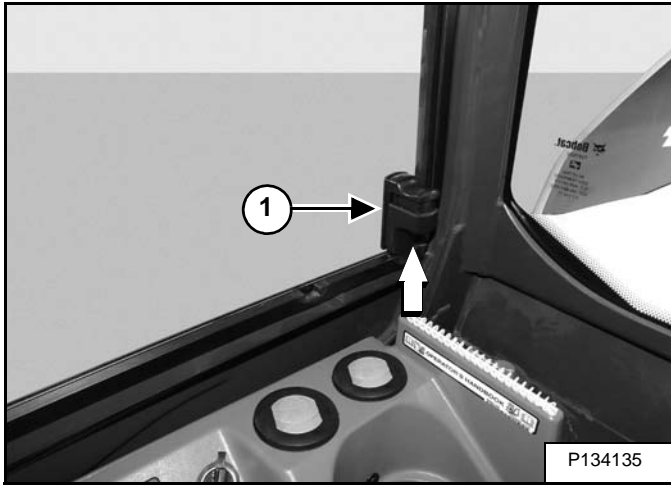
Thank you so much for reading

OPERATOR CAB (ROPS / TOPS) (CONT'D)

Right Side Window

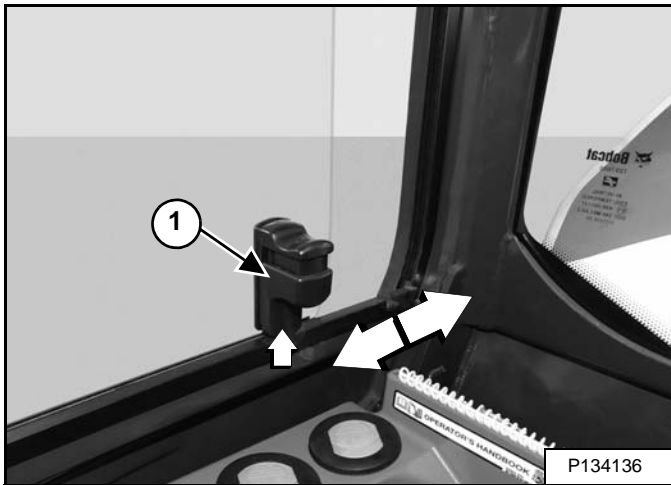
Opening The Right Rear Window

Figure 10-30-10



Pull up on the bottom latch (Item 1) [Figure 10-30-10].

Figure10-30 11



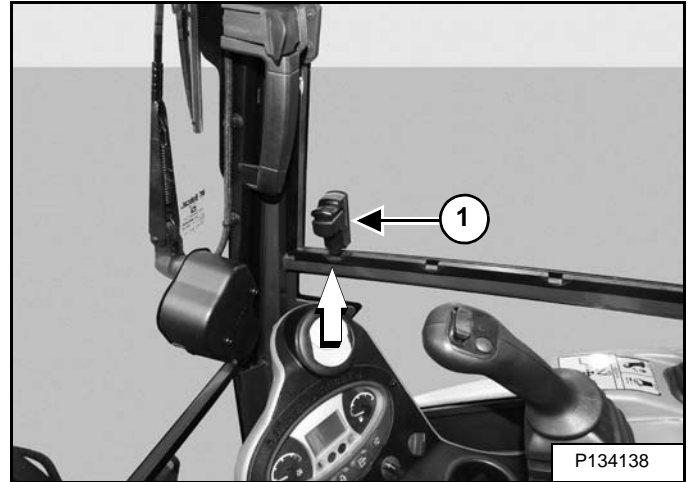
Pull the latch (Item 1) [Figure10-30 11] forward to open the window until the desired stop. Release the bottom latch and snap the lock in place.

Closing The Right Rear Window

Pull up on the bottom latch (Item 1) [Figure10-30 11] and push the latch back to close the window.

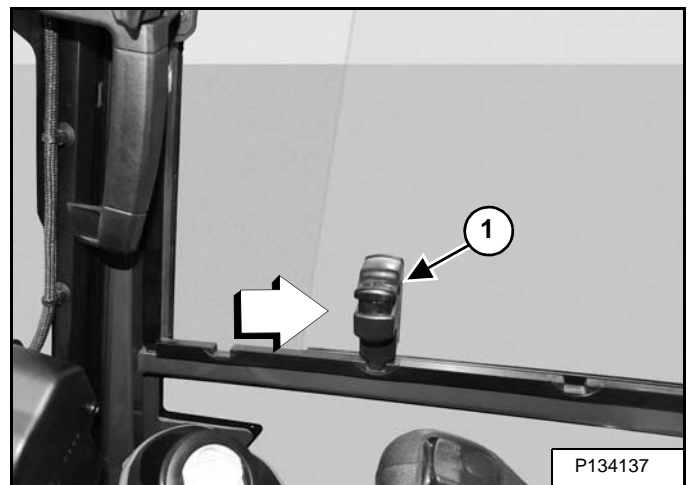
Opening The Right Front Window

Figure 10-30-12



Pull up on the bottom latch (Item 1) [Figure 10-30-12] located at the front of the front window.

Figure10-30 13



Pull the latch (Item 1) [Figure10-30 13] forward to open the window until the desired stop. Release the bottom latch and snap the lock in place.

Closing The Right Front Window

Pull up on the bottom latch (Item 1) [Figure 10-30-12] and push the latch back to close the window.

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