

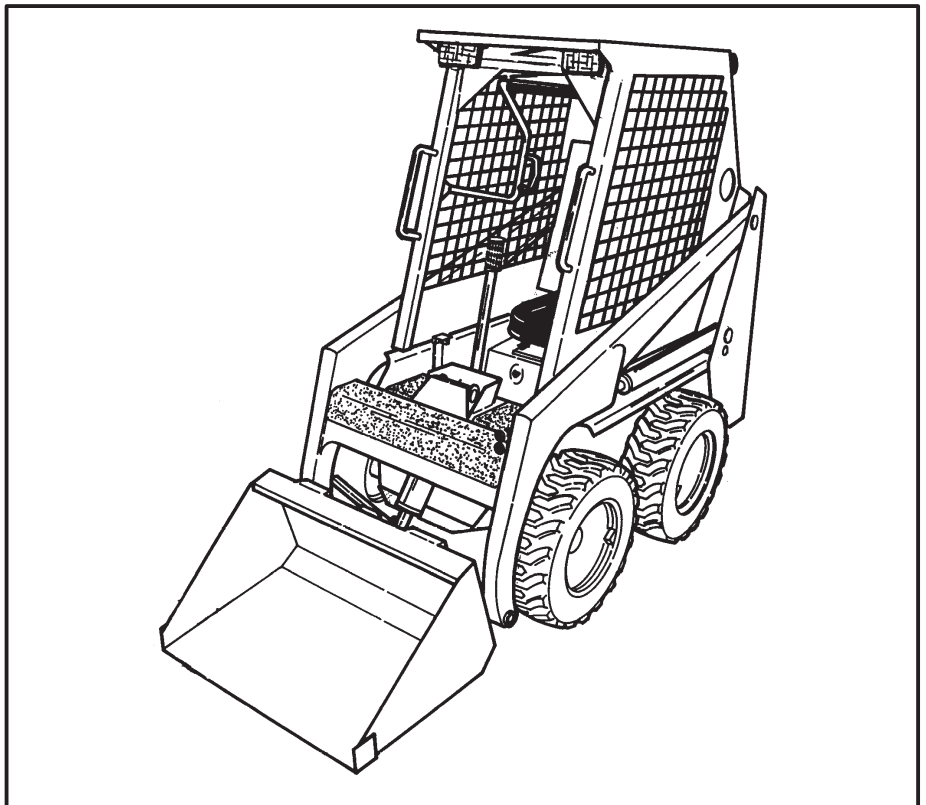
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Service Manual



MELROE
INGERSOLL-RAND

6566694 (11-95)

Printed in U.S.A.



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MAINTENANCE SAFETY



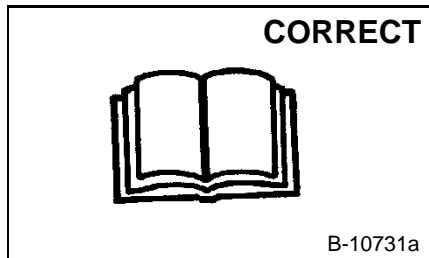
WARNING

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

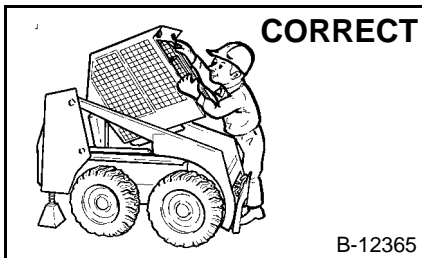


Safety Alert Symbol: This symbol with a warning statement, means: "Warning, be alert! Your safety is involved!" Carefully read the message that follows.



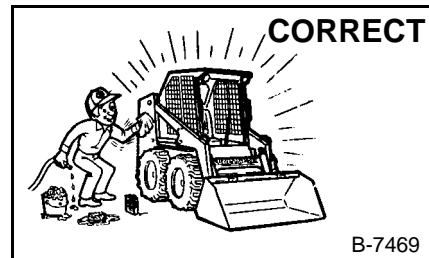
B-10731a

Never service the Bobcat Skid-Steer Loader without instructions.



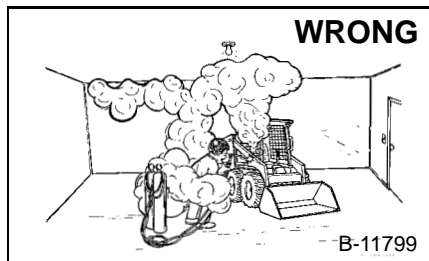
B-12365

Use the correct procedure to lift or lower operator cab.



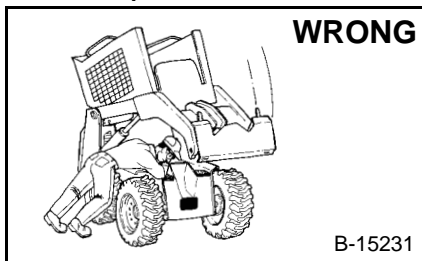
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Cleaning and maintenance are required daily.



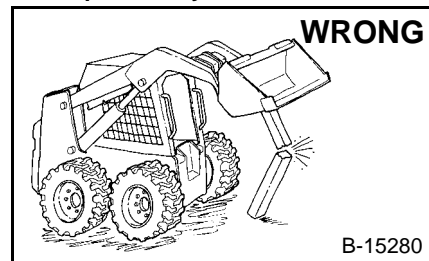
B-11799

- 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.



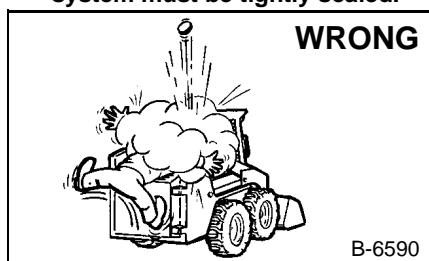
B-15231

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.



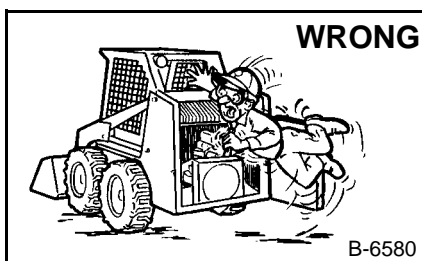
B-15280

- 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.



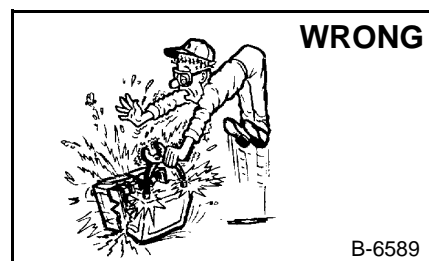
B-6590

- 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.



B-6580

- 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.



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. The Service Safety Training Course is available from your Bobcat dealer.

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**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.

REFERENCE INFORMATION

Write the correct information for Your Bobcat loader in the spaces below. Always use these numbers when referring to your Bobcat loader.

Loader Serial Number _____
Engine Serial Number _____

NOTES: _____

YOUR LOADER DEALER: _____
ADDRESS: _____
PHONE: _____

**PREVENTIVE
MAINTENANCE**

**HYDRAULIC
SYSTEM**

**HYDROSTATIC
SYSTEM**

**DRIVE
SYSTEM**

**MAIN
FRAME**

**ELECTRICAL
SYSTEM**

**ENGINE
SERVICE**

**TECHNICAL
DATA**

SPECIFICATIONS

<https://www.ebooklibonline.com>

Hello dear friend!

Thank you very much for reading.

Enter the link into your browser.

The full manual is available for immediate download.

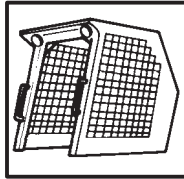
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FOREWORD

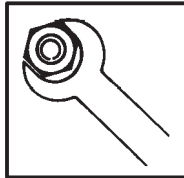
This manual is for the Bobcat loader mechanic. It provides necessary servicing and adjustment procedures for the Bobcat loader and its component parts and systems. Refer to the Operation & Maintenance Manual for operating instructions, starting procedure, daily checks, etc.

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

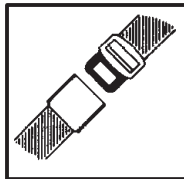
1. Check that the ROPS/FOPS (Including sidescreens) is in good condition and is not modified.



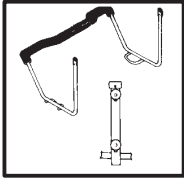
2. Check that ROPS mounting hardware is tightened and is Melroe approved.



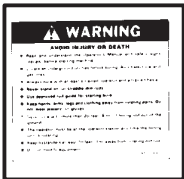
3. The seat belt must be correctly installed, functional and in good condition.



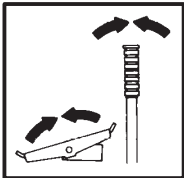
4. The seat bar and pedal interlocks must be correctly adjusted, clean and lubricated.



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.



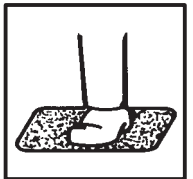
9. Enclosure door latches must open and close freely.



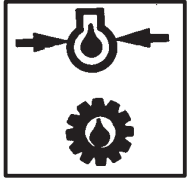
10. Bob-Tach wedges and linkages must function correctly and be in good condition.



11. Safety treads must in good condition.



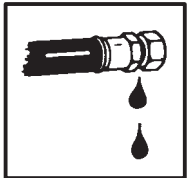
12. Check for correct function of indicator lamps (Optional on some models).



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



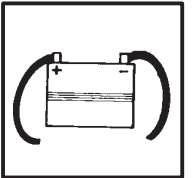
14. Inspect for fuel, oil or hydraulic fluid leaks.



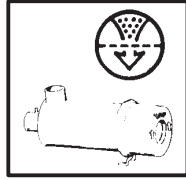
15. Lubricate the loader.



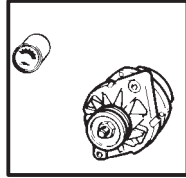
16. Check the condition of the battery and cables.



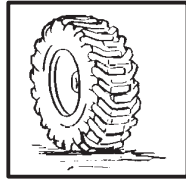
17. Inspect the air cleaner for damage or leaks. Check the condition of the element.



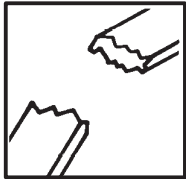
18. Check the electrical charging system.



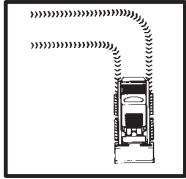
19. Check tires for wear and pressure.



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

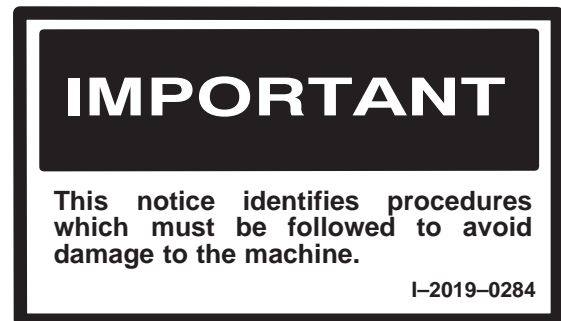
WARNING

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-2003-1289

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 the following languages: French, German, Italian, Dutch & Spanish edition.
- 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 Bobcat dealer. This course is intended to provide rules and practices for correct operation of the Bobcat loader. This course is available in English and Spanish versions.
- The Bobcat Skid-Steer Loader Safety Video is available from your Bobcat Dealer.



Safety Alert Symbol: This Safety Symbol is used for important safety messages. When you see this symbol follow the safety message to avoid personal injury or death.

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 extinguishers and first aid kits 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.
- Use the procedure in the Operation & Maintenance or Service Manuals for cleaning the spark arrestor muffler.

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



PREVENTIVE MAINTENANCE

PREVENTIVE MAINTENANCE

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SERVICE SCHEDULE

Maintenance work must be done at regular intervals. Failure to do so will result in excessive wear and early failures. The service schedule is a guide for correct maintenance of the Bobcat loader.



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 manual when making repairs, adjustments or servicing. Check for correct function after adjustments, repairs or service. Failure to follow instructions can cause injury or death.

W-2003-1289

SERVICE SCHEDULE				HOURS						
440	443 443B	ITEM	SERVICE REQUIRED	8-10	25	50	100	250	500	1000
		Engine Air Cleaner	Empty the dust cup.							
		Engine Oil	Check level & add oil as needed.							
		Engine Cooling System	Check & clean as needed (Including oil cooler).							
		Engine Cooling System	Check coolant level in recovery tank.							
		Tires	Check air pressure & check for damage.							
		Indicators & Gauges	Check for correct operation of all indicators, switches and lights.							
		Seat Belt & Seat Bar	Check the condition of seat belt. Check the seat bar, when raised it must lock both pedals.							
		Safety Signs (Decals)	Check for damaged signs (decals). Replace any signs (decals) that are not in correct location.							
		All Loader Pivot Pins	Add grease to the fittings until extra grease shows.							
		Hydraulic/Hydrostatic Fluid	Check fluid level in the reservoir & add fluid as needed.							
		Engine Oil	Replace the engine oil.							
		Engine Air Cleaner	● Replace the filter element.							
		Engine Air Shrouding	Remove & clean shrouding & cooling fins.							
		Engine Oil & Filter	Replace engine oil & filter.							
		Battery	Check cables & water level.							
		Control Pedals & Steering Linkage	Check operation. Make repairs & adjustments as needed.							
		Bob-Tach	Check locking lever & wedges for condition & operation.							
		Wheel Nuts	Check for loose wheel nuts (See Page 1-17).							
		Parking Brake	Check operation. Make adjustment as needed.							
		Alternator Belt	Check tension, make adjustment as needed.							
		Engine Fuel Filter	Remove water from the filter.							
		Engine Ignition System	Check & clean spark plugs.							
		Hydraulic/Hydrostatic Filter Element	Replace the filter element.							
		Spark Arrestor Muffler	Clean the spark chamber.							
		Steering Levers	Lubricate the grease fittings.							
		Engine Fuel Filter	Remove & replace the filter element.							
		Engine Ignition System	Check points & timing. Replace spark plugs.							
		Engine Compression	Check the compression.							
		Engine Valves	Check & set clearance at valves.							
		Cylinder Head	† Service							
		Starter Drive	Service							
		Chaincase	Replace the fluid.							
		Hydraulic/Hydrostatic Reservoir	Replace the fluid & filter element.							

● More often in dusty conditions.

† 250 hours when leaded gasoline is used.

PREVENTIVE MAINTENANCE

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

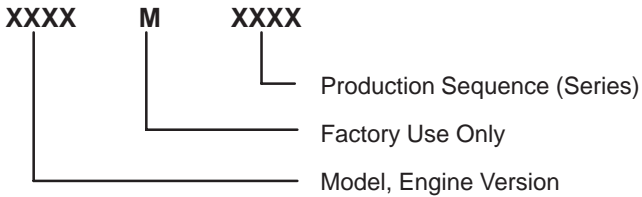
Serial Number Identification

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 service repair.

Loader Serial Number

The Bobcat loader serial number plate location is in the operator cab area on the right fender and in front of the seat [A].

Explanation of the Serial Number



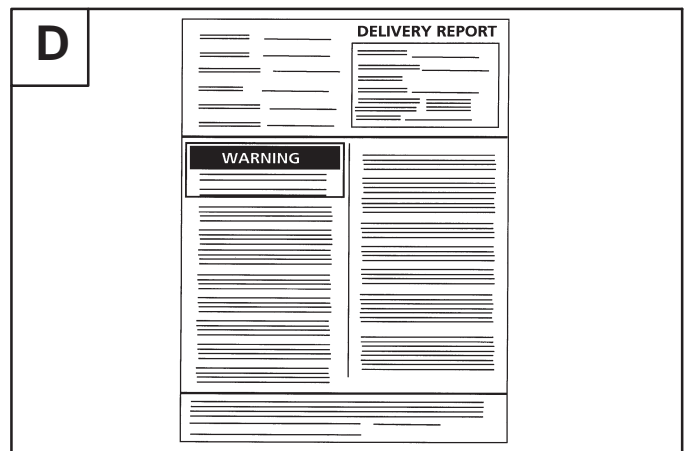
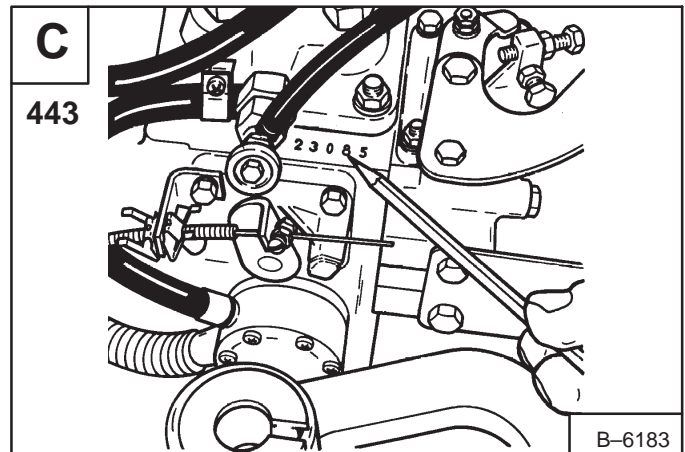
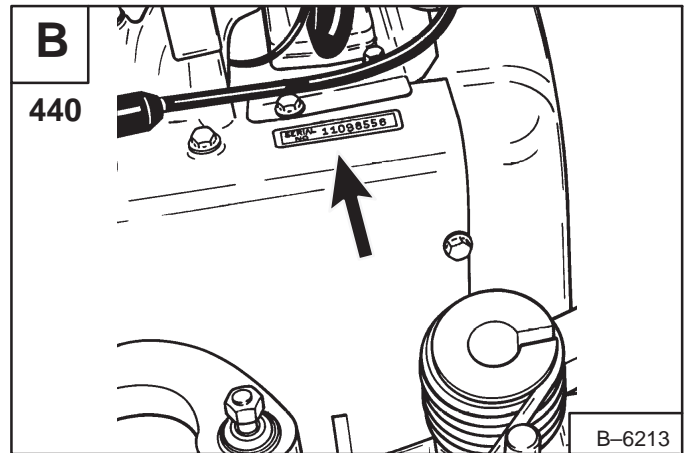
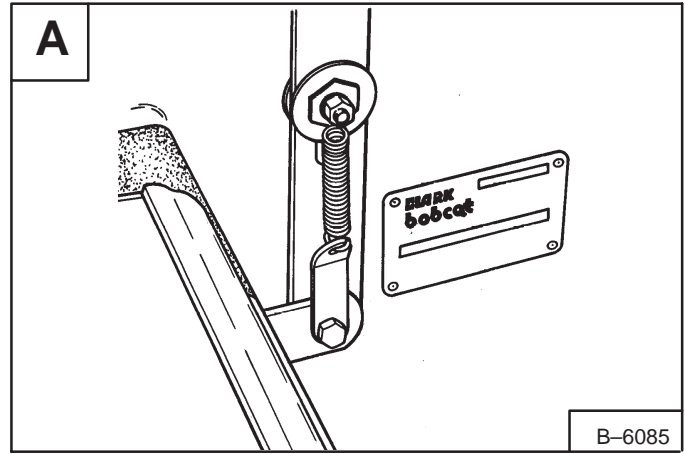
Engine Serial Number

The engine serial number for the 440 Bobcat loader is located on the blower housing at the front side of the engine [B].

The engine serial number for the 443 Bobcat loader is located at the front of the engine on the fuel injection pump housing [C].

Delivery Report

The Delivery Report [D] is to be filled out by the dealer and signed by the power/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.



ENGINE SERVICE (General)

WARNING

AVOID INJURY OR DEATH

Stop, cool and clean engine of flammable material. Never service or adjust loader with engine running unless instructed to do so in manual.

W-2061-0887

Open the rear door to service the engine. Pull the latch pin (rotate clockwise) on the left side of the rear door [A].

Open the rear door to the right.

WARNING

Keep the rear door closed when operating the machine. Failure to do so could seriously injure a bystander.

W-2020-1285

Air Cleaner Service

440 – Bobcat Loader

It is important to service the air cleaner cup at regular intervals for good engine performance and long service life. Remove the dust cup [B] every day and clean it.

Replace the air filter element every 50 hours of loader operation or more if the loader is operated in dusty conditions.

To replace the air cleaner element, use the following procedure:

NOTE: Contamination can enter the system whenever the element is removed. DO NOT use air pressure to clean the air filter housing or the filter element.

Loosen the clamp and remove the dust cup [B].

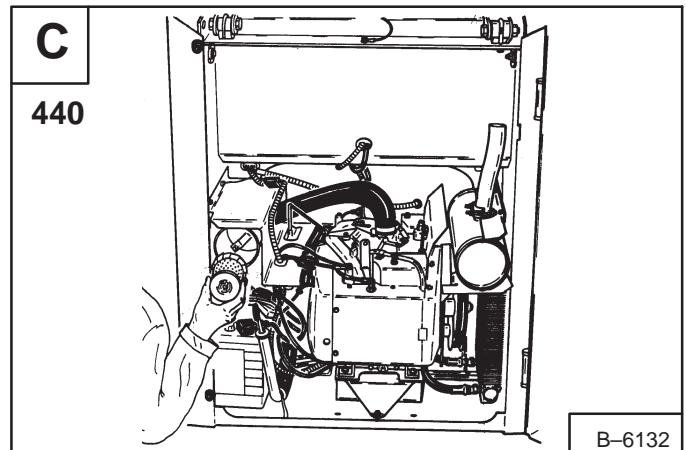
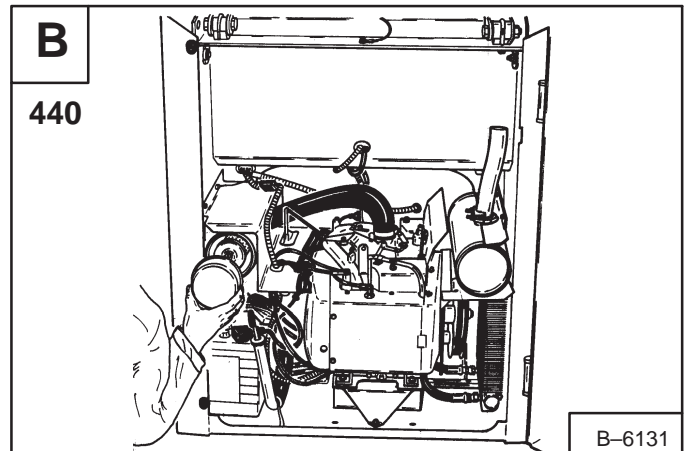
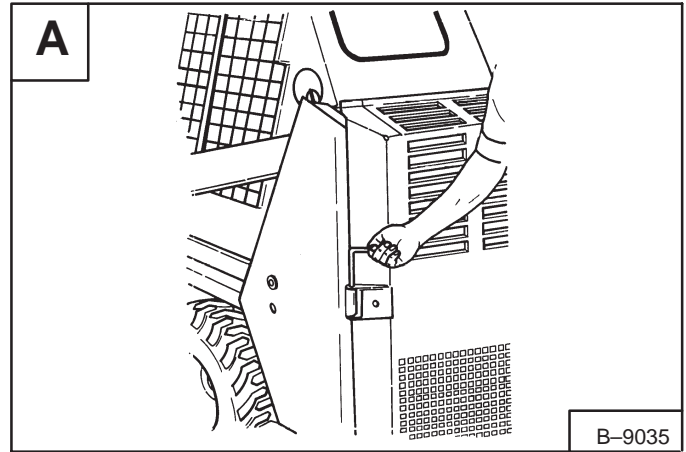
Remove the wing nut and remove the filter element from the air cleaner [C].

Clean the inside of the air cleaner housing so that the filter element has a smooth surface to contact at the seal. Check the filter housing for holes from corrosion, especially if the Bobcat loader is used in fertilizer application.

Install a new filter element [C] and tighten the wing nut.

Install the dust cup [B] and tighten the clamp.

Check to make sure that all the hoses and clamps are tight.



ENGINE SERVICE (Cont'd)

Air Cleaner Service (Cont'd)

443 Bobcat Loader

It is important to service the air cleaner cup at regular intervals for good engine performance and long service life. Remove the dust cup [A] every day and clean it.

Replace the air filter element every 50 hours of loader operation or more often if the loader is operated in dusty conditions.

To replace the air cleaner element, use the following procedure:

NOTE: Contamination can enter the system whenever the element is removed. DO NOT use pressure to clean the air filter housing or the filter element.

Loosen the clamp and remove the dust cup [A].

Remove the rubber cup (Item 1) [B] and remove the dirt from the dust cup.

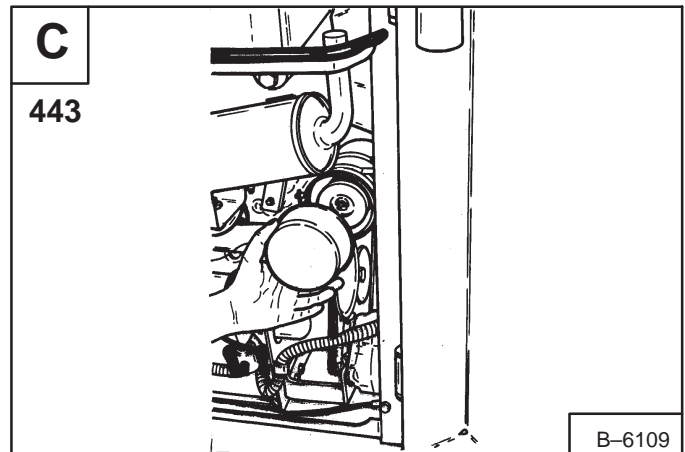
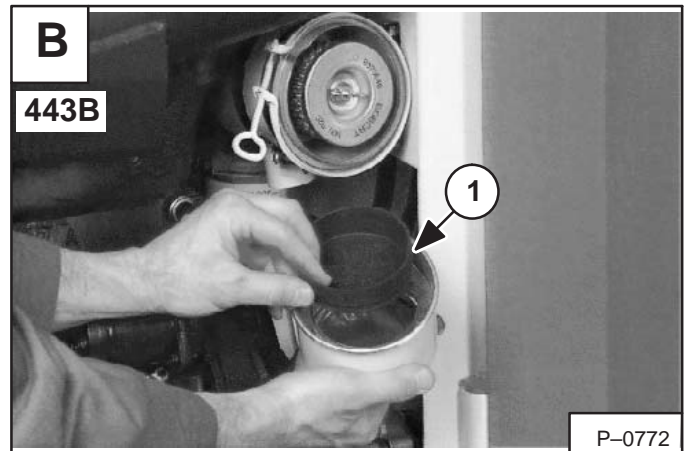
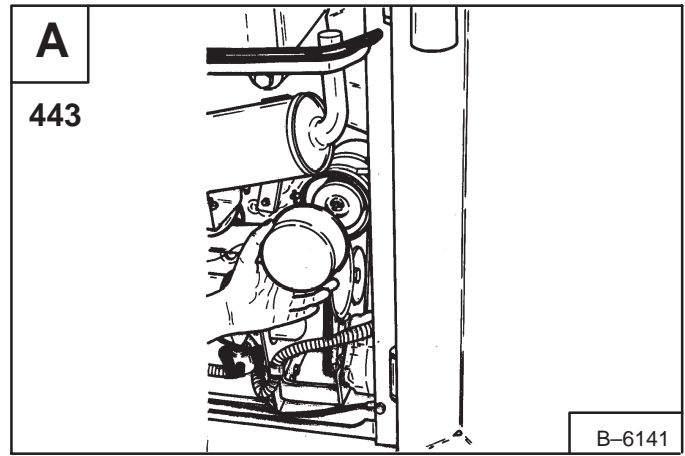
Remove the wing nut and remove the filter element from the air cleaner housing [C].

Clean the inside of the air cleaner housing so that the filter element has a smooth surface to contact at the seal. Check the filter housing for holes from corrosion, especially if the bobcat loader is used in fertilizer application.

Install a new filter element [C] and tighten the wing nut.

Install the dust cup [A] and tighten the clamp.

Check to make sure that all the hoses and clamps are tight.



ENGINE SERVICE (Cont'd)

Fuel System



WARNING

Stop and cool the engine before adding fuel. **NO SMOKING!** Failure to obey warnings can cause an explosion or fire.

W-2063-0887

Use 85 octane unleaded or regular gasoline in the engine of the 440 Bobcat loader.

Use only clean, high quality fuel. Use number 2 diesel fuel above 40°F (4°C) in the engine of the 443 & 443B Bobcat loaders. During temperatures below 40°F, number 1 fuel is recommended.

NOTE: The fuel gauge and fuel shut-off valve are located on the right side of the loader [A], the fuel filler cap (Item 1 [440] [B]) or (Item 1 [443] [C]) are located on the left side of the bobcat loader.

Remove the filler cap (Item 1 [B], [440] or, Item 1 [C] [443]) to service the fuel tank as follows:

Use clean, approved safety containers to add the fuel.

The engine must be STOPPED and cool.

Add fuel only in an area that has a free movement of air and NO open flames or sparks. **NO SMOKING [D].**

Use only clean fuel of the correct specifications.

Tighten the cap on the fuel tank.

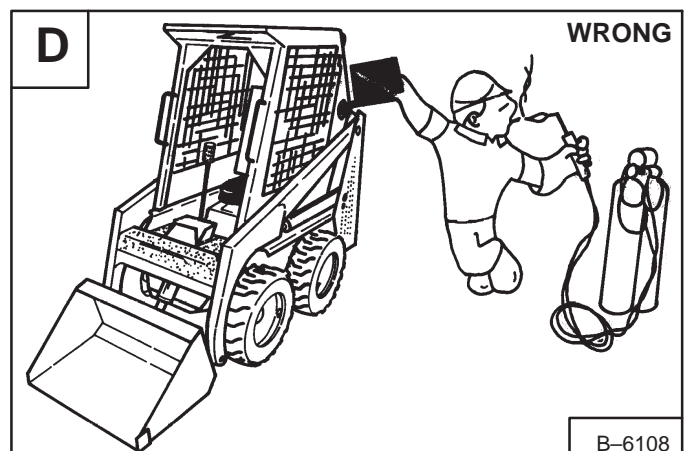
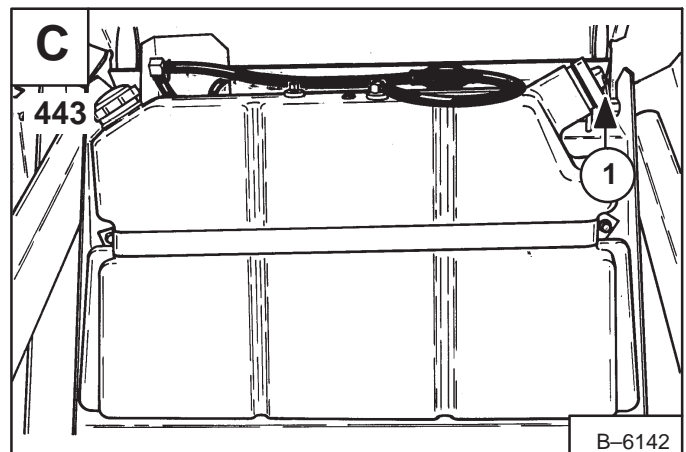
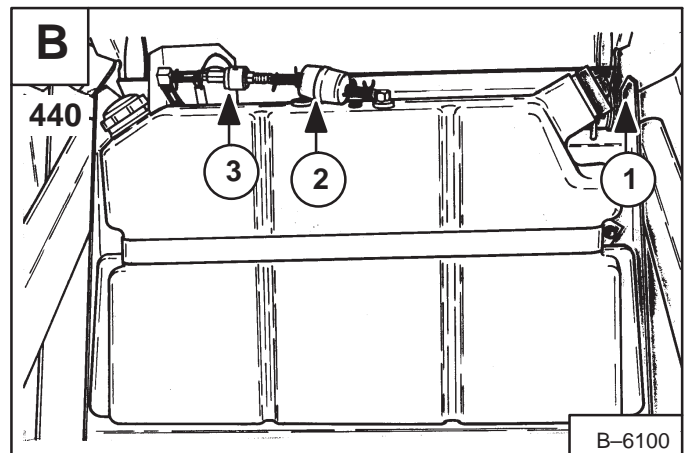
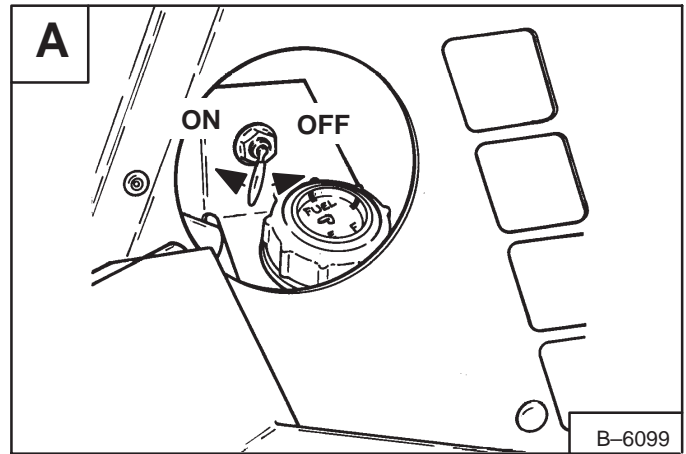
Fuel Filter

440 Bobcat Loader

There is a fuel filter (Item 2) [B] in the fuel line by the fuel tank. The fuel filter must be replaced every 250 hours of loader operation.

Remove the fuel filter, replace with a new filter, make sure all the connections are tight.

NOTE: The electrical fuel solenoid (Item 3) [B] is located by the fuel filter.



ENGINE SERVICE (Cont'd)

Fuel Filter (Cont'd)

443, 443B Bobcat Loader

There is a fuel filter located on the right hand side of the engine compartment.

Replace the fuel filter every 250 hours of loader operation.

See Section 7B for the correct replacement procedure.

Engine Lubrication System

Check the oil level each day.

To check the oil level, stop the engine. Open the rear door and remove the dipstick [A] or [B].

NOTE: 443, 443B ONLY – The dipstick may indicate an incorrect level of oil when first removed because of pressure in the crankcase. Always (1) Remove the dipstick, (2) wipe the dipstick, (3) insert dipstick again and (4) recheck the oil level.

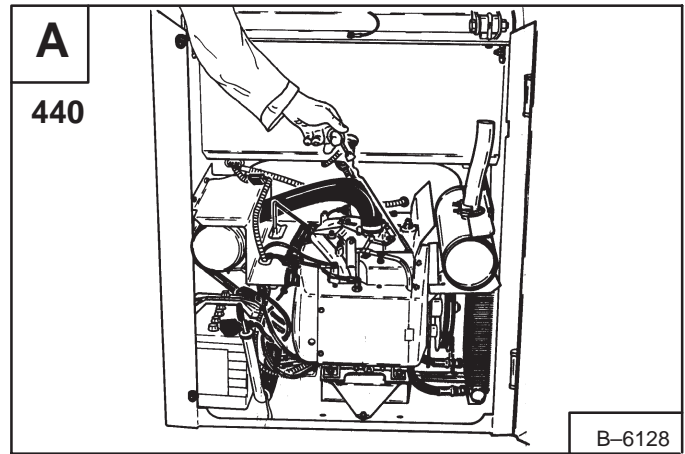
Keep the oil level between the marks on the dipstick [C]. DO NOT fill above the top mark. Use a good quality motor oil that meets API Standard Classification. (See the Chart Below.)

Replacement of the Engine Oil and Filter

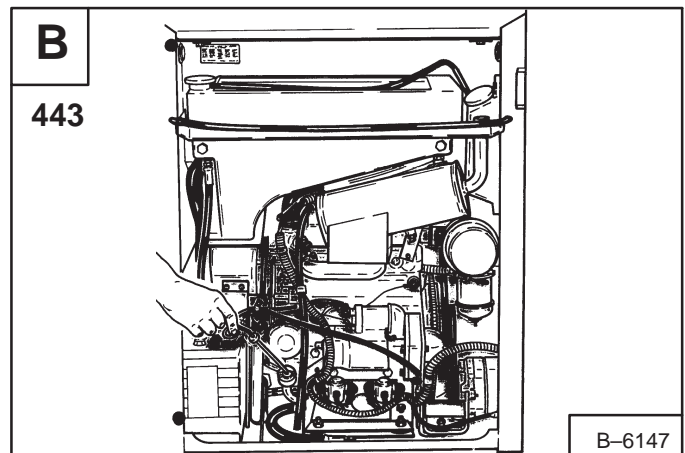
440 – Replace engine oil every 25 hours of loader operation. (S/N 25000 & Above) replace engine oil every 50 hours of operation.

NOTE: Use only straight SAE 30 above 32°F/ (0°C.) in 440 engine.

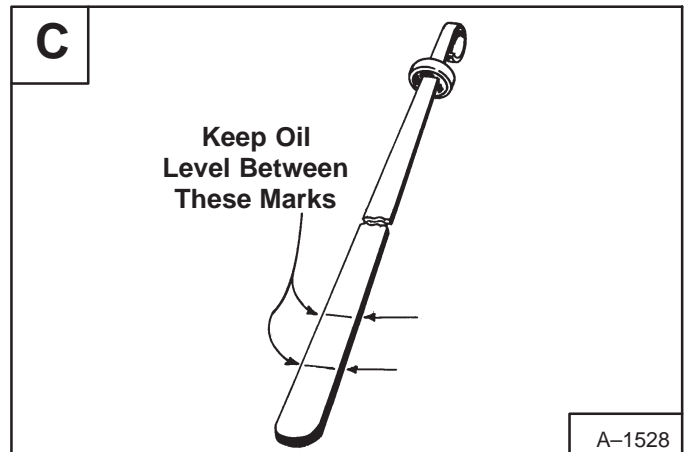
443 – Replace the engine oil and filter every 100 hours of loader operation.



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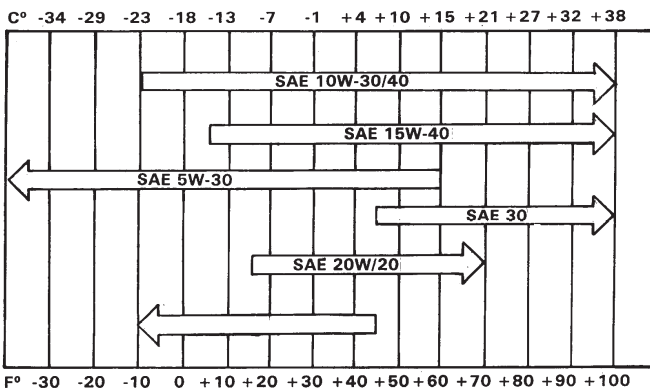


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A-1528

RECOMMENDED SAE VISCOSITY NUMBER (LUBRICATION OILS FOR ENGINE CRANKCASE)



TEMPERATURE RANGE ANTICIPATED BEFORE
NEXT OIL CHANGE
(GASOLINE: USE API CLARIFICATION SE or SF)
(DIESEL: USE API CLASSIFICATION CC or CD)

ENGINE SERVICE (Cont'd)

Replacement of the Engine Oil Filter (Cont'd)

440 Bobcat Loader

NOTE: Do Not use multi-viscosity oils in gasoline engine except when ambient temperature is below 32°F. (0°C.).

Run the engine until it is at operating temperature. Stop the engine and open the rear door.

Remove the drain plug **[A]**.

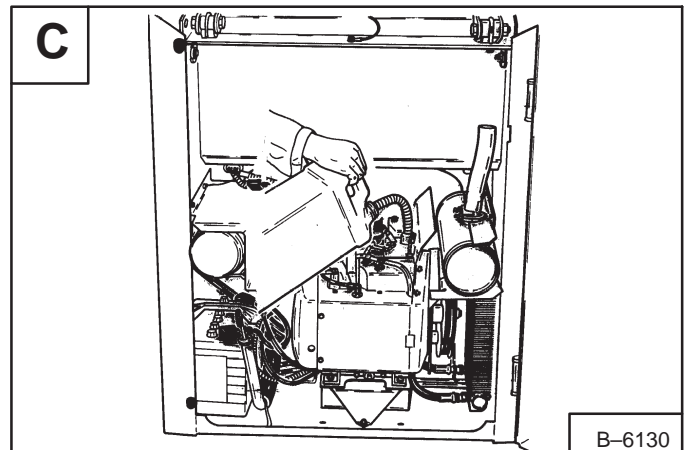
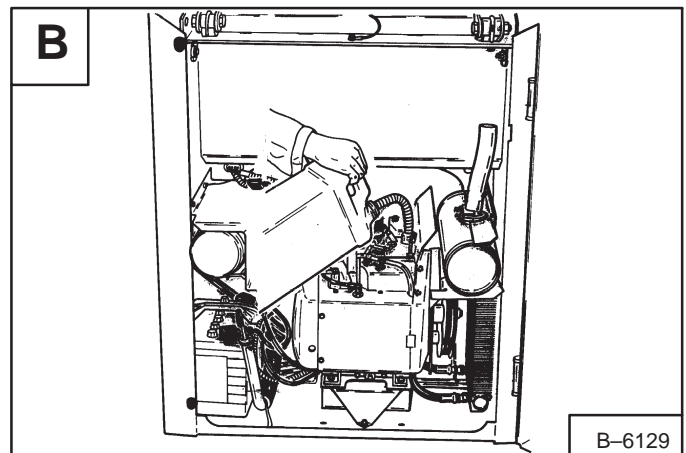
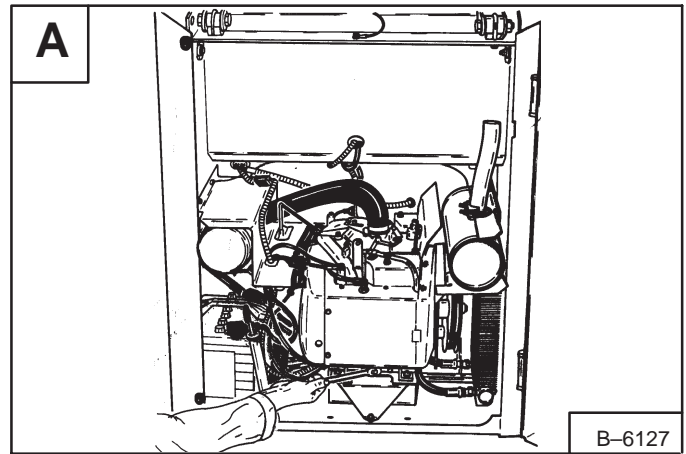
After all the oil is removed from the engine, install the oil plug and tighten.

Remove the oil fill cap **[B]**.

Add the correct amount of oil to the engine **[C]**. (See Oil Chart for the correct oil.)

Install the oil fill cap and tighten.

Start the engine and let it run for several minutes. Stop the engine. Check the oil level. Add oil if the level is not at the top mark on the dipstick.



ENGINE SERVICE (Cont'd)

443, 443B Bobcat Loader

Operate the engine for about 15 minutes. Stop the engine and open the rear door.

Remove the oil drain plug (Item 1) **[A]** from the end of the hose. Remove all the oil from the engine.

Remove the oil filter (Item 2) **[A]** with an oil filter wrench.

Clean the filter housing surface. Put clean oil on the gasket of the new filter. Install the filter and tighten the filter by hand only.

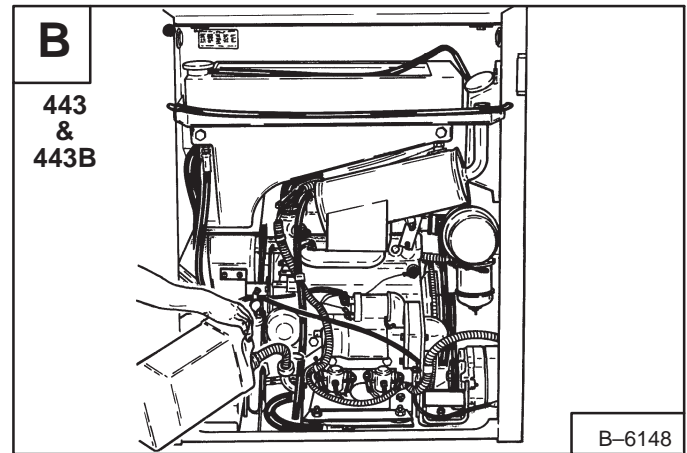
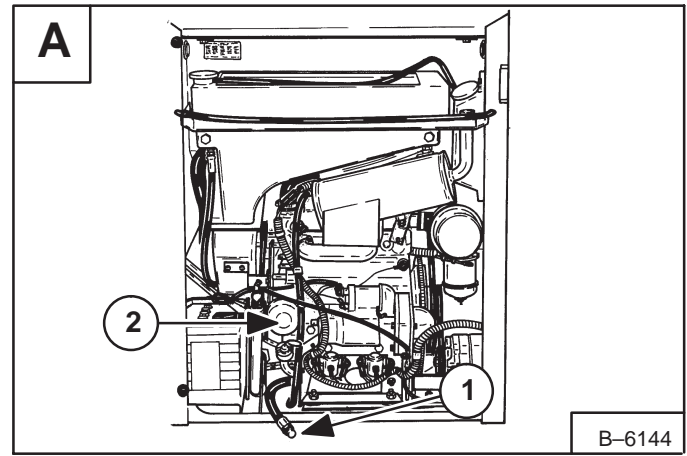
Install the plug in the hose and tighten.

Remove the oil fill cap.

Add the correct amount of oil to the engine **[B]**. (See the Oil Chart for the correct oil.)

Install the oil fill cap and tighten.

Start the engine and let it run for several minutes. Stop the engine. Check for leaks at the filter. Check the oil level. Add oil if the level is not at the top mark on the dipstick.



ENGINE SERVICE (Cont'd)

Engine Cooling System (440)

The loader uprights and the engine cooling fins must be kept clean and free of debris or over-heating will result.

⚠ WARNING

Wear safety glasses to prevent eye injury when any of the following conditions exist:

- When fluids are under pressure.
- Flying debris or loose material is present.
- Engine is running.
- Tools are being used.

W-2019-1285

Use air pressure or water spray to clean the loader uprights **[A]**.

Remove the shrouding on the engine to clean the cooling fins **[B]**. Make sure you wear safety goggles when using air pressure or water spray for cleaning.

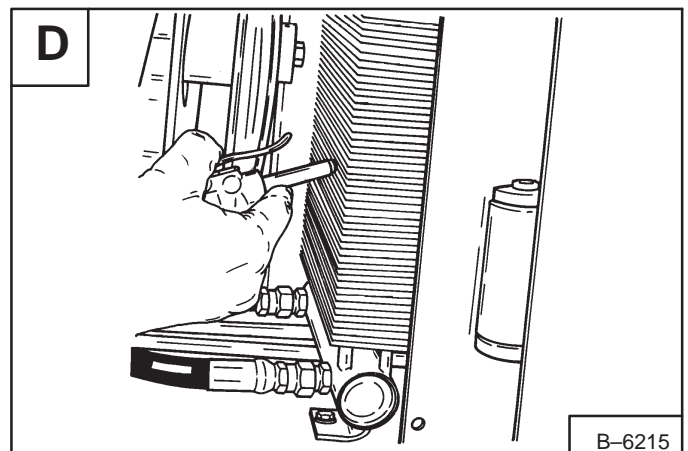
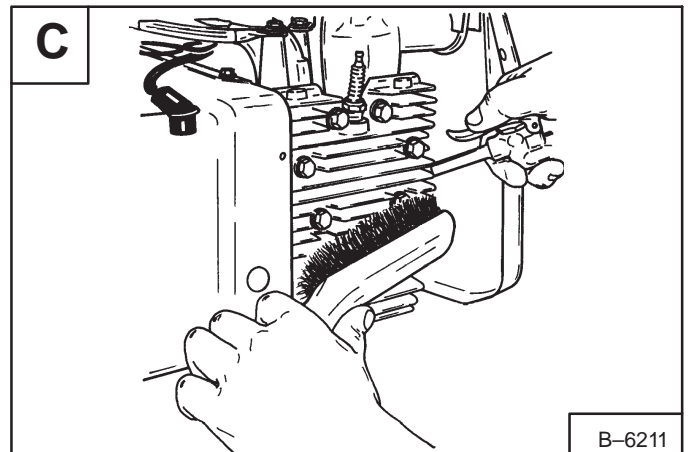
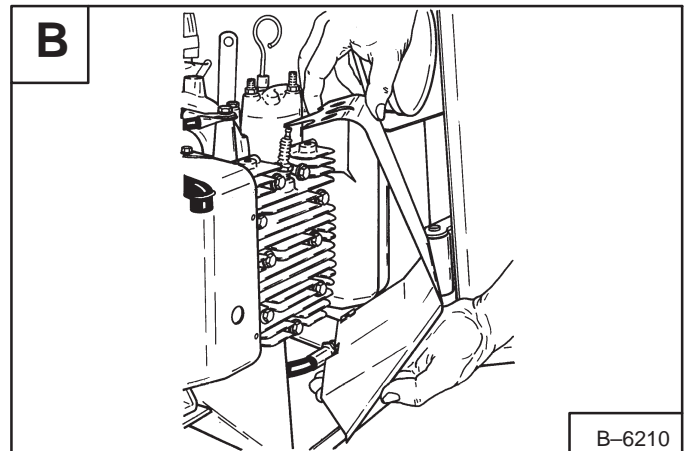
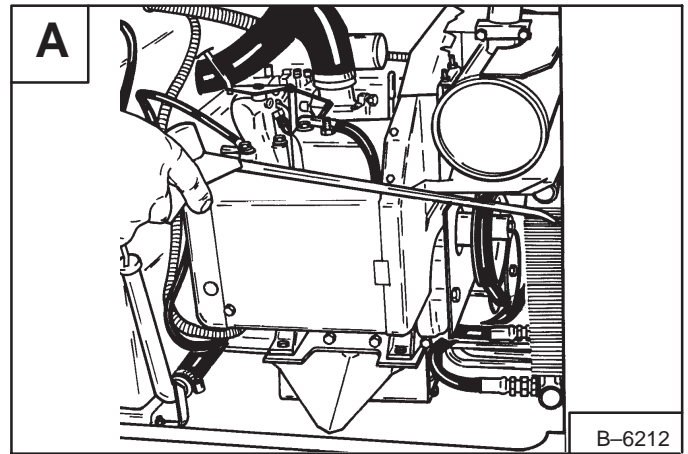
Use a brush and a scraper tool to remove the hard deposits on the cooling fins **[C]**.

IMPORTANT

Never run the engine with any of the covers or air ducts removed. Overheating can damage the engine and hydraulic/hydrostatic system.

I-2020-1285

Use air pressure or water spray to clean the hydraulic/hydrostatic oil cooler **[D]**.



ENGINE SERVICE (Cont'd)

Engine Cooling System (443 & 443B)

The cooling system has a coolant recovery tank. The location of the tank is on the right upright in the engine compartment **[A]**.

The coolant recovery tank must be 1/3 full.

PROPYLENE GLYCOL

Add premixed coolant, 47% water and 53% propylene glycol to the recovery tank if the coolant level is low.

One gallon and one pint of propylene glycol mixed with one gallon of water is the correct mixture of coolant to provide a -34°F (-37°C) freeze protection.

ETHYLENE GLYCOL

Add premixed coolant, 50% water and 50% ethylene glycol to the recovery tank if the coolant level is low.

To remove the coolant from the system, use the following procedure:



Raise the operator cab. (See Page 5-1 for the correct procedure.)

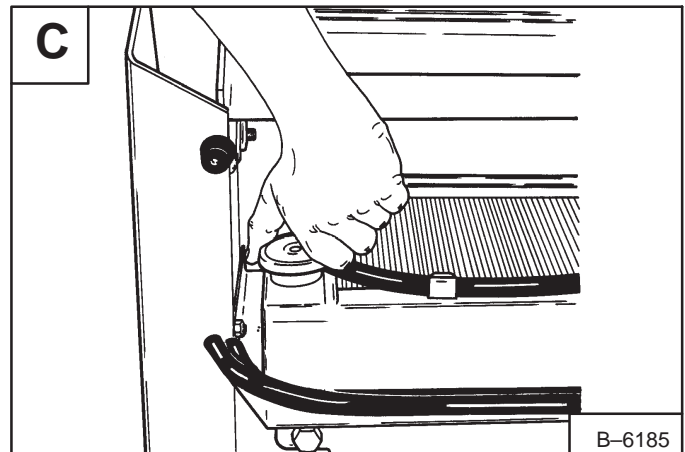
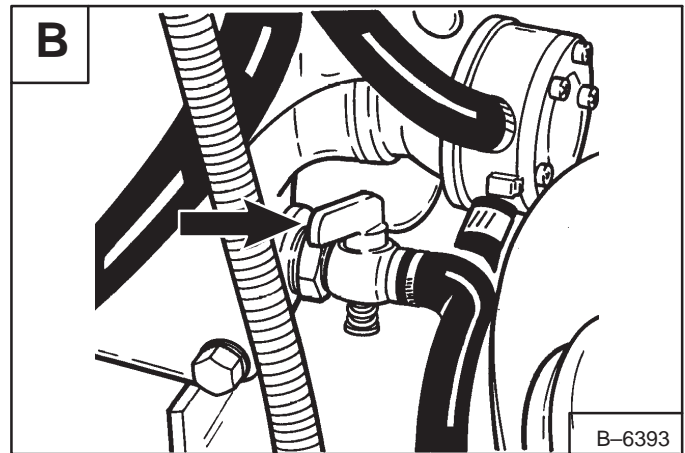
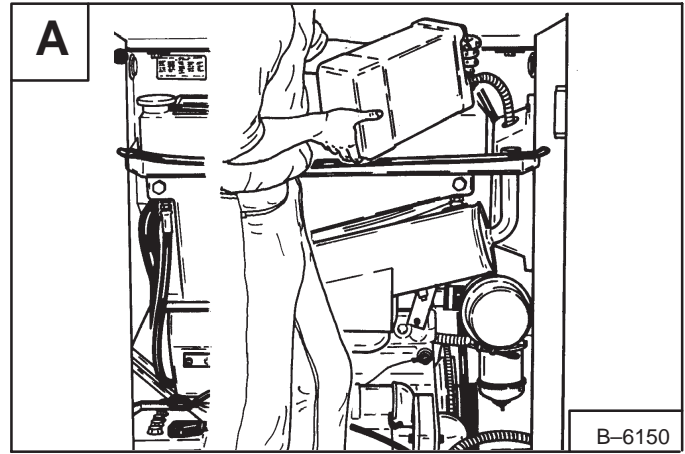
Open the coolant valve on the front side of the engine block **[B]**. Connect a hose to the valve to keep the coolant from getting into the engine compartment.

Remove the radiator cap **[C]**.

Turn the valve to the off position after all the coolant is removed from the system.

Fill the radiator and install the radiator cap **[C]**.

Fill the coolant recovery tank 1/3 full **[A]**.



ELECTRICAL SYSTEM

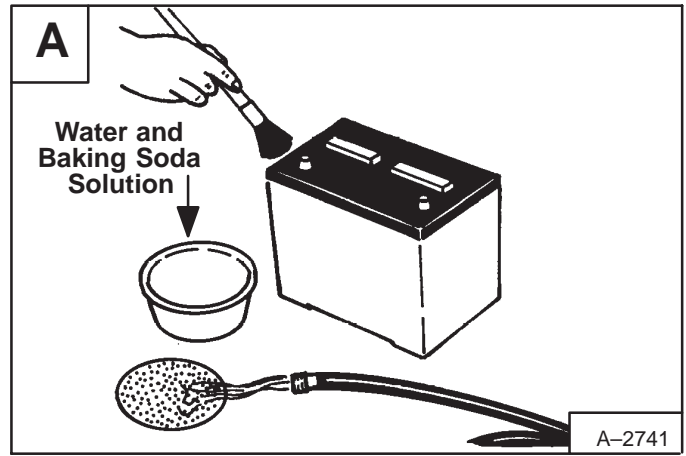
Electrical System Service

Check the battery cables and make sure they are clean and tight. Check the water level of the battery. Remove any acid or corrosion from the battery and cables with a sodium bicarbonate and water solution [A]. Cover the battery terminals and cables with grease.

Check the tension of the alternator belt. (See Section 6 for the correct procedure.)

Check all wires for being broken or open wires.

NOTE: The warning lights (on the dash panel) will come ON (transmission light only on 440) when the key switch is turned ON. When the engine is started, the warning lights must go OFF. If they do not, stop the engine and find the problem.



Using an Extra Battery (Jump Starting)

! WARNING

Keep arcs, sparks, flames and lighted tobacco away from batteries. When “jumping” from booster battery make final connection (negative) at engine frame.

Do not jump start or charge a frozen battery. Warm battery to 60°F. (16°C.) before connecting to a charger. Unplug charger before connecting or disconnecting cables to battery.

Battery gas can explode and cause serious injury.

W-2066-0490

If it is necessary to use an extra battery to start the engine, BE CAREFUL! This is a two-person operation. There must be one person in the operator's seat and one person to connect and disconnect the battery cables.

! WARNING

Batteries contain acid which burns eyes and skin on contact. Wear goggles, protective clothing and rubber gloves to keep acid off body.

In case of acid contact, wash immediately with water for several minutes and get medical attention in case of eye contact.

W-2065-1286

ELECTRICAL SYSTEM (Cont'd)

Using An Extra Battery (Jump Starting) (Cont'd)

The ignition must be in the OFF position.

The battery must be 12 volt.

Connect the end of the first cable to the positive terminal (+) of the booster battery. Connect the other end of the same cable to the loader battery positive (+) terminal [A] & [B].

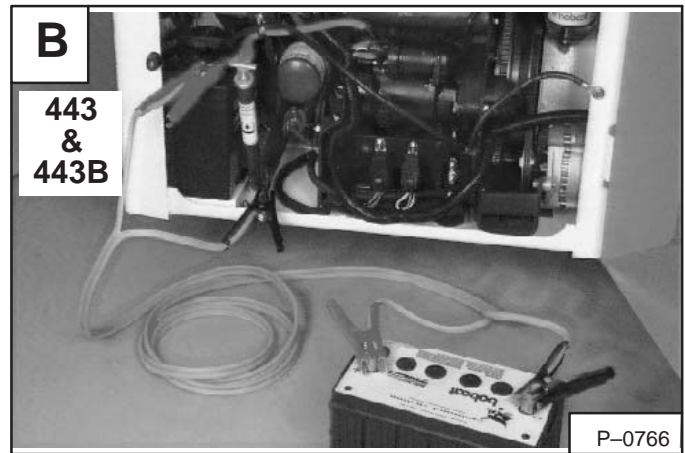
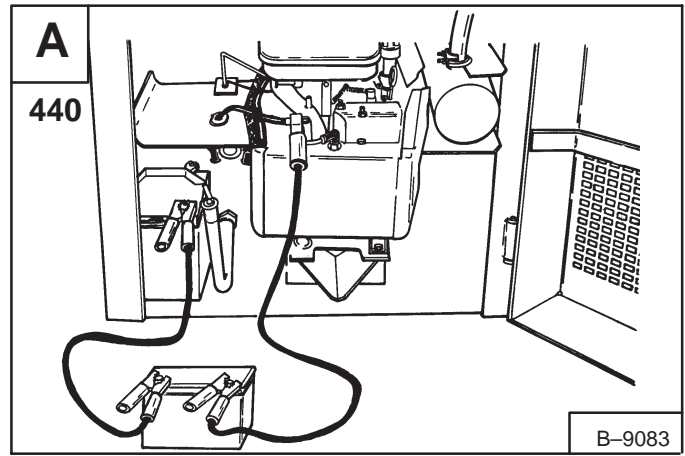
Connect the end of the second cable to the negative terminal (-) of the booster battery. Connect the other end of second cable to the engine [A] & [B].

Keep the cables away from moving parts.

Start the engine.

After the engine has started, remove the ground cable connected to the engine first.

Remove the cable connected to the loader battery.



WARNING

Keep arcs, sparks, flames and lighted tobacco away from batteries. When “jumping” from booster battery make final connection (negative) at engine frame.

Do not jump start or charge a frozen battery. Warm battery to 60°F. (16°C.) before connecting to a charger. Unplug charger before connecting or disconnecting cables to battery.

Battery gas can explode and cause serious injury.

W-2066-0490

IMPORTANT

Damage to the alternator can occur if:

- Engine is operated with battery cables disconnected.
- Battery cables are connected when using a fast charger or when welding on the loader (Remove both cables from the battery).
- Extra battery cables (booster cables) are connected wrong.

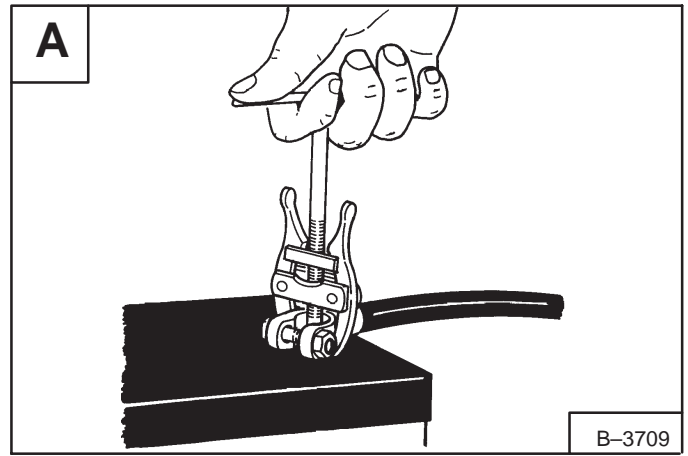
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ELECTRICAL SYSTEM (Cont'd)

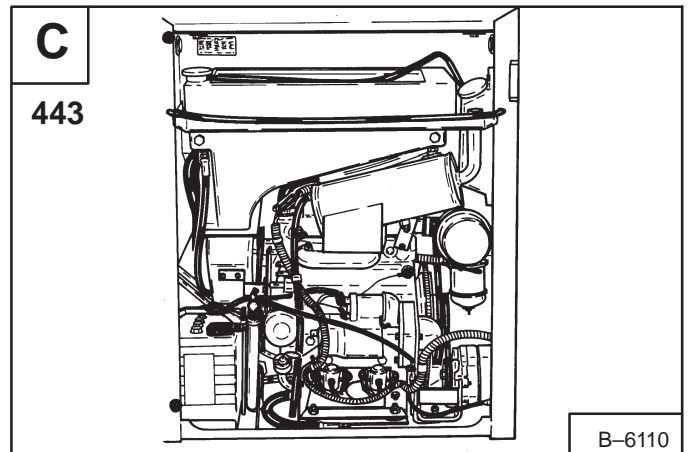
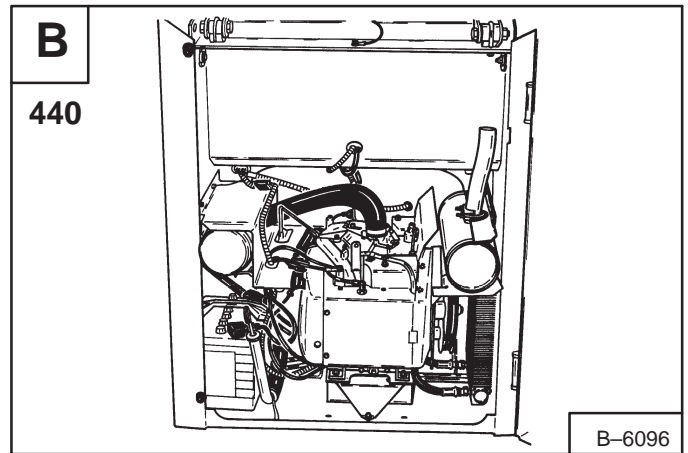
Installing a New Battery

NOTE: See Page 6-6 for more information on removing and replacing batteries.

Remove the negative battery cable from the battery first, using a cable puller [A]. Remember the position of the battery cables so you can connect the cables correctly when installing the battery.



Remove the battery hold-down clamps [B] or [C]. Remove the battery from the compartment.

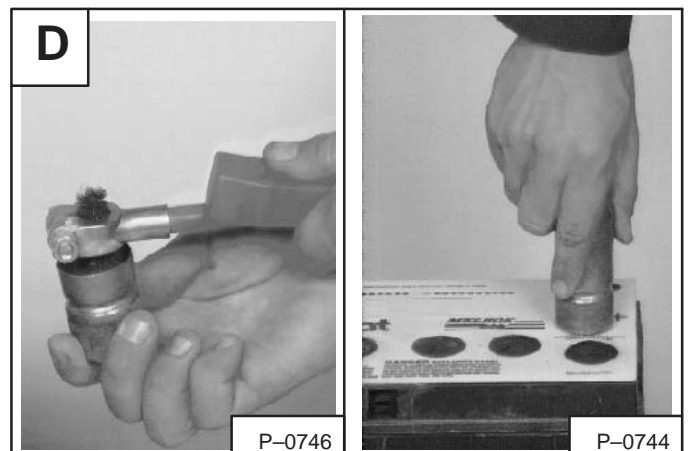


Clean the terminal posts and the ends of the battery cables [D].

Install the new battery in the battery compartment.

Install the holddown clamps.

Install the positive battery cable first and tighten. Connect the negative cable last to prevent sparks.





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SPARK ARRESTOR MUFFLER

The spark arrestor muffler must be cleaned every 100 hours of loader operation.



WARNING

Stop engine and allow the muffler to cool before cleaning the spark chamber. Wear safety goggles. Failure to obey can cause serious injury.

W-2011-1285

Open the rear door.

Remove the plug at the bottom of the muffler [A] or [B].



WARNING

Never use machine in atmosphere with explosive dust or gases or where exhaust can contact flammable material. Failure to obey warnings can cause injury or death.

W-2068-1285

Hold a block of wood over the outlet of the muffler.

Start the engine and run at high idle for 10 seconds.

Stop the engine and install the plug.

Close the rear door.

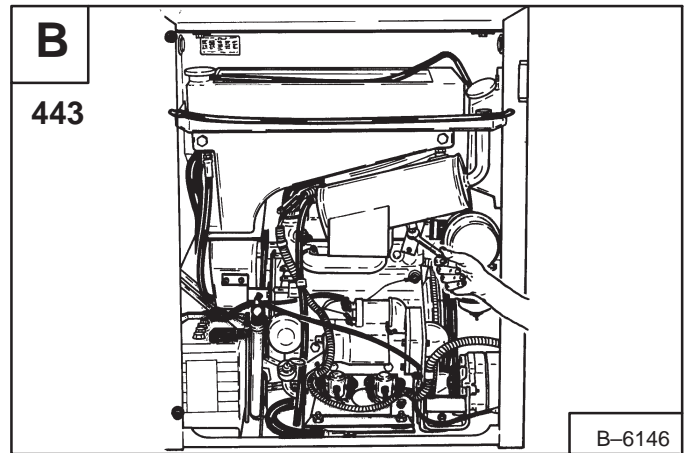
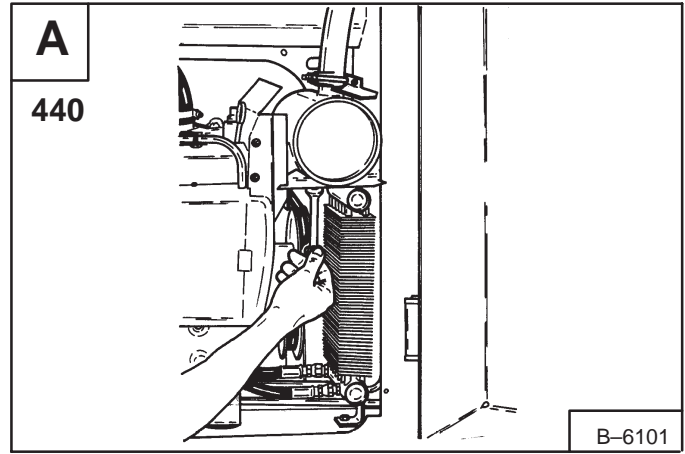
IMPORTANT

This loader is factory equipped with a U.S.D.A. Forestry Service approved spark arrestor muffler. It is necessary to do maintenance on this spark arrestor muffler to keep it in working condition. The spark arrestor muffler must be serviced by dumping the spark chamber every 100 hours of operation.

If this machine is operated on flammable forest, brush or grass covered land, it must be equipped with a spark arrestor attached to the exhaust system and maintained in working order. Failure to do so will be in violation of California State Law, Section 4442 PRC.

Make reference to local laws and regulations for spark arrestor requirements.

I-2022-1285



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