

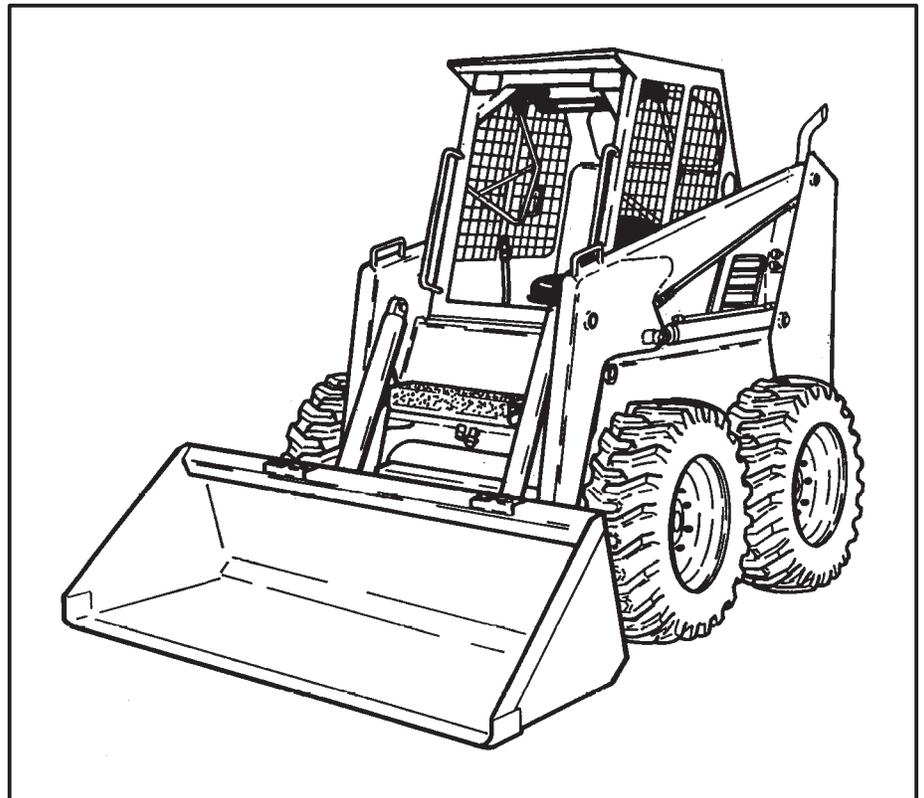


# Service Manual

9

5

3



Product: Bobcat 953 Skid Steer Loader Service Repair Workshop Manual  
Full Download: <https://www.arepairmanual.com/downloads/bobcat-953-skid-steer-loader-service-repair-workshop-manual/>

Sample of manual. Download All 342 pages at:  
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# MAINTENANCE SAFETY



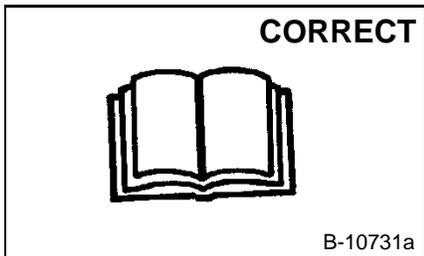
## WARNING

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.

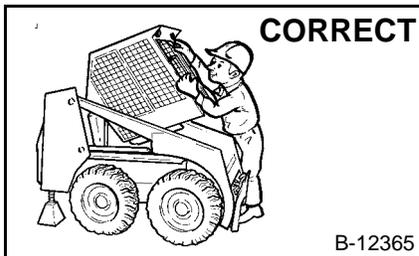
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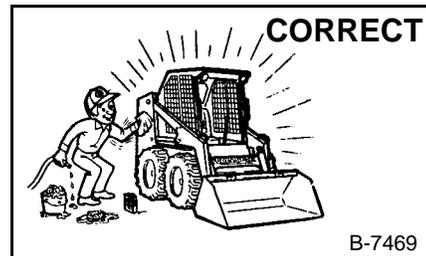
**Safety Alert Symbol:** This symbol with a warning statement, means: "Warning, be alert! Your safety is involved!" Carefully read the message that follows.



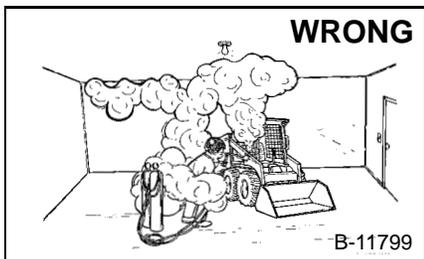
Never service the Bobcat Skid-Steer Loader without instructions.



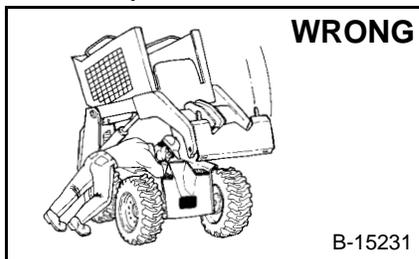
Use the correct procedure to lift or lower operator cab.



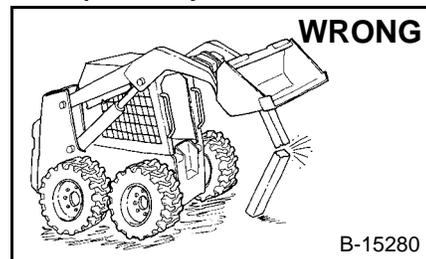
Cleaning and maintenance are required daily.



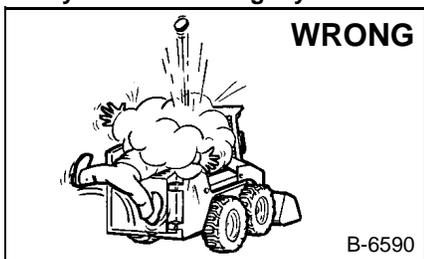
- Have good ventilation when welding or grinding painted parts.
- Wear dust mask when grinding painted parts. Toxic dust and gas can be produced.
- Avoid exhaust fume leaks which can kill without warning. Exhaust system must be tightly sealed.



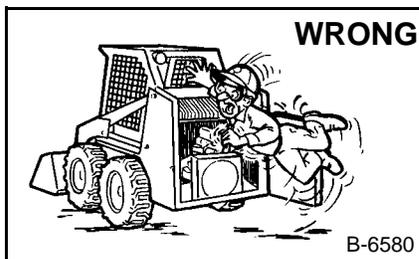
Disconnecting or loosening any hydraulic tubeline, hose, fitting, component or a part failure can cause lift arms to drop. Do not go under lift arms when raised unless supported by an approved lift arm support device. Replace it if damaged.



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



- Stop, cool and clean engine of flammable materials before checking fluids.
- Never service or adjust loader with the engine running unless instructed to do so in the manual.
- Avoid contact with leaking hydraulic fluid or diesel fuel under pressure. It can penetrate the skin or eyes.
- Never fill fuel tank with engine running, while smoking or when near open flame.



- Keep body, jewelry and clothing away from moving parts, electrical contact, hot parts and exhaust.
- Wear eye protection to guard from battery acid, compressed springs, fluids under pressure and flying debris when engines are running or tools are used. Use eye protection approved for type of welding.
- Keep rear door closed except for service. Close and latch door before operating the loader.



- Lead-acid batteries produce flammable and explosive gases.
- Keep arcs, sparks, flames and lighted tobacco away from batteries.
- Batteries contain acid which burns eyes or skin on contact. Wear protective clothing. If acid contacts body, flush well with water. For eye contact flush well and get immediate medical attention.

Maintenance procedures which are given in the Operation & Maintenance Manual can be performed by the owner/operator without any specific technical training. Maintenance procedures which are **not** in the Operation & Maintenance Manual must be performed **ONLY BY QUALIFIED BOBCAT SERVICE PERSONNEL**. Always use genuine Bobcat replacement parts. The Service Safety Training Course is available from your Bobcat dealer.



**Bobcat®**

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**PREVENTIVE  
MAINTENANCE**

**HYDRAULIC  
SYSTEM**

**HYDROSTATIC  
SYSTEM**

**DRIVE  
SYSTEM**

**MAIN  
FRAME**

**ELECTRICAL  
SYSTEM**

**ENGINE  
SERVICE**

**BICS™  
SYSTEM**

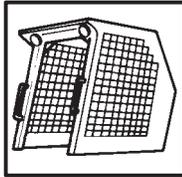
**SPECIFICATIONS**

# 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:

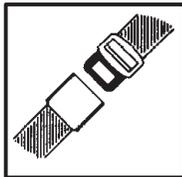
1. Check that the ROPS/FOPS (Including sidescreens) is in good condition and is not modified.



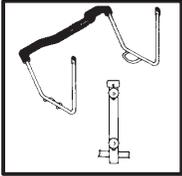
2. Check that ROPS mounting hardware is tightened and is Melroe approved.



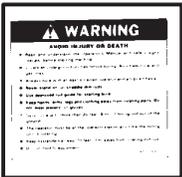
3. The seat belt must be correctly installed, functional and in good condition.



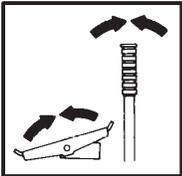
4. The seat bar and pedal interlocks must be correctly adjusted, clean and lubricated.



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.



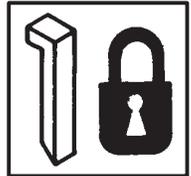
8. The parking brake must function correctly.



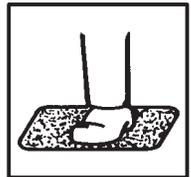
9. Enclosure door latches must open and close freely.



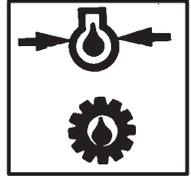
10. Bob-Tach wedges and linkages must function correctly and be in good condition.



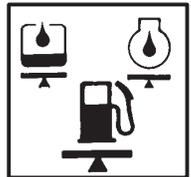
11. Safety treads must in good condition.



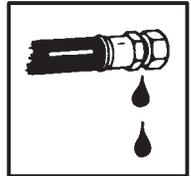
12. Check for correct function of indicator lamps (Optional on some models).



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



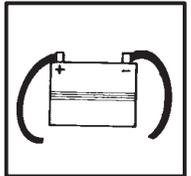
14. Inspect for fuel, oil or hydraulic fluid leaks.



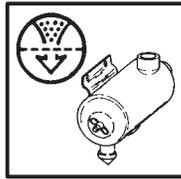
15. Lubricate the loader.



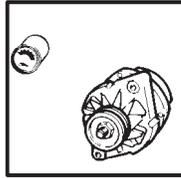
16. Check the condition of the battery and cables.



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



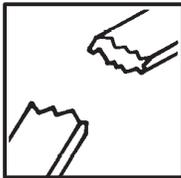
18. Check the electrical charging system.



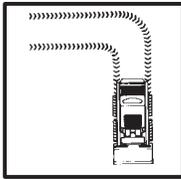
19. Check tires for wear and pressure.



20. Inspect for loose or broken parts or connections.



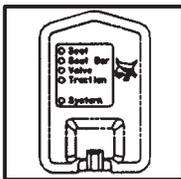
21. Operate the loader and check all functions.



22. Check for any field modification not completed.



23. Check for correct function of the Bobcat Interlock Control System (BICS™) before the machine is returned to the customer.



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





## SAFETY INSTRUCTIONS

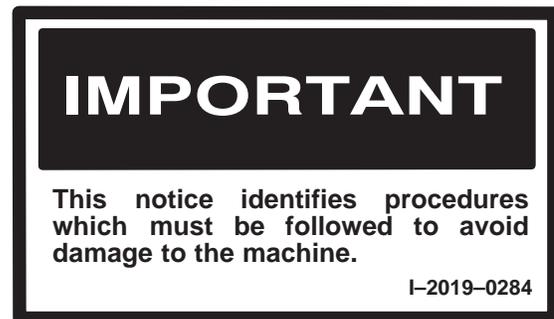
# **WARNING**

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 English edition or French, German, Italian, Dutch & Spanish editions.
- 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 dealer. This course provides information for safe and efficient operation of the Bobcat loader. The course is available in English and Spanish versions.



**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 this engine. It has 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].



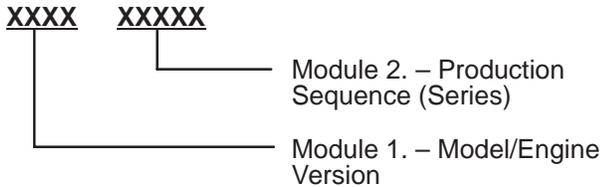
## SERIAL NUMBER LOCATIONS

Always use the serial number of the loader 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.

### LOADER SERIAL NUMBER

The loader serial number plate is located on the inside of the left upright, above the grill [A].

Explanation of loader Serial Number:

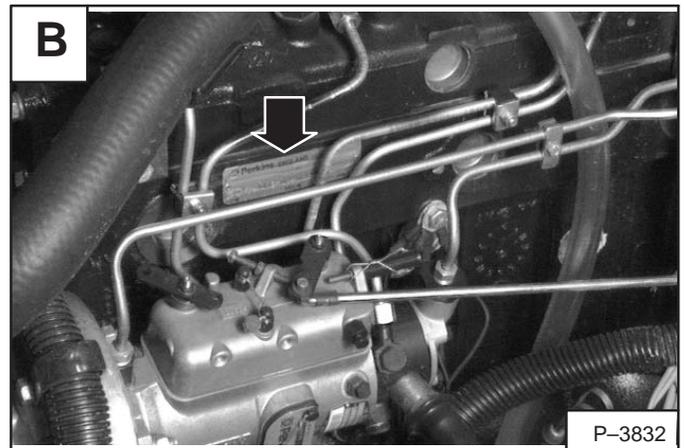
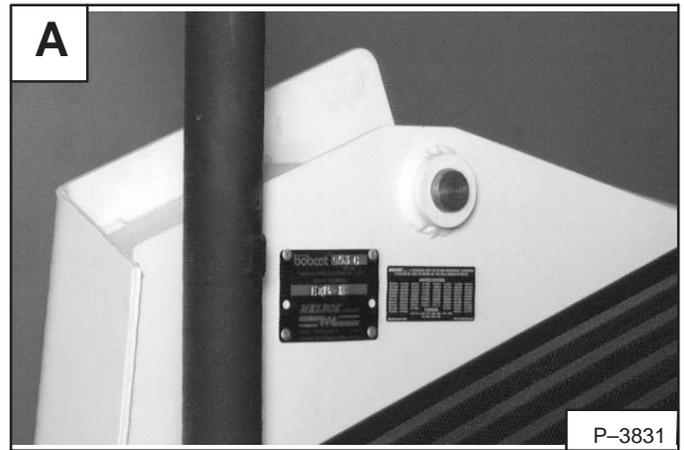


The four digit Model/Engine Combination module number identifies the model number and engine combination. This number (in parenthesis beside the model number) is used in the Service Manual to more easily identify the standard, optional and field accessory equipment included or available for each specific model.

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

### ENGINE SERIAL NUMBER

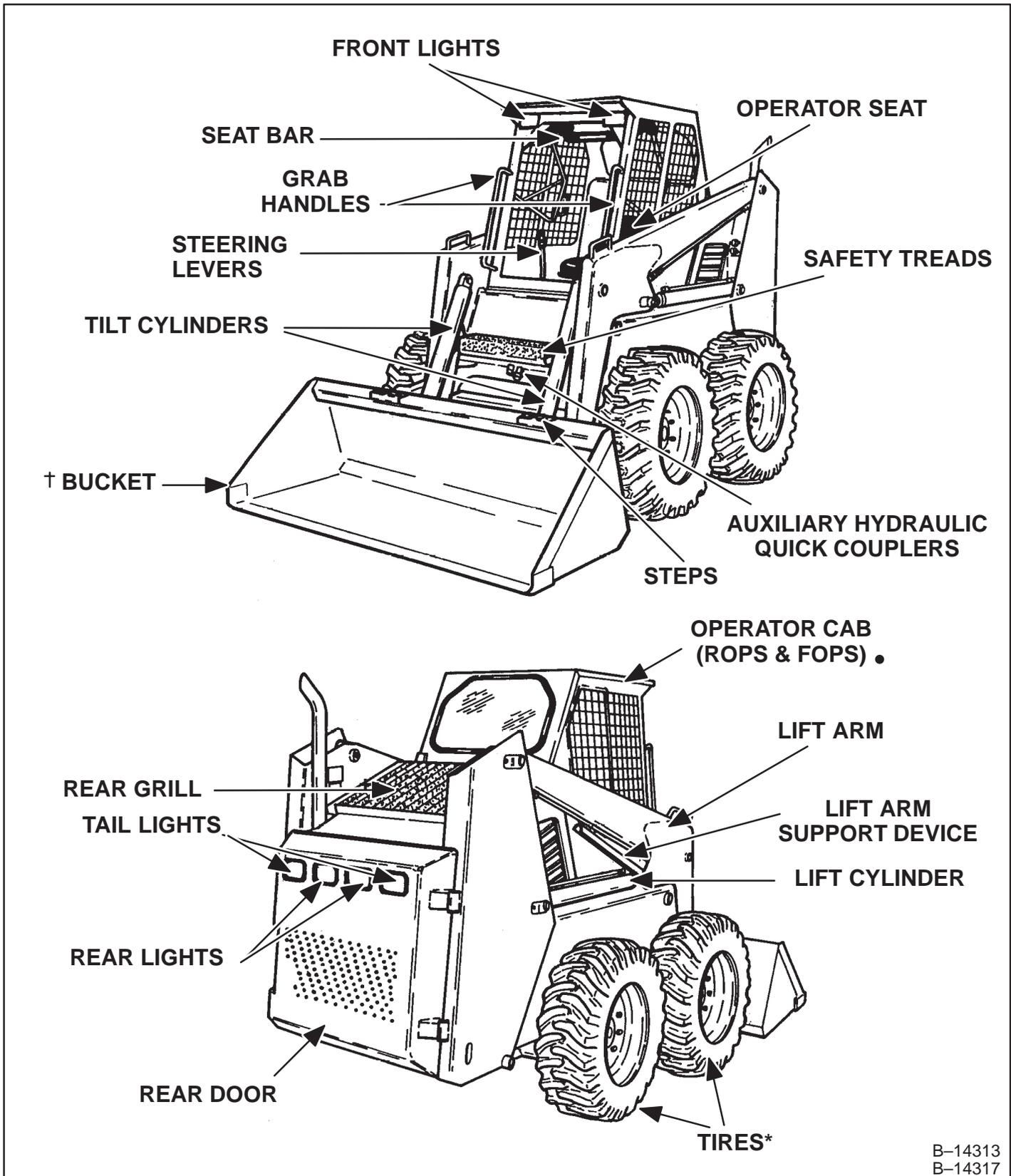
The serial number is located above the starter on the engine block [B].



### DELIVERY REPORT

The Delivery Report must be filled out by the dealer and signed by the owner or 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 [C].

## 953 BOBCAT LOADER IDENTIFICATION



B-14313  
B-14317

\* TIRES – Flotation tires (optional) are shown. The Bobcat loader is factory equipped with standard tires.

† BUCKET – Several different buckets and other attachments are available for the Bobcat loader.

● ROPS, FOPS – Roll Over Protective Structure, Falling Object Protective Structure, per SAE J1040 and ISO 3471, and Falling Object Protective Structure per SAE J1043 and ISO 3449, Level I. Level II is available. The Bobcat loader is base-equipped with a standard operator cab as shown. Extra insulated cab is available as an option (Reduced noise level).

# OPTIONS AND ACCESSORIES

All 953 Bobcat loaders are equipped with the following standard items:

|                              |   |
|------------------------------|---|
| Bob-Tach                     | Operator Cab                            |
| Spark Arrestor Muffler       | Seat Belt                               |
| Front Auxiliary Hydraulics   | Seat Bar                                |
| Hydraulic Bucket Positioning | Bobcat Interlock Control System (BICS™) |
| Parking Brake                | Gauges/Warning Lights                   |
| Top & Rear Window            | Operating Lights                        |

Below is a listing of the optional equipment which is available through your Bobcat Loader dealer.

## Tires

|                                |      |
|--------------------------------|------|
| 8:00–19.5, 8 PR .....          | Std. |
| 14:00–17.5, PR Flotation ..... | Opt. |
| 38 x 20 x 16.1, 8 PR .....     | Opt. |
| 9 x 16 Solid .....             | Opt. |

## Operator Cab

|                                   |           |
|-----------------------------------|-----------|
| Suspension Seat .....             | Opt. & FA |
| Horn .....                        | FA        |
| Heated Enclosed Cab .....         | Opt. & FA |
| Special Applications Kit .....    | FA        |
| Cab Enclosure .....               | FA        |
| Fresh Air Heater w/plumbing ..... | FA        |

## Miscellaneous

|                                  |           |
|----------------------------------|-----------|
| Catalytic Purifier Muffler ..... | Opt. & FA |
| Back-Up Alarm .....              | Opt. & FA |
| Rear Auxiliary Hydraulics .....  | Opt. & FA |
| Ether Starting Aid .....         | FA        |

Std. = Standard Equipment  
 Opt. = Factory Installed Option  
 FA = Field Accessory

***Specifications subject to  
 change without notice***



# 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.

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| SERVICE SCHEDULE                                  |   | HOURS |    |     |     |      |
|---|---|-------|----|-----|-----|------|
| ITEM  | SERVICE REQUIRED  | 8-10  | 50 | 100 | 250 | 1000 |
| Engine Oil  | Check the oil level & add oil as needed.  |       |    |     |     |      |
| Air Cleaner                                       | Check condition indicator. Service only when required.  |       |    |     |     |      |
| Engine Cooling System                             | Clean debris from oil cooler, radiator & grill. Check coolant level cold in recovery tank. Add coolant as needed.                     |       |    |     |     |      |
| Lift Arms, Cylinder, Bob-Tach Pivot Pins & Wedges | Lubricate with multi-purpose lithium based grease (14 places).  |       |    |     |     |      |
| Engine Air System                                 | Check for leaks & damaged components.   |       |    |     |     |      |
| Tires   | Check for damaged tires & correct air pressure.   |       |    |     |     |      |
| Seat Belt, Seat Bar & Pedal Interlocks            | Check the condition of seat belt. Check the seat bar & pedal interlocks for correct operation. Clean dirt & debris from moving parts. |       |    |     |     |      |
| Bobcat Interlock Control System (BICS™)           | Check BICS™ functions. Clean dirt, debris or objects from under or behind seat as required.   |       |    |     |     |      |
| Safety Signs & Safety Tread                       | Check for damaged signs (decals) & safety tread. Replace any signs or safety treads that are damaged or worn.                         |       |    |     |     |      |
| Operator Cab                                      | Check the fastening bolts, washers & nuts. Check the condition of cab. Remove debris from the pedal area through the clean-out holes. |       |    |     |     |      |
| Fuel Filter                                       | Remove the trapped water.   |       |    |     |     |      |
| Hydraulic Fluid, Hoses & Tubelines                | Check fluid level & add as needed. Check for damage & leaks. Repair & replace as needed.  |       |    |     |     |      |
| Final Drive Transmission (Chaincase)              | Check oil level.  |       |    |     |     |      |
| Battery   | Check battery for damage, hold down, cables, connections & electrolyte level. Add distilled water as needed.                          |       |    |     |     |      |
| Control Pedals & Steering                         | Check for correct operation. Repair or adjust as needed.  |       |    |     |     |      |
| Wheel Nuts  | <input type="checkbox"/> Check for loose wheel nuts & tighten to 320-350 ft.-lbs. (434-475 Nm) torque.                                |       |    |     |     |      |
| Parking Brake                                     | Check operations of the parking brake.  |       |    |     |     |      |
| Alternator Belt                                   | Check tension & adjust as needed.   |       |    |     |     |      |
| Engine Oil & Filter                               | † Replace oil & filter. Use CD or better grade oil and Melroe filter.   |       |    |     |     |      |
| Spark Arrestor Muffler                            | Clean the spark chamber.  |       |    |     |     |      |
| Engine/Hydro. Drive Belt                          | * Check gap at rod nuts.  |       |    |     |     |      |
| Fuel Filter                                       | Replace filter element & In-Line fuel filter  |       |    |     |     |      |
| Steering Shaft                                    | Grease fitting & oil the cross-shaft.   |       |    |     |     |      |
| Hyd./Hydro. Filters                               | ● Replace the filter elements.  |       |    |     |     |      |
| Hydraulic Reservoir Breather Cap                  | Replace the reservoir breather cap.   |       |    |     |     |      |
| Final Drive Transmission                          | Replace the oil in the chaincase.   |       |    |     |     |      |
| Hydraulic Reservoir/Case Drain Filter             | Replace the fluid. Replace the case drain filter.   |       |    |     |     |      |
| Bobcat Interlock Control System (BICS™)           | Check lift arm by-pass control.   |       |    |     |     |      |

- Check wheel nut torque every 8 hours for the first 24 hours.
- Also replace hydraulic/hydrostatic filter element when the transmission warning light comes ON.
- Or every 12 months.
- \* Check every 8 hours for the first 40 hours of operation.
- † First oil and filter change must occur at 50 hours; 100 hours thereafter.

Revised Feb. 97

## PREVENTIVE MAINTENANCE

### **! WARNING**

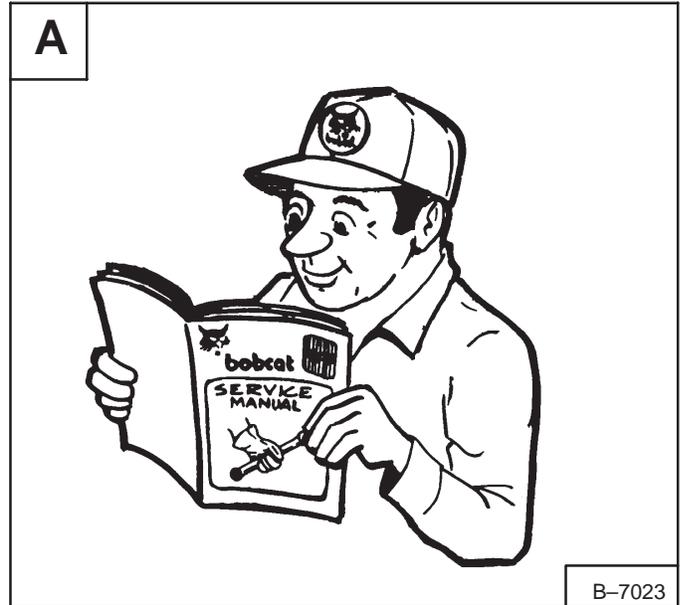
Instructions are necessary before operating or servicing machine. Read Operation & Maintenance Manuals, Handbook and signs (decals) on machine. Follow warnings and instructions in the manuals when making repairs, adjustments or servicing. Check for correct function after adjustments, repairs or service. Failure to follow instructions can cause injury or death.

W-2003-1289

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



## LIFTING AND BLOCKING THE LOADER

### Procedure

Always park the loader on a level surface.

### **! WARNING**

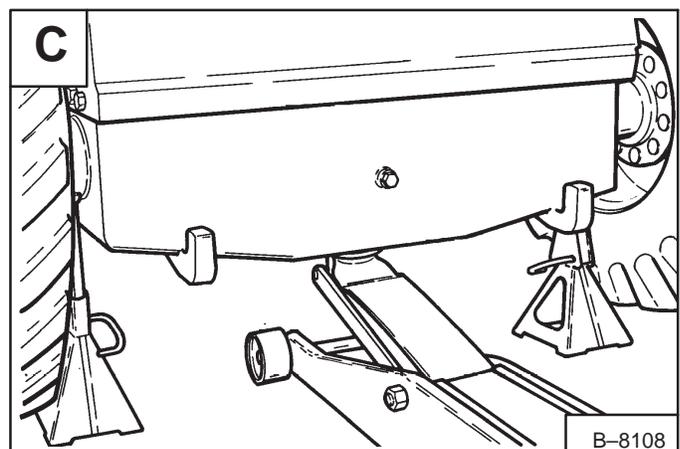
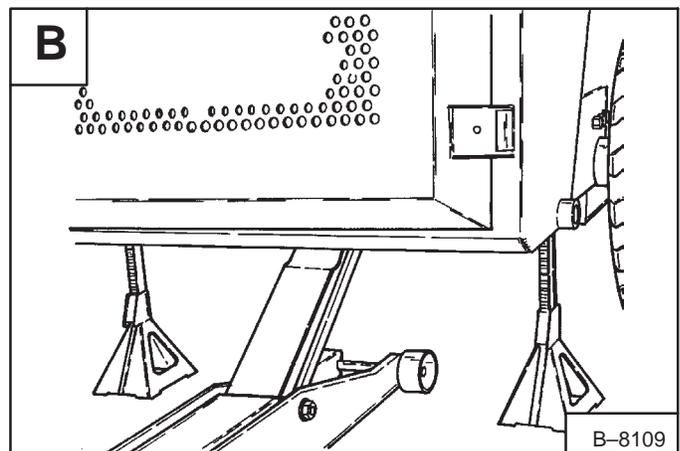
Put jackstands under the front axles and rear corners of the frame before running the engine for service. Failure to use jackstands can allow the machine to fall or move and cause injury or death.

W-2017-0286

Lower the lift arms, stop the engine. Put the floor jack under the rear of the loader. Lift the rear of the loader and install jackstands [B].

Put the floor jack under the front of the loader. Lift the front of the loader and install jackstands under the axle tubes [C].

**NOTE:** Make sure the jackstands do not touch the tires.



## TRANSPORTING THE LOADER

### Procedure

# ⚠ WARNING

Adequately designed ramps of sufficient strength are needed to support the weight of the machine when loading onto a transport vehicle. Wood ramps can break and cause personal injury.

W-2058-0494

A loader with an empty bucket or no attachment must be loaded backward onto the transport vehicle [A].

Be sure the transport and towing vehicles are of adequate size and capacity.

Use the following procedure to fasten the Bobcat loader to the transport vehicle to prevent the loader from moving during sudden stops or when going up or down slopes [B].

Lower the bucket or attachment to the floor. Stop the engine. Engage the parking brake. Install chains at the front and rear loader tie down positions (Inset [B]). Fasten each end of the chain to the transport vehicle and tighten the chain with a chain tightener.

## TOWING THE LOADER

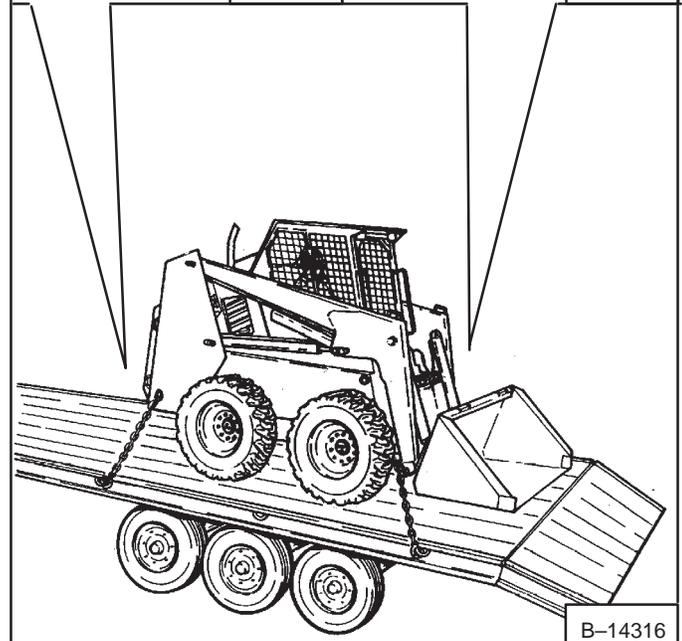
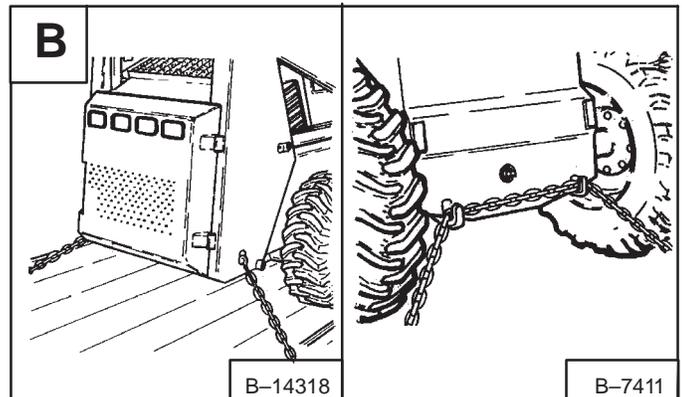
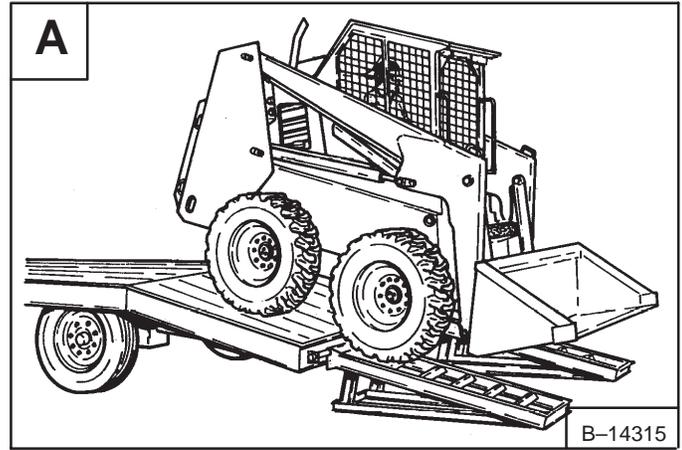
### Procedure

To prevent damage to the loader's hydrostatic system, the loader must be towed only a short distance at slow speed. (Example: Moving the loader onto a transport vehicle.)

The towing chain (or cable) must be rated at 1-1/2 times the weight of the loader. (See Specification, Page 9-1.)

- Turn the key switch to ON and press the Traction Lock Override button.
- Tow the Bobcat at 2 MPH (3,2 km/hr.) or less for not more than 25 feet (7,6 meters).

If the electrical system is not functioning part of the brake system must be disassembled to move the loader. (See Traction Lock removal and installation procedure, Page 8-1.)



## LIFT ARM SUPPORT DEVICE



# WARNING

Never work on a machine with the lift arms up unless the lift arms are secured by a lift arm support device. Failure to use an approved lift arm support device can allow the lift arms or attachment to fall and cause injury or death.

W-2059-0991

### Engaging the Lift Arm Support Device

Maintenance and service work can be done with the lift arms lowered. If the lift arms must be raised for service, use the following procedure:

Disconnect the spring (Item 1) [A] from the lift arm support device retaining pin (Item 2) [A] hold onto the support device and remove the retaining pin.

Lower the lift arm support device on top of the lift cylinder. Hook the free end of the spring to the lift arm support device so there will be no interference with the support device engagement [B].

With the operator in the seat, seat belt fastened and seat bar lowered, start the engine.

Raise the lift arms, until the lift arm support device lowers onto the lift cylinder rod [C].

Lower the lift arms slowly until the support device is held between the lift arm and the lift cylinder. Stop the engine. Raise the seat bar and foot controls until both controls lock.

Install pin (Item 1) [C] into the rear of the lift arm support device below the cylinder rod.

### Disengaging the Lift Arm Support Device

Remove the pin from the lift arm support device.

Connect the spring (Item 1) [D] from the lift arm support device to the bracket below the lift arms.

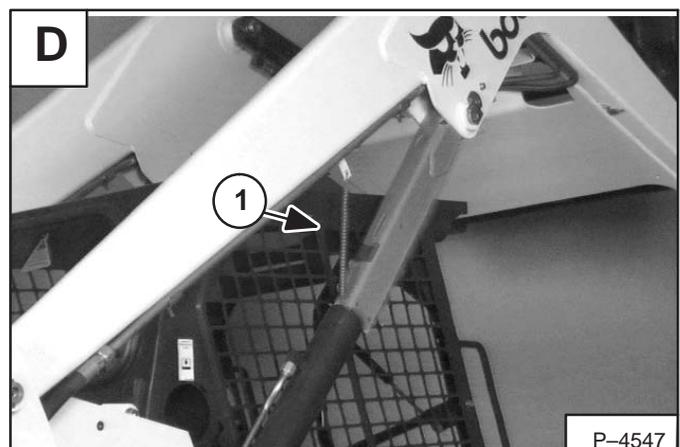
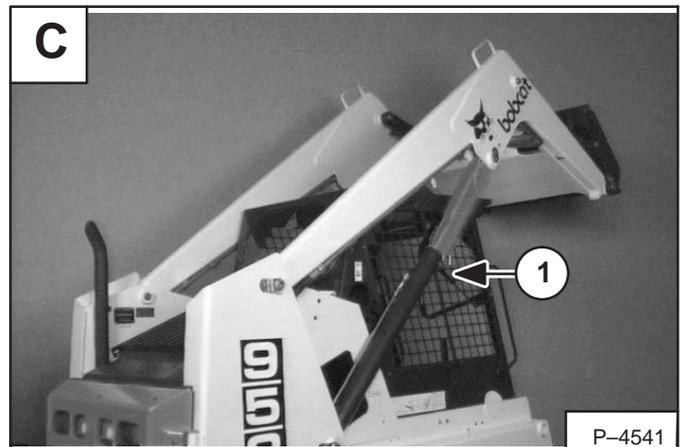
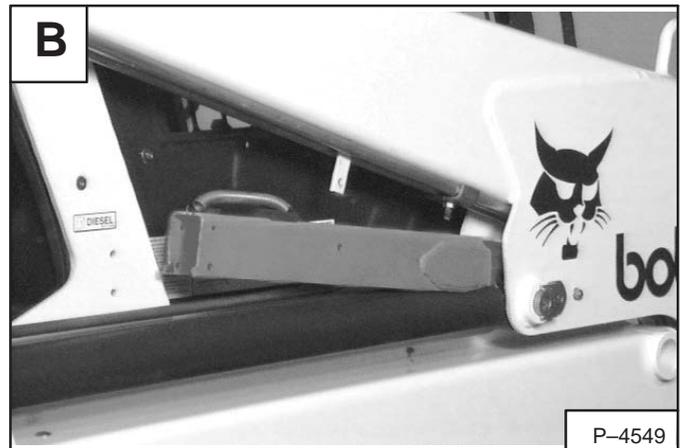
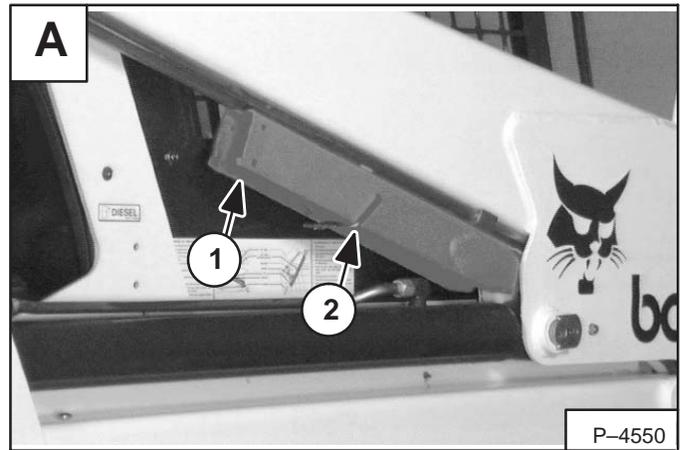
With the operator in the seat, seat belt fastened and seat bar lowered, start the engine.

Raise the lift arms a small amount and the spring will lift the support device off the lift cylinder rod. Lower the lift arms. Stop the engine.

Raise the seat bar and move foot controls until both controls lock.

Disconnect the spring from the bracket. Raise the support device into storage position and insert pin through lift arm support device and bracket [A].

Connect spring to pin [A].



## OPERATOR CAB

### Description

The Bobcat loader has an operator cab (ROPS and FOPS) as standard equipment to protect the operator from rollover and falling objects. Check with your dealer if the operator cab has been damaged. The seat belt must be worn for roll over protection.

**ROPS/FOPS** – Roll Over Protective Structure per SAE J104 and ISO 3471, and Falling Object Protective Structure per SAE J1043 and ISO 3449, Level I. Level II is available.

**Level I** – Protection from falling bricks, small concrete blocks and hand tools encountered in operations such as highway maintenance, landscaping, and other construction site services.

**Level II** – Protection from falling trees, rocks; for machines involved in site clearing, overhead demolition or forestry.

## WARNING

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

W-2069-1285

### Raising the Operator Cab

Stop the loader on a level surface. Lower the lift arms. If the lift arms must be up while raising the operator cab, install the lift arm support device. (See Page 1-6.)

## WARNING

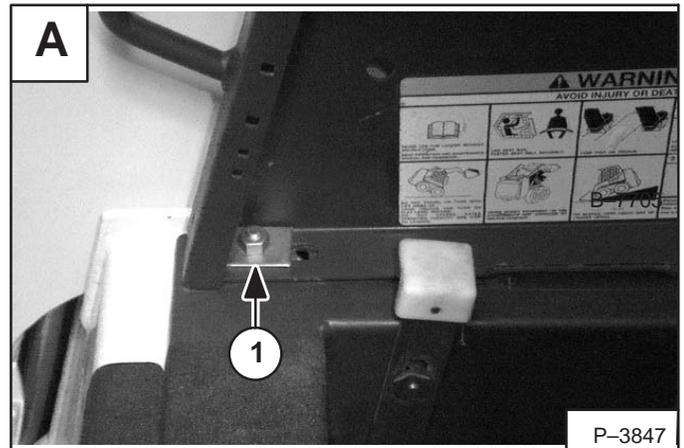
Before the cab or the lift arms are raised for service, jackstands must be put under the rear corners of the frame. Failure to use jackstands may allow the machine to tip backward causing injury or death.

W-2014-1285

Loosen the nut (Item 1) [A] (both sides) at the front corner of the operator cab.

Remove the nut and plate (both sides) [B].

Lift on the grab handle and bottom of the operator cab slowly until the cab latching mechanism engages and the cab is all the way up [C].



## OPERATOR CAB (Cont'd)

### Lowering the Operator Cab

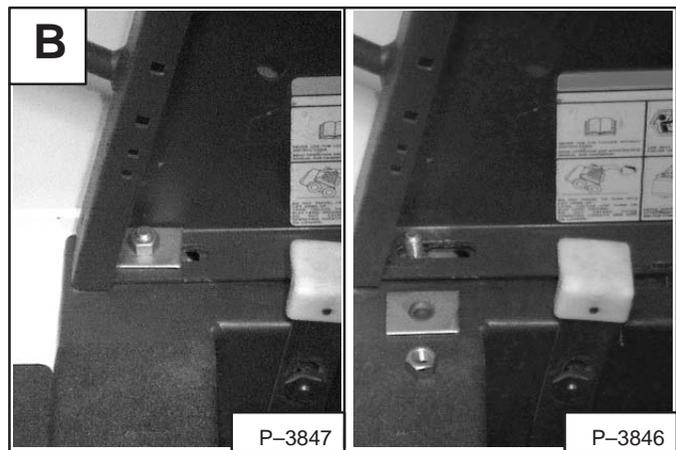
**NOTE: Make sure the seat bar is fully raised or lowered when lowering the cab.**

Pull down on the bottom of the operator cab until it stops at the latching mechanism. Release the latching mechanism and pull the cab all the way down **[A]**.



Install the plate and nut (both sides) **[B]**.

Tighten the nuts to 40–50 ft.-lbs. (54–68 Nm) torque.



### Emergency Exit

The front opening on the operator cab and rear window provide exits.

To exit through the rear window, use the following procedure:

Pull on the tag on the top of the rear window to remove the rubber cord **[C]**.



Push the rear window out of the rear of the operator cab.

Exit through the rear of the operator cab **[D]**.



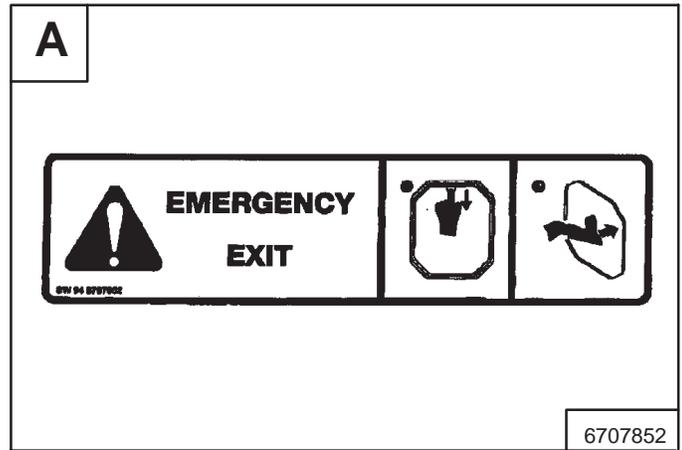
## OPERATOR CAB (Cont'd)

### Emergency Exit (Cont'd)

**NOTE: When an Operator Cab Enclosure Kit (optional) is installed, the window of the front door can be used as an emergency exit. [A]**

Pull the plastic loop at the top of the window in the front door.

Push the window out with your foot.



## SEAT BAR RESTRAINT SYSTEM

### Description

The seat bar restraint system has a pivoting seat bar with arm rests and has spring loaded interlocks for the lift and tilt control pedals. The operator controls the use of the seat bar. The seat bar in the down position helps to keep the operator in the seat. The interlocks require the operator to lower the seat bar in order to operate the foot pedal controls. When the seat bar is up, the lift and tilt pedals are locked when returned to the neutral position.

### Seat Bar Inspection

Sit in the seat and fasten the seat belt. Engage the parking brake. Pull the seat bar all the way down. Start the engine. Operate each foot pedal to check both the lift and tilt functions. Raise the lift arms until the bucket is about 2 feet (600 mm) off the ground.

Raise the seat bar. Try to move each foot pedal. Pedals must be firmly locked in neutral position. There must be no motion of the lift arms or tilt (bucket) when the pedals are pushed.

Pull the seat bar down, lower the lift arms. Operate the lift pedals. While the lift arms are going up, raise the seat bar and the lift arms should stop.

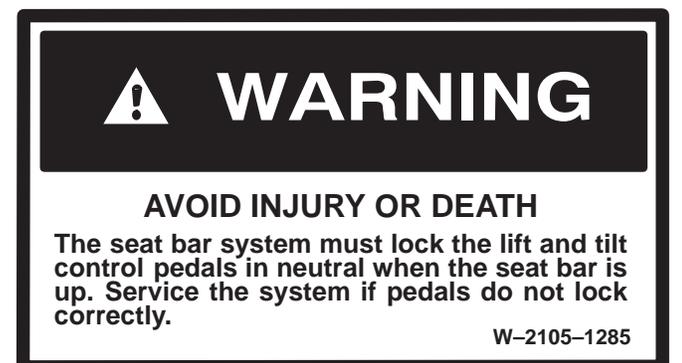
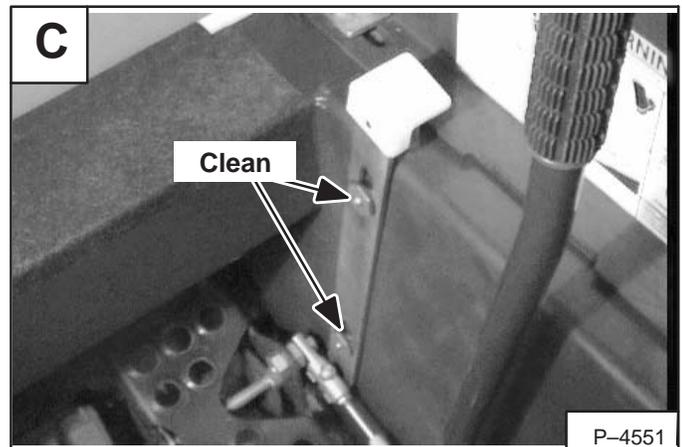
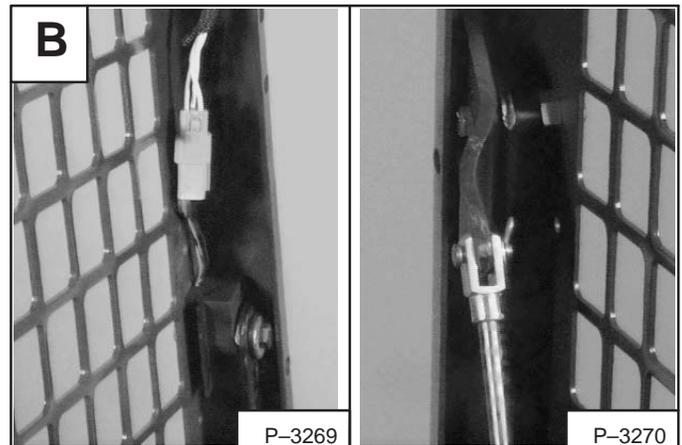
Lower the seat bar, lower the lift arms and place the bucket flat on the ground. Stop the engine. Raise the seat bar and operate the foot pedals to be sure that the pedals are firmly locked in the neutral position. Unbuckle the seat belt.

### Seat Bar Maintenance

See the Service Schedule Page 1–3 and on the loader for correct service interval.

Clean any debris or dirt from the moving parts [B] & [C]. Inspect the linkage bolts and nuts for tightness. The correct torque is 25–28 ft.-lbs. (34–38 Nm).

If the seat bar system does not function correctly, check for free movement of each linkage part. Check for excessive wear. Adjust pedal control linkage. Replace parts that are worn or damaged. Use only genuine Melroe replacement parts.



## REAR DOOR

### Opening the Rear Door

# ! 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

Pull up on the door latch [A] and turn it to open the rear door [B].

**NOTE:** If a rear scarifier attachment is installed, prevent damage to the rear door by making sure the rear door is closed and the latch pin lock is installed before the rear scarifier is raised during loader operation.

# ! WARNING

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

W-2020-1285

### Adjusting the Rear Door Latch

Loosen the set screw (Item 1) [C]. Loosen the nut (Item 1) [D].

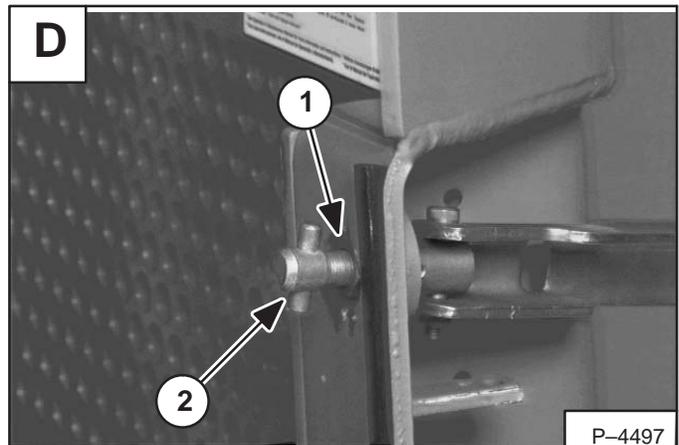
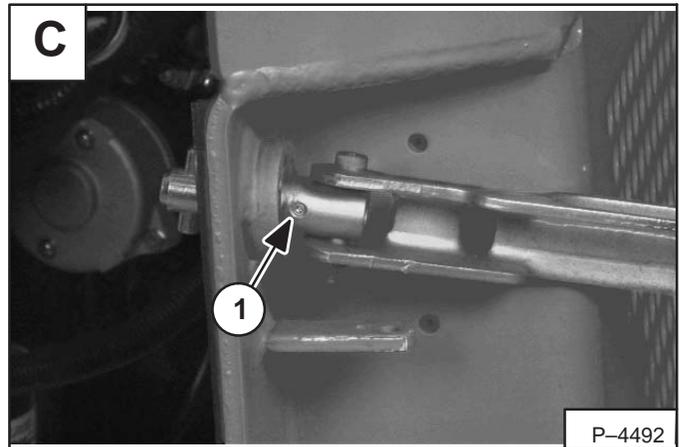
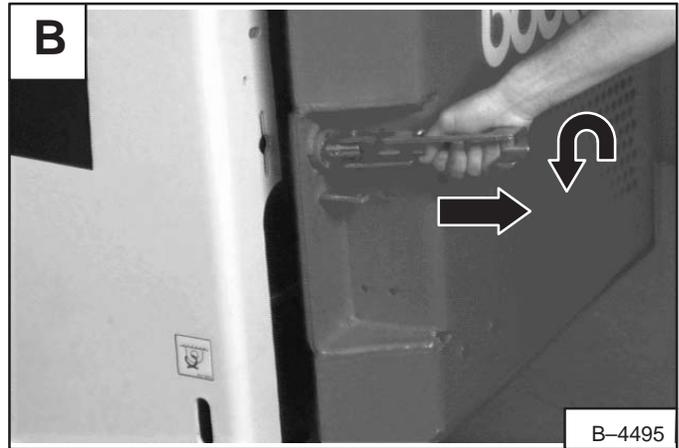
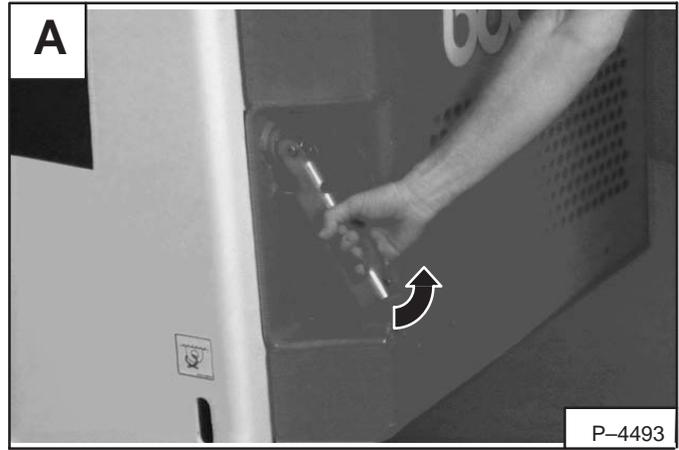
Turn the bolt (Item 2) [D] in or out until the door contacts both the top and the bottom of the loader frame with the lever in the latched position.

**NOTE:** It takes approximately 50 lbs. (20 kg) of force to push the lever down when the latch is correctly adjusted.

With the set screw up, the flanges on the bolt must be to the side so that the set screw aligns with the flat surface of the bolt.

Tighten the set screw (Item 1) [C].

Tighten the nut (Item 1) [D] to 65–70 ft.-lbs. (88–95 Nm) torque.



## AIR CLEANER SERVICE

### Replacing Filter Element

See the Service Schedule Page 1–3 for the interval to service the air cleaner system.

Check the air intake hoses for wear. If the air cleaner is damaged, check all the connections.

Replace the large (outer) filter element when the restriction indicator reads more than 22 inch H<sub>2</sub>O (Item 1) [A].

Replace the inner filter every third time the outer filter is replaced or when the restriction indicator reads 15 inch H<sub>2</sub>O at full engine RPM after the outer filter has been replaced.

Use the following procedure to replace the filter element(s):

**NOTE:** Before replacing the filter element, push the button (Item 2) [A] on the restriction indicator and start the engine. Run at full RPM. If readings are less than 22 inch H<sub>2</sub>O do not replace the filter elements.

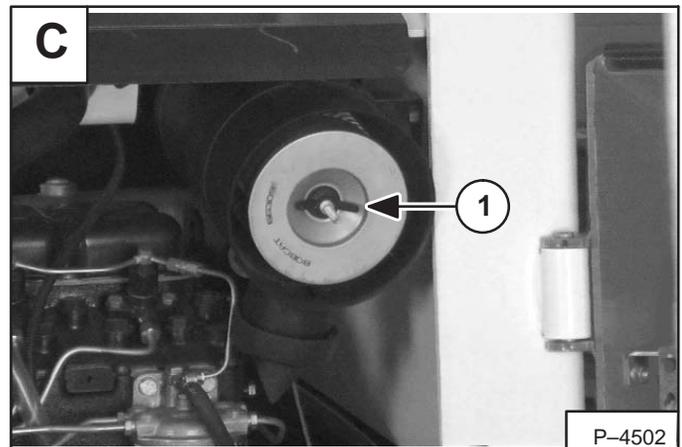
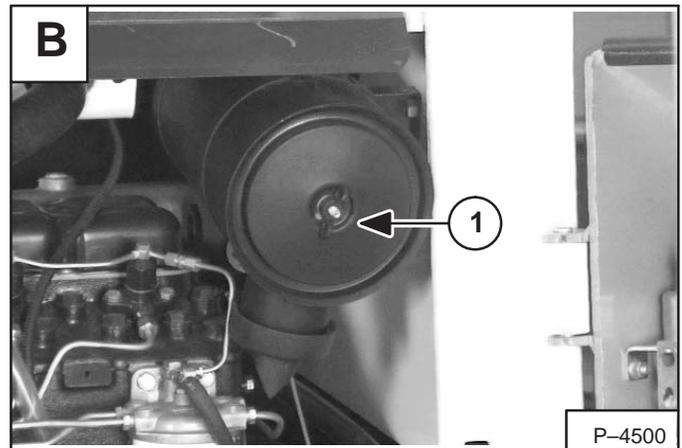
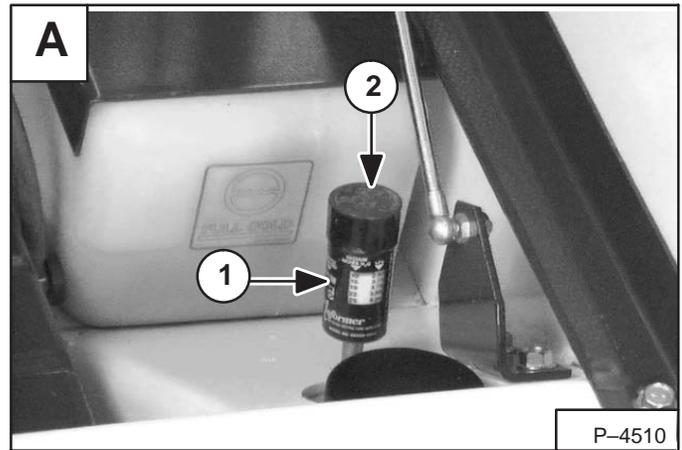
Stop the engine and open the rear door. Raise the rear grill.

Service the air cleaner as follows:

Remove the dust cover wing nut (Item 1) [B].

Remove the dust cover [B].

Remove the wing nut (Item 1) [C] at the large filter element.



## AIR CLEANER SERVICE (Cont'd)

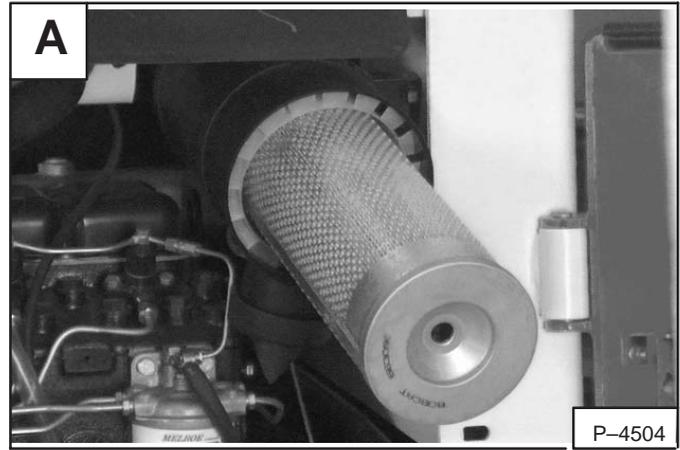
### Replacing Filter Element (Cont'd)

Remove the large filter element [A].

**NOTE: Make sure all sealing surfaces are free of dirt and debris.**

Install the new filter element and tighten the wing nut.

Install the dust cover and tighten the wing nut.



Only replace the inner filter element (Item 1) [B] under the following conditions:

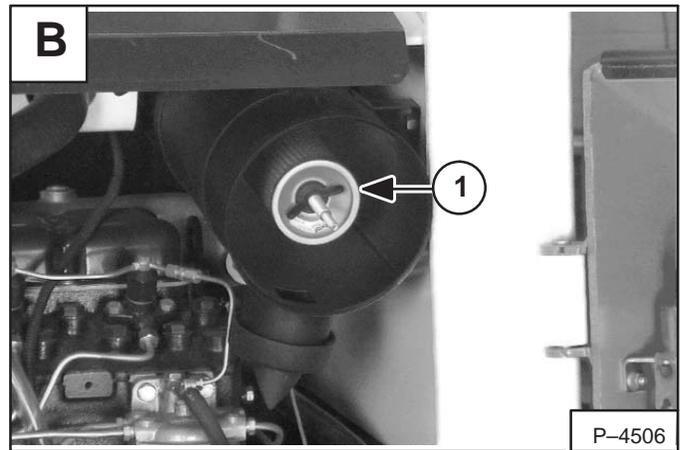
Replace the inner filter element every third time the outer filter is replaced.

When the restriction indicator reads 15 inch H<sub>2</sub>O at full engine RPM, only after the outer filter element has been replaced.

Remove the inner filter (Item 1) [B] wing nut.

Remove the inner filter.

Install a new filter element and tighten the wing nut.



## FUEL SYSTEM

### Fuel Specifications

Use only clean, high quality diesel fuel, Grade No. 1 or Grade No. 2 .

The following is one suggested blending guideline which should prevent fuel gelling problems:

| Temp. F° (C°)       | No. 2 | No.1 |
|---------------------|-------|------|
| +15°(9°)            | 100%  | 0%   |
| Down to -20° (-29°) | 50%   | 50%  |
| Below -20° (29°)    | 0%    | 100% |

We recommend an operator contact their fuel supplier for local recommendations.

### Filling the Fuel Tank

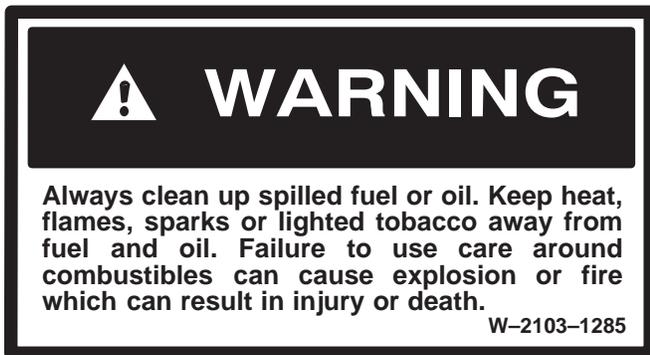


Remove the fuel fill cap (Item 1) [A].

Use a clean, approved safety container to add fuel of the correct specifications. Add fuel only in an area that has free movement of air and no open flames or sparks. **NO SMOKING!** [B].

Install and tighten the fuel fill cap [A].

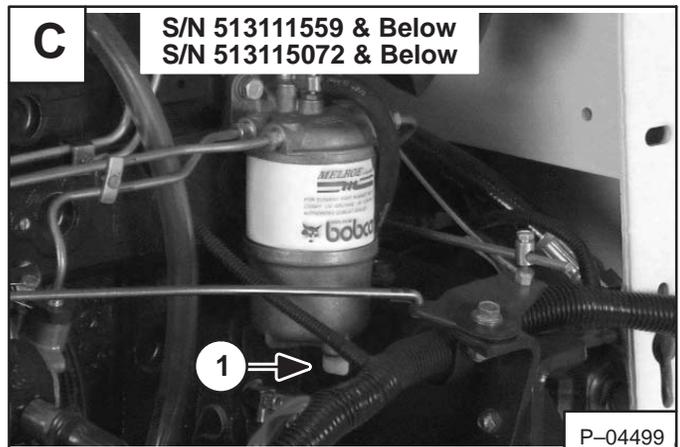
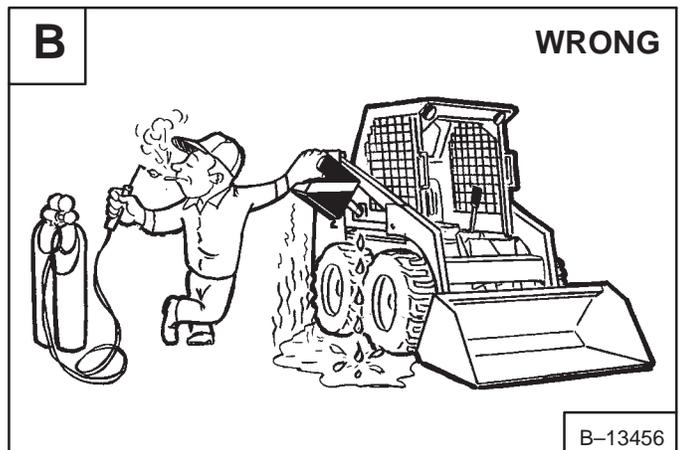
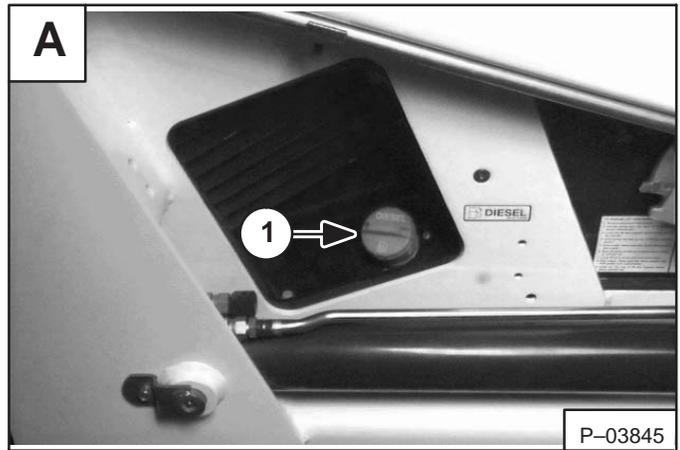
### Fuel Filter



See the Service Schedule Page 1-3 for the service interval when to remove the water from the fuel filter.

Loosen the drain plug (Item 1) [C] or [D] at the bottom of the filter element to drain any water from the filter.

Tighten the drain plug.



## FUEL SYSTEM (Cont'd)

### In-Line Fuel Filter

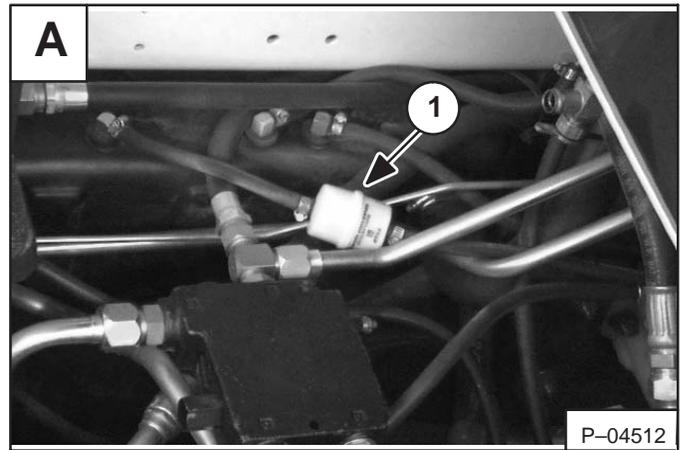
See the Service Schedule Page 1-3 for the correct service interval.

The In-Line fuel filter (Item 1) **[A]** is located at the fuel tank.

To replace the In-Line fuel filter, raise the operator cab. (See Page 1-7.)

Loosen the hose clamps.

Remove the in-line fuel filter and replace with a new filter.



## ENGINE LUBRICATION SYSTEM

### Checking Engine Oil

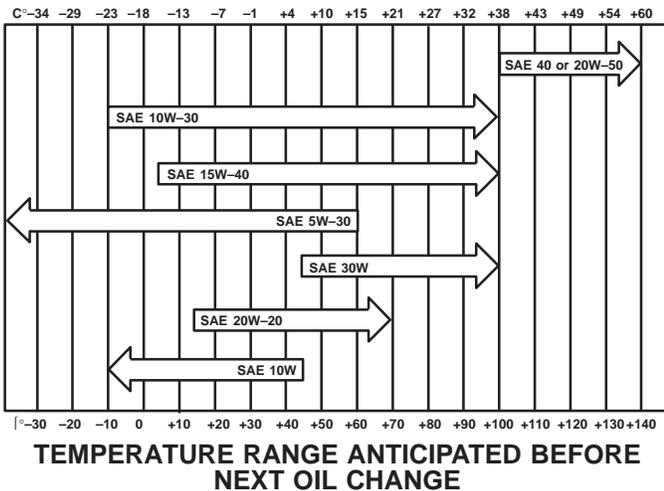
Check the engine oil level every day.

Remove the dipstick (Item 1) [A].

Keep the oil level between the marks on the dipstick [B].

Use a good quality motor oil that meets API Service Classification of CD, CE or better.

### RECOMMENDED SAE VISCOSITY NUMBER (LUBRICATION OILS FOR ENGINE CRANKCASE)



### Replacing of Oil and Filter

See the Service Schedule Page 1-3 for the service interval for replacing the engine oil and filter.

Run the engine until it is at operating temperature. Stop the engine.

Open the rear door. Remove the drain plug (Item 1) [C]. Drain the oil into a container.

Remove the oil filter (Item 1) [D].

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

Install and tighten the drain plug.

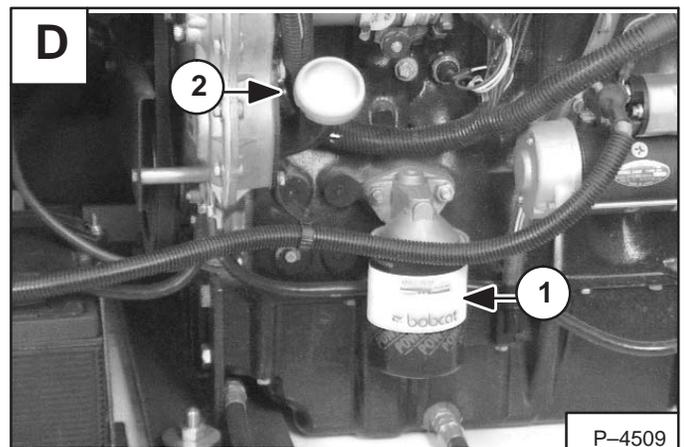
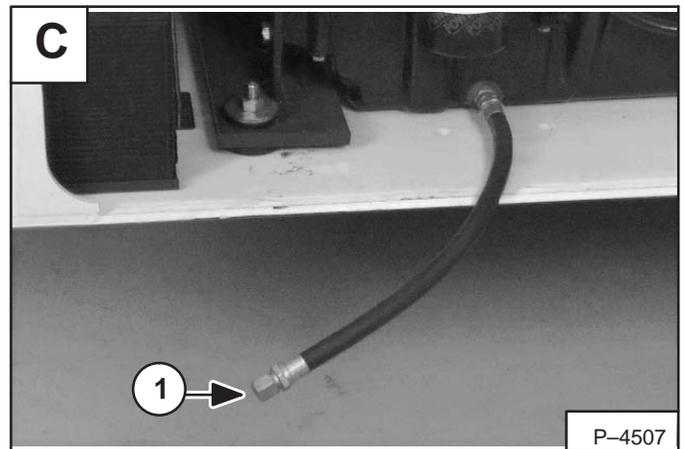
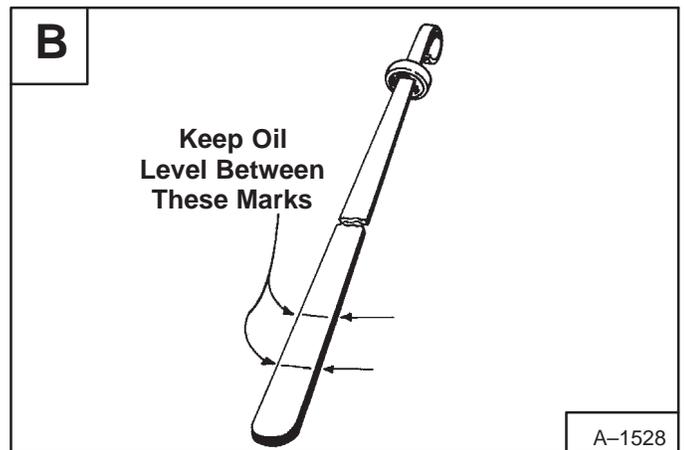
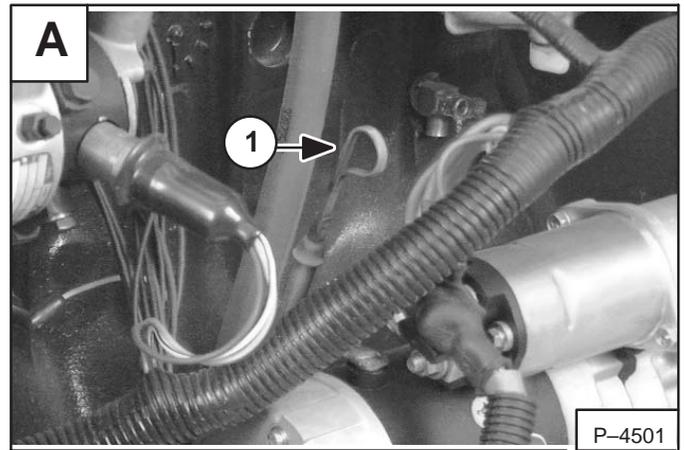
Remove the filler cap (Item 2) [D] from the oil fill tube.

Put 7.0 qts. (6,6 L) of oil in the engine. (See Oil Chart.)

Start the engine and let it run for several minutes. Stop the engine.

Check for leaks at the oil filter and check the oil level.

Add oil as needed if it is not at the top mark on the dipstick.



## ENGINE COOLING SYSTEM

### Checking the Coolant Level

Check the cooling system every day to prevent over-heating, loss of performance or engine damage.



## 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

Open the rear door. Raise the rear grill.

Check the coolant level in the coolant recovery tank (Item 1) [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  $-34^{\circ}\text{F}$  ( $-37^{\circ}\text{C}$ ) freeze protection.

Use a refractometer or coolant test strips (P/N 6724274) to check the condition of propylene glycol in your cooling system.

Never mix propylene glycol with ethylene glycol.

### Cleaning the Cooling System

Raise the rear grill [A].

Use air pressure or water pressure to clean the top of the oil cooler [A].

Raise the oil cooler and clean the top of the radiator [B].

Check cooling system for leaks.

