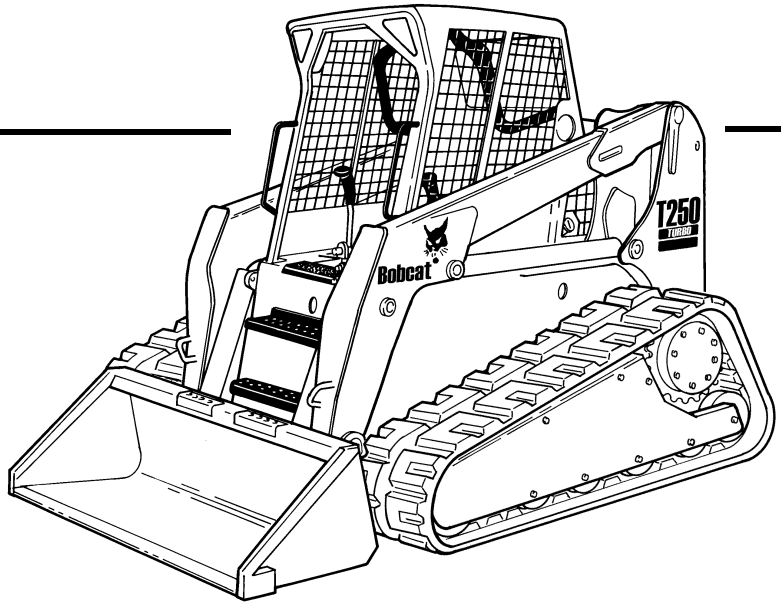
T250
TURBO

T250
TURBO
HIGH FLOW

Bobcat®

Service Manual

S/N 523111001 & Above
S/N 523011001 & Above

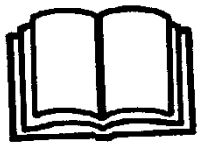


MAINTENANCE SAFETY

WARNING

Instructions are necessary before operating or servicing machine. Read and understand the Operation & Maintenance Manual, Operator's Handbook and signs (decals) on machine. Follow warnings and instructions in the manuals when making repairs, adjustments or servicing. Check for correct function after adjustments, repairs or service. Untrained operators and failure to follow instructions can cause injury or death. W-2003-0903

CORRECT



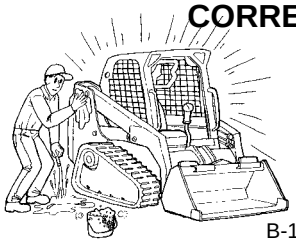
B-10731a

CORRECT

B-15659

Use the correct procedure to lift or lower operator cab.

CORRECT



B-15660

Cleaning and maintenance are required daily.

WRONG

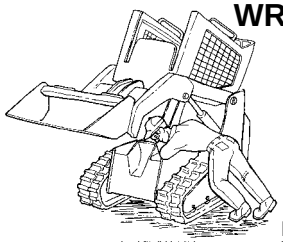
B-15664

Have good ventilation when welding or grinding painted parts.

Wear dust mask when grinding painted parts. Toxic dust and gas can be produced.

Avoid exhaust fume leaks which can kill without warning. Exhaust system must be tightly sealed.

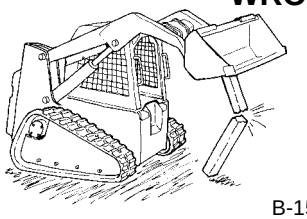
WRONG



B-15661

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.

WRONG

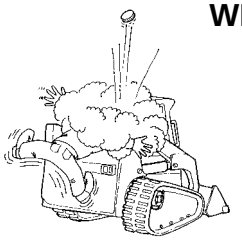


B-15662

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.

WRONG



B-15665

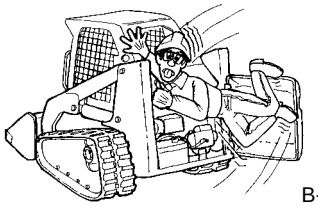
Stop, cool and clean engine of flammable materials before checking fluids.

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.

WRONG



B-15663

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.

WRONG

B-6589

Lead-acid batteries produce flammable and explosive gases.

Keep arcs, sparks, flames and lighted tobacco away from batteries.

Batteries contain acid which burns eyes or skin on contact. Wear protective clothing. If acid contacts body, flush well with water. For eye contact flush well and get immediate medical attention.

MSW09-0805

ALPHABETICAL INDEX

ALPHABETICAL INDEX (CONT'D)

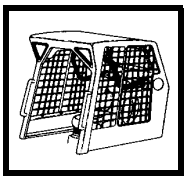
CONTENTS

FOREWORD

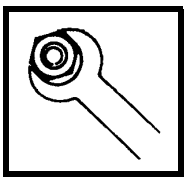
This manual is for the Bobcat loader mechanic. It provides necessary servicing and adjustment procedures for the Bobcat loader and its component parts and systems. Refer to the Operation & Maintenance Manual for operating instructions, starting procedure, daily checks, etc.

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

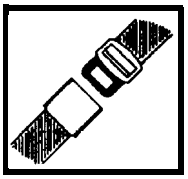
1. Check that the ROPS/FOPS (Including side screens) is in good condition and is not modified.



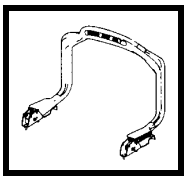
2. Check that ROPS mounting hardware is tightened and is Bobcat approved.



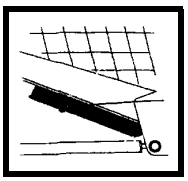
3. The seat belt must be correctly installed, functional and in good condition.



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

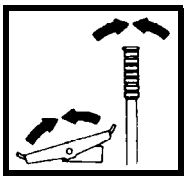


5. Check lift arm support device, replace if damaged.



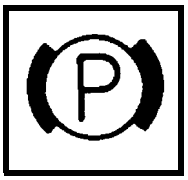
6. Machine signs must be legible and in the correct location.

7. Steering levers and foot pedals must return to neutral.

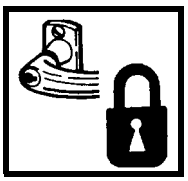


8. Check for correct function of the work lights

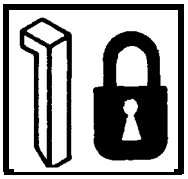
9. The parking brake must function correctly.



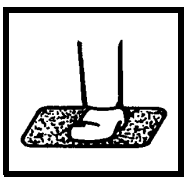
10. Enclosure door latches must open and close freely.



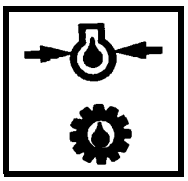
11. Bob-Tach wedges and linkages must function correctly and be in good condition.



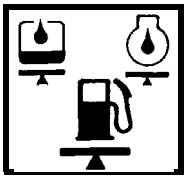
12. Safety treads must be in good condition.



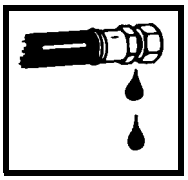
13. Check for correct function of indicator lamps (Optional on some models).



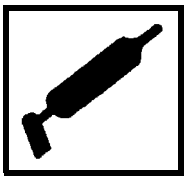
14. Check hydraulic fluid level, engine oil level and fuel supply.



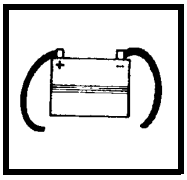
15. Inspect for fuel, oil or hydraulic fluid leaks.



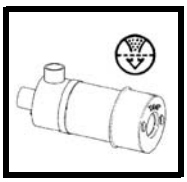
16. Lubricate the loader.



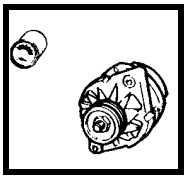
17. Check the condition of the battery and cables.



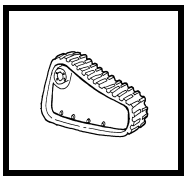
18. Inspect the air cleaner for damage or leaks. Check the condition of the element.



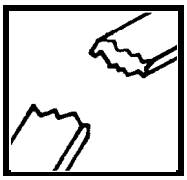
19. Check the electrical charging system.



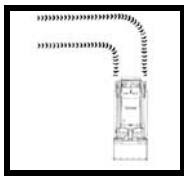
20. Check tracks for wear and tension.



21. Inspect for loose or broken parts or connections.

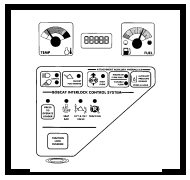


22. Operate the loader and check all functions.

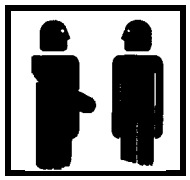


23. Check for any field modification not completed.

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



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



SAFETY INSTRUCTIONS (CONT'D)

Fire Prevention

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

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

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

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

- The operator cab, engine compartment, and engine cooling system must be inspected every day and cleaned if necessary to prevent fire hazard and overheating.

- Check all electrical wiring and connections for damage. Keep the battery terminals clean and tight. Repair or replace any damaged part.

- Check fuel and hydraulic tubes, hoses and fittings for damage and leakage. Never use open flame or bare skin to check for leaks. Tighten or replace any parts that show leakage. Always clean fluid spills. Do not use gasoline or diesel fuel for cleaning parts. Use commercial nonflammable solvents.

- Do not use ether or starting fluids on any engine which has glow plugs. These starting aids can cause explosion and injure you or bystanders.

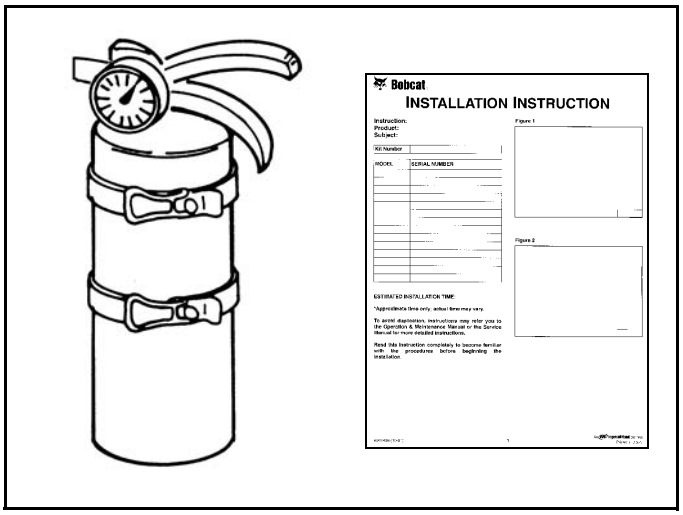
- Always clean the machine, disconnect the battery, and disconnect the wiring from the controllers before welding. Cover rubber hoses, battery and all other flammable parts. Keep a fire extinguisher near the machine when welding. Have good ventilation when grinding or welding painted parts. Wear a dust mask when grinding painted parts. Toxic dust or gas can be produced.

- Stop the engine and let it cool before adding fuel. NO SMOKING!

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

- Use the procedure in the Operation & Maintenance Manual for cleaning the spark arrestor muffler (if equipped).

Figure 1



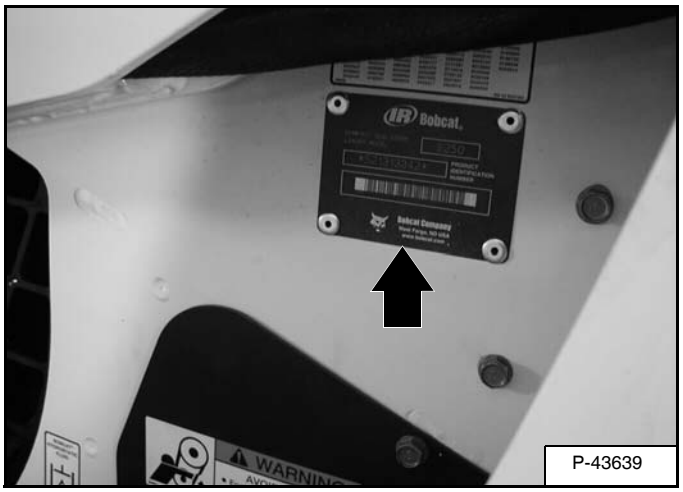
- Know where fire extinguishers and first aid kits are located and how to use them. Fire extinguishers are available from your Bobcat dealer **[Figure 1]**.

SERIAL NUMBER LOCATION

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

Figure 2



The loader serial number plate is located on the outside of the loader frame **[Figure 2]**.

Explanation of loader Serial Number:

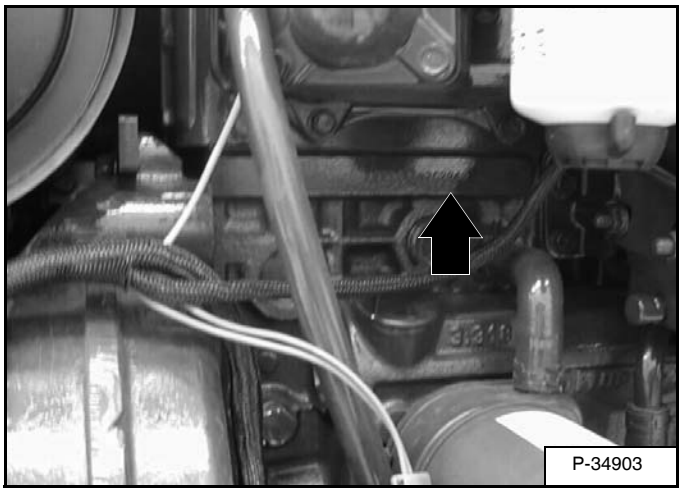
XXXX	XXXXX
Model 1.-Model/ Engine Combination	Model 2.-Production Sequence (Series)

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

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

Engine Serial Number

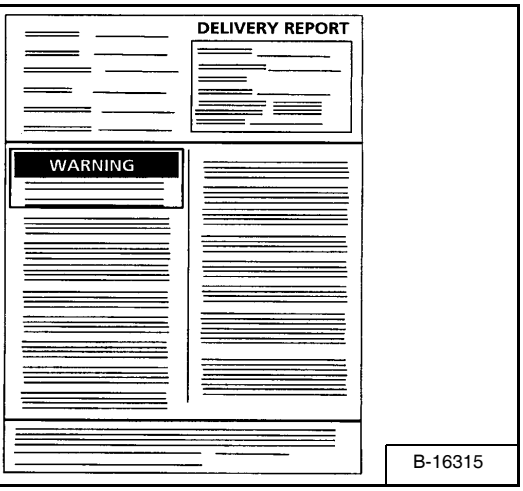
Figure 3



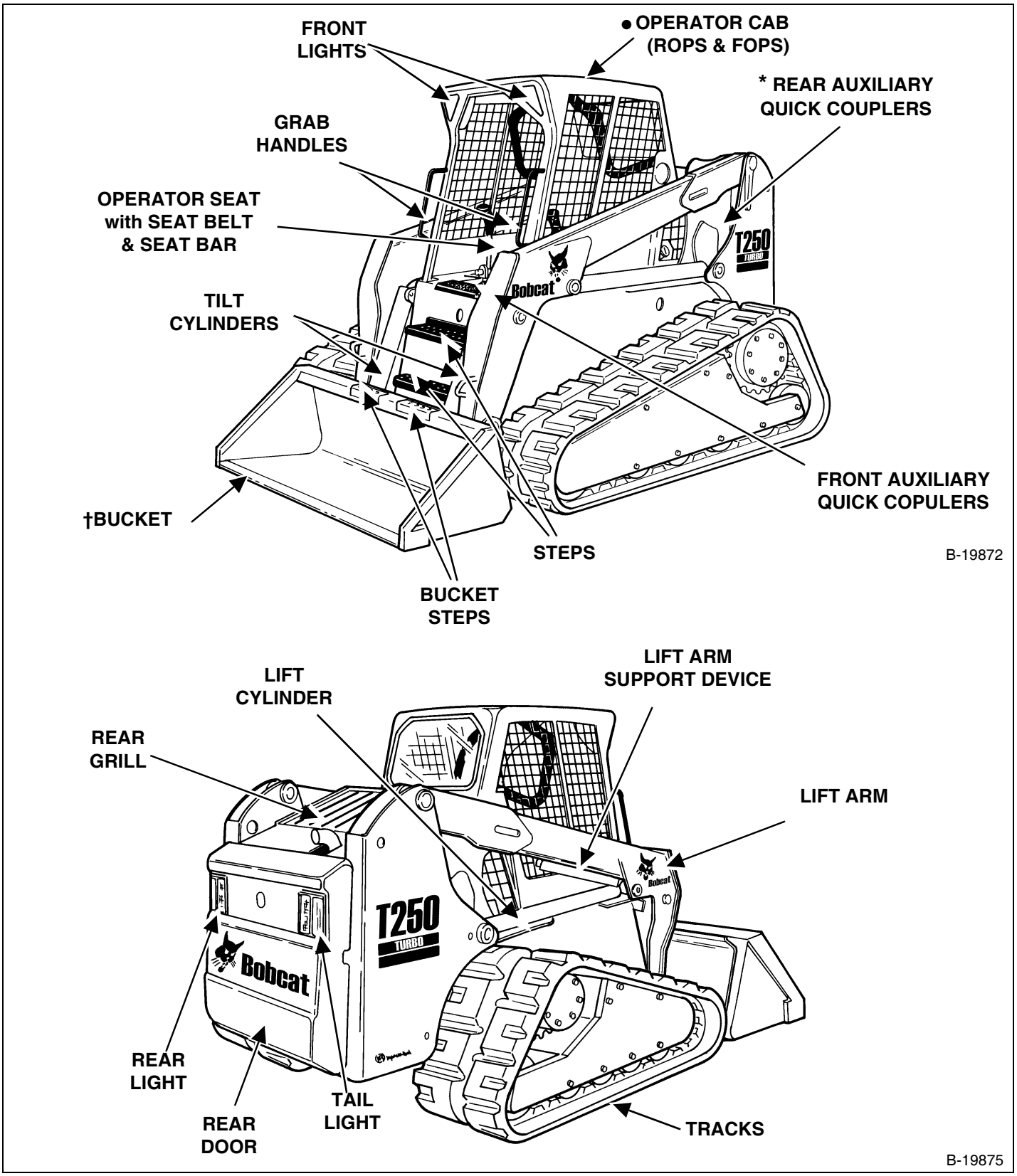
The engine serial number is located on the engine block **[Figure 3]**.

DELIVERY REPORT

Figure 4



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 **[Figure 4]**.



* Option or Field Accessory

† Many buckets and other attachments are available.

● ROPS, FOPS - Roll Over Protective Structure per SAE J1040 and ISO 3471, and Falling Object Protective Structure per SAE 1043 and ISO 3449, Level I. Level II is available.

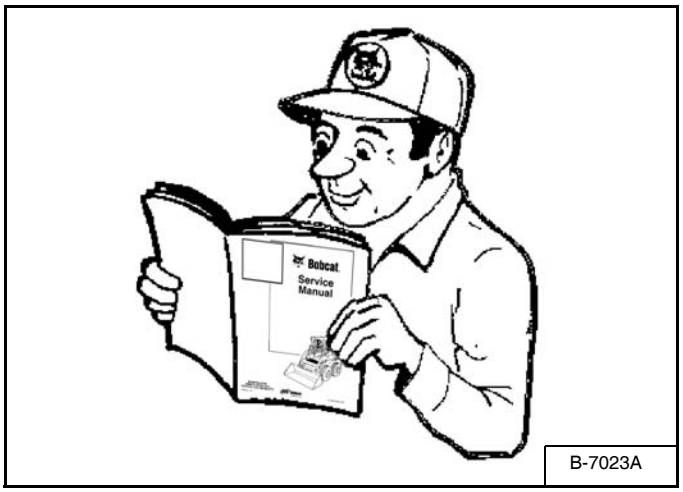
SAFETY AND MAINTENANCE

Continued On Next Page

LIFTING AND BLOCKING THE LOADER

Procedure

Figure 10-10-1



⚠ WARNING

Instructions are necessary before operating or servicing machine. Read and understand the 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. Untrained operators and failure to follow instructions can cause injury or death.

W-2003-0199

Read the Removal & Installation, Disassembly & Assembly, etc. completely to become familiar with the procedure before beginning **[Figure 10-10-1]**.

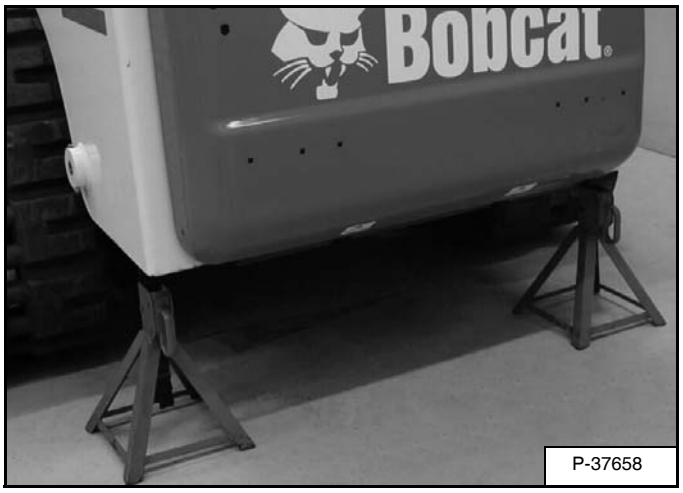
Always park the loader on a level surface.

⚠ 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.

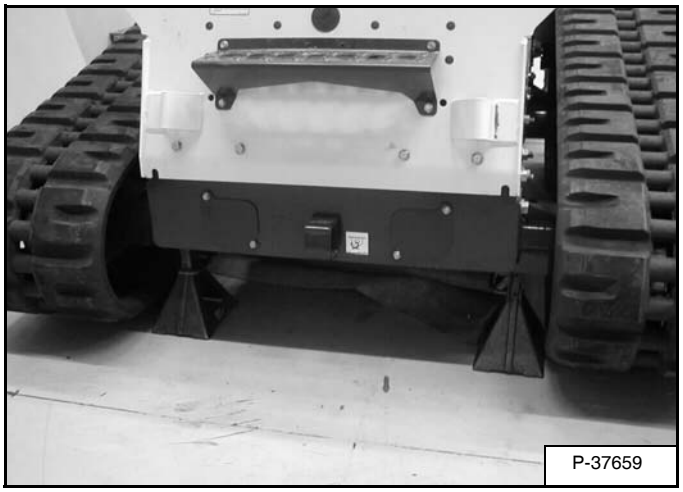
W-2017-0286

Figure 10-10-2



Lift the rear of the loader and install jackstands **[Figure 10-10-2]**.

Figure 10-10-3



Lift the front of the loader and put jackstands under the axle tubes **[Figure 10-10-3]**.

NOTE: Make sure the jackstands do not touch the tracks.

LIFT ARM SUPPORT DEVICE

Engaging The Lift Arm Support Device

⚠ WARNING

Never work on a machine with the lift arms up unless the lift arms are secured by an approved 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.

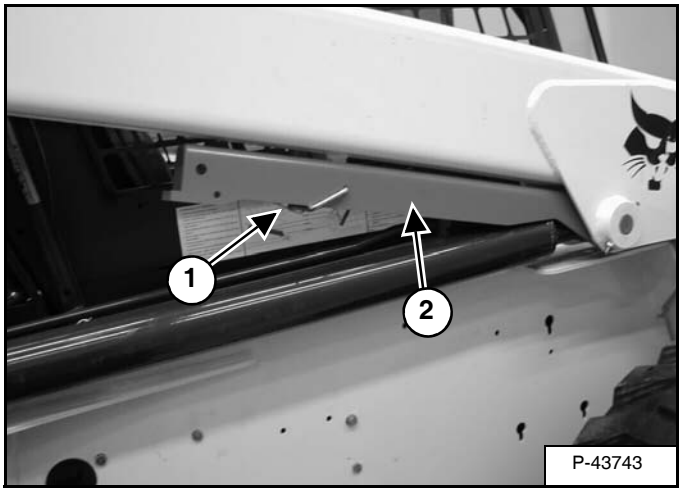
W-2059-0598

⚠ WARNING

Service lift arm support device if damaged or if parts are missing. Using a damaged lift arm support or with missing parts can cause lift arms to drop causing injury or death.

W-2271-1197

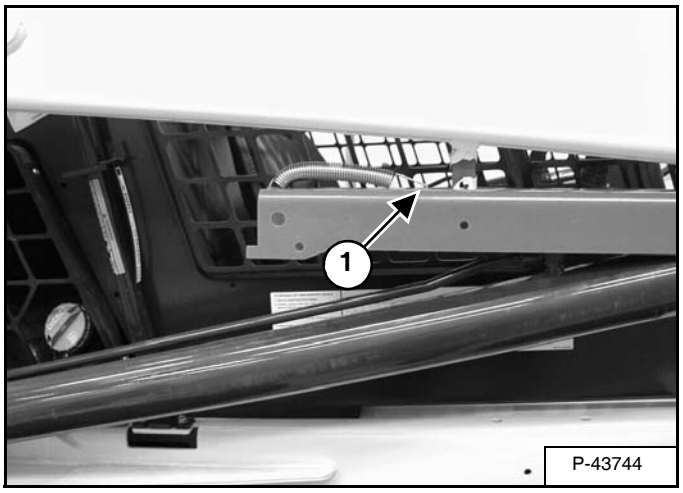
Figure 10-20-1



Maintenance and service work can be done with the lift arms lowered. If the lift arms are raised, use the folowing procedures to engage and disengage an approve lift arm support device:

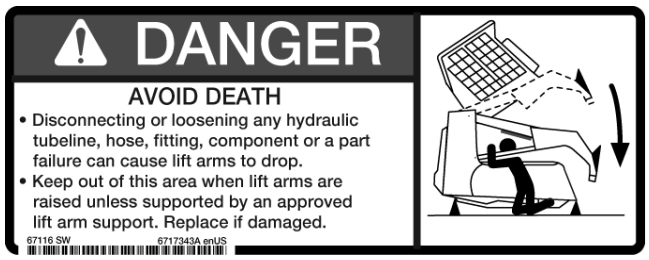
Install jackstands under the rear corners of the loader frame. Disconnect the spring form the lift arm support device retaining pin (Item 1). Support the lift arm support device (Item 2) **[Figure 10-20-1]** with your hand and remove the retaining pin.

Figure 10-20-2



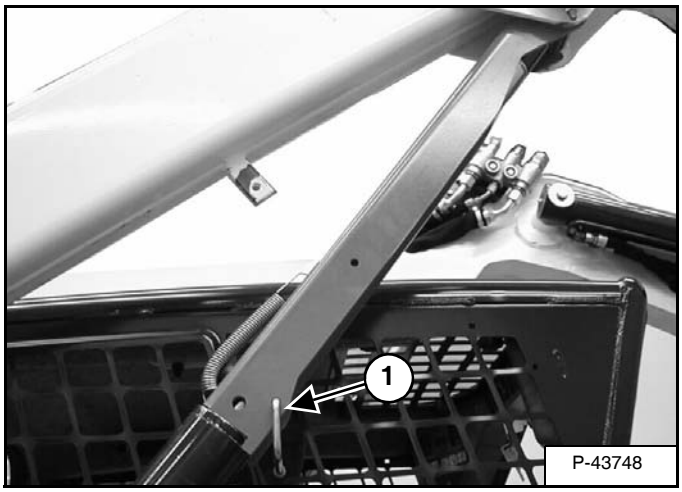
Lower the lift arm support device on top of the lift cylinder. Hook the free end of the spring (Item 1) **[Figure 10-20-2]** to the lift arm support device so there will be no interference with the suppport device engagement.

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



Engaging The Lift Arm Support Device (Cont'd)

Figure 10-20-3



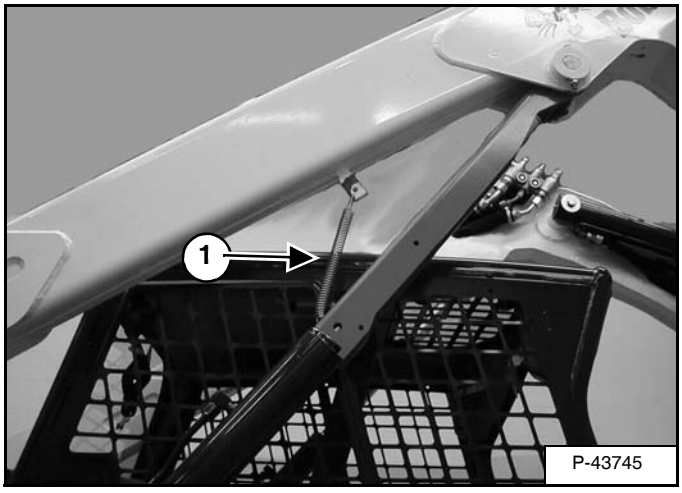
Raise the lift arms, until the lift arm support device drops onto the lift cylinder rod.

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

Install the pin (Item 1) **[Figure 10-20-3]** into the rear of the lift arm supoort device below the cylinder rod.

Disengaging The Lift Arm Support Device

Figure 10-20-4



Remove the pin from the lift arm support device.

Connect the spring (Item 1) **[Figure 10-20-4]** from the lift arm support device to the bracket below the lift arm.

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

Figure 10-20-5

Raise the lift arms a small amount and the spring will llift the support device off the lift cylinder rod **[Figure 10-20-5]**. Lower the lift arms and stop the engine.

Raise the seat bar and move the pedals until both pedals lock.

Disconnect the spring from the bracket.

Raise the support device into the storage position and insert the pin through the lift arm support device and bracket. (See Engaging The Lift Arm Support Device on Page 10-20-1.)

Connect the spring to the pin. (See Engaging The Lift Arm Support Device on Page 10-20-1.)

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.

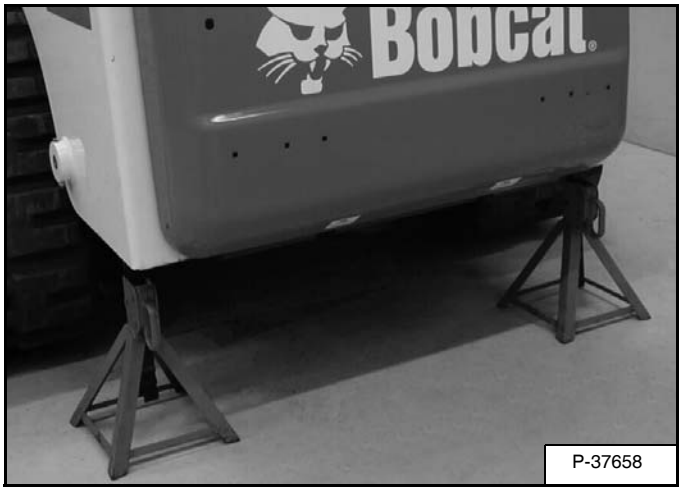
ROPS/FOPS - Roll Over Protective Structure per SAE J1040 and ISO 3471, and Falling Object Protective Structure per SAE J1043 and ISO 3449, Level I. Level II is available.

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.

Raising The Operator Cab

Figure 10-30-1

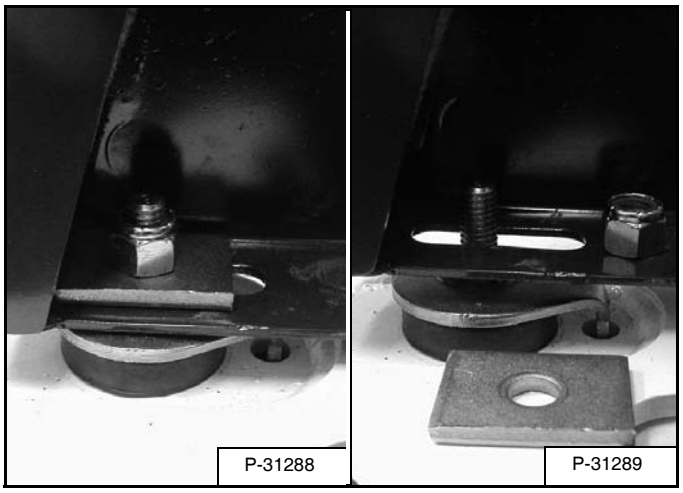


Always stop the engine before raising or lowering the cab.

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 Engaging The Lift Arm Support Device on Page 10-20-1.)

Install jackstands under the rear of the loader frame **[Figure 10-30-1]**.

Figure 10-30-2



Loosen the nut (both sides) at the front corner of the operator cab **[Figure 10-30-2]**.

Remove the nuts and plates **[Figure 10-30-2]** (both sides).

Figure 10-30-3

Lift on the grab handle and bottom of the operator cab slowly until the cab is all the way up and the latching mechanism engages **[Figure 10-30-3]**.

OPERATOR CAB (CONT'D)

Raising The Operator Cab (Cont'd)

Advanced Hand Control Only

WARNING

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

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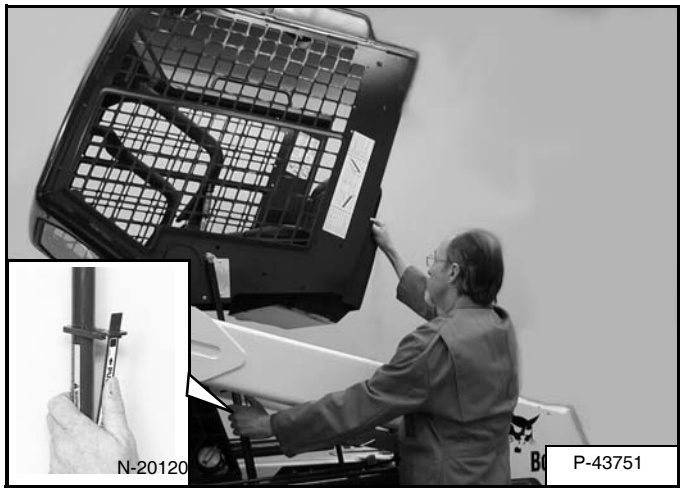
Lowering The Operator Cab

Figure 10-30-4



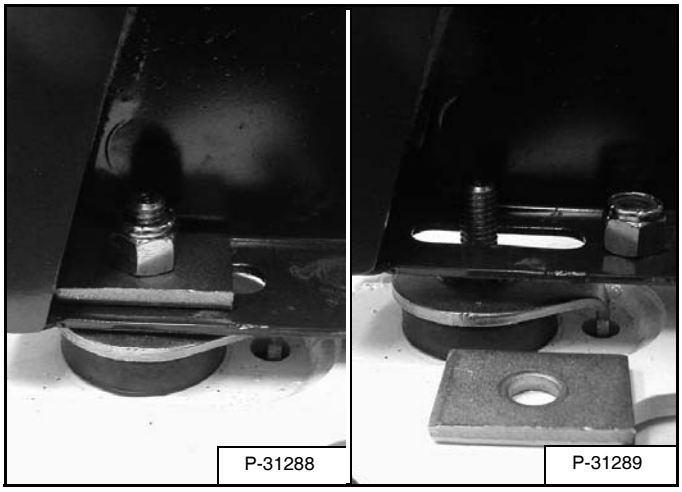
Always stop the engine before raising or lowering the cab.

NOTE: Make sure the seat bar is fully raised or lowered when lowering the cab. Always use the grab handles to lower the cab.

Pull down on the bottom of the operator cab until it stops at the latching mechanism **[Figure 10-30-4]**.

Release the latching mechanism (Inset) **[Figure 10-30-4]** and pull the cab all the way down.

Figure 10-30-5



Install the plates and nuts **[Figure 10-30-5]** (both sides).

Tighten the nuts to 40-50 ft.-lb. (54-68 N•m) torque.

Emergency Exit

Figure 10-30-6

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

REAR WINDOW (If Equipped)

Pull on the tag on the top of the rear window to remove the rubber cord **[Figure 10-30-6]**.

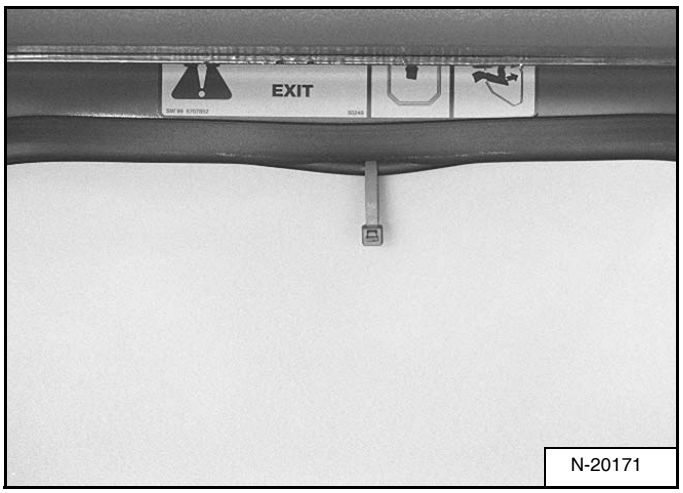
Emergency Exit (Cont'd)

Figure 10-30-7

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

Exit through the rear of the operator cab **[Figure 10-30-7]**.

Figure 10-30-8



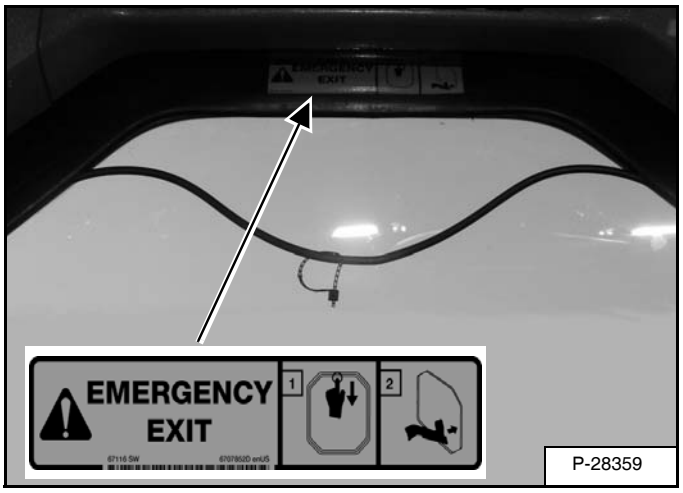
FRONT DOOR (If Equipped)

NOTE: When an Operator Cab Enclosure Kit is installed, the window of the front door can be used as an emergency exit [Figure 10-30-8].

NOTE: When the special applications kit is installed, the front door cannot be used for an emergency exit.

Pull the plastic loop at the top of the window in the front door to remove the rubber cord **[Figure 10-30-8]**.

Figure 10-30-9



Push the window out with your foot **[Figure 10-30-9]** at any corner of the window.

Exit through the front door.

TRANSPORTING THE BOBCAT LOADER

Procedure

Figure 10-40-1

⚠ 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.

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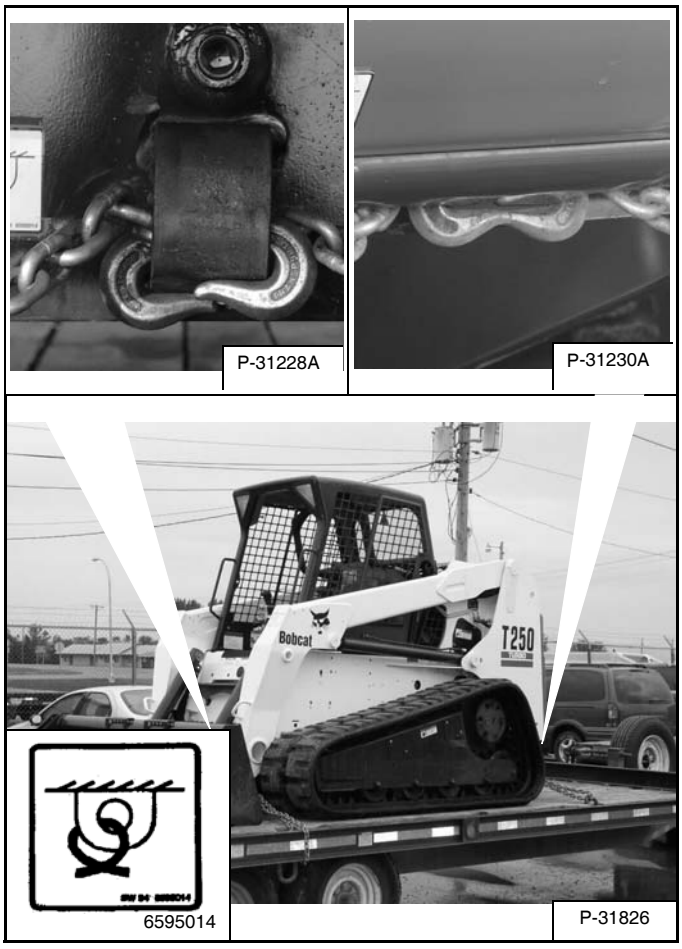
A loader with an empty bucket or no attachment must be loaded backward onto the transport vehicle **[Figure 10-40-1]**.

Be sure the transport and towing vehicles are of adequate size and capacity. (See Performance on Page SPEC-10-2.) for weight of loader.

The rear of the trailer must be blocked or supported (Item 1) **[Figure 10-40-1]** when loading or unloading the loader to prevent the front end of the trailer from raising up.

Figure 10-40-2



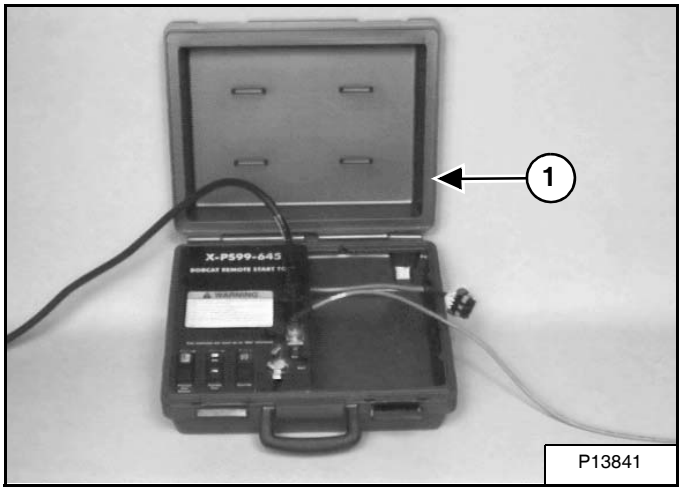
Use the following procedure to fasten the Bobcat loader to the transport vehicle to prevent the loader from moving during sudden stops or when going up or down slopes **[Figure 10-40-2]**.

- 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) **[Figure 10-40-2]**.
- Fasten each end of the chain to the transport vehicle.

REMOTE START

Procedure For Loader W/O Attachments Control Harness

Figure 10-50-1



The tool listed will be need to do the following procedure:

MEL1563 - Remote Start Tool Kit

The remote start (Item 1) **[Figure 10-50-1]** is required when the operator cab is in the raised position for service and the service technician needs to turn the key switch on or start the engine. Example: adjusting the steering linkage.

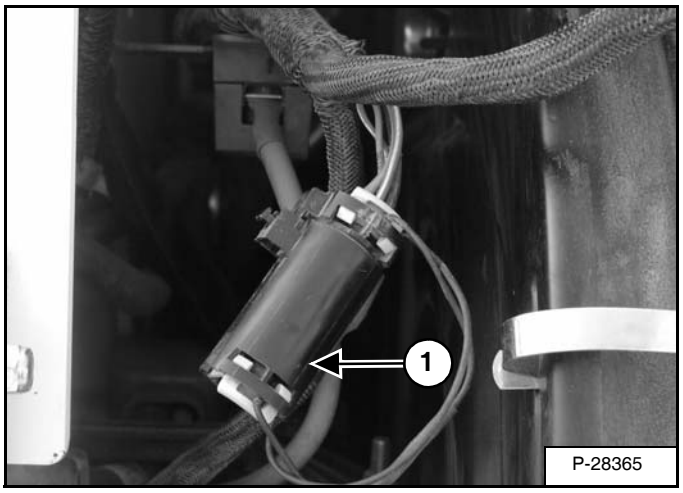
Lift and block the loader. (See LIFTING AND BLOCKING THE LOADER on Page 10-10-1.)

Raise the lift arms (if required by the procedure) and install an approved lift arm support device. (See Engaging The Lift Arm Support Device on Page 10-20-1.)

Raise the operator cab (if required by the procedure). (See Raising The Operator Cab on Page 10-30-1.)

Open the rear door of the loader.

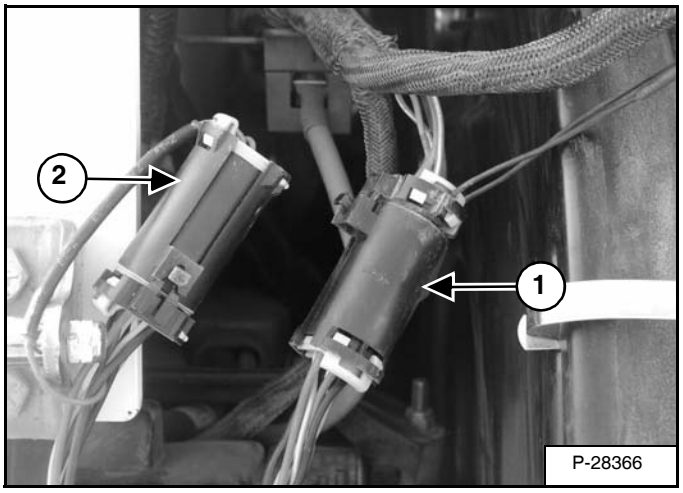
Figure 10-50-2



Remove the cap (Item 1) **[Figure 10-50-2]** from the loader harness.

When the remote start procedure is completed, replace the loader connector cap (Item 1) **[Figure 10-50-2]**.

Figure 10-50-3



Connect the remote start tool to the engine harness connector (Item 1) **[Figure 10-50-3]**.

The connector (Item 2) **[Figure 10-50-3]** from the remote start harness is not used in the remote start procedure and should remain capped.

NOTE: The key switch on the right-hand side operator panel must be in the off position or the Remote Start Kit will not operate.

Procedure For Loader W/O Attachments Control Harness (Cont'd)

WARNING

AVOID INJURY OR DEATH

With the 7-pin connector plugged into the loader and the Remote Start Key Switch in the OFF position, the loader can still be started from the operator panel inside the cab. Placing the key switch of the remote start tool in the run position disconnects the operator panel key switch from the start circuit. If the service technician will be working in the engine area it is important to remove the operator panel keys.

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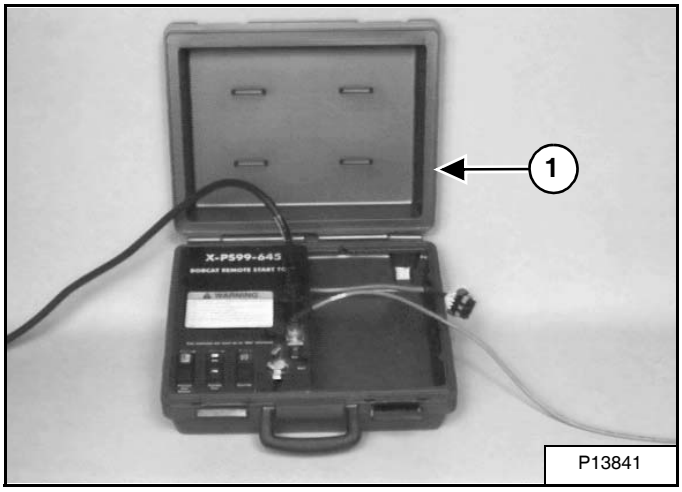
Procedure For Loader With Attachments Control Harness

Figure 10-50-4



The tool listed will be need to do the following procedure:

MEL1563 - Remote Start Tool Kit

The remote start (Item 1) **[Figure 10-50-4]** is required when the operator cab is in the raised position for service and the service technician needs to turn the key switch on or start the engine. Example: adjusting the steering linkage.

Lift and block the loader. (See LIFTING AND BLOCKING THE LOADER on Page 10-10-1.)

Raise the lift arms (if required by the procedure) and install an approved lift arm support device. (See Engaging The Lift Arm Support Device on Page 10-20-1.)

Raise the operator cab (if required by the procedure). (See Raising The Operator Cab on Page 10-30-1.)

Open the rear door of the loader.

Figure 10-50-5

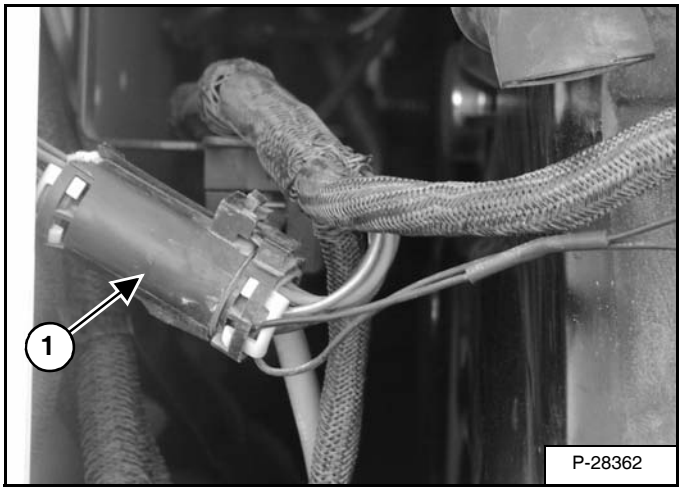
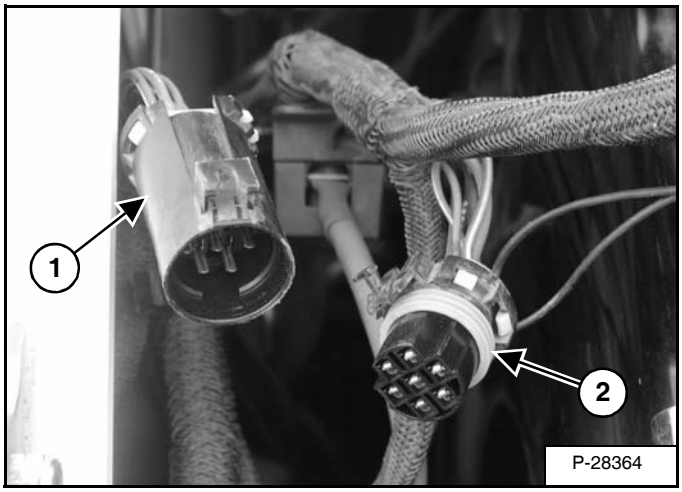


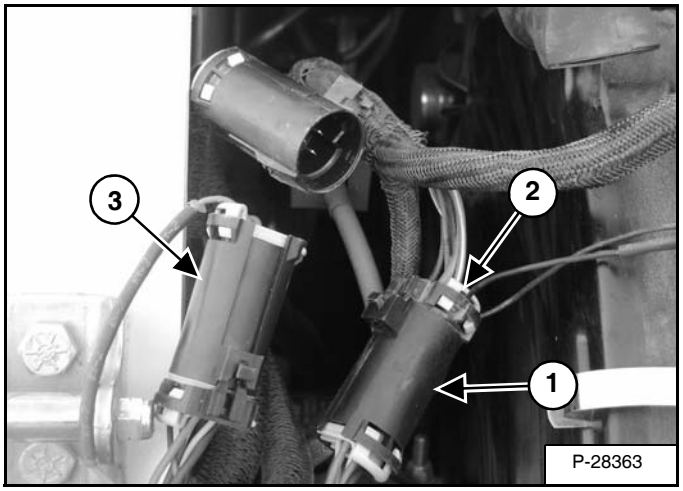
Figure 10-50-6



Disconnect the attachment control harness (Item 1) **[Figure 10-50-5]** & **[Figure 10-50-6]** from the loader harness (Item 2) **[Figure 10-50-6]**.

Procedure for Loader With Attachments Control Harness (Cont'd)

Figure 10-50-7



Connect the remote start tool (Item 1) **[Figure 10-50-7]** to the loader harness connector (Item 2) **[Figure 10-50-6]**.

The connector (Item 3) **[Figure 10-50-7]** on the remote start harness is not used in the remote start procedure and should remain capped.

NOTE: The key switch on the right-hand side operator panel must be in the off position or the Remote Start Kit will not operate.

⚠ WARNING

AVOID INJURY OR DEATH

With the 7-pin connector plugged into the loader and the Remote Start Key Switch in the OFF position, the loader can still be started from the operator panel inside the cab. Placing the key switch of the remote start tool in the run position disconnects the operator panel key switch from the start circuit. If the service technician will be working in the engine area it is important to remove the operator panel keys.

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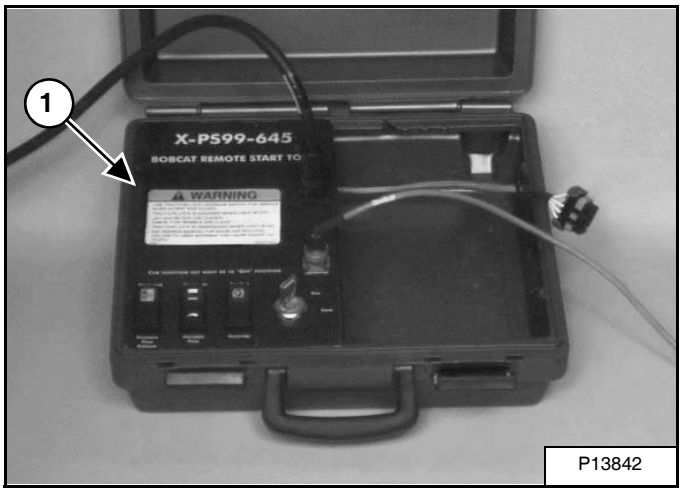
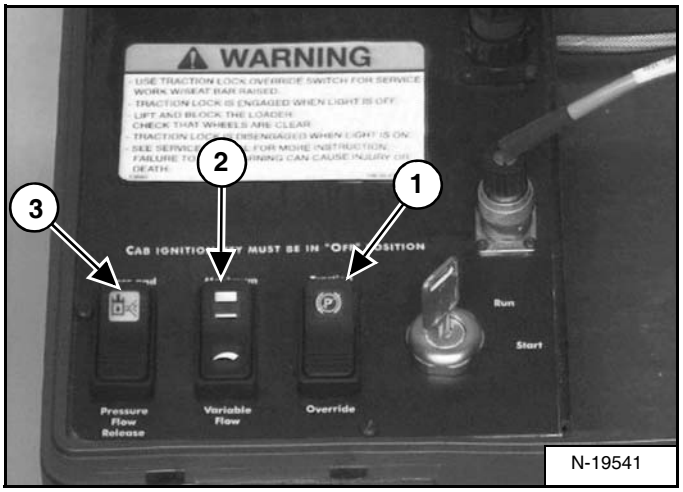
Procedure

Figure 10-50-8



The remote start tool (Item 1) **[Figure 10-50-8]** has three rocker switches.

Figure 10-50-9

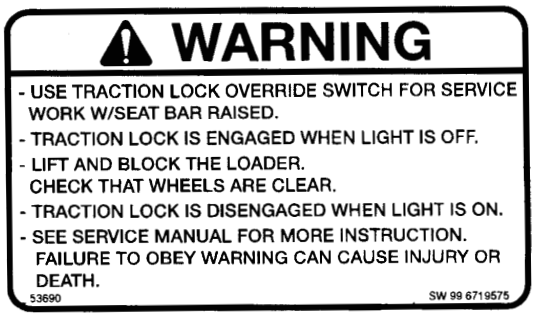


The traction lock switch (Item 1) **[Figure 10-50-9]** is used to turn traction lock on or off. Push the switch to the override position. The switch will illuminate to indicate traction lock OVERRIDE, in this position the wheels are able to turn.

The maximum flow/variable flow switch (Item 2) **[Figure 10-50-9]** is used to activate the auxiliary hydraulics. Pressing the switch once will activate variable flow. Pressing the switch again will activate maximum flow. The switch will illuminate to indicate which flow rate is active. Pressing the switch a third time will turn the flow OFF. The switch is used when checking pressures and flow rate.

The auxiliary pressure release (Item 3) **[Figure 10-50-9]** is used to release hydraulic pressure to the rear auxiliary couplers, and right hand auxiliary. (If so equipped.) To release pressure; push and hold the switch for three seconds.

Procedure (Cont'd)



NOTE: With the engine running; pushing and holding the pressure release switch will cause the engine to stop in three seconds. To relieve the pressure at the rear or right hand auxiliary, (If so equipped.) continue to press the switch after the engine has stopped.

SERVICE SCHEDULE

Chart

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 and understand the 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. Untrained operators and failure to follow instructions can cause injury or death.

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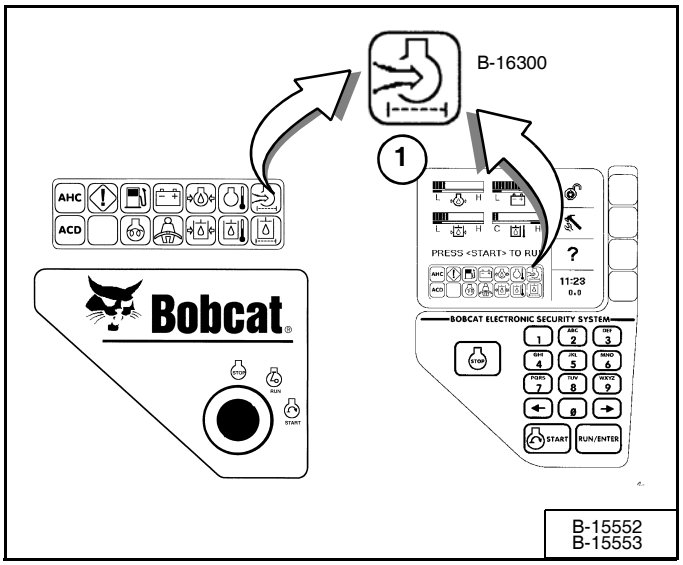
SERVICE SCHEDULE		HOURS					
ITEM	**SERVICE REQUIRED**	**8-10**	**50**	**100**	**■ 250**	**■ 500**	**■ 1000**
Engine Oil	Check the oil level and add as needed.Do not overfill.						
Engine Air Filter and Air System	Check display panel. Service only when required. Check for leaks and damaged components.						
Engine Cooling System	Clean debris from oil cooler, radiator & grill. Check coolant level COLD and add premixed coolant as needed.						
Fuel Filter	Remove the trapped water.						
Lift Arms, Cylinders, Bob-Tach Pivot Pins and Wedges	Lubricate with multi-purpose lithium based grease.						
Seat Bar, Control Interlocks, Seat Belt, Seat Belt Retractors	Check the condition of seat belt. Clean or replace seat belt retractors as needed. Check the sear bar and control interlocks for correct operation. Clean dirt and debris from moving parts.						
Bobcat Interlock Control Systems (BICS™)	Check that four (4) BICS™ indicator lights and functions are activated. See details in this Manual.						
Safety Signs and Safety Treads	Check for damaged signs (decals) and safety treads. Replace any signs or safety treads that are damaged or worn.						
Operator Cab	Check the fastening bolts, washers and nuts. Check the condition of the cab.						
Indicators and Lights	Check for correct operation of all indicators and lights.						
Heater and A/C Filters	Clean or replace filters as needed during heating/cooling season.						
Hydraulic Fluid, Hoses and Tubelines	Check fluid level and add as needed. Check for damage and leaks. Repair or replace as needed.						
Foot Pedals or Hand Controls, and Steering Levers	Check for correct operation. Repair or adjust as needed.						
Parking Brake	Check operation.						
Tracks	Check for damaged tracks and correct tension. Adjust as needed.						
Battery	Check cables, connections and electrolyte level. Add distilled water as needed.						
Steering Shaft	Grease fittings.						
Engine/Hydro. Drive Belt	Check for wear or damage. Check idler arm stop.	*					
Alternator Belt	Check tension and adjust as needed.						
Air Conditioner Belt	Check belt for wear. Adjust or replace as needed.						
Bobcat Interlock Control System (BICS™)	Check the function of the lift arm by-pass control.						
Fuel Filter	Replace filter element.						
Fan Drive Gearbox	Check gear lube level.						
Hydraulic Reservoir Breather Cap	Replace the reservoir breather cap.						
Hyd./Hydro. Filter	●Replace the filter element.						
Engine Oil and Filter	Replace oil and filter. Use CD or better grade oil and Bobcat filter.		^		❍		
Hydraulic Reservoir	Replace the fluid.						
Case Drain Filters	Replace the filters.						
Engine Valves	Adjust the engine valves.						

*** Inspect the new or replacement belt after first 50 hours of operation.**
● Also replace hydraulic/hydrostatic filter element when the transmission warning light comes ON.
^ First oil and filter change must occur at 50 hours; 500 hours thereafter.
❍ When operating under severe conditions, change oil and filter every 250 hours.
■ Or every 12 months.

AIR CLEANER SERVICE

Replacing Filter Element

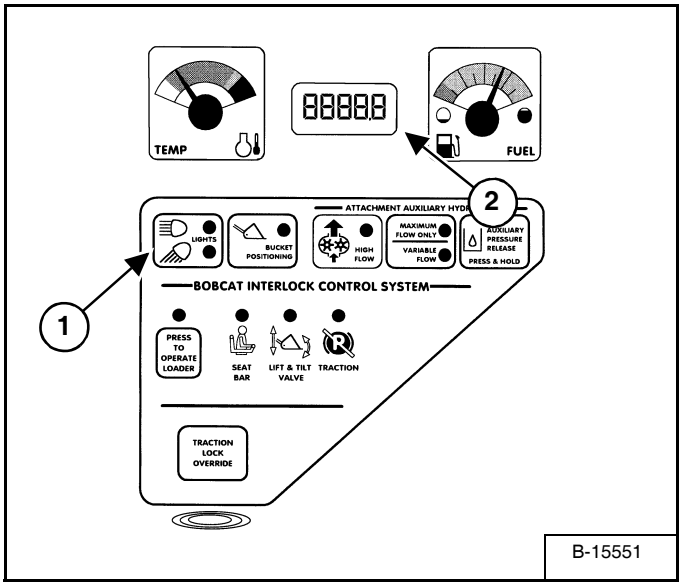
Figure 10-70-1



It is important to change the air filter element only when the Air Cleaner Icon in the right panel is ON (Item 1) **[Figure 10-70-1]** and you hear three beeps from the alarm.

Replace the inner filter every third time the outer filter is replaced or as indicated on (See Replacing Filter Element (Cont'd) on Page 10-70-2.)

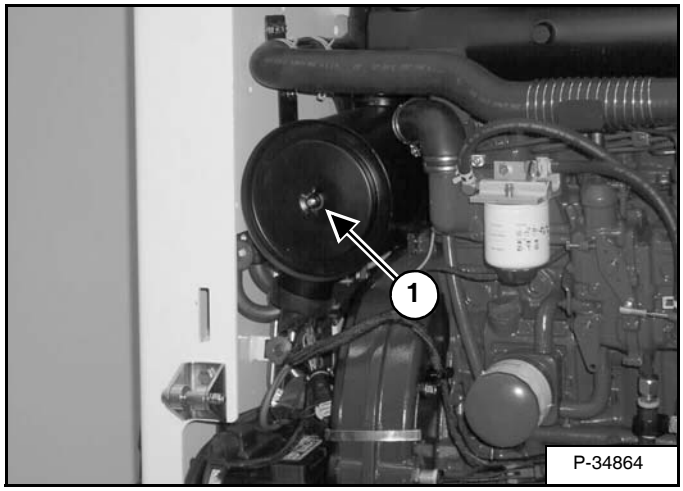
Figure 10-70-2



Press and hold the LIGHT Button (Item 1) **[Figure 10-70-2]** for two seconds.

If the filter element needs replacement, the CODE [01-17] (Air Filter Plugged) will show in the HOURMETER / CODE DISPLAY (Item 2) **[Figure 10-70-2]**.

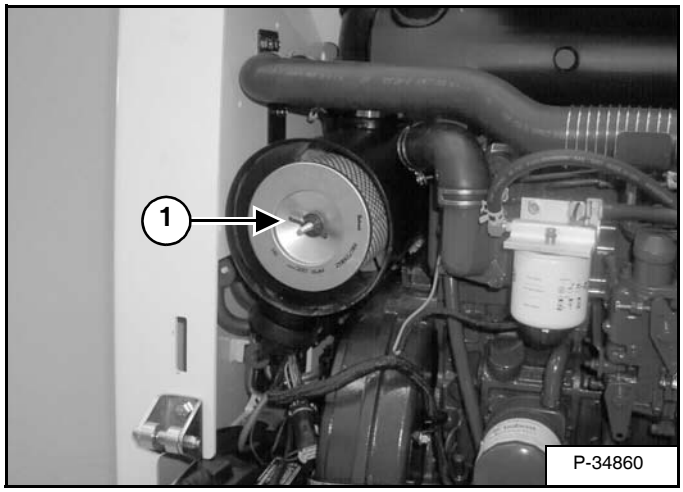
Figure 10-70-3



OUTER FILTER

Disengage the wing nut (Item 1) **[Figure 10-70-3]** and remove the dust cover.

Figure 10-70-4



Remove the wing nut (Item 1) **[Figure 10-70-4]** and remove the outer filter element.

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

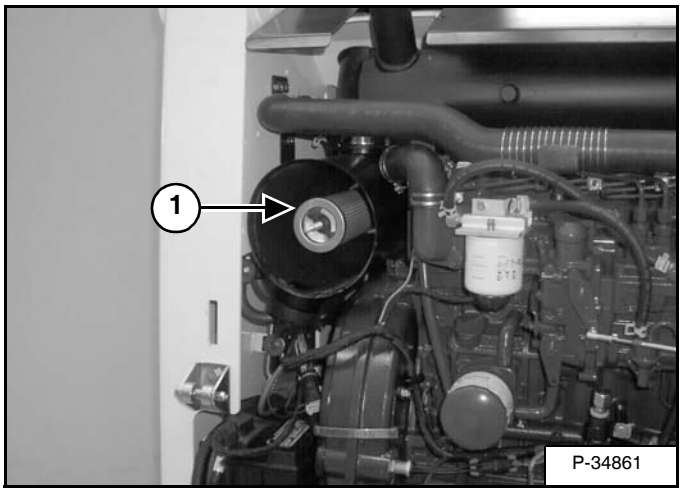
Install a new outer element, and install the wing nut.

Install the dust cover and install the outer wing nut.

Check the air intake hose and the air cleaner housing for damage. Make sure all connections are tight.

Replacing Filter Element (Cont'd)

Figure 10-70-5



INNER FILTER

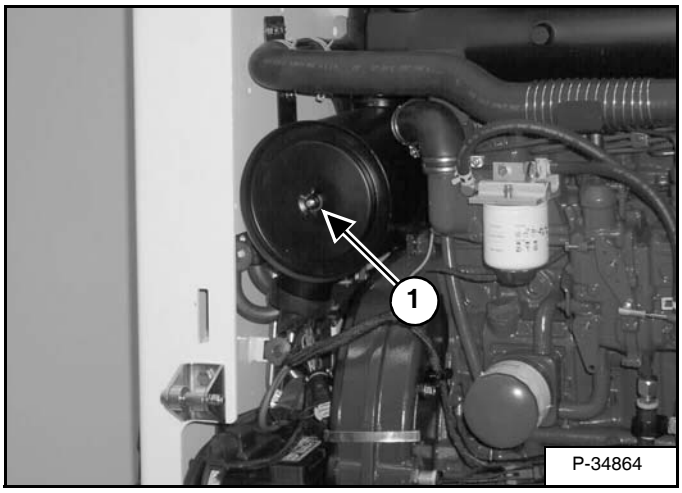
Only replace the inner filter element under the following conditions:

- Replace the inner filter element every third time the outer filter is replaced.
- After the outer element has been replaced, start the engine and run at full RPM. If the HOURMETER / CODE DISPLAY shows [01-17] (Air Filter Plugged), replace the inner filter element.

Remove the inner filter element (Item 1) **[Figure 10-70-5]**.

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

Figure 10-70-6



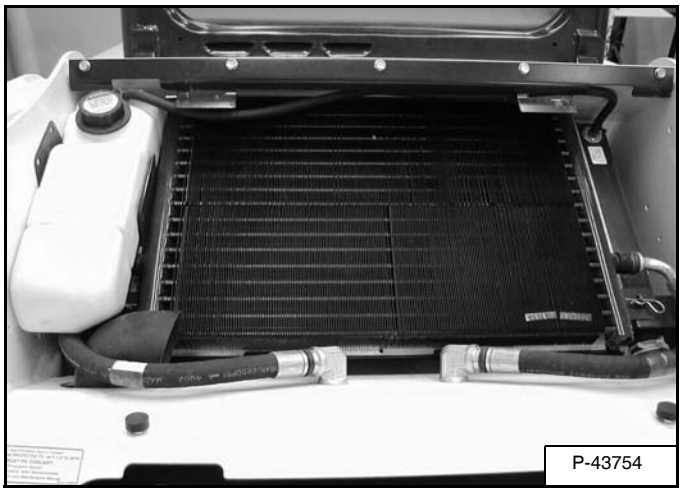
Install the new inner element.

Install the dust cover and wing nut (Item 1) **[Figure 10-70-6]**.

ENGINE COOLING SYSTEM

Cleaning Cooling System

Figure 10-80-1



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

⚠ WARNING

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

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

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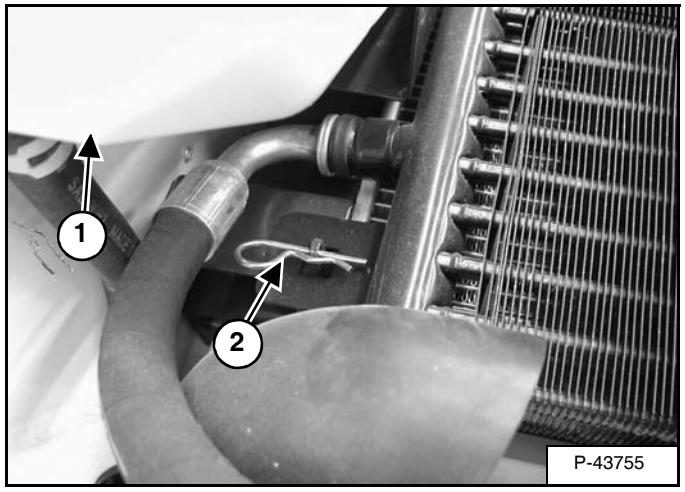
Remove the rear grill. (See Removal And Installation on Page 50-60-1.)

Use air pressure or water pressure to clean the top of the oil cooler **[Figure 10-80-1]**.

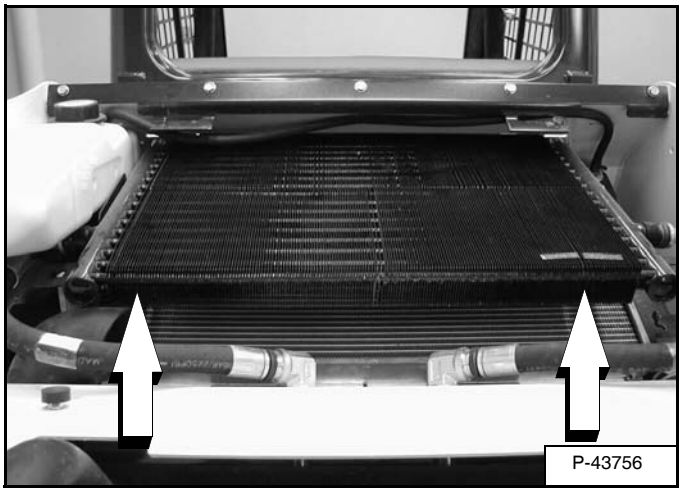
Figure 10-80-2



Lift the overflow tank (Item 1) **[Figure 10-80-2]** out of its mount bracket.

Remove the cotter pin (Item 2) **[Figure 10-80-2]** (both sides) from the oil cooler.

Figure 10-80-3

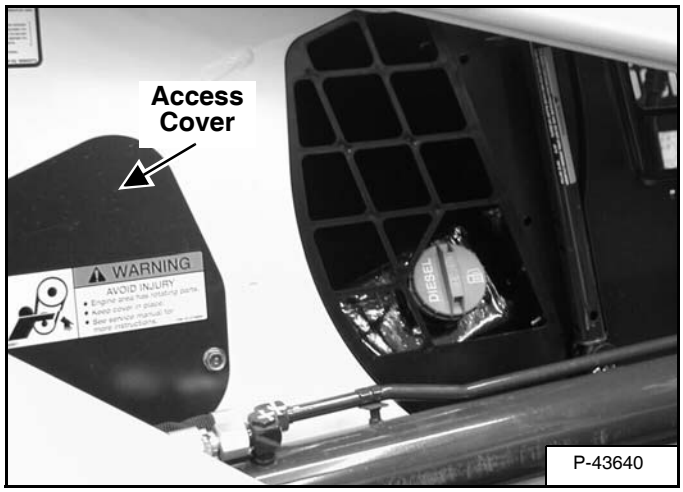


Raise the oil cooler **[Figure 10-80-3]**.

Use air pressure or water pressure to clean the top of the engine oil cooler.

Cleaning Cooling System (Cont'd)

Figure 10-80-4



NOTE: The access cover (both sides) must be in place to ensure proper air flow through the oil cooler which will ensure correct cooling for the engine/hydraulic system [Figure 10-80-4].

FUEL SYSTEM

Fuel Specifications

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

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.

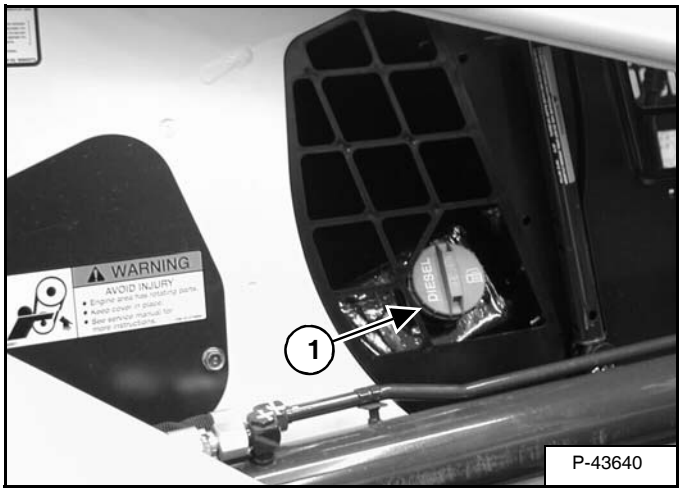
Filling The Fuel Tank

⚠ WARNING

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

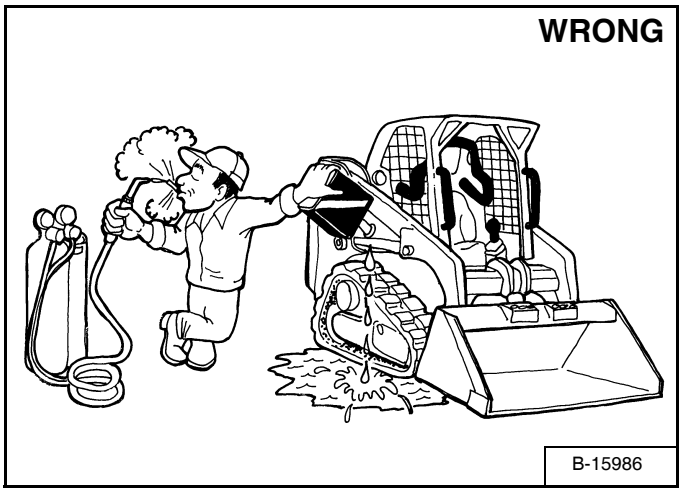
W-2063-0887

Figure 10-90-1



Remove the fuel fill cap (Item 1) **[Figure 10-90-1]**.

Figure 10-90-2

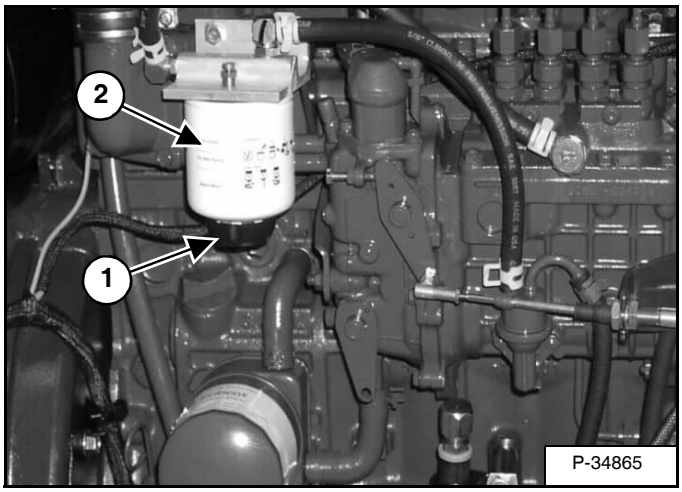


Use a clean, approved safety container to add fuel of the correct specifications. Add fuel only in an area that has free movement of air and no open flames or sparks. NO SMOKING! **[Figure 10-90-2]**.

Install and tighten the fuel fill cap **[Figure 10-90-1]**.

Fuel Filter

Figure 10-90-3



(See SERVICE SCHEDULE on Page 10-60-1.) for the recommended service interval when to remove the water from the fuel filter.

Loosen the drain (Item 1) **[Figure 10-90-3]** at the bottom of the filter element to drain any water from the filter.

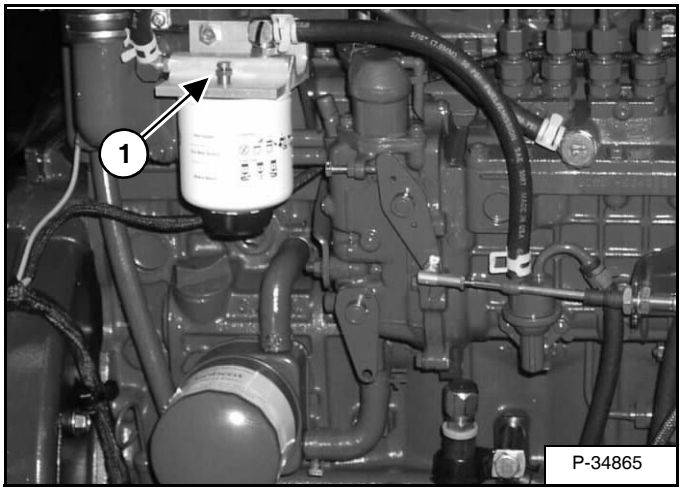
(See SERVICE SCHEDULE on Page 10-60-1.) for the recommended service interval when to replace the fuel filter.

To replace the fuel filter element, use a filter wrench to remove the filter element (Item 2) **[Figure 10-90-3]**.

Clean the area around the filter housing. Put oil on the seal of the new filter element. Install the fuel filter, and hand tighten. Remove the air from the fuel system.

Removing Air From The Fuel System

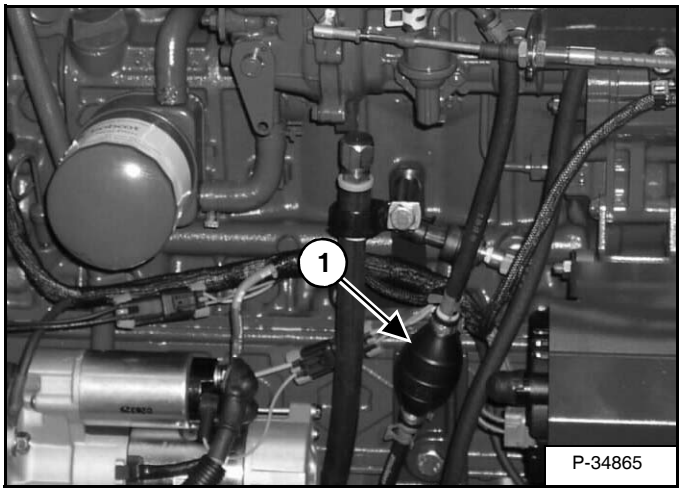
Figure 10-90-4



After replacing the fuel filter element or when the fuel tank has run out of fuel, the air must be removed from the fuel system prior to starting the engine.

Loosen the air vent plug (Item 1) **[Figure 10-90-4]** at the top of the fuel filter.

Figure 10-90-5



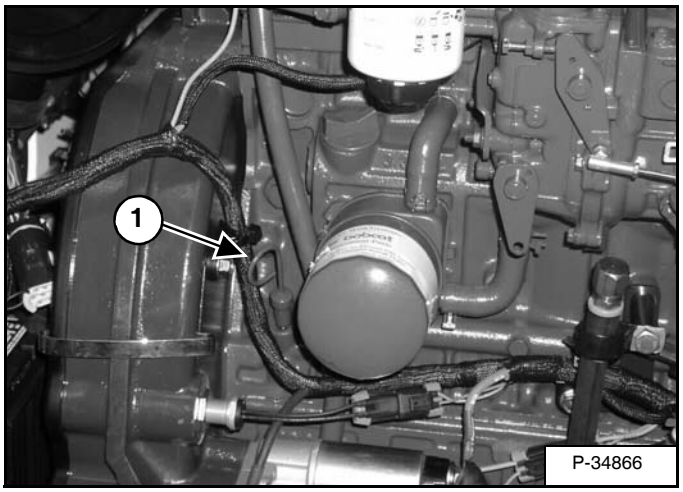
Operate the hand pump (priming bulb) (Item 1) **[Figure 10-90-5]** until the fuel flows from the air vent plug with out air bubbles.

Tighten the air vent plug.

ENGINE LUBRICATION SYSTEM

Checking Engine Oil

Figure 10-100-1



Check the engine oil level every day.

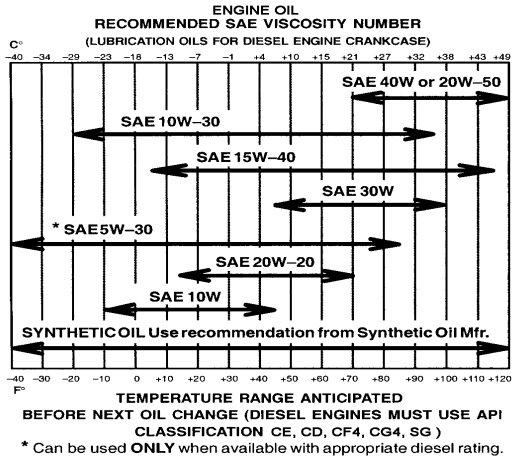
Before starting the engine for the work shift, open the rear door. Remove the dipstick (Item 1) **[Figure 10-100-1]**.

Keep the oil level between the marks on the dipstick.

Use a good quality motor oil that meets API Service Classification of CD, CE or better. (See Oil Chart below.)

Oil Chart

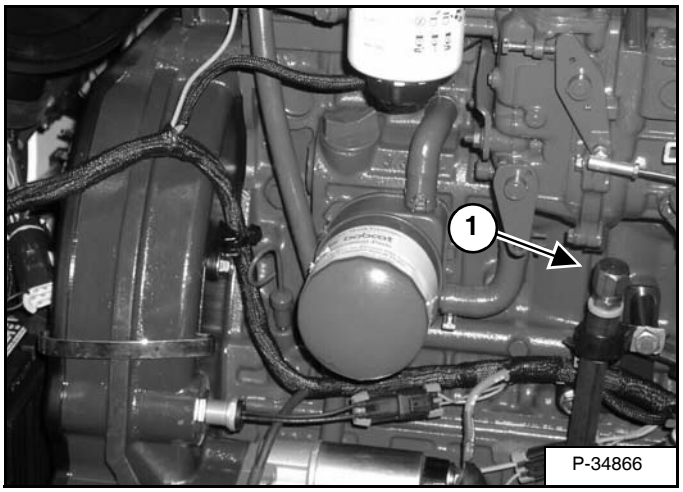
RECOMMENDED SAE VISCOSITY NUMBER
(LUBRICATION OILS FOR DIESEL ENGINE CRANKCASE)



TEMPERATURE RANGE ANTICIPATED
BEFORE NEXT OIL CHANGE (DIESEL ENGINES MUST USE API CLASSIFICATION CD, CF4,CG4)
*Can be used **ONLY** when available with appropriate diesel rating.

Replacing Oil And Filter

Figure 10-100-2



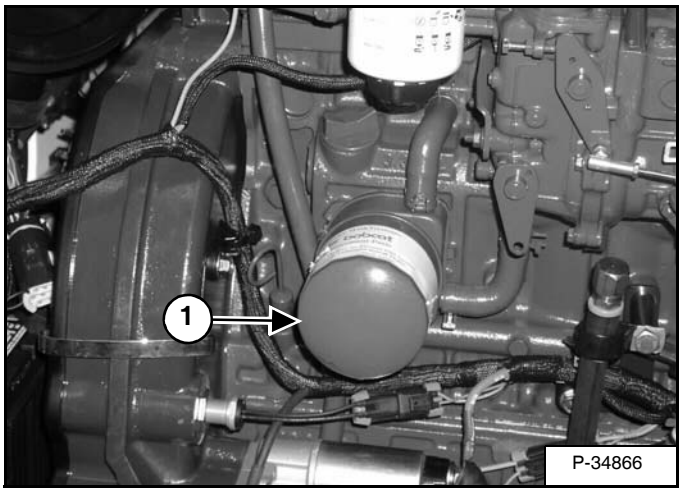
(See SERVICE SCHEDULE on Page 10-60-1.) for the service interval for replacing the engine oil and filter.

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

Open the rear door. Remove the drain hose (Item 1) **[Figure 10-100-2]** from its storage position. Remove the cap and drain the oil into container.

Replacing Oil And Filter (Cont'd)

Figure 10-100-3



WARNING

Always clean up spilled fuel or oil. Keep heat, flames, sparks or lighted tobacco away from fuel and oil. Failure to use care around combustibles can cause explosion or fire which can result in injury or death.

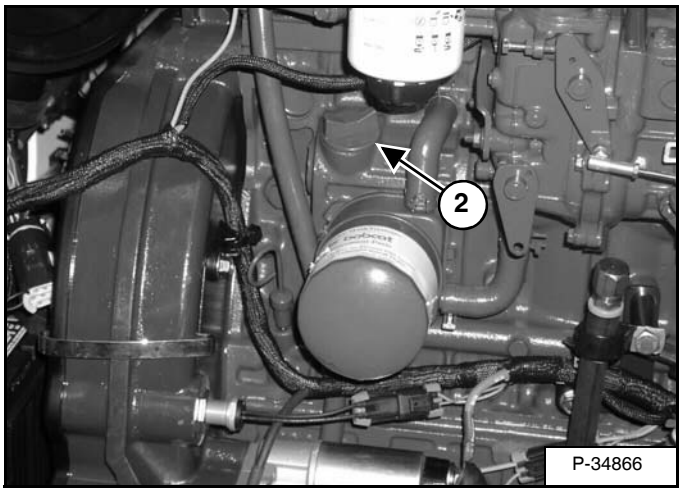
W-2103-1285

Remove the oil filter (Item 1) **[Figure 10-100-3]**.

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

Install and tighten the drain cap on the drain hose.

Figure 10-100-4



Remove the filler cap (Item 1) **[Figure 10-100-4]**.

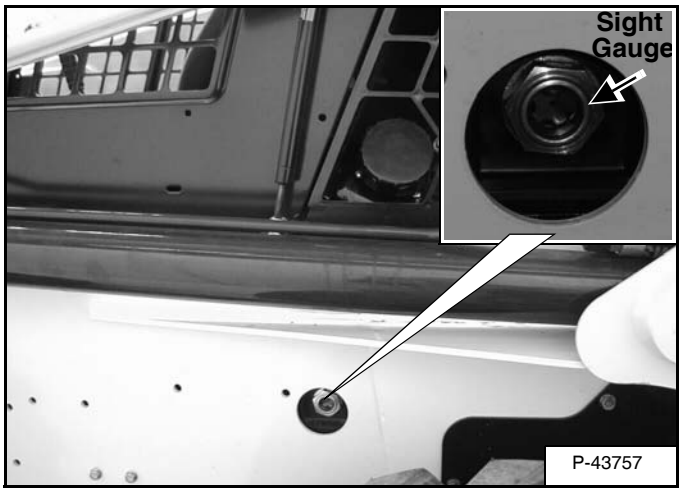
Put 12 qts. (11 L) of oil in the engine.

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

HYDRAULIC/HYDROSTATIC SYSTEM

Checking And Adding Fluid

Figure 10-110-1



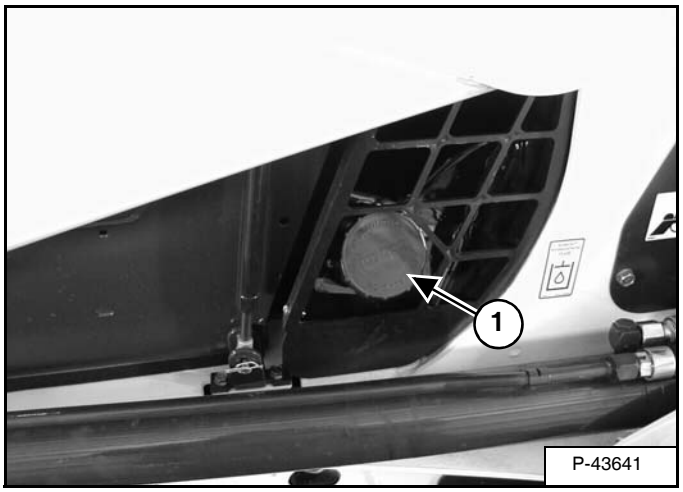
Use only recommended fluid in the hydraulic system. (See Hydraulic System on Page SPEC-10-3.)

To check the reservoir, use the following procedure:

Put the Bobcat loader on a level surface. Lower the lift arms and tilt the Bob-Tach fully back. Stop the engine.

Check the fluid level at the sight gauge **[Figure 10-110-1]**. The fluid level must show in the sight gauge.

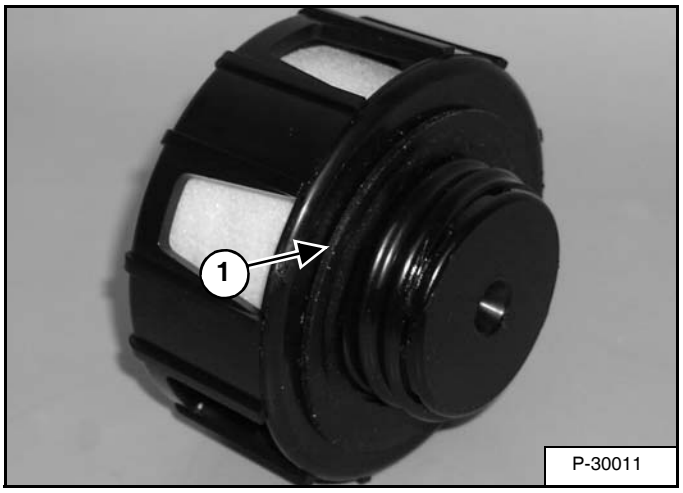
Figure 10-110-2



If fluid is needed, remove the fill cap (Item 1) **[Figure 10-110-2]**.

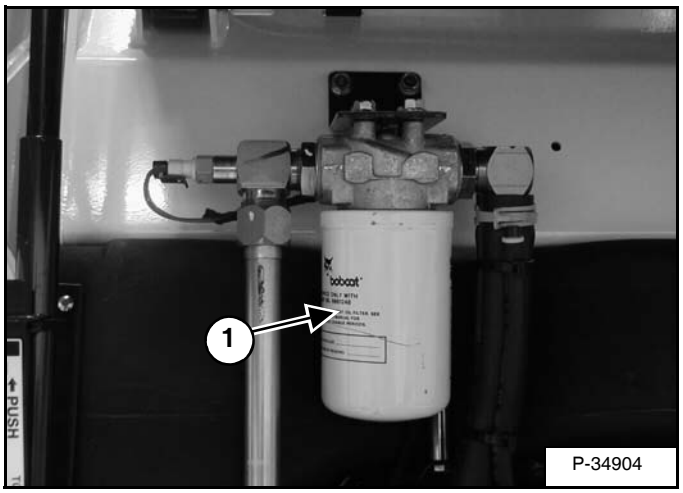
Add the fluid as needed to bring the level to the center of the sight gauge.

Figure 10-110-3



NOTE: Before installing the fill cap, make sure the rubber gasket (Item 1) [Figure 10-110-3] is installed on the fill cap.

Figure 10-110-4



Hydraulic/Hydrostatic Filter Replacement

(See SERVICE SCHEDULE on Page 10-60-1.) for the correct service interval.

Raise the operator cab. (See Raising The Operator Cab on Page 10-30-1.)

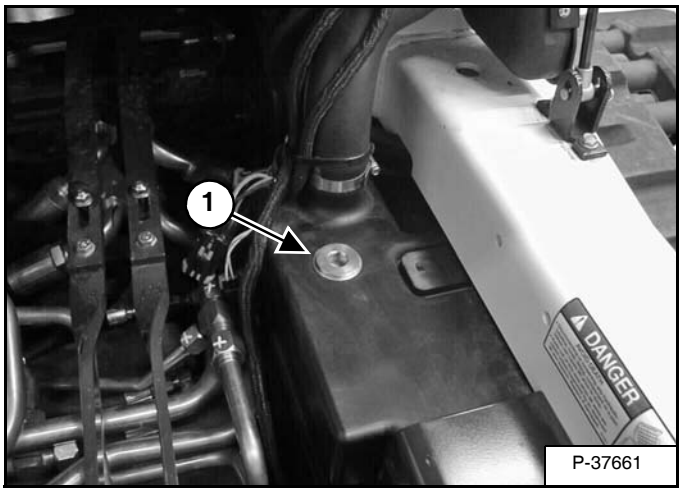
Use a filter wrench to remove the filter element (Item 1) **[Figure 10-110-4]**.

Clean the surface of the filter housing where the element seal contacts the housing. Put clean oil on the rubber seal of the filter elements.

Install and hand tighten the filter elements.

Replacing Hydraulic Fluid And Case Drain Filters

Figure 10-110-5



(See SERVICE SCHEDULE on Page 10-60-1.) for the service interval.

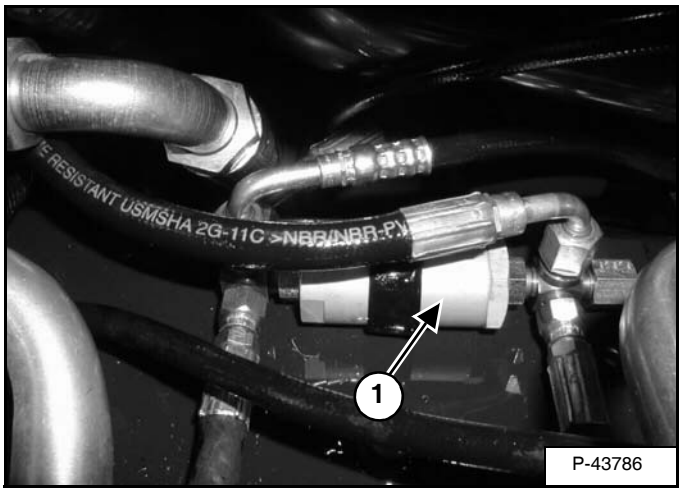
Replace the fluid if it becomes contaminated or after major repair.

Also clean the hydrostatic motor case drain filter thoroughly after a major repair.

Raise the operator cab. (See Raising The Operator Cab on Page 10-30-1.)

Remove the plug (Item 1) **[Figure 10-110-5]** out of the top of the hydraulic reservoir with a lift pump, remove the fluid from the reservoir.

Figure 10-110-6



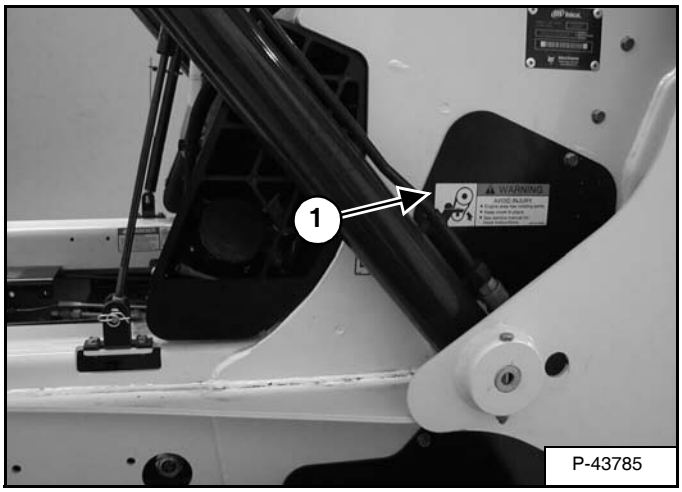
Disconnect the hoses from the hydrostatic motor case drain filter (Item 1) **[Figure 10-110-6]**.

Remove the case drain filter and clean thoroughly with clean solvent.

Install the case drain filter and tighten the hoses.

Install the plug in the reservoir drain hose and tighten. Install the motor cover.

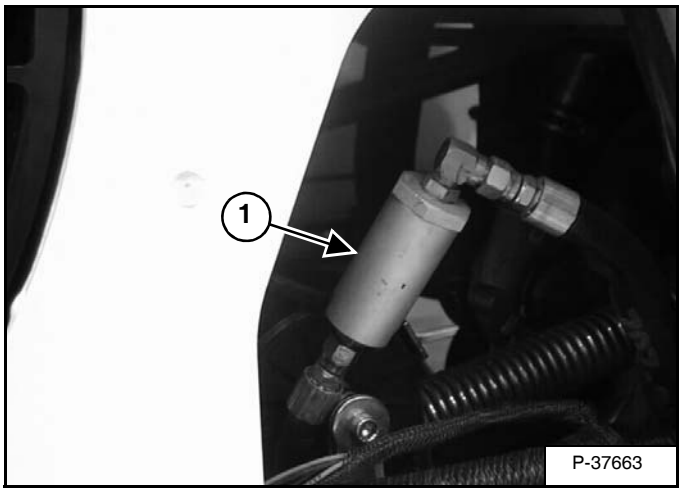
Figure 10-110-7



Remove the left side access panel (Item 1) **[Figure 10-110-7]**.

Replacing Hydraulic Fluid And Case Drain Filters (Cont'd)

Figure 10-110-8



Remove the hoses from the attachments case drain filter (Item 1) **[Figure 10-110-8]**. Remove and discard the filter.

Install a new filter, tighten the hose fittings and install the cover.

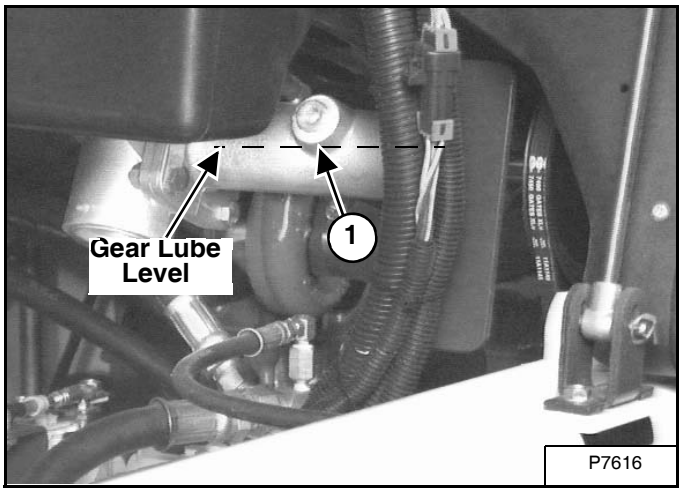
Add the correct fluid to the reservoir until the fluid level is at the center of the sight gauge. (See Checking And Adding Fluid on Page 10-110-1.)

Lower the operator cab. Start the engine and operate the loader hydraulic controls. Stop the engine. Check for leaks. Check the fluid level in the reservoir and add as needed.

FAN GEARBOX

Checking And Adding Oil

Figure 10-120-1



(See SERVICE SCHEDULE on Page 10-60-1.) for the correct service interval.

Raise the operator cab. (See Raising The Operator Cab on Page 10-30-1.)

Remove the plug (Item 1) **[Figure 10-120-1]** to check the lubricant level.

When checking the gearbox lube level, make sure the level does not go above the center line of the shaft in the gearbox **[Figure 10-120-1]**. Use SAE 90W gear lube if the level is low.

BOB-TACH

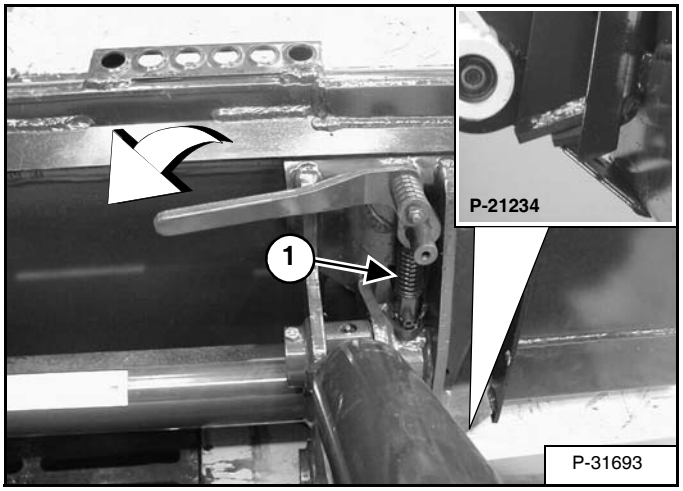
Inspection And Maintenance

⚠ WARNING

Bob-Tach wedges must extend through the holes in attachment. Levers must be fully down and locked. Failure to secure wedges can allow attachment to come off and cause injury or death.

W-2102-0588

Figure 10-130-1



Move the Bob-Tach levers to engage the wedges **[Figure 10-130-1]**. The levers and wedges must move freely.

The wedges must extend through the holes in the attachment mounting frame (Inset) **[Figure 10-130-1]**.

Figure 10-130-2

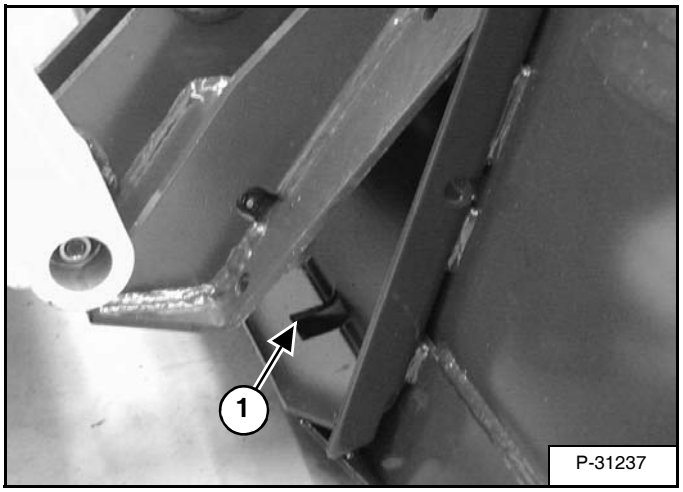
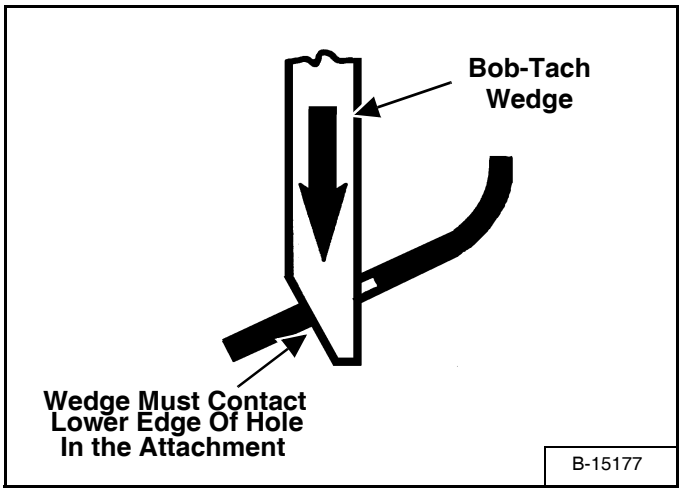


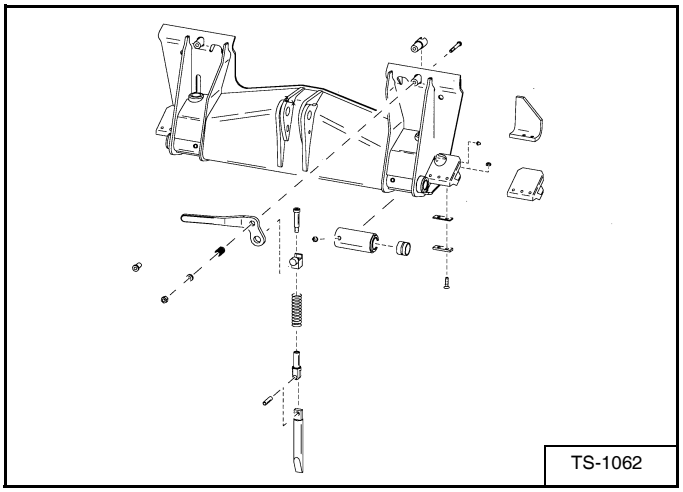
Figure 10-130-3



The spring loaded wedge (Item 1) **[Figure 10-130-1]** must contact the lower edge of the hole in the attachment (Item 1) **[Figure 10-130-2]** and **[Figure 10-130-3]**.

If the wedge does not contact the lower edge of the hole **[Figure 10-130-2]** and **[Figure 10-130-3]**, the attachment will be loose and can come off the Bob-Tach.

Figure 10-130-4



Inspect the mounting frame on the attachment and the Bob-Tach, linkages and wedges for excessive wear or damage **[Figure 10-130-4]**. Replace any parts that are damaged, bent, or missing. Keep all fasteners tight.

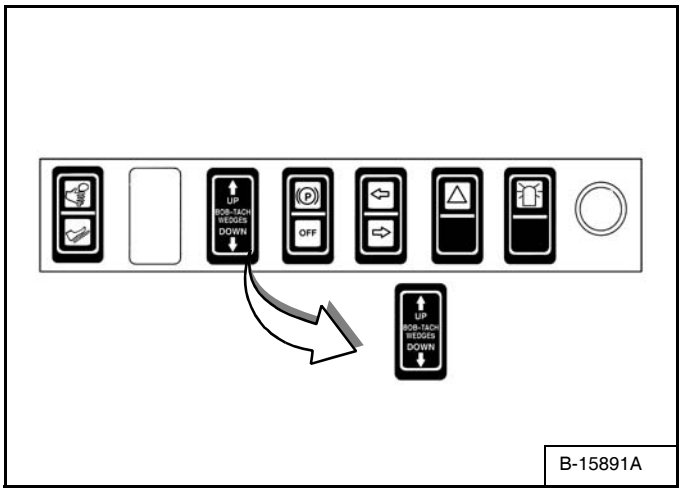
Look for cracked welds. Contact your Bobcat dealer for repair or replacement parts.

Lubricate the wedges. (See SERVICE SCHEDULE on Page 10-60-1.) and (See LUBRICATING THE LOADER on Page 10-140-1.)

POWER BOB-TACH

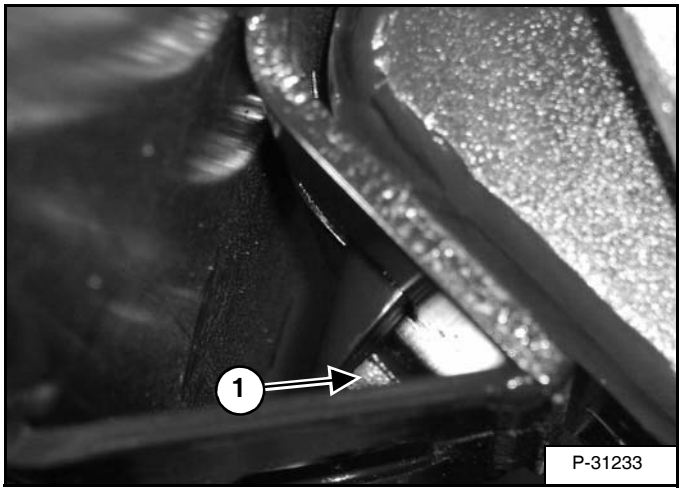
Inspection And Maintenance

Figure 10-131-1



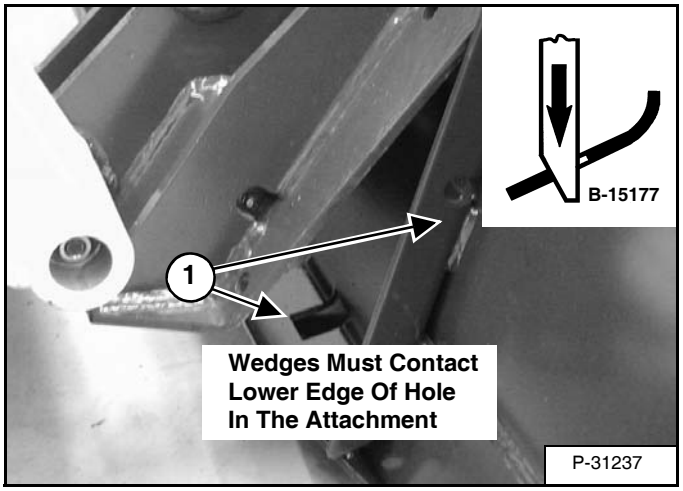
Push and hold the BOB-TACH "WEDGES UP" switch until wedges are fully raised. Push and hold the BOB-TACH "WEDGES DOWN" switch **[Figure 10-131-1]** until the wedges are fully down. The wedges must move freely.

Figure 10-131-2



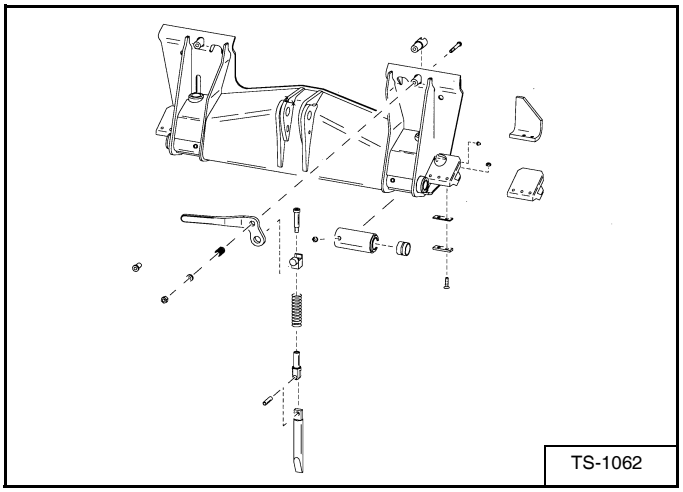
The wedges must extend through the holes in the attachment mounting frame (Item 1) **[Figure 10-131-2]** and must contact the lower edge of the hole in the attachment **[Figure 10-131-2]** and (Item 1) **[Figure 10-131-3]**.

Figure 10-131-3



If the wedge does not contact the lower edge of the hole (Item 1) **[Figure 10-131-3]**, the attachment will be loose and can come off the Bob-Tach.

Figure 10-131-4



Inspect the mounting frame on the attachment and the Bob-Tach, linkages and wedges for excessive wear or damage **[Figure 10-131-4]**. Replace any parts including decals and lever that are damaged, bent, or missing. Keep all fasteners tight. Inspect the hoses and fittings for leaks.

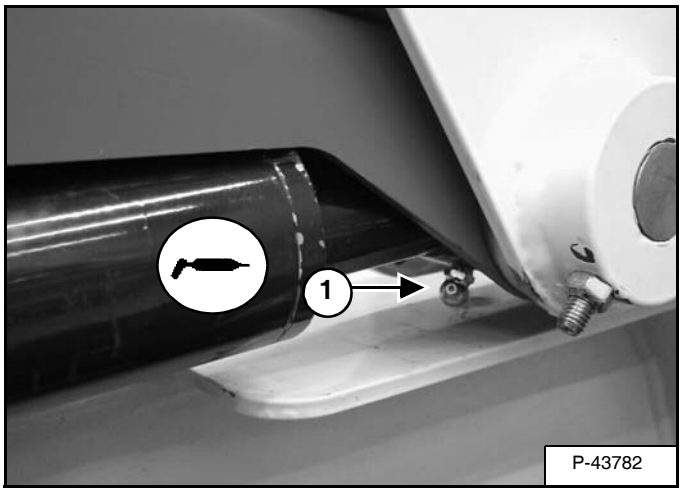
Look for cracked welds. Contact your Bobcat dealer for repair or replacement parts.

Lubricate the wedges. (See SERVICE SCHEDULE on Page 10-60-1.) and (See LUBRICATING THE LOADER on Page 10-140-1.)

LUBRICATING THE LOADER

Procedure

Figure 10-140-1



Lubricate the loader as specified. For the best performance of the loader (See SERVICE SCHEDULE on Page 10-60-1.)

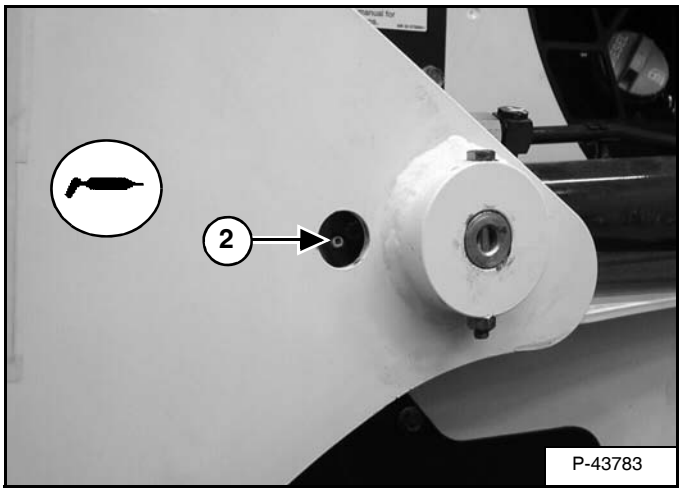
Record the operating hours each time you lubricate the Bobcat loader.

Always use a good quality lithium based multi-purpose grease when you lubricate the loader. Apply the lubricant until extra grease shows.

Lubricate the following locations on the loader:

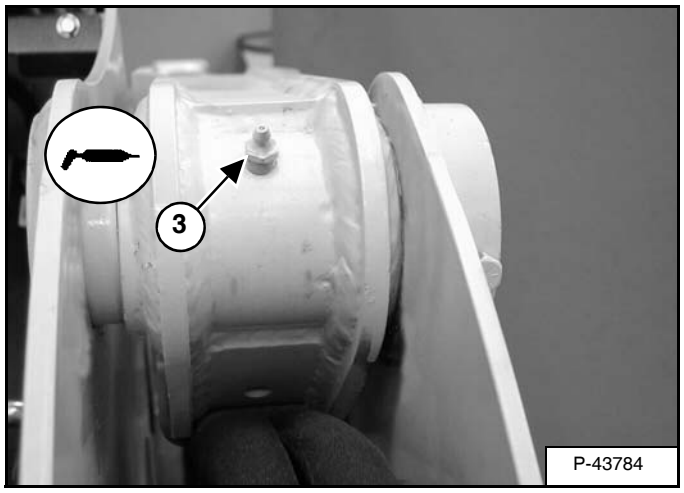
1. Rod End Lift Cylinder (Both Sides) **[Figure 10-140-1]**.

Figure 10-140-2



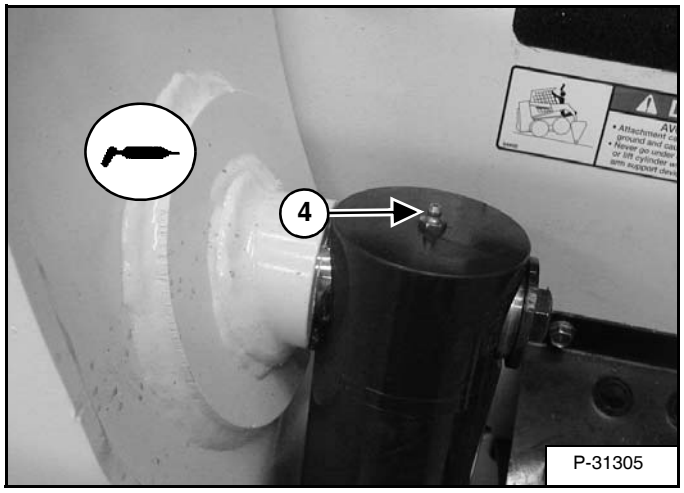
2. Base End Lift Cylinder (Both Sides) **[Figure 10-140-2]**.

Figure 10-140-3



3. Lift Arm Pivot Pin (Both Sides) **[Figure 10-140-3]**.

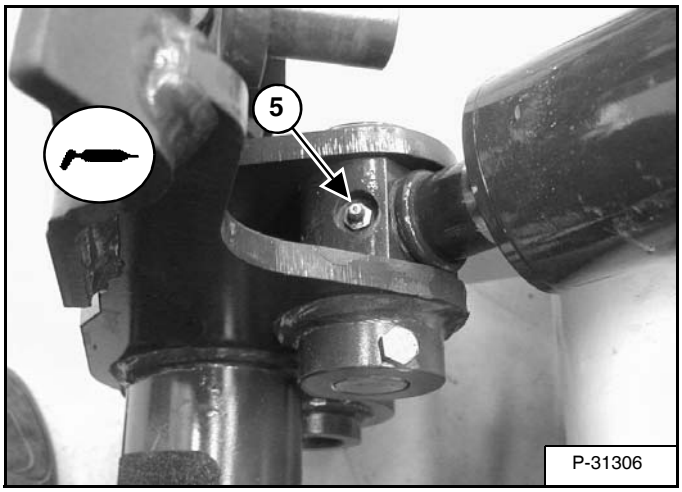
Figure 10-140-4



4. Base End Tilt Cylinder (Both Sides) **[Figure 10-140-4]**.

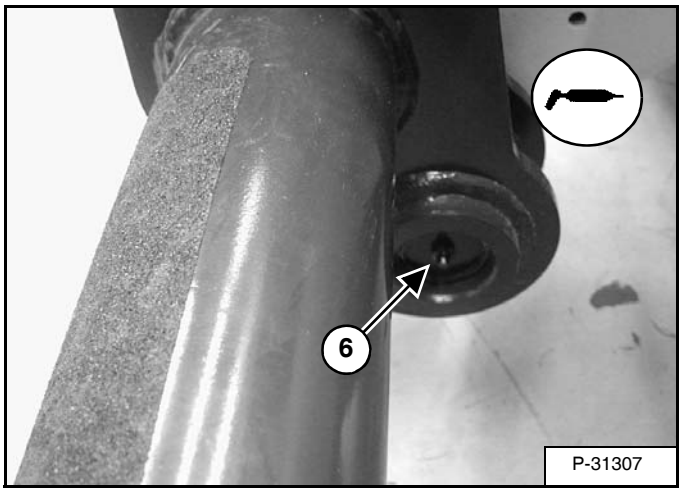
Procedure (Cont'd)

Figure 10-140-5



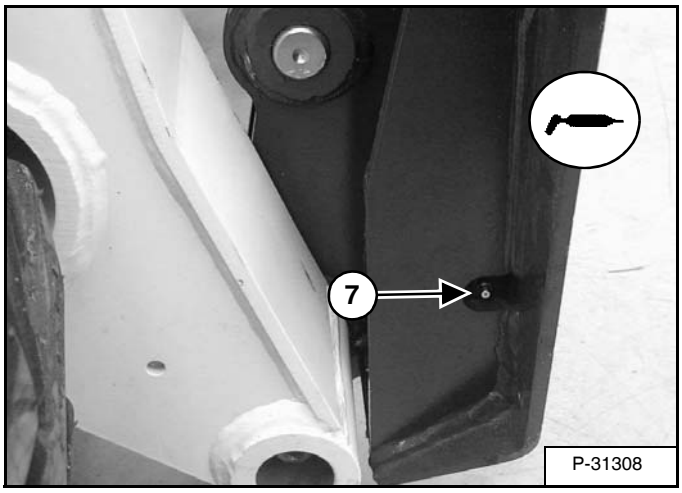
5. Rod End Tilt Cylinder (Both Sides) **[Figure 10-140-5]**.

Figure 10-140-6



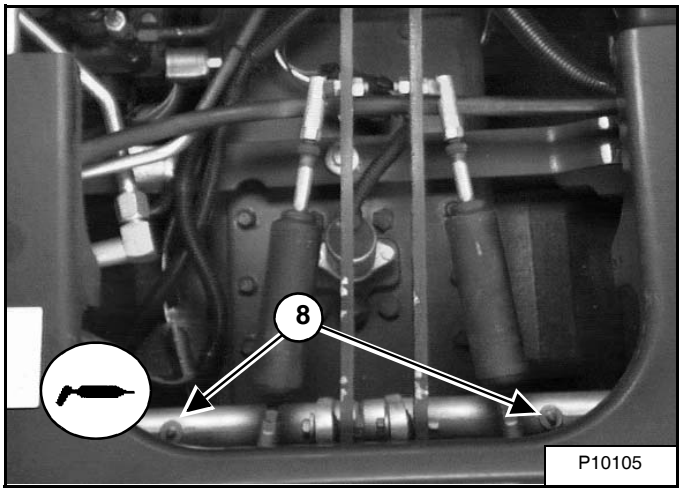
6. Bob-Tach Pivot Pin (Both Sides) **[Figure 10-140-6]**.

Figure 10-140-7



7. Bob-Tach Wedge (Both Sides) [**[Figure 10-140-7]**

Figure 10-140-8



8. **250 Hours:** Steering Lever Shaft (three) **[Figure 10-140-8]**.

Continued On Next Page

HYDRAULIC SYSTEM (CONT'D)

Continued On Next Page

HYDRAULIC SYSTEM (CONT'D)

Continued On Next Page