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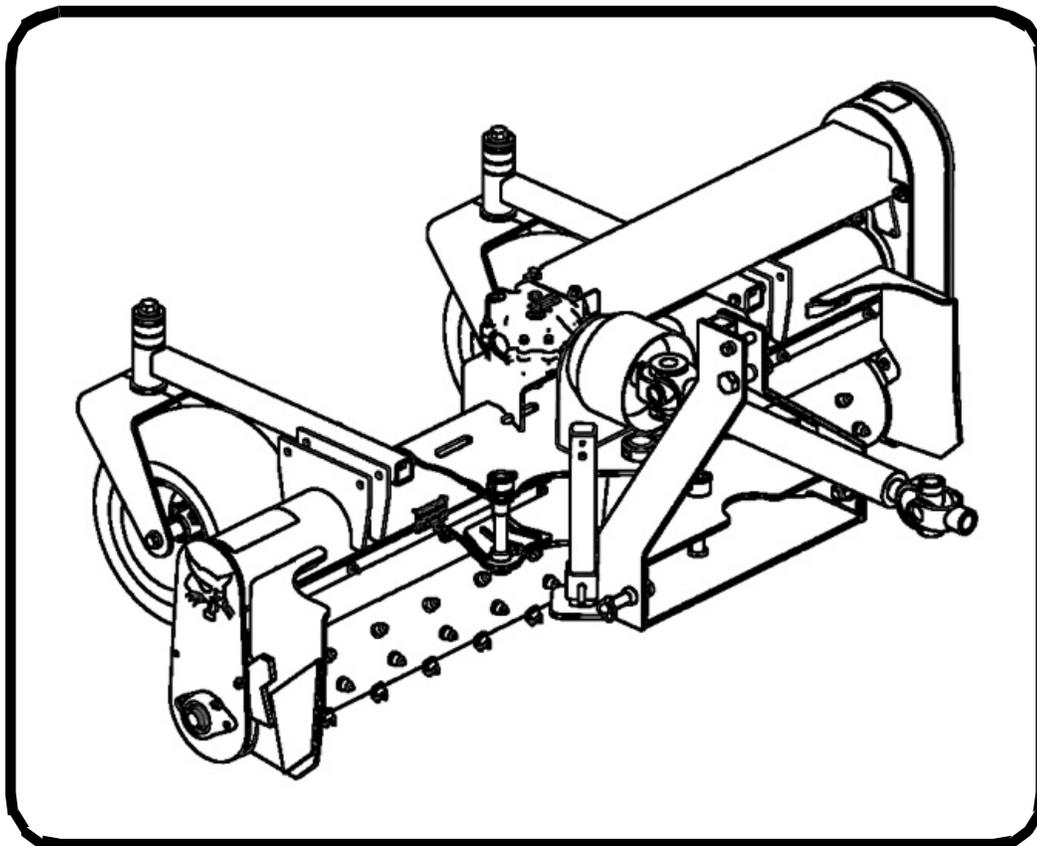
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## Service Manual

# Three-Point Soil Conditioner

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**(3SC60H) S/N AH8P00101 & Above**  
**(3SC60M) S/N AJKZ00101 & Above**  
**(3SC72H) S/N AH8L00101 & Above**  
**(3SC72M) S/N AJL400101 & Above**



Sample of manual. Download All 98 pages at:

<https://www.arepairmanual.com/downloads/2009-bobcat-three-point-soil-conditioner-3sc60h3sc60m3sc72h3sc72m-service-repair-workshop-manual/>

Product: 2009 Bobcat Three-Point Soil Conditioner 3SC60H,3SC60M,3SC72H,3SC72M Service Repair Workshop Manual  
Full Download: <https://www.arepairmanual.com/downloads/2009-bobcat-three-point-soil-conditioner-3sc60h3sc60m3sc72h3sc72m-service-repair-workshop-manual/>

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# MAINTENANCE SAFETY



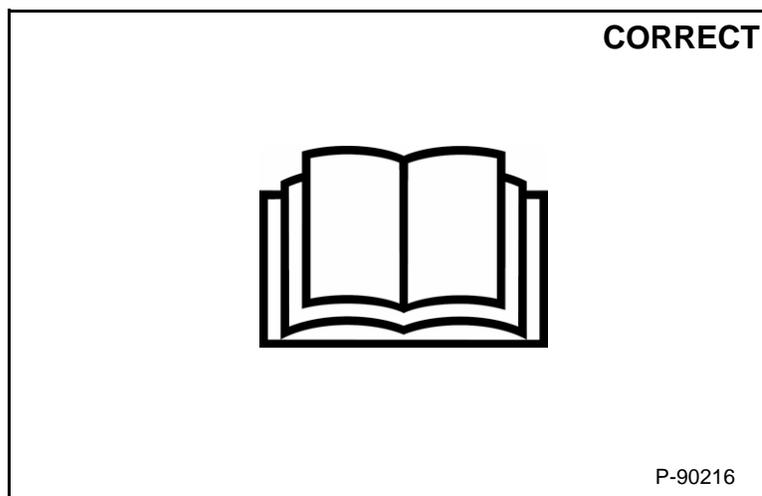
## WARNING

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

W-2003-0807



**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 attachments / implements without instructions. See Operation & Maintenance Manual and Attachment / Implement Service Manual.
-  Cleaning and maintenance are required daily.
-  Never service or adjust attachment / implement with the engine running unless instructed to do so in manual.
-  Always lower the attachment / implement to the ground before lubricating or servicing.
-  Avoid contact with leaking hydraulic fluid or diesel fuel under pressure. It can penetrate skin or eyes.
-  Stop, cool and clean engine of flammable materials before checking fluids.
-  Keep body, loose objects and clothing away from moving parts, electrical contacts, hot parts and exhaust.
-  Safety glasses are needed for eye protection from electrical arcs, battery acid, compressed springs, fluids under pressure and flying debris or when tools are used. Use eye protection approved for type of welding.



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## REFERENCE INFORMATION

Write the correct information for YOUR three-point soil conditioner in the spaces below. Always use these numbers when referring to your three-point soil conditioner.

Three-Point Soil Conditioner  
Serial Number

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NOTES:

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YOUR BOBCAT® DEALER:

ADDRESS:

PHONE:

Bobcat Company  
P.O. Box 128  
Gwinner, ND 58040-0128

Bobcat Company Europe  
Drève Richelle 167  
B-1410 WATERLOO  
Belgium

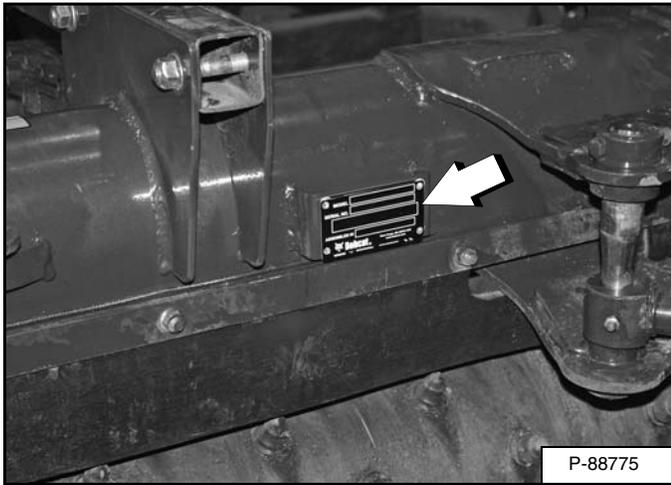


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## SERIAL NUMBER LOCATION

### Implement Serial Number

Figure 1



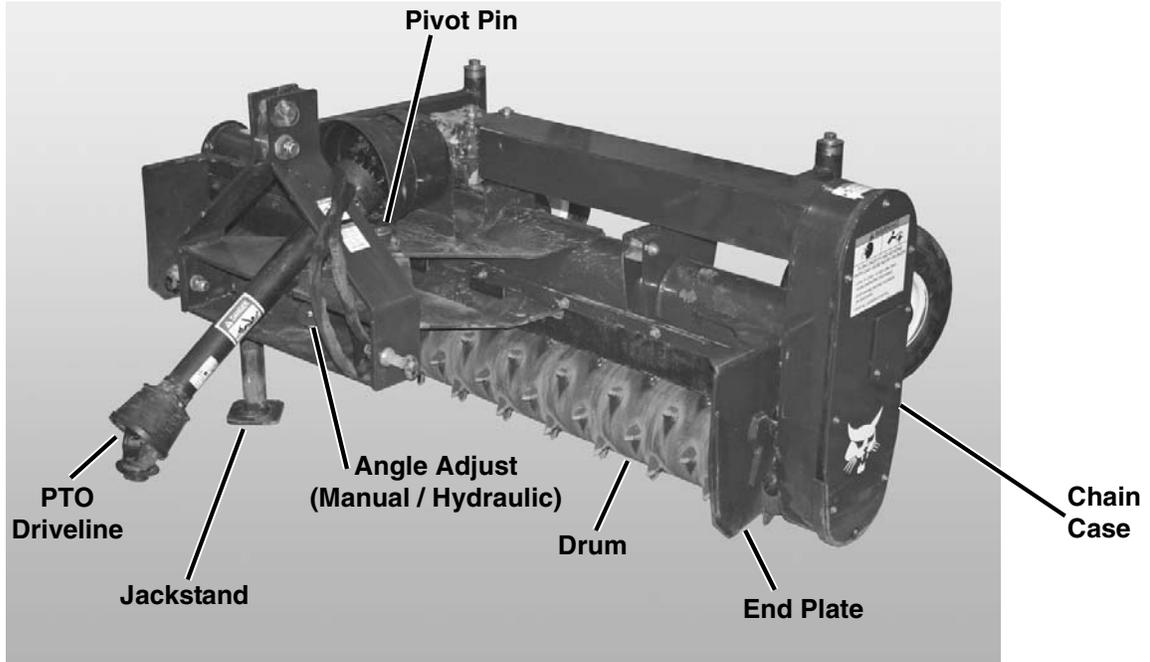
Always use the serial number of the three-point soil conditioner when requesting service information or when ordering parts. Early or later models (identification made by serial number) may use different parts, or it may be necessary to use a different procedure in doing a specific service operation [Figure 1].

## DELIVERY REPORT

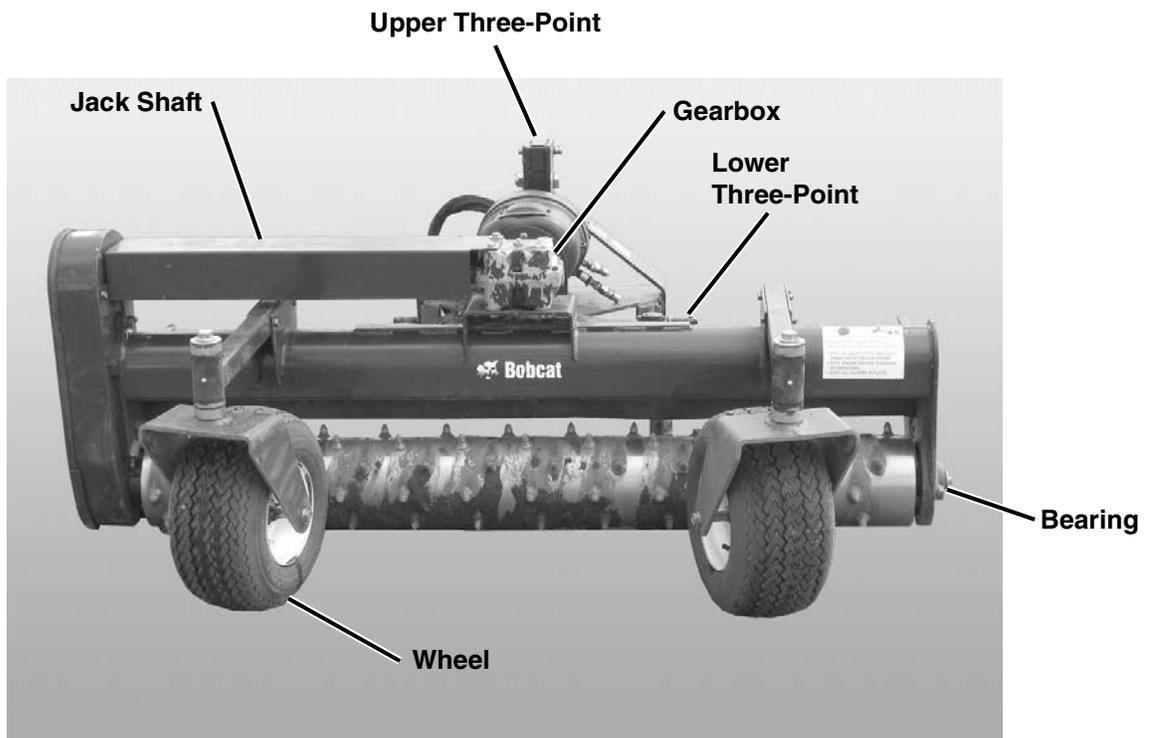
Figure 2

The delivery report must be filled out by the dealer and signed by the owner or operator when the Bobcat three-point soil conditioner is delivered. An explanation of the form must be given to the owner. Make sure it is filled out completely [Figure 2].

**IMPLEMENT IDENTIFICATION**



P-88789



P-88788

## SAFETY AND MAINTENANCE

## SAFETY AND MAINTENANCE

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## TROUBLESHOOTING

### Chart

PROBLEM	CAUSE	CORRECTION
Drum will not spin.	PTO not engaged.	Engage rear-PTO.
	PTO slip clutch worn excessively.	Repair or replace slip clutch.
	Chain link broken.	Repair or replace chain.
	Drum is obstructed.	Remove obstruction from drum.
Poor soil conditioning.	Missing or damaged teeth.	Replace teeth.
	Ground speed too fast.	Drive at slower ground speed.
	Incorrect height setting.	Adjust height setting.
Vibration.	Build up of material on drum.	Clean drum.
	Loose, broken or missing parts.	Repair or replace as needed.
Three-point soil conditioner does not angle.	Debris build up on pivot plates.	Clean debris from pivot plates.
<b>HYDRAULIC ANGLING EQUIPPED MODELS</b>		
PROBLEM	CAUSE	CORRECTION
Three-point soil conditioner does not angle.	Debris build up on pivot plates.	Clean debris from pivot plates.
	No hydraulic flow.	Check quick coupler connection.
	Damaged quick coupler(s).	Replace quick coupler(s).
	Damaged hydraulic hose(s).	Repair or replace hydraulic hose(s).
	Damaged hydraulic cylinder.	Repair or replace hydraulic cylinder.



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## SERVICE SCHEDULE

### Description

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 product.

SERVICE SCHEDULE		FREQUENCY		
ITEM	SERVICE REQUIRED	DAILY	10 HOURS	100 HOURS / YEARLY
Implement Frame Inspection	Inspect for cracks and damage.			
Drum Teeth Inspection	Check for damaged or missing teeth, replace as required.			
Check Chain Tension	Adjust chain tension, replace chain as required.			
PTO Shaft	Grease PTO shaft and check knuckles.			
Grease Three-Point Soil Conditioner	Apply grease to all fittings.			
Gearbox Fluid Level	Check for proper level of fluid.			
Replace Gearbox Fluid	Drain and replace fluid. (Approx. 28 fl. oz. (0,83 L) of EP80W90)		[1]	

[1] Service at first 10 hours and thereafter as scheduled.



#### AVOID INJURY OR DEATH

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

W-2003-0807

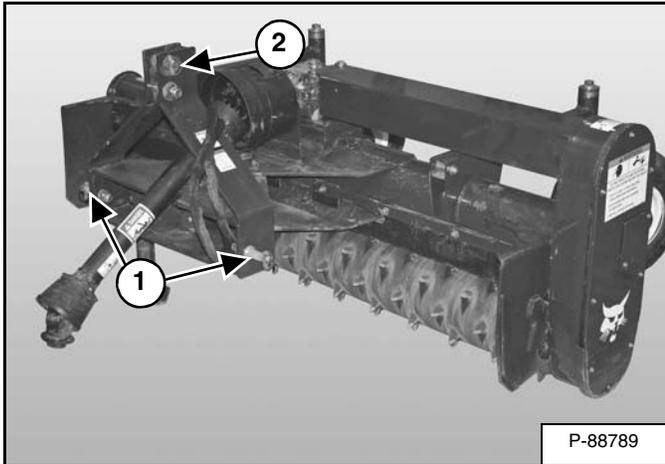


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## DAILY INSPECTION

### Implement Mounting Frame

Figure 10-30-1



Inspect the lower three-point mounts and mounting pins (Item 1) and upper three-point mount and mounting pin (Item 2) [Figure 10-30-1], along with all welds for wear and damage each time the three-point soil conditioner is removed from the carrier.

Frequently inspect the three-point soil conditioner to ensure that all components are secure and that all bolts and nuts are thoroughly tightened.

## DAILY INSPECTION (CONT'D)

### Three-Point Hitch

# ! WARNING

## AVOID INJURY OR DEATH

The parking brake must be engaged before leaving the operator's seat. Rollaway can occur because the transmission may not prevent machine movement. Lock the brake pedals together before activating the parking brake.

W-2656-0807

# ! WARNING

## AVOID INJURY OR DEATH

The parking brake must be engaged before leaving the operator's seat. Rollaway can occur because the transmission may not prevent machine movement. Lock the brake pedals together before activating the parking brake.

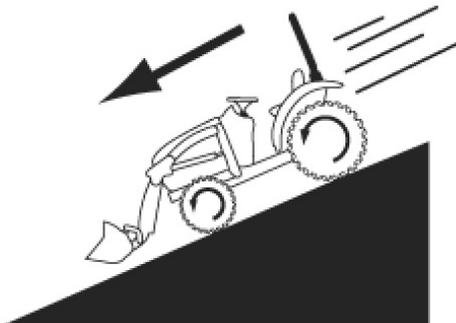
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# ! WARNING

## AVOID INJURY OR DEATH

The parking brake must be engaged before leaving the operator's seat. Rollaway can occur because the transmission may not prevent machine movement. Lock the brake pedals together before activating the parking brake.

W-2656-0807



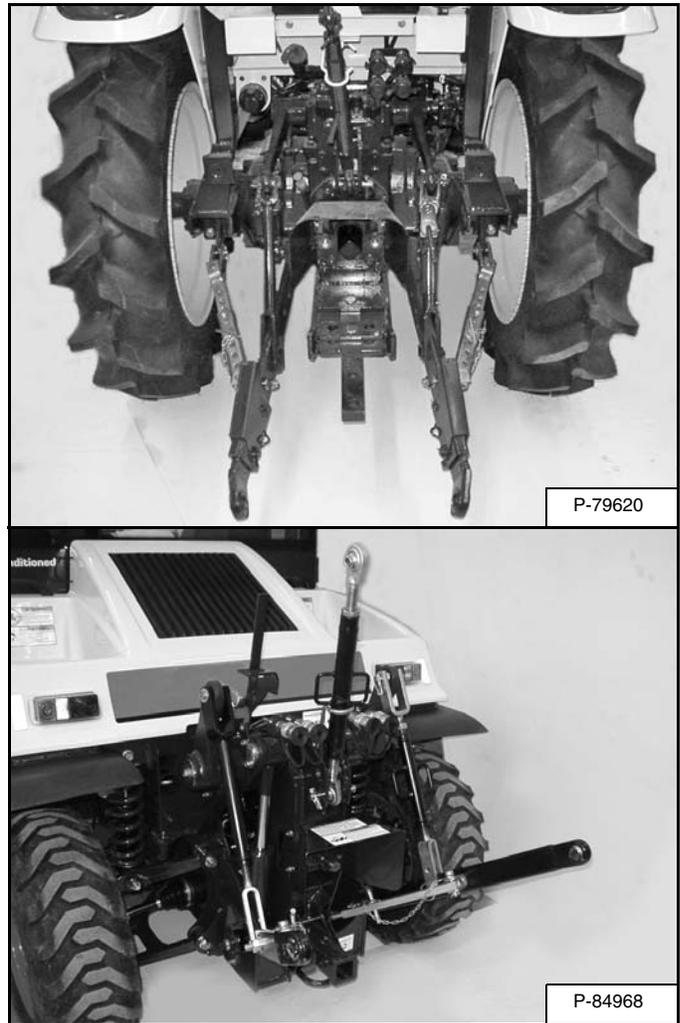
# ! WARNING

## AVOID INJURY OR DEATH

- Disengage the PTO (rear and mid), engage the parking brake, stop the engine and make sure all rotating components are completely stopped before connecting, disconnecting, adjusting or cleaning any PTO driven equipment.
- Always keep PTO shields and all guards in place when using PTO driven equipment.
- Disengage PTO (rear and mid) for road travel.
- Keep hands, feet and clothing away.

W-2568-0907

Figure 10-30-2



Inspect the three-point hitch linkage, PTO shaft splines, guards, and shields. Replace if damaged or missing [Figure 10-30-2]. Repair broken or loose parts.

See your machine's Operation & Maintenance Manual for detailed information on inspecting three-point hitch.

## IMPLEMENT STORAGE AND RETURN TO SERVICE

### Storage

Sometimes it may be necessary to store your Bobcat implement for an extended period of time. Below is a list of items to perform before storage:

- Thoroughly clean and wash the implement.
- Lubricate the implement.
- Inspect the three-point mounts, mounting pins and all welds on the implement for wear and damage.
- Check for loose hardware, missing guards, or damaged parts.
- Replace worn or damaged parts.
- Check for damaged or missing decals. Replace if necessary.
- Place the implement in a dry protected shelter.
- Place the implement flat on the ground.

**NOTE: In muddy conditions or to prevent the implement from freezing to the ground, put the implement on planks or blocks before removing the implement from the machine.**

### Return to Service

After the Bobcat implement has been in storage, it is necessary to follow a list of items to return the implement to service:

- Check for damaged or missing decals. Replace if necessary.
- Be sure all shields and guards are in place.
- Lubricate the implement.
- Check for loose hardware, missing or damaged parts.
- Check for leaks. Repair as needed.
- Check oil level in the gearbox.
- Install and operate implement, check for correct function.



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## REGULAR MAINTENANCE ITEMS

### Chain Tension

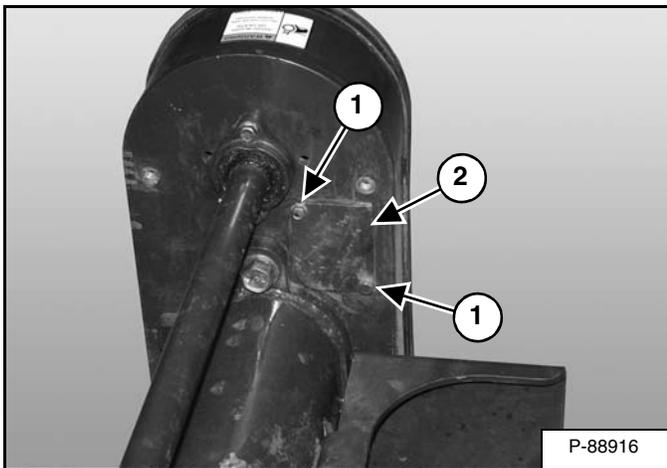


Wear safety glasses to prevent eye injury when any of the following conditions exist:

- Pressurized fluids and springs or other stored energy components.
- Flying debris or loose material is present.
- Engine is running.
- Tools are being used.

W-2505-0604

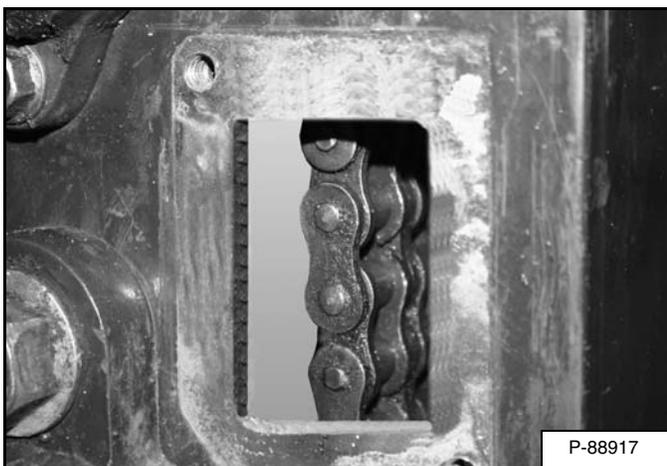
Figure 10-50-1



To access chain to check tension remove the two bolts (Item 1) and access cover (Item 2) [Figure 10-50-1].

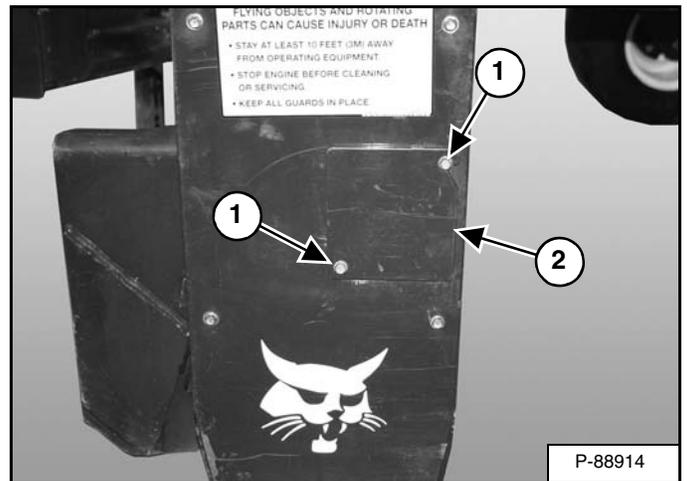
**NOTE:** For picture clarity the jack shaft shield was removed.

Figure 10-50-2



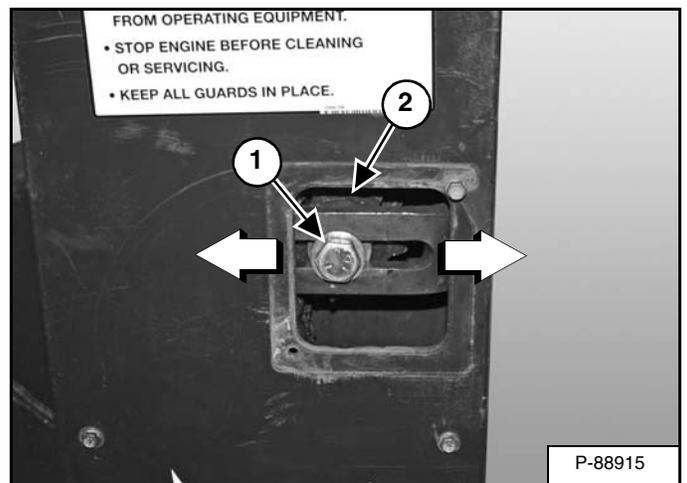
Adjust the chain tensioner if chain has more than 1/4 in. (6,35 mm) total movement at the center of the chain [Figure 10-50-2].

Figure 10-50-3



To access the tensioner, remove the two bolts (Item 1) and access cover (Item 2) [Figure 10-50-3].

Figure 10-50-4



Loosen the bolt (Item 1) [Figure 10-50-4].

Adjust the tensioner (Item 2) [Figure 10-50-4] to correctly tension chain to 1/4 in. (6,35 mm) total movement at the center of the chain.

Tighten tensioner bolt.

Check that chain tension is correct.

**NOTE:** Overtightening the chain will cause excessive wear to the chain and sprockets.

Install the access covers and tighten bolts.



**AVOID INJURY OR DEATH**  
Never operate with covers or guards removed.

W-2121-0788

## REGULAR MAINTENANCE ITEMS (CONT'D)

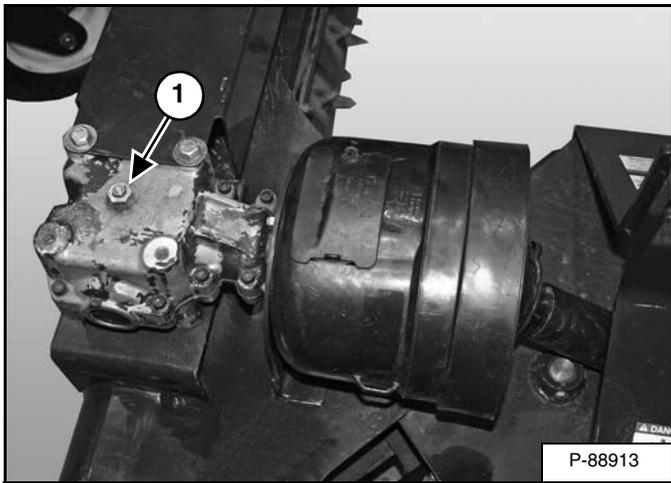
### Gearbox Fluid Level

# IMPORTANT

Fluid such as engine oil, hydraulic fluid, coolants, grease, etc. must be disposed of in an environmentally safe manner. Some regulations require that certain spills and leaks on the ground must be cleaned in a specific manner. See local, state and federal regulations for the correct disposal.

I-2067-0499

Figure 10-50-5



Remove the plug (Item 1) [Figure 10-50-5] from gearbox.

To check the fluid level use a flashlight to look into the gearbox. The fluid level should be about half way up on the cross shaft.

For low fluid level, add SAE EP80W90 to gearbox.

When fluid is at the correct level, reinstall and tighten fill plug.

### Drum Teeth Inspection

The soil condition and type of soil will determine the life of the drum teeth.

Figure 10-50-6

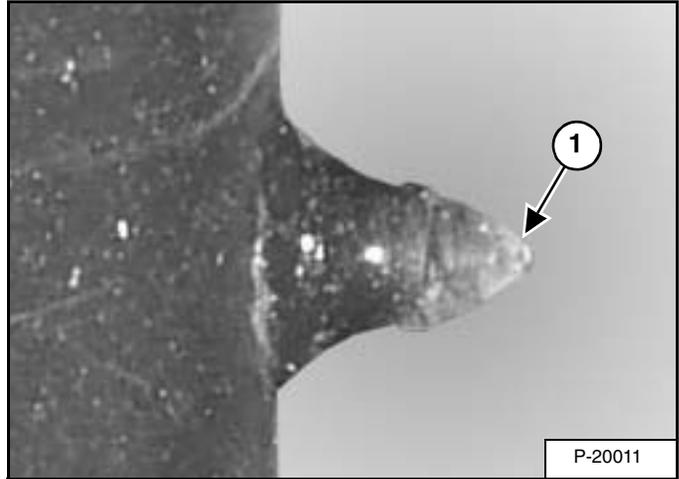
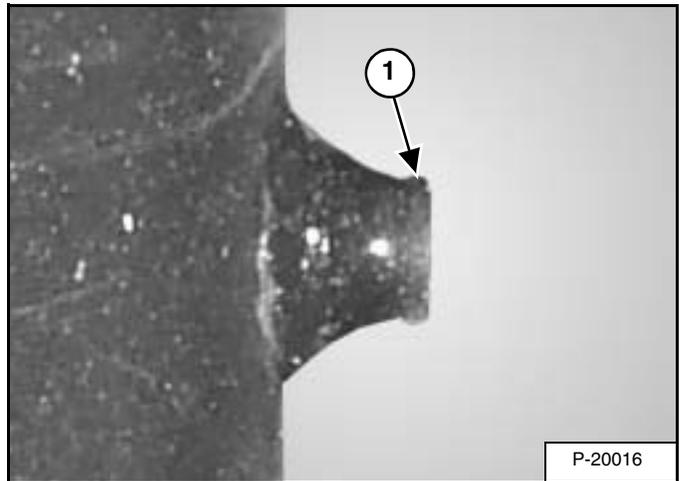


Figure 10-50-7



When the carbide tip (Item 1) [Figure 10-50-6] is worn to the holder (Item 1) [Figure 10-50-7], the tooth needs to be replaced with a new carbide tip.



# WARNING

**AVOID INJURY OR DEATH**  
Never operate with covers or guards removed.

W-2121-0788

## LUBRICATING THE IMPLEMENT

### Lubrication Locations

Always use a good quality lithium base multipurpose grease when lubricating the three-point soil conditioner. Apply lubricant until extra grease shows.

## WARNING

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

- Pressurized fluids and springs or other stored energy components.
- Flying debris or loose material is present.
- Engine is running.
- Tools are being used.

W-2505-0604

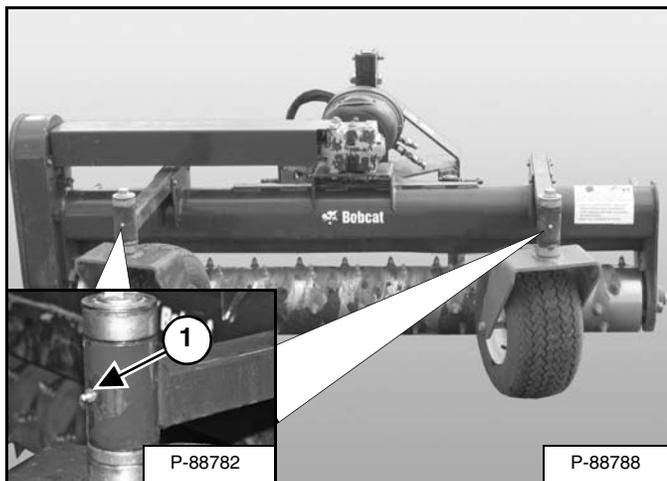
## IMPORTANT

Fluid such as engine oil, hydraulic fluid, coolants, grease, etc. must be disposed of in an environmentally safe manner. Some regulations require that certain spills and leaks on the ground must be cleaned in a specific manner. See local, state and federal regulations for the correct disposal.

I-2067-0499

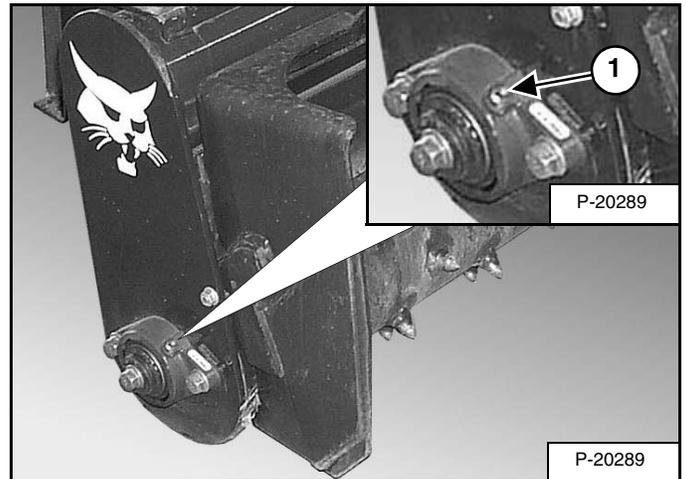
Lubricate the grease fittings EVERY 8 - 10 hours.

Figure 10-60-1



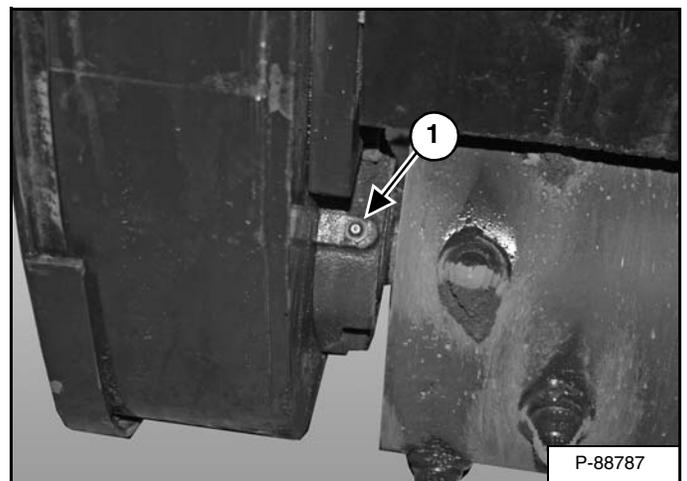
Apply grease to the caster wheel grease fittings (Item 1) [Figure 10-60-1].

Figure 10-60-2



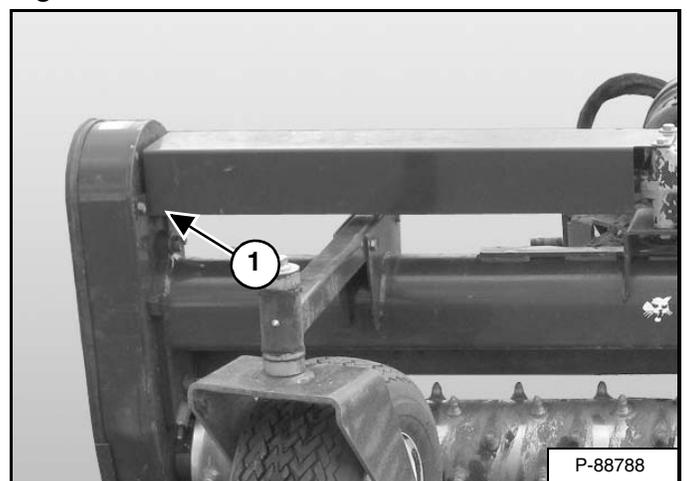
Apply grease to the bearing grease fitting (Item 1) [Figure 10-60-2].

Figure 10-60-3



Apply grease to the lower chain case bearing grease fitting (Item 1) [Figure 10-60-3].

Figure 10-60-4

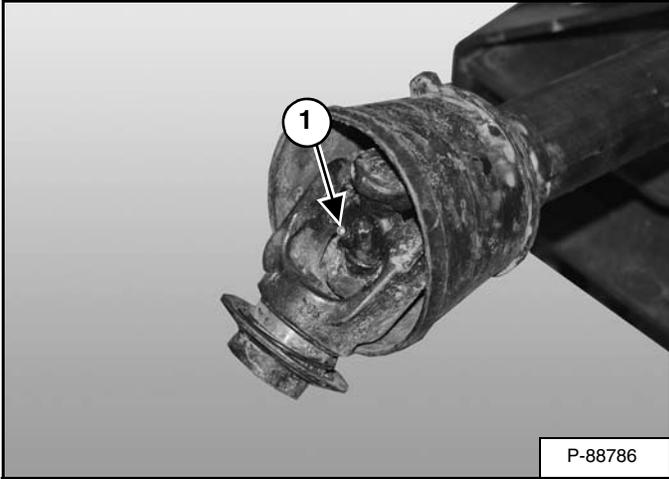


Apply grease to the upper chain case bearing grease fitting (Item 1) [Figure 10-60-4].

## LUBRICATING THE IMPLEMENT (CONT'D)

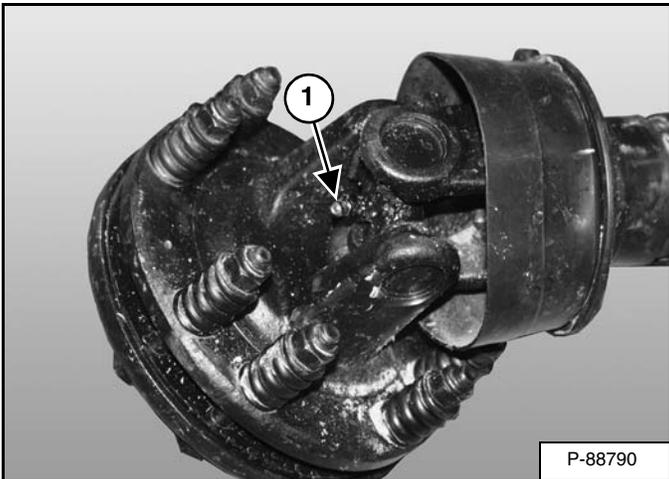
### Lubrication Locations (Cont'd)

Figure 10-60-5



Apply grease to the front PTO shaft grease fitting (Item 1) [Figure 10-60-5].

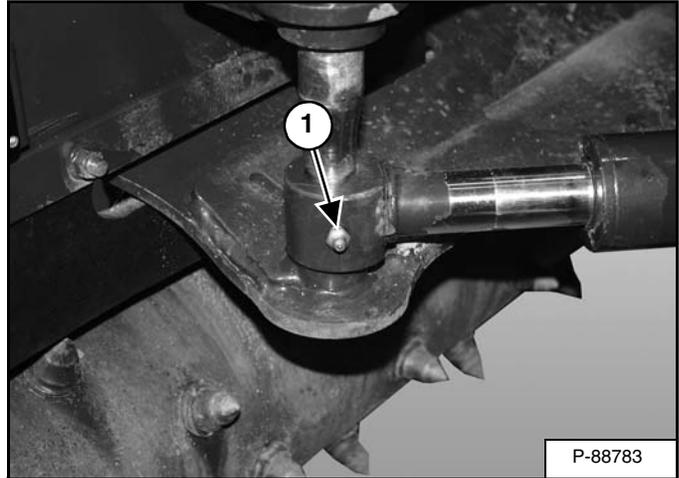
Figure 10-60-6



Apply grease to the rear PTO shaft grease fitting (Item 1) [Figure 10-60-6].

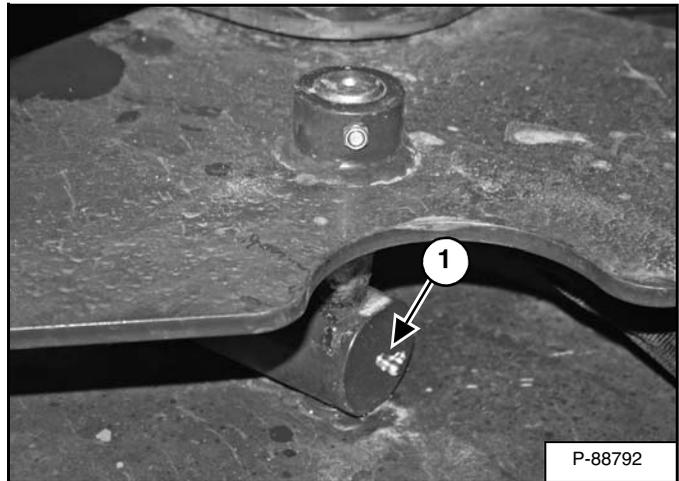
**NOTE:** For picture clarity the PTO shaft has been removed.

Figure 10-60-7



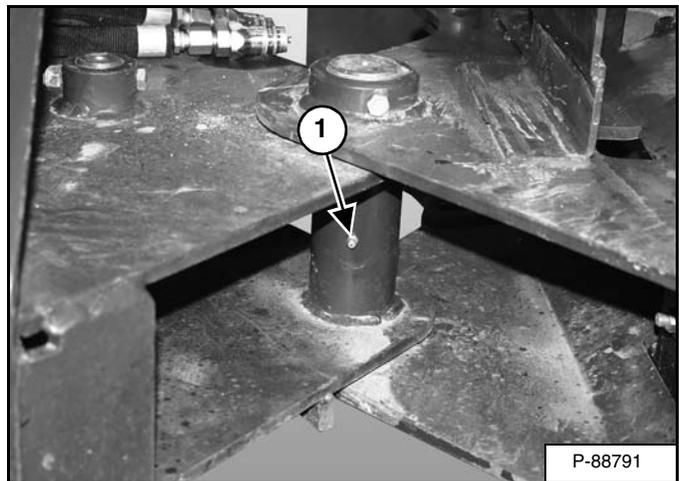
Apply grease to cylinder rod end grease fitting (Item 1) [Figure 10-60-7] (hydraulic angle cylinder if equipped).

Figure 10-60-8



Apply grease to cylinder base end grease fitting (Item 1) [Figure 10-60-8] (hydraulic angle cylinder if equipped).

Figure 10-60-9



Apply grease to pivot pin grease fitting (Item 1) [Figure 10-60-9]

## HYDRAULIC SYSTEM

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**HYDRAULIC  
SYSTEM**



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## HYDRAULIC CYLINDER (IF EQUIPPED)

### Removal And Installation

# IMPORTANT

When repairing hydrostatic and hydraulic systems, clean the work area before disassembly and keep all parts clean. Always use caps and plugs on hoses, tubelines and ports to keep dirt out. Dirt can quickly damage the system.

I-2003-0888

# ⚠ WARNING

## AVOID INJURY OR DEATH

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-2019-0907

# ⚠ WARNING

Hydraulic fluid escaping under pressure can have sufficient force to enter a person's body by penetrating the skin. This can cause serious injury and possible death if proper medical treatment by a physician familiar with this injury is not received immediately.

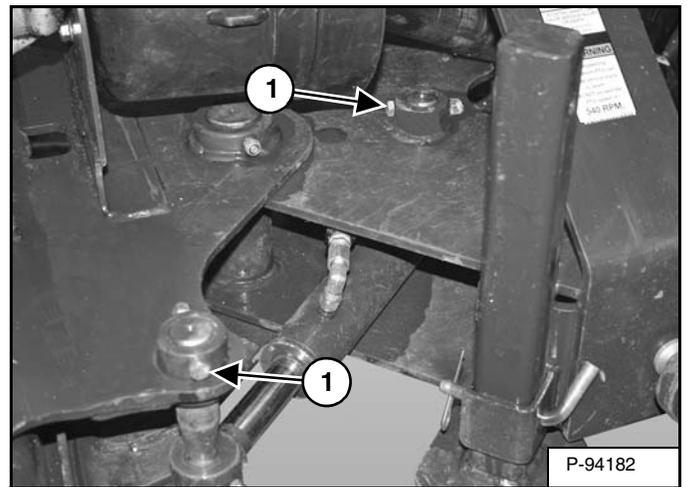
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# ⚠ WARNING

Check for correct function after adjustments, repairs or service. Failure to make correct repairs or adjustments can cause injury or death.

W-2004-1285

Figure 20-10-1

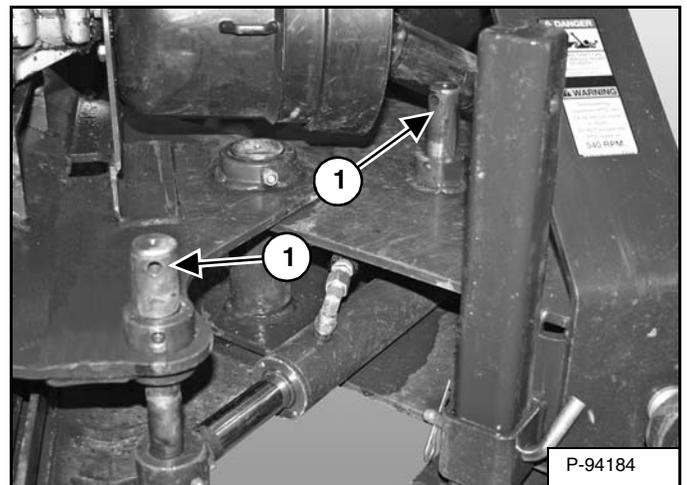


Remove the retaining nuts and bolts (Item 1) [Figure 20-10-1].

**Installation:** Install the retaining bolts and nuts.

Tighten the bolts to 25 - 28 ft.-lb. (34 - 38 N•m) torque.

Figure 20-10-2



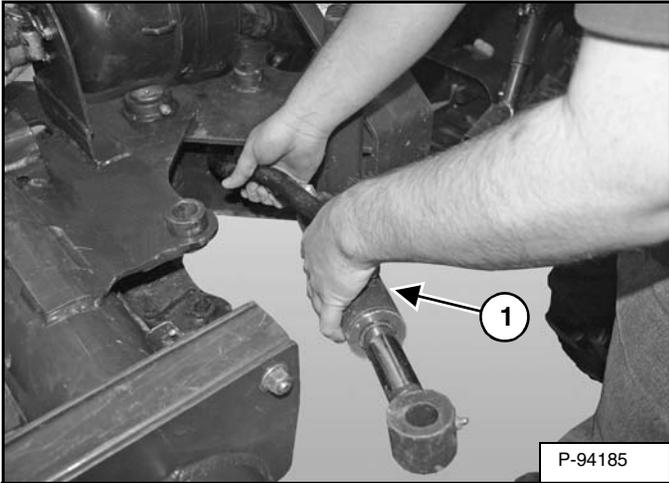
Remove the retaining pins (Item 1) [Figure 20-10-2].

**Installation:** Align the cylinder with the mounts. Install the pins.

## HYDRAULIC CYLINDER (IF EQUIPPED) (CONT'D)

### Removal And Installation (Cont'd)

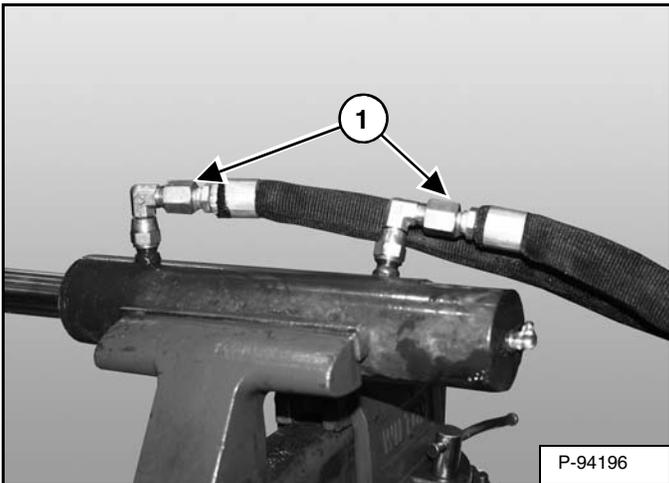
Figure 20-10-3



Remove the cylinder (Item 1) [Figure 20-10-3].

**Installation:** Route the hydraulic hoses and place the cylinder in position.

Figure 20-10-4

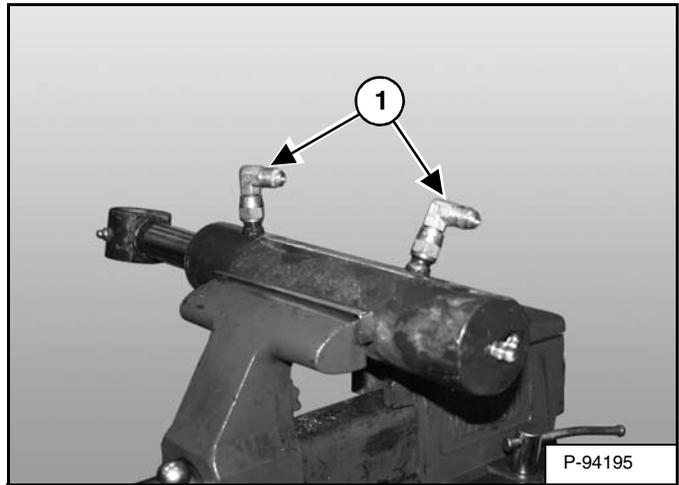


Place the cylinder in a vise and remove the hydraulic hoses (Item 1) [Figure 20-10-4].

**Installation:** Install and tighten hydraulic hoses.

**NOTE:** The longer hydraulic hose goes to the rod end of the cylinder.

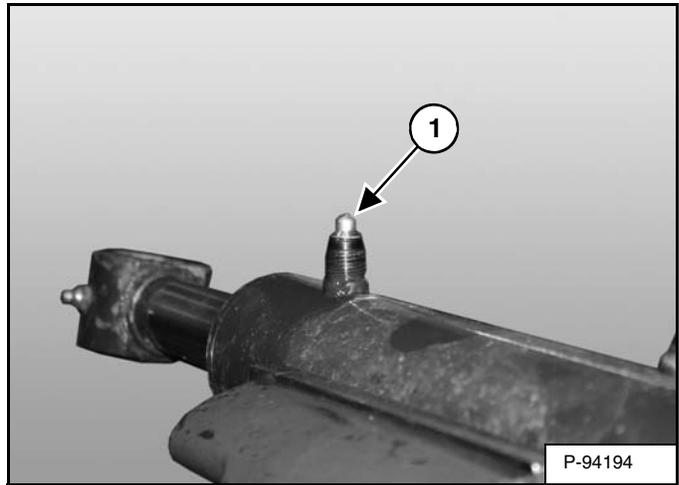
Figure 20-10-5



Remove the hydraulic elbow fittings (Item 1) [Figure 20-10-5].

**Installation:** Install and tighten hydraulic elbow fittings.

Figure 20-10-6



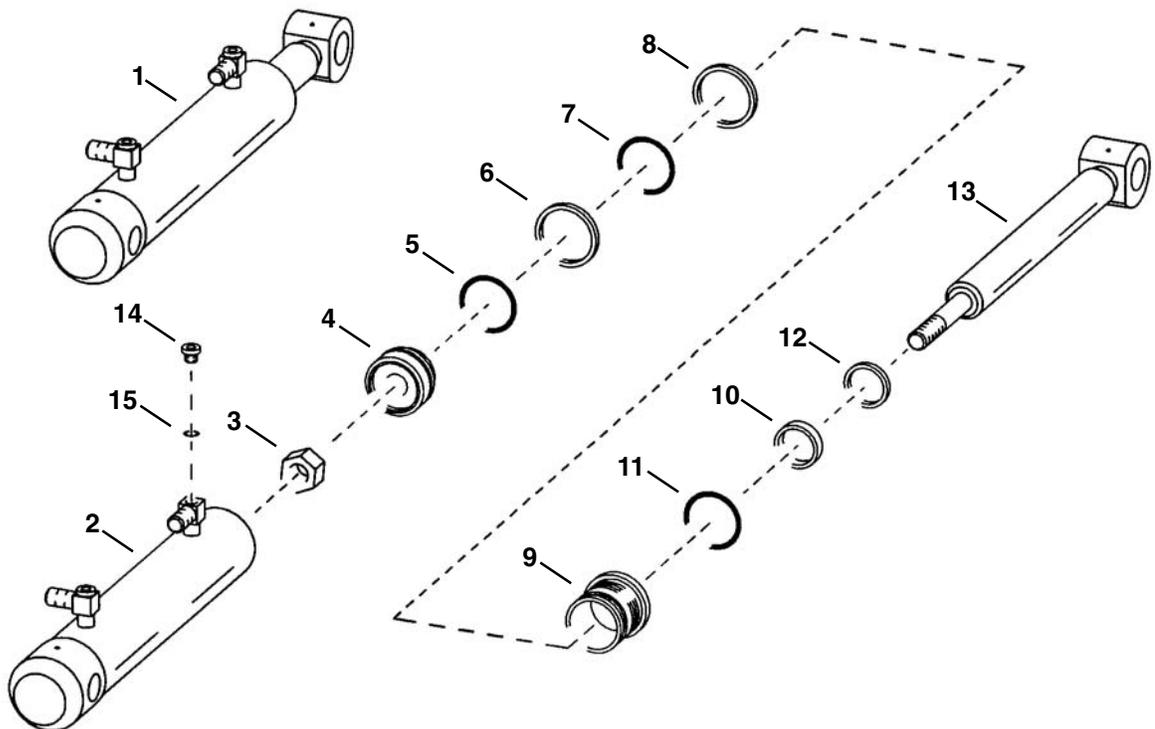
Remove the orifice from the rod end of cylinder (Item 1) [Figure 20-10-6].

**Installation:** Place the orifice on the rod end of cylinder port.

## HYDRAULIC CYLINDER (IF EQUIPPED) (CONT'D)

### Parts Identification

1. Cylinder
2. Case
3. Nut
4. Piston
5. O-Ring
6. Seal
7. O-Ring
8. Washer
9. Head
10. Seal
11. O-Ring
12. Seal
13. Rod
14. Plug
15. O-Ring



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**Disassembly**  
 Use the following tools to disassemble and assemble the hydraulic cylinder:

- MEL1074 O-Ring Seal Hook
- MEL1396 Seal Installation Tool
- MEL1032 or MEL1033 Rod Seal Installation Tool
- MEL1075 Adjustable Gland Nut Wrench
- MEL1076 Cylinder Wrench
- Torque Multiplier (See your Bobcat dealer)

**NOTE:** The drawings may not show the cylinder exactly as it appears, but the procedure is correct for all the cylinders.

## ⚠ WARNING

### AVOID INJURY OR DEATH

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.

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## IMPORTANT

When repairing hydrostatic and hydraulic systems, clean the work area before disassembly and keep all parts clean. Always use caps and plugs on hoses, tubelines and ports to keep dirt out. Dirt can quickly damage the system.

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## IMPORTANT

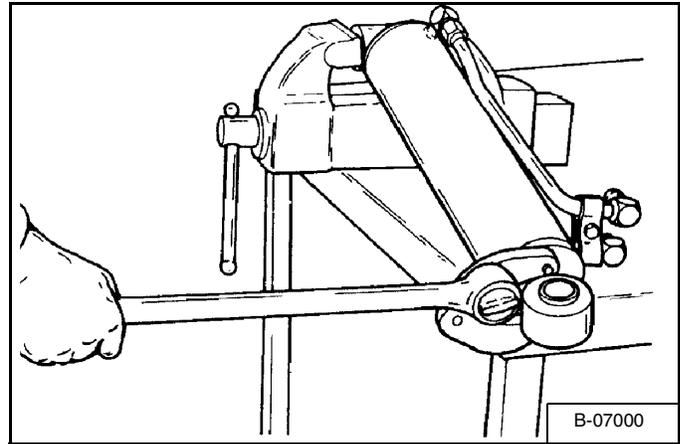
Contain and dispose of any oil leakage in an environmentally safe manner.

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Put the base end of the hydraulic cylinder in a drain pan. Move the rod in and out to remove the fluid from the cylinder. Move the rod slowly so the fluid will go directly into the drain pan.

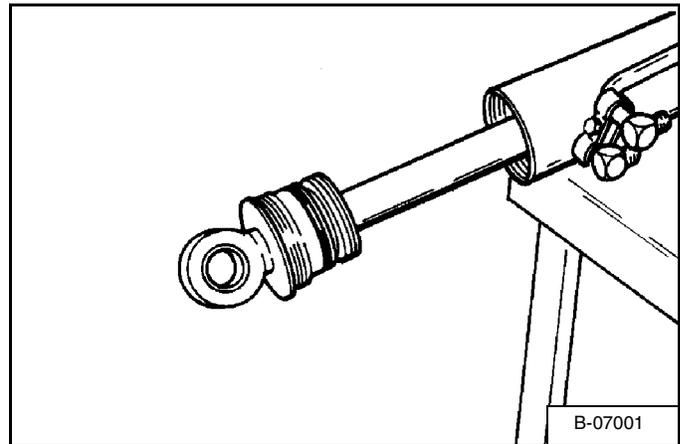
Put the base end of the cylinder in a vise.

**Figure 20-10-7**



Use an adjustable gland nut wrench to loosen the head [Figure 20-10-7].

**Figure 20-10-8**



Remove the rod assembly from the cylinder case [Figure 20-10-8].

Remove the cylinder case from the vise.

Put the rod end in the vise.