

Product: Bobcat Grader Service Repair Workshop Manual
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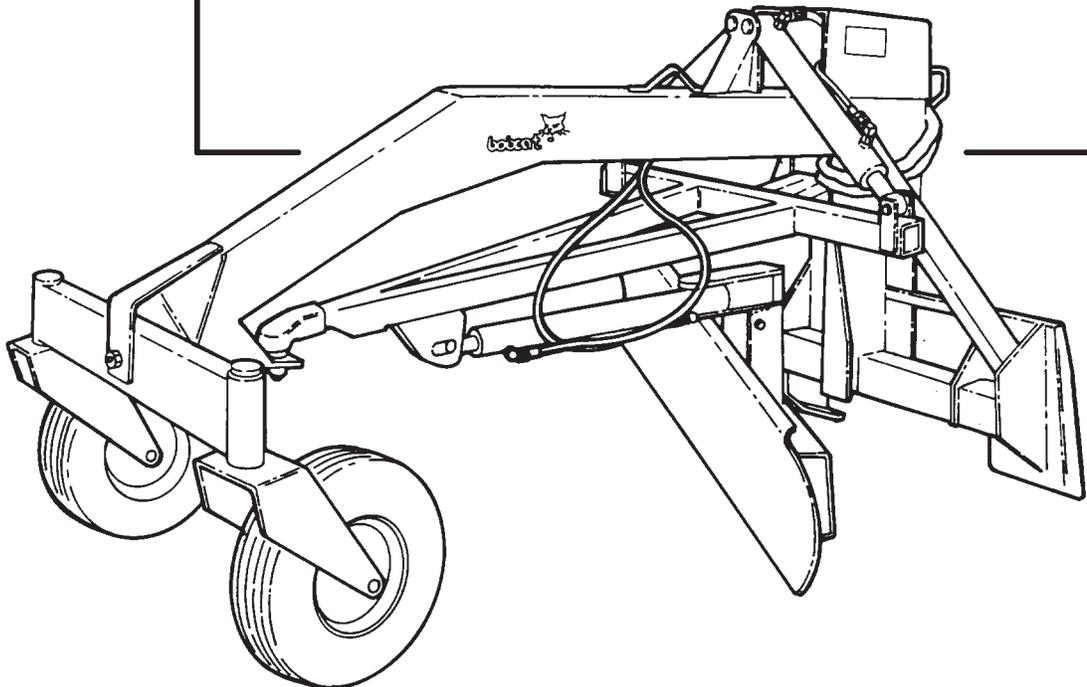


Bobcat®

GRADER

Service Manual

S/N 231511101 & Above
S/N 378700101 & Above
S/N 802700101 & Above



Sample of manual. Download All 82 pages at:
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MAINTENANCE SAFETY



WARNING

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

W-2003-0903



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



B-10731a

-  Never service attachments without instructions. See Operation & Maintenance Manual and Attachment Service Manual.
-  Cleaning and maintenance are required daily.
-  Never service or adjust attachment with the engine running unless instructed to do so in manual.
-  Always lower the attachment 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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**CALIFORNIA
PROPOSITION 65 WARNING**
Diesel engine exhaust and some of its
constituents are known to the State of California
to cause cancer, birth defects and other
reproductive harm.

**PREVENTIVE
MAINTENANCE**

**HYDRAULIC
SYSTEM**

MAIN FRAME

**SPECIFICATIONS
AND
SCHEMATICS**



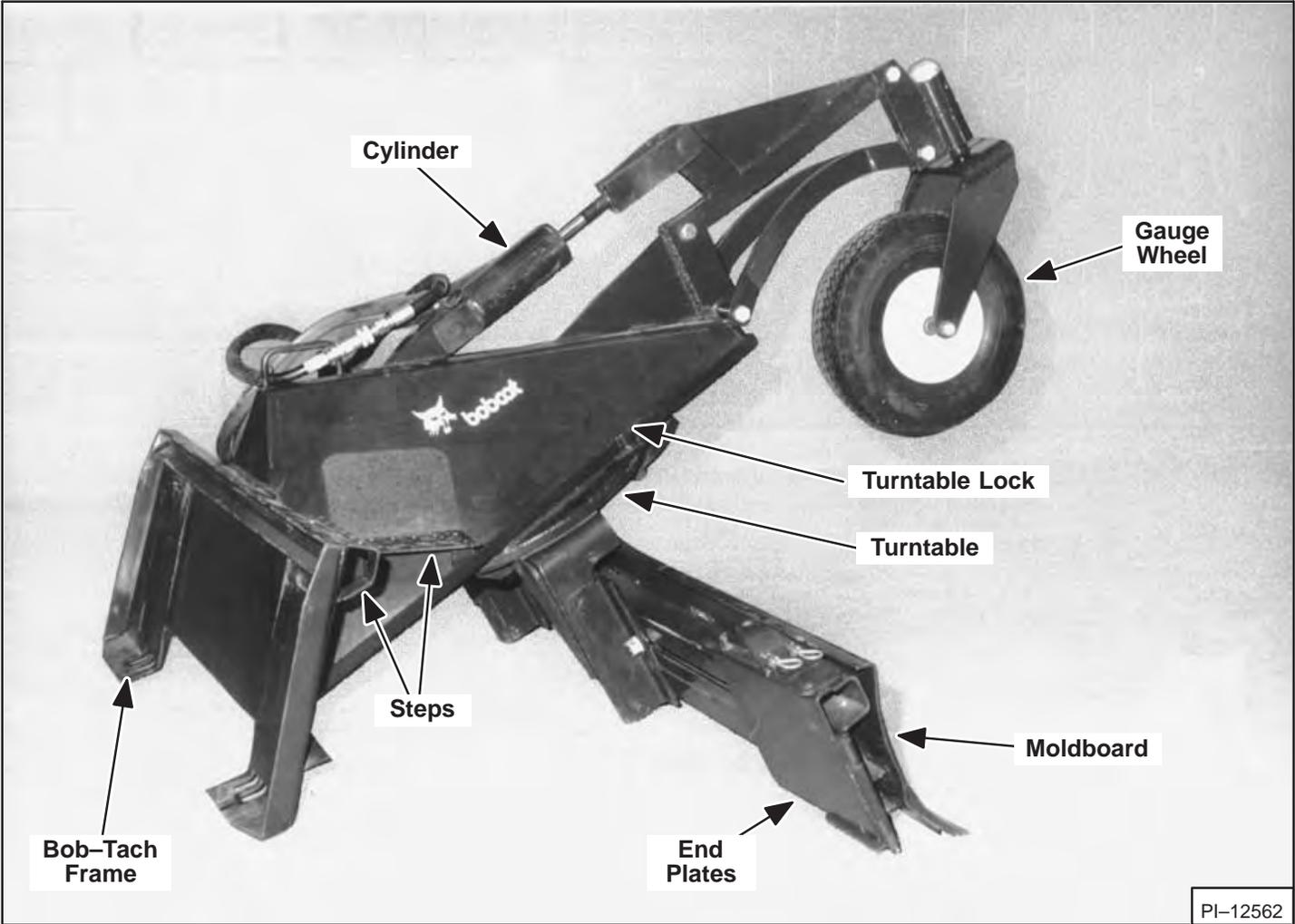
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SERIAL NUMBER LOCATION

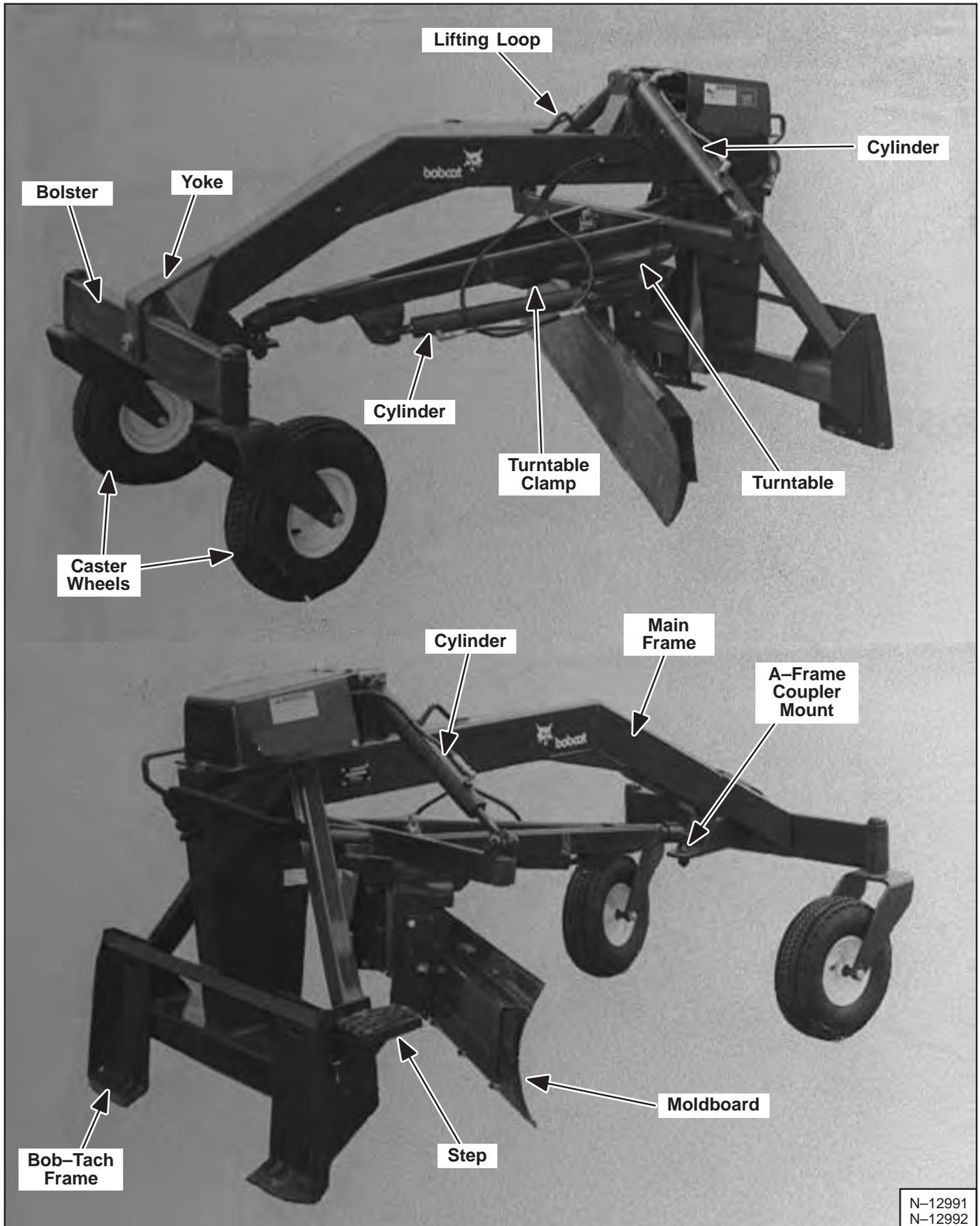
It is important to refer to the serial number of the Grader when making repairs or ordering parts **[A]** & **[B]**. Early or later models (identification made by serial number) may use different parts, or it may be necessary to use a different procedure in doing specific service work.



IDENTIFICATION (S/N 378700101 & Above)



IDENTIFICATION (S/N 802700101 & Above) And (S/N 231511101 & Above)





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PREVENTIVE MAINTENANCE

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**PREVENTIVE
MAINTENANCE**



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LUBRICATION

Lubricate the grader with a high quality multi-purpose lithium base grease. Apply the lubricant until the extra grease shows.

Add lubricant to the following grease fittings **EVERY 8–10 HOURS:**



S/N 378700101 & Above

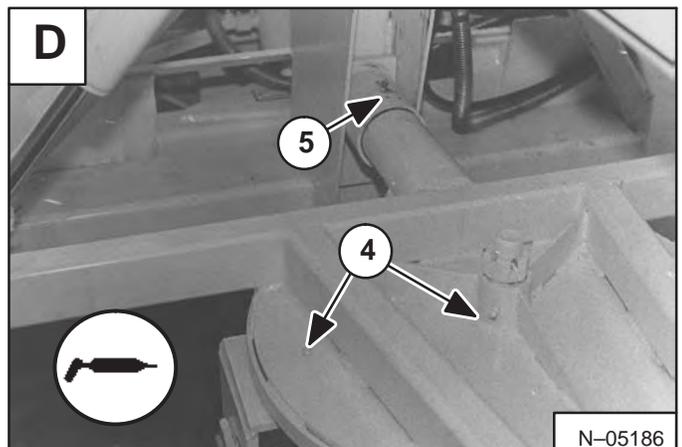
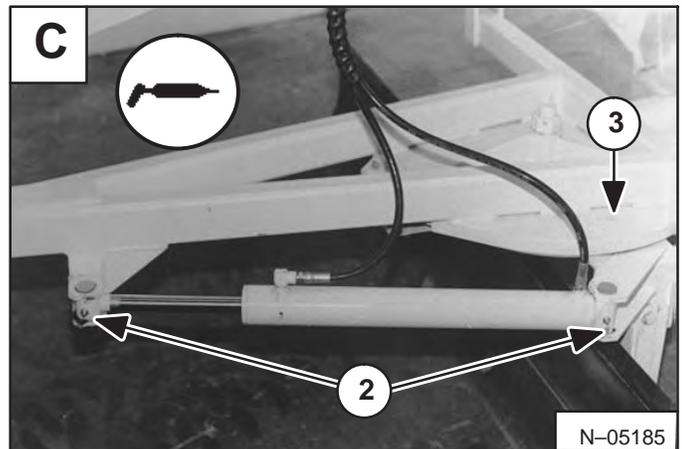
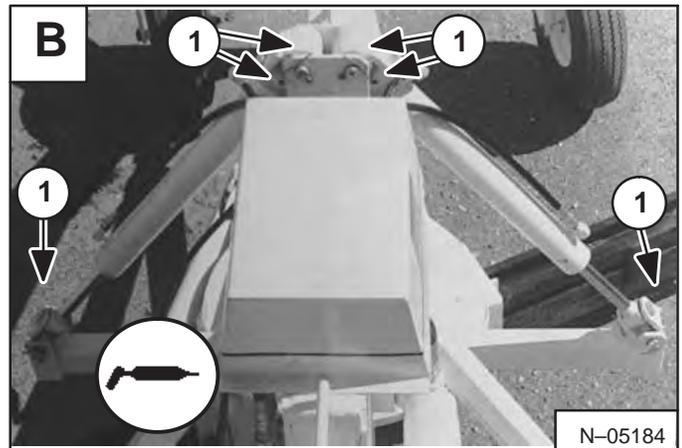
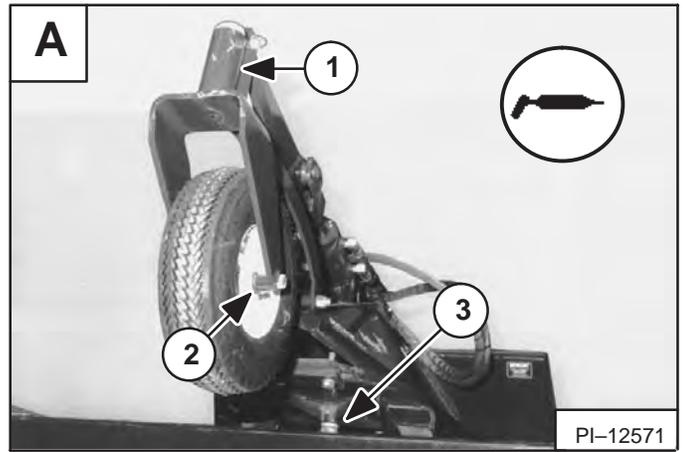
1. Caster Wheel Spindle Bearing [A].
2. Wheel Bearing [A].
3. Turntable Spindle [A].

S/N 802700101–802700871

1. Hydraulic Cylinder Ends (older graders only) [B].

2. Hydraulic Cylinder Ends (older graders only) [C].
3. Turntable [C].

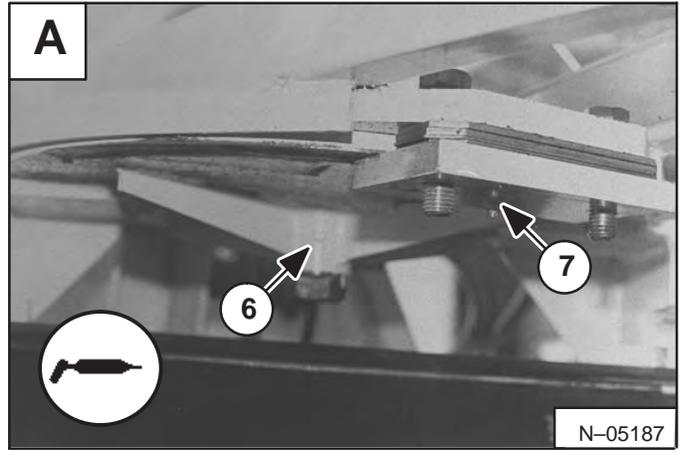
4. Turntable [D].
5. Sliding Pipe [D].



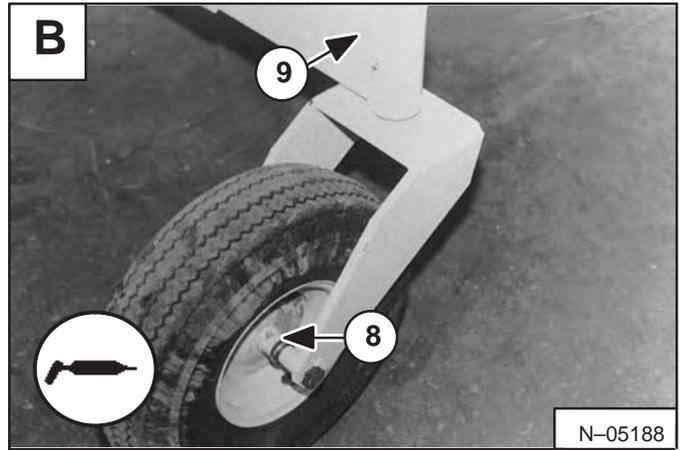
LUBRICATION (Cont'd)

S/N 802700101–802700871 (Cont'd)

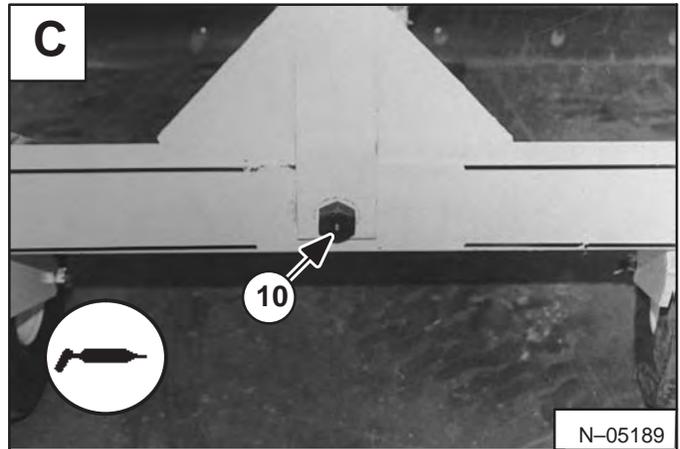
- 6. Turntable [A].
- 7. Turntable Clamp [A].



- 8. Wheel Bearings (both sides) [B].
- 9. Caster Wheel Spindle Bearings (both sides) [B].



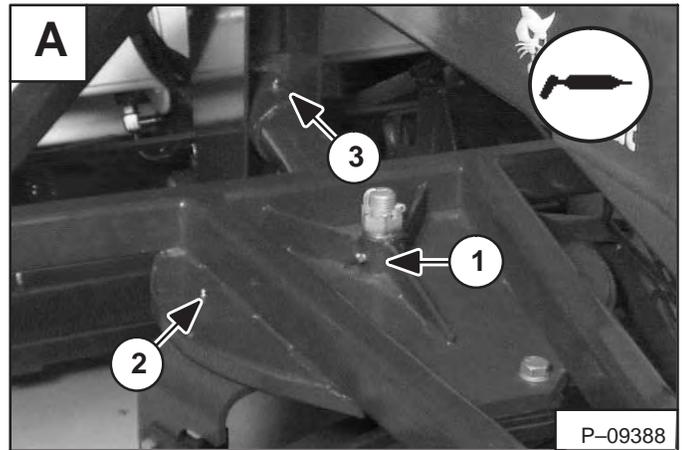
- 10. Bolster Bolt [C].



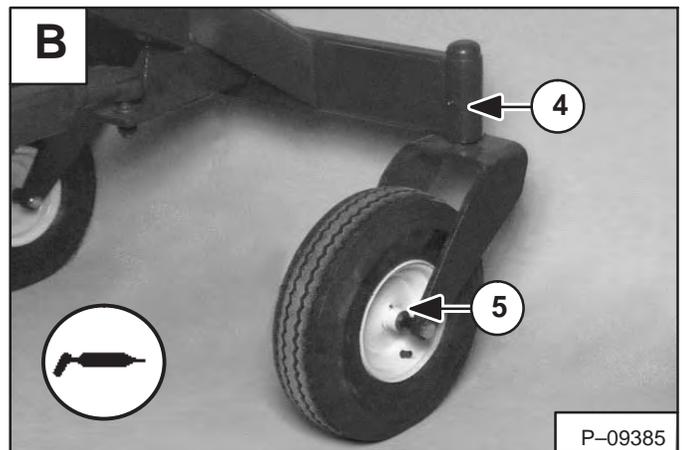
LUBRICATION (Cont'd)

S/N 802700872 & Above And S/N 231511101 & Above

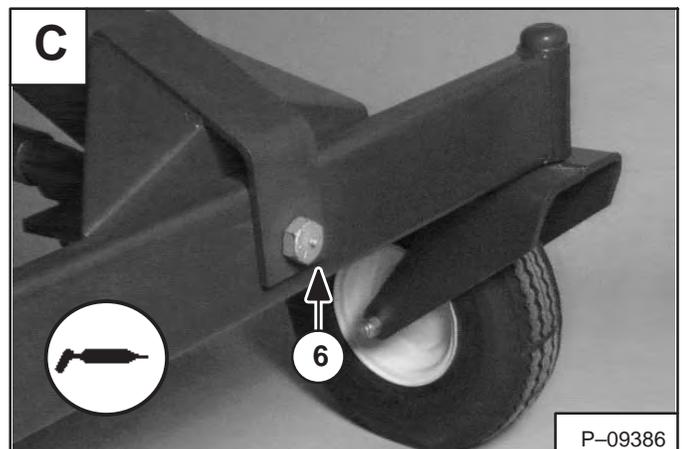
1. Turntable Pivot [A].
2. Turntable Plate (two fittings) [A] (early models only).
3. Vertical Slide [A].



4. Caster Wheel Spindle Bearings (both sides) [B] (early models only).
5. Wheel Bearings (both sides) [B].



6. Bolster Bolt [C].

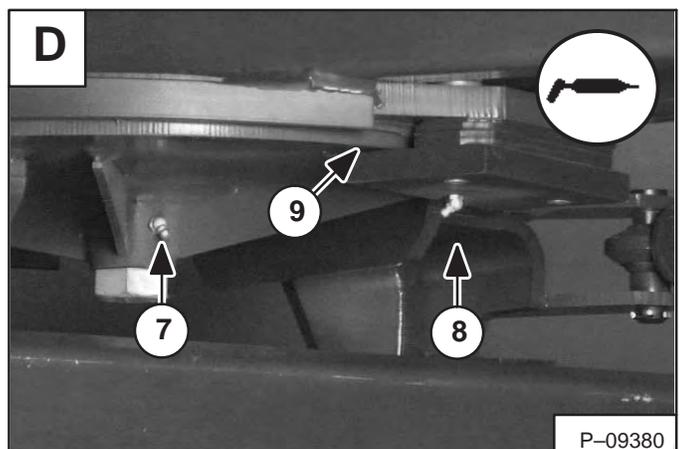


7. Turntable Pivot [D].
8. Turntable Clamp [D].

Check the clearance (Item 9) [D] between the bottom of the turntable and turntable clamp.

If the clearance is over 0.0312 inch (0,8 mm), remove the two bolts and clamp.

Remove or add the shim(s) as needed. Replace the clamp and tighten the bolts.



INSPECTION AND ADJUSTMENT

S/N 378700101 & Above

The following items must be checked and performed after the **FIRST 8–10 HOURS** of operation and **EVERY 50 HOURS** after that.

Lower the moldboard to the ground so the caster wheel is off the ground. Stop the engine.

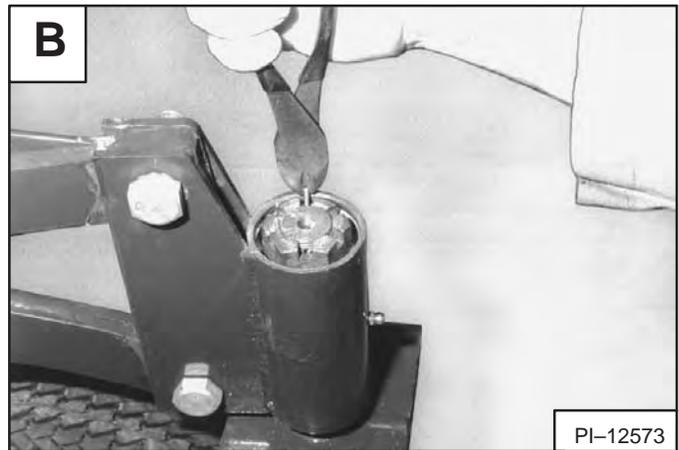
Check the caster wheel spindle for excess play. To reduce the end play, remove the dust cap **[A]**.



Remove the cotter pin **[B]**.

Tighten the castle nut to remove the end play.

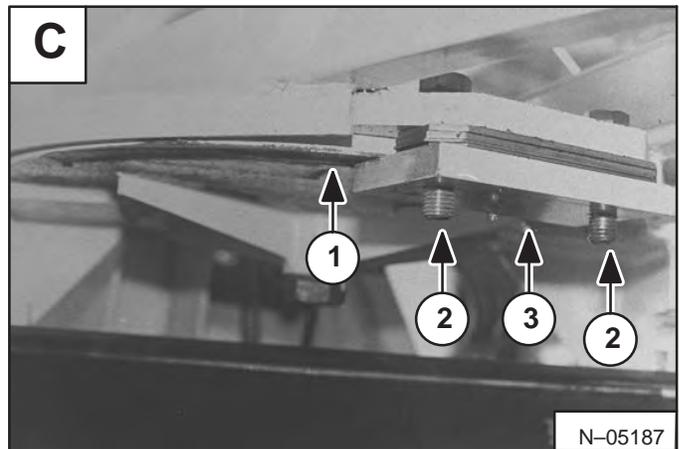
Replace the cotter pin and dust cap.



Check the clearance (Item 1) **[C]** between the bottom of the turntable and the turntable clamp.

If the clearance is over 0.0312 inch (0,8 mm), remove the two bolts (Item 2) **[C]** and clamp (Item 3) **[C]**.

Remove or add shim(s) as needed. Replace the clamp and tighten the bolts.



S/N 802700101–802700871

The following items must be checked and performed after the **FIRST 8–10 HOURS** of operation and **EVERY 50 HOURS** after that.

Raise the front of the grader. Put a jackstand under the A-frame coupler mounting. Stop the engine.

Check the caster wheel spindles for excess end play. To reduce the end play, remove the dust cap **[D]**.



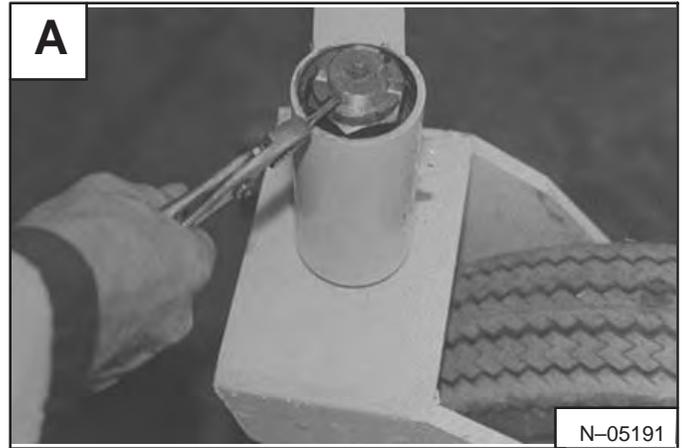
INSPECTION AND ADJUSTMENT (Cont'd)

S/N 802700101–802700871 (Cont'd)

Remove the cotter pin [A].

Tighten the castle nut to remove the end play.

Replace the cotter pin and dust cap.



Check the bolster-to-yoke clearance. If the bolster is loose in the yoke, remove the cotter pin.

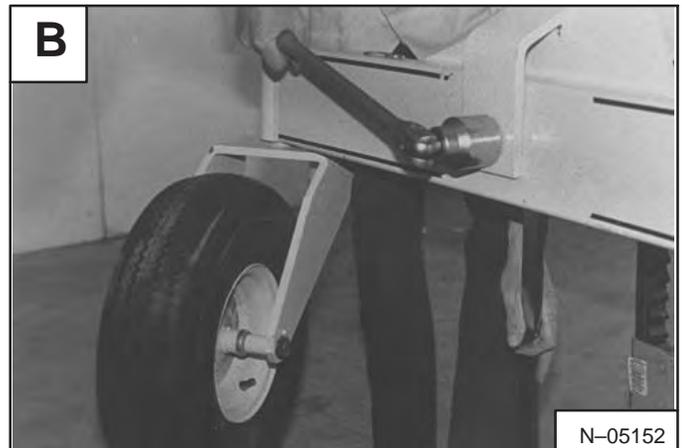
Tighten the castle nut [B].

Replace the cotter pin.

Check the tension at the turntable center bolt.

Disconnect the base end of the pivot cylinder.

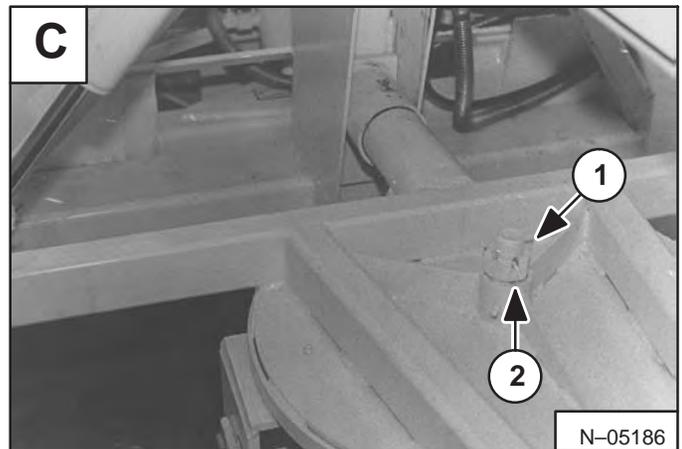
Pivot the turntable by pushing on one end of the moldboard. The turntable should pivot with some difficulty when pushed by hand.



To adjust, remove the cotter pin (Item 1) [C].

Tighten the castle nut (Item 2) [C].

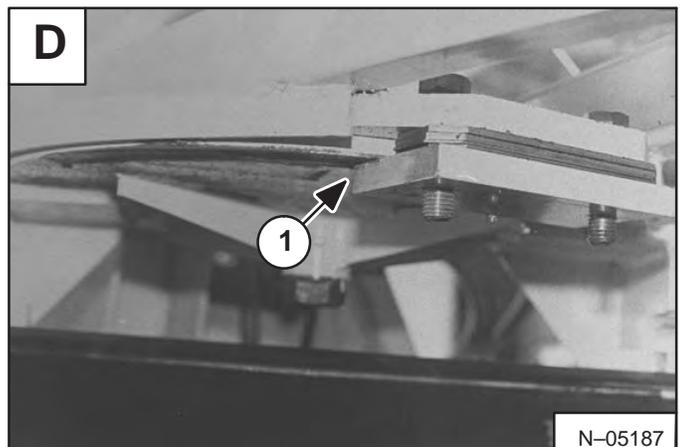
Replace the cotter pin. Connect the base end of the pivot cylinder.



Check the clearance (Item 1) [D] between the bottom of the turntable and turntable clamp.

If the clearance is over 0.032 inch (0,8 mm), remove the two bolts and clamp.

Remove or add shim(s) as needed. Replace the clamp and tighten the bolts.

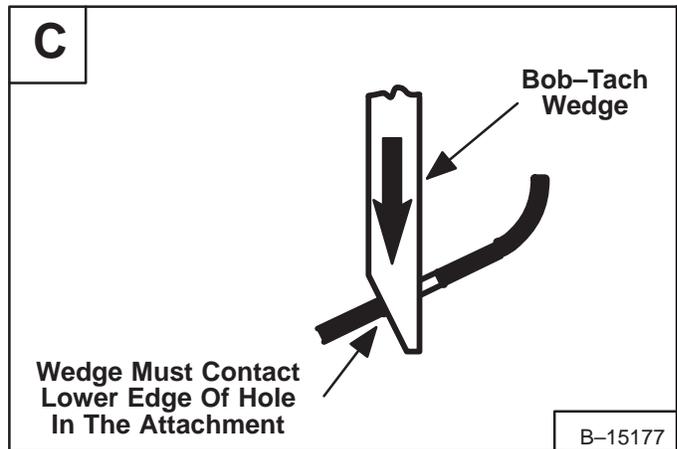
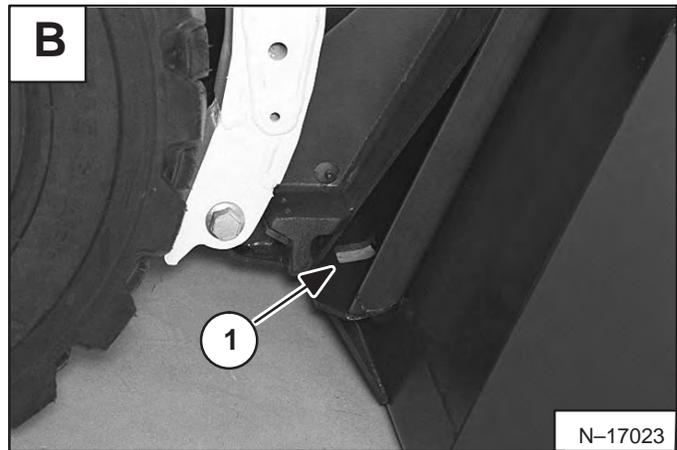
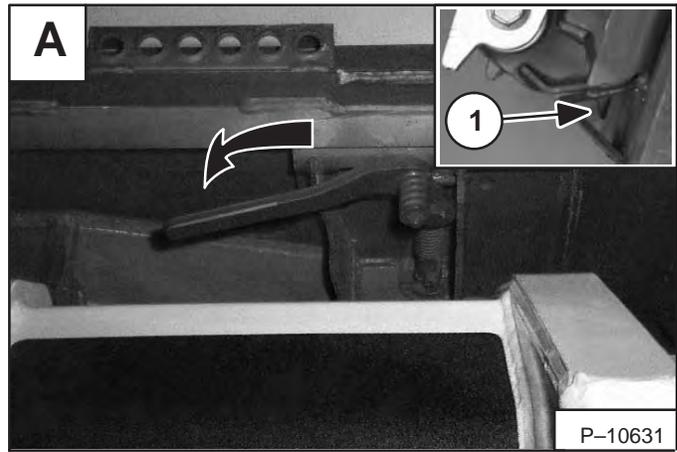


INSPECTION AND ADJUSTMENT (Cont'd)

Hand Lever Bob-Tach Inspection

Move the Bob-Tach levers to engage the wedges [A]. The levers and wedges must move freely.

The wedges must extend through the holes in the attachment mounting frame (Item 1) [A].



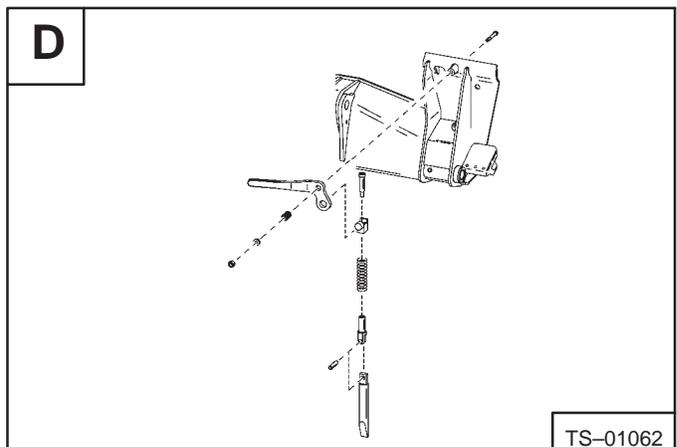
WARNING

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

W-2102-0497

The spring loaded wedge (Item 1) [A] must contact the lower edge of the hole in the attachment (Item 1) [B] and [C].

If the wedge does not contact the lower edge of the hole [B] and [C], the attachment will be loose and can come off the Bob-Tach.



Inspect the mounting frame on the attachment and the Bob-Tach, linkages and wedges for excessive wear or damage [D]. 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 the correct loader Operation & Maintenance Manual for *LUBRICATION OF THE BOBCAT LOADER*.)

INSPECTION(Cont'd)

Power Bob-Tach Inspection

Push and hold the Bob-Tach “wedges up” switch [A] until wedges are fully raised. Push and hold the Bob-Tach “wedges down” switch [A] until the wedges are fully down. the wedges must move freely.

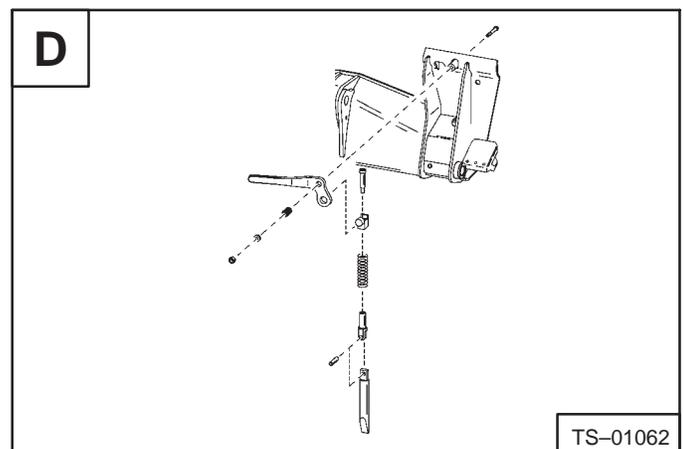
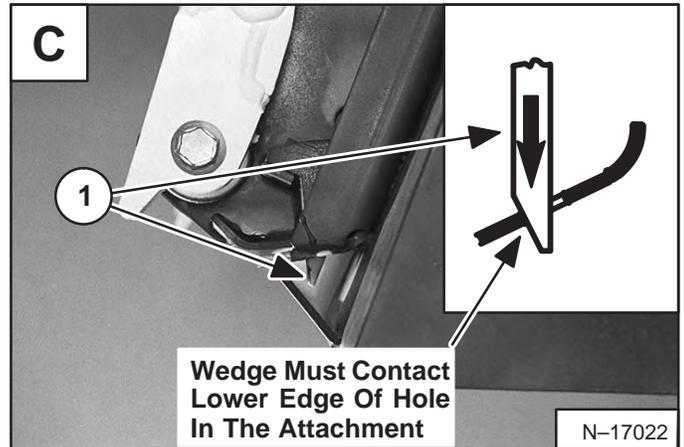
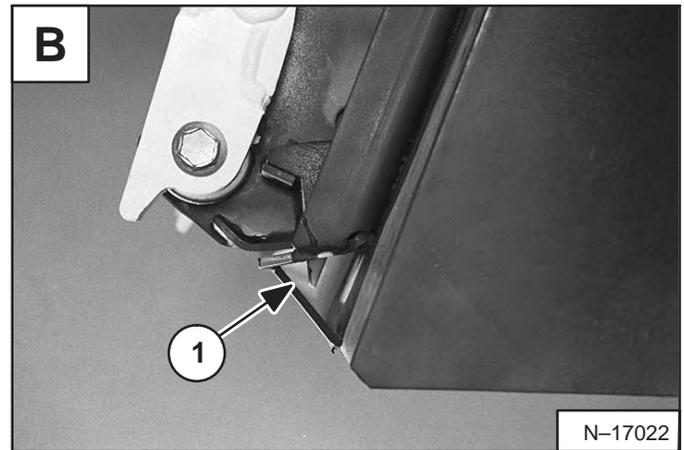
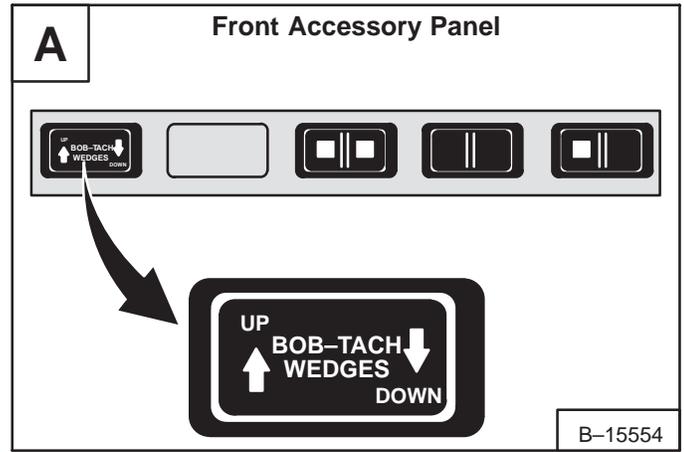
The wedges must extend through the holes in the attachment mounting frame (Item 1) [B] and must contact the lower edge of the hole in the attachment [B] and (Item 1) [C].

If the wedge does not contact the lower edge of the hole [C], the attachment will be loose and can come off the Bob-Tach.

Inspect the mounting frame on the attachment and the Bob-Tach, linkages and wedges for excessive wear or damage [D]. 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 the correct loader Service Manual for *LUBRICATION OF THE BOBCAT LOADER.*)





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HYDRAULIC SYSTEM

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HYDRAULIC SYSTEM



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HYDRAULIC CYLINDER

Checking For Internal Leakage

NOTE: Be sure to retract the cylinder rod fully when pressuring the rod end.

Check only one cylinder at a time.

Disconnect the hose (Item 1) [A] from the cylinder base end port.

Install a plug in the hose and tighten the plug.

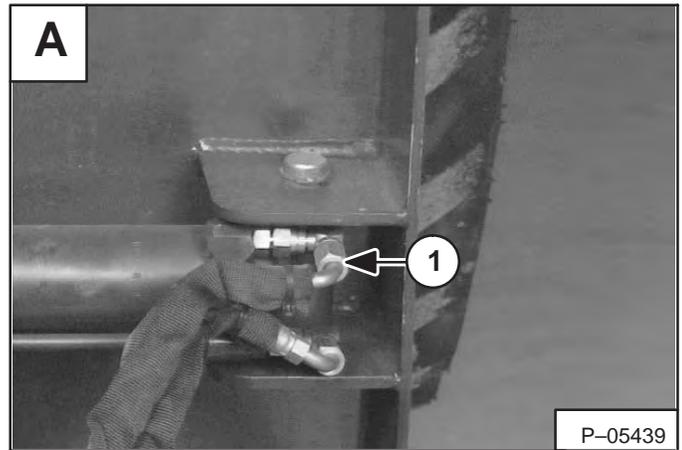
Get in the operator seat.

Lower the seat bar, engage the parking brake and start the engine.

Engage the auxiliary hydraulics and pressurize the rod end of the cylinder until system relief pressure is reached. Hold for one minute over the system relief pressure.

There should be no leaks at the base end port.

If there is leakage from the open base end port of the lift cylinder, remove the lift cylinder for repair.



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 possibly death if proper medical treatment by a physician familiar with this injury is not received immediately.

W-2145-0290

HYDRAULIC CYLINDER (Cont'd)

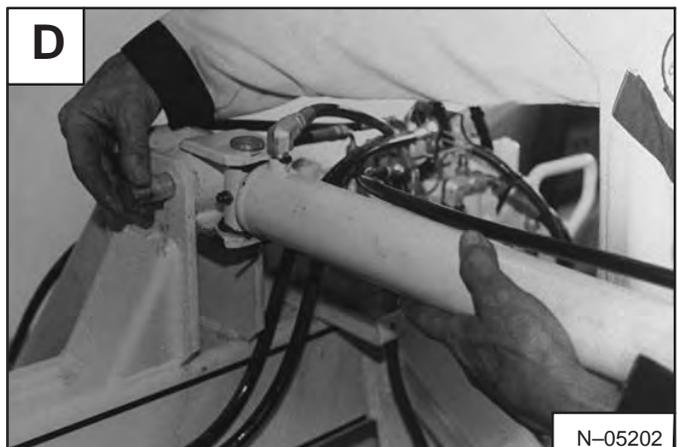
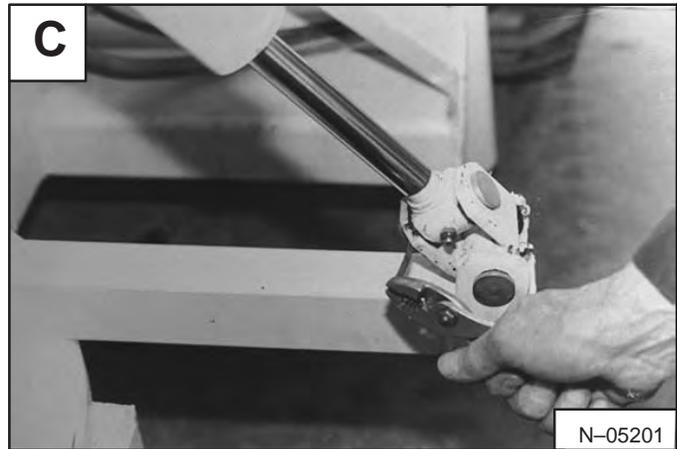
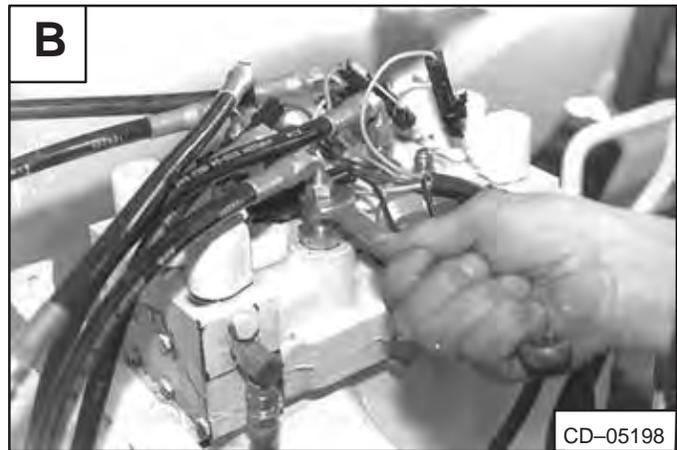
Removal And Installation (S/N 802700101–802700871)

NOTE: The following procedure shows the left cylinder being removed. The procedure is the same for the other cylinders.

Lower the moldboard to the ground. Stop the engine. With the key ON, activate the switches in both directions to release hydraulic pressure.

Remove the three bolts and two nuts from the cover over the control valve [A].

Remove the cover from the main frame.



⚠ 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 possibly death if proper medical treatment by a physician familiar with this injury is not received immediately.

W-2145-0290

Slowly disconnect the two hydraulic hoses at the control valve that are connected to the cylinder that is being removed [B].

Use Caution – cylinder hoses may still be pressurized!

Remove the cotter pin at the rod end of the cylinder [C].

Remove the pivot pin.

Remove the cotter pin at the base end pivot pin.

Remove the base end pivot pin [D].

Remove the cylinder.

HYDRAULIC CYLINDER (Cont'd)

Removal And Installation (S/N 802700872 & Above) And (S/N 231511101 & Above)

Lower the grader blade to the ground.

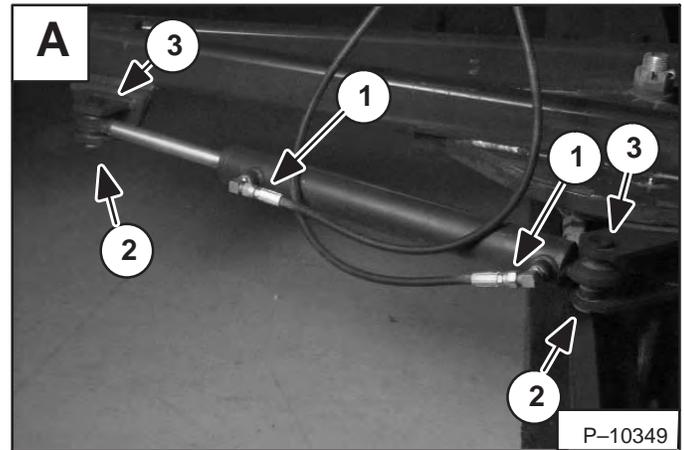
Stop the engine and engage the parking brake.

Remove the hoses (Item 1) [A] from the cylinder.

Remove the cotter pins (Item 2) [A] and the pins (Item 3) [A] from both ends of the cylinder. Remove the cylinder.

Install the cylinder in the reverse order.

Use the same procedure to remove and install the lift cylinders from the grader frame.



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.

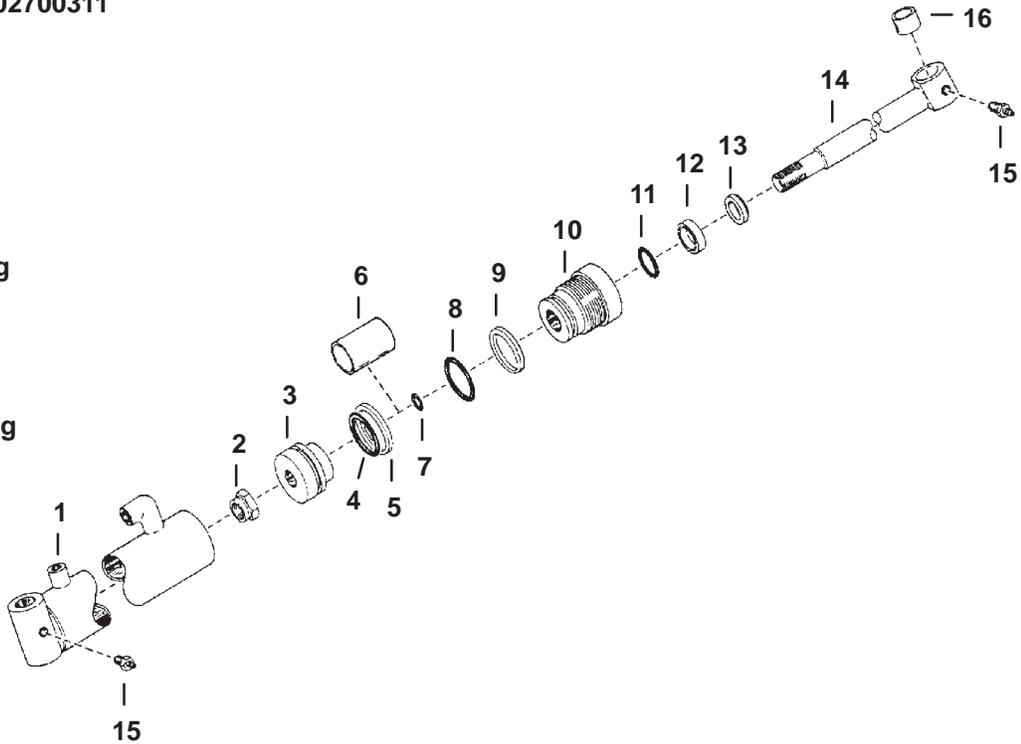
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HYDRAULIC CYLINDER (Cont'd)

Parts Identification

S/N 802700101–802700311

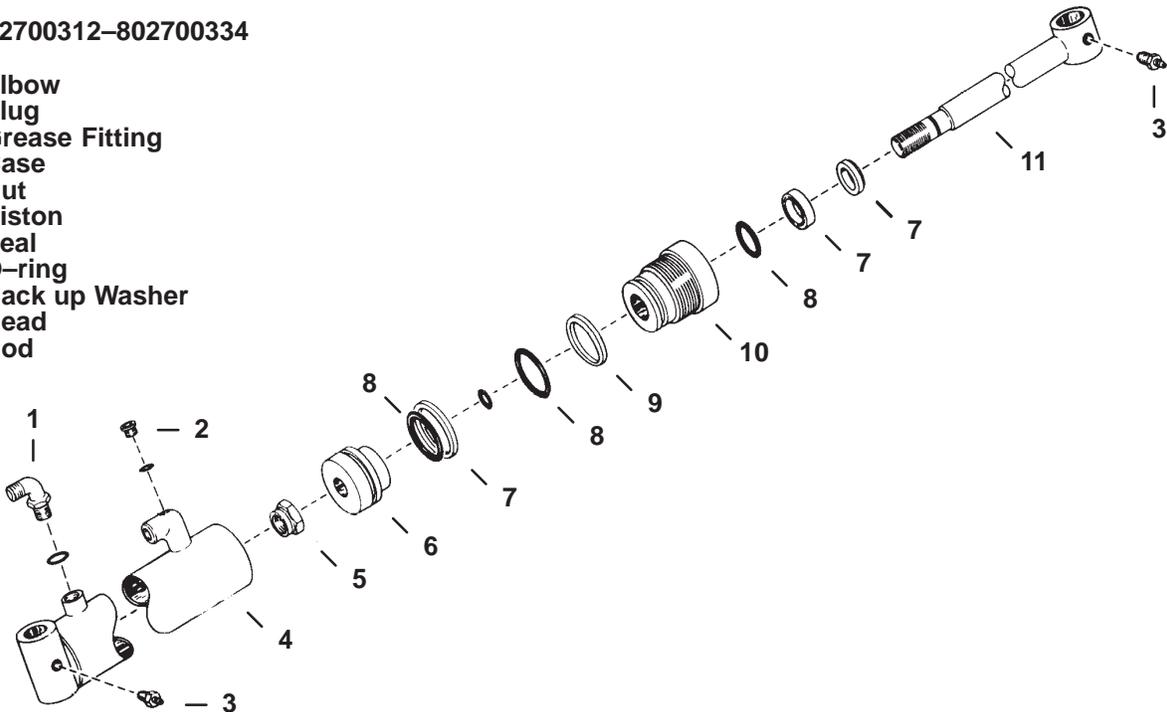
1. Case
2. Nut
3. Piston
4. O-ring
5. Seal
6. Bushing
7. O-ring
8. O-ring
9. Back Up Ring
10. Head
11. O-ring
12. Seal
13. Wiper
14. Rod
15. Grease Fitting
16. Bushing



C-01050

S/N 802700312–802700334

1. Elbow
2. Plug
3. Grease Fitting
4. Case
5. Nut
6. Piston
7. Seal
8. O-ring
9. Back up Washer
10. Head
11. Rod



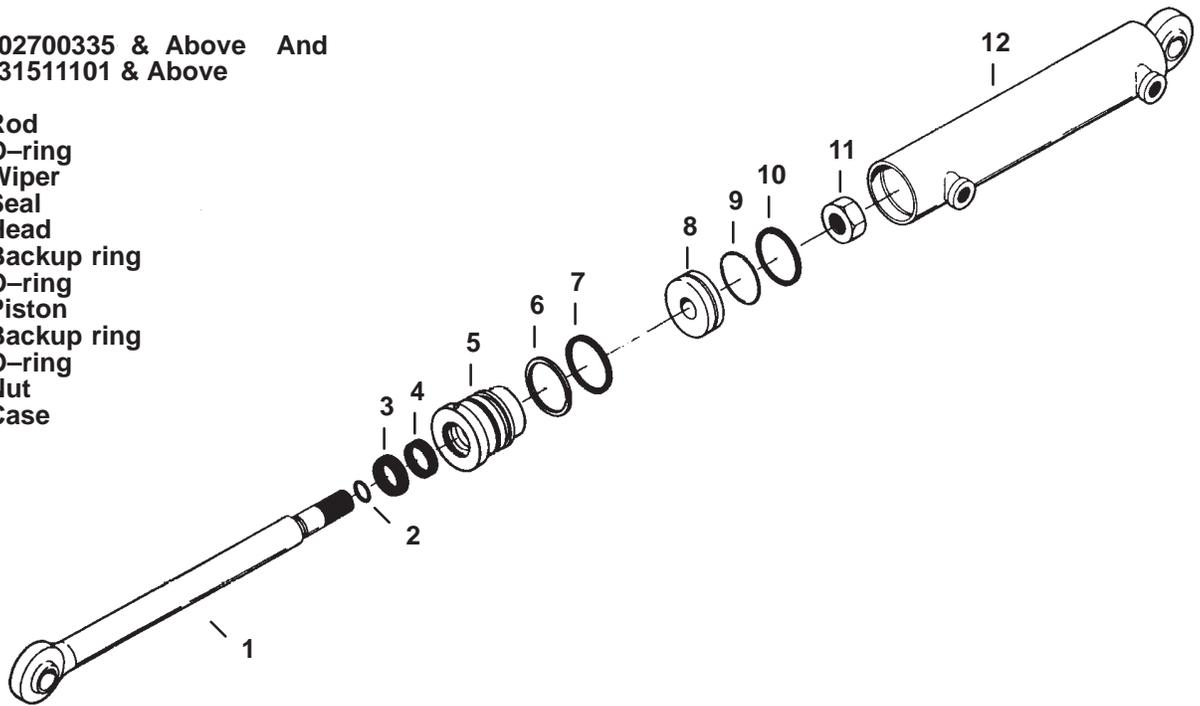
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HYDRAULIC CYLINDER (Cont'd)

Parts Identification (Cont'd)

S/N 802700335 & Above And
S/N 231511101 & Above

- 1. Rod
- 2. O-ring
- 3. Wiper
- 4. Seal
- 5. Head
- 6. Backup ring
- 7. O-ring
- 8. Piston
- 9. Backup ring
- 10. O-ring
- 11. Nut
- 12. Case



NOTE: The drawing may not show your Bobcat cylinder exactly as it appears, but internal assembly is the same.

C-03015

Product: Bobcat Grader Service Repair Workshop Manual
Full Download: <https://www.arepairmanual.com/downloads/bobcat-grader-service-repair-workshop-manual/>

Use the following tool 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

Disassembly

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

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.

Use a adjustable gland nut wrench to loosen the head [A].

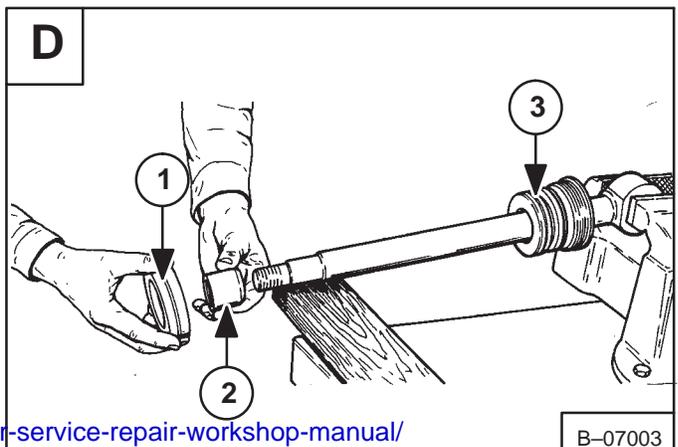
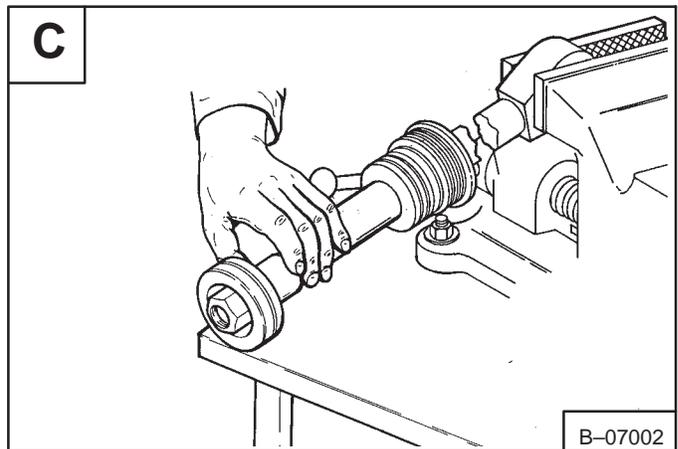
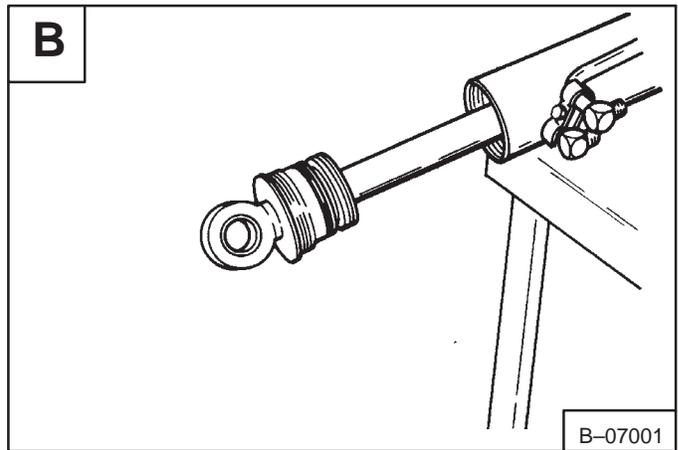
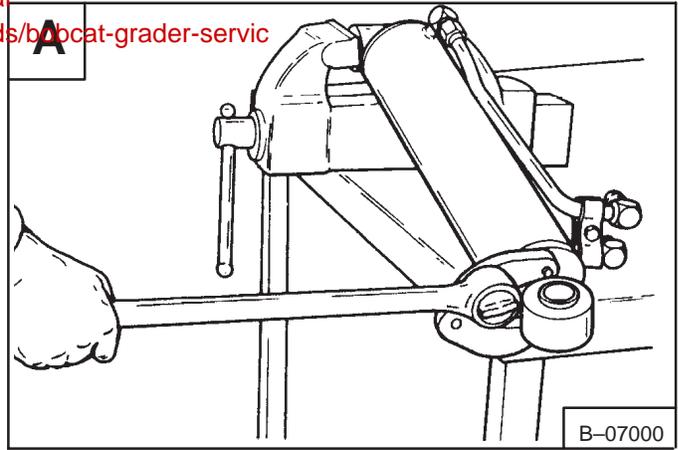
Remove the rod assembly from the cylinder case [B].

Remove the cylinder case from the vise

Put the rod end in the vise

Remove the nut from the piston end of the rod [C].

Pull the piston off the rod (Item 1) [D]. If the cylinder has a cushion sleeve (Item 2) [D], pull it off the rod. Pull the head (Item 3) [D] off the rod.



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