



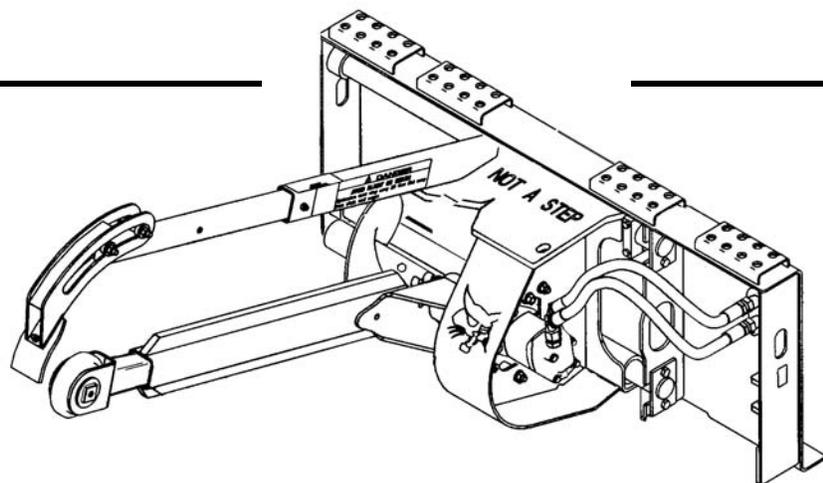
Bobcat®

Trencher

LT112
MX112
LT113
LT213
LT313
LT414

Service Manual

(LT112) S/N 045200101 & Above
(MX112) S/N 045100101 & Above
(LT113) S/N 233800101 & Above
(LT213) S/N 045300101 & Above
(LT313) S/N 045400101 & Above
(LT414) S/N A0RS00101 & Above



Sample of manual. Download All 136 pages at:

<https://www.aresairmanual.com/downloads/2008-bobcat-lt112mx112lt113lt213lt313lt414-trencher-service-repair-workshop-manual/>

Product: 2008 Bobcat LT112,MX112,LT113,LT213,LT313,LT414 Trencher Service Repair Workshop Manual
Full Download: <https://www.arepairmanual.com/downloads/2008-bobcat-lt112mx112lt113lt213lt313lt414-trencher-service-repair-workshop-manual/>

Sample of manual. Download All 136 pages at:
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MAINTENANCE SAFETY



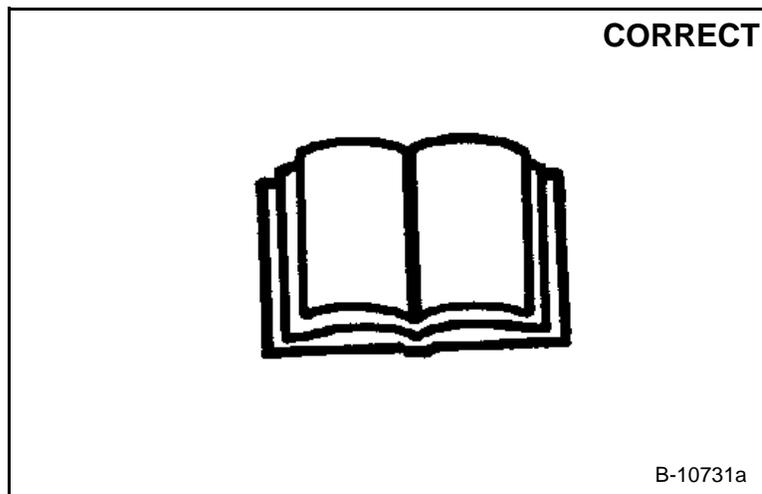
WARNING

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.



-  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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**SAFETY AND
MAINTENANCE**

**HYDRAULIC
SYSTEM**

**MAIN
FRAME**

**SPECIFICATIONS
AND
SCHEMATICS**

**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.



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SERIAL NUMBER LOCATION

Always use the serial number of the Trencher 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

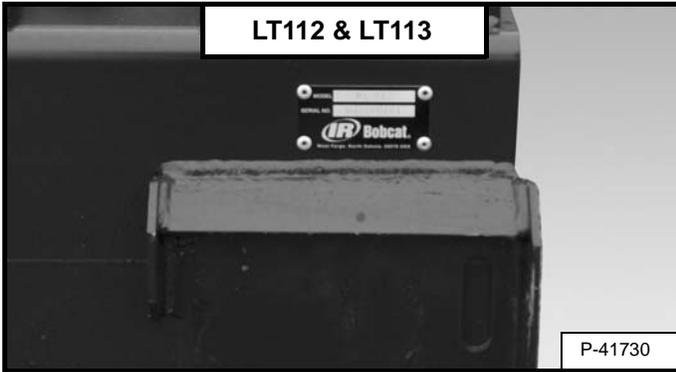


Figure 2

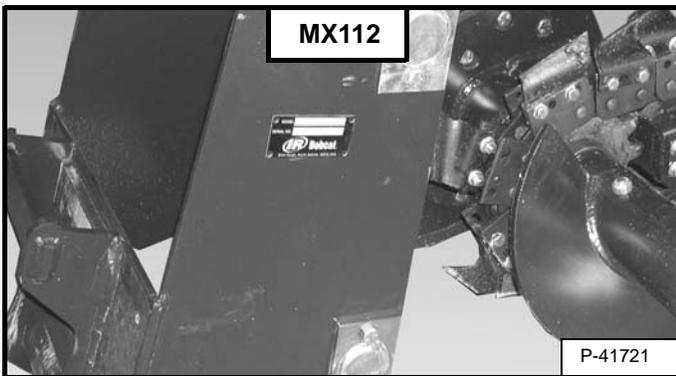
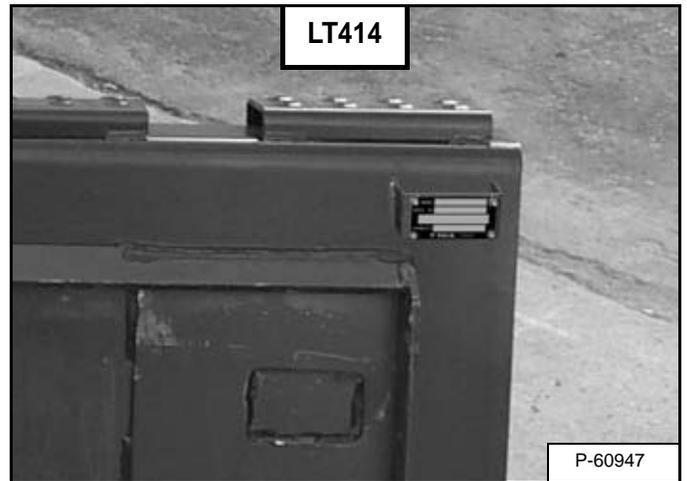


Figure 3

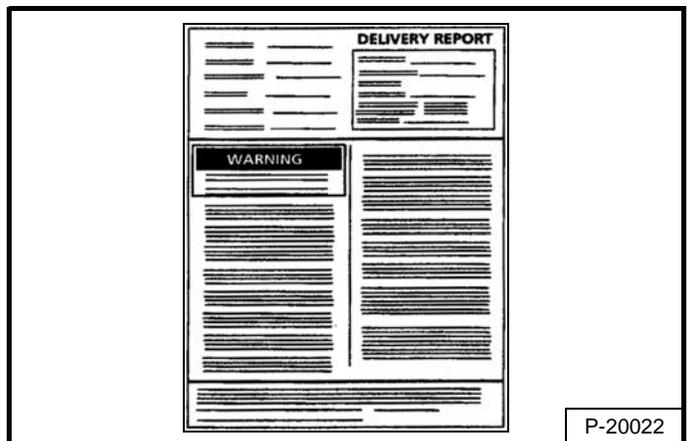


Figure 4



ATTACHMENT DELIVERY REPORT

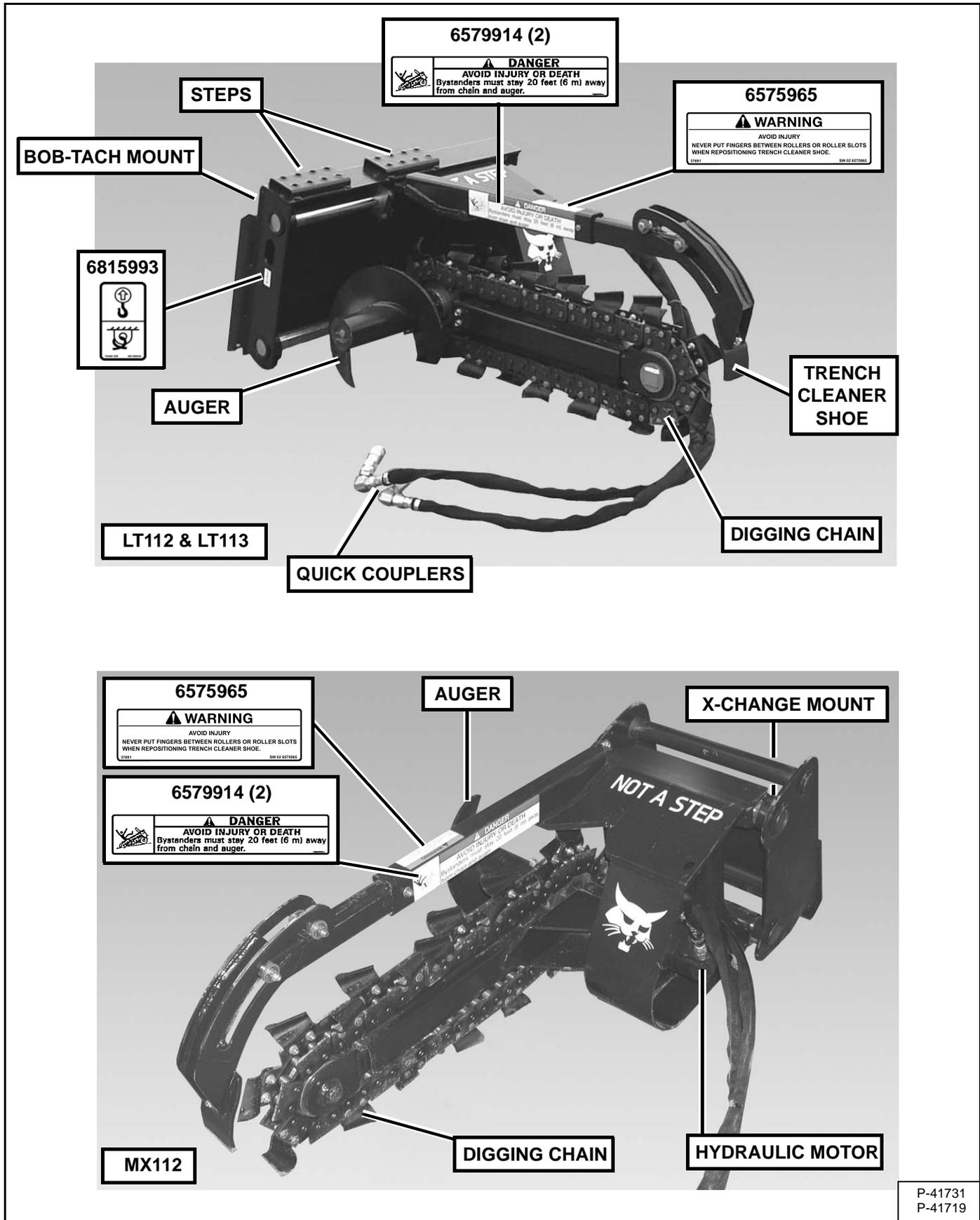
Figure 5



The Attachment Delivery Report must be filled out by the dealer and signed by the owner or operator when the Trencher is delivered. An explanation of the form must be given to the owner. Make sure it is filled out completely [Figure 5].

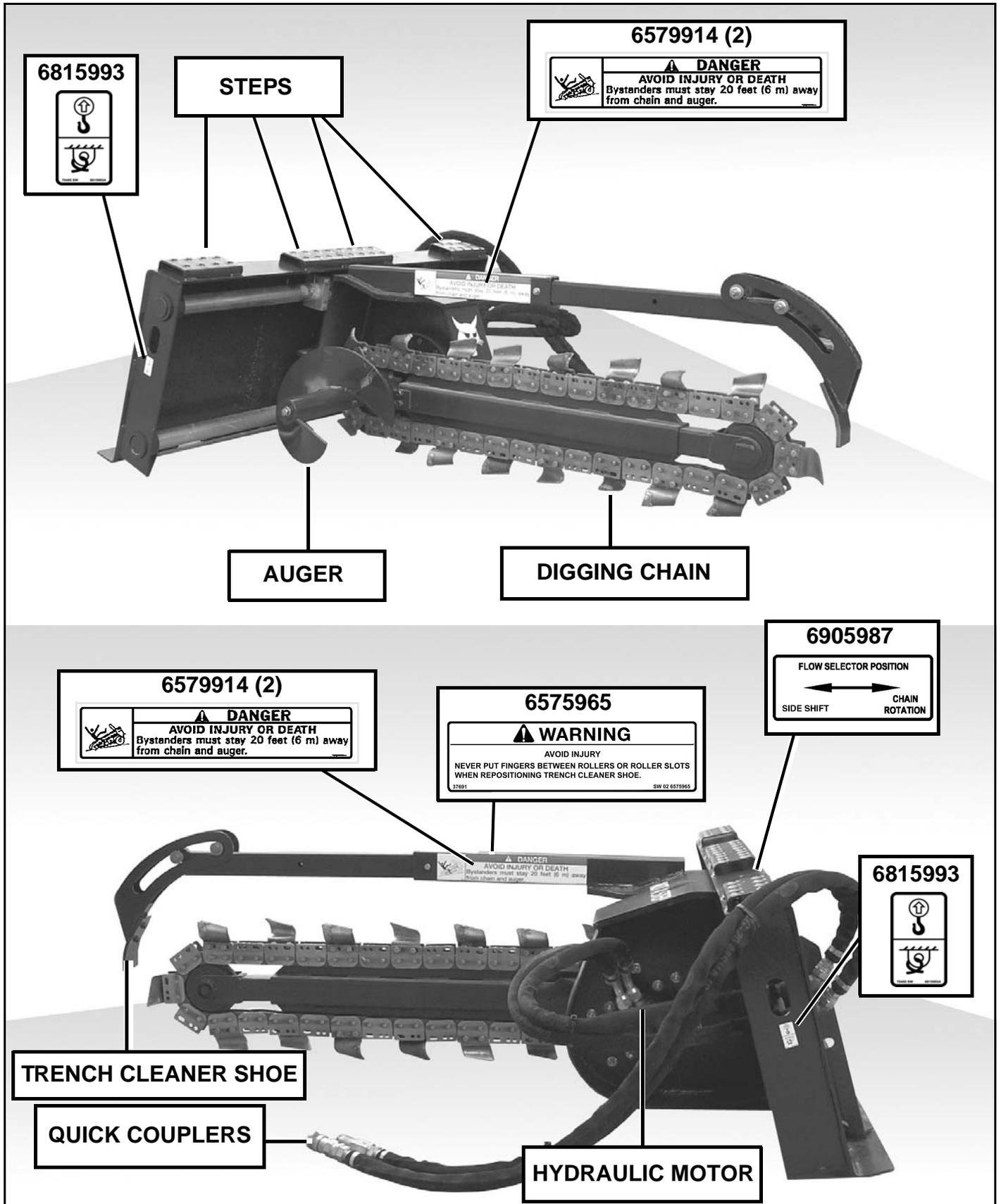
IDENTIFICATION AND MACHINE SIGNS (DECALS)

LT112, LT113 & MX112



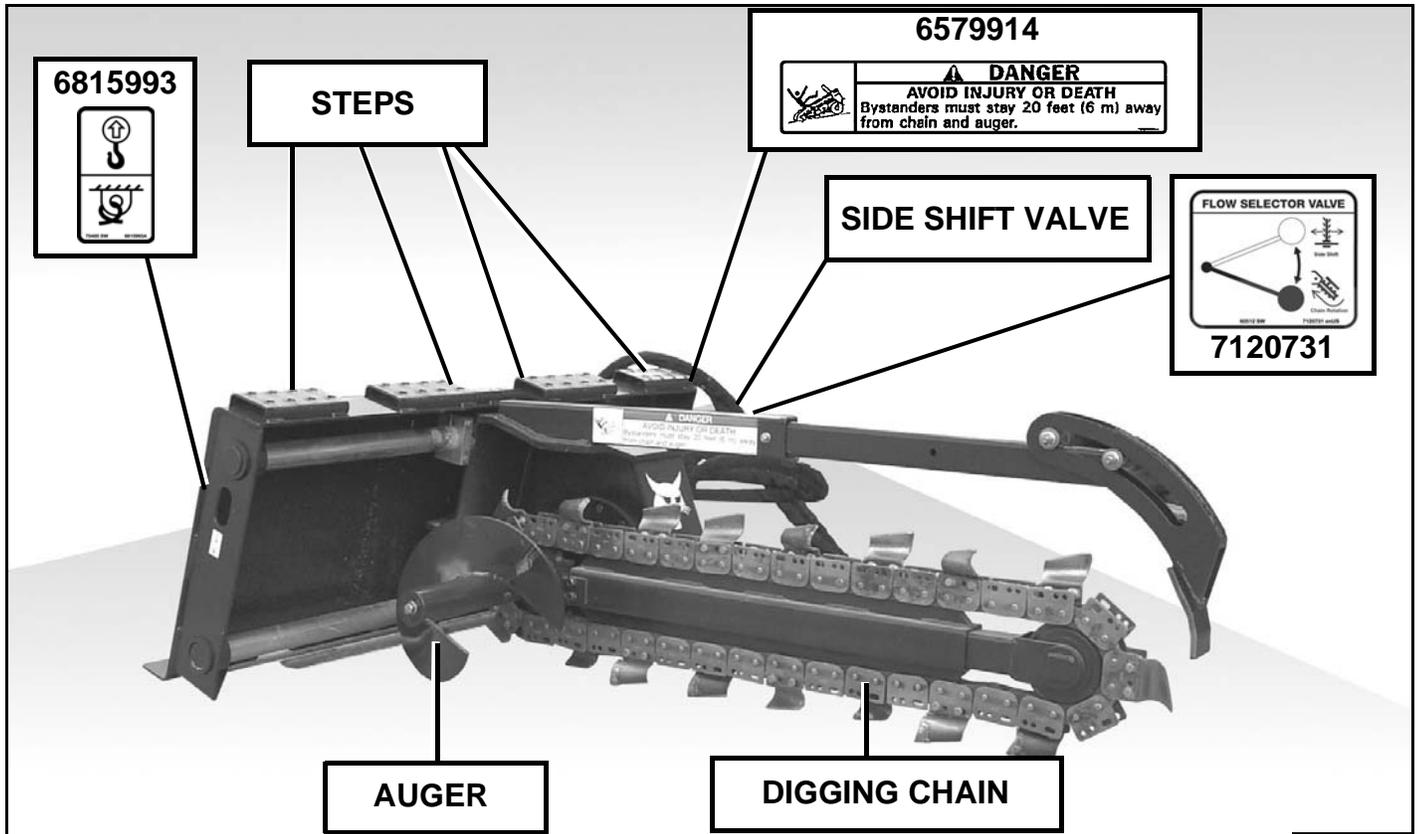
IDENTIFICATION AND MACHINE SIGNS (DECALS) (CONT'D)

LT213 & LT313

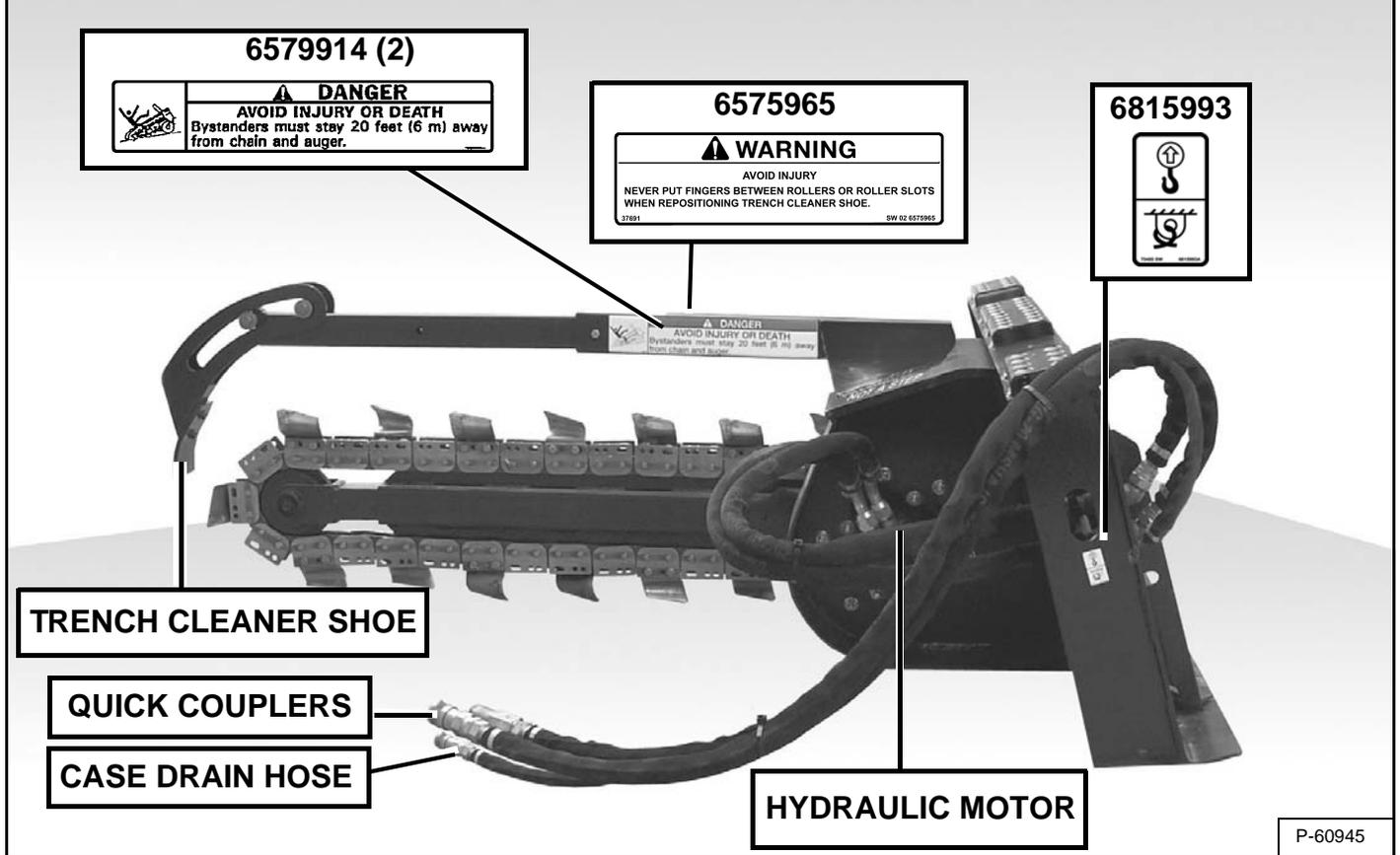


IDENTIFICATION AND MACHINE SIGNS (DECALS) (CONT'D)

LT414 Trencher



P-41512



P-60945

SAFETY AND MAINTENANCE

SAFETY AND MAINTENANCE

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TROUBLESHOOTING

PROBLEM	CAUSE	CORRECTION
Trencher does not mount properly on the Bob-Tach.	Bob-Tach wedges are not fully retracted before installing.	Retract Bob-Tach wedges before installing.
	Mud, dirt or stones are lodged between the Bob-Tach and the Trencher mount.	Remove debris between Bob-Tach and Trencher mount.
Trencher does not operate.	No hydraulic flow.	Activate machine front auxiliary hydraulics.
		Check quick couplers connection. Check for damaged hose ends and fittings.
Digging Chain does not stay adjusted to the correct tension.	Damaged grease cylinder.	Repair or replace grease cylinder.

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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INSPECTION

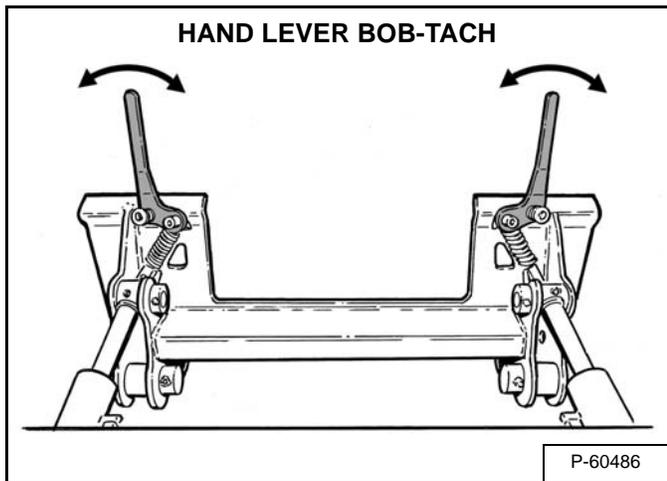
Hand Lever Bob-Tach Inspection

! 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.

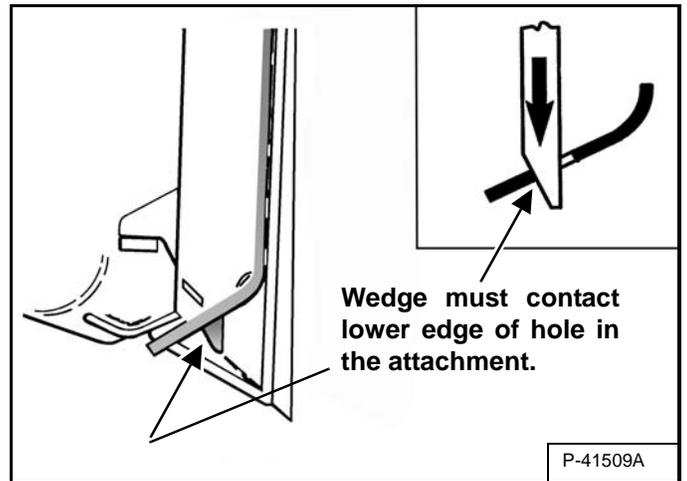
W-2102-0497

Figure 1



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

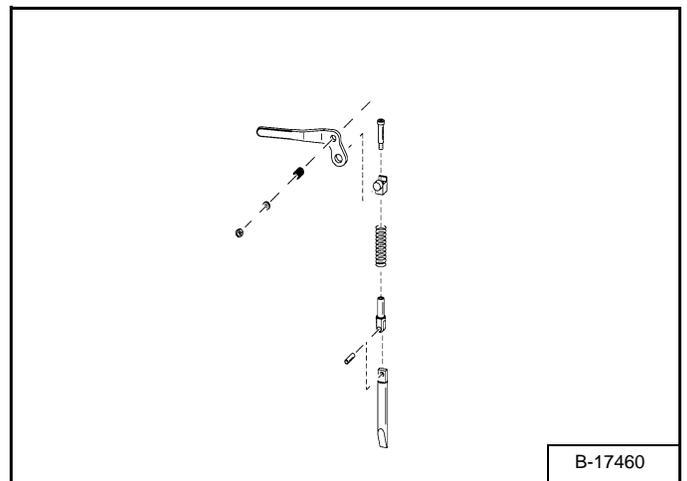
Figure 10-20-2



The wedges must extend through the holes in the attachment mounting frame [Figure 10-20-2].

If the wedge does not contact the lower edge of the hole [Figure 10-20-2], the attachment will be loose and can come off the Bob-Tach.

Figure 10-20-3



Inspect the mounting frame on the attachment and the Bob-Tach, linkages and wedges for excessive wear or damage [Figure 10-20-3]. 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

! 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

Figure 10-20-4

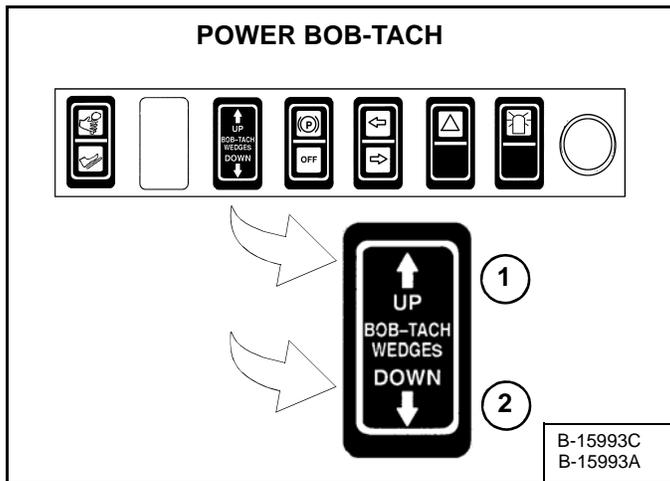
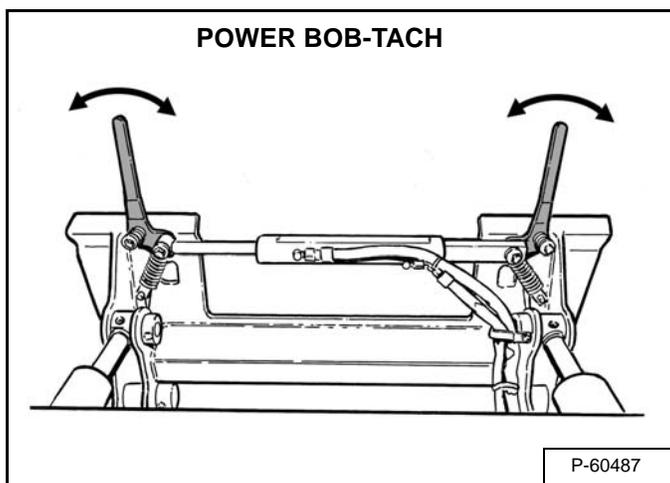


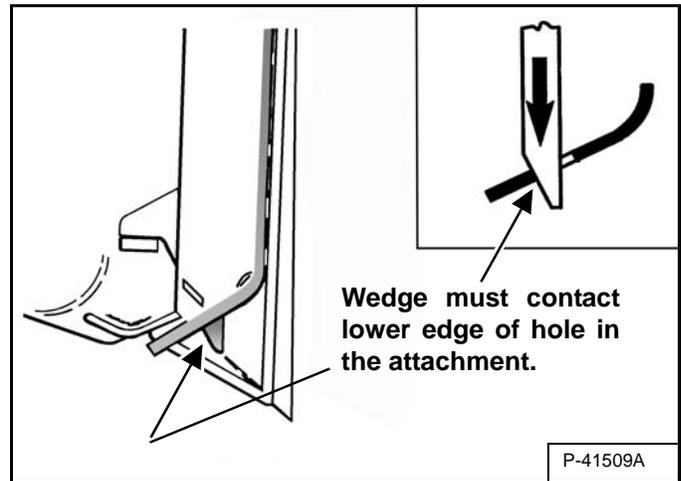
Figure 10-20-5



Push and hold the BOB-TACH WEDGES UP switch (Item 1) until the wedges are fully raised. Push and hold the BOB-TACH WEDGES DOWN switch (Item 2) [Figure 10-20-4] until the wedges are fully lowered.

The levers and wedges must move freely [Figure 10-20-5].

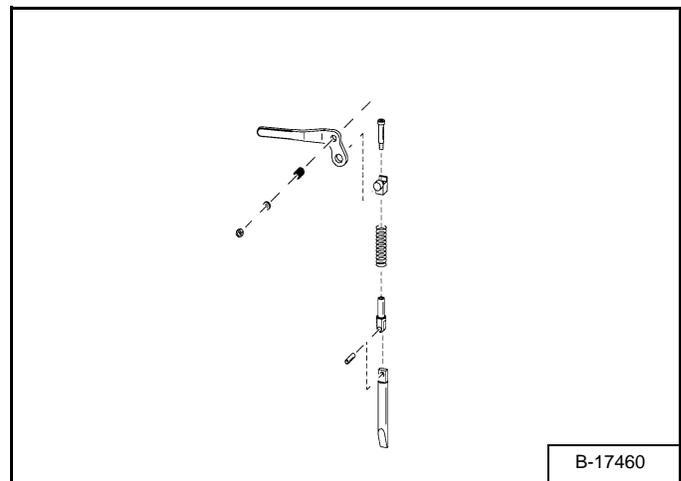
Figure 10-20-6



The wedges must extend through the holes in the attachment mounting frame [Figure 10-20-6].

If the wedge does not contact the lower edge of the hole [Figure 10-20-6], the attachment will be loose and can come off the Bob-Tach.

Figure 10-20-7



Inspect the mounting frame on the attachment and the Bob-Tach, linkages and wedges for excessive wear or damage [Figure 10-20-7]. Replace any parts that are damaged, bent or missing. Keep all fasteners tight.

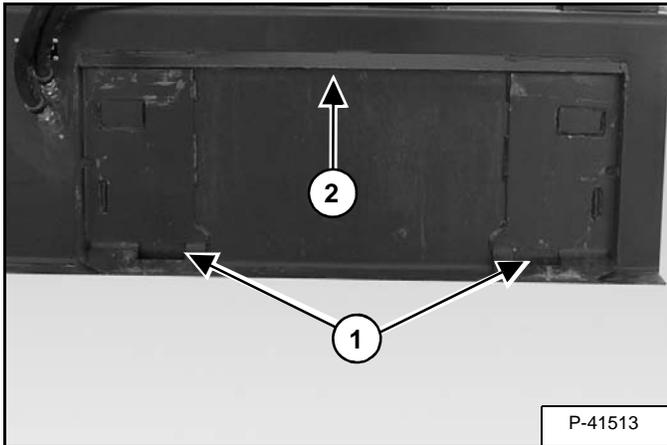
Look for cracked welds. Contact your Bobcat dealer for repair or replacement parts.

Lubricate the wedges. (See the correct loader Operation & Maintenance Manual for *LUBRICATION OF THE BOBCAT LOADER*.)

INSPECTION (CONT'D)

Trencher Mount Inspection

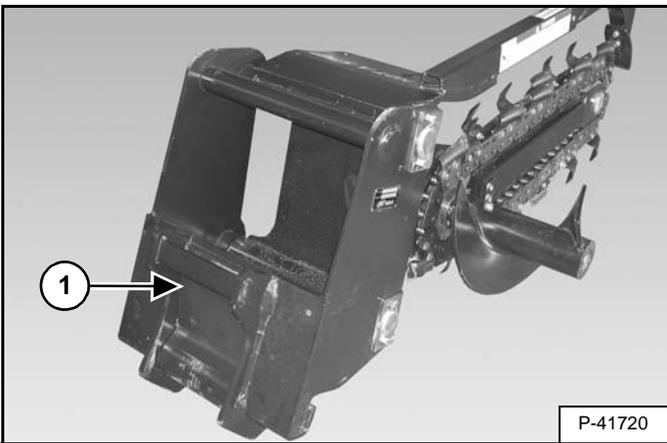
Figure 10-20-8



Inspect the Bob-Tach wedge mounts (Item 1), mounting flange (Item 2) and all welds on the trencher for wear and damage each time the trencher is removed from the loader. [Figure 10-20-8].

X-Change Mount Inspection

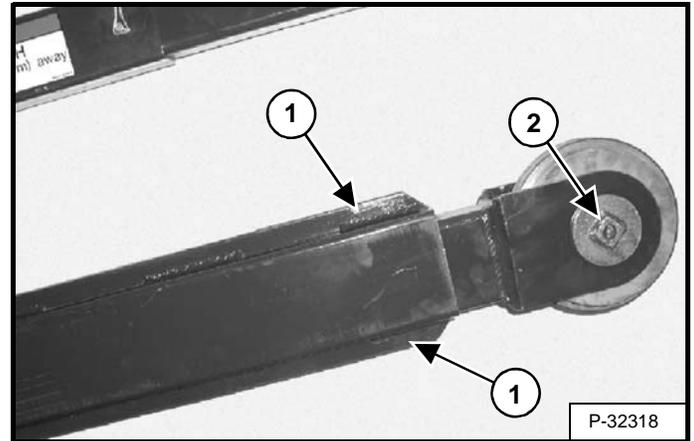
Figure 10-20-9



Inspect the X-Change mount (Item 1) [Figure 10-20-9] and all welds for wear or damage each time the trencher is removed from the excavator.

Chain Guide Inspection

Figure 10-20-10



Inspect the top and bottom chain guide (Item 1) [Figure 10-20-10] for wear and damage.

NOTE: The digging chain is removed for photo clarity.

LUBRICATION

Daily Lubrication

Add grease daily to the idler wheels (Item 2) [Figure 10-20-10] on the LT313 and LT414 trenchers.

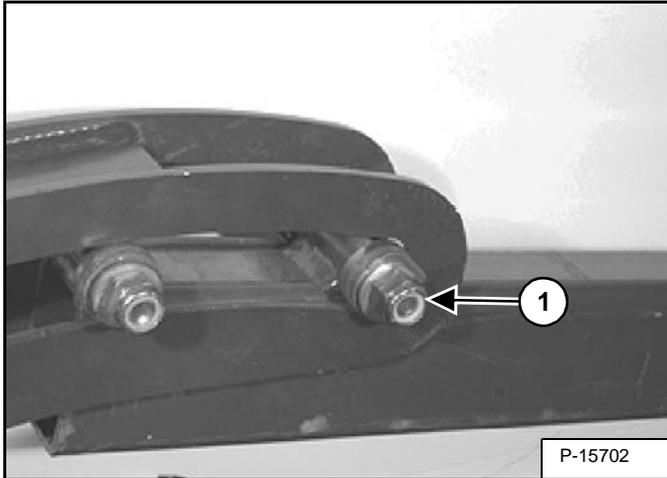


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TRENCH CLEANER

Removal And Installation

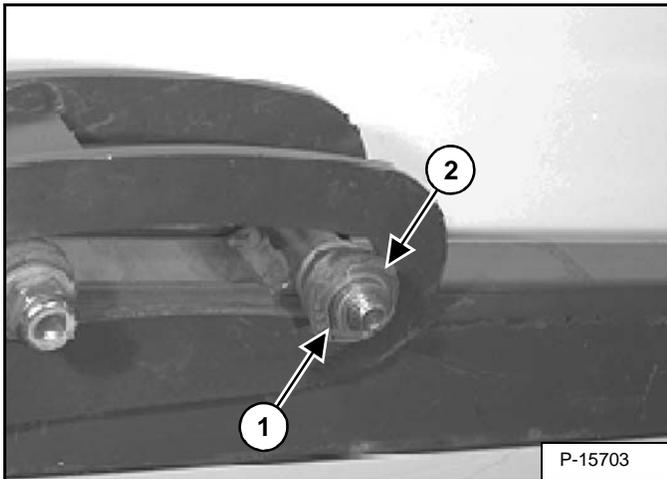
Figure 10-30-1



Remove the nut (Item 1) [Figure 10-30-1] and washer.

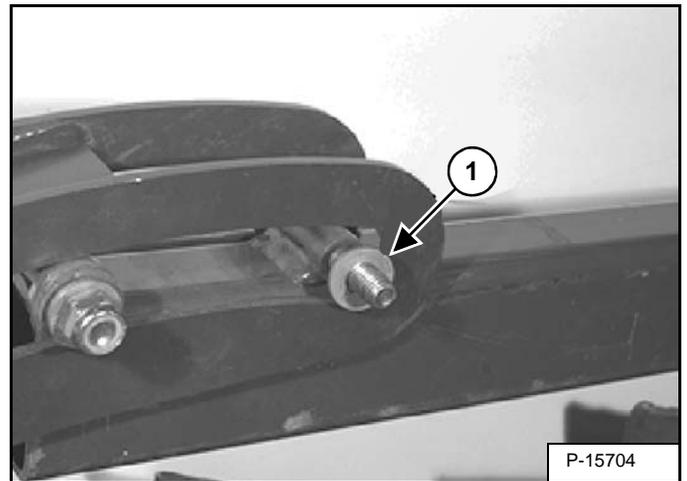
Installation: Tighten the nut and bolt to 65-70 ft.-lb. (88-95 N•m) torque.

Figure 10-30-2



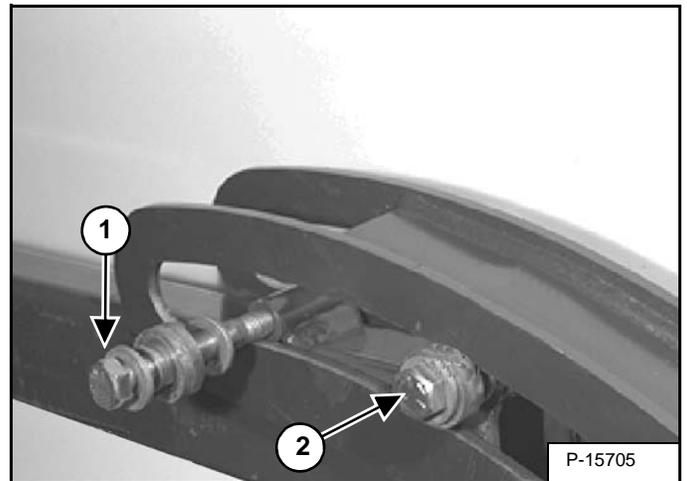
Remove the spacer (Item 1) and roller (Item 2) [Figure 10-30-2].

Figure 10-30-3



Remove the washer (Item 1) [Figure 10-30-3].

Figure 10-30-4



Remove the bolt (Item 1) [Figure 10-30-4], washer, spacer, roller and washer.

Repeat the procedure for the front bolt (Item 2) [Figure 10-30-4].

Remove the trench cleaner.



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HYDRAULIC SYSTEM

HYDRAULIC SYSTEM

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SIDE SHIFT CYLINDER

Removal And Installation

NOTE: The side shift cylinder is optional on the LT213 & LT313 trenchers.

NOTE: The side shift cylinder is standard on the LT414 trenchers.

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.

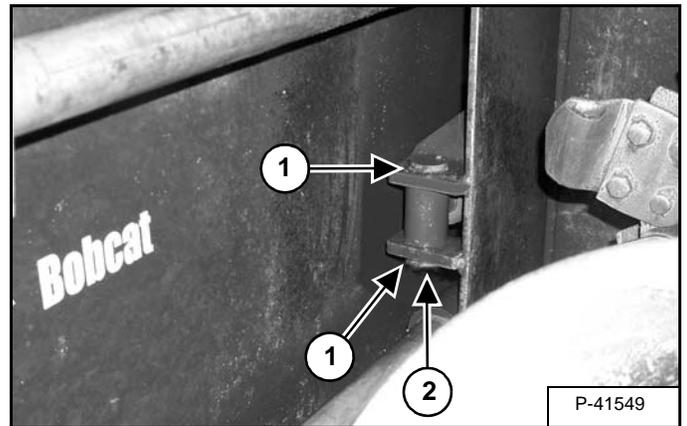
I-2003-0888

IMPORTANT

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

I-2066-0395

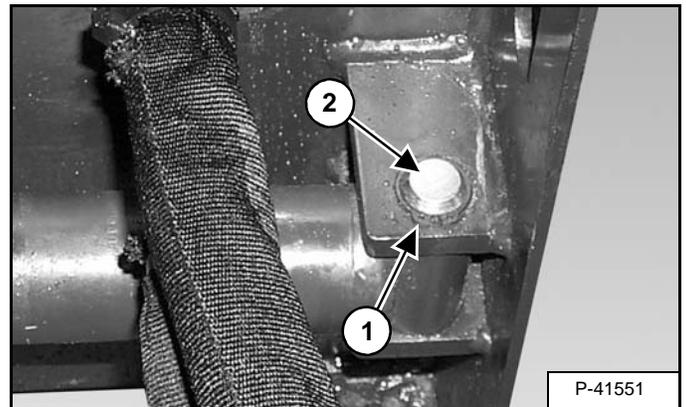
Figure 20-10-1



Remove side shift cylinder hoses from the control valve. (See Contents Page 20-01.)

Remove the snap rings (Item 1) and retaining pin (Item 2) from the cylinder rod end [Figure 20-10-1].

Figure 20-10-2



Remove the snap ring (Item 1) and retaining pin (Item 2) from the cylinder base end. Remove the cylinder (Item 3) [Figure 20-10-2].

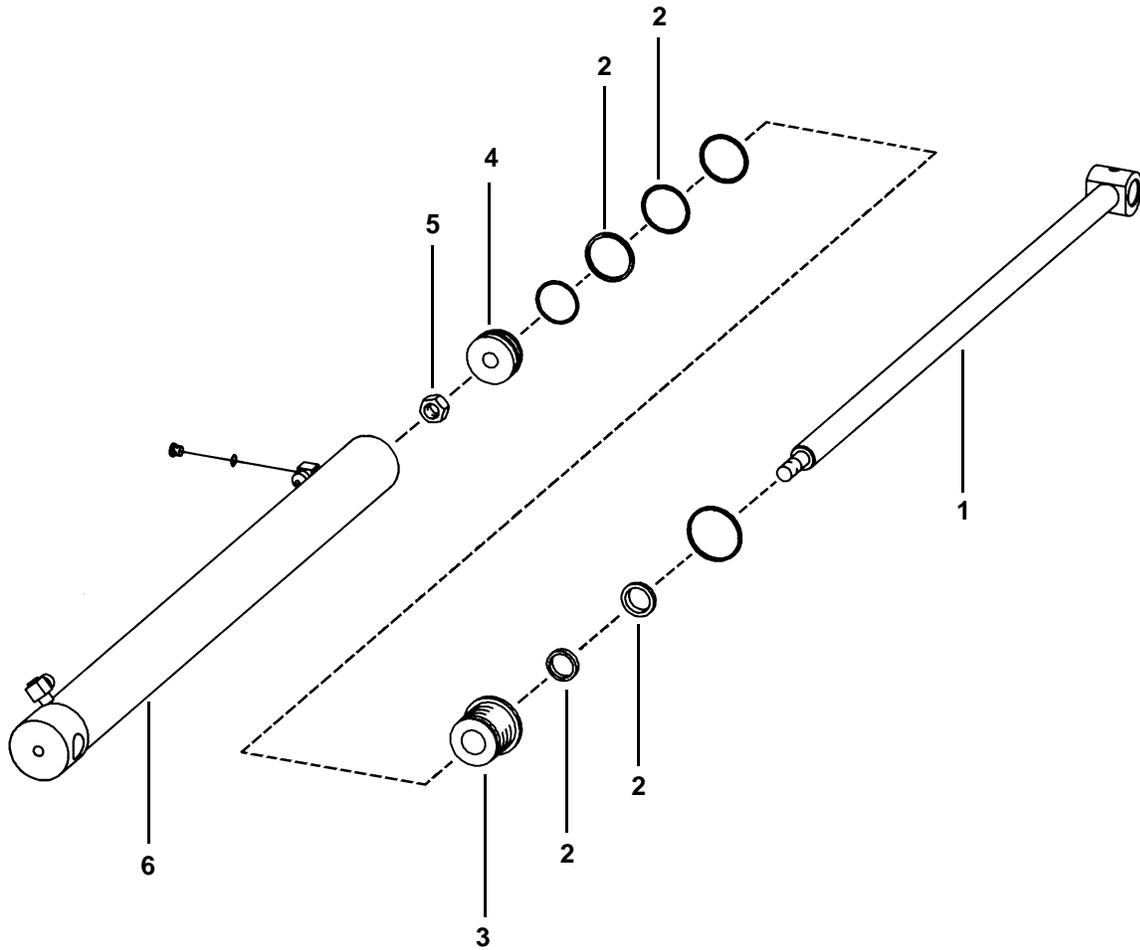
(See Contents Page 20-01.) for hydraulic cylinder disassembly and assembly.

SIDE SHIFT CYLINDER (CONT'D)

Parts Identification

1. Rod
2. Seal
3. Head
4. Piston
5. Nut
6. Case

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



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SIDE SHIFT CYLINDER (CONT'D)

Disassembly

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

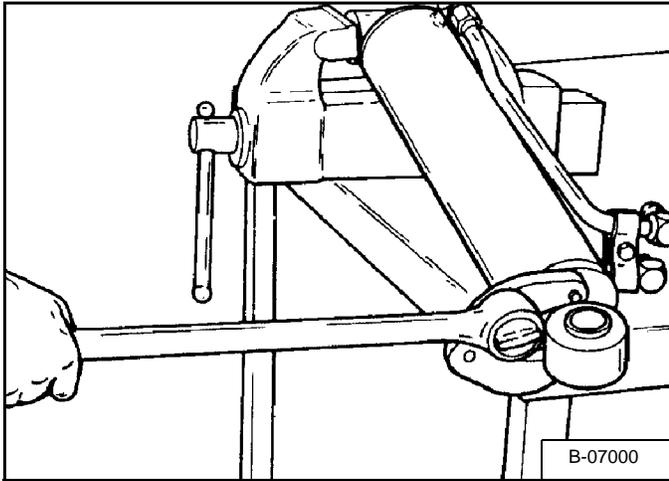
MEL1074 O-Ring Seal Hook
MEL1396 Seal Installation Tool
MEL1032 or MEL1033 Rod Seal Installation Tool
MEL1075 Adjustable Gland Nut Wrench
MEL1076 Cylinder Wrench
Torque Multiplier (See your Bobcat dealer)

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

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.

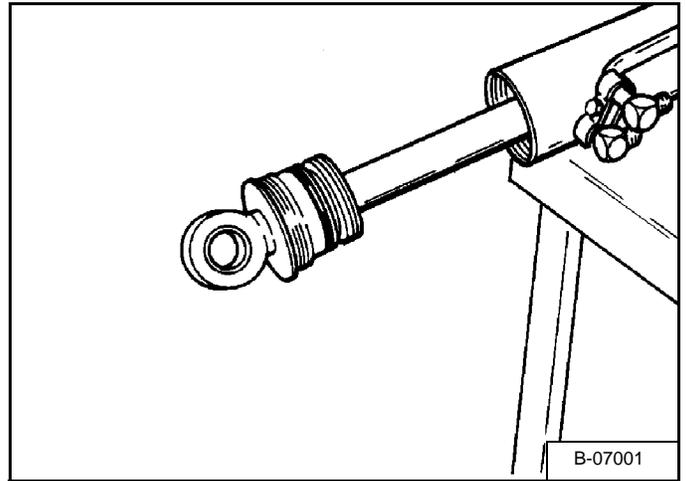
Put the base end of the cylinder in a vise.

Figure 20-10-3



Use a adjustable gland nut wrench to loosen the head [Figure 20-10-3].

Figure 20-10-4

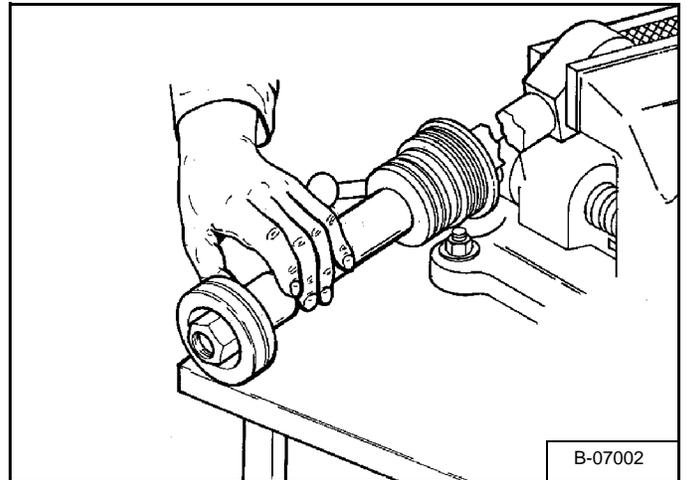


Remove the rod assembly from the cylinder case [Figure 20-10-4].

Remove the cylinder case from the vise.

Put the rod end in the vise

Figure 20-10-5

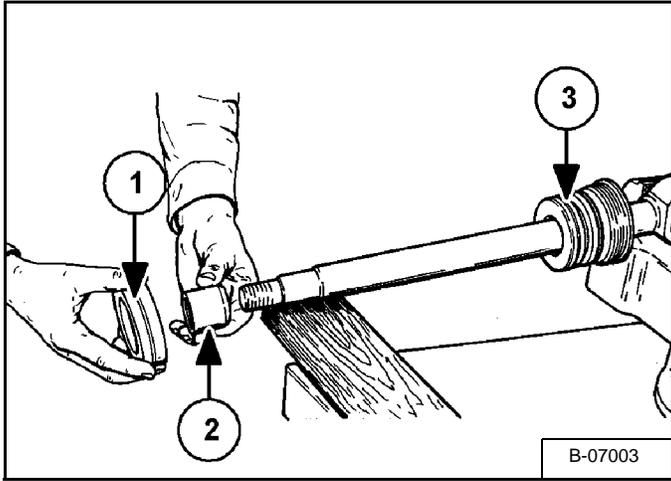


Remove the nut from the piston end of the rod [Figure 20-10-5].

SIDE SHIFT CYLINDER (CONT'D)

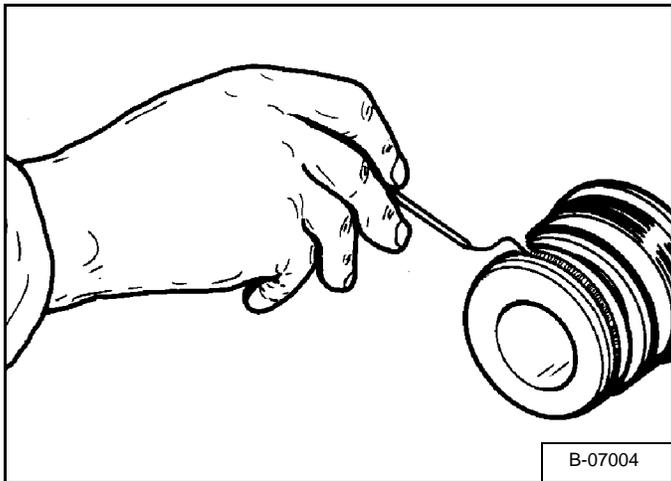
Disassembly (Cont'd)

Figure 20-10-6



Pull the piston off the rod (Item 1). If the cylinder has a cushion sleeve (Item 2), pull it off the rod. Pull the head (Item 3) off the rod [Figure 20-10-6].

Figure 20-10-7



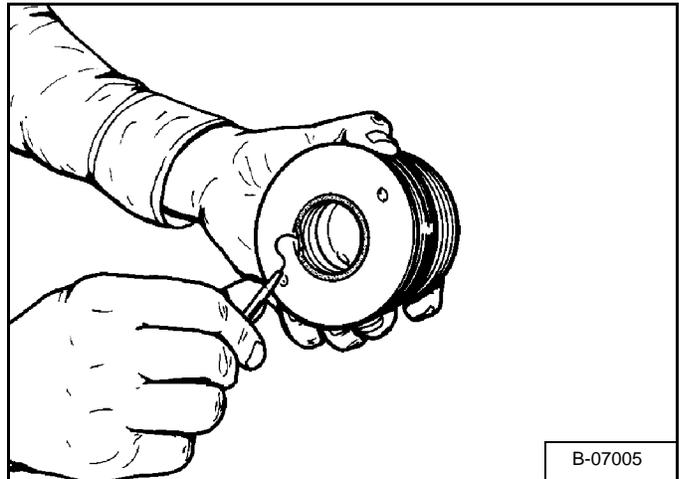
If the head has a seal, remove the seal from the head [Figure 20-10-7].

Figure 20-10-8



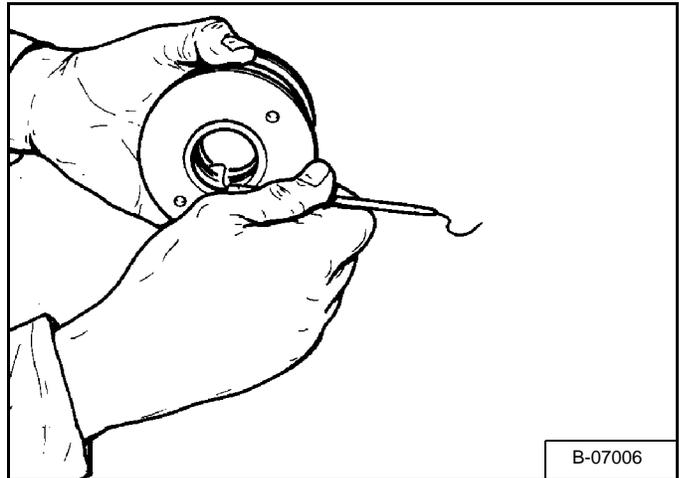
Remove the O-ring and back-up washer from the head [Figure 20-10-8].

Figure 20-10-9



Remove the wiper seal [Figure 20-10-9].

Figure 20-10-10

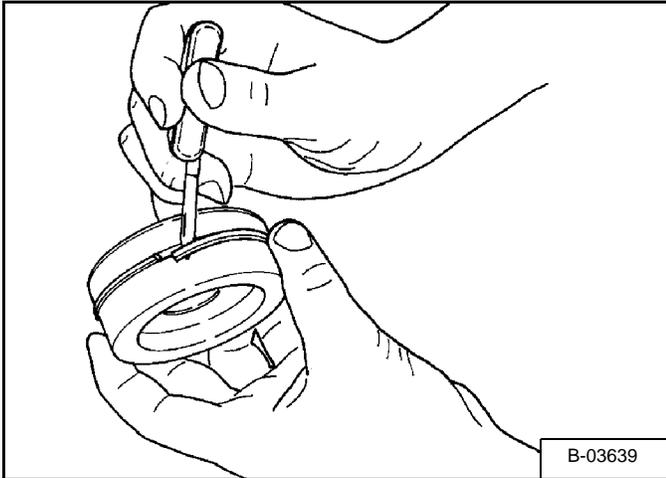


Remove the oil seal from the head [Figure 20-10-10].

SIDE SHIFT CYLINDER (CONT'D)

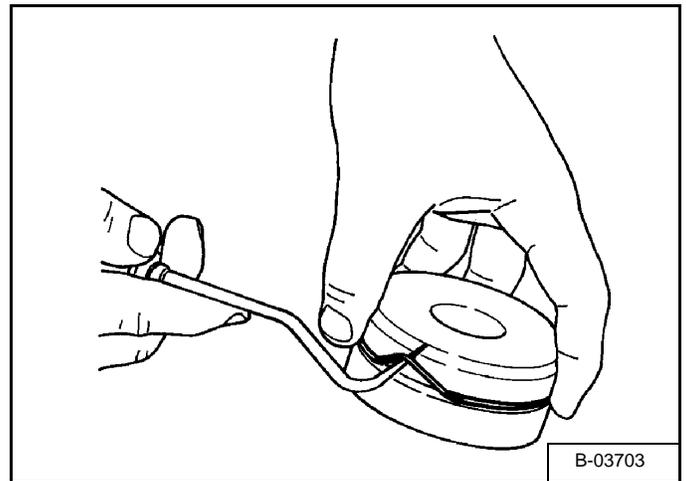
Disassembly (Cont'd)

Figure 20-10-11



Remove the piston seal from the piston [Figure 20-10-11].

Figure 20-10-12



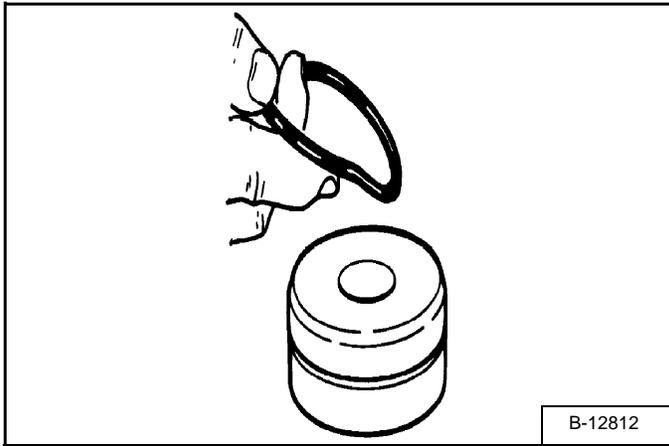
Remove the O-ring from the piston [Figure 20-10-12]. Wash the cylinder parts in clean solvent and dry with compressed air.

NOTE: While servicing the cylinder do not damage the parts. Inspect for nicks, scratches or otherwise damaged or bent parts before assembling the cylinder. Replace parts that appear damaged in any way. The cylinder may not function correctly if there is damage to any of the parts.

Destroy all the O-rings and seals and replace them with NEW O-rings and seals.

Assembly

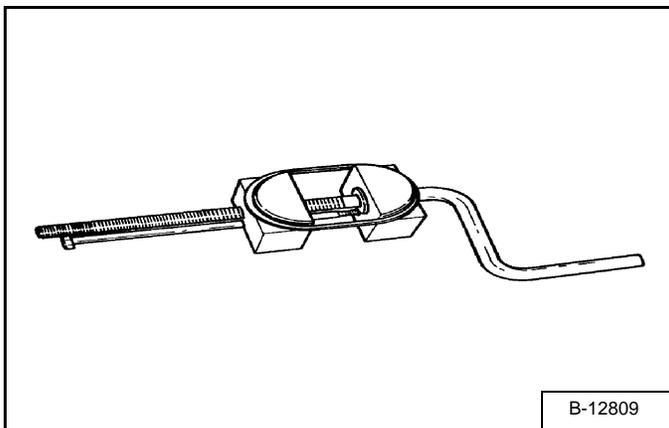
Figure 20-10-13



Install the O-ring on the piston [Figure 20-10-13].

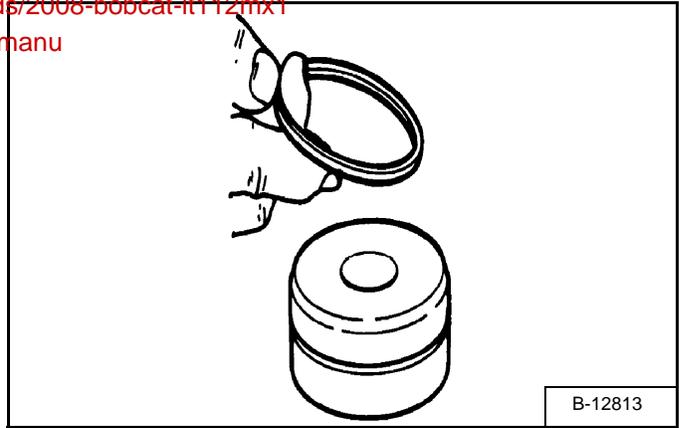
NOTE: Do not overstretch the seal.

Figure 20-10-14



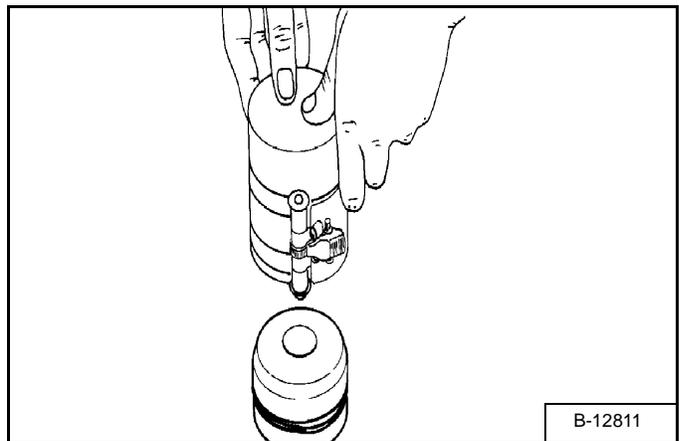
Install the seal on the tool and stretch it until it fits the piston [Figure 20-10-14].

Allow the O-ring to stretch for 30 seconds before removing it from the tool.



Install the seal on the piston [Figure 20-10-15].

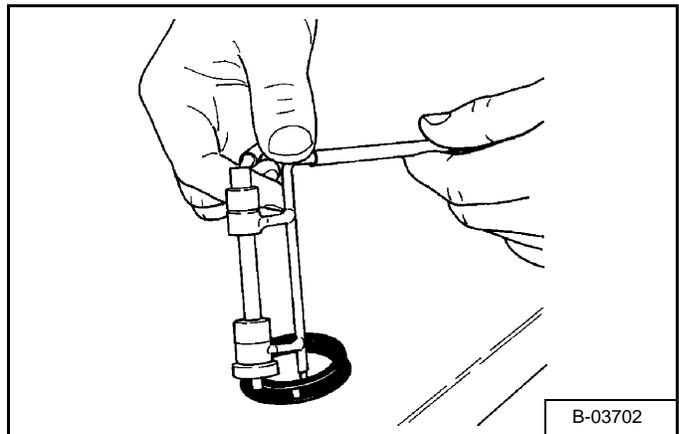
Figure 20-10-16



Use the ring compressor to compress the seal to the correct size [Figure 20-10-16].

NOTE: Leave the piston in the ring compressor for three minutes.

Figure 20-10-17



Install the oil seal on the rod seal tool [Figure 20-10-17].

NOTE: The O-ring side of the oil seal goes toward the inside of the cylinder.