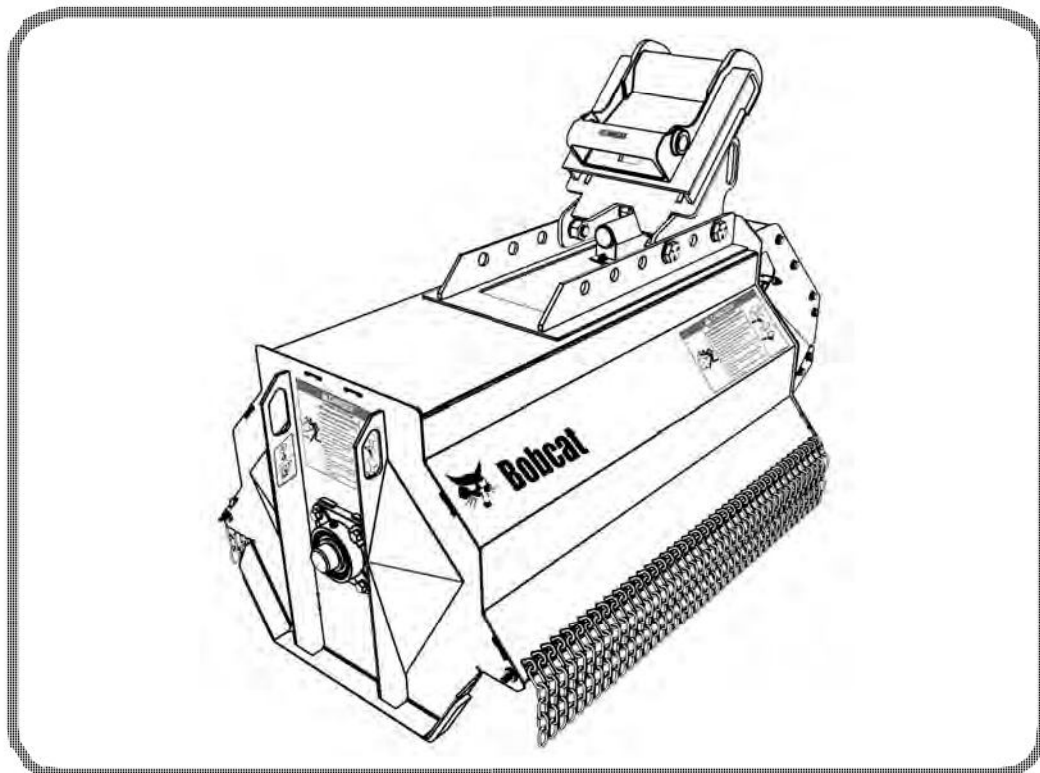




Bobcat®

Service Manual Flail Mower

(30FM) S/N B1YS00101 & Above
(40FM) S/N B1YT00101 & Above



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MAINTENANCE SAFETY



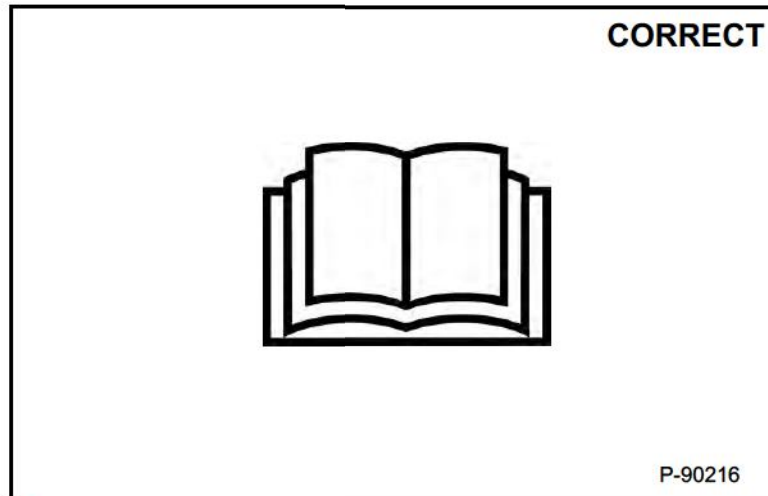
WARNING









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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SERIAL NUMBER LOCATION

Attachment Serial Number

Figure 1-1



Always use the serial number **[Figure 1-1]** of the flail mower 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.

DELIVERY REPORT

Figure 1-2

Bobcat Delivery Report
Attachments

Dealer Number: _____
Dealer Name: _____

PERFORMANCE CLUB

SALES SPECIALIST NAME

1. Explain the following items to the owner or operator:

1. Explain the following items to the owner or operator:
2. Explain the following items to the owner or operator:
3. Explain the following items to the owner or operator:
4. Explain the following items to the owner or operator:
5. Explain the following items to the owner or operator:
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11. Explain the following items to the owner or operator:
12. Explain the following items to the owner or operator:
13. Explain the following items to the owner or operator:
14. Explain the following items to the owner or operator:
15. Explain the following items to the owner or operator:
16. Explain the following items to the owner or operator:
17. Explain the following items to the owner or operator:
18. Explain the following items to the owner or operator:

WARNING

1. Show how to enter and exit machine safely, with attachment down, under engaged and engine on. Demonstrate use of handgrips, attachment lift, and safety brake.

2. Explain availability of manual applications and to which hydraulic function they apply.

3. Explain need for Primary Application PD with correct Control Adjustment for operation and manual operation.

4. Explain need and availability of safety chain for attachment (SA, ST, ST-2, ST-3).

5. Explain proper loading and unloading procedures for the attachment, including use of the 2-way for ground tires critical for hydraulic attachment.

6. Explain availability and use of A-Charge® system.

7. Advise availability of rear seatbelt and other accessories.

8. Review maintenance procedure for attachment with operator and the technician and/or the dealer or Operator & Maintenance Manual.

9. Explain "Memory Pin" and describe in Operator & Maintenance Manual (located in delivery package).

The above delivery information has been explained to the _____ (operator and representative of the machine) (date) (month) (year) and explained as required in the scope of the delivery report.

Dealer Representative Signature: _____ Date: _____

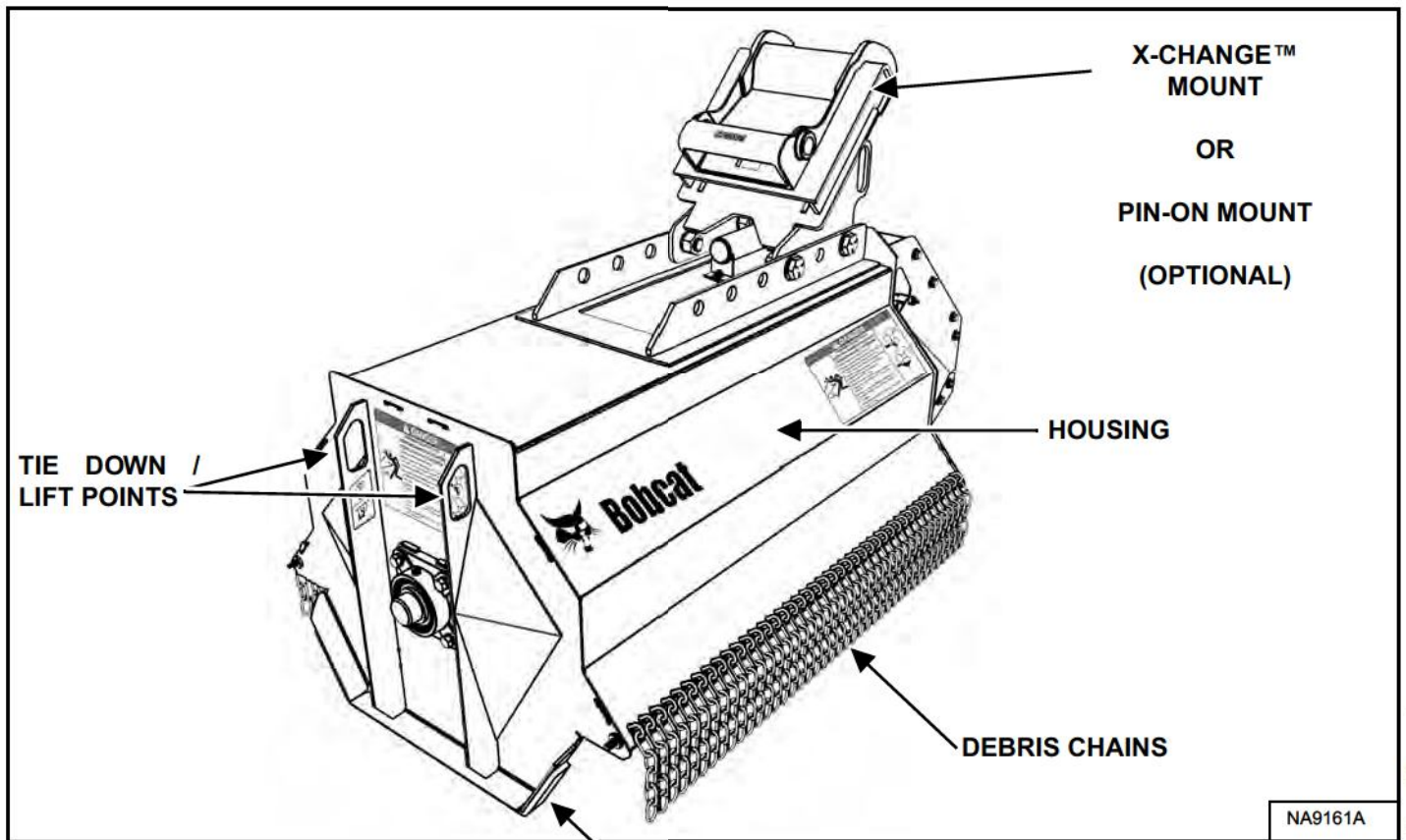
NA7494

The delivery report [Figure 1-2] contains a list of items that must be explained or shown to the owner or operator by the dealer when the Bobcat loader is delivered.

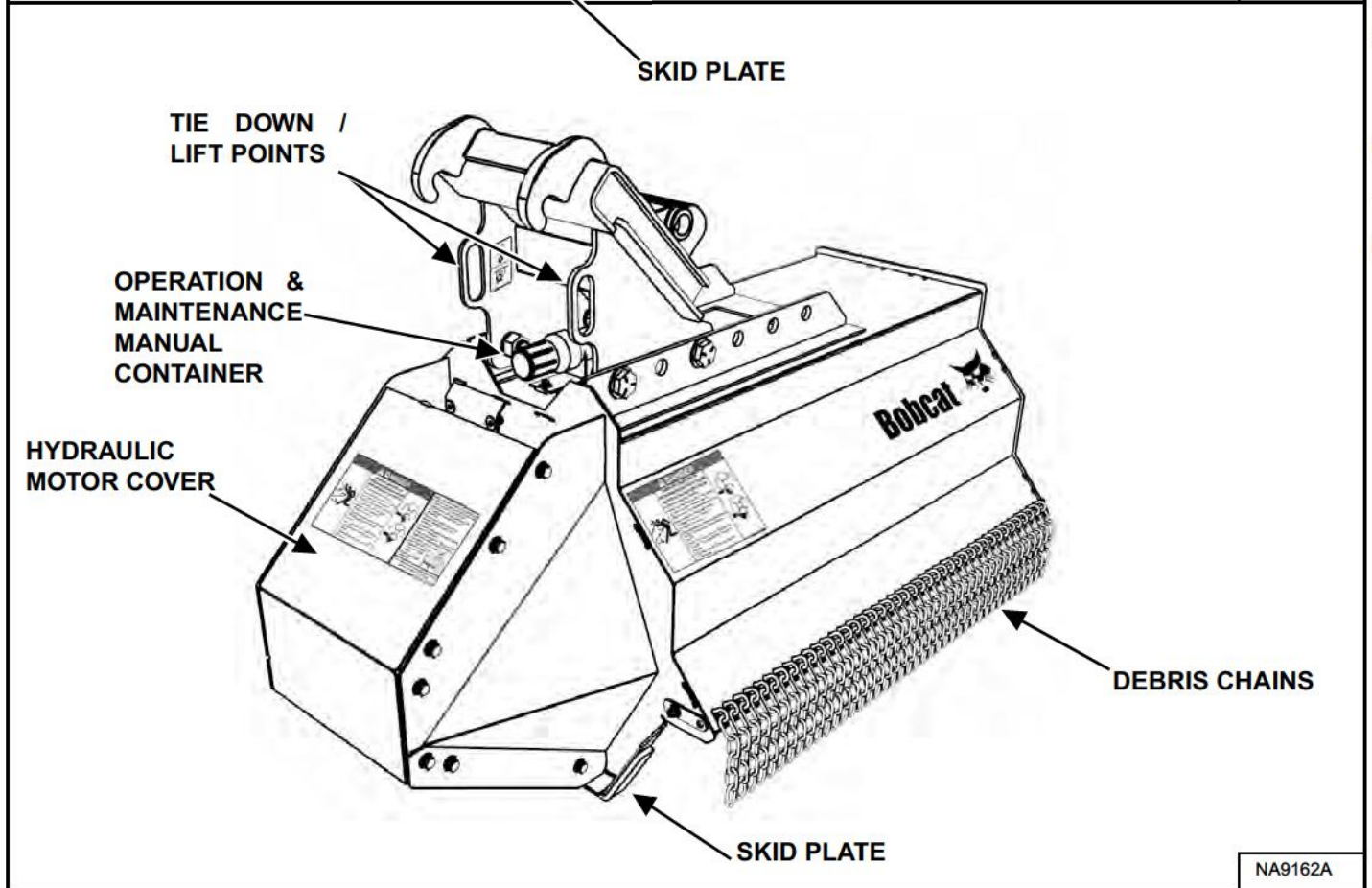
The delivery report must be reviewed and signed by the owner or operator and the dealer.

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ATTACHMENT IDENTIFICATION



NA9161A



NA9162A

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SAFETY & MAINTENANCE

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TROUBLESHOOTING

Chart

 WARNING	<p>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.</p> <p style="text-align: right;">W-2003-0807</p>
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If the attachment is not working correctly, check the hydraulic system of the machine thoroughly before making any repairs on the attachment. Attachment problems can be affected by a hydraulic system that is not operating to specifications. Connect a flow meter to the machine to check the hydraulic pump output, relief valve setting and tube lines to check flow and pressure. (See the machine's Service Manual for the correct procedure to connect the flow meter.)

Use the following troubleshooting chart to locate and correct problems which most often occur with the attachment.

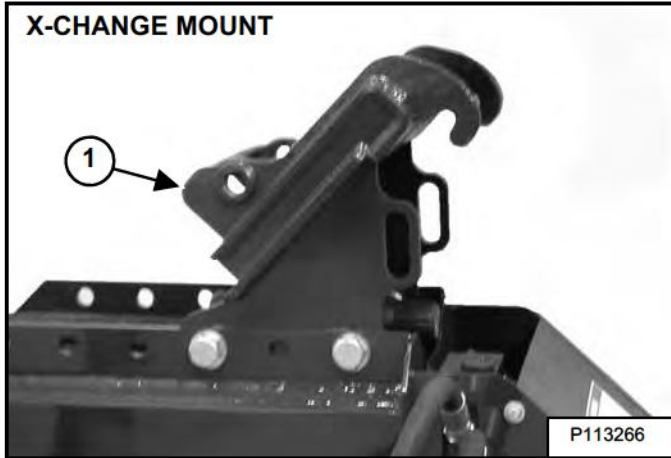
PROBLEM	CAUSE	CORRECTION
Flail mower does not operate.	No hydraulic flow to the flail mower.	Check the hydraulic flow to the flail mower.
	Damaged quick couplers or hoses.	Replace quick couplers or hoses.
	Excavator fluid reservoir is low.	Add hydraulic fluid to the reservoir on the excavator.
	Flail mower bearings seized.	Replace bearings.
	Excavator main relief valve set too low.	Adjust main relief valve to correct setting.
	Excavator hydraulic pump not working.	Check flow of hydraulic pump. Repair or replace as needed.
	The flail mower hydraulic circuit has a check valve that allows the flail mower to be operated in one direction only. If the auxiliary hydraulics are activated in the wrong hydraulic flow direction, the motor will not operate. NOTE: No damage will occur, just the flail mower knives will not rotate until the correct hydraulic flow direction is selected.	Press the hydraulic auxiliary switch for constant flow or press the thumb switch in the opposite direction. NOTE: After the leading edge of the knives are dull, the hoses at the valve or the motor can be switched to allow the drum to rotate in the opposite direction to utilize the opposite knife edge. To change drum rotation.
Rapid bearing failure.	Lack of lubrication.	Lubricate both bearings daily. Do not over grease or bearing seal damage could result.

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DAILY INSPECTION

Attachment Mounting Frame

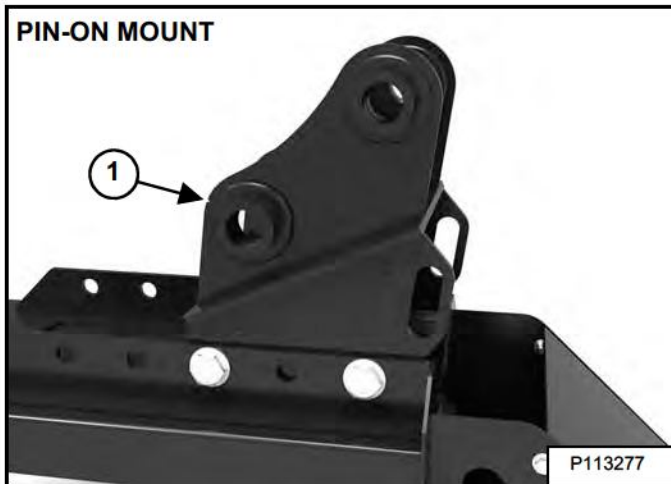
Figure 10-20-1



Inspect the X-Change™ mount (Item 1) [Figure 10-20-1] (if equipped) and all welds on the flail mower for wear and damage each time the flail mower is removed from the excavator.

Check for loose or missing fasteners and replace as needed.

Figure 10-20-2

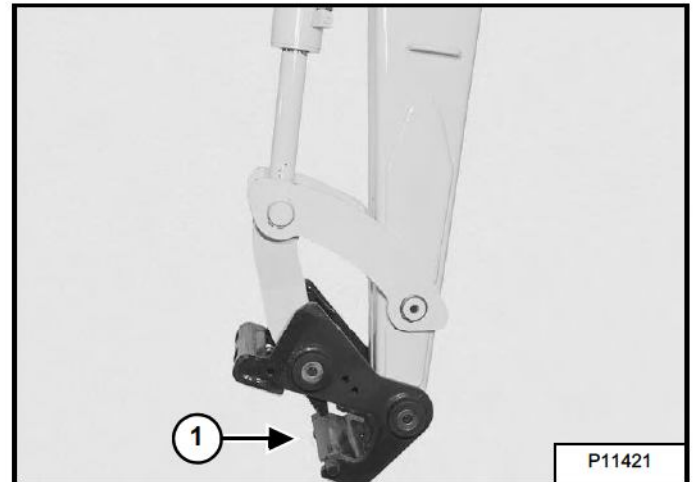


Inspect the pin-on mount (Item 1) [Figure 10-20-2] (if equipped) and all welds on the flail mower for wear and damage each time the flail mower is removed from the excavator.

Check for loose or missing fasteners and replace as needed.

X-Change

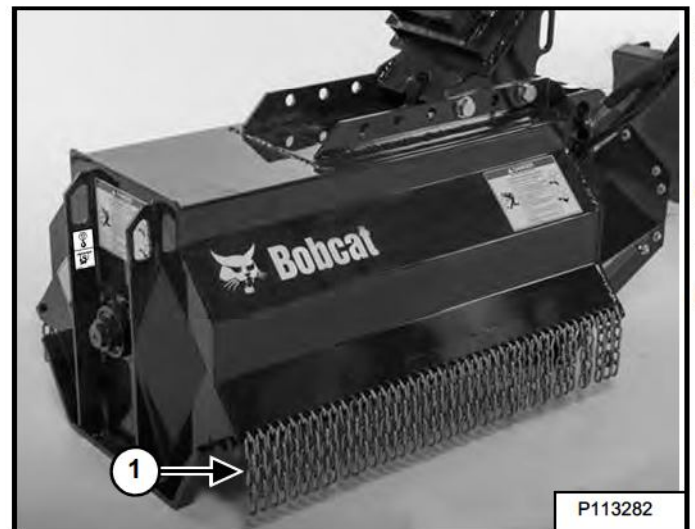
Figure 10-20-3



Inspect the X-Change (Item 1) [Figure 10-20-3] (if equipped) for damage or wear. Clean all dirt and debris from the X-Change.

Debris Chains

Figure 10-20-4



Inspect the debris chains (Item 1) [Figure 10-20-4] for damage. Repair if damaged or replace if necessary.

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DAILY INSPECTION (CONT'D)

Excavator And Flail Mower

Clean debris, leaves, branches and flammable material from the excavator and the flail mower.

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

Figure 10-20-5



Inspect the drum and knives every day.

NOTE: Disconnect the hydraulic hose before inspecting the drum and knives.

Enter the excavator and start the engine. See Operation & Maintenance Manual for correct procedure.

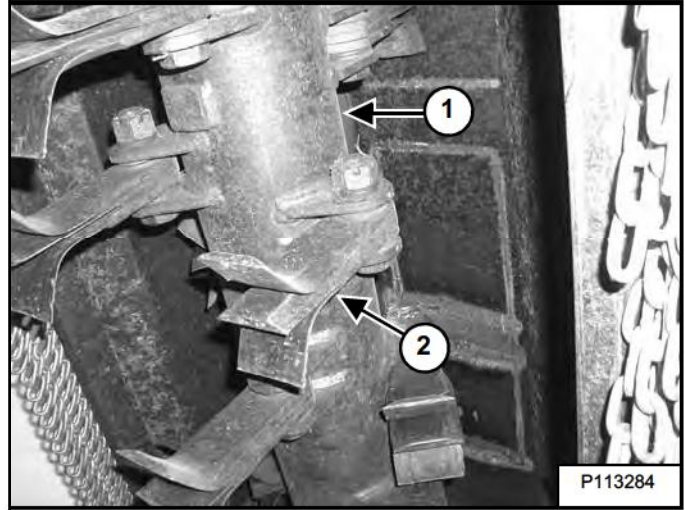
Park the excavator on a flat level surface.

Raise the boom and position the flail mower so it is perpendicular to the ground.

Lower the flail mower until it is fully on the ground [Figure 10-20-5].

Stop the engine and exit the excavator.

Figure 10-20-6



Inspect the drum (Item 1) [Figure 10-20-6] for debris or damage. A drum that has a build up of debris can create an unbalanced drum and cause vibration. Use a pressure washer to clean the drum, knives and the inside of the housing.

Inspect the knives (Item 2) [Figure 10-20-6] for damage. Replace any damaged knives. (See REMOVAL AND INSTALLATION OF KNIVES on Page 10-60-1.)

Inspect the knives for free movement. The knives should swing freely.

Lubricate the flail mower after pressure washing. (See LUBRICATING THE ATTACHMENT on Page 10-30-1.)

LUBRICATING THE ATTACHMENT

Lubrication Locations

Park the excavator on a flat level surface. Lower the attachment to the ground.

Stop the engine and remove the key.

Relieve the auxiliary hydraulic pressure. (See the excavator's Operation & Maintenance Manual and Operator's Handbook for the correct procedure.)

Exit the excavator. (See Entering And Exiting The Excavator in the Operation And Maintenance Manual.)

NOTE: Always use a good quality lithium based grease when lubricating the flail mower.



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

Lubricate the following locations daily.

NOTE: Install 6 - 8 pumps of grease every eight hours of operation. Every four hours if running in severe conditions. Every three hours in wet, boggy conditions. Over greasing bearings can cause damage. If an excessive amount of grease is present at the bearings, too much grease is being applied.

Figure 10-30-1

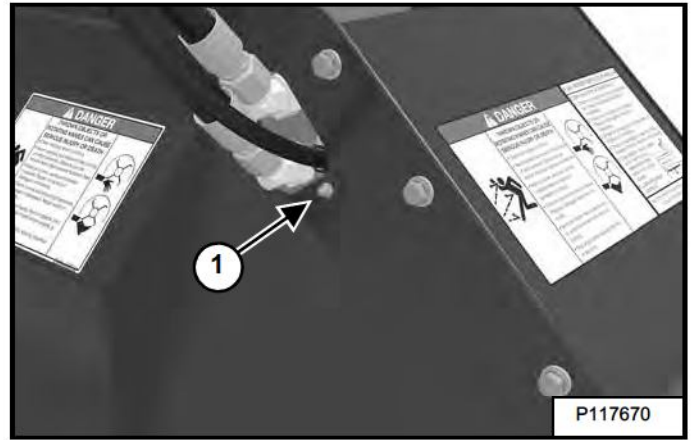
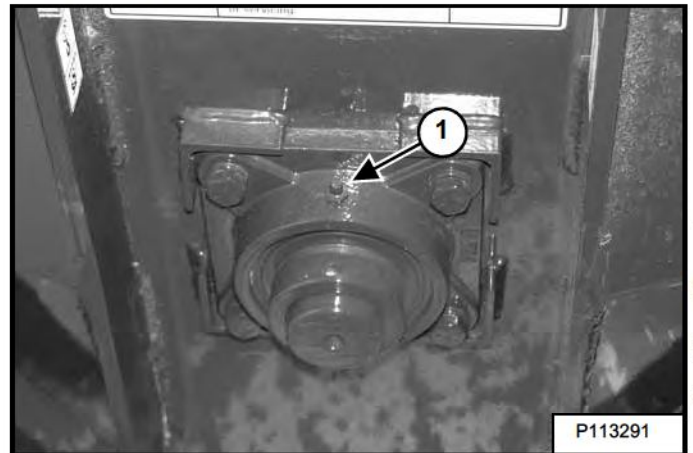


Figure 10-30-2



Lubricate the bearings (Item 1) [Figure 10-30-1] and [Figure 10-30-2].

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DRUM ROTATION

Procedure

The flail mower hydraulic circuit has a check valve that allows the drum to rotate in one direction only to protect the motor from damage by eliminating the ability to quickly reverse the rotation of the drum. To utilize both edges of the knives, the hydraulic flow to the motor can be reversed by changing the hose position at the motor.

Enter the excavator and start the engine. See Operation & Maintenance Manual for correct procedure.

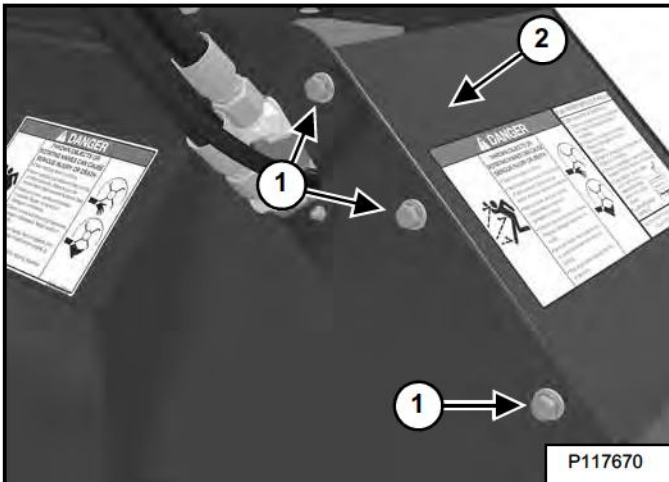
Park the excavator on a flat level surface.

Lower the attachment fully.

Stop the engine and relieve the hydraulic pressure. See Operation & Maintenance Manual for the correct procedure for relieving hydraulic pressure at the excavator.

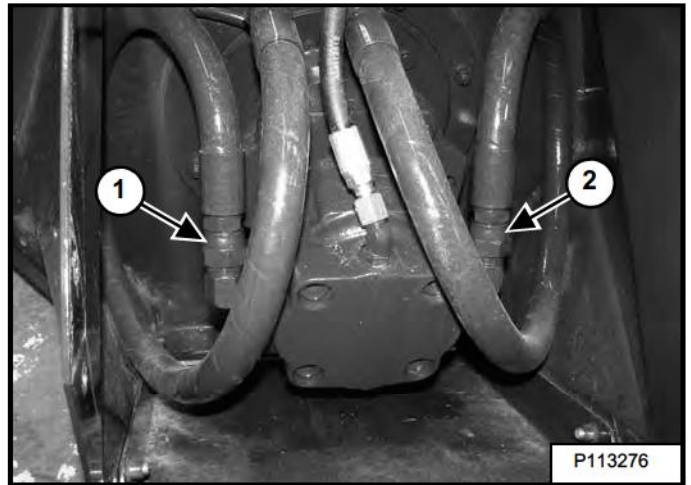
NOTE: Disconnect the hydraulic hose at the quick couplers before changing the hydraulic hoses.

Figure 10-40-1



Remove the three bolts (Item 1) and washers (each side) and remove the cover (Item 2) [Figure 10-40-2].

Figure 10-40-2



Remove the hoses (Item 1) and (Item 2) from the motor. Switch the hose positions so hose (Item 1) will now be installed where hose (Item 2) was originally installed. And hose (Item 2) will now be installed where hose (Item 1) [Figure 10-40-2] was originally installed.

Installation: Tighten the hoses to 114 N•m (84 ft-lb) torque.

Reinstall the cover (Item 2) and bolts (Item 1) [Figure 10-40-1] and tighten.

Reconnect the hydraulic couplers.

The drum will now rotate in the opposite direction and allow the unused side of the knife edge to be the cutting surface.

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SAFETY CHAIN DEBRIS DEFLECTOR GUARDS

Removal And Installation

Park the excavator on a flat level surface.

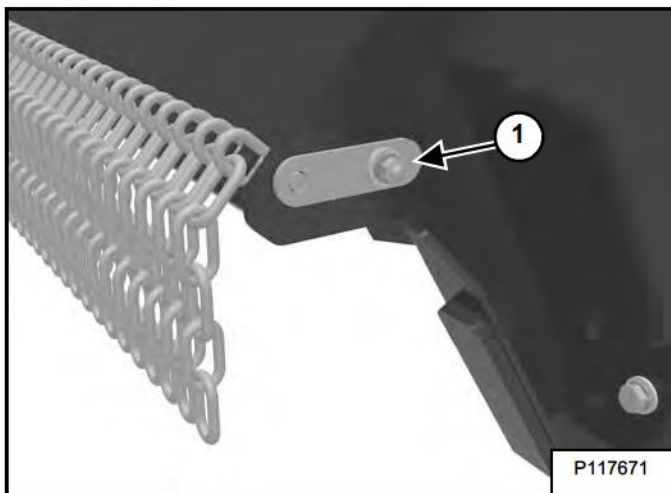
Lower the attachment fully.

Stop the engine and relieve the hydraulic pressure. See Operation & Maintenance Manual for the correct procedure for relieving hydraulic pressure at the excavator.

NOTE: Disconnect the hydraulic hose at the quick couplers before changing the safety chains.

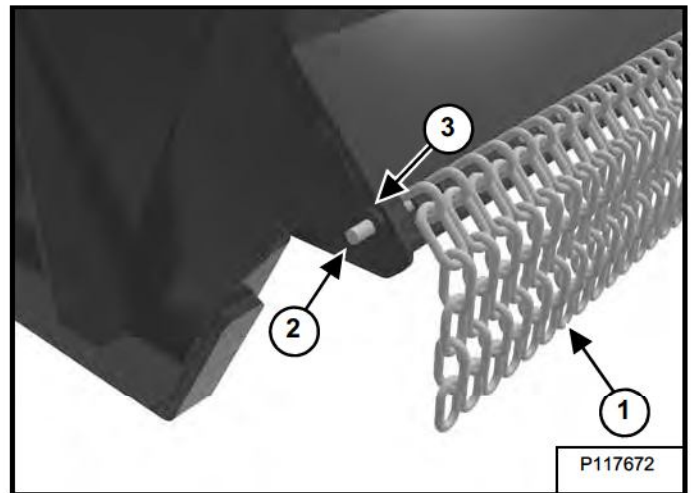
Disconnect the hydraulic hose at the quick couplers.

Figure 10-50-1



Remove the nut / washer (Item 1) [Figure 10-50-1] from the end of the rod.

Figure 10-50-2



As the rod is removed, the chain links (Item 1) [Figure 10-50-2] will be free to remove from the rod.

Replace the chains as necessary.

Reinstall the chains (Item 1) as you slowly reinsert the rod. When all chains are reinstalled, install the end of the rod (Item 2) into the bushing (Item 3) [Figure 10-50-2].

Install the bolt, washer and nut (Item 1) [Figure 10-50-1].

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