

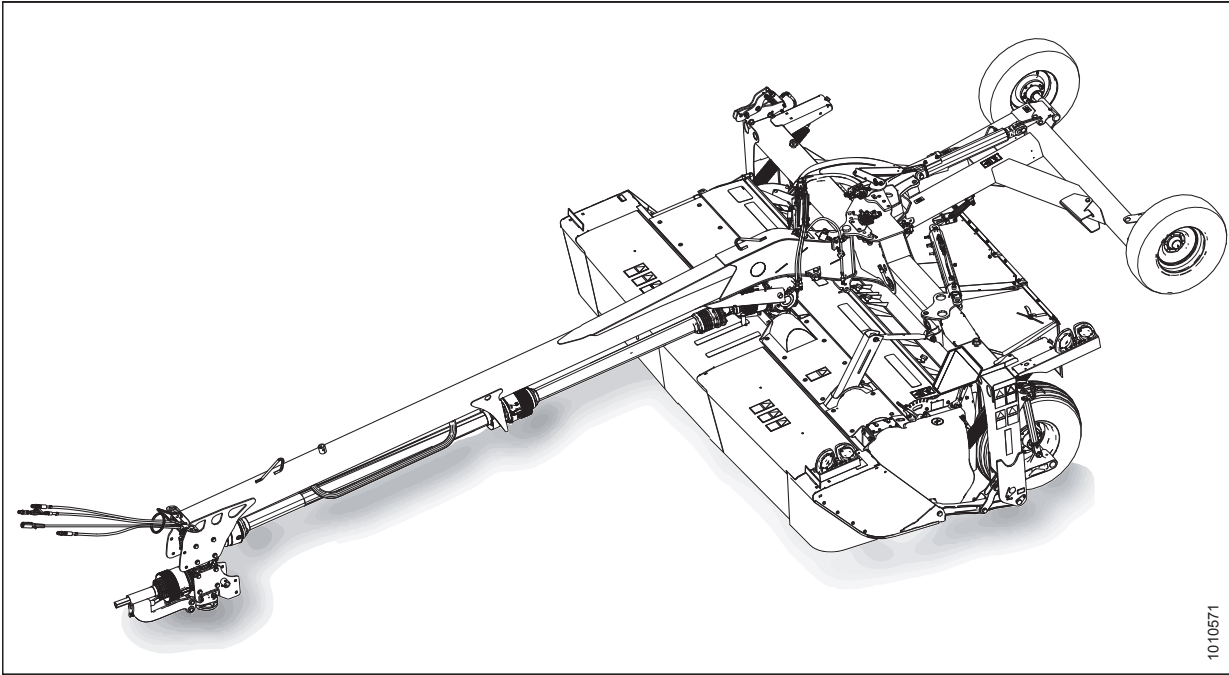
R1 Series Rotary Disc Pull-Types and Headers

Eight- and Ten-Disc Cutterbar Kits (MD #259517 and 259518)
Installation Instructions

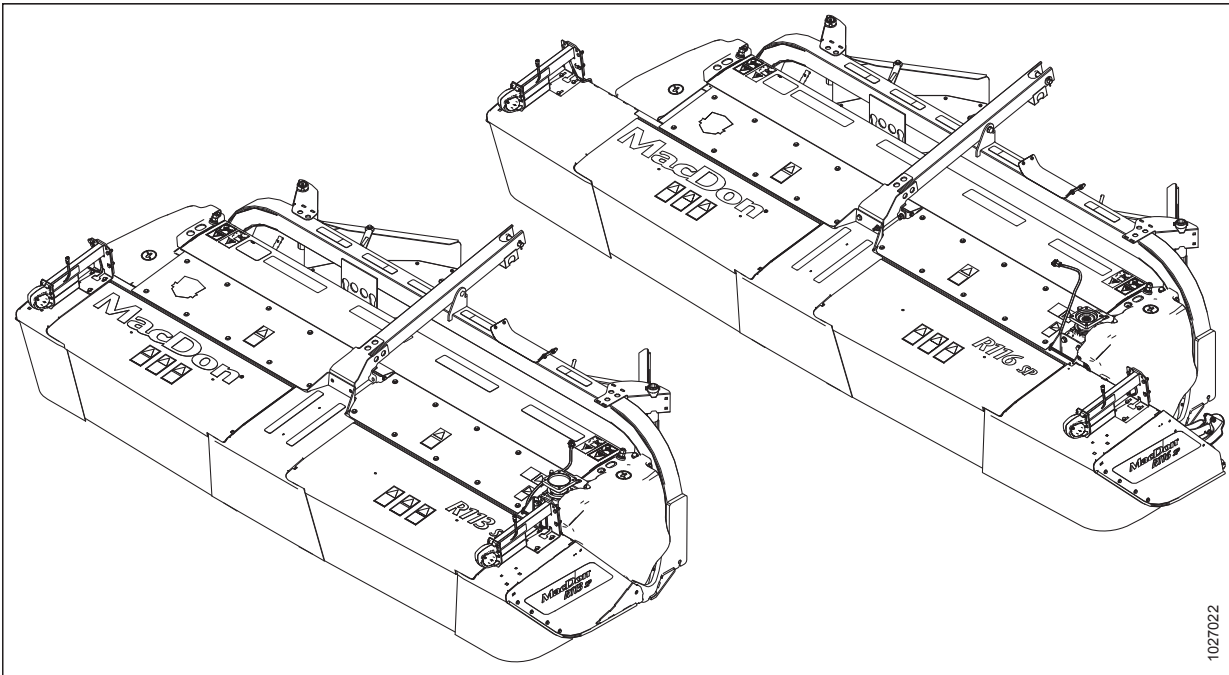
214497 Revision D

Original Instruction

R1 Series Rotary Disc Pull-Type



R1 Series Rotary Disc Header



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Introduction

The Ten-Disc Cutterbar kit (MD #259517) can be used to replace the cutterbar on a MacDon R116 Rotary Disc Header or Rotary Disc Pull-Type; the Eight-Disc Cutterbar kit (MD #259518) can be used to replace the cutterbar on a MacDon R113 Rotary Disc Header or Rotary Disc Pull-Type.

This document explains how to install the kits. A list of parts included in the kits is provided in Chapter 2 *Parts List, page 5*.

Installation time

Installation of this kit will take approximately 6 hours.

Conventions

The following conventions are used in this document:

- Right and left are determined from the operator's position. The front of the disc mower or header is the side that faces the crop.
- Unless otherwise noted, use the standard torque values provided in the mower or header operator's manual and technical manual.

NOTE:

Keep your MacDon publications up-to-date. The most current version of this instruction can be downloaded from our Dealer-only site (<https://portal.macdon.com>) (login required).

NOTE:

This document is currently available in English only.

Summary of Changes

At MacDon, we're continuously making improvements, and occasionally these improvements affect product documentation. The following list provides an account of major changes from the previous version of this document.

Section	Summary of Change	Internal Use Only
Front cover	Changed kit part numbers from MD #259415 and 259416 to 259517 and 259518.	ECN 58773
Inside front cover	Inserted copyright and disclaimer statements.	Tech Pubs
<i>Introduction, page i</i>	Changed kit part numbers from MD #259415 and 259416 to 259517 and 259518.	ECN 58773
<i>2 Parts List, page 5</i>	Replaced tool assembly MD #307769 with 325683.	ECN 58773
<i>3.2 Opening Cutterbar Doors – Export Latches, page 8</i>	Added topic.	Tech Pubs
<i>3.3 Removing Drivelines, page 10</i>	Replaced illustration of header safety prop. The decal has changed.	ECN 58047
<i>3.9 Installing the R113 Cutterbar, page 22</i>	Replaced tool assembly MD #307769 with 325683.	ECN 58773
<i>3.10 Installing the R116 Cutterbar, page 26</i>	Replaced tool assembly MD #307769 with 325683.	ECN 58773

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Chapter 1: Safety

1.1 Signal Words

Three signal words, **DANGER**, **WARNING**, and **CAUTION**, are used to alert you to hazardous situations. Two signal words, **IMPORTANT** and **NOTE**, identify non-safety related information. Signal words are selected using the following guidelines:

DANGER

Indicates an imminently hazardous situation that, if not avoided, will result in death or serious injury.

WARNING

Indicates a potentially hazardous situation that, if not avoided, could result in death or serious injury. It may also be used to alert against unsafe practices.

CAUTION

Indicates a potentially hazardous situation that, if not avoided, may result in minor or moderate injury. It may be used to alert against unsafe practices.

IMPORTANT:

Indicates a situation that, if not avoided, could result in a malfunction or damage to the machine.

NOTE:

Provides additional information or advice.

1.2 General Safety

CAUTION

The following general farm safety precautions should be part of your operating procedure for all types of machinery.

Protect yourself when assembling, operating, and servicing machinery, wear all protective clothing and personal safety devices that could be necessary for the job at hand. Do **NOT** take chances. You may need the following:

- Hard hat
- Protective footwear with slip-resistant soles
- Protective glasses or goggles
- Heavy gloves
- Wet weather gear
- Respirator or filter mask
- Be aware that exposure to loud noises can cause hearing impairment or loss. Wear suitable hearing protection devices such as earmuffs or earplugs to help protect against loud noises.



Figure 1.1: Safety Equipment



Figure 1.2: Safety Equipment

- Provide a first aid kit in case of emergencies.
- Keep a properly maintained fire extinguisher on the machine. Be familiar with its proper use.
- Keep young children away from machinery at all times.
- Be aware that accidents often happen when the Operator is tired or in a hurry. Take time to consider safest way. **NEVER** ignore warning signs of fatigue.

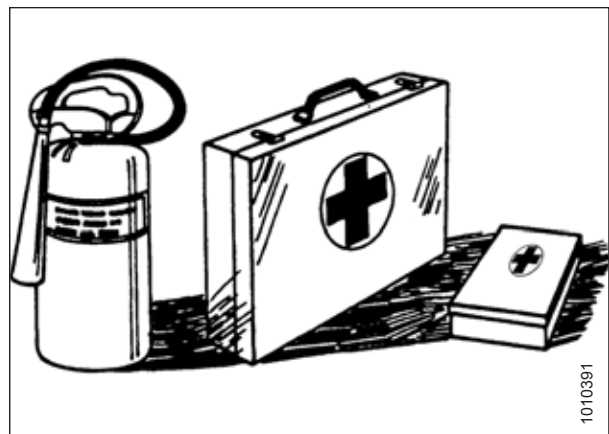


Figure 1.3: Safety Equipment

SAFETY

- Wear close-fitting clothing and cover long hair. **NEVER** wear dangling items such as scarves or bracelets.
- Keep all shields in place. **NEVER** alter or remove safety equipment. Make sure driveline guards can rotate independently of shaft and can telescope freely.
- Use only service and repair parts made or approved by equipment manufacturer. Substituted parts may not meet strength, design, or safety requirements.



Figure 1.4: Safety around Equipment

- Keep hands, feet, clothing, and hair away from moving parts. **NEVER** attempt to clear obstructions or objects from a machine while the engine is running.
- Do **NOT** modify the machine. Unauthorized modifications may impair machine function and/or safety. It may also shorten the machine's life.
- To avoid injury or death from unexpected startup of the machine, **ALWAYS** stop the engine and remove the key from the ignition before leaving the operator's seat for any reason.

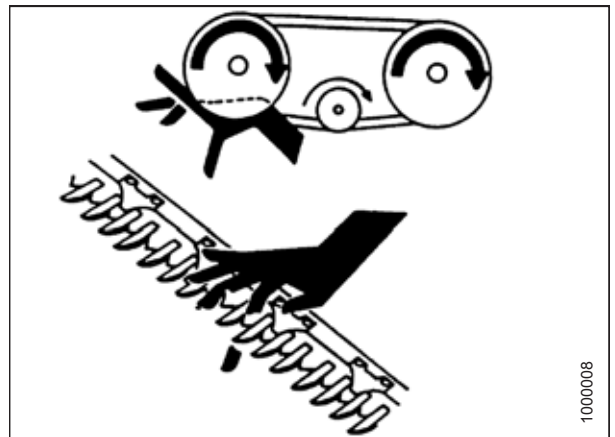


Figure 1.5: Safety around Equipment

- Keep service area clean and dry. Wet and/or oily floors are slippery. Wet spots can be dangerous when working with electrical equipment. Be sure all electrical outlets and tools are properly grounded.
- Keep work area well lit.
- Keep machinery clean. Straw and chaff on a hot engine are fire hazards. Do **NOT** allow oil or grease to accumulate on service platforms, ladders, or controls. Clean machines before storage.
- **NEVER** use gasoline, naphtha, or any volatile material for cleaning purposes. These materials may be toxic and/or flammable.
- When storing machinery, cover sharp or extending components to prevent injury from accidental contact.



Figure 1.6: Safety around Equipment

Chapter 2: Parts List

The following parts are included in this kit:

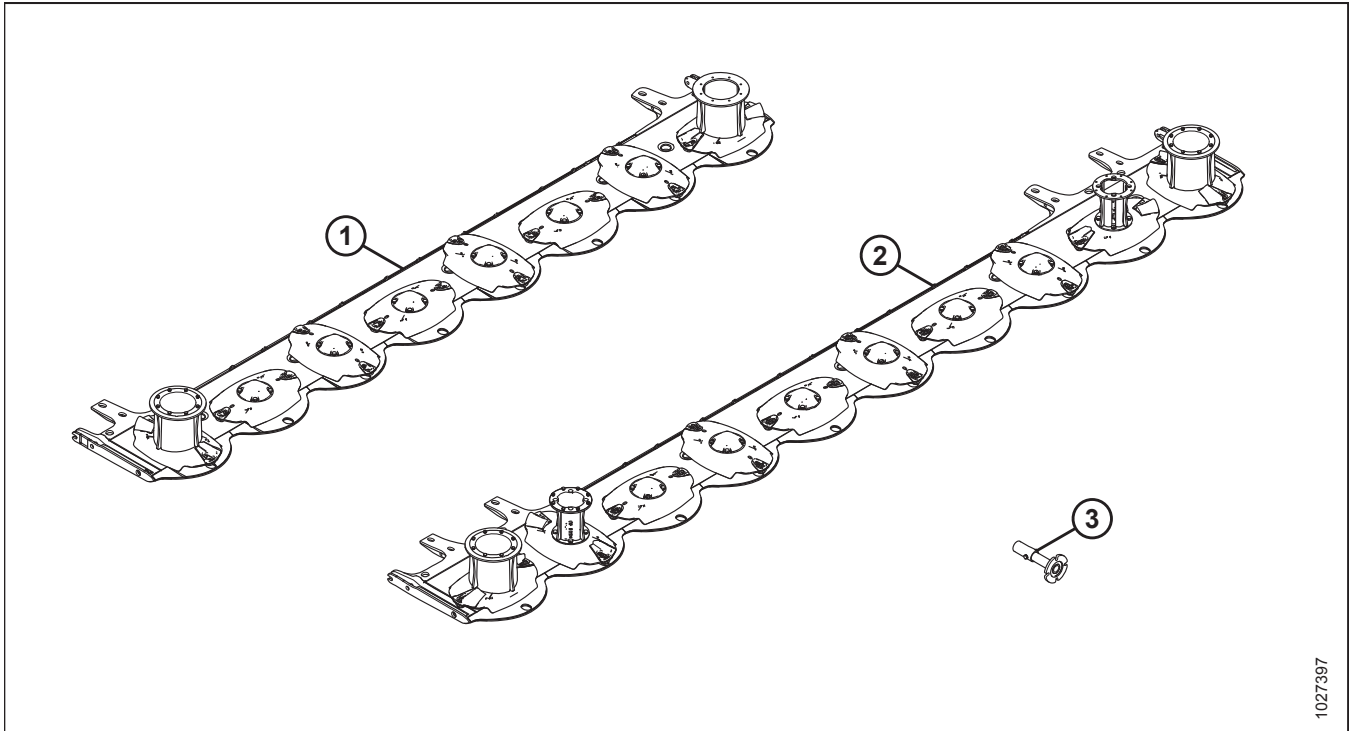


Figure 2.1: Parts Included in the Cutterbar Kits

Ref	Part Number	Description	Quantity	
			R113	R116
1	NSS	CUTTERBAR – 8 DISC, QCB READY	1	
2	NSS	CUTTERBAR – 10 DISC, QCB READY		1
3	325683	TOOL ASSEMBLY – DRIVE ALIGNMENT	1	1

Chapter 3: Installation Instructions

To install the cutterbar kits, follow these steps and procedures in the order given.

NOTE:

Some steps and procedures only apply to some machines. These are clearly labelled.

3.1 Opening Cutterbar Doors – North America

If the machine was sold outside of North America, it will have export latches. Refer to [3.2 Opening Cutterbar Doors – Export Latches, page 8](#).

WARNING

To avoid bodily injury or death from unexpected startup of the machine, always stop the engine and remove the key from the ignition before leaving the operator's seat for any reason.

1. **Pull-types only:** If both doors need to be opened, center the pull-type beneath the hitch.
2. Shut down the engine, and remove the key from the ignition.
3. Lift up on doors (A) at the front of the machine.

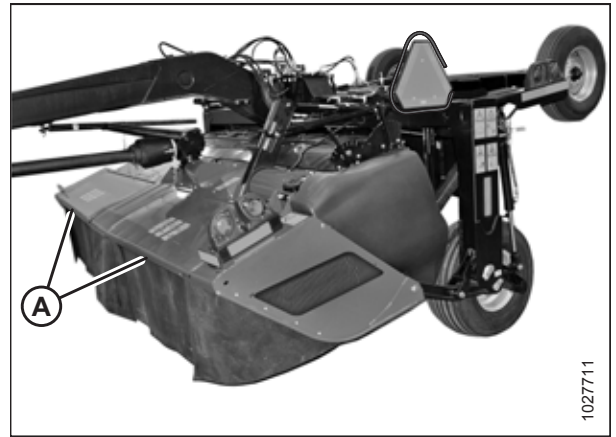


Figure 3.1: Cutterbar Doors and Curtains – Pull-Type

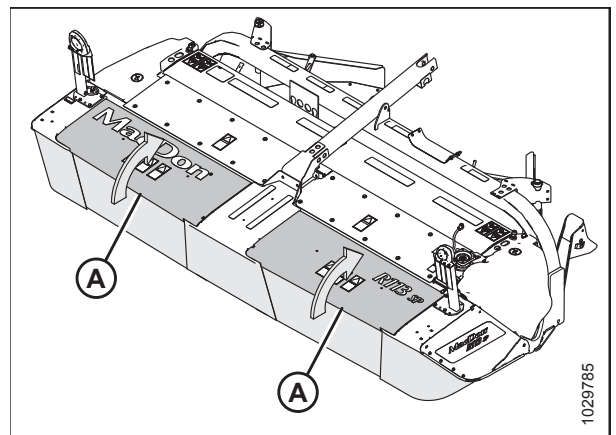


Figure 3.2: Cutterbar Doors and Curtains – Windrower Header

3.2 Opening Cutterbar Doors – Export Latches

Machines sold outside North America require a tool-operated latch on the cutterbar doors. Follow these steps to open cutterbar doors with export latches:

WARNING

To avoid bodily injury or death from unexpected startup of the machine, always stop the engine and remove the key from the ignition before leaving the operator's seat for any reason.

1. **Pull-types only:** Center the pull-type beneath the hitch, if both doors need to be opened.
2. Shut down the engine, and remove the key from the ignition.
3. Locate latch access holes (A) for each door.

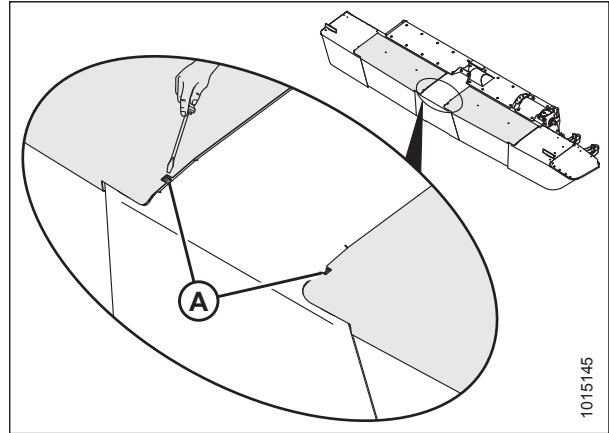


Figure 3.3: Cutterbar Door Latch Access Hole – Export Only

4. Use a rod or screwdriver to press down on latch (A) and release the cutterbar door.

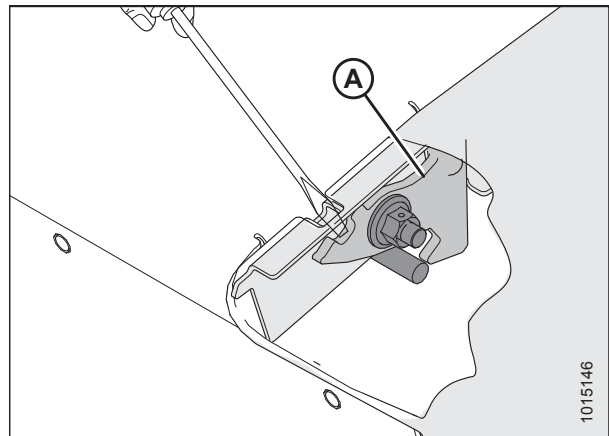


Figure 3.4: Cutterbar Door Latch – Cutaway View

INSTALLATION INSTRUCTIONS

5. Lift up on doors (A) while pressing down on the latch.

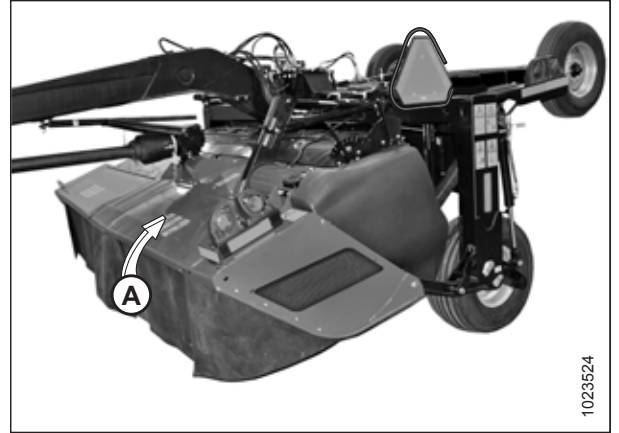


Figure 3.5: Cutterbar Doors and Curtains – Pull-Type

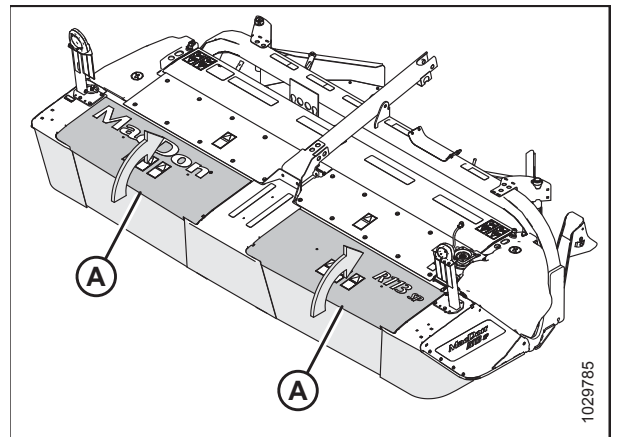


Figure 3.6: Cutterbar Doors and Curtains – Windrower Header

3.3 Removing Drivelines

⚠ DANGER

To avoid bodily injury or death from unexpected start-up or fall of a raised machine, stop engine, remove key, and engage windrower lift cylinder safety props (headers) or lift cylinder lock-out valves (pull-types) before going under machine for any reason.

1. Raise the header/pull-type fully and then engage the safety props (headers) or the lift cylinder lock-out valves (pull-types) to prevent an unexpected fall before going under the machine.
2. **Headers:** Pull lever (A) rotate toward header to release, and lower the safety prop onto the cylinder. Repeat on opposite side.

IMPORTANT:

Ensure the safety props engage over cylinder piston rods. If safety prop does not engage properly, raise the header until the safety prop fits over the rod.

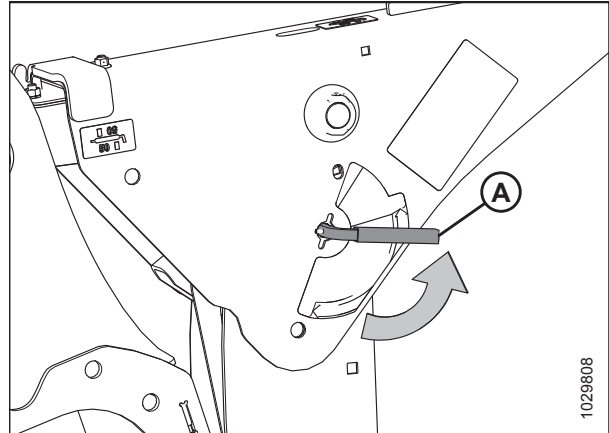


Figure 3.7: Safety Props – Right Shown, Left Similar

3. **Pull-type:** Close the lock-out valve (A) on each lift cylinder by turning the handle to the closed position (90° angle to the hose).

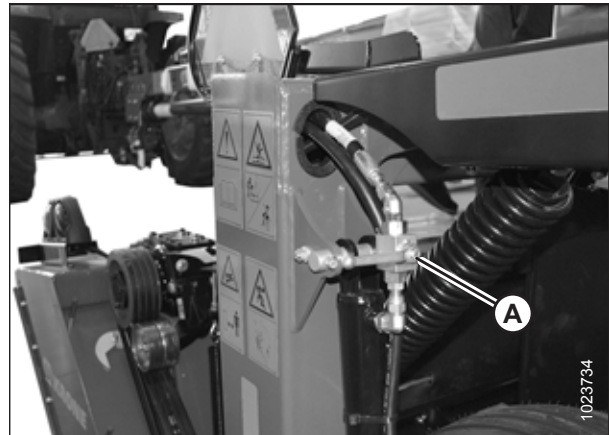


Figure 3.8: Lift Cylinder Lock-out Valve

INSTALLATION INSTRUCTIONS

Before removing the existing cutterbar, you must remove the drivelines from the machine. The procedure varies slightly depending on the type of driven drums installed on the machine. Some machines have large driven drums (A) and some have small driven drums (B). Refer to the procedure appropriate for your machine:

- R113: [3.3.1 Removing Driveline on an R113 – Large Driven Drums, page 11](#)
- R116: [3.3.2 Removing Driveline on an R116 – Small Driven Drums, page 14](#)

NOTE:

Drums vary slightly depending on the year of manufacture, so there may be some small differences between the drums in the illustration and the drums installed on your machine.

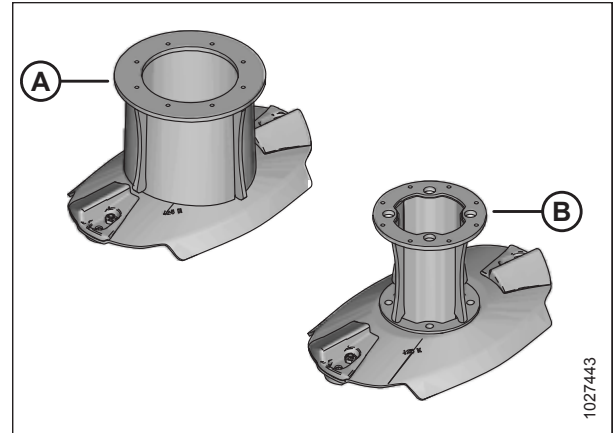


Figure 3.9: Large and Small Driven Drums

3.3.1 Removing Driveline on an R113 – Large Driven Drums

To remove the vertical driveline from a machine with large driven drums, follow these steps:

WARNING

Exercise caution when working around the blades. Blades are sharp and can cause serious injury. Wear gloves when handling blades.

If you are working on an R116 with small driven drums, refer to [3.3.2 Removing Driveline on an R116 – Small Driven Drums, page 14](#).

NOTE:

Retain all parts for reassembly unless otherwise stated.

1. On the left side of the cutterbar, remove four M10 hex flange head bolts (A) and remove vertical driveshield (B).

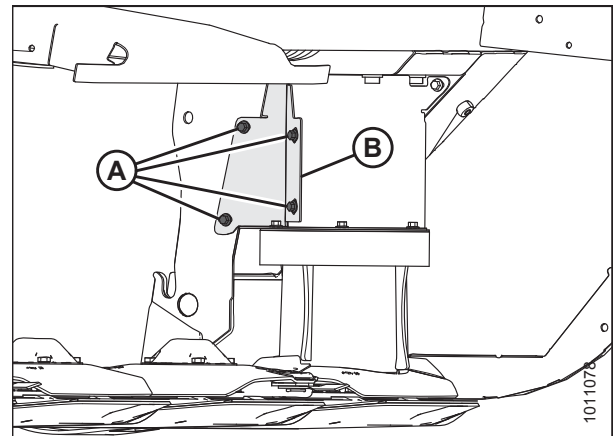


Figure 3.10: Driven Drum

INSTALLATION INSTRUCTIONS

2. Remove two M10 hex flange head bolts (A) and remove cover plate (B).

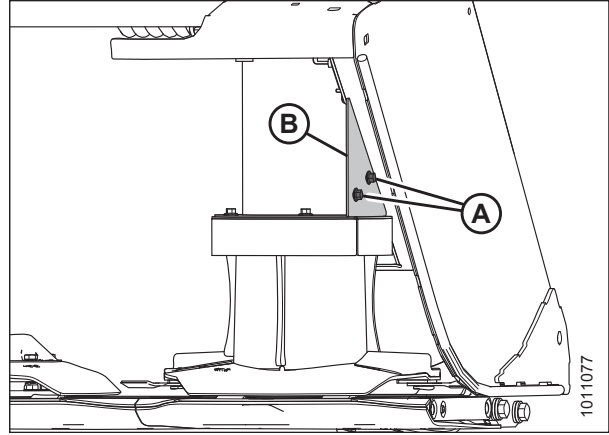


Figure 3.11: Cover Plate

3. Remove four M10 hex flange head bolts (A), and remove top plate (B) and drum top (C).

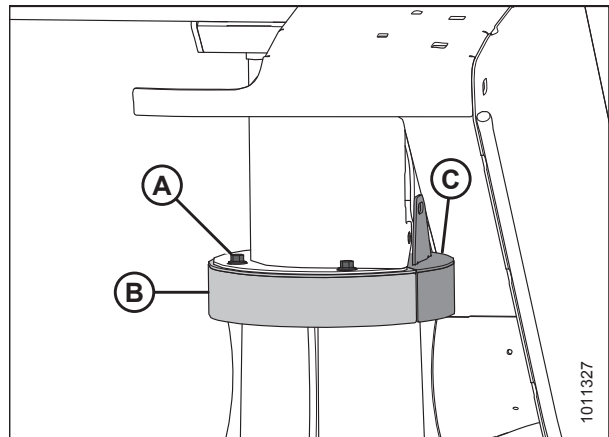


Figure 3.12: Top Plate and Drum Top

4. Remove one M10 x 20 hex flange head bolt (A), two M10 x 16 hex flange head bolts (B), and vertical shield (C).

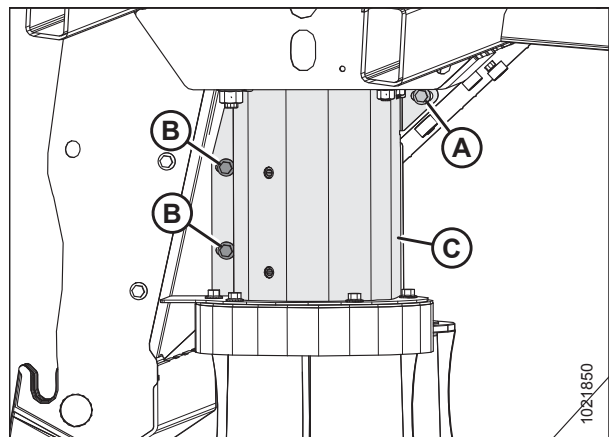


Figure 3.13: Vertical Shield

INSTALLATION INSTRUCTIONS

5. Remove eight M8 hex flange head bolts (A), and remove two drum shields (B).

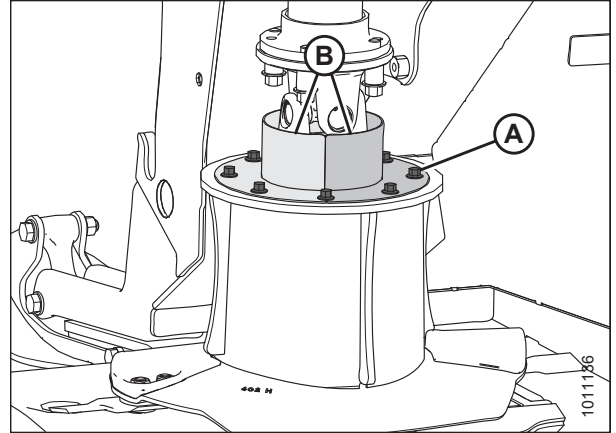


Figure 3.14: Drum Shields

6. Remove four M12 hex flange head bolts (A) and spacers securing driveline assembly (B) to hub drive (C).

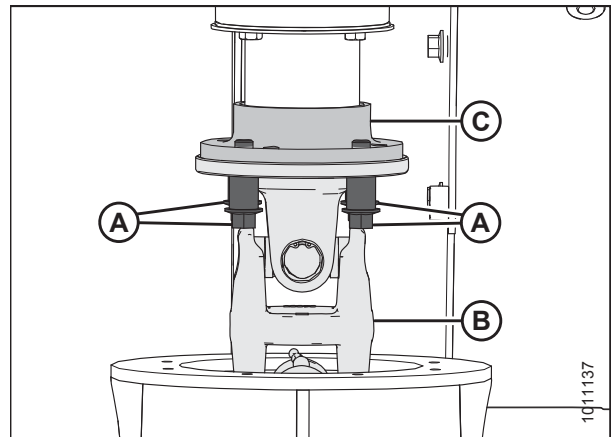


Figure 3.15: Hub Drive and Driveline Assembly

7. Slide driveline (A) downwards, and tilt it to the side. Pull the driveline up and out of the drum.

NOTE:

For clarity, the illustration shows a cutaway view of drum and tube shield.

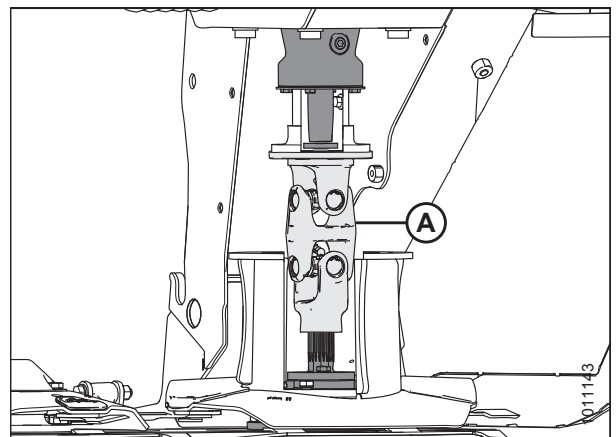


Figure 3.16: Driveline

INSTALLATION INSTRUCTIONS

3.3.2 Removing Driveline on an R116 – Small Driven Drums

To remove the vertical driveline from an R116 with small driven drums, follow these steps:

If you are working on an R113 or an R116 with large driven drums, refer to [3.3.1 Removing Driveline on an R113 – Large Driven Drums, page 11](#).

NOTE:

Retain all parts for reassembly unless otherwise stated.

1. On the left side of the cutterbar, remove four M10 hex flange head bolts (A) and remove vertical driveshield (B).

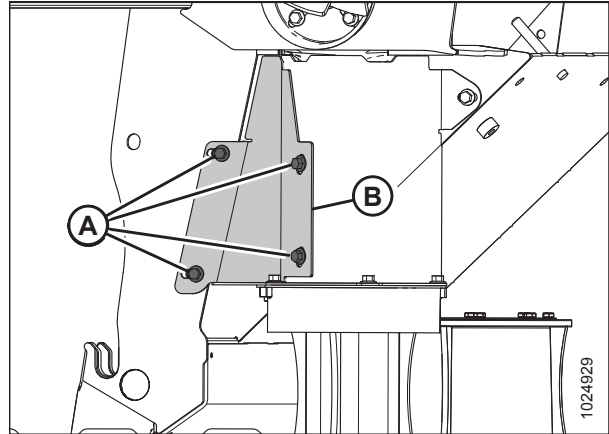


Figure 3.17: Driven Drum

2. Remove two M10 hex flange head bolts (B) and cover plate (A).

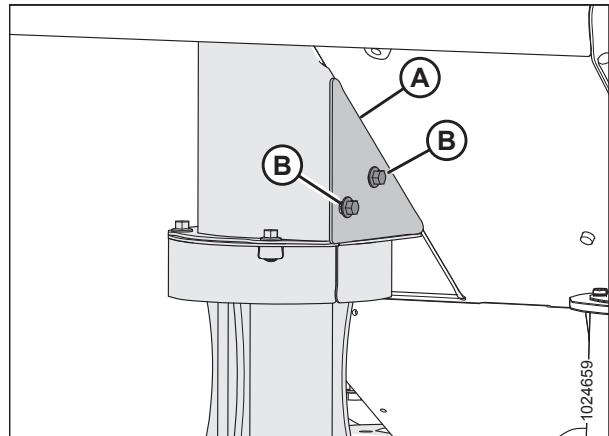


Figure 3.18: Driveline Shield

3. Remove four M10 hex flange head bolts (A), top plate (B), and drum top (C).

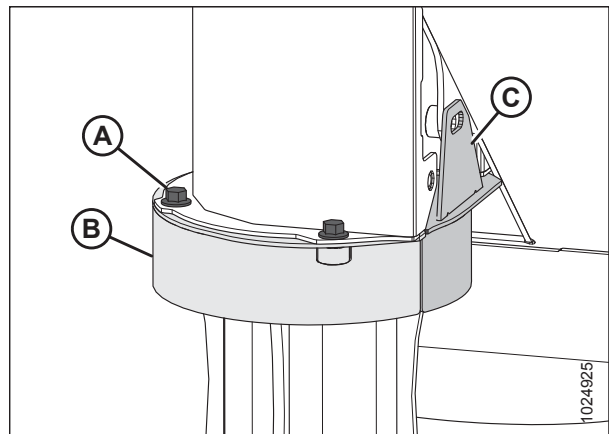


Figure 3.19: Driveline Shield

INSTALLATION INSTRUCTIONS

4. Remove one 20 mm M10 hex flange head bolt (B), two 16 mm M10 hex flange head bolts (C), and vertical shield (A).

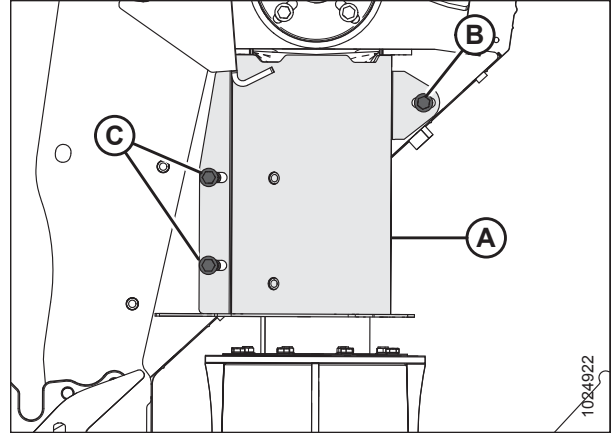


Figure 3.20: Driveline Shield

5. Remove eight M8 hex flange head bolts (A) and two drum shields (B).

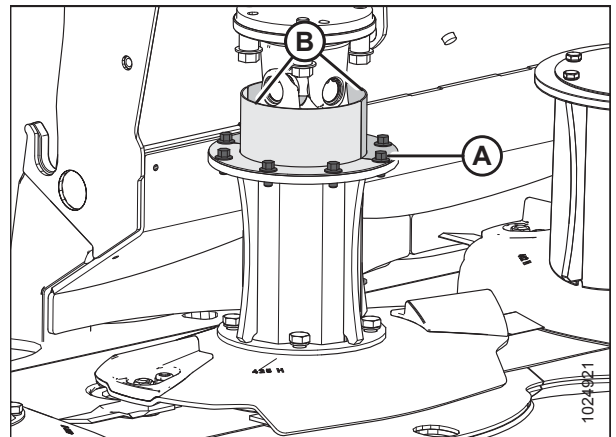


Figure 3.21: Driveline Shield

6. Remove four M12 hex flange head bolts (A) and spacers securing driveline assembly (B) to hub drive (C).

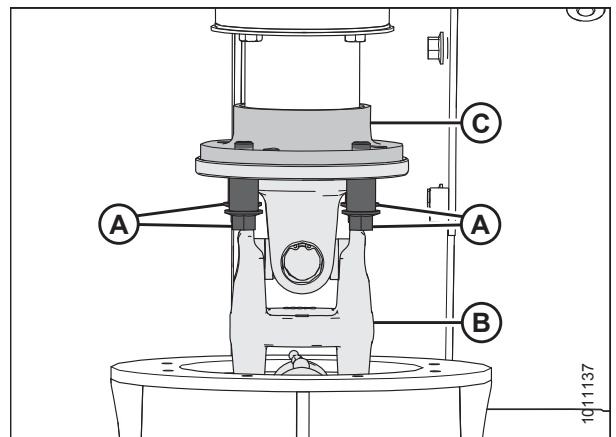


Figure 3.22: Driveline

INSTALLATION INSTRUCTIONS

- Slide driveline (A) downwards, tilt it to the side, and pull driveline up and out of drum.

NOTE:

For clarity, illustration shows a cutaway view of drum and tube shield.

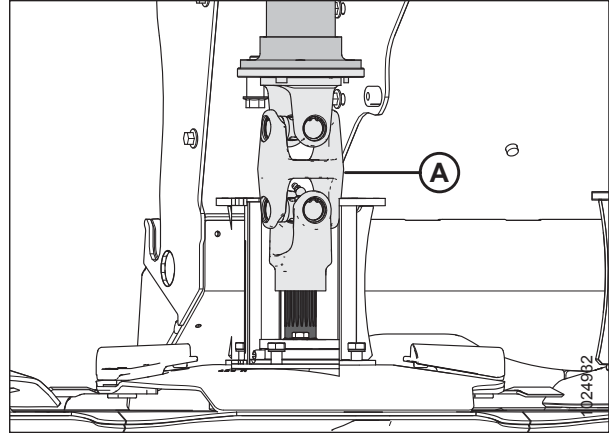


Figure 3.23: Driveline

3.4 Removing Cutterbar Deflectors

The cutterbar deflectors are used with roll conditioners only.

1. Locate deflector (A) on the back of the cutterbar.
2. Clean debris from deflectors and deflector area.
3. Remove bolt (C) shared with the rock guard from the cutterbar on the outboard end of deflector. Retain the hardware.
4. Remove three bolts (B) and nuts securing deflector (A) to the cutterbar using an 8 mm hex key and a 17 mm socket. Remove deflector (A). Retain the hardware.
5. Repeat previous steps for deflector (D) on the opposite side of the header.

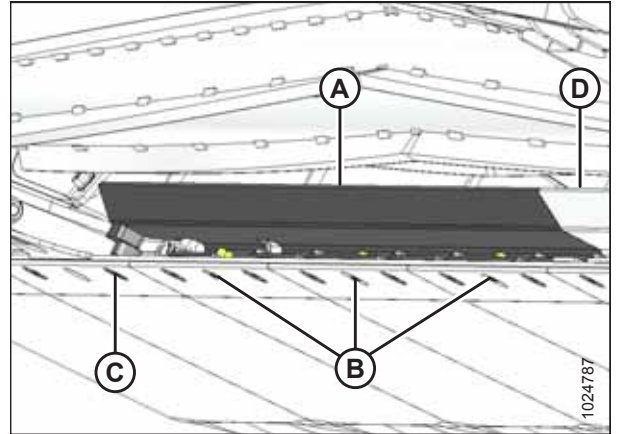


Figure 3.24: Cutterbar Left Deflector Viewed from Underside of Cutterbar

3.5 Removing the R113 Cutterbar

⚠ WARNING

Exercise caution when working around the blades. Blades are sharp and can cause serious injury. Wear gloves when handling blades.

⚠ CAUTION

The cutterbar weighs approximately 560 kg (1300 lb.). Use a suitable lifting device to support and move the cutterbar into place.

1. Using a suitable lifting device, support the cutterbar from the front of the header.
2. Remove nut and bolt (A) and allow skid shoe (B) to swing away from the cutterbar. Repeat for opposite side and retain hardware for installation.

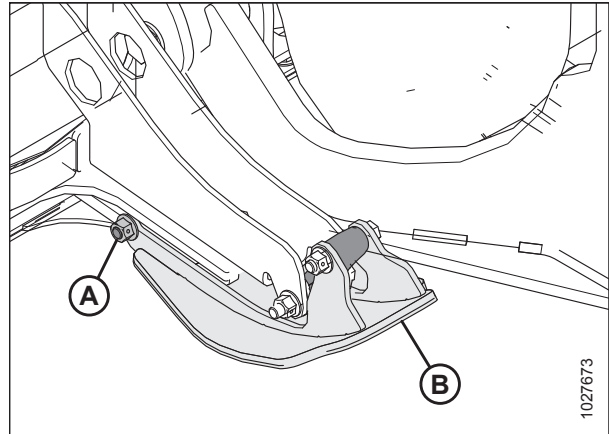


Figure 3.25: Skid Shoe – Rear Side View

3. With the cutterbar supported, remove bolts (B) and (C) that secure the cutterbar support (A) to the frame. Repeat at opposite end of the cutterbar.
4. Use the lifting device to slowly lower the cutterbar and move it away from the header.

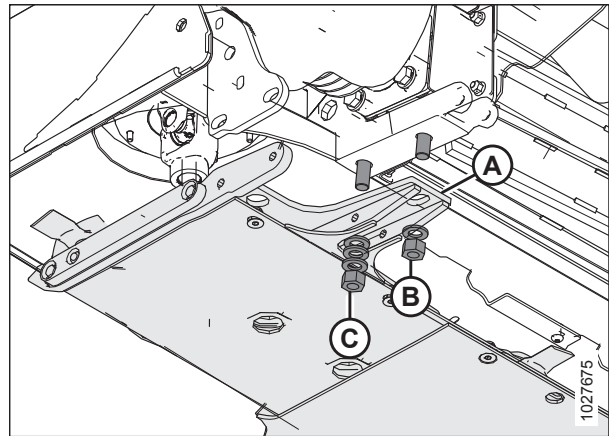


Figure 3.26: Cutterbar Bolts

3.6 Removing the R116 Cutterbar

⚠ WARNING

Exercise caution when working around the blades. Blades are sharp and can cause serious injury. Wear gloves when handling blades.

⚠ CAUTION

The cutterbar weighs approximately 560 kg (1300 lb.). Use a suitable lifting device to support and move the cutterbar into place.

1. Using a suitable lifting device, support the cutterbar from the front of the header.
2. Remove nut and bolt (A) and allow skid shoe (B) to swing away from the cutterbar. Repeat for the remaining skid shoes and retain hardware for installation.

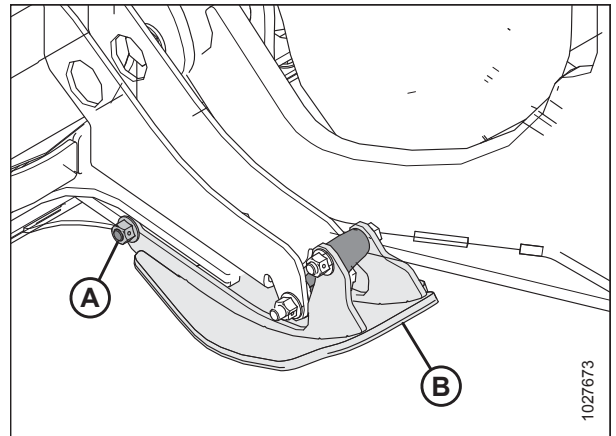


Figure 3.27: Skid Shoe – Rear Side View

3. With the cutterbar supported, remove bolts (A), (B), (C), and (D) that secure the cutterbar to the frame. Repeat at opposite end of the cutterbar.
4. Use the lifting device to slowly lower the cutterbar and move it away from the header.

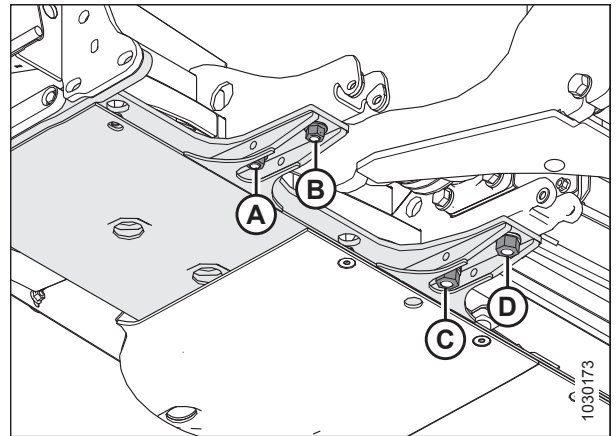


Figure 3.28: Cutterbar Bolts

3.7 Checking Cutterbar Lubricant Level

The new cutterbar comes from the factory pre-filled with lubricant. Before installing the cutterbar, you should check to make sure the lubricant level is correct, and adjust if needed. Follow these steps:

1. Position the cutterbar on a flat surface. Use a spirit (bubble) level (A) to ensure the cutterbar is level in both directions (front to back and end to end).

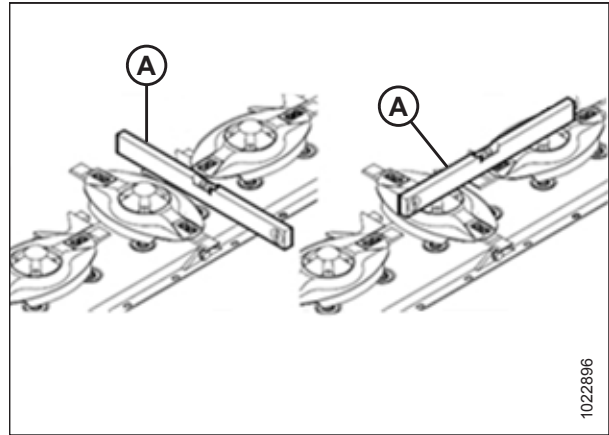


Figure 3.29: Spirit Level on Cutterbar

2. Locate the level inspection plug (A) on the back side of the cutterbar, inboard of the innermost drum.
3. Clean the area around plug (A). Place a 5 liter (5.2 US qts) capacity container under the plug to catch any spills.
4. Use a 17 mm socket to remove plug (A) and O-ring (B) from the cutterbar. The lubricant level should be up to the inspection plug hole.
5. If the lubricant level is too low, tilt the cutterbar forward and add more lubricant through the level hole.

NOTE:

For lubricant specifications, refer to the header operator’s manual or technical manual.

6. Return the cutterbar to level position and recheck lubricant level. If necessary, repeat previous step.
7. Reinstall plug.

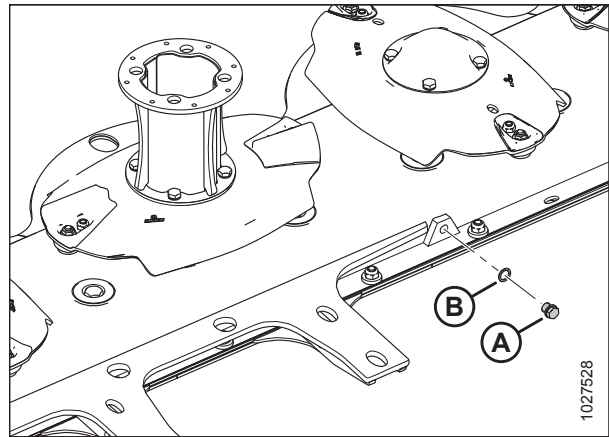


Figure 3.30: Cutterbar Level Inspection Plug

3.8 Removing Outboard Rock Guards

⚠ WARNING

Exercise caution when working around the blades. Blades are sharp and can cause serious injury. Wear gloves when handling blades.

Before installing the cutterbar, remove the outboard rock guards as follows to simplify installation.

1. Locate rock guard (B) on the bottom outboard end of the cutterbar. There is one guard on each end of the cutterbar.
2. Remove the two hex head screws (A), washers, and lock nuts (C) securing rock guard (B) to the cutterbar assembly.

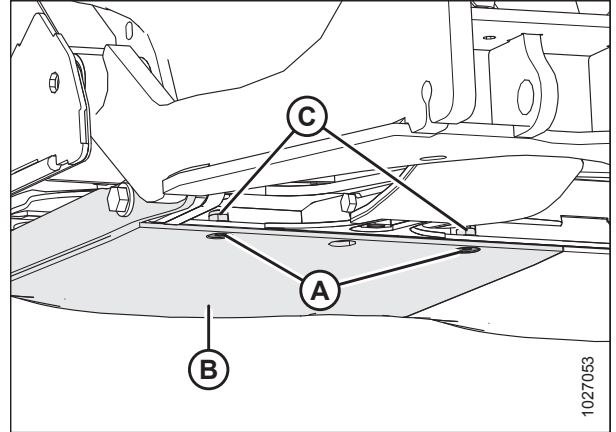


Figure 3.31: Left Outboard Rock Guard – View from Rear

3. Remove bolt and washers (A).
4. Loosen bolt (B).
5. Remove rock guard (C) by sliding it forward.
6. Repeat Steps 1, page 21 to 5, page 21 at the opposite side of the cutterbar.

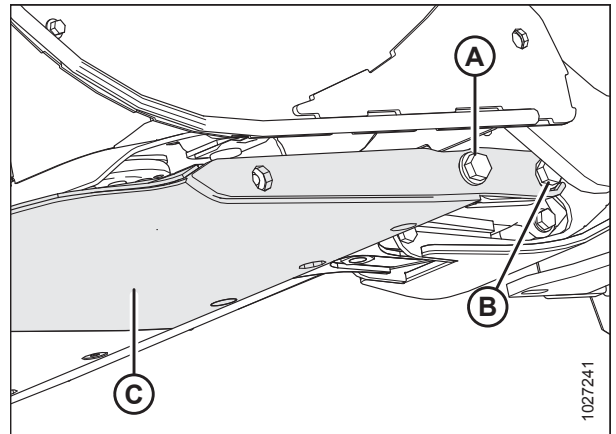


Figure 3.32: Left Outboard Rock Guard – Side View

3.9 Installing the R113 Cutterbar

WARNING

Exercise caution when working around the blades. Blades are sharp and can cause serious injury. Wear gloves when handling blades.

IMPORTANT:

Vertical drive alignment is crucial for proper cutterbar operation. Always use the drive alignment tool (MD #325683) when installing a cutterbar.

CAUTION

The cutterbar weighs approximately 560 kg (1300 lb.). Use a suitable lifting device to support and move the cutterbar into place.

1. Using a suitable lifting device, position cutterbar (A) so that mounting holes in the frame line up with the holes in the cutterbar.
2. Install one M20 x 2.5 x 65 bolt (C). Use three washers under the bolt head and three before the nut. Snug bolts but do **NOT** tighten at this time.
3. Install one M20 x 2.5 x 50 bolt (B). Use one washer under the bolt head and one on top of the nut. Snug bolts but do **NOT** tighten at this time.
4. Repeat Steps 1, page 22 to 3, page 22 for the opposite side.

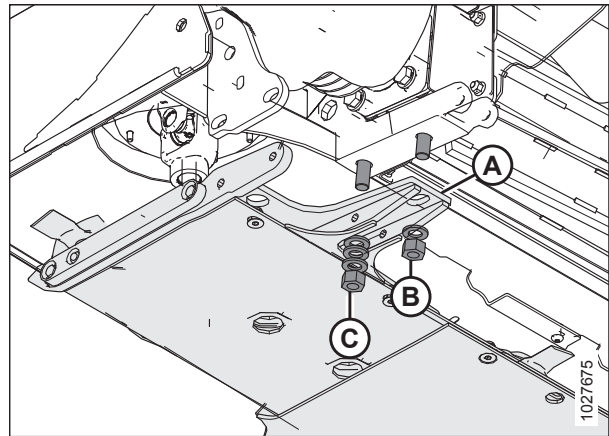


Figure 3.33: Cutterbar – Bottom View

5. Remove bolt, washer, and nut (A) from the drive alignment tool (MD #325683), and slide the bottom tube up.

NOTE:

The bolt, washer, and nut are provided for storage reasons only. They are not needed for drive alignment.

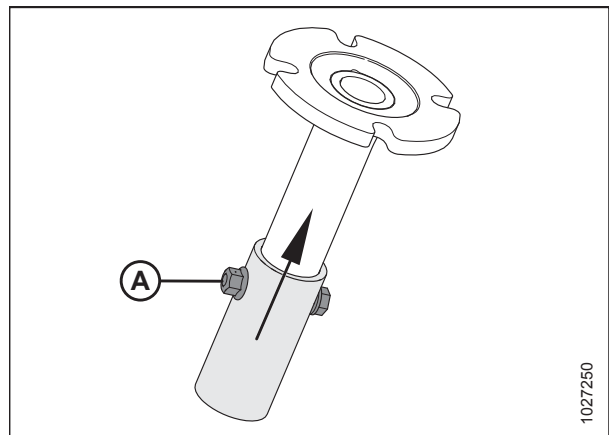


Figure 3.34: Drive Alignment Tool (MD #325683)

INSTALLATION INSTRUCTIONS

6. Attach drive alignment tool (A) to the drive hub (B), and torque to 95 Nm (70 lbf-ft). Slide the bottom tube down over the cutterbar driveshaft.

IMPORTANT:

If the alignment tool is not secured to the gearbox using all four bolts, the drive hub will be misaligned.

7. Use a pry bar to move the cutterbar fore or aft until the alignment tool's bottom tube slides freely over the cutterbar driveshaft.

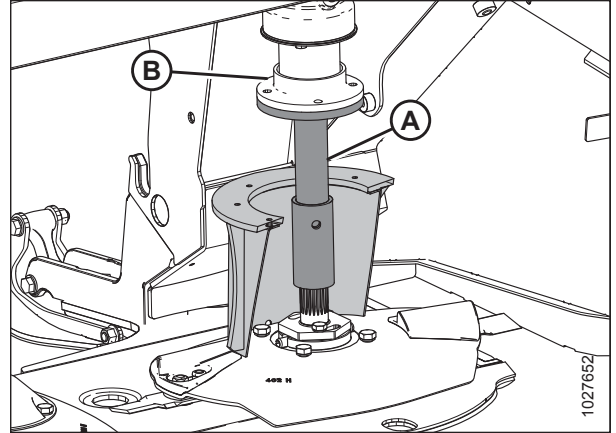


Figure 3.35: Alignment Tool on Gearbox

8. When the driveshaft alignment is set, measure and record distance (A) between the edge of support casting (B) and cutterbar (C).
9. Adjust the opposite side of the cutterbar to achieve the same measurement.

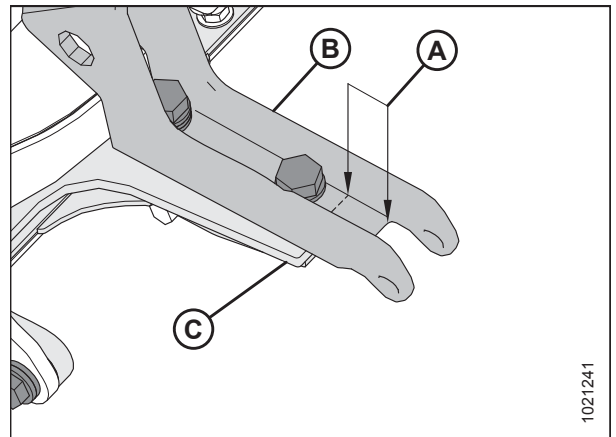


Figure 3.36: Support Casting

10. Apply high-strength threadlocker (Loctite® 262 or equivalent) on two M20 bolts (A) and (B). Torque bolt (A) to 610 Nm (450 lbf-ft) and torque bolt (B) to 434 Nm (320 lbf-ft).

NOTE:

Use a paint pen or grease pencil to mark all bolts with a slash once they have been torqued.

11. Repeat Steps 6, page 23 to 10, page 23 on the opposite side.
12. Check that the tube on the drive alignment tool can still slide up and down freely on the cutterbar driveshaft. If it binds, loosen the cutterbar mounting bolts and recheck the cutterbar alignment. Once complete, torque the bolts (A) and (B) again.

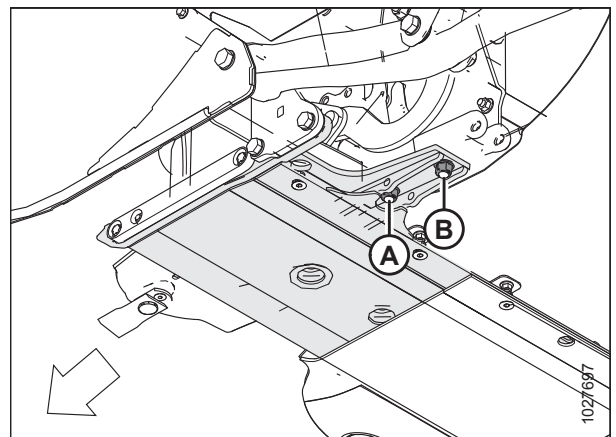


Figure 3.37: Cutterbar – Bottom View

INSTALLATION INSTRUCTIONS

13. If shims (A) were removed during disassembly, install them at this time.

NOTE:

The same number of shims must be installed on both sides of the cutterbar. A maximum gap of 2 mm (0.08 in.) is allowed.

14. Install two bolts with two washers (B) into end of cutterbar through holes on the header frame. Snug bolts but do **NOT** tighten at this time.

NOTE:

These bolts are also used to secure the outboard rock guard to the frame.

15. Remove bolts securing alignment tool (A) to drive hub (B). Lift lower tube and remove tool.

16. Install bolt, washer, and nut (A) onto the drive alignment tool for storage.

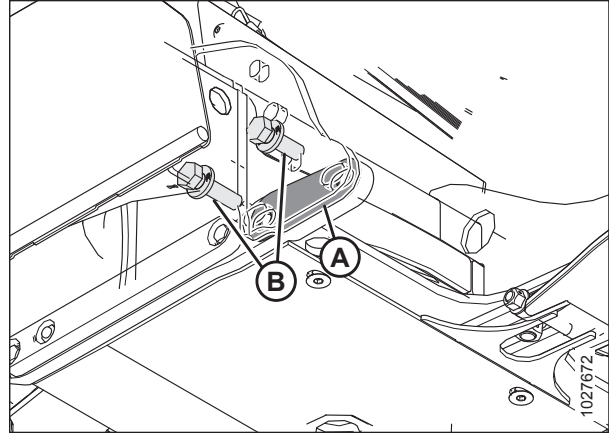


Figure 3.38: Cutterbar – Bottom View

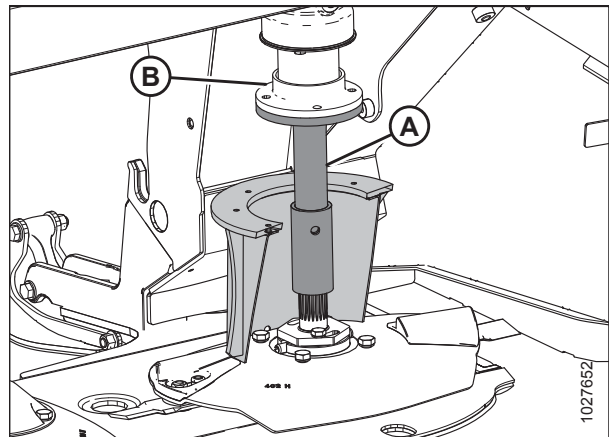


Figure 3.39: Alignment Tool on Gearbox

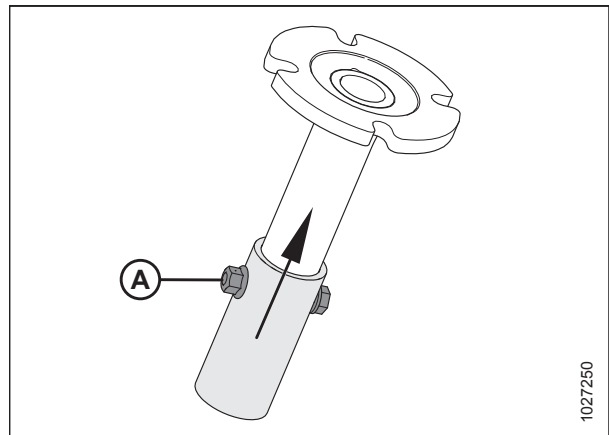


Figure 3.40: Drive Alignment Tool (MD #325683)

INSTALLATION INSTRUCTIONS

17. Position skid shoe (B) as shown. Install bolt, washer, and nut (A). Do **NOT** overtighten; skid shoe must be able to rotate freely.
18. Repeat Steps [13, page 24](#) to [17, page 25](#) on the opposite side.

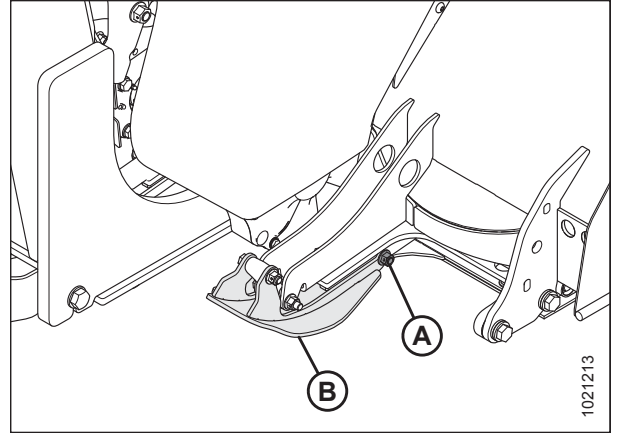


Figure 3.41: Skid Shoe – Rear Side View

3.10 Installing the R116 Cutterbar

WARNING

Exercise caution when working around the blades. Blades are sharp and can cause serious injury. Wear gloves when handling blades.

IMPORTANT:

Vertical drive alignment is crucial for proper cutterbar operation. Always use the drive alignment tool (MD #325683) when installing a cutterbar.

CAUTION

The cutterbar weighs approximately 560 kg (1300 lb.). Use a suitable lifting device to support and move the cutterbar into place.

1. Using a suitable lifting device, position cutterbar (A) so the mounting holes in the frame line up with the holes in the cutterbar.
2. On inner support (B), install one M20 x 2.5 x 50 bolt at location (C). Use one washer under the bolt head and one on top of the nut. Snug bolts but do **NOT** tighten at this time.
3. On inner support (B), install one M20 x 2.5 x 65 bolt at location (D). Use three washers under the bolt head and three before the nut. Snug bolts but do **NOT** tighten at this time.
4. On outer support (A), install two M16 x 2 x 45 bolts at location (E). Use two washers under the bolt head. Snug bolts but do **NOT** tighten at this time.
5. Repeat Steps 1, page 26 to 4, page 26 on opposite side.
6. Remove bolt, washer, and nut (A) from the drive alignment tool (MD #325683), and slide the bottom tube up.

NOTE:

The bolt, washer, and nut are provided for storage reasons only. They are not needed for drive alignment.

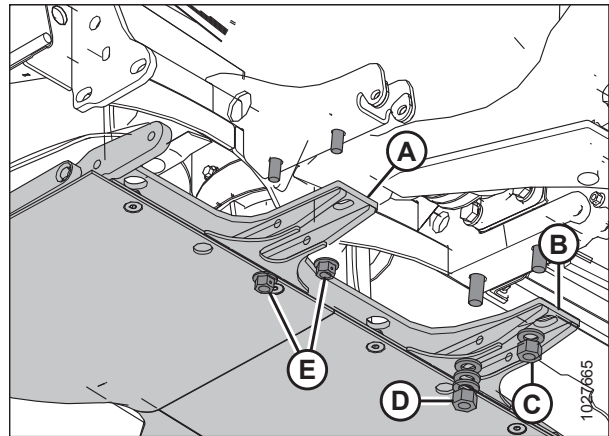


Figure 3.42: Cutterbar – Bottom View

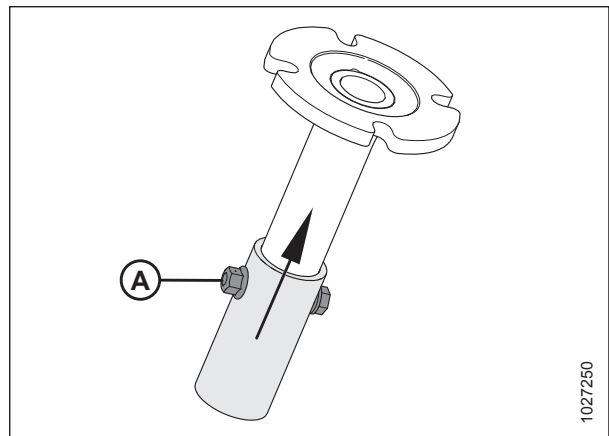


Figure 3.43: Drive Alignment Tool (MD #325683)

INSTALLATION INSTRUCTIONS

- Attach drive alignment tool (A) to drive hub (B), and torque to 95 Nm (70 lbf-ft). Slide the bottom tube down over the cutterbar driveshaft.

IMPORTANT:

If the alignment tool is not secured to the gearbox using all four bolts, the drive hub will be misaligned.

- Use a pry bar to move the cutterbar fore or aft until the alignment tool's bottom tube slides freely over the cutterbar driveshaft.

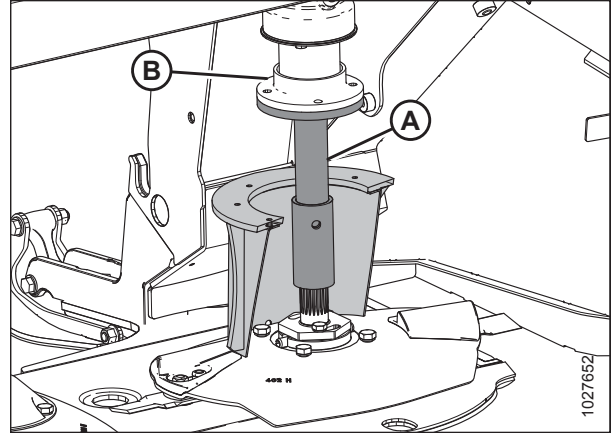


Figure 3.44: Alignment Tool on Driven Drum

- When the driveshaft alignment is set, measure and record distance (A) between the edge of support casting (B) and cutterbar (C).
- Adjust the opposite side of the cutterbar to achieve the same measurement.

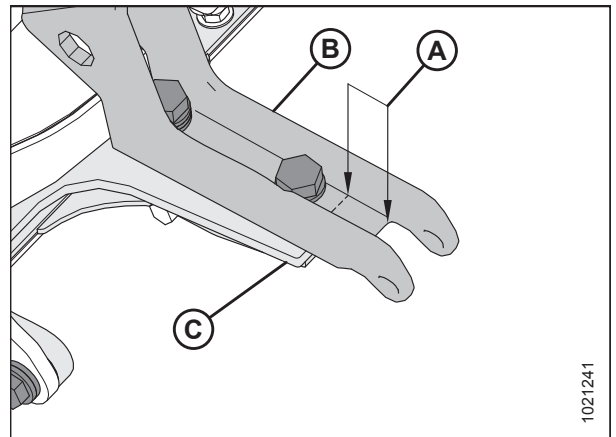


Figure 3.45: Support Casting

- On inner support (B), apply high-strength threadlocker (Loctite® 262 or equivalent) on two M20 bolts (F) and (E). Torque bolt (E) to 610 Nm (450 lbf-ft) and torque bolt (F) to 434 Nm (320 lbf-ft).

NOTE:

Use a paint pen or grease pencil to mark all bolts with a slash once they have been torqued.

- On outer support (A), apply high-strength threadlocker (Loctite® 262 or equivalent) to bolts (C) and (D), and then torque to 210 Nm (155 lbf-ft).
- Repeat Steps 6, page 26 to 12, page 27 on the opposite side.
- Check that the tube on the drive alignment tool can still slide up and down freely on the cutterbar driveshaft. If there is binding, loosen the cutterbar mounting bolts and recheck the cutterbar alignment. Once complete, torque all bolts again.

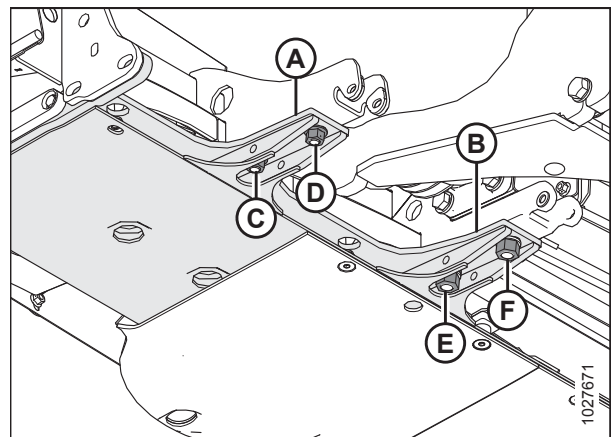


Figure 3.46: Cutterbar – Bottom View

INSTALLATION INSTRUCTIONS

15. If shims (A) were removed during disassembly, install them at this time.

NOTE:

The same number of shims must be installed on both sides of the cutterbar. A maximum gap of 2 mm (0.08 in.) is allowed.

16. Install two bolts with two washers (B) into end of cutterbar through holes on the header frame. Snug bolts but do **NOT** tighten at this time.

NOTE:

These bolts are also used to secure the outboard rock guard to the frame.

17. Remove bolts securing alignment tool (A) to drive hub (B). Lift lower tube and remove tool.

18. Install bolt, washer, and nut (A) onto the drive alignment tool (MD #325683) for storage.

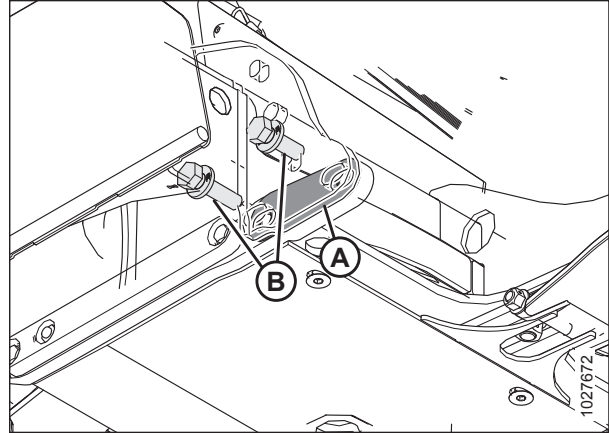


Figure 3.47: Cutterbar – Bottom View

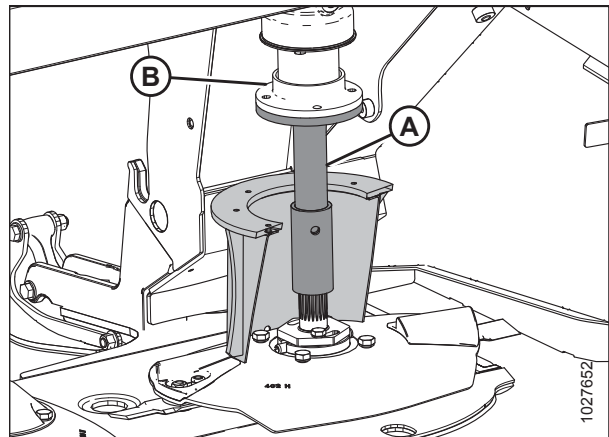


Figure 3.48: Alignment Tool on Driven Drum

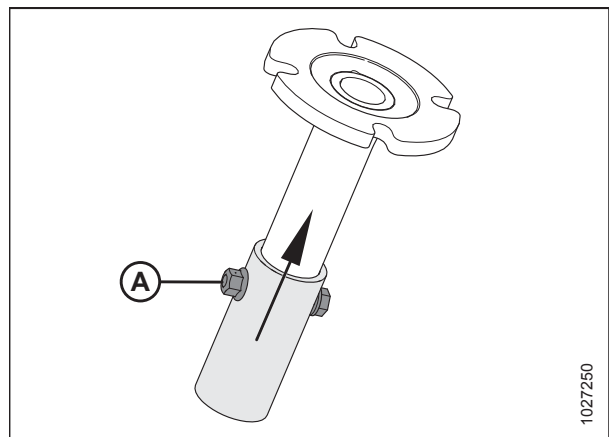


Figure 3.49: Drive Alignment Tool (MD #325683)

INSTALLATION INSTRUCTIONS

19. Position outer skid shoe (B) as shown. Install bolt, washer, and nut (A). Do **NOT** overtighten; skid shoe must be able to rotate freely. Repeat for inner skid shoe.
20. Repeat Steps [15, page 28](#) to [19, page 29](#) on opposite side.

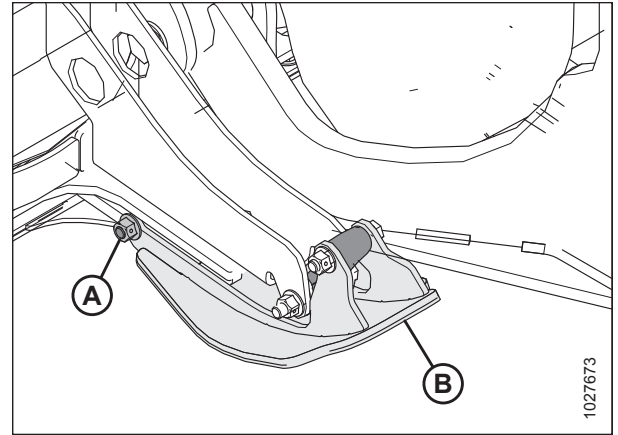


Figure 3.50: Skid Shoe – Rear Side View

3.11 Installing Driveline and Shielding

After installing the new cutterbar, you must reinstall the driveline and shielding. Refer to the procedure appropriate for your machine:

- R113 – *3.11.1 Installing Driveline and Shielding on an R113 – Large Driven Drums, page 30*
- R116 – *3.11.2 Installing Driveline and Shielding on an R116 – Small Driven Drums, page 33*

3.11.1 Installing Driveline and Shielding on an R113 – Large Driven Drums

To reinstall the vertical driveline and shielding on the new cutterbar, follow these steps:

If you are installing the driveline on an R116, refer to *3.11.2 Installing Driveline and Shielding on an R116 – Small Driven Drums, page 33*.

NOTE:

Use parts retained from *3.3.1 Removing Driveline on an R113 – Large Driven Drums, page 11*.

1. Lubricate spindle splines (A). For specifications, refer to the header/mower operator’s manual or technical manual.

NOTE:

The driveline U-joints were greased at the factory and considered to be lubricated for life. No further lubrication is required.

NOTE:

For clarity, illustration shows cutaway view of drum and tube shield.

2. Insert driveline (B) at an angle and guide it past hub drive (C) and drum (D).
3. Insert splined spindle end (A) into the splined bore on driveline (B).
4. Place a bead of medium-strength threadlocker (Loctite® 243 or equivalent) around the threads of four M12 hex flange head bolts (A). Use the bolts and spacers to secure driveline assembly (B) to hub drive (C). Torque bolts to 102 Nm (75 lbf·ft).

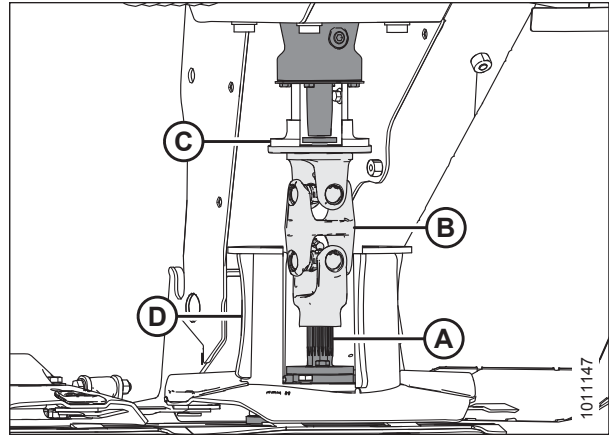


Figure 3.51: Driveline

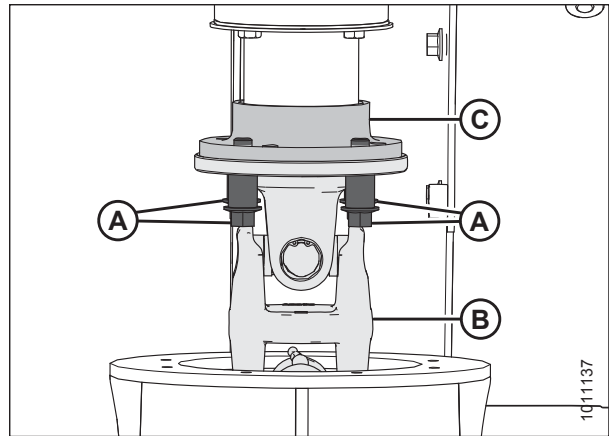


Figure 3.52: Driveline

INSTALLATION INSTRUCTIONS

5. Position two drum shields (B) as shown. Apply a bead of medium-strength threadlocker (Loctite® 243 or equivalent) around the threads of eight M8 hex flange head bolts (A). Use the bolts to secure the drum shields in place. Torque to 27 Nm (20 lbf-ft).

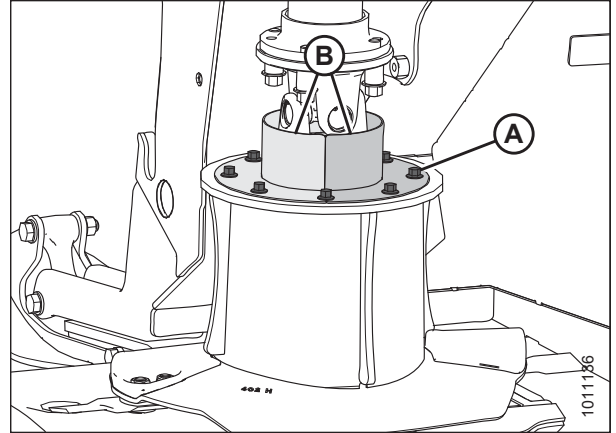


Figure 3.53: Driveline Shield

6. Position vertical shield (A) as shown. Apply a bead of medium-strength threadlocker (Loctite® 243 or equivalent) around the threads of one M10 x 20 mm hex flange head bolt (B) and two M10 x 16 mm hex flange head bolts (C). Use bolts (B) and (C) to secure the vertical shield in place. Torque to 61 Nm (45 lbf-ft).

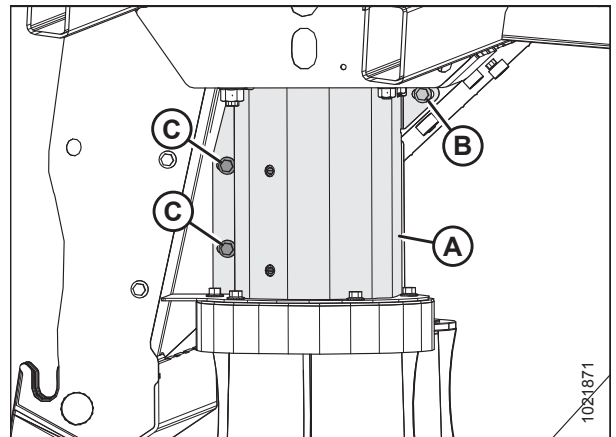


Figure 3.54: Driveline Shield

7. Position top plate (B) and drum top (C) onto the drum as shown. Apply a bead of medium-strength threadlocker (Loctite® 243 or equivalent) around the threads of four M10 hex flange head bolts (A). Use the bolts to secure the top plate and drum top in place. Torque hardware to 61 Nm (45 lbf-ft).

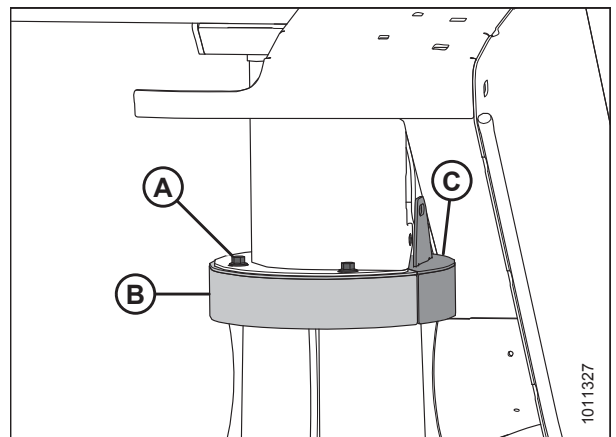


Figure 3.55: Driveline Shield

INSTALLATION INSTRUCTIONS

8. Apply a bead of medium-strength threadlocker (Loctite® 243 or equivalent) around the threads of an M10 hex flange head bolt (B). Install bolt (B) through cover plate (A) and top plate (C). Torque hardware to 61 Nm (45 lbf-ft).
9. Apply a bead of medium-strength threadlocker (Loctite® 243 or equivalent) around the threads of an M10 hex flange head bolt (D). Install bolt (D) through cover plate (A) and vertical shield (E). Torque hardware to 61 Nm (45 lbf-ft).
10. Tighten bolts (B) and (D).

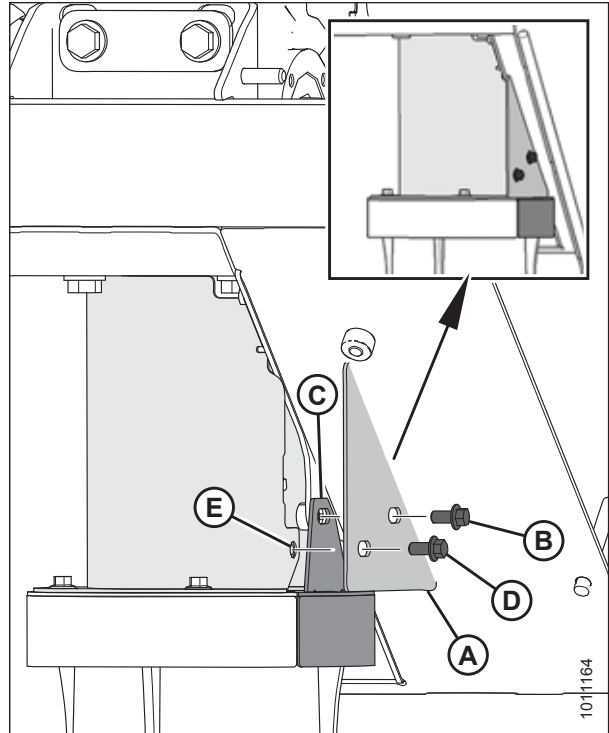


Figure 3.56: Driveline Shield

11. Position vertical driveshield (B) as shown at right. Apply a bead of medium-strength threadlocker (Loctite® 243 or equivalent) around the threads of four M10 hex flange head bolts (A). Use bolts (A) to secure vertical driveshield in place. Torque to 61 Nm (45 lbf-ft).
12. Clear any foreign objects from the cutterbar.

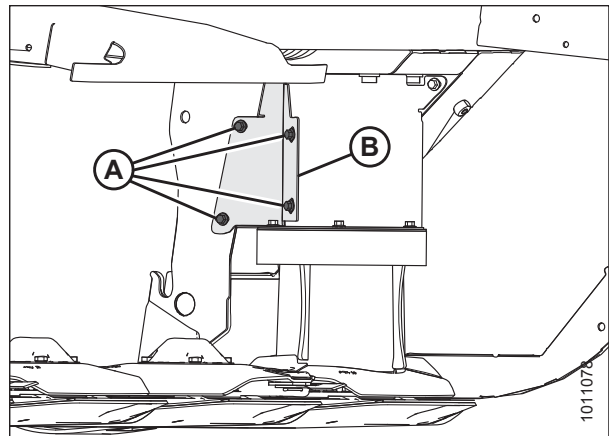


Figure 3.57: Driveline Shield

3.11.2 Installing Driveline and Shielding on an R116 – Small Driven Drums

To reinstall the vertical driveline and shielding on an R116, follow these steps:

If you are working on an R113, refer to [3.11.1 Installing Driveline and Shielding on an R113 – Large Driven Drums](#), page 30.

NOTE:

Use parts retained from [3.3.2 Removing Driveline on an R116 – Small Driven Drums](#), page 14.

1. Lubricate spindle splines (A). For specifications, refer to the header technical manual.

NOTE:

For clarity, illustration shows a cutaway view of drum and tube shield.

2. Insert driveline (B) at an angle and guide it past hub drive (C) and drum (D).
3. Insert splined spindle end (A) into splined bore of driveline (B).

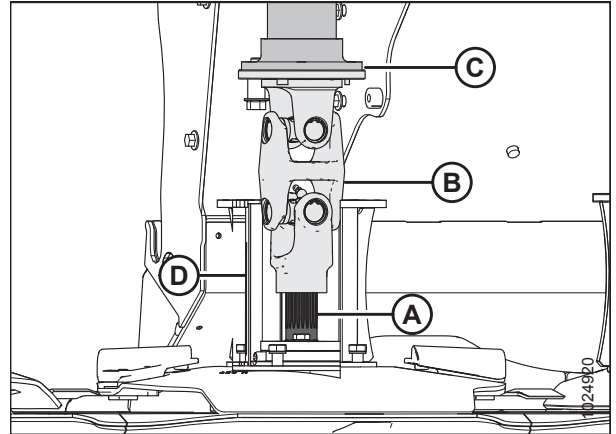


Figure 3.58: Driveline

4. Place a bead of medium-strength threadlocker (Loctite® 243 or equivalent) around the threads of four M12 hex flange head bolts (A). Use the bolts and spacers to secure driveline assembly (B) to hub drive (C). Torque bolts to 102 Nm (75 lbf·ft).

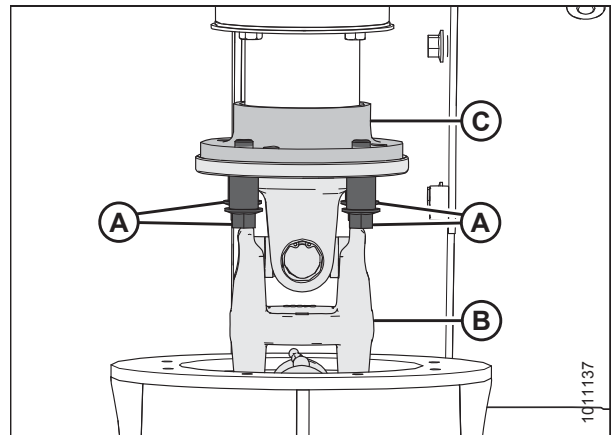


Figure 3.59: Driveline

5. Position two drum shields (B) as shown. Apply a bead of medium-strength threadlocker (Loctite® 243 or equivalent) around the threads of eight M8 hex flange head bolts (A). Use the bolts to secure the drum shields in place. Torque hardware to 27 Nm (20 lbf·ft).

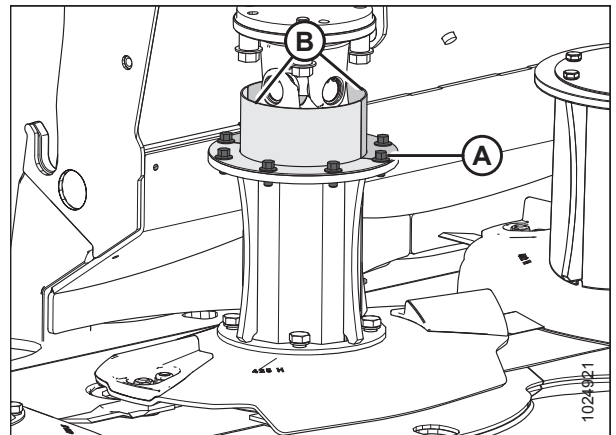


Figure 3.60: Driven Drum

INSTALLATION INSTRUCTIONS

- Position vertical shield (A) as shown. Apply a bead of medium-strength threadlocker (Loctite® 243 or equivalent) around the threads of one M10 x 20 mm hex flange head bolt (B) and two M10 x 16 mm hex flange head bolts (C). Use bolts (B) and (C) to secure the vertical shield in place. Torque hardware to 61 Nm (45 lbf-ft).

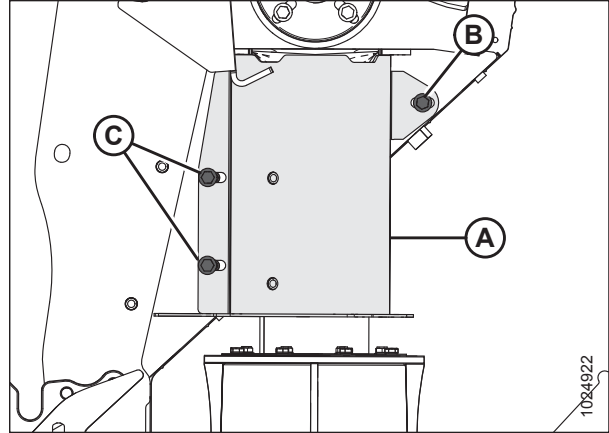


Figure 3.61: Driveline Shield

- Position top plate (B) and drum top (C) onto the drum as shown. Apply a bead of medium-strength threadlocker (Loctite® 243 or equivalent) around the threads of four M10 hex flange head bolts (A). Use the bolts to secure the top plate and drum top in place. Torque hardware to 61 Nm (45 lbf-ft).

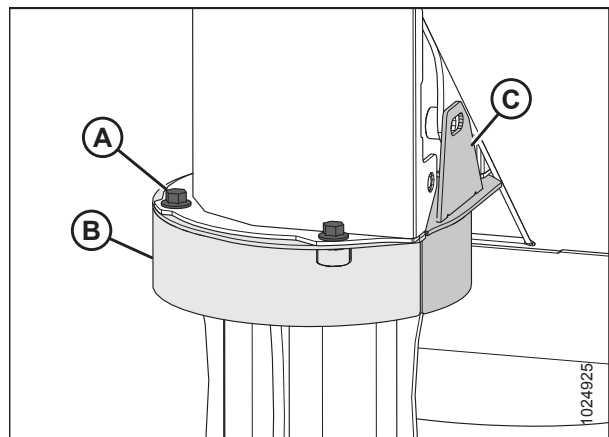


Figure 3.62: Driveline Shield

INSTALLATION INSTRUCTIONS

8. Apply a bead of medium-strength threadlocker (Loctite® 243 or equivalent) around the threads of an M10 hex flange head bolt (B). Install bolt (B) through cover plate (A) and top plate (C). Torque hardware to 61 Nm (45 lbf-ft).
9. Apply a bead of medium-strength threadlocker (Loctite® 243 or equivalent) around the threads of an M10 hex flange head bolt (D). Install bolt (D) through cover plate (A) and vertical shield (E). Torque hardware to 61 Nm (45 lbf-ft).
10. Tighten bolts (B) and (D).

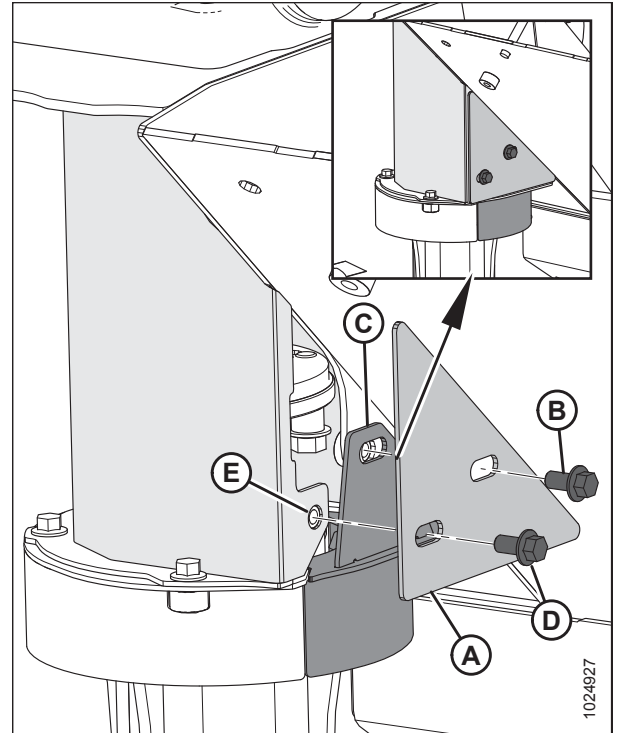


Figure 3.63: Driveline Shield

11. Position vertical driveshield (B) as shown at right. Apply a bead of medium-strength threadlocker (Loctite® 243 or equivalent) around the threads of four M10 hex flange head bolts (A). Use bolts (A) to secure vertical driveshield in place. Torque hardware to 61 Nm (45 lbf-ft).



WARNING

Ensure the cutterbar is completely clear of foreign objects. Foreign objects can be ejected with considerable force when the machine is started and may result in serious injury or machine damage.

12. Clear any foreign objects from the cutterbar.

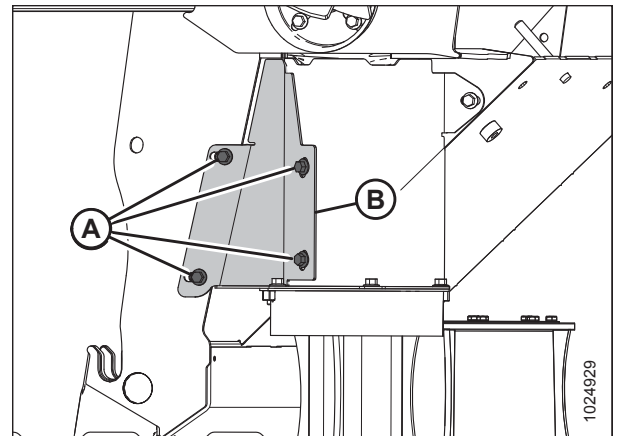


Figure 3.64: Driveline Shield

3.12 Installing Outboard Rock Guards

1. Apply medium-strength threadlocker (Loctite® 242 or equivalent) to bolt (B).

NOTE:

Some parts removed for clarity.

2. Install bolt (B) with washer onto the cutterbar.
3. Angle rock guard (A) outward as shown. Align the slot in the side plate between the washer and the cutterbar on rear M16 bolt (B).
4. Rotate the rock guard towards the center of the header until the tabs on the front of the rock guard are supported by the cutterbar.

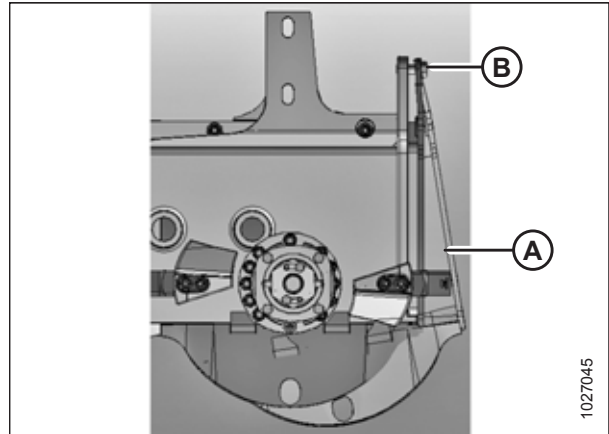


Figure 3.65: Left Outboard Rock Guard – Angled

5. Using a rubber mallet, tap rock guard (A) so it is parallel and flush against cutterbar (B).

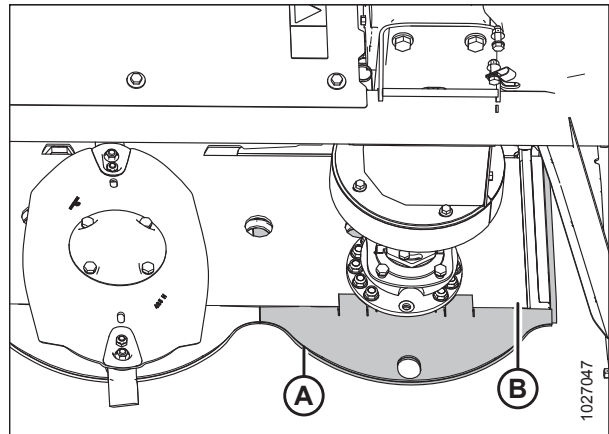


Figure 3.66: Outboard Rock Guard

6. Ensure rock guards (B) and (C) are parallel to one another.

NOTE:

A parallel gap (A) of 5–7 mm (3/16–1/4 in.) between outboard (B) and inboard (C) rock guards is acceptable. You may need to loosen the next one or two rock guards to space out the gap evenly.

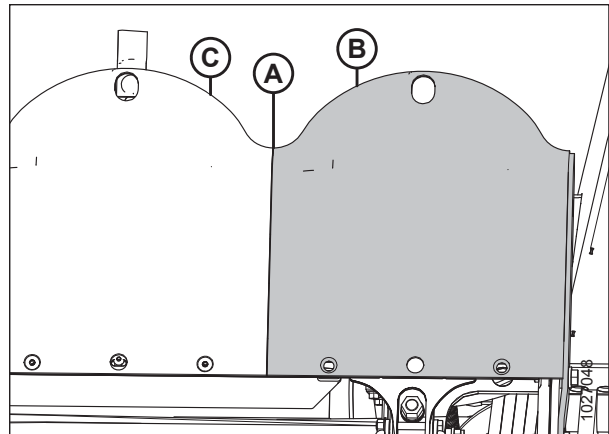


Figure 3.67: Outboard Rock Guard Installed

INSTALLATION INSTRUCTIONS

7. Apply medium-strength threadlocker (Loctite® 242 or equivalent) on two hex head screws (C). Loosely install with lock nuts.
8. Install the M16 x 60 bolt (A) and one washer (B) as shown. Torque bolts (A) and (D) to 251 Nm (185 lbf-ft).
9. Torque screws (C) to 54 Nm (40 lbf-ft).
10. Repeat at the opposite side of the cutterbar.

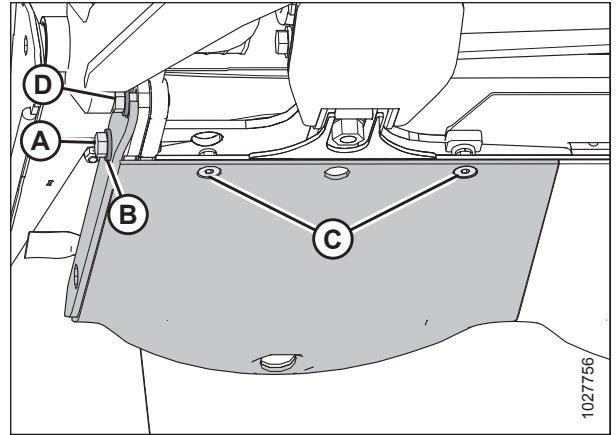


Figure 3.68: Left Outboard Rock Guard – View from Rear

3.13 Installing Cutterbar Deflectors

The cutterbar deflectors are used with roll conditioners only.

IMPORTANT:

Pull-Type only: To avoid damage, cutterbar deflectors must **NOT** be used with the finger conditioner option.

1. Position left deflector (A) on the aft edge of the cutterbar, and align slots in deflector (A) with the existing fasteners and cutterbar plug.
2. Install bolt (C) shared with the rock guard at the outboard end of deflector.
3. Secure the deflector to the cutterbar with three button socket head M10 bolts (B) and lock nuts. Bolts are inserted into the cutterbar from the bottom.

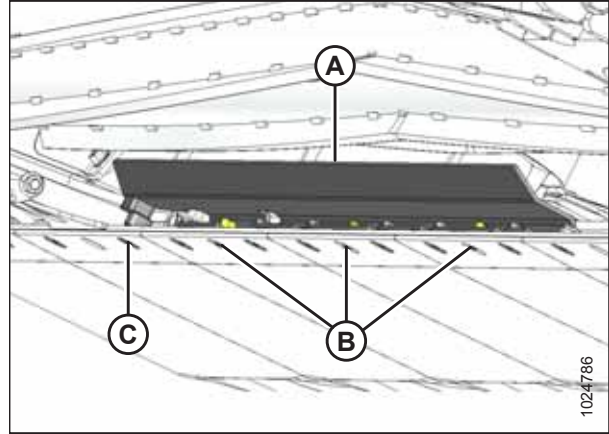


Figure 3.69: Left Cutterbar Deflector Viewed from Underside of Cutterbar

4. Position right deflector (A) on the aft edge of the cutterbar, and install three button socket head M10 bolts (B) with lock nuts. Bolts are inserted into the cutterbar from the bottom.
5. Install bolt (C) shared with the rock guard at the outboard end of the deflector.
6. Align the right deflector with the left one at position (D) and tighten bolts (B) to 54 Nm (40 lbf-ft) with a 17 mm socket and an 8 mm hex key.

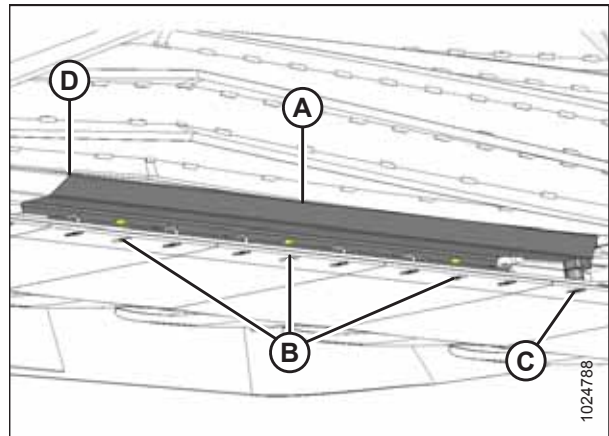


Figure 3.70: Right Cutterbar Deflector Viewed from Underside of Cutterbar

3.14 Closing Cutterbar Doors

⚠ CAUTION

To avoid injury, keep hands and fingers away from corners of doors when closing.

1. Pull down on door (A) from the top to close.
2. Ensure that curtains hang properly and completely enclose the cutterbar area.

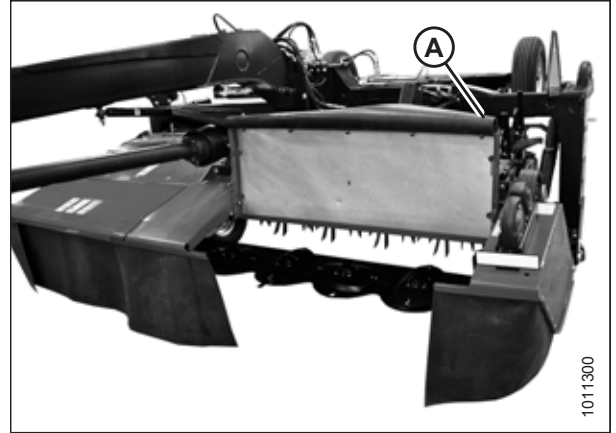


Figure 3.71: Cutterbar Doors and Curtains

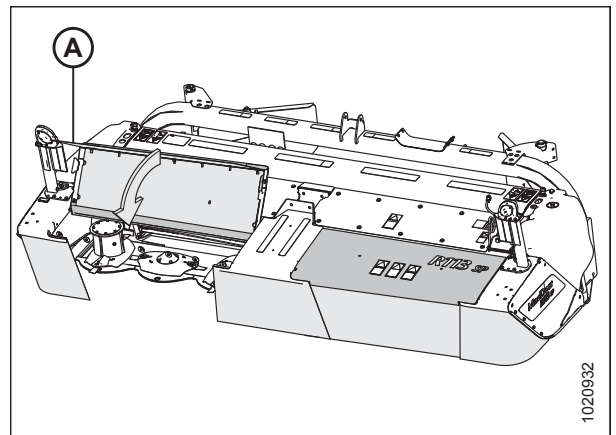


Figure 3.72: Cutterbar Doors and Curtains

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