

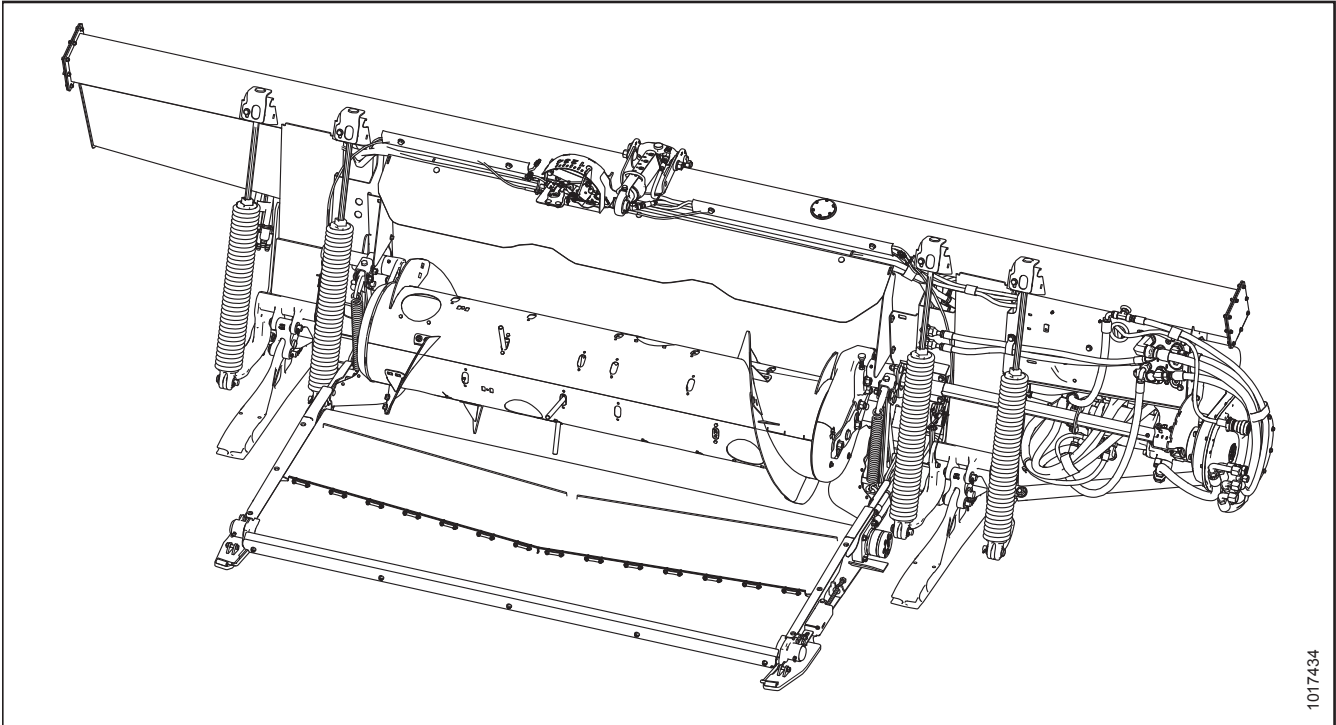
FM100 Float Module

**Feed Auger Bumper Update Kit (MD #308187)
Installation Instructions**

214608 Revision C

Original Instruction

FM100 Float Module



1017434

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Introduction

The Feed Auger Bumper Update kit (MD #308187) is used to install a mounting surface for feed auger bumpers as well as the bumpers themselves on 2016 and 2017 model year FM100 Float Modules.

This document explains how to install the kit. A list of parts included in the kit is provided in Chapter [2 Parts List, page 5](#).

Installation time

Installation time for this kit is 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 float module and header is the side that faces the crop; the back is the side that connects to the combine.
- Unless otherwise noted, use the standard torque values provided in the 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
<ul style="list-style-type: none">• 2 Parts List, page 5• 3.3 Updating Left End of Feed Auger, page 17	Replaced left hand auger support arm (MD #301963) with left hand auger support arm (MD #304931).	ECN 61562

TABLE OF CONTENTS

Introduction i

Summary of Changes..... ii

Chapter 1: Safety 1

 1.1 Signal Words 1

 1.2 General Safety 2

Chapter 2: Parts List..... 5

Chapter 3: Installation Instructions 9

 3.1 Removing Feed Auger 9

 3.2 Updating Right End of Feed Auger 13

 3.3 Updating Left End of Feed Auger 17

 3.4 Reinstalling Feed Auger 23

 3.5 Installing Left Bumper and Indicator Plate..... 26

Chapter 1: Safety

Understanding and following safety procedures consistently will help to ensure the safety of machine operators and bystanders.

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

Protect yourself when assembling, operating, and servicing machinery.

CAUTION

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

In addition, take the following precautions:

- 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 the safest way. **NEVER** ignore warning signs of fatigue.

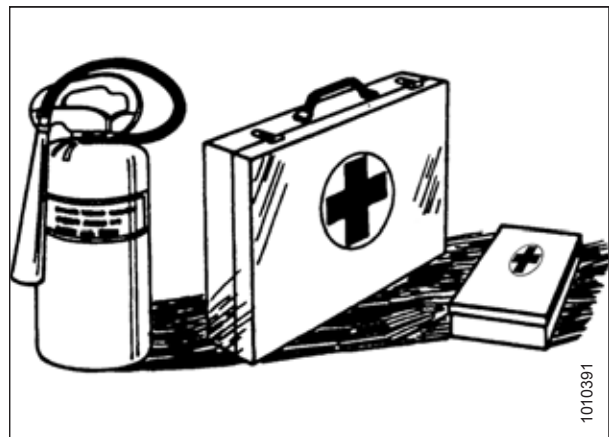


Figure 1.3: Safety Equipment

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.

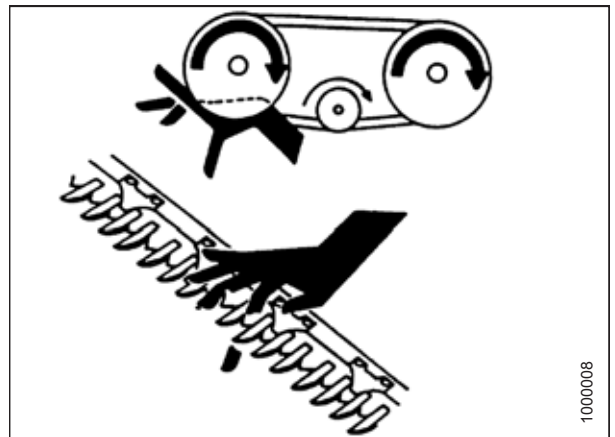


Figure 1.5: Safety around Equipment

- 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.

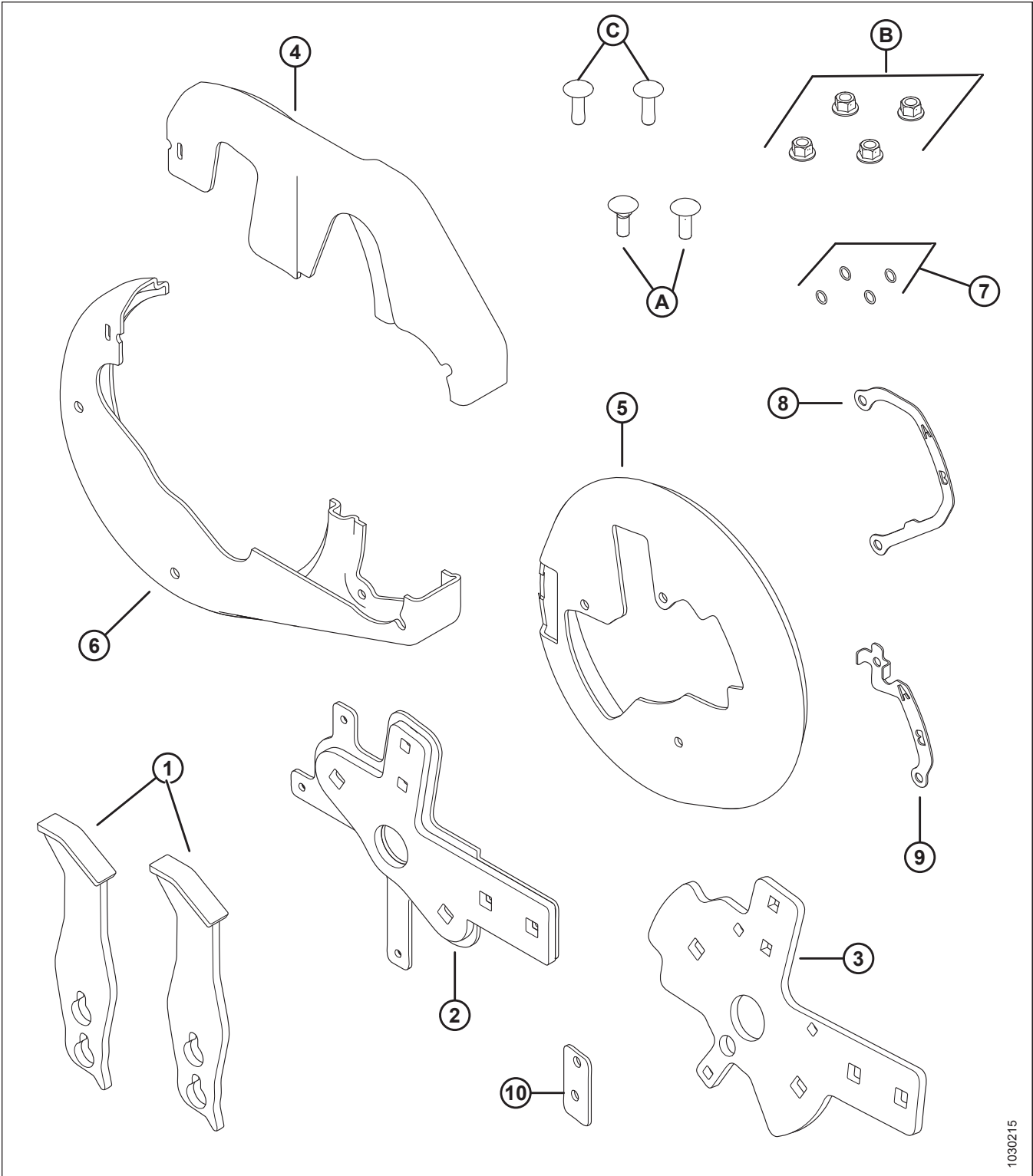


Figure 1.6: Safety around Equipment

Chapter 2: Parts List

A parts list is provided in this instruction so that you can confirm that you have received all required parts before you begin installation.

PARTS LIST



1030215

Figure 2.1: Feed Auger Bumper Update Kit

PARTS LIST

Ref	Part Number	Description	Quantity
1	301912	BUMPER – FM100	2
2	304931	ARM – LH AUGER SUPPORT	1
3	308850	BAR – RH AUGER SUPPORT	1
4	301993	COVER – LH AUGER, SMALL HALF	1
5	301994	COVER – AUGER END CAP, RH	1
6	301992	COVER – LH AUGER, LARGE HALF	1
7	183204	O-RING – HNBR, GREEN	4
8	276180	PLATE – INDICATOR, RH	1
9	276183	PLATE – INDICATOR, LH	1
10	308056	PLATE – SPACER	1
A	136291	BOLT – RHSN TFL M12 X 1.75 X 35 8.8 A3L	2
B	136431	NUT – HEX FLG CTR LOC M12 X 1.75-10	4
C	135900	BOLT – RHSN TFL M12 X 1.75 X 40 8.8 AA1J	2

Chapter 3: Installation Instructions

To install the Feed Auger Bumper Update kit, follow these procedures in order.

NOTE:

Throughout these instructions, when parts included in the kit are initially referenced, the part name is followed by its MacDon part number (MD #xxxxxx). If the part is not sold separately, the part name is followed by (MD #NSS). For more information, cross reference the part number to the parts list description and illustration.

NOTE:

It is not necessary to remove the float module from the header, but it does make installation of the kit easier. Instructions for removing the float module from the header are available in the header operator's manual and technical manual.

3.1 Removing Feed Auger

DANGER

To avoid bodily injury or death from the unexpected start-up or fall of the raised machine, always stop the engine, remove the key, and engage the safety props before going under the machine for any reason.

NOTE:

Unless otherwise stated, retain all parts for reassembly.

1. If the float module is installed in a header, position the reel up and forward, and engage the reel safety props.
2. Shut down the engine, and remove the key from the ignition.

NOTE:

The side flap deflectors have been removed for illustration purposes.

3. Place wooden blocks (A) under the auger to prevent the auger from dropping onto the feed draper and damaging it.

NOTE:

The illustration at right shows the float module alone, not installed in a header. You can perform this procedure with the float module installed in a header, or detached from the header.

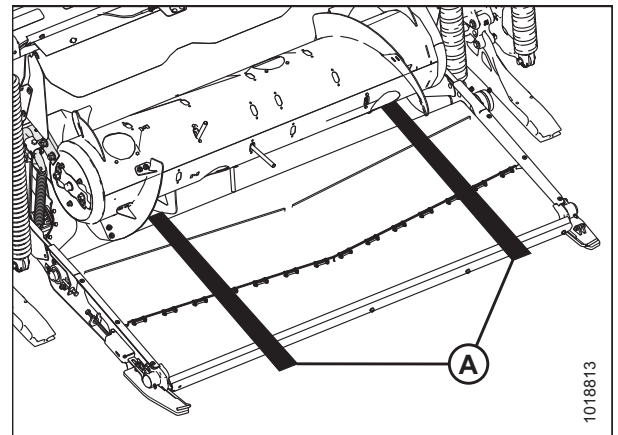


Figure 3.1: Blocks under the Auger

INSTALLATION INSTRUCTIONS

4. On the left side of the auger, remove four bolts (A) and inspection panel (B).
5. Remove bolt and clamp (C) that hold two covers (G) and (H) together. Discard clamp (C).
6. Remove two bolts and washers (D) that secure the bottom cover. Discard one washer.
7. Remove bolts (E) and cover retainer (F).
8. Rotate top (G) and bottom (H) covers forward to remove. Discard both covers.

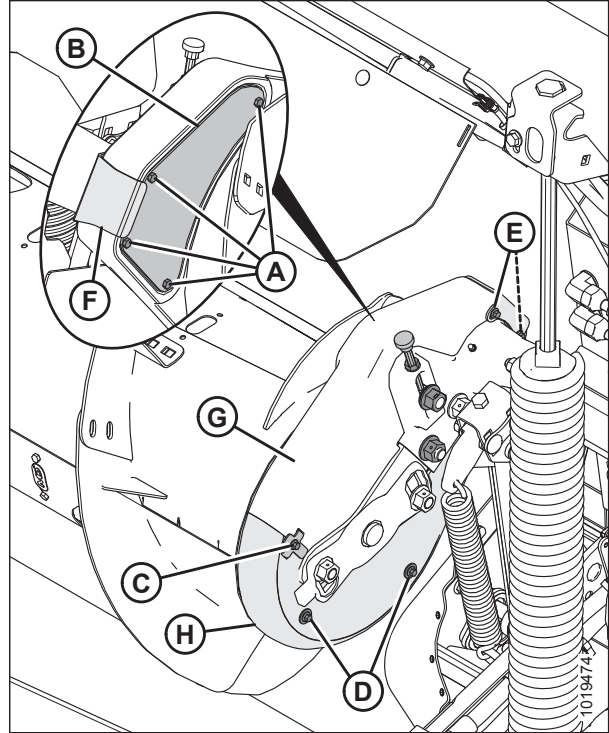


Figure 3.2: Left Side of Auger

9. Loosen jam nut (C) and turn thumbscrew (D) counterclockwise to release the bolt holding sprocket (B) and preventing it from being raised up to release the chain tension.

IMPORTANT:

Do **NOT** loosen thin nut (E) on the inboard side of the idler sprocket spindle.

10. Loosen idler sprocket nut (A), and raise sprocket (B) to the uppermost position to release the tension on the chain. Tighten nut (A) to hold sprocket in place.
11. Remove screw (F) and washer (G).

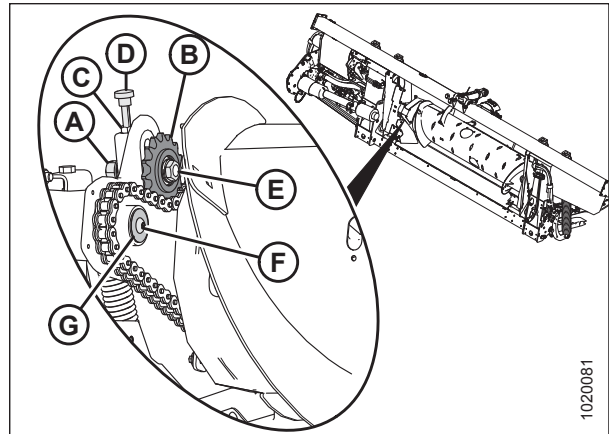


Figure 3.3: Auger Drive

INSTALLATION INSTRUCTIONS

12. Remove two bolts and nuts (A).

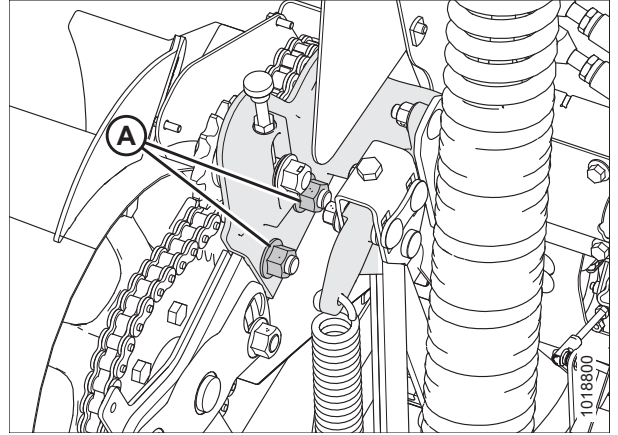


Figure 3.4: Auger Support – Left Side

13. Remove two nuts (A).

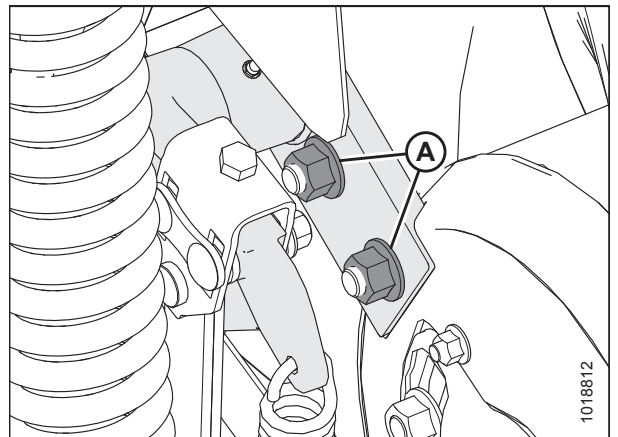


Figure 3.5: Auger Support – Right Side

14. Use a pry bar at location (A) between auger support arm (C) and auger pivot (B). Pry the auger to the right.

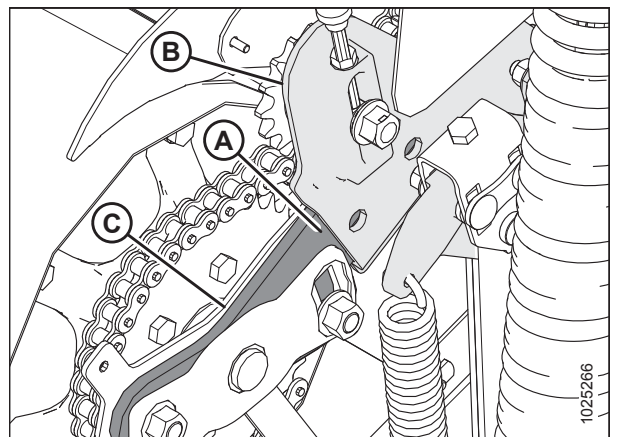


Figure 3.6: Auger Support – Left Side

INSTALLATION INSTRUCTIONS

NOTE:

Once the drum starts sliding to the right, the drive sprocket will fall off.

NOTE:

Chain removed from illustration for clarity.

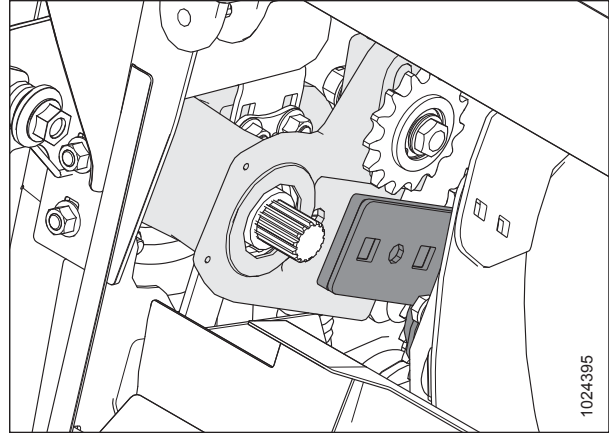


Figure 3.7: Auger Drive – View from Behind

15. Use a pry bar between the right support bar and right auger pivot (B) to slide auger drum to the left, and then slide bolts (A) out of the pivot.

NOTE:

The right support bar is not visible in the illustration at right as it extends from the auger behind pivot (B). It is connected to the pivot with bolts (A).

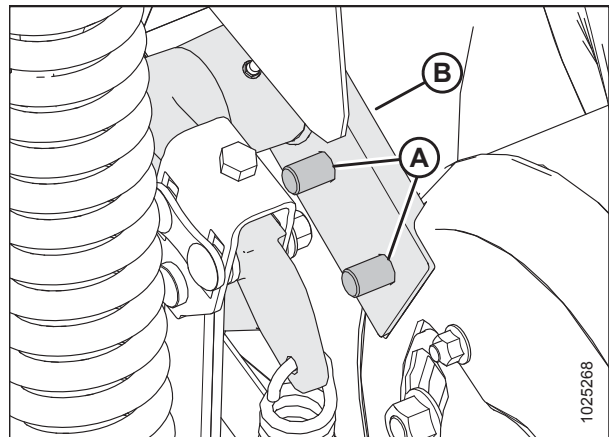


Figure 3.8: Auger Support – Right Side

16. Place feed auger (A) and chain on a workbench.

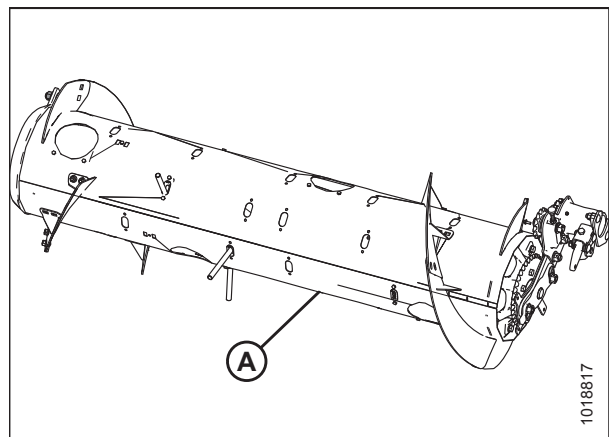


Figure 3.9: Auger

3.2 Updating Right End of Feed Auger

To update the right end of the feed auger, follow these steps:

NOTE:

Unless otherwise stated, all parts are provided in the kit.

1. Remove the three nuts (A) that secure the auger end cap cover (B) to the right assembly. The bolts and O-rings can remain in place. Retain nuts for reassembly.
2. Remove right cover (B) and discard.

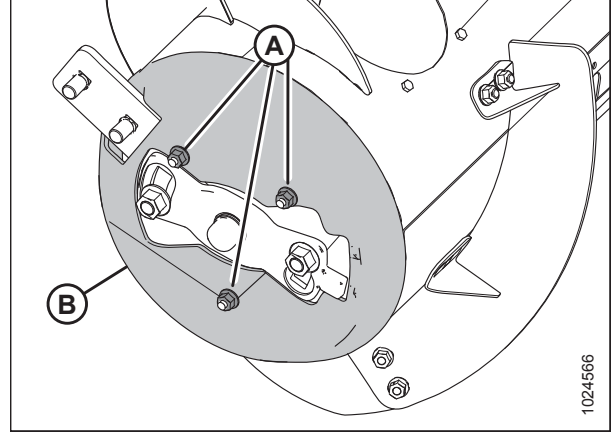


Figure 3.10: Right End of Feed Auger Prior to Update

3. Remove cap (A), and nuts (B). Retain for reassembly.

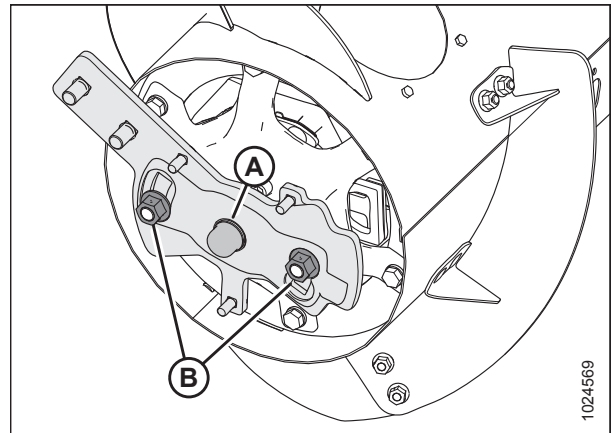


Figure 3.11: Right End of Feed Auger with Cap Cover Removed

4. Remove nut (A). Retain for reassembly.

NOTE:

In the illustration at right, the clutch assembly is shown separate from the rest of the feed auger for clarity.

5. Remove timing plate (B). Retain for reassembly.
6. Remove square key (C). Retain for reassembly.
7. Remove right auger support bar (D).

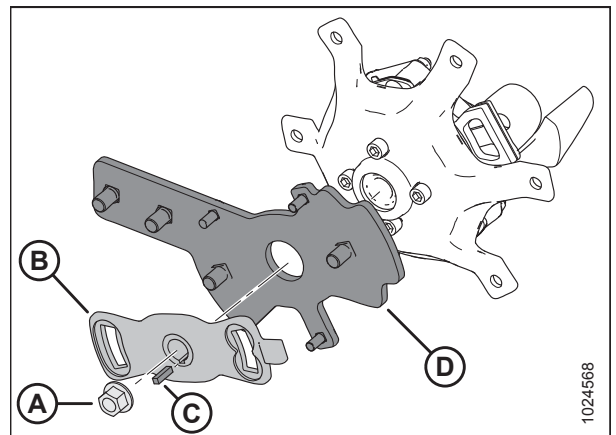


Figure 3.12: Clutch Assembly

INSTALLATION INSTRUCTIONS

8. From the right auger support bar, remove bolts (A), O-rings (B), bolts (C), O-rings (D), and bolts (E). Discard the auger support bar, and retain the bolts and O-rings for reassembly.

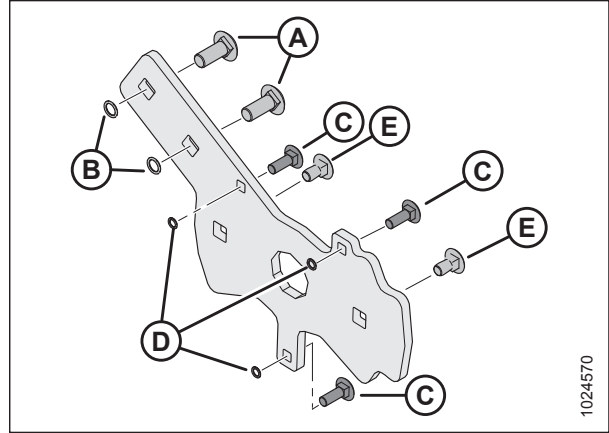


Figure 3.13: Right Auger Support Bar and Attached Hardware

9. The new right auger support bar (A) (MD #308850) has two protrusions with two square holes in them. Position spacer plate (B) (MD #308056) over the smaller of the two protrusions, lining up the holes. Secure spacer plate (B) to bar (A) with two 40 mm long M12 carriage bolts (C) (MD #135900) and two green O-rings (D) (MD #183204).

NOTE:

The top edge of spacer plate (B) should sit below the top edge of auger support bar (A), and the sides of spacer plate (B) should be parallel with the sides of auger support bar (A) as shown in the illustration at right.

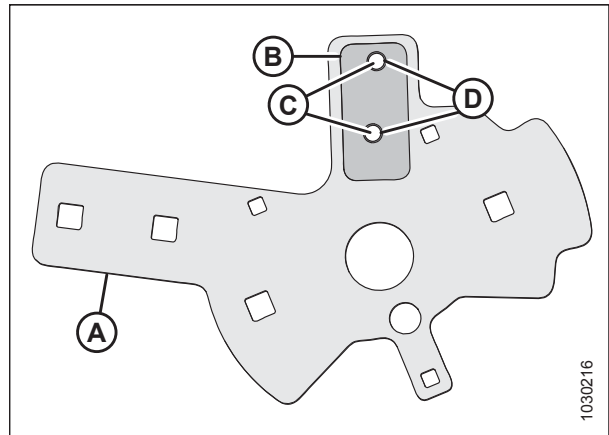


Figure 3.14: New Right Auger Support Bar and Spacer Plate

10. Insert the two bolts (A) retained from Step 8, page 14 through the two square holes in auger support bar (B) on either side of the round center hole. The bolt heads should be on the opposite side of the auger support bar from spacer plate (C).
11. Insert two bolts (D) through the large square holes in auger support bar (B) and secure in place with O-rings (E). Bolts and O-rings are retained from Step 8, page 14.
12. Insert three bolts (F) through the small square holes in auger support bar (B) and secure in place with O-rings (G). Bolts and O-rings are retained from Step 8, page 14.

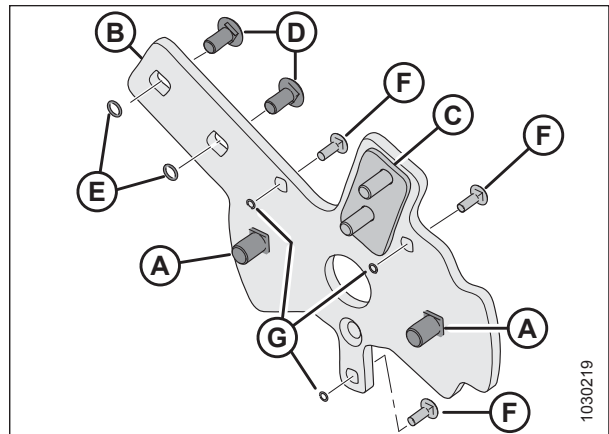


Figure 3.15: Bolts Installed in New Right Auger Support Bar

INSTALLATION INSTRUCTIONS

13. Position the new right auger support bar (A) over the auger shaft (B) in place of the old right auger support bar.
14. Reinstall square key, retained from Step 6, page 13, in auger shaft.

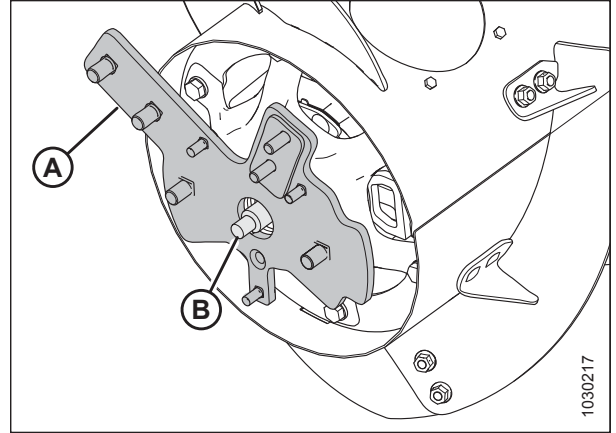


Figure 3.16: New Right Auger Support Bar Installed

15. Position timing plate (A), retained from Step 5, page 13, over the auger shaft and on top of the right auger support bar. The holes in the sides of the timing plate fit over the bolts at locations (B). Secure in place with retained nuts.

IMPORTANT:

Ensure timing plate (A) is in the same position as the timing plate on the left end of the auger.

16. Torque nuts to 92–138 Nm (68–102 lbf·ft).

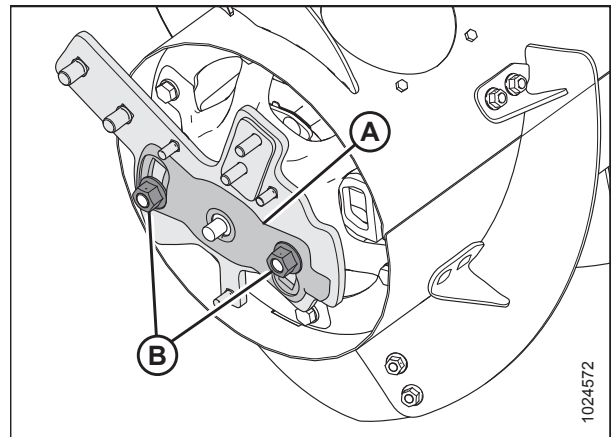


Figure 3.17: Timing Plate Installed

17. Apply medium-strength threadlocker (Loctite® 243 or equivalent) to the auger shaft threads, and then reinstall nut (A), retained from Step 4, page 13.
18. Torque nut (A) to 170 Nm (126 lbf·ft).

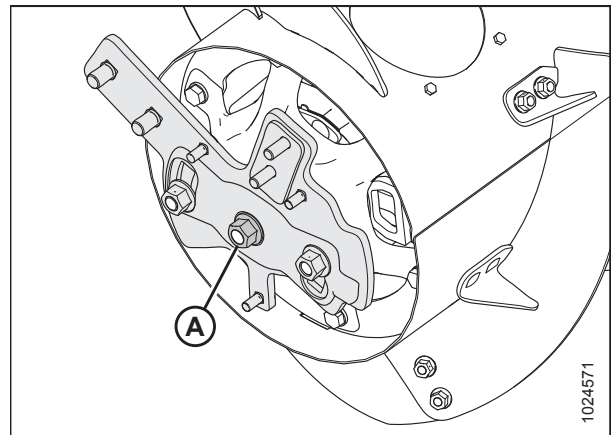


Figure 3.18: Nut Reinstalled on Auger Shaft

INSTALLATION INSTRUCTIONS

19. Reinstall cap (A), retained from Step 3, page 13.
20. Install new right auger end cap cover (B) (MD #301994) and secure in place with one nut (C). The cover is provided in the kit; the nut is retained from Step 1, page 13.

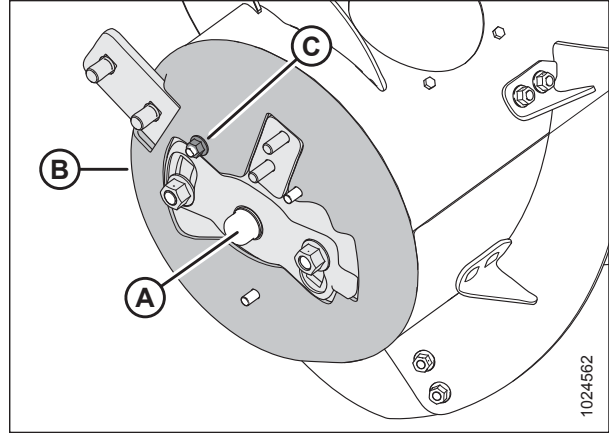


Figure 3.19: Cap and New Right Auger End Cap Cover Installed

21. Install one of the new FM100 bumpers (A) (MD #301912) onto bolt shafts (B) as shown at right. Secure in place with two M12 lock nuts (C) (MD #136431).
22. Torque nuts (C) to 68 Nm (50 lbf-ft).

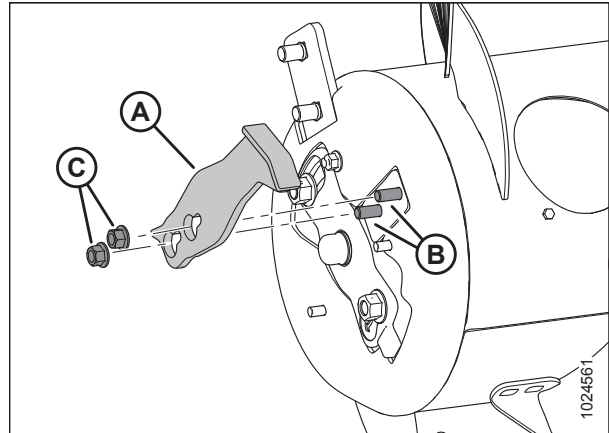


Figure 3.20: Installing Bumper on Right End of Feed Auger

23. Install right indicator plate (A) (MD #276180) as shown at right using two nuts (B) retained from Step 1, page 13.

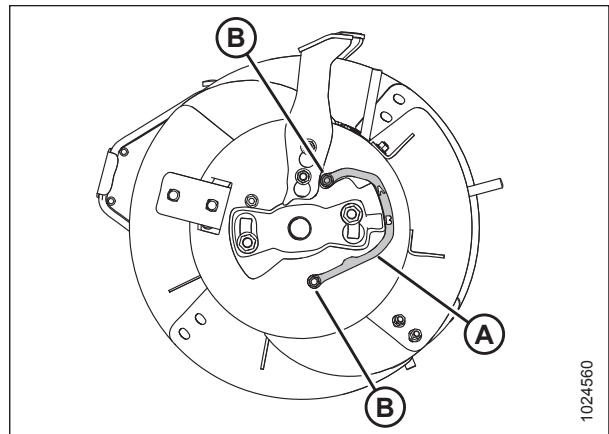


Figure 3.21: Indicator Plate Installed on Right End of Feed Auger

3.3 Updating Left End of Feed Auger

1. Remove the outermost left access cover (A), by removing the two bolts (B). Retain parts for reassembly.

NOTE:

The flighting was made transparent in the illustration at right so that it wouldn't block your view of the cover and bolts.

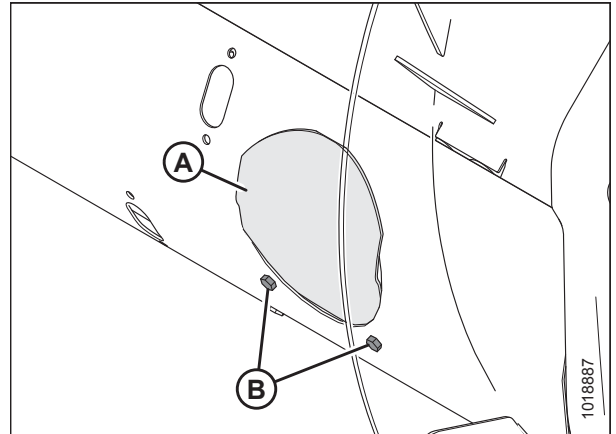


Figure 3.22: Drum Access Cover

2. Inside the drum, place a block (B) under the finger shaft (A).

NOTE:

The auger drum was made transparent in the illustration at right so that you can clearly see the finger shaft and block.

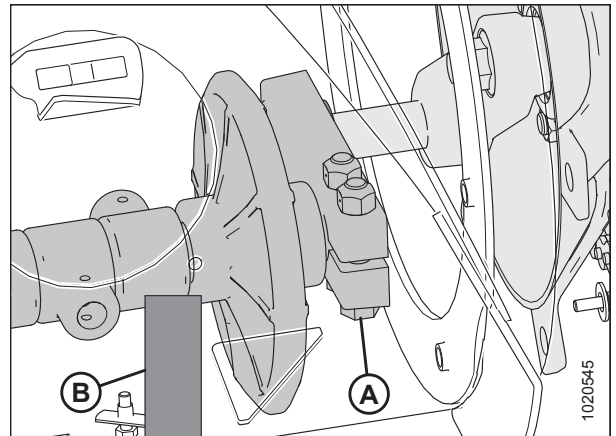


Figure 3.23: Left Pivot Block

3. Remove six bolts (A). Retain for reassembly.

NOTE:

Not all of the bolts are visible in the illustration at right, and only one of them is labelled.

4. Remove left assembly (B).

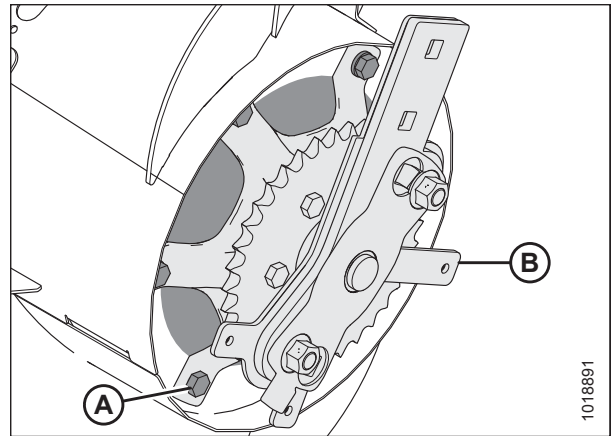


Figure 3.24: Left Assembly

INSTALLATION INSTRUCTIONS

5. Remove nut (A). Retain for reassembly.
6. Remove finger shaft crank arm (B). Retain for reassembly.
7. Remove woodruff key (C) from shaft. Retain for reassembly.

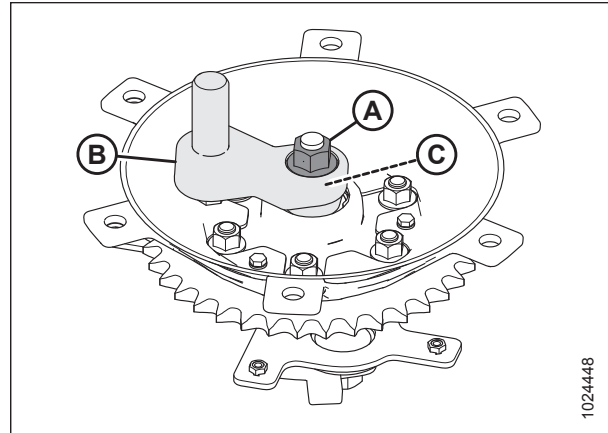


Figure 3.25: Left Assembly

8. Slide hub (A) off shaft (D). Retain for reassembly.
9. Remove woodruff key from the shaft (D). Retain for reassembly.
10. Remove auger support arm assembly (B). Retain for next steps.

NOTE:

The hub bearing (E) may separate. If so, reassemble the bearing by pressing the inner race back into the bearing.

11. Remove washer (C). Retain for reassembly.

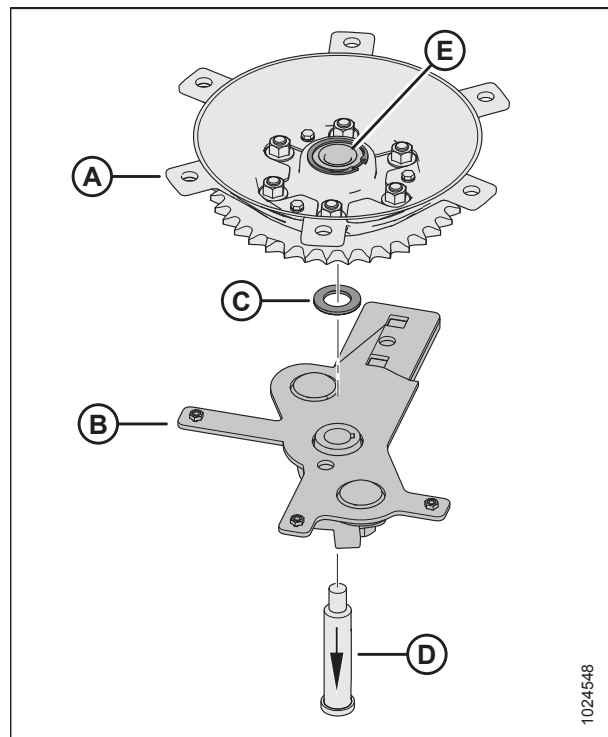


Figure 3.26: Left Assembly

INSTALLATION INSTRUCTIONS

12. Remove nuts (A) and bolts (B) securing timing plate (C) to auger support arm (D). Discard auger support arm (D). Retain all other parts for reassembly.

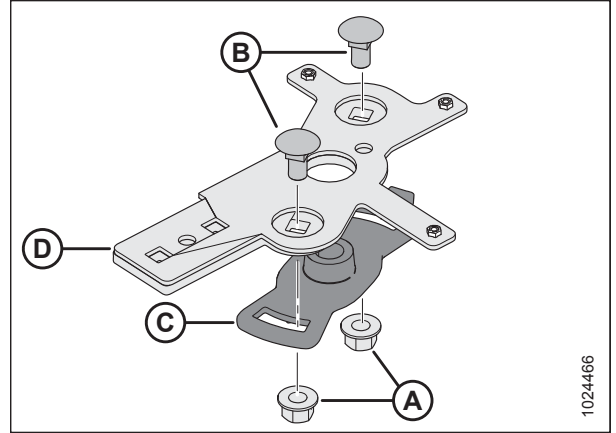


Figure 3.27: Left Assembly

13. Install new left auger support arm (A) (MD #304931) on top of timing plate (B), and secure in place with bolts (C) and nuts (D).

NOTE:

The auger support arm is provided in the kit. The timing plate, bolts, and nuts are retained from Step 12, page 19.

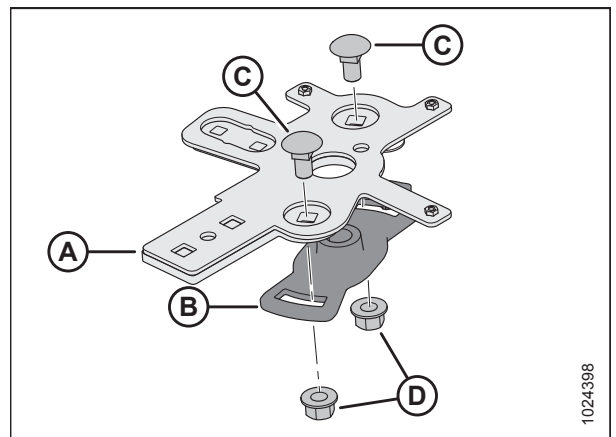


Figure 3.28: New Left Auger Support Arm Installed on Timing Plate

INSTALLATION INSTRUCTIONS

14. Install woodruff key (A) into lower machined slot in shaft (B).
15. Install shaft (B) through auger support arm assembly (C). Align woodruff key (A) with the slot in the timing plate.
16. Install washer (D).
17. Insert two 35 mm M12 carriage bolts (E) (MD #136291) through the two empty holes in the auger support arm indicated in the illustration at right. Secure in place with two green O-rings (F) (MD #183204).
18. Position a tube (not provided in kit) over the inner race of bearing (H) and use it to press the hub assembly (G) onto shaft (B).

NOTE:

If you do not press against the inner race of the bearing while assembling these parts, the bearing may separate. If it does, press the inner race back into the bearing.

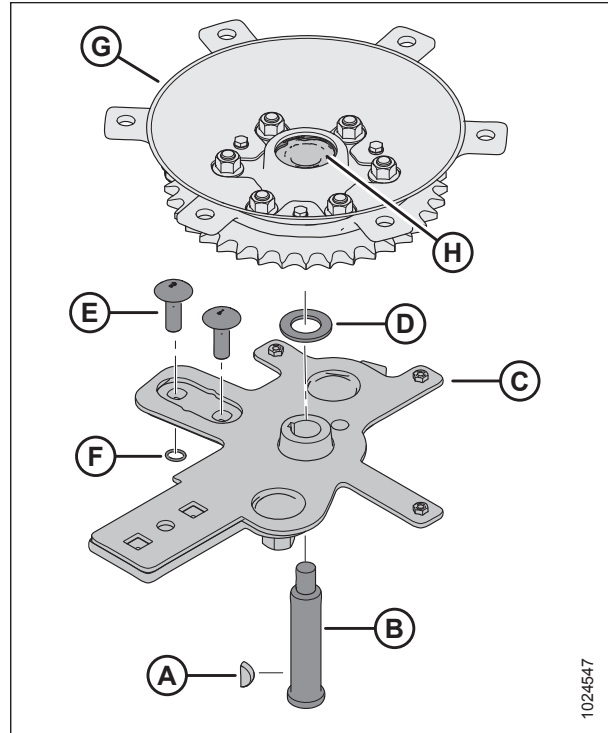


Figure 3.29: Left Assembly

19. Install woodruff key (C) into shaft.
20. Install finger shaft crank arm (B).
21. Apply medium-strength threadlocker (Loctite® 243 or equivalent) to threads, and then install nut (A). Torque nuts to 161–178 Nm (119–132 lbf-ft)

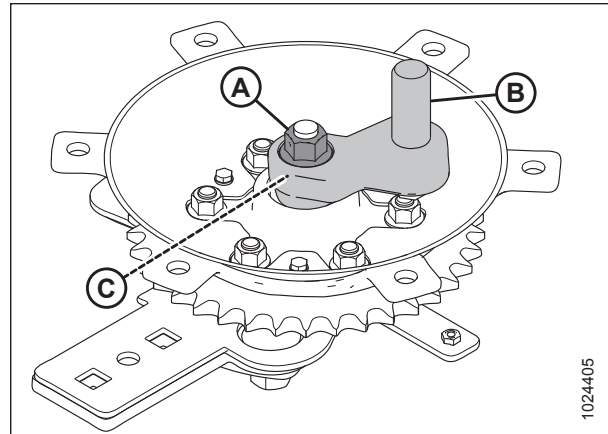


Figure 3.30: Left Assembly

INSTALLATION INSTRUCTIONS

- Slide left assembly (E) into the drum. Align pivot pin (C) with the bushing in pivot block (A).

NOTE:

The auger drum was made transparent in the illustration at right so that you can clearly see the finger shaft and block.

- Remove wooden block (B) supporting finger shaft (D).

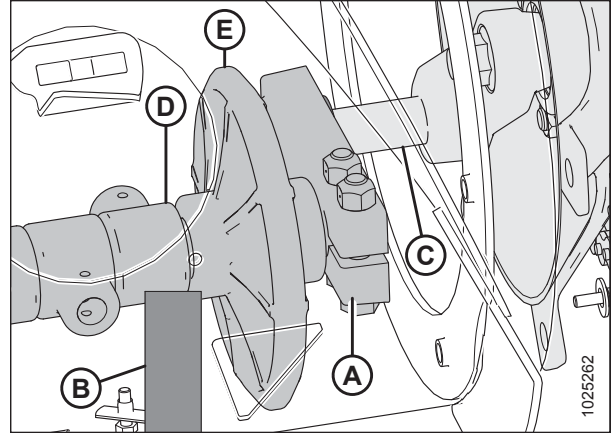


Figure 3.31: Left Pivot Block

- Install six bolts and washers (A).

- Torque to 91 Nm (67 lbf-ft).

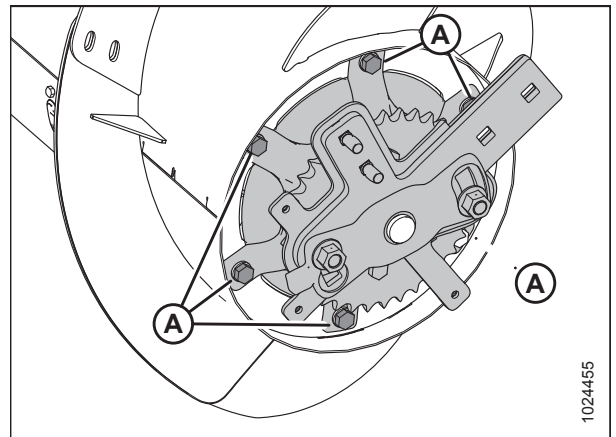


Figure 3.32: Left Assembly

- Install the outermost left access cover (A), and secure with two bolts (B).

NOTE:

The flighting was made transparent in the illustration at right so that it wouldn't block your view of the cover and bolts.

- Torque to 8.5 Nm (75 lbf-in).

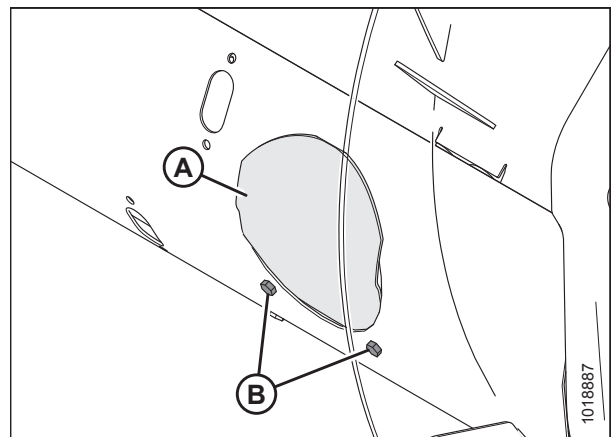


Figure 3.33: Drum Access Cover

INSTALLATION INSTRUCTIONS

28. Ensure finger timing indicator (A) is positioned the same as the right side finger timing indicator.

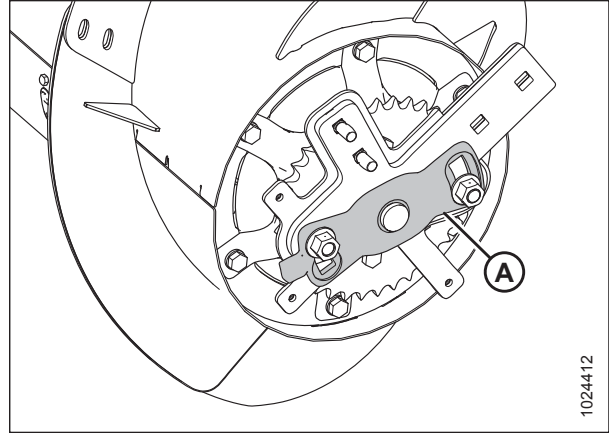


Figure 3.34: Drum Access Cover

3.4 Reinstalling Feed Auger

DANGER

To avoid bodily injury or death from the unexpected start-up or fall of the raised machine, always stop the engine, remove the key, and engage the safety props before going under the machine for any reason.

1. Place the auger on wooden blocks (A) on the feed draper.

NOTE:

The side flap deflectors have been removed for illustration purposes.

NOTE:

The illustration at right shows the float module not installed in a header. You may be installing the feed auger in a stand-alone float module or in a float module installed in a header.

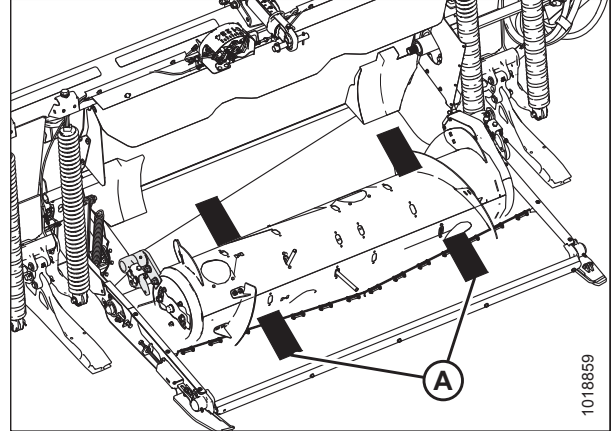


Figure 3.35: Blocks under the Auger

2. Align right pivot (B) and the auger mount support. Secure in place with two nuts (A).

NOTE:

The auger mount support is not visible in the illustration at right as it extends from the auger behind pivot (B).

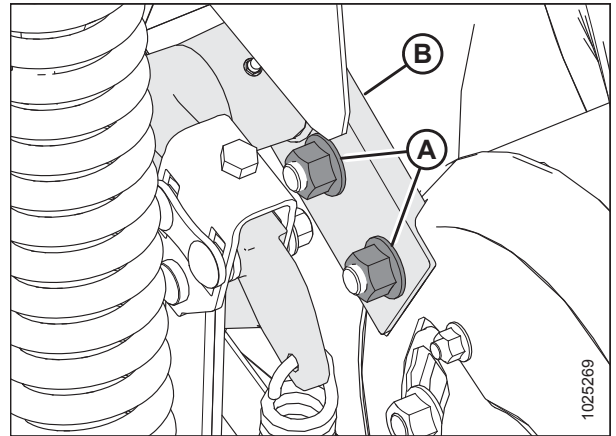


Figure 3.36: Auger Support – Right Side

3. Install the endless chain onto sprocket (B) on the left side of the feed auger (A).

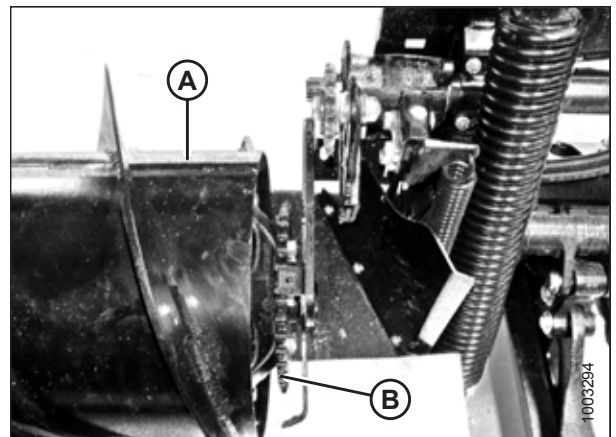


Figure 3.37: Auger Drive – Left Side

INSTALLATION INSTRUCTIONS

- Place drive sprocket (B) into chain (A) and align the sprocket onto the shaft.

NOTE:

The shoulder of drive sprocket (B) should face the auger.

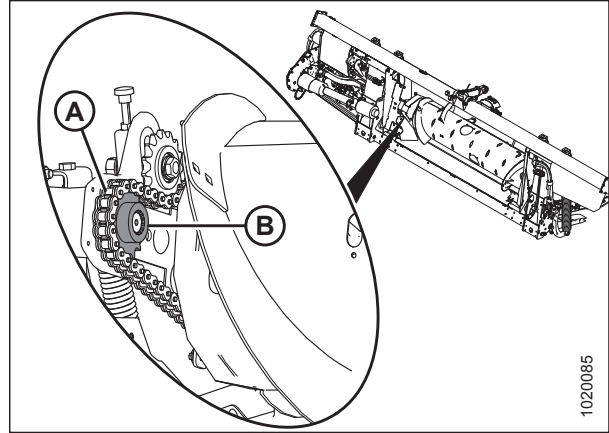


Figure 3.38: Auger Drive

- Align the drive housing from the auger mount bracket. Install the two bolts and nuts (A).
- Remove the blocks from under the auger.

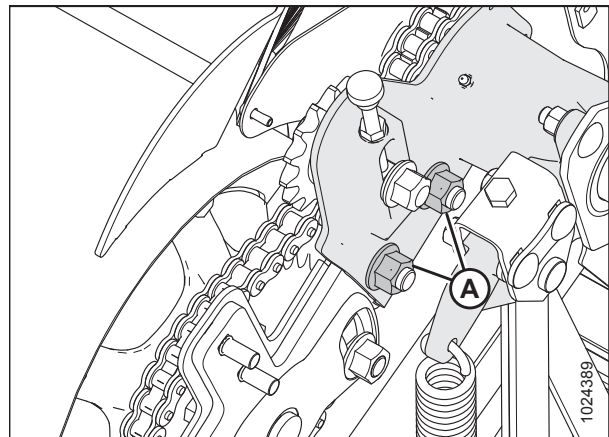


Figure 3.39: Auger Support – Left Side

- Rotate the auger in reverse to take up the slack in the lower strand of the chain.

IMPORTANT:

Do **NOT** loosen thin nut (C) on the inboard side of the idler sprocket spindle.

- Turn adjuster thumbscrew (D) clockwise to move idler sprocket (B) until it is **FINGER TIGHT ONLY**.

IMPORTANT:

Do **NOT** overtighten.

- Tighten idler nut (A) and torque to 265 Nm (195 lbf-ft).

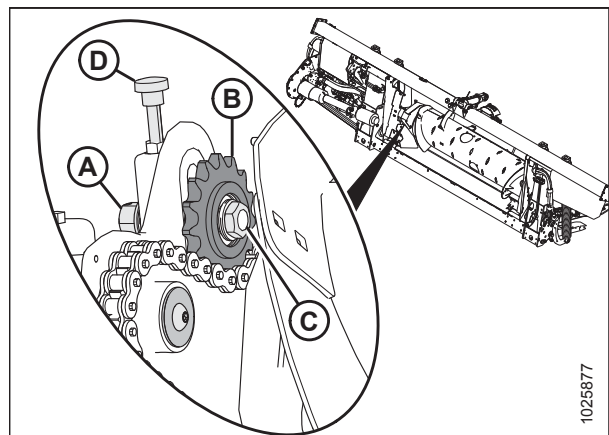


Figure 3.40: Auger Drive

INSTALLATION INSTRUCTIONS

10. Tighten jam nut (A).
11. Apply medium-strength threadlocker (Loctite® 243 or equivalent) to threads of screw (B).
12. Install washer (C) and secure it with screw (B).

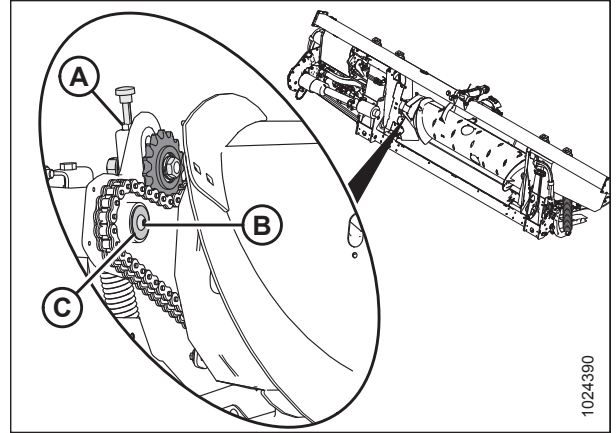


Figure 3.41: Auger Support – Left Side

13. Position new bottom cover (G) (MD #301992) and secure with retained washer and bolt (C).
14. Position new top cover (D) (MD #301993).
15. Install inspection panel (B) and secure with four bolts (A). Tighten bolts (A) and torque to 2.7–4.1 Nm (24–36 lbf-in).
16. Install cover retainer (F) and secure with two bolts (E).

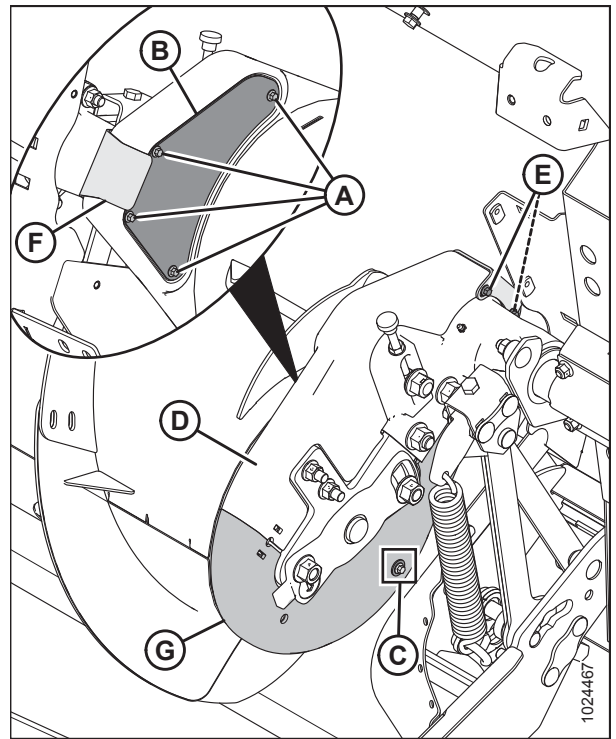


Figure 3.42: Auger Drive

3.5 Installing Left Bumper and Indicator Plate

To install the bumper (MD #301912) and indicator plate (MD #276183) provided in the kit on the left end of the auger, follow these steps:

1. On the left end of the auger, install bumper (A) (MD #301912) on bolt shafts at location (B), and secure in place with two M12 hex flange nuts (MD #136431).
2. Torque nuts to 68 Nm (50 lbf·ft).
3. Position left indicator plate (C) (MD #276183), and secure one end in place with one 16 mm M6 hex flange head bolt (D), retained from Step 6, [page 10](#).
4. Secure the other end of left indicator plate (C) in place with one 16 mm M6 hex flange head bolt (E), retained from Step 5, [page 10](#).
5. Ensure timing plate (F) points to the same letter on the indicator plate as the timing plate on the right end of the auger.

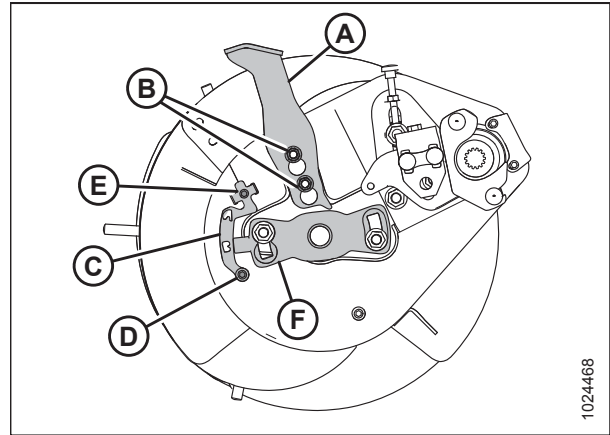


Figure 3.43: Bumper and Indicator Plate Installed on Left End of Feed Auger

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