MacDon

FM100
Float Module

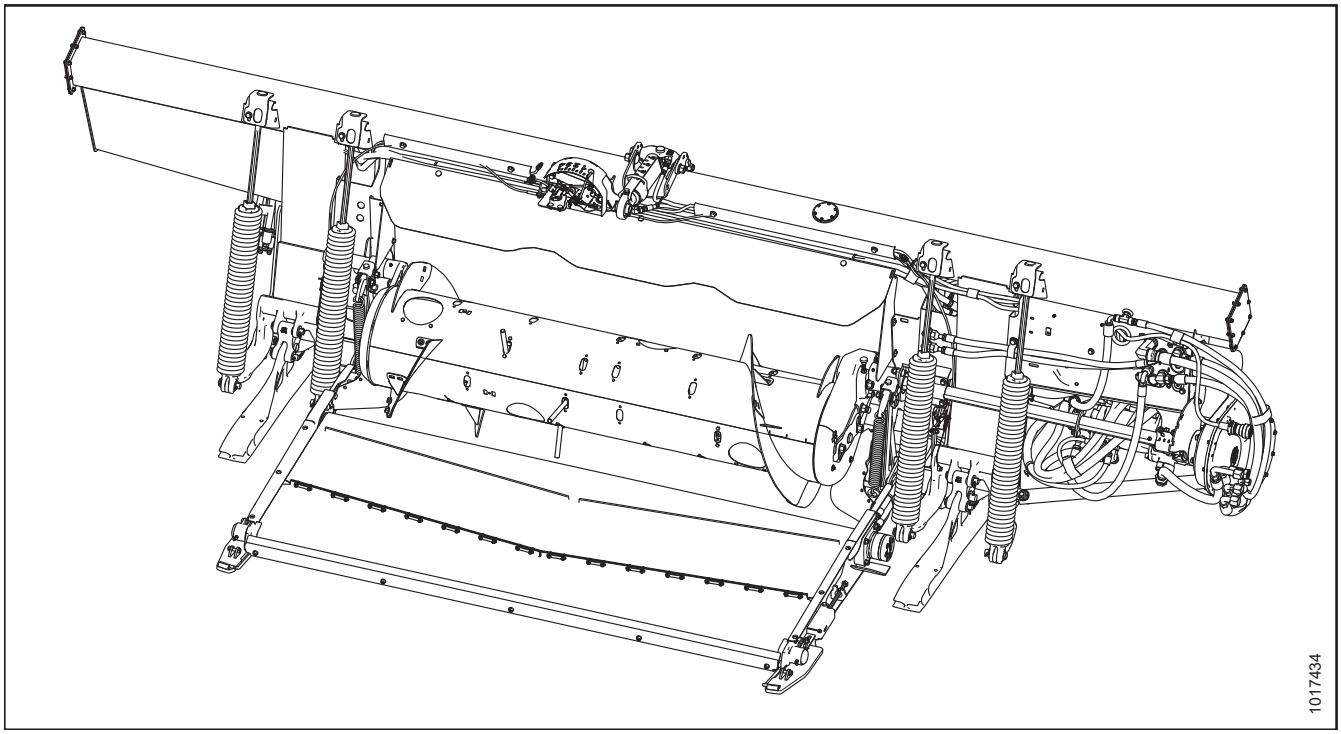
Left Auger Arm Service Kit (MD #308133)
Installation Instructions

214576 Revision B

Original Instruction

The harvesting specialists.

FM100 Float Module



Published December 2021

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Introduction

The left auger arm used on MacDon FM100 Float Modules changed between model year 2017 and model year 2018. The new arm has a slightly different shape and therefore requires different left auger covers. If you want to replace the arm on an older float module, you will also need to replace the left auger covers. The arm and the covers are provided in the Left Auger Arm Service kit (MD #308133).

NOTE:

The updated auger arm allows for installation of the Bumper kit (MD #B6600), but in order to install the kit, both the right and left auger arms need to be updated on model year 2016 and 2017 float modules. To update the right auger arm, order the Right Auger Arm Service kit (MD #308134).

This document explains how to install the Left Auger Arm Service 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 3 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 is the side that faces the crop; the back of the float module 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
2 Parts List, page 5	• Updated the parts image to reflect the new design of the left auger support arm (MD #304931). • Updated the part number associated with the left auger support arm in the parts list (MD #301963 has been superseded by MD #304931).	ECN 61562
3.2 Replacing Left Auger Arm and Covers, page 11	• Updated all illustrations representing the left auger support arm. The illustrations now depict the new part design (MD #304931) as opposed to the old design (MD #301963). • Updated the part number associated with the left auger support arm from MD #301963 to MD #304931.	ECN 61562

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

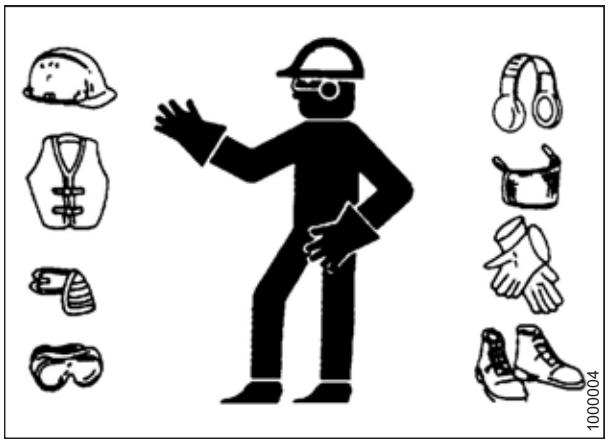


Figure 1.1: Safety Equipment

In addition, take the following precautions:

- Be aware that exposure to loud noises can cause hearing impairment. Wear suitable hearing protection devices such as earmuffs or earplugs to help protect against loud noises.

Figure 1.2: Safety Equipment

- Provide a first aid kit in case of emergencies.
- Keep a properly maintained fire extinguisher on the machine. Familiarize yourself with its use.
- Keep young children away from machinery at all times.
- Be aware that accidents often happen when Operators are fatigued or in a hurry. Take time to consider the safest way to accomplish a task. **NEVER** ignore the signs of fatigue.

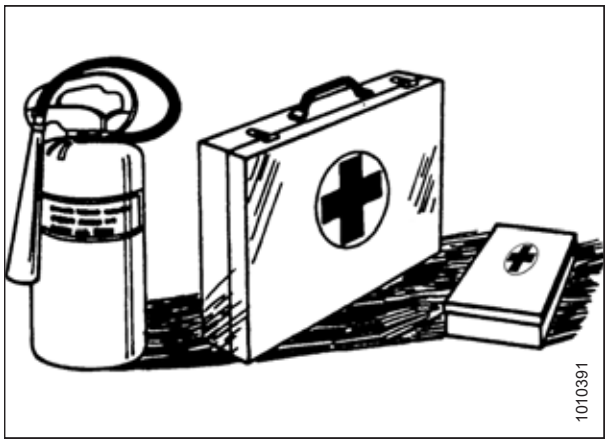


Figure 1.3: Safety Equipment

- 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. Ensure that the driveline guards can rotate independently of their shaft, and that they can telescope freely.
- Use only service and repair parts made or approved by the equipment manufacturer. Parts from other manufacturers may not meet the correct 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 the functionality and/or safety of the machine. It may also shorten the machine's service life.
- To avoid injury or death from the 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.

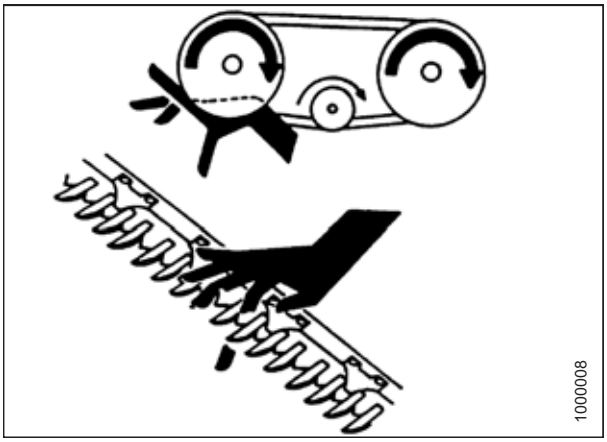


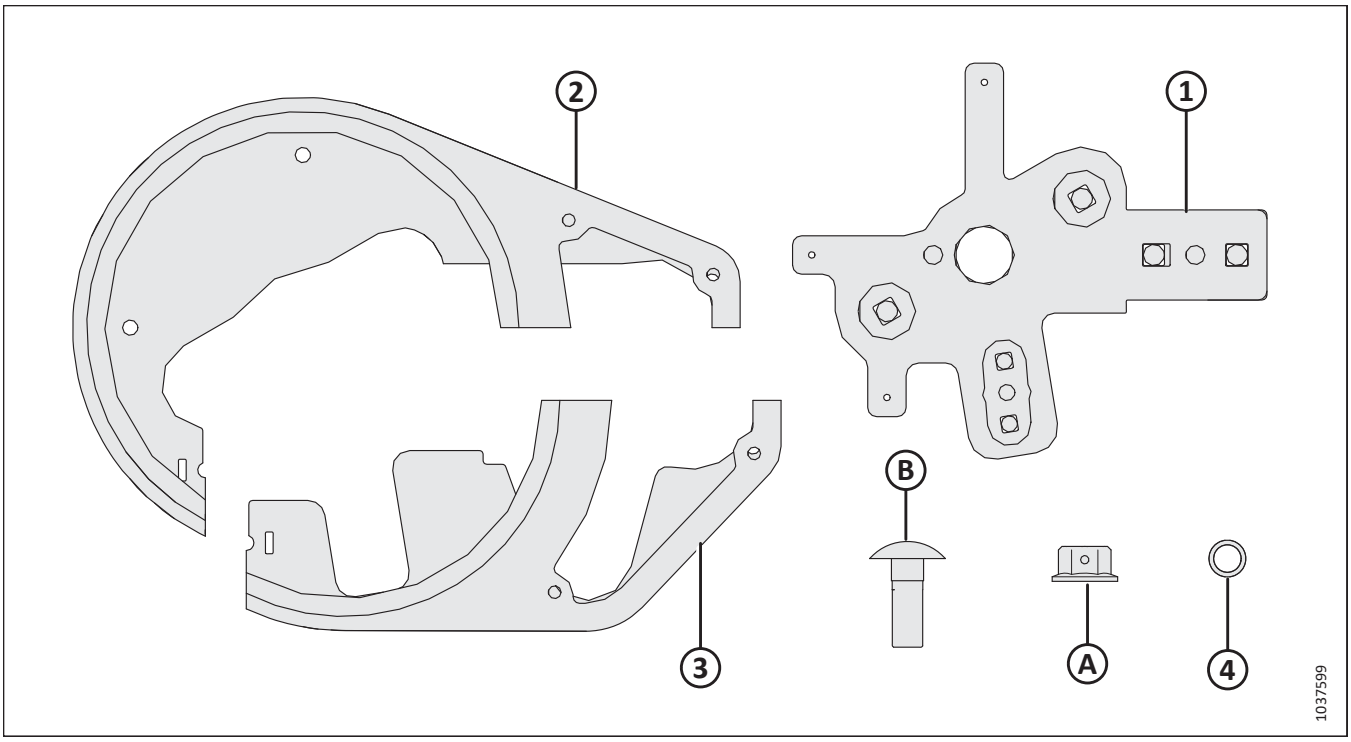
Figure 1.5: Safety around Equipment

- Keep the machine service area clean and dry. Wet and/or oily floors are slippery. Wet spots can be dangerous when working with electrical equipment. Ensure that all electrical outlets and tools are properly grounded.
- Keep the 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 they are stored.
- **NEVER** use gasoline, naphtha, or any volatile material for cleaning purposes. These materials may be toxic and/or flammable.
- When storing machinery, cover any 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:



Ref	Part Number	Description	Quantity
1	304931	ARM – LEFT AUGER SUPPORT	1
2	301992	COVER – LEFT AUGER, LARGE HALF	1
3	301993	COVER – LEFT AUGER, SMALL HALF	1
4	183204	O-RING HNBR, COLOR GREEN	2
A	136431	NUT – HEX FLG CTR LOC M12 X 1.75-10	2
B	136291	BOLT – RHSN TFL M12 X 1.75 X 35 8.8 A3L	2

Chapter 3: Installation Instructions

To install the Left Auger Arm Service kit, follow these procedures in the order in which they are listed below.

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

Before the new parts can be installed, the feed auger must be removed from the float module.

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 from the illustration for clarity.

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.

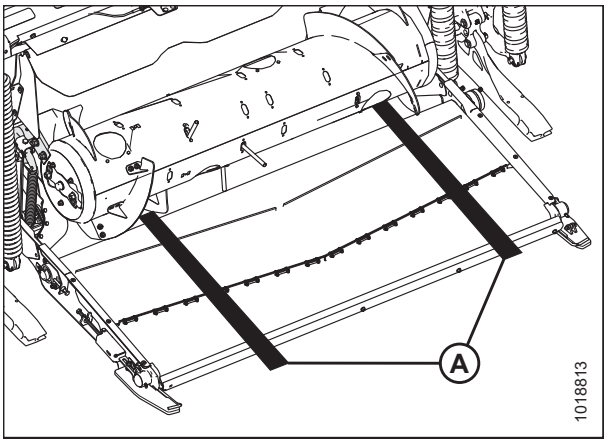


Figure 3.1: Blocks under the Auger

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 cover (G) and bottom cover (H) forward to remove them. Discard both covers.

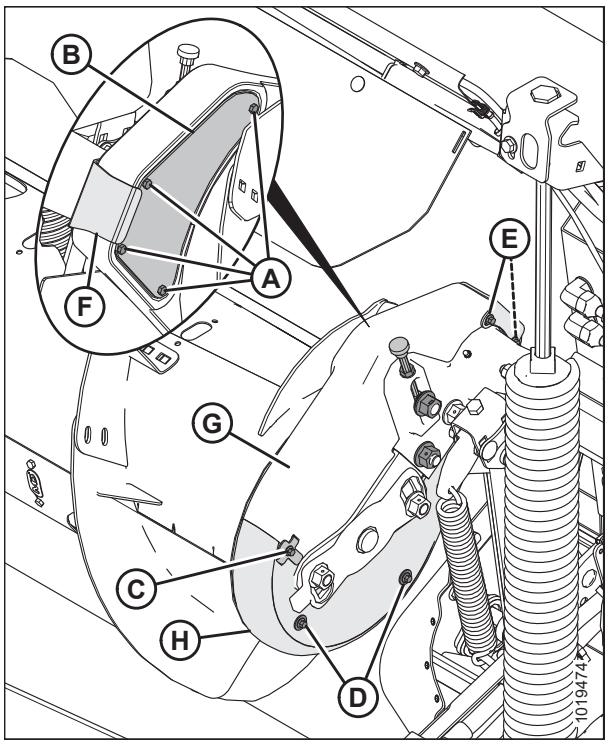


Figure 3.2: Left Side of Auger

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

   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).

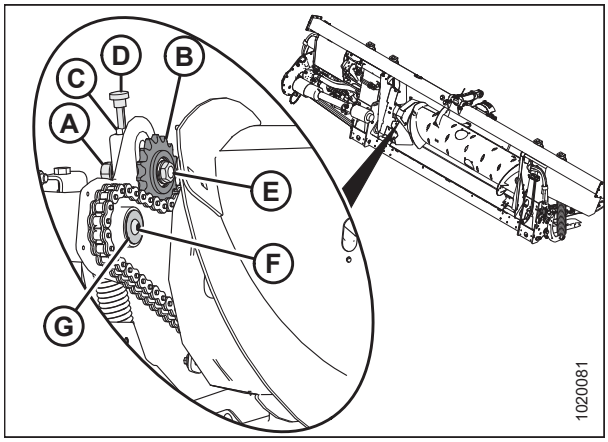


Figure 3.3: Auger Drive

12. Remove two bolts and nuts (A).

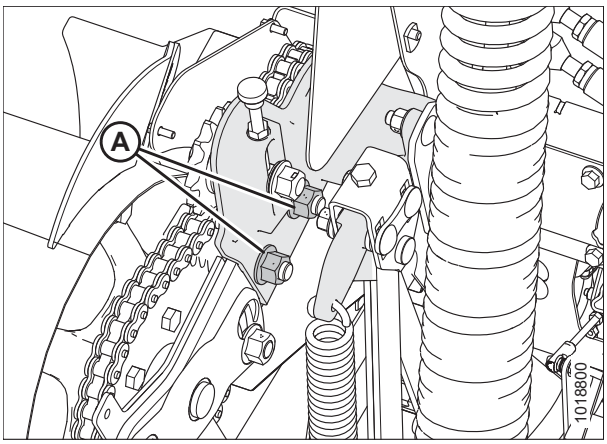


Figure 3.4: Auger Support – Left Side

13. Remove two nuts (A).

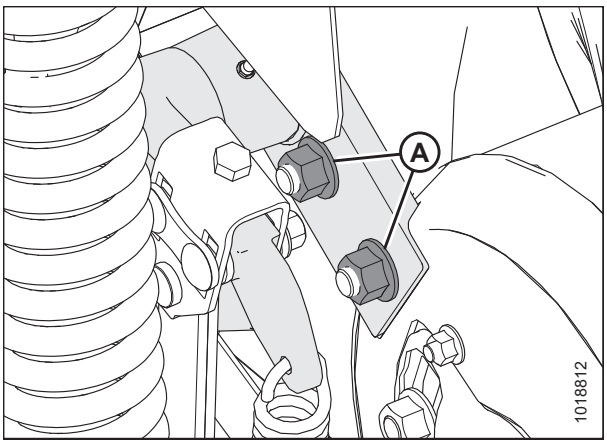


Figure 3.5: Auger Support – Right Side

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

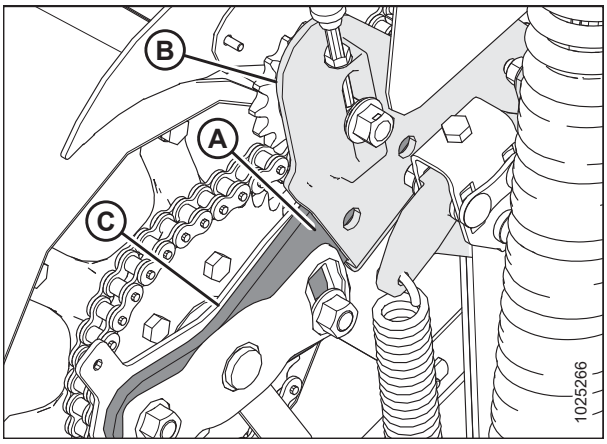


Figure 3.6: Auger Support – Left Side

NOTE:

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

NOTE:

The chain has been removed from the illustration for clarity.

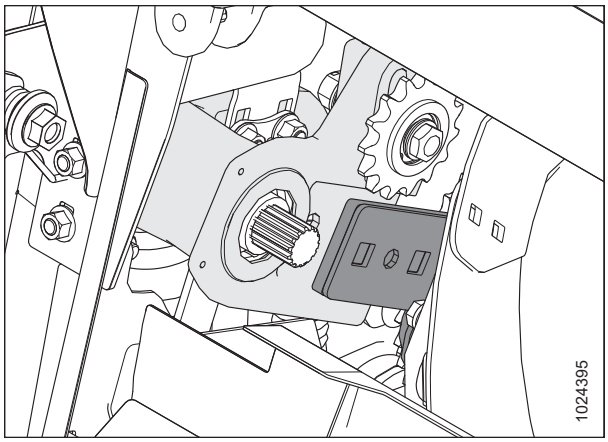


Figure 3.7: Auger Drive – View from Behind

15. Use a pry bar between the right support bar and right auger pivot (B) to slide the 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 and behind pivot (B). It is connected to the pivot with bolts (A).

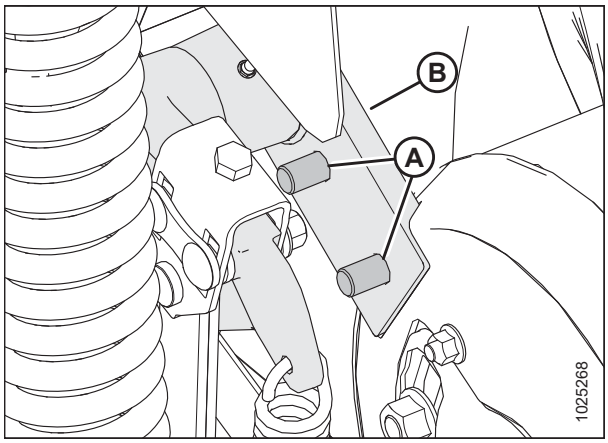


Figure 3.8: Auger Support – Right Side

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

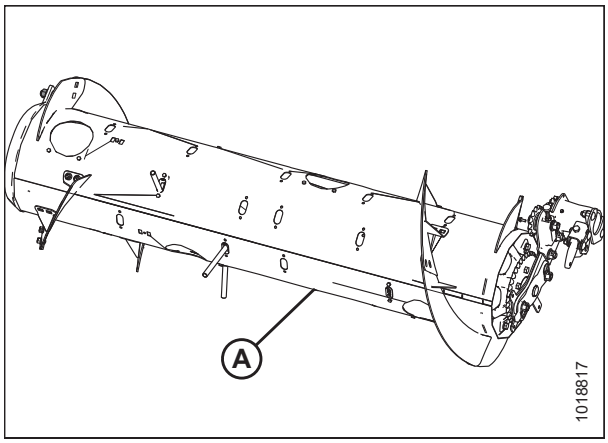


Figure 3.9: Auger

3.2 Replacing Left Auger Arm and Covers

Replace the left auger arm and the left auger covers with the new parts provided in the kit.

NOTE:

Unless otherwise stated, retain all parts for reassembly.

1. Remove outermost left access cover (A), by removing two bolts (B).

   NOTE:

   The flighting was made transparent in the illustration at right for clarity.

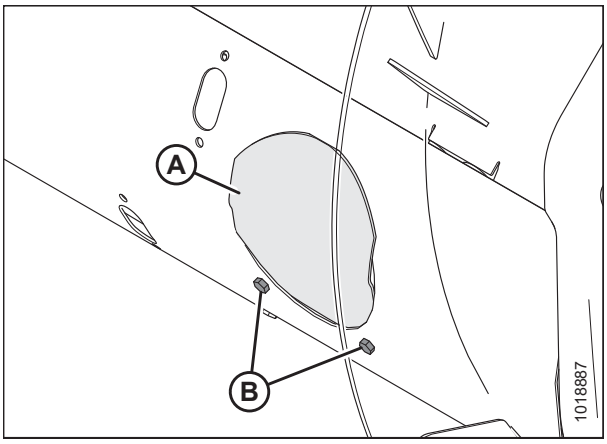


Figure 3.10: Drum Access Cover

2. Inside the drum, place block (B) under 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.

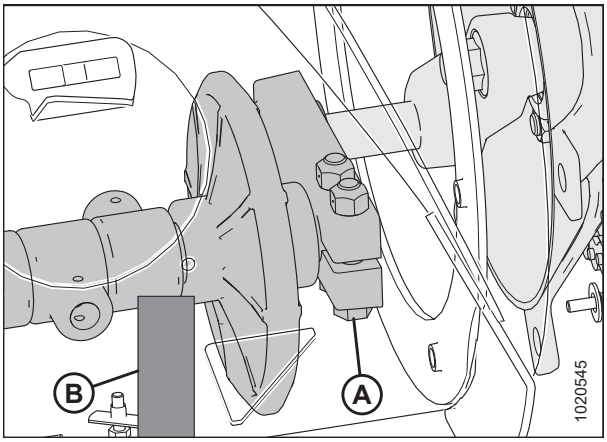


Figure 3.11: Left Pivot Block

3. Remove six bolts (A).

   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).

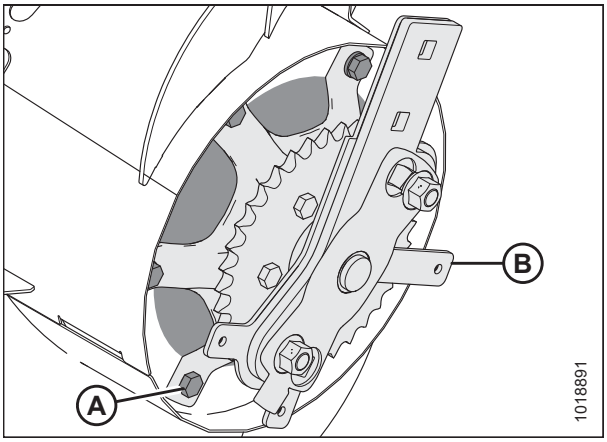


Figure 3.12: Left Assembly

5. Remove nut (A).
6. Remove finger shaft crank arm (B).
7. Remove Woodruff key (C) from the shaft.

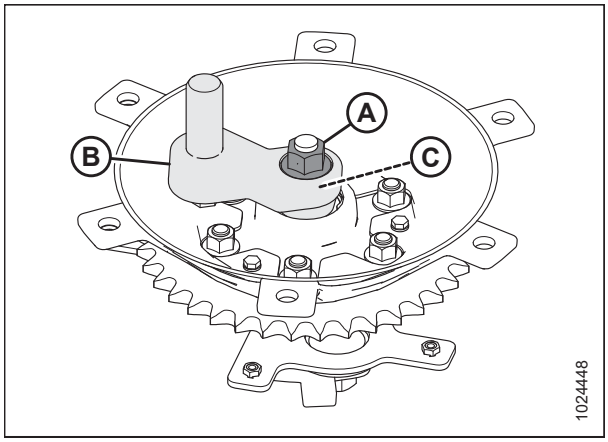


Figure 3.13: Left Assembly

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

    NOTE:

    Hub bearing (E) may separate. If it does, reassemble the bearing by pressing the inner race back into the bearing.

11. Remove washer (C).

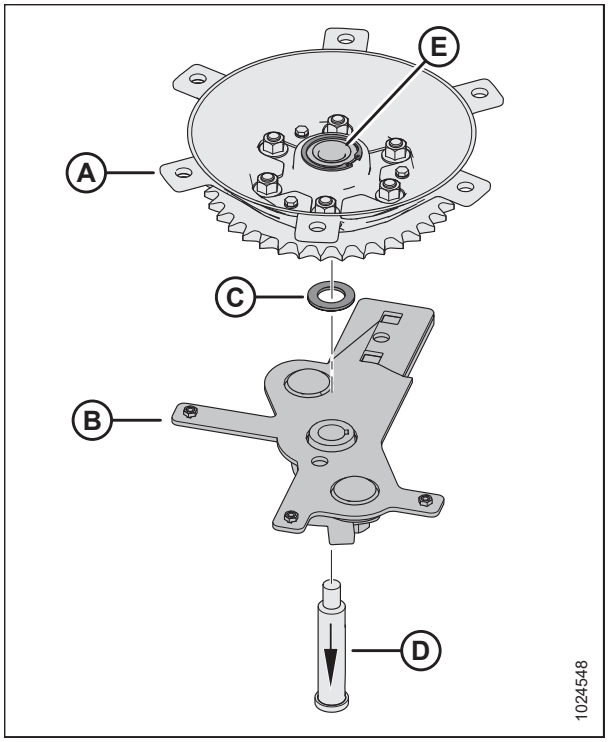


Figure 3.14: Left Assembly

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.

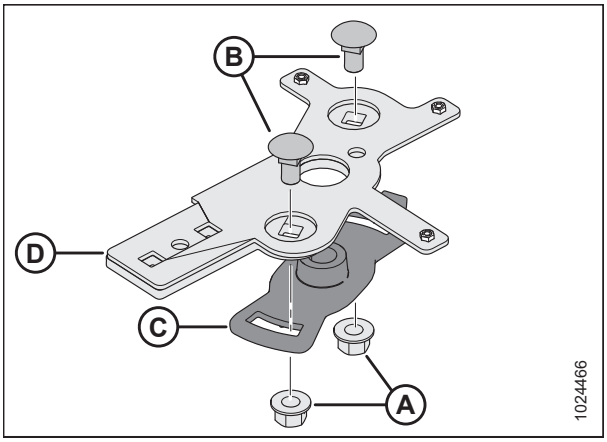


Figure 3.15: Left Assembly

13. Install new left auger support arm (A) (MD #304931) on top of timing plate (B), and secure the arm 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 13*.

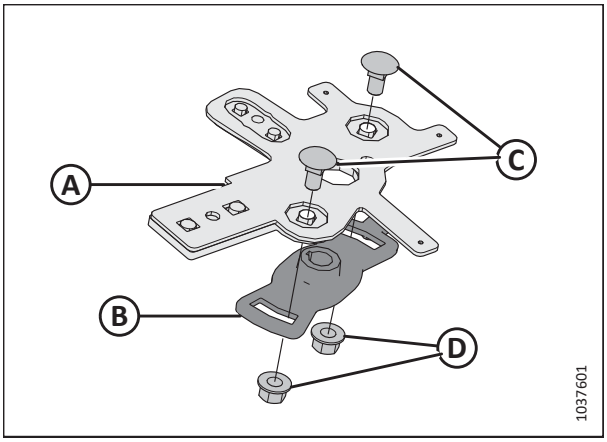


Figure 3.16: New Left Auger Support Arm Installed on Timing Plate

14. Install Woodruff key (A) into the 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 two of the empty holes in the auger support arm. Secure the bolts in place with two green O-rings (F) (MD #183204) and two M12 hex lock nuts (G) (MD #136431).

    NOTE:

    Only one O-ring is shown in the illustration. The second one is hidden behind the auger support arm assembly.

18. Position a tube (not provided in the kit) over the inner race of bearing (H) and use it to press hub assembly (J) 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 separate, press the inner race back into the bearing.

19. Install Woodruff key (C) into the shaft.

20. Install finger shaft crank arm (B).

21. Apply medium-strength threadlocker (Loctite® 243 or equivalent) to the threads, and then install nut (A). Torque the nuts to 161–178 Nm (119–132 lbf·ft).

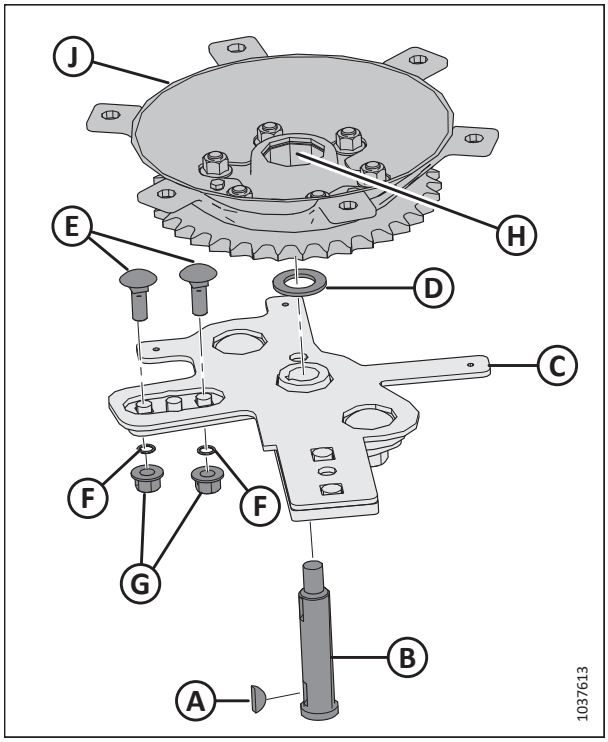


Figure 3.17: Left Assembly

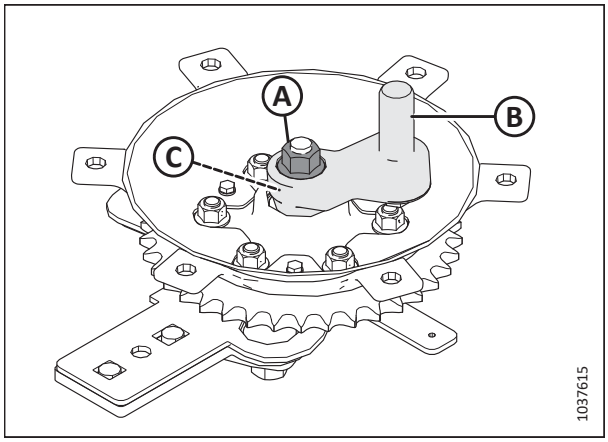


Figure 3.18: Left Assembly

22. 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.

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

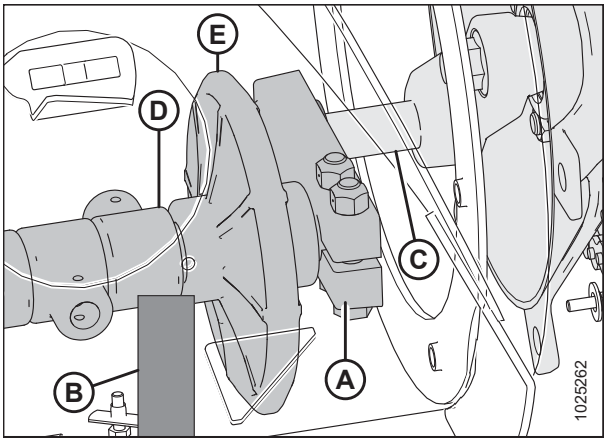


Figure 3.19: Left Pivot Block

24. Install six bolts and washers (A).

25. Torque the hardware to 91 Nm (67 lbf·ft).

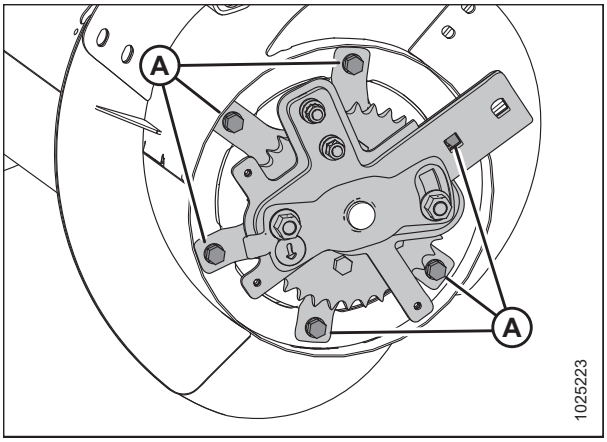


Figure 3.20: Left Assembly

26. Install outermost left access cover (A), and secure it in place with two bolts (B).

    NOTE:

    The flighting was made transparent in the illustration at right for clarity.

27. Torque the bolts to 8.5 Nm (75 lbf·in).

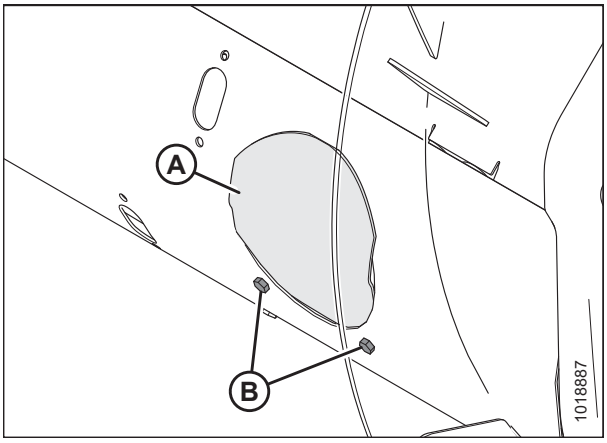


Figure 3.21: Drum Access Cover

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

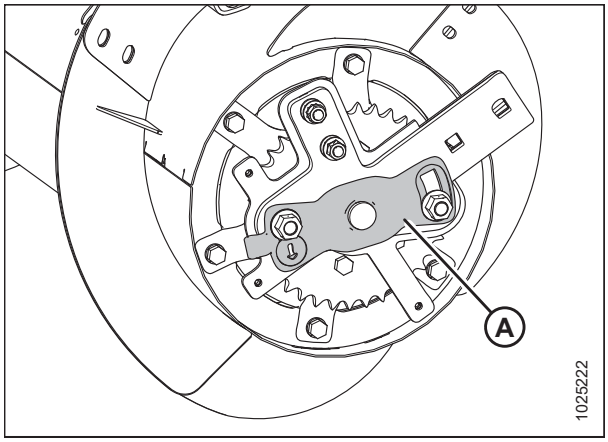


Figure 3.22: Drum Access Cover

3.3 Installing Feed Auger

After installing the new parts, reinstall the feed auger assembly.

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.

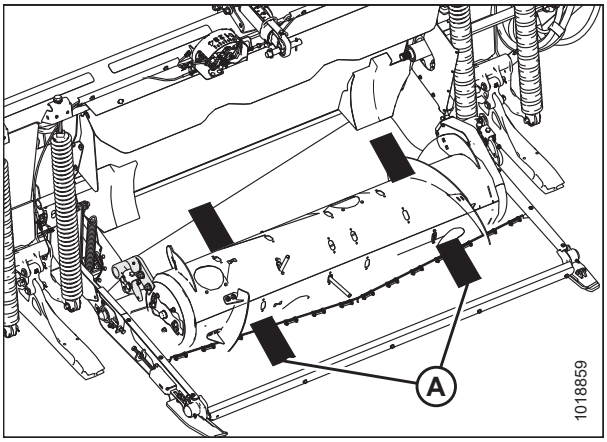


Figure 3.23: Blocks under the Auger

2. Align right pivot (B) and the auger mount support. Secure it 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 and behind pivot (B).

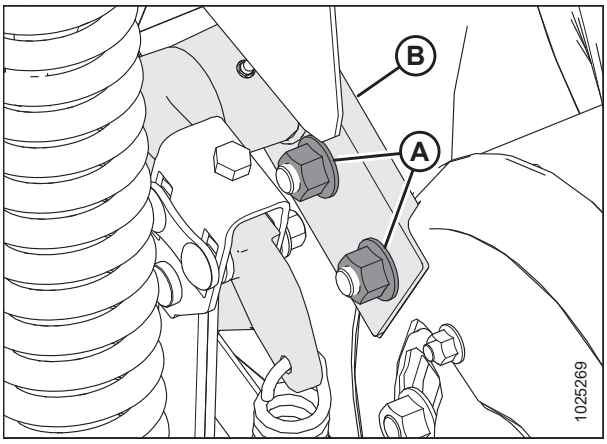


Figure 3.24: Auger Support – Right Side

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

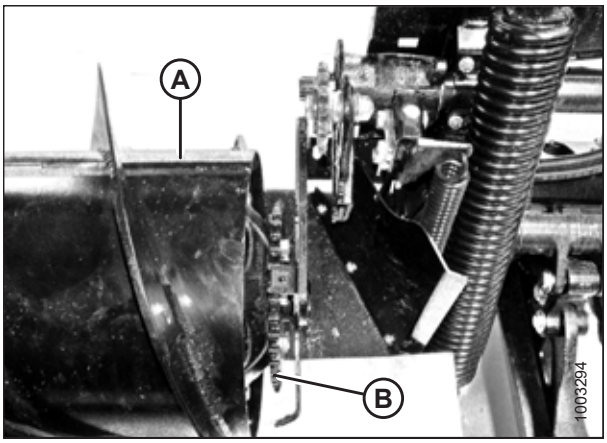


Figure 3.25: Auger Drive – Left Side

4. 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.

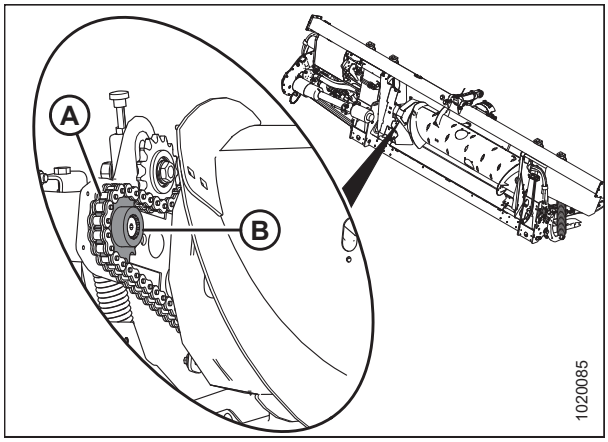


Figure 3.26: Auger Drive

5. Align the holes in auger pivot (B) with the holes in left auger support (C). Secure the parts together with two bolts and nuts (A).

6. Remove the blocks from under the auger.

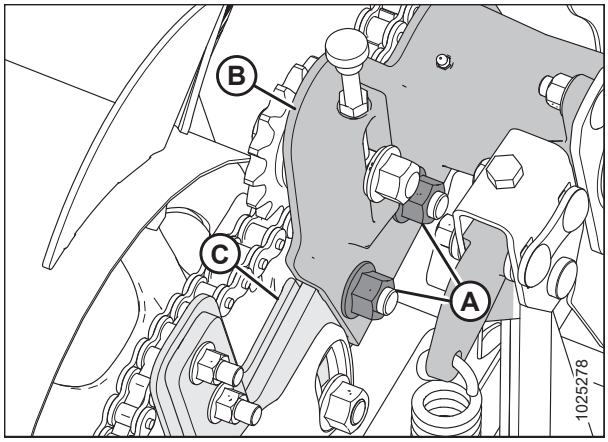


Figure 3.27: Auger Support (Left Side)

7. 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.

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

   IMPORTANT:

   Do **NOT** overtighten.

9. Tighten idler nut (A) and torque it to 265 Nm (195 lbf·ft).

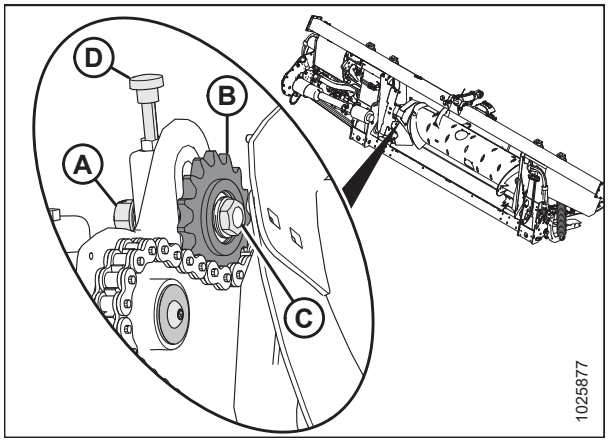


Figure 3.28: Auger Drive

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

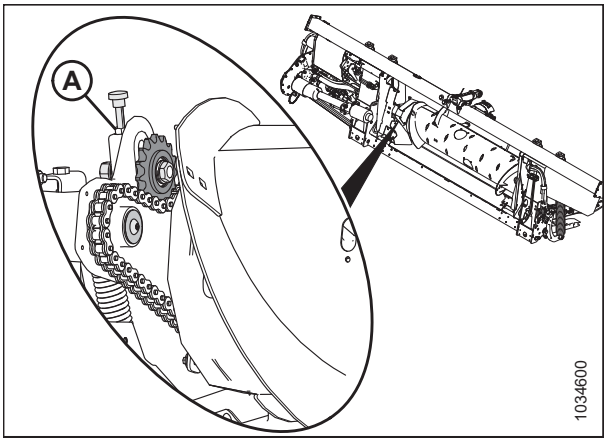


Figure 3.29: Auger Drive

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

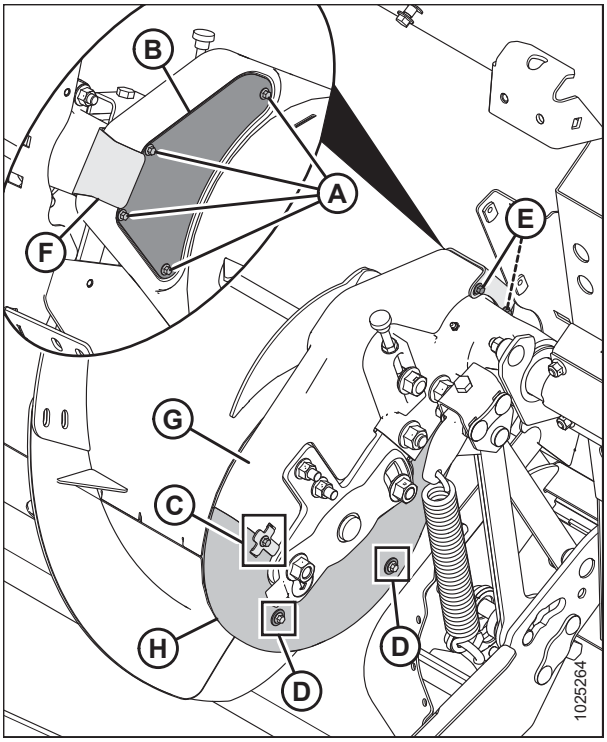


Figure 3.30: Auger Drive

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