

FD2 Series FlexDraper® Combine Header with FM200 Float Module

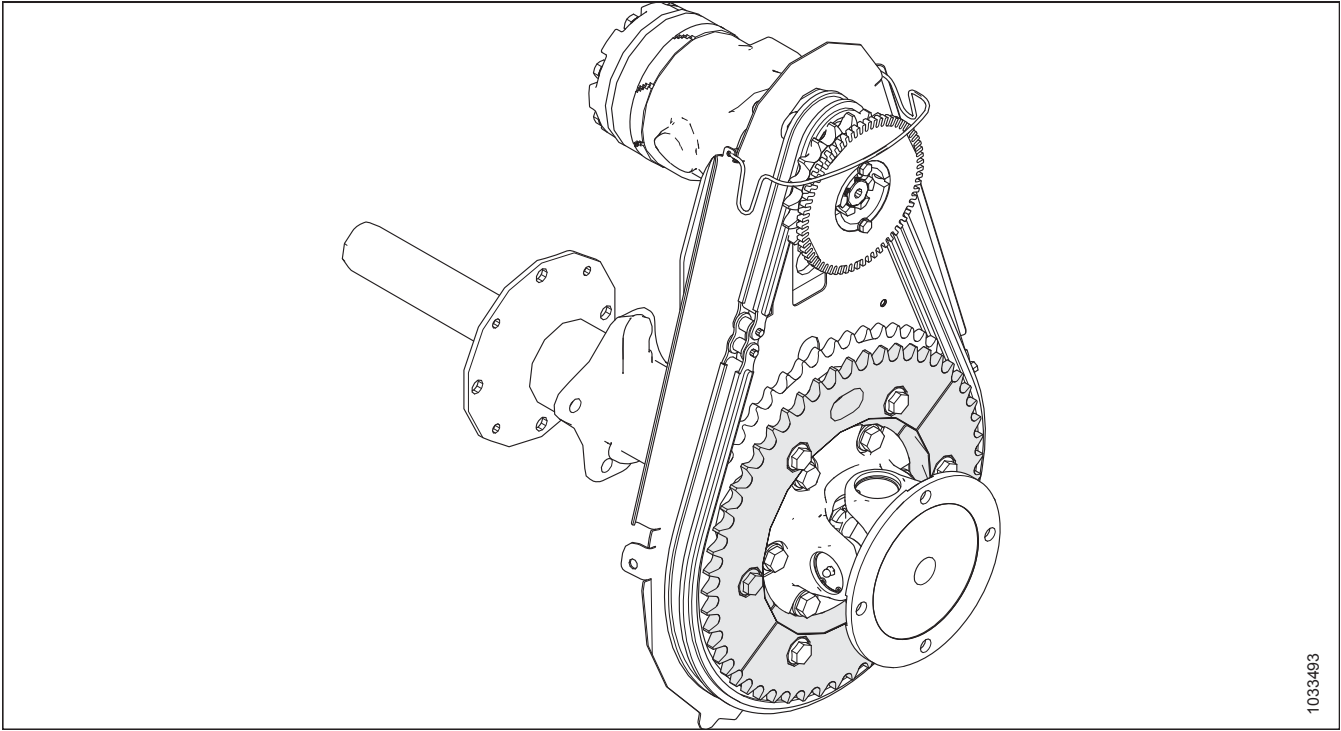
Two Speed Kit (MD #311882) Installation Instructions

215318 Revision B

Original Instruction

Featuring MacDon FLEX-FLOAT Technology™

The Harvesting Specialists.



Published December 2020

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Introduction

This kit provides a second driven sprocket on the reel drive. With the optional 52-tooth driven sprocket, the operator can switch from high torque to high speed for operating in light crops at increased ground speed.

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.

NOTE:

In addition to the lower sprocket (B) included, this kit requires a dual reel-drive sprocket (A) that is suitable for the combine reel circuit hydraulic relief pressure. Refer to .1, page i.

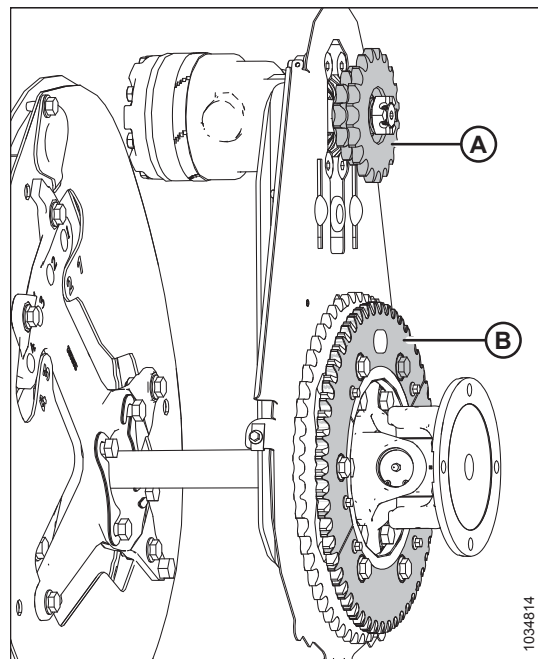


Figure 1: Reel Drive with Optional Sprockets

Table .1 Optional Sprockets

Sprocket	Reel Circuit Hydraulic Relief Pressure	Application	Optional Drive Sprocket
Dual reel drive sprocket (A) MD #273451	13.79 MPa (2000 psi)	Combining down rice	10/20 tooth
Dual reel drive sprocket (A) MD #273452	17.24 MPa (2500 psi)	Combining down rice	12/20 tooth
Dual reel drive sprocket (A) MD #273453	20.68 MPa (3000 psi)	Combining down rice	14/20 tooth

Installation time

Installation time for this kit is approximately 1 hour.

Conventions

The following conventions are used in this document:

- Right and left are determined from the operator's position. The front of the header is the side that faces the crop; the back of the header is the side that connects to the combine.
- Unless otherwise noted, use the standard torque values provided in the FD2 operator's manual and technical manual.

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
Throughout	Remove reference to unreleased products.	Technical Publications
<i>Introduction, page i</i>	Add a chart and image to clarify that an additional top sprocket is required, and the specific model of the top sprocket depends on the combine's hydraulic relief pressure.	Product Support
<i>3.1 Removing Reel Drive Cover, page 7</i>	Remove "if necessary" from step that removes the bottom reel drive cover.	Technical Publications
<i>3.2 Loosening Reel Drive Chain, page 9</i>	Profiled redundant steps to shut off engine, lower header, etc. Steps are not required for every topic in a kit instruction.	Technical Publications
<i>3.3 Installing Reel Driven Optional Dual Sprocket, page 10</i>	<ul style="list-style-type: none"> • Profiled redundant steps to shut off engine, lower header, etc. Steps are not required for every topic in a kit instruction. • Add note about installing chain on outer top sprocket. • Added reference to sprocket tightening steps if loosening and adjustment is necessary. 	Technical Publications
<i>3.4 Tightening Reel Drive Chain, page 12</i>	Profiled redundant steps to shut off engine, lower header, etc. Steps are not required for every topic in a kit instruction.	Technical Publications
<i>3.5 Installing Reel Drive Cover, page 13</i>	Profiled redundant steps to shut off engine, lower header, etc. Steps are not required for every topic in a kit instruction.	Technical Publications
—	Remove open/close endshield topics. Add refer to header operator's manual throughout instruction.	Technical Publications

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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.

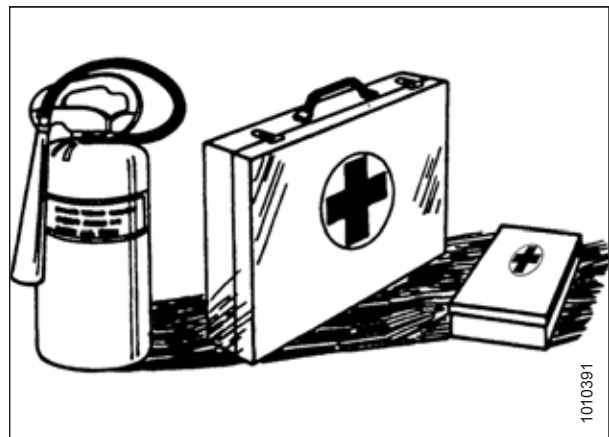


Figure 1.3: Safety Equipment

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.

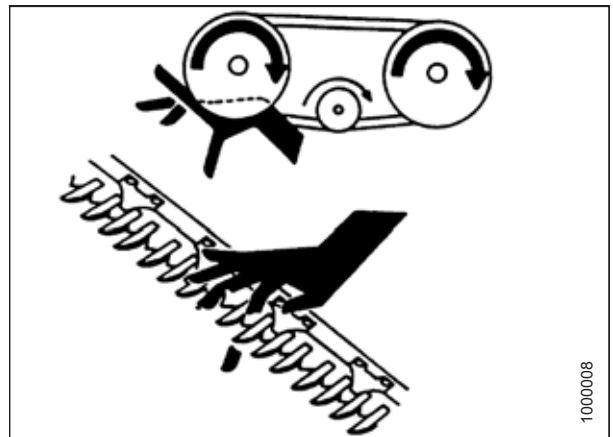


Figure 1.5: Safety around Equipment

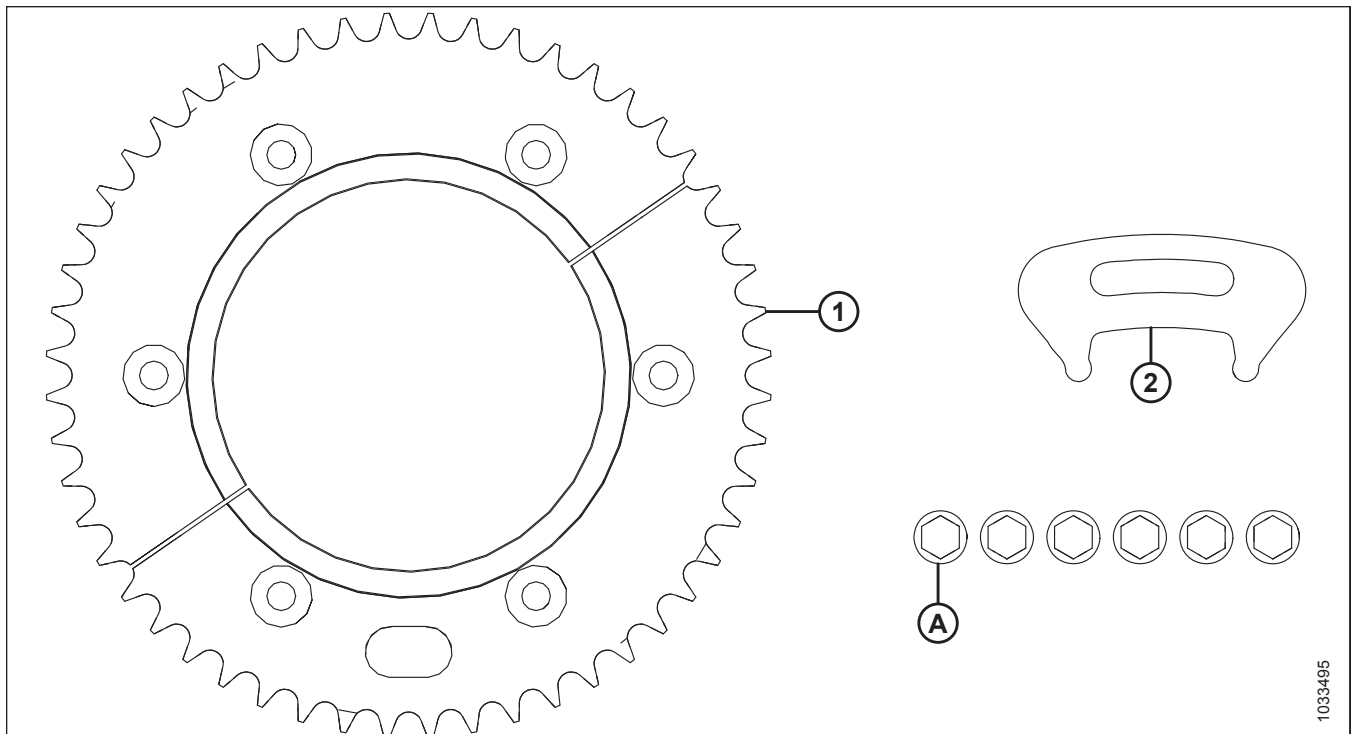
- Keep service area clean and dry. Wet and/or oily floors are slippery. Wet spots can be dangerous when working with electrical equipment. Be sure all electrical outlets and tools are properly grounded.
- Keep work area well lit.
- Keep machinery clean. Straw and chaff on a hot engine are fire hazards. 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

The following parts are included in this kit:



Ref	Part Number	Description	Qty
1	273689	SPROCKET – MACHINED 52 T	1
2	273594	TOOL – SPROCKET	1
A	320192	BOLT – HEX FLG HD M12X1.75X30-SPCL-8.8-AA1J	6

Chapter 3: Installation Instructions

To install this kit, complete the following steps in order.

3.1 Removing Reel Drive Cover

The reel drive cover protects the drive components from weather and debris. The two-piece cover can be removed to access the components for service.

DANGER

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

1. Start the engine.
2. Adjust the reel fully forward.
3. Lower the header fully.
4. Shut down the engine, and remove the key from the ignition.
5. Rotate spring latch (A) up and over the back plate.

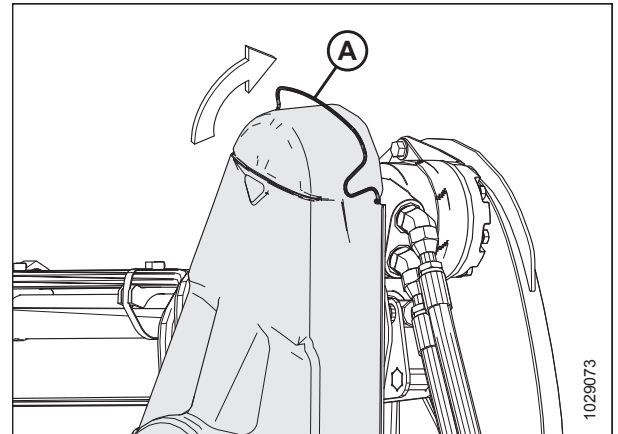


Figure 3.1: Upper Drive Cover

6. Unclip upper cover (A) from the lower cover at locations (B), and remove the upper cover. Keep the two clips engaged on the lower cover.

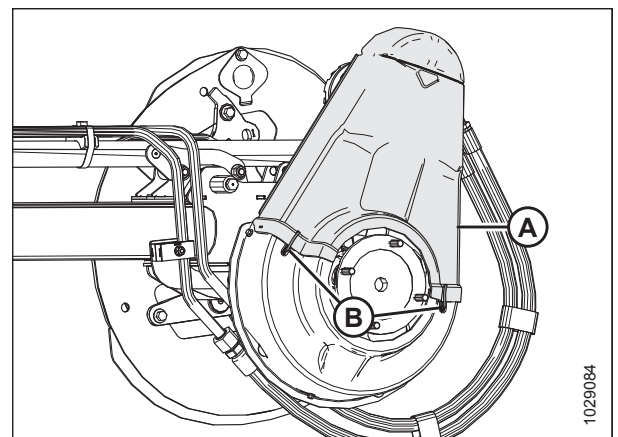


Figure 3.2: Upper Drive Cover

INSTALLATION INSTRUCTIONS

7. Remove lower cover (B) by removing three bolts (A).

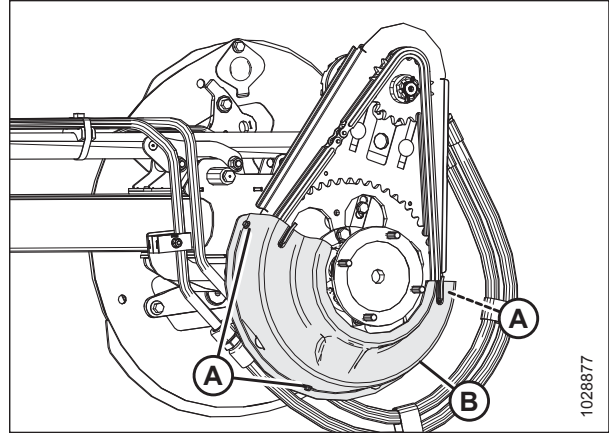


Figure 3.3: Lower Drive Cover

3.2 Loosening Reel Drive Chain

The tension on the reel drive chain can be loosened to allow access to drive components.

1. Open the left endshield. For instructions, refer to the header operator's manual.
2. Remove hairpin (A) securing wrench (B) to bracket on left endsheet.
3. Remove wrench (B), and reinstall hairpin on the bracket.

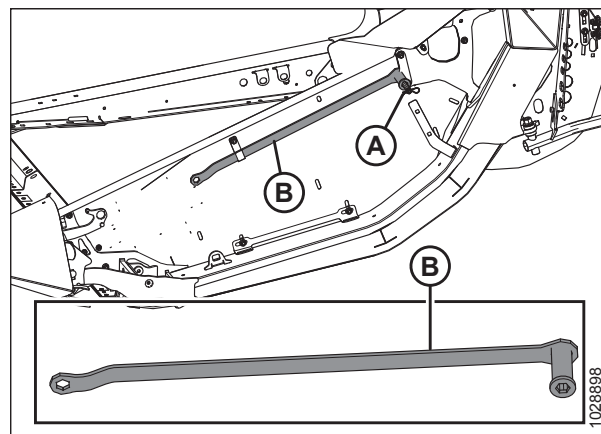


Figure 3.4: Wrench Storage Location

IMPORTANT:

Do **NOT** loosen the motor mount, it is factory-adjusted and secured together with Belleville washers. Chain tension is adjusted without loosening the drive mounting bolts.

4. Push tension retainer (A) clockwise with your thumb, and hold in the unlocked position.
5. Place wrench (B) onto chain tensioner (C), and rotate wrench upwards to loosen the chain tension.

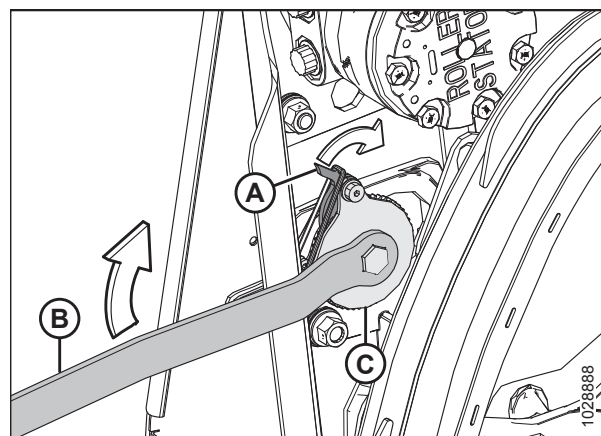


Figure 3.5: Reel Drive

3.3 Installing Reel Driven Optional Dual Sprocket

With the optional dual sprocket, the operator can switch from high torque to high speed for operating in light crops at increased ground speed.

1. Rotate chain tensioner (A) until both holes are visible in the slot on the motor mount plate.

NOTE:

Some parts in the illustration have been removed or made transparent for clarity.

2. Remove bolt (B) from the upper hole.
3. Rotate the wrench upwards to fully lower chain tensioner (A).

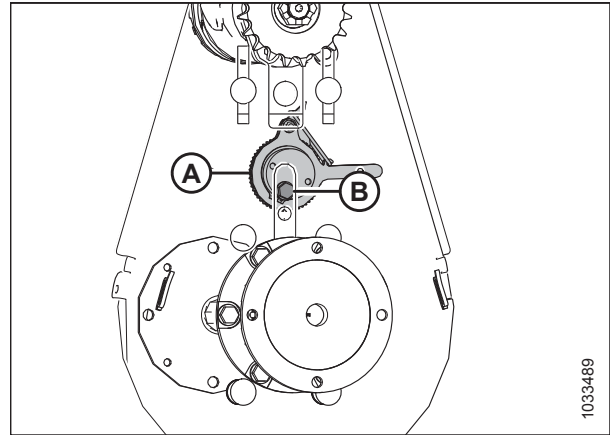


Figure 3.6: Chain Tensioner – View from Sprocket Side

NOTE:

Some parts in the illustration have been removed and some made transparent for clarity.

4. Remove chain tensioner (A) from the upper hole on the motor mount.
5. Install chain tensioner (A) in the lower hole on the motor mount plate and secure it with (B).
6. Retrieve sprocket (MD #273689), six bolts (MD #320192), and sprocket tool (MD #273594) from the kit.

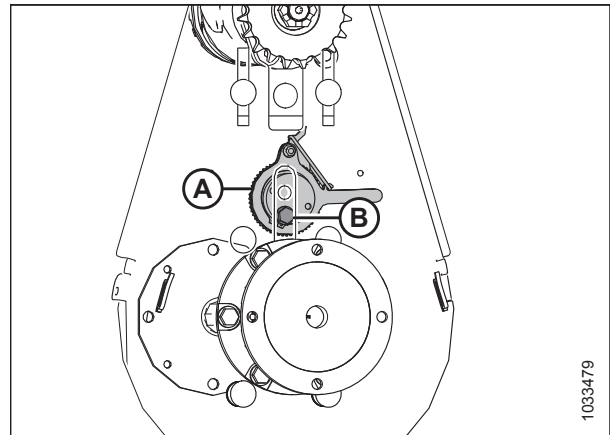


Figure 3.7: Chain Tensioner – View from Sprocket Side

INSTALLATION INSTRUCTIONS

7. Install both halves of sprocket (A) with the machined step facing the other sprocket.
8. Install six bolts (B), and tighten until they are snug.
9. Rotate the reel until the splits in the sprocket are vertical.
10. Wrap chain (D) around sprocket (A) to ensure halves are aligned.

NOTE:

Ensure chain is on the outside drive (top) sprocket (not shown).

11. Push down on the wrench to tension the chain.

NOTE:

To prevent damage to the reel drive motor, avoid excessive force on the wrench.

12. While maintaining tension on the chain, hold the reel from turning and tighten bolts (B).
13. Torque bolts (B) to 110 Nm (81 lbf·ft).
14. Use sprocket tool (C) to verify sprocket alignment. Check both sides of the sprocket. If required, loosen bolts to adjust sprocket then repeat Steps [12, page 11](#) and [13, page 11](#).

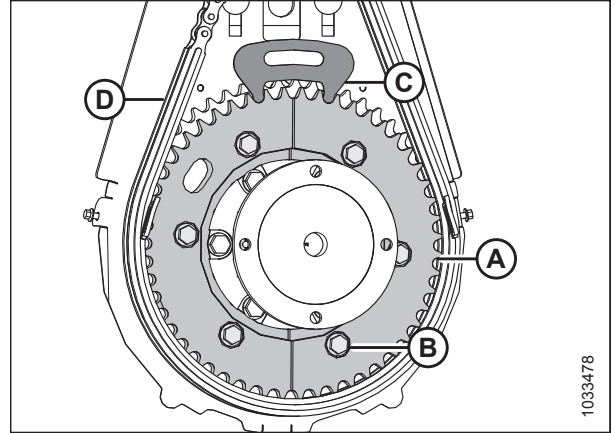


Figure 3.8: Driven Sprocket

3.4 Tightening Reel Drive Chain

A correctly tensioned drive chain ensures optimum power transfer while minimizing component wear.

IMPORTANT:

Do **NOT** loosen the motor mount, it is factory-adjusted and secured together with Belleville washers. Chain tension is adjusted without loosening the drive mounting bolts.

1. Place wrench (A) onto chain tensioner (B).
2. Rotate wrench (A) downward until the chain is tight.

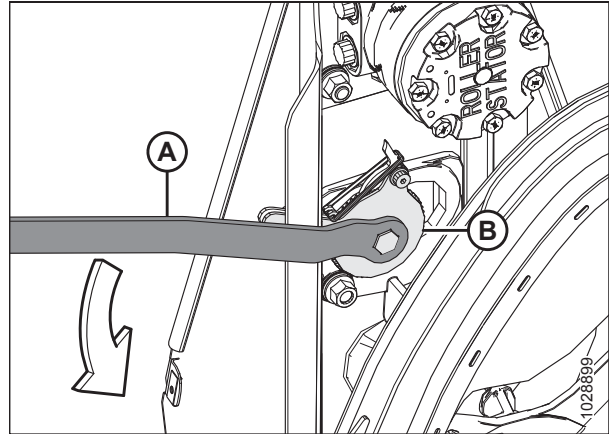


Figure 3.9: Reel Drive

IMPORTANT:

There should be approximately 38 mm (1 1/2 in.) of play on one side (A) of the chain, while it is tight on the other side (B). This level of tension and play in the chain is required to skip one notch on the chain tightener.

4. Once the chain is tight, rotate the wrench upward to properly engage the teeth from the lock/latch into the tightener teeth. If the tightener will not skip a tooth before tightening, do **NOT** force the tightener to the next notch.

IMPORTANT:

Do **NOT** overtighten the chain. If overtightened, the chain will put excessive loads on the sprockets, causing motor bearings and/or other components to fail prematurely.

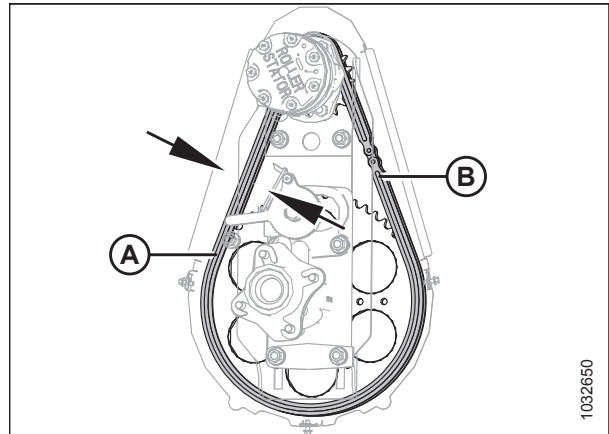


Figure 3.10: Reel Drive

5. Rotate the reel by hand to verify that the chain is still engaged properly on all teeth on lower sprocket (A). To prevent damaging components, ensure the chain does not get too tight as the reel is rotated.
6. Return the wrench to the storage position.
7. Close the left endshield. For instructions, refer to the header operator's manual.

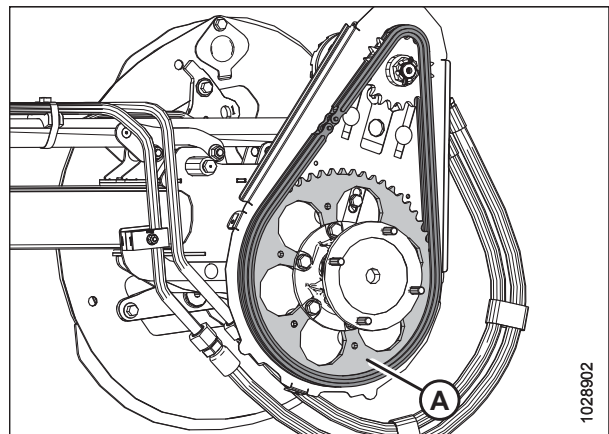


Figure 3.11: Reel Drive

3.5 Installing Reel Drive Cover

The reel drive cover protects the drive components from weather and debris.

1. Position lower drive cover (B) onto the reel drive, and secure with three bolts (A).

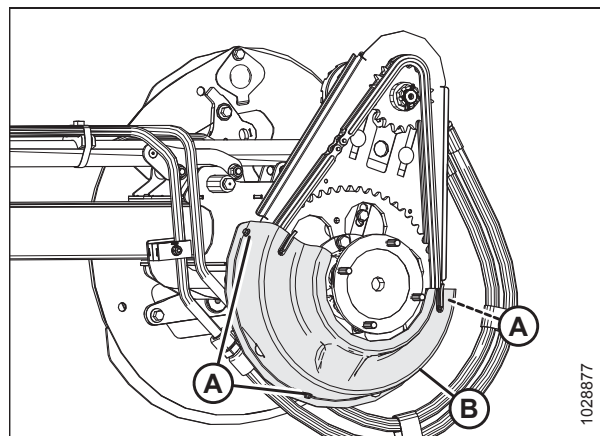


Figure 3.12: Lower Drive Cover

2. Position upper cover (A) onto the reel drive, and secure in place using two clips (B) on the lower cover.

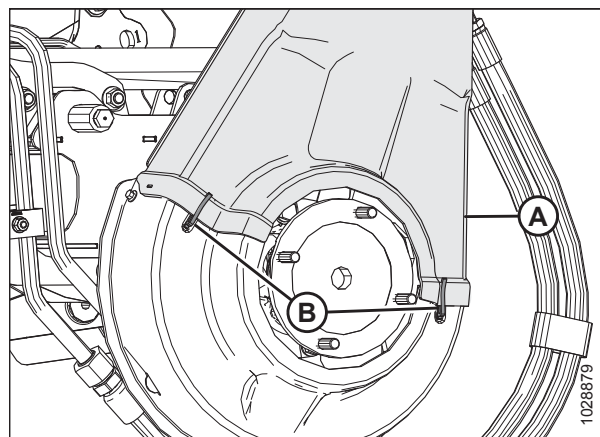


Figure 3.13: Upper Drive Cover

3. Rotate spring latch (A) down to secure the upper cover to the reel drive. Ensure V-shaped loop (C) points down, and the spring end remains inserted into back plate hole (B) on both sides of the reel drive.

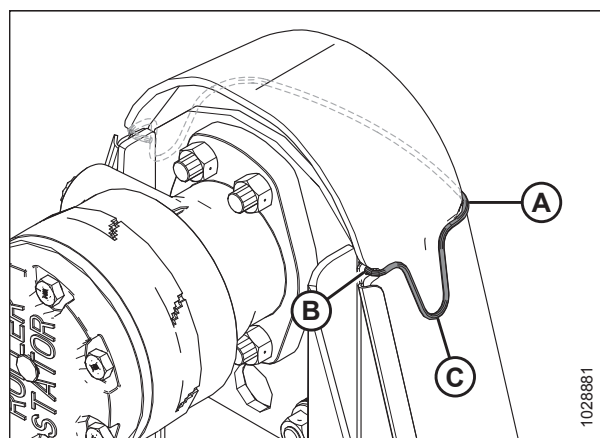


Figure 3.14: Reel Drive

MacDon Industries Ltd.

680 Moray Street
Winnipeg, Manitoba
Canada R3J 3S3
t. (204) 885 5590 f. (204) 832 7749

MacDon, Inc.

10708 N. Pomona Avenue
Kansas City, Missouri
United States 64153-1924
t. (816) 891 7313 f. (816) 891 7323

MacDon Australia Pty. Ltd.

A.C.N. 079 393 721
54 National Boulevard, Campbellfield, Victoria,
Australia 3061
t. +61 3 8301 1911 f. +61 3 8301 1912

MacDon Brasil Agribusiness Ltda.

Rua Grã Nicco, 113, Sala 404, B. 04
Mossunguê, Curitiba, Paraná
CEP 81200-200 Brasil
t. +55 41 2101 1713 f. +55 41 2101 1699

LLC MacDon Russia Ltd.

123317 Moscow, Russia
10 Presnenskaya nab, Block C
Floor 5, Office No. 534, Regus Business Centre
t. +7 495 775 6971 f. +7 495 967 7600

MacDon Europe GmbH

Edisonstrasse 63
Haus A, 12459 Berlin
Germany
t. +49 30 408 172 839

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