MacDon

D1 Series
Draper Header for M Series Windrowers

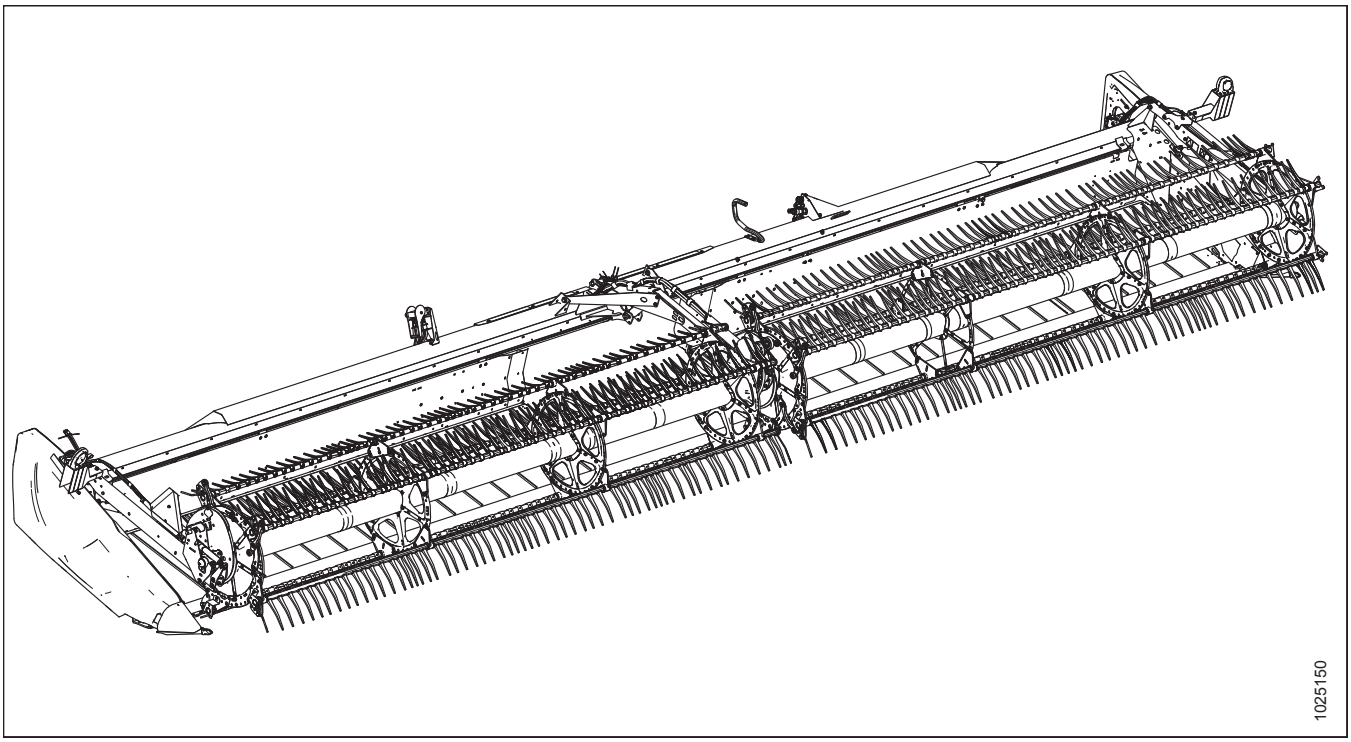
Unloading and Assembly Instructions (North America)

215649 Revision A

Original Instruction

The Harvesting Specialists.

D1 Series Draper Header for M Series Windrowers



Published September 2021.

Introduction

This manual contains unloading, assembly, and predelivery information for the MacDon D1 Series Draper Header for M Series Self-Propelled Windrowers.

To ensure the best performance of this product and the safety of your customers, carefully follow this unloading and assembly procedure.

Carefully read all the material provided before attempting to unload, assemble, or use the machine.

Retain this instruction for future reference.

Conventions

The following conventions are used in this document:

- Right and left are determined from the operator's position. The front of the header faces the crop.
- Unless otherwise noted, use the standard torque values provided in this manual.

NOTE:

Keep your MacDon publications up-to-date. The latest version can be downloaded from our website (*www.macdon.com*) or from our Dealer portal (*https://portal.macdon.com*) (login required).

If the shipment is damaged or is missing parts, contact *shortageanddamage@macdon.com*.

This document is currently available in English only.

Summary of Changes

At MacDon, we're continuously making improvements: 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
Introduction, page i	Added damaged/missing parts statement.	Technical Publications
4.3 Adding Tire Ballast, page 49	Clarified considerations to take into account when adding ballast fluid to the windrower's caster tires.	Technical Publications
5.1 Checking Tire Pressure – Transport and Stabilizer Wheels, page 51	Revised pressure recommendations, added safety note, revised hazard statement.	Product Engineering
5.5.1 Checking and Tensioning Single and Untimed Double-Knife Drive Belts, page 58	Added endshield opening and closing steps.	Technical Publications
5.5.2 Checking and Tensioning Timed Double-Knife Drive Belts, page 60	Added endshield opening and closing steps.	Technical Publications
5.8 Checking and Adjusting Draper Seal, page 70	Procedure now instructs the reader to repeat the height adjustment steps for each deck support. Added reel safety prop engage and disengage steps.	Technical Publications
5.12.2 Adjusting Reel Clearance, page 80	Added distinct procedures for single reel and double reel headers. Added steps for engaging and disengaging the reel safety props.	Technical Publications
5.14 Checking Manuals, page 86	Added endshield opening and closing steps.	Technical Publications
5.13 Checking Grease Points, page 83	Replaced greasing procedure.	Technical Publications
6.1.1 Adjusting Knife, page 89	Added specification for the gap between the knifehead and the pitman arm.	Technical Publications
Predelivery Checklist, page 103	Added instruction to check for quick cards. Clarified procedure.	Technical Publications

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

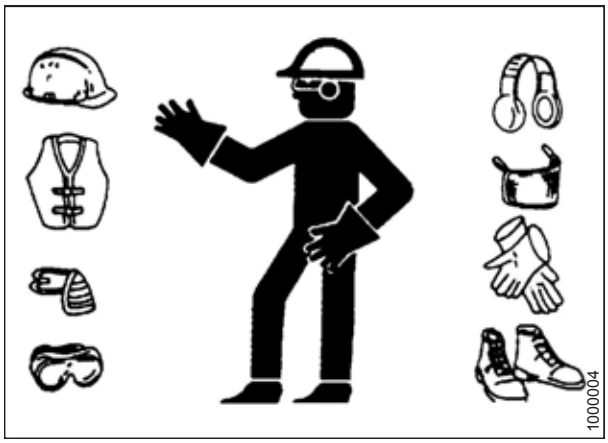


Figure 1.1: Safety Equipment

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.

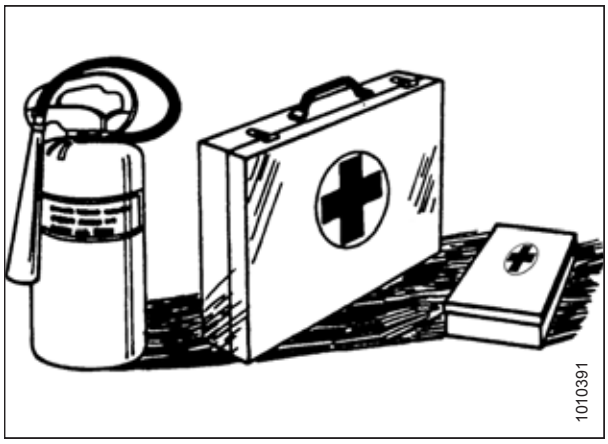


Figure 1.3: Safety Equipment

- 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.

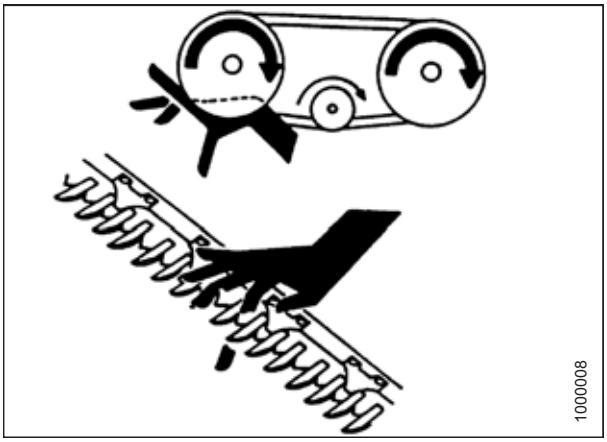


Figure 1.5: Safety around Equipment

- 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

1.3 Welding Precaution

To prevent damage to sensitive electronics, welding should never be attempted on the header while it is connected to a windrower.

WARNING

Severe damage to sensitive, expensive electronics can result from welding on the header while it is connected to the windrower. It can be impossible to know what effect high current could have with regard to future malfunctions or shorter lifespan. It is very important that welding on the header is not attempted while the header is connected to the windrower.

If it is unfeasible to disconnect the header from the windrower before welding, refer to the windrower's technical manual for welding precautions detailing all electrical components that must be disconnected first for safe welding.

1.4 Safety Signs

Safety signs are decals placed on the machine where there is a risk of personal injury, or where the Operator should take extra precautions before operating the controls. They are usually yellow.

- Keep safety signs clean and legible at all times.
- Replace safety signs that are missing or illegible.
- If the original part on which a safety sign was installed is replaced, ensure that the repair part displays the current safety sign.

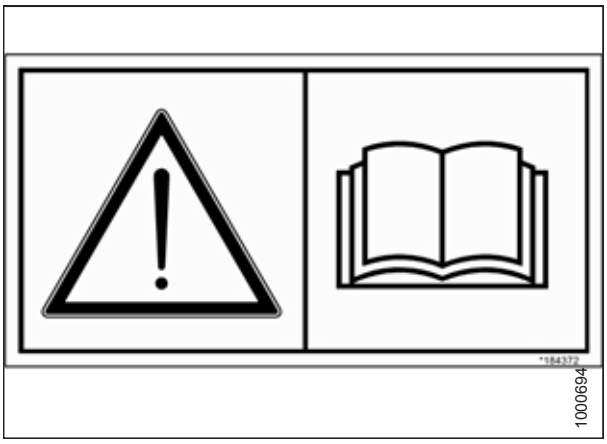


Figure 1.7: Operator's Manual Decal

Chapter 2: Unloading Header

Unload all header parts before beginning assembly. Carefully follow these procedures in the order in which they are presented.

2.1 Unloading Header from Trailer

Ensure that you use a forklift which meets the minimum length and capacity requirements when unloading the header.

DANGER

To prevent injury to bystanders caused by being struck by machinery, do NOT allow people to stand in the unloading area.

DANGER

The equipment used for loading or unloading a header must meet or exceed the requirements specified in this document. Using inadequate equipment may result in chain breakage, vehicle tipping, machine damage or bodily harm to operators or bystanders.

IMPORTANT:

For lifting equipment requirements, refer to *7.2 Header Specifications for Unloading and Assembly, page 99*.

1. Move the trailer into position and block the trailer wheels.
2. Lower the trailer storage stands.
3. Approach the header and slide forks (A) through four forklift brackets (B) underneath the shipping support. Insert the forks as far as possible without contacting the shipping support of second header (C).

   IMPORTANT:

   Avoid lifting the second header. Ensure that the forks do not interfere with the shipping frame.

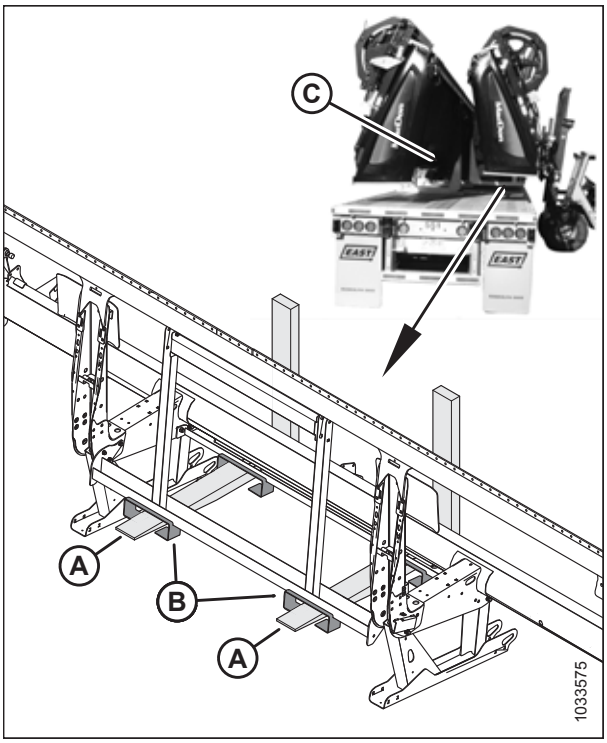


Figure 2.1: Header Shipping Supports

4. Take the header to the storage or setup area. Ensure that the ground is flat and free of rocks or debris that could damage the header.
5. Lower the header to the ground.

6. Unload the second header. Refer to Steps *2, page 7* to *5, page 7* for instructions.
7. Check the unloaded headers for damage and missing parts.

2.2 Lowering Header to Field Position

The procedure for lowering the header differs depending on whether the header has a single or double reel.

To lower the header, follow the relevant procedure:

- **Single-reel headers:** refer to *2.2.1 Lowering Single-Reel Header, page 9*.
- **Double-reel headers:** refer to *2.2.2 Lowering Double-Reel Header, page 12*.

2.2.1 Lowering Single-Reel Header

Lower the header to the field position to prepare it for assembly and setup.

IMPORTANT:

For information on lifting equipment requirements, refer to *7.2 Header Specifications for Unloading and Assembly, page 99*.

1. Approach the header from its underside and place the forklift forks under the top bar of shipping frame (A).
2. Attach chain (B) at each end of the shipping frame and secure the other end of the chain to the lifting vehicle.

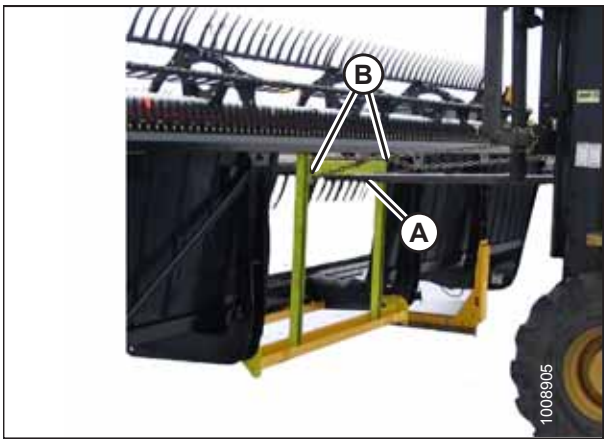


Figure 2.2: Shipping Frame

CAUTION

Stand clear when lowering the header; the machine may sway from side to side.

3. Back the forklift up **SLOWLY** while lowering the forks until the header is just above the ground, as shown in the numbered steps in the illustration.

Figure 2.3: Lowering the Header

4. Place 150 mm (6 in.) blocks (A) under each end and at the center of the cutterbar, then lower the header onto the blocks.
5. Remove the chain and move the lifting vehicle to the rear of the header.

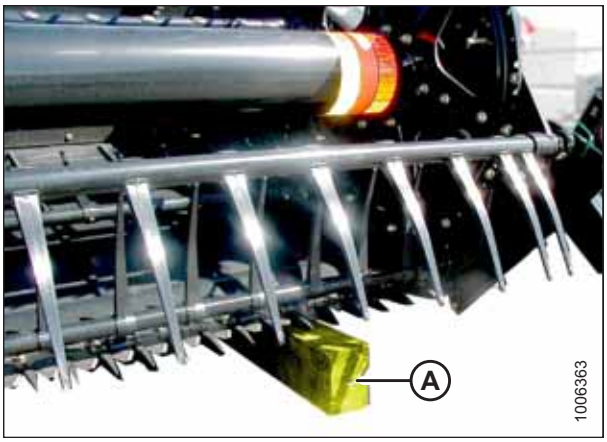


Figure 2.4: Block under Cutterbar

6. Attach the chain to center-link anchor (A) on the frame tube and raise the rear of the header so that the stand can be lowered.

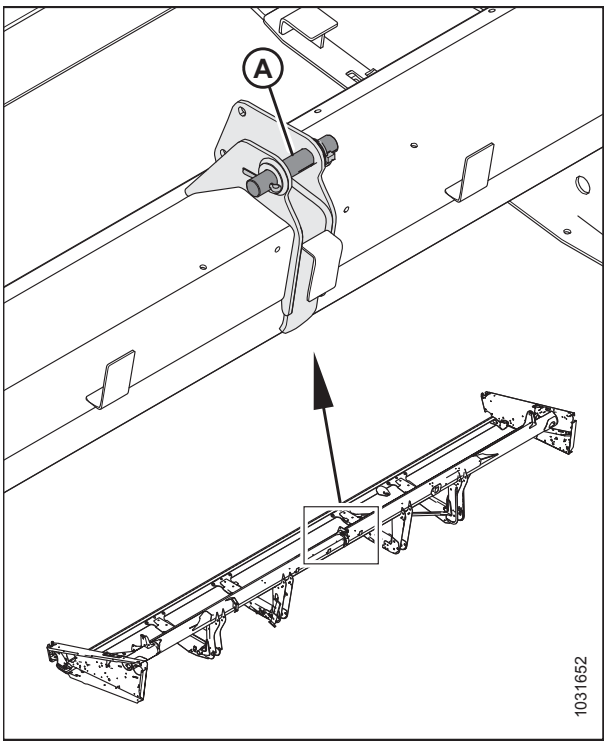


Figure 2.5: Center-link Anchor – Single-Reel

7. To lower the header stand: pull pin (A), gently lower stand (B) to the desired height, and then release pin (A) again to lock the stand at that height.

   NOTE:

   If the ground is soft, place a block under the stand.

8. Lower the forklift forks so that the weight of the header is supported by the stand.

9. Remove the chain.

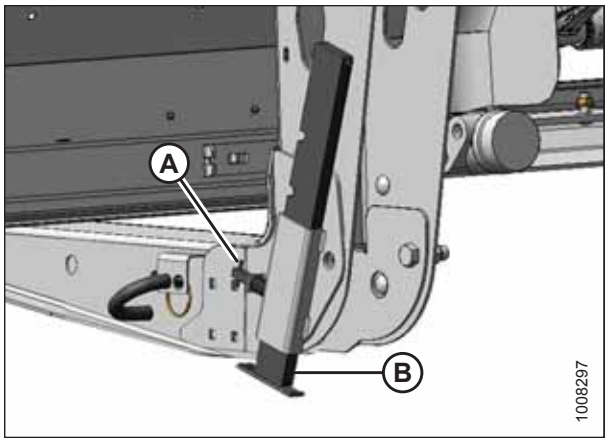


Figure 2.6: Header Stand

2.2.2 Lowering Double-Reel Header

Lower the header to the field position to prepare it for assembly and setup.

IMPORTANT:

For information on the lifting equipment requirements, refer to *7.2 Header Specifications for Unloading and Assembly, page 99*.

1. Orient the forklift so that you are approaching the header from its underside.

Figure 2.7: Underside of Header

2. Attach a chain to shipping support (A) at the center reel arm.

   IMPORTANT:

   Do **NOT** lift the header at this location. The purpose of this procedure is to lay the header into its working position.

   NOTE:

   The right reel has been removed for the sake of clarity.

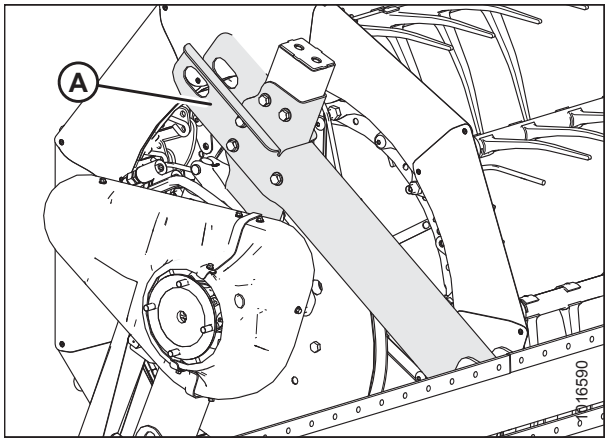


Figure 2.8: Shipping Support

CAUTION

Stand clear when lowering the header; the machine may sway from side to side.

3. Back the forklift up **SLOWLY** while lowering the forks until the header is just above the ground, as shown in the numbered steps in the illustration.

Figure 2.9: Lowering the Header

4. Place 150 mm (6 in.) blocks (A) under each end of the header, and one block at the center of the cutterbar. Lower the header onto the blocks.
5. Remove the chain and move the forklift to the rear of the header.

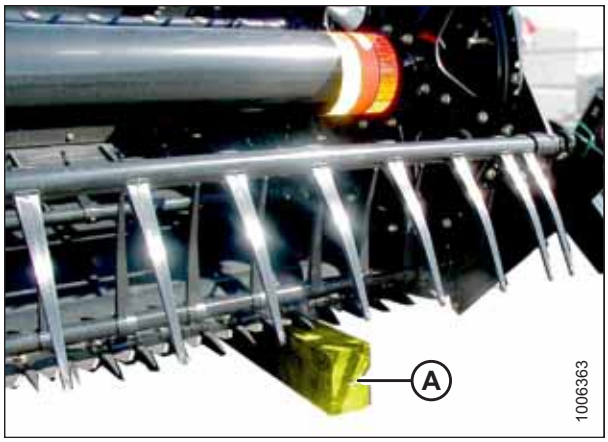


Figure 2.10: Block under Cutterbar

6. Attach the chain to center-link anchor (A) on the frame tube and raise the rear of the header so that the stand can be lowered.

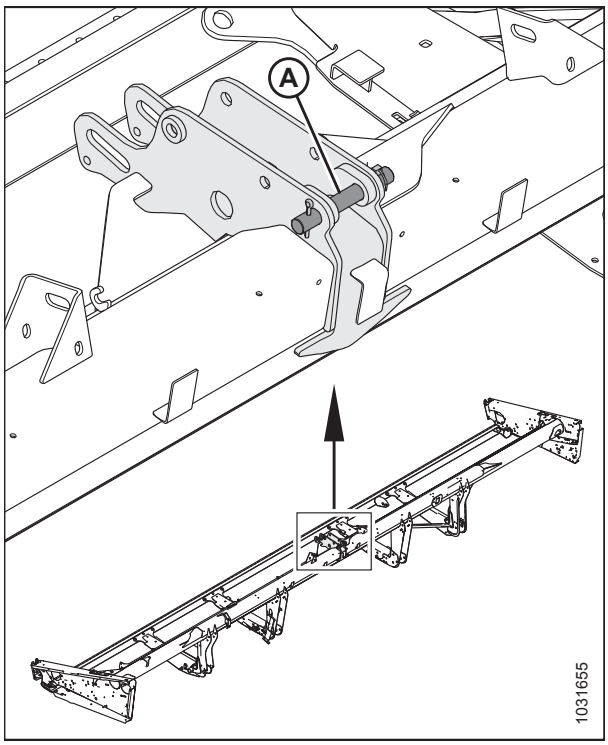


Figure 2.11: Center-Link Anchor – Double-Reel

7. To lower the header stand: pull pin (A), gently lower stand (B) to the desired height, and then release pin (A) again to lock the stand at that height.

   NOTE:

   If the ground is soft, place a block under the stand.

8. Lower the header onto the stand.
9. Remove the chain.

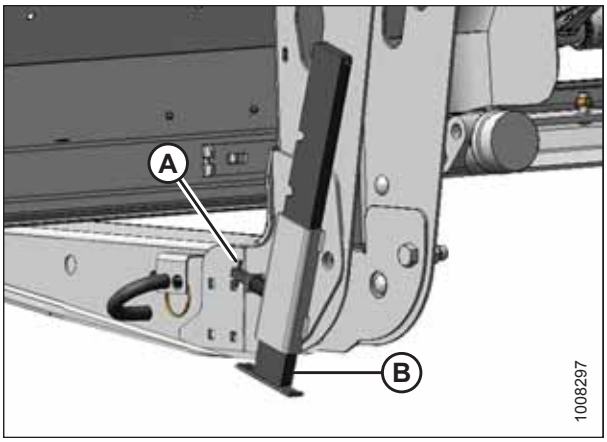


Figure 2.12: Header Stand

2.3 Removing Shipping Supports

Once the header has been lowered, the shipping supports must be removed to prepare the header for assembly.

NOTE:

Unless directed otherwise, discard all shipping materials and hardware.

1. Cut the straps securing draper header supports (A) to the shipping support. Remove the draper header supports and set them aside.

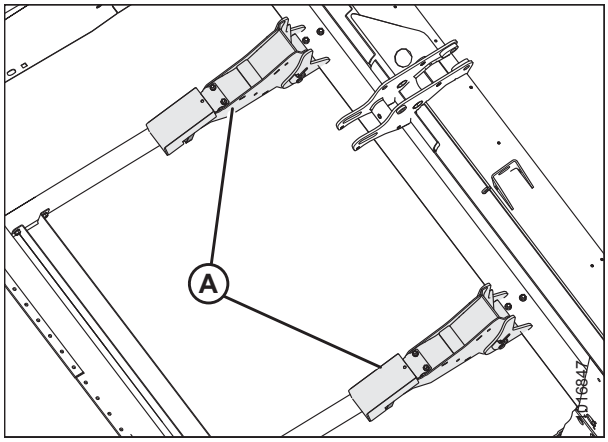


Figure 2.13: Draper Header Supports and Shipping Supports

2. **Single reel headers only:** Cut banding (A) securing the reel to the cutterbar and backtube.

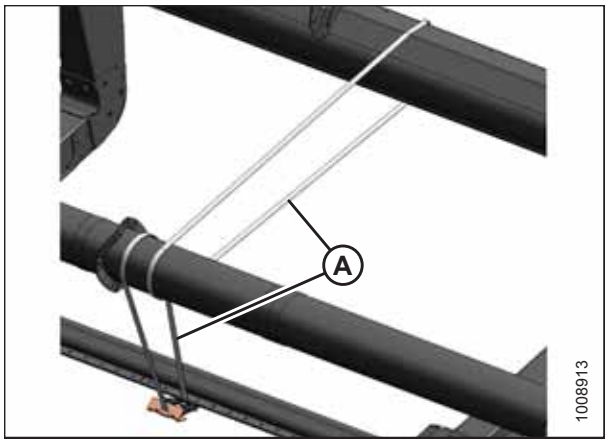


Figure 2.14: Single Reel

3. Locate upper support (B).
4. Remove bolts (A). Remove upper support (B).

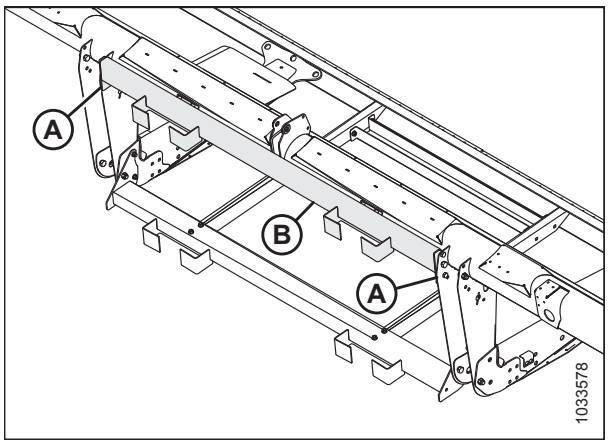


Figure 2.15: Upper Support

5. Locate lower support (B).
6. Remove bolts (A). Remove lower support (B).

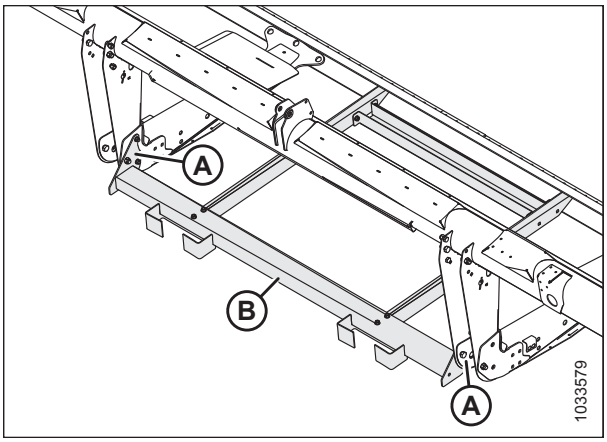


Figure 2.16: Lower Support

7. Remove bolts (A) from the left shipping stand. Remove the shipping stand.
8. Repeat the previous step to remove the right shipping stand.

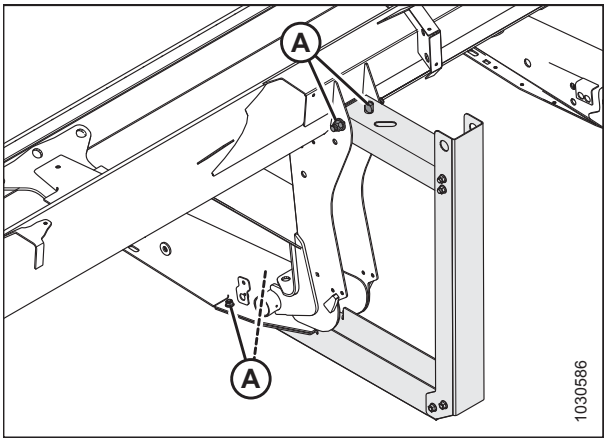


Figure 2.17: Outer Leg Shipping Support for D130, D135, and D140

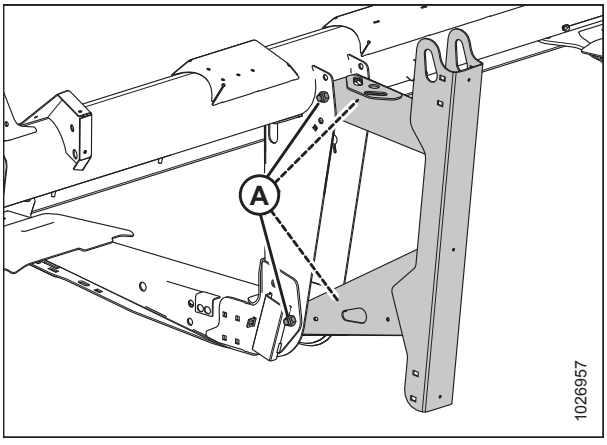


Figure 2.18: Outer Leg Shipping Support – D115, D120, and D125

9. Remove reel anti-rotation brace (A) from between the reel and the endsheet.

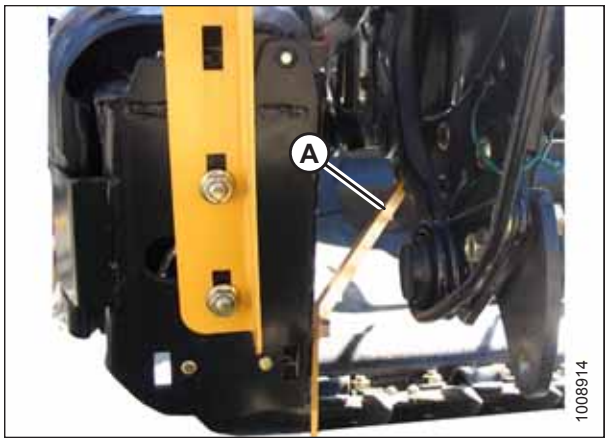


Figure 2.19: Anti-Rotation Brace

10. On the left side of the header, cut and remove wire (A) securing the endshield to the panel.
11. Repeat the previous step to remove the wire from the endshield on the right side.
12. Loosen two nuts (B).
13. Slide shipping support (C) backward and remove it.
14. Tighten nuts (B).

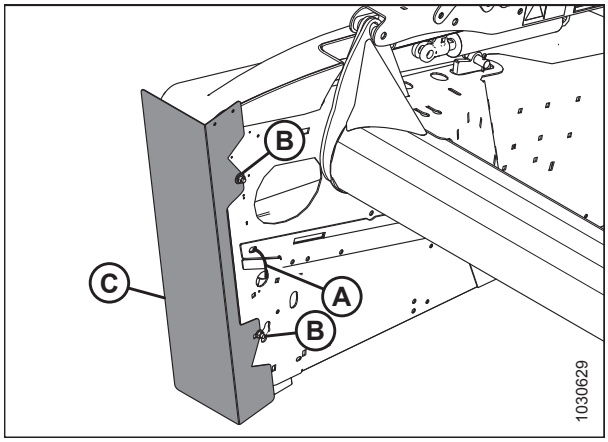


Figure 2.20: Left Endsheet Shipping Support

15. At the right side of the header, loosen two nuts (A).
16. Slide shipping support (B) backward to remove it.
17. Tighten nuts (A).

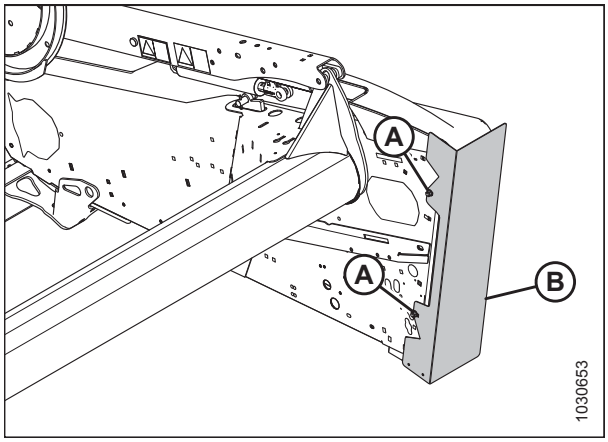


Figure 2.21: Right Endsheet Shipping Support

Chapter 3: Assembling Header

Once the header has been unloaded and the shipping supports have been removed, the header is ready for assembly.

3.1 Attaching Reel-Lift Cylinders

Several shipping supports must be removed before the reel-lift cylinders can be attached to the reel arms.

CAUTION

Tagged bolts (A) on the reel arms keep the reel from sliding forward. Ensure that the fore-aft cylinders are attached before removing the bolts.

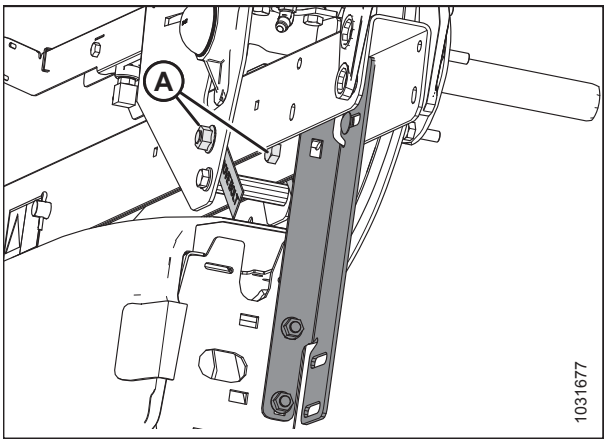


Figure 3.1: Reel Right Arm – Single Reel

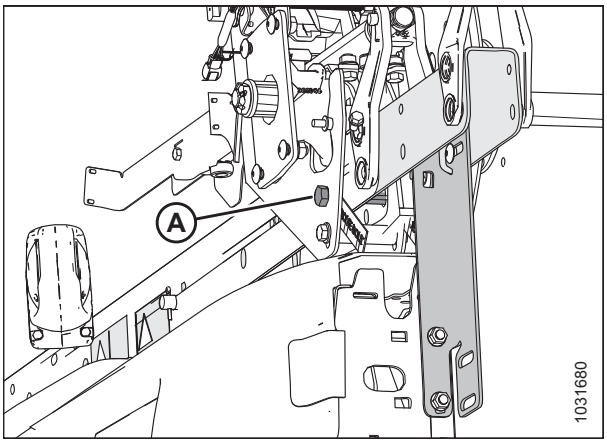


Figure 3.2: Reel Right Arm – Double Reel

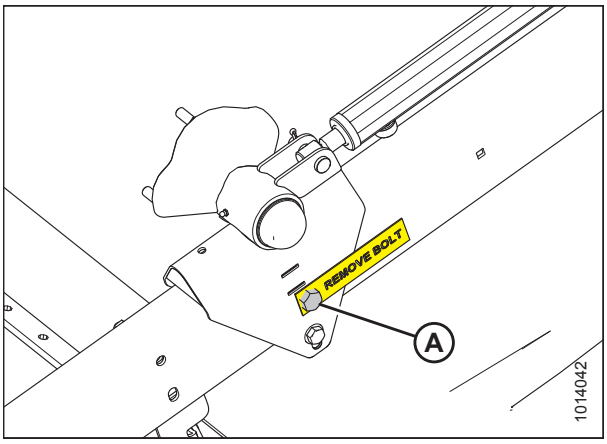


Figure 3.3: Left Reel Arm

NOTE:

Some parts have been removed from the illustration for the sake of clarity.

1. Position sling (A) around reel tube (B) close to the outboard end of the reel. Attach the sling to a forklift or an equivalent lifting device.
2. Remove the shipping wire or banding (whichever is present) from the reel-lift cylinder.

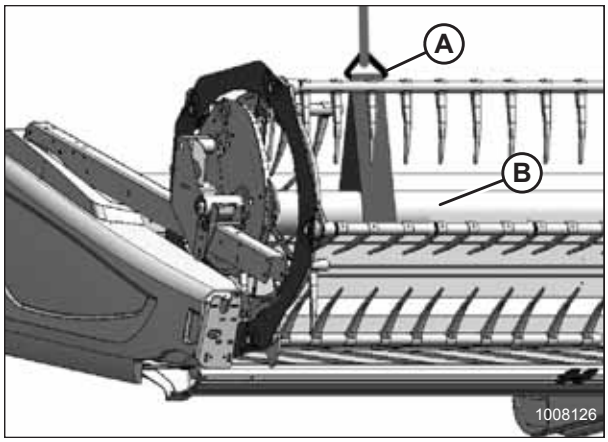


Figure 3.4: Reel Tube

3. Support the reel with a lifting device, and remove top bolts (A) on right outboard reel arm supports (B).
4. Repeat the previous step to remove the top bolts from the left outboard reel arm supports.

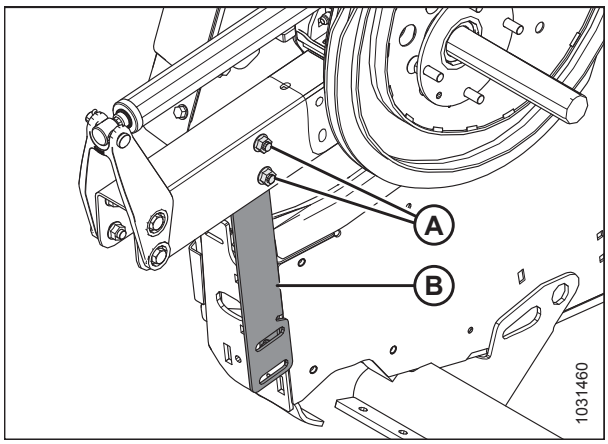


Figure 3.5: Outboard Reel Arm Support

5. **Double-reel headers only:** Support the reel with a lifting device, and remove two top bolts (A) from center reel arm shipping support (B) to allow the center reel arm to move.

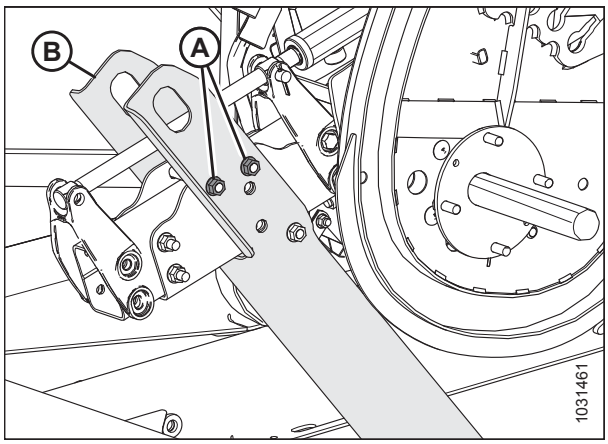


Figure 3.6: Center Reel Arm – Double Reel Only

6. Support the reel with a lifting device, and remove the pins from the endsheet and the reel arm.
7. Align the reel-lift cylinder mounting holes with the lug on the endsheet and the hole in the reel arm.
8. Secure the cylinder to the endsheet and the reel arm with pins as follows:
   - Insert clevis pin (A) as shown. Secure it with a cotter pin placed **OUTBOARD** of the reel arm.
   - Insert clevis pin (B) as shown. Secure it with a cotter pin placed **INBOARD** of the endsheet.

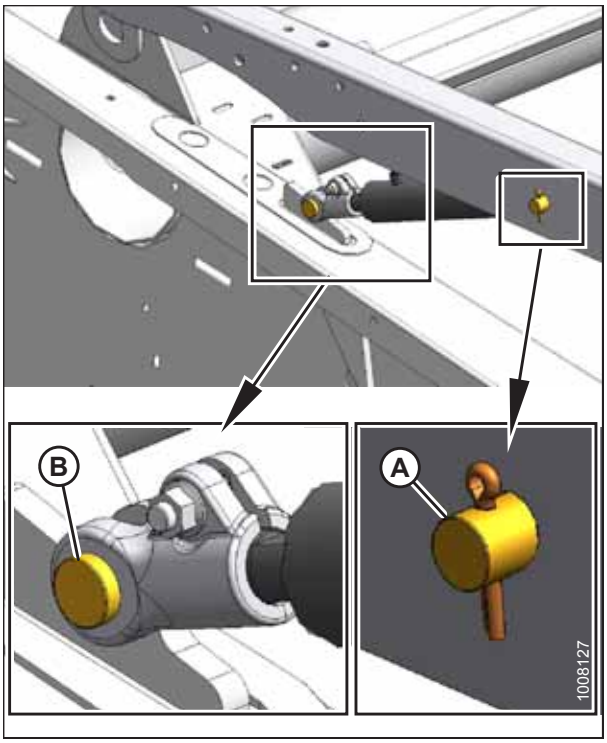


Figure 3.7: Right reel-lift Cylinder

9. Move reel safety props (A) to engaged position (B) on the outer arm.

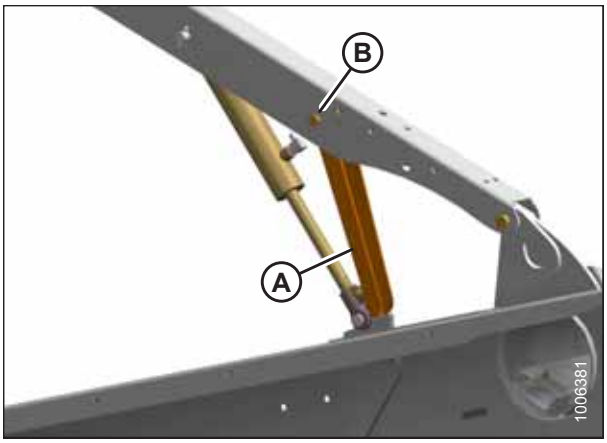


Figure 3.8: Reel Safety Props

10. ***Double reel headers only:***

    a. Position sling (A) around the reel tube near the reel center support arm.

    b. Lift the reel to gain access to the center lift cylinder.

    c. Remove any shipping wire or banding from the center reel-lift cylinder.

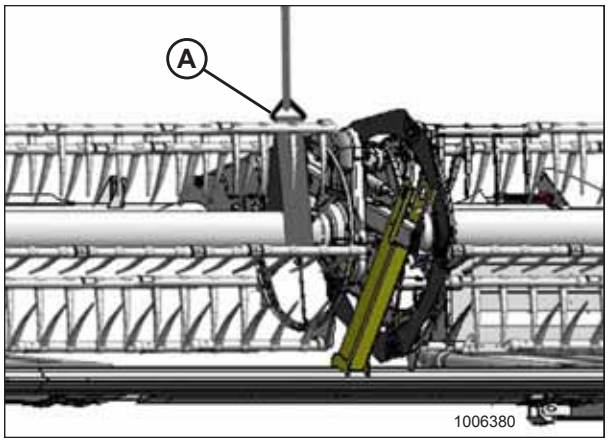


Figure 3.9: Lifting the Reel – Double Reel Only

11. ***Double reel headers only:***

    a. Remove the bolt and nut from the cylinder rod end. Retain the hardware for reinstallation.

    b. Attach the rod end of cylinder (B) to the reel arm with retained bolt and nut (A). Access the hardware through the holes in the reel arm braces.

    c. Torque bolt and nut (A) to 58 Nm (43 lbf·ft).

    d. Remove the pin at the barrel end of the cylinder.

    e. Adjust the reel height so that the pin can be installed at the barrel end of the cylinder.

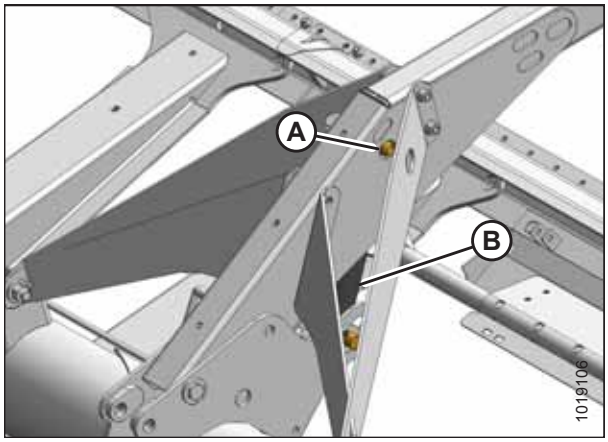


Figure 3.10: Reel Arm Braces

12. Reposition sling (A) around the reel tube near the opposite outboard reel arm.

13. Remove any shipping wire or banding from the reel-lift cylinder.

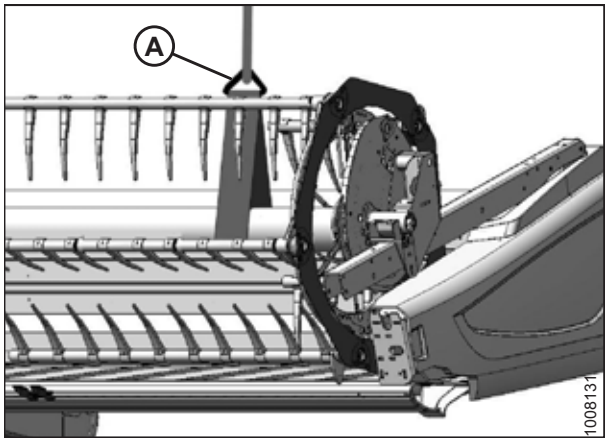


Figure 3.11: Outboard Reel Arm

14. Lift the reel and remove the pins from endsheet (B) and reel arm (A).
15. Align the reel-lift cylinder mounting holes with the lug on the endsheet and the hole in the reel arm.
16. Secure the cylinder to the endsheet and to the reel arm with pins as follows:
    - Insert clevis pin (A) as shown. Secure it with a cotter pin placed **OUTBOARD** of the reel arm.
    - Insert clevis pin (B) as shown. Secure it with a cotter pin placed **INBOARD** of the endsheet.

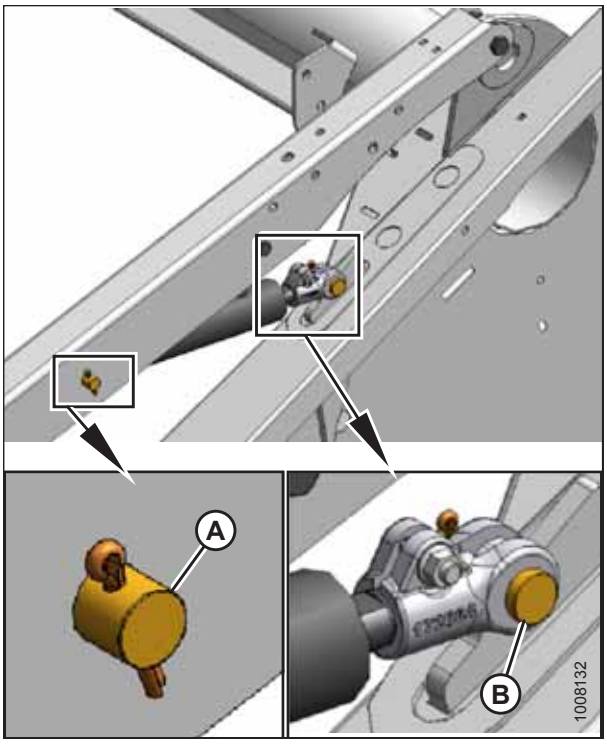


Figure 3.12: Left reel-lift Cylinder

17. Move reel safety props (A) to engaged position (B).

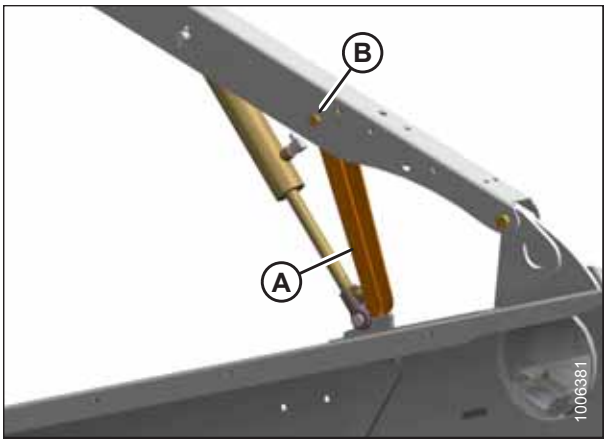


Figure 3.13: Reel Safety Prop

18. **Double reel headers only:** Remove bolt (A), disengage center reel arm shipping support (B) from the cutterbar, and remove the shipping support.

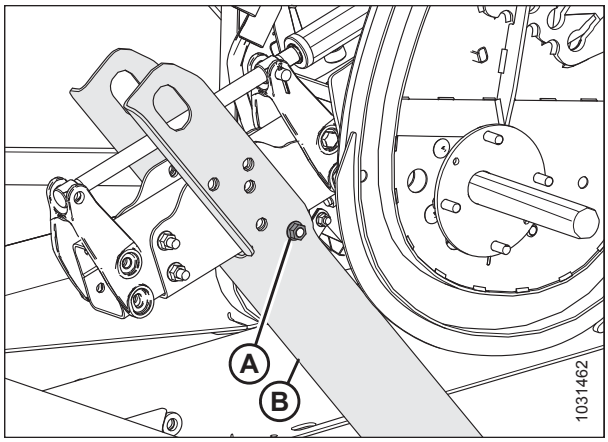


Figure 3.14: Center Reel Arm Shipping Support

19. Remove bolts (A) from left reel arm support (B) at the endsheet. Remove the support.
20. Repeat the previous step to remove the right reel arm support.

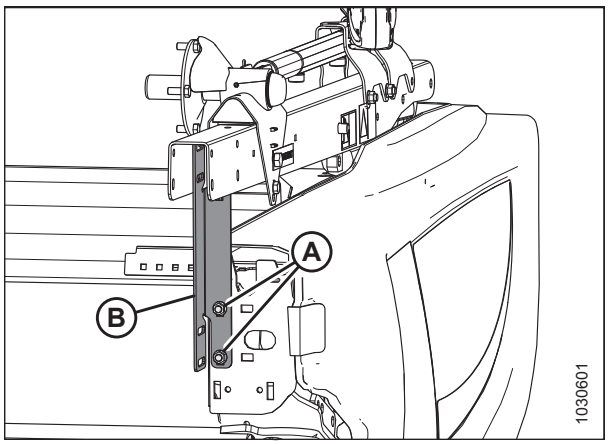


Figure 3.15: Outboard Reel Arm Supports

21. Remove brace bolts and tags (A).

    IMPORTANT:

    Do **NOT** use hydraulic pressure to move the fore-aft cylinder to aid the removal of the brace bolts. The cylinder could be damaged.

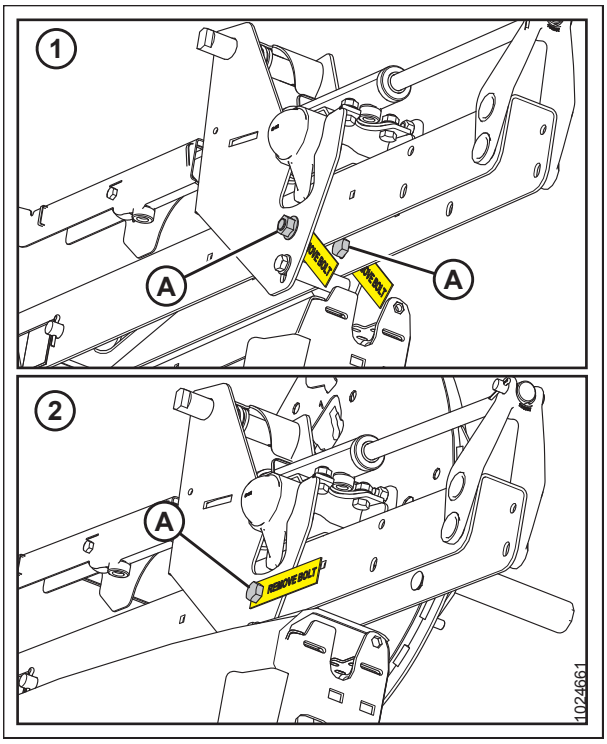


Figure 3.16: Right Reel Arm

1 - Single Reel **2 - Double Reel**

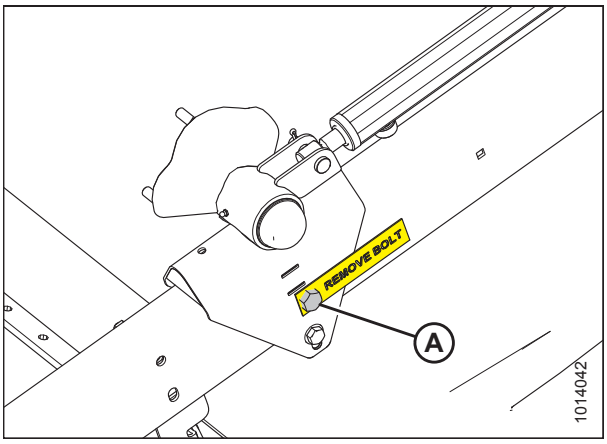


Figure 3.17: Left Reel Arm

22. **Double reel headers only:** Remove three bolts (A). Remove shipping channel (B).

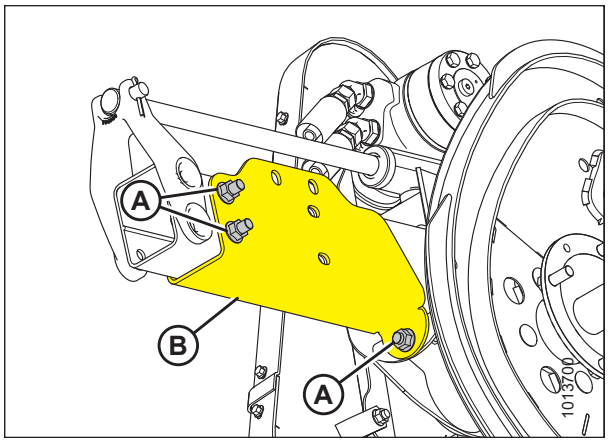


Figure 3.18: Center Reel Arm Shipping Channel – Double-Reel Only

3.2 Positioning Transport Lights

Transport lights are located on each outboard reel arm. The header is shipped with the transport lights in an inverted position on the inboard sides of the reel arms.

1. Locate right light assembly (A).
2. Remove and retain lock nuts (B).
3. Remove right light assembly (A).

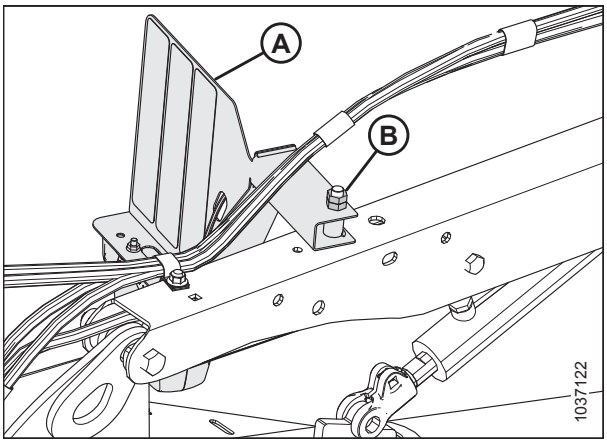


Figure 3.19: Right Light Assembly in Shipping Position

4. Position right light assembly (A) perpendicular to the right reel arm as shown and attach it using retained lock nuts (B).

   NOTE:

   The light assembly should be able to rotate when hand force is applied, yet maintain its position when no force is being applied.

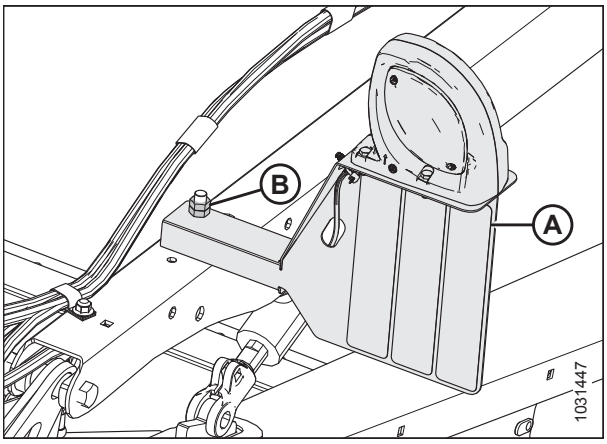


Figure 3.20: Right Transport Light

5. Locate left light assembly (B).
6. Remove and retain lock nuts (A).
7. Remove left light assembly (B).

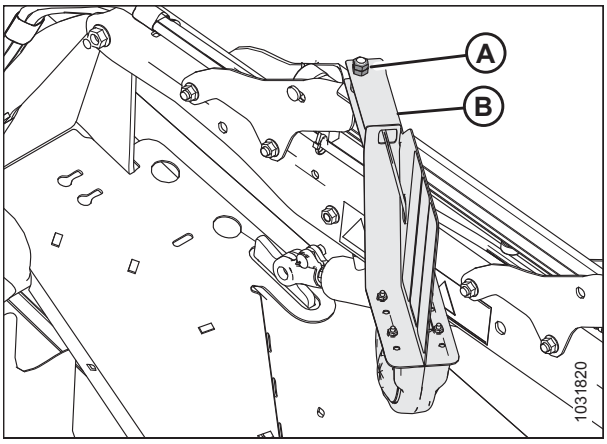


Figure 3.21: Left Light Assembly in Shipping Position

8. Position left light assembly (B) perpendicular to the left reel arm as shown and attach it using retained lock nuts (A).

   NOTE:

   The light assembly should be able to rotate when hand force is applied, yet maintain its position when no force is being applied.

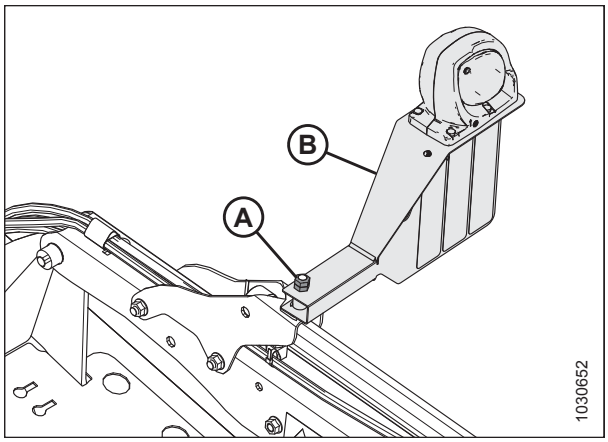


Figure 3.22: Left Transport Light

3.3 Attaching Cam Arms

The header's cam arms must be installed before the reel can be operated.

NOTE:

On nine-bat reel headers, one cam arm assembly will have been removed and secured to the tine tube for shipping purposes.

1. ***Nine-bat reel headers:*** Remove shipping wire and foam (A). Remove cam arm assembly (B) from the tine tube.

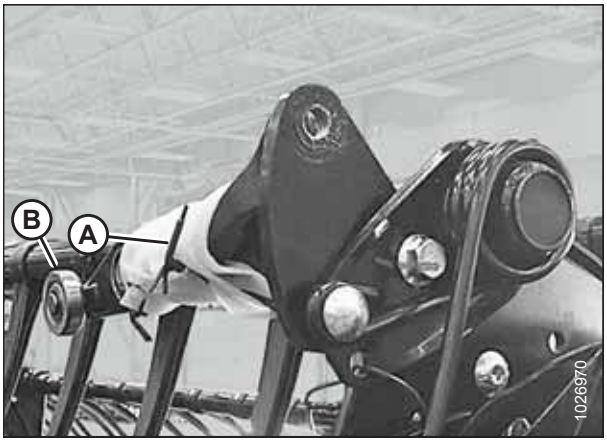


Figure 3.23: Cam Arm in Shipping Position

2. ***Nine-bat reel headers:*** Install cam arm assembly (A) onto arm (B), and secure it with 1/2 in. lock nut (C). Torque the nut to 75 Nm (55 lbf·ft).

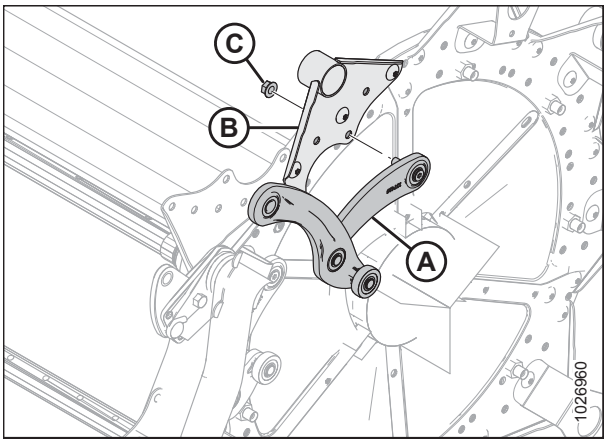


Figure 3.24: Cam Arm Assembly

3. Rotate the reel manually until the tine bars equipped with the disconnected cam links are accessible.
4. Remove shipping wire (A) (if it has not already been removed).

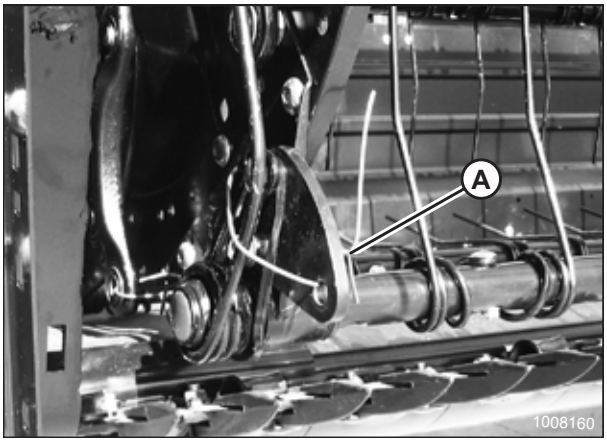


Figure 3.25: Disconnected Cam Links and Shipping Wire

5. Remove bag of hardware (A) from the tine bar.

   NOTE:

   The bag of hardware contains the hardware for the cam links and the endshields.

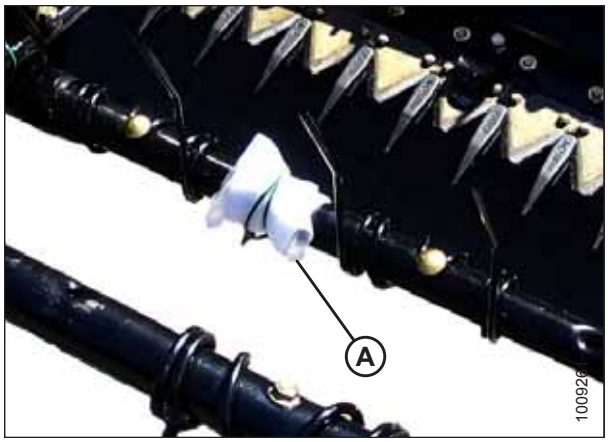


Figure 3.26: Hardware Bag attached to Right Reel

6. Rotate tine bar crank (A) and position link (B) so that the attachment holes in the tine bar's crank are aligned with the hole in the link.
7. Install bolt (C) in the link and position shim (D) on the bolt so that the shim sits **BETWEEN** link (B) and tine bar crank (A).

   IMPORTANT:

   Ensure that shim (D) is installed in the correct location to prevent damage to the bar crank.

   NOTE:

   The bolts in the hardware bag are precoated with threadlocker. Do not add more threadlocker when you are installing the bolts.
8. Realign link (B) and tine bar crank (A), and insert bolt (C).
9. Repeat Steps *6, page 30* to *7, page 30* for the remaining tine bars.
10. Torque the installed bolts to 165 Nm (120 lbf·ft).

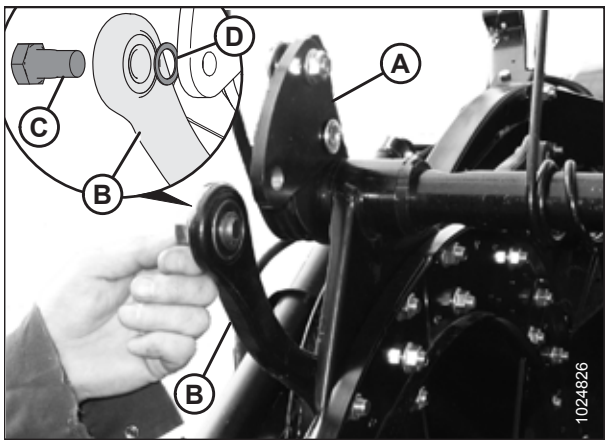


Figure 3.27: Bar Crank Attachment Holes and Link Alignment

3.4 Installing Crop Dividers

The crop dividers must be installed before the header can be operated. One crop divider and two divider rods are stored on the right inboard side of the endsheet, while the other crop divider is stored on the left inboard side of the endsheet.

1. Loosen the bolt at location (A) on the lock tab securing divider rods (B) to storage bracket (C).
2. Remove divider rods (B) from storage bracket (C). Pull the divider rods away from lower divider rod support (D). Set the divider rods aside.
3. Return the lock tab to its original position and tighten the bolt at location (A).

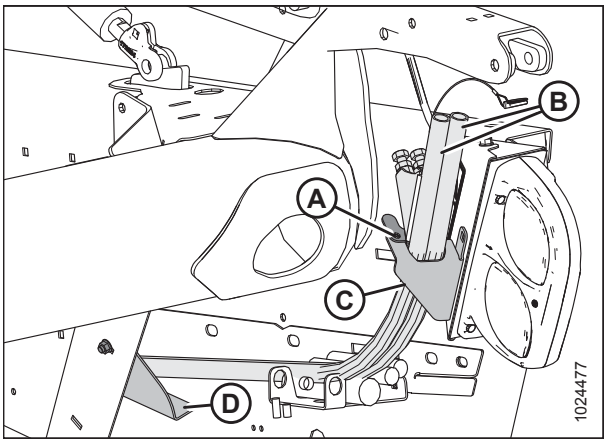


Figure 3.28: Divider Rods on Endsheet

4. While supporting the crop divider, remove shipping wire (A) at the front end, and then remove bolt (B).
5. Remove bolt and washer (C).

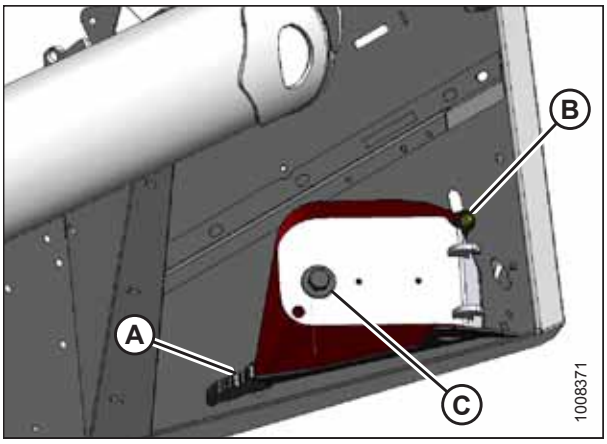


Figure 3.29: Crop Divider on Endsheet

6. Position the crop divider as shown. Insert lugs (A) into slots (B) in the endsheet.

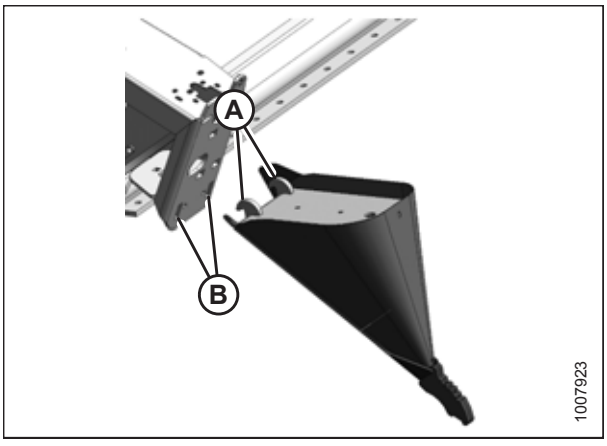


Figure 3.30: Crop Divider Lugs and Endsheet Slots

7. Lift the forward end of the divider up to the endsheet and install washer (A) and bolt (B).

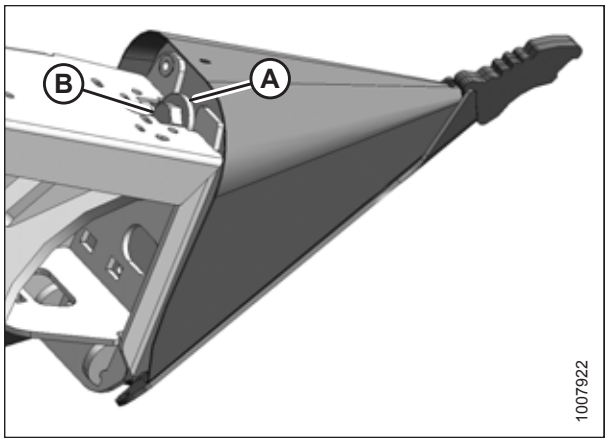


Figure 3.31: Crop Divider Installed

8. Position divider rod (B) on the tip of the crop divider as shown and tighten bolt (A).

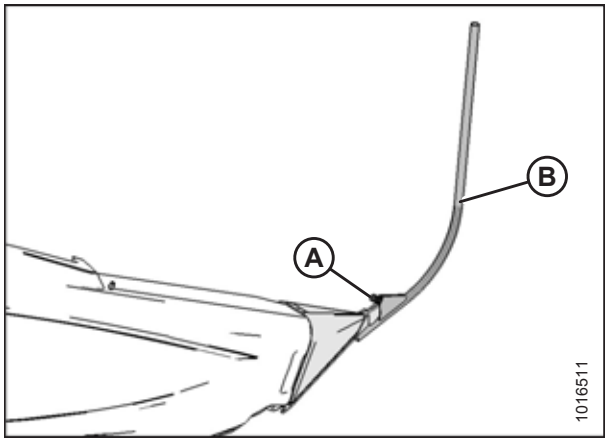


Figure 3.32: Divider Rod on Crop Divider

9. Ensure that the crop divider does **NOT** move laterally by pulling at the tip of the divider. Adjust bolts (A) as required to tighten the crop divider.
10. Repeat Step *4, page 31* to Step *9, page 32* to install the remaining crop divider.

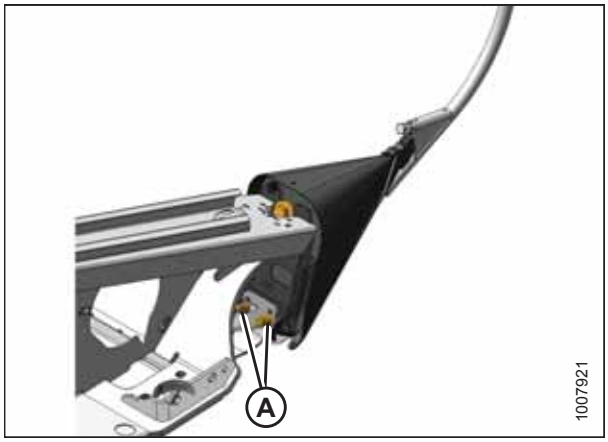


Figure 3.33: Adjustment Hardware

3.5 Installing Disc Segments of Outboard Reel Endshields

Two disc segments of the reel endshields may have been removed from the right reel (tail end) and left reel (cam end) for shipping purposes. They will need to be installed before the header can be operated.

1. The illustration shows reel endshield (A) with two disc segments removed. If the header you are assembling looks like this, then complete the rest of this procedure. If not, then proceed to *3.6 Installing Options, page 34*.

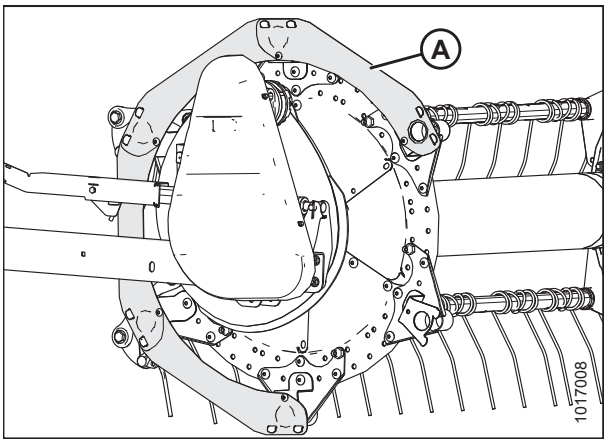


Figure 3.34: Reel Endshield – Cam End Shown; Tail End Similar

2. Retrieve the bag of hardware removed from the center draper support in *3.3 Attaching Cam Arms, page 29*.
3. Remove and retain two bolts (A).
4. Insert endshield support tabs (C) into the slots on disc segment (B).

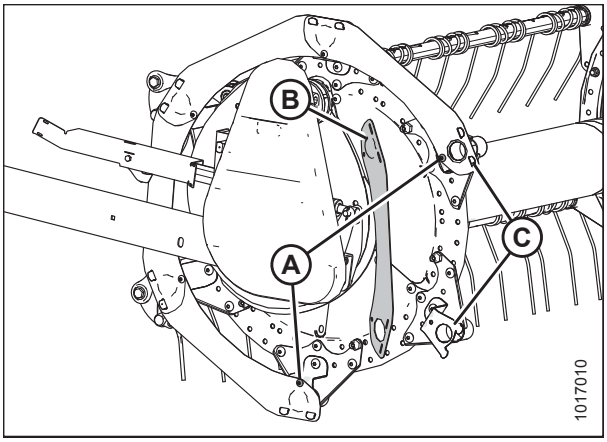


Figure 3.35: Reel Endshield

5. Secure the other end of the disc segment to the support with retained bolt (A).
6. Position last disc segment (B) in front of disc segment (C) and behind disc segment (D).

   NOTE:

   It may be necessary to loosen the hardware and use a prying tool to fit the last disc segment into place.
7. Ensure that the endshield support tabs are engaged with the slots on the disc segments. Secure the disc segments with bolts (E).
8. Repeat Steps *3, page 33* to *7, page 33* to install the disc segment on the other side of the header.

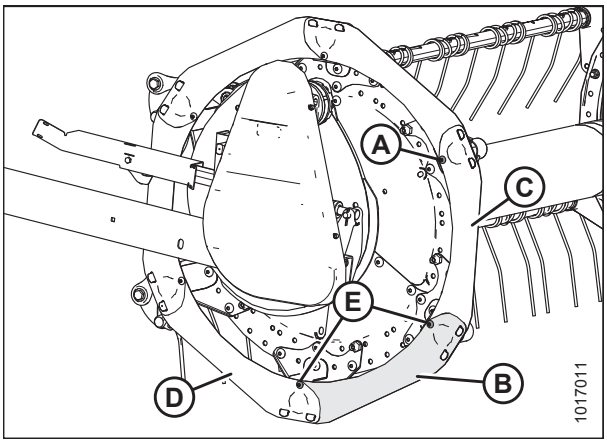


Figure 3.36: Reel Endshield

3.6 Installing Options

The header you are assembling may have shipped with optional kits. Install those kits now.

Retrieve the kits supplied as options with the header, and install them according to the instructions supplied with each kit.

Chapter 4: Attaching Header to Windrower

Once the header has been assembled and any optional kits installed, it can be attached to the windrower. Depending on the configuration of the header, there may be further setup procedures to complete.

DANGER

To prevent bodily injury or death from the unexpected startup of the machine, always stop the engine and remove the key before adjusting the machine.

IMPORTANT:

To avoid damaging the lift system when lowering the header lift linkages without a header or a weight box attached to the windrower, ensure that the float engagement pin is installed in storage location (B) and is **NOT** installed at hole location (A).

NOTE:

If the header supports supplied with the header are already installed on the windrower lift linkage, proceed to Step *6, page 36*.

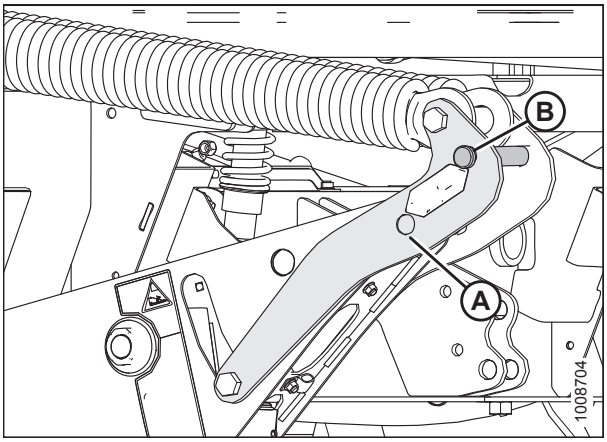


Figure 4.1: Header Float Linkage

1. Shut down the engine, and remove the key from the ignition.
2. Remove the hairpin on clevis pin (B). Remove clevis pin (B) from support (A).

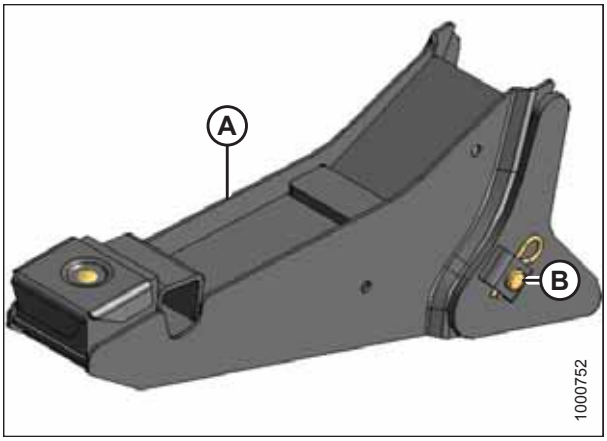


Figure 4.2: Header Support

3. Position support (B) on lift linkage (A) and reinstall clevis pin (C).

   NOTE:

   Clevis pin (C) may be installed from either side of the support.

4. Secure clevis pin (C) with hairpin (D).

5. Repeat Steps *2, page 35* to *4, page 36* to install the remaining lift linkage.

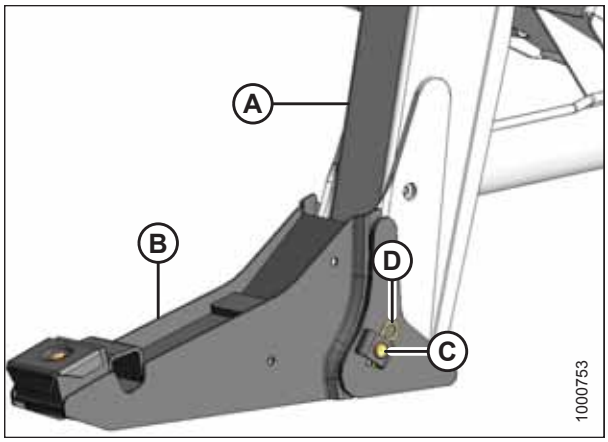


Figure 4.3: Header Support

6. Remove the retaining rings from pins (A). Remove the pins from the header legs.

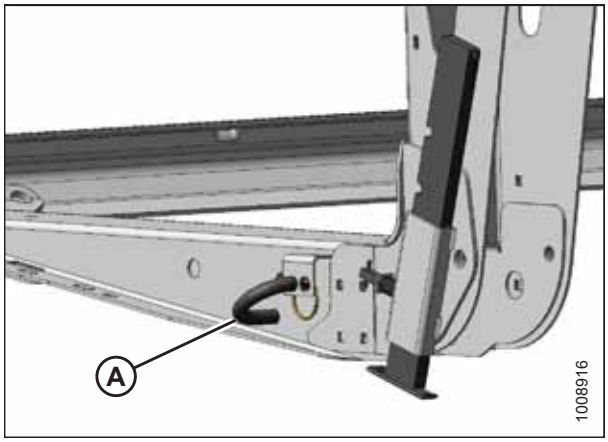


Figure 4.4: Header Leg

WARNING

Check to be sure all bystanders have cleared the area.

7. Start the windrower's engine.

8. Press HEADER DOWN switch (A) on the ground speed lever (GSL) to fully retract the header lift cylinders.

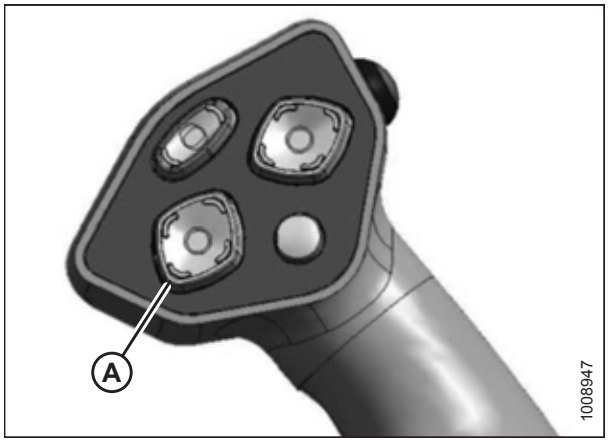


Figure 4.5: Ground Speed Lever (GSL)

9. Drive the windrower forward slowly so that supports (A) enter header legs (B). Continue to drive forward slowly until the linkages contact support plates (C) in the lower header legs and the header is nudged forward.
10. Check that the linkages are properly engaged in the header legs and are in contact with the support plates.

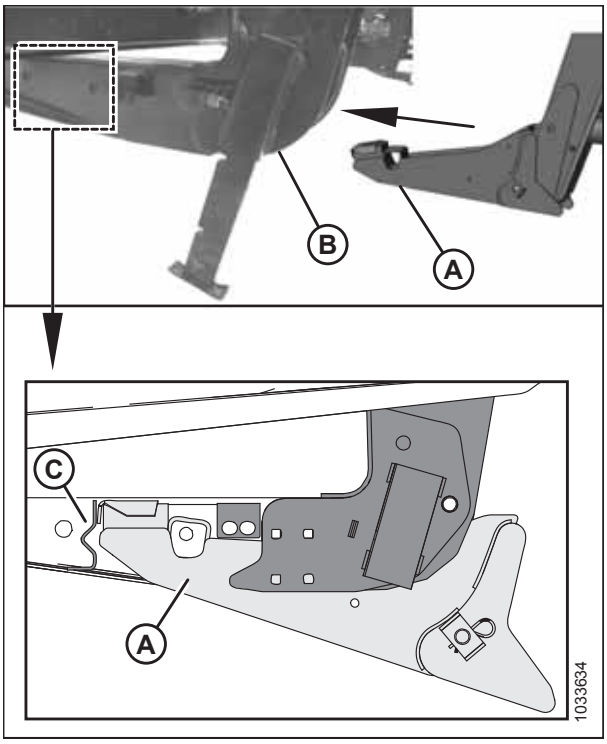


Figure 4.6: Support Engaging Header

4.1 Connecting Center-Link

The procedure for connecting the center-link varies depending on the type of center-link installed on the machine.

Refer to the relevant procedure for your header:

- *4.1.1 Mechanical Link, page 37*
- *4.1.2 Hydraulic Link without Self-Alignment Kit, page 39*
- *4.1.3 Hydraulic Link with Self-Alignment Kit, page 42*

4.1.1 Mechanical Link

If the windrower is equipped with a mechanical center-link, the center-link will have to be connected manually to the header.

DANGER

To prevent bodily injury or death from the unexpected startup of the machine, always stop the engine and remove the key before adjusting the machine.

1. Shut down the engine, and remove the key from the ignition.

2. Locate the center-link on the windrower.
3. Loosen nut (A) and rotate barrel (B) to adjust the length of the center-link so that the link lines up with the header bracket.
4. Install pin (C) and secure it with a cotter pin.
5. Adjust the center-link to the required length by rotating barrel (B). Tighten nut (A) against the barrel.

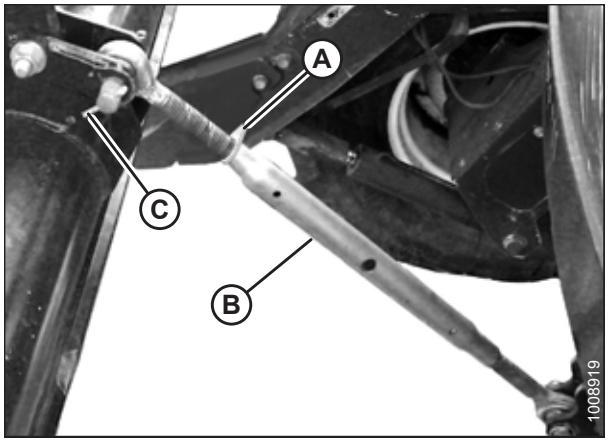


Figure 4.7: Mechanical Center-Link

WARNING

Check to be sure all bystanders have cleared the area.

6. Start the windrower's engine.
7. Raise the header fully by pressing HEADER UP switch (A) on the ground speed lever (GSL).
8. Engage the safety props on both lift cylinders. Refer to the windrower operator's manual for instructions.
9. Shut down the engine, and remove the key from the ignition.

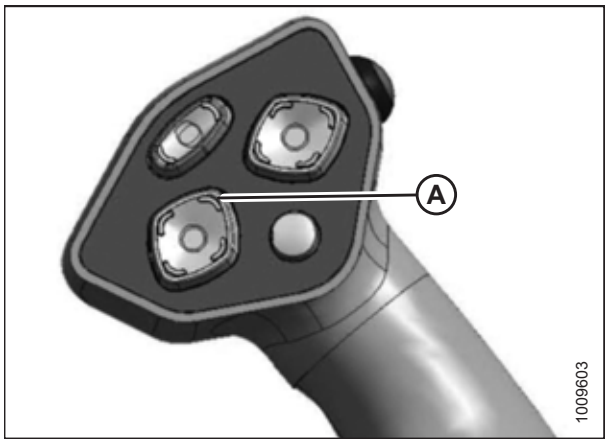


Figure 4.8: Ground Speed Lever (GSL)

10. Install pin (A) through the header leg, ensuring that the U-bracket in the header leg is engaged by the pin.
11. Repeat the previous step to install the pin in the other header leg.
12. Raise header stand (B) to its storage position by pulling pin (C) and lifting the stand into its uppermost position. Release pin (C) to secure the stand.

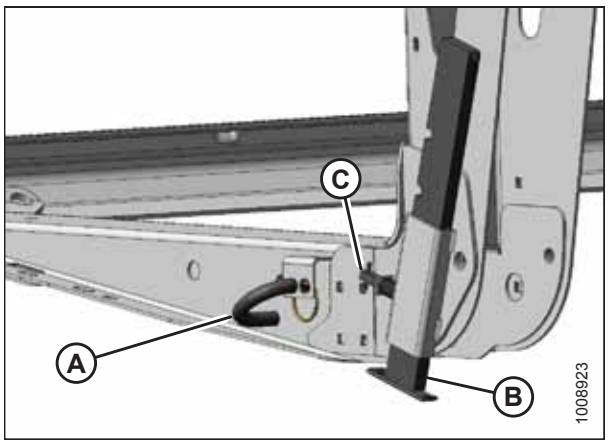


Figure 4.9: Header Stand

13. Remove the pin from storage position (B) in the linkage. Insert the pin into hole (A) to engage the float spring. Secure the pin with a hairpin.
14. Repeat the previous step to install the pin in the other float spring.

Figure 4.10: Float Springs Engaged

WARNING

Check to be sure all bystanders have cleared the area.

15. Start the engine.
16. Disengage the safety props. Refer to the windrower operator's manual for instructions.
17. Press HEADER DOWN switch (A) on the GSL to lower the header fully.
18. Shut down the engine, and remove the key from the ignition.

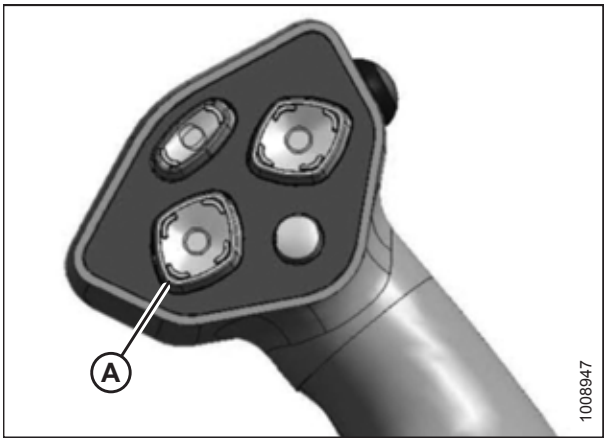


Figure 4.11: GSL

4.1.2 Hydraulic Link without Self-Alignment Kit

If the windrower is equipped with a hydraulic center-link which lacks the optional self-alignment kit, the center-link will have to be connected to the header manually.

DANGER

To prevent bodily injury or death from the unexpected startup of the machine, always stop the engine and remove the key before adjusting the machine.

1. Shut down the engine, and remove the key from the ignition.

2. Relocate pin (A) as needed so that hook (B) can be positioned over the header pin (not shown).

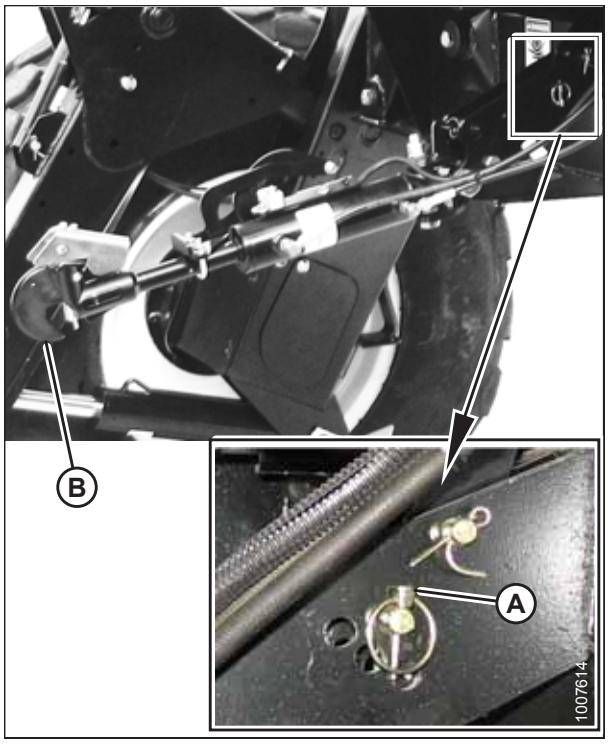


Figure 4.12: Center-Link

WARNING

Check to be sure all bystanders have cleared the area.

3. Start the engine.
4. Activate the HEADER TILT switches on the ground speed lever (GSL) to extend or retract the center-link cylinder so that the hook lines up with the header attachment pin.
5. Shut down the engine, and remove the key from the ignition.

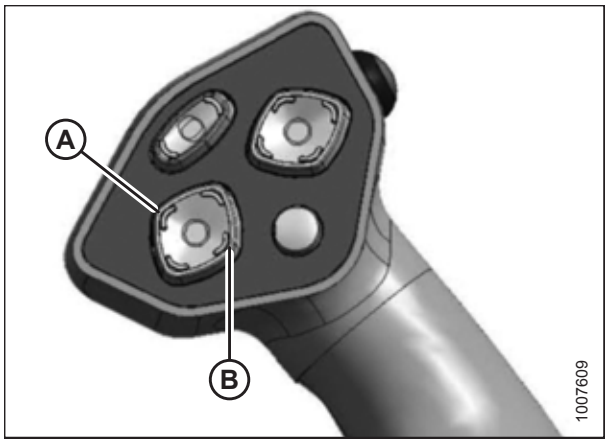


Figure 4.13: GSL

A - HEADER TILT DOWN Switch **B - HEADER TILT UP Switch**

6. Push down on rod end (B) of center-link (A) until the hook engages the pin on the header and is locked.

   IMPORTANT:

   The hook release must be down to enable the self-locking mechanism to function. If the release is open (up), manually push it down after the hook engages the header attachment pin.

7. Ensure that center-link (A) is locked onto the header by pulling upward on the cylinder's rod end (B).

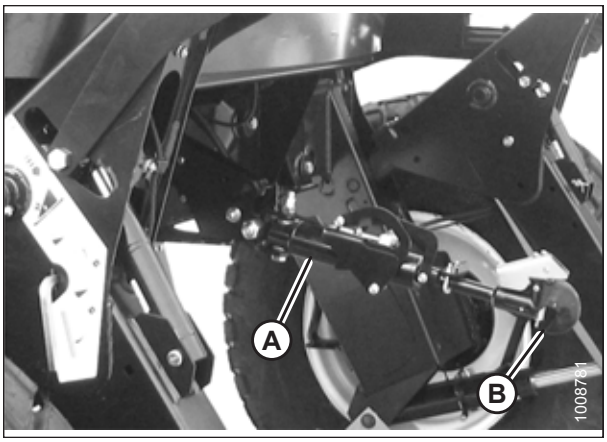


Figure 4.14: Center-Link

WARNING

Check to be sure all bystanders have cleared the area.

8. Start the engine.
9. Raise the header fully by pressing HEADER UP switch (A) on the GSL.
10. Shut down the engine, and remove the key from the ignition.
11. Engage the safety props on both lift cylinders. Refer to the windrower operator's manual for instructions.

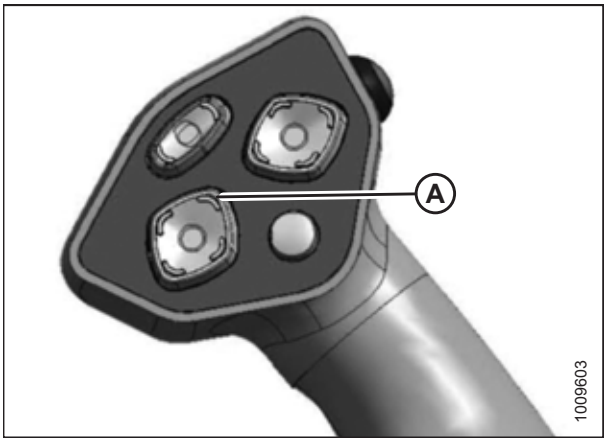


Figure 4.15: Ground Speed Lever (GSL)

12. Install pin (A) through the header leg, ensuring that the U-bracket in the header leg is engaged by the pin.
13. Repeat the previous step to install the pin in the other header leg.
14. Raise header stand (B) to its storage position by pulling pin (C) and lifting the stand into its uppermost position. Release pin (C) to secure the stand.

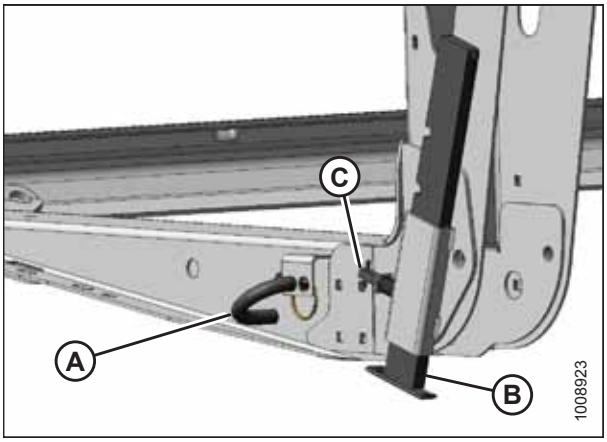


Figure 4.16: Header Stand

15. Remove the pin from storage position (B) in the linkage. Insert the pin into hole (A) to engage the float spring. Secure the pin with a hairpin.
16. Repeat the previous step to install the pin in the other float spring.

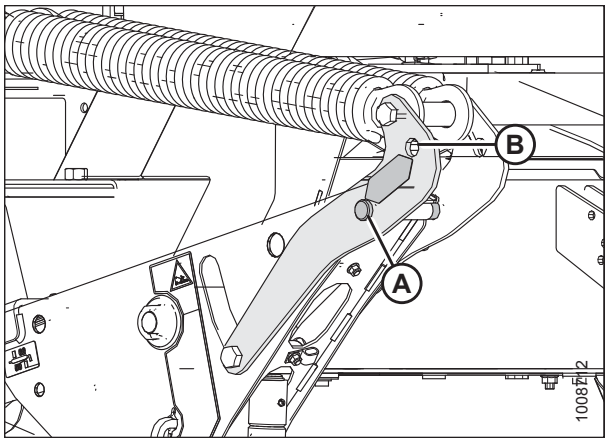


Figure 4.17: Float Springs Engaged

WARNING

Check to be sure all bystanders have cleared the area.

17. Start the engine.
18. Disengage the safety props. Refer to the windrower operator's manual for instructions.
19. Press HEADER DOWN switch (A) on the GSL to lower the header fully.
20. Shut down the engine, and remove the key from the ignition.

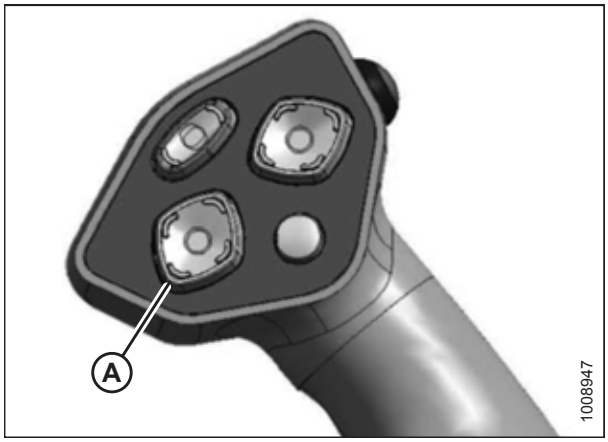


Figure 4.18: GSL

4.1.3 Hydraulic Link with Self-Alignment Kit

If the windrower is equipped with a hydraulic center-link fitted with the optional self-alignment kit, the center-link can be connected to the header from the windrower's cab.

DANGER

To prevent bodily injury or death from the unexpected startup of the machine, always stop the engine and remove the key before adjusting the machine.

1. Adjust the position of center-link hook (A) with reel position switches (B) and header tilt switches (C) on the windrower's ground speed lever (GSL) until hook (A) is above the header attachment pin.

   IMPORTANT:

   Hook release (D) must be down to enable the self-locking mechanism to function. If the release is open (up), manually push it down after hook (A) engages the header attachment pin.

2. Lower center-link hook (A) onto the header attachment pin by pressing the REEL DOWN switch on the GSL until the hook locks onto the pin and hook release (D) is down.

3. Ensure that the center-link is locked onto the header attachment pin by pressing the REEL UP switch on the GSL to change the header angle.

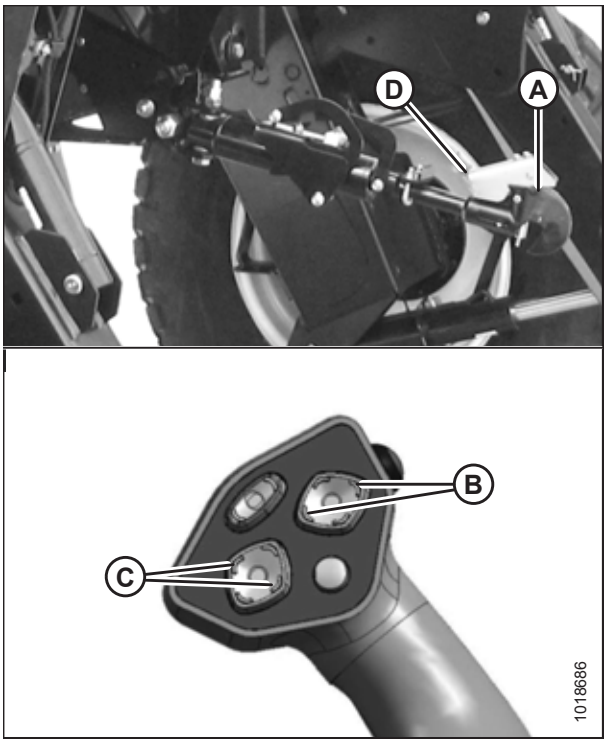


Figure 4.19: Hydraulic Center-Link

WARNING

Check to be sure all bystanders have cleared the area.

4. Start the engine.

5. Raise the header fully by pressing HEADER UP switch (A) on the GSL.

6. Engage the safety props on both lift cylinders. Refer to the windrower operator's manual for instructions.

7. Shut down the engine, and remove the key from the ignition.

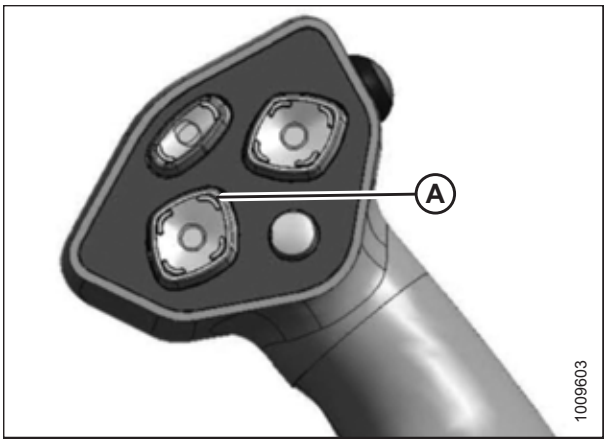


Figure 4.20: Ground Speed Lever (GSL)

8. Install pin (A) through the header leg, ensuring that the U-bracket in the header leg is engaged by the pin.
9. Repeat the previous step to install the pin in the other header leg.
10. Raise header stand (B) to its storage position by pulling pin (C) and lifting the stand into its uppermost position. Release pin (C) to secure the stand.

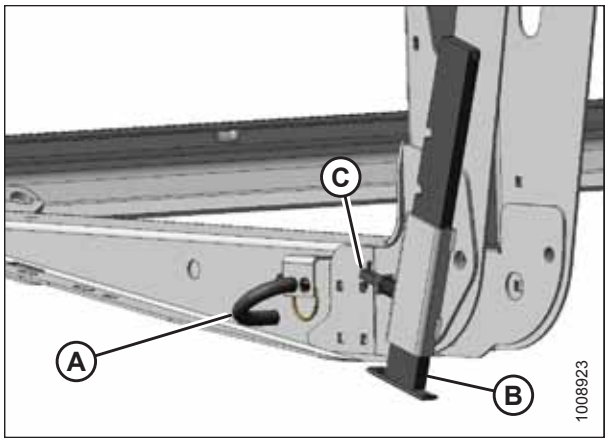


Figure 4.21: Header Stand

11. Remove the pin from storage position (B) in the linkage. Insert the pin into hole (A) to engage the float spring. Secure the pin with a hairpin.
12. Repeat the previous step to install the pin in the other float spring.

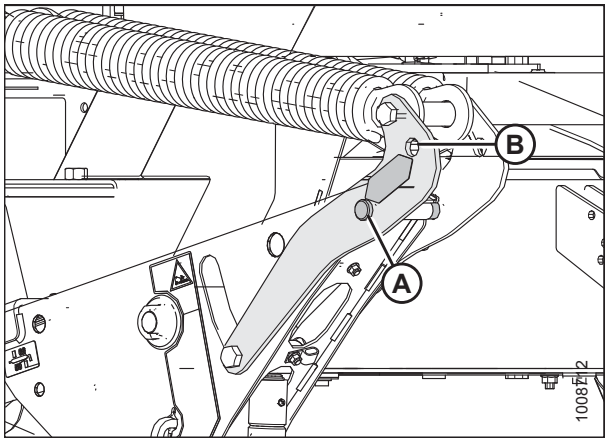


Figure 4.22: Float Springs Engaged

WARNING

Check to be sure all bystanders have cleared the area.

13. Start the engine.
14. Disengage the safety props. Refer to the windrower operator's manual for instructions.
15. Press HEADER DOWN switch (A) on the GSL to lower the header fully.
16. Shut down the engine, and remove the key from the ignition.

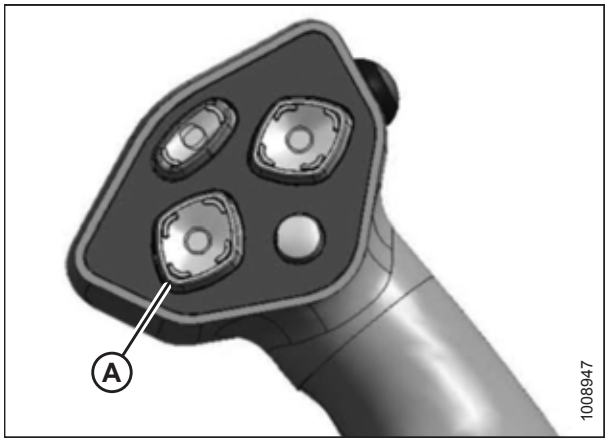


Figure 4.23: GSL

4.2 Connecting Hydraulics

Ensure that the windrower is configured to operate with D1 Series Headers before connecting the header drive and reel drive hoses to the header.

NOTE:

Windrowers equipped with D1 Series hydraulics have four header-drive hoses on the left side and up to five reel-drive hoses on the right.

Figure 4.24: M Series Hydraulics

A - Header-Drive Hydraulics

B - Reel-Drive Hydraulics

1. If the windrower is not already properly equipped to operate with a D1 Series header, install the optional drive or lift kits specified in Table *4.1, page 45*. If the windrower is properly equipped, then proceed directly to Step *12, page 47*.

Table 4.1 Optional Drive/Lift Kits for D1 Series Header

Windrower Model	Part Numbers for D1 Series Header Optional Kits			
	Reel Drive/Lift	Reel Fore-Aft	Reverser	Coupler
M155	MD #B5577	MD #B5577	MD #B4656	–
M155*E4*	MD #B5577	MD #B5577	MD #B4656	–
M205	MD #B5491	MD #B5496	MD #B5492	MD #B5497

Connect the windrower's header-drive hydraulics and its electrical harness to the header as follows:

2. Ensure that all electrical and hydraulic connectors are free of contamination. Clean the connectors as needed.
3. Disengage lever (C) and rotate it counterclockwise to the vertical position.
4. Remove the cap securing electrical connector (B) to the frame.
5. Move hose bundle (A) from the windrower around the hose support on the header.

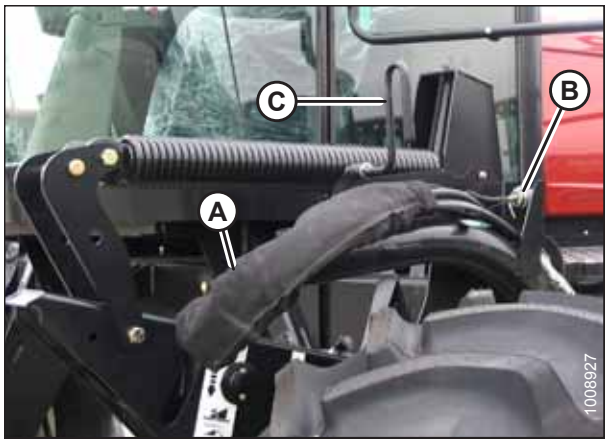


Figure 4.25: Header-Drive Hydraulics and Electrical Harness

6. Push each hose connector onto the receptacle until the collar on the receptacle snaps into the lock position.
7. Remove the cover on electrical connector (A).
8. Push the electrical connector onto the receptacle and turn the collar on the connector to lock it in place.
9. Attach the cover to the mating cover on the windrower's wiring harness.

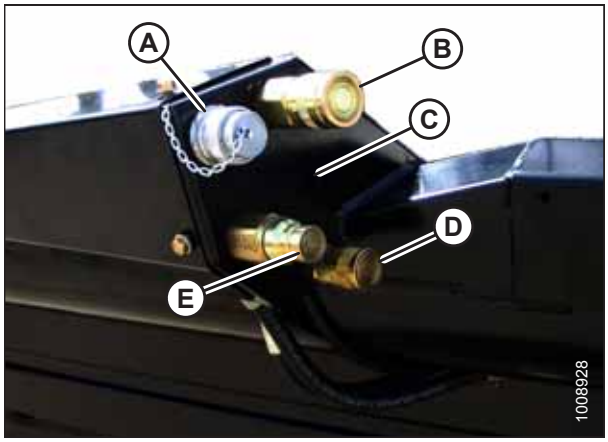


Figure 4.26: Header Receptacles

A - Electrical Connector
B - Knife Drive
C - Case Drain (Double Knife)
D - Draper Drive
E - Return

10. Lower lever (A) and lock it in the down position.

Figure 4.27: Hose Support

11. Ensure that the hose support is positioned so that top bolt (A) is midway in the slot as shown and lower bolt (B) is in the forward hole as shown. Adjust the position of the bolts as needed.

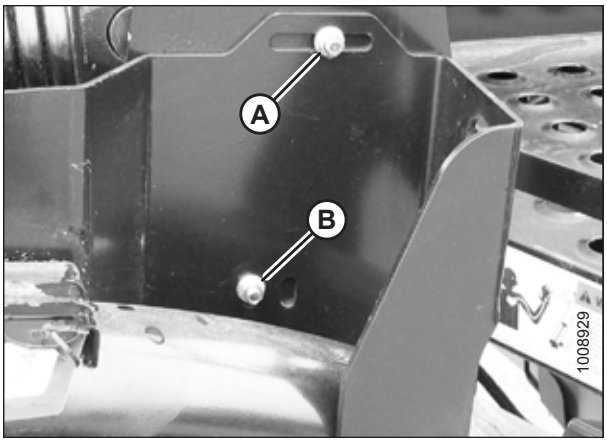


Figure 4.28: Hose Support

12. Locate reel-drive hydraulics (A).
13. Ensure that connectors (A) are free of contamination. Clean the connectors as needed.

Figure 4.29: Reel-Drive Hydraulics

14. Open cover (A) on the header receptacle.
15. Push in lock button (B) and pull handle (C) to the half-open position.

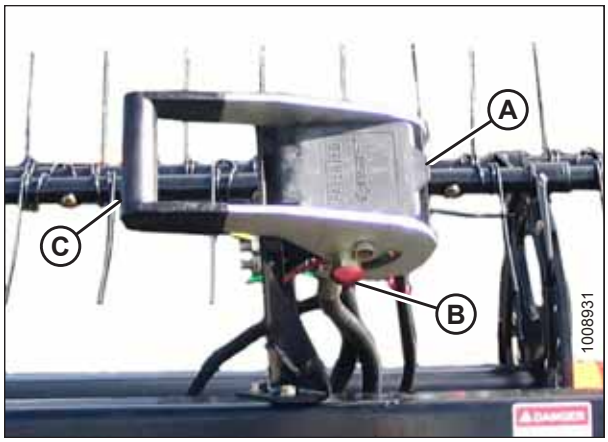


Figure 4.30: Header Receptacle

16. Remove multicoupler (A) from the windrower and position it onto the header's receptacle.
17. Push handle (B) to engage the pins on the multicoupler's connectors.
18. Push the handle away from the hoses until lock button (C) snaps out.

WARNING

Check to be sure all bystanders have cleared the area.

19. Start the engine.
20. From the windrower cab, raise and lower the header and reel several times to allow any air trapped in the hydraulic system to pass back to the reservoir.

    NOTE:

    Do not loosen hydraulic fittings to bleed trapped air from the hydraulic system.

21. Shut down the engine, and remove the key from the ignition.

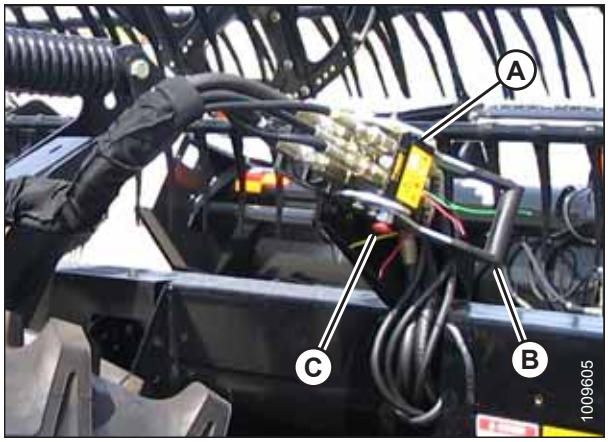


Figure 4.31: Multicoupler on Header

4.3 Adding Tire Ballast

Adding fluid ballast to the windrower's caster tires will improve the windrower's stability when it is paired with a large header.

With respect to ballast capacity, a tire is considered to be "full" of ballast fluid when 75% of the inner volume of the tire is occupied by ballast fluid, or else when the ballast fluid is level with the wheel's valve stem when the stem is positioned at the 12 o'clock position and the windrower is on level ground. When adding ballast fluid to the caster wheels, always add an identical amount to each wheel. The caster wheels can safely hold any volume of ballast fluid up to and including their maximum capacity, as specified in the table below.

Table 4.2 Ballast Fluid Capacity of Various Caster Wheel Tires

Tire Size	Ballast Fluid Volume per Tire at 75% Capacity Liters (U.S. Gal.)	Total Weight of Ballast Fluid in Both Tires When Filled to 75% Capacity kg (lb.)[1]
7.5 x 16	38 (10)	91 (200)
10 x 16	69 (18)	170 (380)
16.5 x 16.1	158 (41)	377 (830)

Table 4.3 Recommended Ballast

Header Size	Applicable Windrower	Rec. Tire Size	Recommended Ballast			
			Level Ground		Hills	
			Per Tire liters (U.S. Gal.)	Both Tires kg (lb.)[2]	Per Tire liters (U.S. Gal.)	Both Tires kg (lb.)[2]
D115, D120, and D125	All	7.5 x 16 10 x 16 16.5 x 16.1	0	0	0	0
D130 Single Reel **D130 Double Reel** (without conditioner) **D135 Double Reel**	All	7.5 x 16 10 x 16 16.5 x 16.1	0	0	38(10)	91 (200)
D130 Double Reel (with steel fingers and conditioner) **D135 Double Reel** (5- or 6-bat)	All	Level ground: 10 x 16 16.5 x 16.1 Hills: 16.5 x 16.1	69 (18)	170 (380)	115 (30)	288 (630)
D140	M155*E4*	16.5 x 16.1	115 (30)	288 (630)	158 (41)	377 (830)

1. The weights provided in this column rely on the assumption that the tires will be filled with a standard mixture of calcium chloride and water. If you intend to fill the tire with only water (for example, in regions where the ambient temperature does not fall below freezing), then multiply the relevant fill weight specified in this column by 0.8 to learn the weight of both tires when they are filled with water alone.
2. The weights provided in this column rely on the assumption that the tires will be filled with a standard mixture of calcium chloride and water. If you intend to add water alone, then increase the volume of water added by 20% (up to the maximum allowable volume per tire) to compensate for the difference in density between calcium chloride and water.

Chapter 5: Performing Predelivery Checks

After completing the setup process, the machine and its features should be inspected. If any adjustments are necessary, follow the procedures detailed in this chapter.

DANGER

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

IMPORTANT:

To prevent damage to the machine, ensure that no shipping material has fallen into the machine.

1. Shut down the engine, and remove the key from the ignition.
2. Perform the final checks as listed on the **Predelivery Checklist** (the yellow sheet attached to this instruction – *Predelivery Checklist, page 103*) to ensure that the machine is field-ready. The completed Checklist should be retained by either the Operator or the Dealer.

5.1 Checking Tire Pressure – Transport and Stabilizer Wheels

Ensure that the transport tires are inflated to the correct pressure and that the load on the tires is appropriate before attempting to transport the header. Inflate the tires to the pressures recommended in the table below.

WARNING

Determine the tire's load range before inflating a transport/stabilizer tire. When inflating the tire, do NOT exceed the pressure specified in Table *5.1, page 51*.

Measure the pressure of each transport tire. If necessary, inflate the tires to the pressure recommended in Table *5.1, page 51*.

IMPORTANT:

Do **NOT** tow the header at speeds faster than 32 km/h (20 mph) using the transport wheels. When turning a corner, or in slippery or rough conditions, do not tow the header faster than 8 km/h (5 mph).

IMPORTANT:

Where a discrepancy exists between the pressure specified on the tire's sidewall and the one listed in Table *5.1, page 51*, use the pressure listed in Table *5.1, page 51*.

Table 5.1 Header Transport Wheels – Tire Inflation Pressure Specifications

Size	Load Range	Recommended Pressure
ST205/75 R15	C **IMPORTANT:** Load range "C" is an alternative tire for the stabilizer wheel option **ONLY**. Do **NOT** use with the transport option.	345 kPa (50 psi)
	D	517 kPa (75 psi)[3]
	E	586 kPa (85 psi)

3. The sidewall pressure for load range D tires is listed as 448 kPa (65 psi). However, since this tire is only operated at slow speeds, use the recommended pressure for load range D tires on the Slow Speed Transport/Stabilizer option.

5.2 Checking Wheel Bolt Torque – Transport and Stabilizer Wheels

The wheel bolts securing the transport wheels must be torqued correctly before the header can be safely transported.

1. Measure the torque value of each wheel bolt. A correctly torqued wheel bolt torque will show a reading of 115 Nm (85 lbf·ft).
2. If a wheel bolt is not set to the correct torque value, adjust its torque as needed.
3. Tighten all wheel bolts according to the bolt-tightening pattern depicted in the illustration.

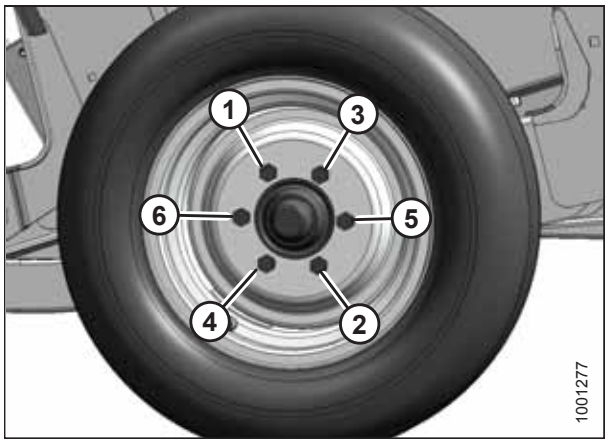


Figure 5.1: Sequence for Tightening Bolts

5.3 Checking and Adjusting Endshields

The header's endshields are made from molded plastic and are therefore subject to expansion or contraction caused by variations in the ambient temperature. The position of the top pin and that of the lower latch can be adjusted to compensate for dimensional changes in the endshield.

Checking the endshield

1. Measure gap (X) between the front end of the endshield and the header frame. Compare the measurement to the values provided in Table *5.2, page 53*.

Table 5.2 Endshield Gaps at Various Ambient Temperatures

Ambient Temperature °C (°F)	Expected Gap (X) mm (in.)
7 (45)	13–18 (1/2–23/32)
18 (65)	10–15 (3/8–19/32)
29 (85)	7–12 (9/32–15/32)
41 (105)	4–9 (5/32–11/32)

2. If adjustment to the endshield is required, proceed to Step *3, page 53*. If no adjustment is required, proceed to *5.4 Checking Knife Drive Box, page 57*.

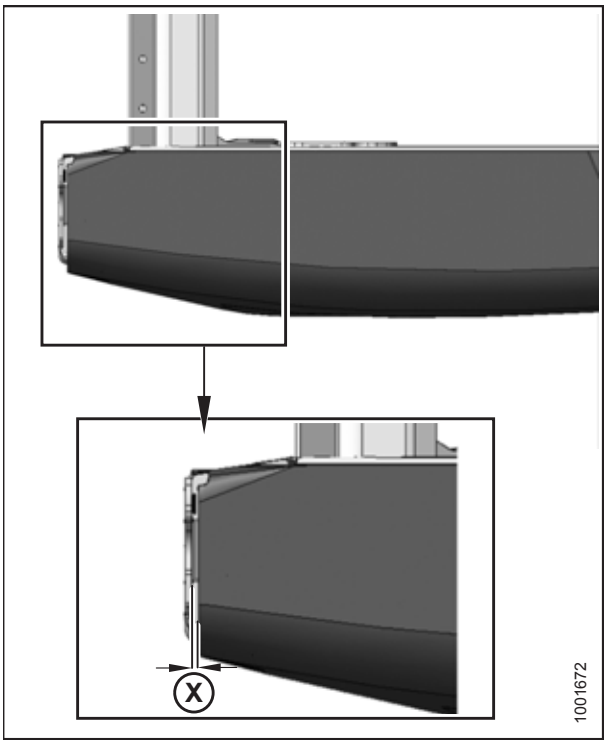


Figure 5.2: Gap between Endshield and Header Frame

3. To unlock the shield, push release lever (A) located on the backside of the endshield.
4. Pull the endshield open using handle depression (B).

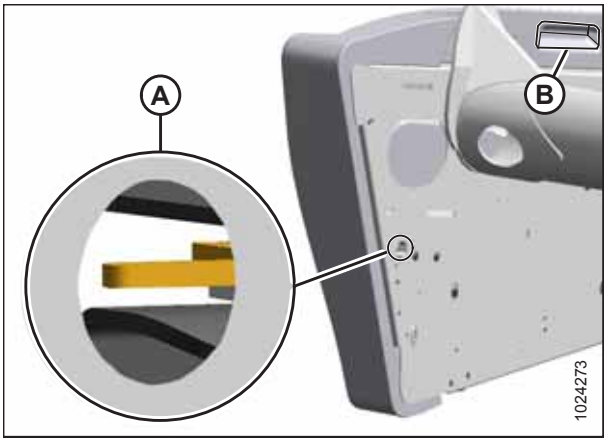


Figure 5.3: Left Endshield

5. Pull the endshield at handle depression (A). The endshield is retained by hinge tab (B) and will open in direction (C).

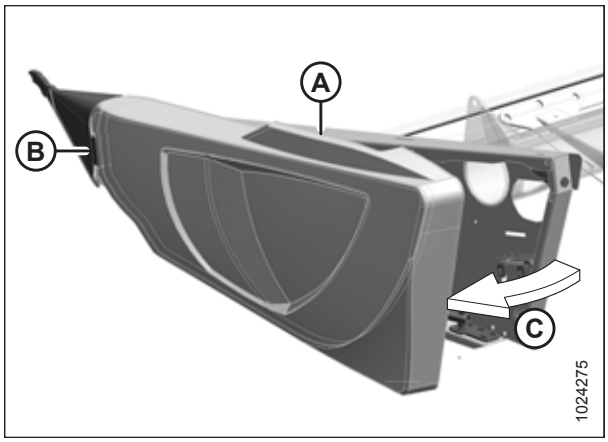


Figure 5.4: Left Endshield

6. If additional clearance is required, pull the endshield free of hinge tab (A), and swing the shield toward the rear of the header.
7. Engage safety catch (B) on the hinge arm to secure the shield in the fully-open position.

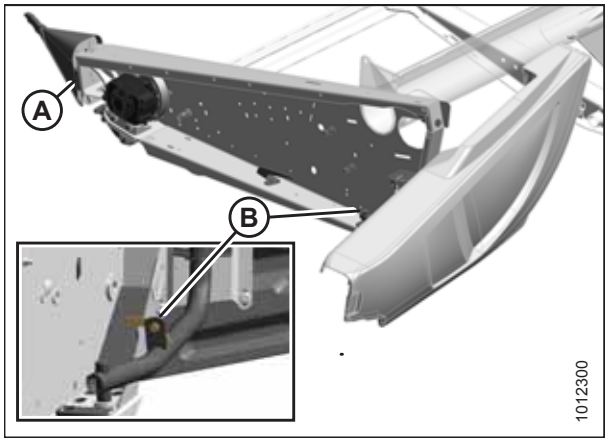


Figure 5.5: Left Endshield

Adjusting the endshield

8. Inside the endshield, loosen four bolts (A) on support tube bracket (B).

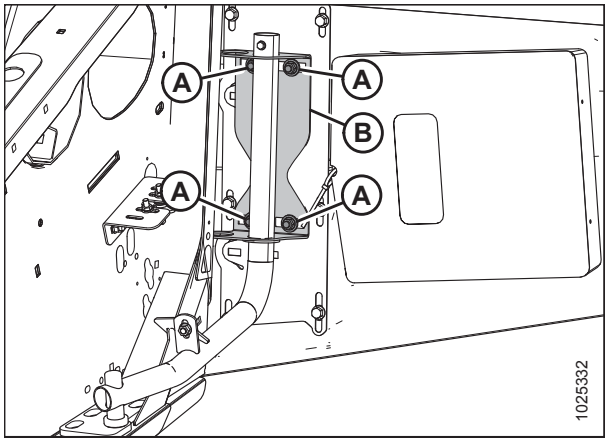


Figure 5.6: Left Endshield Support Tube

9. Loosen three bolts (A) on latch assembly (B).
10. Adjust latch assembly (B) to achieve the desired gap between the front end of the endshield and the header frame. Refer to Table *5.2, page 53* for the recommended endshield gap at various ambient temperatures.
11. Tighten three bolts (A) on the latch assembly to 27 Nm (20 lbf·ft).

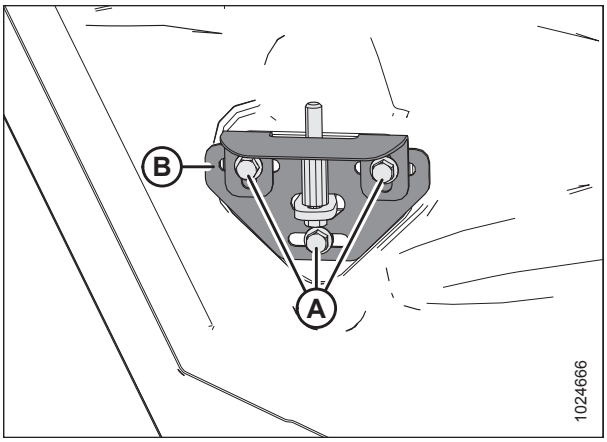


Figure 5.7: Left Endshield Latch Assembly

12. Tighten four bolts (A) on support tube bracket (B) to 31 Nm (23 lbf·ft).

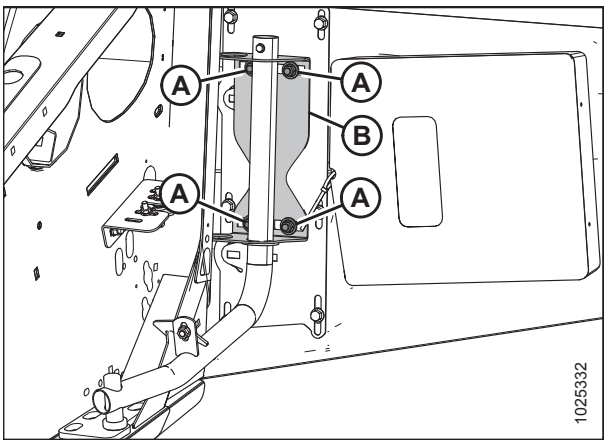


Figure 5.8: Left Endshield Support Tube

13. Disengage lock (B) to allow the endshield to move.
14. Insert the front of the endshield behind hinge tab (A) and into the divider cone.

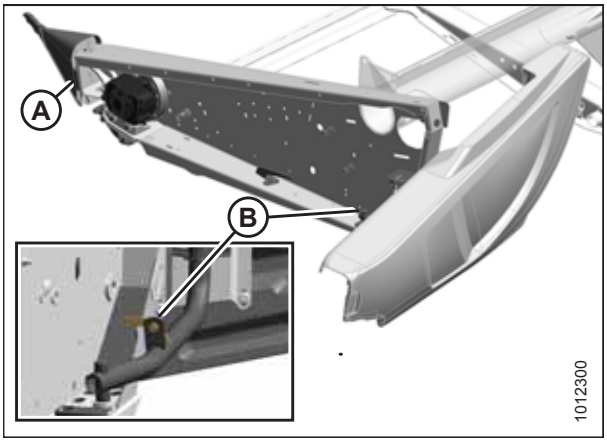


Figure 5.9: Left Endshield

15. Swing the endshield in direction (A) into the closed position. Engage the lock with a firm push.
16. Verify the dimensions of the other endshield.

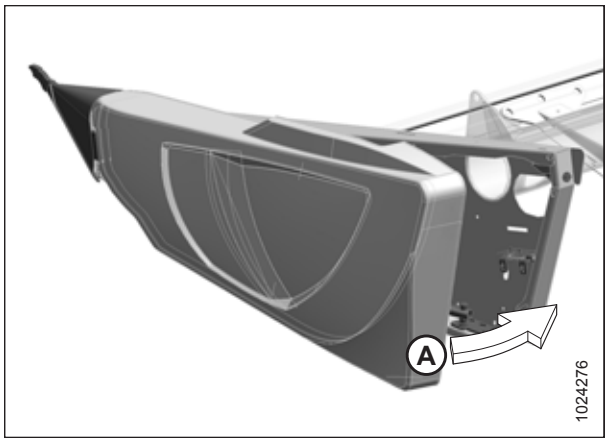


Figure 5.10: Left Endshield

17. Repeat Steps *1, page 53* to *16, page 56* to adjust the right endshield.

5.4 Checking Knife Drive Box

Single-knife headers have one knife drive box, while double-knife headers have two knife drive boxes. The knife drive box(es) can be accessed by opening the endshield(s). Each knife drive's breather and oil level will need to be inspected.

1. Press down on latch (A) in the opening on the inboard side of the endsheet.
2. Pull the endshield open using handle depression (B).

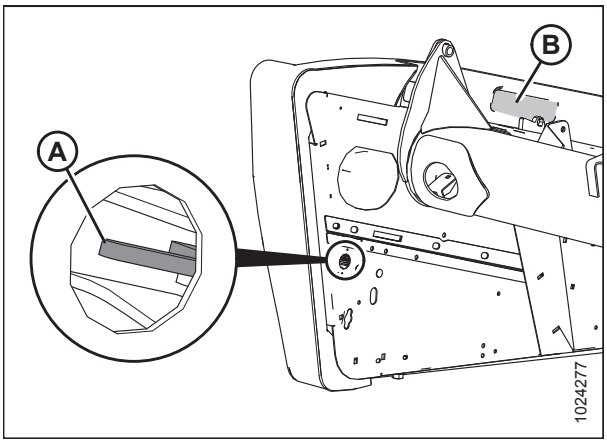


Figure 5.11: Endshield Latch Access

3. Swivel the endshield toward the back of the header and use safety latch (B) to secure endshield support tube (A) to the endsheet.

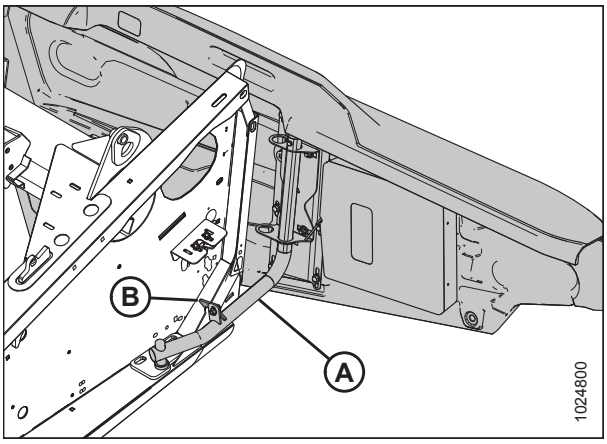


Figure 5.12: Left Endshield Support Tube

IMPORTANT:

The knife drive box's breather is shipped in position (A) (forward) to prevent oil loss during transport. The breather **MUST** be repositioned to location (B) to prevent oil loss during normal operation of the header. Failure to do so can result in damage to the knife drive box.

4. Ensure that the position of plug (A) and breather (B) is as shown. Adjust the plug and breather as needed.
5. Remove breather (B) and check the knife box's oil level. The oil level should be between bottom edge (C) of lower hole (D) and bottom (E) of the breather.

NOTE:

Check the oil level while the top of the knife drive box is horizontal and breather (B) is screwed in.

6. Reinstall the breather and tighten it.

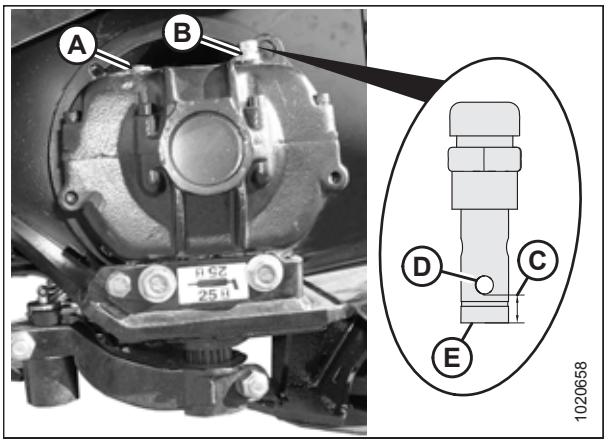


Figure 5.13: Knife Drive Box

5.5 Checking and Adjusting Knife Drive Belt Tension

The belt tension of the knife drive(s) must be set correctly in order for the cutterbar's knife sections to stroke properly.

Single-knife headers have one knife-drive belt and double-knife headers have two knife-drive belts. Refer to the relevant procedure:

- *5.5.1 Checking and Tensioning Single and Untimed Double-Knife Drive Belts, page 58*
- *5.5.2 Checking and Tensioning Timed Double-Knife Drive Belts, page 60*
- *5.5.3 Tensioning Timed Knife Drive V-Belts, page 64*

5.5.1 Checking and Tensioning Single and Untimed Double-Knife Drive Belts

Single-knife headers have one knife-drive belt on the left side of the header. Double-knife untimed headers have two knife-drive belts, one on each side of the header.

DANGER

To prevent bodily injury or death from the unexpected start-up of the machine, always stop the engine and remove the key before making adjustments to the machine.

IMPORTANT:

To ensure the service life of the belt and the knife drive(s), **NEVER** overtighten a drive belt.

1. Shut down the engine, and remove the key from the ignition.
2. Locate the endshield.
3. From the back of the header, push release lever (A) to unlock the endshield.
4. Pull the endshield open using handle depression (B).

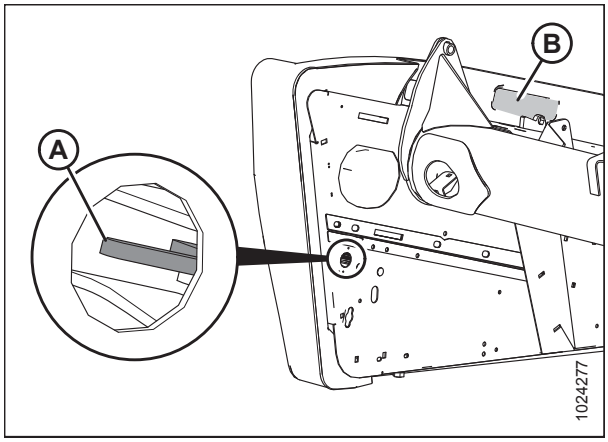


Figure 5.14: Left Endshield

5. Pull the endshield at handle depression (A).

   NOTE:

   The endshield is retained by hinge tab (B) and will open in direction (C).

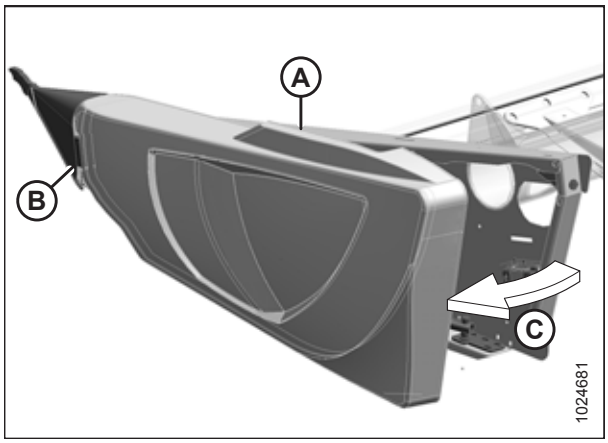


Figure 5.15: Left Endshield

6. If additional clearance is required, pull the endshield free of hinge tab (A) and swing the endshield toward the rear of the header.
7. Engage safety latch (B) on the hinge arm to secure the endshield in the fully open position.

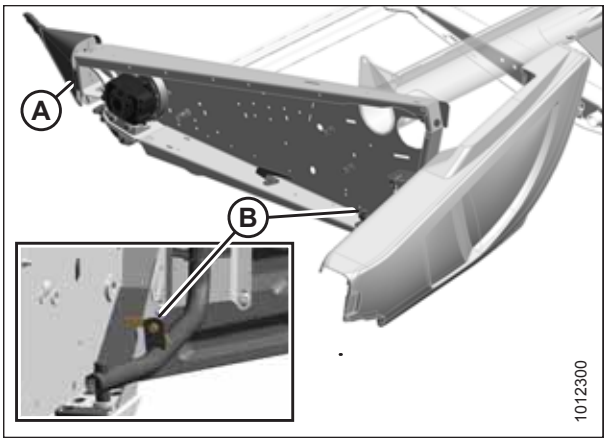


Figure 5.16: Left Endshield

8. Loosen two bolts (A).

   NOTE:

   The belt guide has been removed from the illustrations for the sake of clarity.

9. Check the tension on knife drive belt (C). A properly tensioned drive belt should deflect 24–28 mm (15/16–1 1/8 in.) when 133 N (30 lbf) of force is applied at the midspan of the belt.
10. If the tension on the belt needs to be adjusted, turn adjuster bolt (B) clockwise to move the drive motor until the proper level of tension is achieved.

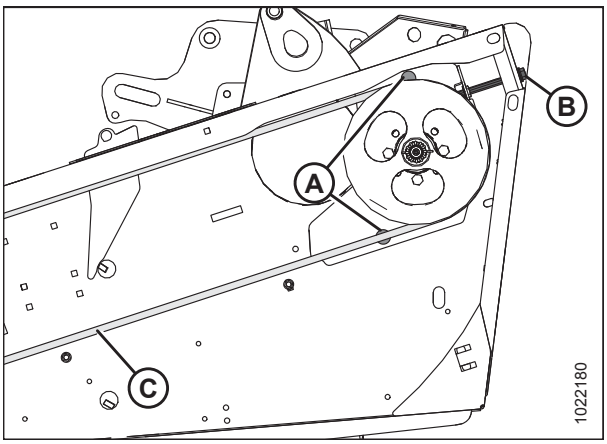


Figure 5.17: Knife Drive

11. Ensure that the clearance between belt (A) and belt guide (B) is 1 mm (1/16 in.).
12. Loosen three bolts (C), and adjust the position of guide (B) as needed.
13. Tighten three bolts (C).

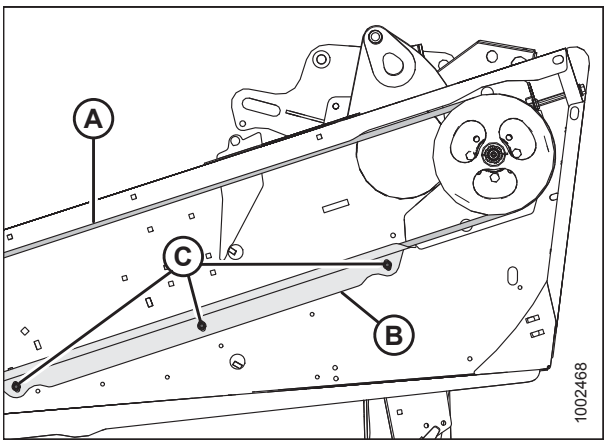


Figure 5.18: Knife Drive

14. Disengage latch (B) to allow the endshield to move.
15. Insert the front of the endshield behind hinge tab (A) and into the divider cone.

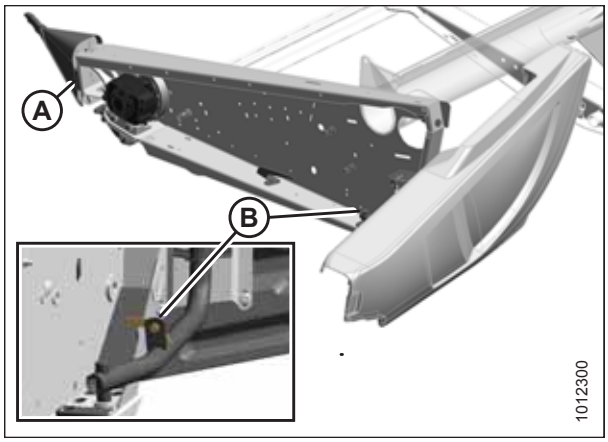


Figure 5.19: Left Endshield

16. Swing the endshield into the closed position (direction [A]). Engage the latch by pushing firmly on the endshield in the direction shown.
17. Ensure that the endshield is locked by pulling the endshield toward you; if it has successfully locked, it will not be possible to move the endshield.

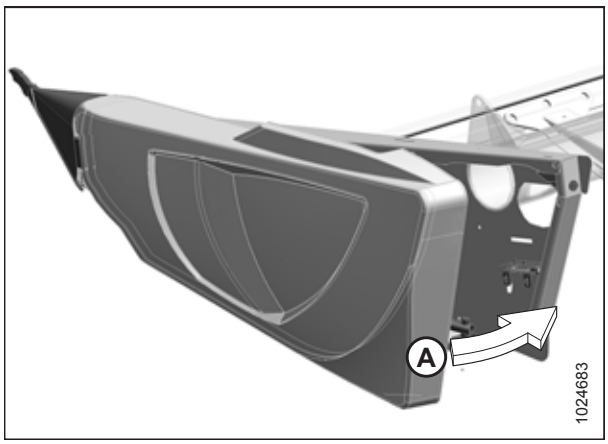


Figure 5.20: Left Endshield

18. **Double-knife headers:** Repeat this procedure to check the knife drive's belt tension on the other side of the header.

5.5.2 Checking and Tensioning Timed Double-Knife Drive Belts

Double-knife timed headers have two knife drive belts, one on each of the side of header, and an additional v-belt on the left side.

DANGER

To prevent bodily injury or death from the unexpected start-up of the machine, always stop the engine and remove the key before making adjustments to the machine.

IMPORTANT:

To ensure the service life of the belts and the knife drives, do **NOT** overtighten the belts.

IMPORTANT:

Do **NOT** use the adjuster bolt at the drive pulley to adjust the tension of the timing belt.

NOTE:

Refer to *5.5.3 Tensioning Timed Knife Drive V-Belts, page 64* for information on tensioning the v-belt.

1. Shut down the engine, and remove the key from the ignition.

2. Locate the endshield.
3. From the back of the header, push release lever (A) to unlock the endshield.
4. Pull the endshield open using handle depression (B).

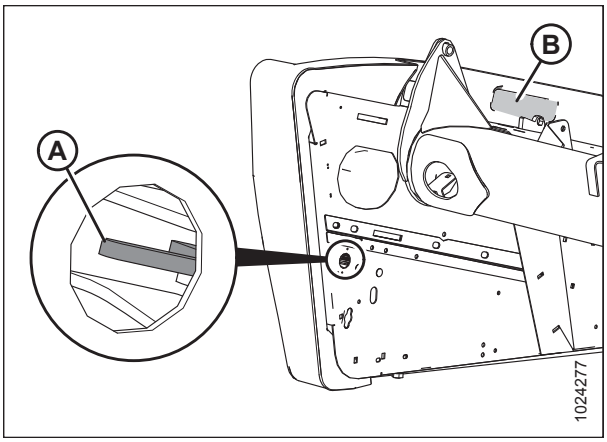


Figure 5.21: Left Endshield

5. Pull the endshield at handle depression (A).

   NOTE:

   The endshield is retained by hinge tab (B) and will open in direction (C).

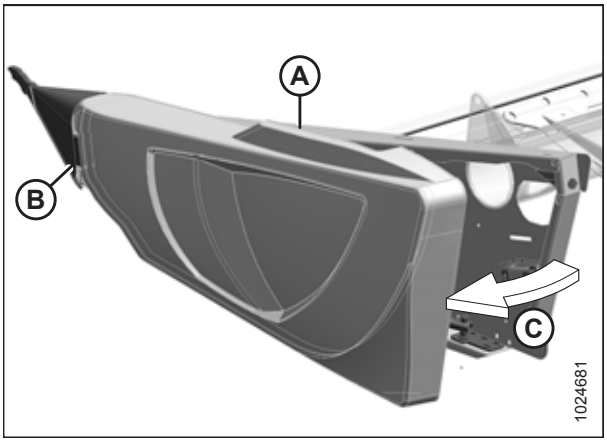


Figure 5.22: Left Endshield

6. If additional clearance is required, pull the endshield free of hinge tab (A) and swing the endshield toward the rear of the header.
7. Engage safety latch (B) on the hinge arm to secure the endshield in the fully open position.

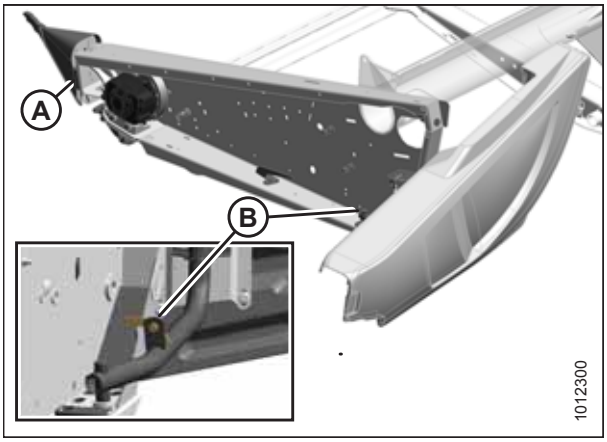


Figure 5.23: Left Endshield

8. Check the tension on drive belt (A). A properly tensioned belt should deflect 13 mm (1/2 in.) at the midpoint of the upper span when a force of 27 N (6 lbf) is applied to it.

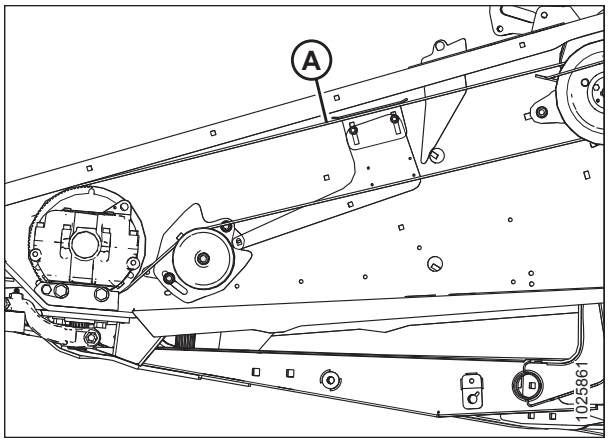


Figure 5.24: Knife Drive – Left Side

9. If the belt needs to be tensioned, loosen two nuts (A) on knife drive belt idler bracket (B).
10. Position pry bar (C) under the idler bracket, and push the bracket upwards until a force of 27 N (6 lbf) deflects the belt 13 mm (1/2 in.) at the midpoint of the upper span of the belt.

    IMPORTANT:

    Protect the header's paint by placing a piece of wood (D) under pry bar (C).

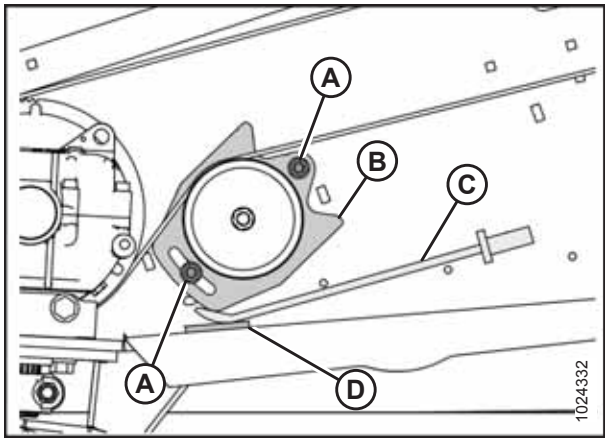


Figure 5.25: Knife Drive – Left Side

11. Tighten nuts (C) to 77 Nm (57 lbf·ft).
12. Remove pry bar (A) and piece of wood (B).
13. **Newly installed belts:** After approximately 5 hours of operation, check the tension on the belt again, and adjust it if necessary.

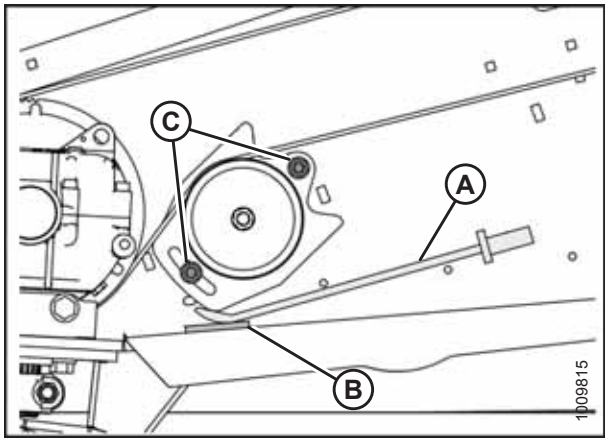


Figure 5.26: Knife Drive – Left Side

14. Ensure that clearance (A) between belt (B) and guide (C) is 0.5–1.5 mm (1/32–1/16 in.).
15. Loosen bolts (D) and adjust the guide if necessary.
16. Tighten bolts (D).

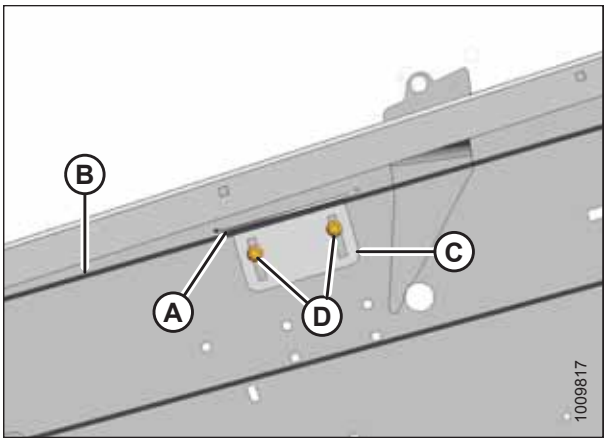


Figure 5.27: Belt Guide – Left Side

17. Disengage latch (B) to allow the endshield to move.
18. Insert the front of the endshield behind hinge tab (A) and into the divider cone.

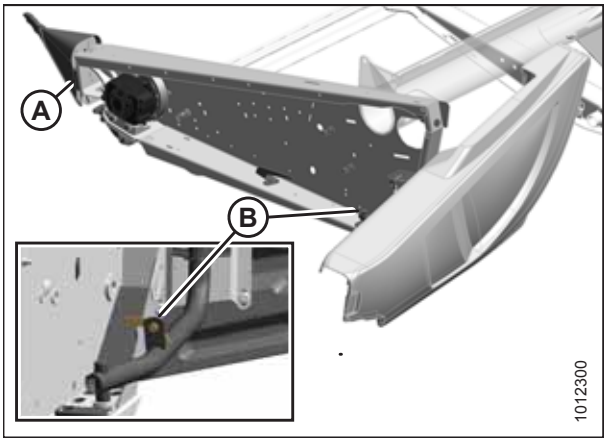


Figure 5.28: Left Endshield

19. Swing the endshield into the closed position (direction [A]). Engage the latch by pushing firmly on the endshield in the direction shown.
20. Ensure that the endshield is locked by pulling the endshield toward you; if it has successfully locked, it will not be possible to move the endshield.

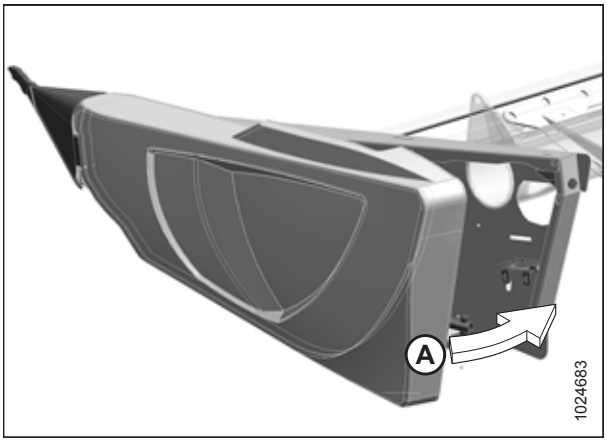


Figure 5.29: Left Endshield

21. Repeat this procedure to check the knife drive's belt tension on the opposite side of the header.

5.5.3 Tensioning Timed Knife Drive V-Belts

Double-knife timed headers have a third knife drive v-belt located on the left side of the header. Check the tension on the v-belt whenever you check the tension on the other two knife drive belts.

1. Loosen two bolts (A).
2. Turn drawbolt (B) clockwise to increase the tension on v-belt (C), or counterclockwise to decrease the tension on it.

   NOTE:

   Belt tension is measured by applying a specified force at the midspan of the belt while noting the amount of belt deflection. The belts should deflect 4 mm (5/32 in.) with 52–77 N (12–17 lbf) of force applied to the midspan of the belt.
3. Tighten bolts (A).

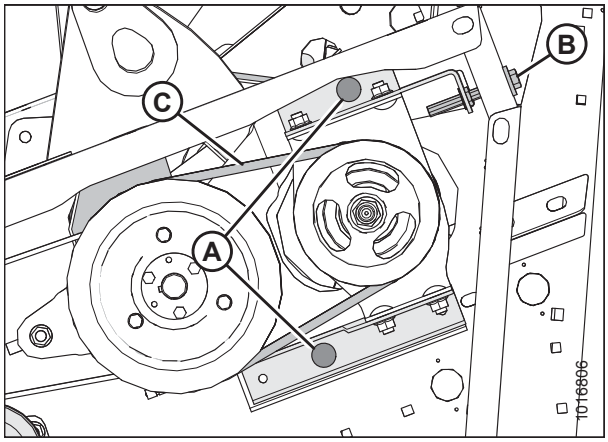


Figure 5.30: Knife Drive V-belts

5.6 Centering Reel

A properly centered reel picks up crop evenly and does not accumulate debris at the ends of the reel.

Refer to the relevant topic:

- **Double-reel headers:** *5.6.1 Centering Double Reel, page 65*
- **Single-reel headers:** *5.6.2 Centering Single Reel, page 66*

5.6.1 Centering Double Reel

Centering a double reel requires measuring the current reel-endsheet clearance on each side of the header and adjusting the center reel support arm.

DANGER

To prevent bodily injury or death from the unexpected start-up of the machine, always stop the engine and remove the key before making adjustments to the machine.

1. Shut down the engine, and remove the key from the ignition.
2. Measure clearance (A) at locations (B). Clearance (A) is the gap between the reel tine tube and the endsheet at each end of the header. You should obtain identical measurements if the reels are properly centered.
   - If the reel is not centered, proceed to Step *3, page 66*.
   - If the reel is centered, proceed to *5.7 Checking and Adjusting Draper Tension, page 68*.

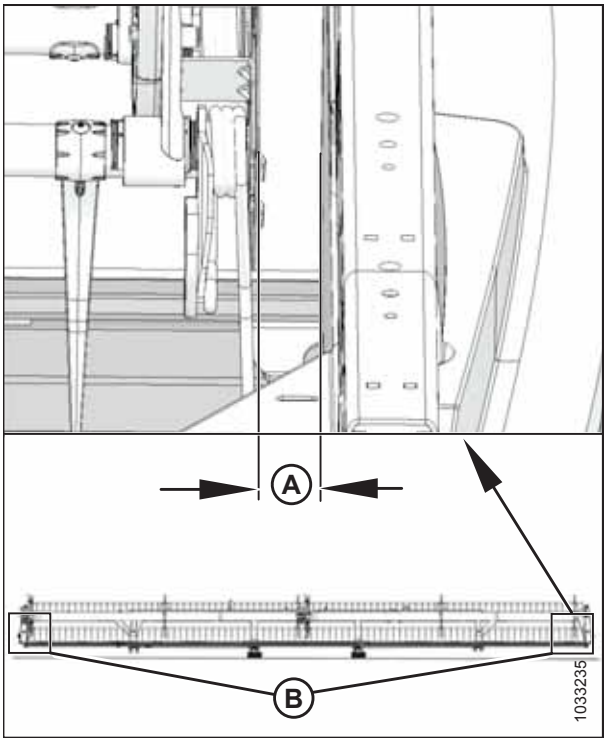


Figure 5.31: Double Reel Measurement Locations

3. Locate braces (B) on reel center support arm (C).
4. Loosen bolts (A).
5. Move the forward end of reel center support arm (C) laterally as required to center both reels.
6. Tighten bolts (A). Torque the bolts to 382 Nm (282 lbf·ft).

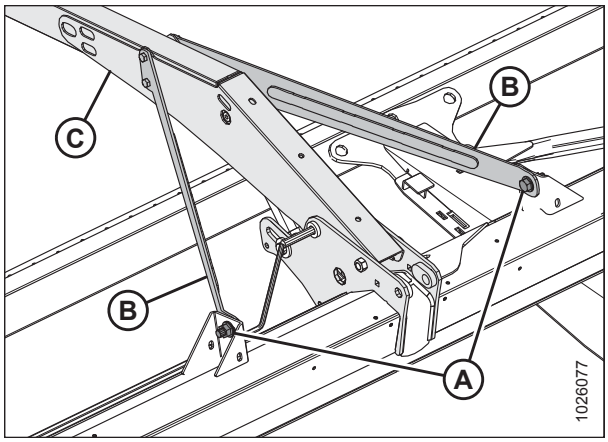


Figure 5.32: Reel Center Support Arm

5.6.2 Centering Single Reel

Centering a single reel requires measuring the current reel-to-endsheet clearance on each side of the header.

DANGER

To prevent bodily injury or death from the unexpected start-up of the machine, always stop the engine and remove the key before making adjustments to the machine.

1. Shut down the engine, and remove the key from the ignition.
2. Measure clearance (A) at locations (B). Clearance (A) is the gap between the reel tine tube and the endsheet at each end of the header. You should obtain identical measurements if the reels are properly centered.
   - If the reel is not centered, proceed to Step *3, page 67*.
   - If the reel is centered, proceed to *5.7 Checking and Adjusting Draper Tension, page 68*.

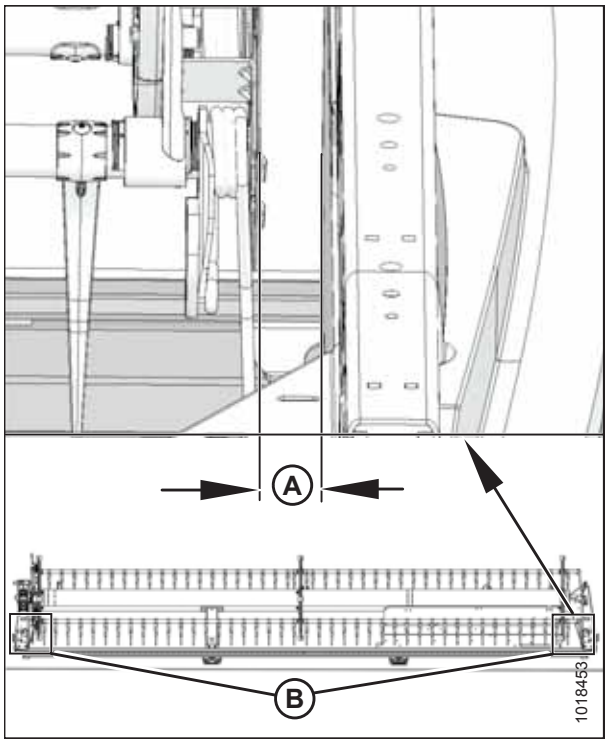


Figure 5.33: Single-Reel Measurement Locations

3. Loosen bolt (A) on brace (B) at each end of the reel.
4. Move the forward end of reel support arm (C) laterally as needed to center the reel.
5. Tighten bolt (A). Torque the bolt to 359 Nm (265 lbf·ft).
6. Repeat the previous step to secure the reel brace on the opposite side of the header.

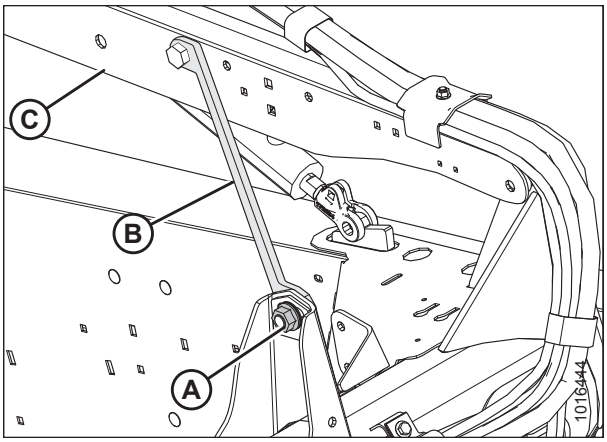


Figure 5.34: Reel Support Arm

5.7 Checking and Adjusting Draper Tension

The header's drapers are tensioned at the factory and rarely need adjustment. If adjustment is required, tension the drapers just enough so that the drapers do not slip when in operation, and so that the draper does not sag below the cutterbar. If adjustment is needed, ensure that the draper is adjusted on both sides of the header.

DANGER

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

1. Locate the draper tension adjuster and the tension inspection window on the rear left side of the header.
2. Ensure that white indicator bar (A) is at the halfway point in the window. If this is not the case, then adjustment is required. Proceed to Step *3, page 68*.

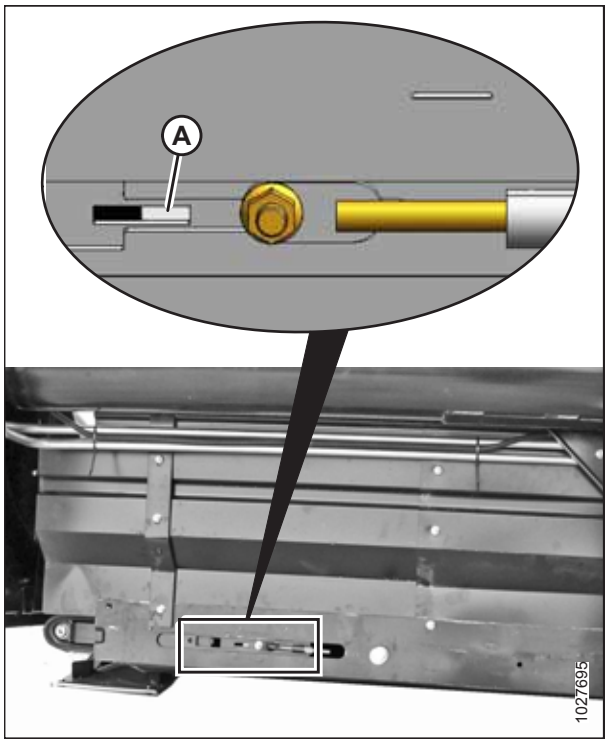


Figure 5.35: Left Draper Tension Adjuster

WARNING

Check to be sure all bystanders have cleared the area.

3. Start the engine.
4. Fully raise the header.
5. Shut down the engine, and remove the key from the ignition.
6. Engage the header safety props. Refer to the windrower operator's manual for instructions.
7. Ensure that the draper guide (the rubber track on the underside of the draper) is properly engaged in groove (A) on the drive roller.

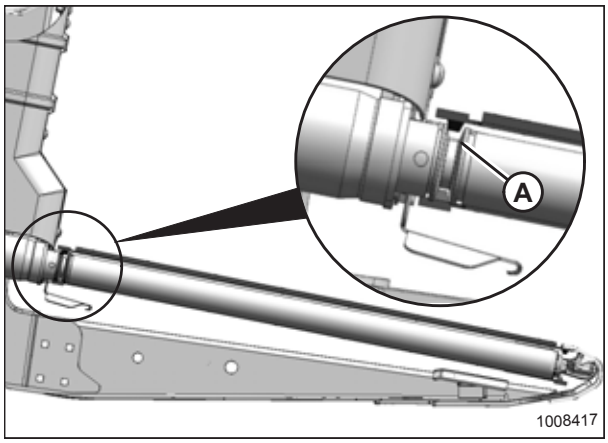


Figure 5.36: Drive Roller

8. Ensure that idler roller (A) sits between draper guides (B).

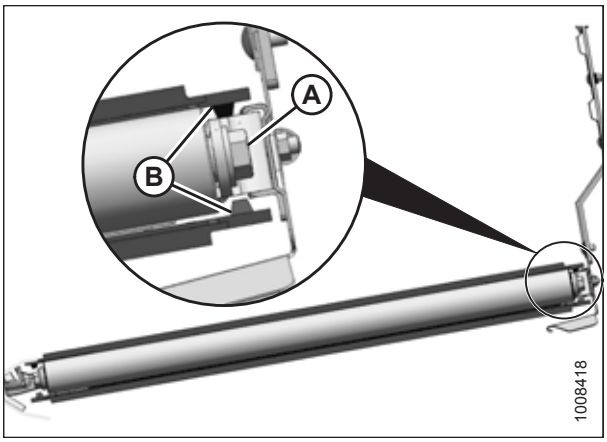


Figure 5.37: Idler Roller

IMPORTANT:

Do **NOT** adjust nut (C). This nut is used for draper alignment only.

9. To reduce the tension on the draper, turn adjuster bolt (A) counterclockwise. White indicator bar (B) will move outboard in the direction of arrow (D) to indicate that the tension on the draper has lessened. Continue to turn adjuster bolt (A) counterclockwise until the white indicator bar is at the halfway point in the window.
10. To increase the tension on the draper, turn adjuster bolt (A) clockwise. White indicator bar (B) will move inboard in the direction of arrow (E) to indicate that the tension on the draper has increased. Continue to turn adjuster bolt (A) clockwise until the white indicator bar is at the halfway point in the window.

IMPORTANT:

To prevent premature failure of the draper, draper rollers, and/or tightener components, do **NOT** operate the draper if the white bar is not visible in the inspection window.

IMPORTANT:

To prevent the header from scooping soil while in operation, ensure that the draper is tight enough that it does not sag below the point where the cutterbar contacts the ground.

11. Repeat Steps *1, page 68* to *10, page 69* to inspect and adjust the tension on the other draper belt.

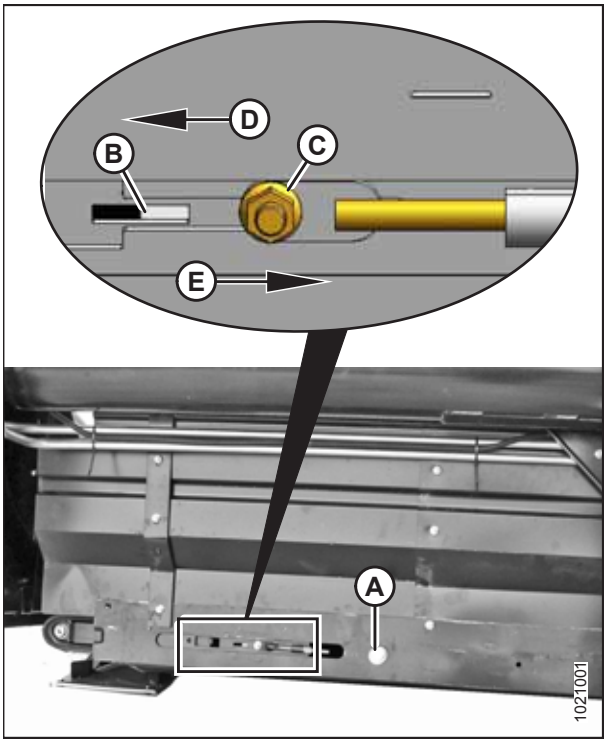


Figure 5.38: Left Tension Adjuster

5.8 Checking and Adjusting Draper Seal

The gap between the draper and cutterbar is also known as the draper seal. It should be inspected before the draper is operated, to prevent potential damage to the draper system.

DANGER

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

WARNING

To prevent bodily injury from the fall of a raised reel, always engage the reel safety props before going under the raised reel for any reason.

IMPORTANT:

The draper seal is set to 0–3 mm (0.00–0.12 in.) at the factory to prevent material from entering into the side drapers and stalling them. Whenever you are installing new drapers, the draper seal **MUST** be set to at least 1 mm (0.04 in.); new drapers are very tacky and can accumulate powder coating on the underside of the cutterbar, which can cause the draper to rub against the cutterbar and thereby cause the hydraulic pressure in the draper circuit to increase to dangerous levels.

1. Lower the header onto blocks.
2. Raise the reel fully.
3. Move reel safety props (A) to the engaged position.

   NOTE:

   Keep pivot bolt (B) sufficiently tight that the prop remains in the stored position when not in use, but can be engaged using hand force.
4. Repeat the previous step on the opposite reel arm.

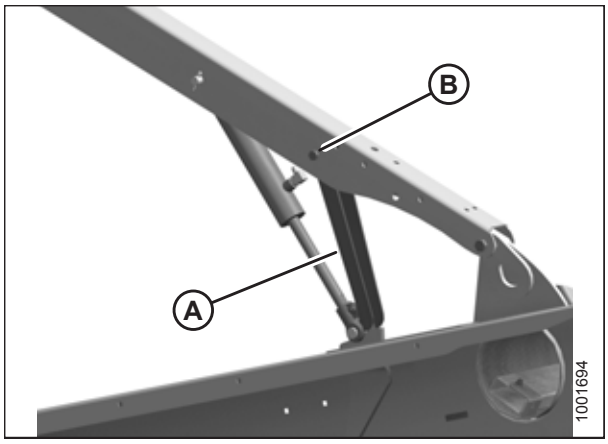


Figure 5.39: Engaged Reel Safety Prop – Left Shown

5. Use handle (A) to move the lock rod to inboard position (B), which engages pin (C) under the prop.
6. Lower the reel until the safety props contact the outer arm cylinder mounts and the center arm pins.
7. Shut down the engine, and remove the key from the ignition.

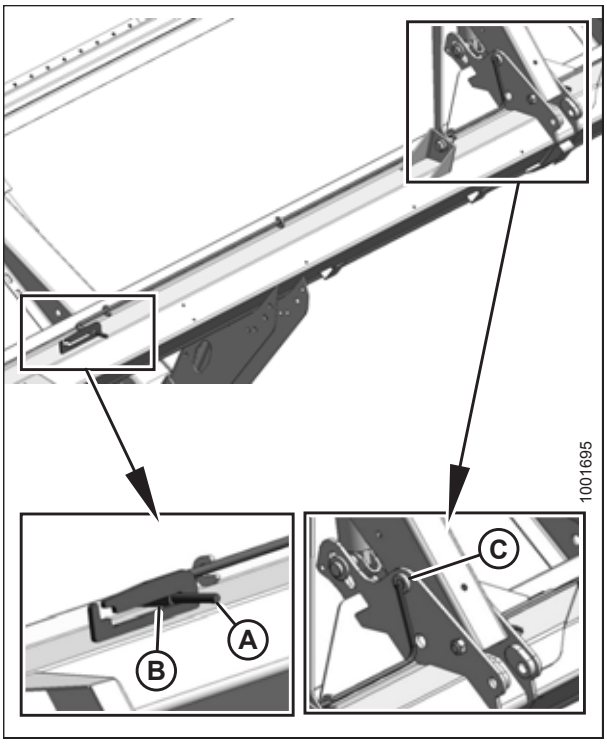


Figure 5.40: Reel Safety Prop – Center Arm

8. Ensure that clearance (A) between draper (B) and cutterbar (C) is 0–3 mm (0.00–0.12 in.).
   - If clearance (A) is acceptable, proceed to *5.9 Checking and Adjusting Skid Shoe Settings, page 75*.
   - If clearance (A) is **NOT** acceptable, proceed to the next step in this procedure.

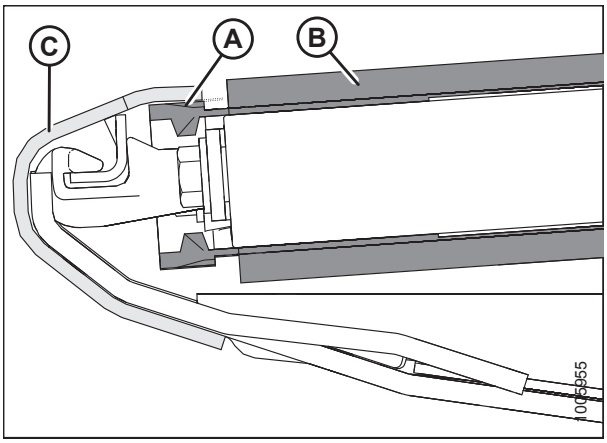


Figure 5.41: Draper Seal

9. Measure the clearance between the draper and the cutterbar at deck supports (A). For instructions, refer to Step *8, page 71*.
10. Reduce the tension on the draper. For instructions, refer to *5.7 Checking and Adjusting Draper Tension, page 68*.

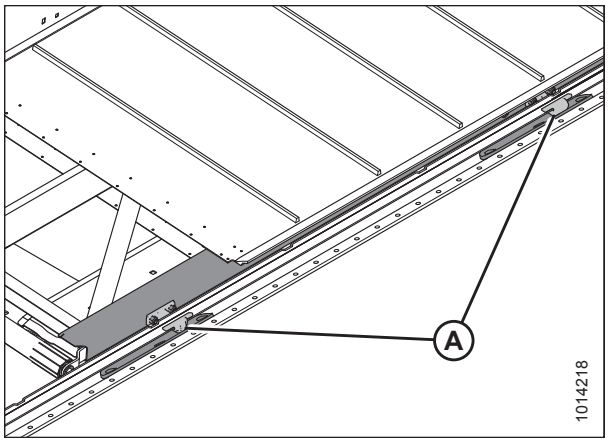


Figure 5.42: Draper Deck Supports

11. Lift the front edge of draper (A) past cutterbar (B) to expose the deck support.

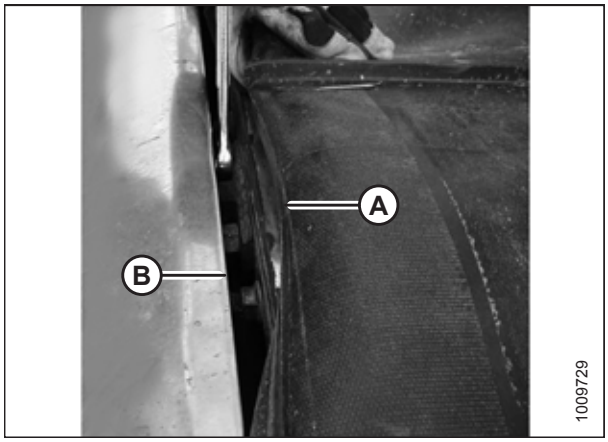


Figure 5.43: Deck Adjustment

12. Loosen two lock nuts (A) on deck support (B) by one half-turn **ONLY**.

    NOTE:

    The deck is shown with the draper removed. The number of deck supports depends on the width of the header:

    - **D115 and D120:** Four supports
    - **D125 and D130:** Six supports
    - **D135 and D140:** Eight supports
13. Tap deck (C) with a hammer to lower the deck relative to the deck supports. Tap deck support (B) using a hammer and punch to raise the deck relative to the deck supports.
14. Measure the thickness of the draper belt.

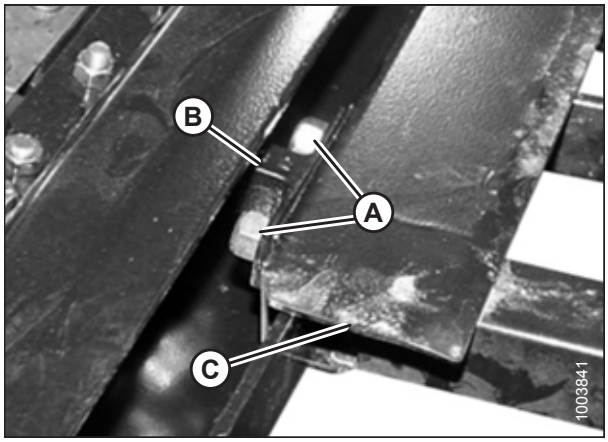


Figure 5.44: Deck Support

15. Locate a feeler gauge of the same thickness as the draper belt plus 1 mm (0.04 in.).
16. Slide the feeler gauge along deck (A) under the cutterbar in order to properly set the gap.
17. To create a seal, adjust deck (A) so that clearance (B) between cutterbar (C) and the deck is the same thickness as the draper belt plus 1 mm (0.04 in.).

    NOTE:

    When checking the clearance at either roller, measure the gap beginning at the roller tube, **NOT** the deck.
18. Tighten deck support hardware (D).
19. Recheck gap (B) with the feeler gauge. For instructions, refer to Step *15, page 73*.
20. Repeat Steps *12, page 72* to *19, page 73* for each draper deck support requiring adjustment.
21. Tension the draper. For instructions, refer to *5.7 Checking and Adjusting Draper Tension, page 68*.
22. If necessary, adjust backsheet deflector (A) by loosening nut (D) and moving the deflector until there is a 1–7 mm (0.04–0.28 in.) gap (indicated by callout [C]) between draper (B) and the deflector.

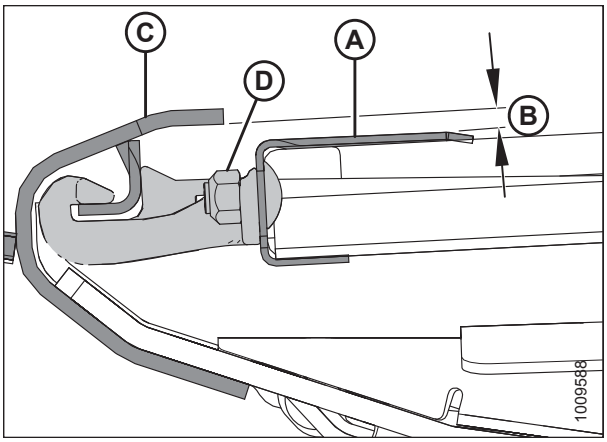


Figure 5.45: Deck Support

WARNING

Check to be sure all bystanders have cleared the area.

23. Start the engine.

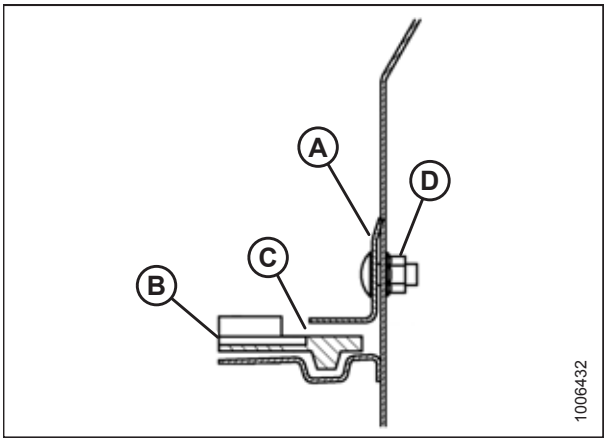


Figure 5.46: Backsheet Deflector

24. Raise the reel to its maximum height.
25. Move reel safety props (A) back inside the reel arms.
26. Repeat the previous step on the opposite end of the reel.

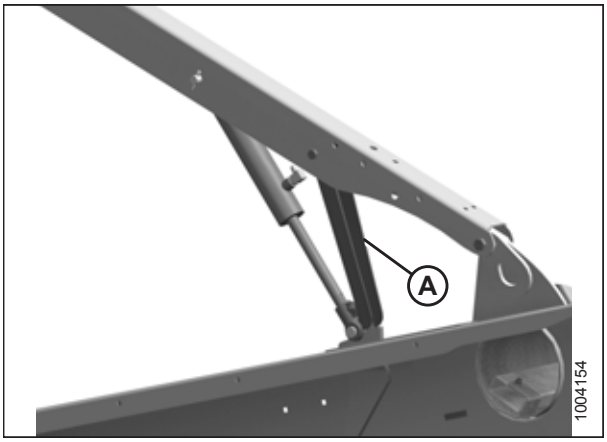


Figure 5.47: Left Reel Safety Prop

27. Use handle (B) to move lock rod (A) to the outboard position.
28. Lower the reel fully.
29. Shut down the engine, and remove the key from the ignition.

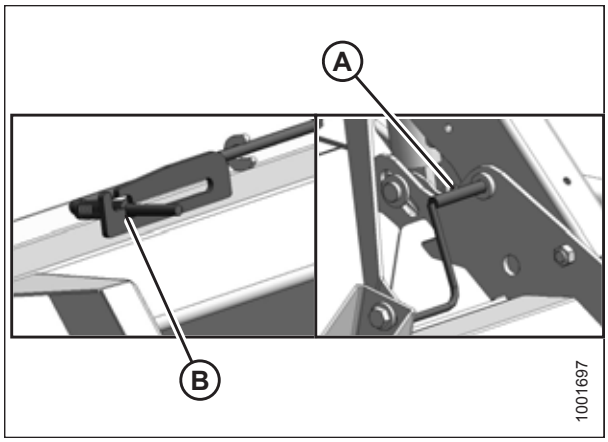


Figure 5.48: Reel Safety Prop – Center Arm

5.9 Checking and Adjusting Skid Shoe Settings

Skid shoes protect the bottom of the header from damage during operation, and affect the header's cutting height. Raise or lower the skid shoes as required to optimize the performance of the cutterbar.

DANGER

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

1. Raise the header fully.
2. Engage the header's safety props. Refer to the windrower operator's manual for instructions.
3. Shut down the engine, and remove the key from the ignition.
4. Check the adjustment hole positions on lugs (A) on each skid shoe. The pin should be in the same position on all skid shoes.
5. If necessary, adjust the position of the skid shoe as follows:

   NOTE:

   Ensure that all skid shoes are set to the same position.

   a. Remove lynch pin (B).

   b. Support the weight of the shoe and remove pin (C) by disengaging the shoe from the frame and then pulling the pin away from the shoe.

   c. Raise or lower the skid shoe to the desired position.

   d. Reinsert pin (C), engage the shoe into the frame, and secure the shoe with lynch pin (B).

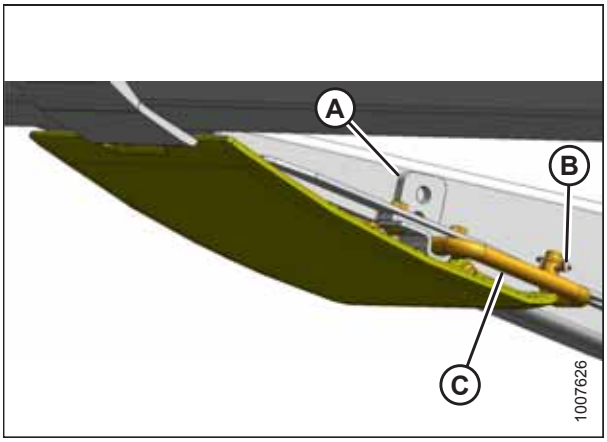


Figure 5.49: Inner Skid Shoe

WARNING

Check to be sure all bystanders have cleared the area.

6. Start the engine.
7. Disengage the header's safety props.
8. Lower the header fully.
9. Shut down the engine, and remove the key from the ignition.

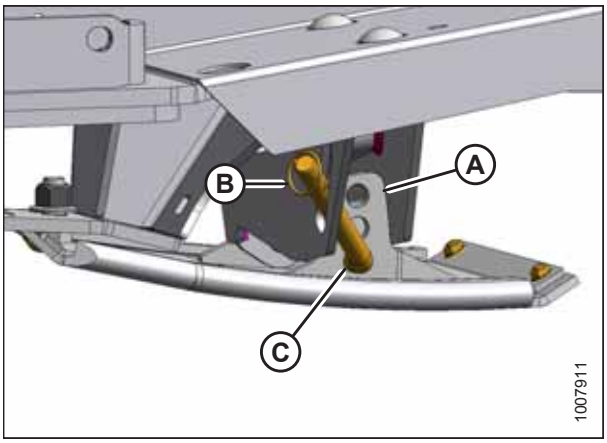


Figure 5.50: Outer Skid Shoe

5.10 Leveling Header

The windrower linkages are factory-set to provide the proper level for the header. Unless you are unable to level the header through normal means, they should not require adjustment.

1. If the header is not level, check the pressure of the windrower's tires to ensure they are properly inflated. Refer to the windrower operator's manual for instructions.
2. If the header is still not level, adjust the windrower linkages as required. Refer to the windrower operator's manual for instructions.

   NOTE:

   The float springs are **NOT** used to level the header.

5.11 Checking and Adjusting Float

Check the header's float setting and adjust it if necessary.

Refer to the windrower operator's manual for instructions on adjusting the float.

5.12 Reel to Cutterbar Clearance

Correctly setting the clearance between the reel fingers and the cutterbar ensures that the reel fingers do not contact the cutterbar when the header is operating. The clearance is set at the factory, but some adjustment may be necessary before the header can be operated.

The finger to guard/cutterbar clearance values when the reels are fully lowered are shown in the table below.

Table 5.3 Finger to Guard/Cutterbar Clearance

Header Width	(X) 3 mm (+/- 1/8 in.) at Reel Ends	
	Single Reel	Double Reel
D115	20 mm (3/4 in.)	—
D120	20 mm (3/4 in.)	—
D125	25 mm (1 in.)	—
D130	45 mm (1 3/4 in.)	20 mm (3/4 in.)
D135	60 mm (2 3/8 in.)	20 mm (3/4 in.)
D140	—	20 mm (3/4 in.)

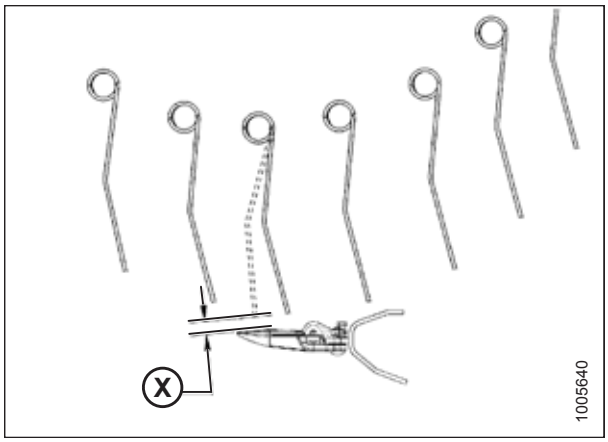


Figure 5.51: Finger Clearance

5.12.1 Measuring Reel Clearance

Measure the clearance between the reel fingers and the cutterbar before operating the reel.

DANGER

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

WARNING

Check to be sure all bystanders have cleared the area.

1. Start the engine.
2. Park the windrower on a level surface.
3. Lower the header fully.

4. Set the fore-aft position to the middle position (**5**), as shown on fore-aft position decal (A).
5. Lower the reel fully.
6. Shut down the engine, and remove the key from the ignition.

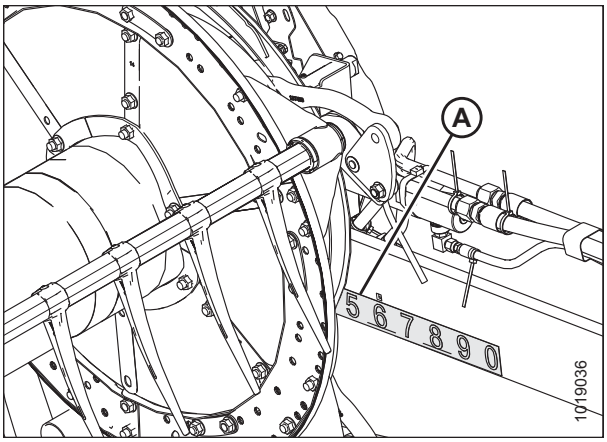


Figure 5.52: Fore-Aft Position

7. Measure clearance (X) between guard (A) and finger (B) at the specified measurement locations. For clearance specifications, refer to *5.12 Reel to Cutterbar Clearance, page 78*.

   For the measurement locations, refer to Figure *5.54, page 79*.

   NOTE:

   When measuring the reel clearance at the center of a double-reel header, measure the lowest reel.

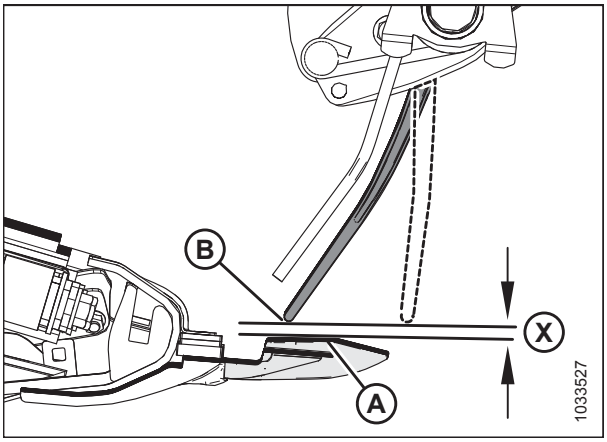


Figure 5.53: Reel to Cutterbar Clearance

Measure the reel clearance at the outer ends of the reel at locations (A).

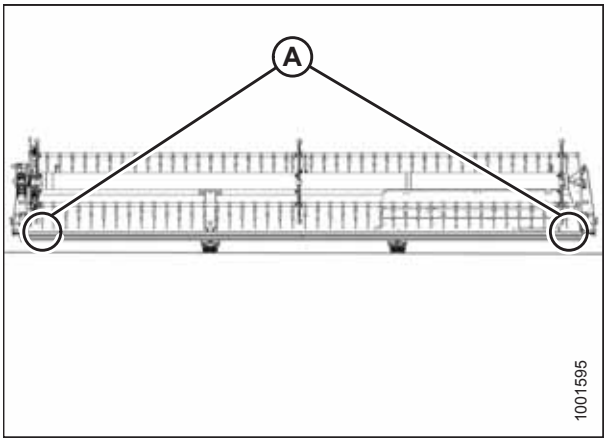


Figure 5.54: Reel Clearance Measurement Locations – Single Reel Shown

8. Adjust the reel clearance, if necessary. For instructions, refer to *5.12.2 Adjusting Reel Clearance, page 80*.

5.12.2 Adjusting Reel Clearance

Adjust the reel until there is enough clearance to prevent the reel fingers from contacting the cutterbar during operation.

DANGER

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

1. Raise the reel fully.
2. Shut down the engine, and remove the key from the ignition.
3. Move reel safety props (A) to the engaged position.

   NOTE:

   Keep pivot bolt (B) sufficiently tight that the prop remains in the stored position when not in use, but can be engaged using hand force.
4. Repeat the previous step on the opposite reel arm.

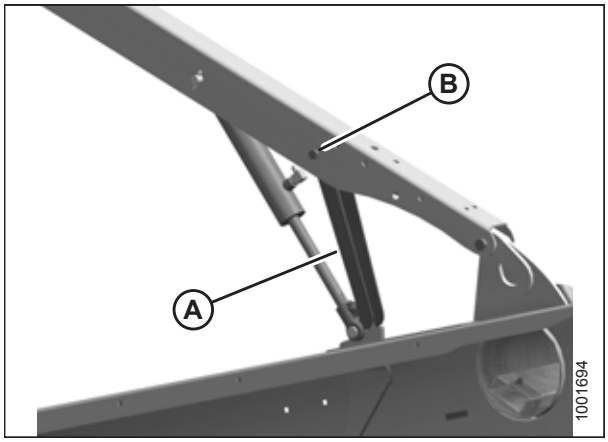


Figure 5.55: Engaged Reel Safety Prop – Left Shown

5. Use handle (A) to move the lock rod to inboard position (B), which engages pin (C) under the prop.
6. Lower the reel until the safety props contact the outer arm cylinder mounts and the center arm pins.

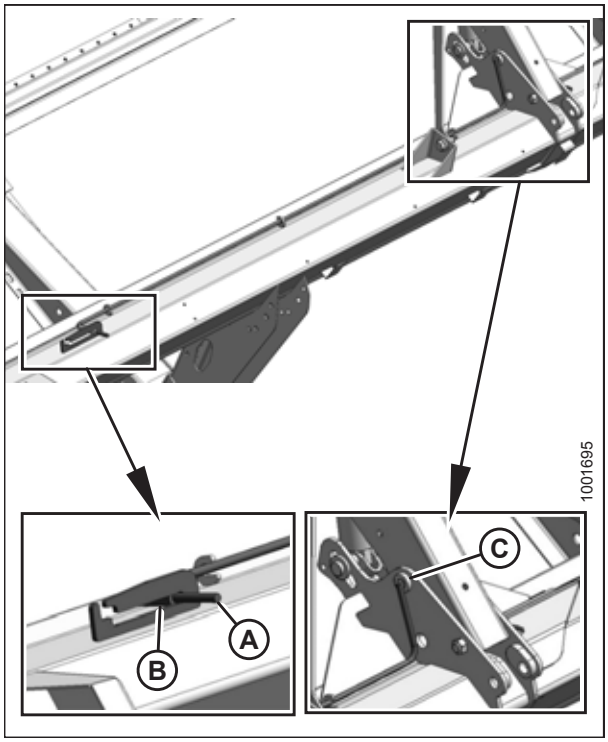


Figure 5.56: Reel Safety Prop – Center Arm

7. **Single-reel headers:** Adjust the outboard reel arm lift cylinders to set the clearance at the outboard ends of the reel as follows:

   a. Loosen bolt (A).

   b. Turn cylinder rod (B) out of the clevis to raise the reel and thereby increase the reel-to-cutterbar clearance, or else turn cylinder rod into the clevis to lower the reel and thereby decrease the reel-to-cutterbar clearance.

   c. Tighten bolt (A).

   d. Repeat Steps a) to c) to set the reel-to-cutterbar clearance on the opposite side of the header.

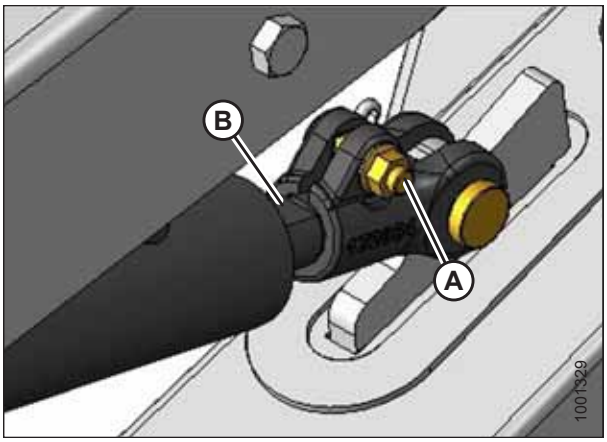


Figure 5.57: Outside Reel Arm

8. **Double-reel headers:** adjust center arm lift cylinder stop (A) to change the reel-to-cutterbar clearance at the inboard ends of the reels as follows:

   a. Loosen nut (B).

   b. Turn nut (C) counterclockwise to raise the reel and increase the reel-to-cutterbar clearance, or clockwise to lower the reel and decrease the reel-to-cutterbar clearance.

   c. Tighten nut (B).

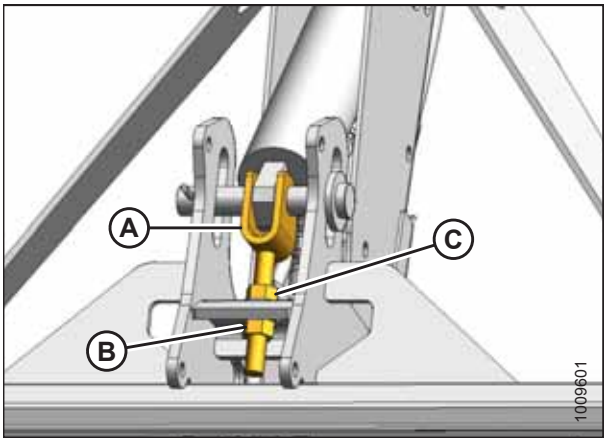


Figure 5.58: Underside of Center Arm

9. Measure the reel clearance again. For instructions, refer to *5.12.1 Measuring Reel Clearance, page 78*. If necessary, repeat the reel-to-cutterbar clearance adjustment procedure.

WARNING

Check to be sure all bystanders have cleared the area.

10. Start the engine.
11. Move the reel back to ensure that the steel end fingers do **NOT** contact the deflector shields.
12. If contact between the steel end fingers and the deflector shields occurs, adjust the reel upward to maintain the reel-to-cutterbar clearance at all reel fore-aft positions. If contact between the steel end fingers and the deflector shields still occurs after adjusting the reel, trim the steel end fingers to obtain the proper clearances.

    NOTE:

    Periodically inspect the equipment for abrasion damage caused by insufficient equipment clearance. Adjust the clearances as needed.

13. Raise the reel to its maximum height.
14. Move reel safety props (A) back inside the reel arms.
15. Repeat the previous step on the opposite end of the reel.

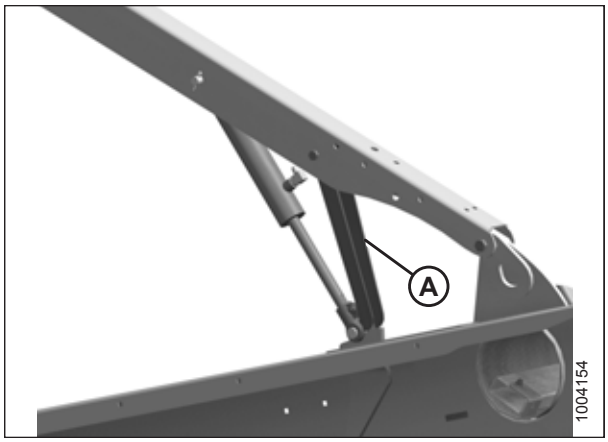


Figure 5.59: Left Reel Safety Prop

16. Use handle (B) to move lock rod (A) to the outboard position.
17. Lower the reel fully.
18. Shut down the engine, and remove the key from the ignition.

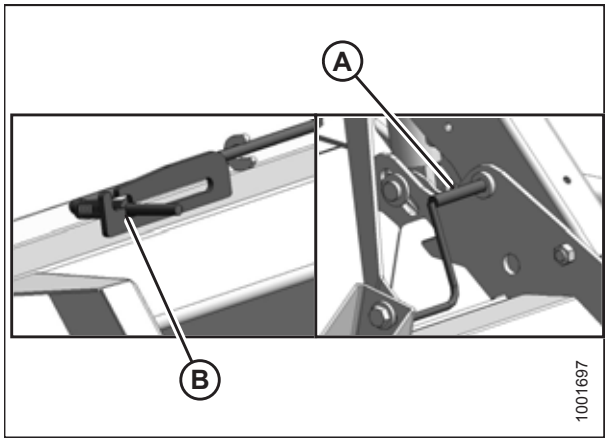


Figure 5.60: Reel Safety Prop – Center Arm

5.13 Checking Grease Points

The grease zerks on the header will need to be checked to ensure that they can accept grease.

IMPORTANT:

All grease points on the header should have received grease from the factory. Do not add more than one pump of grease from a grease gun before consulting the greasing procedures in the header operator's manual, as some components have special greasing requirements and can be damaged if the wrong procedure is followed.

IMPORTANT:

Do not use an electric grease gun for this procedure.

DANGER

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

1. Shut down the engine, and remove the key from the ignition.
2. Open both endshields. To open an endshield:
3. Locate the endshield.
4. From the back of the header, push release lever (A) to unlock the endshield.
5. Pull the endshield open using handle depression (B).

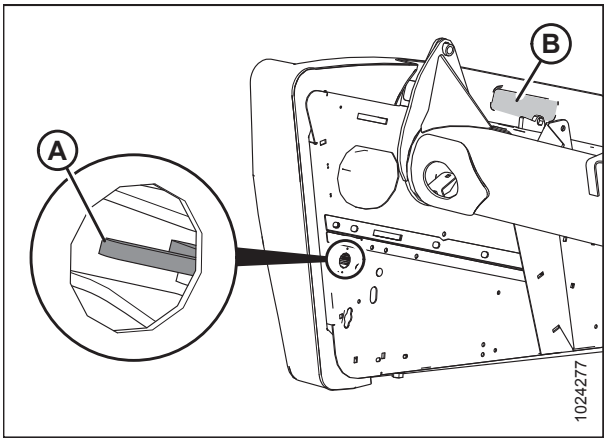


Figure 5.61: Left Endshield

6. Pull the endshield at handle depression (A).

   NOTE:

   The endshield is retained by hinge tab (B) and will open in direction (C).

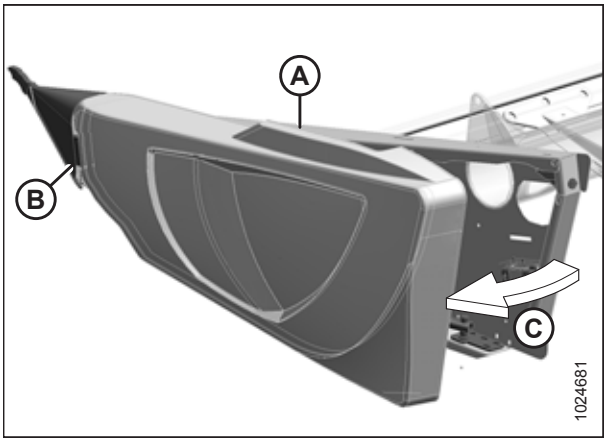


Figure 5.62: Left Endshield

7. If additional clearance is required, pull the endshield free of hinge tab (A) and swing the endshield toward the rear of the header.
8. Engage safety latch (B) on the hinge arm to secure the endshield in the fully open position.

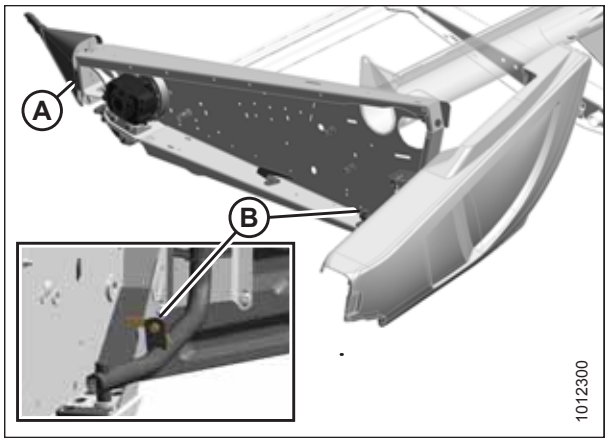


Figure 5.63: Left Endshield

9. Locate the grease point location decal on the header, or refer to the relevant illustration on the right side of this page.
10. For each grease point listed on the decal, check that the grease zerk accepts grease as follows:
    a. Wipe the grease fitting with a clean cloth to avoid injecting dirt and grit.
    b. Fit the end of the grease gun over the grease zerk. Inject one pump of grease [4] into the zerk. Most or all of the grease should enter the grease zerk without resistance or without overflowing the zerk. Some grease may overflow the lubricated component. If the zerk will not accept grease, refer to the header operator's manual for instructions on how to repair or replace a grease zerk.
    c. Leave a blob of excess grease on the fitting to keep out dirt.

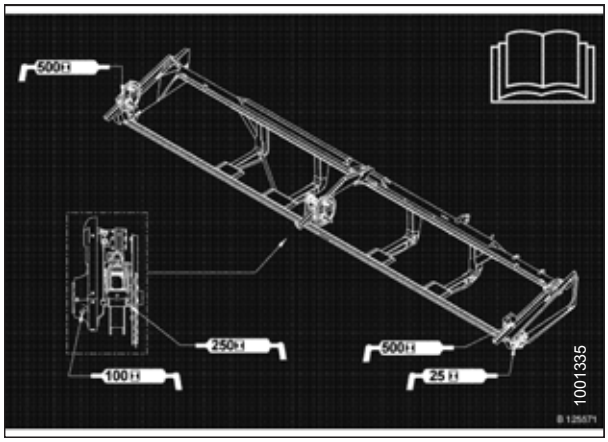


Figure 5.64: Single-Knife Header Grease Point Decal

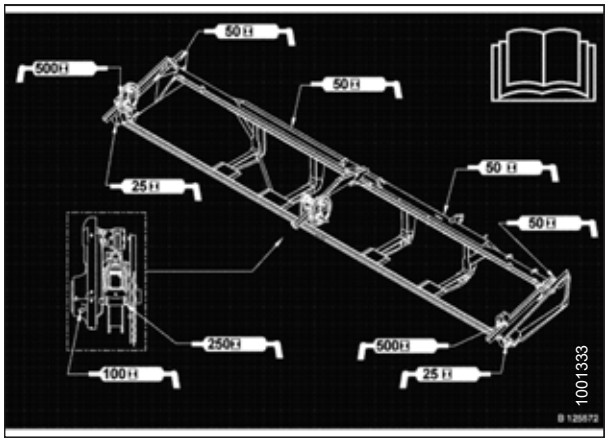


Figure 5.65: Double-Knife Header Grease Point Decal

4. Use only high temperature extreme pressure (EP2) performance with 1% maximum molybdenum disulphide (NLGI grade 2) lithium base grease.

11. Close both endshields. To close an endshield:
12. Disengage latch (B) to allow the endshield to move.
13. Insert the front of the endshield behind hinge tab (A) and into the divider cone.

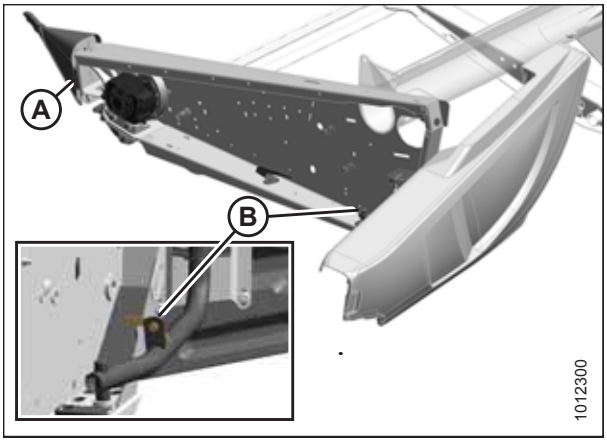


Figure 5.66: Left Endshield

14. Swing the endshield into the closed position (direction [A]). Engage the latch by pushing firmly on the endshield in the direction shown.
15. Ensure that the endshield is locked by pulling the endshield toward you; if it has successfully locked, it will not be possible to move the endshield.

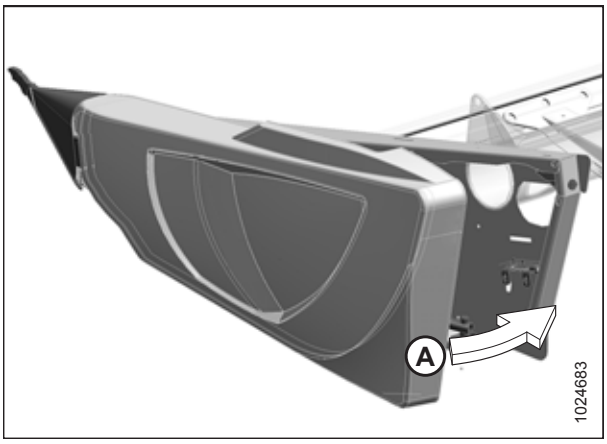


Figure 5.67: Left Endshield

5.14 Checking Manuals

The header's manual case is located inside the left endshield.

1. Locate the endshield.
2. From the back of the header, push release lever (A) to unlock the endshield.
3. Pull the endshield open using handle depression (B).

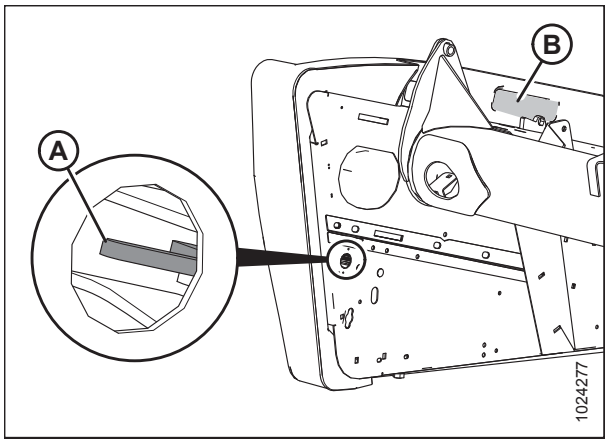


Figure 5.68: Left Endshield

4. Pull the endshield at handle depression (A).

   NOTE:

   The endshield is retained by hinge tab (B) and will open in direction (C).

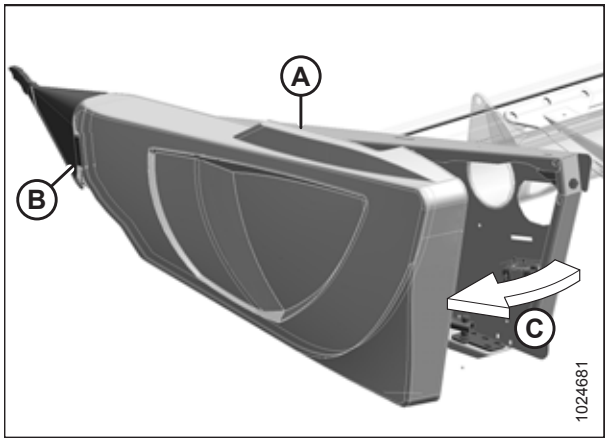


Figure 5.69: Left Endshield

5. If additional clearance is required, pull the endshield free of hinge tab (A) and swing the endshield toward the rear of the header.
6. Engage safety latch (B) on the hinge arm to secure the endshield in the fully open position.

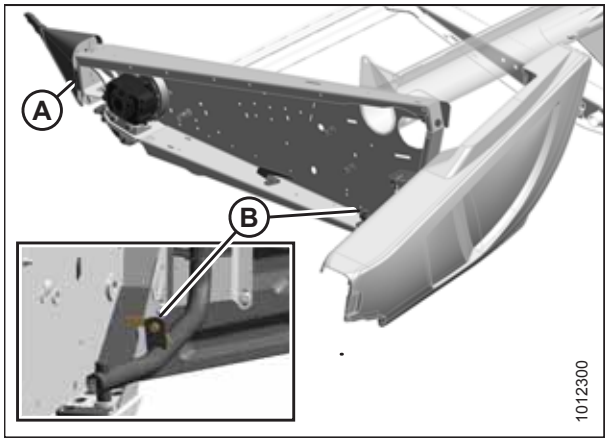


Figure 5.70: Left Endshield

7. Remove the cable tie on manual case (A).
8. Confirm that the case contains the following manuals:
   - D1 Series Draper Header for Self-Propelled Windrowers Operator's Manual
   - D1 Series Draper Header for Self-Propelled Windrowers Quick Card
   - D1 Series Draper Header for Self-Propelled Windrowers Parts Catalog
9. Close the case.

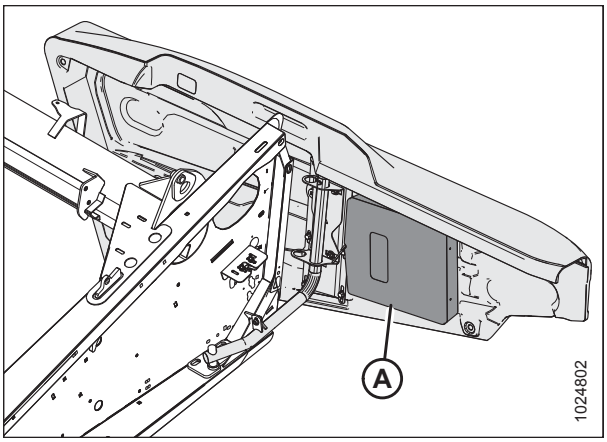


Figure 5.71: Manual Case

10. Disengage latch (B) to allow the endshield to move.
11. Insert the front of the endshield behind hinge tab (A) and into the divider cone.

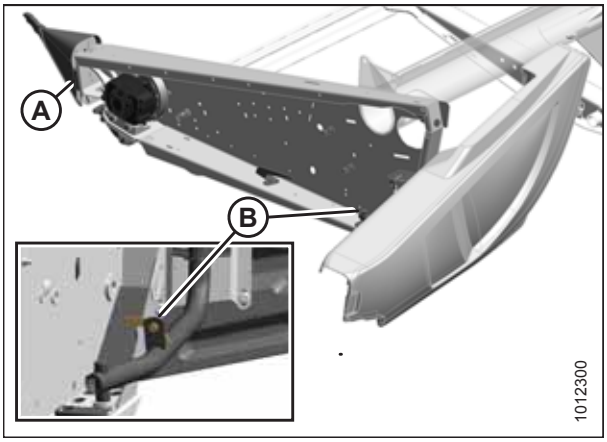


Figure 5.72: Left Endshield

12. Swing the endshield into the closed position (direction [A]). Engage the latch by pushing firmly on the endshield in the direction shown.
13. Ensure that the endshield is locked by pulling the endshield toward you; if it has successfully locked, it will not be possible to move the endshield.

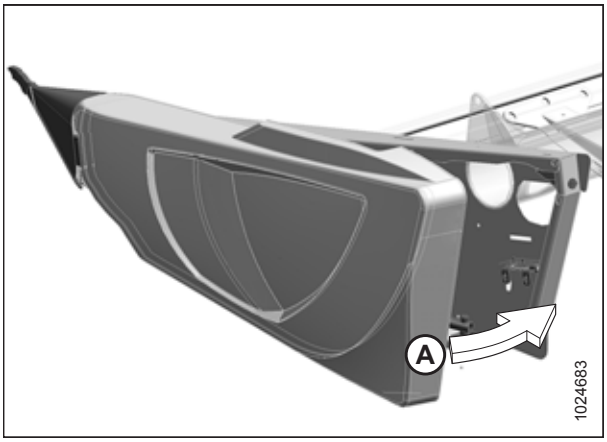


Figure 5.73: Left Endshield

Chapter 6: Running up Header

The header must be run up before it is delivered to the customer, to ensure that all its features are functional.

DANGER

To prevent bodily injury or death from the unexpected start-up of the machine, always stop the engine and remove the key before making adjustments to the machine.

DANGER

Clear the area of other persons, pets etc. Keep children away from the machinery. Walk around the machine to be sure that no one is under, on, or close to it.

1. Start the windrower.
2. Engage the header and let it run at low speed for 5 minutes, watching and listening **FROM THE OPERATOR'S SEAT** for binding or interfering parts.

   NOTE:

   The header's reels and drapers will not operate until hydraulic oil fills the lines.
3. Run the header for an additional 10 minutes at operating speed, watching and listening **FROM THE OPERATOR'S SEAT** for binding or interfering parts.
4. Shut down the engine, and remove the key from the ignition.
5. Perform the run-up check as detailed on the Predelivery Checklist (the yellow sheet attached to this instruction): *Predelivery Checklist, page 103*.

6.1 Performing Post Run-Up Adjustments

After the initial run-up of the header, a few final adjustments may be necessary.

Stop the engine and perform the post run-up checks listed on the Predelivery Checklist (the yellow sheet attached to this instruction: *Predelivery Checklist, page 103*) to ensure that the machine is field-ready.

WARNING

To prevent bodily injury or death from the unexpected startup of the machine, always stop the engine and remove the key before adjusting the machine.

It may be necessary to adjust the knife after the initial run-up. Refer to *6.1.1 Adjusting Knife, page 89* for instructions.

6.1.1 Adjusting Knife

Adjust the knife if you notice signs of overheating after running up the header.

WARNING

To prevent bodily injury or death from the unexpected startup of the machine, always stop the engine and remove the key before adjusting the machine.

1. Shut down the engine, and remove the key from the ignition.

2. Check the guards for signs of overheating occurring during the initial run-up procedure.

   NOTE:

   Overheating can be caused by insufficient clearance between the guard and the knife.

3. Check the gap between knifehead (A) and pitman arm (B). A feeler gauge set to 0.4 mm (0.016 in.) should slide easily through the gap. If the gap is too small, adjust the gap by loosening bolt (C), and tapping knifehead (A) with a hammer. Retighten the bolt when your adjustments are complete.

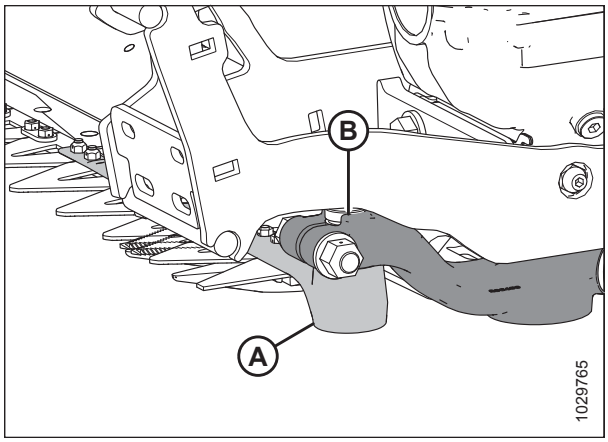


Figure 6.1: Knifehead and Pitman Arm

4. Adjust the guard alignment as needed using the guard-straightening tool (MD #140135). Adjust the guard tips upwards by positioning the tool as shown and then pulling up on the tool.

Figure 6.2: Straightening Tool – Upward Adjustment

5. Adjust the guard tips downward by positioning the tool as shown and then pushing down on the tool.

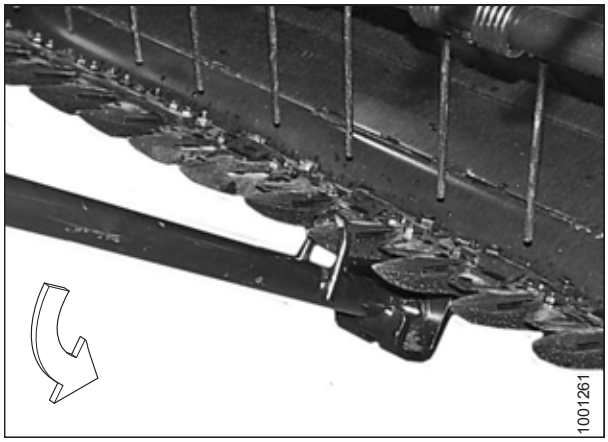


Figure 6.3: Straightening Tool – Downward Adjustment

Chapter 7: Reference

The reference section provides additional, non-procedural information on topics such as torque specifications, the requirements for lifting equipment, unit measurement conversions, and terminology definitions. Consult this section as needed.

7.1 Torque Specifications

The following tables provide torque values for various bolts, cap screws, and hydraulic fittings. Use these values only when no other torque value has been specified in a given procedure.

- Tighten all bolts to the torque values specified in the charts below, unless you are directed otherwise in this manual.
- Replace removed hardware with hardware of the same strength and grade.
- Use the torque value tables as a guide when periodically checking the tightness of bolts.
- Understand the torque categories for bolts and cap screws by reading the markings on their heads.

Jam nuts

Jam nuts require less torque than nuts used for other purposes. When applying torque to finished jam nuts, multiply the torque applied to regular nuts by 0.65 to obtain the modified torque value.

Self-tapping screws

Use the standard torque values when installing self-tapping screws. Do **NOT** install self-tapping screws on structural or otherwise critical joints.

7.1.1 Metric Bolt Specifications

The torque values provided in the following metric bolt torque tables apply to hardware installed dry; that is, hardware with no grease, oil, or threadlocker on the threads or heads. Do **NOT** grease or oil bolts or cap screws unless directed to do so in this manual.

Table 7.1 Metric Class 8.8 Bolts and Class 9 Free Spinning Nut

Nominal Size (A)	Torque (Nm)		Torque (lbf·ft) (*lbf·in)	
	Min.	Max.	Min.	Max.
3-0.5	1.4	1.6	*13	*14
3.5-0.6	2.2	2.5	*20	*22
4-0.7	3.3	3.7	*29	*32
5-0.8	6.7	7.4	*59	*66
6-1.0	11.4	12.6	*101	*112
8-1.25	28	30	20	23
10-1.5	55	60	40	45
12-1.75	95	105	70	78
14-2.0	152	168	113	124
16-2.0	236	261	175	193
20-2.5	460	509	341	377
24-3.0	796	879	589	651

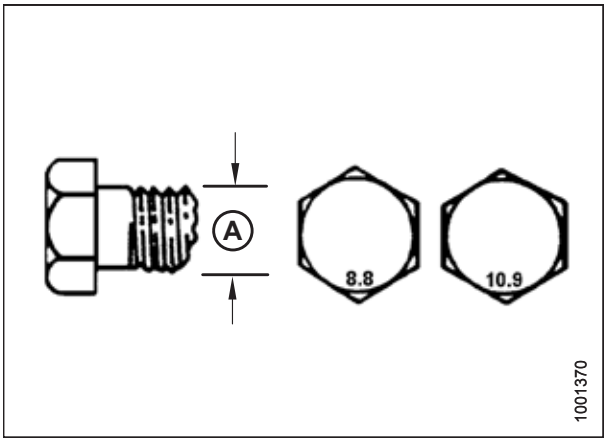


Figure 7.1: Bolt Grades

Table 7.2 Metric Class 8.8 Bolts and Class 9 Distorted Thread Nut

Nominal Size (A)	Torque (Nm)		Torque (lbf·ft) (*lbf·in)	
	Min.	Max.	Min.	Max.
3-0.5	1	1.1	*9	*10
3.5-0.6	1.5	1.7	*14	*15
4-0.7	2.3	2.5	*20	*22
5-0.8	4.5	5	*40	*45
6-1.0	7.7	8.6	*69	*76
8-1.25	18.8	20.8	*167	*185
10-1.5	37	41	28	30
12-1.75	65	72	48	53
14-2.0	104	115	77	85
16-2.0	161	178	119	132
20-2.5	314	347	233	257
24-3.0	543	600	402	444

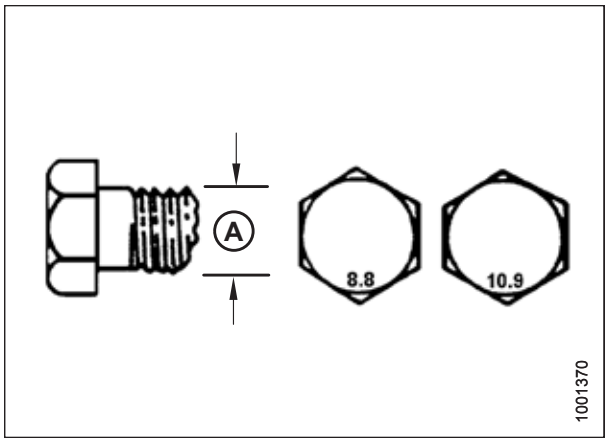


Figure 7.2: Bolt Grades

Table 7.3 Metric Class 10.9 Bolts and Class 10 Free Spinning Nut

Nominal Size (A)	Torque (Nm)		Torque (lbf·ft) (*lbf·in)	
	Min.	Max.	Min.	Max.
3-0.5	1.8	2	*18	*19
3.5-0.6	2.8	3.1	*27	*30
4-0.7	4.2	4.6	*41	*45
5-0.8	8.4	9.3	*82	*91
6-1.0	14.3	15.8	*140	*154
8-1.25	38	42	28	31
10-1.5	75	83	56	62
12-1.75	132	145	97	108
14-2.0	210	232	156	172
16-2.0	326	360	242	267
20-2.5	637	704	472	521
24-3.0	1101	1217	815	901

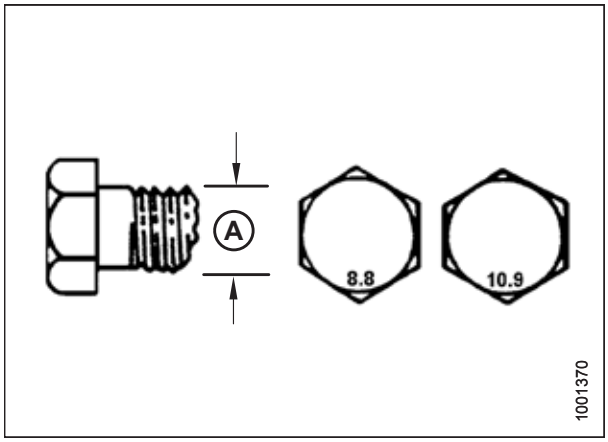


Figure 7.3: Bolt Grades

Table 7.4 Metric Class 10.9 Bolts and Class 10 Distorted Thread Nut

Nominal Size (A)	Torque (Nm)		Torque (lbf·ft) (*lbf·in)	
	Min.	Max.	Min.	Max.
3-0.5	1.3	1.5	*12	*13
3.5-0.6	2.1	2.3	*19	*21
4-0.7	3.1	3.4	*28	*31
5-0.8	6.3	7	*56	*62
6-1.0	10.7	11.8	*95	*105
8-1.25	26	29	19	21
10-1.5	51	57	38	42
12-1.75	90	99	66	73
14-2.0	143	158	106	117
16-2.0	222	246	165	182
20-2.5	434	480	322	356
24-3.0	750	829	556	614

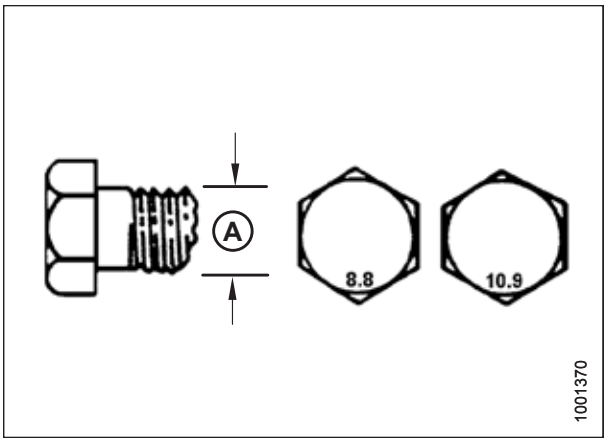


Figure 7.4: Bolt Grades

7.1.2 Metric Bolt Specifications Bolting into Cast Aluminum

The torque values provided in the following metric bolt torque tables apply to hardware installed dry; that is, hardware with no grease, oil, or threadlocker on the threads or heads. Do **NOT** grease or oil bolts or cap screws unless directed to do so in this manual.

Table 7.5 Metric Bolt Bolting into Cast Aluminum

Nominal Size (A)	Bolt Torque			
	8.8 (Cast Aluminum)		10.9 (Cast Aluminum)	
	Nm	lbf·ft	Nm	lbf·ft
M3	–	–	–	1
M4	–	–	4	2.6
M5	–	–	8	5.5
M6	9	6	12	9
M8	20	14	28	20
M10	40	28	55	40
M12	70	52	100	73
M14	–	–	–	–
M16	–	–	–	–

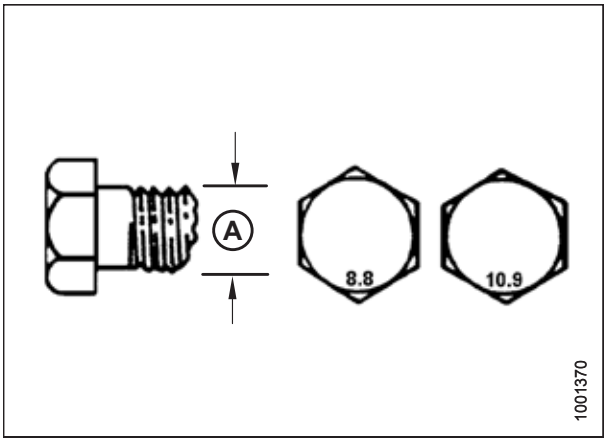


Figure 7.5: Bolt Grades

7.1.3 O-Ring Boss Hydraulic Fittings – Adjustable

The standard torque values are provided for adjustable hydraulic fittings. If a procedure specifies a different torque value for the same type and size of fitting found in this topic, use the value specified in the procedure instead.

1. Inspect O-ring (A) and seat (B) for dirt or obvious defects.
2. Back off lock nut (C) as far as possible. Ensure that washer (D) is loose and is pushed toward lock nut (C) as far as possible.
3. Check that O-ring (A) is **NOT** on the threads. Adjust O-ring (A) if necessary.
4. Apply hydraulic system oil to O-ring (A).

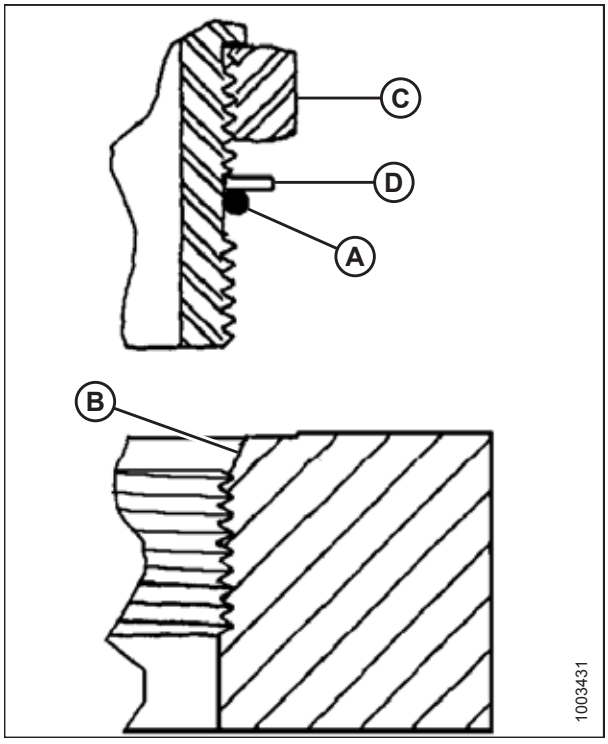


Figure 7.6: Hydraulic Fitting

5. Install fitting (B) into the port until backup washer (D) and O-ring (A) contact part face (E).
6. Position the angle fittings by unscrewing no more than one turn.
7. Turn lock nut (C) down to washer (D) and tighten it to the torque value indicated in the table. Use two wrenches, one on fitting (B) and the other on lock nut (C).
8. Check the final condition of the fitting.

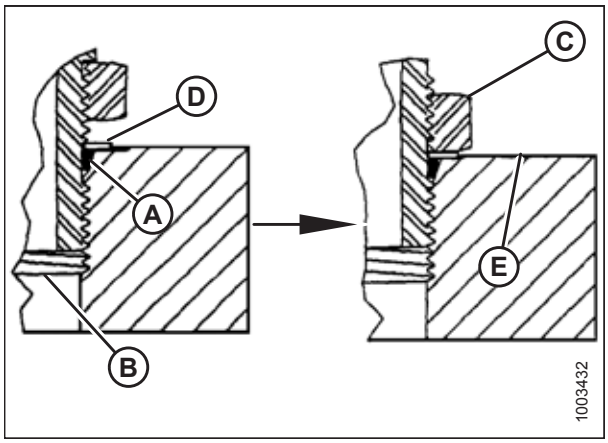


Figure 7.7: Hydraulic Fitting

Table 7.6 O-Ring Boss (ORB) Hydraulic Fittings – Adjustable

SAE Dash Size	Thread Size (in.)	Torque Value[5]	
		Nm	lbf·ft (*lbf·in)
-2	5/16–24	6–7	*53–62
-3	3/8–24	12–13	*106–115

5. Torque values shown are based on lubricated connections as in reassembly.

Table 7.6 O-Ring Boss (ORB) Hydraulic Fittings – Adjustable (continued)

SAE Dash Size	Thread Size (in.)	Torque Value[6]	
		Nm	lbf·ft (*lbf·in)
-4	7/16–20	19–21	14–15
-5	1/2–20	21–33	15–24
-6	9/16–18	26–29	19–21
-8	3/4–16	46–50	34–37
-10	7/8–14	75–82	55–60
-12	1 1/16–12	120–132	88–97
-14	1 3/8–12	153–168	113–124
-16	1 5/16–12	176–193	130–142
-20	1 5/8–12	221–243	163–179
-24	1 7/8–12	270–298	199–220
-32	2 1/2–12	332–365	245–269

6. Torque values shown are based on lubricated connections as in reassembly.

7.1.4 O-Ring Boss Hydraulic Fittings – Non-Adjustable

The standard torque values are provided for non-adjustable hydraulic fittings. If a procedure specifies a different torque value for the same type and size of fitting found in this topic, use the value specified in the procedure instead.

Torque values are shown in following table below.

1. Inspect O-ring (A) and seat (B) for dirt or obvious defects.
2. Check that O-ring (A) is **NOT** on the threads. Adjust O-ring (A) if necessary.
3. Apply hydraulic system oil to the O-ring.
4. Install fitting (C) into the port until the fitting is hand-tight.
5. Torque fitting (C) according to values in Table *7.7, page 96*.
6. Check the final condition of the fitting.

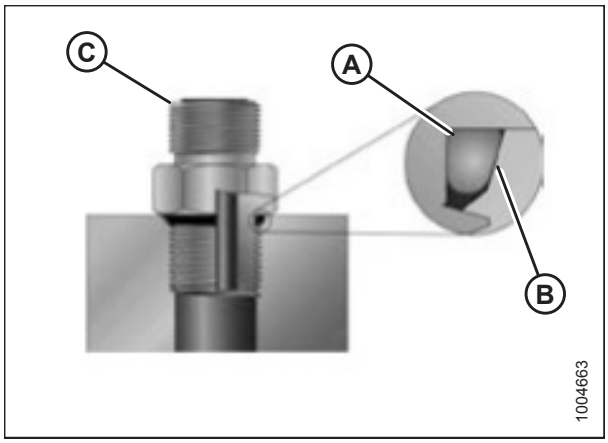


Figure 7.8: Hydraulic Fitting

Table 7.7 O-Ring Boss (ORB) Hydraulic Fittings – Non-Adjustable

SAE Dash Size	Thread Size (in.)	Torque Value[7]	
		Nm	lbf·ft (*lbf·in)
-2	5/16–24	6–7	*53–62
-3	3/8–24	12–13	*106–115
-4	7/16–20	19–21	14–15
-5	1/2–20	21–33	15–24
-6	9/16–18	26–29	19–21
-8	3/4–16	46–50	34–37
-10	7/8–14	75–82	55–60
-12	1 1/16–12	120–132	88–97
-14	1 3/8–12	153–168	113–124
-16	1 5/16–12	176–193	130–142
-20	1 5/8–12	221–243	163–179
-24	1 7/8–12	270–298	199–220
-32	2 1/2–12	332–365	245–269

7.1.5 O-Ring Face Seal Hydraulic Fittings

The standard torque values are provided for O-ring face seal hydraulic fittings. If a procedure specifies a different torque value for the same type and size of fitting found in this topic, use the value specified in the procedure instead.

Torque values are shown in following table below.

7. Torque values shown are based on lubricated connections as in reassembly.

1. Check the components to ensure that the sealing surfaces and the fitting threads are free of burrs, nicks, scratches, and any foreign material.

Figure 7.9: Hydraulic Fitting

2. Apply hydraulic system oil to O-ring (B).
3. Align the tube or hose assembly so that the flat face of sleeve (A) or (C) comes into full contact with O-ring (B).
4. Thread tube or hose nut (D) until it is hand-tight. The nut should turn freely until it bottoms out.
5. Torque the fittings according to values in Table *7.8, page 97*.

   NOTE:

   If applicable, hold the hex flange on fitting body (E) to prevent the rotation of the fitting body and the hose when tightening fitting nut (D).
6. Use three wrenches when assembling unions or joining two hoses together.
7. Check the final condition of the fitting.

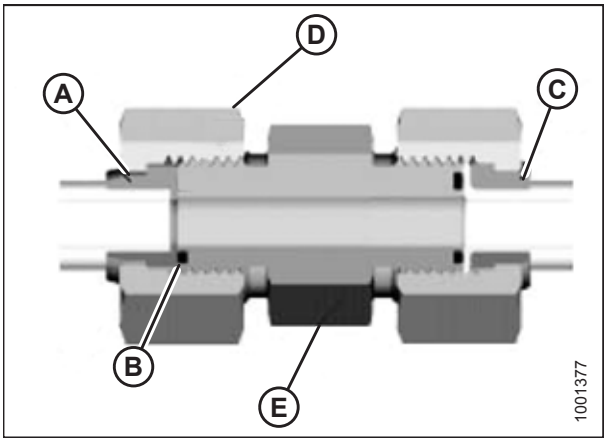


Figure 7.10: Hydraulic Fitting

Table 7.8 O-Ring Face Seal (ORFS) Hydraulic Fittings

SAE Dash Size	Thread Size (in.)	Tube O.D. (in.)	Torque Value[8]	
			Nm	lbf·ft
-3	Note[9]	3/16	–	–
-4	9/16	1/4	25–28	18–21
-5	Note[9]	5/16	–	–
-6	11/16	3/8	40–44	29–32
-8	13/16	1/2	55–61	41–45
-10	1	5/8	80–88	59–65
-12	1 3/16	3/4	115–127	85–94
-14	Note[9]	7/8	–	–
-16	1 7/16	1	150–165	111–122
-20	1 11/16	1 1/4	205–226	151–167

8. Torque values and angles shown are based on lubricated connection as in reassembly.
9. O-ring face seal type end not defined for this tube size.

Table 7.8 O-Ring Face Seal (ORFS) Hydraulic Fittings (continued)

SAE Dash Size	Thread Size (in.)	Tube O.D. (in.)	Torque Value[10]	
			Nm	lbf·ft
-24	1–2	1 1/2	315–347	232–256
-32	2 1/2	2	510–561	376–414

7.1.6 Tapered Pipe Thread Fittings

The standard torque values are provided for tapered pipe thread fittings. If a procedure specifies a different torque value for the same type and size of fitting found in this topic, use the value specified in the procedure instead.

Assemble pipe fittings as follows:

1. Check the components to ensure that the fitting and the port threads are free of burrs, nicks, scratches, and any other form of contamination.
2. Apply paste-type pipe thread sealant to the external pipe threads.
3. Thread the fitting into the port until it is hand-tight.
4. Torque the connector to the appropriate torque angle. The turns from finger tight (TFFT) and flats from finger tight (FFFT) values are shown in Table *7.9, page 98*. Make sure that the tube end of a shaped connector (typically a 45° or 90° elbow) is aligned to receive the incoming tube or hose assembly. Always finish the alignment of the fitting in the direction of tightening. Never back off (i.e. loosen) the threaded connectors to achieve alignment.
5. Clean all residue and any excess thread conditioner with an appropriate cleaner.
6. Assess the final condition of the fitting. Pay special attention to the possibility of cracks in the port opening.
7. Mark the final position of the fitting. If a fitting leaks, disassemble the fitting and check it for damage.

   NOTE:

   The failure of fittings due to overtorquing may not be evident until the fittings are disassembled and inspected.

Table 7.9 Hydraulic Fitting Pipe Thread

Tapered Pipe Thread Size	Recommended TFFT	Recommended FFFT
1/8–27	2–3	12–18
1/4–18	2–3	12–18
3/8–18	2–3	12–18
1/2–14	2–3	12–18
3/4–14	1.5–2.5	12–18
1–11 1/2	1.5–2.5	9–15
1 1/4–11 1/2	1.5–2.5	9–15
1 1/2–11 1/2	1.5–2.5	9–15
2–11 1/2	1.5–2.5	9–15

10. Torque values and angles shown are based on lubricated connection as in reassembly.

7.2 Header Specifications for Unloading and Assembly

Header dimensions and weight specifications are provided so that you can choose the correct equipment to lift or transport the header safely.

DANGER

To prevent injury to bystanders caused by being struck by machinery, do NOT allow people to stand in the unloading area.

DANGER

The equipment used for loading or unloading a header must meet or exceed the requirements specified in this document. Using inadequate equipment may result in chain breakage, vehicle tipping, machine damage or bodily harm to operators or bystanders.

IMPORTANT:

The load center of a sample load is indicated by dimension (A). Forklifts are normally rated for a load center projected forward 610 mm (24 in.) from the back end of the forks. To learn the forklift capacity for a load center at 1220 mm (48 in.) (dimension [B]), contact your forklift distributor. The minimum fork length (shown by dimension [C]) required to unload the header is 1981 mm (78 in.).

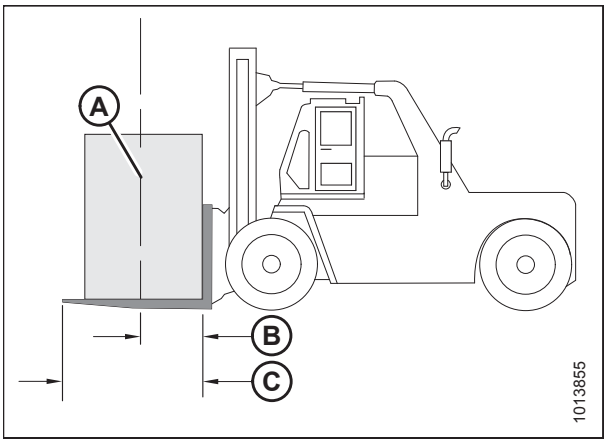


Figure 7.11: Minimum Lifting Capacity

A - Load Center of Gravity
B - Load Center 1220 mm (48 in.) from Back of Forks
C - Minimum Fork Length 1981 mm (78 in.)

Table 7.10 Lifting Vehicle Requirements

Minimum Capacity	3178 kg (7000 lb.) at 1220 mm (48 in.) from back end of forks
Minimum Fork Length	1981 mm (78 in.)

Table 7.11 Lifting Chain Requirements

Type	Overhead lifting quality (1/2 in.)
Minimum Load	2270 kg (5000 lb.)

7.3 Conversion Chart

Both SI units (including metric) and US customary units (sometimes referred to as standard units) of measurement are used in this manual. A list of those units along with their abbreviations and conversion factors is provided here for your reference.

Table 7.12 Conversion Chart

Quantity	SI Units (Metric)		Factor	US Customary Units (Standard)	
	Unit Name	Abbreviation		Unit Name	Abbreviation
Area	hectare	ha	x 2.4710 =	acre	acres
Flow	liters per minute	L/min	x 0.2642 =	US gallons per minute	gpm
Force	Newton	N	x 0.2248 =	pound force	lbf
Length	millimeter	mm	x 0.0394 =	inch	in.
Length	meter	m	x 3.2808 =	foot	ft.
Power	kilowatt	kW	x 1.341 =	horsepower	hp
Pressure	kilopascal	kPa	x 0.145 =	pounds per square inch	psi
Pressure	megapascal	MPa	x 145.038 =	pounds per square inch	psi
Pressure	bar (Non-SI)	bar	x 14.5038 =	pounds per square inch	psi
Torque	Newton meter	Nm	x 0.7376 =	pound feet or foot pounds	lbf·ft
Torque	Newton meter	Nm	x 8.8507 =	pound inches or inch pounds	lbf·in
Temperature	degrees Celsius	°C	(°C x 1.8) + 32 =	degrees Fahrenheit	°F
Velocity	meters per minute	m/min	x 3.2808 =	feet per minute	ft/min
Velocity	meters per second	m/s	x 3.2808 =	feet per second	ft/s
Velocity	kilometers per hour	km/h	x 0.6214 =	miles per hour	mph
Volume	liter	L	x 0.2642 =	US gallon	US gal
Volume	milliliter	mL	x 0.0338 =	ounce	oz.
Volume	cubic centimeter	cm^3 or cc	x 0.061 =	cubic inch	$in.^3$
Weight	kilogram	kg	x 2.2046 =	pound	lb.

7.4 Definitions

The following terms, abbreviations, and acronyms may be used in this instruction.

Term	Definition
API	American Petroleum Institute
ASTM	American Society of Testing and Materials
Bolt	A headed and externally threaded fastener designed to be paired with a nut
Cab-forward	Windrower operation mode, in which the Operator's seat faces the header
CDM	Cab display module on an M Series Windrower
Center-link	A hydraulic cylinder connection between the header and the vehicle, which is used to change the angle of the header relative to the vehicle
CGVW	Combined gross vehicle weight
D1 SP Series Header	MacDon D115, D120, D125, D130, D135, and D140 rigid draper headers for windrowers
DDD	Double-draper drive
DK	Double knife
DKD	Double-knife drive
DR	Double reel
DWA	Double Windrow Attachment
Engine-forward	Windrower operation with Operator and engine facing in direction of travel
Export header	The header configuration typical outside North America
FFFT	Flats from finger tight
Finger tight	Finger tight is a reference position in which the given sealing surfaces or components are making contact with each other and the fitting has been tightened by hand to a point where the fitting is no longer loose and cannot be tightened further by hand
GVW	Gross vehicle weight
Hard joint	A joint made with use of a fastener where joining materials are highly incompressible
Header	A machine that cuts and lays crop into a windrow when attached to a windrower
Hex key	A tool of hexagonal cross-section used to drive bolts and screws that have a hexagonal socket in the head (internal-wrenching hexagon drive); also known as an Allen key
HDS	Hydraulic deck shift
hp	Horsepower
ISC	Intermediate Speed Control
JIC	Joint Industrial Council: A standards body that developed standard sizing and shape for original 37° flared fitting
Knife	A cutting device found on a header's cutterbar which uses a reciprocating cutter (also called a sickle) to cut crop so that it can be fed into the header
M Series Windrowers	MacDon M100, M105, M150, M155, M155*E4*, M200, and M205 Windrowers
MDS	Mechanical Deck Shift
n/a	Not applicable
North American header	The header configuration typical in North America
NPT	National Pipe Thread: A style of fitting used for low-pressure port openings. Threads on NPT fittings are uniquely tapered for an interference fit
Nut	An internally threaded fastener designed to be paired with a bolt
ORB	O-ring boss: A style of fitting commonly used in port openings on manifolds, pumps, and motors

Term	Definition
ORFS	O-ring face seal: A style of fitting commonly used for connecting hoses and tubes. This style of fitting is also commonly called ORS, which stands for O-Ring Seal
rpm	Revolutions per minute
SAE	Society of Automotive Engineers
Screw	A headed and externally threaded fastener that threads into preformed threads or forms its own thread when inserted into a mating part
SDD	Single-draper drive
Self-Propelled (SP) Windrower	Self-propelled machine consisting of a power unit and a header. It is designed to cut and lay crops into windrows for later harvest
SK	Single knife
SKD	Single-knife drive
Soft joint	A flexible joint made by use of a fastener in which the joining materials compress or relax over a period of time
spm	Strokes per minute
SR	Single reel
Tension	An axial load placed on a bolt or screw, usually measured in Newtons (N) or pounds (lb.). This term can also be used to describe the force a belt exerts on a pulley or sprocket
TFFT	Turns from finger tight
Timed knife drive	Synchronized motion applied at cutterbar to two separately driven knives from a single hydraulic motor
Torque	The product of a force * the length of a lever arm, usually measured in Newton-meters (Nm) or foot-pounds (lbf·ft)
Torque angle	A tightening procedure in which a fitting is assembled to a specified tightness (usually finger tight) and then the nut is turned farther by a specified number of degrees until it achieves its final position
Torque-tension	The relationship between the assembly torque applied to a piece of hardware and the axial load it induces in a bolt or screw
UCA	Upper Cross Auger
Untimed knife drive	Unsynchronized motion applied at the cutterbar to two separately driven knives from a single hydraulic motor or from two hydraulic motors
Washer	A thin cylinder with a hole or a slot located in the center, used as a spacer, a load distribution element, or a locking mechanism
Windrower	The power unit for a header

Predelivery Checklist

Perform these checks before delivering the header. **Adjustments to the header normally are not required; the machine will have been assembled and adjusted at the factory.** However, if adjustments are required, refer to the relevant procedure in this manual. The completed Checklist should be retained by either the Operator or the Dealer.

CAUTION

Carefully follow the instructions provided herein. Be alert for safety related messages that bring your attention to hazards and unsafe practices.

Header Serial Number:

Predelivery Checklist for D1 Series Draper Headers – North America

✓	Item	Reference
	Check for shipping damage or missing parts. Ensure that all shipping dunnage has been removed.	—
	Check for loose hardware. Tighten any loose hardware to the required torque value.	*7.1 Torque Specifications, page 91*
	Check the tire pressure on the Transport/Stabilizer Option tires.	*5.1 Checking Tire Pressure – Transport and Stabilizer Wheels, page 51*
	Check the wheel bolt torque on the Transport/Stabilizer Option wheels.	*5.2 Checking Wheel Bolt Torque – Transport and Stabilizer Wheels, page 52*
	Check the position of the knife drive box's breather.	*5.4 Checking Knife Drive Box, page 57*
	Check the level of lubricant in the knife drive box.	*5.4 Checking Knife Drive Box, page 57*
	Check the tension on the knife drive belt(s).	*5.5 Checking and Adjusting Knife Drive Belt Tension, page 58*
	Ensure that the reel is properly centered between the header's endsheets.	*5.6 Centering Reel, page 65*
	Ensure that all grease zerks accept grease.	*5.13 Checking Grease Points, page 83*
	Check the tension on the draper.	*5.7 Checking and Adjusting Draper Tension, page 68*
	Ensure that the draper seal is set correctly.	*5.8 Checking and Adjusting Draper Seal, page 70*
	Ensure that the reel tine-to-cutterbar clearance is set correctly.	*5.12.1 Measuring Reel Clearance, page 78*
	Ensure that the skid shoes are positioned correctly.	*5.9 Checking and Adjusting Skid Shoe Settings, page 75*
	Check the fit of the endshields.	*5.3 Checking and Adjusting Endshields, page 53*
	Ensure that the header is level.	*5.10 Leveling Header, page 76*
	Check the header's float setting.	*5.11 Checking and Adjusting Float, page 77*
	Check the hydraulic hose and wiring harness routing for clearance when raising or lowering the header and reel.	—
Run-up procedure		*6 Running up Header, page 89*
	Ensure that the knife drive pulley(s) are rotating in the proper direction: clockwise on the left side; counterclockwise on the right side (double knife only).	*5.5 Checking and Adjusting Knife Drive Belt Tension, page 58*
	Ensure that the header's lights are functioning correctly.	—
	Ensure that the reel lift cylinders extend fully.	—

✓	Item	Reference
	Ensure that the reel moves fully fore and aft.	—
Post run-up check. Stop the engine.		*6.1 Performing Post Run-Up Adjustments, page 89*
	Inspect the belt drives. Ensure that the bearings are not overheating.	*5.5 Checking and Adjusting Knife Drive Belt Tension, page 58*
	Inspect the knife sections for discoloration caused by misaligned components.	*6.1.1 Adjusting Knife, page 89*
	Inspect the cutterbar above the draper seal for hot spots. Adjust the deck height as needed.	*5.8 Checking and Adjusting Draper Seal, page 70*
	Safely inspect the hydraulic system for hydraulic fluid leaks.	—
	Ensure that the manual storage case contains an operator's manual, a quick card, and a parts catalog.	*5.14 Checking Manuals, page 86*

Date checked: **Checked by:**

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