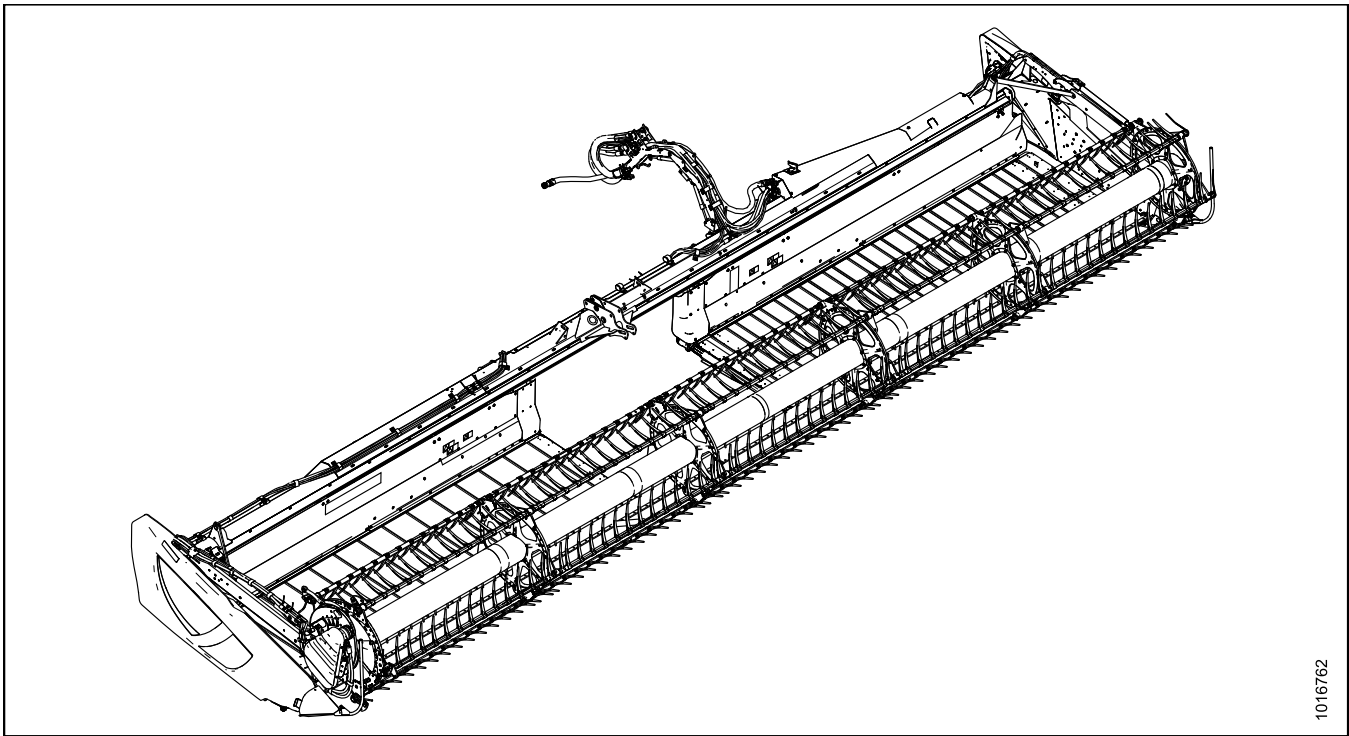


D1 XL-Series Draper Header for Windrowers

Unloading and Assembly Instructions (North America)

214017 Revision A
2016 Model Year
Original Instruction

D1 XL-Series Draper Header for Self-Propelled Windrowers



1016762

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Introduction

This instruction manual describes the unloading, setup, and predelivery requirements for the MacDon D1 XL-Series Draper Header for Self-Propelled Windrowers.

To ensure the best performance of this product and the safety of your customers, carefully follow the unload and assembly procedure from the beginning through to completion.

Some sections/steps apply to multiple header configurations and sizes. Refer to the instructions for your specific header.

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

Retain this instruction for future reference.

This instruction is available in the English language only.

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1 Safety

1.1 Signal Words

Three signal words, *DANGER*, *WARNING*, and *CAUTION*, are used to alert you to hazardous situations. The appropriate signal word for each situation has been 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.

1.2 General Safety

CAUTION

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

Protect yourself.

- When assembling, operating, and servicing machinery, wear all the protective clothing and personal safety devices that **could** be necessary for the job at hand. Don't take chances. You may need the following:
 - Hard hat
 - Protective footwear with slip resistant soles
 - Protective glasses or goggles
 - Heavy gloves
 - Wet weather gear
 - Respirator or filter mask
- Be aware that exposure to loud noises can cause hearing impairment or loss. Wear suitable hearing protection devices such as ear muffs or ear plugs to help protect against objectionable or loud noises.

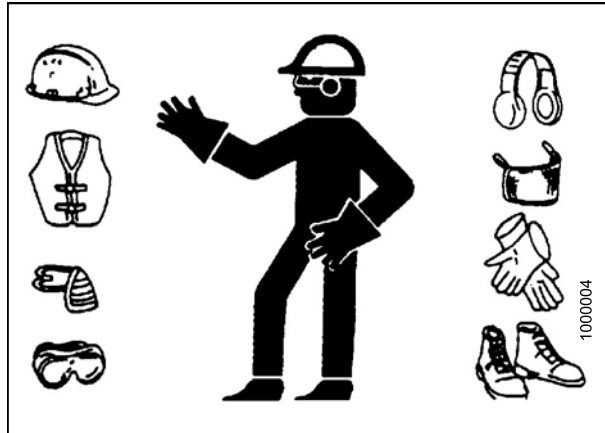


Figure 1.1: Safety Equipment



Figure 1.2: Safety Equipment

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

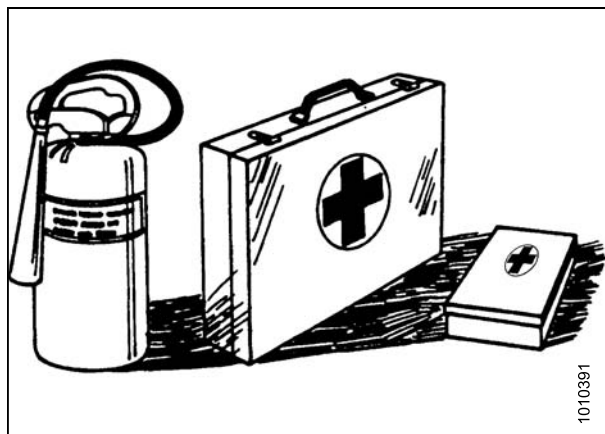


Figure 1.3: Safety Equipment

SAFETY

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



Figure 1.4: Safety around Equipment

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

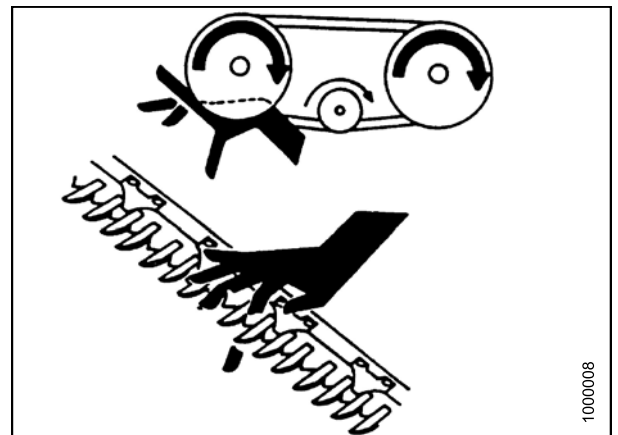


Figure 1.5: Safety around Equipment

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



Figure 1.6: Safety around Equipment

1.3 Safety Signs

- Keep safety signs clean and legible at all times.
- Replace safety signs that are missing or become illegible.
- If original parts on which a safety sign was installed are replaced, be sure the repair part also bears the current safety sign.
- Safety signs are available from MacDon Parts.

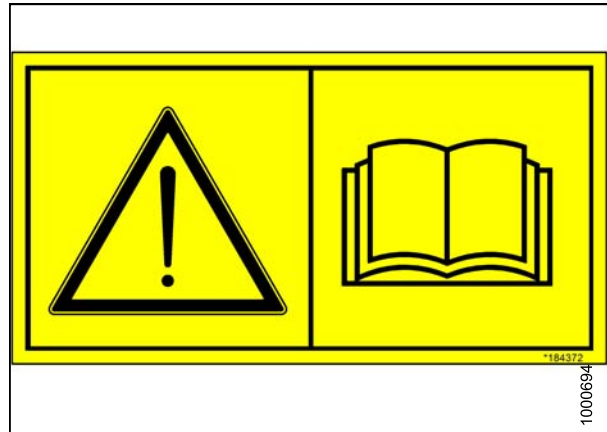


Figure 1.7: Operator's Manual Decal

2 Unloading Header

Perform all procedures in this chapter in the order in which they are listed.

2.1 Unloading Header from Trailer

The following procedure assumes that two headers were shipped on the trailer.

CAUTION

To avoid injury to bystanders from being struck by machinery, do not allow people to stand in unloading area.

CAUTION

Equipment used for unloading must meet or exceed the requirements specified below. Using inadequate equipment may result in chain breakage, vehicle tipping, or machine damage.

IMPORTANT:

Forklifts are normally rated with the load centered 24 in. (610 mm) from the back end of forks. To obtain forklift capacity for a load centered at 48 in. (1220 mm), check with your forklift distributor.

Table 2.1 Lifting Vehicle

Minimum Lifting Capacity	7000 lb. (3178 kg) load center (A) at 48 in. (1220 mm) (B) from back of forks
Minimum Fork Length (C)	78 in. (1981 mm)

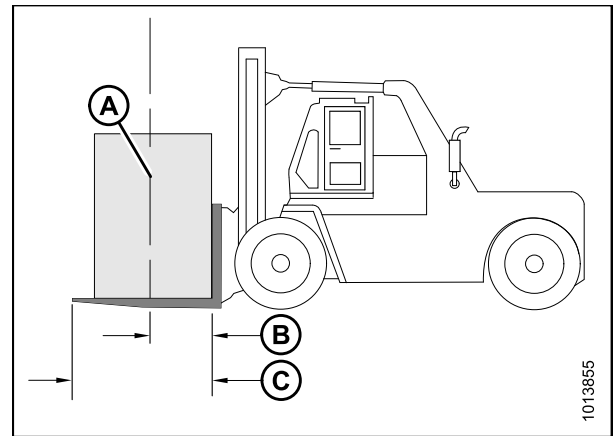


Figure 2.1: Minimum Lifting Capacity

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

To unload headers from a trailer, follow these steps:

1. Move trailer into position and block trailer wheels.
2. Lower trailer storage stands.

UNLOADING HEADER

3. Approach one of the headers and slide forks (A) underneath the shipping support (B) as far as possible without contacting the shipping support of opposite header (C).

IMPORTANT:

Avoid lifting the second header and ensure the forks do not interfere with the shipping frame. If the forks contact the second header, damage to the headers may occur.

4. Remove hauler's tie-down straps, chains, and wooden blocks.
5. Slowly raise header off trailer deck.



WARNING

Be sure forks are secure before moving away from load. Stand clear when lifting.

6. Back up until unit clears trailer and slowly lower to 6 in. (150 mm) from ground.

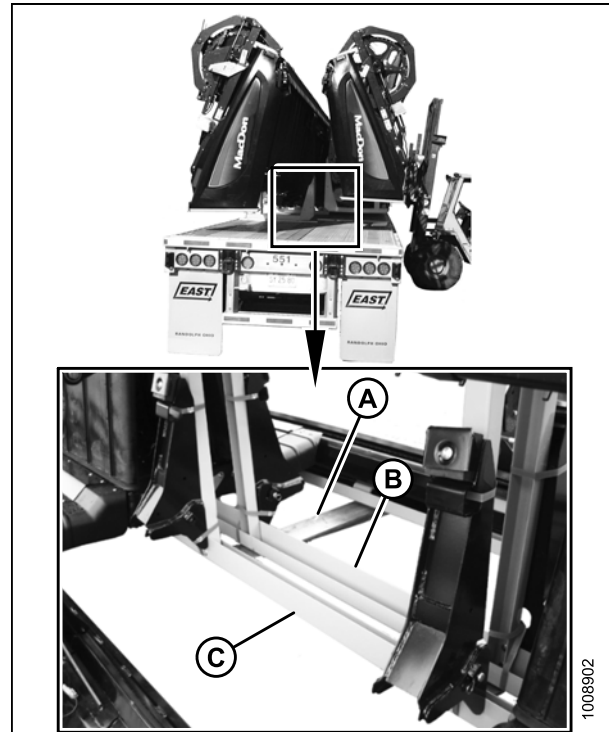


Figure 2.2: Header Shipping Supports

7. Take header to the storage or setup area. Ensure ground is flat and free of rocks or debris that could damage the header.
8. Repeat above steps for second header.
9. Check for shipping damage and missing parts.

2.2 Lowering Header

The procedure for lowering the header from the trailer varies depending on whether the header has a single or double reel. Refer to the following:

- [2.2.1 Lowering Single-Reel Header, page 7](#)
- [2.2.2 Lowering Double-Reel Header, page 9](#)

2.2.1 Lowering Single-Reel Header

Reposition header in preparation for assembly and setup as follows:

1. Choose an area with level ground.
2. Approach header from its underside and place forks under top of shipping frame (A).
3. Attach a chain (B) at each end of frame and secure other end to lifting vehicle.

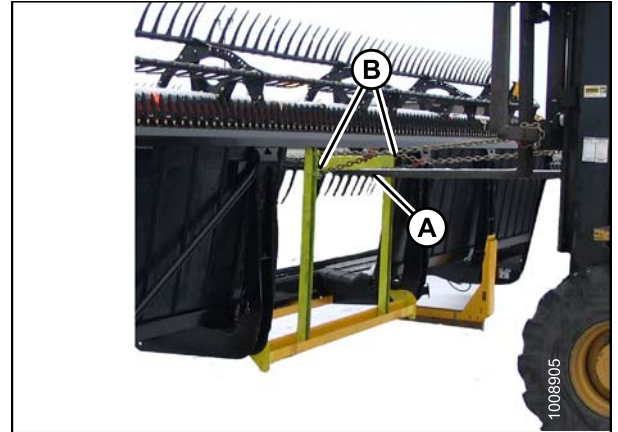


Figure 2.3: Shipping Frame

UNLOADING HEADER

CAUTION

Stand clear when lowering, as machine may swing.

4. Back up SLOWLY while lowering forks until header is just above the ground. Refer to the four positions in the illustration.



Figure 2.4: Lowering the Header

UNLOADING HEADER

5. Place 6 in. (150 mm) blocks (A) under each end and center of cutterbar, and then lower header onto blocks.
6. Remove chain and move lifting vehicle to rear of header.
7. Attach chain to center-link anchor on frame tube and raise rear of header so that stand can be lowered.

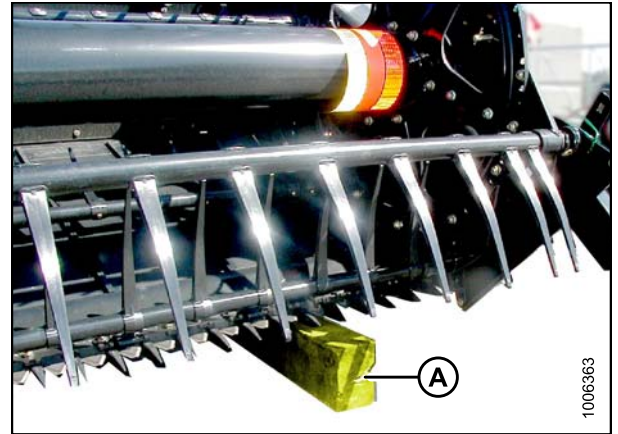


Figure 2.5: Block at One End of Cutterbar

8. Lower header stand by pulling pin (A), lowering stand (B), and releasing pin (A) to secure stand in place.
9. If ground is soft, place a block under the stand.
10. Lower header onto stand.

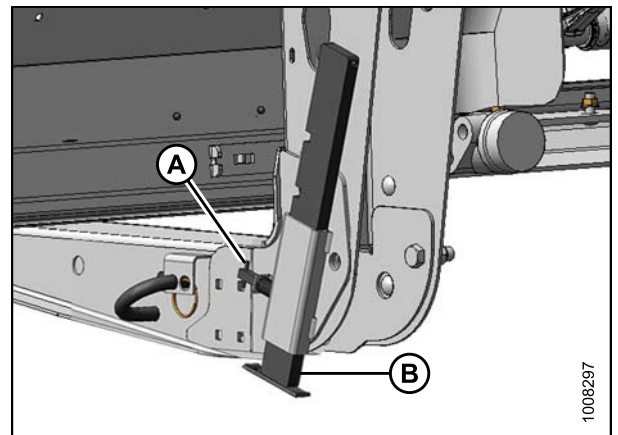


Figure 2.6: Header Stand

2.2.2 Lowering Double-Reel Header

Reposition header in preparation for assembly and setup as follows:

1. Choose an area with level ground.
2. Drive lifting vehicle to approach header from its underside.



Figure 2.7: Lift Location

UNLOADING HEADER

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

IMPORTANT:

Do **NOT** lift header at this location. This procedure is only for laying the machine over into working position.

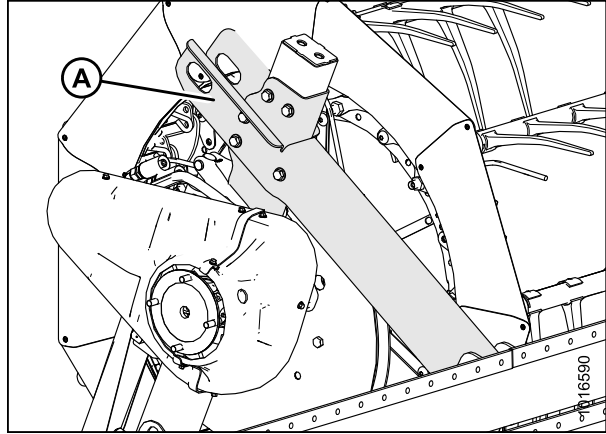


Figure 2.8: Shipping Support

UNLOADING HEADER

CAUTION

Stand clear when lowering, as machine may swing.

4. Back up SLOWLY while lowering forks until header is just above the ground. Refer to the four positions in the illustration.

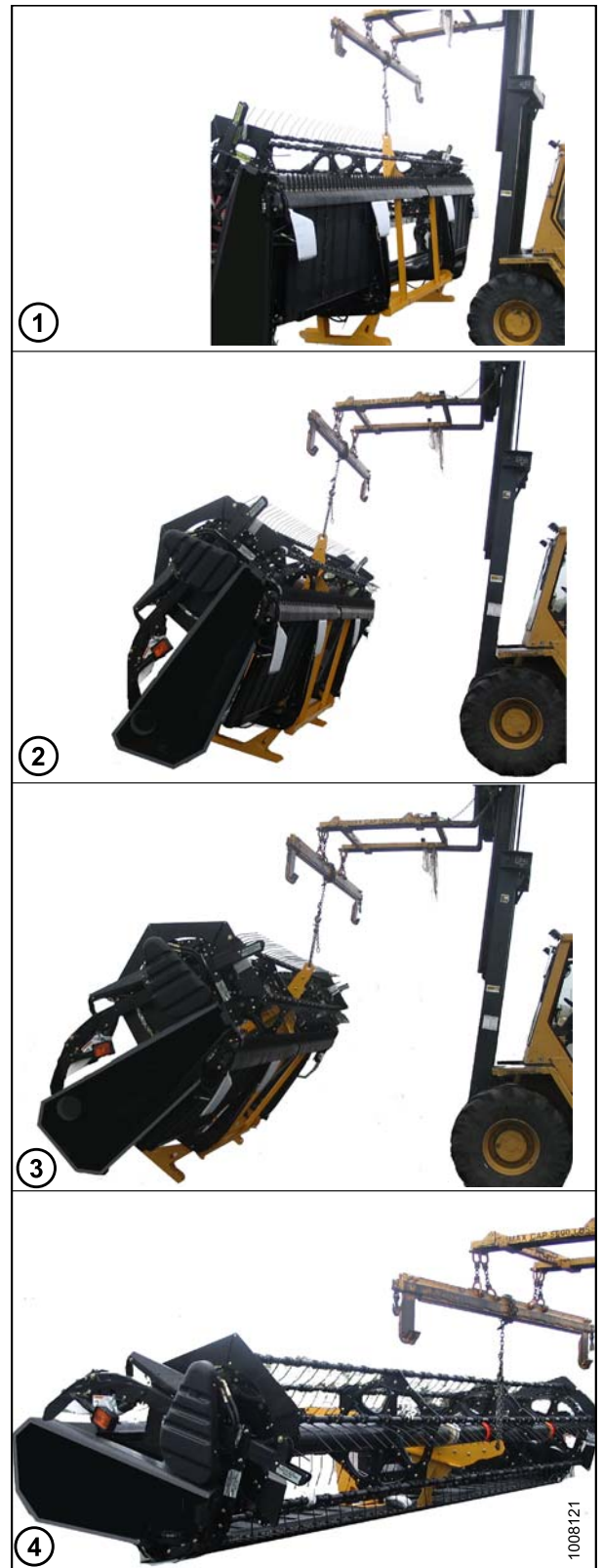


Figure 2.9: Lowering the Header

UNLOADING HEADER

5. Place 6 in. (150 mm) blocks (A) under each end and center of cutterbar, and then lower header onto blocks.
6. Remove chain and move lifting vehicle to rear of header.
7. Attach chain to center-link anchor on frame tube and raise rear of header so that stand can be lowered.

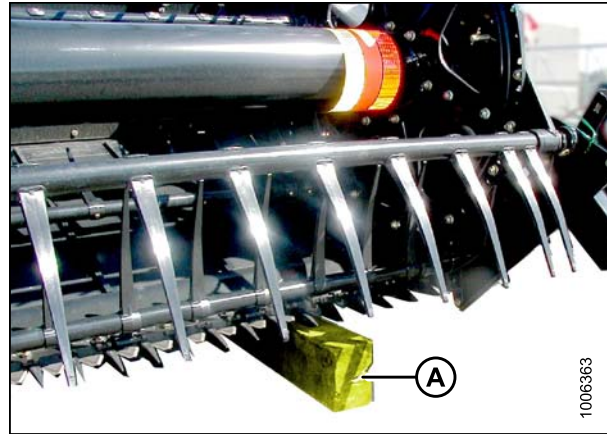


Figure 2.10: Block at One End of Cutterbar

8. Lower the header stand: pull pin (A), lower stand (B), and release pin (A) to secure stand in place.
9. If ground is soft, place a block under the stand.
10. Lower header onto stand.
11. Remove chain.

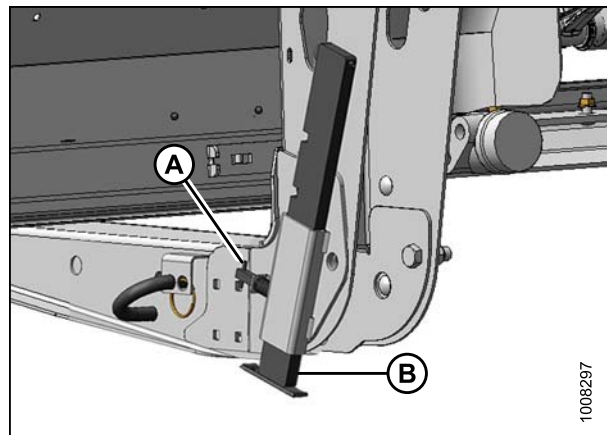


Figure 2.11: Header Stand

2.3 Removing Shipping Supports

NOTE:

Unless otherwise specified, discard all shipping materials and hardware.

1. Cut straps and remove draper header supports (A) from shipping support. Set draper header supports aside for reinstallation.

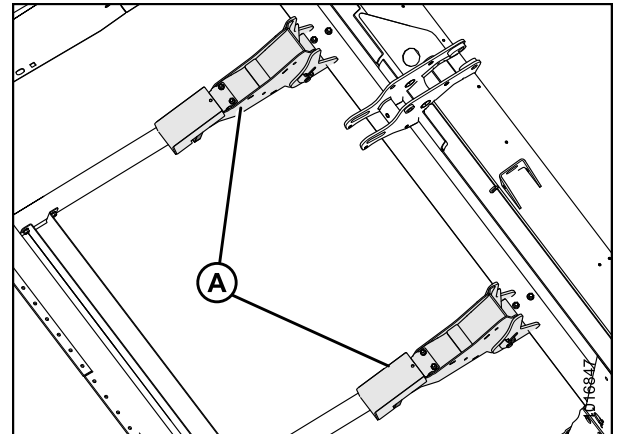


Figure 2.12: Straps, Draper Header Supports, and Shipping Supports

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

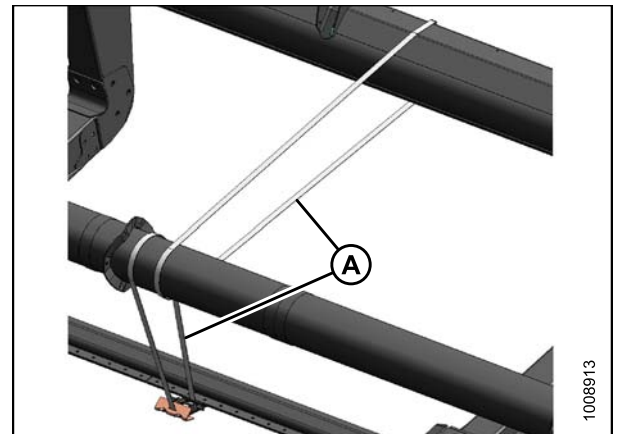


Figure 2.13: Single Reel

3. Remove four bolts (A) securing upper support (B) to header legs and remove support.

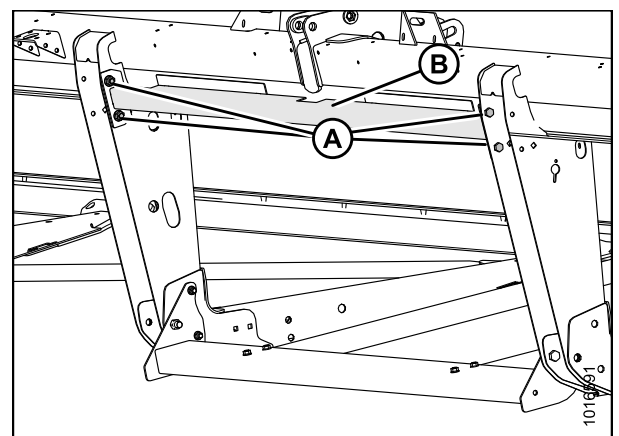


Figure 2.14: Upper Support

UNLOADING HEADER

4. Remove six bolts (A) securing lower support (B) to header legs and remove support.

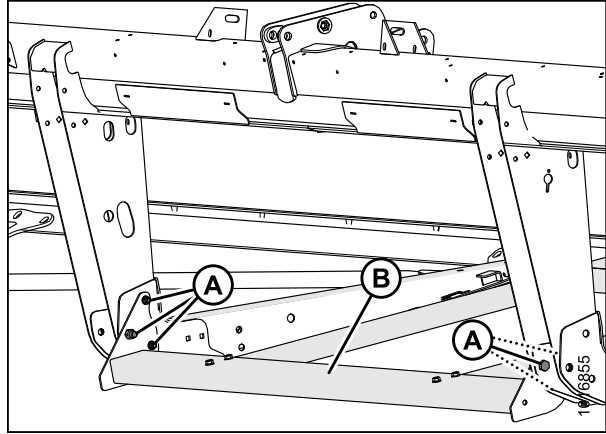


Figure 2.15: Lower Support

5. Remove the four bolts (A) from the shipping stands at both outboard header legs and remove the shipping stands.

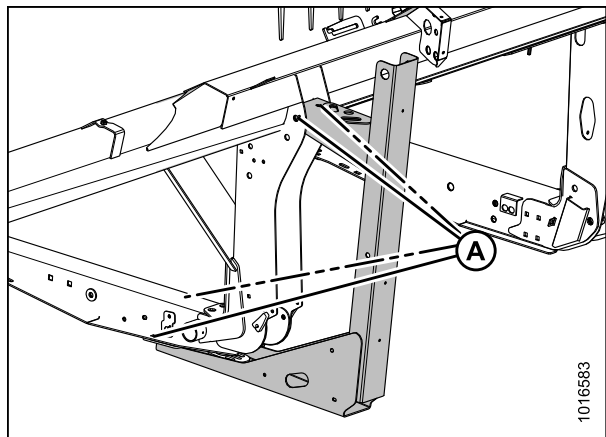


Figure 2.16: Outer Leg Shipping Supports

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

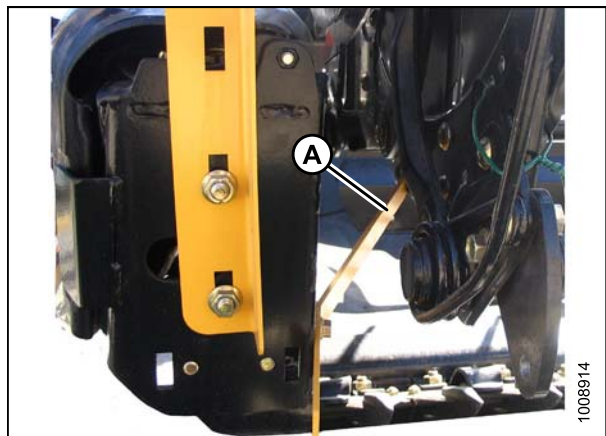


Figure 2.17: Anti-Rotation Brace

UNLOADING HEADER

7. At the left-hand side of the header, cut and remove the wire (A) securing the endshield to the panel. Repeat at the opposite side.
8. Loosen the two nuts (B) securing the shipping support to the endsheet.
9. Slide shipping support (C) backward to remove.
10. Tighten nuts (B).

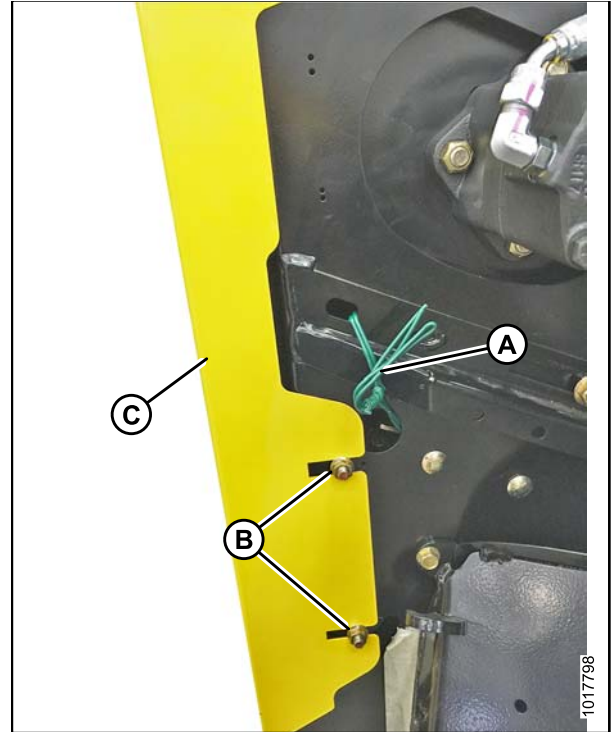


Figure 2.18

11. At the right-hand side of the header, loosen the two nuts (A) securing the shipping support (B) to the endsheet.
12. Slide shipping support (B) backward to remove.
13. Tighten nuts (A).

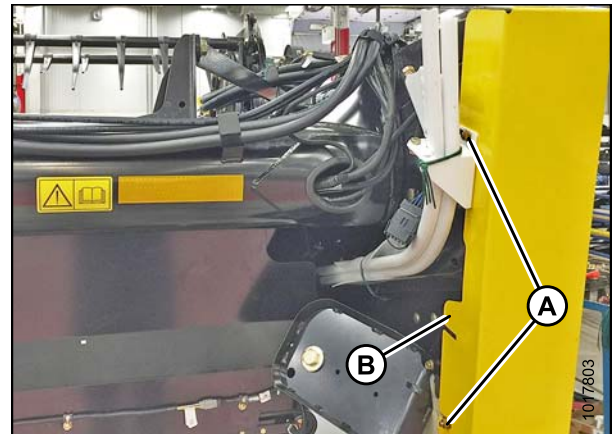


Figure 2.19

3 Attaching Header to Windrower

Perform all the procedures in this chapter in the order in which they are listed.

3.1 Installing the Hydraulic Hose Management Arm

The hydraulic hose management arm should be properly installed from shipping position to working position. Lifting equipment is required to complete this task; the hydraulic hose management arm weighs approximately 120 lb. (54 kg).

NOTE:

Hydraulic hoses were removed from the illustrations in this procedure to show clarity.

1. Cut and remove the wire (A) securing the hydraulic hose management arm (B) to the diagonal brace (C).
2. Position a sling on top of the gas spring cylinder (B) and around the support arm (C).
3. Cut cable tie (D) and remove the latch support assembly (E) from the hydraulic hose management arm (A). Retain for reassembly.

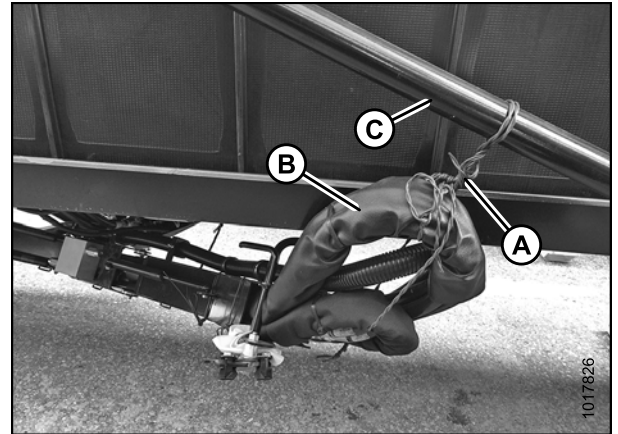


Figure 3.1: Hydraulic Hose Management Arm

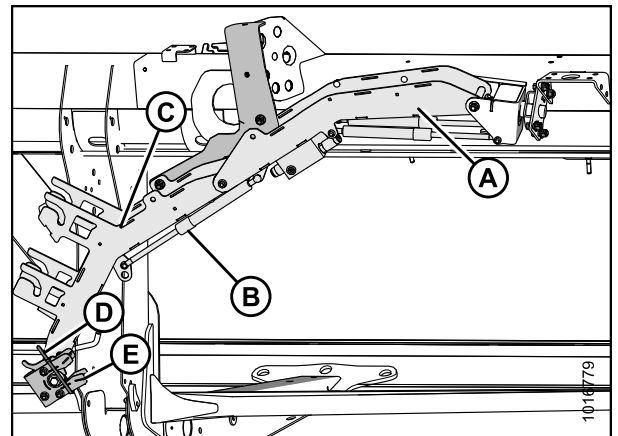


Figure 3.2: Hydraulic Hose Management Arm in Shipping Position

ATTACHING HEADER TO WINDROWER

4. Remove the two bolts and nuts (A) securing the base of the hose management arm (B) to the frame channel (C).
5. Remove the other two bolts and nuts (D) from the plate support (E).
6. Retain bolts and nuts for use later.

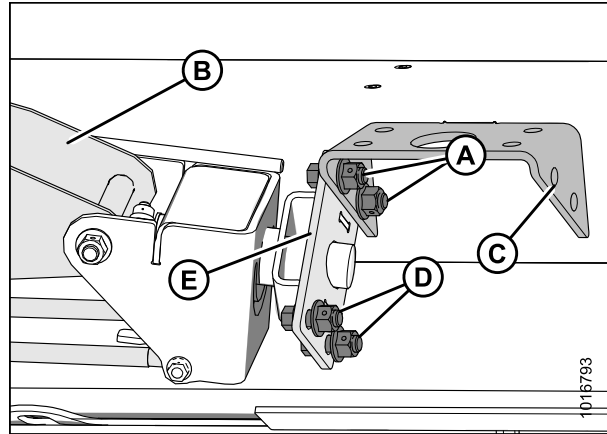


Figure 3.3: Hydraulic Hose Management Arm Base Frame

7. **30–35 Foot Headers:** With the sling supporting the hose management arm (A), remove the two bolts and nuts (B) that secure it to the shipping support (C).

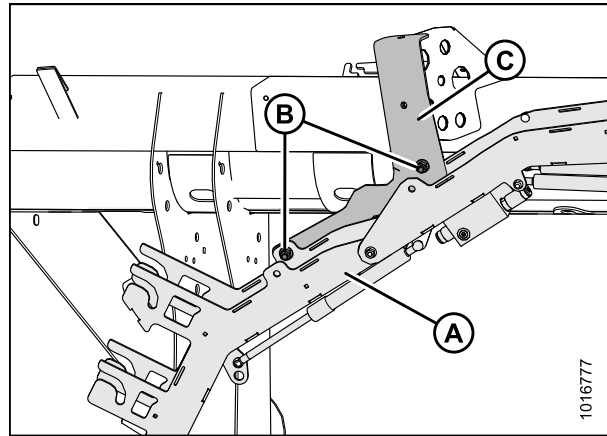


Figure 3.4: Hydraulic Hose Management Arm in Shipping Position (30–35 Foot Headers)

ATTACHING HEADER TO WINDROWER

8. **40–45 Foot Headers:** With the sling supporting the hose management arm, cut and remove the wire (A) that secure it to channel latch on top of header frame tube.



Figure 3.5

9. With the help of the sling, position the hose management arm (A) as shown.

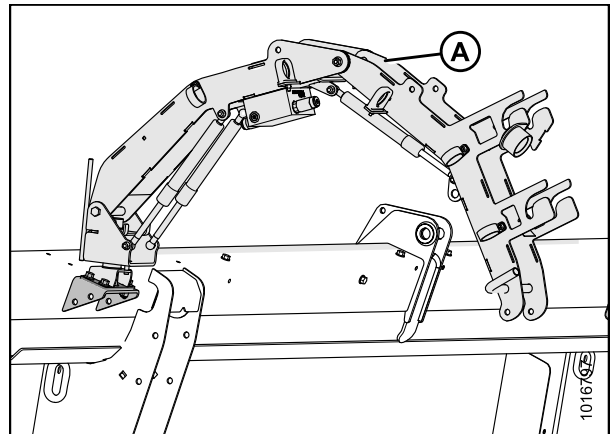


Figure 3.6: Hose Management Arm in Field Position

ATTACHING HEADER TO WINDROWER

10. Secure the plate support (A) to the frame channel (B) using the four bolts and nuts previously removed.
11. Remove sling from the hose management arm.

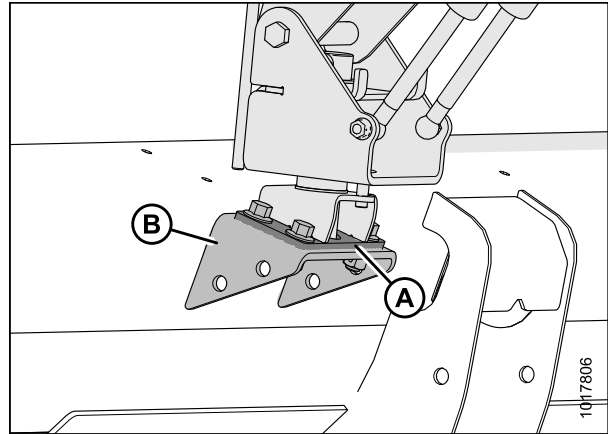


Figure 3.7: Hose Management Arm Plate Support

12. **30–35 Foot Headers:** Remove the two bolts (A) and shipping support (B) from the coupler holder (C). Discard shipping support (B) and reinstall the two bolts on the same location on the coupler holder to secure the hose cover.

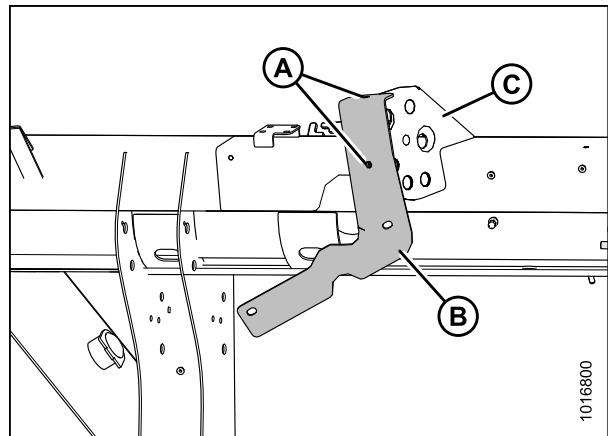


Figure 3.8: Hose Management Arm Shipping Support Bracket (30–35 Foot Headers)

13. Cut the cable tie securing the hoses in position (A), and secure the hoses with the strap (A) bolted on the frame.

IMPORTANT:

Note the routing of the hoses in the hose management arm field position in [Figure 3.9: Hose Management Arm Hose Routing – Top View, page 20](#).

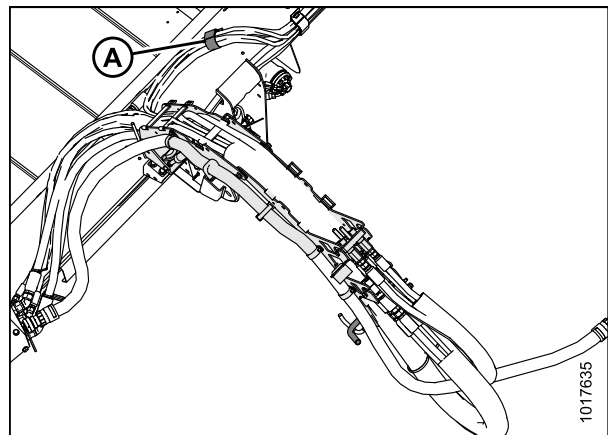


Figure 3.9: Hose Management Arm Hose Routing – Top View

ATTACHING HEADER TO WINDROWER

- 14. Retrieve the latch support assembly (A) removed in Step 3, page 17.
- 15. Remove the three nuts (B) from the latch support assembly (A).

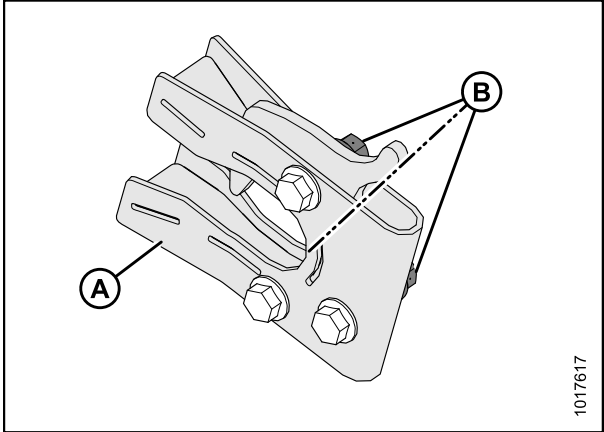


Figure 3.10: Latch Support Assembly

- 16. Align the bolts (A) on the latch support assembly (B) to the holes on the support channel (C) of the windrower's outer leg, and secure with the three nuts removed earlier.

NOTE:
Ensure the hook (D) is still free to move after tightening bolt and nut (E).

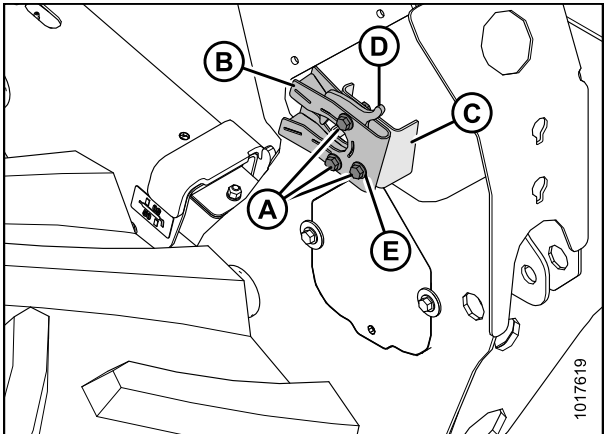


Figure 3.11: Latch Support Assembly on Windrower Leg

3.2 Attaching Draper Header Supports

WARNING

To avoid bodily injury or death from unexpected startup of machine, always stop engine and remove key before making adjustments to machine.

1. Remove hairpin and clevis pin (B) from the draper header support (A).

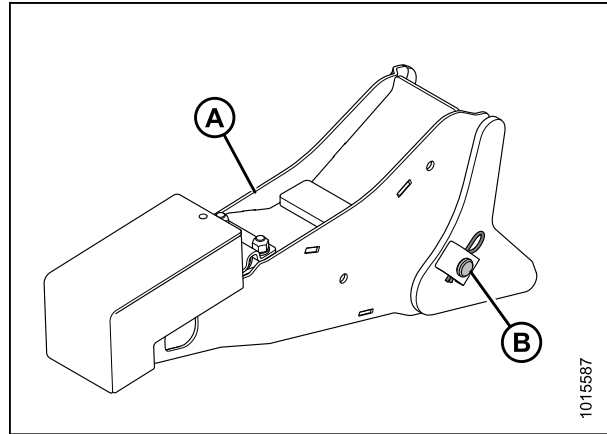


Figure 3.12: Draper Header Support

2. Position the draper header support (B) on lift linkage (A), and reinstall clevis pin (C).

NOTE:

To avoid catching the pin on passing crop, install the clevis pin on the outboard side of the draper header support.

3. Secure clevis pin (C) with hairpin (D).
4. Repeat for opposite lift linkage.

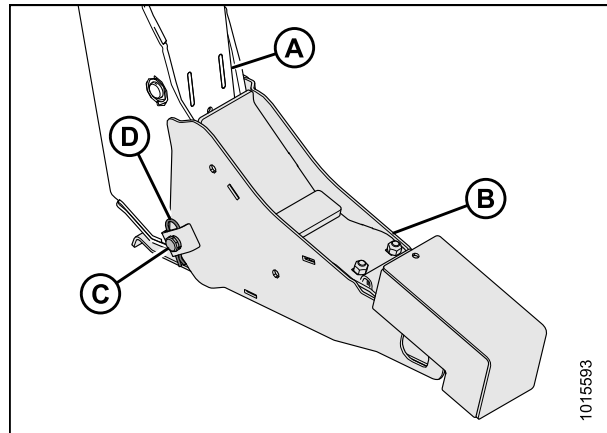


Figure 3.13: Draper Header Support

3.3 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 applicable topic:

- [3.3.1 Hydraulic Link without Self-Alignment Kit, page 23](#)
- [3.3.2 Hydraulic Link with Optional Self-Alignment Kit, page 27](#)

3.3.1 Hydraulic Link without Self-Alignment Kit

The following connection procedure applies to M1240 windrowers with a hydraulic center-link and without the self-alignment kit.

DANGER

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

1. Stop windrower engine and remove key from ignition.
2. Relocate pin (A) in frame linkage as required to raise the center-link (B) until the hook is above the attachment pin on the header.

IMPORTANT:

If the center-link is too low, it may contact the header as the windrower approaches the header for hookup.

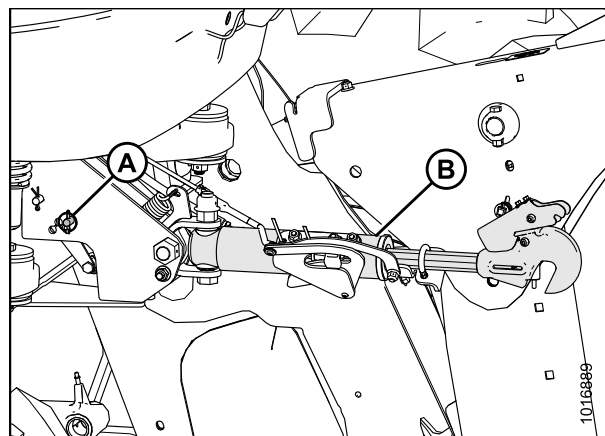


Figure 3.14: Hydraulic Center-Link without Self-Alignment Kit

3. Remove hairpin (A) from pin (B), and remove pins from both header legs.

CAUTION

Check to be sure all bystanders have cleared the area.

4. Start engine.

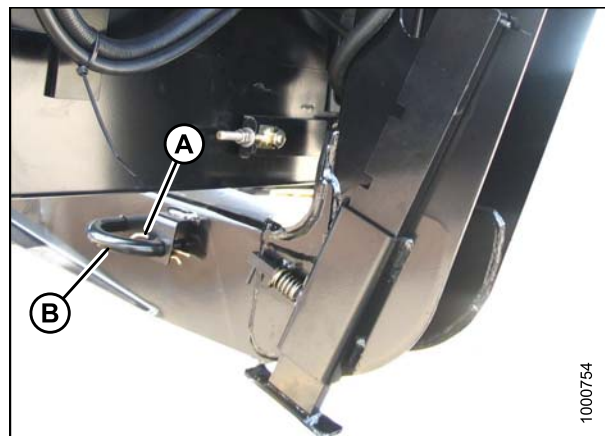


Figure 3.15: Header Leg

ATTACHING HEADER TO WINDROWER

CAUTION

To prevent damage to the header lift linkages when lowering header lift legs without a header or weight box attached to the windrower, ensure the float springs tension is fully released.

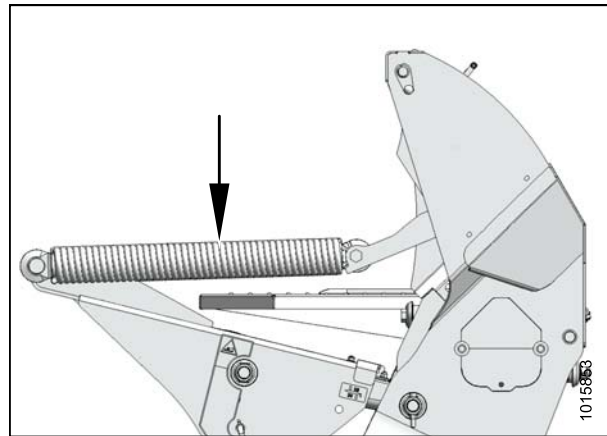


Figure 3.16: Float Springs

5. In the windrower cab, press scroll knob (A) on Harvest Performance Tracker (HPT) to highlight QUICK MENU options.
6. Rotate scroll knob (A) to highlight the HEADER FLOAT symbol (B) and press scroll knob to select. The screen changes.

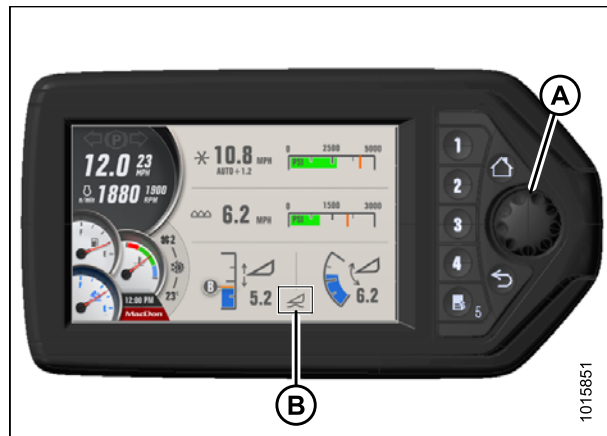


Figure 3.17: HPT Display

7. Press soft key 3 (A) to remove float.



Figure 3.18: HPT Display

ATTACHING HEADER TO WINDROWER

8. Drive the windrower slowly forward until the draper header supports (A) enter the header legs (B). Continue driving slowly forward until lift linkages contact the support plates in the header legs and the header nudges forward.
9. Ensure that lift linkages are properly engaged in header legs and are contacting the support plates.

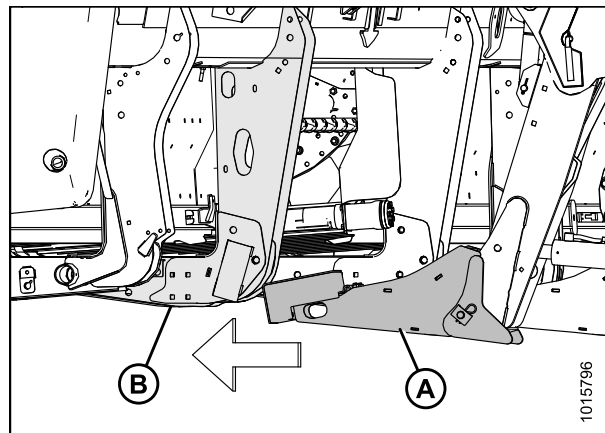


Figure 3.19: Header Leg and Draper Header Support

10. Press HEADER TILT UP (A) and HEADER TILT DOWN (B) cylinder switches on the ground speed lever (GSL) to extend or retract center-link cylinder until the hook is aligned with the header attachment pin.
11. Stop engine and remove key from ignition.

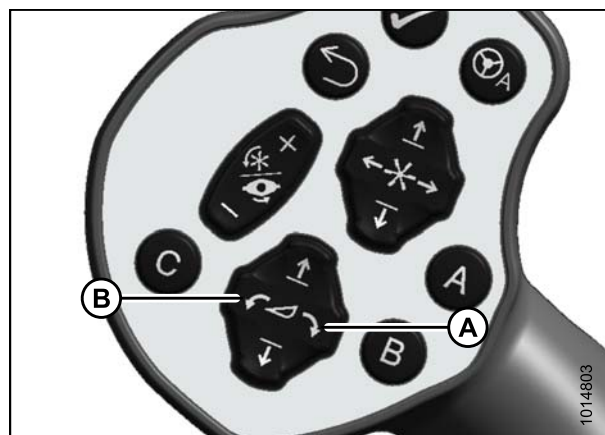


Figure 3.20: GSL

12. Push down on rod end of link cylinder (B) until hook engages and locks onto header pin.

IMPORTANT:

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

13. Check that center-link (A) is locked onto header by pulling upward on rod end (B) of cylinder.

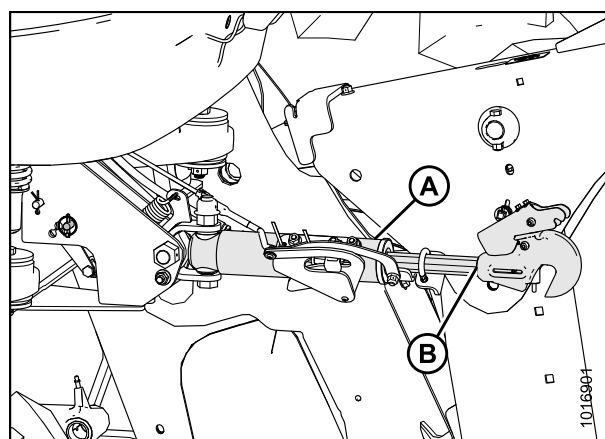


Figure 3.21: Hydraulic Center-Link

ATTACHING HEADER TO WINDROWER

CAUTION

Check to be sure all bystanders have cleared the area.

14. Start engine and press the HEADER UP switch (A) on the GSL to raise header to maximum height.
15. Stop engine and remove the key from the ignition.



Figure 3.22: GSL

16. Engage safety prop on the windrower's lift cylinder as follows:
 - a. Pull lever (A) and rotate toward header to release, and lower safety prop onto cylinder.
 - b. Repeat for opposite lift cylinder.

IMPORTANT:

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

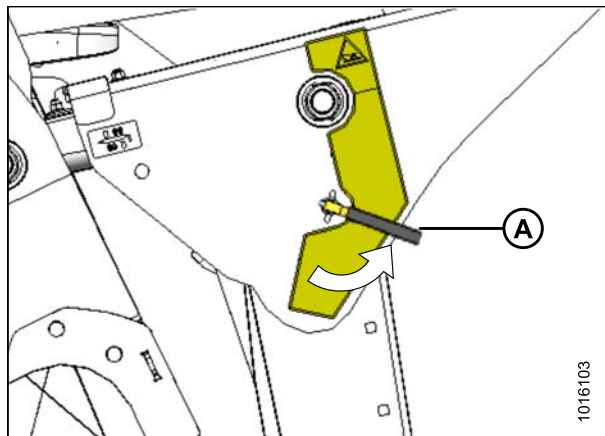


Figure 3.23: Cylinder Safety Prop

17. Install the pin (B) through header leg (engaging U-bracket in draper header support) on both sides and secure with hairpin (A).
18. Raise header stand (D) to storage position by pulling spring pin (C) and lifting stand into uppermost position. Release spring pin (C).

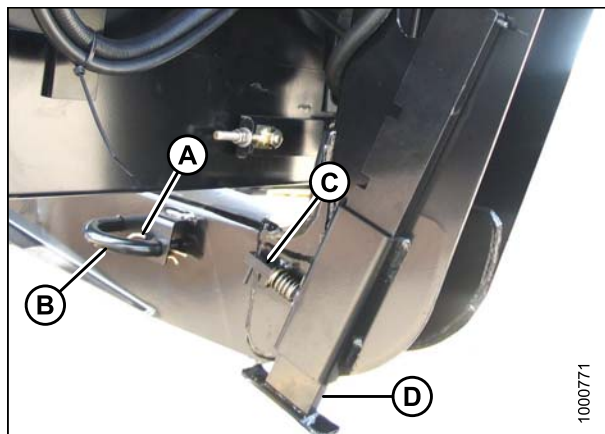


Figure 3.24: Header Leg

ATTACHING HEADER TO WINDROWER

19. Disengage safety prop by turning lever (A) downward to raise prop until lever locks into vertical position.

NOTE:

If safety prop will not disengage, raise header to release the prop.

20. Repeat for opposite side.

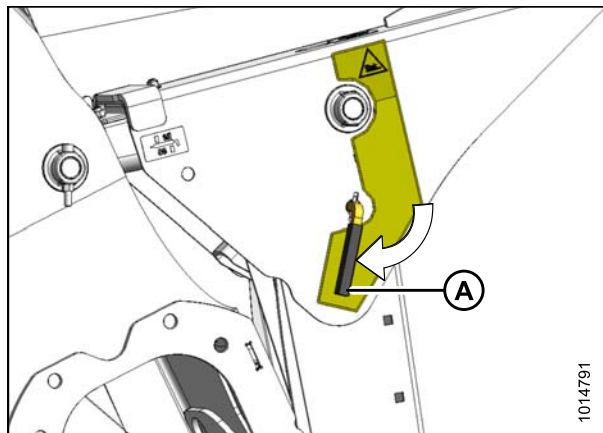


Figure 3.25: Cylinder Safety Prop

CAUTION

Check to be sure all bystanders have cleared the area.

21. Start engine and press HEADER DOWN switch (A) on GSL to fully lower header.
22. Stop engine and remove key.

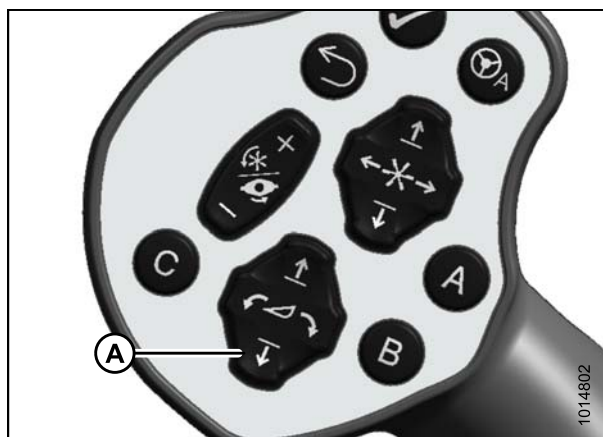


Figure 3.26: GSL

3.3.2 Hydraulic Link with Optional Self-Alignment Kit

The following connection procedure applies to M1240 windrowers hydraulic center-link with the optional self-alignment kit installed.

DANGER

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

1. Stop windrower engine and remove key from ignition.

ATTACHING HEADER TO WINDROWER

2. Remove hairpins (A) from pins (B), and remove pins from both header legs.

CAUTION

Check to be sure all bystanders have cleared the area.

3. Start engine.

CAUTION

To prevent damage to the header lift linkages when lowering header lift legs without a header or weight box attached to the windrower, ensure the float springs tension is fully released.

4. In the windrower cab, press scroll knob (A) on Harvest Performance Tracker (HPT) to highlight QUICK MENU options.
5. Rotate scroll knob (A) to highlight the HEADER FLOAT symbol (B) and press scroll knob to select. Screen changes.

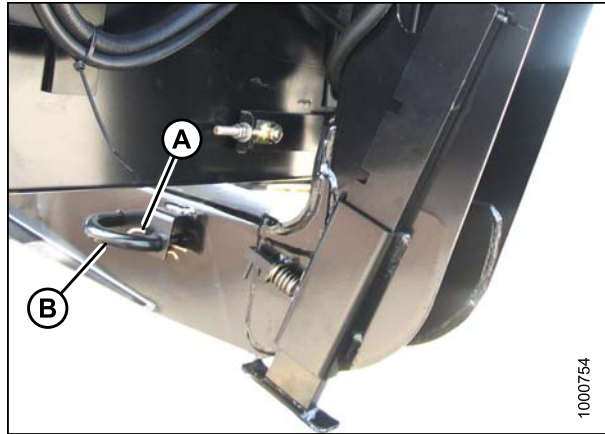


Figure 3.27: Header Leg

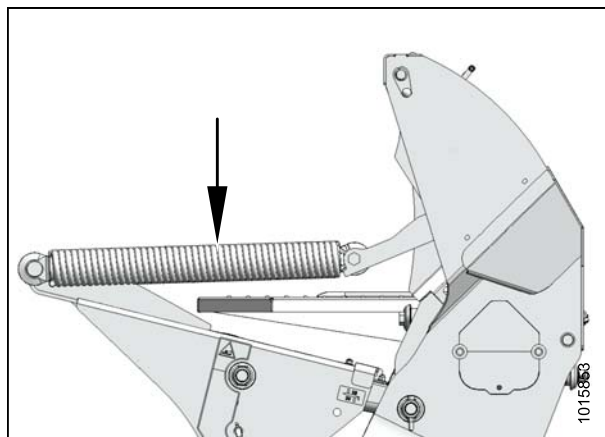


Figure 3.28: Header Float Springs



Figure 3.29: HPT Display

ATTACHING HEADER TO WINDROWER

6. Press soft key 3 (A) to remove float.



Figure 3.30: HPT Display

CAUTION

Check to be sure all bystanders have cleared the area.

7. Press HEADER DOWN switch (A) on the ground speed lever (GSL) to fully retract header lift cylinders.
8. Press REEL UP switch (B) on the GSL to raise the center-link until the hook is above the attachment pin on the header.

IMPORTANT:

If the center-link is too low, it may contact the header as the windrower approaches the header for hookup.



Figure 3.31: GSL

9. Drive the windrower slowly forward until the draper header supports (A) enter the header legs (B). Continue driving slowly forward until lift linkages contact the support plates in the header legs and the header nudges forward.
10. Ensure that lift linkages are properly engaged in header legs and are contacting the support plates.

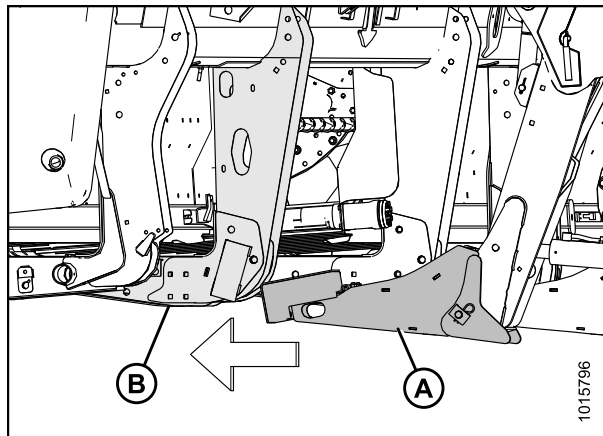


Figure 3.32: Header Leg and Draper Header Support

ATTACHING HEADER TO WINDROWER

GSL switches:

- REEL DOWN (A) to lower the center-link
- REEL UP (B) to raise the center-link
- HEADER TILT DOWN (C) to extend the center-link
- HEADER TILT UP (D) to retract the center-link

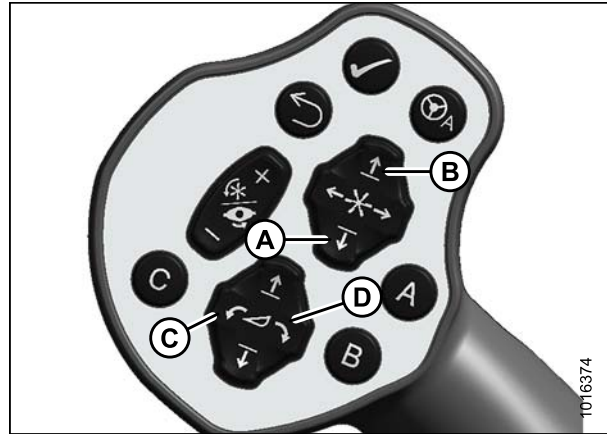


Figure 3.33: GSL

11. Adjust position of the center-link cylinder (A) with the switches on the GSL until the hook (B) is above the header attachment pin.

IMPORTANT:

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

12. Lower center-link (A) onto the header with REEL DOWN switch on the GSL until it locks into position (hook release (C) is down).
13. Check that center-link is locked onto header by pressing the REEL UP switch on the GSL.

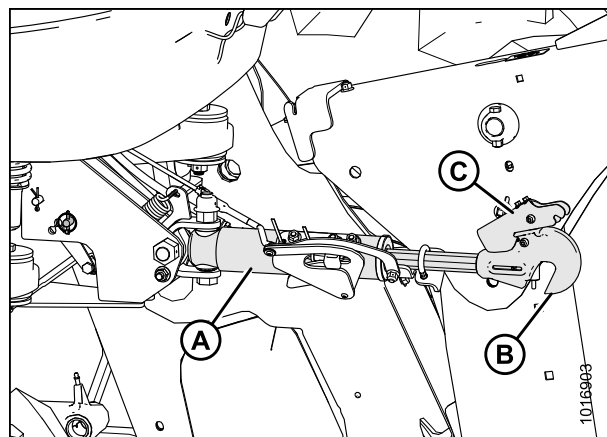


Figure 3.34: Center-Link

CAUTION

Check to be sure all bystanders have cleared the area.

14. Press the HEADER UP switch (A) to raise header to maximum height.
15. Stop engine and remove key from ignition.



Figure 3.35: GSL

ATTACHING HEADER TO WINDROWER

16. Engage safety prop on the windrower's lift cylinder as follows:
 - a. Pull lever (A) and rotate toward header to release, and lower safety prop onto cylinder.
 - b. Repeat for opposite lift cylinder.

IMPORTANT:

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

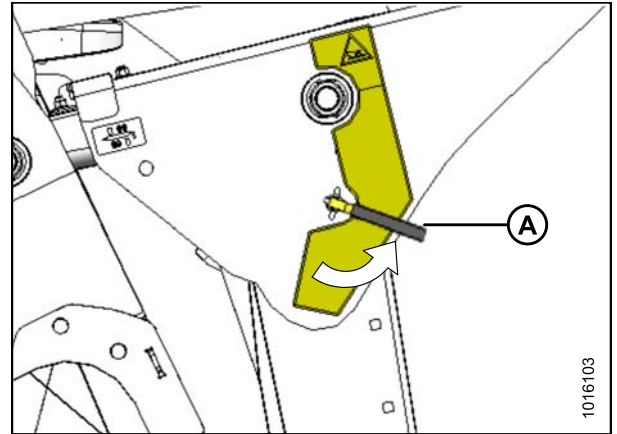


Figure 3.36: Cylinder Safety Prop

17. Install pin (B) through the header leg (engaging U-bracket in draper header support) on both sides and secure with a hairpin (A).
18. Raise header stand (D) to storage position by pulling spring pin (C) and lifting stand into uppermost position. Release spring pin.

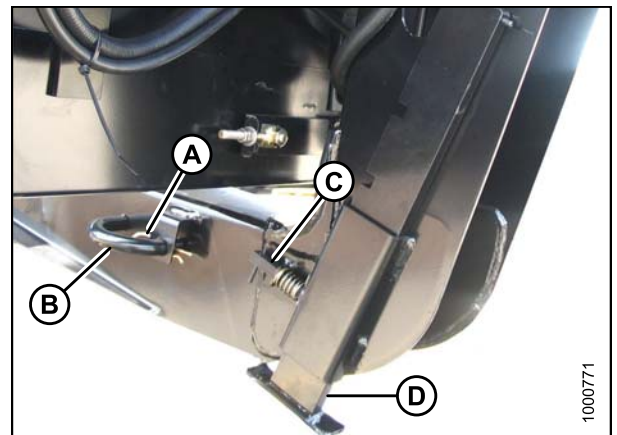


Figure 3.37: Header Leg

19. Disengage safety prop by turning lever (A) downward to raise safety prop until lever locks into vertical position.

NOTE:

If safety prop will not disengage, raise header to release the prop.

20. Repeat for opposite side.

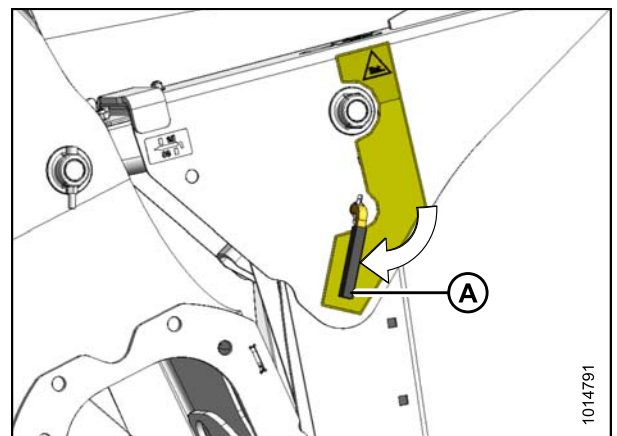


Figure 3.38: Cylinder Safety Prop

ATTACHING HEADER TO WINDROWER

CAUTION

Check to be sure all bystanders have cleared the area.

21. Start engine and press HEADER DOWN switch (A) on GSL to fully lower header.
22. Stop engine and remove key.

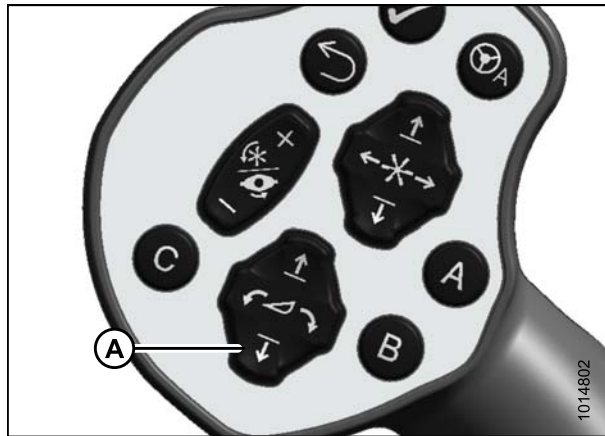


Figure 3.39: GSL

3.4 Connecting Hydraulics

IMPORTANT:

To prevent contamination of the hydraulic system, use a clean rag to remove dirt and moisture from all (fixed and movable) hydraulic couplers.

1. Move arm (A) toward left cab-forward side of windrower.

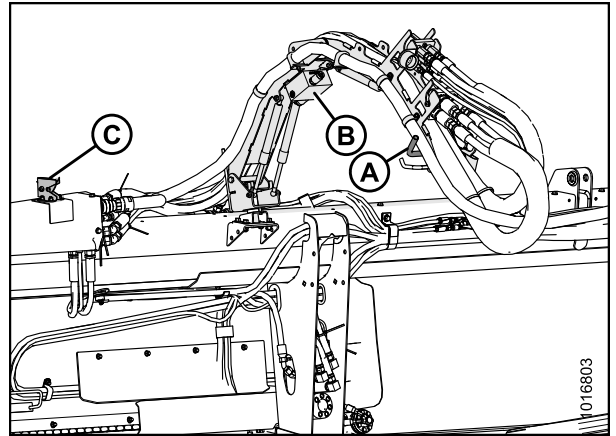


Figure 3.40: Hydraulic Hose Management Arm

2. Connect hydraulic hose management arm (A) to windrower by securing the ball joint (B) on arm into the latch support (C) on windrower.

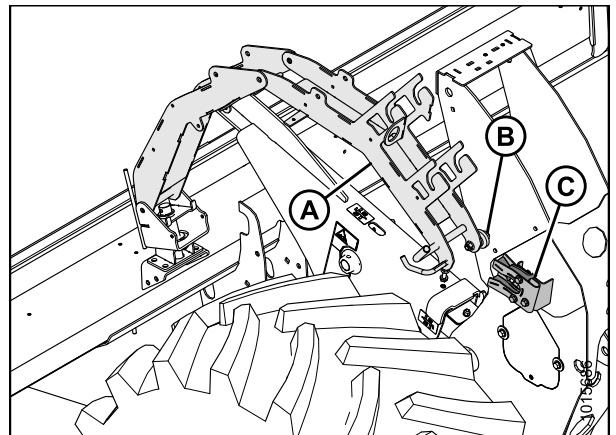


Figure 3.41: Windrower Left Leg

3. Ensure cab door is closed on the left cab-forward side of the windrower.
4. Push latch (B), and pull platform (A) toward walking beam until it stops and latch engages.

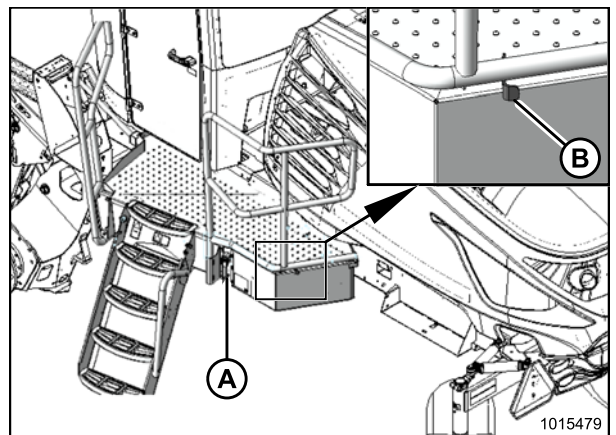


Figure 3.42: Platform

ATTACHING HEADER TO WINDROWER

5. Retrieve draper drive and reel control multicoupler (A) from hose management arm.
6. Push knob (B) on hydraulic receptacle and pull handle (C) fully away from windrower.
7. Open cover (D) and position coupler onto receptacle. Align pins in coupler with slots in handle (C) and push handle toward windrower so that coupler is locked onto receptacle and knob (B) snaps out.
8. Remove cover from electrical connector (E), push electrical connector onto receptacles, and secure by turning collar on electrical connector clockwise.

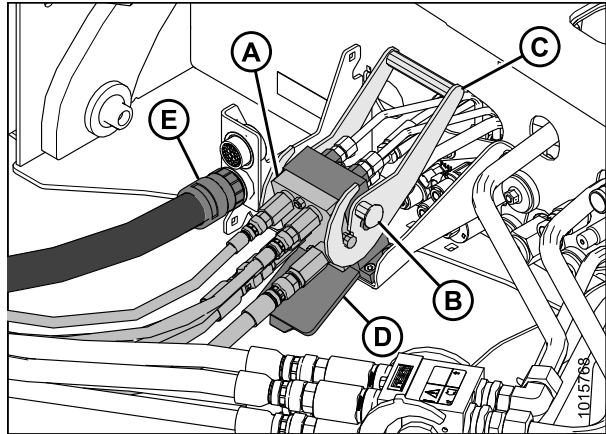


Figure 3.43: Draper/Reel Multicoupler

9. Retrieve knife and reel drive multicoupler (A) from hose management arm.
10. Push knob (B) on hydraulic receptacle and pull handle (C) fully away from windrower.
11. Open cover (D) and position coupler onto receptacle. Align pins in coupler with slots in handle (C) and push handle toward windrower so that coupler is locked onto receptacle and knob (B) snaps out.

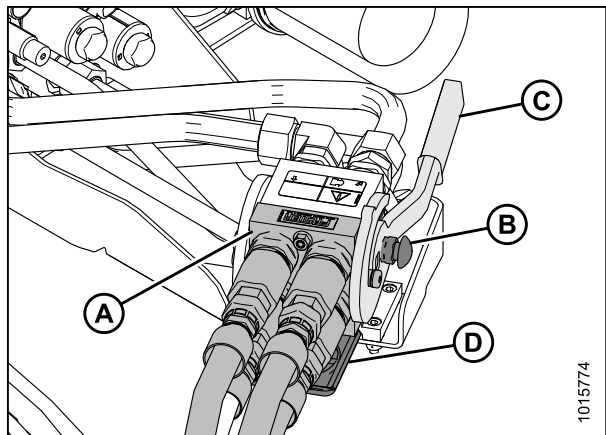


Figure 3.44: Knife/Reel Drive Multicoupler

12. Push latch (B) to unlock the platform (A).
13. Push the platform (B) towards the cab until it stops and latch engages.

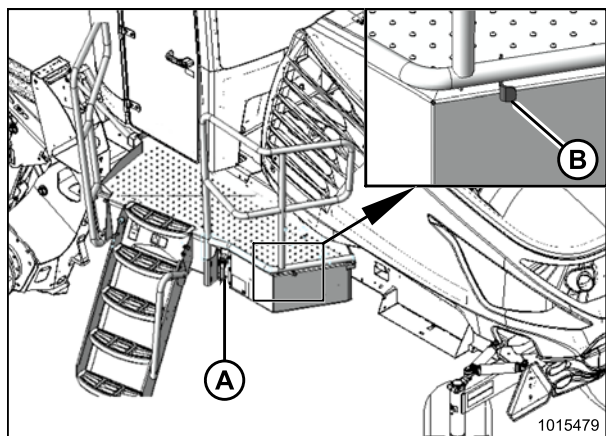


Figure 3.45: Platform

ATTACHING HEADER TO WINDROWER

14. Ensure hydraulic hose routing is as straight as possible and avoids potential rub/wear points.

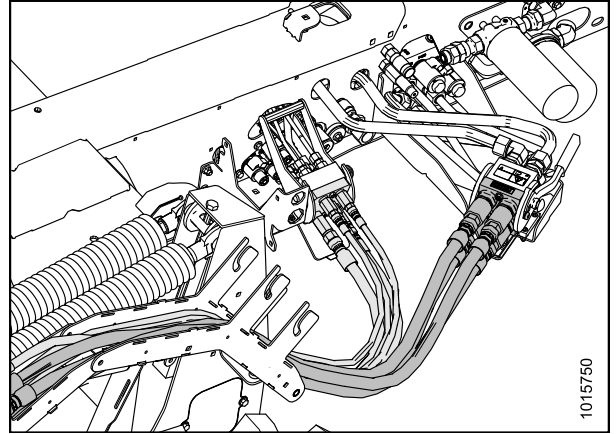


Figure 3.46: Hydraulic Multicouplers and Hose Routing

4 Assembling the Header

Perform all the procedures in this chapter in the order in which they are listed.

4.1 Attaching Reel Lift Cylinders

CAUTION

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

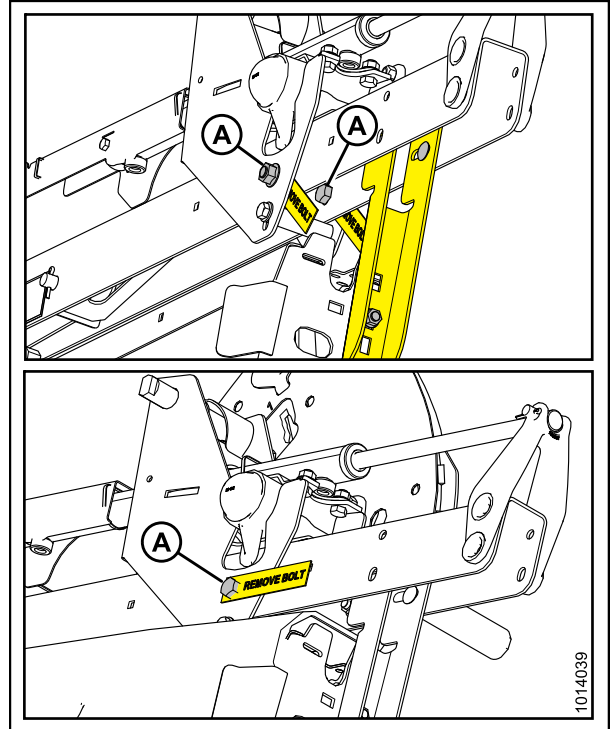


Figure 4.1: Right Reel Arm (Parts Removed for Clarity)

Top Image - Single Reel

Bottom Image - Double Reel

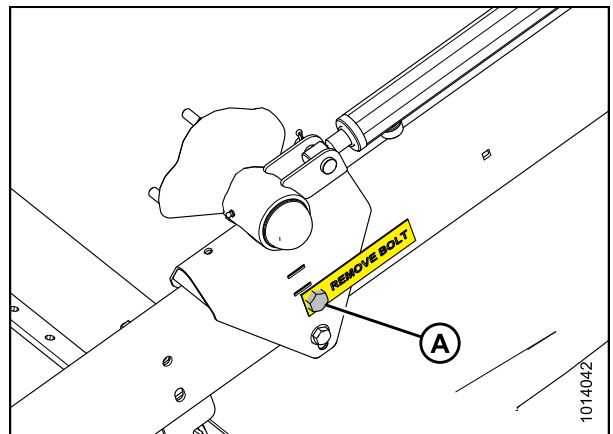


Figure 4.2: Left Reel Arm

ASSEMBLING THE HEADER

1. Position sling (A) around the reel tube (B) close to the outboard end of reel and attach sling to a forklift (or equivalent).
2. Remove shipping wire/banding from the reel lift cylinder.

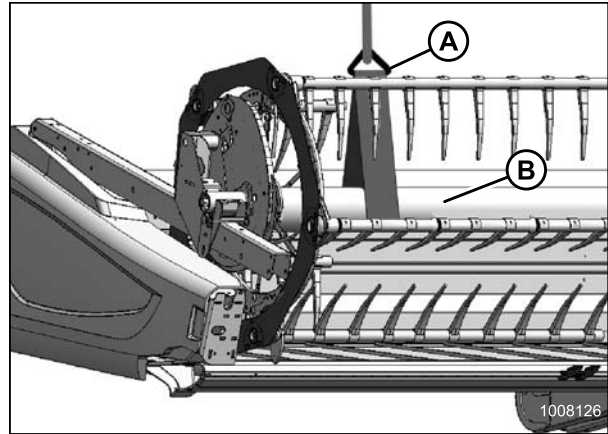


Figure 4.3: Reel Tube

3. Lift reel and remove two top bolts (A) on outboard reel arm supports. Repeat for opposite side.

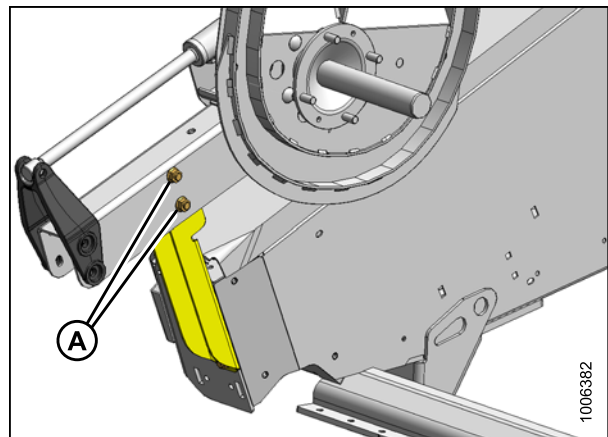


Figure 4.4: Outboard Reel Arm Support

4. **Double-reel headers only:** Lift reel and remove two top bolts (A) on center reel arm to allow the center reel arm to move.

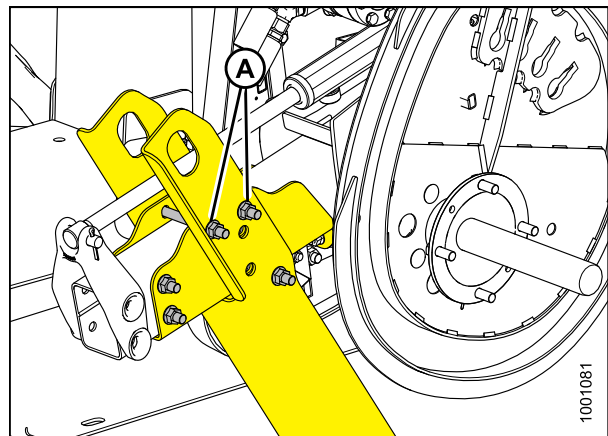


Figure 4.5: Center Reel Arm: Double-Reel Header Only

ASSEMBLING THE HEADER

5. Lift reel and remove pins from the endsheet and the reel arm.
6. Align the reel lift cylinder mounting holes until they line up with the lug on endsheet and the hole in the reel arm.
7. Secure cylinder to endsheet and reel arm with pins as shown.
 - Insert cotter pin (A) **OUTBOARD** at reel arm
 - Insert cotter pin (B) **INBOARD** at endsheet

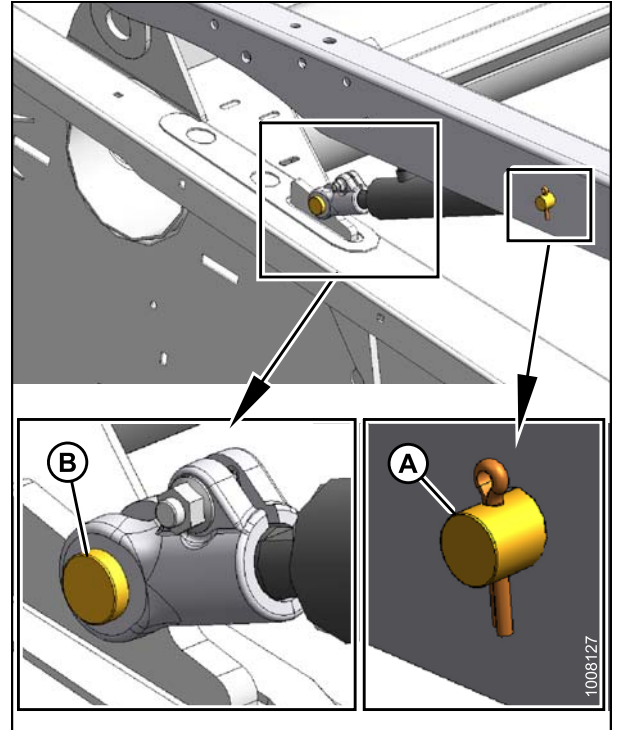


Figure 4.6: Right-Hand Shown

8. Move reel safety props (A) to engaged position (B) at outer arm.

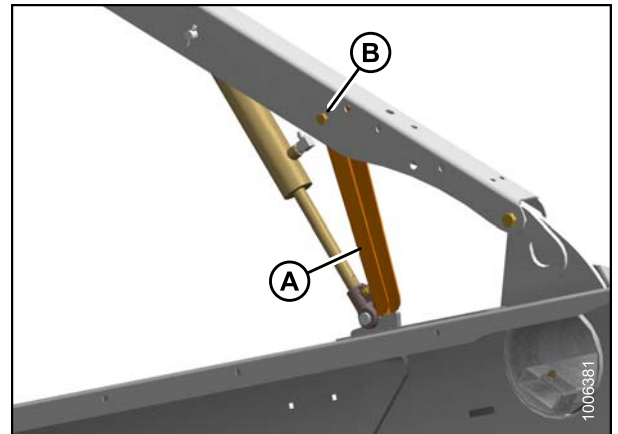


Figure 4.7: Reel Safety Props

ASSEMBLING THE HEADER

NOTE:

Step 9, page 40 to Step 16, page 40 apply **ONLY** to double-reel headers; for single-reel headers, go to Step 17, page 40.

9. **Double reel only:** Position sling (A) around the reel tube near the reel center support arm.
10. **Double reel only:** Lift reel to gain access to the center lift cylinder.
11. **Double reel only:** Remove shipping wire and banding from center reel lift cylinder.

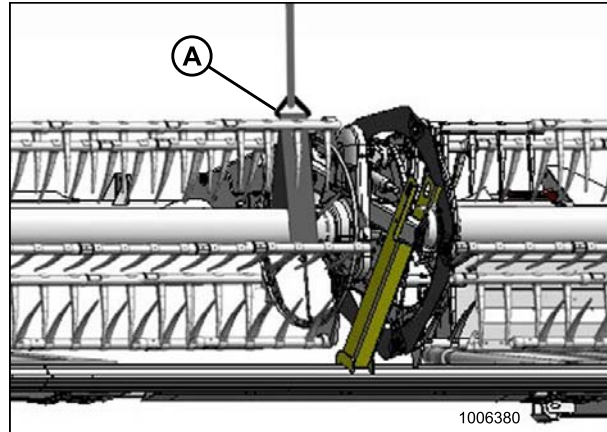


Figure 4.8: Lifting the Reel: Double Reel Only

12. **Double reel only:** Remove socket head bolt and nut from cylinder rod end.
13. **Double reel only:** Attach rod end of cylinder to reel arm with socket head bolt and nut (A). Access hardware through holes in reel arm braces.
14. **Double reel only:** Torque bolt and nut (A) to 40–45 ft·lbf (54–61 N·m).
15. **Double reel only:** Remove pin at barrel end of cylinder.
16. **Double reel only:** Adjust reel height so pin can be installed at barrel end of cylinder and mounting structure.

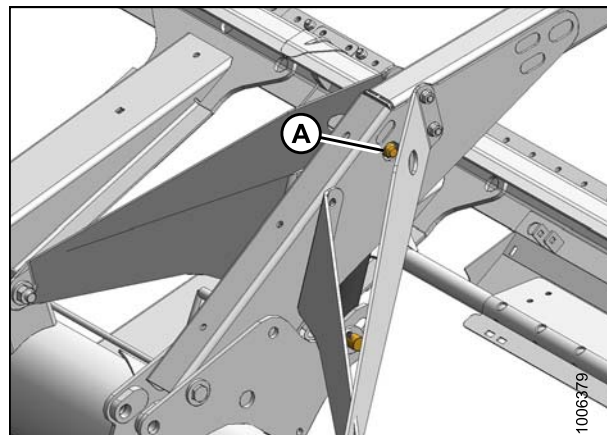


Figure 4.9: Reel Arm Braces

17. Reposition the sling (A) around reel tube near the opposite outboard reel arm.
18. Remove shipping wire and banding from the reel lift cylinder.

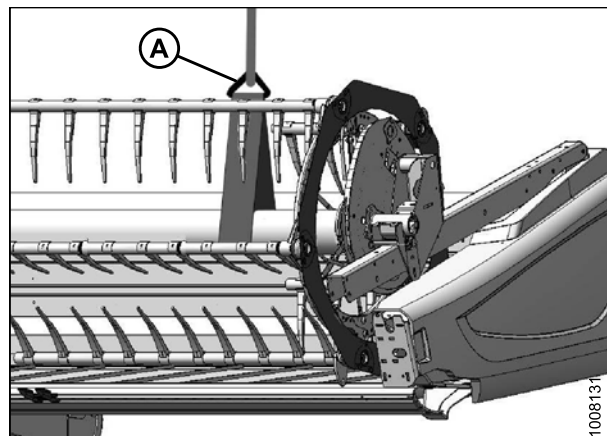


Figure 4.10: Outboard Reel Arm

ASSEMBLING THE HEADER

19. Lift reel and remove pins from the endsheet and the reel arm.
20. Align the reel lift cylinder mounting holes until they line up with the lug on endsheet and the hole in the reel arm.
21. Secure cylinder to endsheet and reel arm with pins as shown.
 - Insert cotter pin (A) **OUTBOARD** at reel arm
 - Insert cotter pin (B) **INBOARD** at endsheet

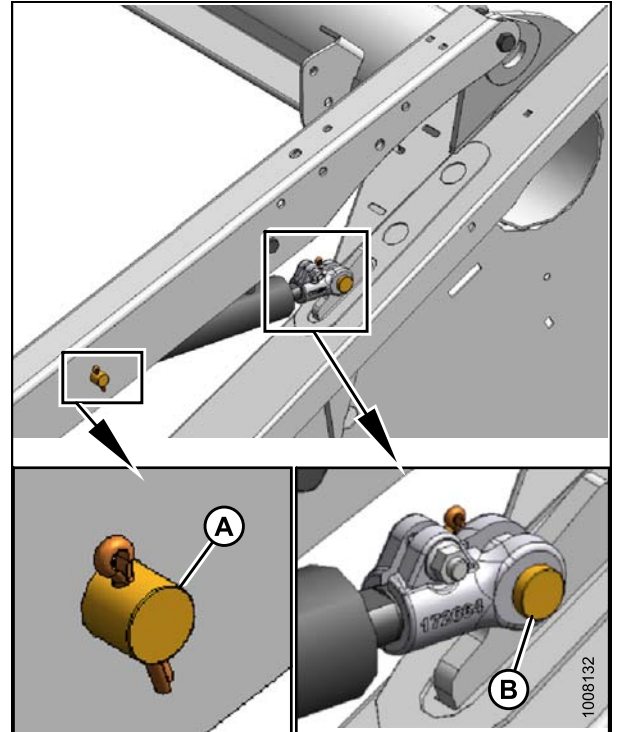


Figure 4.11: Cylinder and Endsheet

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

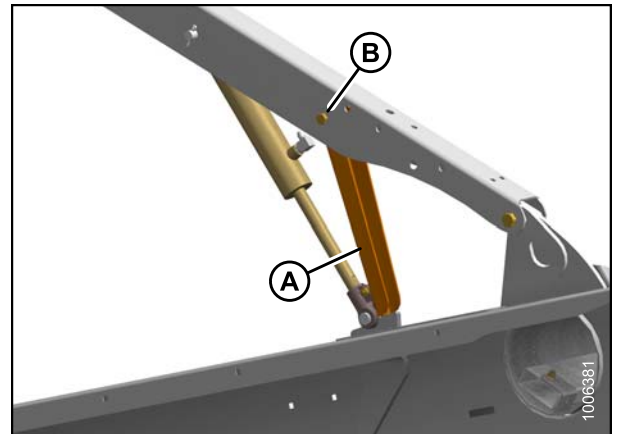


Figure 4.12: Reel Safety Prop

ASSEMBLING THE HEADER

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

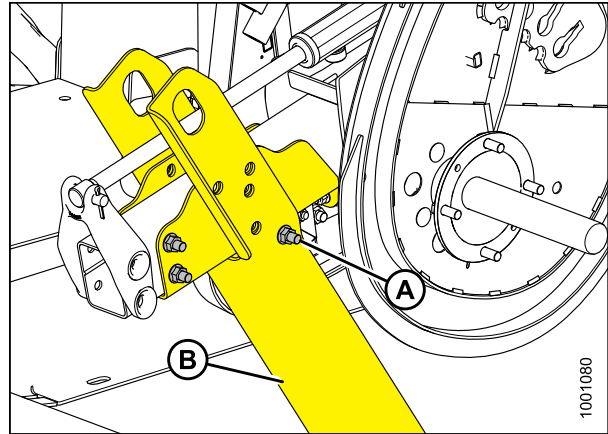


Figure 4.13: Center Reel Arm Shipping Support

24. Remove bolts (A) from reel arm support at endsheet and remove support. Repeat at other side.

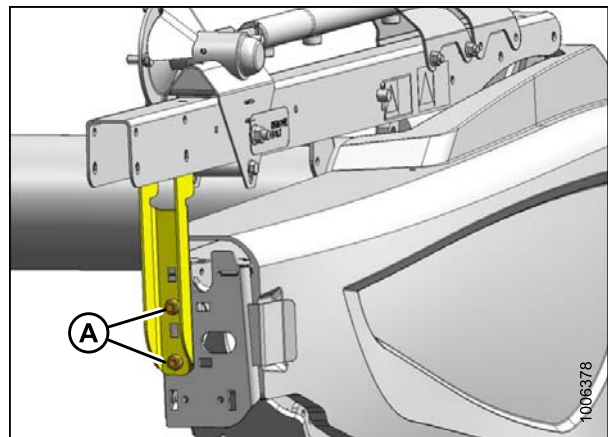


Figure 4.14: Outboard Reel Arm Supports

ASSEMBLING THE HEADER

25. Remove brace bolts and tags (A) locking the reel fore-aft position at outer reel arms.

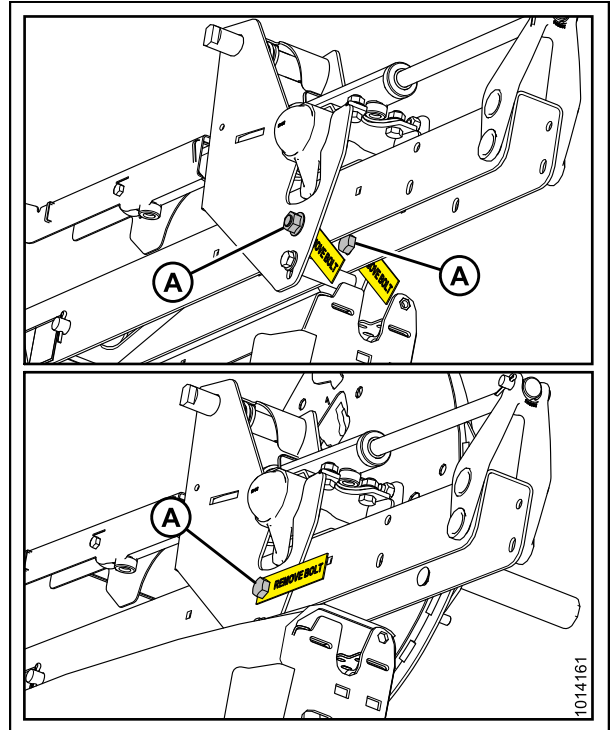


Figure 4.15: Right Reel Arm

Top Image - Single Reel

Bottom Image - Double Reel

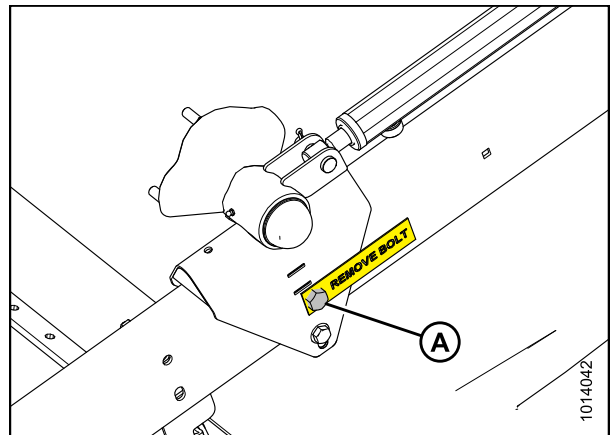


Figure 4.16: Left Reel Arm

ASSEMBLING THE HEADER

26. **Double reel only:** Remove the remaining three bolts (A) locking the reel fore-aft position at the center reel arm and remove shipping channel (B).

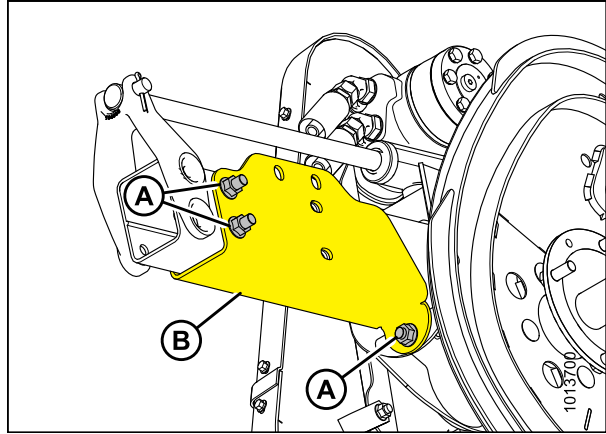


Figure 4.17: Center Reel Arm Shipping Channel (Double-Reel Header Only)

4.2 Installing Disc Segments of Outboard Reel Endshields

To meet the trucking load regulations for the maximum load width and height, two disc segments of the reel endshields (A) may have been removed from the right-hand reel (tail end) and left-hand reel (cam end). Check if reel endshields are completely installed. If not, install the two disc segments as follows:

1. Retrieve the bag of hardware removed from the center draper support.

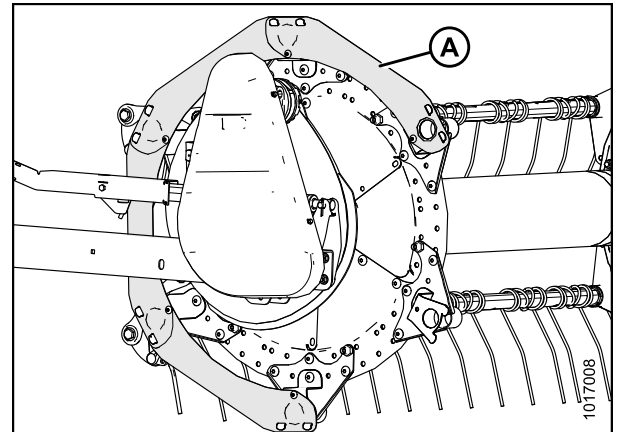


Figure 4.18: Partially Installed Reel Endshield (Cam End Shown—Tail End Similar)

2. Remove the two bolts (A) securing the disc segments to support tabs. Retain for reinstallation later.
3. Engage slots on disc segment (B) on endshield support tabs (C).

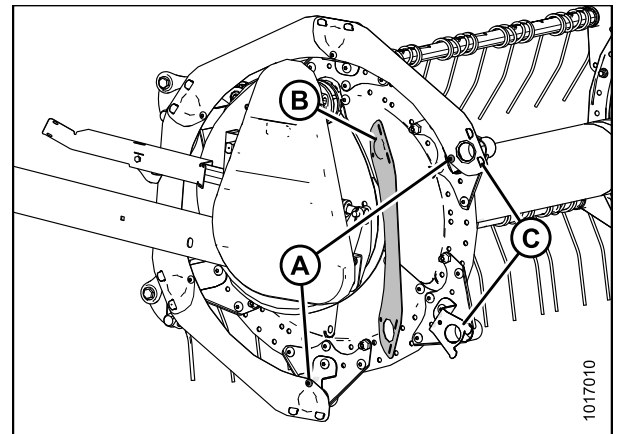


Figure 4.19: Reel Endshield

4. Secure the other end of the disc segment to support using the bolt (A) that was removed earlier.
5. Position last disc segment (B) in front of disc segment (C) and behind disc segment (D), engage endshield support tabs through all disc segments, and secure with two bolts (E).

NOTE:

It may be necessary to loosen hardware and use a pry tool to secure the last disc segment in place.

6. Repeat procedure at the opposite side.

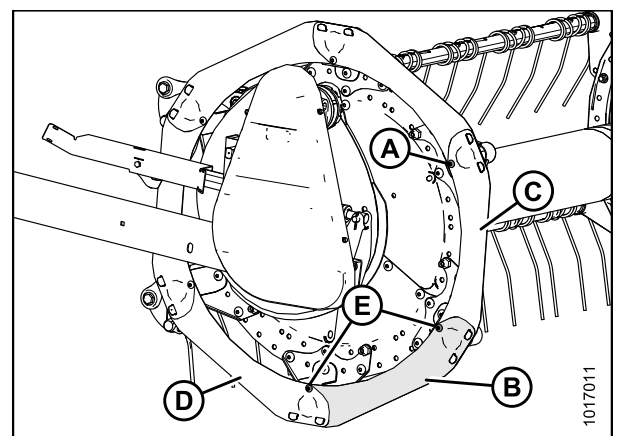


Figure 4.20: Reel Endshield

4.3 Attaching Cam Arms

To attach the reel cam arms, follow these steps:

1. Rotate the reel manually until the tine bars with disconnected cam links are accessible.
2. Remove shipping wire (A) (if not already removed).

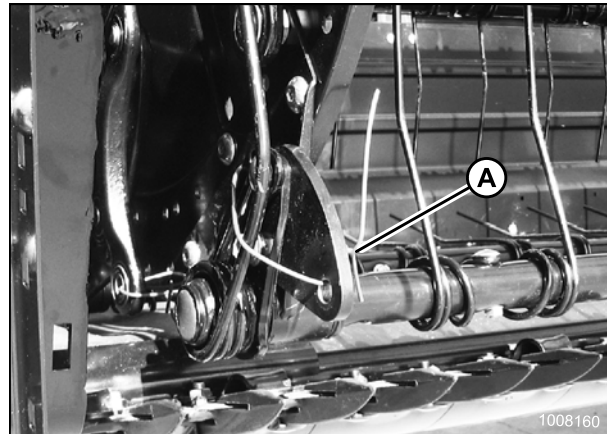


Figure 4.21: Disconnected Cam Links and Shipping Wire

3. Remove bag of hardware (A) from tine bar. It contains hardware for cam links and endshields.

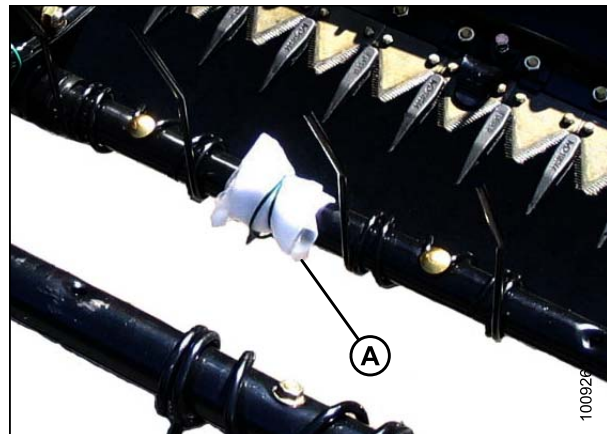


Figure 4.22: Hardware Bag Right-Hand Reel

4. Rotate tine bar crank (A) and position link (B) so attachment holes in bar crank are aligned with hole in link.
5. Install bolt (C) in link and position shim (D) on bolt so that shim is between link and tine bar crank.

NOTE:

Bolts are pre-coated with Loctite®, so no further locking method is required.

6. Realign link (B) and tine bar crank (A) and thread in bolt (C).
7. Repeat for remaining tine bars and torque bolts to 120 ft·lbf (165 N·m).

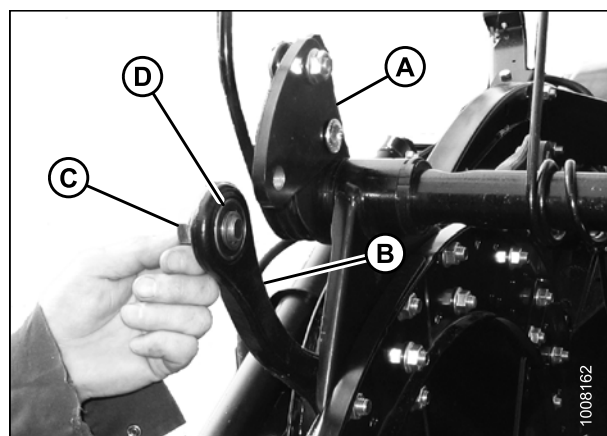


Figure 4.23: Bar Crank Attachment Holes and Link Alignment

4.4 Installing Crop Dividers

One crop and two rod dividers are stored on the right inboard side of the endsheet; the other crop divider is stored on the left inboard side of the endsheet.

1. Remove the two shipping wire (A) and loosen the bolt (B) on the lock tab securing the divider rods (C) to the bracket storage.
2. Remove divider rods (C) from the bracket storage (D) and set aside for installation later.
3. Return lock tab to its original position and tighten bolt (B).

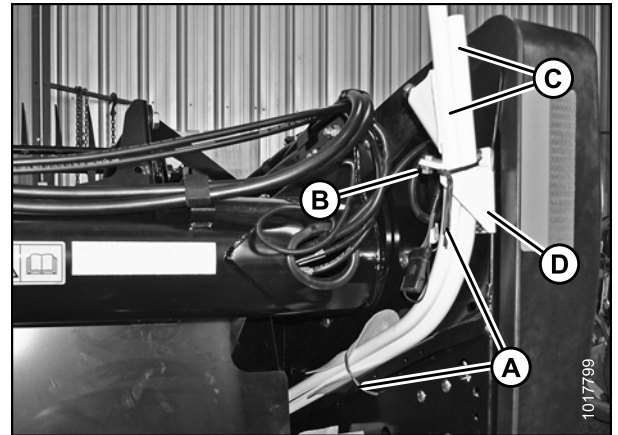


Figure 4.24: Crop Divider on Endsheets

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

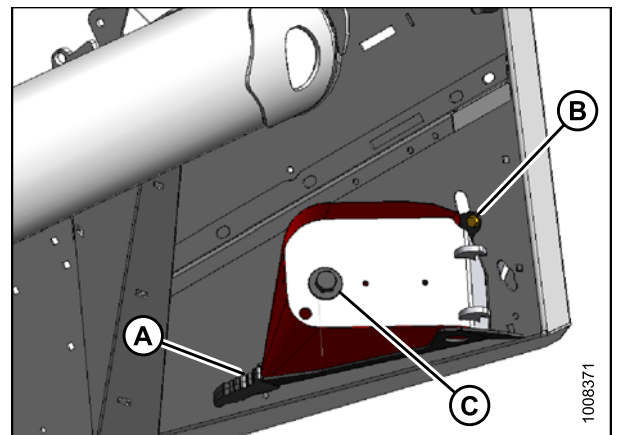


Figure 4.25: Crop Divider on Endsheets

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

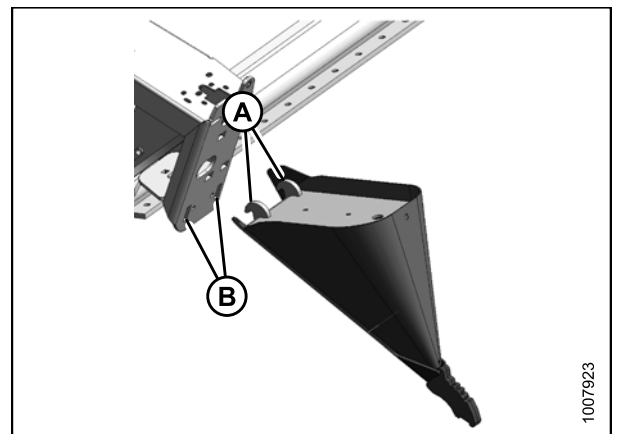


Figure 4.26: Crop Divider Lugs and Endsheets Slots

ASSEMBLING THE HEADER

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

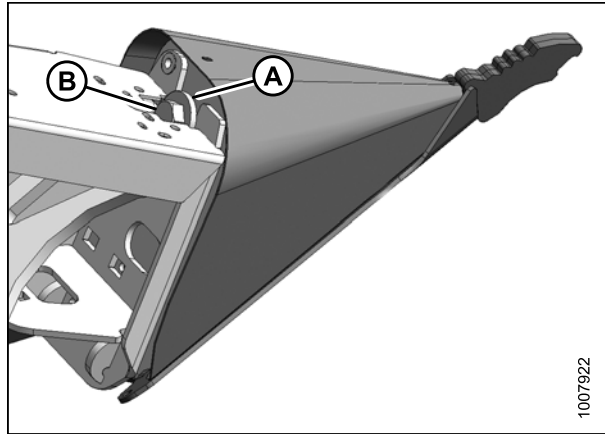


Figure 4.27: Installation Hardware

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

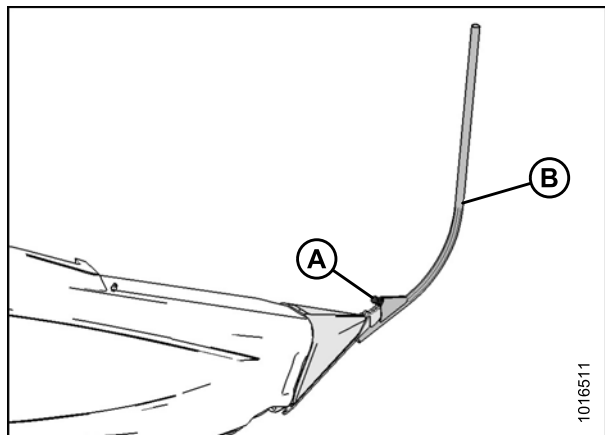


Figure 4.28: Divider Rod on Crop Divider

9. Check that divider does **NOT** move laterally. Adjust bolts (A) as required to tighten divider and remove lateral play when pulling at divider tip.
10. Repeat Step 4, [page 47](#) to Step 9, [page 48](#) on the left side of the header.

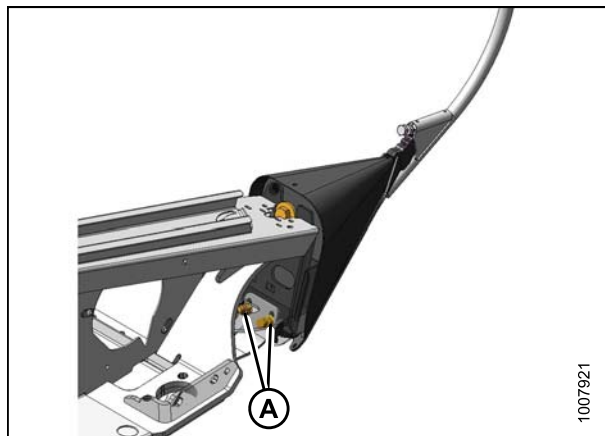


Figure 4.29: Adjustment Hardware

4.5 Positioning Transport Lights

Transport lights are located on each of the outboard reel arms.

1. Position lights (A) perpendicular to header.

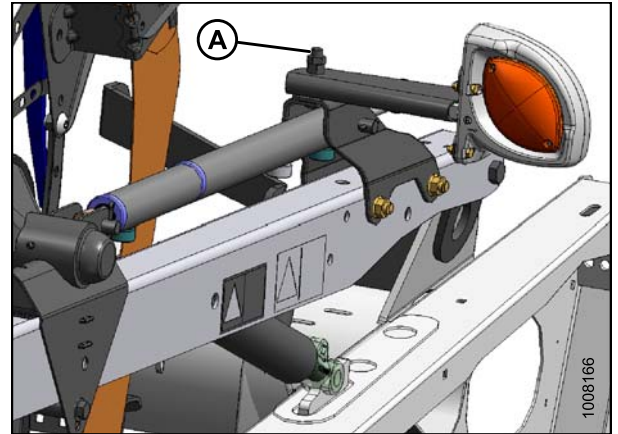


Figure 4.30: Transport Light Perpendicular to Header

4.6 Installing Options

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

4.7 Adding Tire Ballast

When using large headers on the windrower, adding fluid ballast to the rear caster tires will improve machine stability. Machine stability is also affected by different attachments, windrower options, terrains, and driving techniques.

Ballast capability per tire is at a maximum fill of 75% or when the fluid is level with the valve stem when the stem is positioned at the 12 o'clock position. Always add an equal amount of fluid on both sides. Fluid can be added to any level up to maximum fill.

Table 4.1 Fluid per Tire

Tire Size	Fluid per Tire at 75% Fill U.S. Gal. (liters)	Total Weight of Both Tires lb. (kg) ¹
7.5 x 16	10 (38)	200 (91)
10 x 16	18 (69)	380 (170)
16.5 x 16.1	41 (158)	830 (377)

Table 4.2 Recommended Ballast

Header Size	Rec. Tire Size	Recommended Ballast			
		Level Ground		Hills	
		Per Tire U.S. Gal. (liters)	Both Tires lb. (kg) ²	Per Tire U.S. Gal. (liters)	Both Tires lb. (kg)
30 ft. Single Reel or Double Reel (without conditioner) 35 ft. Single Reel	7.5 x 16 10 x 16 16.5 x 16.1	0	0	10 (38)	200 (91)
30 ft. Double Reel (with steel fingers and conditioner) 35 ft. Double Reel (5- or 6-bat)	Level ground: 10 x 16 16.5 x 16.1 Hills: 16.5 x 16.1	18 (69)	380 (170)	30 (115)	630 (288)
40 ft. 45 ft.	16.5 x 16.1	30 (115)	630 (288)	41 (158)	830 (377)

When the recommended fluid ballast has been added, proceed to [5 Performing Predelivery Checks, page 53](#).

- Weights given are for typical calcium chloride and water mixtures. Weight is reduced by 20% if only water is used (for areas that do not require antifreeze protection).
- If only water is used, increase volume of water by 20% (up to maximum allowable fill per tire) to compensate.

5 Performing Predelivery Checks

This machine has been set at the factory and should not require further adjustments; however, the following checks will ensure your machine provides maximum performance. If adjustments are necessary, follow the procedures in this chapter.

WARNING

To avoid bodily injury or death from unexpected startup of machine, always stop engine and remove key before making adjustments to machine.

IMPORTANT:

To avoid machine damage, check that no shipping dunnage has fallen into the machine.

1. Perform the final checks as listed on the **Predelivery Checklist** (yellow sheet attached to this instruction – [Predelivery Checklist, page 101](#)) to ensure the machine is field-ready. Refer to the following pages for detailed instructions as indicated on the Checklist. The completed Checklist should be retained either by the Operator or the Dealer.

5.1 Checking Tire Pressure: Transport and Stabilizer Wheels

Check tire inflation pressure. If necessary, inflate tires according to the following table:

Table 5.1 Tire Inflation Pressure

Tire	Size	Pressure
Goodyear Wrangler RT/S	205/75 R15	40 psi (276 kPa)
Carlisle and Titan	ST205/75 R15	65 psi (448 kPa)

IMPORTANT:

Do **NOT** exceed maximum pressure specified on tire sidewall.

5.2 Checking Wheel Bolt Torque

Perform the following procedure to ensure that transport and stabilizer wheel bolts are correctly torqued:

1. Check wheel bolt torque is 80–90 ft-lbf (110–120 N·m).
Refer to bolt tightening sequence illustration at right.

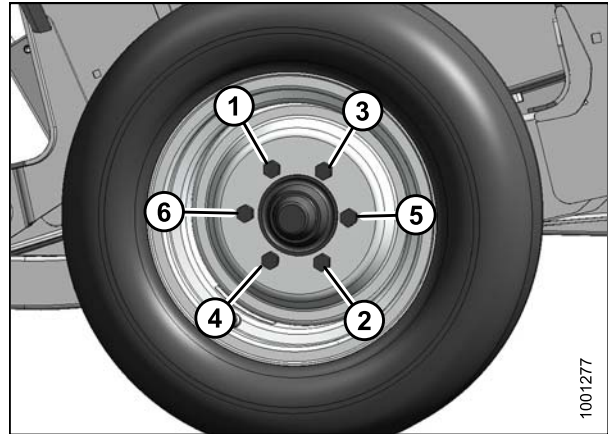


Figure 5.1: Bolt Tightening Sequence

5.3 Checking Knife Drive Box

To access the knife drive box(es), endshield(s) must be fully opened.

WARNING

To avoid bodily injury or death from unexpected startup of machine, always stop engine and remove key before making adjustments to machine.

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

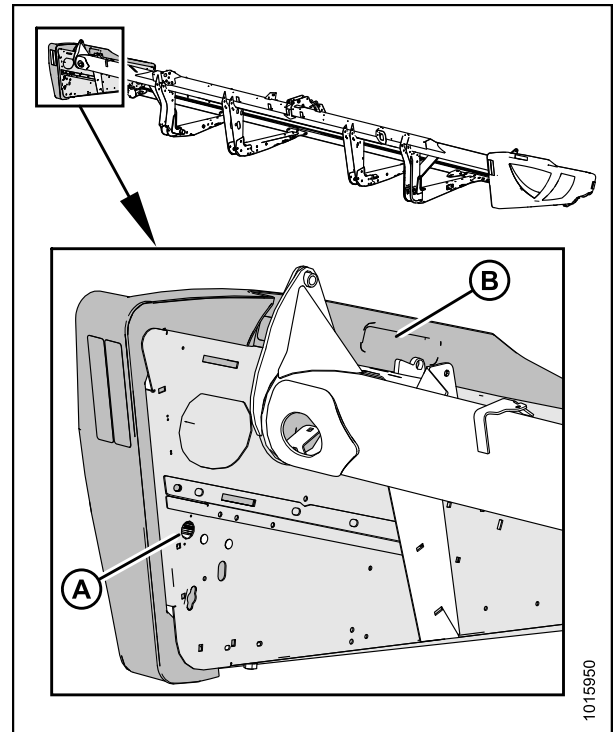


Figure 5.2: Endshield Latch Access

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

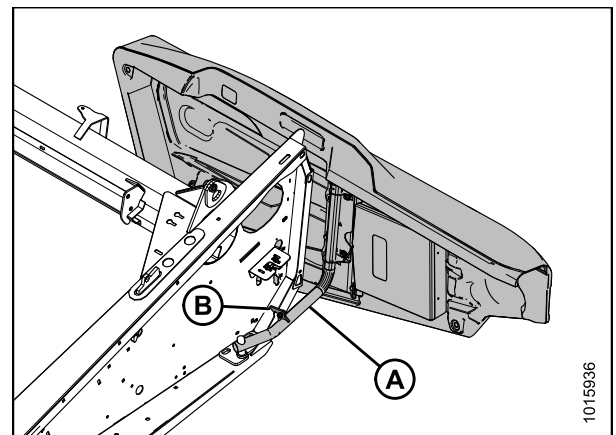


Figure 5.3: Left-Hand Endshield Support Tube

PERFORMING PREDELIVERY CHECKS

IMPORTANT:

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

4. Check position of plug (A) and breather (B) at knife drive box. Position **MUST** be as shown.
5. Check oil level. It should be between the lower hole (C) on the dipstick and the bottom end of the dipstick.

NOTE:

Check oil level with top of knife drive box horizontal and with the dipstick screwed in.

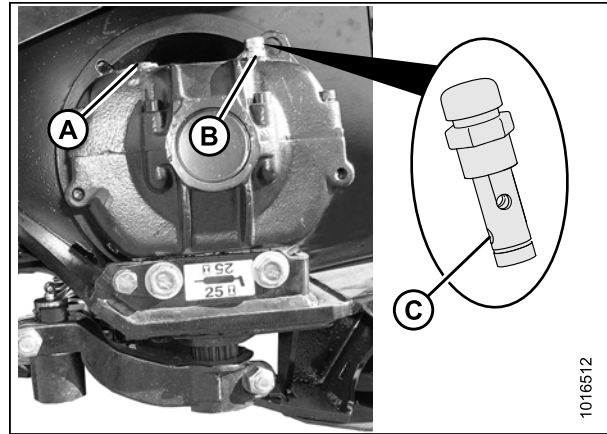


Figure 5.4: Knife Drive Box

5.4 Checking and Adjusting Knife Drive Belt Tension

Proceed to the section that applies to the header's knife drive configuration:

- [5.4.1 Tensioning Non-Timed Knife Drive Belts, page 57](#)
- [5.4.2 Tensioning Timed Knife Drive Belts, page 58](#)
- [5.4.3 Tensioning Timed Knife Drive V-Belts, page 60](#)

5.4.1 Tensioning Non-Timed Knife Drive Belts

WARNING

To avoid bodily injury or death from unexpected startup of machine, always stop engine and remove key before making adjustments to machine.

IMPORTANT:

To prolong the belt and drive life, do **NOT** overtighten the belt.

1. Open the endshield.
2. Loosen the two bolts (A) securing the motor assembly to the header endsheet.
3. Turn the adjuster bolt (B) clockwise to move the drive motor until a force of 30 lbf (133 N) deflects the belt (C) 15/16–1-1/8 in. (24–28 mm) at the mid-span.

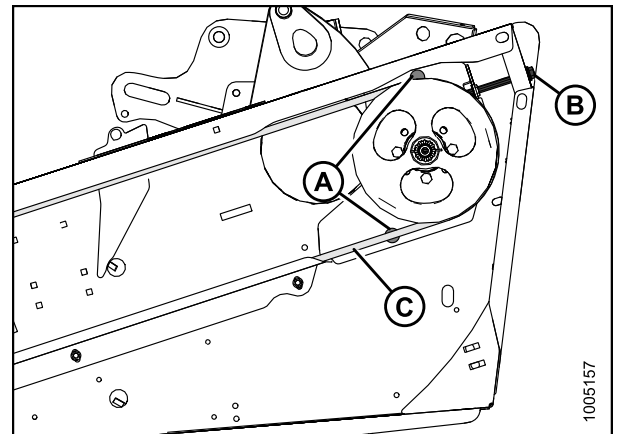


Figure 5.5: Left Side Shown – Right Side Opposite for Double-Knife Headers

4. Ensure the clearance between the belt (A) and the belt guide (B) is 1/16 in. (1 mm).
5. Loosen the three bolts (C), and adjust the position of the guide (B) as required.
6. Tighten the three bolts (C).
7. Close the endshield.
8. Repeat procedure on the other side of the header.

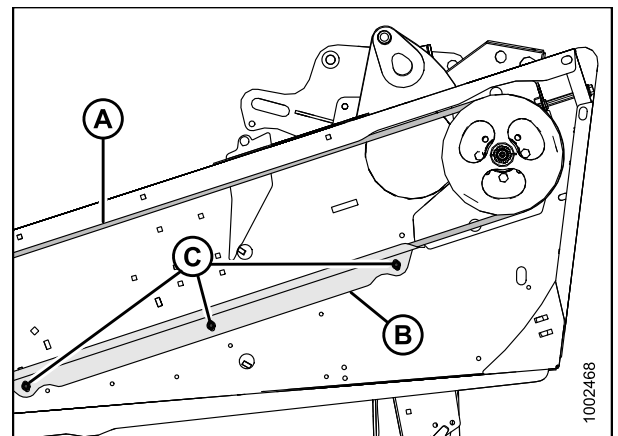


Figure 5.6: Knife Drive

5.4.2 Tensioning Timed Knife Drive Belts

The procedure for tensioning timed knife drive belts is the same for both sides of the header. The illustrations shown are for the left side—the right side is opposite.

IMPORTANT:

To prolong belt and drive life, do **NOT** over-tighten belt.

IMPORTANT:

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

1. Open the endshield.
2. Loosen hex nuts (A) enough to allow the idler pulleys (B) to pivot.

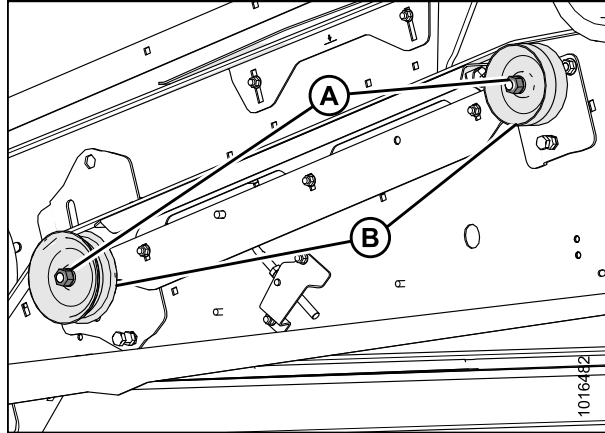


Figure 5.7: LH Knife Drive

3. Pull the idler pulley (A) as high as possible by hand.
4. Thread flange nut (B) down adjuster bolt (C) to achieve final tension.

NOTE:

Tension is checked at mid-span of the belts. The belts should deflect 11/16–14/16 in. (18–22 mm) with 20 lbf (89 N) of force applied to belt.

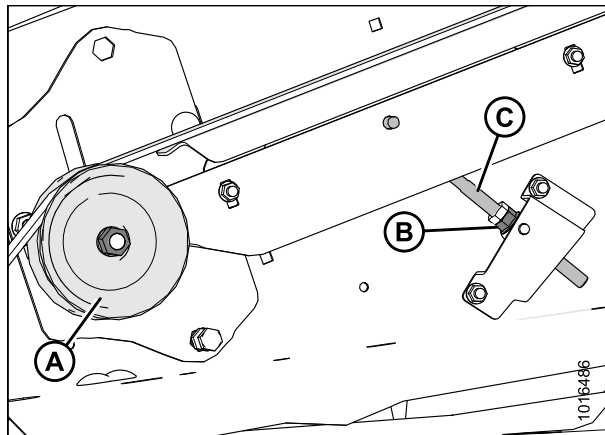


Figure 5.8: LH Knife Drive

PERFORMING PREDELIVERY CHECKS

5. Tighten hex nuts (A) on idler pulleys (B).

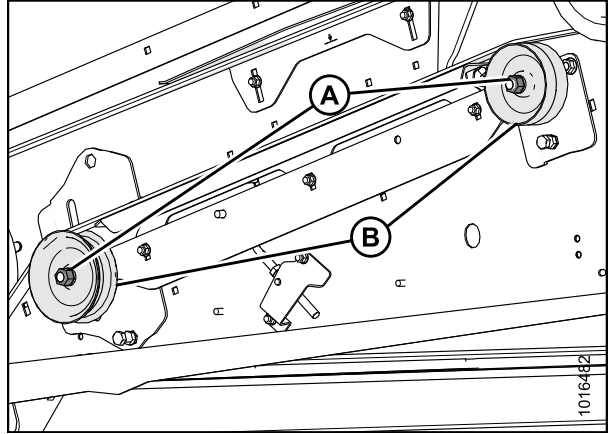


Figure 5.9: LH Knife Drive

6. Loosen flange nut (A) until adjuster bolt (B) is just snug, then tighten jam nut (C) to prevent loosening of the adjuster bolt.

NOTE:

If flange nut and adjuster bolt is not loosened, the lower guide will not be parallel to the belt.

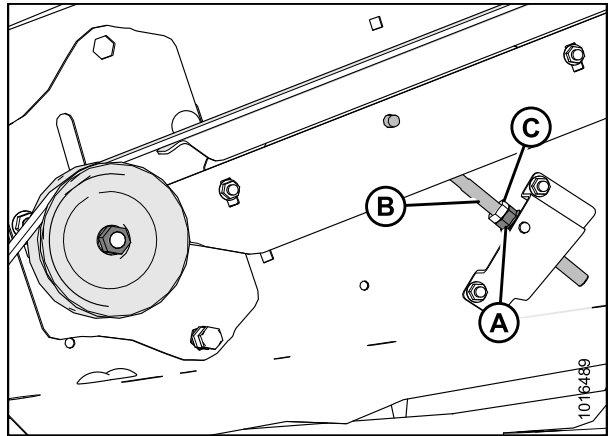


Figure 5.10: LH Knife Drive

7. Ensure there is a clearance of 0.10–0.14 in. (2.5–3.5 mm) between the lower belt (A) and lower guide (B).
8. If necessary, loosen the three bolts (C) and adjust lower guide (B) as required. Tighten bolts.
9. Check that upper belt (D) and upper guide (E) also has a clearance of 1/16–1/8 in. (1.5–2.5 mm). If necessary, loosen the two bolts (F) and adjust as required. Tighten bolts.
10. Close the endshield.
11. Repeat procedure for other side of header.

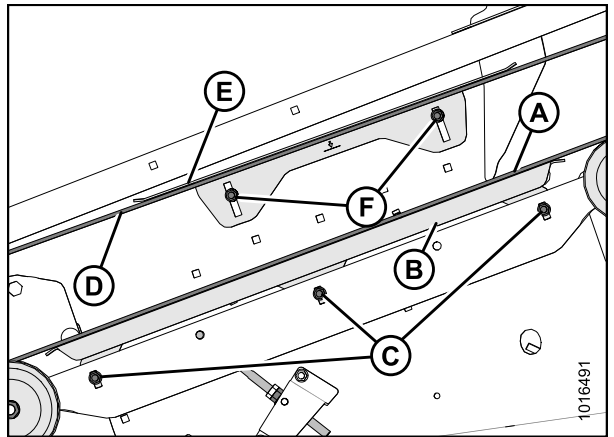


Figure 5.11: LH Knife Drive

5.4.3 Tensioning Timed Knife Drive V-Belts

1. Loosen the two bolts (A).
2. Turn drawbolt (B) clockwise to tighten or counterclockwise to loosen belts (C) tension.

NOTE:

Tension is checked at mid-span of the belts.
The belts should deflect $5/32$ in. (4 mm) with 12–17 lbf (52–77 N) of force applied to each belt.

3. Tighten bolts (A).

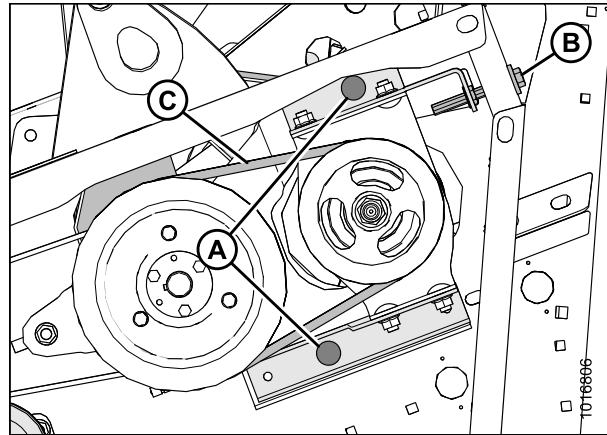


Figure 5.12: Knife Drive V-belts

5.5 Centering the Reel

If the reel is not centered between the endsheets, refer to the topic for the header type:

WARNING

To avoid bodily injury or death from unexpected startup of machine, always stop engine and remove key before making adjustments to machine.

- [5.5.1 Centering Double Reels, page 61](#)
- [5.5.2 Centering Single Reels, page 62](#)

5.5.1 Centering Double Reels

1. Measure clearances at locations (A) between reels and both endsheets. The clearances should be the same if the reels are centered. If not centered, continue on the next step.

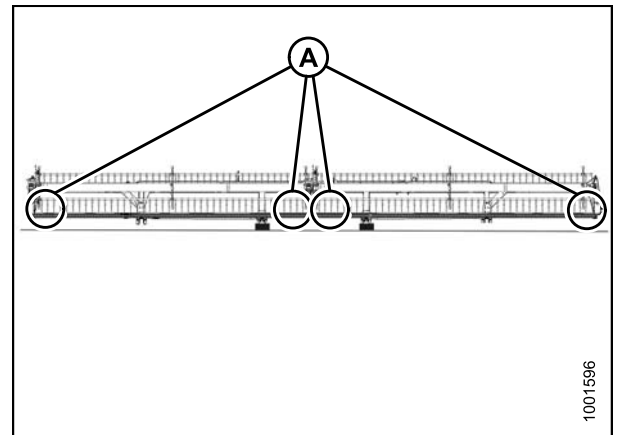


Figure 5.13: Double Reel Measurement Locations

2. Loosen bolts (A) on each brace (B) located on both sides of the reel support arm (C).
3. Move the forward end of the reel center support arm (C) laterally as required, to center both reels.
4. Tighten bolts (A) and torque to 265 ft-lbf (359 N·m).

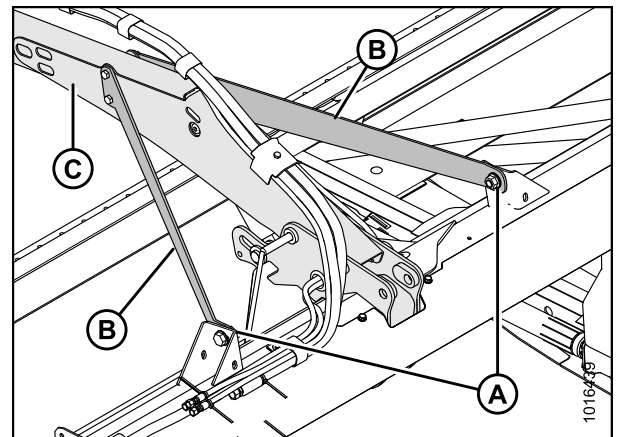


Figure 5.14: Reel Center Support Arm

PERFORMING PREDELIVERY CHECKS

5.5.2 Centering Single Reels

1. Measure the clearance at locations (A) between the reel and endsheets. The clearances should be the same if the reel is centered. If not centered, continue on the next step.

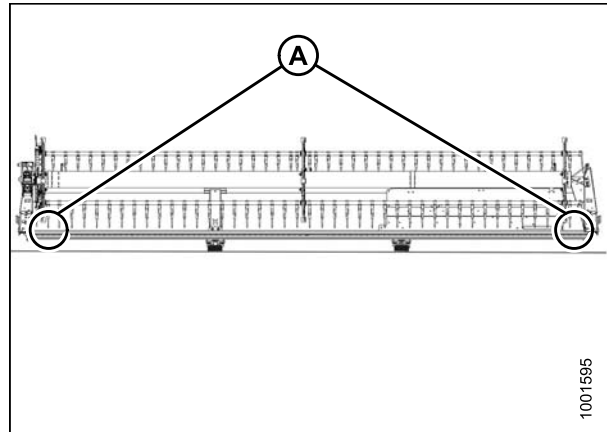


Figure 5.15: Single Reel Measurement Locations

2. Loosen bolt (A) on the brace (B) at both ends of the reel.
3. Move the forward end of the reel support arm (C) laterally as required, to center the reel.
4. Tighten bolts (A) and torque to 265 ft·lbf (359 N·m).

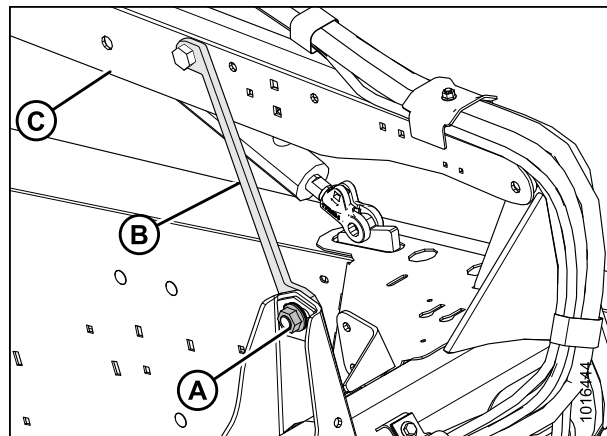


Figure 5.16: Reel Support Arm

5.6 Adjusting Draper Tension

WARNING

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

NOTE:

If adjustment is required, tension the drapers just enough to prevent slipping and to keep the draper from sagging below the cutterbar.

1. Ensure the white indicator bar (A) is at the halfway point in the window.

WARNING

Check to be sure all bystanders have cleared the area.

2. Start the engine and raise the header.
3. Stop the engine, remove the key from the ignition, and engage the header safety props.
4. Ensure the draper guide (the rubber track on the underside of the draper) is properly engaged in the groove (A) on the drive roller.

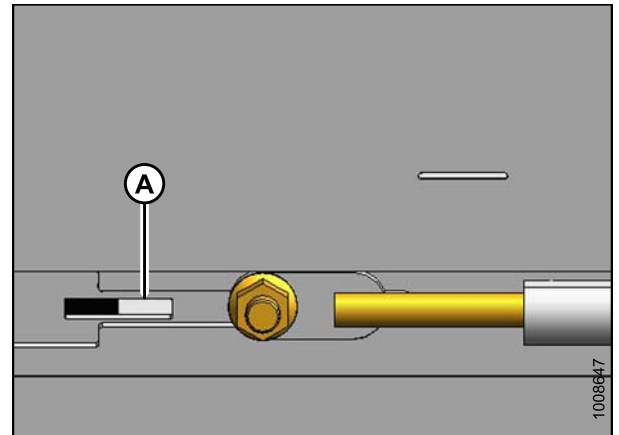


Figure 5.17: Left Tension Adjuster
Shown – Right Opposite

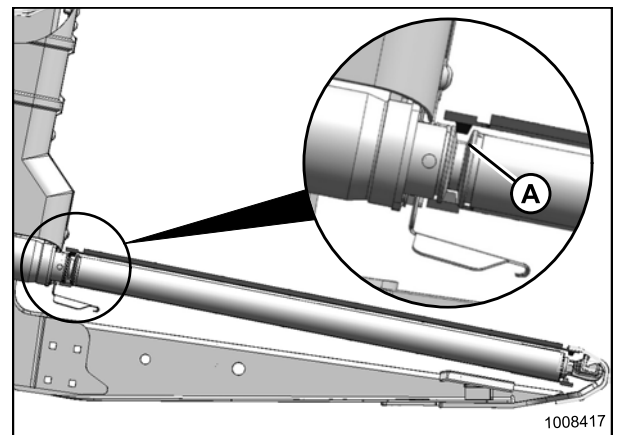


Figure 5.18: Drive Roller

PERFORMING PREDELIVERY CHECKS

5. Ensure the idler roller (A) is between the draper guides (B).

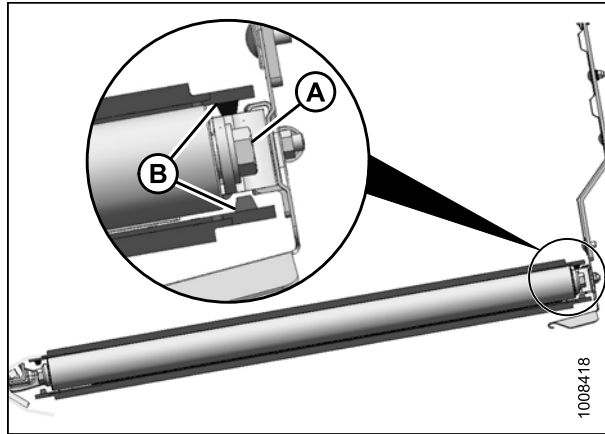


Figure 5.19: Idler Roller

IMPORTANT:

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

6. Turn the adjuster bolt (A) counterclockwise to loosen. The white indicator bar (B) will move outboard in the direction of arrow (D) to indicate that the draper is loosening. Loosen until the white indicator bar is at the halfway point in the window.
7. Turn the adjuster bolt (A) clockwise to tighten. The white indicator bar (B) will move inboard in the direction of arrow (E) to indicate that the draper is tightening. Tighten until the white indicator bar is at the halfway point in the window.

IMPORTANT:

- To avoid premature failure of the draper, draper rollers, and/or tightener components, do not operate with the tension set so the white bar is not visible.
- To prevent scooping dirt, ensure the draper is tight enough that it does not sag below the point where the cutterbar contacts the ground.

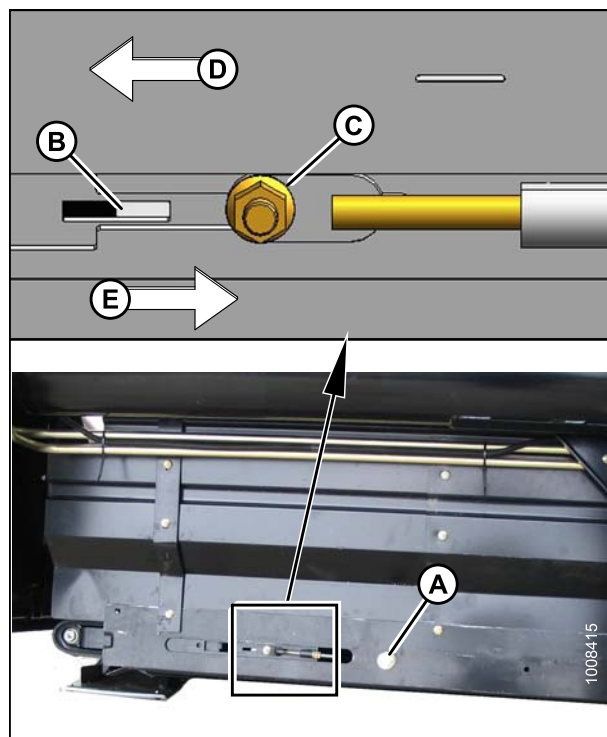


Figure 5.20: Left Tension Adjuster
Shown – Right Opposite

5.7 Checking and Adjusting Draper Seal

Maintain the deck height such that the draper runs just below the cutterbar.

IMPORTANT:

With a new header or newly installed draper, set the gap between the draper (A) and cutterbar (B) to 1/8 in. (3 mm). To prevent material from entering the drapers and cutterbar, you may need to decrease the deck clearance to 0–1/32 in. (0–1 mm) after an initial break-in period of approximately 50 hours.

1. Check deck height. Draper (A) should run just below cutterbar (B) with a gap of 1/8 in. (3 mm) between the top of deck front track and cutterbar.
 - If deck height is acceptable, skip the remaining steps and proceed to [5.8 Checking and Adjusting Skid Shoe Settings, page 67](#).
 - If deck height is **NOT** acceptable, adjust seal as described in the following steps:

NOTE:

Take measurement at deck supports (A) with the header in working position and decks slid fully forward. There are between two and five supports per deck depending on header size.

2. Loosen tension on drapers. For instructions, refer to [5.6 Adjusting Draper Tension, page 63](#).
3. Lift draper (A) up at front edge past cutterbar (B).

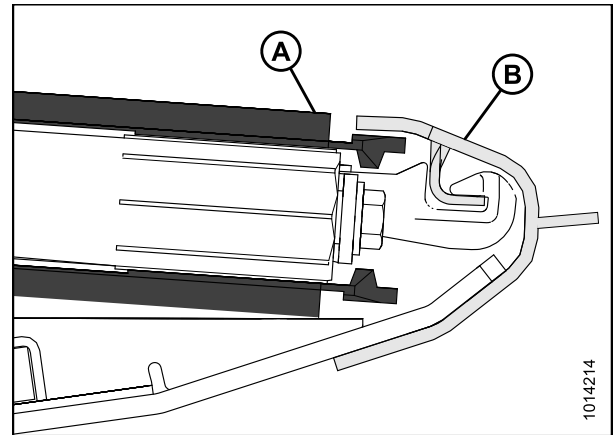


Figure 5.21: Draper/Cutterbar Gap

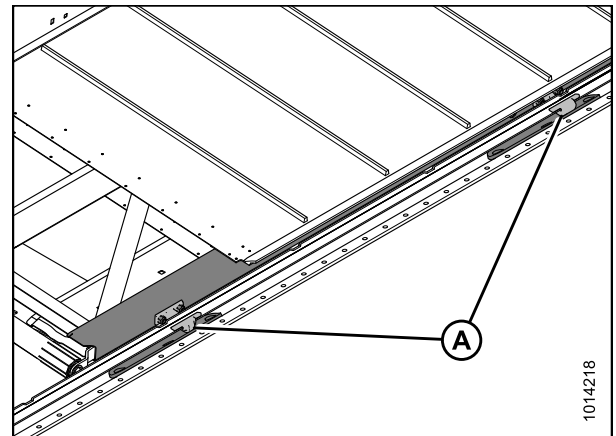


Figure 5.22: Draper Deck Supports

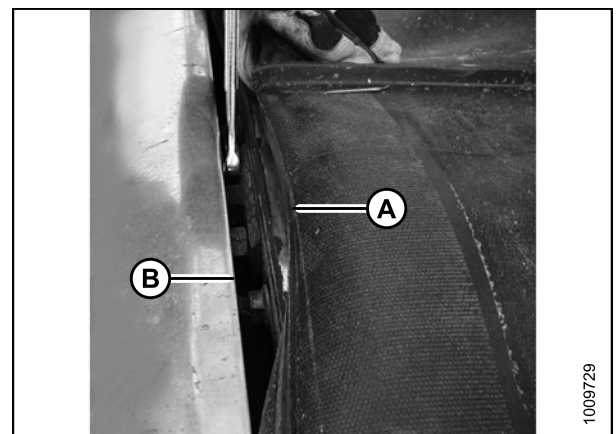


Figure 5.23: Draper and Cutterbar

PERFORMING PREDELIVERY CHECKS

4. Loosen two lock nuts (A) only one-half-turn on deck support (B).
5. Tap deck (C) to lower deck relative to supports and achieve the recommended setting. Tap support (B) using a punch to raise deck relative to supports.
6. Tighten deck support hardware (A).
7. Tension drapers. Refer to [5.6 Adjusting Draper Tension, page 63](#).

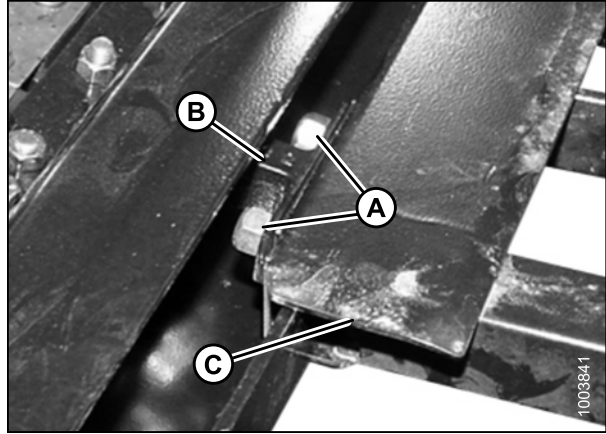


Figure 5.24: Draper Deck Supports (Draper Removed)

5.8 Checking and Adjusting Skid Shoe Settings

Check skid shoes and adjust, if necessary.

WARNING

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

DANGER

Engage header safety props and reel props before working under header or reel.

1. Note the adjustment hole positions on the lugs (A) on each skid shoe. They should be the same.
2. If necessary, adjust skid shoe as follows:
 - a. Remove lynch pin (B).
 - b. Hold shoe and remove pin (C) by disengaging frame and then pulling away from shoe.
 - c. Raise or lower skid shoe to desired position using holes in support as a guide.
 - d. Reinsert pin (C), engage in frame, and secure with lynch pin (B).
 - e. Check that all skid shoes are adjusted to the same position.

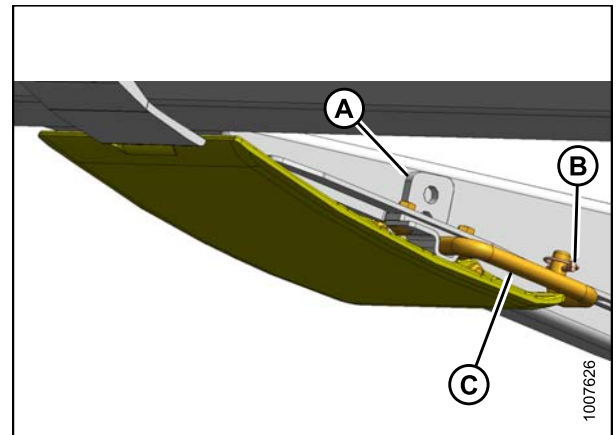


Figure 5.25: Inner Skid Shoe

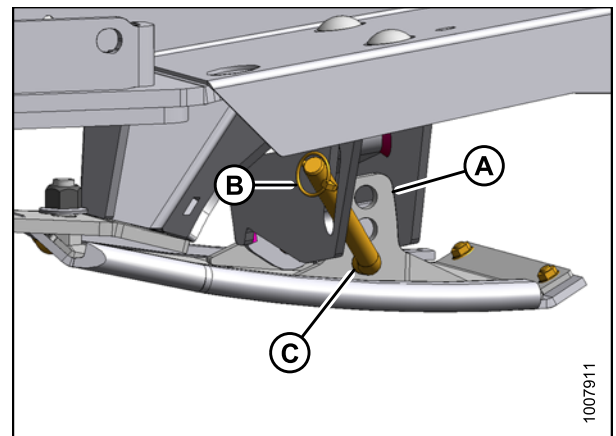


Figure 5.26: Outer Skid Shoe

5.9 Levelling the Header

The windrower linkages are factory-set to provide the proper level for the header and should not normally 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 your windrower's operator's manual).
2. If the header is still not level, adjust the windrower linkages as required (refer to the appropriate section in the windrower's operator's manual).

NOTE:

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

5.10 Measuring and Adjusting Reel Clearance to Cutterbar

The minimum clearance between the reel fingers and the cutterbar ensures that the reel fingers do not contact the cutterbar during operation. The clearance is adjusted at the factory, but some adjustment may be necessary before operation.

The finger to guard/cutterbar clearances with reels fully lowered are shown in Table 5.2 *Finger to Guard/Cutterbar Clearance*, page 69.

Table 5.2 Finger to Guard/Cutterbar Clearance

Header Width	(X) +/- 1/8 in. (3 mm) at Reel Ends	
	Single Reel	Double Reel
30 ft.	1-3/4 in. (45 mm)	—
35 ft.	2-3/8 in. (60 mm)	3/4 in. (20 mm)
40 ft.	—	
45 ft.	—	

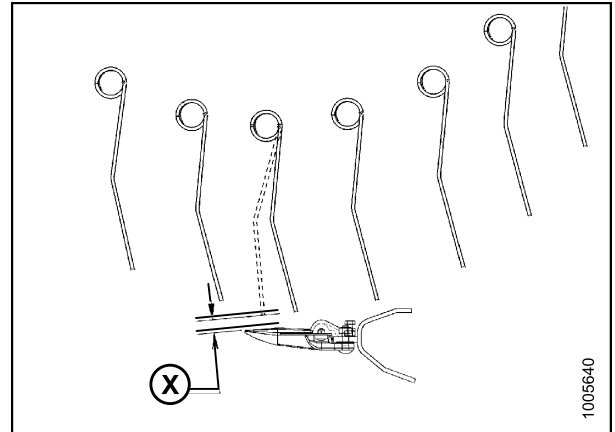


Figure 5.27: Finger Clearance

5.10.1 Measuring Reel Clearance

DANGER

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

1. Park the header on level ground.
2. Set the fore-aft position to the middle position (5) on the fore-aft position decal (A).
3. Lower the reel fully.
4. Shut down the engine and remove key from the ignition.

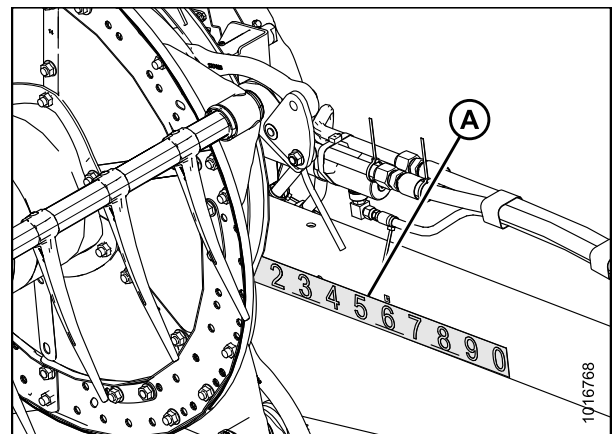


Figure 5.28: Fore-Aft Position

PERFORMING PREDELIVERY CHECKS

5. Measure the clearance (X) between points (B) and (C) at the ends of each reel (A).

NOTE:

The reel is factory-set to provide more clearance at the center of the reel than at the ends (frown) to compensate for reel flexing.

6. Check all possible points of contact between points (B) and (C). Depending on the reel fore-aft position, minimum clearance can result at the guard tine, hold-down, or cutterbar.
7. Adjust the reel if necessary. Refer to [5.10.2 Adjusting Reel Clearance, page 71](#).

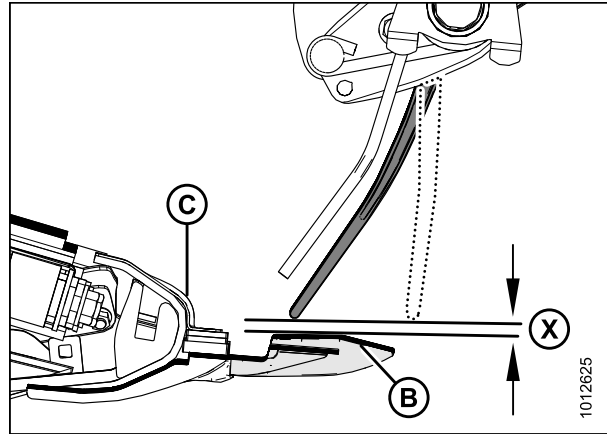


Figure 5.29: Reel Clearance

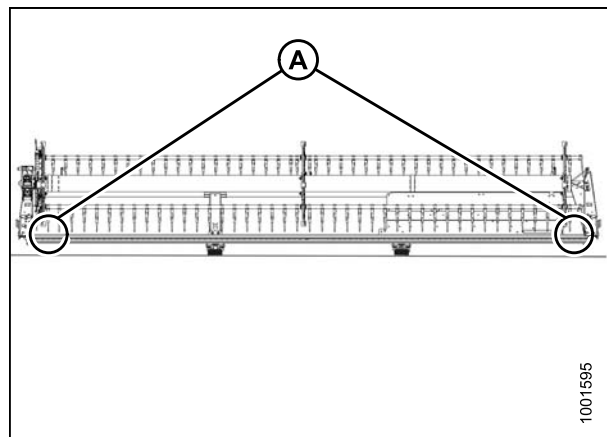


Figure 5.30: Single Reel Measurement Locations (Two Places)

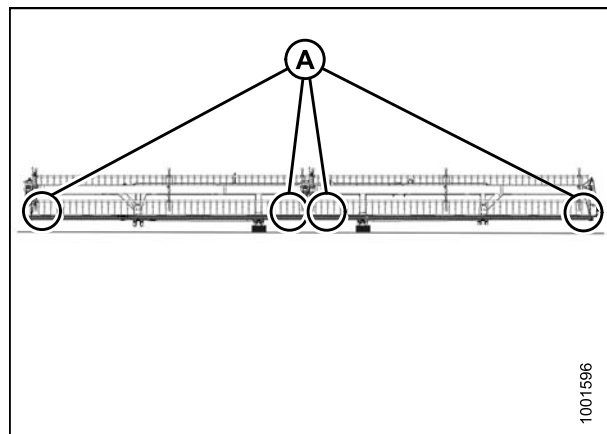


Figure 5.31: Double Reel Measurement Locations (Four Places)

5.10.2 Adjusting Reel Clearance

DANGER

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

1. Stop the engine and remove the key.
2. Adjust outboard reel arm lift cylinders to set clearance at outboard ends of reel as follows:
 - a. Loosen bolt (A).
 - b. Turn cylinder rod (B) out of clevis to raise reel and increase clearance to cutterbar, or turn cylinder rod into clevis to lower reel and decrease clearance.
 - c. Tighten bolt (A).
 - d. Repeat at opposite side.

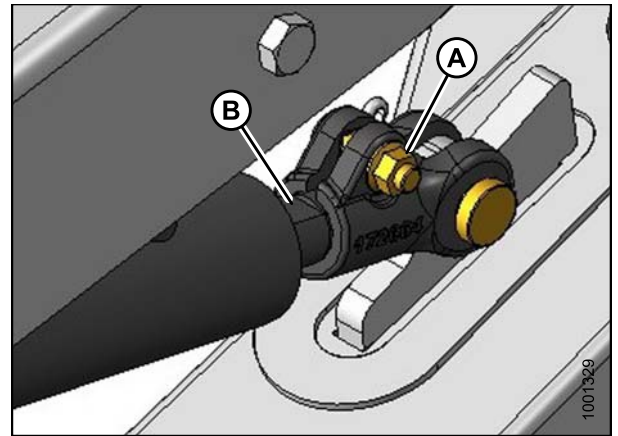


Figure 5.32: Outside Reel Arm

3. **For Double Reel Only:** Adjust center arm lift cylinder stop (A) to change clearance at inboard ends of reels as follows:

NOTE:

Instructions apply to double-reel headers only and are performed from the underside of the arm.

- a. Loosen nut (B).
 - b. Turn nut (C) counterclockwise to raise reel and increase clearance to cutterbar, or clockwise to lower reel and decrease clearance.
 - c. Tighten nut (B).
4. Check measurements and if necessary, repeat adjustment procedures.

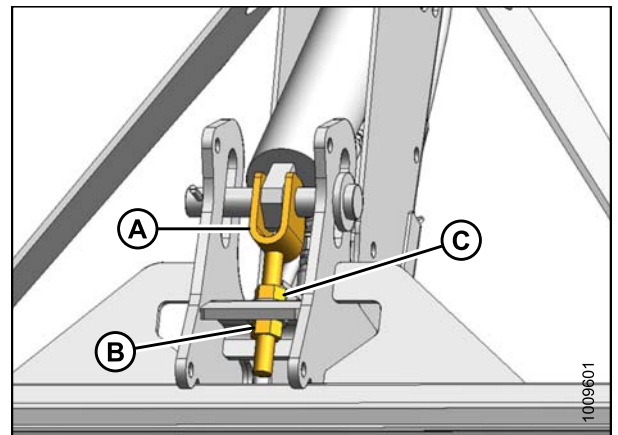


Figure 5.33: Underside of Center Arm

5.11 Checking and Adjusting Endshields

Endshields are subject to expansion or contraction caused by large temperature variations. The position of the top pin and lower catch can be adjusted to compensate for dimensional changes.

1. Check gap (X) between front end of shields and header frame and compare to the values in Table 5.3 *Endshield Gap at Various Temperatures, page 72.*

Table 5.3 Endshield Gap at Various Temperatures

Temperature in Degrees F (C)	Gap (X) in Inches (mm)
25 (-4)	1-1/10 (28)
45 (7)	1 (24)
65 (18)	13/16 (20)
85 (29)	5/8 (16)
105 (41)	1/2 (12)
125 (52)	5/16 (8)
145 (63)	3/16 (4)
165 (89)	0

NOTE:

If the endshield gap is correct, skip to the next procedure. If adjustment is required, follow these steps:

Opening the endshield:

2. Push release lever (A) located on the backside of the endshield to unlock the shield.
3. Pull endshield open using handle depression (B).

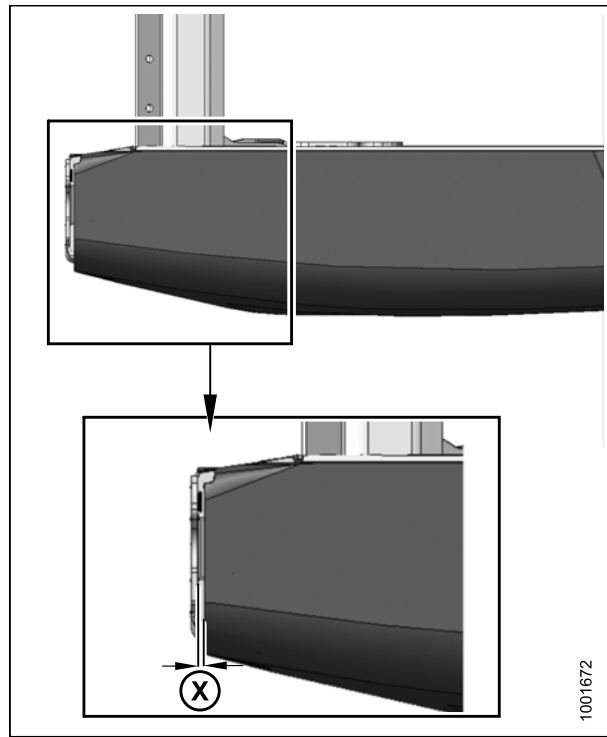


Figure 5.34: Gap between Endshield and Header Frame

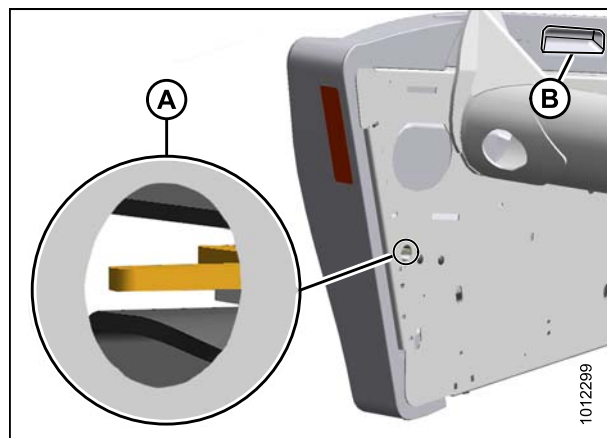


Figure 5.35: Left Endshield

PERFORMING PREDELIVERY CHECKS

4. Pull endshield at handle depression (A). Endshield is retained by a hinge tab (B) and will open in direction (C).

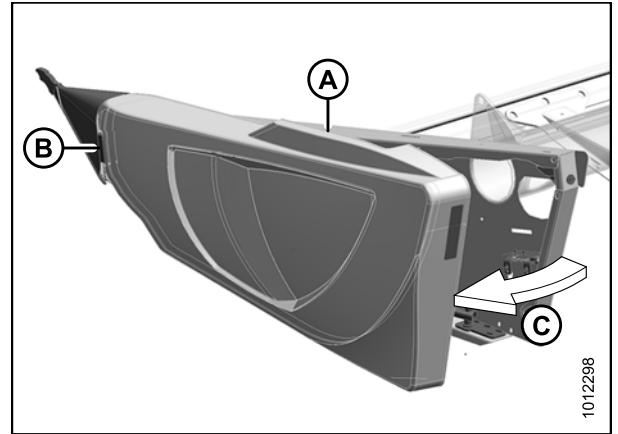


Figure 5.36: Left Endshield

5. Pull the endshield free of hinge tab (A) if additional clearance is required, and swing shield towards the rear of the header.
6. Engage safety catch (B) on hinge arm to secure the shield in fully open position.

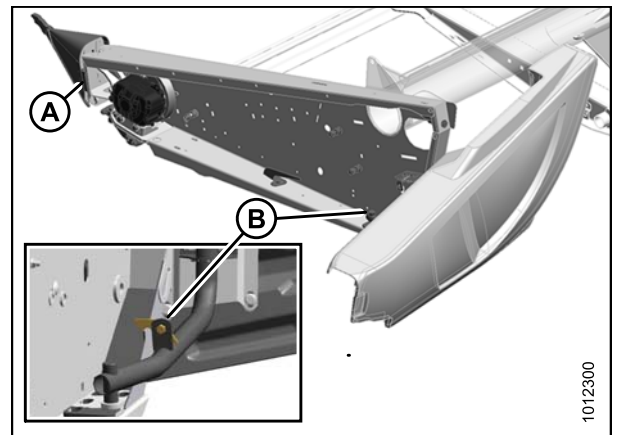


Figure 5.37: Left Endshield

Adjusting the endshield gap:

7. Loosen the four bolts (A) on the support tube bracket (B).

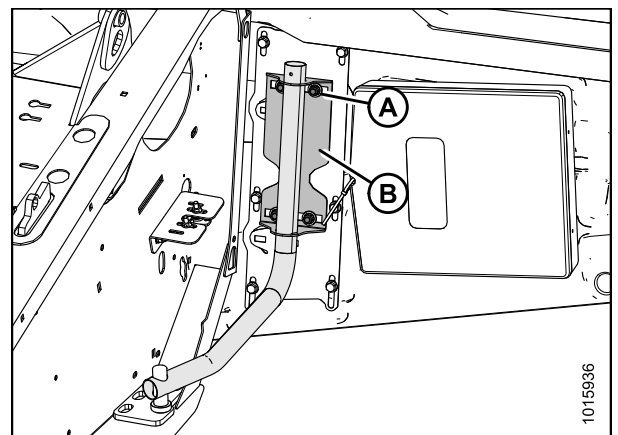


Figure 5.38: LH Endshield Support Tube

PERFORMING PREDELIVERY CHECKS

8. Loosen the three bolts (A) on latch assembly (B).
9. Adjust latch assembly to achieve the desired gap between the front end of shield and header frame in accordance with Table 5.3 *Endshield Gap at Various Temperatures, page 72*.
10. Tighten the three bolts (A) on latch assembly.
11. Tighten the four bolts on the support tube bracket.
12. Close endshield.

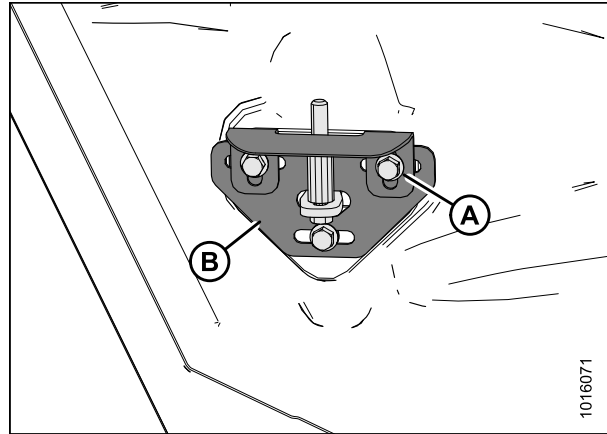


Figure 5.39: LH Endshield Latch Assembly

Closing the endshield:

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

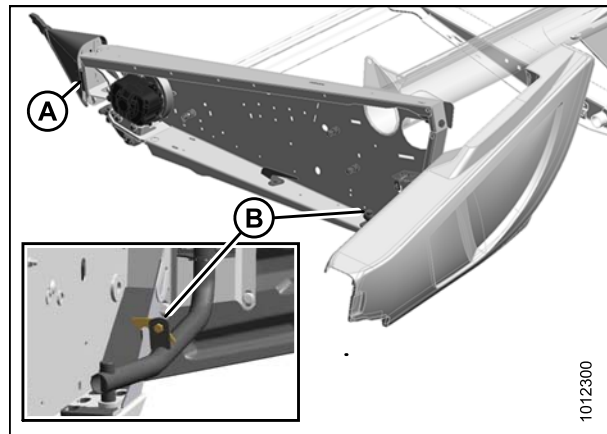


Figure 5.40: Left Endshield

15. Swing endshield in direction (A) into closed position. Engage lock with a firm push.
16. Verify that endshield is locked.

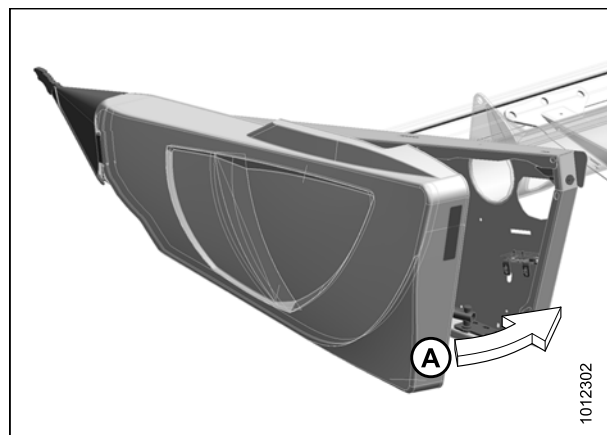


Figure 5.41: Left Endshield

5.12 Lubricating the Header

Table 5.4 Recommended Lubricant

Specification	Description	Use
SAE multipurpose	High temperature, extreme pressure (EP2) performance with 1% max molybdenum disulphide (NLGI Grade 2) lithium base	As required unless otherwise specified
	High temperature, extreme pressure (EP) performance with 10% max molybdenum disulphide (NLGI Grade 2) lithium base	Driveline slip-joints

5.12.1 Greasing Procedure

Greasing points are marked on the machine by decals showing a grease gun and grease interval in hours of operation. Master grease point location decals are provided on the header.

 **DANGER**

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

PERFORMING PREDELIVERY CHECKS

1. Wipe grease fitting with a clean cloth before greasing to avoid injecting dirt and grit.
2. Inject grease through fitting with grease gun until grease overflows fitting (except where noted).
3. Leave excess grease on fitting to keep out dirt.
4. Replace any loose or broken fittings immediately.
5. Remove and thoroughly clean any fitting that will not take grease. Also clean lubricant passageway. Replace fitting if necessary.
6. Use clean, high-temperature, extreme-pressure grease only.

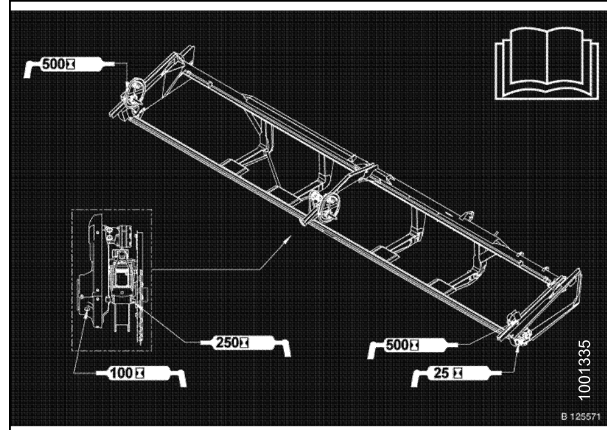


Figure 5.42: Single-Knife Header Master Grease Point Decal

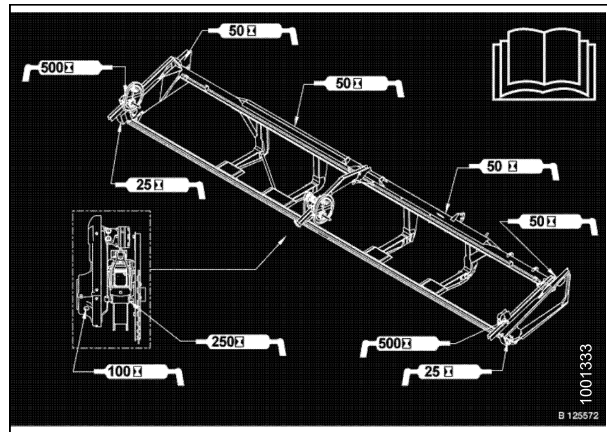


Figure 5.43: Double-Knife Header Master Grease Point Decal

5.12.2 Lubrication Points

Knifehead

IMPORTANT:

Overgreasing can cause the knife to bend and make contact with the guards closest to the knifehead. Check for signs of excessive heating on first few guards after greasing. If required, relieve some pressure by removing the grease fitting.

- To prevent binding and/or excessive wear caused by knife pressing on guards, do **NOT** over grease the knifehead (A).
- Apply only 1–2 pumps of grease with a grease gun, or just until the knifehead starts to move away from the arm. Do **NOT** use an electric grease gun.
- If more than 6–8 pumps of the grease gun are required to fill the cavity, replace the seal in the knifehead.
- Check for signs of excessive heating on first few guards after greasing. If required, relieve pressure by pressing check-ball in grease fitting.

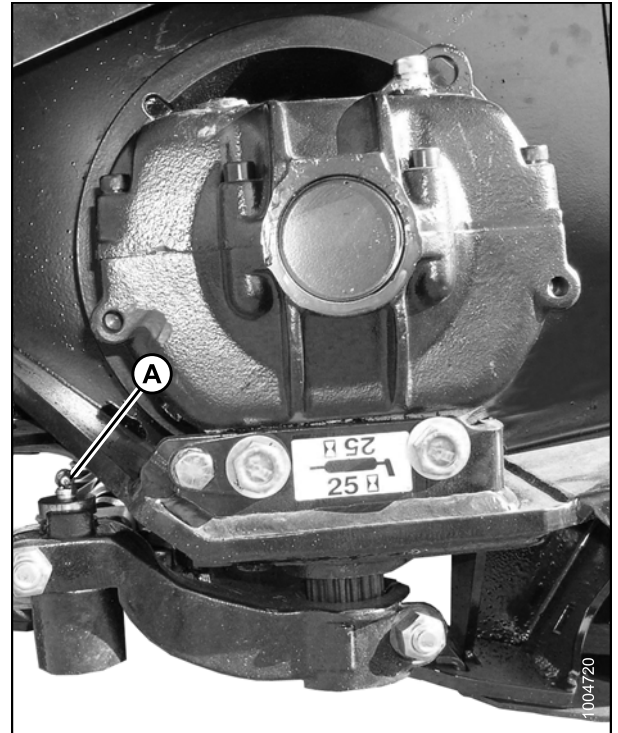


Figure 5.44: Knifehead

(Single Knife – One Place)
(Double Knife – Two Places)

NOTE:

Use High Temperature Extreme Pressure (EP2) Performance with 1% Max Molybdenum Disulphide (NLGI Grade 2) Lithium Base grease unless otherwise specified.

PERFORMING PREDELIVERY CHECKS

IMPORTANT:

The reel U-joint (C) has an extended lubrication cross and bearing kit. Stop greasing when greasing becomes difficult or if U-joint stops taking grease. **OVERGREASING WILL DAMAGE U-JOINT.** Six to eight pumps is sufficient at first grease (factory). As U-joint wears and requires more than six pumps, grease the joint more often.

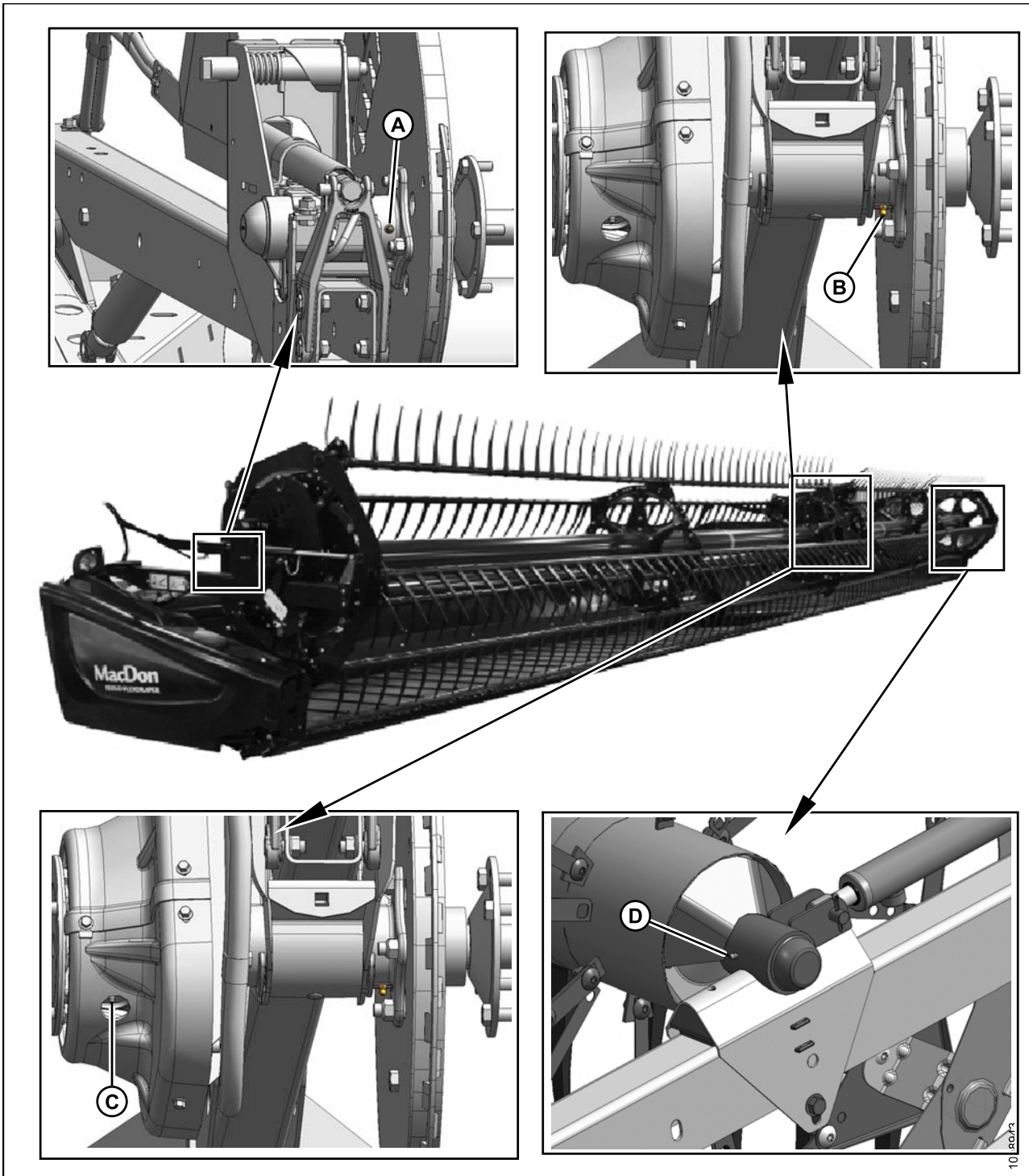


Figure 5.45: Reel Shaft Bearings

A - Reel Shaft Right-Hand Bearing (One Place)
C - Reel Universal (One Place)

B - Reel Center Bearing (One Place)
D - Reel Shaft Left-Hand Bearing (One Place)

5.13 Checking Manuals

Check manual case contents. The manual case is located inside the left-hand endshield.

1. Open the left-hand endshield and remove the cable tie on the manual case.

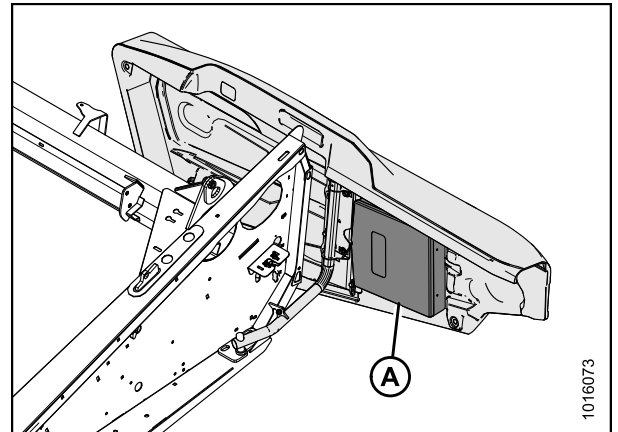


Figure 5.46: Manual Case

2. Confirm that the case contains the following manuals:
 - D1 XL-Series Draper Header for Self-Propelled Windrowers Operator's Manual
 - D1 XL-Series Draper Header for Self-Propelled Windrowers Quick Card
 - D1 XL-Series Draper Header Parts Catalog
3. Close case and endshield.



Figure 5.47: D1 XL-Series Manuals

6 Running up the Header

To run up the header, follow these steps:

CAUTION

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

CAUTION

Before investigating an unusual sound or attempting to correct a problem, shut off engine, engage parking brake, and remove key.

1. Start the windrower and run header for 5 minutes, watching and listening FROM THE OPERATOR'S SEAT for binding or interfering parts.

NOTE:

Reels and drapers will not operate until oil flow fills the lines.

2. Run header for an additional 10 minutes at operating speed, watching and listening FROM THE OPERATOR'S SEAT for binding or interfering parts.
3. Shut down the windrower and remove key.
4. Perform the run-up check as listed on the Predelivery Checklist (yellow sheet attached to this instruction) [Predelivery Checklist, page 101](#).

7 Performing Post Run-Up Adjustments

Perform post run-up check as listed on the Predelivery Checklist (yellow sheet attached to this instruction [Predelivery Checklist, page 101](#)) to ensure machine is field-ready.

WARNING

To avoid bodily injury or death from unexpected startup of machine, always stop engine and remove key before making adjustments to machine.

It may be necessary to adjust the knife after the run-up. Refer to [7.1 Adjusting Knife, page 83](#).

7.1 Adjusting Knife

WARNING

To avoid bodily injury or death from unexpected startup of machine, always stop engine and remove key before making adjustments to machine.

1. Stop engine and remove the key.
2. Check guards for signs of heating during run-up due to insufficient clearance between guard and knife.
3. If heating is evident, check gap between knifehead (A) and pitman arm (B). A business card should slide easily through the gap. If not, adjust gap by loosening bolt and tapping knifehead (A) with a hammer. Retighten bolt.
4. Adjust guard alignment as necessary using guard straightening tool (MD #140135). Adjust guard tips upwards by positioning tool as shown and pulling up.

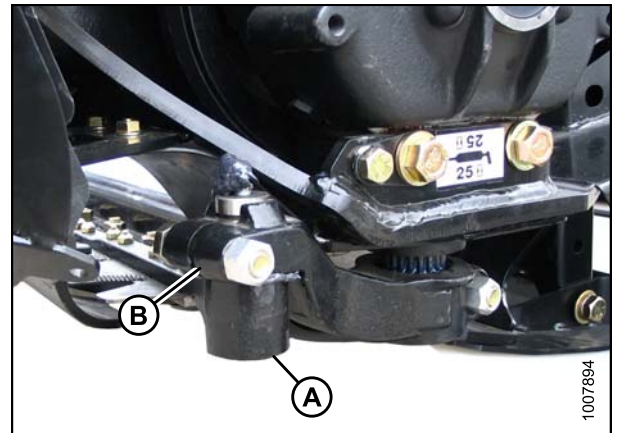


Figure 7.1: Knifehead and Pitman Arm



Figure 7.2: Guard Tips – Upward Adjustment

PERFORMING POST RUN-UP ADJUSTMENTS

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



Figure 7.3: Guard Tips – Downward Adjustment

8 Reference

8.1 Torque Specifications

The following tables provide the correct torque values for various bolts, cap screws, and hydraulic fittings.

- Tighten all bolts to the torque values specified in the charts (unless otherwise noted throughout this manual).
- Replace hardware with the same strength and grade of bolt.
- Use the torque value tables as a guide and periodically check tightness of bolts.
- Understand torque categories for bolts and cap screws by using their identifying head markings.

8.1.1 Metric Bolt Specifications

Table 8.1 Metric Class 8.8 Bolts and Class 9 Free Spinning Nut

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

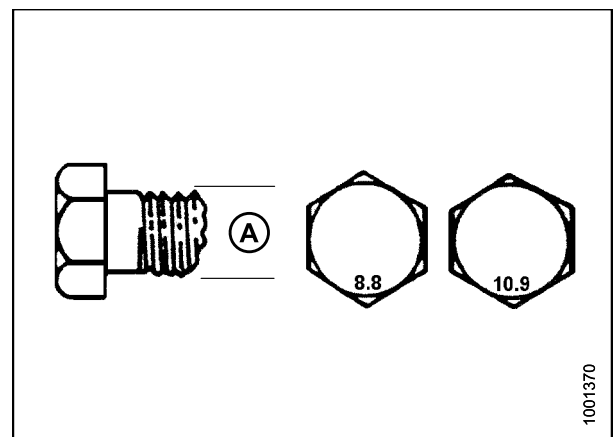


Figure 8.1: Bolt Grades

REFERENCE

Table 8.2 Metric Class 8.8 Bolts and Class 9 Distorted Thread Nut

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

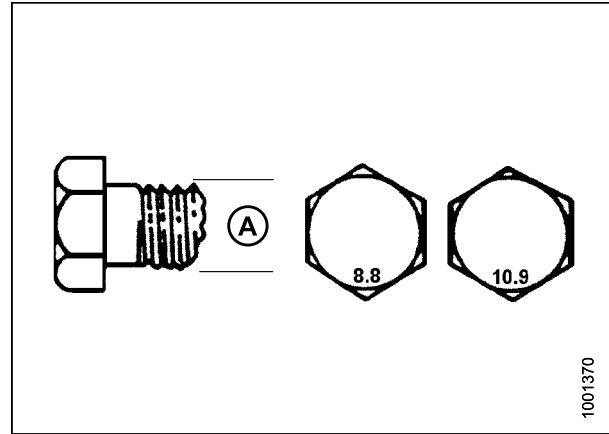


Figure 8.2: Bolt Grades

Table 8.3 Metric Class 10.9 Bolts and Class 10 Free Spinning Nut

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

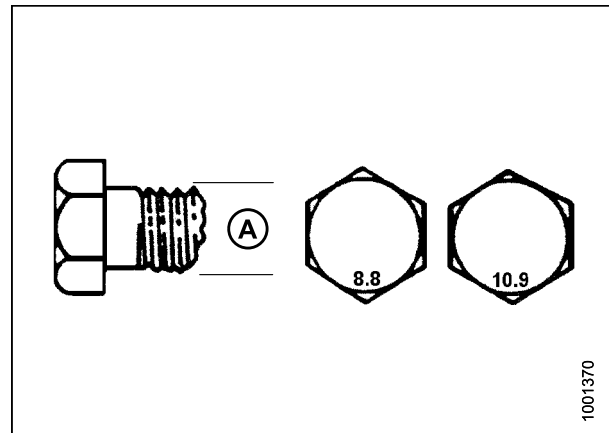


Figure 8.3: Bolt Grades

REFERENCE

Table 8.4 Metric Class 10.9 Bolts and Class 10 Distorted Thread Nut

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

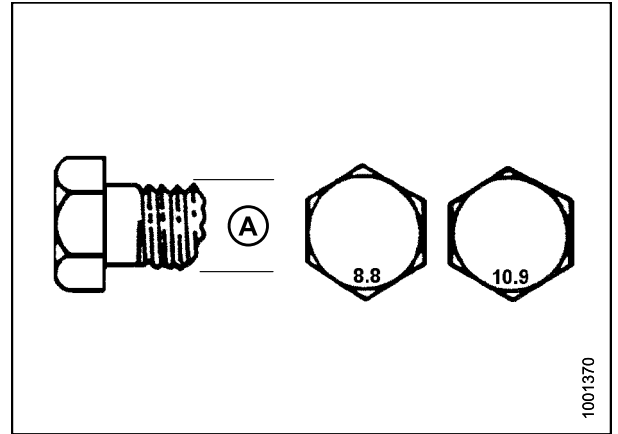


Figure 8.4: Bolt Grades

8.1.2 Metric Bolt Specifications Bolting into Cast Aluminum

Table 8.5 Metric Bolt Bolting into Cast Aluminum

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

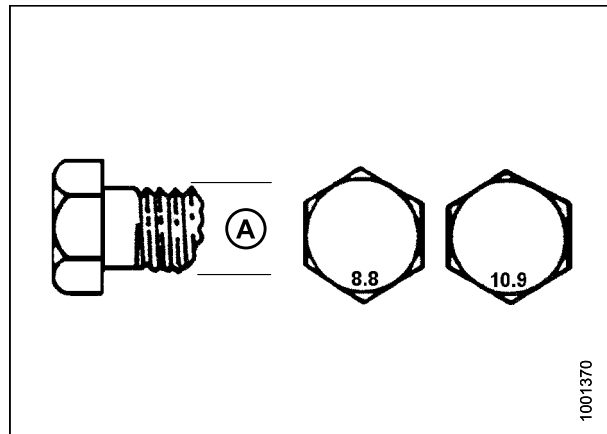


Figure 8.5: Bolt Grades

8.1.3 Flare-Type Hydraulic Fittings

1. Check flare (A) and flare seat (B) for defects that might cause leakage.
2. Align tube (C) with fitting (D) and thread nut (E) onto fitting without lubrication until contact has been made between the flared surfaces.
3. Torque the fitting nut (E) to the specified number of flats from finger tight (FFFT) or to a given torque value in [Table 8.6 Flare-Type Hydraulic Tube Fittings, page 89](#).
4. Use two wrenches to prevent fitting (D) from rotating. Place one wrench on the fitting body (D) and tighten nut (E) with the other wrench to the torque shown.
5. Assess the final condition of the connection.

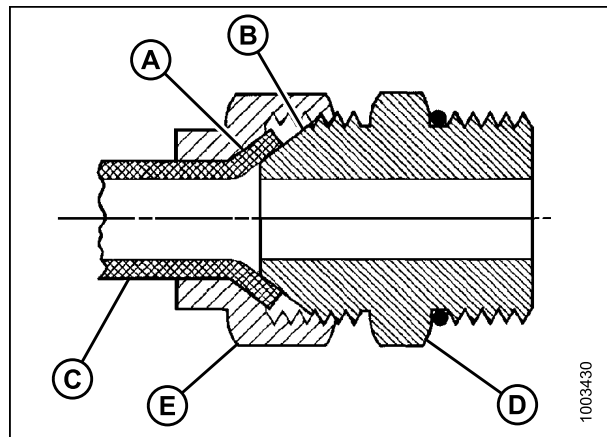


Figure 8.6: Hydraulic Fitting

REFERENCE

Table 8.6 Flare-Type Hydraulic Tube Fittings

SAE Dash Size	Thread Size (in.)	Torque Value ³		Flats from Finger Tight (FFFT)	
		ft·lbf	N·m	Tube	Swivel Nut or Hose
-2	5/16-24	3-4	4-5	—	—
-3	3/8-24	5-6	7-8	—	—
-4	7/16-20	13-14	18-19	2-1/2	2
-5	1/2-20	14-15	19-21	2	2
-6	9/16-18	22-24	30-33	2	1-1/2
-8	3/4-16	42-46	57-63	2	1-1/2
-10	7/8-14	60-66	81-89	1-1/2	1-1/2
-12	1-1/16-12	83-91	113-124	1-1/2	1-1/4
-14	1-3/16-12	100-110	136-149	1-1/2	1-1/4
-16	1-5/16-12	118-130	160-176	1-1/2	1
-20	1-5/8-12	168-184	228-250	1	1
-24	1-7/8-12	195-215	264-291	1	1
-32	2-1/2-12	265-291	359-395	1	1
-40	3-12	—	—	1	1

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

REFERENCE

8.1.4 O-Ring Boss (ORB) Hydraulic Fittings (Adjustable)

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

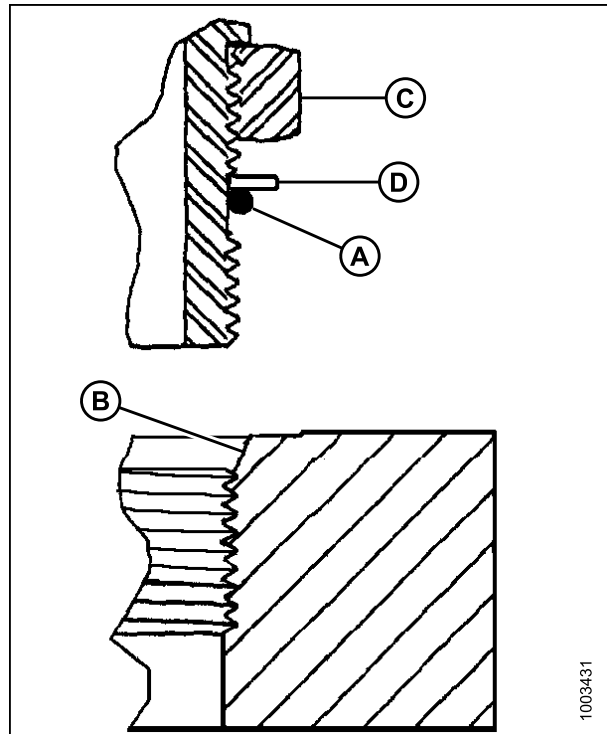


Figure 8.7: Hydraulic Fitting

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

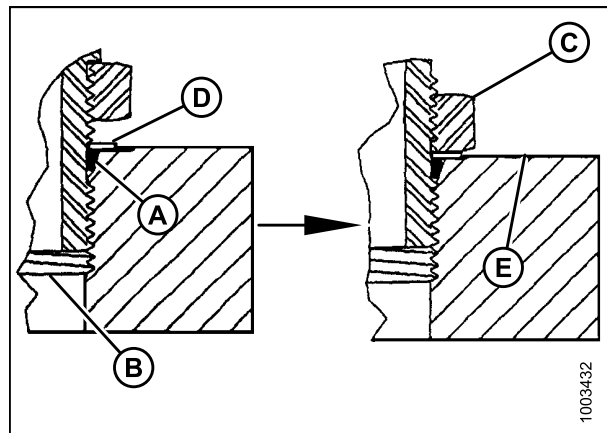


Figure 8.8: Hydraulic Fitting

REFERENCE

Table 8.7 O-Ring Boss (ORB) Hydraulic Fittings (Adjustable)

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

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

REFERENCE

8.1.5 O-Ring Boss (ORB) Hydraulic Fittings (Non-Adjustable)

1. Inspect O-ring (A) and seat (B) for dirt or obvious defects.
2. Check that O-ring (A) is **NOT** on the threads and adjust if necessary.
3. Apply hydraulic system oil to the O-ring.
4. Install fitting (C) into port until fitting is hand tight.
5. Torque fitting (C) according to the values in Table 8.8 *O-Ring Boss (ORB) Hydraulic Fittings (Non-Adjustable)*, page 92.
6. Check the final condition of the fitting.

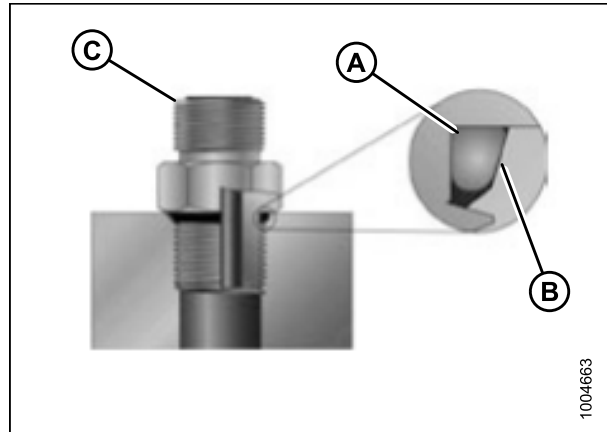


Figure 8.9: Hydraulic Fitting

Table 8.8 O-Ring Boss (ORB) Hydraulic Fittings (Non-Adjustable)

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

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

8.1.6 O-Ring Face Seal (ORFS) Hydraulic Fittings

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



Figure 8.10: Hydraulic Fitting

2. Apply hydraulic system oil to the O-ring (B).
3. Align the tube or hose assembly so that the flat face of the sleeve (A) or (C) comes in full contact with O-ring (B).
4. Thread tube or hose nut (D) until hand-tight. The nut should turn freely until it is bottomed out.
5. Torque fittings according to the values in Table [8.9 O-Ring Face Seal \(ORFS\) Hydraulic Fittings, page 94](#).

NOTE:

If applicable, hold the hex on the fitting body (E) to prevent rotation of fitting body and hose when tightening the fitting nut (D).

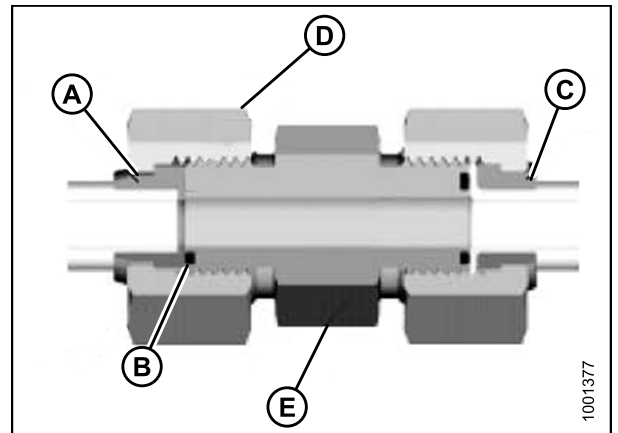


Figure 8.11: Hydraulic Fitting

6. Use three wrenches when assembling unions or joining two hoses together.
7. Check the final condition of the fitting.

REFERENCE

Table 8.9 O-Ring Face Seal (ORFS) Hydraulic Fittings

SAE Dash Size	Thread Size (in.)	Tube O.D. (in.)	Torque Value ⁶	
			ft-lbf	N·m
-3	Note ⁷	3/16	–	–
-4	9/16	1/4	18–21	25–28
-5	Note ⁷	5/16	–	–
-6	11/16	3/8	29–32	40–44
-8	13/16	1/2	41–45	55–61
-10	1	5/8	59–65	80–88
-12	1-3/16	3/4	85–94	115–127
-14	Note ⁷	7/8	–	–
-16	1-7/16	1	111–122	150–165
-20	1-11/16	1-1/4	151–167	205–226
-24	1–2	1-1/2	232–256	315–347
-32	2-1/2	2	376–414	510–561

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

7. O-ring face seal type end not defined for this tube size.

REFERENCE

8.1.7 Tapered Pipe Thread Fittings

The proper method of assembling a pipe thread fitting is:

1. Check components to ensure that fitting and port threads are free of burrs, nicks and scratches, or any form of contamination.
2. Apply pipe thread sealant (paste type) to the external pipe threads.
3. Thread the fitting into the port until hand-tight.
4. Torque the connector to the appropriate torque angle. The Turns From Finger Tight (TFFT) values are shown in Table 8.10 *Hydraulic Fitting Pipe Thread*, page 95. Making sure that the tube end of a shaped connector (typically 45° or 90°) is aligned to receive the incoming tube or hose assembly. Always finish alignment of fitting in the tightening direction. Never back off (loosen) pipe threaded connectors to achieve alignment
5. Clean all residue and any excess thread conditioner with the appropriate cleaner.
6. Assess the final condition of the fitting. Pay special attention to the possibility of cracks to the port opening.
7. Mark the final position of the fitting. If a fitting leaks, disassemble the fitting and check for damage.

NOTE:

*Over-torque failure of fittings may not be evident until the fittings are disassembled.

Table 8.10 Hydraulic Fitting Pipe Thread

Tapered Pipe Thread Size	Recommended T.F.F.T	Recommended F.F.F.T
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

8.2 Lifting Equipment Requirements

The following topic describes the minimum equipment requirements for lifting headers.

CAUTION

To avoid injury to bystanders from being struck by machinery, do not allow people to stand in unloading area.

CAUTION

Equipment used for loading and unloading must meet or exceed the minimum specified requirements. Using inadequate equipment may result in vehicle tipping, machine damage, or chain breakage.

IMPORTANT:

Forklifts are normally rated for a load center 24 in. (610 mm) ahead of back end of the forks. To obtain the forklift capacity for a load center (A) at 48 in. (1220 mm) (B), check with your forklift distributor. The minimum fork length (C) is 78 in. (1981 mm).

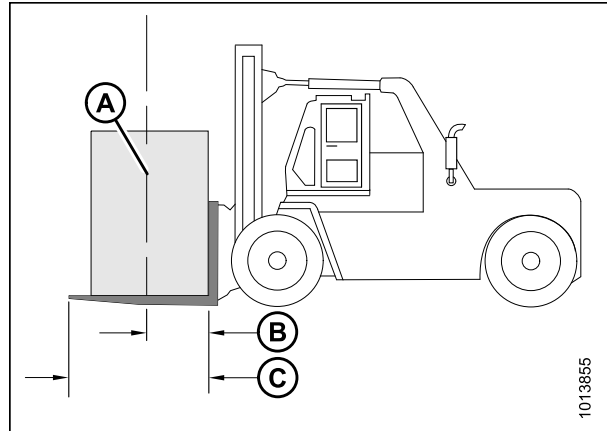


Figure 8.12: Minimum Lifting Capacity

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

Table 8.11 Lifting Vehicle Requirements

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

Table 8.12 Lifting Chain Requirements

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

REFERENCE

8.3 Conversion Chart

Table 8.13 Conversion Chart

Quantity	Inch-Pound Units		Factor	SI Units (Metric)	
	Unit Name	Abbreviation		Unit Name	Abbreviation
Area	acres	acres	$\times 0.4047 =$	hectares	ha
Flow	US gallons per minute	gpm	$\times 3.7854 =$	liters per minute	L/min
Force	pounds force	lbf	$\times 4.4482 =$	Newtons	N
Length	inch	in.	$\times 25.4 =$	millimeters	mm
	foot	ft.	$\times 0.305 =$	meters	m
Power	horsepower	hp	$\times 0.7457 =$	kilowatts	kW
Pressure	pounds per square inch	psi	$\times 6.8948 =$	kilopascals	kPa
			$\times .00689 =$	megapascals	MPa
			$\div 14.5038 =$	bar (Non-SI)	bar
Torque	pound feet or foot pounds	ft-lbf	$\times 1.3558 =$	Newton meters	N-m
	pound inches or inch pounds	in-lbf	$\times 0.1129 =$	Newton meters	N-m
Temperature	degrees Fahrenheit	$^{\circ}\text{F}$	$(^{\circ}\text{F}-32) \times 0.56 =$	Celsius	$^{\circ}\text{C}$
Velocity	feet per minute	ft/min	$\times 0.3048 =$	meters per minute	m/min
	feet per second	ft/s	$\times 0.3048 =$	meters per second	m/s
	miles per hour	mph	$\times 1.6063 =$	kilometers per hour	km/h
Volume	US gallons	US gal	$\times 3.7854 =$	liters	L
	ounces	oz.	$\times 29.5735 =$	milliliters	ml
	cubic inches	in ³	$\times 16.3871 =$	cubic centimeters	cm ³ or cc
Weight	pounds	lb.	$\times 0.4536 =$	kilograms	kg

REFERENCE

8.4 Definitions

The following terms and acronyms may be used in this manual.

Term	Definition
API	American Petroleum Institute
ASTM	American Society of Testing and Materials
Bolt	A headed and externally threaded fastener that is designed to be paired with a nut
Cab-forward	Windrower operation with the Operator and cab facing in the direction of travel
Center-link	A hydraulic cylinder link between the header and the machine to which it is attached: It is used to change header angle
CGVW	Combined vehicle gross weight
D1 XL-Series header	MacDon D130 XL, D135 XL, D140 XL, and D145 XL rigid draper headers for windrowers from the D1 XL model number series
DK	Double knife
DKD	Double-knife drive
DDD	Double-draper drive
DR	Double reel
ECU	Electronic control unit
Engine-forward	Windrower operation with the Operator and engine facing in the direction of travel
Export header	Header configuration typical outside North America
Finger tight	Finger tight is a reference position where sealing surfaces or components are making contact with each other and the fitting has been tightened to a point where the fitting is no longer loose
FFFT	Flats from finger tight
GSL	Ground speed lever
GVW	Gross vehicle weight
Hard joint	A joint made with the use of a fastener where the joining materials are highly incompressible
HPT display	Harvest Performance Tracker display module on a self-propelled windrower.
Header	A machine that cuts and lays crop into a windrow and is attached to a self-propelled windrower
Hex key	A hex key or Allen key (also known by various other synonyms) is a tool of hexagonal cross-section used to drive bolts and screws that have a hexagonal socket in the head (internal-wrenching hexagon drive)
HDS	Hydraulic deck shift
hp	Horsepower
JIC	Joint Industrial Council: A standards body that developed the standard sizing and shape for original 37° flared fitting
Knife	A cutting device which uses a reciprocating cutter (also called a sickle)
n/a	Not applicable

REFERENCE

Term	Definition
Nut	An internally threaded fastener that is designed to be paired with a bolt
N-DETENT	The slot opposite the NEUTRAL position on operator's console
North American header	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
ORB	O-ring boss: A style of fitting commonly used in port opening on manifolds, pumps, and motors
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
RoHS (Reduction of Hazardous Substances)	A directive by the European Union to restrict the use of certain hazardous substances (such as hexavalent chromium used in some yellow zinc platings)
SAE	Society of Automotive Engineers
Screw	A headed and externally threaded fastener that threads into preformed threads or forms its own thread in one of the mating parts
SDD	Single-drapeer drive
Self-Propelled (SP) Windrower	Self-propelled machine consisting of a power unit with a header
SK	Single knife
SKD	Single-knife drive
Soft joint	A joint made with the use of a fastener where the joining materials are compressible or experience relaxation over a period of time
spm	Strokes per minute
SR	Single reel
Truck	A four-wheel highway/road vehicle weighing no less than 7500 lb. (3400 kg)
Timed knife drive	Synchronized motion applied at the cutterbar to two separately driven knives from a single hydraulic motor
Tension	Axial load placed on a bolt or screw, usually measured in pounds (lb.) or Newtons (N)
TFFT	Turns from finger tight
Torque	The product of a force X lever arm length, usually measured in foot-pounds (ft-lbf) or Newton-meters (N·m)
Torque angle	A tightening procedure where the fitting is assembled to a precondition (finger tight) and then the nut is turned further a number of degrees or a number of flats to achieve its final position
Torque-tension	The relationship between the assembly torque applied to a piece of hardware and the axial load it induces in the bolt or screw
ULSD	Ultra low sulphur diesel
UCA	Upper cross auger

REFERENCE

Term	Definition
Untimed knife drive	Unsynchronized motion applied at the cutterbar to two separately driven knives from a single hydraulic motor or two hydraulic motors
Washer	A thin cylinder with a hole or slot located in the center that is to be used as a spacer, load distribution element, or a locking mechanism
Windrower	Power unit of a self-propelled header
WCM	Windrower control module

Predelivery Checklist

Perform these checks prior to delivery to your Customer. **Adjustments are normally not required as the machine is factory-assembled and adjusted.** If adjustments are required, refer to the appropriate page number in this manual. The completed Checklist should be retained by either the Operator or the Dealer.

CAUTION

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

Header Serial Number:

Table 1 D1 XL-Series Predelivery Checklist – North America

✓	Item	Reference
	Check for shipping damage or missing parts. Be sure all shipping dunnage is removed.	—
	Check for loose hardware. Tighten to required torque.	8.1 Torque Specifications, page 85
	Check tire pressure (Transport/Stabilizer Option).	5.1 Checking Tire Pressure: Transport and Stabilizer Wheels, page 53
	Check wheel bolt torque (Transport/Stabilizer Option).	5.2 Checking Wheel Bolt Torque, page 54
	Check knife drive box breather position.	5.3 Checking Knife Drive Box, page 55
	Check knife drive box lube level.	5.3 Checking Knife Drive Box, page 55
	Check knife drive belt(s) tension.	5.4 Checking and Adjusting Knife Drive Belt Tension, page 57
	Check if reel is centered between header endsheets.	5.5 Centering the Reel, page 61
	Grease all bearings and U-joints.	5.12 Lubricating the Header, page 75
	Check draper tension.	5.6 Adjusting Draper Tension, page 63
	Check draper seal.	5.7 Checking and Adjusting Draper Seal, page 65
	Check reel tine to cutterbar clearance.	5.10.1 Measuring Reel Clearance, page 69
	Check if skid shoes are evenly adjusted an appropriate setting for first crop.	5.8 Checking and Adjusting Skid Shoe Settings, page 67
	Check fit of endshields.	5.11 Checking and Adjusting Endshields, page 72
	Check that header is level	5.9 Levelling the Header, page 68
	Check hydraulic hose and wiring harness routing for clearance when raising or lowering header and reel.	—
Run-up procedure		
	Check if the knife drive pulley(s) is rotating in proper direction: clockwise on left-hand side; counterclockwise on right-hand side (double knife only).	5.4 Checking and Adjusting Knife Drive Belt Tension, page 57
	Check if lights are functional.	—

PREDELIVERY CHECKLIST

✓	Item	Reference
	Check if reel lift cylinders extend fully.	—
	Check if reel moves fully fore and aft.	—
Post run-up check. Stop engine.		
	Check belt drives for heated bearings.	<i>5.4 Checking and Adjusting Knife Drive Belt Tension, page 57</i>
	Check knife sections for discoloration caused by misaligned components.	<i>7.1 Adjusting Knife, page 83</i>
	Check for hot spots on the cutterbar above the draper seal. Adjust deck height as required.	<i>5.7 Checking and Adjusting Draper Seal, page 65</i>
	Check for hydraulic leaks.	—
	Check that manual storage case contains operator's manual and parts catalog.	<i>5.13 Checking Manuals, page 79</i>

Date checked:

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