MacDon

R85
Rotary Disc 16-Foot Self-Propelled Windrower Header

Unloading and Assembly Instructions

147755 Revision A

2016 Model Year

Original Instruction

The harvesting specialists.

R85 Rotary Disc 16-Foot Self-Propelled Windrower Header

Published: July 2015

Introduction

This instructional manual describes the unloading, setup, and predelivery requirements for MacDon Model R85 Rotary Disc 16-Foot Self-Propelled Windrower Headers.

Carefully read all the material provided before attempting to use or service the machine.

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

List of Revisions

The following list provides an account of major changes from the previous version of this document.

Table 1 List of Revisions

Summary of Change	Location
Added note in Introduction referring to online access of MacDon publications	*Introduction, page i*
Updated Optional Skid Shoes kit instruction part number.	*3.2 Installing Skid Shoes (Optional), page 9*
Updated illustrations to include new bevel gearbox.	*4.6 Preparing the Bevel Gearbox, page 76*
Placed Reference chapter at end of instruction.	*5 Reference, page 83*
Updated Definitions information.	*5.3 Definitions, page 96*

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.

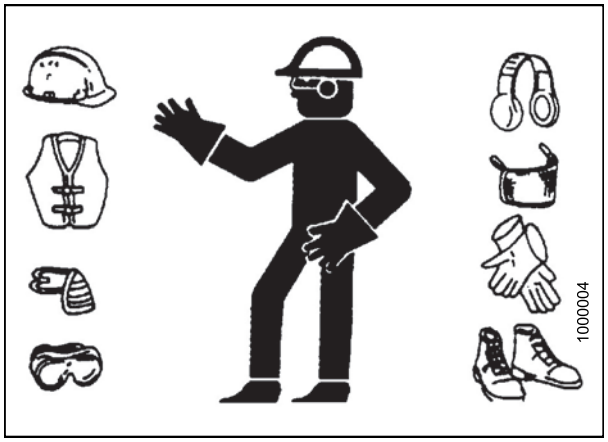

Figure 1.1: Safety Equipment

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.

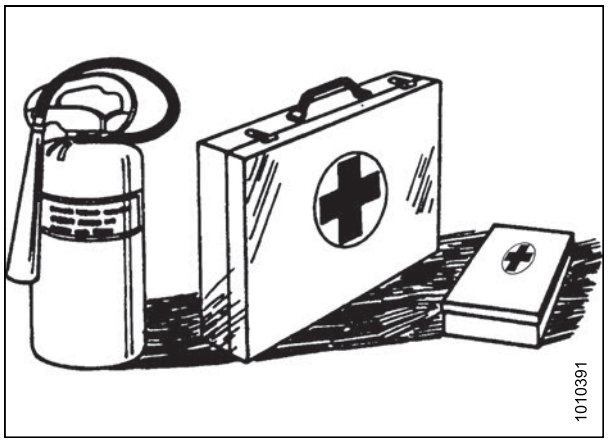

Figure 1.3: Safety Equipment

- 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 stop the engine and remove the key from ignition before leaving operator's seat for any reason.

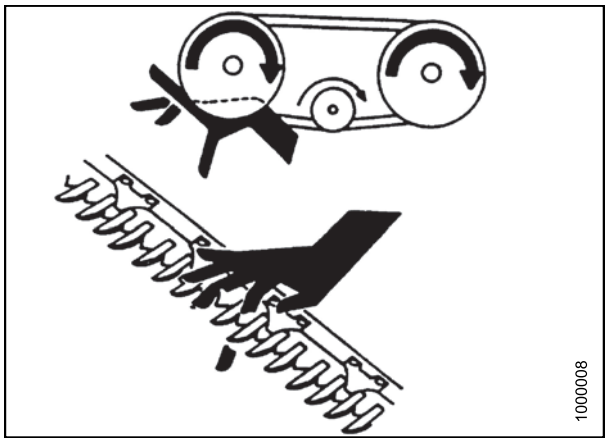

Figure 1.5: Safety Around Equipment

- 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.

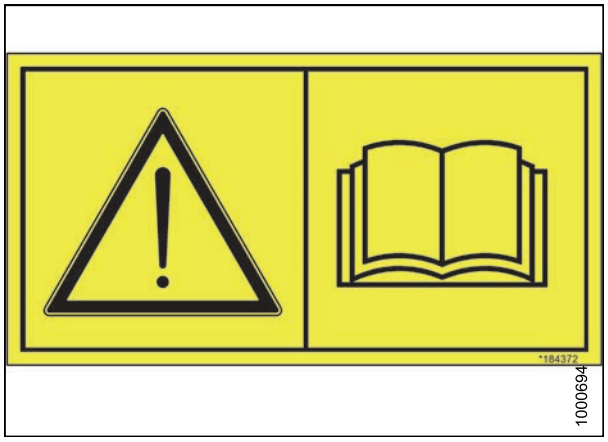

Figure 1.7: Operator's Manual Decal

2 Unloading the Header

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.

Table 2.1 Lifting Vehicle

Minimum Capacity[1]	8000 lb (3630 kg)
Minimum Fork Length	78 in. (198.1 cm)

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

1. Remove hauler's tie-down straps and chains.

WARNING

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

2. Approach header from its underside and slide forks in under the lifting framework as far as possible.

   IMPORTANT:
   If load is two units wide, take care to avoid contacting the other machine.
3. Raise header off the deck.

Figure 2.1: Lifting Header off Trailer

4. Back up until the unit clears trailer, and slowly lower to 6 in. (150 mm) from the ground.
5. Take to storage or setup area.
6. Set machine down on secure, level ground.
7. If hydraulic motor and hoses are shipped separately on pallet, unload pallet.
8. Check for shipping damage and missing parts.

Figure 2.2: Moving Header with Forklift

1. At 48 in. (1220 mm) from back end of forks.

3 Assembling the Header

Follow each procedure in this chapter in order.

3.1 Removing Underside Shipping Support and Installing Auger Pan

CAUTION

Keep feet clear when removing final bolts.

1. Use a forklift to support stand.
2. Remove two bolts (A) on each end of support and remove shipping support (B). Lay support on ground.

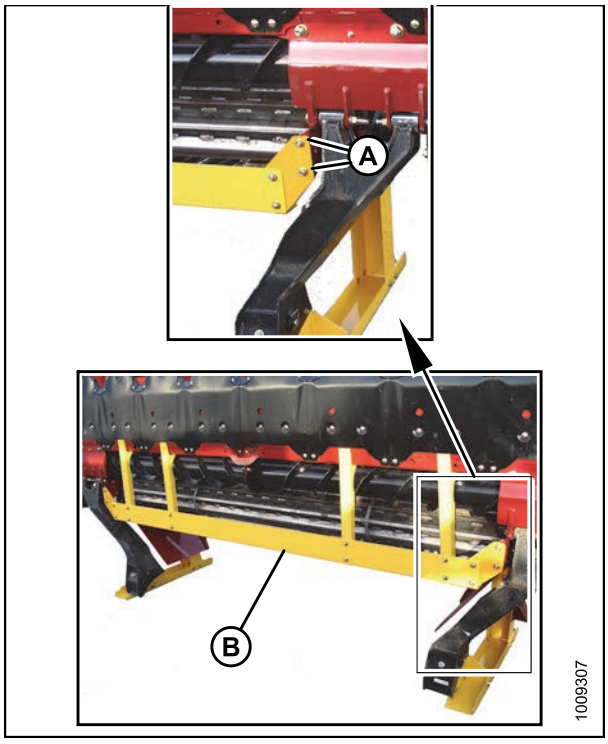

Figure 3.1: Shipping Support

3. Cut banding (A) and remove auger pan (B) and hardware from stand. Discard stand.
4. Locate the hardware bag strapped between auger pan (B) and the stand.

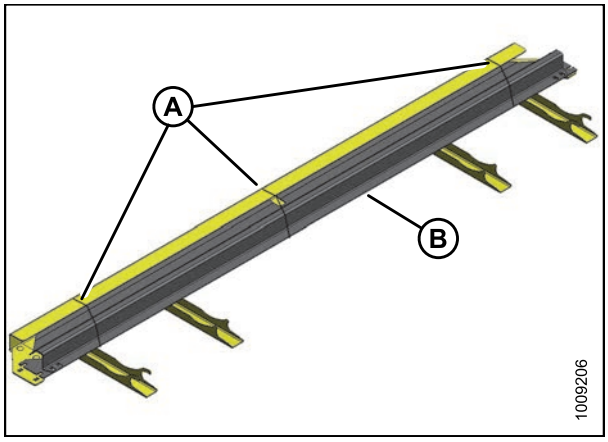

Figure 3.2: Auger Pan Attached to Shipping Support

5. Position auger pan (A) against cutterbar lugs and install four 1/2 in. x 3.5 long bolts (B) and lock nuts. Do not fully tighten.

   IMPORTANT:
   Ensure auger pan is oriented as shown.

6. Retrieve plates (C) from hardware bag and install as shown at each end of pan with four 1/2 in. x 1.0 long bolts (D).

7. Tighten all hardware.

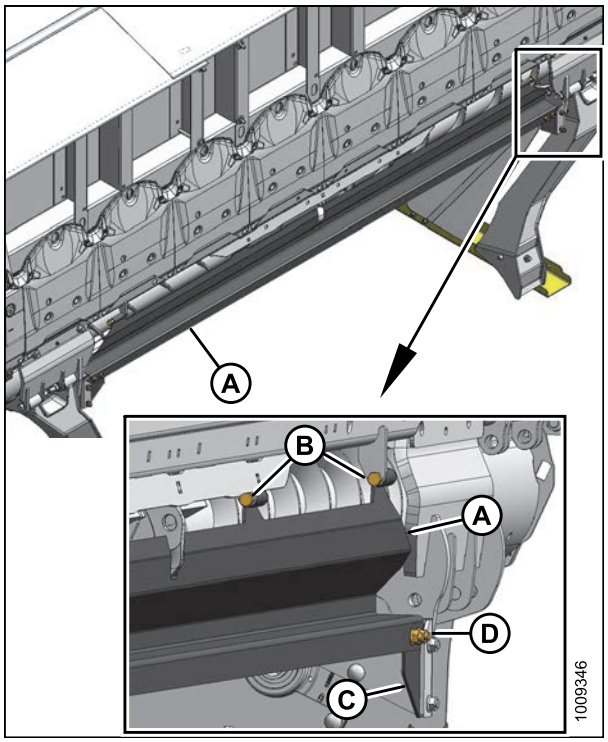

Figure 3.3: Auger Pan Installed

3.2 Installing Skid Shoes (Optional)

NOTE:
This kit may be installed later in the assembly sequence, but installation may be easier prior to laying the header down.

If kit was not supplied, proceed to *3.4 Lowering Header, page 11*.

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. Lower header to the ground, shut off engine, and remove key from ignition.
2. Unpack kit.
3. Install skid shoes. Refer to instruction (MD #169972) supplied with kit.

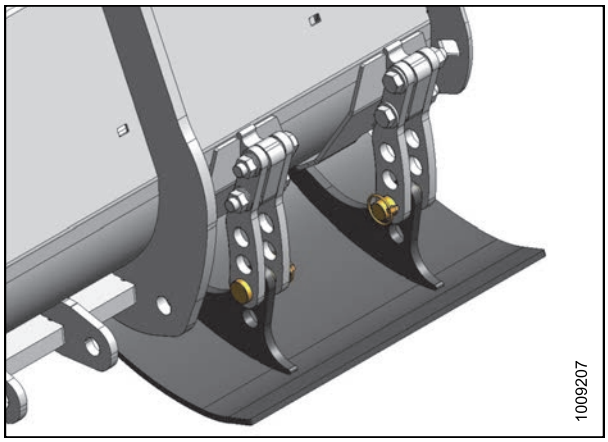

Figure 3.4: Skid Shoe (Right Side Shown — Left Side Similar)

3.3 Installing Gauge Rollers (Optional)

NOTE:
This kit may be installed later in the assembly sequence, but installation may be easier prior to laying the header down.

If kit not supplied, proceed to *3.4 Lowering Header, page 11*.

1. Unpack gauge roller bundle and install gauge rollers. Refer to instruction (MD #169467) supplied with kit.

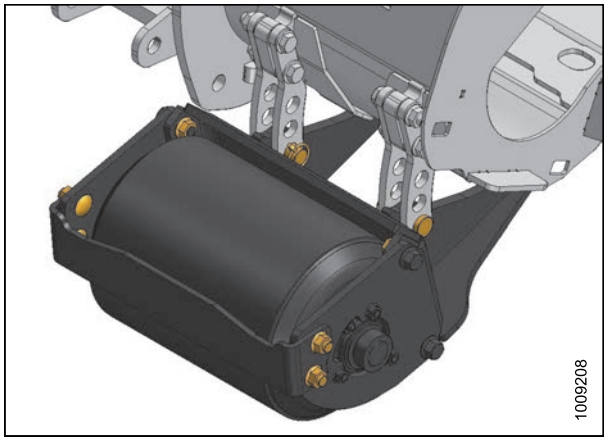

Figure 3.5: Gauge Roller (Right Side Shown — Left Side Similar)

3.4 Lowering Header

1. Attach spreader bar to forks.

   IMPORTANT:
   Length of spreader bar must be approximately 15 ft (4.6 m).

CAUTION

Ensure spreader bar is secured to the forks so that it cannot slide off the forks or towards the mast as the header is lowered to the ground.

Table 3.1 Lifting Vehicle

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

2. Drive lifting vehicle to approach header from its underside.
3. Attach chains to hooks (A) on either side of header.

CAUTION

Stand clear when lowering the header

IMPORTANT:
Do **NOT** lift at hooks when unloading from trailer. this procedure is only for laying the machine over into working position.

IMPORTANT:
Chain length must be sufficient to provide a minimum 4 ft. (1.2 m) vertical chain height.

4. Raise forks until lift chains are fully tensioned.

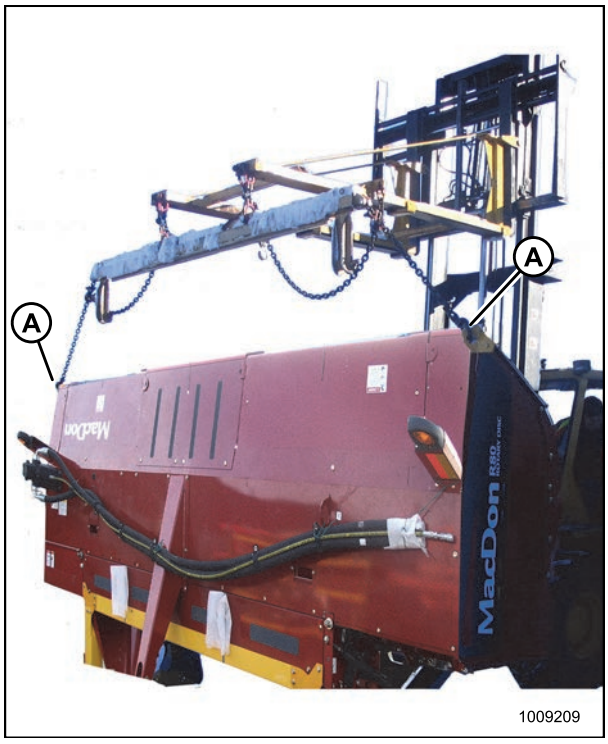

Figure 3.6: Spreader Bar Attached to Header

5. Back up **SLOWLY**, while simultaneously lowering header until cutterbar rests on ground.
6. Remove chains from header.

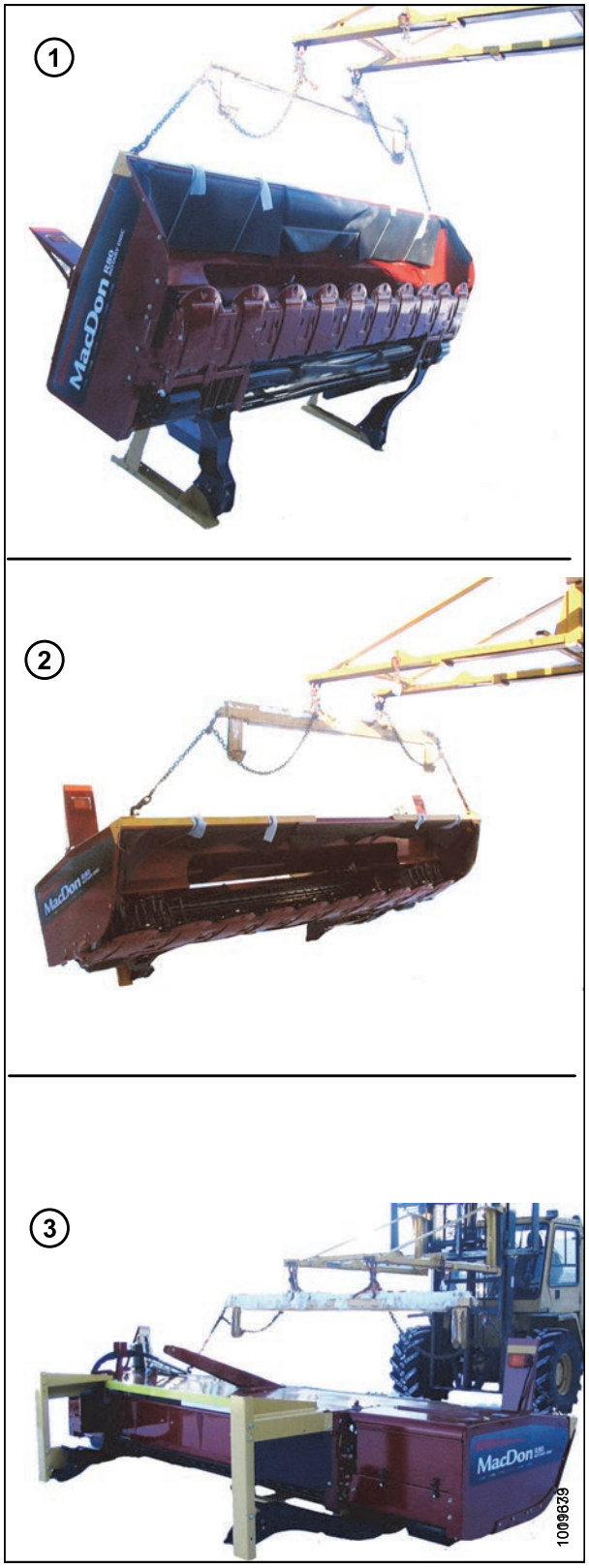

Figure 3.7: Lowering Header to the Ground

3.5 Removing Shipping Stands

1. Cut and remove banding (A) from baffle.

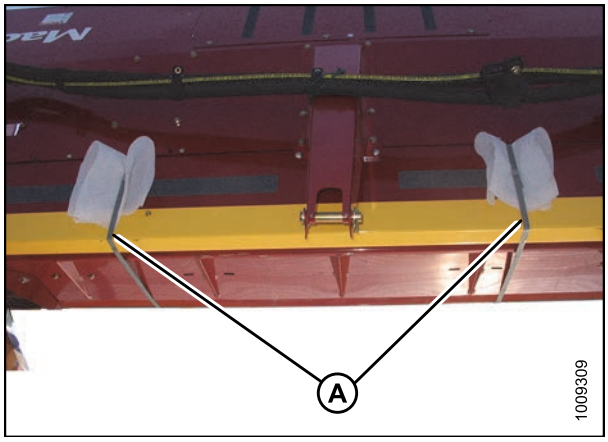

Figure 3.8: Banding on Baffle

2. Remove plate (A) from left-hand shipping stand (B) and set aside with hardware for reinstallation.

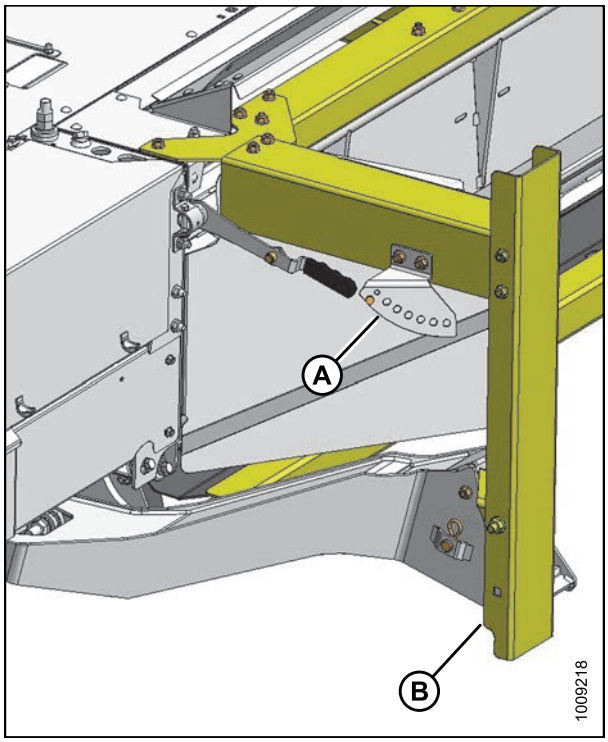

Figure 3.9: Shipping Stands (Left Side Shown – Right Side Opposite)

3. Remove the three bolts (A) securing left-hand stand (B) to shipping channel plate and shield.

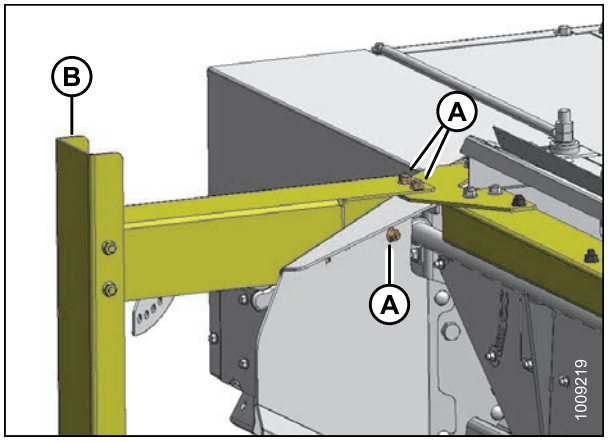

Figure 3.10: Shipping Stands (Left Side Shown – Right Side Opposite)

4. Remove bolt (A) securing shipping stand to header lifting arm.
5. Remove hairpin from pin (B).
6. Hold shipping stand and remove pin (B).
7. Remove stand (C) and discard. Reinsert pin (B) in header lifting arm and secure with lynch pin.
8. Repeat Step *3, page 14* to Step *7, page 14* for other stand.

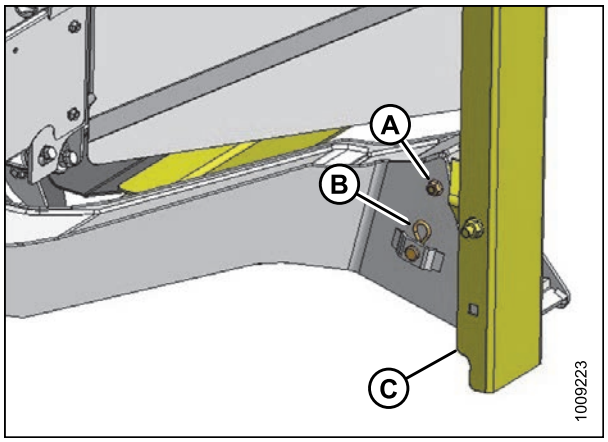

Figure 3.11: Shipping Stands (Left Side Shown – Right Side Opposite)

9. Raise baffle (A) with handle and temporarily secure in raised position with wire.

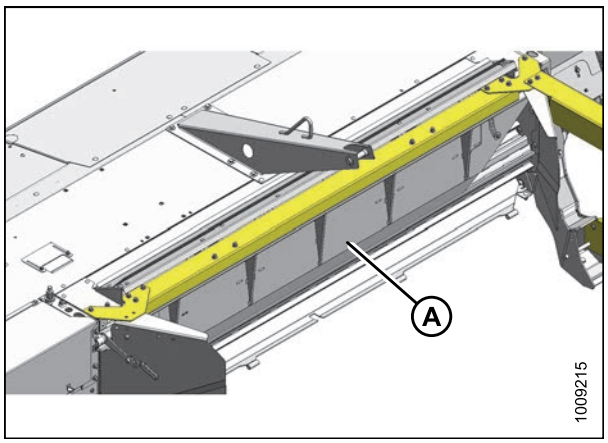

Figure 3.12: Shipping Stands

10. Remove two bolts (A) attaching shipping channel (B) to frame. Retain hardware.

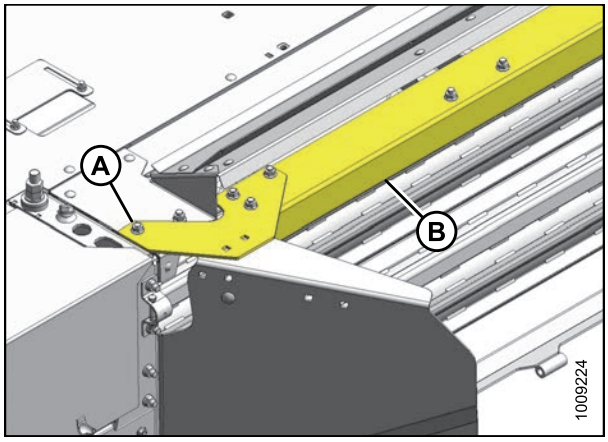

Figure 3.13: Shipping Stands (Left Side Shown – Right Side Opposite), Baffle Not Shown for Clarity

11. Remove the two bolts (A) attaching shipping channel (B) to frame. Retain hardware.
12. Remove wire and lower baffle so that channel can be removed.
13. Remove and discard channel (B).

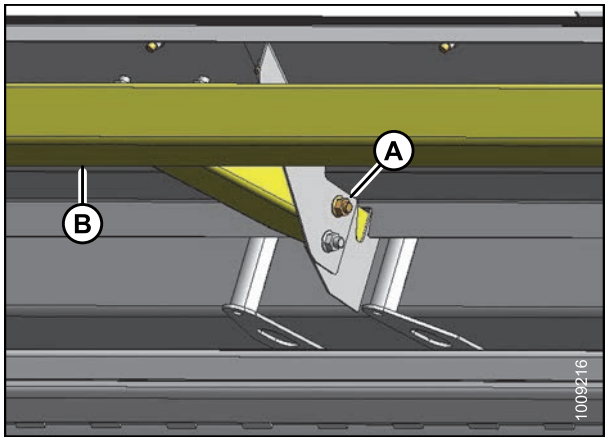

Figure 3.14: Shipping Stands (Left Side Shown – Right Side Opposite)

14. Reinstall two bolts (A) through frame and tighten.

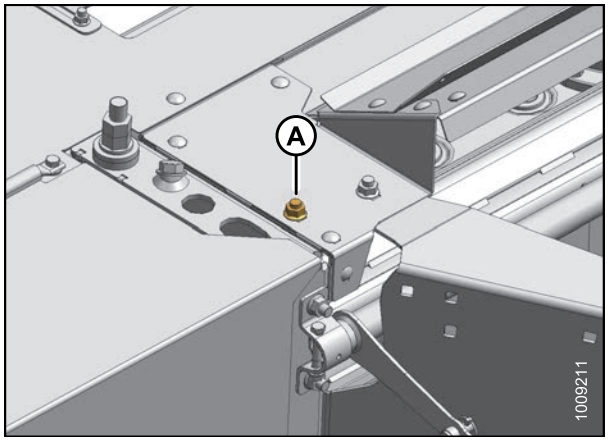

Figure 3.15: Frame with Shipping Stand Removed

15. Reinstall two bolts (A) and lock nuts into cover support and tighten.

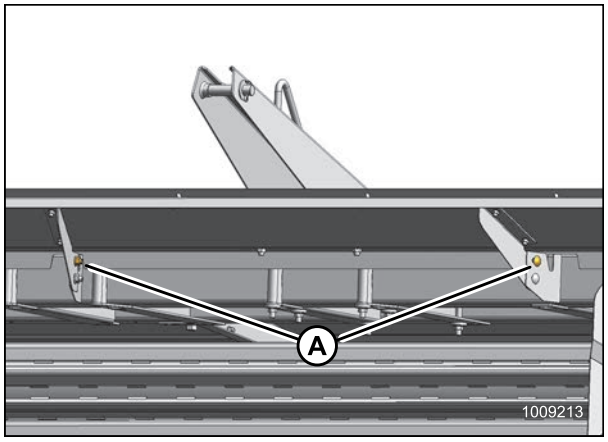

Figure 3.16: Frame with Shipping Stand Removed

16. Remove hooks (A) at front corners. Reinstall hardware.

    NOTE:
    If tall crop divider option will be installed, do not reinstall hardware.

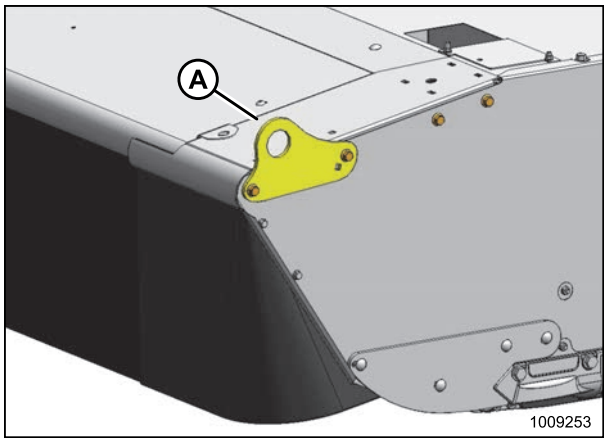

Figure 3.17: Shipping Hook

17. Remove wire and lower baffle (A).

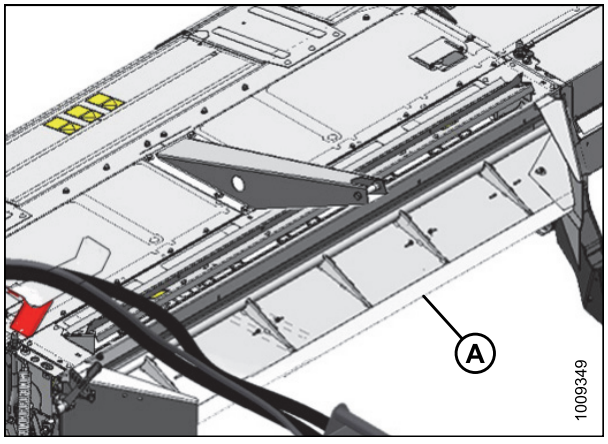

Figure 3.18: Swath Baffle

3.6 Installing Swath Baffle Lever

1. Retrieve adjuster plate and hardware previously removed from shipping stand (in *3.5 Removing Shipping Stands, page 13*).
2. Position adjuster plate (A) over holes on side deflector and install bolts (E) and nuts. Do not tighten.
3. Remove bolt (B).
4. Remove lynch pin from clevis pin (D) and remove clevis pin from lever (C).

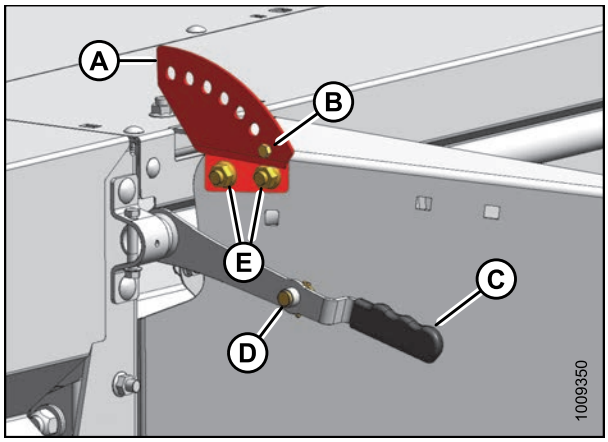

Figure 3.19: Adjuster Plate and Swath Baffle Lever

5. Move swath baffle lever (C) to middle hole in bracket (A) and reinstall clevis pin (D) through lever and bracket.
6. Secure with lynch pin.
7. Tighten bolts (G).

   NOTE:
   Baffle position may need to be adjusted for proper pin engagement. Loosen bolts (E) and adjust bracket (F) and baffle as required. Tighten bolts (E).
8. Reinstall nut and bolt (B).

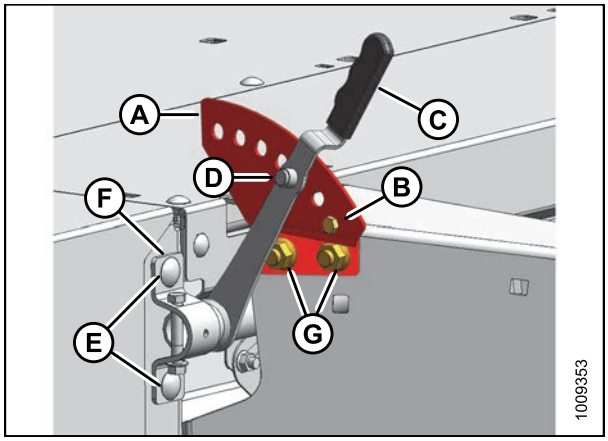

Figure 3.20: Adjuster Plate and Swath Baffle Lever

3.7 Unpacking Curtains

1. Remove two bolts (A) securing cutterbar doors to frame.
2. Remove shipping wire (B) around curtains.

WARNING

Ensure cutterbar is completely clear of foreign objects. These objects can be ejected with considerable force when the machine is started and may result in serious injury or machine damage.

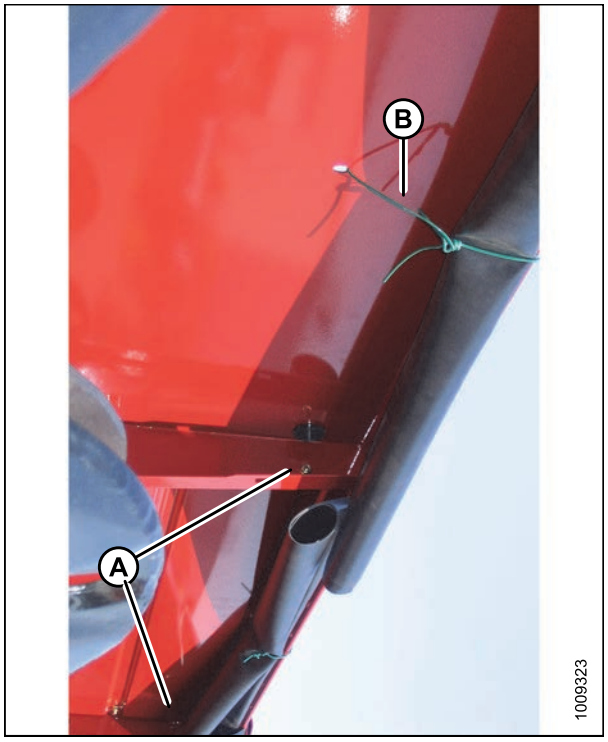

Figure 3.21: Cutterbar Door and Curtain Secured for Shipping

3. For North American headers, lift up at front of cutterbar door to open it.

Figure 3.22: Cutterbar Doors Open

4. For export headers, insert a screwdriver (or equivalent) through hole (A) in door into notch in latch (B) and push latch to disengage.
5. Lift at front of door to open position.
6. Check cutterbar area for debris and foreign objects. Ensure all material is removed.

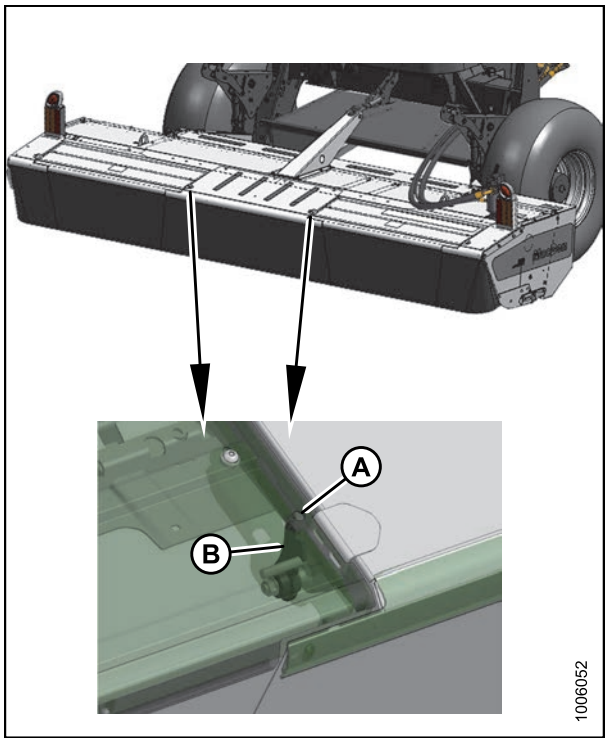

Figure 3.23: Export Headers: Latch on Cutterbar Doors

7. Close cutterbar doors. Ensure that curtains hang properly and completely enclose cutterbar area. Minor creases in curtains will eventually straighten out.

Figure 3.24: Curtain – Unacceptable

Figure 3.25: Curtain – Acceptable

8. For export headers, ensure latches (A) engage cutterbar doors.

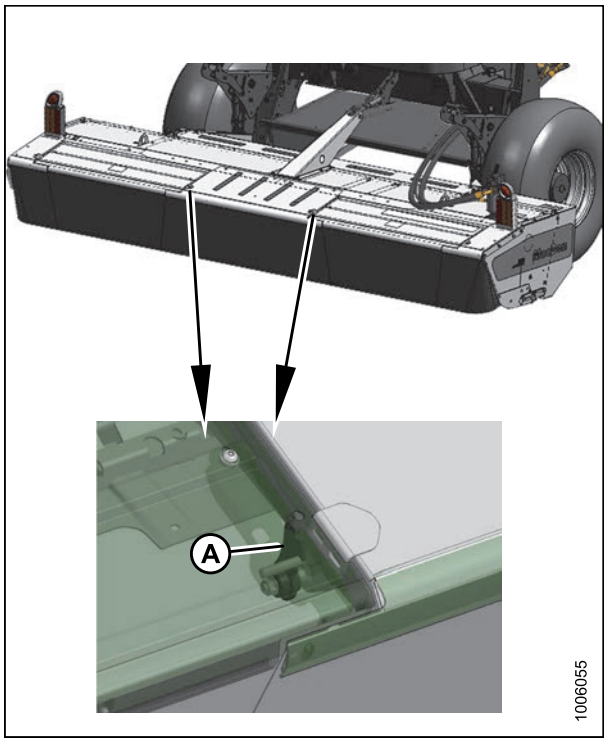

Figure 3.26: Cutterbar Door Latch

9. Fasten latches (A) at corners of curtains.

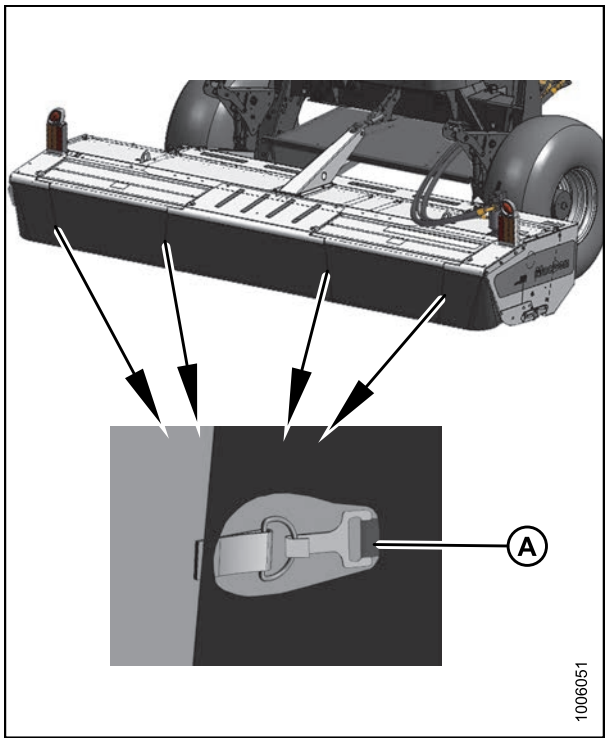

Figure 3.27: Curtain Latches

10. Remove shipping edge trim (A).
11. Close the shields (B) over the two shipping tie-down holes and tighten nuts (C).

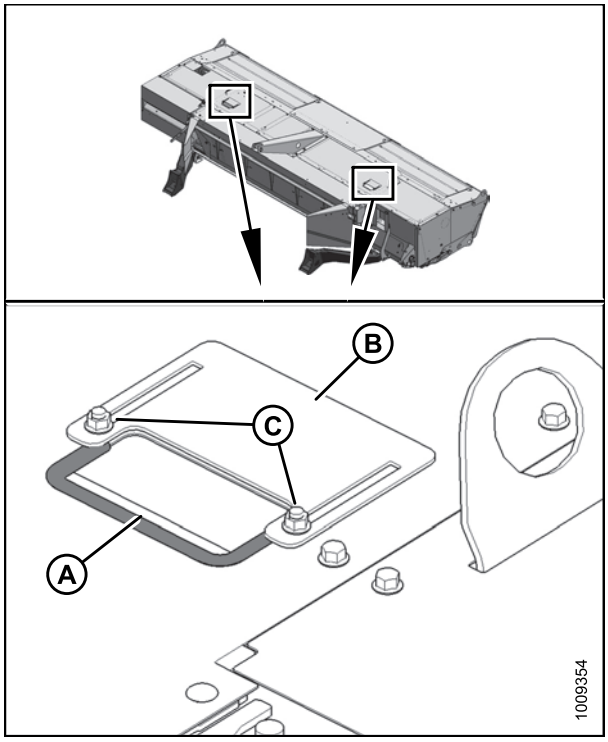

Figure 3.28: Top Shield Cover

12. Remove shipping wire/banding and packing around hydraulic hoses.

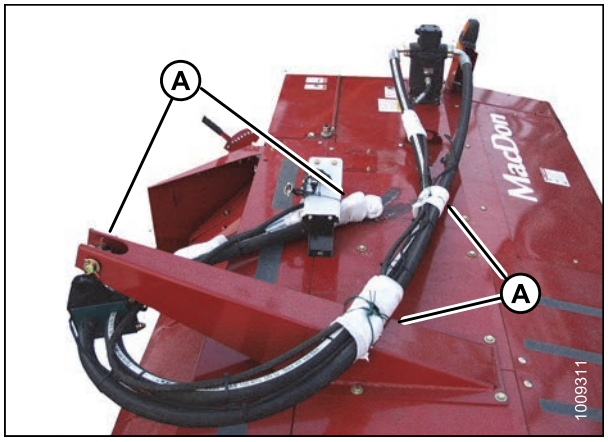

Figure 3.29: Shipping Material around Hoses

3.8 Attaching Conditioner Cover

1. Remove bolts (A) and remove cover (B) from shipping position.
2. Replace bolts (A) into existing holes.

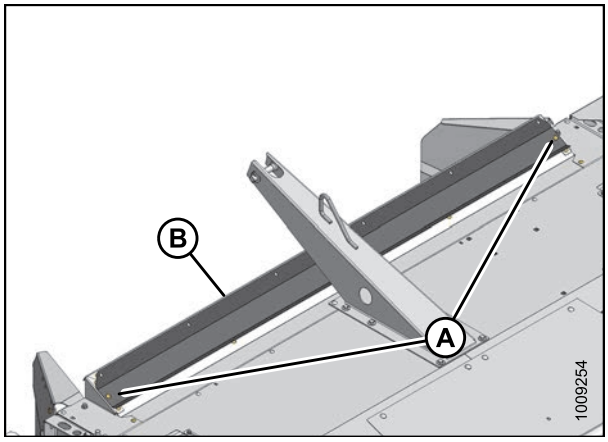

Figure 3.30: Cover in Shipping Configuration

3. Remove six carriage bolts (A) along aft edge.

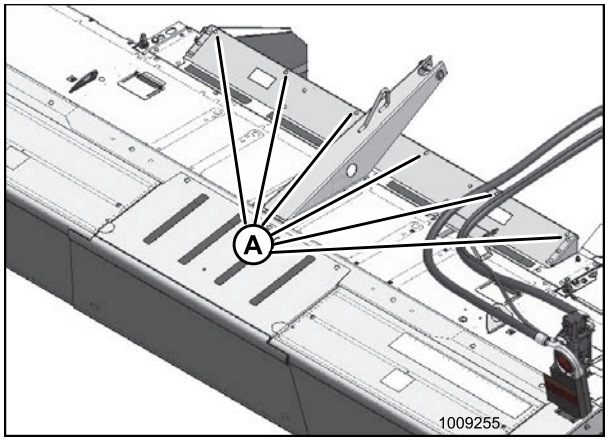

Figure 3.31: Hardware on Edge of Hood

4. Position cover (A) on hood as shown and secure with six carriage bolts (B) and lock nuts.

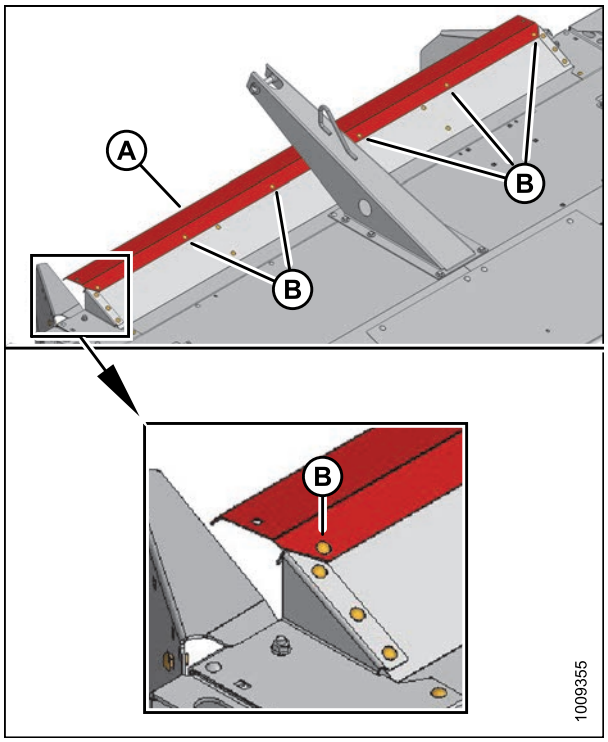

Figure 3.32: Cover Installed

3.9 Assembling Forming Shield

1. Unpack and remove shipping material from side deflectors (A).
2. Remove hardware bag (B).
3. Open the hardware bag.

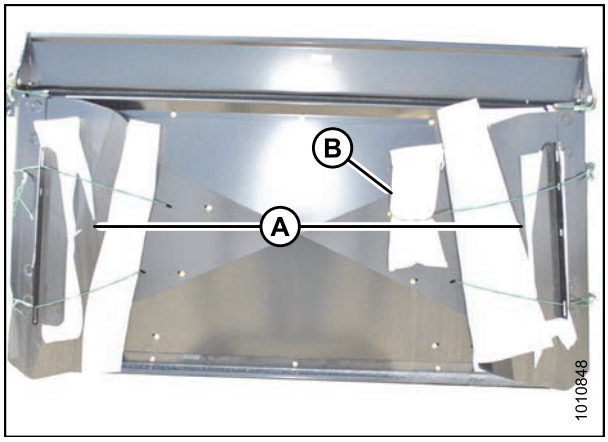

Figure 3.33: Forming Shield in Shipping Configuration

4. Install rubber strap (A) to the side bracket (B) using bolt (C), washer (D), and nut (E).
5. Repeat for the other side.

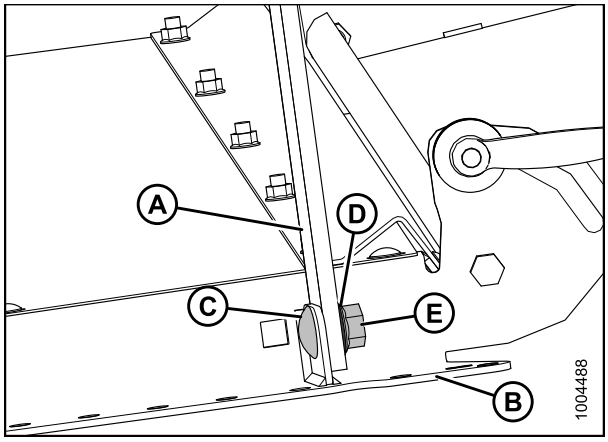

Figure 3.34: Forming Shield Cover Right Side Up

6. Lay cover (A) upside down on a flat surface.
7. Install the center deflectors (B) using three bolts (C) on each side.

   NOTE:
   Deflector's (B) narrow end faces front and deep end faces the rear.

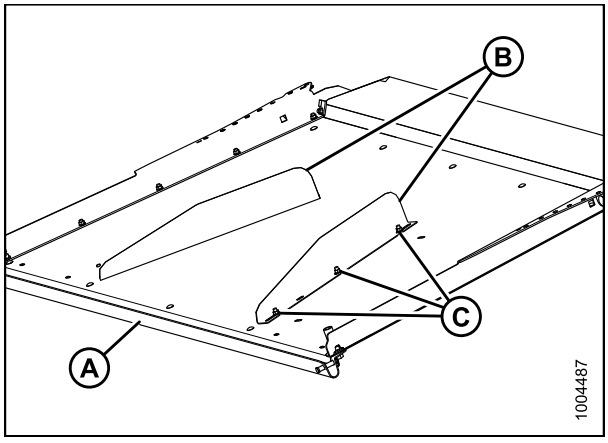

Figure 3.35: Forming Shield Cover Upside Down

8. Assemble side deflectors (C) to cover with 5/8 in. x 7 in. bolt (B), jam nut (E), washer (D), and nut (A).
9. Tighten flange nut (A) enough to hold deflectors (C) in position, but still allow deflectors to move.
10. Tighten jam nut (E) against cover while holding bolt (B).

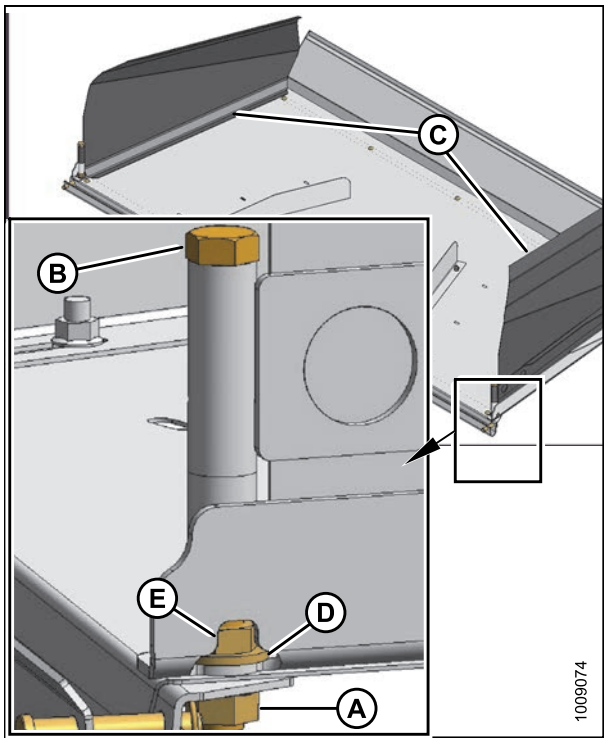

Figure 3.36: Forming Shield: Side Deflectors

11. Remove lynch pin (A) from adjuster rod (B) and position rod in hole in side deflector (C). Secure with lynch pin (A).
12. Repeat for other deflector.

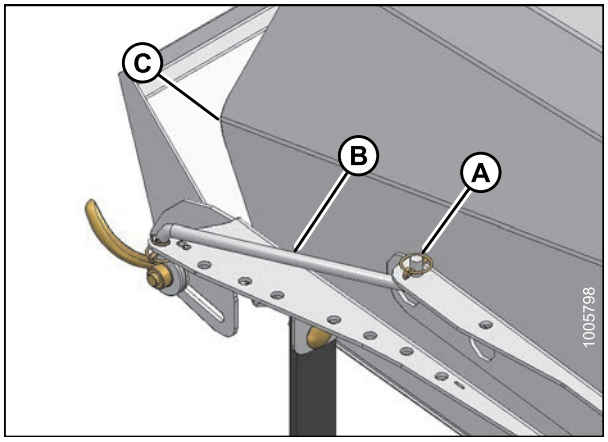

Figure 3.37: Positioning Adjuster Rod

13. Invert forming shield to installation position as shown.

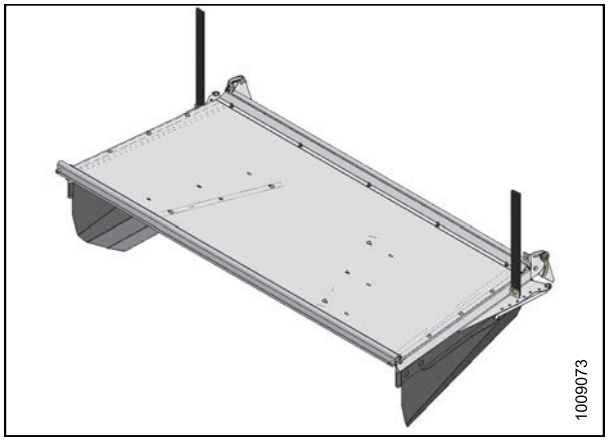

Figure 3.38: Forming Shield Right Side Up

14. **For M205 Self-Propelled Windrowers Only:** Install hose support (A) to the left hand side of the top shield (B) and channel (C) using two bolts and nuts (D).

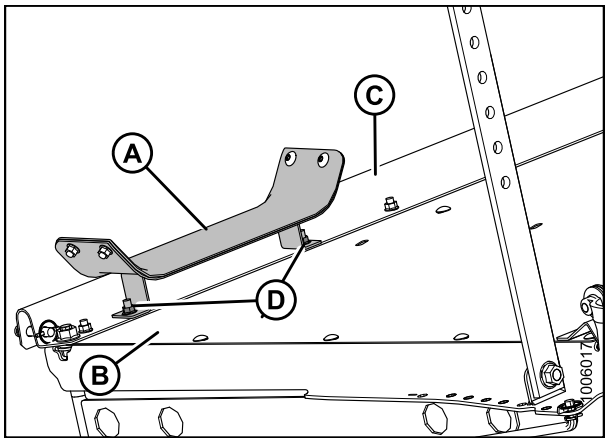

Figure 3.39: M205 Hose Support

NOTE:
If there are no mounting slots for the hose support, drill two 7/16 in. (11 mm) holes (A) through top shield (B) and channel (C).

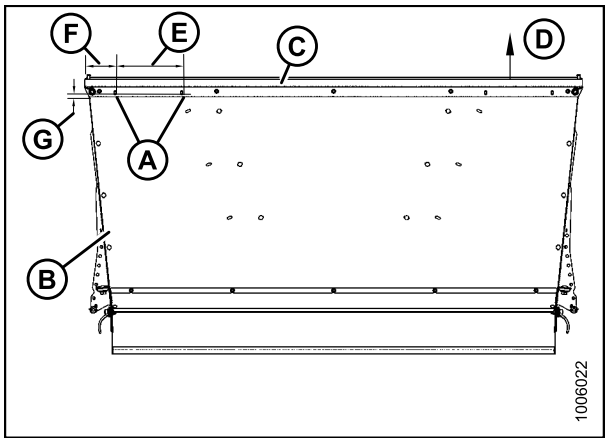

Figure 3.40: Forming Shield Top View

A - Two 7/16 in. (11 mm) Holes
B - Top Shield
C - Channel
D - Header Forward
E - 12.6 in. (320 mm)
F - 5.7 in. (144.8 mm)
G - 0.77 in. (19.5 mm)

3.10 Installing Forming Shield

To install the forming shield, follow these steps:

1. To ease forming shield installation, remove header from windrower (if attached). Refer to your windrower operator's manual for instructions.
2. Retrieve plate (A) and attachment hardware from forming shield bundle.
3. Attach plate (A) to windrower leg with two 1/2 in. x 5.25 in. hex bolts (B) and nuts. Repeat for opposite leg. Hardware is supplied with forming shield bundle.

   IMPORTANT:
   Plate (A) is shown in standard position. If installing double windrow attachment (DWA), install plate in inverted position.
4. Install a 1/2 in. x 4 in. hex bolt (C) with spacer (D) and nut on each plate. Hardware is supplied with forming shield bundle.
5. Remove the two clevis pins (A) from forming shield forward end.

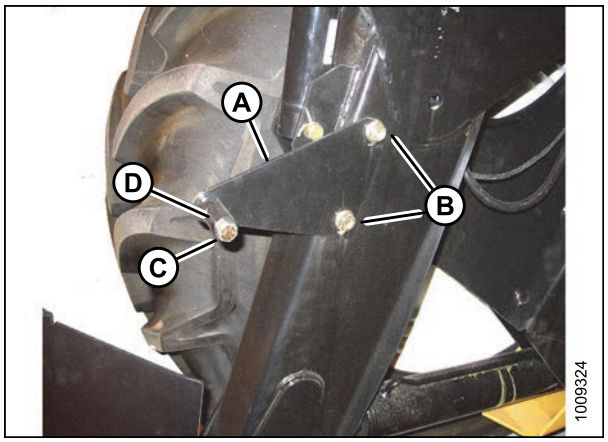

Figure 3.41: Attaching Plate to Windrower Leg

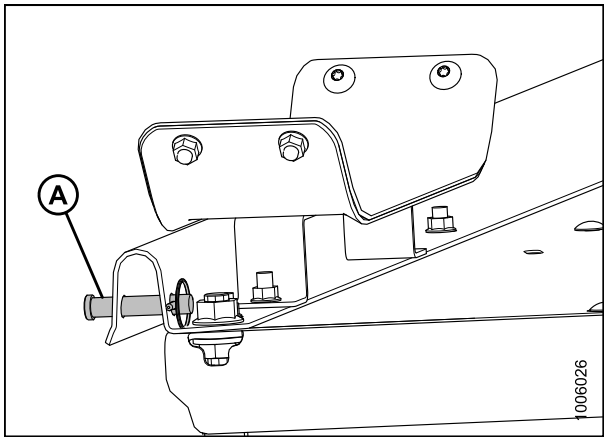

Figure 3.42: Clevis Pin at Forward End of Forming Shield

6. Position the forming shield (A) under the windrower frame.

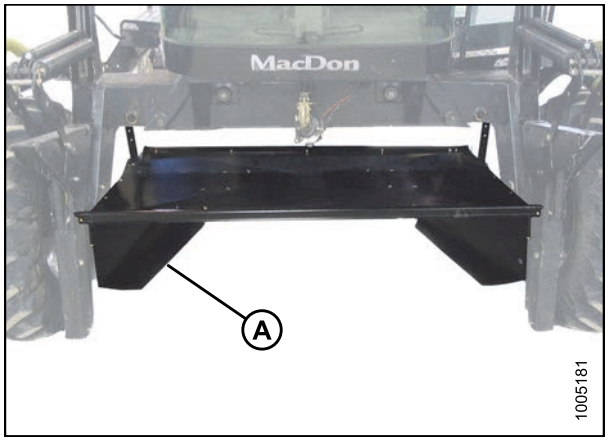

Figure 3.43: Forming Shield under Windrower Frame

7. Position the forming shield onto spacers (B) on windrower legs. Secure with clevis pins (A) and lynch pin.

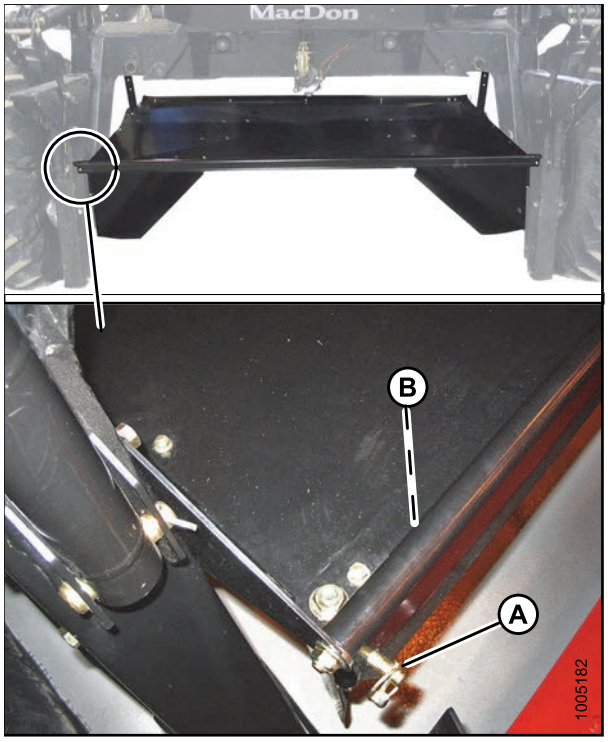

Figure 3.44: Attaching Forming Shield to Windrower Legs

8. Lift the aft end of the forming shield and attach straps (B) to pins (A) on windrower frame. Install washer and hairpin to secure strap. Use the middle hole and adjust height to suit the crop.

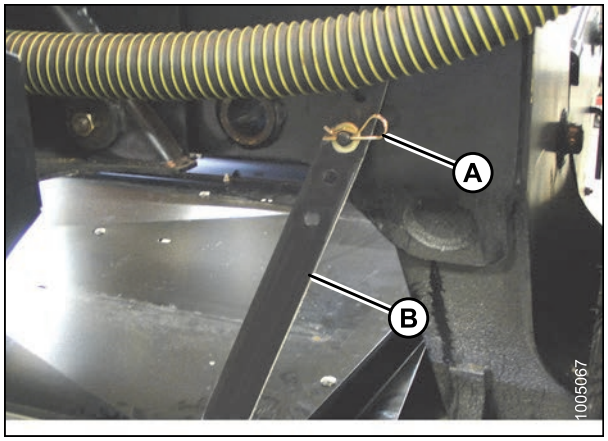

Figure 3.45: Attaching Forming Shield to Windrower Frame

9. Set the forming shield side deflectors to the desired width by repositioning adjuster bars (A). Use the same hole location on both sides.
10. Adjust rear fluffer deflector (C) to middle position. Loosen handles (B) if required.

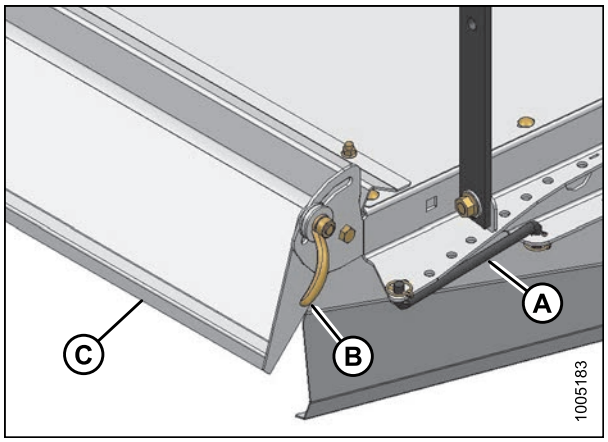

Figure 3.46: Adjusting Forming Shield

3.11 Attaching Header to Windrower

The procedure for attaching the header to a windrower varies depending on the type of center-link installed. The center-link consists of either a hydraulic cylinder that adjusts the header tilt or angle and is controlled with switches in the windrower cab, or a manually adjusted mechanical link.

An optional self-alignment kit controls the alignment of the center-link when attaching the link to the header.

Follow the appropriate procedure:

- *3.11.1 Attaching Header to Windrower: Hydraulic Center-Link with Optional Self-Alignment, page 31*
- *3.11.2 Attaching Header to Windrower: Hydraulic Center-Link without Self-Alignment, page 36*
- *3.11.3 Attaching Header to Windrower: Mechanical Center-Link, page 41*

NOTE:
Refer to your windrower operator's manual for windrower operating instructions.

3.11.1 Attaching Header to Windrower: Hydraulic Center-Link with Optional Self-Alignment

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. Remove hairpin (B) from clevis pin (A) and remove clevis pin from the header boots (C) on both sides of the header.

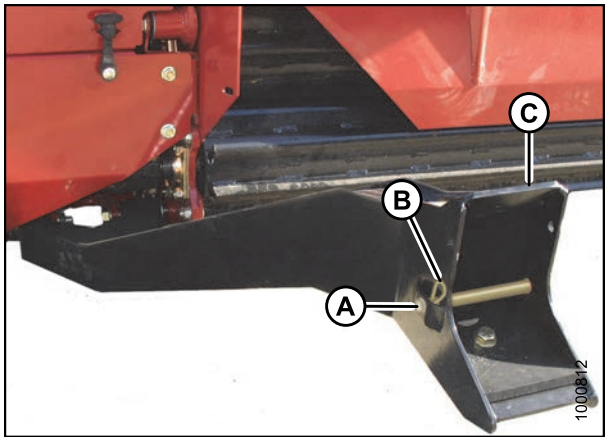

Figure 3.47: Header Boot

CAUTION

To prevent damage to the lift system when lowering header lift linkages without a header or weight box attached to the windrower, ensure the float engagement pin is installed in storage position (B) and NOT in engaged position (A).

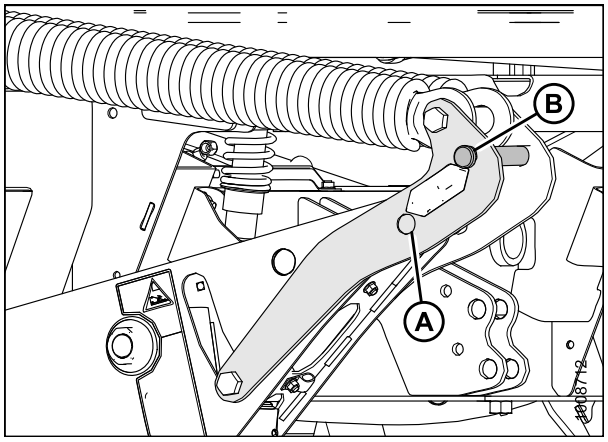

Figure 3.48: Header Float Linkage

CAUTION

Check to be sure all bystanders have cleared the area.

IMPORTANT:
Remove protective cover from exhaust stack prior to starting engine.

2. Start the engine and activate the HEADER DOWN button (A) on the ground speed lever (GSL) to fully retract header lift cylinders.

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

3. Activate the reel up switch (A) on the GSL to raise the center-link until the hook is above the attachment pin on the header.

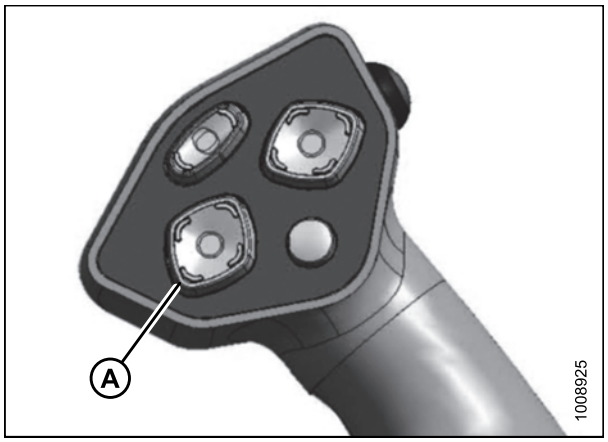

Figure 3.49: GSL

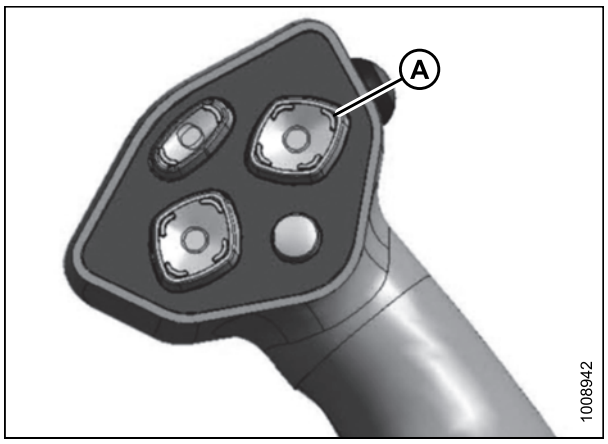

Figure 3.50: GSL

4. Drive the windrower slowly forward until the windrower feet (A) enter the header boots (B). Continue driving slowly forward until the feet engage the boots and the header nudges forward.

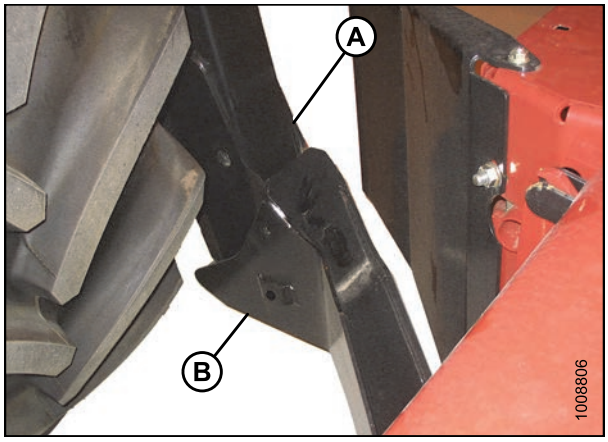

Figure 3.51: Header Boot

5. Use the following GSL functions to position the center-link hook above the header attachment pin:
   - Reel up (A) to raise the center-link
   - Reel down (B) to lower the center-link
   - Header tilt up (C) to retract the center-link
   - Header tilt down (D) to extend the center-link

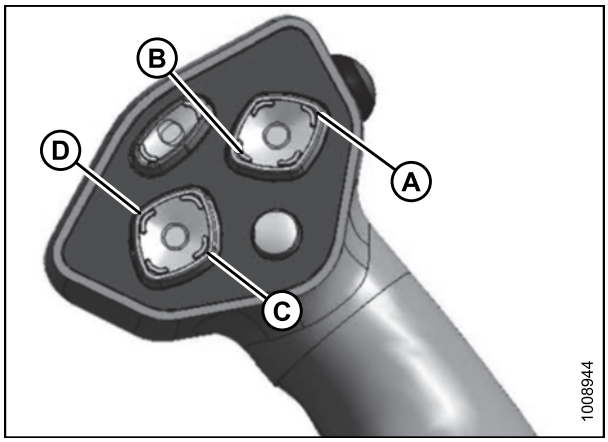

Figure 3.52: GSL

6. Adjust position of the center-link cylinder (A) with the reel up and reel down switches on the GSL until the hook is positioned above the header attachment 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.

7. Lower center-link (A) onto the header with reel down switch until it locks into position (hook release [B] is down).
8. Check that center-link is locked onto header by pressing the reel up switch on the GSL.

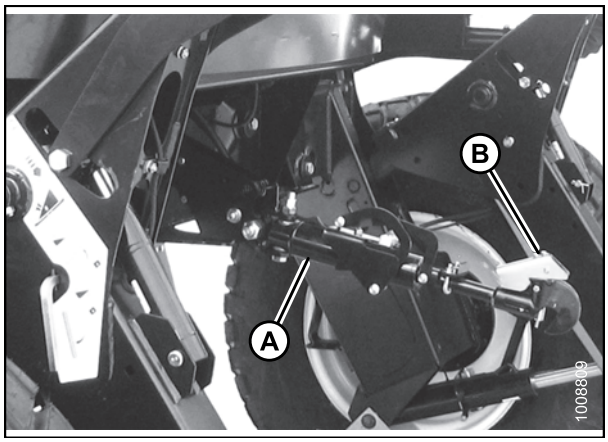

Figure 3.53: Hydraulic Center-Link

CAUTION

Check to be sure all bystanders have cleared the area.

9. Press the header up switch (A) to raise header to maximum height.

   NOTE:
   If one end of the header does **NOT** fully raise, rephase the lift cylinders as follows:

   a. Press and hold the header up switch until both cylinders stop moving.

   b. Continue to hold the switch for 3–4 seconds. Cylinders are now phased.

   NOTE:
   It may be necessary to repeat this procedure if there is air in the system.

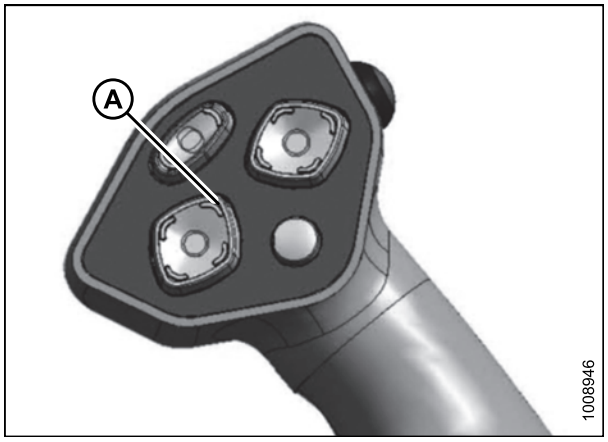

Figure 3.54: GSL

10. Engage safety props on both lift cylinders as follows:

    a. Stop engine and remove key from ignition.

    b. Pull lever (A) and rotate towards the header to release and lower safety prop (B) onto the lift cylinder.

    c. Repeat for opposite lift cylinder.

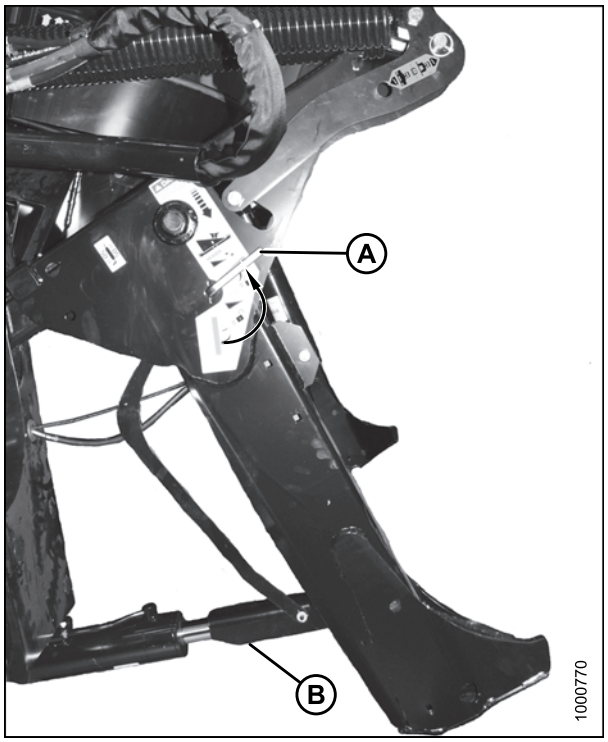

Figure 3.55: Safety Prop

11. Install clevis pin (A) through boot and foot and secure with hairpin (B). Repeat for opposite side.

    IMPORTANT:
    Ensure clevis pin (A) is fully inserted and hairpin is installed behind bracket.

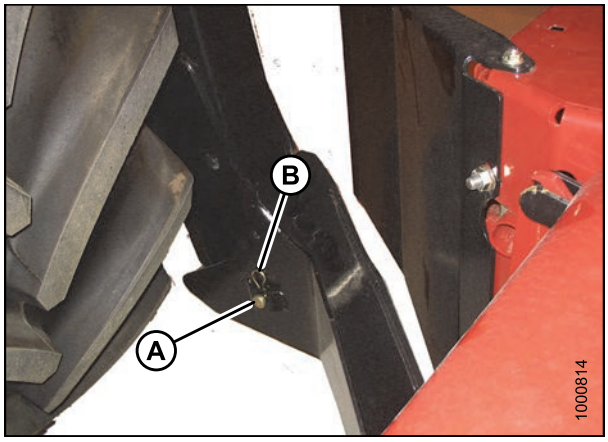

Figure 3.56: Header Boot

12. Remove clevis pin from storage position (B) in linkage and insert into hole (A) to engage float springs. Secure with hairpin.

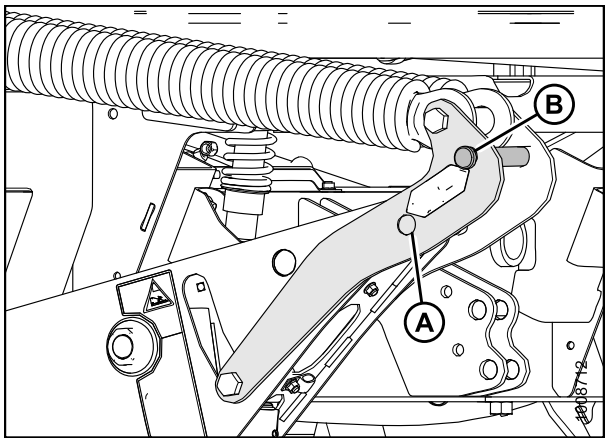

Figure 3.57: Header Float Linkage

13. Disengage safety prop by turning lever (A) downwards to release and lower stop until lever locks into vertical position.
14. Repeat for opposite safety prop.

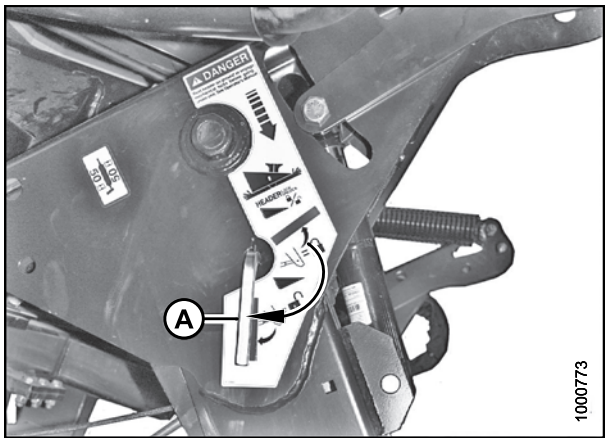

Figure 3.58: Safety Prop

CAUTION

Check to be sure all bystanders have cleared the area.

15. Start the engine and activate the header down switch (A) on the GSL to fully lower the header.
16. Stop engine and remove key from ignition.

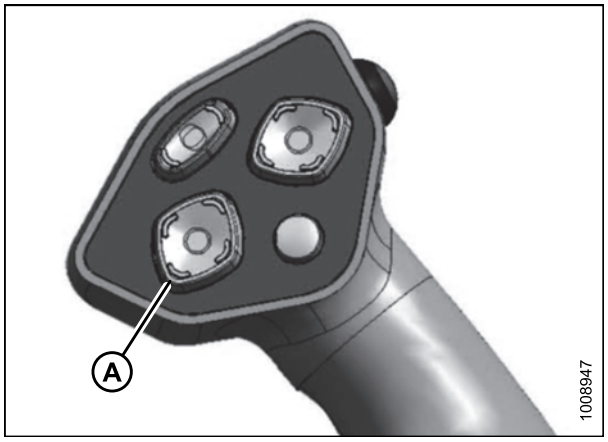

Figure 3.59: GSL

3.11.2 Attaching Header to Windrower: Hydraulic Center-Link without Self-Alignment

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. Remove hairpin (B) from clevis pin (A) and remove clevis pin from the header boots (C) on both sides of the header.

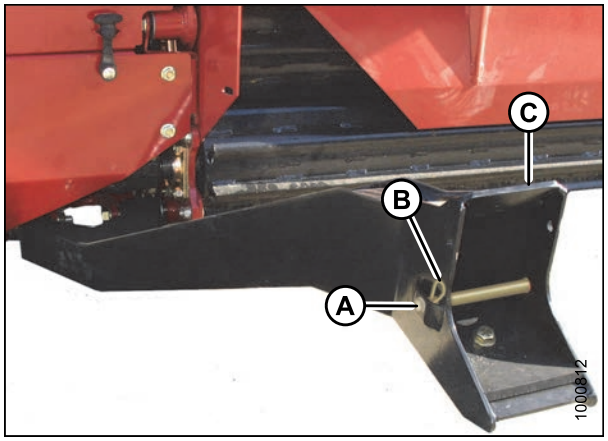

Figure 3.60: Header Boot

CAUTION

To prevent damage to the lift system when lowering header lift linkages without a header or weight box attached to the windrower, ensure the float engagement pin is installed in storage position (B) and NOT in engaged position (A).

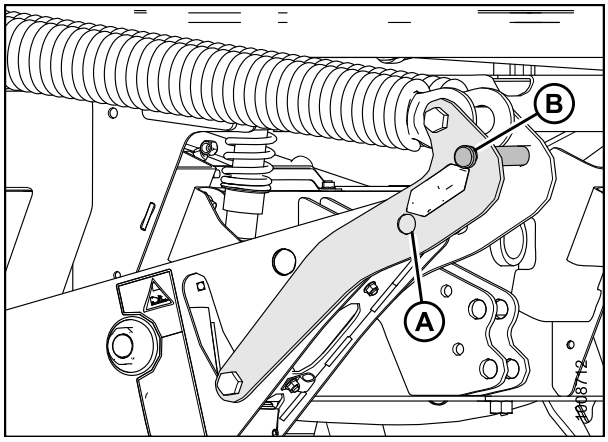

Figure 3.61: Header Float Linkage

CAUTION

Check to be sure all bystanders have cleared the area.

IMPORTANT:
Remove protective cover from exhaust stack prior to starting engine.

2. Start the engine and activate the HEADER DOWN button (A) on the ground speed lever (GSL) to fully retract header lift cylinders.

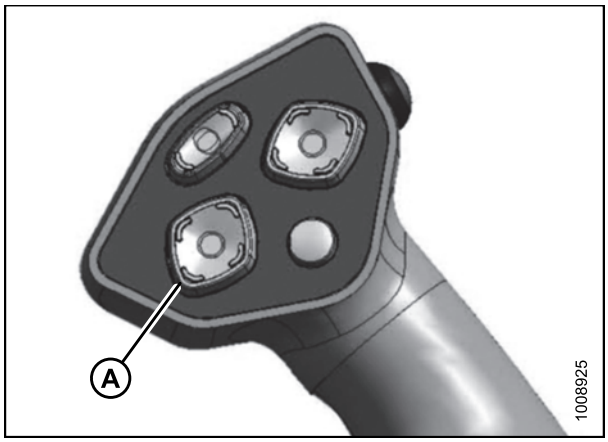

Figure 3.62: GSL

3. 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.

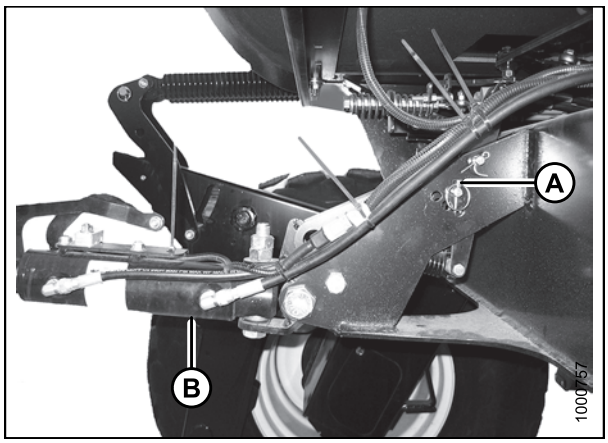

Figure 3.63: Hydraulic Center-Link

4. Drive the windrower slowly forward until the windrower feet (A) enter the header boots (B). Continue driving slowly forward until the feet engage the boots and the header nudges forward.

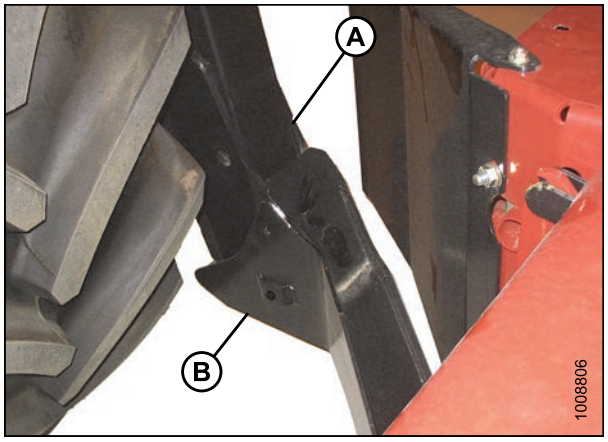

Figure 3.64: Header Boot

5. Use the following GSL functions to position the center-link hook above the header attachment pin:
   - Header tilt up (A) to retract the center-link
   - Header tilt down (B) to extend the center-link
6. Stop engine and remove key from ignition.

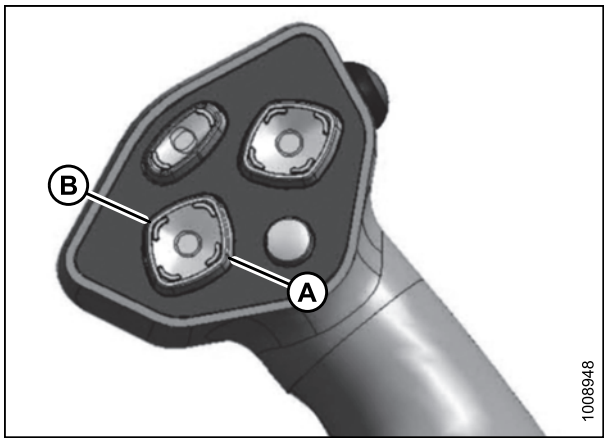

Figure 3.65: GSL

7. 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.

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

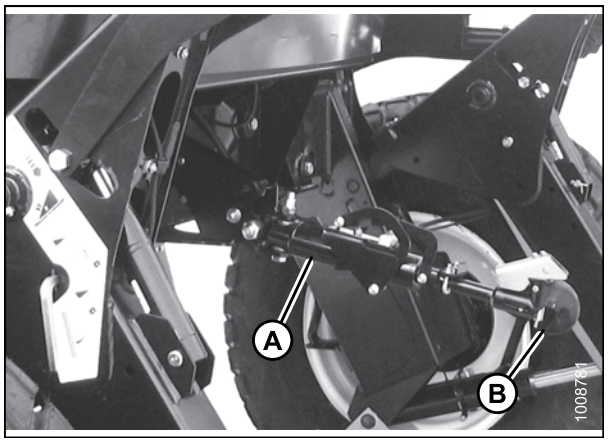

Figure 3.66: Hydraulic Center-Link

CAUTION

Check to be sure all bystanders have cleared the area.

9. Start the engine.
10. Press the header up switch (A) to raise header to maximum height.

    NOTE:
    If one end of the header does **NOT** fully raise, rephase the lift cylinders as follows:

    a. Press and hold the header up switch until both cylinders stop moving.

    b. Continue to hold the switch for 3–4 seconds. Cylinders are now phased.

    NOTE:
    It may be necessary to repeat this procedure if there is air in the system.

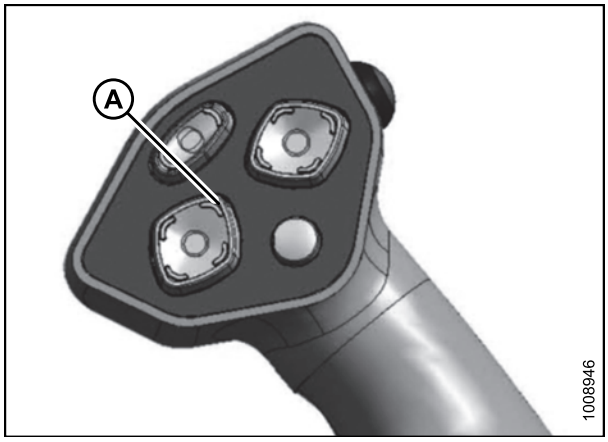

Figure 3.67: GSL

11. Engage safety props on both lift cylinders as follows:

    a. Stop engine and remove key from ignition.

    b. Pull lever (A) and rotate towards the header to release and lower safety prop (B) onto the lift cylinder.

    c. Repeat for opposite lift cylinder.

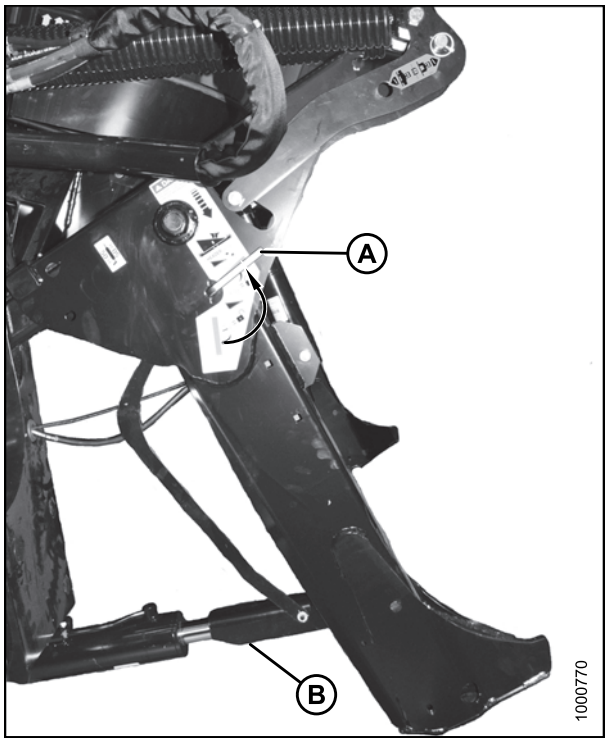

Figure 3.68: Safety Prop

12. Install clevis pin (A) through boot and foot and secure with hairpin (B). Repeat for opposite side.

    IMPORTANT:
    Ensure clevis pin (A) is fully inserted and hairpin is installed behind bracket.

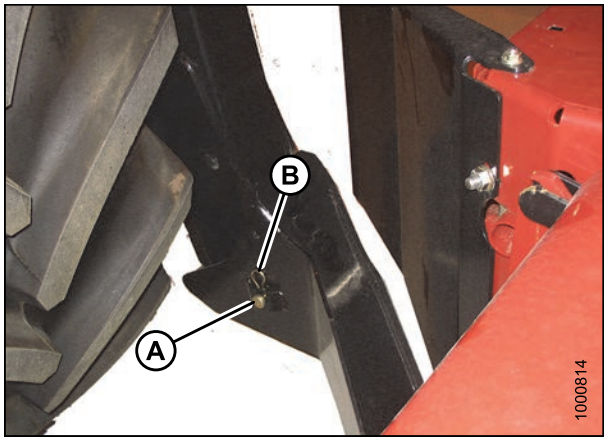

Figure 3.69: Header Boot

13. Remove clevis pin from storage position (B) in linkage and insert into hole (A) to engage float springs. Secure with hairpin.

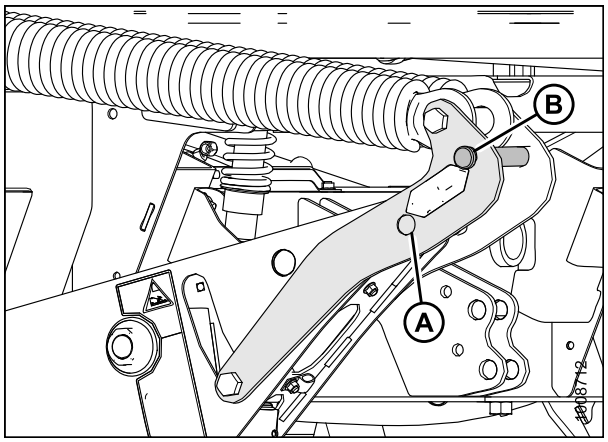

Figure 3.70: Header Float Linkage

14. Disengage safety prop by turning lever (A) downwards to release and lower stop until lever locks into vertical position.
15. Repeat for opposite safety prop.

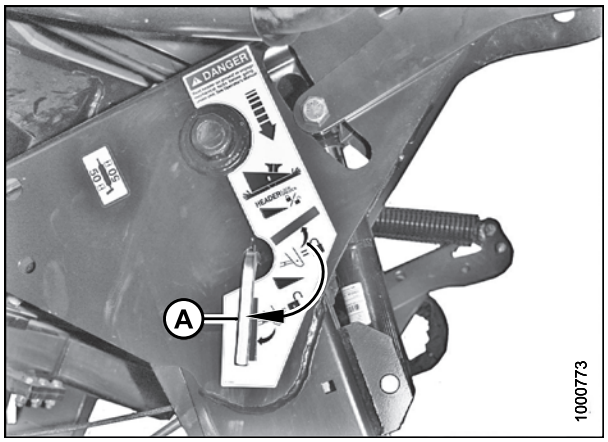

Figure 3.71: Safety Prop

CAUTION

Check to be sure all bystanders have cleared the area.

16. Start the engine and activate the header down switch (A) on the GSL to fully lower the header.
17. Stop engine and remove key from ignition.

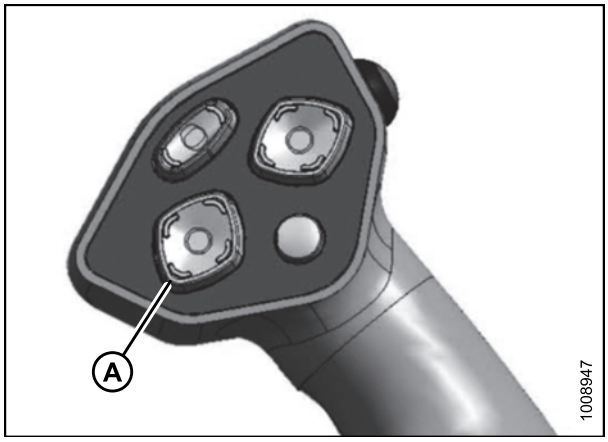

Figure 3.72: GSL

3.11.3 Attaching Header to Windrower: Mechanical Center-Link

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. Remove hairpin (B) from clevis pin (A) and remove clevis pin from the header boots (C) on both sides of the header.

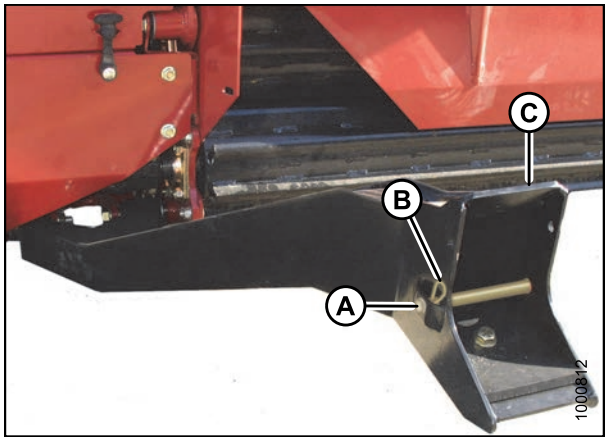

Figure 3.73: Header Boot

CAUTION

To prevent damage to the lift system when lowering header lift linkages without a header or weight box attached to the windrower, ensure the float engagement pin is installed in storage position (B) and NOT in engaged position (A).

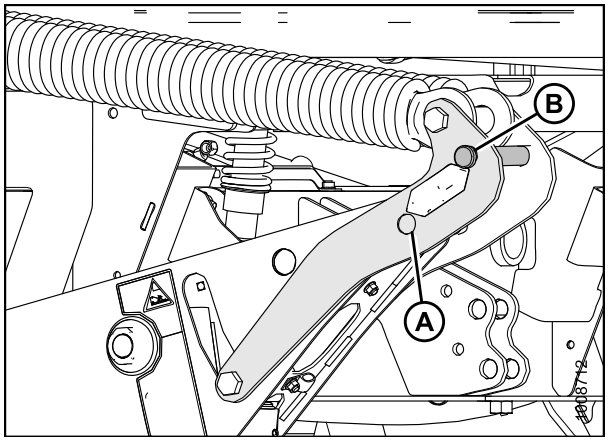

Figure 3.74: Header Float Linkage

CAUTION

Check to be sure all bystanders have cleared the area.

IMPORTANT:
Remove protective cover from exhaust stack prior to starting engine.

2. Start the engine and activate the HEADER DOWN button (A) on the ground speed lever (GSL) to fully retract header lift cylinders.

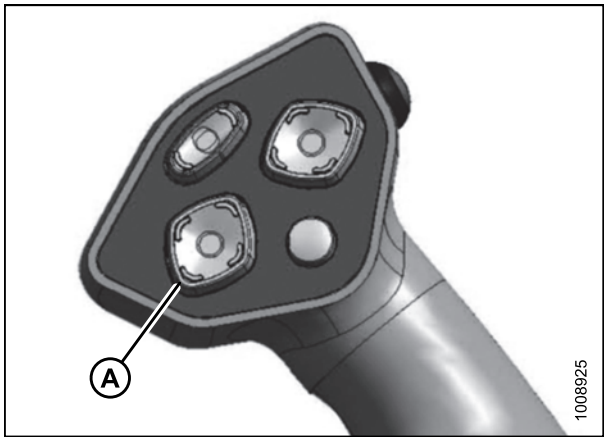

Figure 3.75: GSL

3. Drive the windrower slowly forward until the windrower feet (A) enter the header boots (B). Continue driving slowly forward until the feet engage the boots and the header nudges forward.

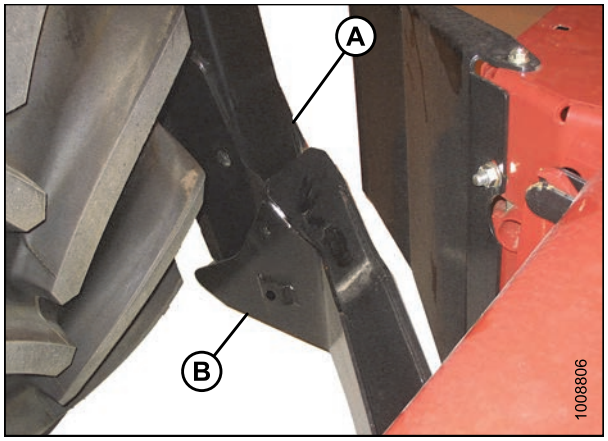

Figure 3.76: Header Boot

4. Stop engine and remove key from ignition.
5. Loosen nut (A) and rotate barrel (B) to adjust length until the link is aligned with the header bracket.
6. Install clevis pin (C) and secure with cotter pin (D).
7. Adjust length of link to achieve proper header angle by rotating barrel (B). Tighten nut (A) against barrel (a slight tap with a hammer is sufficient).

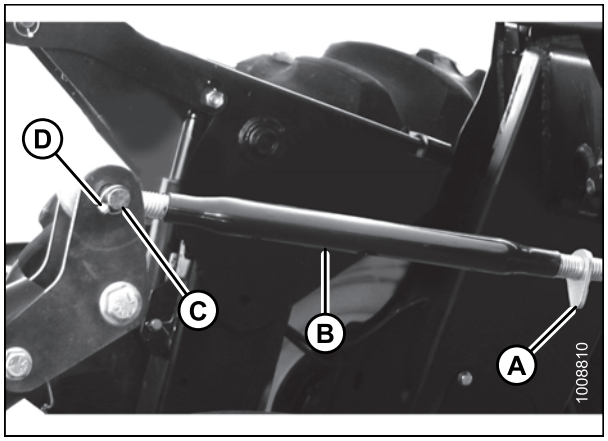

Figure 3.77: Mechanical Center-Link

CAUTION

Check to be sure all bystanders have cleared the area.

8. Start the engine.
9. Press the header up switch (A) to raise header to maximum height.

   NOTE:
   If one end of the header does **NOT** fully raise, rephase the lift cylinders as follows:

   a. Press and hold the header up switch until both cylinders stop moving.

   b. Continue to hold the switch for 3–4 seconds. Cylinders are now phased.

   NOTE:
   It may be necessary to repeat this procedure if there is air in the system.

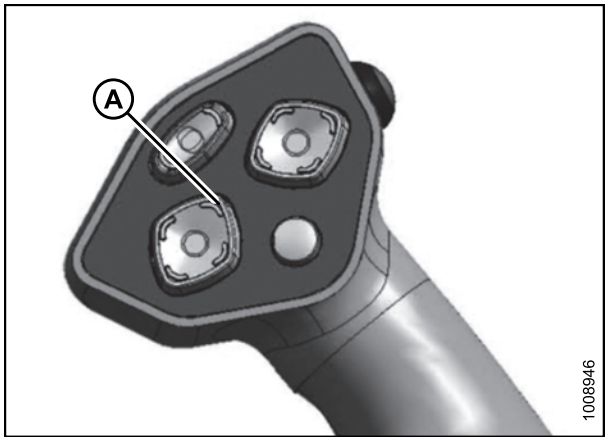

Figure 3.78: GSL

10. Engage safety props on both lift cylinders as follows:

    a. Stop engine and remove key from ignition.

    b. Pull lever (A) and rotate towards the header to release and lower safety prop (B) onto the lift cylinder.

    c. Repeat for opposite lift cylinder.

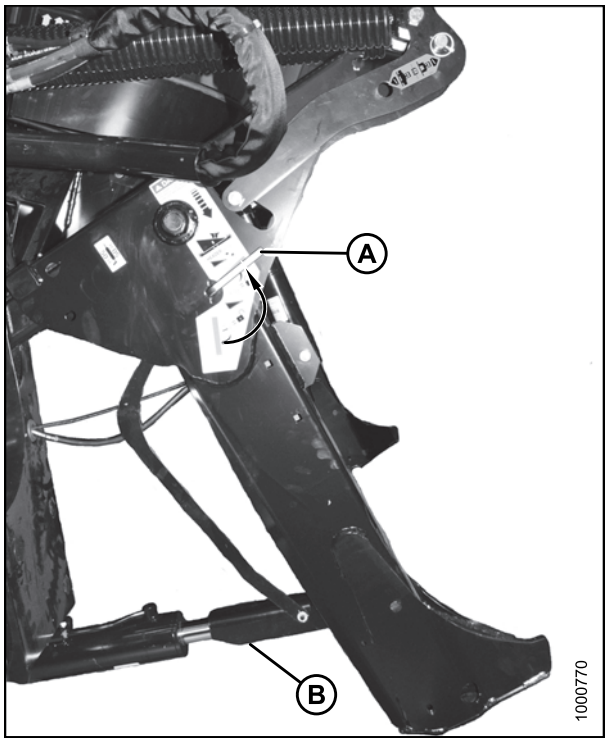

Figure 3.79: Safety Prop

11. Install clevis pin (A) through boot and foot and secure with hairpin (B). Repeat for opposite side.

    IMPORTANT:
    Ensure clevis pin (A) is fully inserted and hairpin is installed behind bracket.

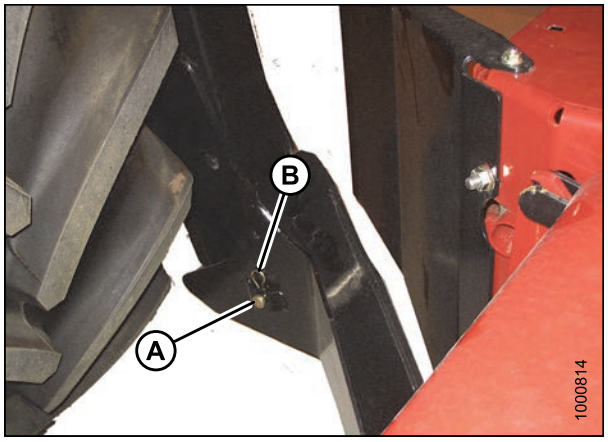

Figure 3.80: Header Boot

12. Remove clevis pin from storage position (B) in linkage and insert into hole (A) to engage float springs. Secure with hairpin.

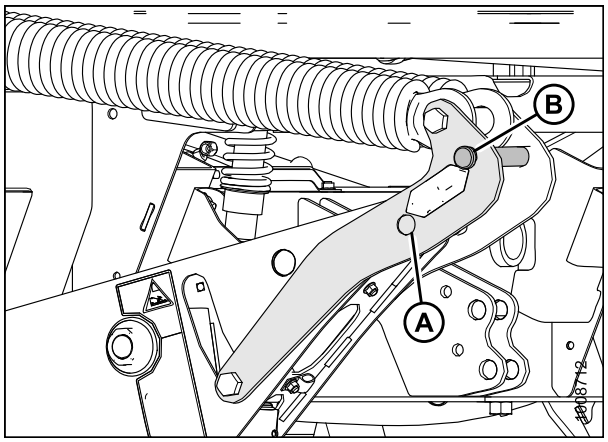

Figure 3.81: Header Float Linkage

13. Disengage safety prop by turning lever (A) downwards to release and lower stop until lever locks into vertical position.
14. Repeat for opposite safety prop.

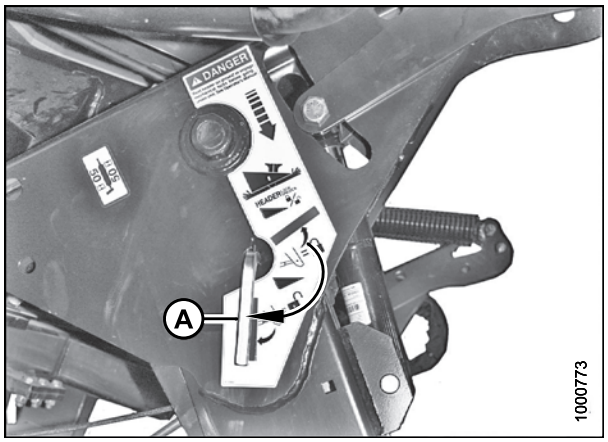

Figure 3.82: Safety Prop

CAUTION

Check to be sure all bystanders have cleared the area.

15. Start the engine and activate the header down switch (A) on the GSL to fully lower the header.
16. Stop engine and remove key from ignition.

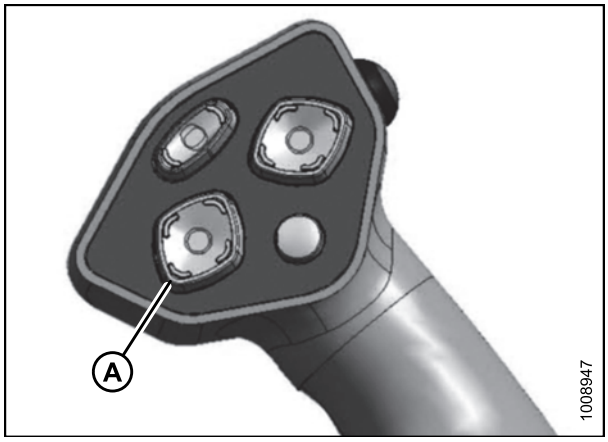

Figure 3.83: GSL

3.12 Attaching Hydraulic and Electrical Connections

The procedure for attaching the header hydraulic and electrical connections depends on the windrower model. Refer to the appropriate procedure:

- *3.12.1 Attaching the Header (M205 Windrowers), page 46*
- *3.12.2 Attaching the Header (M200 Windrowers), page 51*

3.12.1 Attaching the Header (M205 Windrowers)

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. Move windrower left-hand (cab-forward) platform (A) to OPEN position.

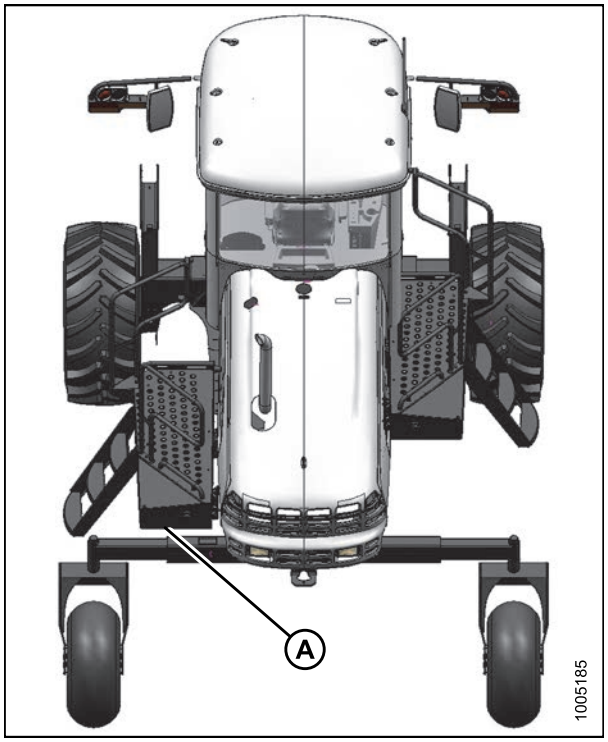

Figure 3.84: Windrower with LH Platform in Open Position

2. Route the hose bundle (A) from the header, under the windrower frame and insert pin (B) into hole in windrower frame.
3. Place hoses on support (C) and on the hose support on the forming shield (not shown).
4. If optional couplers and lock are installed on hoses and lines, proceed as follows. Otherwise, proceed to Step *14., page 50*.

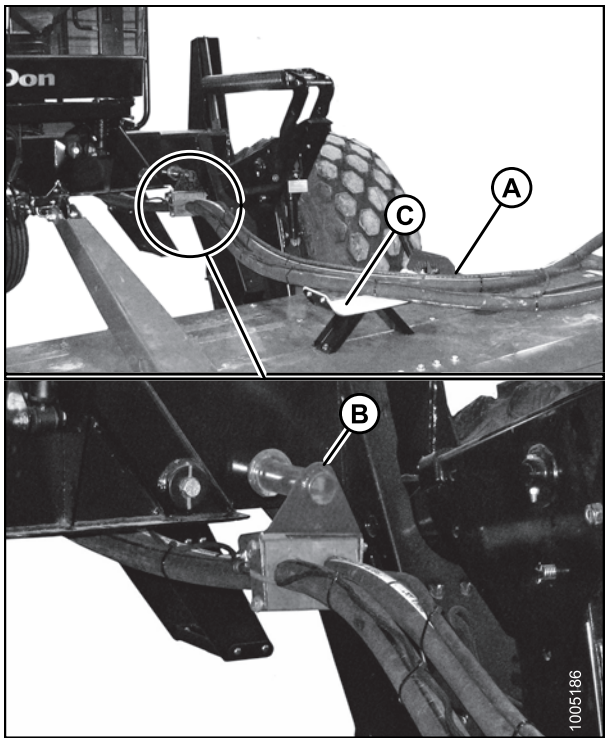

Figure 3.85: Hydraulic Hoses

5. Remove coupler lock as follows:
   a. Remove lynch pin (A) and open up coupler lock (B).
   b. Remove lock from coupler.

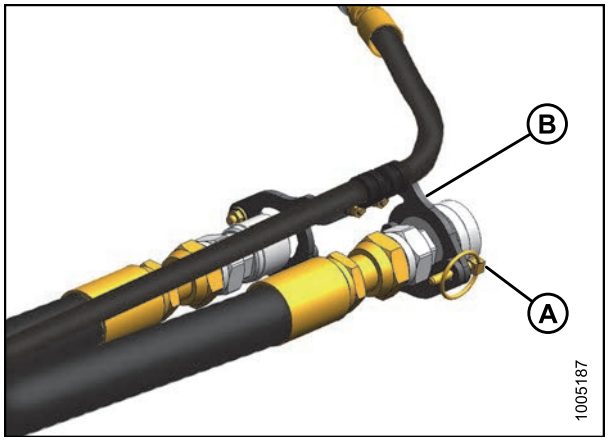

Figure 3.86: Hydraulic Couplers with Coupler Lock

6. Connect the rear pump hose (A) to outboard line (D) on windrower using fitting (C).
7. Connect the front pump hose (B) to the inboard line (E) on windrower using fitting (C).
8. Torque fittings to 135 ft·lbf (183 N·m).

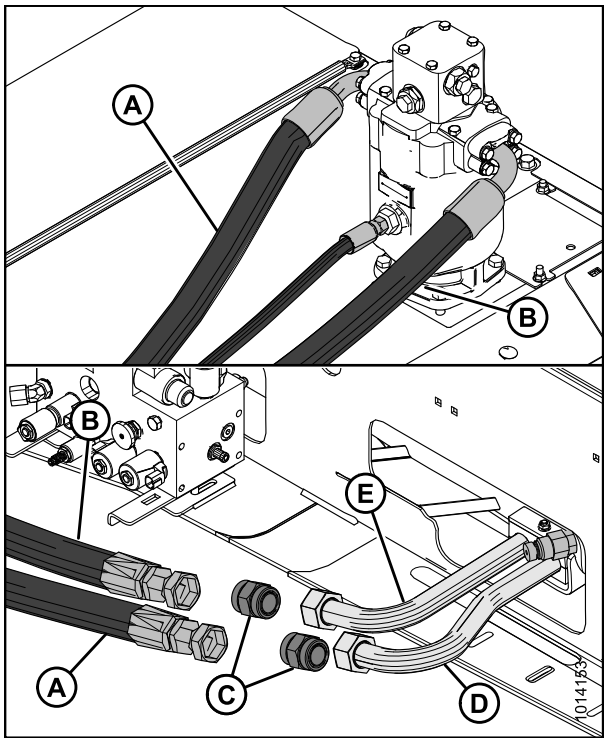

Figure 3.87: Hose Routing and Connections

9. Position the lock onto the couplers so that retainer (A) rests under the fitting next to the sleeve on each coupler.

   NOTE:
   The retainer can be adjusted by loosening bolts (B). Tighten bolts after adjusting.

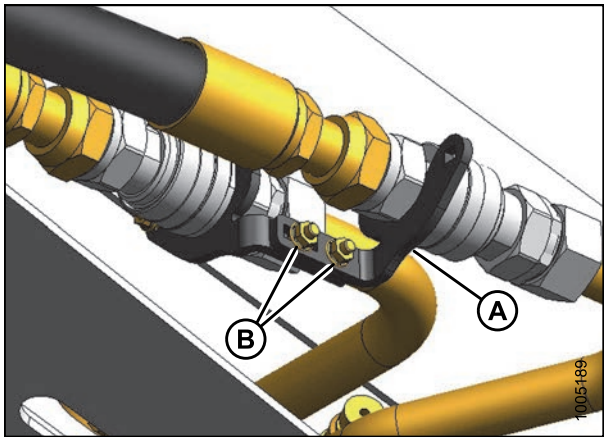

Figure 3.88: Hydraulic Couplers with Coupler Lock

10. Lower holder (A) onto sleeves (B) so that the flats are positioned on the holder.

    NOTE:
    Holder can be adjusted by loosening bolts (C). Tighten bolts after adjusting.

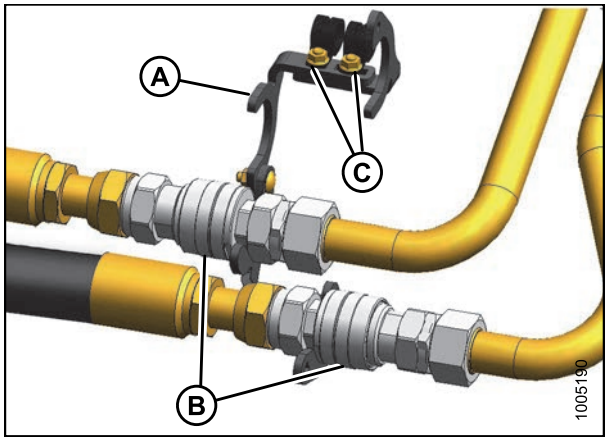

Figure 3.89: Hydraulic Couplers with Coupler Lock

11. Insert lynch pin (A) to secure the lock.
12. Attach case drain hose coupler at (B).
13. Proceed to Step *18., page 50*.

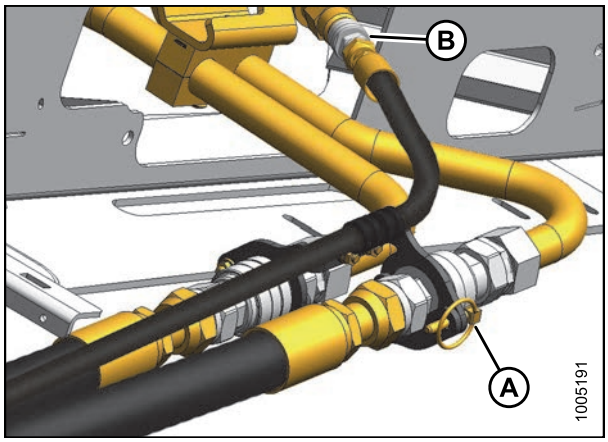

Figure 3.90: Hydraulic Couplers with Case Drain Hose

14. Connect the rear pump hose (A) to outboard line (F) on windrower using fitting (D).
15. Connect the front pump hose (B) to the inboard line (G) on windrower using fitting (D).
16. Torque fittings to 135 ft·lbf (183 N·m).
17. Attach case drain hose and coupler (C) to (E).

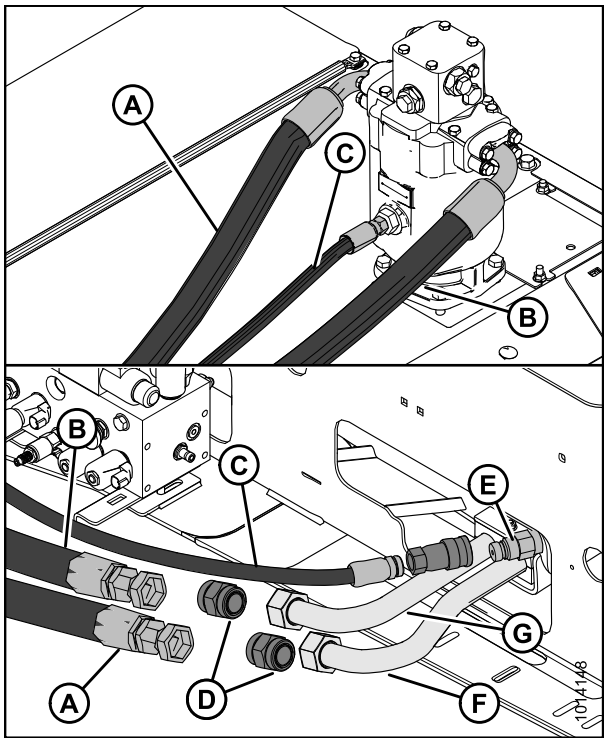

Figure 3.91: Hose Routing and Connections

18. Connect the electrical harness to connector HC-2A (A) (located beside the forward valve block on the windrower).

    NOTE:
    Valve block hidden to show the electrical connector.

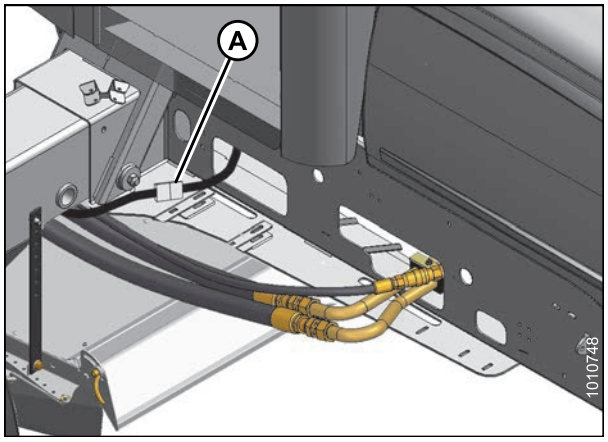

Figure 3.92: Electrical Connection

19. Move the windrower platform (A) to the CLOSED position.

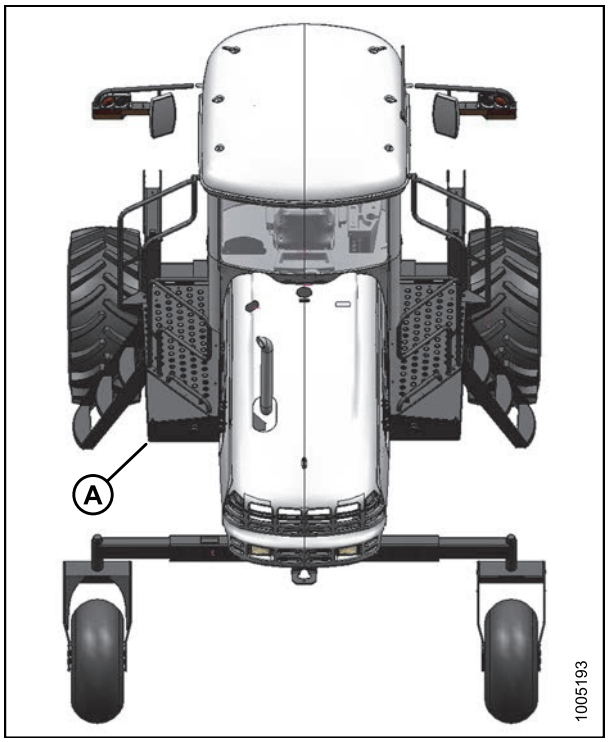

Figure 3.93: Windrower with LH Platform in Closed Position

3.12.2 Attaching the Header (M200 Windrowers)

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.

To operate the 16-foot header on an M200 windrower, installation of a motor/hose kit (MD #B5455) is required.

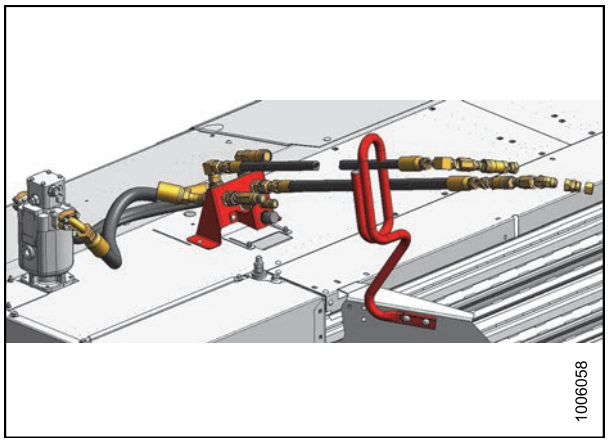

Figure 3.94: MD #B5455

1. Disengage and rotate lever (A) counterclockwise to the UP position.
2. Remove the cap (B) securing the electrical connector to the frame.

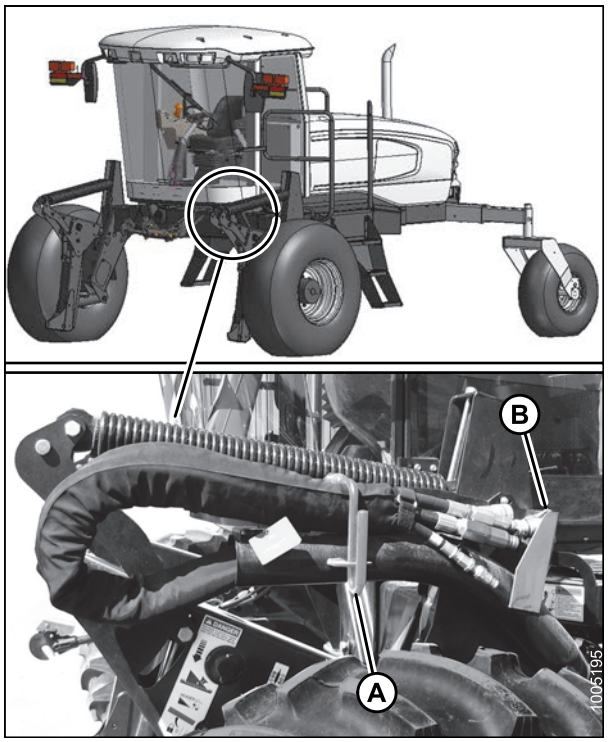

Figure 3.95: Hose Bundle

3. Move hose bundle (A) from the windrower and rest the bundle on the header.

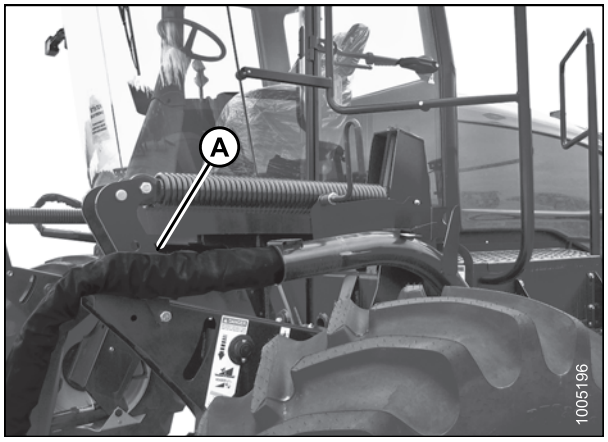

Figure 3.96: Hose Bundle

4. Position the hose support with the lower bolt (A) in the forward hole and the support positioned as shown. Loosen both bolts and adjust as required.

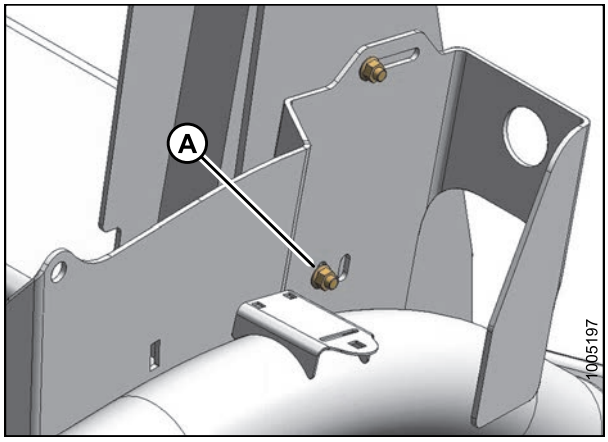

Figure 3.97: Hose Support

5. Route hose bundle (A) from the windrower through the support (B) on header.
6. Route header return and pressure hose bundle (C) through support (B) on header to the windrower.

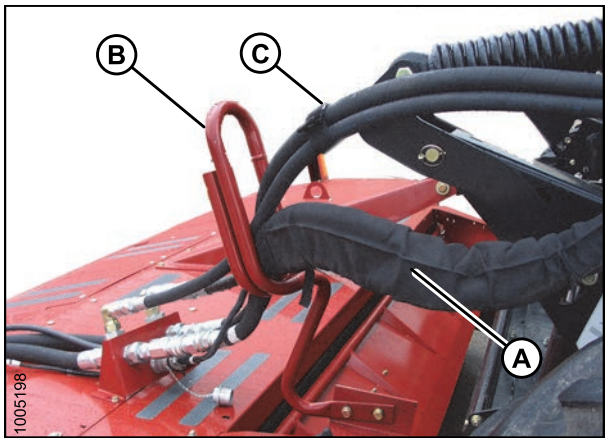

Figure 3.98: Hose Bundle

7. Secure hose bundles with three cinch straps (B).
8. Lower and lock lever (A).

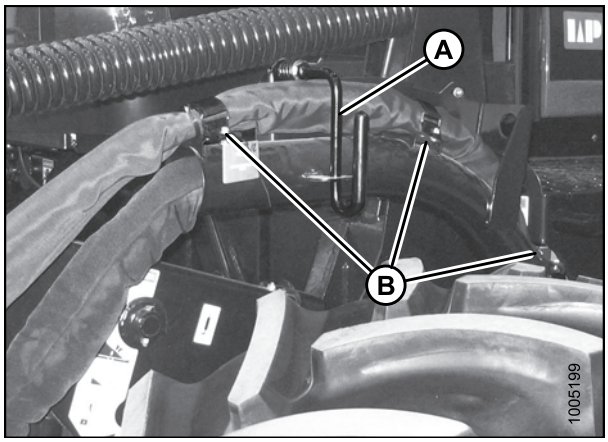

Figure 3.99: Hose Bundle

9. Move the windrower's left-hand side (cab-forward) platform (A) to the OPEN position to access the valve blocks.

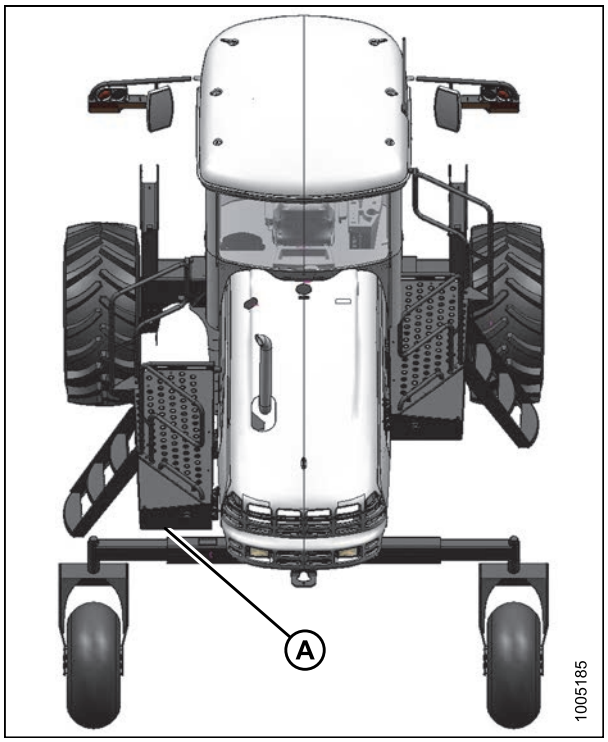

Figure 3.100: Windrower with LH Platform in Open Position

10. Remove caps from pressure (A) and return (B) ports on valve (C) and discard.

    IMPORTANT:
    Keep open lines and ports clean.

11. Remove fitting at pressure port (A) and discard.

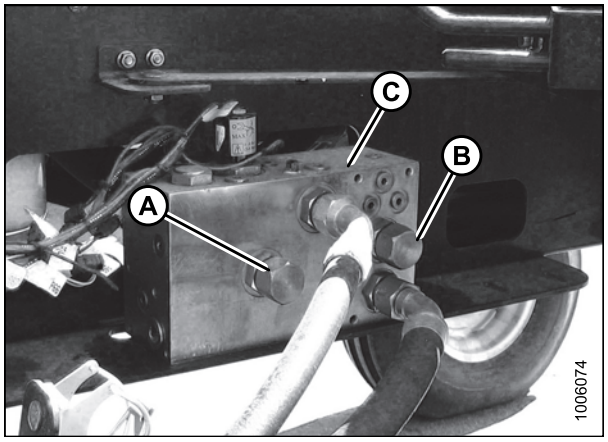

Figure 3.101: Hydraulic Connections

12. Disconnect fittings at end of hose bundle (A). Discard caps.

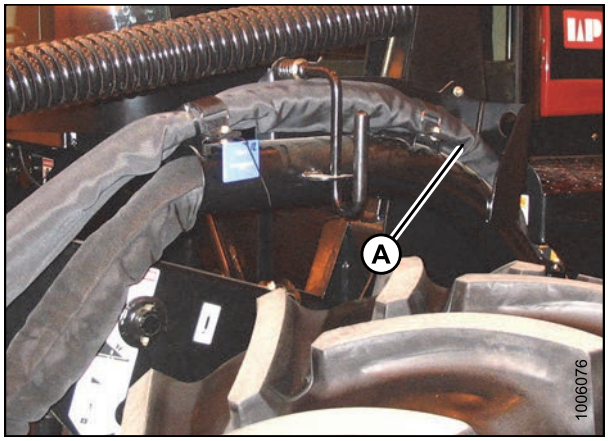

Figure 3.102: Hose Bundle

13. Remove O-ring (A) from cap and install over JIC threads on fitting at return port (B).
14. Install female coupler (C) from hose in return port (B).
15. Install male 45° fitting (D) and male coupler (E) from hose in pressure port (F).

    NOTE:
    Male fitting and coupler may need to be disassembled prior to installing on valve block.

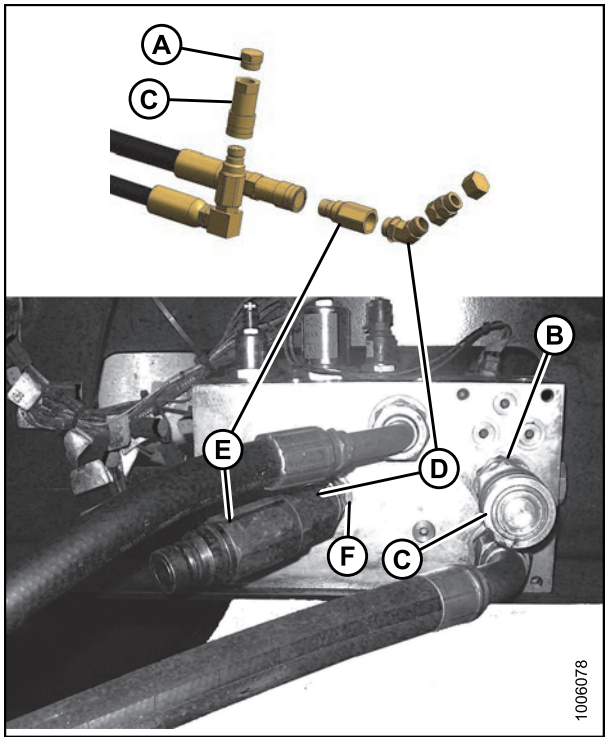

Figure 3.103: Hydraulic Connections

16. Connect hoses from header to fittings as shown.

    NOTE:
    Some windrowers maybe equipped with a reverser. The return line (C) would require a 45° fitting instead of a 90° fitting to avoid contact with the platform.

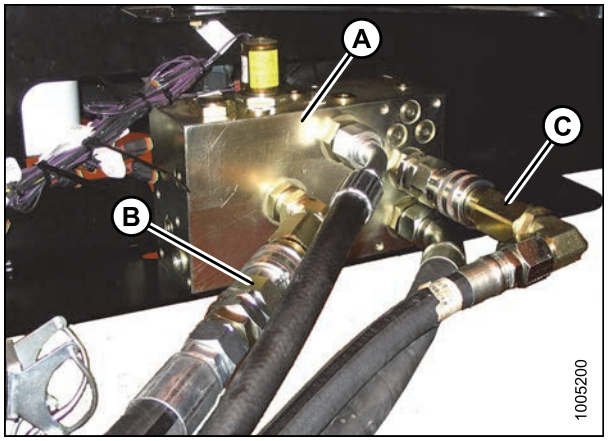

Figure 3.104: Hydraulic Connections

A - Middle Valve Block **B - Pressure**
C - Return

17. Connect the three hoses from windrower to the fittings on the header as shown.
18. Assemble electrical connector as shown.
19. Remove caps and plugs from hoses and lines.
20. Connect the pressure (A), return (B), and case drain (C) hoses from windrower to fittings on header as shown.
21. Connect electrical harness (D) from windrower to connector on header.

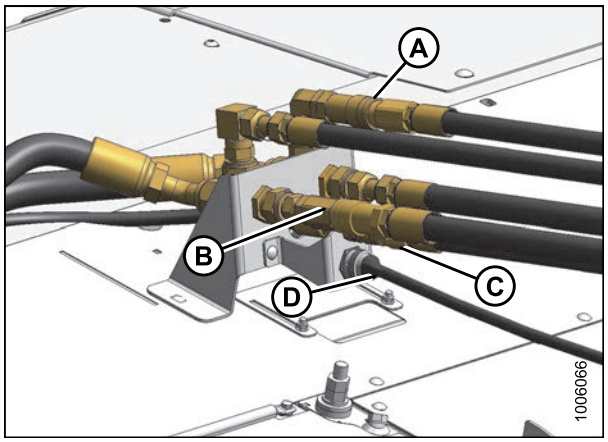

Figure 3.105: Header Connections

22. Move platform (A) to the CLOSED position.

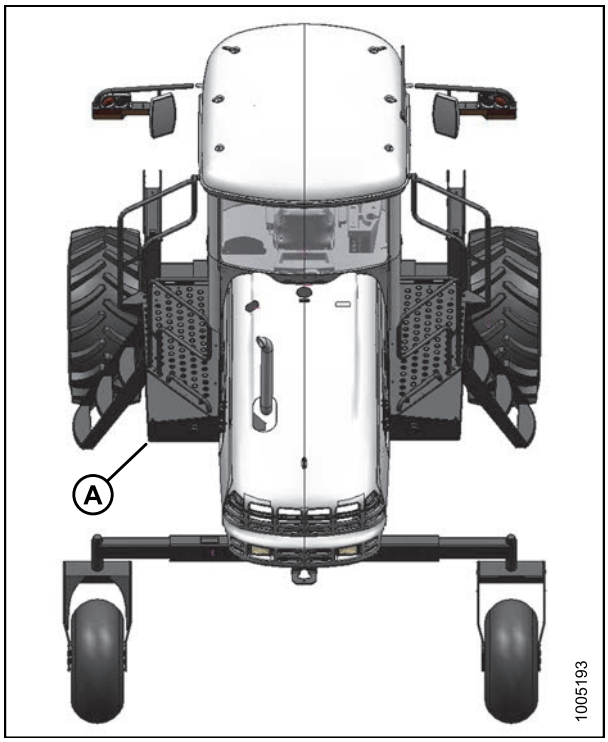

Figure 3.106: Top View of Windrower

3.13 Installing Other Options

Install options (if supplied with shipment) in accordance with the instructions supplied with each kit.

3.13.1 Installing Tall Crop Divider Kit

To install the tall crop divider kit, follow these steps:

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. Lower header to the ground, shut off engine, and remove key from ignition.
2. Unpack kit.
3. Open cutterbar doors.

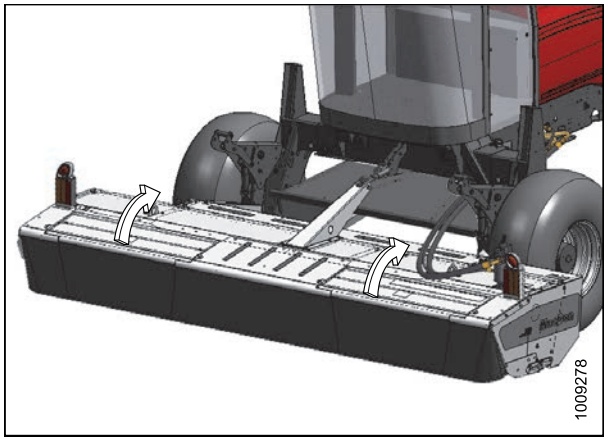

Figure 3.107: Cutterbar Doors

4. Remove the four bolts (A) from the divider (B).

   NOTE:
   Mounting holes in header should be vacant. Remove fasteners if necessary.

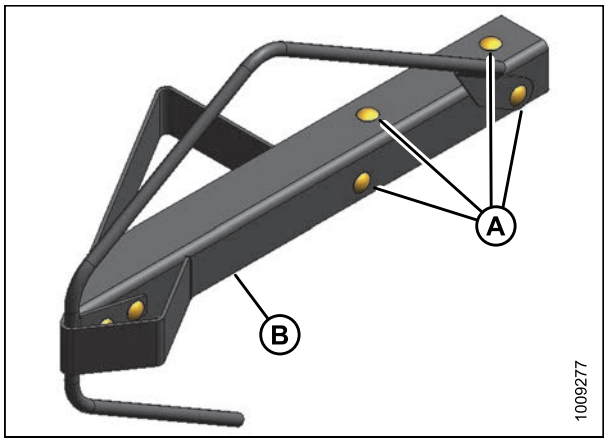

Figure 3.108: Tall Crop Divider Kit (LH Shown, RH Opposite)

5. Position left-hand divider (B) on header left front corner, and install with four bolts (A) and nuts in existing holes. Tighten hardware.
6. Repeat for right-hand side.
7. Lower cutterbar doors.

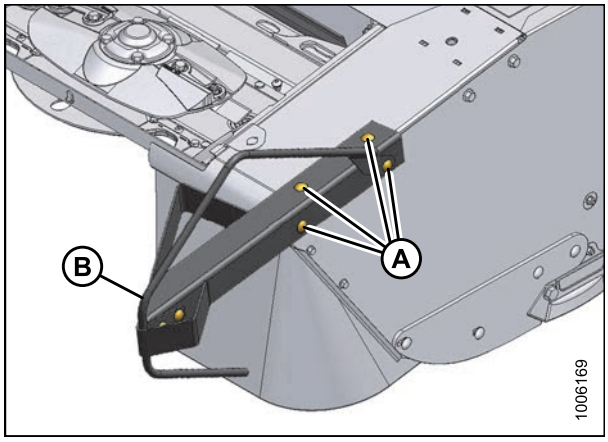

Figure 3.109: Tall Crop Divider Installed

3.13.2 Installing Double Windrow Attachment (DWA)

Refer to instructions supplied with kit.

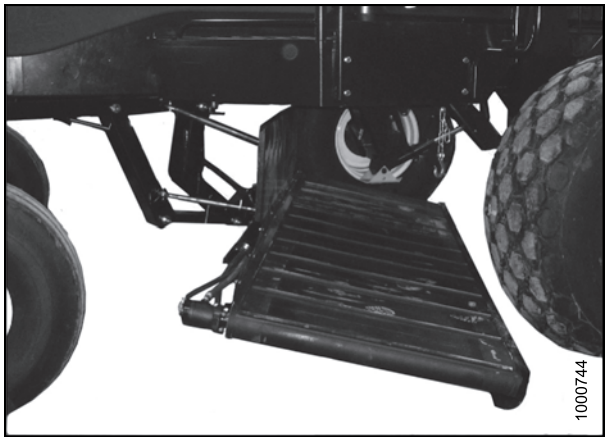

Figure 3.110: DWA

3.13.3 Installing Skid Shoes (Optional)

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. Lower header to the ground, shut off engine, and remove key from ignition.
2. Unpack kit.

3. Install skid shoes. Refer to instruction (MD #169972) supplied with kit.

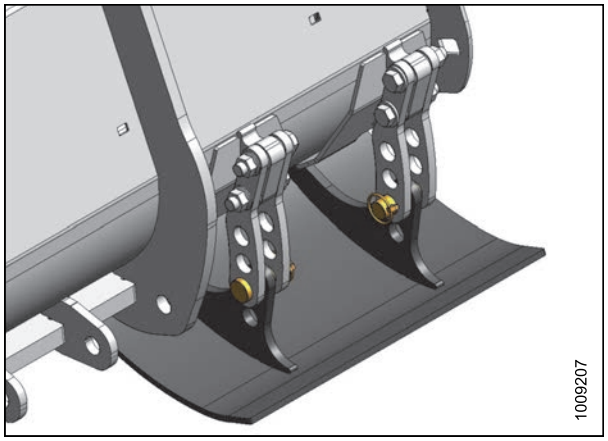

Figure 3.111: Skid Shoe (Right Side Shown — Left Side Similar)

3.13.4 Installing Gauge Rollers (Optional)

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. Unpack gauge roller bundle and install gauge rollers. Refer to instruction (MD #169467) supplied with kit.

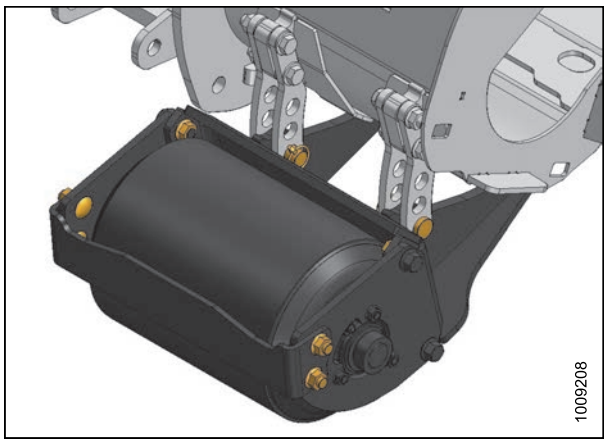

Figure 3.112: Gauge Roller (Right Side Shown — Left Side Similar)

3.13.5 Installing Tall Crop Feed Plates

Two plates (A) are supplied with each header and can be installed if required. They are stored behind the right-hand side driveshield. Installation instructions are included in the operator's manual.

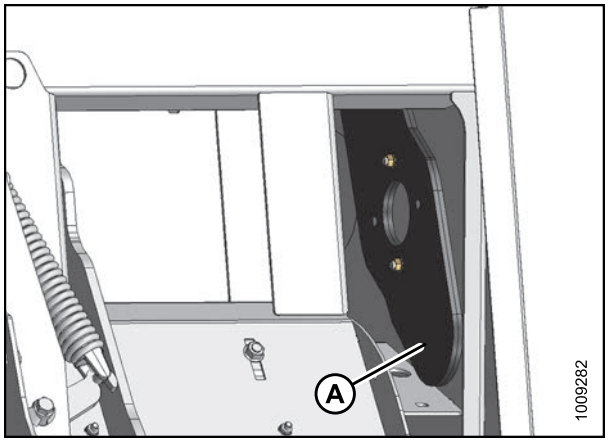

Figure 3.113: Driveshield Removed

3.13.6 Installing Nut Protectors (for Blade Hardware on Discs)

Twelve nut protector caps are (A) supplied as standard equipment with each header. These are shipped bolted to the tall crop feed plates.

The nut protectors can be used in place of the crop accelerators (factory installed on each disc) when cutting in light crop conditions to reduce air turbulence, thereby improving the quality of cut.

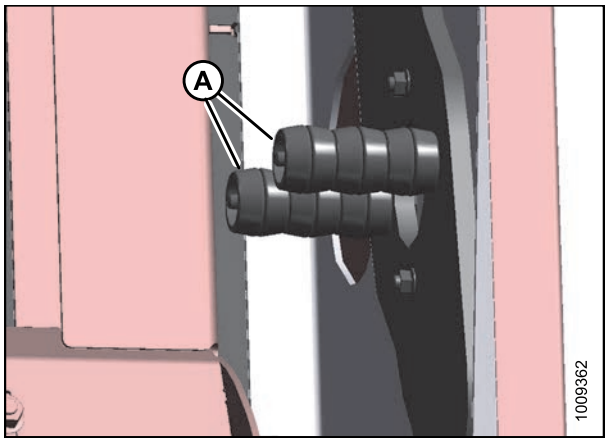

Figure 3.114: Nut Protector Storage Location

3.14 Header Lubrication

The header has been lubricated at the factory. However, you should lubricate the header prior to delivery to offset the effects of weather during outside storage and transport and to familiarize yourself with the header.

3.14.1 Driveshields

WARNING

Do NOT operate the machine with the driveshields open. High-speed rotating components may throw debris and could result in death or serious injury.

Access to the header drive systems requires opening the driveshield at the left end of the header. The procedures for opening and closing the driveshield vary depending on whether the header was configured for use in North America or outside of North America (export).

Opening the Driveshield: North American Headers

Follow these steps to open the driveshield on North American headers:

1. Release rubber latches (A).
2. Lift shield (B).

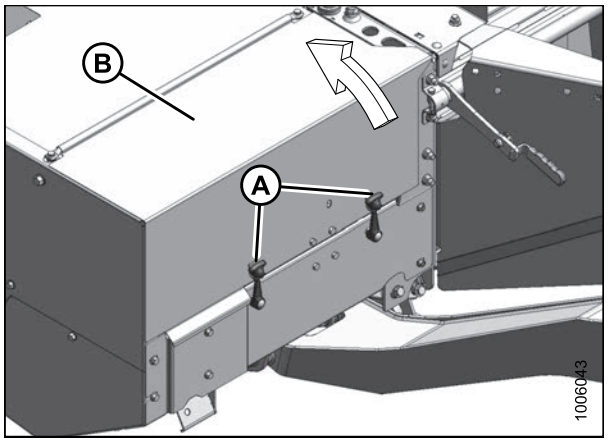

Figure 3.115: Driveshield

Closing the Driveshield: North American Headers

Follow these steps to close the driveshield on North American headers:

1. Lower shield (B) so that pins at lower end of shield engage holes in lower panel.
2. Engage rubber latches (A).

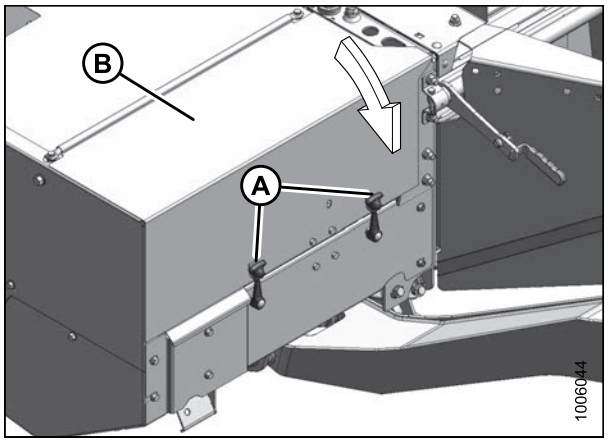

Figure 3.116: Driveshield

Opening the Driveshield: Export Headers

Follow these steps to open the driveshield on export headers:

1. Release rubber latches (A).
2. Insert a screwdriver (or equivalent) through hole in shield (B) and into the notch in latch (C) and disengage latch.
3. Open shield (D).

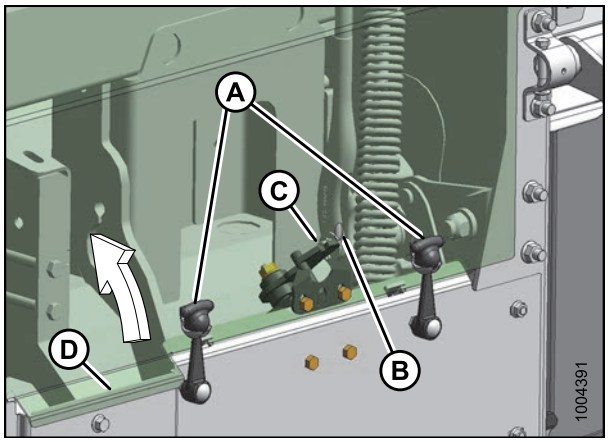

Figure 3.117: Driveshield

Closing the Driveshield: Export Headers

Follow these steps to close the driveshield on export headers:

1. Lower the shield (C) so that pins at lower end of shield engage holes in the lower panel and latch (B) reengages the shield.
2. Engage rubber latches (A).

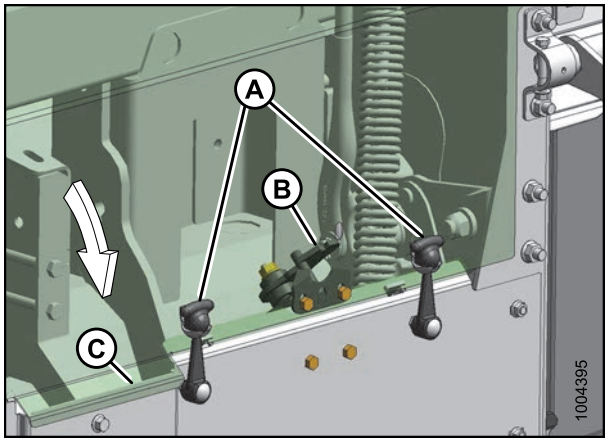

Figure 3.118: Driveshield

3.14.2 Greasing Procedure

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.

The greasing points are marked on the machine by decals showing a grease gun and grease interval in hours of operation.

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. If fitting will not take grease, remove and clean thoroughly. Also clean lubricant passageway. Replace fitting if necessary.

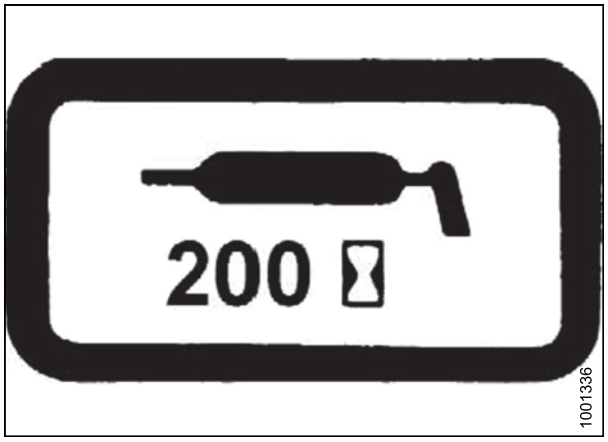

Figure 3.119: Grease Interval Decal

3.14.3 Lubrication Points

To identify the various locations that require lubrication, refer to the following illustrations.

NOTE:
Use high temperature extreme pressure (EP2) performance with 1% max molybdenum disulphide (NLGI grade 2) lithium base except where noted.

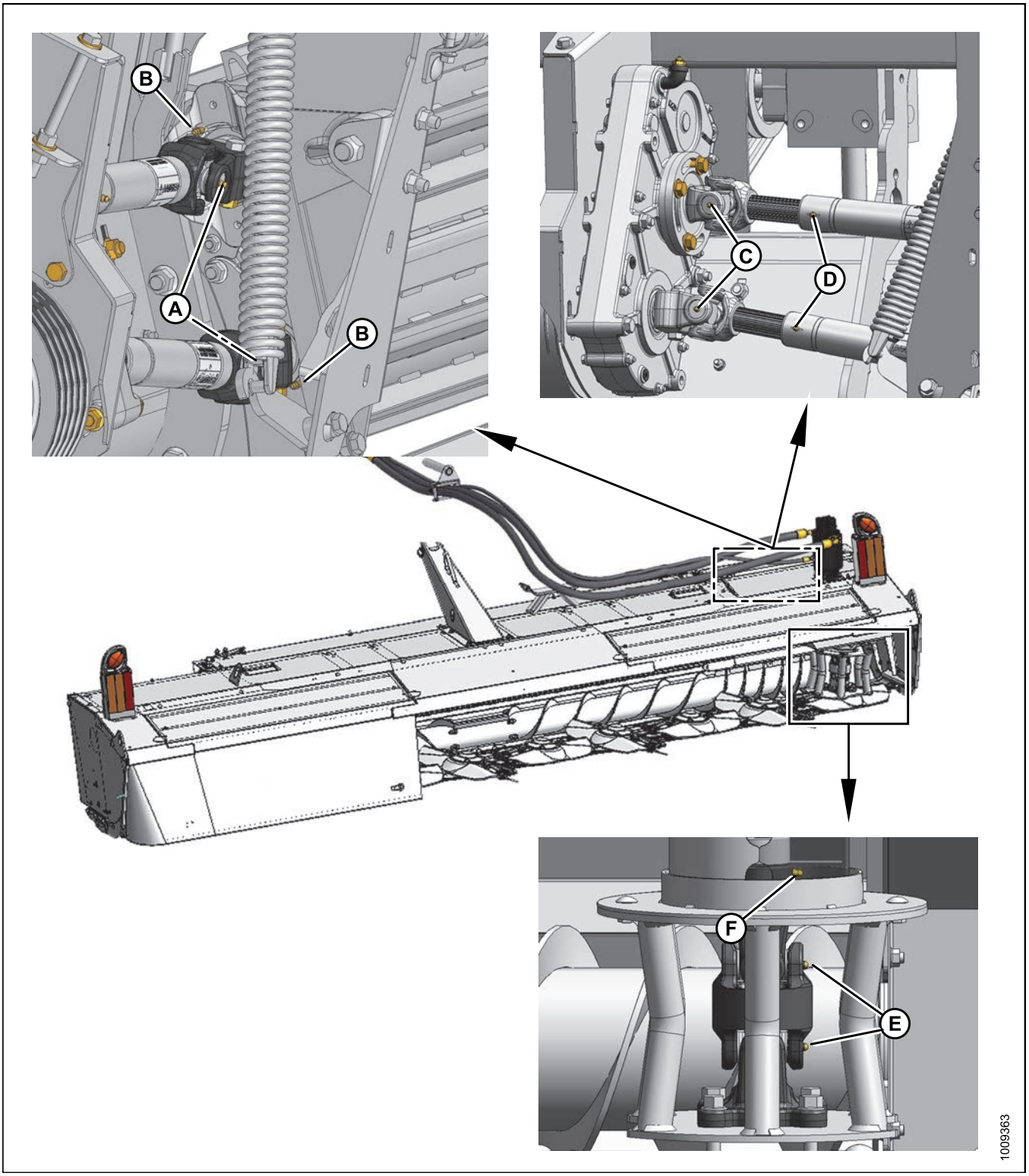

Figure 3.120: Lubrication Points

A - Driveline Universals (2 Places)
B - Roll Shaft Bearings (2 Places)
C - Driveline Universals (2 Places)
D - Driveline Shaft[2] (2 Places)
E - Driveline Universals[2] (2 Places)
F - Driveshaft (1 Place)

2. 10% moly grease is recommended for driveline shaft slip joint only.

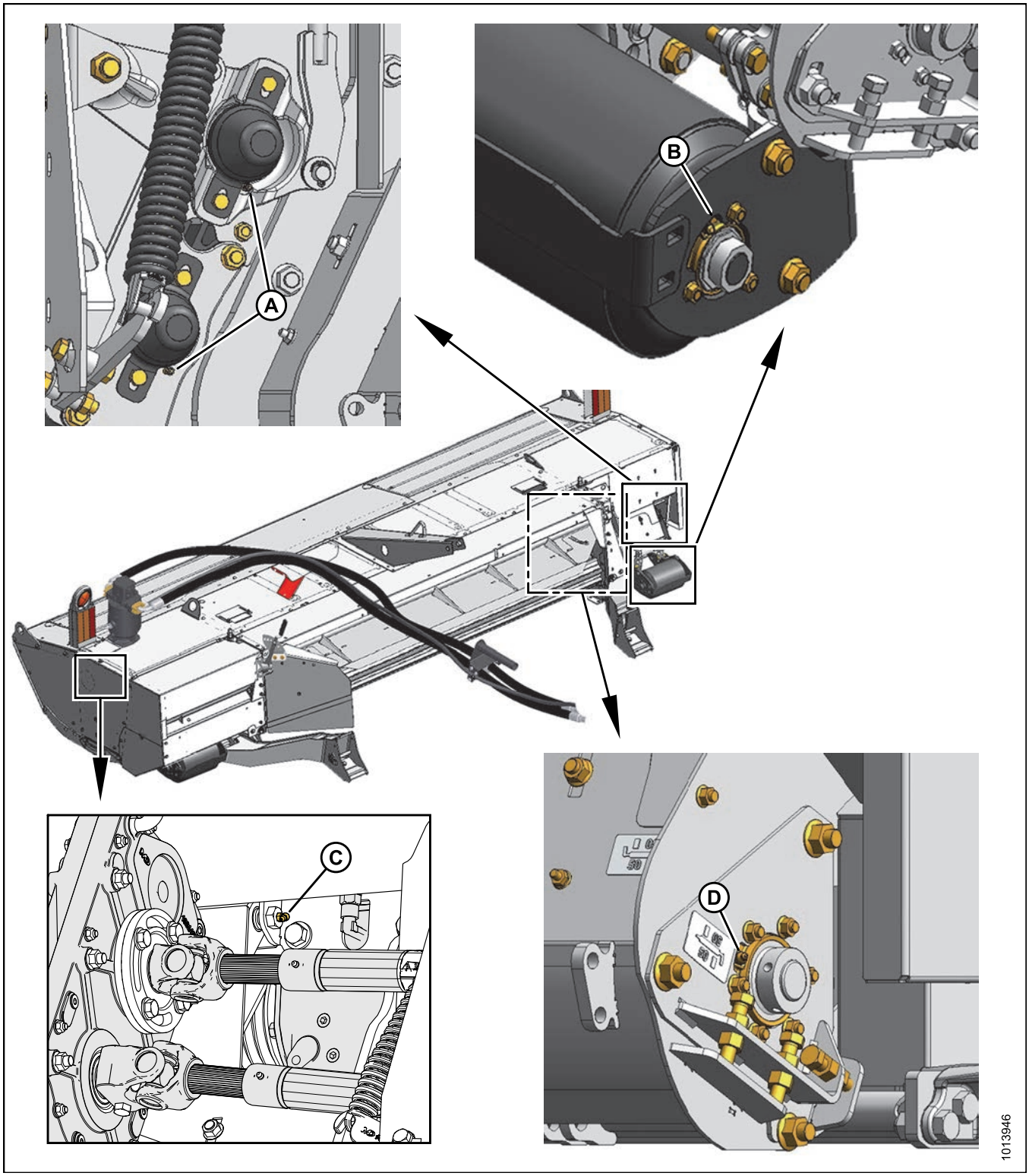

Figure 3.121: Lubrication Points

A - Roll Shaft Bearings (2 Places) **B - Optional Gauge Roll Bearings (2 Places) – Both Sides** **C - Belt Tensioner Pivot (1 Place)**
D - Auger Bearing (1 Place)

4 Performing Predelivery Checks

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.

IMPORTANT:
To avoid machine damage, check that no shipping dunnage has fallen down between auger and pans.

1. Perform final checks and adjustments as listed on the "Predelivery Checklist" (yellow sheet attached to back of this instruction) to ensure the machine is field-ready. Refer to the referenced pages as indicated on the checklist for detailed instructions.
2. The completed checklist should be retained either by the Operator or the Dealer.

4.1 Checking Drive Belts

Drive belt tensions have been properly set at the factory and should not require any further adjustment. Check as follows:

1. Open driveshield. For instructions, refer to *3.14.1 Driveshields, page 62*.

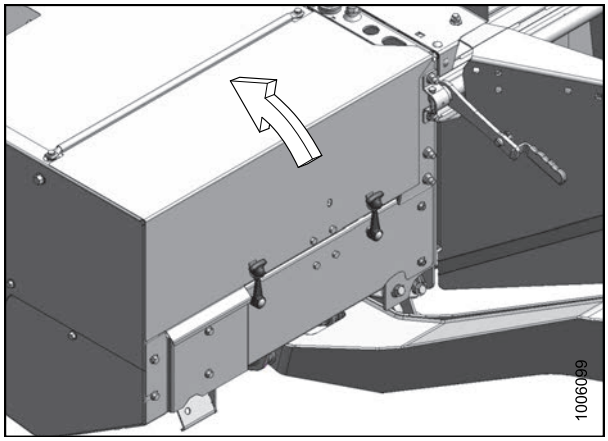

Figure 4.1: Driveshield

2. Check that adjuster nut (A) is tight and that conditioner drive belt (B) is tensioned.
3. Check that end of slots (C) are aligned with plate (D).

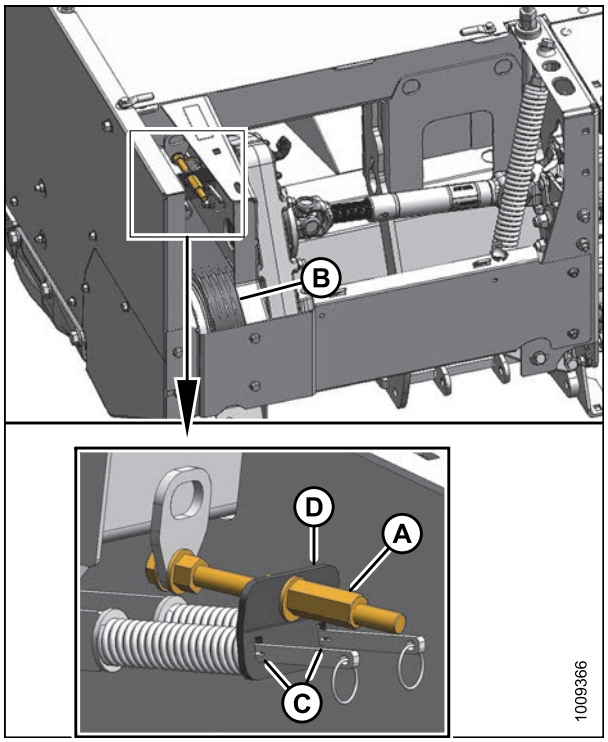

Figure 4.2: Conditioner Drive Belt Tension

4. Raise header fully, turn off engine, and remove key. Engage header safety props.
5. To check auger belt tension, spring length (A) should measure 10.3 in. (262 mm).
6. Lower header and close driveshield.

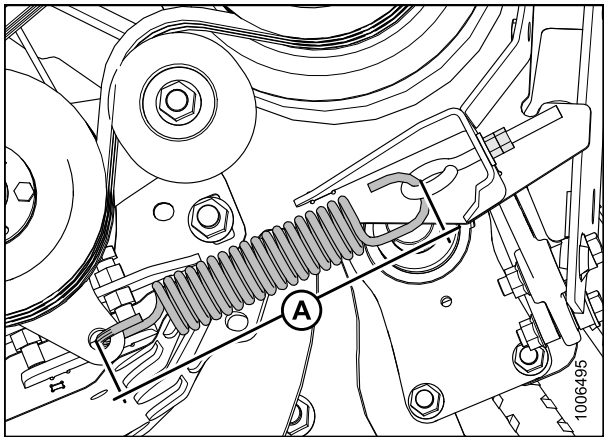

Figure 4.3: Auger Belt Tension

4.2 Checking Header Float

CAUTION

Check to be sure all bystanders have cleared the area.

1. Start engine and lower header to ground and ensure header lift cylinders are fully retracted.
2. Adjust the header angle/tilt to mid-range position with the switches (A) and (B) on the windrower ground speed lever (GSL).
3. Set the float fine adjustment to mid-range with the windrower float adjustment system in the cab. Refer to the windrower operator's manual.

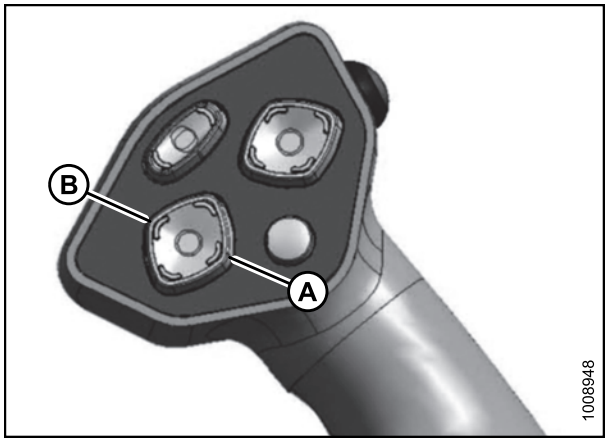

Figure 4.4: Header Tilt Switches

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.

4. Stop engine and remove key from ignition.
5. Check float by grasping the front corner of header and lifting. The force to lift should be 95–105 lbf (426–471 N) and should be approximately the same at both ends.
6. Perform the following steps to adjust the float (if necessary):
   a. Start engine and raise header fully.
   b. Shut down engine and remove the key.
   c. Turn drawbolt (A):
      - **Clockwise to increase float** (make header lighter)
      - **Counterclockwise to decrease float** (make header heavier)
   d. Recheck the float.

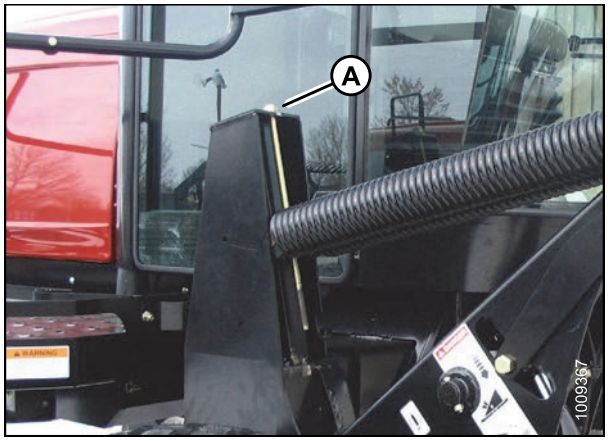

Figure 4.5: Float Adjustment

4.3 Checking Header Level

To check if header is level, and adjust if necessary, follow these steps.

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. Park windrower on level ground and raise header off ground approximately 6 in. (150 mm).
2. Shut off engine and check that clearances (A) between header and ground at each end of the header are approximately the same.
3. If header does **NOT** need levelling, skip remaining steps. If header **DOES** need levelling, proceed as follows.

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

4. Observe which side of header is the high side and which is the low side.

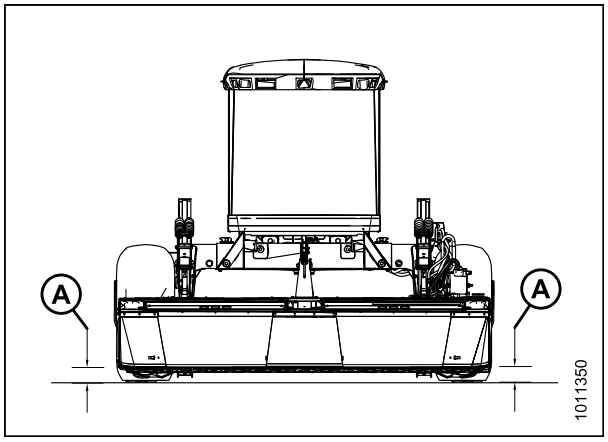

Figure 4.6: Level Header

CAUTION

Check to be sure all bystanders have cleared the area.

5. Start the engine and raise header fully.
6. Stop engine and remove key.
7. Move float engagement pin from hole (A) to hole (B) at front of linkage.

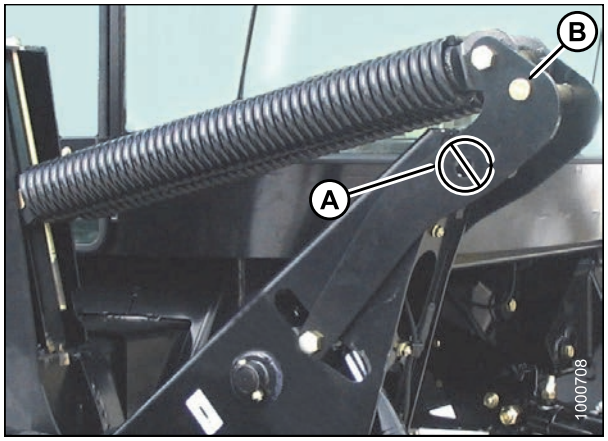

Figure 4.7: Header Lift Linkage

8. Place wooden blocks under header cutterbar and header lift linkage.
9. Disengage header safety props.

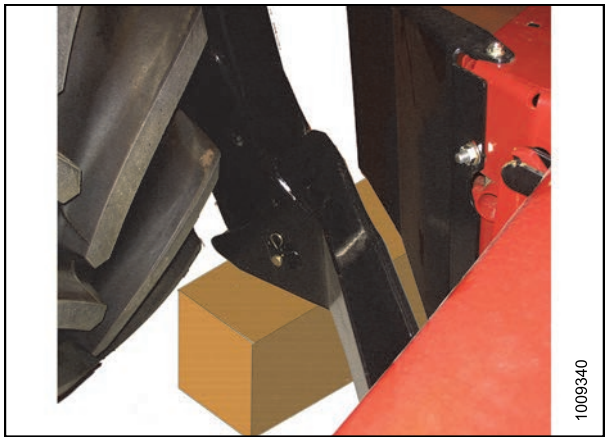

Figure 4.8: Wooden Block

CAUTION

Check to be sure all bystanders have cleared the area.

10. Start engine and lower header onto blocks so that header lift linkage (A) lifts at windrower leg and off of shims.
11. Shut down engine and remove key.

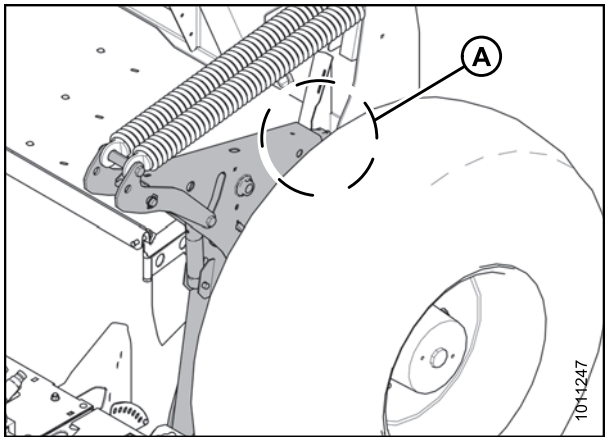

Figure 4.9: Header Lift Linkage

12. On the high side linkage (A), remove nut, washer, and bolt (C) that attach shims (B) to link.
13. Remove one or both shims (B) and reinstall the hardware (C).
14. Raise header approximately 6 in. (150 mm) off ground and check level of header.
15. If additional levelling is required, install the removed shim on the opposite linkage (low side).

    NOTE:
    Float does NOT require adjustment after levelling header.

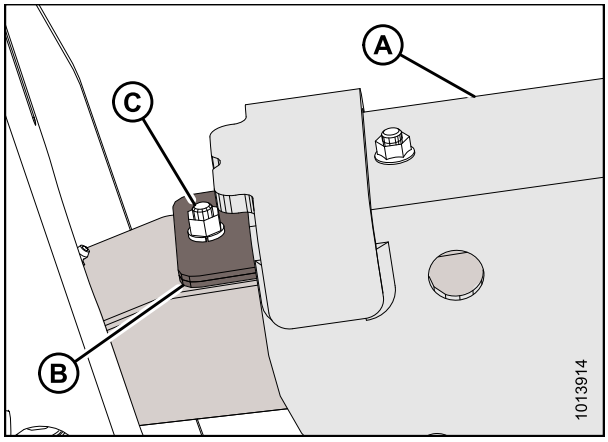

Figure 4.10: Header Lift Linkage: Top View

4.4 Checking Conditioner Rolls

4.4.1 Checking Conditioner Roll Gap

1. Check the size of the gap between the conditioner rolls. The amount of thread protruding through jam nut should be 1-3/16 in. (30 mm). This equates to 1 in. (25 mm) of roll gap.

   NOTE:
   If roll gap is not set correctly, refer to the operators manual for procedure to adjust.

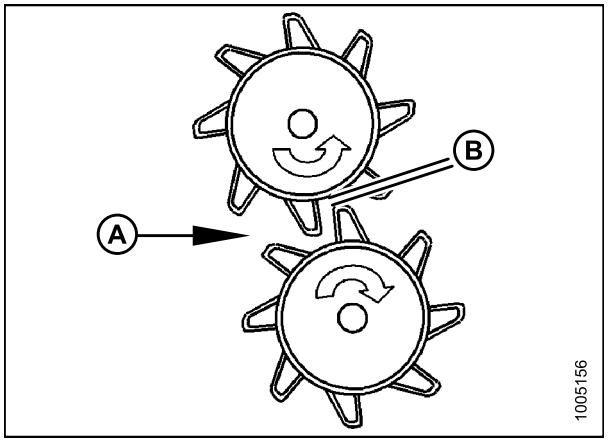

Figure 4.11: Roll Gap

A - Crop **B - Roll Gap**

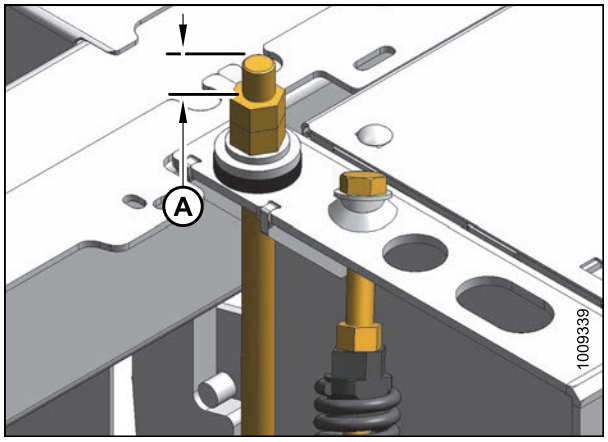

Figure 4.12: Measuring Threads

A - 1-3/16 in. (30 mm)

4.4.2 Checking Conditioner Roll Timing

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. Header should be on the ground and tractor should be shut down. Ensure key is removed from ignition.
2. Open driveshield. For instructions, refer to *3.14.1 Driveshields, page 62*.

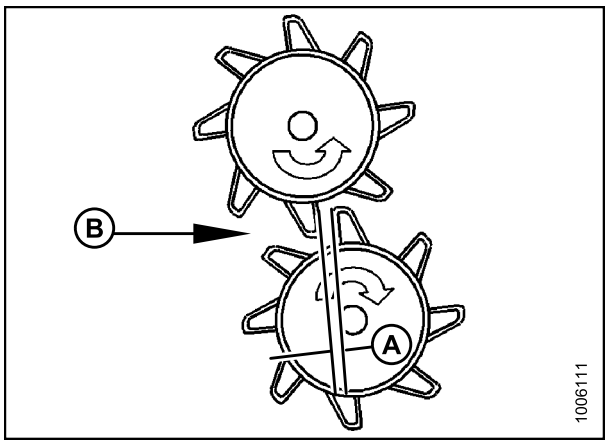

Figure 4.13: Roll Timing

A - Timing Gap **B - Crop**

3. Remove bolt (A) and nut, and remove gauge (B) from flanged frame member.

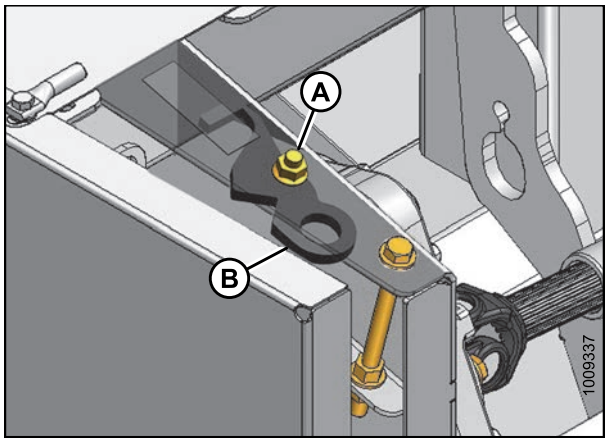

Figure 4.14: Roll Timing Gauge in Storage Position

4. From the rear of the header, position gauge (B) at center of rolls as shown, and manually turn rolls to limits of gauge. Rolls will engage the gauge if timing is correct.
5. Manually turn rolls to release gauge.

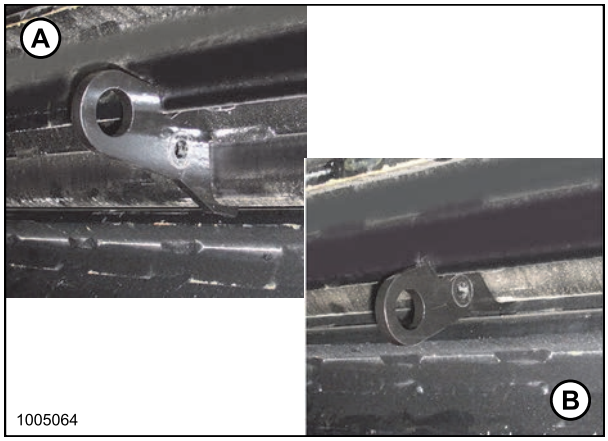

Figure 4.15: Roll Timing Gauge in Use

A - Start Position **B - Gauge Position**

WARNING

Remove gauge from rolls and return it to storage location before starting machine.

6. Replace gauge (B) in header with bolt (A) and nut.

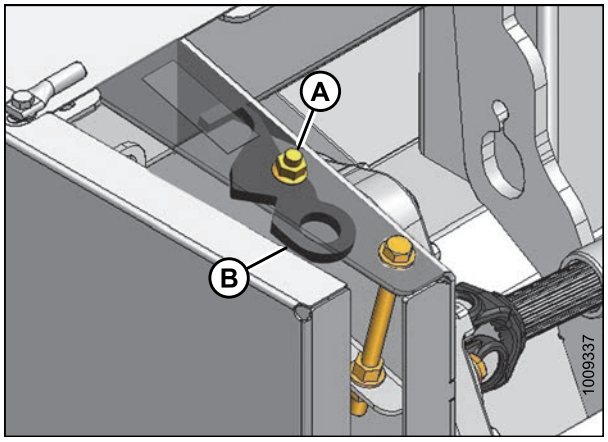

Figure 4.16: Roll Timing Gauge in Storage Position

7. Check timing flange bolts (A) are tight.

   NOTE:
   If rolls are out of time, refer to the operators manual for procedure to adjust.

8. Close driveshield.

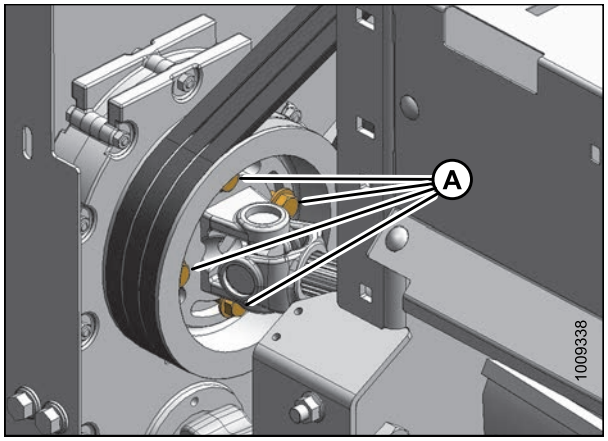

Figure 4.17: Conditioner Gearbox

4.5 Checking Gauge Rollers or Skid Shoes

DANGER

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

1. Raise header and engage header safety props.
2. Both gauge rollers or skid shoes should be set at the same position.

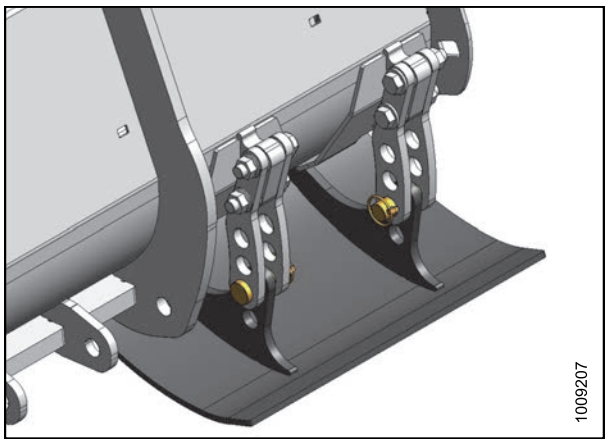

Figure 4.18: Skid Shoe

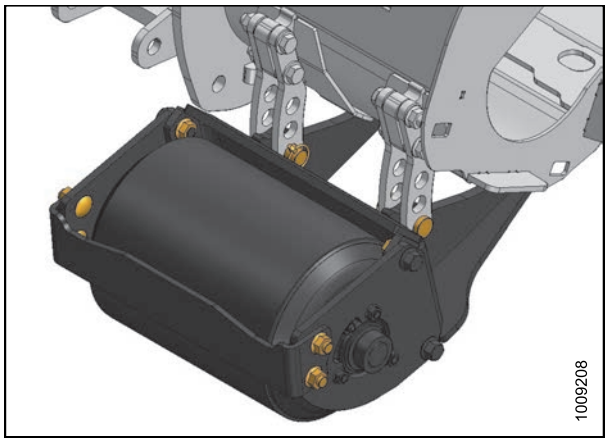

Figure 4.19: Gauge Roller

4.6 Preparing the Bevel Gearbox

To prepare the bevel gearbox and check the oil level, follow these steps:

1. Adjust header height and angle so that top of header is horizontal.
2. Open the driveshield.

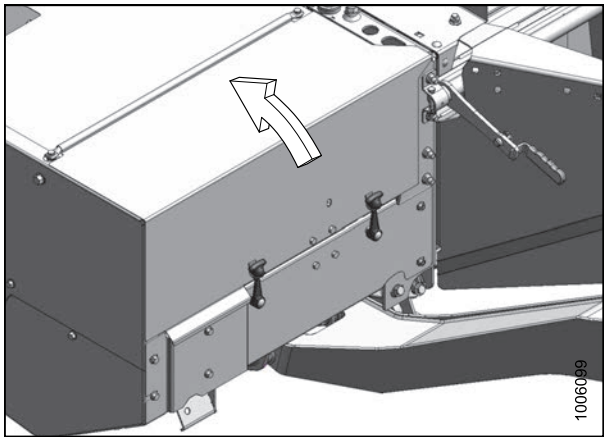

Figure 4.20: Driveshield

3. Cut cable ties and remove bags (A) and (B) from the breather pipe elbows.

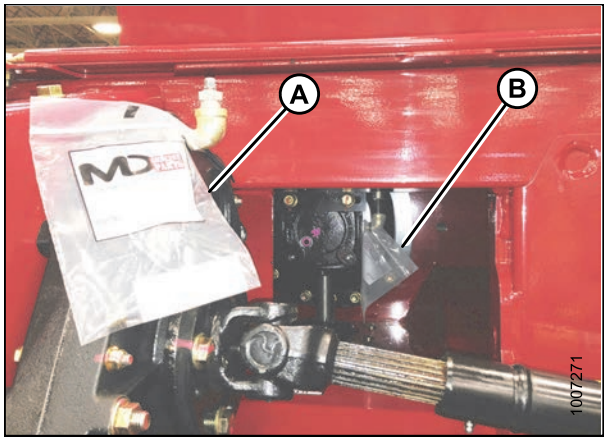

Figure 4.21: Bevel Gearbox

4. Remove plug from breather pipe (A) and replace with breather cap in bag. Discard bag and plug.
5. Remove check plug (B) to check oil level. Oil should slightly run out when removed.

   NOTE:
   If the oil level is low, top up with a 75W90 synthetic gear lubricant with high thermal and oxidation stability conforming to API GL-5 minimum (SAE J2360 preferred) specifications such as Traxon E Synthetic 75W90 gear oil.

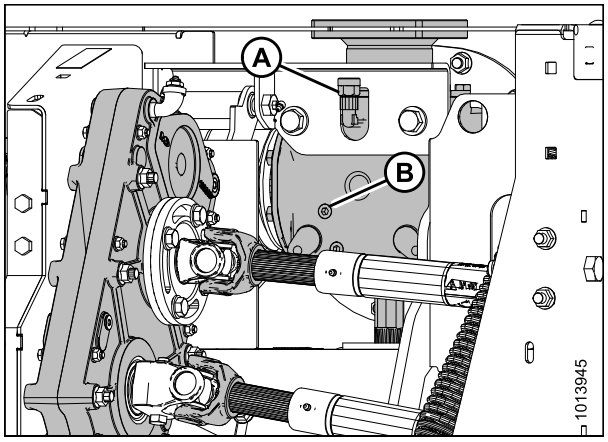

Figure 4.22: Bevel Gearbox

4.7 Preparing the Conditioner Gearbox

To prepare the conditioner gearbox and check the oil level, follow these steps:

1. Adjust the header height and angle until the top of the conditioner gearbox (A) is level with the ground (B).

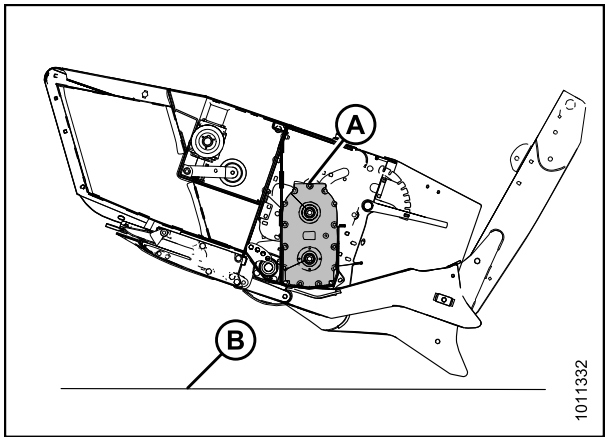

Figure 4.23: Conditioner Gearbox

2. Open the driveshield.

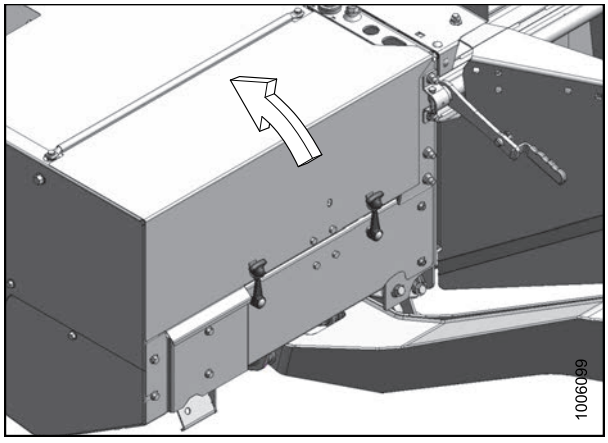

Figure 4.24: Driveshield

3. Cut cable ties and remove bags (A) and (B) from the breather pipe elbows.

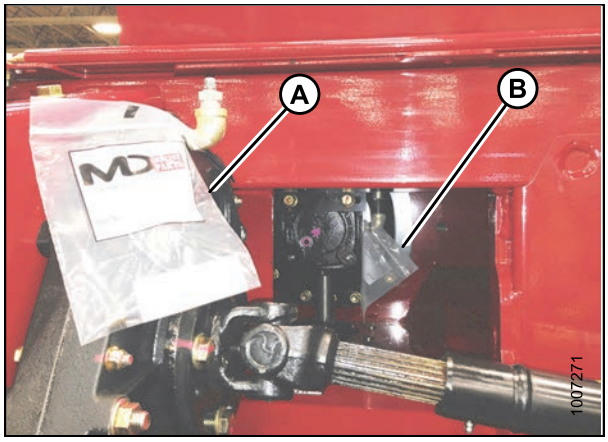

Figure 4.25: Bevel and Conditioner Gearbox

4. Remove the plug from breather pipe (A) and replace it with the breather cap in bag. Discard bag and plug.
5. Remove check plug (B) to check oil level. Oil should slightly run out when removed.

NOTE:
If the oil does not run out, top up with a 75W90 synthetic gear lubricant with high thermal and oxidation stability conforming to API GL-5 minimum (SAE J2360 preferred) specifications such as Traxon E Synthetic 75W90 gear oil.

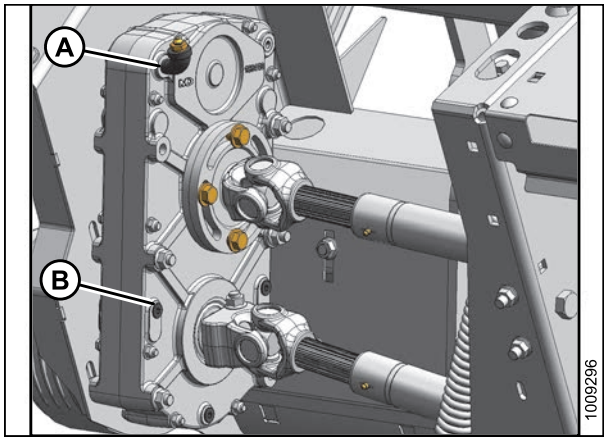

Figure 4.26: Conditioner Gearbox

4.8 Checking Lights

The hazard lights, mounted on both ends of the header, are activated by a switch in the windrower cab.

1. Check for operation during run-up.
2. Check light mountings for security and check lights for damage.

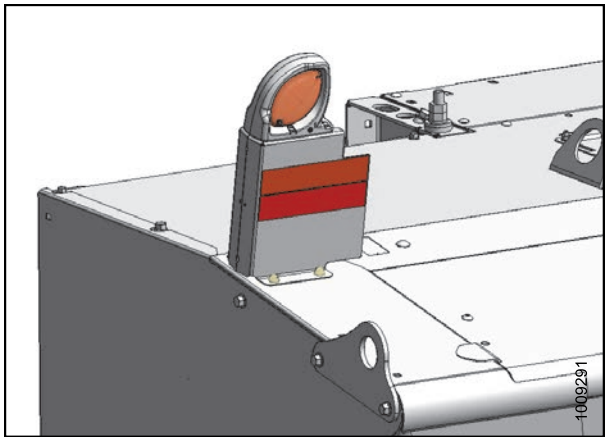

Figure 4.27: Hazard Light

4.9 Checking Manuals

The following manuals should be stored in the manual storage case (A) on the right-hand side of the header:

- R85 16-Foot Rotary Disc Pull-Type Mower Conditioner and Self-Propelled Windrower Header Parts Catalog
- R85 Rotary Disc 16-Foot Self-Propelled Windrower Header Operator's Manual

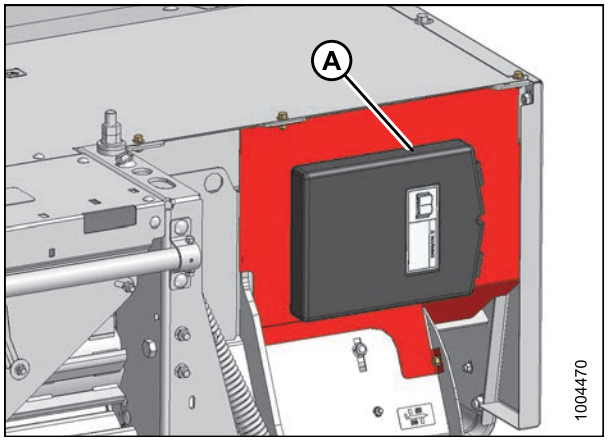

Figure 4.28: Manual Storage Case

4.10 Running Up the Header

DANGER

- **Keep everyone several hundred feet away from your operation. Ensure bystanders are never in line with the front or rear of the machine. Stones or other foreign objects can be ejected from either end with force.**
- **Take extreme care to avoid injury from thrown objects. Do NOT, under any circumstances, operate the header when other people are in the vicinity. Stones and other objects can be thrown great distances by the rotating cutting blades.**
- **Check cutterbar area carefully for loose parts and hardware on the cutterbar. These objects can be ejected with considerable force when the machine is started, and may result in serious injury or machine damage.**
- **The cutterbar curtains are very important to reduce the potential for thrown objects. Always keep these curtains down when operating the header. Replace the curtains if they should become worn or damaged.**

DANGER

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

CAUTION

Never start or move the machine until you are sure all bystanders have cleared the area.

Refer to your windrower operator's manual for windrower operating instructions.

NOTE:
Higher engine rpm may be required to engage the header. Do **NOT** exceed 1800 rpm.

1. Start windrower.
2. Set header to working position and adjust center-link to mid-position.
3. Run the machine slowly for 5 minutes, watching, and listening FROM **THE OPERATOR'S SEAT** for binding or interfering parts.
4. Run the machine at operating speed for 15 minutes. Listen for any unusual sounds or abnormal vibration.
5. Perform the run-up check as listed on the Predelivery Checklist (yellow sheet attached to this instruction) to ensure the machine is field-ready.
6. Retain the Checklist and if desired, retain this instruction for future reference.

5 Reference

5.1 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.

5.1.1 SAE Bolt Torque Specifications

Torque values shown in the following tables are valid for non-greased, or non-oiled threads and heads; therefore, do **NOT** grease or oil bolts or cap screws unless otherwise specified in this manual.

Table 5.1 SAE Grade 5 Bolt and Grade 5 Free Spinning Nut

Nominal Size (A)	Torque (ft·lbf) (*in·lbf)		Torque (N·m)	
	Min.	Max.	Min.	Max.
1/4-20	*106	*117	11.9	13.2
5/16-18	*218	*241	24.6	27.1
3/8-16	32	36	44	48
7/16-14	52	57	70	77
1/2-13	79	87	106	118
9/16-12	114	126	153	170
5/8-11	157	173	212	234
3/4-10	281	311	380	420
7/8-9	449	496	606	669
1-8	611	676	825	912

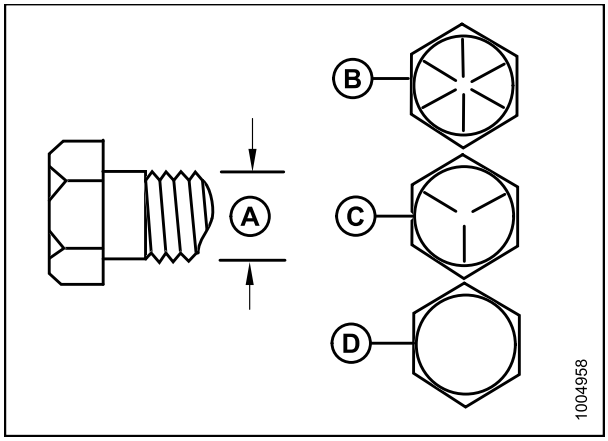

Figure 5.1: Bolt Grades

A - Nominal Size
B - SAE-8
C - SAE-5
D - SAE-2

Table 5.2 SAE Grade 5 Bolt and Grade F Distorted Thread Nut

Nominal Size (A)	Torque (ft·lbf) (*in·lbf)		Torque (N·m)	
	Min.	Max.	Min.	Max.
1/4-20	*72	*80	8.1	9
5/16-18	*149	*164	16.7	18.5
3/8-16	22	24	30	33
7/16-14	35	39	48	53
1/2-13	54	59	73	80
9/16-12	77	86	105	116
5/8-11	107	118	144	160
3/4-10	192	212	259	286
7/8-9	306	338	413	456
1-8	459	507	619	684

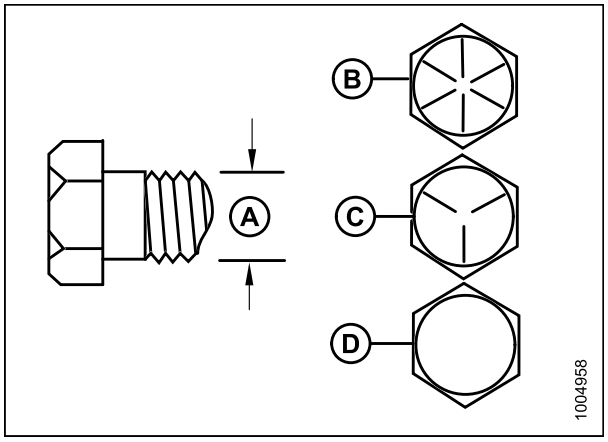

Figure 5.2: Bolt Grades

A - Nominal Size **B - SAE-8**
C - SAE-5 **D - SAE-2**

Table 5.3 SAE Grade 8 Bolt and Grade G Distorted Thread Nut

Nominal Size (A)	Torque (ft·lbf) (*in·lbf)		Torque (N·m)	
	Min.	Max.	Min.	Max.
1/4-20	*150	*165	16.8	18.6
5/16-18	18	19	24	26
3/8-16	31	34	42	46
7/16-14	50	55	67	74
1/2-13	76	84	102	113
9/16-12	109	121	148	163
5/8-11	151	167	204	225
3/4-10	268	296	362	400
7/8-9	432	477	583	644
1-8	647	716	874	966

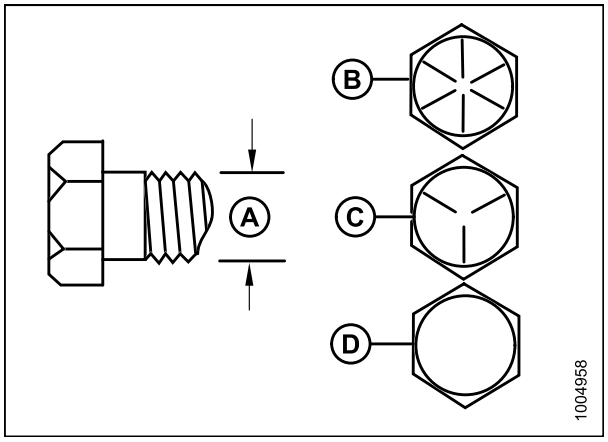

Figure 5.3: Bolt Grades

A - Nominal Size **B - SAE-8**
C - SAE-5 **D - SAE-2**

Table 5.4 SAE Grade 8 Bolt and Grade 8 Free Spinning Nut

Nominal Size (A)	Torque (ft·lbf) (*in·lbf)		Torque (N·m)	
	Min.	Max.	Min.	Max.
1/4-20	*150	*165	16.8	18.6
5/16-18	26	28	35	38
3/8-16	46	50	61	68
7/16-14	73	81	98	109
1/2-13	111	123	150	166
9/16-12	160	177	217	239
5/8-11	221	345	299	330
3/4-10	393	435	531	587
7/8-9	633	700	855	945
1-8	863	954	1165	1288

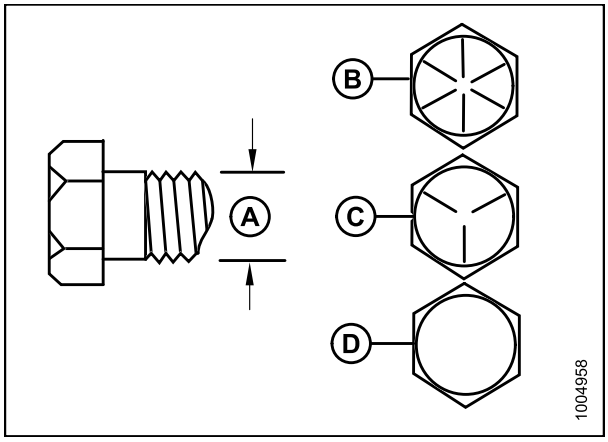

Figure 5.4: Bolt Grades

A - Nominal Size **B - SAE-8**
C - SAE-5 **D - SAE-2**

5.1.2 Metric Bolt Specifications

Table 5.5 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

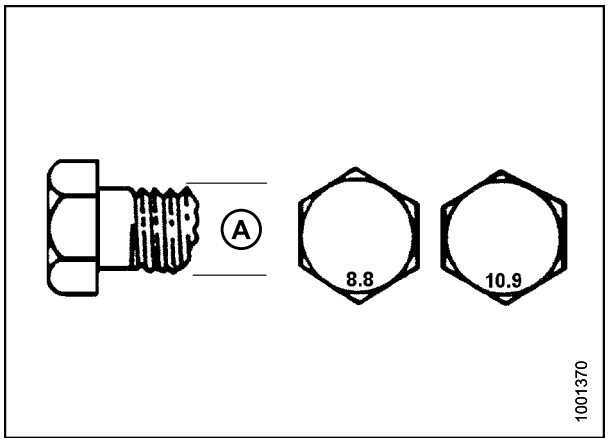

Figure 5.5: Bolt Grades

Table 5.6 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

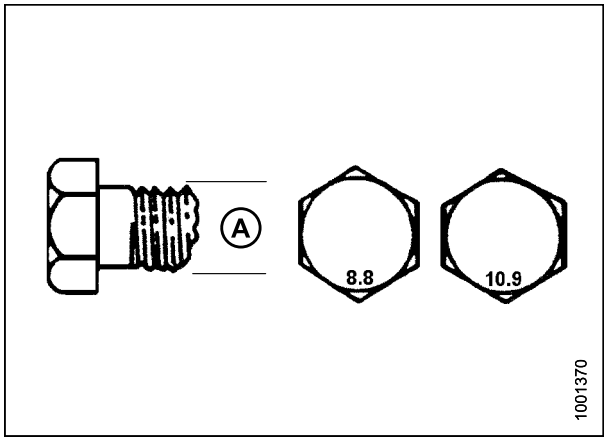

Figure 5.6: Bolt Grades

Table 5.7 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

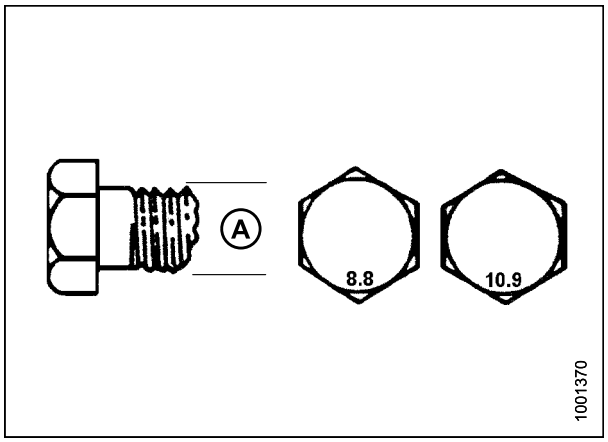

Figure 5.7: Bolt Grades

Table 5.8 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

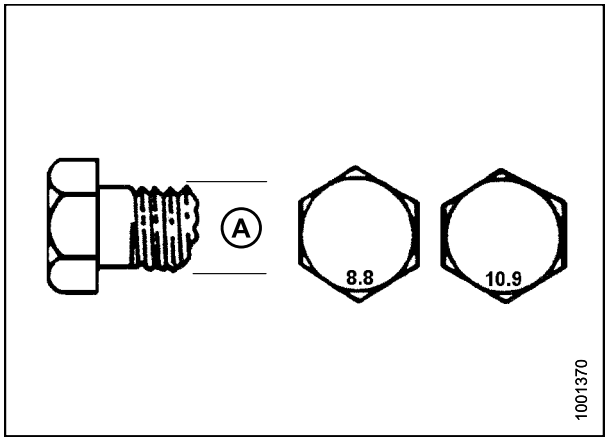

Figure 5.8: Bolt Grades

5.1.3 Metric Bolt Specifications Bolting into Cast Aluminum

Table 5.9 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	–	–	–	–

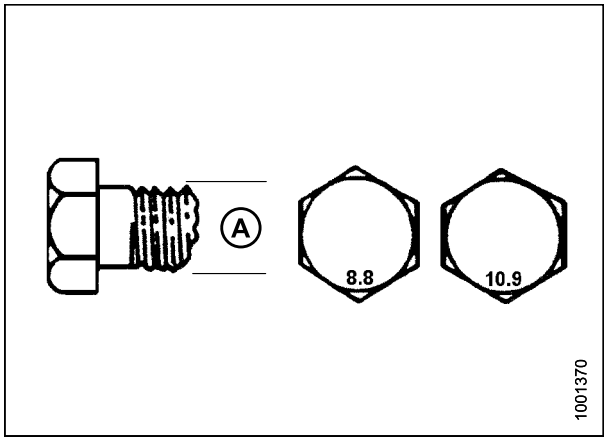

Figure 5.9: Bolt Grades

5.1.4 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 *5.10 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.

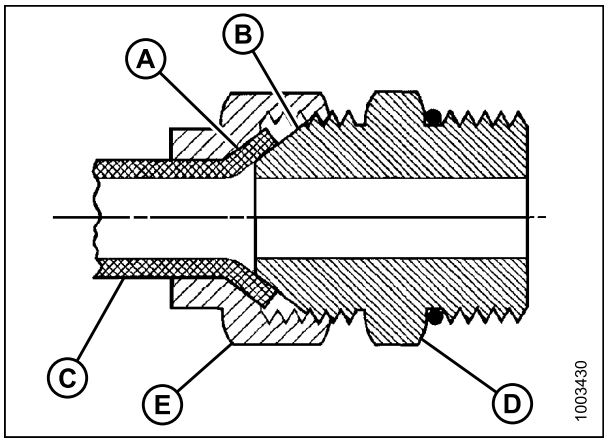

Figure 5.10: Hydraulic Fitting

Table 5.10 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.

5.1.5 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).

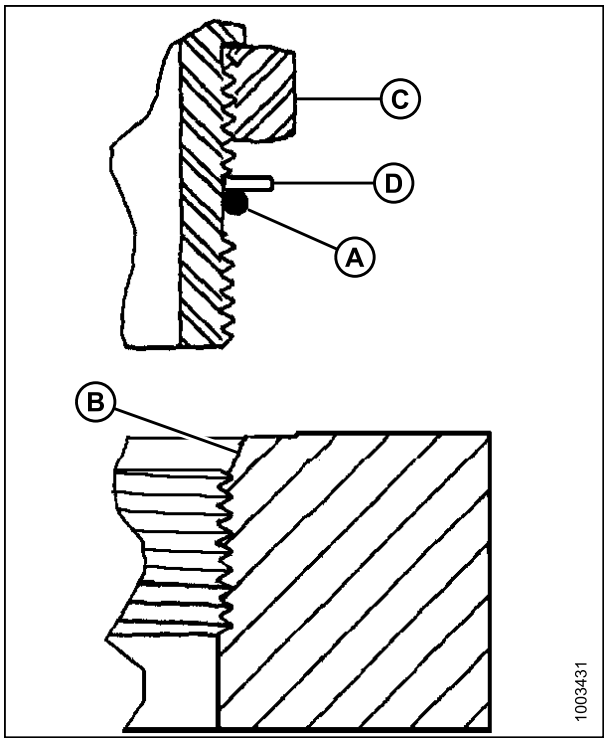

Figure 5.11: Hydraulic Fitting

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.

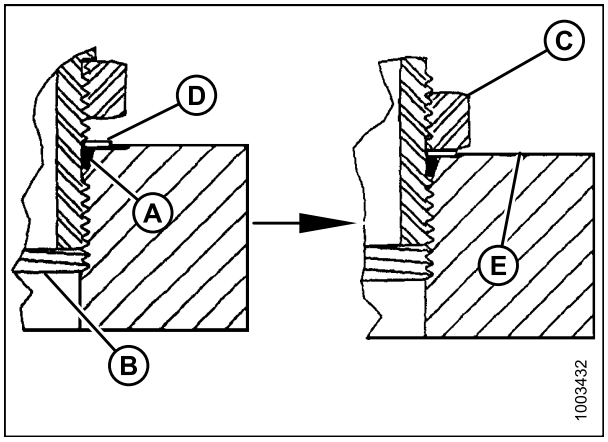

Figure 5.12: Hydraulic Fitting

Table 5.11 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.

5.1.6 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 *5.12 O-Ring Boss (ORB) Hydraulic Fittings (Non-Adjustable), page 92*.
6. Check the final condition of the fitting.

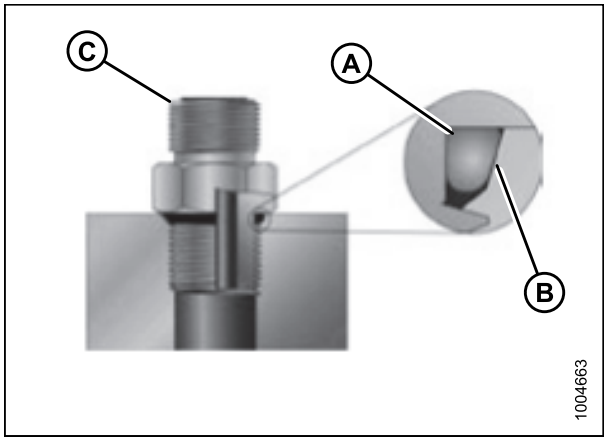

Figure 5.13: Hydraulic Fitting

Table 5.12 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.

5.1.7 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.

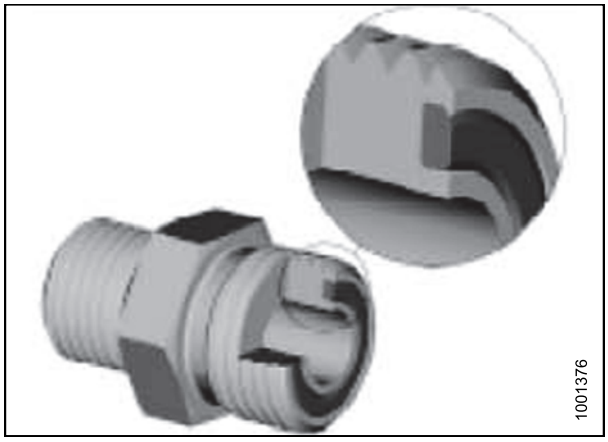

Figure 5.14: Hydraulic Fitting

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 *5.13 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).

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

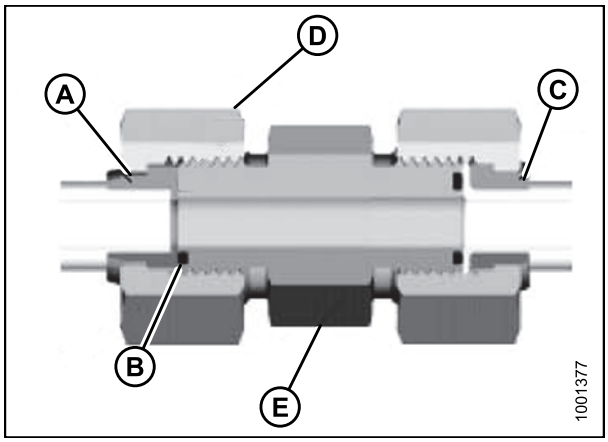

Figure 5.15: Hydraulic Fitting

Table 5.13 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.

5.2 Conversion Chart

Table 5.14 Conversion Chart

Quantity	Inch-Pound Units		Factor	SI Units (Metric)	
	Unit Name	Abbreviation		Unit Name	Abbreviation
Area	Acres	acres	x 0.4047 =	Hectares	ha
Flow	US gallons per minute	gpm	x 3.7854 =	Liters per minute	L/min
Force	Pounds force	lbf	x 4.4482 =	Newtons	N
Length	Inch	in.	x 25.4 =	Millimeters	mm
	Foot	ft.	x 0.305 =	Meters	m
Power	Horsepower	hp	x 0.7457 =	Kilowatts	kW
Pressure	Pounds per square inch	psi	x 6.8948 =	Kilopascals	kPa
			x .00689 =	Megapascals	MPa
			÷ 14.5038 =	Bar (Non-SI)	bar
Torque	Pound feet or foot pounds	ft·lbf	x 1.3558 =	Newton meters	N·m
	Pound inches or inch pounds	in·lbf	x 0.1129 =	Newton meters	N·m
Temperature	Degrees Fahrenheit	˚F	(˚F-32) x 0.56 =	Celsius	˚C
Velocity	Feet per minute	ft/min	x 0.3048 =	Meters per minute	m/min
	Feet per second	ft/s	x 0.3048 =	Meters per second	m/s
	Miles per hour	mph	x 1.6063 =	Kilometres per hour	km/h
Volume	US gallons	US gal	x 3.7854 =	Liters	L
	Ounces	oz.	x 29.5735 =	Milliliters	ml
	Cubic inches	$in.^3$	x 16.3871 =	Cubic centimeters	cm^3 or cc
Weight	Pounds	lbs	x 0.4536 =	Kilograms	kg

5.3 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
CDM	Cab display module on a self-propelled windrower
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
DWA	Double Windrow Attachment
ECM	Engine control module
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
GSS	Grass Seed Special
GVW	Gross vehicle weight
Hard joint	A joint made with the use of a fastener where the joining materials are highly incompressible
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)
hp	Horsepower
ISC	Intermediate Speed Control
JIC	Joint Industrial Council: A standards body that developed the standard sizing and shape for original 37° flared fitting
n/a	Not applicable
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

Term	Definition
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
R-Series header	MacDon rotary disc header
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
Self-Propelled (SP) Windrower	Self-propelled machine consisting of a power unit with a header
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
Truck	A four-wheel highway/road vehicle weighing no less than 7500 lbs (3400 kg)
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
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 and adjustments before delivering the machine to your Customer. 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.

WARNING

Do NOT operate the machine with the driveshields open. High speed rotating components may throw debris and could result in death or serious injury.

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 2 R85 Rotary Disc 16-Foot Self-Propelled Windrower Header Predelivery Checklist

✓	Item	Reference
	Check for shipping damage or missing parts. Be sure all shipping dunnage is removed.	—
	Check for loose hardware. Tighten to required torque if applicable.	*5.1 Torque Specifications, page 83*
	Check main drive belt tension.	*4.1 Checking Drive Belts, page 67*
	Check auger drive belt tension.	*4.1 Checking Drive Belts, page 67*
	Check header angle. Set center-link to middle of adjustment range.	*3.11 Attaching Header to Windrower, page 31*
	Check header float: 95–105 lbf (426–471 N).	*4.2 Checking Header Float, page 69*
	Check if header is level.	*4.3 Checking Header Level, page 70*
	Check if side forming shields are evenly set to desired position.	*3.10 Installing Forming Shield, page 28*
	Check if rear fluffer deflector is about halfway down.	*3.10 Installing Forming Shield, page 28*
	Check if swath baffle lever is set about halfway.	*3.7 Unpacking Curtains, page 18*
	Check if gauge rollers/skid shoes are evenly set.	*4.5 Checking Gauge Rollers or Skid Shoes, page 75*
	Check bevel gearbox lube level.	*4.6 Preparing the Bevel Gearbox, page 76*
	Check if bevel gearbox breather is installed.	*4.6 Preparing the Bevel Gearbox, page 76*
	Check conditioner gearbox lube level.	*4.7 Preparing the Conditioner Gearbox, page 77*
	Check if conditioner gearbox breather is installed.	*4.7 Preparing the Conditioner Gearbox, page 77*
	Grease all bearings and drivelines.	*3.14 Header Lubrication, page 62*
	Check conditioner roll gap and timing.	*4.4 Checking Conditioner Rolls, page 72*
	Check if roll intermesh hardware is securely tightened.	*4.4 Checking Conditioner Rolls, page 72*
	Check if cutterbar curtains are hanging properly.	*3.7 Unpacking Curtains, page 18*

PREDELIVERY CHECKLIST

✓	Item	Reference
	Check hydraulic hose and wiring harness routing.	—
	Check cutterbar area carefully for loose parts and hardware on the cutterbar. **WARNING** **These objects can be ejected with considerable force when the machine is started, and may result in serious injury or machine damage.**	—
Run-Up Procedure		*4.10 Running Up the Header, page 81*
	Check hydraulic hose and wiring harness routing for clearance when raising or lowering header.	—
	Check that hazard lights are functional.	*4.8 Checking Lights, page 79*
Post Run-Up Check. Stop Engine.		
	Check belt drives for idler alignment and heated bearings.	*4.1 Checking Drive Belts, page 67*
	Check for hydraulic leaks.	—
	Check that header manuals are in windrower cab storage compartment.	*4.9 Checking Manuals, page 80*

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