

# **PW8**

## **Pick-Up Header**

Unloading and Assembly Instructions (North America)

214658 Revision A

2019 Model Year

Original Instruction

PW8 Pick-Up Header



1006866

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## Introduction

This manual contains the unloading, setup, and predelivery requirements for the MacDon PW8 Combine Pick-Up Header for North America.

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

The header can be configured for the following combines:

Combine	Model
Case IH	50/60/7088, 51/61/7130, 51/61/7140, 70/8010, 71/81/9120, 72/82/9230, and 72/82/9240
John Deere	96/97/9860STS, 96/97/9870, S650/660/670/680/690, 9660WTS, and T670
New Holland	All CR/CX Series
Versatile	RT490

When setting up the machine or making adjustments, review and follow the recommended machine settings in all relevant MacDon publications. Failure to do so may compromise machine function and machine life and may result in a hazardous situation.

### NOTE:

Keep your MacDon publications up-to-date. The most current version can be downloaded from our website ([www.macdon.com](http://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.

Summary of Change	Location
Updated illustration.	<i>3.6 Setting Fixed Wheels to Field/Working Position, page 25</i>
New topic and contents created for Case IH 5130/6130/7130 and 5140/6140/7140 midrange combines.	<i>6.1.3 Case IH 5130/6130/7130 and 5140/6140/7140 Midrange Combines, page 79</i>
Renamed topics and added new content for Case IH 7010/8010, 7120/8120/9120, 7230/8230/9230, 7240/8240/9240 combines.	<i>6.1.4 Case IH 7010/8010, 7120/8120/9120, 7230/8230/9230, and 7240/8240/9240 Combines, page 85</i>
Updated illustrations.	<i>Adjusting Threshold for Drop Rate Valve (John Deere 60 Series), page 100</i>
Topics include content for John Deere T Series combines.	<ul style="list-style-type: none"> <li>• <i>6.1.7 John Deere S and T Series Combines, page 106</i></li> <li>• <i>Checking Voltage Range from Combine Cab (John Deere S and T Series), page 106</i></li> <li>• <i>Calibrating Feeder House Fore-Aft Tilt Range (John Deere S and T Series), page 106</i></li> <li>• <i>Calibrating Auto Header Height Control (John Deere S and T Series), page 109</i></li> <li>• <i>Setting Sensitivity of Auto Header Height Control (John Deere S and T Series), page 111</i></li> <li>• <i>Adjusting Manual Header Raise/Lower Rate (John Deere S and T Series), page 112</i></li> <li>• <i>Setting Preset Cutting Height (John Deere S and T Series), page 113</i></li> </ul>
Updated procedure steps.	<i>Setting Preset Cutting Height (John Deere S and T Series), page 113</i>

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# 1 Safety

## 1.1 Signal Words

Three signal words, **DANGER**, **WARNING**, and **CAUTION**, are used to alert you to hazardous situations. Signal words are selected using the following guidelines:

### **DANGER**

Indicates an imminently hazardous situation that, if not avoided, will result in death or serious injury.

### **WARNING**

Indicates a potentially hazardous situation that, if not avoided, could result in death or serious injury. It may also be used to alert against unsafe practices.

### **CAUTION**

Indicates a potentially hazardous situation that, if not avoided, may result in minor or moderate injury. It may be used to alert against unsafe practices.

## 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 protective clothing and personal safety devices that could be necessary for job at hand. Do **NOT** take chances. You may need the following:
  - Hard hat
  - Protective footwear with slip-resistant soles
  - Protective glasses or goggles
  - Heavy gloves
  - Wet weather gear
  - Respirator or filter mask
- Be aware that exposure to loud noises can cause hearing impairment or loss. Wear suitable hearing protection devices such as earmuffs or earplugs to help protect against loud noises.



Figure 1.1: Safety Equipment



Figure 1.2: Safety Equipment

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

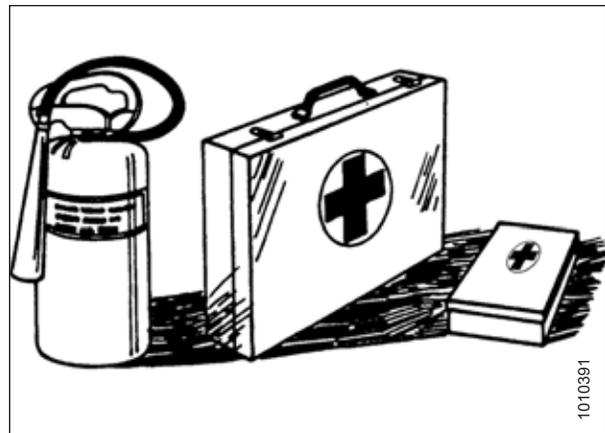


Figure 1.3: Safety Equipment

## SAFETY

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



Figure 1.4: Safety around Equipment

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

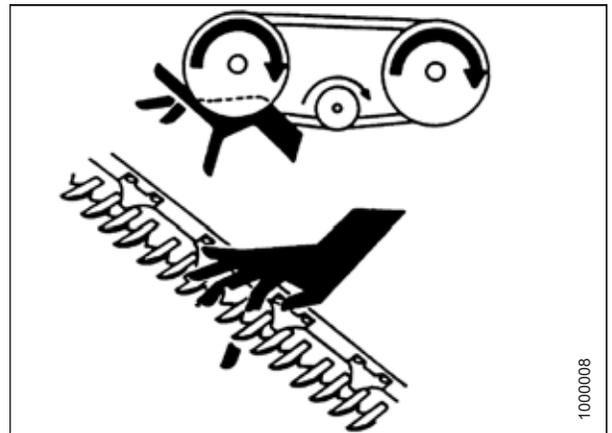


Figure 1.5: Safety around Equipment

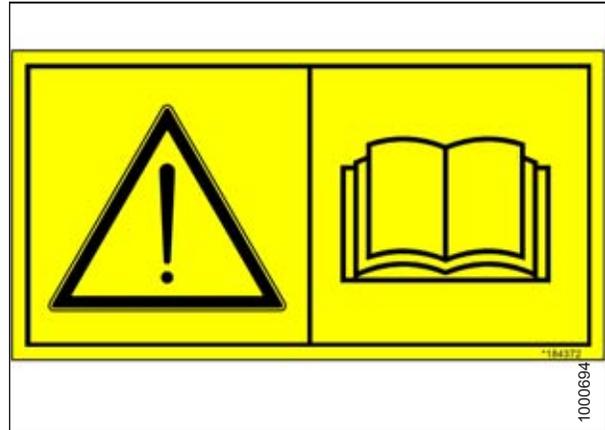
- Keep service area clean and dry. Wet or oily floors are slippery. Wet spots can be dangerous when working with electrical equipment. Be sure all electrical outlets and tools are properly grounded.
- Keep work area well lit.
- Keep machinery clean. Straw and chaff on a hot engine is a fire hazard. Do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

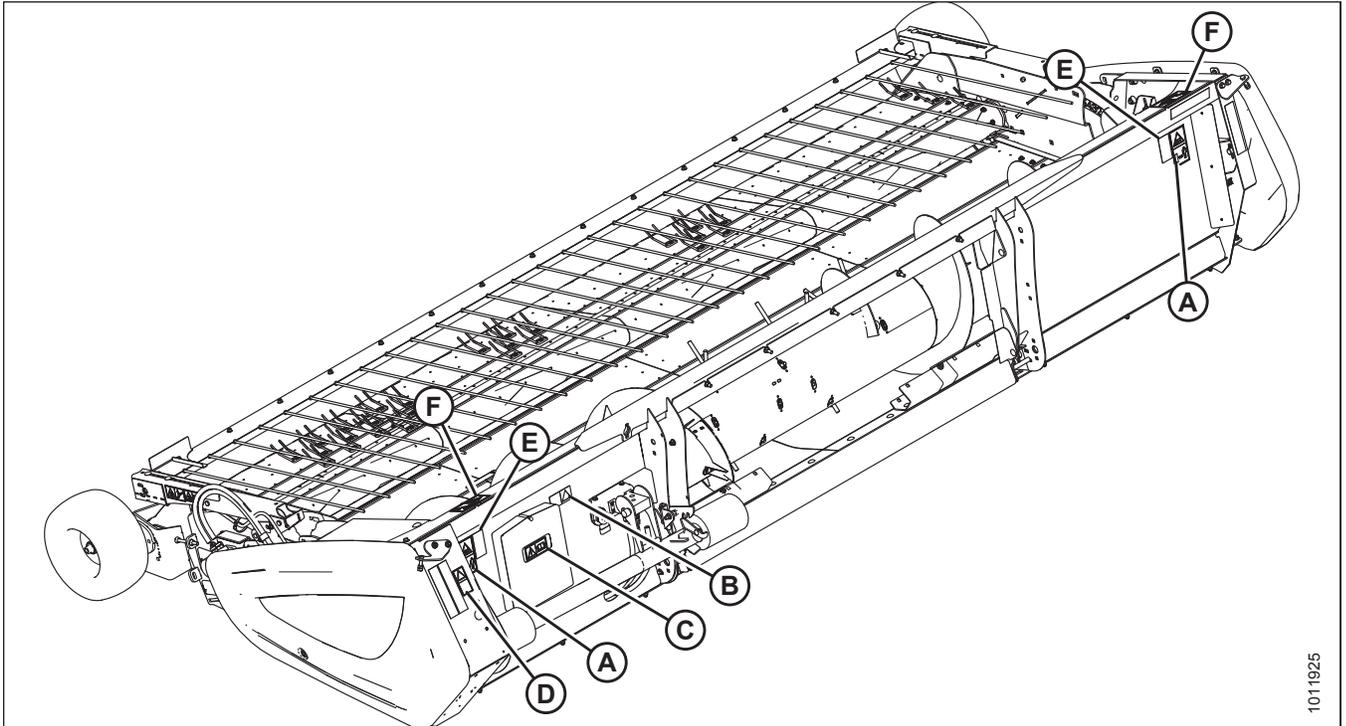
- Keep safety signs clean and legible at all times.
- Replace safety signs that are missing or illegible.
- If original part on which a safety sign was installed is replaced, be sure repair part also bears current safety sign.
- Safety signs are available from your MacDon Dealer.



**Figure 1.7: Operator's Manual Decal**

# 1.4 Safety Sign Locations

Figure 1.8: Header Decals – Case IH



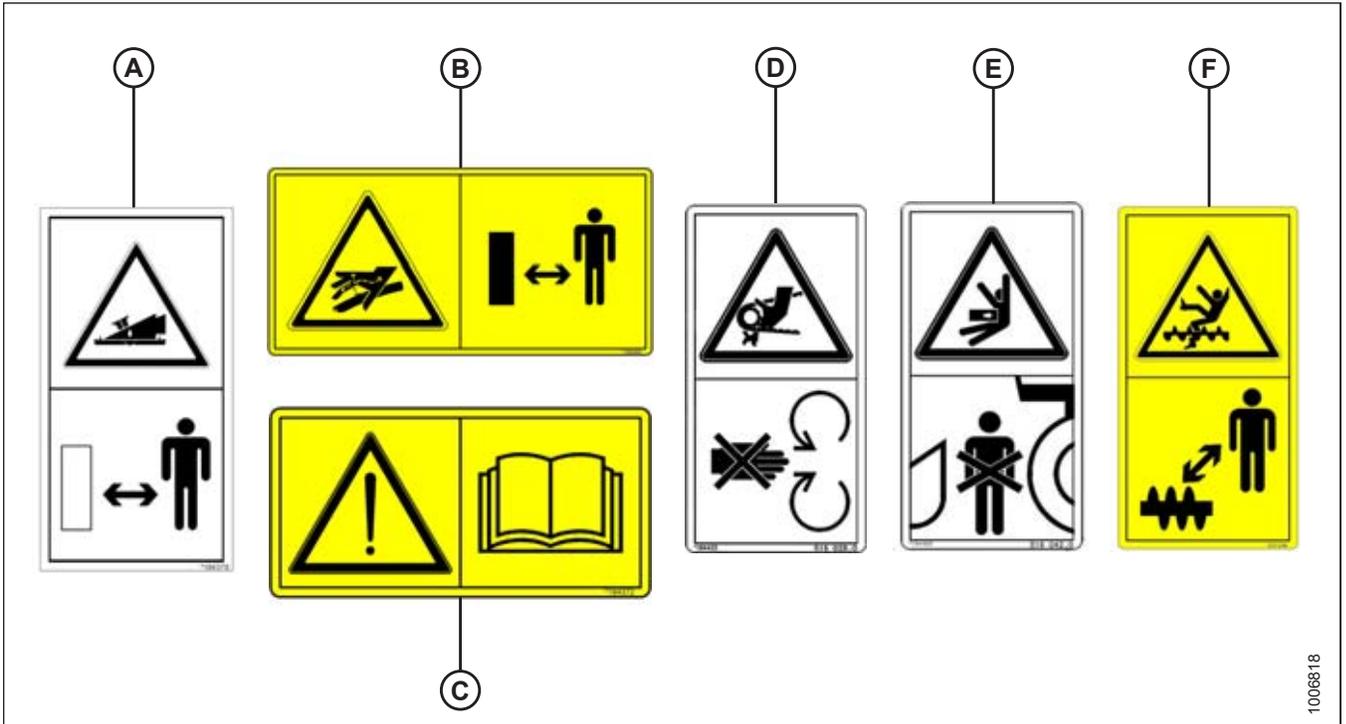
1011925

A - MD #184370  
D - MD #184422

B - MD #166466  
E - MD #184420

C - MD #184372  
F - MD #237298

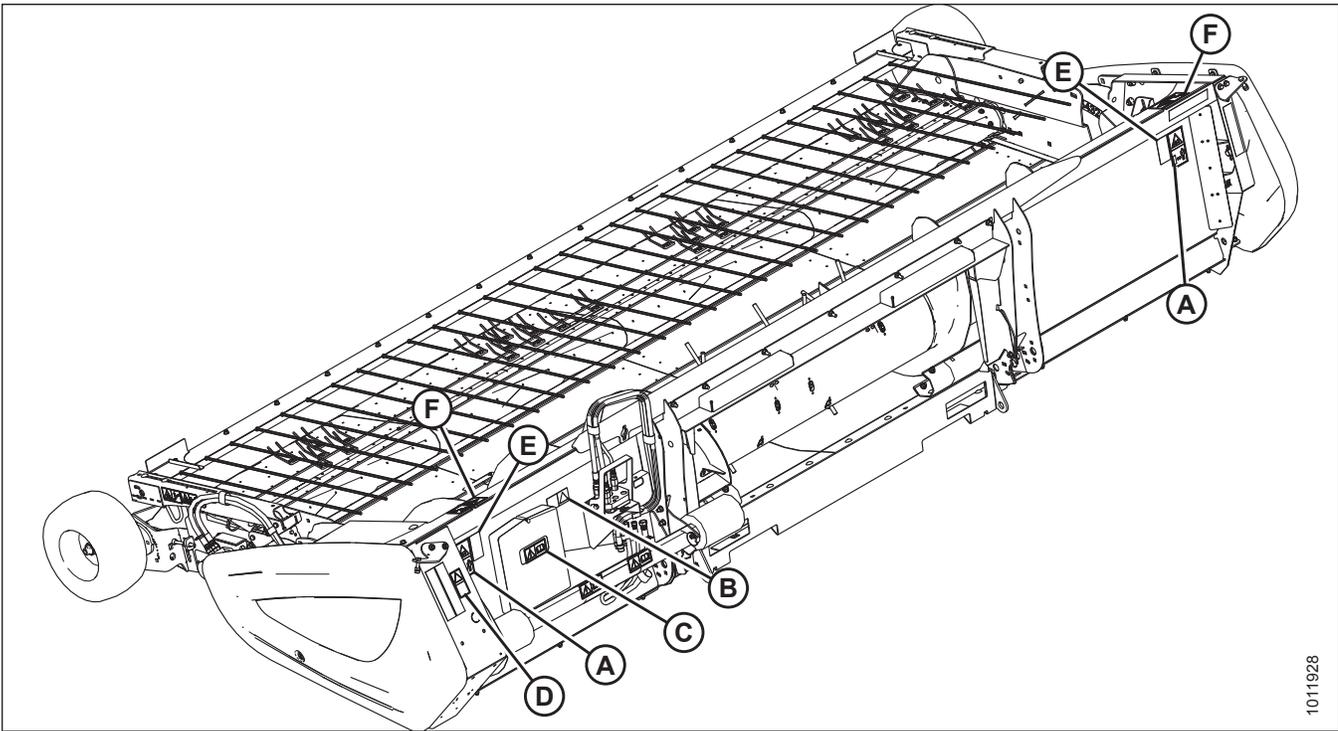
Figure 1.9: Header Decals



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# SAFETY

**Figure 1.10: Header Decals – John Deere**



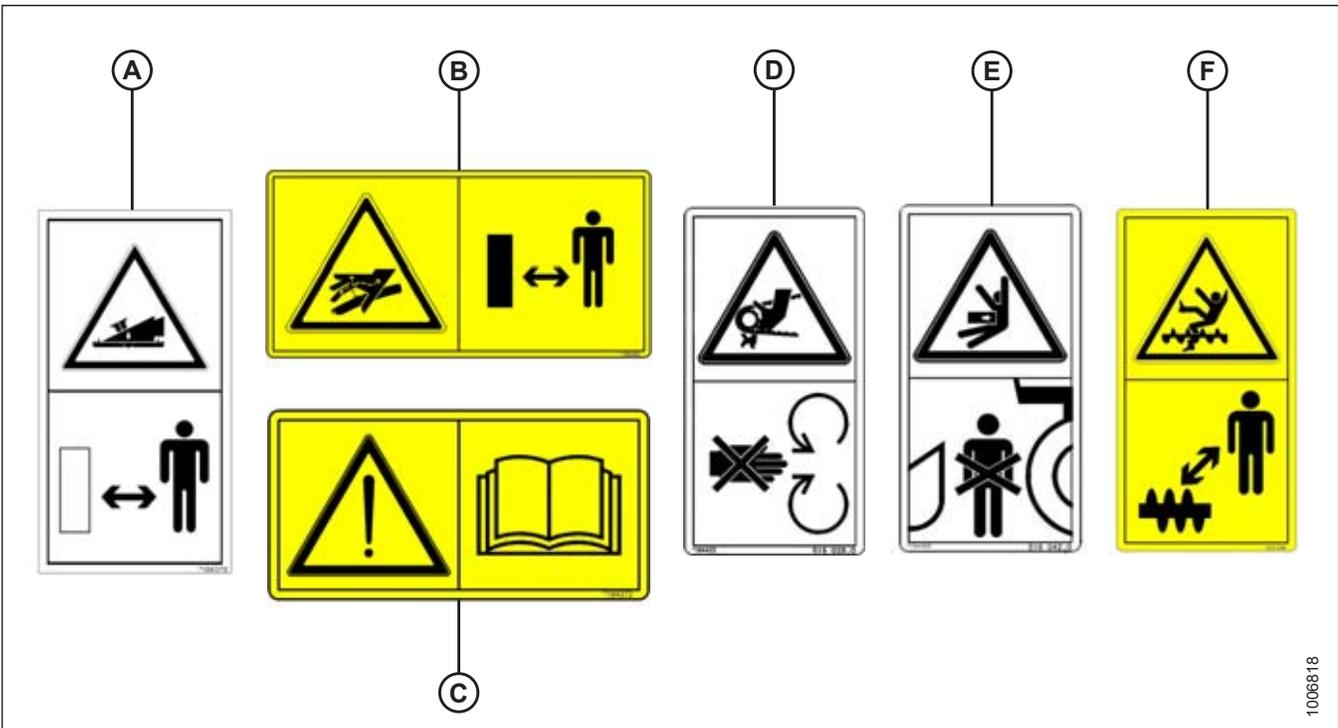
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D - MD #184422

B - MD #166466  
E - MD #184420

C - MD #184372  
F - MD #237298

1011928

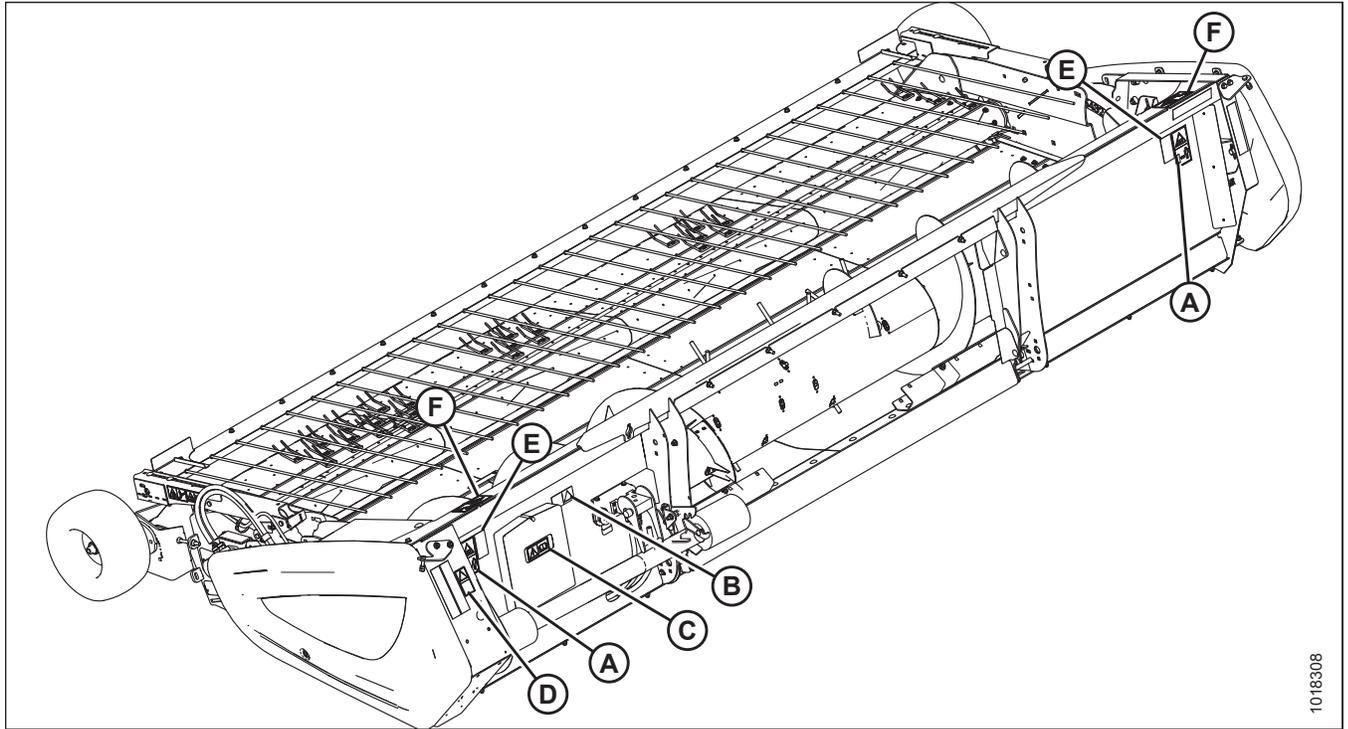
**Figure 1.11: Header Decals**



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SAFETY

Figure 1.12: Header Decals – New Holland



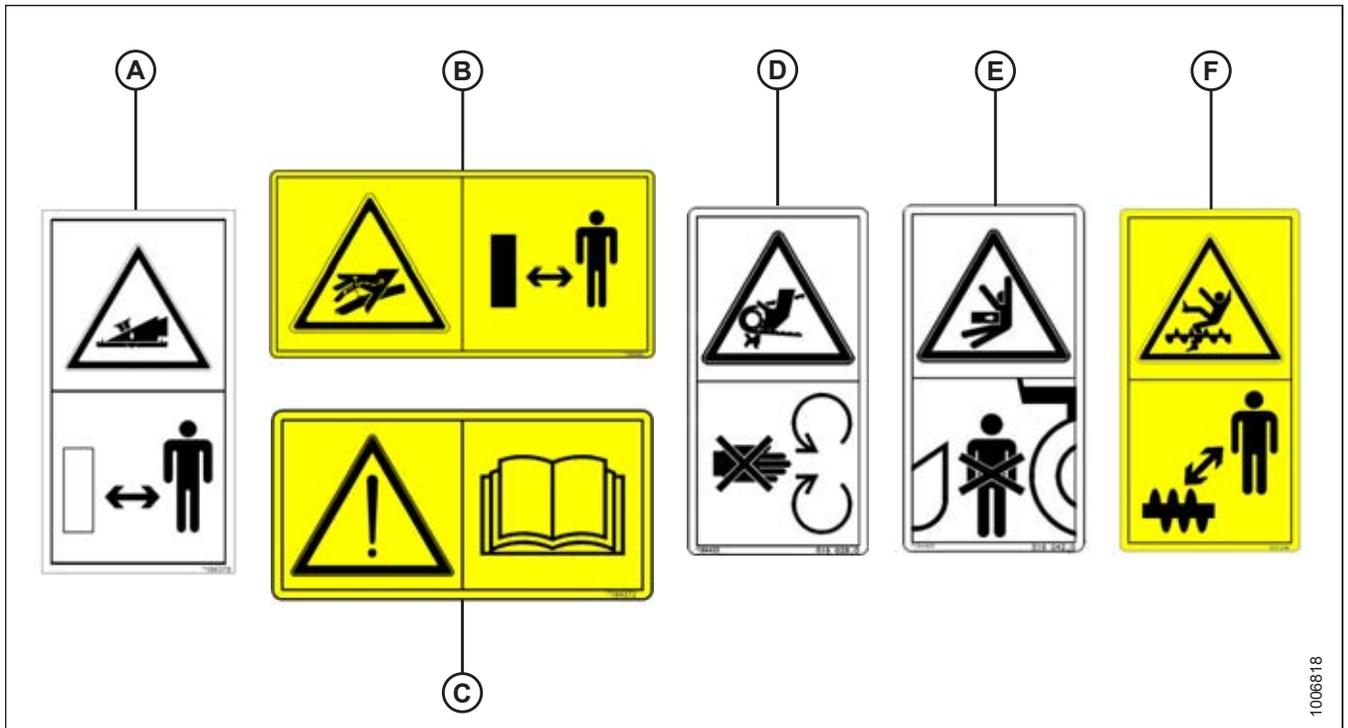
1018308

A - MD #184370  
D - MD #184422

B - MD #166466  
E - MD #184420

C - MD #184372  
F - MD #237298

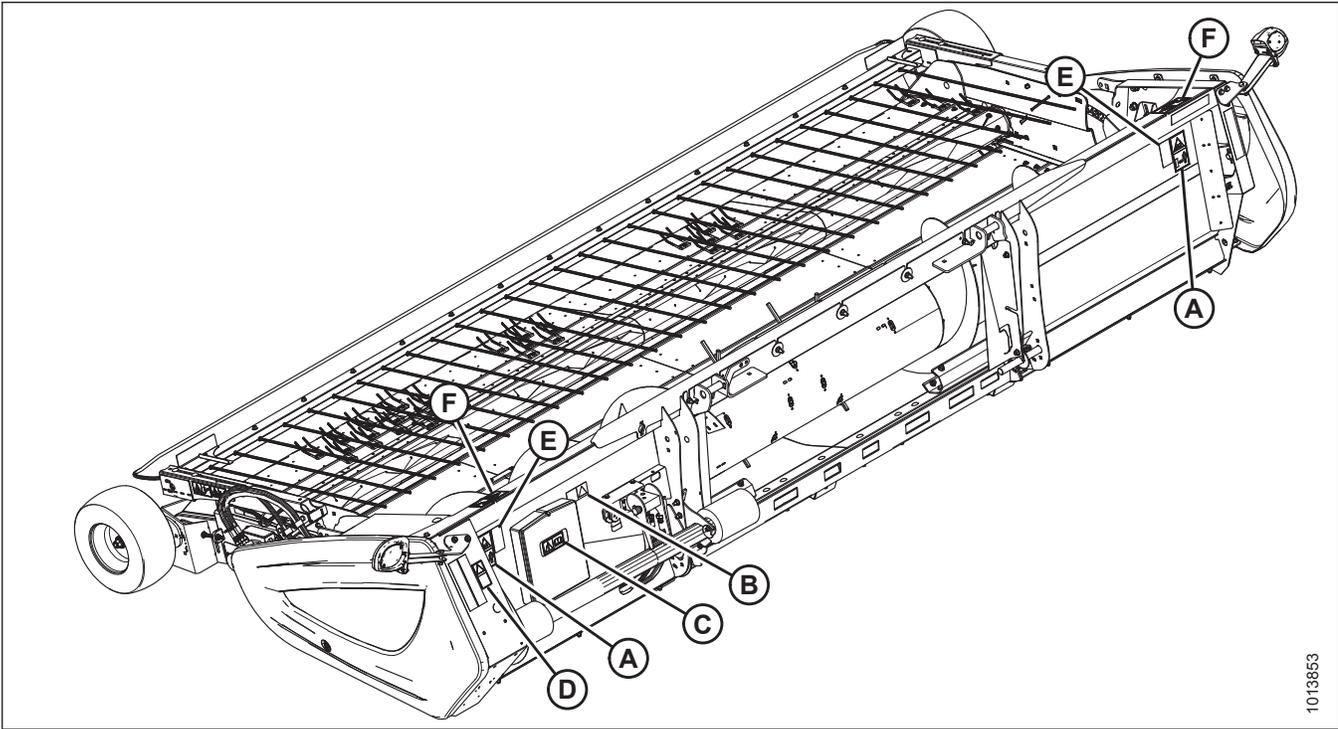
Figure 1.13: Header Decals



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SAFETY

Figure 1.14: Header Decals – Versatile



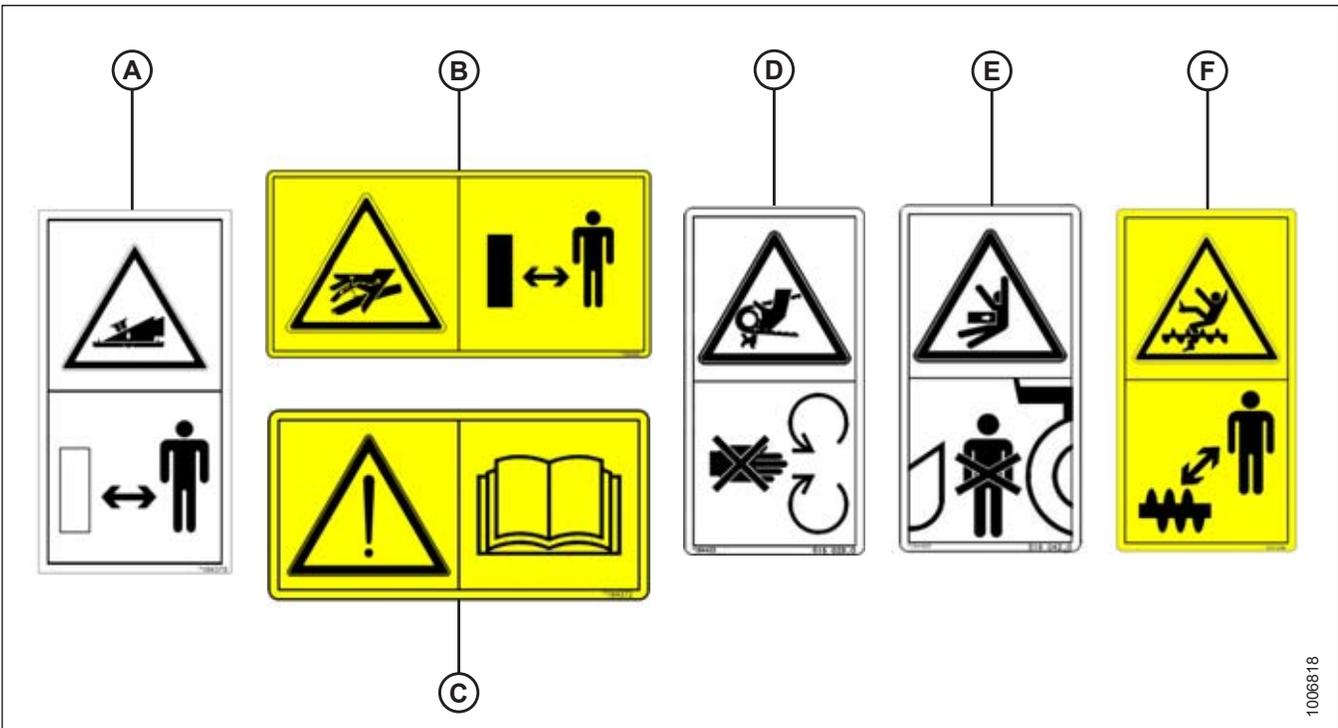
A - MD #184370  
D - MD #184422

B - MD #166466  
E - MD #184420

C - MD #184372  
F - MD #237298

1013853

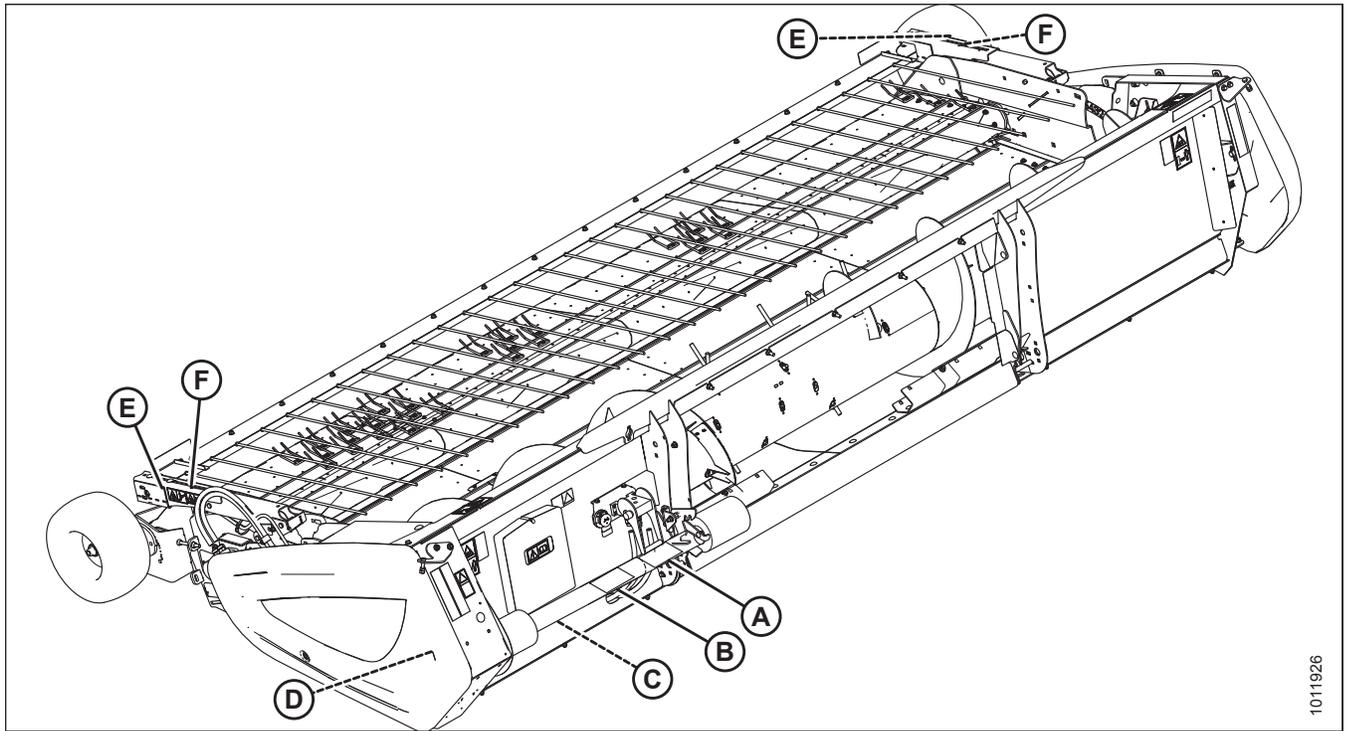
Figure 1.15: Header Decals



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**SAFETY**

**Figure 1.16: Driveline and Hold-Down Decals – Case IH**



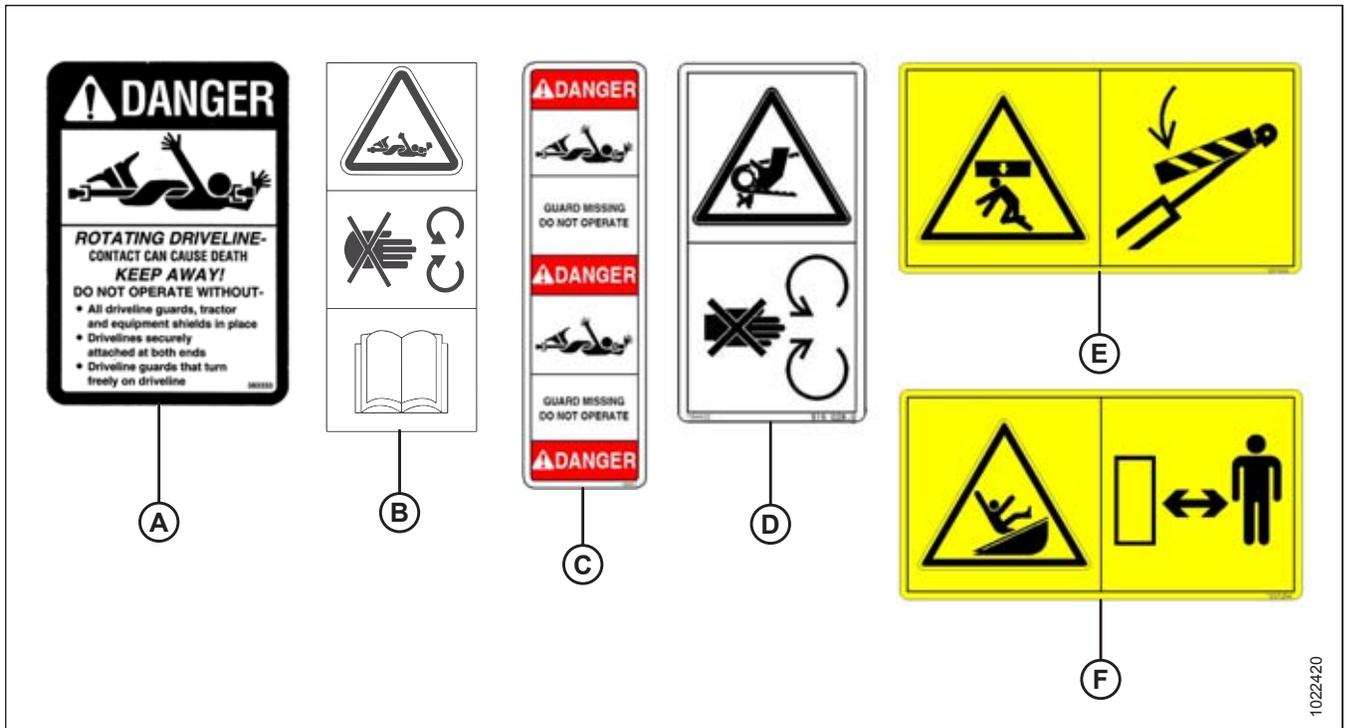
A - MD #30316  
D - MD #184422 (Behind Endshield)

B - MD #191099  
E - MD #237229

C - MD #36651  
F - MD #237254

1011926

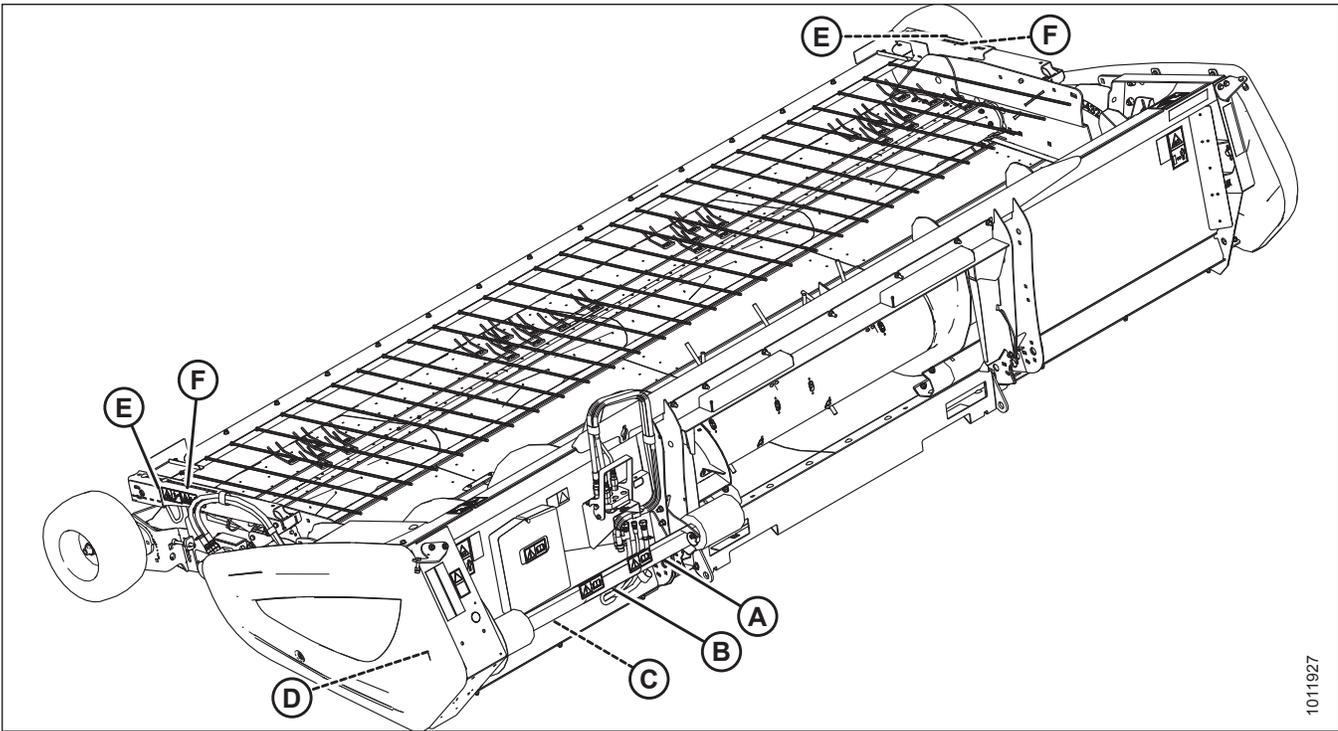
**Figure 1.17: Driveline and Hold-Down Decals**



1022420

**SAFETY**

**Figure 1.18: Driveline and Hold-Down Decals – John Deere**



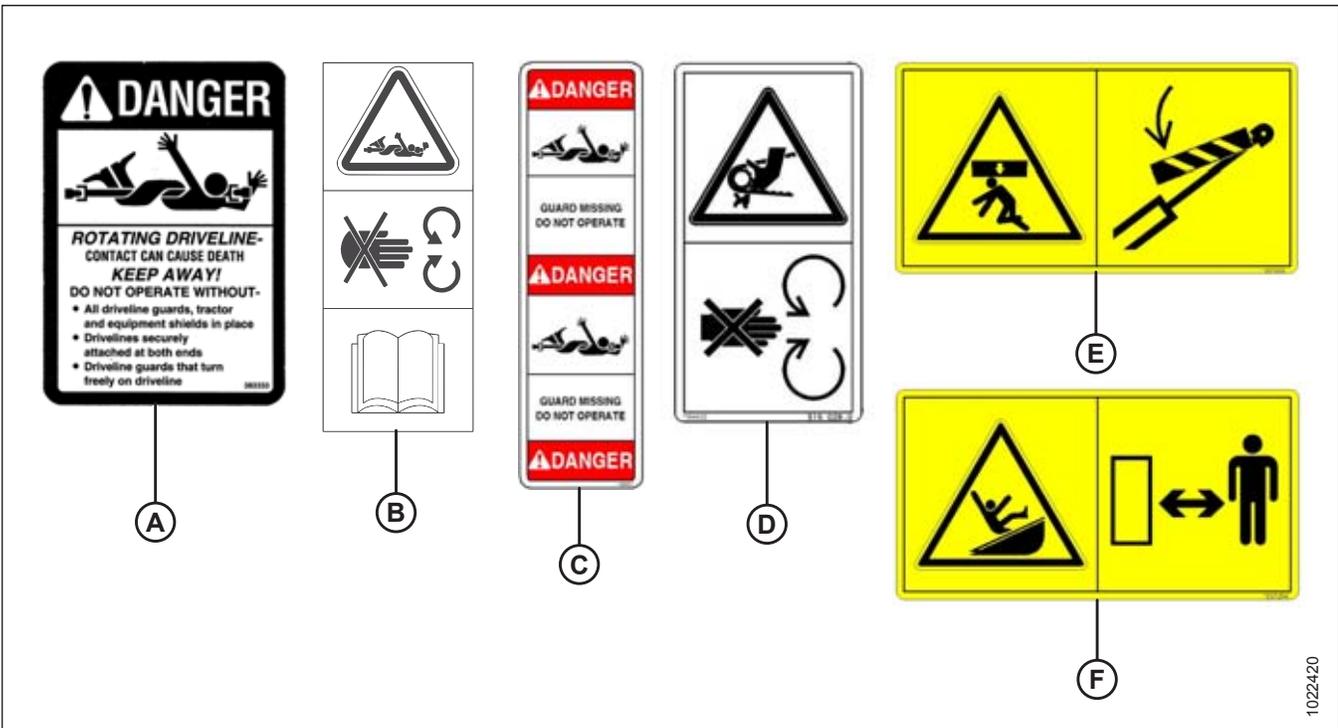
A - MD #30316  
D - MD #184422 (Behind Endshield)

B - MD #191099  
E - MD #237229

C - MD #36651  
F - MD #237254

1011927

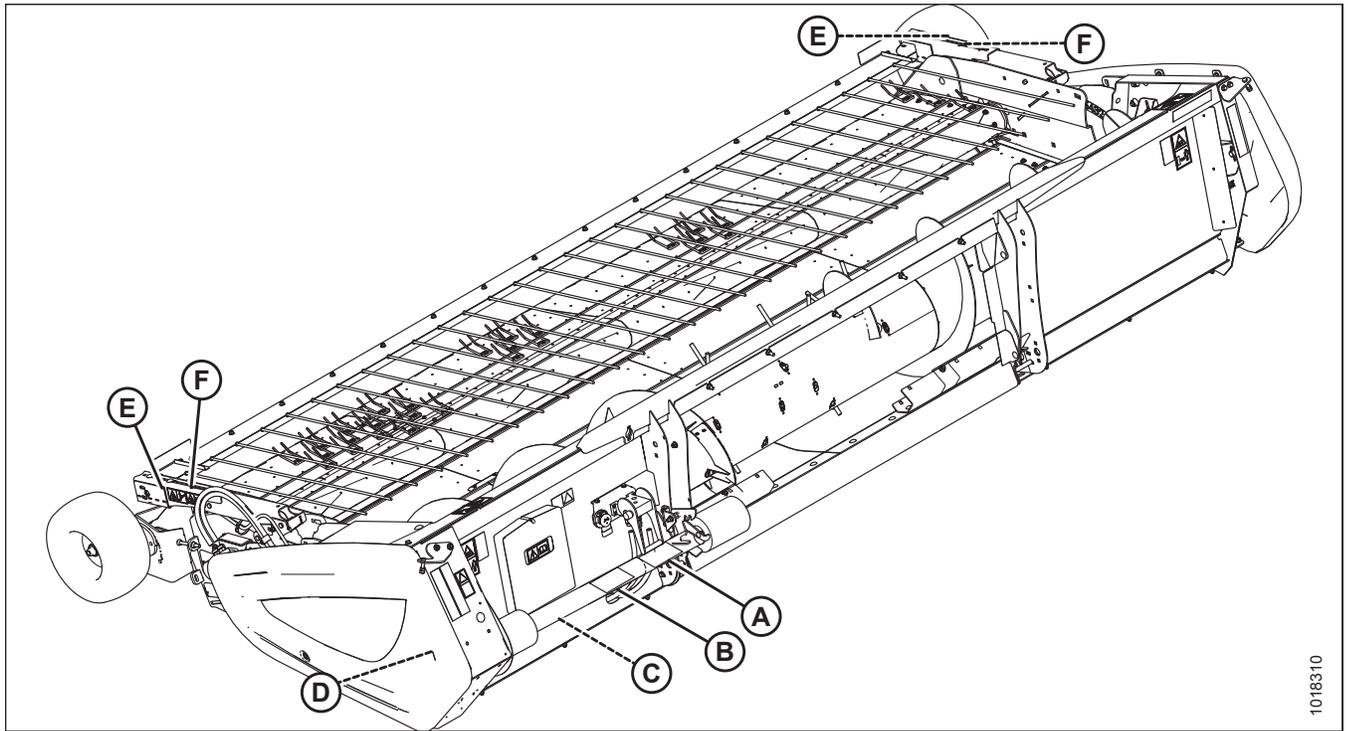
**Figure 1.19: Driveline and Hold-Down Decals**



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# SAFETY

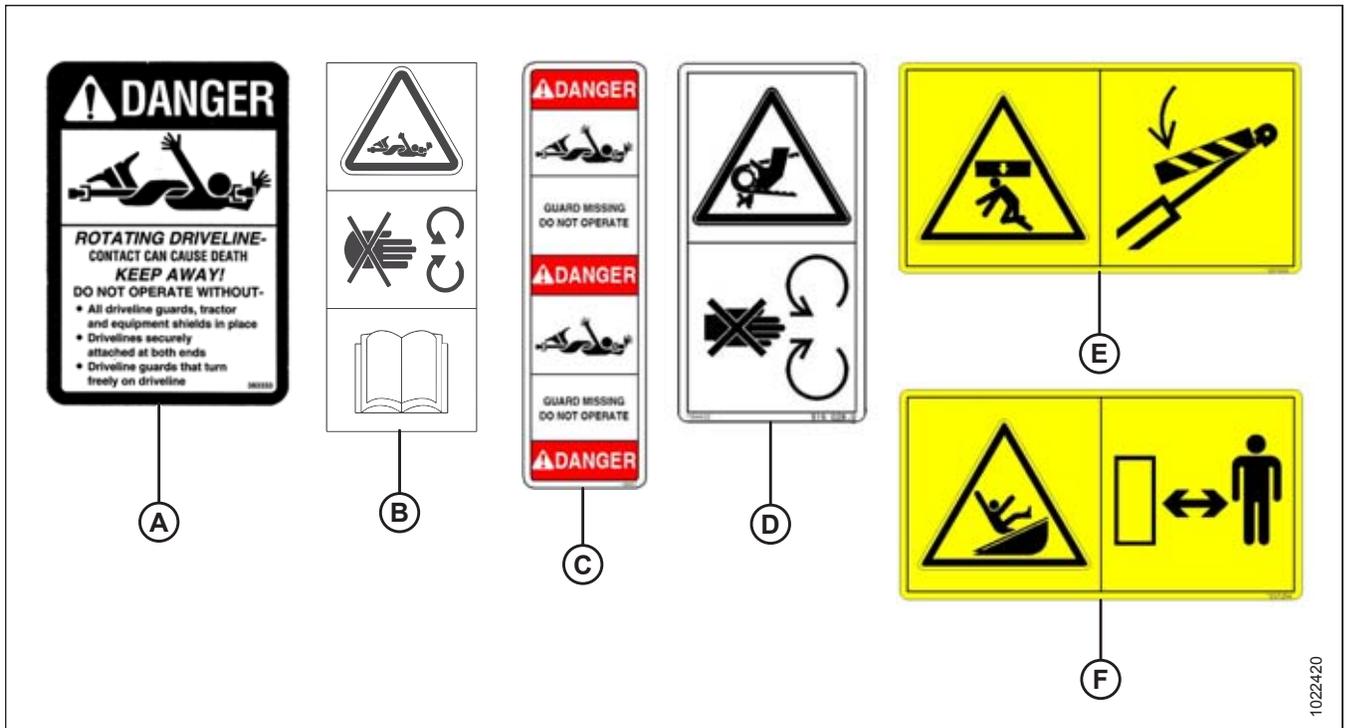
**Figure 1.20: Driveline and Hold-Down Decals – New Holland**



1018310

- |                                   |                |                |
|-----------------------------------|----------------|----------------|
| A - MD #30316                     | B - MD #191099 | C - MD #36651  |
| D - MD #184422 (Behind Endshield) | E - MD #237229 | F - MD #237254 |

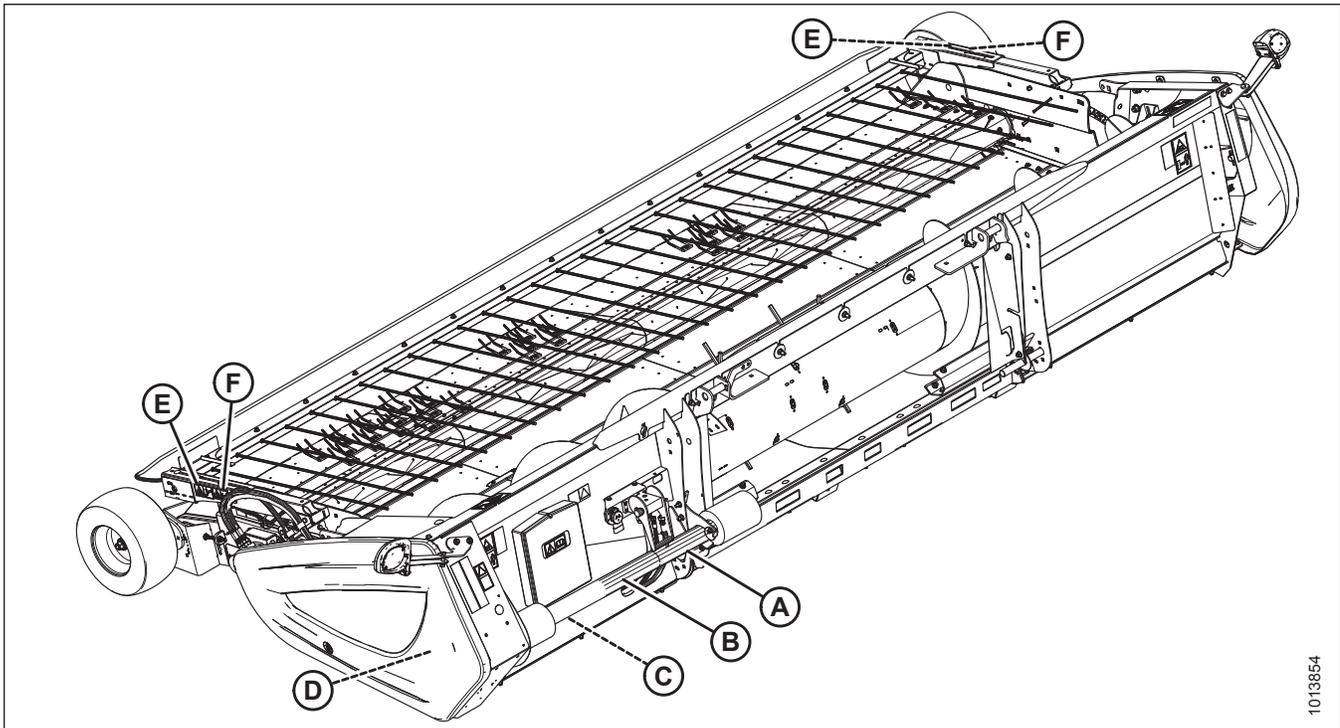
**Figure 1.21: Driveline and Hold-Down Decals**



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**SAFETY**

**Figure 1.22: Driveline and Hold-Down Decals – Versatile**



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A - MD #30316

D - MD #184422 (Behind Endshield)

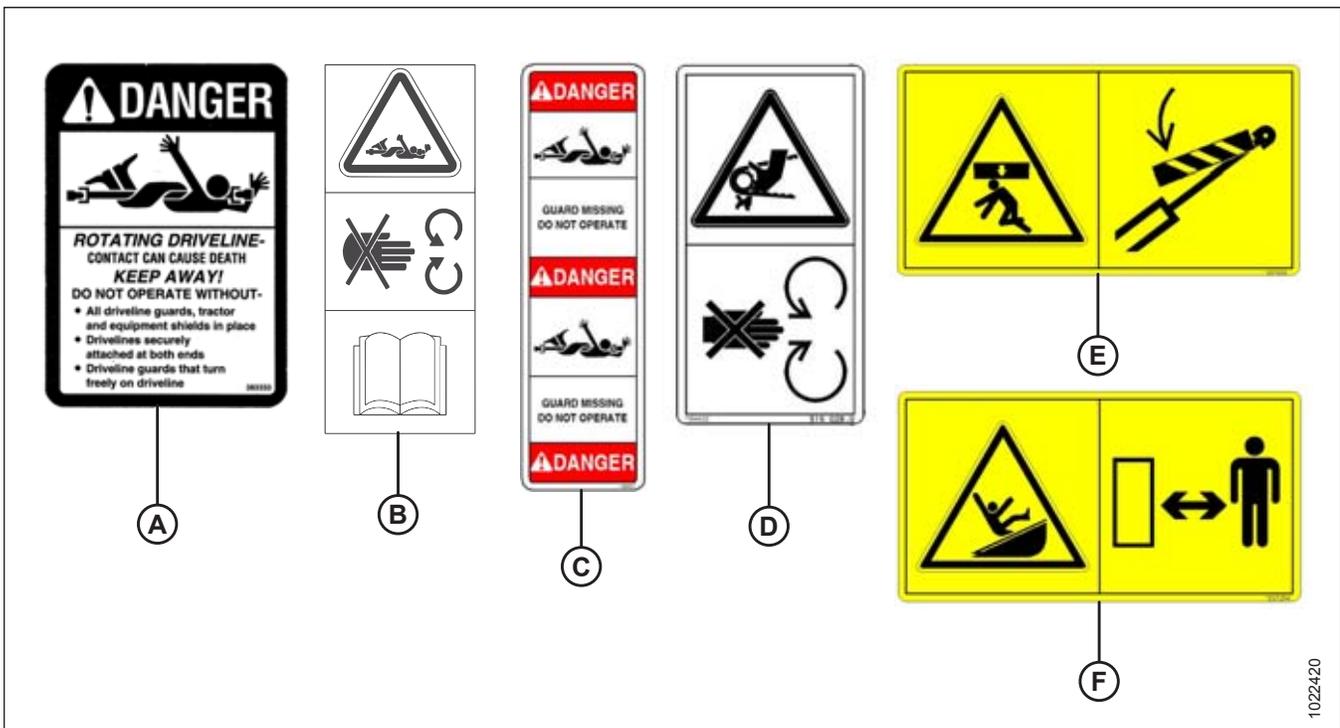
B - MD #191099

E - MD #237229

C - MD #36651

F - MD #237254

**Figure 1.23: Driveline and Hold-Down Decals**



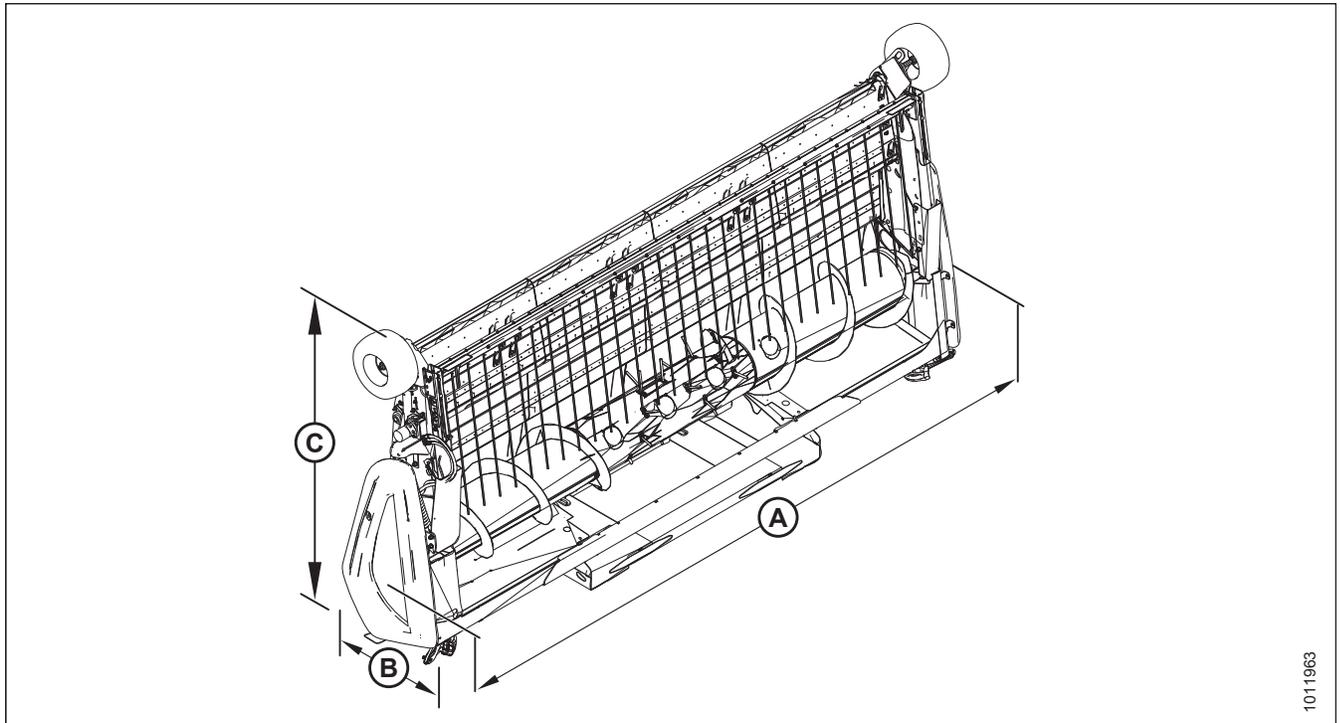
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## 2 Shipping Data

The following data include shipping stands:

Length (A)	Width (B)	Height (C)	Weight <sup>1</sup>
5318 mm (17 ft. 5 in.)	1000 mm (39-3/8 in.)	2579 mm (8 ft. 5-1/2 in.)	1612 kg (3550 lb.)

Figure 2.1: Shipping Dimensions



1. Weight is approximate and depends on combine completion package.



### 3 Unloading the Header

Follow each of the procedures in this chapter in order.

#### 3.1 Unloading with a Forklift

**NOTE:**

Extra hardware is stored inside the manual storage case at the back of the header. Loose parts are strapped to the header.

**NOTE:**

MacDon recommends storing pick-up headers in the horizontal position after being received. If the units must be stored in the vertical position, ensure the storage surface is flat and hard.

 **WARNING**

Be sure all persons/pets are clear when moving the header.

 **CAUTION**

To avoid injury to bystanders from being struck by machinery, do not allow anyone 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.

Lifting Vehicle (Forklift or Equivalent)	
Minimum Lifting Capacity <sup>2</sup>	2270 kg (5000 lb.)
Minimum Fork Length	1981 mm (78 in.)

**IMPORTANT:**

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

---

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

## UNLOADING THE HEADER

To unload headers from a trailer, follow these steps:

1. Move trailer into position on level ground, and then block trailer wheels.
2. Lower trailer storage stands.
3. Approach side of trailer with forklift.
4. Adjust width of forks to line up with shipping stand pockets (A).
5. Slowly slide the forks into the shipping stand pockets.

### IMPORTANT:

Attempting to lift the header with forks not engaged in lift pockets may result in an unstable load and/or damage to shipping stands.

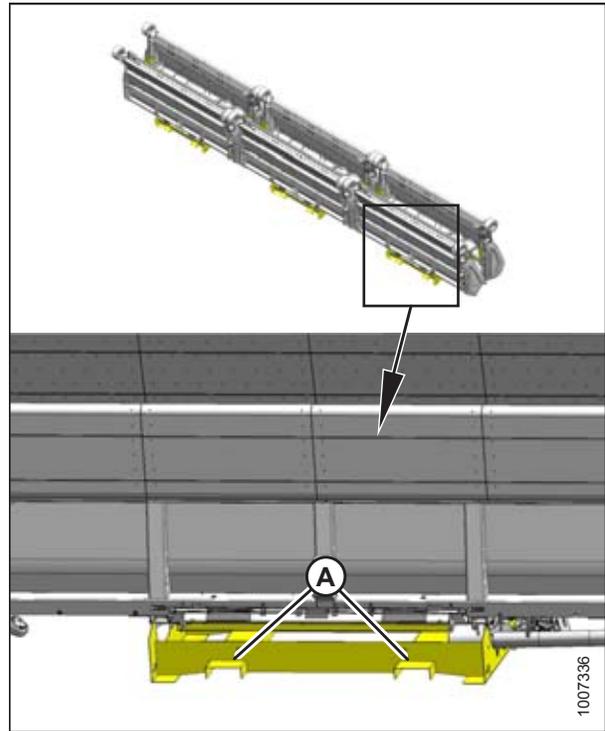


Figure 3.1: Header Shipping

### WARNING

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

### CAUTION

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

6. Raise header off deck and back up until forks clear trailer.
7. Slowly lower to 150 mm (6 in.) from the ground.
8. Take header to storage or set up area, and place on level hard ground.
9. Check header for shipping damage, and check shipment for missing parts.
10. Repeat above steps for remaining headers.



Figure 3.2: Unloading the Header

## UNLOADING THE HEADER

### 3.2 Lowering Header

#### IMPORTANT:

These instructions are only for tipping over the unit. Lifting should only be done using a forklift and the shipping stand.

1. Attach a spreader bar (A) to forklift or equivalent. Spreader bar should have a minimum working load of 2270 kg (5000 lb.).
2. Attach the spreader bar chains (B) to the lifting lug (C) on each end of the header as shown. Do not attach chains to, or through, hold-down components.

#### IMPORTANT:

Damage to header resulting from lowering the unit with alternative methods will not be covered by warranty.

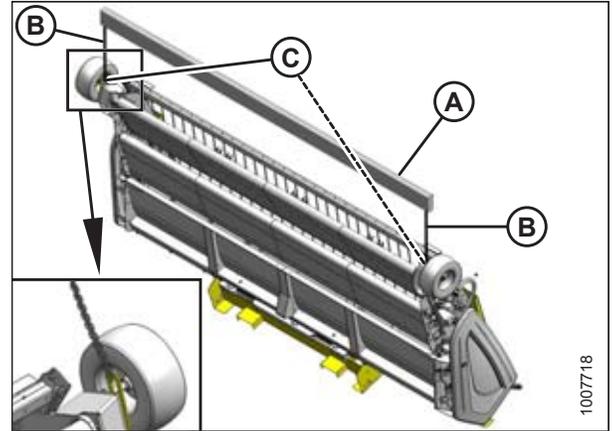


Figure 3.3: Spreader Bar on Header

3. If ground is soft, place two wooden blocks (2 x 4 in.) on ground in front of frame at locations shown so that header will rest on blocks after it is lowered.

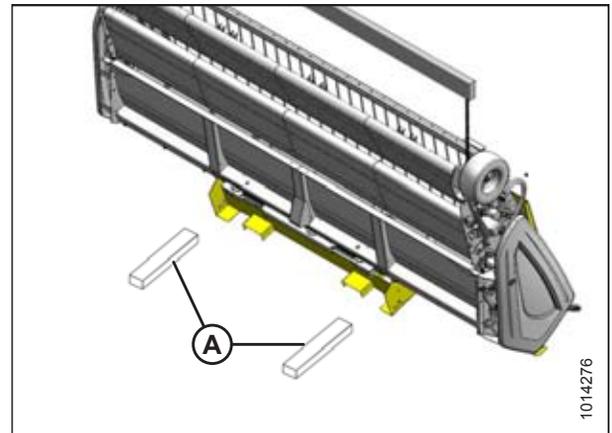


Figure 3.4: Wooden Blocks

4. Slowly back up forklift while lowering the front of pick-up header to the ground.
5. Remove chains (A) from header lugs.
6. Proceed to [3.3 Removing Shipping Stands, page 18](#).

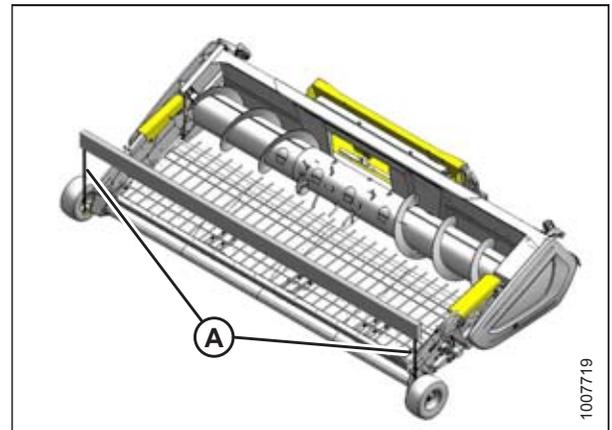


Figure 3.5: Spreader Bar on Header

### 3.3 Removing Shipping Stands

The removable stands are painted yellow.

**⚠ CAUTION**

Shipping stands are extremely heavy. Use caution when detaching shipping stands.

**NOTE:**

Unless otherwise specified, discard stands as well as all shipping material and hardware.

1. Remove the two bolts (A) near the top of the stand and allow the stand to rotate aft until it rests on the ground.
2. Remove the two lower bolts (B) and remove stand.

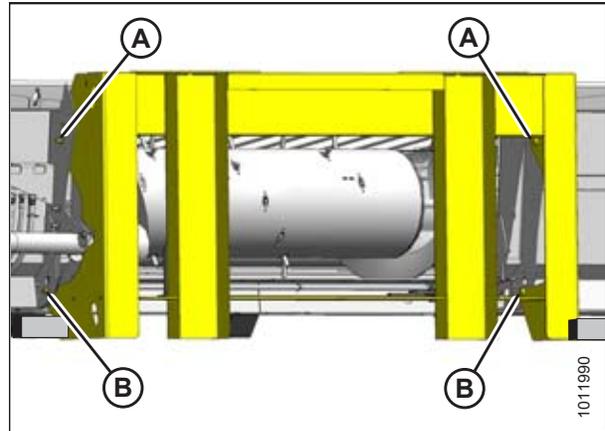


Figure 3.6: Shipping Stand

**NOTE:**

Wheel not shown for clarity.

3. Remove bolt (A) from lifting lug (B).
4. Loosen bolt (C) and slide lug (B) in direction of arrow until bolt (C) disengages slot in header.
5. Remove lug from opposite end of header.

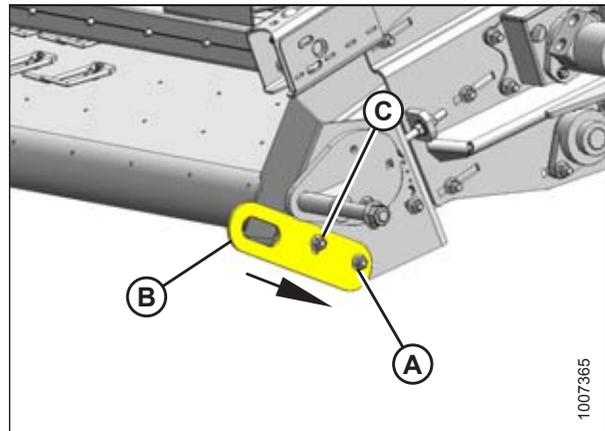


Figure 3.7: Shipping Lug

## UNLOADING THE HEADER

6. Remove two nuts (A).
7. Loosen two nuts (B) and remove bumper (C).

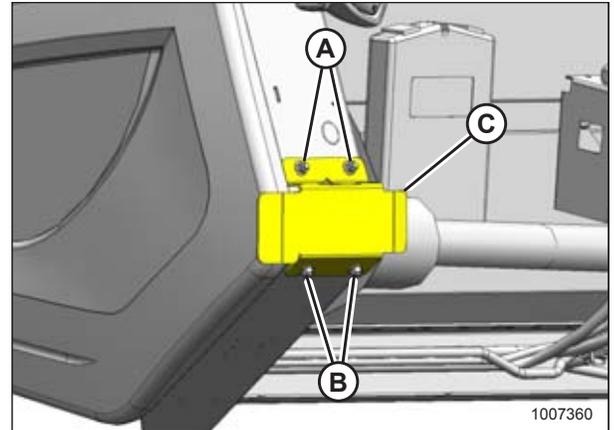


Figure 3.8: Shipping Bumper

8. Open the left endshield (A). Refer to [3.3.1 Opening Left Endshield, page 20](#).
9. Remove four nuts and bolts (B).
10. Close endshield. Refer to [3.3.2 Closing Left Endshield, page 20](#).

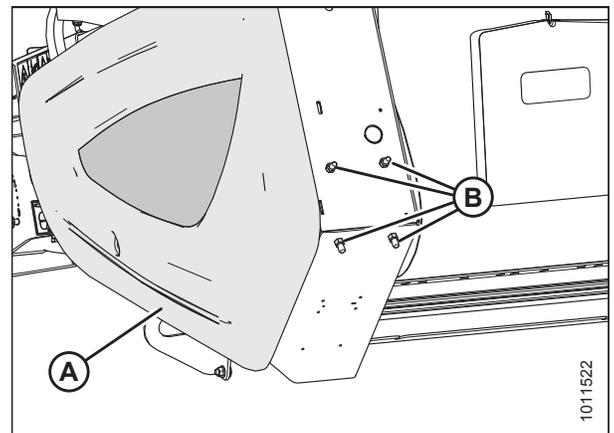


Figure 3.9: Bumper Bolts

### NOTE:

The shipping brace (A) on the hold-down will be removed after the header is attached to the combine.

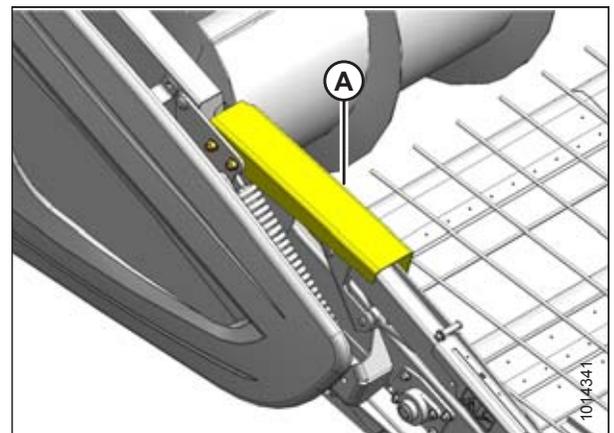


Figure 3.10: Deck Shipping Brace

## UNLOADING THE HEADER

### 3.3.1 Opening Left Endshield

1. Use a slotted screwdriver to unlock endshield (B) by turning latch (A) counterclockwise until it stops (slightly more than one half turn).

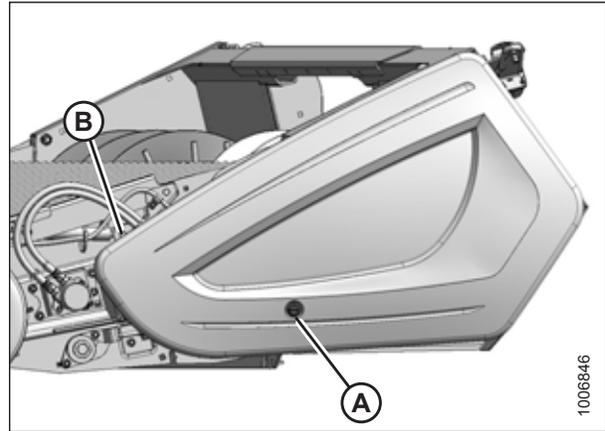


Figure 3.11: Endshield Closed

2. Grasp forward end of endshield (A) and pull open until support (B) engages and holds endshield in open position.

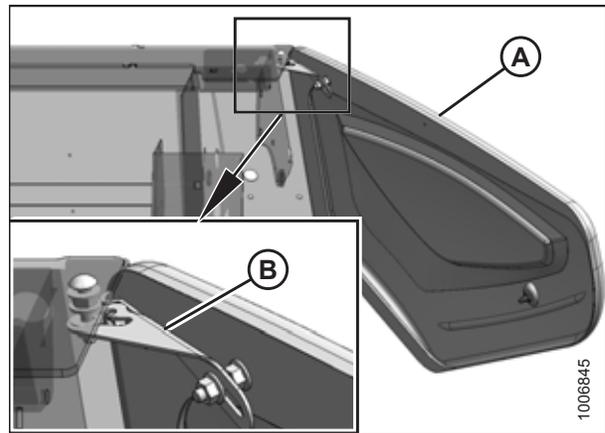


Figure 3.12: Endshield Open

### 3.3.2 Closing Left Endshield

1. Move endshield (A) slightly so support (B) can be moved out of the locked position.

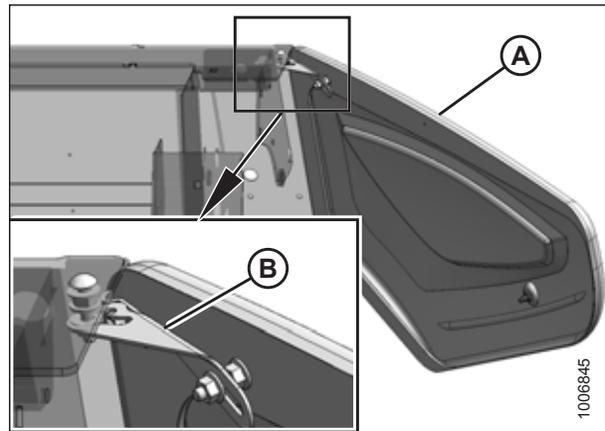


Figure 3.13: Endshield Support

## UNLOADING THE HEADER

2. Close endshield (A) ensuring magnet (B) and stop (C) in header frame are aligned. This will ensure that latch (D) aligns with receptacle (E).

**NOTE:**

Latch (D) and magnet (B) positions are factory-set and should not require adjustment.

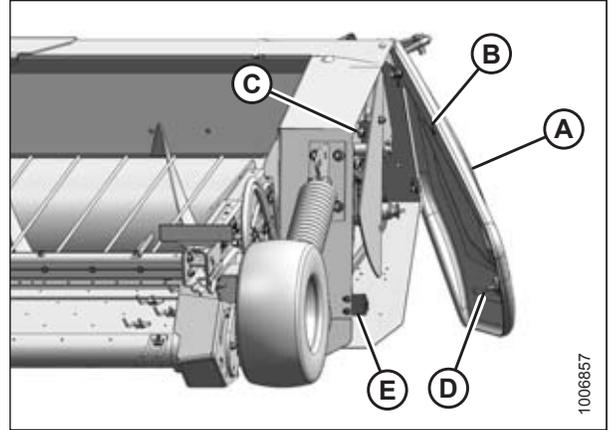


Figure 3.14: Endshield

3. If front of endshield needs to be raised or lowered, loosen nuts (B) on clips (C) at the back of the endshield (A), and reposition the endshield. Tighten the nuts (B).

**IMPORTANT:**

Do **NOT** overtighten nuts (B). Overtightening can damage the endshield.

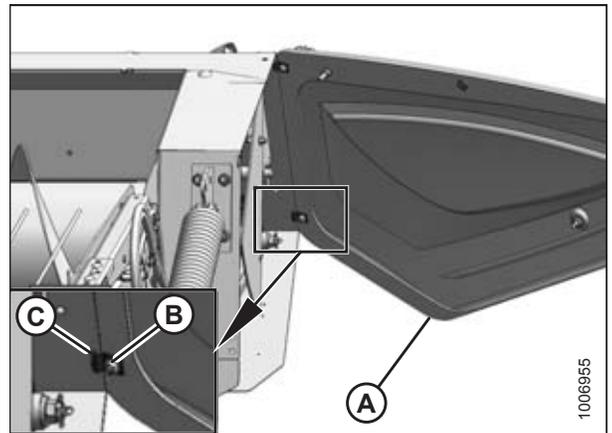


Figure 3.15: Endshield Adjustment

4. Close endshield (D) and use a slotted screwdriver to turn latch (A) clockwise until it stops (slightly more than one-half turn).

**NOTE:**

When latch is fully engaged, the slot will align with notch (C), and the endshield will draw tightly against the header.

5. Check that magnet (B) on endshield is against the header endsheet and aligned with the cutout in the frame, and that latch (A) is engaged.

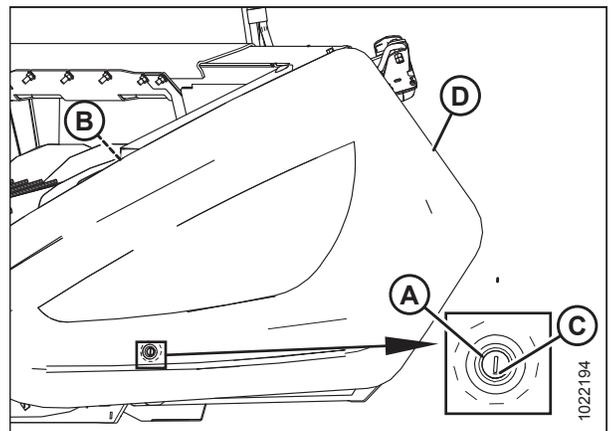


Figure 3.16: Endshield Closed

## UNLOADING THE HEADER

### 3.4 Attaching Fixed Wheels

Headers can be ordered with either fixed wheels or caster wheels. For instructions about attaching caster wheels, refer to [3.5 Attaching Caster Wheels, page 23](#).

1. Retrieve wheel assemblies (A) and bag of hardware from crate.
2. Adjust header to approximately working height.
3. Remove bolts and lock nuts (B) from the header frame.

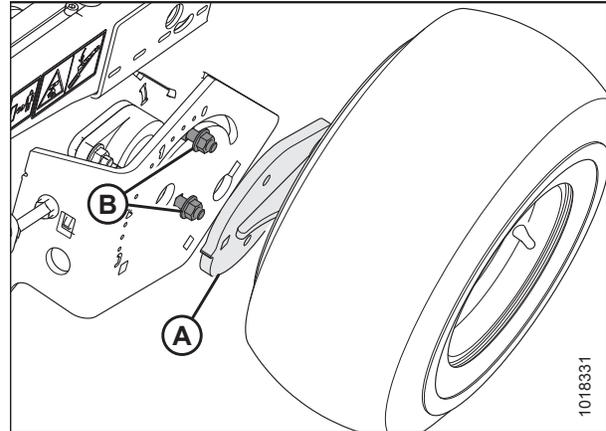


Figure 3.17: Wheel Assembly (Right Side)

4. Position the spindle plate (A) against the frame with cog (B) pointing aft.
5. Line up the lower hole in spindle plate with the center hole in frame and install bolt (C) from the inboard side of frame.
6. Secure with nut, but do not tighten.
7. Swivel the wheel assembly so that the second bolt (D) can be installed through the slot in the frame and into spindle plate (A). Secure with nut.
8. Position the wheel assembly with cog (B) lined up with the number **2** on the frame.
9. Tighten both nuts.
10. Repeat for the other wheel assembly.

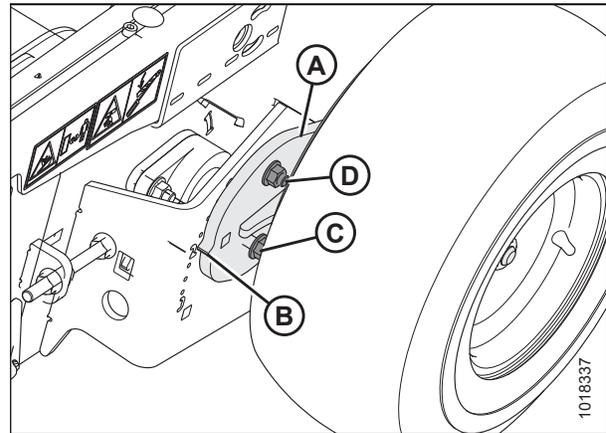


Figure 3.18: Attaching Wheel

### 3.5 Attaching Caster Wheels

Headers can be ordered with either fixed wheels or caster wheels. For instructions about attaching fixed wheels, refer to [3.4 Attaching Fixed Wheels, page 22](#).

**NOTE:**

Headers are shipped with caster wheels removed.

2. Remove bolts (A).
3. Remove caster wheel support (B).

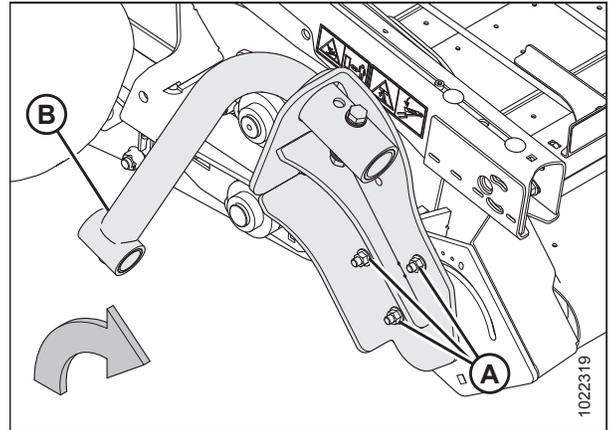


Figure 3.19: Header Wheel Right Side

4. Rotate caster wheel support (A) until it aligns with the header frame at location (B).
5. Install bolts (C) and torque to 68.5 Nm (50.5 lbf-ft).

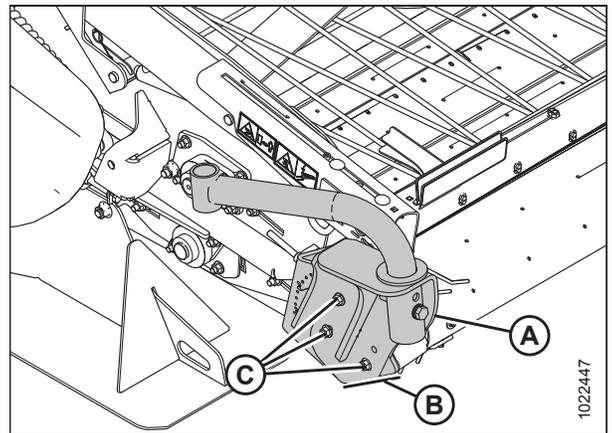


Figure 3.20: Header Wheel Right Side

## UNLOADING THE HEADER

6. Remove bolt (A) and rotate the caster wheel support tube (B) until the upper hole (C) is aligned.
7. Install bolt (A) into hole (C). Torque bolt to 234 Nm (173 lbf·ft).

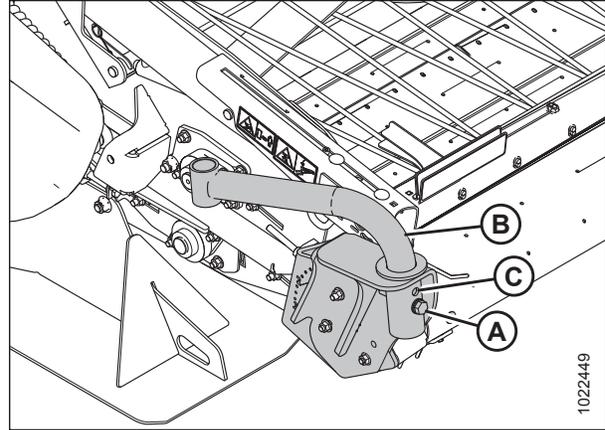


Figure 3.21: Header Wheel Right Side

8. Remove the bolt (A), stop collar (E), thrust washers (D), and spacer (B) from the right caster wheel. Leave thrust washer (C) on the shaft of the caster assembly.

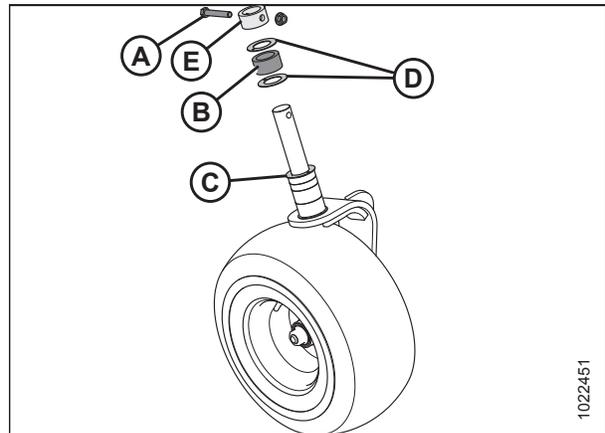


Figure 3.22: Caster Wheel Assembly

9. Insert the assembly into wheel support tube (E).
10. On the shaft extending past the wheel support tube, install thrust washer (C), collar (B), thrust washer (D) and stop collar (F).
11. Rotate the stop collar until the holes line up. Insert bolt (A), torque it to 68.5 Nm (50.5 lbf·ft).
12. Repeat installation on left side of the header.

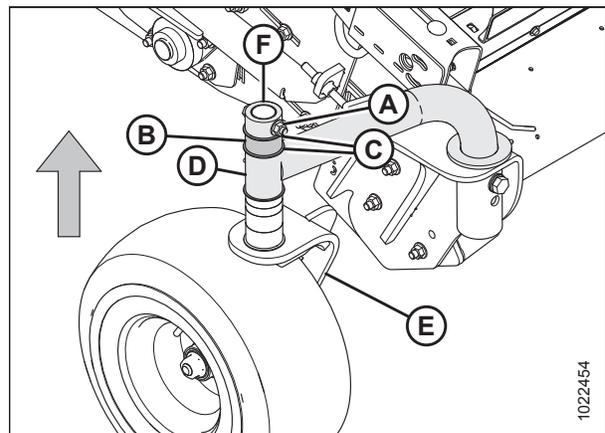


Figure 3.23: Caster Wheel Assembly

### 3.6 Setting Fixed Wheels to Field/Working Position

Headers can be ordered with either fixed wheels or caster wheels. For instructions about positioning caster wheels in field/working position, refer to [3.7 Setting Caster Wheels to Field/Working Position, page 26](#).

Wheels must be in working position (with cog lined up with position **2** [A] on header frame) prior to setting the header on the ground.

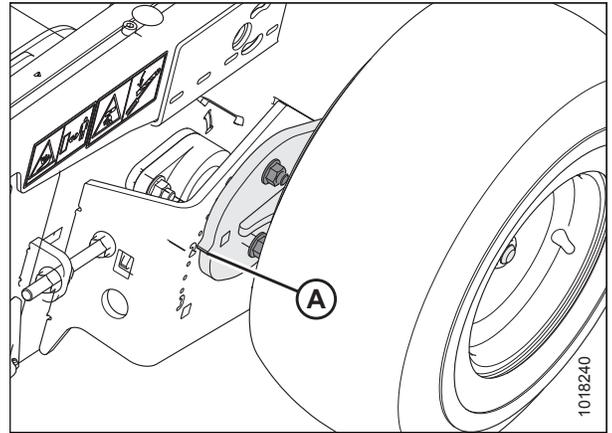


Figure 3.24: Working Position

1. Loosen nuts (A) until wheel mounting plate (B) can be rotated.

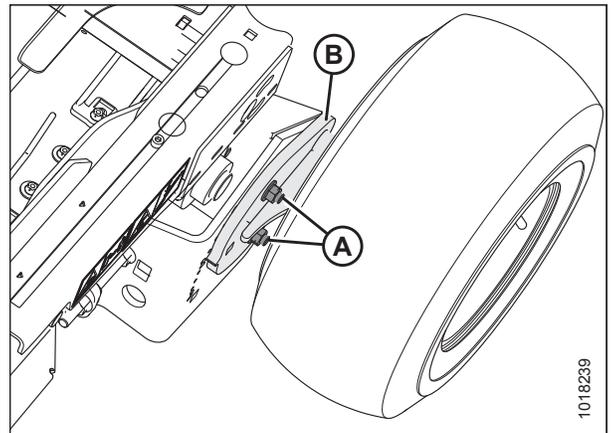


Figure 3.25: Right Side Header Wheel

2. Rotate wheel mounting plate (B) and wheel approximately 180 degrees until cog (C) lines up with the number **2** on frame.
3. Tighten nuts (A).

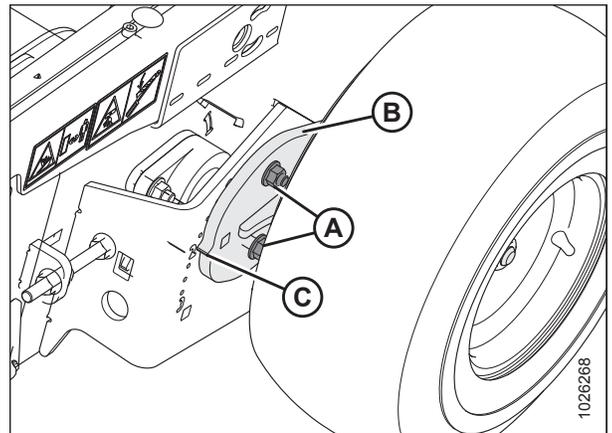


Figure 3.26: Right Side Header Wheel

## UNLOADING THE HEADER

### 3.7 Setting Caster Wheels to Field/Working Position

Headers can be ordered with either fixed wheels or caster wheels. For instructions about positioning fixed wheels in field/working position, refer to [3.6 Setting Fixed Wheels to Field/Working Position, page 25](#).

1. Locate the right caster assembly (A).
2. Remove bolts (B) and caster wheel support (A).

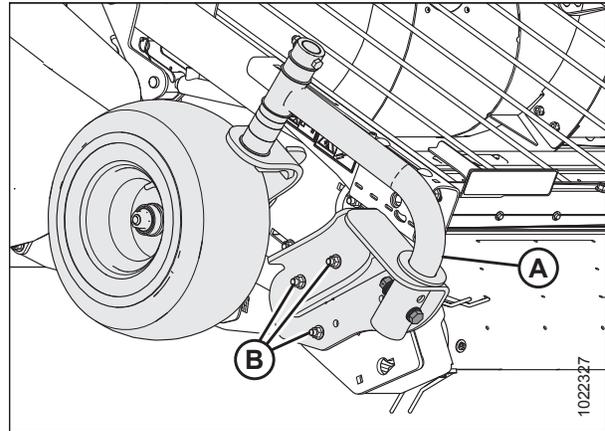


Figure 3.27: Right Side Header Wheel

3. Position caster wheel support (A), until it aligns with the header frame at location (C).
4. Install bolts (B), and torque to 68.5 Nm (50.5 lbf ft).
5. Remove bolt (D) from the lower hole.

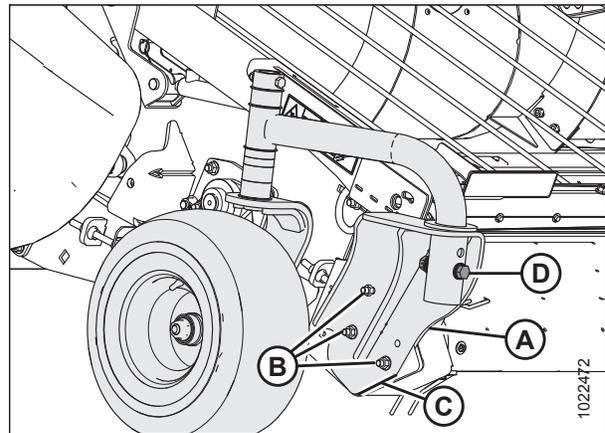


Figure 3.28: Right Side Header Wheel

6. Rotate the caster assembly (B) until the upper holes align. Insert bolt (A) and washers to secure. Torque nut to 234 Nm (173 lbf ft).
7. Repeat on left side of the header.

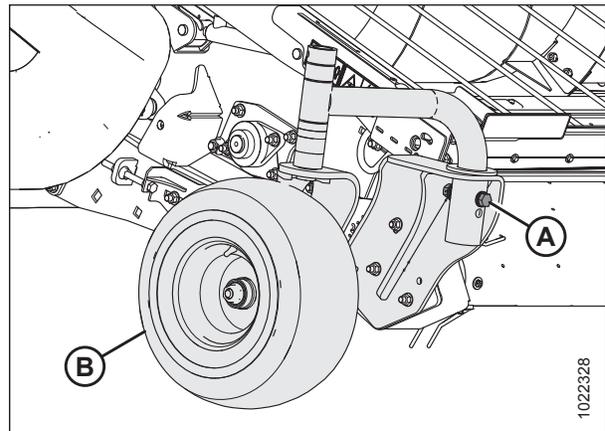


Figure 3.29: Right Side Header Wheel

### 3.8 Extending Hold-Down to Field/Working Position

Extend the hold-down into the working position as follows:

1. If necessary, lift hold-down (A) slightly to gain access to bolts (B) inside hold-down arms.

**NOTE:**

When working under the hold-down, lower the safety props and engage the securing pins.

2. Loosen four bolts (B) (two per side) in hold-down frame with an 18 mm socket wrench.

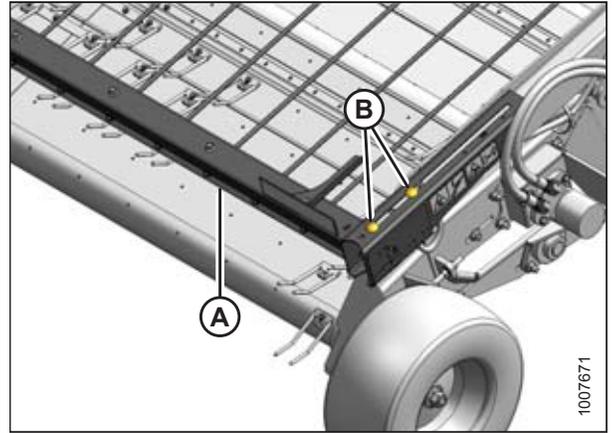


Figure 3.30: Left Side Hold-Down

3. Pull the hold-down frame (A) fully forward.
4. Tighten bolts (B) in hold-down arms.

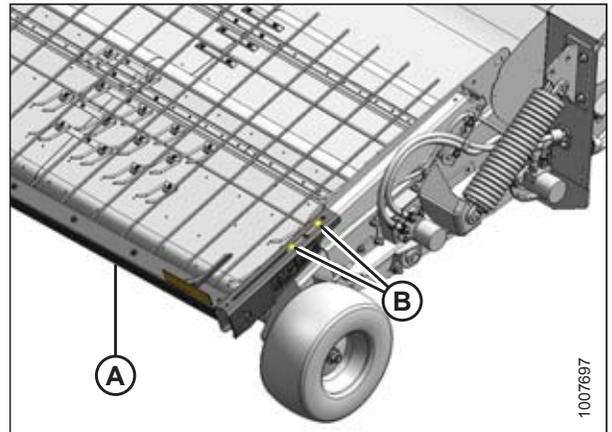


Figure 3.31: Left Side Hold-Down

### 3.9 Adjusting Transport Lights

Position the transport lights so they are perpendicular to the endsheet.

**⚠ DANGER**

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

1. Transport lights should be perpendicular to the endsheet. If repositioning is required, swivel the lights with hand force.
2. If the swivel is too loose or too tight, adjust jam nut (A) and turn nut (B) so the light maintains its position and can be moved with hand force.
3. Tighten jam nut (A). Do **NOT** overtighten.

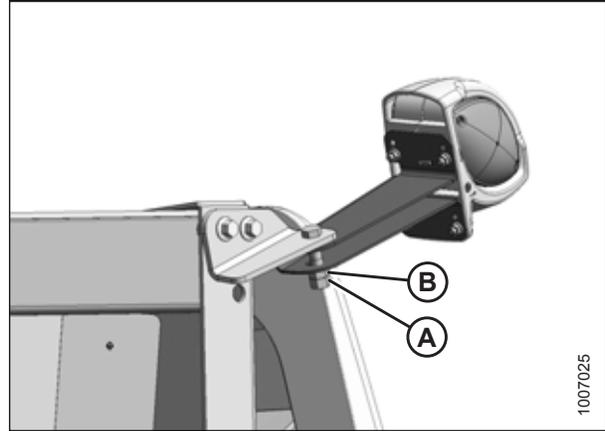


Figure 3.32: Transport Light

### 3.10 Repositioning Driveline Storage Bracket

1. Remove shipping wire securing driveline to header.
2. Rotate locking disc (A) and remove driveline from bracket (B).
3. Remove the two bolts (C) securing bracket (B) to the header leg and remove the bracket.
4. For Case and New Holland combines, reinstall bolts (C) to secure locking mechanism (D). For all other combines, retain hardware.

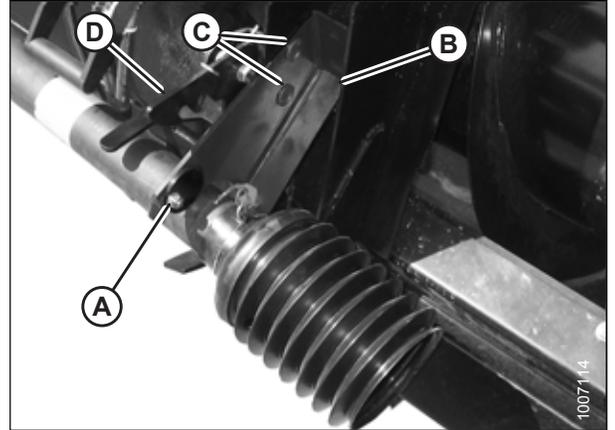


Figure 3.33: Driveline Bracket

5. For Case and New Holland combines, retrieve two M12 x 35 carriage bolts and locking nuts from hardware bag (B) in manual case (A).

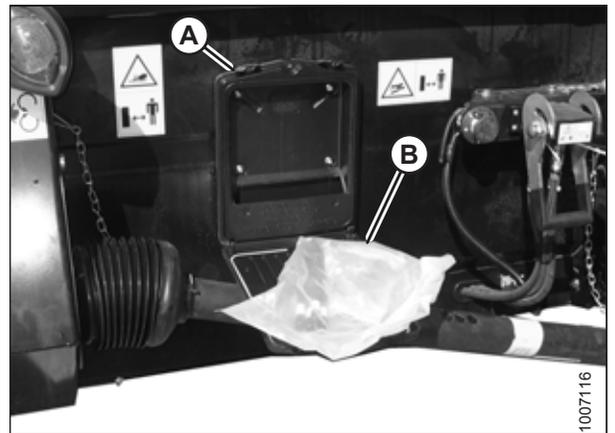


Figure 3.34: Hardware Bag

6. Loosely install one carriage bolt (A) and locking nut in bracket (B) and the other bolt and nut in slot (C) in header frame.

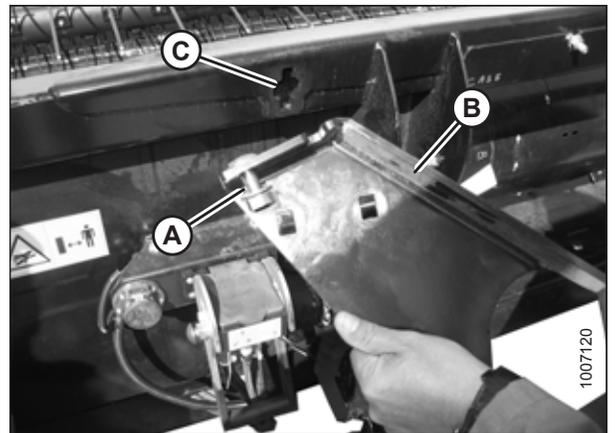


Figure 3.35: Driveline Bracket

## UNLOADING THE HEADER

7. Position bracket (A) against header frame and locate the preinstalled bolt (B) into the upper slot in frame.
8. Swivel bracket (A) so that slot in bracket engages bolt (B) in lower slot in frame.
9. Tighten the two nuts.

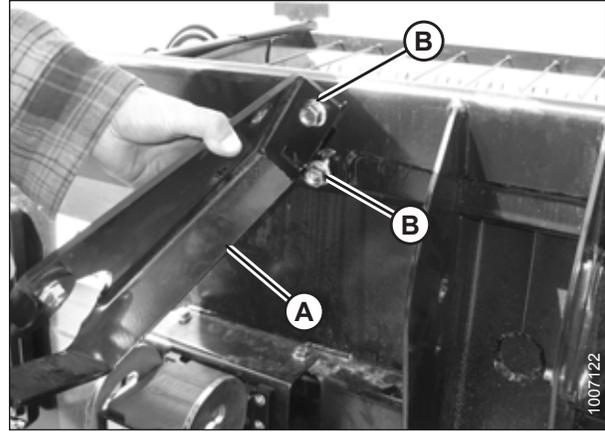


Figure 3.36: Driveline Bracket

10. Place driveline in bracket ensuring locking disc (A) secures driveline in bracket.

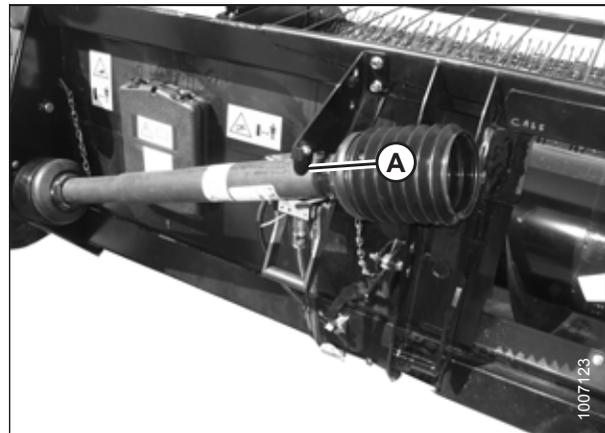


Figure 3.37: Driveline in Repositioned Bracket

## 4 Reconfiguring Headers

To minimize setup, PW8 Combine Pick-Up Headers are factory configured for a particular combine make, model, and feeder house size. This chapter describes how to modify the header to accommodate the following combine models and feeder house sizes.

Reconfiguring the headers is more easily accomplished if the header is not attached to the combine.

- Case 1156 mm (45.5 in.) – refer to [4.2 Configuring Headers for Case IH, page 38](#)
- John Deere 1670 mm (65 in.) – refer to [4.1 Configuring Headers for John Deere, page 31](#)
- New Holland 1016 mm (40 in.) – refer to [4.4 Configuring Headers for New Holland CR, page 47](#)
- New Holland 1524 mm (60 in.) – refer to [4.3 Configuring Headers for New Holland CX, page 41](#)

### 4.1 Configuring Headers for John Deere

PW8 Pick-Up Headers are configured at the factory for John Deere combine models with a 1397 mm (55 in.) feeder house. These procedures describe how to modify the header for models with a 1650 mm (65 in.) feeder house.

#### 4.1.1 Moving Stripper Assemblies

To reposition the stripper assemblies for a larger header opening, follow these steps:

1. Loosen three bolts (A) and remove cover (B) on both sides of the header to expose the stripper assembly attachment hardware.

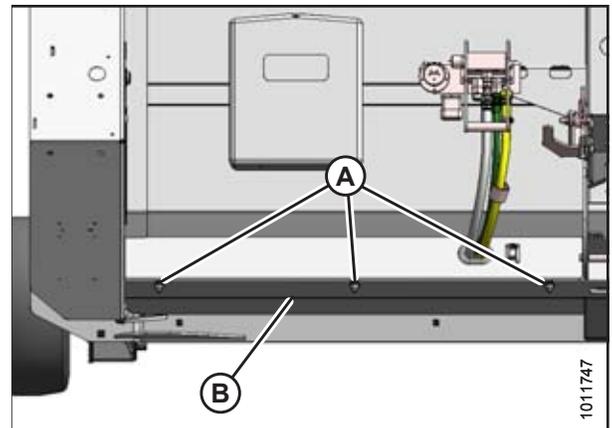


Figure 4.1: Left Cover – Right Side Opposite

## RECONFIGURING HEADERS

- Remove the four bolts (A) attaching left stripper assembly (B) to the frame, left of the header centerline (C).

**NOTE:**

For clarity, auger not shown in illustration at right.

**NOTE:**

The centerline is located where the header pans meet.

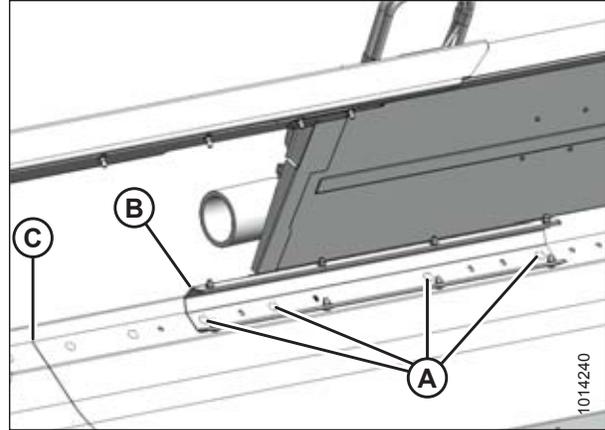


Figure 4.2: Left Stripper – Narrow Opening

- Move left stripper assembly (A) outboard so the distance (B) from the stripper assembly to header centerline (C) is 700 mm (27-9/16 in.).

**NOTE:**

The centerline is located where the header pans meet.

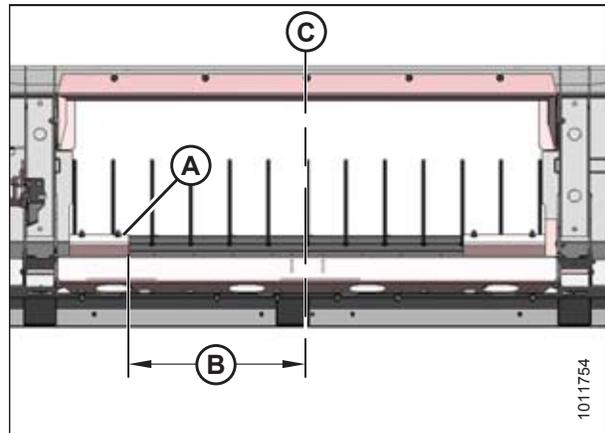


Figure 4.3: Left Stripper – Wide Opening

- Reinstall the four bolts (A) where the stripper assembly (B) mounting holes line up with the frame. Tighten bolts.
- Install M12 x 30 carriage bolt (C) and nut (provided in hardware bag) in the existing hole.

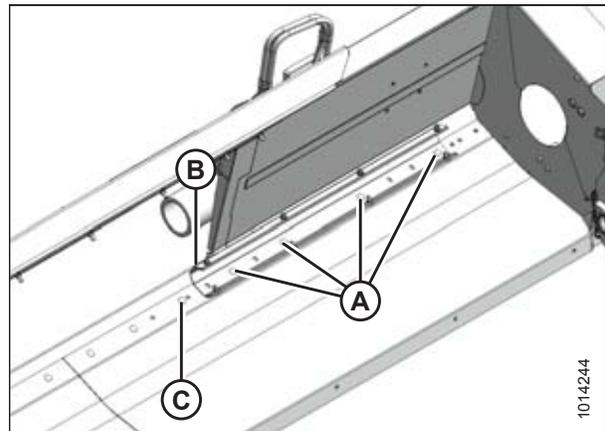


Figure 4.4: Left Stripper – Wide Opening

## RECONFIGURING HEADERS

6. Remove four bolts (A) attaching right stripper assembly (B) to the frame.

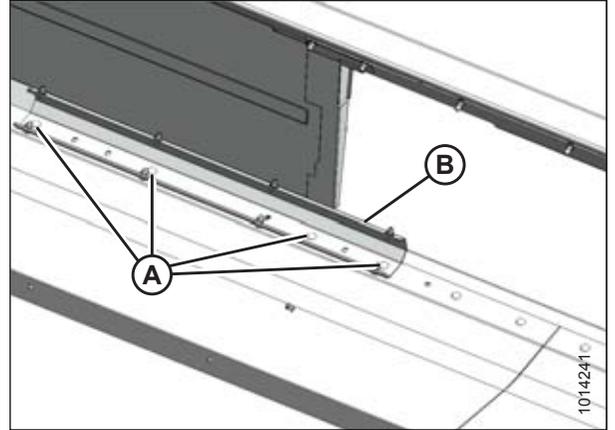


Figure 4.5: Right Stripper – Narrow Opening

7. Reinstall the four bolts (A) where the stripper assembly (B) mounting holes line up with the frame. Tighten bolts.
8. Install M12 x 30 carriage bolt (C) and nut (provided in hardware bag) in the existing hole.

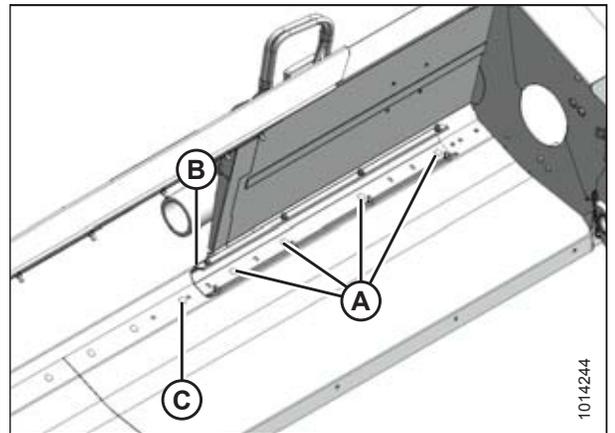


Figure 4.6: Left Stripper – Wide Opening

9. Remove four bolts (A) attaching right stripper assembly (B) to the frame.

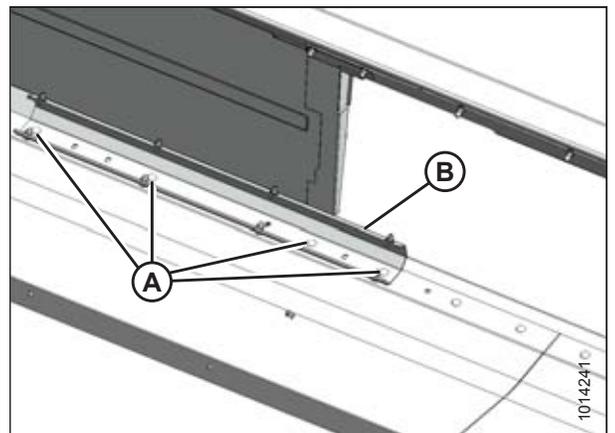


Figure 4.7: Right Stripper – Narrow Opening

## RECONFIGURING HEADERS

10. Move right stripper assembly (A) outboard so that dimension (B) from header centerline (C) is 700 mm (27-9/16 in.).
11. Make sure distance (D) between stripper assemblies is 1400 mm (55-1/8 in.).

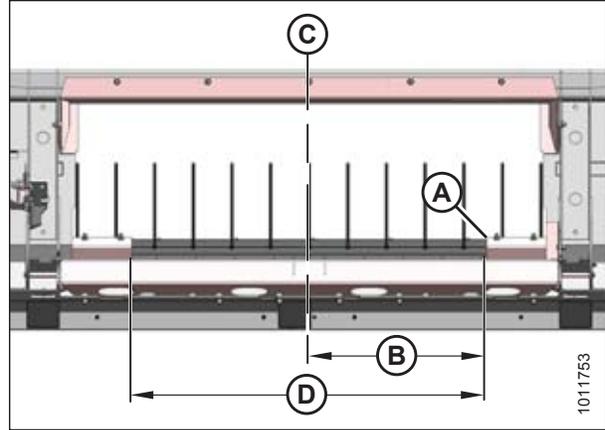


Figure 4.8: Right Stripper – Wide Opening

12. Reinstall the four bolts (A) where stripper assembly (B) mounting holes line up with the frame. Tighten bolts.
13. Install M12 x 30 carriage bolt (C) and nut (provided in hardware bag) into the existing hole as shown.
14. Manually rotate the auger and check the clearances between the auger flighting and stripper plates. The clearance should be 3–11 mm (1/8–7/16 in.).

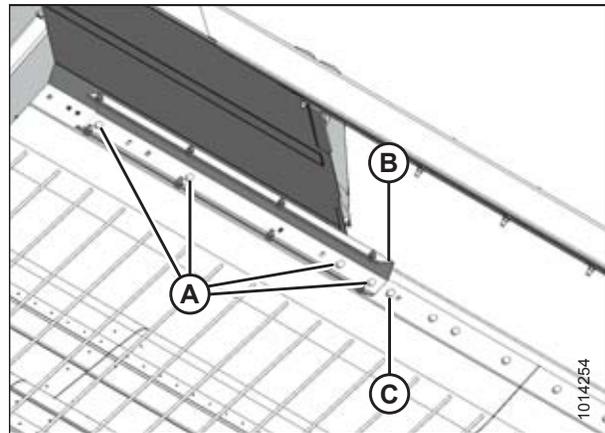


Figure 4.9: Right Stripper – Wide Opening

15. Reinstall covers (B) and tighten bolts (A).

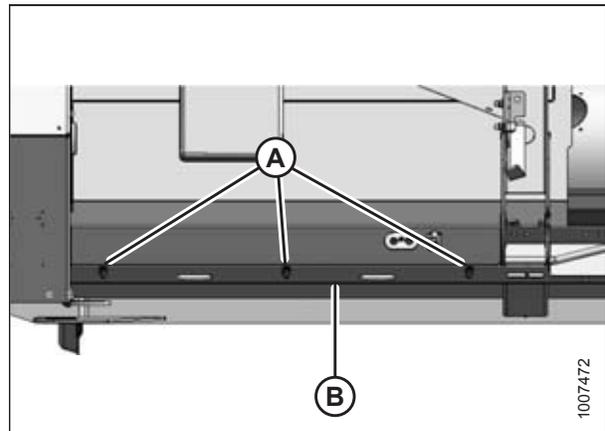


Figure 4.10: Left Cover – Right Side Opposite

## RECONFIGURING HEADERS

### 4.1.2 Removing Flighting Extensions

Follow these steps to configure the auger flighting extensions for a 1651 mm (65 in.) feeder house:

1. Remove the two access covers (A) on both sides of center.

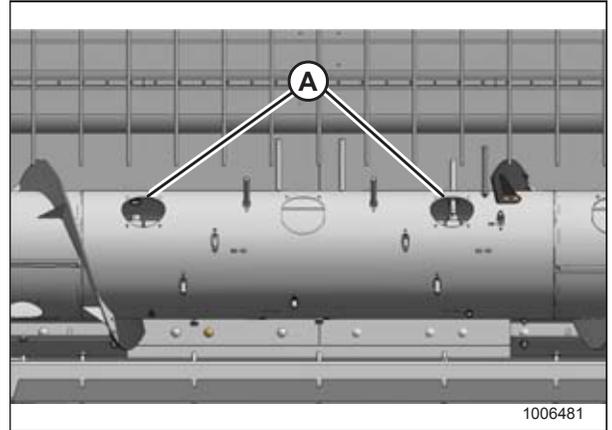


Figure 4.11: Access Holes in Auger

2. Remove hardware (A) securing existing left and right auger flighting extensions (B) and remove extensions.

**IMPORTANT:**

To avoid damage to auger, check that all loose hardware and tools are removed from inside the auger.

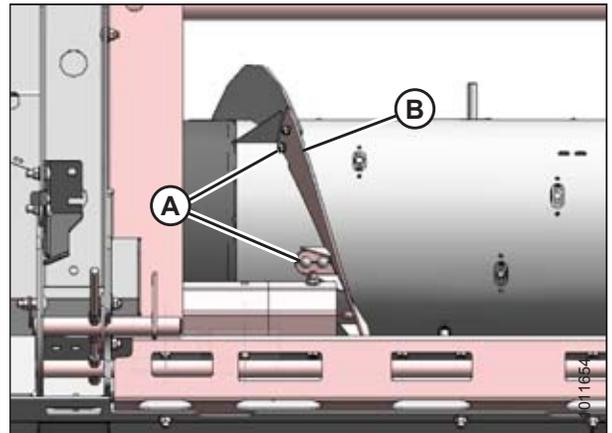


Figure 4.12: Left Flighting Extension – Right Extension Opposite

## RECONFIGURING HEADERS

### 4.1.3 Installing Auger Fingers

The total number of fingers installed on the auger should be 22. Follow these steps to install the extra auger fingers required to configure the header:

1. Retrieve the bag of hardware from the manual storage case located on the back of the header.
2. Remove screws (A) securing plastic plug (B) to the auger and remove plug from inside the auger.
3. Retrieve four plastic guides (C) from the bag of hardware.
4. Position plastic guide (C) in the hole from inside the auger and secure with hex socket screws (D) and tee nuts (E) provided in the hardware bag.
5. Torque the screws to 8.5 Nm (75 lbf·in).
6. Repeat Steps 2, [page 36](#) to 5, [page 36](#) for the remaining locations.

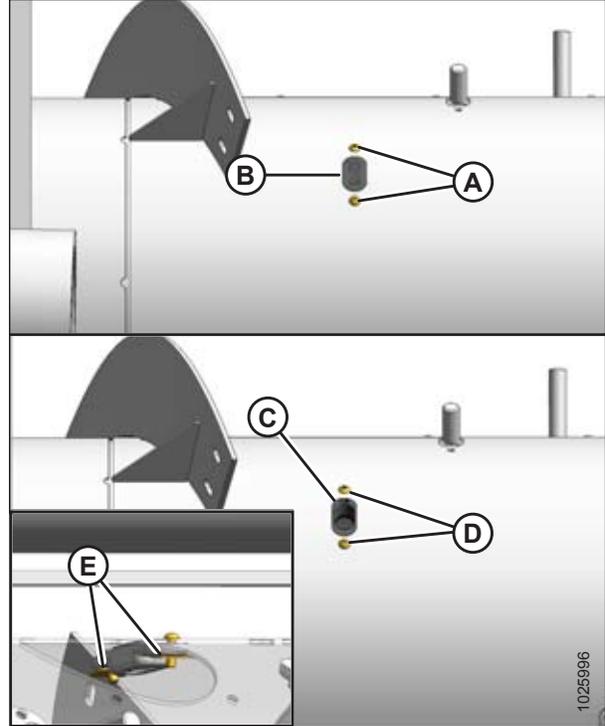


Figure 4.13: Plastic Guides

7. Insert finger (A) through plastic guide (B) from inside the auger.
8. Insert finger into bushing (C).
9. Secure finger (A) in bushing with hairpin (D). Install the hairpin with its closed end positioned to lead in the direction of the auger's forward rotation.
10. Repeat Steps 7, [page 36](#) to 9, [page 36](#) for the remaining fingers. There should be a total of 22 fingers installed.

#### IMPORTANT:

To avoid damage to auger, check that all loose hardware and tools are removed from inside the auger.

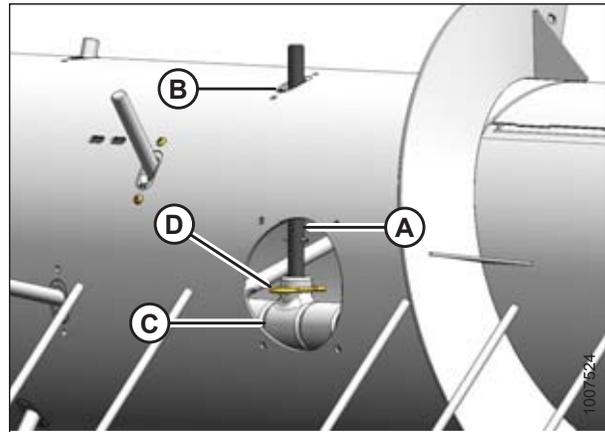


Figure 4.14: Auger Fingers

## RECONFIGURING HEADERS

11. Replace access covers (A) and secure with existing screws (B). Torque to 11 Nm (95 lbf-in).

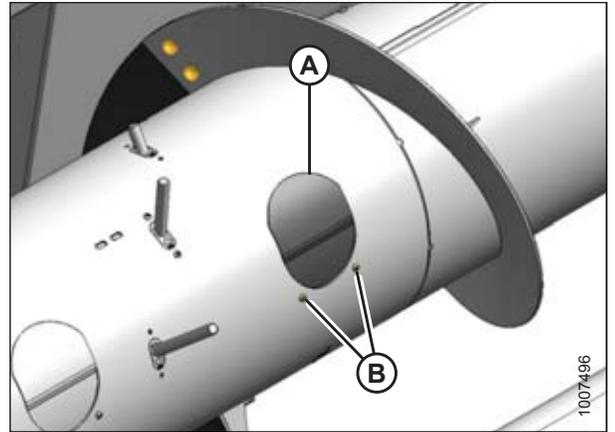


Figure 4.15: Access Cover

## 4.2 Configuring Headers for Case IH

PW8 Pick-Up Headers are configured at the factory for Cas IH combine models with a 1372 mm (54 in.) feeder house. These procedures describe how to modify the header for models with a 1156 mm (46 in.) feeder house.

### 4.2.1 Moving Stripper Assemblies

To reposition the stripper assemblies for a narrower feeder house opening, follow these steps:

1. Loosen three bolts (A) and remove cover (B) on both sides of the header to expose the stripper assembly attachment hardware.

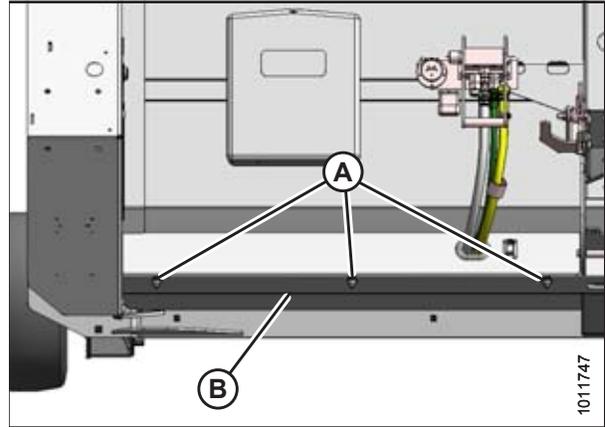


Figure 4.16: Left Cover – Right Side Opposite

2. Remove the four bolts (A) attaching left stripper assembly (B) to the frame, left of the header centerline (C).

**NOTE:**

For clarity, auger not shown in illustration at right.

**NOTE:**

The centerline is located where the header pans meet.

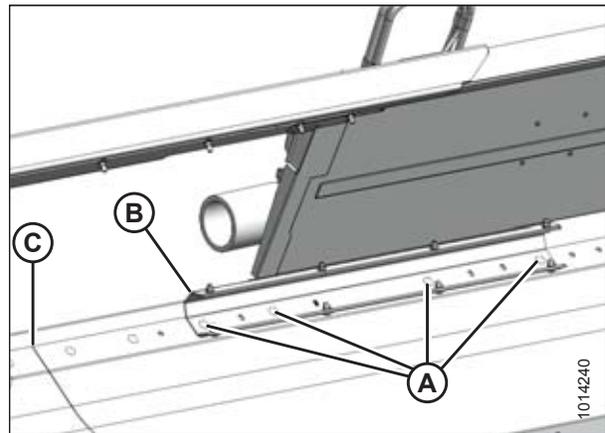


Figure 4.17: Left Stripper – Narrow Opening

## RECONFIGURING HEADERS

3. Move the left stripper assembly (A) inboard so that the distance (B) from the stripper assembly to the header centerline (C) is 578 mm (22-3/4 in.).

**NOTE:**

The centerline is located where the header pans meet.

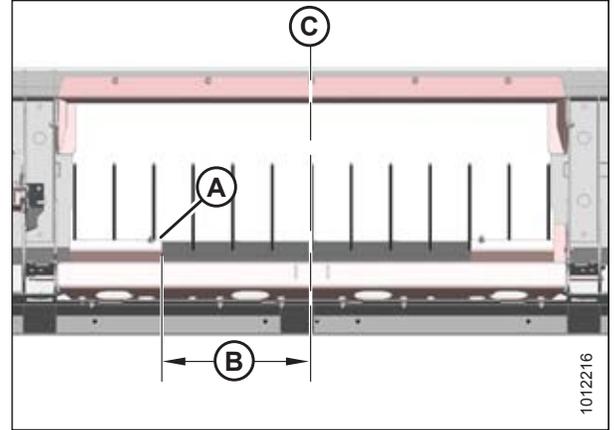


Figure 4.18: Narrow Opening

4. Reinstall the four bolts (A) where the stripper assembly (B) mounting holes line up with the frame. Tighten bolts.

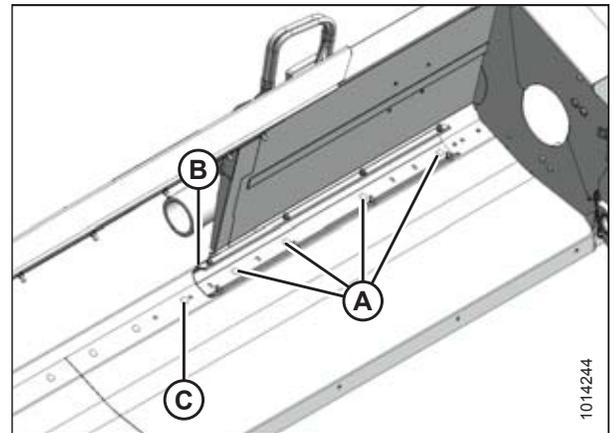


Figure 4.19: Left Stripper – Wide Opening

5. Remove four bolts (A) attaching right stripper assembly (B) to the frame.

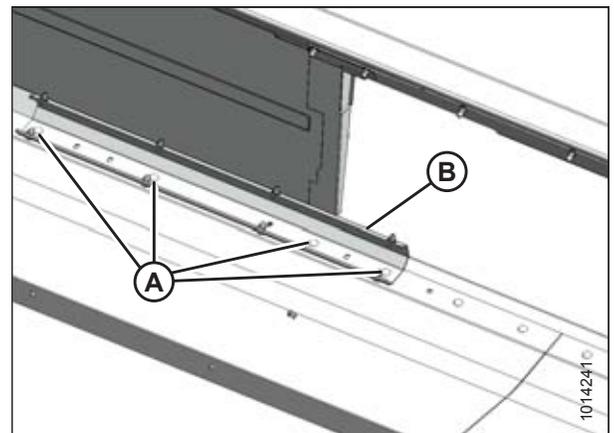


Figure 4.20: Right Stripper

## RECONFIGURING HEADERS

6. Move right stripper assembly (A) inboard so dimension (B) from header centerline (C) is 578 mm (22-3/4 in.).
7. Make sure the distance (D) between stripper assemblies is 1156 mm (45-1/2 in.).

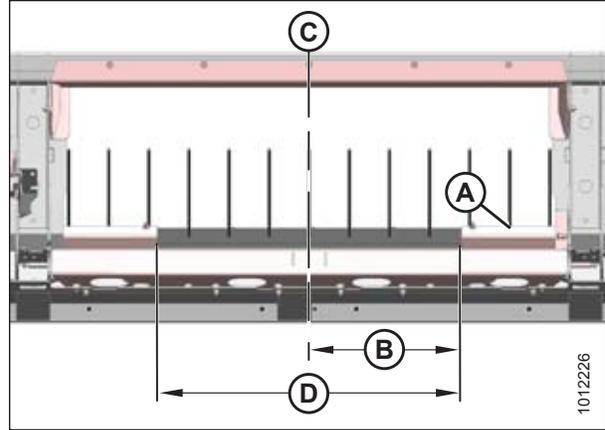


Figure 4.21: Narrow Opening

8. Reinstall the four bolts (A) where stripper assembly (B) mounting holes line up with the frame. Tighten the bolts.
9. Manually rotate the auger and check the clearances between the auger flighting and stripper plates. The clearance should be 3–11 mm (1/8–7/16 in.).
10. If necessary, refer to [4.5 Adjusting Stripper Plate Clearance](#), page 54

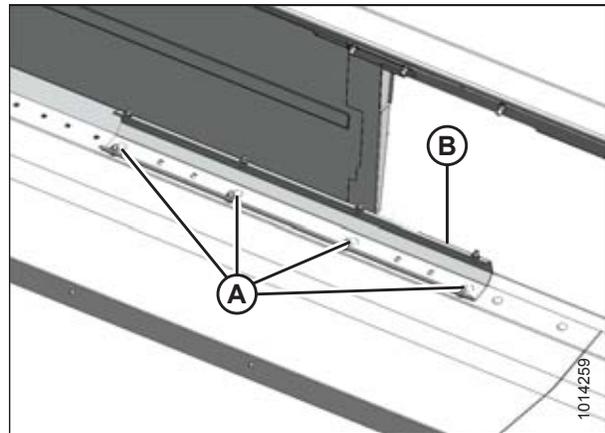


Figure 4.22: Right Stripper – Narrow Opening

11. Reinstall covers (B) and tighten bolts (A).

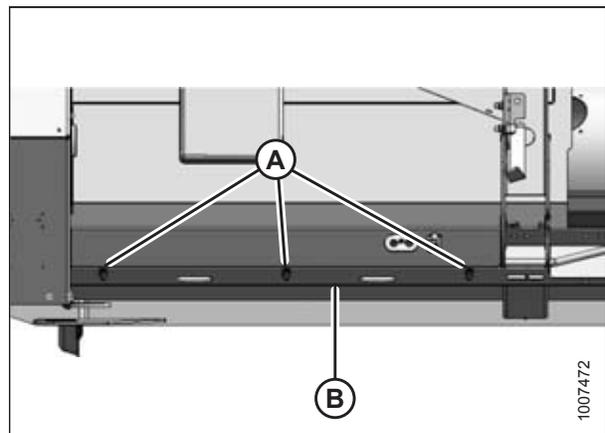


Figure 4.23: Left Cover – Right Side Opposite

## 4.3 Configuring Headers for New Holland CX

PW8 Pick-Up Headers are configured at the factory for New Holland combine models with a 1270 mm (50 in.) feeder house. These procedures describe how to modify the header for model CX with a 1524 mm (60 in.) feeder house.

### 4.3.1 Moving Stripper Assemblies

To reposition the stripper assemblies for a larger header opening, follow these steps:

1. Loosen three bolts (A) and remove cover (B) on both sides of the header to expose the stripper assembly attachment hardware.

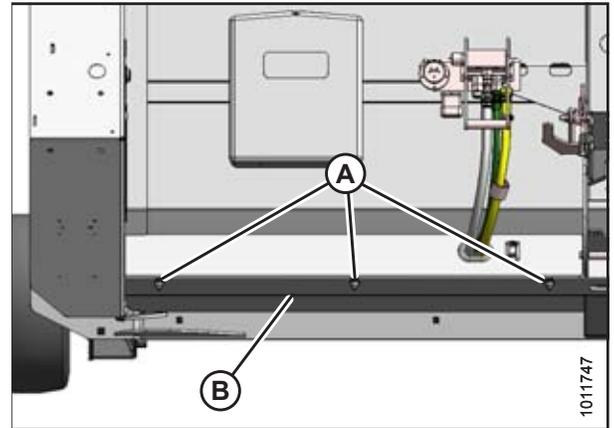


Figure 4.24: Left Cover – Right Side Opposite

2. Remove the four bolts (A) attaching left stripper assembly (B) to the frame, left of the header centerline (C).

**NOTE:**

For clarity, auger not shown in Figure 4.25, page 41

**NOTE:**

The centerline is located where the header pans meet.

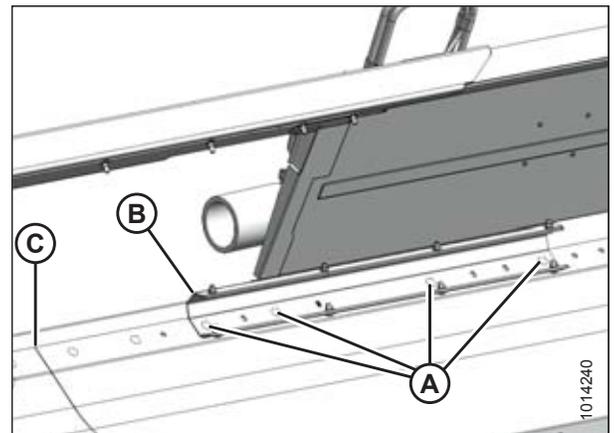


Figure 4.25: Left Stripper – Narrow Opening

## RECONFIGURING HEADERS

3. Move left stripper assembly (A) outboard so the distance (B) from the stripper assembly to header centerline (C) is 700 mm (27-9/16 in.).

**NOTE:**

The centerline is located where the header pans meet.

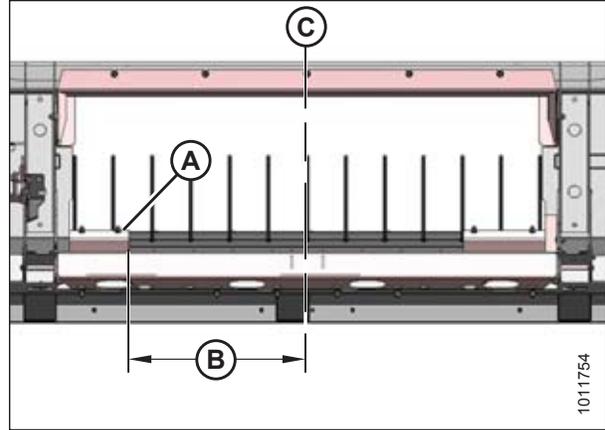


Figure 4.26: Left Stripper – Wide Opening

4. Reinstall the four bolts (A) where the stripper assembly (B) mounting holes line up with the frame. Tighten bolts.
5. Install M12 x 30 carriage bolt (C) and nut (provided in hardware bag) in the existing hole.

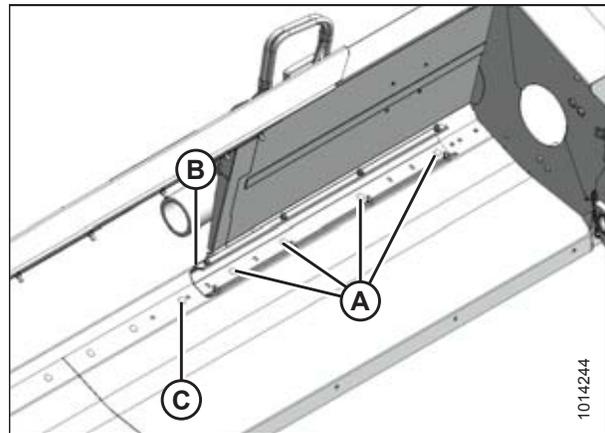


Figure 4.27: Left Stripper – Wide Opening

6. Remove four bolts (A) attaching right stripper assembly (B) to the frame.

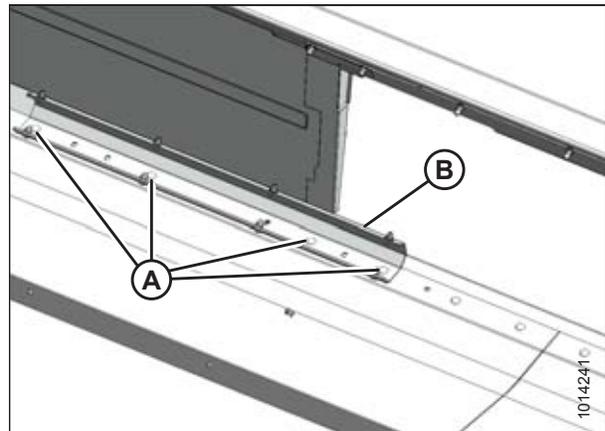


Figure 4.28: Right Stripper – Narrow Opening

## RECONFIGURING HEADERS

7. Move right stripper assembly (A) outboard so that dimension (B) from header centerline (C) is 700 mm (27-9/16 in.).
8. Make sure distance (D) between stripper assemblies is 1400 mm (55-1/8 in.).

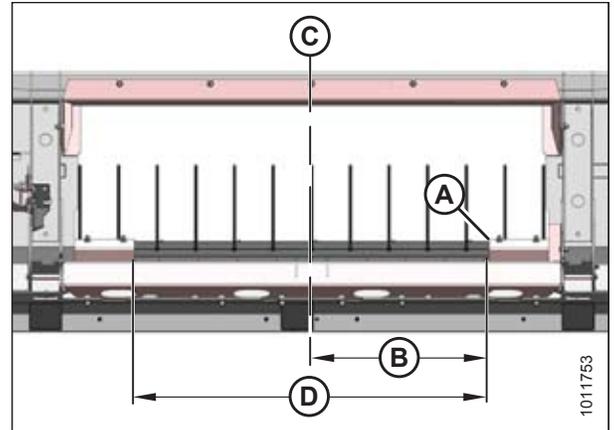


Figure 4.29: Right Stripper – Wide Opening

9. Reinstall the four bolts (A) where stripper assembly (B) mounting holes line up with the frame. Tighten bolts.
10. Install M12 x 30 carriage bolt (C) and nut (provided in hardware bag) into the existing hole as shown.
11. Manually rotate the auger and check the clearances between the auger flighting and stripper plates. The clearance should be 3–11 mm (1/8–7/16 in.).
12. If necessary, refer to [4.5 Adjusting Stripper Plate Clearance](#), page 54.

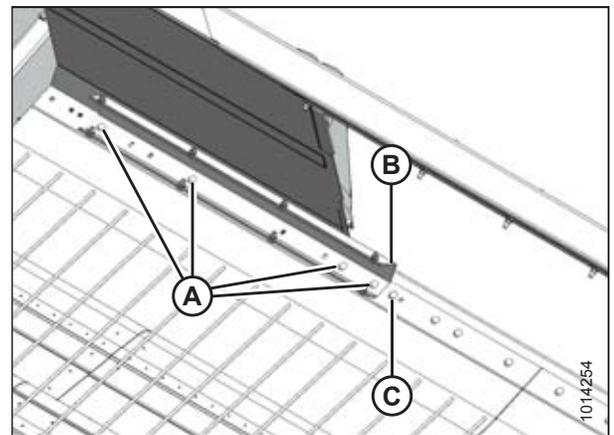


Figure 4.30: Right Stripper – Wide Opening

13. Reinstall covers (B) and tighten bolts (A).

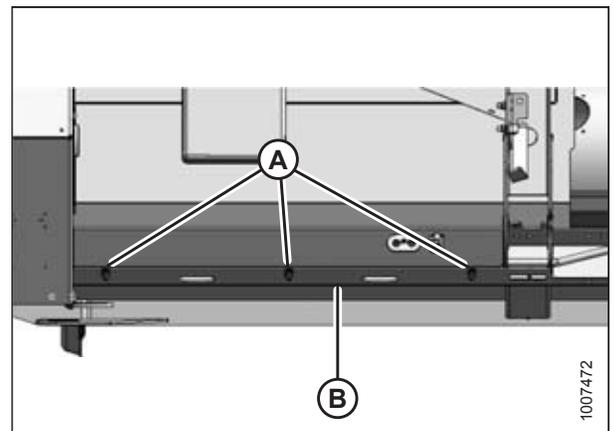


Figure 4.31: Left Cover – Right Side Opposite

## RECONFIGURING HEADERS

### 4.3.2 Removing Flighting Extensions

Follow these steps to configure the auger flighting extensions for a 1651 mm (65 in.) feeder house:

1. Remove the two access covers (A) on both sides of center.

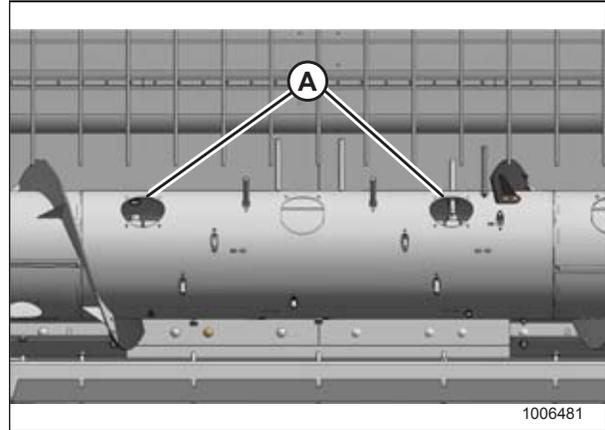


Figure 4.32: Access Holes in Auger

2. Remove hardware (A) securing existing left and right auger flighting extensions (B) and remove extensions.

**IMPORTANT:**

To avoid damage to auger, check that all loose hardware and tools are removed from inside the auger.

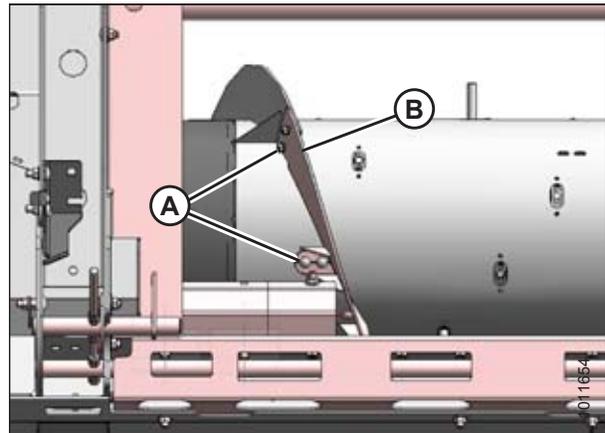


Figure 4.33: Left Flighting Extension – Right Extension Opposite

### 4.3.3 Installing Auger Fingers

The total number of fingers installed on the auger should be 22. Follow these steps to install the extra auger fingers required to configure the header:

1. Retrieve the bag of hardware from the manual storage case located on the back of the header.
2. Remove screws (A) securing plastic plug (B) to the auger and remove plug from inside the auger.
3. Retrieve four plastic guides (C) from the bag of hardware.
4. Position plastic guide (C) in the hole from inside the auger and secure with hex socket screws (D) and tee nuts (E) provided in the hardware bag.
5. Torque the screws to 8.5 Nm (75 lbf·in).
6. Repeat Steps 2, [page 45](#) to 5, [page 45](#) for the remaining locations.

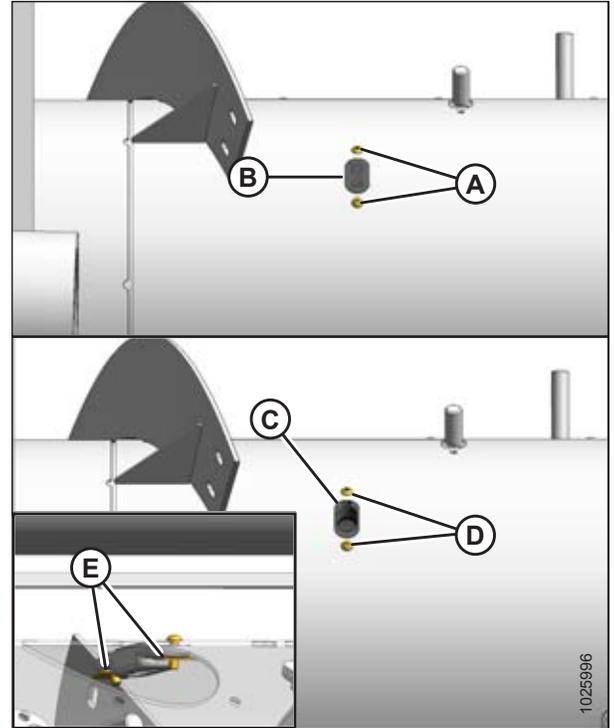


Figure 4.34: Plastic Guides

7. Insert finger (A) through plastic guide (B) from inside the auger.
8. Insert finger into bushing (C).
9. Secure finger (A) in bushing with hairpin (D). Install the hairpin with its closed end positioned to lead in the direction of the auger's forward rotation.
10. Repeat Steps 7, [page 45](#) to 9, [page 45](#) for the remaining fingers. There should be a total of 22 fingers installed.

**IMPORTANT:**

To avoid damage to auger, check that all loose hardware and tools are removed from inside the auger.

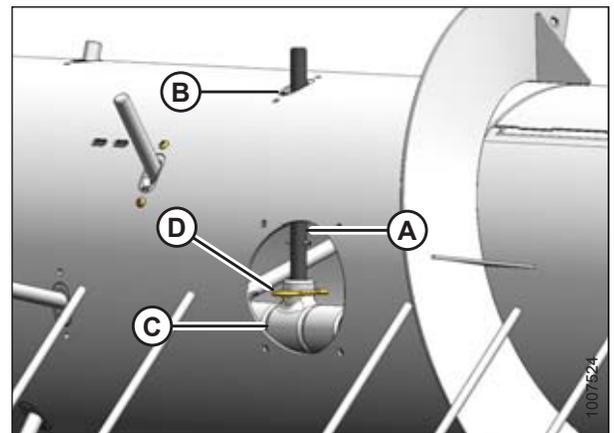


Figure 4.35: Auger Fingers

## RECONFIGURING HEADERS

11. Replace access covers (A) and secure with existing screws (B). Torque to 11 Nm (95 lbf·in).

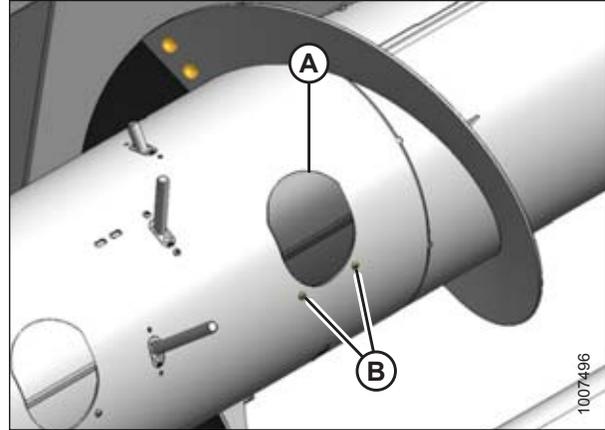


Figure 4.36: Access Cover

## 4.4 Configuring Headers for New Holland CR

PW8 Pick-Up Headers are configured at the factory for New Holland combine models with a 1270 mm (50 in.) feeder house. These procedures describe how to modify the header for models with a 1016 mm (40 in.) feeder house.

### 4.4.1 Moving Stripper Assemblies

This procedure describes the repositioning of the stripper assemblies to accommodate the narrower feeder house opening.

1. Loosen three bolts (A) and remove cover (B) on both sides of the header to expose the stripper assembly attachment hardware.

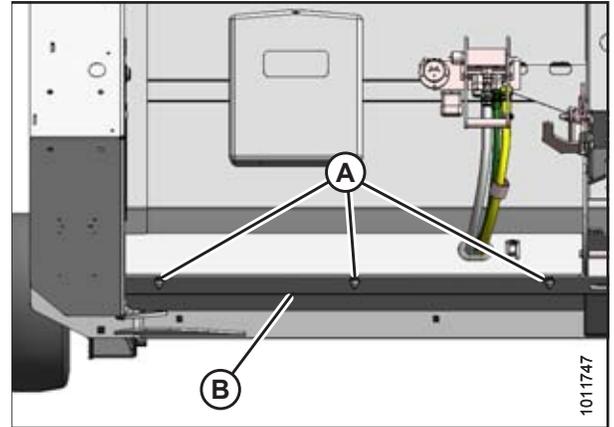


Figure 4.37: Left Cover – Right Side Opposite

2. Remove the four bolts (A) attaching left stripper assembly (B) to the frame, left of the header centerline (C).

**NOTE:**

For clarity, auger not shown in illustration at right.

**NOTE:**

The centerline is located where the header pans meet.

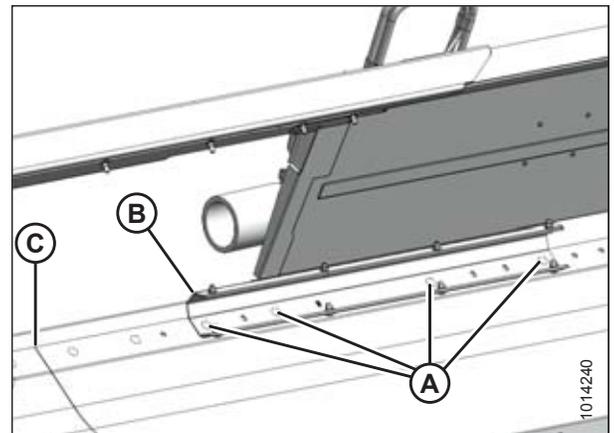


Figure 4.38: Left Stripper – Narrow Opening

## RECONFIGURING HEADERS

3. Move the left stripper assembly (A) inboard so that the distance (B) from the stripper assembly to the header centerline (C) is 417 mm (16-7/16 in.).

**NOTE:**

The centerline is located where the header pans meet.

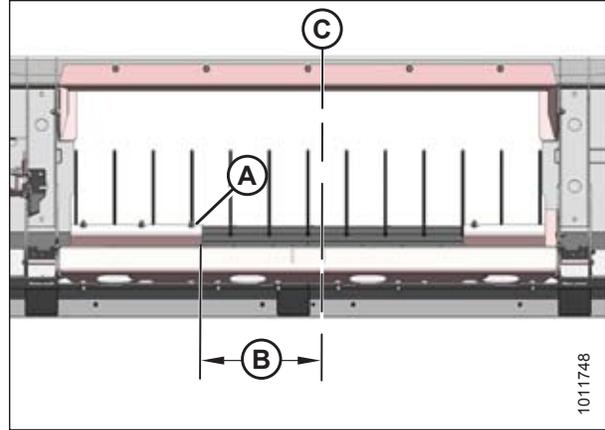


Figure 4.39: Narrow Opening

4. Reinstall the four bolts (A) where the stripper assembly (B) mounting holes line up with the frame. Tighten bolts.
5. Install M12 x 30 carriage bolt (C) and nut (provided in hardware bag) in the existing hole.

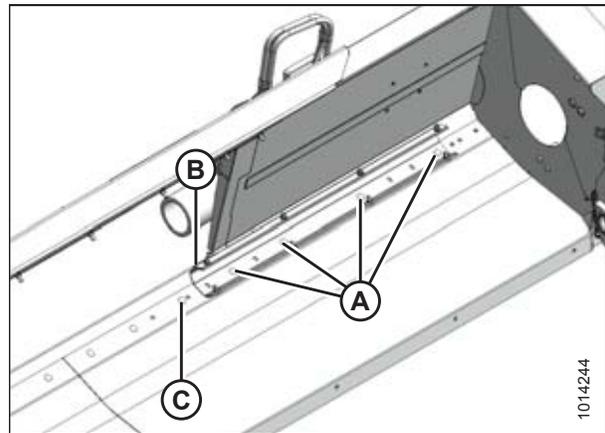


Figure 4.40: Left Stripper – Wide Opening

6. Remove four bolts (A) attaching right stripper assembly (B) to the frame.

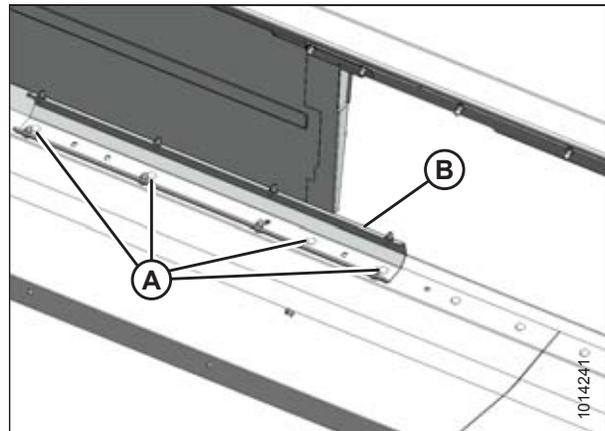


Figure 4.41: Right Stripper – Narrow Opening

## RECONFIGURING HEADERS

7. Move the right stripper assembly (A) inboard so that dimension (B) from header centerline (C) is 417 mm (16-7/16 in.).
8. Ensure distance (D) between stripper assemblies is 834 mm (32-13/16 in.).

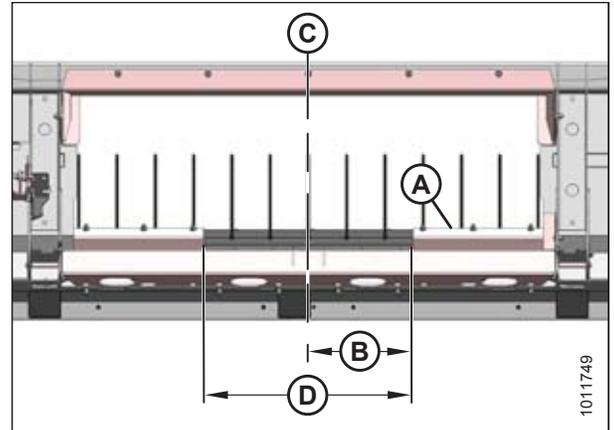


Figure 4.42: Narrow Opening

9. Reinstall the four bolts (A) where stripper assembly (B) mounting holes line up with the frame. Tighten bolts.
10. Manually rotate the auger and check the clearances between the auger flighting and stripper plates. The clearance should be 3–11 mm (1/8–7/16 in.).

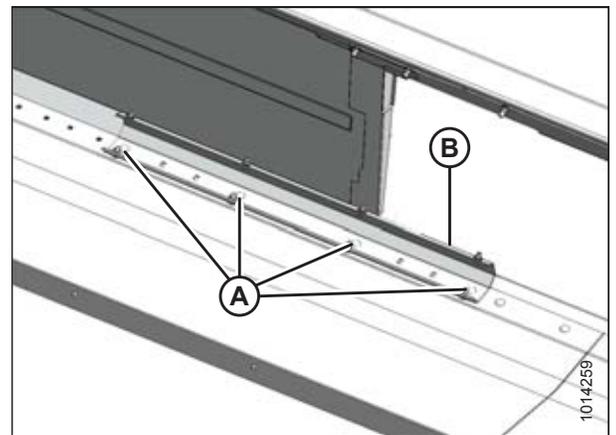


Figure 4.43: Right Stripper – Narrow Opening

11. Reinstall covers (B) and tighten bolts (A).

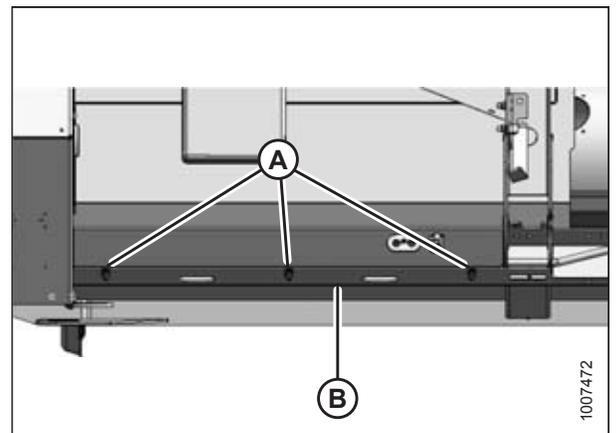


Figure 4.44: Left Cover – Right Side Opposite

### 4.4.2 Installing Flighting Extensions

Follow these steps to install the long flighting extensions required for a 1 m (40 in.) feeder house:

1. Remove the two flighting extensions (A) that are strapped to the auger.

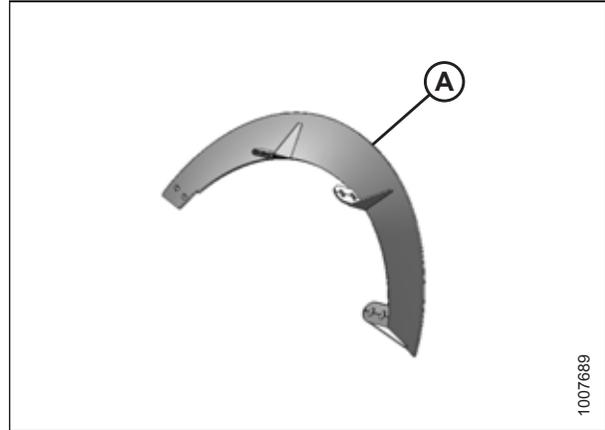


Figure 4.45: Left Extension – Right Opposite

2. Remove two access covers (A), one on each side of the center.

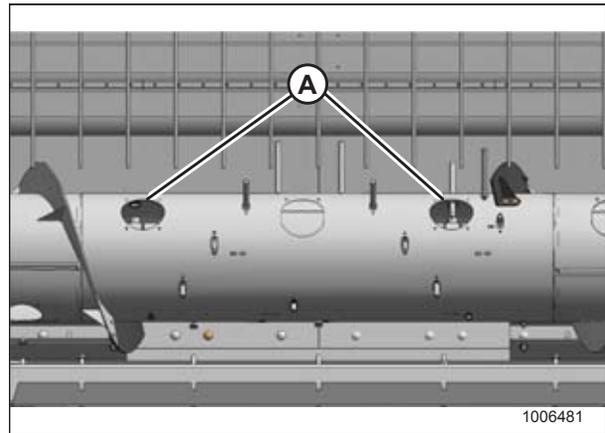


Figure 4.46: Access Holes in Auger

3. Remove hardware (A) securing existing left and right auger flighting extensions (B) and remove extensions. Retain hardware.

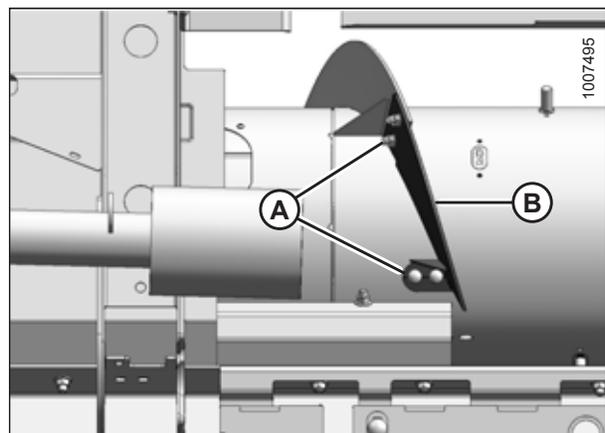
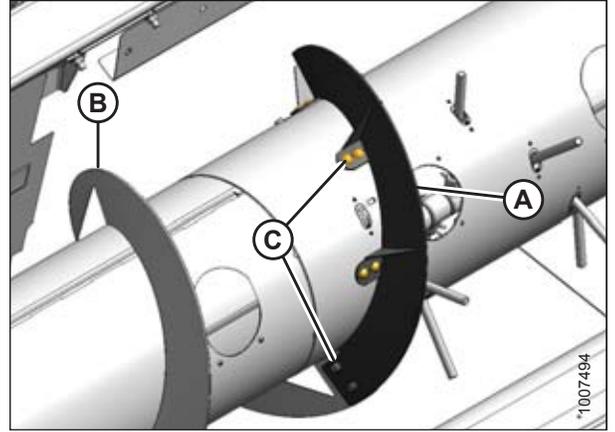


Figure 4.47: Short Flighting Extension

## RECONFIGURING HEADERS

4. Retrieve the hardware provided in the manual storage case.
5. Place new flighting extension (A) on auger, ensuring new flighting rests on the outboard side of existing flighting (B).
6. Secure flighting extension (A) to auger with existing hardware and additional M8 x 20 bolts (C) and locknuts provided in hardware bag. Bolts (C) that join the flighting must be installed with heads facing inboard.
7. Adjust flighting extension position to achieve flushness with existing flighting along outer edge.
8. Repeat the above steps for the opposite side.
9. Store removed components in a safe place.
10. Manually rotate the auger and check the clearances between the auger flighting and stripper plates. The clearance should be 3–11 mm (1/8–7/16 in.). If necessary, adjust clearance. Refer to [4.5 Adjusting Stripper Plate Clearance, page 54](#).



**Figure 4.48: Long Flighting Extension**

## RECONFIGURING HEADERS

### 4.4.3 Removing Auger Fingers

Follow these steps to configure the auger fingers for a New Holland 1 m (40 in.) feeder house:

**NOTE:**

There should be 16 fingers on the auger.

1. Remove the two covers (A) on each side of the auger to access the auger fingers (B).

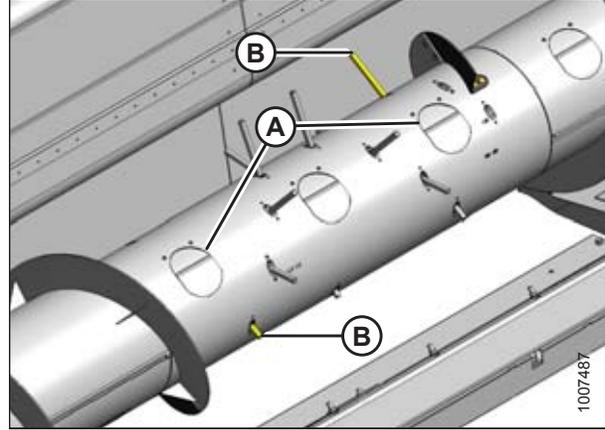


Figure 4.49: Access Holes in Auger

2. From inside the auger, remove hairpin (A) and pull finger (B) out of bushing (C).
3. From inside the auger, swivel finger away from bushing, pull from plastic guide (D), and remove from auger.
4. Assemble hairpin to finger and store in the manual case.
5. Repeat Step 2, [page 52](#) to Step 4, [page 52](#) for the other finger.

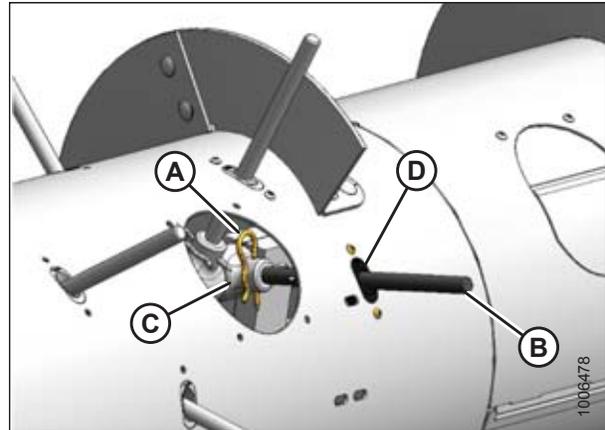


Figure 4.50: Auger Fingers

6. Remove screws (A) securing plastic guide (B) where the extra finger was located.
7. Remove plastic guide from inside the auger.
8. Retrieve plugs and hardware from bag provided.

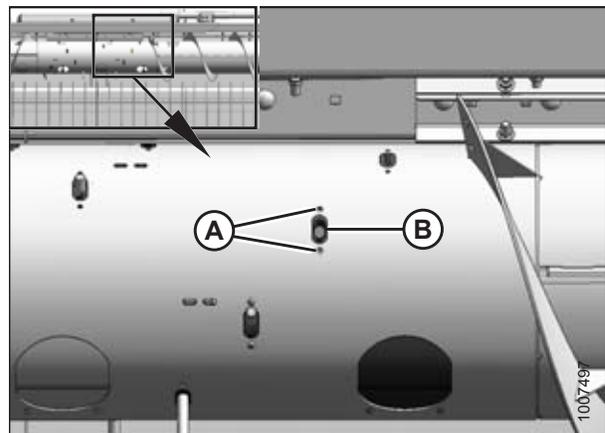


Figure 4.51: Finger Guide Plugs

## RECONFIGURING HEADERS

9. Position plug (B) in hole from inside the auger and secure with M6 x 20 long hex socket screws (A).
10. Torque screws to 8.5 Nm (75 lbf-in).
11. Repeat Step 6, [page 52](#) to Step 10, [page 53](#) for the other plastic guide.

**IMPORTANT:**

To avoid damage to auger, check that all loose hardware and tools are removed from inside the auger.

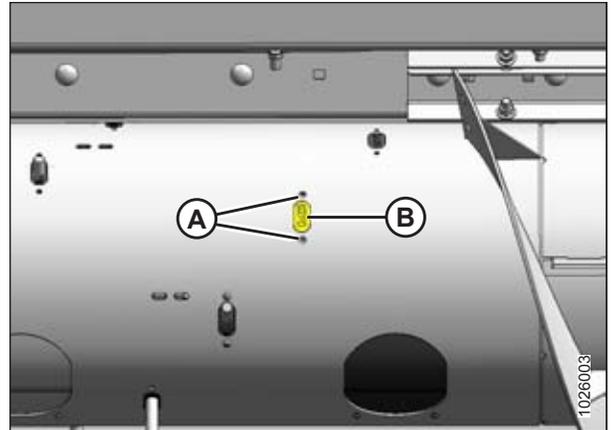


Figure 4.52: Finger Guide Plugs

12. Replace access covers (A) and secure with existing screws (B). Torque to 11 Nm (95 lbf-in).

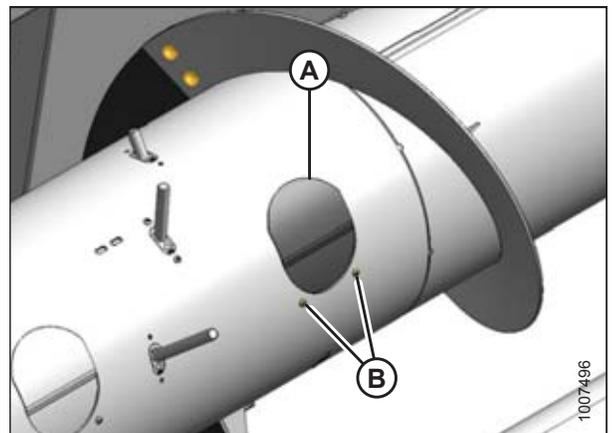


Figure 4.53: Access Cover

## 4.5 Adjusting Stripper Plate Clearance

1. Loosen nuts (A) on stripper plate (B), and adjust the stripper plate to achieve clearance (C) of 3–8 mm (1/8–5/16 in.).
2. Tighten nuts (A).
3. Recheck clearance.

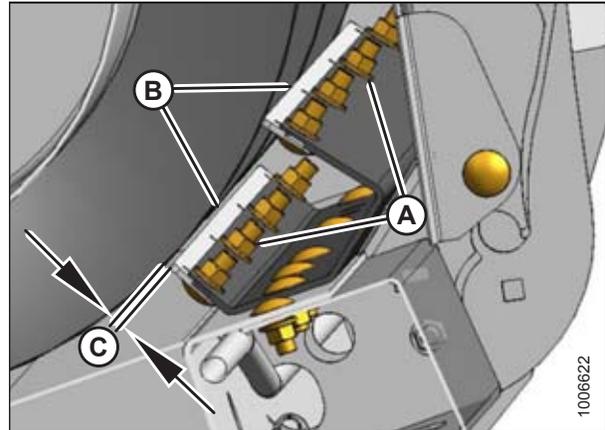


Figure 4.54: Stripper Plate Clearance

## 5 Attaching Header to Combine

This section includes instructions for attaching PW8 headers to the combines listed below.

Combine	Refer to
Case IH	<a href="#">5.1 Attaching to Case IH Combine, page 55</a>
John Deere	<a href="#">5.2 Attaching to John Deere 60, 70, S, or T Series Combine, page 58</a>
New Holland CR, CX Series	<a href="#">5.3 Attaching to New Holland CR/CX Series Combine, page 62</a>
Versatile	<a href="#">5.4 Attaching to Versatile Combine, page 66</a>

### 5.1 Attaching to Case IH Combine

#### DANGER

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

1. Pull handle (A) on combine to raise hooks (B) on both sides of the feeder house.

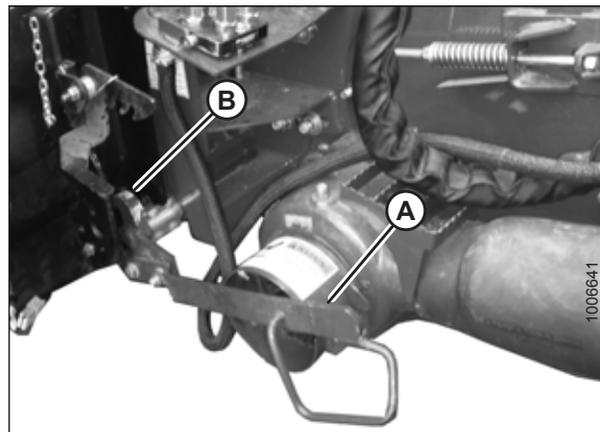


Figure 5.1: Feeder House Locks

2. Drive combine slowly up to header until feeder house saddle (A) is directly under the header top beam (B).
3. Raise feeder house slightly to lift header ensuring feeder house saddle (A) is properly engaged in header frame.
4. Stop engine, and remove key from ignition.

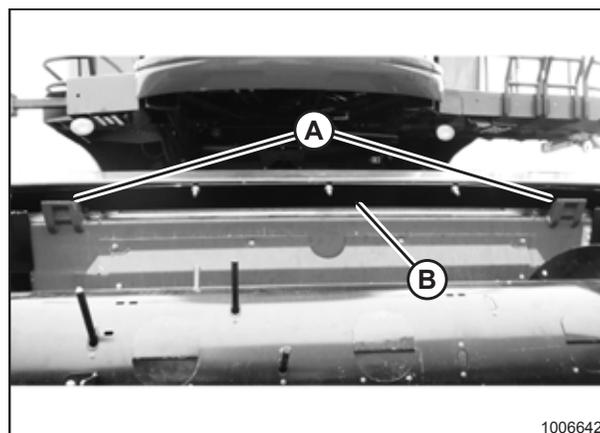


Figure 5.2: Header on Combine

## ATTACHING HEADER TO COMBINE

5. Lift lever (A) on header at left side of feeder house and push handle (B) on combine to engage locks (C) on both sides of the feeder house.
6. Push down on lever (A) so that slot in lever engages handle (B) to lock handle in place.
7. If locks (C) do not fully engage the spacer tube and bolt on the header, loosen nut (E) and adjust position of the spacer tube and bolt (D) as necessary (both sides). Tighten nut.
8. Loosen bolts (F) and adjust lock as required to obtain full lock on spacer tube and bolt (D) when lift lever (A) and handle (B) are engaged. Retighten bolts.

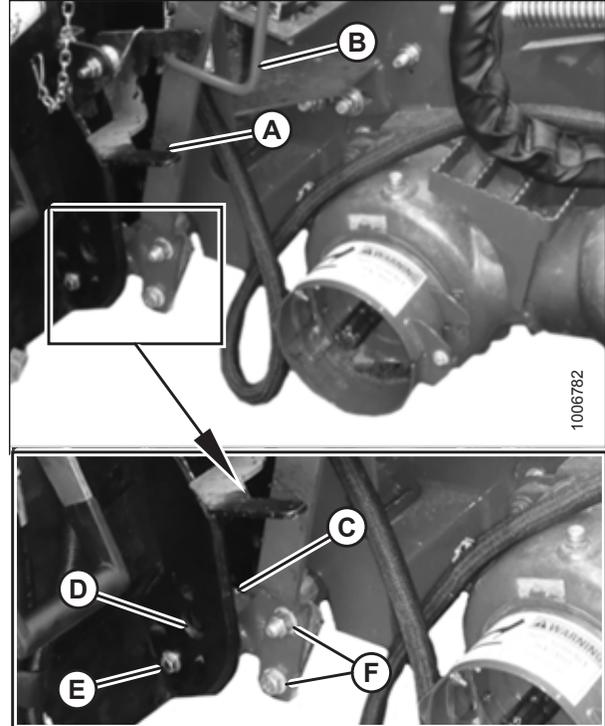


Figure 5.3: Engaging Locks

9. Rotate disc (B) on header driveline storage hook (A) and remove driveline from hook.

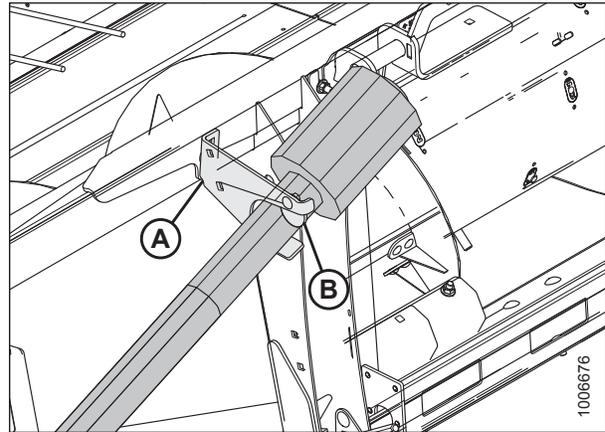


Figure 5.4: Driveline in Storage Position

## ATTACHING HEADER TO COMBINE

10. Pull back collar (A) on end of driveline and push onto combine output shaft (B) until collar locks.

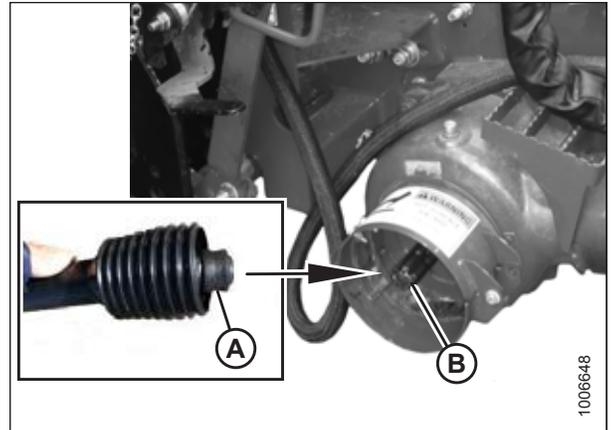


Figure 5.5: Attaching Driveline

11. Open cover (A) on header receptacle.
12. Push in lock button (B) and pull handle (C) upward to fully open position.
13. Remove coupler (D) from combine, and clean mating surfaces.

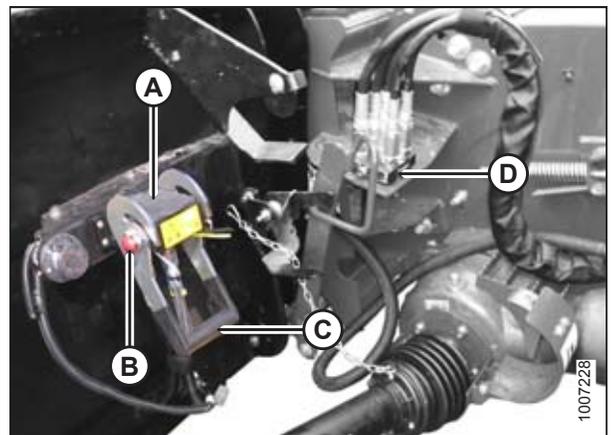


Figure 5.6: Coupler Lock

14. Position coupler (A) onto header receptacle and push handle (B) downward to engage coupler pins in receptacle.
15. Push handle to closed position until lock button (C) snaps out.
16. Open cover (D) on header electrical receptacle.
17. Remove electrical connector (E) from storage cup on combine.
18. Align lugs on electrical connector (E) with slots in receptacle, push connector onto receptacle, and turn collar on connector to lock it in place.
19. Remove draper deck shipping braces. Refer to [5.5 Removing Deck Shipping Braces, page 71](#).

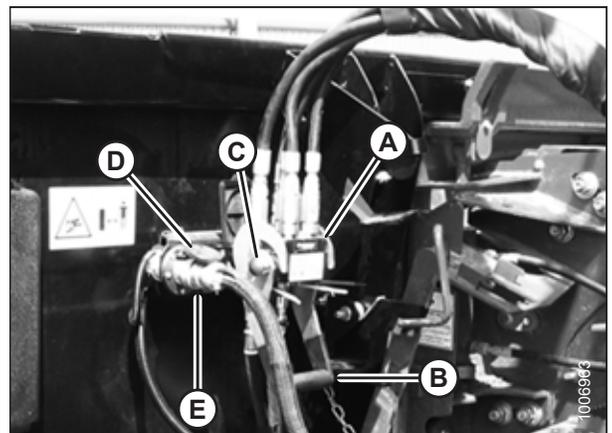


Figure 5.7: Attaching Coupler

## 5.2 Attaching to John Deere 60, 70, S, or T Series Combine

### DANGER

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

1. Push handle (A) on combine coupler toward feeder house to retract pins (B) at bottom corners of feeder house.

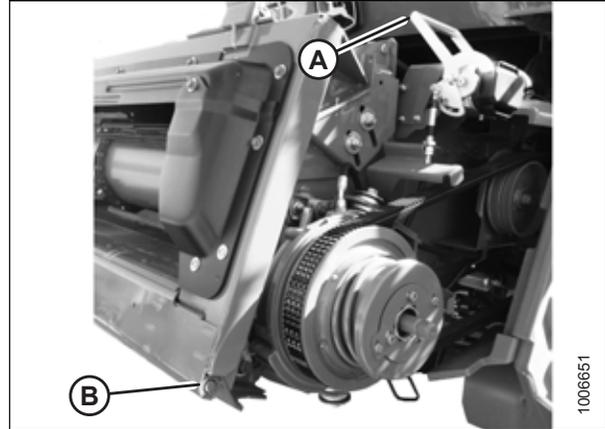


Figure 5.8: Feeder House Locks

2. Drive combine slowly up to header until feeder house saddles (A) are directly under header top beam (B).
3. Raise feeder house to lift header ensuring feeder house saddles (A) are properly engaged in the header frame.
4. Position header slightly off the ground, stop engine, and remove key from ignition.

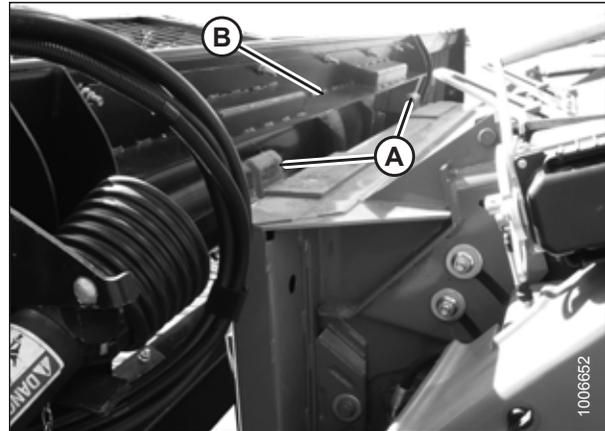


Figure 5.9: Header on Combine

5. Open driveshield (A) on combine feeder house.

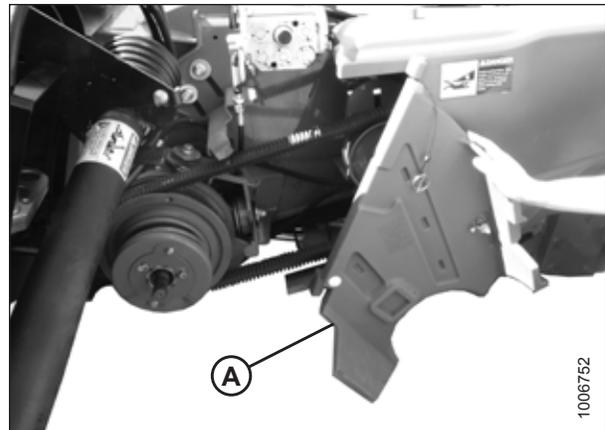


Figure 5.10: Combine Driveshield

## ATTACHING HEADER TO COMBINE

6. Rotate disc (B) on header driveline storage hook (A) and remove driveline from hook.

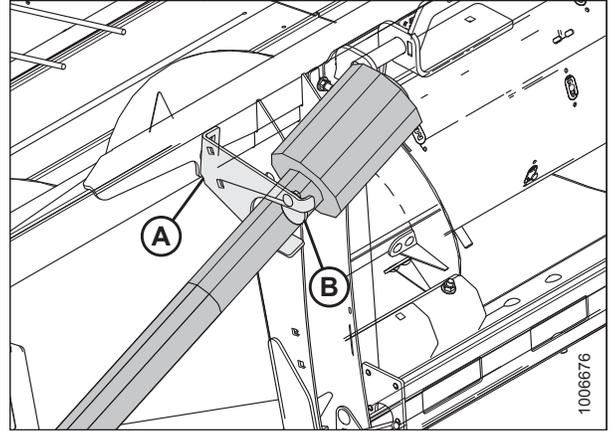


Figure 5.11: Driveline in Storage Position

7. Pull back collar (A) on end of driveline and slide driveline on feeder house driveshaft until the collar locks.
8. Close feeder house driveshield.

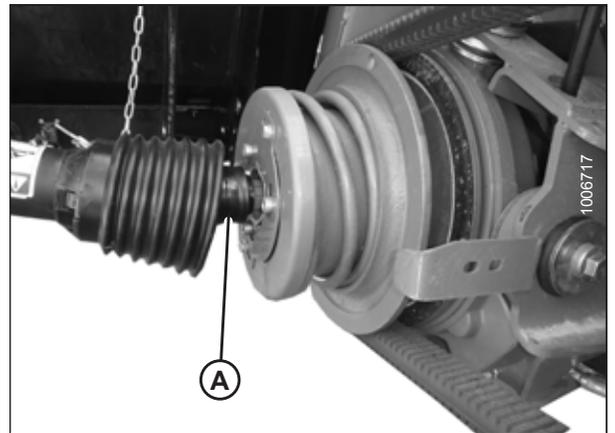


Figure 5.12: Attaching Driveline to Combine

9. Remove cover (A) from combine multicoupler receptacle.

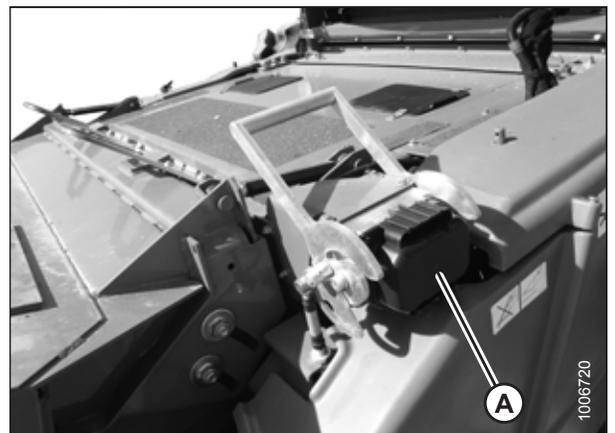


Figure 5.13: Combine Receptacle

## ATTACHING HEADER TO COMBINE

10. Pull handle (A) on header to release multicoupler (B) from storage position, remove coupler, and push handle back into header to store.

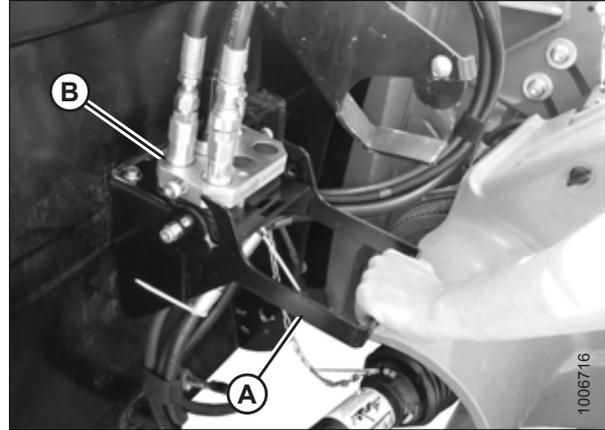


Figure 5.14: Releasing Coupler

11. Place coupler (A) onto combine receptacle.
12. Pull out knob (B) to release handle, and pull handle (C) to engage pins in coupler.

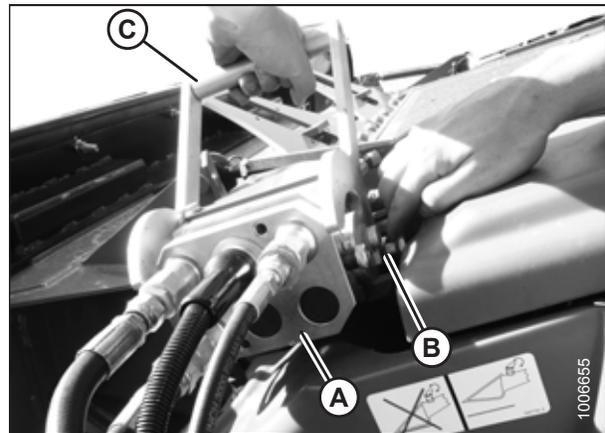


Figure 5.15: Engaging Coupler

## ATTACHING HEADER TO COMBINE

13. Pull handle (A) from vertical to fully horizontal position to fully engage multicoupler and to extend pins (B) at the base of the feeder house into locking plates (C). Knob (D) will engage lock handle.

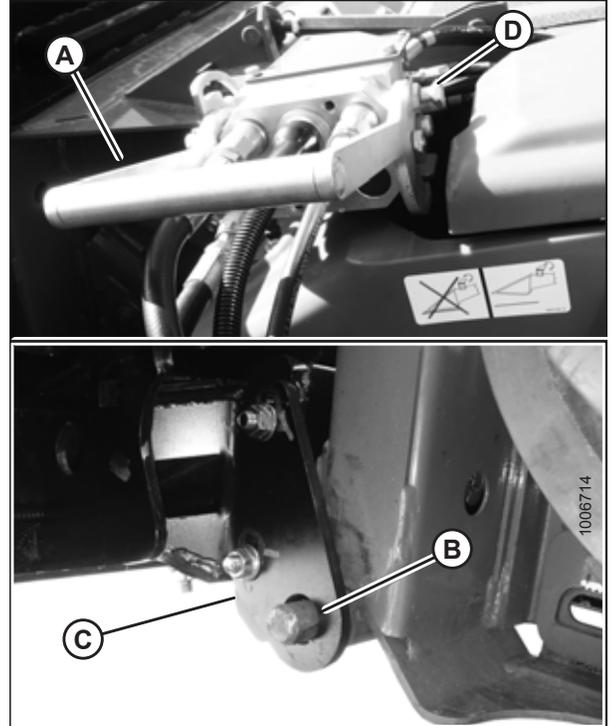


Figure 5.16: Locking Feeder House

### NOTE:

If handle does not move to fully horizontal position, check alignment of locking plates (A) on the header with locking pins (B) on both sides of the feeder house. If necessary, loosen nuts (C) and adjust plates (A) to line up with pins (B). Retighten nuts.

14. Remove draper deck shipping braces. Refer to [5.5 Removing Deck Shipping Braces, page 71](#).

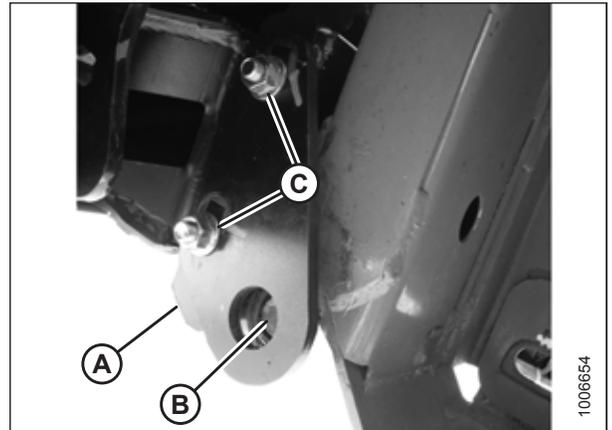


Figure 5.17: Aligning Locking Plates

### 5.3 Attaching to New Holland CR/CX Series Combine

#### DANGER

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

1. Pull handle (A) on combine to raise hooks (B) on both sides of the feeder house.

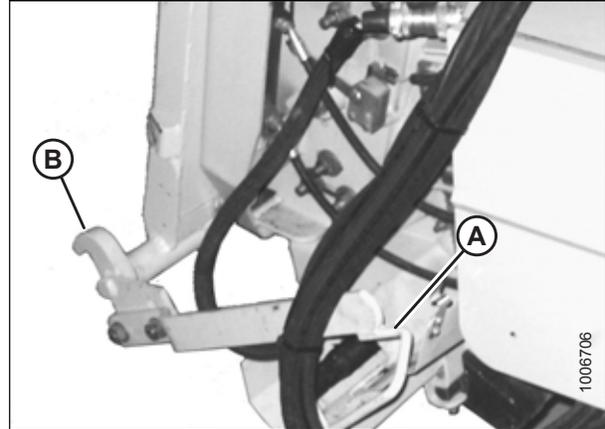


Figure 5.18: Feeder House Locks

2. Drive combine slowly up to header until feeder house saddle (A) is directly under header top beam (B).
3. Raise feeder house to lift header, ensuring feeder house saddle (A) is properly engaged in header frame.

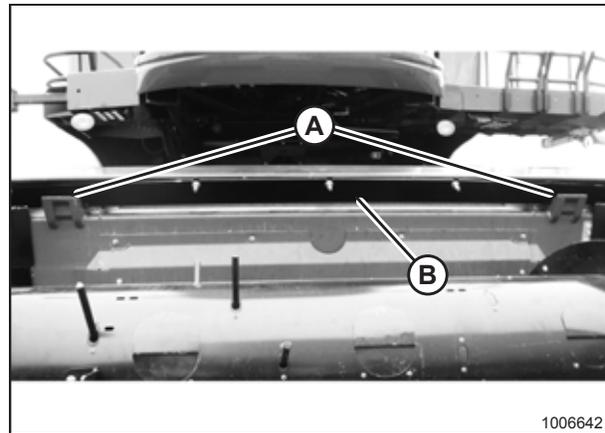


Figure 5.19: Header on Combine

## ATTACHING HEADER TO COMBINE

4. Lift lever (A) on header at left side of feeder house and push handle (B) on combine so that hooks (C) engage pins (D) on both sides of the feeder house.
5. Push down on lever (A) so that slot in lever engages handle (B) to lock handle in place.
6. Loosen nut (E) and adjust position of pin (D) as necessary (both sides) if locks (C) do not fully engage pins (D) on header. Tighten nut.
7. Loosen bolts (F) and adjust lock as required to obtain full lock on pin (D) when lift lever (A) and handle (B) are engaged. Retighten bolts.

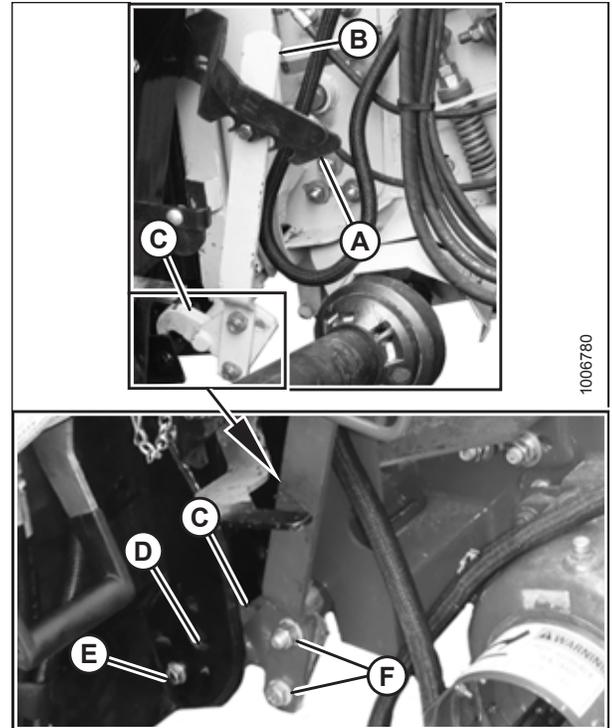


Figure 5.20: Engaging Locks

8. Rotate disc (B) on header driveline storage hook (A) and remove driveline from hook.

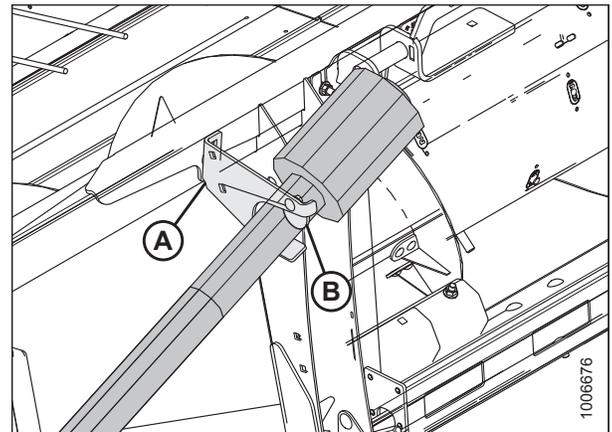


Figure 5.21: Driveline in Storage Position

## ATTACHING HEADER TO COMBINE

9. Pull back collar (B) on end of driveline and push onto combine output shaft (A) until collar locks.

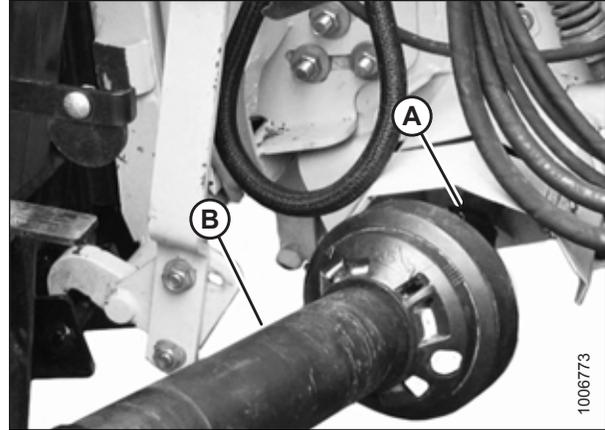


Figure 5.22: Attaching Driveline

10. Open cover (A).
11. Push in lock button (B) and pull handle (C) halfway up to open position.

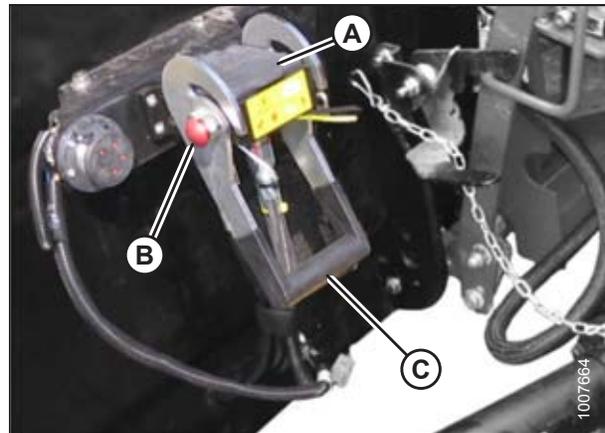


Figure 5.23: Header Receptacle

12. Remove coupler (A) from storage location on combine and clean mating surface of coupler.

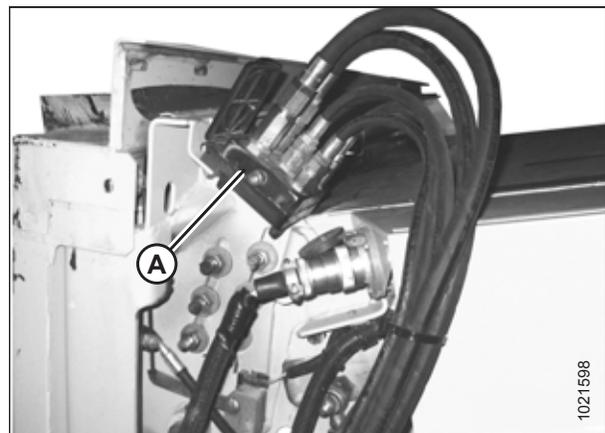


Figure 5.24: Combine Coupler/Connector

## ATTACHING HEADER TO COMBINE

13. Position coupler onto header receptacle (A) and push handle (B) downward to engage pins into receptacle.
14. Push handle (B) to closed position until lock button (C) snaps out.
15. Open cover (D) on header electrical receptacle.
16. Remove electrical connector (E) from combine.
17. Align lugs on electrical connector (E) with slots in header receptacle, push connector onto receptacle, and turn collar on connector to lock it in place.
18. Remove draper deck shipping braces. Refer to [5.5 Removing Deck Shipping Braces, page 71](#).

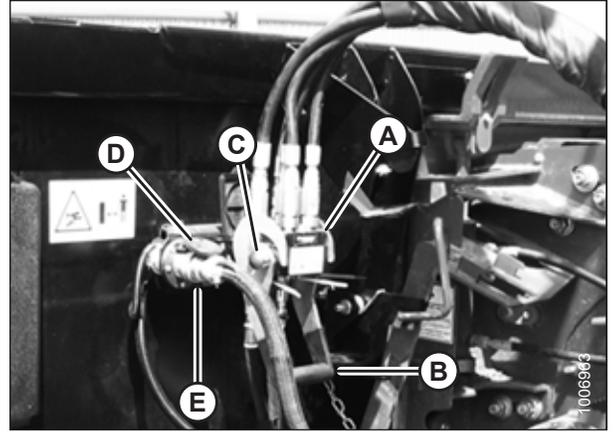


Figure 5.25: Attaching Coupler

## 5.4 Attaching to Versatile Combine

### DANGER

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

1. Check that pins (A) at lower corners of header opening are retracted.

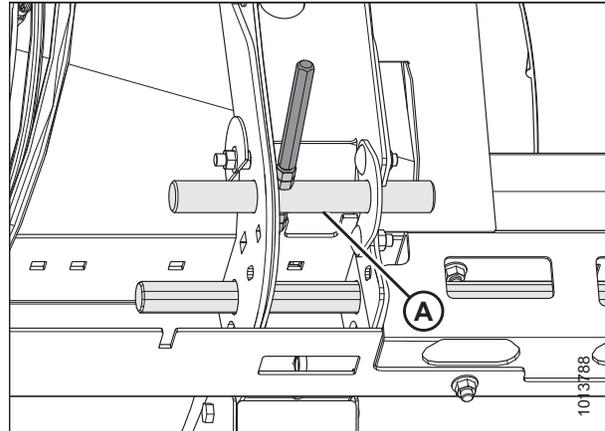


Figure 5.26: Locking Pins Retracted

2. Drive combine slowly up to header until feeder house posts (A) are directly under the header top brackets (B).
3. Raise feeder house to lift header, ensuring posts (A) are properly engaged around header frame (B).
4. Position header slightly off the ground, stop the engine, and remove the key from the ignition.

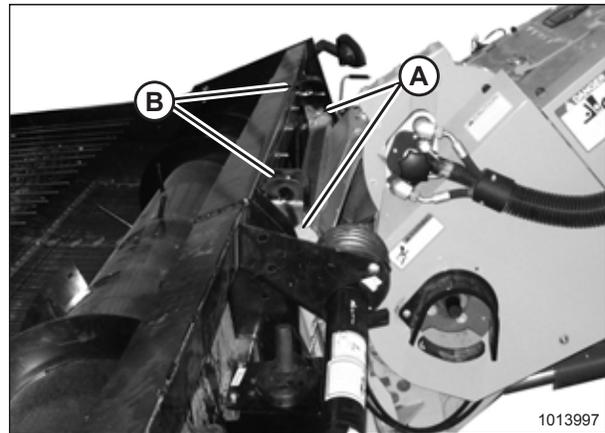


Figure 5.27: Picking up Header

5. Grasp handle (A) and slide pin (B) into feeder house receptacle (C) until pin stop (D) drops down to lock the pin (see inset). Ensure pin is engaged on the opposite side of the feeder house.
6. If pin (B) does not align with feeder house receptacle (C), or if alignment of the header pan and bottom of feeder house opening is unacceptable, reposition the top beam by performing Step 7, page 67 to Step 12, page 68.

**NOTE:**

If pin aligns with feeder house receptacle (C), proceed to Step 14, page 68.

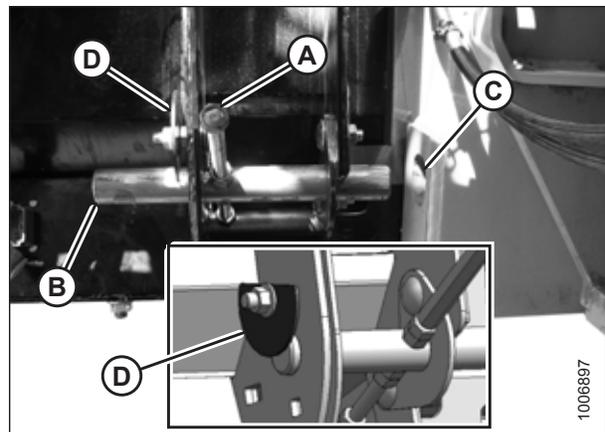


Figure 5.28: Feeder House Lock

## ATTACHING HEADER TO COMBINE

7. Measure the misalignment between pin (A) and feeder house receptacle (B).
8. Lower header to the ground until the feeder house disengages the top beam.

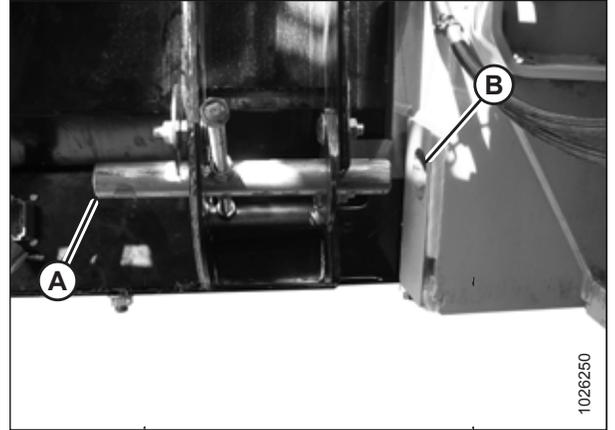


Figure 5.29: Feeder House Lock

9. Loosen the seven bolts (A) along top beam (B) on the auger side of the header.

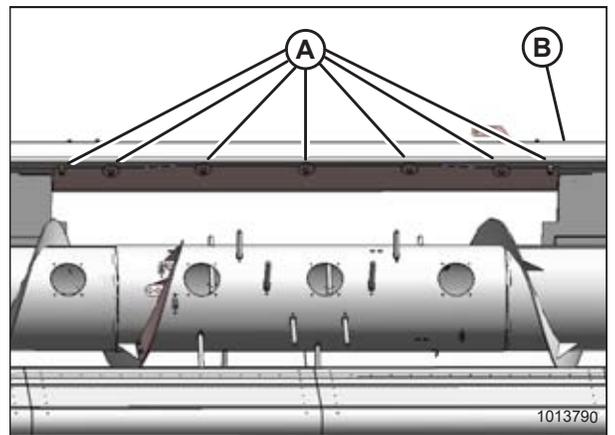


Figure 5.30: Top Beam (Front View)

10. Loosen the seven bolts (A) along the top beam (B) on the back side of the header.

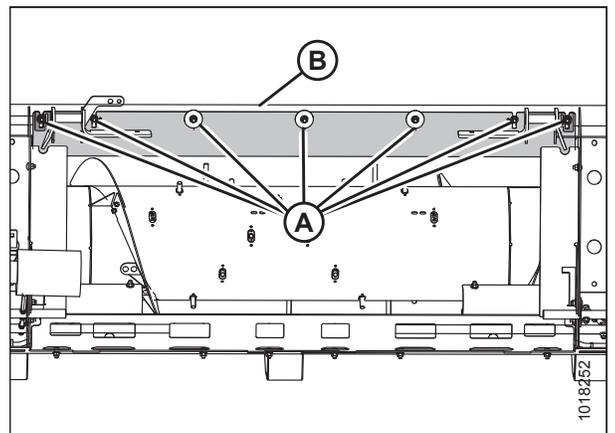


Figure 5.31: Top Beam (Rear View)

## ATTACHING HEADER TO COMBINE

11. Move support channel (A) according to measurement in Step to achieve proper alignment of locking pin and feeder house receptacle. Refer to Figure 7, page 67.
12. Tighten all bolts.

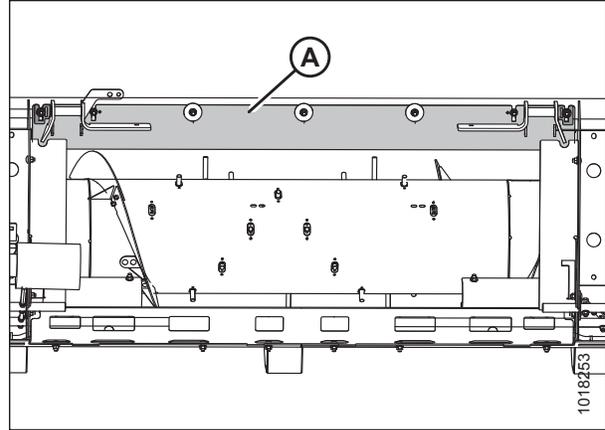


Figure 5.32: Top Beam (Rear View)

13. Raise feeder house to lift header, ensuring posts (A) are properly engaged around the header frame (B).

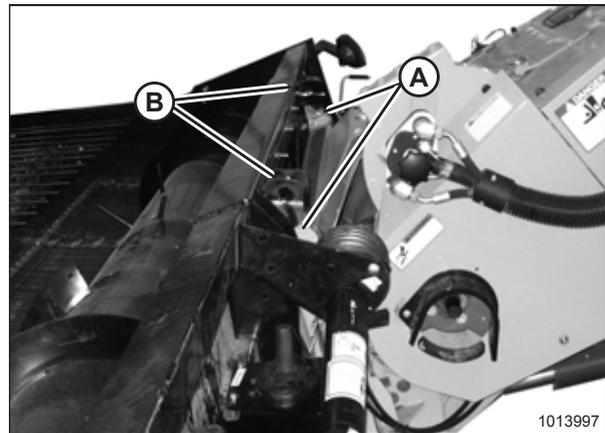


Figure 5.33: Picking up Header

14. Rotate disc (B) on header driveline storage hook (A), and remove the driveline from the hook.

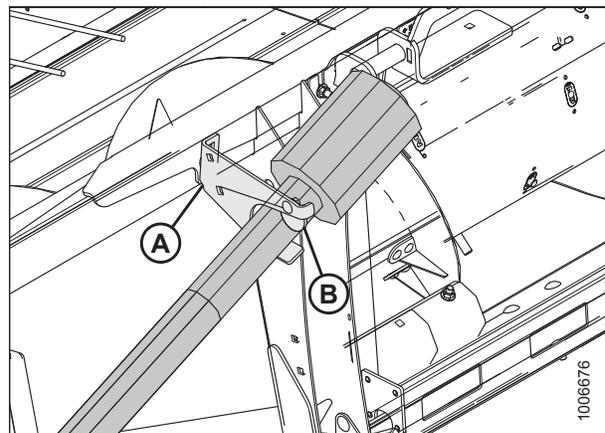


Figure 5.34: Driveline in Storage Position

## ATTACHING HEADER TO COMBINE

15. Pull back collar (A) at the end of the driveline and push onto combine output shaft (B) until the collar locks.

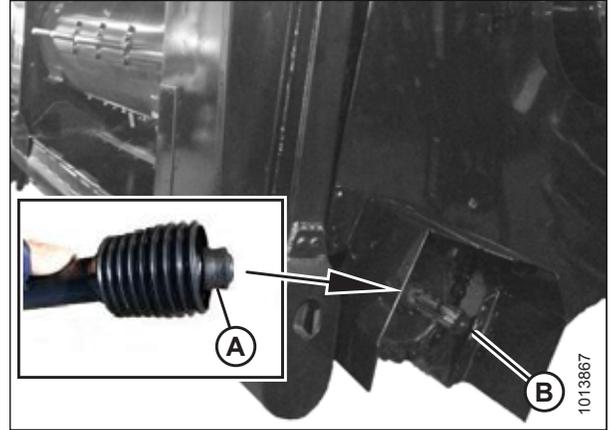


Figure 5.35: Driveline

16. Open cover (A) on header receptacle.
17. Push in lock button (B) and pull handle (C) upward to fully open position.

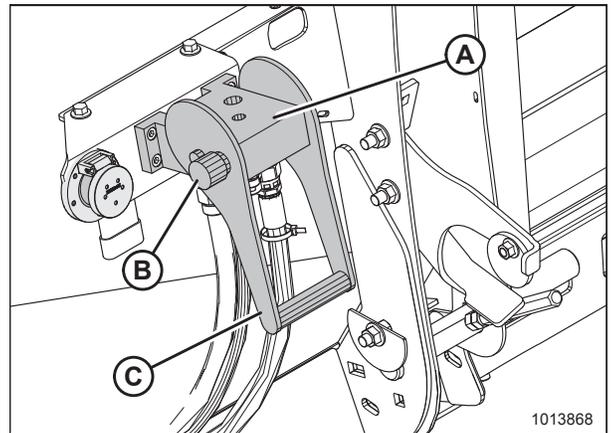


Figure 5.36: Coupler Lock

18. Remove coupler (A) from combine and clean mating surfaces.

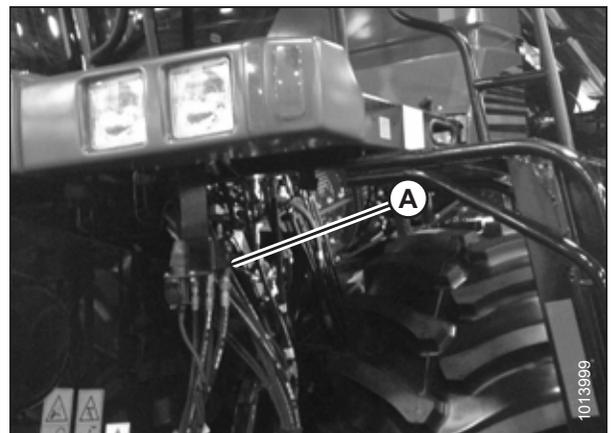
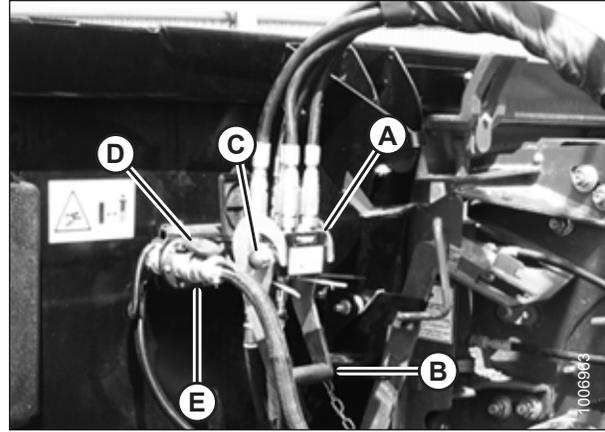


Figure 5.37: Versatile Coupler

## ATTACHING HEADER TO COMBINE

19. Position coupler (A) onto header receptacle and push handle (B) downward to engage coupler pins into receptacle.
20. Push handle to closed position until lock button (C) snaps out.
21. Open cover (D) on the header electrical receptacle.
22. Remove electrical connector (E) from the storage cup on combine.
23. Align lugs on electrical connector (E) with slots in the receptacle, push the connector onto the receptacle, and turn the collar on the connector to lock it in place.
24. Remove draper deck shipping braces. Refer to [5.5 Removing Deck Shipping Braces, page 71](#).



**Figure 5.38: Attaching Coupler**

## 5.5 Removing Deck Shipping Braces

### DANGER

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

1. Start combine.
2. Relieve load on support bolts (A) and (B) by raising and lowering the feeder house until bolts are loose.
3. Shut down combine.
4. Remove bolts (A) and (B) and remove support (C).
5. Similarly remove support from opposite end of header.

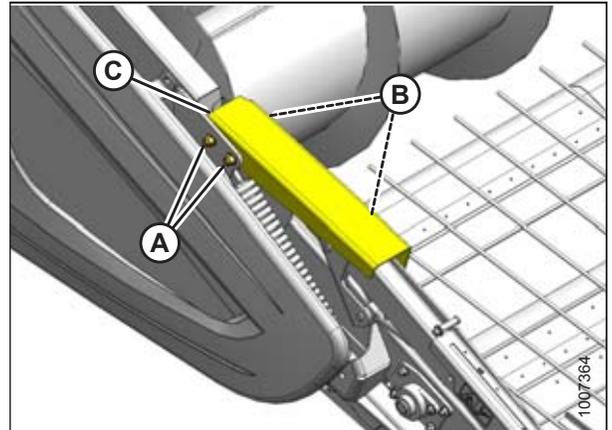


Figure 5.39: Shipping Support

## 5.6 Installing Crop Deflectors

Crop deflectors are provided to reduce the build up of stems under the hold-down support arm pivot.

If crop deflectors will not be installed, remove them from the auger drive compartment and store them in the combine cab or another suitable location.

**NOTE:**

To avoid damage to the header drive, do **NOT** operate the header with the crop deflectors bolted in the shipping location inside the header drive compartment.

1. Open the left endshield. For instructions, refer to [3.3.1 Opening Left Endshield, page 20](#).
2. Remove bolt (A), crop deflectors (B), and bag of installation hardware from inside the left endsheet.
3. Close the endshield. For instructions, refer to [3.3.2 Closing Left Endshield, page 20](#).

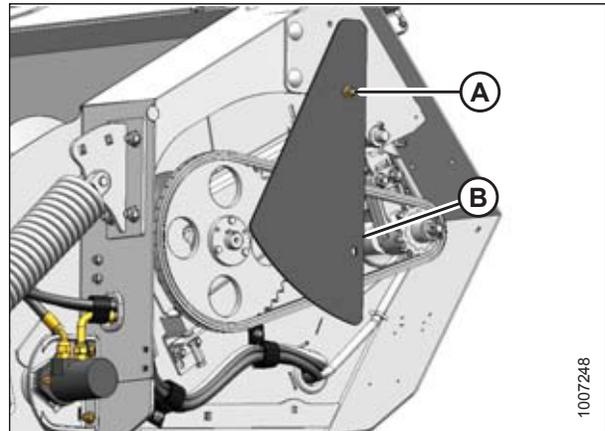


Figure 5.40: Crop Deflectors

4. Position crop deflector (A) onto the header endsheet and secure with two M12 x 25 bolts (B) and nuts provided in the bag.

**NOTE:**

Bolt heads must face inboard.

5. Repeat Step [4, page 72](#) for the opposite deflector.

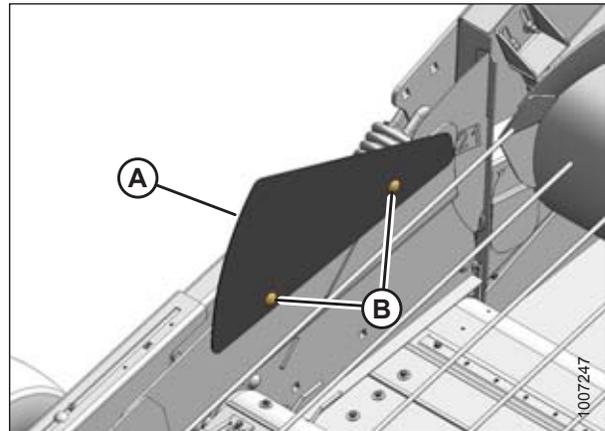


Figure 5.41: Crop Deflector

## 6 Predelivery Inspection

1. To avoid damaging the machine during operation, make sure no shipping dunnage has fallen into the machine.
2. Refer to the following procedures for detailed instructions and perform final checks as listed on the yellow [Predelivery Checklist, page 159](#) to ensure the machine is field-ready.

### **IMPORTANT:**

If adjustments are absolutely necessary, follow instructions in this document to comply with factory-specified values and tolerances.

### **NOTE:**

Make sure the Operator or Dealer retains the completed Predelivery Checklist.

### 6.1 Auto Header Height Control (AHHC) System Overview

MacDon's AHHC feature works in conjunction with the AHHC option available on certain combine models.

#### **NOTE:**

This section does not apply to Versatile combines.

Sensors installed at each end of the PW8 Pick-Up Header send a signal to the combine allowing it to maintain a consistent cutting height as the header follows ground contours.

PW8 Pick-Up Headers are factory-equipped for AHHC; however, before using AHHC feature, you must do the following:

1. Ensure that the AHHC sensor's output voltage range is appropriate for combine. For more information, refer to [6.1.2 Height Sensor Output Voltage Range – Combine Requirements, page 74](#).
2. Prepare combine to use AHHC feature.
3. Calibrate AHHC system so that combine can correctly interpret data from height sensors on header. Once calibration is complete, you are ready to use AHHC feature in the field. For each combine, certain operation settings can be used to improve performance of AHHC feature.

#### **NOTE:**

If your PW8 Pick-Up Header is not equipped to work with a specific combine model, you will need to install appropriate combine completion package. Completion packages come with instructions for installing height sensors.

Refer to the following instructions for your specific combine model:

- [6.1.3 Case IH 5130/6130/7130 and 5140/6140/7140 Midrange Combines, page 79](#)
- [6.1.4 Case IH 7010/8010, 7120/8120/9120, 7230/8230/9230, and 7240/8240/9240 Combines, page 85](#)
- [6.1.6 John Deere 70 Series Combines, page 101](#)
- [6.1.7 John Deere S and T Series Combines, page 106](#)
- [6.1.8 New Holland Combines CX/CR Series \(CR Series – Model Year 2014 and Earlier\), page 115](#)
- [6.1.9 New Holland Combines \(CR Series – Model Year 2015 and Later\), page 125](#)

### 6.1.1 AHHC Sensor Operation

The position sensors supplied with the auto header height control (AHHC) system are 1000 ohm (1 k) industrial series variable resistor consisting of a sealed unit with a three-pin connection point (A) and two mounting holes (B). A signal wire is connected internally to a movable wiper (C) that sweeps across a high resistance filament band. An external arm is attached to the movable wiper (C) and as it moves, the wiper moves across the resistance filament to change the resistance at signal wire, which changes the output voltage. The resistance across the power and ground pins should be approximately 100 ohms. Normal operating signal voltages are 0.5–4.5 VDC or 5–95% of available voltage.

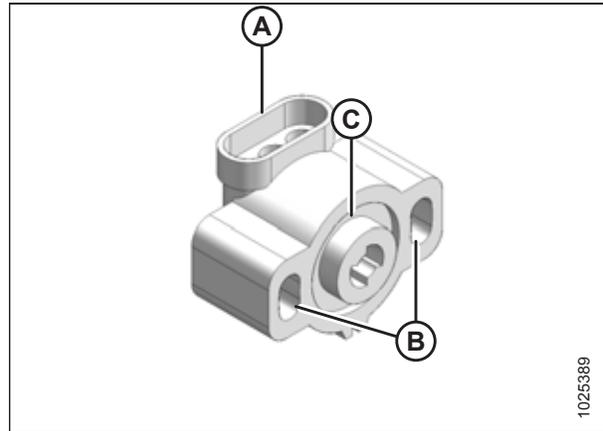


Figure 6.1: Variable Resistor Type Sensor

- A sensor operating with a signal voltage **below 5%** is considered to be shorted.
- A sensor with a signal voltage **above 95%** is considered to be open.
- A change in header height will cause the voltage signal to change.

### 6.1.2 Height Sensor Output Voltage Range – Combine Requirements

The height sensor output must be within a specific voltage range for each combine or the auto header height control (AHHC) feature will not work properly.

Table 6.1 Combine Voltage Range

Combine	Low Voltage Limit	High Voltage Limit	Minimum Range
Case IH 7/8010, 5/6/7088, 7/8/9120, 5/6/7130, 5/6/7140, 7/8/9230, 7/8/9240	0.7 V	4.3 V	2.5 V
John Deere 60/70/S/T Series	0.7 V	4.3 V	2.5 V
New Holland CR/CX – 5 V system	0.7 V	4.3 V	2.5 V
New Holland CR/CX – 10 V system	3.0 V	7.0 V	4.1–4.4 V

**NOTE:**

For instructions on manually checking voltage range, refer to [Manually Checking Voltage Range, page 75](#).

## PREDELIVERY INSPECTION

### Manually Checking Voltage Range

In some combines, output voltage range of auto header height control (AHC) sensors can be checked from the cab. For instructions, refer to the combine operator's manual or AHC instructions later in this document.

1. Position the header until the header wheels are approximately 150 mm (6 in.) above the ground.

**NOTE:**

Ensure float spring is fully extended. If float spring is not fully extended during next step, voltage may go out of range during operation causing a malfunction of AHC system.

2. Shut down combine. Position key so that power is supplied to sensors.
3. Open left endshield. For instructions, refer to [3.3.1 Opening Left Endshield, page 20](#).
4. Locate left height sensor (A).

**NOTE:**

Sensor and connector may not be exactly as shown.

5. With connector plugged into sensor, measure voltage between orange signal wire (B) in middle position on connector, and the brown ground wire (C) at one side of connector. This is the maximum voltage for the left sensor.

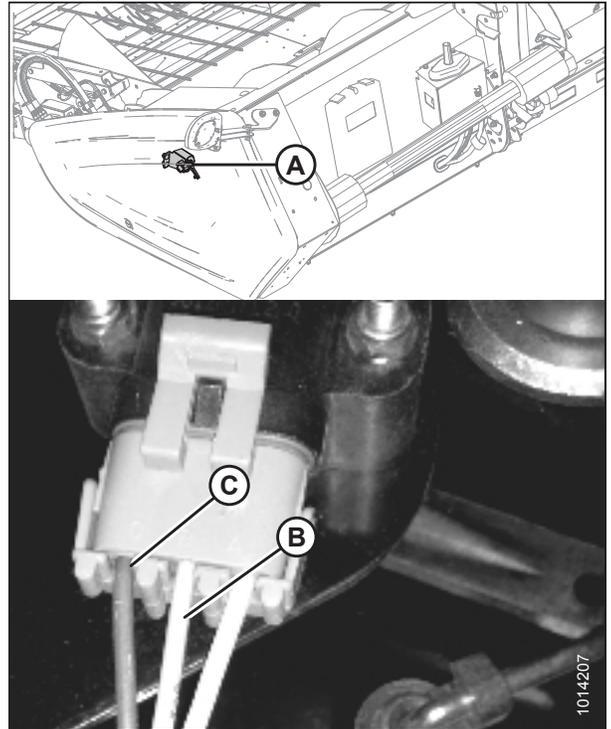


Figure 6.2: Left Height Sensor

6. Locate access panel (A) on inside of right end frame.

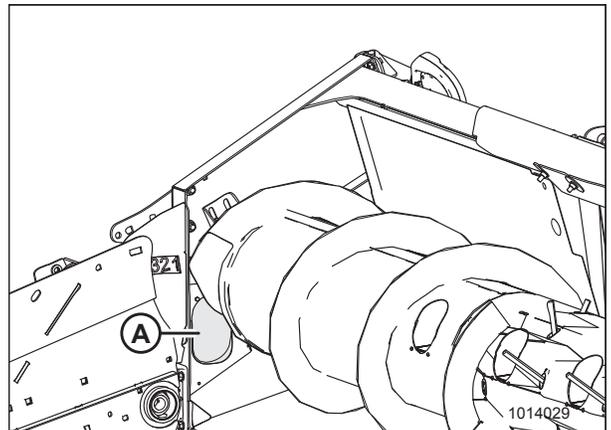


Figure 6.3: Right Access Panel

## PREDELIVERY INSPECTION

7. Remove two bolts (A) from access panel (B).
8. Remove access panel (B).

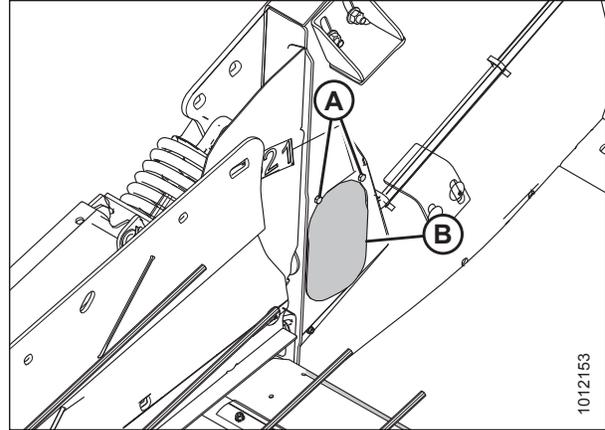


Figure 6.4: Right Access Panel

9. Locate right height sensor (A).

**NOTE:**

Sensor may not be exactly as shown, and view of harness is from inboard side of endsheet.

10. With connector plugged into the sensor, measure voltage between the orange signal wire (B) in middle position on connector, and the brown ground wire (C) on one side of connector. This is maximum voltage for the right sensor.
11. Start combine and fully lower combine feeder house. The float springs should be fully compressed. Shut down combine, and position the key so that power is supplied to sensors.
12. Repeat voltage measurements for both sensors. These are the minimum voltages.

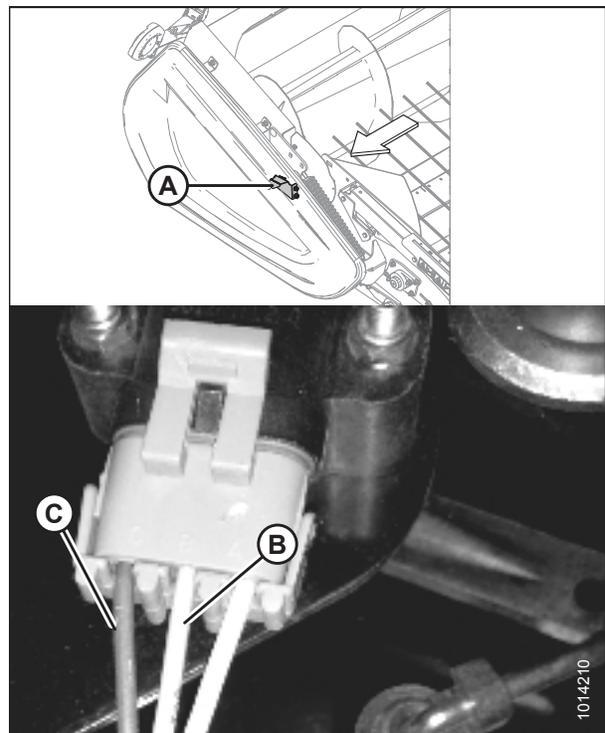


Figure 6.5: Right Height Sensor

13. Compare voltage measurements to specified values. Refer to [6.1.2 Height Sensor Output Voltage Range – Combine Requirements, page 74](#).
14. If sensor voltage is outside low and high limits, or if voltage range is less than specified value, adjustments are required. For instructions, refer to [Adjusting Header Height Sensor Voltage Range \(Left Side\), page 77](#) or [Adjusting Header Height Sensor Voltage Range \(Right Side\), page 77](#).

## PREDELIVERY INSPECTION

### Adjusting Header Height Sensor Voltage Range (Left Side)

#### DANGER

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

1. Lower header to ground, shut down combine, and remove key from ignition.
2. Open left endshield. Refer to [3.3.1 Opening Left Endshield, page 20](#).
3. Loosen nuts (A).
4. Rotate control (B) until desired voltage range is achieved. Refer to [6.1.2 Height Sensor Output Voltage Range – Combine Requirements, page 74](#).

#### NOTE:

If voltage range is too large or too small, you may need to relocate linkage rod (C) to a different hole in sensor control arm (D). If that doesn't work, relocate linkage rod (C) to a different hole in sensor control arm (E).

5. Close left endshield. Refer to [3.3.2 Closing Left Endshield, page 20](#).

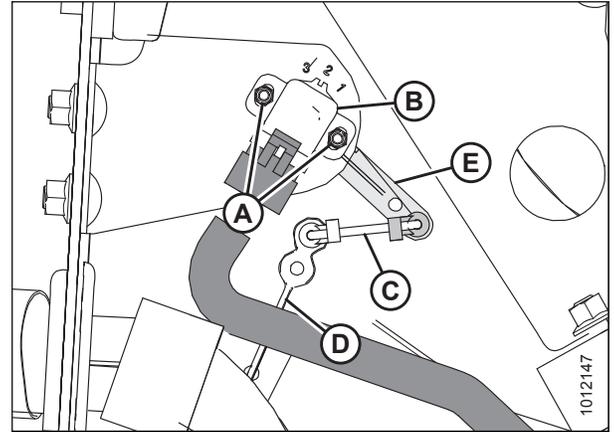


Figure 6.6: Header Height Sensor Assembly – Left Side

### Adjusting Header Height Sensor Voltage Range (Right Side)

#### DANGER

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

1. Raise hold-down and engage lift cylinder safety props.
2. Lower header to ground, shut down combine, and remove key from ignition.
3. Locate access panel (A) on inside of right end frame.

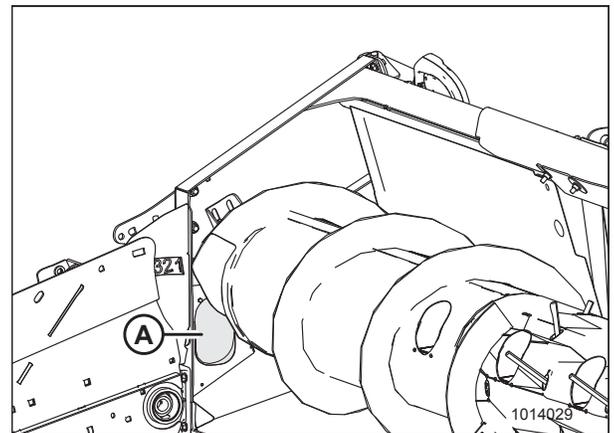


Figure 6.7: Right Access Panel

## PREDELIVERY INSPECTION

4. Remove two bolts (A) from access panel (B).
5. Remove access panel (B).

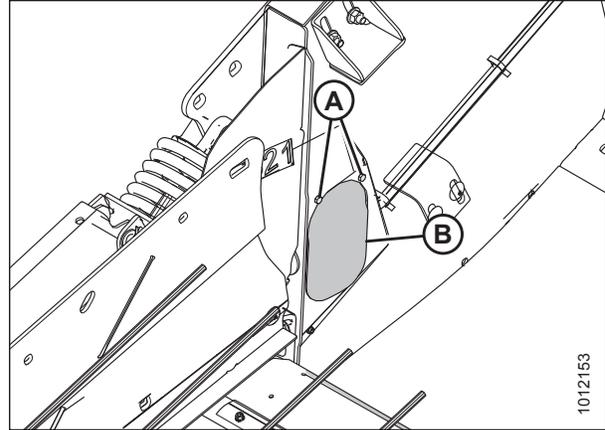


Figure 6.8: Right Access Panel

6. Loosen nuts (A).
7. Rotate sensor (B) until desired voltage range is achieved. Refer to [6.1.2 Height Sensor Output Voltage Range – Combine Requirements, page 74](#).

**NOTE:**

If voltage range is too large or too small, you may need to relocate linkage rod (C) to a different hole in sensor control arm (D). If that doesn't work, relocate linkage rod (C) to a different hole in sensor control arm (E).

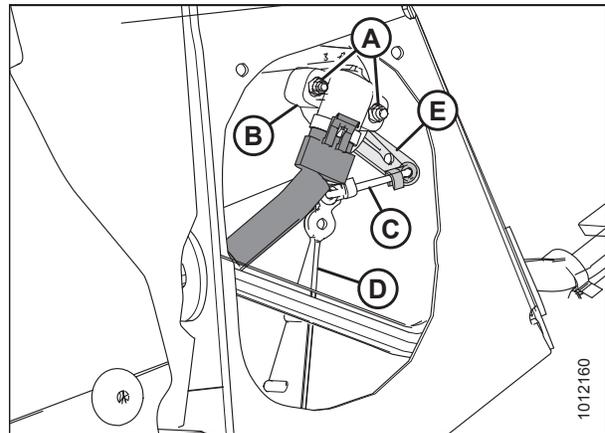


Figure 6.9: Header Height Sensor Assembly – Right Side

8. Once complete, install access panel (B) and secure it with bolts (A).

**NOTE:**

Auger removed for illustration purposes.

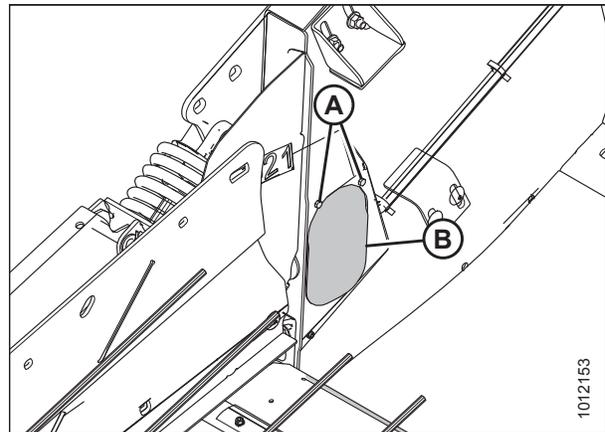


Figure 6.10: Header Height System

## PREDELIVERY INSPECTION

### 6.1.3 Case IH 5130/6130/7130 and 5140/6140/7140 Midrange Combines

#### Setting up the Header on the Combine Display (Case IH 5130/6130/7130; 5140/6140/7140)

1. On the main page of the combine display, select TOOLBOX (A).

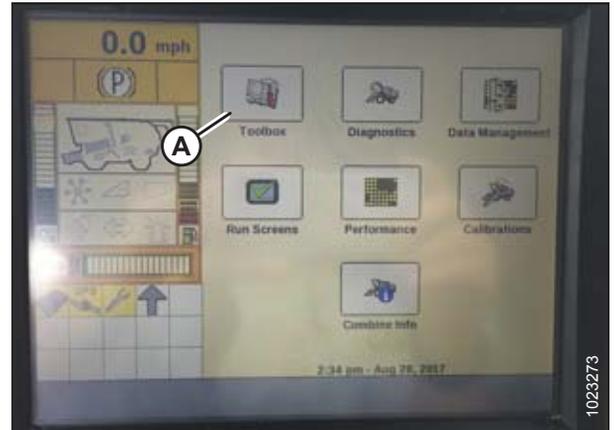


Figure 6.11: Case IH Combine Display

2. Select the HEAD 1 tab (A). The HEADER SETUP page displays.
3. From the CUTTING TYPE menu (B), select PLATFORM.

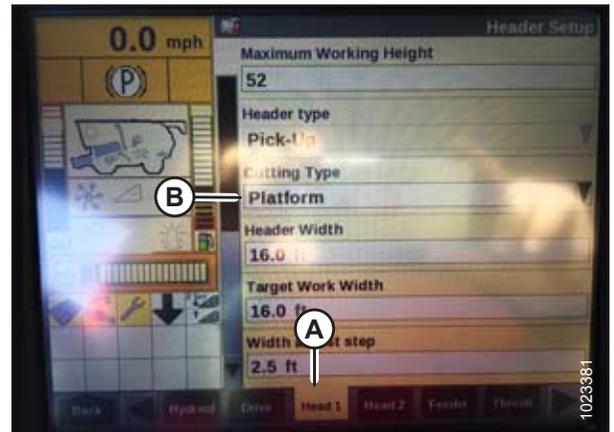


Figure 6.12: Case IH Combine Display

4. Select the HEAD 2 tab (A). The HEADER SETUP 2 page displays.
5. From the HEADER PRESSURE FLOAT menu (B), select NOT INSTALLED.



Figure 6.13: Case IH Combine Display

## PREDELIVERY INSPECTION

6. From the BELT DRIVE TYPE menu (A), select
  - 1 - for most pick-up headers
  - 2 - for 4.9 m (16 ft.) Rake-Up pick-up headers
  - 3 - for SwathMaster pick-up headers

**NOTE:**

Proper belt drive selection optimizes auto-belt to ground speed.

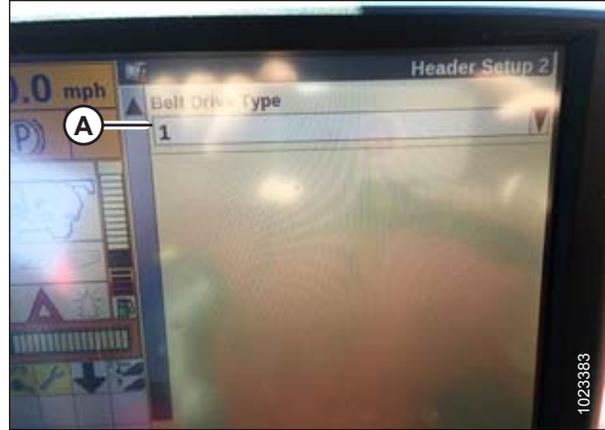


Figure 6.14: Case IH Combine Display

### *Checking Voltage Range from Combine Cab (Case IH 5130/6130/7130; 5140/6140/7140)*

**NOTE:**

Changes may have been made to combine controls or display since this document was published. Refer to combine operator's manual for updates.

**CAUTION**

**Check to be sure all bystanders have cleared the area.**

1. Raise header until header wheels are 150 mm (6 in.) above ground.
2. On the main page of the combine display, select DIAGNOSTICS (A). The DIAGNOSTICS page opens.

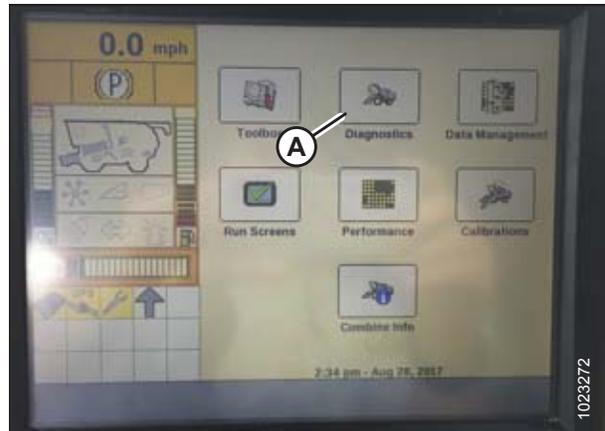


Figure 6.15: Case IH Combine Display

## PREDELIVERY INSPECTION

3. Select SETTINGS (A). The SETTINGS page opens.
4. From the GROUP menu (B), select HEADER.

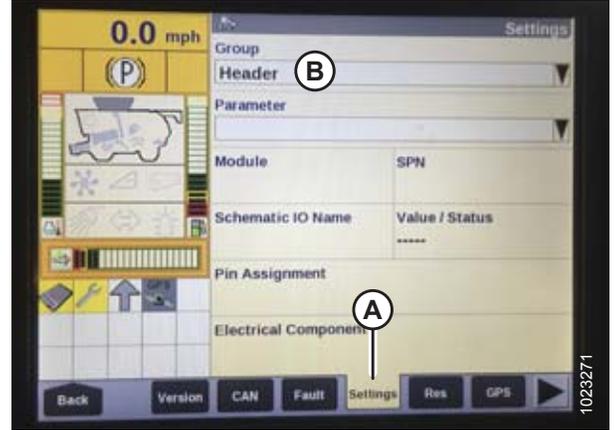


Figure 6.16: Case IH Combine Display

5. From the PARAMETER menu, select LEFT HEIGHT/TILT SENSOR (A).



Figure 6.17: Case IH Combine Display

6. The SETTINGS page updates to display the voltage in the VALUE/STATUS field (A). Lower the feeder house fully, and then raise it 305 mm (12 in.) off the ground to view the full range of voltage readings.
7. If sensor voltage is not within low and high limits shown in [6.1.2 Height Sensor Output Voltage Range – Combine Requirements, page 74](#), or if range between low and high limits is insufficient, you need to make adjustments. For instructions, refer to [Adjusting Header Height Sensor Voltage Range \(Left Side\), page 77](#) and [Adjusting Header Height Sensor Voltage Range \(Right Side\), page 77](#).



Figure 6.18: Case IH Combine Display

## PREDELIVERY INSPECTION

### *Calibrating Auto Header Height Control (Case IH 5130/6130/7130, 5140/6140/7140)*

#### **NOTE:**

This procedure applies to combines with a software version below 28.00. For instructions on calibrating the AHHC for combines with software version 28.00 or above, refer to [Calibrating Auto Header Height Control \(Case Combines with Version 28.00 or Higher Software\)](#), page 91.

#### **NOTE:**

Changes may have been made to the combine controls or display since this document was published. Refer to the combine operator's manual for updates.

1. Ensure all header electrical and hydraulic connections are made.
2. Lower the combine feeder house all the way down (the feeder house will stop moving).
3. Hold the DOWN button for 2 seconds.
4. Push the RAISE button and hold it until the feeder house travels all the way up. It will stop 61 cm (2 ft.) above ground for 5 seconds, then it will resume lift. This is an indication that calibration is successful.



**Figure 6.19: Calibrating Auto Header Height**

### *Setting Preset Cutting Height (Case 5130/6130/7130, 5140/6140/7140)*

To set preset cutting height, follow these steps:

#### **NOTE:**

Changes may have been made to combine controls or display since this document was published. Refer to combine operator's manual for updates.

#### **CAUTION**

**Check to be sure all bystanders have cleared the area.**

1. Engage separator and header.
2. Manually raise or lower header to desired cutting height.
3. Press 1 on button (A). A yellow light next to the button will illuminate.



**Figure 6.20: Case Combine Console**

## PREDELIVERY INSPECTION

4. Manually raise or lower header to a second desired cutting height.
5. Press 2 on button (A). A yellow light next to the button will illuminate.



Figure 6.21: Case Combine Console

Up and down arrows should now appear in the MANUAL HEIGHT box (A) on the RUN 1 page on the combine display. This indicates that the auto header height control (AHHC) is functioning.

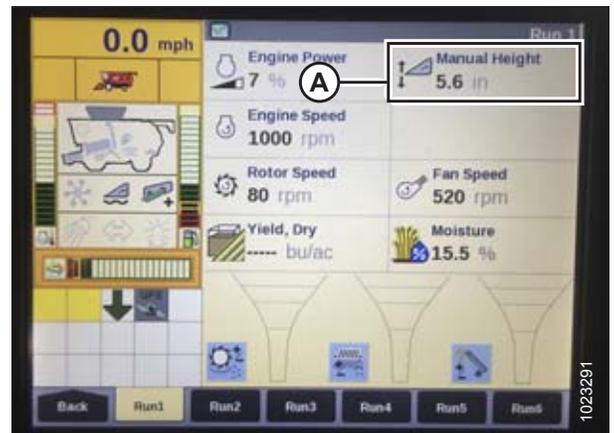


Figure 6.22: Case Combine Display – Run 1 Page

6. To enable the presets, activate AHHC button (A) to place the header on the ground. To enable the first preset, tap the button once. To enable the second preset, tap the button twice.

To lift the header to maximum working height, hold the SHIFT button on the back of the ground speed lever (GSL) while tapping AHHC button (A).



Figure 6.23: Case Combine Joystick

## PREDELIVERY INSPECTION

7. The maximum working height can be adjusted on the HEADER SETUP page on the combine display. Enter the desired height in the MAXIMUM WORKING HEIGHT field (A).

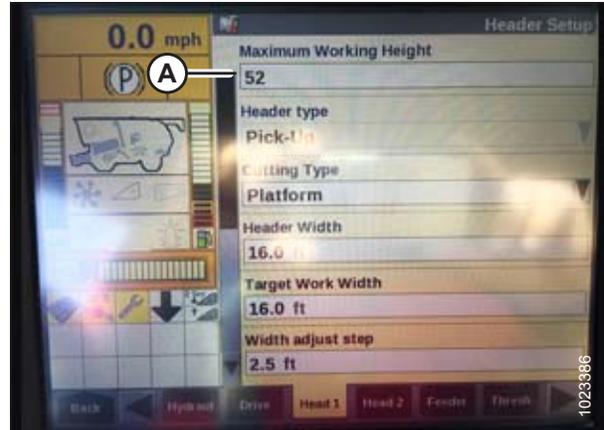


Figure 6.24: Case Combine Display – Header Setup Page

8. If you need to change the position of one of the presets, you can fine tune this setting with button (A) on the combine console.



Figure 6.25: Case Combine Console

## PREDELIVERY INSPECTION

### 6.1.4 Case IH 7010/8010, 7120/8120/9120, 7230/8230/9230, and 7240/8240/9240 Combines

#### Checking Voltage Range from Combine Cab (Case 8010)

##### NOTE:

Changes may have been made to combine controls or display since this document was published. Refer to combine operator's manual for updates.

##### CAUTION

Check to be sure all bystanders have cleared the area.

1. Raise header until header wheels are 150 mm (6 in.) above ground.
2. Select DIAG (A) on Universal display MAIN page. The DIAG page displays.

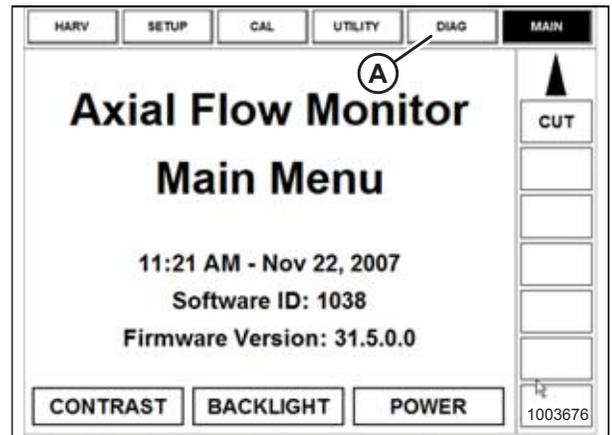


Figure 6.26: Case 8010 Combine Display

3. Select SUB SYSTEM (A). The SUB SYSTEM page displays.

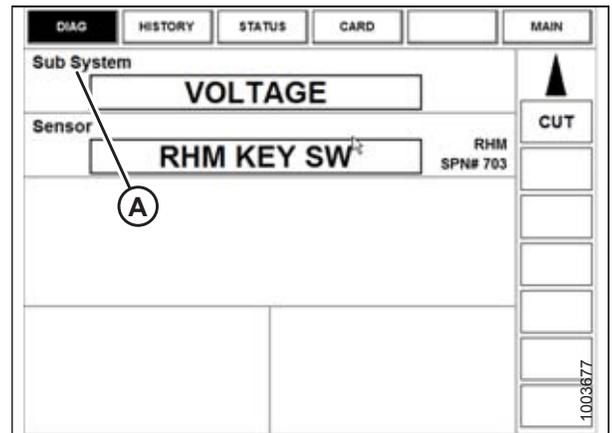


Figure 6.27: Case 8010 Combine Display

## PREDELIVERY INSPECTION

4. Select HDR HEIGHT/TILT (A). The SENSOR page displays.

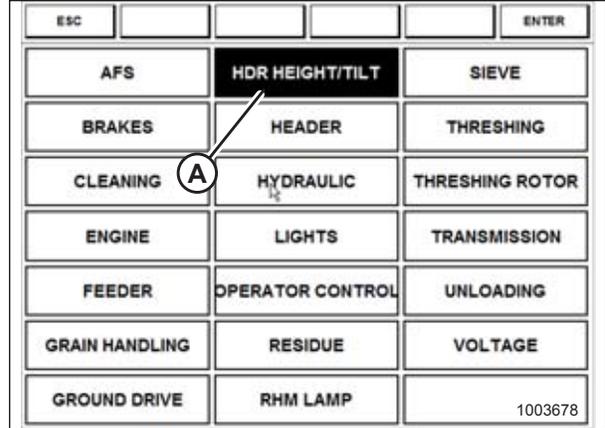


Figure 6.28: Case 8010 Combine Display

5. Select LEFT SEN (A). The exact voltage is displayed. Raise and lower header to see full range of voltage readings.

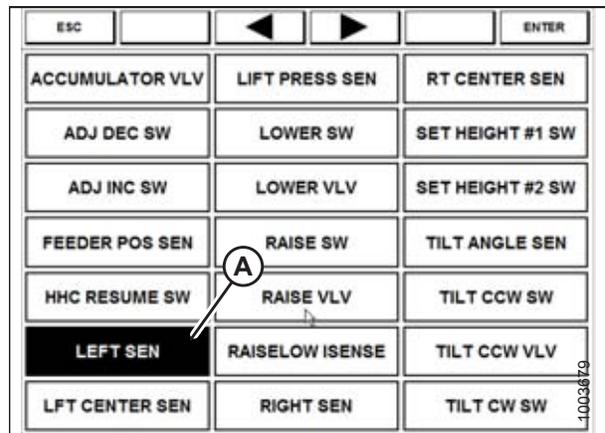


Figure 6.29: Case 8010 Combine Display

6. If sensor voltage is not within low and high limits shown in [6.1.2 Height Sensor Output Voltage Range – Combine Requirements, page 74](#), or if range between low and high limits is insufficient, you need to make adjustments. For instructions, refer to [Adjusting Header Height Sensor Voltage Range \(Left Side\), page 77](#) and [Adjusting Header Height Sensor Voltage Range \(Right Side\), page 77](#).

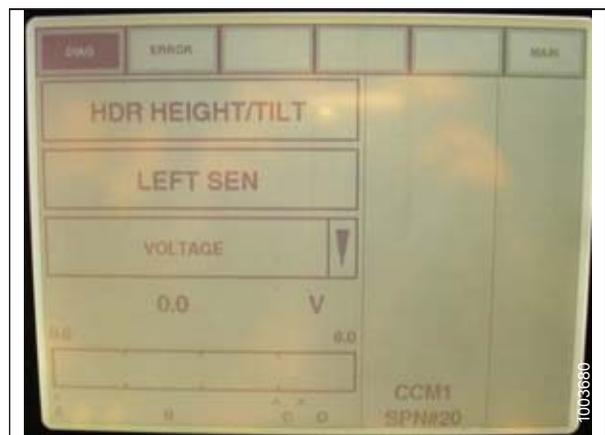


Figure 6.30: Case 8010 Combine Display

## PREDELIVERY INSPECTION

Checking Voltage Range from Combine Cab (Case IH 7010/8010; 7120/8120/9120; 7230/8230/9230; 7240/8240/9240)

### NOTE:

Changes may have been made to the combine controls or display since this document was published. Refer to the combine operator's manual for updates.

### CAUTION

Check to be sure all bystanders have cleared the area.

1. Raise header until header wheels are 150 mm (6 in.) above ground.
2. Select DIAGNOSTICS (A) on the MAIN page. The DIAGNOSTICS page opens.
3. Select SETTINGS. The SETTINGS page opens.

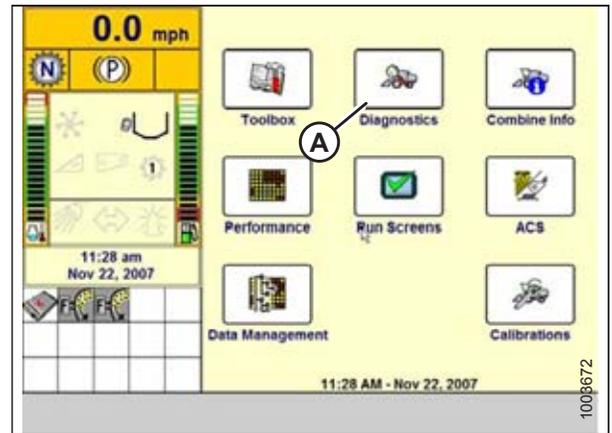


Figure 6.31: Case IH Combine Display

4. Select GROUP drop-down arrow (A). The GROUP dialog box displays.

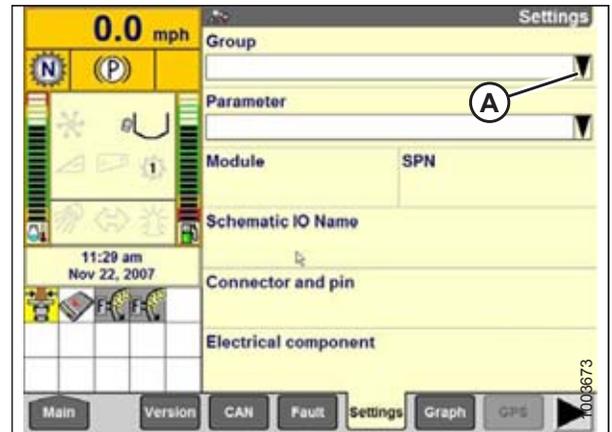


Figure 6.32: Case IH Combine Display

## PREDELIVERY INSPECTION

5. Select HEADER HEIGHT/TILT (A). The PARAMETER page opens.

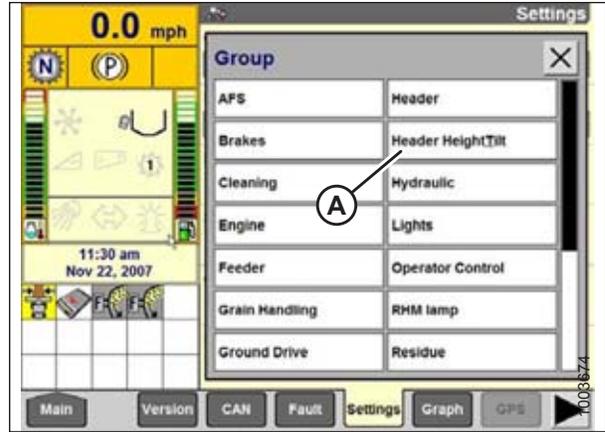


Figure 6.33: Case IH Combine Display

6. Select LEFT HEADER HEIGHT SEN (A), and then select GRAPH button (B). The exact voltage is displayed at top of the page. Raise and lower the header to see the full range of voltage readings.
7. If the sensor voltage is not within the low and high limits shown in [6.1.2 Height Sensor Output Voltage Range – Combine Requirements, page 74](#), or if the range between the low and high limits is insufficient, make adjustments. For instructions, refer to [Adjusting Header Height Sensor Voltage Range \(Left Side\), page 77](#) and [Adjusting Header Height Sensor Voltage Range \(Right Side\), page 77](#).

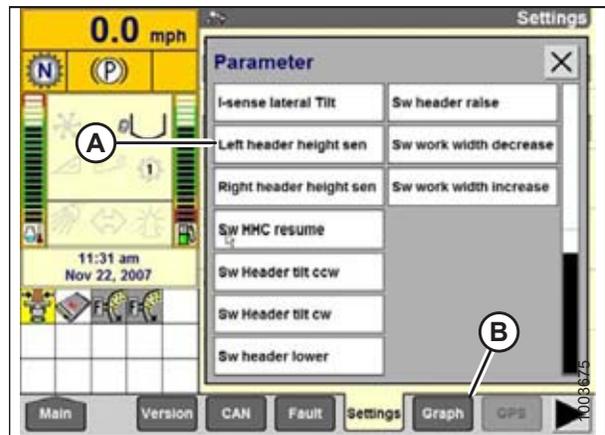


Figure 6.34: Case IH Combine Display

## PREDELIVERY INSPECTION

*Calibrating Auto Header Height Control (Case IH 7010/8010; 7120/8120/9120; 7230/8230/9230; 7240/8240/9240)*

### NOTE:

This procedure applies to combines with a software version below 28.00. For instructions on calibrating the AHHC for combines with software version 28.00 or above, refer to [Calibrating Auto Header Height Control \(Case Combines with Version 28.00 or Higher Software\)](#), page 91.

### NOTE:

Changes may have been made to the combine controls or display since this document was published. Refer to combine operator's manual for updates.

1. Ensure all header electrical and hydraulic connections are made.
2. Select TOOLBOX on the MAIN page, and then select HEADER.
3. Set appropriate HEADER STYLE.



Figure 6.35: Case IH Combine Display

4. Set AUTO REEL SPEED SLOPE.
5. Set HEADER PRESSURE FLOAT to NO (A) if equipped, and ensure REEL DRIVE is set to HYDRAULIC (B).

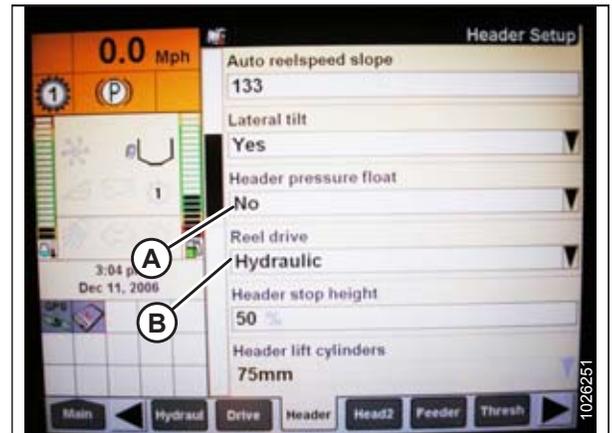


Figure 6.36: Case IH Combine Display

## PREDELIVERY INSPECTION

6. Select YES (A) from the REEL FORE-BACK list (if applicable).
7. Set HEIGHT SENSITIVITY (B) to desired value. The recommended starting point is 180.

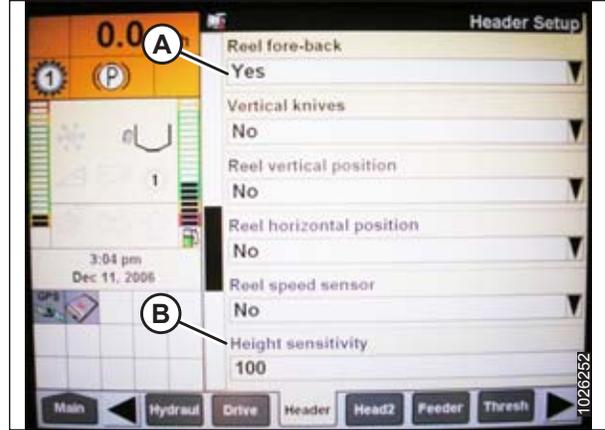


Figure 6.37: Case IH Combine Display

8. Select YES for FORE-AFT CONTROL (A) and HDR FORE-AFT TILT (B) (if applicable).

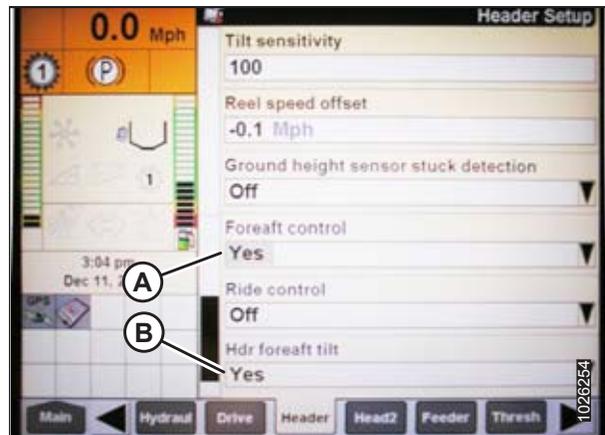


Figure 6.38: Case IH Combine Display

9. Select the HEAD2 tab at the bottom of the page.
  10. Ensure PICKUP (A) is selected from the HEADER TYPE list.
- NOTE:**  
If the recognition resistor is plugged into the header harness, you will not be able to change the header type.
11. Set cutting type to PLATFORM (B).
  12. Set appropriate HEADER WIDTH (C) and HEADER USAGE (D).

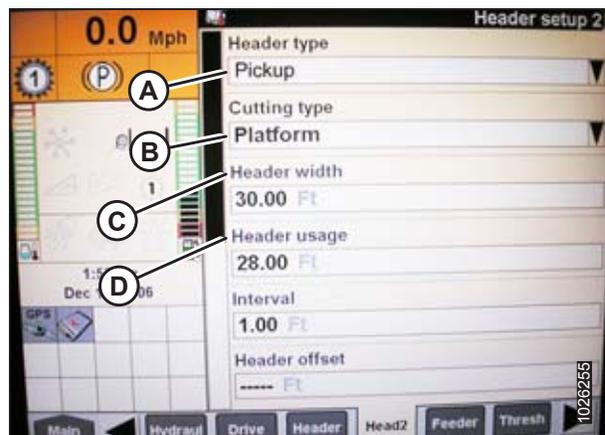


Figure 6.39: Case IH Combine Display

## PREDELIVERY INSPECTION

### Calibrating Auto Header Height Control (Case Combines with Version 28.00 or Higher Software)

#### NOTE:

Changes may have been made to combine controls or display since this document was published. Refer to combine operator's manual for updates.

1. Select TOOLBOX on the MAIN page, and then select HEADER SETUP.
2. Locate HEADER SUB TYPE field. It will be located on either the HEAD 1 or HEAD 2 tab.
3. Select 2000 (A).



Figure 6.40: Case IH Combine Display

4. Locate the HEADER SENSORS and HEADER PRESSURE FLOAT fields. They will be located on either the HEAD 1 or the HEAD 2 tab.
5. Select ENABLE (A) in the HEADER SENSORS field.
6. Select NO (B) in HEADER PRESSURE FLOAT field.

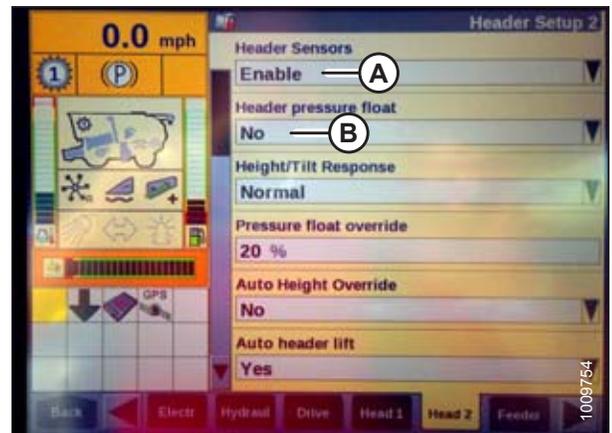


Figure 6.41: Case IH Combine Display

7. Engage separator and header, and press preset 1 or 2.
8. Ensure AUTO HEIGHT icon (A) appears on display and is shown at location (B) as shown. When the header is set for cutting on the ground, this verifies that the combine is using the potentiometers on the header correctly to sense ground pressure.

#### NOTE:

AUTO HEIGHT field (B) may appear on any of the RUN tabs and not necessarily on RUN 1 tab.



Figure 6.42: Case IH Combine Display

## PREDELIVERY INSPECTION

9. Select CALIBRATION on the combine display, and press the right arrow navigation key to enter the information box.
10. Select HEADER (A), and press ENTER. The CALIBRATION dialog box opens.

**NOTE:**

You can use up and down navigation keys to move between options.

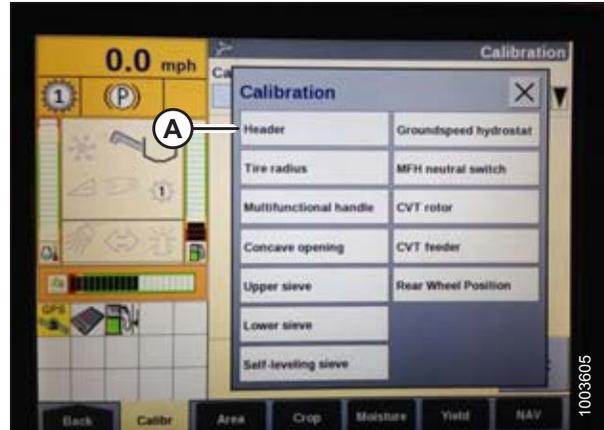


Figure 6.43: Case IH Combine Display

11. Follow calibration steps in the order they appear in the dialog box. As you proceed through the calibration process, the display will automatically update to show the next procedure step.

**NOTE:**

The calibration procedure will stop if the system sits idle for more than 3 minutes, or if the ESC key is pressed during any step.

**NOTE:**

Refer to your combine operator's manual for an explanation of any error codes encountered.



Figure 6.44: Case IH Combine Display

12. When all the steps have been completed, CALIBRATION SUCCESSFUL is displayed on the page. Exit the CALIBRATION menu by pressing the ENTER or ESC key.

**NOTE:**

If float was set heavier to complete ground calibration procedure, adjust to recommended operating float after calibration is complete.

13. If the unit does not function properly, conduct maximum stubble height calibration.

## PREDELIVERY INSPECTION

### Setting Preset Cutting Height (Case 7010/8010, 7120/8120/9120, 7230/8230/9230, 7240/8240/9240)

To set preset cutting height, follow these steps:

#### NOTE:

Changes may have been made to the combine controls or display since this document was published. Refer to the combine operator's manual for updates.

#### CAUTION

Check to be sure all bystanders have cleared the area.

1. Engage the separator and header.
2. Manually raise or lower the header to the desired cutting height.
3. Press SET #1 switch (A). The HEADER HEIGHT MODE light (C) (next to SET #1 switch) turns on.
4. Manually raise or lower the header to a second desired cutting height.
5. Press SET #2 switch (B). The HEADER HEIGHT MODE light (D) (next to SET #2 switch) turns on.

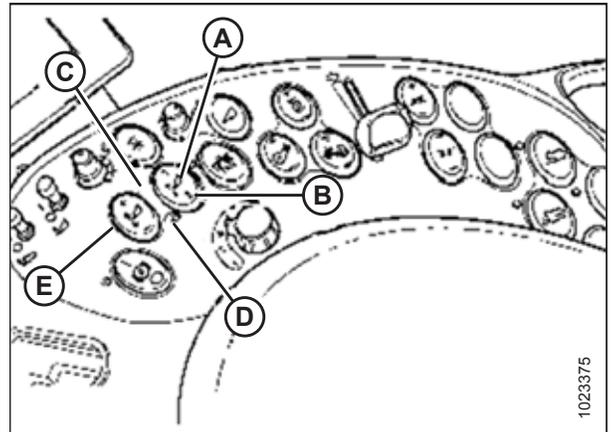


Figure 6.45: Case Combine Controls

A - Set #1 Switch

B - Set #2 Switch

C - Header Height Mode Light

D - Header Height Mode Light

E - Fine Adjust Switch

6. To swap between set points, press HEADER RESUME (A).
7. To pick up header at headlands, press HEADER RESUME (A) twice. To lower, press HEADER RESUME (A).

#### NOTE:

You can adjust these set points by using FINE ADJUST switch (E) in Figure 6.45, page 93.

#### NOTE:

Pressing the HEADER RAISE/LOWER switch will disengage AUTO HEIGHT mode. Press HEADER RESUME to re-engage.



Figure 6.46: Case Combine Controls

## 6.1.5 John Deere 60 Series Combines

### Checking Voltage Range from Combine Cab (John Deere 60 Series)

The auto header height sensor output must be within a specific range, or feature will not work properly. Refer to [6.1.2 Height Sensor Output Voltage Range – Combine Requirements, page 74](#) for voltage limits.

Check sensor's output voltage range from combine cab according to instructions that follow.

**NOTE:**

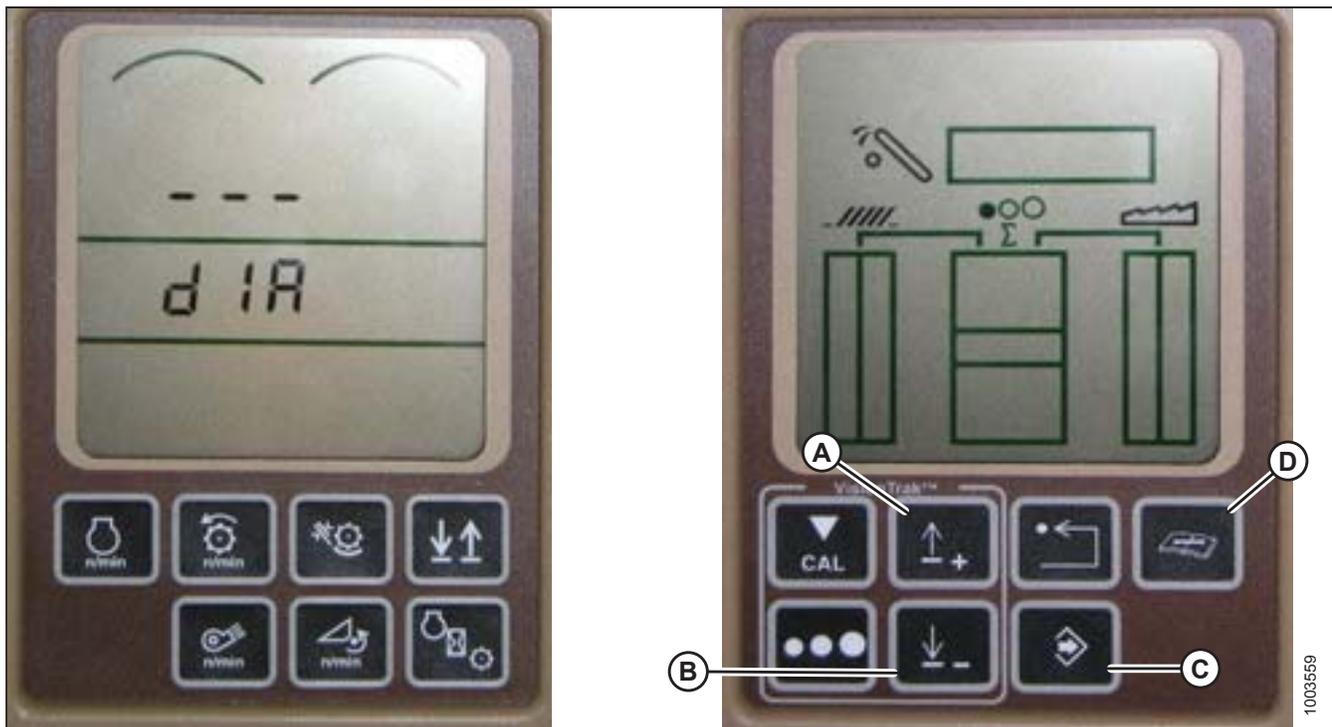
Changes may have been made to combine controls or display since this document was published. Refer to combine operator's manual for updates.

**CAUTION**

Check to be sure all bystanders have cleared the area.

1. Raise header until header wheels are 150 mm (6 in.) above ground.

**Figure 6.47: John Deere Combine Display**



2. Press diagnostic button (D) on HHS monitor (the button with open book with wrench on top of it). dIA appears on monitor.
3. Press up button (A) until EO1 appears on monitor (these are header adjustments).
4. Press ENTER button (C).
5. Press up (A) or down (B) until 22 is displayed on top portion of monitor. This is voltage reading of sensor.
6. Start combine and lower feeder house to ground until feeder house stops moving.

**NOTE:**

You may need to hold HEADER DOWN switch for a few seconds to ensure feeder house is entirely down.

## PREDELIVERY INSPECTION

7. Check sensor reading on monitor.
8. Raise header so it is just off ground and check sensor reading again.
9. If sensor voltage is not within low and high limits shown in *6.1.2 Height Sensor Output Voltage Range – Combine Requirements, page 74*, or if range between low and high limits is insufficient, you need to make adjustments. For instructions, refer to *Adjusting Header Height Sensor Voltage Range (Left Side), page 77* and *Adjusting Header Height Sensor Voltage Range (Right Side), page 77*.

### Calibrating Auto Header Height Control (John Deere 60 Series)

#### NOTE:

Changes may have been made to combine controls or display since this document was published. Refer to combine operator's manual for updates.

#### CAUTION

Check to be sure all bystanders have cleared the area.

1. Press DIAGNOSTIC button (A) on monitor. DIA appears on monitor.
2. Press CAL button (B). DIA-CAL appears on monitor.

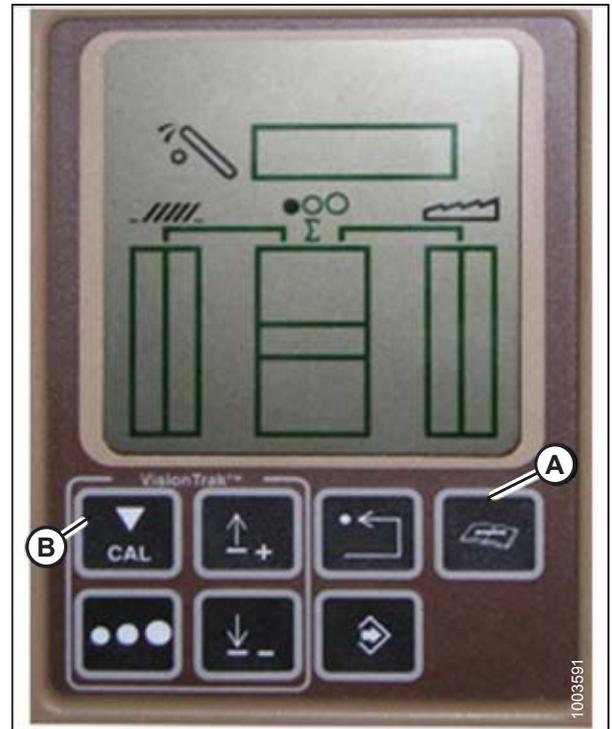


Figure 6.48: John Deere Combine Display

## PREDELIVERY INSPECTION

3. Press UP or DOWN buttons until HDR appears on monitor.
4. Press ENTER button. HDR H-DN appears on monitor.
5. Fully lower feeder house to ground.

**NOTE:**

You may need to hold HEADER DOWN switch for a few seconds to ensure feeder house is fully lowered.

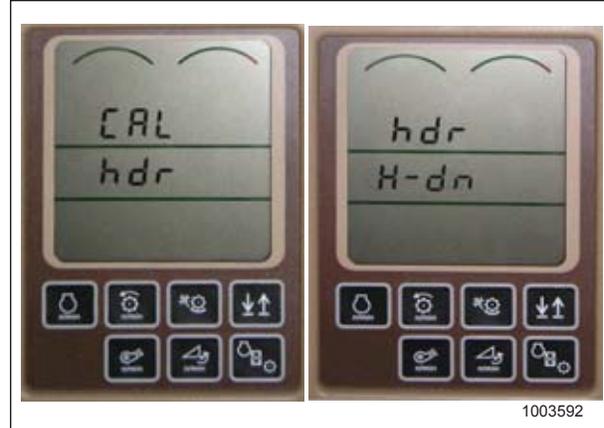


Figure 6.49: John Deere Combine Display

6. Press CAL button (A) to save calibration of header. HDR H-UP appears on monitor.
7. Raise header 1 m (3 ft.) off the ground, and press CAL (A) button. EOC appears on monitor.
8. Press ENTER button (B) to save calibration of header. Your AHHC is now calibrated.

**NOTE:**

If an error code appears during calibration, sensor is out of voltage range and will require adjustment. Refer to [Calibrating Auto Header Height Control \(John Deere 60 Series\), page 95](#).

**NOTE:**

After calibration is complete, adjust combine operation settings to ensure proper field operation.

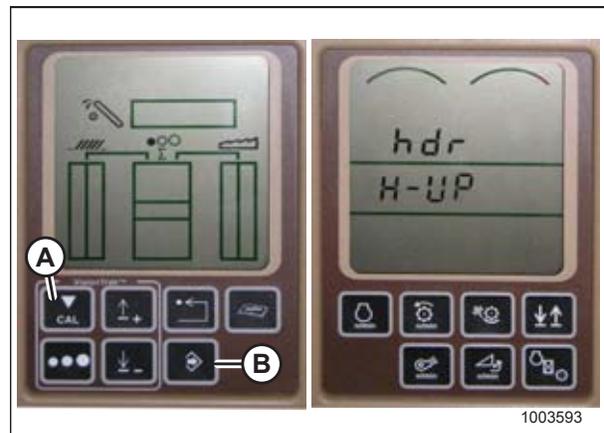


Figure 6.50: John Deere Combine Display

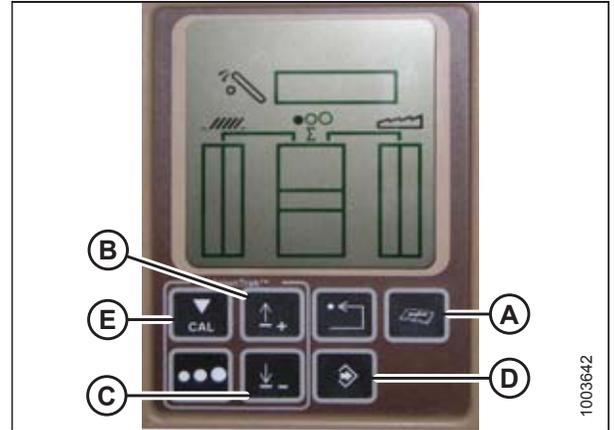
## PREDELIVERY INSPECTION

### *Turning Off Accumulator (John Deere 60 Series)*

#### **NOTE:**

Changes may have been made to combine controls or display since this document was published. Refer to combine operator's manual for updates.

1. Press DIAGNOSTIC button (A) on monitor. DIA appears on the monitor.
2. Press UP button (B) until EO1 appears on monitor, and press ENTER (D). This is header adjustment.
3. Press UP (B) or DOWN (C) button until 132 is displayed on top portion of monitor. This is the accumulator reading.
4. Press ENTER (D) to select 132 as accumulator reading (this will allow you to change display to a three-digit number so it has a 0 in it, for example, x0x).
5. Press UP (B) or DOWN (C) button until desired number is displayed, and press CAL (E) button.
6. Press ENTER (D) to save changes. The accumulator is now deactivated.



**Figure 6.51: John Deere Combine Display**

## PREDELIVERY INSPECTION

### Setting Sensing Grain Header Height to 50 (John Deere 60 Series)

#### NOTE:

Changes may have been made to combine controls or display since this document was published. Refer to combine operator's manual for updates.

To set sensing grain header height, follow these steps:

1. Press DIAGNOSTIC button (A) on monitor. DIA appears on the monitor.
2. Press UP button (B) until EO1 appears on monitor, and press ENTER (D). This is header adjustment.
3. Press UP (B) or DOWN (C) button until 128 is displayed on top portion of monitor. This is the reading for the sensor.
4. Press ENTER (D) to select 128 as sensor reading (this will allow you to change display to a three-digit number so it has a 50 in it).
5. Press UP (B) or DOWN (C) button until desired number is displayed, and press CAL (E) button.
6. Press ENTER (D) to save the changes. The height is now set.

#### NOTE:

Do **NOT** use active header float function (A) in combination with MacDon auto header height control (AHHC)—the two systems will counteract one another. The header symbol (B) on display should **NOT** have a wavy line under it and should appear exactly as shown on Active Header Control Display in Figure 6.53, [page 98](#).

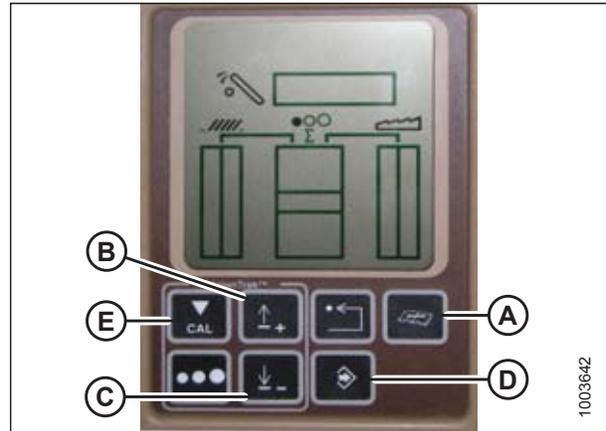


Figure 6.52: John Deere Combine Display

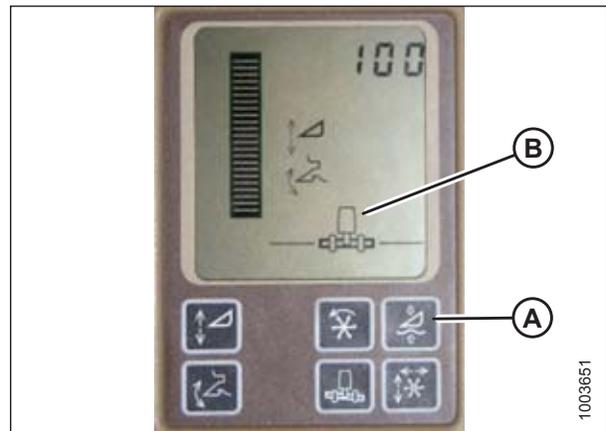


Figure 6.53: John Deere Combine Display

## PREDELIVERY INSPECTION

### Setting Sensitivity of Auto Header Height Control (John Deere 60 Series)

This is also known as dead band adjustment.

**NOTE:**

Changes may have been made to combine controls or display since this document was published. Refer to combine operator's manual for updates.

1. Press DIAGNOSTIC button (A) on monitor. DIA appears on the monitor.
2. Press UP button (B) until EO1 appears on monitor, and press ENTER (D). This is header adjustment.
3. Press UP (B) or DOWN (C) button until 112 is displayed on monitor. This is your sensitivity setting.

**NOTE:**

The lower the reading, the higher the sensitivity. Ideal operating range is typically between 50 and 80.

4. Press ENTER (D) to select 112 as sensitivity setting (this will allow you to change first digit of number sequence).
5. Press UP (B) or DOWN (C) until desired number is displayed, then press CAL (E) button. This will bring you to second digit. Repeat this procedure until desired setting is achieved.
6. Press ENTER (D) to save changes.

**NOTE:**

The numbers depicted on displays in these illustrations are for reference purposes only; they are not intended to represent specific settings for your equipment.

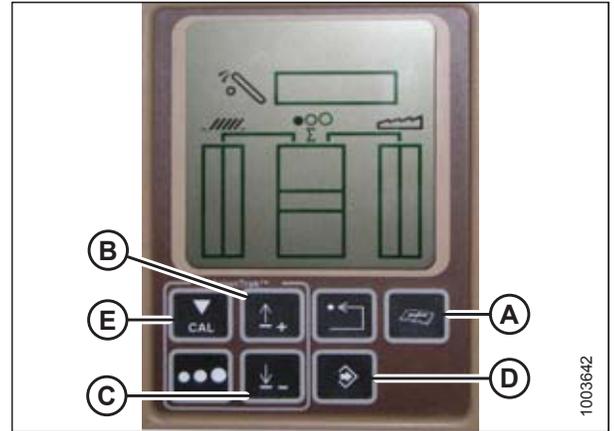


Figure 6.54: John Deere Combine Display

## PREDELIVERY INSPECTION

### Adjusting Threshold for Drop Rate Valve (John Deere 60 Series)

This procedure explains how to adjust the point at which the restrictor valve opens and allows full flow to lift cylinders.

#### NOTE:

Changes may have been made to combine controls or display since this document was published. Refer to combine operator's manual for updates.

1. Press DIAGNOSTIC button (A) on monitor. DIA appears on the monitor.
2. Press UP button (B) until EO1 appears on monitor and press ENTER (C). This is header adjustment.
3. Press UP (B) or DOWN button (D) until 114 is displayed on top portion of monitor. This is the setting that adjusts when fast drop rate starts with respect to dead band.

#### NOTE:

The default setting is 100. Ideal operating range is typically between 60 and 85.

4. Press ENTER (C) to select 114 as fast drop rate (this will allow you to change first digit of number sequence).
5. Press UP (A) or DOWN (B) until desired number is displayed, then press CAL button (C). This will bring you to second digit. Repeat this procedure until desired setting is achieved.
6. Press ENTER (D) to save changes.

#### NOTE:

The numbers depicted on displays in these illustrations are for reference purposes only; they are not intended to represent specific settings for your equipment.

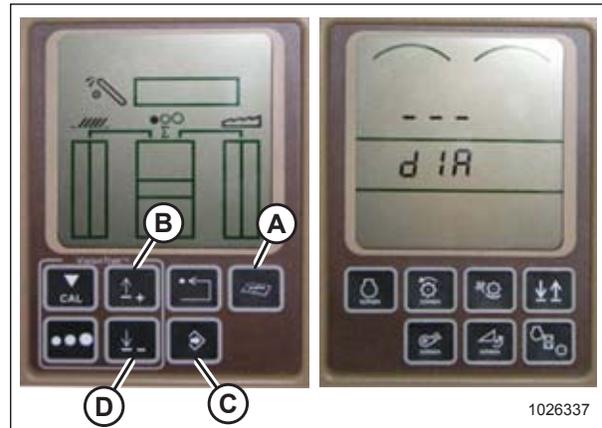


Figure 6.55: John Deere Combine Display

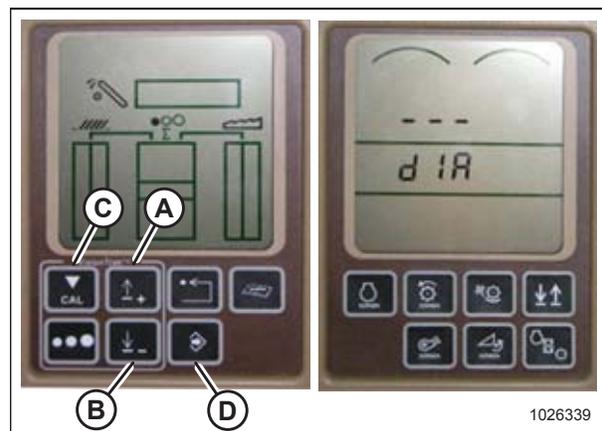


Figure 6.56: John Deere Combine Display

## 6.1.6 John Deere 70 Series Combines

### *Checking Voltage Range from Combine Cab (John Deere 70 Series)*

The auto header height sensor output must be within a specific range, or feature will not work properly. Refer to [6.1.2 Height Sensor Output Voltage Range – Combine Requirements, page 74](#) for voltage limits.

Check sensor's output voltage range from combine cab according to instructions that follow.

**NOTE:**

Changes may have been made to combine controls or display since this document was published. Refer to combine operator's manual for updates.



### **CAUTION**

**Check to be sure all bystanders have cleared the area.**

1. Raise header until header wheels are 150 mm (6 in.) above ground.
2. If sensor voltage is not within low and high limits shown in [6.1.2 Height Sensor Output Voltage Range – Combine Requirements, page 74](#), or if range between low and high limits is insufficient, you need to make adjustments. For instructions, refer to [Adjusting Header Height Sensor Voltage Range \(Left Side\), page 77](#) and [Adjusting Header Height Sensor Voltage Range \(Right Side\), page 77](#).

### *Calibrating Feeder House Speed (John Deere 70 Series)*

The feeder house speed must be calibrated before you calibrate auto header height control (AHHC) system. Refer to combine operator's manual for instructions.

## PREDELIVERY INSPECTION

### Calibrating Auto Header Height Control (John Deere 70 Series)

#### NOTE:

Changes may have been made to combine controls or display since this document was published. Refer to combine operator's manual for updates.

#### CAUTION

Check to be sure all bystanders have cleared the area.

1. Start combine.
2. Press button located fourth from left along top of monitor (A) to select icon that resembles an open book with a wrench on it (B).
3. Press button (A) a second time to enter diagnostics and calibration mode.

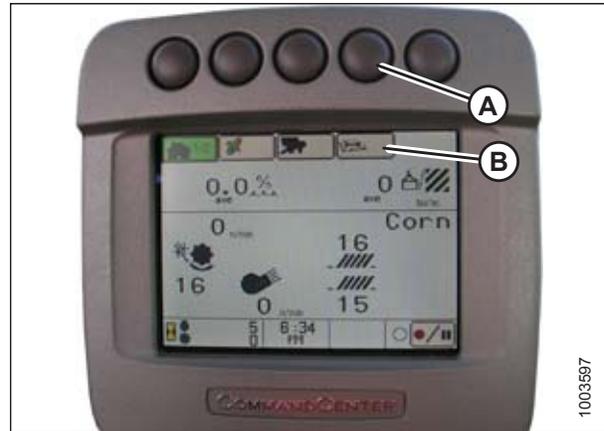


Figure 6.57: John Deere Combine Display

4. Select HEADER in box (A) by scrolling down to box using the scroll knob, and then by pressing the check mark button.

#### NOTE:

The knob and button are shown in figures at right.

5. Scroll down to the lower right icon that resembles an arrow in a diamond (B) and press the check mark button to select it.
6. Follow the steps listed on the combine display to perform the calibration.

#### NOTE:

If an error code appears on page, then the sensor is not in the correct working range. Refer to [Checking Voltage Range from Combine Cab \(John Deere 70 Series\)](#), page 101 to check and adjust range.

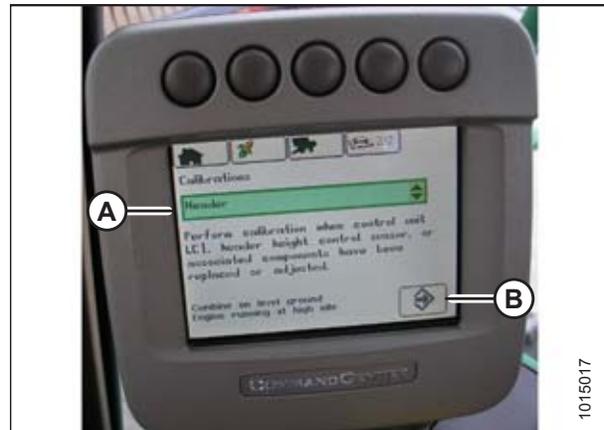
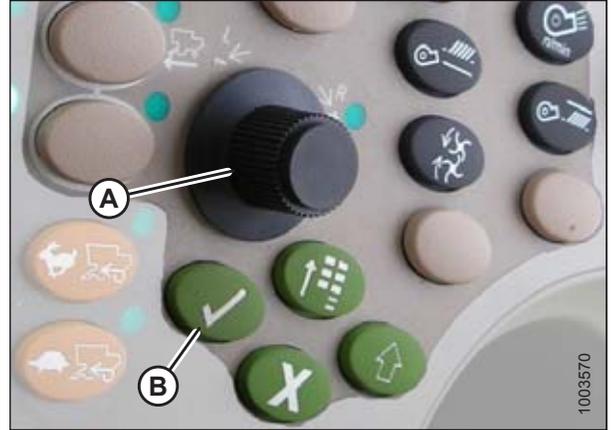


Figure 6.58: John Deere Combine Display

## PREDELIVERY INSPECTION



**Figure 6.59: John Deere Combine Control Console**

A - Scroll Knob

B - Check Mark Button

### *Setting Sensitivity of Auto Header Height Control (John Deere 70 Series)*

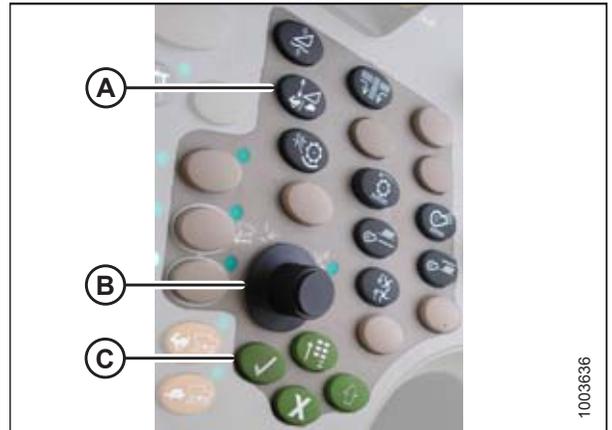
**NOTE:**

Changes may have been made to combine controls or display since this document was published. Refer to combine operator's manual for updates.

1. Press button (A) twice and current sensitivity setting will appear on combine display (the lower the reading, the lower the sensitivity).
2. Use scroll knob (B) to adjust sensitivity setting. The adjustment will be saved automatically.

**NOTE:**

If page remains idle for a short period of time, it will automatically return to previous page. Pressing check mark button (C) also will return combine display to previous page.



**Figure 6.60: John Deere Combine Control Console**

## PREDELIVERY INSPECTION

**NOTE:**

The numbers depicted on displays in these illustrations are for reference purposes only; they are not intended to represent specific settings for your equipment.



Figure 6.61: John Deere Combine Display

## PREDELIVERY INSPECTION

### *Adjusting Manual Header Raise/Lower Rate (John Deere 70 Series)*

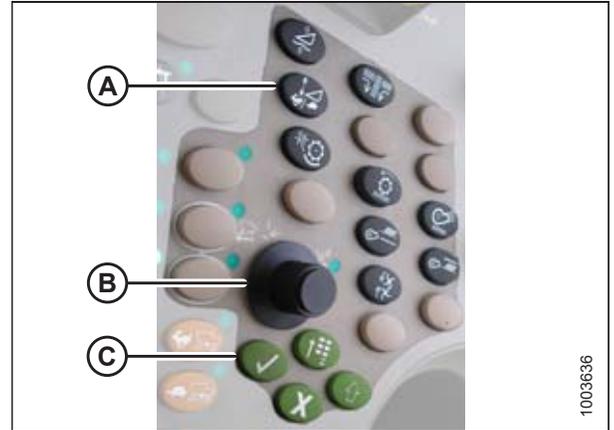
#### **NOTE:**

Changes may have been made to combine controls or display since this document was published. Refer to combine operator's manual for updates.

1. Press button (A) and current raise/lower rate setting will appear on monitor (the lower reading, slower rate).
2. Use scroll knob (B) to adjust rate. The adjustment will be saved automatically.

#### **NOTE:**

If page remains idle for a short period of time, it will automatically return to previous page. Pressing check mark button (C) will also return monitor to previous page.



**Figure 6.62: John Deere Combine Control Console**

#### **NOTE:**

The numbers depicted on displays in these illustrations are for reference purposes only; they are not intended to represent specific settings for your equipment.



**Figure 6.63: John Deere Combine Display**

## 6.1.7 John Deere S and T Series Combines

### *Checking Voltage Range from Combine Cab (John Deere S and T Series)*

The auto header height sensor output must be within a specific range, or feature will not work properly. Refer to [6.1.2 Height Sensor Output Voltage Range – Combine Requirements, page 74](#) for voltage limits.

Check sensor's output voltage range from combine cab according to instructions that follow.

**NOTE:**

Changes may have been made to combine controls or display since this document was published. Refer to combine operator's manual for updates.

**⚠ CAUTION**

**Check to be sure all bystanders have cleared the area.**

1. Raise header until header wheels are 150 mm (6 in.) above ground.
2. Start combine and fully lower feeder house to the ground.

**NOTE:**

You may need to hold HEADER DOWN switch for a few seconds to ensure feeder house is fully lowered.

3. Check sensor reading on monitor.
4. If sensor voltage is not within low and high limits shown in [6.1.2 Height Sensor Output Voltage Range – Combine Requirements, page 74](#), or if range between low and high limits is insufficient, you need to make adjustments. For instructions, refer to [Adjusting Header Height Sensor Voltage Range \(Left Side\), page 77](#) and [Adjusting Header Height Sensor Voltage Range \(Right Side\), page 77](#).

### *Calibrating Feeder House Fore-Aft Tilt Range (John Deere S and T Series)*

This procedure applies only to model year 2015 and later John Deere S and T Series combines.

**NOTE:**

Changes may have been made to the combine controls or display since this document was published. Refer to the combine operator's manual for updates.

The feeder house fore-aft tilt is controlled by buttons (A) and (D) at back of hydro handle.



**Figure 6.64: John Deere Hydro Handle**

## PREDELIVERY INSPECTION

### NOTE:

The feeder house fore-aft tilt controls can be changed to work with buttons E and F by pressing hydro handle icon (A) and then selecting FEEDER HOUSE FORE/AFT TILT from drop-down menu (B) on combine display.

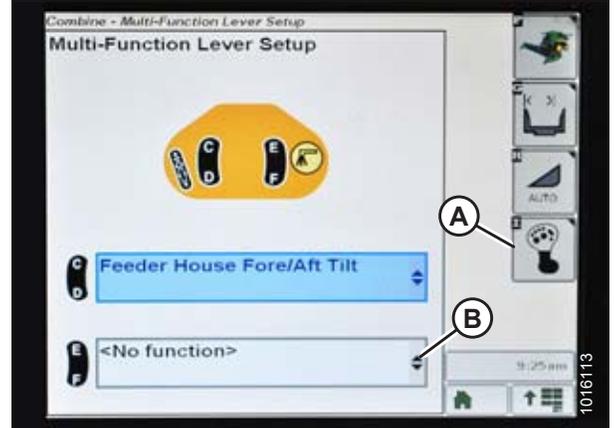


Figure 6.65: John Deere Combine Display

To calibrate feeder house fore-aft tilt range, follow these steps:

1. Press DIAGNOSTIC icon (A) on main page of combine display. The CALIBRATION page displays.



Figure 6.66: John Deere Combine Display

2. Select CALIBRATIONS drop-down menu (A) to view list of calibration options.

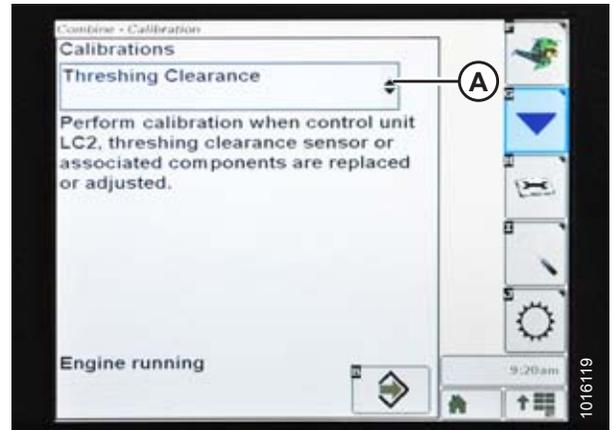


Figure 6.67: John Deere Combine Display

## PREDELIVERY INSPECTION

3. Press arrow (A) to cycle up through calibration options and select FEEDER HOUSE FORE/AFT TILT RANGE.

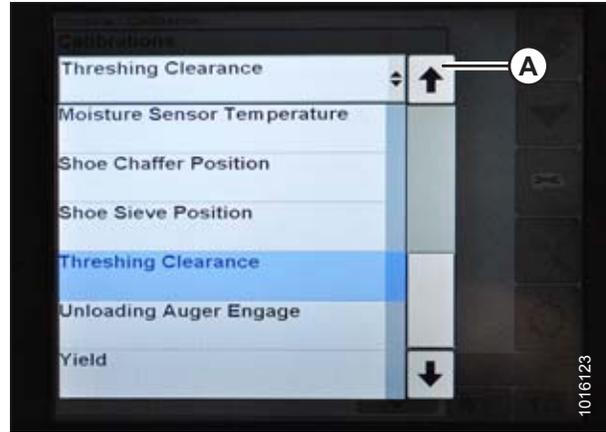


Figure 6.68: John Deere Combine Display

4. Press ENTER icon (A).

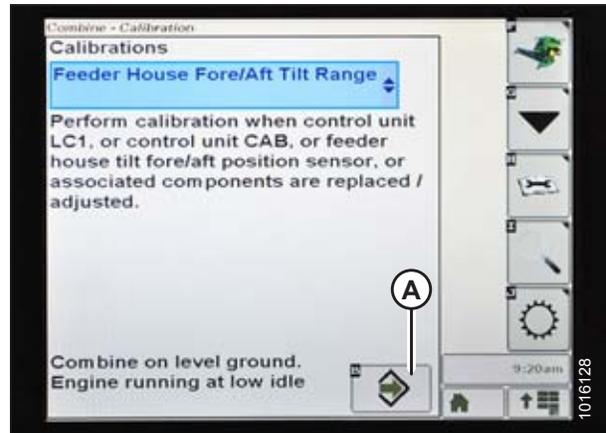


Figure 6.69: John Deere Combine Display

5. Follow instructions that appear on combine display. As you proceed through calibration process, display will automatically update to show next step.

### NOTE:

If an error code appears during calibration, sensor is out of voltage range and will require adjustment. Refer to [Checking Voltage Range from Combine Cab \(John Deere S and T Series\), page 106.](#)

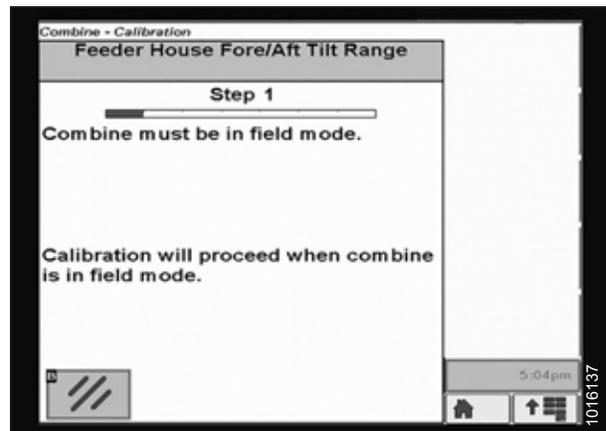


Figure 6.70: John Deere Combine Display

## PREDELIVERY INSPECTION

### Calibrating Auto Header Height Control (John Deere S and T Series)

#### NOTE:

Changes may have been made to combine controls or display since this document was published. Refer to combine operator's manual for updates.

1. Press DIAGNOSTIC icon (A) on main page of monitor.  
The CALIBRATION page appears.



Figure 6.71: John Deere Combine Display

2. Select THRESHING CLEARANCE (A) and a list of calibration options appears.

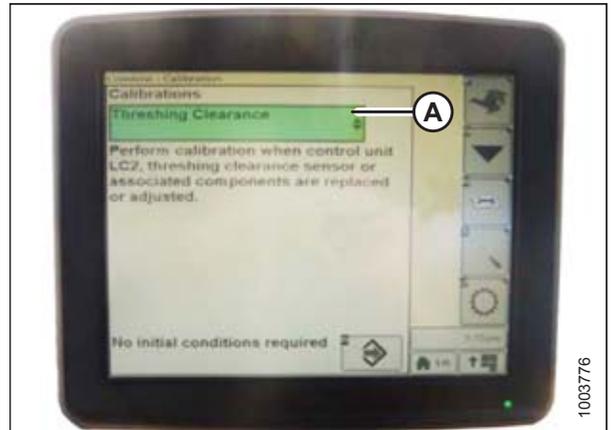


Figure 6.72: John Deere Combine Display

3. Select FEEDER HOUSE SPEED (A) and calibrate.
4. Select HEADER (B) and calibrate.

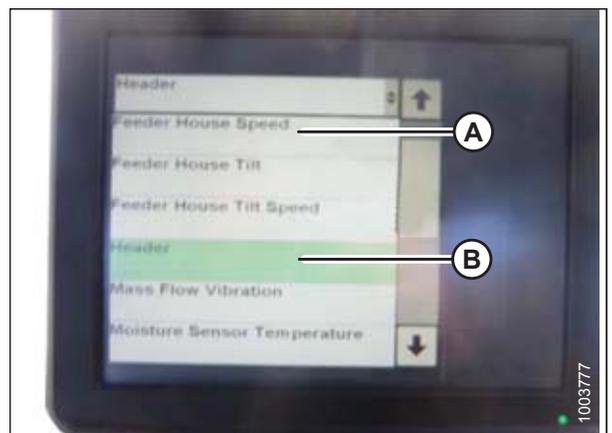


Figure 6.73: John Deere Combine Display

## PREDELIVERY INSPECTION

5. Press icon (A) with either FEEDER HOUSE SPEED or HEADER selected and icon will turn green.

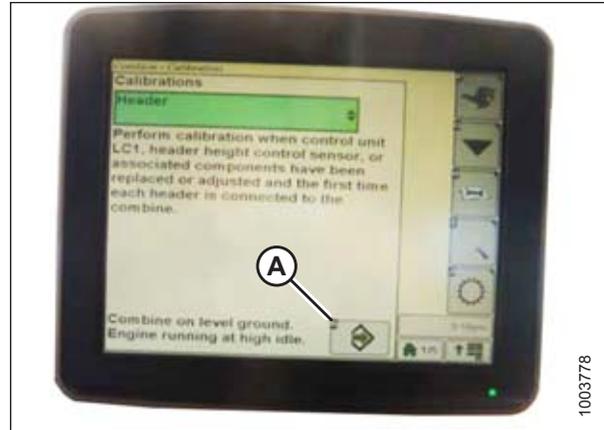


Figure 6.74: John Deere Combine Display

6. Click button (A) and instructions will appear on screen to guide you through remaining calibration steps.

**NOTE:**

If an error code appears during calibration, one or both sensors are out of voltage range and will require adjustment. Refer to *Adjusting Header Height Sensor Voltage Range (Left Side)*, page 77 and *Adjusting Header Height Sensor Voltage Range (Right Side)*, page 77.

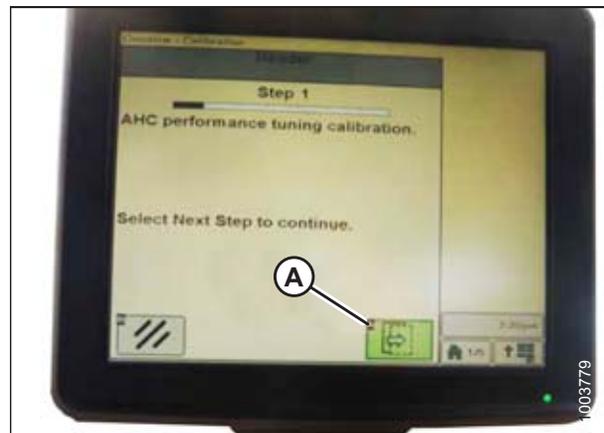


Figure 6.75: John Deere Combine Display

## PREDELIVERY INSPECTION

### *Setting Sensitivity of Auto Header Height Control (John Deere S and T Series)*

**NOTE:**

Changes may have been made to combine controls or display since this document was published. Refer to combine operator's manual for updates.

1. Press button (A) twice and current sensitivity setting will appear on combine display.



**Figure 6.76: John Deere Combine Command Center**

2. Press – or + icon (A) to adjust rates.

**NOTE:**

The numbers depicted on displays in these illustrations are for reference purposes only; they are not intended to represent specific settings for your equipment.



**Figure 6.77: John Deere Combine Display**

## PREDELIVERY INSPECTION

### *Adjusting Manual Header Raise/Lower Rate (John Deere S and T Series)*

#### **NOTE:**

Changes may have been made to the combine controls or display since this document was published. Refer to combine operator's manual for updates.

1. Press button (A) and current sensitivity setting will appear on monitor.

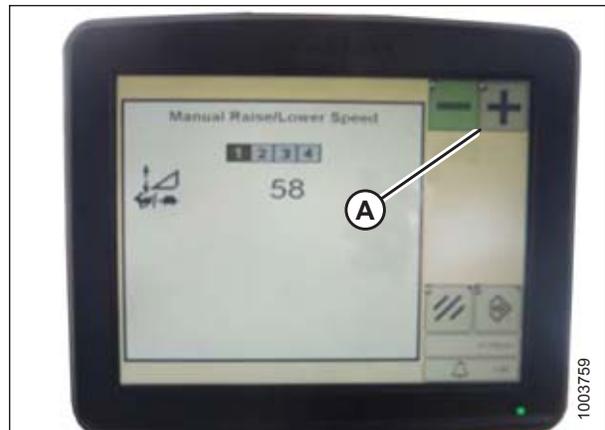


**Figure 6.78: John Deere Combine Command Center**

2. Press – or + icon (A) to adjust rates.

#### **NOTE:**

The numbers depicted on displays in these illustrations are for reference purposes only; they are not intended to represent specific settings for your equipment.



**Figure 6.79: John Deere Combine Display**

## PREDELIVERY INSPECTION

### Setting Preset Cutting Height (John Deere S and T Series)

#### NOTE:

Changes may have been made to combine controls or display since this document was published. Refer to combine operator's manual for updates.

1. Press COMBINE – HEADER SETUP icon (A) on main page. The COMBINE – HEADER SETUP page appears. This page is used to set various header settings such as reel speed, header width, and height of feeder house for acre counter engagement.



Figure 6.80: Combine Display

2. Select COMBINE – HEADER SETUP AHC icon (A). The COMBINE – HEADER SETUP AHC screen appears.



Figure 6.81: Combine Display

3. Select HEADER HEIGHT SENSING ENABLE (A), HEADER HEIGHT RESUME ENABLE (B), and REEL POSITION RESUME ENABLE (C) icons.

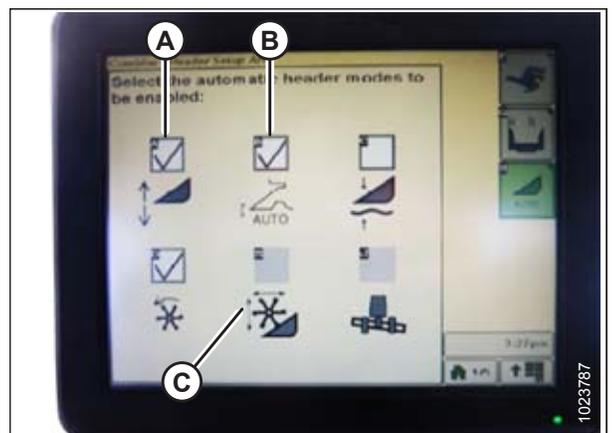


Figure 6.82: Combine Display

## PREDELIVERY INSPECTION

4. Turn on header engagement switch (A) and move header to desired preset position.
5. Position can be fine-tuned with HEADER HEIGHT PRESSURE CONTROL DIAL (B).



Figure 6.83: Combine Control Console

6. Hold joystick button 2 (B) until the AHHC icon flashes on monitor.
7. To store another preset, repeat Step 4, page 114 and Step 6, page 114 for button 3 (C).
8. Select an appropriate ground pressure setting:
  - Preset button 2 (B) on joystick for a light ground pressure setting in muddy or soft soil conditions
  - Preset button 3 (C) for a heavy ground pressure setting in harder soil conditions and a faster ground speed



Figure 6.84: Joystick Buttons

**NOTE:**

Preset button 1 (A) is reserved for header lift on headland and is not used for ground cutting.

**NOTE:**

When auto header height control (AHHC) is engaged, AHHC icon (A) appears on monitor and number indicating which button was pressed (B) is displayed on the screen.

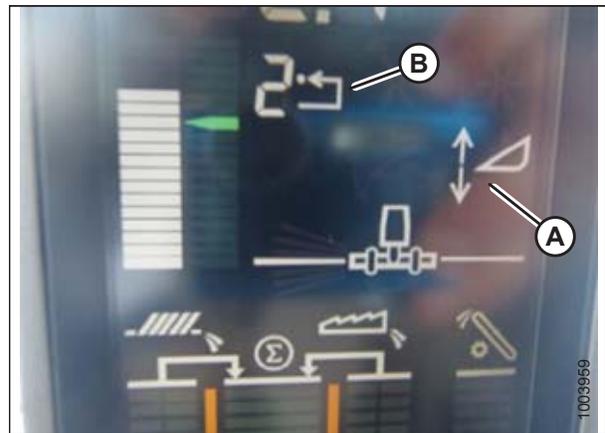


Figure 6.85: Combine Display

## 6.1.8 New Holland Combines CX/CR Series (CR Series – Model Year 2014 and Earlier)

**NOTE:**

For New Holland CR models 6.80, 6.90, 7.90, 8.90, 9.90, and 10.90, refer to [6.1.9 New Holland Combines \(CR Series – Model Year 2015 and Later\)](#), page 125.

### Checking Voltage Range from Combine Cab (New Holland)

**NOTE:**

Changes may have been made to the combine controls or display since this document was published. Refer to the combine operator’s manual for updates.

**CAUTION**

Check to be sure all bystanders have cleared the area.

1. Raise header until header wheels are 150 mm (6 in.) above ground.
2. Select DIAGNOSTICS (A) on main page. The DIAGNOSTICS page displays.
3. Select SETTINGS. The SETTINGS page displays.

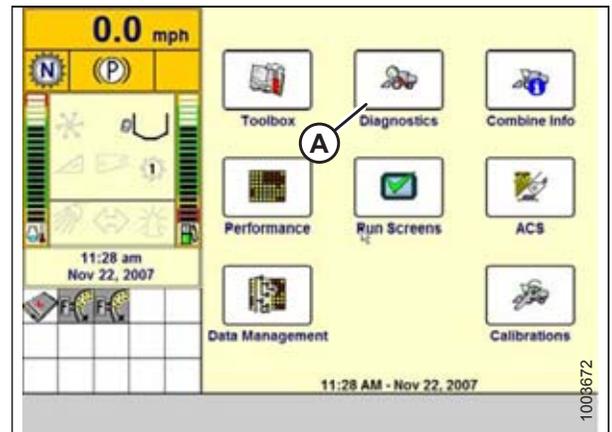


Figure 6.86: New Holland Combine Display

4. Select GROUP drop-down arrow (A). The GROUP dialog box displays.

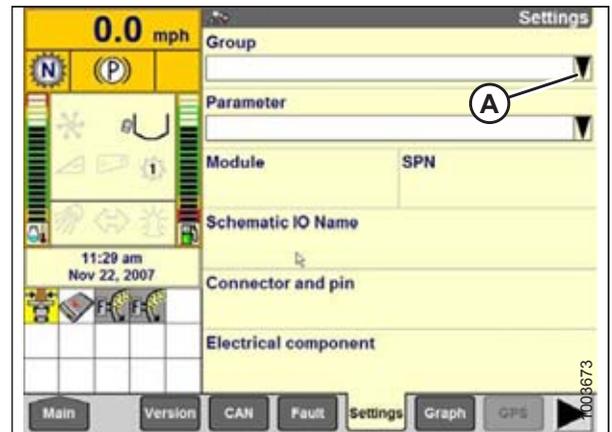


Figure 6.87: New Holland Combine Display

## PREDELIVERY INSPECTION

5. Select HEADER HEIGHT/TILT (A). The PARAMETER page displays.

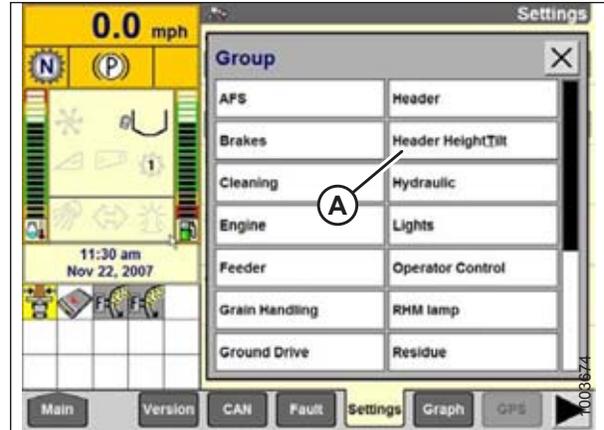


Figure 6.88: New Holland Combine Display

6. Select LEFT HEADER HEIGHT SEN (A), and then select GRAPH button (B). The exact voltage is displayed at top of page.
7. Raise and lower header to see full range of voltage readings.
8. If sensor voltage is not within low and high limits shown in [6.1.2 Height Sensor Output Voltage Range – Combine Requirements, page 74](#), or if range between low and high limits is insufficient, you need to make adjustments. For instructions, refer to [Adjusting Header Height Sensor Voltage Range \(Left Side\), page 77](#) and [Adjusting Header Height Sensor Voltage Range \(Right Side\), page 77](#).

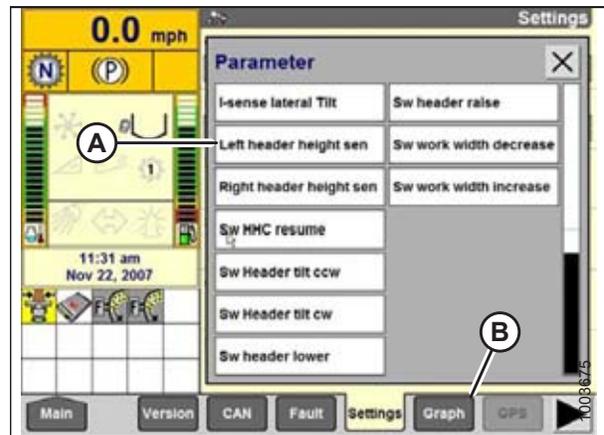


Figure 6.89: New Holland Combine Display

## PREDELIVERY INSPECTION

### *Engaging Auto Header Height Control (New Holland CR/CX Series)*

#### **NOTE:**

Changes may have been made to the combine controls or display since this document was published. Refer to the combine operator's manual for updates.

1. Select HEADER LATERAL FLOAT on combine display, and press ENTER.
2. Use up and down navigation keys to move between options, and select INSTALLED.



**Figure 6.90: New Holland Combine Display**

3. Select HEADER AUTOFLOAT, and press ENTER.
4. Use up and down navigation keys to move between options, and select INSTALLED.



**Figure 6.91: New Holland Combine Display**

## PREDELIVERY INSPECTION

### *Calibrating Auto Header Height Control (New Holland CR/CX Series)*

#### NOTE:

Changes may have been made to the combine controls or display since this document was published. Refer to the combine operator's manual for updates.

#### CAUTION

**Check to be sure all bystanders have cleared the area.**

Check the following conditions before starting the header calibration procedure:

- The header is attached to the combine.
- The combine is on level ground, with the header level to the ground.
- The engine is running.
- The combine is not moving.
- No faults have been received from the Header Height Controller (HHC) module.
- The header/feeder is disengaged.
- Lateral float buttons are **NOT** pressed.
- The ESC key is **NOT** pressed.

To calibrate the AHHC, follow these steps:

1. Select CALIBRATION on the combine display, and press the right arrow navigation key to enter the information box.
2. Select HEADER (A), and press ENTER. The CALIBRATION dialog box opens.

#### NOTE:

You can use the up and down navigation keys to move between options.

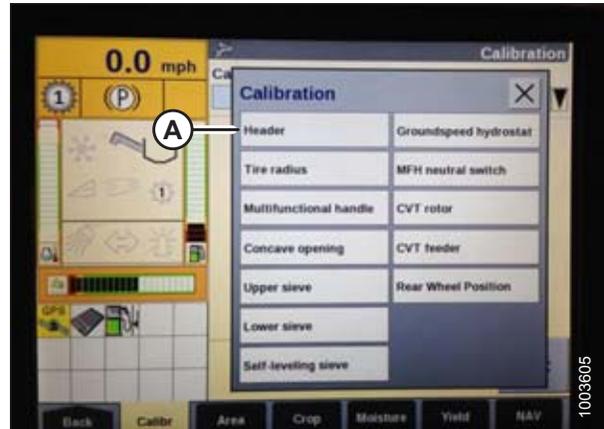


Figure 6.92: New Holland Combine Display

## PREDELIVERY INSPECTION

3. Follow the calibration steps in the order that they appear in the dialog box. As you proceed through the calibration process, the display will automatically update to show the next step.

**NOTE:**

Pressing the ESC key during any of the steps or letting the system sit idle for more than 3 minutes will stop the calibration process.

**NOTE:**

Refer to your combine operator's manual for an explanation of any error codes encountered.



**Figure 6.93: New Holland Combine Display**

4. When all steps have been completed, a CALIBRATION SUCCESSFUL message is displayed on the page. Exit the CALIBRATION menu by pressing either the ENTER or ESC key.

**NOTE:**

If the float was set heavier to complete ground the calibration procedure, adjust to the recommended operating float after calibration is complete.

5. If the unit does not function properly, conduct maximum stubble height calibration.

## PREDELIVERY INSPECTION

### Calibrating Maximum Stubble Height

This procedure describes how to calibrate the area counter to stop or start counting at the correct height. Program header to a height that will never be reached while cutting. The area counter will stop counting when header is above programmed height, and will begin counting when header is below programmed height.

Select height of header that corresponds to description above.

#### IMPORTANT:

- If value is set too low, area may **NOT** be counted since header is sometimes raised above this threshold although combine is still cutting.
- If value is set too high, area counter will keep counting even when header is raised (but below this threshold) and combine is no longer cutting crop.

### CAUTION

Check to be sure all bystanders have cleared the area.

1. Select MAXIMUM STUBBLE HEIGHT calibration dialog box. As you proceed through calibration process, display will automatically update to show next step.

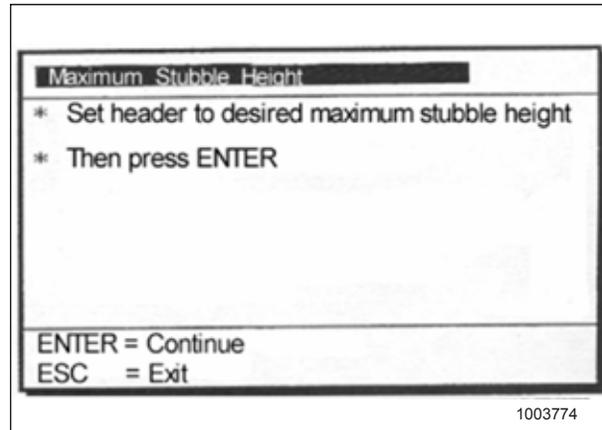


Figure 6.94: New Holland Calibration Dialog Box

2. Move header to correct position using header up or down control switch on multifunction handle.
3. Press ENTER to continue. As you proceed through calibration process, display will automatically update to show next step.
4. Press ENTER or ESC to close calibration page. The calibration is now complete.

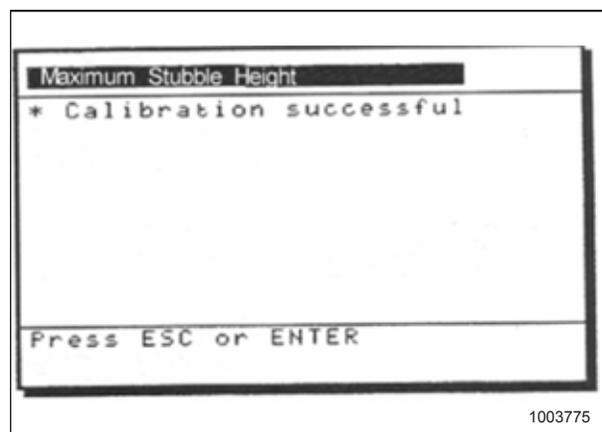


Figure 6.95: New Holland Calibration Dialog Box

## PREDELIVERY INSPECTION

### *Adjusting Header Raise Rate (New Holland CR/CX Series)*

If necessary, header raise rate (the first speed on HEADER HEIGHT rocker switch of multifunction handle) can be adjusted.

#### **NOTE:**

Changes may have been made to the combine controls or display since this document was published. Refer to combine operator's manual for updates.

1. Select HEADER RAISE RATE on combine display.
2. Use + or – buttons to change setting.
3. Press ENTER to save new setting.

#### **NOTE:**

The raise rate can be changed from 32 to 236 in increments of 34. The factory setting is 100.

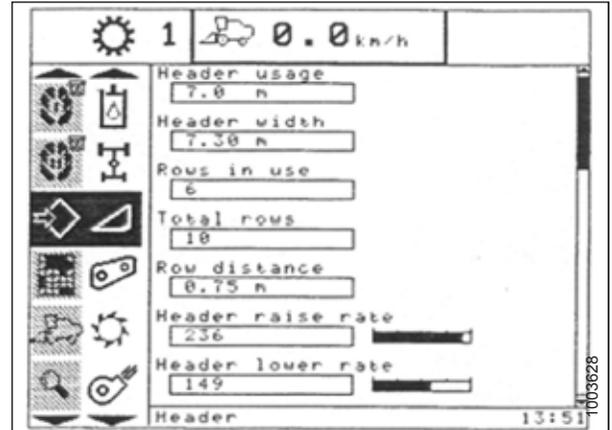


Figure 6.96: New Holland Combine Display

### *Setting Header Lower Rate to 50 (New Holland CR/CX Series)*

The header lower rate can be adjusted using the automatic header height control (AHC) button or second speed on the multifunction handle's header height rocker switch.

#### **NOTE:**

Changes may have been made to the combine controls or display since this document was published. Refer to combine operator's manual for updates.

1. Select HEADER LOWER RATE on combine display.
2. Use + or – buttons to change setting to 50.
3. Press ENTER to save new setting.

#### **NOTE:**

The lower rate can be changed from 2 to 247 in increments of 7. It is factory-set to 100.

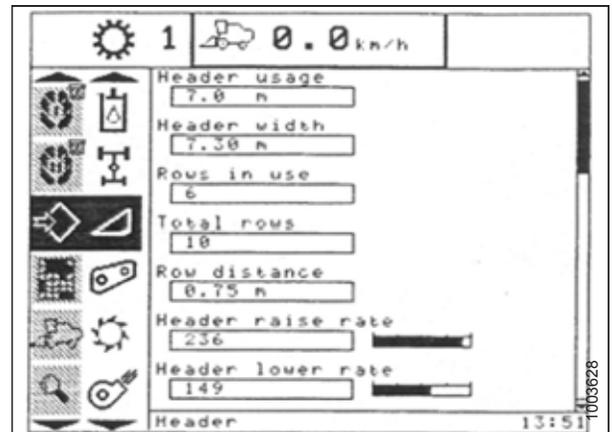


Figure 6.97: New Holland Combine Display

## PREDELIVERY INSPECTION

### Setting Sensitivity of Auto Header Height Control to 200 (New Holland CR/CX Series)

#### NOTE:

Changes may have been made to the combine controls or display since this document was published. Refer to combine operator's manual for updates.

#### CAUTION

Check to be sure all bystanders have cleared the area.

1. Engage threshing and feeder house.
2. Select HEIGHT SENSITIVITY on combine display screen.
3. Use + or – buttons to change setting to 200.
4. Press ENTER to save new setting.

#### NOTE:

The sensitivity can be changed from 10 to 250 in increments of 10. It is factory-set to 100.



Figure 6.98: New Holland Combine Display

### Setting Preset Cutting Height (New Holland CR/CX Series)

To set preset cutting height, follow these steps:

#### NOTE:

Changes may have been made to the combine controls or display since this document was published. Refer to combine operator's manual for updates.

1. Engage threshing mechanism and feeder with switches (A) and (B).
2. Set HEADER MEMORY rocker switch (D) in STUBBLE HEIGHT/AUTO FLOAT MODE.
3. Lower header to desired cutting height using HEADER HEIGHT AND HEADER LATERAL FLOAT rocker switch (C).
4. Press AUTOMATIC HEADER HEIGHT CONTROL button (E) for a minimum of 2 seconds to store height position. A beep will confirm setting.

#### NOTE:

It is possible to store two different header height values by using HEADER MEMORY rocker switch (D) in STUBBLE HEIGHT/AUTO FLOAT MODE.

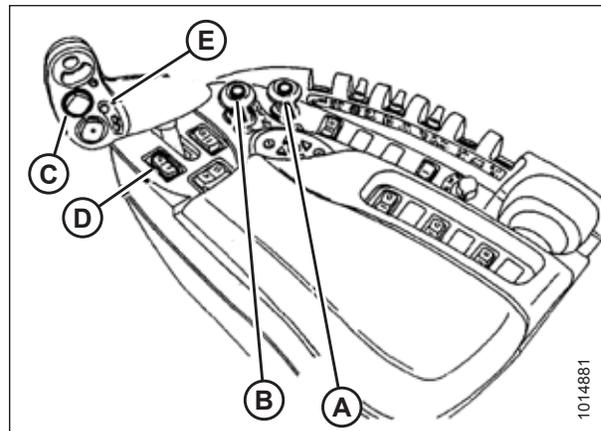


Figure 6.99: New Holland Combine Controls

## PREDELIVERY INSPECTION

- To change one of saved header height set points while combine is in use, use HEADER HEIGHT AND HEADER LATERAL FLOAT rocker switch (A) (slow up/down) to raise or lower header to desired value. Press AUTOMATIC HEADER HEIGHT CONTROL button (B) for a minimum of 2 seconds to store new height position. A beep will confirm setting.

**NOTE:**

Do **NOT** press too hard on AUTOMATIC HEADER HEIGHT CONTROL button (B), or float mode will be disengaged.

**NOTE:**

It is not necessary to press rocker switch (C) again after adjusting.

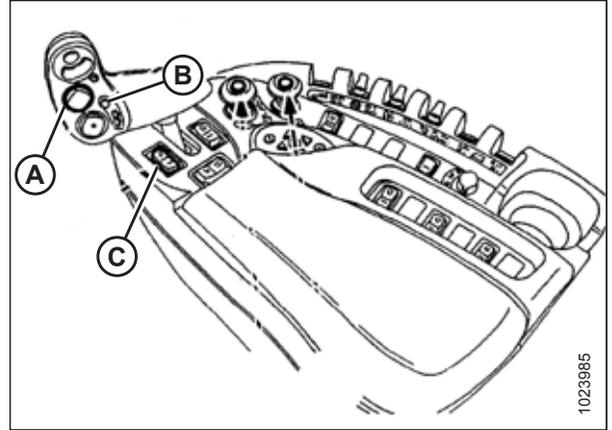


Figure 6.100: New Holland Combine Controls

### *Configuring Reel Fore-Aft, Header Tilt, and Header Type (New Holland CR Series)*

This procedure applies only to 2016 New Holland CR models 6.90, 7.90, 8.90, and 9.90.

**NOTE:**

Changes may have been made to the combine controls or display since this document was published. Refer to the combine operator's manual for updates.

- Simultaneously press both UNLOAD (A) and RESUME (B) buttons on hydro handle.

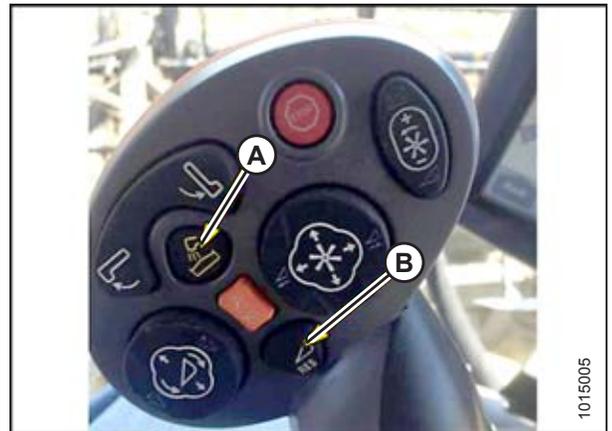


Figure 6.101: New Holland Combine Controls

## PREDELIVERY INSPECTION

- On HEAD 1 page, change CUTTING TYPE from FLEX to PLATFORM (A).



Figure 6.102: New Holland Combine Display

- On HEAD 2 page, change HEADER SUB TYPE from DEFAULT to 80/90 (A).

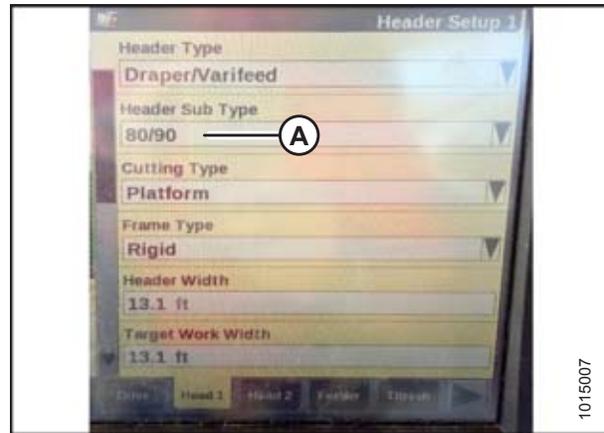


Figure 6.103: New Holland Combine Display

There are now two buttons for ON GROUND presets. The toggle switch from previous models is configured as shown. MacDon headers require the first two buttons (A) and (B). The third button (C) is not configured.



Figure 6.104: New Holland Combine Controls

## PREDELIVERY INSPECTION

### 6.1.9 New Holland Combines (CR Series – Model Year 2015 and Later)

This section applies only to 2015 and later CR models (6.80, 6.90, 7.90, 8.90, 9.90, and 10.90). For other New Holland combine models, refer to [6.1.8 New Holland Combines CX/CR Series \(CR Series – Model Year 2014 and Earlier\)](#), page 115.

#### *Engaging Auto Header Height Control (New Holland CR Series)*

This procedure applies only to 2015 and later CR models (6.80, 6.90, 7.90, 8.90, 9.90, and 10.90).

#### **NOTE:**

Changes may have been made to the combine controls or display since this document was published. Refer to the combine operator's manual for updates.

1. Select TOOLBOX (A) on main page. The TOOLBOX page displays.
2. Simultaneously press both UNLOAD (A) and RESUME (B) buttons on hydro handle.



Figure 6.105: New Holland Combine Controls

3. Select HEAD 1 (A). The HEADER SETUP 1 page displays.
4. Select CUTTING TYPE drop-down arrow (B) and change CUTTING TYPE to PLATFORM (C).

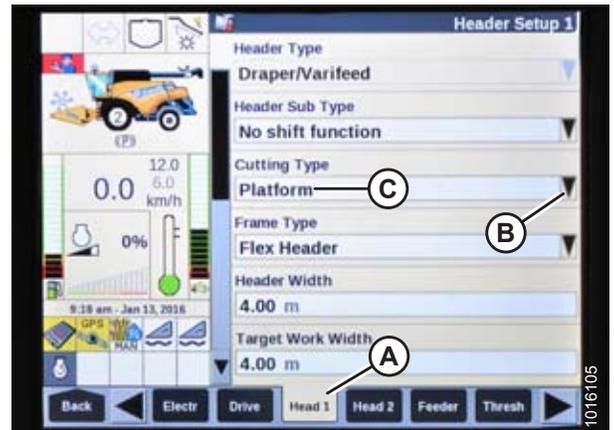


Figure 6.106: New Holland Combine Display

## PREDELIVERY INSPECTION

5. Select HEADER SUB TYPE drop-down arrow (A). The HEADER SUB TYPE dialog box displays.



Figure 6.107: New Holland Combine Display

6. Select 80/90 (A).



Figure 6.108: New Holland Combine Display

7. Select HEAD 2 (A). The HEADER SETUP 2 page displays.



Figure 6.109: New Holland Combine Display

## PREDELIVERY INSPECTION

8. Select AUTOFLOAT drop-down arrow and set AUTOFLOAT to INSTALLED (A).
9. Select AUTO HEADER LIFT drop-down arrow and set AUTO HEADER LIFT to INSTALLED (B).

**NOTE:**

With AUTO HEADER LIFT installed and AHHC engaged, header will lift up automatically when you pull back on hydro handle.

10. Set values for MANUAL HHC RAISE RATE (C) and MANUAL HHC LOWER RATE (D) for best performance according to ground conditions.
11. Set values for HHC HEIGHT SENSITIVITY (A) and HHC TILT SENSITIVITY (B) for best performance according to ground conditions.



Figure 6.110: New Holland Combine Display

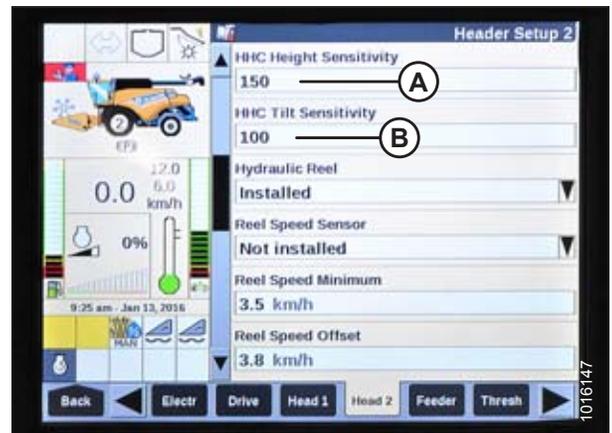


Figure 6.111: New Holland Combine Display

## PREDELIVERY INSPECTION

### Checking Voltage Range from Combine Cab (New Holland CR Series)

#### NOTE:

Changes may have been made to the combine controls or display since this document was published. Refer to the combine operator's manual for updates.

#### CAUTION

Check to be sure all bystanders have cleared the area.

1. Position header 150 mm (6 in.) above ground.
2. Select DIAGNOSTICS (A) on main page. The DIAGNOSTICS page displays.



Figure 6.112: New Holland Combine Display

3. Select SETTINGS (A). The SETTINGS page displays.



Figure 6.113: New Holland Combine Display

## PREDELIVERY INSPECTION

4. Select HEADER HEIGHT/TILT (A) from GROUP drop-down menu.
5. Select HEADER HEIGHT SENS. L (B) from PARAMETER drop-down menu.



Figure 6.114: New Holland Combine Display

6. Select GRAPH (A). The exact voltage (B) is displayed at top of page.
7. Raise and lower header to see full range of voltage readings.
8. If sensor voltage is not within low and high limits shown in [6.1.2 Height Sensor Output Voltage Range – Combine Requirements, page 74](#), or if range between low and high limits is insufficient, you need to make adjustments. For instructions, refer to [Adjusting Header Height Sensor Voltage Range \(Left Side\), page 77](#) and [Adjusting Header Height Sensor Voltage Range \(Right Side\), page 77](#).

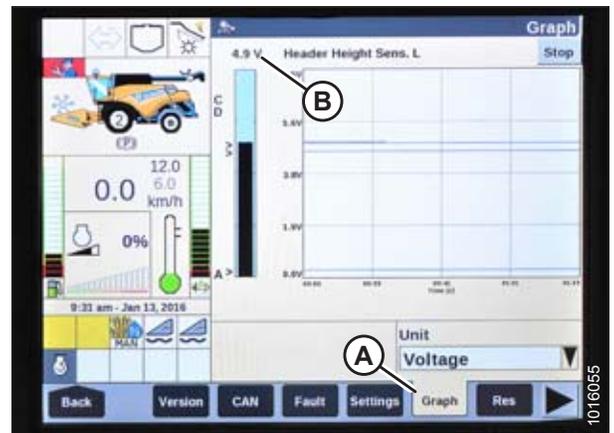


Figure 6.115: New Holland Combine Display

## PREDELIVERY INSPECTION

### *Calibrating Auto Header Height Control (New Holland CR Series)*

#### NOTE:

Changes may have been made to the combine controls or display since this document was published. Refer to the combine operator's manual for updates.

#### CAUTION

**Check to be sure all bystanders have cleared the area.**

Check the following conditions before starting the header calibration procedure:

- The header is attached to the combine.
- The combine is on level ground, with the header level to the ground.
- The engine is running.
- The combine is **NOT** moving.
- No faults have been received from Header Height Controller (HHC) module.
- Header/feeder is disengaged.
- Lateral float buttons are **NOT** pressed.
- ESC key is **NOT** pressed.

To calibrate the AHHC, follow these steps:

1. Select CALIBRATIONS (A) on the main page. The CALIBRATION page displays.



Figure 6.116: New Holland Combine Display

## PREDELIVERY INSPECTION

2. Select CALIBRATION drop-down arrow (A).



Figure 6.117: New Holland Combine Display

3. Select HEADER (A) from the list of calibration options.

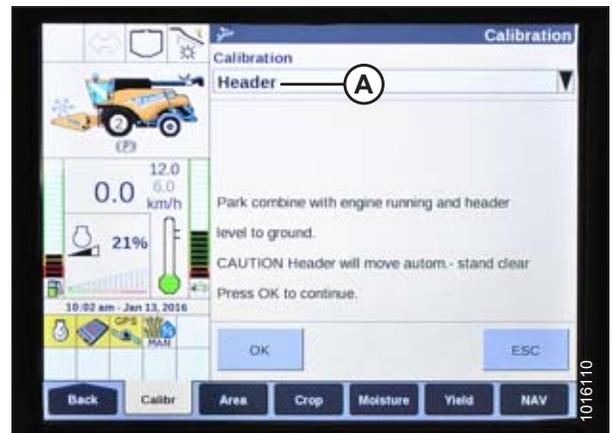


Figure 6.118: New Holland Combine Display

4. Follow calibration steps in the order they appear on screen. As you proceed through the calibration process, the display will automatically update to show the next step.

**NOTE:**

Pressing the ESC key during programming or letting system sit idle for more than 3 minutes will stop the calibration procedure.

**NOTE:**

Refer to your combine operator's manual for an explanation of any encountered error codes.



Figure 6.119: New Holland Combine Display

## PREDELIVERY INSPECTION

- When all steps have been completed, the CALIBRATION COMPLETED message is displayed on screen.

**NOTE:**

If the float was set heavier to complete the ground calibration procedure, return it to the recommended operating float after completing calibration.



Figure 6.120: New Holland Combine Display

## PREDELIVERY INSPECTION

### Setting Auto Height (New Holland CR Series)

This procedure applies only to 2015 and later CR models (6.80, 6.90, 7.90, 8.90, 9.90, and 10.90).

The console has two buttons used for auto height presets. The toggle switch that was present on previous models is now configured as shown at right. MacDon headers only require first two buttons (A) and (B). The third button (C) is not configured.



Figure 6.121: New Holland Combine Controls

To set auto height, follow these steps:

1. Engage separator and header.
2. Select RUN SCREENS (A) on main page.



Figure 6.122: New Holland Combine Display

## PREDELIVERY INSPECTION

3. Select RUN tab that shows MANUAL HEIGHT.

**NOTE:**

The MANUAL HEIGHT field may appear on any of RUN tabs. When an auto height set point button is pressed, display will change to AUTO HEIGHT (A).

4. Lower header to ground.
5. Select one of auto height set point buttons shown in Figure 6.121, page 133.
  - Press SET 1 button for lower position
  - Press SET 2 button for higher position



Figure 6.123: New Holland Combine Display

## PREDELIVERY INSPECTION

### Setting Maximum Work Height (New Holland CR Series)

This procedure applies only to 2015 and later CR models (6.80, 6.90, 7.90, 8.90, 9.90, and 10.90).

1. Select TOOLBOX (A) on main page. The TOOLBOX page displays.



Figure 6.124: New Holland Combine Display

2. Select FEEDER (A). The FEEDER SETUP page displays.
3. Select MAXIMUM WORK HEIGHT field (B).

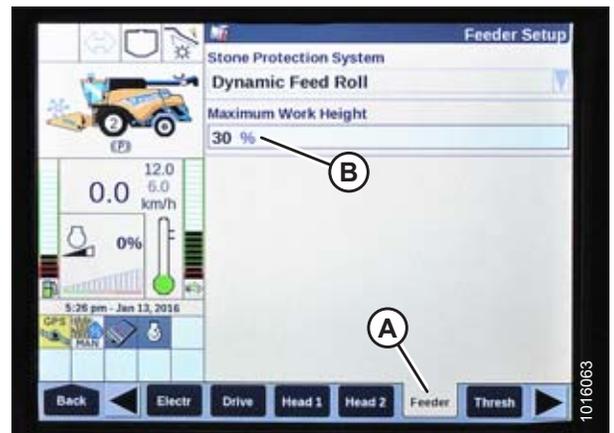


Figure 6.125: New Holland Combine Display

4. Set MAXIMUM WORK HEIGHT to desired value.
5. Press SET and then press ENTER.



Figure 6.126: New Holland Combine Display

## 6.2 Wheels and Tires

There are two wheels and tires on the PW8 Combine Pick-Up Header, one on each side of the header.

### DANGER

- Never install a tube in a cracked wheel rim.
- Never weld a wheel rim.
- Make sure all the air is removed from the tire before removing the tire from the rim.
- Never use force on an inflated or partially inflated tire. Make sure the tire is correctly seated before inflating to operating pressure.
- Do NOT remove, install, or repair a tire on a rim unless you have the proper equipment and experience to perform the job. Take the tire and rim to a qualified tire repair shop.
- If the tire is overinflated or is incorrectly positioned on the rim, the tire bead can loosen on one side causing air to escape at high speed and with great force. An air leak of this nature can propel the tire in any direction and endanger anyone in the area.
- Do NOT exceed the maximum inflation pressure indicated on the tire label.
- Replace the tire if it is worn or damaged beyond repair.

### 6.2.1 Inflating Tire

Maintain correct tire pressure to achieve desired cutting height. Check tire pressure daily.

Table 6.2 Tire (MD #152724)

Tire	Pressure
18.50 x 8.50-8	240–310 kPa (35–45 psi) <sup>3</sup>

3. Use the lower end of this range if operating on rough terrain.

## 6.3 Checking Draper Belt Tension

Draper tension is factory-set but should be checked before operating.

### DANGER

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

#### NOTE:

Drapers may be sticky when new. To help reduce stickiness, apply talcum or baby powder to the drapers.

1. Raise the header fully and engage the combine safety props.
2. Stop engine and remove key from ignition.
3. Ensure drapers are visible through slots (A). Proper tension is achieved when the draper aligns with indicator notch in slots (A).

#### IMPORTANT:

For proper draper tracking, ensure deck indicator (B) is in the same position on both sides of the header.

If adjustment is required, refer to [6.3.1 Adjusting Front Draper Belt Tension, page 138](#) or [6.3.2 Adjusting Rear Draper Belt Tension, page 140](#).

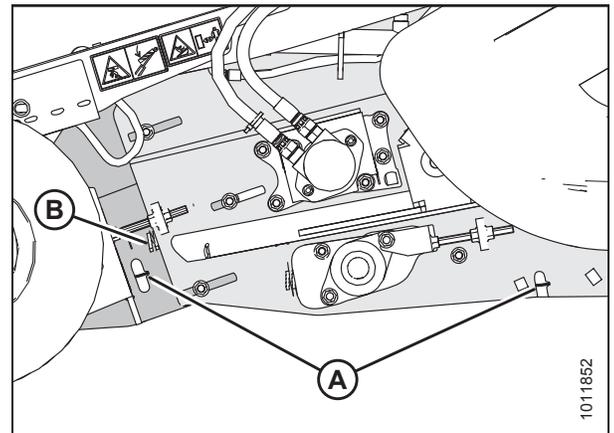
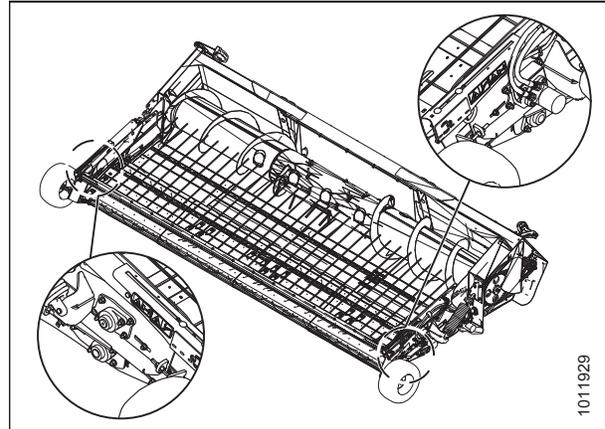


Figure 6.127: Draper Tension Indicator

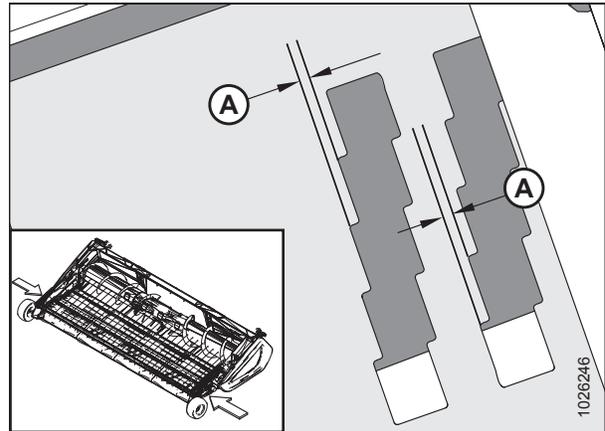
### 6.3.1 Adjusting Front Draper Belt Tension

Draper belt tension is factory-set, but it should be checked before operating.



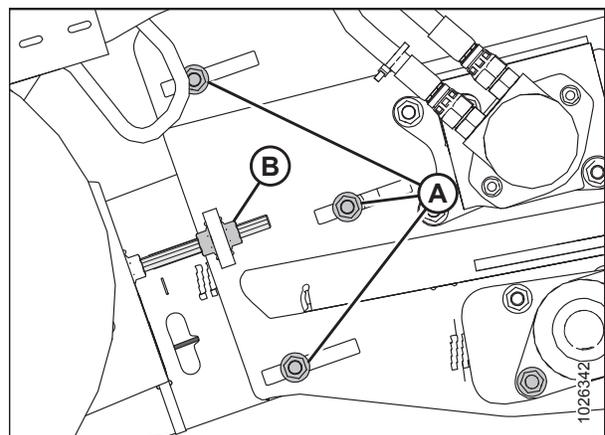
**Figure 6.128: Front Deck Adjusting Bolt Locations**

The stepped position indicator gauges are used to precisely align each side of the front and rear decks. Each notch (A) represents an adjustment of 1 mm (3/64 in.).



**Figure 6.129: Stepped Position Indicators**

1. Loosen three clamp bolts (A) on each side of the header.
2. Loosen jam nut (B) on the left side.



**Figure 6.130: Left Side Front Deck Shown – Right Side Opposite**

## PREDELIVERY INSPECTION

- Turn adjuster nut (A) to set the draper tension. Proper tension is achieved when the draper lines up with indicator notch (B).

### IMPORTANT:

Do **NOT** tighten draper above the indicator notch (B). Drapers only need to be tight enough to prevent slippage.

Overtightening drapers may result in the following:

- Joining bolts pulling out of draper
- Damage to the rollers or bearings
- Twisting and wrinkling of drapers

### NOTE:

Note the position of the stepped position indicator gauge (C).

- Loosen jam nut (A) on the right side of the header, and turn adjuster nut (B) until the position of stepped position indicator gauge (C) is identical to the left side.

- Tighten three clamp bolts (A) and jam nut (B) on both sides of the header.

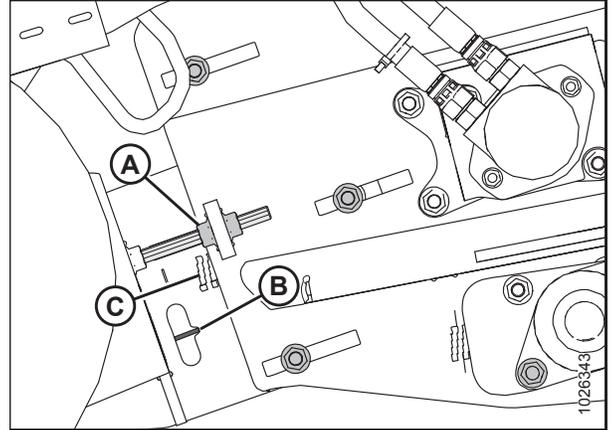


Figure 6.131: Left Side Front Deck Shown – Right Side Opposite

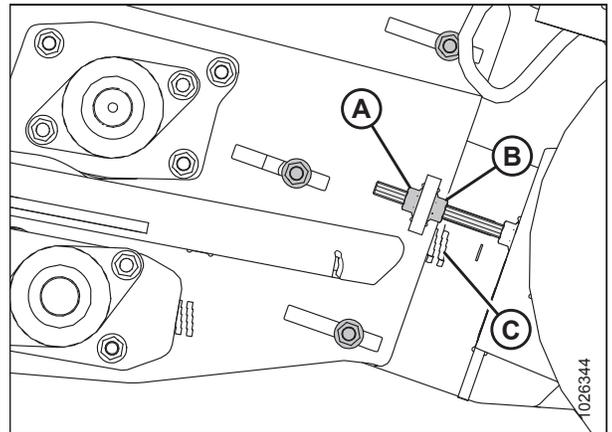


Figure 6.132: Right Side Stepped Position Indicator Gauge

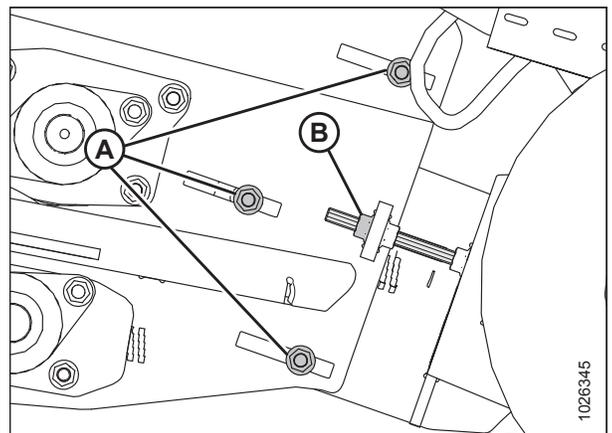


Figure 6.133: Front Deck Adjuster

### 6.3.2 Adjusting Rear Draper Belt Tension

1. Loosen two clamp bolts (A) on the left side.
2. Loosen jam nut (B).
3. Turn adjuster nut (C) to set draper tension. Proper tension is achieved when the draper lines up with indicator notch (D).

**IMPORTANT:**

Do **NOT** tighten draper above the indicator notch (D). Drapers only need to be tight enough to prevent slippage.

Overtightening drapers may result in the following:

- Joining bolts pulling out of draper
- Damage to the rollers or bearings
- Twisting and wrinkling of drapers

4. Tighten clamp bolts (A) and jam nut (B).
5. Note the position of indicator (E) and set the right side to the same position.
6. Loosen three clamp bolts (A) on the right side.
7. Loosen jam nut (B).
8. Turn adjuster nut (C) until the position of the indicator notch (D) is exactly the same as the left side.
9. Tighten clamp bolts (A) and jam nut (B).

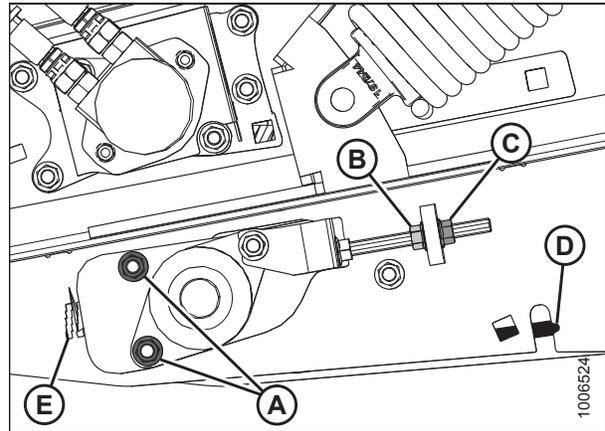


Figure 6.134: Left Side Rear Deck

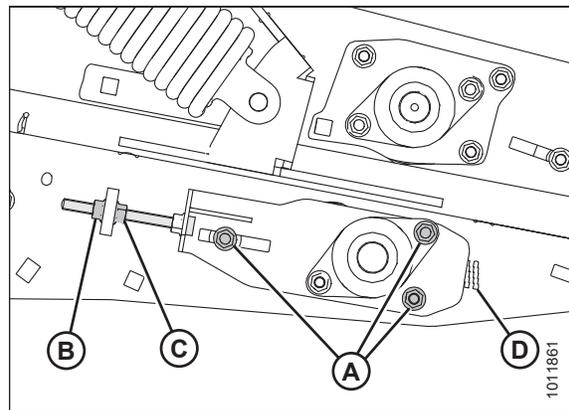


Figure 6.135: Right Side Rear Deck

## 6.4 Lubrication

### 6.4.1 Lubricating the Header

 **DANGER**

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

- Use the recommended lubricant specified in the pick-up header operator's manual.
- Wipe grease fittings with a clean cloth before greasing, to avoid injecting dirt and grit.
- Inject grease through fitting with grease gun until grease overflows fitting, except where noted.
- Leave excess grease on fitting to keep out dirt.
- Replace any loose or broken fittings immediately.
- If fitting will not take grease, remove and clean it thoroughly. Also clean lubricant passageway. Replace fitting if necessary.

## 6.4.2 Lubricating Auger Drive Chain

### DANGER

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

1. Lower header to the ground, shut down the combine, and remove the key from the ignition.
2. Open left endshield (A). For instructions, refer to [3.3.1 Opening Left Endshield, page 20](#).

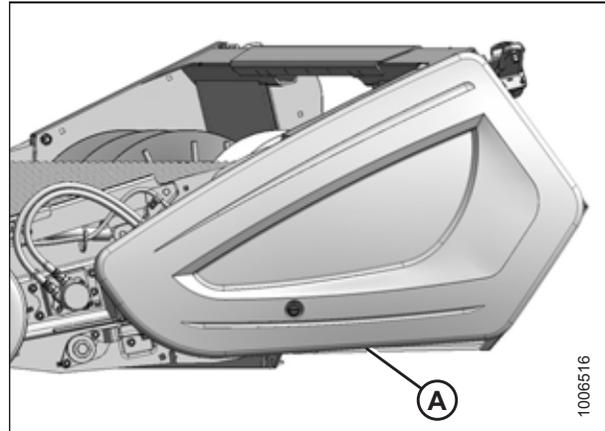


Figure 6.136: Left Endshield

3. Apply a liberal amount of SAE 30 engine oil to the chain (A).
4. Close left endshield. For instructions, refer to [3.3.2 Closing Left Endshield, page 20](#).

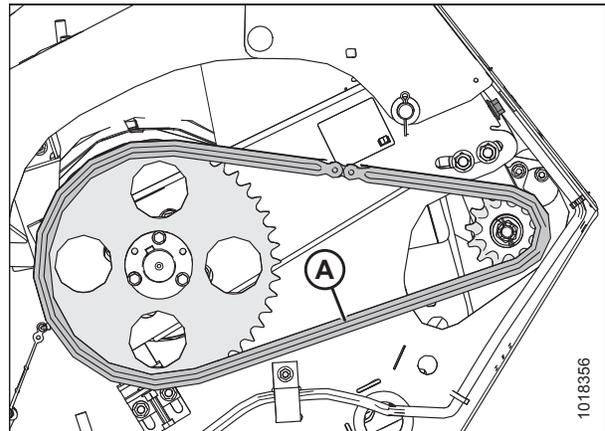
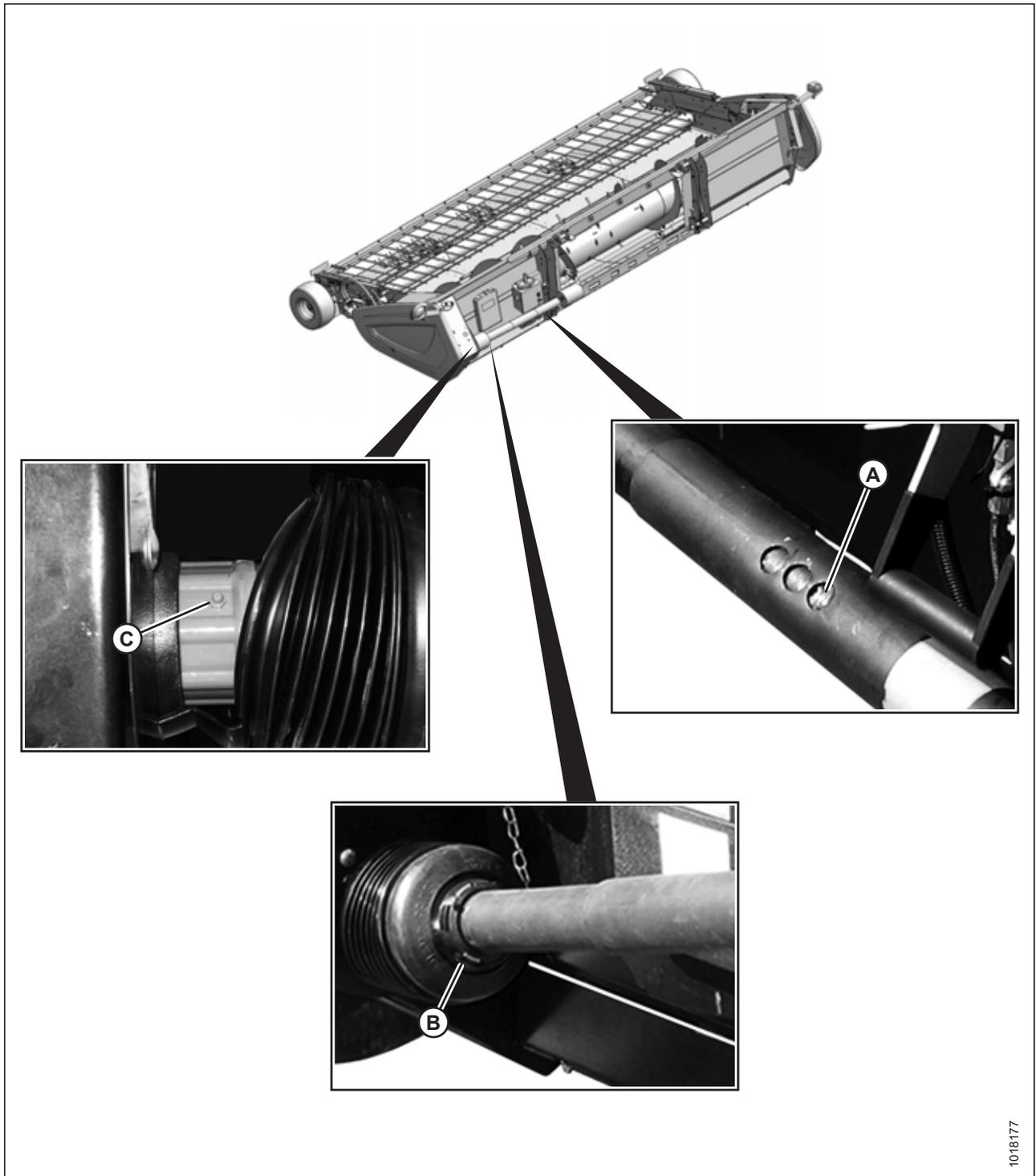


Figure 6.137: Auger Drive Chain

### 6.4.3 Greasing Points

Figure 6.138: Greasing Points



A - Driveline Slip-Joint

B - Driveline Guard (Both Ends)

C - Driveline Clutch

## PREDELIVERY INSPECTION

### 6.5 Manuals

1. Remove cable tie on manual case (A), and open case.
2. Check that case contains the following manuals:
  - PW8 Pick-Up Header Operator's Manual
  - PW8 Pick-Up Header Parts Catalog
3. Return manuals to the case.
4. Remove red and yellow stripe decals from case and set aside.
5. Close the manual case.

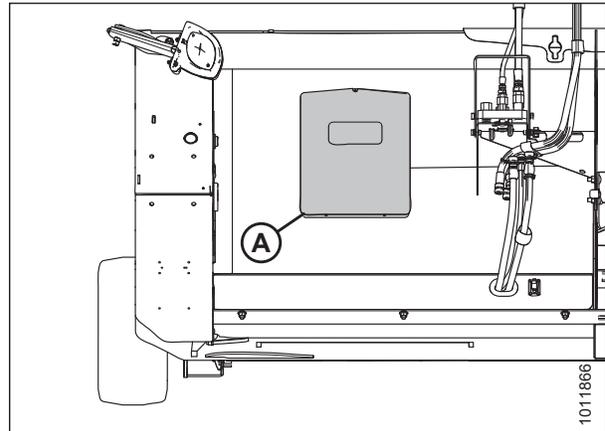


Figure 6.139: Manual Storage Case

## 6.6 Installing Endshield Decals

Red and yellow stripe decals for the right and left header endshields are provided in the manual case. Select the stripe decals matching your combine color and follow the installation instructions.

1. Clean and dry the installation area outlined by the black shadow (A) on left endshield.
2. Ensure the decal is placed on top of the black shadow (A). Remove the smaller portion of the split backing paper.
3. Place the decal in position and slowly peel back the remaining paper, smoothing the decal as it is applied.
4. Prick small air pockets with a pin and smooth out.
5. Repeat procedure on right endshield.



Figure 6.140: Left Endshield – Right Opposite

## 6.7 Running up the Header

### CAUTION

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

### CAUTION

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

### CAUTION

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

#### NOTE:

Perform all testing with the pick-up header in the working position with wheels on the ground and approximately 356 mm (14 in.) from the ground to the center of the rear roller. This is the standard operating height.

1. Start the combine, and run the machine at operating speed for 15 minutes. Run the header slowly for the first 5 minutes, watching and listening **FROM THE OPERATOR'S SEAT** for binding or interfering parts.
2. Test the function of the height controller as follows:
  - a. Drive the combine over uneven ground and note the following:
    - If the front end of the header goes up (as if going up a hill), the header height should move up to compensate.
    - If the front of the header goes down (as if dropping into a hole), the header height should drop to compensate.
3. If applicable, check that the draper speed and auger speed are displayed on the combine monitor.
4. Fully raise the hold-down. If the hold-down is not level, perform the following:
  - a. Raise the hold-down and leave it pressurized to rephase.
  - b. Lower and raise the hold-down several times and check that the hold-down is level.
  - c. If the hold-down is still not level, lower the hold-down. Place a container under the bleed screw on slave cylinder and remove the bleed screw.
  - d. Pressurize the hold-down circuit until oil flow is free of air bubbles.
  - e. Lower the hold-down and reinstall the bleed plug. Torque the plug to 3.4 Nm (30 lbf·in).
  - f. Repeat Steps a and b. The cylinders should lower at the same time and at the same rate. It should take 12–18 seconds for the hold-down to lower from the highest point. It is acceptable for the slave cylinder to remain extended 0–13 mm (0–1/2 in.) when the master cylinder is fully retracted.
5. Perform the run-up check listed on the *Predelivery Checklist, page 159* and the post run-up check to ensure the machine is field-ready.

# 7 Reference

## 7.1 Definitions

The following definitions 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
CGVW	Combined gross vehicle weight
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.
F.F.F.T.	Flats from finger tight
GVW	Gross vehicle weight
hp	Horsepower
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
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 openings 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 an O-ring seal (ORS).
Pick-Up Header	A machine that attaches to a combine and picks up grain that has been cut and laid in windrows.
PTO	Power take-off
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.
Soft joint	A joint made with the use of a fastener where the joining materials are compressible or experience relaxation over a period of time.
spm	Strokes per minute
Tension	Axial load placed on a bolt or screw, usually measured in Newtons (N) or pounds (lb.).

## REFERENCE

<b>Term</b>	<b>Definition</b>
T.F.F.T.	Turns from finger tight
Torque	The product of a force X lever arm length, usually measured in Newton-meters (Nm) or foot-pounds (lbf-ft).
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.
Tractor	Agricultural-type tractor
Truck	A four-wheel highway/road vehicle weighing no less than 3400 kg (7500 lb.).
Washer	A thin cylinder with a hole or slot located in the center and is to be used as a spacer, load distribution element or a locking mechanism.

REFERENCE

## 7.2 Conversion Chart

Table 7.1 Conversion Chart

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

## 7.3 Torque Specifications

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

- Tighten all bolts to torque values specified in charts (unless otherwise noted throughout this manual).
- Replace hardware with same strength and grade of bolt.
- Use 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.

### Jam nuts

When applying torque to finished jam nuts, multiply the torque applied to regular nuts by  $f=0.65$ .

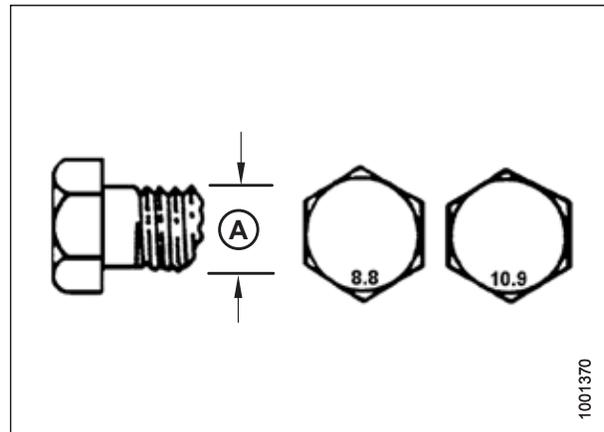
### Self-tapping screws

Standard torque is to be used (**NOT** to be used on critical or structurally important joints).

### 7.3.1 Metric Bolt Specifications

**Table 7.2 Metric Class 8.8 Bolts and Class 9 Free Spinning Nut**

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



**Figure 7.1: Bolt Grades**

REFERENCE

Table 7.3 Metric Class 8.8 Bolts and Class 9 Distorted Thread Nut

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

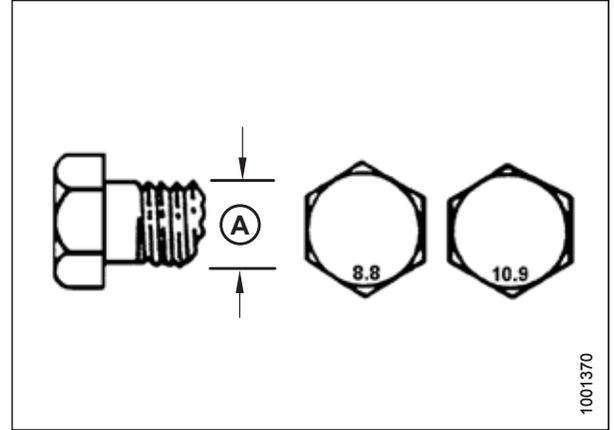


Figure 7.2: Bolt Grades

Table 7.4 Metric Class 10.9 Bolts and Class 10 Free Spinning Nut

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

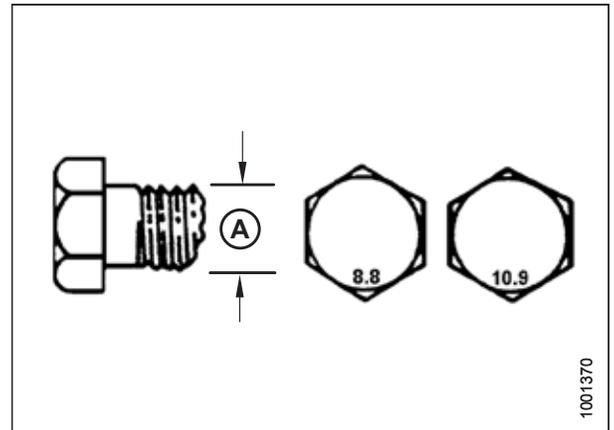


Figure 7.3: Bolt Grades

REFERENCE

Table 7.5 Metric Class 10.9 Bolts and Class 10 Distorted Thread Nut

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

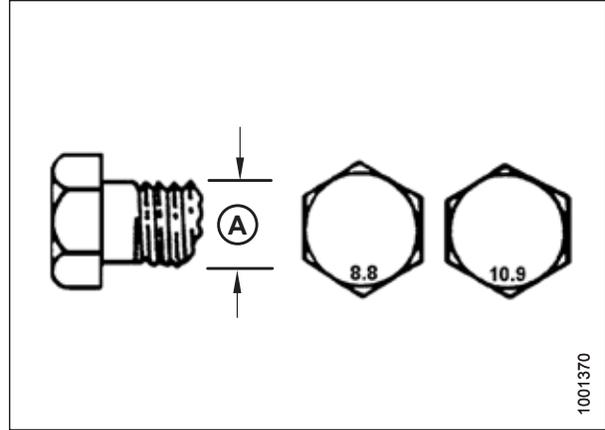


Figure 7.4: Bolt Grades

### 7.3.2 Metric Bolt Specifications Bolting into Cast Aluminum

Table 7.6 Metric Bolt Bolting into Cast Aluminum

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

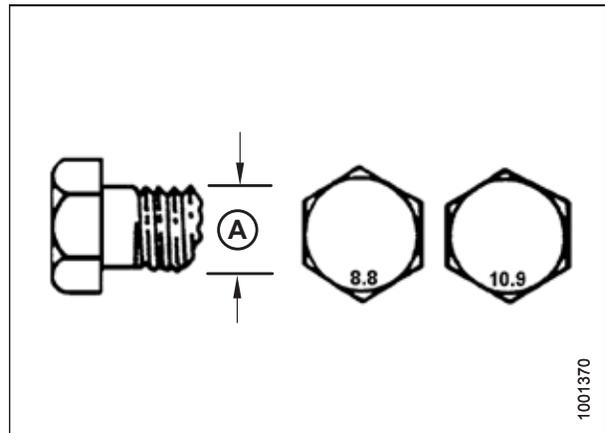


Figure 7.5: Bolt Grades

### 7.3.3 Flare-Type Hydraulic Fittings

1. Check flare (A) and flare seat (B) for defects that might cause leakage.
2. Align tube (C) with fitting (D) and thread nut (E) onto fitting without lubrication until contact has been made between flared surfaces.
3. Torque fitting nut (E) to specified number of flats from finger tight (FFFT) or to a given torque value in Table 7.7, page 153.
4. Use two wrenches to prevent fitting (D) from rotating. Place one wrench on fitting body (D), and tighten nut (E) with other wrench to torque shown.
5. Assess final condition of connection.

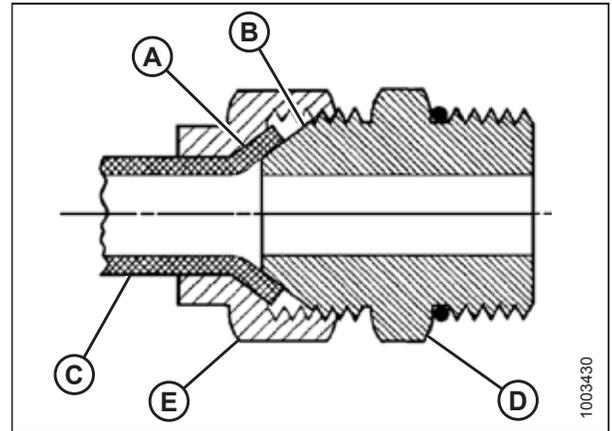


Figure 7.6: Hydraulic Fitting

Table 7.7 Flare-Type Hydraulic Tube Fittings

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

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

## REFERENCE

### 7.3.4 O-Ring Boss (ORB) Hydraulic Fittings (Adjustable)

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

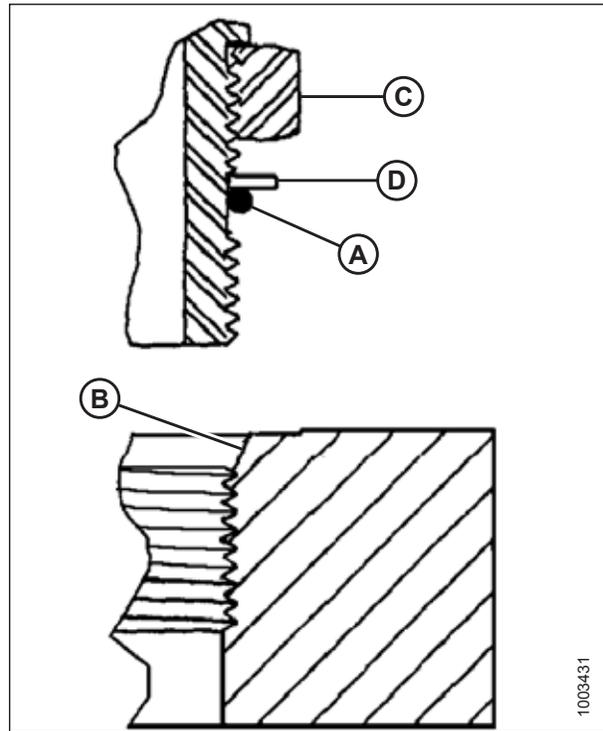


Figure 7.7: Hydraulic Fitting

5. Install fitting (B) into port until back up washer (D) and O-ring (A) contact 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 other on lock nut (C).
8. Check final condition of fitting.

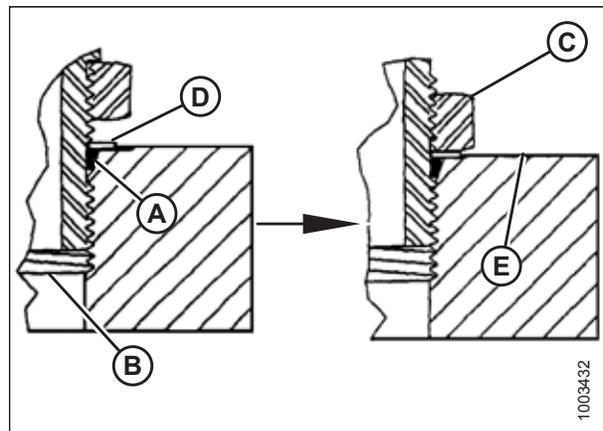


Figure 7.8: Hydraulic Fitting

**REFERENCE**

**Table 7.8 O-Ring Boss (ORB) Hydraulic Fittings (Adjustable)**

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

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

REFERENCE

### 7.3.5 O-Ring Boss (ORB) Hydraulic Fittings (Non-Adjustable)

1. Inspect O-ring (A) and seat (B) for dirt or obvious defects.
2. Check that O-ring (A) is **NOT** on threads and adjust if necessary.
3. Apply hydraulic system oil to O-ring.
4. Install fitting (C) into port until fitting is hand-tight.
5. Torque fitting (C) according to values in Table 7.9, page 156.
6. Check final condition of fitting.

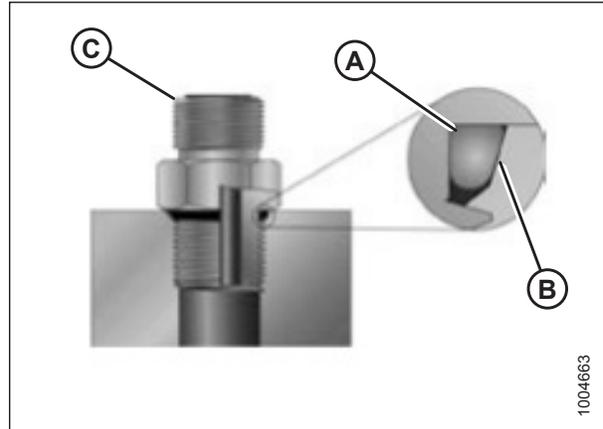


Figure 7.9: Hydraulic Fitting

Table 7.9 O-Ring Boss (ORB) Hydraulic Fittings (Non-Adjustable)

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

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

## REFERENCE

### 7.3.6 O-Ring Face Seal (ORFS) Hydraulic Fittings

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



Figure 7.10: Hydraulic Fitting

2. Apply hydraulic system oil to O-ring (B).
3. Align tube or hose assembly so that flat face of 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 values in Table 7.10, page 157.

**NOTE:**

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

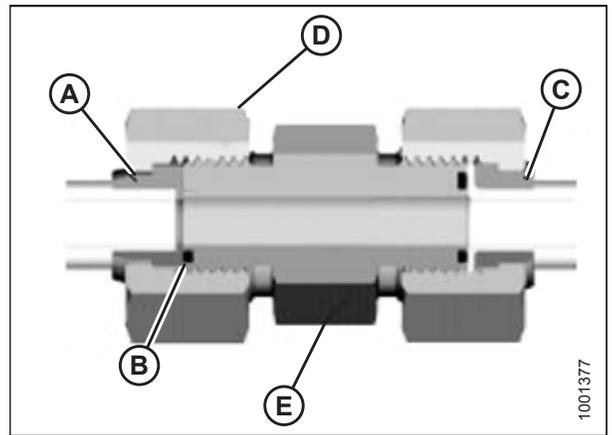


Figure 7.11: Hydraulic Fitting

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

**Table 7.10 O-Ring Face Seal (ORFS) Hydraulic Fittings**

SAE Dash Size	Thread Size (in.)	Tube O.D. (in.)	Torque Value <sup>7</sup>	
			Nm	lbf-ft
-3	Note <sup>8</sup>	3/16	–	–
-4	9/16	1/4	25–28	18–21
-5	Note <sup>8</sup>	5/16	–	–
-6	11/16	3/8	40–44	29–32
-8	13/16	1/2	55–61	41–45
-10	1	5/8	80–88	59–65
-12	1-3/16	3/4	115–127	85–94

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

## REFERENCE

**Table 7.10 O-Ring Face Seal (ORFS) Hydraulic Fittings (continued)**

SAE Dash Size	Thread Size (in.)	Tube O.D. (in.)	Torque Value <sup>9</sup>	
			Nm	lbf·ft
-14	Note <sup>8</sup>	7/8	–	–
-16	1-7/16	1	150–165	111–122
-20	1-11/16	1-1/4	205–226	151–167
-24	1–2	1-1/2	315–347	232–256
-32	2-1/2	2	510–561	376–414

### 7.3.7 Tapered Pipe Thread Fittings

Assemble pipe fittings as follows:

1. Check components to ensure that fitting and port threads are free of burrs, nicks and scratches, or any form of contamination.
2. Apply pipe thread sealant (paste type) to external pipe threads.
3. Thread fitting into port until hand-tight.
4. Torque connector to appropriate torque angle. The Turns From Finger Tight (TFFT) values are shown in Table 7.11, page 158. Make sure that tube end of a shaped connector (typically 45 degree or 90 degree) is aligned to receive incoming tube or hose assembly. Always finish alignment of fitting in tightening direction. Never back off (loosen) pipe threaded connectors to achieve alignment.
5. Clean all residue and any excess thread conditioner with appropriate cleaner.
6. Assess final condition of fitting. Pay special attention to possibility of cracks to port opening.
7. Mark final position of fitting. If a fitting leaks, disassemble fitting and check for damage.

**NOTE:**

Overtorque failure of fittings may not be evident until fittings are disassembled.

**Table 7.11 Hydraulic Fitting Pipe Thread**

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

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

# Predelivery Checklist

After completing setup and adjustment procedures, perform these checks before delivery to your Customer. If further adjustments are required, refer to the appropriate page number in this manual. The completed Checklist should be retained by either the Operator or the Dealer.

## CAUTION

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

Header Serial Number: \_\_\_\_\_

✓	Item	Reference
	Check for shipping damage or missing parts. Be sure all shipping dunnage is removed.	—
	Check for loose hardware. Tighten to specified torque.	<i>7.3 Torque Specifications, page 150</i>
	Check that wheels are in field (working) position.	<i>3.6 Setting Fixed Wheels to Field/Working Position, page 25</i>
	Check if tire air pressure is 240–310 kPa (35–45 psi). Adjust as required.	<i>6.2.1 Inflating Tire, page 136</i>
	Check that hold-down is set in the field/working position.	<i>3.8 Extending Hold-Down to Field/Working Position, page 27</i>
	Check if the machine is completely lubricated.	<i>6.4.1 Lubricating the Header, page 141</i>
	Check draper belt tension.	<i>6.3 Checking Draper Belt Tension, page 137</i>
	Check that transport lights (if installed) are extended.	<i>3.9 Adjusting Transport Lights, page 28</i>
	Check that height sensor is calibrated.	<i>6.1 Auto Header Height Control (AHHC) System Overview, page 73</i>
<b>Run-Up Procedure</b>		
	Check hydraulic hose and wiring harness routing for clearance problems when raising or lowering the header and hold-down bar.	—
	Check that hold-down is level when fully raised.	<i>6.7 Running up the Header, page 146</i>
	Check that draper speed sensor is working.	Refer to combine operator's manual
	Check that height controller is working.	<i>6.7 Running up the Header, page 146</i>
	Check that transport lights (if installed) are functional.	Refer to combine operator's manual
<b>Post Run-Up Checks. Stop Engine.</b>		
	Check drives for heated bearings.	—
	Check for hydraulic leaks.	—
	Check that manual storage case contains PW8 Pick-Up Header Operator's Manual and Parts Catalog.	<i>6.5 Manuals, page 144</i>

Date Checked:

Checked by:





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