MacDon

PW8
Pick-Up Header

Unloading and Assembly Instructions (North America)

147727 Revision A
2016 Model Year
Original Instruction

The harvesting specialists.

PW8 Pick-Up Header

Published in August, 2015

Introduction

This manual contains the unloading, setup, and predelivery requirements for the MacDon PW8 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:

Table 1 Combine Models

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

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

List of Revisions

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

Table 2 List of Revisions

Summary of Change	Location
Model Year added to cover.	—
Added Attaching Header to Versatile Combine procedure.	*5.4 Attaching to Versatile Combine, page 62*
Assembling the Header section restructured.	*Assembling the Header*
Added Manually Checking Height Sensor Output Voltage Range procedure.	*Manually Checking Voltage Range, page 70*
Added Installing Endshield Decals procedure.	*6.6 Installing Endshield Decals, page 117*
Blocks added to Lowering the Header procedure.	*3.2 Lowering Header, page 15*
Stripper Images and stripper clearance updated. Quantity of auger fingers added.	*4.2 Converting Headers for Case IH, page 33* *4.1 Converting Headers for John Deere, page 27* *4.3 Converting Headers for New Holland CX, page 37* *4.4 Converting Headers for New Holland CR, page 43*
Removing Deck Shipping Brace and Installing Crop Deflectors moved to end of the Attaching Procedure for each combine.	*5.3 Attaching to New Holland CR/CX Series Combine, page 58* *5.1 Attaching to Case IH Combine, page 51* *5.2 Attaching to John Deere 60, 70, and S Series Combine, page 54*
New step added to Manuals section.	*6.5 Manuals, page 116*
New step added to header run up procedure.	*6.7 Running Up the Header, page 118*
Wording changes to Predelivery Checklist.	*Predelivery Checklist, page 131*

1 Safety

1.1 Signal Words

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

DANGER

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

WARNING

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

CAUTION

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

1.2 General Safety

⚠ CAUTION

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

Protect yourself.

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

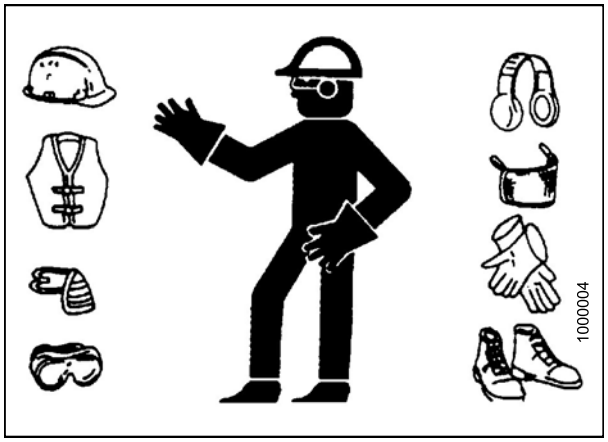

Figure 1.1: Safety Equipment

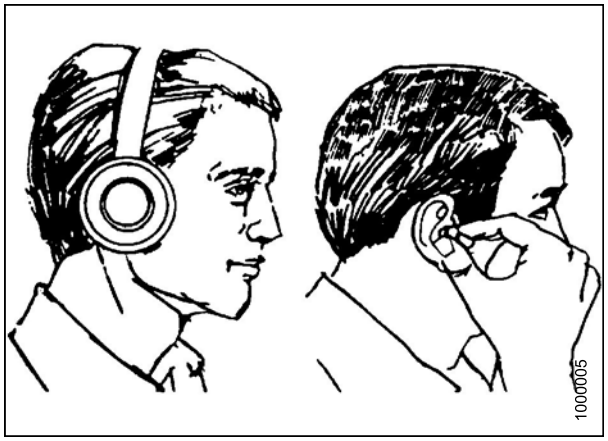

Figure 1.2: Safety Equipment

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

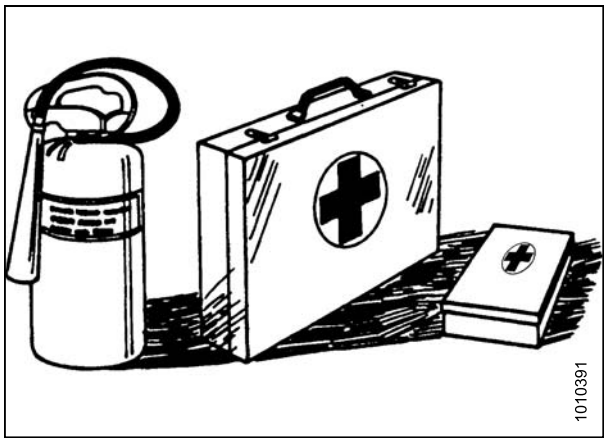

Figure 1.3: Safety Equipment

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

Figure 1.4: Safety around Equipment

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

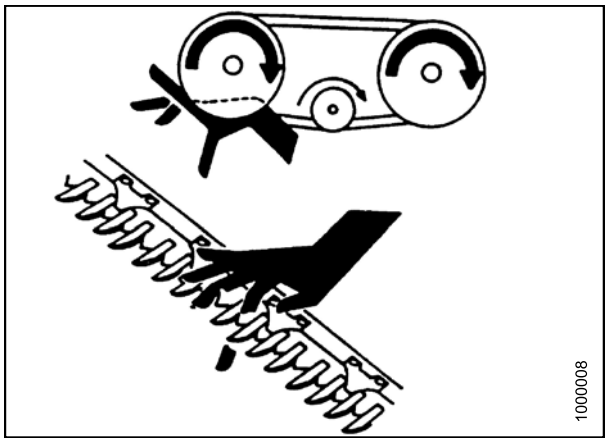

Figure 1.5: Safety around Equipment

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

Figure 1.6: Safety around Equipment

1.3 Safety Signs

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

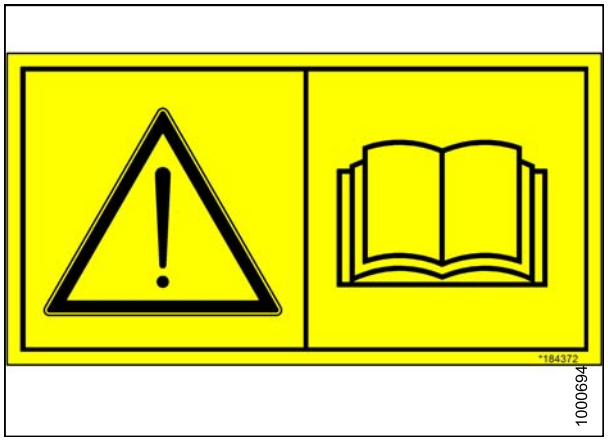

Figure 1.7: Operator's Manual Decal

1.4 Safety Sign Locations

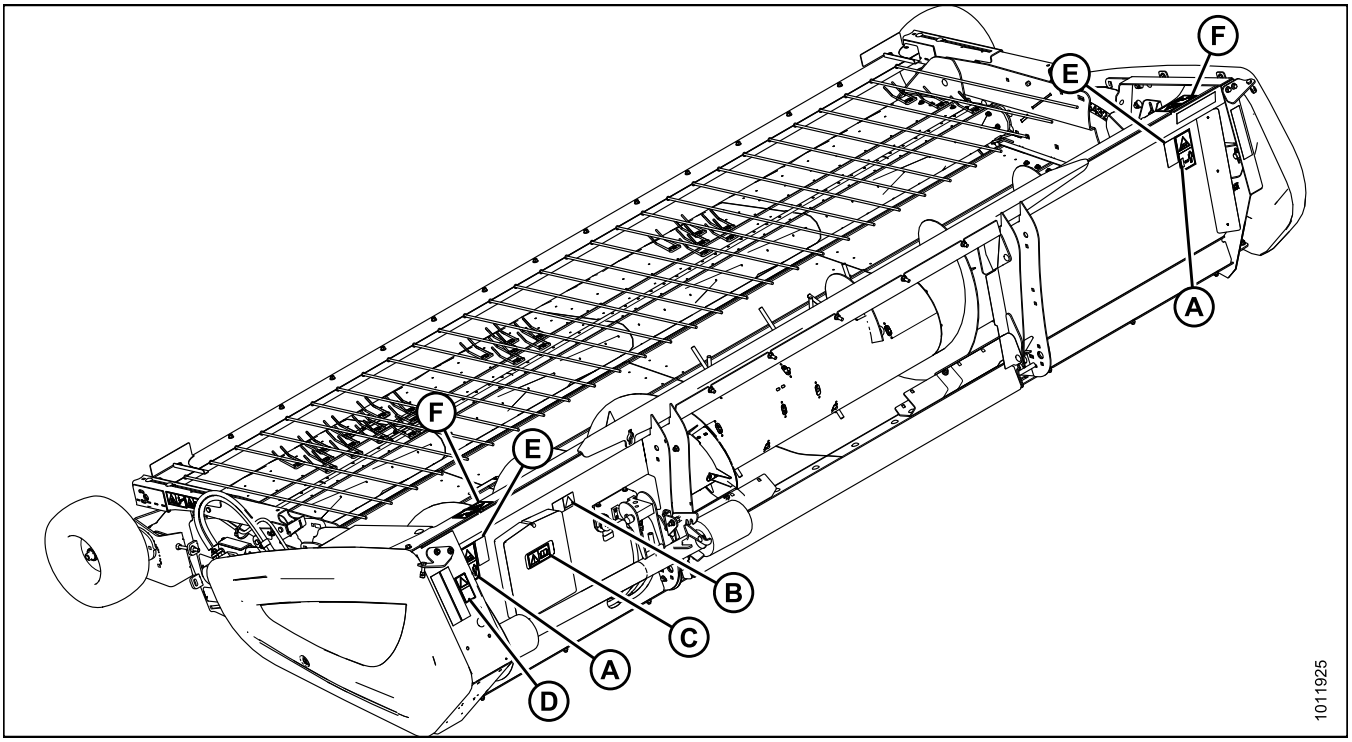

Figure 1.8: Header Decals – Case IH

A - MD #184370
B - MD #166466
C - MD #184372
D - MD #184422
E - MD #184420
F - MD #237298

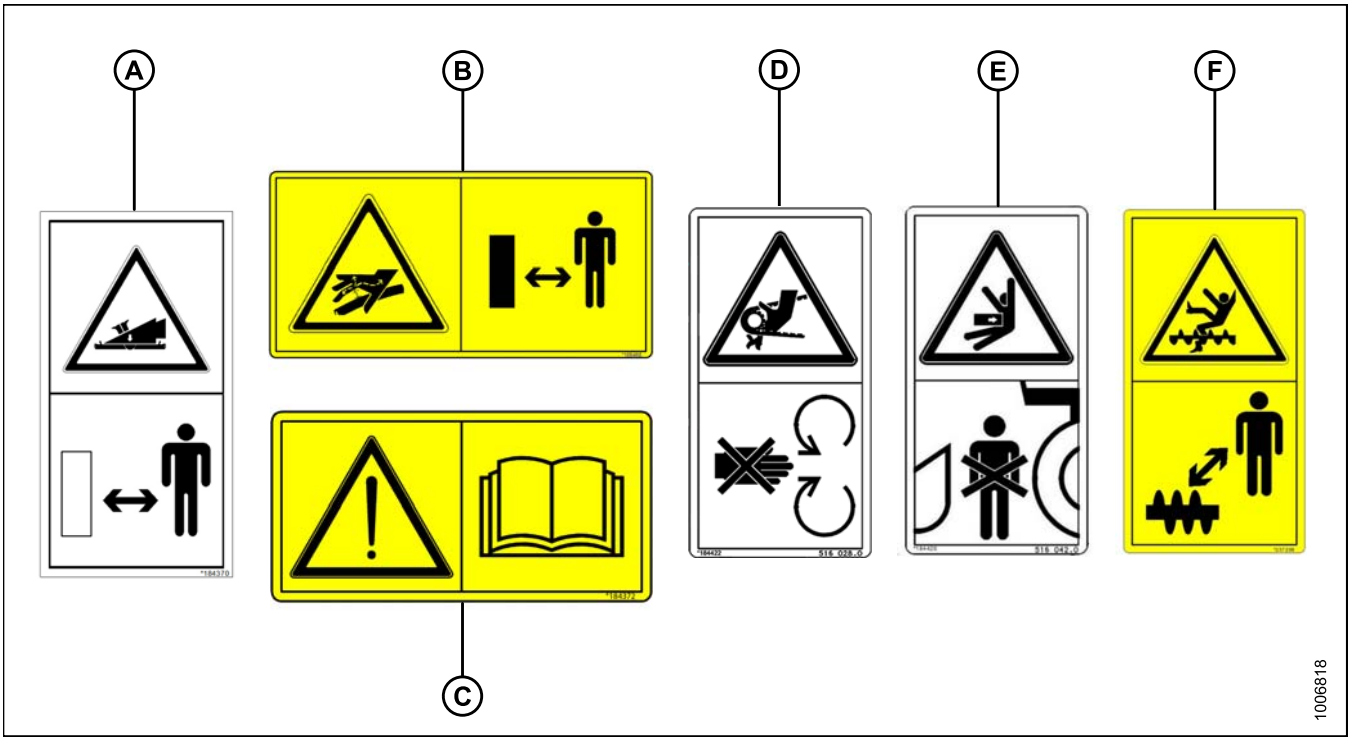

Figure 1.9: Header Decals

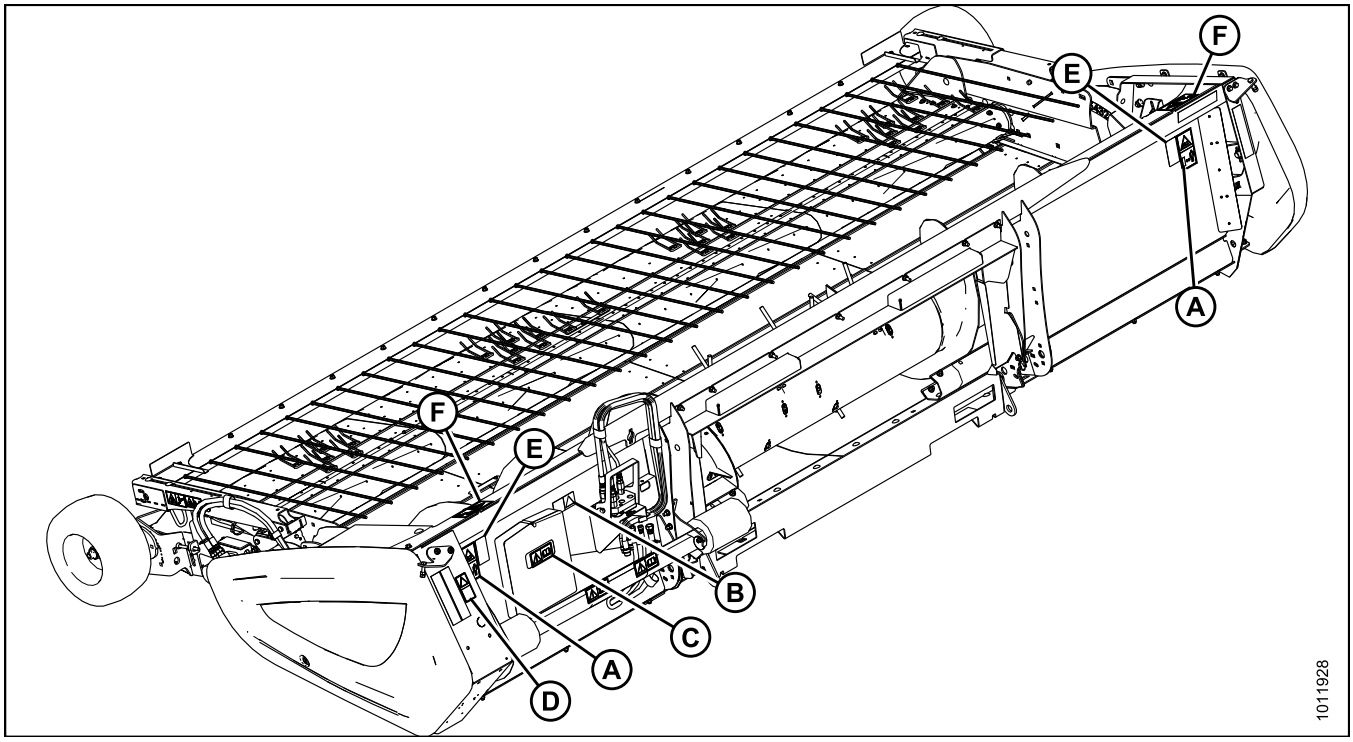

Figure 1.10: Header Decals – John Deere

A - MD #184370
B - MD #166466
C - MD #184372
D - MD #184422
E - MD #184420
F - MD #237298

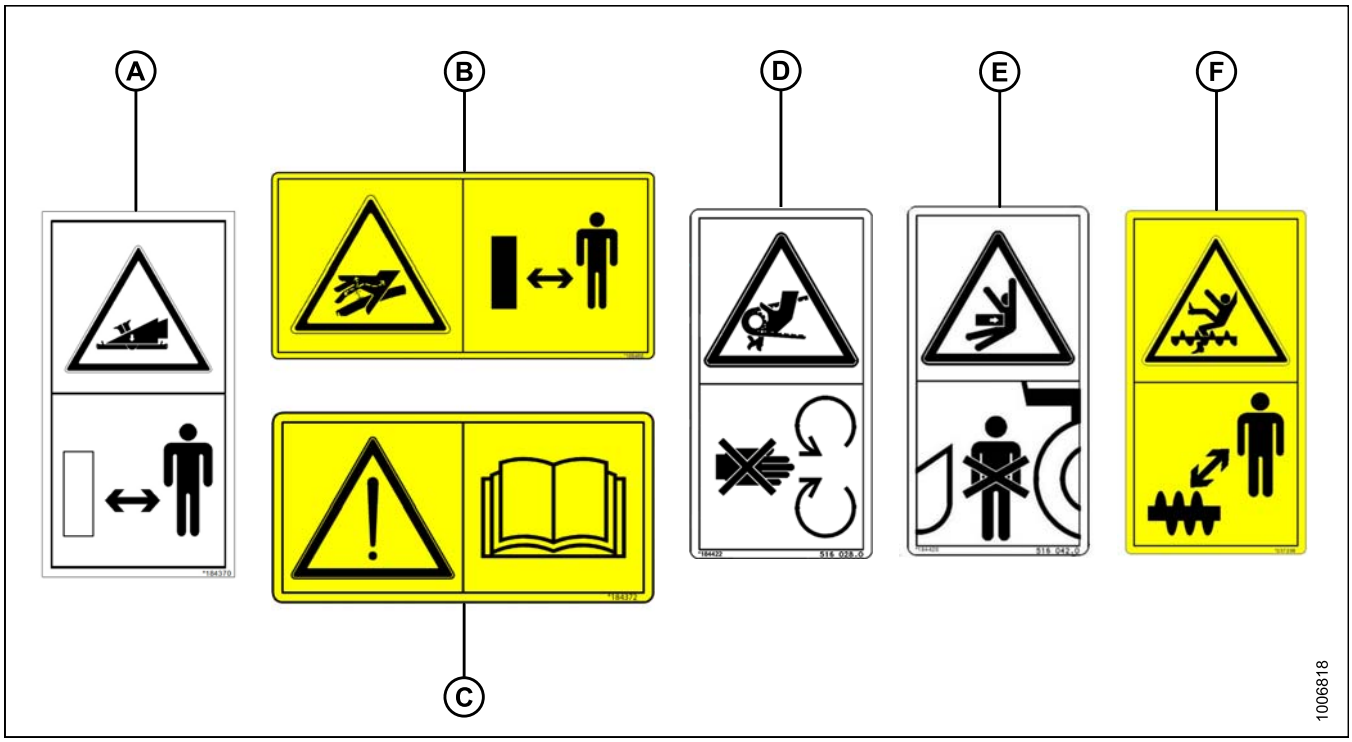

Figure 1.11: Header Decals

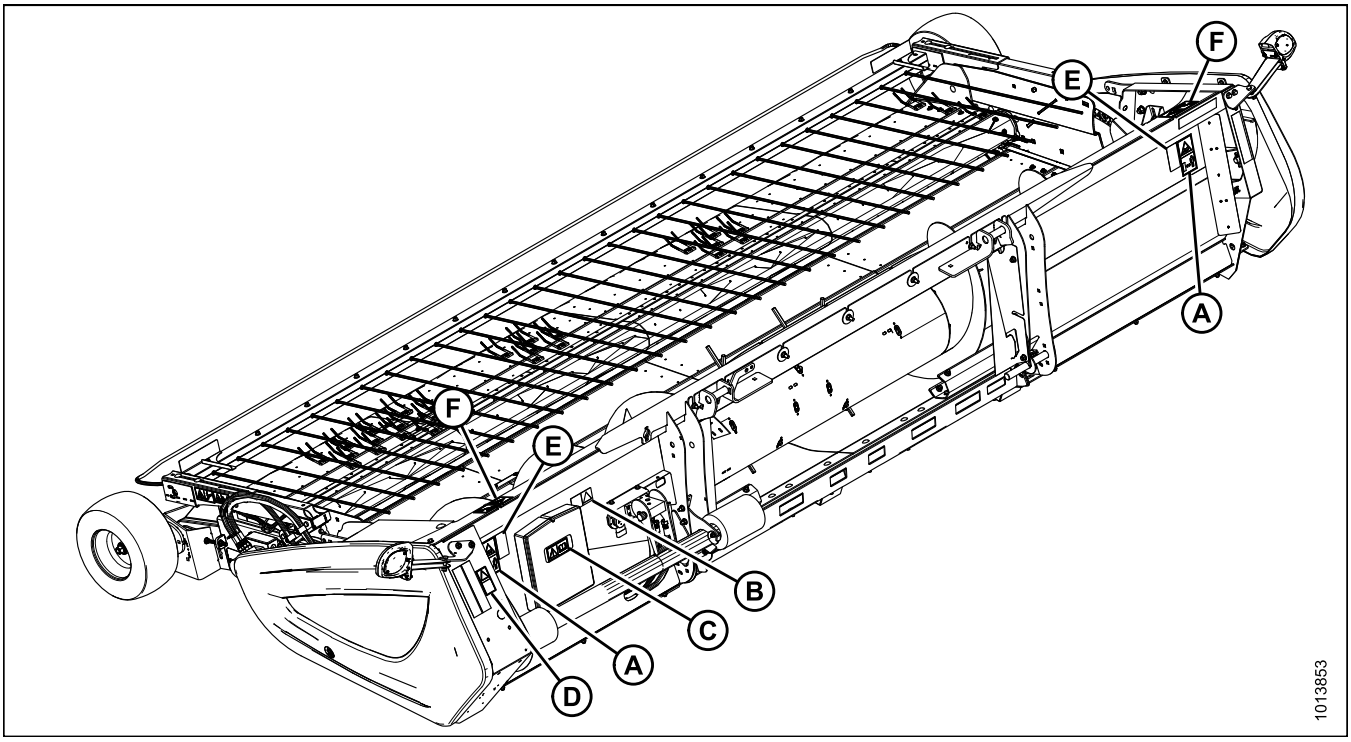

Figure 1.12: Header Decals – Versatile

A - MD #184370
B - MD #166466
C - MD #184372
D - MD #184422
E - MD #184420
F - MD #237298

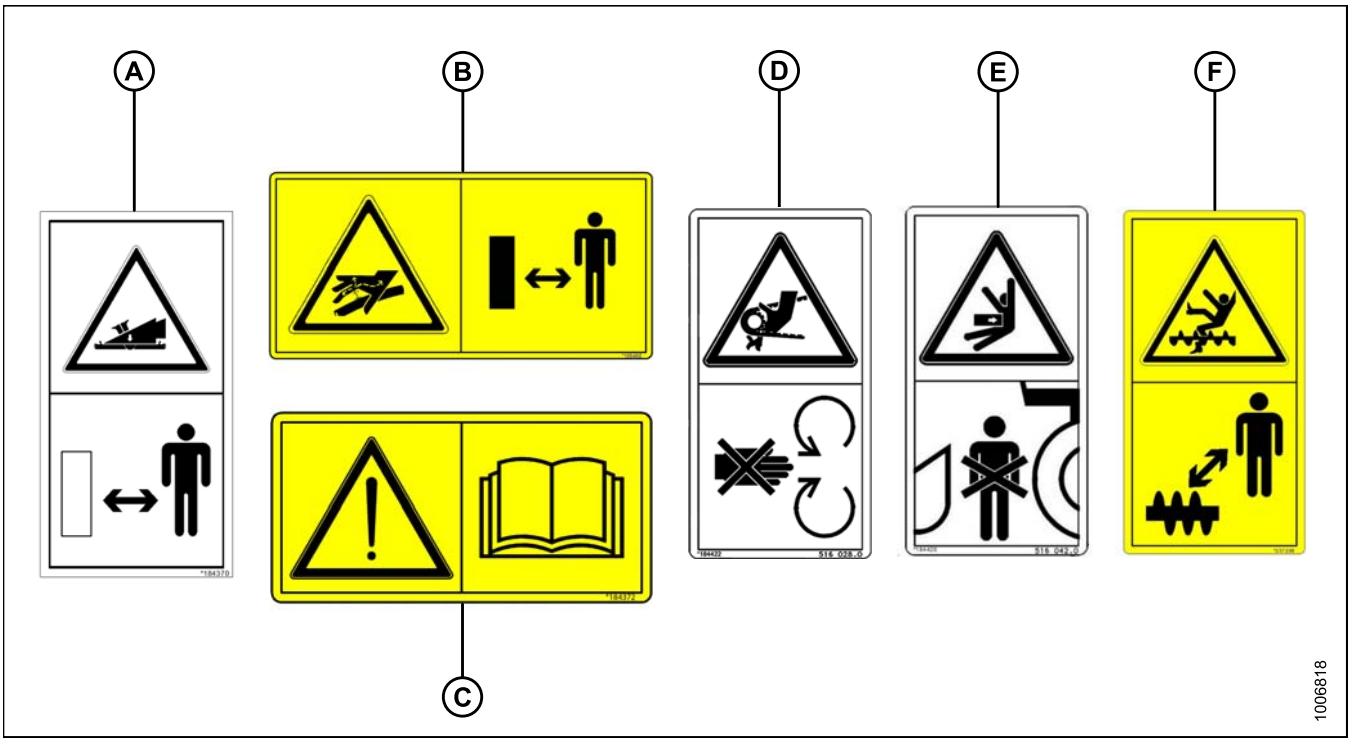

Figure 1.13: Header Decals

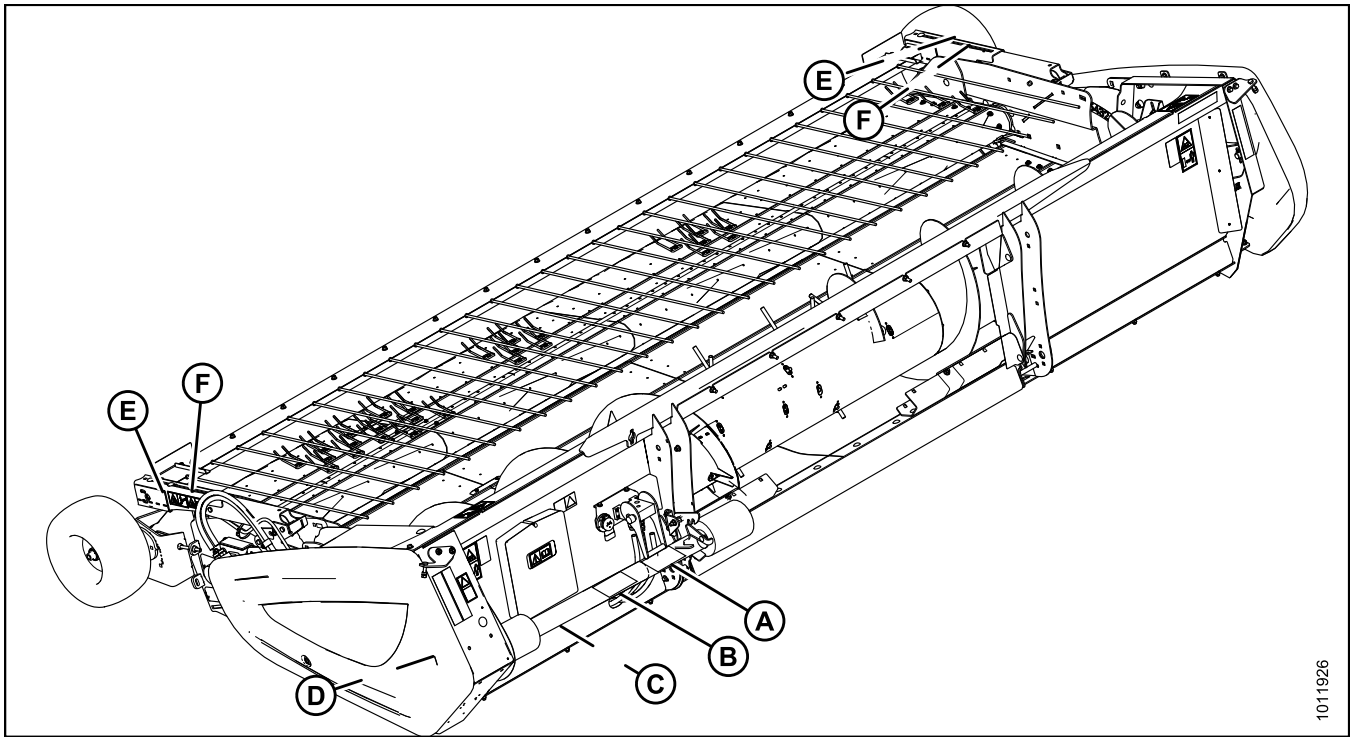

Figure 1.14: Driveline and Hold-Down Decals – Case IH

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

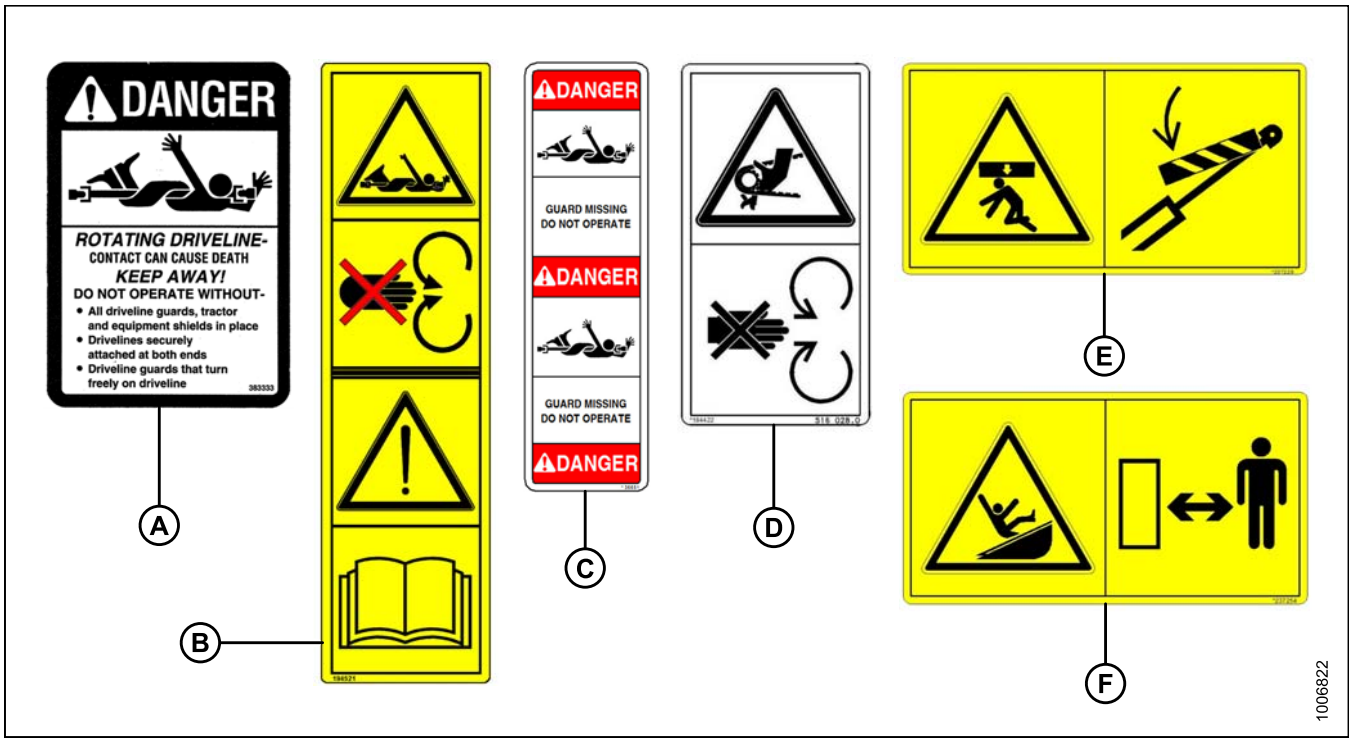

Figure 1.15: Driveline and Hold-Down Decals

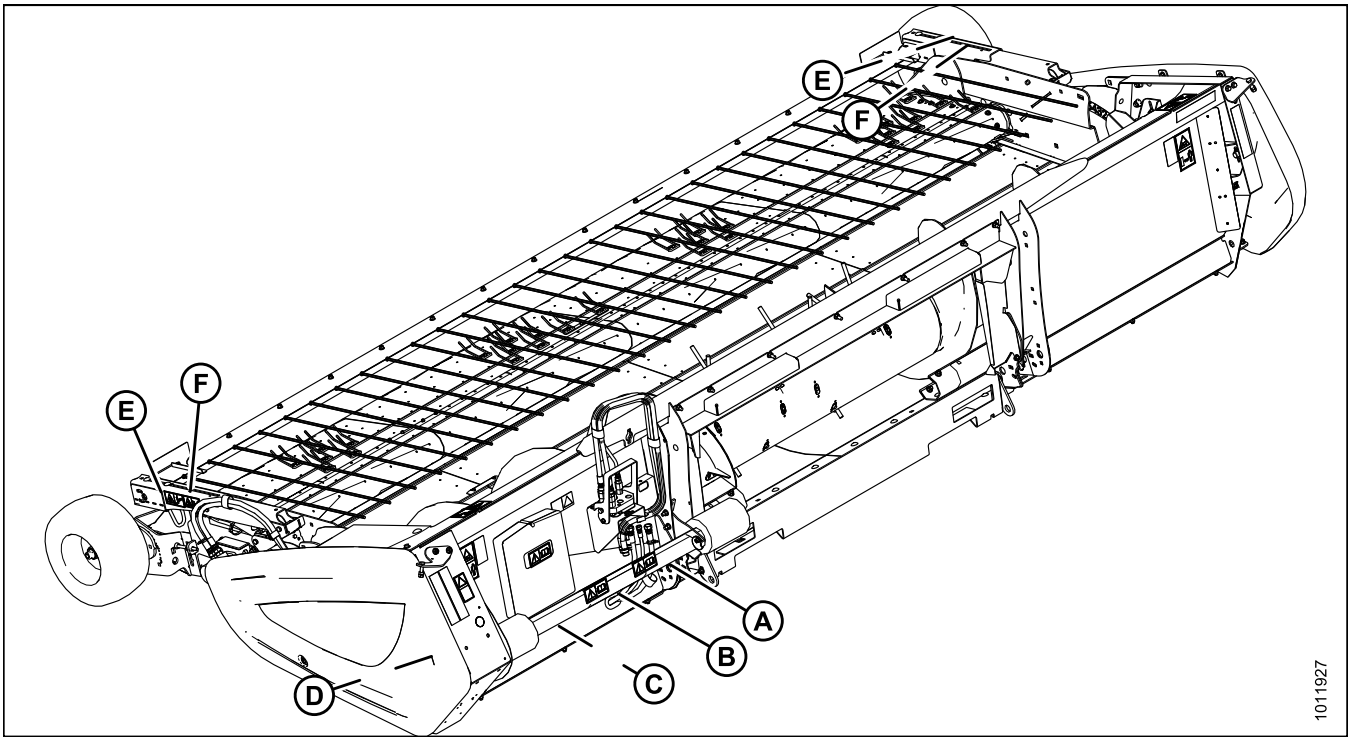

Figure 1.16: Driveline and Hold-Down Decals – John Deere

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

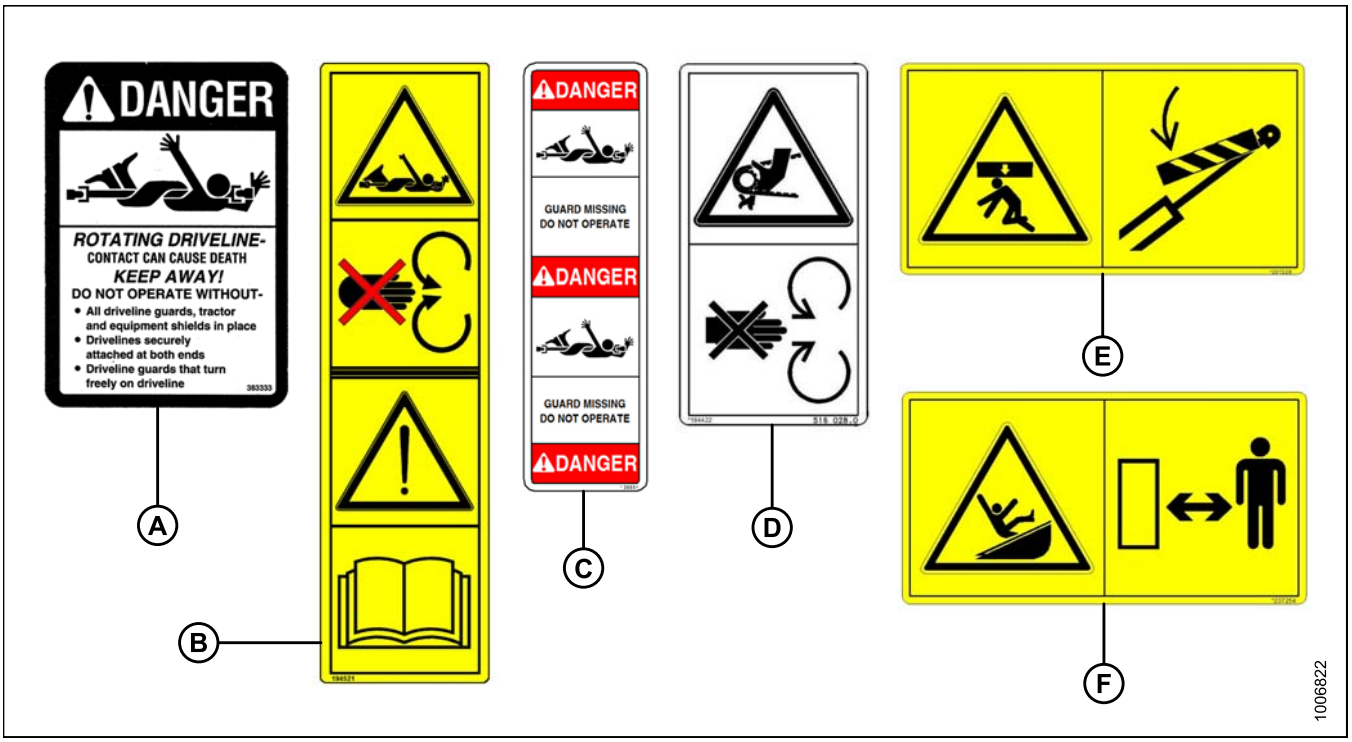

Figure 1.17: Driveline and Hold-Down Decals

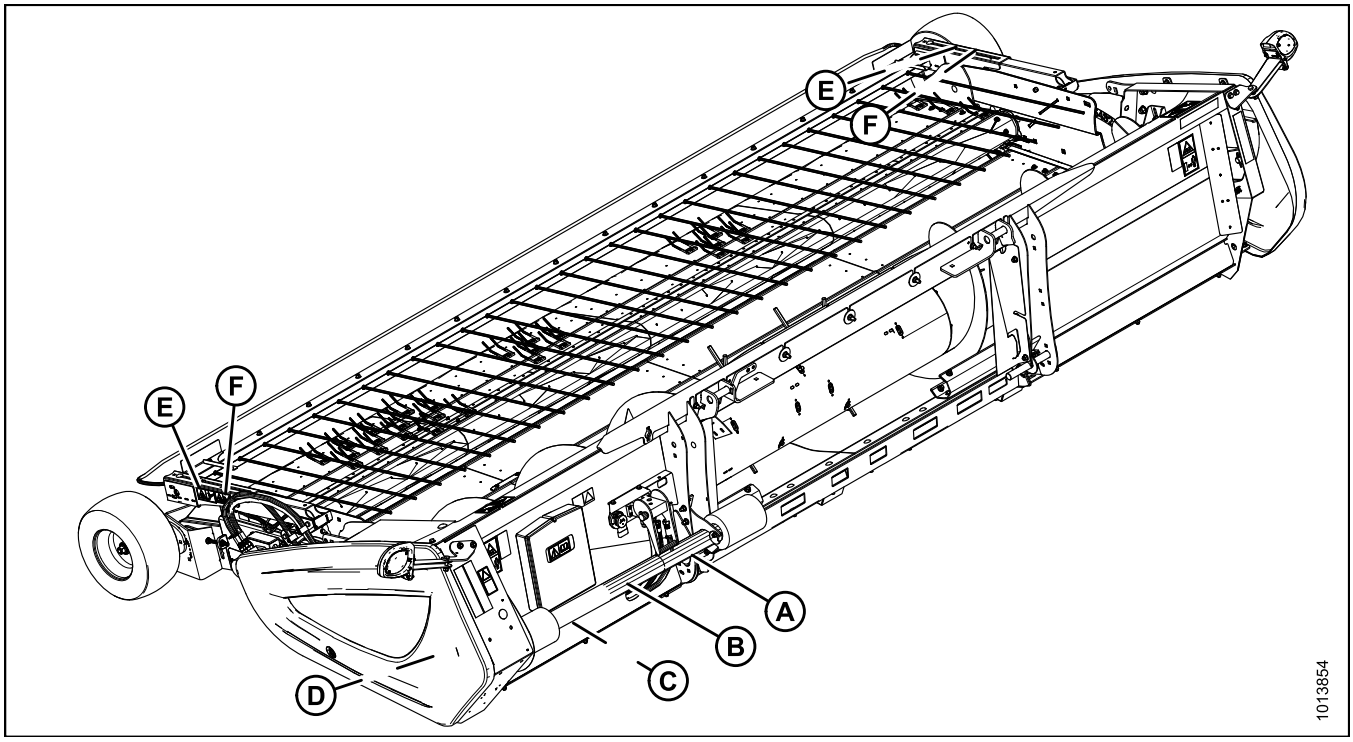

Figure 1.18: Driveline and Hold-Down Decals – Versatile

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

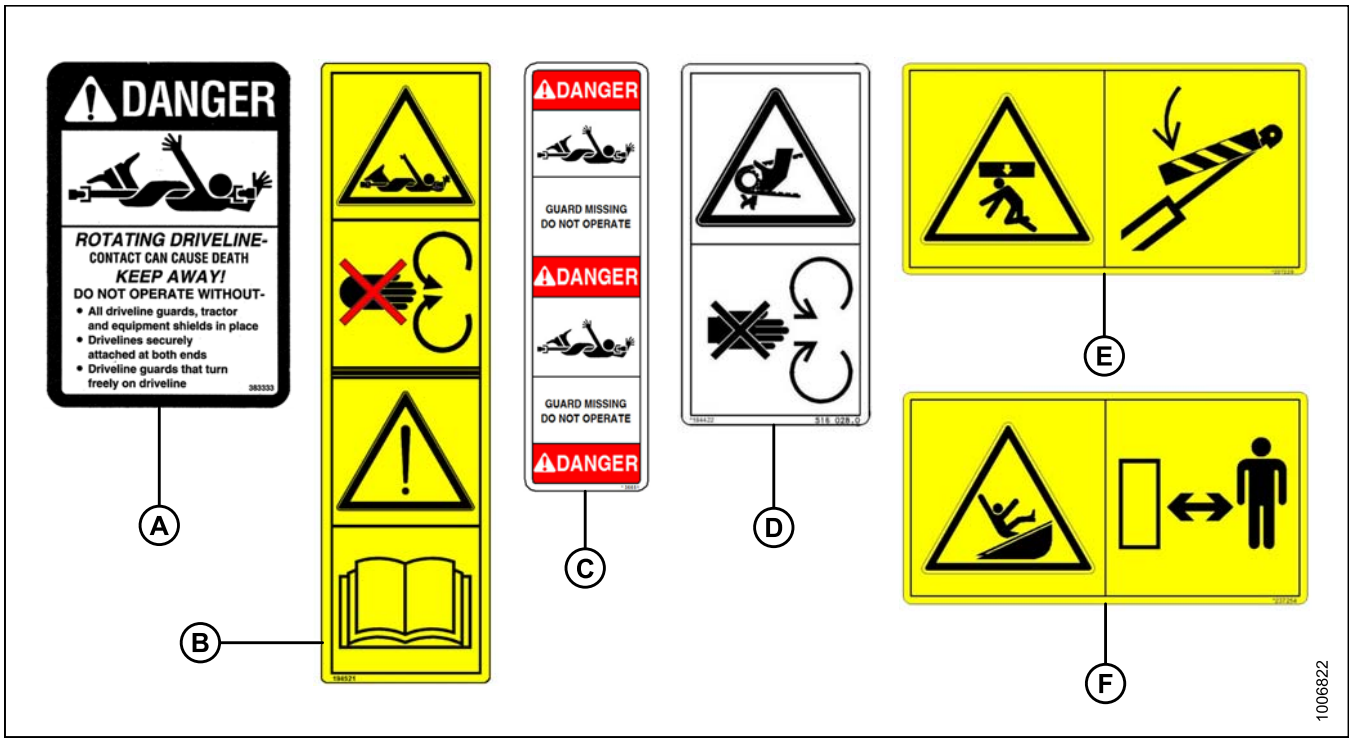

Figure 1.19: Driveline and Hold-Down Decals

2 Shipping Data

The following data includes shipping stands:

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

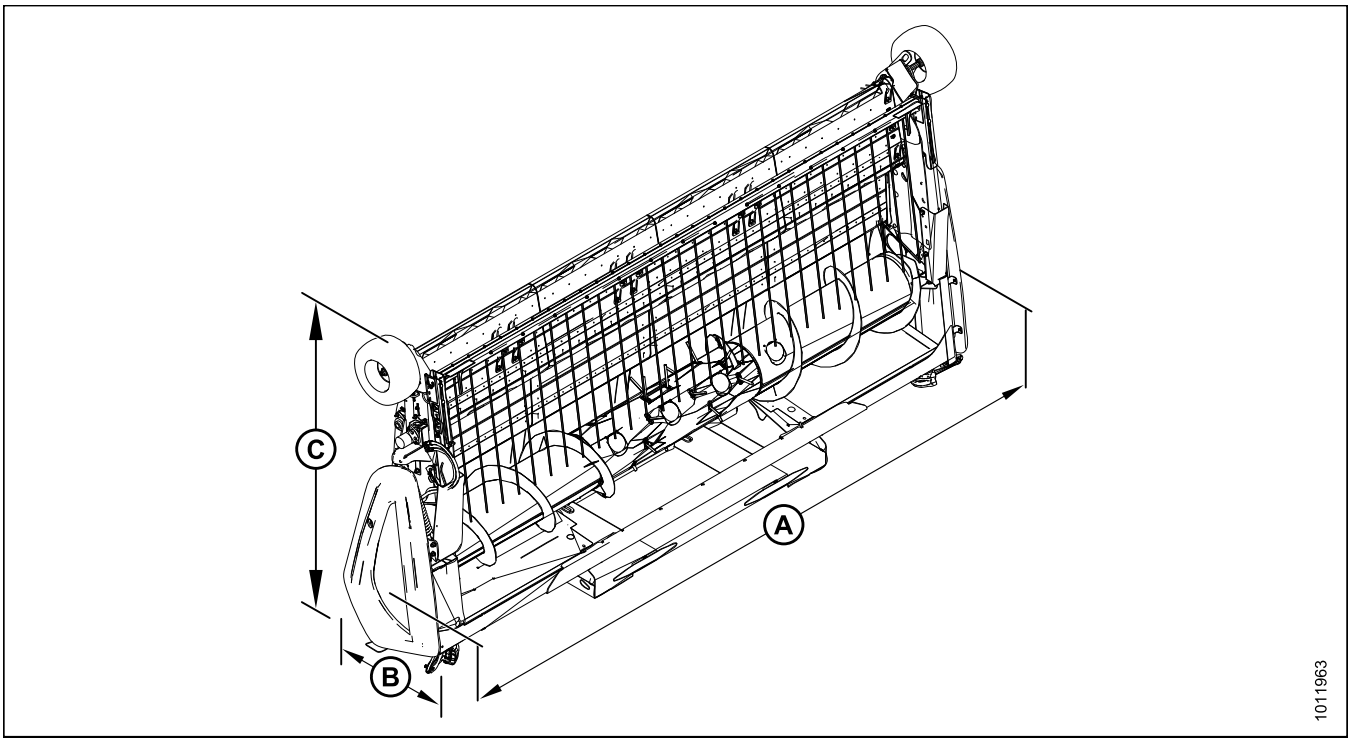

Figure 2.1: Shipping Dimensions

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 persons 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[2]	5000 lb (2270 kg)
Minimum Fork Length	78 in. (1981 mm)

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

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

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.

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.

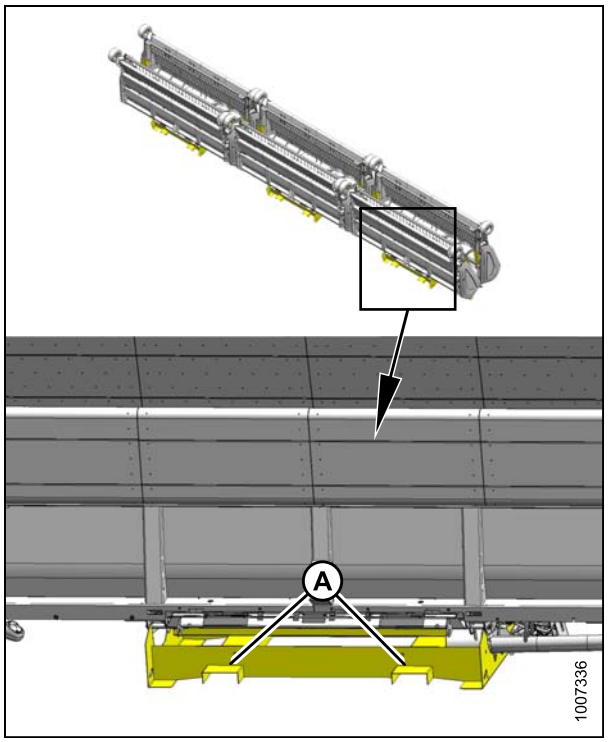

Figure 3.1: Header Shipping

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.

6. Raise header off deck and back up until forks clear trailer.
7. Slowly lower to 6 in. (150 mm) from 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

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.

IMPORTANT:
The header wheels must be in working position before lowering header to prevent damage to the draper tines. Refer to *3.3 Setting Wheels to Field/Working Position, page 17*.

1. Attach a spreader bar (A) to forklift or equivalent. Spreader bar should have a minimum working load of 5000 lb. (2270 kg).
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.

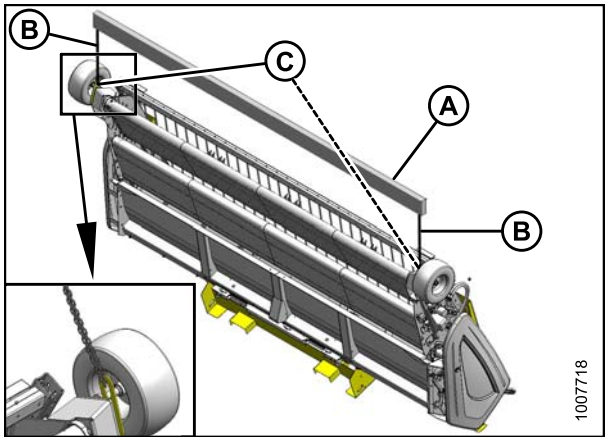

Figure 3.3: Spreader Bar on Header

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.

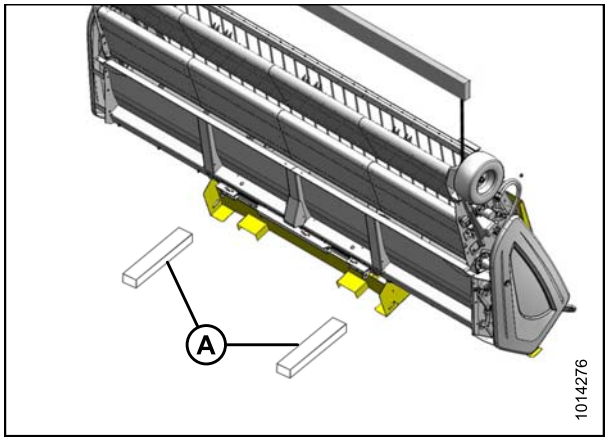

Figure 3.4: Wooden Blocks

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 *3.4 Removing Shipping Stands, page 18*.

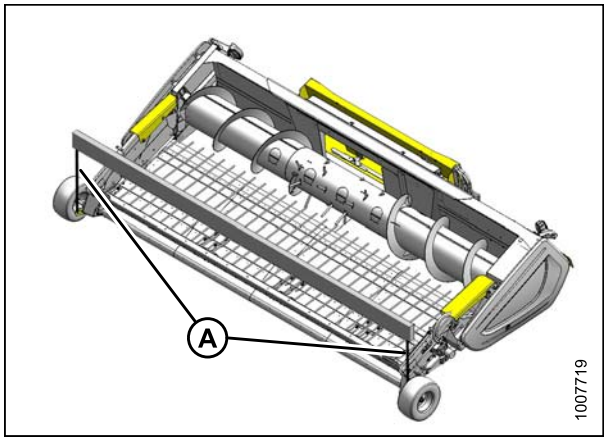

Figure 3.5: Spreader Bar on Header

3.3 Setting Wheels to Field/Working Position

IMPORTANT:
To prevent damage to the header, wheels must be in working position (cog (A) lined up with number '2' on frame) BEFORE setting header on ground. See illustration. If wheels are **NOT** in working position, proceed as follows:

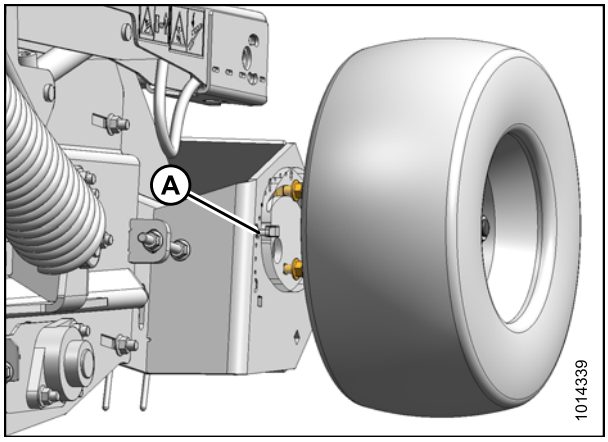

Figure 3.6: Working Position

1. Remove bolt (A).
2. Loosen bolt (B) until wheel mounting plate (C) can be rotated.

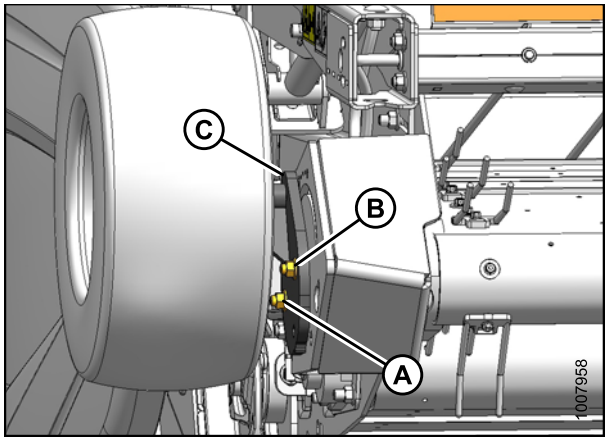

Figure 3.7: Header Wheel Right Side

3. Rotate wheel mounting plate (A) and wheel approximately 180 degrees until cog (B) lines up with the number '2' on frame.
4. Reinstall bolt (D) through slot in frame and secure with lock nut.
5. Tighten nuts (C) and (D).

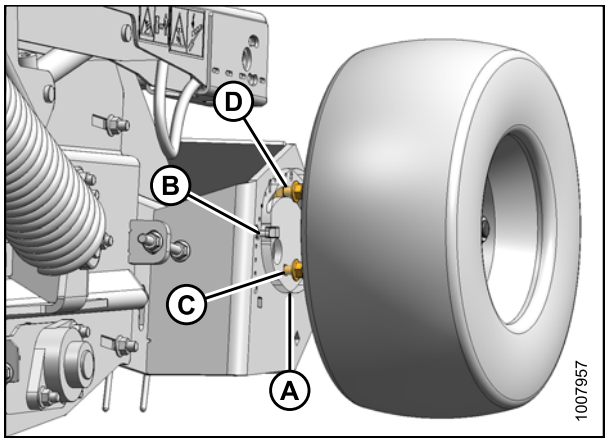

Figure 3.8: Header Wheel Right Side

3.4 Removing Shipping Stands

The removable stands are painted yellow.

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

CAUTION

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

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.

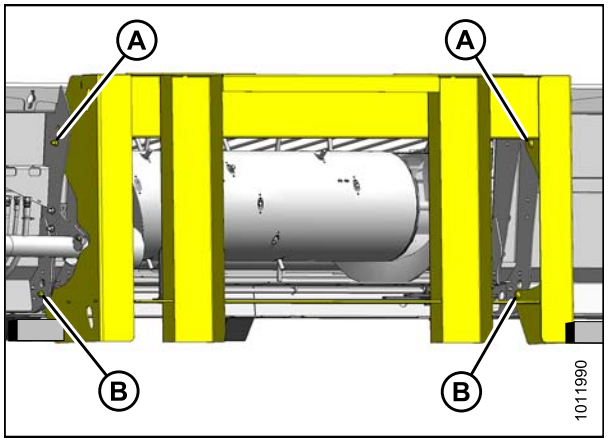

Figure 3.9: Shipping Stand

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.

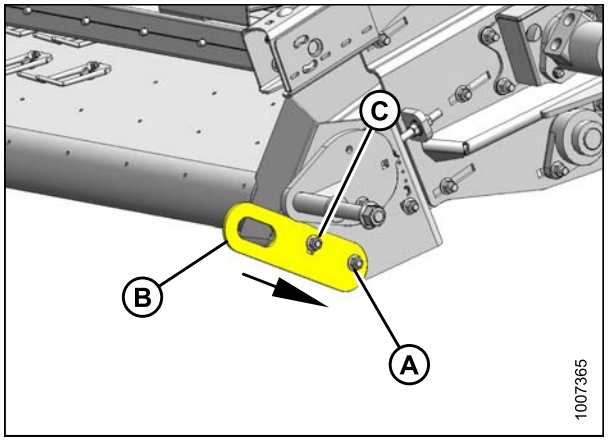

Figure 3.10: Shipping Lug

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

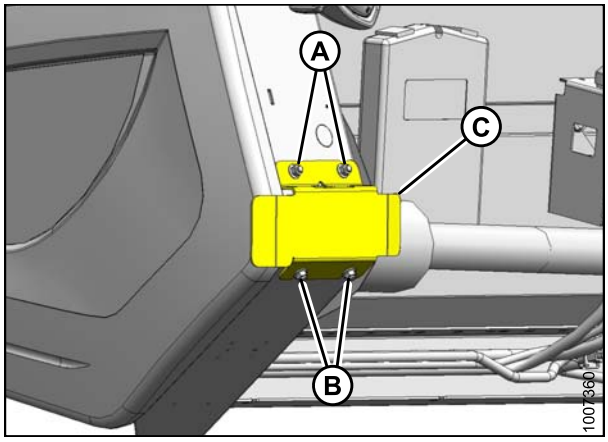

Figure 3.11: Shipping Bumper

8. Open the left endshield. (A). Refer to *3.4.1 Opening Left Endshield, page 20*.
9. Remove four nuts and bolts (B).

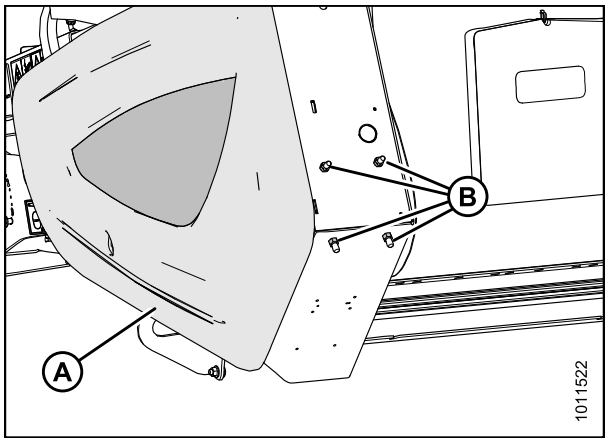

Figure 3.12: Bumper Bolts

10. Close endshield. Refer to *3.4.2 Closing Left Endshield, page 20*.

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

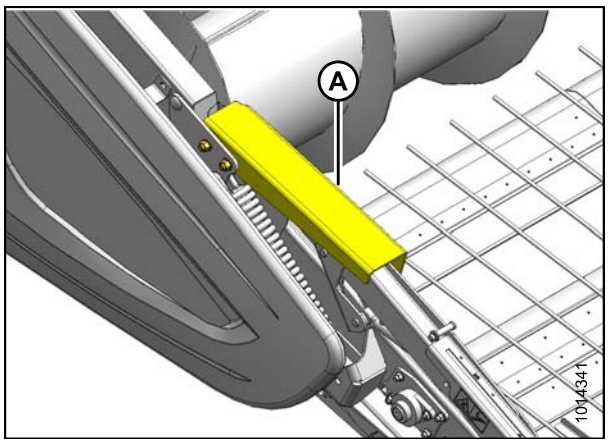

Figure 3.13: Deck Shipping Brace

3.4.1 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).

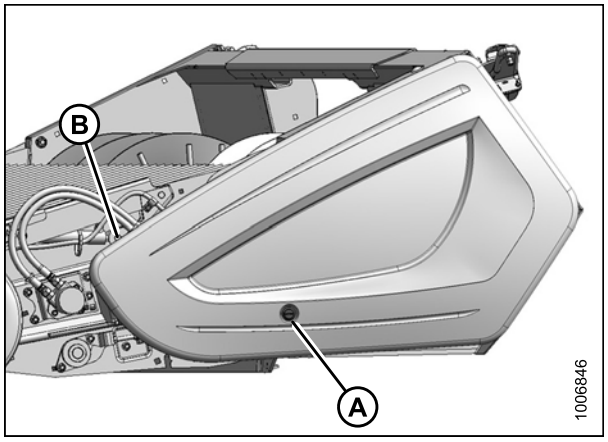

Figure 3.14: Endshield Closed

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

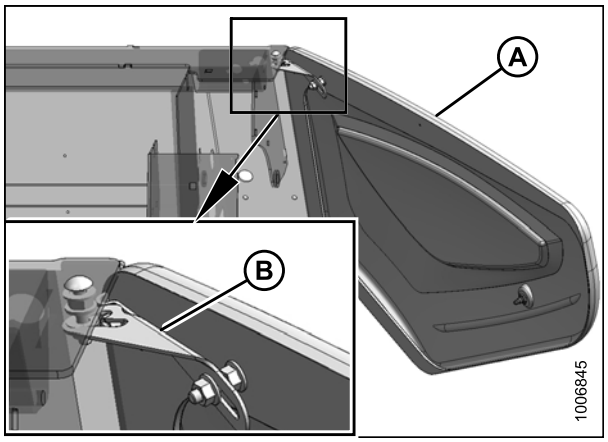

Figure 3.15: Endshield Open

3.4.2 Closing Left Endshield

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

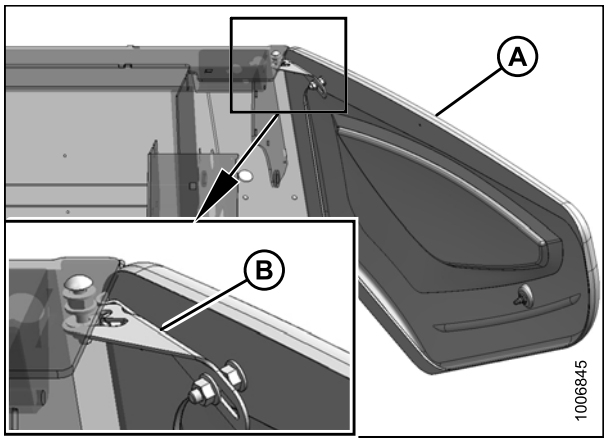

Figure 3.16: Endshield Support

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.

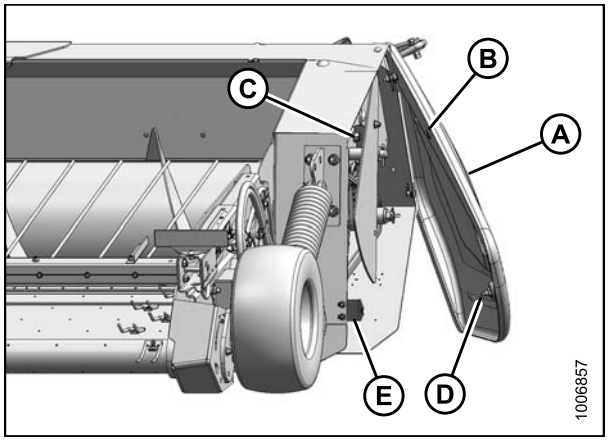

Figure 3.17: Endshield

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), but do not overtighten to avoid damaging the endshield.

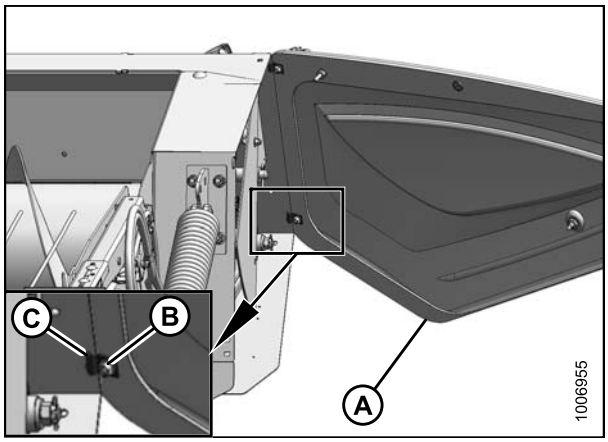

Figure 3.18: Endshield Adjustment

4. Close the 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 cut out in the frame, and that latch (A) is engaged.

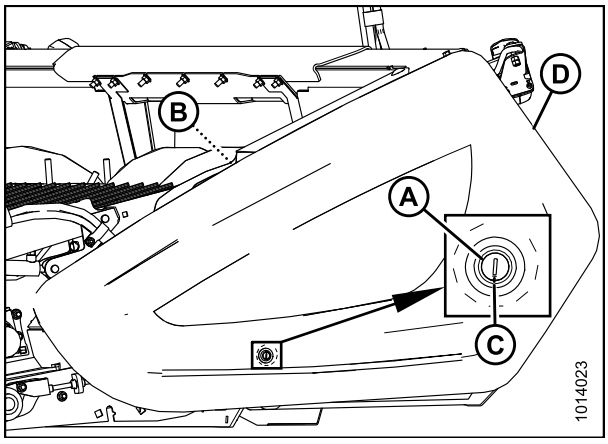

Figure 3.19: Endshield Closed

3.5 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.

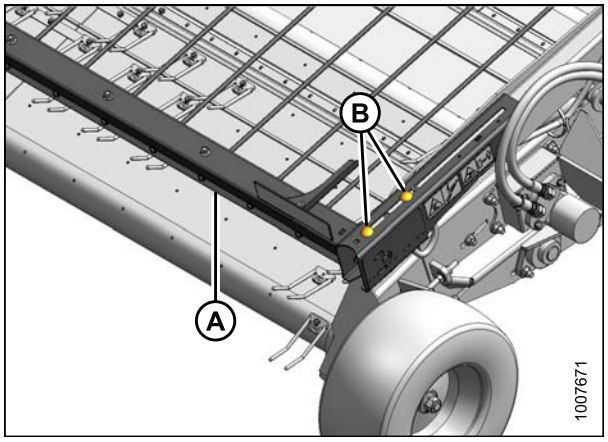

Figure 3.20: Hold-Down Left Side

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

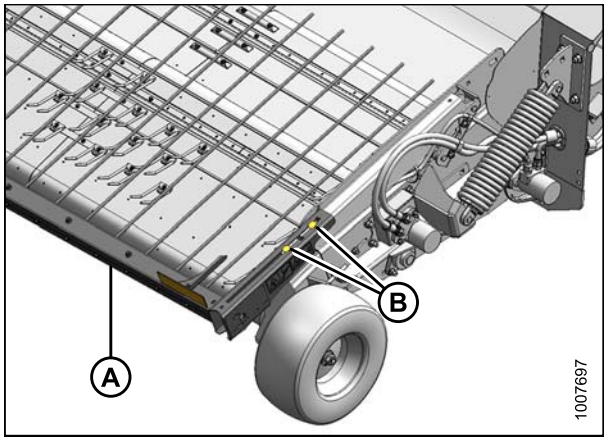

Figure 3.21: Hold-Down Left Side

3.6 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. Lower header to the ground, shut off combine, and remove key from ignition.
2. If repositioning is required, swivel the lights with hand force.
3. If the swivel is too loose or too tight, loosen jam nut (A) and turn nut (B) so the light maintains its position and can be moved with hand force. Do not overtighten.
4. Tighten jam nut (A).

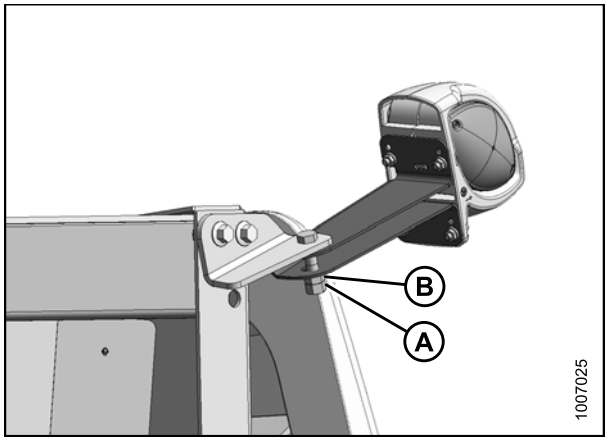

Figure 3.22: Transport Light

3.7 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 header leg and remove bracket.
4. For Case and New Holland combines, reinstall bolts (C) to secure locking mechanism (D). For all other combines, retain hardware.

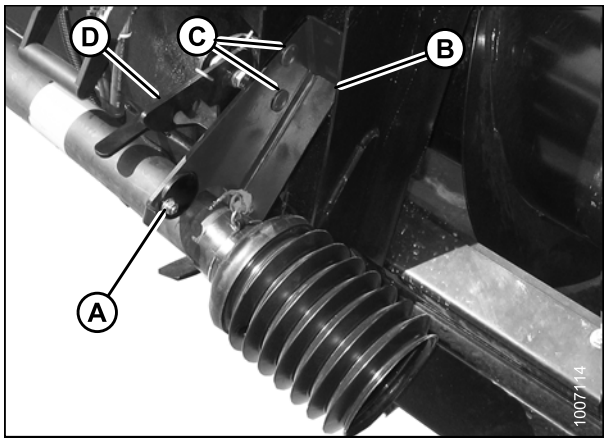

Figure 3.23: Driveline Bracket

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).

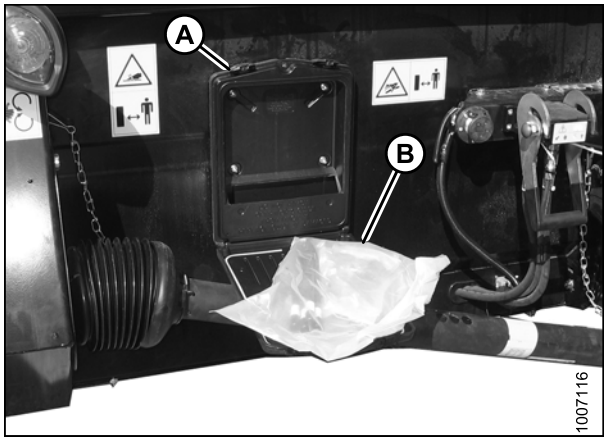

Figure 3.24: Hardware Bag

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.

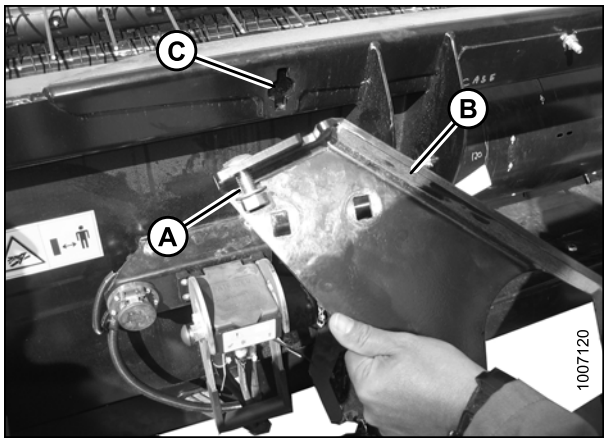

Figure 3.25: Driveline Bracket

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.

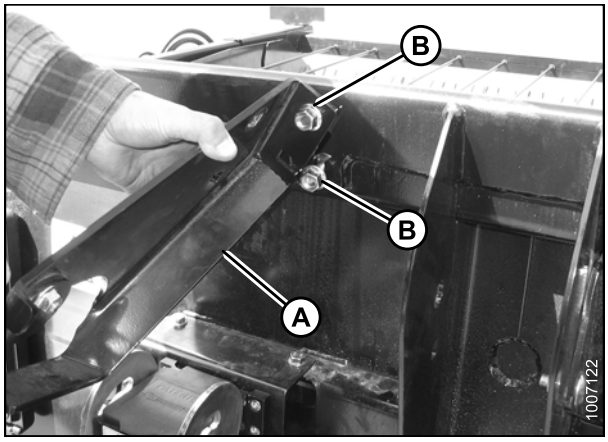

Figure 3.26: Driveline Bracket

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

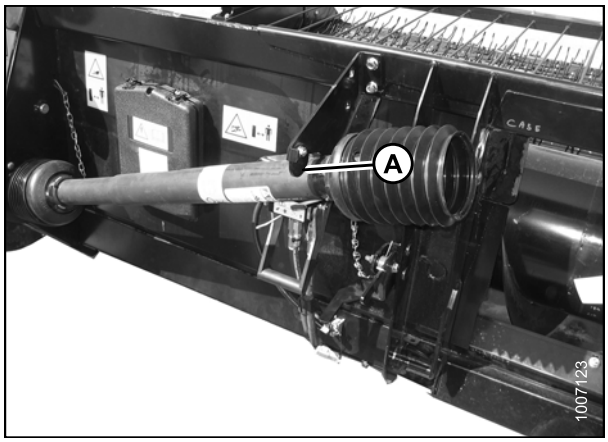

Figure 3.27: Driveline in Repositioned Bracket

4 Reconfiguring Headers

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

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.

- Case 45.5 in. (1156 mm) refer to *4.2 Converting Headers for Case IH, page 33*
- John Deere 65 in. (1670 mm) refer to *4.1 Converting Headers for John Deere, page 27*
- New Holland 40 in. (1016 mm) refer to *4.4 Converting Headers for New Holland CR, page 43*
- New Holland 60 in. (1524 mm) refer to *4.3 Converting Headers for New Holland CX, page 37*

4.1 Converting Headers for John Deere

PW8 Pick-Up Headers are configured at the factory for combine models with a 55 in. (1397 mm) feeder house. These procedures describe how to modify the header for models with a 65 in. (1670 mm) 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.

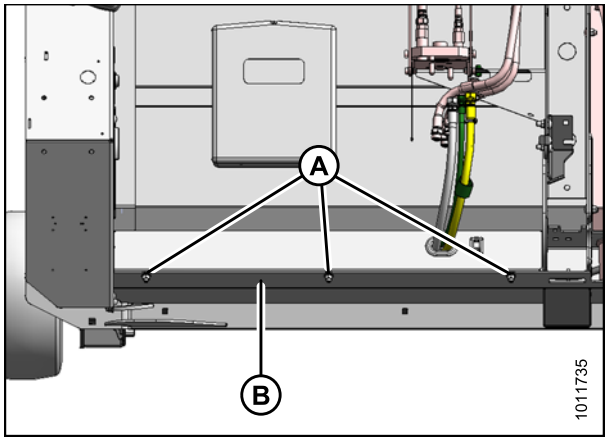

Figure 4.1: Left Cover – Right Side Opposite

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

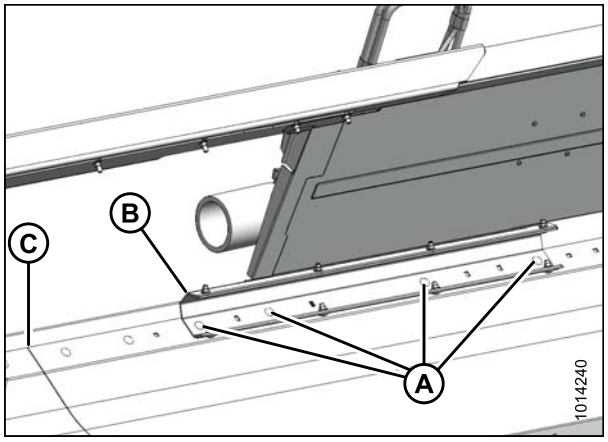

Figure 4.2: Left Stripper – Narrow Opening (Auger Not Shown for Clarity)

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

   NOTE:
   The centerline is located where the header pans meet.

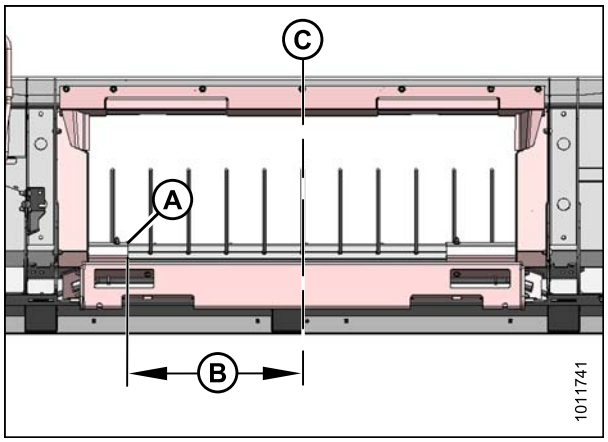

Figure 4.3: Left Stripper – Wide Opening

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.

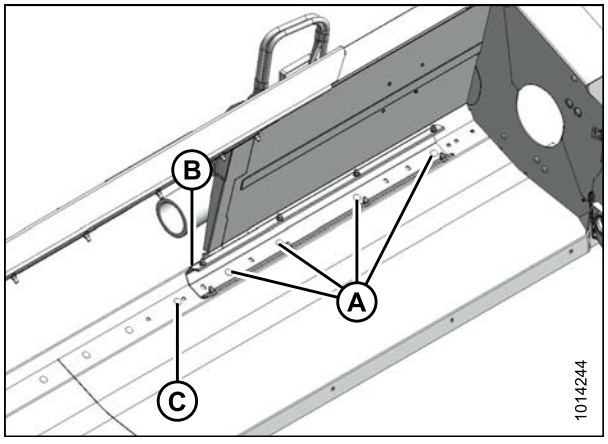

Figure 4.4: Left Stripper – Wide Opening

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

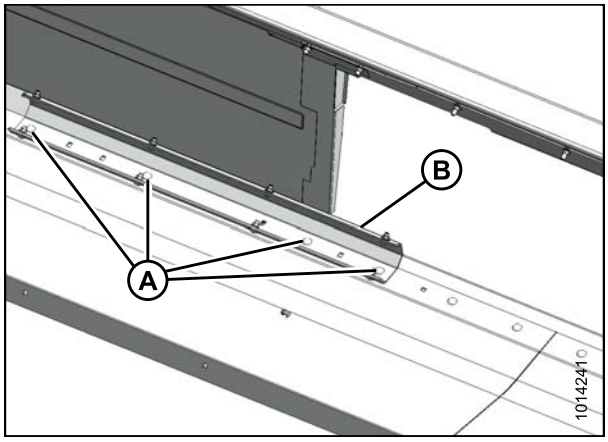

Figure 4.5: Right Stripper – Narrow Opening

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

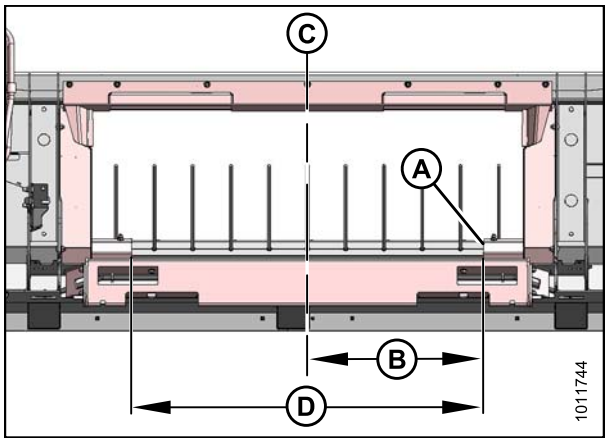

Figure 4.6: Right Stripper – Wide Opening

9. Reinstall the four bolts (A) where the 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) in the existing hole.
11. Manually rotate the auger and check the clearances between the auger flighting and stripper plates. The clearance should be 1/8–7/16 in. (3–11 mm).
12. If necessary, refer to *4.1.4 Adjusting Stripper Plate Clearance, page 32*.

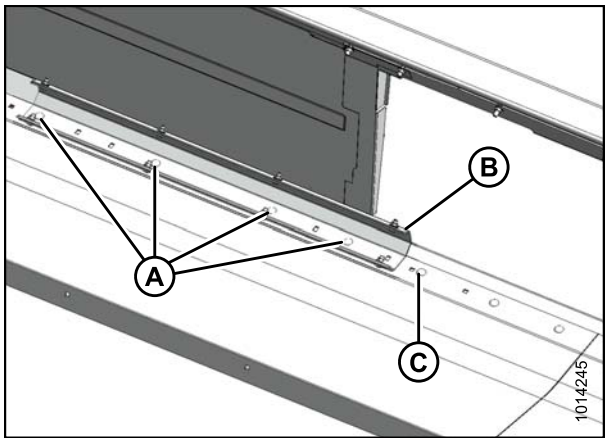

Figure 4.7: Right Stripper – Wide Opening

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

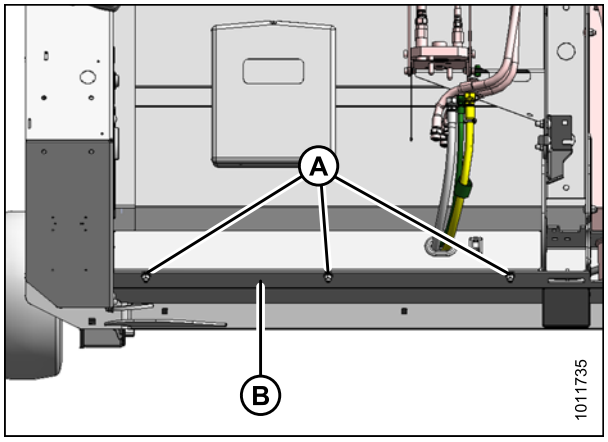

Figure 4.8: Left Cover – Right Side Opposite

4.1.2 Removing Flighting Extensions

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

1. Remove the two access covers (A) on either side of center.

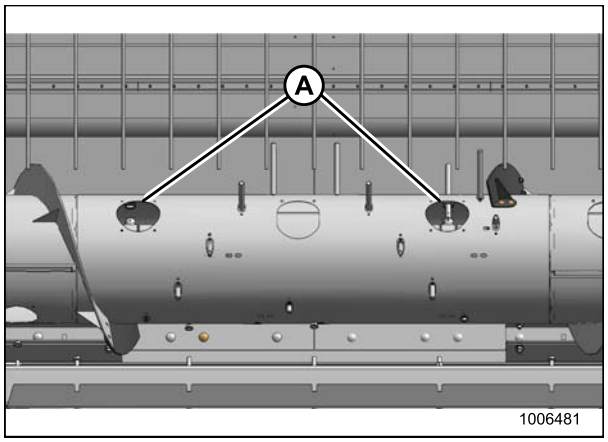

Figure 4.9: Access Holes in Auger

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

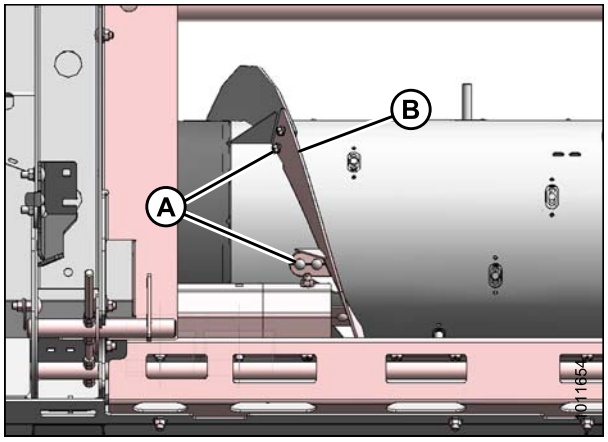

Figure 4.10: Left Flighting Extension – Right Extension Opposite

4.1.3 Installing Auger Fingers

Follow these steps to install the extra auger fingers required for a John Deere 65 in. (1650 mm) and New Holland 60 in. (1525 mm) feeder house: The total number of fingers should be 22.

1. Retrieve the bag of hardware from the manual storage case located on the back of the header.
2. Access the two covers (A) located on each side of center.

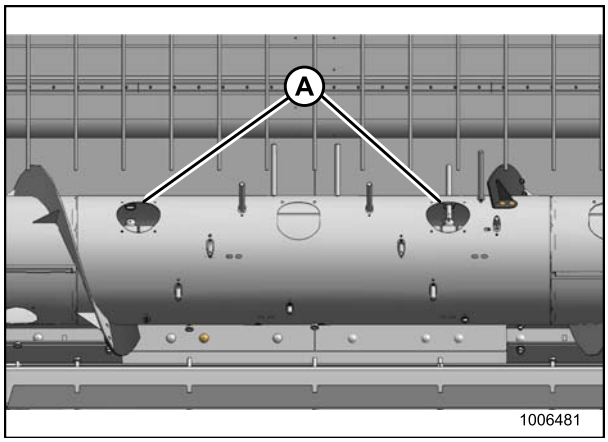

Figure 4.11: Access Holes in Auger

3. Remove screws (B) securing plastic plug (C) to the auger and remove plug from inside the auger.
4. Retrieve four plastic guides (D) from the bag of hardware.
5. Position plastic guide (D) in the hole from inside the auger and secure with hex socket screws (E) and tee nuts (F) provided in the hardware bag.
6. Torque the screws to 75 in·lbf (8.5 N·m).
7. Repeat Steps *3., page 31* to *6., page 31* for the remaining locations.

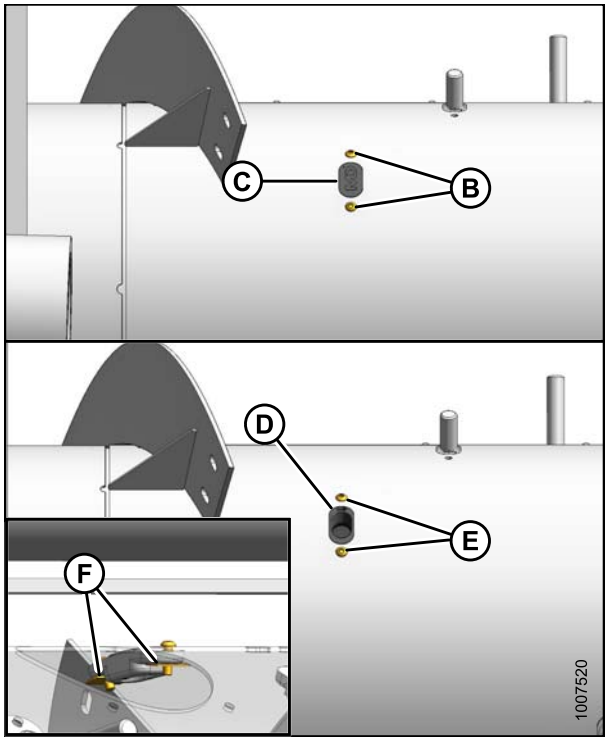

Figure 4.12: Plastic Guides

8. Insert finger (A) through plastic guide (B) from inside the auger.
9. Insert finger into bushing (C).
10. Secure finger (A) in bushing with hairpin (D). Install hairpin with closed end leading with respect to auger forward rotation.
11. Repeat Steps *8., page 32* to *10., page 32* for the remaining fingers.

NOTE:
There should be a total of 22 fingers.

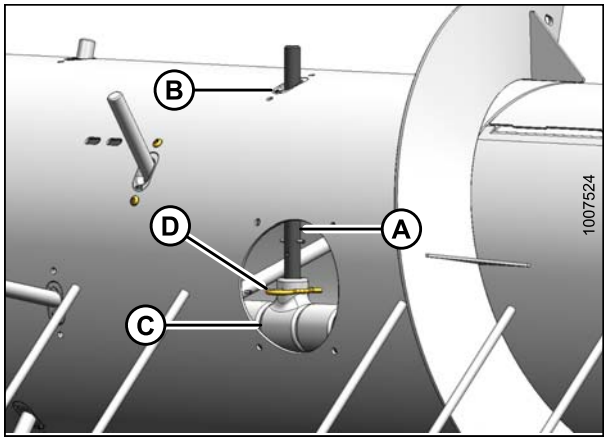

Figure 4.13: Auger Fingers

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

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

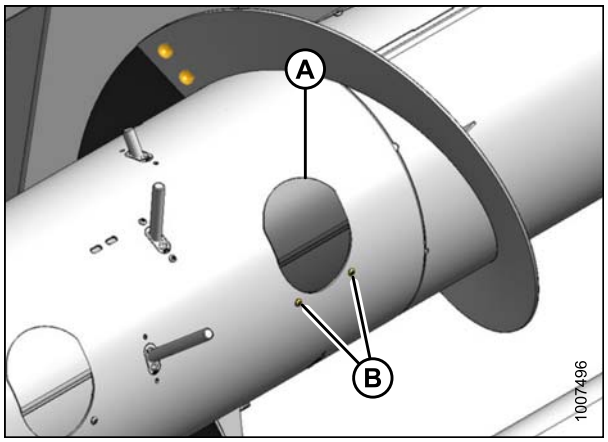

Figure 4.14: Access Cover

4.1.4 Adjusting Stripper Plate Clearance

1. Loosen nuts (A) on the stripper plate (B), and adjust the stripper plate to achieve clearance (C) of 1/8–7/16 in. (3–11 mm).
2. Tighten nuts (A).
3. Recheck clearance.

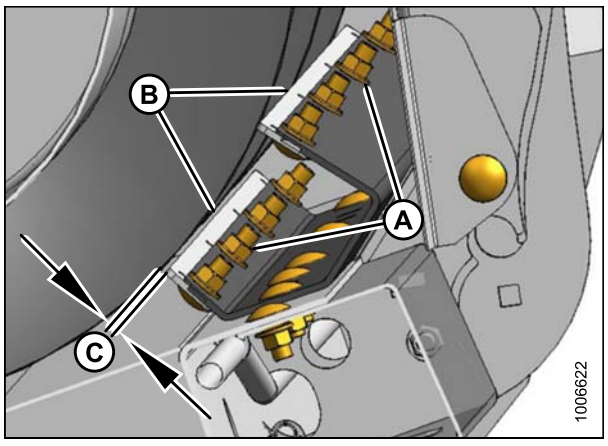

Figure 4.15: Stripper Plate Clearance

4.2 Converting Headers for Case IH

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

4.2.1 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.

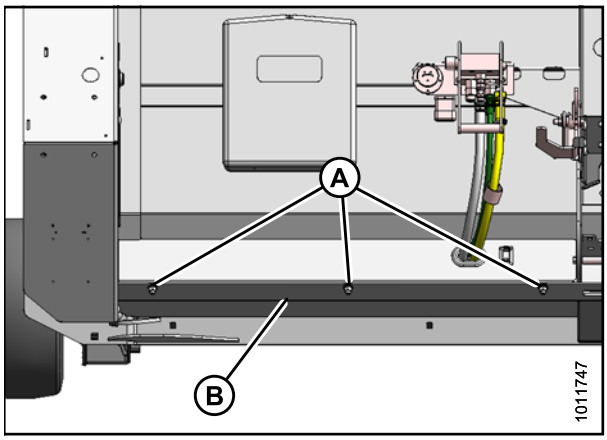

Figure 4.16: Left Cover – Right Side Opposite

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

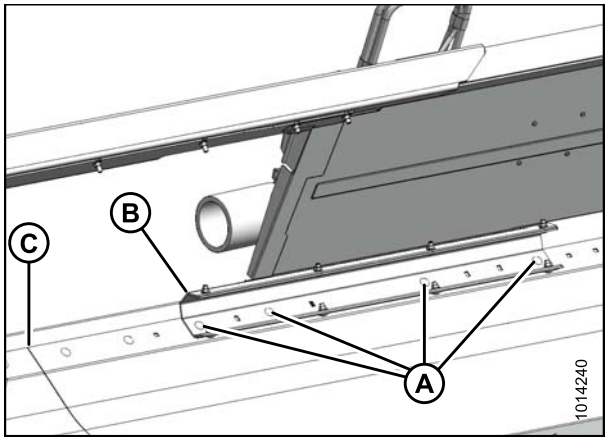

Figure 4.17: Left Stripper (Auger Not Shown for Clarity)

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

   NOTE:
   The centerline is located where the header pans meet.

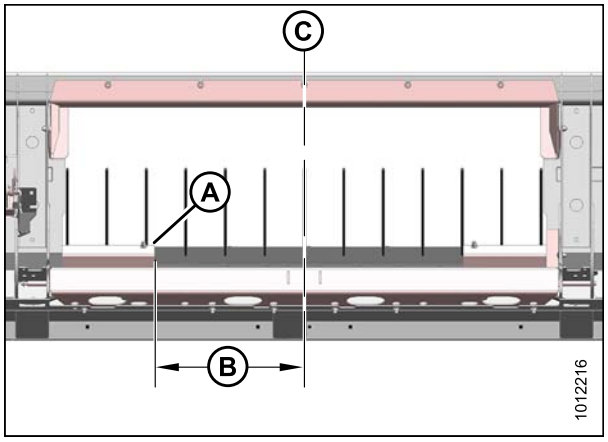

Figure 4.18: Narrow Opening

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

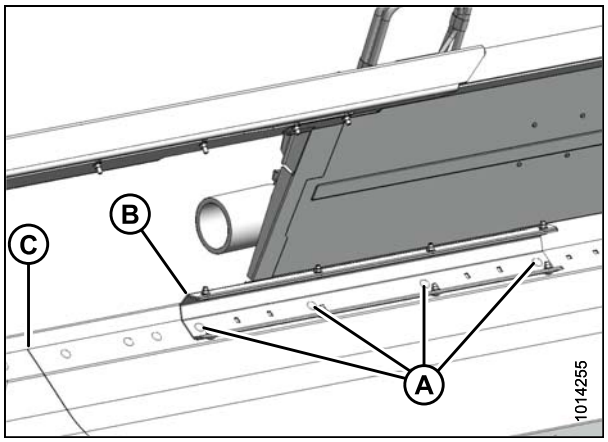

Figure 4.19: Left Stripper – Narrow Opening

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

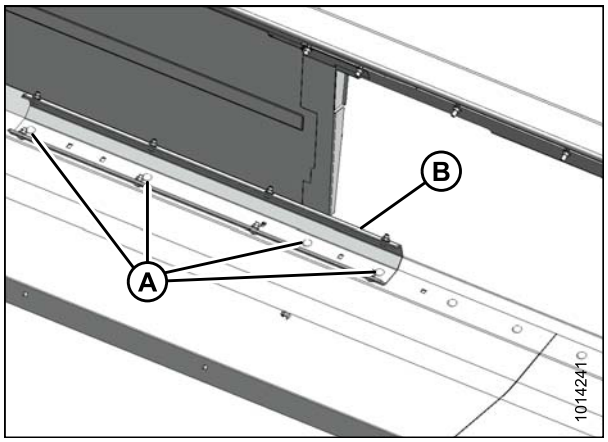

Figure 4.20: Right Stripper

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

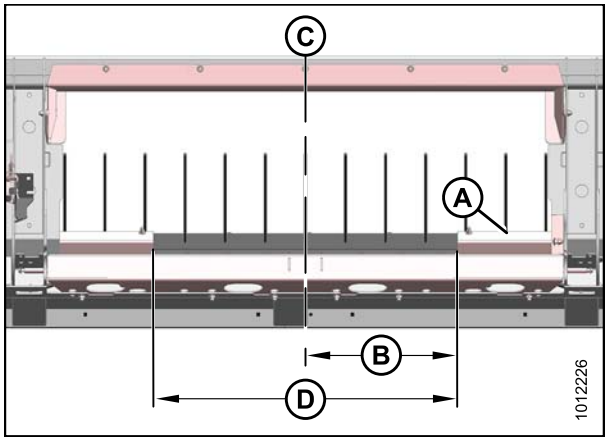

Figure 4.21: Narrow Opening

8. Reinstall the four bolts (A) where stripper assembly (B) mounting holes line up with the frame. Tighten bolts.
9. Manually rotate the auger and check the clearances between the auger flighting and stripper plates. The clearance should be 1/8–7/16 in. (3–11 mm).
10. If necessary, refer to *4.1.4 Adjusting Stripper Plate Clearance, page 32*.

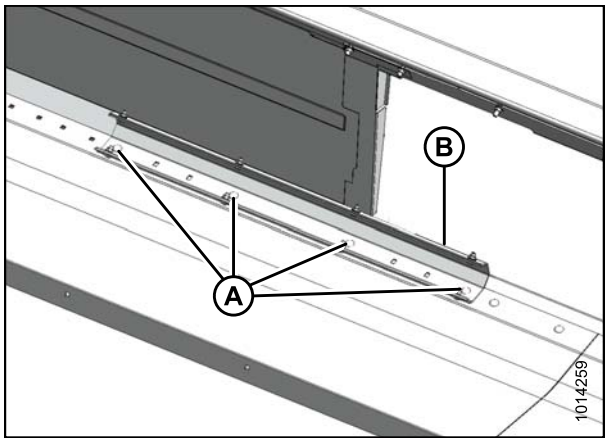

Figure 4.22: Right Stripper – Narrow Opening

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

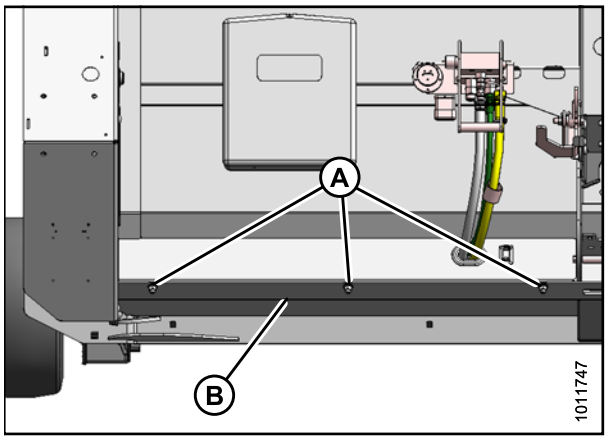

Figure 4.23: Left Cover – Right Side Opposite

4.2.2 Adjusting Stripper Plate Clearance

1. Loosen nuts (A) on the stripper plate (B), and adjust the stripper plate to achieve clearance (C) of 1/8–7/16 in. (3–11 mm).
2. Tighten nuts (A).
3. Recheck clearance.

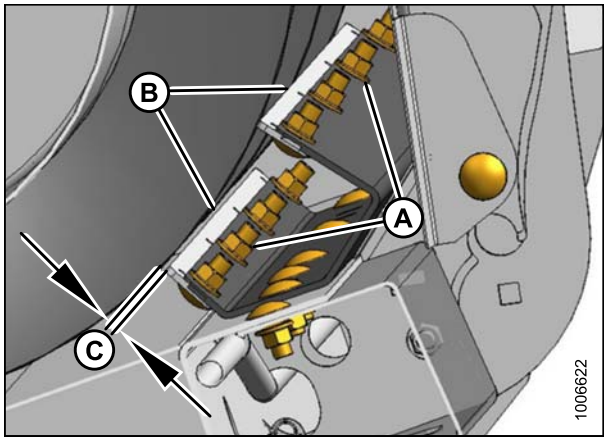

Figure 4.24: Stripper Plate Clearance

4.3 Converting Headers for New Holland CX

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

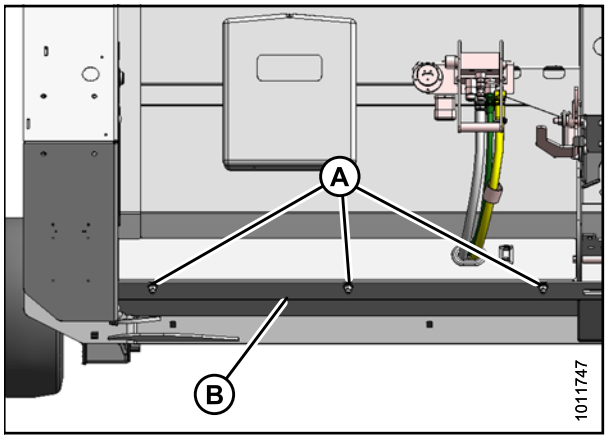

Figure 4.25: Left Cover – Right Side Opposite

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

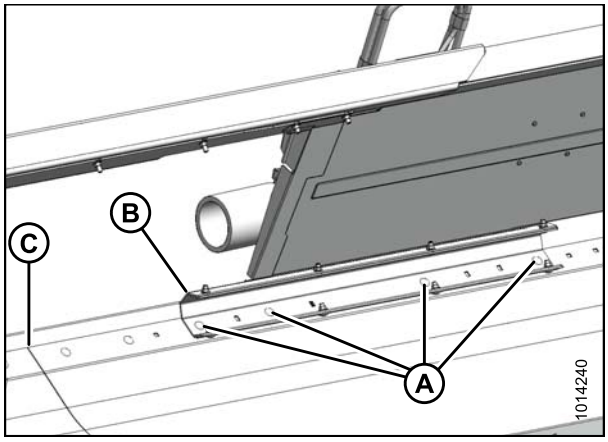

Figure 4.26: Left Stripper – Narrow Opening (Auger Not Shown for Clarity)

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

   NOTE:
   The centerline is located where the header pans meet.

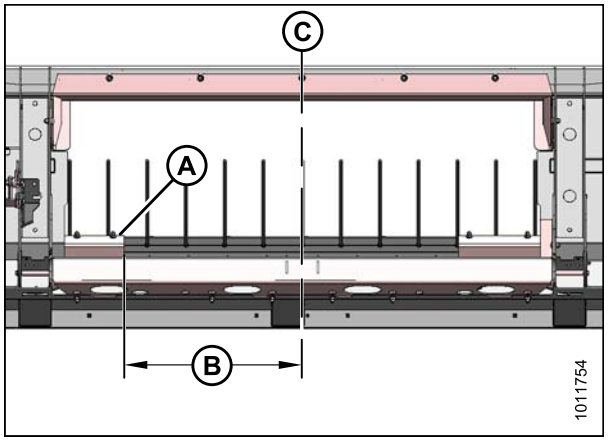

Figure 4.27: Left Stripper – Wide Opening

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.

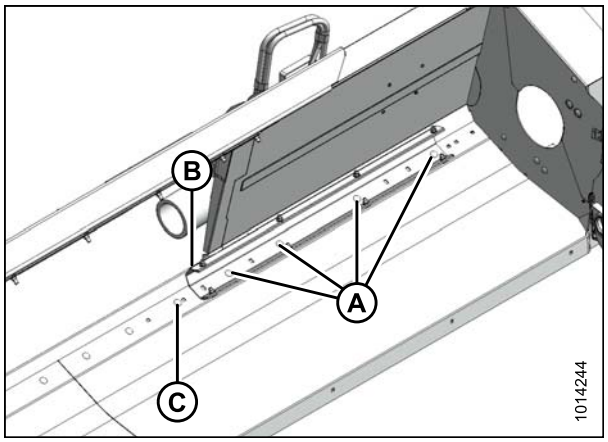

Figure 4.28: Left Stripper – Wide Opening

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

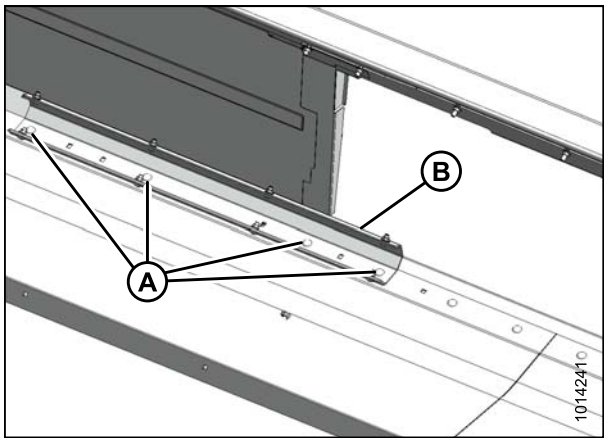

Figure 4.29: Right Stripper – Narrow Opening

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

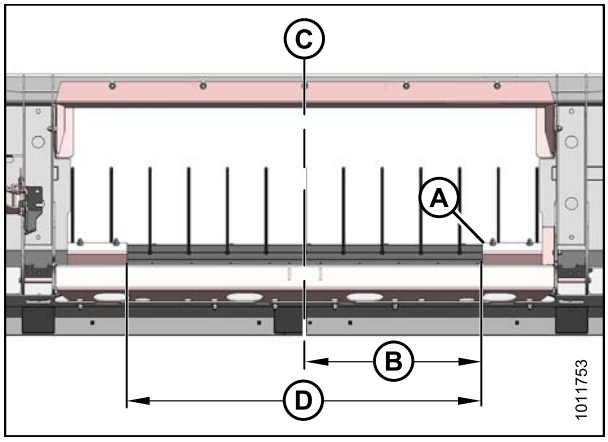

Figure 4.30: Right Stripper – Wide Opening

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 1/8–7/16 in. (3–11 mm).
12. If necessary, refer to *4.2.2 Adjusting Stripper Plate Clearance, page 36*.

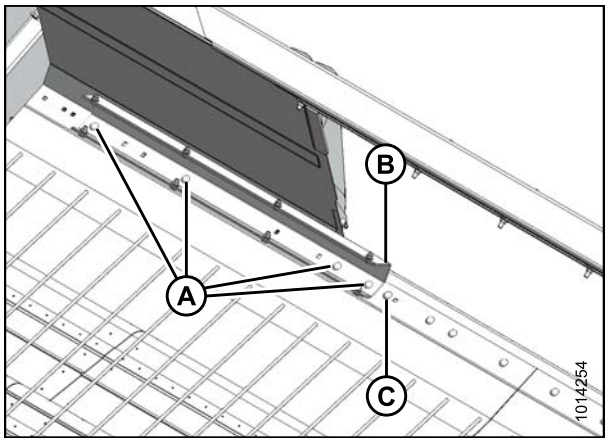

Figure 4.31: Right Stripper – Wide Opening

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

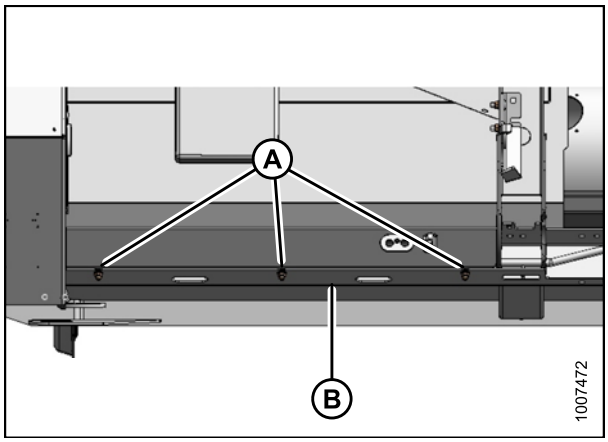

Figure 4.32: Left Cover – Right Side Opposite

4.3.2 Removing Flighting Extensions

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

1. Remove the two access covers (A) on either side of center.

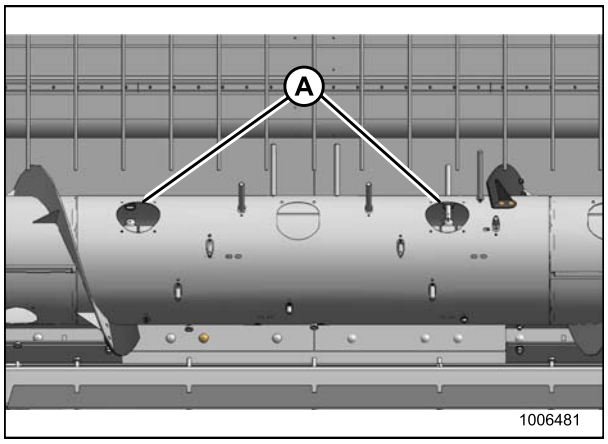

Figure 4.33: Access Holes in Auger

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

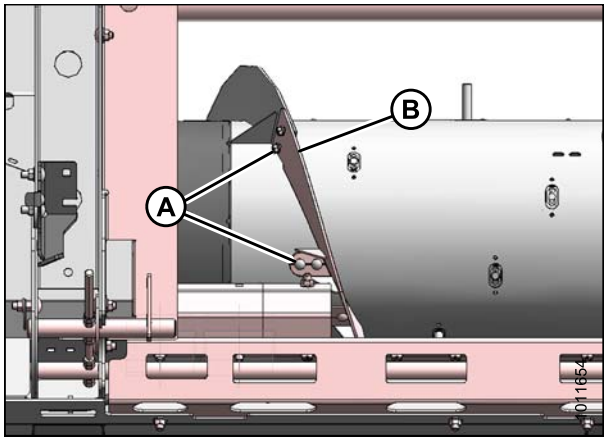

Figure 4.34: Left Flighting Extension – Right Extension Opposite

4.3.3 Installing Auger Fingers

Follow these steps to install the extra auger fingers required for a John Deere 65 in. (1650 mm) and New Holland 60 in. (1525 mm) feeder house: The total number of fingers should be 22.

1. Retrieve the bag of hardware from the manual storage case located on the back of the header.
2. Access the two covers (A) located on each side of center.

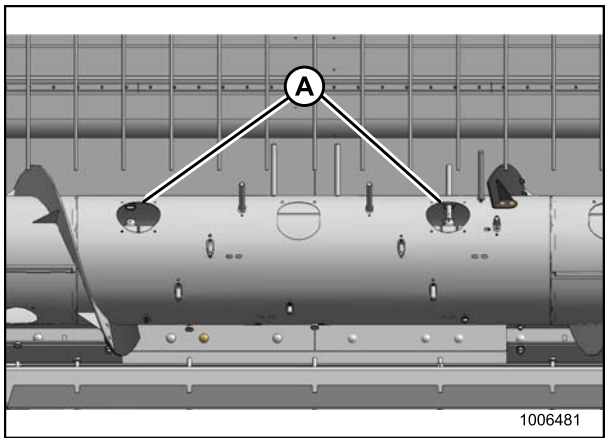

Figure 4.35: Access Holes in Auger

3. Remove screws (B) securing plastic plug (C) to the auger and remove plug from inside the auger.
4. Retrieve four plastic guides (D) from the bag of hardware.
5. Position plastic guide (D) in the hole from inside the auger and secure with hex socket screws (E) and tee nuts (F) provided in the hardware bag.
6. Torque the screws to 75 in·lbf (8.5 N·m).
7. Repeat Steps *3., page 41* to *6., page 41* for the remaining locations.

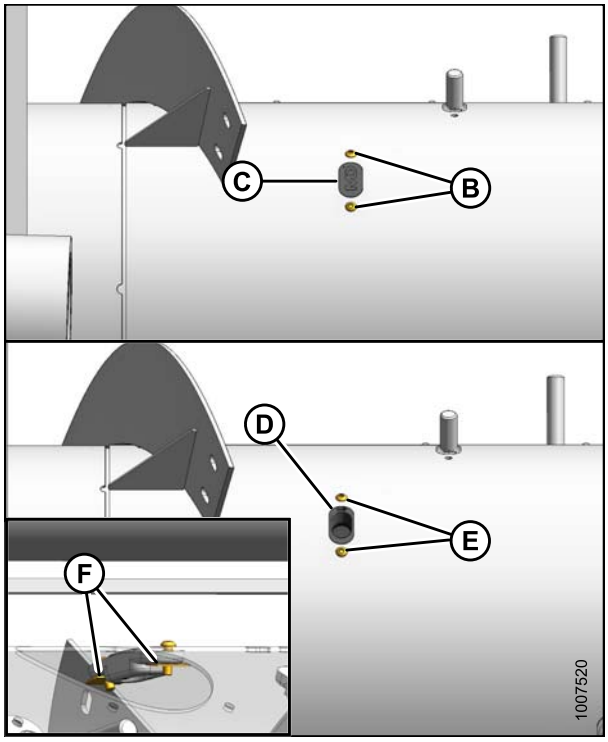

Figure 4.36: Plastic Guides

8. Insert finger (A) through plastic guide (B) from inside the auger.
9. Insert finger into bushing (C).
10. Secure finger (A) in bushing with hairpin (D). Install hairpin with closed end leading with respect to auger forward rotation.
11. Repeat Steps *8., page 42* to *10., page 42* for the remaining fingers.

NOTE:
There should be a total of 22 fingers.

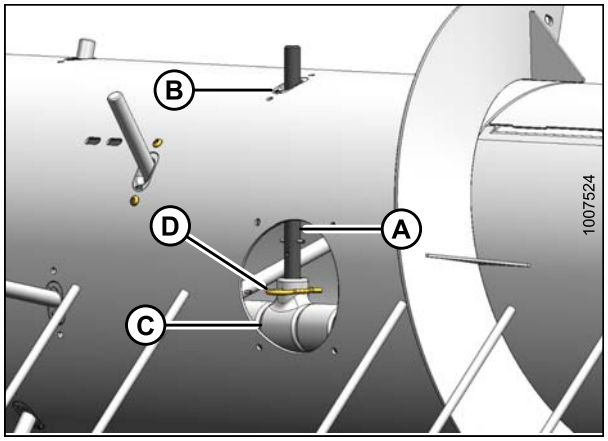

Figure 4.37: Auger Fingers

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

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

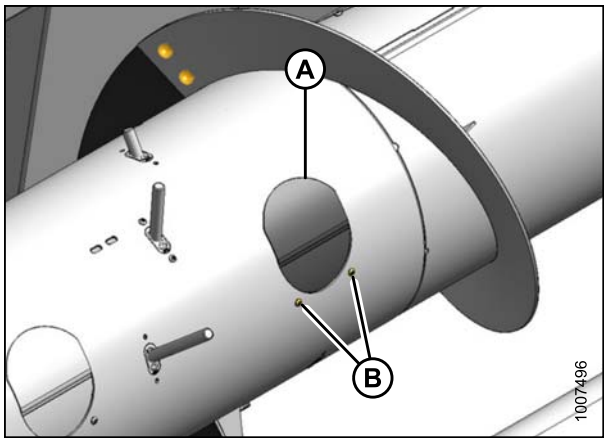

Figure 4.38: Access Cover

4.3.4 Adjusting Stripper Plate Clearance

1. Loosen nuts (A) on the stripper plate (B), and adjust the stripper plate to achieve clearance (C) of 1/8–7/16 in. (3–11 mm).
2. Tighten nuts (A).
3. Recheck clearance.

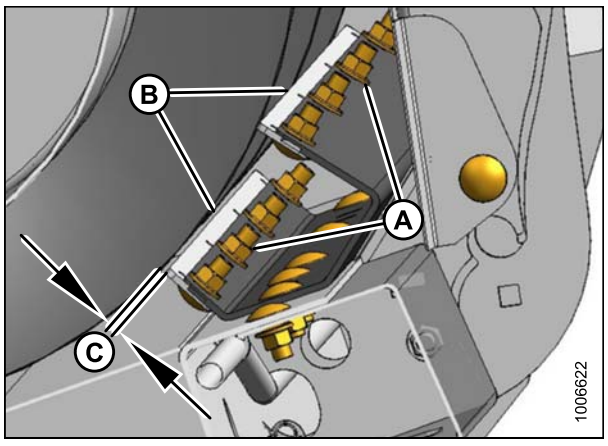

Figure 4.39: Stripper Plate Clearance

4.4 Converting Headers for New Holland CR

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

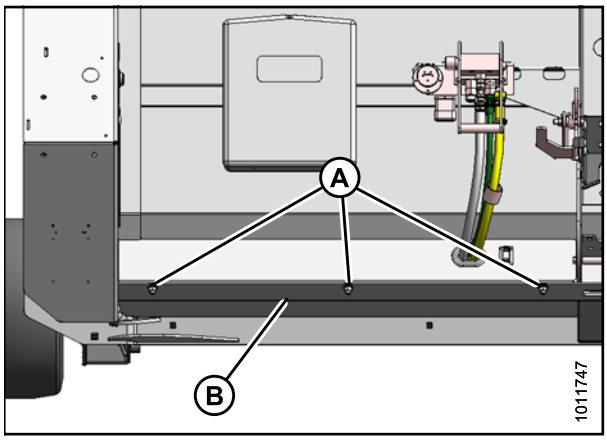

Figure 4.40: Left Cover – Right Side Opposite

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

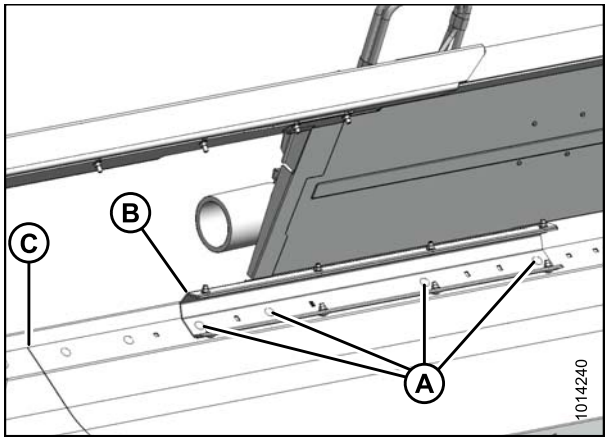

Figure 4.41: Left Stripper (Auger Not Shown for Clarity)

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

   NOTE:
   The centerline is located where the header pans meet.

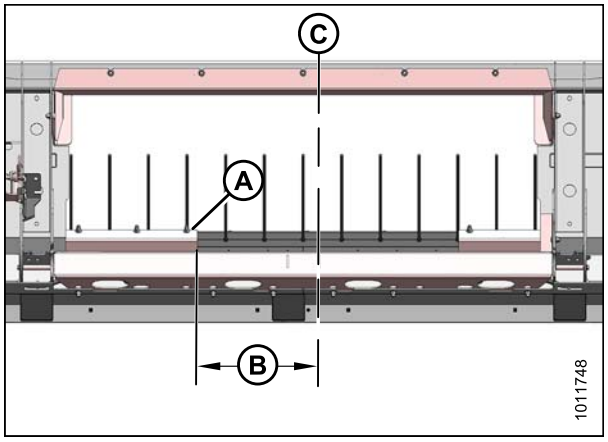

Figure 4.42: Narrow Opening

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

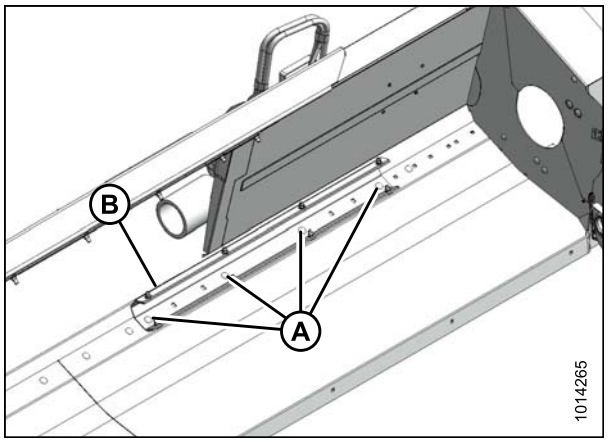

Figure 4.43: Left Stripper – Narrow Opening

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

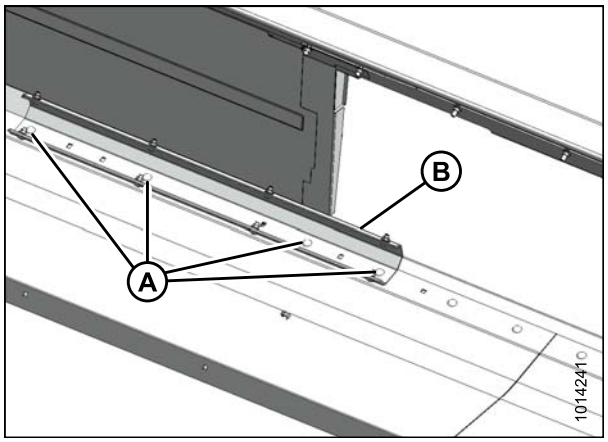

Figure 4.44: Right Stripper

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

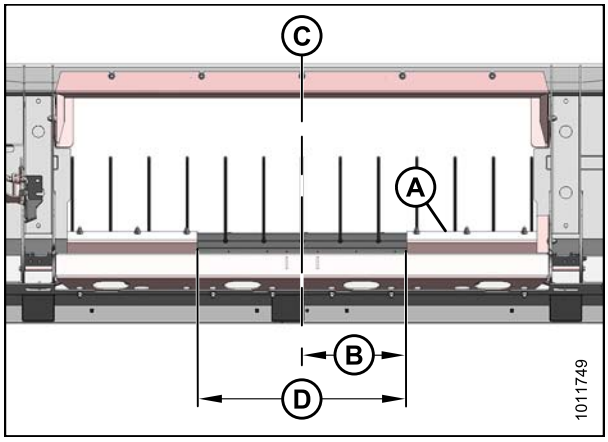

Figure 4.45: Narrow Opening

8. Reinstall the four bolts (A) where stripper assembly (B) mounting holes line up with the frame. Tighten bolts.
9. Manually rotate the auger and check the clearances between the auger flighting and stripper plates. The clearance should be 1/8–7/16 in. (3–11 mm).
10. If necessary, refer to *4.3.4 Adjusting Stripper Plate Clearance, page 42*.

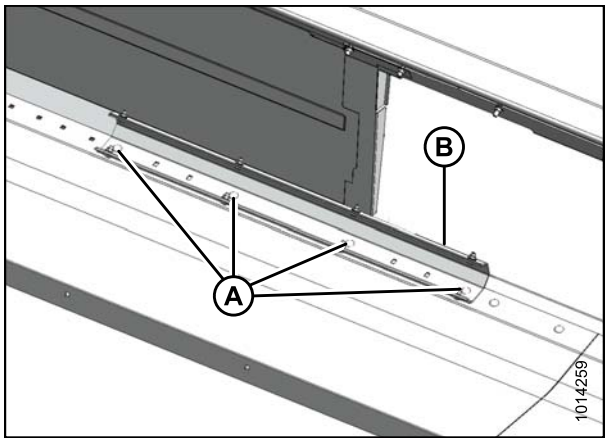

Figure 4.46: Right Stripper – Narrow Opening

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

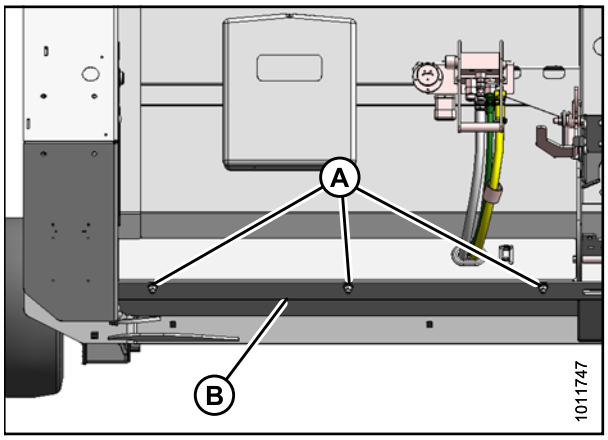

Figure 4.47: Left Cover – Right Side Opposite

4.4.2 Installing Flighting Extensions

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

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

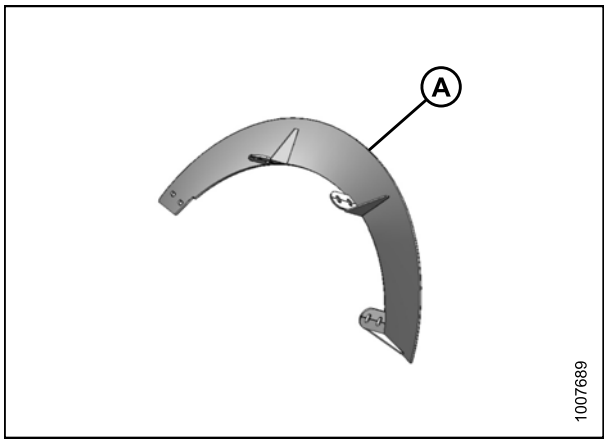

Figure 4.48: Left Extension – Right Opposite

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

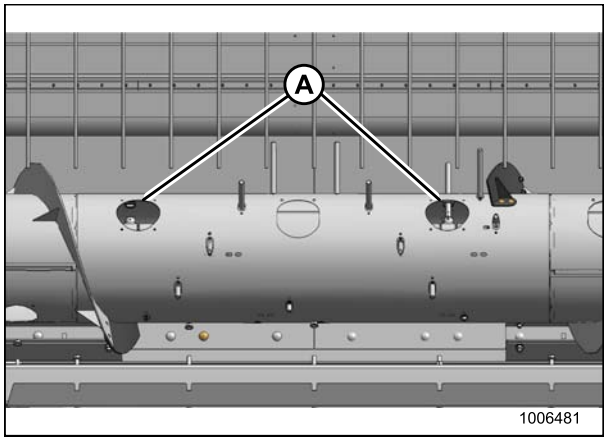

Figure 4.49: Access Holes in Auger

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

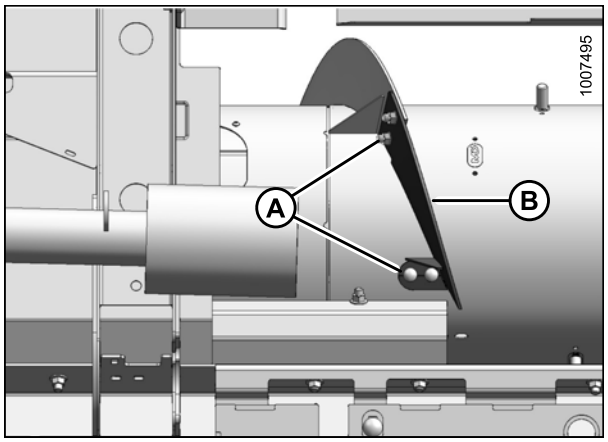

Figure 4.50: Short Flighting Extension

4. Retrieve the hardware provided in the manual storage case.
5. Place the new flighting extension (A) on auger, ensuring new flighting locates on the outboard side of the 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.

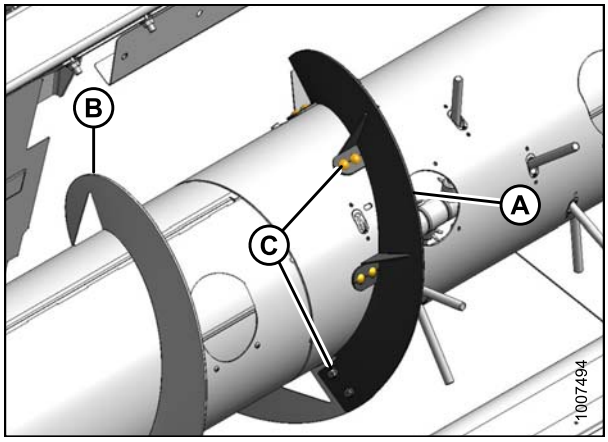

Figure 4.51: Long Flighting Extension

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

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 1/8–7/16 in. (3–11 mm). If necessary adjust clearance as per *4.3.4 Adjusting Stripper Plate Clearance, page 42*.

4.4.3 Removing Auger Fingers

Follow these steps to configure the auger fingers for a New Holland 40 in. feeder house: The total number of fingers should be 16.

1. Access the extra auger fingers through the two covers (A) one either side of center to allow access to the auger fingers (B).

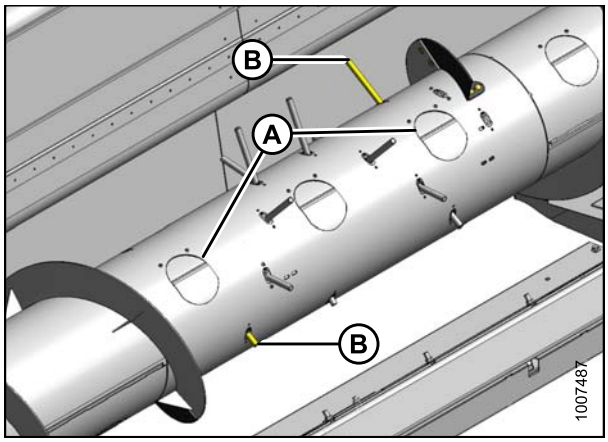

Figure 4.52: Access Holes in Auger

2. From inside the auger, remove hairpin (A) and pull finger (B) out of the 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 Steps *2., page 48* to *4., page 48* for the other finger.

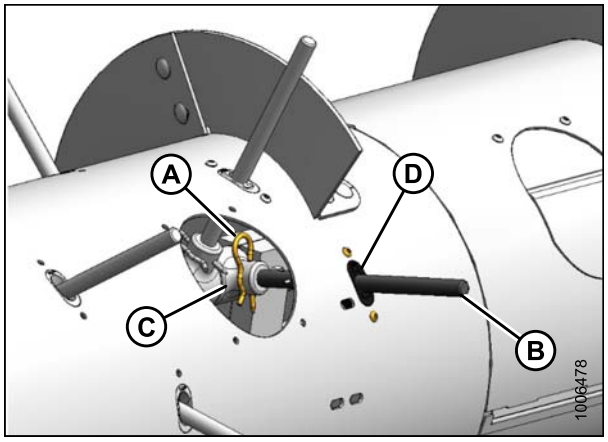

Figure 4.53: Auger Fingers

6. Remove screws (A) securing the 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.

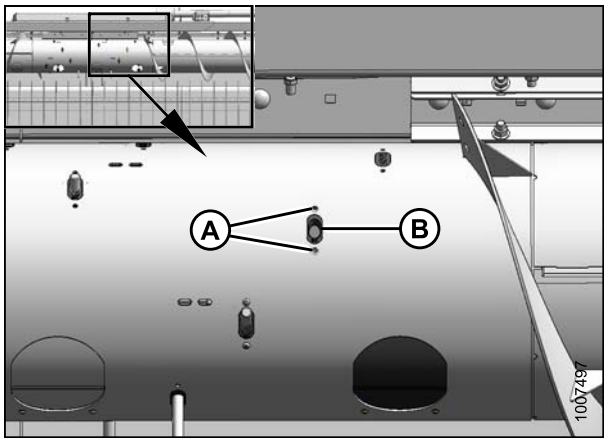

Figure 4.54: Finger Guide Plugs

9. Position plug (C) in hole from inside the auger and secure with M6 x 20 long hex socket screws (A).
10. Torque screws to 75 in·lbf (8.5 N·m).
11. Repeat Steps *6., page 48* to Step *10., page 48* for the other plastic guide.

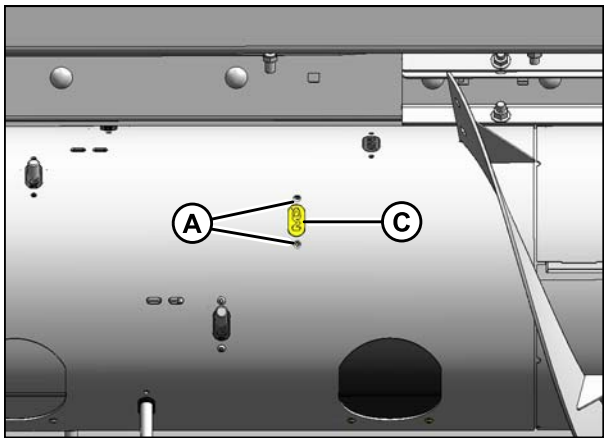

Figure 4.55: Finger Guide Plugs

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

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

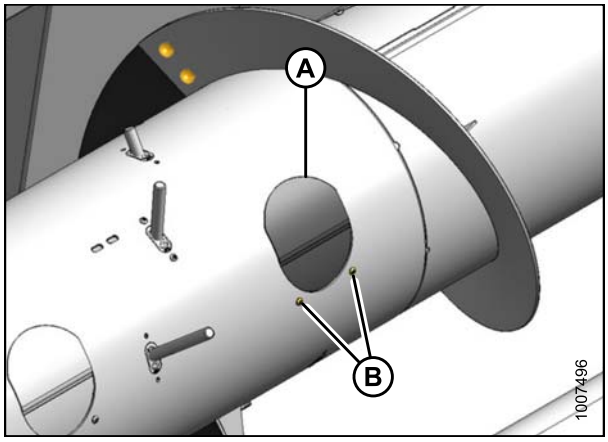

Figure 4.56: Access Cover

4.4.4 Adjusting Stripper Plate Clearance

1. Loosen nuts (A) on the stripper plate (B), and adjust the stripper plate to achieve clearance (C) of 1/8–7/16 in. (3–11 mm).
2. Tighten nuts (A).
3. Recheck clearance.

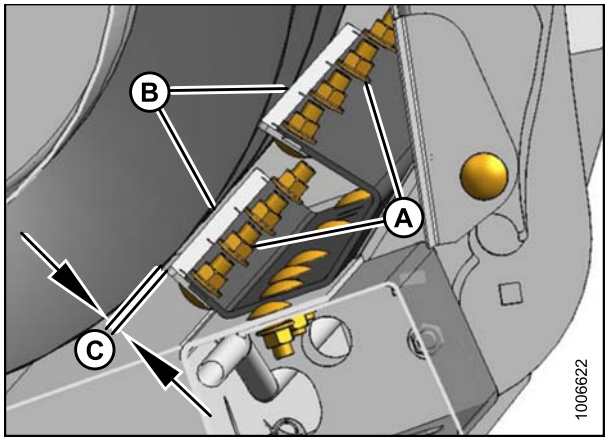

Figure 4.57: Stripper Plate Clearance

5 Attaching Header to Combine

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

Combine	Refer to
Case IH	*5.1 Attaching to Case IH Combine, page 51*
John Deere	*5.2 Attaching to John Deere 60, 70, and S Series Combine, page 54*
New Holland CR, CX Series	*5.3 Attaching to New Holland CR/CX Series Combine, page 58*
Versatile	*5.4 Attaching to Versatile Combine, page 62*

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.

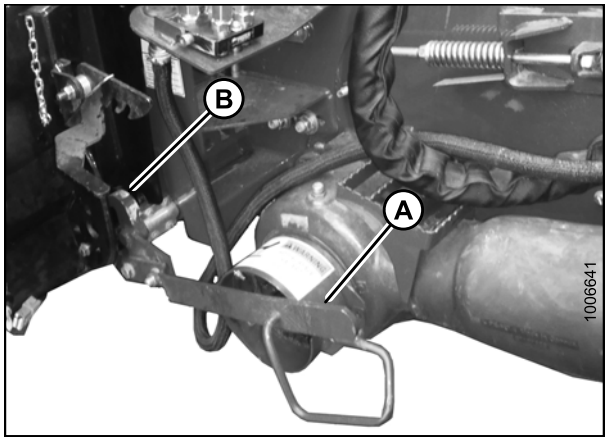

Figure 5.1: Feeder House Locks

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.

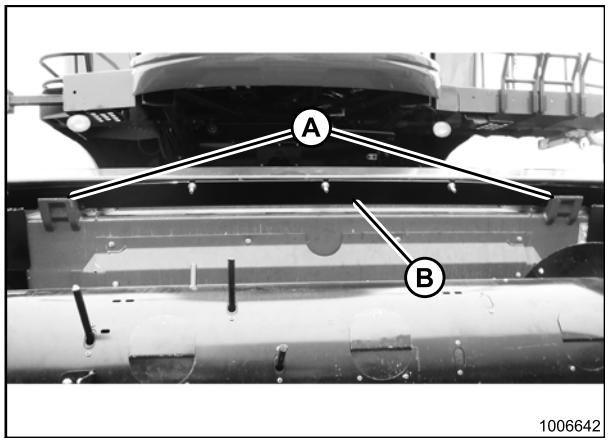

Figure 5.2: Header on Combine

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. Loosen nut (E) and adjust position of the spacer tube and bolt (D) as necessary (both sides) if locks (C) do not fully engage the spacer tube and bolt on the header. 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.

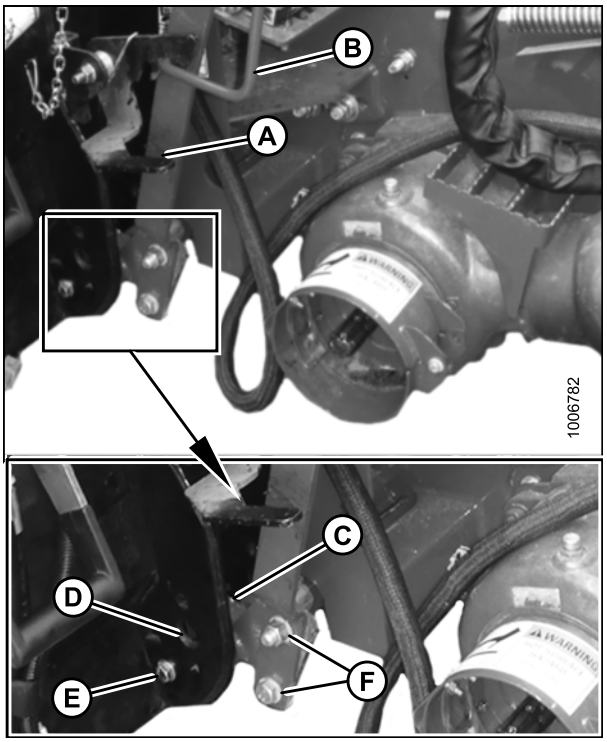

Figure 5.3: Engaging Locks

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

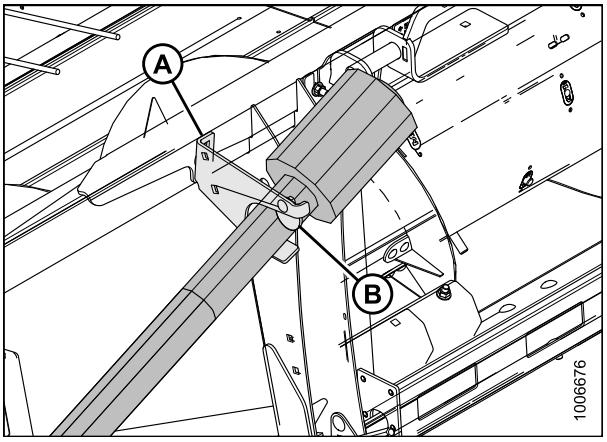

Figure 5.4: Driveline

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

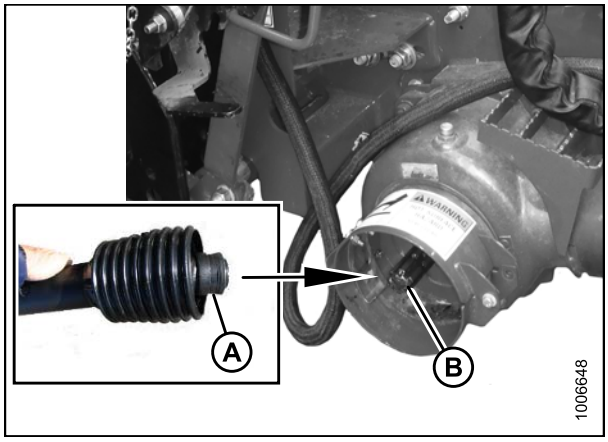

Figure 5.5: Attaching Driveline

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.

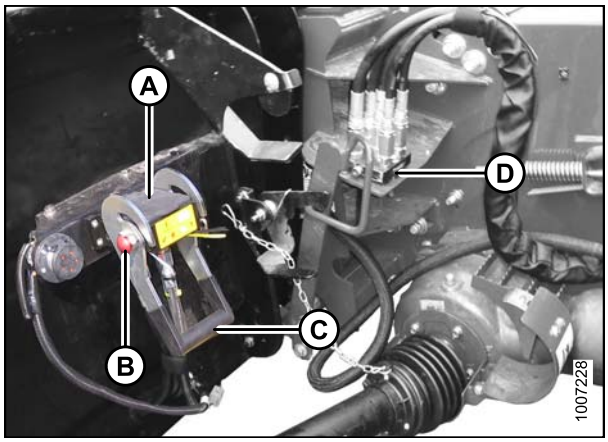

Figure 5.6: Coupler Lock

14. Position coupler (A) onto header receptacle and push handle (B) downward to engage coupler pins into 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 66*.

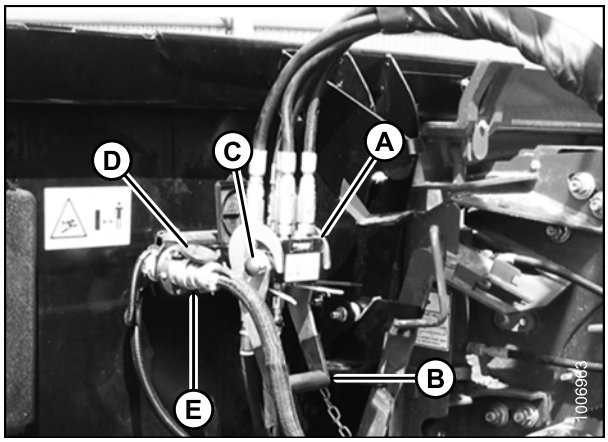

Figure 5.7: Attaching Coupler

5.2 Attaching to John Deere 60, 70, and S 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.

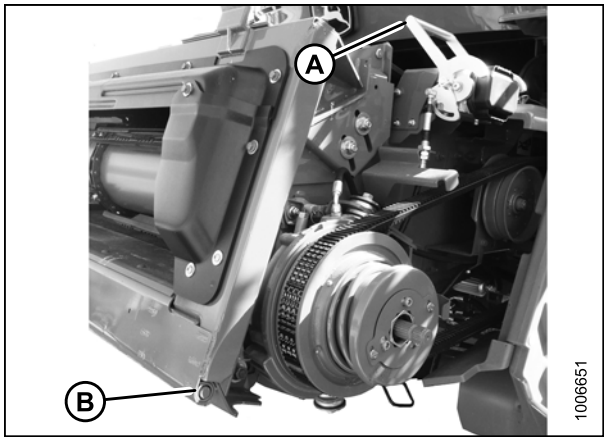

Figure 5.8: Feeder House Locks

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

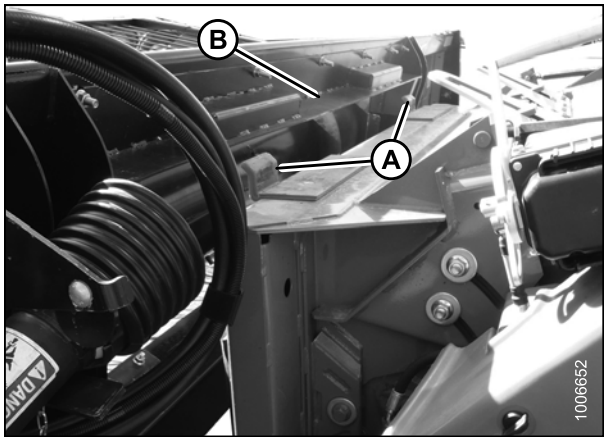

Figure 5.9: Header on Combine

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

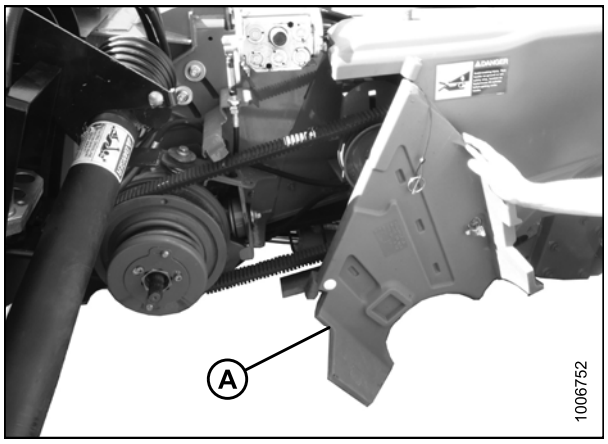

Figure 5.10: Combine Driveshield

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

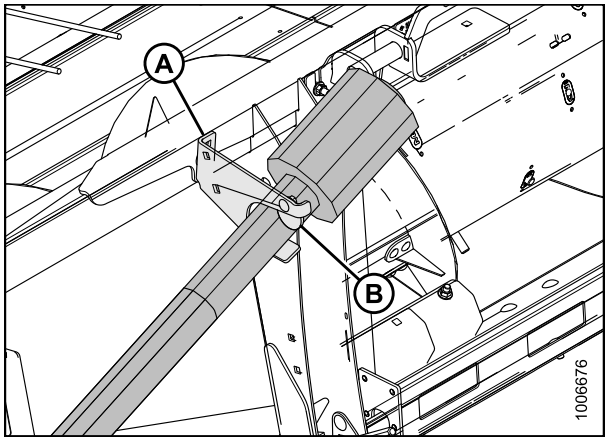

Figure 5.11: Driveline

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.

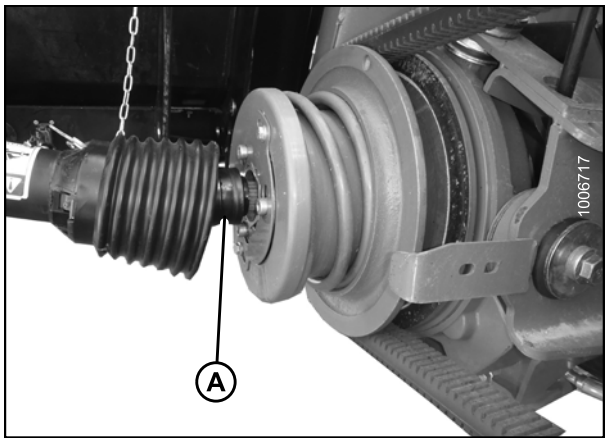

Figure 5.12: Attaching Driveline

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

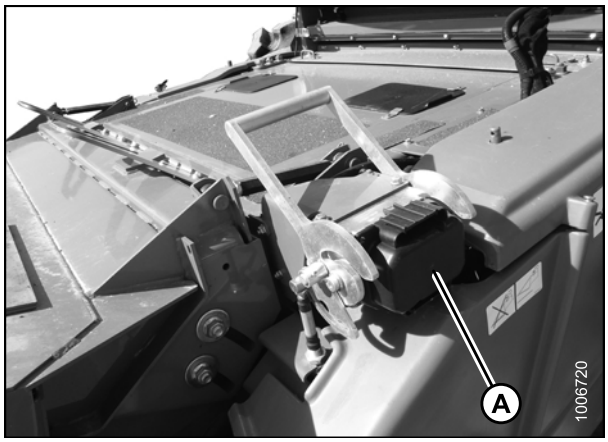

Figure 5.13: Combine Receptacle

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

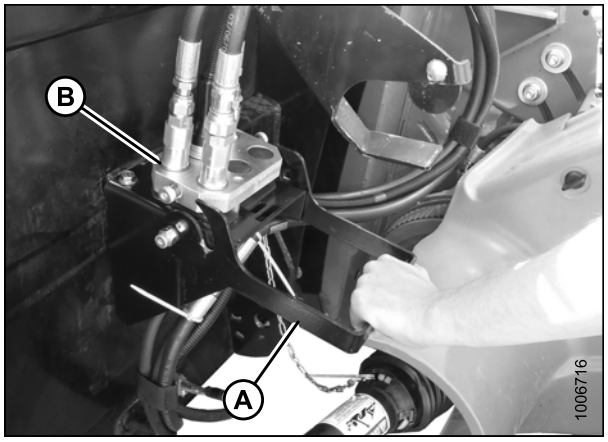

Figure 5.14: Releasing Coupler

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

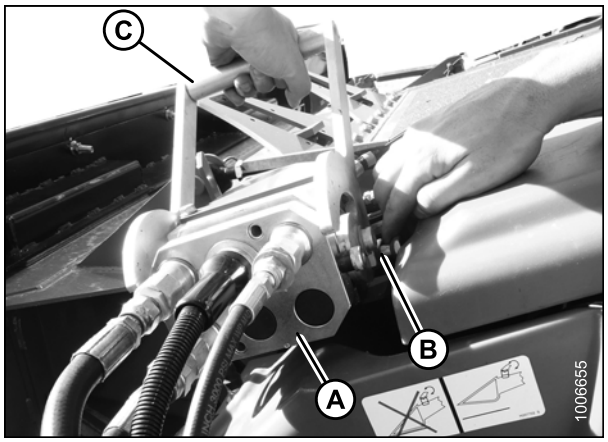

Figure 5.15: Engaging Coupler

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

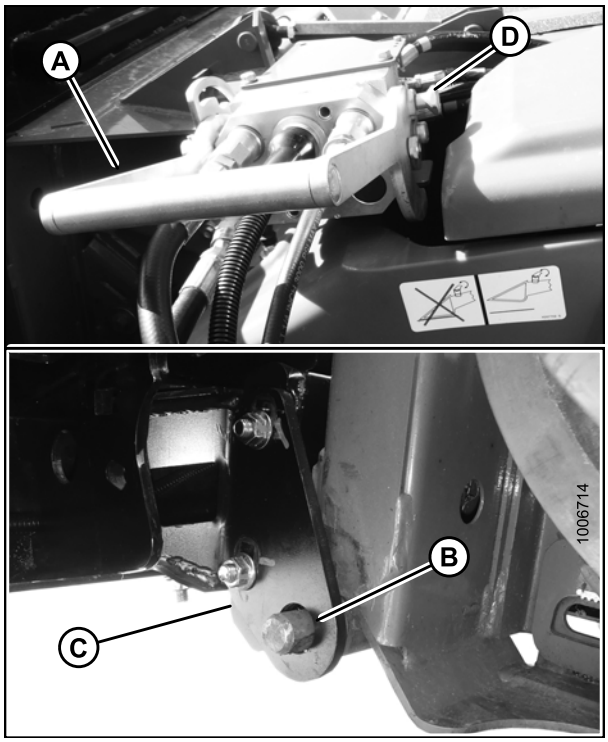

Figure 5.16: Locking Feeder House

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 66*.

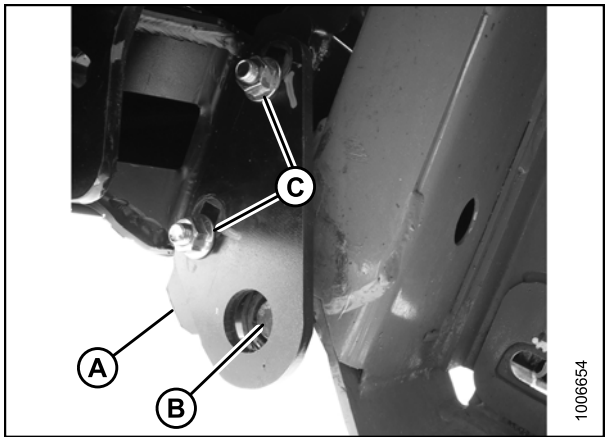

Figure 5.17: Aligning Locking Plates

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.

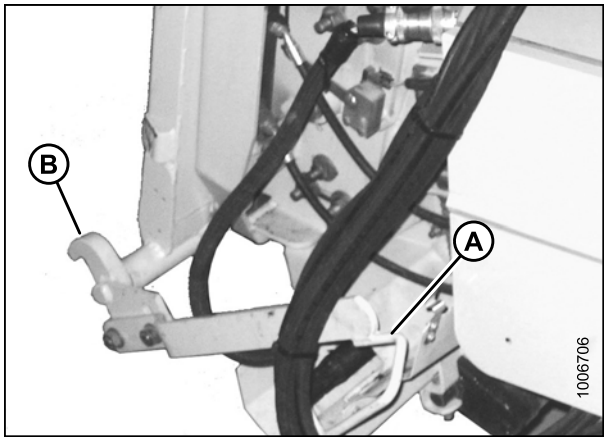

Figure 5.18: Feeder House Locks

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

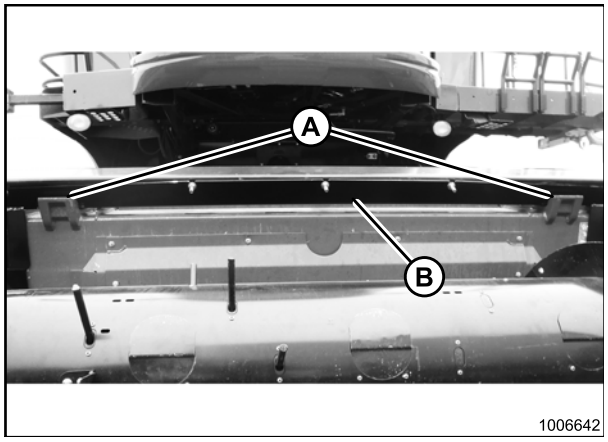

Figure 5.19: Header on Combine

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.

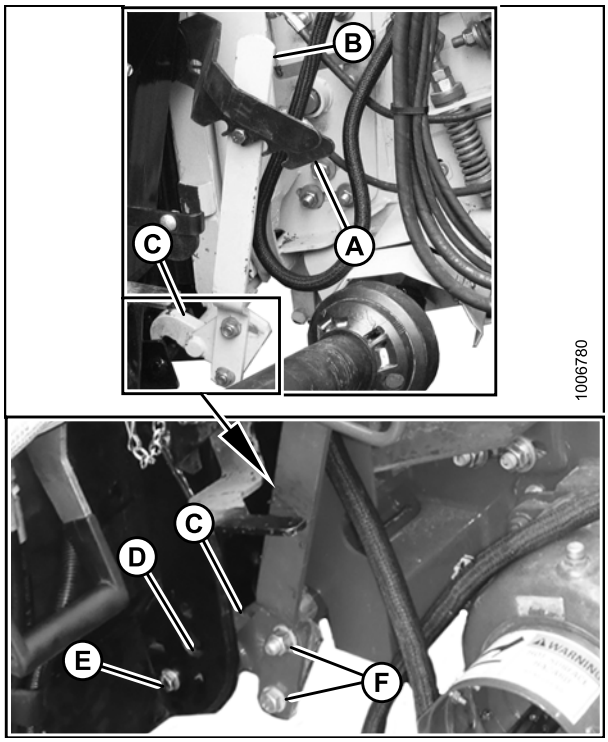

Figure 5.20: Engaging Locks

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

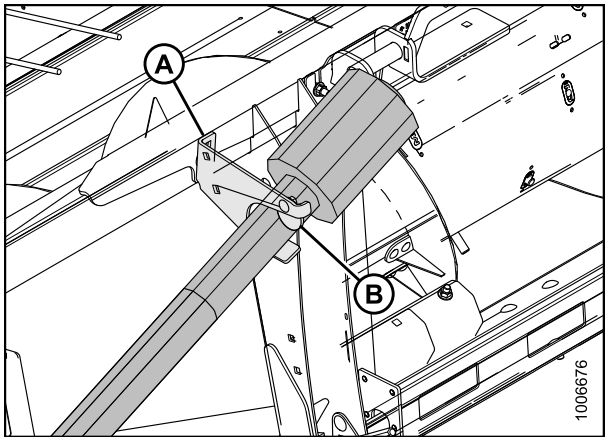

Figure 5.21: Driveline

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

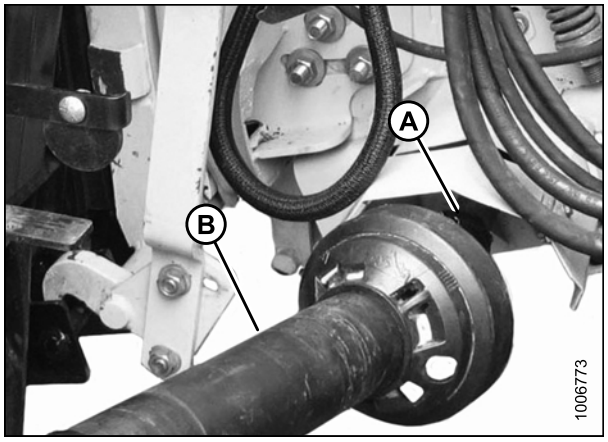

Figure 5.22: Attaching Driveline

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

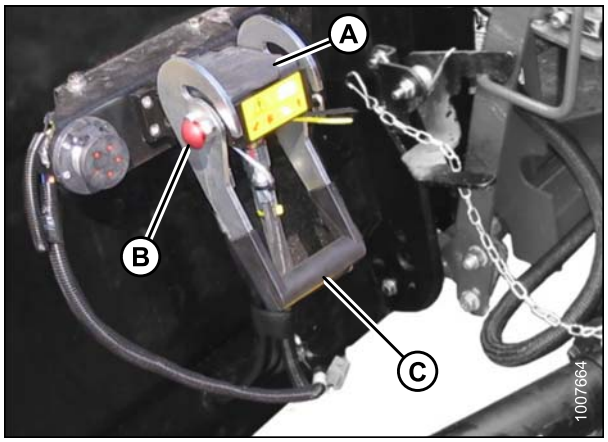

Figure 5.23: Header Receptacle

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

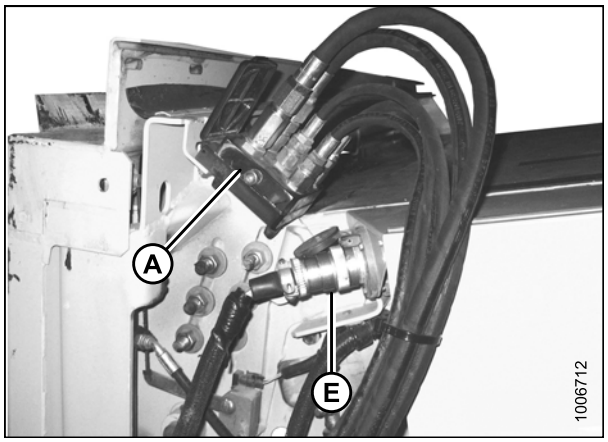

Figure 5.24: Combine Coupler/Connector

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 66*.

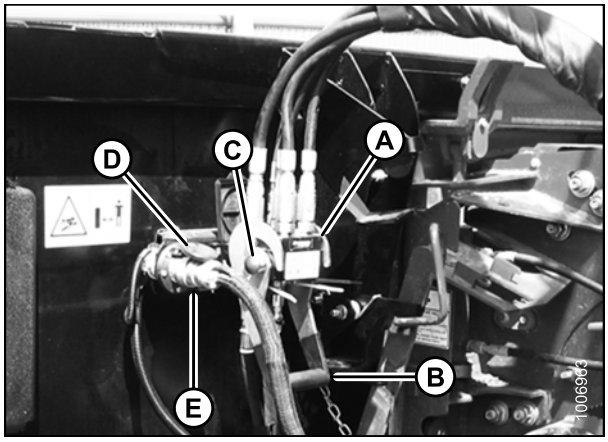

Figure 5.25: Attaching Coupler

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.

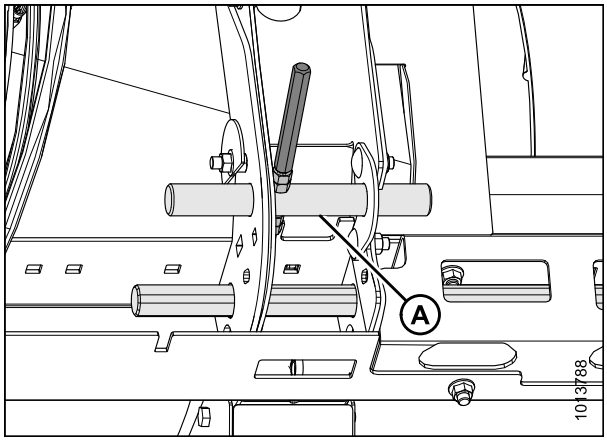

Figure 5.26: Locking Pins Retracted

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 the header frame (B).
4. Position header slightly off the ground, stop the engine, and remove key from ignition.

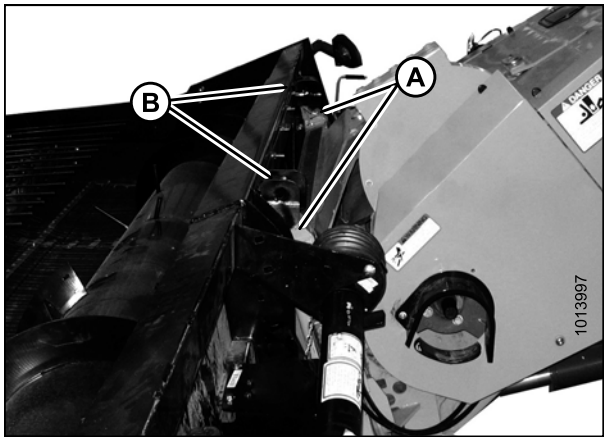

Figure 5.27: Picking Up Header

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). Check that the pin on opposite side of feeder house also is engaged.
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 top beam by performing Steps *7, page 63* to Step *12, page 64*.

   NOTE:
   If pin aligns with feeder house receptacle (C), proceed to Step *14, page 64*.

7. Measure the misalignment between pin (B) and the feeder house receptacle (C).
8. Lower header to ground until the feeder house disengages the top beam.
9. Loosen the seven bolts (A) along the top beam (B) on the auger side of the header.
10. Loosen the seven bolts (A) along the top beam (B) on the back side of the header.

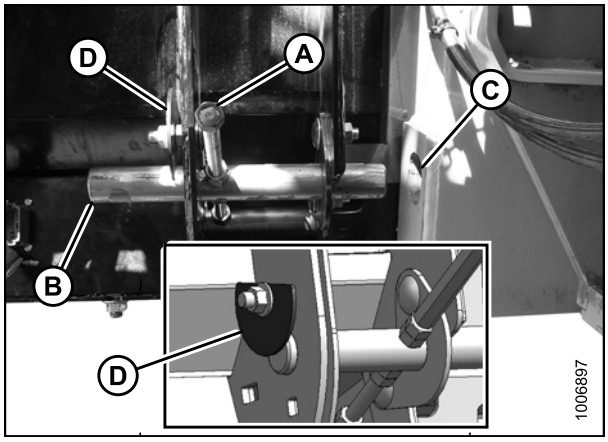

Figure 5.28: Feeder House Lock

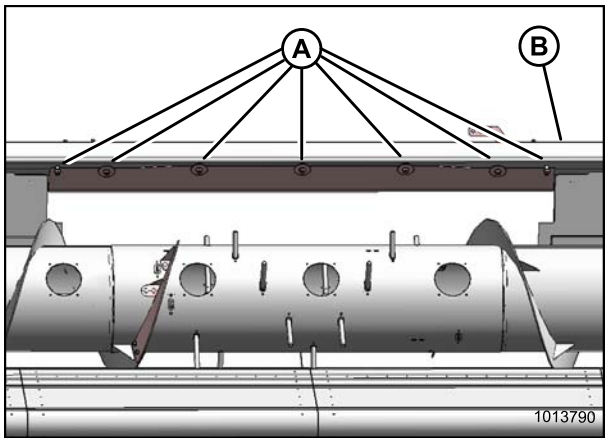

Figure 5.29: Top Beam (Front View)

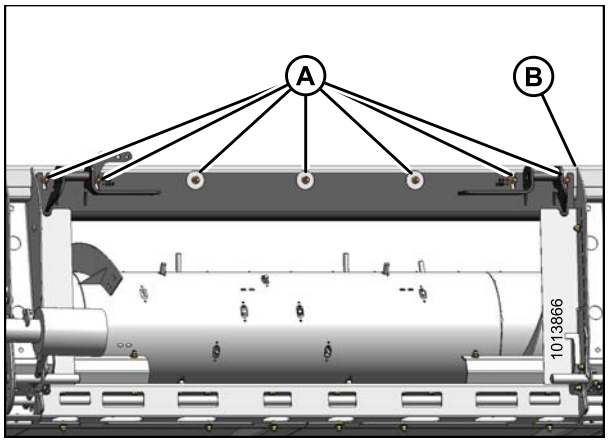

Figure 5.30: Top Beam (Rear View)

11. Move top beam (A) according to measurement in Step *7, page 63* to achieve proper alignment of locking pin and feeder house receptacle. Refer to Figure *5.28: Feeder House Lock, page 63*.
12. Tighten all bolts.
13. Go back to Step *3, page 62*.

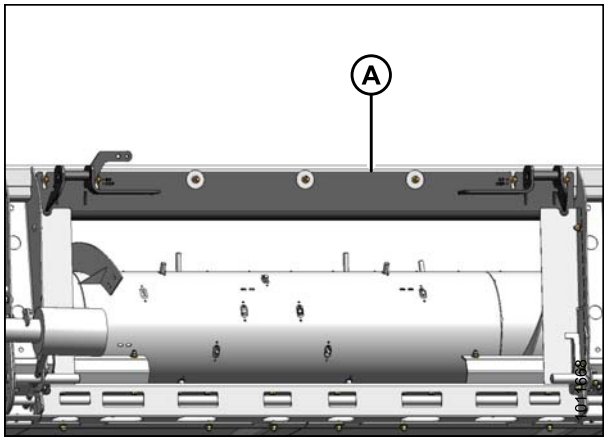

Figure 5.31: Top Beam (Rear View)

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

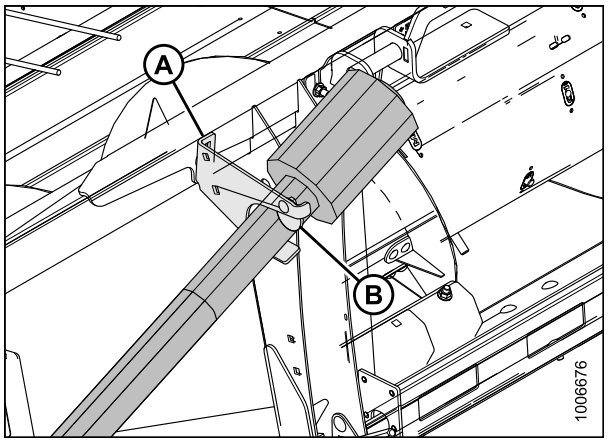

Figure 5.32: Driveline

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

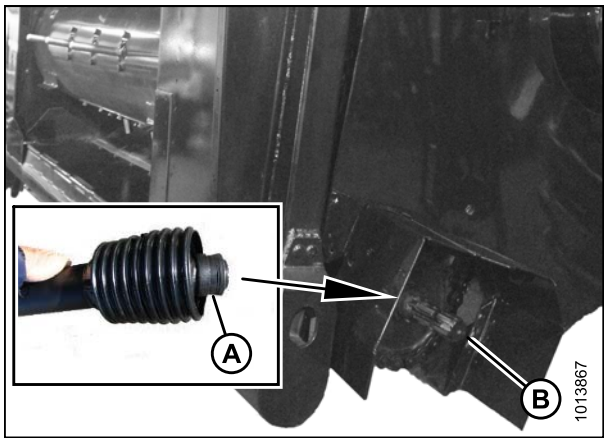

Figure 5.33: Driveline

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

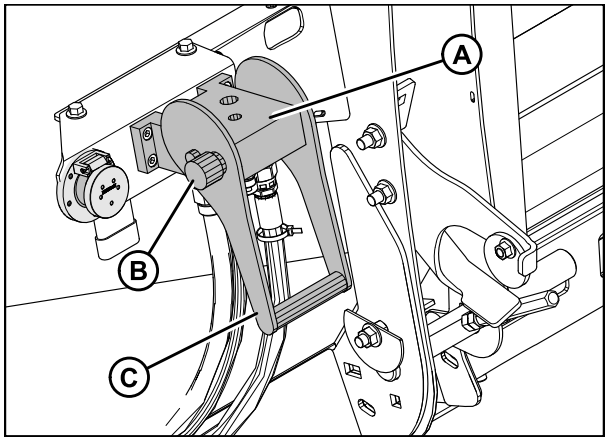

Figure 5.34: Coupler Lock

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

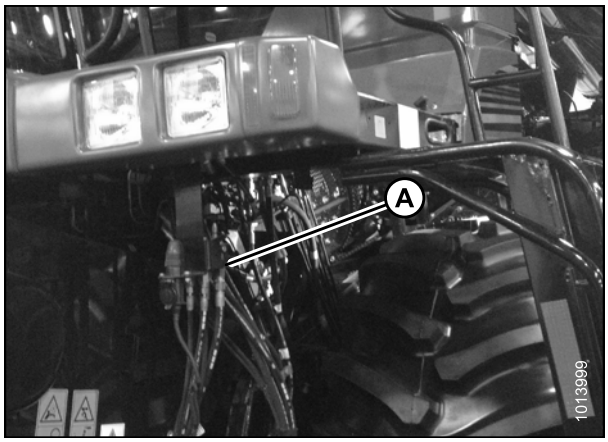

Figure 5.35: Versatile Coupler

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 header electrical receptacle.
22. Remove electrical connector (E) from storage cup on combine.
23. Align lugs on electrical connector (E) with slots in receptacle, push connector onto receptacle, and turn collar on connector to lock it in place.
24. Remove draper deck shipping braces. Refer to *5.5 Removing Deck Shipping Braces, page 66*.

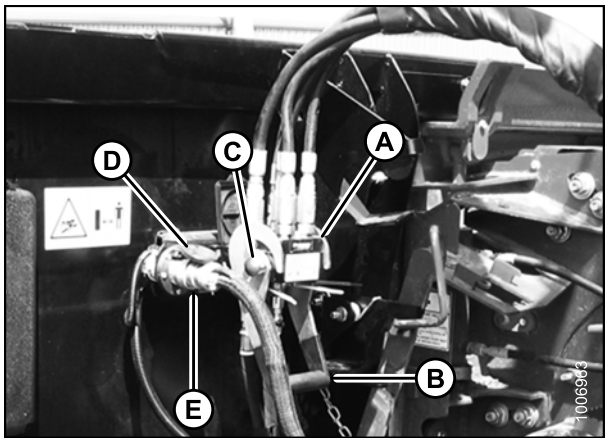

Figure 5.36: Attaching Coupler

5.5 Removing Deck Shipping Braces

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.

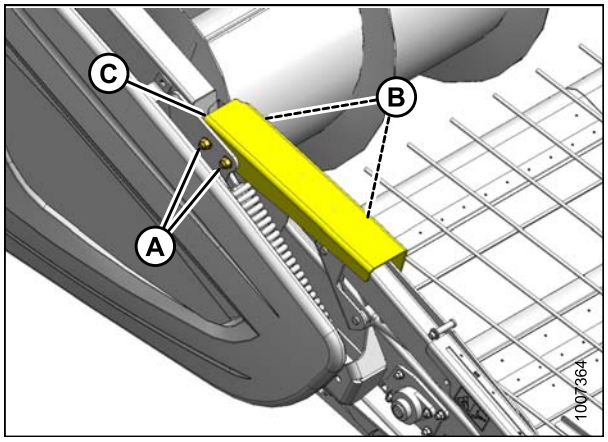

Figure 5.37: Shipping Support

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.

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. Open the left endshield. Refer to *3.4.1 Opening Left Endshield, page 20*.
2. Remove bolt (A) and remove the crop deflectors (B) and bag of installation hardware from inside the left endsheet.

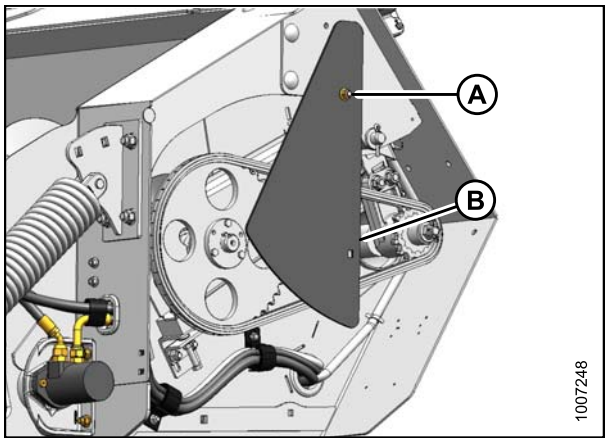

Figure 5.38: Crop Deflectors

3. Close the endshield. Refer to *3.4.2 Closing Left Endshield, page 20*.
4. Position crop deflector (A) onto 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 previous step for the opposite deflector.

   NOTE:
   The right endshield does not need to be removed.

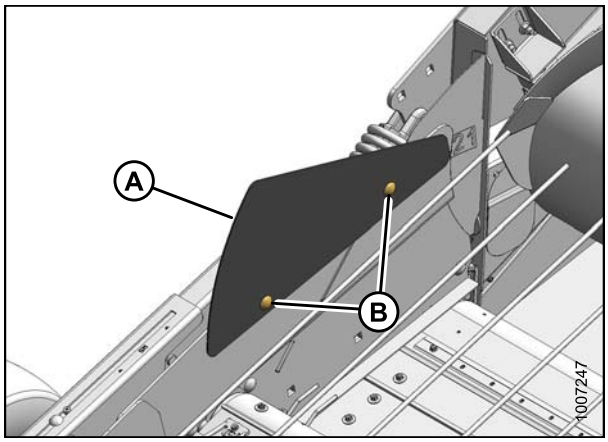

Figure 5.39: Crop Deflector

6 Predelivery Inspection

1. To avoid machine damage, check that no shipping dunnage has fallen into machine.
2. Perform the final checks as listed on the yellow Predelivery Checklist (*Predelivery Checklist, page 131*) to ensure the machine is field-ready.
3. Refer to the following subsections for detailed instructions as indicated on the Checklist.
4. Present the completed Checklist to the Dealer or Operator.

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

6.1 Auto Header Height Control (AHHC)

MacDon's Auto Header Height Control (AHHC) feature works in conjunction with the AHHC option available on certain combine models.

A sensor is installed at each end of the PW8 Pick-Up Header. These sensors 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 Auto Header Height Control; however, before using the Auto Header Height Control feature, you must do the following:

1. Ensure that the Auto Header Height Control sensor's output voltage range is appropriate for the combine. For more information, refer to *6.1.1 Height Sensor Output Voltage Range – Combine Requirements, page 70*.
2. Prepare the combine to use the Auto Header Height Control feature.
3. Calibrate the Auto Header Height Control system so that the combine can correctly interpret data from the height sensors on the header.

   NOTE:
   Once calibration is complete, you are ready to use the Auto Header Height Control feature in the field. For each combine, certain operation settings can be used to improve the performance of the Auto Header Height Control feature.

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

Refer to the following instructions for your specific combine model:

- *6.1.2 Case IH 5130/6130/7130, 7010/8010, 7120/8120/9120, and 7230/8230/9230 Combines, page 75*
- *6.1.3 John Deere 60 Series Combines, page 82*
- *6.1.4 John Deere 70 Series Combines, page 88*
- *6.1.5 John Deere S Series Combines, page 94*
- *6.1.6 New Holland Combines, page 99*

6.1.1 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	Range (Difference between High and Low Limits)
Case IH 7/8010, 5/6/7088, 7/8/9120, 5/6/7130, 5/6/7140, 7/8/9230, 7/8/9240	0.5 V	4.5 V	2.5 V
John Deere 60/70/S/T Series	0.5 V	4.5 V	2.5 V
New Holland CR/CX - 5 V system	0.5 V	4.5 V	2.5 V
New Holland CR/CX - 10 V system	2.8 V	7.2 V	4.1–4.4 V

NOTE:
For instructions on manually checking the voltage range, refer to *Manually Checking Voltage Range, page 70*.

Manually Checking Voltage Range

In some combines, the output voltage range of the Auto Header Height Control (AHHC) sensors can be checked from the cab. For instructions, refer to the combine operator's manual or the AHHC instructions later in this document.

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

   NOTE:
   Ensure the float spring is fully extended. If the float spring is not fully extended during the next step, the voltage may go out of range during operation causing a malfunction of the AHHC system. Refer to *6.1.1 Height Sensor Output Voltage Range – Combine Requirements, page 70*.

2. Shut down the combine. Position key so that power is supplied to sensors.
3. Open left endshield. Refer to *3.4.1 Opening Left Endshield, page 20*.

4. Locate left height sensor (A).

   NOTE:
   Sensor and connector may not be exactly as shown.

5. Measure the voltage between the orange signal wire (B) at #2 position, and ground (brown) wire (C) at #1 position. This is the maximum voltage for the left sensor.

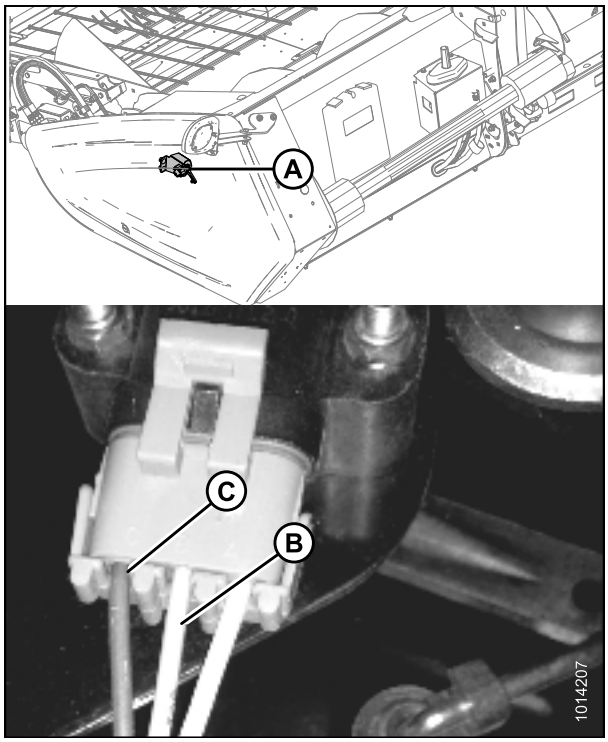

Figure 6.1: Left Height Sensor

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

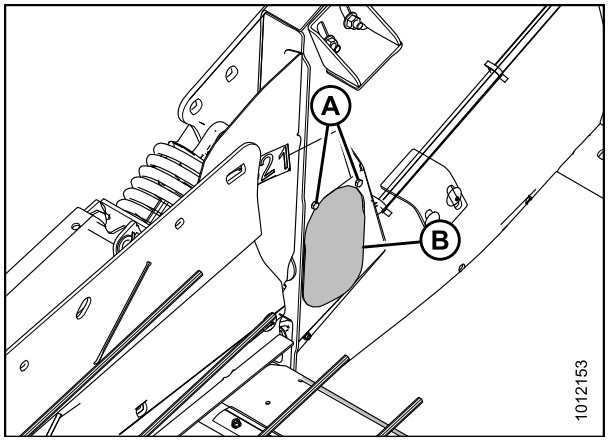

Figure 6.2: Right Access Panel

8. Locate the right height sensor (A).

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

9. Measure the voltage between the signal (orange) wire (B) at #2 position and ground (brown) wire (C) at #1 position. This is the maximum voltage for the right sensor.
10. Start combine and fully lower the combine feeder house. The float spring should be fully compressed. Shut down the combine. Position key so that power is supplied to sensors.
11. Repeat the voltage measurements for both sensors. These are the minimum voltages.

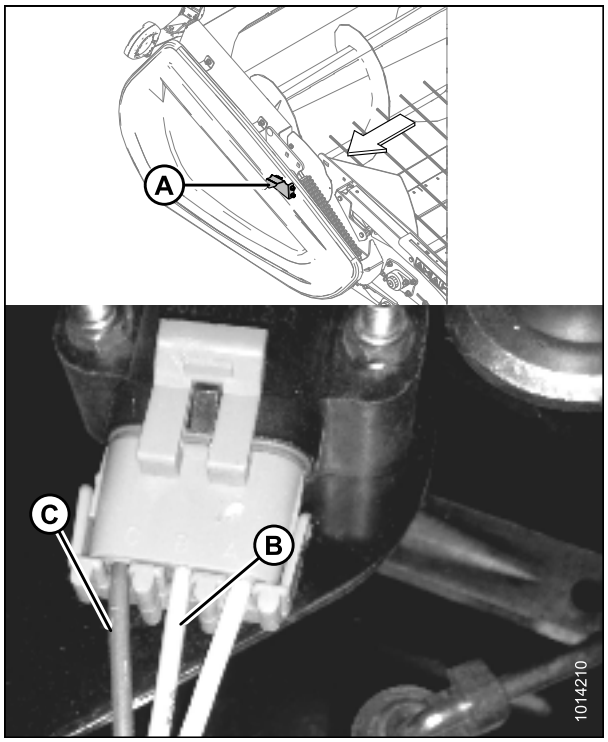

Figure 6.3: Right Height Sensor – View from Inboard Side of Endsheet

12. Compare voltage measurements to specified values.
13. If the sensor voltage is outside the low and high limits, or if the voltage range is less than the specified value, adjustments are required. For instructions, refer to *Adjusting Header Height Control Voltage Range (Left Side), page 72* or *Adjusting Header Height Control Voltage Range (Right Side), page 73*.

Adjusting Header Height Control 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 the ground, shut down combine, and remove key from ignition.
2. Open the left endshield. Refer to *3.4.1 Opening Left Endshield, page 20*.

3. Loosen nuts (A).
4. Rotate control (B) until desired voltage range is achieved. Refer to *6.1.1 Height Sensor Output Voltage Range – Combine Requirements, page 70*.

   NOTE:
   If the voltage range is too large or too small, you may need to relocate the linkage rod (C) to a different hole in sensor control arm (D). If that doesn't work, relocate the linkage rod (C) to a different hole in sensor control arm (E).
5. Close left endshield. Refer to *3.4.2 Closing Left Endshield, page 20*.

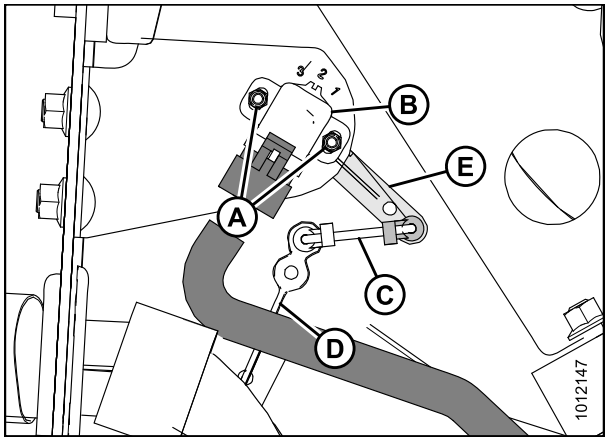

Figure 6.4: Left Header Height System

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

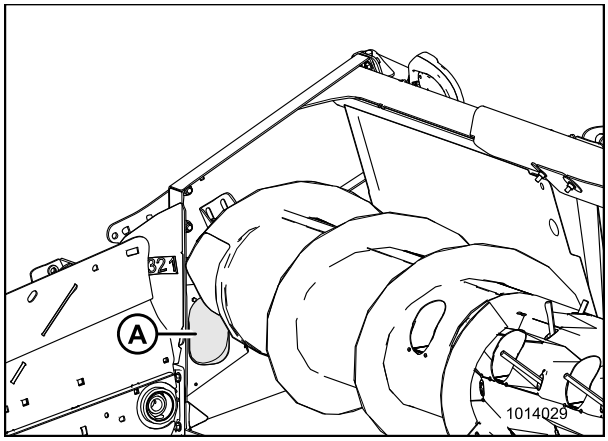

Figure 6.5: Right Access Panel

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

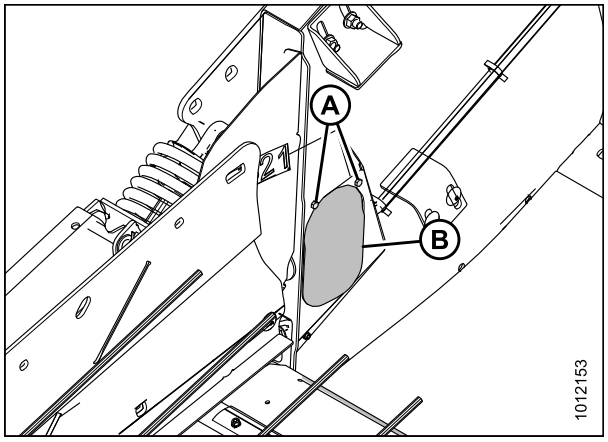

Figure 6.6: Right Access Panel

6. Loosen nuts (A).
7. Rotate control (B) until desired voltage range is achieved. Refer to *6.1.1 Height Sensor Output Voltage Range – Combine Requirements, page 70*.

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

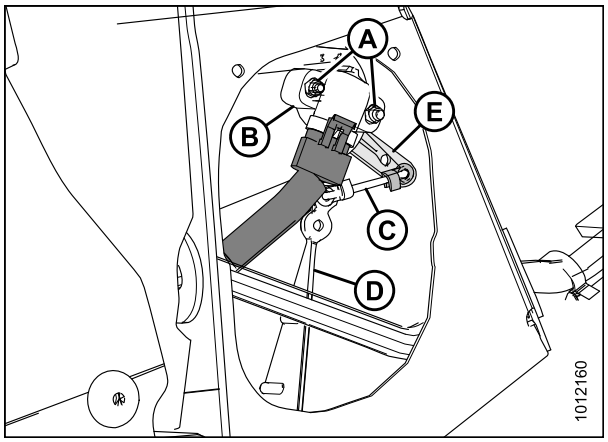

Figure 6.7: Right Header Height System

8. Once complete Install the access panel (B), secure it with bolts (A).

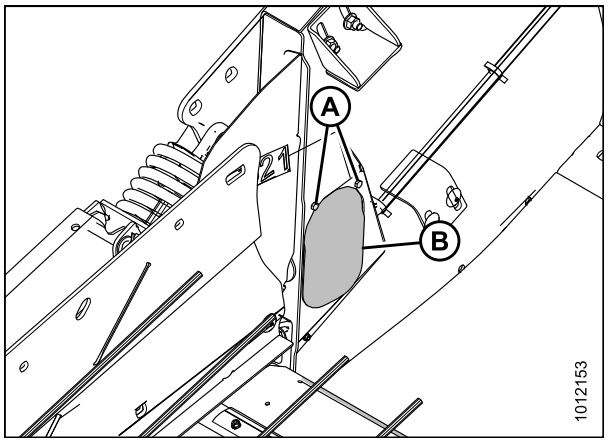

Figure 6.8: Header Height System (Auger Removed for Clarity)

6.1.2 Case IH 5130/6130/7130, 7010/8010, 7120/8120/9120, and 7230/8230/9230 Combines

Checking Voltage Range from the Combine Cab (Case 8010)

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

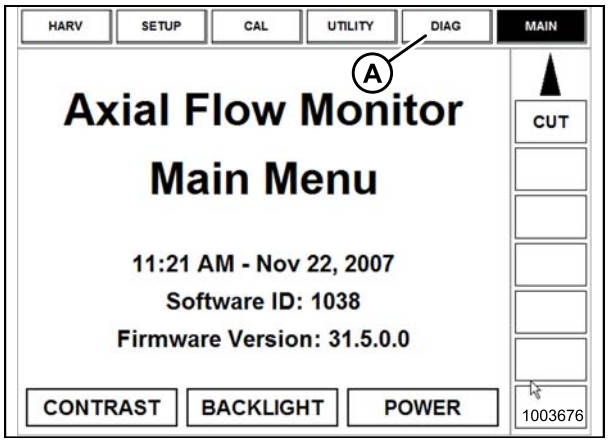

Figure 6.9: Case 8010 Combine Display

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

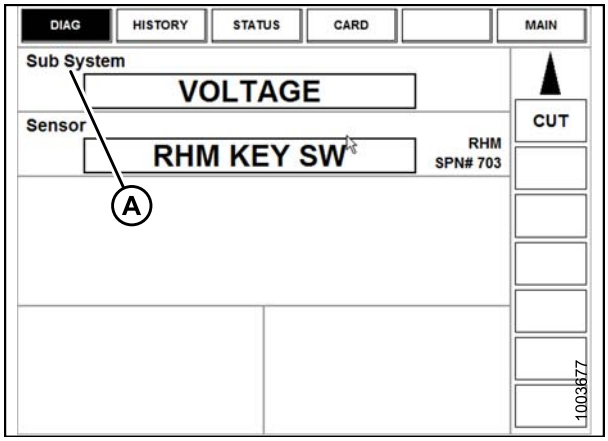

Figure 6.10: Case 8010 Combine Display

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

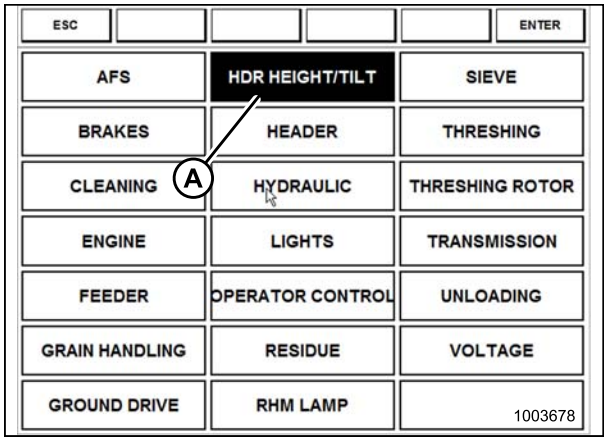

Figure 6.11: Case 8010 Combine Display

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

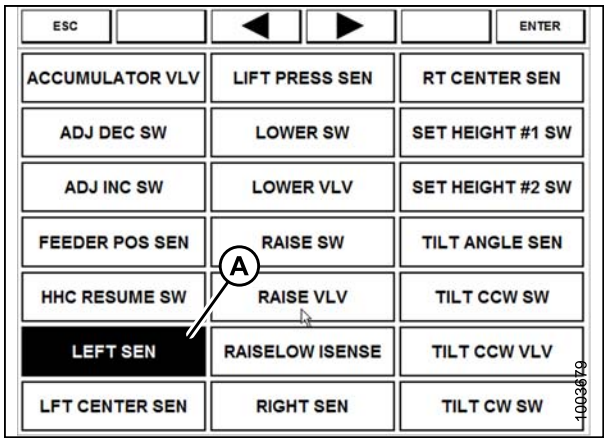

Figure 6.12: Case 8010 Combine Display

6. If the sensor voltage is not within the low and high limits shown in *6.1.1 Height Sensor Output Voltage Range – Combine Requirements, page 70*, or if the range between the low and high limits is insufficient, you need to make adjustments. For instructions, refer to *Adjusting Header Height Control Voltage Range (Left Side), page 72* and *Adjusting Header Height Control Voltage Range (Right Side), page 73*.

Figure 6.13: Case 8010 Combine Display

Checking Voltage Range from the Combine Cab (Case IH 5130/6130/7130, 7010/8010; 7120/8120/9120; 7230/8230/9230)

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

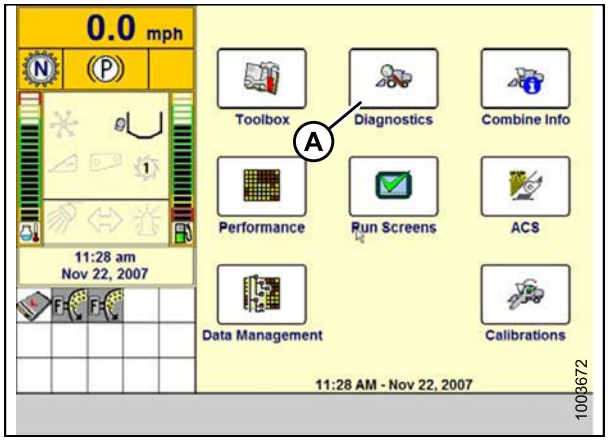

Figure 6.14: Case IH Combine Display

4. Select the GROUP arrow (A). The GROUP dialog box.

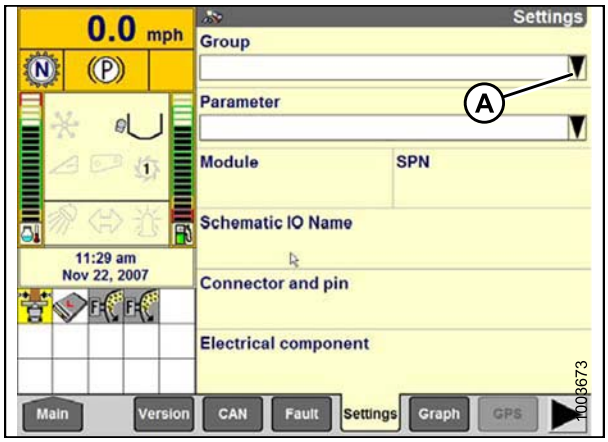

Figure 6.15: Case IH Combine Display

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

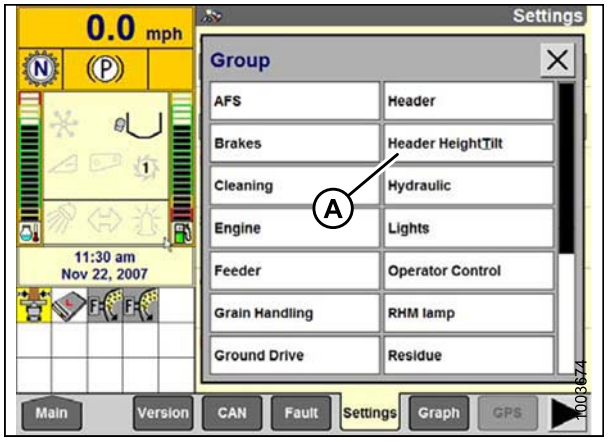

Figure 6.16: Case IH Combine Display

6. Select LEFT HEADER HEIGHT SEN (A), and then select the GRAPH button (B). The exact voltage is displayed at top of 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 *6.1.1 Height Sensor Output Voltage Range – Combine Requirements, page 70*, or if the range between the low and high limits is insufficient, you need to make adjustments. For instructions, refer to *Adjusting Header Height Control Voltage Range (Left Side), page 72* and *Adjusting Header Height Control Voltage Range (Right Side), page 73*.

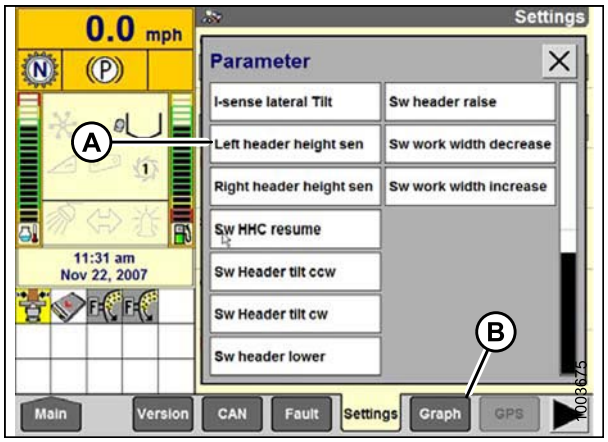

Figure 6.17: Case IH Combine Display

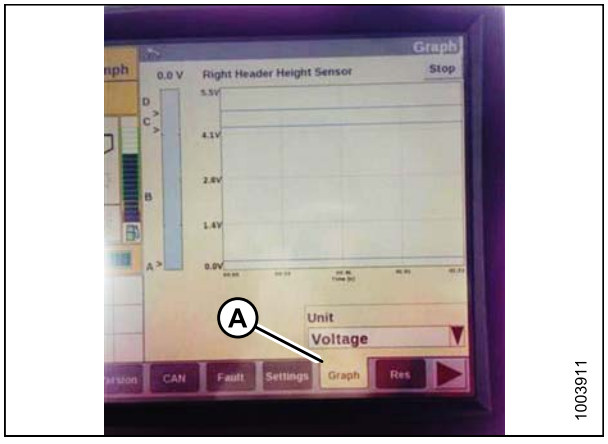

Figure 6.18: Case IH Combine Display

Calibrating the Auto Header Height Control (Case IH 5130/6130/7130, 7010/8010; 7120/8120/9120; 7230/8230/9230)

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 the Auto Header Height Control System (Case Combines with Version 28.00 Software), page 81*.

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. Select TOOLBOX on the MAIN page, and then select HEADER.
3. Set appropriate HEADER STYLE.

Figure 6.19: Case IH Combine Display

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

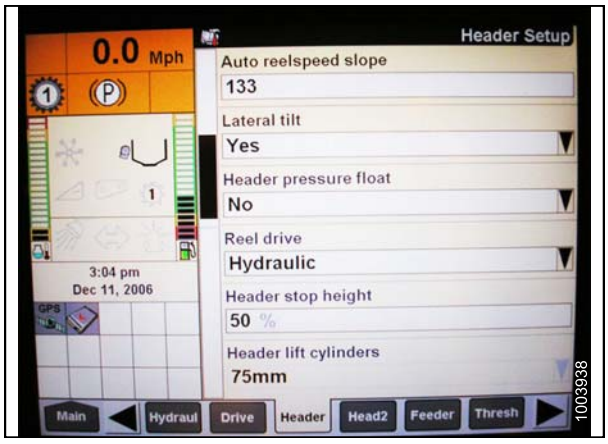

Figure 6.20: Case IH Combine Display

6. Install REEL FORE-BACK (if applicable).
7. Set HEIGHT SENSITIVITY to desired value. The recommended starting point is 180.

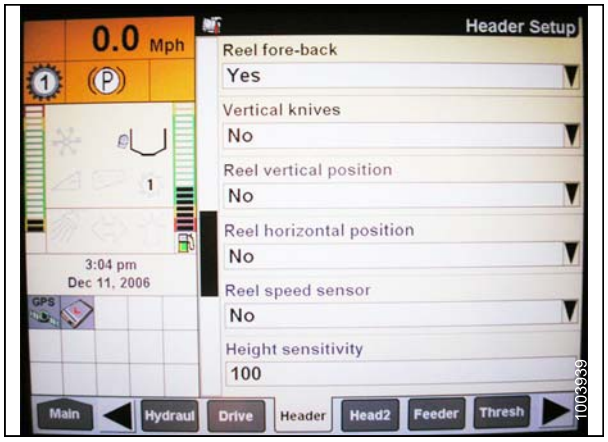

Figure 6.21: Case IH Combine Display

8. Install FORE-AFT CONTROL, and HDR FORE-AFT TILT (if applicable).

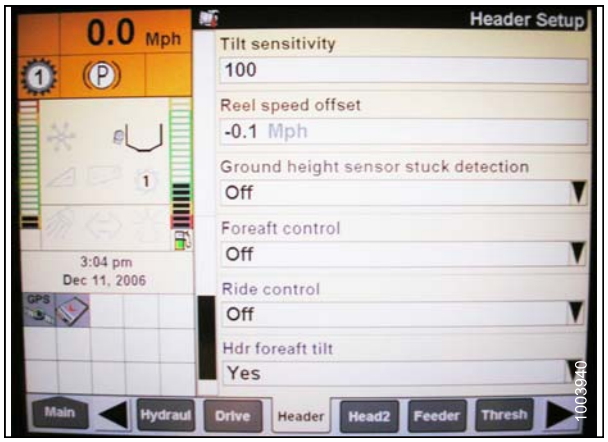

Figure 6.22: Case IH Combine Display

9. Press HEAD2 at bottom of page.
10. Ensure HEADER TYPE is PICK-UP.

NOTE:
If recognition resistor is plugged in to header harness, you will not be able to change this.

11. Set cutting type to PLATFORM.
12. Set appropriate HEADER WIDTH and HEADER USAGE.

Image Tag Expected within Figure Tag
Case IH Combine Display

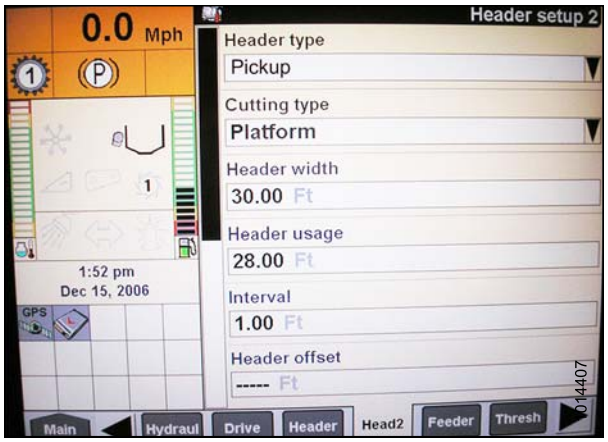

Figure 6.23: Case IH Combine Display

Calibrating the Auto Header Height Control System (Case Combines with Version 28.00 Software)

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

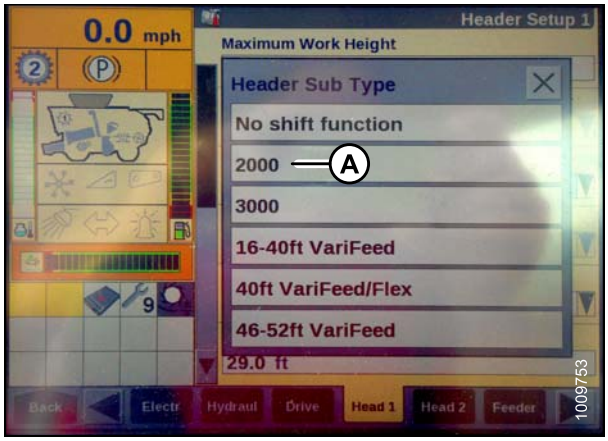

Figure 6.24: Combine Display

4. Locate the HEADER SENSORS and HEADER PRESSURE FLAT 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 the HEADER PRESSURE FLAT field.

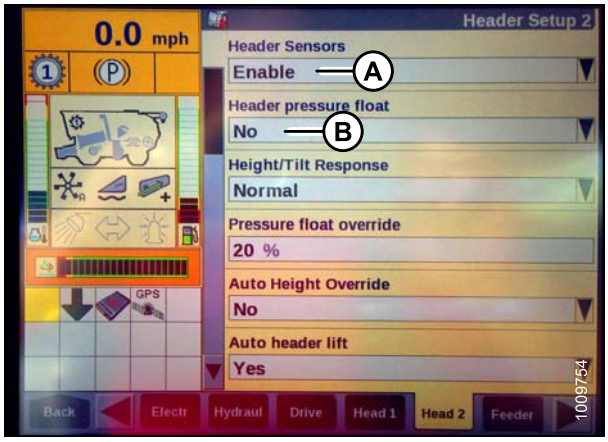

Figure 6.25: Combine Display

7. Ensure AUTO HEIGHT icon (A) appears on the monitor and is displayed as shown at (B). When the header is set for cutting on the ground, this verifies that the combine is correctly using the potentiometers on the header to sense ground pressure.

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

Figure 6.26: Combine Display

6.1.3 John Deere 60 Series Combines

Checking Voltage Range from the Combine Cab (John Deere 60 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. Raise the header until the header wheels are 6 inches (150 mm) above the ground.

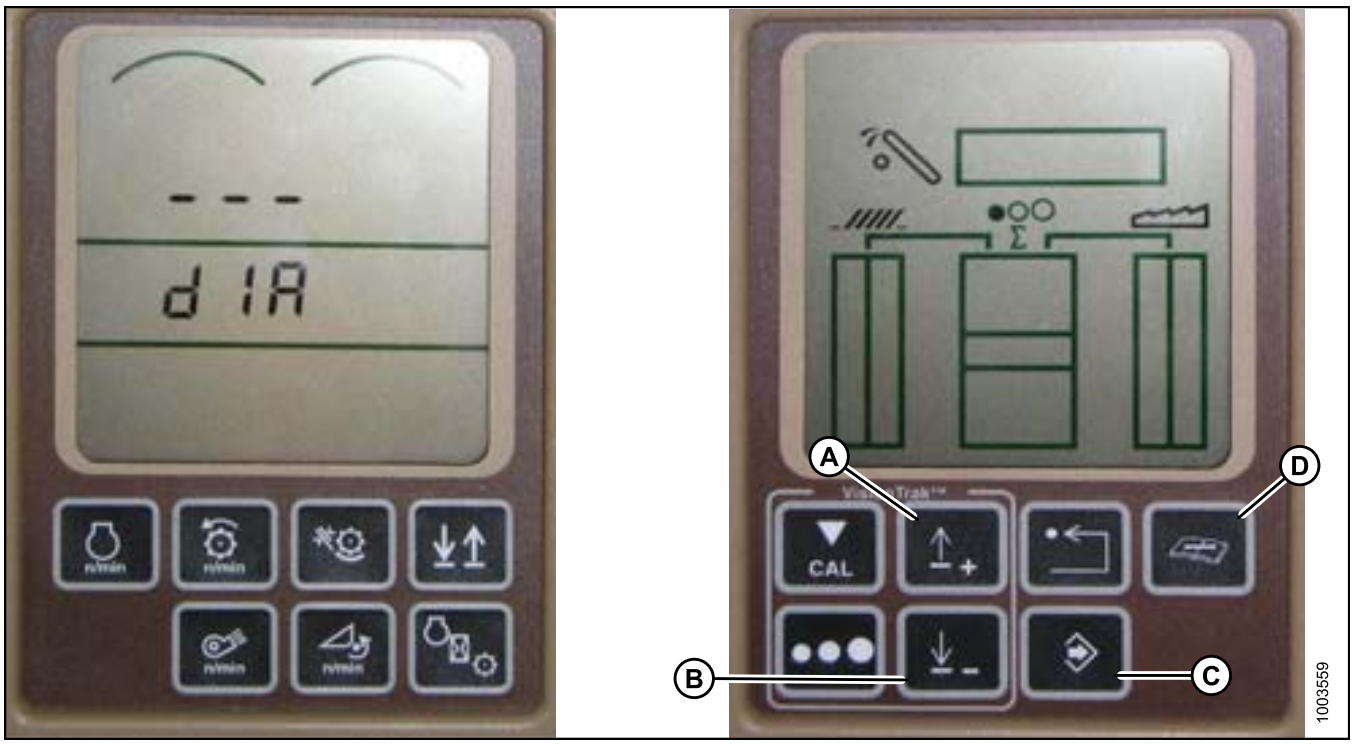

Figure 6.27: John Deere Combine Display

2. Press the diagnostic button (D) on the HHS monitor (the button with the open book with the wrench on top of it) dIA appears on the monitor.
3. Press the up button (A) until EO1 appears on the monitor (these are the header adjustments).
4. Press the ENTER button (C).
5. Press up (A) or down (B) until 24 is displayed on the top portion of the monitor. This is the voltage reading of the sensor.
6. Start the combine and lower the feeder house to the ground until the feeder house stops moving.

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

7. Check the sensor reading on the monitor.
8. Raise the header so it is just off the ground and check the sensor reading again.
9. If the sensor voltage is not within the low and high limits shown in *6.1.1 Height Sensor Output Voltage Range – Combine Requirements, page 70*, or if the range between the low and high limits is insufficient, you need to make adjustments. For instructions, refer to *Adjusting Header Height Control Voltage Range (Left Side), page 72* and *Adjusting Header Height Control Voltage Range (Right Side), page 73*.

Calibrating the Auto Header Height Control (John Deere 60 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. Start the combine.
2. Press the DIAGNOSTIC button (A) on the monitor. DIA appears on the monitor.
3. Press the CAL button (B). DIA-CAL appears on the monitor.

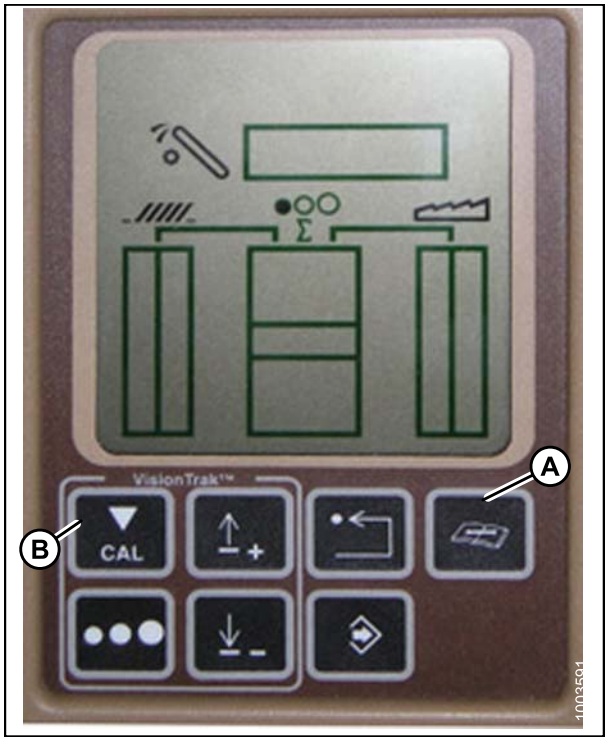

Figure 6.28: John Deere Combine Display

4. Press the UP or DOWN buttons until HDR appears on the monitor.
5. Press the ENTER button. HDR H-DN appears on the monitor.

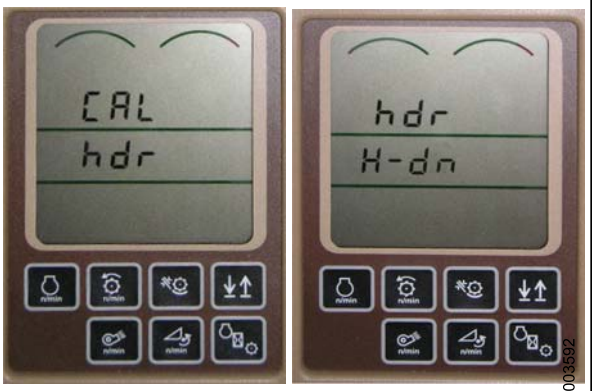

Figure 6.29: John Deere Combine Display

6. Fully lower feeder house to the ground.

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

7. Press the CAL button (A) to save the calibration of the header. HDR H-UP appears on the monitor.
8. Raise the header three feet off the ground and press the CAL (A) button. EOC appears on the monitor.
9. Press the ENTER button (B) to save the calibration of the header. Your AHHC is now calibrated.

NOTE:
If an error code appears during calibration, the sensor is out of voltage range and will require adjustment. Refer to *Checking Voltage Range from the Combine Cab (John Deere 60 Series), page 82*.

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

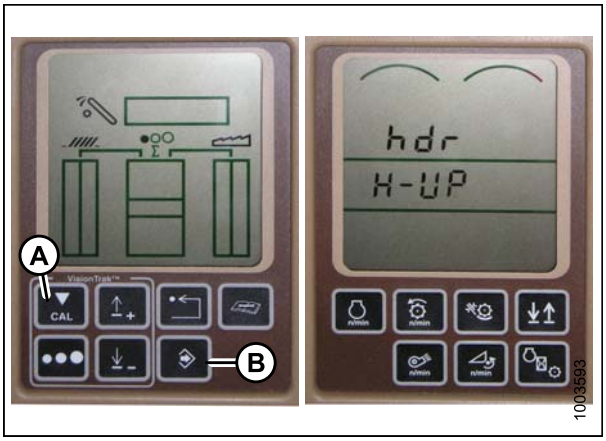

Figure 6.30: John Deere Combine Display

Turning the Accumulator Off (John Deere 60 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. Press the DIAGNOSTIC button (A) on the monitor. DIA appears on the monitor.
2. Press the UP button (B) until EO1 appears on the monitor, and press ENTER (D). This is the header adjustment.
3. Press the UP (B) or DOWN (C) button until 132 is displayed on the top portion of the monitor. This is the reading for the accumulator.
4. Press ENTER (D) to select 132 as the accumulator reading (this will allow you to change the display to a three-digit number so it has a 0 in it, for example, x0x).
5. Press the UP (B) or DOWN (C) button until the desired number is displayed, and press the CAL (E) button.
6. Press ENTER (D) to save the changes. The accumulator is now deactivated.

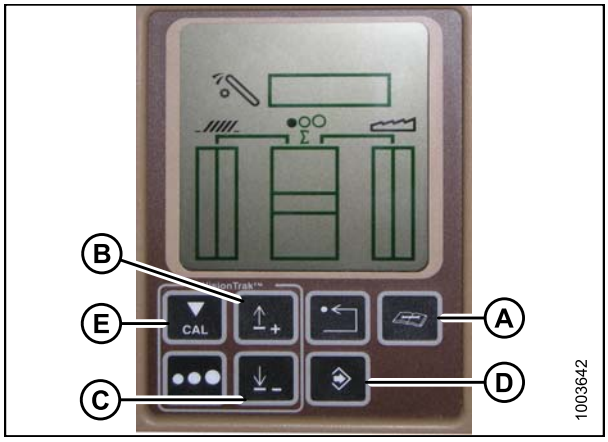

Figure 6.31: John Deere Combine Display

Setting the Sensing Grain Header Height to 50 (John Deere 60 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.

To set the sensing grain header height, follow these steps:

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

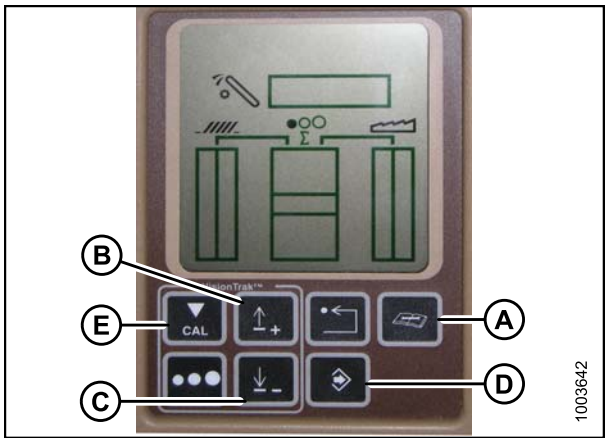

Figure 6.32: John Deere Combine Display

NOTE:
Do **NOT** use the active header float function (A) in combination with the MacDon Auto Header Height Control (AHHC)—the two systems will counteract one another. The header symbol (B) on the display should NOT have a wavy line under it and should appear exactly as shown on the Active Header Control Display in Figure *6.33: John Deere Combine Display, page 86*.

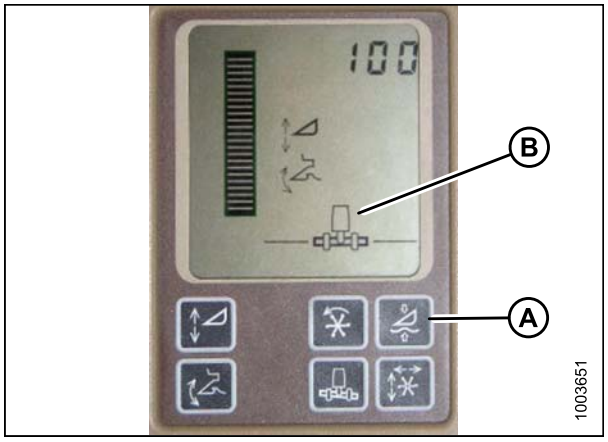

Figure 6.33: John Deere Combine Display

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

This is also known as dead band adjustment.

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. Press the DIAGNOSTIC button (A) on the monitor. DIA appears on the monitor.
2. Press the UP button (B) until EO1 appears on the monitor, and press ENTER (D). This is the header adjustment.
3. Press the UP (B) or DOWN (C) button until 112 is displayed on the 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 the sensitivity setting (this will allow you to change the first digit of the number sequence).
5. Press UP (B) or DOWN (C) until the desired number is displayed, then press the CAL (E) button. This will bring you to the second digit. Repeat this procedure until the desired setting is achieved.
6. Press ENTER (D) to save changes.

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

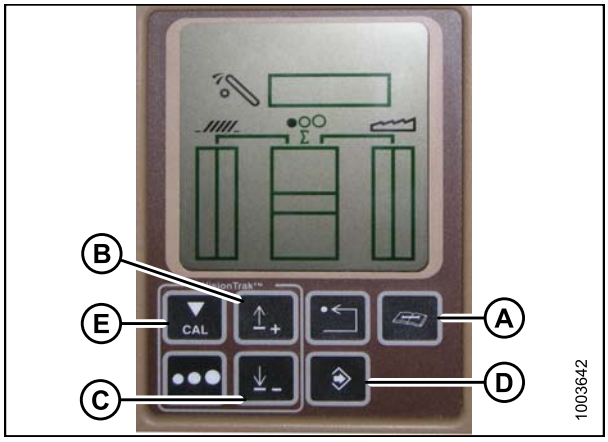

Figure 6.34: John Deere Combine Display

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

This adjusts the point at which the restrictor valve opens allowing full flow to the lift cylinders.

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. Press the DIAGNOSTIC button (A) on the monitor. DIA appears on the monitor.
2. Press the UP button (B) until EO1 appears on the monitor and press ENTER (C). This is the header adjustment.
3. Press the UP (B) or DOWN button until 114 is displayed on the top portion of the monitor. This is the setting that adjusts when the fast drop rate starts with respect to the 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 the fast drop rate (this will allow you to change the first digit of the number sequence).
5. Press UP (B) or DOWN (E) until the desired number is displayed, then press the CAL button (D). This will bring you to the second digit. Repeat this procedure until the desired setting is achieved.
6. Press ENTER (C) to save changes.

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

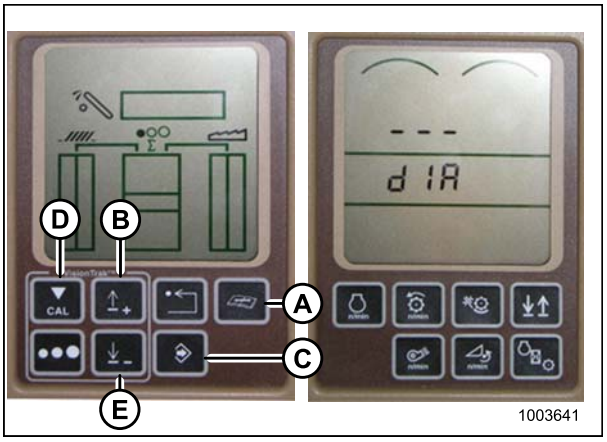

Figure 6.35: John Deere Combine Display

6.1.4 John Deere 70 Series Combines

Checking Voltage Range from the Combine Cab (John Deere 70 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. Raise the header until the header wheels are 6 inches (150 mm) above the ground.

2. Press the HOME PAGE button (A) on the main page of the monitor.

Figure 6.36: John Deere Combine Display

3. Ensure the three icons (A) depicted in the illustration at right appear on the monitor.

Figure 6.37: John Deere Combine Display

4. Use scroll knob (A) to highlight the middle icon (the green 'i') and press the check mark button (B) to select it. This will bring up the Message Center.

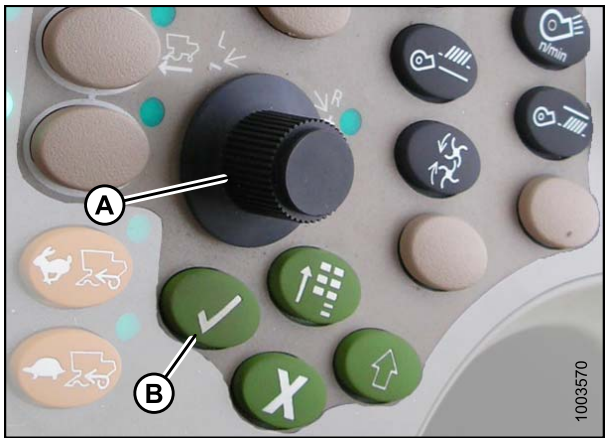

Figure 6.38: John Deere Combine Control Console

5. Use the scroll knob to highlight DIAGNOSTIC ADDRESSES (A) from the right column and select it by pressing the check mark button.
6. Use the scroll knob to highlight drop down box (B) and press the check mark button to select it.

Figure 6.39: John Deere Combine Display

7. Use the scroll knob to highlight LC 1.001 VEHICLE (A) is highlighted and press the check mark button to select it.

Figure 6.40: John Deere Combine Display

8. Use the scroll knob to highlight the down arrow (A) and press the check mark button to scroll through the list until 029 DATA (B) is displayed and voltage reading (C) appears on the monitor.

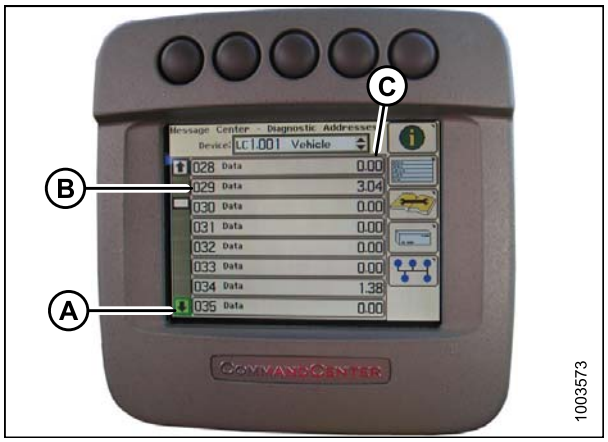

Figure 6.41: John Deere Combine Display

9. Start the combine and fully lower feeder house to the ground.

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

10. Check the sensor reading on the monitor.

11. Raise the header so it is just off the ground and recheck the sensor reading.
12. If the sensor voltage is not within the low and high limits shown in *6.1.1 Height Sensor Output Voltage Range – Combine Requirements, page 70*, or if the range between the low and high limits is insufficient, you need to make adjustments. For instructions, Refer to *Adjusting Header Height Control Voltage Range (Left Side), page 72* and *Adjusting Header Height Control Voltage Range (Right Side), page 73*.

Calibrating Feeder House Speed (John Deere 70 Series)

The feeder house speed must be calibrated before you calibrate the Auto Header Height Control (AHHC) system. Refer to the combine operator's manual for instructions.

Calibrating the Auto Header Height Control (John Deere 70 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. Start the combine.
2. Press the button located fourth from the left along the top of the monitor (A) to select the icon that resembles an open book with a wrench on it (B).
3. Press the top button (A) a second time to enter diagnostics and calibration mode.

Figure 6.42: John Deere Combine Display

4. Use scroll knob (A) to highlight the HEADER option and press the check mark button (B) to select it.
5. Use the scroll knob (A) to highlight the lower right icon that resembles an arrow in a diamond and press the check mark button (B) to select it.
6. Follow the steps listed on the monitor to perform the calibration.

NOTE:
If an error code appears on page, the sensor is not in the correct working range. Refer to *Checking Voltage Range from the Combine Cab (John Deere 70 Series), page 88* to check and adjust the range.

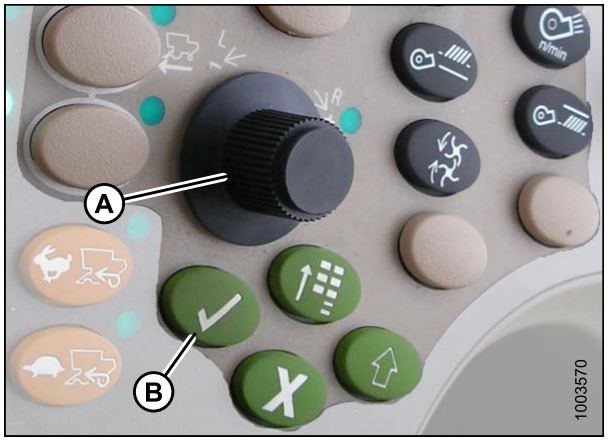

Figure 6.43: John Deere Combine Control Console

Setting the Sensitivity of the Auto Header Height Control (John Deere 70 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. Press button (A) twice and the current sensitivity setting will appear on the monitor (the lower the reading, the lower the sensitivity).
2. Use scroll knob (B) to adjust the sensitivity setting. The adjustment will be saved automatically.

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

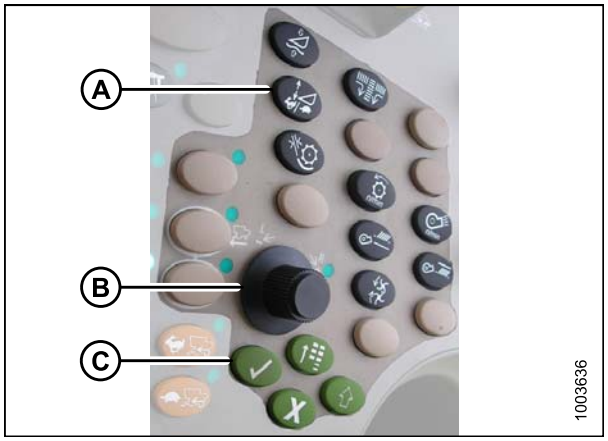

Figure 6.44: John Deere Combine Control Console

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

Figure 6.45: John Deere Combine Display

Adjusting the Manual Header Raise/Lower Rate (John Deere 70 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. Press button (A) and the current raise/lower rate setting will appear on the monitor (the lower the reading, the slower the rate).
2. Use scroll knob (B) to adjust the rate. The adjustment will be saved automatically.

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

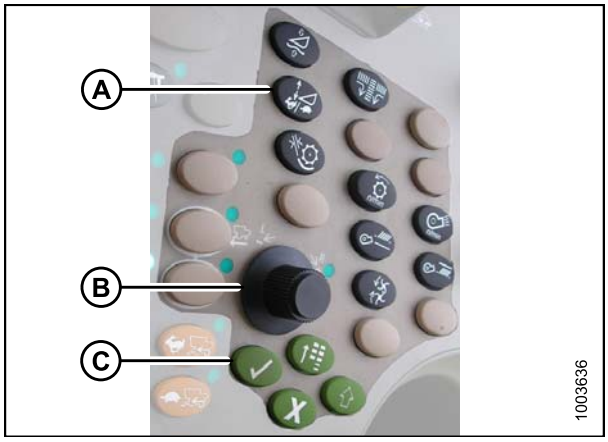

Figure 6.46: John Deere Combine Control Console

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

Figure 6.47: John Deere Combine Display

6.1.5 John Deere S Series Combines

Checking Voltage Range from the Combine Cab (John Deere S 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. Raise the header until the header wheels are 6 inches (150 mm) above the ground.
2. Press the CALIBRATION icon (A) on the main page of the monitor. The CALIBRATION page appears.

Figure 6.48: John Deere Combine Display

3. Press the DIAGNOSTIC READINGS icon (A) on the CALIBRATION page. The DIAGNOSTIC READINGS page appears. This page provides access to calibrations, header options, and diagnostic information.

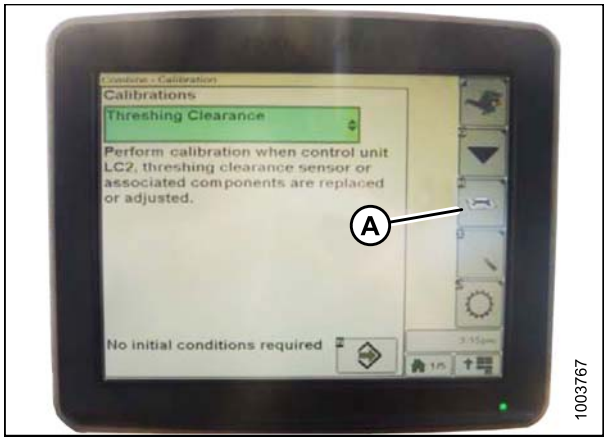

Figure 6.49: John Deere Combine Display

4. Select AHHC RESUME (A) and a list of calibration options appears.

Figure 6.50: John Deere Combine Display

5. Select the AHHC SENSING option.
6. Press the icon that resembles an arrow in a box (A). The AHHC SENSING menu appears and five pages of information are displayed.

Figure 6.51: John Deere Combine Display

7. Press icon (A) until it reads Page 5 near the top of the page and the following sensor readings appear:
   - LEFT HEADER HEIGHT
   - CENTER HEADER HEIGHT
   - RIGHT HEADER HEIGHT

Figure 6.52: John Deere Combine Display

8. Start the combine and fully lower feeder house to the ground.

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

9. Check the sensor reading on the monitor.
10. If the sensor voltage is not within the low and high limits shown in *6.1.1 Height Sensor Output Voltage Range – Combine Requirements, page 70*, or if the range between the low and high limits is insufficient, you need to make adjustments. For instructions, refer to *Adjusting Header Height Control Voltage Range (Left Side), page 72* and *Adjusting Header Height Control Voltage Range (Right Side), page 73*.

Calibrating the Auto Header Height Control (John Deere S 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. Press the DIAGNOSTIC icon (A) on the main page of the monitor. The CALIBRATION page appears.

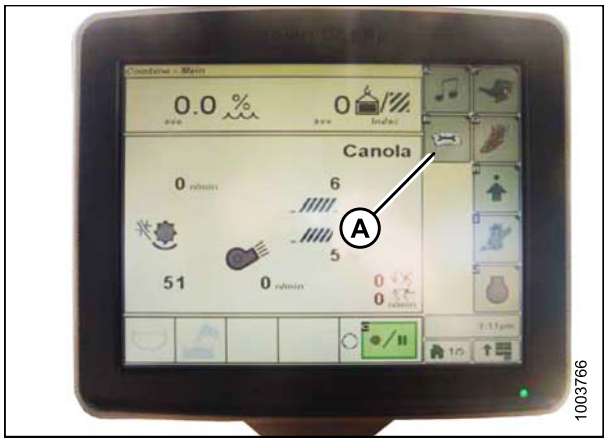

Figure 6.53: John Deere Combine Display

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

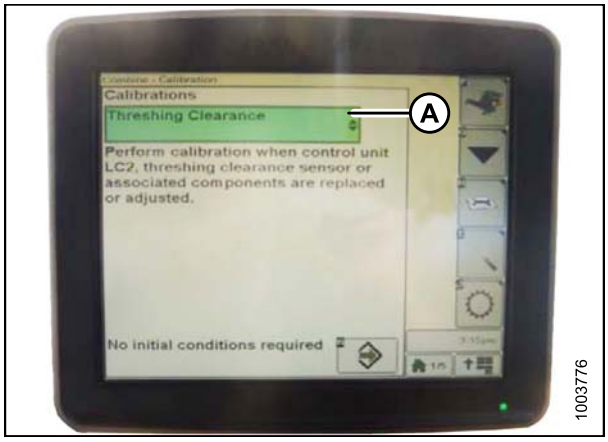

Figure 6.54: John Deere Combine Display

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

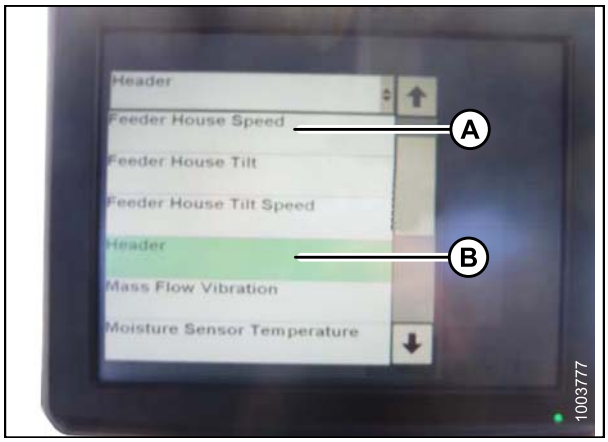

Figure 6.55: John Deere Combine Display

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

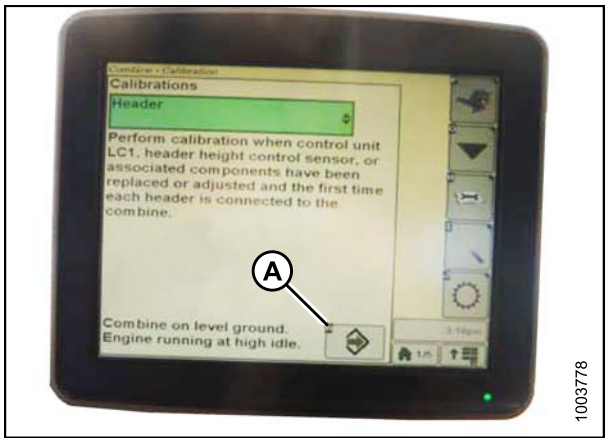

Figure 6.56: John Deere Combine Display

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

   NOTE:
   If an error code appears during calibration, the sensor is out of voltage range and will require adjustment. Refer to *Checking Voltage Range from the Combine Cab (John Deere S Series), page 94*.

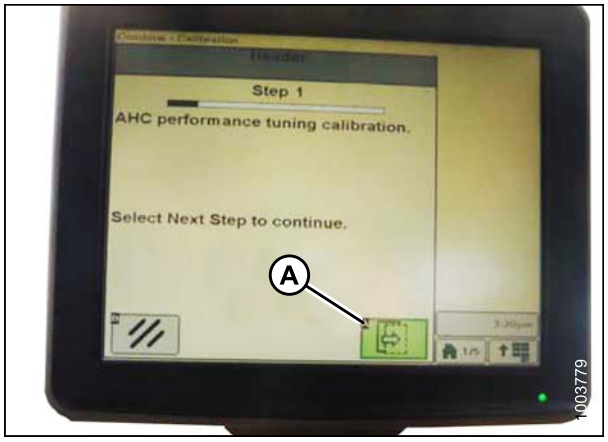

Figure 6.57: John Deere Combine Display

Setting the Sensitivity of the Auto Header Height Control (John Deere S 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. Press button (A) twice and the current sensitivity setting will appear on the monitor.

Figure 6.58: John Deere Combine Command Center

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

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

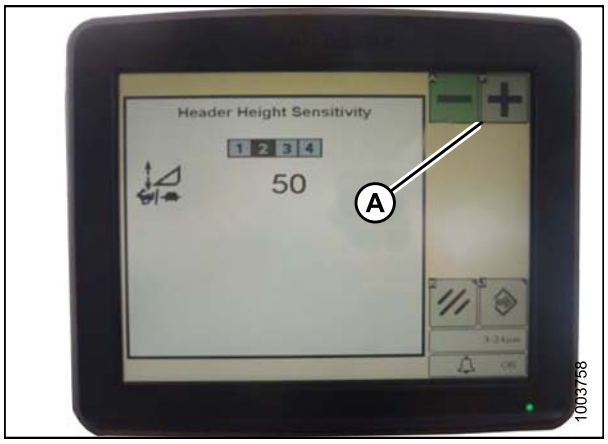

Figure 6.59: John Deere Combine Display

Adjusting the Manual Header Raise/Lower Rate (John Deere S 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. Press button (A) and the current sensitivity setting will appear on the monitor.

Figure 6.60: John Deere Combine Command Center

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

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

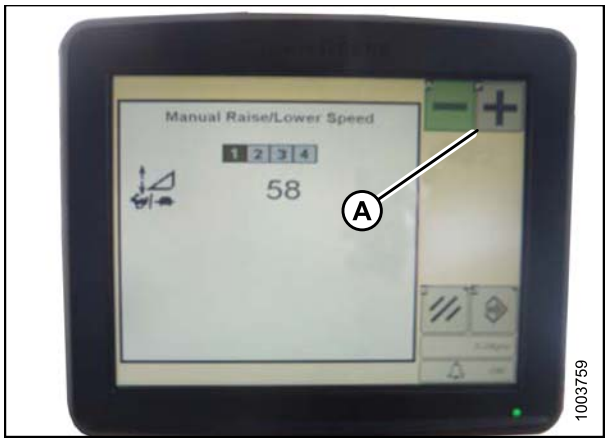

Figure 6.61: John Deere Combine Display

6.1.6 New Holland Combines

Checking Voltage Range from the 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 the header until the header wheels are 6 inches (150 mm) above the ground.

2. Select DIAGNOSTICS (A) on the main page. The DIAGNOSTICS page displays.
3. Select SETTINGS. The SETTINGS page displays.

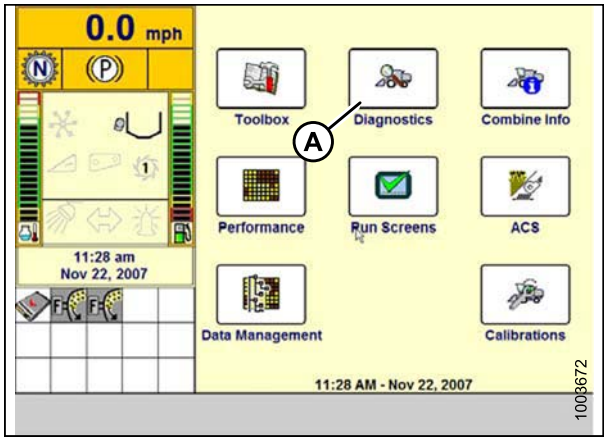

Figure 6.62: New Holland Combine Display

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

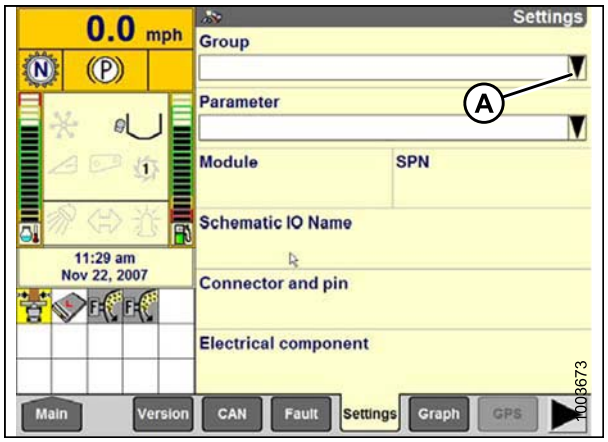

Figure 6.63: New Holland Combine Display

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

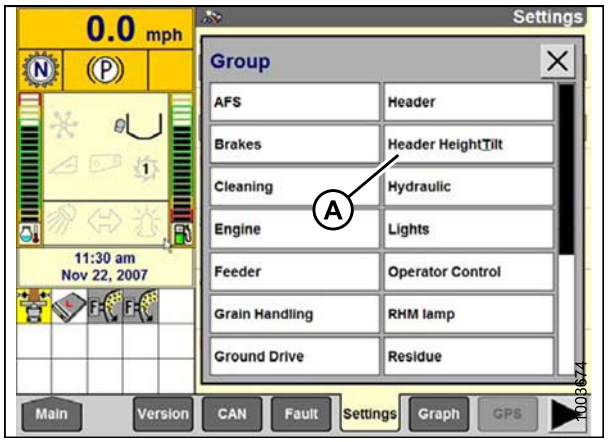

Figure 6.64: New Holland Combine Display

6. Select LEFT HEADER HEIGHT SEN (A), and then select GRAPH button (B). The exact voltage is displayed at the top of the page.
7. Raise and lower the header to see the full range of voltage readings.
8. If the sensor voltage is not within the low and high limits shown in *6.1.1 Height Sensor Output Voltage Range – Combine Requirements, page 70*, or if the range between the low and high limits is insufficient, you need to make adjustments. For instructions, refer to *Adjusting Header Height Control Voltage Range (Left Side), page 72* and *Adjusting Header Height Control Voltage Range (Right Side), page 73*.

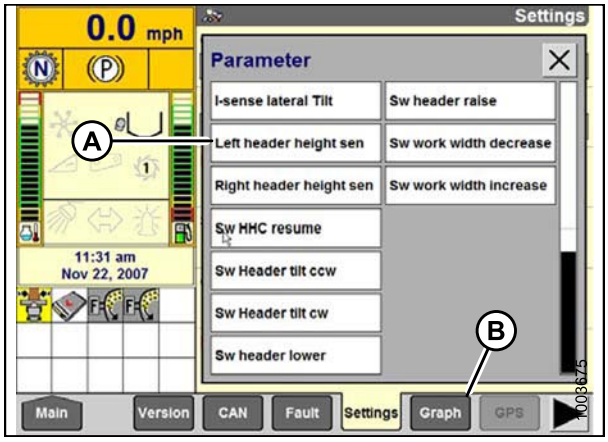

Figure 6.65: New Holland Combine Display

Engaging the 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 the combine display, and press ENTER.
2. Use the up and down navigation keys to move between options, and select INSTALLED.

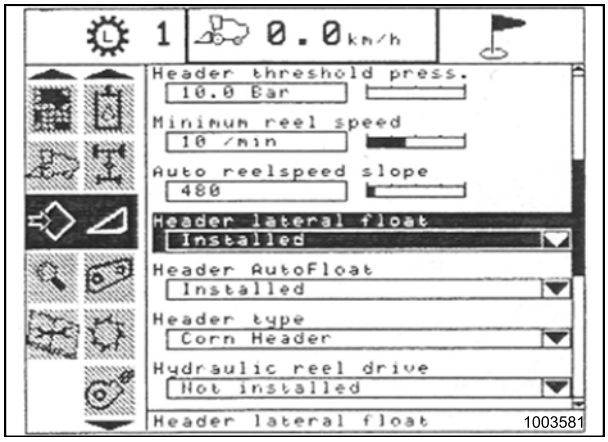

Figure 6.66: New Holland Combine Display

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

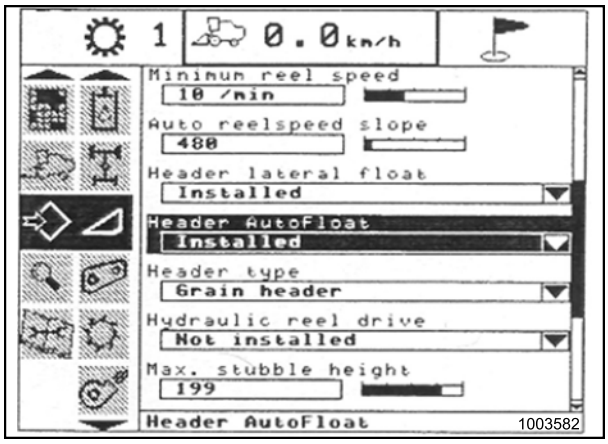

Figure 6.67: New Holland Combine Display

Calibrating the 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.
- Header/feeder is disengaged.
- Lateral flotation buttons are NOT pressed.
- ESC key is NOT pressed.

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.

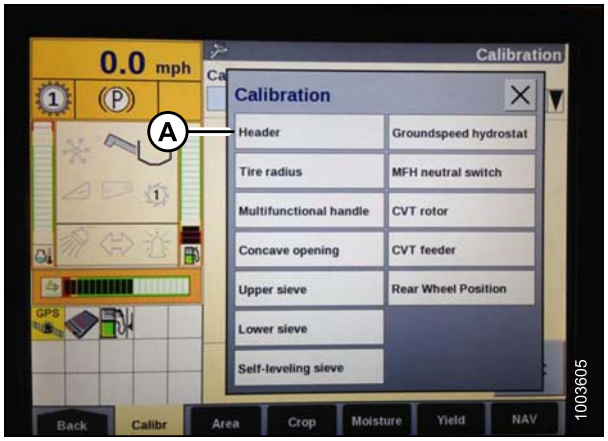

Figure 6.68: New Holland Combine Display

3. Follow the calibration steps in the order in which 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 three minutes will cause the calibration procedure to stop.

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

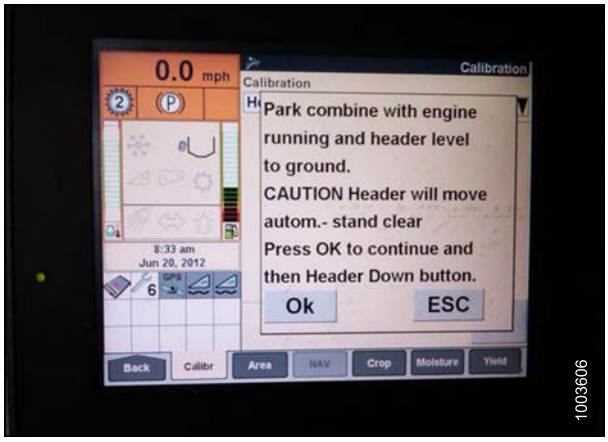

Figure 6.69: New Holland Combine Display

4. When all steps have been completed, CALIBRATION SUCCESSFUL message 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 the calibration is complete.

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

Calibrating Maximum Stubble Height

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

Select the height of the header that corresponds to the description above.

IMPORTANT:

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

⚠ CAUTION

Check to be sure all bystanders have cleared the area.

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

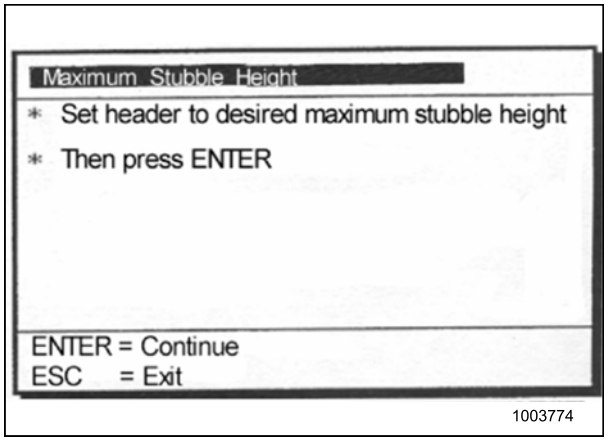

Figure 6.70: New Holland Calibration Dialog Box

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

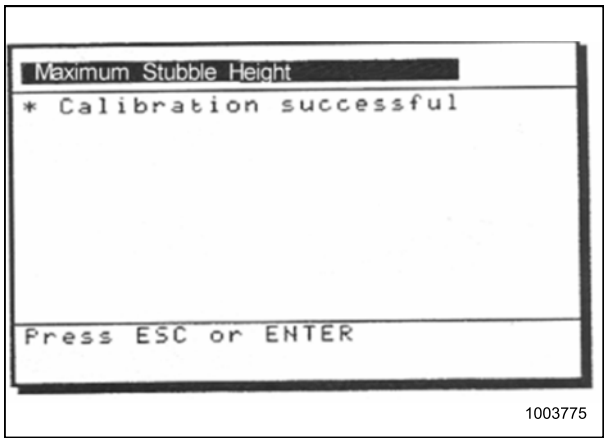

Figure 6.71: New Holland Calibration Dialog Box

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

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

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

NOTE:
The raise rate can be changed from 32–236 in steps of 34. The factory setting is 100.

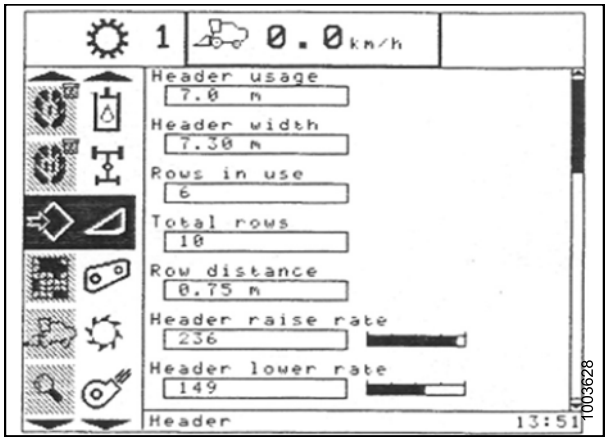

Figure 6.72: New Holland Combine Display

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

If necessary, the header lower rate (the automatic header height control button or second speed on the header height rocker switch of the multi-function handle) can be adjusted.

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

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

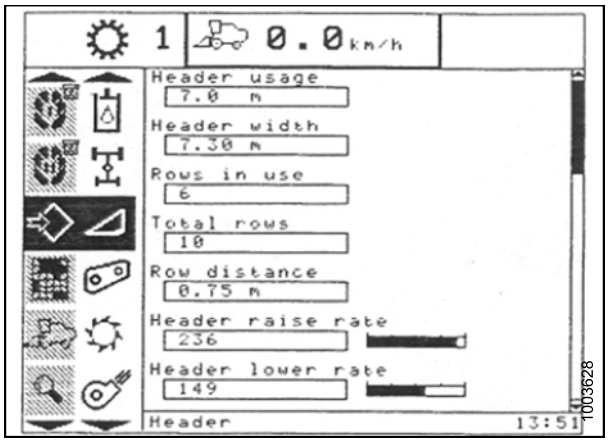

Figure 6.73: New Holland Combine Display

Setting the Sensitivity of the 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 the 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 the combine display screen.
3. Use the '+' or '–' buttons to change the setting to 200.
4. Press ENTER to save the new setting.

NOTE:
The sensitivity can be changed from 10–250 in steps of 10. It is factory-set to 100.

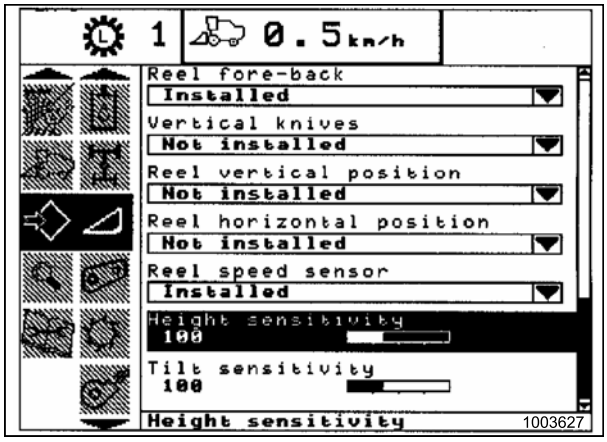

Figure 6.74: New Holland Combine Display

6.1.7 Sensor Operation

The position sensors supplied with the Auto Header Height Control (AHHC) system are 1000 ohm (1k) industrial series sensors containing sealed connectors. Normal operating signal voltages for the sensors fall between 10% (0.5VDC) and 90% (4.5VDC).

A sensor operating with a signal voltage below 5% is considered to be shorted, and a sensor with a signal voltage above 95% is considered to be open. An increase in sensor voltage correlates to an increase in header height.

Each sensor is constructed with a power wire and a ground wire. Inside the sensor, these two wires are connected by a high resistance filament band (C). The resistance measured across the power (A) and ground (B) wires should read a constant value between 800 and 1200 ohms (0.8–1.2 k) with the nominal reading being 1000 ohms (1 k).

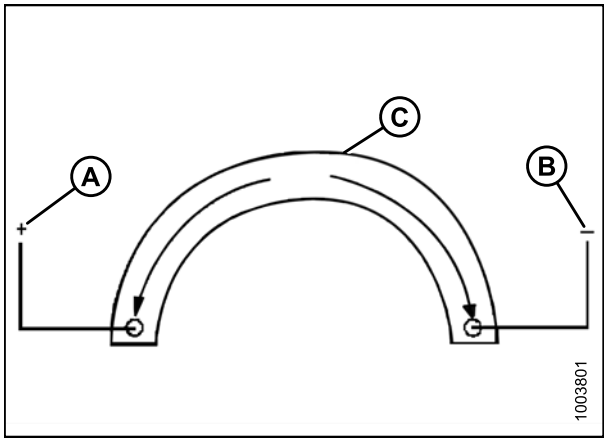

Figure 6.75: Power, Ground, and Signal Wires

In addition to the power (A) and ground (B) wires, a signal wire (C) is connected internally to a movable wiper that is attached to an external arm and sweeps the high resistance filament band. As the external arm is rotated and the wiper is moved toward or away from the power wire connection, the measured resistance at the signal wire (C) changes.

The resistance measured across the signal and ground wires should increase uniformly from a low 80–100 ohms (.08–0.1 k) to a high 800–1200 ohms (0.8–1.2 k). This can be observed if an ohmmeter is connected across the signal and power wires and the sensor shaft rotated. When an input voltage is applied to the high resistance filament band through the power wire (A), the output (or measured) voltage in the signal wire (C) is changed by this variable resistance.

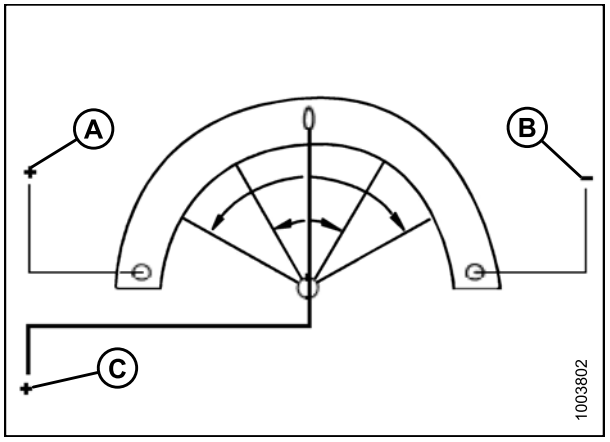

Figure 6.76: Power, Ground, and Signal Wires

NOTE:
Ground and power wires may differ depending on combine.

6.2 Wheels and Tires

There are two wheels and tires on the PW8 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 position 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	35–45 psi (240–310 kPa)[3]

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. Talcum or baby powder applied to the drapers should help to reduce the stickiness.

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 109* or *6.3.2 Adjusting Rear Draper Belt Tension, page 111*.

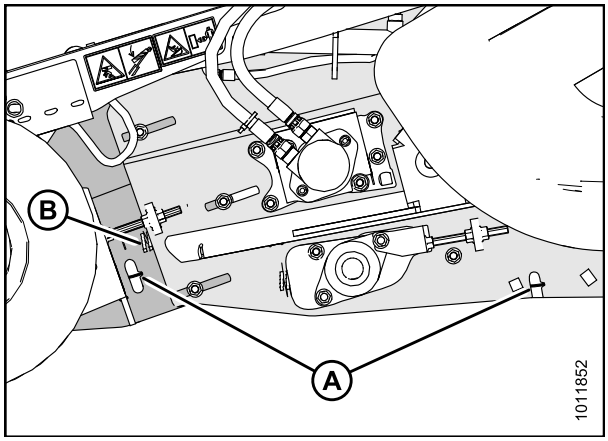

Figure 6.77: Draper Tension Indicator

6.3.1 Adjusting Front Draper Belt Tension

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

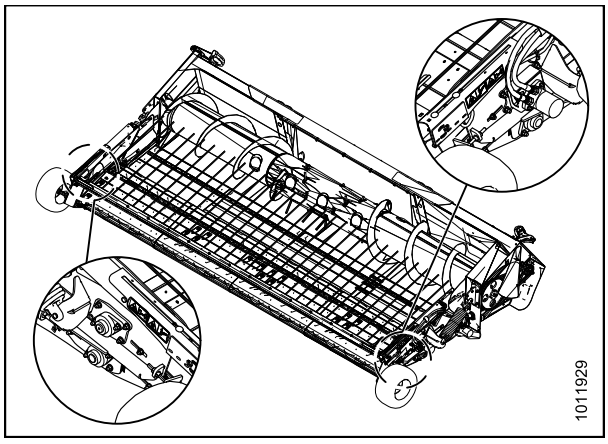

Figure 6.78: Front Deck Adjusting Bolts

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 3/64 in. (1 mm).

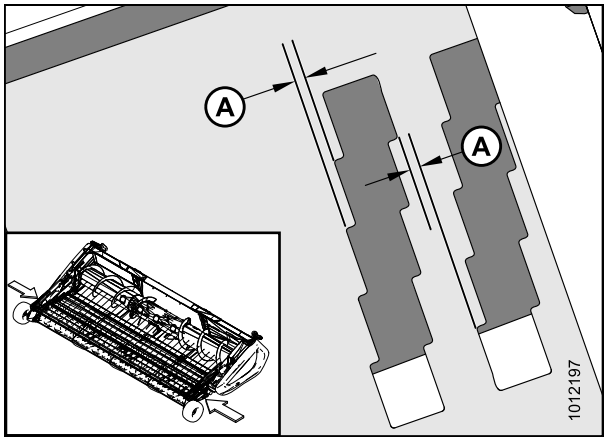

Figure 6.79: Stepped Position Indicators

1. Loosen three clamp bolts (A) on each side of the header.
2. Loosen jam nut (B) on the left side.
3. Turn adjuster nut (C) to set the 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

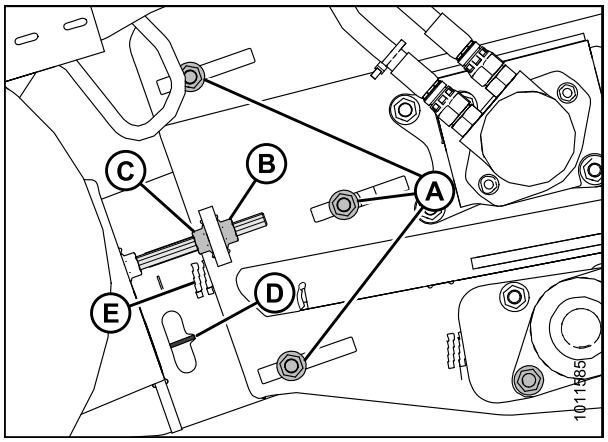

Figure 6.80: Left Side Front Deck Shown – Right Side Opposite

4. Note the position of the stepped position indicator gauge (E).
5. 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.

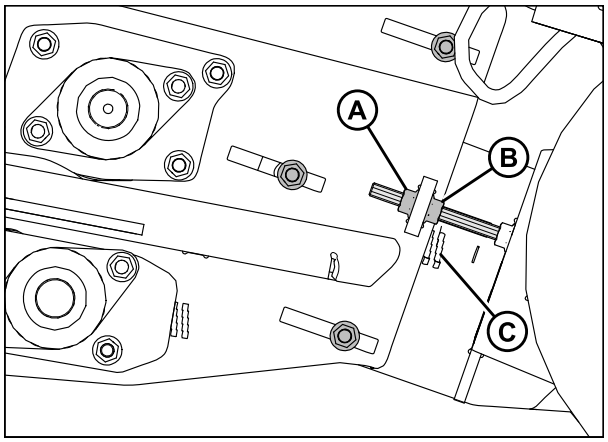

Figure 6.81: Right Side Stepped Position Indicator Gauge

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

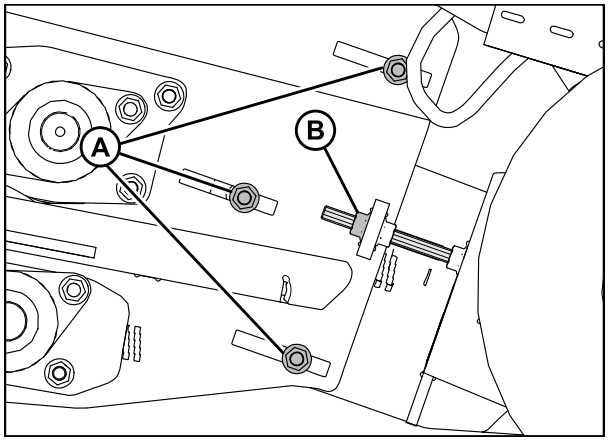

Figure 6.82: Front Deck Adjuster

6.3.2 Adjusting Rear Draper Belt Tension

Left Side

1. Loosen two clamp bolts (A).
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.

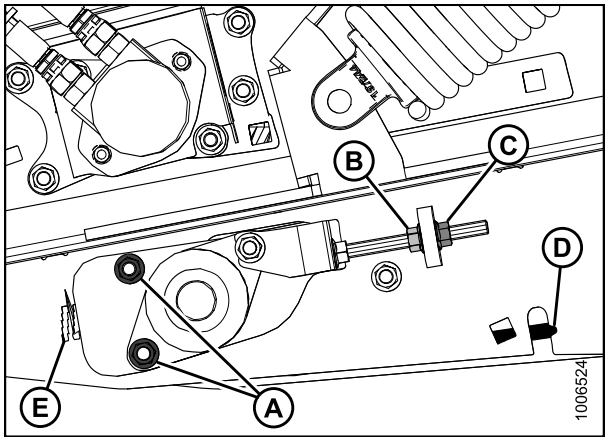

Figure 6.83: Left Side Rear Deck

Right Side

6. Loosen three clamp bolts (A).
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).

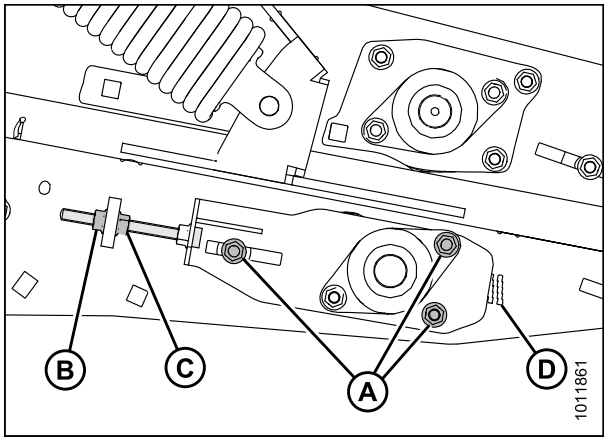

Figure 6.84: Right Side Rear Deck

6.4 Lubrication

6.4.1 Lubricating the Header

Lubricant	Specification	Description	Use
Grease	SAE Multi-purpose	High temperature extreme pressure (EP2) performance with 1% max Molybdenum Disulphide (NLGI Grade 2) Lithium base	As required unless otherwise specified

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 lubricants specified above.
- 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). Refer to *3.4.1 Opening Left Endshield, page 20*.

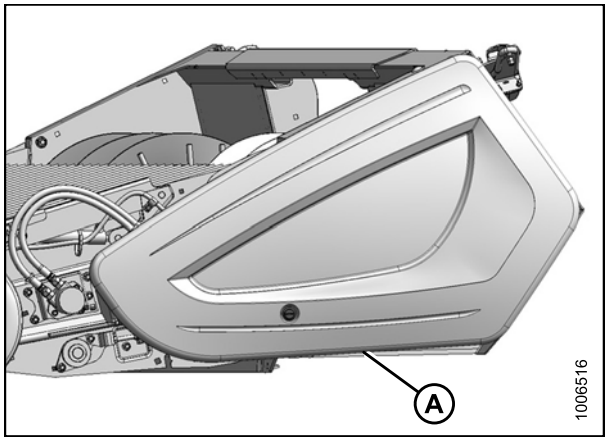

Figure 6.85: Left Endshield

3. Apply a liberal amount of SAE 30 engine oil to the chain (A).
4. Close left endshield. Refer to *3.4.2 Closing Left Endshield, page 20*.

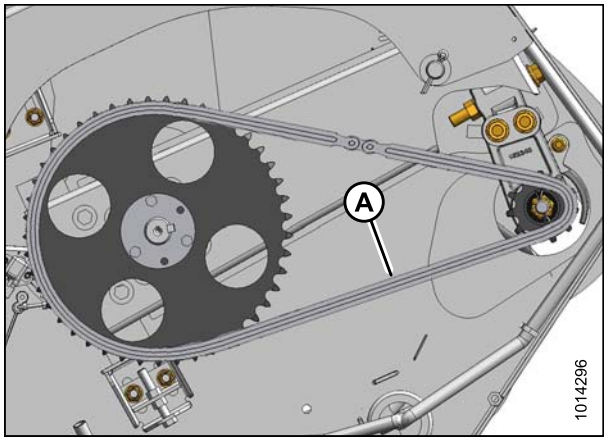

Figure 6.86: Auger Drive Chain

6.4.3 Greasing Points

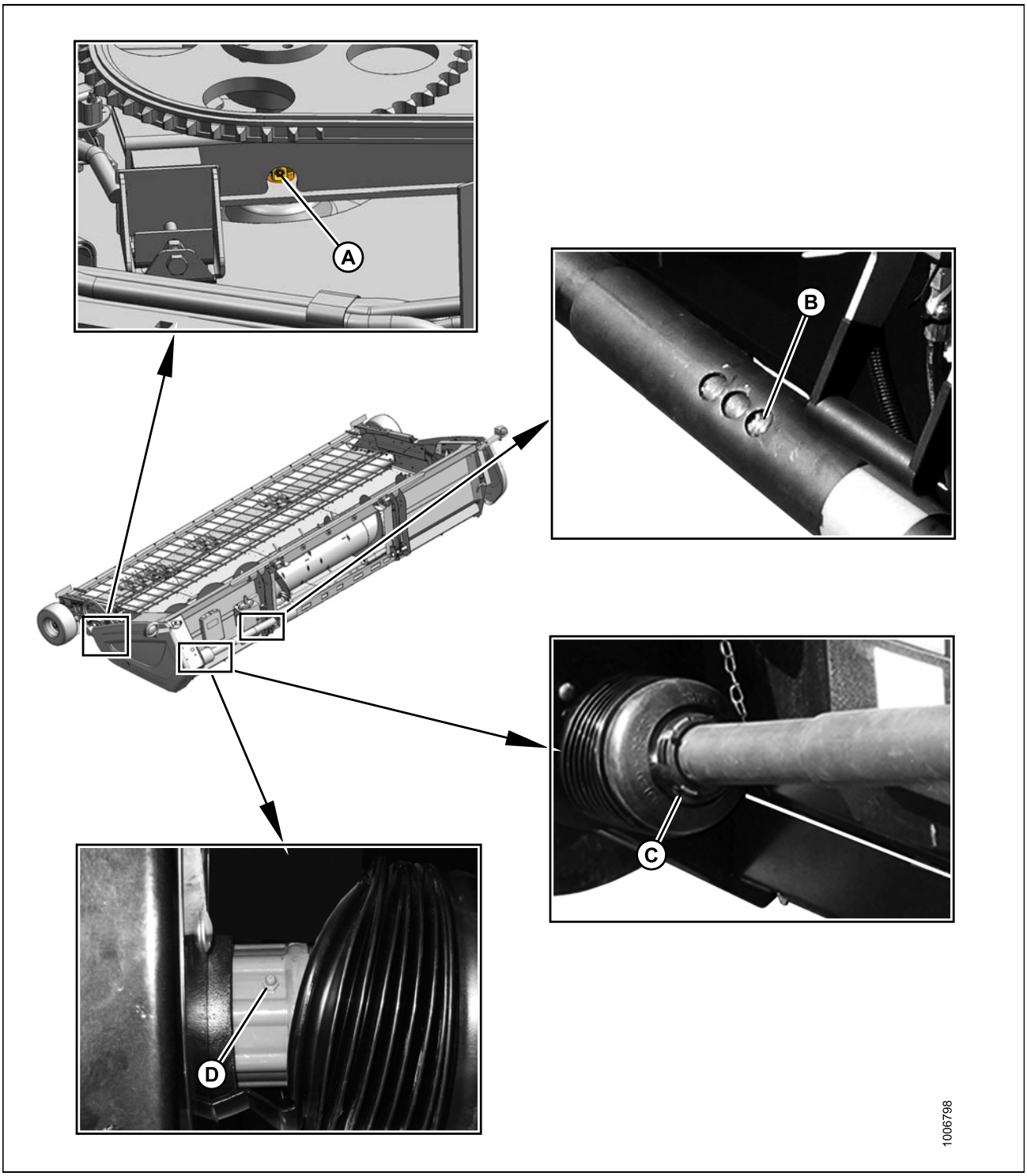

Figure 6.87: Greasing Points

A - Auger Bearing
B - Driveline Slip-Joint
C - Driveline Guard (Both Ends)
D - Driveline Clutch

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.

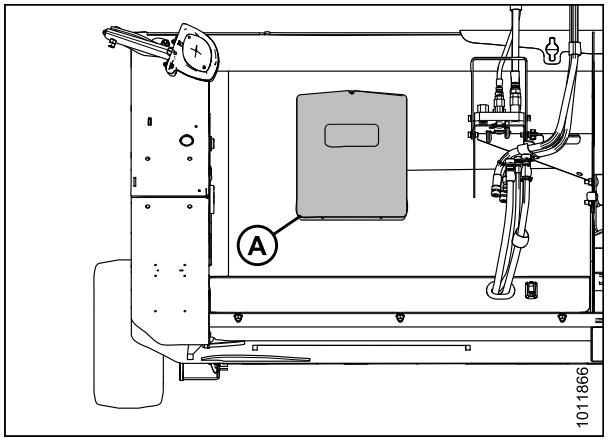

Figure 6.88: Manual Storage Case

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.

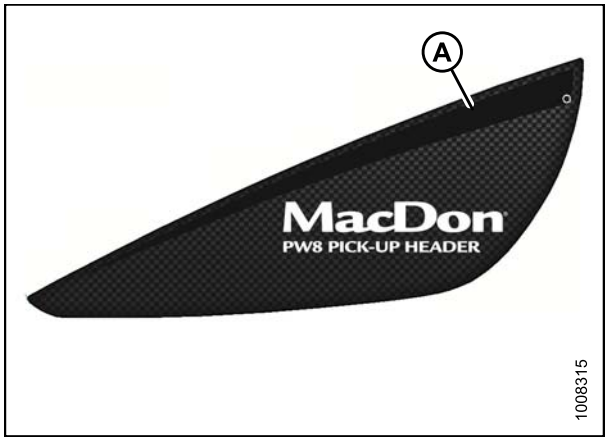

Figure 6.89: Left Endshield – Right Opposite

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 engine, engage parking brake, and remove key.

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

1. Start 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. Check draper speed and auger speeds are displayed on combine monitor if applicable.
4. Raise hold-down fully. If hold-down is not level, perform the following:
   a. Raise hold-down and leave pressurized to rephase.
   b. Lower and raise hold-down several times and check that hold-down is level.
   c. If hold-down is still not level, lower hold-down. Place a container under 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 hold-down and reinstall bleed plug. Torque plug to 30 in·lbf (3.4 N·m).
   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 from 0–1/2 in. (0–13 mm) extended when the master cylinder is fully retracted.
5. Perform the run-up check listed on the Predelivery Checklist (*Predelivery Checklist, page 131*) and the post run-up check to ensure the machine is field-ready.

7 Appendix

7.1 Conversion Chart

Table 7.1 Conversion Chart

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

7.2 Torque Specifications

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

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

7.2.1 Metric Bolt Specifications

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

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

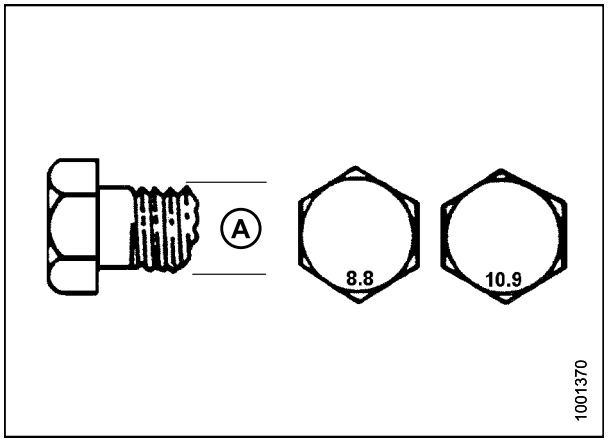

Figure 7.1: Bolt Grades

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

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

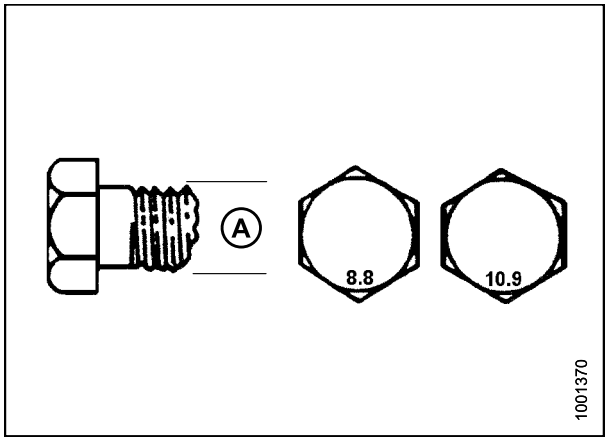

Figure 7.2: Bolt Grades

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

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

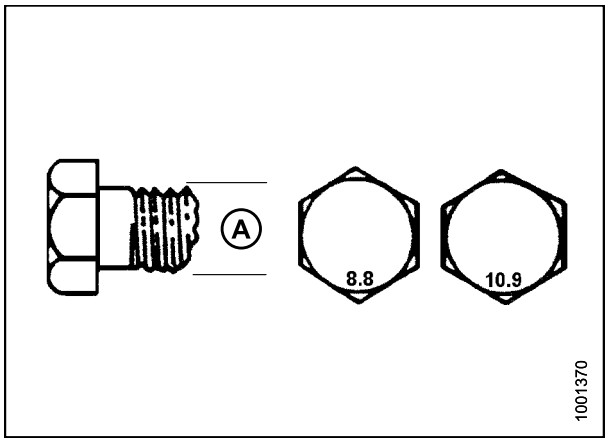

Figure 7.3: Bolt Grades

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

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

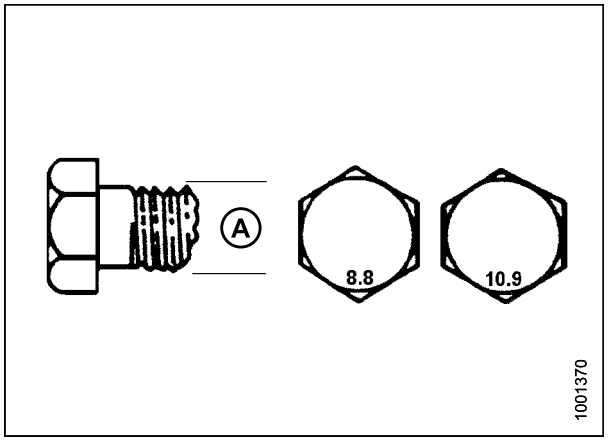

Figure 7.4: Bolt Grades

7.2.2 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)	
	ft·lbf	N·m	ft·lbf	N·m
M3	–	–	1	–
M4	–	–	2.6	4
M5	–	–	5.5	8
M6	6	9	9	12
M8	14	20	20	28
M10	28	40	40	55
M12	52	70	73	100
M14	–	–	–	–
M16	–	–	–	–

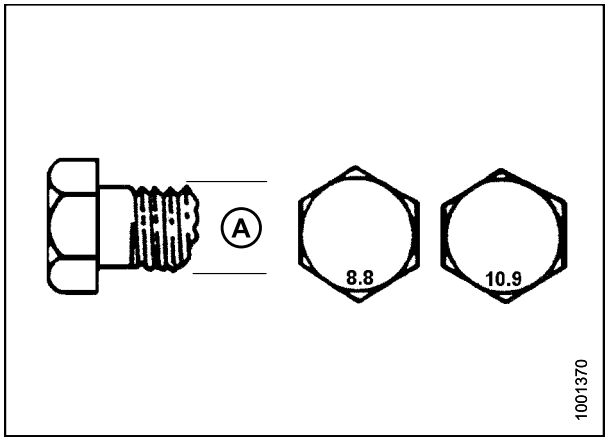

Figure 7.5: Bolt Grades

7.2.3 Flare-Type Hydraulic Fittings

1. Check flare (A) and flare seat (B) for defects that might cause leakage.
2. Align tube (C) with fitting (D) and thread nut (E) onto fitting without lubrication until contact has been made between the flared surfaces.
3. Torque the fitting nut (E) to the specified number of flats from finger tight (FFFT) or to a given torque value in Table *7.7 Flare-Type Hydraulic Tube Fittings, page 124*.
4. Use two wrenches to prevent fitting (D) from rotating. Place one wrench on the fitting body (D) and tighten nut (E) with the other wrench to the torque shown.
5. Assess the final condition of the connection.

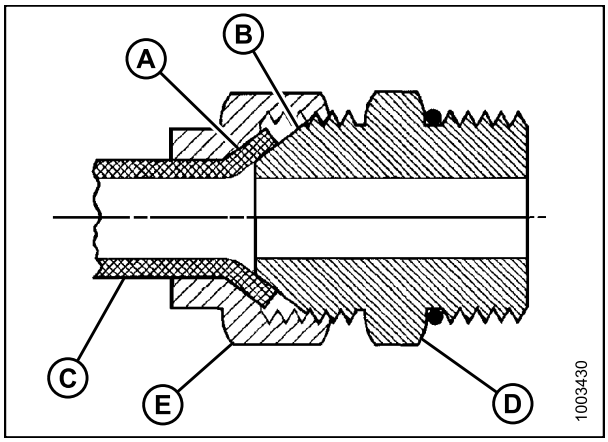

Figure 7.6: Hydraulic Fitting

Table 7.7 Flare-Type Hydraulic Tube Fittings

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

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

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

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

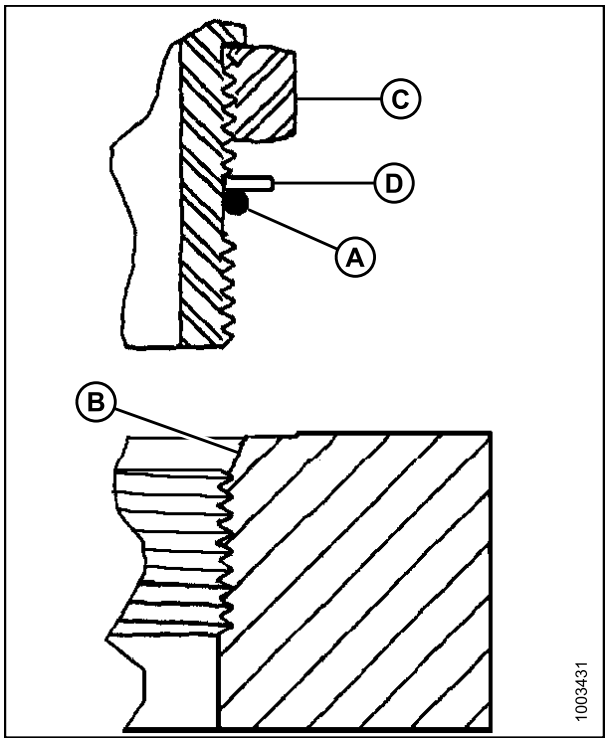

Figure 7.7: Hydraulic Fitting

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

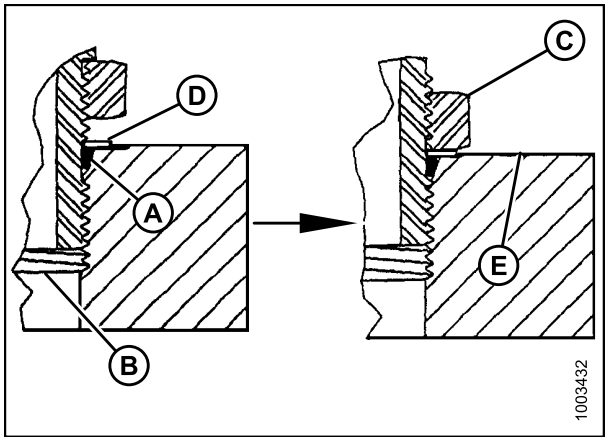

Figure 7.8: Hydraulic Fitting

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

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

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

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

1. Inspect O-ring (A) and seat (B) for dirt or obvious defects.
2. Check that O-ring (A) is **NOT** on the threads and adjust if necessary.
3. Apply hydraulic system oil to the O-ring.
4. Install fitting (C) into port until fitting is hand tight.
5. Torque fitting (C) according to the values in Table *7.9 O-Ring Boss (ORB) Hydraulic Fittings (Non-Adjustable), page 127*.
6. Check the final condition of the fitting.

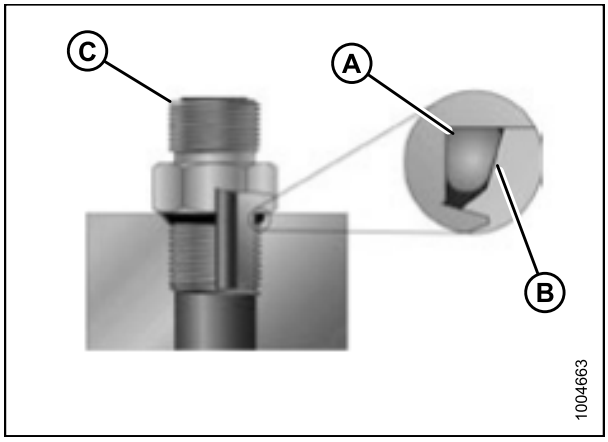

Figure 7.9: Hydraulic Fitting

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

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

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

7.2.6 O-Ring Face Seal (ORFS) Hydraulic Fittings

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

Figure 7.10: Hydraulic Fitting

2. Apply hydraulic system oil to the O-ring (B).
3. Align the tube or hose assembly so that the flat face of the sleeve (A) or (C) comes in full contact with O-ring (B).
4. Thread tube or hose nut (D) until hand-tight. The nut should turn freely until it is bottomed out.
5. Torque fittings according to the values in Table *7.10 O-Ring Face Seal (ORFS) Hydraulic Fittings, page 129*.

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

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

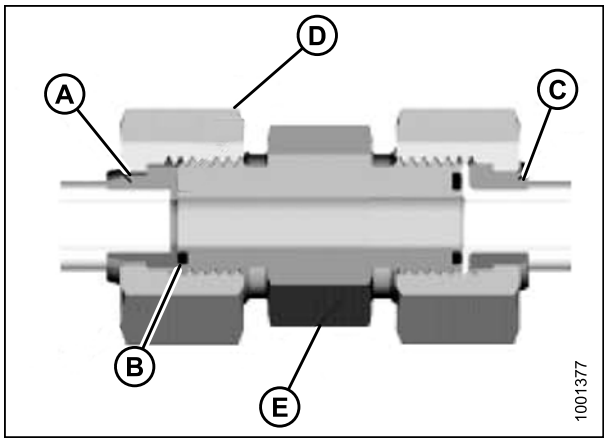

Figure 7.11: Hydraulic Fitting

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

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

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.

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.

Table 3 PW8 Pick-up Header Predelivery Checklist. 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.	*7.2 Torque Specifications, page 120*
	Check wheels are in field (working) position.	*3.3 Setting Wheels to Field/Working Position, page 17*
	Check tire air pressure is 35–45 psi (240–310 kPa). Adjust as required.	*6.2.1 Inflating Tire, page 108*
	Check hold-down is in the field/working position.	*3.5 Extending Hold-Down to Field/Working Position, page 22*
	Check machine is completely lubricated.	*6.4.1 Lubricating the Header, page 113*
	Check draper belt tension.	*6.3 Checking Draper Belt Tension, page 109*
	Check that transport lights (if installed) are extended.	*3.6 Adjusting Transport Lights, page 23*
	Check height sensor is calibrated.	*6.1 Auto Header Height Control (AHHC), page 69*
Run-Up Procedure		
	Check hydraulic hose and wiring harness routing for clearance problems when raising or lowering the header and hold-down bar.	—
	Check hold-down is level when fully raised.	*6.7 Running Up the Header, page 118*
	Check draper speed sensor is working.	Refer to Combine Operator's Manual
	Check height controller is working.	*6.7 Running Up the Header, page 118*
	Check transport lights (if installed) are functional.	Refer to Combine Operator's Manual
Post Run-Up Checks. Stop Engine.		
	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.	*6.5 Manuals, page 116*

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