MacDon

PW8
Pick-Up Header

Unloading and Assembly Instructions (North America)

214263 Revision A

2018 Model Year

Original Instruction

The harvesting specialists.

PW8 Pick-Up Header

Published in May 2017

Introduction

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

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

The header can be configured for the following combines:

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

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

NOTE:

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

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

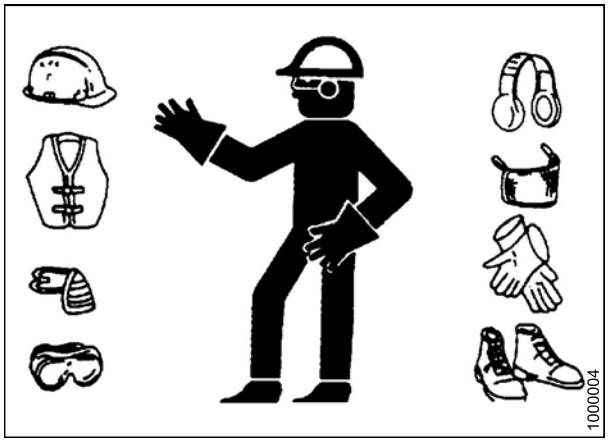


Figure 1.1: Safety Equipment

Figure 1.2: Safety Equipment

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

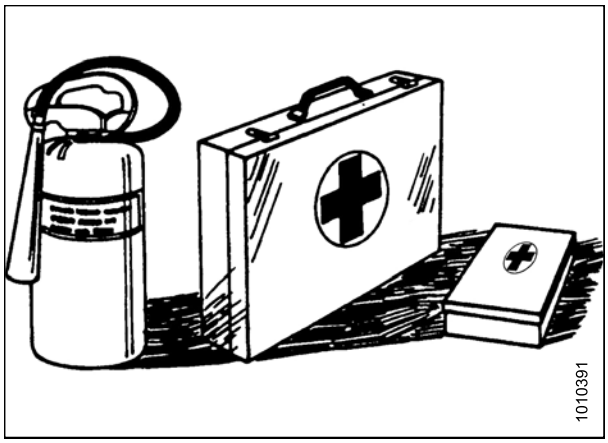


Figure 1.3: Safety Equipment

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

Figure 1.4: Safety around Equipment

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

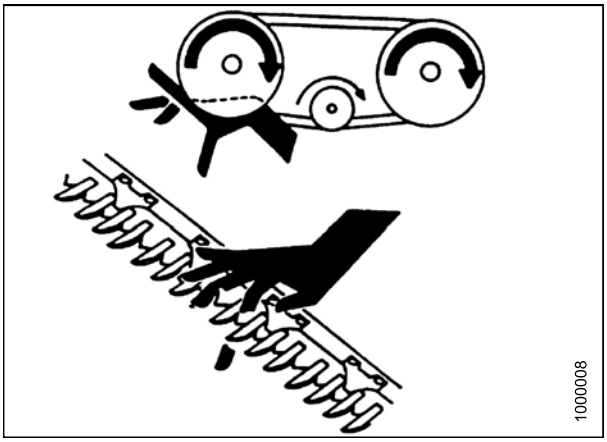


Figure 1.5: Safety around Equipment

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

Figure 1.6: Safety around Equipment

1.3 Safety Signs

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

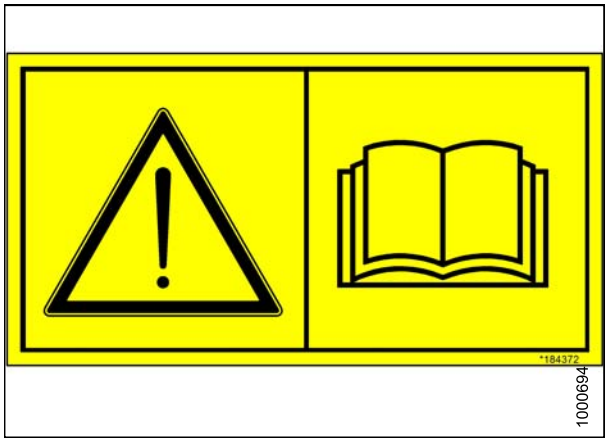
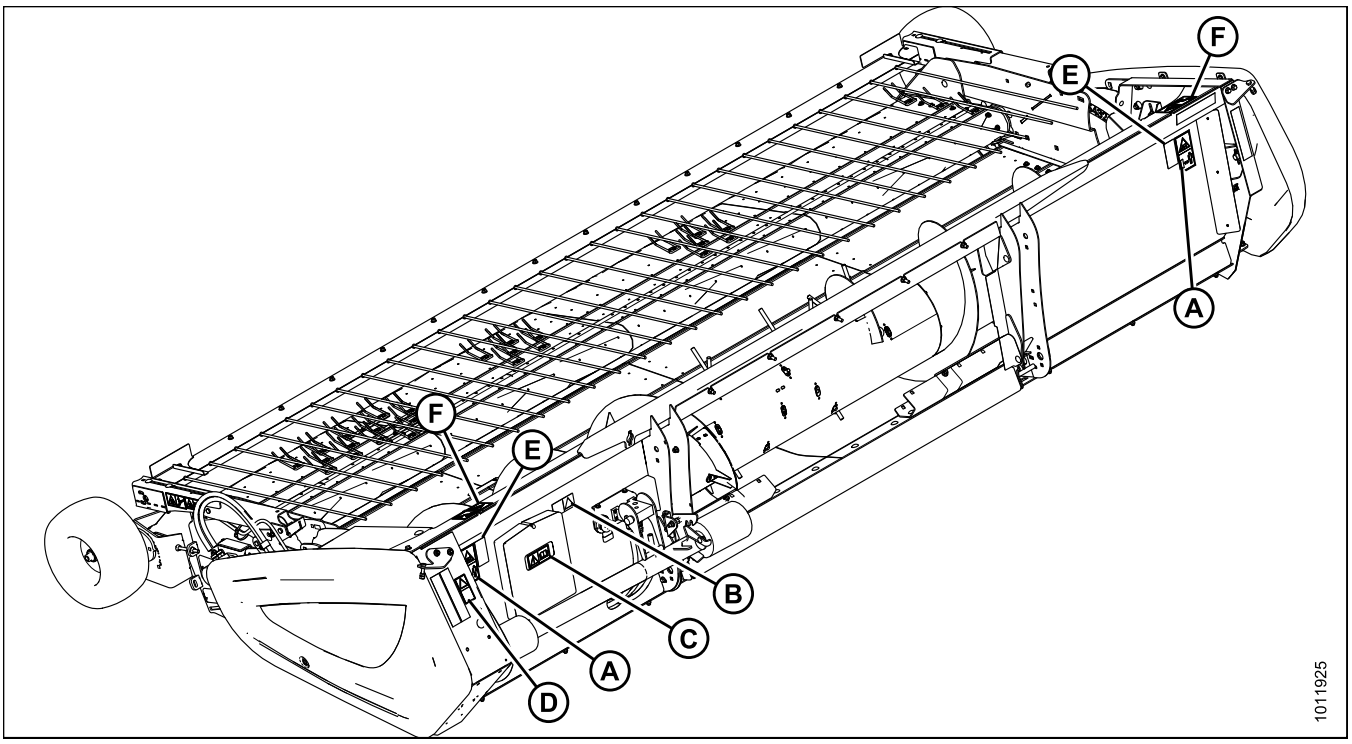


Figure 1.7: Operator's Manual Decal

1.4 Safety Sign Locations

Figure 1.8: Header Decals – Case IH



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

Figure 1.9: Header Decals

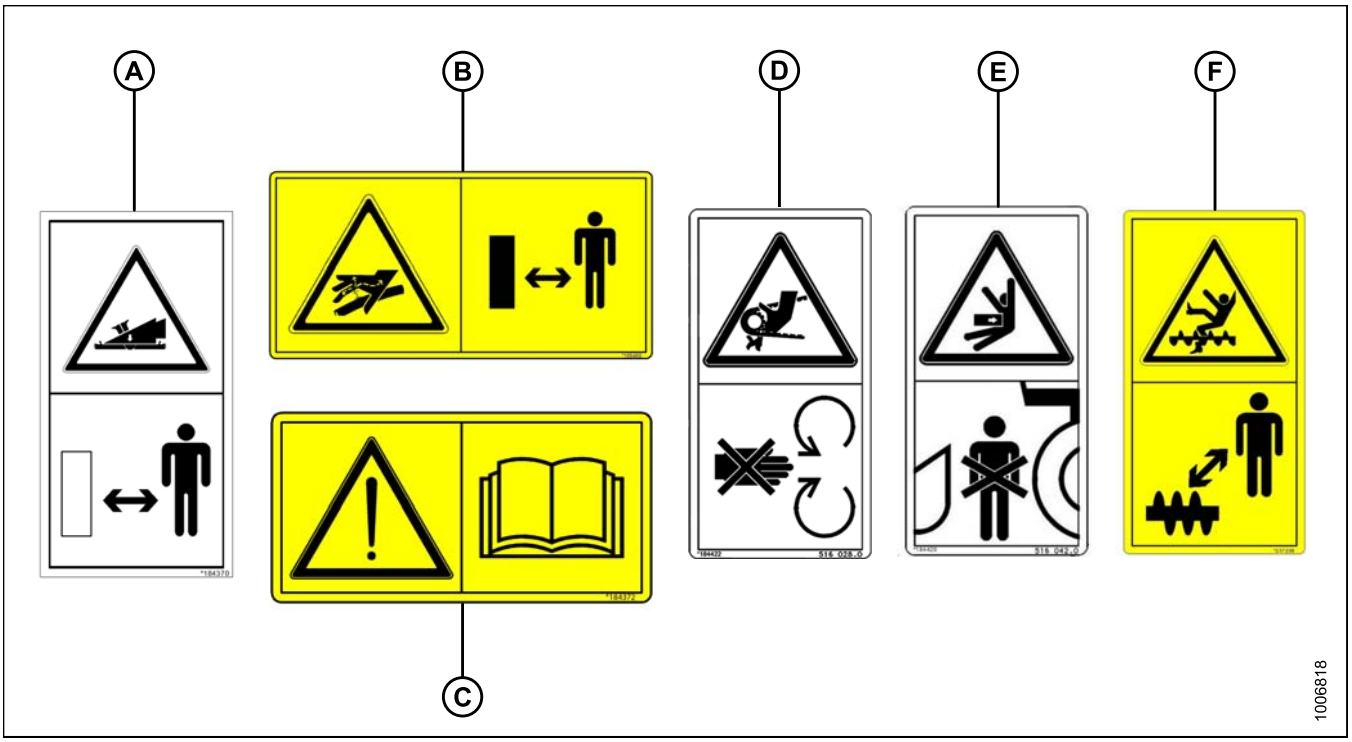
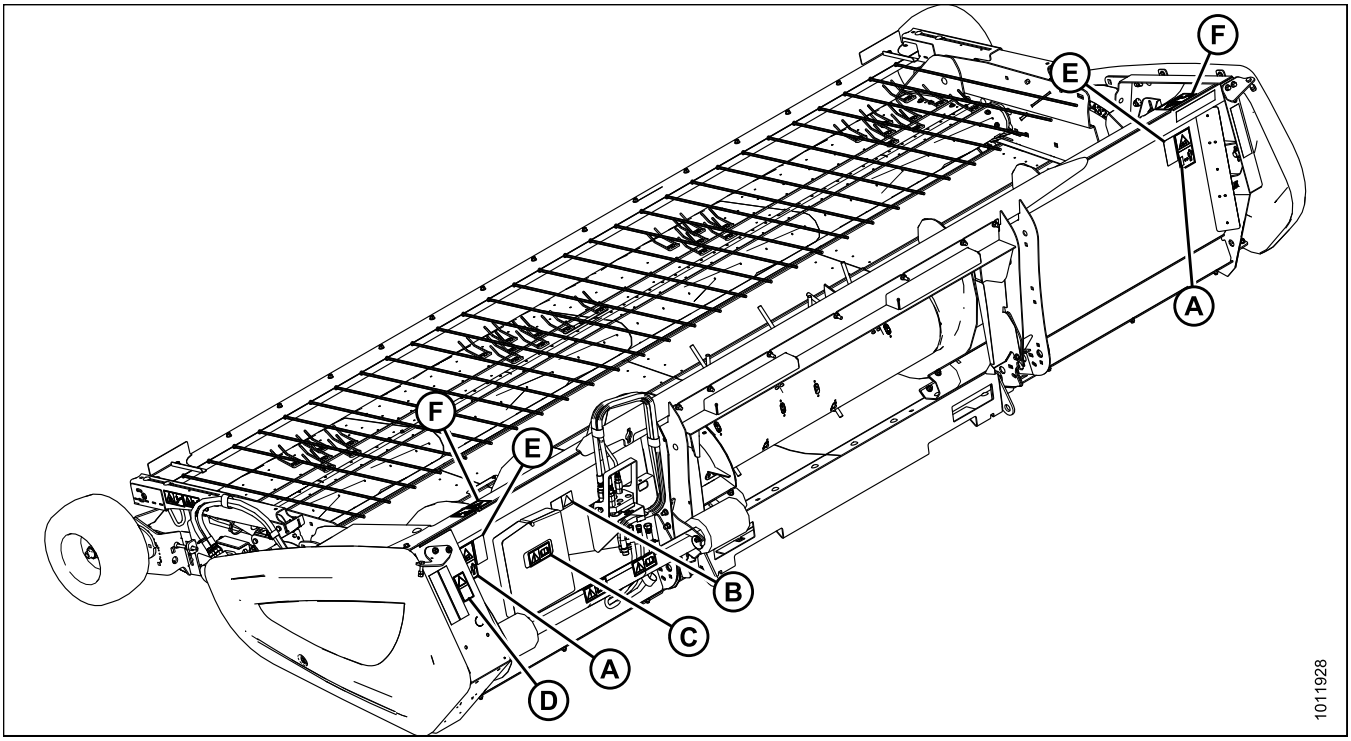


Figure 1.10: Header Decals – John Deere



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

Figure 1.11: Header Decals

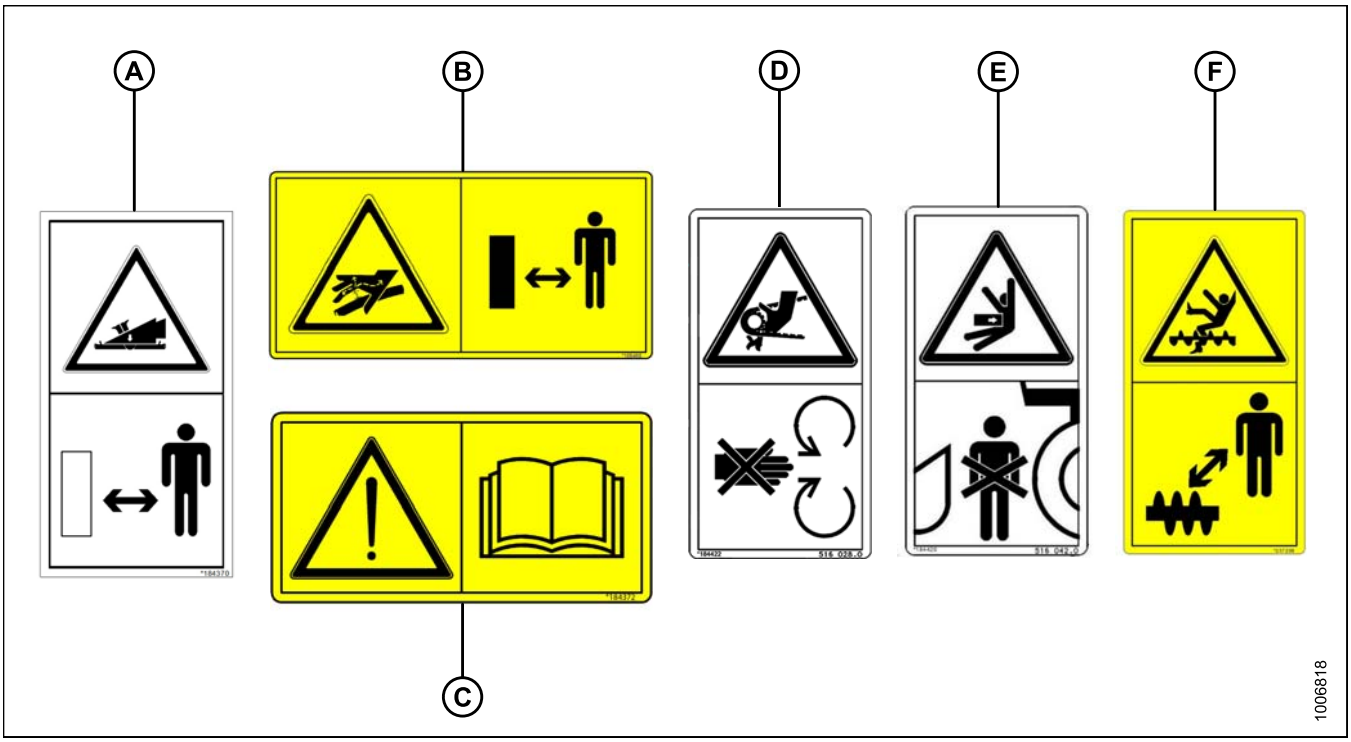
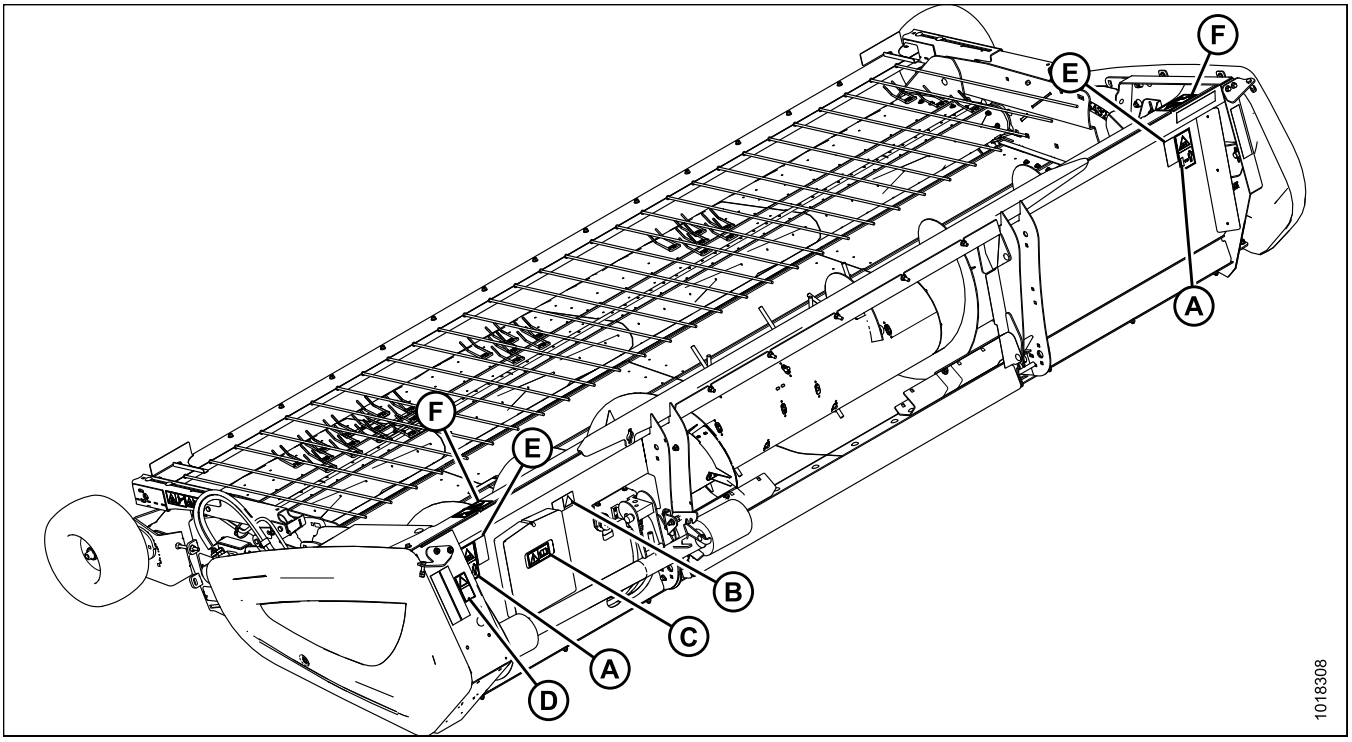


Figure 1.12: Header Decals – New Holland



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

Figure 1.13: Header Decals

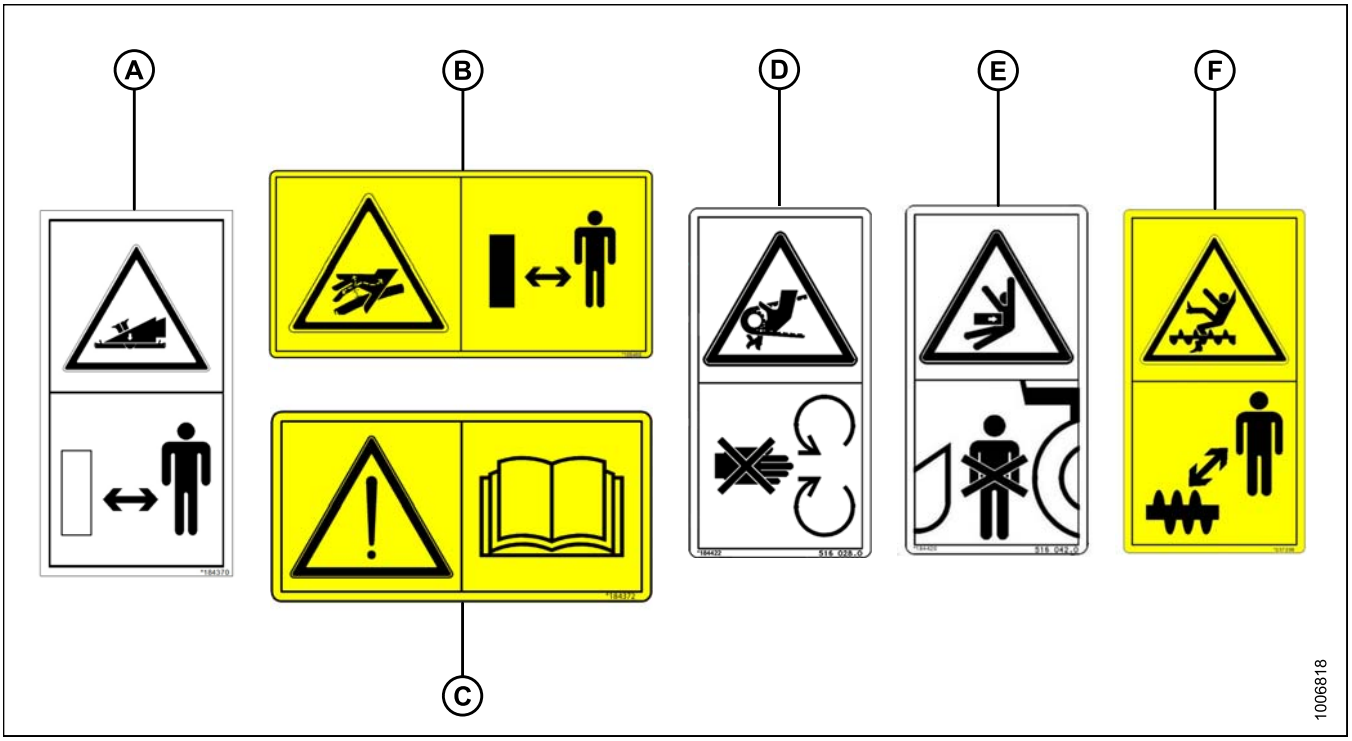
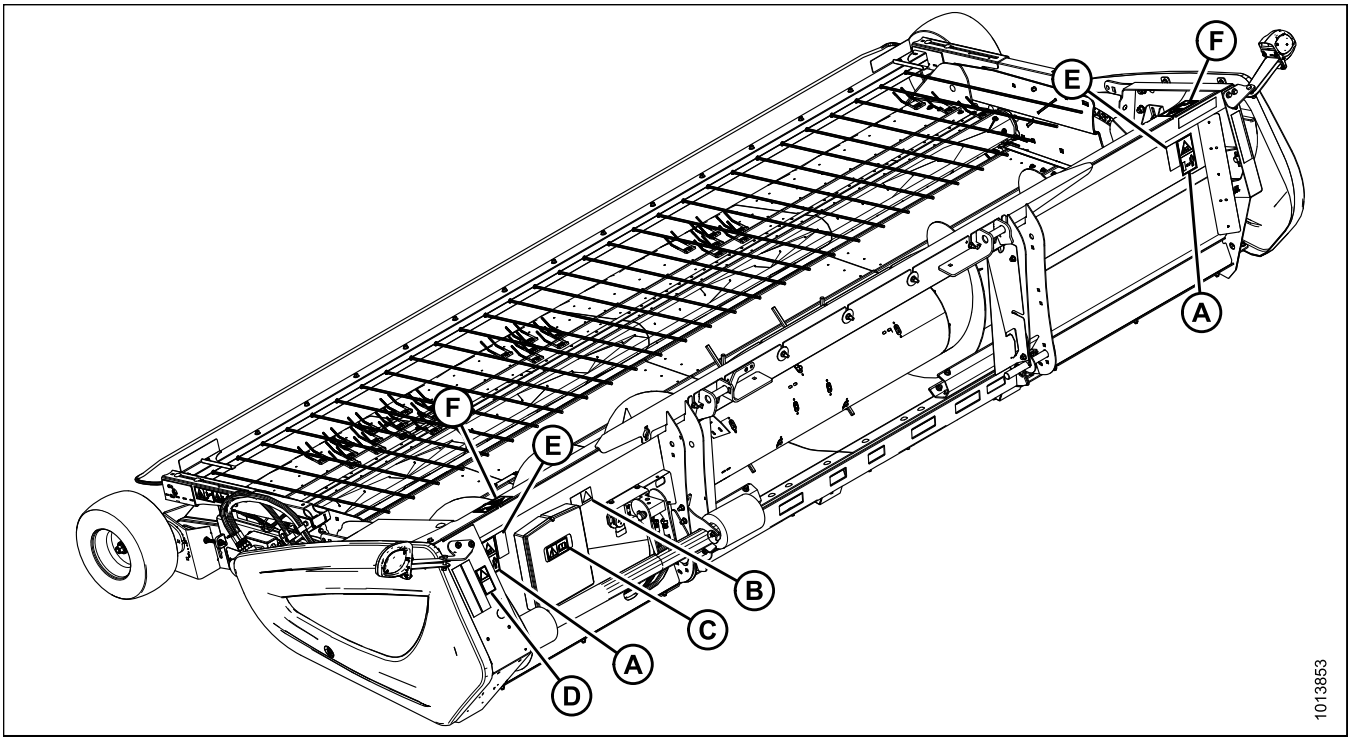


Figure 1.14: Header Decals – Versatile



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

Figure 1.15: Header Decals

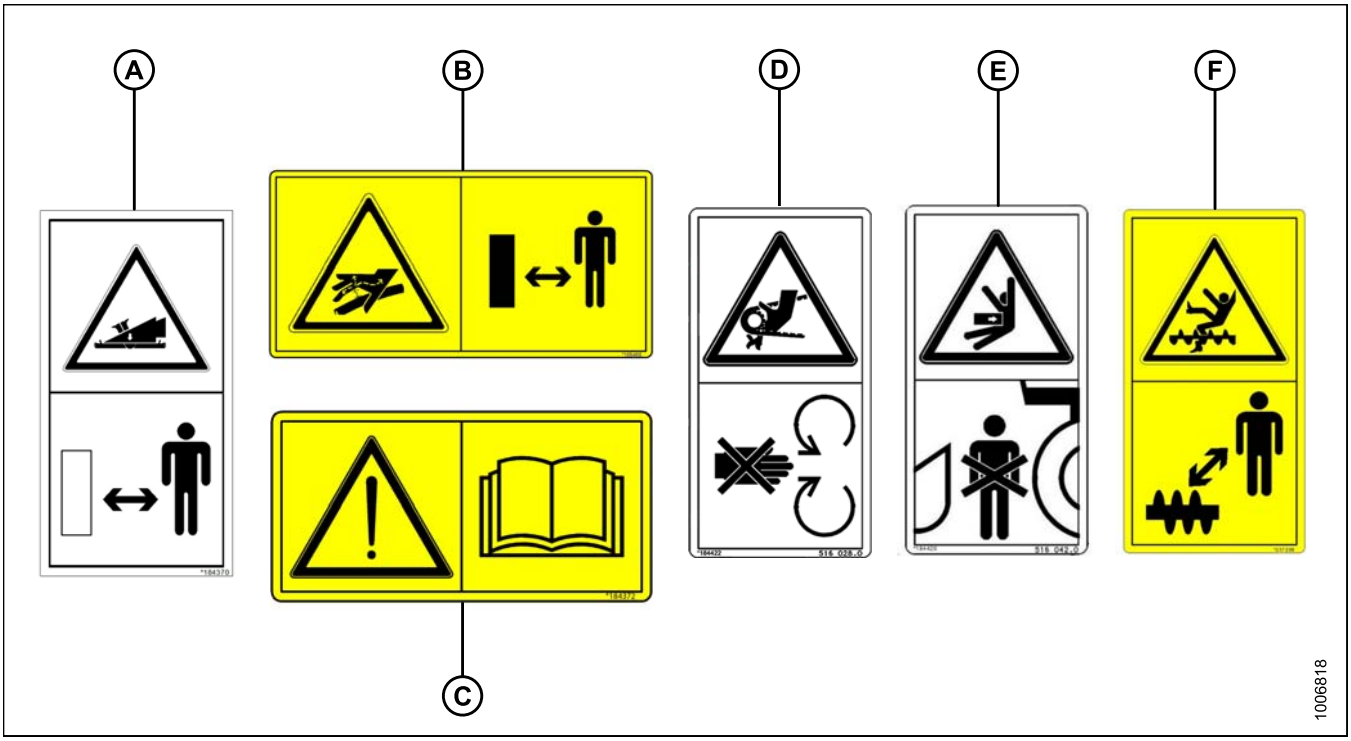
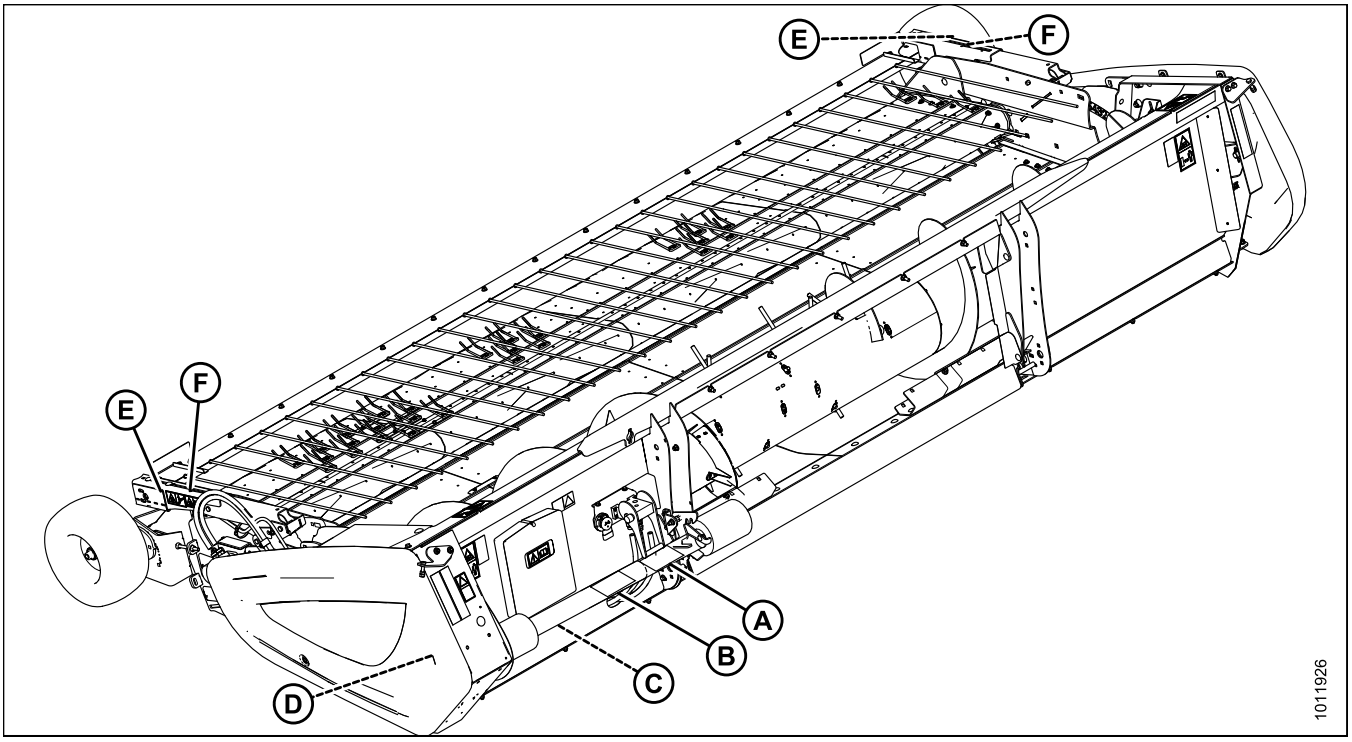


Figure 1.16: Driveline and Hold-Down Decals – Case IH



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

Figure 1.17: Driveline and Hold-Down Decals

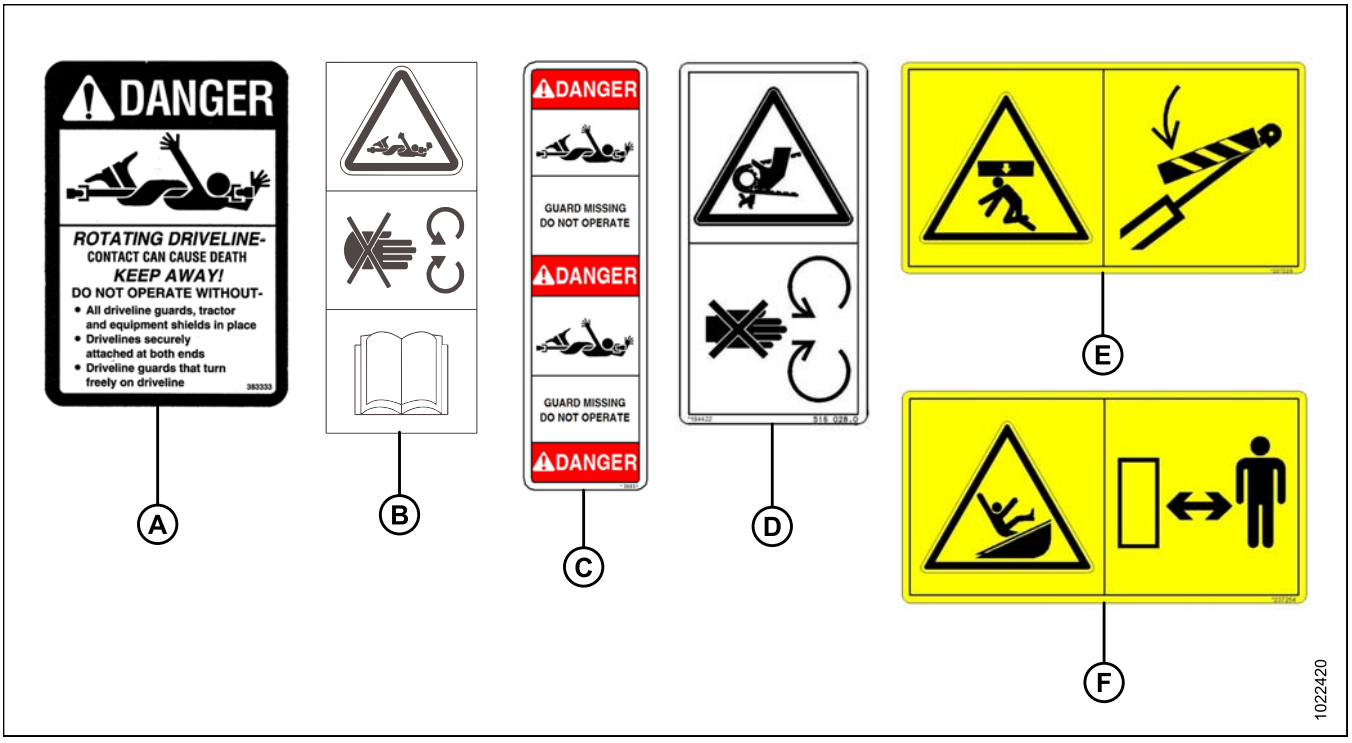
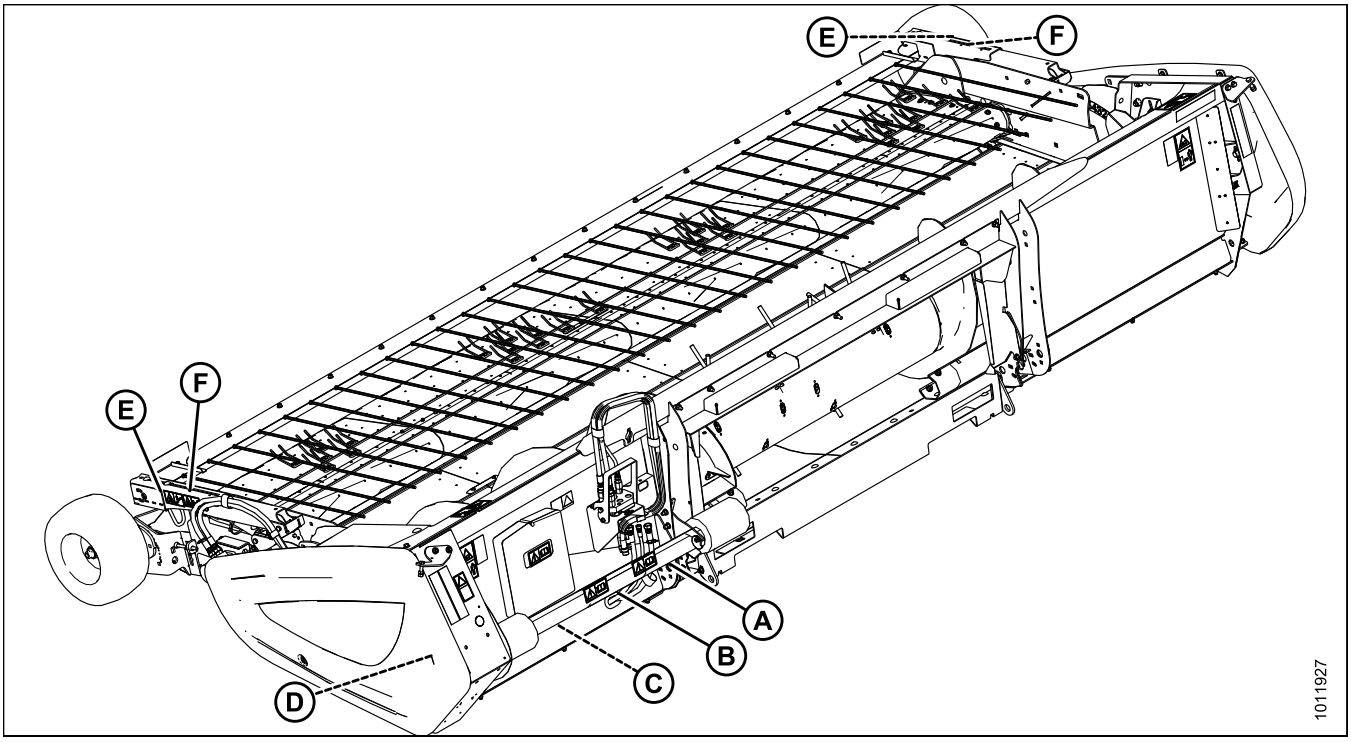


Figure 1.18: Driveline and Hold-Down Decals – John Deere



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

Figure 1.19: Driveline and Hold-Down Decals

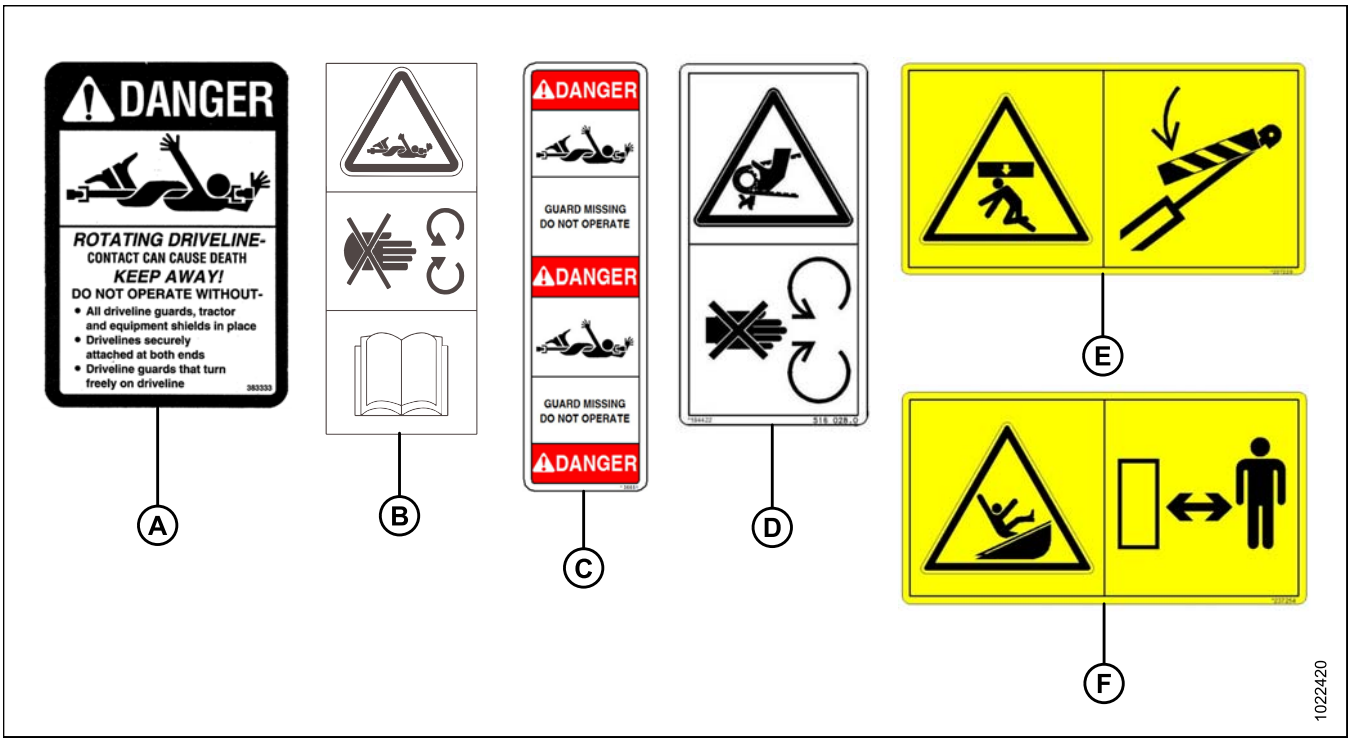
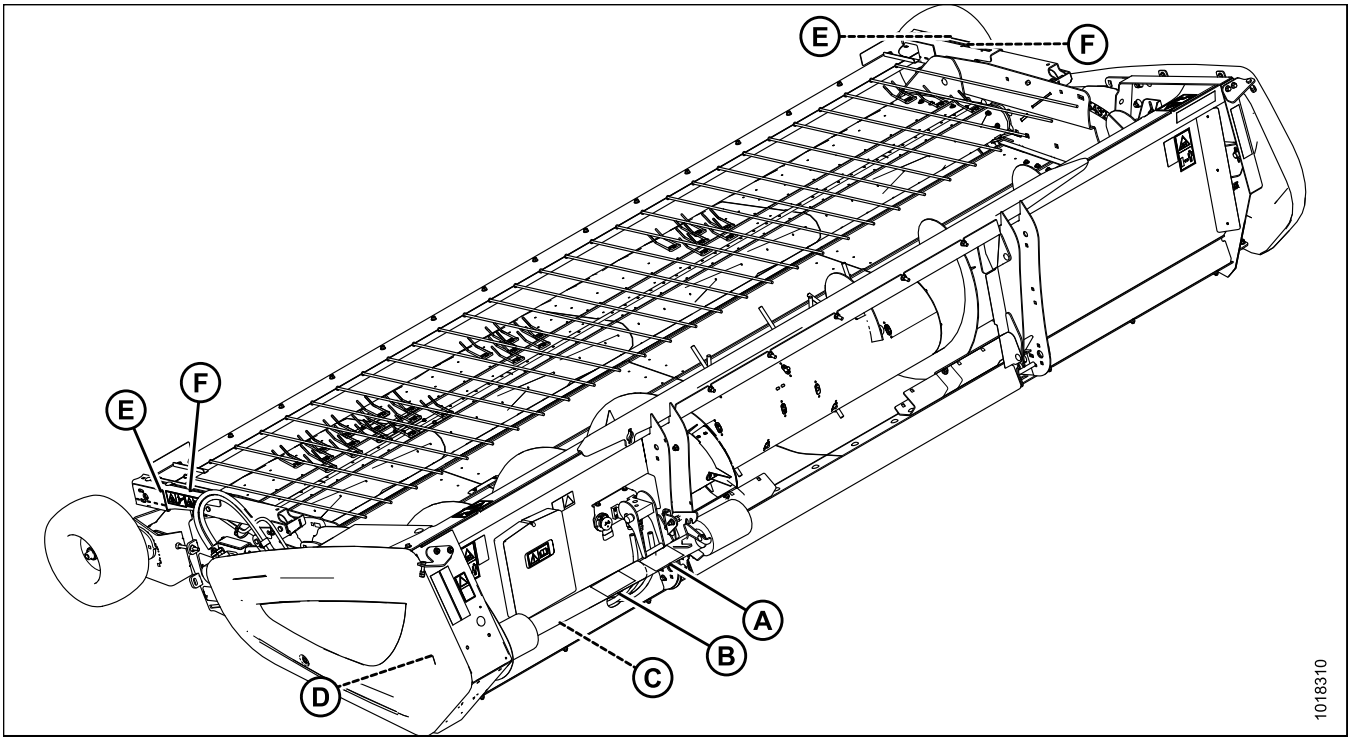


Figure 1.20: Driveline and Hold-Down Decals – New Holland



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

Figure 1.21: Driveline and Hold-Down Decals

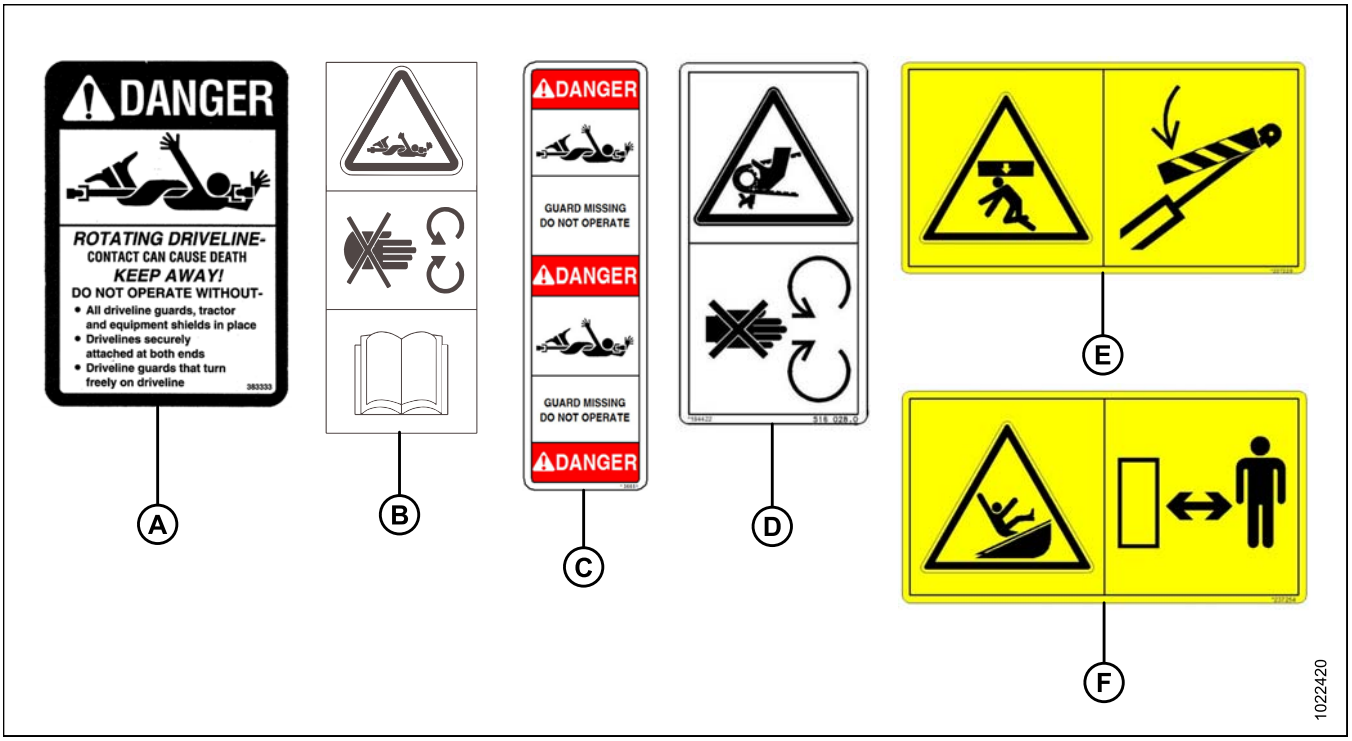
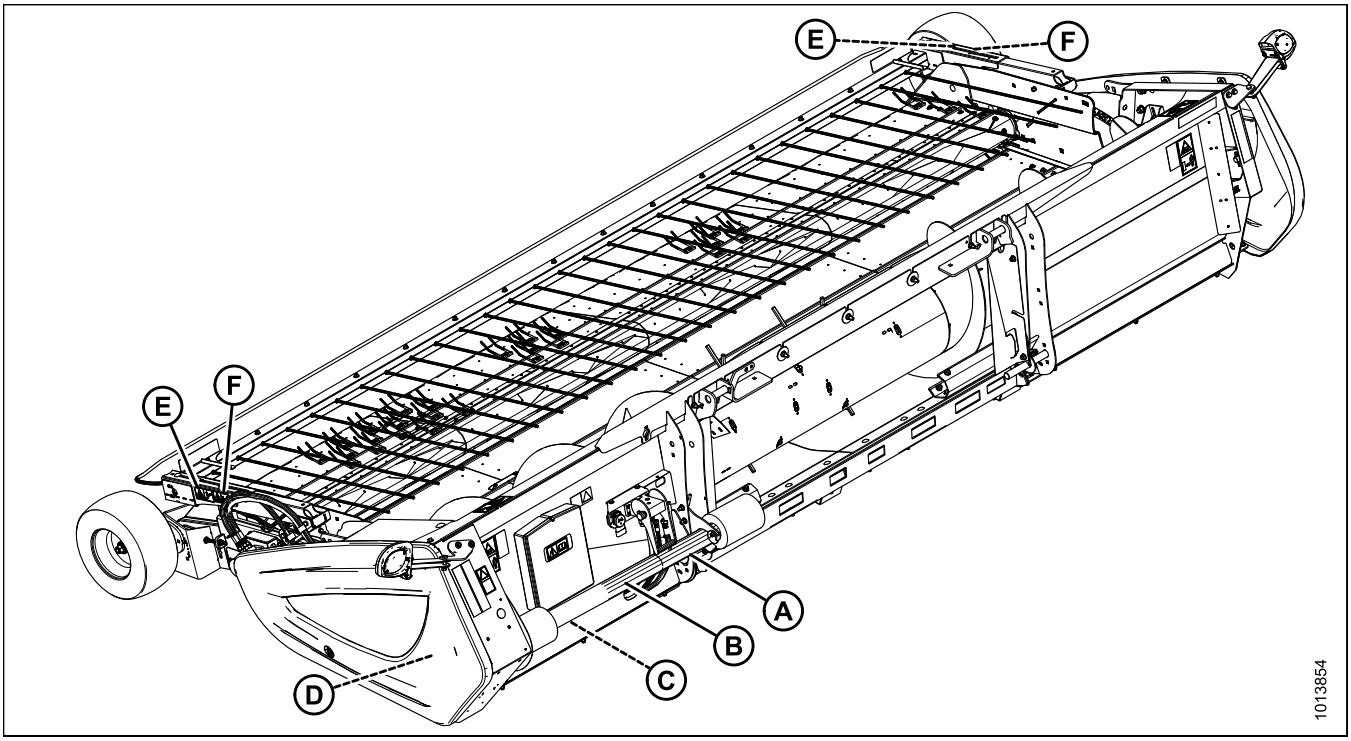
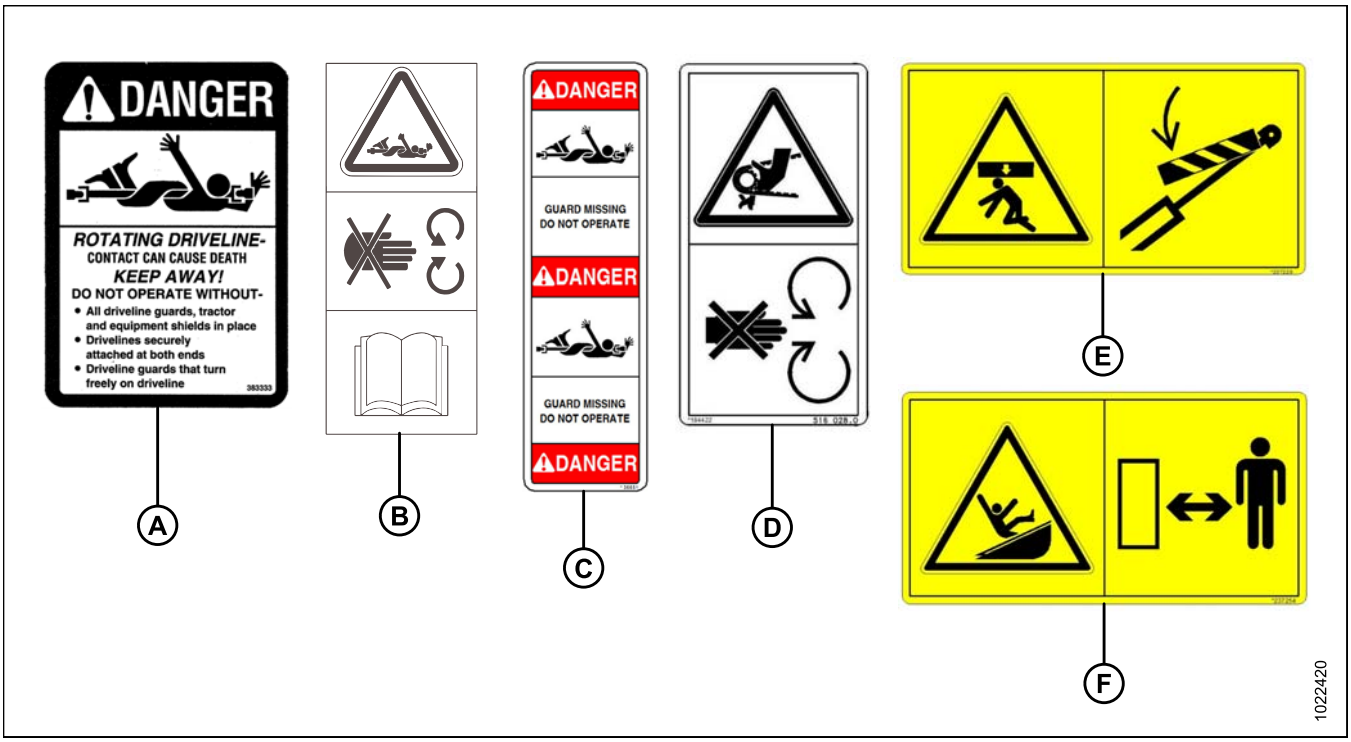


Figure 1.22: Driveline and Hold-Down Decals – Versatile



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

Figure 1.23: Driveline and Hold-Down Decals

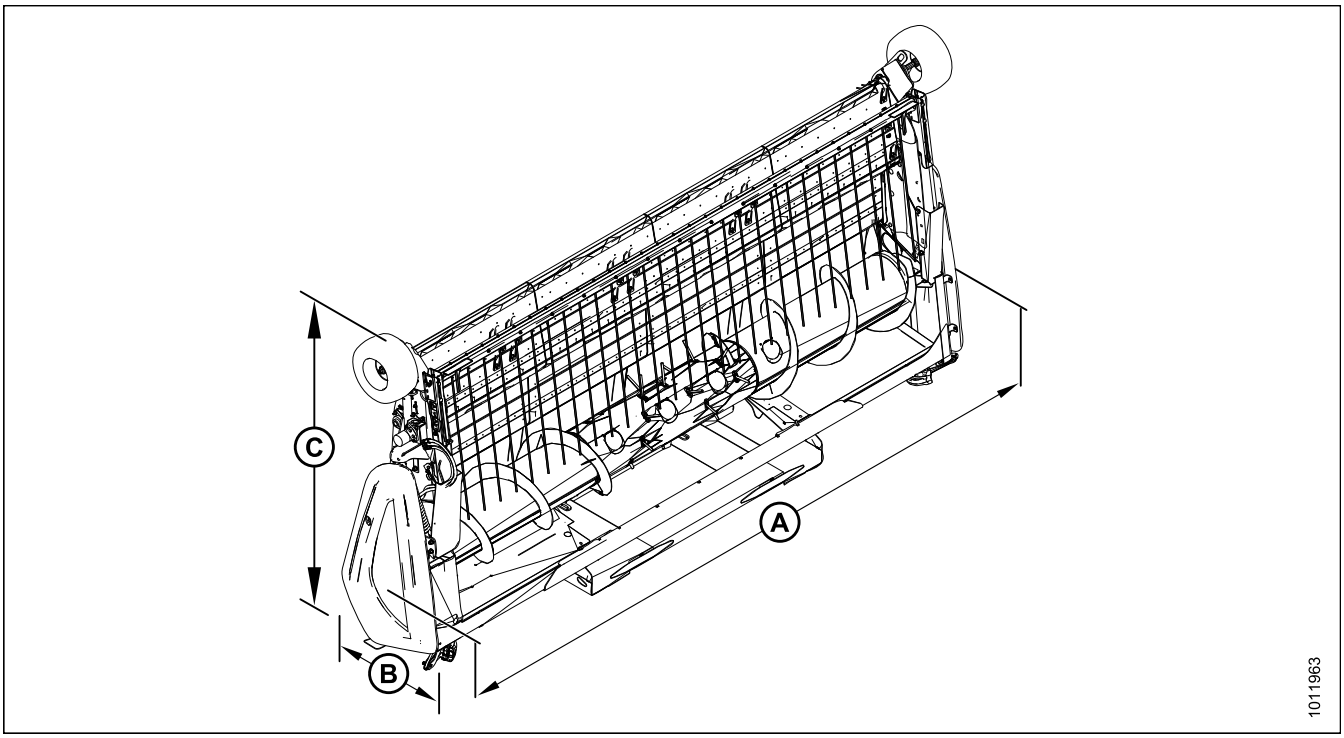


2 Shipping Data

The following data includes shipping stands:

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

Figure 2.1: Shipping Dimensions



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

3 Unloading the Header

Follow each of the procedures in this chapter in order.

3.1 Unloading with a Forklift

NOTE:

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

NOTE:

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

WARNING

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

CAUTION

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

CAUTION

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

Lifting Vehicle (Forklift or Equivalent)	
Minimum Lifting Capacity[2]	2270 kg (5000 lb.)
Minimum Fork Length	1981 mm (78 in.)

IMPORTANT:

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

To unload headers from a trailer, follow these steps:

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

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).

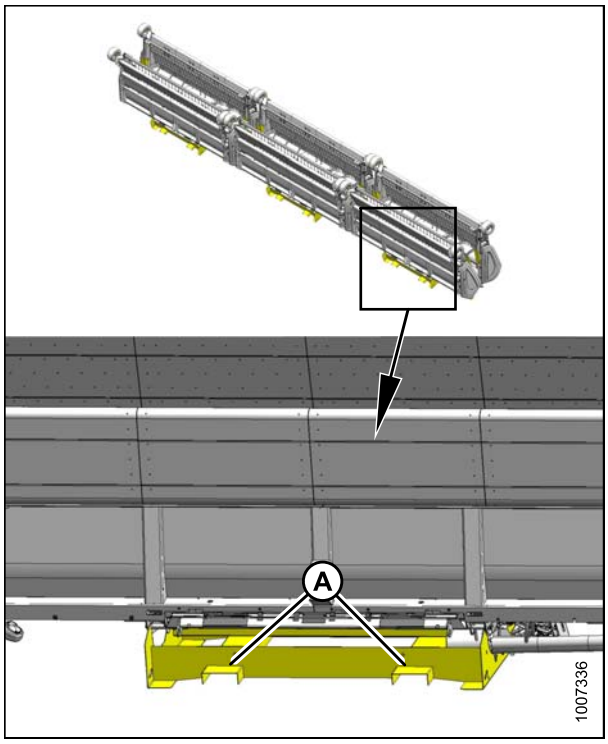


Figure 3.1: Header Shipping

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.

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 150 mm (6 in.) 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.

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

IMPORTANT:

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

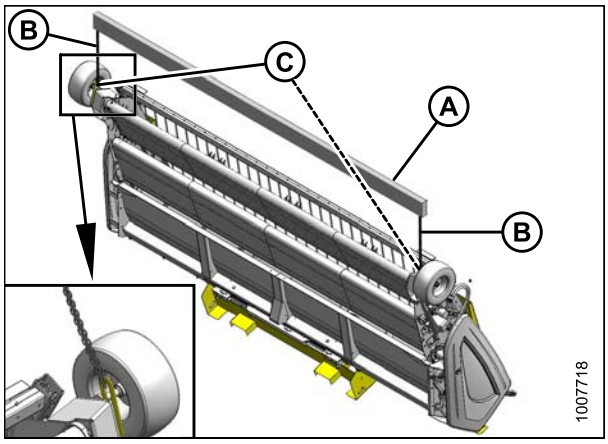


Figure 3.3: Spreader Bar on Header

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

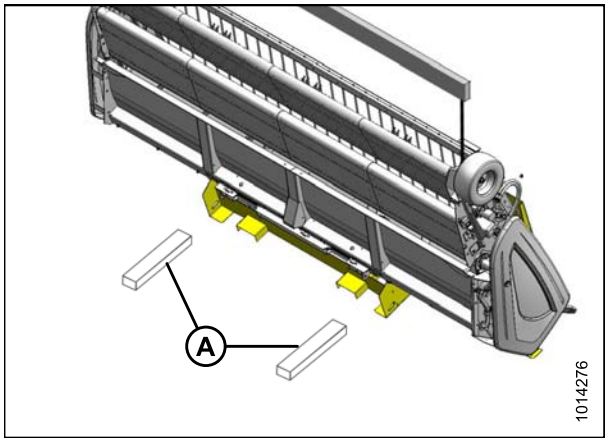


Figure 3.4: Wooden Blocks

4. Slowly back up forklift while lowering the front of pick-up header to the ground.
5. Remove chains (A) from header lugs.
6. Proceed to *3.3 Removing Shipping Stands, page 19*.

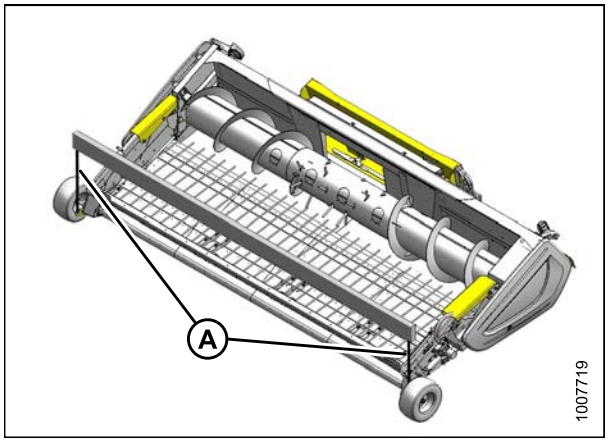


Figure 3.5: Spreader Bar on Header

3.3 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.

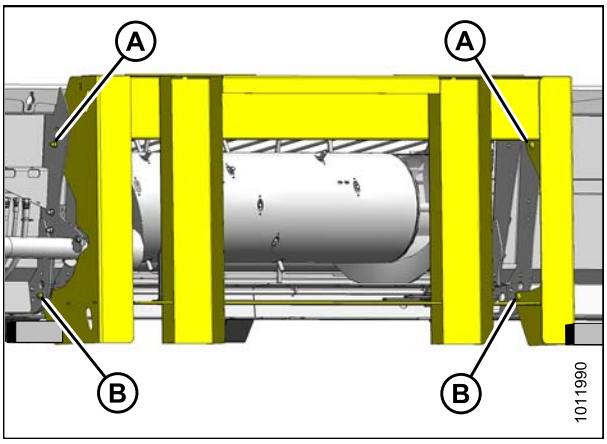


Figure 3.6: Shipping Stand

NOTE:

Wheel not shown for clarity.

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

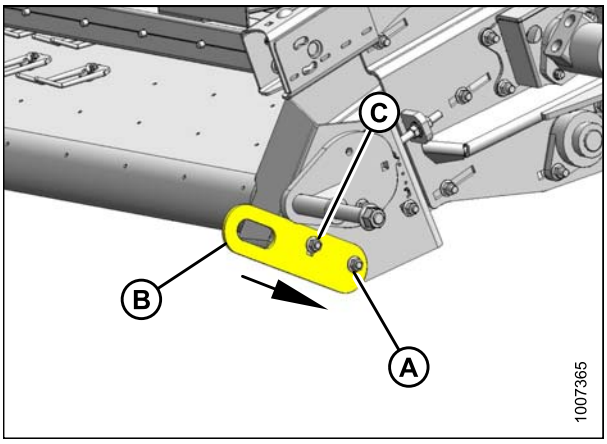


Figure 3.7: Shipping Lug

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

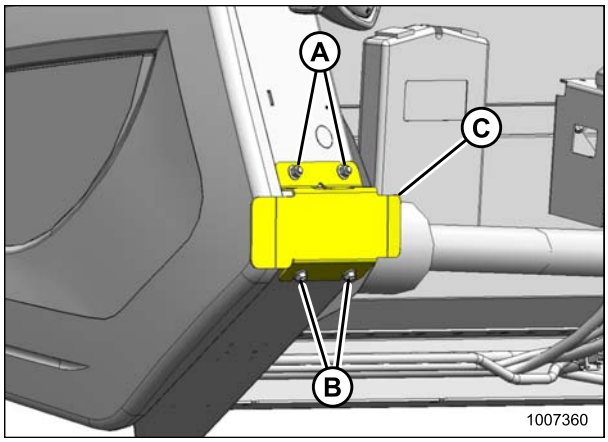


Figure 3.8: Shipping Bumper

8. Open the left endshield (A). Refer to *3.3.1 Opening Left Endshield, page 21*.
9. Remove four nuts and bolts (B).
10. Close endshield. Refer to *3.3.2 Closing Left Endshield, page 21*.

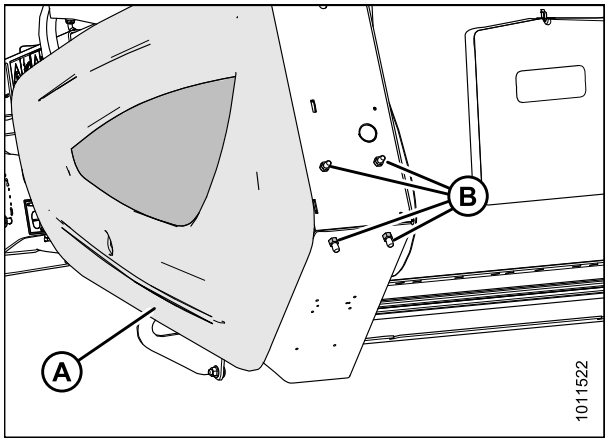


Figure 3.9: Bumper Bolts

NOTE:

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

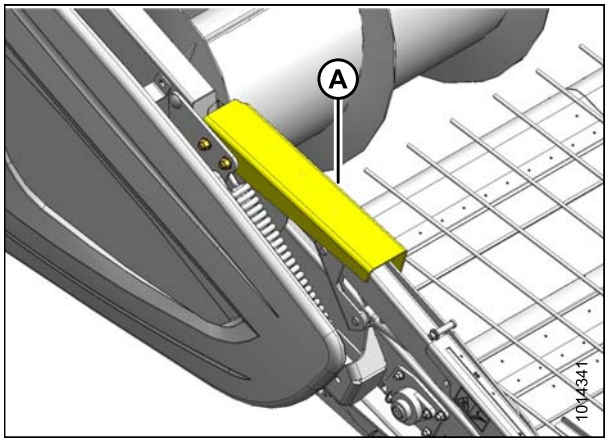


Figure 3.10: Deck Shipping Brace

3.3.1 Opening Left Endshield

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

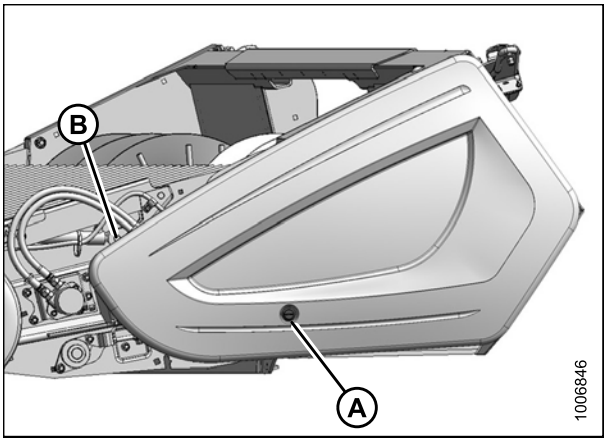


Figure 3.11: Endshield Closed

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

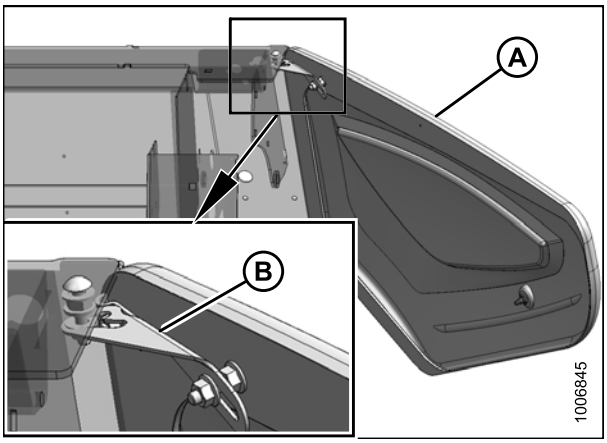


Figure 3.12: Endshield Open

3.3.2 Closing Left Endshield

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

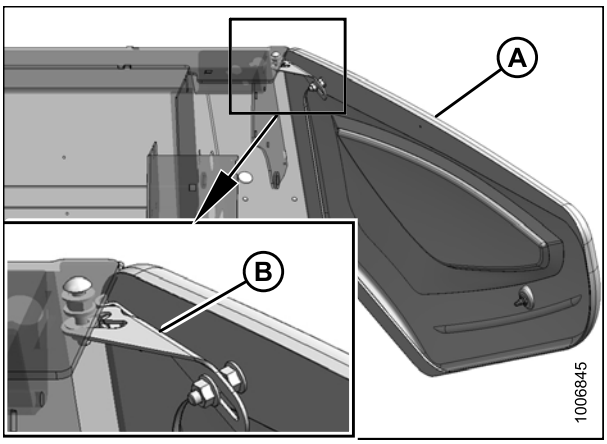


Figure 3.13: Endshield Support

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

   NOTE:

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

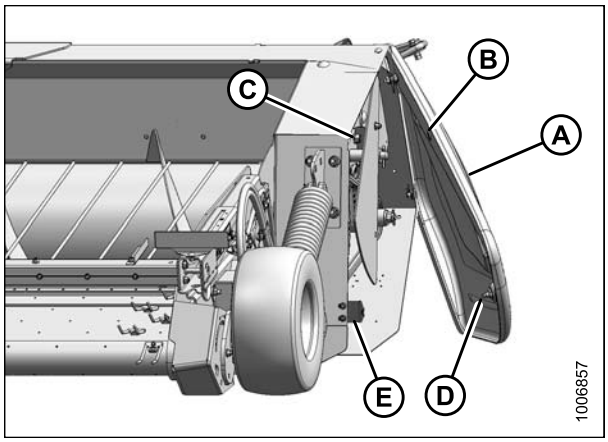


Figure 3.14: Endshield

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

   IMPORTANT:

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

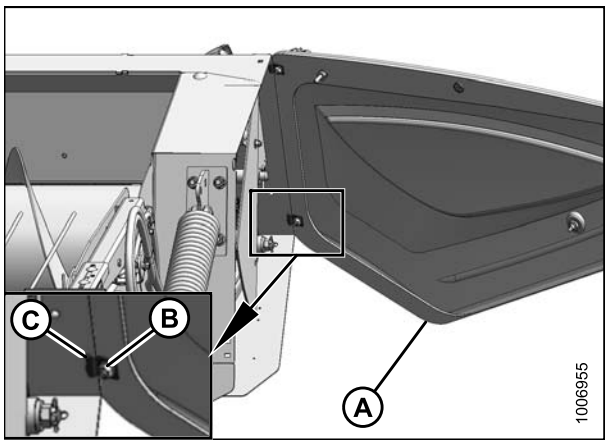


Figure 3.15: Endshield Adjustment

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

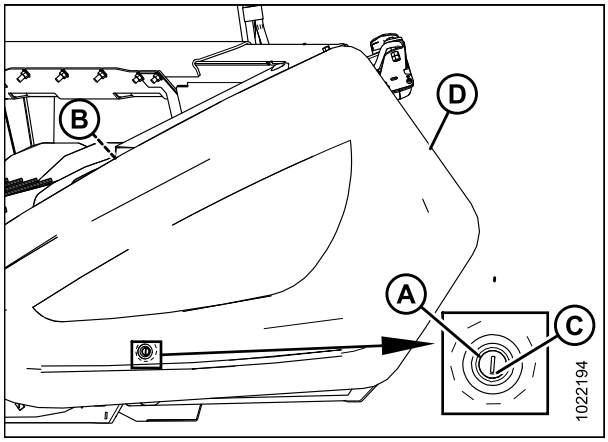


Figure 3.16: Endshield Closed

3.4 Setting Rigid Wheels to Field/Working Position

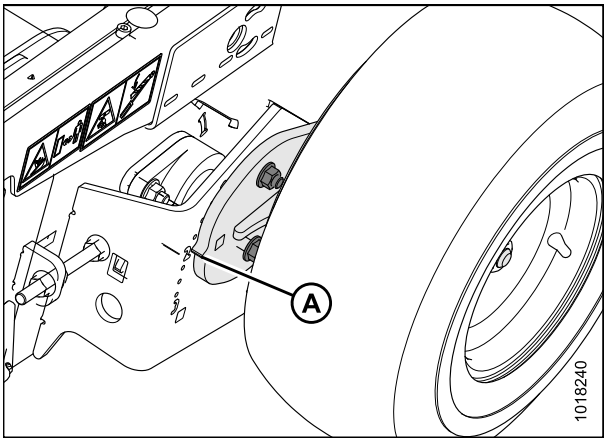


Figure 3.17: Working Position

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

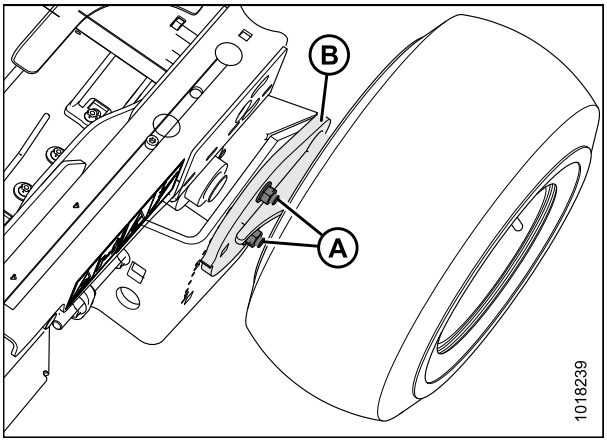


Figure 3.18: Header Wheel Right Side

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

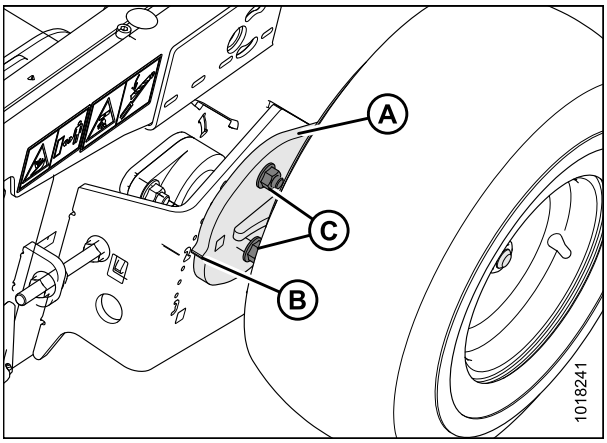


Figure 3.19: Header Wheel Right Side

3.5 Setting Caster Wheels to Field/Working Position

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

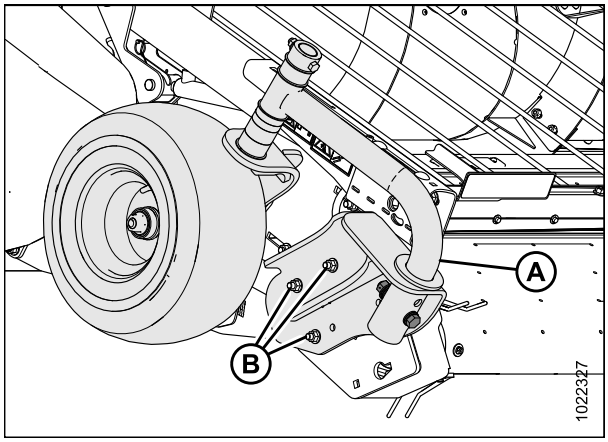


Figure 3.20: Header Wheel Right Side

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

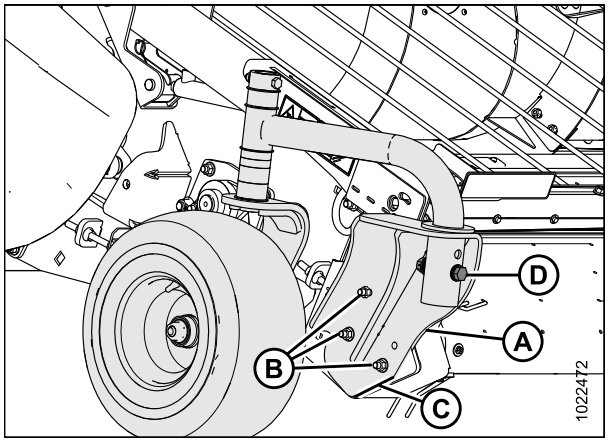


Figure 3.21: Header Wheel Right Side

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

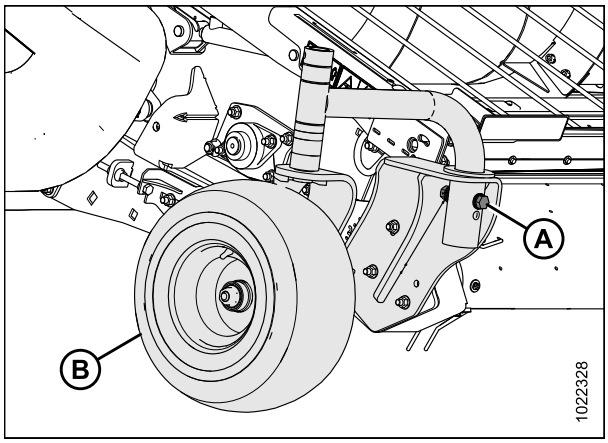


Figure 3.22: Header Wheel Right Side

3.6 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.

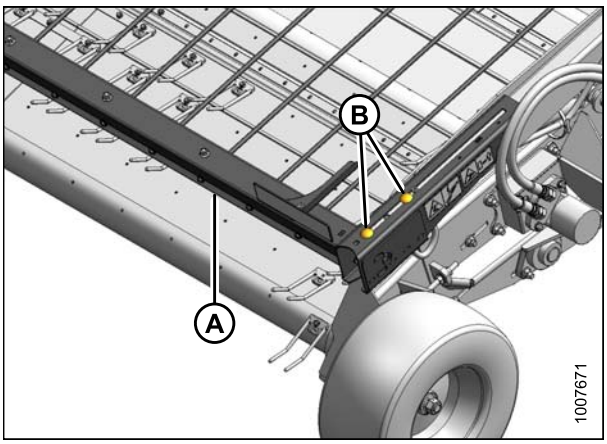


Figure 3.23: Hold-Down Left Side

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

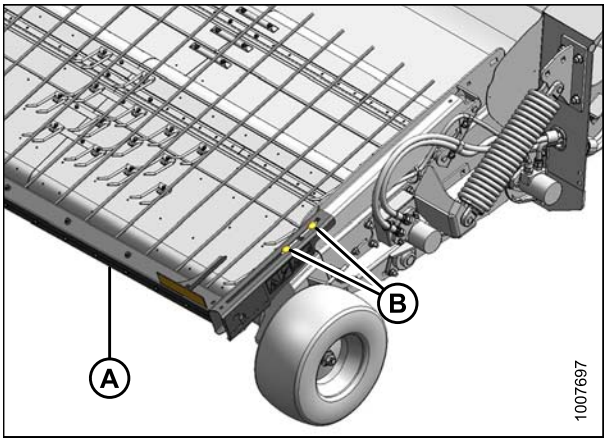


Figure 3.24: Hold-Down Left Side

3.7 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).

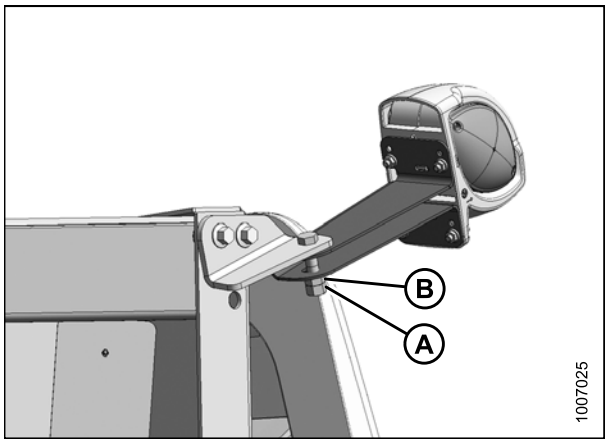


Figure 3.25: Transport Light

3.8 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.

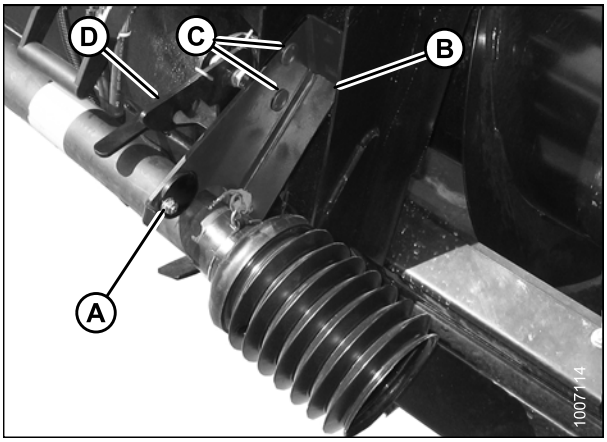


Figure 3.26: Driveline Bracket

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).

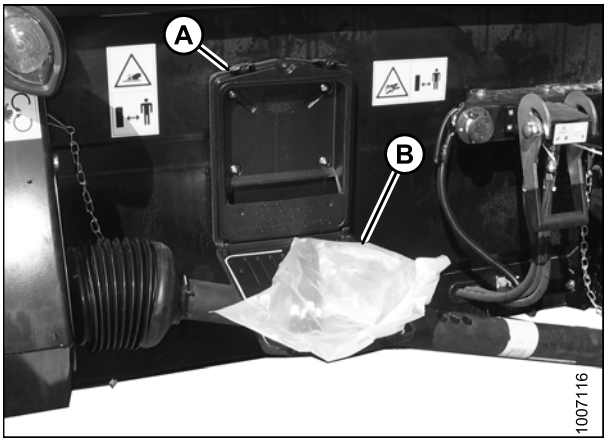


Figure 3.27: Hardware Bag

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.

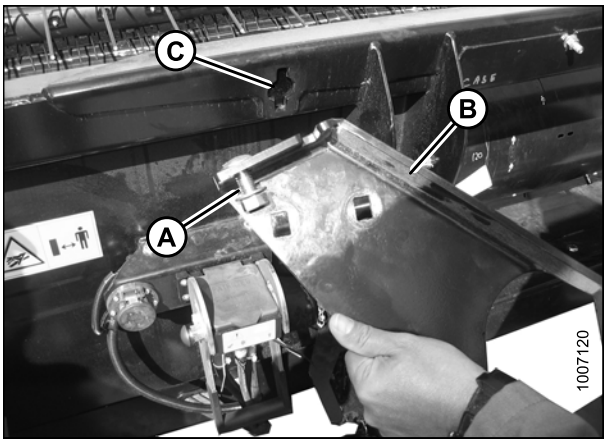


Figure 3.28: Driveline Bracket

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.

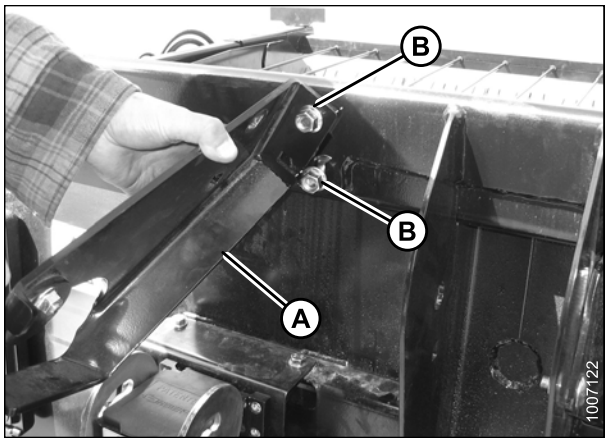


Figure 3.29: Driveline Bracket

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

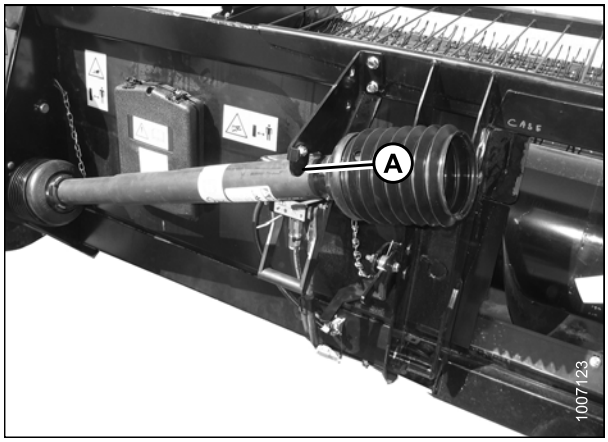


Figure 3.30: Driveline in Repositioned Bracket

4 Reconfiguring Headers

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

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

- Case 1156 mm (45.5 in.) – refer to *4.2 Configuring Headers for Case IH, page 36*
- John Deere 1670 mm (65 in.) – refer to *4.1 Configuring Headers for John Deere, page 29*
- New Holland 1016 mm (40 in.) – refer to *4.4 Configuring Headers for New Holland CR, page 45*
- New Holland 1524 mm (60 in.) – refer to *4.3 Configuring Headers for New Holland CX, page 39*

4.1 Configuring Headers for John Deere

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

4.1.1 Moving Stripper Assemblies

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

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

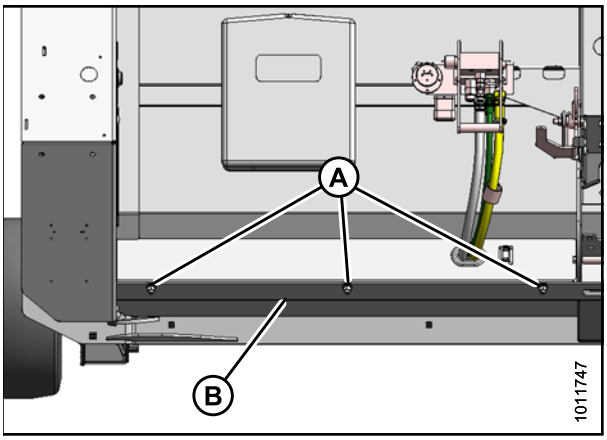


Figure 4.1: Left Cover – Right Side Opposite

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

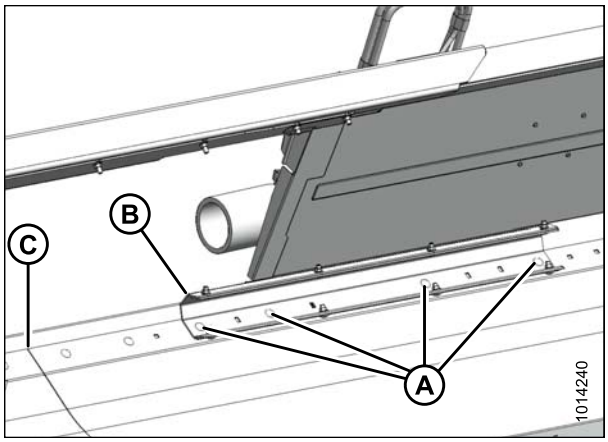


Figure 4.2: Left Stripper – Narrow Opening (Auger Not Shown for Clarity)

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

   NOTE:

   The centerline is located where the header pans meet.

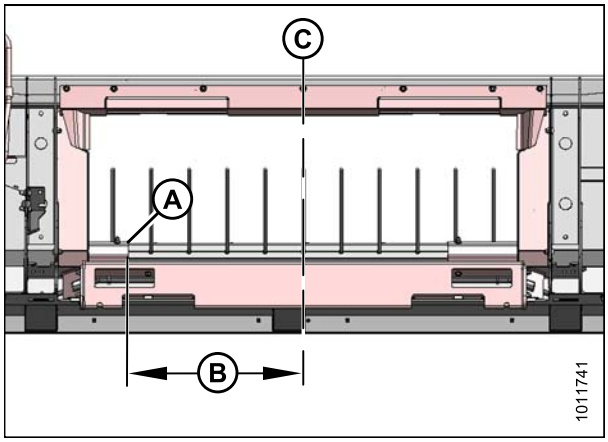


Figure 4.3: Left Stripper – Wide Opening

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.

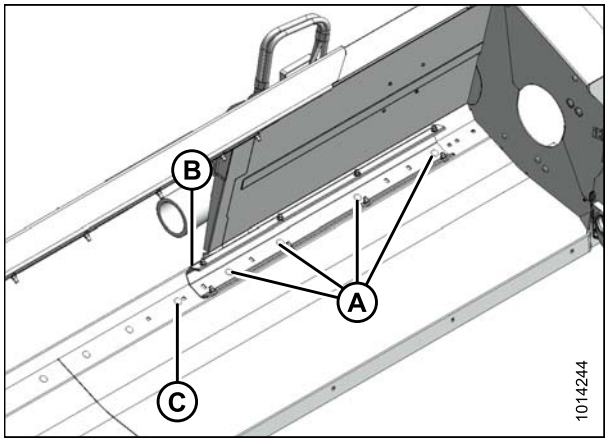


Figure 4.4: Left Stripper – Wide Opening

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

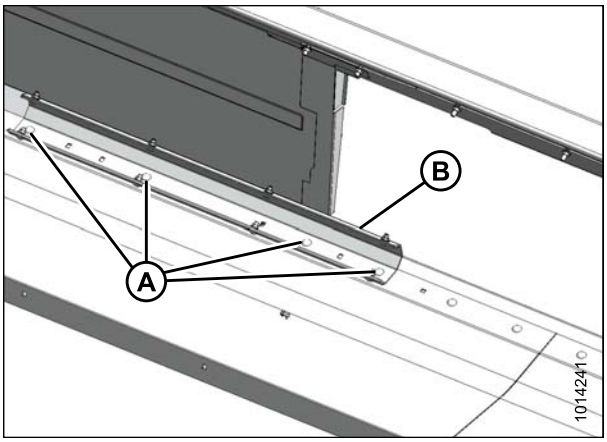


Figure 4.5: Right Stripper – Narrow Opening

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

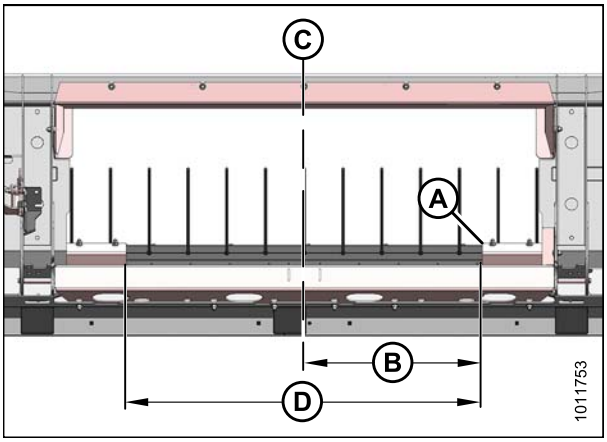


Figure 4.6: Right Stripper – Wide Opening

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 3–11 mm (1/8–7/16 in.).
12. If necessary, refer to .

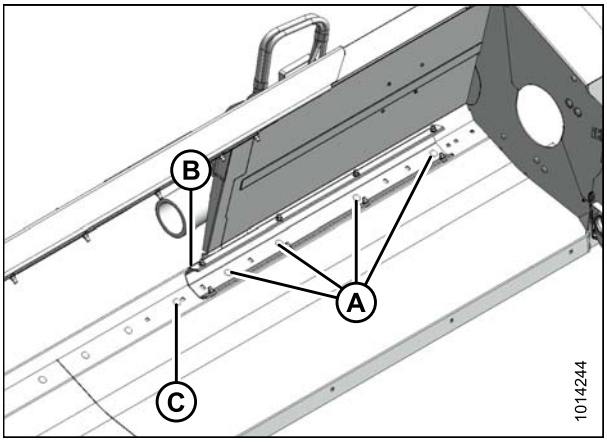


Figure 4.7: Left Stripper – Wide Opening

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

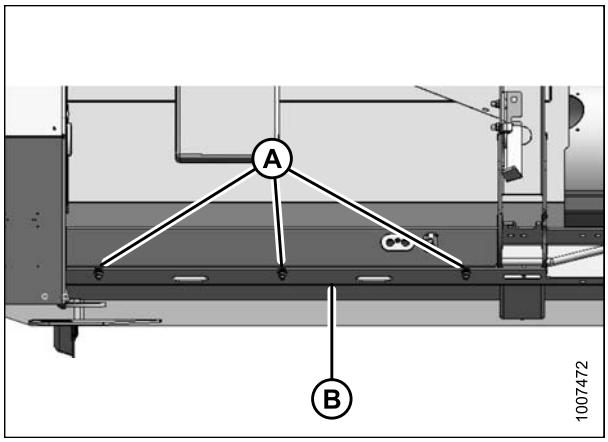


Figure 4.8: Left Cover – Right Side Opposite

4.1.2 Removing Flighting Extensions

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

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

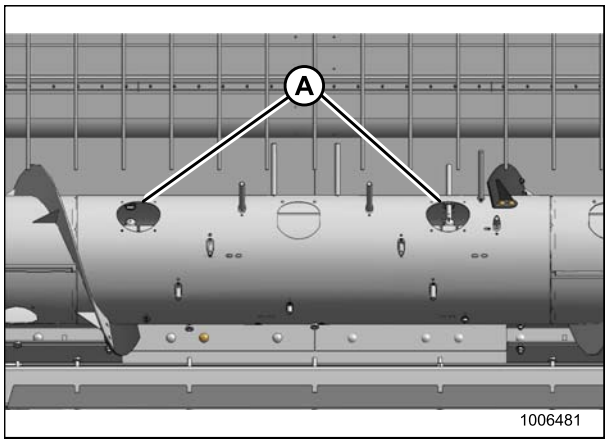


Figure 4.9: Access Holes in Auger

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

   IMPORTANT:

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

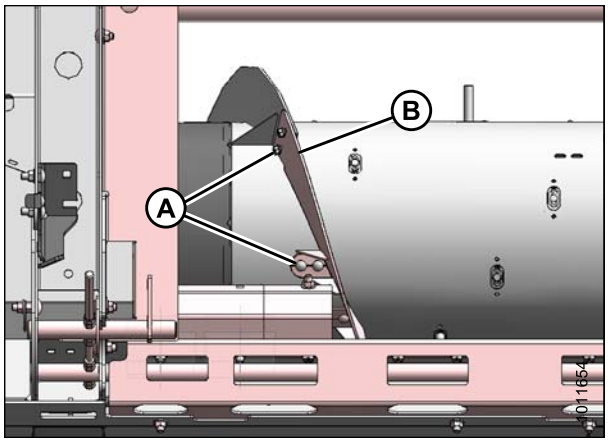


Figure 4.10: Left Flighting Extension – Right Extension Opposite

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

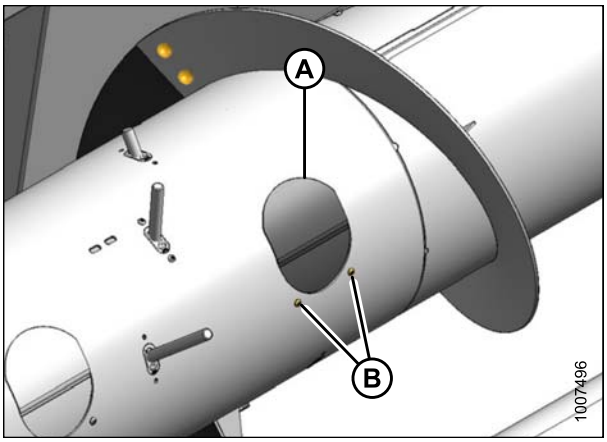


Figure 4.11: Access Cover

4.1.3 Installing Auger Fingers

Follow these steps to install the extra auger fingers required to configure the header: 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.

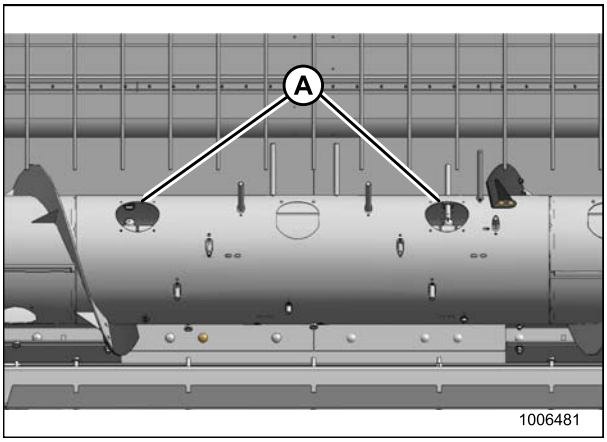


Figure 4.12: Access Holes in Auger

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 8.5 N·m (75 in·lbf).
7. Repeat Steps *3, page 34* to *6, page 34* for the remaining locations.

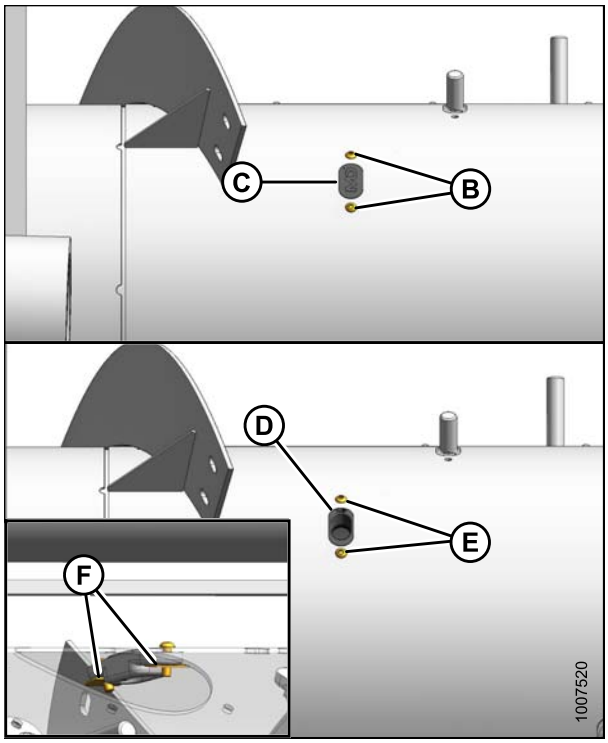


Figure 4.13: Plastic Guides

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 34* to *10, page 34* for the remaining fingers.

NOTE:

There should be a total of 22 fingers.

IMPORTANT:

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

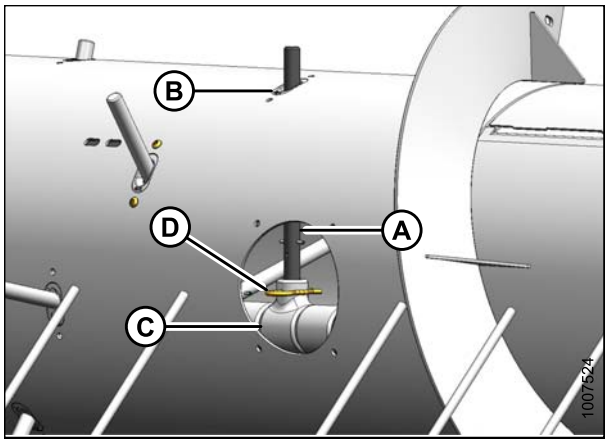


Figure 4.14: Auger Fingers

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

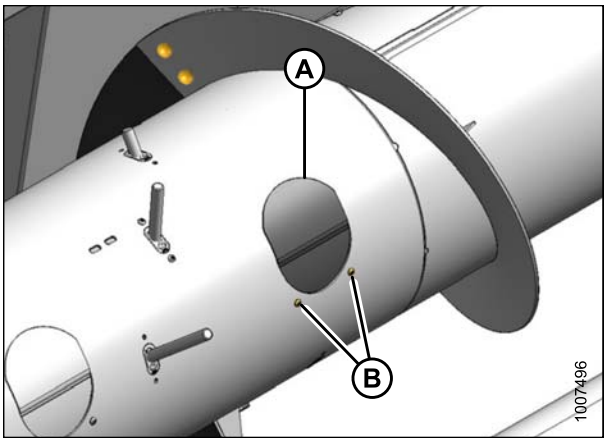


Figure 4.15: Access Cover

4.2 Configuring Headers for Case IH

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

4.2.1 Moving Stripper Assemblies

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.

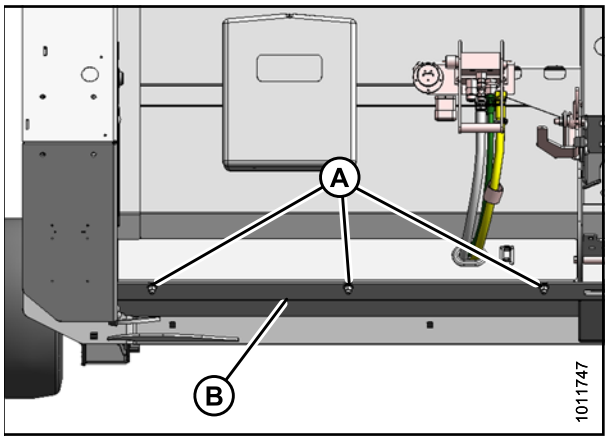


Figure 4.16: Left Cover – Right Side Opposite

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

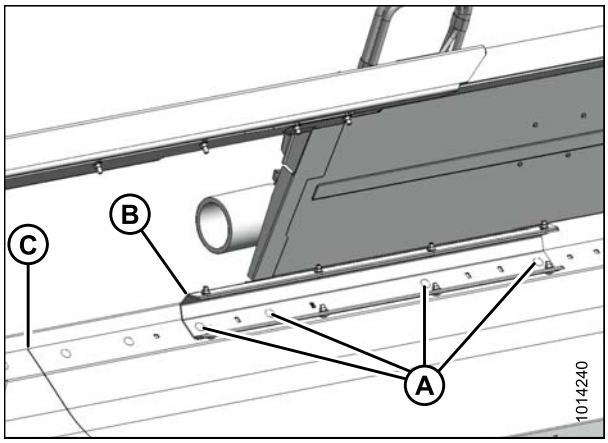


Figure 4.17: Left Stripper – Narrow Opening (Auger Not Shown for Clarity)

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

   NOTE:

   The centerline is located where the header pans meet.

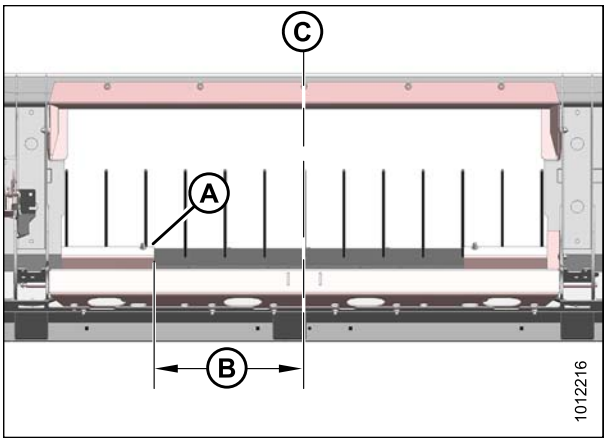


Figure 4.18: Narrow Opening

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

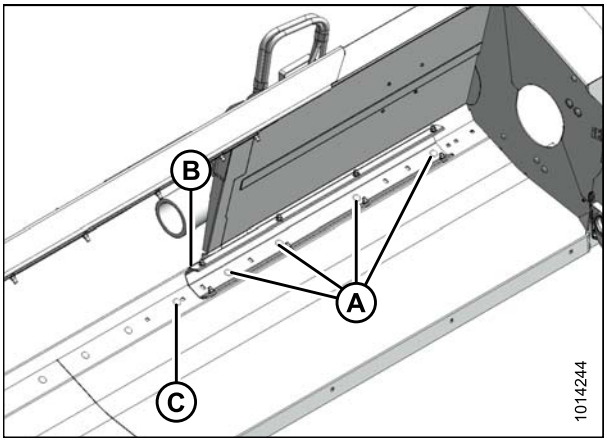


Figure 4.19: Left Stripper – Wide Opening

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

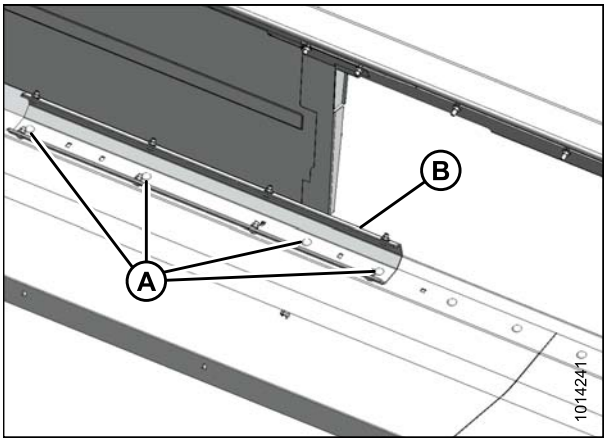


Figure 4.20: Right Stripper

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

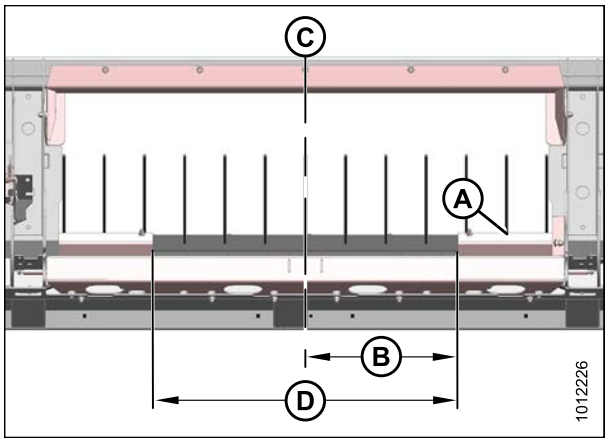


Figure 4.21: Narrow Opening

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

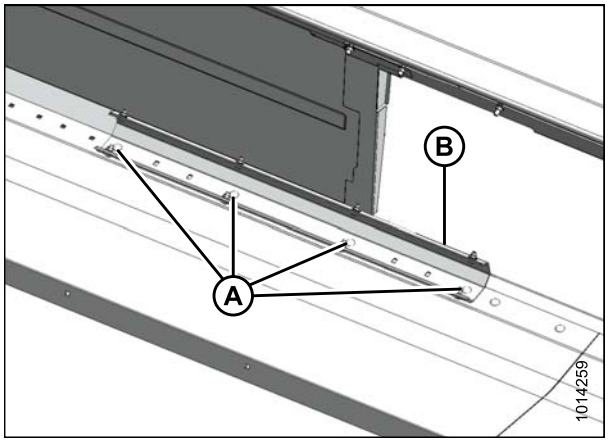


Figure 4.22: Right Stripper – Narrow Opening

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

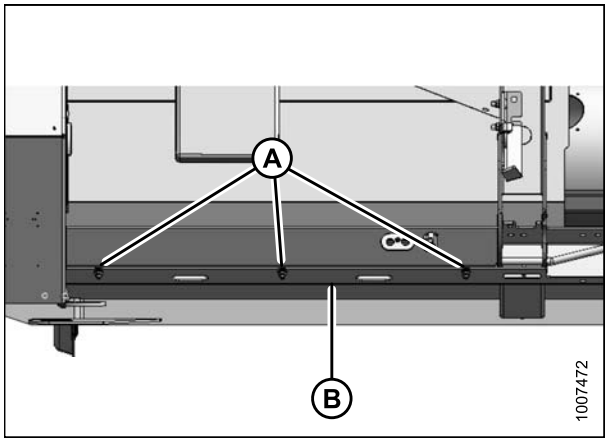


Figure 4.23: Left Cover – Right Side Opposite

4.3 Configuring Headers for New Holland CX

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

4.3.1 Moving Stripper Assemblies

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

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

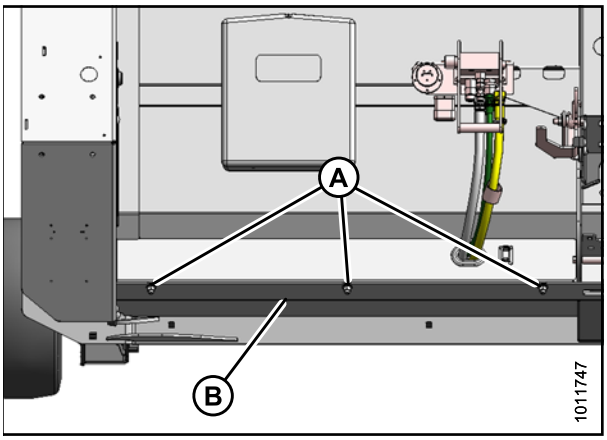


Figure 4.24: Left Cover – Right Side Opposite

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

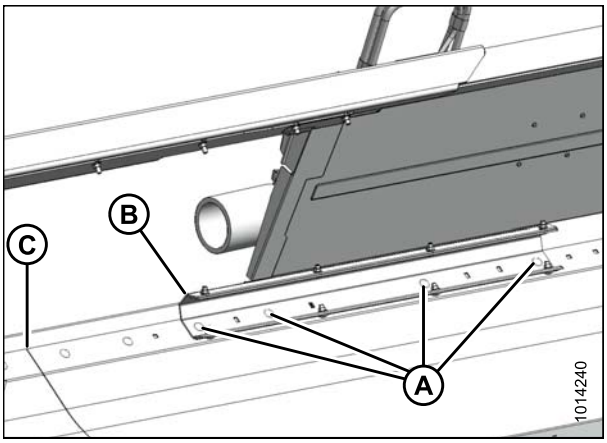


Figure 4.25: Left Stripper – Narrow Opening (Auger Not Shown for Clarity)

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

   NOTE:

   The centerline is located where the header pans meet.

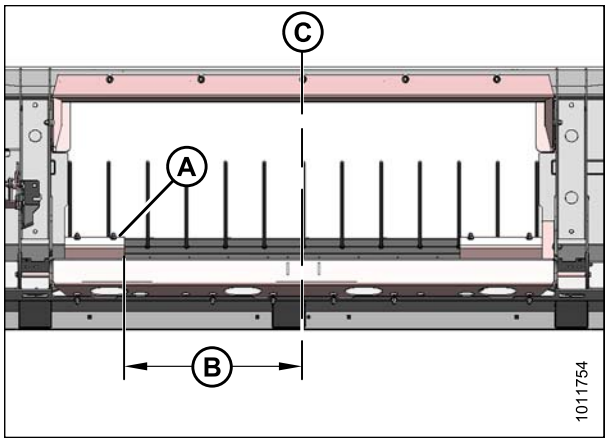


Figure 4.26: Left Stripper – Wide Opening

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

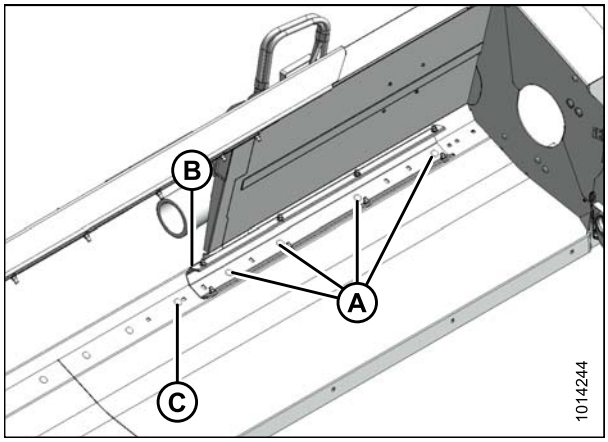


Figure 4.27: Left Stripper – Wide Opening

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

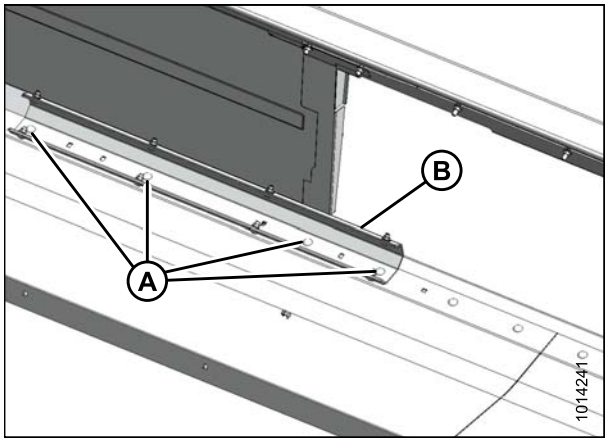


Figure 4.28: Right Stripper – Narrow Opening

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

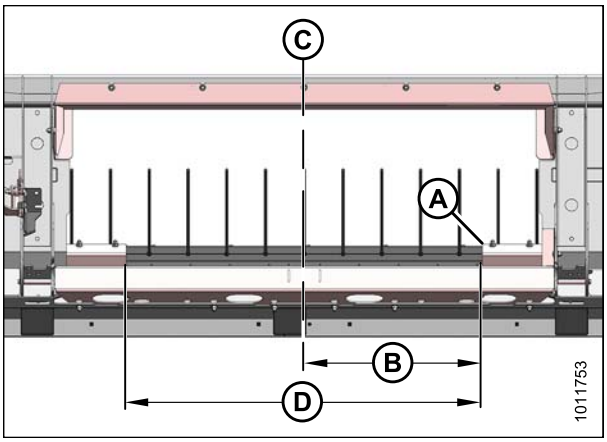


Figure 4.29: Right Stripper – Wide Opening

9. Reinstall the four bolts (A) where stripper assembly (B) mounting holes line up with the frame. Tighten bolts.
10. Install M12 x 30 carriage bolt (C) and nut (provided in hardware bag) into the existing hole as shown.
11. Manually rotate the auger and check the clearances between the auger flighting and stripper plates. The clearance should be 3–11 mm (1/8–7/16 in.).
12. If necessary, refer to *4.5 Adjusting Stripper Plate Clearance, page 52*.

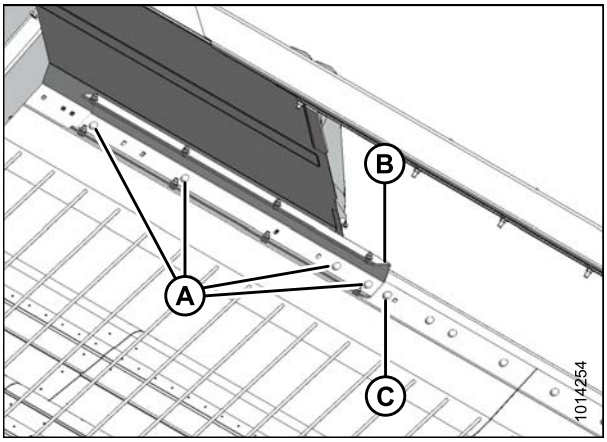


Figure 4.30: Right Stripper – Wide Opening

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

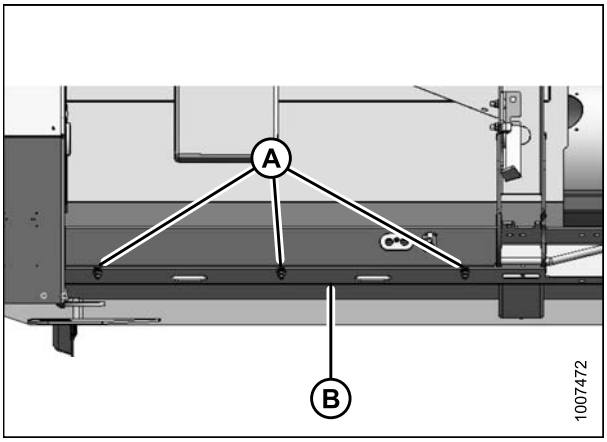


Figure 4.31: Left Cover – Right Side Opposite

4.3.2 Removing Flighting Extensions

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

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

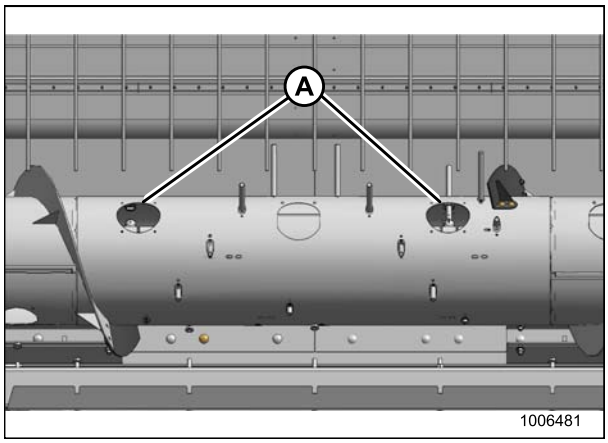


Figure 4.32: Access Holes in Auger

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

   IMPORTANT:

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

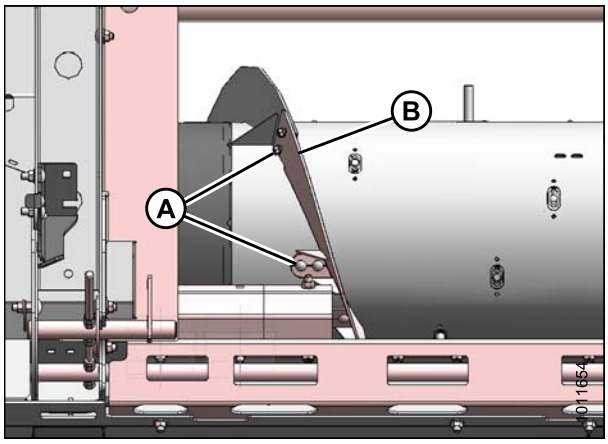


Figure 4.33: Left Flighting Extension – Right Extension Opposite

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

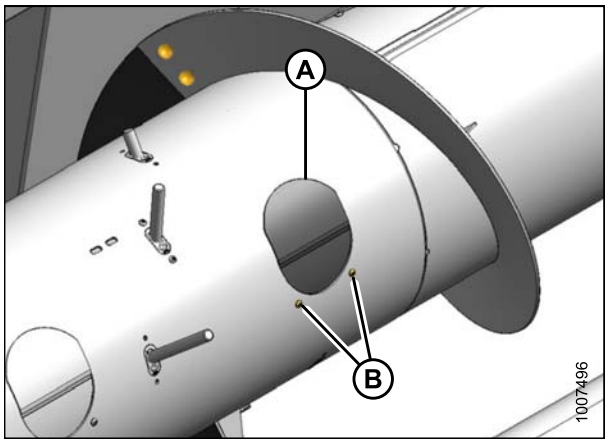


Figure 4.34: Access Cover

4.3.3 Installing Auger Fingers

Follow these steps to install the extra auger fingers required to configure the header: 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.

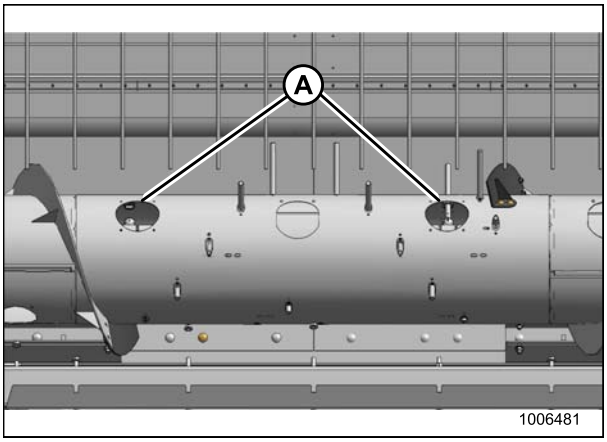


Figure 4.35: Access Holes in Auger

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 8.5 N·m (75 in·lbf).
7. Repeat Steps *3, page 43* to *6, page 43* for the remaining locations.

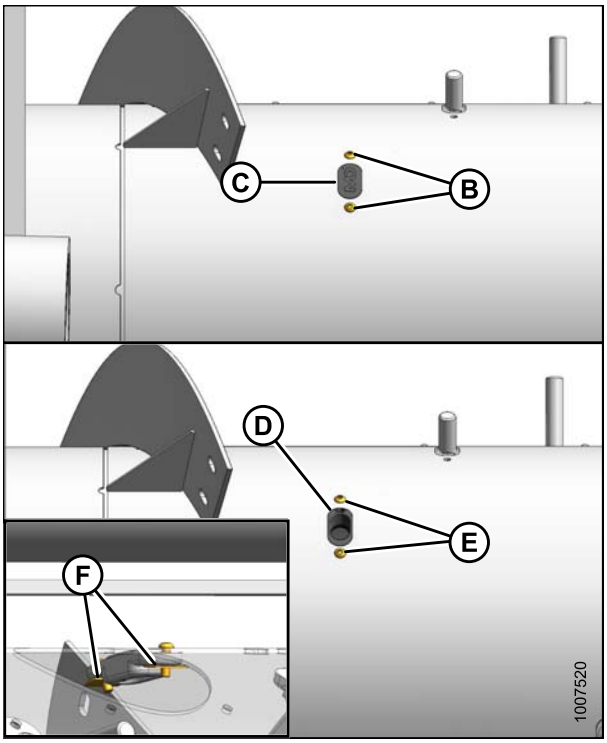


Figure 4.36: Plastic Guides

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 44* to *10, page 44* for the remaining fingers.

    NOTE:

    There should be a total of 22 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 11 N·m (95 in·lbf).

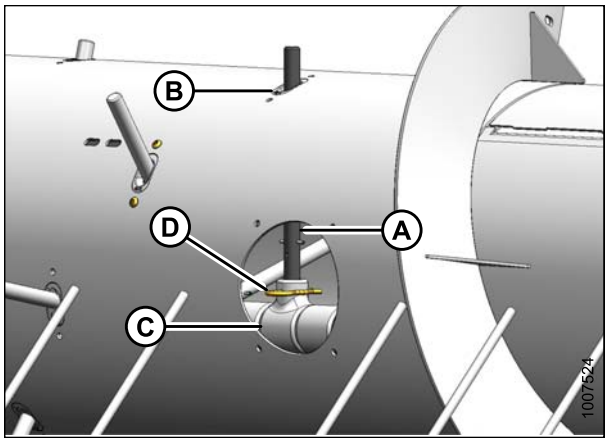


Figure 4.37: Auger Fingers

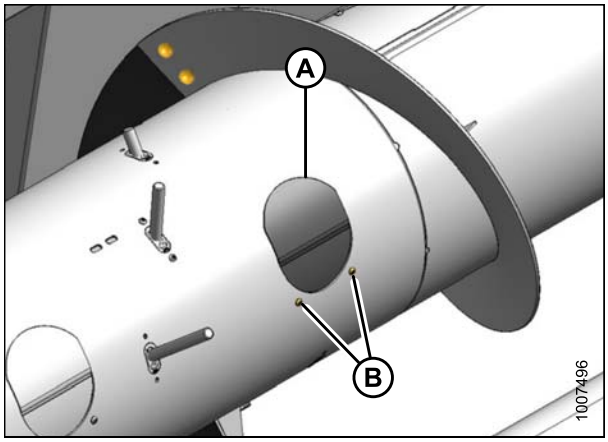


Figure 4.38: Access Cover

4.4 Configuring Headers for New Holland CR

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

4.4.1 Moving Stripper Assemblies

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

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

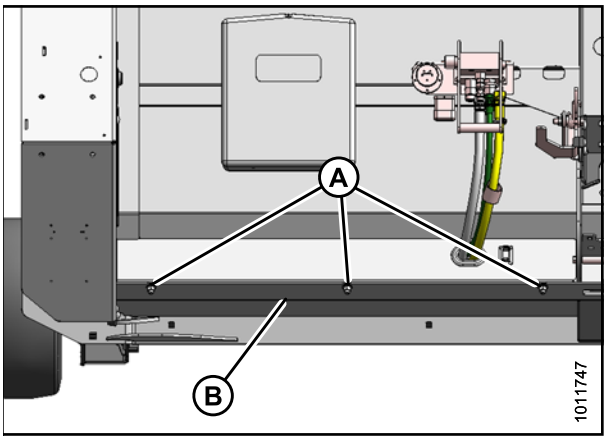


Figure 4.39: Left Cover – Right Side Opposite

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

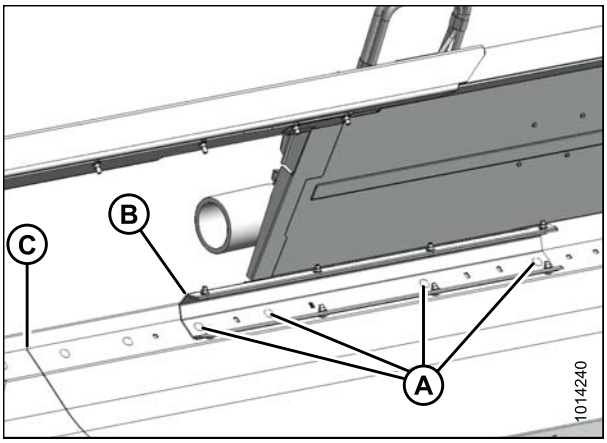


Figure 4.40: Left Stripper – Narrow Opening (Auger Not Shown for Clarity)

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

   NOTE:

   The centerline is located where the header pans meet.

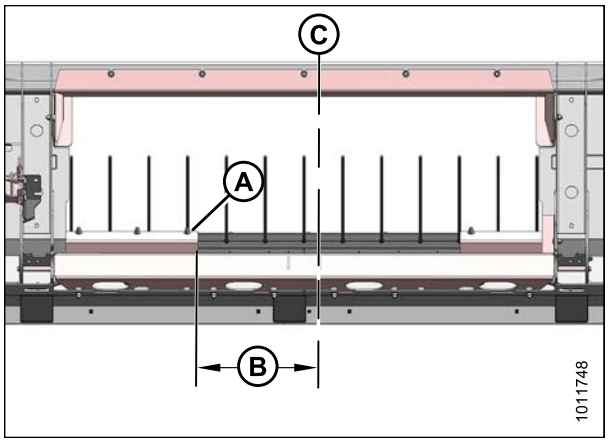


Figure 4.41: Narrow Opening

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

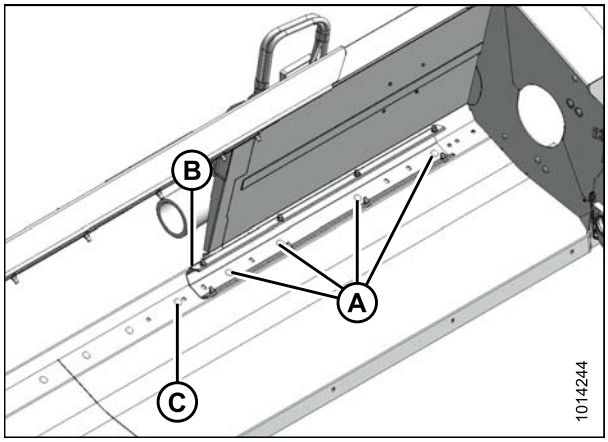


Figure 4.42: Left Stripper – Wide Opening

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

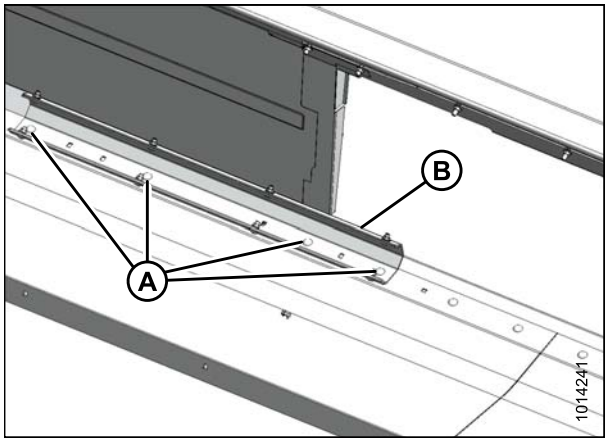


Figure 4.43: Right Stripper

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

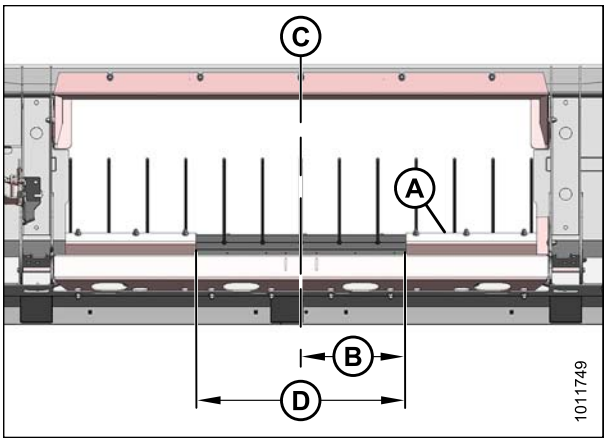


Figure 4.44: Narrow Opening

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 3–11 mm (1/8–7/16 in.).
10. If necessary, refer to .

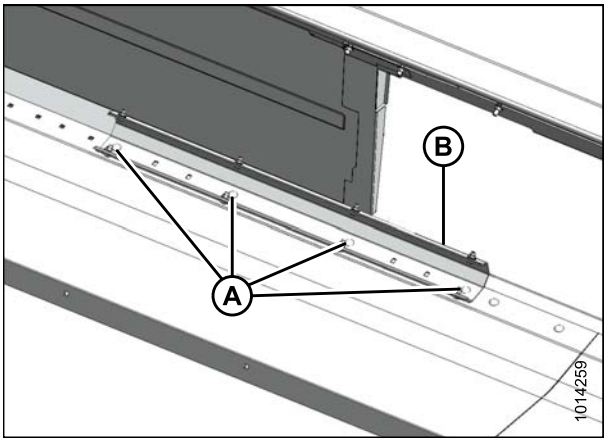


Figure 4.45: Right Stripper – Narrow Opening

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

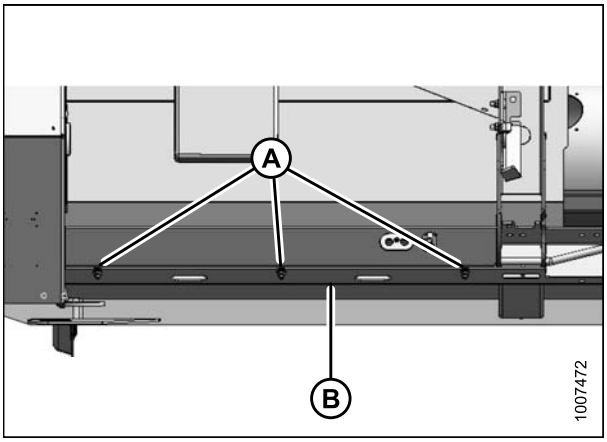


Figure 4.46: Left Cover – Right Side Opposite

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.

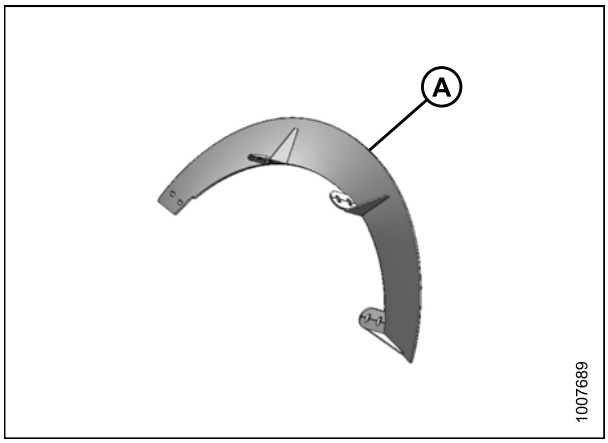


Figure 4.47: Left Extension – Right Opposite

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

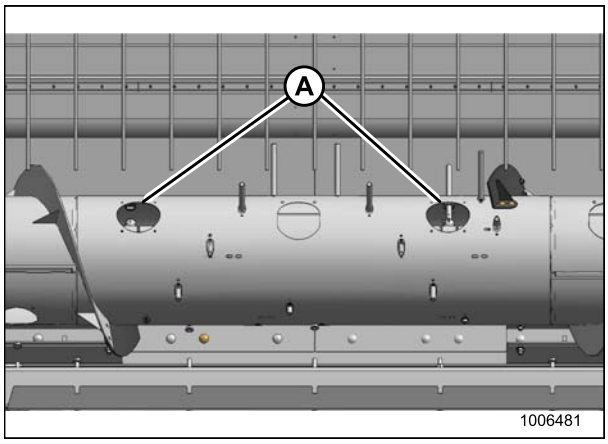


Figure 4.48: Access Holes in Auger

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

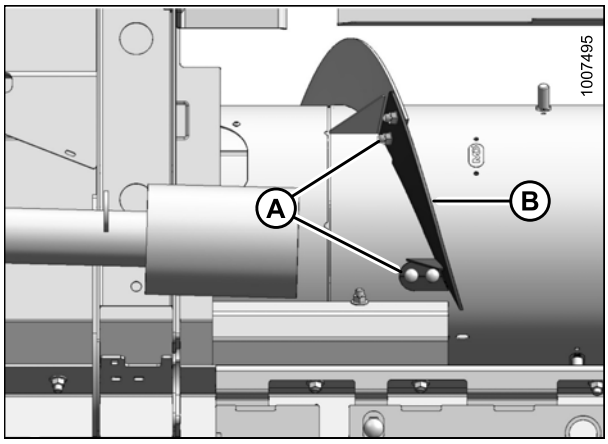


Figure 4.49: Short Flighting Extension

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.

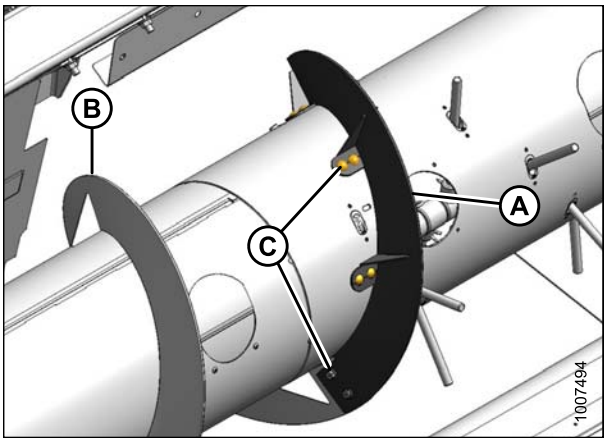


Figure 4.50: Long Flighting Extension

9. Store removed components in a safe place.
10. Manually rotate the auger and check the clearances between the auger flighting and stripper plates. The clearance should be 3–11 mm (1/8–7/16 in.). If necessary, adjust clearance. Refer to *4.5 Adjusting Stripper Plate Clearance, page 52*.

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) on each side of the center to allow access to the auger fingers (B).

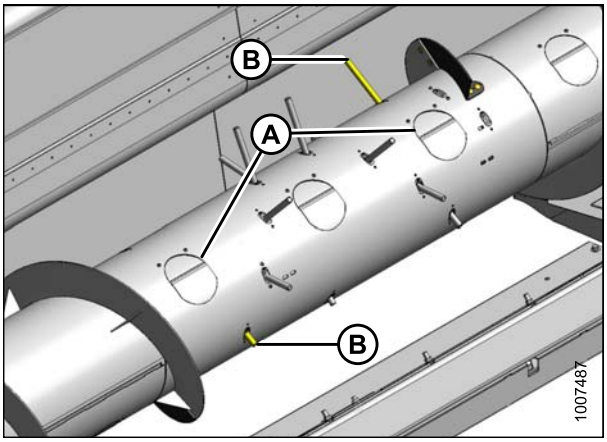


Figure 4.51: Access Holes in Auger

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 50* to *4, page 50* for the other finger.

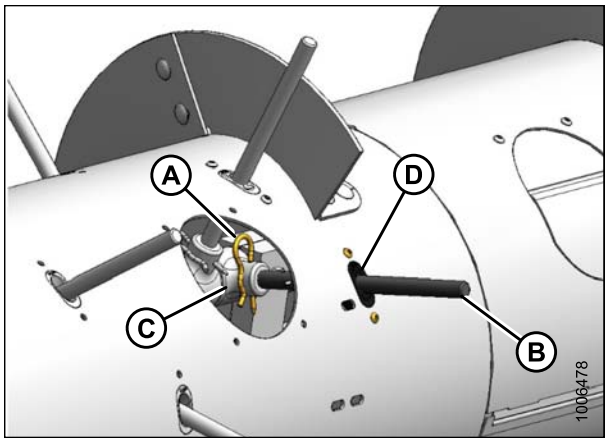


Figure 4.52: Auger Fingers

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.

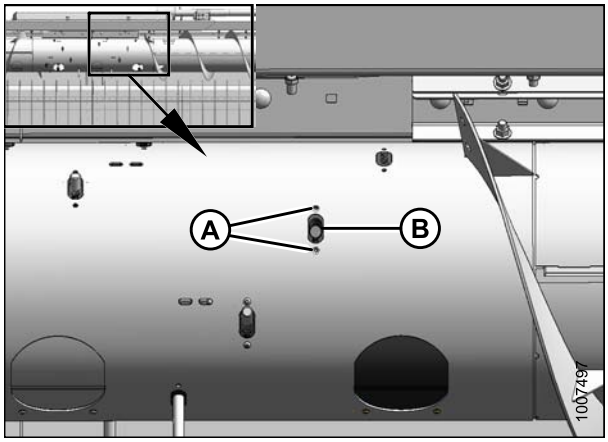


Figure 4.53: Finger Guide Plugs

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 8.5 N·m (75 in·lbf).
11. Repeat Steps *6, page 50* to Step *10, page 50* for the other plastic guide.

IMPORTANT:

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

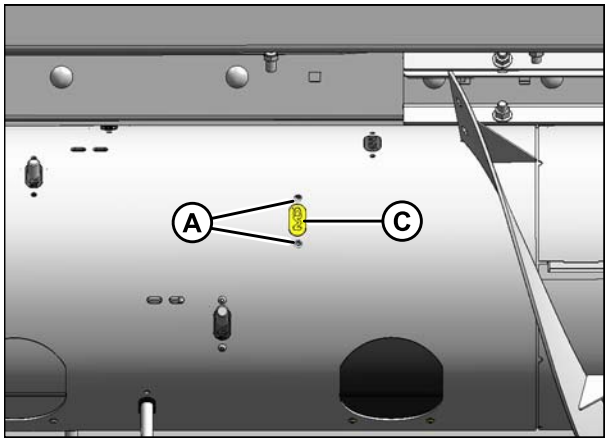


Figure 4.54: Finger Guide Plugs

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

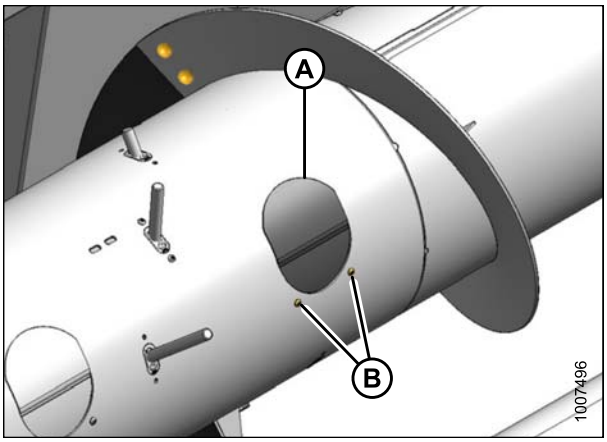


Figure 4.55: Access Cover

4.5 Adjusting Stripper Plate Clearance

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

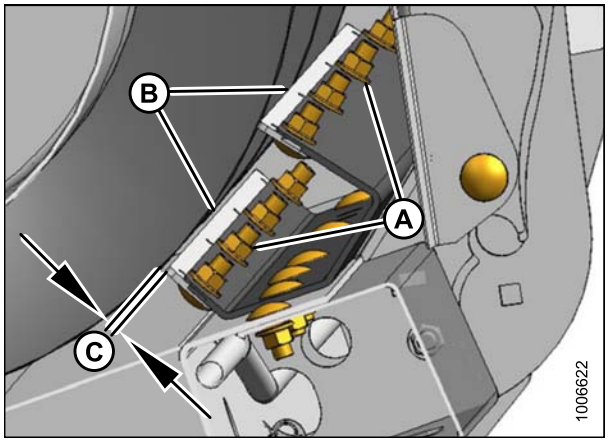


Figure 4.56: Stripper Plate Clearance

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 53*
John Deere	*5.2 Attaching to John Deere 60, 70, and S Series Combine, page 56*
New Holland CR, CX Series	*5.3 Attaching to New Holland CR/CX Series Combine, page 60*
Versatile	*5.4 Attaching to Versatile Combine, page 64*

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.

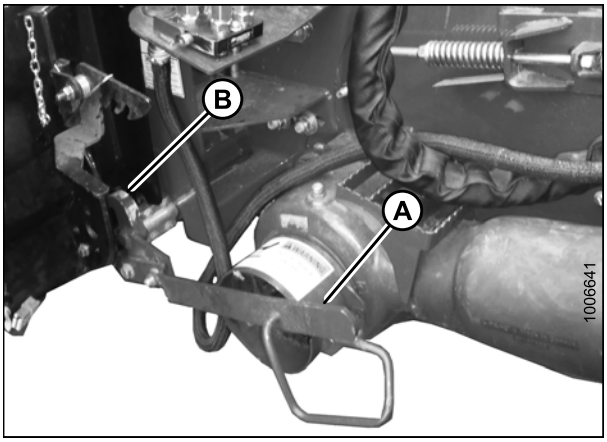


Figure 5.1: Feeder House Locks

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.

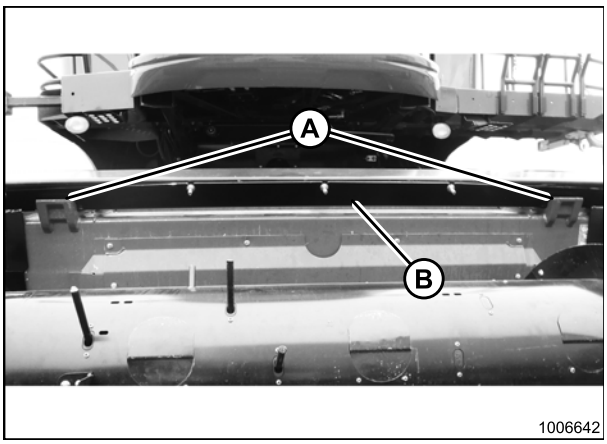


Figure 5.2: Header on Combine

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. If locks (C) do not fully engage the spacer tube and bolt on the header, loosen nut (E) and adjust position of the spacer tube and bolt (D) as necessary (both sides). Tighten nut.
8. Loosen bolts (F) and adjust lock as required to obtain full lock on spacer tube and bolt (D) when lift lever (A) and handle (B) are engaged. Retighten bolts.

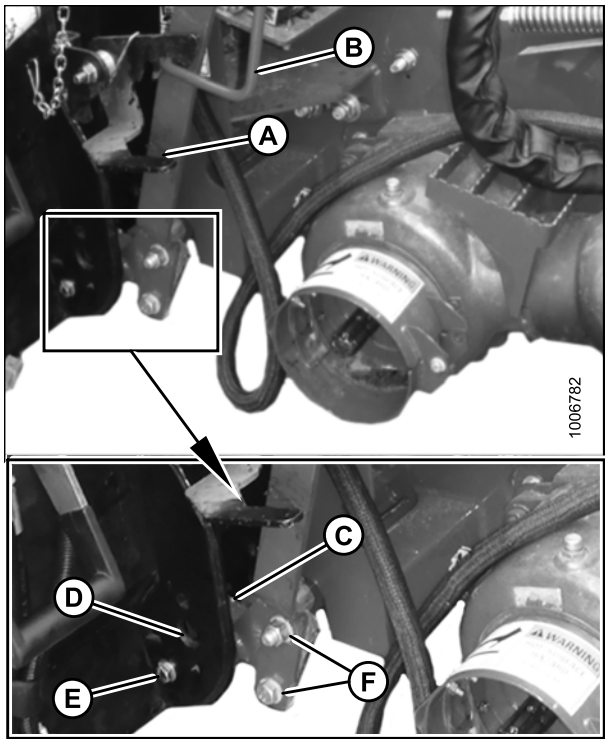


Figure 5.3: Engaging Locks

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

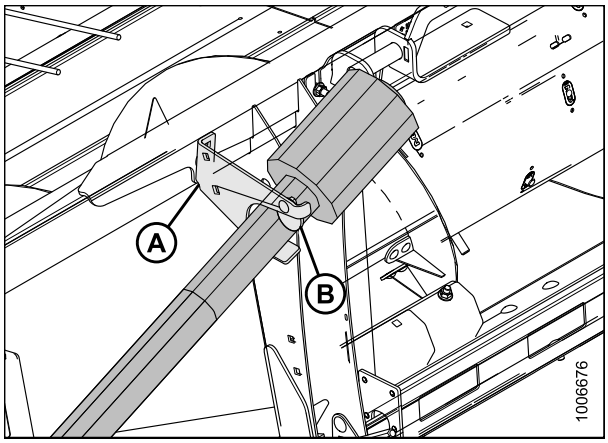


Figure 5.4: Driveline in Storage Position

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

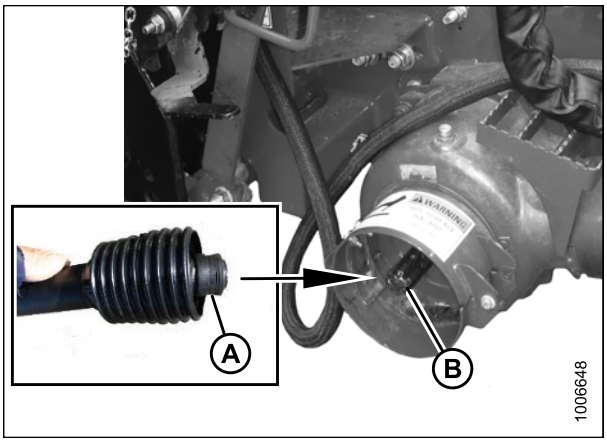


Figure 5.5: Attaching Driveline

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

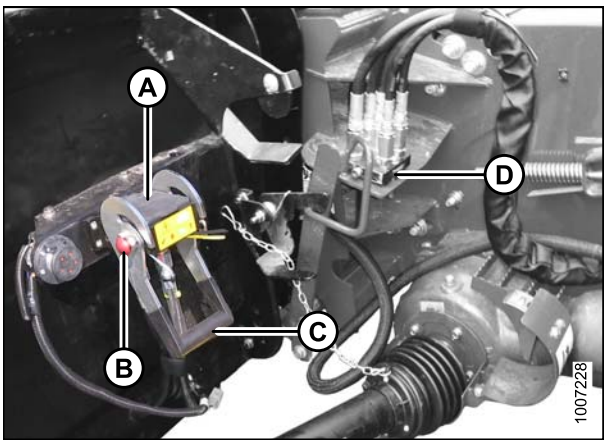


Figure 5.6: Coupler Lock

14. Position coupler (A) onto header receptacle and push handle (B) downward to engage coupler pins in receptacle.
15. Push handle to closed position until lock button (C) snaps out.
16. Open cover (D) on header electrical receptacle.
17. Remove electrical connector (E) from storage cup on combine.
18. Align lugs on electrical connector (E) with slots in receptacle, push connector onto receptacle, and turn collar on connector to lock it in place.
19. Remove draper deck shipping braces. Refer to *5.5 Removing Deck Shipping Braces, page 68*.

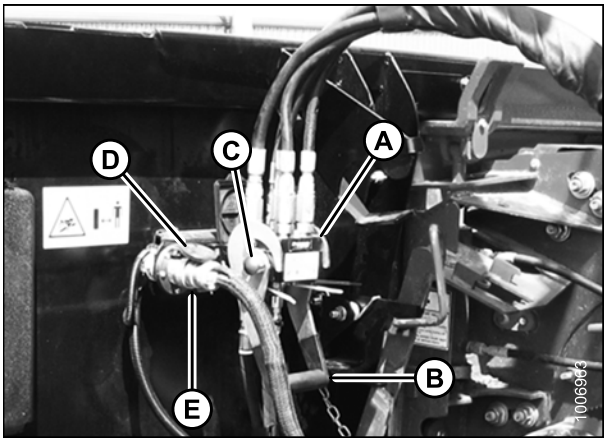


Figure 5.7: Attaching Coupler

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.

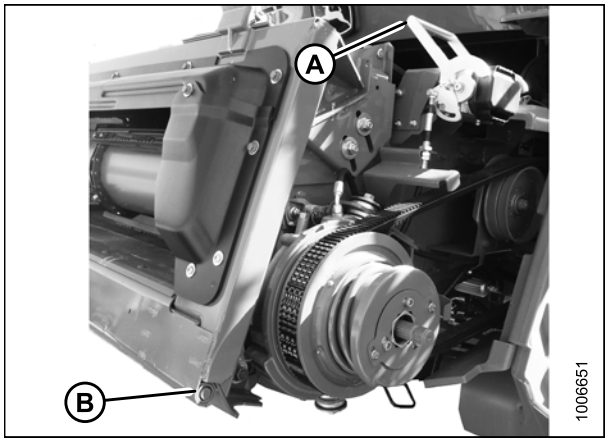


Figure 5.8: Feeder House Locks

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 slightly off the ground, stop engine, and remove key from ignition.

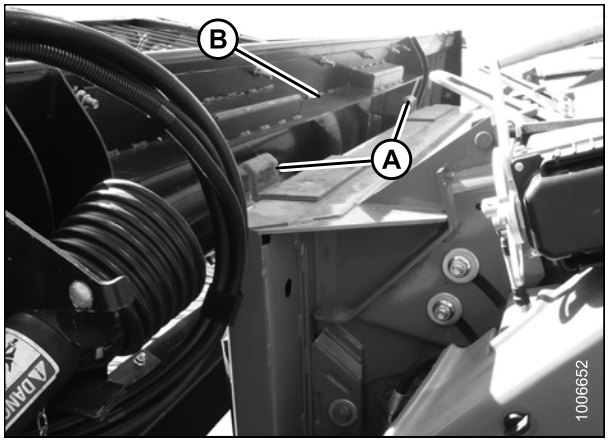


Figure 5.9: Header on Combine

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

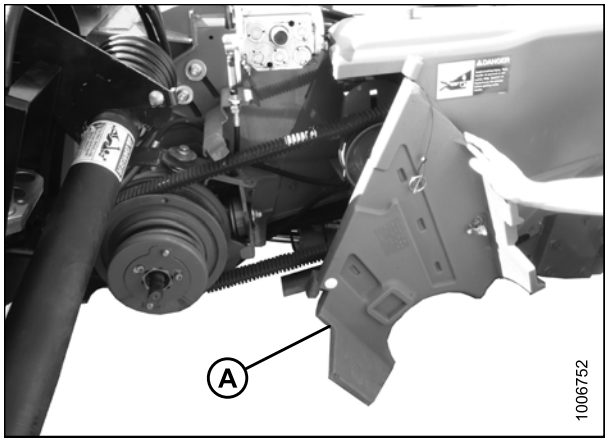


Figure 5.10: Combine Driveshield

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

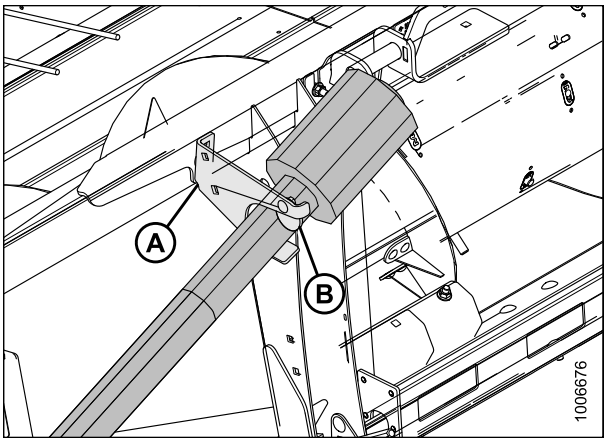


Figure 5.11: Driveline in Storage Position

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

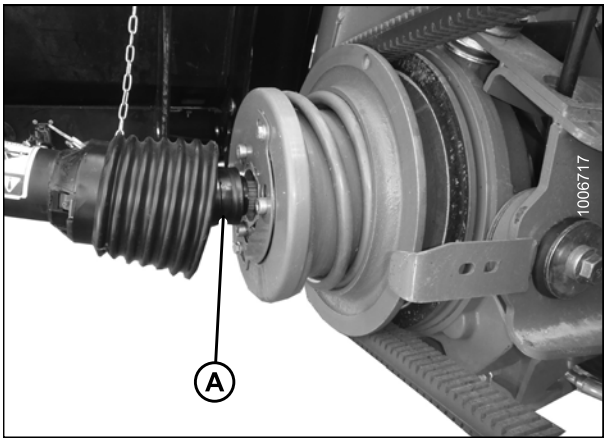


Figure 5.12: Attaching Driveline to Combine

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

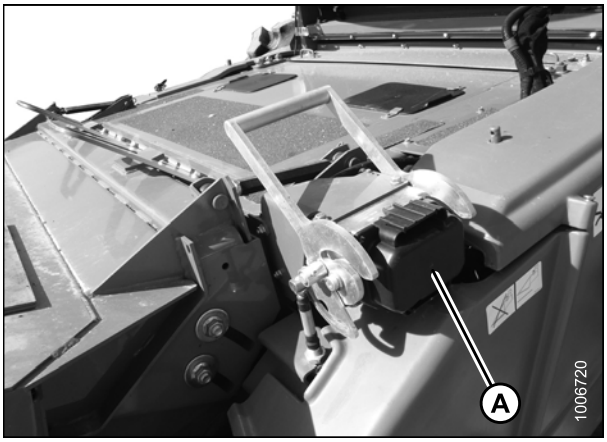


Figure 5.13: Combine Receptacle

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

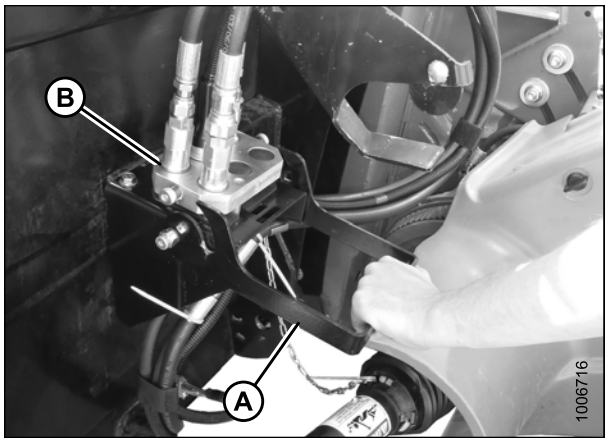


Figure 5.14: Releasing Coupler

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

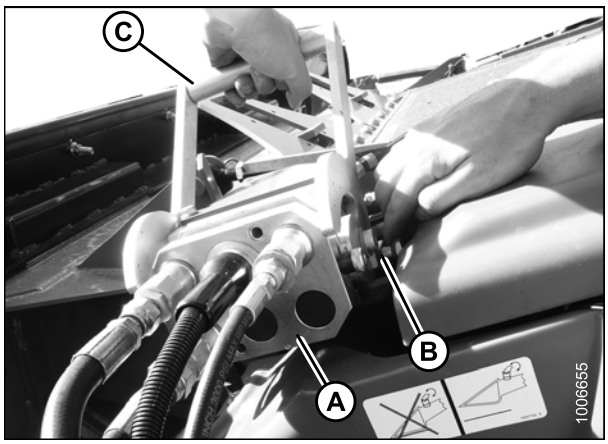


Figure 5.15: Engaging Coupler

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 lock handle.

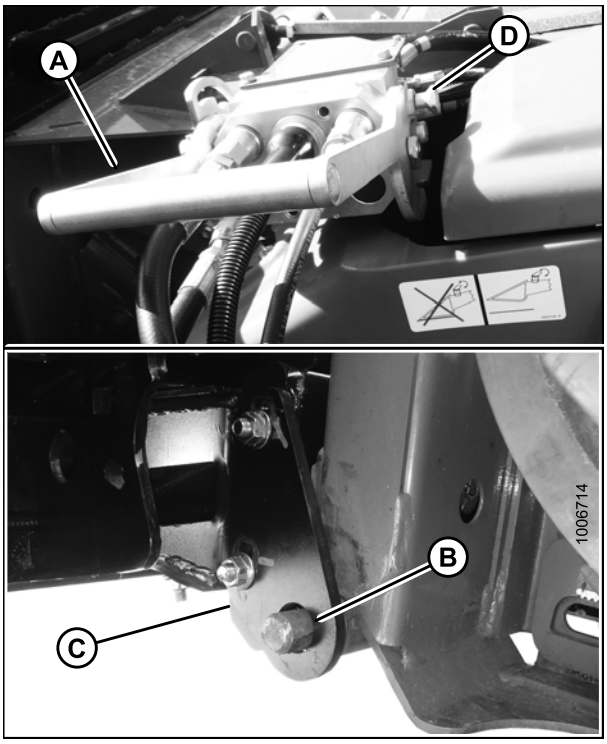


Figure 5.16: Locking Feeder House

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 68*.

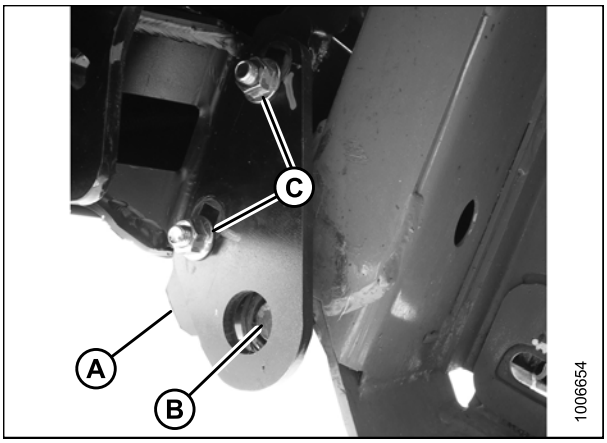


Figure 5.17: Aligning Locking Plates

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.

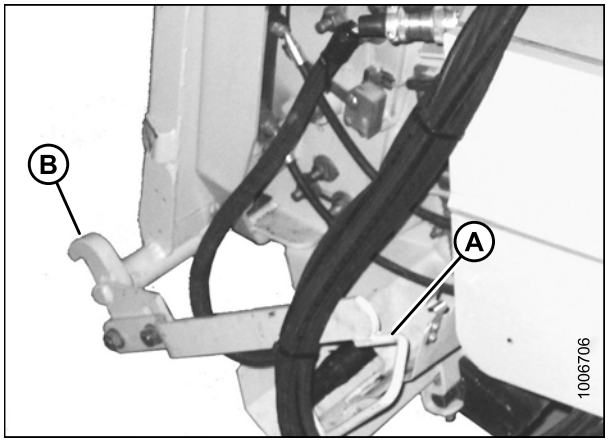


Figure 5.18: Feeder House Locks

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.

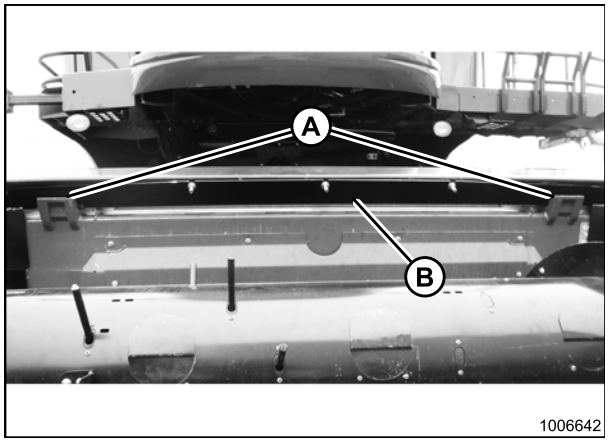


Figure 5.19: Header on Combine

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.

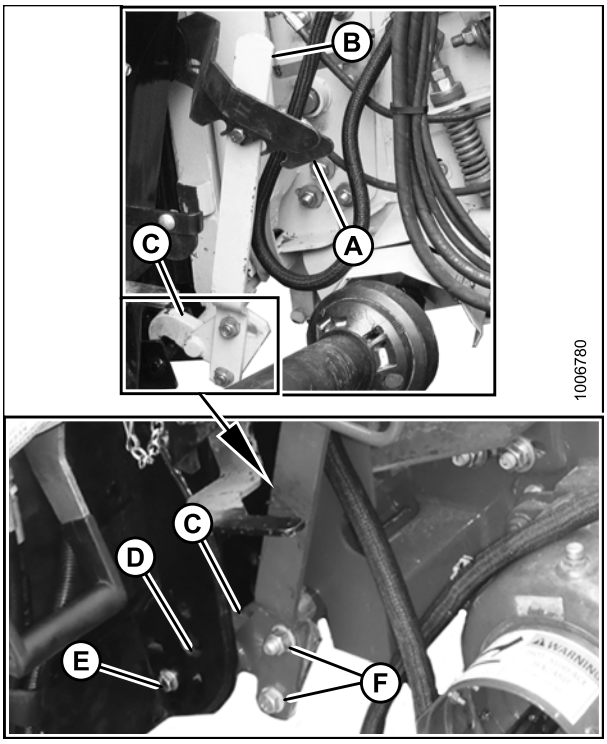


Figure 5.20: Engaging Locks

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

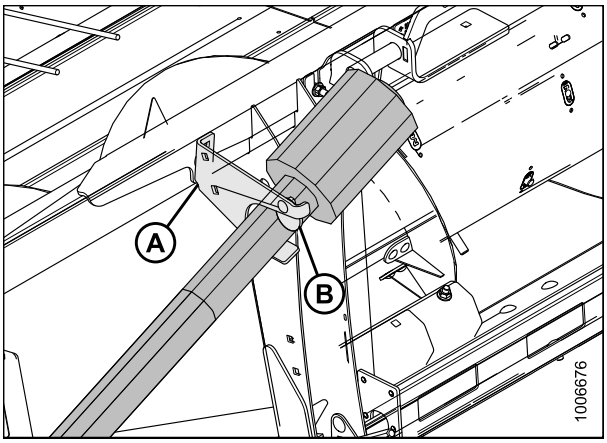


Figure 5.21: Driveline in Storage Position

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

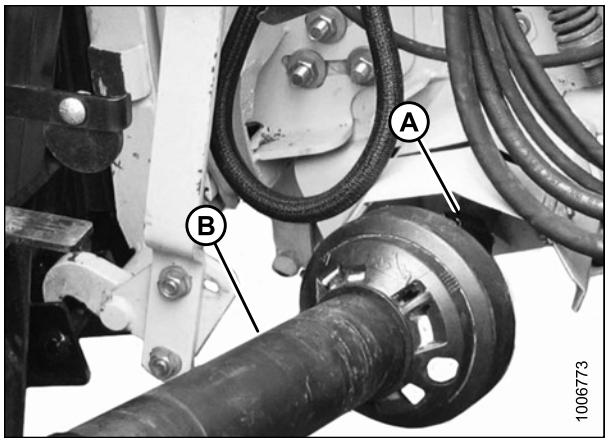


Figure 5.22: Attaching Driveline

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

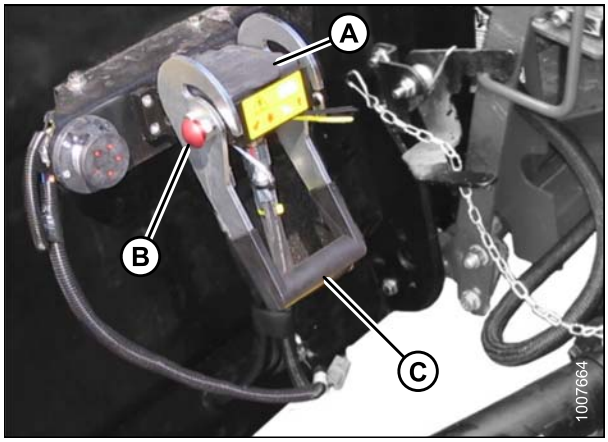


Figure 5.23: Header Receptacle

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

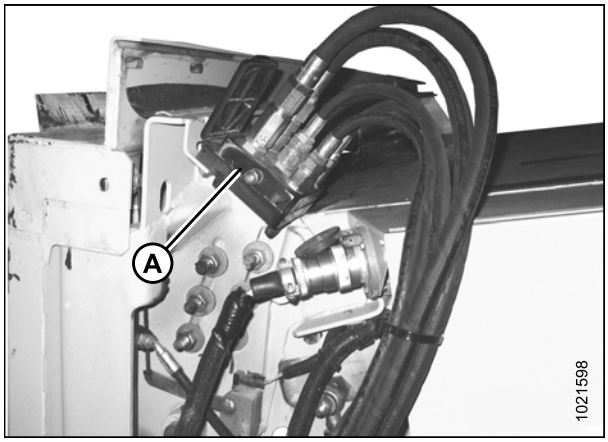


Figure 5.24: Combine Coupler/Connector

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 68*.

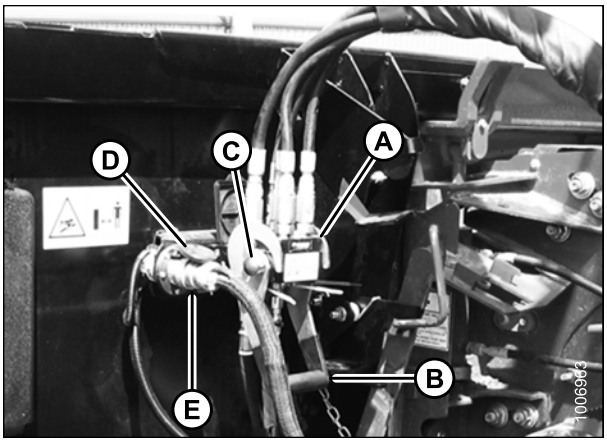


Figure 5.25: Attaching Coupler

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.

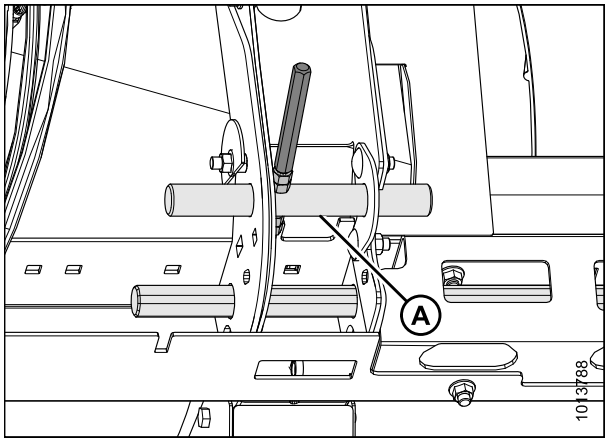


Figure 5.26: Locking Pins Retracted

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.

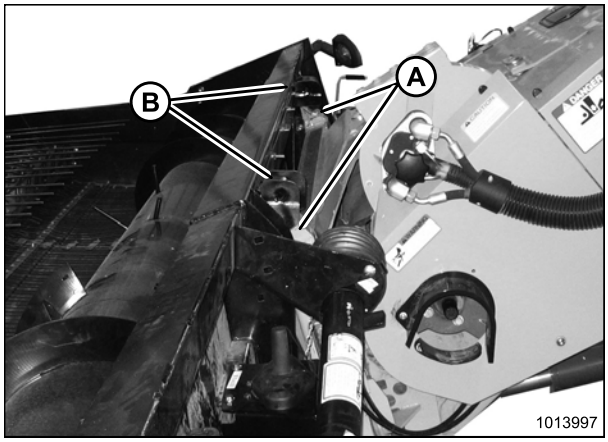


Figure 5.27: Picking up Header

5. Grasp handle (A) and slide pin (B) into the feeder house receptacle (C) until pin stop (D) drops down to lock the pin (see inset). Ensure pin is engaged on the opposite side of the feeder house.
6. If pin (B) does not align with feeder house receptacle (C), or if alignment of the header pan and bottom of feeder house opening is unacceptable, reposition the top beam by performing Step *7, page 65* to Step *12, page 65*.

   NOTE:

   If pin aligns with feeder house receptacle (C), proceed to Step *14, page 66*.

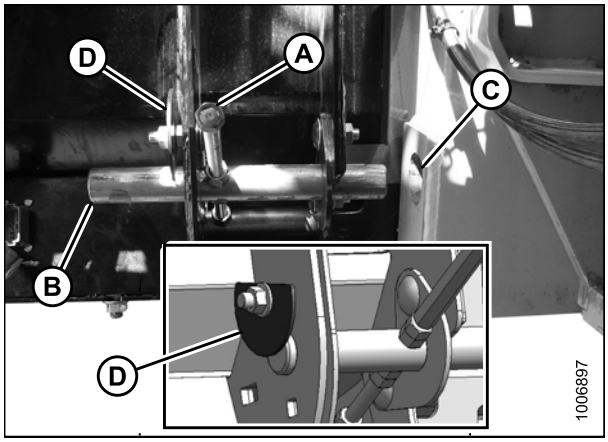


Figure 5.28: Feeder House Lock

7. Measure the misalignment between pin (B) and the feeder house receptacle (C).
8. Lower header to the 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.

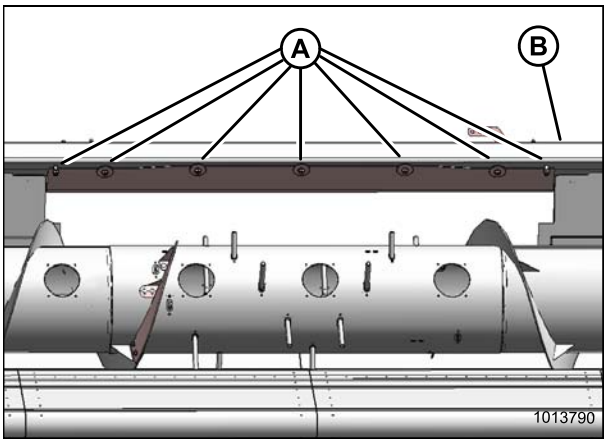


Figure 5.29: Top Beam (Front View)

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

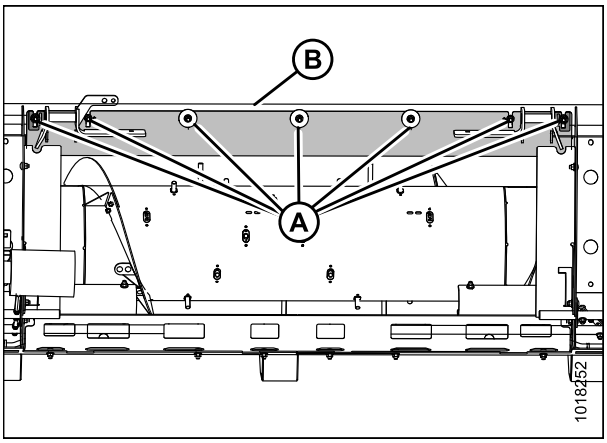


Figure 5.30: Top Beam (Rear View)

11. Move support channel (A) according to measurement in Step *7, page 65* to achieve proper alignment of locking pin and feeder house receptacle. Refer to Figure *5.28, page 64*.
12. Tighten all bolts.
13. Repeat Step *3, page 64*.

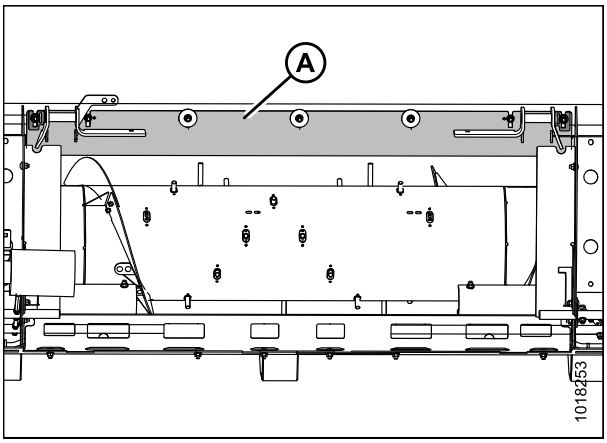


Figure 5.31: Top Beam (Rear View)

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

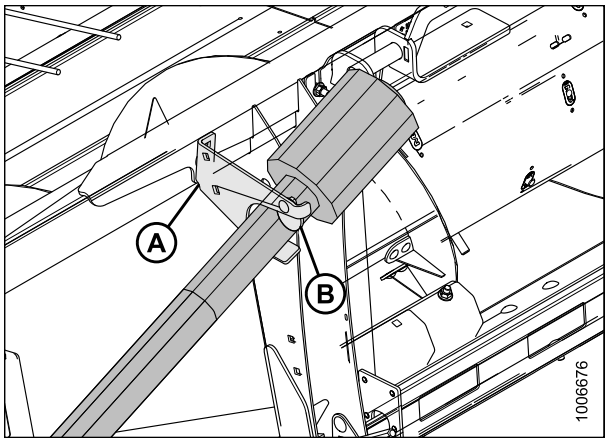


Figure 5.32: Driveline in Storage Position

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

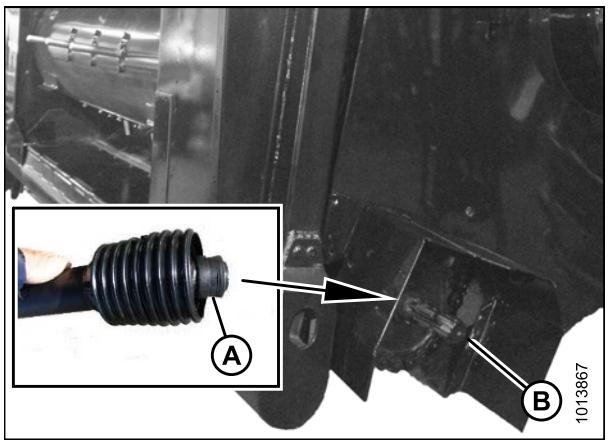


Figure 5.33: Driveline

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

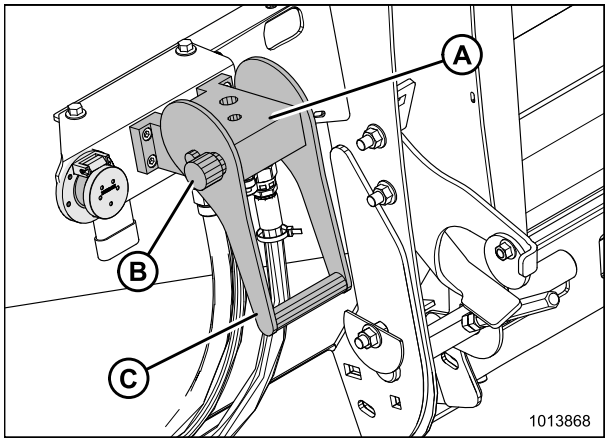


Figure 5.34: Coupler Lock

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

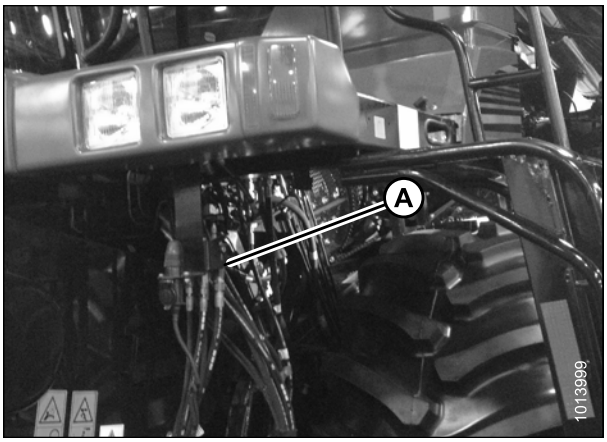


Figure 5.35: Versatile Coupler

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 68*.

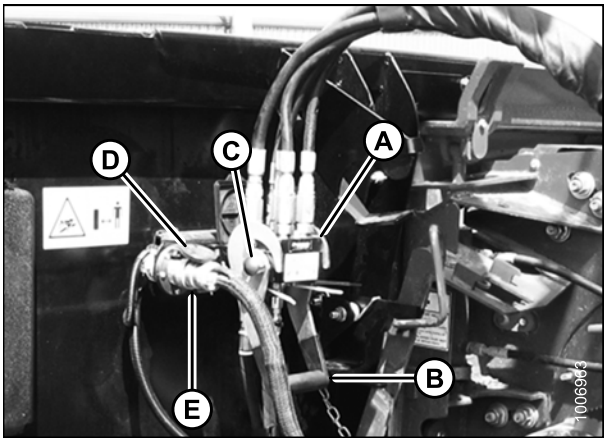


Figure 5.36: Attaching Coupler

5.5 Removing Deck Shipping Braces

DANGER

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

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

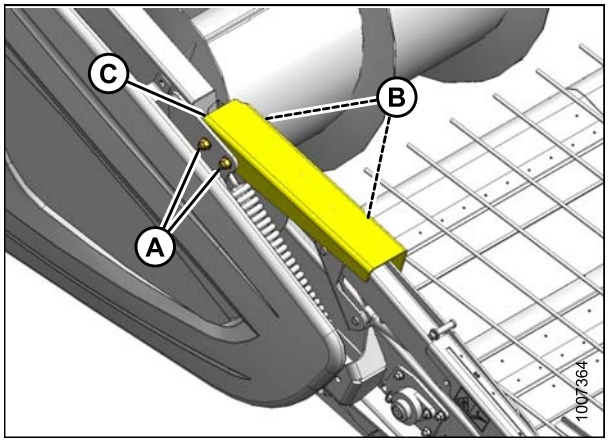


Figure 5.37: Shipping Support

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.

CAUTION

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

1. Open the left endshield. Refer to *3.3.1 Opening Left Endshield, page 21*.
2. Remove bolt (A) and remove the crop deflectors (B) and bag of installation hardware from inside the left endsheet.

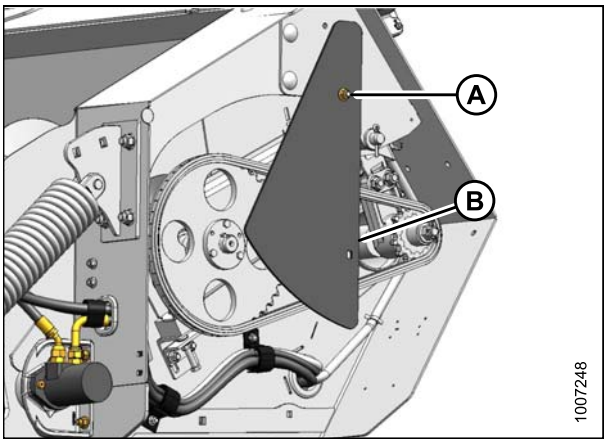


Figure 5.38: Crop Deflectors

3. Close the endshield. Refer to *3.3.2 Closing Left Endshield, page 21*.
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 Step *4, page 69* for the opposite deflector.

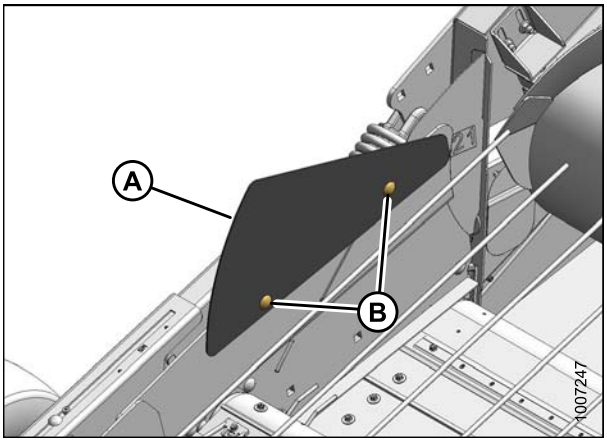


Figure 5.39: Crop Deflector

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, page 151* 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.

NOTE:

This section does not apply to Versatile combines.

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

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

1. Ensure that AHHC sensor's output voltage range is appropriate for combine. For more information, refer to *6.1.1 Height Sensor Output Voltage Range – Combine Requirements, page 72*.
2. Prepare combine to use AHHC feature.
3. Calibrate AHHC system so that combine can correctly interpret data from height sensors on header. Once calibration is complete, you are ready to use AHHC feature in the field. For each combine, certain operation settings can be used to improve performance of AHHC feature.

   NOTE:

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

Refer to the following instructions for your specific combine model:

- *6.1.2 Case IH 5130/6130/7130, 7010/8010, 7120/8120/9120, and 7230/8230/9230 Combines, page 77*
- *6.1.4 John Deere 70 Series Combines, page 91*
- *6.1.5 John Deere S Series Combines, page 97*
- *6.1.6 New Holland Combines CX/CR Series (CR Series – Model Year 2014 and Earlier), page 107*
- *6.1.7 New Holland Combines (CR Series – Model Year 2015 and Later), page 115*

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

NOTE:

For instructions on manually checking voltage range, refer to *Manually Checking Voltage Range, page 72*.

Manually Checking Voltage Range

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

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

   NOTE:

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

2. Shut down combine. Position key so that power is supplied to sensors.
3. Open left endshield. Refer to *3.3.1 Opening Left Endshield, page 21*.

4. Locate left height sensor (A).

   NOTE:

   Sensor and connector may not be exactly as shown.

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

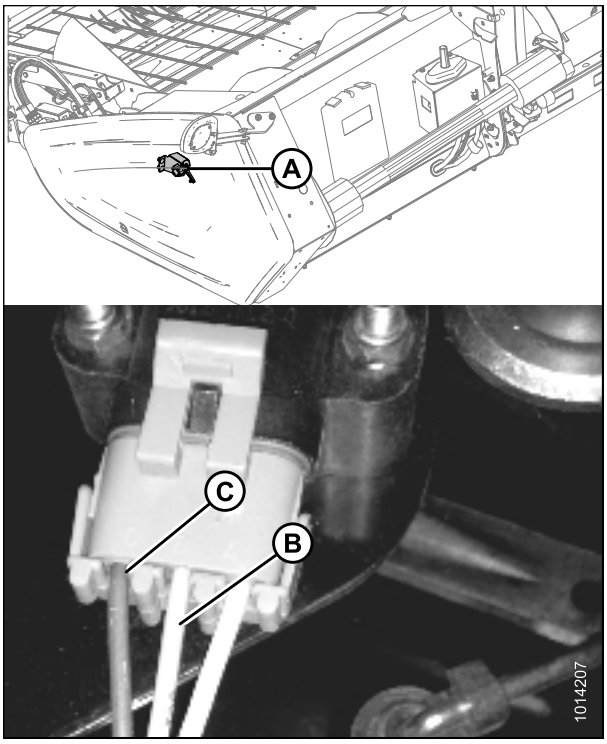


Figure 6.1: Left Height Sensor

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

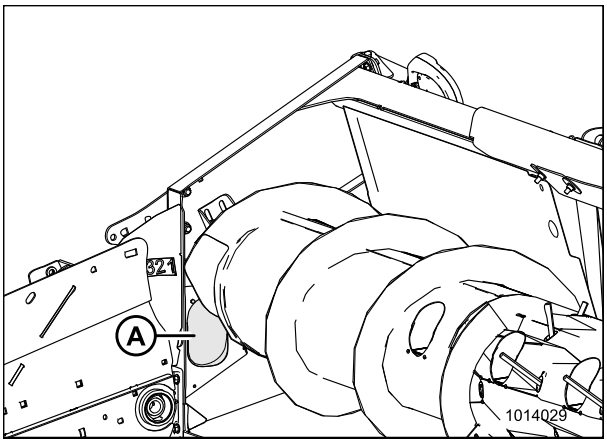


Figure 6.2: Right Access Panel

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

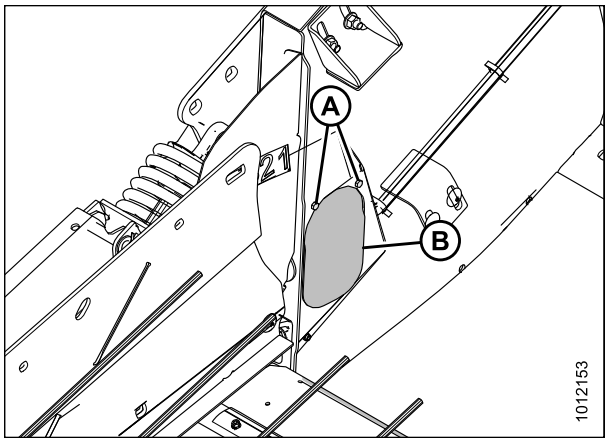


Figure 6.3: Right Access Panel

9. Locate right height sensor (A).

   NOTE:

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

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

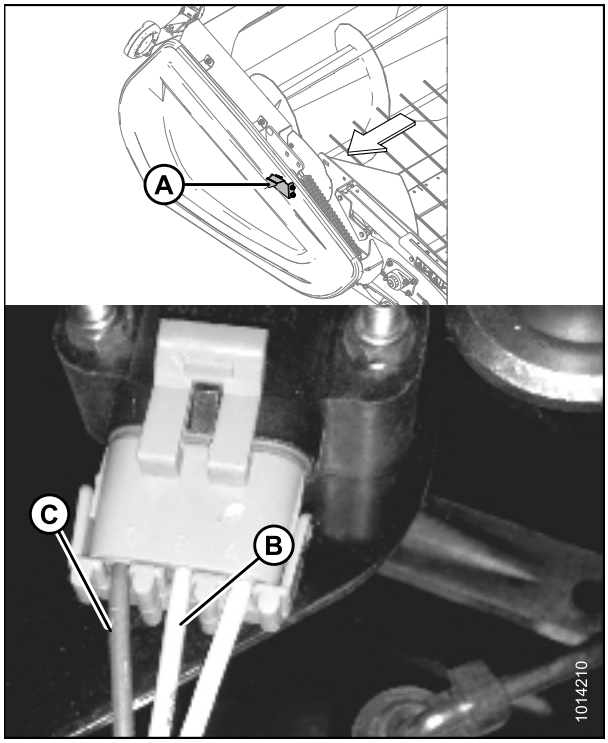


Figure 6.4: Right Height Sensor

13. Compare voltage measurements to specified values. Refer to *6.1.1 Height Sensor Output Voltage Range – Combine Requirements, page 72*.
14. If sensor voltage is outside low and high limits, or if voltage range is less than specified value, adjustments are required. For instructions, refer to *Adjusting Header Height Sensor Voltage Range (Left Side), page 74* or *Adjusting Header Height Sensor Voltage Range (Right Side), page 75*.

Adjusting Header Height Sensor Voltage Range (Left Side)

DANGER

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

1. Lower header to ground, shut down combine, and remove key from ignition.
2. Open left endshield. Refer to *3.3.1 Opening Left Endshield, page 21*.
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 72*.

   NOTE:

   If voltage range is too large or too small, you may need to relocate linkage rod (C) to a different hole in sensor control arm (D). If that doesn't work, relocate linkage rod (C) to a different hole in sensor control arm (E).
5. Close left endshield. Refer to *3.3.2 Closing Left Endshield, page 21*.

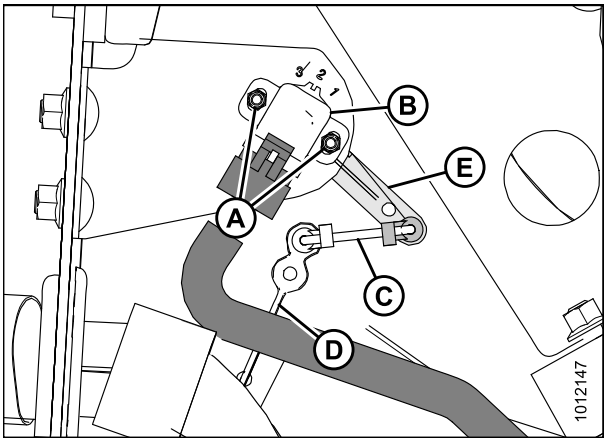


Figure 6.5: Header Height Sensor Assembly – Left Side

Adjusting Header Height Sensor Voltage Range (Right Side)

DANGER

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

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

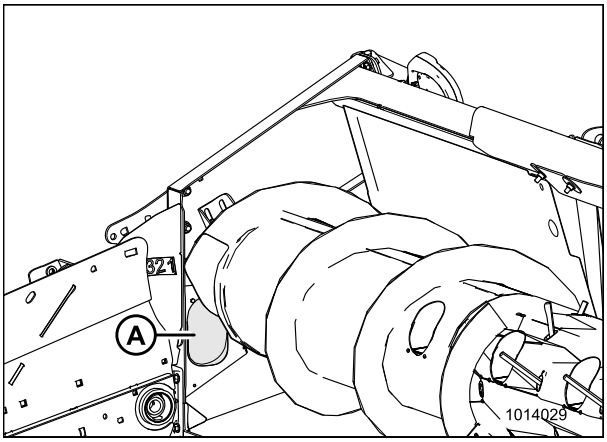


Figure 6.6: Right Access Panel

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

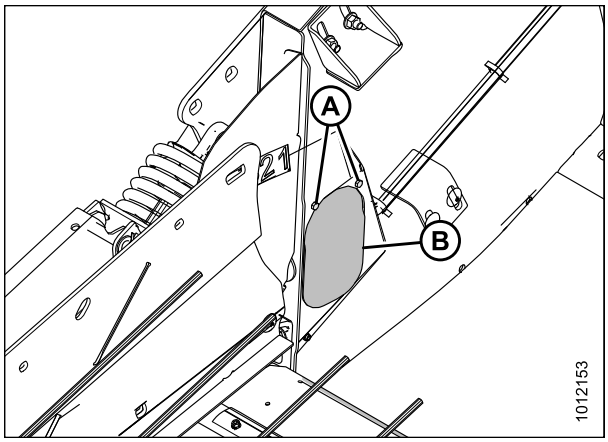


Figure 6.7: Right Access Panel

6. Loosen nuts (A).
7. Rotate sensor (B) until desired voltage range is achieved. Refer to *6.1.1 Height Sensor Output Voltage Range – Combine Requirements, page 72*.

   NOTE:

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

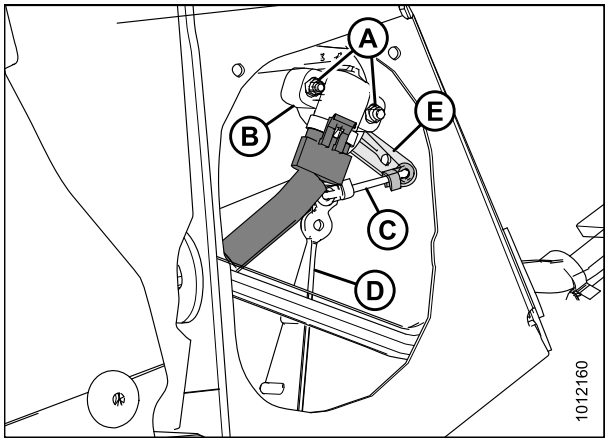


Figure 6.8: Header Height Sensor Assembly – Right Side

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

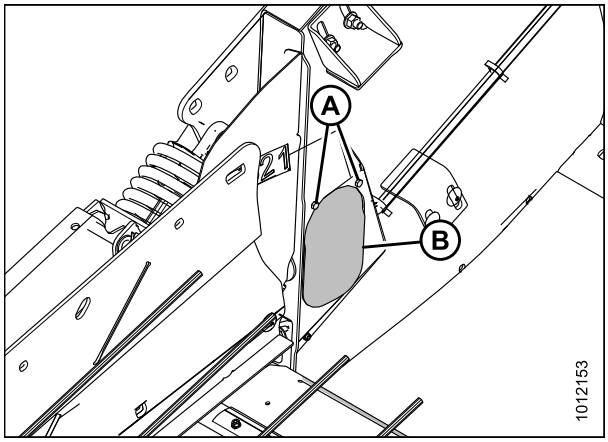


Figure 6.9: Header Height System (Auger Removed for Clarity)

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

Checking Voltage Range from Combine Cab (Case 8010)

NOTE:

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

CAUTION

Check to be sure all bystanders have cleared the area.

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

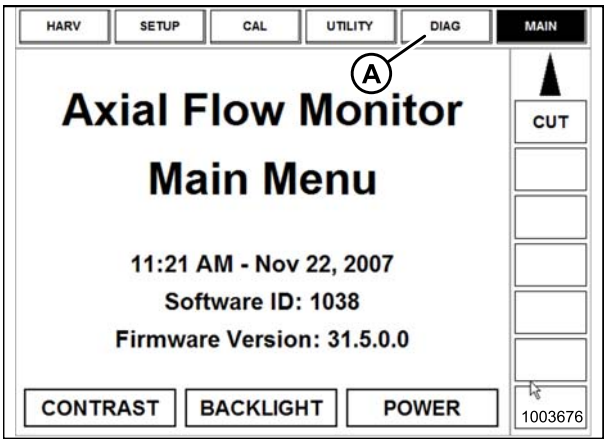


Figure 6.10: Case 8010 Combine Display

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

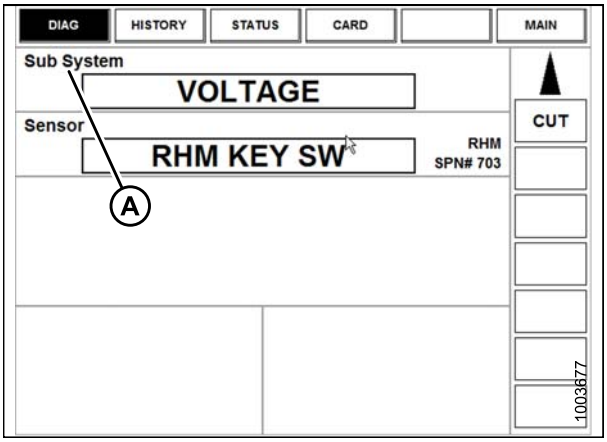


Figure 6.11: Case 8010 Combine Display

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

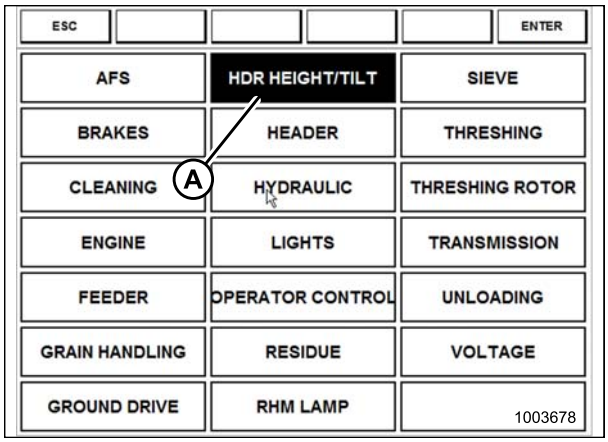


Figure 6.12: Case 8010 Combine Display

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

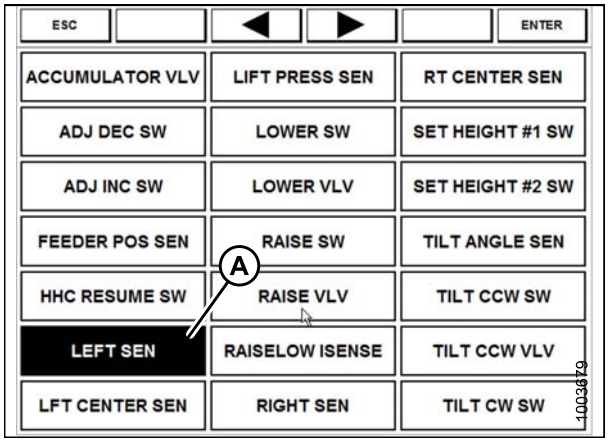


Figure 6.13: Case 8010 Combine Display

6. If sensor voltage is not within low and high limits shown in *6.1.1 Height Sensor Output Voltage Range – Combine Requirements, page 72*, or if range between low and high limits is insufficient, you need to make adjustments. For instructions, refer to *Adjusting Header Height Sensor Voltage Range (Left Side), page 74* and *Adjusting Header Height Sensor Voltage Range (Right Side), page 75*.

Figure 6.14: Case 8010 Combine Display

Setting Header Controls (Case 8010)

The following procedure applies to Case 8010 combines without a shift button on the GSL.

The reel fore/aft controls (A) also control header fore/aft tilt (if header is equipped with the fore/aft tilt option). The ground speed lever (GSL) needs to be configured to allow the Operator to swap between reel fore/aft and header fore/aft tilt.

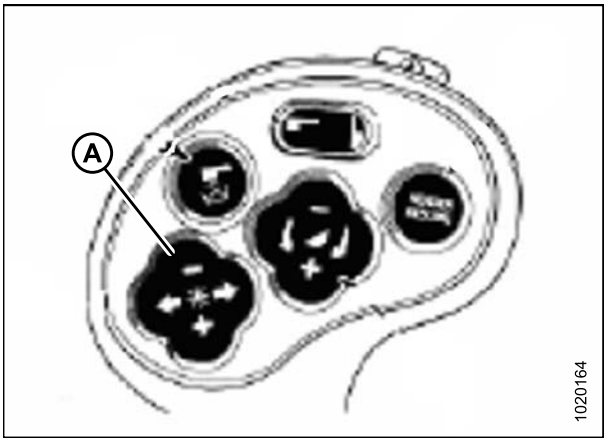


Figure 6.15: Case Combine Controls

1. To be able to swap between reel fore/aft controls and header fore/aft tilt controls, select FORE/AFT CONTROL (A) and place it on one of the operator configurable screens—HARV1, HARV2, HARV3 or ADJUST under the RUN menu.

   NOTE:

   H F/A (B) is displayed on the status bar on the right of the screen when HEADER is selected with the FORE/AFT CONTROL.

2. If HEADER is selected with the FORE/AFT CONTROL, press the reel aft button on the GSL to tilt the header rearward, or press the reel fore button on the GSL to tilt the header forward.

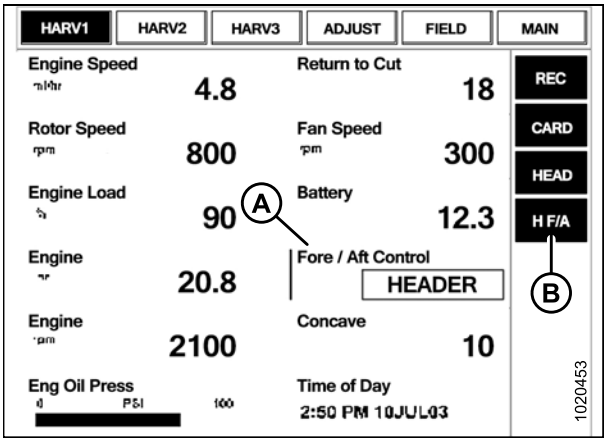


Figure 6.16: Case Combine Display

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

NOTE:

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

⚠ CAUTION

Check to be sure all bystanders have cleared the area.

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

2. Select DIAGNOSTICS (A) on MAIN page. The DIAGNOSTICS page opens.
3. Select SETTINGS. The SETTINGS page opens.

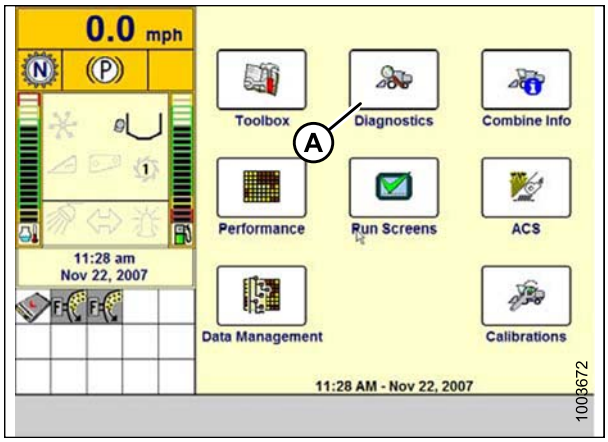


Figure 6.17: Case IH Combine Display

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

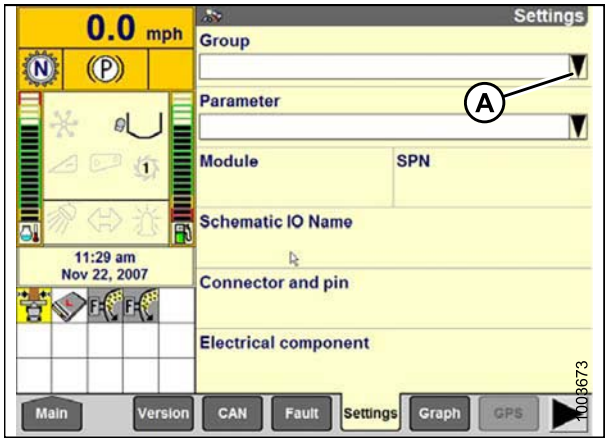


Figure 6.18: Case IH Combine Display

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

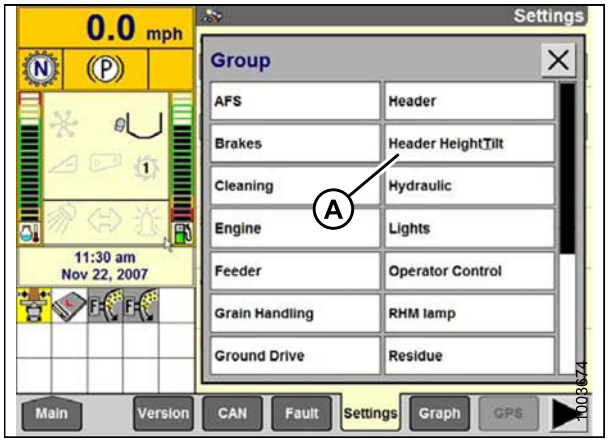


Figure 6.19: Case IH Combine Display

6. Select LEFT HEADER HEIGHT SEN (A), and then select GRAPH button (B). The exact voltage is displayed at top of page. Raise and lower header to see full range of voltage readings.
7. If sensor voltage is not within low and high limits shown in *6.1.1 Height Sensor Output Voltage Range – Combine Requirements, page 72*, or if range between low and high limits is insufficient, you need to make adjustments. For instructions, refer to *Adjusting Header Height Sensor Voltage Range (Left Side), page 74* and *Adjusting Header Height Sensor Voltage Range (Right Side), page 75*.

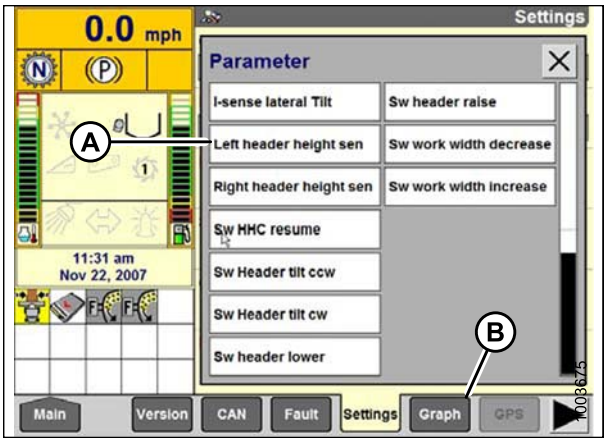


Figure 6.20: Case IH Combine Display

Calibrating 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 Auto Header Height Control (Case Combines with Version 28.00 or Higher Software), page 83*.

NOTE:

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

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

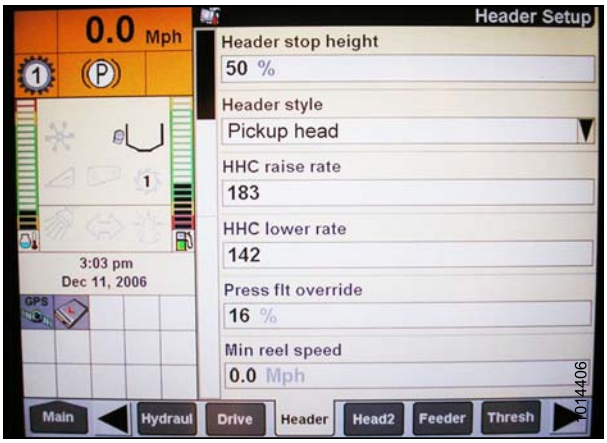


Figure 6.21: Case IH Combine Display

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

Figure 6.22: Case IH Combine Display

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

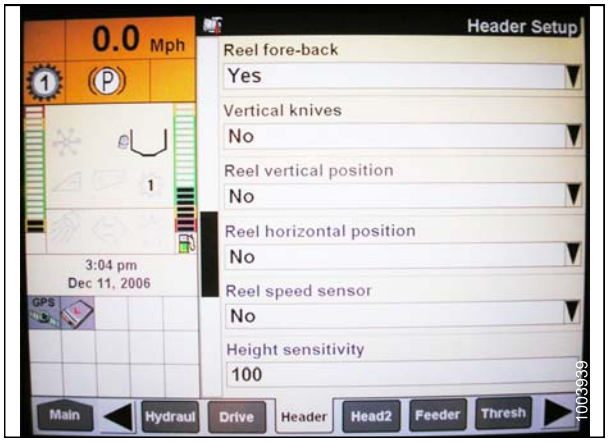


Figure 6.23: Case IH Combine Display

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

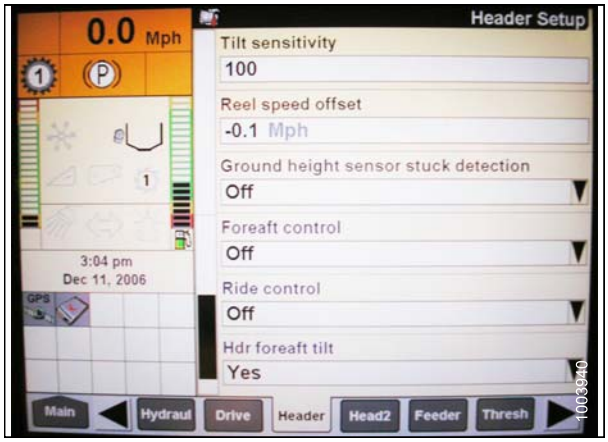


Figure 6.24: Case IH Combine Display

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.

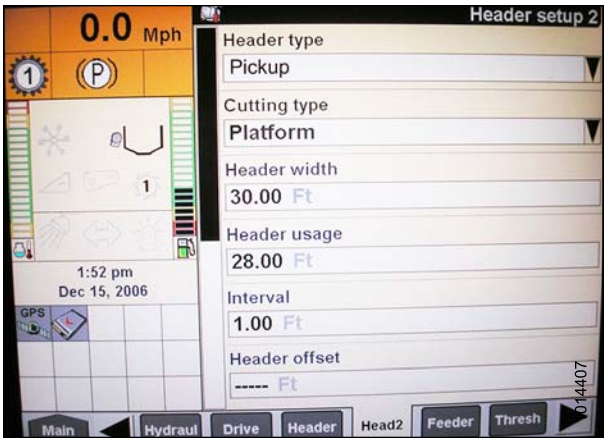


Figure 6.25: Case IH Combine Display

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

NOTE:

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

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

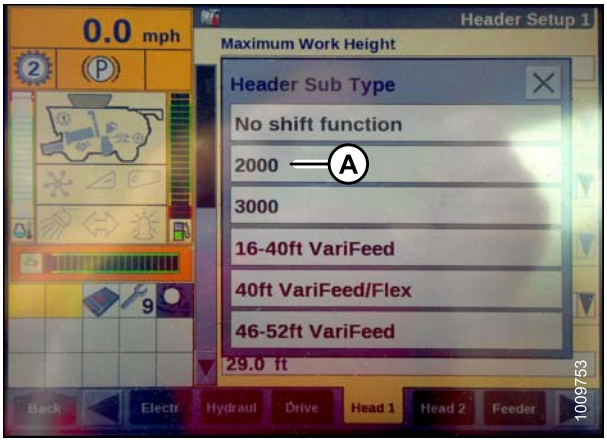


Figure 6.26: Case IH Combine Display

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

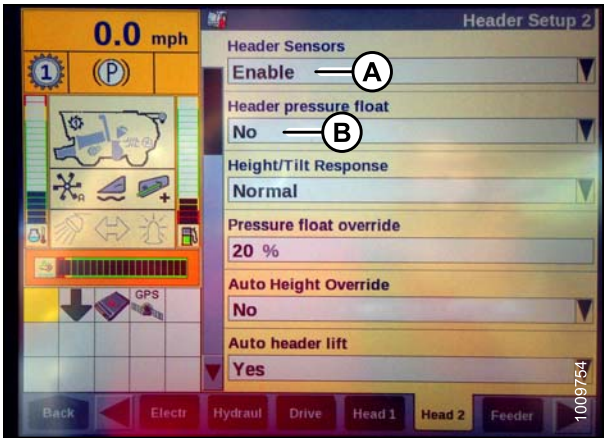


Figure 6.27: Case IH Combine Display

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

   NOTE:

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

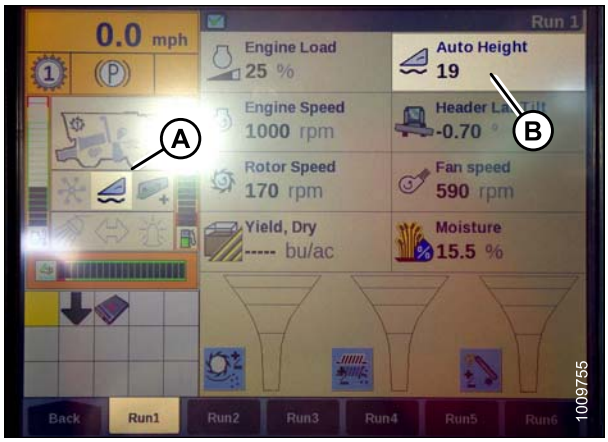


Figure 6.28: Case IH Combine Display

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

   NOTE:

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

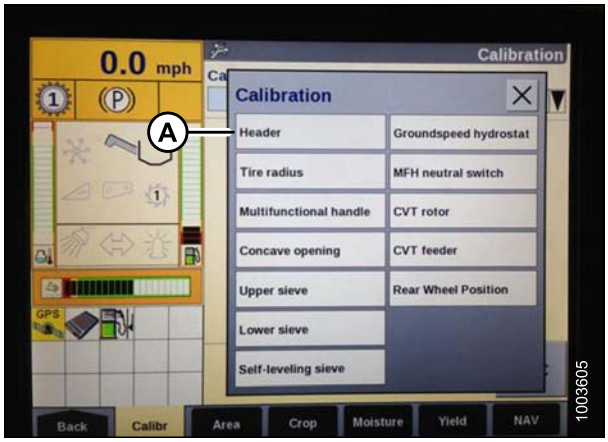


Figure 6.29: Case IH Combine Display

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

    NOTE:

    Pressing ESC key during any of steps or letting system sit idle for more than three minutes will cause calibration procedure to stop.

    NOTE:

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

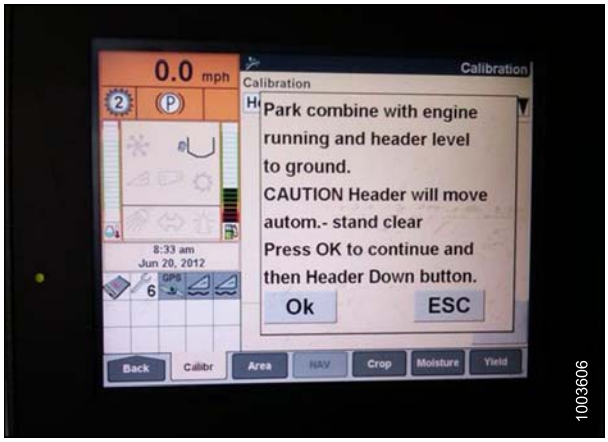


Figure 6.30: Case IH Combine Display

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

NOTE:

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

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

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

To set preset cutting height, follow these steps:

NOTE:

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

⚠ CAUTION

Check to be sure all bystanders have cleared the area.

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

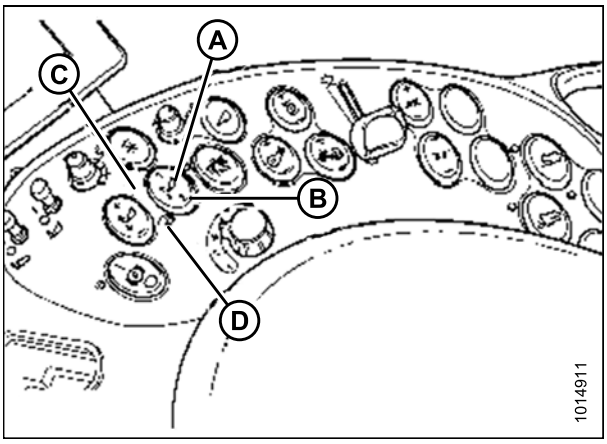


Figure 6.31: Case Combine Controls

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

   NOTE:

   You can fine adjust these set points by using FINE ADJUST switch.

   NOTE:

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

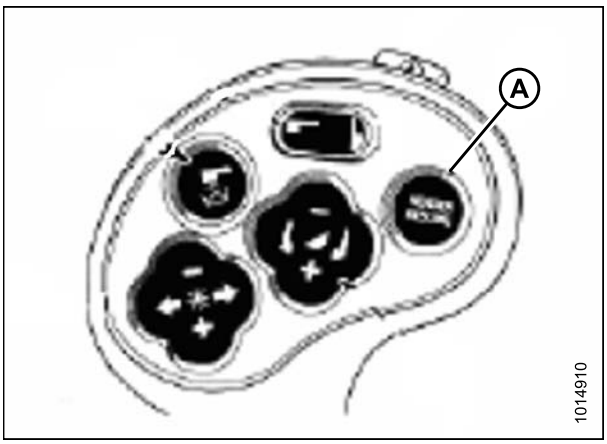


Figure 6.32: Case Combine Controls

6.1.3 John Deere 60 Series Combines

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

The auto header height sensor output must be within a specific range, or feature will not work properly.

Combine	Low Voltage Limit	High Voltage Limit	Minimum Range
John Deere 60 Series	0.7 V	4.3 V	3.0 V

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

NOTE:

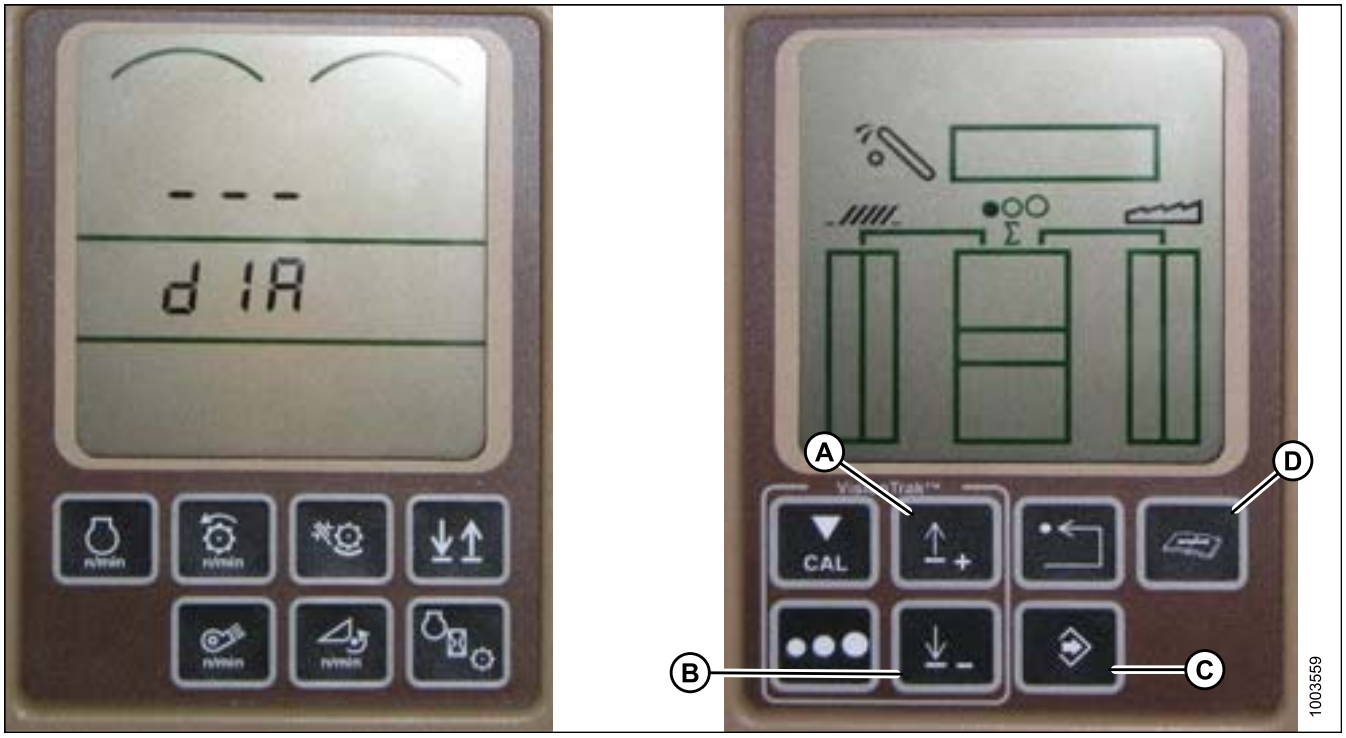
Changes may have been made to combine controls or display since this document was published. Refer to combine operator's manual for updates.

CAUTION

Check to be sure all bystanders have cleared the area.

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

Figure 6.33: John Deere Combine Display



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

   NOTE:

   You may need to hold HEADER DOWN switch for a few seconds to ensure feeder house is entirely down.
7. Check sensor reading on monitor.

8. Raise header so it is just off ground and check sensor reading again.
9. If sensor voltage is not within low and high limits shown in *6.1.1 Height Sensor Output Voltage Range – Combine Requirements, page 72*, or if range between low and high limits is insufficient, you need to make adjustments. For instructions, refer to *Adjusting Header Height Sensor Voltage Range (Left Side), page 74* and *Adjusting Header Height Sensor Voltage Range (Right Side), page 75*.

Calibrating Auto Header Height Control (John Deere 60 Series)

NOTE:

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

CAUTION

Check to be sure all bystanders have cleared the area.

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

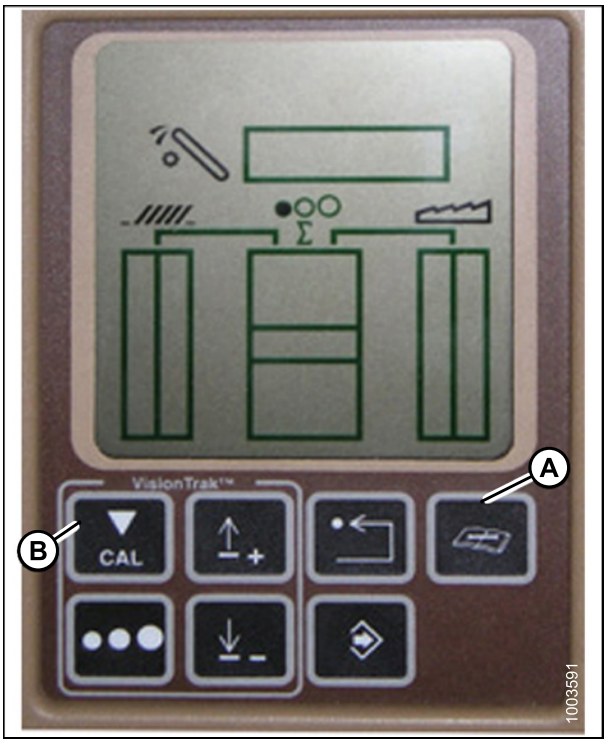


Figure 6.34: John Deere Combine Display

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

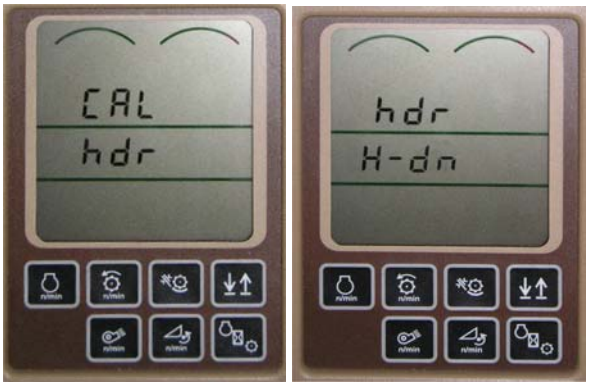


Figure 6.35: John Deere Combine Display

6. Fully lower feeder house to ground.

   NOTE:

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

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

   NOTE:

   If an error code appears during calibration, sensor is out of voltage range and will require adjustment. Refer to *Calibrating Auto Header Height Control (John Deere 60 Series), page 87*.

   NOTE:

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

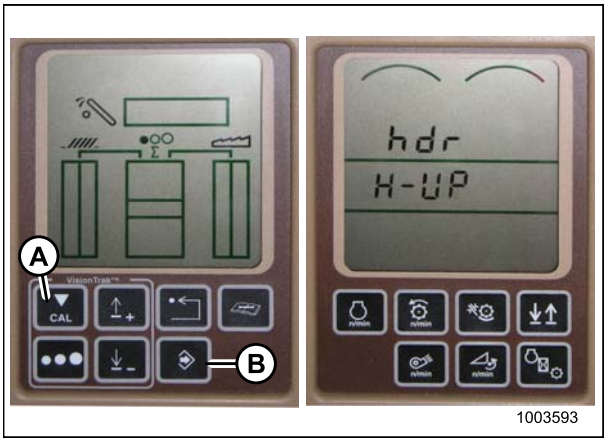


Figure 6.36: John Deere Combine Display

Turning Accumulator Off (John Deere 60 Series)

NOTE:

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

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

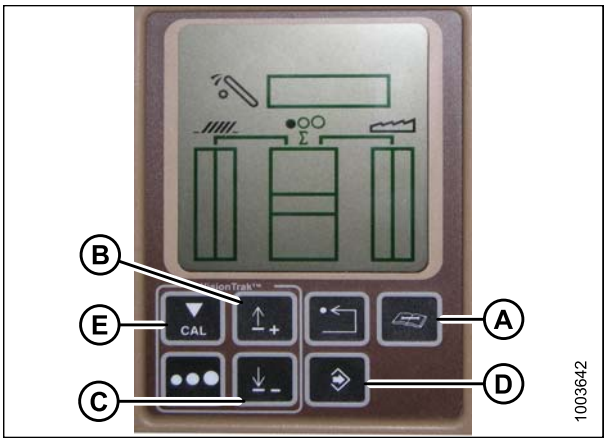


Figure 6.37: John Deere Combine Display

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

NOTE:

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

To set sensing grain header height, follow these steps:

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

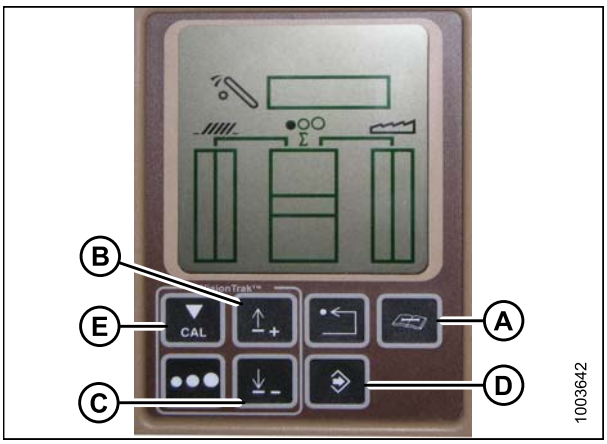


Figure 6.38: John Deere Combine Display

NOTE:

Do **NOT** use active header float function (A) in combination with MacDon auto header height control (AHHC)—the two systems will counteract one another. The header symbol (B) on display should **NOT** have a wavy line under it and should appear exactly as shown on Active Header Control Display in Figure *6.39, page 90*.

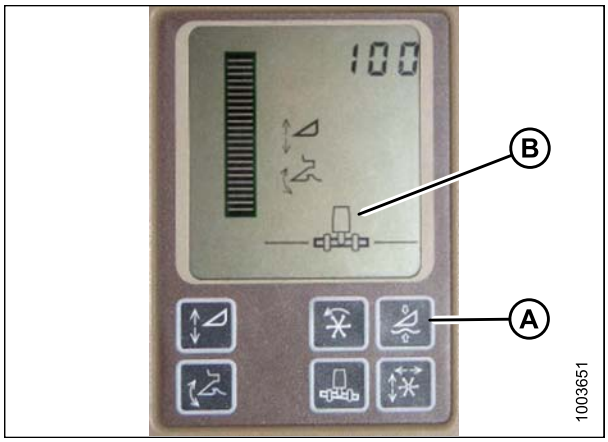


Figure 6.39: John Deere Combine Display

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

This is also known as dead band adjustment.

NOTE:

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

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

   NOTE:

   The lower the reading, the higher the sensitivity. Ideal operating range is typically between 50 and 80.
4. Press ENTER (D) to select 112 as sensitivity setting (this will allow you to change first digit of number sequence).
5. Press UP (B) or DOWN (C) until desired number is displayed, then press CAL (E) button. This will bring you to second digit. Repeat this procedure until desired setting is achieved.
6. Press ENTER (D) to save changes.

   NOTE:

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

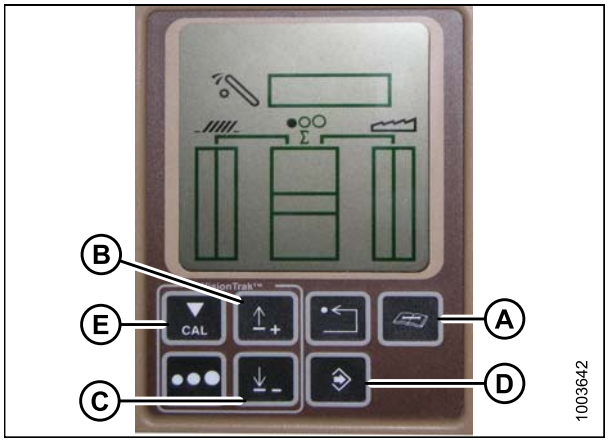


Figure 6.40: John Deere Combine Display

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

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

NOTE:

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

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

   NOTE:

   The default setting is 100. Ideal operating range is typically between 60 and 85.
4. Press ENTER (C) to select 114 as fast drop rate (this will allow you to change first digit of number sequence).
5. Press UP (B) or DOWN (E) until desired number is displayed, then press CAL button (D). This will bring you to second digit. Repeat this procedure until desired setting is achieved.
6. Press ENTER (C) to save changes.

   NOTE:

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

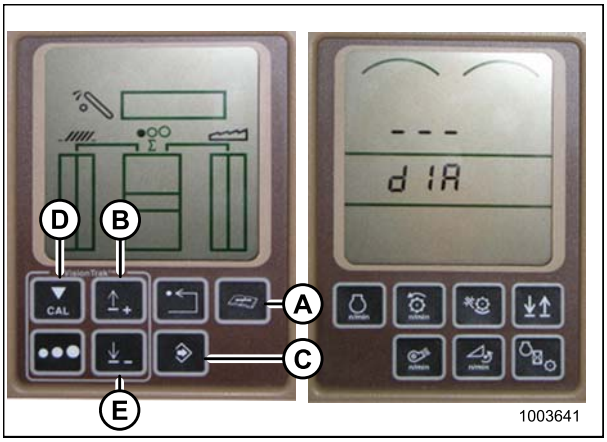


Figure 6.41: John Deere Combine Display

6.1.4 John Deere 70 Series Combines

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

The auto header height sensor output must be within a specific range, or feature will not work properly.

Combine	Low Voltage Limit	High Voltage Limit	Minimum Range
John Deere 70 Series	0.7 V	4.3 V	3.0 V

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

NOTE:

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

CAUTION

Check to be sure all bystanders have cleared the area.

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

2. Press HOME PAGE button (A) on main page of combine display.

Figure 6.42: John Deere Combine Display

3. Ensure three icons (A) depicted in illustration at right appear on combine display.

Figure 6.43: John Deere Combine Display

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

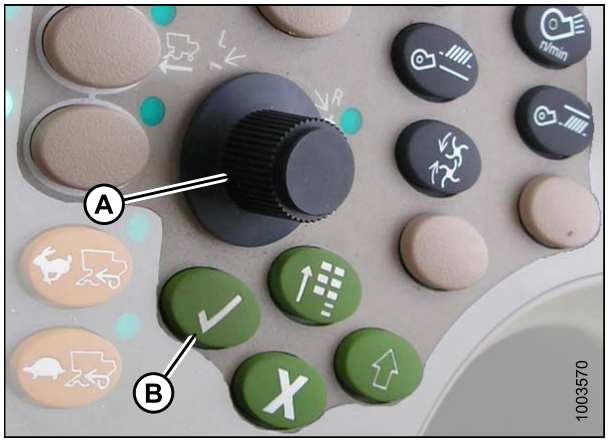


Figure 6.44: John Deere Combine Control Console

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

Figure 6.45: John Deere Combine Display

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

Figure 6.46: John Deere Combine Display

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

Figure 6.47: John Deere Combine Display

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

   NOTE:

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

10. Check sensor reading on monitor.

11. Raise header so it is just off ground and recheck sensor reading.
12. If sensor voltage is not within low and high limits shown in *6.1.1 Height Sensor Output Voltage Range – Combine Requirements, page 72*, or if range between low and high limits is insufficient, you need to make adjustments. For instructions, refer to *Adjusting Header Height Sensor Voltage Range (Left Side), page 74* and *Adjusting Header Height Sensor Voltage Range (Right Side), page 75*.

Calibrating Feeder House Speed (John Deere 70 Series)

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

Calibrating Auto Header Height Control (John Deere 70 Series)

NOTE:

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

⚠ CAUTION

Check to be sure all bystanders have cleared the area.

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

Figure 6.48: John Deere Combine Display

4. Select HEADER in box (A) by scrolling down to box using scroll knob, and then pressing check mark button (knob and button are shown in the image below (Figure *6.50, page 95*).
5. Scroll down to lower right icon that resembles an arrow in a diamond (B) and press check mark button to select it.

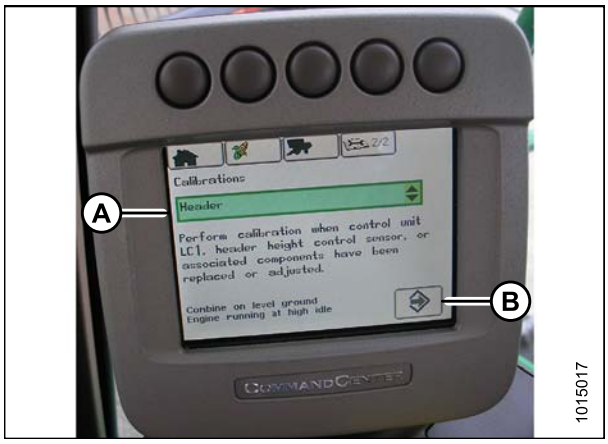


Figure 6.49: John Deere Combine Display

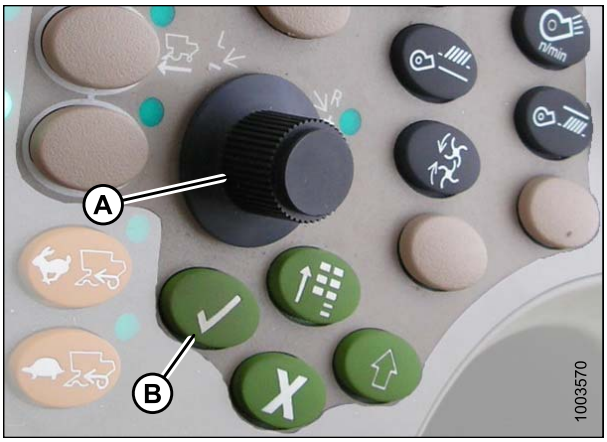


Figure 6.50: John Deere Combine Control Console
A - Scroll Knob **B - Check Mark Button**

6. Follow steps listed on combine display to perform the calibration.

   NOTE:

   If an error code appears on page, sensor is not in correct working range. Refer to *Checking Voltage Range from Combine Cab (John Deere 70 Series), page 91* to check and adjust range.

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

NOTE:

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

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

   NOTE:

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

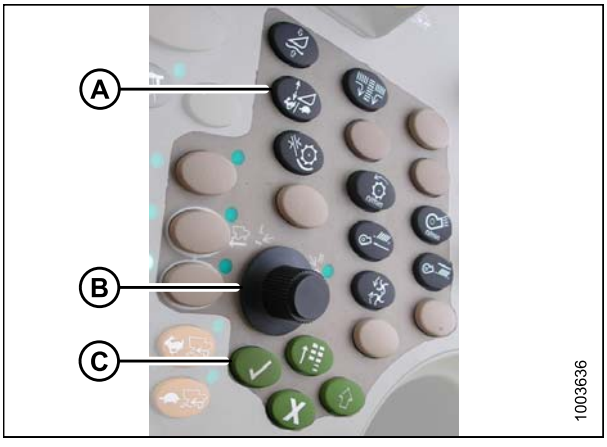


Figure 6.51: John Deere Combine Control Console

NOTE:

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

Figure 6.52: John Deere Combine Display

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

NOTE:

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

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

   NOTE:

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

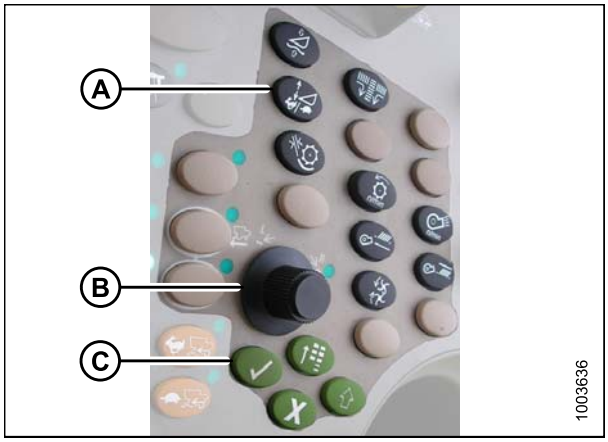


Figure 6.53: John Deere Combine Control Console

NOTE:

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

Figure 6.54: John Deere Combine Display

6.1.5 John Deere S Series Combines

Checking Voltage Range from Combine Cab (John Deere S Series)

The auto header height sensor output must be within a specific range, or feature will not work properly.

Combine	Low Voltage Limit	High Voltage Limit	Minimum Range
John Deere S and T Series	0.7 V	4.3 V	3.0 V

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

NOTE:

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

⚠ CAUTION

Check to be sure all bystanders have cleared the area.

1. Raise header until header wheels are 150 mm (6 in.) above ground.
2. Press CALIBRATION icon (A) on main page of combine display. The CALIBRATION page appears.

Figure 6.55: John Deere Combine Display

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

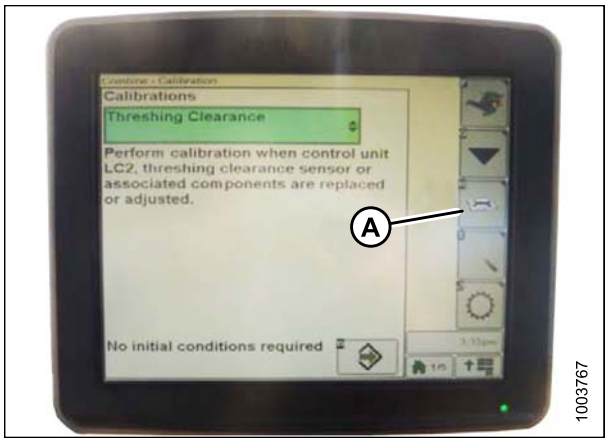


Figure 6.56: John Deere Combine Display

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

Figure 6.57: John Deere Combine Display

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

Figure 6.58: John Deere Combine Display

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

Figure 6.59: John Deere Combine Display

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

   NOTE:

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

9. Check sensor reading on monitor.
10. If sensor voltage is not within low and high limits shown in *6.1.1 Height Sensor Output Voltage Range – Combine Requirements, page 72*, or if range between low and high limits is insufficient, you need to make adjustments. For instructions, refer to *Adjusting Header Height Sensor Voltage Range (Left Side), page 74* and *Adjusting Header Height Sensor Voltage Range (Right Side), page 75*.

Calibrating Feeder House Fore/Aft Tilt Range (John Deere S Series)

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

NOTE:

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

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

Figure 6.60: John Deere Hydro Handle

NOTE:

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

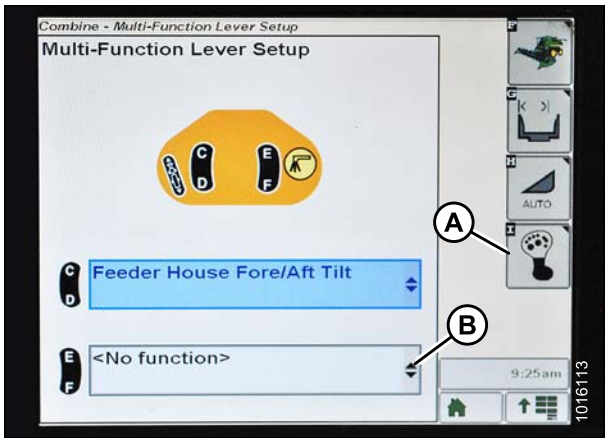


Figure 6.61: John Deere Combine Display

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

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

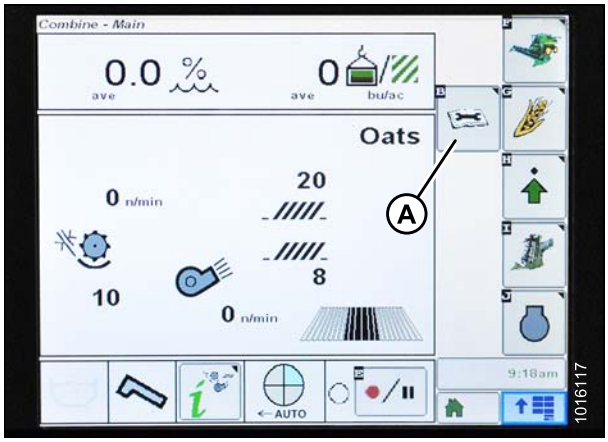


Figure 6.62: John Deere Combine Display

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

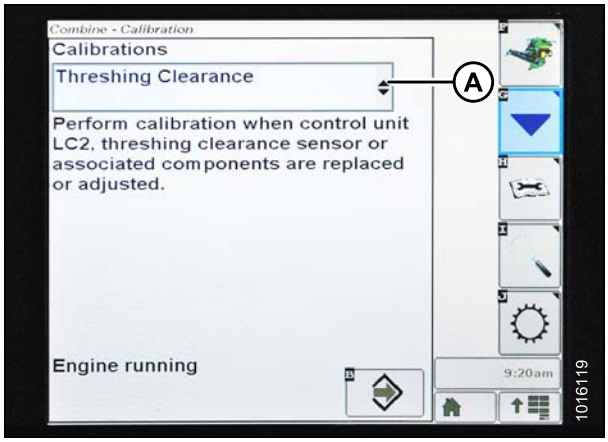


Figure 6.63: John Deere Combine Display

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

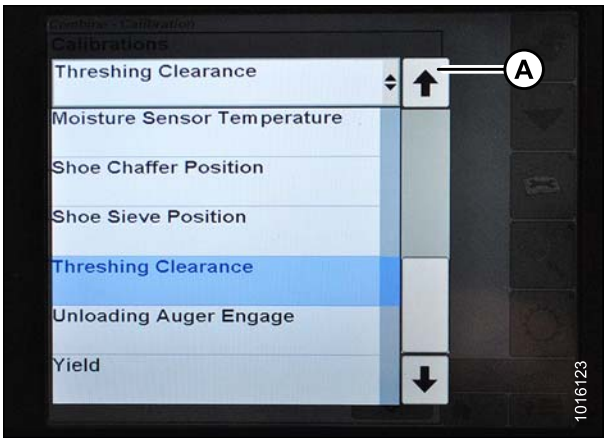


Figure 6.64: John Deere Combine Display

4. Press ENTER icon (A).

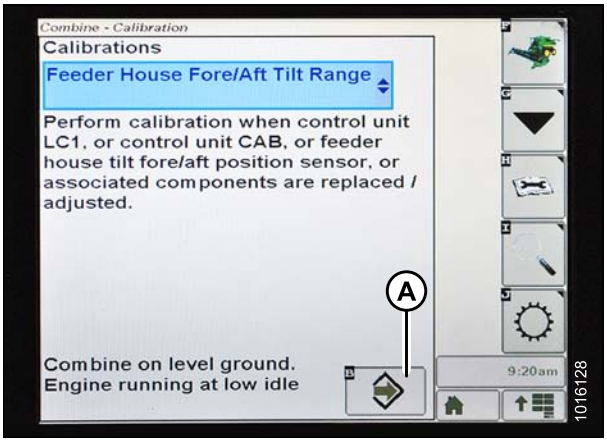


Figure 6.65: John Deere Combine Display

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

   NOTE:

   If an error code appears during calibration, sensor is out of voltage range and will require adjustment. Refer to *Checking Voltage Range from Combine Cab (John Deere S Series), page 97*.

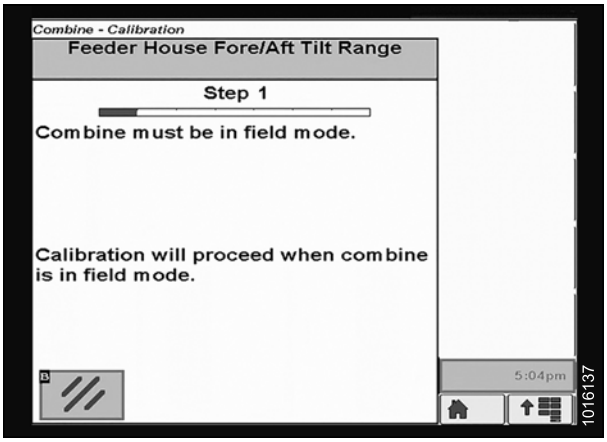


Figure 6.66: John Deere Combine Display

Calibrating Auto Header Height Control (John Deere S Series)

NOTE:

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

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

Figure 6.67: John Deere Combine Display

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

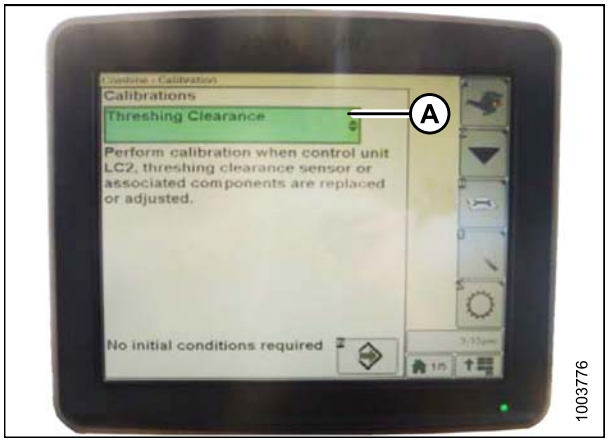


Figure 6.68: John Deere Combine Display

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

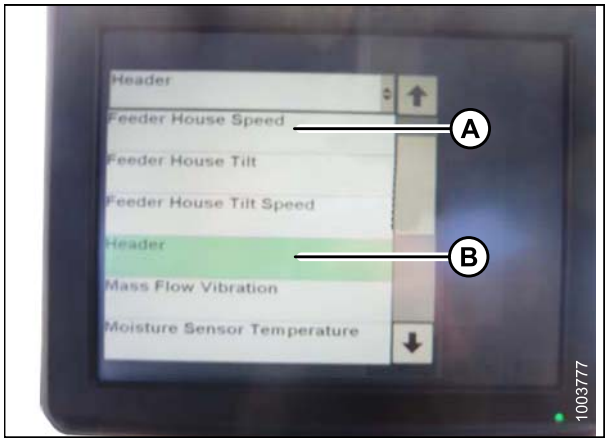


Figure 6.69: John Deere Combine Display

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

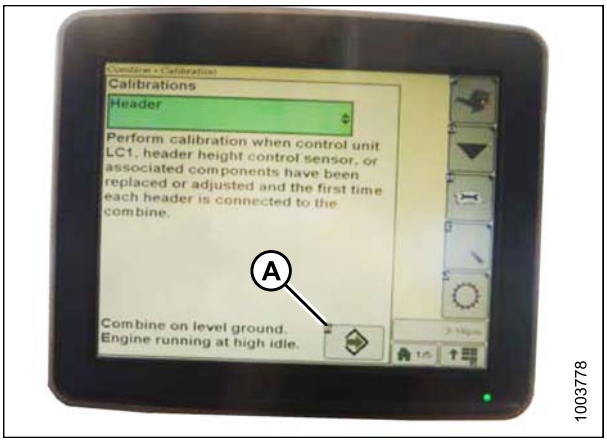


Figure 6.70: John Deere Combine Display

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

   NOTE:

   If an error code appears during calibration, one or both of sensors is out of voltage range and will require adjustment. Refer to *Adjusting Header Height Sensor Voltage Range (Left Side), page 74* and *Adjusting Header Height Sensor Voltage Range (Right Side), page 75*.

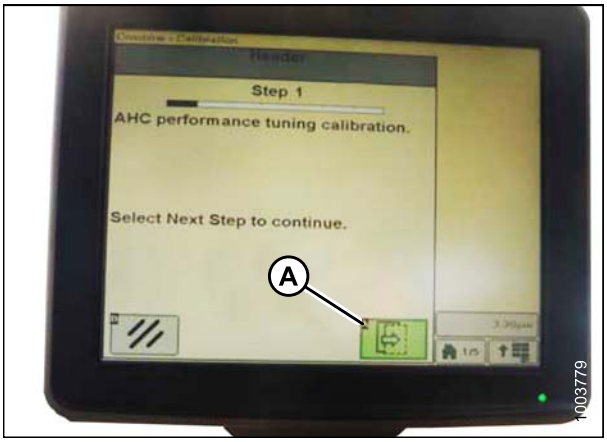


Figure 6.71: John Deere Combine Display

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

NOTE:

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

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

Figure 6.72: John Deere Combine Command Center

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

   NOTE:

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

Figure 6.73: John Deere Combine Display

Adjusting 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 combine operator's manual for updates.

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

Figure 6.74: John Deere Combine Command Center

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

   NOTE:

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

Figure 6.75: John Deere Combine Display

Setting Preset Cutting Height (John Deere S Series)

NOTE:

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

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

Figure 6.76: Combine Display

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

Figure 6.77: Combine Display

3. Select top-left (A) and top-center (B) icons for auto height sensing and return to cut.

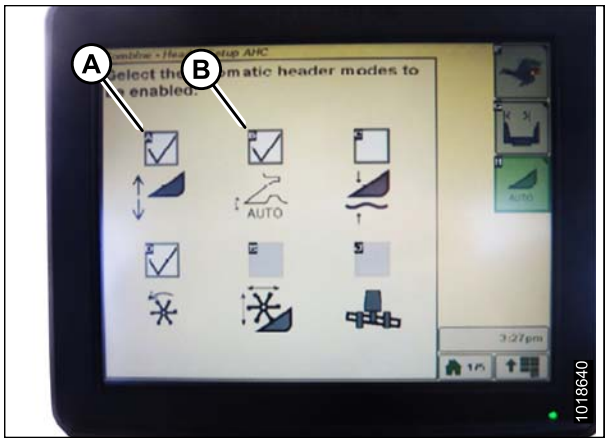


Figure 6.78: Combine Display

4. Select an appropriate ground pressure setting. Preset button 2 (B) on joystick for a light ground pressure setting in muddy or soft soil conditions, or preset button 3 (C) for a heavy ground pressure setting in harder soil conditions and a faster ground speed.

   NOTE:

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

Figure 6.79: Joystick Buttons

5. Use control knob (A) to scroll through different button options.

Figure 6.80: Combine Control Console

NOTE:

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

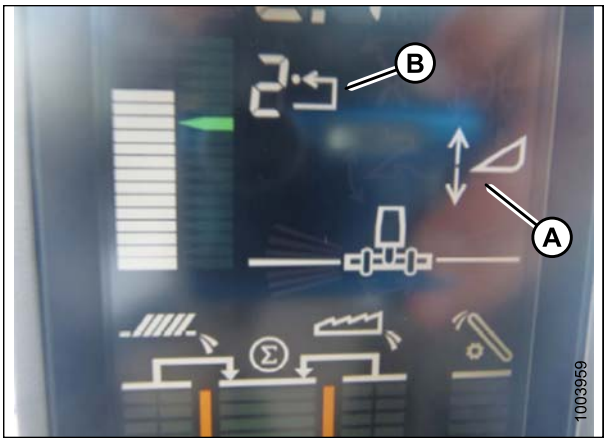


Figure 6.81: Combine Display

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

NOTE:

For New Holland CR models 6.80, 6.90, 7.90, 8.90, 9.90, and 10.90, refer to *6.1.7 New Holland Combines (CR Series – Model Year 2015 and Later), page 115*.

Checking Voltage Range from Combine Cab (New Holland)

NOTE:

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

CAUTION

Check to be sure all bystanders have cleared the area.

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

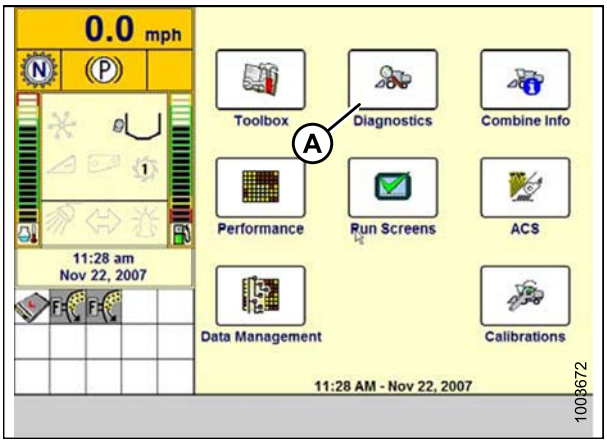


Figure 6.82: New Holland Combine Display

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

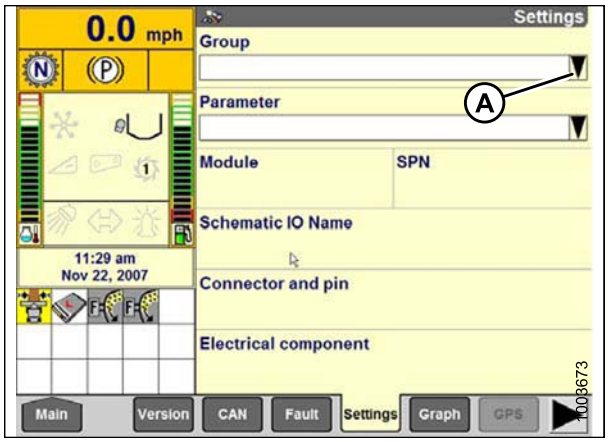


Figure 6.83: New Holland Combine Display

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

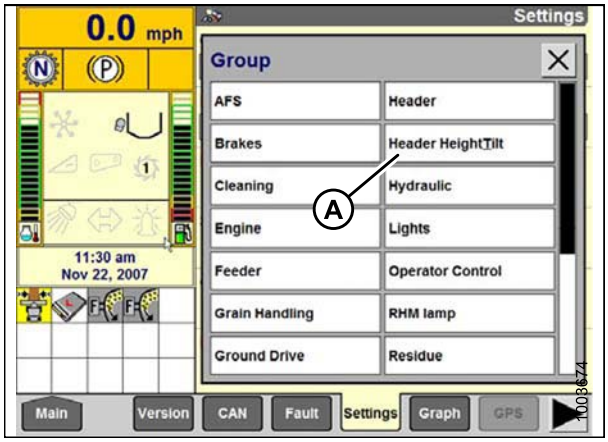


Figure 6.84: New Holland Combine Display

6. Select LEFT HEADER HEIGHT SEN (A), and then select GRAPH button (B). The exact voltage is displayed at top of page.
7. Raise and lower header to see full range of voltage readings.

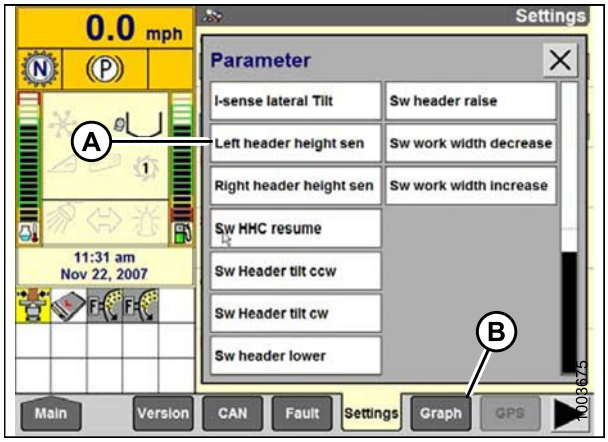


Figure 6.85: New Holland Combine Display

8. If sensor voltage is not within low and high limits shown in *6.1.1 Height Sensor Output Voltage Range – Combine Requirements, page 72*, or if range between low and high limits is insufficient, you need to make adjustments. For instructions, refer to *Adjusting Header Height Sensor Voltage Range (Left Side), page 74* and *Adjusting Header Height Sensor Voltage Range (Right Side), page 75*.

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

NOTE:

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

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

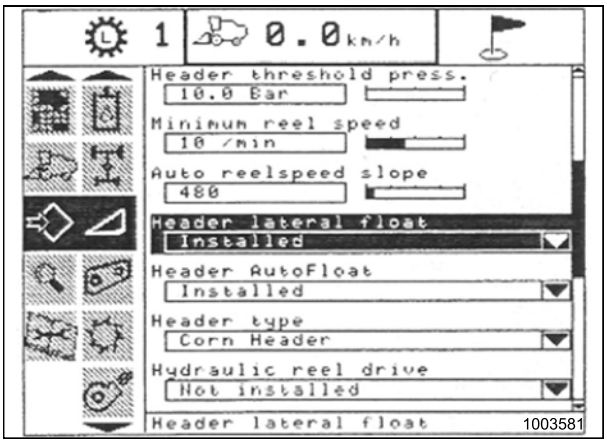


Figure 6.86: New Holland Combine Display

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

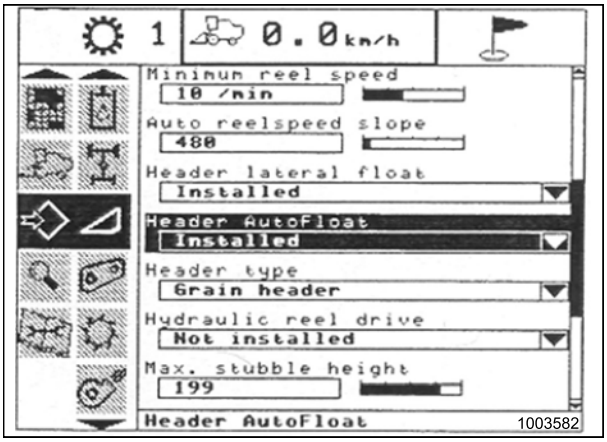


Figure 6.87: New Holland Combine Display

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

NOTE:

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

⚠ CAUTION

Check to be sure all bystanders have cleared the area.

Check following conditions before starting header calibration procedure:

- The header is attached to combine.
- The combine is on level ground, with header level to ground.
- The engine is running.

- The combine is not moving.
- No faults have been received from Header Height Controller (HHC) module.
- Header/feeder is disengaged.
- Lateral float buttons are NOT pressed.
- ESC key is NOT pressed.

To calibrate the AHHC, follow these steps:

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

   NOTE:

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

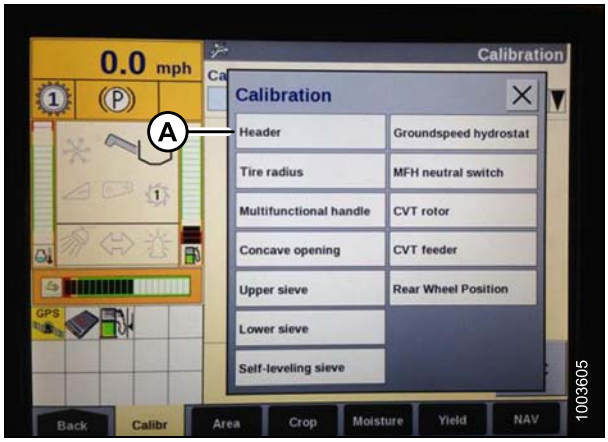


Figure 6.88: New Holland Combine Display

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

   NOTE:

   Pressing ESC key during any of steps or letting system sit idle for more than three minutes will cause calibration procedure to stop.

   NOTE:

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

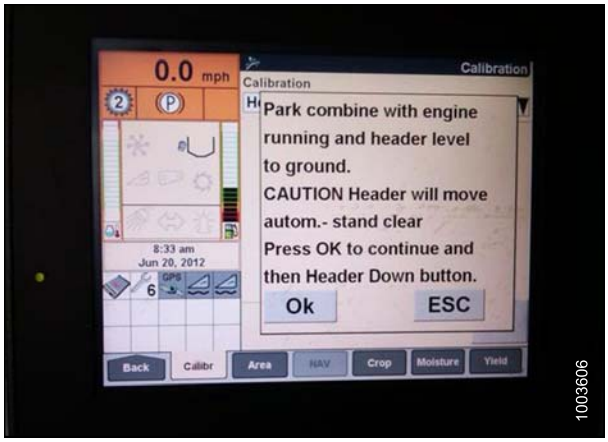


Figure 6.89: New Holland Combine Display

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

   NOTE:

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

5. If unit does not function properly, conduct 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 header to a height that will never be reached while cutting. The area counter will stop counting when header is above programmed height, and will begin counting when header is below programmed height.

Select height of header that corresponds to description above.

IMPORTANT:

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

CAUTION

Check to be sure all bystanders have cleared the area.

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

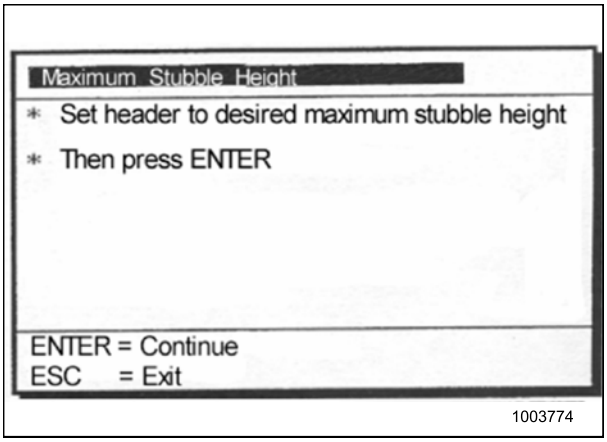


Figure 6.90: New Holland Calibration Dialog Box

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

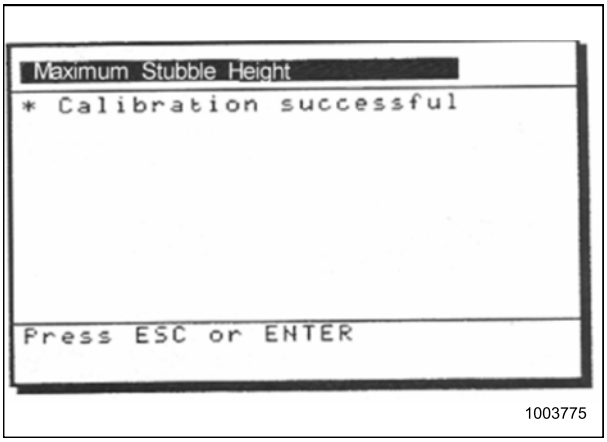


Figure 6.91: New Holland Calibration Dialog Box

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

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

NOTE:

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

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

   NOTE:

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

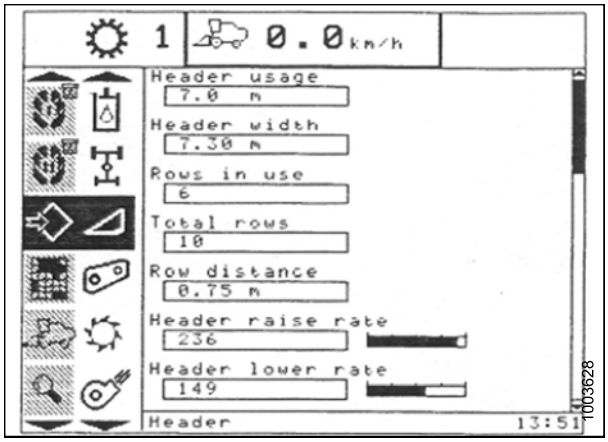


Figure 6.92: New Holland Combine Display

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

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

NOTE:

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

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

   NOTE:

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

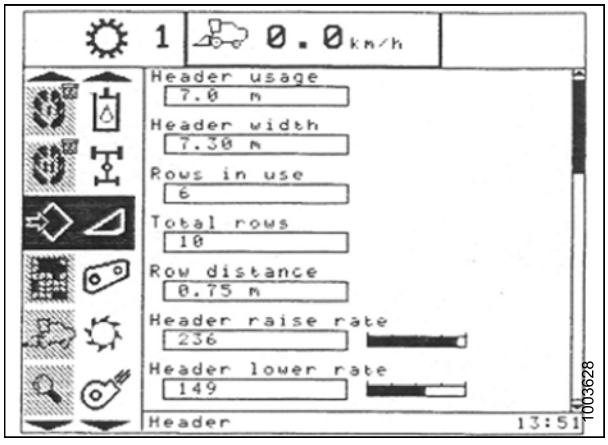


Figure 6.93: New Holland Combine Display

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

NOTE:

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

CAUTION

Check to be sure all bystanders have cleared the area.

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

   NOTE:

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

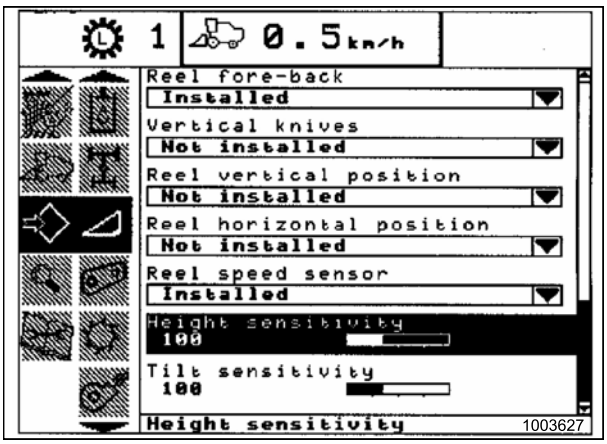


Figure 6.94: New Holland Combine Display

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

To set preset cutting height, follow these steps:

NOTE:

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

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

   NOTE:

   It is possible to store two different header height values by using HEADER MEMORY rocker switch (D) in STUBBLE HEIGHT/AUTOFLOAT MODE position (A) or (B).
5. To change one of memorized header height set points while combine is in use, use HEADER HEIGHT AND HEADER LATERAL FLOAT rocker switch (C) (slow up/down) to raise or lower header to desired value. Press AUTOMATIC HEADER HEIGHT CONTROL button (E) for a minimum of 2 seconds to store new height position. A beep will confirm setting.

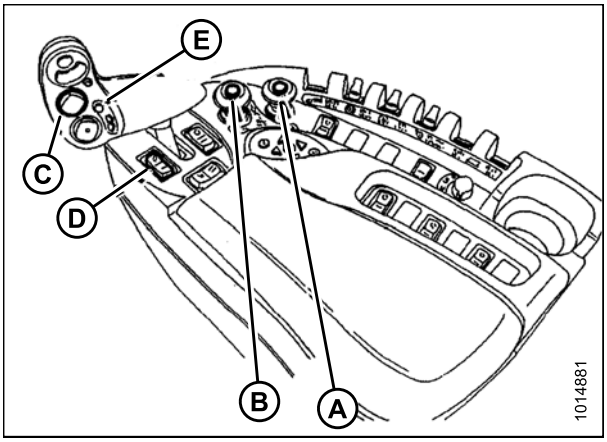


Figure 6.95: New Holland Combine Controls

NOTE:

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

NOTE:

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

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

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

NOTE:

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

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

Figure 6.96: New Holland Combine Controls

2. On HEAD 1 page, change CUTTING TYPE from FLEX to PLATFORM as shown at (A).

Figure 6.97: New Holland Combine Display

3. On HEAD 2 page, change HEADER SUB TYPE from DEFAULT to 80/90 as shown at (A).

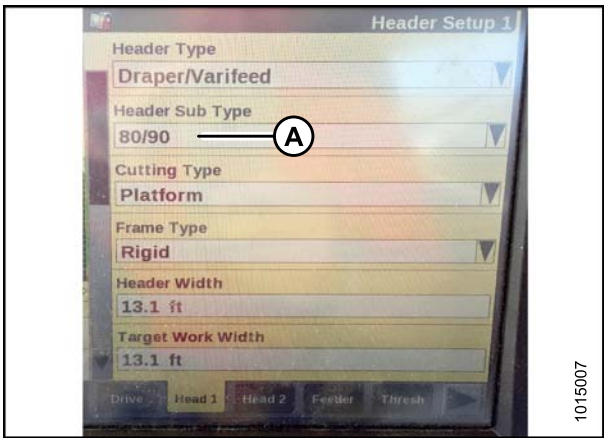


Figure 6.98: New Holland Combine Display

There are now two different buttons for ON GROUND presets. The toggle switch that was present on previous models is now configured as shown at right. MacDon headers only require first two buttons (A) and (B). The third button down (C) is not configured.

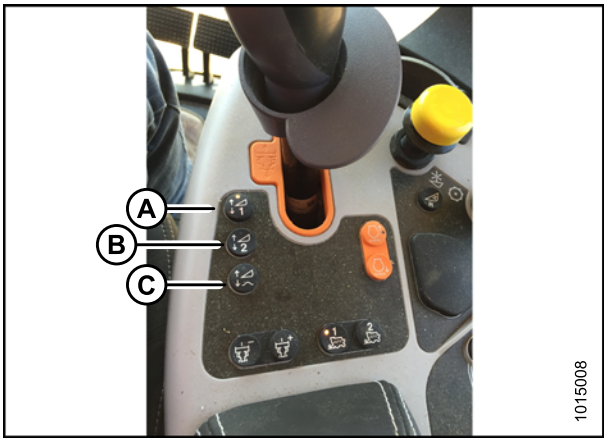


Figure 6.99: New Holland Combine Controls

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

This section applies only to 2015 and later CR models (6.80, 6.90, 7.90, 8.90, 9.90, and 10.90). For other New Holland combine models, refer to *6.1.6 New Holland Combines CX/CR Series (CR Series – Model Year 2014 and Earlier), page 107*.

Engaging Auto Header Height Control (New Holland CR Series)

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

NOTE:

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

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

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

Figure 6.100: New Holland Combine Controls

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

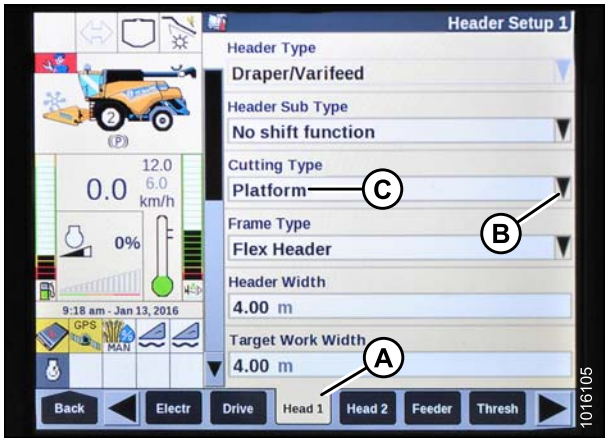


Figure 6.101: New Holland Combine Display

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

Figure 6.102: New Holland Combine Display

6. Select 80/90 (A).

Figure 6.103: New Holland Combine Display

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

Figure 6.104: New Holland Combine Display

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

   NOTE:

   With AUTO HEADER LIFT installed and AHHC engaged, header will lift up automatically when you pull back on GSL.
10. Set values for MANUAL HHC RAISE RATE (C) and MANUAL HHC LOWER RATE (D) for best performance according to ground conditions.

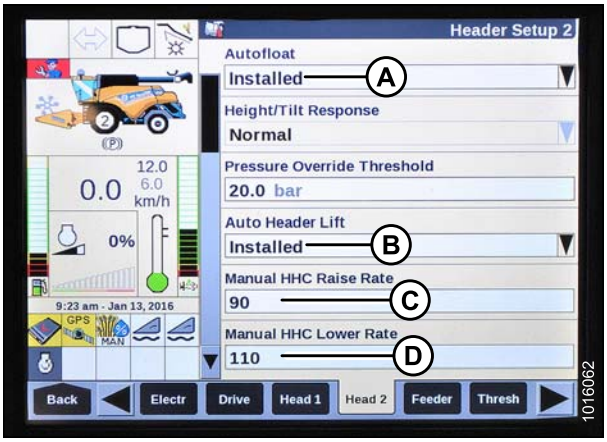


Figure 6.105: New Holland Combine Display

11. Set values for HHC HEIGHT SENSITIVITY (A) and HHC TILT SENSITIVITY (B) for best performance according to ground conditions.

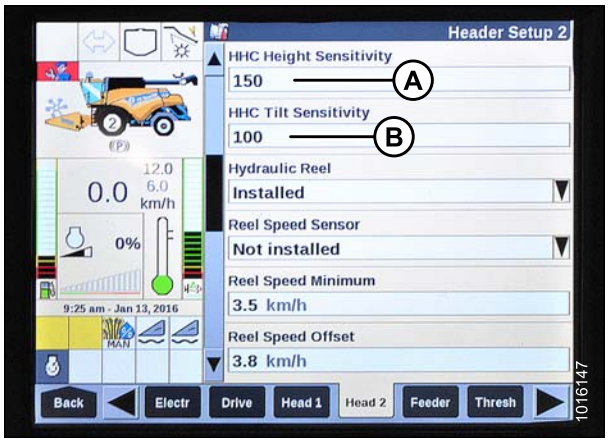


Figure 6.106: New Holland Combine Display

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

NOTE:

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

⚠ CAUTION

Check to be sure all bystanders have cleared the area.

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

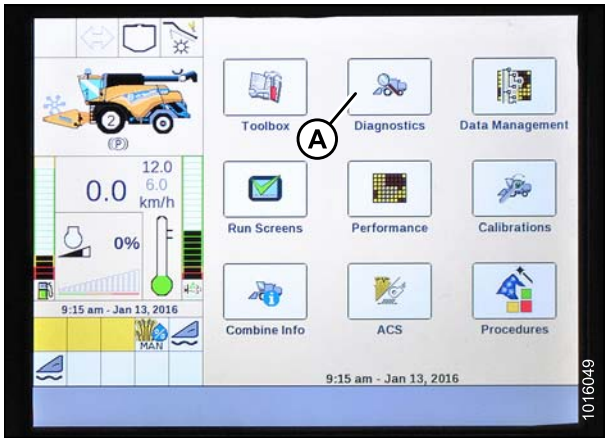


Figure 6.107: New Holland Combine Display

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

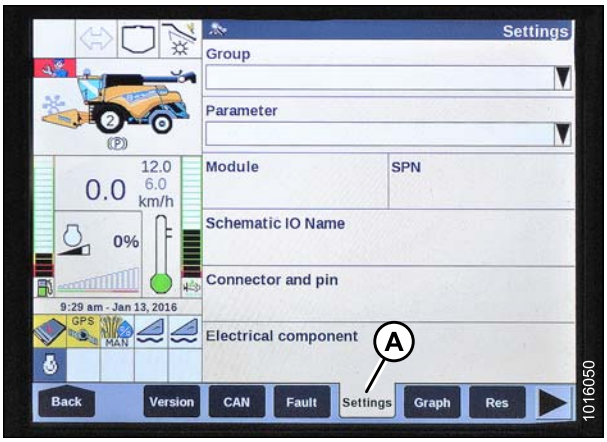


Figure 6.108: New Holland Combine Display

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

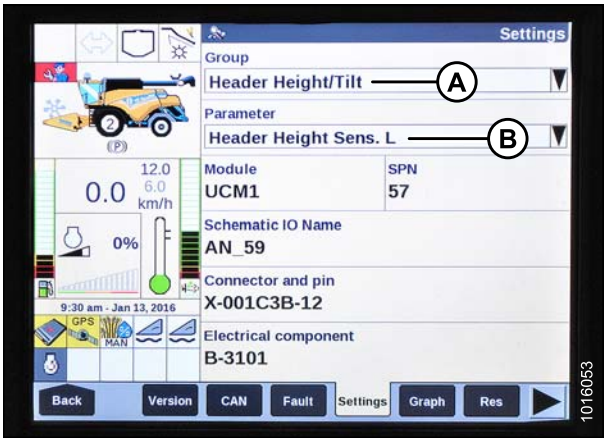


Figure 6.109: New Holland Combine Display

6. Select GRAPH (A). The exact voltage (B) is displayed at top of page.
7. Raise and lower header to see full range of voltage readings.
8. If sensor voltage is not within low and high limits shown in *6.1.1 Height Sensor Output Voltage Range – Combine Requirements, page 72*, or if range between low and high limits is insufficient, you need to make adjustments. For instructions, refer to *Adjusting Header Height Sensor Voltage Range (Left Side), page 74* and *Adjusting Header Height Sensor Voltage Range (Right Side), page 75*.

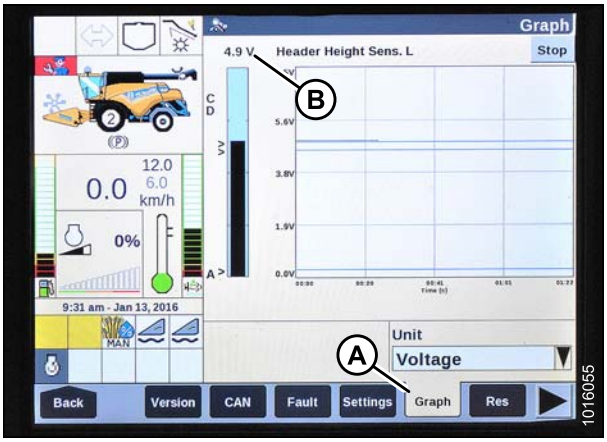


Figure 6.110: New Holland Combine Display

Calibrating Auto Header Height Control (New Holland CR Series)

NOTE:

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

CAUTION

Check to be sure all bystanders have cleared the area.

Check following conditions before starting header calibration procedure:

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

To calibrate AHHC, follow these steps:

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

Figure 6.111: New Holland Combine Display

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

Figure 6.112: New Holland Combine Display

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

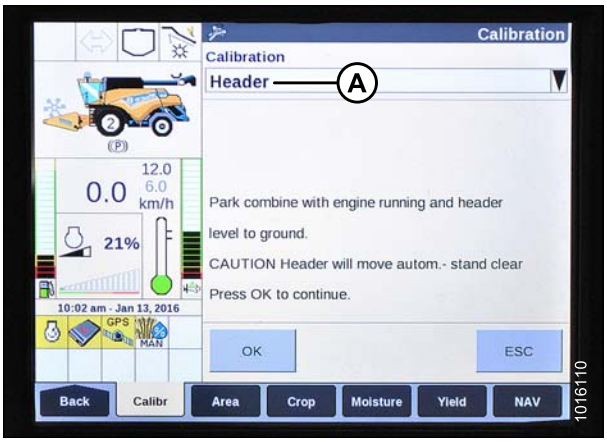


Figure 6.113: New Holland Combine Display

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

   NOTE:

   Pressing ESC key during any of steps or letting system sit idle for more than three minutes will cause calibration procedure to stop.

   NOTE:

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

Figure 6.114: New Holland Combine Display

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

   NOTE:

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

Figure 6.115: New Holland Combine Display

Setting Auto Height (New Holland CR Series)

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

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

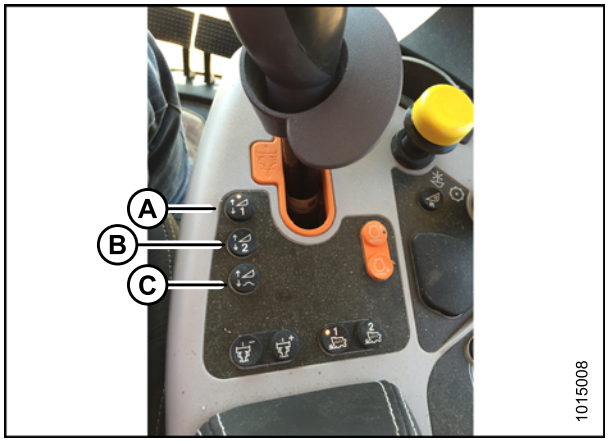


Figure 6.116: New Holland Combine Controls

To set auto height, follow these steps:

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

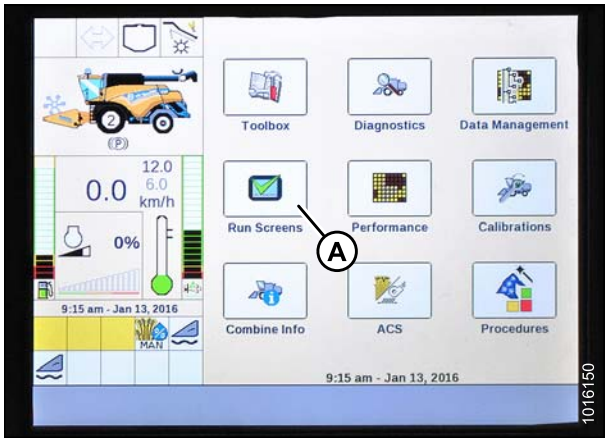


Figure 6.117: New Holland Combine Display

3. Select RUN tab that shows MANUAL HEIGHT.

   NOTE:

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

4. Lower header to ground.
5. Select one of auto height set point buttons shown in Figure *6.116, page 122*.
   - Press SET 1 button for lower position
   - Press SET 2 button for higher position

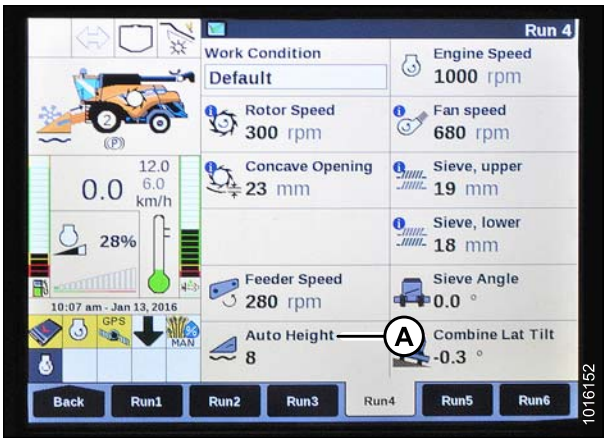


Figure 6.118: New Holland Combine Display

Setting Maximum Work Height (New Holland CR Series)

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

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

Figure 6.119: New Holland Combine Display

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

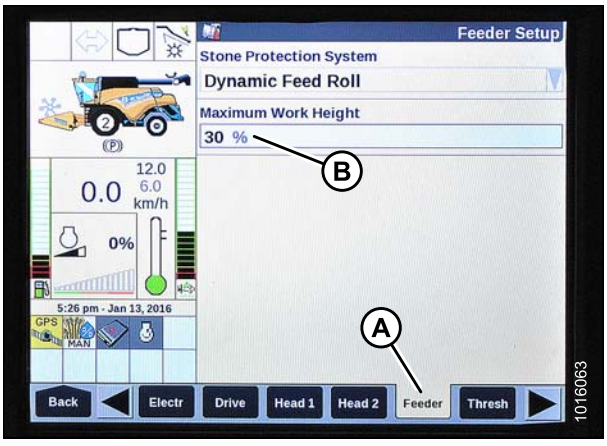


Figure 6.120: New Holland Combine Display

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

Figure 6.121: New Holland Combine Display

6.1.8 Sensor Operation

The position sensors supplied with auto header height control (AHHC) system are 1000 ohm (1 k) industrial series sensors containing sealed connectors. Normal operating signal voltages for sensors fall between 10% (0.5VDC) and 90% (4.5VDC).

- A sensor operating with a signal voltage **below 5%** is considered to be shorted
- A sensor with a signal voltage **above 95%** is considered to be open

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

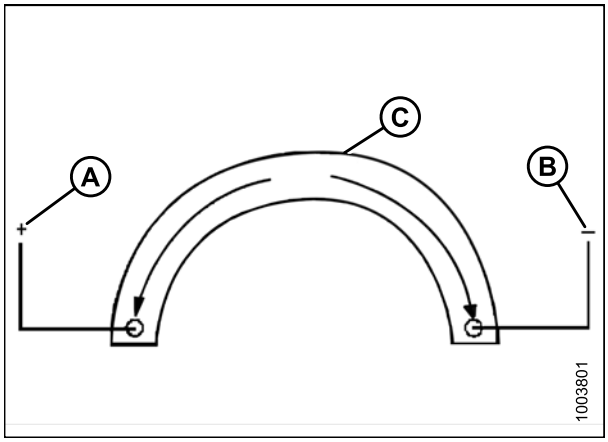


Figure 6.122: Power, Ground, and Signal Wires

In addition to 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 high resistance filament band. As external arm is rotated and wiper is moved toward or away from power wire connection, measured resistance at signal wire (C) changes.

The resistance measured across 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 ohm meter is connected across signal and power wires and sensor shaft rotated. When an input voltage is applied to high resistance filament band through power wire (A), output (or measured) voltage in signal wire (C) is changed by this variable resistance.

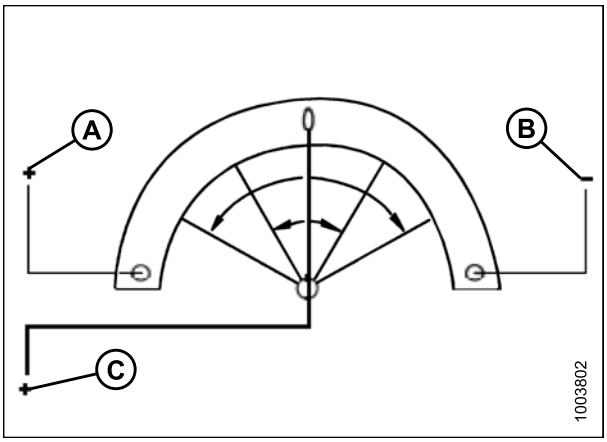


Figure 6.123: Power, Ground, and Signal Wires

NOTE:

Ground and power wires may differ depending on combine.

6.2 Wheels and Tires

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

DANGER

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

6.2.1 Inflating Tire

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

Table 6.2 Tire (MD #152724)

Tire	Pressure
18.50 x 8.50-8	240–310 kPa (35–45 psi)[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 reduce 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 127* or *6.3.2 Adjusting Rear Draper Belt Tension, page 129*.

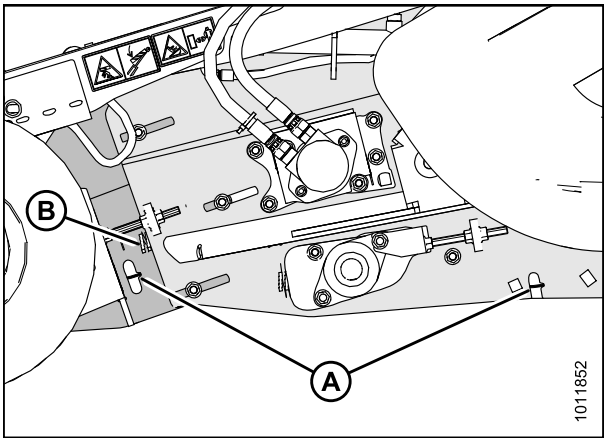


Figure 6.124: Draper Tension Indicator

6.3.1 Adjusting Front Draper Belt Tension

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

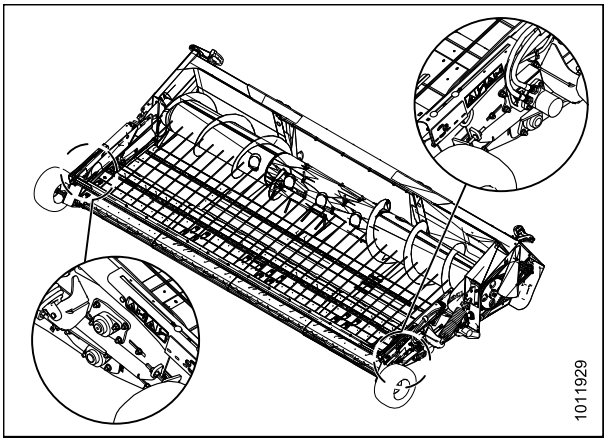


Figure 6.125: Front Deck Adjusting Bolts

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 1 mm (3/64 in.).

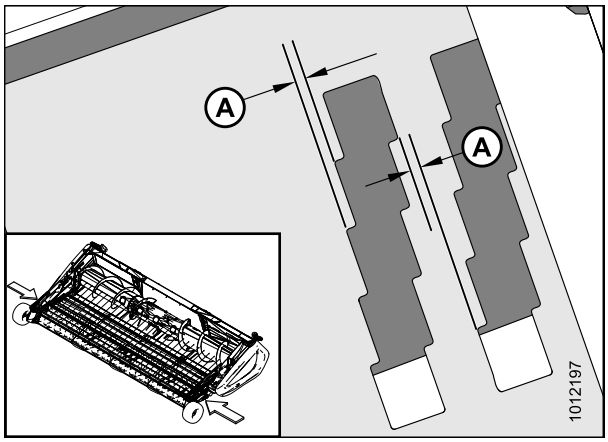


Figure 6.126: Stepped Position Indicators

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
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.

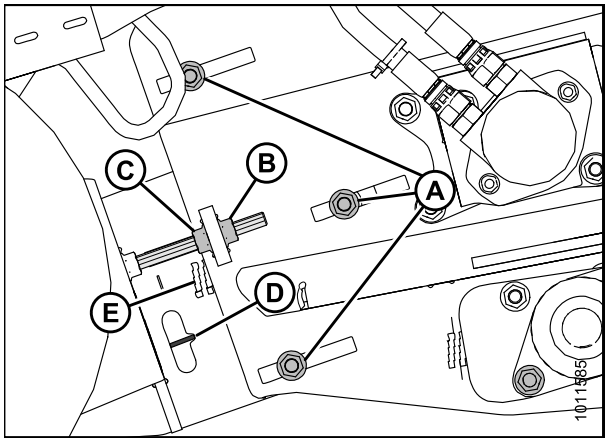


Figure 6.127: Left Side Front Deck Shown – Right Side Opposite

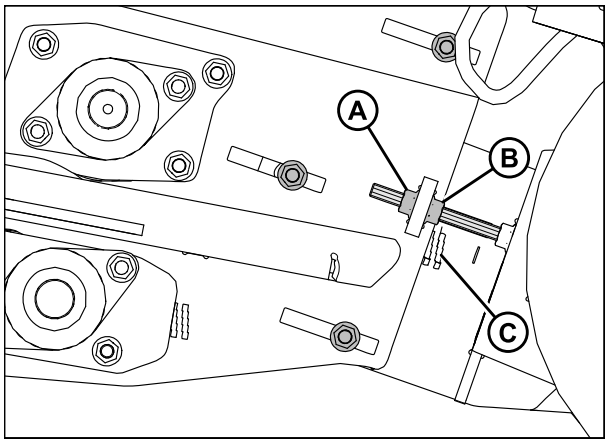


Figure 6.128: Right Side Stepped Position Indicator Gauge

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

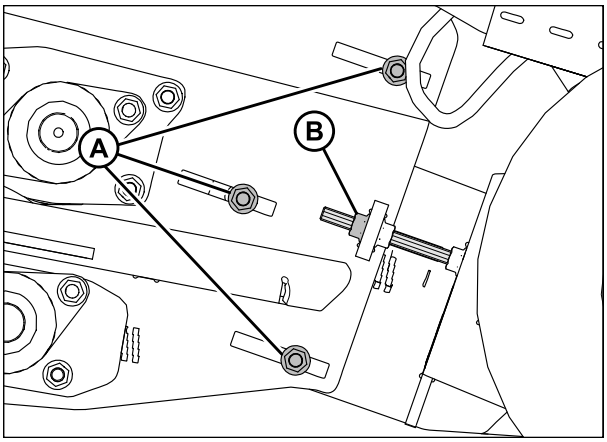


Figure 6.129: Front Deck Adjuster

6.3.2 Adjusting Rear Draper Belt Tension

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

   IMPORTANT:

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

   Overtightening drapers may result in the following:

   - Joining bolts pulling out of draper
   - Damage to the rollers or bearings
   - Twisting and wrinkling of drapers
4. Tighten clamp bolts (A) and jam nut (B).
5. Note the position of indicator (E) and set the right side to the same position.

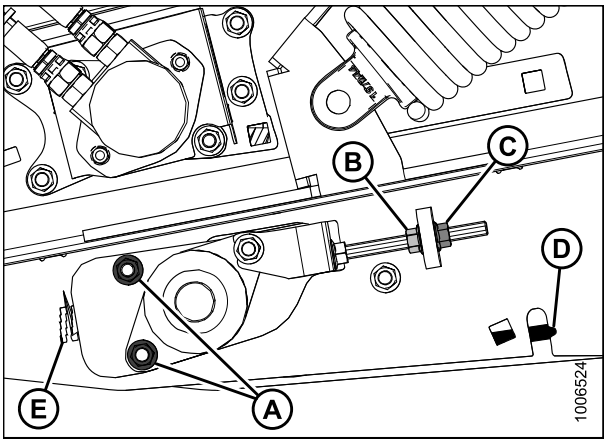


Figure 6.130: Left Side Rear Deck

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

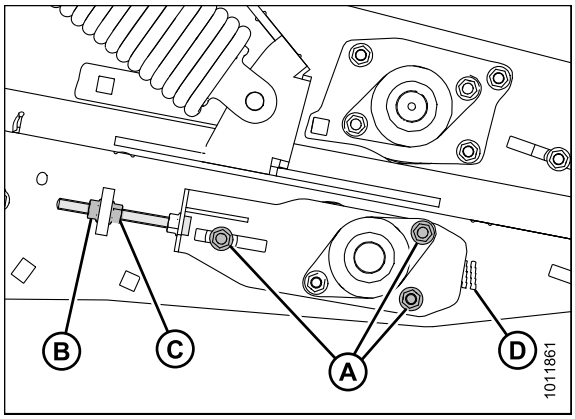


Figure 6.131: Right Side Rear Deck

6.4 Lubrication

6.4.1 Lubricating the Header

DANGER

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

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

6.4.2 Lubricating Auger Drive Chain

DANGER

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

1. Lower header to the ground, shut down the combine, and remove the key from the ignition.
2. Open left endshield (A). Refer to *3.3.1 Opening Left Endshield, page 21*.

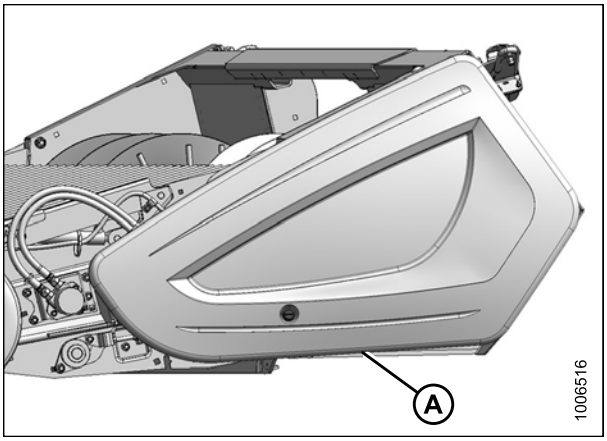


Figure 6.132: Left Endshield

3. Apply a liberal amount of SAE 30 engine oil to the chain (A).
4. Close left endshield. Refer to *3.3.2 Closing Left Endshield, page 21*.

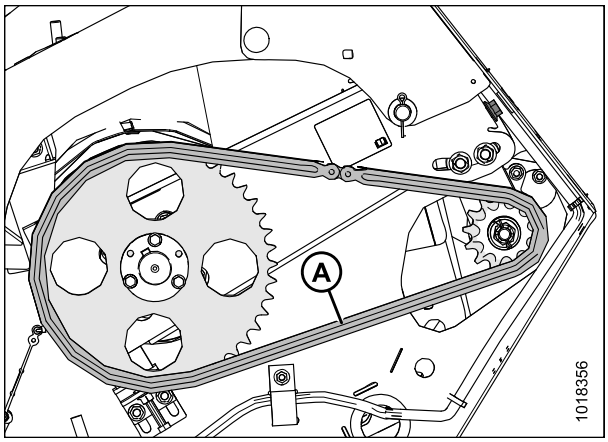
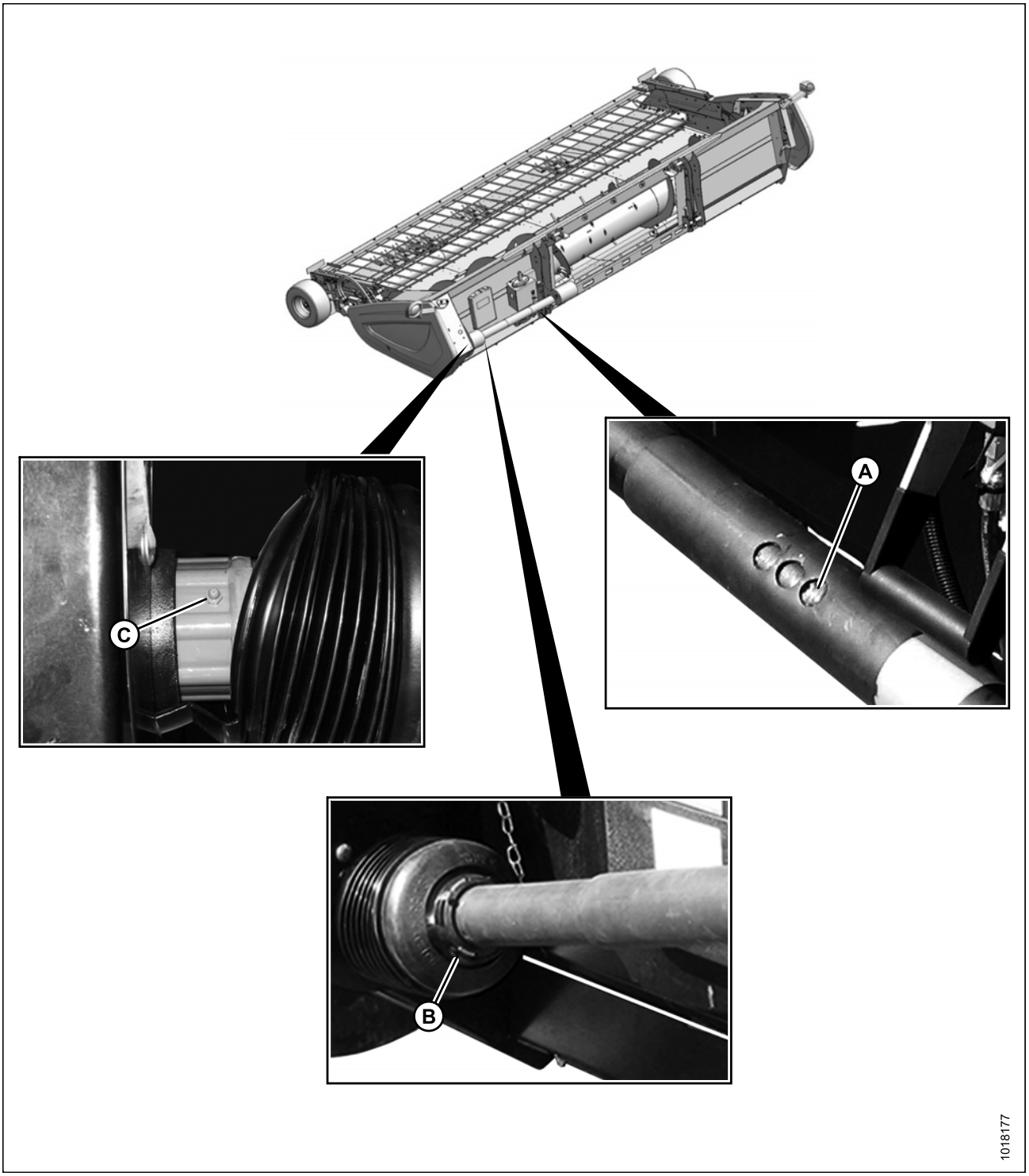


Figure 6.133: Auger Drive Chain

6.4.3 Greasing Points

Figure 6.134: Greasing Points



A - Driveline Slip-Joint

B - Driveline Guard (Both Ends)

C - Driveline Clutch

6.5 Manuals

1. Remove cable tie on manual case (A), and open case.

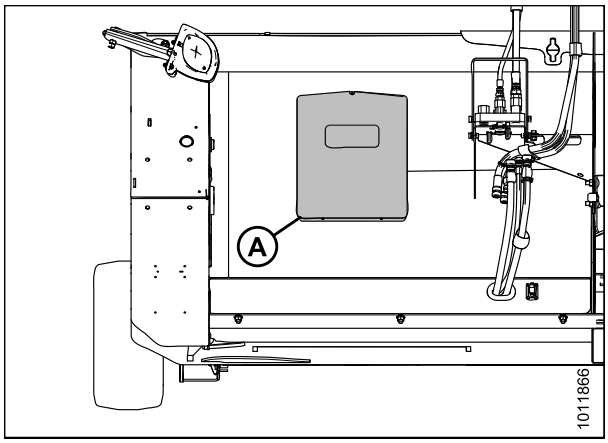


Figure 6.135: Manual Storage Case

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.

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.

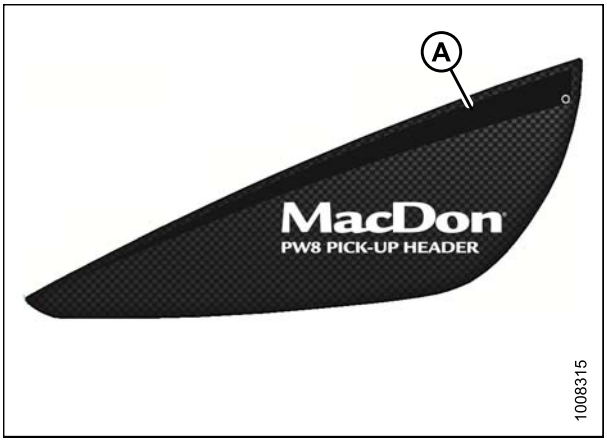


Figure 6.136: Left Endshield – Right Opposite

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 356 mm (14 in.) 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 3.4 N·m (30 in·lbf).
    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 0–13 mm (0–1/2 in.) extended when the master cylinder is fully retracted.
5. Perform the run-up check listed on the *Predelivery Checklist, page 151* and the post run-up check to ensure the machine is field-ready.

7 Reference

7.1 Definitions

The following definitions and acronyms may be used in this manual:

Term	Definition
API	American Petroleum Institute.
ASTM	American Society of Testing and Materials.
Bolt	A headed and externally threaded fastener that is designed to be paired with a nut.
CGVW	Combined Vehicle Gross Weight.
Finger tight	Finger tight is a reference position where sealing surfaces or components are making contact with each other and the fitting has been tightened to a point where the fitting is no longer loose.
F.F.F.T.	Flats from finger tight.
GVW	Gross Vehicle Weight.
hp	Horsepower.
JIC	Joint Industrial Council: A standards body that developed the standard sizing and shape for original 37° flared fitting.
n/a	Not applicable.
Nut	An internally threaded fastener that is designed to be paired with a bolt.
NPT	National Pipe Thread: A style of fitting used for low pressure port openings. Threads on NPT fittings are uniquely tapered for an interference fit.
ORB	O-ring Boss: a style of fitting commonly used in port opening on manifolds, pumps and motors.
ORFS	O-ring face seal: A style of fitting commonly used for connecting hoses and tubes. This style of fitting is also commonly called ORS, which stands for O-ring Seal.
Pick-Up Header	A machine that attaches to a combine that picks up grain that has been cut and laid in windrows.
PTO	Power take-off.
RoHS (Reduction of Hazardous Substances)	A directive by the European Union to restrict the use of certain hazardous substances (such as hexavalent chromium used in some yellow zinc platings).
SAE	Society of Automotive Engineers.
Screw	A headed and externally threaded fastener that threads into preformed threads or forms its own thread in one of the mating parts.
Soft joint	A joint made with the use of a fastener where the joining materials are compressible or experience relaxation over a period of time.
spm	Strokes per minute.
Tension	Axial load placed on a bolt or screw, usually measured in Newtons (N) or pounds (lb.).

Term	Definition
T.F.F.T.	Turns from finger tight.
Torque	The product of a force X lever arm length, usually measured in Newton-meters (Nm) or foot-pounds (lbf·ft).
Torque angle	A tightening procedure where the fitting is assembled to a precondition (finger tight) and then the nut is turned further a number of degrees or a number of flats to achieve its final position.
Torque-tension	The relationship between the assembly torque applied to a piece of hardware and the axial load it induces in the bolt or screw.
Tractor	Agricultural-type tractor.
Truck	A four-wheel highway/road vehicle weighing no less than 3400 kg (7500 lb.).
Washer	A thin cylinder with a hole or slot located in the center and is to be used as a spacer, load distribution element or a locking mechanism.

7.2 Conversion Chart

Table 7.1 Conversion Chart

Quantity	SI Units (Metric)		Factor	Inch-Pound Units	
	Unit Name	Abbreviation		Unit Name	Abbreviation
Area	hectares	ha	x 2.4710 =	acres	acres
Flow	liters per minute	L/min	x 0.2642 =	US gallons per minute	gpm
Force	Newtons	N	x 0.2248 =	pounds force	lbf
Length	millimeters	mm	x 0.0394 =	inch	in.
	meters	m	x 3.2808 =	foot	ft.
Power	kilowatts	kW	x 1.341 =	horsepower	hp
Pressure	kilopascals	kPa	x 0.145 =	pounds per square inch	psi
	megapascals	MPa	x 145.038 =		
	bar (Non-SI)	bar	x 14.5038		
Torque	Newton meters	Nm	x 0.7376 =	pound feet or foot pounds	lbf·ft
	Newton meters	Nm	x 8.8507 =	pound inches or inch pounds	lbf·in
Temperature	Celsius	˚C	(C˚ x 1.8) + 32 =	degrees Fahrenheit	˚F
Velocity	meters per minute	m/min	x 3.2808 =	feet per minute	ft/min
	meters per second	m/s	x 3.2808 =	feet per second	ft/s
	kilometers per hour	km/h	x 0.6214 =	miles per hour	mph
Volume	liters	L	x 0.2642 =	US gallons	US gal
	milliliters	ml	x 0.0338 =	ounces	oz.
	cubic centimeters	cm^3 or cc	x 0.061 =	cubic inches	$in.^3$
Weight	kilograms	kg	x 2.2046 =	pounds	lb.

7.3 Torque Specifications

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

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

Jam nuts

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

Self-tapping screws

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

7.3.1 Metric Bolt Specifications

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

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

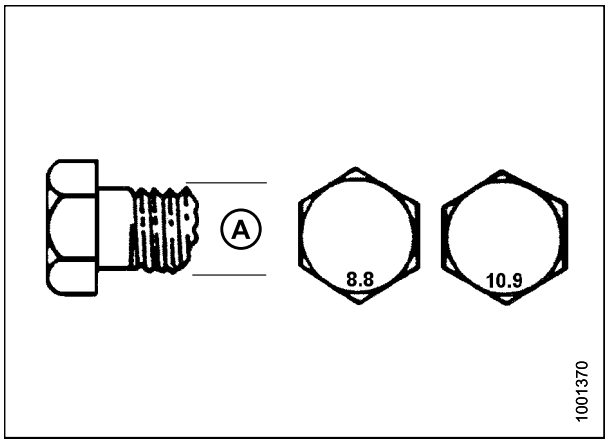


Figure 7.1: Bolt Grades

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

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

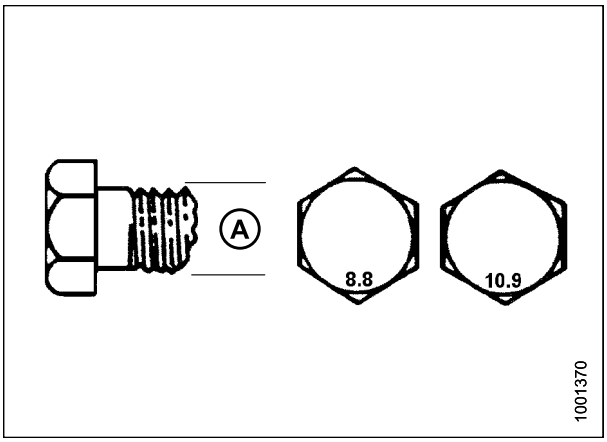


Figure 7.2: Bolt Grades

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

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

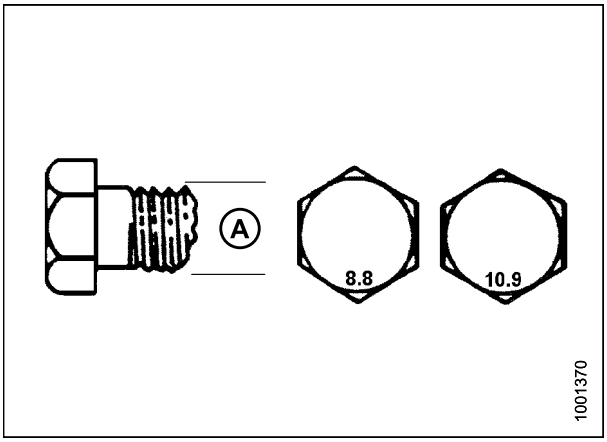


Figure 7.3: Bolt Grades

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

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

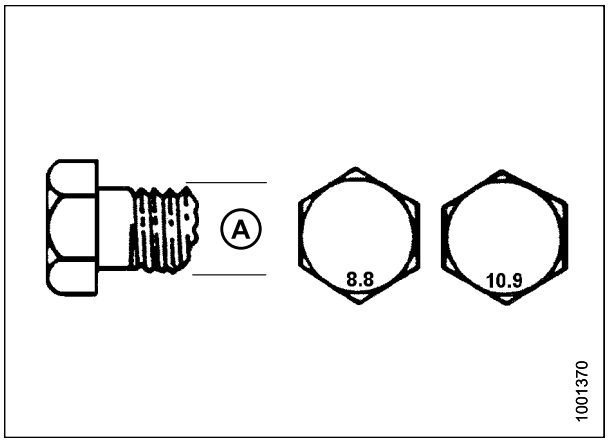


Figure 7.4: Bolt Grades

7.3.2 Metric Bolt Specifications Bolting into Cast Aluminum

Table 7.6 Metric Bolt Bolting into Cast Aluminum

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

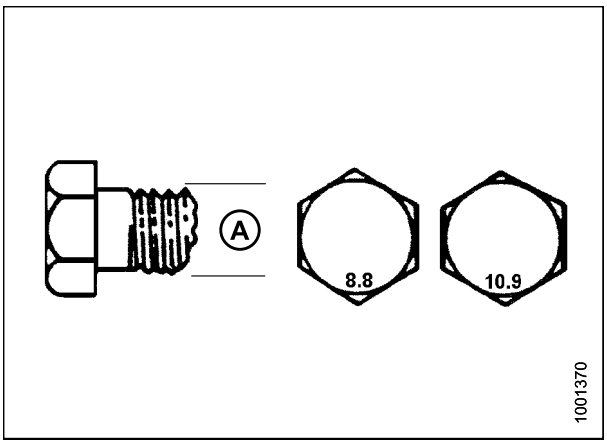


Figure 7.5: Bolt Grades

7.3.3 Flare-Type Hydraulic Fittings

1. Check flare (A) and flare seat (B) for defects that might cause leakage.
2. Align tube (C) with fitting (D) and thread nut (E) onto fitting without lubrication until contact has been made between flared surfaces.
3. Torque fitting nut (E) to specified number of flats from finger tight (FFFT) or to a given torque value in Table *7.7, page 143*.
4. Use two wrenches to prevent fitting (D) from rotating. Place one wrench on fitting body (D), and tighten nut (E) with other wrench to torque shown.
5. Assess final condition of connection.

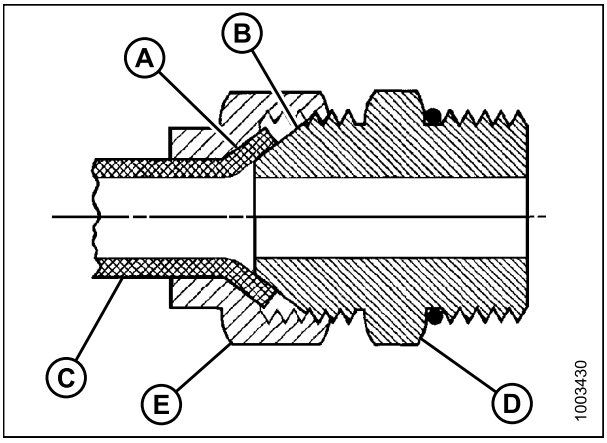


Figure 7.6: Hydraulic Fitting

Table 7.7 Flare-Type Hydraulic Tube Fittings

SAE Dash Size	Thread Size (in.)	Torque Value[4]		Flats from Finger Tight (FFFT)	
		Nm	lbf·ft	Tube	Swivel Nut or Hose
-2	5/16–24	4–5	3–4	—	—
-3	3/8–24	7–8	5–6	—	—
-4	7/16–20	18–19	13–14	2-1/2	2
-5	1/2–20	19–21	14–15	2	2

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

Table 7.7 Flare-Type Hydraulic Tube Fittings (continued)

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

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

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

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

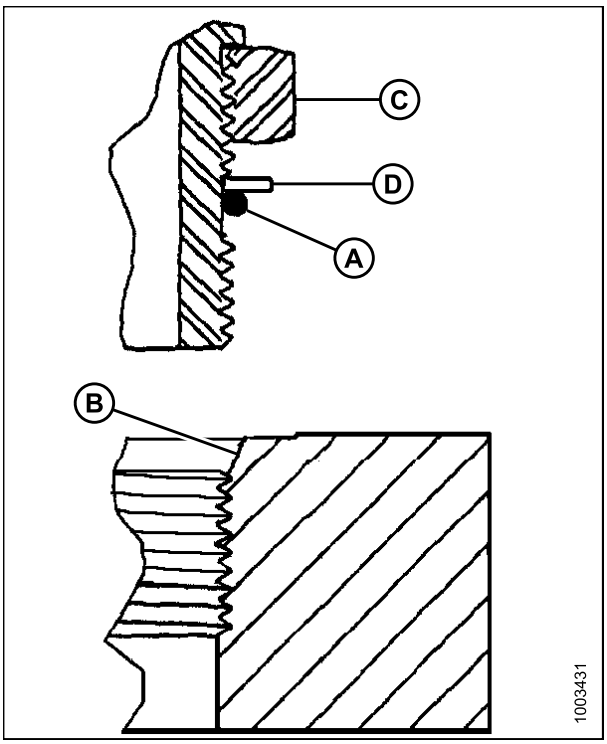


Figure 7.7: Hydraulic Fitting

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

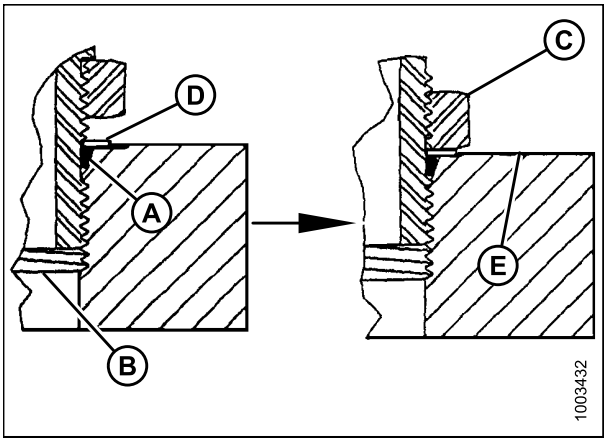


Figure 7.8: Hydraulic Fitting

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

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

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

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

1. Inspect O-ring (A) and seat (B) for dirt or obvious defects.
2. Check that O-ring (A) is **NOT** on threads and adjust if necessary.
3. Apply hydraulic system oil to O-ring.
4. Install fitting (C) into port until fitting is hand tight.
5. Torque fitting (C) according to values in Table *7.9, page 147*.
6. Check final condition of fitting.

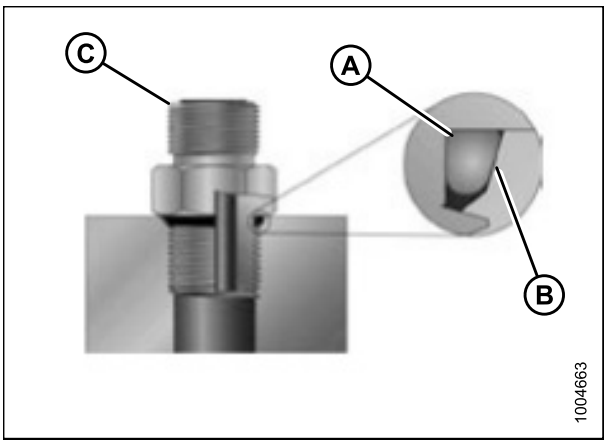


Figure 7.9: Hydraulic Fitting

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

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

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

7.3.6 O-Ring Face Seal (ORFS) Hydraulic Fittings

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

Figure 7.10: Hydraulic Fitting

2. Apply hydraulic system oil to O-ring (B).
3. Align tube or hose assembly so that flat face of sleeve (A) or (C) comes in full contact with O-ring (B).
4. Thread tube or hose nut (D) until hand-tight. The nut should turn freely until it is bottomed out.
5. Torque fittings according to values in Table *7.10, page 148*.

   NOTE:

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

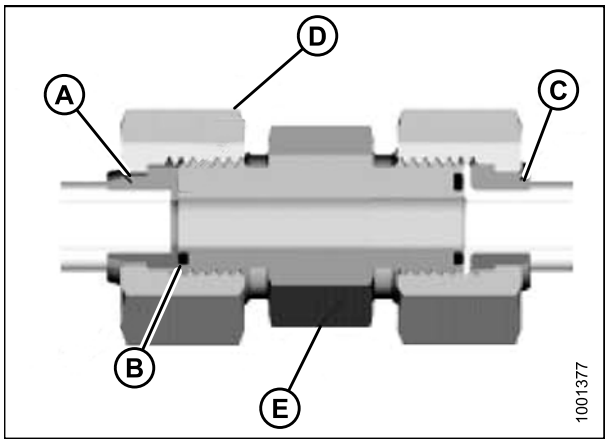


Figure 7.11: Hydraulic Fitting

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

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

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

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

SAE Dash Size	Thread Size (in.)	Tube O.D. (in.)	Torque Value[10]	
			Nm	lbf·ft
-14	Note[9]	7/8	–	–
-16	1-7/16	1	150–165	111–122
-20	1-11/16	1-1/4	205–226	151–167
-24	1–2	1-1/2	315–347	232–256
-32	2-1/2	2	510–561	376–414

7.3.7 Tapered Pipe Thread Fittings

Assemble pipe fittings as follows:

1. Check components to ensure that fitting and port threads are free of burrs, nicks and scratches, or any form of contamination.
2. Apply pipe thread sealant (paste type) to external pipe threads.
3. Thread fitting into port until hand-tight.
4. Torque connector to appropriate torque angle. The Turns From Finger Tight (T.F.F.T.) values are shown in Table *7.11, page 149*. Make sure that tube end of a shaped connector (typically 45º or 90º) is aligned to receive incoming tube or hose assembly. Always finish alignment of fitting in tightening direction. Never back off (loosen) pipe threaded connectors to achieve alignment.
5. Clean all residue and any excess thread conditioner with appropriate cleaner.
6. Assess final condition of fitting. Pay special attention to possibility of cracks to port opening.
7. Mark final position of fitting. If a fitting leaks, disassemble fitting and check for damage.

   NOTE:

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

Table 7.11 Hydraulic Fitting Pipe Thread

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

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

Predelivery Checklist

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

CAUTION

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

Header Serial Number: _____

✓	Item	Reference
	Check for shipping damage or missing parts. Be sure all shipping dunnage is removed.	—
	Check for loose hardware. Tighten to specified torque.	*7.3 Torque Specifications, page 140*
	Check wheels are in field (working) position.	*3.4 Setting Rigid Wheels to Field/Working Position, page 23*
	Check tire air pressure is 240–310 kPa (35–45 psi). Adjust as required.	*6.2.1 Inflating Tire, page 126*
	Check hold-down is in the field/working position.	*3.6 Extending Hold-Down to Field/Working Position, page 25*
	Check machine is completely lubricated.	*6.4.1 Lubricating the Header, page 131*
	Check draper belt tension.	*6.3 Checking Draper Belt Tension, page 127*
	Check that transport lights (if installed) are extended.	*3.7 Adjusting Transport Lights, page 26*
	Check height sensor is calibrated.	*6.1 Auto Header Height Control (AHHC), page 71*
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 136*
	Check draper speed sensor is working.	Refer to combine operator's manual
	Check height controller is working.	*6.7 Running up the Header, page 136*
	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 134*

Date Checked: **Checked by:**

Recommended Fluids and Lubricants

Keep your machine operating at top efficiency by using only clean lubricants and by ensuring the following:

- Use clean containers to handle all lubricants.
- Store lubricants in an area protected from dust, moisture, and other contaminants.

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
		Extreme pressure (EP) performance with 1.5–5% molybdenum disulphide (NLGI Grade 2) lithium base	Drive motor shaft
Oil	SAE 30	—	Auger drive chain

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