

FD1 Series FlexDraper® Combine Header with FM100 Float Module

Unloading and Assembly Instructions (North America)

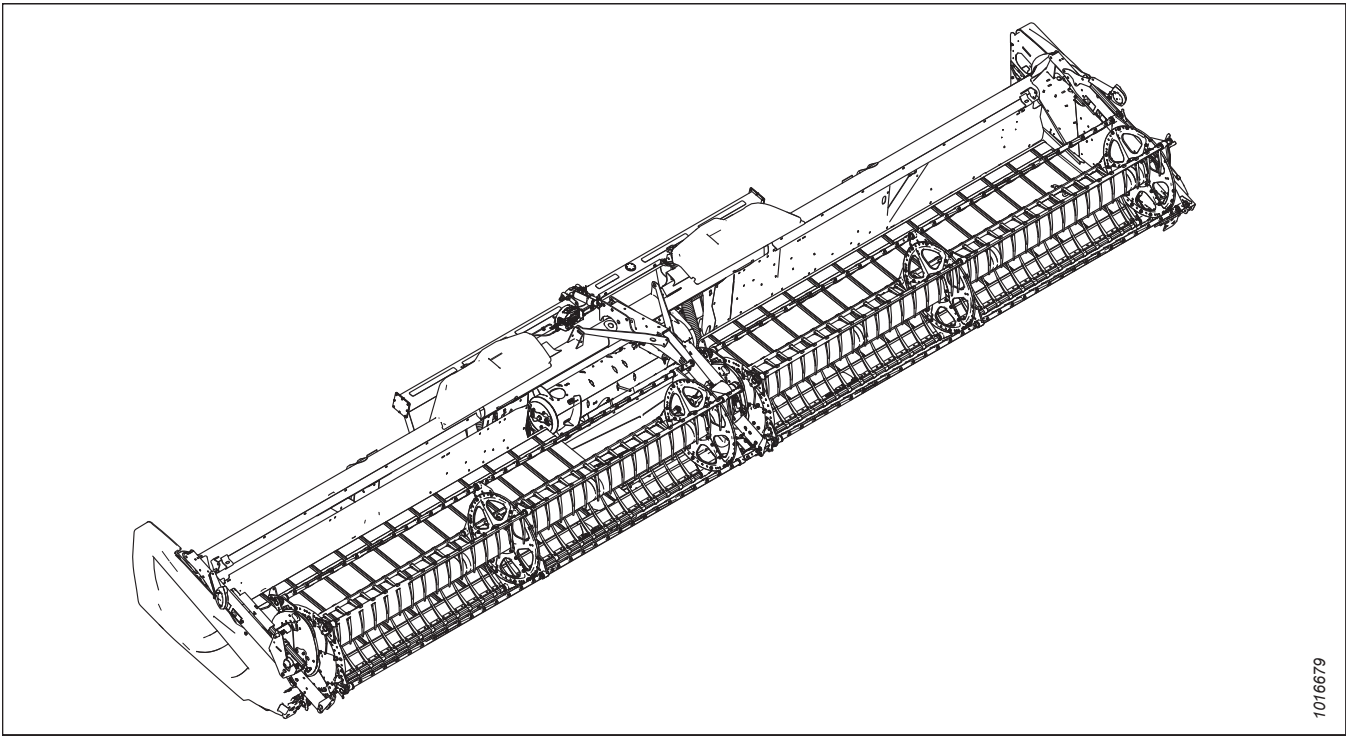
215824 Revision A

Original Instruction

Featuring MacDon FLEX-FLOAT Technology™

The Harvesting Specialists.

FD1 Series FlexDraper® Header for Combines and FM100 Float Module



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Introduction

This manual contains unloading, assembly, and predelivery information for the MacDon FD1 Series FlexDraper® Combine Header with FM100 Float Module.

To ensure the best performance of this product and the safety of your customers, carefully read all the material provided before attempting to unload, assemble, or use the machine.

Retain this instruction for future reference.

Conventions

The following conventions are used in this document:

- Right and left are determined from the operator's position. The front of the header faces the crop.
- Unless otherwise noted, use the standard torque values provided in this manual.

NOTE:

Keep your MacDon publications up-to-date. The latest version can be downloaded from our website (www.macdon.com) or from our Dealer portal (<https://portal.macdon.com>) (login required).

If the shipment is damaged or is missing parts, contact shortageanddamage@macdon.com.

This document is currently available in French and English.

Summary of Changes

At MacDon, we're continuously making improvements, and occasionally these improvements affect product documentation. The following list provides an account of major changes from the previous version of this document.

Section	Summary of Change	Internal Use Only
<i>Introduction, page i</i>	Added contact information so that the Dealer knows who to contact in the event of damaged or missing parts.	Tech Pubs, Global Product Support
<i>3.1 Attaching Reel Lift Cylinders, page 23</i>	Added caution statement and Step <i>21, page 28</i> for clarity.	Product Support
<i>3.5 Installing Driveline, page 37</i>	Updated Step <i>3, page 38</i> to retain shield and hardware for clarity.	Product Support
<i>4.1 Installing Filler Cap, page 39</i>	Updated procedure to reflect hardware changes.	ECN 62415
<i>4.2 FM100 Feed Auger Configurations, page 42</i>	Revised feed auger configuration procedures and chapter titles for clarity.	Tech Pubs
<ul style="list-style-type: none"> • <i>4.2.2 Medium Configuration – Auger Flighting, page 48</i> • <i>4.2.3 Wide Configuration – Auger Flighting, page 51</i> 	Replaced all references to superseded kit part number MD #287031 with new kit part number MD #357233.	ECN 62443
<i>5 Attaching Header to Combine, page 73</i>	Added feeder house lug note.	Product Support
<i>5.3.1 Attaching Header to Case IH Combine, page 85</i>	Added a note to Step <i>23, page 89</i> for clarity.	Product Support
<i>6.4 Checking Knife Drive Box, page 129</i>	Updated the last step for clarity regarding thread sealant.	Product Support
<i>6.6 Checking Oil Level in Hydraulic Reservoir, page 131</i>	<ul style="list-style-type: none"> • Added illustrations representing how oil levels appear in the sight glass when the oil level is set for hilly vs. normal terrain. • Added a note stating that the machine can operate in flat conditions with the oil level set for hilly terrain if the Fill Neck Extension kit has been installed. 	Product Support
<i>6.10 Centering Reel on Single-Reel Header, page 137</i>	Updated illustration and measurement method for centering the reel on single-reel header (FD125).	Audit 2021-61
<i>6.11 Reel-to-Cutterbar Clearance, page 139</i>	Moved the Reel-to-Cutterbar Clearance topics to immediately follow the Centering Reel topics.	Product Support
<i>6.17.2 Lubrication Points – Additional Instructions, page 170</i>	<ul style="list-style-type: none"> • Added a new Important statement regarding manual grease guns vs electric and pneumatic grease guns. • Revised the lubrication points illustration for the upper cross auger in order to represent the lubrication points for the new center support assembly on the upper cross auger (UCA). 	ECN 61273, Product Support
<i>9 Running up Header, page 391</i>	Revised Step <i>11, page 393</i> for clarity.	Product Support

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Chapter 1: Safety

Understanding and consistently following these safety procedures will help to ensure the safety of those operating the machine and of bystanders.

1.1 Safety Alert Symbols

The safety alert symbol indicates important safety messages in this manual and on safety signs on the machine.

This symbol means:

- **ATTENTION!**
- **BECOME ALERT!**
- **YOUR SAFETY IS INVOLVED!**

Carefully read and follow the safety message accompanying this symbol.

Why is safety important to you?

- Accidents disable and kill
- Accidents cost
- Accidents can be avoided



Figure 1.1: Safety Symbol

1.2 Signal Words

Three signal words, **DANGER**, **WARNING**, and **CAUTION**, are used to alert you to hazardous situations. Two signal words, **IMPORTANT** and **NOTE**, identify non-safety related information.

Signal words are selected using the following guidelines:

DANGER

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

WARNING

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

CAUTION

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

IMPORTANT:

Indicates a situation that, if not avoided, could result in a malfunction or damage to the machine.

NOTE:

Provides additional information or advice.

1.3 General Safety

Protect yourself when assembling, operating, and servicing machinery.

CAUTION

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

Wear all protective clothing and personal safety devices that could be necessary for the 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

In addition, take the following precautions:

- Be aware that exposure to loud noises can cause hearing impairment. Wear suitable hearing protection devices such as earmuffs or earplugs to help protect against loud noises.

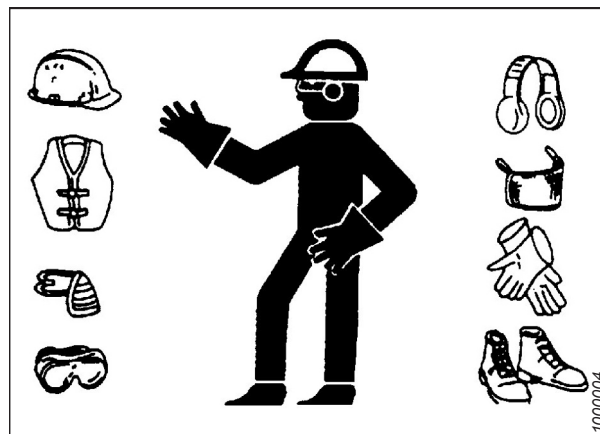


Figure 1.2: Safety Equipment



Figure 1.3: Safety Equipment

- Provide a first aid kit in case of emergencies.
- Keep a properly maintained fire extinguisher on the machine. Familiarize yourself with its use.
- Keep young children away from machinery at all times.
- Be aware that accidents often happen when Operators are fatigued or in a hurry. Take time to consider the safest way to accomplish a task. **NEVER** ignore the signs of fatigue.

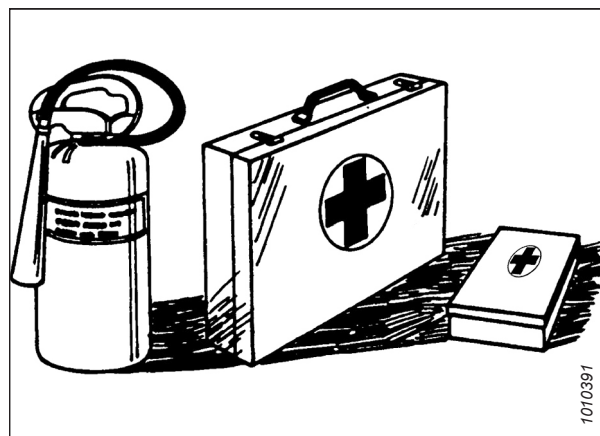


Figure 1.4: Safety Equipment

SAFETY

- Wear close-fitting clothing and cover long hair. **NEVER** wear dangling items such as scarves or bracelets.
- Keep all shields in place. **NEVER** alter or remove safety equipment. Ensure that the driveline guards can rotate independently of their shaft, and that they can telescope freely.
- Use only service and repair parts made or approved by the equipment manufacturer. Parts from other manufacturers may not meet the correct strength, design, or safety requirements.



Figure 1.5: Safety around Equipment

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

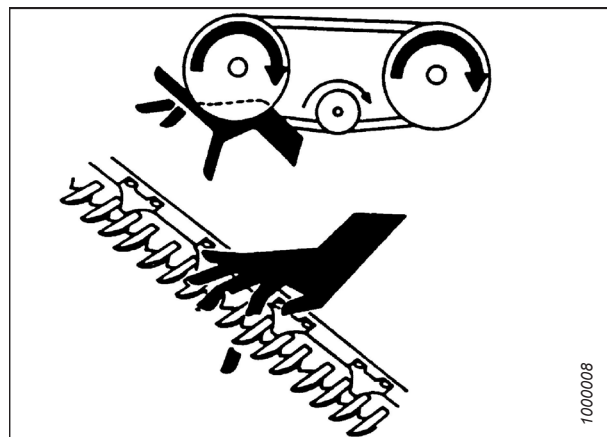


Figure 1.6: Safety around Equipment

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



Figure 1.7: Safety around Equipment

1.4 Maintenance Safety

Protect yourself when maintaining machinery.

To ensure your safety while maintaining the machine:

- Review the operator's manual and all safety items before operating or performing maintenance on the machine.
- Place all controls in Neutral, stop the engine, set the parking brake, remove the ignition key, and wait for all moving parts to stop before servicing, adjusting, or repairing the machine.
- Follow good shop practices:
 - Keep service areas clean and dry
 - Ensure that electrical outlets and tools are properly grounded
 - Keep the work area well lit
- Relieve pressure from hydraulic circuits before servicing and/or disconnecting the machine.
- Ensure that all components are tight and that steel lines, hoses, and couplings are in good condition before applying pressure to hydraulic systems.
- Keep hands, feet, clothing, and hair away from all moving and/or rotating parts.
- Clear the area of bystanders, especially children, when carrying out any maintenance, repairs, or adjustments.
- Install the transport lock or place safety stands under the frame before working under the machine.
- If more than one person is servicing the machine at the same time, be aware that rotating a driveline or another mechanically driven component by hand (for example, accessing a lubricant fitting) will cause drive components in other areas (belts, pulleys, and knives) to move. Stay clear of driven components at all times.
- Wear protective gear when working on the machine.
- Wear heavy gloves when working on knife components.



Figure 1.8: Safety around Equipment

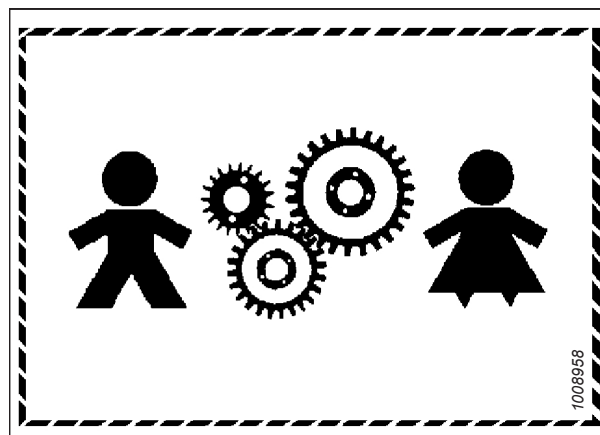


Figure 1.9: Equipment is NOT Safe for Children

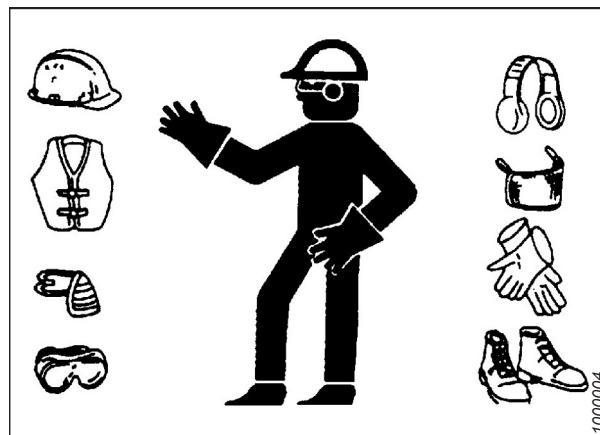


Figure 1.10: Safety Equipment

1.5 Hydraulic Safety

Protect yourself when assembling, operating, and servicing hydraulic components.

- Always place all hydraulic controls in Neutral before leaving the operator's seat.
- Make sure that all components in the hydraulic system are kept clean and in good condition.
- Replace any worn, cut, abraded, flattened, or crimped hoses and steel lines.
- Do **NOT** attempt any makeshift repairs to hydraulic lines, fittings, or hoses by using tapes, clamps, cements, or welding. The hydraulic system operates under extremely high pressure. Makeshift repairs can fail suddenly and create hazardous conditions.

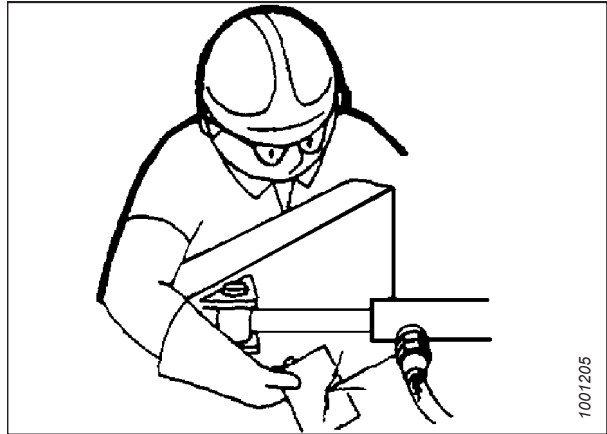


Figure 1.11: Testing for Hydraulic Leaks

- Wear proper hand and eye protection when searching for high-pressure hydraulic fluid leaks. Use a piece of cardboard as a backstop instead of your hands to isolate and identify a leak.
- If injured by a concentrated, high-pressure stream of hydraulic fluid, seek medical attention immediately. Serious infection or toxic reaction can develop from hydraulic fluid piercing the skin.



Figure 1.12: Hydraulic Pressure Hazard

- Ensure that all components are tight and that steel lines, hoses, and couplings are in good condition before applying pressure to a hydraulic system.

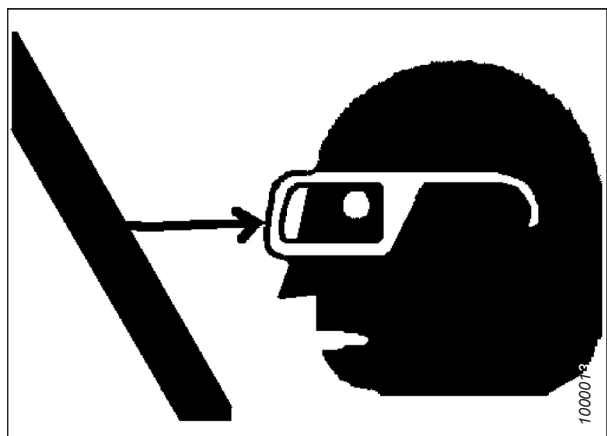


Figure 1.13: Safety around Equipment

1.6 Safety Signs

Safety signs are decals placed on the machine where there is a risk of personal injury, or where the Operator should take extra precautions before operating the controls. They are usually yellow.

- Keep safety signs clean and legible at all times.
- Replace safety signs that are missing or illegible.
- If the original part on which a safety sign was installed is replaced, ensure that the repair part displays the current safety sign.

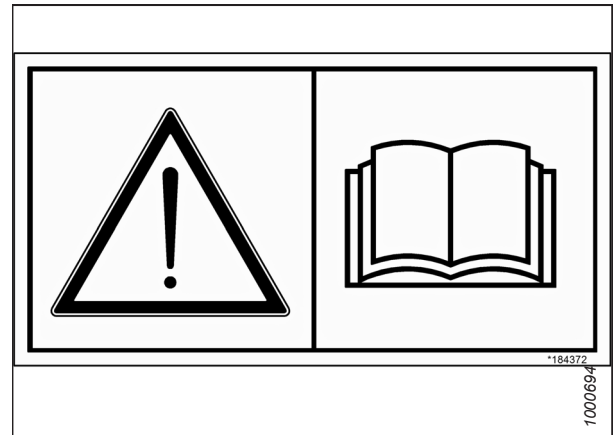


Figure 1.14: Operator's Manual Decal

1.6.1 Installing Safety Decals

Replace any safety decals that are worn or damaged.

1. Decide exactly where you are going to place the decal.
2. Clean and dry the installation area.
3. Remove the smaller portion of the split backing paper.
4. Place the decal in position and slowly peel back the remaining paper, smoothing the decal as it is applied.
5. Prick small air pockets with a pin and smooth them out.

Chapter 2: Unloading Header

Unload all header parts before beginning assembly. Carefully follow these procedures in the order in which they are presented.

2.1 Unloading Header and Float Module from Trailer

A trailer will typically have two headers on it. Ensure that you use a forklift which meets the minimum length and capacity requirements when unloading a header.

DANGER

To prevent injury to bystanders caused by being struck by machinery, do NOT allow people to stand in the unloading area.

DANGER

The equipment used for loading or unloading a header must meet or exceed the requirements specified in this document. Using inadequate equipment may result in chain breakage, vehicle tipping, machine damage or bodily harm to operators or bystanders. For instructions, refer to [10.3 Lifting Vehicle Specifications, page 413](#).

1. Move the trailer into position and block the trailer wheels.
2. Lower the trailer storage stands.
3. Approach the headers and line up forks (A) with fork slider channels (B) under the float module frame.
4. Slide forks (A) underneath fork slider channels (B) as far as possible without contacting the shipping support of the opposite header.

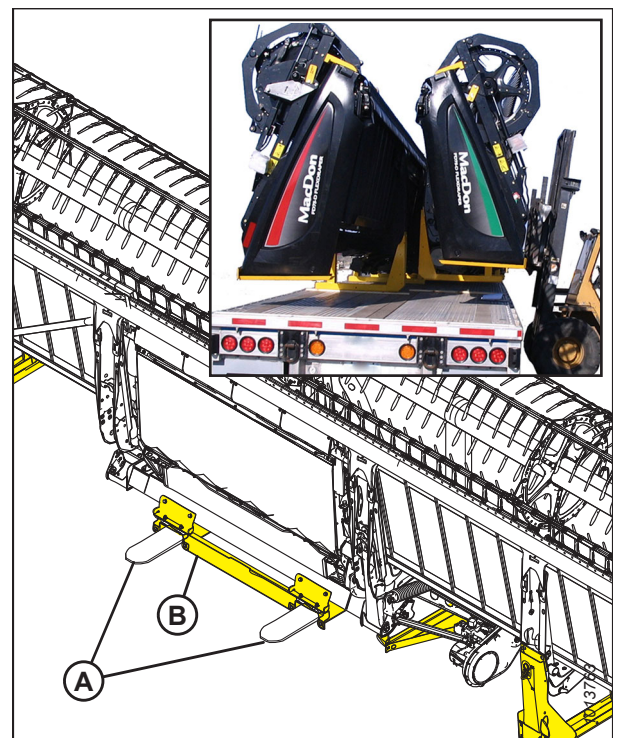


Figure 2.1: Header Shipping Supports

UNLOADING HEADER

5. Take the header to the storage or setup area.

NOTE:

Ensure that the ground where the header is to be placed is flat and free of rocks or debris that could damage the header.

6. Lower the header to the ground.
7. Unload the second header. Refer to Steps 2, *page 9* to 6, *page 10* for instructions.
8. Check the unloaded headers for damage and missing parts.

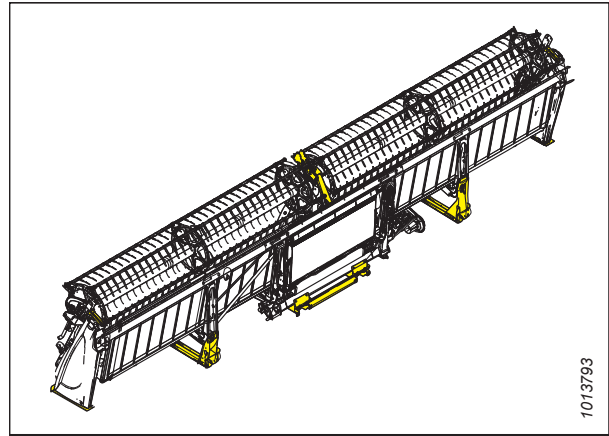


Figure 2.2: Header on Level Ground

2.2 Lowering Header

Lower the header into the working position using a lifting vehicle and a high-grade chain suitable for overhead lifting.

1. Approach the underside of the header with the lifting vehicle.

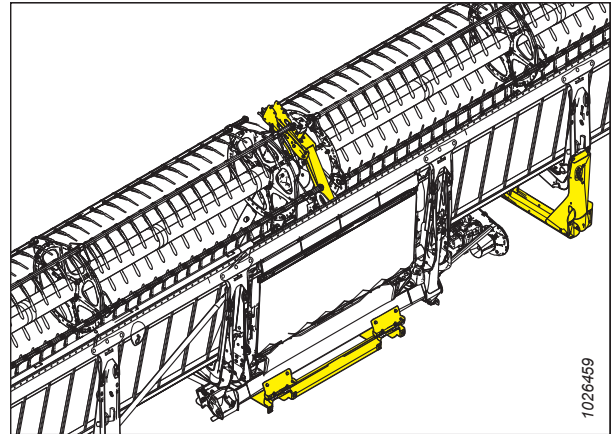


Figure 2.3: Underside of Header

2. Attach a chain to shipping support (double reel [A]) (single reel [B]) at the center reel arm.

IMPORTANT:

Do **NOT** attempt to lift at the cutterbar when unloading the header from a trailer. This procedure is **ONLY** for laying the machine over into the working position.

CAUTION

Stand clear of header when lowering. Machine may swing.

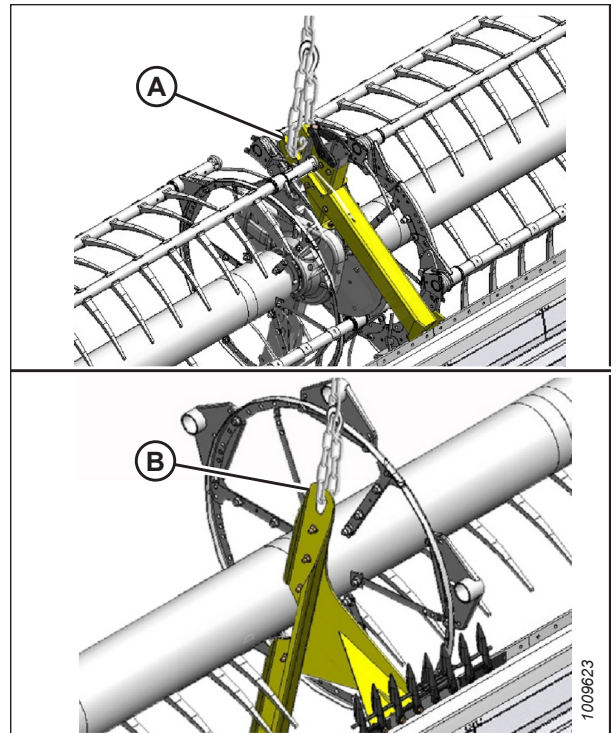


Figure 2.4: Chain Attachment Locations

A - Double Reel

B - Single Reel

UNLOADING HEADER

3. Back up **SLOWLY** while lowering the forks until the header rests on the ground.



Figure 2.5: Header Lowered onto Ground

UNLOADING HEADER

4. Place 150 mm (6 in.) blocks (A) under each end and at the center of the cutterbar.
5. Remove the chain.

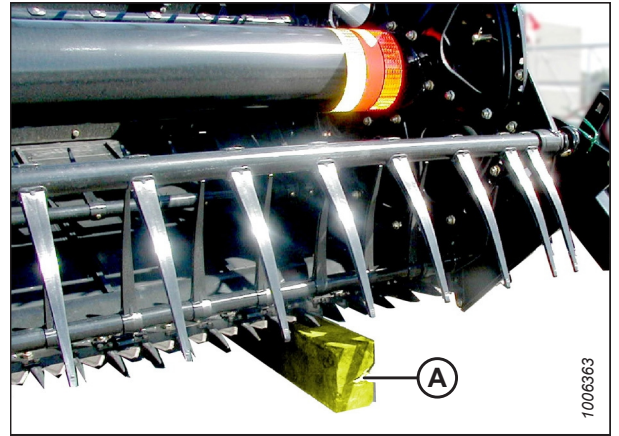


Figure 2.6: Blocks at Each End of Cutterbar

2.3 Removing Shipping Stands

The shipping stands must be removed from the header before the machine can be assembled.

NOTE:

Unless otherwise specified, discard the stands, shipping material, and hardware. The removable stands may be painted yellow or may be unpainted.

1. Remove two bolts (A) securing right fork channel (B) to shipping stand (C).

NOTE:

To access the bolts at the lower stand support, the header must be supported on 150 mm (6 in.) blocks, as directed in Step 4, page 13.

2. Remove two bolts (D) securing right fork channel (B) to the lower brace.
3. Repeat Step 1, page 14 and Step 2, page 14 on the left side.

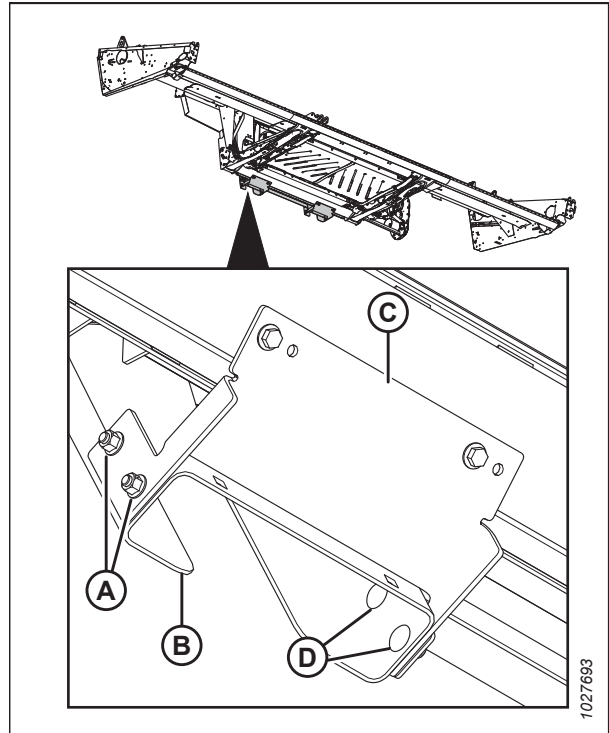


Figure 2.7: Shipping Supports

4. Remove lower brace (A).

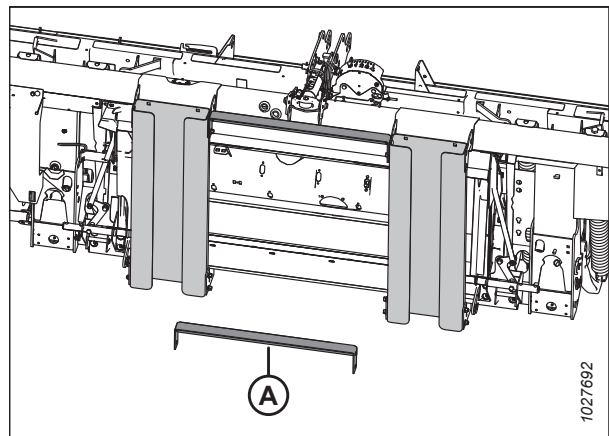


Figure 2.8: Shipping Supports

UNLOADING HEADER

5. Remove two bolts (A) from the upper brace. Repeat this step on the opposite side.

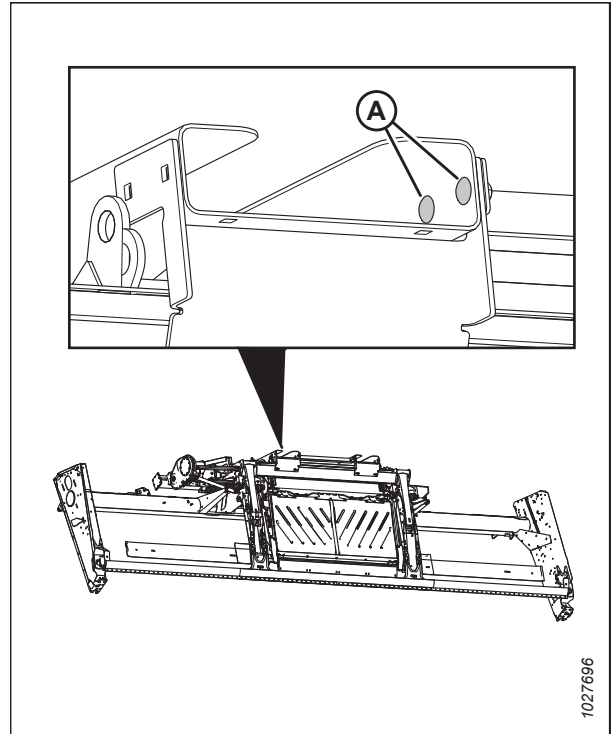


Figure 2.9: Shipping Supports

6. Remove upper brace (B).
7. Remove right and left fork channels (A).

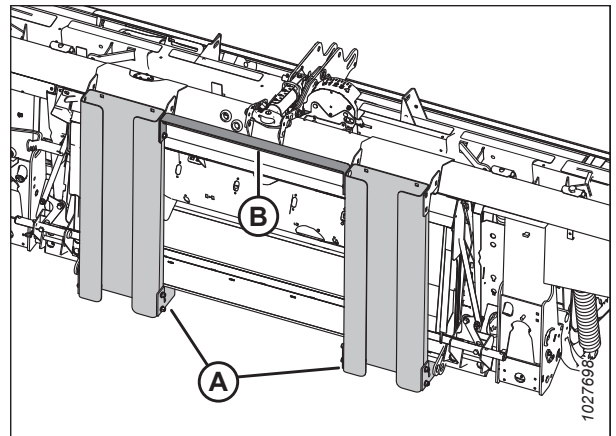


Figure 2.10: Shipping Supports

UNLOADING HEADER

- Remove four bolts (A) and remove shipping stands (B) from the bottom of the float module.

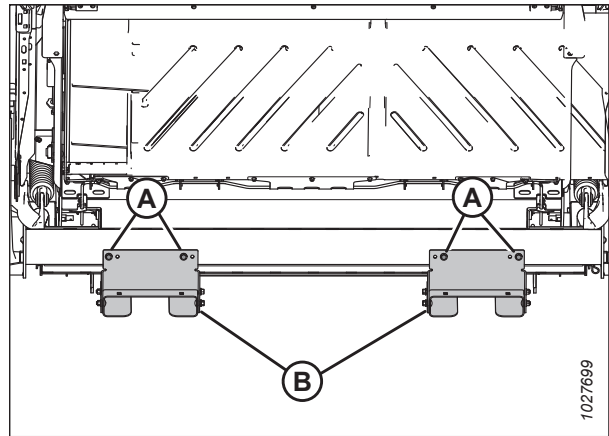


Figure 2.11: View from Below Header

- Remove two bolts (A) securing the bottom of coupler cover (B) to the float module.

IMPORTANT:

Do **NOT** remove bolts (C) because they hold multicoupler components in place. Loosen bolts (C) only enough so that coupler cover (B) can be removed, and then make sure you retighten the bolts.

- Loosen two bolts (C), slide the coupler cover to the left until the cutouts are aligned with the bolts, and then remove coupler cover (B).
- Tighten two bolts (C).

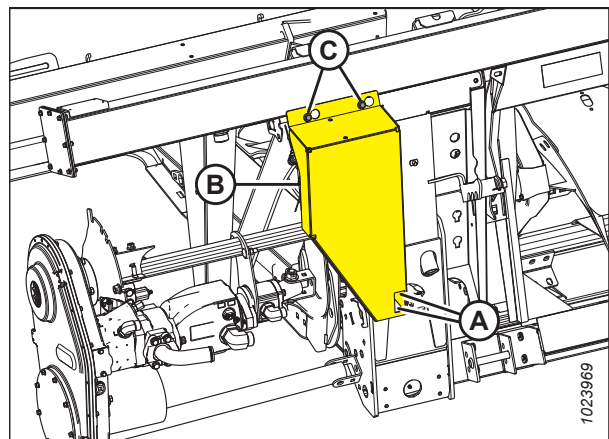


Figure 2.12: Coupler Cover

- FD130, FD135, FD140, and FD145:** Remove four bolts (A) from the shipping stands at both of the outboard header legs. Remove stands (B).

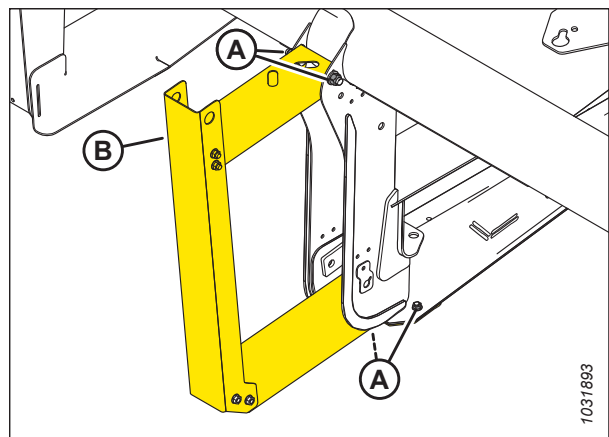


Figure 2.13: Shipping Stands at Outboard Legs – Right Side Shown

UNLOADING HEADER

13. Remove reel anti-rotation strap (A) between the reel and the endsheet.

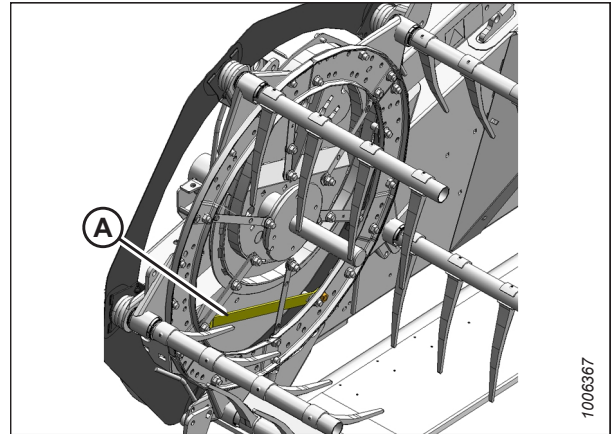


Figure 2.14: Reel Anti-Rotation Strap

14. Locate the endshield.
15. From the back of the header, push release lever (A) to unlock the endshield.
16. Pull the endshield open using handle depression (B).

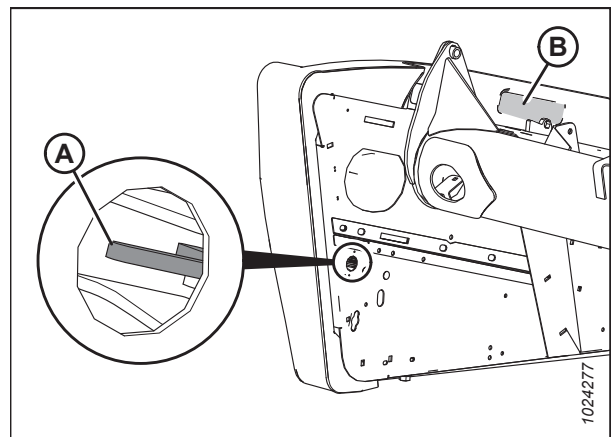


Figure 2.15: Left Endshield

17. Loosen two bolts (A) in each endshield guard (B), and remove the guards and hardware.

NOTE:

The hardware can only be removed when the header endshields are opened.

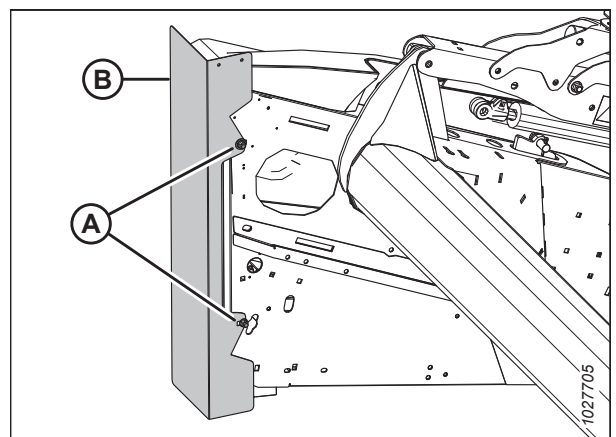


Figure 2.16: Endshield Guard

UNLOADING HEADER

18. **Single Reel:** Remove the center shipping support by removing two bolts (A) at the backtube and three bolts (B) at the cutterbar.

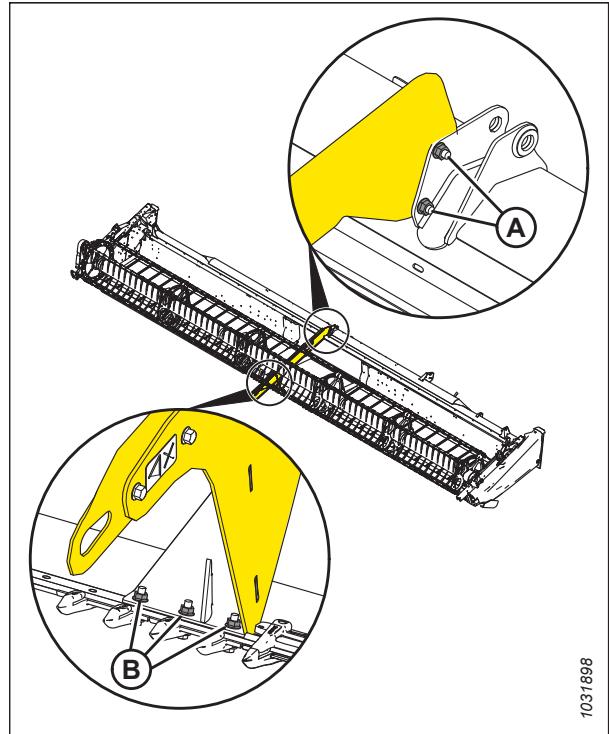


Figure 2.17: Single-Reel Center Shipping Support

2.4 Removing Endshields from Shipping Position – FD145 Headers

This procedure applies to FD145 headers only. All other header sizes are shipped with the endshields in operating position.

1. Loosen nuts (A) and remove screws (B). Use the slots in the shipping channel to access the nuts. Remove channel (C).
2. Remove bolt (D) at the front of the endshield.

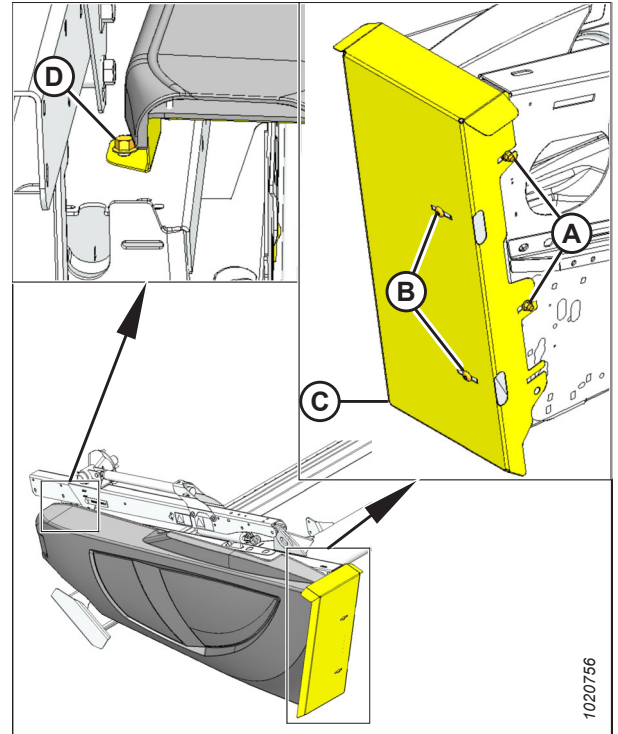


Figure 2.18: Left Endshield

3. Swivel the endshield towards the rear of the header.

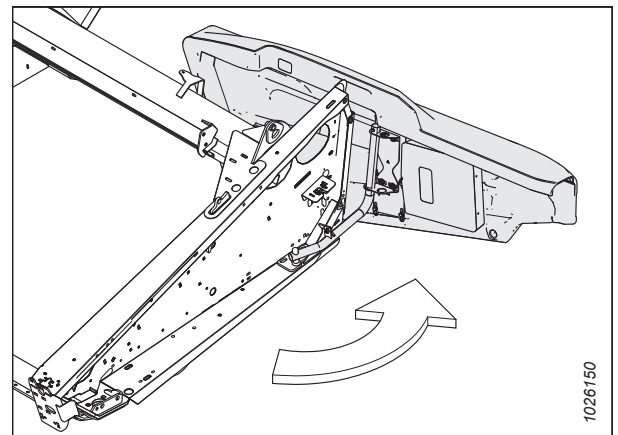


Figure 2.19: Left Endshield

UNLOADING HEADER

4. Engage lock (A) to prevent endshield movement.
5. Remove self-tapping screw (B).
6. Slide the endshield upwards and remove it from the hinge arm.

NOTE:

The inboard holes (position 2) on the endshield bracket are used for shipping position.

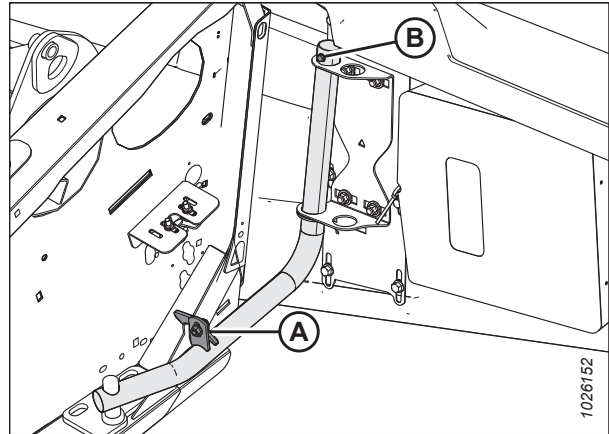


Figure 2.20: Left Endshield – Shipping Position

7. Remove the fasteners securing shipping brackets (A) to the endshields and remove the brackets. Discard the fasteners and the brackets.

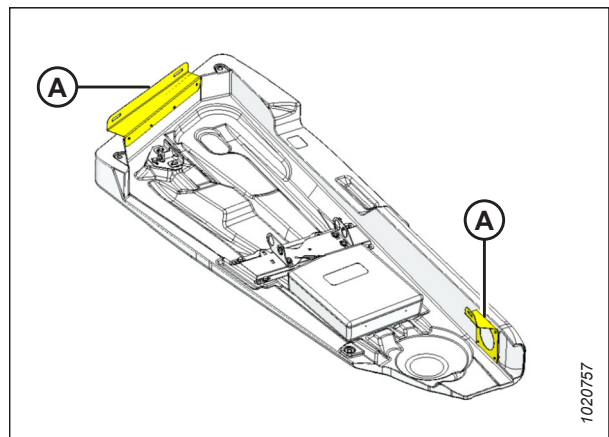


Figure 2.21: Left Endshield

8. Guide the endshield onto the hinge arm, using outboard holes (position 1) on bracket (C). Slowly slide the endshield downwards.
9. Install self-tapping screw (B).
10. Disengage lock (A) to allow endshield movement.

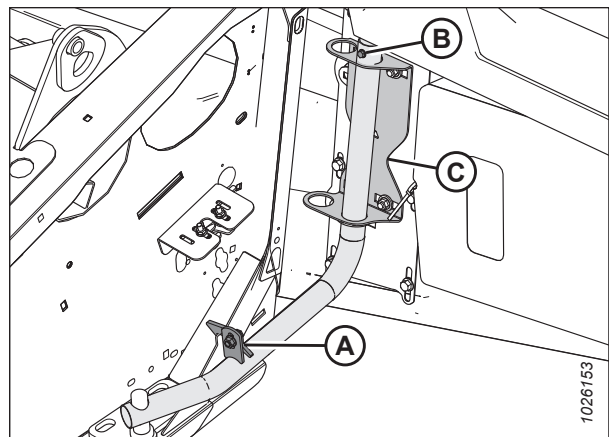


Figure 2.22: Left Endshield

UNLOADING HEADER

11. Insert the front of the endshield behind hinge tab (A).
12. Swing the endshield in direction (B) into the closed position. Engage the lock with a firm push.
13. Verify that the endshield is locked.
14. Repeat the above steps for the opposite endshield.

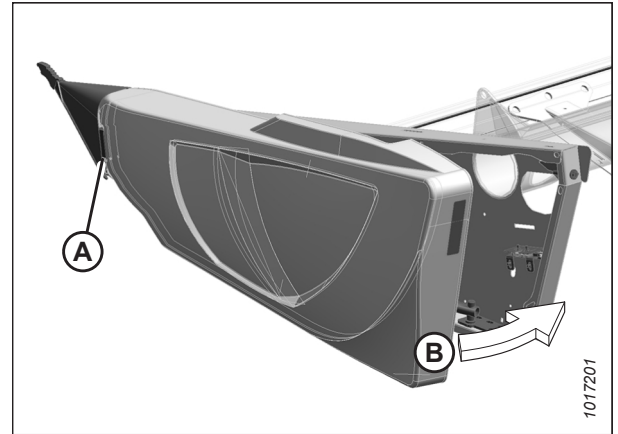


Figure 2.23: Left Endshield

15. On the outboard side of the right endsheet, remove shipping wire (A) securing divider rods (B) to the endsheet, and remove the divider rods from the shipping location.

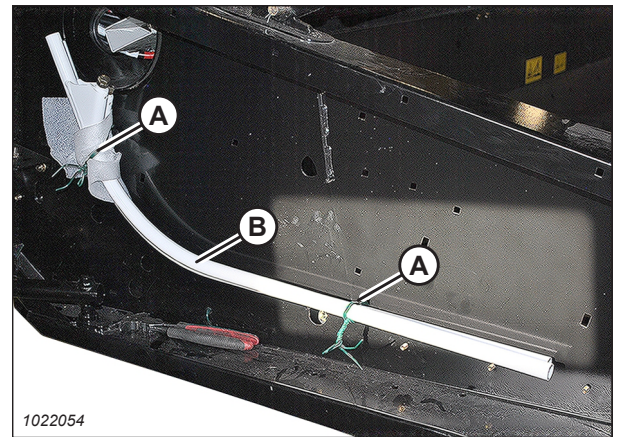


Figure 2.24: Divider Rods in Shipping Location on Header Endsheet

16. Store both crop divider rods (A) in bracket (B) as shown on the inboard side of the right endsheet.

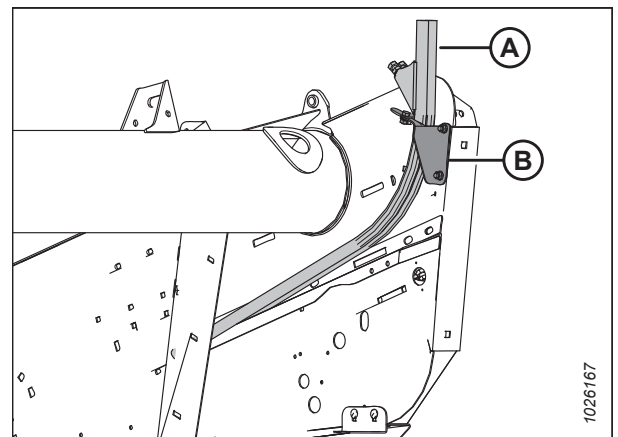


Figure 2.25: Divider Rods in Storage Location

Chapter 3: Assembling Header and Float Module

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

3.1 Attaching Reel Lift Cylinders

When attaching the reel lift cylinders, ensure that the reel is supported until the attachment steps are complete.

CAUTION

Tagged bolts (A) on the reel arms keep the reel from sliding forward. Ensure that the fore-aft cylinders are attached **BEFORE** removing any tagged bolts.

NOTE:

The reel, draper, and cutterbar parts have been removed from the illustration for the sake of clarity.

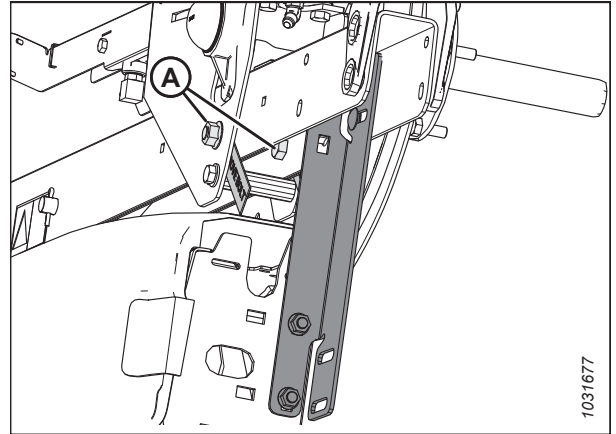


Figure 3.1: Reel Right Arm – Single-Reel Header

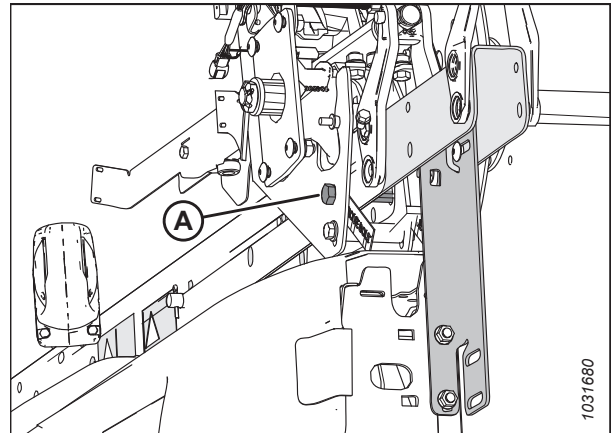


Figure 3.2: Reel Right Arm – Double-Reel Header

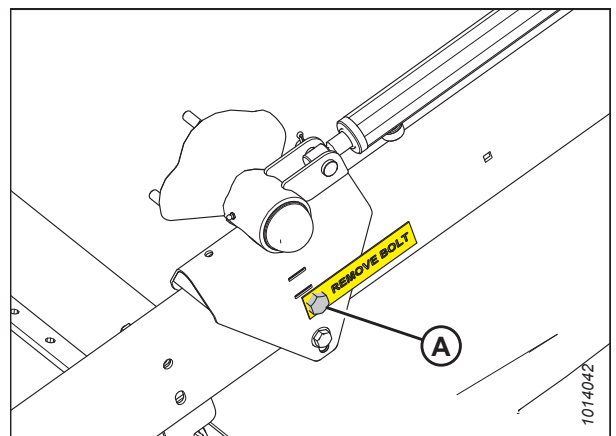


Figure 3.3: Reel Left Arm

ASSEMBLING HEADER AND FLOAT MODULE

1. Remove top bolts (A) on the right outboard reel arm support.
2. Remove the top bolts from the left outboard reel arm support.

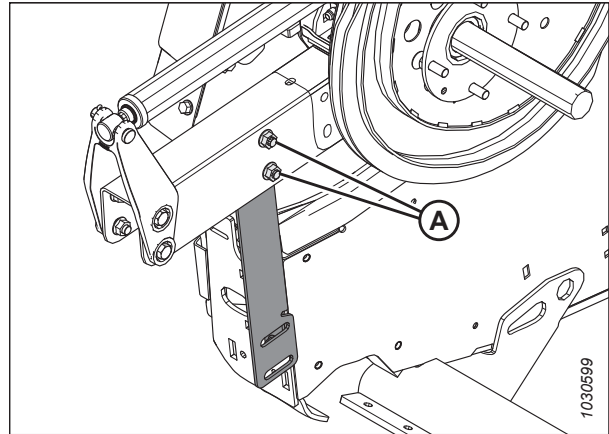


Figure 3.4: Outboard Reel Arm Support

3. **Double-reel headers:** Remove two top bolts (A) on the center reel arm to allow the center reel arm to move.

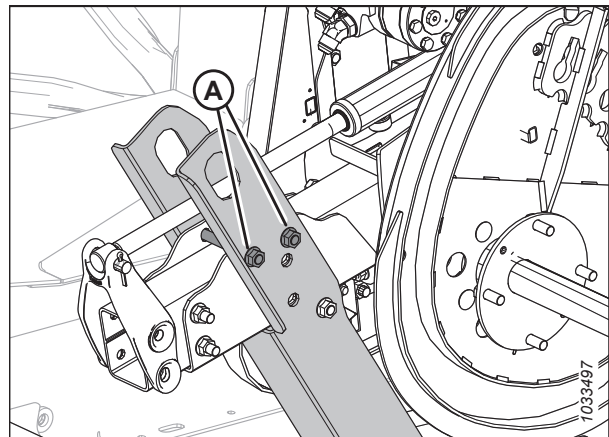


Figure 3.5: Double-Reel Center Arm

4. Position sling (A) around reel tube (B) close to the right outboard end of the reel. Attach the sling to a suitable lifting device.
5. Remove the shipping wire and/or banding securing the reel lift cylinder to the right reel arm.

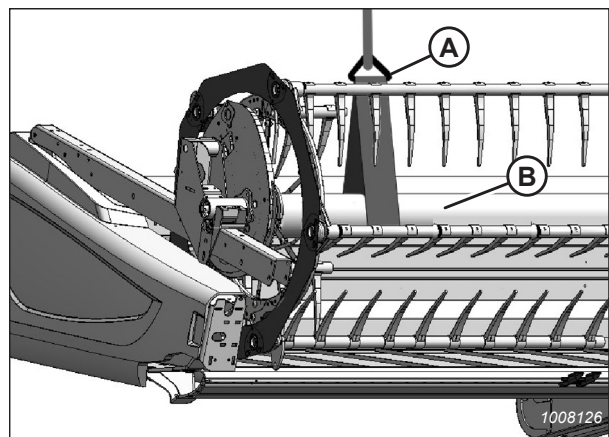


Figure 3.6: Reel Right End

ASSEMBLING HEADER AND FLOAT MODULE

6. Lift the reel.
7. Remove the pins from the endsheet and the reel arm.
8. Align the reel lift cylinder's mounting bolts with the lug on the endsheet and the hole in the reel arm.
9. Secure the cylinder to the endsheet and the reel arm:
 - Insert the cotter pin into clevis pin (A) on the **OUTBOARD** side of the reel arm.
 - Insert the cotter pin into clevis pin (B) on the **INBOARD** side of the endsheet.

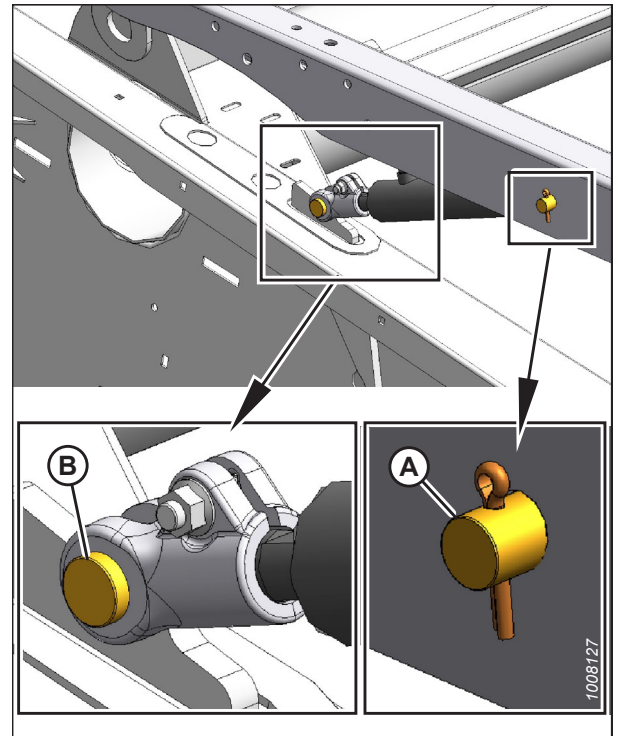


Figure 3.7: Reel Right Lift Cylinder Attachment

10. **Double-reel headers:** Position sling (A) around the reel tube near the reel's center support arm. Raise the lifting device to relieve the load on shipping supports (B).

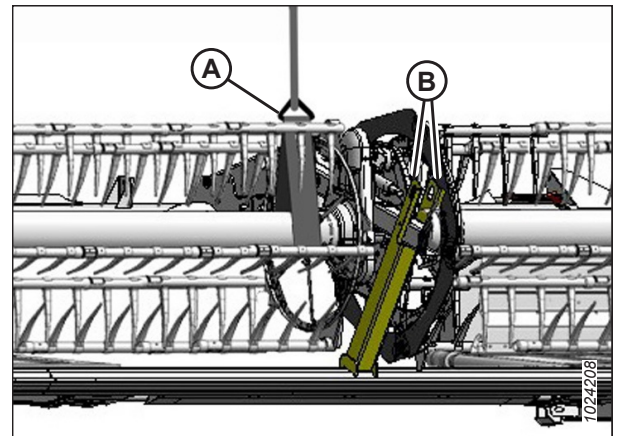


Figure 3.8: Center Arm Support on Double-Reel Headers

ASSEMBLING HEADER AND FLOAT MODULE

11. Double-reel headers:

- a. Lift the reel to gain access to the center lift cylinder.
- b. Remove the shipping wire and banding from the center reel's lift cylinder. Remove and retain the bolt and nut from the cylinder rod.
- c. Lift the reel so that the hole in the center lift cylinder's rod lines up with the mounting hole in the reel arm.
- d. Attach the rod end of the cylinder to the reel arm with bolt and nut (A).

NOTE:

Access the hardware through the holes in reel arm braces (C).

- e. Torque bolt and nut (A) to 58 Nm (43 lbf-ft).
 - f. Remove the pin at the barrel end of the cylinder.
 - g. Adjust the reel height so that pin (B) can be installed at the barrel end of the cylinder.
12. Reposition sling (A) around the reel tube near the left outboard reel arm.
 13. Remove the shipping wire and banding securing the left reel lift cylinder.

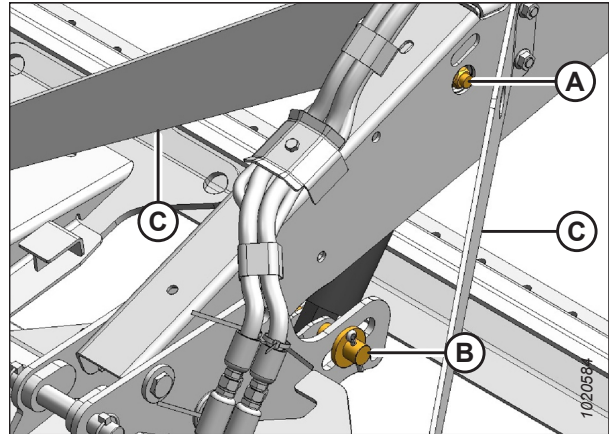


Figure 3.9: Reel Arm Braces – Double-Reel Headers

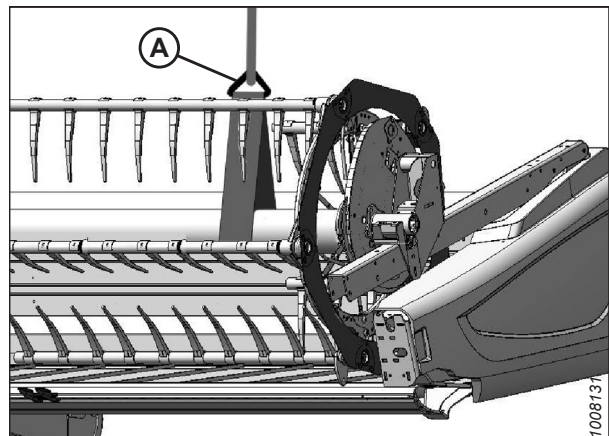


Figure 3.10: Outboard Reel Arm

ASSEMBLING HEADER AND FLOAT MODULE

14. Lift the reel.
15. Remove the pins from the endsheet and the reel arm.
16. Align the reel lift cylinder's mounting holes so that they line up with the lug on the endsheet and the hole in the reel arm.
17. Secure the cylinder to the endsheet and the reel arm:
 - Insert the cotter pin into clevis pin (A) on the **OUTBOARD** side of the reel arm.
 - Insert the cotter pin into clevis pin (B) on the **INBOARD** side of the endsheet.

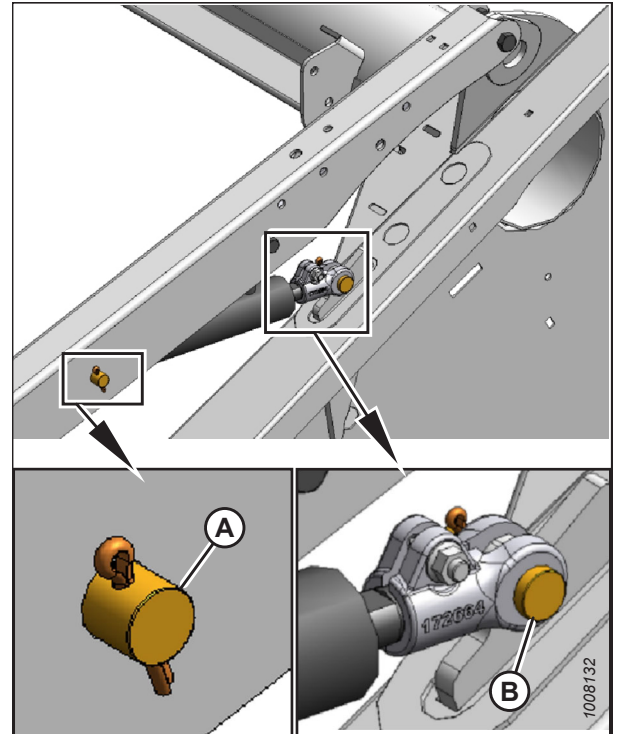


Figure 3.11: Lift Cylinder Attached

18. **Double-reel headers:** Remove bolt (A), disengage center reel arm shipping support (B) from the cutterbar, and remove the shipping support.

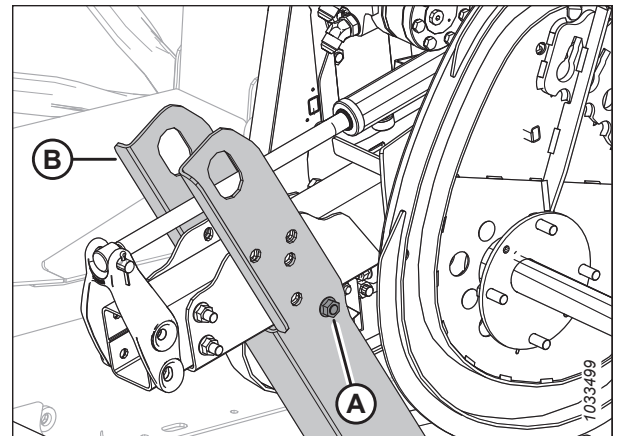


Figure 3.12: Reel Center Arm Shipping Support

ASSEMBLING HEADER AND FLOAT MODULE

19. Remove bolts (A) from reel arm support (B). Remove the support.
20. Repeat the previous step to remove the other reel arm support.

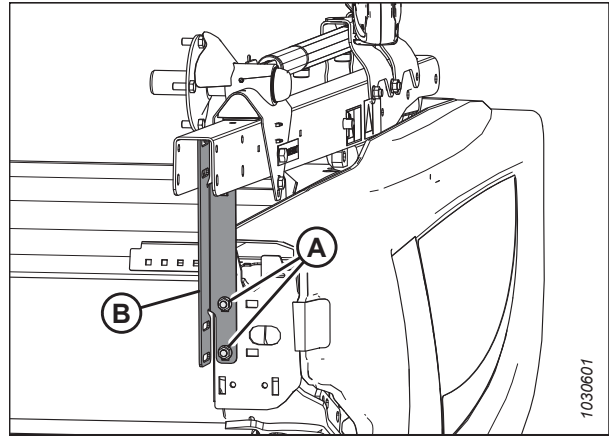


Figure 3.13: Outboard Reel Arm Supports

CAUTION

Tagged bolts (A) on the reel arms keep the reel from sliding forward. Ensure that the fore-aft cylinders are attached **BEFORE** removing any tagged bolts.

21. Ensure that the fore-aft cylinders are attached to the fore-aft mounting supports at the end of the reel arms with clevis pins, washers, and cotter pins.
22. At the outer reel arms, remove brace bolts and tags (A) locking the reel's fore-aft position.

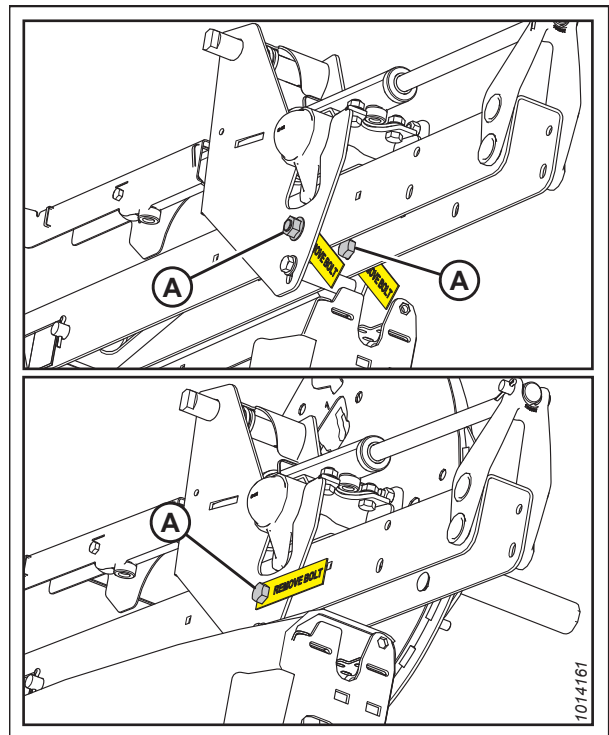


Figure 3.14: Reel Right Arm

Top Image - Single Reel

Bottom Image - Double Reel

ASSEMBLING HEADER AND FLOAT MODULE

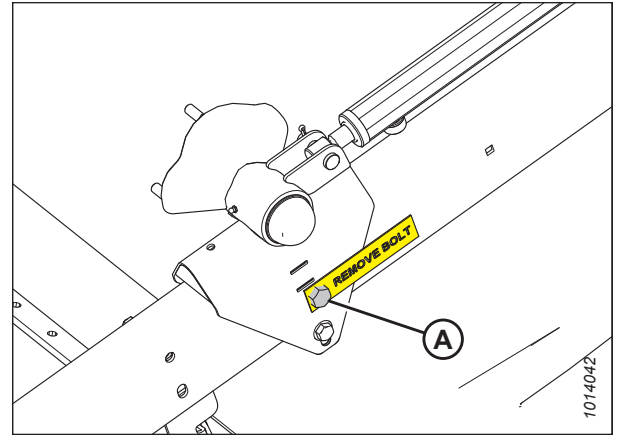


Figure 3.15: Reel Left Arm

23. **Double-reel headers:** Remove bolts (A) locking the reel fore-aft position at the center reel arm. Remove shipping channel (B).

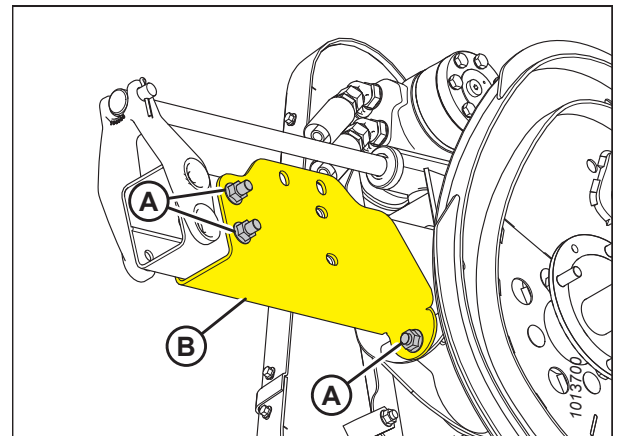


Figure 3.16: Double-Reel Center Arm Shipping Channel

3.2 Attaching Reel Height Sensor

The reel height sensor linkage (located toward the back of the right reel arm) is disconnected to prevent shipping damage. Reconnect the sensor using the following procedure:

1. Remove the shipping wire from sensor (A).

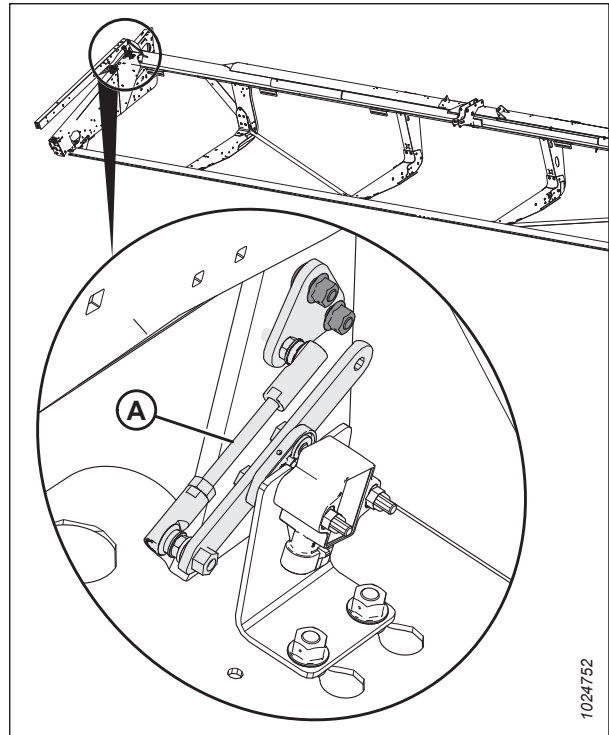


Figure 3.17: Reel Height Sensor – Disconnected

ASSEMBLING HEADER AND FLOAT MODULE

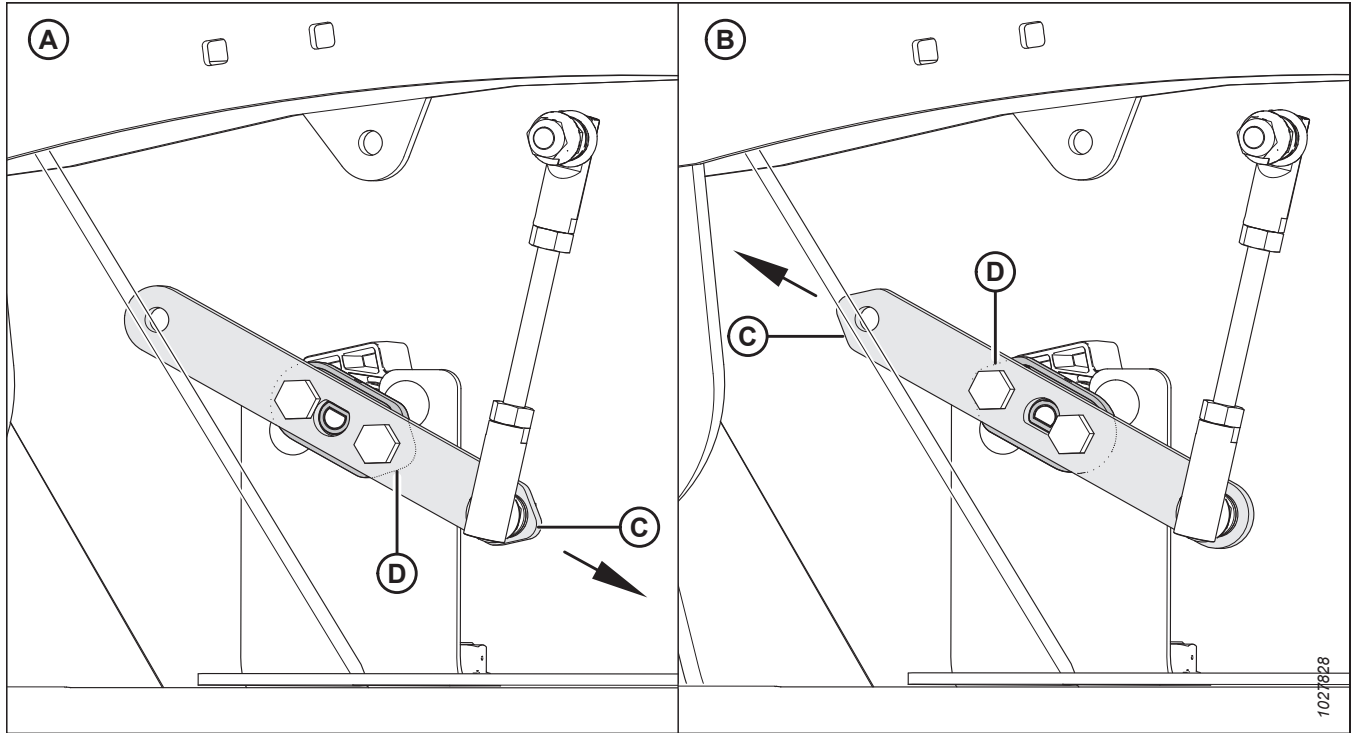


Figure 3.18: Sensor Arm/Pointer Configurations

A - Case/New Holland Configuration

B - John Deere/CLAAS/IDEAL™ Configuration

C - Sensor Arm (Shown Semitransparent)

D - Sensor Pointer (Shown Under Sensor Arm)

NOTE:

- For configuration (A), pointer (D) points to the **FRONT** of the header.
 - For configuration (B), pointer (D) points to the **REAR** of the header.
 - The sensor arm has been made semitransparent to show the sensor pointer behind it.
2. Check that sensor arm (C) and pointer (D) are configured properly for your combine. For instructions, refer to [Figure 3.18, page 31](#).

ASSEMBLING HEADER AND FLOAT MODULE

3. Attach reel height sensor plate (A) to the reel arm with existing bolts and nuts (B). Torque the nuts to 8.2 Nm (6 lbf·ft).

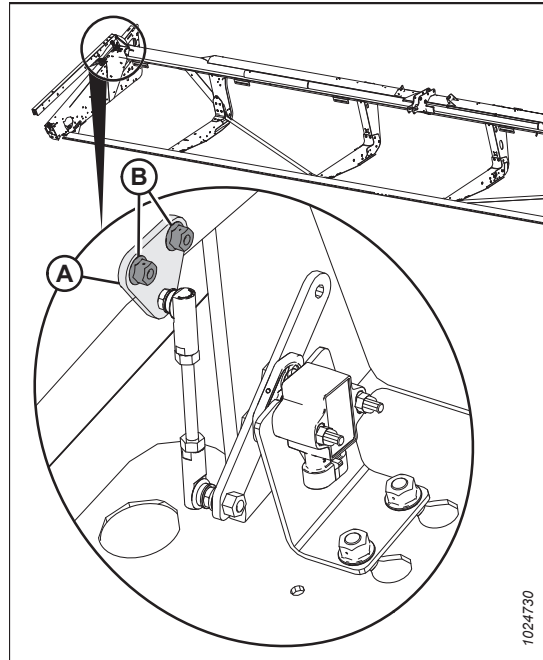


Figure 3.19: Reel Height Sensor

3.3 Attaching Cam Arms

The header's cam arms must be installed before the reel can be operated.

1. Manually rotate the reel in order to access the disconnected cam links.
2. Remove shipping wire (A) if necessary.

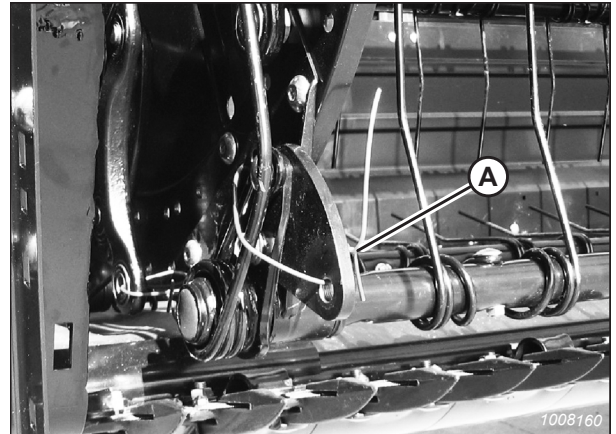


Figure 3.20: Disconnected Cam Links and Shipping Wire

3. Remove bag of hardware (A) from the tine bar.

NOTE:

The bag contains the hardware for the cam links and the endshields.

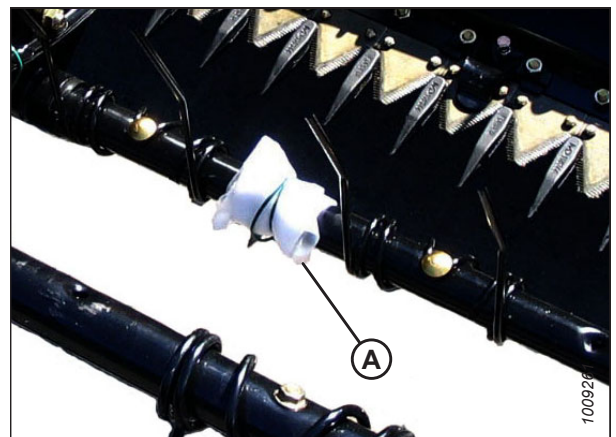


Figure 3.21: Hardware Bag Attached to Right Reel

4. Rotate tine bar crank (A) and position link (B) so that the attachment holes in the tine bar's crank are aligned with the hole in the link.
5. Install bolt (C) in the link and position shim (D) on the bolt so that the shim sits **BETWEEN** link (B) and tine bar crank (A).

IMPORTANT:

Ensure that shim (D) is installed in the correct location to prevent damage to the bar crank.

NOTE:

The bolts in the hardware bag are precoated with threadlocker. Do not add more threadlocker when you are installing the bolts.

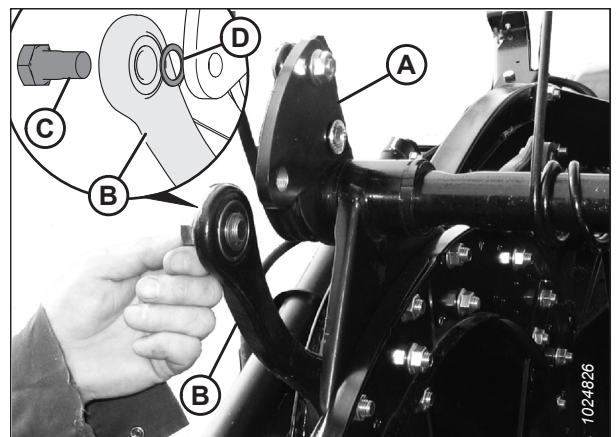


Figure 3.22: Bar Crank Attachment Holes and Link Alignment

6. Realign link (B) and tine bar crank (A), and insert bolt (C).

ASSEMBLING HEADER AND FLOAT MODULE

7. Repeat Step 4, [page 33](#) to Step 6, [page 33](#) for the remaining tine bars.
8. Torque the installed bolts to 165 Nm (120 lbf-ft).
9. Rotate the right reel and move the reel pitch to position 4 to access bolt (A).
10. Move the right reel to position 2.

NOTE:

This procedure is performed on the right reel only.

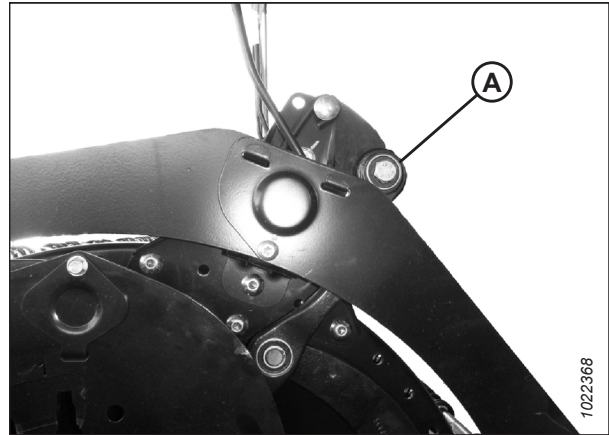


Figure 3.23: Right Reel with Cam Arms Attached

3.4 Repositioning Gearbox

The gearbox is stowed for shipping. Move it from its shipping position into the working position.

1. Remove the shipping wire and wrapping on brace (A). Swing the brace clear of the gearbox.

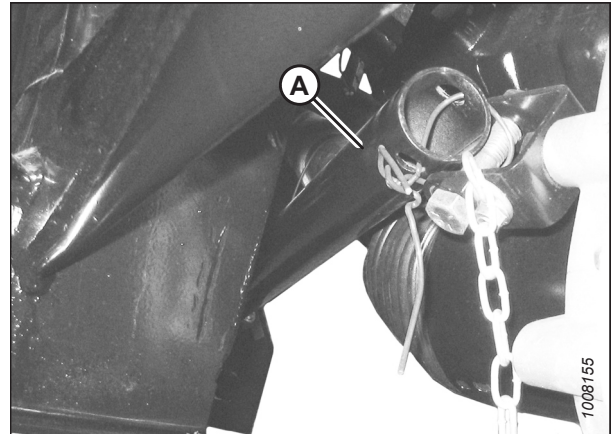


Figure 3.24: Shipping Wire and Brace

2. Loosen nut (A) and move the bolt out of the shipping position slot.

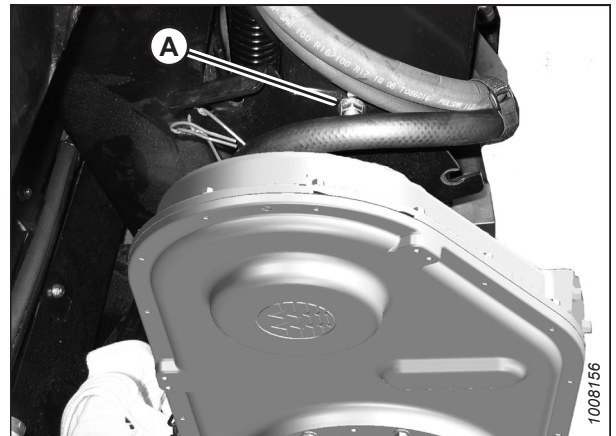


Figure 3.25: Shipping Position

3. Rotate the gearbox and insert bolt into working position slot (A). Tighten the nut.
4. Tighten suction hose clamp (B) to 6.4–7.0 Nm (57–62 lbf·in).

NOTE:

The hose clamps should be readjusted after hot oil is run through the hydraulic hoses.

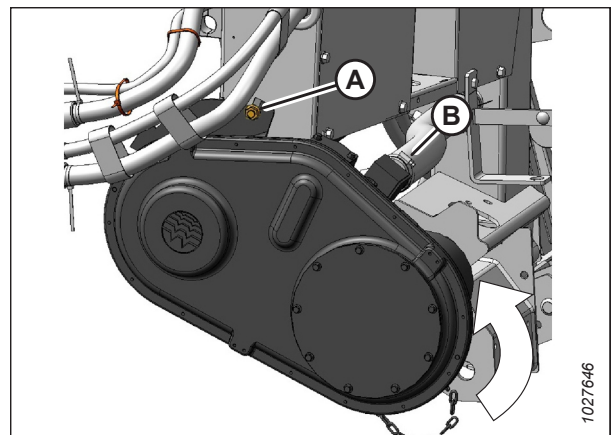


Figure 3.26: Working Position

ASSEMBLING HEADER AND FLOAT MODULE

5. Remove bolt (C) and the nut from the bracket on the gearbox.
6. Position brace (A) inside bracket (B), and reinstall bolt (C) and the nut.

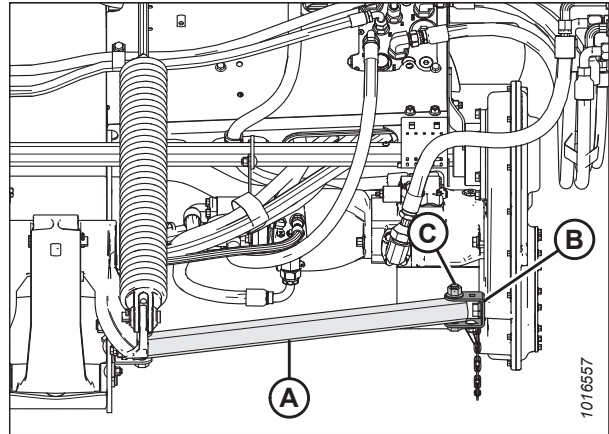


Figure 3.27: Brace Position

3.5 Installing Driveline

The driveline shaft must be moved from its shipping position and attached to the storage support.

CAUTION

To prevent injury to the installer and damage to the driveline, hold the driveline so that it doesn't fall to the floor or ground.

NOTE:

Case New Holland drivelines are stored in a lower position on the float module. If installing a Case New Holland driveline, proceed to Step 2, [page 37](#).

1. Position driveline storage support (A) onto the left frame of the float module. Secure it in place with two M10 carriage bolts and hex flange nuts (B).

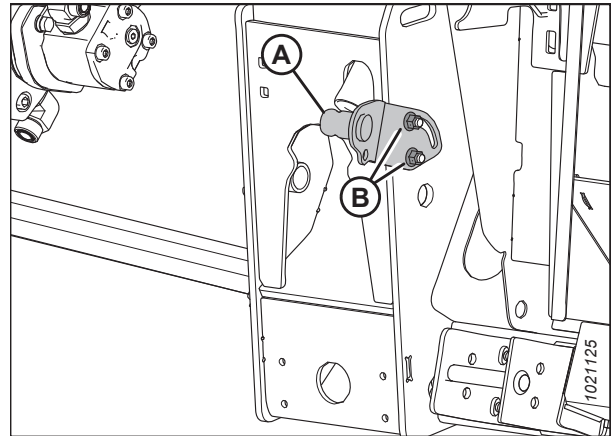


Figure 3.28: Driveline Support

2. **Case New Holland only:** Position driveline storage support (A) onto the left side of bracket (B) as shown. Secure it in place with two M12 hex head bolts (C) and two hex flange nuts.

NOTE:

The support for the 21-tooth spline drivelines is shown in the illustration at right. The support for the 6-tooth spline drivelines is similar.

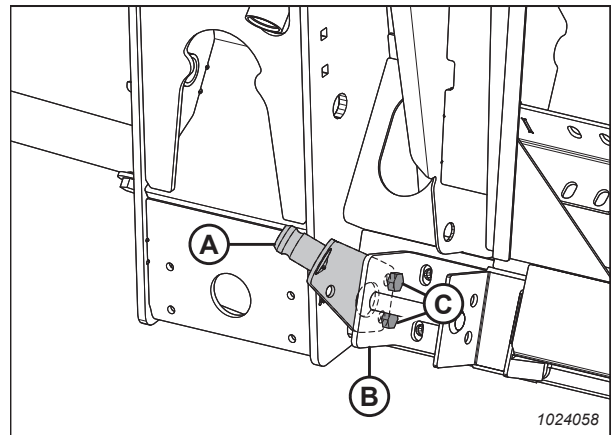


Figure 3.29: Driveline Support – Case New Holland

ASSEMBLING HEADER AND FLOAT MODULE

3. At the gearbox end, remove driveline shield (A) by loosening nuts (B). Retain the shield and hardware for reinstallation.
4. Position the driveline quick disconnect onto the float module gearbox shaft, pull back the collar, and slide it onto the shaft until the yoke locks on to the shaft. Release the collar.

NOTE:

The arrow on the driveline sticker should point toward the combine.

5. Position shield (A) on the gearbox and secure it with bolts (B).
6. Attach driveline chain (C) to the chain on shield (A).
7. Position the combine end of driveline (A) onto storage support (B), pull back the collar, and slide it onto the shaft until the yoke locks on to the shaft. Release the collar.
8. Secure the loose end of driveline chain (C) to driveline storage support (B).

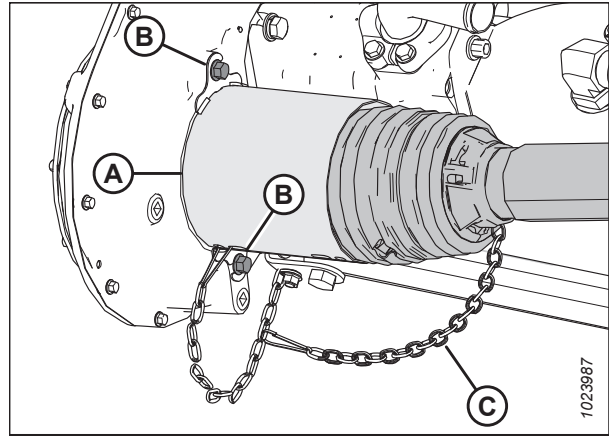


Figure 3.30: Gearbox End of Driveline

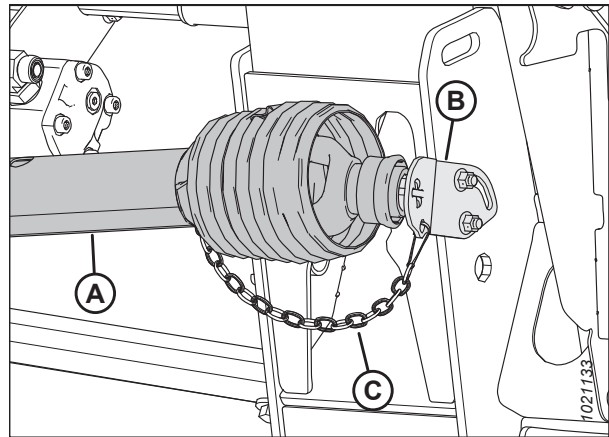


Figure 3.31: Driveline in Storage Position

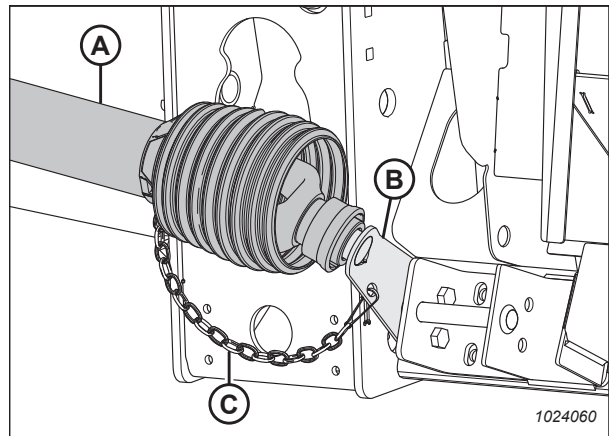


Figure 3.32: Driveline in Storage Position –
Case New Holland

Chapter 4: Setting up Float Module at Dealership

There are certain setup procedures that must be completed when the header arrives at the dealership.

Complete the following procedures in the order in which they are listed.

- [4.1 Installing Filler Cap, page 39](#)
- [4.2 FM100 Feed Auger Configurations, page 42](#)
- [4.3 FM100 Stripper Bars, page 71](#)

4.1 Installing Filler Cap

The filler cap gets installed on top of the float module frame and facilitates the addition of hydraulic oil to the float module.

CAUTION

Fluid may be under pressure. Allow the pressure to equalize by loosening the screws and lifting the shipping cover slightly away from you.

1. Loosen the bolts and remove yellow shipping cover (A) from the float module frame.
2. Remove the gasket below the shipping cover, and discard the bolts, cover, and gasket.

3. Retrieve the filler cap assembly from bag (A).

NOTE:

Bag (A) is secured to the suction hose on the left side of the float module for shipping.

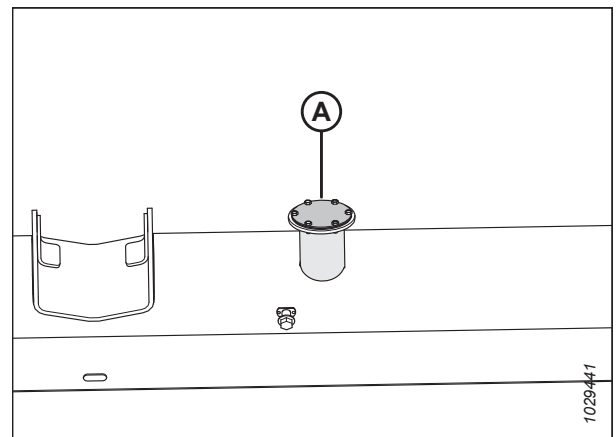


Figure 4.1: Yellow Shipping Cover

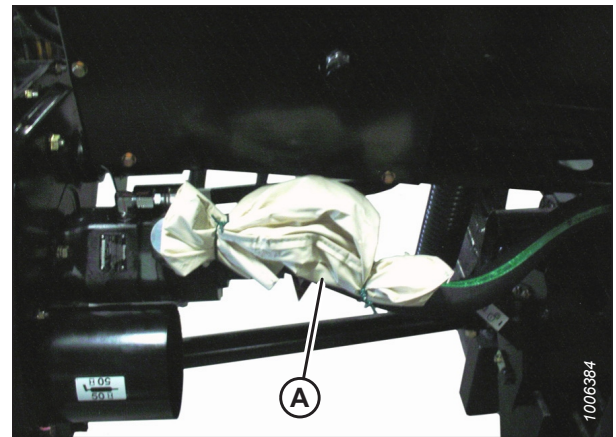


Figure 4.2: Hardware Bag

SETTING UP FLOAT MODULE AT DEALERSHIP

4. Separate filler cap (A) and six hex bolts (B) from bayonet (C), gaskets (D), and strainer (E).

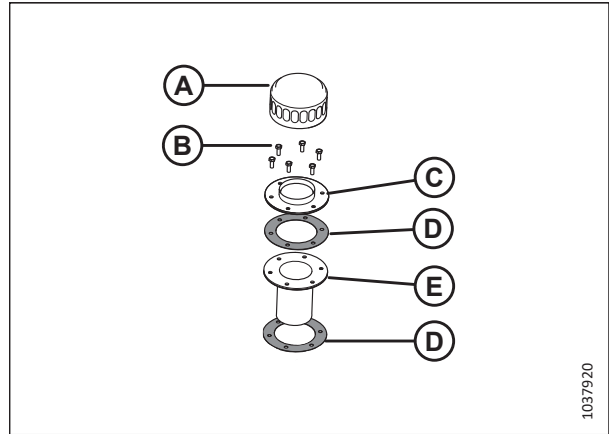


Figure 4.3: Filler Cap Assembly

5. Place bayonet (A), gaskets (B), and strainer (C) onto filler neck (D), as shown, and align the holes. Ensure strainer (C) is placed between two gaskets (B).

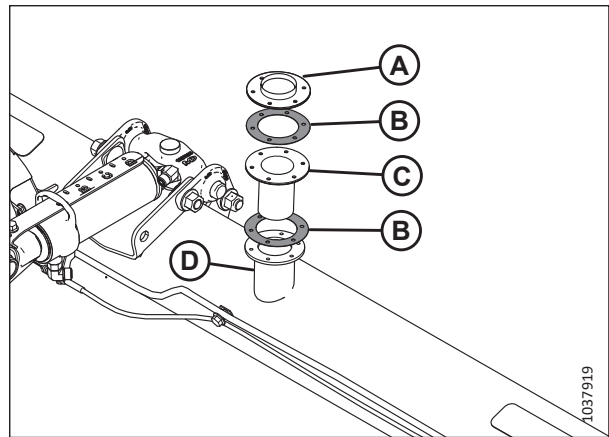


Figure 4.4: Filler Neck and Filler Cap Assembly Parts

6. Carefully thread the M5 bolts provided with the filler cap assembly into bayonet (A) using a cross pattern, as shown.

IMPORTANT:

Using a cross pattern will prevent cross-threading of the tapped holes.

7. Repeat the pattern to gradually tighten the bolts to 3.5 Nm (31 lbf-in).

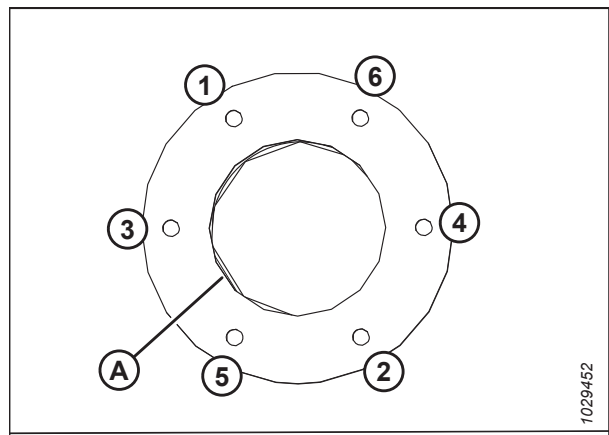


Figure 4.5: Filler Cap Screw Tightening Pattern

SETTING UP FLOAT MODULE AT DEALERSHIP

8. Install filler cap (A) by screwing the cap onto the threads of the bayonet.

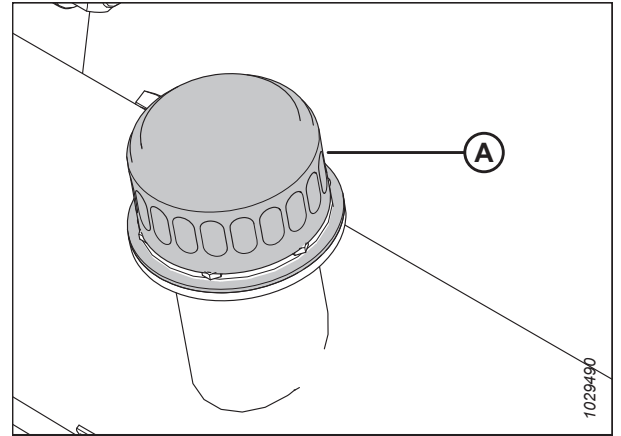


Figure 4.6: Filler Cap

4.2 FM100 Feed Auger Configurations

The FM100 feed auger can be configured to suit various crop conditions. Reconfiguring the auger involves changing the spacing and the number of the flightings and fingers on the auger drum.

NOTE:

Dimensions (A) and (B) are the same for both ends of the auger. They should be within 15 mm (9/16 in.) of the numbers given.

Narrow Configuration is the standard configuration for the following combines:

- Gleaner® R6/75, R6/76, S6/77, S6/7/88, S96/7/8
- IDEAL™ 7/8/9/10
- New Holland CR 920/940/960, 9020/40/60/65, 6090/7090, 8060/8070/8080

Narrow Configuration uses four long bolt-on flightings (two on the left and two on the right). 18 feed auger fingers are recommended for this configuration.

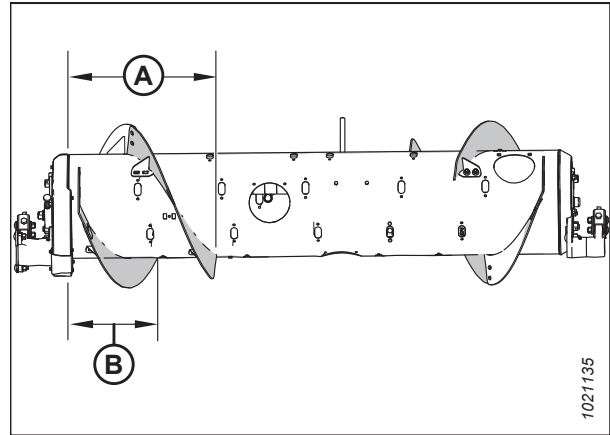


Figure 4.7: Narrow Configuration – Rear View

A - 514 mm (20 1/4 in.)

B - 356 mm (14 in.)

For more information on converting to Narrow Configuration, refer to [4.2.1 Narrow Configuration – Auger Flighting, page 44](#).

NOTE:

Dimensions (A) and (B) are the same for both ends of the auger. They should be within 15 mm (9/16 in.) of the numbers given.

Medium Configuration is the standard configuration for the following combines:

- Case IH 2166; 2300/2500 Series
- Case IH 5/6/7088, 7/8010, 7/8/9120, 5/6/7130, 7/8/9230, 5/6/7140, 7/8/9240, 5/6/7150, 7/8/9250
- Challenger® 66/67/680B, 54/560C, 54/560E
- CLAAS 56/57/58/590R, 57/58/595R, 62/63/64/65/66/670, 73/74/75/76/77/780, 6000/7000/8000, Tucano
- Gleaner A66/A76/A86
- IDEAL™ 9490X/6335C
- John Deere 95/96/97/9860, 95/96/97/9870, S65/66/67/68/690, T670, S76/77/78/790
- Massey Ferguson® 96/97/9895, 9520/40/60, 9545/65, 92/9380
- New Holland CR 970/980, 9070/9080, 8090/9090, X.90, X.80, 10.80/10.90
- New Holland CX 8X0, 80X0, 8.X0, 8080/8090
- Rostselmash 161; T500; Torum 760/780/785
- Versatile RT490

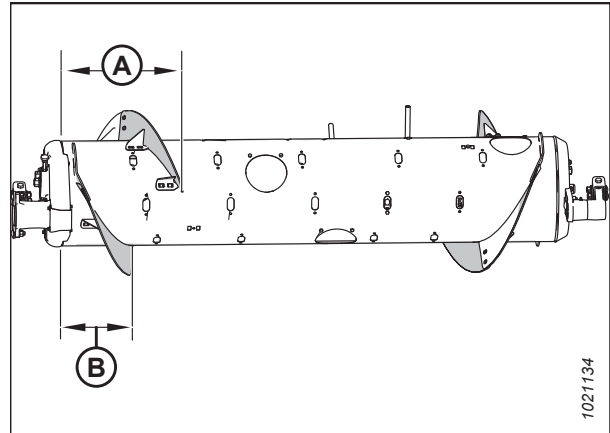


Figure 4.8: Medium Configuration – Rear View

A - 410 mm (16 1/8 in.)

B - 260 mm (10 1/4 in.)

SETTING UP FLOAT MODULE AT DEALERSHIP

Medium Configuration is an optional configuration for IDEAL™ Series combines.

Medium Configuration uses four short bolt-on flightings (two on the left and two on the right). 22 feed auger fingers are recommended for this configuration.

For more information on converting to Medium Configuration, refer to [4.2.2 Medium Configuration – Auger Flighting, page 48](#).

NOTE:

Dimensions (A) and (B) are the same for both ends of the auger. They should be within 15 mm (9/16 in.) of the numbers given.

Wide Configuration is the standard configuration for the following combines:

- John Deere X9 1000/1100

Wide Configuration is an optional configuration for the following combines:

- Challenger® 670B/680B, 540C/560C, 540E/560E
- CLAAS 590R/595R, 660/670, 760/770/780, 6000/7000/8000
- John Deere T670
- Massey Ferguson® 9895, 9540, 9560, 9545, 9565, 9380
- New Holland CX 8X0, 80X0, 8.X0
- Rostselmash 161; T500; Torum 785

Wide Configuration uses two short bolt-on flightings (one on the left and one on the right). 30 feed auger fingers are recommended for this configuration.

NOTE:

This configuration may increase the capacity of the combine on wide feeder house combines in certain crop conditions.

For more information on converting to Wide Configuration, refer to [4.2.3 Wide Configuration – Auger Flighting, page 51](#).

NOTE:

Dimensions (A) and (B) are the same for both ends of the auger. They should be within 15 mm (9/16 in.) of the numbers given.

Ultra Narrow Configuration is an optional configuration that may improve feeding performance on combines with narrow feeder houses. It may also be helpful when harvesting rice.

Ultra Narrow Configuration uses eight long bolt-on flightings (four on the left and four on the right). 18 auger fingers are recommended for this configuration.

NOTE:

You will need to drill holes in the flighting and in the drum to install the extra flighting.

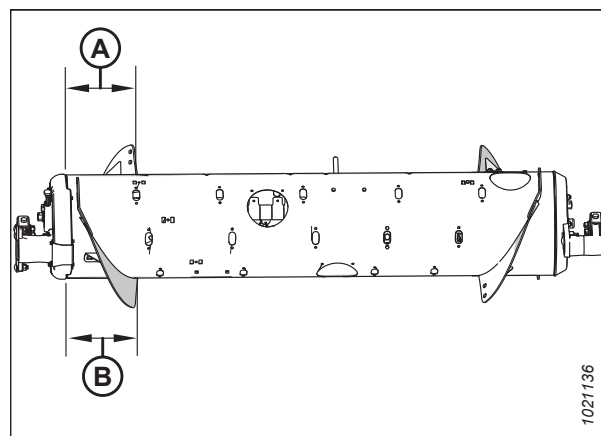


Figure 4.9: Wide Configuration – Rear View

A - 257 mm (10 1/8 in.)

B - 257 mm (10 1/8 in.)

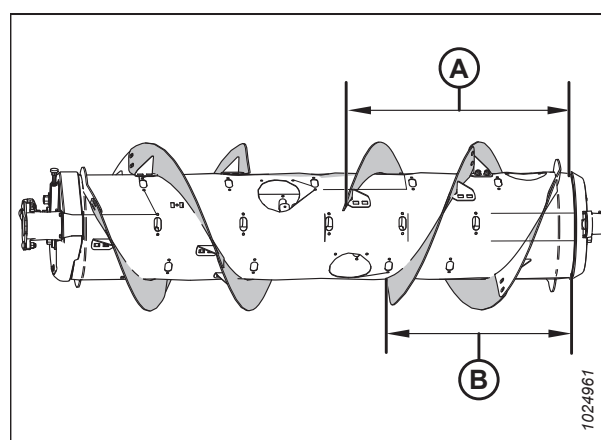


Figure 4.10: Ultra Narrow Configuration – Rear View

A - 760 mm (29 15/16 in.)

B - 602 mm (23 11/16 in.)

For more information on converting to Ultra Narrow Configuration, refer to [4.2.4 Ultra Narrow Configuration – Auger Flighting, page 53](#).

SETTING UP FLOAT MODULE AT DEALERSHIP

Ultra Wide Configuration is an optional configuration for wide feeder house combines.

Ultra Wide Configuration uses no bolt-on flighting; only factory-welded flighting (A) is responsible for conveying the crop.

NOTE:

This configuration may improve feeding for wide feeder house combines.

A total of 30 auger fingers are recommended for this configuration.

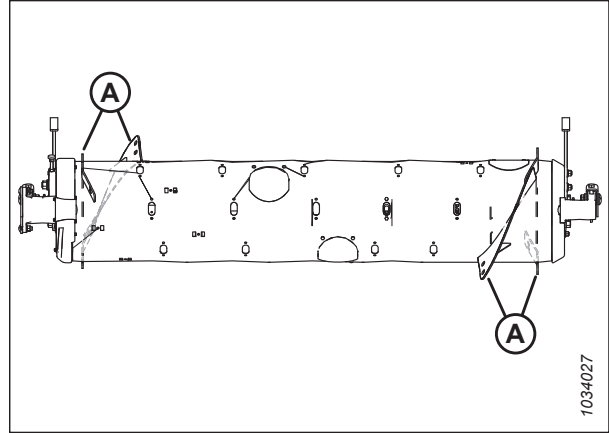


Figure 4.11: Ultra Wide Configuration – Rear View

For more information on converting to Ultra Wide Configuration, refer to [4.2.5 Ultra Wide Configuration – Auger Flighting](#), page 57.

4.2.1 Narrow Configuration – Auger Flighting

Narrow Configuration uses four long bolt-on flightings (two on the left and two on the right). 18 auger fingers are recommended for this configuration.

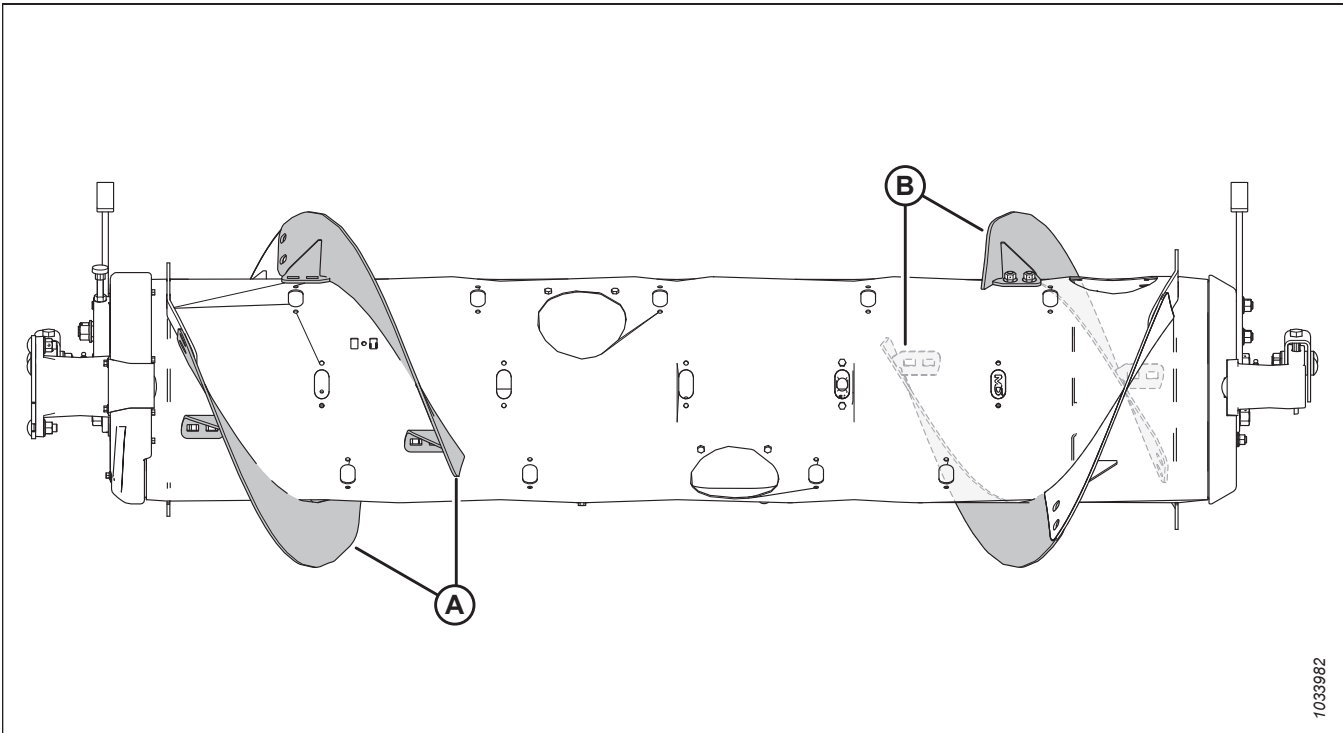


Figure 4.12: Narrow Configuration

A - Left Long Flighting (MD #287889)

B - Right Long Flighting (MD #287890)

SETTING UP FLOAT MODULE AT DEALERSHIP

To convert to Narrow Configuration from Ultra Narrow Configuration:

Remove four flightings (A) from the auger and install additional auger fingers. A total of 18 auger fingers is recommended for this configuration.

- For flighting removal instructions, refer to [4.2.6 Removing Bolt-On Flighting, page 58](#).
- For finger installation instructions, refer to [4.2.10 Installing Feed Auger Fingers, page 68](#).

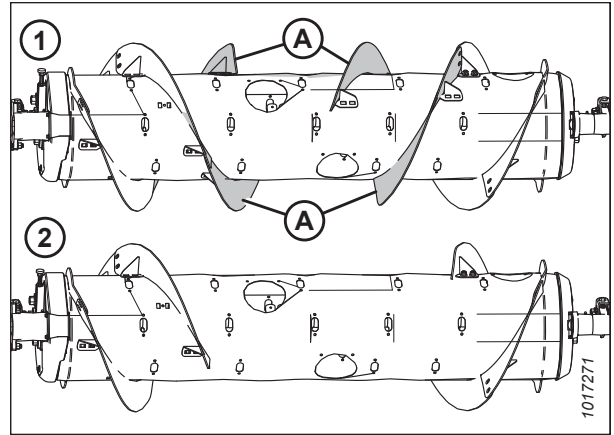


Figure 4.13: Auger Configurations – Rear View

1 - Ultra Narrow Configuration 2 - Narrow Configuration

To convert to Narrow Configuration from Medium, Wide, or Ultra Wide Configuration:

Two flighting kits (MD #287032 or B6400¹) are required. Replace any of short flightings (A)² with long flightings (B) and remove the extra auger fingers. A total of 18 auger fingers is recommended for this configuration.

IMPORTANT:

Extra hardware is included in these kits. Be sure to use the correct hardware in the correct location to prevent equipment damage and to maximize the performance of the auger.

- For flighting replacement instructions, refer to [4.2.6 Removing Bolt-On Flighting, page 58](#) and [4.2.7 Installing Bolt-On Flighting, page 60](#).
- For finger removal instructions, refer to [4.2.9 Removing Feed Auger Fingers, page 67](#).

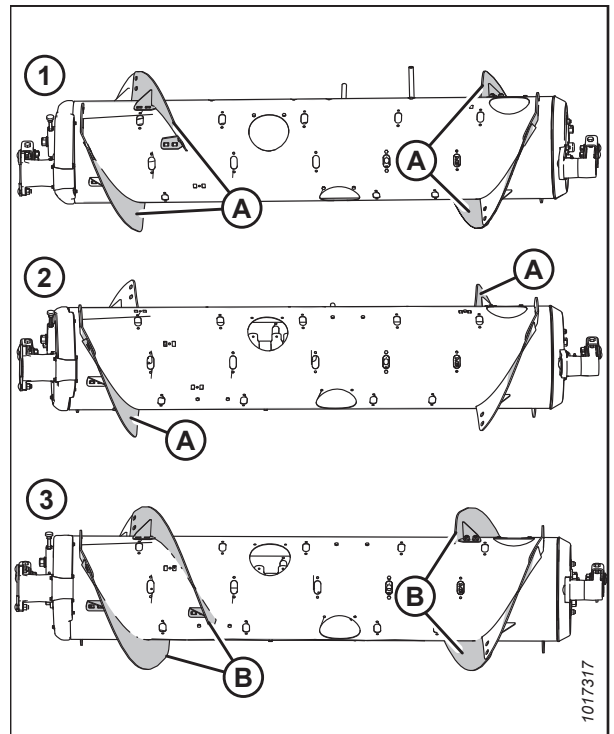


Figure 4.14: Auger Configurations – Rear View

1 - Medium Configuration 2 - Wide Configuration
3 - Narrow Configuration

1. MD #287032 is available only through MacDon Parts. B6400 is available only through Whole Goods. Both kits contain wear-resistant flightings.
2. The quantity of existing short flightings is either 0, 2, or 4, depending on the current configuration.

SETTING UP FLOAT MODULE AT DEALERSHIP

NOTE:

If converting from Ultra Wide Configuration, there is no existing bolt-on flighting to remove because that configuration uses only factory-welded flighting (A).

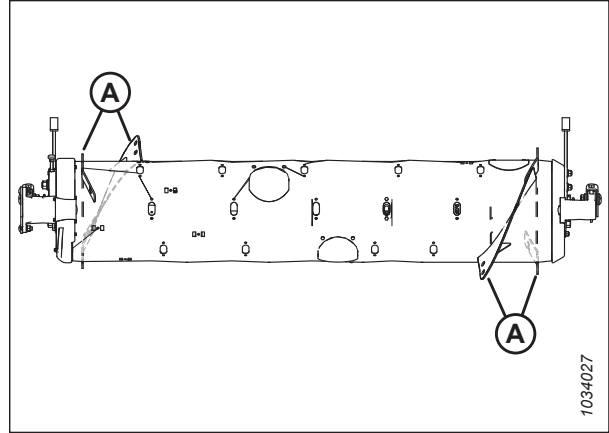


Figure 4.15: Ultra Wide Configuration

SETTING UP FLOAT MODULE AT DEALERSHIP

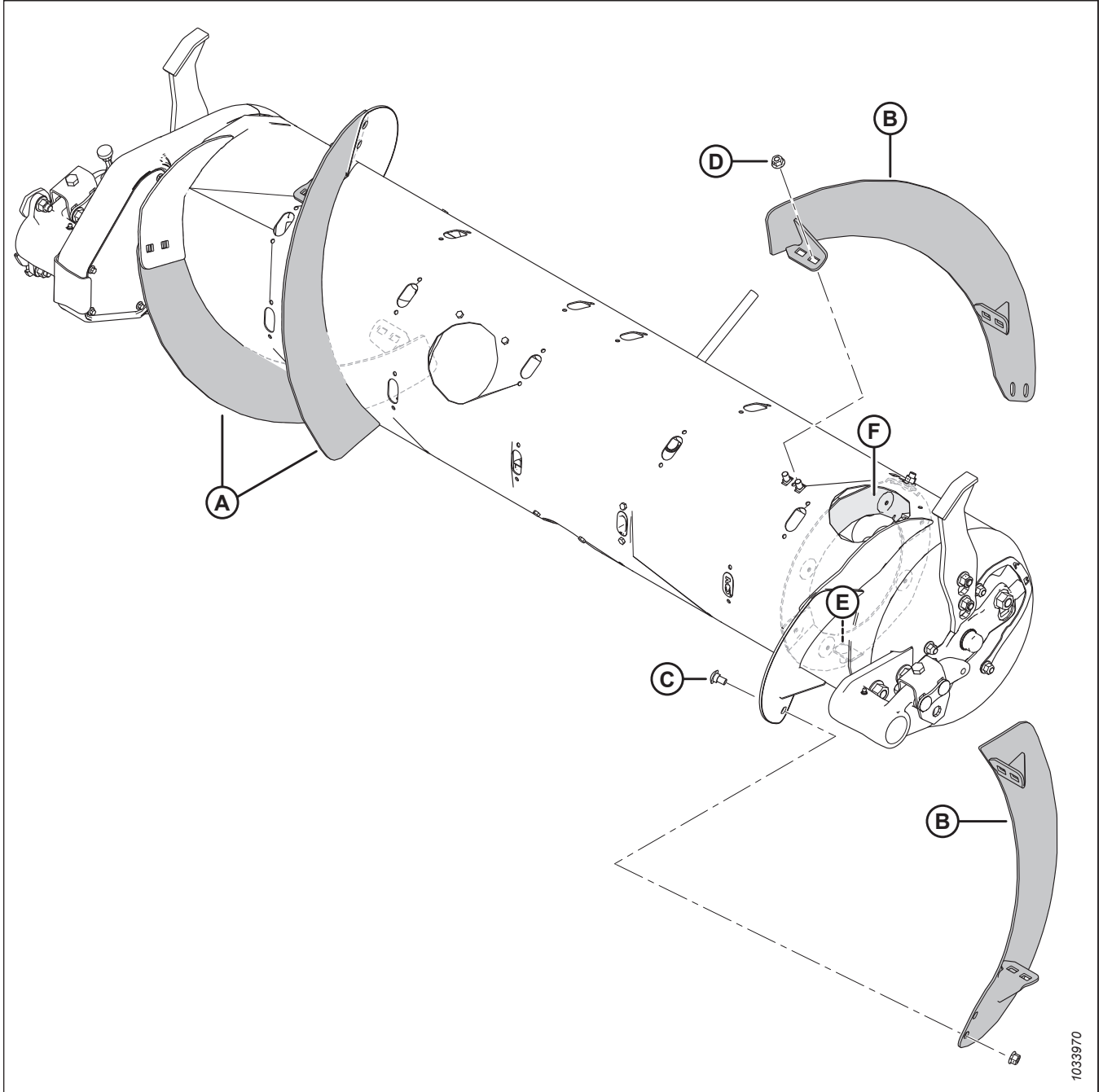


Figure 4.16: Narrow Configuration

A - Left Long Fighting (MD #287889)

C - M10 x 20 mm Carriage Bolt (MD #136178)

E - Existing M10 x 25 mm Carriage Bolt

B - Right Long Fighting (MD #287890)

D - M10 Center Lock Flange Nut (MD #135799)

F - Magnetic Reverser Shield

NOTE:

In Narrow Configuration, one of two 25 mm bolts (E) is used to secure both the fighting and the reverser shield together. The second 25 mm bolt is used only on the reverser shield.

4.2.2 Medium Configuration – Auger Flighting

Medium Configuration uses four short bolt-on flightings (two on the left and two on the right). 22 auger fingers are recommended for this configuration.

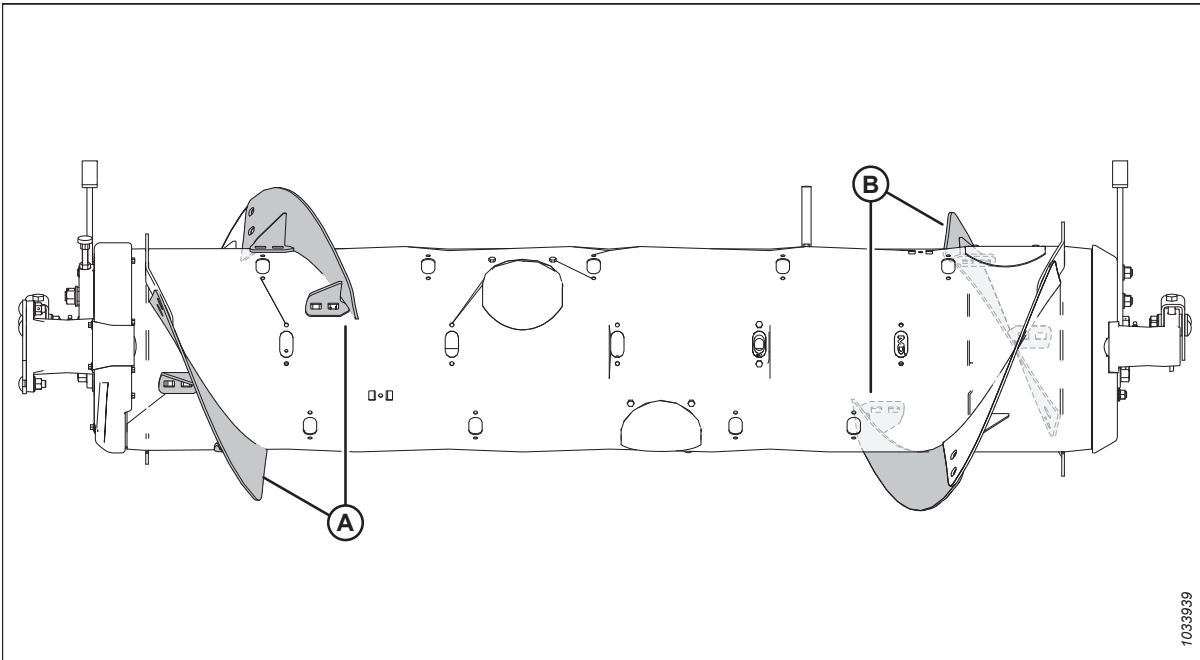


Figure 4.17: Medium Configuration

A - Left Short Flighting (MD #287888)

B - Right Short Flighting (MD #287887)

To convert to Medium Configuration from Wide Configuration:

One flighting kit (MD #357233) is required. Install new flightings (A) and remove the extra auger fingers. A total of 22 auger fingers is recommended for this configuration.

- For flighting installation instructions, refer to [4.2.7 Installing Bolt-On Flighting, page 60](#).
- For finger removal instructions, refer to [4.2.9 Removing Feed Auger Fingers, page 67](#).

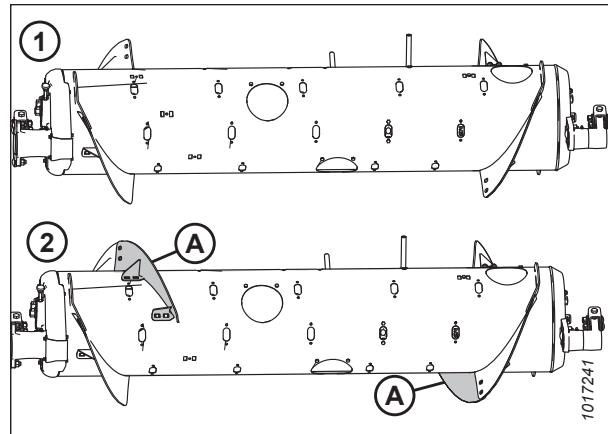


Figure 4.18: Auger Configurations – Rear View

1 - Wide Configuration

2 - Medium Configuration

SETTING UP FLOAT MODULE AT DEALERSHIP

To convert to Medium Configuration from Narrow or Ultra Narrow Configuration:

Two flighting kits (MD #357233) are required. Replace long flightings (A)³ with short flightings (B) and install additional auger fingers. A total of 22 auger fingers is recommended for this configuration.

- For flighting replacement instructions, refer to [4.2.6 Removing Bolt-On Flighting, page 58](#) and [4.2.7 Installing Bolt-On Flighting, page 60](#).
- For finger installation instructions, refer to [4.2.10 Installing Feed Auger Fingers, page 68](#).

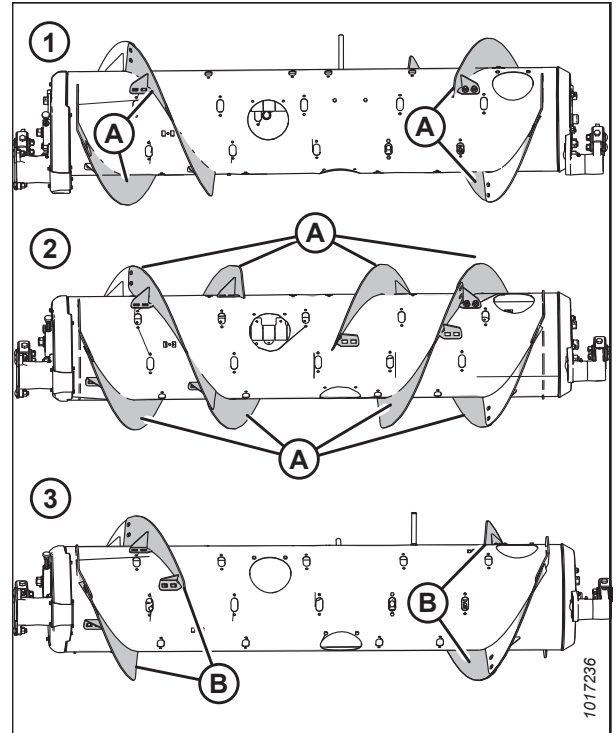


Figure 4.19: Auger Configurations – Rear View

1 - Narrow Configuration
3 - Medium Configuration

2 - Ultra Narrow Configuration

To convert to Medium Configuration from Ultra Wide Configuration:

Two flighting kits (MD #357233) are required. Install four short flightings onto the existing welded flightings (A) and remove the extra auger fingers. A total of 22 auger fingers is recommended for this configuration.

- For flighting installation instructions, refer to [4.2.7 Installing Bolt-On Flighting, page 60](#).
- For finger removal instructions, refer to [4.2.9 Removing Feed Auger Fingers, page 67](#).

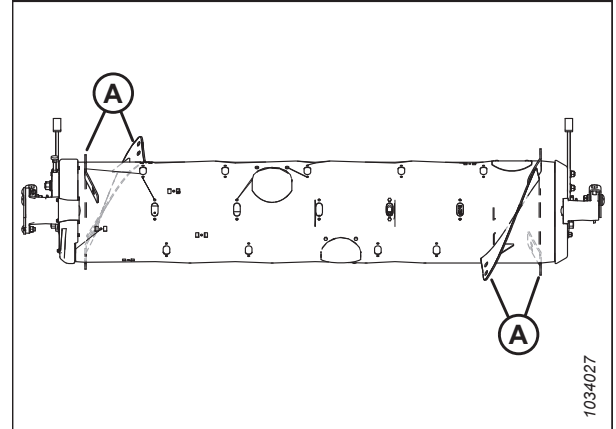


Figure 4.20: Ultra Wide Configuration

3. The quantity of existing long flightings is either four or eight, depending on the current configuration.

SETTING UP FLOAT MODULE AT DEALERSHIP

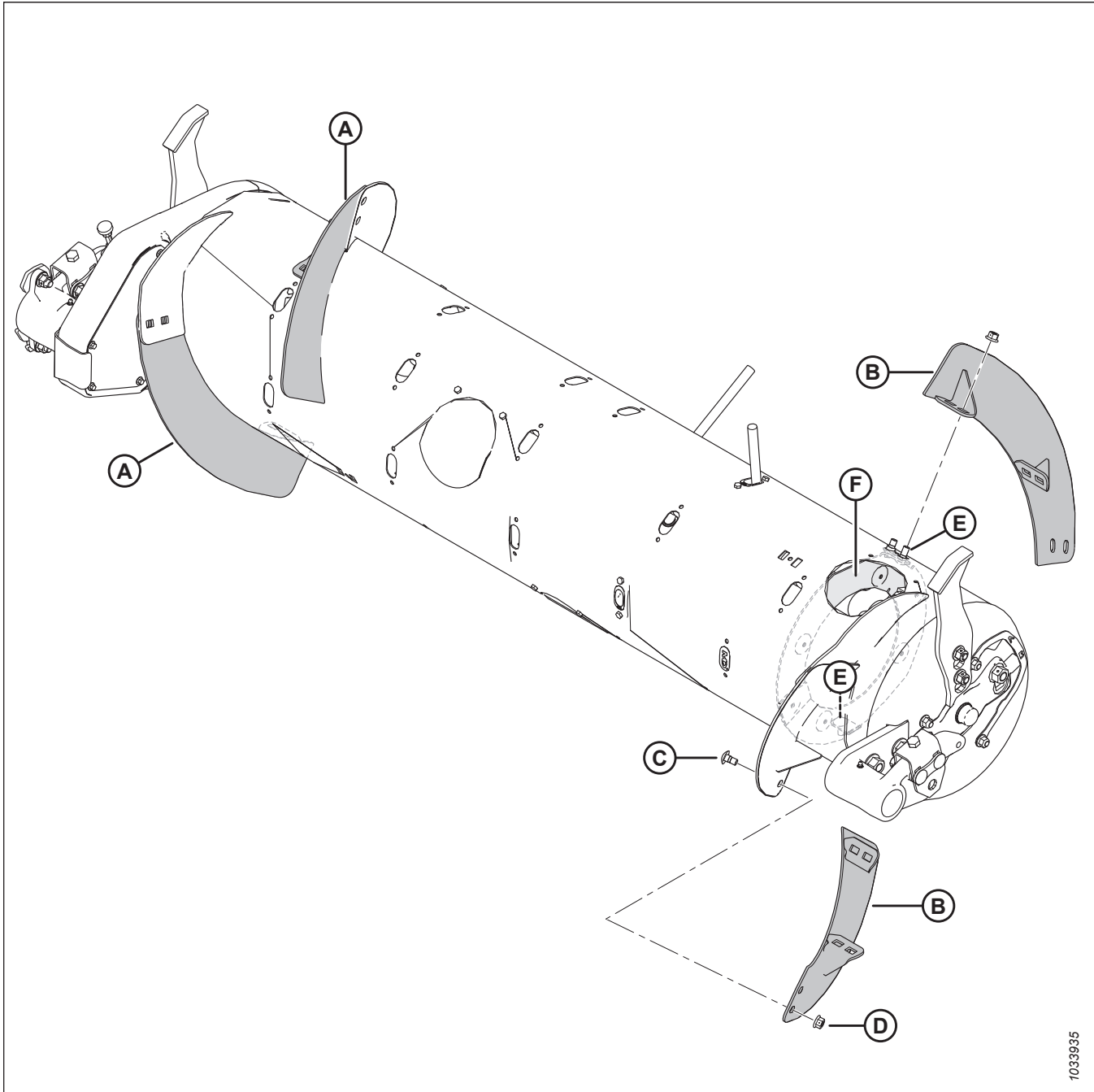


Figure 4.21: Medium Configuration

A - Left Short Fighting (MD #287888)

C - M10 x 20 mm Carriage Bolt (MD #136178)

E - Existing M10 x 25 mm Carriage Bolts

B - Right Short Fighting (MD #287887)

D - M10 Center Lock Flange Nut (MD #135799)

F - Magnetic Reverser Shield

NOTE:

In Medium Configuration, use the existing 25 mm bolts to secure the fighting to the reverser shield at locations (E).

4.2.3 Wide Configuration – Auger Flighting

Wide Configuration uses two short bolt-on flightings (one on the left and one on the right). 30 auger fingers are recommended for this configuration.

NOTE:

This configuration may increase combine capacity on wide feeder house combines in certain crop conditions.

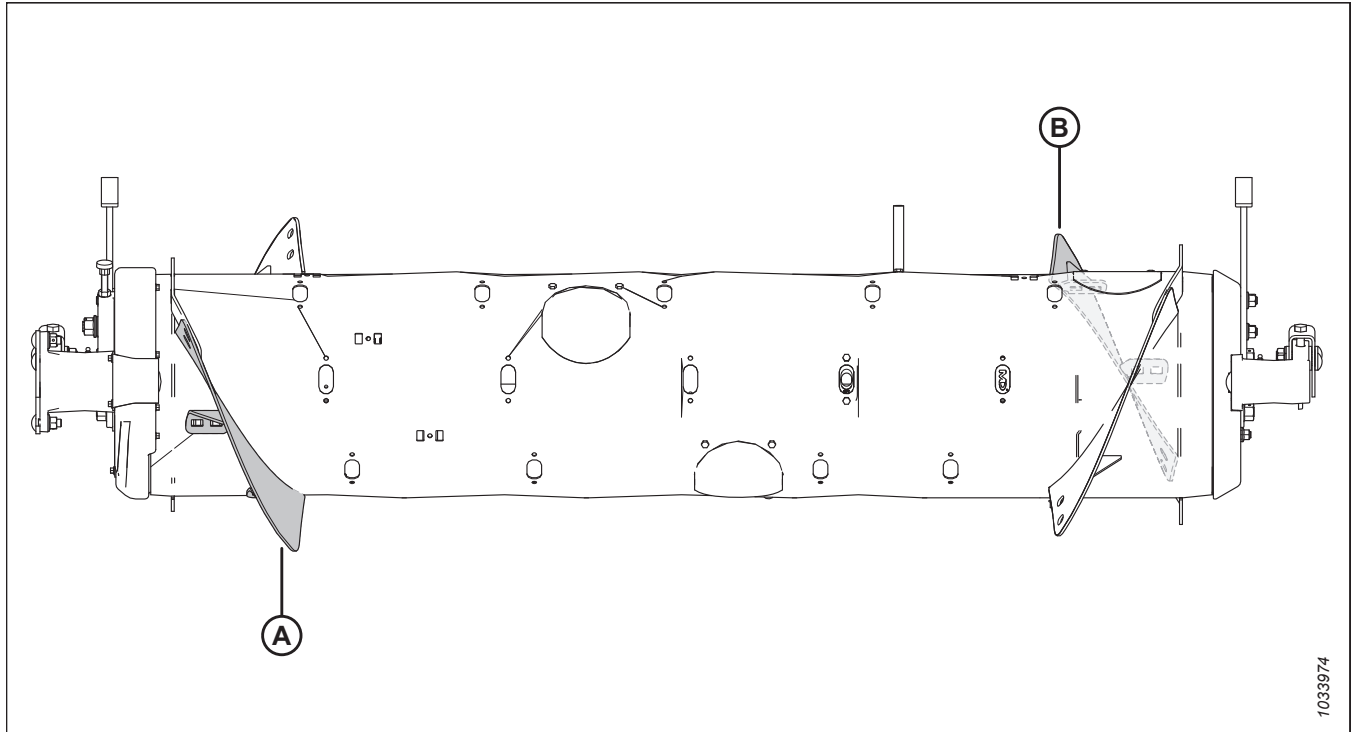


Figure 4.22: Wide Configuration

A - Left Short Flighting (MD #287888)

B - Right Short Flighting (MD #287887)

To convert to Wide Configuration from Medium Configuration:

Remove existing flightings (A) from the auger and install additional auger fingers. A total of 30 auger fingers is recommended for this configuration.

- For flighting removal instructions, refer to [4.2.6 Removing Bolt-On Flighting, page 58](#).
- For finger installation instructions, refer to [4.2.10 Installing Feed Auger Fingers, page 68](#).

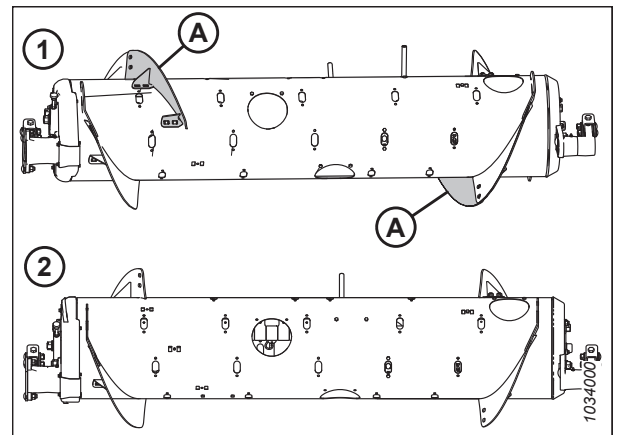


Figure 4.23: Auger Configurations – Rear View

1 - Medium Configuration

2 - Wide Configuration

SETTING UP FLOAT MODULE AT DEALERSHIP

To convert to Wide Configuration from Ultra Wide Configuration:

One flighting kit (MD #357233) is required. Install two short flightings onto existing welded flightings (A). A total of 30 auger fingers is recommended for this configuration.

- For flighting installation instructions, refer to [4.2.7 Installing Bolt-On Flighting, page 60](#).
- If required to remove auger fingers, refer to [4.2.9 Removing Feed Auger Fingers, page 67](#).

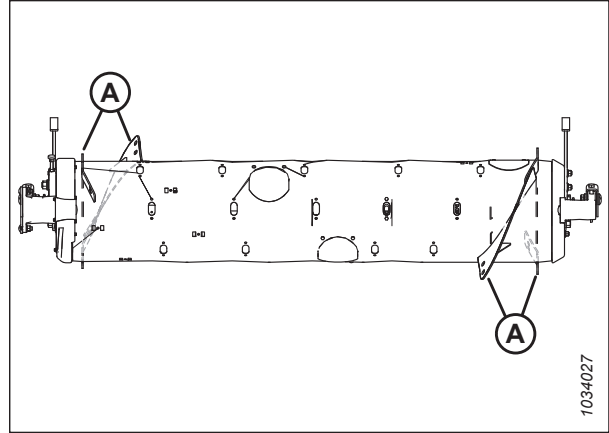


Figure 4.24: Ultra Wide Configuration

To convert to Wide Configuration from Narrow or Ultra Narrow Configuration:

One flighting kit (MD #357233) is required. Replace existing long flightings (A)⁴ with short flightings (B) and install additional auger fingers. A total of 30 auger fingers is recommended for this configuration.

- For flighting replacement instructions, refer to [4.2.6 Removing Bolt-On Flighting, page 58](#) and [4.2.7 Installing Bolt-On Flighting, page 60](#).
- For finger installation instructions, refer to [4.2.10 Installing Feed Auger Fingers, page 68](#).

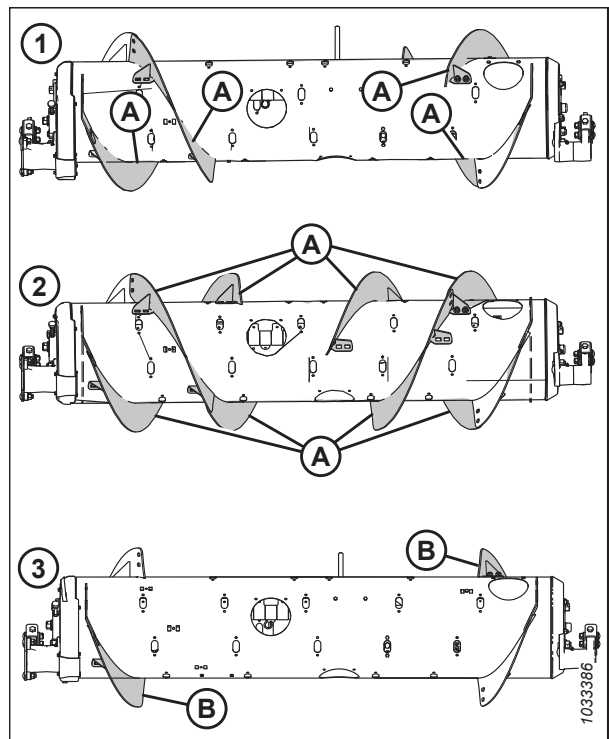


Figure 4.25: Auger Configurations – Rear View

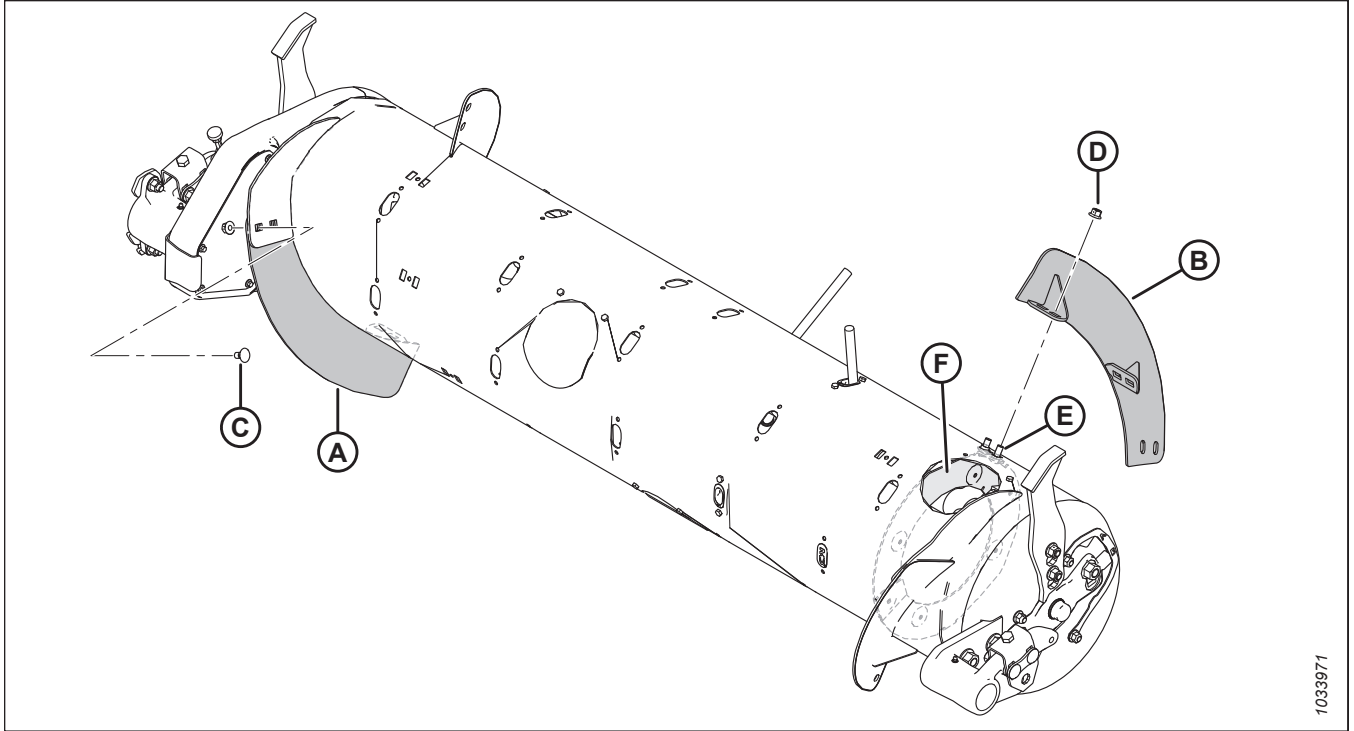
1 - Narrow Configuration

2 - Ultra Narrow Configuration

3 - Wide Configuration

4. The quantity of existing long flightings is either 4 or 8, depending on the current configuration.

SETTING UP FLOAT MODULE AT DEALERSHIP



1033971

Figure 4.26: Wide Configuration

A - Left Short Flighting (MD #287888)

C - M10 x 20 mm Carriage Bolt (MD #136178)

E - Existing M10 x 25 mm Carriage Bolt

B - Right Short Flighting (MD #287887)

D - M10 Center Lock Flange Nut (MD #135799)

F - Magnetic Reverser Shield

NOTE:

In the Wide Configuration, one of the two existing 25 mm bolts (E) is used to secure both the flighting and reverser shield together. The second 25 mm bolt is used only on the reverser shield.

4.2.4 Ultra Narrow Configuration – Auger Flighting

Ultra Narrow Configuration uses eight long bolt-on flightings (four on the left and four on the right). 18 auger fingers are recommended for this configuration.

NOTE:

You will need to drill holes in the flighting and in the drum to install the four additional flightings.

SETTING UP FLOAT MODULE AT DEALERSHIP

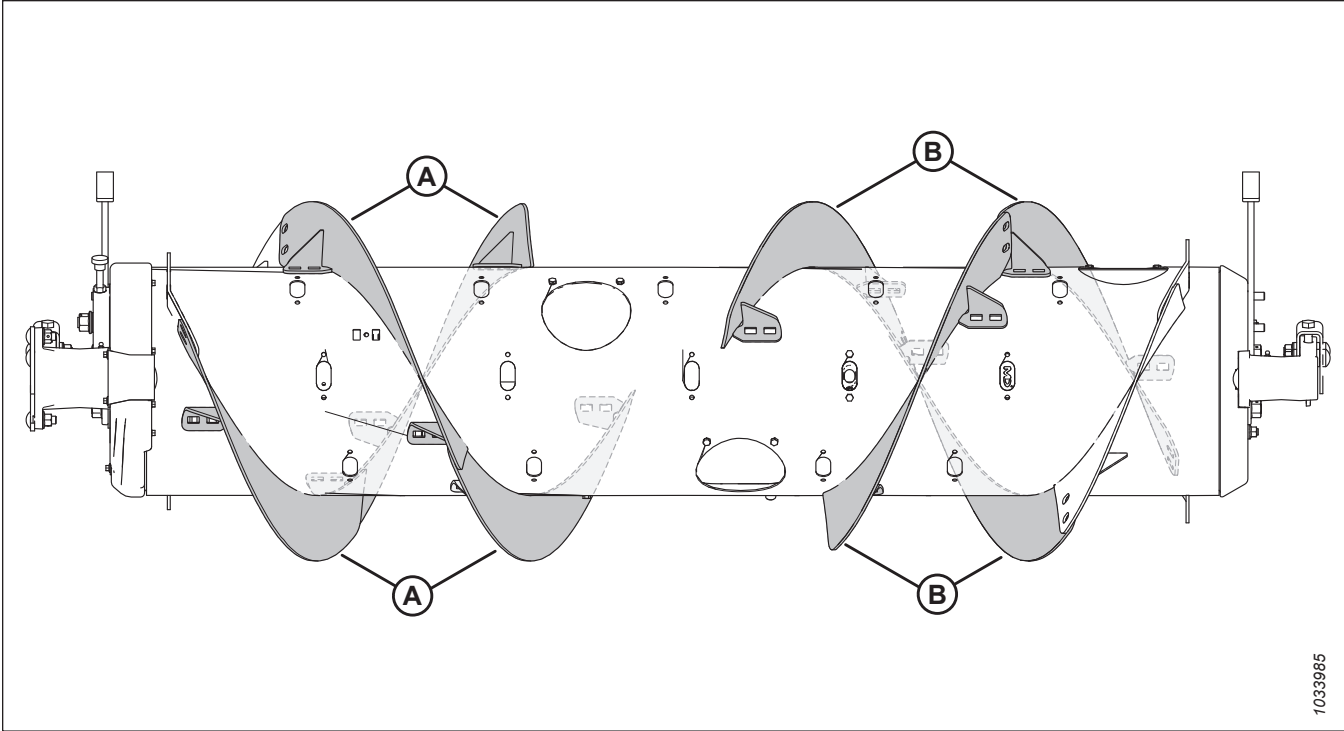


Figure 4.27: Ultra Narrow Configuration

A - Left Long Flighting (MD #287889)

B - Right Long Flighting (MD #287890)

To convert to Ultra Narrow Configuration from Narrow Configuration:

Two flighting kits (MD #287032 or B6400⁵) and some hole-drilling are required to install flightings (A). Add or remove auger fingers as necessary to optimize feeding for your combine and crop conditions.

IMPORTANT:

Extra hardware is included in these kits. Be sure to use the correct hardware at the correct location to prevent equipment damage and to maximize the performance of the auger.

- For flighting installation instructions, refer to [4.2.7 Installing Bolt-On Flighting](#), page 60.
- To install the additional flightings that require hole drilling, refer to [4.2.8 Installing Additional Bolt-On Flighting – Ultra Narrow Configuration Only](#), page 63.
- For finger installation/removal instructions, refer to [4.2.10 Installing Feed Auger Fingers](#), page 68 and [4.2.9 Removing Feed Auger Fingers](#), page 67.

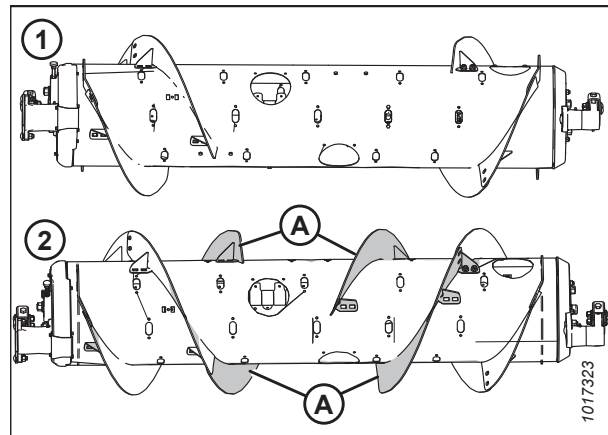


Figure 4.28: Auger Configurations – Rear View

1 - Narrow Configuration

2 - Ultra Narrow Configuration

5. MD #287032 is available only through MacDon Parts. B6400 is available only through Whole Goods.

SETTING UP FLOAT MODULE AT DEALERSHIP

To convert to Ultra Narrow Configuration from Medium, Wide, or Ultra Wide Configuration:

Four flighting kits (MD #287032 or B6400⁶) and some hole-drilling are required to convert to this configuration.

Replace existing short flightings (A)⁷ with long flightings (B). Add or remove auger fingers as necessary to optimize feeding for your combine and crop conditions.

IMPORTANT:

Extra hardware is included in these kits. Be sure to use the correct hardware in the correct location to prevent equipment damage and to maximize the performance of the auger.

- For flighting replacement instructions, refer to [4.2.6 Removing Bolt-On Flighting, page 58](#) and [4.2.7 Installing Bolt-On Flighting, page 60](#).
- To install the additional flightings that require hole drilling, refer to [4.2.8 Installing Additional Bolt-On Flighting – Ultra Narrow Configuration Only, page 63](#).
- For finger installation/removal instructions, refer to [4.2.10 Installing Feed Auger Fingers, page 68](#) and [4.2.9 Removing Feed Auger Fingers, page 67](#).

NOTE:

If converting from Ultra Wide Configuration, there is no existing bolt-on flighting to remove because that configuration uses only factory-welded flighting (A).

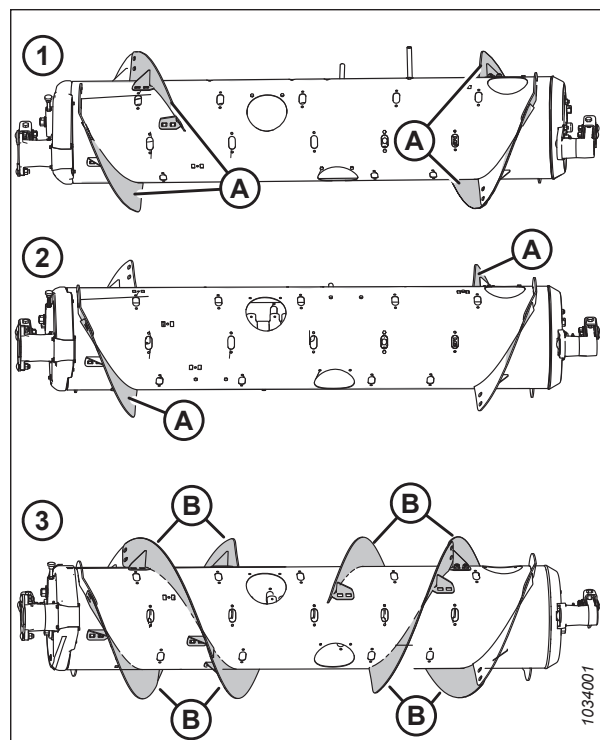


Figure 4.29: Auger Configurations – Rear View

1 - Medium Configuration

2 - Wide Configuration

3 - Ultra Narrow Configuration

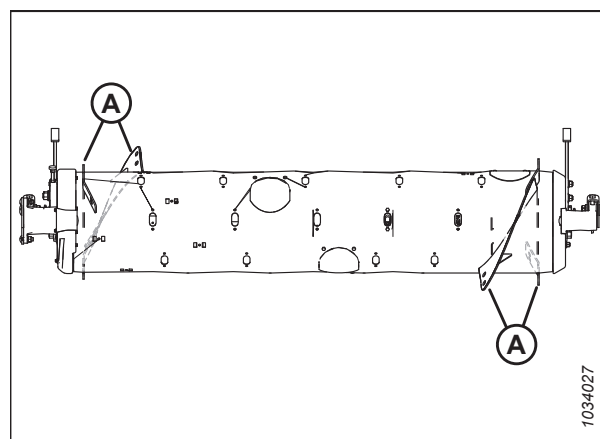


Figure 4.30: Ultra Wide Configuration

6. MD #287032 is available only through MacDon Parts. B6400 is available only through Whole Goods.

7. The quantity of existing short flightings is either 0, 2, or 4, depending on the current configuration.

SETTING UP FLOAT MODULE AT DEALERSHIP

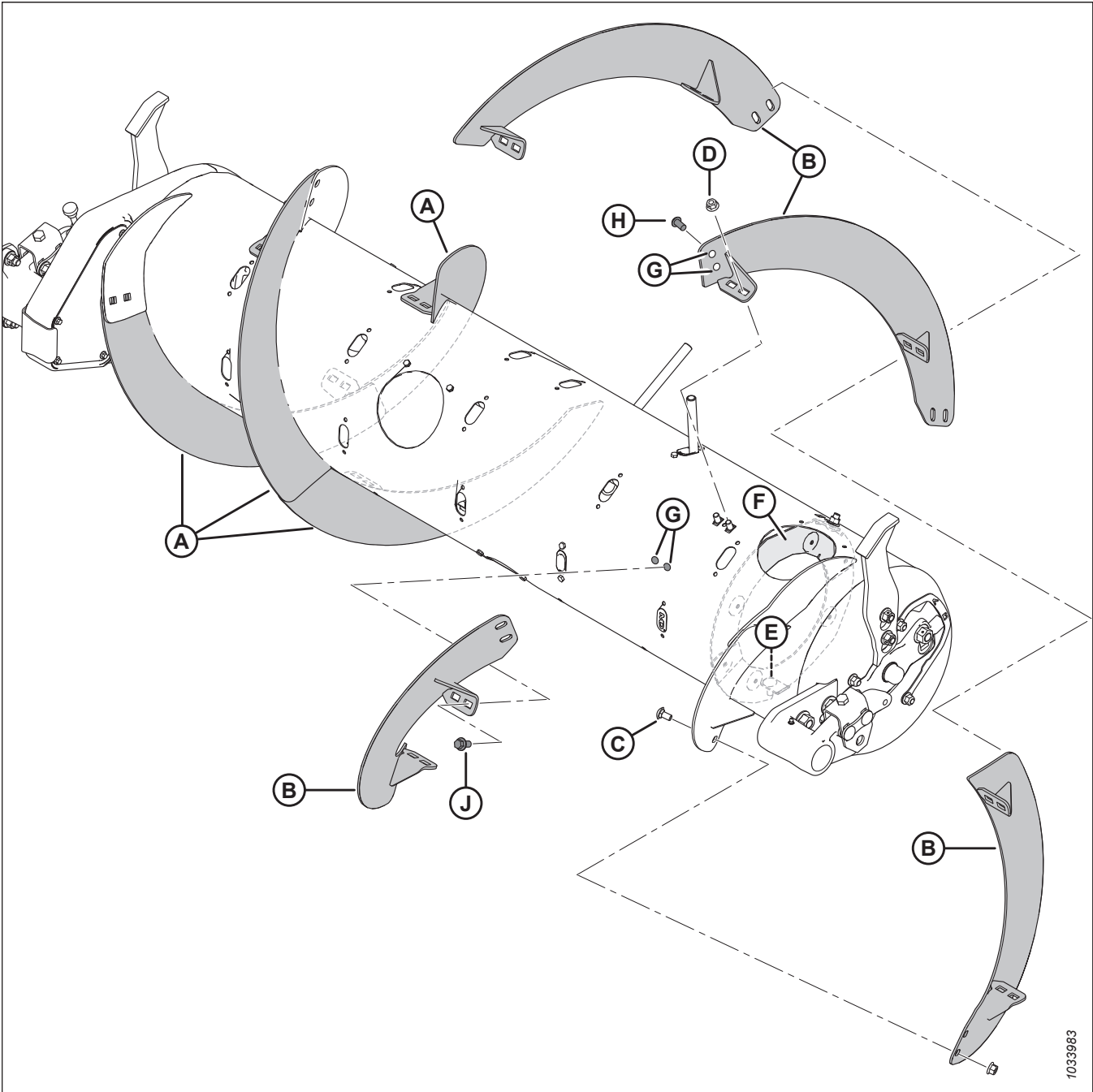


Figure 4.31: Ultra Narrow Configuration

A - Left Long Flighting (MD #287889)

B - Right Long Flighting (MD #287890)

C - M10 x 20 mm Carriage Bolt (MD #136178)

D - M10 Center Lock Flange Nut (MD #135799)

E - Existing M10 x 25 mm Carriage Bolt

F - Magnetic Reverser Shield

G - Drilled Holes – 11 mm (7/16 in.)⁸

H - M10 x 20 mm Button Head Bolt (MD #135723)⁹

J - M10 x 20 mm Flange Head Bolt (MD #152655)¹⁰

8. Each of the four additional flightings require six drilled holes to install (four in the auger and two in the adjacent flighting).

9. Used on the holes drilled in the existing flighting.

10. Used on the holes drilled in the auger.

SETTING UP FLOAT MODULE AT DEALERSHIP

NOTE:

In Ultra Narrow Configuration, one of two existing 25 mm bolts (E) is used to secure both the flighting and reverser shield together. The second 25 mm bolt is used only on the reverser shield.

4.2.5 Ultra Wide Configuration – Auger Flighting

Ultra Wide Configuration uses no bolt-on flighting; only factory-welded flighting is responsible for conveying the crop. A total of 30 auger fingers is recommended for this configuration.

NOTE:

This configuration may increase combine capacity on wide feeder house combines in certain crop conditions.

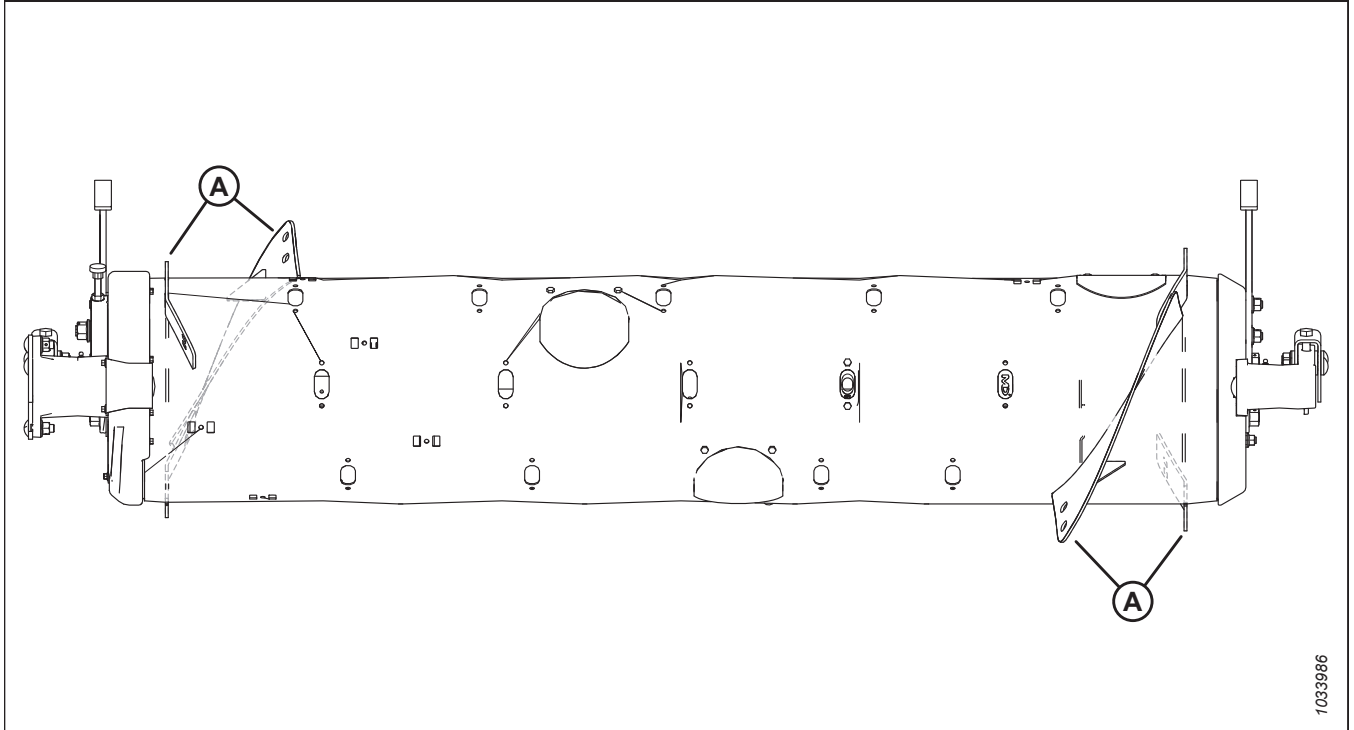


Figure 4.32: Ultra Wide Configuration

A - Factory-Welded Flighting

SETTING UP FLOAT MODULE AT DEALERSHIP

To convert to Ultra Wide Configuration:

Remove all existing bolt-on flightings (A) from the auger and install additional auger fingers if required. A total of 30 auger fingers is recommended for this configuration.

- For flighting removal instructions, refer to [4.2.6 Removing Bolt-On Flighting, page 58](#).
- For finger installation instructions, refer to [4.2.10 Installing Feed Auger Fingers, page 68](#).

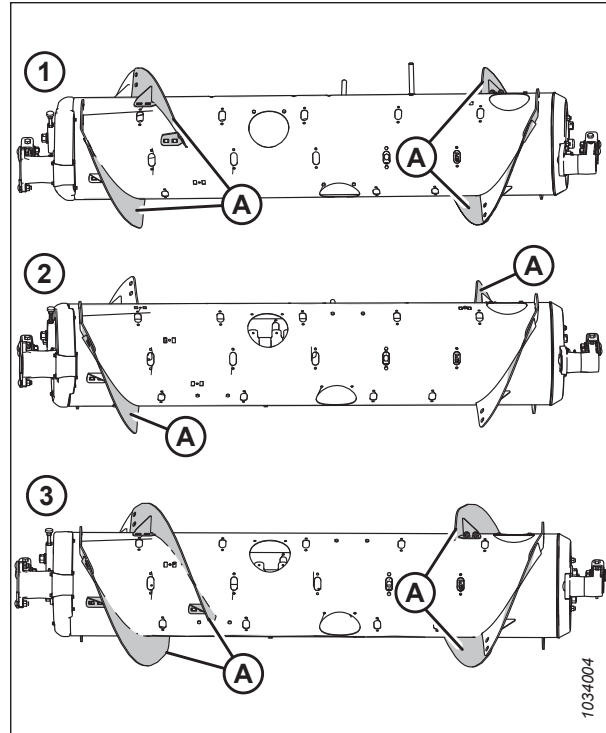


Figure 4.33: Auger Configurations – Rear View

1 - Medium Configuration

2 - Wide Configuration

3 - Narrow Configuration

4.2.6 Removing Bolt-On Flighting

Remove bolt-on flighting as required to configure the feed auger for the combine.

For information on the different flighting configurations, refer to [4.2 FM100 Feed Auger Configurations, page 42](#).

DANGER

To prevent bodily injury or death from the unexpected start-up or fall of a raised machine, always stop the engine and remove the key before leaving the operator's seat, and always engage the safety props before going under the machine for any reason.

1. To improve access, remove the float module from the combine. For instructions, refer to the header operator's manual.

NOTE:

All illustrations in this procedure show the feed auger separated from the float module for clarity. The procedure can be performed with the feed auger installed in the float module.

SETTING UP FLOAT MODULE AT DEALERSHIP

2. On the right side of the auger, rotate the auger to gain access to bolts (A).
3. Remove and retain bolts (A) and access cover (B). If necessary, remove multiple access covers.

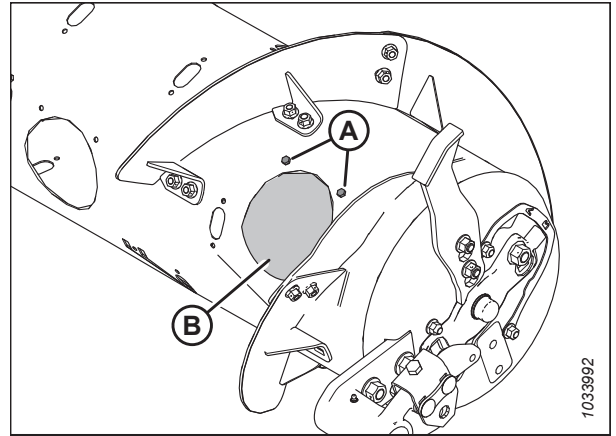


Figure 4.34: Auger Access Cover – Right Side

4. Remove bolts and nuts (B) and remove flighting (A). If flighting (A) is attached to magnetic reverser shield (D), retain the bolt and nut at location (C) to reattach reverser shield (D) to the auger after the flighting is removed.

NOTE:

Bolt (C) is longer than bolts (B).

NOTE:

When modifying or servicing the auger, keep at least one side of the reverser shield attached to the drum if possible. A completely detached reverser shield is more difficult to install because the shield is magnetically attracted to the auger.

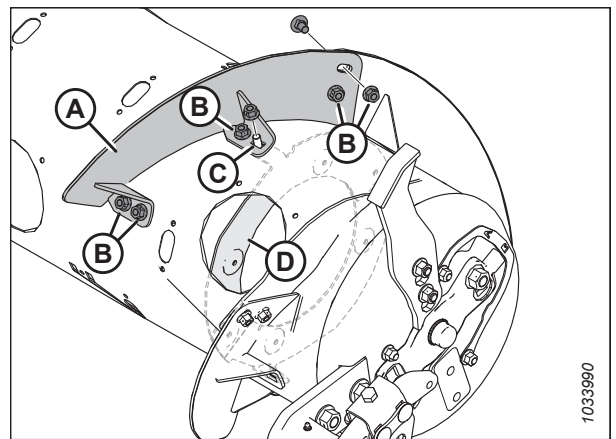


Figure 4.35: Short Flighting – Right Side

NOTE:

Long flighting (A) shown in this illustration does not attach to the reverser shield. The opposite long flighting, however, does attach to the reverser shield at location (B).

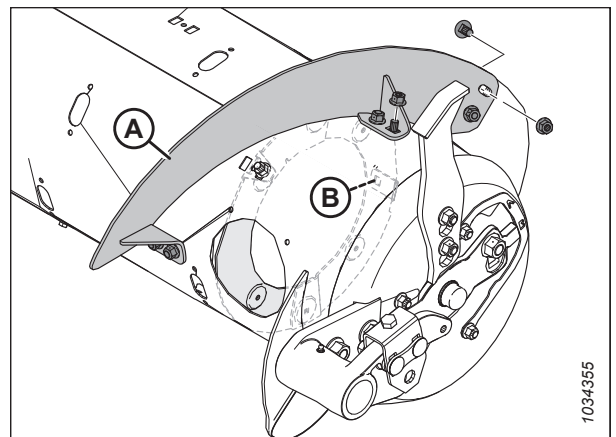


Figure 4.36: Long Flighting – Right Side

SETTING UP FLOAT MODULE AT DEALERSHIP

5. Install slot plug (A) with M6 bolt (B) and tee nut (C) at each location where the flighting was removed from the auger. Torque the hardware to 9 Nm (80 lbf-in).

NOTE:

If the plug bolts are **NOT** new, apply medium-strength threadlocker (Loctite® 243 or equivalent) to the threads of the bolts prior to installation.

NOTE:

Slot plugs are not required at locations where the reverser shield attaches to the auger.

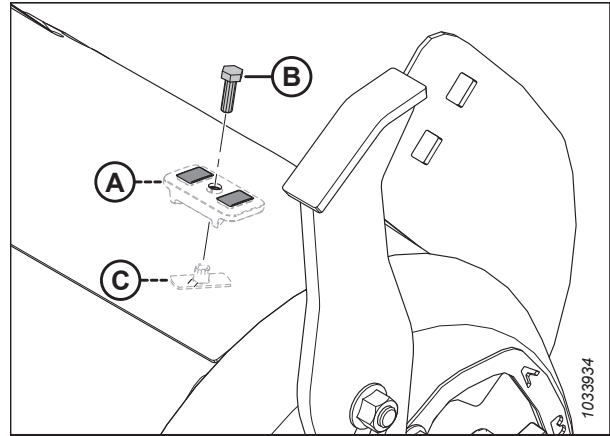


Figure 4.37: Installing Slot Plugs

6. Repeat Step 2, page 59 to Step 5, page 60 to remove flighting (A) from the left side of the auger.

NOTE:

References to the magnetic reverser shield do not apply to the left side.

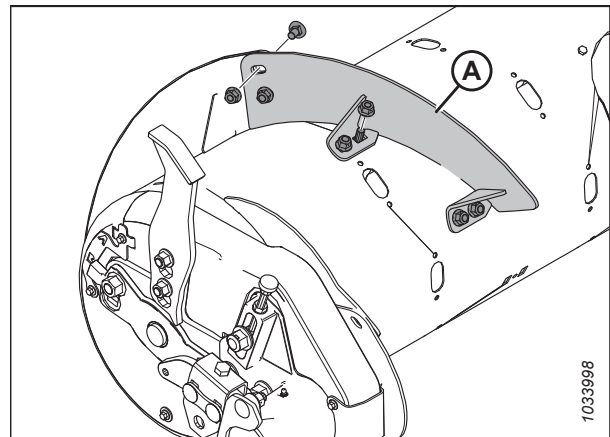


Figure 4.38: Short Flighting – Left Side

7. Reinstall access cover(s) (A) using retained bolts (B) and the welded nuts inside the auger. Apply medium-strength threadlocker (Loctite® 243 or equivalent) to the bolt threads and torque them to 9 Nm (80 lbf-in).

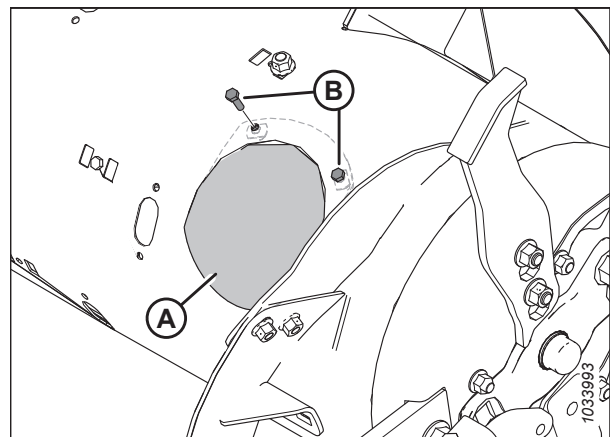


Figure 4.39: Access Cover – Right Side

4.2.7 Installing Bolt-On Flighting

Installing additional pieces of flighting onto the float module auger allows you to change the auger's configuration profile.

Before installing the bolt-on flighting, determine the quantity and type of flighting required. For information on the different flighting configurations, refer to [4.2 FM100 Feed Auger Configurations, page 42](#).

DANGER

To prevent bodily injury or death from the unexpected start-up or fall of a raised machine, always stop the engine and remove the key before leaving the operator's seat, and always engage the safety props before going under the machine for any reason.

1. To improve access, remove the float module from the combine. For instructions, refer to the header operator's manual.

NOTE:

All illustrations show the feed auger separated from the float module for clarity. The procedure can be performed with the feed auger installed in the float module.

2. Rotate the auger as needed.
3. Remove and retain bolts (A) and access cover (B). If necessary, remove and retain additional access covers.

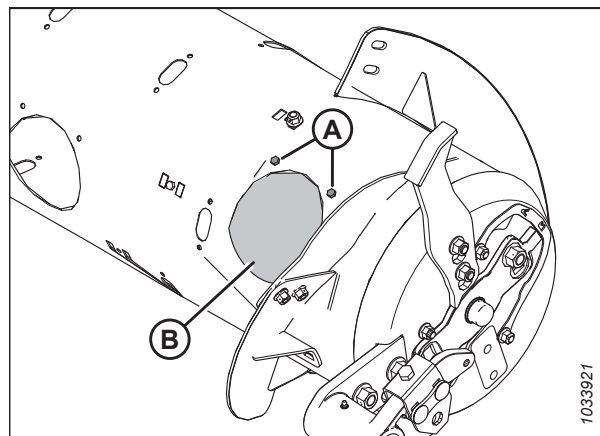


Figure 4.40: Auger Access Cover – Right

4. Line up new bolt-on flighting (A) in position to determine which slot plugs need to be removed from the auger. The new flighting overlaps on the outboard side of the adjacent flighting.

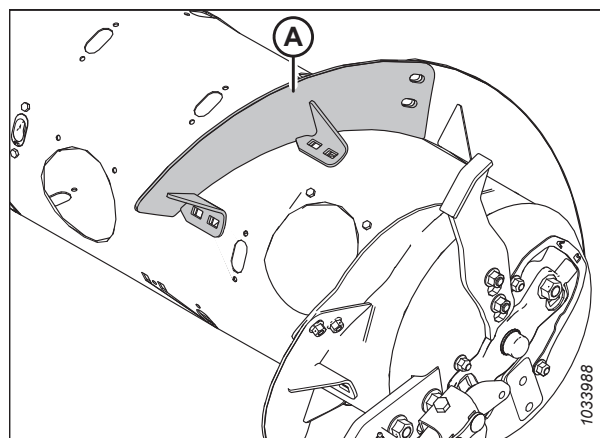


Figure 4.41: Right Side of the Auger

SETTING UP FLOAT MODULE AT DEALERSHIP

- Remove applicable slot plugs(s) (A). If the new flighting will be installed at the same location where reverser shield (B) attaches to the auger, remove and retain hardware (C). The bolts that attach the reverser shield to the auger are slightly longer than the other flighting bolts.

NOTE:

When modifying or servicing the auger, keep at least one side of the reverser shield attached to the drum if possible. A completely detached reverser shield is more difficult to install because the shield is magnetically attracted to the auger.

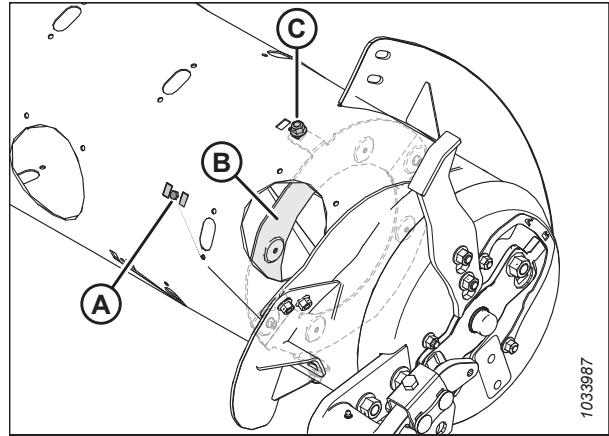


Figure 4.42: Right Side of the Auger

- Install flighting (A) using M10 x 20 mm square neck carriage bolts and center lock nuts at locations (B). If the flighting attaches to reverser shield (D), install the longer M10 x 25 mm bolt and center lock nut at location (C) to secure the magnetic reverser shield to the auger and flighting.

IMPORTANT:

The bolt heads must be installed on the inside of the auger to prevent damage to internal components.

IMPORTANT:

The bolts that attach the flightings to each other must have the bolt heads on the inboard (crop side) of the flighting.

- Torque the six nuts and bolts to 47 Nm (35 lbf-ft) to eliminate deflection on the flighting, then retorque them to 61 Nm (45 lbf-ft).

NOTE:

Long flighting (A) shown in this illustration does not attach to the reverser shield. The opposite long flighting does attach to the reverser shield at location (B).

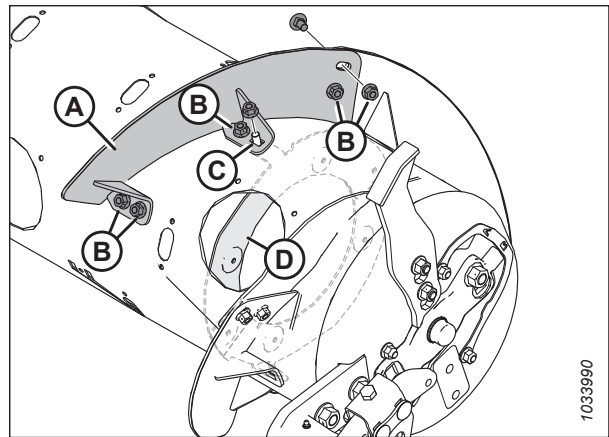


Figure 4.43: Short Flighting - Right

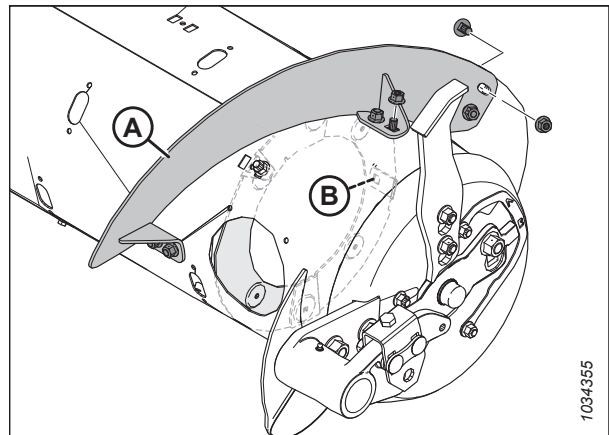


Figure 4.44: Long Flighting - Right

SETTING UP FLOAT MODULE AT DEALERSHIP

- Repeat Step 2, page 61 to Step 7, page 62 to install flighting (A) on the left side of the auger. References to the magnetic reverser shield do not apply to the left side.

NOTE:

Flighting performs best when no gaps are present. If desired, use silicone sealant to fill the gaps.

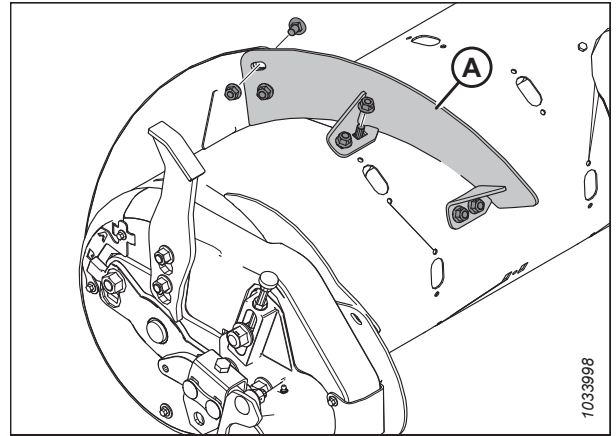


Figure 4.45: Short Flighting – Left

- Reinstall access cover(s) (A) using retained bolts (B) and the welded nuts inside the auger. Coat the bolts with medium-strength threadlocker (Loctite® 243 or equivalent) and torque them to 9 Nm (80 lbf-in).

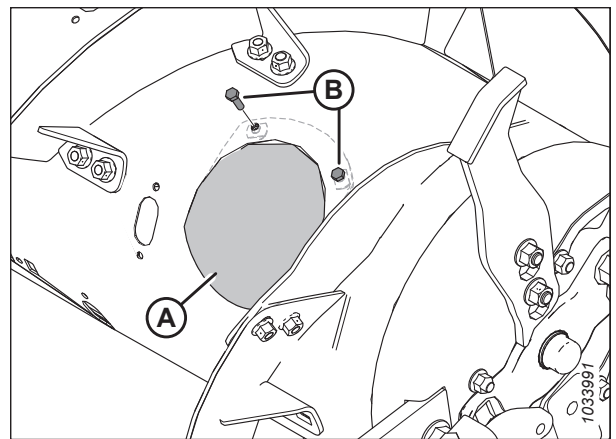


Figure 4.46: Access Cover – Right

- If converting to Ultra Narrow Configuration and drilling is required to install the remaining flighting, proceed to 4.2.8 *Installing Additional Bolt-On Flighting – Ultra Narrow Configuration Only*, page 63.

4.2.8 Installing Additional Bolt-On Flighting – Ultra Narrow Configuration Only

When converting to the Ultra Narrow Configuration, some hole-drilling is required to install the additional flighting.

NOTE:

This procedure assumes that the feed auger is currently in the Narrow Configuration (i.e. four long flightings [A] installed).

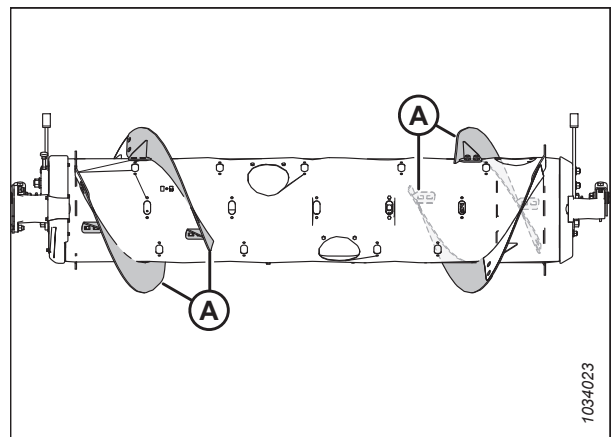


Figure 4.47: Narrow Configuration

SETTING UP FLOAT MODULE AT DEALERSHIP

To install the four additional long flightings for the Ultra Narrow Configuration, follow these steps:

DANGER

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

1. To improve access and ease installation, remove the float module from the combine. For instructions, refer to the header operator's manual or technical manual.

NOTE:

All illustrations show the feed auger separated from the float module for clarity. The procedure can be performed with the feed auger installed in the float module.

2. On the left side of the auger, rotate the auger so that the section of the drum where flighting (A) will be installed faces upward.
 3. Place new flighting (A) outboard of flighting (B) on the left side of the auger, as shown.
 4. Mark hole locations (C) onto flighting (B).
 5. Remove the access cover nearest to flighting (B). Retain the hardware for reassembly.
 6. Remove bolt-on flighting (B) from the auger. Retain the hardware for reassembly.
7. Drill two 11 mm (7/16 in.) holes at marked locations (A) on the already-installed flighting.
 8. Reinstall the bolt-on flighting.

IMPORTANT:

Ensure that the carriage bolt heads are on the inside of the auger to prevent damage to the auger's internal components.

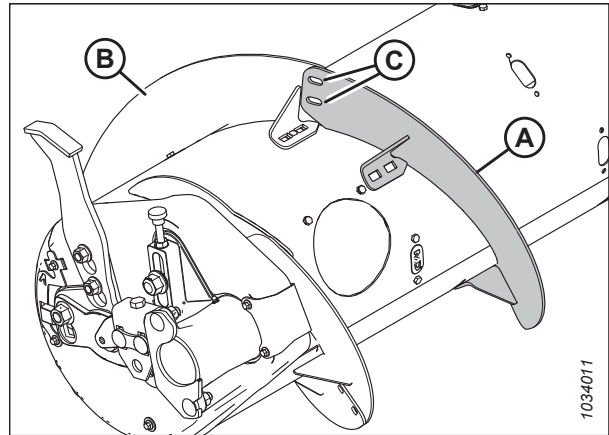


Figure 4.48: Left Side of Auger

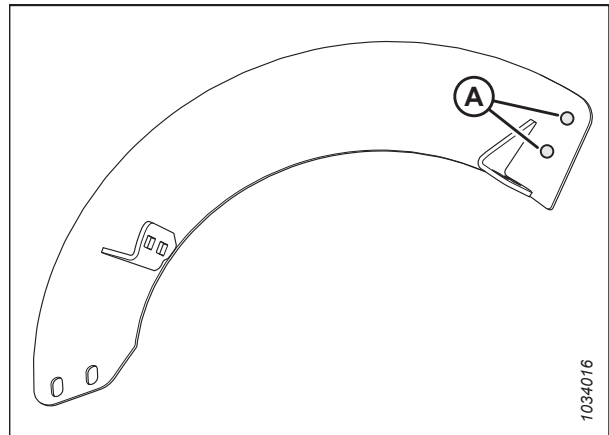


Figure 4.49: Drilling Locations

SETTING UP FLOAT MODULE AT DEALERSHIP

- Place new flighting (A) into position on the auger, outboard of flighting (B).
- Secure the flighting with two M10 x 20 mm button head bolts and center lock nuts (C).

IMPORTANT:

Ensure that the bolt heads are on the inboard side (that is, the crop-facing side) of the flighting, and that the nuts are on the outboard side of the flighting.

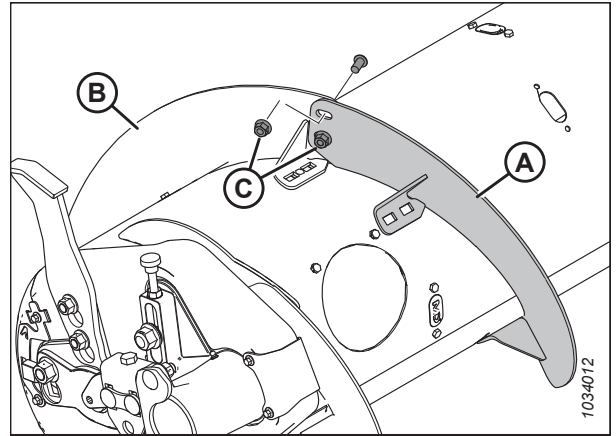


Figure 4.50: Left Side of Auger

- Stretch flighting (A) to fit the auger tube as shown. Use the slotted holes on the flighting to achieve the best fit around the auger tube.

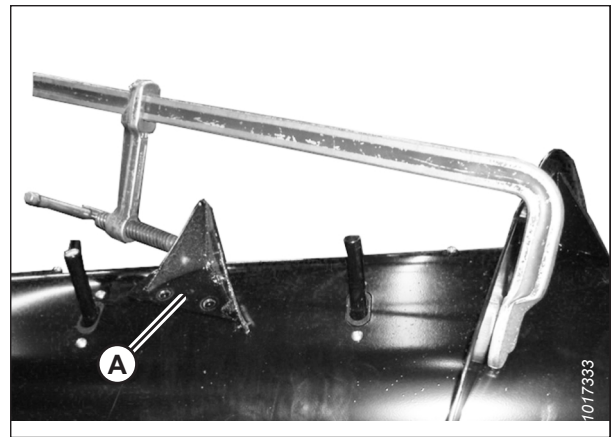


Figure 4.51: Auger Flighting – Stretched Axially

- Scribe marks (A) through the bolt holes on the flighting.
- Drill 11 mm (7/16 in.) holes in the auger tube at marks (A).

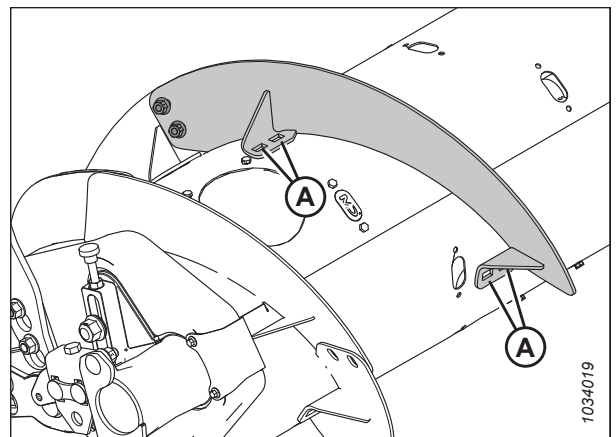


Figure 4.52: Auger Flighting – Left Side

SETTING UP FLOAT MODULE AT DEALERSHIP

14. Remove and retain nearest access cover(s) (B).
15. Secure the flighting to the auger at drilled holes (A) using four M10 x 20 mm flange head bolts and four center lock nuts.
16. Repeat Step 2, page 64 to Step 15, page 66 for the other flighting on the left side of the auger.

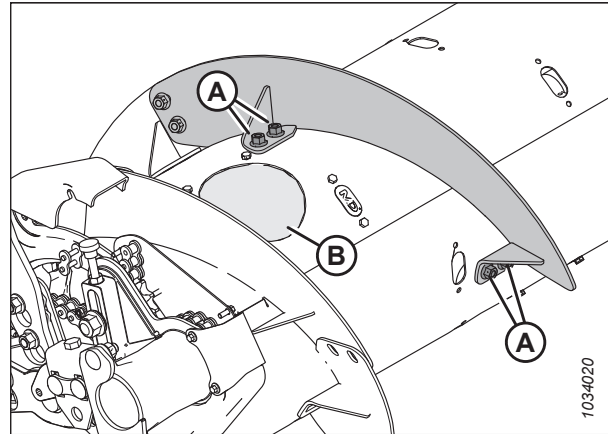


Figure 4.53: Auger Flighting – Left Side

17. Repeat Step 2, page 64 to Step 15, page 66 for both flightings on the right side of the auger.

NOTE:

One of flightings (A) on the right side attaches to magnetic reverser shield (C) with bolt (B). Bolt (B) is longer than the other flighting bolts and must be reused at the same location when reattaching the flighting and reverser shield to the auger.

NOTE:

When modifying or servicing the auger, keep at least one side of the reverser shield attached to the drum if possible. A completely detached reverser shield is more difficult to install because the shield is magnetically attracted to the auger.

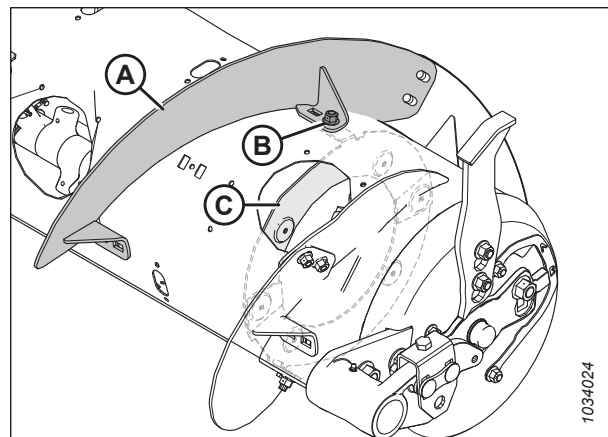


Figure 4.54: Auger Flighting – Right Side

18. Torque all flighting nuts and bolts first to 47 Nm (35 lbf-ft) to eliminate any deflection on the flighting, and then torque the nuts and bolts again to 61 Nm (45 lbf-ft).

NOTE:

Flighting performs best when no gaps are present between the flighting and the auger drum. Silicone sealant can be used to fill any gaps.

19. Add or remove auger fingers as necessary to optimize feeding for your combine and crop conditions. For instructions, refer to 4.2.10 *Installing Feed Auger Fingers*, page 68 or 4.2.9 *Removing Feed Auger Fingers*, page 67.
20. If you are not adding or removing any auger fingers, reinstall all access covers and secure them with the retained hardware. Apply medium-strength threadlocker (Loctite® 243 or equivalent) to the bolt threads and torque the hardware to 9 Nm (80 lbf-in).

4.2.9 Removing Feed Auger Fingers

The feed auger has fingers that extend and retract to pull crop into the feeder house on the combine. Fingers may need to be removed from the auger drum to change its configuration profile.

1. Remove bolts (A) and access cover (B) closest to the finger you are removing. Retain the parts for reinstallation.

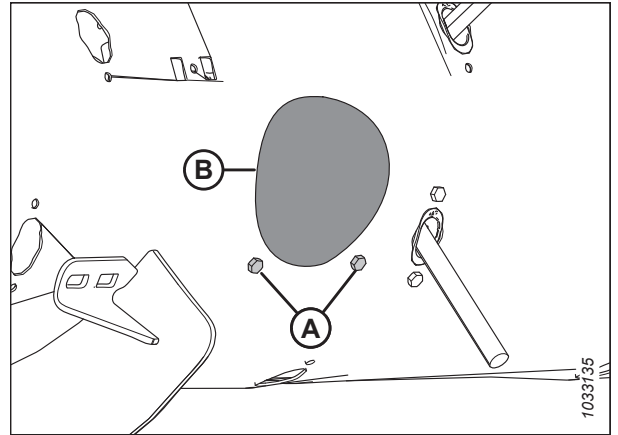


Figure 4.55: Auger Access Hole Cover

2. Remove hair pin (A). Pull finger (B) out of finger holder (C).
3. If the finger is broken, remove any remnants from holder (C) and from inside the drum.

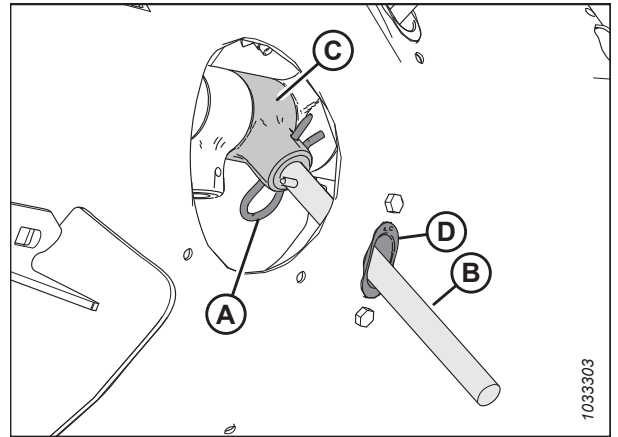


Figure 4.56: Auger Finger

4. Remove and retain two bolts (A) and tee nuts (not shown) securing finger guide (B) to the auger. Remove guide (B).

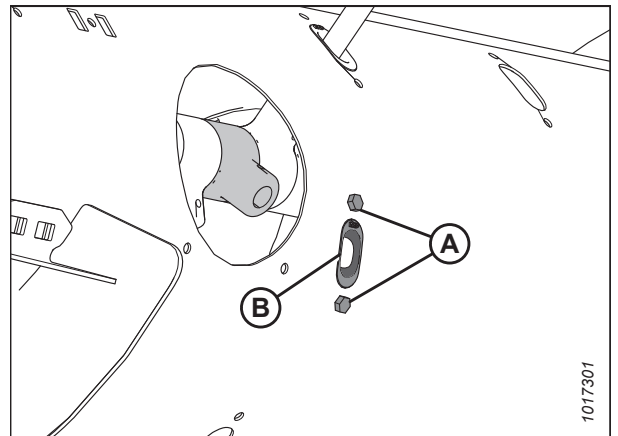


Figure 4.57: Auger Finger Hole

SETTING UP FLOAT MODULE AT DEALERSHIP

5. Position plug (A) into the hole from inside the auger. Secure the plug with two M6 hex head bolts (B) and tee nuts. Torque the bolts to 9 Nm (80 lbf-in).

NOTE:

Bolts (B) come with a threadlocker patch that will wear off if the bolts are removed. If reinstalling bolts (B), apply medium-strength threadlocker (Loctite® 243 or equivalent) before installation.

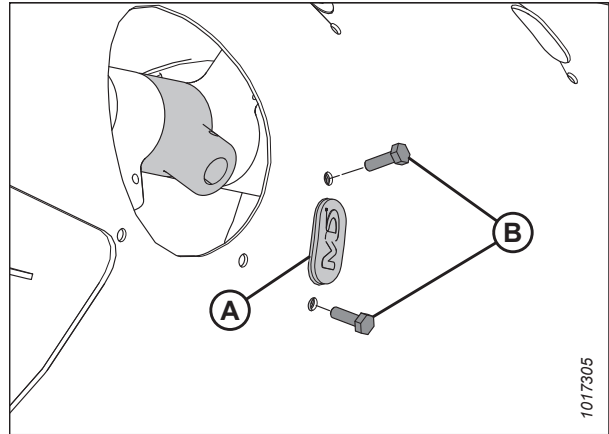


Figure 4.58: Plug

6. Secure access cover (B) in place with bolts (A). Torque the bolts to 9 Nm (80 lbf-in).

NOTE:

Bolts (A) come with a threadlocker patch that will wear off if the bolts are removed. If reinstalling bolts (A), apply medium-strength threadlocker (Loctite® 243 or equivalent) before installation.

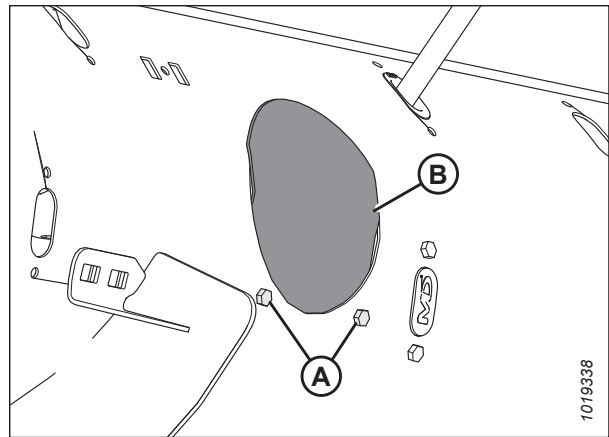


Figure 4.59: Auger Access Hole Cover

4.2.10 Installing Feed Auger Fingers

The feed auger has fingers that extend and retract to pull crop into the feeder house on the combine. Fingers may need to be installed onto the auger drum to change its configuration profile.

1. Remove bolts (A) and access cover (B) closest to the finger you are removing. Retain the parts for reinstallation.

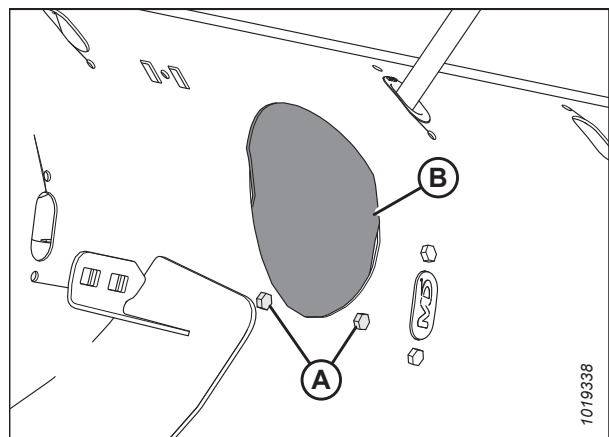


Figure 4.60: Auger Access Hole Cover

SETTING UP FLOAT MODULE AT DEALERSHIP

2. Remove two bolts (B), tee nuts (not shown), and plug (A).

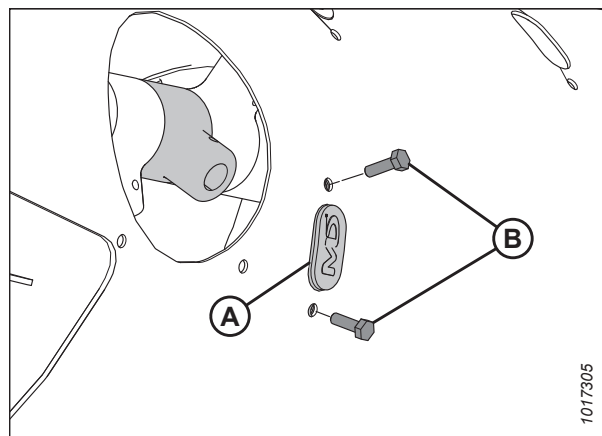


Figure 4.61: Auger Finger Hole

3. Insert guide (B) from inside the auger and secure it with bolts (A) and tee nuts (not shown).

IMPORTANT:

Always install a new guide when replacing a solid finger.

NOTE:

Bolts (A) come with a threadlocker patch that will wear off if the bolts are removed. If reinstalling bolts (A), apply medium-strength threadlocker (Loctite® 243 or equivalent) before installation.

4. Torque bolts (A) to 9 Nm (80 lbf-in).

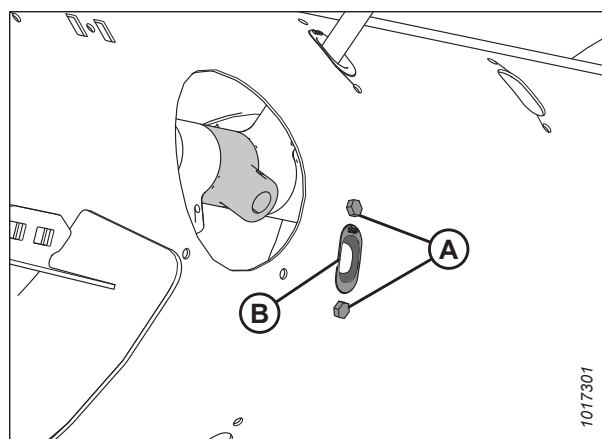


Figure 4.62: Auger Finger Hole

5. Place auger finger (A) inside the drum. Insert auger finger (A) up through the bottom of guide (B) and insert the other end into holder (C).
6. Secure the finger by inserting hairpin (D) into the holder. Ensure that the round end (S-shaped side) of the hairpin faces the chain drive side of the auger. Make sure the closed end of the hairpin points in the direction in which the auger rotates.

IMPORTANT:

Position the hairpin as described in this step to prevent the hairpin from falling out during operation. If fingers are lost, the header might not be able to feed crop into the combine properly. Fingers that fall into the drum might damage internal components.

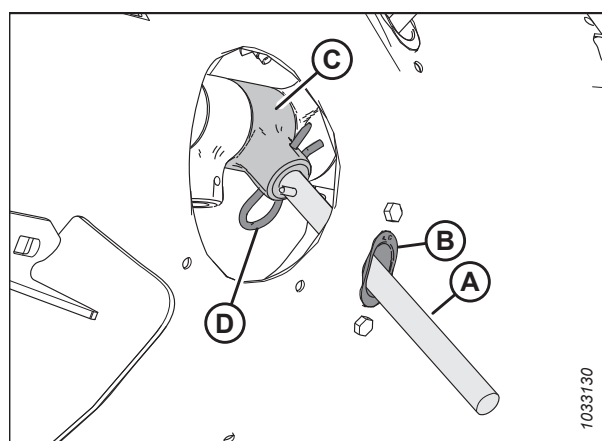


Figure 4.63: Auger Finger

SETTING UP FLOAT MODULE AT DEALERSHIP

7. Secure access cover (B) in place with bolts (A). Torque the bolts to 9 Nm (80 lbf·in).

NOTE:

Bolts (A) come with a threadlocker patch that will wear off if the bolts are removed. If reinstalling bolts (A), apply medium-strength threadlocker (Loctite® 243 or equivalent) before installation.

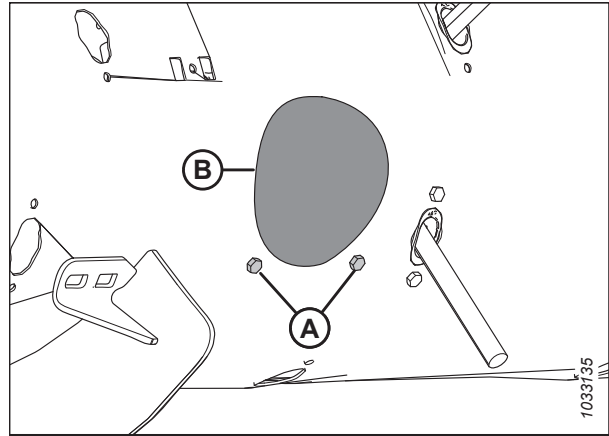


Figure 4.64: Auger Access Hole Cover

4.3 FM100 Stripper Bars

Stripper bars improve feeding in certain crops such as rice.

4.3.1 Removing Stripper Bars

Stripper bars should be removed if the header is going to be used to harvest cereal crops.

NOTE:

The following procedure does **NOT** apply to New Holland CR960, 9060, 970, 9070, and 9080 combines. For these combines, refer to [4.3.2 Feeder Deflectors – New Holland CR Series Combines, page 71](#).

If necessary, remove auger stripper bars as follows:

1. Remove four bolts (A) and the nuts securing bars (B) to the float module frame. Remove the bars.
2. Repeat the previous step for the opposite set of stripper bars.

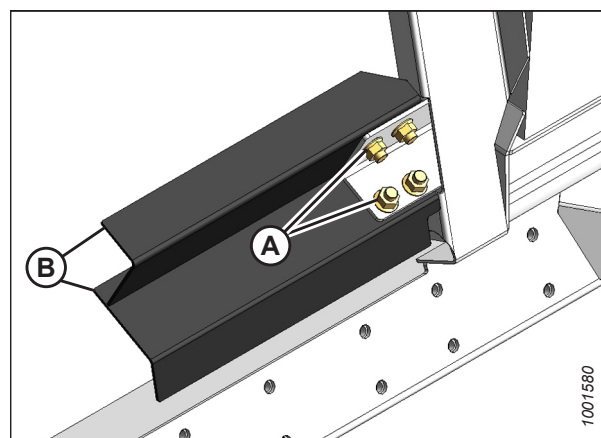


Figure 4.65: Auger Stripper Bar

4.3.2 Feeder Deflectors – New Holland CR Series Combines

On New Holland CR Series combines, feeder deflectors may need to be installed. Feeder deflectors are **NOT** necessary on New Holland CX Series combines.

For New Holland CR combines only: Short feeder deflectors have been factory-installed on the float module to improve feeding into the feeder house. Remove the feeder deflectors if necessary. For instructions, refer to [4.3.3 Replacing Feeder Deflectors on New Holland CR Combines, page 72](#).

Long feeder kits are provided for narrow feeder house combines and can be installed to replace the short feeder deflectors.

Table 4.1 FM100 Feeder Kits for CR Model Combines

Feeder House Size	Feeder Kit Size	MacDon Part Number
1250–1350 mm (49–65 in.)	Short: 200 mm (7 7/8 in.)	MD #213613, 213614
1100 mm (43-1/2 in.) and below	Long: 325 mm (12 13/16 in.)	MD #213592, 213593

4.3.3 Replacing Feed Deflectors on New Holland CR Combines

Feed deflectors are used with New Holland CR combines only.

1. Remove two bolts and nuts (B) securing feed deflector (A) to the float module frame, and remove the feed deflector.
2. Position replacement feed deflector (A), and secure it with bolts and nuts (B) (ensure the nuts are facing the combine). Do **NOT** tighten the nuts.

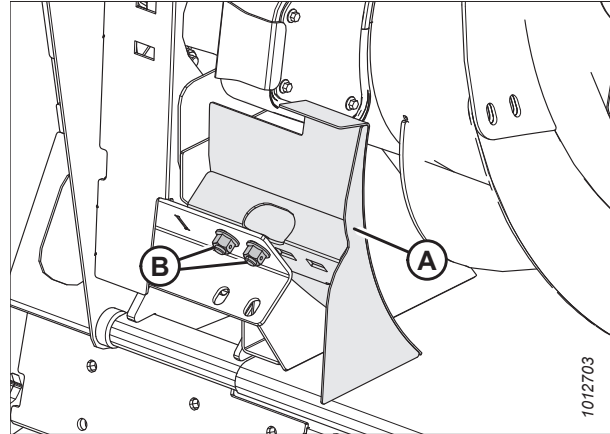


Figure 4.66: Feed Deflector

3. Adjust deflector (A) so that distance (C) between the pan and the deflector is 4–6 mm (5/32–1/4 in.).
4. Tighten nuts (B).
5. Repeat the previous steps for the opposite deflector.
6. Attach the header to the combine. For instructions, refer to Chapter 5 *Attaching Header to Combine*, page 73.
7. After attaching the header to the combine, fully extend the center-link and check the gap between the deflector and pan. Maintain the 4–6 mm (5/32–1/4 in.) gap.

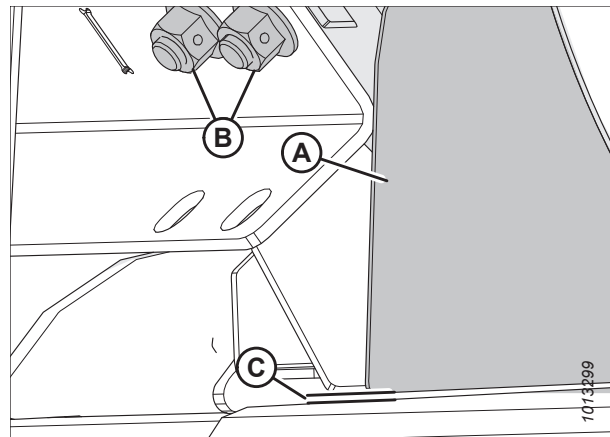


Figure 4.67: Pan and Deflector Distance

Chapter 5: Attaching Header to Combine

Once the header has been assembled at the dealership, it should be attached to a combine for final assembly and testing. The procedures for attaching the header to a combine vary depending on the combine model. Refer to the following table for the appropriate procedure:

Table 5.1 Combine Model Header Attachment Procedures

Combine	Refer to
AGCO Gleaner® R and S Series; Challenger® 660, 670, 680B, 540C, and 560C; Massey Ferguson® 9690, 9790, 9895, 9520, 9540, and 9560	<i>5.1 Challenger®, Gleaner, and Massey Ferguson® Combines, page 74</i>
IDEAL™	<i>5.2 IDEAL™ Series Combines, page 82</i>
Case IH 7010, 8010, 7120, 8120, 9120, 5088, 6088, 7088, 5130, 6130, 7130, 7230, 8230, and 9230	<i>5.3 Case IH Combines, page 85</i>
CLAAS 500, 600, and 700 (R Series)	<i>5.5 CLAAS Combines, page 107</i>
John Deere 60, 70, S, and T Series	<i>5.4 John Deere Combines, page 92</i>
New Holland CR and CX	<i>5.6 New Holland Combines, page 112</i>

IMPORTANT:

Ensure that the applicable functions (automatic header height control [AHHC], Draper Header Option, Hydraulic Center-Link Option, Hydraulic Reel Drive, and the like) are enabled on the combine and in the combine computer. Failure to do so may result in improper header operation.

NOTE:

Ensure the combine feeder house lugs are free of dirt and debris. Check the locking mechanism for freedom of movement, and ensure that it is free of damage; make any necessary repairs to the locking mechanism prior to attaching the header to the combine.

NOTE:

Ensure all electrical and hydraulic connectors are clean and free of dust and debris.

5.1 Challenger®, Gleaner, and Massey Ferguson® Combines

To attach the header to or to detach it from a Challenger®, Gleaner, or Massey Ferguson® combine, follow the relevant procedure in this section.

5.1.1 Installing Reel Fore-Aft / Header Tilt Selector Switch and Harness

Connect the header's electrical components to the combine after physically attaching the combine to the header.

Gleaner combines prior to model year 2014 are not equipped to accommodate hydraulic reel fore-aft and header tilt options. The following additional items are required and not supplied by MacDon:

- Valve (A) (AGCO #71389745)
- Hoses
- Electrical components
- Couplers

NOTE:

Model year 2014 and later Gleaner combines will have the above parts factory-installed.

To enable the reel fore-aft and header tilt options, install the switch and harness as follows:

⚠ DANGER

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

1. Lower and tilt the combine feeder house all the way forward. This will ensure that the electrical harnesses has sufficient slack.
2. Shut down the engine, and remove the key from the ignition.
3. Disconnect the negative cable from the combine battery. For instructions, refer to the combine manual.

IMPORTANT:

If you do not disconnect the battery before connecting the cab draper control harness to the combine's auxiliary power connectors, electrical components may be damaged.

4. At the multicoupler, connect the cab draper extension harness (MD #304211) to the float module as follows:
 - **Connector C3A** – If the In-Cab Side Draper Speed Control kit has been installed, plug connector C3B on the valve drive harness into connector C3A. If the In-Cab Side Draper Speed Control kit has not been installed, leave C3A unconnected.
 - **Connector C5B** – Plug connector C5B (A) into connector C5A on the completion harness.

NOTE:

Connectors C3A and C5B are shipped with caps. The caps need to be removed in order to connect these connectors.

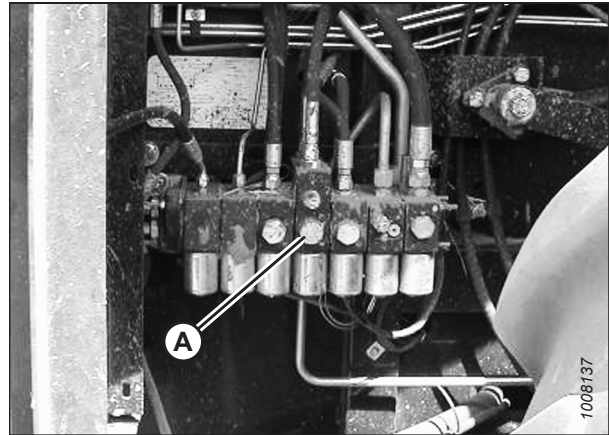


Figure 5.1: Converted Gleaner R72 Shown

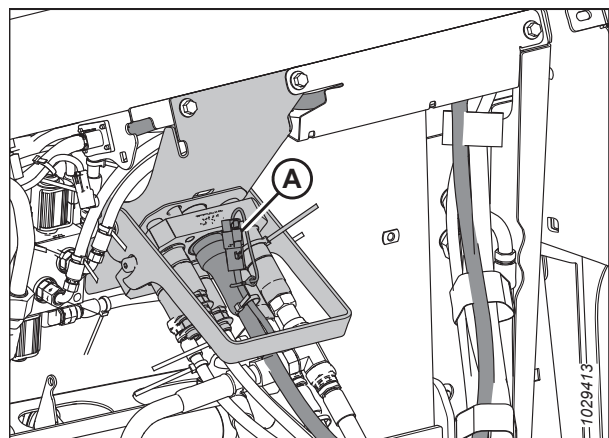


Figure 5.2: Multicoupler on Float Module

ATTACHING HEADER TO COMBINE

5. Route cab draper extension harness (A) along the side of the combine feeder house to the underside of the combine cab.



Figure 5.3: Switch Harness Routing

6. Use cable ties (MD #16661) to fasten cab draper extension harness (A) to the main harness on the left side of the feeder house and under the cab floor at locations (B).

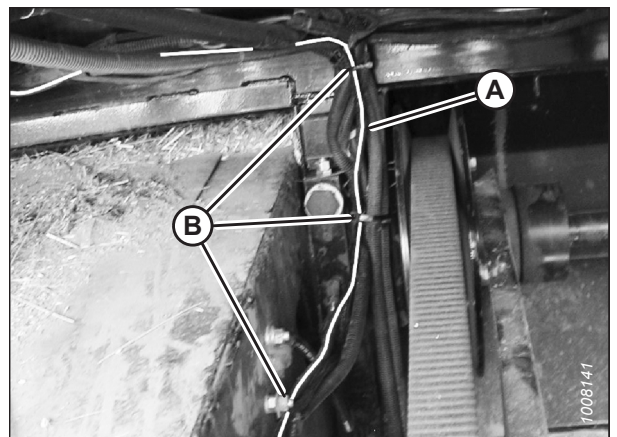


Figure 5.4: Left Side of Feeder House

7. Use cable ties (MD #16661) to fasten cab draper extension harness (A) to the main harness under the cab floor at location (B).

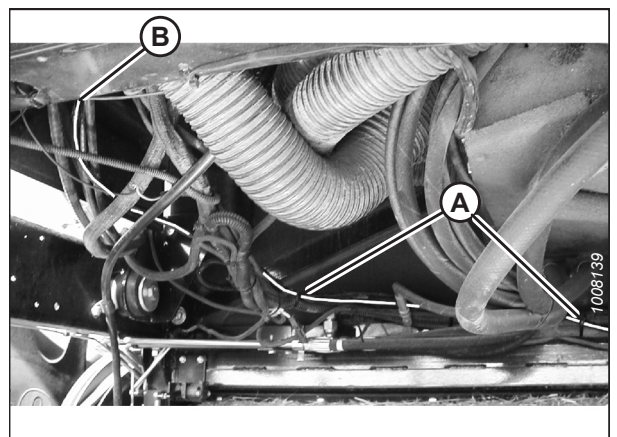


Figure 5.5: Harness under Right Side of Cab Floor

ATTACHING HEADER TO COMBINE

8. Route cab draper extension harness (A) under the cab, through the cab floor, and into the console at foam seal (B).

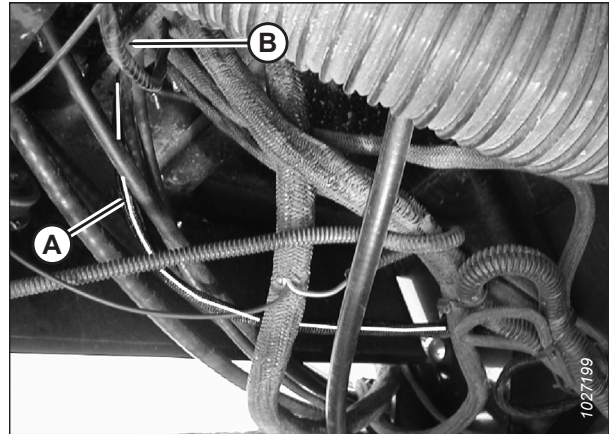


Figure 5.6: Harness through Cab Floor

9. Inside the cab, remove the console cover as shown.
10. Connect the cab draper extension harness to the cab draper control harness (MD #304210) as follows:
 - Plug C4B into C4A.
 - Plug C6B into C6A.
11. Connect the cab draper control harness to the power supply inside the console at location (A).
 - The red wire from the inline fuse goes to switched power supply (A).
 - The double black wire goes to the ground.

IMPORTANT:

Connecting the draper control harness to an unswitched power supply or cigarette lighter (using harness MD #220570, provided in the kit) will supply constant power to the header tilt side of the solenoid valve and drain the combine battery during extended shutdown periods.

12. Route the draper control harness through grommet (B), and then replace the cover.

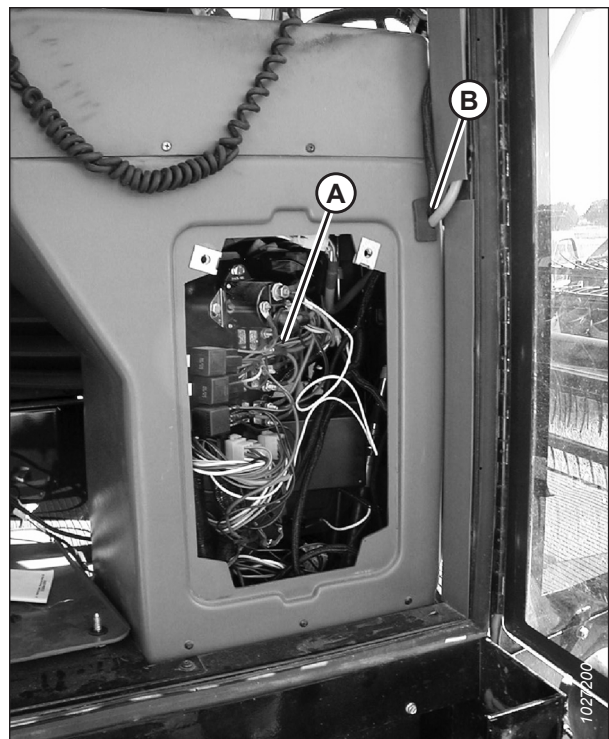


Figure 5.7: Console with Cover Removed

ATTACHING HEADER TO COMBINE

13. Insert the rocker switch (MD #109064) into the rocker switch support (MD #158377). Ensure the lugs on the underside of the support have secured the switch.
14. Mount the rocker switch support onto console (A) in a comfortable position.
15. Connect the harness to the switch with the red wire to center terminal (B), and with the white wire to either outer terminal (C).
16. If the In-Cab Side Draper Speed Control kit has been installed, connect connector P551 to the speed control rheostat. If the In-Cab Side Draper Speed Control kit has not been installed, leave connector P551 unconnected.
17. Reconnect the battery cable.
18. Operate the switch to select either the REEL FORE-AFT or the HEADER TILT function.

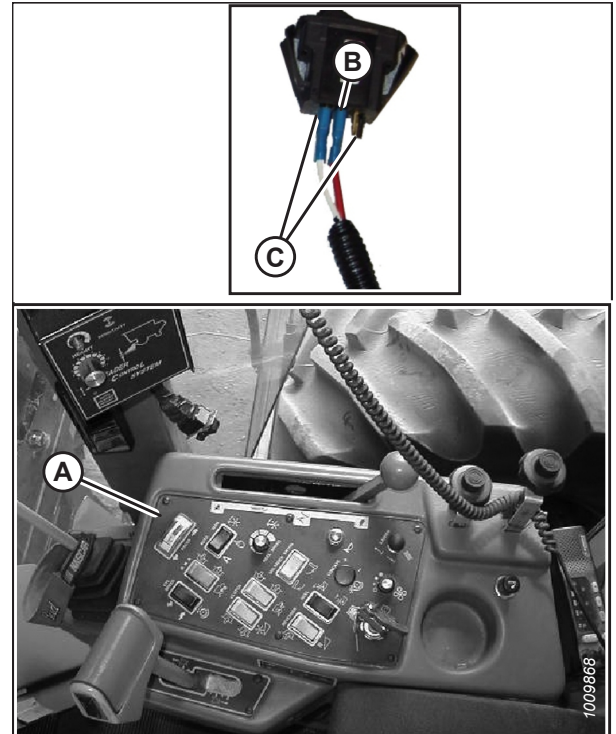


Figure 5.8: Switch and Console

5.1.2 Attaching Header to Challenger®, Gleaner, or Massey Ferguson® Combines

Physically attach the float module to the combine before connecting the multicoupler and driveline.

DANGER

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

1. Shut down the engine, and remove the key from the ignition.
2. Use lock handle (B) to retract lugs (A) at the base of the feeder house.

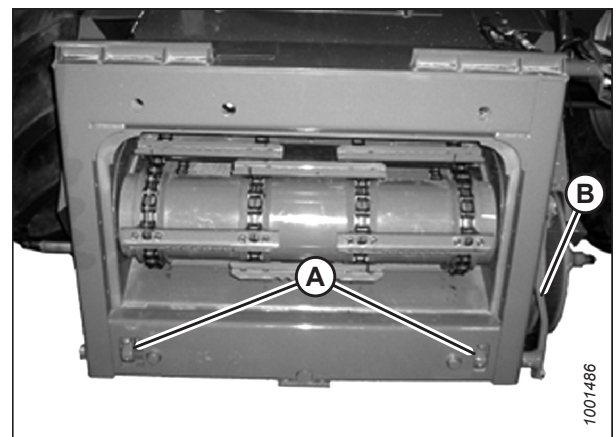


Figure 5.9: Feeder House

ATTACHING HEADER TO COMBINE

DANGER

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

3. Start the engine and slowly approach the header until the feeder house is directly under float module top cross member (A) and alignment pins (C) (refer to Figure 5.11, page 78) on the feeder house are aligned with holes (B) in the float module frame.

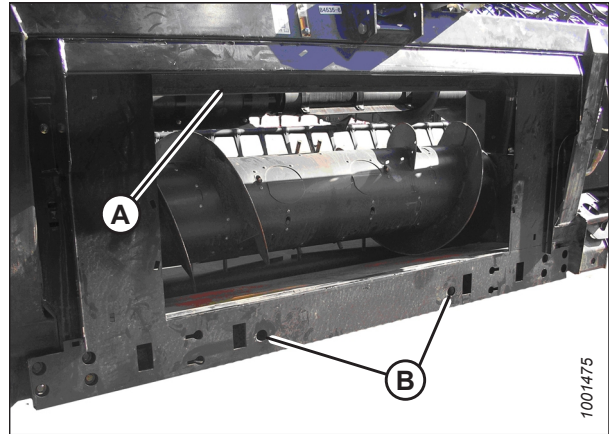


Figure 5.10: Float Module

NOTE:

Your combine feeder house may not be exactly as shown.

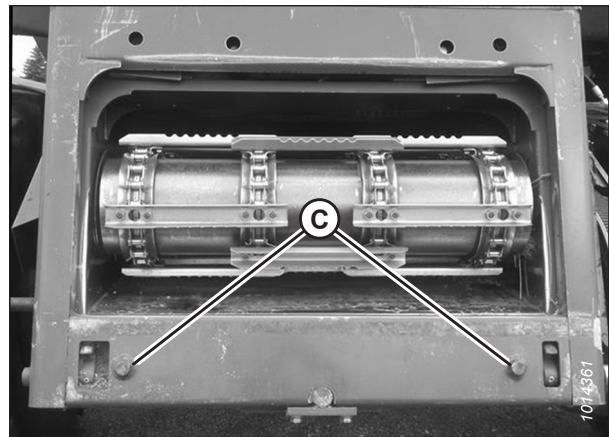


Figure 5.11: Alignment Pins

4. Raise the feeder house slightly to lift the header, ensuring feeder house saddle (A) is properly engaged in the float module frame.
5. Shut down the engine, and remove the key from the ignition.

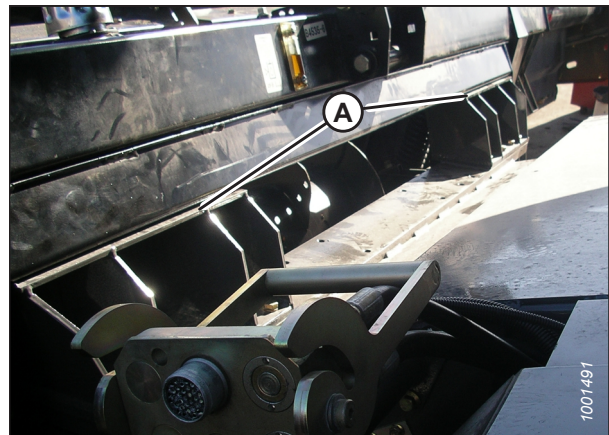


Figure 5.12: Feeder House and Float Module

ATTACHING HEADER TO COMBINE

- Use lock handle (B) to engage lugs (A) with the float module.

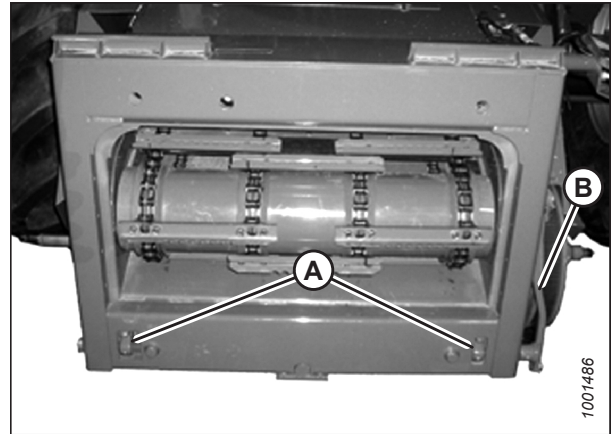


Figure 5.13: Feeder House

DANGER

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

- Start the engine. For instructions, refer to the combine operator's manual.
- Lower the header fully.

NOTE:

The float module is equipped with a multicoupler that connects to the combine. If your combine is equipped with individual connectors, a multicoupler kit (single-point connector) must be installed. Refer to Table 5.2, page 79 for a list of kits and installation instructions that are available through your combine Dealer.

Table 5.2 Multicoupler Kits

Combine	Kit Number
Challenger®	71530662
Gleaner R/S Series	71414706
Massey Ferguson®	71411594

- Raise handle (A) to release multicoupler (B) from the float module.

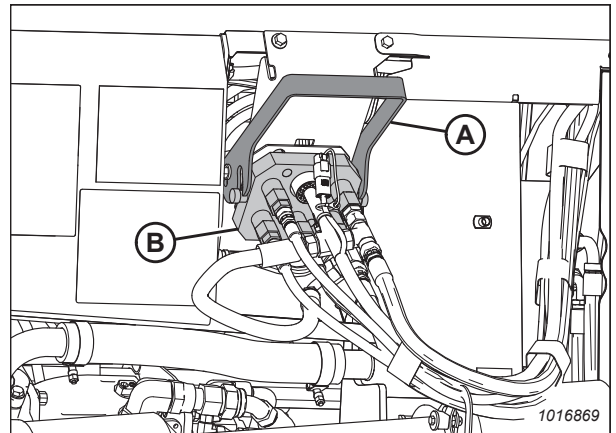


Figure 5.14: Float Module Multicoupler

ATTACHING HEADER TO COMBINE

10. Push handle (A) on the combine to the fully-open position.
11. Clean the mating surfaces of multicoupler (B) and the receptacle if necessary.

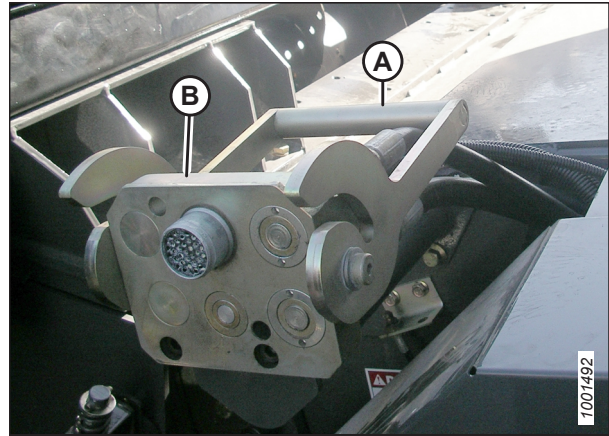


Figure 5.15: Combine Receptacle

12. Position multicoupler (A) onto the combine receptacle, and pull handle (B) to fully engage the multicoupler into the receptacle.
13. Connect reel fore-aft/header tilt selector harness (C) to combine harness (D).

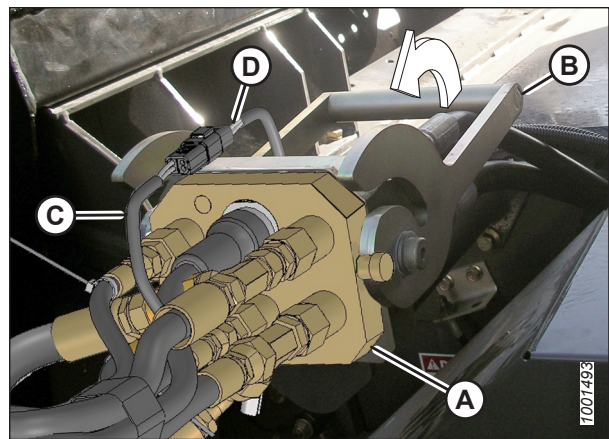


Figure 5.16: Multicoupler

14. Detach safety chain (C) from support bracket (B).
15. Pull collar (D) back to release driveline (A) from the support bracket. Remove the driveline from the support bracket.

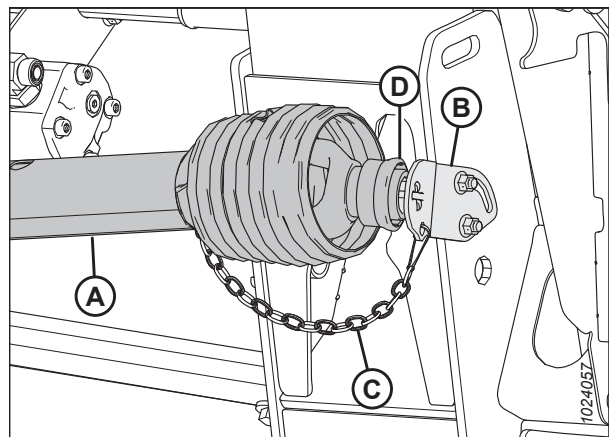


Figure 5.17: Driveline

ATTACHING HEADER TO COMBINE

16. Pull back collar (A) on the end of the driveline, and push the driveline onto combine output shaft (B) until the collar locks.
17. Proceed to [5.7 Completing Header Assembly, page 117](#).

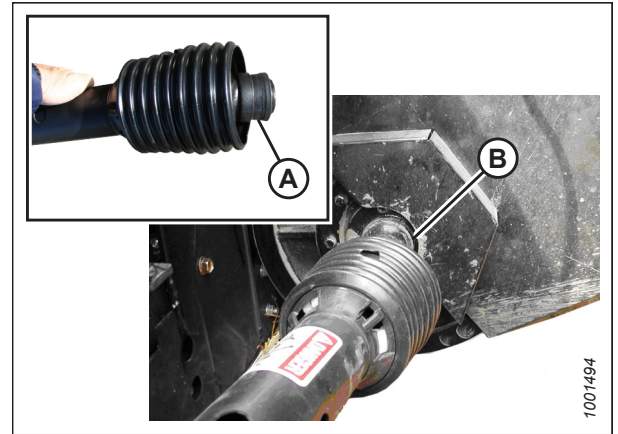


Figure 5.18: Driveline

5.2 IDEAL™ Series Combines

To attach the header to or detach it from an IDEAL™ combine, follow the relevant procedure in this section.

5.2.1 Attaching Header to IDEAL™ Series Combine

Physically attach the float module to the combine before connecting the multicoupler and driveline.

DANGER

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

1. Shut down the engine, and remove the key from the ignition.
2. Pull lever (A) up to retract pins (B) at the bottom left and right sides of the feeder house.
3. Start the engine. For instructions, refer to the combine operator's manual.

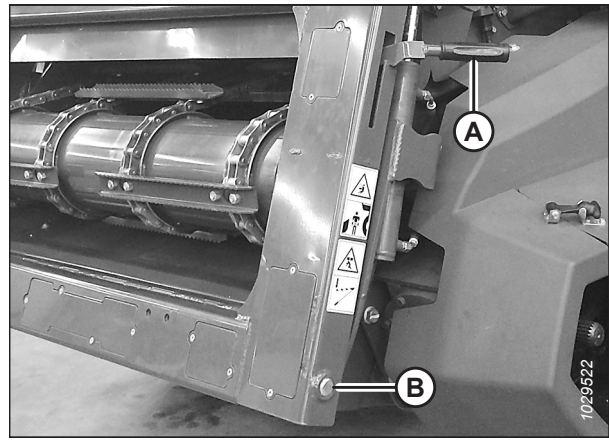


Figure 5.19: Feeder House

4. Drive the combine slowly up to the header until the feeder house is directly under top beam (A), and pins (B) are under hooks (C) on the transition frame.

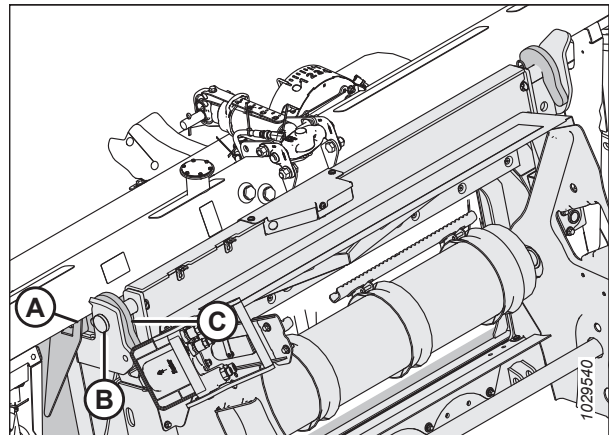


Figure 5.20: Feeder House

ATTACHING HEADER TO COMBINE

5. Raise the feeder house until transition frame top beam (A) is fully resting on the feeder house. Raise the header slightly off the ground.

IMPORTANT:

The full weight of the header must be on the feeder house, **NOT** on pins (B).

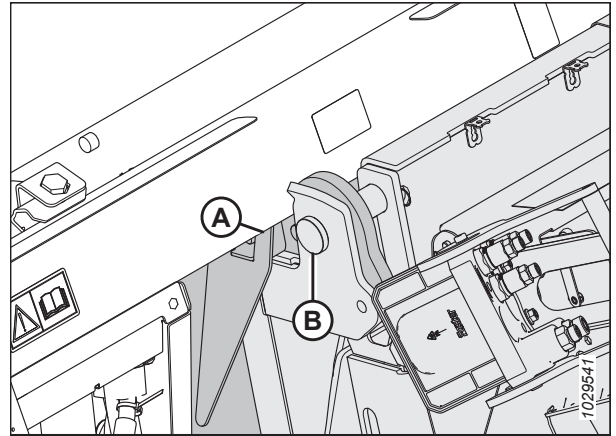


Figure 5.21: Top Beam Resting on Feeder House

6. Position the bottom of the feeder house so that locking pins (B) align with the holes in mount (C).
7. Push lever (A) down to extend locking pins (B) so they engage in mount (C).

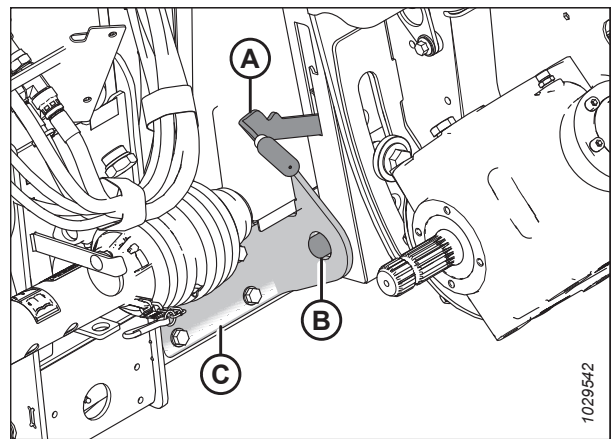


Figure 5.22: Feeder House Locking Pins

8. Rotate lock disc (A) upward and remove driveline (B) from the support.

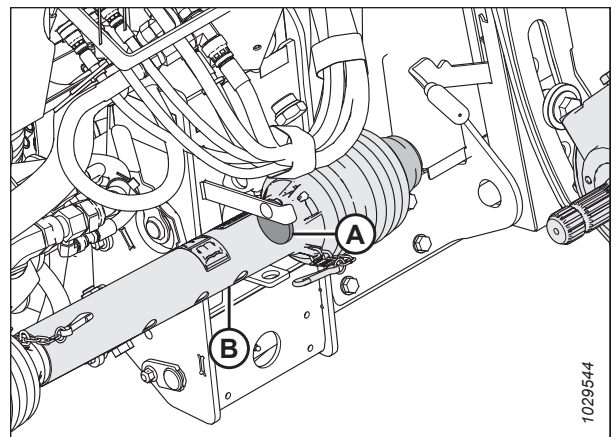


Figure 5.23: Driveline in Storage Position

ATTACHING HEADER TO COMBINE

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

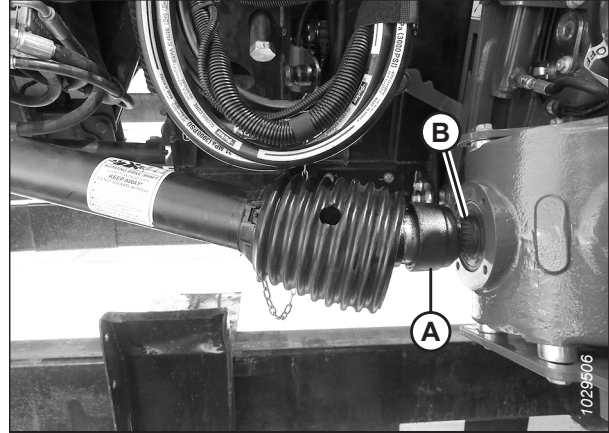


Figure 5.24: Connecting Driveline to Combine

10. Lower handle (A) to release multicoupler (B) from the header.
11. Open cover (C) on the combine receptacle.
12. Push handle (D) to the fully open position.
13. Clean the mating surfaces of the coupler and receptacle if necessary.

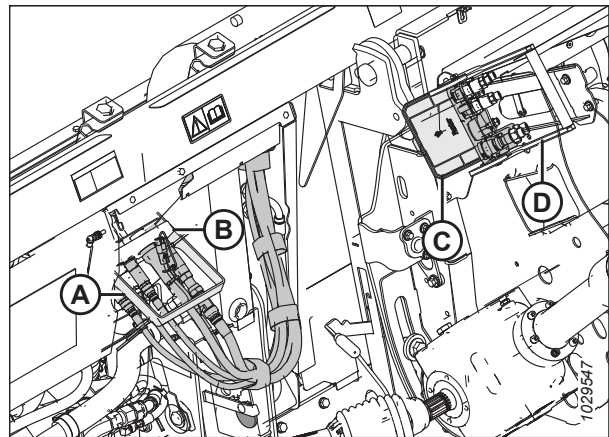


Figure 5.25: Multicoupler Receptacles

14. Position coupler (A) onto the combine receptacle, and pull handle (B) to fully engage the multicoupler into the receptacle.

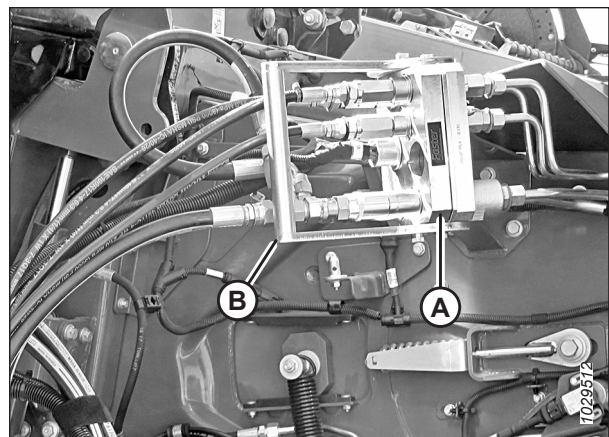


Figure 5.26: Multicoupler

5.3 Case IH Combines

To attach the header to or detach it from a Case IH combine, follow the relevant procedure in this section.

5.3.1 Attaching Header to Case IH Combine

Physically attach the float module to the combine before connecting the hydraulic hoses, electrical connectors, and driveline.

DANGER

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

1. Shut down the engine, and remove the key from the ignition.
2. On the upper left side of the combine float module, remove nut (A), and remove washer, spring, and lever (B).

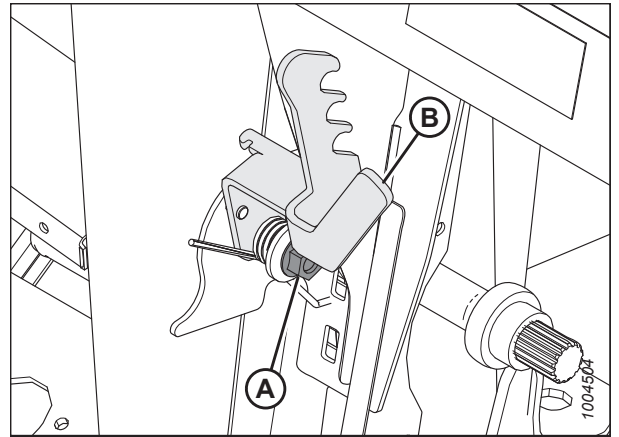


Figure 5.27: Combine Float Module Upper Left Side

3. Position lever (A) onto stud (B).

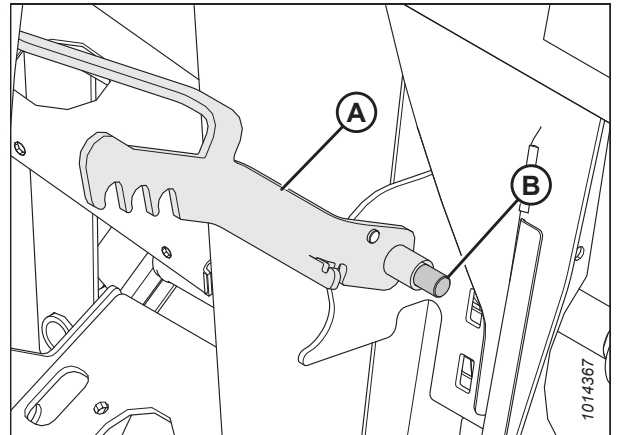


Figure 5.28: Combine Float Module Upper Left Side

ATTACHING HEADER TO COMBINE

- Place spring arm (C) into the hook on lever (B) to preload it, and tighten nut (A) with a washer onto the float module.

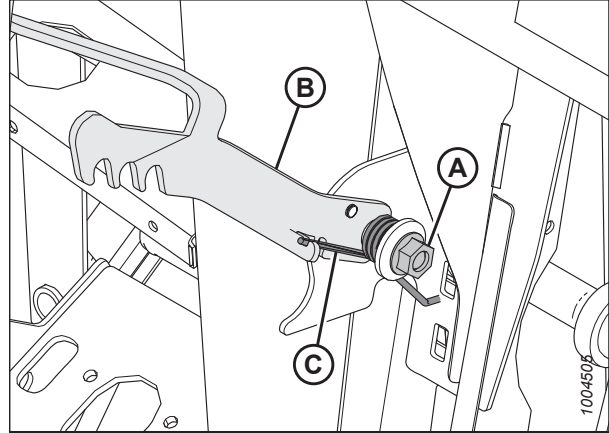


Figure 5.29: Combine Float Module Left Side

- On the combine, ensure lock handle (A) is positioned so hooks (B) can engage the float module.

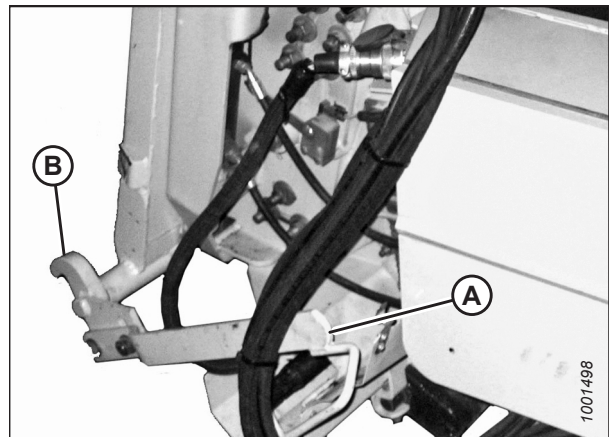


Figure 5.30: Feeder House Locks

DANGER

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

- Start the engine and slowly drive the combine up to the header until feeder house saddle (A) is directly under float module top cross member (B).
- Raise the feeder house slightly to lift the header, ensuring the feeder saddle is properly engaged in the float module frame and that the bottom of the feeder house frame is in contact with the float module frame.
- Shut down the engine, and remove the key from the ignition.

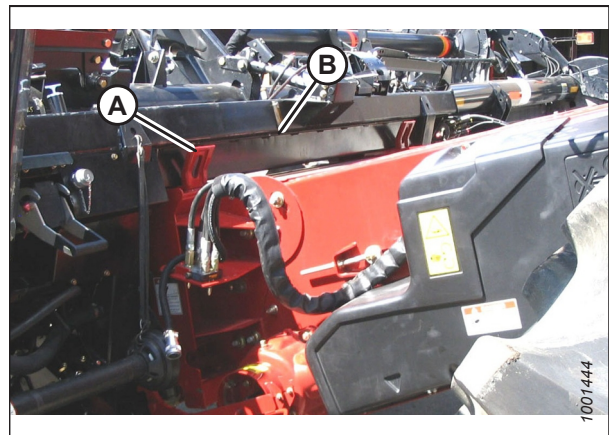


Figure 5.31: Combine and Float Module

ATTACHING HEADER TO COMBINE

9. On the left side of the feeder house, lift lever (A) on the float module and push handle (B) on the combine to engage locks (C) on both sides of the feeder house.
10. Push down on lever (A) so the slot in the lever engages the handle and locks the handle in place.
11. If lock (C) does not fully engage the pin on the float module, loosen bolts (D) and adjust the lock. Retighten the bolts.

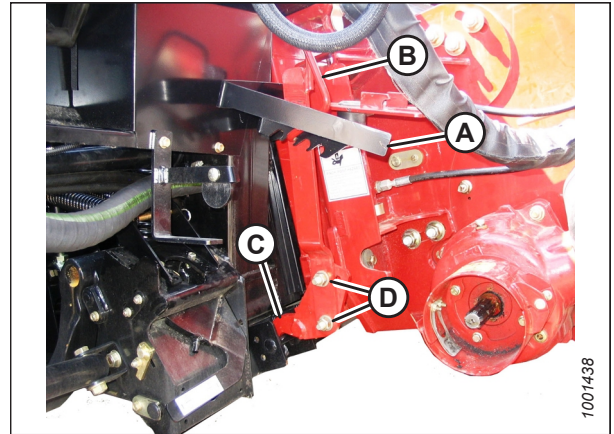


Figure 5.32: Combine and Float Module

12. Open the cover on receptacle (A) located on the left side of the float module.
13. Press lock button (B) and pull handle (C) to the fully-open position.
14. Clean the receptacle mating surfaces.

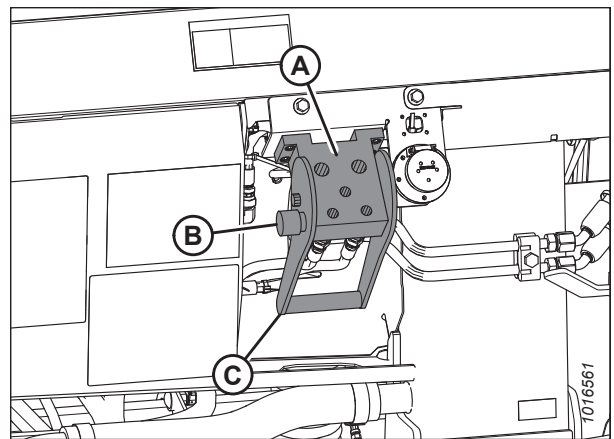


Figure 5.33: Float Module Receptacle

15. Remove hydraulic quick coupler (A) from the combine, and clean the mating surfaces.

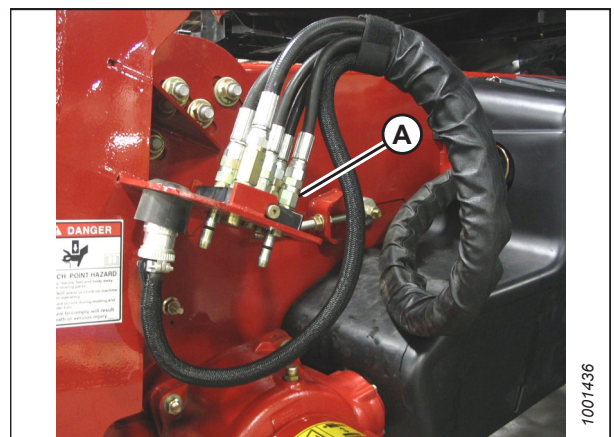


Figure 5.34: Combine Connectors

ATTACHING HEADER TO COMBINE

16. Position the coupler onto coupler receptacle (A) and push handle (B) (not shown) to engage the multicoupler pins into the receptacle.
17. Push handle (B) to the closed position until lock button (C) snaps out.

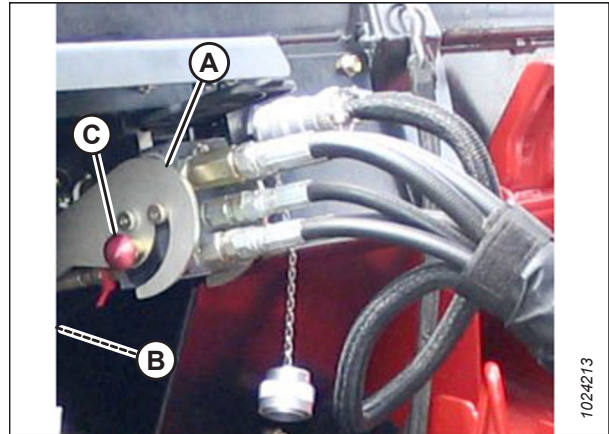


Figure 5.35: Hydraulic Connection

18. Remove the cover from electrical receptacle (A). Ensure the receptacle is clean and has no signs of damage.

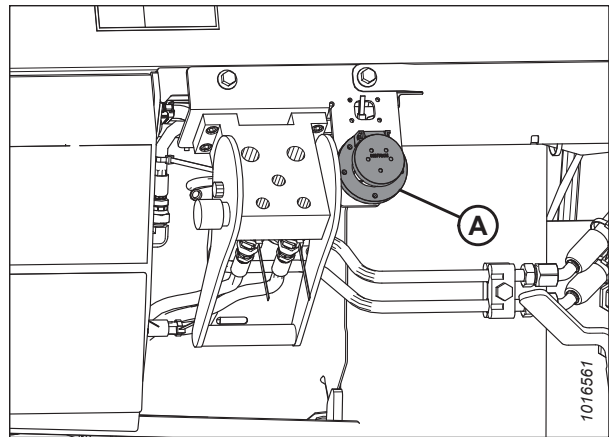


Figure 5.36: Electrical Receptacle

19. Remove electrical connector (A) from the storage cup on the combine and route it to the float module receptacle.

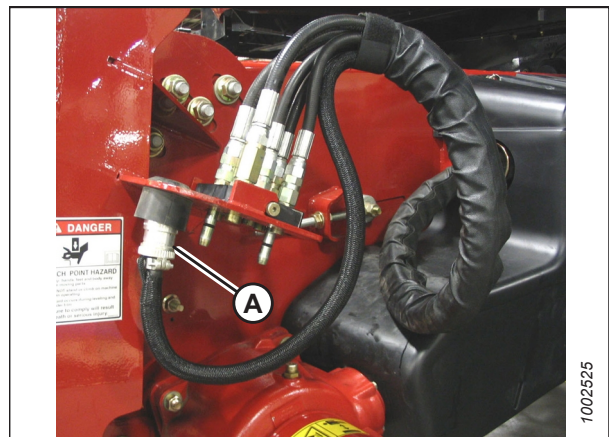


Figure 5.37: Combine Connectors

ATTACHING HEADER TO COMBINE

20. Align the lugs on connector (A) with the slots in receptacle (B), push the connector onto the receptacle, and turn the collar on the connector to lock it in place.

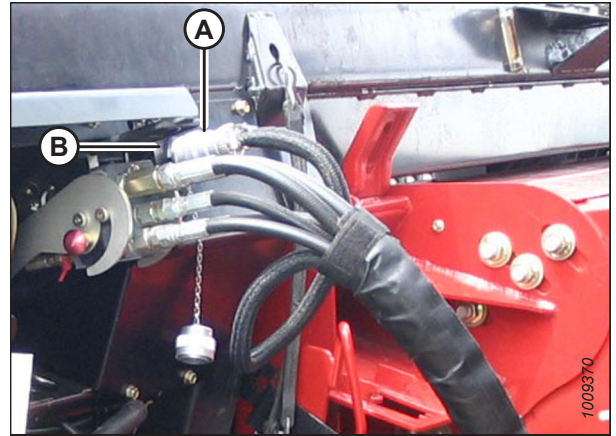


Figure 5.38: Electrical Connection

21. Detach safety chain (C) from support bracket (B).
22. Pull collar (D) back to release driveline (A) from the support bracket. Remove the driveline from the support bracket.

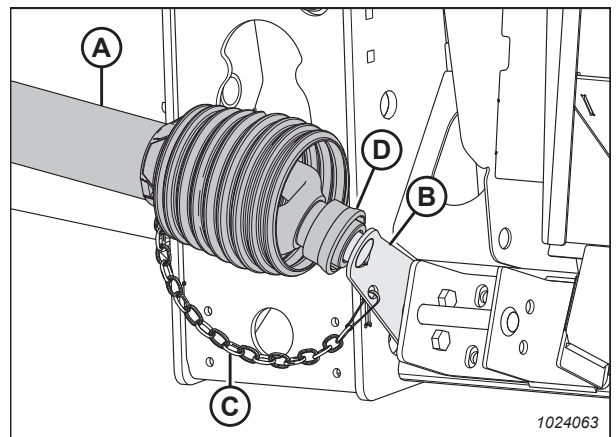


Figure 5.39: Driveline in Storage Position

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

NOTE:

If required, raise the driveline shield on the combine output shaft for easier access to install the driveline, then lower the shield once the driveline has been installed.

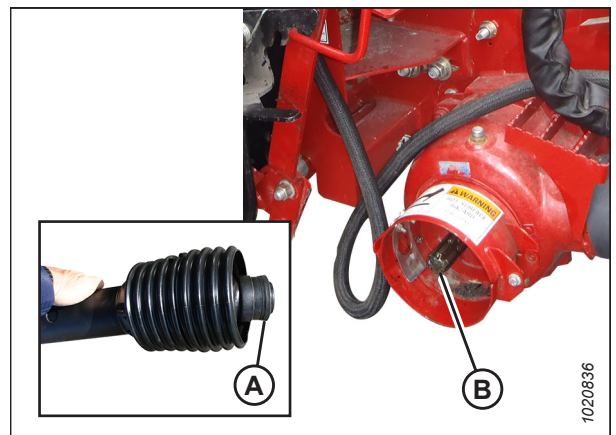


Figure 5.40: Combine Output Shaft

ATTACHING HEADER TO COMBINE

24. Disengage the float locks by pulling each float lock handle (A) away from the float module and setting it in unlocked position (B).

NOTE:

The illustration shows the float lock on the right side of the header; the float lock on the left side is similar.

25. Proceed to [5.7 Completing Header Assembly, page 117](#).

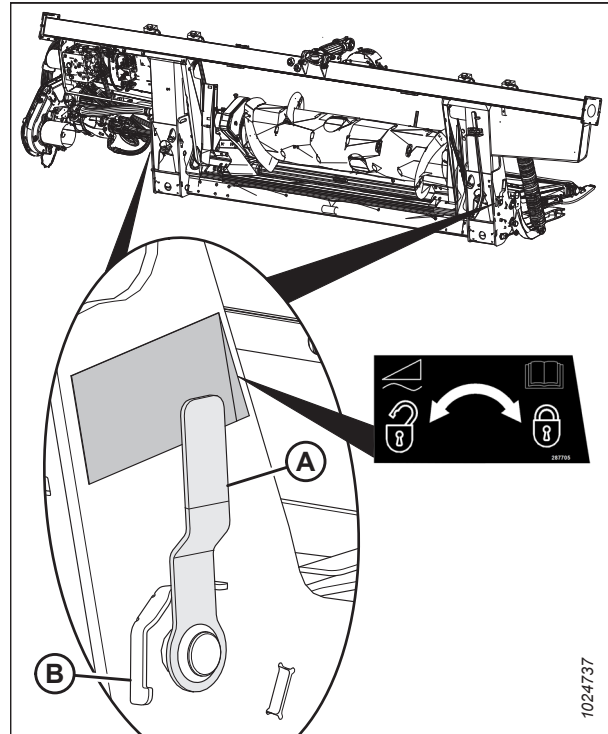


Figure 5.41: Float Lock Handle

5.3.2 Enabling Reel Fore-Aft / Header Tilt – Case IH 250 Series

This topic is for enabling the reel fore-aft / header tilt on Case IH 250 Series combines that are equipped with the optional feeder fore/aft face plate control.

NOTE:

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

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

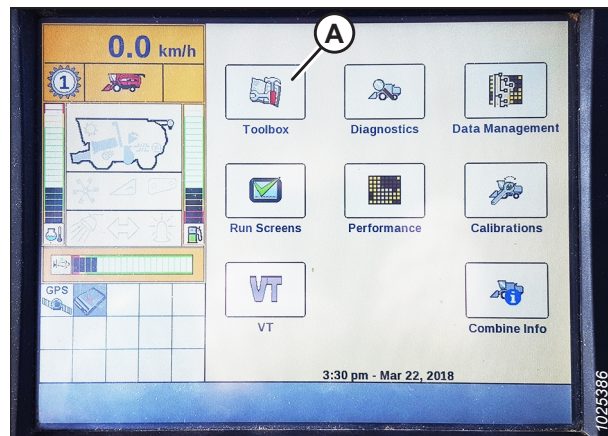


Figure 5.42: Case IH Combine Display

ATTACHING HEADER TO COMBINE

2. Using arrow key (A), find the Head 2 page and select it.
3. Locate Shift + Reel Fore/Aft heading (B).
4. From drop down menu (C), select Header Features.

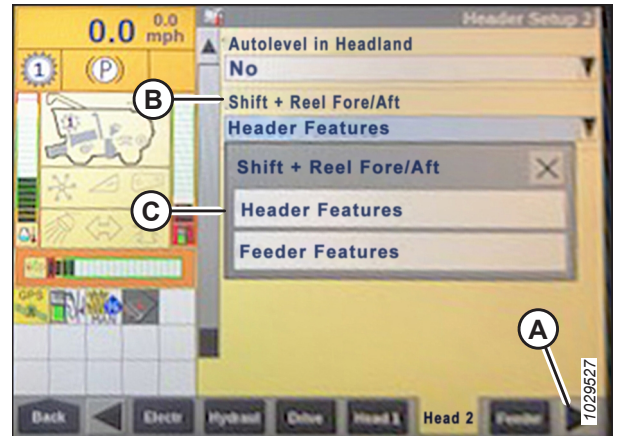


Figure 5.43: Case IH Combine Display

5.4 John Deere Combines

To attach the header to or detach it from a John Deere combine, follow the relevant procedure in this section.

The FD1 Series FlexDraper® Header is compatible with John Deere 60, 70, S, and T Series combines.

5.4.1 Attaching Header to John Deere Combine

Physically attach the float module to the combine before connecting the multicoupler and driveline.

DANGER

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

1. Shut down the engine, and remove the key from the ignition.
2. Push handle (A) on the combine multicoupler receptacle towards the feeder house to retract pins (B) at the bottom corners of the feeder house. Clean the receptacle.

DANGER

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

3. Start the engine and slowly drive the combine up to the header until feeder house saddle (C) is directly under float module top cross member (D).
4. Raise the feeder house slightly to lift the header, ensuring the feeder house saddle is properly engaged in the float module frame.
5. Shut down the engine, and remove the key from the ignition.
6. Pull handle (A) on the float module to release multicoupler (B) from the storage position. Remove the multicoupler, and push the handle back into the float module to store it.

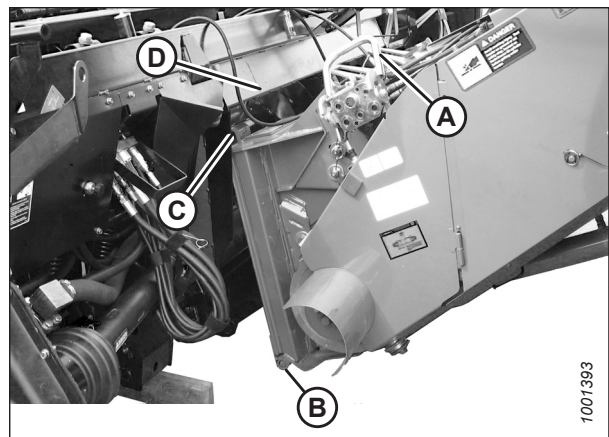


Figure 5.44: Combine and Float Module

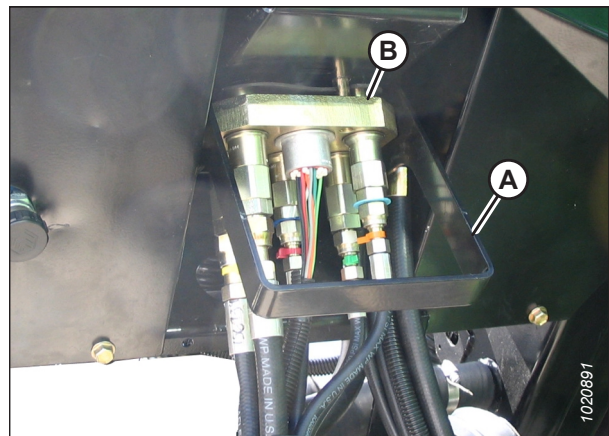


Figure 5.45: Multicoupler Storage

ATTACHING HEADER TO COMBINE

7. Position multicoupler (A) onto the receptacle, and pull handle (B) to engage the lugs on the multicoupler into the handle.
8. Pull handle (B) to a horizontal position and ensure multicoupler (A) is fully engaged into the receptacle.

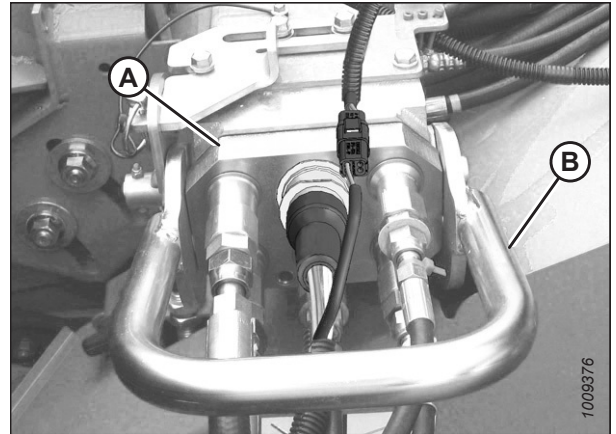


Figure 5.46: Multicoupler

9. Ensure that both feeder house pins (A) are fully engaged into the float module brackets.

NOTE:

If pins (A) do not fully engage the float module brackets, loosen bolts (B) and adjust the bracket as required.

10. Tighten bolts (B).

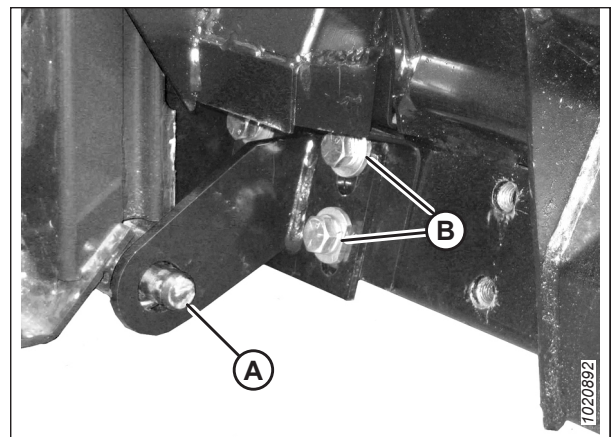


Figure 5.47: Feeder House Pin

11. Slide latch (A) to lock handle (B) in position and secure it with lynch pin (C).
12. If the float module is equipped with the reel fore-aft/header tilt selector, connect harness (D) to combine connector (E).

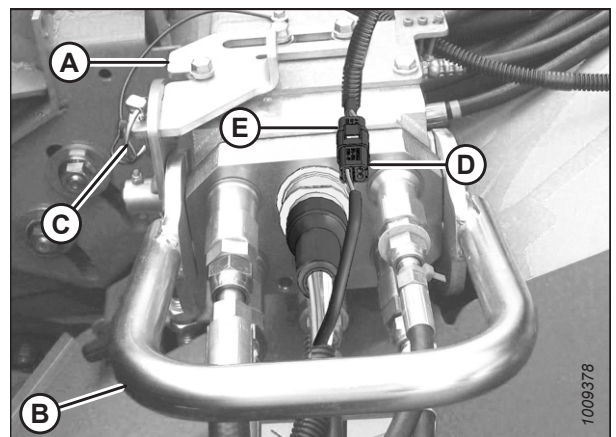


Figure 5.48: Multicoupler

ATTACHING HEADER TO COMBINE

13. Detach safety chain (C) from support bracket (B).
14. Pull collar (D) back to release driveline (A) from the support bracket. Remove the driveline from the support bracket.

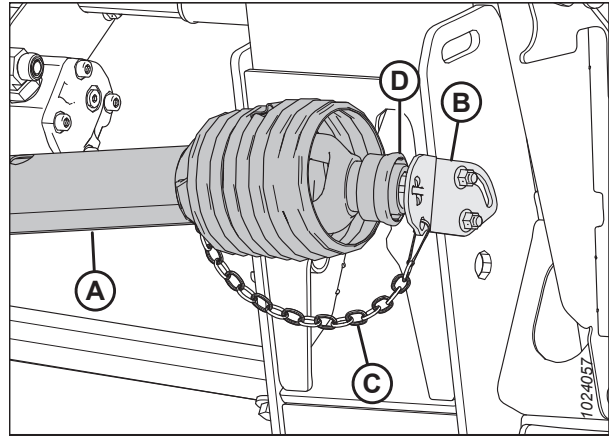


Figure 5.49: Driveline

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

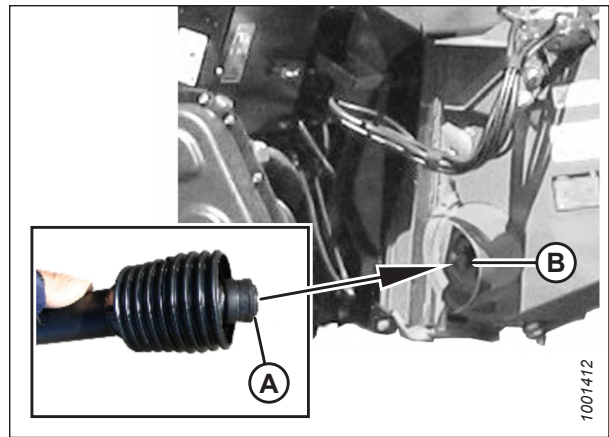


Figure 5.50: Driveline

ATTACHING HEADER TO COMBINE

16. Disengage the float locks by pulling each float lock handle (A) away from the float module, and setting it in unlocked position (B).

NOTE:

The illustration at right shows the right side of the header. The float lock on the left side of the header is opposite.

17. Proceed to [5.7 Completing Header Assembly, page 117](#).

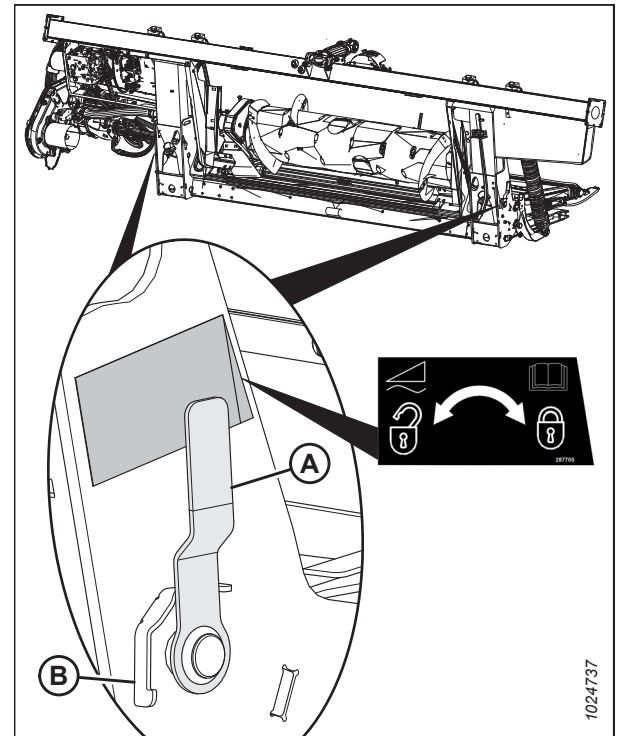


Figure 5.51: Float Lock Handle

5.4.2 Installing Reel Fore-Aft / Header Tilt Switch – S and T Series Combines

The reel fore-aft/header tilt switch allows the combine Operator to select either reel FORE-AFT or HEADER TILT mode.

⚠ DANGER

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

This procedure is applicable to John Deere S and T Series combines. For John Deere 60 or 70 Series combines, refer to [5.4.3 Installing Reel Fore-Aft / Header Tilt Switch – 60 and 70 Series Combines, page 102](#).

Prepare the combine cab for switch and harness installation as follows:

1. Lower and tilt the combine feeder house all the way forward. This will ensure that the electrical harnesses has sufficient slack.
2. Shut down the engine, and remove the key from the ignition.
3. Disconnect the negative cable from the combine battery. For instructions, refer to the combine manual.

IMPORTANT:

If you do not disconnect the battery before connecting the cab draper control harness to the combine's auxiliary power connectors, electrical components may be damaged.

ATTACHING HEADER TO COMBINE

4. At the multicoupler, connect the cab draper extension harness (MD #304211) to the float module as follows:
 - **Connector C3A** – If the In-Cab Side Draper Speed Control kit has been installed, plug connector C3B on the valve drive harness into connector C3A. If the In-Cab Side Draper Speed Control kit has not been installed, leave C3A unconnected.
 - **Connector C5B** – Plug connector C5B (A) into connector C5A on the JD completion harness.

NOTE:

Connectors C3A and C5B are shipped with caps. The caps need to be removed in order to connect these connectors.

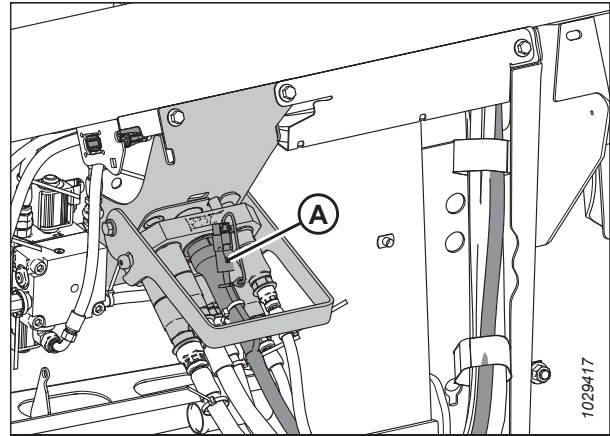


Figure 5.52: Multicoupler on Float Module

5. Route cab draper extension harness (A) along the left side of the combine feeder house, under shield (B), to the underside of the combine cab (along the existing hoses).

NOTE:

The illustration shows an S6, S7, T6, or T7 Series combine. Earlier models may look different.

6. Secure cab draper extension harness (A) to the hoses with cable ties (MD #16661) as required.

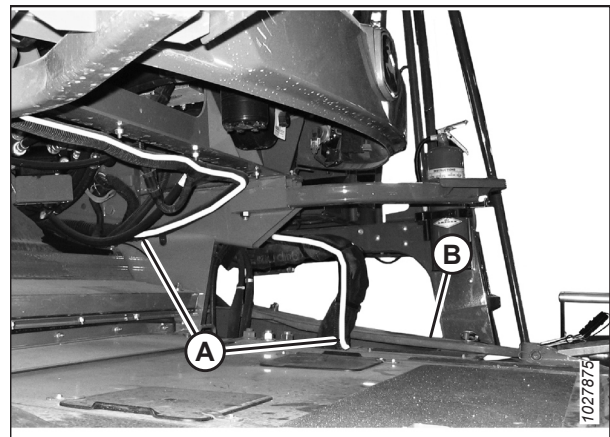


Figure 5.53: Harness Routing

7. Inside the cab, lift floor mat (A) at the front right corner to access knockout (B).

NOTE:

The illustration shows an S6, S7, T6, or T7 Series combine. Earlier models may look different.

8. Remove knockout (B).

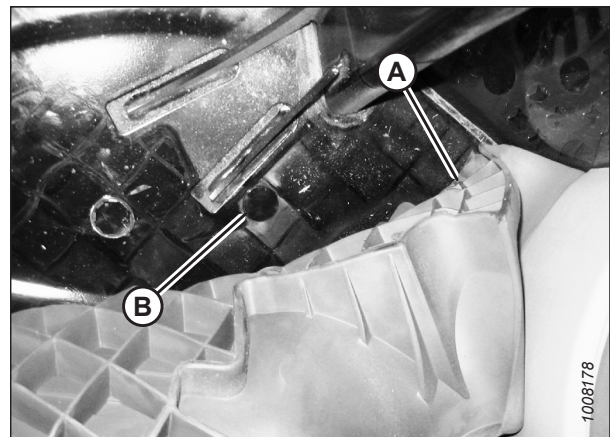


Figure 5.54: Floor Mat at Forward Right Corner and Knockout

ATTACHING HEADER TO COMBINE

- Pull the ends of cab draper extension harness (A) up into the cab through hole (B).

NOTE:

The illustration shows an S6, S7, T6, or T7 Series combine. Earlier models may look different.

- Connect cab draper extension harness (A) to cab draper control harness (C) (MD #304210) as follows:
 - Plug C4B into C4A.
 - Plug C6B into C6A.
- Reinstall the floor mat.

NOTE:

Any extra wire can be placed between the floor mat and the right console at the cup holder.

- For S6 Series, T6 Series, and earlier combines:** In the combine cab, open the storage compartment on the console.
- For S6 Series, T6 Series, and earlier combines:** Remove two screws (A) attaching compartment cover (B) to the console and then remove the cover.

- For S6 Series, T6 Series, and earlier combines:** Two rocker switch supports are provided: MD #158377 (A) and MD #220734 (B). Select the one you need to use:
 - MD #158377 – Used on John Deere 60 and 70 Series combines
 - MD #220734 – Used on John Deere S and T Series combines

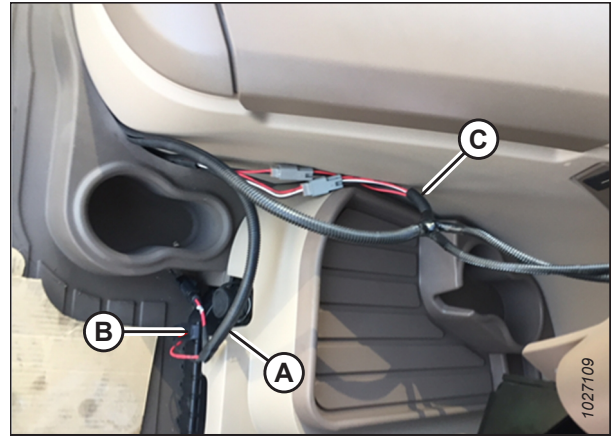


Figure 5.55: Harness Connections

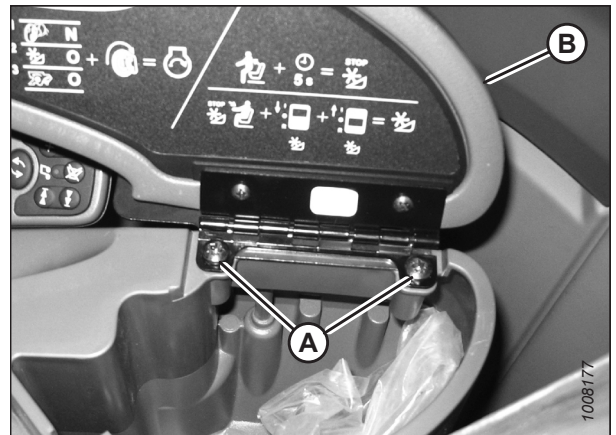


Figure 5.56: Storage Compartment and Cover

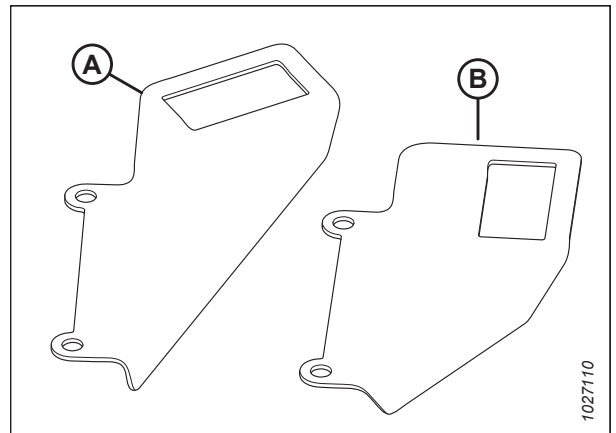


Figure 5.57: Rocker Switch Supports

ATTACHING HEADER TO COMBINE

15. **For S7 and T7 Series combines only:** Secure rocker switch support (A) (MD #220734) to tilt/draper speed support (B) (MD #304111) with two M6 hex socket head screws (C) (MD #136886) and two M6 hex flange lock nuts (MD #152668).

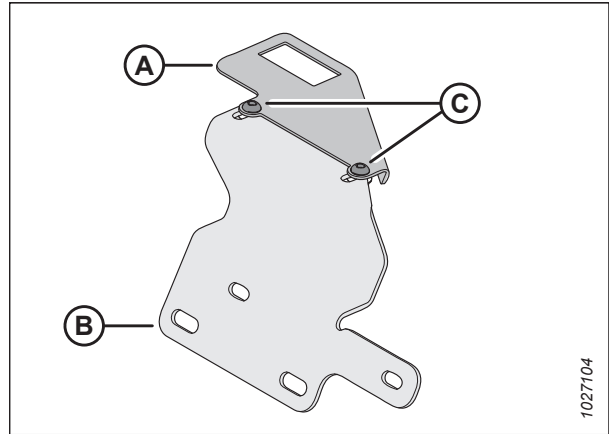


Figure 5.58: Supports for S7 and T7 Series Combines

16. Install rocker switch (A) (MD #109064) into rocker switch support (C) from the top. Ensure the lugs on the underside of the support have secured the switch.

NOTE:

The tilt/draper speed support needed for S7 and T7 Series combines is not shown in the illustration.

17. One branch of cab draper control harness (B) ends in two terminals: T242 and T243. Connect one terminal to the center terminal on rocker switch (A) and the other to either outer terminal. The color of the wires does not matter.

For more information, refer to Figure 5.60, page 99.

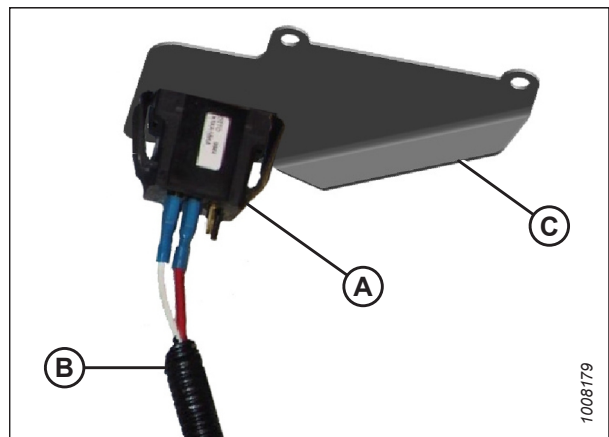


Figure 5.59: Switch and Harness

ATTACHING HEADER TO COMBINE

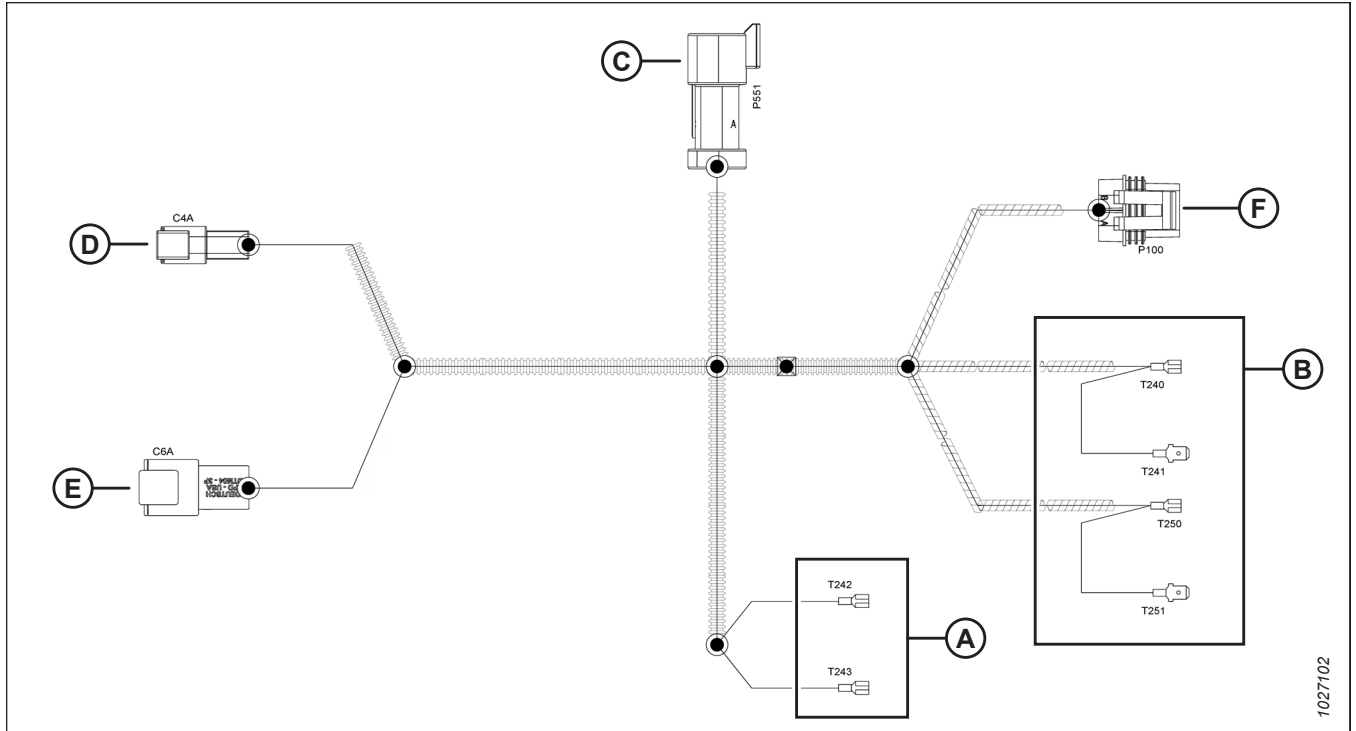


Figure 5.60: Cab Draper Control Harness (MD #304210)

A - Terminals Connect to Rocker Switch

C - P551 Connects to Speed Control Rheostat

E - C6A Connects to C6B on Harness (MD #304211)

B - Terminals Connect to Auxiliary Power Outlet Strip

D - C4A Connects to C4B on Harness (MD #304211)

F - P100 – Inline Fuse

18. If the In-Cab Side Draper Speed Control kit has been installed, connect connector P551 to the speed control rheostat. If the In-Cab Side Draper Speed Control kit has not been installed, leave connector P551 unconnected.
19. **S6 and T6 Series combines only:** Position rocker switch support (C) onto the console and align the holes in the support with the holes in the console.
20. **S6 and T6 Series combines only:** Reinstall cover (B) and secure it in place with existing screws (A).

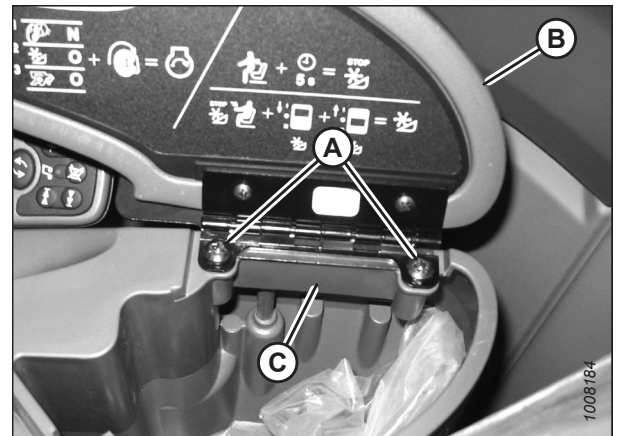


Figure 5.61: Support Position on Console – S6 and T6 Series Combines

ATTACHING HEADER TO COMBINE

21. **S6 and T6 Series combines only:** Close the cover and ensure that rocker switch (A) and rocker switch support (B) are secure.

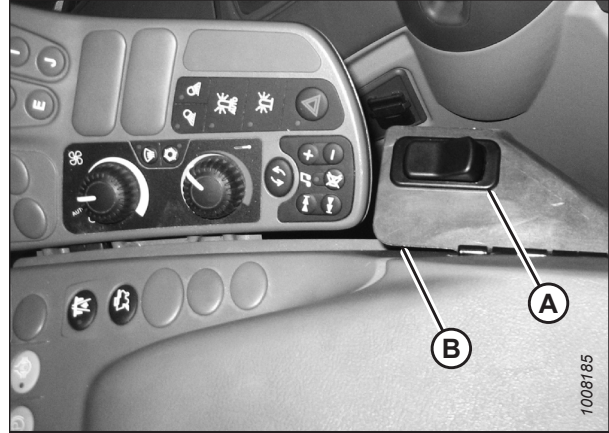


Figure 5.62: Secured Switch – S6 and T6 Series Combines

22. Remove two M6 countersunk head screws (C) securing track (B) to the side of the seat, then remove the track. Install tilt/draper speed support (A) between track (B) and the side of the seat using M6 screws (C).

NOTE:

If other options are not being installed on the track, refer to the alternative installation location instructions below. The preferred installation location provides better access to the cup holders.

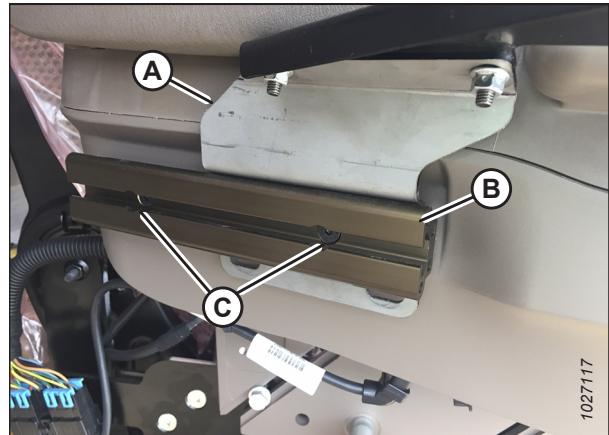


Figure 5.63: Side View of Seat with Supports Installed in Preferred Location

NOTE:

The rocker switch is not shown in the illustration at right.

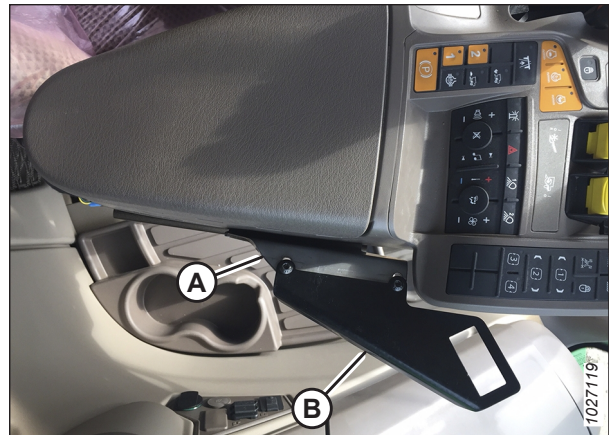


Figure 5.64: Top View of Armrest Showing Supports Installed in Preferred Location

A - Tilt/Draper Speed Support

B - Rocker Switch Support

ATTACHING HEADER TO COMBINE

23. **S7 and T7 Series combines only – alternative installation location:** Secure tilt/draper speed support (A) to track (B) with two M8 carriage head bolts (C) (MD #197171) and two M8 hex flange lock nuts (MD #135337).

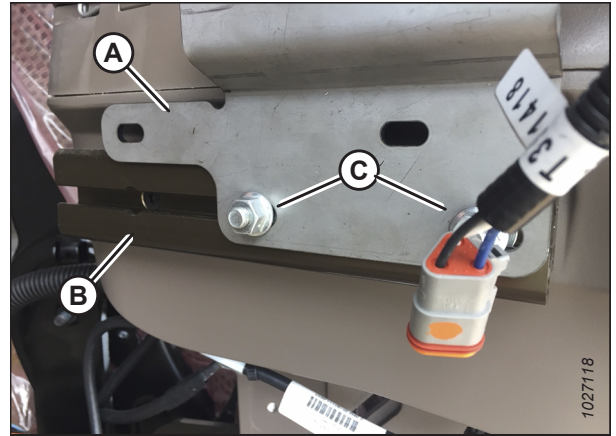


Figure 5.65: Side View of Seat with Supports Installed in Alternative Location

NOTE:

The rocker switch is not shown in the illustration at right.

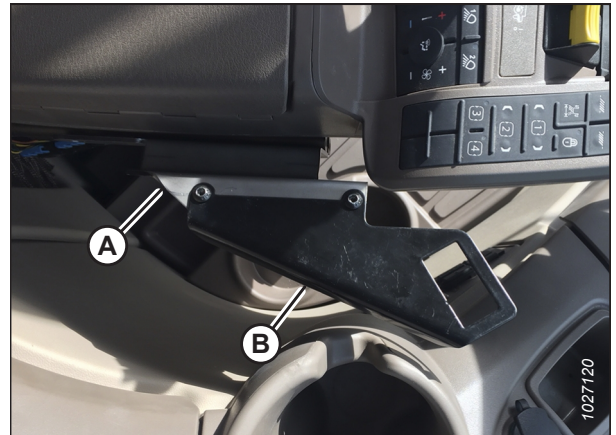


Figure 5.66: Top View of Armrest Showing Supports Installed in Alternative Location

A - Tilt/Draper Speed Support B - Rocker Switch Support

ATTACHING HEADER TO COMBINE

24. Connect the feed end of cab draper control harness ([B] in Figure 5.60, page 99) to the auxiliary power outlet strip as follows:

NOTE:

The auxiliary power strip is on the right side of the cab floor on S6, S7, T6, and T7 Series combines, and near the window on earlier models.

- Terminals T240 and T241 are for power. Connect them to switched power supply (C).
- Terminals T250 and T251 are for ground. Connect them to ground (B).

NOTE:

Each circuit has a male and female terminal pair so that they can be connected in line with an existing circuit on the combine. They can also be connected to a spare circuit in the combine (at location [A]), which would only use one terminal out of each pair. Insulate any unused terminals with electrical tape.

NOTE:

The illustration shows an S6, S7, T6, or T7 Series combine. Earlier models may look different.

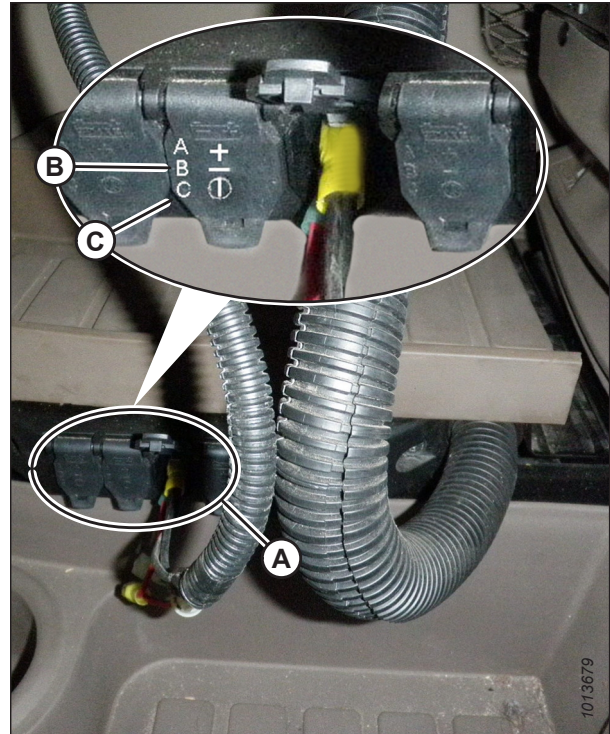


Figure 5.67: Combine Auxiliary Power Supply

25. Tape any unused terminals to the harness.
26. Reconnect the battery.

5.4.3 Installing Reel Fore-Aft / Header Tilt Switch – 60 and 70 Series Combines

The reel fore-aft/header tilt switch allows the combine Operator to select either reel FORE-AFT or HEADER TILT mode.

⚠ DANGER

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

This procedure applies to John Deere 60 and 70 Series combines. For John Deere S and T Series combines, refer to [5.4.2 Installing Reel Fore-Aft / Header Tilt Switch – S and T Series Combines, page 95](#).

1. Lower and tilt the combine feeder house all the way forward. This will ensure that the electrical harnesses has sufficient slack.
2. Shut down the engine, and remove the key from the ignition.
3. Disconnect the negative cable from the combine battery. For instructions, refer to the combine manual.

IMPORTANT:

If you do not disconnect the battery before connecting the cab draper control harness to the combine's auxiliary power connectors, electrical components may be damaged.

4. To ensure the switch harness will attach to the selector valve wiring harness (with header tilted forward) and that the feeder house can be fully lowered with adequate slack in the harness, lay the switch harness along the route from the front of the feeder house to the auxiliary power supply in the cab.

ATTACHING HEADER TO COMBINE

5. Route switch harness (A) through existing grommet (B) on the combine's electrical plate (located at the rear of the right window).

NOTE:

To simplify feeding the harness through the grommet, wrap the switch and power plugs with electrical tape.

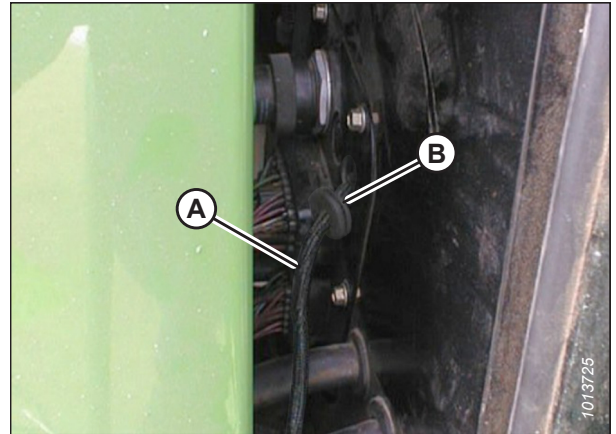


Figure 5.68: Switch Harness Routing

6. Retrieve switch (A) and support (C) provided with the kit.
7. Install switch (A) into support (C) from the top. Ensure the lugs on the underside of the support have secured the switch.

NOTE:

The image at right shows switch (A) connected to harness (B).

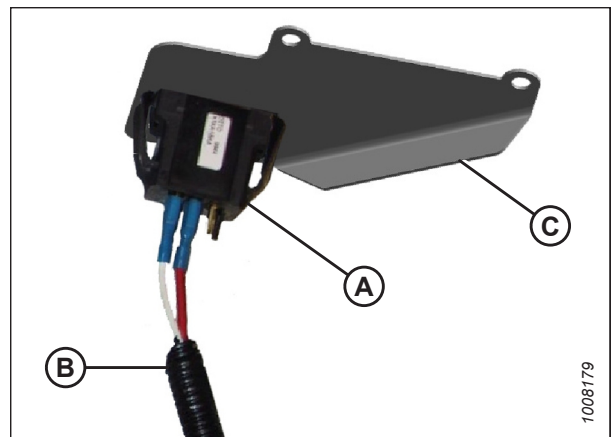


Figure 5.69: Switch and Harness

8. Mount switch plate (A) between the armrest cover hinge and the armrest using existing screws (B).

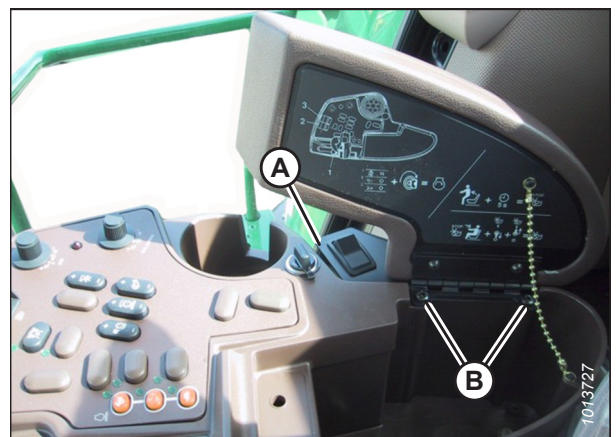


Figure 5.70: Switch Plate Mounting

ATTACHING HEADER TO COMBINE

9. Connect the switch end of harness (A) to switch (B) with one of the wires to the center terminal and the other wire to either outer terminal.

NOTE:

The color of the wires does not matter; ensure one wire terminates at the center terminal.

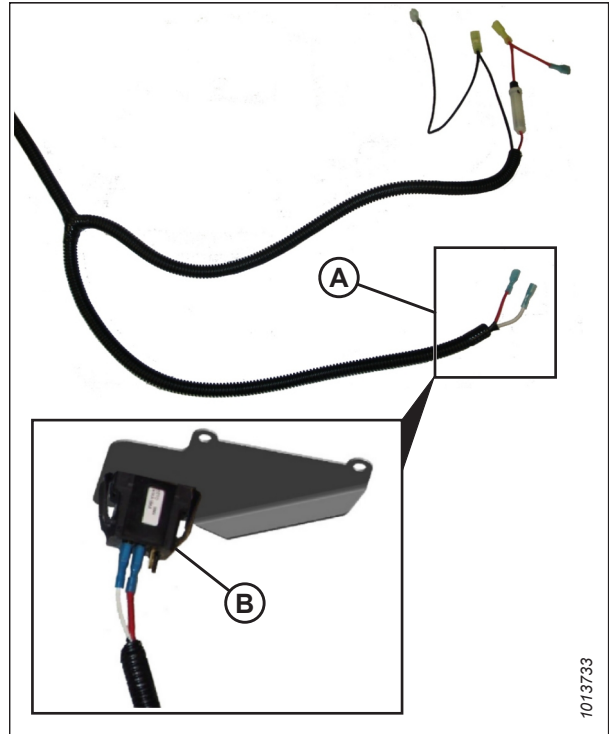


Figure 5.71: Switch End of Harness and Switch

10. Connect the switch harness to auxiliary power supply (D). Connect the wire with the in-line fuse to switched power supply (C) and the second wire to ground (B).

IMPORTANT:

Connecting the draper control harness to an unswitched power supply or cigarette lighter (using harness MD #220570, provided in the kit) will supply constant power to the header tilt side of the solenoid valve and drain the combine battery during extended shutdown periods.

11. Tape the unused wire jumpers to the harness.

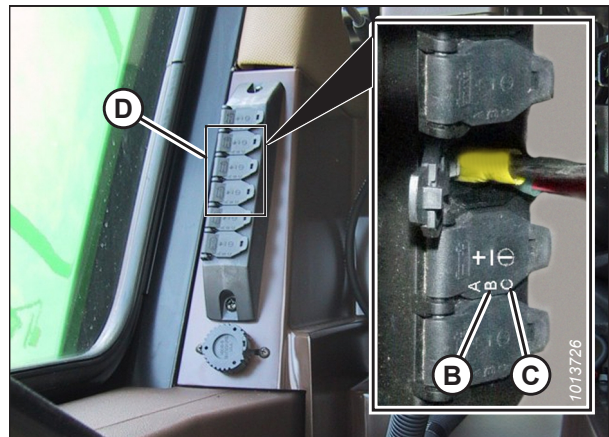


Figure 5.72: Auxiliary Power Supply

ATTACHING HEADER TO COMBINE

12. Route switch harness (A) across the underside of the cab, alongside an existing harness, to the left side of the feeder house.

IMPORTANT:

To prevent damage to the harness, ensure adequate slack by lowering the feeder house fully before securing the harness with cable ties.

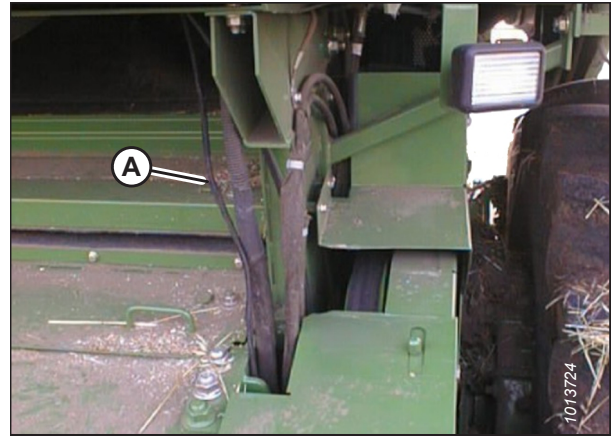


Figure 5.73: Switch Harness Routing

13. Secure switch harness (A) at the rear of the feeder house with a cable tie.



Figure 5.74: Switch Harness Routing

14. Route switch harness (A) through the welded hose guide on the feeder house.

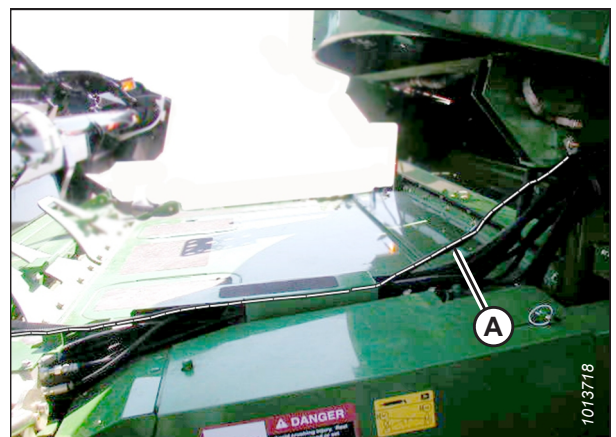


Figure 5.75: 60/70 Series Harness Routing

ATTACHING HEADER TO COMBINE

15. Secure switch harness (A) at the multicoupler with a cable tie. Leave 100 cm (40 in.) extending past location (B).

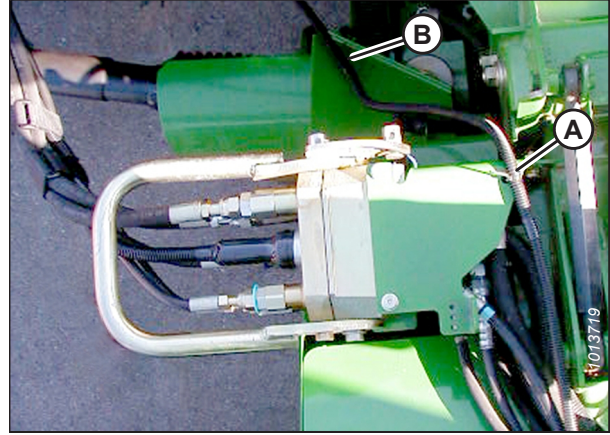


Figure 5.76: Switch Harness Routing

5.5 CLAAS Combines

To attach the header to or detach it from a CLAAS combine, follow the relevant procedure in this section.

The FD1 Series FlexDraper® Header is compatible with CLAAS 500, 600, and 700 series, Tucano, and 7000, 8000 series combines.

NOTE:

Older Tucano combines (model year 2006 and prior) are incompatible with FD1 Series FlexDraper® Headers.

5.5.1 Attaching Header to CLAAS Combine

Physically attach the float module to the combine before connecting the coupler and driveline.

⚠ DANGER

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

1. Shut down the engine, and remove the key from the ignition.
2. Move handle (A) on the float module into the raised position, and ensure pins (B) at the bottom corners of the float module are retracted.

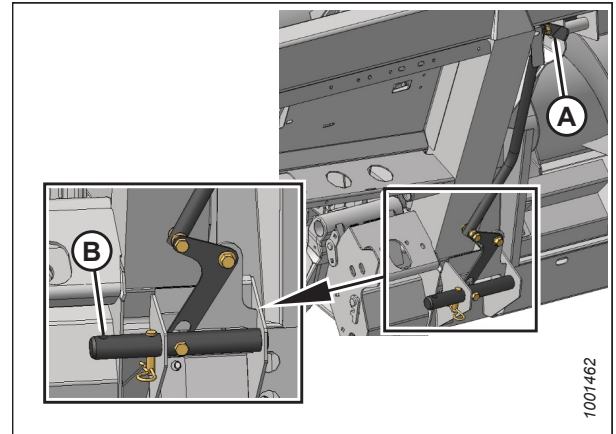


Figure 5.77: Pins Retracted

⚠ DANGER

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

3. Start the engine and slowly drive the combine up to the header until feeder house saddle (A) is directly under float module top cross member (B).
4. Raise the feeder house slightly to lift the header, ensuring the feeder saddle is properly engaged in the float module frame.
5. Shut down the engine, and remove the key from the ignition.

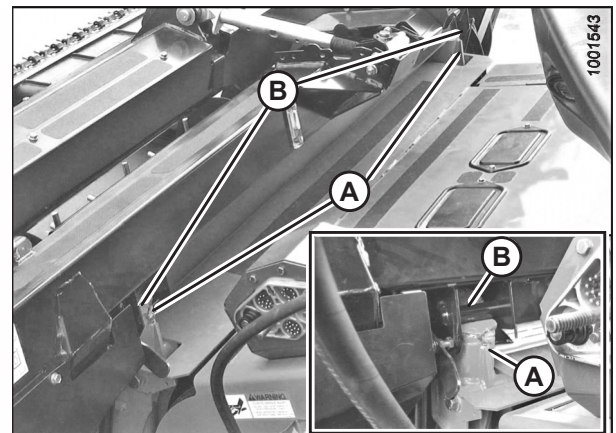


Figure 5.78: Header on Combine

ATTACHING HEADER TO COMBINE

- Remove locking pin (B) from float module pin (A).

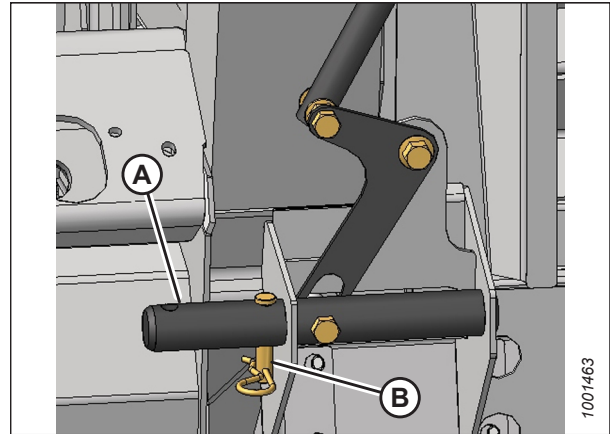


Figure 5.79: Locking Pins

- Lower handle (A) to engage float module pins (B) into the feeder house. Reinsert locking pin (C) and secure it with the hairpin.
- Remove the blocks from under the cutterbar.

DANGER

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

- Start the engine. For instructions, refer to the combine operator's manual.
- Lower the header fully.
- Shut down the engine, and remove the key from the ignition.
- Unscrew knob (A) on combine coupler (B) to release the coupler from the receptacle.
- Clean coupler (B) and the receptacle.

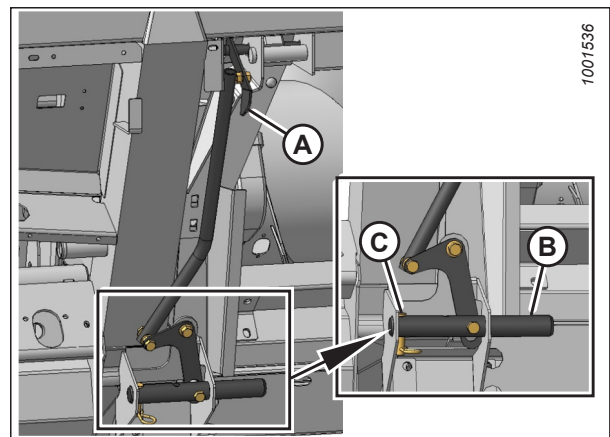


Figure 5.80: Engaging Pins

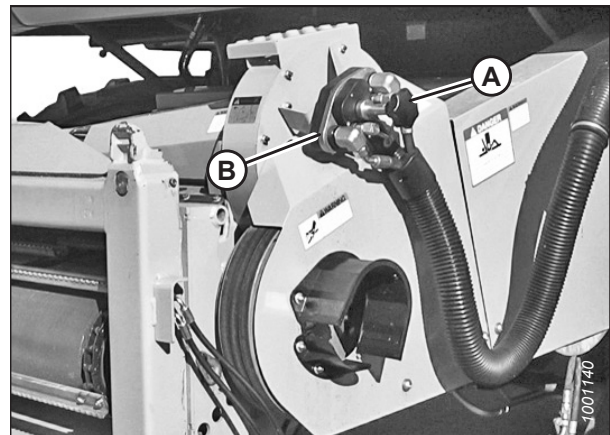


Figure 5.81: Combine Coupler

ATTACHING HEADER TO COMBINE

14. Remove float module receptacle cover (A).

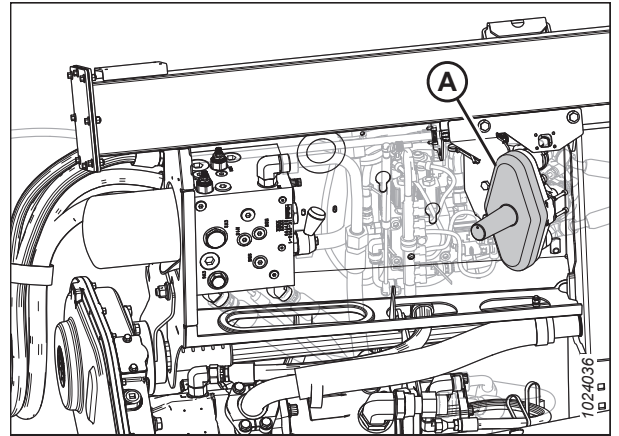


Figure 5.82: Receptacle Cover

15. Place float module receptacle cover (A) onto the combine receptacle.

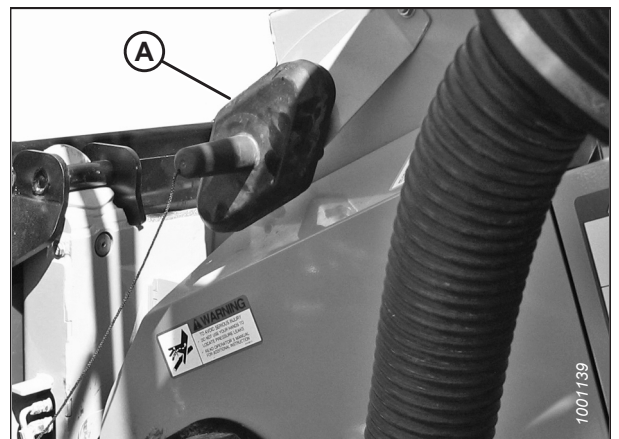


Figure 5.83: Receptacle Cover

16. Clean the mating surface of coupler (A) and position it onto float module receptacle (C).
17. Turn knob (B) to secure the coupler to the receptacle.

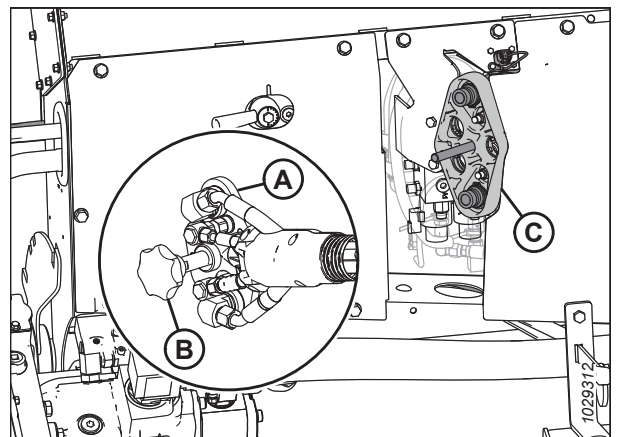


Figure 5.84: Coupler

ATTACHING HEADER TO COMBINE

18. Detach safety chain (C) from support bracket (B).
19. Pull collar (D) back to release driveline (A) from the support bracket. Remove the driveline from the support bracket.

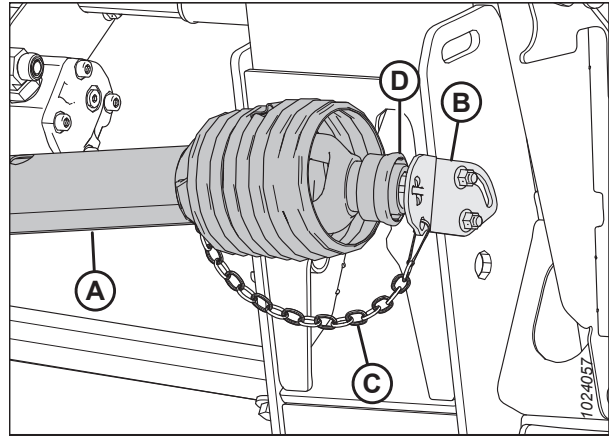


Figure 5.85: Driveline

20. Attach driveline (A) to the combine output shaft.

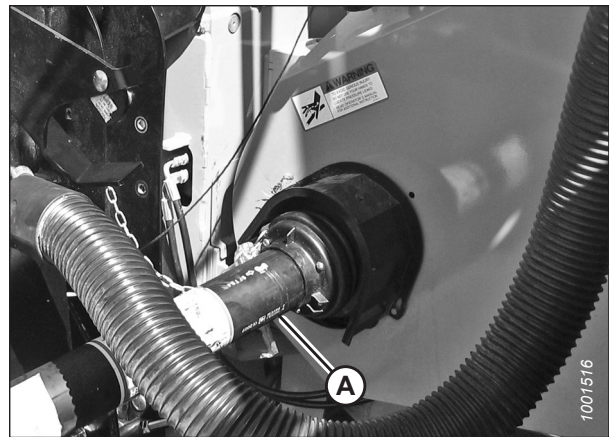


Figure 5.86: Driveline and Output Shaft

ATTACHING HEADER TO COMBINE

21. Disengage both header float locks by pulling each float lock handle (A) away from the float module and setting it in unlocked position (B).

NOTE:

The illustration at right shows the right side of the header. The float lock on the left side of the header is opposite.

22. Proceed to [5.7 Completing Header Assembly, page 117](#).

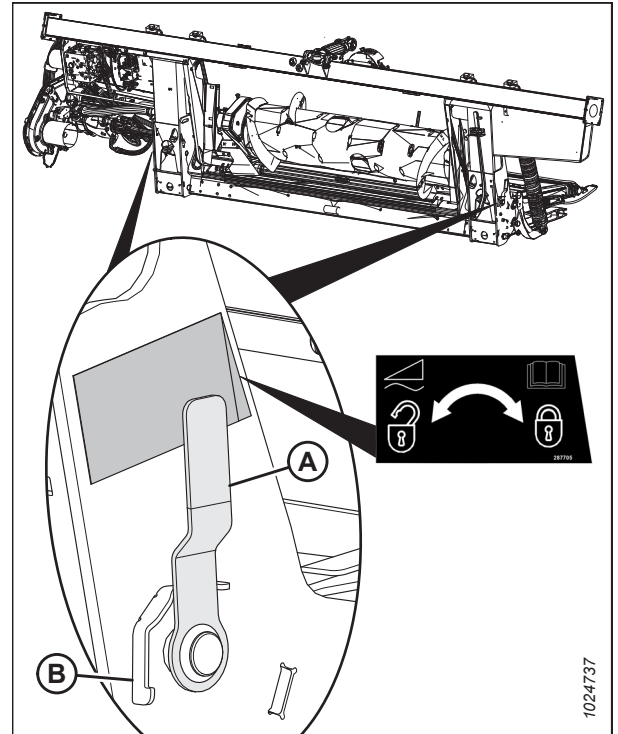


Figure 5.87: Float Lock Handle

5.6 New Holland Combines

To attach the header to or detach it from a New Holland combine, follow the relevant procedure in this section.

Refer to the table below for information on the New Holland combine models that are compatible with this header.

Table 5.3 New Holland Combine Compatibility

New Holland Combine Series	Combine Model
CR	920, 940, 960, 970, 980
	9020, 9040, 9060, 9065, 9070, 9080
	6090, 7090, 8080, 8090, 9090
	6.80, 6.90, 7.90, 8.90, 9.90, 10.90
CX	840, 860, 870, 880
	8070, 8080, 8090
	8080 Elevation, 8090 Elevation

5.6.1 Attaching Header to New Holland CR/CX Combine

Physically attach the float module to the combine before connecting the hydraulics, electrical, and driveline.

DANGER

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

1. Shut down the engine, and remove the key from the ignition.
2. On the upper left side of the combine float module, remove nut (A), and washer, spring, and lever (B).

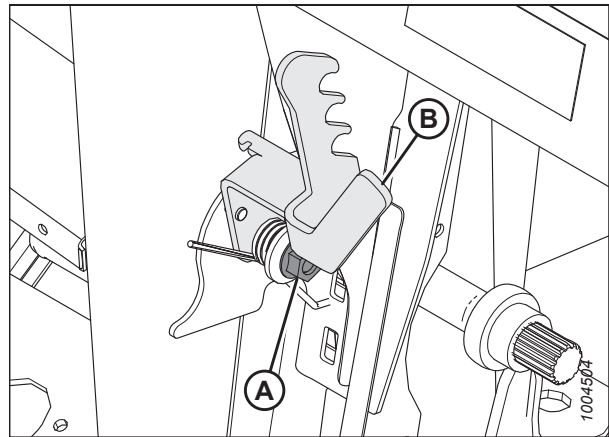


Figure 5.88: Combine Float Module Upper Left Side

ATTACHING HEADER TO COMBINE

3. Position lever (A) onto stud (B).

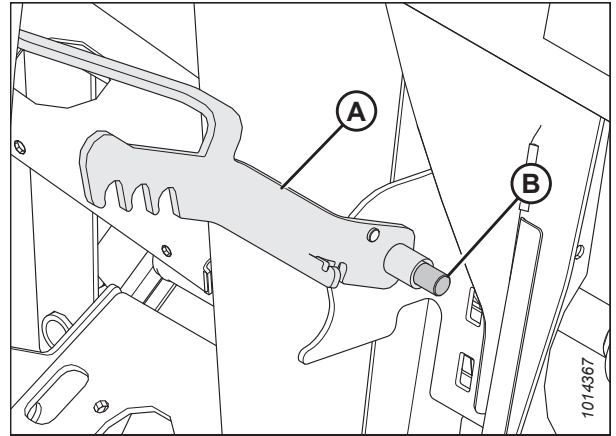


Figure 5.89: Combine Float Module Upper Left Side

4. Place spring arm (C) into the hook on lever (B) to preload it, and tighten nut (A) with a washer onto the combine float module.

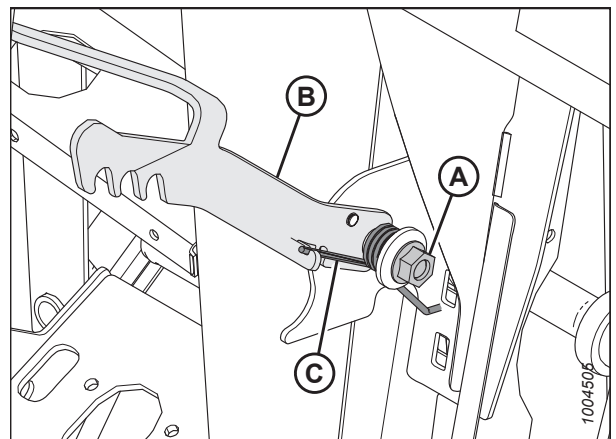


Figure 5.90: Combine Float Module Upper Left Side

5. Ensure handle (A) is positioned so hooks (B) can engage the float module.

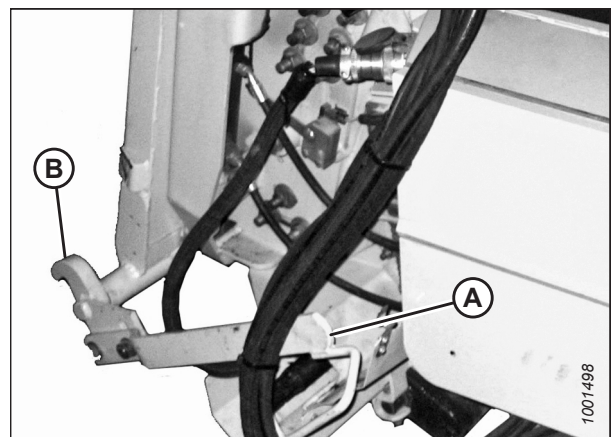


Figure 5.91: Feeder House Locks

ATTACHING HEADER TO COMBINE

DANGER

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

6. Start the engine and slowly drive the combine up to the float module until feeder house saddle (A) is directly under float module top cross member (B).
7. Raise the feeder house slightly to lift the header, ensuring the feeder saddle is properly engaged in the float module frame.
8. Shut down the engine, and remove the key from the ignition.

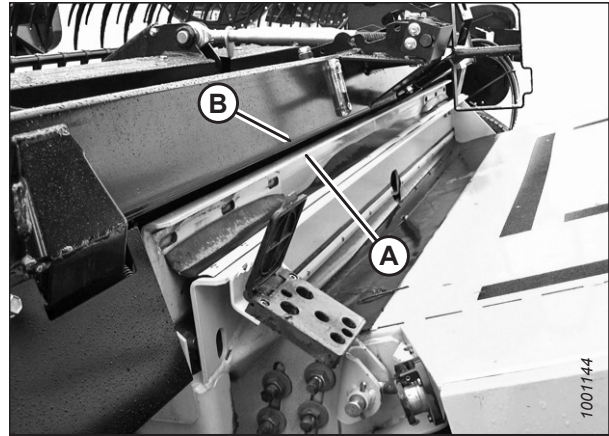


Figure 5.92: Header on Combine

9. Lift lever (A) on the float module on the left side of the feeder house, and push handle (B) on the combine to engage locks (C) on both sides of the feeder house.
10. Push down on lever (A) so the slot in the lever engages the handle and locks the handle in place.
11. If the lock does not fully engage pin (D) on the float module when lever (A) and handle (B) are engaged, loosen bolts (E) and adjust lock (C). Retighten the bolts.

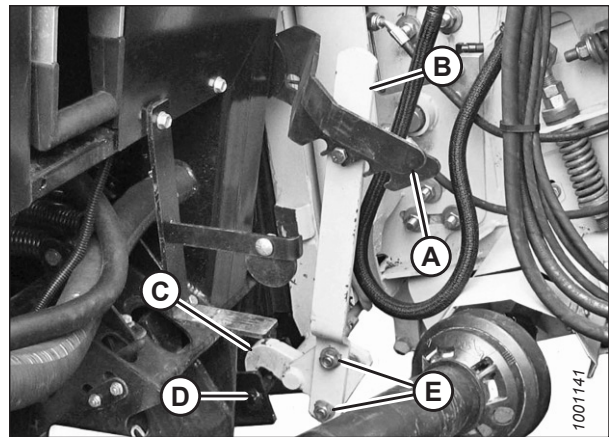


Figure 5.93: Feeder House Locks

12. Open the cover on receptacle (A) located on the left side of the float module.
13. Push in lock button (B) and pull handle (C) to the fully open position.
14. Clean the receptacle mating surfaces.

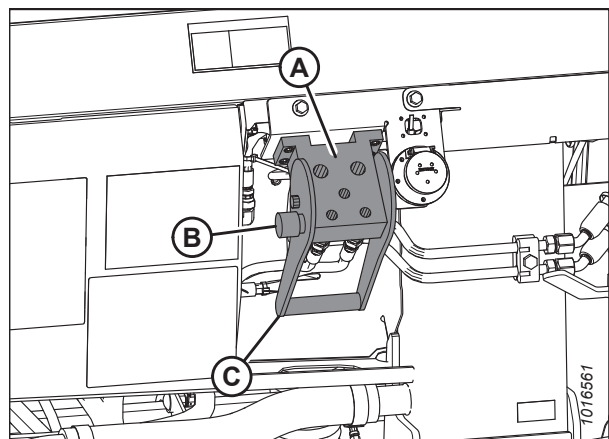


Figure 5.94: Float Module Receptacle

ATTACHING HEADER TO COMBINE

15. Remove hydraulic quick coupler (A) from the storage plate on the combine, and clean the mating surface of the coupler.

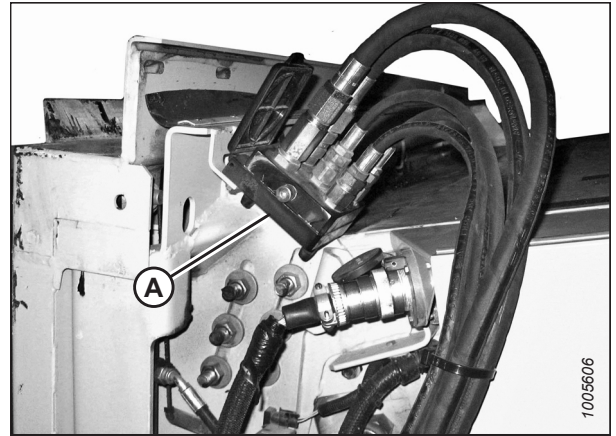


Figure 5.95: Combine Coupler

16. Position coupler (A) onto the float module receptacle, and push handle (B) to engage the pins into the receptacle.
17. Push handle (B) to the closed position until lock button (C) snaps out.
18. Remove the cover on the float module electrical receptacle.
19. Remove connector (D) from the combine.
20. Align the lugs on connector (D) with the slots in the float module receptacle, and push the connector onto the receptacle. Turn the collar on the connector to lock it in place.

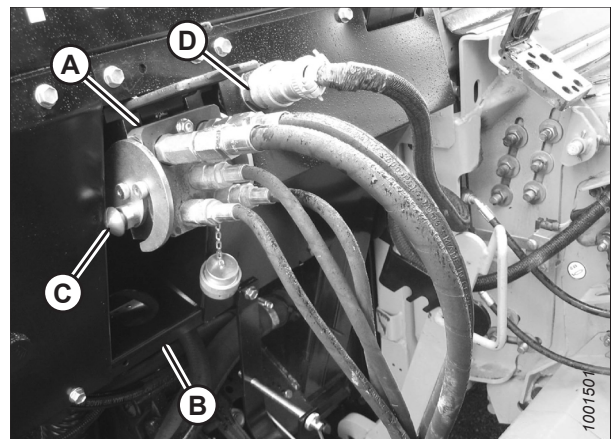


Figure 5.96: Connections

21. Detach safety chain (C) from support bracket (B).
22. Pull collar (D) back to release driveline (A) from the support bracket. Remove the driveline from the support bracket.

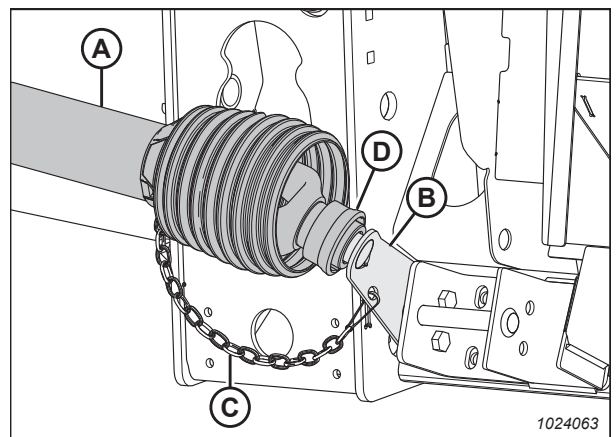


Figure 5.97: Driveline in Storage Position

ATTACHING HEADER TO COMBINE

23. Pull back the collar on the end of the driveline, and push the driveline onto combine output shaft (A) until the collar locks.

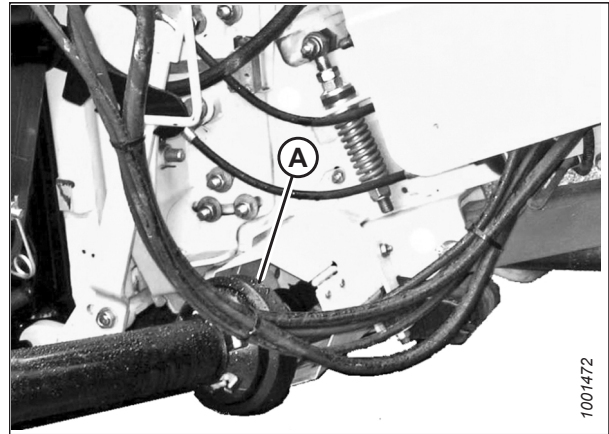


Figure 5.98: Driveline and Output Shaft

24. Disengage the float locks by pulling each float lock handle (A) away from the float module and setting it in unlocked position (B).

NOTE:

The illustration at right shows the right side of the header. The float lock on the left side of the header is opposite.

25. Proceed to [5.7 Completing Header Assembly, page 117](#).

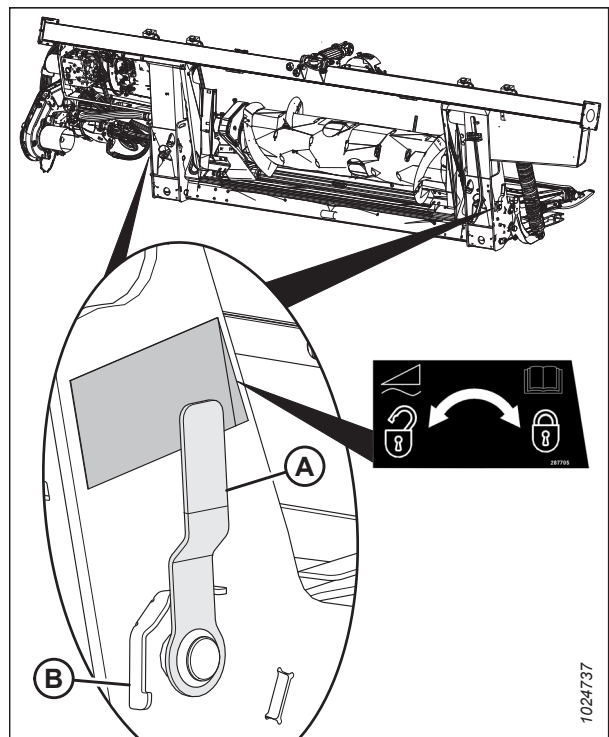


Figure 5.99: Float Lock Handle

5.7 Completing Header Assembly

The header has to be completely assembled before it can be operated.

5.7.1 Removing Shipping Supports

The removable supports are painted yellow. Refer to the illustrations and remove the remaining supports.

NOTE:

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

1. Remove two bolts (A) and remove strap (B) from both sides of the center frame.

NOTE:

If the strap is difficult to remove, lift on one end of the header to release the load on the strap so that the bolts can be removed.

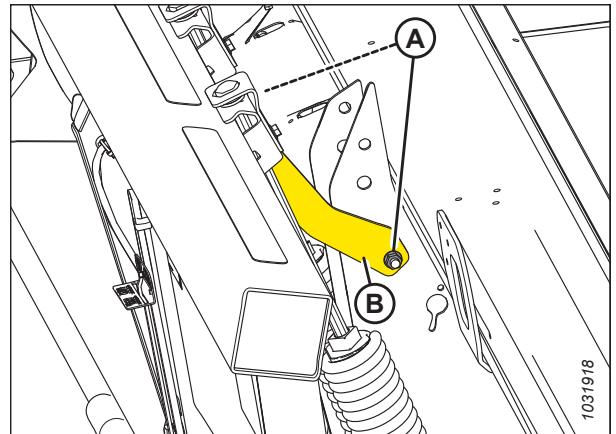


Figure 5.100: Strap on Center Frame

2. Remove lynch pin (A), nut and bolt (B), and remove shipping brace (C).
3. Reinstall lynch pin (A).

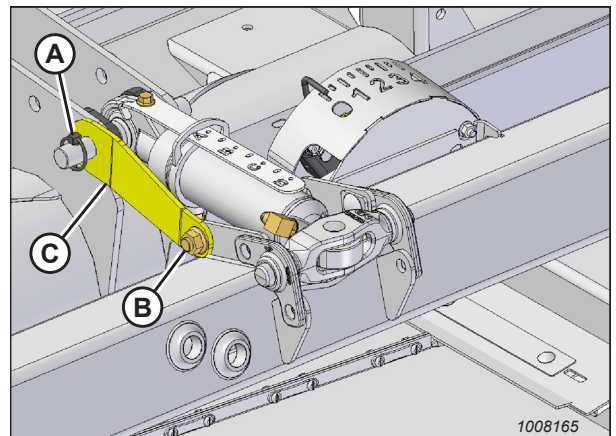


Figure 5.101: Lynch Pin, Hardware, and Shipping Brace

5.7.2 Positioning Transport Lights

Transport lights are located on each outboard reel arm. They are shipped in an inverted position on the inboard sides of the reel arms.

1. Position light (A) perpendicular to the header. The light arm should move with normal hand force yet maintain its position. If not, proceed to the next step.
2. Loosen jam nut (B) on the light attachment bolt, and adjust hex nut (C) as required. Tighten jam nut (B).
3. Repeat the steps above for the opposite side.

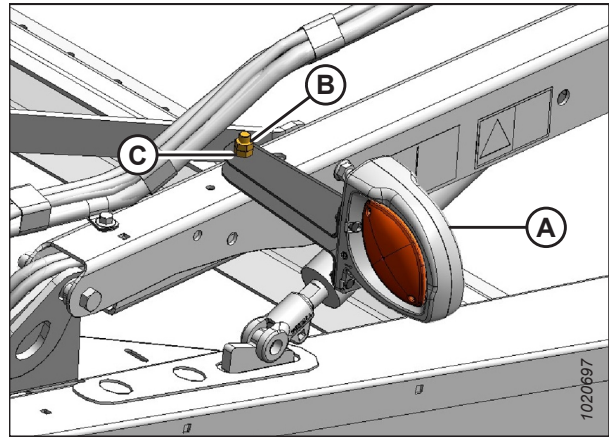


Figure 5.102: Transport Light

5.7.3 Crop Dividers

Crop dividers are used to help divide the crop when harvesting. They are removable to allow the installation of the vertical knives and to decrease transport width.

Removing Crop Dividers from Storage

Crop dividers are shipped attached to the inboard side of the endsheets. They must be removed from their shipping location.

1. Support the crop divider and remove the shipping wire at front end (A).
2. Remove bolt (B).
3. Remove bolt and washer (C) and retain these parts for installation later.

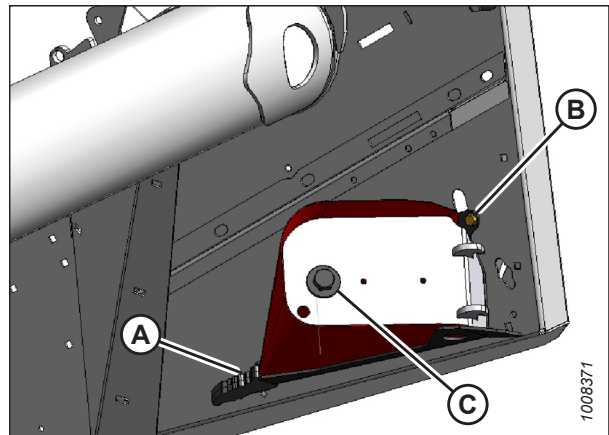


Figure 5.103: Crop Divider Stored on Endsheets

Opening Endshields

The endshields can be opened to access serviceable components or stored items.

This procedure details the steps necessary to open the left endshield; the procedure for opening the right endshield is similar.

ATTACHING HEADER TO COMBINE

1. From the back of the header, push release lever (A) to unlock the endshield.
2. Pull the endshield open using handle depression (B).

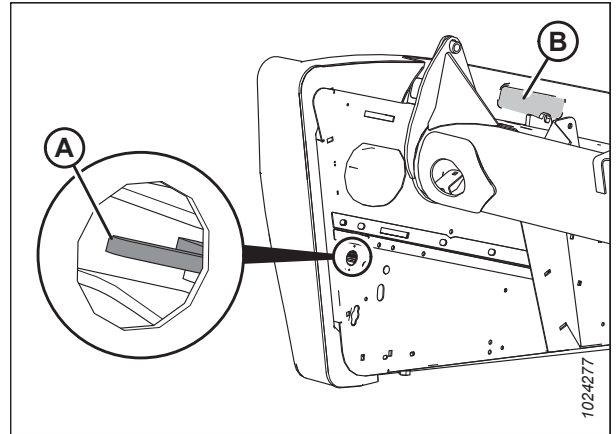


Figure 5.104: Left Endshield

3. Pull the endshield at handle depression (A).

NOTE:

The endshield is retained by hinge tab (B) and will open in direction (C).

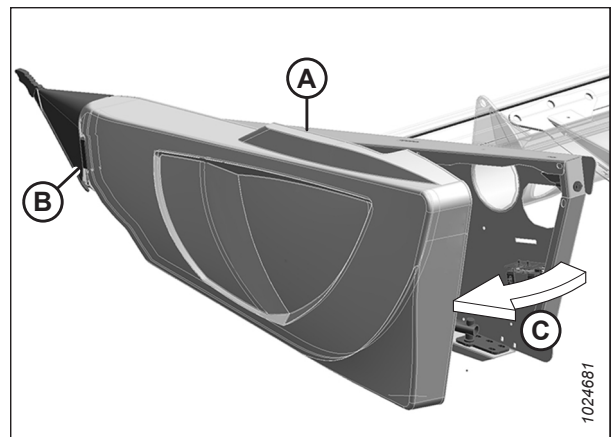


Figure 5.105: Left Endshield

4. If additional clearance is required, pull the endshield free of hinge tab (A) and swing the endshield toward the rear of the header.
5. Engage safety latch (B) on the hinge arm to secure the endshield in the fully open position.

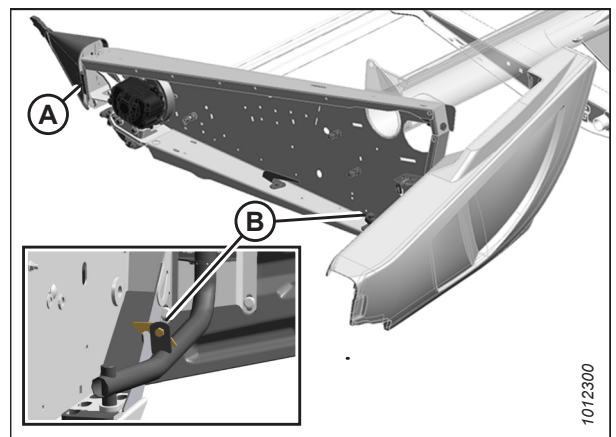


Figure 5.106: Left Endshield

Installing Crop Divider without Latch Option

Crop dividers are installed on the header endsheets. They can be installed without the latch option.

NOTE:

If the crop divider latch option was ordered with the header, proceed to [Installing Crop Divider with Latch Option, page 121](#). Otherwise, complete the following procedure:

ATTACHING HEADER TO COMBINE

1. Position the crop divider as shown by inserting lugs (A) into holes (B) in the endsheet.

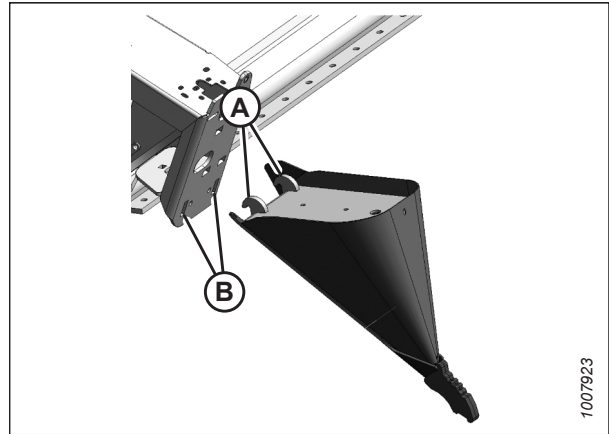


Figure 5.107: Crop Divider without Latch

2. Lift the forward end of the crop divider and install bolt (B) and special stepped washer (A) (step towards divider). Tighten the bolt.

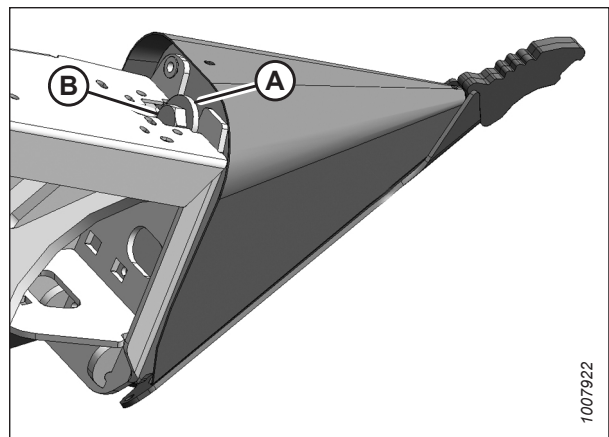


Figure 5.108: Crop Divider without Latch

3. Check that the divider does **NOT** move laterally. Adjust bolts (A) as required to tighten the divider, and remove lateral play when pulling at the divider tip.

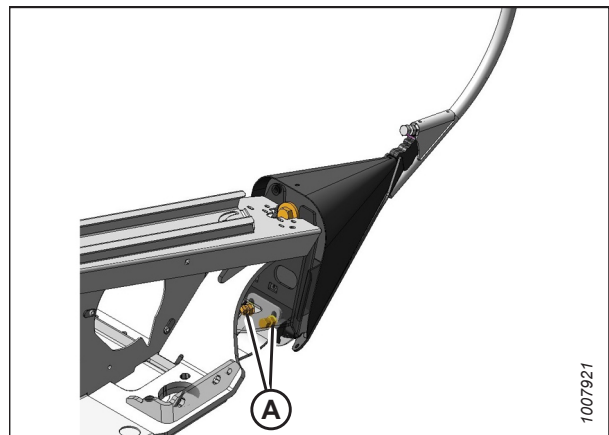


Figure 5.109: Crop Divider Adjustment

ATTACHING HEADER TO COMBINE

Installing Crop Divider with Latch Option

The crop dividers can be installed on the endsheets with the optional latch mechanism.

1. Position the crop divider as shown by inserting lugs (A) into the holes in the endsheet.
2. Lift the forward end of the divider until pin (B) engages and closes latch (C).
3. Push safety lever (D) down to lock the pin in the latch.

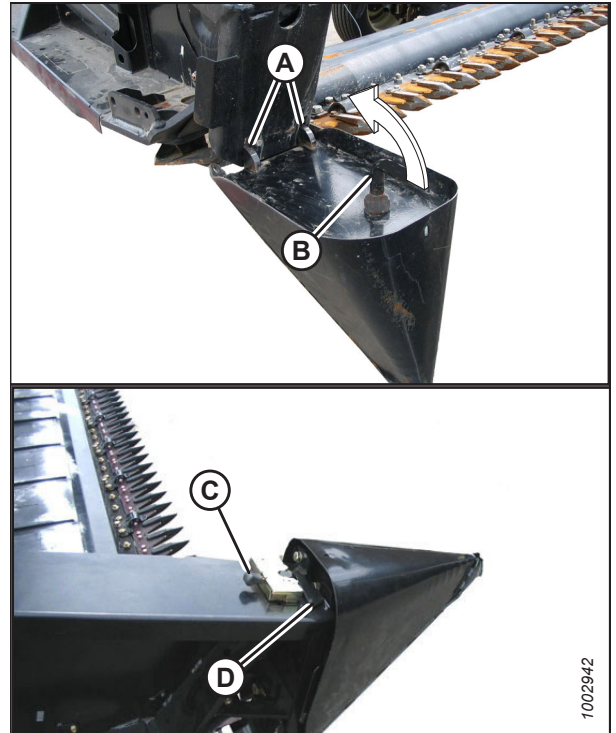


Figure 5.110: Crop Divider with Latch

4. Adjust bolts (A) to tighten the divider and remove lateral play when pulling at the divider tip.

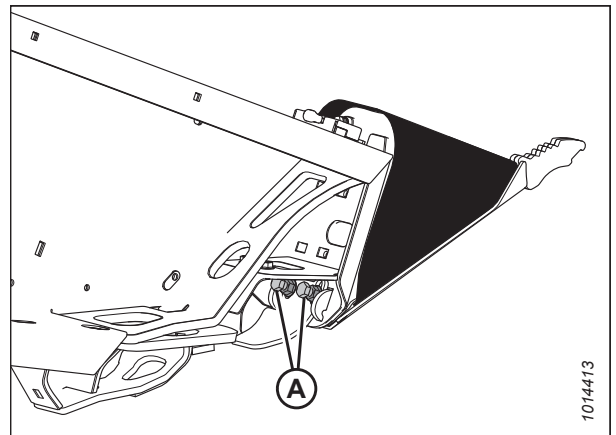


Figure 5.111: Crop Divider Adjustment

ATTACHING HEADER TO COMBINE

Closing Endshields

Close and lock the endshields before moving the header.

1. Disengage latch (B) to allow the endshield to move.
2. Insert the front of the endshield behind hinge tab (A) and into the divider cone.

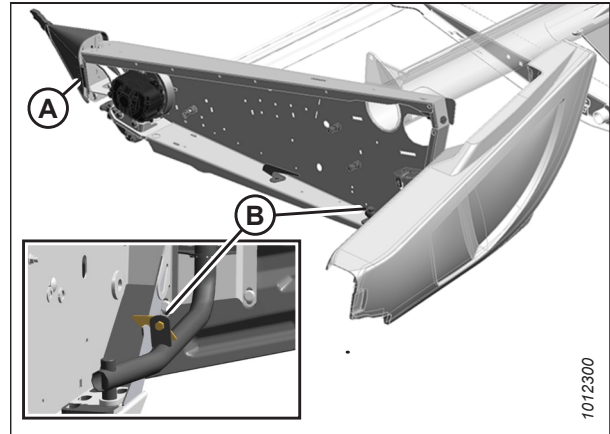


Figure 5.112: Left Endshield

3. Swing the endshield into the closed position (direction [A]). Engage the latch by pushing firmly on the endshield in the direction shown.
4. Ensure that the endshield is locked by pulling the endshield outboard; if it has successfully locked, it will not be possible to move the endshield.

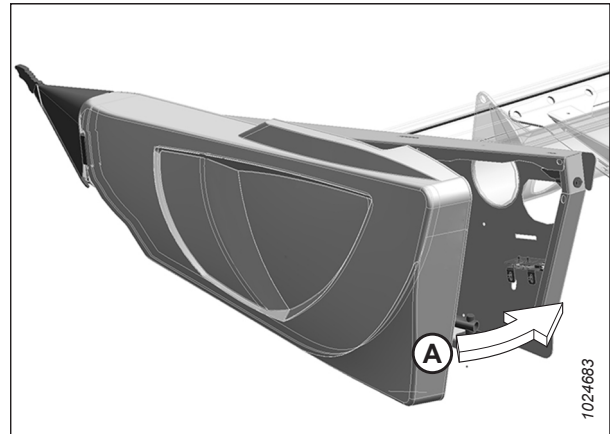


Figure 5.113: Left Endshield

Installing Crop Divider Rods

Crop divider rods are installed at the tips of the crop dividers.

1. Remove the divider rods from their shipping location on the header endsheet.
2. Position crop divider rod (B) on the tip of the crop divider as shown and tighten bolt (A).
3. Repeat Step 1, [page 122](#) and Step 2, [page 122](#) at the opposite end of the header.

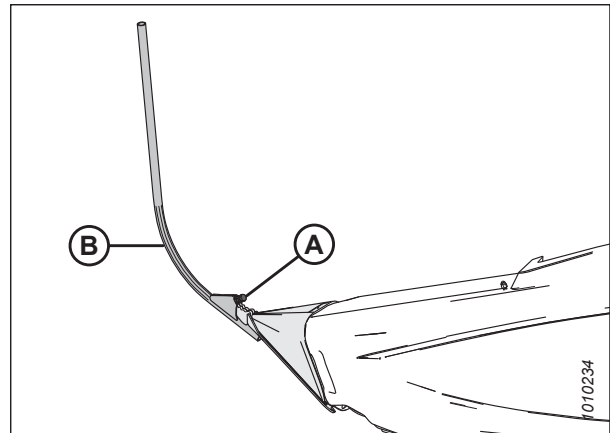


Figure 5.114: Divider Rod on Crop Divider

5.7.4 Installing Options

The header you are assembling may have shipped with optional kits. Install those kits at this stage in the procedures.

1. Retrieve the kits supplied as options with the header, and install them according to the instructions supplied with each kit.
2. Proceed to Chapter [6 Performing Predelivery Checks, page 125](#).

Chapter 6: Performing Predelivery Checks

After completing the setup process, the machine and its features should be inspected. If any adjustments are necessary, follow the procedures detailed in this chapter.

DANGER

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

IMPORTANT:

To prevent damage to the machine, ensure that no shipping material has fallen into the machine.

1. Shut down the engine, and remove the key from the ignition.
2. Perform the final checks as listed on the **Predelivery Checklist** (the yellow sheet attached to this instruction – [Predelivery Checklist, page 417](#)) to ensure that the machine is field-ready. The completed Checklist should be retained by either the Operator or the Dealer.

6.1 Recording Serial Numbers

Record the machine serial numbers on the Predelivery Checklist.

FD1 Series FlexDraper® Header

Serial Number: _____

Model Year: _____

Header serial number plate (A) is located on the upper corner on the left endsheet.

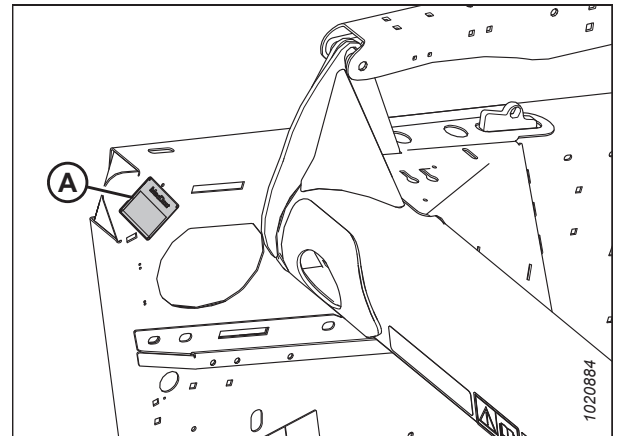


Figure 6.1: Header Serial Number Plate Location

FM100 Float Module for Combine

Serial Number: _____

Model Year: _____

Float module serial number plate (A) is located on the top left of the float module frame.

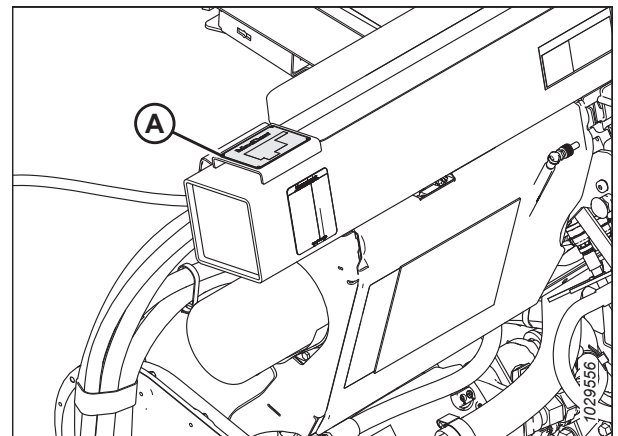


Figure 6.2: Float Module Serial Number Plate Location

PERFORMING PREDELIVERY CHECKS

Transport / Stabilizer Wheel Option

Serial Number: _____

Model Year: _____

Transport serial number plate (A) is located on the right axle assembly.

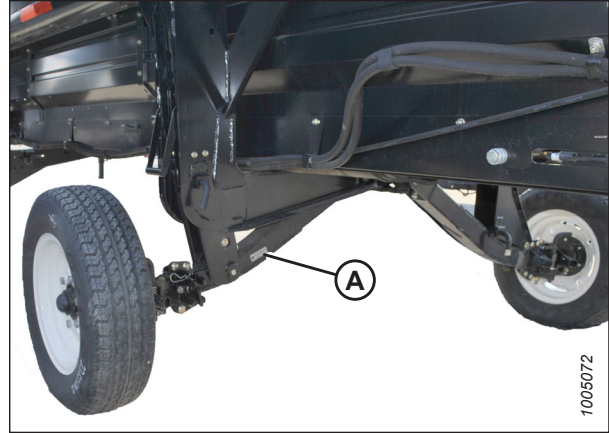


Figure 6.3: Transport / Stabilizer Wheel Location

6.2 Checking Tire Pressure – Transport and Stabilizer Wheels

Ensure that the transport tires are inflated to the correct pressure and that the load on the tires is appropriate before attempting to transport the header. Inflate the tires to the pressures recommended in the table below.

WARNING

Determine the tire’s load range before inflating a transport/stabilizer tire. When inflating the tire, do **NOT** exceed the pressure specified in Table 6.1, page 127.

Measure the pressure of each transport tire. If necessary, inflate the tires to the pressure recommended in Table 6.1, page 127.

IMPORTANT:

Do **NOT** tow the header at speeds faster than 32 km/h (20 mph) using the transport wheels. When turning a corner, or in slippery or rough conditions, do **NOT** tow the header faster than 8 km/h (5 mph).

IMPORTANT:

Where a discrepancy exists between the pressure specified on the tire’s sidewall and the one listed in Table 6.1, page 127, use the pressure listed in Table 6.1, page 127.

Table 6.1 Header Transport Wheels – Tire Inflation Pressure Specifications

Size	Load Range	Recommended Pressure
ST205/75 R15	C	345 kPa (50 psi)
	IMPORTANT: Load range “C” is an alternative tire for the stabilizer wheel option ONLY . Do NOT use with the transport option.	
	D	517 kPa (75 psi) ¹¹
	E	586 kPa (85 psi)

11. The sidewall pressure for load range D tires is listed as 448 kPa (65 psi). However, since this tire is only operated at slow speeds, use the recommended pressure for load range D tires on the Slow Speed Transport/Stabilizer option.

6.3 Checking Wheel Bolt Torque

The wheel bolts securing the transport wheels must be torqued correctly before the header can be safely transported.

1. Measure the torque value of each wheel bolt. A correctly torqued wheel bolt will show a torque reading of 115 Nm (85 lbf-ft).
2. If a wheel bolt is not set to the correct torque value, adjust its torque as needed.
3. Tighten all wheel bolts according to the bolt-tightening pattern depicted in the illustration at right.

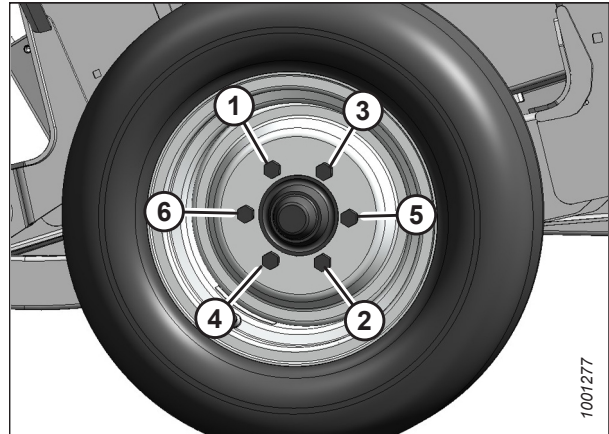


Figure 6.4: Sequence for Tightening Bolts

6.4 Checking Knife Drive Box

Single-knife headers have one knife drive box, while double-knife headers have two knife drive boxes. The knife drive box(es) can be accessed by opening the endshield(s). Each knife drive's breather and oil level will need to be inspected.

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

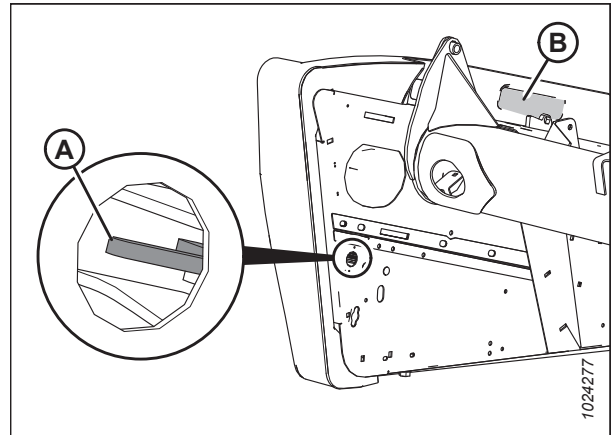


Figure 6.5: Endshield Latch Access

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

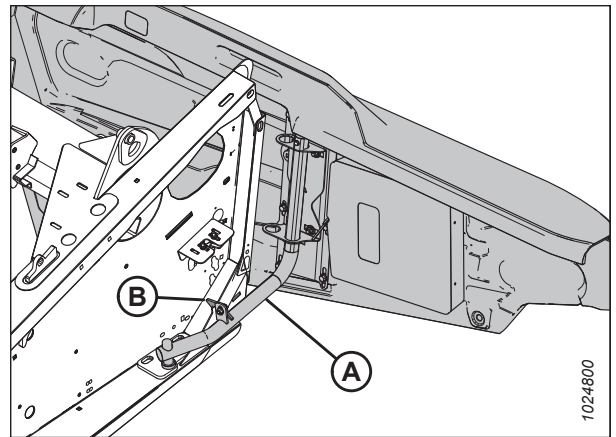


Figure 6.6: Left Endshield Support Tube

IMPORTANT:

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

4. Ensure that the position of plug (A) and breather (B) is as shown. Adjust the plug and breather as needed.
5. Remove breather (B) and check the knife box's oil level. The oil level should be between bottom edge (C) of lower hole (D) and bottom (E) of the breather.

NOTE:

Check the oil level while the top of the knife drive box is horizontal and breather (B) is screwed in.

6. Reinstall the breather and tighten it. Ensure that both the plug and breather have an adequate thread sealant.

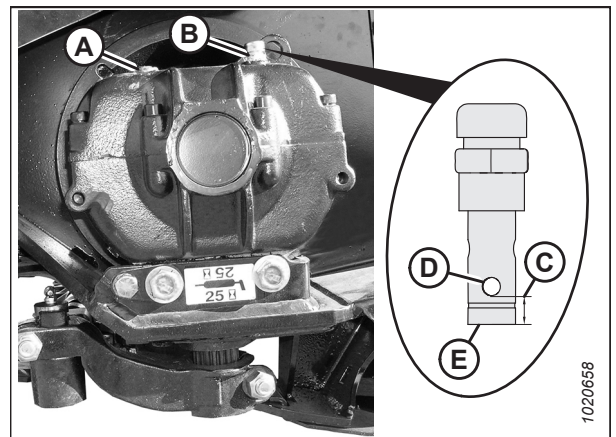


Figure 6.7: Knife Drive Box

6.5 Checking Oil Level in Header Drive Gearbox

Check the oil level in the header drive gearbox as part of the predelivery checks.

DANGER

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

1. Lower the header to the ground and ensure the gearbox is in working position.
2. Shut down the engine, and remove the key from the ignition.
3. Remove oil level plug (A) and check that the oil level is up to the bottom of the hole.
4. Reinstall oil level plug (A).

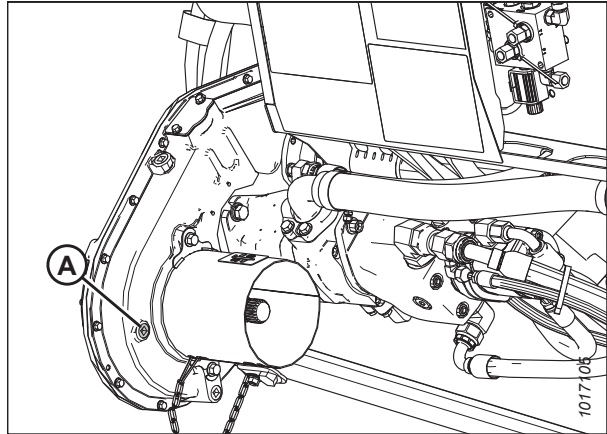


Figure 6.8: Header Drive Gearbox

6.6 Checking Oil Level in Hydraulic Reservoir

Check the oil level in the hydraulic reservoir as part of the predelivery checks.

NOTE:

Check the oil level when the oil is cold.

1. Check the oil level by looking at lower sight (A) and upper sight (B). Ensure that the cutterbar is barely touching the ground, and the center-link is fully retracted.
2. Ensure that the oil is at the appropriate level for the terrain:
 - **Level terrain (C):** Lower sight (A) should be full, and upper sight (B) should be empty.
 - **Sloped terrain (D):** Lower sight (A) should be full, and upper sight (B) should be half-filled.

NOTE:

It may be necessary to slightly reduce the oil level when the ambient temperature is above 35°C (95°F). This will prevent oil from overflowing at the breather tube when the hydraulic oil reaches operating temperature.

NOTE:

It is **OK** to use the sloped terrain oil level even in level terrain so long as the fill neck extension kit (MD #B6057) is installed.

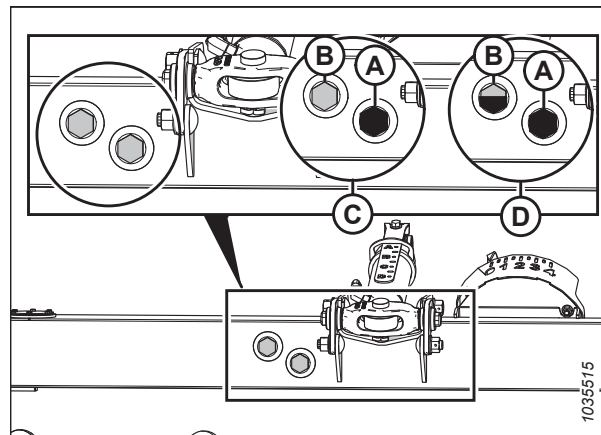


Figure 6.9: Oil Level Sight Glass

6.7 Checking Knife Drive Belt Tension

Check and possibly adjust the knife drive belt tension as part of the predelivery checks.

DANGER

To prevent bodily injury or death from the unexpected startup of the machine, always stop the engine and remove the key before adjusting the machine.

1. Open endshield(s). For instructions refer to *Opening Endshields, page 118*.

NOTE:

The knife drive is identical on both sides of the header.

2. Check belt (C) tension by applying 90 N (20 lbf) by hand to the belt at mid-span, and check that the belt deflects 18 mm (3/4 in.). If necessary adjust the tension as follows:
 - a. Loosen two bolts (A) that secure the motor assembly to the header endsheet.
 - b. Turn adjuster bolt (B) as required (clockwise to tighten) to achieve the specified tension.

IMPORTANT:

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

3. Ensure that the clearance between belt (A) and belt guide (B) is 1 mm (1/32 in.).
4. If required, loosen three bolts (C), and adjust the position of guide (B).
5. Tighten bolts (C).
6. Close the endshield(s). For instructions, refer to *Closing Endshields, page 122*.

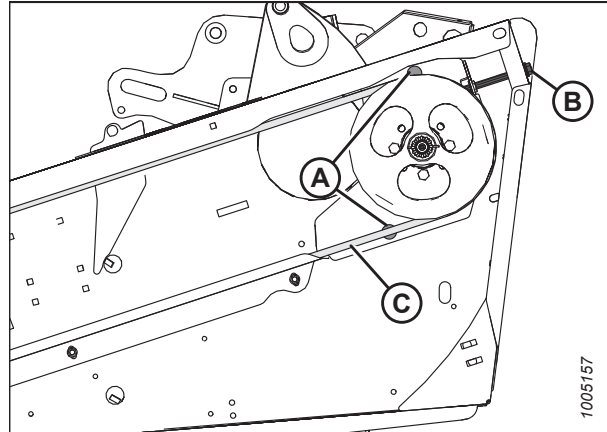


Figure 6.10: Left Side of Header Shown – Right Opposite for Double-Knife Headers

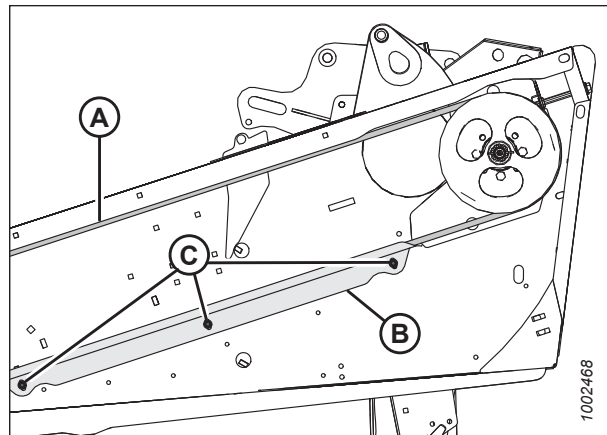


Figure 6.11: Knife Drive

6.8 Checking Pointed Guard Hold-Downs

This procedure is applicable to headers with pointed guards.

DANGER

To prevent bodily injury or death from the unexpected startup of the machine, always stop the engine and remove the key before adjusting the machine.

Measure the clearance between the hold-downs and knife sections as follows:

1. Shut down the combine, and remove the key from the ignition.
2. Check the guard alignment and adjust it as required. Refer to [9.2.1 Adjusting Knife](#), page 397.
3. Manually stroke the knife to align section (A) under hold-down (B).
4. At standard guard locations, push knife section (A) down against guard (C) and measure the clearance between hold-down (B) and knife section (A) with a feeler gauge. The clearance should be 0.1–0.6 mm (0.004–0.024 in.).
5. If necessary, refer to [6.8.1 Adjusting Pointed Guard Hold-Downs](#), page 134.

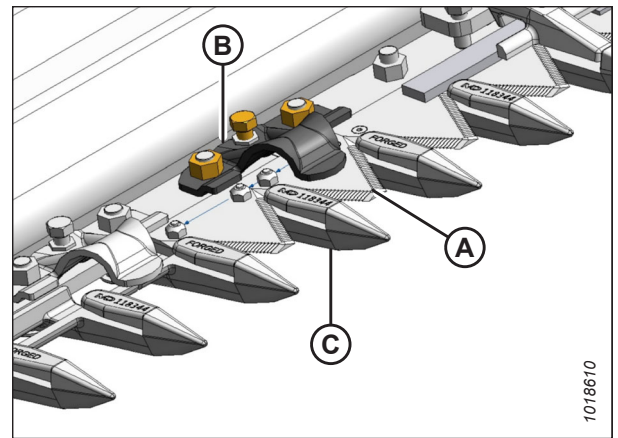


Figure 6.12: Normal Guard Hold-Down

Double knife:

6. Manually stroke the knife to align sections (A) and (C) under center hold-down (B).
7. Measure between knife sections (A) and (C) with a feeler gauge. The clearances should be as follows:
 - At tip of hold-down: 0.1–0.4 mm (0.004–0.016 in.)
 - At rear of hold-down: 0.1–1.0 mm (0.004–0.040 in.)
8. If necessary, refer to [6.8.2 Adjusting Hold-Down Clips at Double-Knife Center Pointed Guard](#), page 134.

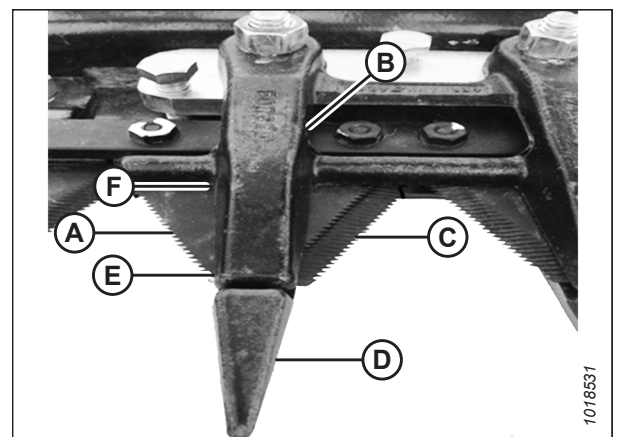


Figure 6.13: Double-Knife Center Guard Hold-Down

6.8.1 Adjusting Pointed Guard Hold-Downs

This procedure is applicable to formed sheet metal hold-downs. Do **NOT** use this procedure for the hold-down at the center guard position where knives overlap on double-knife headers. For center guard, refer to [6.8.2 Adjusting Hold-Down Clips at Double-Knife Center Pointed Guard](#), page 134.

DANGER

To prevent bodily injury or death from the unexpected startup of the machine, always stop the engine and remove the key before adjusting the machine.

1. Shut down the combine, and remove the key from the ignition.
2. Decrease the clearance by turning bolt (B) clockwise to lower the front of hold-down (A).
3. Increase the clearance by turning bolt (B) counterclockwise to raise the front of the hold-down.

NOTE:

For larger adjustments, it may be necessary to loosen nuts (C), turn adjuster bolt (B), and then retighten the nuts.

4. Check the clearance again and adjust it as required.

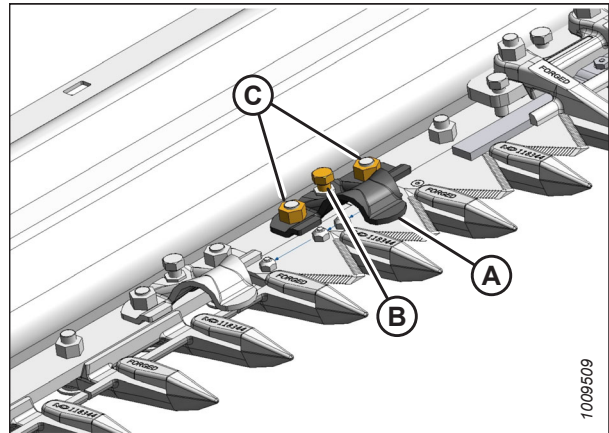


Figure 6.14: Cutterbar

6.8.2 Adjusting Hold-Down Clips at Double-Knife Center Pointed Guard

DANGER

To prevent bodily injury or death from the unexpected startup of the machine, always stop the engine and remove the key before adjusting the machine.

1. Shut down the combine, and remove the key from the ignition.
2. Manually stroke the knives so that sections (A) are under hold-down (B) as shown.
3. Loosen nuts (C) and back off bolts (D) until they don't contact the cutterbar.
4. Lightly clamp hold-down (B) to guard (E) with a C-clamp or equivalent. Position the clamp on the trash bar at location (F) as shown.
5. Turn bolts (D) until they contact the cutterbar, then tighten them **ONE** turn.
6. Remove the clamp.
7. Tighten nuts (C) and torque the nuts to 88 Nm (65 lbf-ft).
8. Check clearances. For instructions, refer to [6.8 Checking Pointed Guard Hold-Downs](#), page 133.

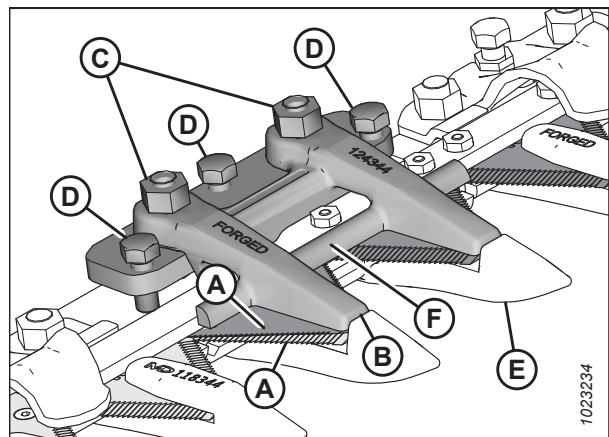


Figure 6.15: Center Guard

6.9 Centering Reel on Double-Reel Header

DANGER

To prevent bodily injury or death from the unexpected startup of the machine, always stop the engine and remove the key before adjusting the machine.

1. Unlock the wings.
2. Start the engine.
3. Lower the reel and adjust the fore-aft position to 5 on the reel arm indicator decal.
4. Raise the header enough to put 150 mm (6 in.) blocks under the outboard skid shoes.
5. Lower the header onto the blocks. The ends of the header will be higher than the center section, causing the header to smile.
6. Shut down the engine, and remove the key from the ignition.
7. Measure clearance (A) at locations (B) between the reel tine tube and the endsheet at both ends of the header. The clearances should be the same if the reel is centered. Refer to the following steps to center the reel.

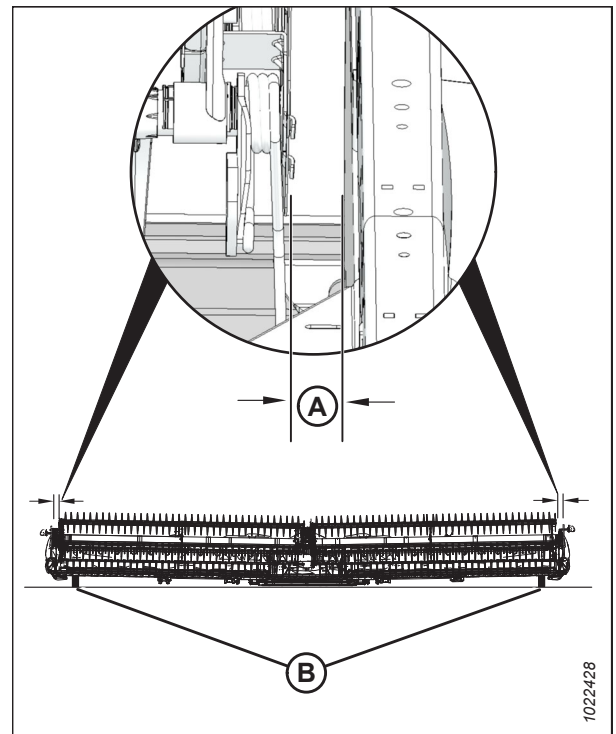


Figure 6.16: Centering Reel – Double Reel

PERFORMING PREDELIVERY CHECKS

8. Loosen bolts (A) on braces (B) at the center support arm.
9. Move the forward end of reel support arm (C) laterally as required to center the reel.
10. Tighten bolts (A) and torque the bolts to 382 Nm (282 lbf-ft).

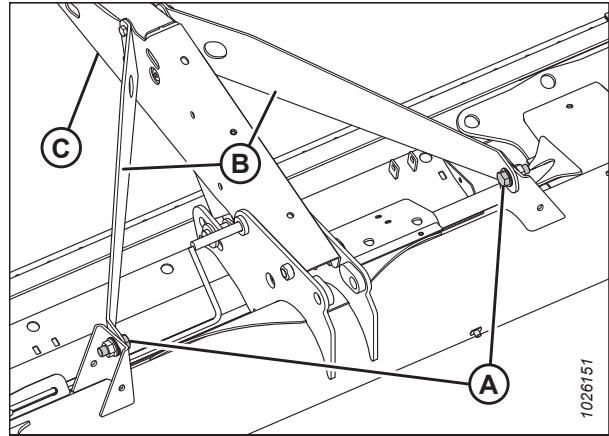


Figure 6.17: Center Support Arm and Braces

6.10 Centering Reel on Single-Reel Header

Center the reel to minimize loss from uneven gathering.

DANGER

To prevent bodily injury or death from the unexpected start-up of the machine, always stop the engine and remove the key before making adjustments to the machine.

DANGER

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

1. Unlock the wings.
2. Start the engine.
3. Lower the reel and adjust the fore-aft position to 5 on the reel arm indicator decal.
4. Raise the header enough to put 150 mm (6 in.) blocks under the outboard skid shoes.
5. Lower the header onto the blocks. The ends of the header will be higher than the center section, causing the header to smile.
6. Shut down the engine, and remove the key from the ignition.
7. Measure clearance (A) between the reel tine tube and the endsheet at the right end of the header. The clearance should be 40 mm (1 9/16 in.). Refer to the following steps to adjust the reel position.

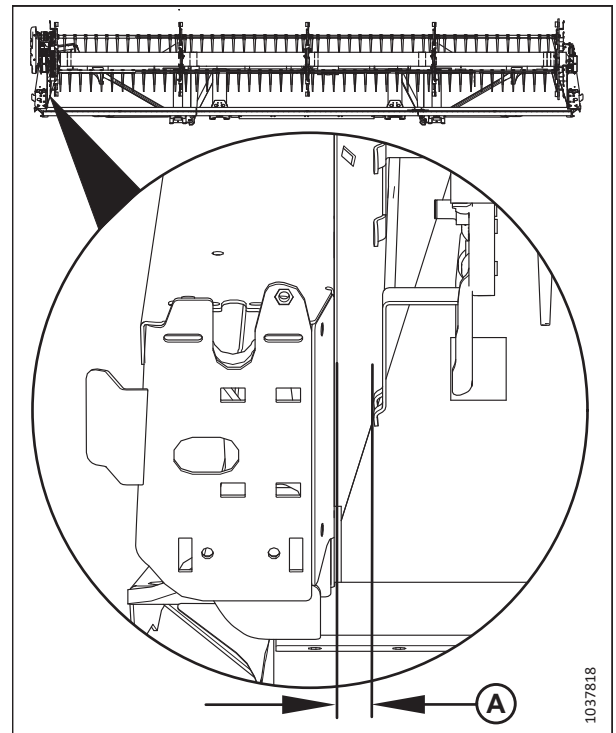


Figure 6.18: Centering Reel

PERFORMING PREDELIVERY CHECKS

8. Loosen bolt (A) on brace (B) on the right side of the reel.
9. Move the forward end of reel support arm (C) laterally as required to achieve the specified clearance.
10. Tighten bolt (A) and torque the bolt to 382 Nm (282 lbf-ft).

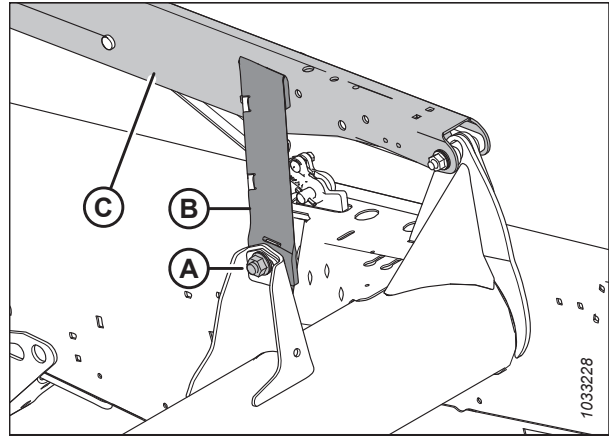


Figure 6.19: Reel Support Arm

6.11 Reel-to-Cutterbar Clearance

Correctly setting the clearance between the reel fingers and the cutterbar ensures that the reel fingers do not contact the cutterbar when the header is operating. The clearance is set at the factory, but some adjustment may be necessary before the header can be operated.

The finger to guard/cutterbar clearance values when the reels are fully lowered are shown in the table below.

IMPORTANT:

Measurements must be taken at **both ends of each reel and at the cutterbar flex locations** with the header in full-frown mode.

Table 6.2 Finger to Guard/Cutterbar Clearance

Header Width	Single Reel	Double Reel
	(X) 3 mm (+/- 1/8 in.) at Flex Locations ONLY with Header in Full-Frown Mode	(X) 3 mm (+/- 1/8 in.) at Reel Ends and Flex Locations with Header in Full-Frown Mode
FD125	20 mm (3/4 in.)	—
FD130	—	20 mm (3/4 in.)
FD135	—	20 mm (3/4 in.)
FD140	—	20 mm (3/4 in.)
FD145	—	20 mm (3/4 in.)

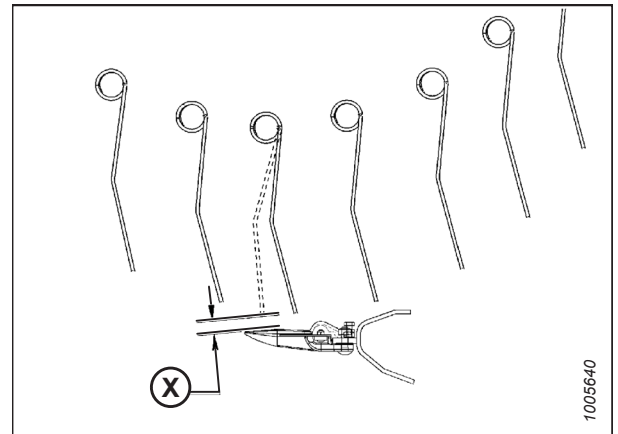


Figure 6.20: Finger Clearance

6.11.1 Measuring Reel Clearance

Measure the clearance between the reel fingers and the cutterbar before operating the reel.

⚠ DANGER

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

⚠ WARNING

Check to be sure all bystanders have cleared the area.

1. Start the engine.
2. Park the combine on a level surface.
3. Lower the header fully.

PERFORMING PREDELIVERY CHECKS

4. Move spring handles (A) down to the UNLOCK position.

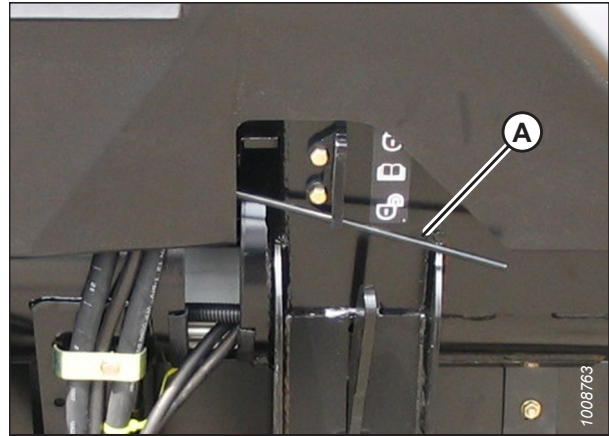


Figure 6.21: Wing Lock in Unlocked Position

5. Raise the header and place two 150 mm (6 in.) blocks (A) under the cutterbar, just inboard of the wing flex points.
6. Lower header fully, allowing it to flex into full frown mode.

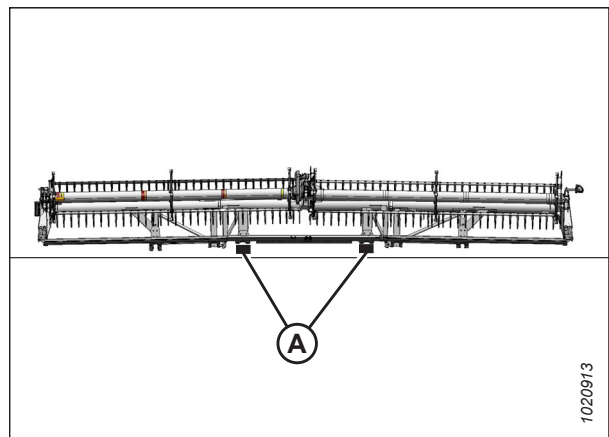


Figure 6.22: FlexDraper® Header Block Locations

7. Set the fore-aft position to the middle position (5), as shown on fore-aft position decal (A).
8. Lower the reel fully.
9. Shut down the engine, and remove the key from the ignition.

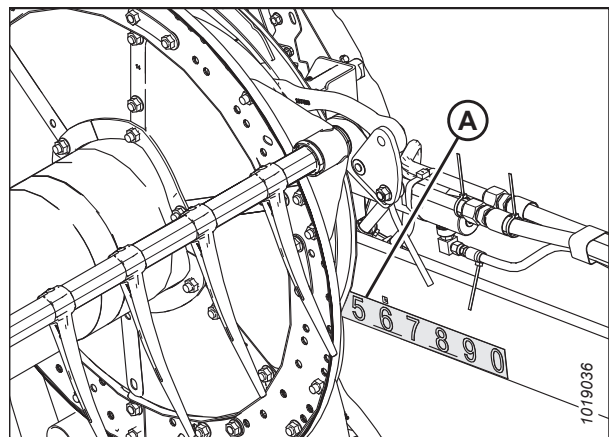


Figure 6.23: Fore-Aft Position

PERFORMING PREDELIVERY CHECKS

10. Measure clearance (X) between guard (A) and finger (B) at the specified measurement locations. For the clearance specifications, refer to [6.11 Reel-to-Cutterbar Clearance](#), page 139.

For the measurement locations, refer to Figure 6.25, page 141.

NOTE:

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

NOTE:

When measuring the reel clearance at the center of a double-reel header, measure the lowest reel.

Single Reel: Measure the reel clearance at hinge points (A).

Double Reel: Measure the reel clearance at hinge points (A) and at outer ends (B) of the reels.

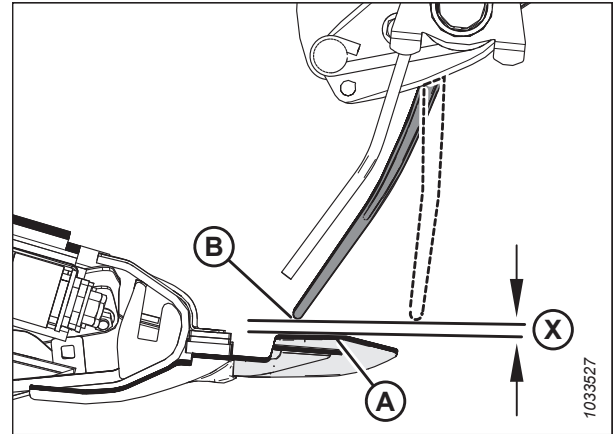


Figure 6.24: Reel-to-Cutterbar Clearance

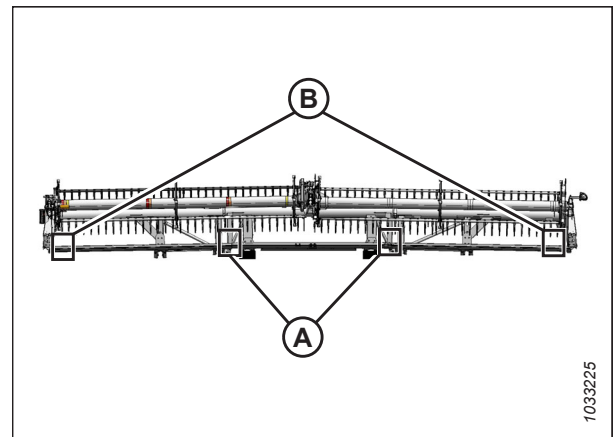


Figure 6.25: Measurement Locations – Double Reel Shown

11. Adjust the reel clearance, if necessary. For instructions, refer to [6.11.2 Adjusting Reel Clearance](#), page 141.

6.11.2 Adjusting Reel Clearance

Adjust the reel until there is enough clearance to prevent the reel fingers from contacting the cutterbar during operation.

⚠ DANGER

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

PERFORMING PREDELIVERY CHECKS

1. Raise the reel fully.
2. Move reel safety prop (A) to the engaged position.

NOTE:

Keep pivot bolt (B) sufficiently tight that the prop remains in the stored position when it is not in use, but can be engaged using hand force.

3. Repeat the previous step on the opposite reel arm.

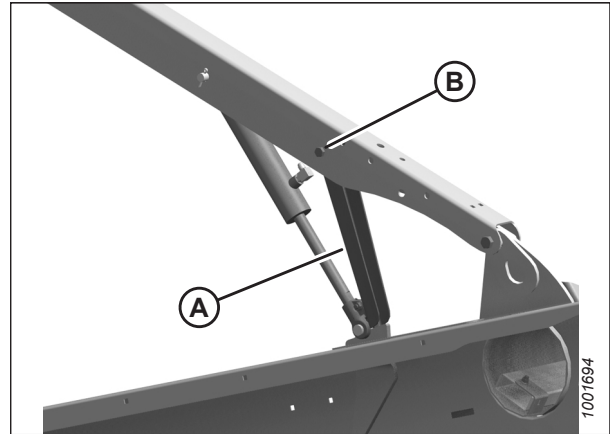


Figure 6.26: Engaged Reel Safety Prop – Left Shown

4. Use handle (A) to move the lock rod to inboard position (B), which engages pin (C) under the prop.
5. Lower the reel until the safety props contact the outer arm cylinder mounts and the center arm pins.
6. Shut down the engine, and remove the key from the ignition.

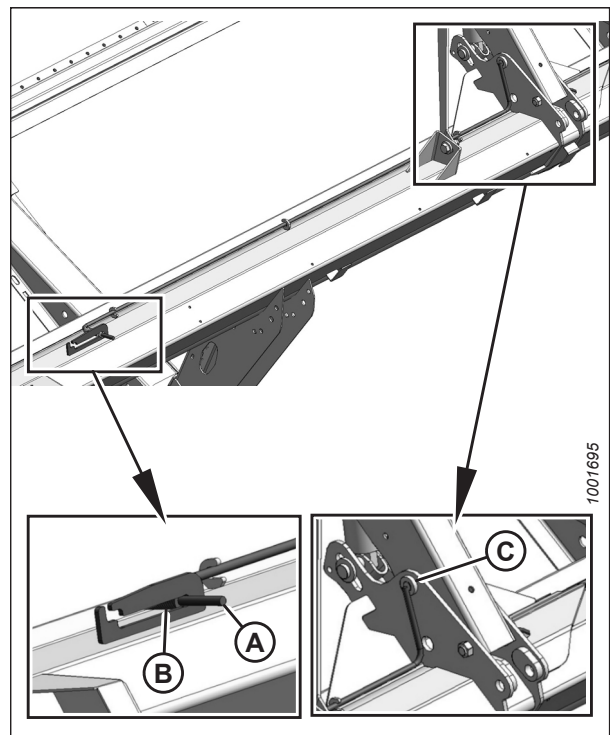


Figure 6.27: Reel Safety Prop – Center Arm

PERFORMING PREDELIVERY CHECKS

7. **Single-reel headers:** Adjust the outboard reel arm lift cylinders to set the clearance at the outboard ends of the reel as follows:
 - a. Loosen bolt (A).
 - b. Turn cylinder rod (B) out of the clevis to raise the reel and thereby increase the reel-to-cutterbar clearance, or else turn the cylinder rod into the clevis to lower the reel and thereby decrease the reel-to-cutterbar clearance.
 - c. Tighten bolt (A).
 - d. Repeat Steps a) to c) to set the reel-to-cutterbar clearance on the opposite side of the header.

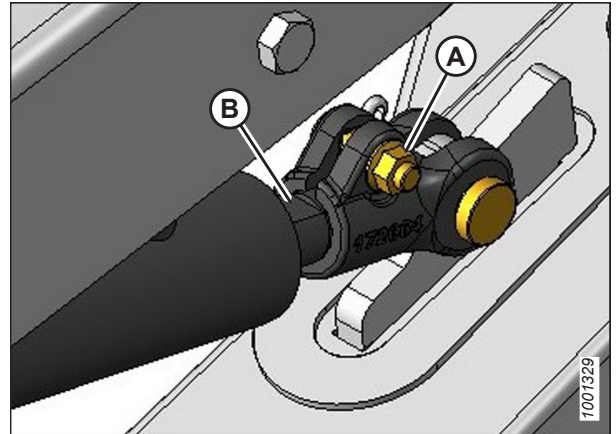


Figure 6.28: Outside Reel Arm

8. **Double-reel headers:** adjust center arm lift cylinder stop (A) to change the reel-to-cutterbar clearance at the inboard ends of the reels and the clearance at the header's flex points as follows:
 - a. Loosen nut (B).
 - b. Turn nut (C) counterclockwise to raise the reel and increase the reel-to-cutterbar clearance, or clockwise to lower the reel and decrease the reel-to-cutterbar clearance.
 - c. Tighten nut (B).

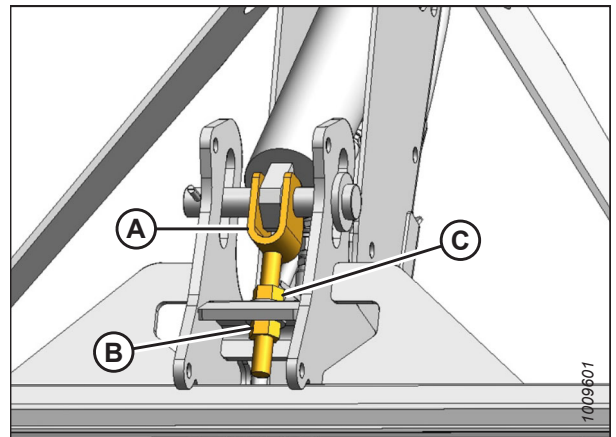


Figure 6.29: Underside of Center Arm

9. Measure the reel clearance again. For instructions, refer to [6.11.1 Measuring Reel Clearance, page 139](#). If necessary, repeat the reel-to-cutterbar clearance adjustment procedure.

WARNING

Check to be sure all bystanders have cleared the area.

10. Start the engine.
11. Move the reel back to ensure that the steel end fingers do **NOT** contact the deflector shields.
12. If contact between the steel end fingers and the deflector shields occurs, adjust the reel upward to maintain the reel-to-cutterbar clearance at all reel fore-aft positions. If contact between the steel end fingers and the deflector shields still occurs after adjusting the reel, trim the steel end fingers to obtain the proper clearances.

PERFORMING PREDELIVERY CHECKS

13. Raise the reel to its maximum height.
14. Move reel safety prop (A) inside the reel arm.
15. Repeat the previous step on the opposite end of the reel.

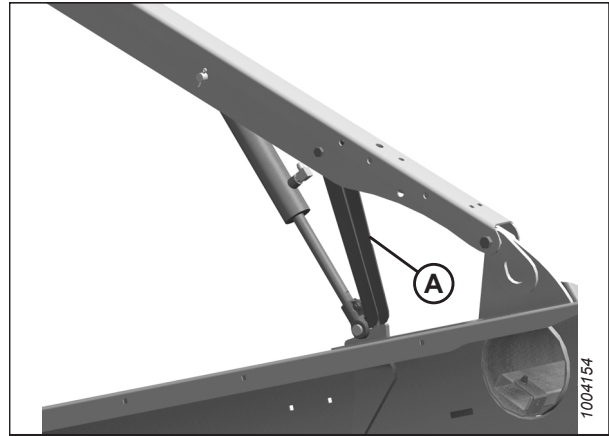


Figure 6.30: Left Reel Safety Prop

16. Use handle (B) to move lock rod (A) to the outboard position.
17. Lower the reel fully.
18. Shut down the engine, and remove the key from the ignition.

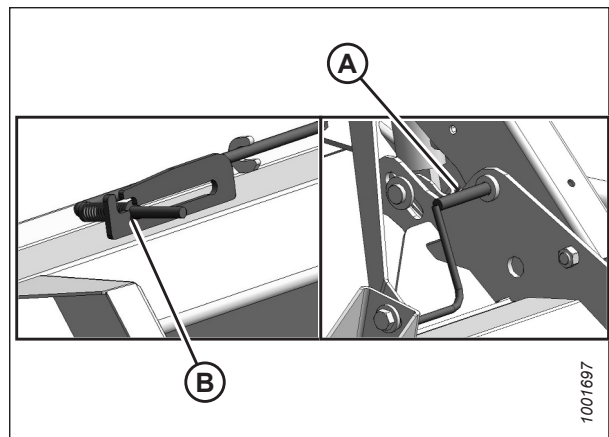


Figure 6.31: Reel Safety Prop – Center Arm

6.12 Checking and Adjusting Header Float

The header is equipped with a suspension system that floats the header over the ground to compensate for ridges, trenches, and other variations in ground contour. If the header float is not set properly, it may cause the cutterbar to push into the ground or leave uncut crop. This procedure describes how to check the header float and adjust it to the factory-recommended settings.

DANGER

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

Use the following guidelines when adjusting the float setting:

- Turn each adjustment bolt pair equally. Repeat the torque wrench reading procedure on both sides of the header.
- Set the header float as light as possible (without causing excessive bouncing) to prevent knife component breakage, soil scooping, and soil build-up at the cutterbar in wet conditions.
- To prevent the header from bouncing excessively while in operation with a light float setting, reduce the combine's ground speed.
- When cutting above the ground, use the stabilizer wheels in conjunction with the header float to minimize bouncing at the ends of the header.

NOTE:

If an adequate header float setting cannot be achieved using all of the available adjustments, an optional heavy-duty spring is available.

To check and adjust the header float:

1. Park the combine on a level surface.
2. Level the header and the float module. If the header and the float module are not level, perform the following checks before adjusting the float:

IMPORTANT:

Do **NOT** use the float module springs to level the header.

- Check that the combine feeder house is level. For instructions, refer to your combine operator's manual.
 - Check that the top of the float module is level with the combine axle.
 - Ensure that the combine tires are inflated to the same pressure.
3. Position the header so that the cutterbar is 150–254 mm (6–10 in.) above the ground.
 4. Extend the header angle hydraulic cylinder to between **B** and **C** on indicator (A).

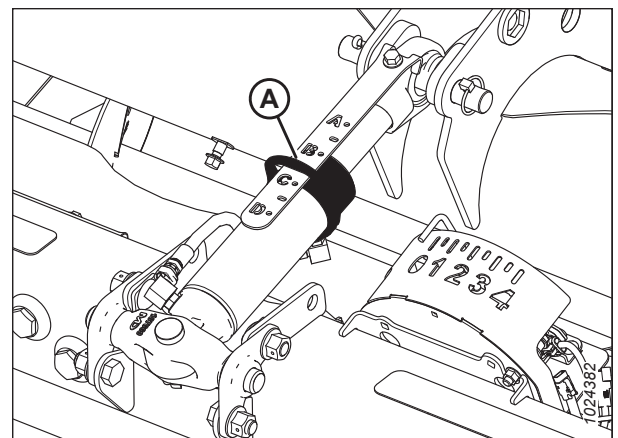


Figure 6.32: Center-Link

PERFORMING PREDELIVERY CHECKS

5. Adjust the reel fore-aft position until it is between 5 and 6 on position indicator decal (A) located on the reel right arm.
6. Lower the reel fully.
7. Shut down the engine, and remove the key from the ignition.

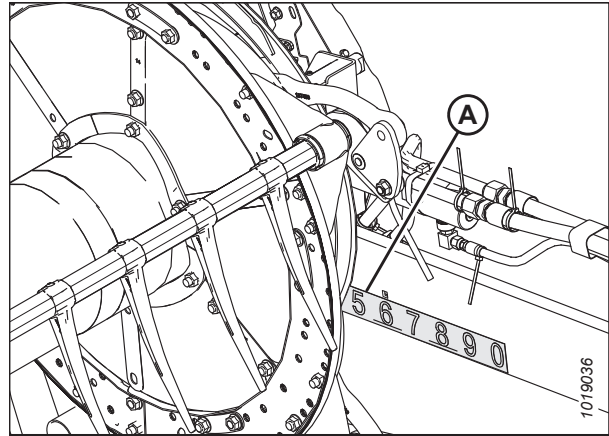


Figure 6.33: Fore-Aft Position

8. Place wing lock spring handles (A) in the **LOCKED** (upper) position to lock the wings.

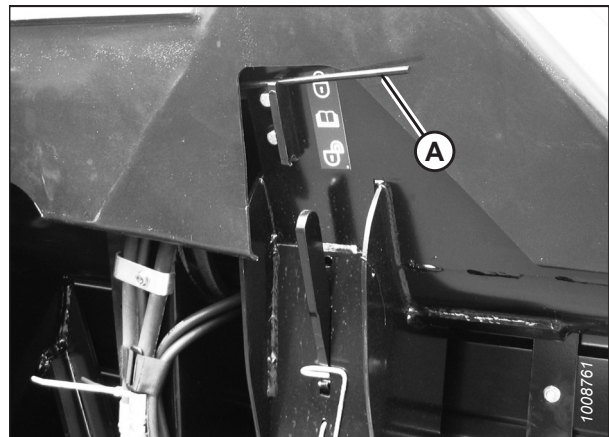


Figure 6.34: Wing Lock Spring Handle in Lock Position

PERFORMING PREDELIVERY CHECKS

9. Disengage both of the header float locks by pulling float lock handle (A) away from the float module and pushing the float lock handle down and into position (B) (**UNLOCK**).

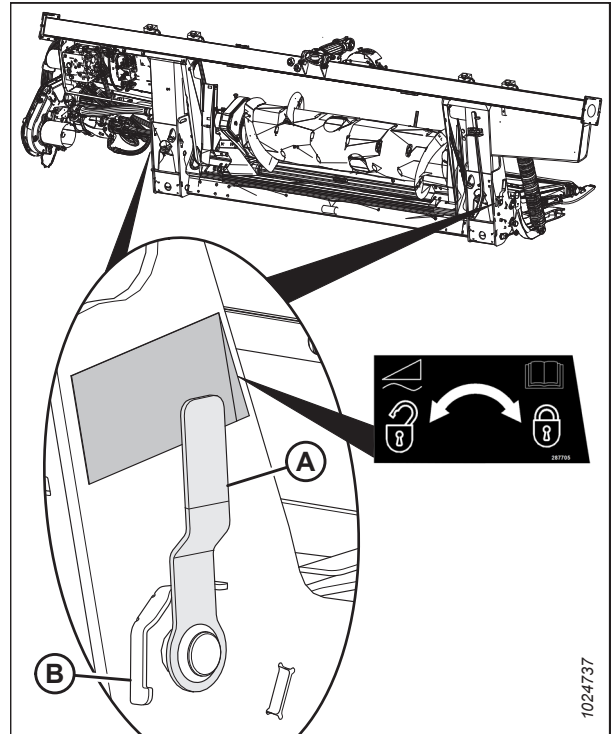


Figure 6.35: Header Float Lock in Locked Position

10. Place the stabilizer wheels and transport wheels (if equipped) in the storage position as follows:
 - a. While supporting the wheel weight by lifting the wheel slightly with one hand, pull up on handle (A) to release the lock.
 - b. Lift the wheels to the desired height, and engage the support channel into slot (B) in the upper support.
 - c. Push down on handle (A) to engage the lock.

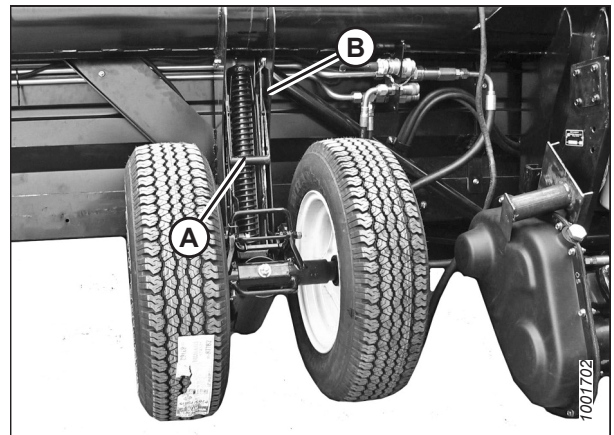


Figure 6.36: Left Wheel

PERFORMING PREDELIVERY CHECKS

11. Remove supplied torque wrench (A) from its storage position at the right side of the float module frame. Pull in the direction shown to disengage the wrench from the hook.

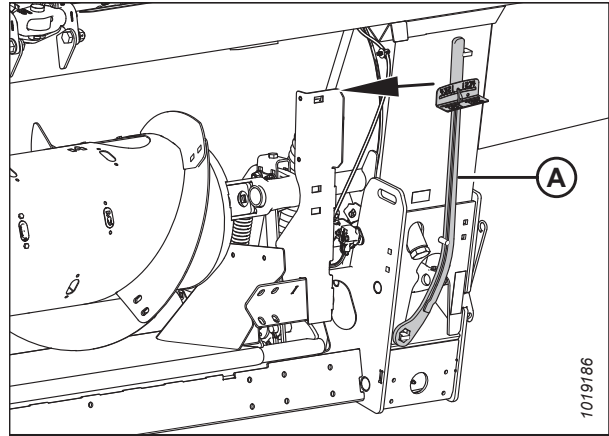


Figure 6.37: Torque Wrench Storage Location

12. Place torque wrench (A) onto float pivot (B). Note the position of the wrench for checking the left or right side.
13. Push down on the wrench to rotate bell crank (C) forward.

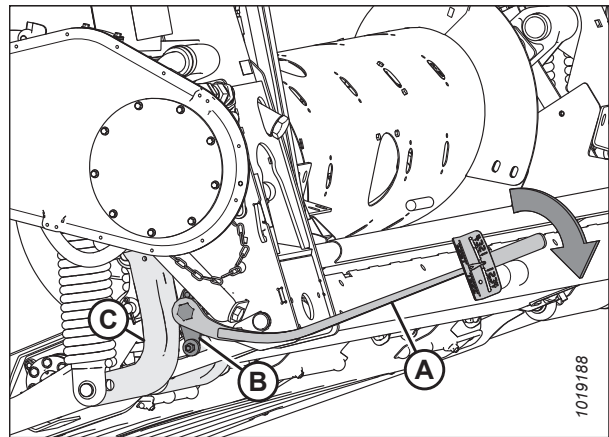


Figure 6.38: Float Module – Left Side

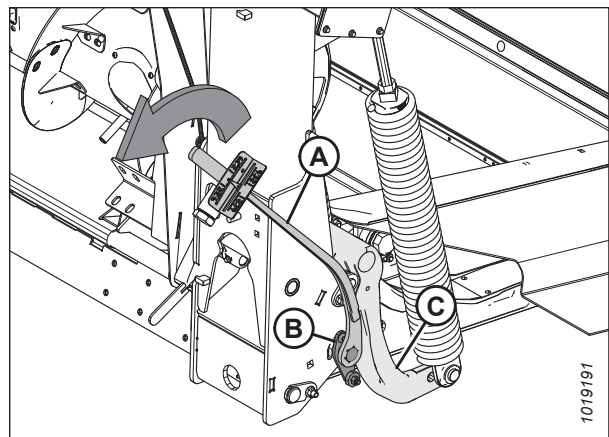


Figure 6.39: Float Module – Right Side

PERFORMING PREDELIVERY CHECKS

14. Push down on the wrench until indicator (A) reaches a maximum reading and then begins to decrease. Note the maximum reading. Repeat this step at the opposite side.
15. Use the following table as a guide for float settings:
 - If the reading on the wrench is high, the header is heavy
 - If the reading on the wrench is low, the header is light

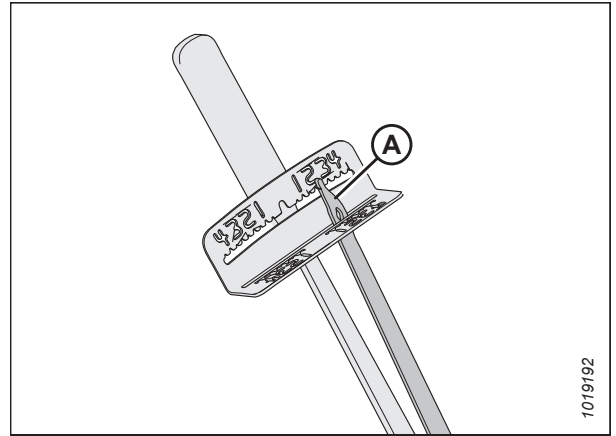


Figure 6.40: Torque Wrench

Table 6.3 Float Settings

Header Size	Indicator Reading	
	Cutting on the Ground	Cutting off the Ground
FD125, FD130, and FD135	1 1/2 to 2	2 to 2 1/2
FD140 and FD145	2 to 2 1/2	2 1/2 to 3

16. To access float spring adjustment bolts (A), loosen bolts (C) and rotate spring locks (B).
17. To increase the float (that is, to decrease the weight of the header), turn both adjustment bolts (A) on the left side clockwise. Repeat the adjustment at the opposite side.

To decrease the float (that is, to increase the weight of the header), turn adjustment bolts (A) on the left side counterclockwise. Repeat the adjustment at the opposite side.

NOTE:

Turn each bolt pair equally.

18. Adjust the float so that the wrench readings are equal on both sides of the header.

NOTE:

For FD140 and FD145 double-knife headers: adjust the float so the wrench readings are equal at both sides, and then loosen both right side spring bolts two turns.

19. Lock adjustment bolts (A) with spring locks (B). Ensure that bolt heads (A) are engaged in the spring lock cutouts. Tighten bolts (C) to secure the spring locks in place.

20. Proceed to [6.13.2 Adjusting Wing Balance, page 156](#).

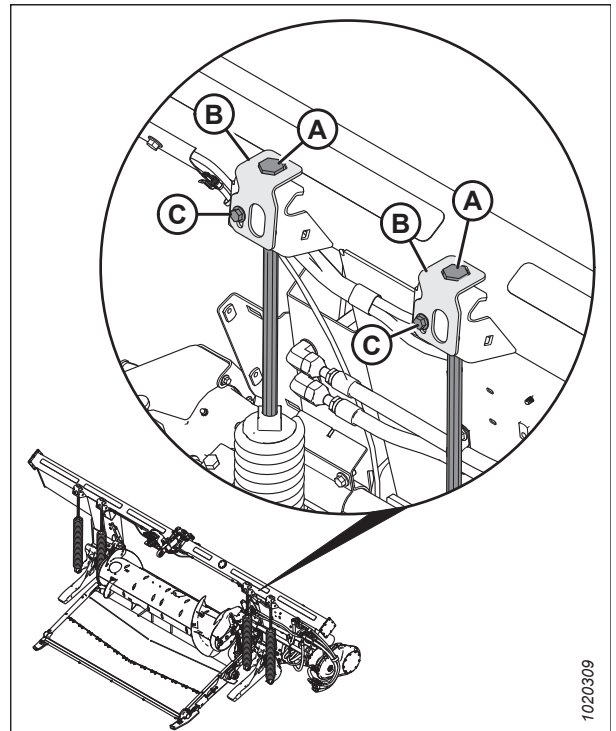


Figure 6.41: Float Adjustment – Left Side

6.13 Checking and Adjusting Header Wing Balance

The header wing balance allows the wings to react to changing ground conditions. If set too light, the wings will bounce or not follow ground contours, leaving uncut crop. If set too heavy, the end of the header will dig into the ground. After the header float has been set, the wings must be balanced for the header to follow the ground contours properly.

IMPORTANT:

Before proceeding, the header float must be set properly. For instructions, refer to [6.12 Checking and Adjusting Header Float, page 145](#).

6.13.1 Checking Wing Balance

Wing balance ensures that the left and right wings require the same amount of pressure to follow the ground. The amount of ground force/pressure required to lift the wings, and the speed with which the wings return to the ground when the pressure is reduced should be equal/balanced.

IMPORTANT:

To ensure correct wing balance readings, make sure the header float is set properly before proceeding. For instructions, refer to [6.12 Checking and Adjusting Header Float, page 145](#).

⚠ DANGER

To prevent bodily injury or death from the unexpected startup of the machine, always stop the engine and remove the key before adjusting the machine.

If a header wing has a tendency to be in a smile (A) or a frown (B) position, wing balance may require adjusting. Perform the following steps to check if the wings are not balanced, and how much adjustment is required.

The header wings are balanced when it takes an equal amount of force to move a wing up or down.

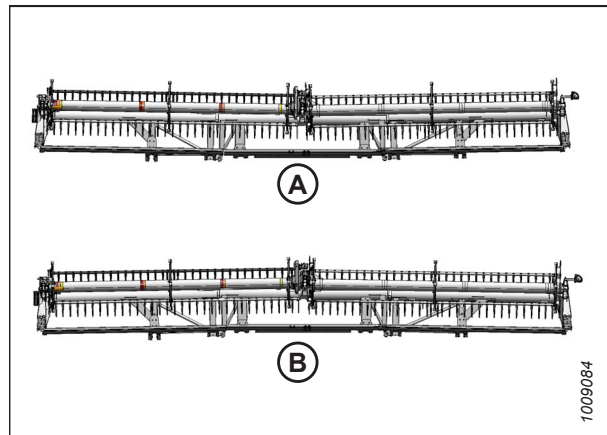


Figure 6.42: Wing Imbalance

1. Adjust the reel fore-aft position to between 5 and 6 on the position indicator decal (A) located on the reel right arm.
2. Lower the reel fully.

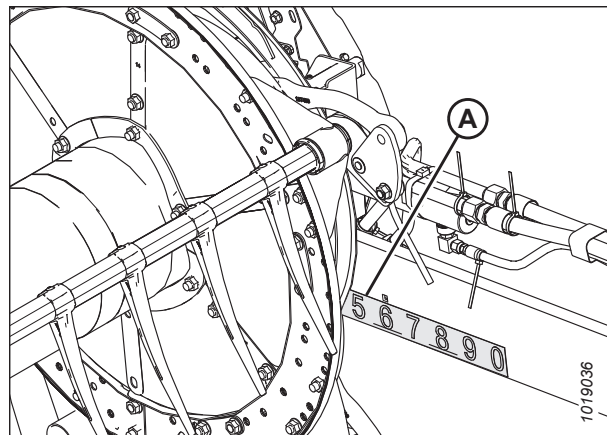


Figure 6.43: Fore-Aft Position

PERFORMING PREDELIVERY CHECKS

3. Adjust center-link (A) so that indicator (B) is between **B** and **C** on gauge (C).
4. Park the combine on level ground and raise the header until the cutterbar is 152–254 mm (6–10 in.) off the ground.

NOTE:

Ensure that the float module is level.

5. Shut down the engine, and remove the key from the ignition.
6. If installed, move stabilizer/transport wheels so that they are supported by the header. Refer to the instructions provided with the stabilizer/transport system.
7. Remove linkage cover (A) by removing bolt (B) and rotating the cover upward until the inboard end can be lifted off.

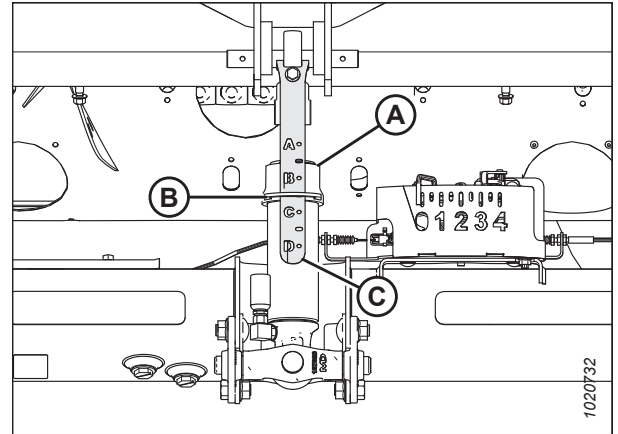


Figure 6.44: Center-Link

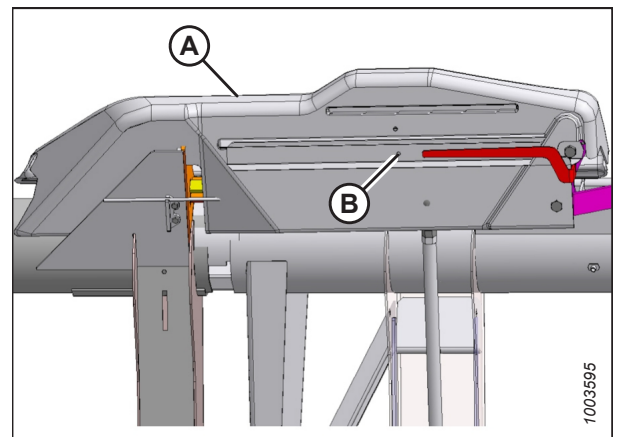


Figure 6.45: Linkage Cover

NOTE:

Refer to decal (A) inside each linkage cover.

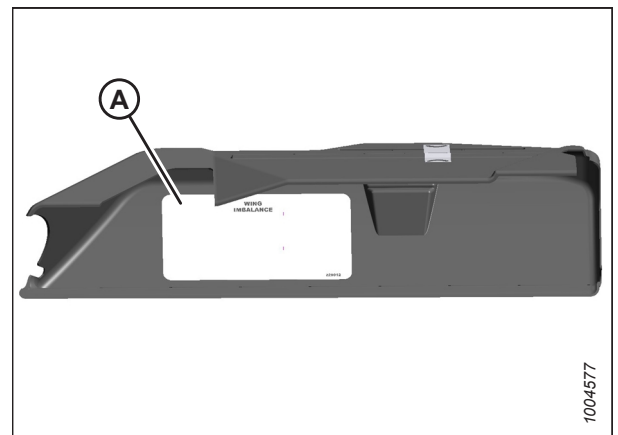


Figure 6.46: Linkage Cover

PERFORMING PREDELIVERY CHECKS

- Unlock the wings by moving spring handles (A) to the lower (UNLOCK) position.

NOTE:

If the lock link does not engage in the lower slot, move the wing with the torque wrench until the lock link moves into the slot.

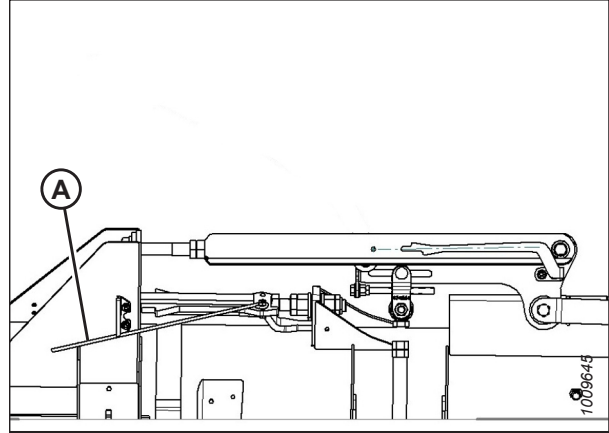


Figure 6.47: Wing Lock in UNLOCK Position

- Retrieve wrench (A) from the float module right leg.

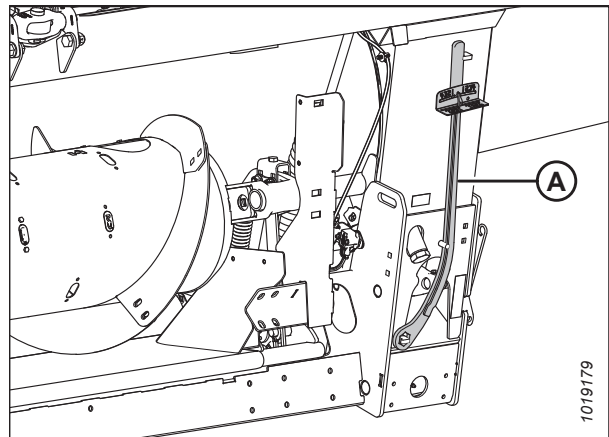


Figure 6.48: Torque Wrench

- Place torque wrench (A) onto bolt (B).

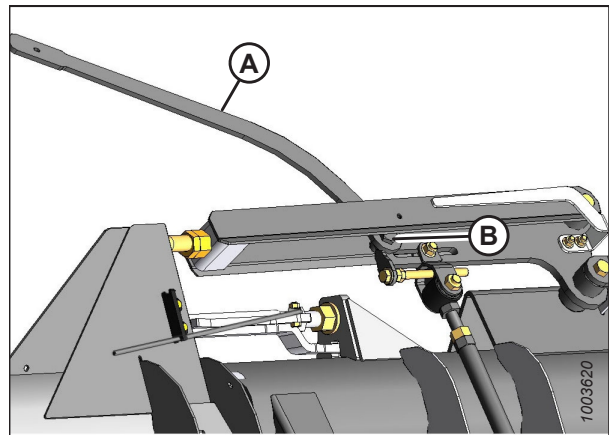


Figure 6.49: Balance Linkage

PERFORMING PREDELIVERY CHECKS

11. Check that pointer (D) is properly positioned as follows:
 - a. Use wrench (A) to move bell crank (B) so that the lower edge of the bell crank is parallel to top-link (C).
 - b. Check that pointer (D) is parallel with top-link (C).

NOTE:

If the above two conditions are met, adjust the pointer until it is aligned in the middle of top-link (C).

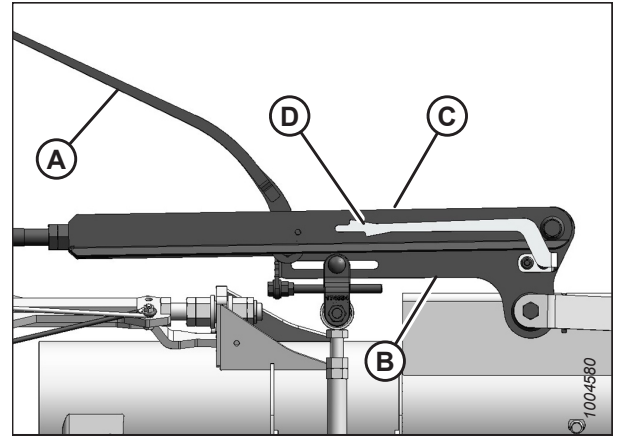


Figure 6.50: Balance Linkage

12. Move the wing upward with torque wrench (A) until the pointer's lower alignment tab (C) lines up with the upper edge of top-link (B). Observe indicator reading (D) on the wrench and record it.

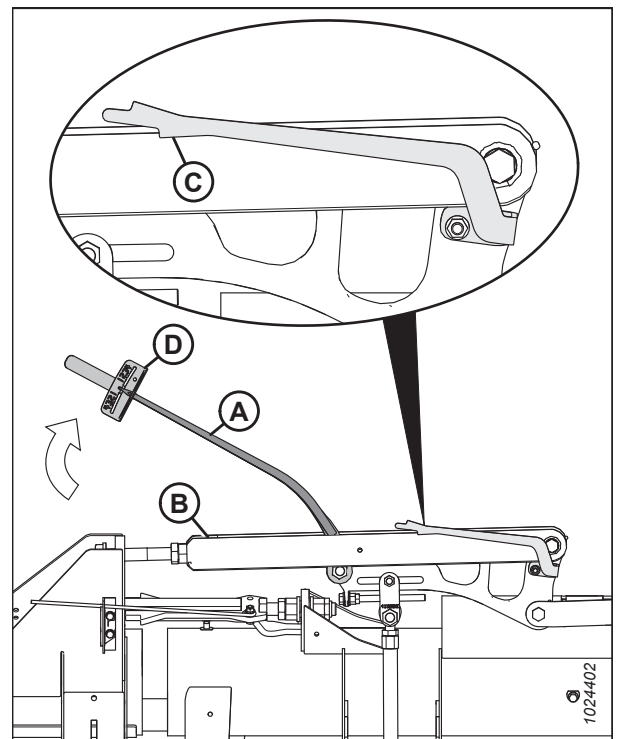


Figure 6.51: Balance Linkage

PERFORMING PREDELIVERY CHECKS

13. Move the wing downward with torque wrench (A) until the pointer's upper alignment tab (C) lines up with the lower edge of top-link (B). Observe indicator reading (A) on the wrench and record it.
14. Compare the readings taken in Step 12, [page 153](#) and Step 13, [page 154](#).
 - If the difference between the readings is 0.5 or less, the wing is balanced and no further adjustment is required. To reinstall the linkage cover, refer to Step 15, [page 155](#) and Step 16, [page 155](#).
 - If the difference between the readings is more than 0.5, the wing is not balanced. Proceed to [6.13.2 Adjusting Wing Balance, page 156](#).

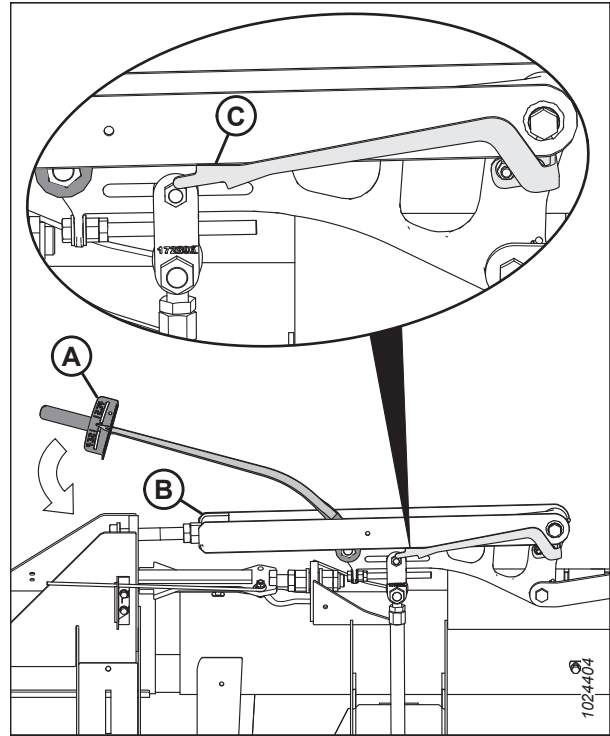


Figure 6.52: Balance Linkage

- If the indicator range is as shown, the wing is too light.

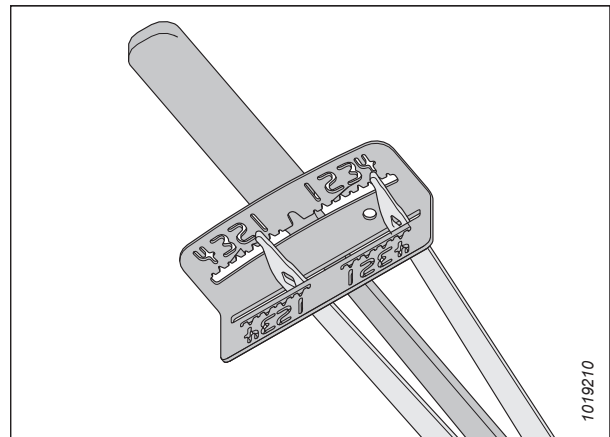


Figure 6.53: Wrench Indicator

PERFORMING PREDELIVERY CHECKS

- If the indicator range is as shown, the wing is too heavy.

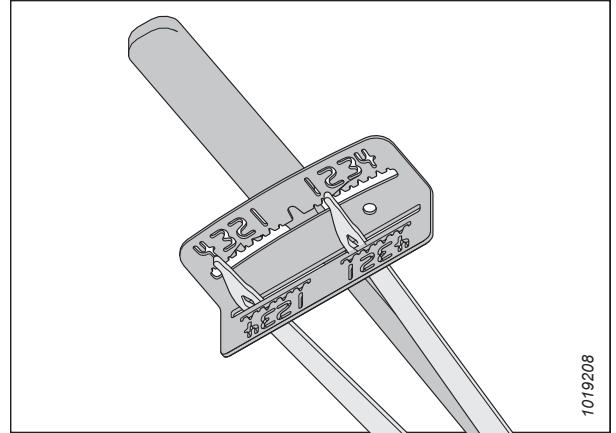


Figure 6.54: Wrench Indicator

15. If no adjustment is required, place wrench (A) back onto the float module right leg.

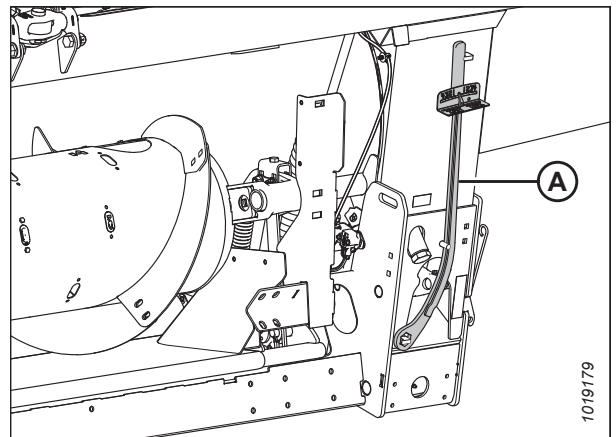


Figure 6.55: Torque Wrench

16. If no adjustment is required, reinstall linkage cover (A) and secure it with bolt (B). If adjustment is required, refer to [6.13.2 Adjusting Wing Balance, page 156](#).

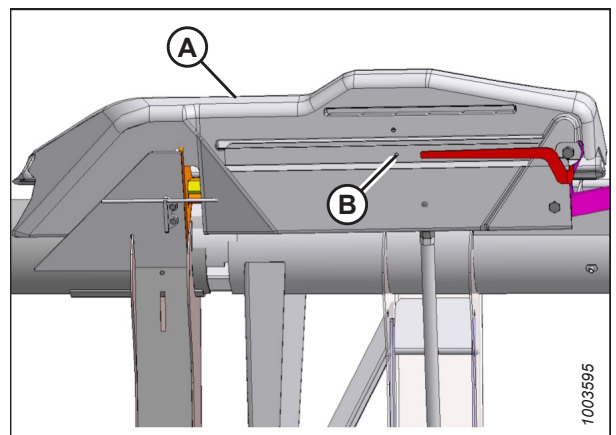


Figure 6.56: Linkage Cover

6.13.2 Adjusting Wing Balance

Wing balance ensures that the left and right wings require the same amount of pressure to follow the ground. The amount of ground force/pressure required to lift the wings, and the speed that wings return to the ground when the pressure is reduced should be equal/balanced.

DANGER

To prevent bodily injury or death from the unexpected startup of the machine, always stop the engine and remove the key before adjusting the machine.

This procedure describes how to adjust the balance of each wing. Before proceeding, refer to [6.13.1 Checking Wing Balance, page 150](#) to determine if adjustments are necessary.

IMPORTANT:

To ensure correct wing balance readings, make sure the header float is set properly before proceeding. For instructions, refer to [6.12 Checking and Adjusting Header Float, page 145](#). The float module must be sitting level before performing any adjustments.

1. Place torque wrench (A) on bolt (B). Check that wing lock (C) is in the lower position.

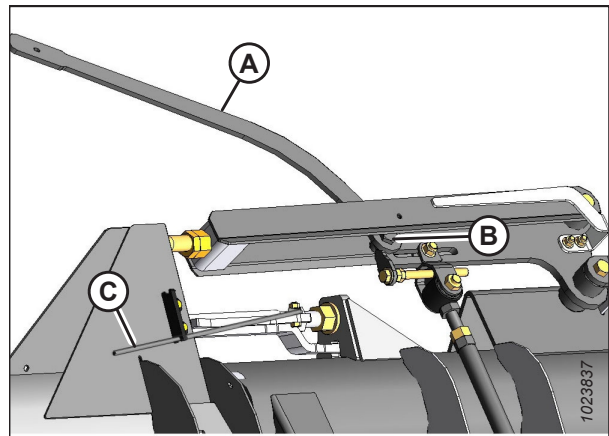


Figure 6.57: Balance Linkage – Left Side

2. Loosen nut (A) on the clevis bolt for the wing requiring adjustment as determined by the wing balance check.
3. Loosen jam nut (B).

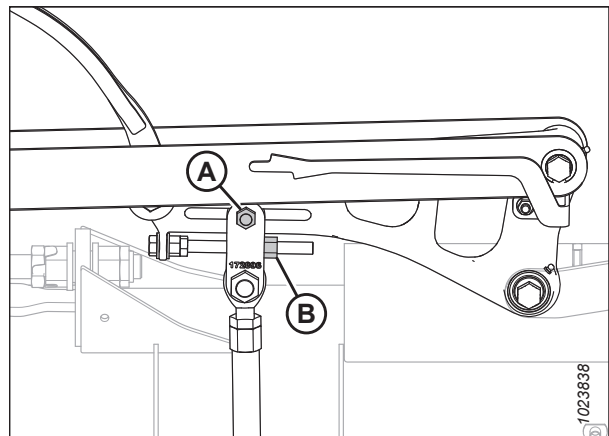


Figure 6.58: Balance Linkage – Left Side

PERFORMING PREDELIVERY CHECKS

4. If necessary, perform the following adjustments:
 - If the wing is too heavy, turn adjuster bolt (B) clockwise to move clevis (C) outboard (D).
 - If the wing is too light, turn adjuster bolt (B) counterclockwise to move clevis (C) inboard (E).
5. Adjust clevis (C) position if necessary until indicator readings on torque wrench are within 1/2 increment.
6. Tighten nut (A) on the clevis bolt.
7. Torque jam nut (F) to 81 Nm (60 lbf-ft).

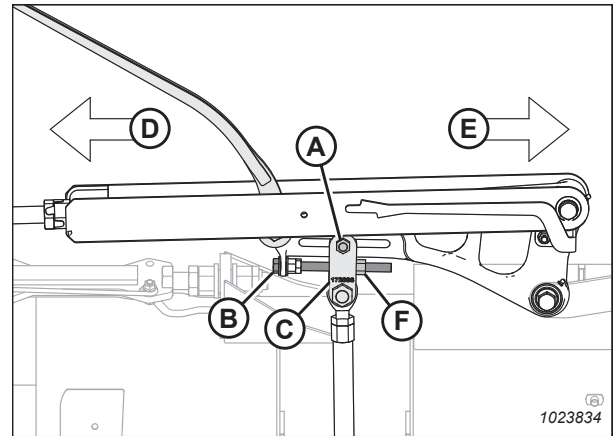


Figure 6.59: Balance Linkage – Left Side

8. Move handle (A) to the upper lock position.
9. If the lock does not engage, move the wing up and down with torque wrench (B) until it locks. When locked, there will be some movement in the linkage.
10. If the cutterbar is not straight when the wings are in lock mode, then further adjustments are required.

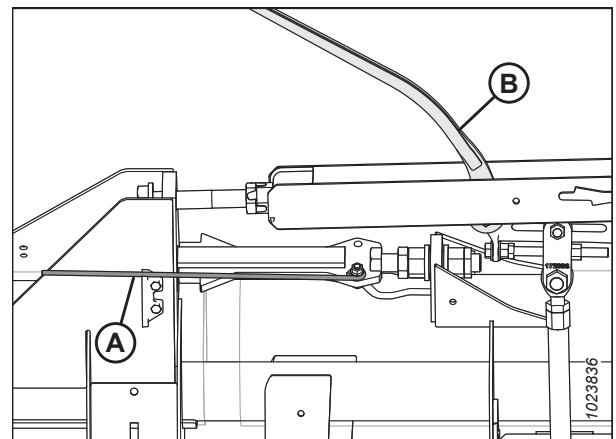


Figure 6.60: Wing Lock in Lock Position

11. Return torque wrench (A) to its storage location on the float module frame.

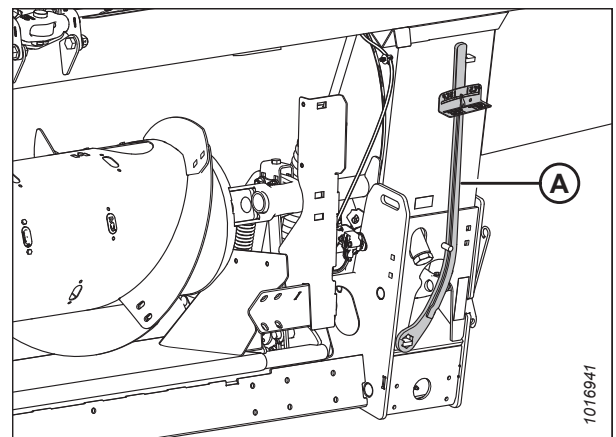


Figure 6.61: Torque Wrench in Storage Location

PERFORMING PREDELIVERY CHECKS

12. Reinstall linkage cover (A) and secure it with bolt (B).

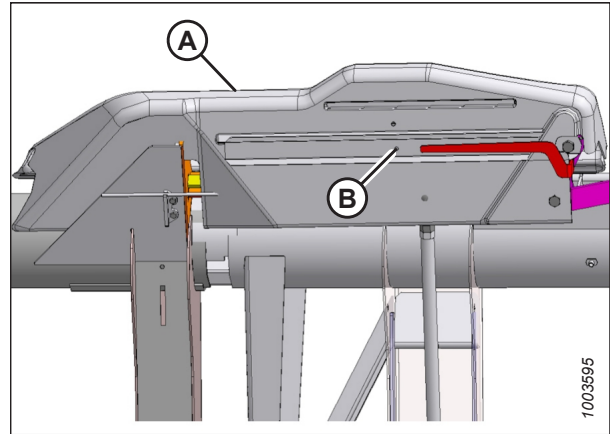


Figure 6.62: Linkage Cover

6.14 Adjusting Auger to Pan Clearance

Setting a proper auger-to-pan clearance will prevent the fingers or flighting from contacting the feed draper or pan during operation.

DANGER

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

IMPORTANT:

Maintain an appropriate distance between the auger and the auger pan. Too little clearance may result in the fingers or flighting contacting and damaging the feed draper or pan when operating the header at certain angles. Look for evidence of contact when greasing the float module.

1. Extend the center-link to the steepest header angle, and position the header 150–254 mm (6–10 in.) off the ground.
2. Shut down the engine, and remove the key from the ignition.
3. Ensure the float lock linkage is on the down stops (washer [A] cannot be moved) at both locations.

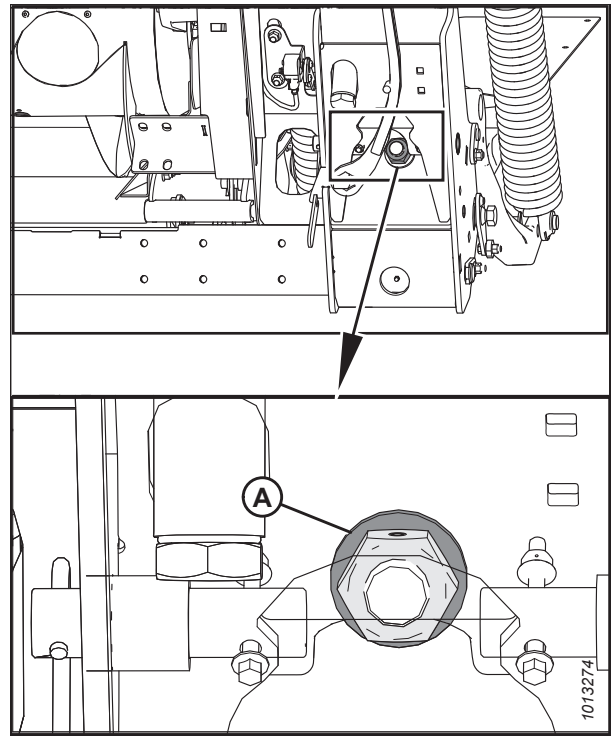


Figure 6.63: Float Lock

PERFORMING PREDELIVERY CHECKS

- Before adjusting the auger to pan clearance, check the auger float position to determine how much clearance is required:
 - If bolt head (A) is closest to floating symbol (B), the auger is in the floating position.

IMPORTANT:

Make sure bolts (A) are set at the same location on both ends of the header to avoid damaging the machine during operation.

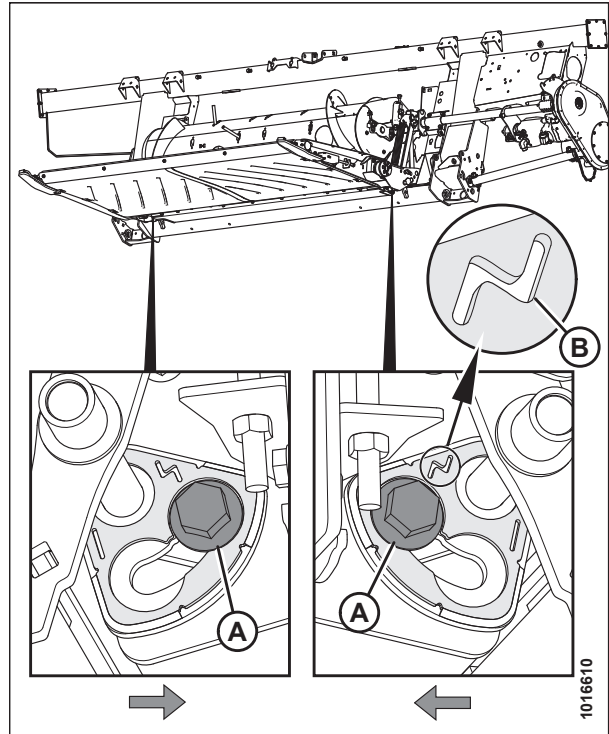


Figure 6.64: Floating Position

- If bolt head (A) is closest to fixed symbol (B), the auger is in the fixed position.

IMPORTANT:

Make sure bolts (A) are set at the same location on both ends of the header to avoid damaging the machine during operation.

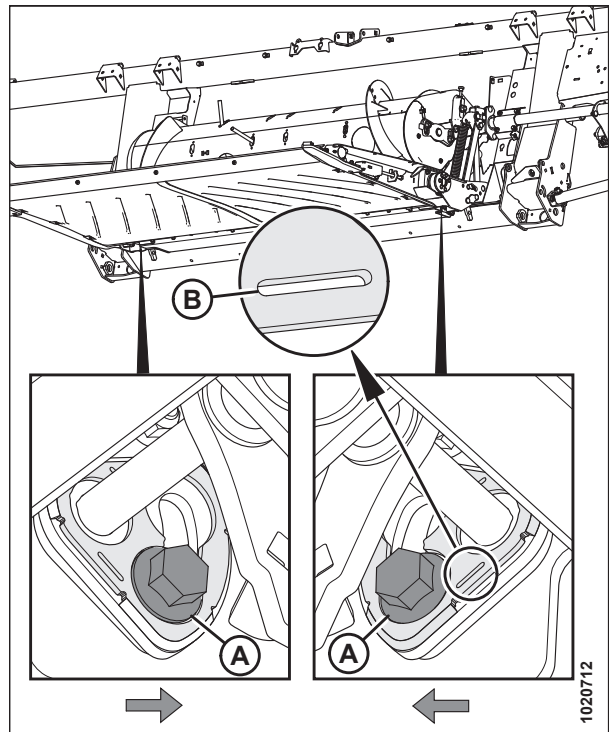


Figure 6.65: Fixed Position

PERFORMING PREDELIVERY CHECKS

- Loosen two nuts (B) and rotate the auger to position the flighting over the feed pan.
- Turn bolt (A) clockwise to increase clearance (C); turn bolt (A) counterclockwise to decrease clearance (C).
 - If the feed auger is in the fixed position, set the clearance to 22–26 mm (7/8–1 in.).
 - If the feed auger is in the floating position, set the clearance to 11–15 mm (7/16–5/8 in.).

NOTE:

The clearance increases 25–40 mm (1–1 1/2 in.) when the center-link is fully retracted.

- Repeat Steps 5, [page 161](#) and 6, [page 161](#) for the opposite end of the auger.

IMPORTANT:

Adjusting one side of the auger can affect the other side. Always double-check both sides of the auger after making final adjustments.

- Tighten nuts (B) on both ends of the feed auger. Torque the nuts to 96 Nm (71 lbf-ft).
- Rotate the drum and double-check clearances.

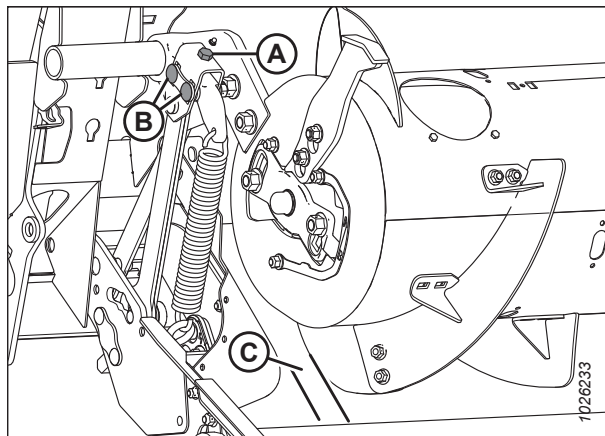


Figure 6.66: Auger Clearance

6.15 Checking and Adjusting Draper Tension

The header's drapers are tensioned at the factory and rarely need adjustment. If adjustment is required, tension the drapers just enough so that the drapers do not slip when in operation, and so that the draper does not sag below the cutterbar; ensure that the draper is adjusted similarly on both sides of the header.

DANGER

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

1. Locate the draper tension adjuster and the tension inspection window on the rear left side of the header.
2. Ensure that white indicator bar (A) is at the halfway point in the window. If this is not the case, then adjustment is required. Proceed to Step 3, [page 162](#).

WARNING

Check to be sure all bystanders have cleared the area.

3. Start the engine.
4. Fully raise the header.
5. Shut down the engine, and remove the key from the ignition.
6. Engage the header safety props. Refer to the combine operator's manual for instructions.
7. Ensure that the draper guide (the rubber track on the underside of the draper) is properly engaged in groove (A) on the drive roller.

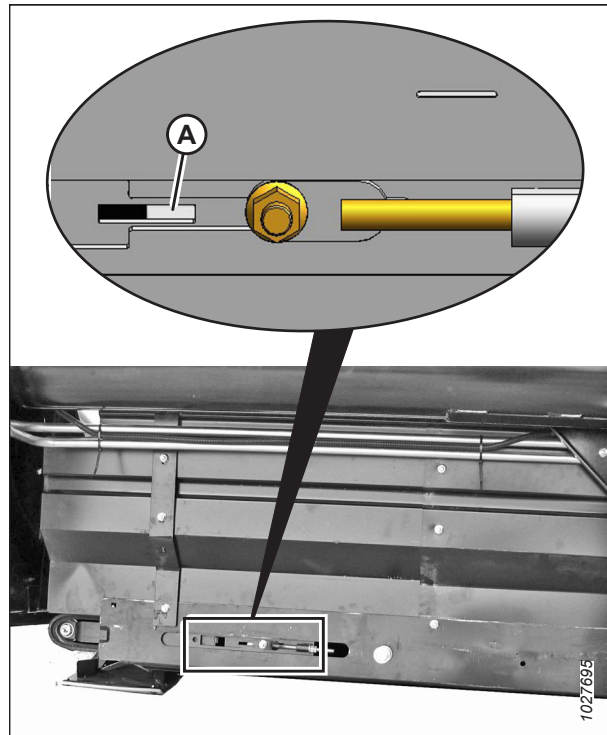


Figure 6.67: Left Draper Tension Adjuster

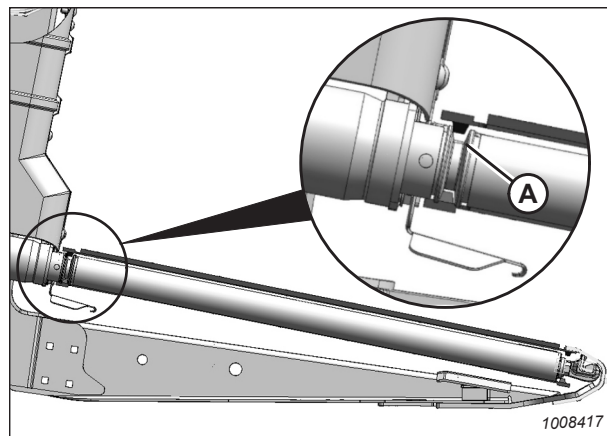


Figure 6.68: Drive Roller

PERFORMING PREDELIVERY CHECKS

8. Ensure that idler roller (A) sits between draper guides (B).

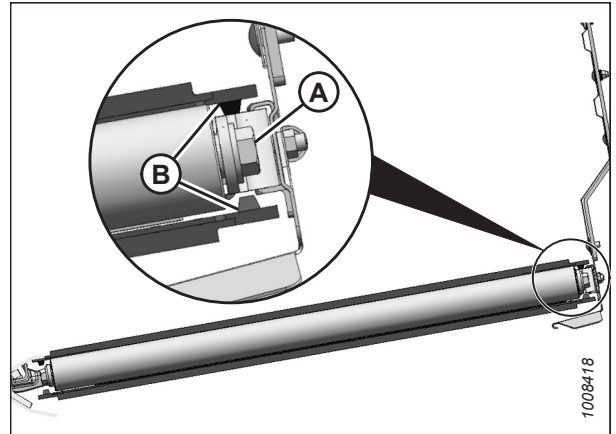


Figure 6.69: Idler Roller

9. To reduce the tension on the draper, turn adjuster bolt (A) counterclockwise. White indicator bar (B) will move outboard in the direction of arrow (D) to indicate that the tension on the draper has lessened. Continue to turn adjuster bolt (A) counterclockwise until the white indicator bar is at the halfway point in the window.

IMPORTANT:

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

10. To increase the tension on the draper, turn adjuster bolt (A) clockwise. White indicator bar (B) will move inboard in the direction of arrow (E) to indicate that the tension on the draper has increased. Continue to turn adjuster bolt (A) clockwise until the white indicator bar is at the halfway point in the window.

IMPORTANT:

To prevent premature failure of the draper, draper rollers, and/or tightener components, do **NOT** operate the draper if the white bar is not visible in the inspection window.

IMPORTANT:

To prevent the header from scooping soil while in operation, ensure that the draper is tight enough that it does not sag below the point where the cutterbar contacts the ground.

11. Repeat Step 1, page 162 to Step 10, page 163 to inspect and adjust the tension on the other draper belt.

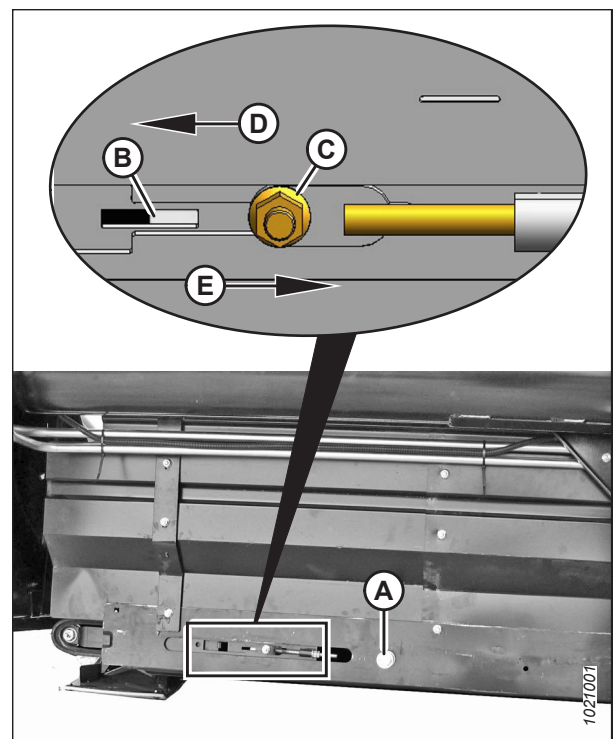


Figure 6.70: Left Tension Adjuster

6.16 Checking and Adjusting Draper Seal

The draper seal is the gap between the draper and the cutterbar. It should be inspected before the draper is operated to prevent potential damage to the draper system.

DANGER

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

WARNING

To prevent bodily injury from the fall of a raised reel, always engage the reel safety props before going under the raised reel for any reason.

IMPORTANT:

The draper seal is set to 0–3 mm (0.00–0.12 in.) at the factory to prevent material from entering into the side drapers and stalling them. Whenever you are installing new drapers, the draper seal **MUST** be set to at least 1 mm (0.04 in.); new drapers are very tacky and can accumulate powder coating on the underside of the cutterbar, which can cause the draper to rub against the cutterbar and thereby cause the hydraulic pressure in the draper circuit to increase to dangerous levels.

1. Lower the header onto blocks.
2. Raise the reel fully.
3. Move reel safety prop (A) to the engaged position.

NOTE:

Keep pivot bolt (B) sufficiently tight that the prop remains in the stored position when it is not in use, but can be engaged using hand force.

4. Repeat the previous step on the opposite reel arm.

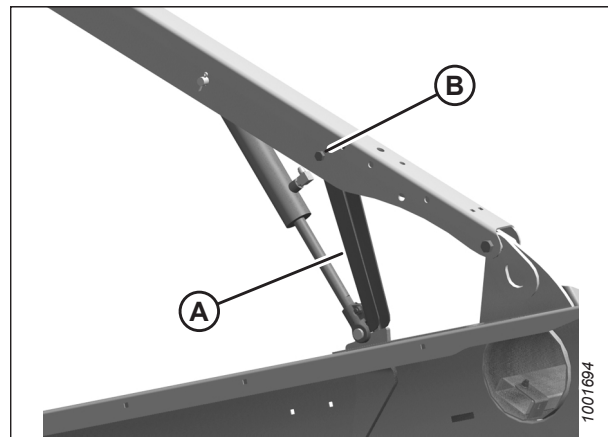


Figure 6.71: Engaged Reel Safety Prop – Left Shown

PERFORMING PREDELIVERY CHECKS

5. Use handle (A) to move the lock rod to inboard position (B), which engages pin (C) under the prop.
6. Lower the reel until the safety props contact the outer arm cylinder mounts and the center arm pins.
7. Shut down the engine, and remove the key from the ignition.

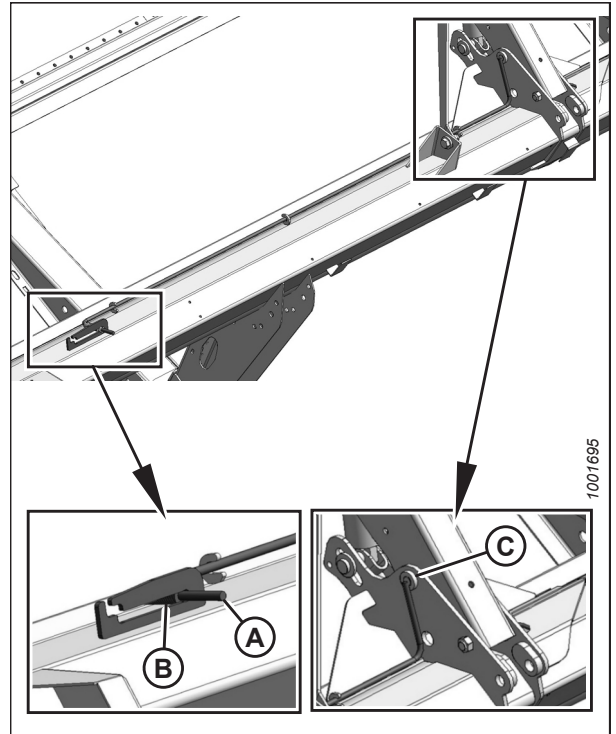


Figure 6.72: Reel Safety Prop – Center Arm

8. Ensure that clearance (A) between draper (B) and cutterbar (C) is 0–3 mm (0.00–0.12 in.).
 - If clearance (A) is acceptable, proceed to [6.17 Lubricating Header, page 169](#).
 - If clearance (A) is not acceptable, proceed to the next step in this procedure.

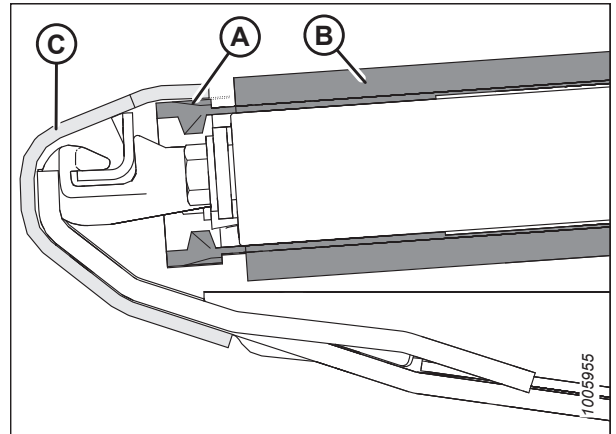


Figure 6.73: Draper Seal

PERFORMING PREDELIVERY CHECKS

9. Measure the clearance between the draper and the cutterbar at deck supports (A). Depending on the header size, there are between two and eight supports per deck.
10. Reduce the tension on the draper. For instructions, refer to [6.15 Checking and Adjusting Draper Tension, page 162](#).

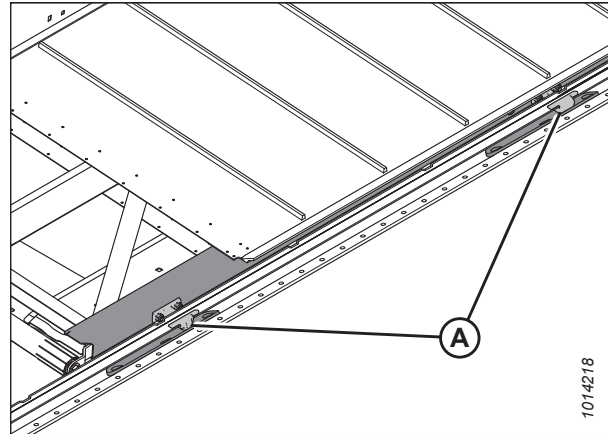


Figure 6.74: Draper Deck Supports

11. Lift the front edge of draper (A) past cutterbar (B) to expose the deck support.

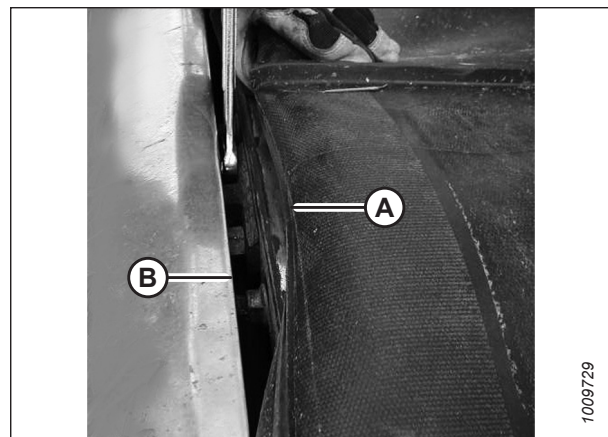


Figure 6.75: Deck Adjustment

12. Loosen two lock nuts (A) on deck support (B) by one half-turn **ONLY**.

NOTE:

The deck is shown with the draper removed. The number of deck supports depends on the width of the header:

- **FD125:** Six supports
- **FD130 and FD135:** Eight supports
- **FD140:** Ten supports
- **FD145:** Twelve supports

13. To lower the deck relative to the deck supports, tap deck (C) with a hammer. To raise the deck relative to the deck supports, tap deck support (B) using a hammer and punch.

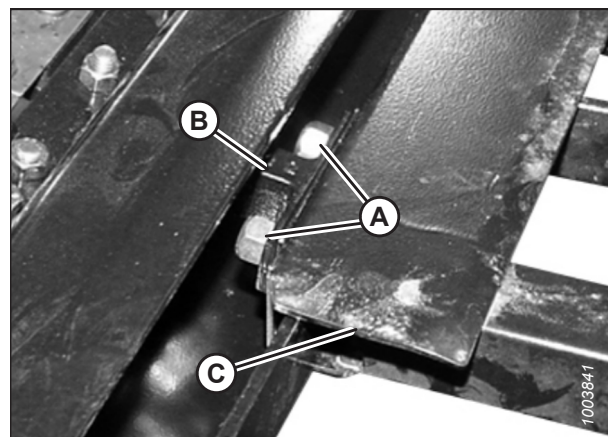


Figure 6.76: Deck Support

14. Measure the thickness of the draper belt.

PERFORMING PREDELIVERY CHECKS

15. Locate a feeler gauge of the same thickness as the draper belt plus 1 mm (0.04 in.).
16. Slide the feeler gauge along deck (A) under the cutterbar in order to properly set the gap.
17. To create a seal, adjust deck (A) so that clearance (B) between cutterbar (C) and the deck is the same thickness as the draper belt plus 1 mm (0.04 in.).

NOTE:

When checking the clearance at either roller, measure the gap beginning at the roller tube, **NOT** the deck.

18. Tighten deck support hardware (D).
19. Recheck gap (B) with the feeler gauge. For instructions, refer to Step 15, page 167.
20. Repeat Steps 12, page 166 to 19, page 167 for each draper deck support requiring adjustment.
21. Tension the draper. For instructions, refer to [6.15 Checking and Adjusting Draper Tension](#), page 162.
22. If necessary, adjust backsheet deflector (A) by loosening nut (D) and moving the deflector until there is a 1–7 mm (0.04–0.28 in.) gap (indicated by callout [C]) between draper (B) and the deflector.



WARNING

Check to be sure all bystanders have cleared the area.

23. Start the engine.

24. Raise the reel to its maximum height.
25. Move reel safety prop (A) inside the reel arm.
26. Repeat the previous step on the opposite end of the reel.

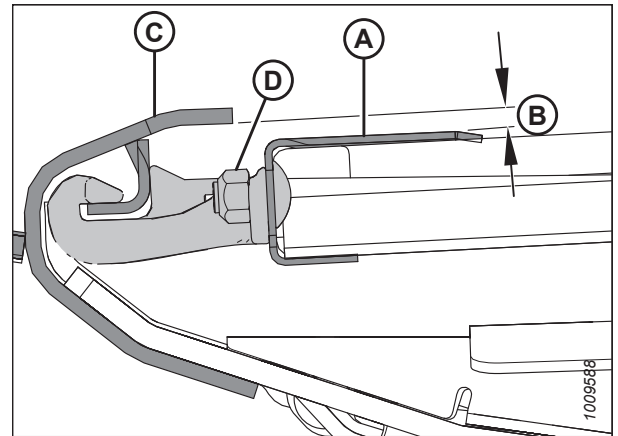


Figure 6.77: Deck Support

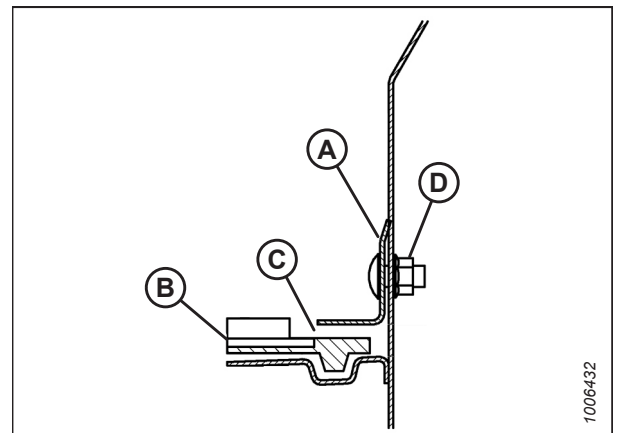


Figure 6.78: Backsheet Deflector

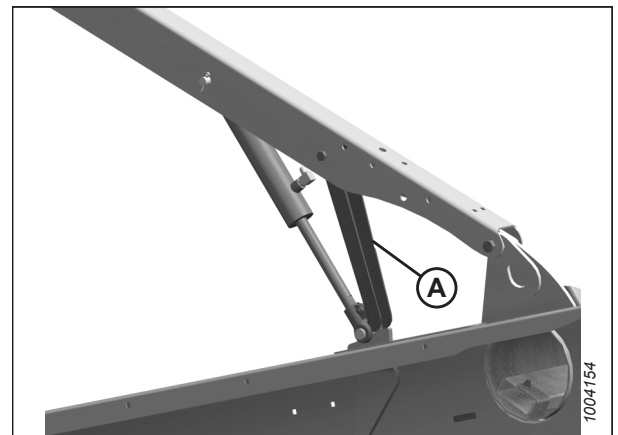


Figure 6.79: Left Reel Safety Prop

PERFORMING PREDELIVERY CHECKS

27. Use handle (B) to move lock rod (A) to the outboard position.
28. Lower the reel fully.
29. Shut down the engine, and remove the key from the ignition.

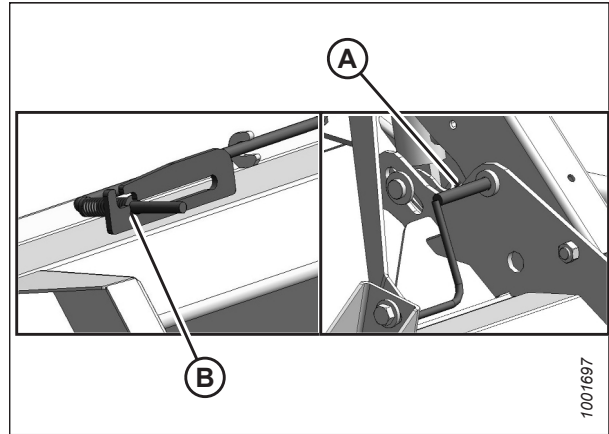


Figure 6.80: Reel Safety Prop – Center Arm

6.17 Lubricating Header

Two types of lubricant are used on the header.

Table 6.4 Recommended Lubricant

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

6.17.1 Greasing Procedure

Greasing points are identified on the machine by decals showing a grease gun and a grease interval specified in terms of hours of operation. Grease point layout decals are located on the header and on the right side of the float module.

DANGER

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

1. Shut down the engine, and remove the key from the ignition.
2. Wipe the grease fitting with a clean cloth before greasing to avoid injecting dirt and grit.

IMPORTANT:

Use clean, high-temperature, extreme-pressure grease only.

NOTE:

Replace any loose or broken grease fittings immediately.

3. Inject the grease through the fitting until grease overflows the fitting (except where noted).
4. Leave a blob of excess grease on the fitting. This will prevent the fitting from becoming contaminated.
5. Remove and thoroughly clean any fitting that will not take grease. Clean the lubricant passageway. Replace the fitting if necessary.

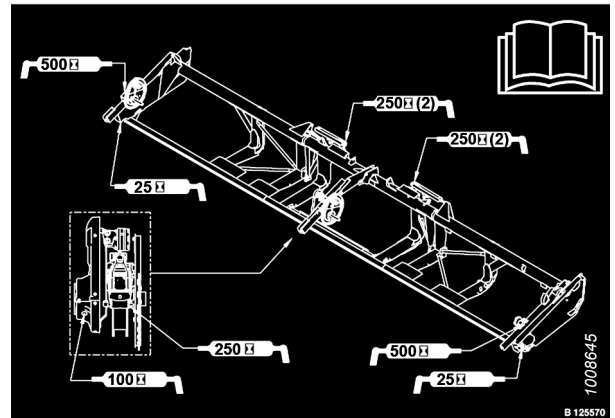


Figure 6.81: FD1 Series Grease Point Decal

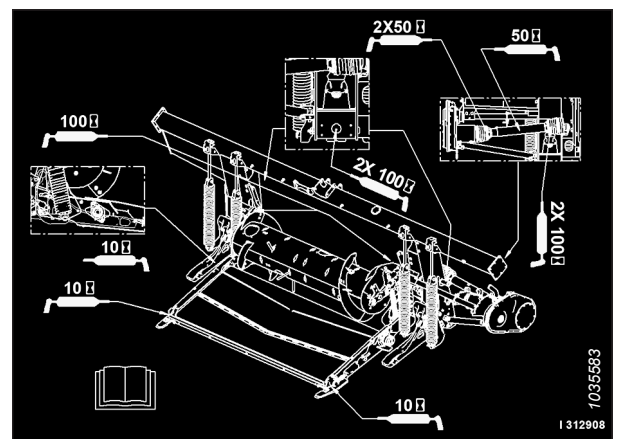


Figure 6.82: FM100 Grease Point Decal

6.17.2 Lubrication Points – Additional Instructions

Some components have specialized lubrication requirements.

Knifehead

IMPORTANT:

Overgreasing can cause the knife to bend and thereby make contact with the guards closest to the knifehead. Check for signs of excessive heating on the first two or three guards after adding grease. If necessary, relieve some of the pressure in the lubrication system by removing the grease fitting.

- To prevent binding and/or excessive wear caused by the knife pressing on the guards, do **NOT** overgrease knifehead (A).
- Apply only 1–2 pumps of grease with a grease gun, or inject enough grease that the knifehead just begins to move away from the arm. Do **NOT** use an electric grease gun.
- If more than 6–8 pumps of the grease gun are required to fill the cavity, replace the seal in the knifehead.

IMPORTANT:

Use a manual grease gun only to apply grease. Do **NOT** use an electric or pneumatic grease gun as these grease guns produce excessive pressures that can push out the seal or inject excessive grease in the chamber.

NOTE:

Use high temperature extreme pressure (EP2) performance with 1% max molybdenum disulphide (NLGI Grade 2) lithium base grease unless otherwise specified.

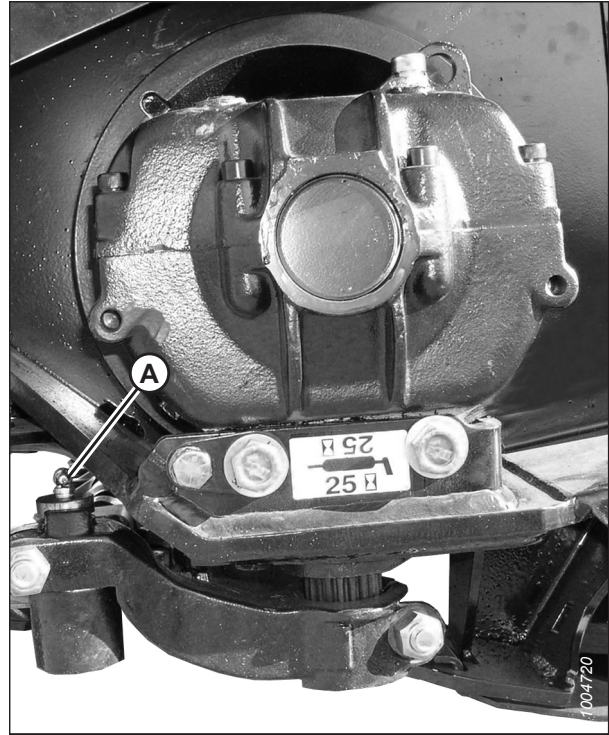


Figure 6.83: Knifehead

Single Knife – One Place

Double Knife – Two Places

PERFORMING PREDELIVERY CHECKS

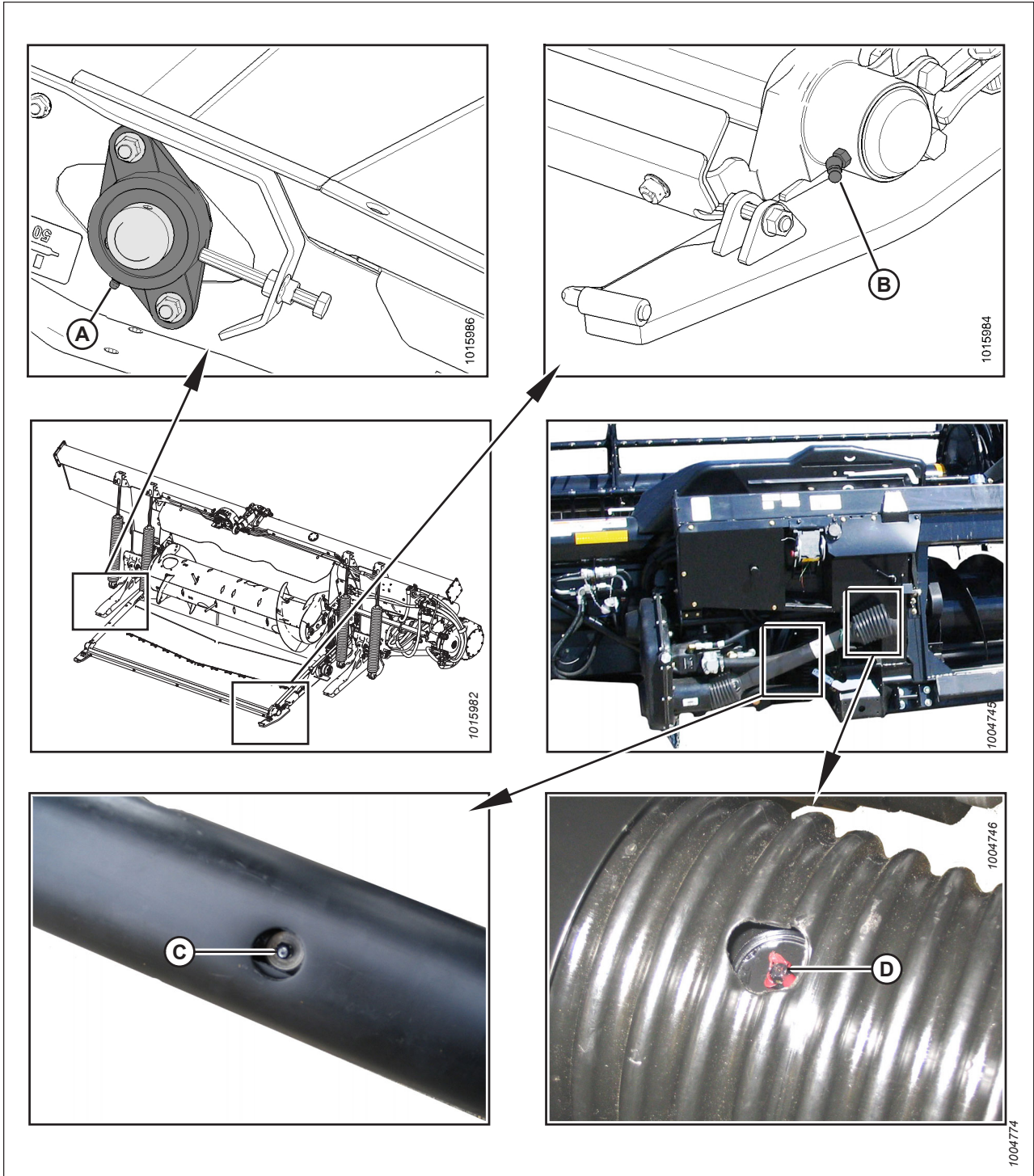


Figure 6.84: Drive Roller Bearing, Idler Roller, Slip Joint, and Driveline Universal

A - Drive Roller Bearing

B - Idler Roller (Both Sides)

C - Driveline Slip Joint¹²

D - Driveline Universal (Two Places)

12. 10% moly grease is recommended for the driveline slip joint.

PERFORMING PREDELIVERY CHECKS

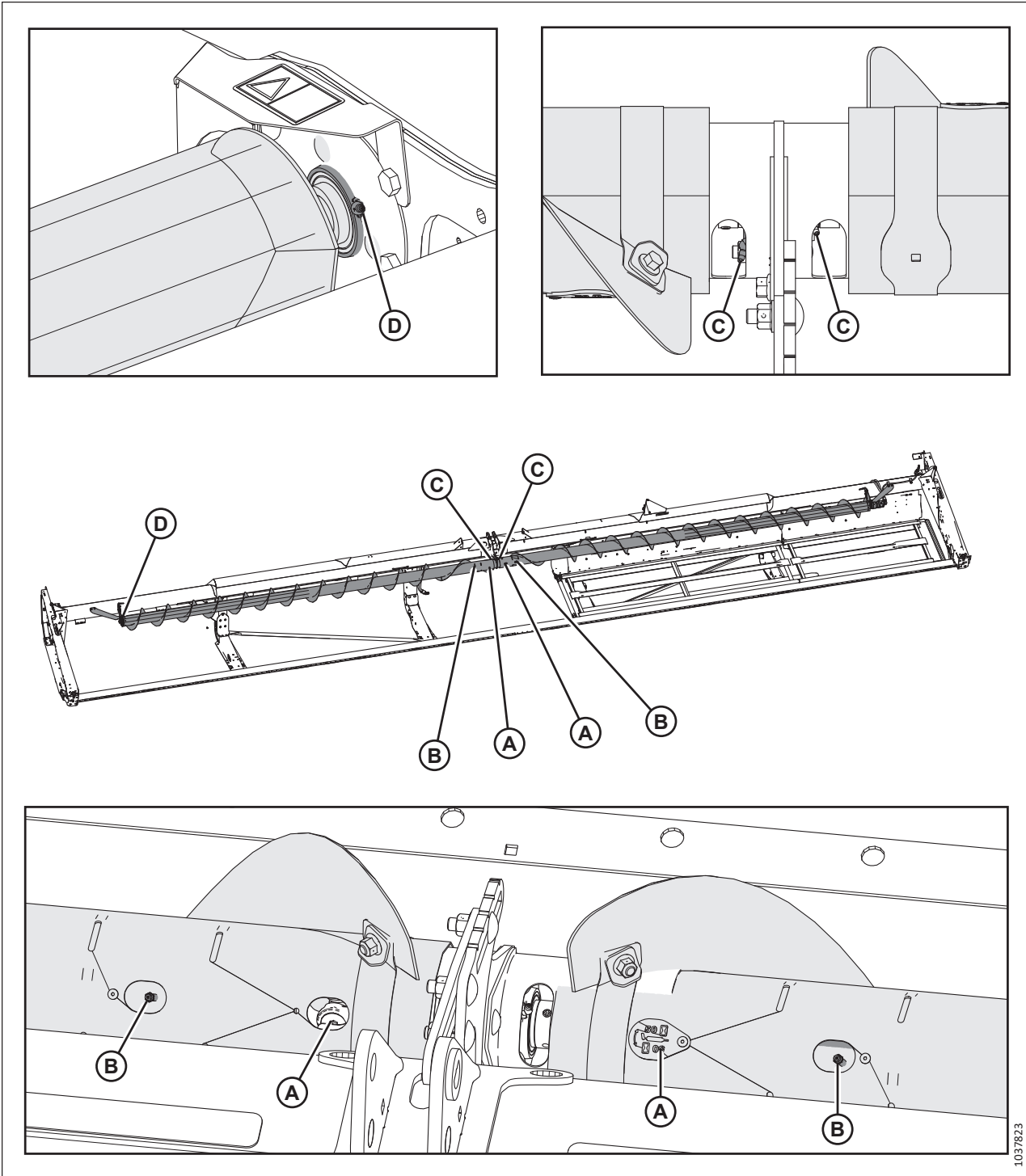


Figure 6.85: Upper Cross Auger (UCA)

A - Upper Cross Auger U-joint (Two Places)¹³
 C - Upper Cross Auger Bearing (Two Places)

B - Upper Cross Auger - Sliding Hub (Two Places)
 D - Upper Cross Auger Bearing (Right)

13. The U-joint has an extended lubrication cross and bearing kit. Stop greasing when greasing becomes difficult or if the U-joint stops taking grease. Overgreasing will damage the U-joint. Six to eight pumps are sufficient at the first grease (factory). Increase the grease interval as the U-joint wears and requires more than six pumps.

PERFORMING PREDELIVERY CHECKS

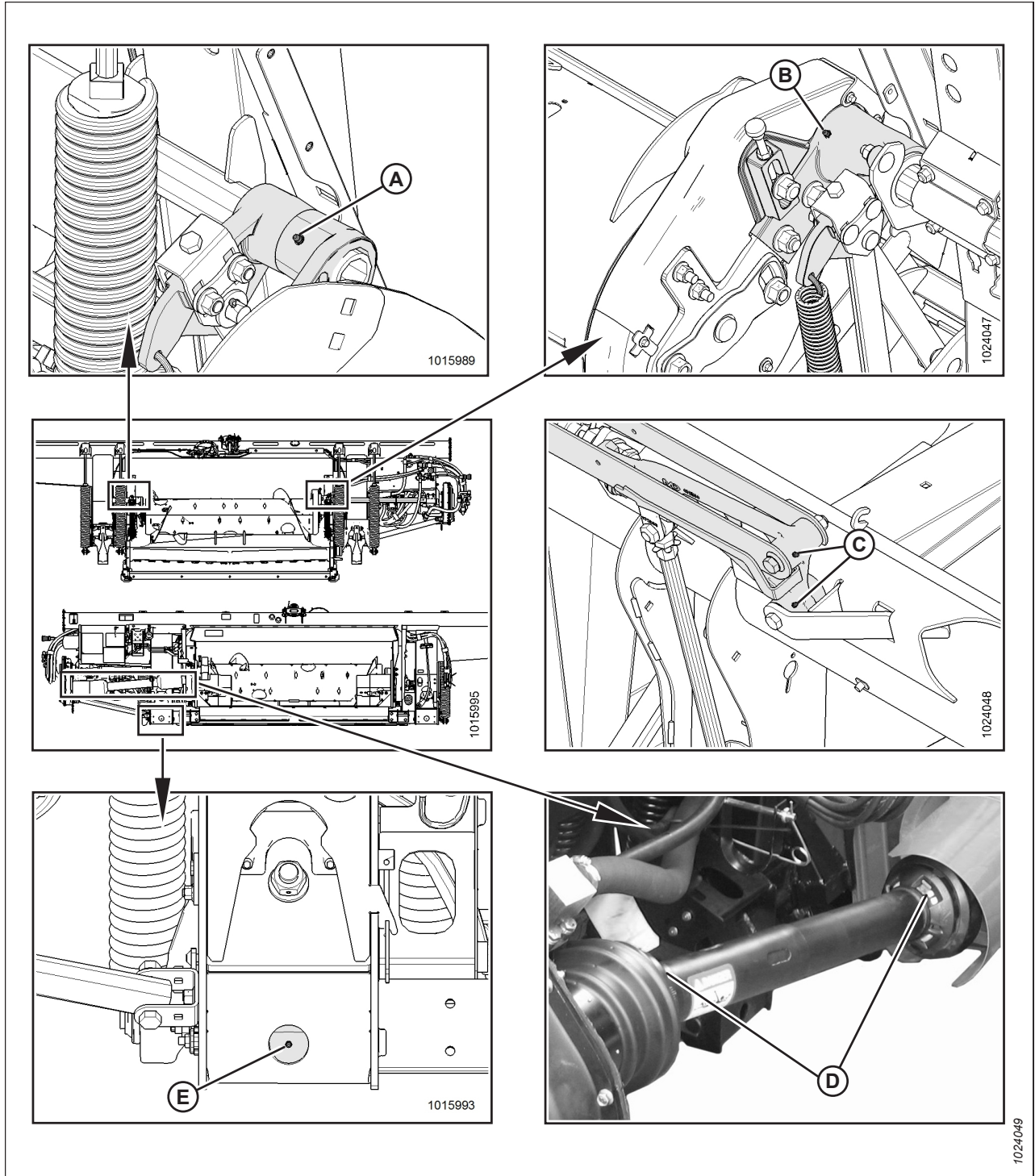


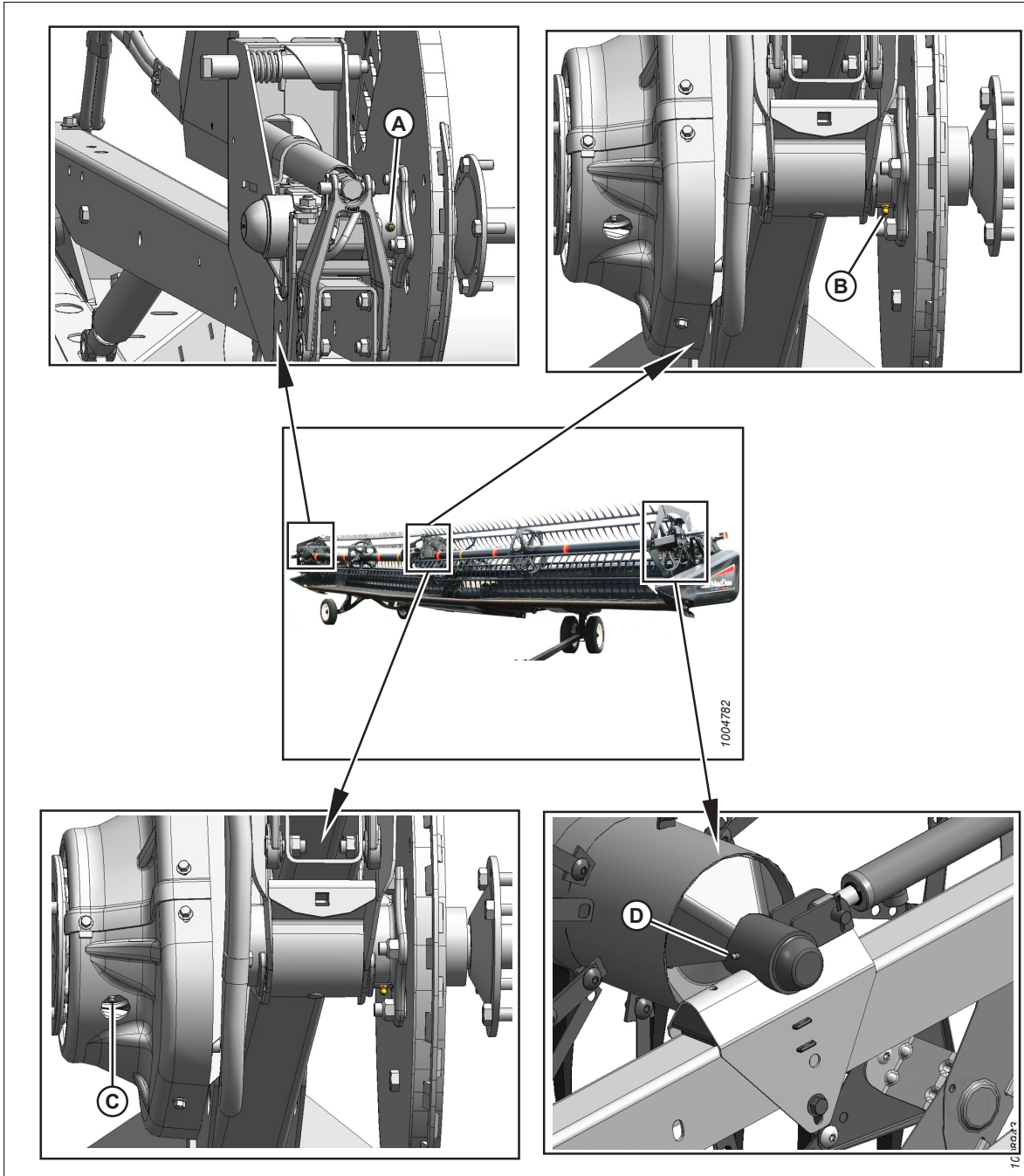
Figure 6.86: Float Pivot, Driveline Guard, Flex Linkage, and Auger Pivot

A - Auger Pivot (First Place)
 D - Driveline Guard (Two Places)

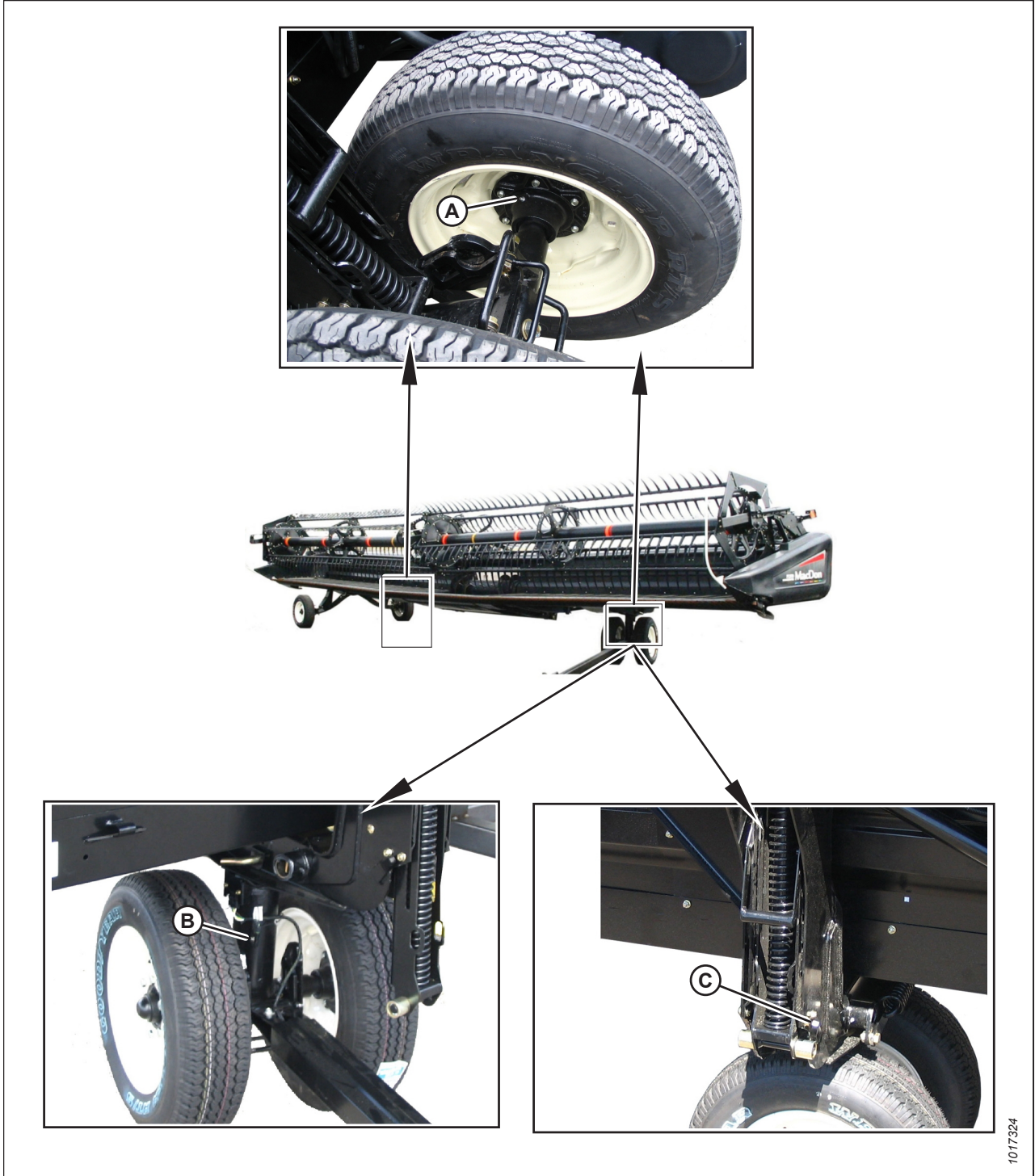
B - Auger Pivot (Second Place)
 E - Float Pivot (Two Places)

C - Flex Linkage (Two Places) (Both Sides)

PERFORMING PREDELIVERY CHECKS



PERFORMING PREDELIVERY CHECKS



1017324

Figure 6.88: Rear Wheel Axle, Wheel Bearings, Frame/Wheel Pivot, and Front Wheel Pivot

A - Wheel Bearings (Four Places)

B - Front Wheel Pivot (One Place)

C - Frame/Wheel Pivot (One Place) Both Sides

6.18 Checking and Adjusting Endshields

The header's endshields are made from molded plastic and are therefore subject to expansion or contraction caused by variations in the ambient temperature. The position of the top pin and that of the lower latch can be adjusted to compensate for dimensional changes in the endshield.

Checking the endshield

1. Measure gap (X) between the front end of the endshield and the header frame. Compare the measurement to the values provided in Table 6.5, page 176.

Table 6.5 Endshield Gaps at Various Ambient Temperatures

Ambient Temperature °C (°F)	Expected Gap (X) mm (in.)
7 (45)	13–18 (1/2–23/32)
18 (65)	10–15 (3/8–19/32)
29 (85)	7–12 (9/32–15/32)
41 (105)	4–9 (5/32–11/32)

2. If adjustment to the endshield is required, proceed to Step 3, page 176. If no adjustment is required, proceed to 6.4 Checking Knife Drive Box, page 129.

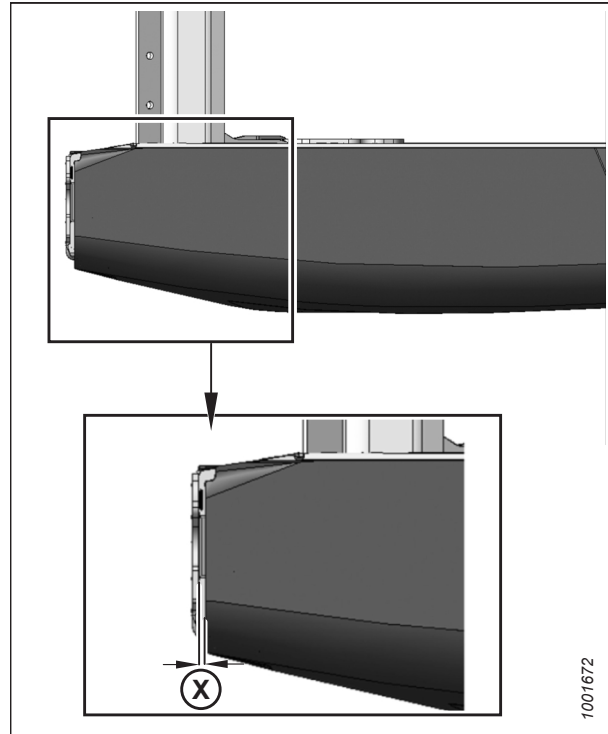


Figure 6.89: Gap between Endshield and Header Frame

3. To unlock the endshield, push release lever (A) located on the backside of the left endshield.
4. Pull the endshield open using handle depression (B).

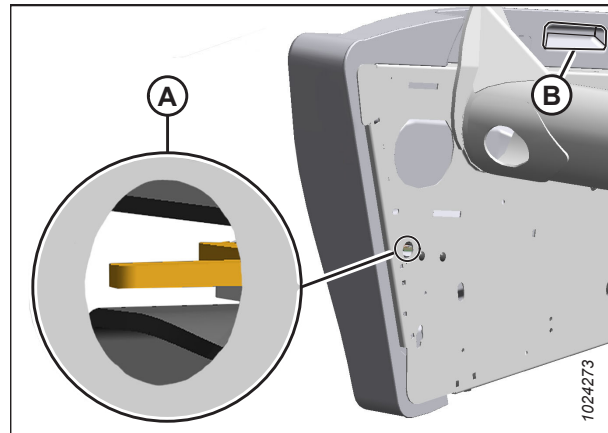


Figure 6.90: Left Endshield

PERFORMING PREDELIVERY CHECKS

5. Pull the endshield at handle depression (A). The endshield is retained by hinge tab (B) and will open in direction (C).

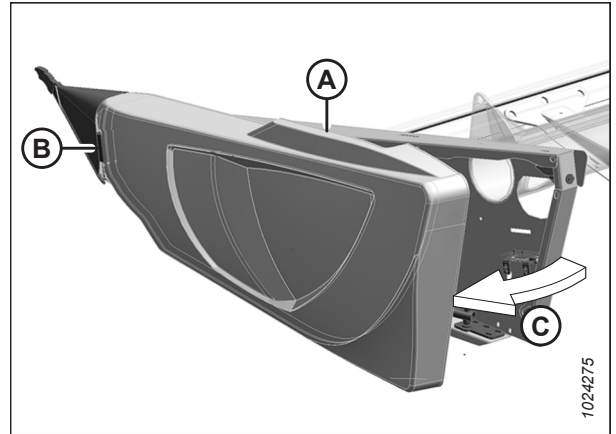


Figure 6.91: Left Endshield

6. If additional clearance is required, pull the endshield free of hinge tab (A), and swing the shield toward the rear of the header.
7. Engage safety catch (B) on the hinge arm to secure the shield in the fully-open position.

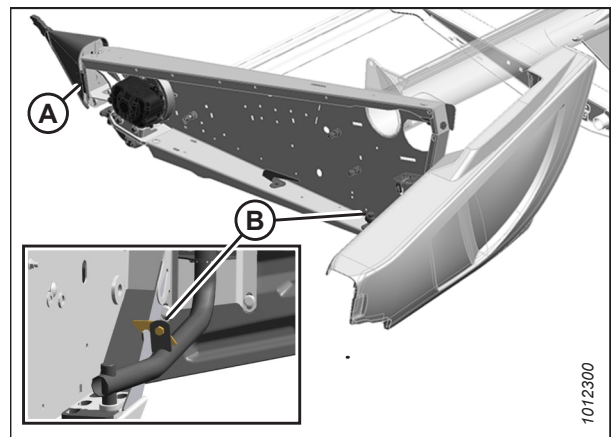


Figure 6.92: Left Endshield

Adjusting the endshield

8. Inside the endshield, loosen four bolts (A) on support tube bracket (B).

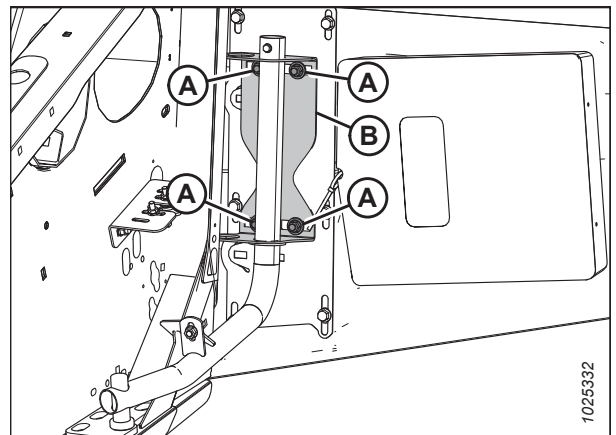


Figure 6.93: Left Endshield Support Tube

PERFORMING PREDELIVERY CHECKS

9. Loosen three bolts (A) on latch assembly (B).
10. Adjust latch assembly (B) to achieve the desired gap between the front end of the endshield and the header frame. Refer to Table 6.5, page 176 for the recommended endshield gap at various ambient temperatures.
11. Tighten three bolts (A) on the latch assembly to 27 Nm (20 lbf-ft).

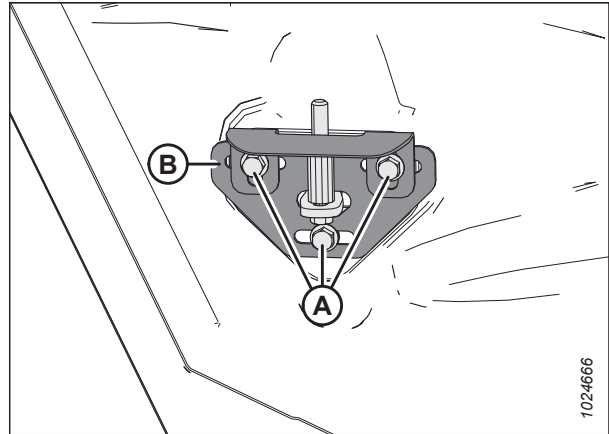


Figure 6.94: Left Endshield Latch Assembly

12. Tighten four bolts (A) on support tube bracket (B) to 31 Nm (23 lbf-ft).

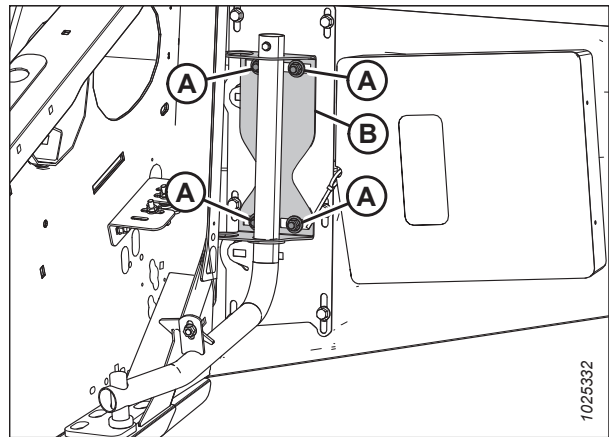


Figure 6.95: Left Endshield Support Tube

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

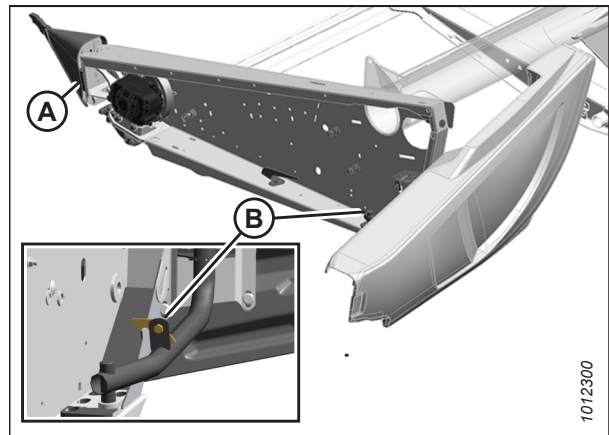


Figure 6.96: Left Endshield

PERFORMING PREDELIVERY CHECKS

15. Swing the endshield in direction (A) into the closed position. Engage the lock with a firm push.
16. Verify the dimensions of the other endshield.
17. Repeat Step [1](#), [page 176](#) to Step [16](#), [page 179](#) to adjust the right endshield.

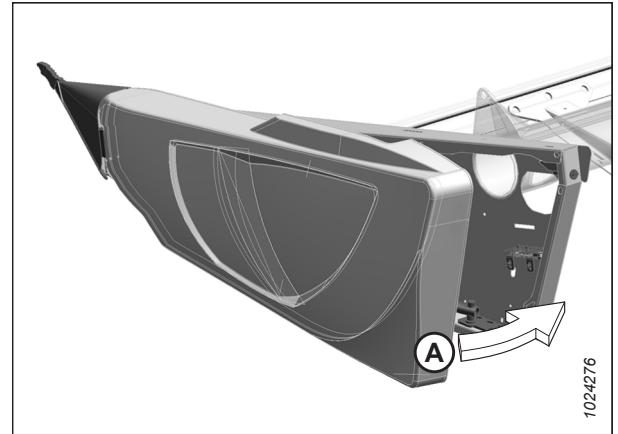


Figure 6.97: Left Endshield

6.19 Checking Manuals

The header's manual case is located inside the left endshield.

1. Open the left endshield.
2. Remove the cable tie on manual case (A).
3. Confirm that the case contains the following manuals:
 - FD1 Series FlexDraper® Operator's Manual
 - FD1 Series FlexDraper® Quick Card
 - FD1 Series FlexDraper® with FM100 Float Module Parts Catalog
4. Close the case.
5. Close the left endshield.

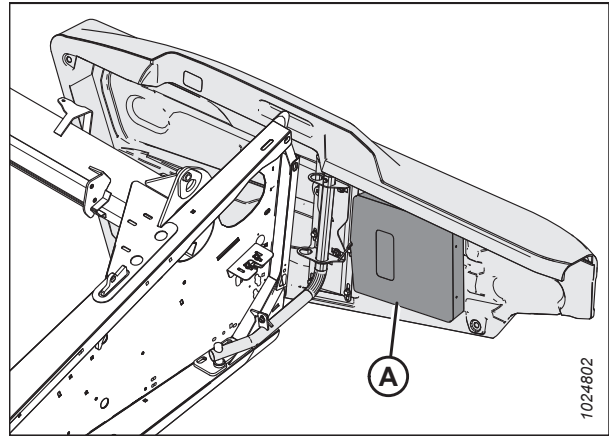


Figure 6.98: Manual Case

Chapter 7: Setting up Auto Header Height Control

Follow the steps below to set up the auto header height control feature.

7.1 Auto Header Height Control

MacDon's auto header height control (AHHC) feature works in conjunction with the AHHC option available on certain combine models.

A sensor is installed in float indicator box (A) on the FM100 Float Module. This sensor sends a signal to the combine allowing it to maintain a consistent cutting height and an optimum float as the header follows ground contours. A lateral tilt two-sensor system is also available as an optional kit.

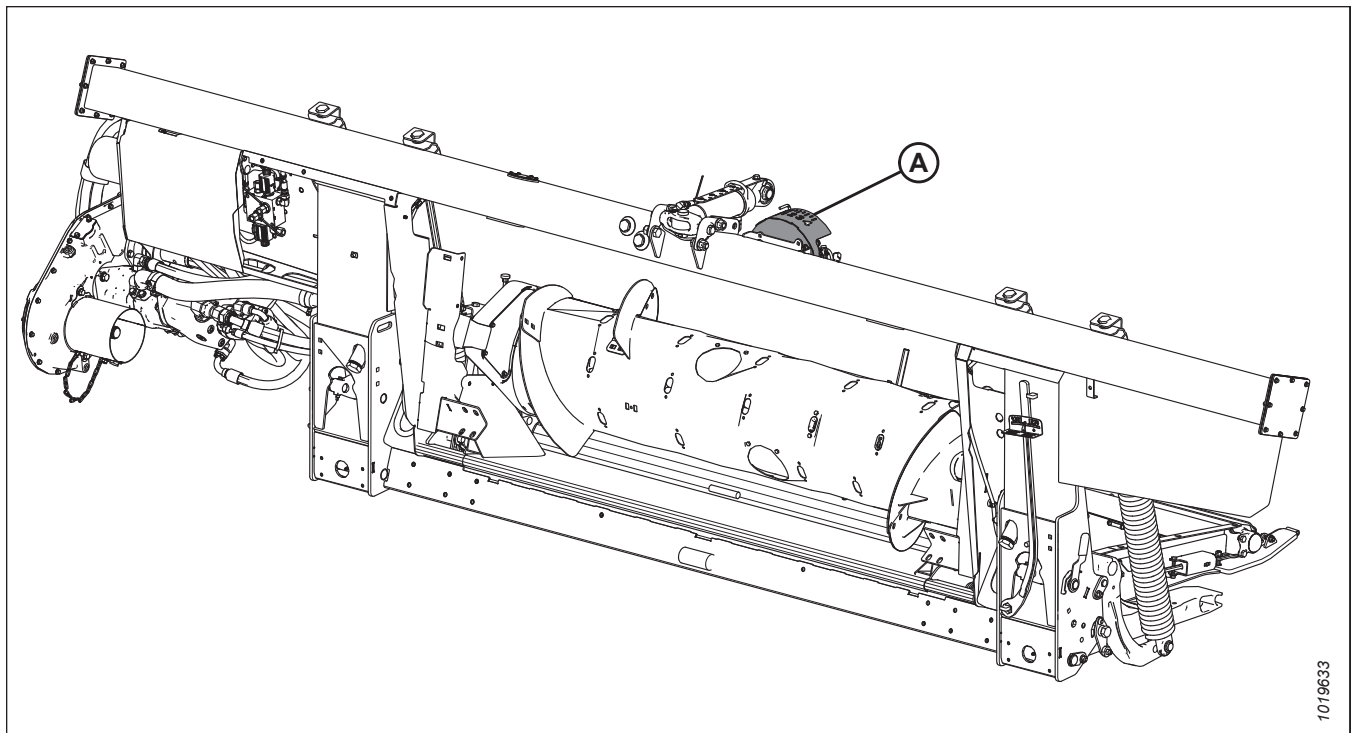


Figure 7.1: FM100 Float Module

To configure the AHHC system for your specific combine model, refer to the relevant procedure:

- [7.1.4 Case IH 5088/6088/7088 Combines, page 208](#)
- [7.1.5 Case IH 130 and 140 Series Mid-Range Combines, page 211](#)
- [7.1.6 Case IH 7010/8010, 120, 230, 240, and 250 Series Combines, page 220](#)
- [7.1.7 Challenger® and Massey Ferguson® 6 and 7 Series Combines, page 239](#)
- [7.1.8 CLAAS 500 Series Combines, page 247](#)
- [7.1.9 CLAAS 600 and 700 Series Combines, page 256](#)
- [7.1.10 CLAAS 7000 and 8000 Series Combines, page 266](#)
- [7.1.11 Gleaner R65/R66/R75/R76 and S Series Combines, page 277](#)
- [7.1.12 Gleaner S9 Series Combines, page 287](#)
- [7.1.13 IDEAL™ Series Combines, page 301](#)
- [7.1.14 John Deere 60 Series Combines, page 314](#)

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- [7.1.15 John Deere 70 Series Combines, page 322](#)
- [7.1.16 John Deere S and T Series Combines, page 329](#)
- [7.1.17 John Deere S7 Series Combines, page 347](#)
- [7.1.18 New Holland Combines – CR/CX Series – 2014 and Prior, page 360](#)
- [7.1.19 New Holland Combines – CR Series – 2015 and Later, page 370](#)

7.1.1 Sensor Operation

The position sensors supplied with the auto header height control (AHHC) system are hall-effect sensors. Normal operating signal voltages for the sensors fall between 10% (0.5 VDC) and 90% (4.5 VDC). An increase in sensor voltage correlates to a decrease in ground pressure, or if you are cutting off the ground on gauge wheels, an increase in the header cut height.

Sensor errors result in a 0 V signal, indicating a faulty sensor, incorrect supply voltage, or a damaged wiring harness.

7.1.2 Sensor Output Voltage Range – Combine Requirements

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

Table 7.1 Combine Voltage Limits

Combine	Lower Voltage Limit	Upper Voltage Limit	Range
Case IH 5088/6088/7088, 5130/6130/7130, 7010/8010, 7120/8120/9120, 7230/8230/9230, and 7240/8240/9240	0.5 V	4.5 V	2.5 V
Case IH 2588/2577	2.8 V	7.2 V	4.0 V
Challenger®, Gleaner A, and Massey Ferguson®	0.5 V	4.5 V	2.5 V
CLAAS 500/600/700 Series, 7000/8000 Series, and Tucano Series	0.5 V	4.5 V	2.5 V
Gleaner R and S Series	0.5 V	4.5 V	2.5 V
IDEAL™ Series	0.5 V	4.5 V	2.5 V
John Deere 60, 70, S, and T Series	0.5 V	4.5 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	2.8 V	7.2 V	4.1–4.4 V

NOTE:

Some combine models do not support checking sensor output voltage from the cab (early Case 23/2588 series, CLAAS 500/600/700 Series). For these models, check output voltage manually. For instructions, refer to [Checking Voltage Range Manually – One-Sensor System, page 183](#) or [Checking Voltage Range Manually – Two-Sensor System, page 186](#).

SETTING UP AUTO HEADER HEIGHT CONTROL

10 Volt Adapter (MD #B6421) – New Holland Combines Only

New Holland combines with a 10 V system require the 10 V adapter (MD #B6421) for proper calibration of the auto header height control (AHC) feature.

If a 10 V New Holland combine does not have adapter (A) installed, the AHC output will always read 0 V, regardless of sensor position.

NOTE:

A 10 V adapter is not available for the optional two-sensor system.

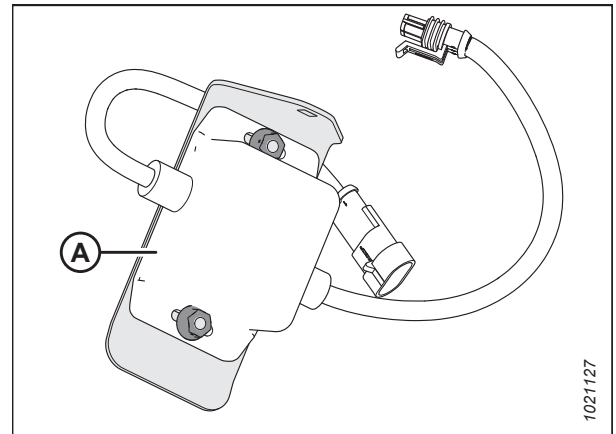


Figure 7.2: 10 V Adapter (MD #B6421)

Use a voltmeter to measure the voltage between Pin 1 (power) and Pin 2 (ground) wires at AHC sensor (A). This will determine whether the combine has a 5 V system or a 10 V system.

NOTE:

The combine key must be in the ON position, but the engine does not need to be running.

The three possible voltage readings are as follows:

- 0 V – combine key is in OFF position, or there is a faulty harness/bad connection
- 5 V – standard combine reading
- 10 V – 10 V combine reading; adapter (MD #B6421) is required

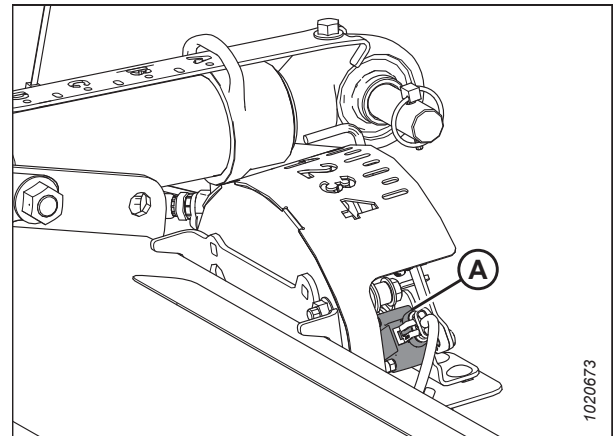


Figure 7.3: Float Indicator Box

Checking Voltage Range Manually – One-Sensor System

The one-sensor system is standard for the FM100 Float Module. The sensor is located inside the float indicator box.

If the float module is equipped with the optional two-sensor system, refer to [Checking Voltage Range Manually – Two-Sensor System, page 186](#).

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

To manually check the sensor's output voltage range, follow these steps:

1. Extend the guard angle fully; the header angle indicator should be at D.
2. Position the header 150 mm (6 in.) above the ground, and unlock the float.

DANGER

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

SETTING UP AUTO HEADER HEIGHT CONTROL

3. Shut down the engine, and remove the key from the ignition.
4. Check that the float lock linkage is on the down stops (washer [A] cannot be moved) at both locations.

NOTE:

If the header is **NOT** on the down stops during the next two steps, the voltage may go out of range during operation causing a malfunction of the AHHC system.

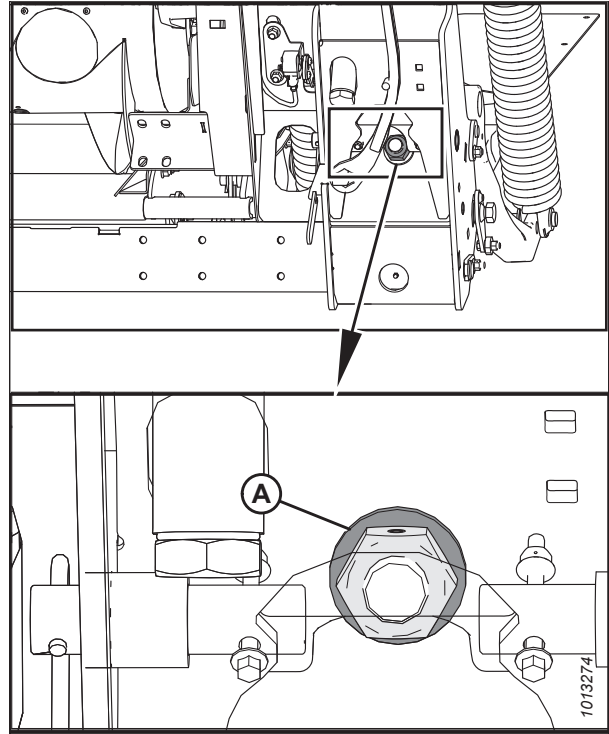


Figure 7.4: Down Stop Washer

5. Locate linkage assembly (A) in the float indicator box on top of the float module. Verify that dimension (B) is set to 55 mm (2 3/16 in.). If it is not, adjust linkage (A).

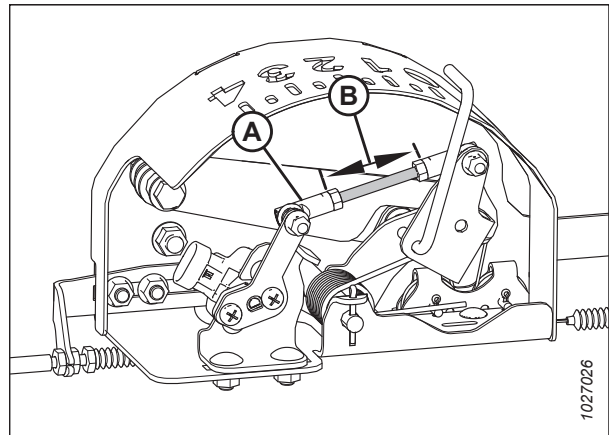


Figure 7.5: Float Indicator Box

SETTING UP AUTO HEADER HEIGHT CONTROL

- If necessary, adjust cable take-up bracket (B) until float indicator pointer (A) is on 0.

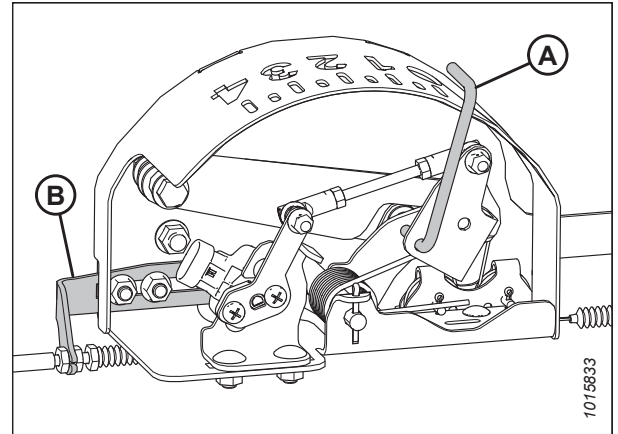


Figure 7.6: Float Indicator Box

- Use voltmeter (A) to measure the voltage between the ground (Pin 2) and signal (Pin 3) wires at the AHHC sensor in the float indicator box. Ensure that the voltage reading is identical to the upper voltage limit for the combine. For the voltage limit chart, refer to Table 7.1, page 182.

NOTE:

The wiring harness connector must be attached to the sensor. Do **NOT** disconnect it.

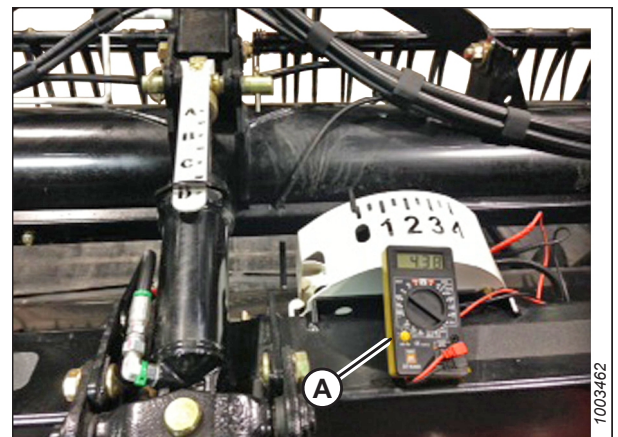


Figure 7.7: Measuring Voltage at Float Indicator Box

- Fully lower the combine feeder house, and float the header up off the down stops (the float indicator should be at 4, and the float module should be fully separated from the header).

NOTE:

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

- Use voltmeter (A) to measure the voltage between the ground and signal wires at the AHHC sensor in the float indicator box. Ensure that the voltage reading is identical to the lower voltage limit for the combine. For the voltage limit chart, refer to Table 7.1, page 182.

NOTE:

The wiring harness connector must be attached to the sensor. Do **NOT** disconnect it.

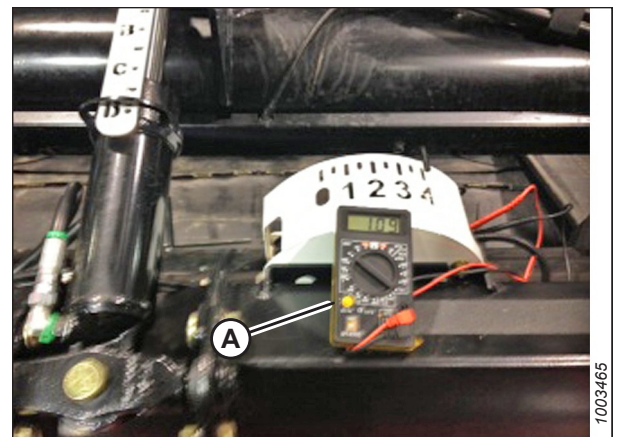


Figure 7.8: Measuring Voltage at Float Indicator Box

- If the sensor voltage is not within the low and high limits, or if the range between the low and high limits is insufficient, adjust the voltage limits. For instructions refer to [Adjusting Voltage Limits – One-Sensor System, page 189](#).

SETTING UP AUTO HEADER HEIGHT CONTROL

Checking Voltage Range Manually – Two-Sensor System

FM100 Float Modules equipped with the optional two-sensor system have left and right sensors located on the back frame of the float module.

NOTE:

FM100 float modules configured for John Deere combines use both the single-sensor and the two-sensor system at the same time. Check the voltages for both systems. For single-sensor systems, refer to *Checking Voltage Range Manually – One-Sensor System, page 183.*

DANGER

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

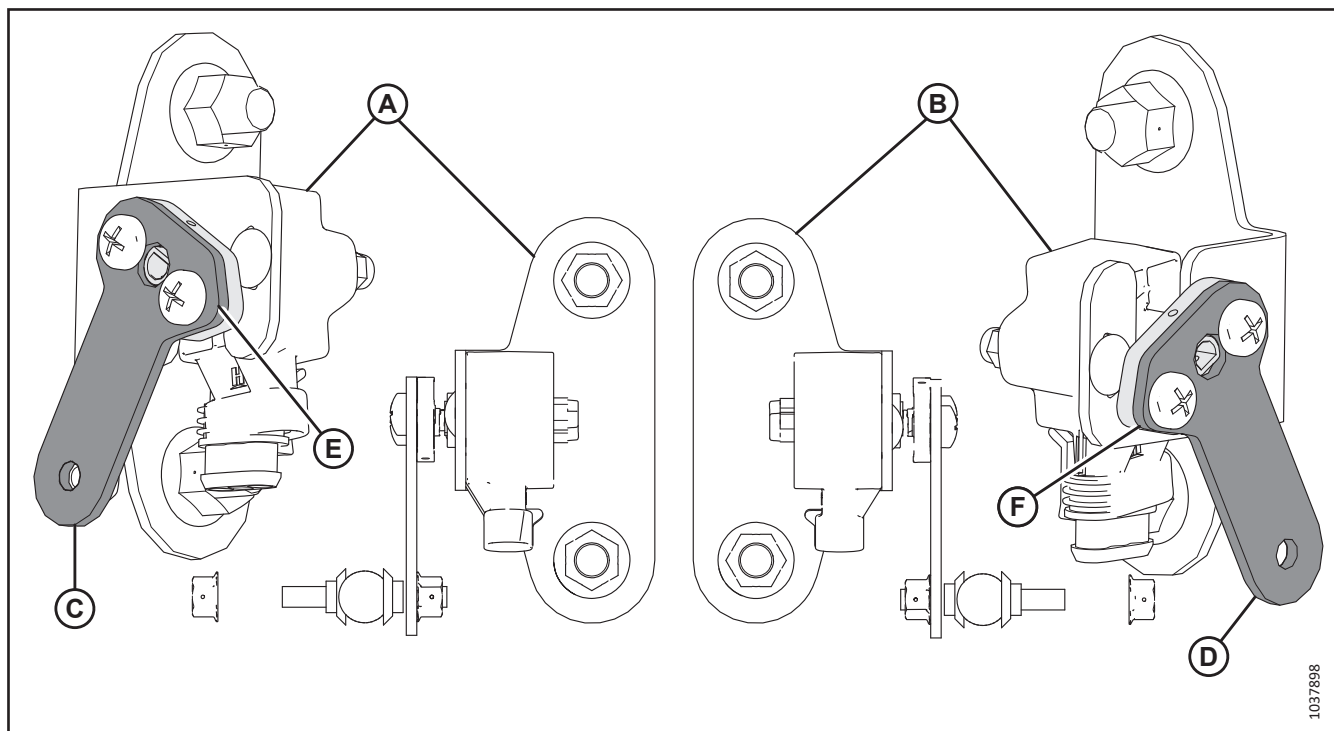


Figure 7.9: Sensor Orientation

1. Before adjusting the sensors, verify the sensor arms are properly installed on the sensors.
 - Left Sensor (A): The **POINT** on the arm of the sensor should face **AWAY** from the header. Point (E) on float sensor arm (C) should be installed in the same direction, facing away from the header.
 - Right Sensor (B): The **POINT** on the arm of the sensor should face **AWAY** from the header. Point (F) on float sensor arm (D) should be installed in the same direction, facing away from the header.

To manually check the sensor's output voltage range, follow these steps:

2. Extend the guard angle fully; the header angle indicator should be at **D**.
3. Position the header 150 mm (6 in.) above the ground, and unlock the float.

SETTING UP AUTO HEADER HEIGHT CONTROL

4. Check that the float lock linkage is on the down stops (that is, check that washer [A] cannot be moved) at both locations.

NOTE:

If the header is not on the down stops during the next two steps, the voltage may go out of range during operation, causing a malfunction of the AHHC system.

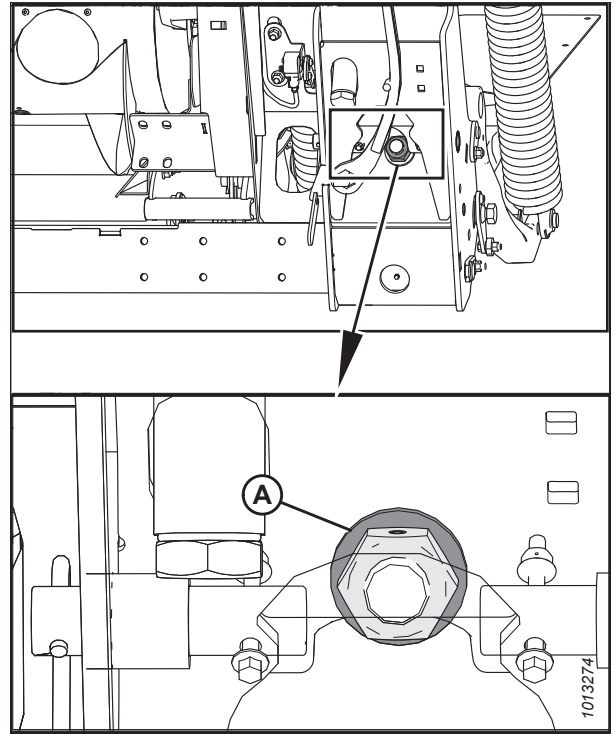


Figure 7.10: Down Stop Washer

5. Locate linkage assembly (A). Verify that dimension (B) is set to 55 mm (2 3/16 in.). If it is not, adjust linkage (A).

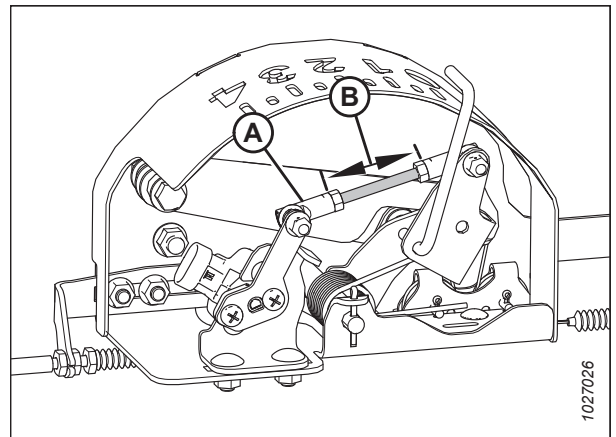


Figure 7.11: Float Indicator Box

SETTING UP AUTO HEADER HEIGHT CONTROL

6. Ensure that pointer (A) on the float indicator is on **0**. Adjust cable take-up bracket (B), if necessary.

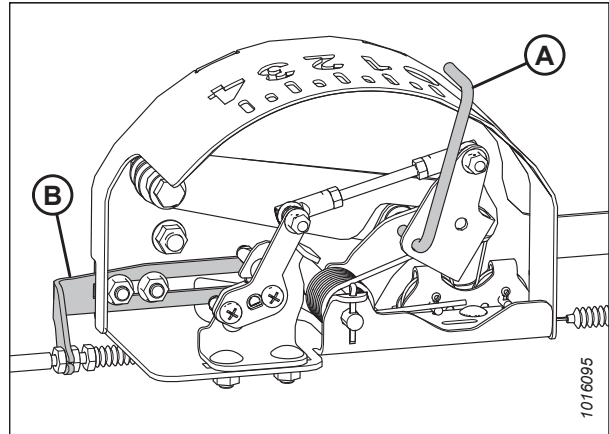


Figure 7.12: Float Indicator Box

7. Use a voltmeter to measure the voltage between the ground (Pin 2) and signal (Pin 3) wires of AHHC sensor (A) at the back of the float module side frame. Ensure it is at the upper voltage limit for the combine. For the voltage limit chart, refer to Table 7.1, page 182.

NOTE:

The wiring harness connector must be attached to the sensor. Do **NOT** disconnect it.

8. Repeat the previous step on the opposite sensor.

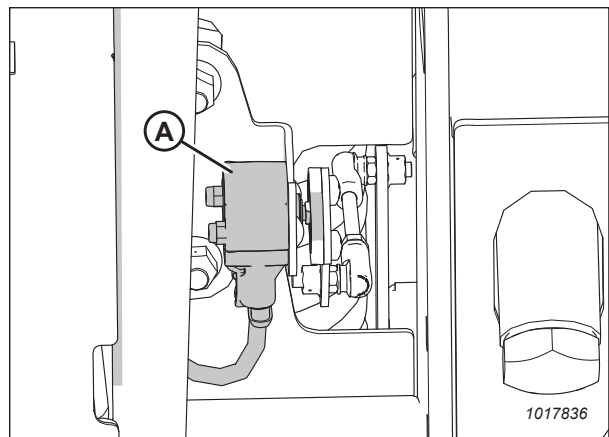


Figure 7.13: Optional Two-Sensor Kit – Right Sensor

9. Fully lower the combine feeder house, and float the header up off the down stops (float indicator [A] should be at **4**, and the float module should be fully separated from the header).

NOTE:

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

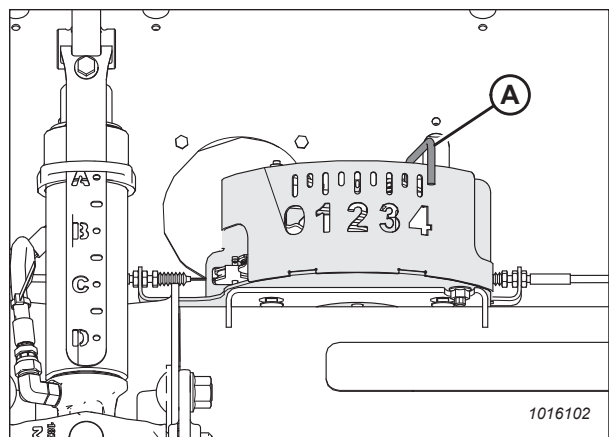


Figure 7.14: Float Indicator Box

SETTING UP AUTO HEADER HEIGHT CONTROL

- Using a voltmeter, measure the voltage between the ground (Pin 2) and signal (Pin 3) wires of AHHC sensor (A) at the back of the side frame. Ensure it is at the lower voltage limit for the combine. For the voltage limit chart, refer to Table 7.1, page 182.

NOTE:

The wiring harness connector must be attached to the sensor. Do **NOT** disconnect it.

- If the sensor voltage is not within the lower and upper limits, or if the range between the lower and upper limits is insufficient, adjust the voltage limits. For instructions, refer to *Adjusting Voltage Limits – Two-Sensor System*, page 190.
- Repeat the previous two steps on the opposite sensor.

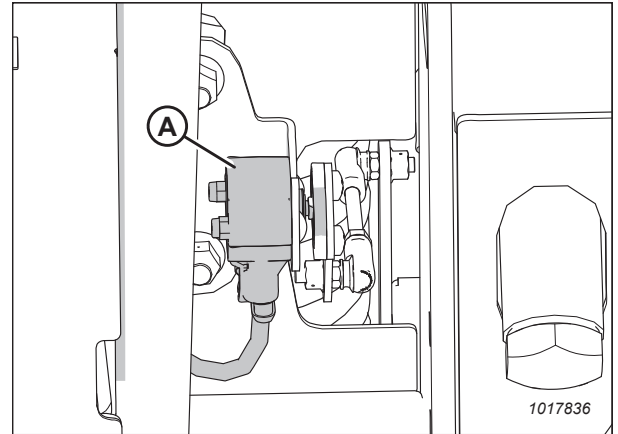


Figure 7.15: Optional Two-Sensor Kit – Right Sensor

Adjusting Voltage Limits – One-Sensor System

Follow this procedure if you have checked the voltage range (either manually or from the cab) and found that the sensor voltage is not within the lower and upper limits, or that the range between the upper and lower limits is insufficient.

DANGER

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

- Adjust the upper voltage limit:
 - Extend the guard angle fully; the header angle indicator should be at **D**.
 - Position the header 152–254 mm (6–10 in.) above the ground; the float indicator should be at **0**.
 - Check the upper voltage limit using the combine display or a voltmeter. For the voltage limit chart, refer to Table 7.1, page 182.
 - Loosen sensor-mounting nuts (A).
 - Slide sensor support (B) to the right to increase the upper voltage limit or to the left to decrease it.
 - Tighten sensor-mounting nuts (A).

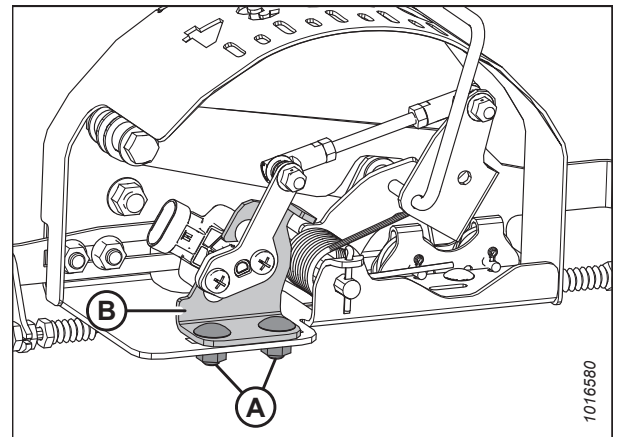


Figure 7.16: AHHC Sensor Assembly

SETTING UP AUTO HEADER HEIGHT CONTROL

2. Adjust the lower voltage limit:
 - a. Check the lower voltage limit using the combine display or voltmeter. For the voltage limit chart, refer to Table 7.1, page 182.
 - b. Loosen sensor-mounting nuts (A).
 - c. Rotate sensor (B) clockwise to increase the lower voltage limit or counterclockwise to decrease it.
 - d. Tighten sensor-mounting nuts (A).
3. After making adjustments, recheck both the upper and lower voltage limits to make sure they are within the required range according to Table 7.1, page 182.

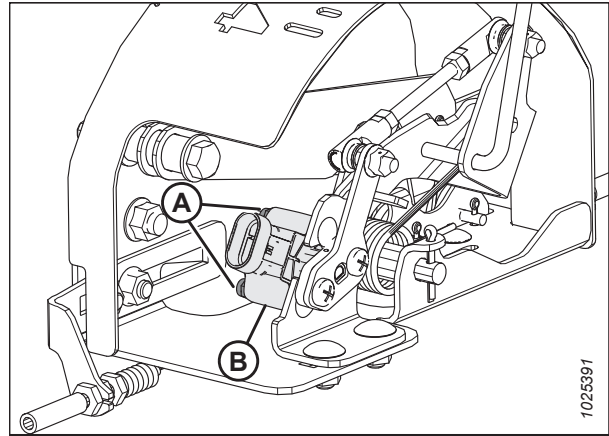


Figure 7.17: AHHC Sensor Assembly

Adjusting Voltage Limits – Two-Sensor System

Follow this procedure if you have checked the voltage range (either manually or from the cab) and found that the sensor voltage is not within the lower and upper limits, or that the range between the lower and upper limits is insufficient.

DANGER

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

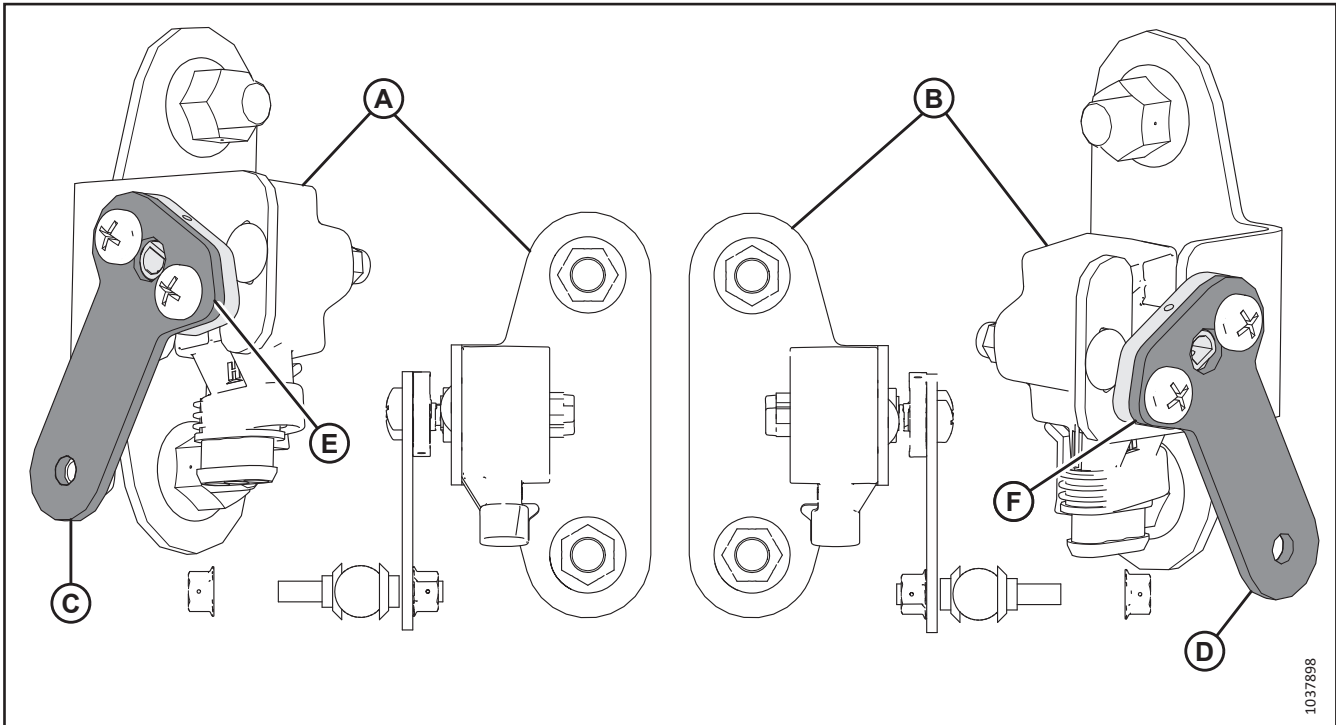


Figure 7.18: Sensor Orientation

SETTING UP AUTO HEADER HEIGHT CONTROL

1. Before adjusting the sensors, verify the sensor arms are properly installed on the sensors.
 - Left Sensor (A): The **POINT** on the arm of the sensor should face **AWAY** from the header. Point (E) on float sensor arm (C) should be installed in the same direction, facing away from the header.
 - Right Sensor (B): The **POINT** on the arm of the sensor should face **AWAY** from the header. Point (F) on float sensor arm (D) should be installed in the same direction, facing away from the header.

Follow these steps to adjust the left sensor voltage:

2. Extend the guard angle fully; the header angle indicator should be at **D**.
3. Position the header 150–254 mm (6–10 in.) above the ground; the float indicator should be at **0**.
4. Loosen sensor-mounting nuts (A).
5. Check that the left sensor is at the correct upper voltage limit.
6. Rotate sensor (B) counterclockwise to lower the voltage. Rotate the sensor clockwise to raise the voltage.
7. Tighten sensor-mounting nuts (A).

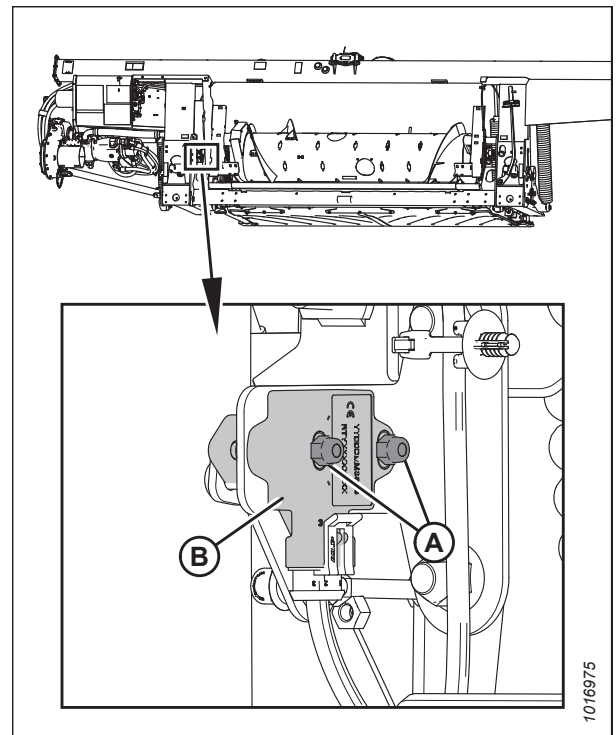


Figure 7.19: Optional Two-Sensor Kit – Left Sensor

SETTING UP AUTO HEADER HEIGHT CONTROL

Follow these steps to adjust the right sensor voltage:

8. Loosen sensor mounting nuts (A).
9. Rotate sensor (B) clockwise to lower the voltage. Rotate the sensor counterclockwise to raise the voltage.
10. Check that the right sensor is at the correct upper voltage limit.
11. Tighten sensor mounting nuts (A).

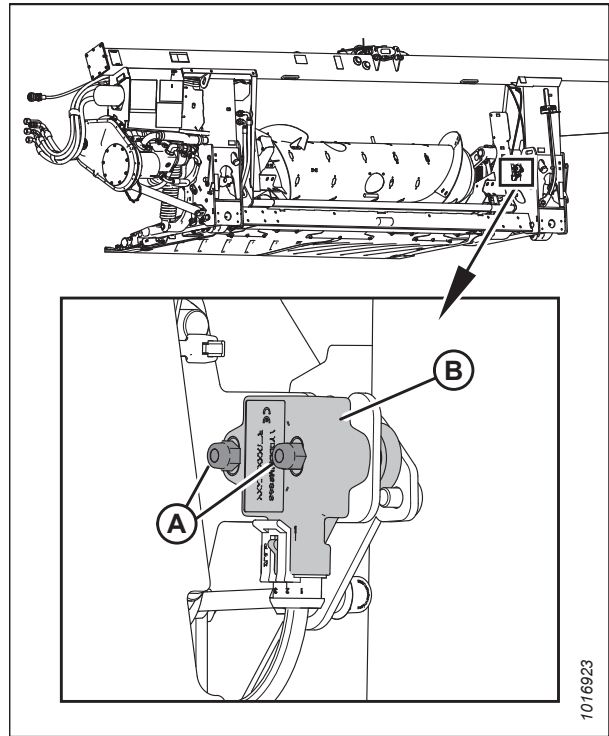


Figure 7.20: Optional Two-Sensor Kit – Right Sensor

12. Fully lower the header; float indicator (A) should be at 4.
13. Check that both of the sensors are at the correct lower voltage limit.

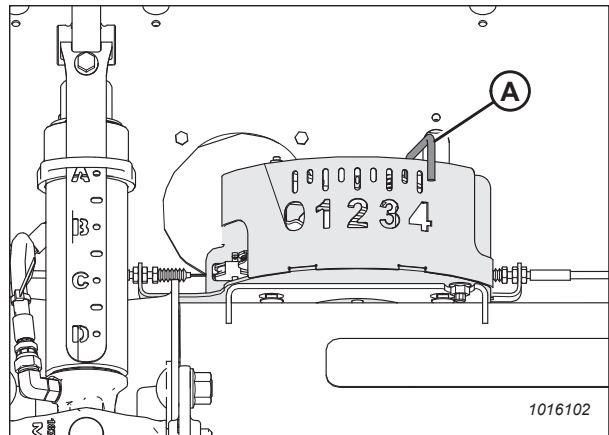


Figure 7.21: Float Indicator Box

7.1.3 Serviceable Components

This section describes and provides service information for the system's main components.

10 Volt Adapter (MD #B6421) – New Holland Combines Only

New Holland combines with a 10 V system require the 10 V adapter (MD #B6421) for proper calibration of the auto header height control (AHC) feature.

If a 10 V New Holland combine does not have adapter (A) installed, the AHC output will always read 0 V, regardless of sensor position.

NOTE:

A 10 V adapter is not available for the optional two-sensor system.

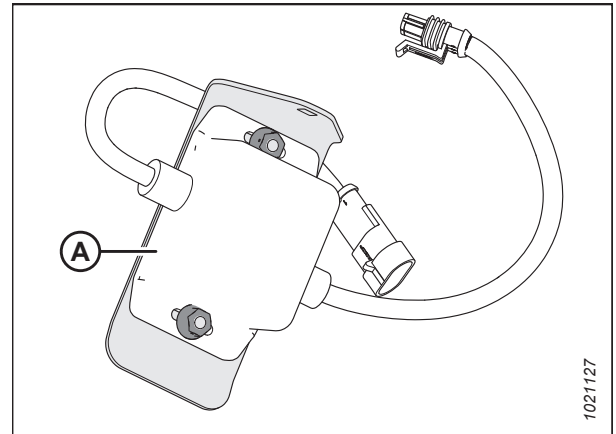


Figure 7.22: 10 V Adapter (MD #B6421)

Use a voltmeter to measure the voltage between Pin 1 (power) and Pin 2 (ground) wires at AHC sensor (A). This will determine whether the combine has a 5 V system or a 10 V system.

NOTE:

The combine key must be in the ON position, but the engine does not need to be running.

The three possible voltage readings are as follows:

- 0 V – combine key is in OFF position, or there is a faulty harness/bad connection
- 5 V – standard combine reading
- 10 V – 10 V combine reading; adapter (MD #B6421) is required

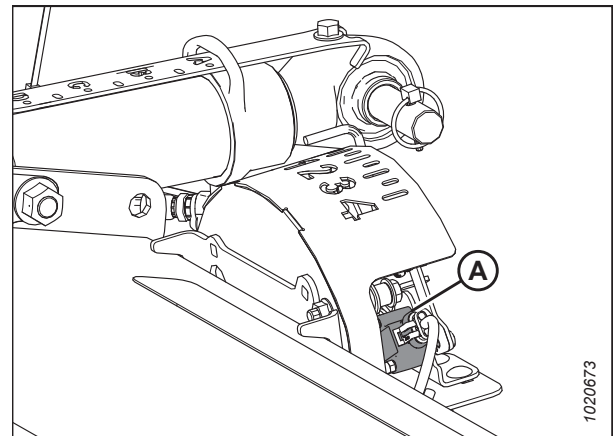


Figure 7.23: Float Indicator Box

Checking Voltage Range Manually – One-Sensor System

The one-sensor system is standard for the FM100 Float Module. The sensor is located inside the float indicator box.

If the float module is equipped with the optional two-sensor system, refer to [Checking Voltage Range Manually – Two-Sensor System, page 196](#).

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

To manually check the sensor's output voltage range, follow these steps:

1. Extend the guard angle fully; the header angle indicator should be at D.
2. Position the header 150 mm (6 in.) above the ground, and unlock the float.

SETTING UP AUTO HEADER HEIGHT CONTROL

DANGER

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

3. Shut down the engine, and remove the key from the ignition.
4. Check that the float lock linkage is on the down stops (washer [A] cannot be moved) at both locations.

NOTE:

If the header is **NOT** on the down stops during the next two steps, the voltage may go out of range during operation causing a malfunction of the AHHC system.

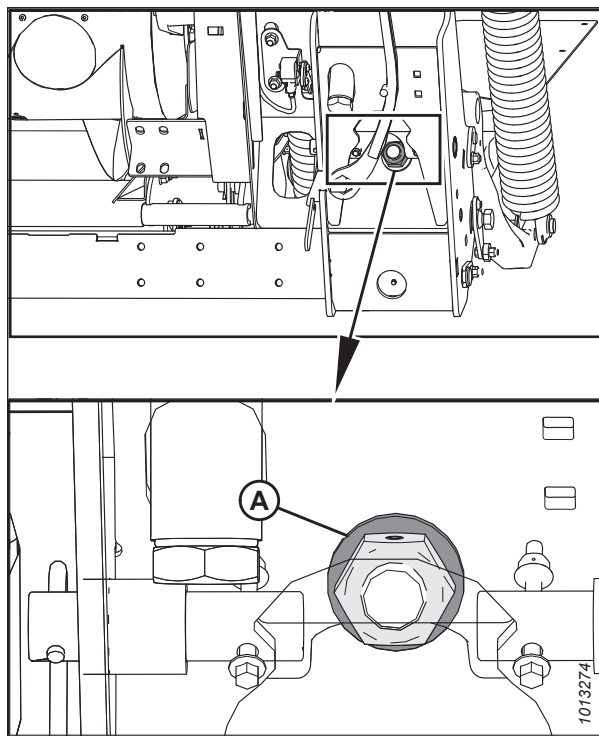


Figure 7.24: Down Stop Washer

5. Locate linkage assembly (A) in the float indicator box on top of the float module. Verify that dimension (B) is set to 55 mm (2 3/16 in.). If it is not, adjust linkage (A).

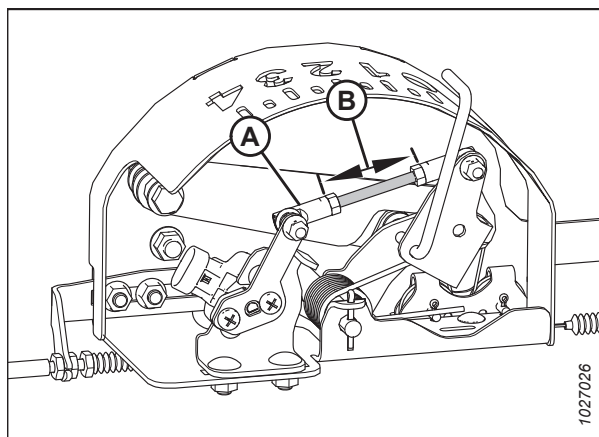


Figure 7.25: Float Indicator Box

SETTING UP AUTO HEADER HEIGHT CONTROL

6. If necessary, adjust cable take-up bracket (B) until float indicator pointer (A) is on 0.

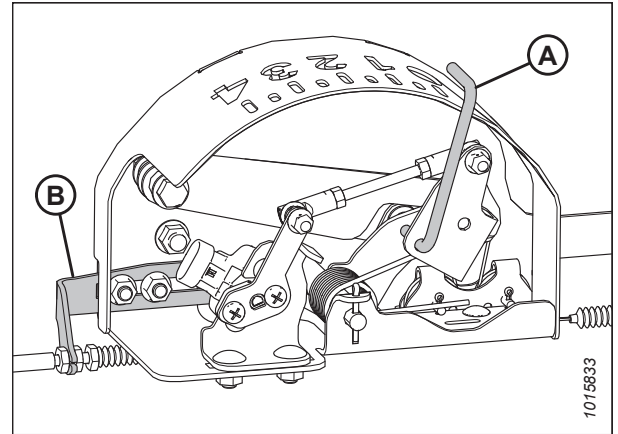


Figure 7.26: Float Indicator Box

7. Use voltmeter (A) to measure the voltage between the ground (Pin 2) and signal (Pin 3) wires at the AHHC sensor in the float indicator box. Ensure that the voltage reading is identical to the upper voltage limit for the combine. For the voltage limit chart, refer to Table 7.1, page 182.

NOTE:

The wiring harness connector must be attached to the sensor. Do **NOT** disconnect it.

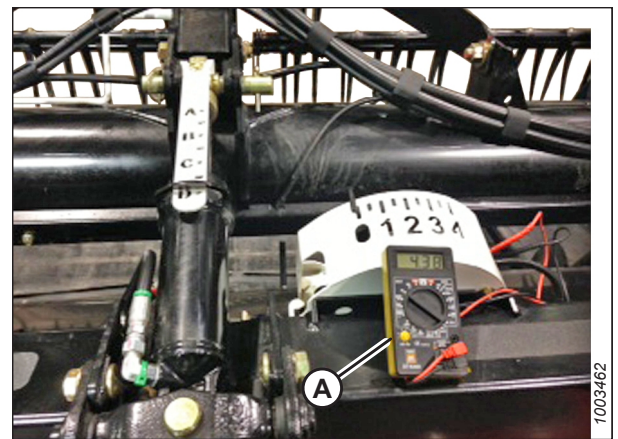


Figure 7.27: Measuring Voltage at Float Indicator Box

8. Fully lower the combine feeder house, and float the header up off the down stops (the float indicator should be at 4, and the float module should be fully separated from the header).

NOTE:

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

9. Use voltmeter (A) to measure the voltage between the ground and signal wires at the AHHC sensor in the float indicator box. Ensure that the voltage reading is identical to the lower voltage limit for the combine. For the voltage limit chart, refer to Table 7.1, page 182.

NOTE:

The wiring harness connector must be attached to the sensor. Do **NOT** disconnect it.

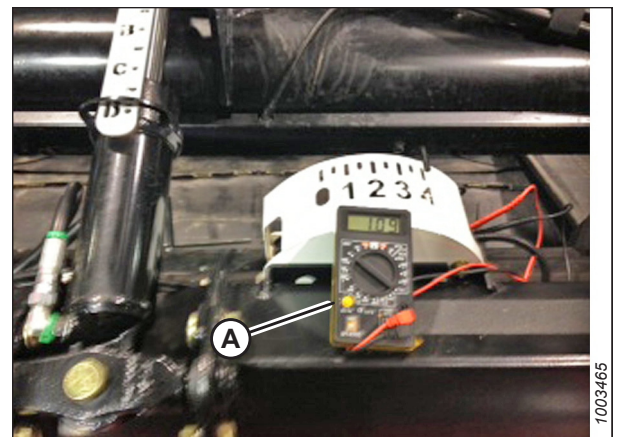


Figure 7.28: Measuring Voltage at Float Indicator Box

10. If the sensor voltage is not within the low and high limits, or if the range between the low and high limits is insufficient, adjust the voltage limits. For instructions refer to *Adjusting Voltage Limits – One-Sensor System, page 199*.

SETTING UP AUTO HEADER HEIGHT CONTROL

Checking Voltage Range Manually – Two-Sensor System

FM100 Float Modules equipped with the optional two-sensor system have left and right sensors located on the back frame of the float module.

NOTE:

FM100 float modules configured for John Deere combines use both the single-sensor and the two-sensor system at the same time. Check the voltages for both systems. For single-sensor systems, refer to *Checking Voltage Range Manually – One-Sensor System, page 193*.

DANGER

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

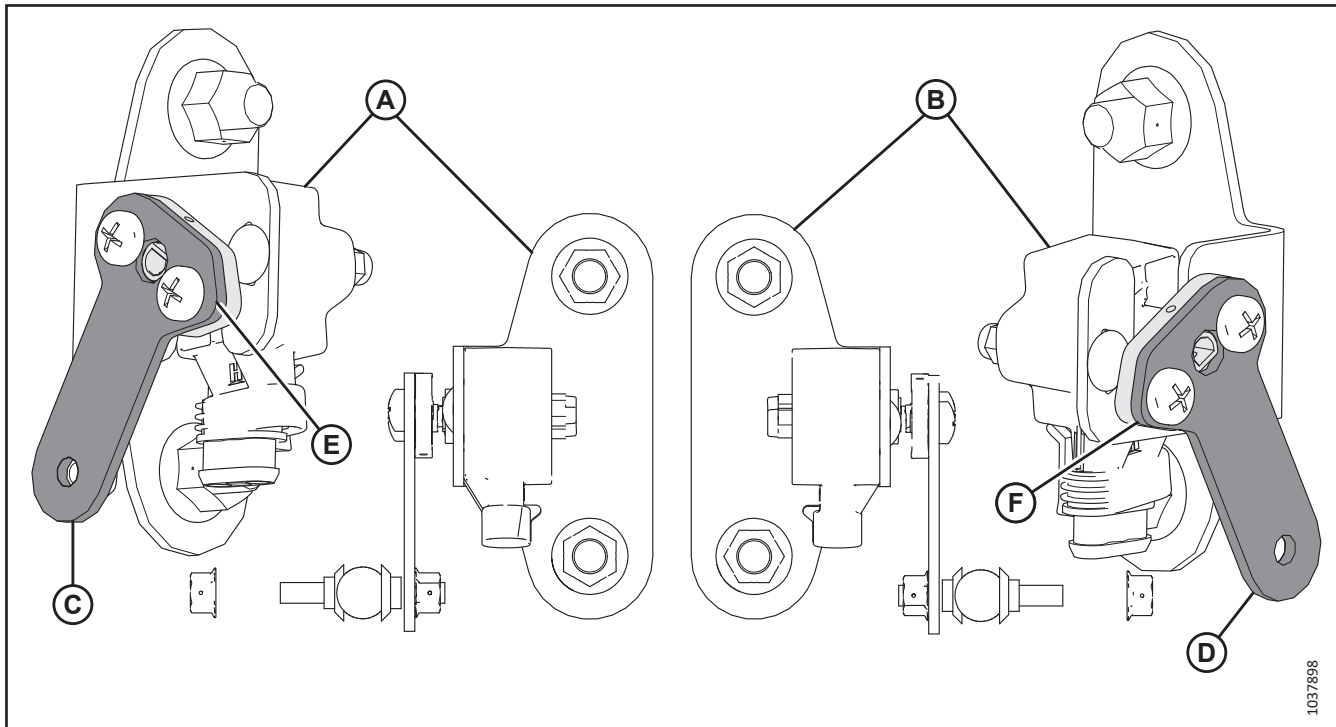


Figure 7.29: Sensor Orientation

1. Before adjusting the sensors, verify the sensor arms are properly installed on the sensors.
 - Left Sensor (A): The **POINT** on the arm of the sensor should face **AWAY** from the header. Point (E) on float sensor arm (C) should be installed in the same direction, facing away from the header.
 - Right Sensor (B): The **POINT** on the arm of the sensor should face **AWAY** from the header. Point (F) on float sensor arm (D) should be installed in the same direction, facing away from the header.

To manually check the sensor's output voltage range, follow these steps:

2. Extend the guard angle fully; the header angle indicator should be at **D**.
3. Position the header 150 mm (6 in.) above the ground, and unlock the float.

SETTING UP AUTO HEADER HEIGHT CONTROL

4. Check that the float lock linkage is on the down stops (that is, check that washer [A] cannot be moved) at both locations.

NOTE:

If the header is not on the down stops during the next two steps, the voltage may go out of range during operation, causing a malfunction of the AHHC system.

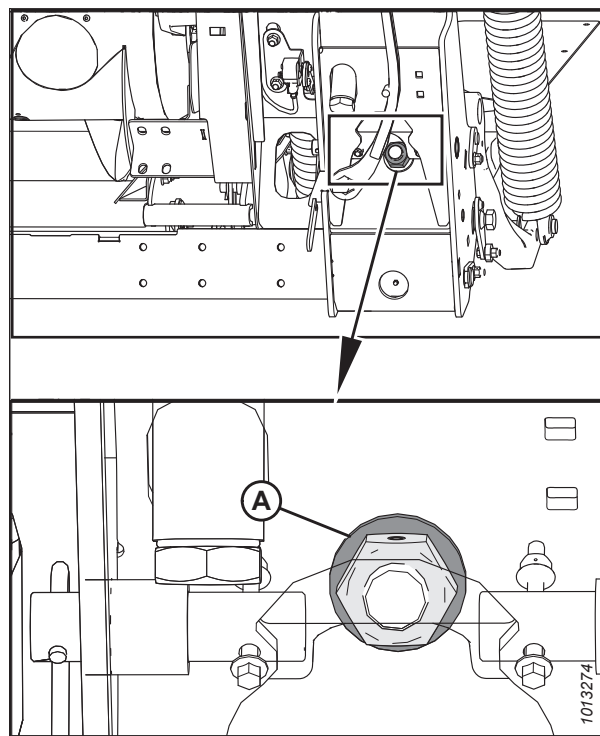


Figure 7.30: Down Stop Washer

5. Locate linkage assembly (A). Verify that dimension (B) is set to 55 mm (2 3/16 in.). If it is not, adjust linkage (A).

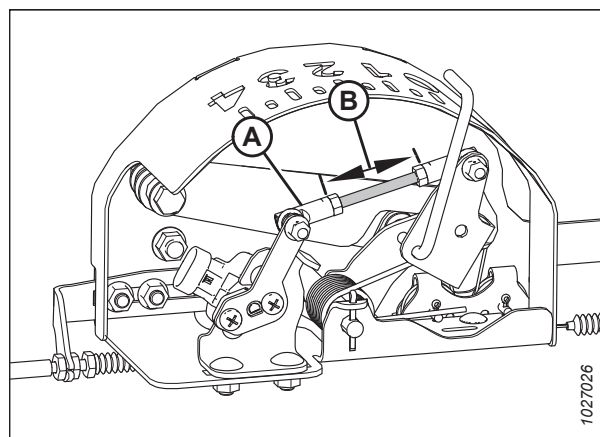


Figure 7.31: Float Indicator Box

SETTING UP AUTO HEADER HEIGHT CONTROL

6. Ensure that pointer (A) on the float indicator is on **0**. Adjust cable take-up bracket (B), if necessary.

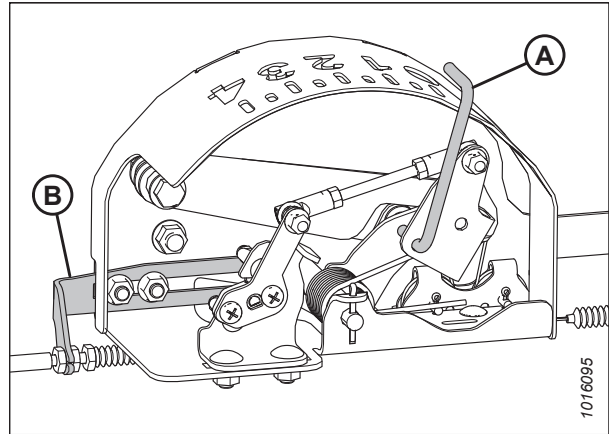


Figure 7.32: Float Indicator Box

7. Use a voltmeter to measure the voltage between the ground (Pin 2) and signal (Pin 3) wires of AHHC sensor (A) at the back of the float module side frame. Ensure it is at the upper voltage limit for the combine. For the voltage limit chart, refer to Table 7.1, page 182.

NOTE:

The wiring harness connector must be attached to the sensor. Do **NOT** disconnect it.

8. Repeat the previous step on the opposite sensor.

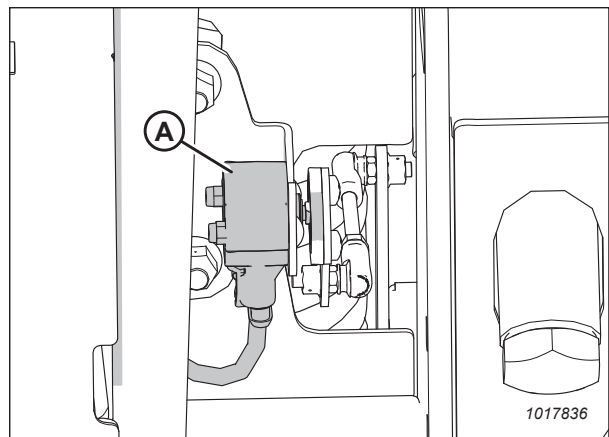


Figure 7.33: Optional Two-Sensor Kit – Right Sensor

9. Fully lower the combine feeder house, and float the header up off the down stops (float indicator [A] should be at **4**, and the float module should be fully separated from the header).

NOTE:

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

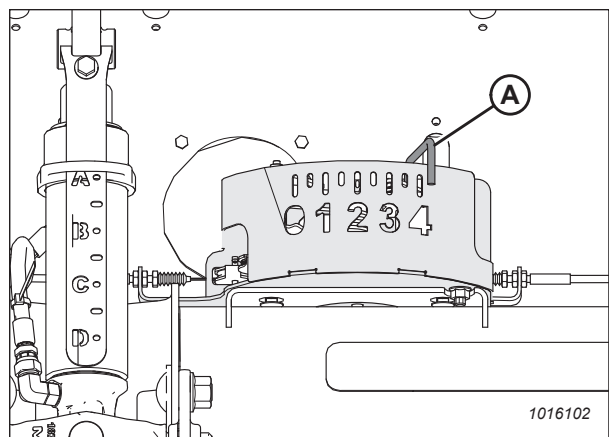


Figure 7.34: Float Indicator Box

SETTING UP AUTO HEADER HEIGHT CONTROL

- Using a voltmeter, measure the voltage between the ground (Pin 2) and signal (Pin 3) wires of AHC sensor (A) at the back of the side frame. Ensure it is at the lower voltage limit for the combine. For the voltage limit chart, refer to Table 7.1, page 182.

NOTE:

The wiring harness connector must be attached to the sensor. Do **NOT** disconnect it.

- If the sensor voltage is not within the lower and upper limits, or if the range between the lower and upper limits is insufficient, adjust the voltage limits. For instructions, refer to *Adjusting Voltage Limits – Two-Sensor System*, page 200.
- Repeat the previous two steps on the opposite sensor.

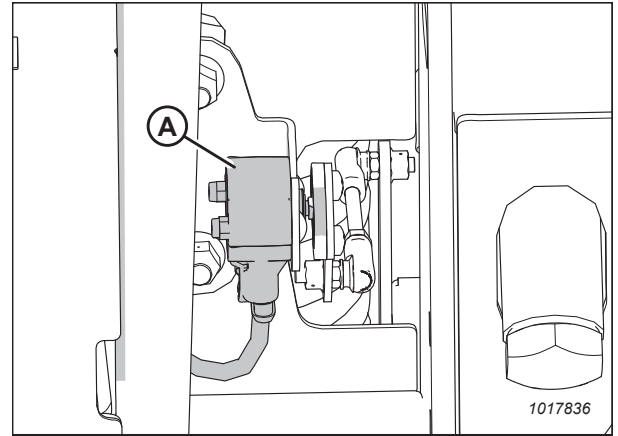


Figure 7.35: Optional Two-Sensor Kit – Right Sensor

Adjusting Voltage Limits – One-Sensor System

Follow this procedure if you have checked the voltage range (either manually or from the cab) and found that the sensor voltage is not within the lower and upper limits, or that the range between the upper and lower limits is insufficient.

DANGER

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

- Adjust the upper voltage limit:
 - Extend the guard angle fully; the header angle indicator should be at **D**.
 - Position the header 152–254 mm (6–10 in.) above the ground; the float indicator should be at **0**.
 - Check the upper voltage limit using the combine display or a voltmeter. For the voltage limit chart, refer to Table 7.1, page 182.
 - Loosen sensor-mounting nuts (A).
 - Slide sensor support (B) to the right to increase the upper voltage limit or to the left to decrease it.
 - Tighten sensor-mounting nuts (A).

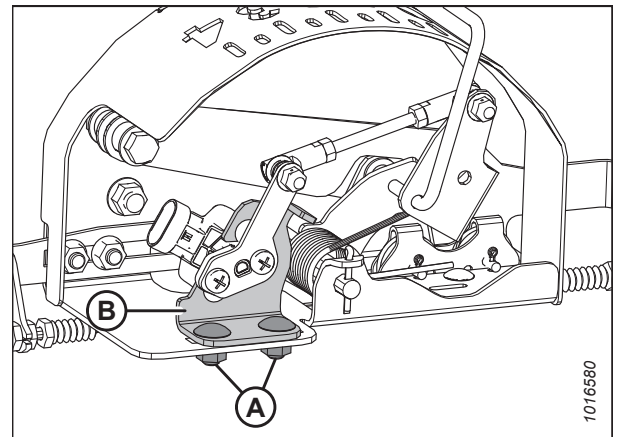


Figure 7.36: AHC Sensor Assembly

SETTING UP AUTO HEADER HEIGHT CONTROL

2. Adjust the lower voltage limit:
 - a. Check the lower voltage limit using the combine display or voltmeter. For the voltage limit chart, refer to Table 7.1, page 182.
 - b. Loosen sensor-mounting nuts (A).
 - c. Rotate sensor (B) clockwise to increase the lower voltage limit or counterclockwise to decrease it.
 - d. Tighten sensor-mounting nuts (A).
3. After making adjustments, recheck both the upper and lower voltage limits to make sure they are within the required range according to Table 7.1, page 182.

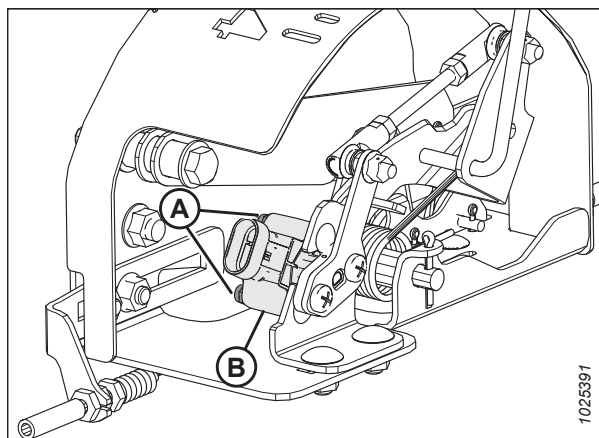


Figure 7.37: AHC Sensor Assembly

Adjusting Voltage Limits – Two-Sensor System

Follow this procedure if you have checked the voltage range (either manually or from the cab) and found that the sensor voltage is not within the lower and upper limits, or that the range between the lower and upper limits is insufficient.

DANGER

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

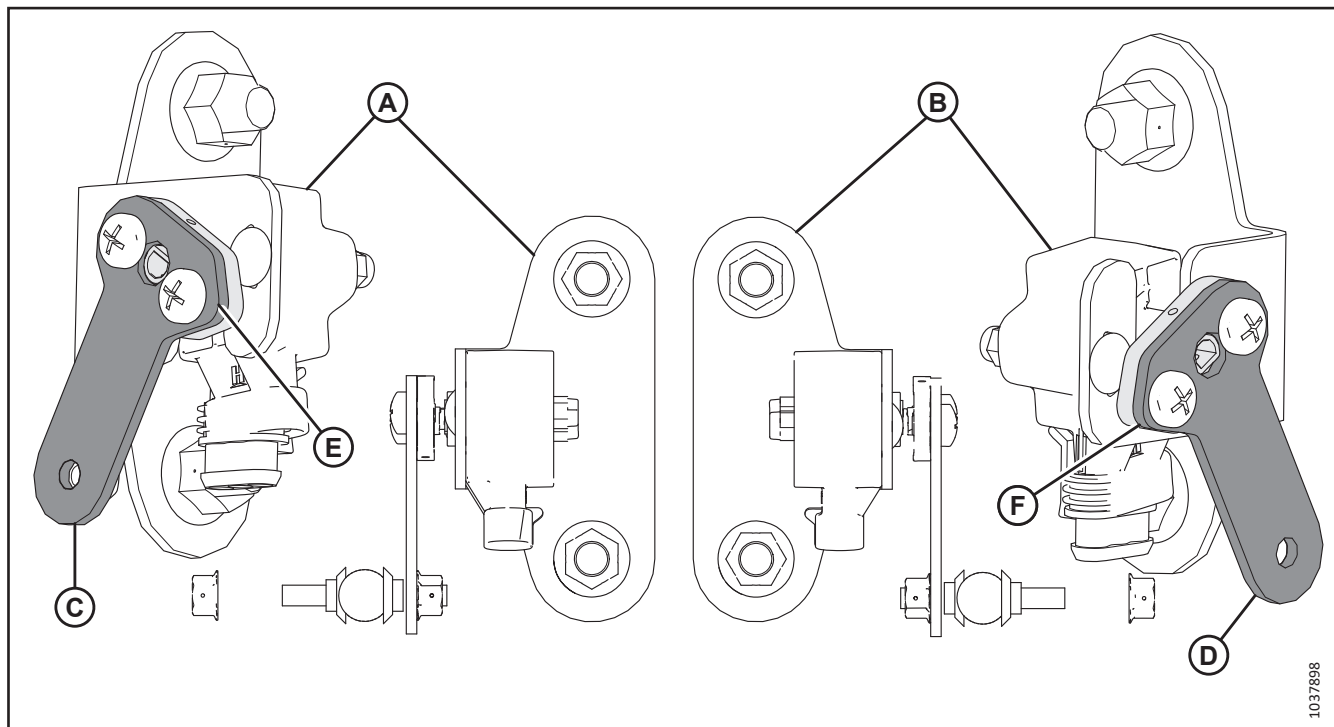


Figure 7.38: Sensor Orientation

SETTING UP AUTO HEADER HEIGHT CONTROL

1. Before adjusting the sensors, verify the sensor arms are properly installed on the sensors.
 - Left Sensor (A): The **POINT** on the arm of the sensor should face **AWAY** from the header. Point (E) on float sensor arm (C) should be installed in the same direction, facing away from the header.
 - Right Sensor (B): The **POINT** on the arm of the sensor should face **AWAY** from the header. Point (F) on float sensor arm (D) should be installed in the same direction, facing away from the header.

Follow these steps to adjust the left sensor voltage:

2. Extend the guard angle fully; the header angle indicator should be at **D**.
3. Position the header 150–254 mm (6–10 in.) above the ground; the float indicator should be at **0**.
4. Loosen sensor-mounting nuts (A).
5. Check that the left sensor is at the correct upper voltage limit.
6. Rotate sensor (B) counterclockwise to lower the voltage. Rotate the sensor clockwise to raise the voltage.
7. Tighten sensor-mounting nuts (A).

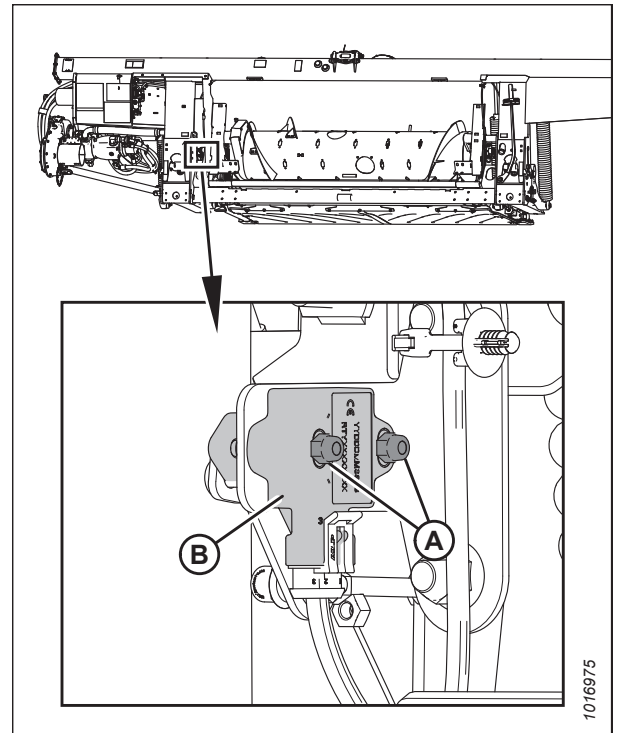


Figure 7.39: Optional Two-Sensor Kit – Left Sensor

SETTING UP AUTO HEADER HEIGHT CONTROL

Follow these steps to adjust the right sensor voltage:

8. Loosen sensor mounting nuts (A).
9. Rotate sensor (B) clockwise to lower the voltage. Rotate the sensor counterclockwise to raise the voltage.
10. Check that the right sensor is at the correct upper voltage limit.
11. Tighten sensor mounting nuts (A).

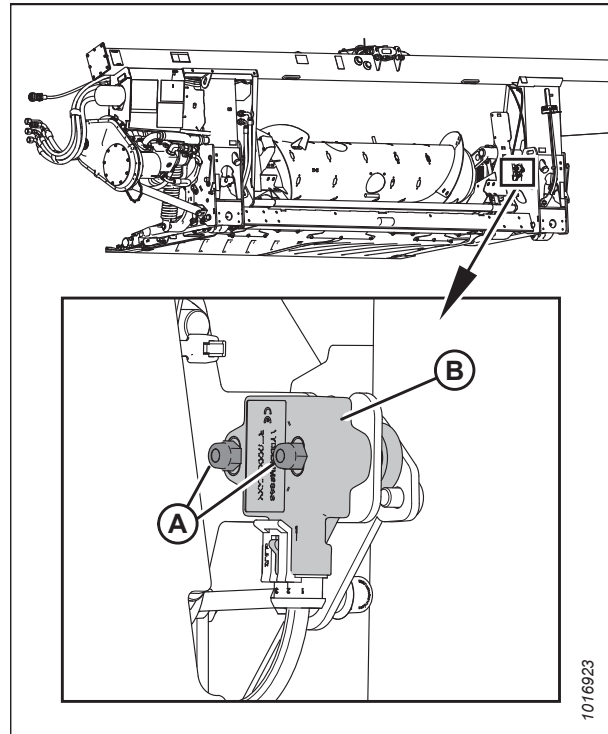


Figure 7.40: Optional Two-Sensor Kit – Right Sensor

12. Fully lower the header; float indicator (A) should be at 4.
13. Check that both of the sensors are at the correct lower voltage limit.

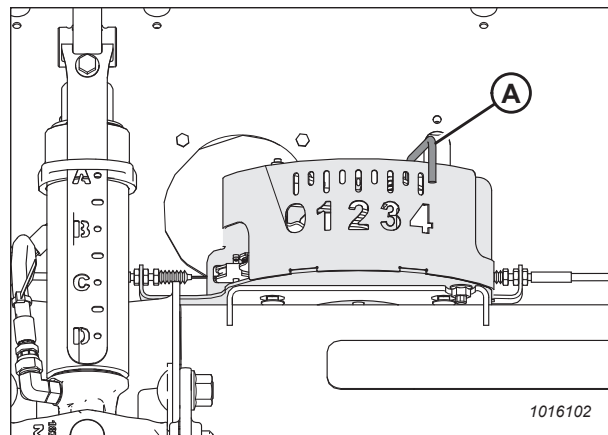


Figure 7.41: Float Indicator Box

Replacing the Auto Header Height Control Sensor – One-Sensor System

If the auto header height control (AHHC) sensor is not operating correctly, the sensor may be damaged and need replacement. Order a new sensor (MD #248643) and install it as follows:

WARNING

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

SETTING UP AUTO HEADER HEIGHT CONTROL

1. Shut down the engine, and remove the key from the ignition.
2. Disconnect wiring harness (A) from existing sensor (B).
3. Remove two screws (C) that secure sensor (B) to sensor arm (D).

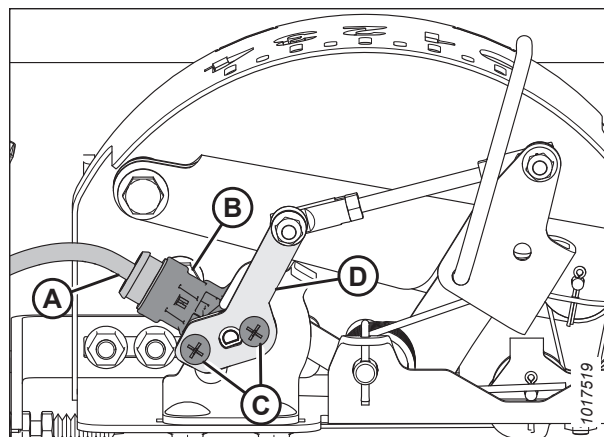


Figure 7.42: AHHC Sensor

4. Swing sensor arm (A) upwards to gain access to two bolts (B) securing sensor (C) to bracket (D).
5. Remove two bolts and nuts (B) that secure sensor (C) to bracket (D).
6. Pull sensor (C) away from bracket (D).

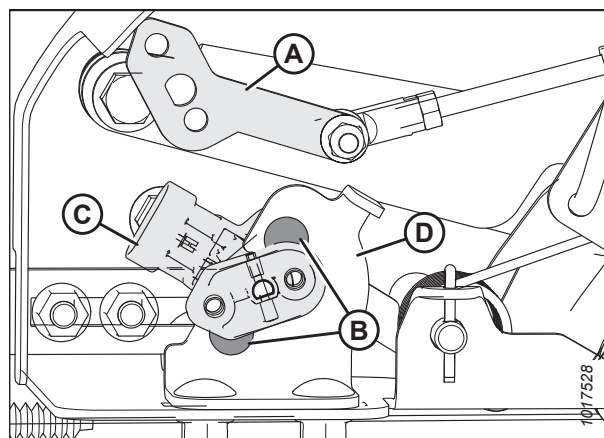


Figure 7.43: AHHC Sensor

IMPORTANT:

To avoid damaging the new sensor, install sensor as follows:

7. Position new sensor (A) on bracket (B).
8. Secure the sensor with two bolts (C) and nuts (D).

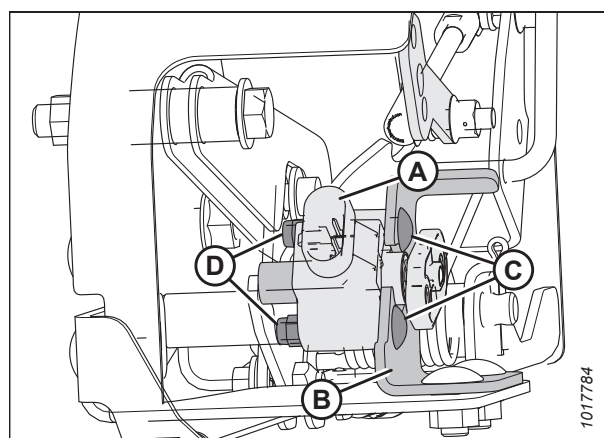


Figure 7.44: AHHC Sensor

SETTING UP AUTO HEADER HEIGHT CONTROL

- Attach sensor arm (A) to sensor (B) and secure it with two screws (C).
- Reconnect the wiring harness to plug (B) on the sensor.
- Check the voltage range of the new sensor, and adjust it if necessary. Refer to:
 - Checking Voltage Range Manually – One-Sensor System, page 193*
 - Adjusting Voltage Limits – One-Sensor System, page 199*

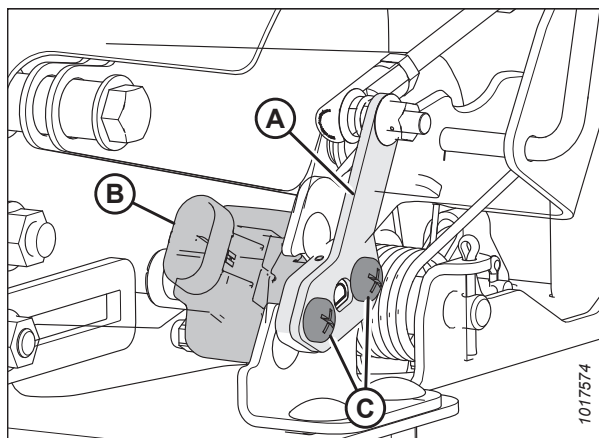


Figure 7.45: AHC Sensor

Replacing Float Indicator Cable

If the float indicator cable is damaged, replace it following these instructions. You will need to order one float indicator cable (MD #187658) from your MacDon Dealer.

NOTE:

Some parts have been removed from the illustrations for clarity.

- On the left front side of the float module, remove nut, washer, and bolt (A) securing the cable eye on the end of float indicator cable (B) to the float lever. Retain the hardware for reinstallation.
- Loosen jam nuts (C) on float indicator cable (B), and then disconnect the cable from cable stop support (D).
- Repeat the previous steps on the right front side of the float module.

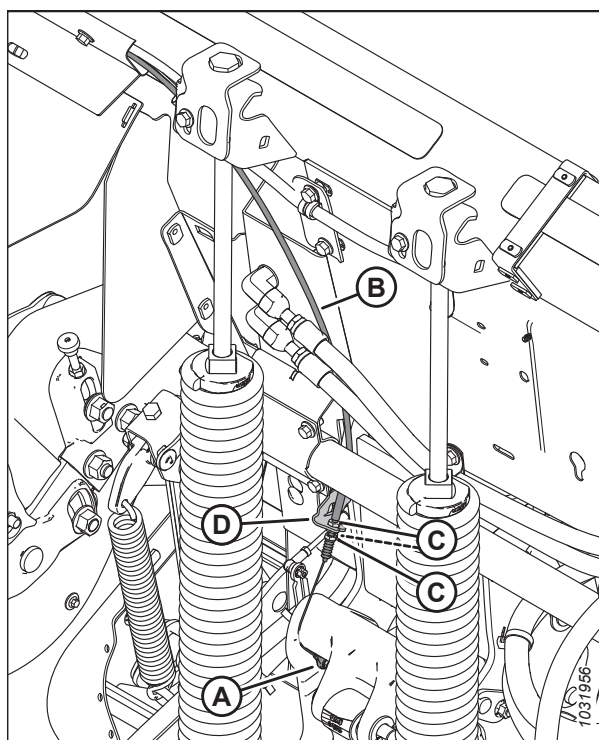


Figure 7.46: Left Front Side of Float Module – Right Front Side is Opposite

SETTING UP AUTO HEADER HEIGHT CONTROL

4. Loosen jam nuts (A) securing float indicator cable (B) to both sides of the float indicator bottom support, and then disconnect the cable from the support.
5. Float indicator cable (B) is routed around three pulleys (C) in the float indicator box. Remove the cable and discard it.

NOTE:

Pulleys are hidden by other parts in the illustration. Their approximate location is identified.

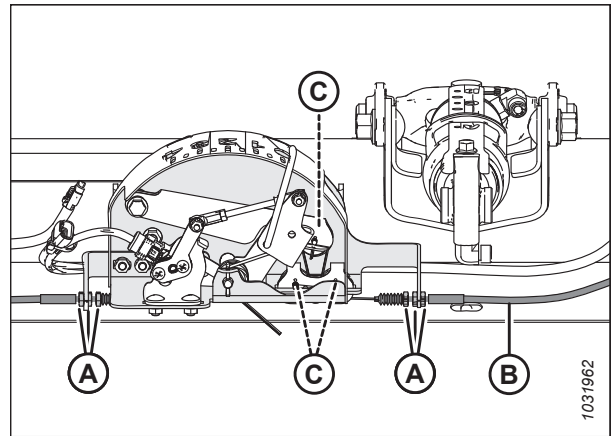


Figure 7.47: Float Indicator Box

6. Examine the new float indicator cable (MD #187658). You will see that it is divided into sections. Longer covered section (A) should be installed on the left side of the float module, middle uncovered section (B) should be installed in the float indicator box, and shorter covered section (C) should be installed on the right side of the float module.

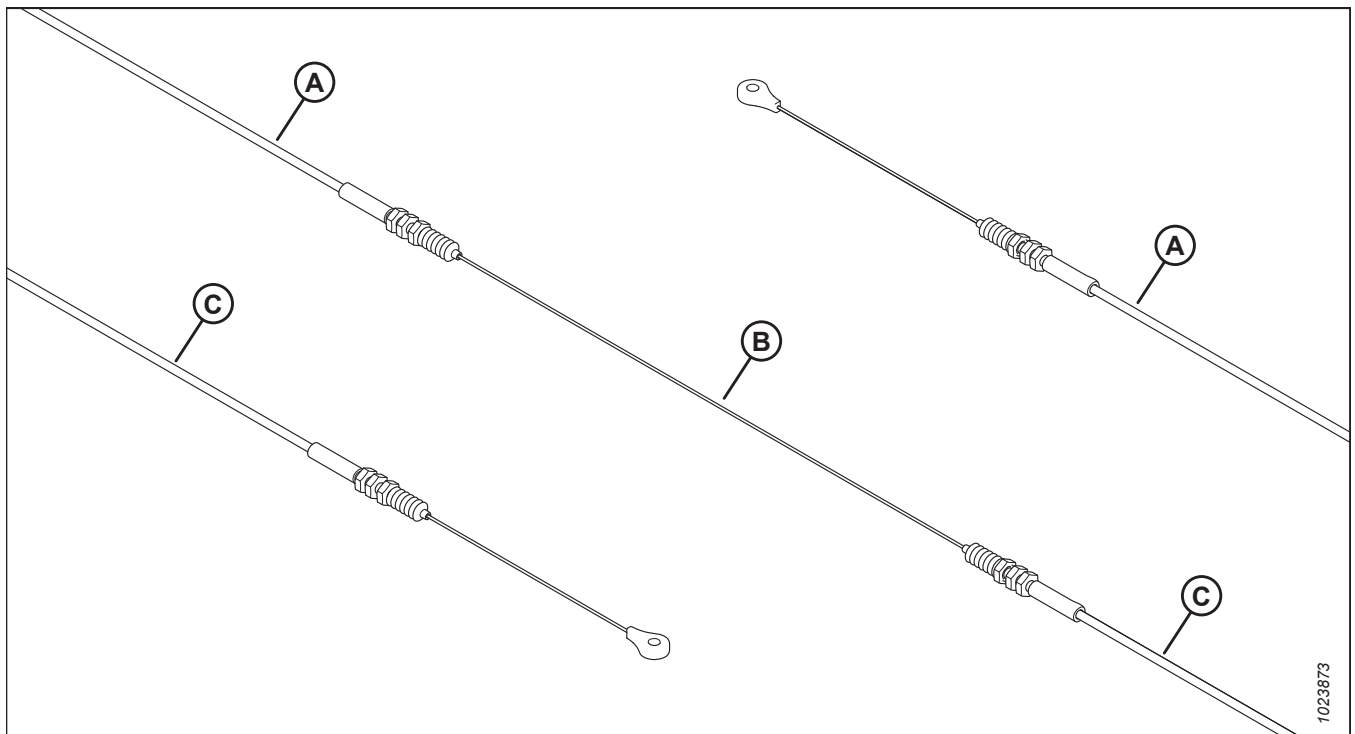


Figure 7.48: Float Indicator Cable

A - Longer Covered Cable Section
1788–1800 mm (70 3/8–70 7/8 in.)

B - Uncovered Middle Cable Section

C - Shorter Covered Cable Section
1352–1364 mm (53 1/4–53 11/16 in.)

SETTING UP AUTO HEADER HEIGHT CONTROL

7. With the longer end of the new float indicator cable on the left of the pulleys, loop the middle section of cable (A) (the section in between the innermost boot seals and jam nuts) around the three pulleys in the float indicator box as shown.

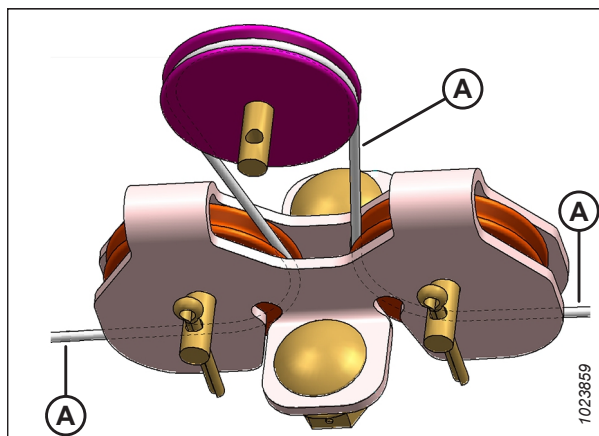


Figure 7.49: Cable Routing around Pulleys

8. Secure the left side of new float indicator cable (A) to the left side of the float indicator bottom support as follows:
 - a. On float indicator cable (A), jam nuts and boot seals are positioned in four locations as shown. Select the second location from the left.
 - b. Remove boot seal (B), and slide cable (A) through the slot on the left side of float indicator bottom support (C).
 - c. Insert the threaded end of cable housing (D) into the hole in support (C), and then thread boot seal (B) onto the housing.
 - d. Tighten jam nuts (E).

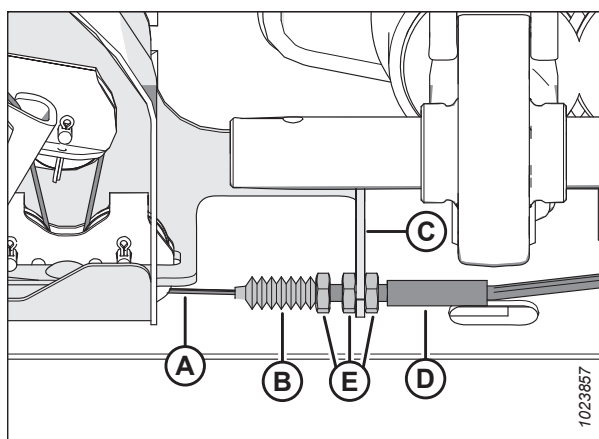


Figure 7.50: Float Indicator Cable Secured to Left Side of the Float Indicator Bottom Support – Right Side is Opposite

9. Route the left end of new float indicator cable (A) through hose holder (B).

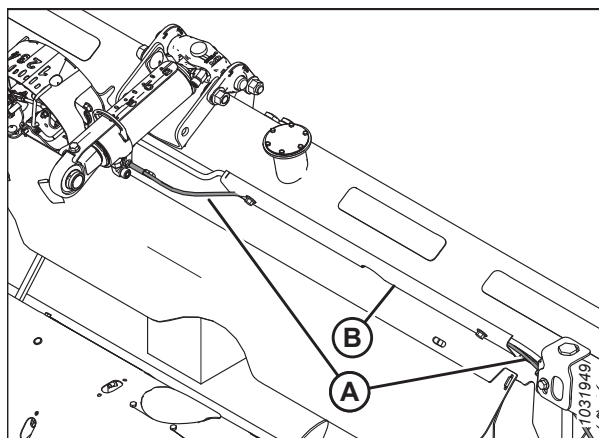


Figure 7.51: Cable Routing on Left Side of Float Module

SETTING UP AUTO HEADER HEIGHT CONTROL

10. Route new float indicator cable (A) behind float spring bolt (B) and hydraulic hoses (C) as shown. Slide the new float indicator cable through the slot in cable stop support (D), and secure the cable in place with the cable boot seal and jam nuts (E).
11. Secure the cable eye on the end of float indicator cable (A) to the float lever with nut, washer, and bolt (F) retained from Step 1, page 204. The washer goes between the cable eye and the bolt.
12. Torque the nut to 8.6 Nm (76 lbf-in).

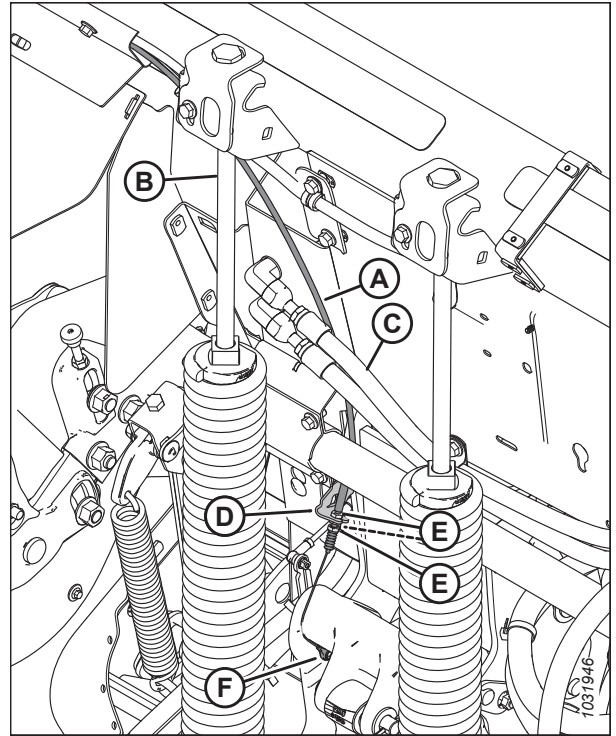


Figure 7.52: Left Front Side of Float Module – Right Front Side is Opposite

13. Route the right end of new float indicator cable (A) through P-clip (B) near the top of the inboard float spring. Secure the P-clip with bolt (C).

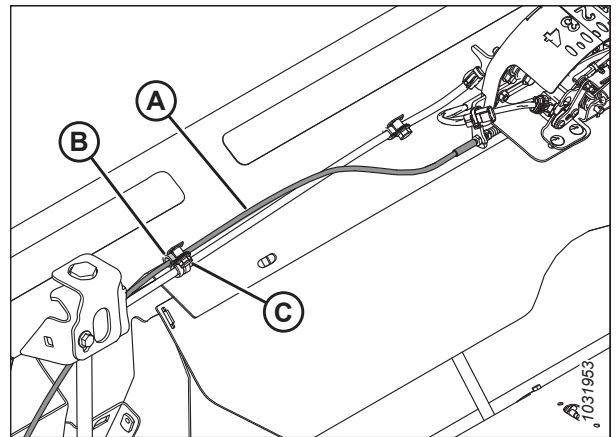


Figure 7.53: Cable Routing on Right Side of Float Module

SETTING UP AUTO HEADER HEIGHT CONTROL

- Route new float indicator cable (A) behind float spring bolt (B) as shown. Slide the new float indicator cable through the slot in cable stop support (C), and secure it in place with the cable boot and jam nuts (D).
- Secure the cable eye on the end of float indicator cable (A) to the float lever with nut, washer, and bolt (E) retained from Step 1, page 204. The washer goes between the cable eye and the bolt head.
- Torque the nut to 8.6 Nm (76 lbf-in).

NOTE:

The cable eye must remain free to rotate on the bolt.

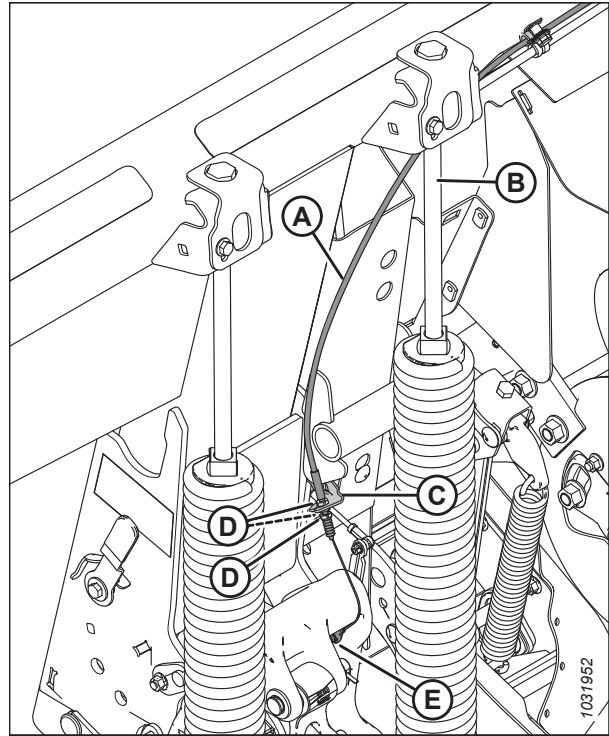


Figure 7.54: Cable Routing on Right Side of Float Module

- If necessary, adjust cable take-up bracket (B) until pointer (A) on the float indicator is on 0.

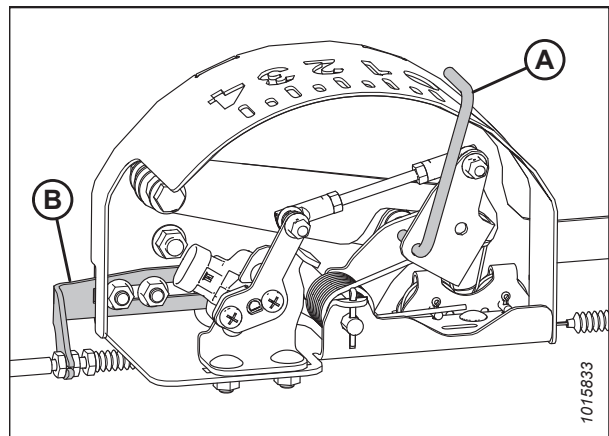


Figure 7.55: Float Indicator Box

7.1.4 Case IH 5088/6088/7088 Combines

Follow these steps to set up auto header height control (AHHC) on Case IH 5088/6088/7088 combines.

Calibrating Auto Header Height Control – Case IH 5088/6088/7088

The auto header height control (AHHC) sensor output must be calibrated for each combine, or the AHHC feature will not work properly.

NOTE:

Changes may have been made to the combine controls or the display since this document was published. Refer to the combine operator's manual for the most up-to-date information.

SETTING UP AUTO HEADER HEIGHT CONTROL

WARNING

Check to be sure all bystanders have cleared the area.

NOTE:

If the header float setting is too light, it can prevent the calibration of the AHHC. You may need to make the float setting heavier for the calibration procedure. This will prevent the header from separating from the float module.

NOTE:

To ensure the best performance of the auto header height control (AHHC) system, perform the ground calibration with the center-link set to **D**. When calibration is complete, adjust the center-link back to the desired header angle. For instructions, refer to the header operator's manual.

1. Ensure that the center-link is set to **D**.
2. Set the float. For instructions, refer to .
3. Position the reel midway in the fore-aft dimension.
4. Start the combine engine, but do **NOT** engage the separator or the feeder house.
5. Locate HEADER CONTROL switch (A) on the right console, and set it to HT (AHHC mode).

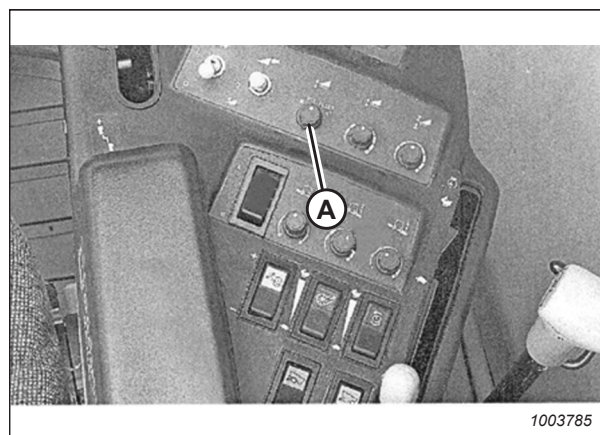


Figure 7.56: Right Console

6. Press HEADER LOWER switch (A) on the control handle until the float module and header are fully lowered. You may need to hold the switch for several seconds.
7. Press HEADER RAISE switch (A) on the control handle. The header should stop at about the halfway point. Continue holding the HEADER RAISE switch, and the header will rise until the feeder house reaches its upper limit. The AHHC system is now calibrated.

NOTE:

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

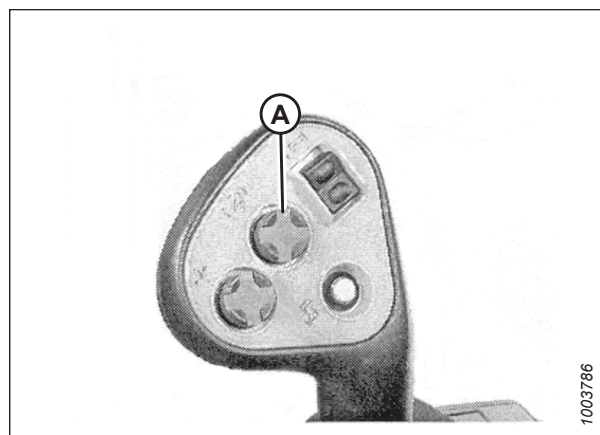


Figure 7.57: Control Handle – Case IH 2300/2500

SETTING UP AUTO HEADER HEIGHT CONTROL

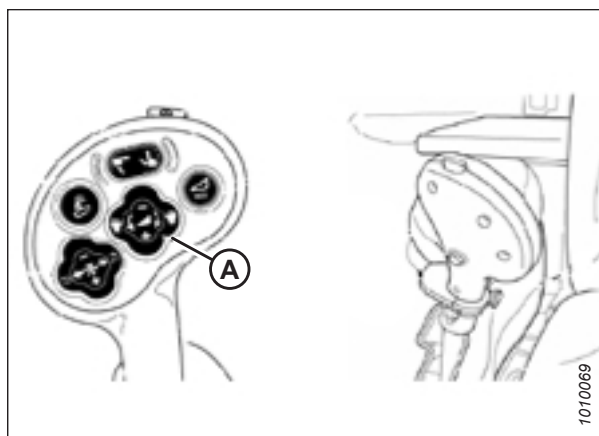


Figure 7.58: Control Handle – Case IH 5088/6088/7088

Setting Auto Header Height Control Sensitivity – Case IH 5088/6088/7088

The sensitivity adjustment controls the distance the cutterbar must travel up or down before the auto header height control (AHHC) reacts and raises or lowers the feeder house. When the sensitivity is set to maximum, only small changes in ground height are needed to cause the system to raise or lower the feeder house. When the sensitivity is set to minimum, large changes in the ground height are needed to cause the system to raise or lower the feeder house.

NOTE:

Changes may have been made to the combine controls or the display since this document was published. Refer to the combine operator's manual for the most up-to-date information.

1. Use HEADER SETTINGS key (A) to display the HEADER SENSITIVITY CHANGE page as shown in Figure 7.60, page 211.
2. Use UP key (B) or DOWN key (C) to adjust the highlighted item. The height sensitivity setting range is 0 (least sensitive) to 250 (most sensitive) in increments of 10.

NOTE:

Adjustments take effect immediately. Use the CANCEL key to return to the original settings.

3. Use HEADER SETTINGS key (A) to highlight the next changeable item.
4. Use ENTER key (D) to save changes and return to the monitor screen. If there are no changes, the screen will return to the monitor screen after 5 seconds.

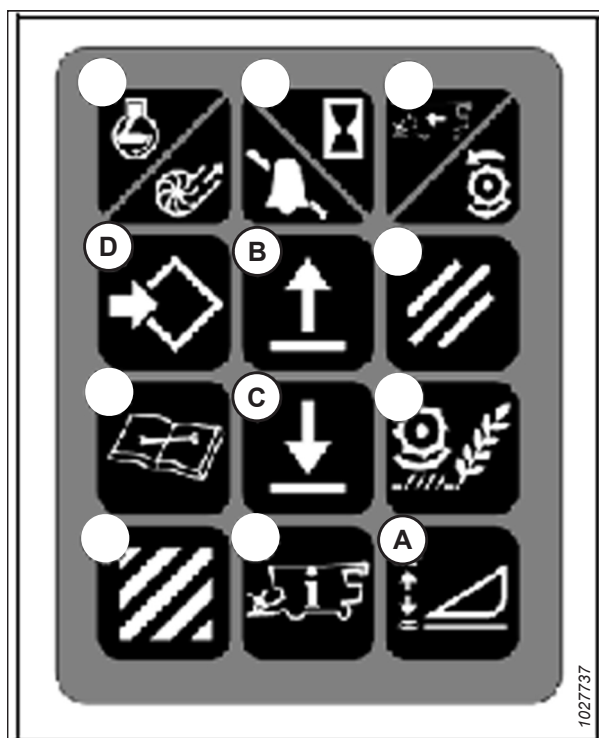


Figure 7.59: Combine Controls

SETTING UP AUTO HEADER HEIGHT CONTROL

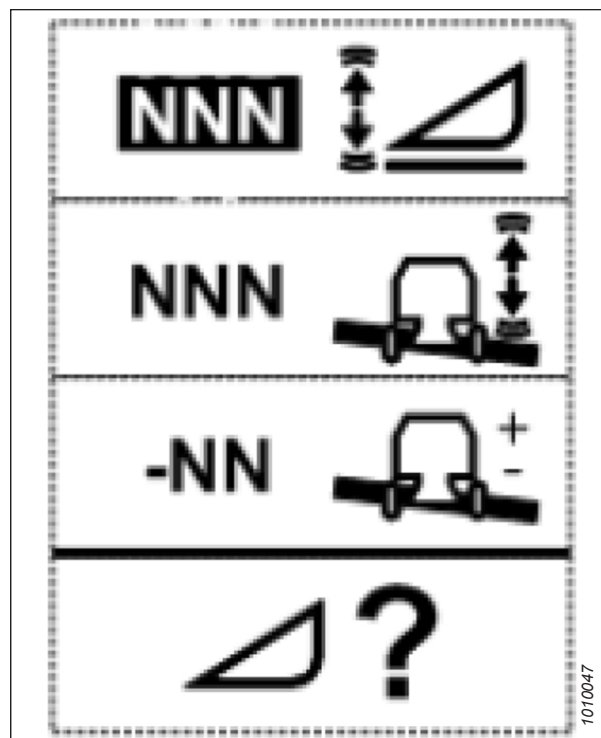


Figure 7.60: Height Sensitivity Change Page

7.1.5 Case IH 130 and 140 Series Mid-Range Combines

To make your header's auto header height control (AHC) system compatible with Case IH 130 and 140 Series mid-range combines, you must set your combine's header configuration options for the particular model of header, configure the reel speed settings, set up the AHC controls, and calibrate the AHC system to ensure that it is working correctly.

Setting up Header on Combine Display – Case IH 5130/6130/7130; 5140/6140/7140

To set up the header to work with a Case IH 5130/6130/7130 or 5140/6140/7140 combine, you will need to access the HEADER SETUP page on the combine display.

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

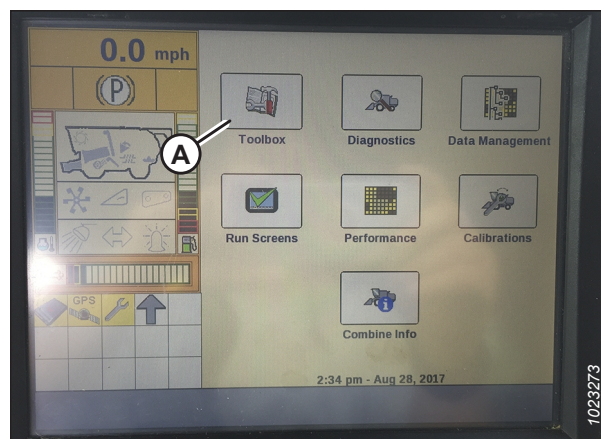


Figure 7.61: Case IH Combine Display

SETTING UP AUTO HEADER HEIGHT CONTROL

2. Select HEAD 1 tab (A). The HEADER SETUP page appears.

NOTE:

To locate the HEAD 1 tab, you may need to scroll to the right using side arrows (C).

3. From CUTTING TYPE menu (B), select PLATFORM.

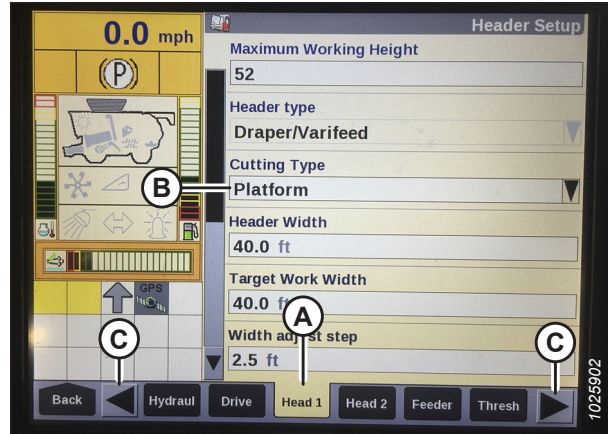


Figure 7.62: Case IH Combine Display

4. Select HEAD 2 tab (A). The HEADER SETUP 2 page appears.
5. From HEADER PRESSURE FLOAT menu (B), select NOT INSTALLED.
6. From DRAPER GRAIN HEADER STYLE menu (C), select FLEX 2000 SERIES.

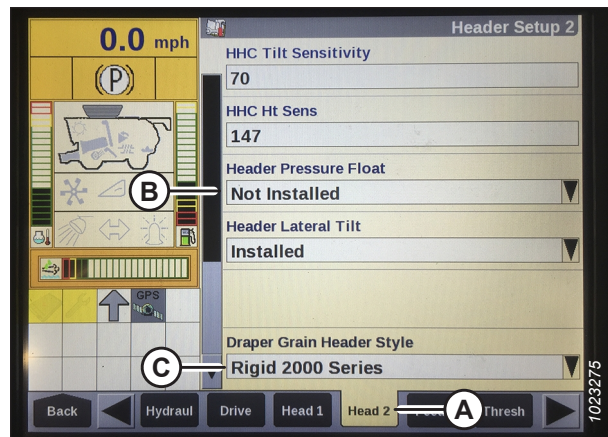


Figure 7.63: Case IH Combine Display

7. Locate HHC HEIGHT SENSITIVITY field (A). Enter the following settings:
 - If using a two-sensor system: Set HHC HEIGHT SENSITIVITY to 250.
 - If using a single-sensor system: Set HHC HEIGHT SENSITIVITY to 180.

NOTE:

If hunting occurs during operation, decrease the HUNTING setting by 20 points at a time until hunting no longer occurs.

8. Set HHC TILT SENSITIVITY (B) to 150. Increase or decrease as desired.

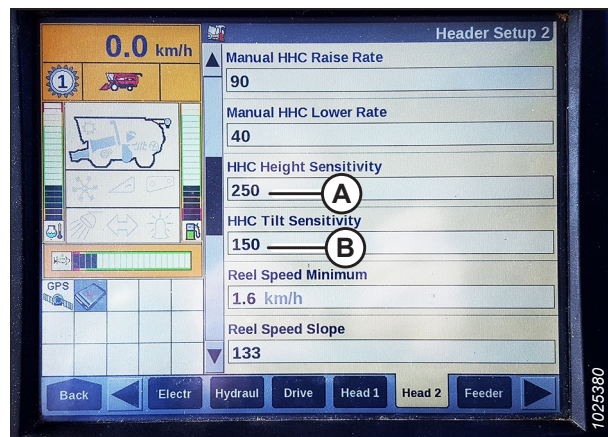


Figure 7.64: Case IH Combine Display

SETTING UP AUTO HEADER HEIGHT CONTROL

9. From REEL DRIVE TYPE menu (A), select one of the following:
- 4 if you are using a standard 19-tooth drive sprocket.
 - 5 if you are using an optional high-torque 14-tooth drive sprocket.
 - 6 if you are using an optional high-torque 10-tooth drive sprocket.

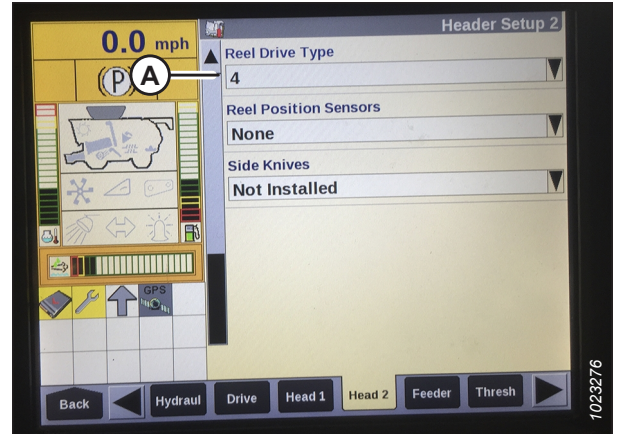


Figure 7.65: Case IH Combine Display

10. From REEL HEIGHT SENSOR menu (A), select YES.

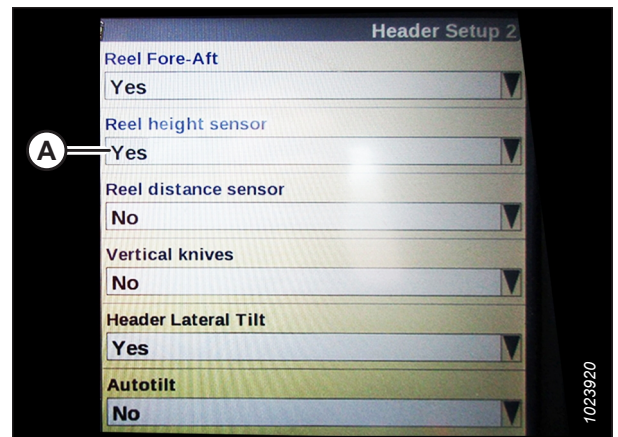


Figure 7.66: Case IH Combine Display

11. Locate AUTOTILT field (A).
- **If using a two-sensor system:** Select YES in the AUTOTILT field.
 - **If using a single-sensor system:** Select NO in the AUTOTILT field.

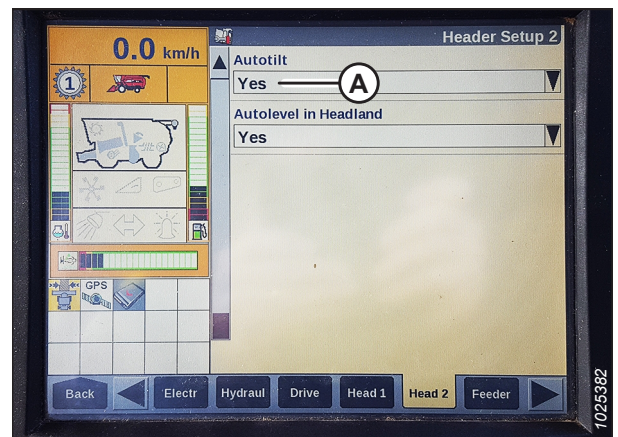


Figure 7.67: Case IH Combine Display

SETTING UP AUTO HEADER HEIGHT CONTROL

Calibrating Auto Header Height Control – Case IH 5130/6130/7130, 5140/6140/7140

The auto header height control (AHHC) sensor output must be calibrated for each combine, or the AHHC feature will not work properly.

WARNING

Check to be sure all bystanders have cleared the area.

NOTE:

Changes may have been made to the combine controls or the display since this document was published. Refer to the combine operator's manual for the most up-to-date information.

NOTE:

This procedure applies to combines with a software version below 28.00. For instructions on calibrating the AHHC for combines with a software version 28.00 or above, refer to *Calibrating Auto Header Height Control – Case IH Combines with Version 28.00 or Higher Software, page 229*.

1. To view the software version, select the DIAGNOSTICS button from the Home Screen, then select VERSION tab (A).



Figure 7.68: Case IH Combine Display

NOTE:

If the header float is set too light, it can prevent the calibration of the AHHC. In order to prevent the header from separating from the float module, it may be necessary to change the float to a heavier setting during the calibration procedure.

NOTE:

For the best performance of the auto header height control (AHHC) system, perform the ground calibration with the center-link set to **D**. When calibration is complete, adjust the center-link back to the desired header angle. For instructions, refer to the header operator's manual.

2. Ensure that the center-link is set to **D**.
3. Confirm that all electrical and hydraulic connections between the header and float module are functional.
4. Start the combine engine, but do **NOT** engage the separator or the feeder house.
5. Locate the HEADER CONTROL switch on the right console, and set to HT (this is AHHC mode).
6. Hold the DOWN button for 10 seconds, or until the combine feeder house has been lowered all the way down (the feeder house will stop moving).

SETTING UP AUTO HEADER HEIGHT CONTROL

7. Push the RAISE button and hold it until the feeder house travels all the way up. It will stop 61 cm (2 ft.) above the ground for 5 seconds, then it will resume traveling upward. This is an indication that calibration is successful.

NOTE:

If the float was changed to a heavier setting to complete the AHHC calibration procedure, adjust it to the recommended operating float weight after the calibration is complete.

Checking Voltage Range from Combine Cab – Case IH 5130/6130/7130; 5140/6140/7140

The auto header height control sensor needs to operate in a specific voltage range in order to work properly.

NOTE:

Changes may have been made to the combine controls or the display since this document was published. Refer to the combine operator's manual for the most up-to-date information.

WARNING

Check to be sure all bystanders have cleared the area.

1. Position the header 150 mm (6 in.) above the ground, and unlock the float.
2. Check that the float lock linkage is on the down stops (washer [A] cannot be moved) at both locations.

NOTE:

If the header is not on the down stops during the next two steps, the voltage may go out of range during operation causing a malfunction of the auto header height control (AHHC) system.

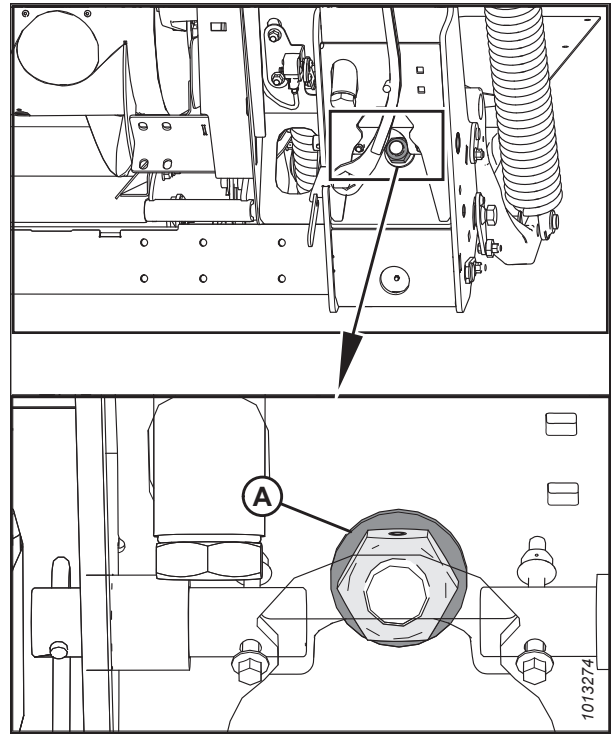


Figure 7.69: Float Lock

SETTING UP AUTO HEADER HEIGHT CONTROL

3. If necessary, adjust cable take-up bracket (B) until pointer (A) on float indicator is on **0**.
4. Ensure the header float is unlocked.

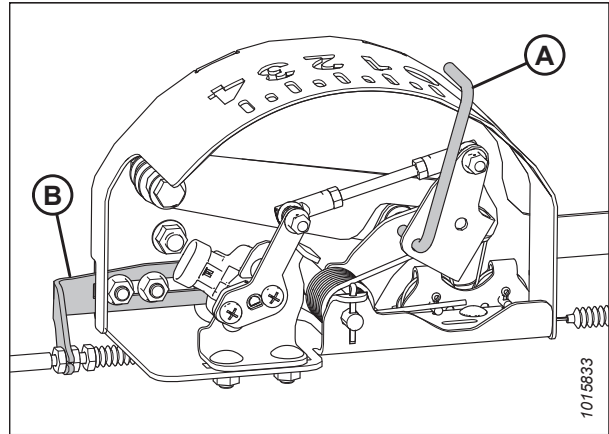


Figure 7.70: Float Indicator Box

5. On the main page of the combine display, select **DIAGNOSTICS (A)**. The **DIAGNOSTICS** page appears.

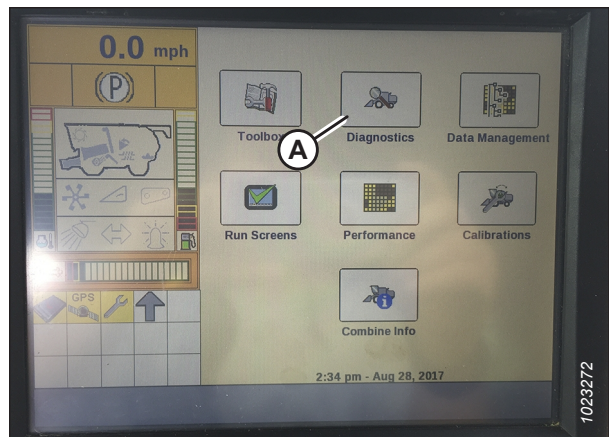


Figure 7.71: Case IH Combine Display

6. Select **SETTINGS (A)**. The **SETTINGS** page appears.
7. From the **GROUP** menu, select **HEADER (B)**.

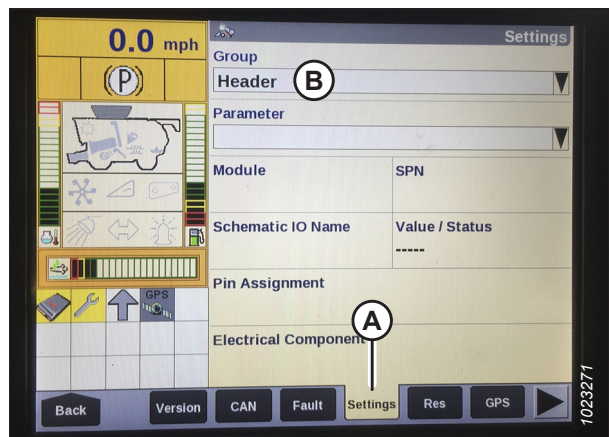


Figure 7.72: Case IH Combine Display

SETTING UP AUTO HEADER HEIGHT CONTROL

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

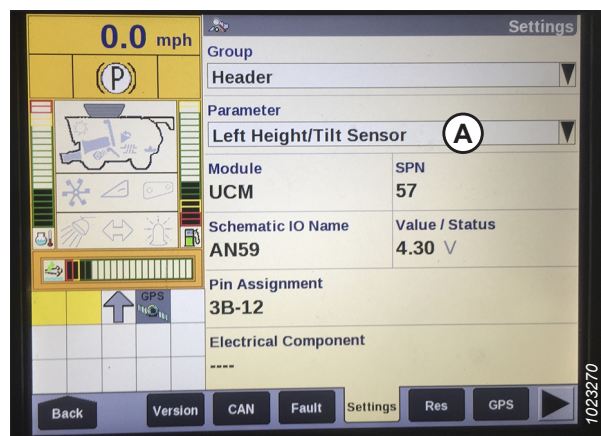


Figure 7.73: Case IH Combine Display

- The SETTINGS page updates to display the voltage in VALUE/STATUS field (A). Lower the feeder house fully, and then raise it 254–356 mm (10–14 in.) off the ground to view the full range of voltage readings.
- If the sensor voltage is not within the low and high limits, or if the range between the low and high limits is insufficient, adjust the voltage limits. For instructions, refer to *Adjusting Voltage Limits – One-Sensor System, page 199*.

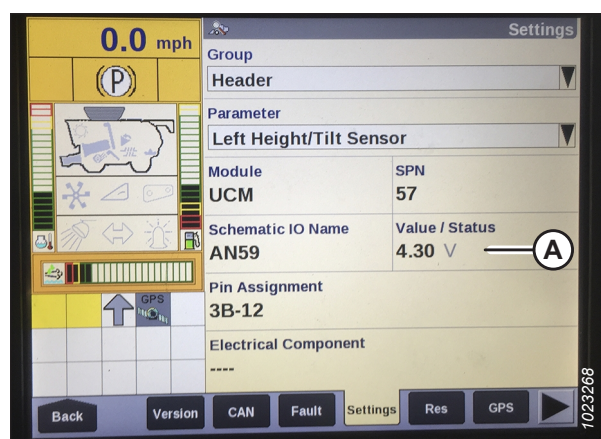


Figure 7.74: Case IH Combine Display

Setting Preset Cutting Height – Case 5130/6130/7130, 5140/6140/7140

Once the cab combine display has been configured, the preset cutting heights can be used.

NOTE:

Changes may have been made to the combine controls or the display since this document was published. Refer to the combine operator's manual for the most up-to-date information.

WARNING

Check to be sure all bystanders have cleared the area.

SETTING UP AUTO HEADER HEIGHT CONTROL

1. Ensure that indicator (A) is at position 0 (B) with the header 254–356 mm (10–14 in.) off the ground. If not, the float sensor output voltage should be checked. For instructions, refer to Step 6, page 195.

NOTE:

When the header is on the ground, the indicator should be at position 1 (C) for low ground pressure, and at position 4 (D) for high ground pressure. Crop and soil conditions determine the amount of float to use. The ideal setting is as light as possible without the header bouncing or missing crop. Operating with heavy settings prematurely wears the cutterbar wearplates.

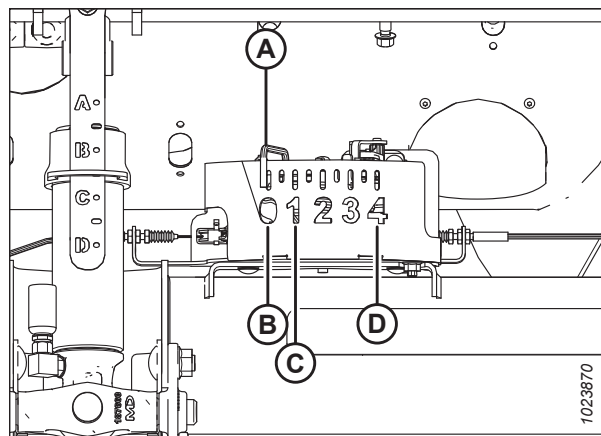


Figure 7.75: Float Indicator Box

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

NOTE:

When setting presets, always set the header position before setting the reel position. If the header and the reel are set at the same time, the reel setting will not be saved.

5. Manually raise or lower the reel to the desired working position.
6. Press 1 on button (A). A yellow light next to the button will illuminate.
7. Manually raise or lower the header to a second desired cutting height.
8. Press 2 on button (A). A yellow light next to the button will illuminate.
9. Manually raise or lower the reel to the desired working position.
10. Press 2 on button (A). A yellow light next to the button will illuminate.



Figure 7.76: Case Combine Console



Figure 7.77: Case Combine Console

SETTING UP AUTO HEADER HEIGHT CONTROL

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

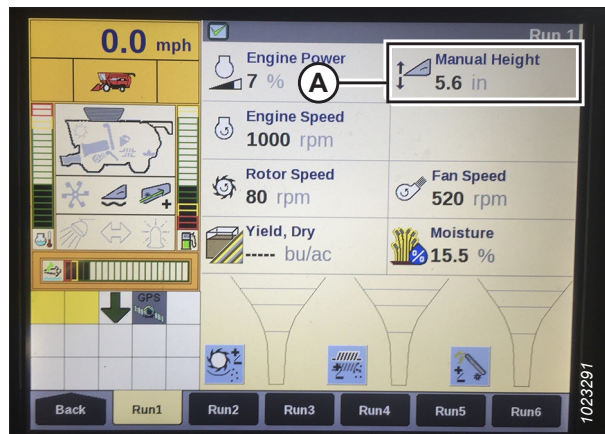


Figure 7.78: Case Combine Display – Run 1 Page

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

To lift the header to maximum working height, hold the SHIFT button on the back of the control handle while tapping AHHC button (A).



Figure 7.79: Case Combine Control Handle

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

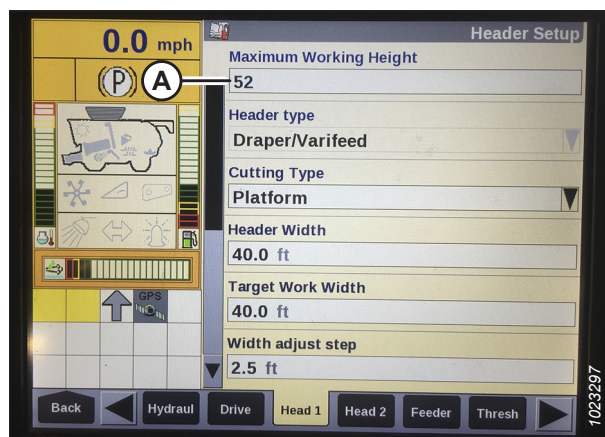


Figure 7.80: Case Combine Display – Header Setup Page

SETTING UP AUTO HEADER HEIGHT CONTROL

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



Figure 7.81: Case Combine Console

7.1.6 Case IH 7010/8010, 120, 230, 240, and 250 Series Combines

To make your header's auto header height control (AHC) system compatible with Case IH 7010/8010, 120, 230, 240, and 250 series combines, you must set your combine's header configuration options for the particular model of header, configure the reel speed settings, set up the AHC controls, and calibrate the AHC system to ensure that it is working correctly.

Checking Voltage Range from Combine Cab – Case IH 8010

The auto header height control sensor needs to operate in a specific voltage range in order to work properly.

NOTE:

Changes may have been made to the combine controls or the display since this document was published. Refer to the combine operator's manual for the most up-to-date information.

DANGER

Check to be sure all bystanders have cleared the area.

1. Position the header 150 mm (6 in.) above the ground, and unlock the float.

SETTING UP AUTO HEADER HEIGHT CONTROL

2. Check that the float lock linkage is on the down stops (washer [A] cannot be moved) at both locations.

NOTE:

If the header is not on the down stops during the next two steps, the voltage may go out of range during operation causing a malfunction of the AHHC system.

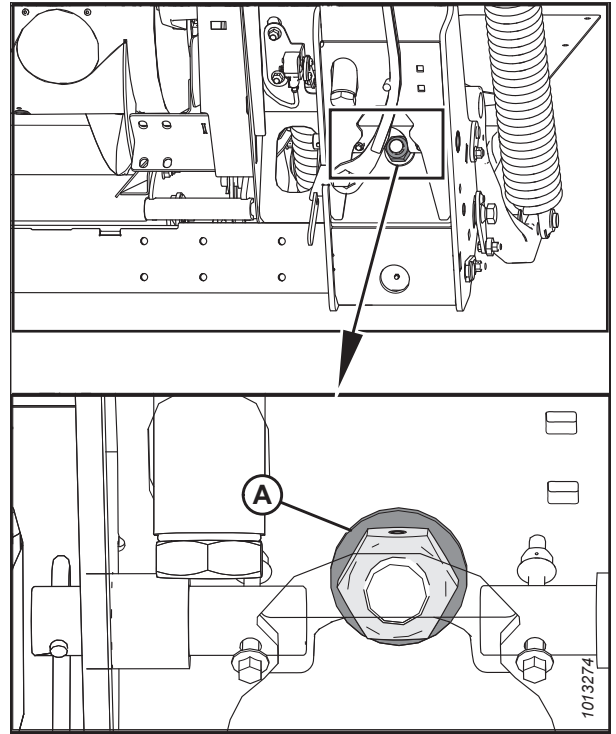


Figure 7.82: Float Lock

3. If necessary, adjust cable take-up bracket (B) until pointer (A) on the float indicator is on 0.

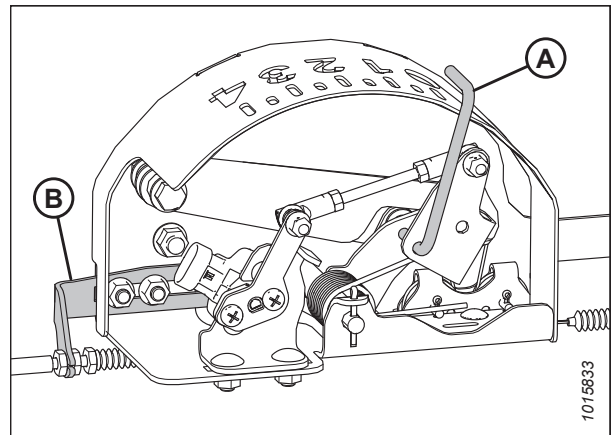


Figure 7.83: Float Indicator Box

SETTING UP AUTO HEADER HEIGHT CONTROL

4. Ensure the header float is unlocked.
5. Select DIAG (A) on the Universal display MAIN screen. The DIAG screen appears.

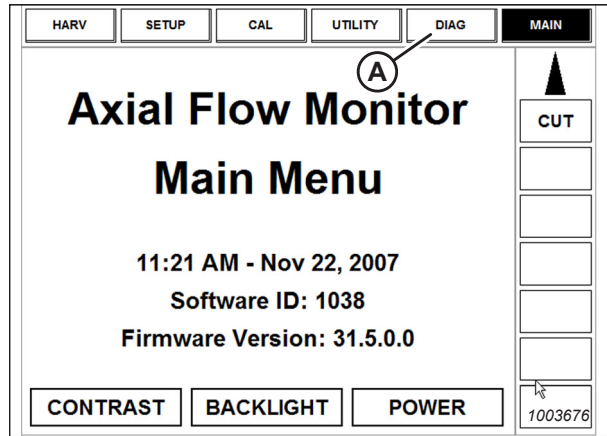


Figure 7.84: Case 8010 Combine Display

6. Select SUB SYSTEM (A). The SUB SYSTEM screen appears.

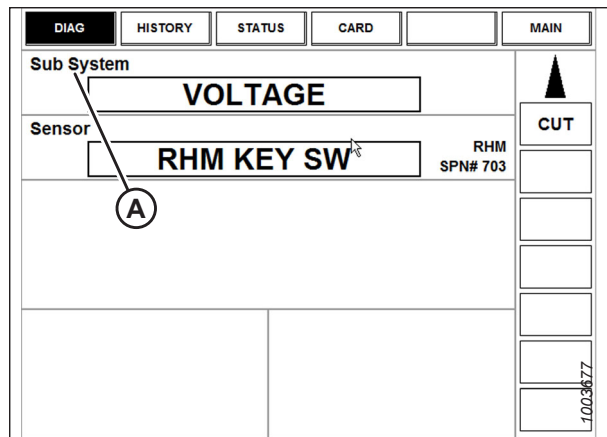


Figure 7.85: Case 8010 Combine Display

7. Select HDR HEIGHT/TILT (A). The SENSOR screen appears.

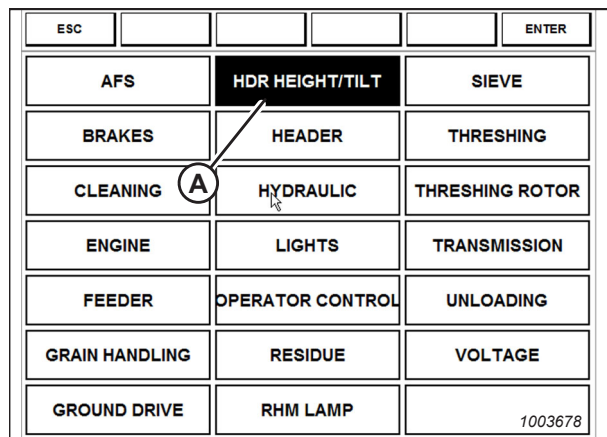


Figure 7.86: Case 8010 Combine Display

SETTING UP AUTO HEADER HEIGHT CONTROL

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

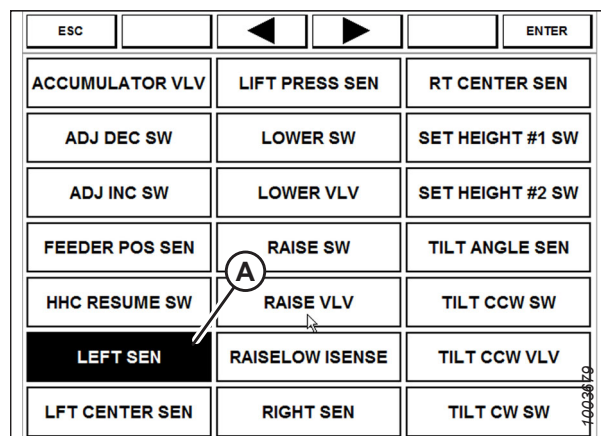


Figure 7.87: Case 8010 Combine Display

9. If the sensor voltage is not within the lower and upper limits, or if the range between the lower and upper limits is insufficient, adjust the voltage limits. For instructions, refer to *Adjusting Voltage Limits – One-Sensor System*, page 199.

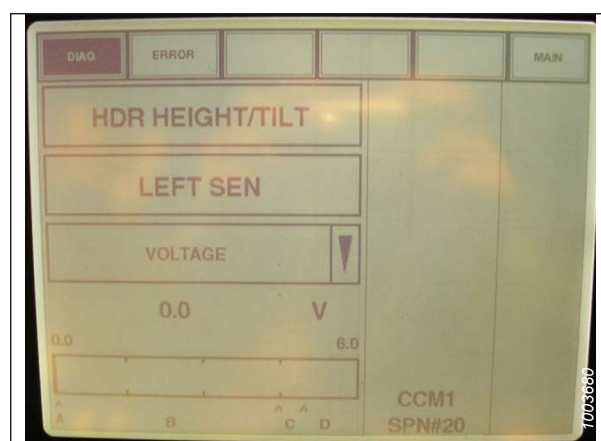


Figure 7.88: Case 8010 Combine Display

Setting Header Controls – Case IH 8010

The following procedure applies to Case IH 8010 combines without a shift button on the control handle.

REEL FORE-AFT switches (A) also control header fore-aft tilt if the header is equipped with the fore-aft tilt option. The switches can be configured to allow the Operator to swap between reel fore-aft and header fore-aft tilt.

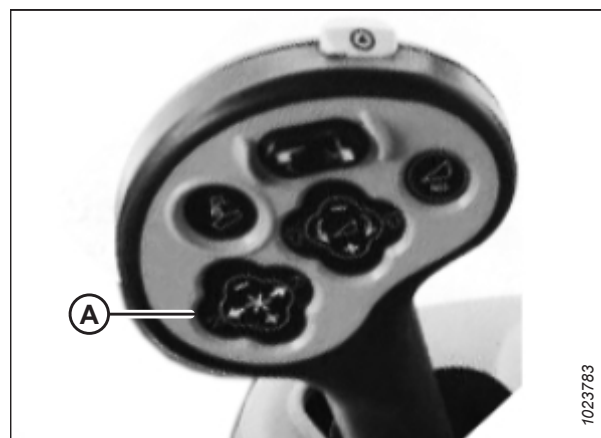


Figure 7.89: Case Combine Controls

SETTING UP AUTO HEADER HEIGHT CONTROL

- To switch from reel fore-aft controls to header fore-aft tilt controls, go to the LAYOUT tab, select FORE/AFT CONTROL (A) from the legend, 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.

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

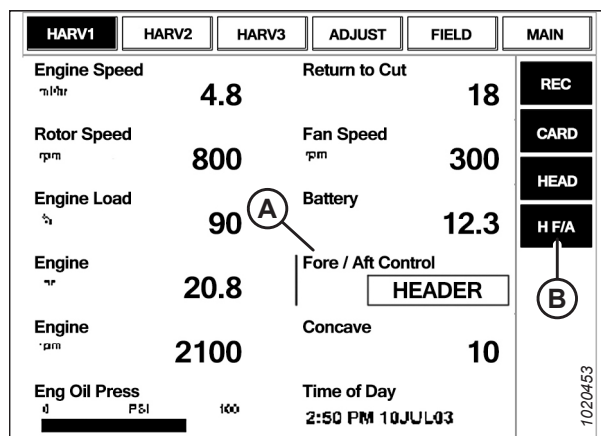


Figure 7.90: Case Combine Display

Calibrating Feeder House Engagement

Calibrating the feeder house engagement allows for smoother header operation by optimizing how hydraulic power is delivered.

DANGER

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

NOTE:

Changes may have been made to the combine controls or the display since this document was published. Refer to the combine operator's manual for the most up-to-date information.

WARNING

Check to be sure all bystanders have cleared the area.

- Start the combine engine and raise the header 150 mm (6 in.) from the ground.
- Select CALIBRATION (A) on the combine display and press the right arrow navigation key to enter the information box.

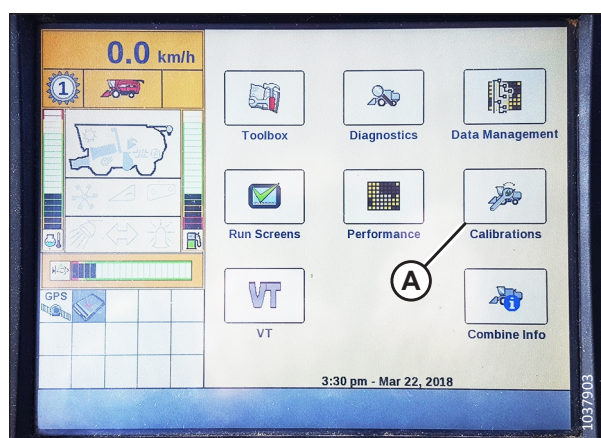


Figure 7.91: Case IH Combine Display

SETTING UP AUTO HEADER HEIGHT CONTROL

3. Select FEEDER ENGAGEMENT (A), and press ENTER. The CALIBRATION dialog box opens.

NOTE:

Use the UP and DOWN navigation keys to move between options.



Figure 7.92: Case IH Combine Display

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

NOTE:

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

NOTE:

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

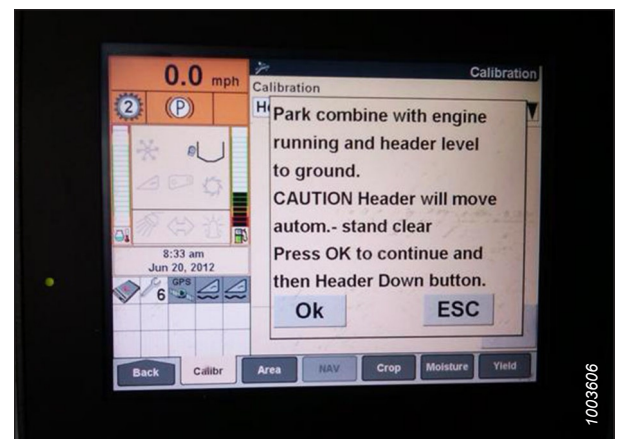


Figure 7.93: Case IH Combine Display

Calibrating Auto Header Height Control – Case IH 7010/8010,120, 230, 240, and 250 Series Combines

The auto header height control (AHHC) sensor output must be calibrated for each combine, or the AHHC feature will not work properly.

! DANGER

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

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 IH Combines with Version 28.00 or Higher Software, page 229](#).

NOTE:

Changes may have been made to the combine controls or the display since this document was published. Refer to the combine operator's manual for the most up-to-date information.

NOTE:

If the header float is set too light, it can prevent the calibration of the AHHC. You may need to set the float heavier for calibration procedure so the header does not separate from the float module.

SETTING UP AUTO HEADER HEIGHT CONTROL

NOTE:

For best performance of the auto header height control (AHHC), perform these procedures with the center-link set to **D**. When setup and calibration are complete, adjust the center-link back to desired header angle. For instructions, refer to the header operator's manual.

1. Ensure the center-link is set to **D**.
2. Confirm that all electrical and hydraulic connections between the header and float module are functional.
3. Select TOOLBOX (A) on the MAIN page.

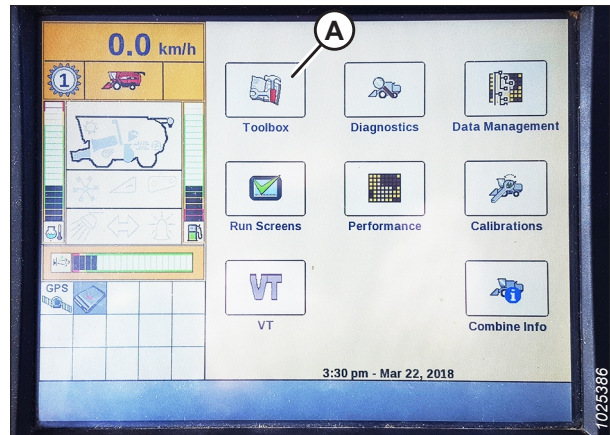


Figure 7.94: Case IH Combine Display

4. Select HEADER tab (A).

NOTE:

To locate the HEADER tab, you may need to scroll to the right using side arrows (C).

5. Set HEADER STYLE (B).

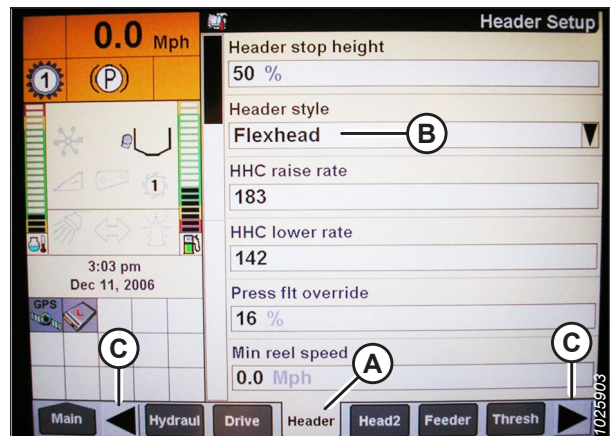


Figure 7.95: Case IH Combine Display

6. Set AUTO REEL SPEED SLOPE.

NOTE:

The AUTO REEL SPEED SLOPE value automatically maintains the speed of the reel relative to ground speed. For example, if the value is set to 133, then the reel will turn faster than the ground speed. The reel's speed should be faster than the combine's ground speed; however, adjust the value according to crop conditions.

7. Set HEADER PRESSURE FLOAT to NO if equipped, and ensure REEL DRIVE is set to HYDRAULIC.

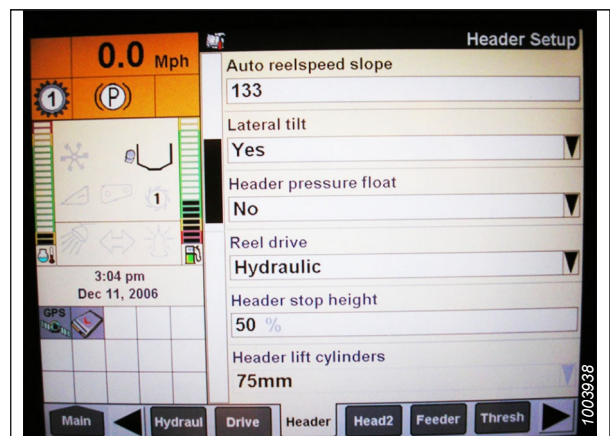


Figure 7.96: Case IH Combine Display

SETTING UP AUTO HEADER HEIGHT CONTROL

- Set REEL FORE-BACK to YES (if applicable).

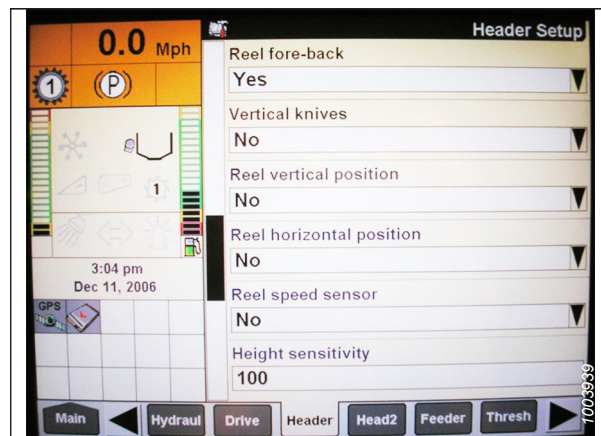


Figure 7.97: Case IH Combine Display

- Locate HHC HEIGHT SENSITIVITY field (A), and set it as follows:

- **If using a two-sensor system:** Set HHC HEIGHT SENSITIVITY to 250.
- **If using a single-sensor system:** Set HHC HEIGHT SENSITIVITY to 180.

NOTE:

If hunting occurs during operation, decrease this setting by 20 points at a time until hunting no longer occurs.

- Set HHC TILT SENSITIVITY (B) to 150. Increase or decrease sensitivity as desired.

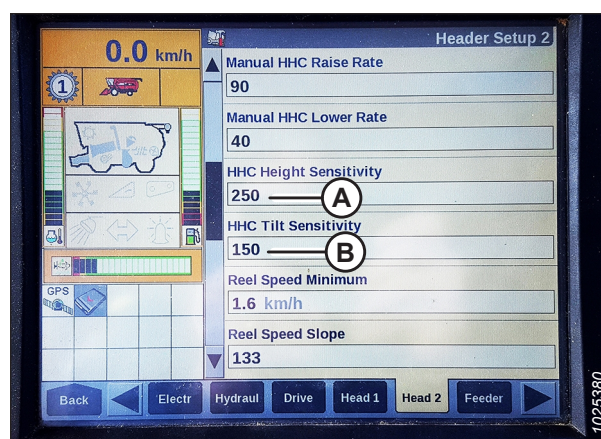


Figure 7.98: Case IH Combine Display

- Set FORE/AFT CONTROL and HDR FORE/AFT TILT to YES (if applicable).

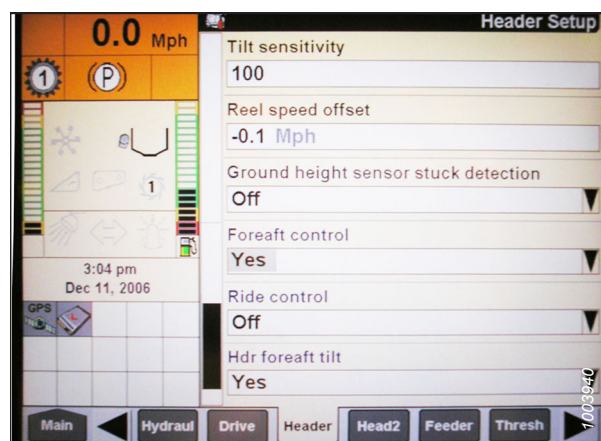


Figure 7.99: Case IH Combine Display

SETTING UP AUTO HEADER HEIGHT CONTROL

12. Press HEAD2 (A) at the bottom of the page.
13. Ensure HEADER TYPE (B) is set to DRAPER.

NOTE:

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

14. Set CUTTING TYPE (C) to PLATFORM.
15. Set HEADER WIDTH (D) and HEADER USAGE (E) to the appropriate values.

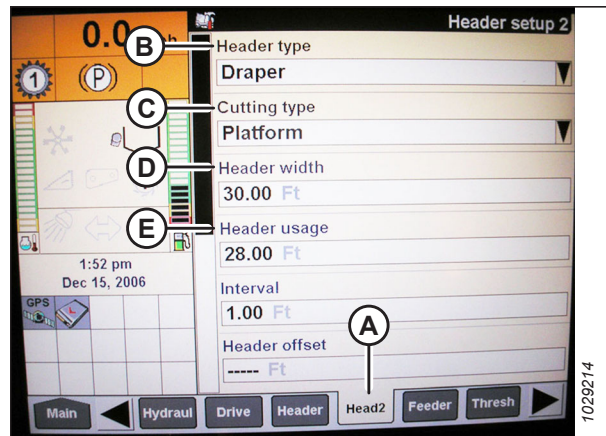


Figure 7.100: Case IH Combine Display

16. From the REEL HEIGHT SENSOR menu, select YES (A).

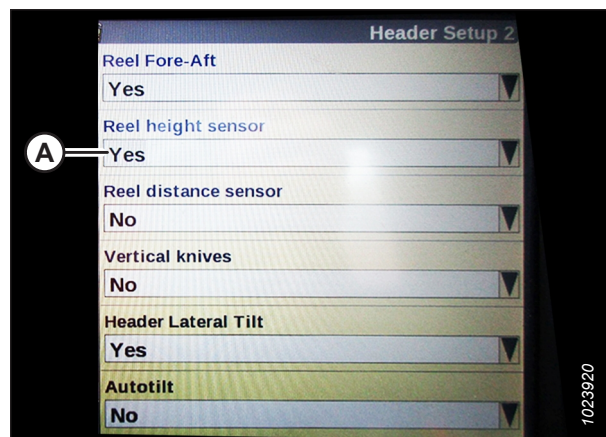


Figure 7.101: Case IH Combine Display

17. Locate AUTOTILT field (A) and set it as follows:
 - **If using a two-sensor system:** Select YES in the AUTOTILT field.
 - **If using a single-sensor system:** Select NO in the AUTOTILT field.

NOTE:

If the float was changed to a heavier setting to complete the AHHC calibration procedure, adjust it to the recommended operating float after the calibration is complete.

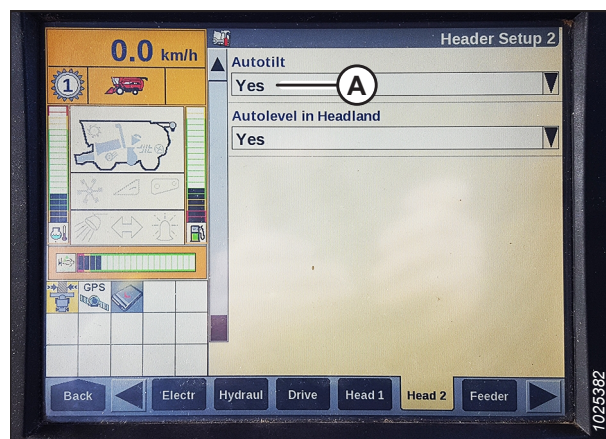


Figure 7.102: Case IH Combine Display

SETTING UP AUTO HEADER HEIGHT CONTROL

Calibrating Auto Header Height Control – Case IH Combines with Version 28.00 or Higher Software

Calibrate the auto header height control (AHC) sensor output for each combine, or the AHC feature will not work properly.

DANGER

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

NOTE:

Changes may have been made to the combine controls or the display since this document was published. Refer to the combine operator's manual for the most up-to-date information.

1. To view the software version, select the DIAGNOSTICS button from the Home Screen, then select VERSION tab (A).



Figure 7.103: Case IH Combine Display

NOTE:

If the header float is set too light, it can prevent the calibration of the AHC. You may need to set the float heavier for the calibration procedure so the header does not separate from the float module.

NOTE:

For best performance of the auto header height control (AHC), perform these procedures with the center-link set to **D**. When setup and calibration are complete, adjust the center-link back to desired header angle. For instructions, refer to the header operator's manual.

2. Set the header center-link to **D**.
3. Raise the header onto the down stops and unlock the float.
4. Place the wings in the locked position.

SETTING UP AUTO HEADER HEIGHT CONTROL

Adjusting settings in the combine display

5. Select TOOLBOX (A) on the MAIN page.

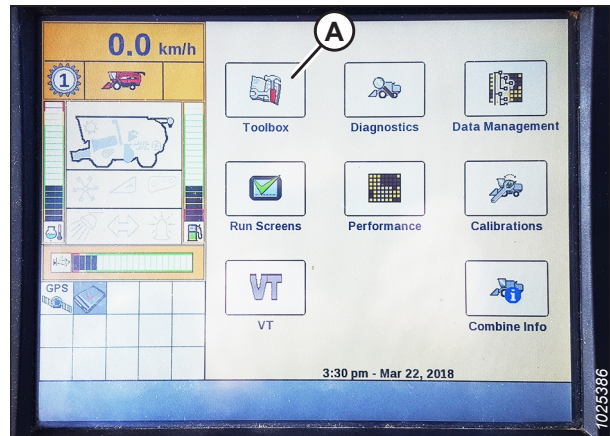


Figure 7.104: Case IH Combine Display

6. Select HEAD 1 tab (A).

NOTE:

To locate the HEAD 1 tab, you may need to scroll to the right using side arrows (B).

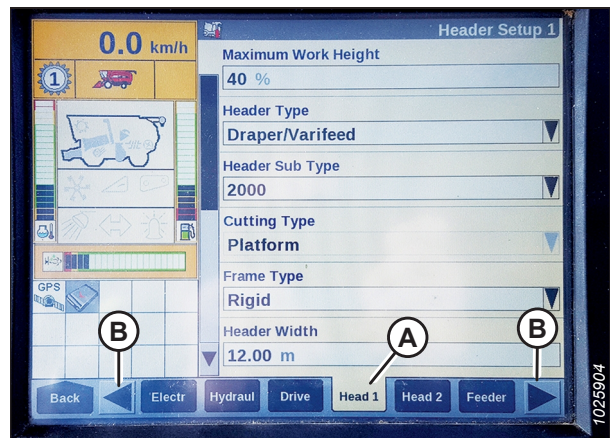


Figure 7.105: Case IH Combine Display

7. Locate the HEADER SUB TYPE field.

8. Select 2000 (A).

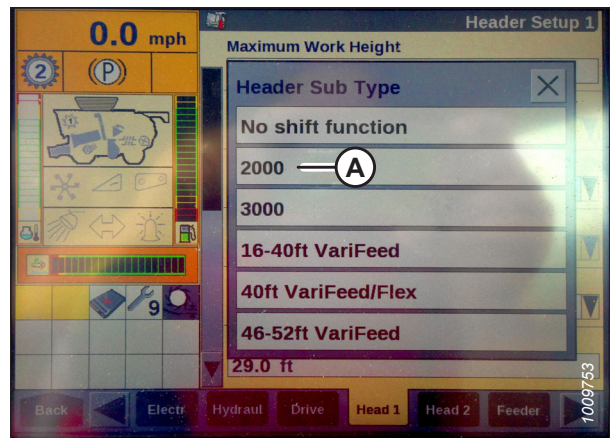


Figure 7.106: Case IH Combine Display

SETTING UP AUTO HEADER HEIGHT CONTROL

- Return to the Head 1 page and choose FLEX from FRAME TYPE drop-down menu (A).

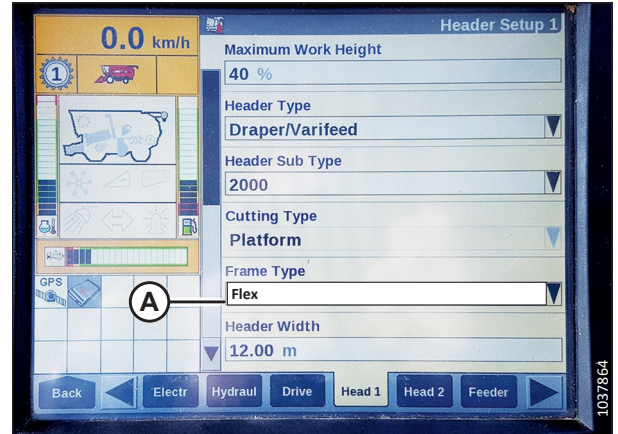


Figure 7.107: Case IH Combine Display

- Select HEAD 2 tab (A).
- In HEADER SENSORS field (B), select ENABLE.
- In HEADER PRESSURE FLOAT field (C), select NO.
- In HEIGHT/TILT RESPONSE field (D), select FAST.
- In AUTO HEIGHT OVERRIDE field (E), select YES.
- Press down arrow (F) to go to the next page.

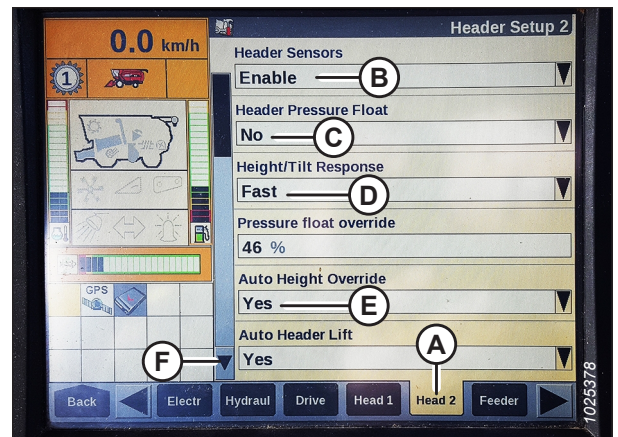


Figure 7.108: Case IH Combine Display

- Locate HHC HEIGHT SENSITIVITY field (A), and set it as follows:
 - If using a single-sensor system:** Set HHC HEIGHT SENSITIVITY to 180.
 - If using a two-sensor system:** Set HHC HEIGHT SENSITIVITY to 250.

NOTE:

If hunting occurs during operation, decrease this setting by 20 points at a time until hunting no longer occurs.

- Set HHC TILT SENSITIVITY (B) to 150. Increase or decrease the sensitivity as desired.

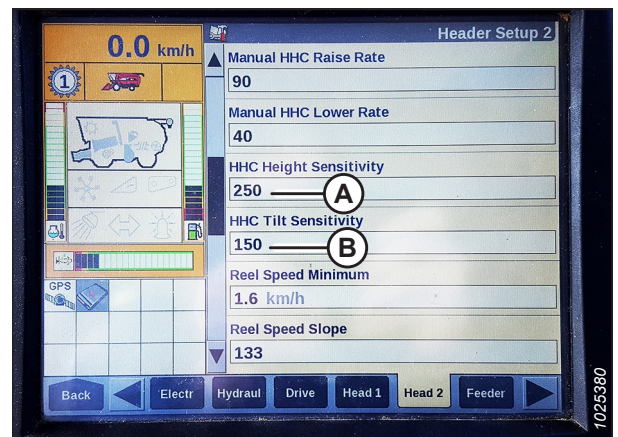


Figure 7.109: Case IH Combine Display

SETTING UP AUTO HEADER HEIGHT CONTROL

18. From the REEL HEIGHT SENSOR menu, select YES (A).

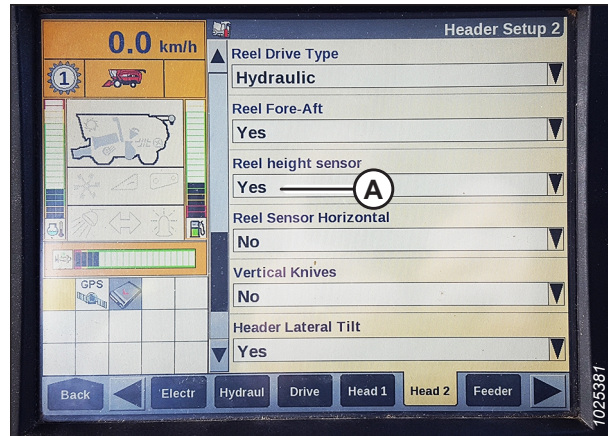


Figure 7.110: Case IH Combine Display

19. Scroll to the AUTOTILT field (A), and set it as follows:

- **If using a two-sensor system:** Select YES in the AUTOTILT field.
- **If using a single-sensor system:** Select NO in the AUTOTILT field.

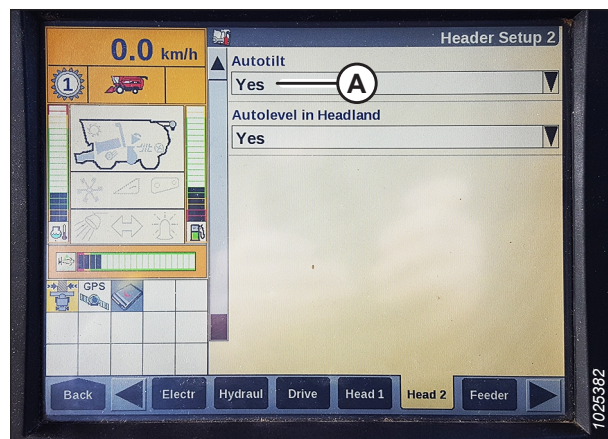


Figure 7.111: Case IH Combine Display

Calibrating Auto Header Height Control

20. Select CALIBRATION on the combine display and press the right arrow navigation key to enter the information box.

21. Select HEADER (A), and press ENTER. The CALIBRATION dialog box opens.

NOTE:

Use the UP and DOWN navigation keys to move between options.

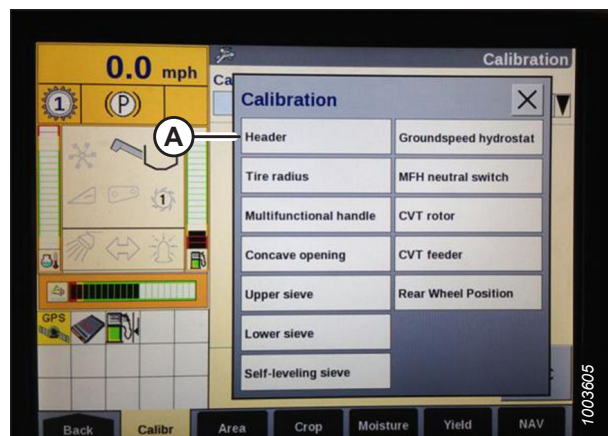


Figure 7.112: Case IH Combine Display

SETTING UP AUTO HEADER HEIGHT CONTROL

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

NOTE:

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

NOTE:

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

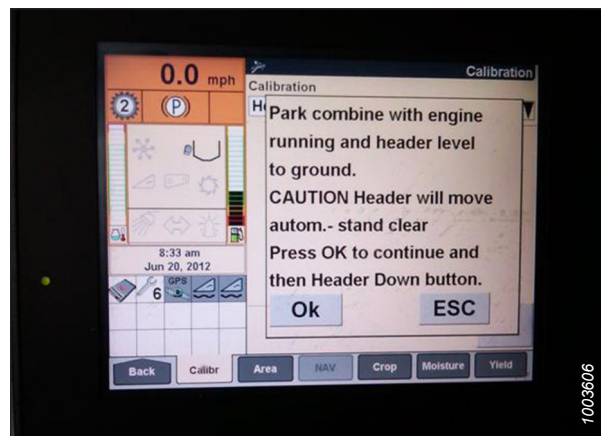


Figure 7.113: Case IH Combine Display

- When all steps have been completed, CALIBRATION SUCCESSFUL message displays on the page. Exit the CALIBRATION menu by pressing the ENTER or ESC key.

NOTE:

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

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

NOTE:

Icons (A) and (B) appear on the monitor only after engaging the separator and header, and then pressing HEADER RESUME button on the control panel.

NOTE:

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

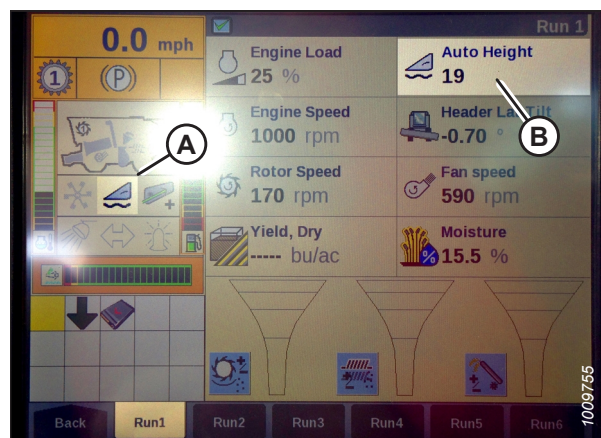


Figure 7.114: Case IH Combine Display

Checking Voltage Range from Combine Cab – Case IH 7010/8010, 120, 230, 240, and 250 Series Combines

In order for the auto header height control (AHHC) system to work correctly, the header height sensors must be sending the correct voltage readings. The sensor outputs can be viewed using the combine display.

NOTE:

Changes may have been made to the combine controls or the display since this document was published. Refer to the combine operator's manual for the most up-to-date information.



DANGER

Check to be sure all bystanders have cleared the area.

- Position the header 150 mm (6 in.) above the ground, and unlock the float.

SETTING UP AUTO HEADER HEIGHT CONTROL

2. Check that the float lock linkage is on the down stops (washer [A] cannot be moved) at both locations.

NOTE:

If the header is not on the down stops during the next two steps, the voltage may go out of range during operation causing a malfunction of the auto header height control (AHHC) system.

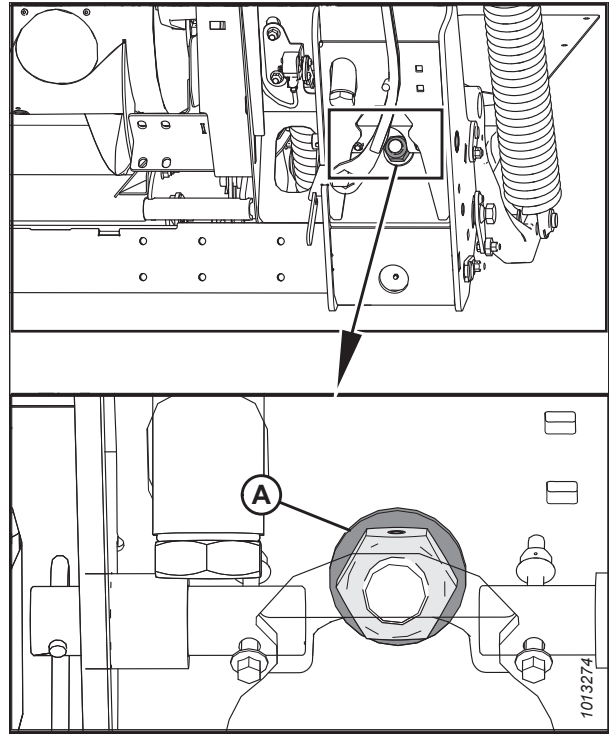


Figure 7.115: Float Lock

3. If necessary, adjust cable take-up bracket (B) until pointer (A) on the float indicator is on 0.

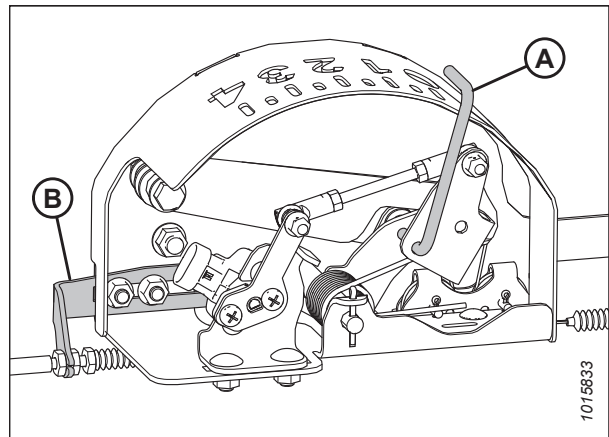


Figure 7.116: Float Indicator Box

SETTING UP AUTO HEADER HEIGHT CONTROL

4. Ensure the header float is unlocked.
5. Select DIAGNOSTICS (A) on the MAIN page. The DIAGNOSTICS page opens.
6. Select SETTINGS. The SETTINGS page opens.

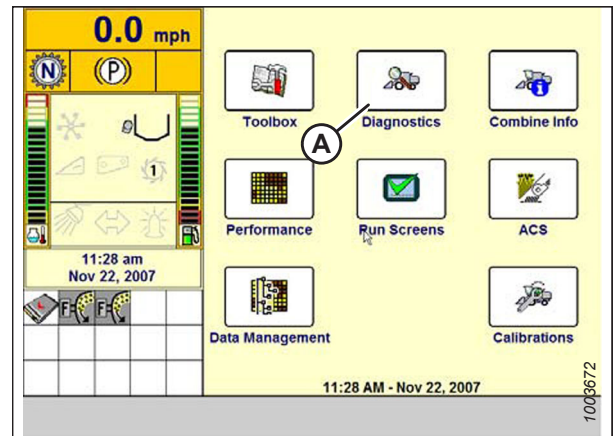


Figure 7.117: Case IH Combine Display

7. Select GROUP drop-down menu (A). The GROUP dialog box opens.

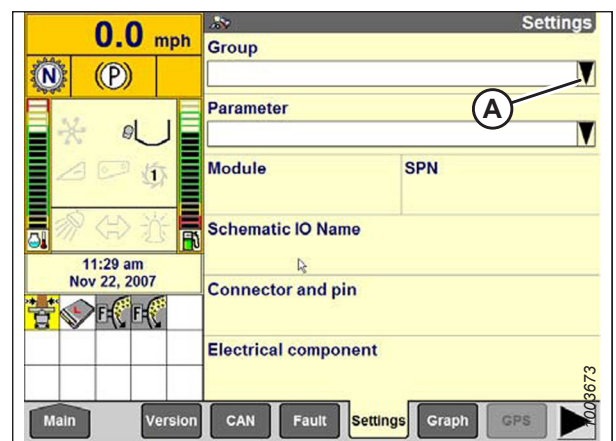


Figure 7.118: Case IH Combine Display

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

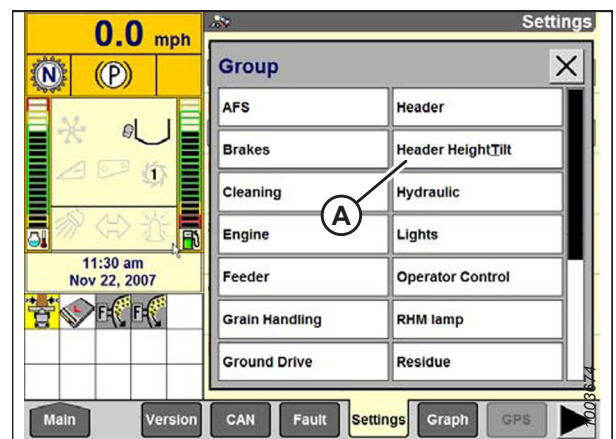


Figure 7.119: Case IH Combine Display

SETTING UP AUTO HEADER HEIGHT CONTROL

9. Select LEFT HEADER HEIGHT SEN (A), and then select GRAPH button (B). The exact voltage is displayed at top of page. Raise and lower the header to see the full range of voltage readings.
10. If the sensor voltage is not within the lower and upper limits, or if the range between the lower and upper limits is insufficient, adjust the voltage limits. For instructions, refer to *Adjusting Voltage Limits – One-Sensor System, page 199*.

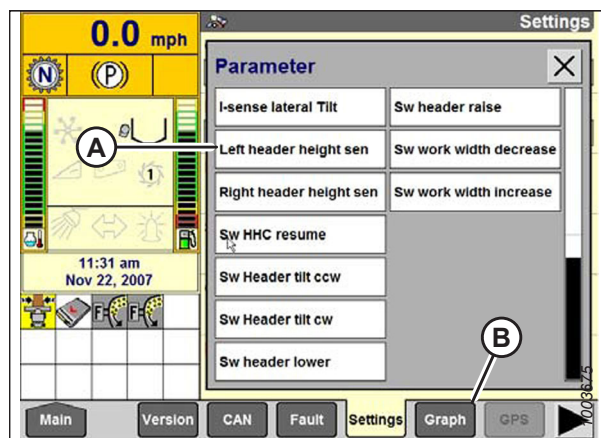


Figure 7.120: Case IH Combine Display

Checking Reel Height Sensor Voltages – Case IH Combines

The voltage output of the reel height sensors can be inspected using the combine display in the cab.

⚠ DANGER

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

NOTE:

Changes may have been made to the combine controls or the display since this document was published. Refer to the combine operator's manual for the most up-to-date information.

1. On the main page of the combine display, select DIAGNOSTICS (A). The DIAGNOSTICS page appears.

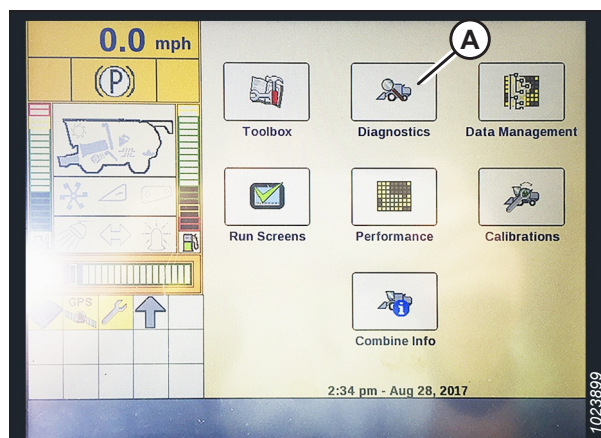


Figure 7.121: Case IH Combine Display

SETTING UP AUTO HEADER HEIGHT CONTROL

2. Select SETTINGS tab (A). The SETTINGS page appears.
3. From the GROUP menu, select HEADER (B).
4. From the PARAMETER menu, select REEL VERTICAL POSITION (C).

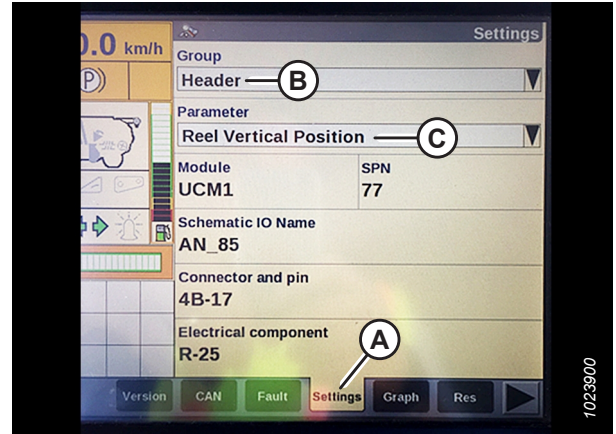


Figure 7.122: Case IH Combine Display

5. Select GRAPH tab (A). The REEL VERTICAL POSITION graph appears.
6. Lower the reel to view upper voltage (B). The voltage should be 4.1–4.5 V.
7. Raise the reel to view lower voltage (C). The voltage should be 0.5–0.9 V.
8. If either voltage is out of range, refer to [8.1 Checking and Adjusting Reel Height Sensor](#), page 387.

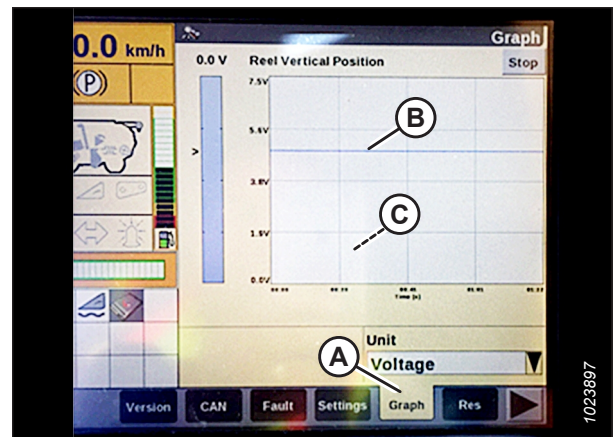


Figure 7.123: Case IH Combine Display

Setting Preset Cutting Height – Case IH 7010/8010, 120, 230, 240, and 250 Series Combines

Once the auto header height control (AHHC) system has been configured to work with the header, the preset cutting height can be set.

DANGER

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

NOTE:

Changes may have been made to the combine controls or the display since this document was published. Refer to the combine operator's manual for the most up-to-date information.

SETTING UP AUTO HEADER HEIGHT CONTROL

1. Ensure indicator (A) is at position 0 (B) with the header 254–356 mm (10–14 in.) off the ground. If not, the float sensor output voltage should be checked. For instructions, refer to Step 6, page 195.

NOTE:

When the header is on the ground, the indicator should be at position 1 (C) for low ground pressure, and at position 4 (D) for high ground pressure. Crop and soil conditions determine the amount of float to use. The ideal setting is as light as possible without header bouncing or missing crop. Operating with heavy settings prematurely wears the cutterbar wearplates.

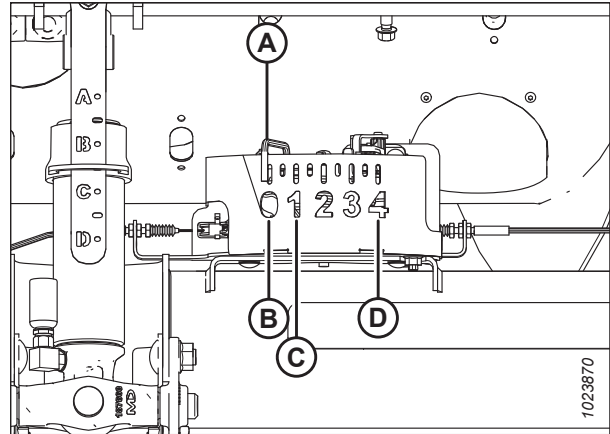


Figure 7.124: Float Indicator Box

2. Engage the separator and the header.
3. Manually raise or lower the header to a desired cutting height.
4. Press SET #1 switch (A). The light beside switch (A) will illuminate.

NOTE:

Use switch (C) for fine adjustments.

NOTE:

When setting the presets, always set the header position before setting the reel position. If the header and the reel are set at the same time, the reel setting will not be saved.

5. Manually raise or lower the reel to the desired position.
6. Press SET #1 switch (A). The light beside switch (A) will light up.
7. Manually raise or lower the header to a second desired cutting height.
8. Press SET #2 switch (B). The light beside switch (B) will light up.
9. Manually raise or lower the reel to a second desired working position.
10. Press SET #2 switch (B). The light beside switch (B) will light up.



Figure 7.125: Case Combine Controls

SETTING UP AUTO HEADER HEIGHT CONTROL

11. To swap between the set points, press HEADER RESUME (A).
12. To raise the header, press and hold SHIFT button (B) at the back of the control handle and press HEADER RESUME switch (A). To lower the header, press HEADER RESUME switch (A) once to return to the header preset height.

NOTE:

Pressing HEADER RAISE/LOWER switches (C) and (D) disengages AUTO HEIGHT mode. Press HEADER RESUME (A) to re-engage AUTO HEIGHT mode.



Figure 7.126: Case Combine Controls

7.1.7 Challenger® and Massey Ferguson® 6 and 7 Series Combines

To make your header's auto header height control (AHC) system compatible with Challenger® and Massey Ferguson® 6 and 7 Series combines, you must set your combine's header configuration options for the particular model of header, configure the reel speed settings, set up the AHC controls, and calibrate the AHC system to ensure that it is working correctly.

Checking Voltage Range from Combine Cab – Challenger® and Massey Ferguson®

The auto header height control sensor needs to operate in a specific voltage range in order to work properly.

⚠ DANGER

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

NOTE:

Changes may have been made to the combine controls or the display since this document was published. Refer to the combine operator's manual for the most up-to-date information.

1. Position the header 150 mm (6 in.) above the ground, and unlock the float.

SETTING UP AUTO HEADER HEIGHT CONTROL

2. Check that the float lock linkage is on the down stops (washer [A] cannot be moved) at both locations.

NOTE:

If the header is not on the down stops during the next two steps, the voltage may go out of range during operation, causing a malfunction of the auto header height control (AHHC) system.

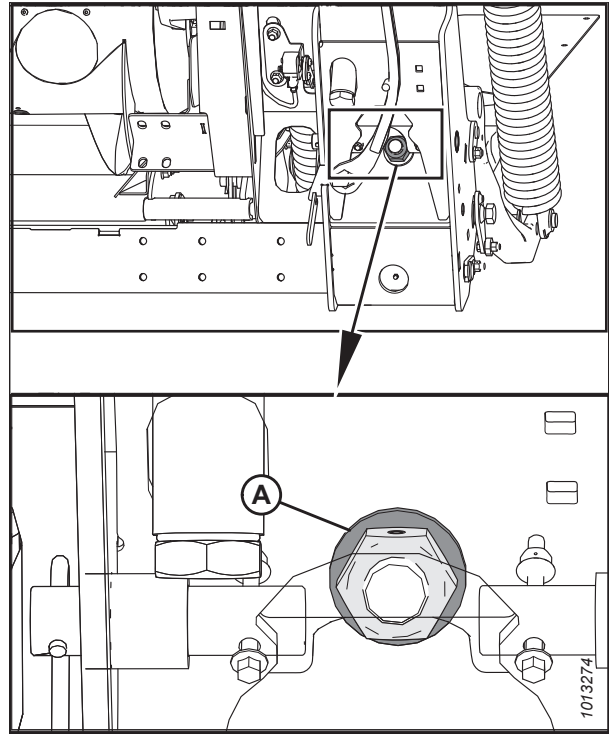


Figure 7.127: Float Lock

3. If necessary, adjust cable take-up bracket (B) until float indicator pointer (A) is on 0.

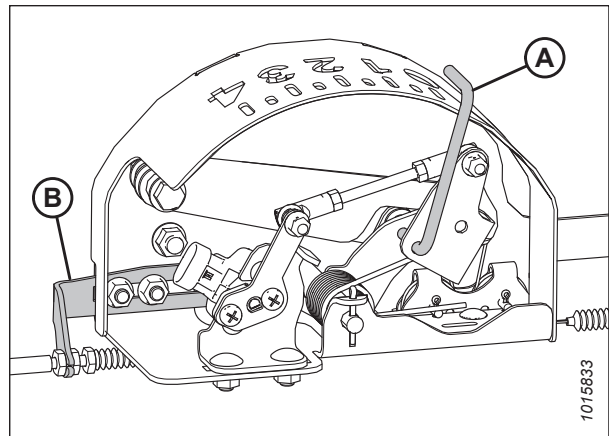


Figure 7.128: Float Indicator Box

SETTING UP AUTO HEADER HEIGHT CONTROL

- Go to the FIELD page on the combine monitor, and then press the diagnostics icon. The MISCELLANEOUS page displays.
- Press VMM DIAGNOSTIC button (A). The VMM DIAGNOSTIC page displays.

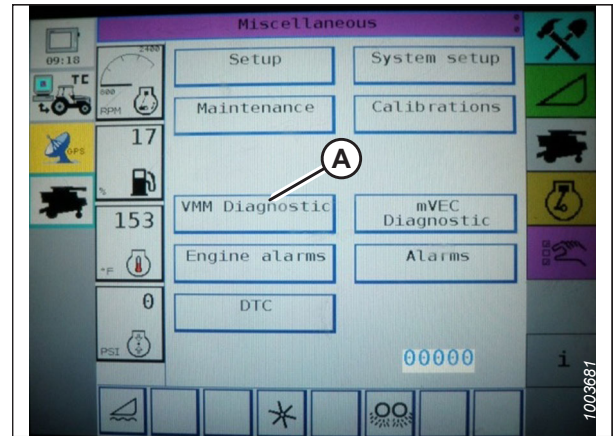


Figure 7.129: Challenger® Combine Display

- Go to ANALOG IN tab (A), and then select VMM MODULE 3 by pressing the text box below the four tabs. The voltage from the AHHC sensor is now displayed on page as HEADER HEIGHT RIGHT POT and HEADER HEIGHT LEFT POT. The readings may be slightly different.

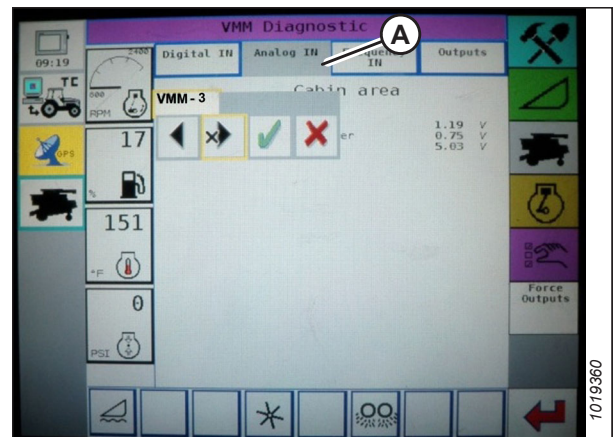


Figure 7.130: Challenger® Combine Display

- Fully lower the combine feeder house (the float module should be fully separated from the header).

NOTE:

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

- Read the voltage.
- Raise the header 150 mm (6 in.) above the ground.
- Read the voltage.
- If the sensor voltage is not within the low and high limits, or if the range between the low and high limits is insufficient, adjust the voltage limits. For instructions, refer to [Adjusting Voltage Limits – One-Sensor System, page 199](#) or [Adjusting Voltage Limits – Two-Sensor System, page 200](#).

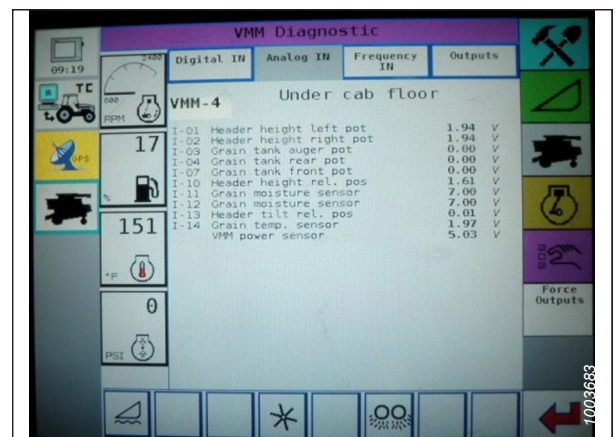


Figure 7.131: Challenger® Combine Display

SETTING UP AUTO HEADER HEIGHT CONTROL

Engaging Auto Header Height Control – Challenger® and Massey Ferguson®

The auto header height control (AHHC) system must be engaged before its features can be configured.

NOTE:

Changes may have been made to the combine controls or the display since this document was published. Refer to the combine operator's manual for the most up-to-date information.

The following system components are required in order for the auto header height control (AHHC) to work:

- Main module (PCB board) and header driver module (PCB board) mounted in the card box in the fuse panel module (FP)
- Multifunction control handle operator inputs
- Operator inputs mounted in the control console module (CC) panel
- The electrohydraulic header lift control valve

To engage the auto header height control, follow these steps:

1. Scroll through the header control options on the combine display using the header control switch until AHHC icon (A) is displayed in the first message box. The AHHC will adjust the header height in relation to the ground according to the height setting and sensitivity setting.

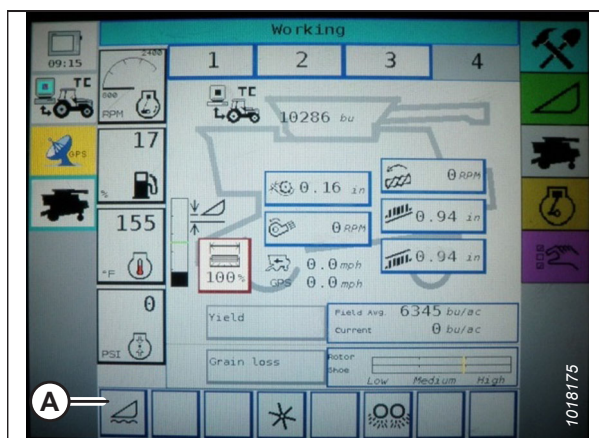


Figure 7.132: Challenger® Combine Display

Calibrating Auto Header Height Control – Challenger® and Massey Ferguson®

The auto header height control (AHHC) sensor output must be calibrated for each combine, or the AHHC feature will not work properly.

DANGER

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

NOTE:

Changes may have been made to the combine controls or the display since this document was published. Refer to the combine operator's manual for the most up-to-date information.

NOTE:

If the header float is set too light, it can prevent the AHHC calibration. You may need to set the float heavier for the calibration procedure so the header doesn't separate from the float module.

NOTE:

For best performance of the auto header height control (AHHC) system, perform these procedures with the center-link set to D. When setup and calibration are complete, adjust the center-link back to desired header angle. For instructions, refer to Header Angle in the header operator's manual.

SETTING UP AUTO HEADER HEIGHT CONTROL

1. Ensure the center-link is set to **D**.
2. On the FIELD page, press DIAGNOSTICS icon (A). The MISCELLANEOUS page appears.

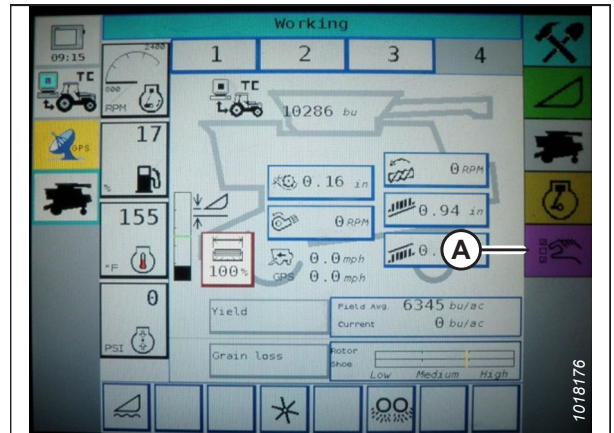


Figure 7.133: Challenger® Combine Display

3. Press CALIBRATIONS button (A). The CALIBRATIONS page appears.

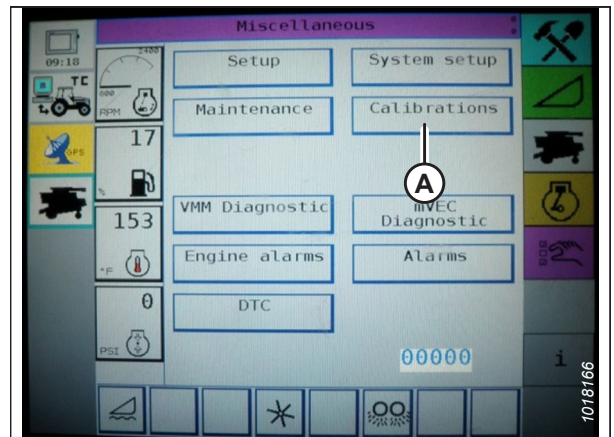


Figure 7.134: Challenger® Combine Display

4. Press HEADER button (A). The HEADER CALIBRATION page displays a warning.

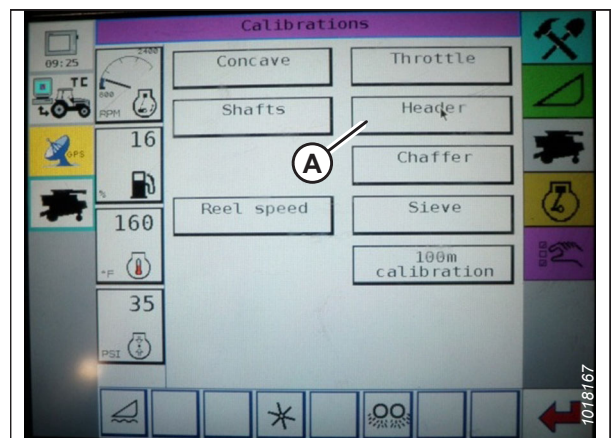


Figure 7.135: Challenger® Combine Display

SETTING UP AUTO HEADER HEIGHT CONTROL

5. Read the warning message, and then press the green check mark button.

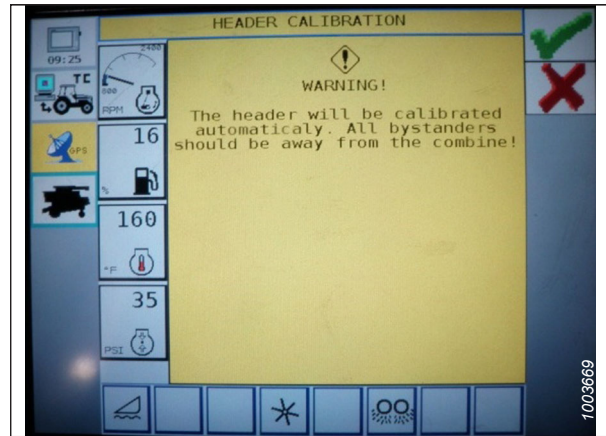


Figure 7.136: Challenger® Combine Display

6. Follow the on-screen prompts to complete calibration.

NOTE:

The calibration procedure can be canceled at any time by pressing the CANCEL button on the screen. While the header calibration is running, the calibration can also be canceled by using the UP, DOWN, TILT RIGHT, or TILT LEFT buttons on the control handle.

NOTE:

If the combine does not have HEADER TILT installed or if it is inoperable, you may receive warnings during calibration. Press the green check mark if these warnings appear. This will not affect the AHHC calibration.

NOTE:

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

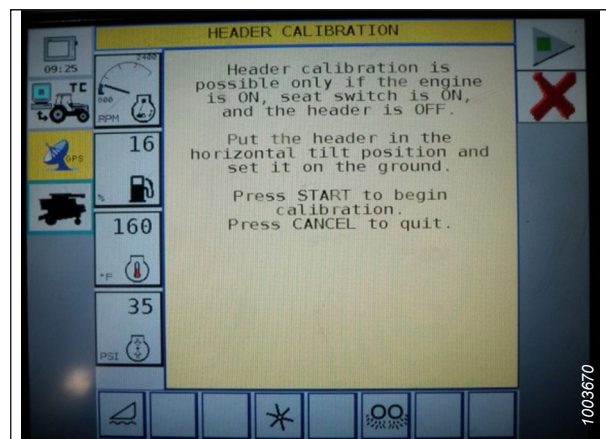


Figure 7.137: Challenger® Combine Display

Adjusting Header Height – Challenger® and Massey Ferguson®

The auto header height control (AHHC) feature allows the operator to set specific header heights.

DANGER

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

NOTE:

Changes may have been made to the combine controls or the display since this document was published. Refer to the combine operator's manual for the most up-to-date information.

SETTING UP AUTO HEADER HEIGHT CONTROL

Once the auto header height control (AHHC) is activated, press and release the HEADER LOWER button on the control handle. The AHHC will automatically lower the header to the selected height setting.

You can adjust the selected AHHC height using HEIGHT ADJUSTMENT knob (A) on the control console. Turning the knob clockwise increases the selected height, and turning the knob counterclockwise decreases the selected height.



Figure 7.138: Height Adjustment Knob on the Combine Control Console

Adjusting Header Raise/Lower Rate – Challenger® and Massey Ferguson®

The rate at which the header rises and falls can be configured by accessing the HEADER CONTROL menu on the combine display.

NOTE:

Changes may have been made to the combine controls or the display since this document was published. Refer to the combine operator's manual for the most up-to-date information.

1. Press HEADER icon (A) on the FIELD page. The HEADER page displays.

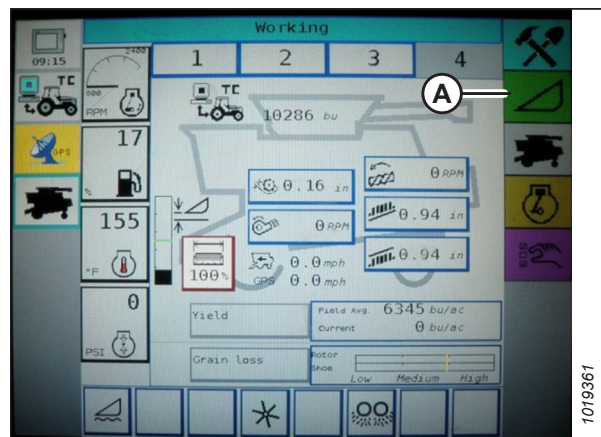


Figure 7.139: Challenger® Combine Display

SETTING UP AUTO HEADER HEIGHT CONTROL

2. Press HEADER CONTROL (A). The HEADER CONTROL page displays.

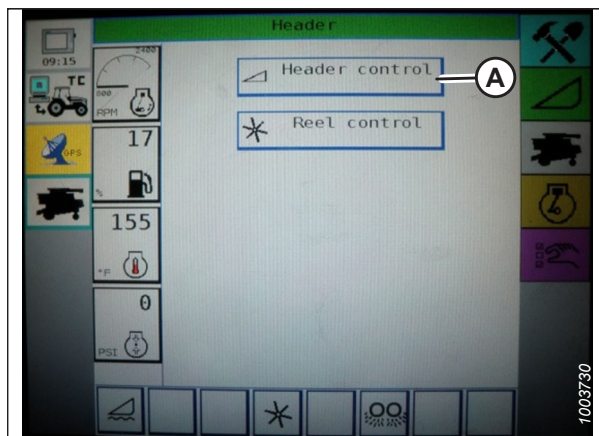


Figure 7.140: Challenger® Combine Display

3. Go to the TABLE SETTINGS tab.
4. Press the up arrow on MAX UP PWM to increase the percentage number and increase the raise speed. Press the down arrow on MAX UP PWM to decrease the percentage number and decrease the raise speed.
5. Press the up arrow on MAX DOWN PWM to increase the percentage number and increase the lower speed. Press the down arrow on MAX DOWN PWM to decrease the percentage number and decrease the lower speed.

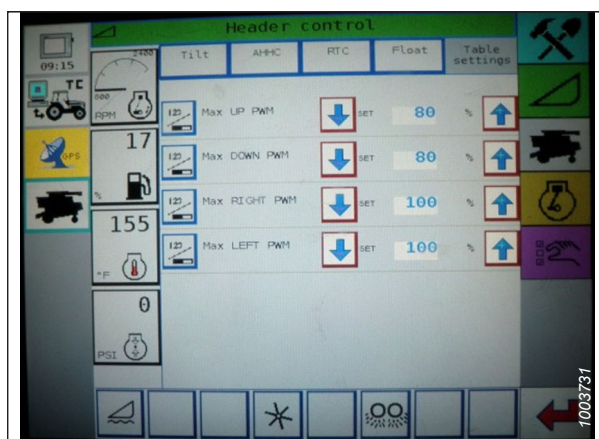


Figure 7.141: Challenger® Combine Display

Setting Auto Header Height Control Sensitivity – Challenger® and Massey Ferguson®

The sensitivity adjustment controls the distance the cutterbar must travel up or down before the auto header height control (AHHC) reacts and raises or lowers the feeder house. When the sensitivity is set to maximum, only small changes in ground height are needed to cause the system to raise or lower the feeder house. When the sensitivity is set to minimum, large changes in the ground height are needed to cause the system to raise or lower the feeder house.

DANGER

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

NOTE:

Changes may have been made to the combine controls or the display since this document was published. Refer to the combine operator's manual for the most up-to-date information.

1. Press the HEADER icon on the FIELD page. The HEADER page appears.

SETTING UP AUTO HEADER HEIGHT CONTROL

2. Press HEADER CONTROL button (A). The HEADER CONTROL page appears. You can adjust sensitivity on this page using the up and down arrows.

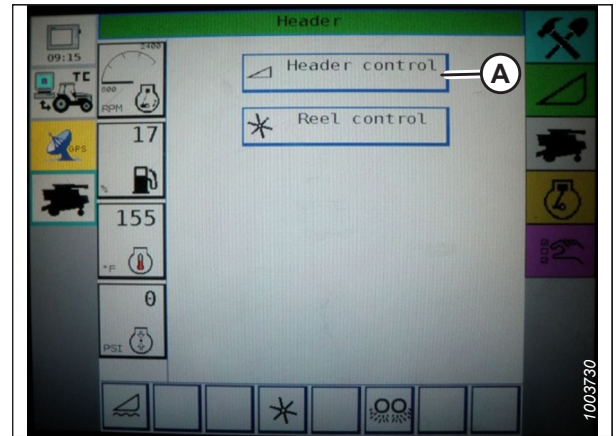


Figure 7.142: Challenger® Combine Display

3. Adjust the sensitivity to the maximum setting.
4. Activate the AHHC, and press the HEADER LOWER button on the control handle.
5. Decrease the sensitivity until the feeder house remains steady and does not bounce up and down.

NOTE:

This is the maximum sensitivity and is only an initial setting. The final setting must be made in the field, as the system reaction will vary with changing surfaces and operating conditions.

NOTE:

If maximum sensitivity is not needed, a less sensitive setting will reduce the frequency of header height corrections and component wear. Partially opening the accumulator valve will cushion the action of the header lift cylinders and reduce header hunting.

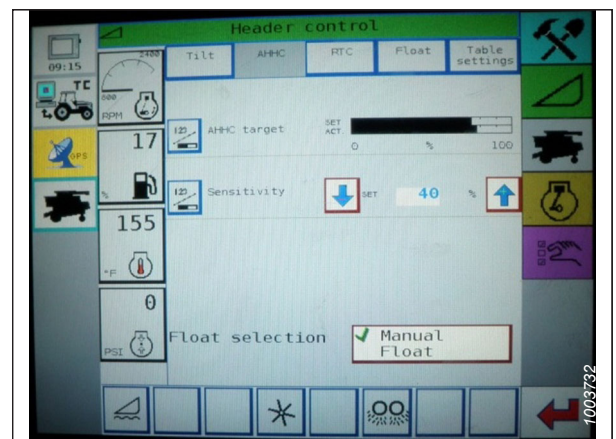


Figure 7.143: Challenger® Combine Display

7.1.8 CLAAS 500 Series Combines

To make your header's auto header height control (AHHC) system compatible with CLAAS 500 series combines, you must set your combine's header configuration options for the particular model of header, configure the reel speed settings, set up the AHHC controls, and calibrate the AHHC system to ensure that it is working correctly.

Calibrating Auto Header Height Control – CLAAS 500 Series

The auto header height control (AHHC) sensor output must be calibrated for each combine, or the AHHC feature will not work properly.

NOTE:

Changes may have been made to the combine controls or the display since this document was published. Refer to the combine operator's manual for the most up-to-date information.

NOTE:

If the header float is set too light, it can prevent the calibration of the AHHC. You may need to set the float heavier for the calibration procedure so the header does not separate from the float module.

SETTING UP AUTO HEADER HEIGHT CONTROL

NOTE:

For best performance of the auto header height control (AHHC), perform these procedures with the center-link set to **D**. When setup and calibration are complete, adjust the center-link back to desired header angle. For instructions, refer to The Header Angle in the header operator's manual for instructions.

1. Ensure the center-link is set to **D**.
2. Use < key (A) or > key (B) to select AUTO HEADER, and press OK key (C). The E5 page indicates whether the automatic header height is on or off.

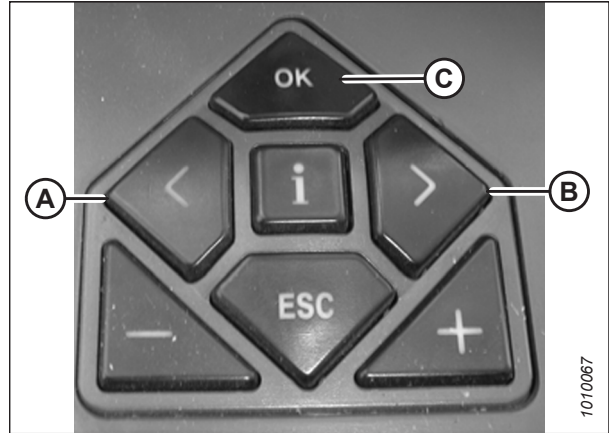


Figure 7.144: CLAAS Combine Controls

3. Use – key (A) or + key (B) to turn the AHHC on, and press OK key (C).
4. Engage the threshing mechanism and the header.

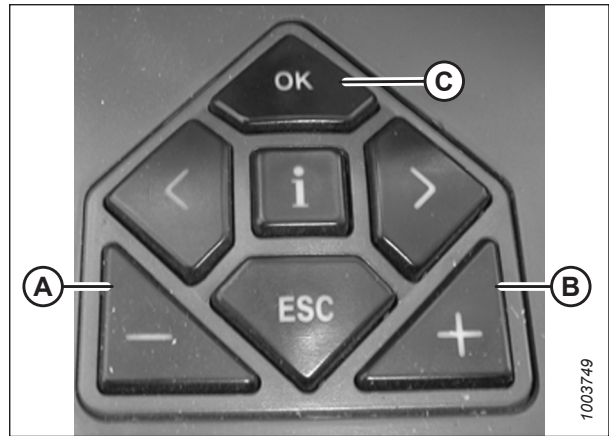


Figure 7.145: CLAAS Combine Controls

5. Use the < or > key to select CUTT. HEIGHT LIMITS, and press the combine control's OK key.
6. Follow the procedure displayed on the screen to program the upper and lower limits of the header into the CEBIS.

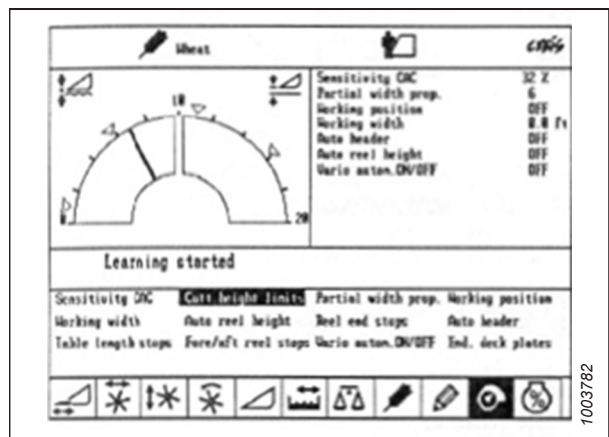


Figure 7.146: CLAAS Combine Display

SETTING UP AUTO HEADER HEIGHT CONTROL

- Use the < or > key to select SENSITIVITY CAC, and press the combine control's OK key.

NOTE:

Setting the sensitivity of the AHHC system affects the reaction speed of the AHHC on the header.

- Use the – key or the + key to change the reaction speed setting, and press the combine control's OK key.

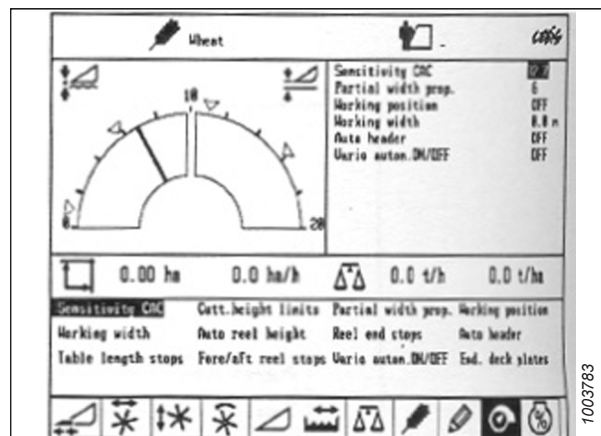


Figure 7.147: CLAAS Combine Display

- Use line (A) or value (B) to determine the sensitivity setting.

NOTE:

The setting can be adjusted from 0–100%. When sensitivity is adjusted to 0%, the signals from the sensing bands have no effect on the automatic cutting height adjustment. When sensitivity is adjusted to 100%, the signals from the sensing bands have maximum effect on the automatic cutting height adjustment. The recommended starting point is 50%.

NOTE:

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

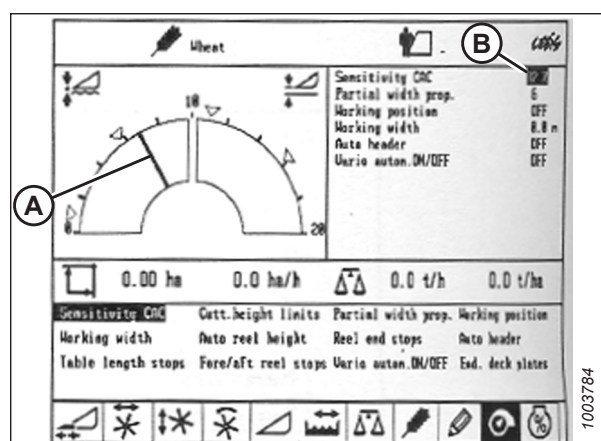


Figure 7.148: CLAAS Combine Display

Cutting Height – CLAAS 500 Series

Cutting heights can be programmed into the preset cutting height and auto contour systems. Use the preset cutting height system for cutting heights above 150 mm (6 in.), and use the auto contour system for cutting heights below 150 mm (6 in.).

Setting Preset Cutting Height – CLAAS 500 Series

Once the auto header height control (AHHC) system has been configured and activated, the preset cutting height can be set.

DANGER

Check to be sure all bystanders have cleared the area.

NOTE:

Changes may have been made to the combine controls or the display since this document was published. Refer to the combine operator's manual for the most up-to-date information.

- Start the engine.
- Activate the machine enable switch.
- Engage the threshing mechanism.
- Engage the header.

SETTING UP AUTO HEADER HEIGHT CONTROL

- Briefly press button (A) in order to activate the auto contour system, or briefly press button (B) in order to activate the preset cutting height system.

NOTE:

Button (A) is used only with auto header height control (AHHC) function. Button (B) is used only with the return to cut function.



Figure 7.149: Control Handle Buttons

- Use < key (C) or > key (D) to select the CUTTING HEIGHT page, and press OK key (E).
- Use – key (A) or + key (B) to set the desired cutting height. An arrow indicates the selected cutting height on the scale.

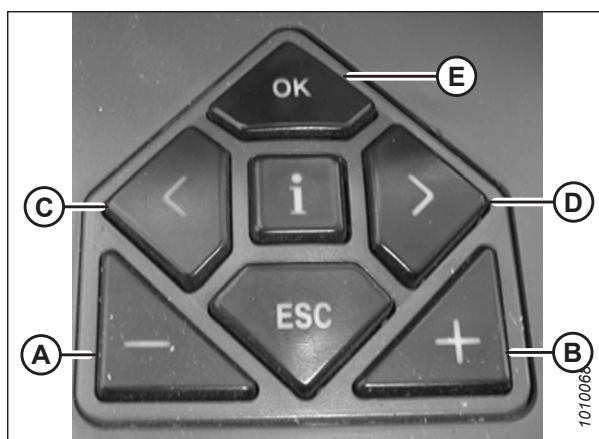


Figure 7.150: CLAAS Combine Controls

- Briefly press button (A) or button (B) in order to select the set point.
- Repeat Step 7, page 250 for the set point.



Figure 7.151: Control Handle Buttons

Setting Cutting Height Manually – CLAAS 500 Series

Once the auto header height control (AHHC) system has been configured and activated, the preset cutting height can be manually configured.

DANGER

Check to be sure all bystanders have cleared the area.

SETTING UP AUTO HEADER HEIGHT CONTROL

NOTE:

Changes may have been made to the combine controls or the display since this document was published. Refer to the combine operator's manual for the most up-to-date information.

1. Use button (A) to raise the header, or button (B) to lower the header to the desired cutting height.
2. Press and hold button (C) for 3 seconds to store the cutting height (an alarm will sound when the new setting has been stored).
3. Program a second set point, if desired, by using button (A) to raise the header, or button (B) to lower the header to the desired cutting height, and briefly press button (C) to store the second set point (an alarm will sound when the new setting has been stored).

NOTE:

For above-the-ground cutting, repeat Step 1, page 251, and use button (D) instead of button (C) while repeating Step 2, page 251.



Figure 7.152: Control Handle Buttons

Setting Auto Header Height Control Sensitivity – CLAAS 500 Series

The sensitivity adjustment controls the distance the cutterbar must travel up or down before the auto header height control (AHHC) reacts and raises or lowers the feeder house. When the sensitivity is set to maximum, only small changes in ground height are needed to cause the system to raise or lower the feeder house. When the sensitivity is set to minimum, large changes in the ground height are needed to cause the system to raise or lower the feeder house.

NOTE:

The upper and lower limits of the header must be set before adjusting the sensitivity of the AHHC system. The setting can be adjusted from 0–100%. When the sensitivity is adjusted to 0%, the signals from the sensing bands have no effect on the automatic cutting height adjustment. When the sensitivity is adjusted to 100%, the signals from the sensing bands have maximum effect on the automatic cutting height adjustment. The recommended starting point is 50%.

NOTE:

Changes may have been made to the combine controls or the display since this document was published. Refer to the combine operator's manual for the most up-to-date information.

1. Use < key (C) or > key (D) to select SENSITIVITY CAC, and press OK key (E).
2. Use – key (A) or + (B) key to change the reaction speed setting, and press OK key (E).

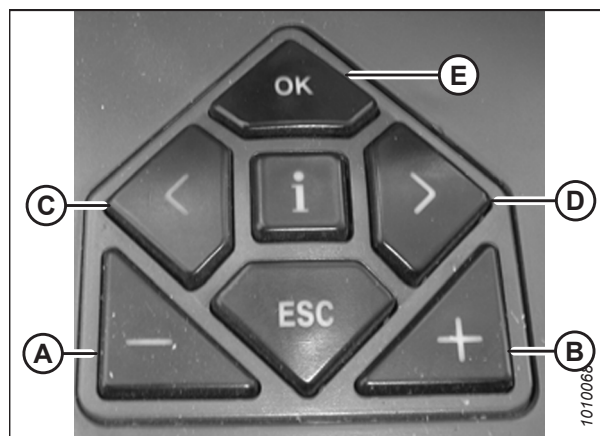


Figure 7.153: CLAAS Combine Controls

SETTING UP AUTO HEADER HEIGHT CONTROL

- Use line (A) or value (B) to determine the sensitivity setting.

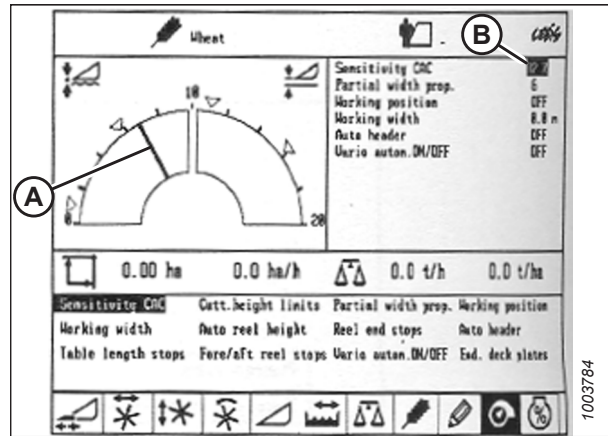


Figure 7.154: CLAAS Combine Display

SETTING UP AUTO HEADER HEIGHT CONTROL

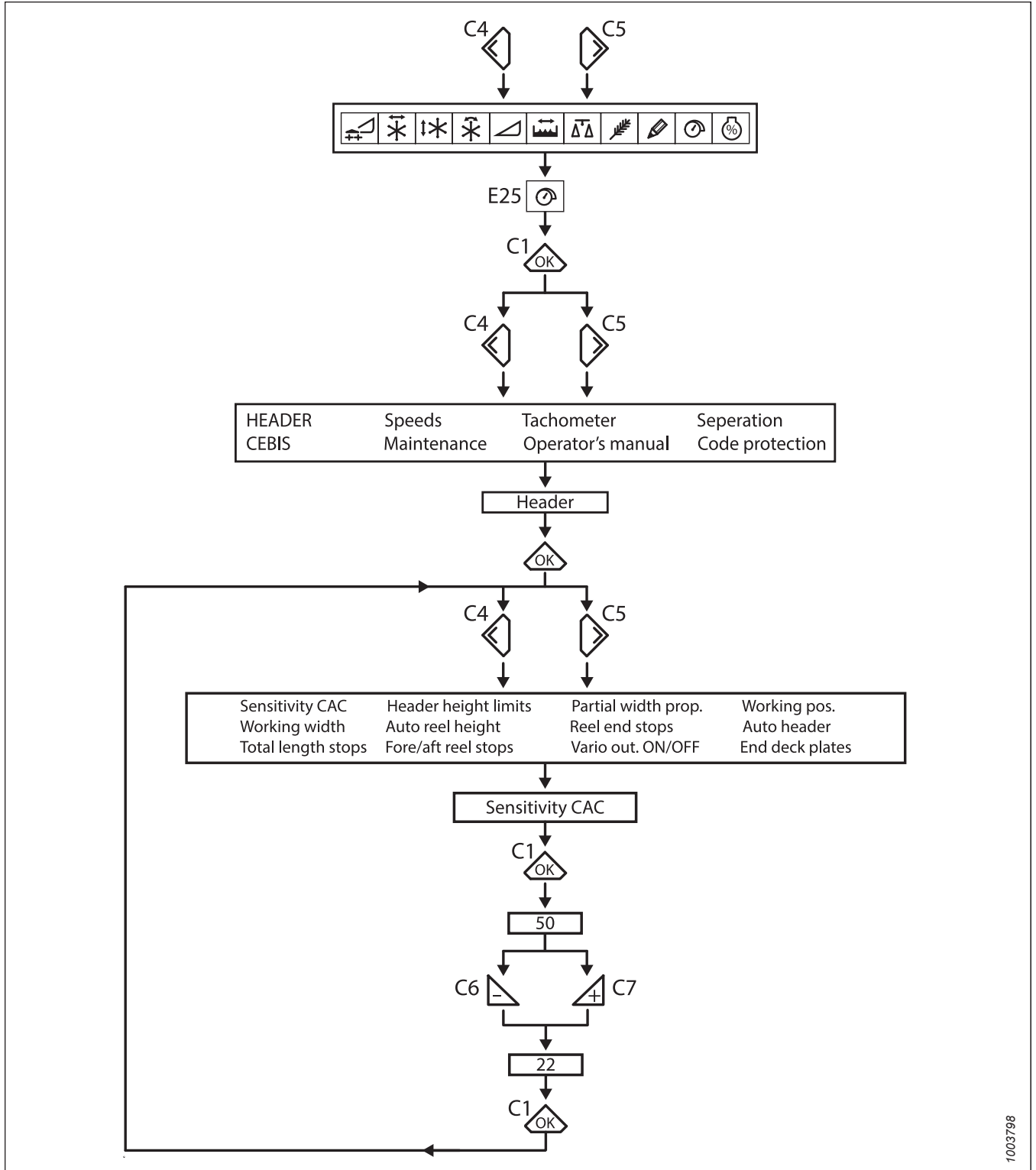


Figure 7.155: Flow Chart for Setting the Sensitivity of the Float Optimizer

1003798

SETTING UP AUTO HEADER HEIGHT CONTROL

Adjusting Auto Reel Speed – CLAAS 500 Series

The preset reel speed can be set when the automatic header functions are activated.

NOTE:

Changes may have been made to the combine controls or the display since this document was published. Refer to the combine operator's manual for the most up-to-date information.

1. Use the < or > key to select REEL WINDOW. Window E15 displays the current advance or retard speed of the reel in relation to the ground speed.

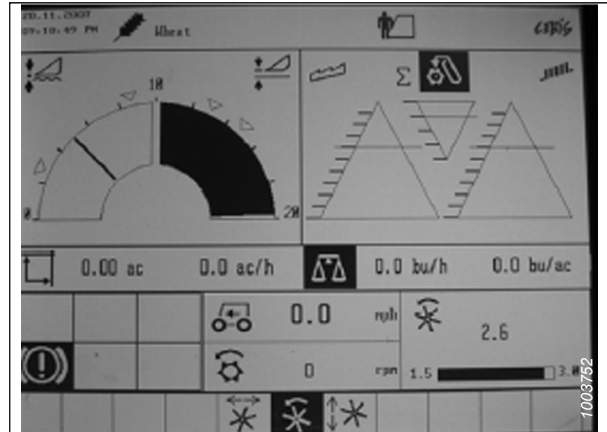


Figure 7.156: CLAAS Combine Display

2. Press OK key (C) to open the REEL SPEED window.
3. Use – key (A) or + key (B) to set the reel speed in relation to the current ground speed. Window E15 displays the selected reel speed.

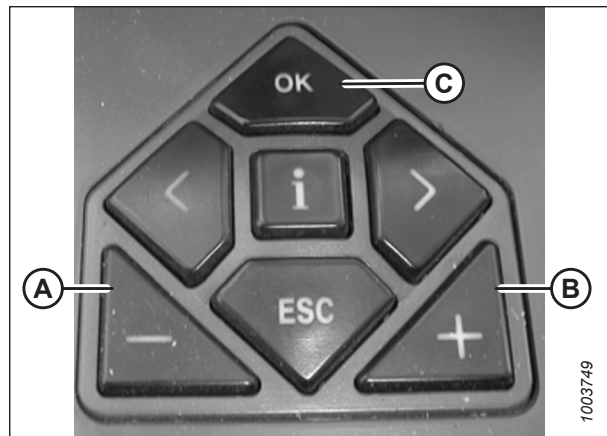


Figure 7.157: CLAAS Combine Controls

4. Manually adjust the reel speed by rotating the rotary switch to reel position (A), and then use the – or + key to set the reel speed.



Figure 7.158: CLAAS Combine Rotary Switch

SETTING UP AUTO HEADER HEIGHT CONTROL

- Press and hold button (A) or button (B) for 3 seconds to store the setting (an alarm sounds when the new setting has been stored).

NOTE:

Whenever button (A) or button (B) is pressed for 3 seconds, the current positions for reel speed and cutting height are stored.



Figure 7.159: CLAAS Control Handle Buttons

- Use the < or > key to select the REEL WINDOW. Window E15 displays the current advance or retard speed of the reel in relation to the ground speed.

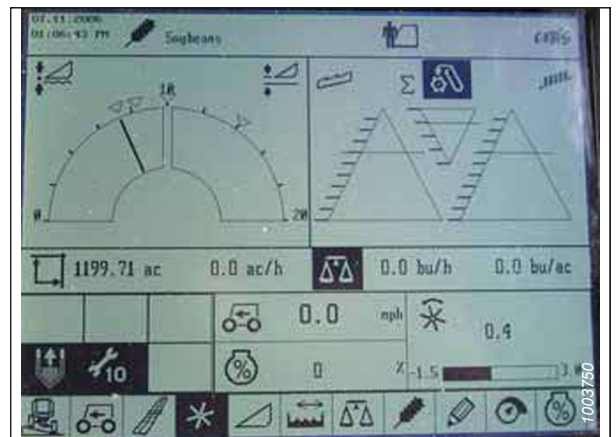


Figure 7.160: CLAAS Combine Display

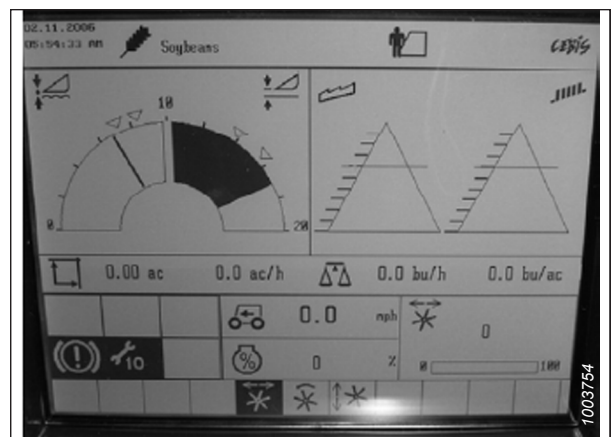


Figure 7.161: CLAAS Combine Display

SETTING UP AUTO HEADER HEIGHT CONTROL

- Press OK key (E), and use < key (C) or > key (D) to select the REEL FORE AND AFT window.
- Use – key (A) or + key (B) to set the reel fore-aft position.

NOTE:

Control handle button (A) or button (B) (as shown in Figure 7.163, page 256) can also be used to set the reel fore-aft position.

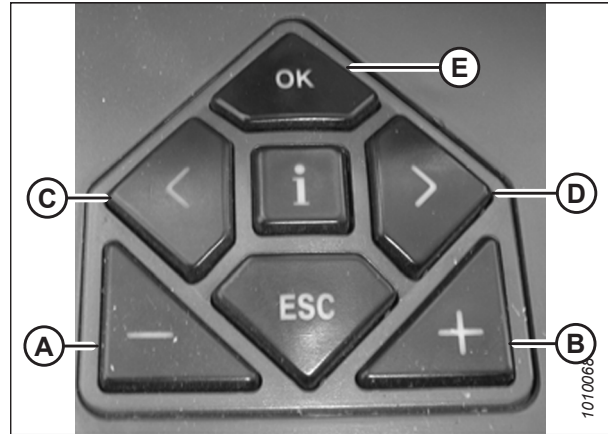


Figure 7.162: CLAAS Combine Controls

- Press and hold button (A) or button (B) for 3 seconds to store the setting into the CEBIS (an alarm sounds when the new setting has been stored).

NOTE:

Whenever button (A) or button (B) is pressed for 3 seconds, the current positions for reel speed and cutting height are stored.



Figure 7.163: CLAAS Control Handle Buttons

7.1.9 CLAAS 600 and 700 Series Combines

To make your header's auto header height control (AHHC) system compatible with CLAAS 600 and 700 series combines, you must set your combine's header configuration options for the particular model of header, configure the reel speed settings, set up the AHHC controls, and calibrate the AHHC system to ensure that it is working correctly.

Calibrating Auto Header Height Control – CLAAS 600 and 700 Series

The auto header height control (AHHC) sensor output must be calibrated for each combine, or the AHHC feature will not work properly.

NOTE:

Changes may have been made to the combine controls or the display since this document was published. Refer to the combine operator's manual for the most up-to-date information.

NOTE:

If the header float is set too light, it can prevent the AHHC calibration. You may need to set the float heavier for the calibration procedure so the header does not separate from the float module.

NOTE:

For best performance of the auto header height control (AHHC), perform these procedures with the center-link set to **D**. When setup and calibration are complete, adjust the center-link back to desired header angle. For instructions, refer to Header Angle in the header operator's manual for instructions.

SETTING UP AUTO HEADER HEIGHT CONTROL

1. Ensure the center-link is set to **D**.
2. Ensure that the header float is unlocked.
3. Place the wings in the locked position.
4. Use control knob (A) to highlight AUTO CONTOUR icon (B) and press control knob (A) to select it.

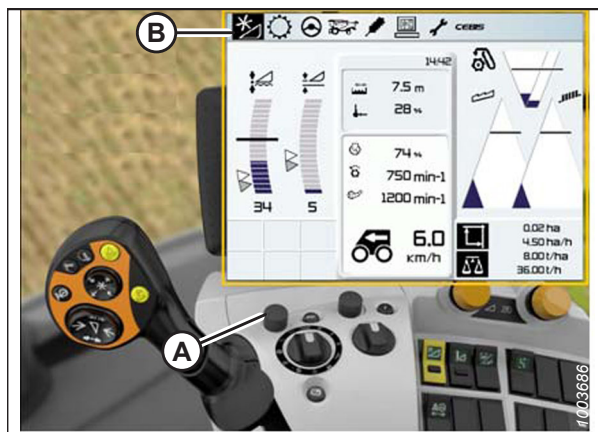


Figure 7.164: CLAAS Combine Display, Console, and Control Handle

5. Use control knob (A) to highlight the icon that resembles a header with up and down arrows (not shown). Press control knob (A) to select it. Highlighted header icon (B) displays on the screen.



Figure 7.165: CLAAS Combine Display, Console, and Control Handle

6. Use control knob (A) to highlight header icon (B) with the up and down arrows. Press control knob (A) to select it.



Figure 7.166: CLAAS Combine Display, Console, and Control Handle

SETTING UP AUTO HEADER HEIGHT CONTROL

7. Use control knob (A) to highlight screwdriver icon (B).
8. Engage the combine separator and feeder house.
9. Press control knob (A). A progress bar appears.



Figure 7.167: CLAAS Combine Display, Console, and Control Handle

10. Fully raise the feeder house. Progress bar (A) advances to 25%.
11. Fully lower the feeder house. Progress bar (A) advances to 50%.
12. Fully raise the feeder house. Progress bar (A) advances to 75%.
13. Fully lower the feeder house. Progress bar (A) advances to 100%.



Figure 7.168: CLAAS Combine Display, Console, and Control Handle

14. Ensure progress bar (A) displays 100%. The calibration procedure is now complete.

NOTE:

If the voltage is not within the range of 0.5–4.5 V at any time throughout the calibration process, the monitor will indicate learning procedure not concluded.

NOTE:

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



Figure 7.169: CLAAS Combine Display, Console, and Control Handle

SETTING UP AUTO HEADER HEIGHT CONTROL

Setting Cutting Height – CLAAS 600 and 700 Series

The Operator can configure two different cutting height presets. The height presets can be selected using the combine's control handle.

DANGER

Check to be sure all bystanders have cleared the area.

NOTE:

Changes may have been made to the combine controls or the display since this document was published. Refer to the combine operator's manual for the most up-to-date information.

1. Lower the header to the desired cutting height or to the ground pressure setting. The float indicator box should be set to 1.5.
2. Hold the left side of header raise and lower switch (A) until you hear a ping sound.



Figure 7.170: CLAAS Combine Display, Console, and Control Handle

Setting Auto Header Height Control Sensitivity – CLAAS 600 and 700 Series

The sensitivity adjustment controls the distance the cutterbar must travel up or down before the auto header height control (AHHC) reacts and raises or lowers the feeder house. When the sensitivity is set to maximum, only small changes in ground height are needed to cause the feeder house to raise or lower. When the sensitivity is set to minimum, large changes in the ground height are needed to cause the feeder house to raise or lower.

NOTE:

Changes may have been made to the combine controls or the display since this document was published. Refer to the combine operator's manual for the most up-to-date information.

SETTING UP AUTO HEADER HEIGHT CONTROL

1. Use control knob (A) to highlight HEADER/REEL icon (B). Press control knob (A) to select it. The HEADER/REEL dialog box opens.
2. Select the HEADER icon.

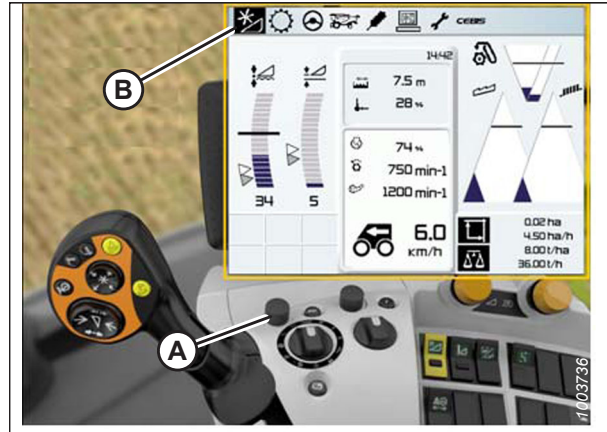


Figure 7.171: CLAAS Combine Display, Console, and Control Handle

3. Select FRONT ATTACHMENT PARAMETER SETTINGS icon (A). A list of settings appears.
4. Select SENSITIVITY CAC (B) from the list.



Figure 7.172: CLAAS Combine Display, Console, and Control Handle

5. Select SENSITIVITY CAC icon (A).

NOTE:

To set the sensitivity, change CUTTING HEIGHT ADJUSTMENT (B) from the 0 default. The settings from 1–50 provide a faster response, whereas the settings from -1 to -50 provide a slower response. For best results, make adjustments in increments of 5.

6. If the reaction time between the header and the float module is too slow while cutting on the ground, increase the CUTTING HEIGHT ADJUSTMENT setting. If the reaction time between the header and the float module is too fast, decrease the CUTTING HEIGHT ADJUSTMENT setting.
7. If the header is lowered too slowly, increase the sensitivity. If the header hits the ground too hard or is lowered too quickly, decrease the sensitivity.

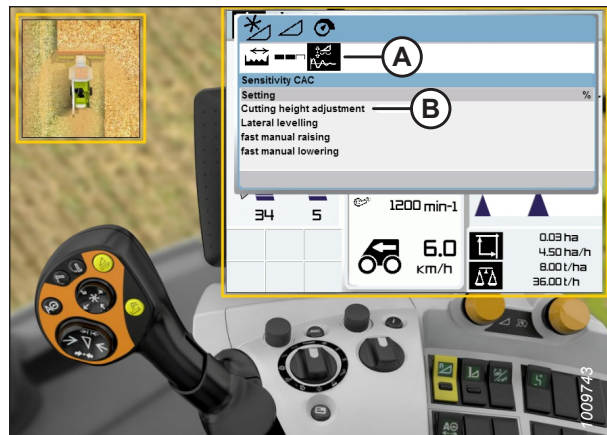


Figure 7.173: CLAAS Combine Display

SETTING UP AUTO HEADER HEIGHT CONTROL

Adjusting Auto Reel Speed – CLAAS 600 and 700 Series

The preset reel speed can be set when the automatic header functions are activated.

NOTE:

Changes may have been made to the combine controls or the display since this document was published. Refer to the combine operator's manual for the most up-to-date information.

1. Use control knob (A) to highlight HEADER/REEL icon (B). Press control knob (A) to select it. The HEADER/REEL dialog box opens.

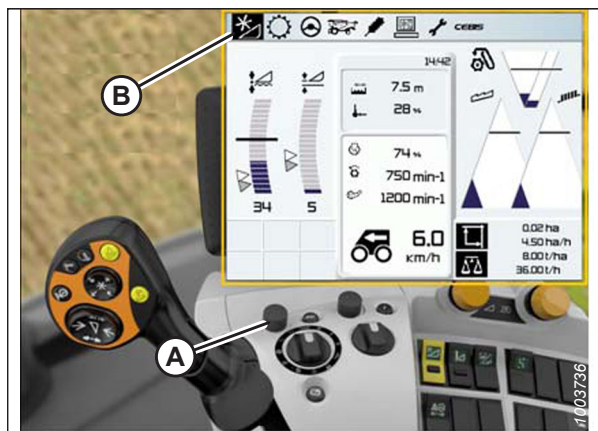


Figure 7.174: CLAAS Combine Display, Console, and Control Handle

2. Use control knob (A) to select REEL SPEED (B), and adjust the reel speed (if you are **NOT** using Auto Reel Speed). A graph appears in the dialog box.



Figure 7.175: CLAAS Combine Display, Console, and Control Handle

SETTING UP AUTO HEADER HEIGHT CONTROL

3. Select ACTUAL VALUE (A) from the AUTO REEL SPEED dialog box (if you are using Auto Reel Speed). The ACTUAL VALUE dialog box indicates the auto reel speed.

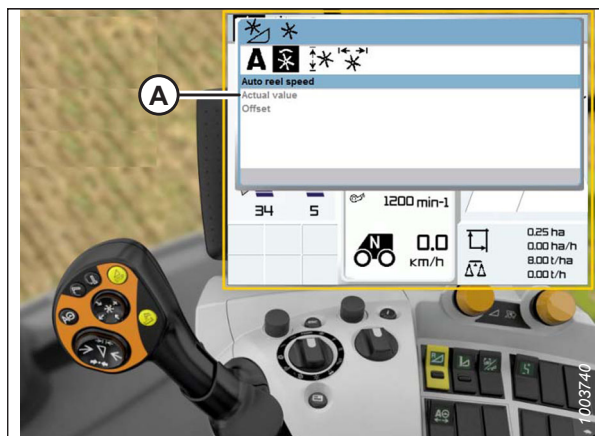


Figure 7.176: CLAAS Combine Display, Console, and Control Handle

4. Use control knob (A) to raise or lower the reel speed.

NOTE:

This option is only available with the engine at full throttle.



Figure 7.177: CLAAS Combine Display, Console, and Control Handle

Calibrating Reel Height Sensor – CLAAS 600 and 700 Series

The auto header height control (AHHC) sensor output must be calibrated for each combine, or the AHHC feature will not work properly.

NOTE:

Changes may have been made to the combine controls or the display since this document was published. Refer to the combine operator's manual for the most up-to-date information.

NOTE:

If the header float is set too light, it can prevent the calibration of the AHHC. You may need to set the float heavier for the calibration procedure so the header does not separate from the float module.

NOTE:

For the best performance of the auto header height control (AHHC) system, perform the ground calibration with the center-link set to **D**. When calibration is complete, adjust the center-link back to the desired header angle. For instructions, refer to the header operator's manual.

DANGER

Check to be sure all bystanders have cleared the area.

SETTING UP AUTO HEADER HEIGHT CONTROL

1. Start the engine.
2. Position the header 15–25 cm (6–10 in.) off the ground. Keep the engine running.

IMPORTANT:

Do **NOT** turn off the engine. The combine has to be at full idle for the sensors to calibrate properly.

3. Use control knob (A) to highlight FRONT ATTACHMENT icon (B). Press control knob (A) to select it.



Figure 7.178: CLAAS Combine Display, Console, and Control Handle

4. Use control knob (A) to highlight REEL icon (B). Press control knob (A) to select it.

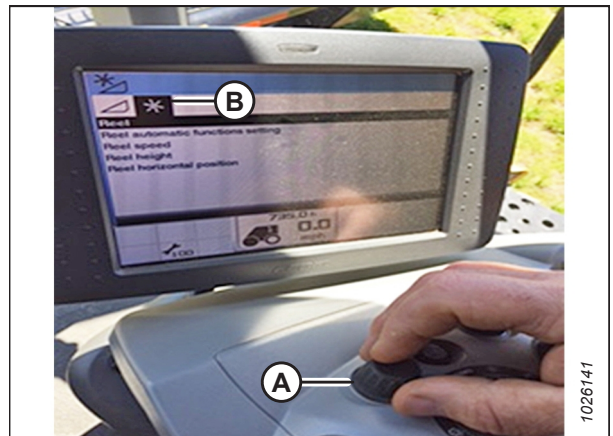


Figure 7.179: CLAAS Combine Display and Console

5. Highlight REEL HEIGHT icon (A). Press the control knob to select it.
6. Select LEARNING END STOPS (B) from the list.



Figure 7.180: CLAAS Combine Display and Console

SETTING UP AUTO HEADER HEIGHT CONTROL

7. Use control knob (A) to highlight screwdriver icon (B).
8. Press the control knob.



Figure 7.181: CLAAS Combine Display, Console, and Control Handle

WARNING

Check to be sure all bystanders have cleared the area.

9. Progress bar chart (A) appears on the screen.
10. Follow the prompts on the screen to raise and lower the reel.
11. Ensure progress bar chart (A) displays 100%. When the progress bar chart displays 100%, the calibration procedure is complete.



Figure 7.182: CLAAS Combine Display, Console, and Control Handle



Figure 7.183: CLAAS Combine Display, Console, and Control Handle

SETTING UP AUTO HEADER HEIGHT CONTROL

Adjusting Auto Reel Height – CLAAS 600 and 700 Series

The auto reel height setting can be configured by accessing the REEL menu on the combine display.

NOTE:

Changes may have been made to the combine controls or the display since this document was published. Refer to the combine operator's manual for the most up-to-date information.

1. Use HOTKEY rotary dial (A) to select REEL icon (B).

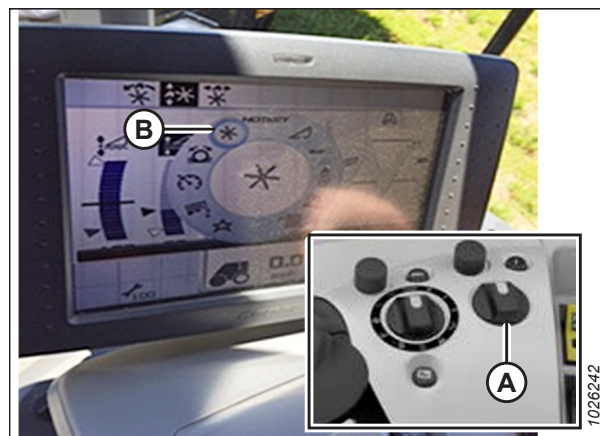


Figure 7.184: CLAAS Combine Display and Console

2. Use control knob (A) to select AUTO REEL HEIGHT icon (B) at the top of the page.

NOTE:

AUTO REEL HEIGHT icon (C) at the center of the page should be highlighted black. If it is not black, either the end stops have not been set or the auto header height control (AHHC) is not active. For instructions, refer to [Calibrating Reel Height Sensor – CLAAS 600 and 700 Series, page 262](#).

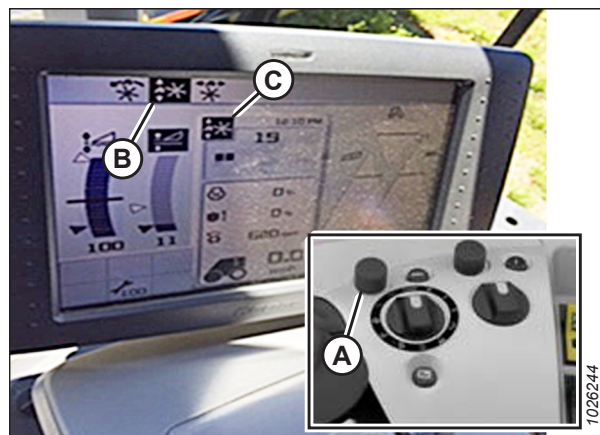


Figure 7.185: CLAAS Combine Display and Console

3. Adjust the auto reel height position for the current AHHC position using outer scroll knob (A). To lower the preset reel position, turn the scroll knob counterclockwise; to raise the preset reel position, turn the scroll knob clockwise. The display will update current setting (B).

NOTE:

If the AUTO REEL HEIGHT icon in the center of the page is not black, an AHHC position is not currently active.

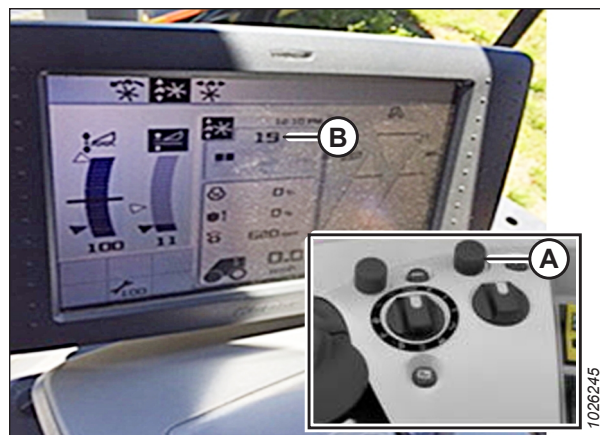


Figure 7.186: CLAAS Combine Display and Console

SETTING UP AUTO HEADER HEIGHT CONTROL

7.1.10 CLAAS 7000 and 8000 Series Combines

To make your header's auto header height control (AHHC) system compatible with CLAAS 7000 and 8000 series combines, you must set your combine's header configuration options for the particular model of header, configure the reel speed settings, set up the AHHC controls, and calibrate the AHHC system to ensure that it is working correctly.

Setting up Header – CLAAS 7000 and 8000 Series

To set up a header to work with the auto header height control (AHHC) system, you will need to access the FRONT ATTACHMENT menu using the CEBIS terminal.

NOTE:

Changes may have been made to the combine controls or the display since this document was published. Refer to the combine operator's manual for the most up-to-date information.

1. From the main page, select FRONT ATTACHMENT (A).



Figure 7.187: CEBIS Main Page

2. From the drop down list, select FRONT ATTACHMENT PARAMETERS (A).

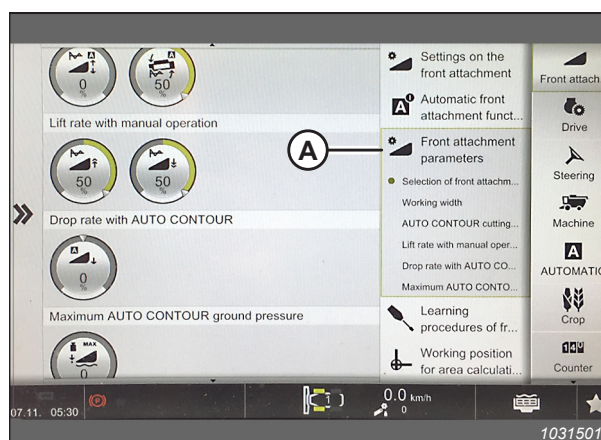


Figure 7.188: Front Attachment Page

SETTING UP AUTO HEADER HEIGHT CONTROL

3. From the FRONT ATTACHMENT PARAMETERS page, select FRONT ATTACHMENT TYPE (A).
4. From the drop down list, select FLEX CUTTERBAR PRODUCT BY OTHER MANUFACTURER (B).

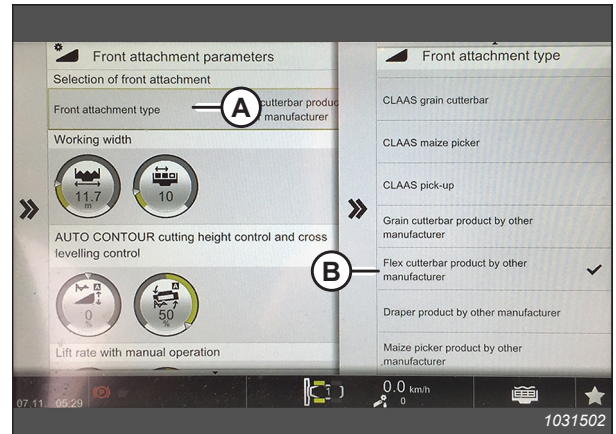


Figure 7.189: Attachment Parameters Page

5. From the FRONT ATTACHMENT PARAMETERS page, select WORKING WIDTH (A).
6. Set the header width by sliding adjuster arrow (B) up or down.
7. Select check mark (C) to save the settings.

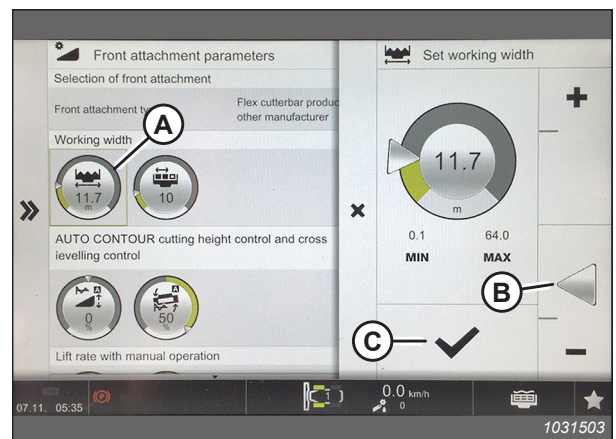


Figure 7.190: Attachment Parameters Page

Setting up Header Fore-Aft Tilt Function – CLAAS 7000 and 8000 Series

To set up the header's fore-aft tilt function, you will need to access the FRONT ATTACHMENT menu in the CEBIS terminal. The fore-aft tilt function can be controlled from the cab using the trigger on the back of the combine's control handle.

DANGER

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

NOTE:

Changes may have been made to the combine controls or the display since this document was published. Refer to the combine operator's manual for the most up-to-date information.

SETTING UP AUTO HEADER HEIGHT CONTROL

1. From the main page, select FRONT ATTACHMENT (A).



Figure 7.191: CEBIS Main Page

2. From the drop down list, select FRONT ATTACHMENT PARAMETERS (A).

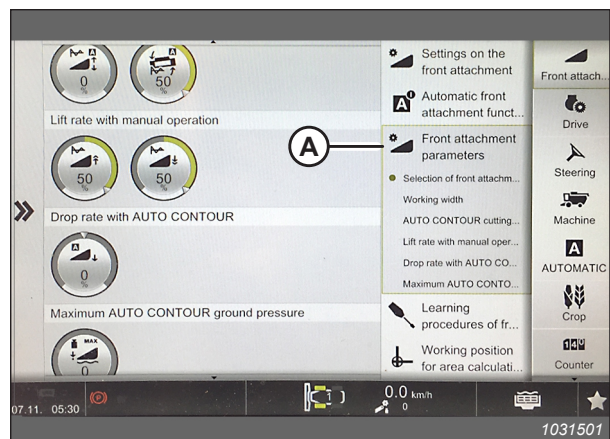


Figure 7.192: Front Attachment Page

3. From the FRONT ATTACHMENT PARAMETERS page, select FRONT ATTACHMENT TYPE (A).
4. From the drop down list, select FLEX CUTTERBAR PRODUCT BY OTHER MANUFACTURER (B).

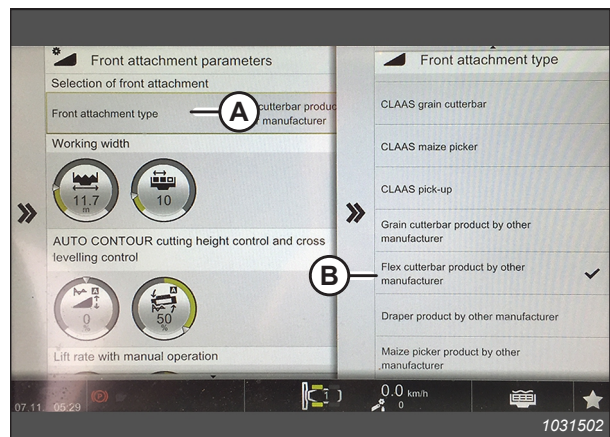


Figure 7.193: Attachment Parameters Page

SETTING UP AUTO HEADER HEIGHT CONTROL

- From the MAIN page, select SETTINGS (A).
- From the SETTINGS page, select FAVOURITE MANAGEMENT (B).

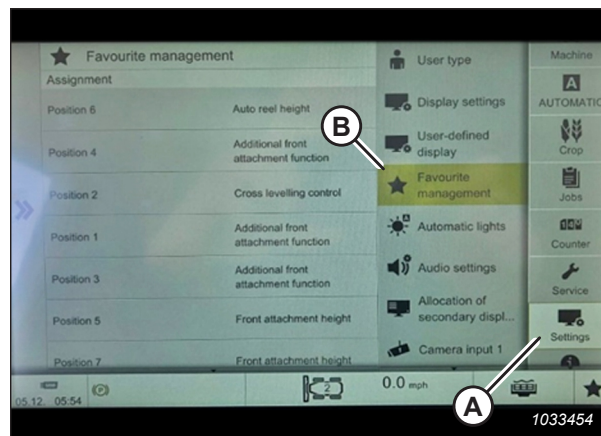


Figure 7.194: CEBIS Settings Page

- Add OTHER HEADER FUNCTIONS icon (A) as a favorite.

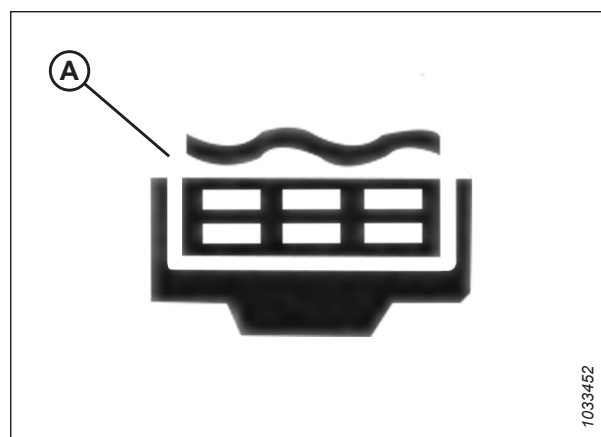


Figure 7.195: Other Header Functions Icon

- Select the OTHER HEADER FUNCTIONS icon so that it appears on the operator screen at location (A).
- You can now use the trigger (not shown) on the back of the handle to control the fore-aft position and tilt of the header.

NOTE:

The FAVOURITE MANAGEMENT menu controls the trigger on the back of handle. The icon shown at location (A) is the function controlled by the trigger.



Figure 7.196: CEBIS Main Page

SETTING UP AUTO HEADER HEIGHT CONTROL

Calibrating Auto Header Height Control – CLAAS 7000 and 8000 Series

The auto header height control (AHHC) sensor output must be calibrated for each combine, or the AHHC feature will not work properly.

DANGER

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

NOTE:

Changes may have been made to the combine controls or the display since this document was published. Refer to the combine operator's manual for the most up-to-date information.

NOTE:

If the header float is set too light, it can prevent the calibration of the AHHC. You may need to set the float heavier for the calibration procedure so the header does not separate from the float module.

NOTE:

For the best performance of the auto header height control (AHHC) system, perform the ground calibration with the center-link set to **D**. When calibration is complete, adjust the center-link back to the desired header angle. For instructions, refer to the header operator's manual.

1. From the MAIN page, select FRONT ATTACHMENT (A).

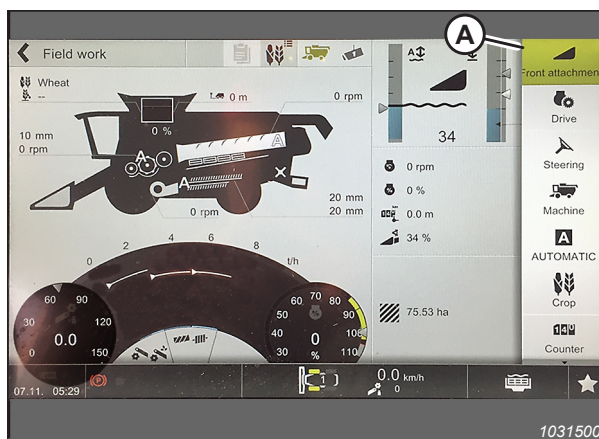


Figure 7.197: CEbis Main Page

2. Select LEARNING PROCEDURES (A) from the menu.
3. SELECT FRONT ATTACHMENT HEIGHT (B).

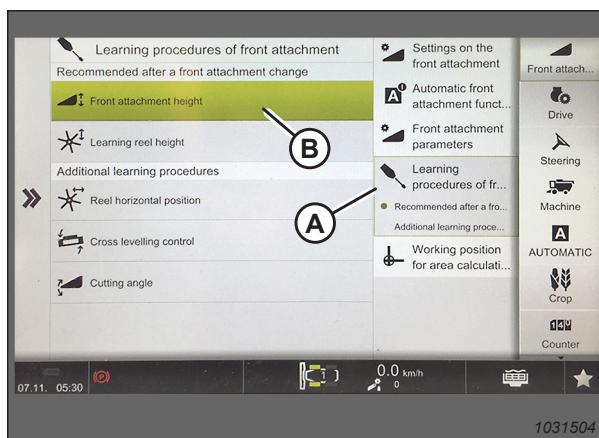


Figure 7.198: Learning Procedures Page

SETTING UP AUTO HEADER HEIGHT CONTROL

4. Follow the prompts that appear in DESCRIPTION and NOTES fields (A).

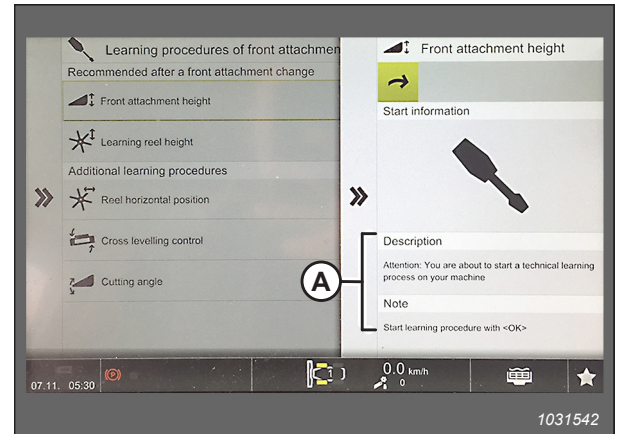


Figure 7.199: Front Attachment Height Page

5. When prompted, select OK button (A) to start the learning procedure.



Figure 7.200: Operator Controls

SETTING UP AUTO HEADER HEIGHT CONTROL

- When prompted, raise the front attachment with button (A) on the multifunction lever.
- When prompted, lower the front attachment with button (B) on the multifunction lever.
- Repeat the previous steps as prompted until calibration is complete.

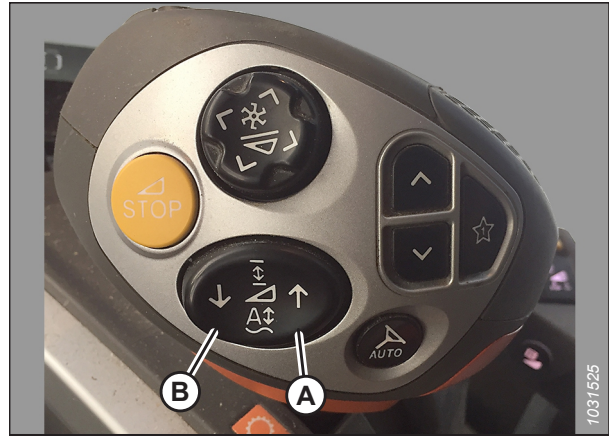


Figure 7.201: Multifunction Lever

Setting Cut and Reel Height Preset – CLAAS 7000 and 8000 Series

The reel and cut height setting can be stored in the combine. When harvesting, the setting can be selected from the control handle.

DANGER

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

NOTE:

Changes may have been made to the combine controls or the display since this document was published. Refer to the combine operator's manual for the most up-to-date information.

- Set the desired cutting height with feeder house raise/lower buttons (A) on the multifunction lever.
- Set the desired reel position with buttons (B).
- Press and hold AUTO HEIGHT PRESET button (C) to store the settings.

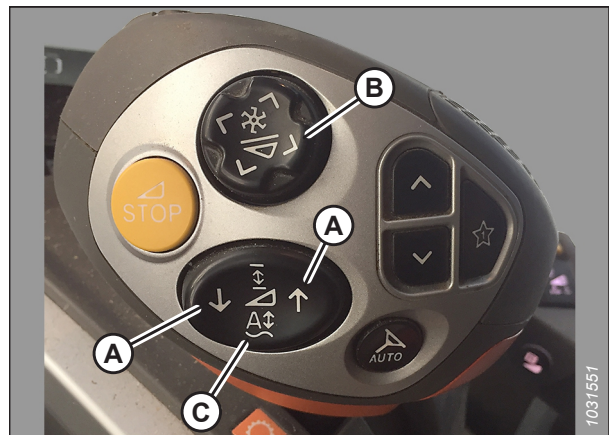


Figure 7.202: Multifunction Lever

SETTING UP AUTO HEADER HEIGHT CONTROL

Triangle (A) appears on the header height gauge indicating the preset level.

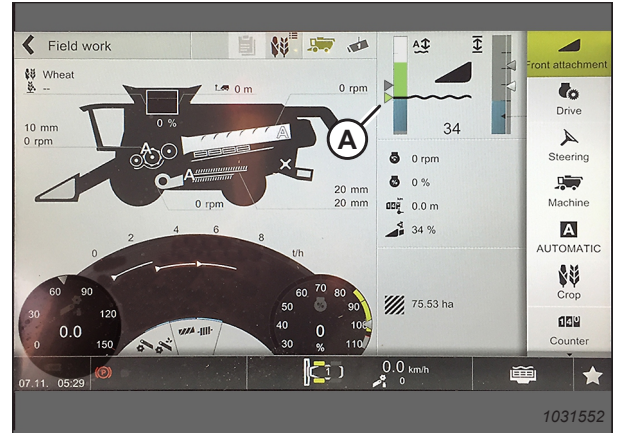


Figure 7.203: CEBIS Main Page

Setting Auto Header Height Control Sensitivity – CLAAS 7000 and 8000 Series

The sensitivity adjustment controls the distance the cutterbar must travel up or down before the auto header height control (AHHC) reacts and raises or lowers the feeder house. When the sensitivity is set to maximum, only small changes in ground height are needed to cause the system to raise or lower the feeder house. When the sensitivity is set to minimum, large changes in the ground height are needed to cause the system to raise or lower the feeder house.

DANGER

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

NOTE:

Changes may have been made to the combine controls or the display since this document was published. Refer to the combine operator's manual for the most up-to-date information.

1. From the main page, select FRONT ATTACHMENT (A).



Figure 7.204: CEBIS Main Page

SETTING UP AUTO HEADER HEIGHT CONTROL

- From the drop down list, select FRONT ATTACHMENT PARAMETERS (A).

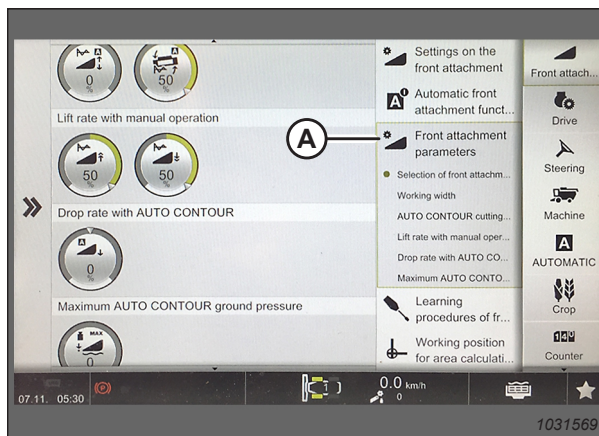


Figure 7.205: Front Attachment Parameters Page

- Scroll through the list and select DROP RATE WITH AUTO CONTOUR icon (A).
- Adjust the drop rate by sliding adjuster arrow (B) up or down.
- Select check mark (C) to confirm the settings.



Figure 7.206: Drop Rate with Auto Contour Page

Adjusting Auto Reel Speed – CLAAS 7000 and 8000 Series

The preset reel speed can be set when the automatic header functions are activated.

DANGER

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

NOTE:

Changes may have been made to the combine controls or the display since this document was published. Refer to the combine operator's manual for the most up-to-date information.

SETTING UP AUTO HEADER HEIGHT CONTROL

1. From the main page, select FRONT ATTACHMENT (A).



Figure 7.207: CEBIS Main Page

2. From the list, select SETTINGS ON FRONT ATTACHMENT (A).
3. Select REEL TARGET VALUES (B).
4. Select REEL SPEED ADJUST icon (C).

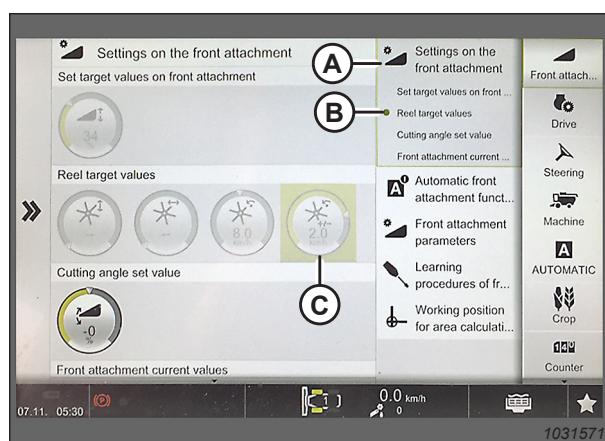


Figure 7.208: Settings on Front Attachment Page

5. Adjust the reel speed target value by sliding adjuster arrow (A) up or down.
6. Select check mark (B) to save the setting.

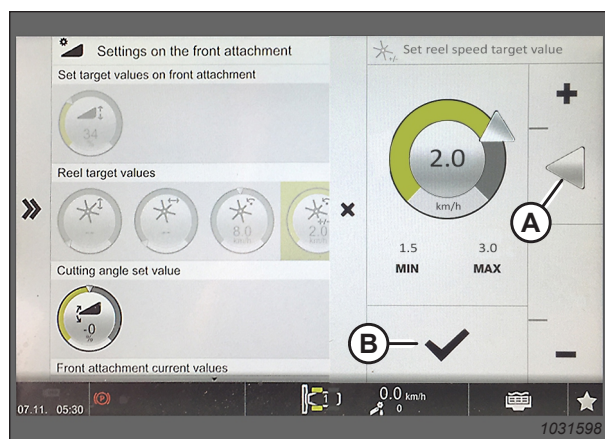


Figure 7.209: Reel Speed Target Value Page

SETTING UP AUTO HEADER HEIGHT CONTROL

Calibrating Reel Height Sensor – CLAAS 7000 and 8000 Series

The auto header height control (AHC) sensor output must be calibrated for each combine, or the AHC feature will not work properly.

DANGER

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

NOTE:

Changes may have been made to the combine controls or the display since this document was published. Refer to the combine operator's manual for the most up-to-date information.

1. Position the header 15–25 cm (6–10 in.) off the ground.

NOTE:

Do **NOT** turn off the engine. The combine has to be at full idle for the sensors to calibrate properly.

2. From the main page, select FRONT ATTACHMENT (A).



Figure 7.210: CEBIS Main Page

3. Select LEARNING PROCEDURES FOR FRONT ATTACHMENT (A).
4. Select LEARNING REEL HEIGHT (B).

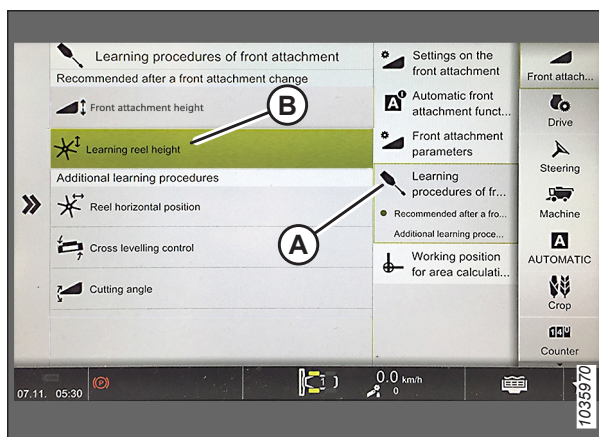


Figure 7.211: Front Attachment Page

SETTING UP AUTO HEADER HEIGHT CONTROL

5. Follow the prompts that appear in DESCRIPTION and NOTES fields (A).

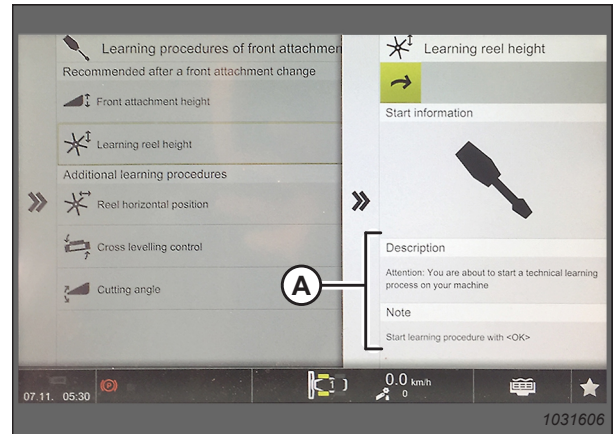


Figure 7.212: Learning Reel Height Page

6. When prompted, select OK button (A) to start the learning procedure.



Figure 7.213: Operator Controls

7.1.11 Gleaner R65/R66/R75/R76 and S Series Combines

To make your header's auto header height control (AHHC) system compatible with Gleaner R65/R66/R75/R76 and S series combines, you must set your combine's header configuration options for the particular model of header, configure the reel speed settings, set up the AHHC controls, and calibrate the AHHC system to ensure that it is working correctly.

Checking Voltage Range from the Combine Cab – Gleaner R65/R66/R75/R76 and Pre-2016 S Series

The auto header height control sensor needs to operate in a specific voltage range in order to work properly.

NOTE:

Changes may have been made to the combine controls or the display since this document was published. Refer to the combine operator's manual for the most up-to-date information.

SETTING UP AUTO HEADER HEIGHT CONTROL

1. Position the header 150 mm (6 in.) above the ground.
2. Unlock the float.
3. Check that the float lock linkage is on the down stops (washer [A] cannot be moved) at both locations.

NOTE:

If the header is not on the down stops during the next two steps, the voltage may go out of range during operation causing a malfunction of the auto header height control (AHHC) system.

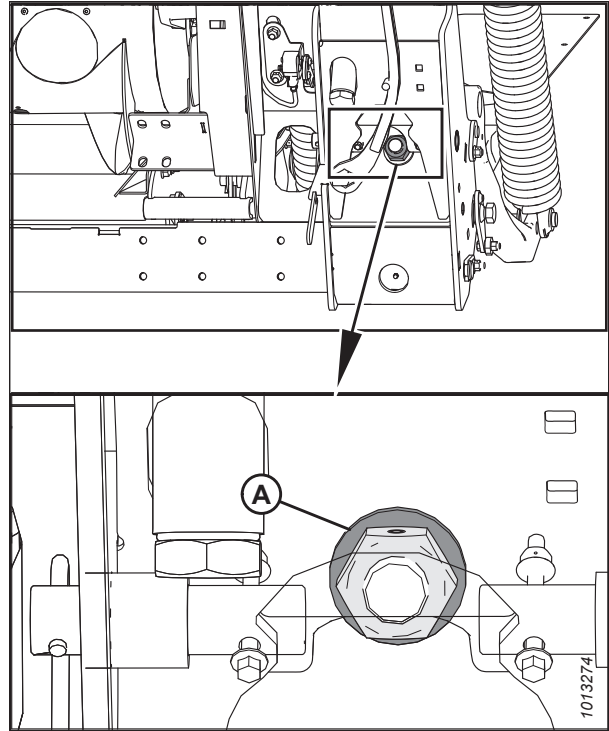


Figure 7.214: Float Lock

4. If necessary, adjust cable take-up bracket (B) until pointer (A) on the float indicator is on 0.

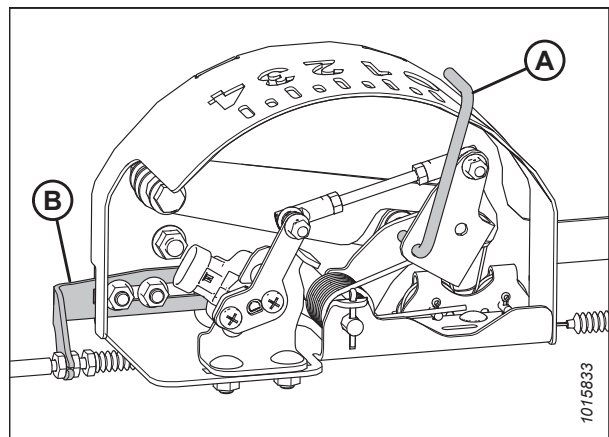


Figure 7.215: Float Indicator Box

SETTING UP AUTO HEADER HEIGHT CONTROL

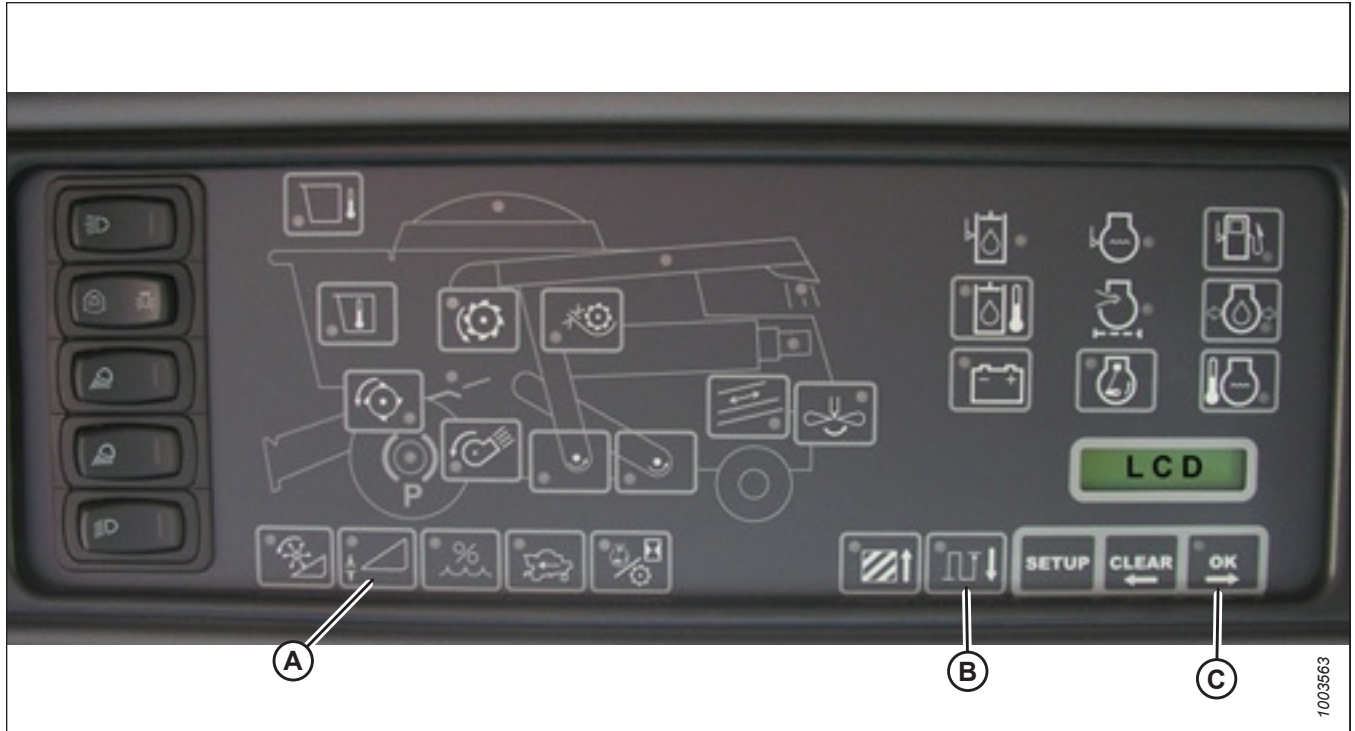


Figure 7.216: Combine Heads-Up Display

5. Ensure the header float is unlocked.
6. Press and hold button (A) on the heads-up display for 3 seconds to enter diagnostic mode.
7. Scroll down using button (B) until LEFT is displayed on the LCD screen.
8. Press OK button (C). The number indicated on the LCD screen is the voltage reading from the sensor of the auto header height control (AHHC). Raise and lower the header to see the full range of the voltage readings.

Engaging Auto Header Height Control – Gleaner R65/R66/R75/R76 and Pre-2016 S Series

Engage the auto header height control (AHHC) before adjusting it for height and sensitivity.

NOTE:

Changes may have been made to the combine controls or the display since this document was published. Refer to the combine operator's manual for the most up-to-date information.

The following system components are required in order for the auto header height control (AHHC) to work:

- Main module and header driver module mounted in card box in fuse panel (FP) module.
- Multifunction control handle operator inputs.
- Operator inputs mounted in the control console (CC) module panel.
- Electrohydraulic header lift control valve.

SETTING UP AUTO HEADER HEIGHT CONTROL



Figure 7.217: Combine Auto Header Height Controls

1. Press AUTO MODE button (A) until AHHC LED light (B) begins flashing. If the RTC light is flashing, press AUTO MODE button (A) again until it switches to the AHHC.

WARNING

Check to be sure all bystanders have cleared the area.

2. Briefly press button (A) on the control handle. The AHHC light should change from flashing to solid. The header should drop to the ground. The AHHC is now engaged and can be adjusted for height and sensitivity.
3. Use the controls to adjust the height and sensitivity to the constant changing ground conditions such as shallow gullies and field drainage trenches.

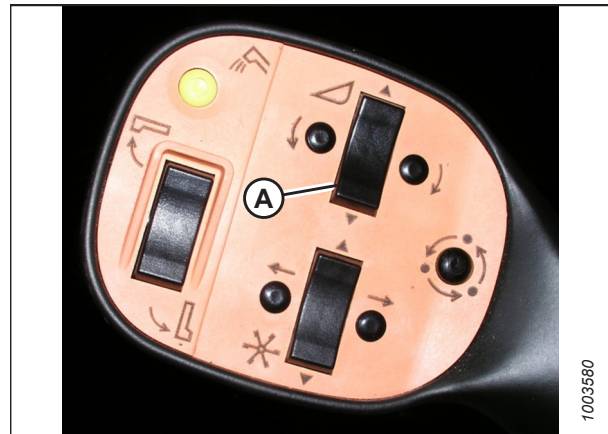


Figure 7.218: Control Handle

Calibrating Auto Header Height Control – Gleaner R65/R66/R75/R76 and Pre-2016 S Series

The auto header height control (AHHC) sensor output must be calibrated for each combine, or the AHHC feature will not work properly.

NOTE:

Changes may have been made to the combine controls or the display since this document was published. Refer to the combine operator's manual for the most up-to-date information.

SETTING UP AUTO HEADER HEIGHT CONTROL

NOTE:

If the header float is set too light, it can prevent the calibration of the AHHC. You may need to set the float heavier for calibration procedure so the header does not separate from the float module.



Figure 7.219: Combine Auto Header Height Controls

A - AUTO MODE Button
D - Raise Header Light
G - CAL2 Button

B - AHHC Light
E - Lower Header Light

C - CAL1 Button
F - AUTO Mode

NOTE:

For the best performance of the auto header height control (AHHC) system, perform the ground calibration with the center-link set to **D**. When calibration is complete, adjust the center-link back to the desired header angle. For instructions, refer to the header operator's manual.

NOTE:

Calibration should be done on flat, level ground without the header engaged. The header height and header tilt functions must not be in auto or standby modes. The engine rpm must be above 2000 rpm. The header tilt option on 2004 and earlier model combines does not work with MacDon headers. This system will have to be removed and disabled in order to calibrate the AHHC. For instructions, refer to the combine operator's manual.

1. Ensure the center-link is set to **D**.
2. Press AUTO MODE button (**A**) until AHHC light (**B**) lights up.
3. Press and hold CAL1 button (**C**) until you see the following lights flash: raise header (**D**), lower header (**E**), tilt auto mode (**F**), and AHHC (**B**).
4. Fully lower the header, and continue to hold the HEADER LOWER button for 5–8 seconds to ensure the float module has separated from the header.
5. Press CAL2 button (**G**) until lower header light (**E**) stops flashing, and release it when raise header light (**D**) begins flashing.
6. Raise the header to its maximum height, and ensure the header is resting on the down-stop pads.

SETTING UP AUTO HEADER HEIGHT CONTROL

7. Press CAL2 button (G) until raise header light (D) turns off.

NOTE:

The following steps are applicable only to 2005 and newer combines with the Smartrac feeder house.

8. Wait for the HEADER TILT LEFT light (not shown) to start flashing, and then tilt the header to the maximum left position.
9. Press CAL2 button (G) until the HEADER TILT LEFT light (not shown) stops flashing, and release the button when the HEADER TILT RIGHT light (not shown) begins flashing.
10. Tilt the header to the maximum right position.
11. Press CAL2 button (G) until all of the following lights flash: raise header (D), lower header (E), height auto mode (A), right header and left header (not shown), and tilt auto mode (F).
12. Center the header.
13. Press CAL1 button (C) to exit calibration and save all values. All lights should stop flashing.

NOTE:

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

Turning off Accumulator – Gleaner R65/R66/R75/R76 and Pre-2016 S Series

The accumulator being on will affect the combine's height adjustment reaction time, which can affect the auto header height control (AHHC) system's performance.

Refer to the combine operator's manual for the procedure for turning the accumulator off and on. For best performance, turn the feeder house accumulator off.

NOTE:

The accumulator is located in front of the front left axle beam.



Figure 7.220: Combine Accumulator ON/OFF Switch

A - Accumulator Lever (Off Position)

SETTING UP AUTO HEADER HEIGHT CONTROL

Adjusting Header Raise/Lower Rate – Gleaner R65/R66/R75/R76 and Pre-2016 S Series

The auto header height control (AHHC) system's stability is affected by hydraulic flow rates. Adjust the header raise/lower rate to ensure the stability of the auto header height control system.

Ensure that header raise restrictor (A) and header lower restrictor (B) in the hydraulic manifold are adjusted so that it takes approximately 6 seconds to raise the header from ground level to maximum height (that is, to the point at which the hydraulic cylinders are fully extended), and approximately 6 seconds to lower the header from maximum height to ground level.

If there is excessive header movement (for example, hunting) when the header is on the ground, adjust the lower rate so that it takes 7 or 8 seconds for the header to drop down to ground level.

NOTE:

Make this adjustment with the hydraulic system at its normal operating temperature (54.4°C [130°F]) and the engine running at full throttle.

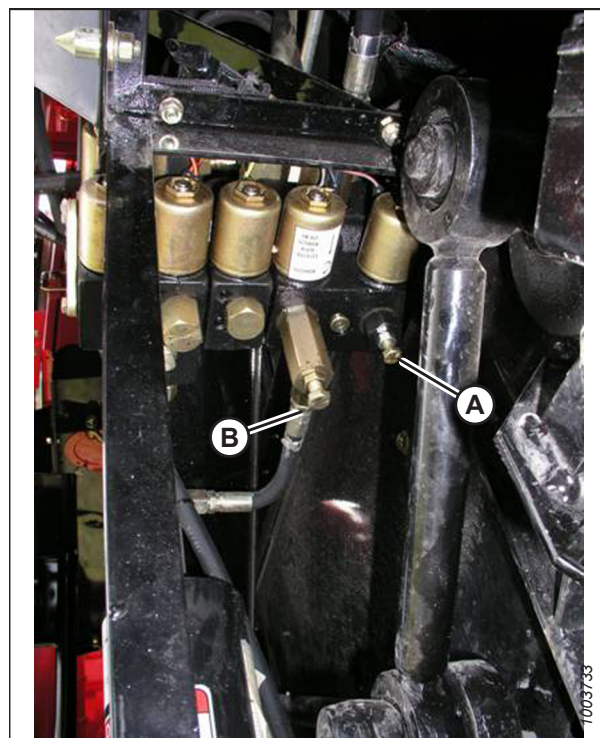


Figure 7.221: Header Raise and Lower Adjustable Restrictor's

Adjusting Ground Pressure – Gleaner R65/R66/R75/R76 and Pre-2016 S Series

Adjust the header ground pressure setting so that the pressure is as light as possible, but sufficiently heavy that the header does not bounce while in operation.

NOTE:

Changes may have been made to the combine controls or the display since this document was published. Refer to the combine operator's manual for the most up-to-date information.

1. Ensure indicator (A) is at position 0 (B) with the header is 254–356 mm (10–14 in.) off the ground. If not, the float sensor output voltage should be checked. For instructions, refer to [Checking Voltage Range from the Combine Cab – Gleaner R65/R66/R75/R76 and Pre-2016 S Series, page 277](#).

NOTE:

When the header is on the ground, the indicator should be at position 1 (C) for low ground pressure, and at position 4 (D) for high ground pressure. Crop and soil conditions determine the amount of float to use. The ideal setting is as light as possible without header bouncing or missing crop. Operating with heavy settings prematurely wears the cutterbar wearplates.

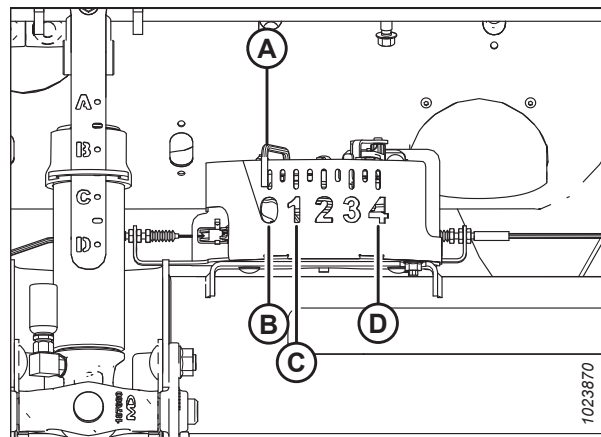


Figure 7.222: Float Indicator Box

SETTING UP AUTO HEADER HEIGHT CONTROL

2. Ensure the header is in auto header height control (AHHC) mode. This is indicated by AUTO MODE LED light (A) displaying a continuous, solid light.
3. The header will lower to the height (ground pressure) corresponding to the position selected with height control knob (B). Turn the knob counterclockwise for minimum ground pressure, and clockwise for maximum ground pressure.

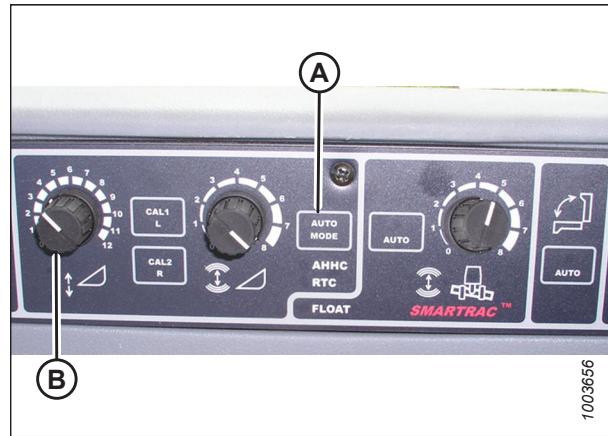


Figure 7.223: AHHC Console

Adjusting Auto Header Height Control Sensitivity – Gleaner R65/R66/R75/R76 and Pre-2016 S Series

Auto header height control (AHHC) sensitivity refers to the distance that the cutterbar must travel up or down before the AHHC reacts and raises or lowers the feeder house.

NOTE:

Changes may have been made to the combine controls or the display since this document was published. Refer to the combine operator's manual for the most up-to-date information.



Figure 7.224: Auto Header Height Control Console

SENSITIVITY ADJUSTMENT dial (A) controls the distance the cutterbar must travel up or down before the auto header height control (AHHC) reacts and raises or lowers the feeder house.

When SENSITIVITY ADJUSTMENT dial (A) is set to maximum (turned completely clockwise), only small changes in ground height are needed to cause the feeder house to raise or lower. In this position, the cutterbar moves up and down

SETTING UP AUTO HEADER HEIGHT CONTROL

approximately 19 mm (3/4 in.) before the control module signals the hydraulic control valve to raise or lower the header frame.

When SENSITIVITY ADJUSTMENT dial (A) is set to minimum (turned completely counterclockwise), large changes in ground height are needed to cause the feeder house to raise or lower. In this position, the cutterbar moves up and down approximately 51 mm (2 in.) before the control module signals the hydraulic control valve to raise or lower the header frame.

The HEADER SENSE LINE input also changes the range of the sensitivity. When connected to a draper, the counterclockwise position (least sensitive) allows for approximately 102 mm (4 in.) of vertical travel before correction is made.

Troubleshooting Alarms and Diagnostic Faults – Gleaner R65/R66/R75/R76 and Pre-2016 S Series

Refer to this section to learn the meaning of the alarms and faults related to the auto header height control (AHHC) system. Alarms and diagnostic faults are displayed on the combine's electronic instrument panel (EIP).

NOTE:

Changes may have been made to the combine controls or the display since this document was published. Refer to the combine operator's manual for the most up-to-date information.

Display type:

Displayed on tachometer (A) as XX or XXX.



Figure 7.225: Tachometer

SETTING UP AUTO HEADER HEIGHT CONTROL

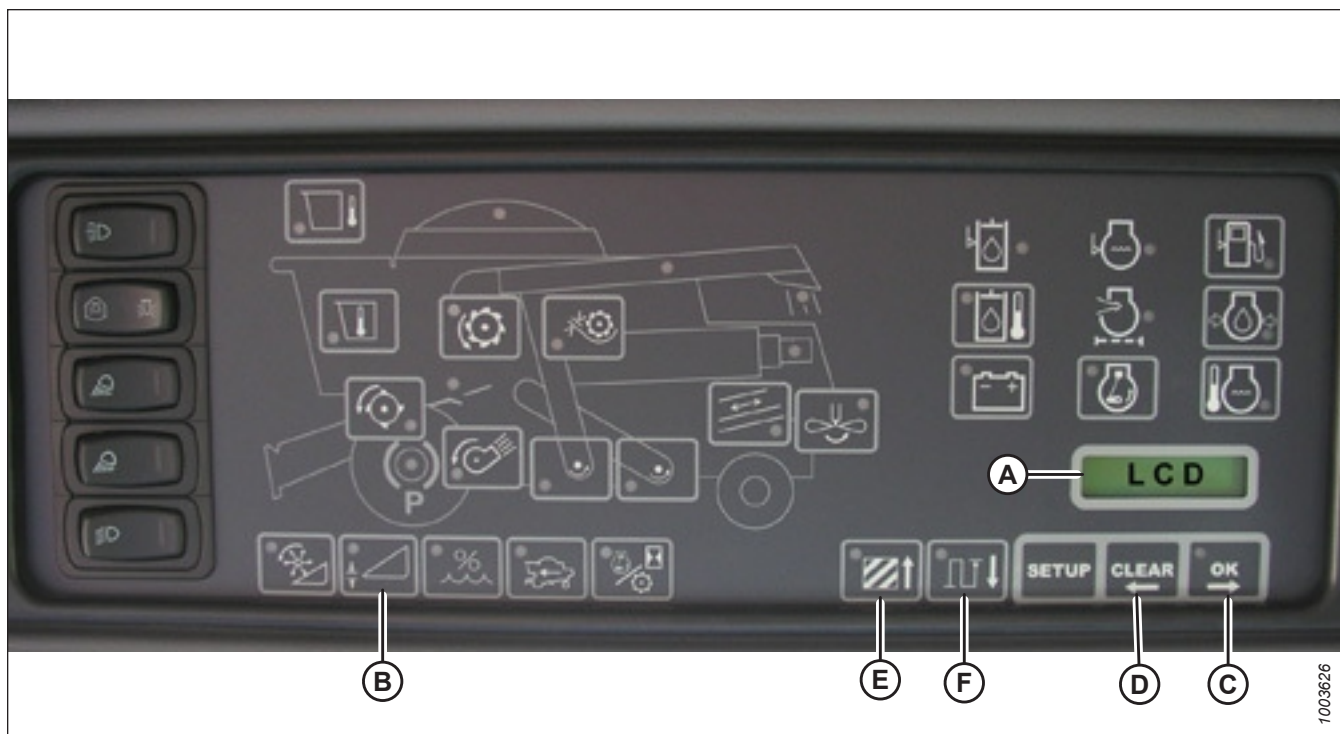


Figure 7.226: Combine Electronic Instrument Panel (EIP)

NOTE:

Displayed on LCD (A) as XX in. or XXX cm.

Alarm conditions:

If an error message is received from the fuse panel, an alarm sounds. The alarm buzzer sounds five times every 10 seconds. The LCD (A) on the electronic instrument panel (EIP) indicates the header system in error as HDR CTRL followed by HGT ERR for height, and HDR CTRL followed by TILT ERR for tilt. The header height LED flashes yellow two times every second.

When an alarm condition occurs, a green LED flashes (green, yellow, or red depending on the input). In addition, a message is displayed on the LCD to identify the nature of the alarm. For example, HYD TEMP, OPEN, SHRT will be flashed alternately.

Diagnostic fault failures:

Refer to Figure 7.226, page 286.

Pressing header height switch (B) for a minimum of 5 seconds will put the EIP in header diagnostic mode. The LCD (shown on previous screen) will display the message HDR DIAG when the EIP has entered header diagnostic mode.

In this mode, after 3 seconds, header fault parameter labels are displayed on the EIP LCD. All the information displayed is read-only.

OK (C) and CLEAR (D) buttons allow you to scroll through the list of parameters. If there are no active fault codes, the EIP LCD will display NO CODE.

When a parameter is displayed, its label is displayed for 3 seconds, after which its value is automatically displayed.

Pressing OK button (C) while the value is displayed will advance to the next parameter and display its label.

When a parameter label is displayed and OK button (C) is pressed before 3 seconds, the parameter's value will be displayed.

Pressing AREA (E) will cycle through the options. When LEFT is displayed on the LCD, press OK button (C), and the auto header height control (AHHC) voltage will be shown on the display.

Press DIST button (F) to cycle back through the table.

SETTING UP AUTO HEADER HEIGHT CONTROL

Press CLEAR button (D) to exit header diagnostics and return to normal mode.

7.1.12 Gleaner S9 Series Combines

To make your header's auto header height control (AHHC) system compatible with Gleaner S9 series combines, you must set your combine's header configuration options for the particular model of header, configure the reel speed settings, set up the AHHC controls, and calibrate the AHHC system to ensure that it is working correctly.

Setting up Header – Gleaner S9 Series

To set up a header to work with the auto header height control (AHHC) system, you will need to access the HEADER SETTINGS menu using the Tyton terminal.

NOTE:

Changes may have been made to the combine controls or the display since this document was published. Refer to the combine operator's manual for the most up-to-date information.

AGCO Tyton terminal (A) is used to set up and manage a MacDon draper header on a Gleaner S9 Series combine. Use the touch screen display to select the desired item on the screen.



Figure 7.227: Gleaner S9

A - Tyton Terminal B - Control Handle
C - Throttle D - Header Control Cluster

1. On the top right quadrant of the home page, touch COMBINE icon (A). The COMBINE MAIN MENU opens.



Figure 7.228: Combine Icon on Home Page

SETTING UP AUTO HEADER HEIGHT CONTROL

2. On the COMBINE MAIN MENU, touch HEADER SETTINGS (A). The HEADER SETTINGS page opens.

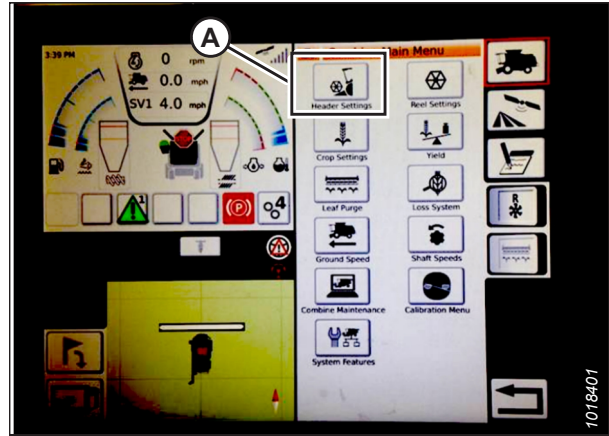


Figure 7.229: Header Settings in Combine Main Menu

SETTING UP AUTO HEADER HEIGHT CONTROL

3. Touch **HEADER CONFIGURATION** field (A). A dialog box showing predefined headers opens.
 - If your MacDon header is already set up, it appears on the header list. Touch MacDon header title (B) to highlight the selection in blue, and then touch green check mark (E) to continue.
 - If only default header (D) is shown, touch ABC button (C), and use the on-screen keyboard to enter the MacDon header information. When complete, select one of the following options to return to the **HEADER SETTINGS** page:
 - Green check mark (E) saves the settings
 - Garbage can icon (F) deletes the highlighted header from the list
 - Red X (G) cancels the change(s)

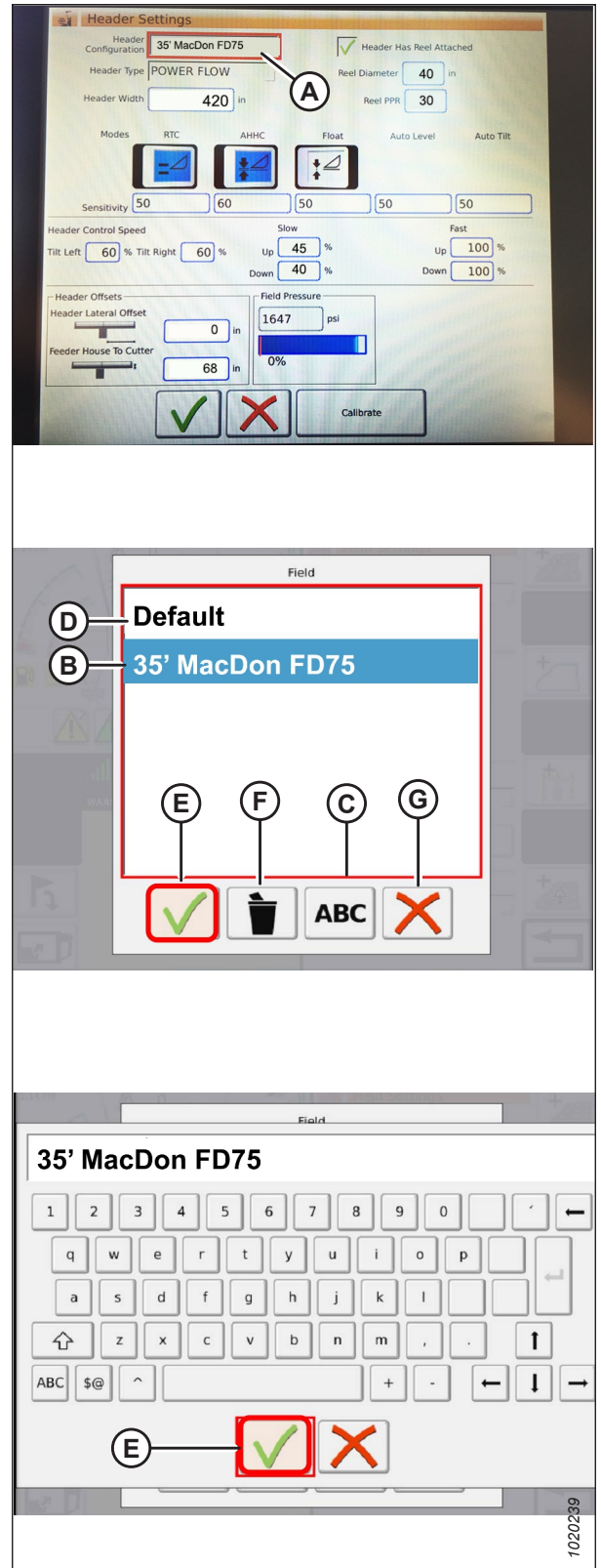


Figure 7.230: Header Configuration Menu on Header Settings Page

SETTING UP AUTO HEADER HEIGHT CONTROL

- To specify the type of header installed on the machine, touch HEADER TYPE field (A).

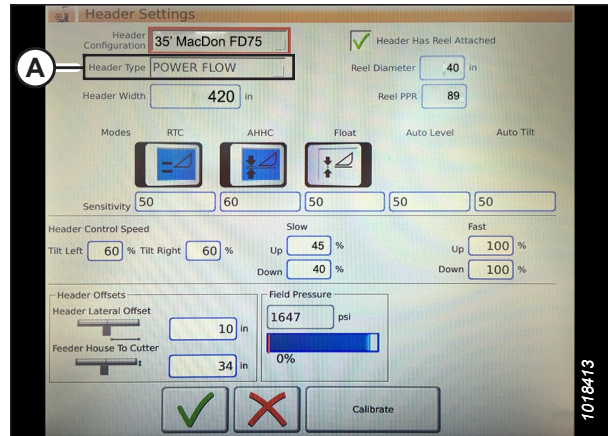


Figure 7.231: Header Settings

- A list of predefined header types appears.
 - For MacDon D1 Series Draper and FD1 Series FlexDraper® headers, touch POWER FLOW (A)
 - Touch green check mark (B) to save the selection and continue

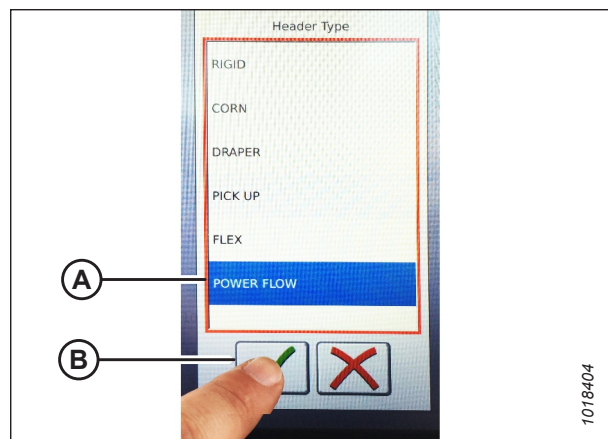


Figure 7.232: Header Type

- Make sure that HEADER HAS REEL ATTACHED check box (A) is checked.

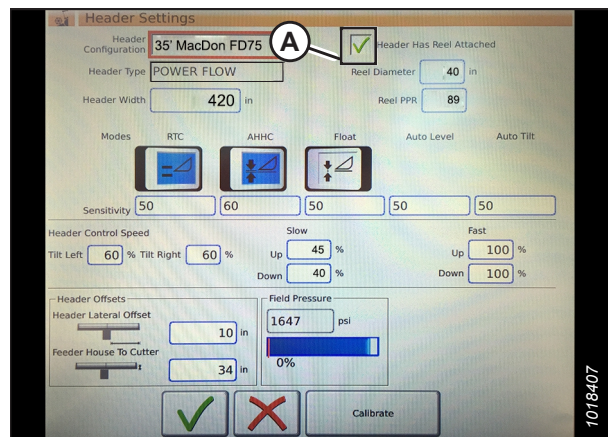


Figure 7.233: Header Settings

SETTING UP AUTO HEADER HEIGHT CONTROL

7. Touch REEL DIAMETER field (A) and a numeric keypad displays. Enter **40** for a MacDon reel.
8. Touch REEL PPR (Pulses Per Revolution) field (B) and enter **30** as the value for your MacDon header.

NOTE:

PPR is determined by the number of teeth on the reel speed sprocket.

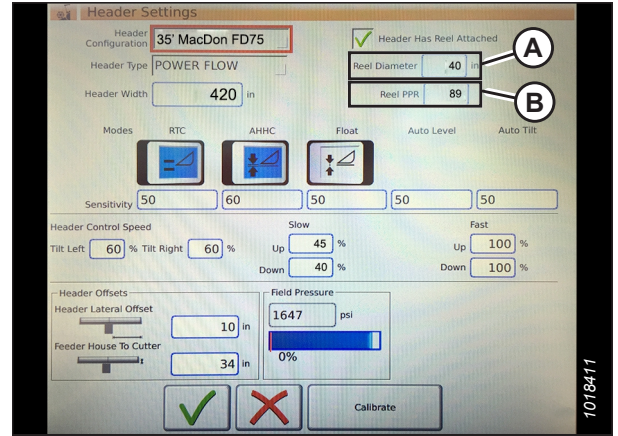


Figure 7.234: Header Settings

9. Touch green check mark (B) at the bottom of numeric keypad, or the red X to cancel.

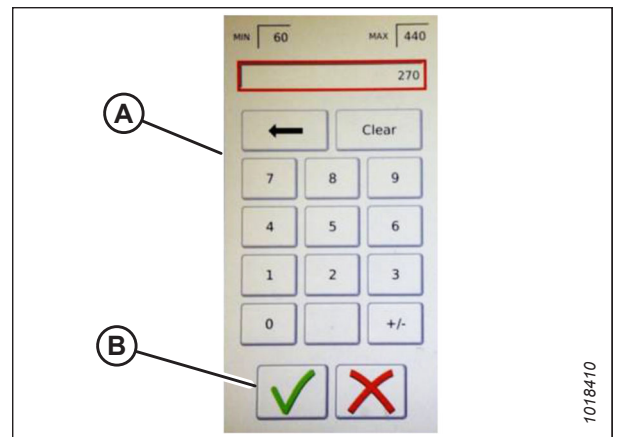


Figure 7.235: Numeric Keypad

10. When complete, touch green check mark (A) at the bottom of the HEADER SETTINGS page.

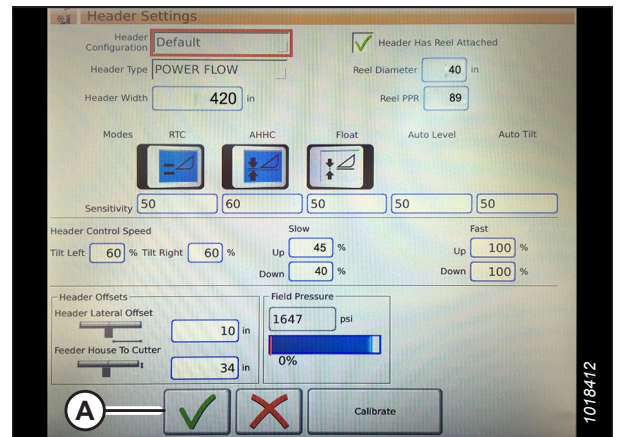


Figure 7.236: Header Settings Page

SETTING UP AUTO HEADER HEIGHT CONTROL

Setting Minimum Reel Speed and Calibrating Reel – Gleaner S9 Series

To set up the header's minimum reel speed to work with the auto header height control (AHHC) system, and to calibrate the reel, the REEL SETTINGS menu will need to be accessed.

DANGER

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

NOTE:

Changes may have been made to the combine controls or the display since this document was published. Refer to the combine operator's manual for the most up-to-date information.

1. From the COMBINE MAIN MENU, touch REEL SETTINGS (A) to open the REEL SETTINGS page.



Figure 7.237: Reel Settings on Combine Main Menu

2. To set the minimum reel speed, touch SPEED MINIMUM FIELD (B). The on-screen keyboard appears. Enter the desired value. Touch the green check mark to accept the new value, or the red X to cancel. The reel speed is shown in mph and rpm.

NOTE:

At the bottom of the REEL SETTINGS page, the reel diameter and reel pulses per revolution (PPR) are displayed. These values have already been set in the HEADER SETTINGS page.

3. The reel speed is calibrated on the REEL SETTINGS page by touching CALIBRATE button (A) in the top right of the page.



Figure 7.238: Reel Settings Calibration

SETTING UP AUTO HEADER HEIGHT CONTROL

4. The CALIBRATION WIZARD opens and displays a hazard warning.
5. Make sure to meet all the conditions listed in the CALIBRATION WIZARD warning. Press green check mark (A) to accept and start the reel calibration. Pressing red X (B) will cancel the calibration procedure.

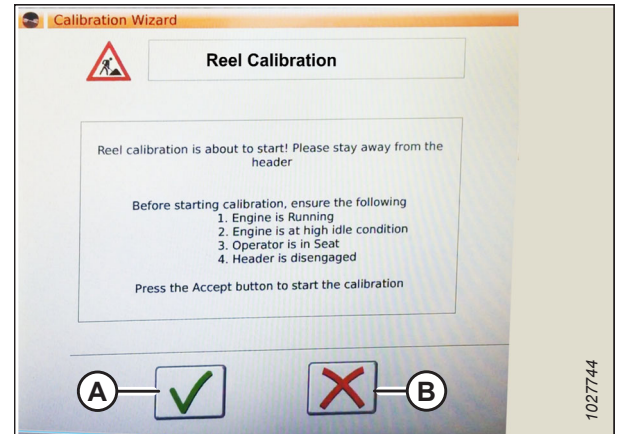


Figure 7.239: Calibration Wizard

6. A message appears in the CALIBRATION WIZARD stating that the reel calibration has started. The reel will begin turning slowly and the reel speed will increase to high speed. A progress bar is provided. If necessary, touch the red X to cancel. Otherwise, wait for the message that reel calibration has completed successfully. Touch the green check mark to save the calibrated settings.

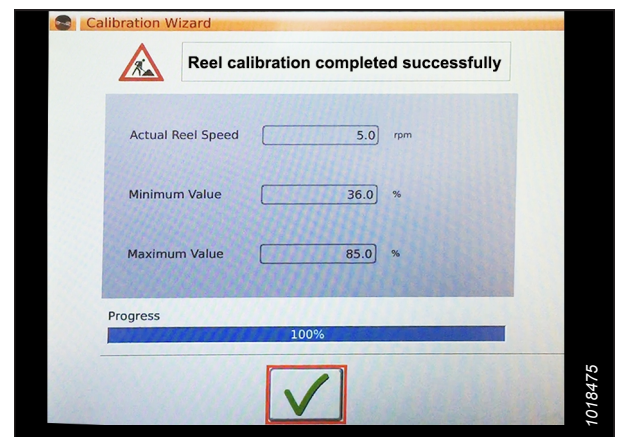


Figure 7.240: Calibration Progress

Setting up Automatic Header Controls – Gleaner S9 Series

Automatic header functions are configured on the HEADER SETTINGS page.

NOTE:

Changes may have been made to the combine controls or the display since this document was published. Refer to the combine operator's manual for the most up-to-date information.

SETTING UP AUTO HEADER HEIGHT CONTROL

1. **Automatic control functions:** There are toggle (OFF/ON) switches on the HEADER SETTINGS page for the automatic control functions. For MacDon headers, ensure the following two functions are enabled as shown:

- RTC (return to cut) (A)
- AHHC (automatic header height control) (B)

All other switches are disabled (not highlighted).

2. **Sensitivity:** Setting (C) controls how responsive a control (RTC or AHHC) is to a given change in sensor feedback. The setting fields are located directly below the toggle switches. To enter a new sensitivity setting, touch the setting field below the specific toggle switch, and enter the new value in the on-screen keyboard.

- Increase the sensitivity if the combine does not change the feeder position quickly enough when in Auto Mode.
- Decrease the sensitivity if the combine hunts for a position in Auto Mode.

NOTE:

The sensitivity starting points for MacDon headers are as follows:

- 50 for RTC (A)
- 60 for AHHC (B)

3. **Header speed:** HEADER CONTROL SPEED area (A) on the HEADER SETTINGS page is used to adjust the following speeds:

- Tilt left and right is the lateral tilt of the combine faceplate
- Header up and down (slow and fast speeds) is a two-stage button with slow speed on the first detent and fast on the second

NOTE:

The control speed starting points for MacDon headers are as follows:

- Slow: 45 up / 40 down
- Fast: 100 up / 100 down

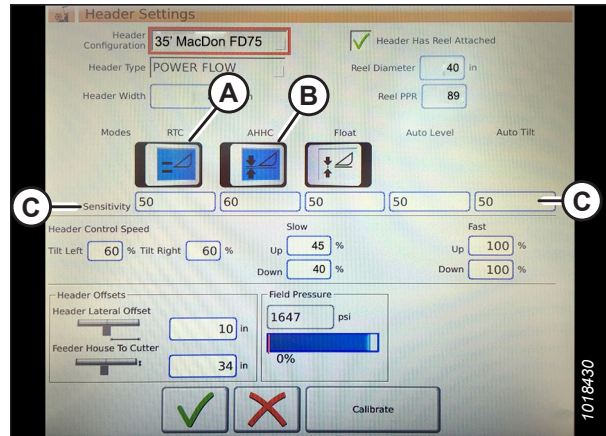


Figure 7.241: Automatic Controls and Sensitivity Settings

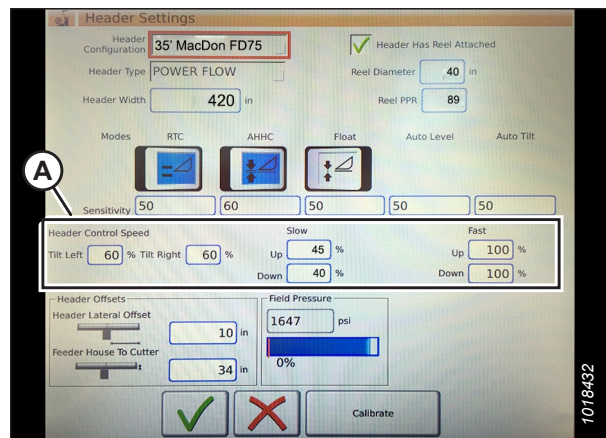


Figure 7.242: Header Speed Control Settings

SETTING UP AUTO HEADER HEIGHT CONTROL

4. **Header offsets (A):** Offset distances are important for yield mapping. There are two adjustable dimensions on the HEADER SETTINGS page:

- Header Lateral Offset: the distance between the centerline of the header and the centerline of the machine. Set to **0** for a MacDon header.
- Feeder House to Cutter: the distance from the machine interface to the cutterbar. Set to **68** for a MacDon header.

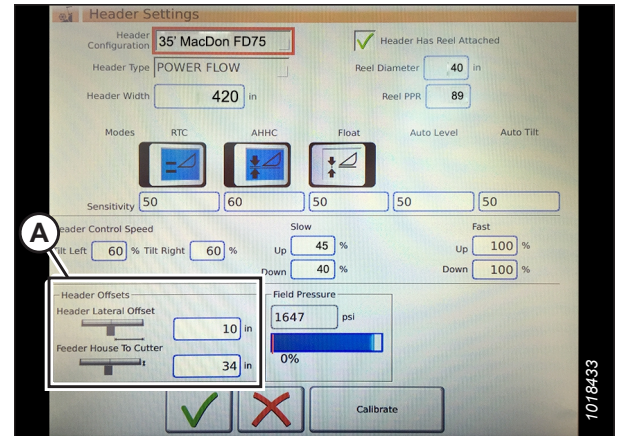


Figure 7.243: Header Offset Settings

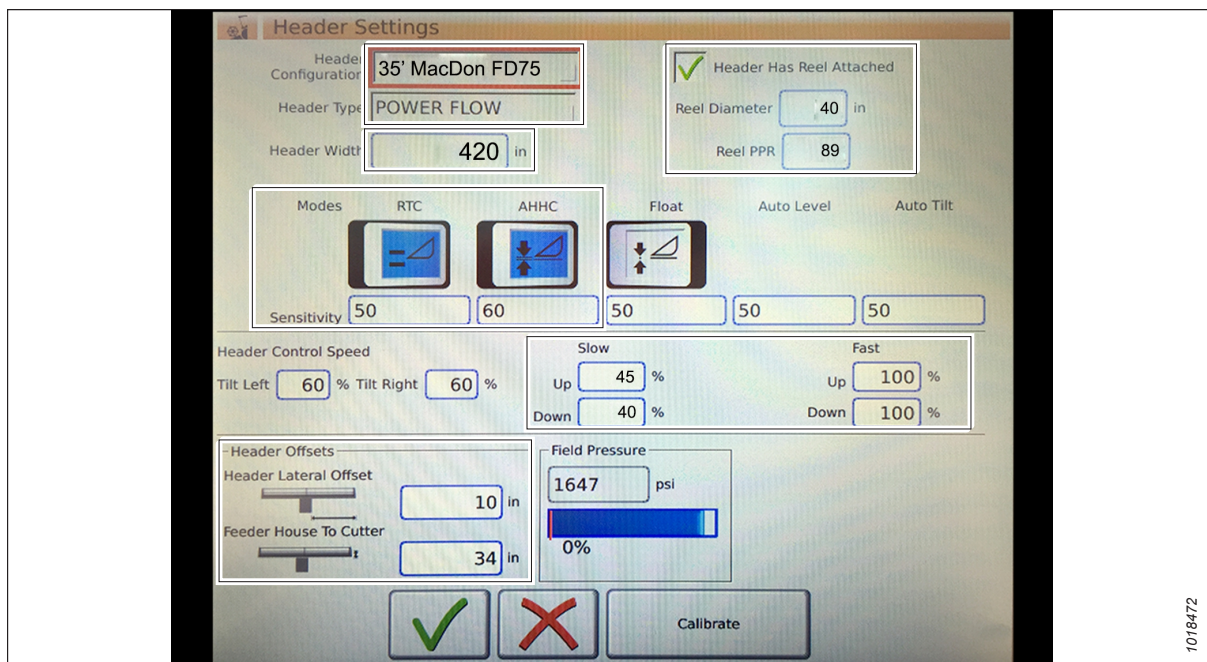


Figure 7.244: MacDon Header Settings Inputs

Calibrating Auto Header Height Control – Gleaner S9 Series

The auto header height control (AHHC) sensor output must be calibrated for each combine, or the AHHC feature will not work properly.

⚠ DANGER

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

NOTE:

Changes may have been made to the combine controls or the display since this document was published. Refer to the combine operator's manual for the most up-to-date information.

NOTE:

If the header float is set too light, it can prevent the calibration of the AHHC. You may need to set the float heavier for the calibration procedure so the header does not separate from the float module.

SETTING UP AUTO HEADER HEIGHT CONTROL

NOTE:

For the best performance of the auto header height control (AHHC) system, perform the ground calibration with the center-link set to **D**. When calibration is complete, adjust the center-link back to the desired header angle. For instructions, refer to the header operator's manual.

1. On the COMBINE MAIN MENU, touch HEADER SETTINGS (A).

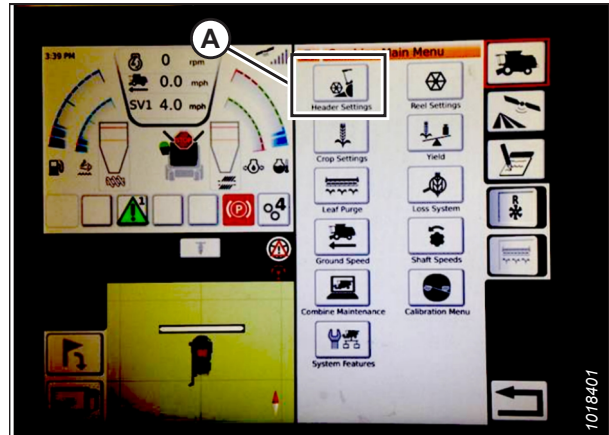


Figure 7.245: Combine Main Menu

2. Touch CALIBRATE (A) at the bottom right of the page. The HEADER CALIBRATION page appears.

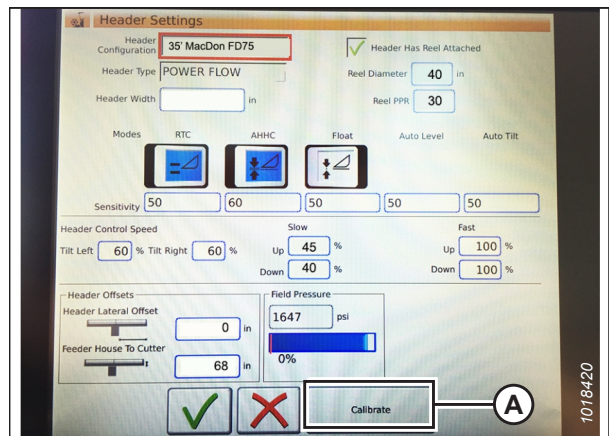


Figure 7.246: Header Settings Page

The right side of the page shows header calibration information (A). The results are shown for a variety of sensors (B):

- Left and right header sensor (voltage) (values will be the same with MacDon headers)
- Header height sensor (mA)
- Tilt position sensor (mA)

The following valid modes are shown with check marks (C) below sensor values (B):

- Return to cut
- Automatic header height control

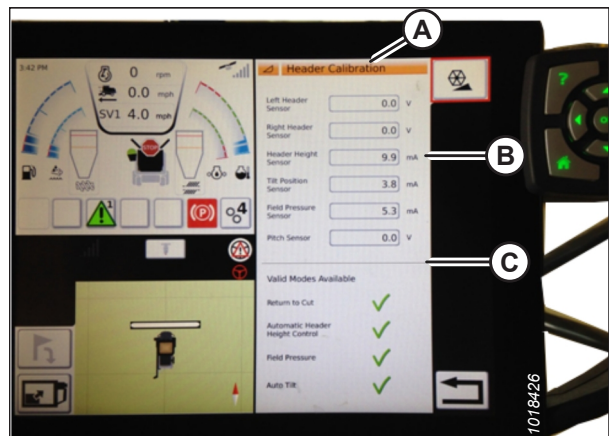


Figure 7.247: Header Calibration Page

SETTING UP AUTO HEADER HEIGHT CONTROL

- On the control handle, touch HEADER DOWN button (A). Sensor values start changing on the HEADER CALIBRATION page as the header lowers.

NOTE:

The header needs to be lowered all the way, and then raised off the ground. The range should be between **0.5 and 4.5 V**. If the value is not in that range, the sensor needs to be adjusted. For instructions, refer to [Adjusting Voltage Limits – One-Sensor System, page 199](#) or [Adjusting Voltage Limits – Two-Sensor System, page 200](#).



Figure 7.248: Header Down Switch

- When the sensor values are stable, touch CALIBRATE icon (A).

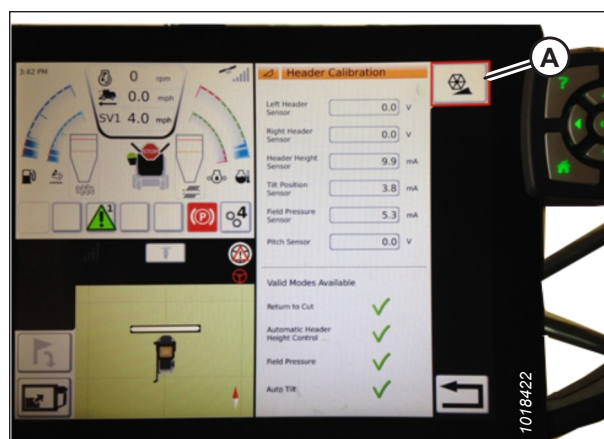


Figure 7.249: Header Calibration

- The hazard warning for HEADER CALIBRATION appears. Make sure that all conditions are met.
- Touch the green check mark at the bottom of the page to start the CALIBRATION WIZARD.

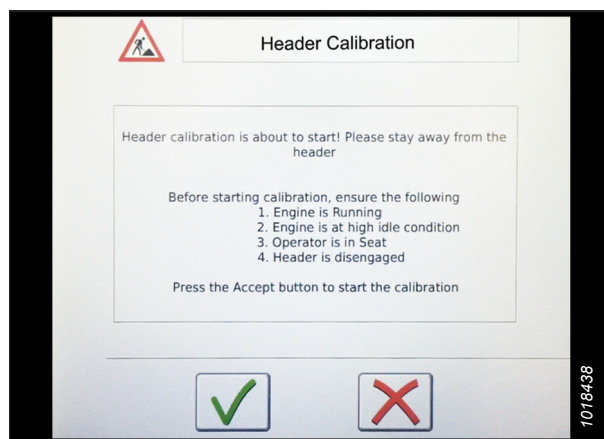


Figure 7.250: Header Calibration Warning

SETTING UP AUTO HEADER HEIGHT CONTROL

A calibration progress bar displays at the bottom of the screen. The process can be stopped at any time by touching the red X. The header moves automatically and erratically during this process.

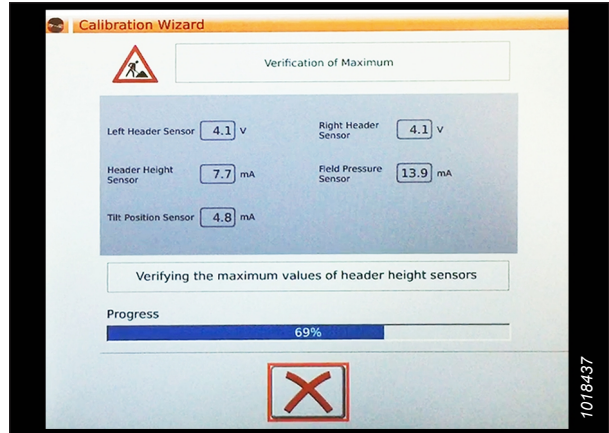


Figure 7.251: Calibration in Progress

- When the calibration is complete, a message displays, and summary information (A) is shown. Green check marks confirm the functions have been calibrated (B). Touch bottom green check mark (C) to save.

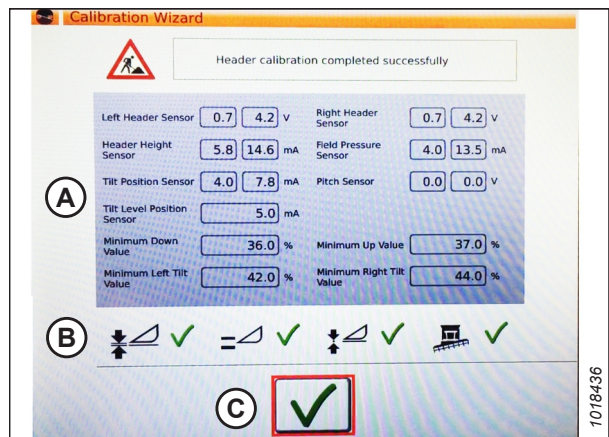


Figure 7.252: Completed Calibration Page

NOTE:

Touch CALIBRATION icon (A) on the COMBINE MAIN MENU page to display the CALIBRATION MENU where you can choose from a variety of calibrations including header and reel calibration.



Figure 7.253: Direct Calibration Menu

SETTING UP AUTO HEADER HEIGHT CONTROL

Operating Auto Header Height Control – Gleaner S9 Series

Once the auto header height control (AHHC) system has been set up, follow these instructions to take advantage of its functions.

NOTE:

Changes may have been made to the combine controls or the display since this document was published. Refer to the combine operator's manual for the most up-to-date information.

The following controls are used to operate the auto header height control (AHHC) functions:

- Tyton terminal (A)
- Control handle (B)
- Throttle (C)
- Header control cluster (D)

Use the combine operator's manual to familiarize yourself with the controls.



Figure 7.254: Gleaner S9 Operator Controls

1. With the header running, set lateral tilt switch (A) to MANUAL.
2. Engage the AHHC by pressing switch (B) upward to the I position.

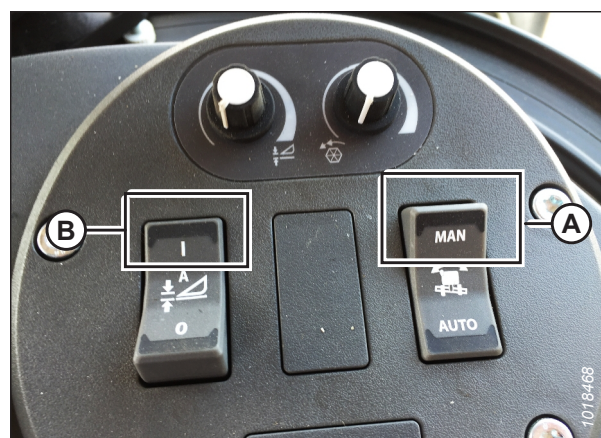


Figure 7.255: Header Control Cluster

3. Press AHHC control switch (A) on the control handle to engage the AHHC. The header moves to the current set point position.



Figure 7.256: AHHC on Control Handle

SETTING UP AUTO HEADER HEIGHT CONTROL

4. Use HEADER HEIGHT SETPOINT control dial (A) as necessary to fine-tune the position.

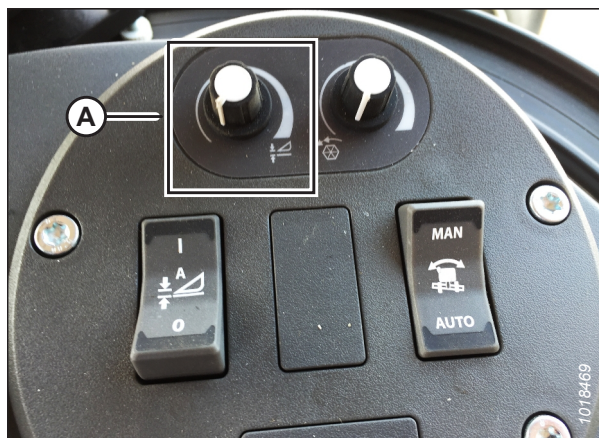


Figure 7.257: Header Control Cluster

Reviewing Header In-Field Settings – Gleaner S9 Series

The auto header height control (AHHC) settings can be reviewed at a glance by pressing the HEADER icon on the Tyton terminal's home page.

NOTE:

Changes may have been made to the combine controls or the display since this document was published. Refer to the combine operator's manual for the most up-to-date information.

1. To view the following header group settings, touch HEADER icon (A) on the right side of the home page:
 - CURRENT POSITION of header (B).
 - SETPOINT cut-off position (C) (indicated by the red line)
 - HEADER symbol (D) – touch to adjust the set point cut-off position using the scroll wheel on the right side of the Tyton terminal.
 - CUT HEIGHT for AHHC (E) – fine-tune with the header height set point control dial on the header control cluster.
 - HEADER WORKING WIDTH (F)
 - HEADER PITCH (G)

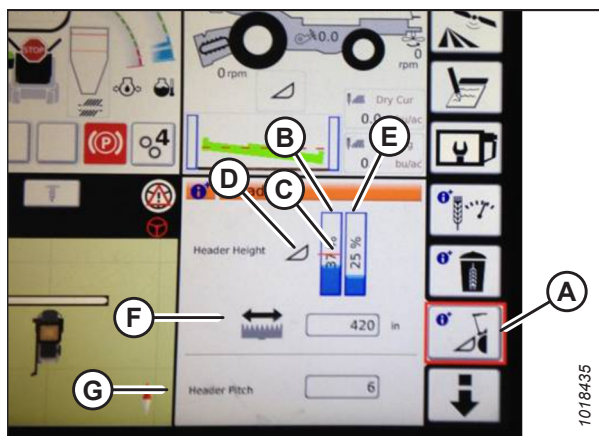


Figure 7.258: Header Groups

SETTING UP AUTO HEADER HEIGHT CONTROL

2. Touching a field opens the on-screen keyboard, so that the values can be adjusted. Enter the new value and touch the green check mark when complete.

NOTE:

Scroll wheel (A) is located on the right side of the Tyton terminal.

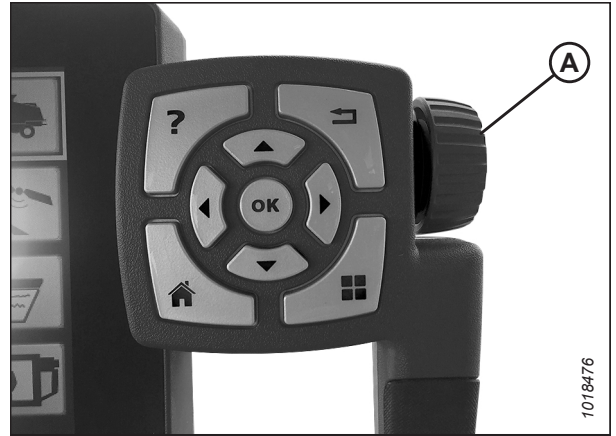


Figure 7.259: Adjustment Wheel on Right Side of Tyton Terminal

NOTE:

HEADER HEIGHT SETPOINT control dial (A) is on the header control cluster.



Figure 7.260: Header Control Cluster

7.1.13 IDEAL™ Series Combines

To make your header's auto header height control (AHHC) system compatible with IDEAL™ Series combines, you must set your combine's header configuration options for the particular model of header, configure the reel speed settings, set up the AHHC controls, and calibrate the AHHC system to ensure that it is working correctly.

Setting up Header – IDEAL™ Series

Set these initial configuration options on your IDEAL™ Series combine when setting up the auto header height control (AHHC) system.

NOTE:

Changes may have been made to the combine controls or the display since this document was published. Refer to the combine operator's manual for the most up-to-date information.

SETTING UP AUTO HEADER HEIGHT CONTROL

Tyton terminal (A) is used to set up and manage a MacDon header on an IDEAL™ Series combine. Use the touch screen display to select the desired item on the page.



Figure 7.261: IDEAL™ Series Operator Station

A - Tyton Terminal B - Control Handle
C - Throttle D - Header Control Cluster

1. On the top right of the home page, touch COMBINE icon (A). The COMBINE MAIN MENU opens.

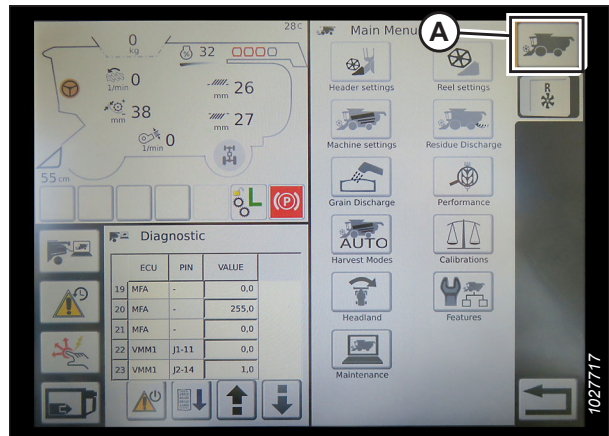


Figure 7.262: Combine Icon on Home Page

2. On the COMBINE MAIN MENU, touch HEADER SETTINGS (A). The HEADER SETTINGS page opens.

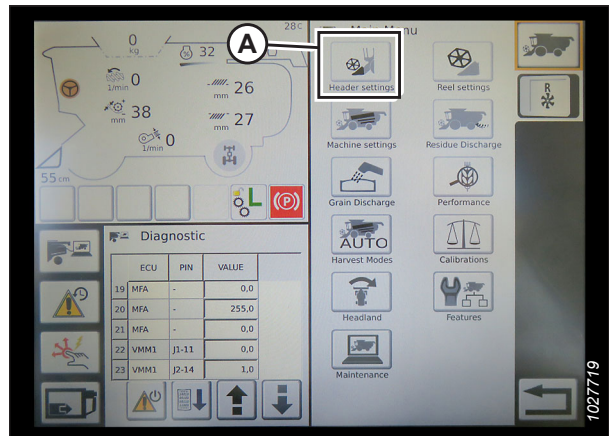


Figure 7.263: Header Settings in Combine Main Menu

SETTING UP AUTO HEADER HEIGHT CONTROL

3. Touch **HEADER CONFIGURATION** field (A). A dialog box showing a list of predefined header configuration profiles opens.
 - If your MacDon header is already set up, it appears on the header list. Touch MacDon header title (B) to highlight the selection in blue, and then touch green check mark (E) to continue.
 - If only default header (D) is shown, touch ABC button (C) and use the on-screen keyboard to enter the MacDon header information. When complete, select one of the following options to return to the **HEADER SETTINGS** page:
 - Green check mark (E) saves the settings
 - Garbage can icon (F) deletes the highlighted header from the list
 - Red X (G) cancels the change(s)

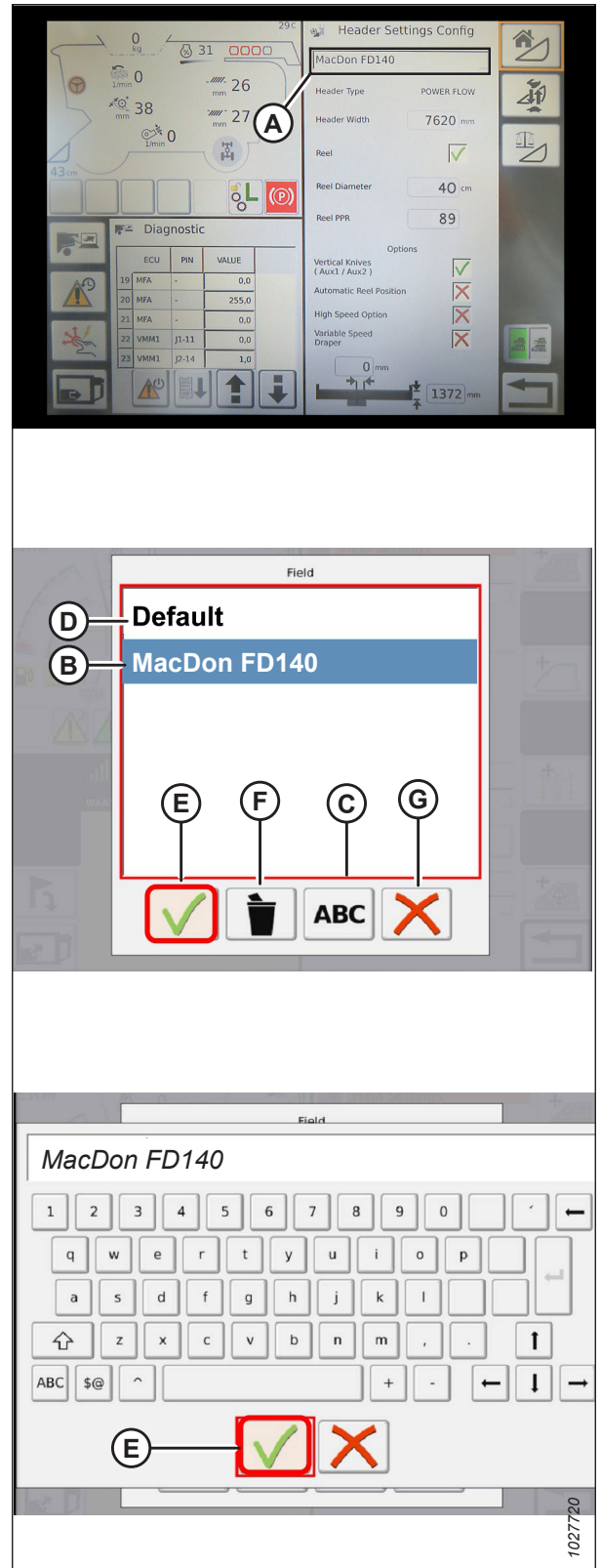


Figure 7.264: Header Configuration Menu on Header Settings Page

SETTING UP AUTO HEADER HEIGHT CONTROL

- To specify the type of header installed on the machine, touch HEADER TYPE field (A).

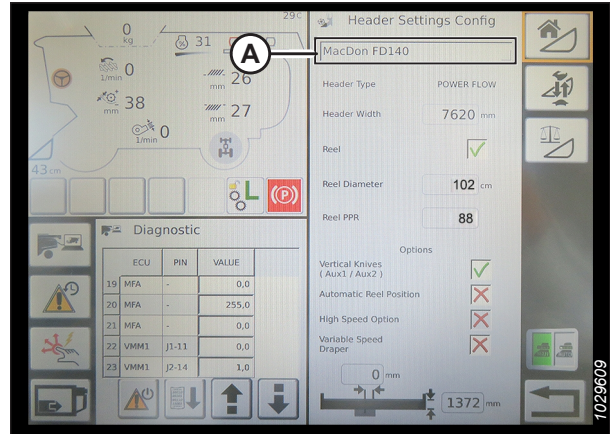


Figure 7.265: Header Settings

- From the list of predefined header types, touch POWER FLOW (A).
- Touch green check mark (B) to save the selection and continue.

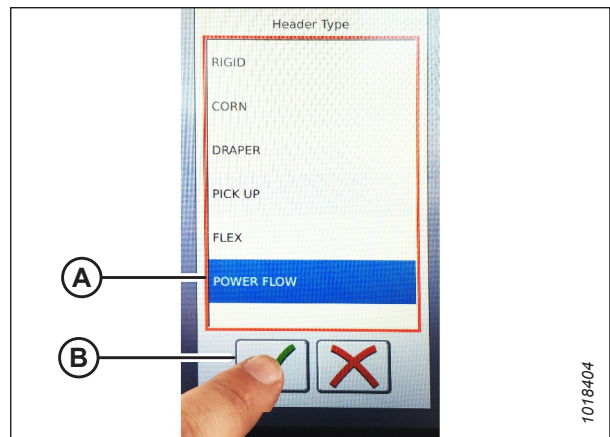


Figure 7.266: Header Type

- Make sure that REEL check box (A) is checked.

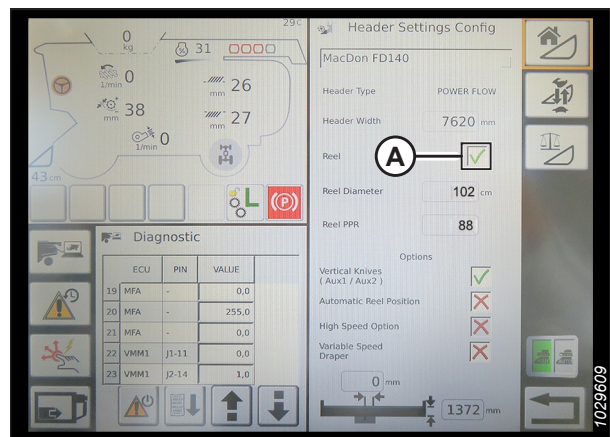


Figure 7.267: Header Settings

SETTING UP AUTO HEADER HEIGHT CONTROL

- Touch REEL DIAMETER field (A) and a numeric keypad appears. Enter the following value for a MacDon reel:

- 102 cm (40 in.)

NOTE:

If the reel speed does not index correctly, then the reel diameter can be increased to 112 cm (44 in.).

- Touch REEL PPR (Pulses Per Revolution) field (B) and enter the following as the value for your MacDon header:

- Standard:** 88
- High torque, 12-tooth sprocket:** 61
- High torque, Australia:** 52
- High speed, 21-tooth sprocket:** 35
- High speed, Australia:** 30

- Touch green check mark (B) at the bottom of numeric keypad (A) when complete, or the red X to cancel.

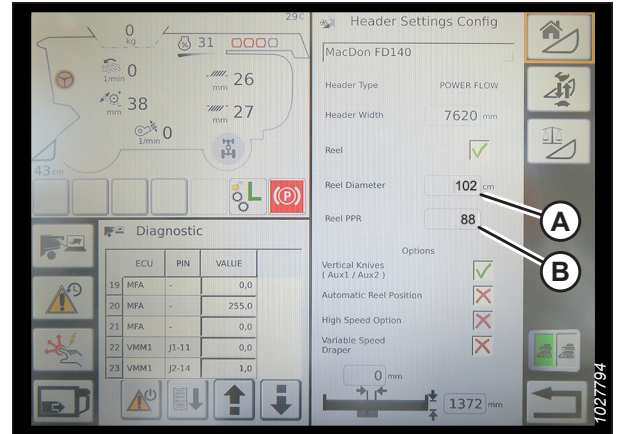


Figure 7.268: Header Settings

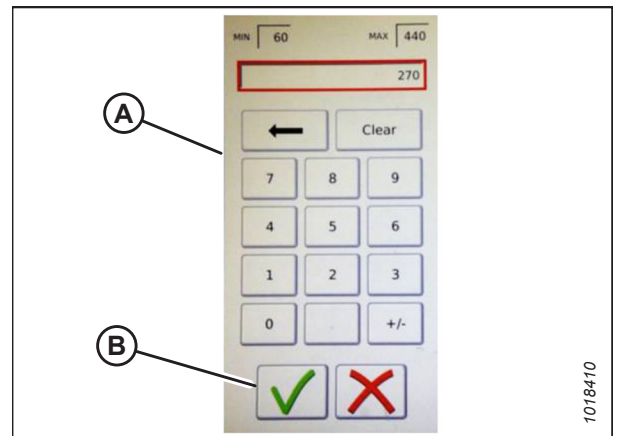


Figure 7.269: Numeric Keypad

- When complete, touch green check mark (A) at the bottom of the HEADER SETTINGS page.

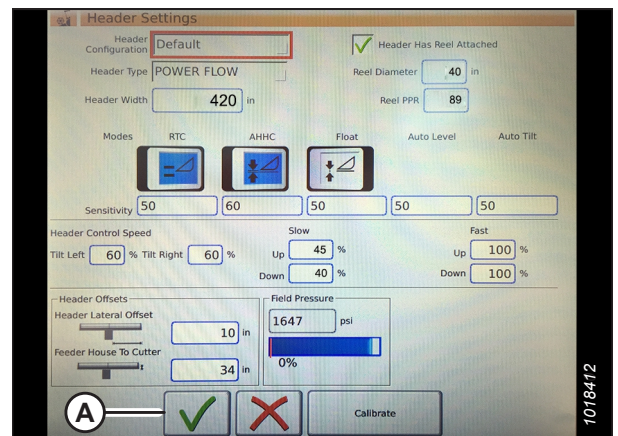


Figure 7.270: Header Settings Page

SETTING UP AUTO HEADER HEIGHT CONTROL

Setting Minimum Reel Speed and Calibrating Reel – IDEAL™ Series

To configure the reel speed on the header to work with the auto header height control system (AHHC) on an IDEAL™ Series combine, the reel operation parameters must be configured and the combine must run an automatic reel calibration procedure.

DANGER

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

NOTE:

Changes may have been made to the combine controls or the display since this document was published. For instructions, refer to the combine operator's manual for updated information.

1. From the COMBINE MAIN MENU, touch REEL SETTINGS (A) to open the REEL SETTINGS page.

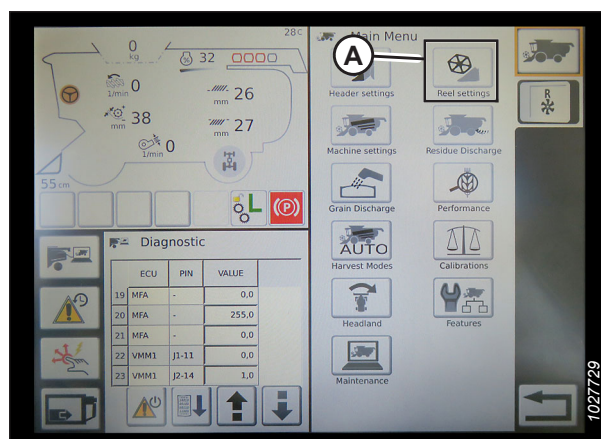


Figure 7.271: Reel Settings on Combine Main Menu

2. To set the minimum reel speed, touch SPEED MINIMUM FIELD (B). The on-screen keyboard appears. Enter the desired value. Touch the green check mark to accept the new value, or the red X to cancel. The reel speed is shown in miles per hour (mph) and rotations per minute (rpm).

NOTE:

The reel diameter and reel pulses per revolution (PPR) are displayed at the bottom of the REEL SETTINGS page. These values have already been set in the HEADER SETTINGS page.

3. Reel speed is calibrated on the REEL SETTINGS page by touching CALIBRATE button (A) at the top right corner of the page.

NOTE:

The CALIBRATION WIZARD opens and displays a hazard warning.



Figure 7.272: Reel Settings Calibration

SETTING UP AUTO HEADER HEIGHT CONTROL

4. Make sure to meet all the conditions listed in the CALIBRATION WIZARD warning. Press the green check mark to accept and start the reel calibration procedure. Pressing the red X will cancel the calibration procedure.

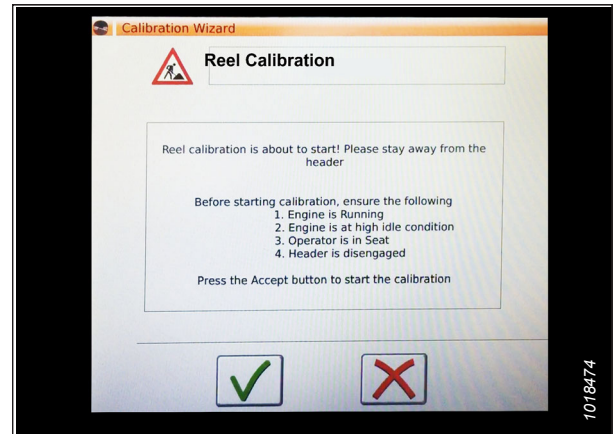


Figure 7.273: Calibration Wizard

5. A message appears in the CALIBRATION WIZARD stating that the reel calibration procedure has started. The reel will begin turning slowly and its speed will gradually increase. If necessary, touch the red X (not shown) to cancel. Otherwise, wait for the message that the reel calibration procedure has completed successfully. Touch the green check mark to save the calibrated settings.

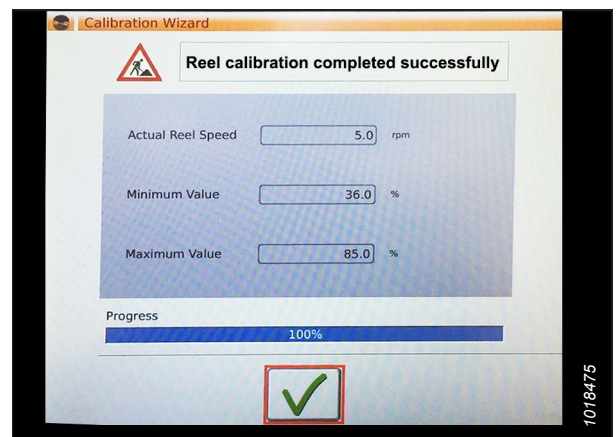


Figure 7.274: Calibration Progress

Setting up Automatic Header Controls – IDEAL™ Series

To configure the automatic header height control (AHC) functions on an IDEAL™ Series combine to work with your header, navigate to the HEADER SETTINGS page on the combine's computer.

NOTE:

Changes may have been made to the combine controls or the display since this document was published. Refer to the combine operator's manual for the most up-to-date information.

SETTING UP AUTO HEADER HEIGHT CONTROL

1. **Automatic Control Functions:** There are toggle (OFF/ON) switches on the HEADER SETTINGS page for the automatic control functions. For MacDon headers, ensure that the following two functions are enabled as shown:
 - RTC (return to cut) (A)
 - AHHC (automatic header height control) (B)

- RTC (return to cut) (A)
- AHHC (automatic header height control) (B)

All other switches should be disabled (not highlighted).

2. **Sensitivity** setting (C) controls how responsive a control (RTC or AHHC) is to a given change in sensor feedback. The setting fields are located directly below the toggle switches. To enter a new sensitivity setting, touch the setting field below the specific toggle switch, and enter the new value in the on-screen keyboard.

- Increase the sensitivity if the combine does not change the feeder position quickly enough when in Auto Mode.
- Decrease the sensitivity if the combine continually hunts for a position in Auto Mode.

NOTE:

The following sensitivity settings are recommended for MacDon headers:

- 50 for RTC (A)
- 60 for AHHC (B)

3. **Header Speed:** HEADER CONTROL SPEED area (A) on the HEADER SETTINGS page is used to adjust the following speeds:

- Tilt left and right is the lateral tilt of the combine faceplate
- Header up and down (slow and fast speeds) is a two-stage button with slow speed on the first detent and fast on the second

NOTE:

The recommended header control speed settings are:

- Slow: Up 45/Down 40
- Fast: Up 100/Down 100

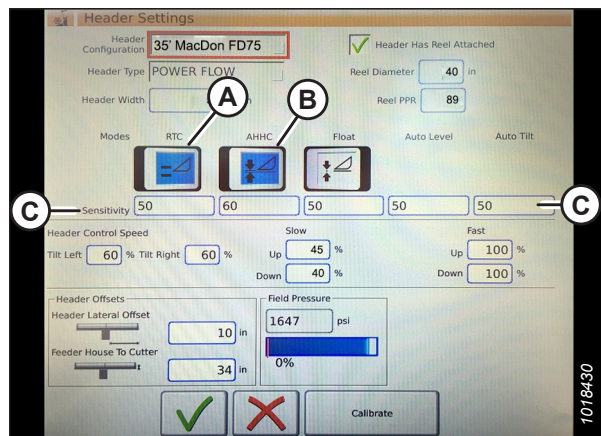


Figure 7.275: Automatic Controls and Sensitivity Settings

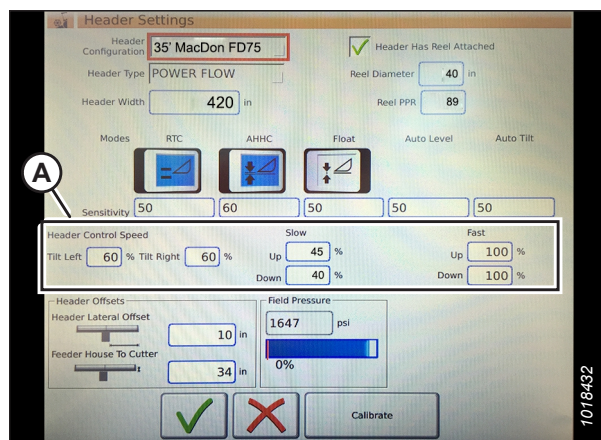


Figure 7.276: Header Speed Control Settings

SETTING UP AUTO HEADER HEIGHT CONTROL

4. **Header Offsets (A):** Offset distances are important for yield mapping. There are two adjustable dimensions on the HEADER SETTINGS page:

- Header Lateral Offset: the distance between the centerline of the header and the centerline of the machine. This should be set at **0** for a MacDon header.
- Feeder House to Cutter: the distance from the machine interface to the cutterbar. This should be set at **68** for a MacDon header.

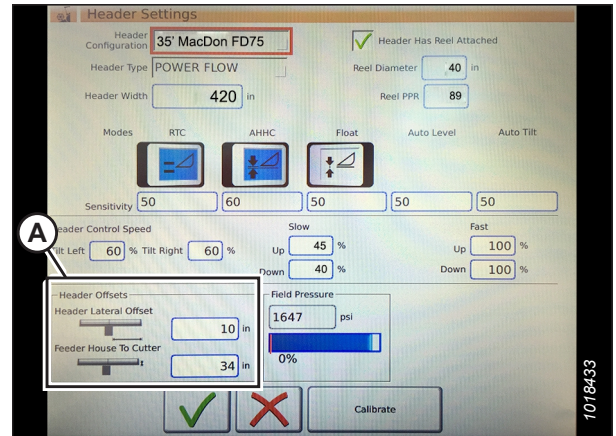


Figure 7.277: Header Offset Settings

Calibrating Header – IDEAL™ Series

The auto header height control (AHHC) sensor output must be calibrated for IDEAL™ Series combines, or the AHHC feature will not work properly.

DANGER

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

NOTE:

Changes may have been made to the combine controls or the display since this document was published. Refer to the combine operator's manual for the most up-to-date information.

1. On the COMBINE MAIN MENU, touch HEADER SETTINGS (A).

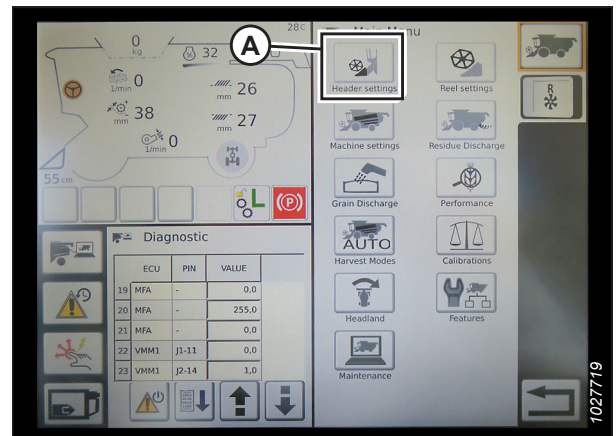


Figure 7.278: Combine Main Menu

SETTING UP AUTO HEADER HEIGHT CONTROL

2. Touch HEADER CALIBRATE (A) at the right side of the HEADER SETTINGS CONFIG page.

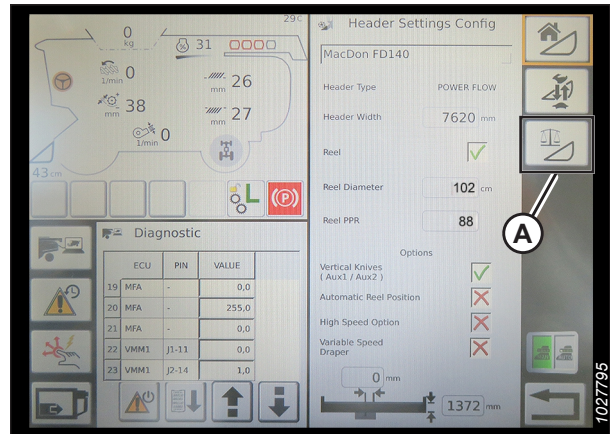


Figure 7.279: Header Settings Page

3. The hazard warning for HEADER CALIBRATION appears. Ensure that all conditions are met.
4. Touch the green check mark at the bottom of the page to start the calibration procedure and follow the on-screen commands.

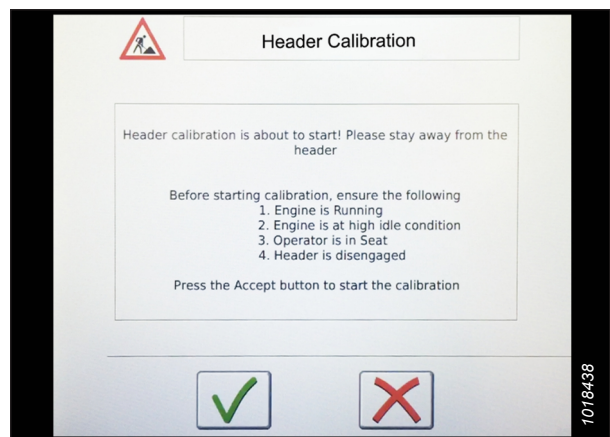


Figure 7.280: Header Calibration Warning

A progress bar is provided and the calibration can be stopped by touching the red X. The header moves automatically and erratically during this process.

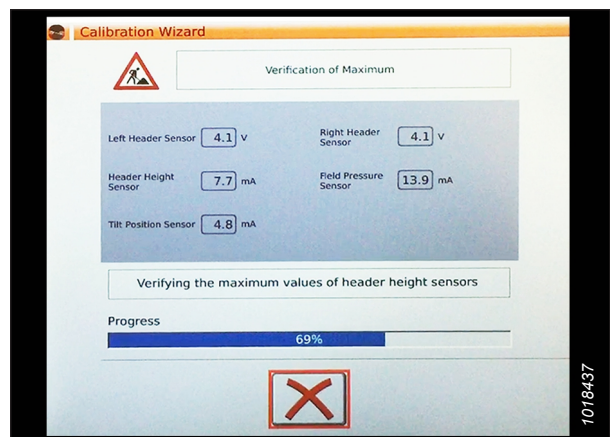


Figure 7.281: Calibration in Progress

SETTING UP AUTO HEADER HEIGHT CONTROL

5. When the calibration procedure is complete:
- Review summary information (A)
 - Review green check marks confirming calibrated functions (B)
 - Touch check mark (C) to save



Figure 7.282: Completed Calibration Page

NOTE:

Touch CALIBRATIONS icon (A) on the MAIN MENU page to display the CALIBRATION MENU where you can choose from a variety of calibrations including header and reel calibration.

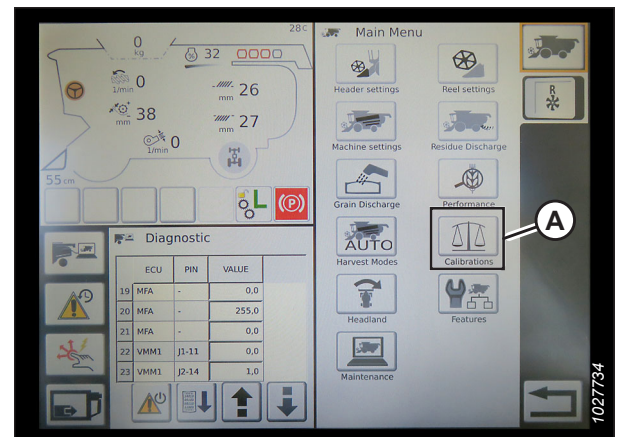


Figure 7.283: Direct Calibration Menu

Operating Header – IDEAL™ Series

Once the auto header height control (AHHC) system has been configured on your IDEAL™ Series combine, the AHHC system can be controlled from the combine cab.

NOTE:

Changes may have been made to the combine controls or the display since this document was published. Refer to the combine operator's manual for the most up-to-date information.

The following are used to operate the auto header height control (AHHC) functions:

- Tyton terminal (A)
- Control handle (B)
- Throttle (C)
- Header control cluster (D)

Refer to the combine operator's manual to familiarize yourself with the combine's controls.



Figure 7.284: Operator Station

SETTING UP AUTO HEADER HEIGHT CONTROL

1. With the header running, set the lateral tilt to MANUAL by pressing switch (A). The light above the switch should be off.
2. Engage the AHHC by pressing switch (B). The light above the switch should be on.

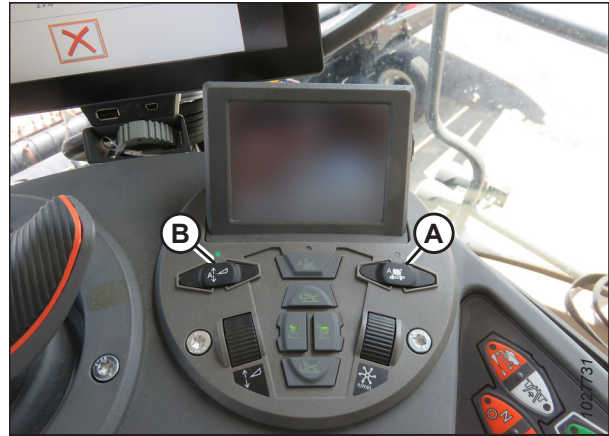


Figure 7.285: Header Control Cluster

3. Press AHHC control switch (A) on the control handle to engage the AHHC. The header moves to the configured set point position.

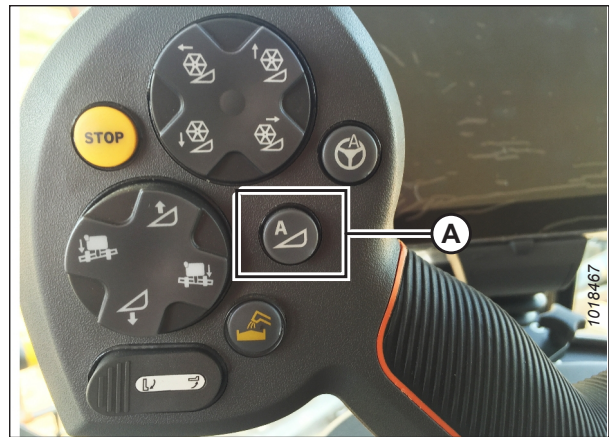


Figure 7.286: AHHC on Control Handle

4. Use HEADER HEIGHT SETPOINT control dial (A) as necessary to fine-tune the header position.



Figure 7.287: Header Control Cluster

SETTING UP AUTO HEADER HEIGHT CONTROL

Reviewing Header In-Field Settings – IDEAL™ Series

Once the auto header height control (AHHC) system is working correctly with your IDEAL™ Series combine, you can fine-tune these AHHC settings to your liking.

NOTE:

Changes may have been made to the combine controls or the display since this document was published. Refer to the combine operator's manual for the most up-to-date information.

1. Touch HEADER icon (A) on the right side of the home page to view the following header group settings:
 - CURRENT POSITION of header (B).
 - SETPOINT cut-off position (C) (indicated by the red line)
 - HEADER symbol (D) – touch this to adjust the set point cut-off position using the adjustment wheel on the right side of the Tyton terminal.
 - CUT HEIGHT for AHHC (E) – fine-tune this setting with the header height set point control dial on the header control cluster.
 - HEADER WORKING WIDTH (F)
 - HEADER PITCH (G)

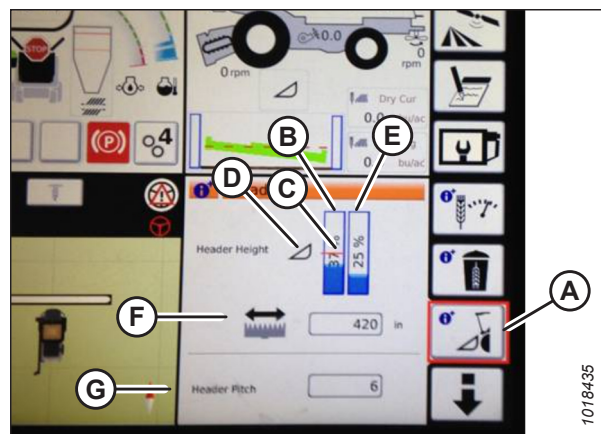


Figure 7.288: Header Groups

2. Touching a field opens the on-screen keyboard so that the values can be adjusted. Enter the new value and touch the green check mark.

NOTE:

Adjustment wheel (A) is located on the right of the Tyton terminal.

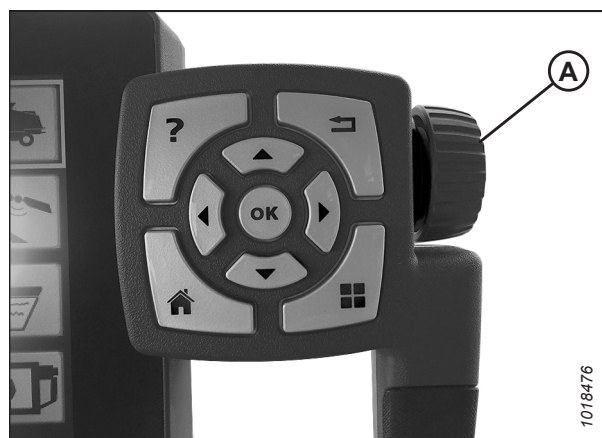


Figure 7.289: Adjustment Wheel on Right of Tyton Terminal

SETTING UP AUTO HEADER HEIGHT CONTROL

NOTE:

HEADER HEIGHT SETPOINT control dial (A) is on the header control cluster.



Figure 7.290: Header Control Cluster

7.1.14 John Deere 60 Series Combines

Follow these steps to set up auto header height control (AHHC) on John Deere 60 series combines.

Checking Voltage Range from Combine Cab – John Deere 60 Series

The auto header height control (AHHC) sensor needs to operate in a specific voltage range in order to work properly.

NOTE:

Changes may have been made to the combine controls or the display since this document was published. Refer to the combine operator's manual for the most up-to-date information.

⚠ DANGER

Check to be sure all bystanders have cleared the area.

1. Position the header 150 mm (6 in.) above the ground.
2. Unlock the float.

SETTING UP AUTO HEADER HEIGHT CONTROL

3. Check that the float lock linkage is on the down stops (washer [A] cannot be moved) at both locations.

NOTE:

If the header is not on the down stops during the next two steps, the voltage may go out of range during operation causing a malfunction of the AHHC system.

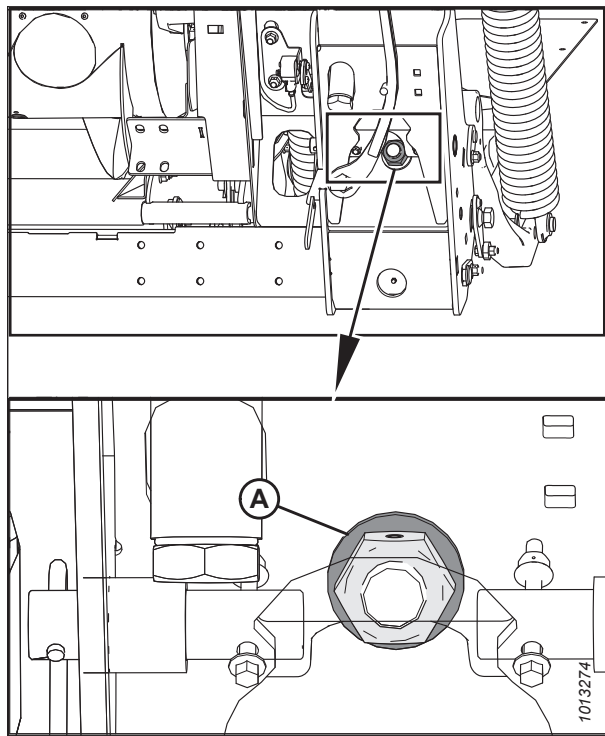


Figure 7.291: Float Lock

4. If necessary, adjust cable take-up bracket (B) until float indicator pointer (A) is on 0.

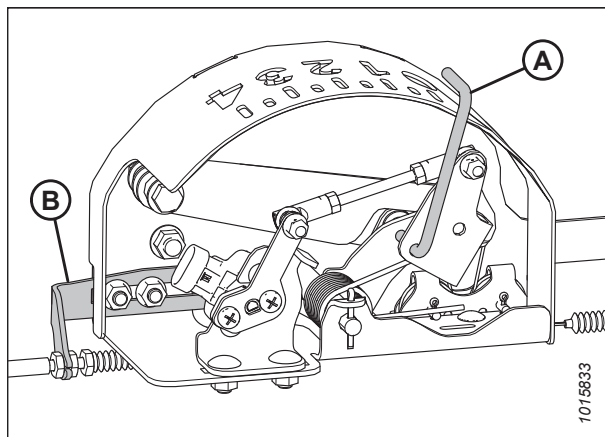


Figure 7.292: Float Indicator Box

SETTING UP AUTO HEADER HEIGHT CONTROL

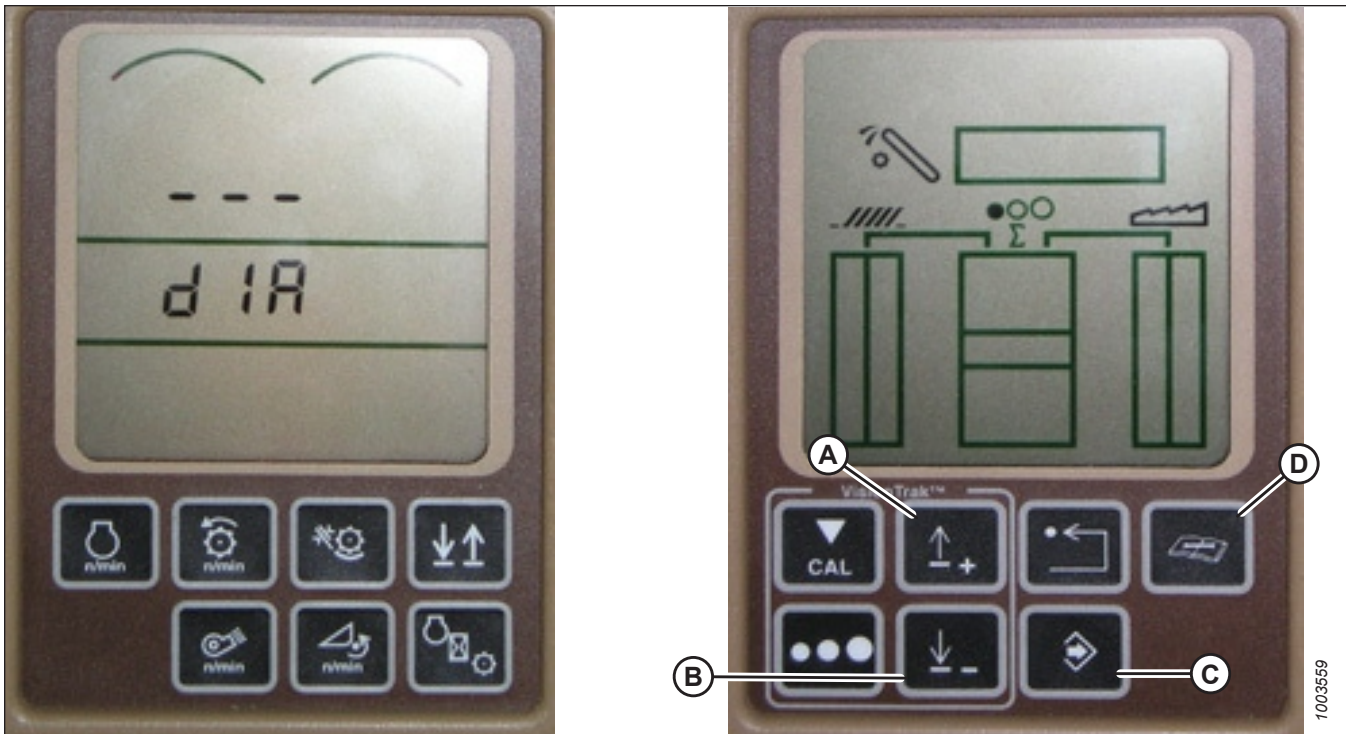


Figure 7.293: John Deere Combine Display

5. Press DIAGNOSTIC button (D) on the display—DIA appears on the display.
6. Press UP button (A) until EO1 appears on the display—this is the header adjustments.
7. Press ENTER button (C).
8. Press the UP (A) or DOWN button (B) until 24 is shown on the top portion of the display—this is the voltage reading for the sensor.
9. Ensure the header float is unlocked.
10. Start the combine, and fully lower the feeder house to the ground.

NOTE:

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

11. Check the sensor reading on the display. The reading should be above 0.5 V.
12. Raise the header so it is just off the ground. The reading on the display should read below 4.5 V.
13. If the sensor voltage is not within the lower and upper limits, or if the range between the lower and upper limits is insufficient, refer to [Adjusting Voltage Limits – One-Sensor System, page 199](#).

Calibrating Auto Header Height Control – John Deere 60 Series

The auto header height control (AHHC) sensor output must be calibrated for each combine, or the AHHC feature will not work properly.

⚠ DANGER

Check to be sure all bystanders have cleared the area.

SETTING UP AUTO HEADER HEIGHT CONTROL

NOTE:

Changes may have been made to the combine controls or the display since this document was published. Refer to the combine operator's manual for the most up-to-date information.

NOTE:

If the header float is set too light, it can prevent the calibration of the AHHC. You may need to set the float heavier for the calibration procedure so header does not separate from the float module.

NOTE:

For the best performance of the auto header height control (AHHC) system, perform the ground calibration with the center-link set to **D**. When calibration is complete, adjust the center-link back to the desired header angle. For instructions, refer to the header operator's manual.

1. Ensure the center-link is set to **D**.
2. Rest the header on the down stops.
3. Unlock the float.
4. Put the wings in the locked position.
5. Start the combine.
6. Press DIAGNOSTIC button (A) on the display. DIA appears on the display.
7. Press CAL button (B). DIA-CAL appears on the display.

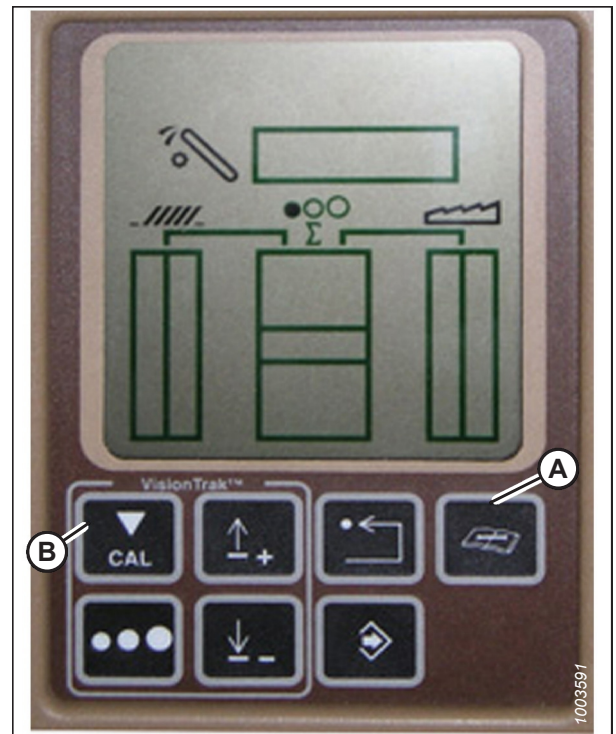


Figure 7.294: John Deere Combine Display

SETTING UP AUTO HEADER HEIGHT CONTROL

- Press the UP or DOWN buttons until HDR appears on the display.
- Press the ENTER button. HDR H-DN appears on the display.
- Fully lower the feeder house to the ground.

NOTE:

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

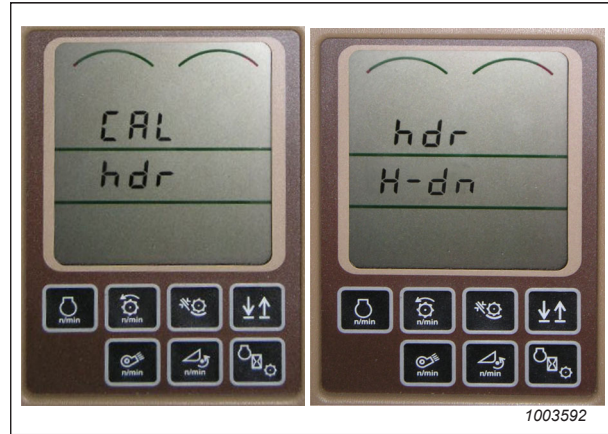


Figure 7.295: John Deere Combine Display

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

NOTE:

If an error code appears during calibration, the sensor is out of voltage range and will require adjustment. For instructions, refer to [Checking Voltage Range from Combine Cab – John Deere 60 Series, page 314](#).

NOTE:

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

NOTE:

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

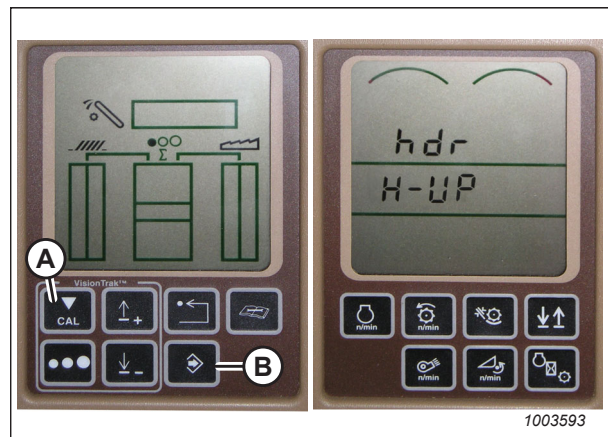


Figure 7.296: John Deere Combine Display

Turning Accumulator Off – John Deere 60 Series

The accumulator prevents shocks to the hydraulic system when the combine is operating with a heavy header attached. The accumulator should not be used when operating the combine with an FD1 Series FlexDraper® Header with an FM100 Float Module attached.

NOTE:

Changes may have been made to the combine controls or the display since this document was published. Refer to the combine operator's manual for the most up-to-date information.

SETTING UP AUTO HEADER HEIGHT CONTROL

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

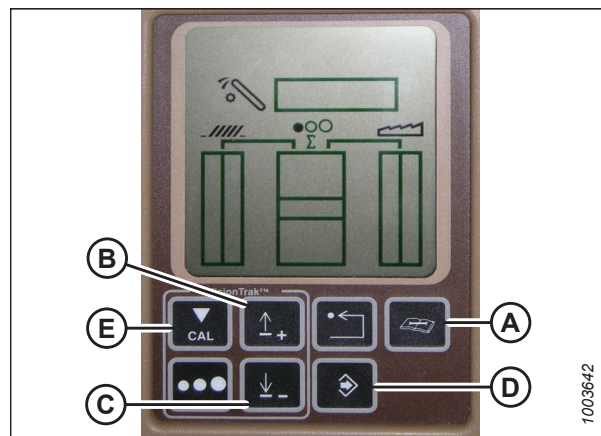


Figure 7.297: John Deere Combine Display

Setting Header Height Sensitivity – John Deere 60 Series

In order for a John Deere 60 Series combine to accurately read the output from the height sensors on a MacDon header, the combine's sensitivity setting needs to be set to 50.

NOTE:

Changes may have been made to the combine controls or the display since this document was published. Refer to the combine operator's manual for the most up-to-date information.

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

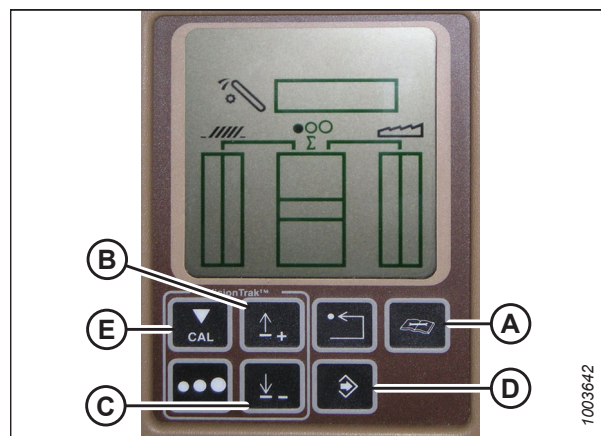


Figure 7.298: John Deere Combine Display

SETTING UP AUTO HEADER HEIGHT CONTROL

NOTE:

Do **NOT** use active header float function (A) in combination with the MacDon auto header height control (AHHC)—the two systems will counteract one another. Header symbol (B) on the display should **NOT** have a wavy line under it and should appear exactly as shown on the Active Header Control Display in Figure 7.299, page 320.

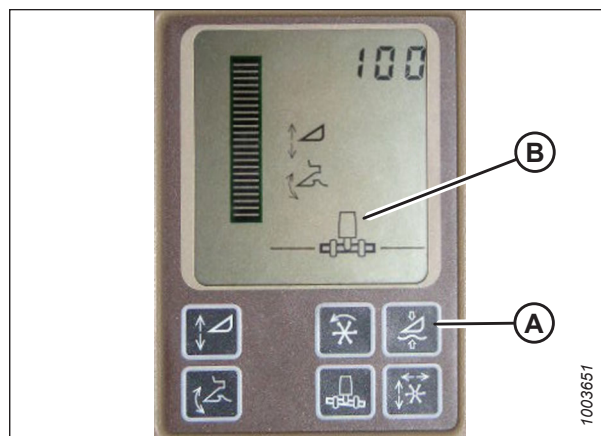


Figure 7.299: John Deere Combine Display

Setting Auto Header Height Control Sensitivity – John Deere 60 Series

The sensitivity adjustment controls the distance the cutterbar must travel up or down before the auto header height control (AHHC) reacts and raises or lowers the feeder house.

When the sensitivity is set to maximum, only small changes in ground height are needed to cause the feeder house to raise or lower. When the sensitivity is set to minimum, large changes in the ground height are needed to cause the feeder house to raise or lower.

NOTE:

Changes may have been made to the combine controls or the display since this document was published. Refer to the combine operator's manual for the most up-to-date information.

NOTE:

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

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

NOTE:

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

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

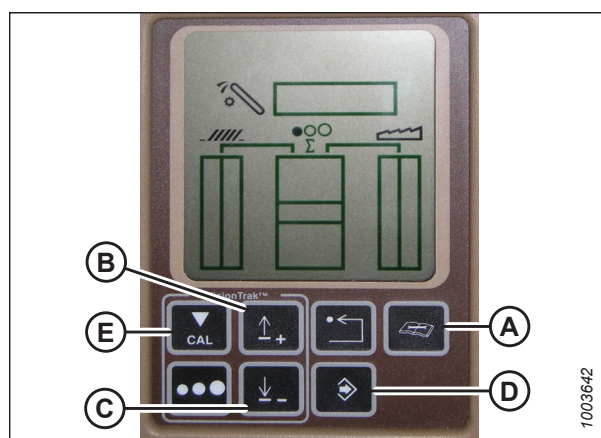


Figure 7.300: John Deere Combine Display

SETTING UP AUTO HEADER HEIGHT CONTROL

Adjusting Drop Rate Valve Threshold – John Deere 60 Series

This procedure details how to adjust the point at which the restrictor valve opens to allow full flow to the lift cylinders.

NOTE:

Changes may have been made to the combine controls or the display since this document was published. Refer to the combine operator's manual for the most up-to-date information.

NOTE:

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

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

NOTE:

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

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

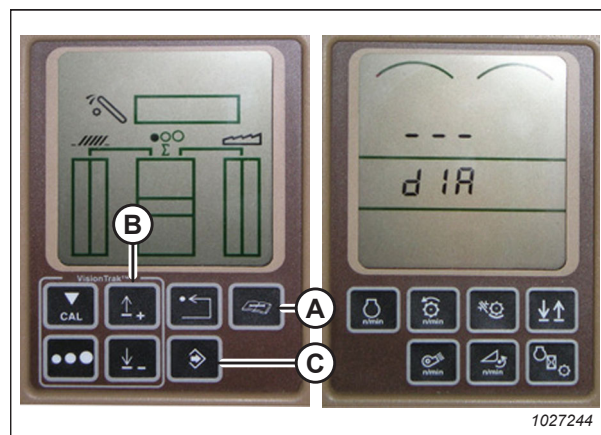


Figure 7.301: John Deere Combine Display

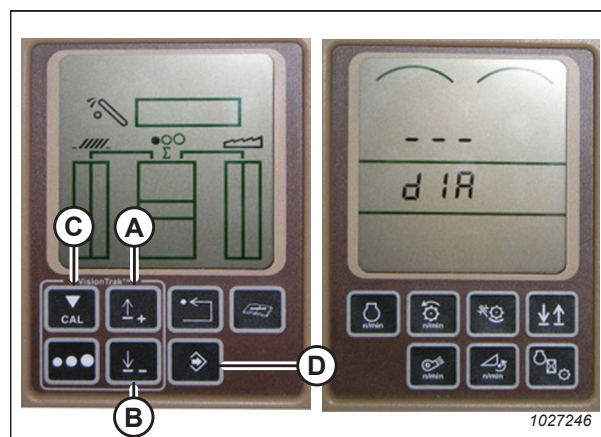


Figure 7.302: John Deere Combine Display

7.1.15 John Deere 70 Series Combines

To make your header's auto header height control (AHHC) system compatible with John Deere 70 series combines, you must set your combine's header configuration options for the particular model of header, configure the reel speed settings, set up the AHHC controls, and calibrate the AHHC system to ensure that it is working correctly.

Checking Voltage Range from Combine Cab – John Deere 70 Series

The auto header height control (AHHC) sensor needs to operate in a specific voltage range in order to work properly.

NOTE:

Changes may have been made to the combine controls or the display since this document was published. Refer to the combine operator's manual for the most up-to-date information.

⚠ DANGER

Check to be sure all bystanders have cleared the area.

1. Position the header 150 mm (6 in.) above the ground.
2. Unlock the float.
3. Check that the float lock linkage is on the down stops (washer [A] cannot be moved) at both locations.

NOTE:

If the header is not on the down stops during the next two steps, the voltage may go out of range during operation causing a malfunction of the AHHC system.

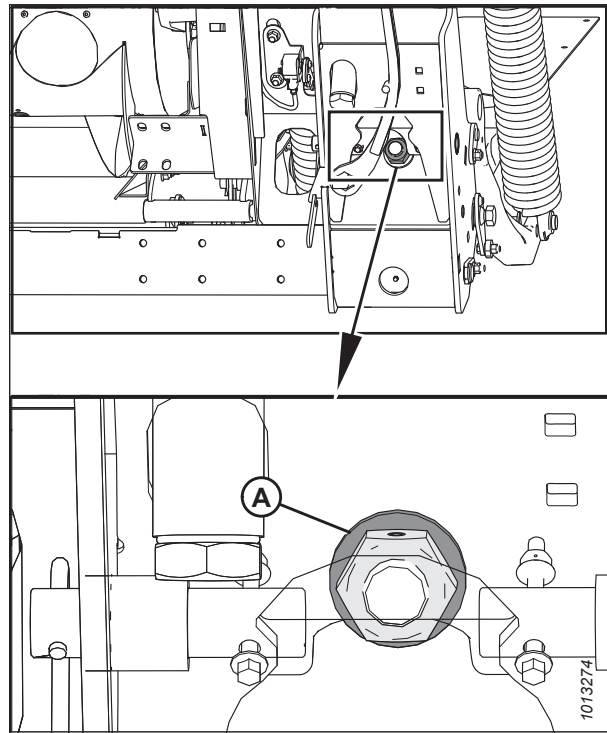


Figure 7.303: Float Lock

SETTING UP AUTO HEADER HEIGHT CONTROL

4. If necessary, adjust cable take-up bracket (B) until pointer (A) on the float indicator is on **0**.

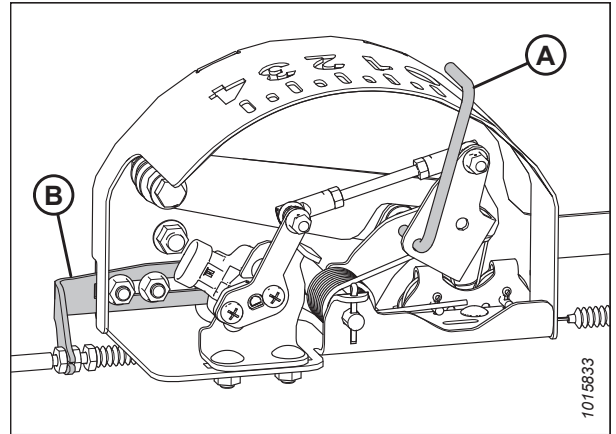


Figure 7.304: Float Indicator Box

5. Press HOME PAGE button (A) on the main page of the display.



Figure 7.305: John Deere Combine Display

6. Ensure three icons (A) shown in the illustration at right appear on the display.



Figure 7.306: John Deere Combine Display

SETTING UP AUTO HEADER HEIGHT CONTROL

- Use scroll knob (A) to highlight the middle icon (the green i) and press check mark button (B) to select it. The Message Center appears.

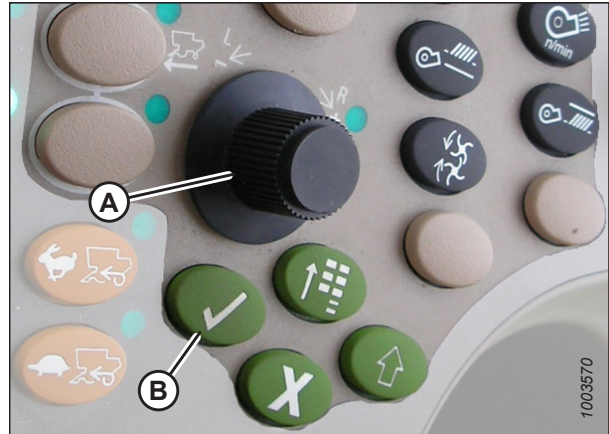


Figure 7.307: John Deere Combine Control Console

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

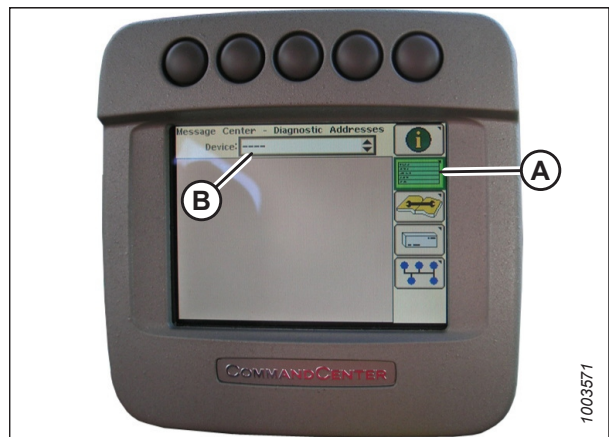


Figure 7.308: John Deere Combine Display

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



Figure 7.309: John Deere Combine Display

SETTING UP AUTO HEADER HEIGHT CONTROL

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

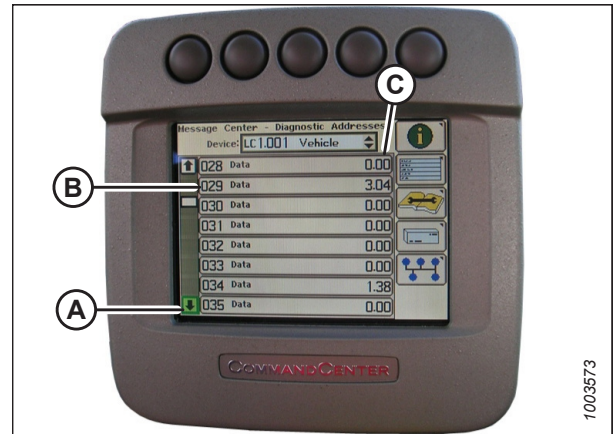


Figure 7.310: John Deere Combine Display

12. Ensure the header float is unlocked.
13. Start the combine and fully lower the feeder house to the ground.

NOTE:

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

14. Check the sensor reading on the display.
15. Raise the header so it is just off the ground and recheck the sensor reading.
16. If the sensor voltage is not within the low and high limits or if the range between the low and high limits is insufficient, refer to [Adjusting Voltage Limits – One-Sensor System, page 199](#).

Calibrating Feeder House Speed – John Deere 70 Series

The feeder house speed must be calibrated before you calibrate the auto header height control (AHHC) system.

For instructions, refer to the combine operator's manual.

Calibrating Auto Header Height Control – John Deere 70 Series

The auto header height control (AHHC) sensor output must be calibrated for each combine, or the AHHC feature will not work properly.

DANGER

Check to be sure all bystanders have cleared the area.

NOTE:

Changes may have been made to the combine controls or the display since this document was published. Refer to the combine operator's manual for the most up-to-date information.

NOTE:

If the header float is set too light, it can prevent the calibration of the AHHC. You may need to set the float heavier for the calibration procedure so the header does not separate from the float module.

NOTE:

For the best performance of the auto header height control (AHHC) system, perform the ground calibration with the center-link set to **D**. When calibration is complete, adjust the center-link back to the desired header angle. For instructions, refer to the header operator's manual.

SETTING UP AUTO HEADER HEIGHT CONTROL

1. Ensure the center-link is set to **D**.
2. Rest the header on the down stops.
3. Put the wings in the locked position.
4. Unlock the float.
5. Start the combine.
6. Press the button located fourth from the left along the top of display (A) to select the icon that resembles an open book with a wrench on it (B).
7. Press top button (A) a second time to enter diagnostics and calibration mode.

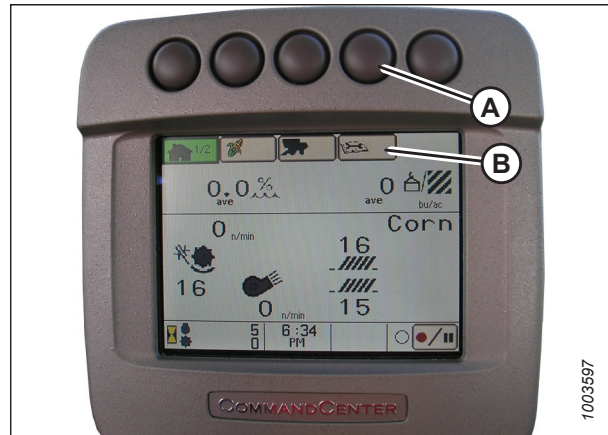


Figure 7.311: John Deere Combine Display

8. Select **HEADER** in box (A) by scrolling down to the box using the scroll knob, and then pressing the check mark button (knob and button are shown in Figure 7.313, page 327).
9. Scroll down to the lower right icon that resembles an arrow in a diamond (B) and press the check mark button to select it.
10. Follow the steps listed on the page to perform the calibration.

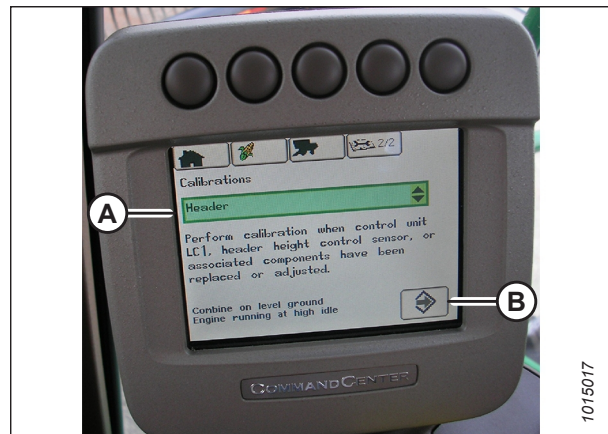


Figure 7.312: John Deere Combine Display

SETTING UP AUTO HEADER HEIGHT CONTROL

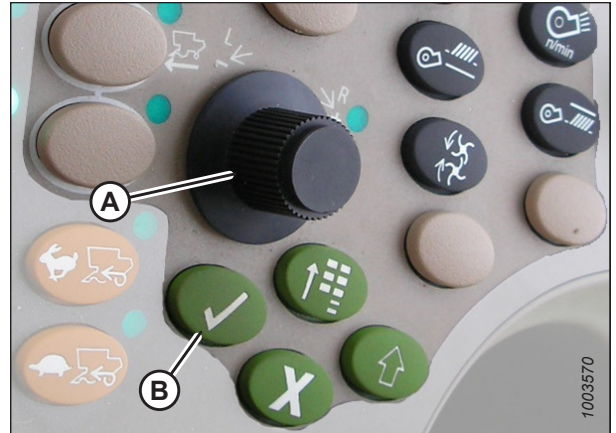


Figure 7.313: John Deere Combine Control Console

A - Scroll Knob

B - Check Mark Button

NOTE:

If an error code appears on the display, the sensor is not in the correct working range. Check and adjust the range. For instructions, refer to *Checking Voltage Range from Combine Cab – John Deere S and T Series*, page 329.

NOTE:

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

Setting Auto Header Height Control Sensitivity – John Deere 70 Series

The sensitivity adjustment controls the distance the cutterbar must travel up or down before the auto header height control (AHHC) reacts and raises or lowers the feeder house.

When the sensitivity is set to maximum, only small changes in ground height are needed to cause the feeder house to raise or lower. When the sensitivity is set to minimum, large changes in the ground height are needed to cause the feeder house to raise or lower.

NOTE:

Changes may have been made to the combine controls or the display since this document was published. Refer to the combine operator's manual for the most up-to-date information.

SETTING UP AUTO HEADER HEIGHT CONTROL

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

NOTE:

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

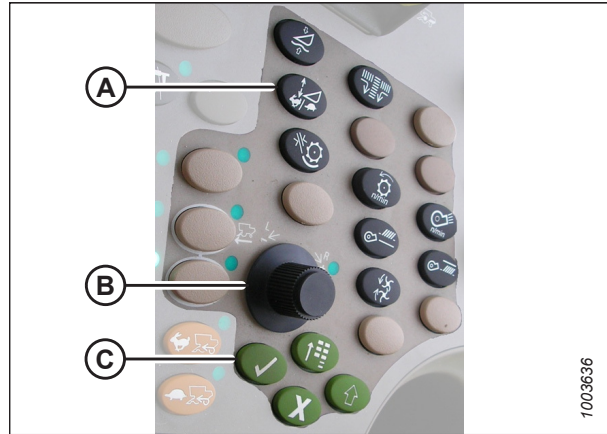


Figure 7.314: John Deere Combine Control Console

NOTE:

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



Figure 7.315: John Deere Combine Display

Adjusting Manual Header Raise/Lower Rate – John Deere 70 Series

The weight of the header will dictate the rate at which the header can be raised or lowered during operation.

NOTE:

Changes may have been made to the combine controls or the display since this document was published. Refer to the combine operator's manual for the most up-to-date information.

SETTING UP AUTO HEADER HEIGHT CONTROL

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

NOTE:

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

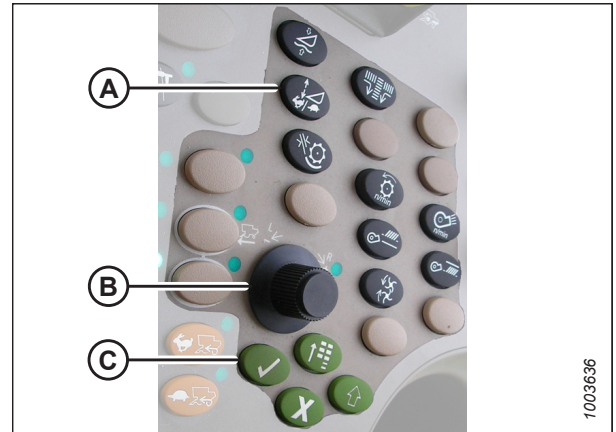


Figure 7.316: John Deere Combine Control Console

NOTE:

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



Figure 7.317: John Deere Combine Display

7.1.16 John Deere S and T Series Combines

To make your header's auto header height control (AHHC) system compatible with John Deere S and T series combines, you must set your combine's header configuration options for the particular model of header, configure the reel speed settings, set up the AHHC controls, and calibrate the AHHC system to ensure that it is working correctly.

Checking Voltage Range from Combine Cab – John Deere S and T Series

The auto header height control (AHHC) sensor needs to operate in a specific voltage range in order to work properly.

NOTE:

Changes may have been made to the combine controls or the display since this document was published. Refer to the combine operator's manual for the most up-to-date information.

DANGER

Check to be sure all bystanders have cleared the area.

1. Position the header 150 mm (6 in.) above the ground.
2. Unlock the float.

SETTING UP AUTO HEADER HEIGHT CONTROL

3. Check that the float lock linkage is on the down stops (washer [A] cannot be moved) at both locations.

NOTE:

If the header is not on the down stops during the next two steps, the voltage may go out of range during operation causing a malfunction of the AHHC system.

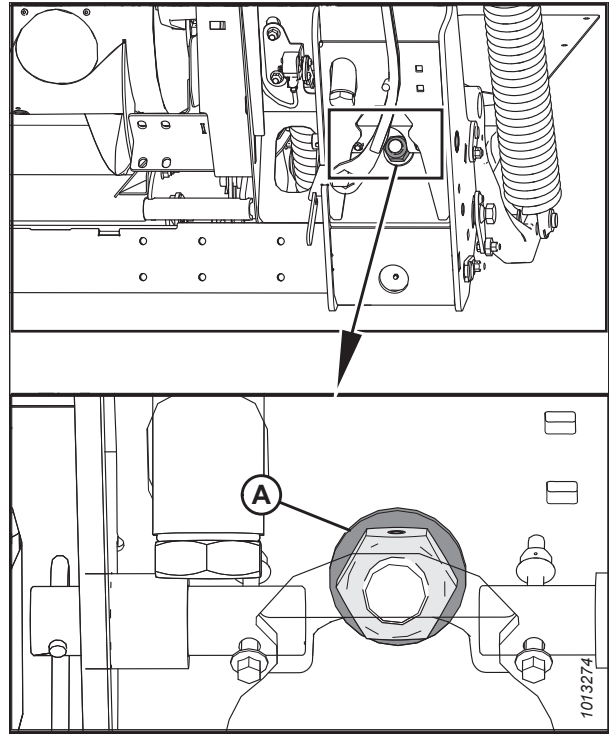


Figure 7.318: Float Lock

4. If necessary, adjust cable take-up bracket (B) until pointer (A) on the float indicator is on 0.

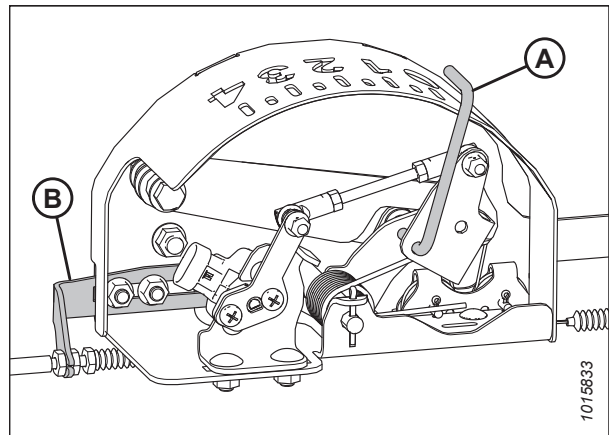


Figure 7.319: Float Indicator Box

SETTING UP AUTO HEADER HEIGHT CONTROL

5. Press CALIBRATION icon (A) on the main page of the display. The CALIBRATION page appears.



Figure 7.320: John Deere Combine Display

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

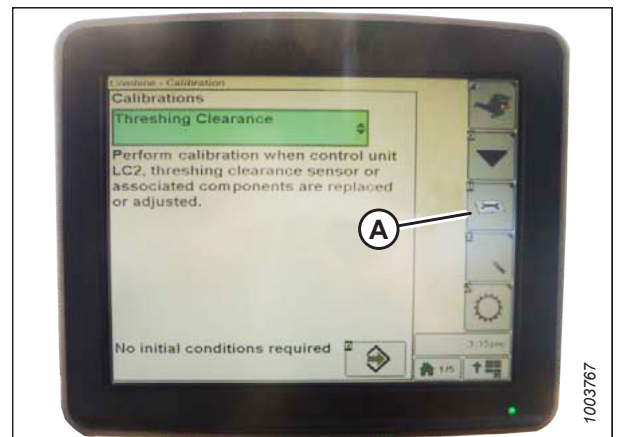


Figure 7.321: John Deere Combine Display

7. Select AHC RESUME (A) and a list of calibration options appears.



Figure 7.322: John Deere Combine Display

SETTING UP AUTO HEADER HEIGHT CONTROL

8. Select the AHHC SENSING option.
9. Press icon (A). The AHHC SENSING menu appears and five pages of information appear.



Figure 7.323: John Deere Combine Display

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

A reading is displayed for both the left and right sensors. On the MacDon header, there may be one sensor located in the float indicator box (standard) or two sensors located at the back of the float module side frame (optional).

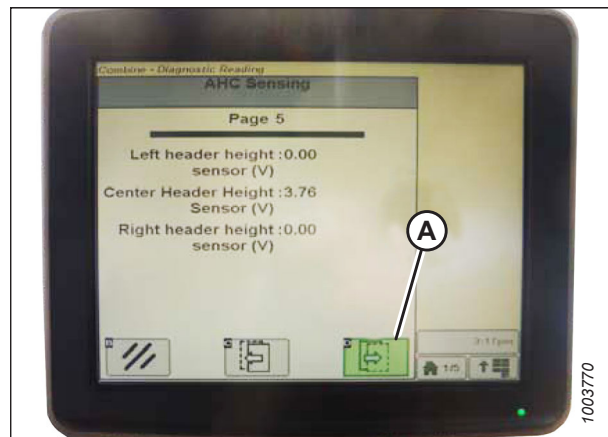


Figure 7.324: John Deere Combine Display

11. Ensure the header float is unlocked.
12. Start the combine and fully lower the feeder house to the ground.

NOTE:
You may need to hold the HEADER DOWN switch for a few seconds to ensure the feeder house is fully lowered.
13. Check the sensor reading on the display.
14. If the sensor voltage is not within the lower and upper limits or if the range between the lower and upper limits is insufficient, refer to *Adjusting Voltage Limits – One-Sensor System, page 199*.

Calibrating Auto Header Height Control – John Deere S and T Series

The auto header height control (AHHC) sensor output must be calibrated for each combine, or the AHHC feature will not work properly.

WARNING

Check to be sure all bystanders have cleared the area.

NOTE:

Changes may have been made to the combine controls or the display since this document was published. Refer to the combine operator's manual for the most up-to-date information.

SETTING UP AUTO HEADER HEIGHT CONTROL

NOTE:

If header float is set too light, it can prevent the calibration of the AHHC. You may need to set the float heavier for the calibration procedure so header does not physically separate from the float module.

NOTE:

For the best performance of the auto header height control (AHHC) system, perform the ground calibration with the center-link set to **D**. When calibration is complete, adjust the center-link back to the desired header angle. For instructions, refer to the header operator's manual.

1. Ensure the center-link is set to **D**.
2. Rest the header on the down stops.
3. Unlock the float.
4. Put the wings in the locked position.
5. Press DIAGNOSTIC icon (A) on the main page of the display. The CALIBRATION page appears.



Figure 7.325: John Deere Combine Display

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

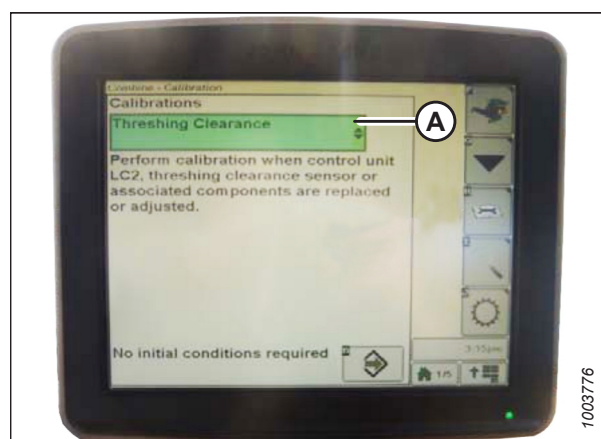


Figure 7.326: John Deere Combine Display

SETTING UP AUTO HEADER HEIGHT CONTROL

7. Select FEEDER HOUSE SPEED (A) from the list of calibration options.

NOTE:

Feeder house speed calibration must be done before header calibration.

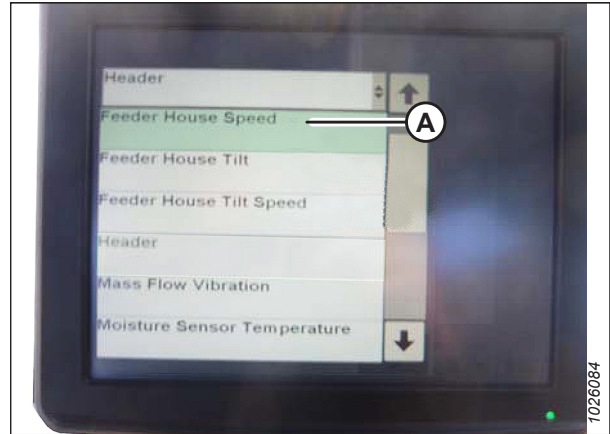


Figure 7.327: John Deere Combine Display

8. With FEEDER HOUSE SPEED selected, press icon (A). The icon turns green.

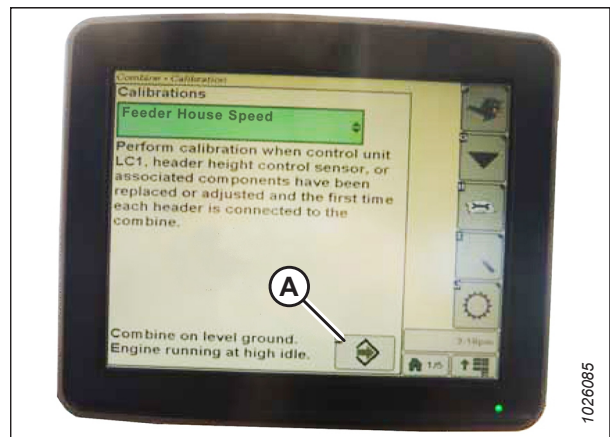


Figure 7.328: John Deere Combine Display

9. Press icon (A) and instructions will appear on screen to guide you through the remaining calibration steps.

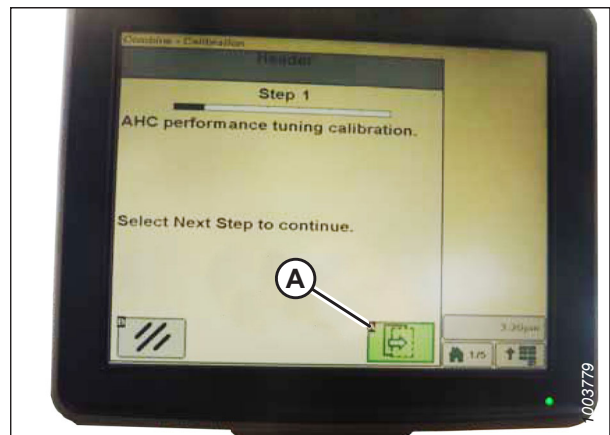


Figure 7.329: John Deere Combine Display

SETTING UP AUTO HEADER HEIGHT CONTROL

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

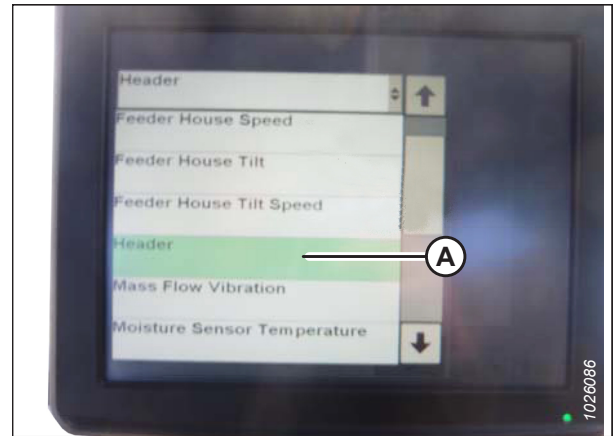


Figure 7.330: John Deere Combine Display

11. With HEADER selected, press icon (A). The icon turns green.

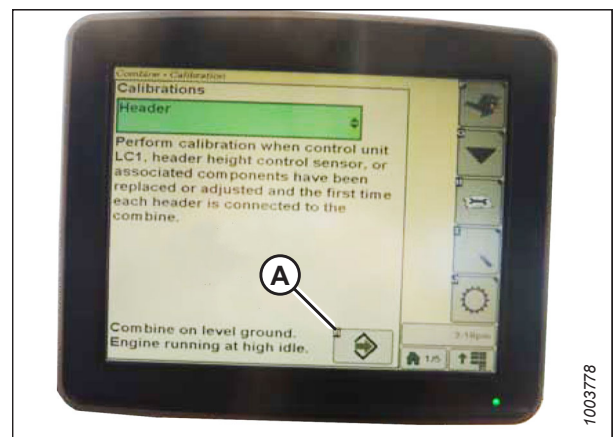


Figure 7.331: John Deere Combine Display

12. Press icon (A) and instructions will appear on screen to guide you through the remaining calibration steps.

NOTE:

If an error code appears during calibration, the sensor is out of voltage range and will require adjustment. For instructions, refer to [Checking Voltage Range from Combine Cab – John Deere S and T Series](#), page 329.

NOTE:

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

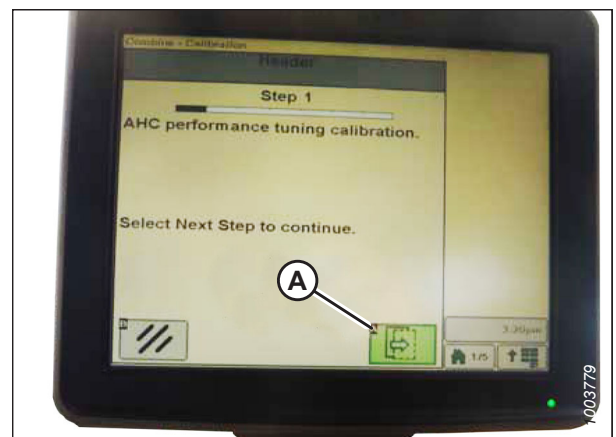


Figure 7.332: John Deere Combine Display

Setting Auto Header Height Control Sensitivity – John Deere S and T Series

The sensitivity adjustment controls the distance the cutterbar must travel up or down before the auto header height control (AHHC) reacts and raises or lowers the feeder house.

When the sensitivity is set to maximum, only small changes in ground height are needed to cause the feeder house to raise or lower. When the sensitivity is set to minimum, large changes in the ground height are needed to cause the feeder house to raise or lower.

SETTING UP AUTO HEADER HEIGHT CONTROL

NOTE:

Changes may have been made to the combine controls or the display since this document was published. Refer to the combine operator's manual for the most up-to-date information.

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



Figure 7.333: John Deere Combine Command Center

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

NOTE:

The numbers shown on the combine display in this illustration are for reference purposes only; they are not intended to represent the specific settings for your equipment.

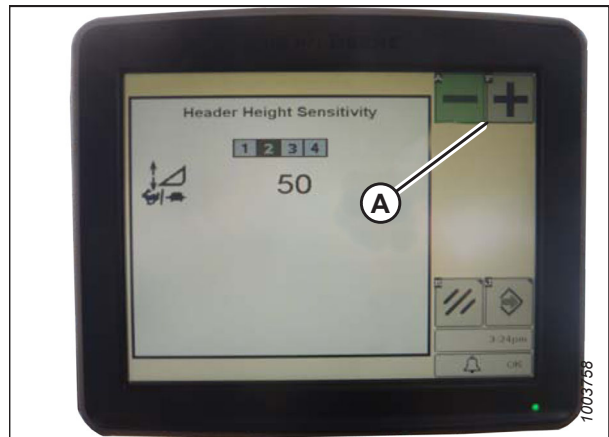


Figure 7.334: John Deere Combine Display

Adjusting Manual Header Raise/Lower Rate – John Deere S and T Series

The rate at which the header can be raised or lowered using the combine controls can be changed from the height sensitivity screen in the combine command center.

NOTE:

Changes may have been made to the combine controls or the display since this document was published. Refer to the combine operator's manual for the most up-to-date information.

1. Put the wings in the locked position.

SETTING UP AUTO HEADER HEIGHT CONTROL

2. Ensure indicator (A) is at position 0 (B) with the header 152 mm (6 in.) off the ground. If not, check the float sensor output voltage. For instructions, refer to Step 6, page 195.

NOTE:

When the header is on the ground, the indicator should be at position 1 (C) for low ground pressure, and at position 4 (D) for high ground pressure. Crop and soil conditions determine the amount of float to use. The ideal setting is as light as possible without header bouncing or missing crop. Operating with heavy settings prematurely wears the cutterbar wearplates.

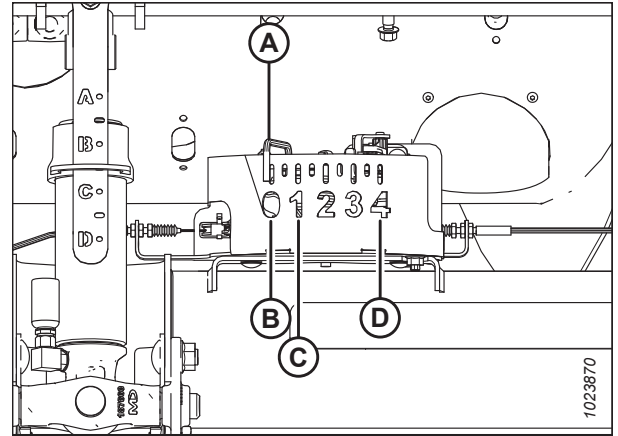


Figure 7.335: Float Indicator Box

3. Press button (A) and the current sensitivity setting will appear on the display.



Figure 7.336: John Deere Combine Command Center

4. Press – or + icons (A) to adjust the rates.

NOTE:

The numbers shown on the combine display in this illustration are for reference purposes only; they are not intended to represent the specific settings for your equipment.



Figure 7.337: John Deere Combine Display

SETTING UP AUTO HEADER HEIGHT CONTROL

Setting Preset Cutting Height – John Deere S and T Series

The reel and cut height setting can be stored in the combine. When harvesting the setting can be selected from the control handle.

NOTE:

Changes may have been made to the combine controls or the display since this document was published. Refer to the combine operator's manual for the most up-to-date information.

1. Ensure indicator (A) is at position 0 (B) with the header (152 mm [6 in.]) off the ground. If not, check the float sensor output voltage. For instructions, refer to Step 6, page 195.

NOTE:

When the header is on the ground, the indicator should be at position 1 (C) for low ground pressure, and at position 4 (D) for high ground pressure. Crop and soil conditions determine the amount of float to use. The ideal setting is as light as possible without header bouncing or missing crop. Operating with heavy settings prematurely wears the cutterbar wearplates.

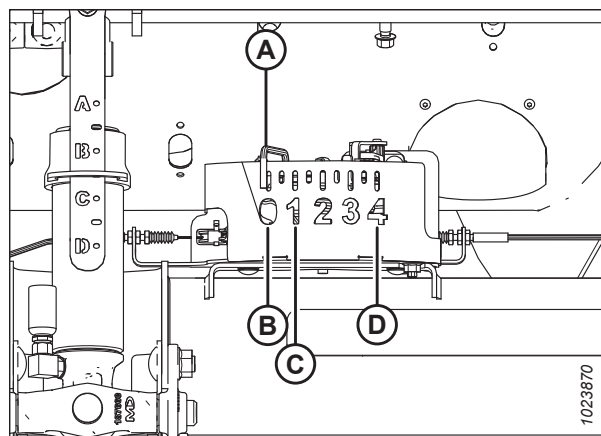


Figure 7.338: Float Indicator Box

2. Press COMBINE – HEADER SETUP icon (A) on the 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 7.339: Combine Display

3. Select COMBINE – HEADER SETUP AHC icon (A). The COMBINE – HEADER SETUP AHC page appears.



Figure 7.340: Combine Display

SETTING UP AUTO HEADER HEIGHT CONTROL

4. Select AUTO HEIGHT SENSING (A), RETURN TO CUT (B), and REEL POSITION (C) icons.

NOTE:

If REEL POSITION icon (C) cannot be selected (no check mark), the reel height sensor requires calibration. For instructions, refer to *Calibrating Reel Height Sensor – John Deere S and T Series, page 345*.

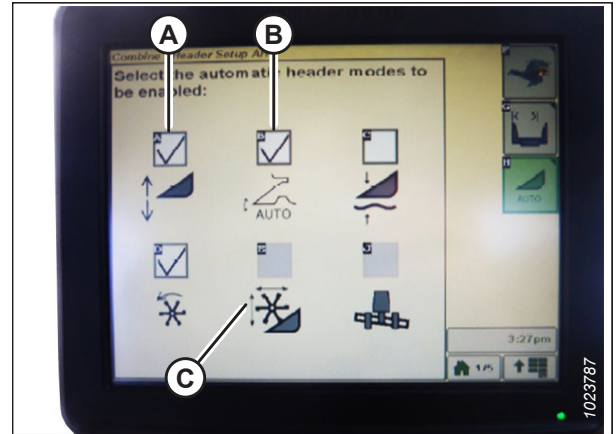


Figure 7.341: Combine Display

5. Engage the header.
6. Move the header to the desired position and use knob (A) to fine tune the position.
7. Move the reel to the desired position.



Figure 7.342: Combine Control Console

8. Press and hold preset switch 2 (B) until the reel height icon flashes on display.
9. Repeat the previous three steps for preset switch 3 (C).
10. Select an appropriate ground pressure setting. Use preset button 2 (B) on the control handle for a low ground pressure setting in muddy or soft soil conditions, and preset 3 (C) for a high ground pressure setting in firm soil conditions and a higher ground speed.

NOTE:

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



Figure 7.343: Control Handle Buttons

SETTING UP AUTO HEADER HEIGHT CONTROL

NOTE:

When the AHHC is engaged, AHHC icon (A) appears on the display and the number indicating which button was pressed (B) is shown on the page.

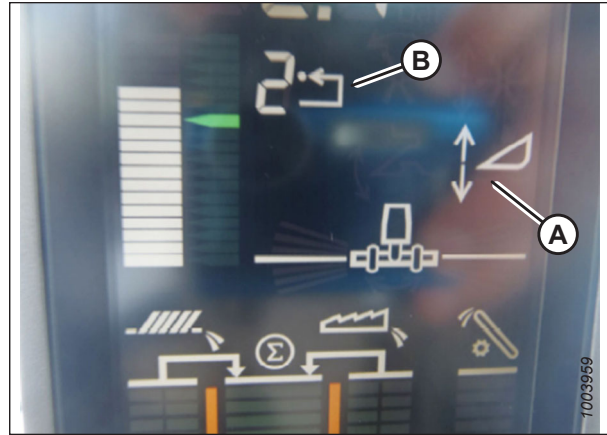


Figure 7.344: Combine Display

Calibrating Feeder House Fore-Aft Tilt Range – John Deere S and T Series

Follow this procedure to properly calibrate the combine feeder house fore-aft tilt range. This procedure applies only to model year 2015 and later John Deere S and T Series combines.

For best performance of the auto header height control (AHHC), perform these procedures with the center-link set to **D**. When setup and calibration are complete, adjust the center-link back to desired header angle. For instructions, refer to the header operator's manual.

NOTE:

Changes may have been made to the combine controls or the display since this document was published. Refer to the combine operator's manual for the most up-to-date information.

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

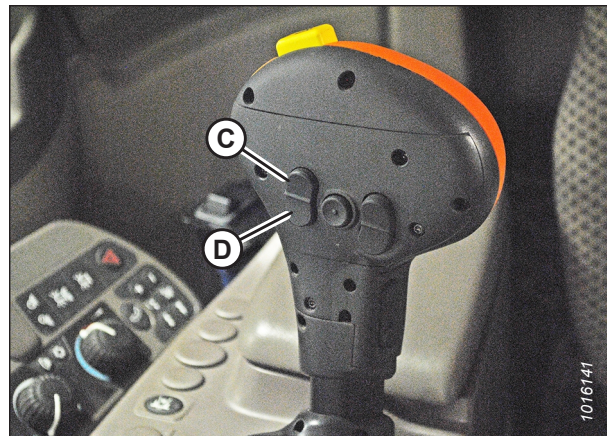


Figure 7.345: John Deere Control Handle

SETTING UP AUTO HEADER HEIGHT CONTROL

NOTE:

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

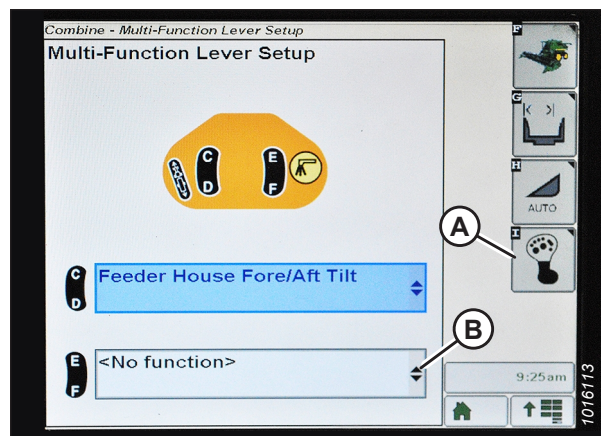


Figure 7.346: John Deere Combine Display

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

1. Ensure the center-link is set to D.
2. Rest the header on the down stops and unlock the float.
3. Place the wings in the locked position.
4. Press DIAGNOSTIC icon (A) on the main page of the display. The CALIBRATION page displays.

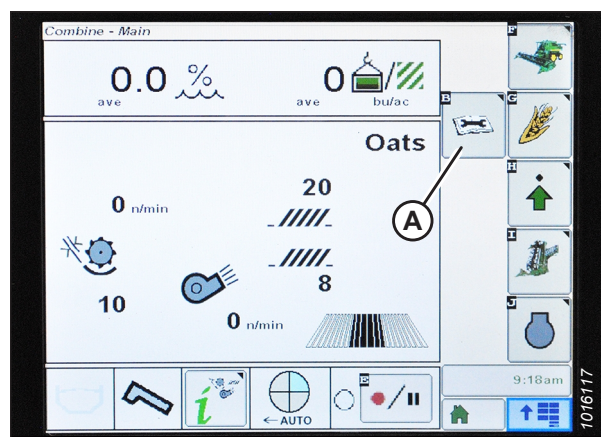


Figure 7.347: John Deere Combine Display

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

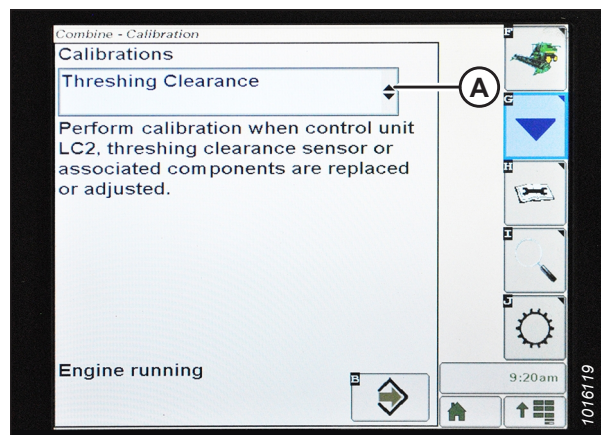


Figure 7.348: John Deere Combine Display

SETTING UP AUTO HEADER HEIGHT CONTROL

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

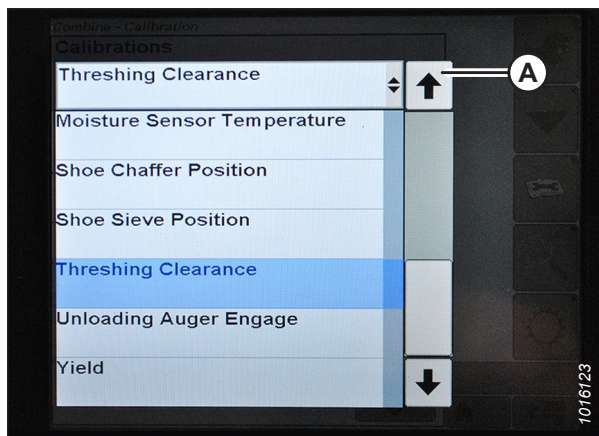


Figure 7.349: John Deere Combine Display

- Press ENTER icon (A).

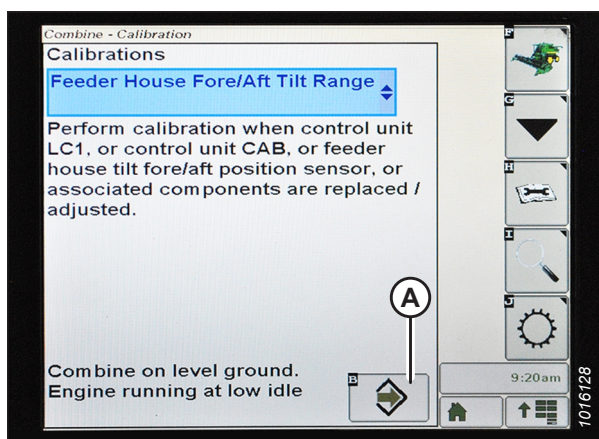


Figure 7.350: John Deere Combine Display

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

NOTE:

If an error code appears during calibration, the sensor is out of voltage range and will require adjustment. For instructions, refer to [Checking Voltage Range from Combine Cab – John Deere S and T Series, page 329](#).

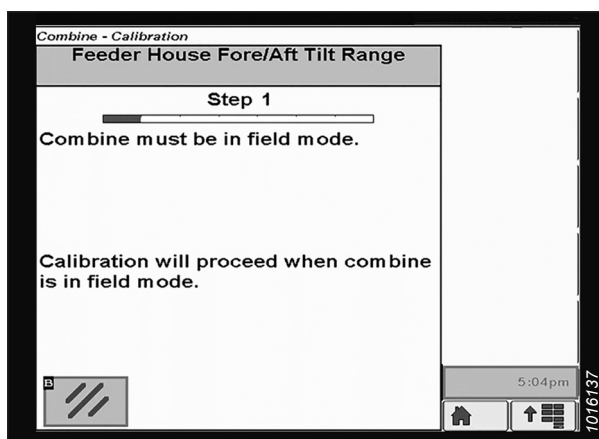


Figure 7.351: John Deere Combine Display

Checking Reel Height Sensor Voltages – John Deere S and T Series

Check the reel height sensor voltages to ensure they are within the prescribed range.

NOTE:

Changes may have been made to the combine controls or the display since this document was published. Refer to the combine operator's manual for the most up-to-date information.

SETTING UP AUTO HEADER HEIGHT CONTROL

1. Press CALIBRATION icon (A) on the main page of the display. The CALIBRATION page appears.

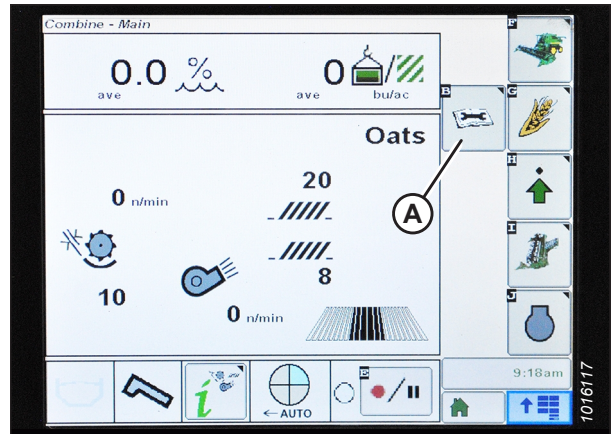


Figure 7.352: John Deere Combine Display

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

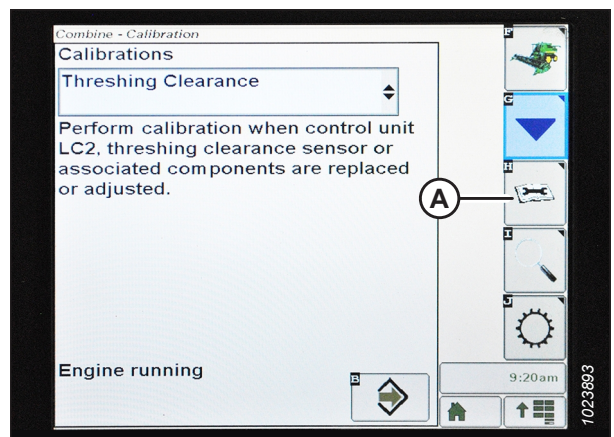


Figure 7.353: John Deere Combine Display

3. Select drop-down menu (A) to view the list of calibration options.

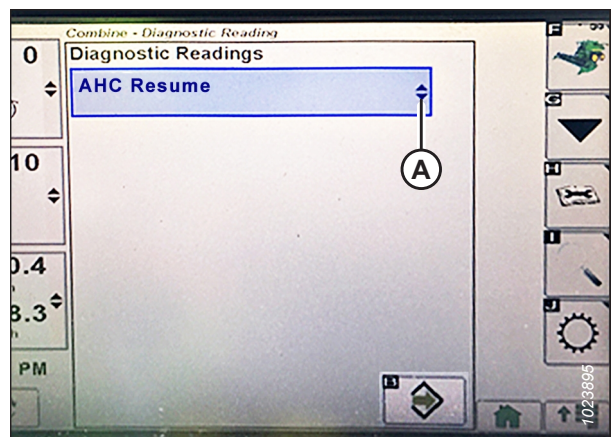


Figure 7.354: John Deere Combine Display

SETTING UP AUTO HEADER HEIGHT CONTROL

4. Scroll down and select REEL RESUME (A).

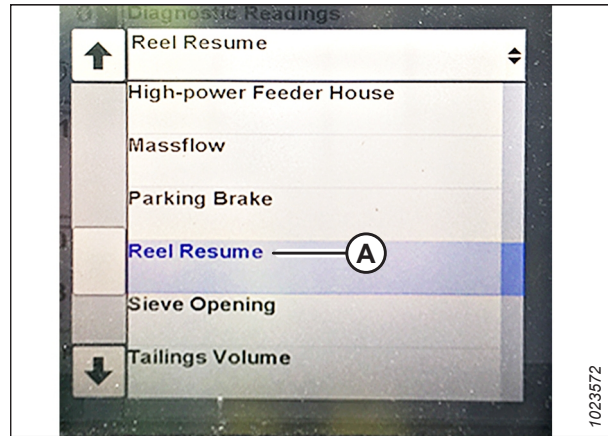


Figure 7.355: John Deere Combine Display

5. Press ENTER icon (A). The REEL RESUME page appears.

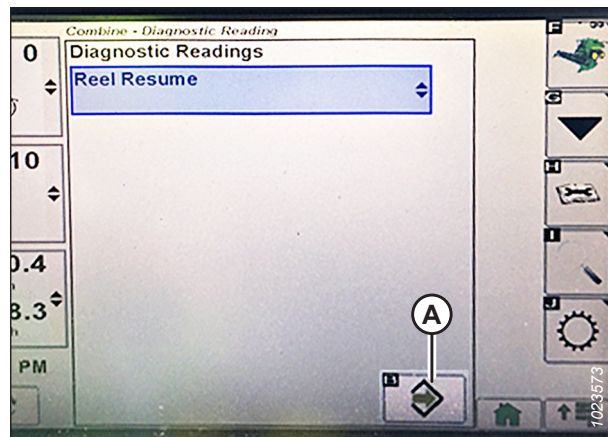


Figure 7.356: John Deere Combine Display

6. Press NEXT PAGE icon (A) to cycle to page 3.
7. Lower the reel to view lower voltage limit (B). The voltage should be 0.5–0.9 V.

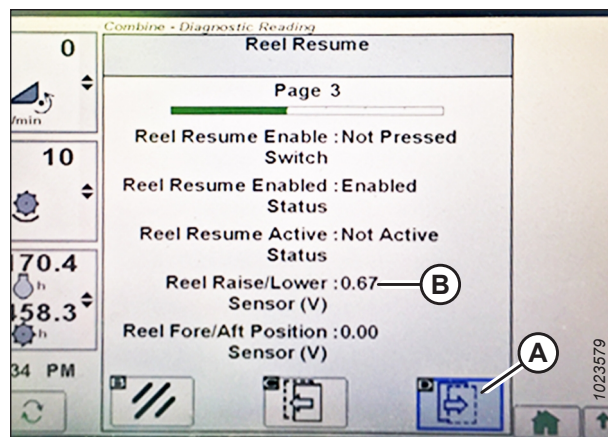


Figure 7.357: John Deere Combine Display

SETTING UP AUTO HEADER HEIGHT CONTROL

8. Raise the reel to view upper voltage limit (A). The voltage should be 4.1–4.5 V.
9. If either voltage is not within the correct range, refer to [8.1 Checking and Adjusting Reel Height Sensor, page 387](#).

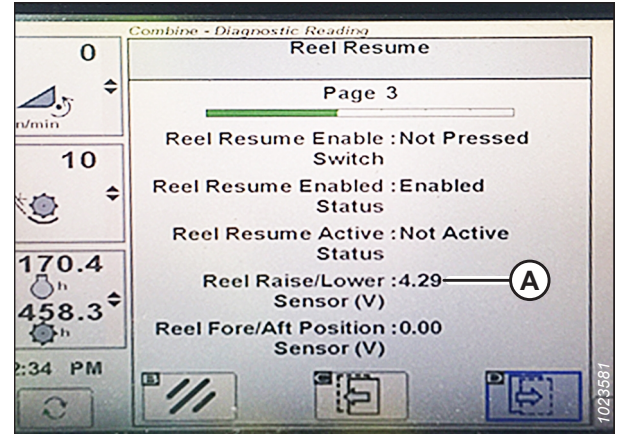


Figure 7.358: John Deere Combine Display

Calibrating Reel Height Sensor – John Deere S and T Series

The auto header height control (AHHC) sensor output must be calibrated for each combine, or the AHHC feature will not work properly. The following procedure applies only to model year 2015 and later John Deere S and T Series combines.

NOTE:

Changes may have been made to the combine controls or the display since this document was published. Refer to the combine operator's manual for the most up-to-date information.

1. Position the header 15–25 cm (6–10 in.) off the ground.

IMPORTANT:

Do **NOT** turn off the engine. The combine has to be at full idle for the sensors to calibrate properly.

2. Press DIAGNOSTIC icon (A) on the main page of the display. The CALIBRATION page is shown.

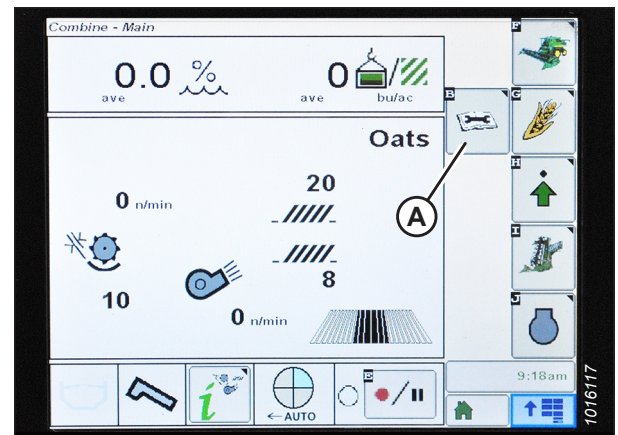


Figure 7.359: John Deere Combine Display

SETTING UP AUTO HEADER HEIGHT CONTROL

3. Select CALIBRATIONS drop-down menu (A) to view the list of calibration options.
4. Scroll through the list of options and select REEL POSITION.
5. Press ENTER icon (B).

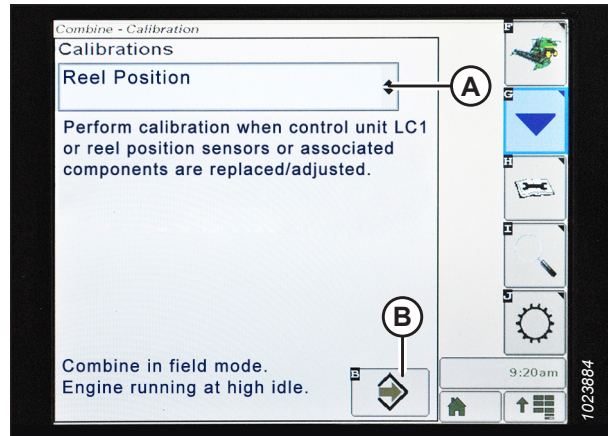


Figure 7.360: John Deere Combine Display

6. Follow the instructions that appear on the page. As you proceed through the calibration process, the display will automatically update to show the next step. This calibration requires you to use reel raise (A) and reel lower (B) switches on the control handle.



Figure 7.361: John Deere Control Handle

7. Press and hold REEL LOWER switch until the reel is fully lowered. Continue holding REEL LOWER switch until prompted by the display.

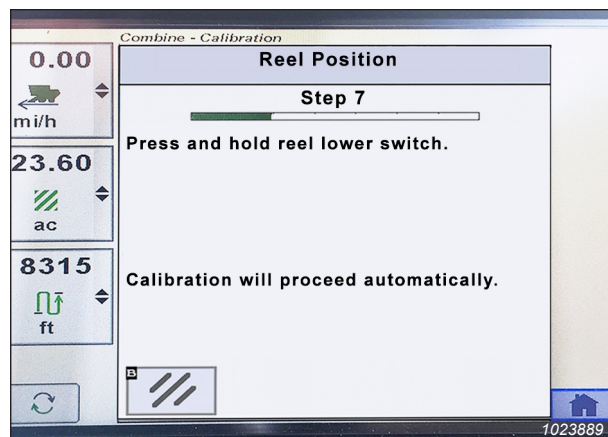


Figure 7.362: John Deere Combine Display

SETTING UP AUTO HEADER HEIGHT CONTROL

- Press and hold the REEL RAISE switch until the reel is fully raised. Continue holding the REEL RAISE switch until prompted by the display.

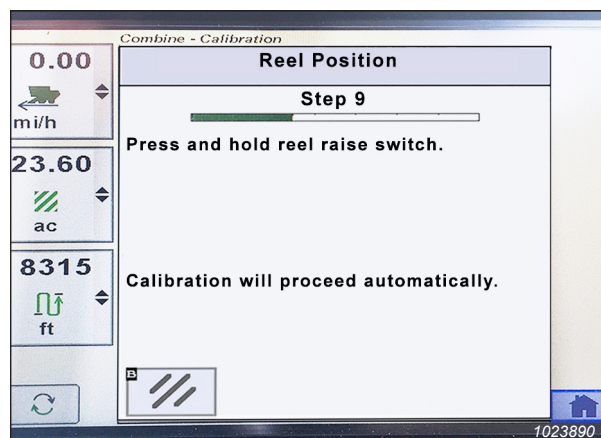


Figure 7.363: John Deere Combine Display

- When all steps have been completed, CALIBRATION COMPLETE message is displayed on the page. Exit the CALIBRATION menu by pressing ENTER icon (A).

NOTE:

If an error code appears during calibration, the sensor is out of voltage range and will require adjustment. For instructions, refer to *Checking Reel Height Sensor Voltages – John Deere S and T Series, page 342.*

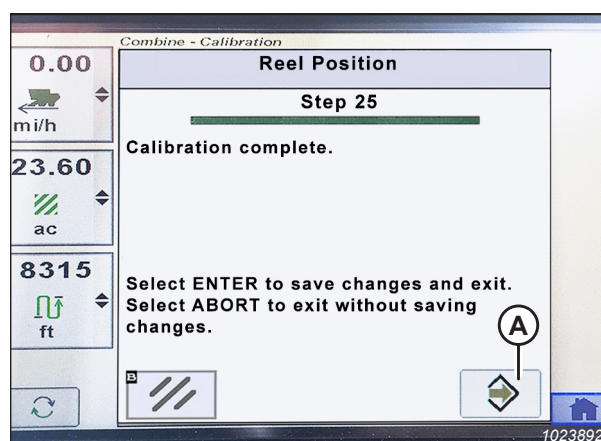


Figure 7.364: John Deere Combine Display

7.1.17 John Deere S7 Series Combines

To make your header's auto header height control (AHHC) system compatible with John Deere S7 series combines, you must set your combine's header configuration options for the particular model of header, configure the reel speed settings, set up the AHHC controls, and calibrate the AHHC system to ensure that it is working correctly.

Setting up Header – John Deere S7 Series

Set these initial configuration options on your combine when setting up the auto header height control (AHHC) system.

NOTE:

Changes may have been made to the combine controls or the display since this document was published. Refer to the combine operator's manual for the most up-to-date information.

SETTING UP AUTO HEADER HEIGHT CONTROL

1. Press header button (A) on the panel below the display. The HEADER page opens.



Figure 7.365: John Deere S7 Display

2. Select HEADER TYPE field (A). The HEADER DETAILS dialog box opens.

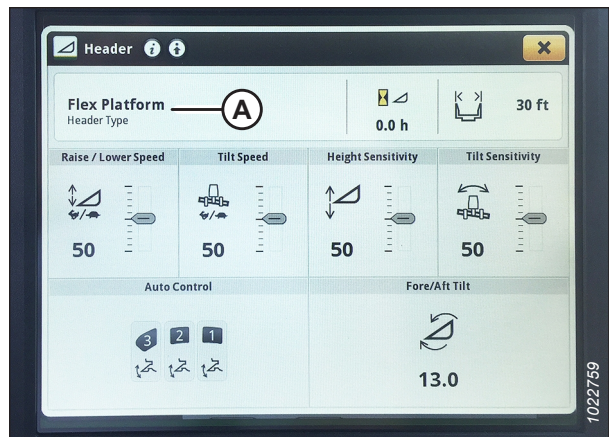


Figure 7.366: John Deere S7 Display – Header Page

3. Verify correct header width is displayed under WIDTH.
4. To change header width, select field (A). The WIDTH dialog box opens.

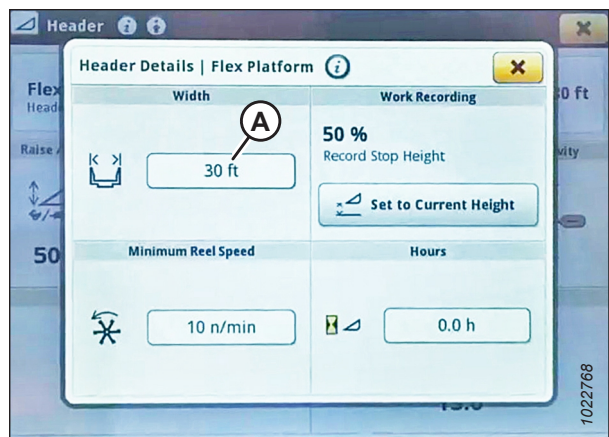


Figure 7.367: John Deere S7 Display – Header Details Window

SETTING UP AUTO HEADER HEIGHT CONTROL

- Use the on-screen keypad to enter the correct header width, and then press OK.



Figure 7.368: John Deere S7 Display – Setting Header Width

- Press close button (A) in the top right corner to return to the HEADER page.

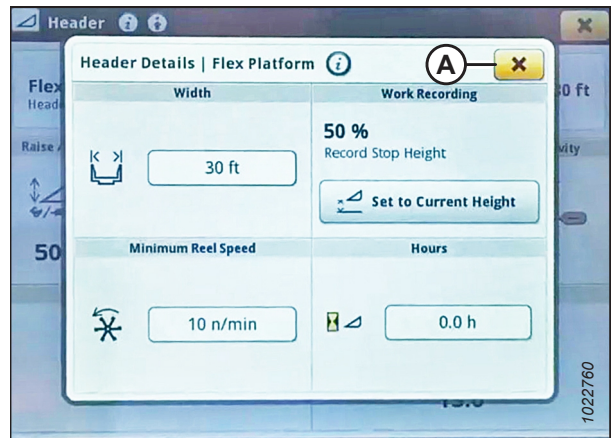


Figure 7.369: John Deere S7 Display – Header Details Dialog Box

- Raise/lower speed (A), tilt speed (B), height sensitivity (C), and tilt sensitivity (D) can all be adjusted from this page. Select the option you would like to adjust. The following example shows the raise/lower speed adjustment.

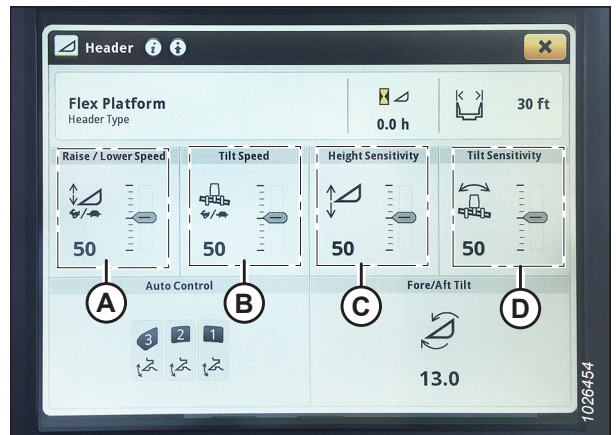


Figure 7.370: John Deere S7 Display – Header Page

SETTING UP AUTO HEADER HEIGHT CONTROL

8. Use + and – buttons (A) to adjust the setting.
9. Press the close button in top right corner of the window to return to the HEADER page.

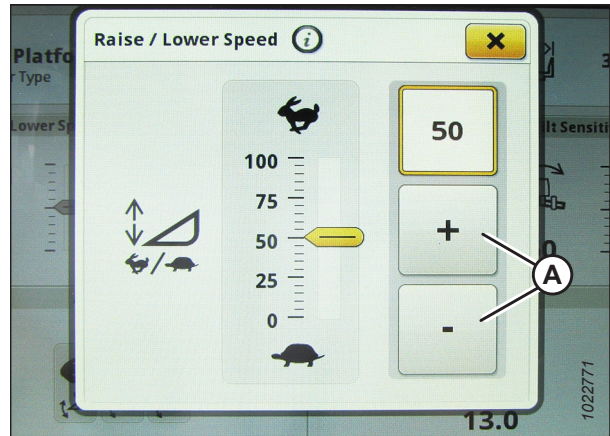


Figure 7.371: John Deere S7 Display – Raise/Lower Speed Adjustment

10. Select AUTO CONTROL icons (A). The AUTO HEADER CONTROLS page opens.

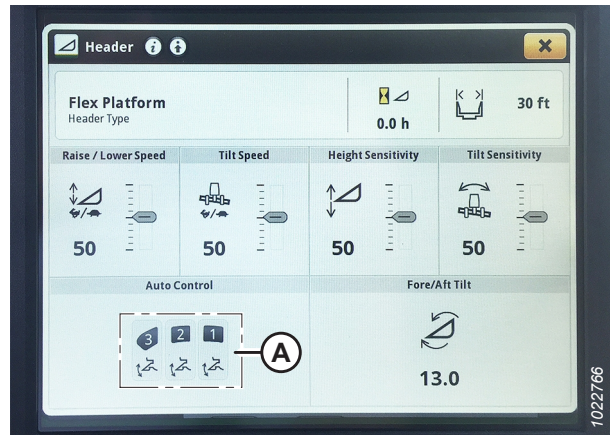


Figure 7.372: John Deere S7 Display – Header Page

11. If the header has not been calibrated yet, an error icon will appear on HEIGHT SENSING button (A). Select button (A) to view the error message.

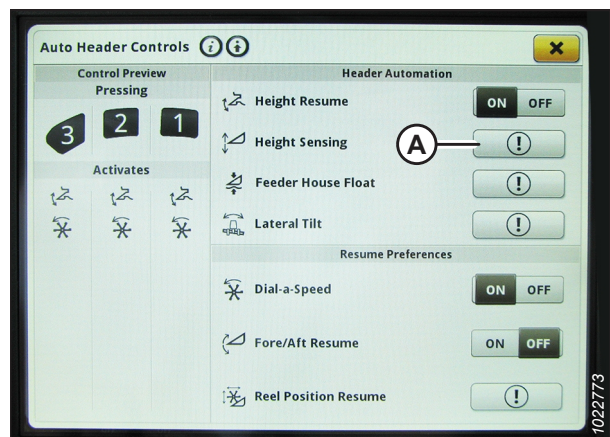


Figure 7.373: John Deere S7 Display – Auto Header Controls

SETTING UP AUTO HEADER HEIGHT CONTROL

12. Read the error message and then press OK.
13. Proceed to *Checking Voltage Range from Combine Cab – John Deere S7 Series, page 351.*

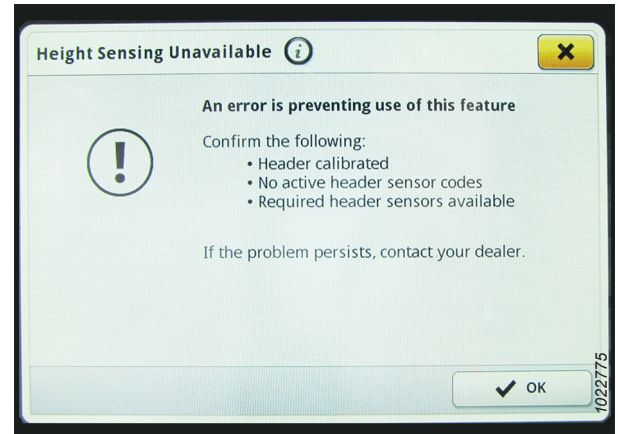


Figure 7.374: John Deere S7 Display – Height Sensing Error Message

Checking Voltage Range from Combine Cab – John Deere S7 Series

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

NOTE:

Changes may have been made to the combine controls or the display since this document was published. Refer to the combine operator's manual for the most up-to-date information.



WARNING

Check to be sure all bystanders have cleared the area.

1. Position the header 150 mm (6 in.) above the ground.
2. Unlock the float.

SETTING UP AUTO HEADER HEIGHT CONTROL

3. Check that the float lock linkage is on the down stops (washer [A] cannot be moved) at both locations.

NOTE:

If the header is not on the down stops during the next two steps, the voltage may go out of range during operation causing a malfunction of auto header height control (AHHC) system.

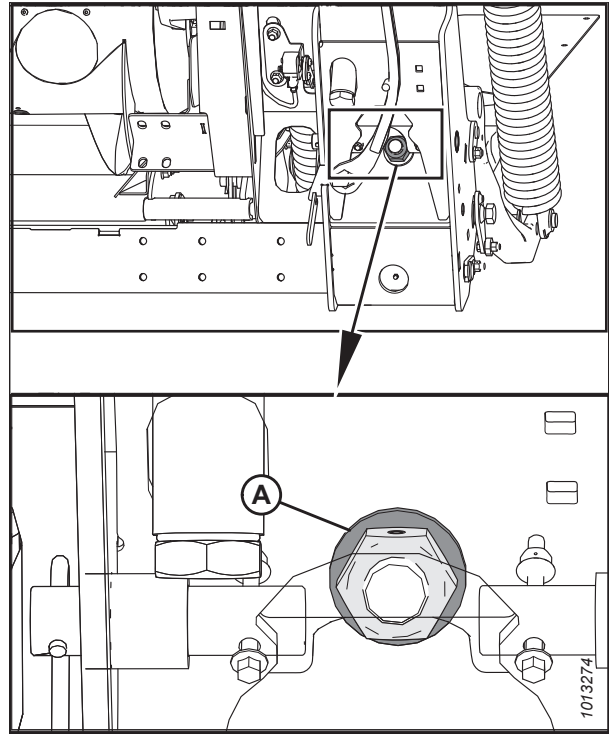


Figure 7.375: Float Lock

4. If necessary, adjust cable take-up bracket (B) until pointer (A) on the float indicator is on 0.

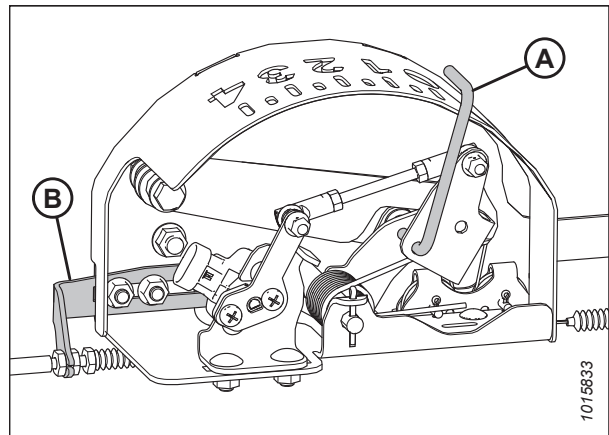


Figure 7.376: Float Indicator Box

SETTING UP AUTO HEADER HEIGHT CONTROL

- On the HARVESTING page, select MENU icon (A) in the bottom right corner of the page.

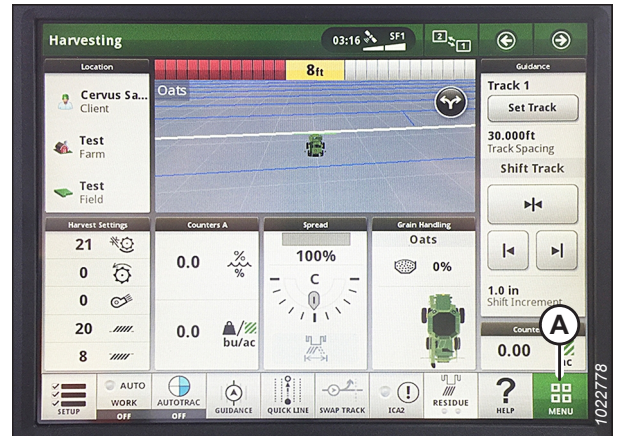


Figure 7.377: John Deere S7 Display – Harvesting Page

- On the MENU page, select SYSTEM tab (A). The MENU opens.
- Select DIAGNOSTICS CENTER icon (B). The DIAGNOSTICS CENTER page opens.

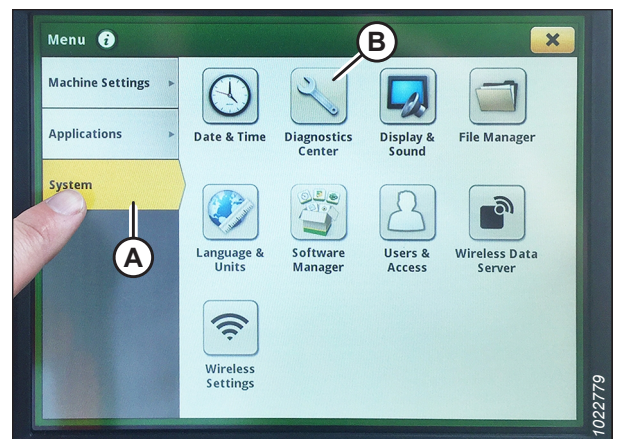


Figure 7.378: John Deere S7 Display – Menu

- Select AHC - SENSING (A). The AHC - SENSING\DIAGNOSTICS page appears.

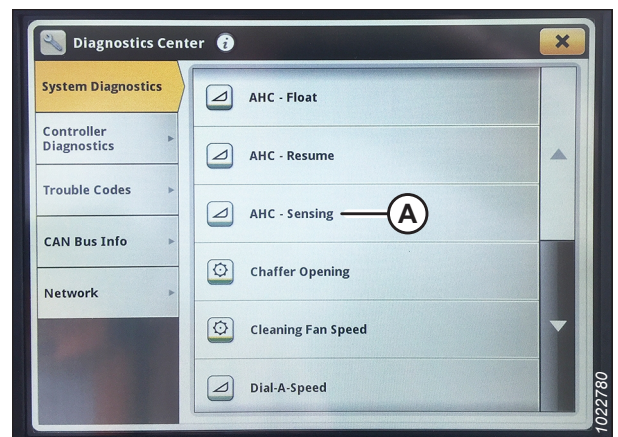


Figure 7.379: John Deere S7 Display – Diagnostics Center

SETTING UP AUTO HEADER HEIGHT CONTROL

9. Select SENSOR tab (A) to view the sensor voltages. Center header height sensor voltage (B) must be between 0.5 and 4.5 V, with at least 3 V of variation between 0 and 4 on the float indicator box.

NOTE:

If the optional Auto Lateral Tilt AHHC kit is installed, the left and right header height sensors must also be in the same 0.5–4.5 V range.

10. If sensor voltage adjustment is required, refer to [Adjusting Voltage Limits – One-Sensor System, page 199](#).

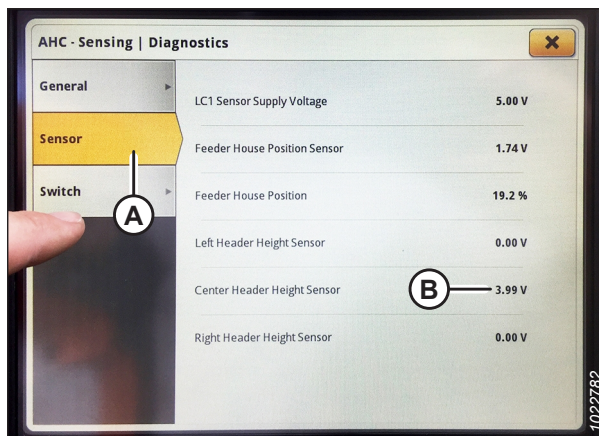


Figure 7.380: John Deere S7 Display – Checking Sensor Voltage

Calibrating Feeder House – John Deere S7 Series

Feeder house calibration must be done before header calibration.

DANGER

Check to be sure all bystanders have cleared the area.

NOTE:

Changes may have been made to the combine controls or the display since this document was published. Refer to the combine operator's manual for the most up-to-date information.

NOTE:

For the best performance of the auto header height control (AHHC) system, perform the ground calibration with the center-link set to **D**. When calibration is complete, adjust the center-link back to the desired header angle. For instructions, refer to the header operator's manual.

1. Ensure the center-link is set to **D**.
2. Rest the header on the down stops and unlock the float module float.
3. Put the wings in the locked position.
4. On the HARVESTING page, select MENU icon (A) in the bottom right corner of page. The MENU opens.



Figure 7.381: John Deere S7 Display – Harvesting Page

SETTING UP AUTO HEADER HEIGHT CONTROL

5. Select MACHINE SETTINGS tab (A).
6. Select CALIBRATIONS & PROCEDURES icon (B). The CALIBRATIONS & PROCEDURES page appears.

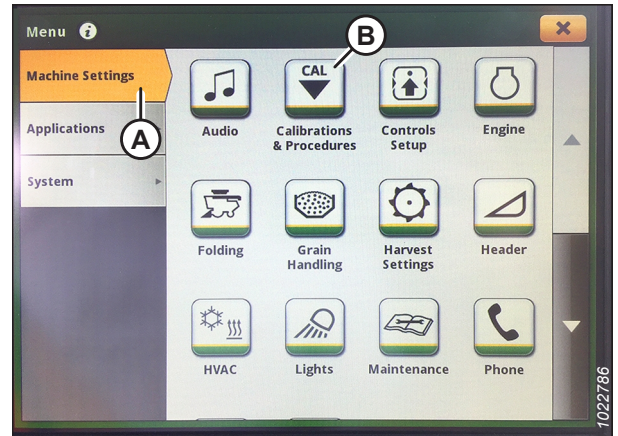


Figure 7.382: John Deere S7 Display – Machine Settings

7. Select HEADER tab (A).
8. Select FEEDER HOUSE RAISE SPEED CALIBRATION (B). The FH RAISE SPEED CALIBRATION page appears.

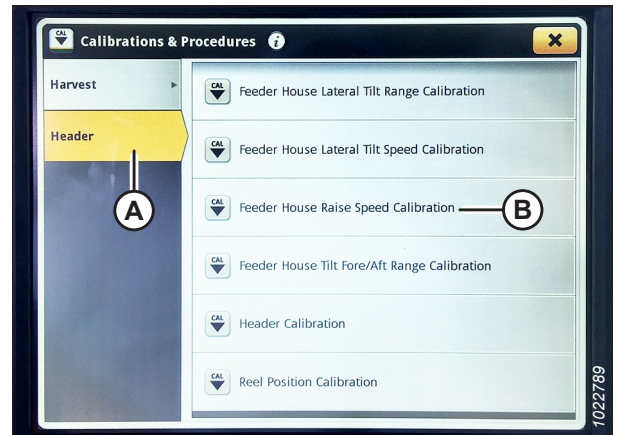


Figure 7.383: John Deere S7 Display – Calibrations and Procedures

9. Select CALIBRATE (A) at the bottom of the page. A calibration overview appears.

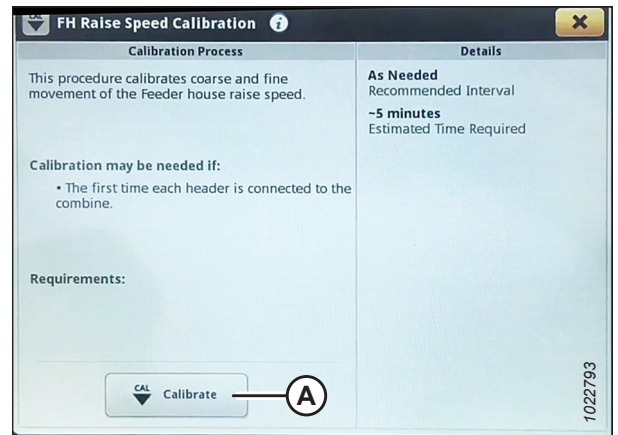


Figure 7.384: John Deere S7 Display – Feeder House Calibration

SETTING UP AUTO HEADER HEIGHT CONTROL

10. Read the calibration overview, and then press START.

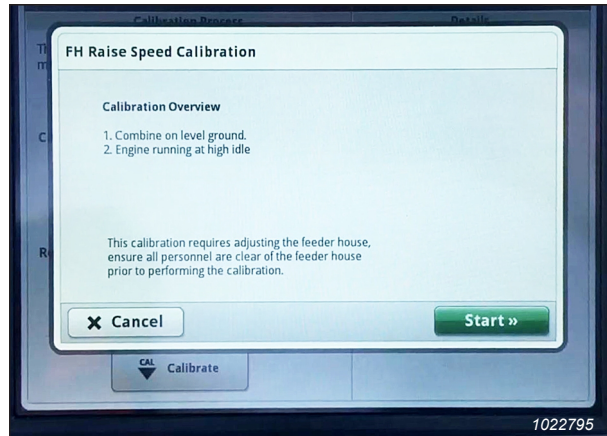


Figure 7.385: John Deere S7 Display – Feeder House Calibration

11. Follow the instructions on the page. As you proceed through the calibration process, the display will automatically update to show the next step.

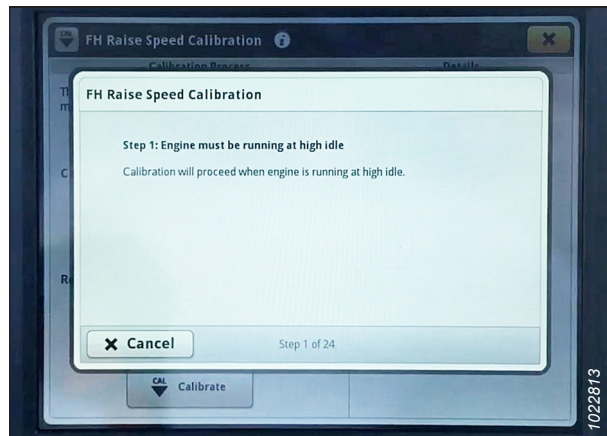


Figure 7.386: John Deere S7 Display – Feeder House Calibration

12. When calibration is complete, select SAVE to confirm the calibration.

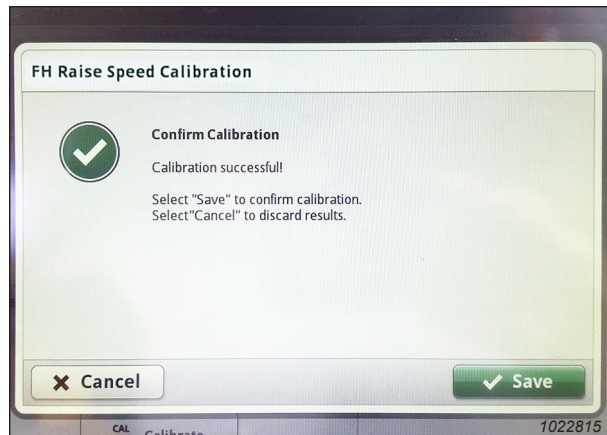


Figure 7.387: John Deere S7 Display – Feeder House Calibration

SETTING UP AUTO HEADER HEIGHT CONTROL

Calibrating Header – John Deere S7 Series

Before the auto header height control (AHHC) system can be used, it must be calibrated.

DANGER

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

Feeder house calibration must be done before header calibration. If feeder house has not yet been calibrated, refer to [Calibrating Feeder House – John Deere S7 Series, page 354](#).

NOTE:

For the best performance of the auto header height control (AHHC) system, perform the ground calibration with the center-link set to **D**. When calibration is complete, adjust the center-link back to the desired header angle. For instructions, refer to the header operator's manual.

NOTE:

Changes may have been made to the combine controls or the display since this document was published. Refer to the combine operator's manual for the most up-to-date information.

1. Ensure the center-link is set to **D**.
2. Rest the header on the down stops and unlock the float module float.
3. Place the wings in the locked position.
4. On the HARVESTING page, select MENU icon (A) in the bottom right corner of screen. The MENU opens.

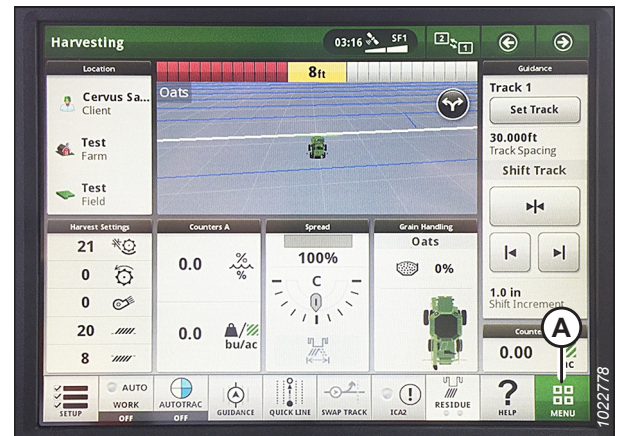


Figure 7.388: John Deere S7 Display – Harvesting Page

SETTING UP AUTO HEADER HEIGHT CONTROL

5. Select MACHINE SETTINGS tab (A).
6. Select CALIBRATIONS & PROCEDURES icon (B). The CALIBRATIONS & PROCEDURES page appears.

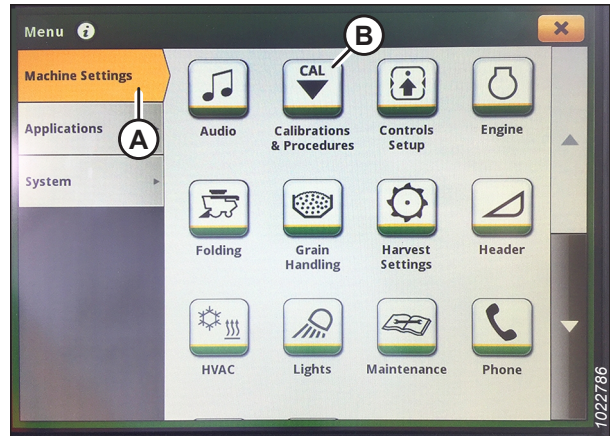


Figure 7.389: John Deere S7 Display – Machine Settings

7. Select HEADER tab (A).
8. Select HEADER CALIBRATION (B). The HEADER CALIBRATION page appears.

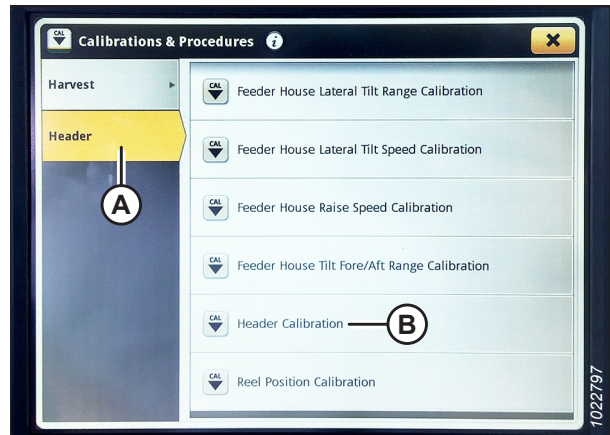


Figure 7.390: John Deere S7 Display – Calibrations and Procedures

9. Select CALIBRATE (A) at the bottom of the page. The calibration overview window opens.

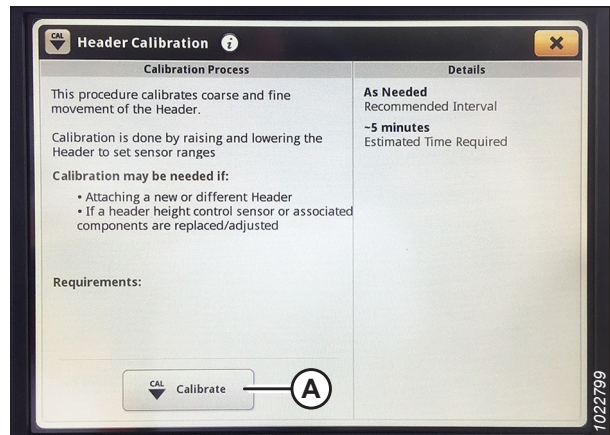


Figure 7.391: John Deere S7 Display – Header Calibration

SETTING UP AUTO HEADER HEIGHT CONTROL

10. Press button (A) on the console to set the engine to high idle.



Figure 7.392: John Deere S7 Console

11. Select START on the CALIBRATION OVERVIEW page.
12. Follow the instructions that appear on the combine display. As you proceed through the calibration process, the display will automatically update to show the next step.

NOTE:

If an error code appears during the calibration, the sensor is out of voltage range and will require adjustment. For instructions, refer to [Adjusting Voltage Limits – One-Sensor System, page 199](#).

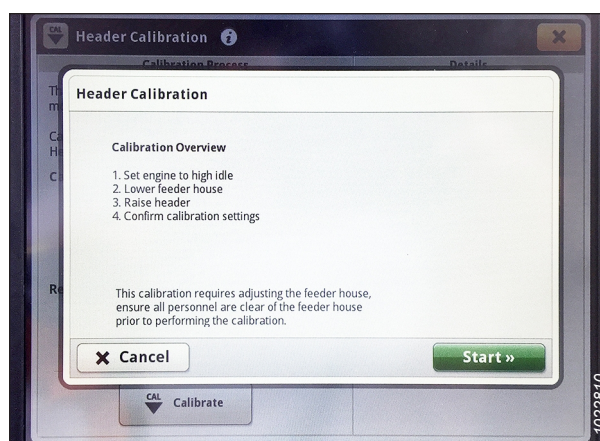


Figure 7.393: John Deere S7 Display – Header Calibration

13. When the calibration is complete, select SAVE to confirm the calibration.

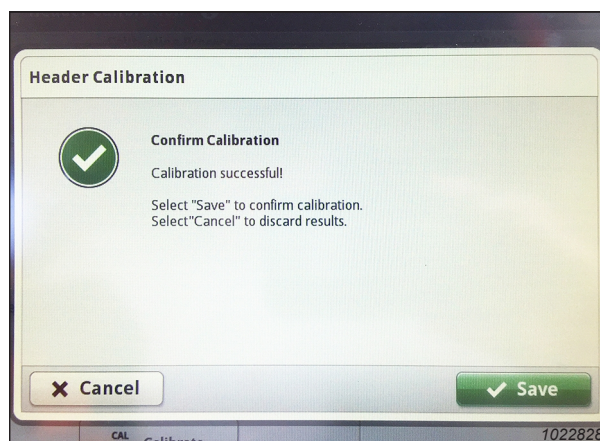


Figure 7.394: John Deere S7 Display – Header Calibration

7.1.18 New Holland Combines – CR/CX Series – 2014 and Prior

To make your header's auto header height control (AHHC) system compatible with New Holland CR/CX Series combines, you must set your combine's header configuration options for the particular model of header, configure the reel speed settings, set up the AHHC controls, and calibrate the AHHC system to ensure that it is working correctly.

This section applies only to pre-2015 CR/CX models.

Checking Voltage Range from Combine Cab – New Holland CR/CX Series

The auto header height control (AHHC) sensor needs to operate in a specific voltage range in order to work properly.

NOTE:

Changes may have been made to the combine controls or the display since this document was published. Refer to the combine operator's manual for the most up-to-date information.

NOTE:

For New Holland CR models 6.80, 6.90, 7.90, 8.90, 9.90, and 10.90, refer to [7.1.19 New Holland Combines – CR Series – 2015 and Later, page 370](#).

⚠ DANGER

Check to be sure all bystanders have cleared the area.

1. Position the header 150 mm (6 in.) above the ground.
2. Unlock the float.
3. Check that the float lock linkage is on the down stops (washer [A] cannot be moved) at both locations.

NOTE:

If the header is not on the down stops during the next two steps, the voltage may go out of range during operation causing a malfunction of the AHHC system.

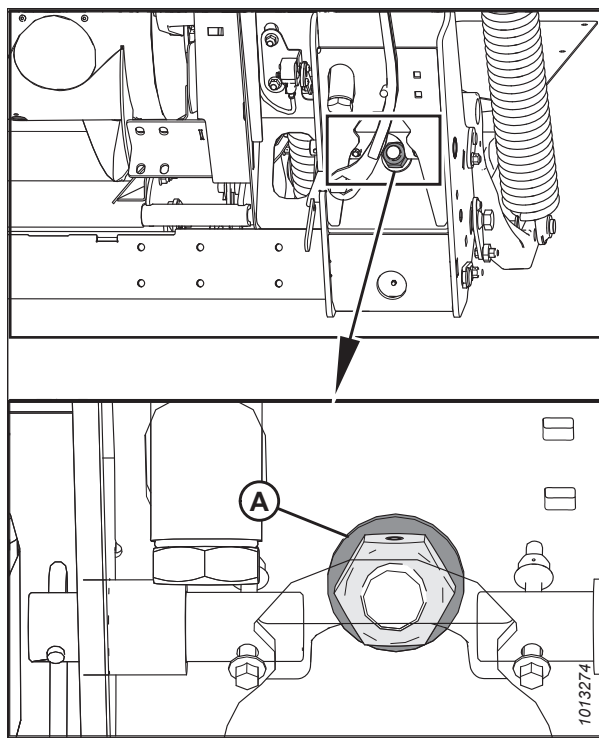


Figure 7.395: Float Lock

SETTING UP AUTO HEADER HEIGHT CONTROL

- If necessary, adjust cable take-up bracket (B) until float indicator pointer (A) is on 0.

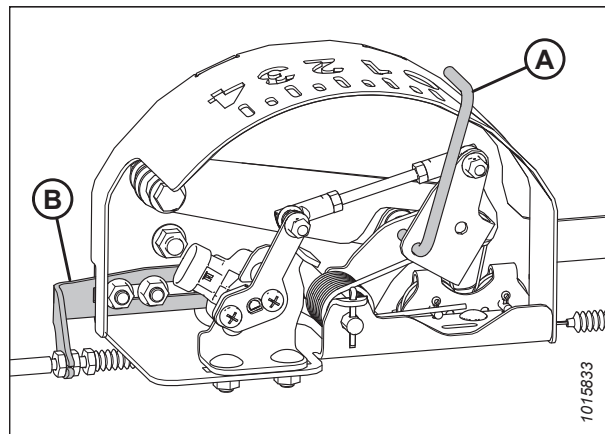


Figure 7.396: Float Indicator Box

- Ensure the header float is unlocked.
- Select DIAGNOSTICS (A) on the main page. The DIAGNOSTICS page appears.
- Select SETTINGS. The SETTINGS page appears.

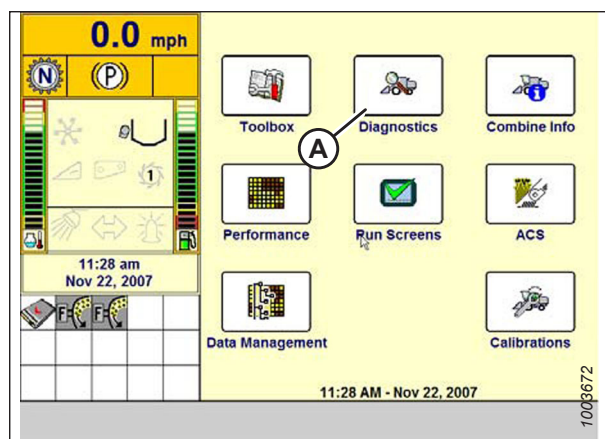


Figure 7.397: New Holland Combine Display

- Select GROUP drop-down menu (A). The GROUP dialog box appears.

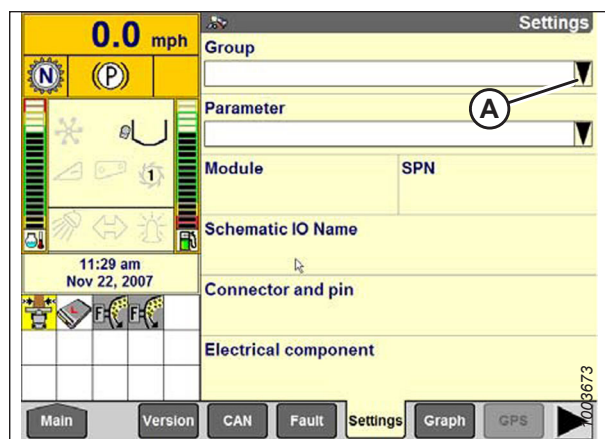


Figure 7.398: New Holland Combine Display

SETTING UP AUTO HEADER HEIGHT CONTROL

9. Select HEADER HEIGHT/TILT (A). The PARAMETER page appears.

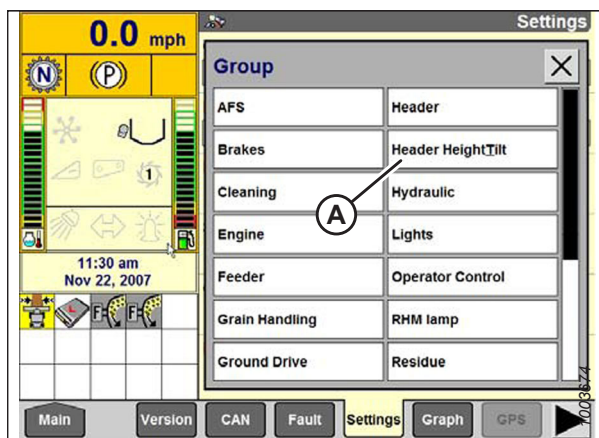


Figure 7.399: New Holland Combine Display

10. Select LEFT HEADER HEIGHT SEN (A), and then select GRAPH button (B). The exact voltage appears at the top of the page.
11. Raise and lower the header to see the full range of voltage readings.
12. If the sensor voltage is not within the low and high limits, or if the range between the low and high limits is insufficient, adjust the voltage limits. For instructions, refer to [Adjusting Voltage Limits – One-Sensor System, page 199](#).

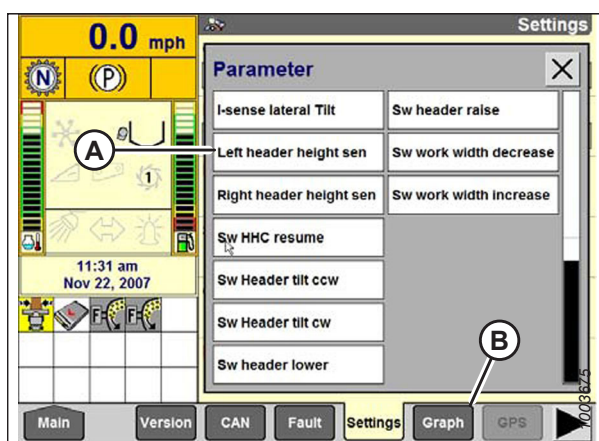


Figure 7.400: New Holland Combine Display

Setting up Auto Header Height Control – New Holland CR/CX Series

Auto header height control (AHHC) is set up using the combine display.

NOTE:

Changes may have been made to the combine controls or the display since this document was published. Refer to the combine operator's manual for the most up-to-date information.

NOTE:

For New Holland CR models 6.80, 6.90, 7.90, 8.90, 9.90, and 10.90, refer to [7.1.19 New Holland Combines – CR Series – 2015 and Later, page 370](#).

SETTING UP AUTO HEADER HEIGHT CONTROL

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



Figure 7.401: New Holland Combine Display

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



Figure 7.402: New Holland Combine Display

Calibrating Auto Header Height Control – New Holland CR/CX Series

The auto header height control (AHHC) sensor output must be calibrated for each combine, or the AHHC feature will not work properly.

DANGER

Check to be sure all bystanders have cleared the area.

NOTE:

Changes may have been made to the combine controls or the display since this document was published. Refer to the combine operator's manual for the most up-to-date information.

NOTE:

For New Holland CR models 6.80, 6.90, 7.90, 8.90, 9.90, and 10.90, refer to [7.1.19 New Holland Combines – CR Series – 2015 and Later, page 370](#).

NOTE:

If the header float is set too light, it can prevent the calibration of the AHHC. You may need to set the float heavier for the calibration procedure so header does not separate from the float module.

SETTING UP AUTO HEADER HEIGHT CONTROL

NOTE:

For the best performance of the auto header height control (AHHC) system, perform the ground calibration with the center-link set to **D**. When calibration is complete, adjust the center-link back to the desired header angle. For instructions, refer to the header operator's manual.

Check the following conditions before starting the header calibration procedure:

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

To calibrate the AHHC, follow these steps:

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

NOTE:

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

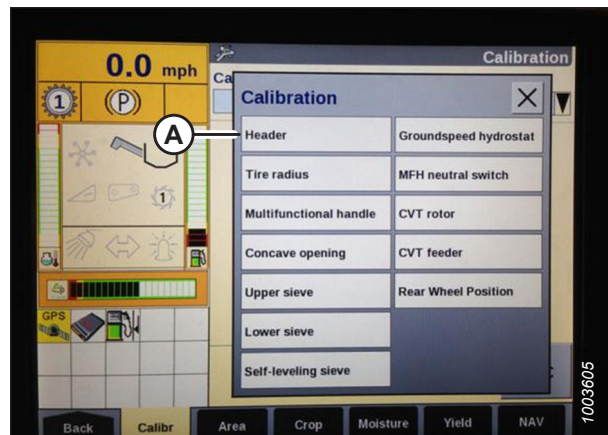


Figure 7.403: New Holland Combine Display

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

NOTE:

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

NOTE:

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

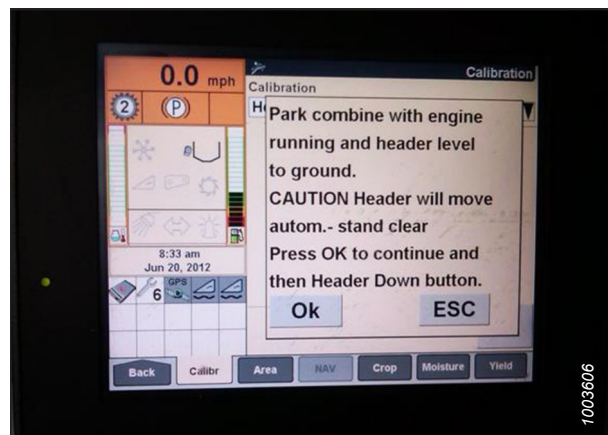


Figure 7.404: New Holland Combine Display

SETTING UP AUTO HEADER HEIGHT CONTROL

4. When all steps have been completed, a CALIBRATION SUCCESSFUL message will appear on the screen. Exit the CALIBRATION menu by pressing the ENTER or ESC key.

NOTE:

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

5. If the unit does not function properly, conduct the maximum stubble height calibration. For instructions, refer to [*Calibrating Maximum Stubble Height – New Holland CR/CX Series, page 366.*](#)

SETTING UP AUTO HEADER HEIGHT CONTROL

Calibrating Maximum Stubble Height – New Holland CR/CX Series

This procedure details how to set the height at which the harvest area counter will start and stop counting harvested area.

IMPORTANT:

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

DANGER

Check to be sure all bystanders have cleared the area.

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

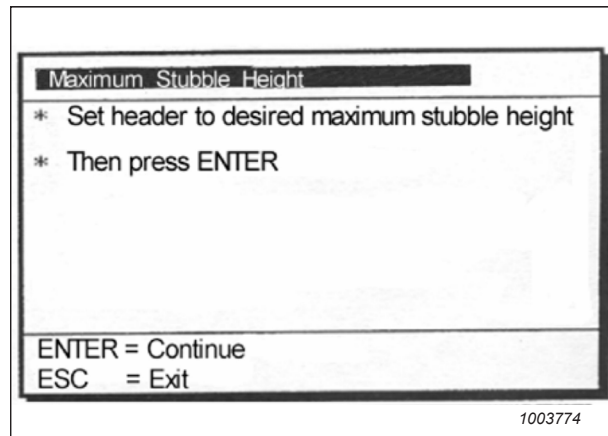


Figure 7.405: New Holland Calibration Dialog Box

2. Move the header to the desired maximum stubble height using the header up or down control switch on the multifunction handle.

NOTE:

Set the header to a height which will never be attained while harvesting. This will ensure that the harvest area counter never stops recording harvesting data while the auto header height control (AHC) system is active.

3. Press ENTER to continue. As you proceed through the calibration process, the display will automatically update to show the next step.
4. Press ENTER or ESC to close the calibration screen. The calibration is now complete.

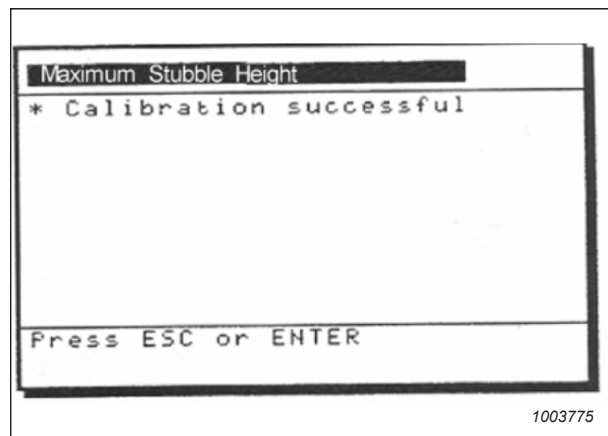


Figure 7.406: New Holland Calibration Dialog Box

SETTING UP AUTO HEADER HEIGHT CONTROL

Adjusting Header Raise Rate – New Holland CR/CX Series

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

NOTE:

Changes may have been made to the combine controls or the display since this document was published. Refer to the combine operator's manual for the most up-to-date information.

NOTE:

For New Holland CR models 6.80, 6.90, 7.90, 8.90, 9.90, and 10.90, refer to [7.1.19 New Holland Combines – CR Series – 2015 and Later, page 370](#).

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

NOTE:

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

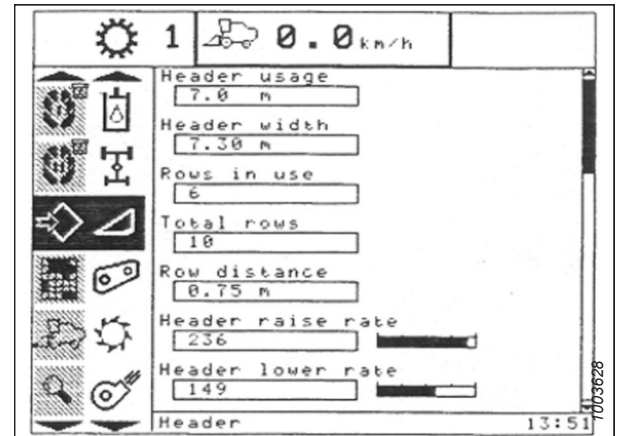


Figure 7.407: New Holland Combine Display

SETTING UP AUTO HEADER HEIGHT CONTROL

Setting Header Lower Rate – New Holland CR/CX Series

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

NOTE:

Changes may have been made to the combine controls or the display since this document was published. Refer to the combine operator's manual for the most up-to-date information.

NOTE:

For New Holland CR models 6.80, 6.90, 7.90, 8.90, 9.90, and 10.90, refer to [7.1.19 New Holland Combines – CR Series – 2015 and Later, page 370](#).

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

NOTE:

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

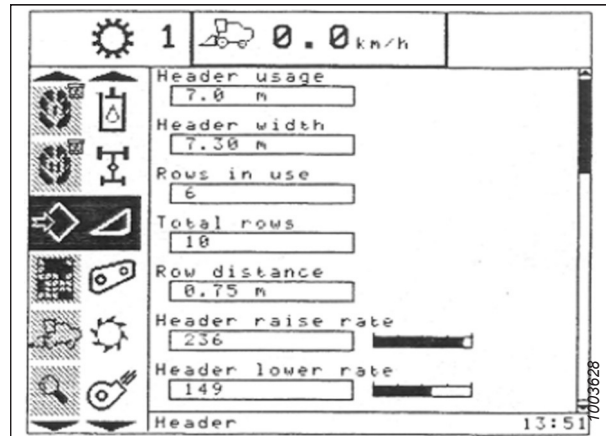


Figure 7.408: New Holland Combine Display

Setting Auto Header Height Control Sensitivity – New Holland CR/CX Series

The sensitivity adjustment controls the distance the cutterbar must travel up or down before the auto header height control (AHC) reacts and raises or lowers the feeder house.

When the sensitivity is set to maximum, only small changes in ground height are needed to cause the feeder house to raise or lower. When the sensitivity is set to minimum, large changes in the ground height are needed to cause the feeder house to raise or lower.

NOTE:

Changes may have been made to the combine controls or the display since this document was published. Refer to the combine operator's manual for the most up-to-date information.

NOTE:

For New Holland CR models 6.80, 6.90, 7.90, 8.90, 9.90, and 10.90, refer to [7.1.19 New Holland Combines – CR Series – 2015 and Later, page 370](#).



DANGER

Check to be sure all bystanders have cleared the area.

SETTING UP AUTO HEADER HEIGHT CONTROL

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

NOTE:

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

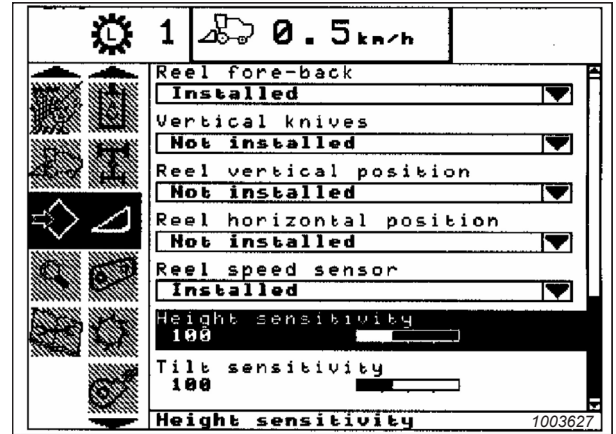


Figure 7.409: New Holland Combine Display

Setting Preset Cutting Height – New Holland CR/CX Series

The cut height setting can be stored in the combine. When harvesting the setting can be selected from the control handle.

NOTE:

Changes may have been made to the combine controls or the display since this document was published. Refer to the combine operator's manual for the most up-to-date information.

NOTE:

For New Holland CR models 6.80, 6.90, 7.90, 8.90, 9.90, and 10.90, refer to [7.1.19 New Holland Combines – CR Series – 2015 and Later, page 370](#).

NOTE:

Indicator (A) should be at position 0 (B) with the header (152 mm [6 in.]) off the ground. If not, the float sensor output voltage should be checked. Refer to [Step 6, page 195](#). When the header is on the ground, the indicator should be at position 1 (C) for low ground pressure, and at position 4 (D) for high ground pressure. Crop and soil conditions determine the amount of float to use. The ideal setting is as light as possible without the header bouncing or missing crop. Operating with heavy settings prematurely wears the cutterbar wearplates.

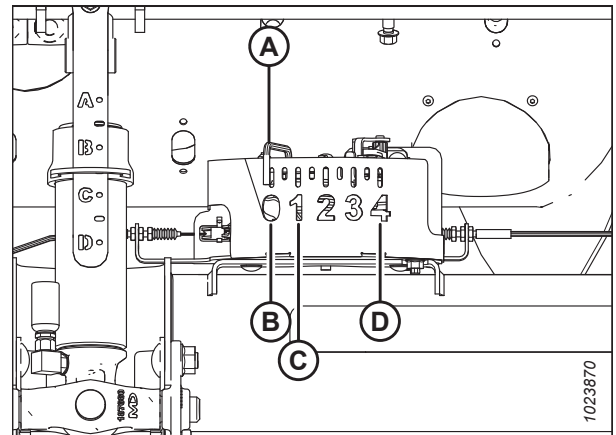


Figure 7.410: Float Indicator Box

SETTING UP AUTO HEADER HEIGHT CONTROL

1. Engage the threshing mechanism and the feeder house with switches (A) and (B).
2. Set HEADER MEMORY rocker switch (D) in STUBBLE HEIGHT/AUTOFLOAT mode position (A) or (B).
3. Raise or lower the header to the desired cutting height using HEADER HEIGHT and HEADER LATERAL FLOAT momentary switch (C).
4. Lightly press AUTOMATIC HEADER HEIGHT CONTROL button (E) for a minimum of 2 seconds to store the height position. A beep confirms the 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. Raise or lower the reel to the desired working height using REEL HEIGHT momentary switch (E).
6. Lightly press AUTOMATIC HEADER HEIGHT CONTROL button (E) for a minimum of 2 seconds to store the height position. A beep confirms the setting.
7. To change one of the memorized header height set points while the combine is in use, use HEADER HEIGHT AND HEADER LATERAL FLOAT rocker switch (A) (slow up/down) to raise or lower header to the desired value. Lightly press AUTOMATIC HEADER HEIGHT CONTROL button (B) for a minimum of 2 seconds to store the new height position. A beep confirms setting.

NOTE:

Fully pressing AUTOMATIC HEADER HEIGHT CONTROL button (B) will disengage float mode.

NOTE:

It is not necessary to press rocker switch (C) again after changing header height set point.

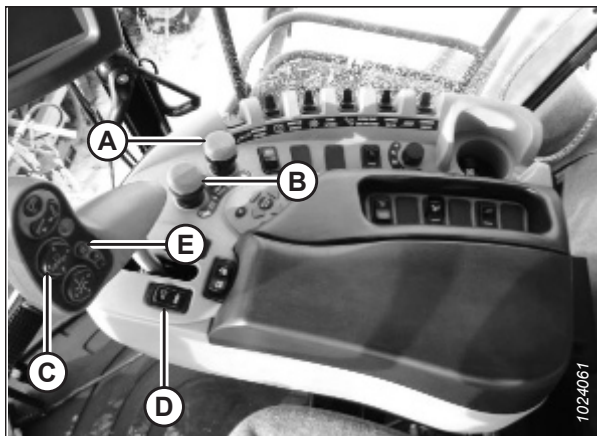


Figure 7.411: New Holland Combine Controls

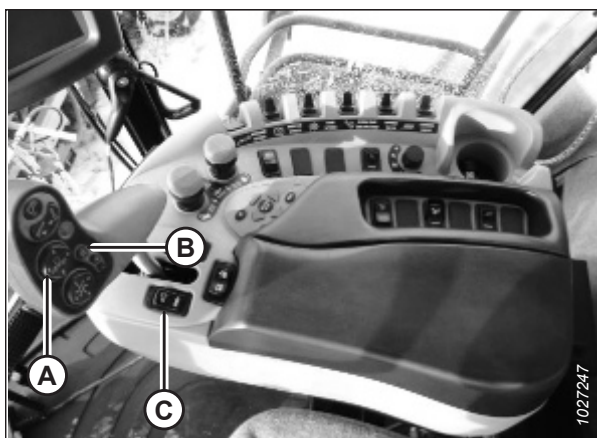


Figure 7.412: New Holland Combine Controls

7.1.19 New Holland Combines – CR Series – 2015 and Later

To make your header's auto header height control (AHHC) system compatible with model year 2015 and newer New Holland CR Series combines, you must set your combine's header configuration options for the particular model of header, configure the reel speed settings, set up the AHHC controls, and calibrate the AHHC system to ensure that it is working correctly.

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

SETTING UP AUTO HEADER HEIGHT CONTROL

Checking Voltage Range from Combine Cab – New Holland CR Series

The auto header height control (AHHC) sensor needs to operate in a specific voltage range in order to work properly.

NOTE:

Changes may have been made to the combine controls or the display since this document was published. Refer to the combine operator's manual for the most up-to-date information.

NOTE:

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 pre-2015 New Holland combine models, refer to [7.1.18 New Holland Combines – CR/CX Series – 2014 and Prior, page 360](#).

⚠ DANGER

Check to be sure all bystanders have cleared the area.

1. Position the header 150 mm (6 in.) above the ground.
2. Unlock the float.
3. Check that the float lock linkage is on the down stops (washer [A] cannot be moved) at both locations.

NOTE:

If the header is not on the down stops during the next two steps, the voltage may go out of range during operation causing a malfunction of the auto header height control (AHHC) system.

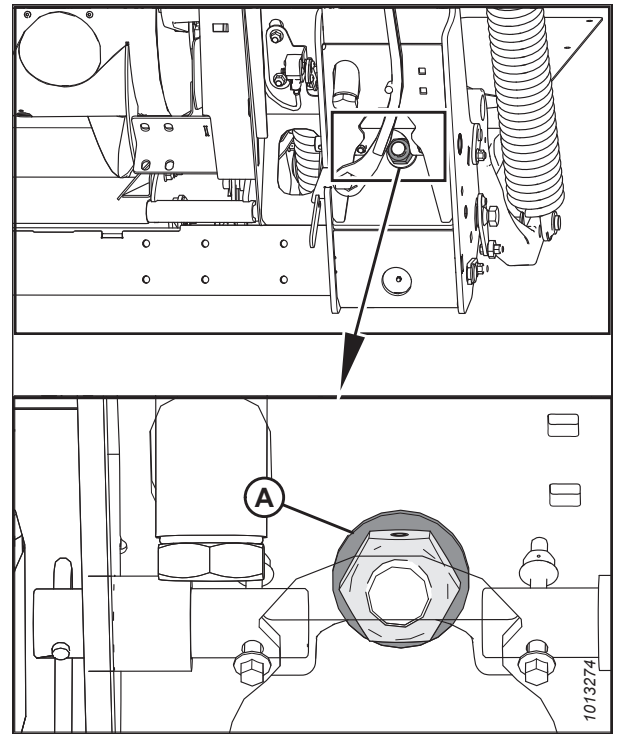


Figure 7.413: Float Lock

SETTING UP AUTO HEADER HEIGHT CONTROL

4. If necessary, adjust cable take-up bracket (B) until float indicator pointer (A) is on 0.
5. Ensure the header float is unlocked.

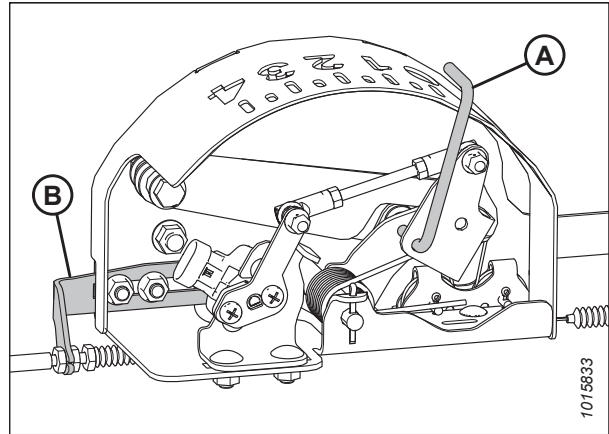


Figure 7.414: Float Indicator Box

6. Select DIAGNOSTICS (A) on the main page. The DIAGNOSTICS page appears.

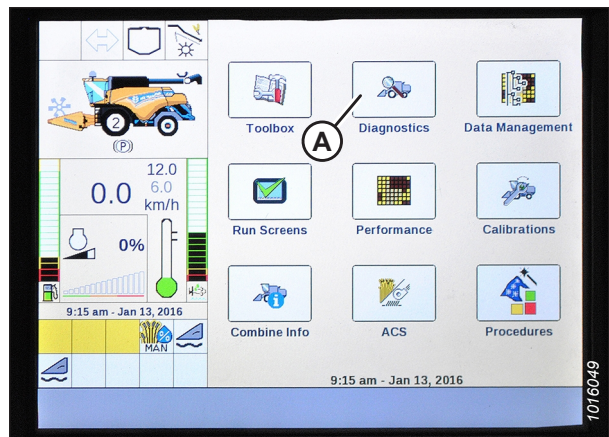


Figure 7.415: New Holland Combine Display

7. Select SETTINGS (A). The SETTINGS page appears.

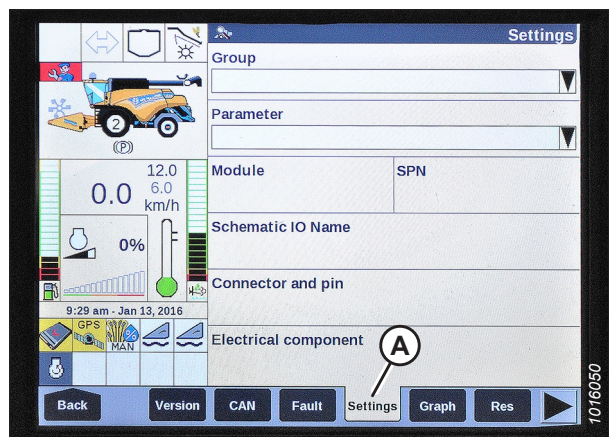


Figure 7.416: New Holland Combine Display

SETTING UP AUTO HEADER HEIGHT CONTROL

8. Select HEADER HEIGHT/TILT (A) from the GROUP drop-down menu.
9. Select HEADER HEIGHT SENS. L (B) from the PARAMETER drop-down menu.



Figure 7.417: New Holland Combine Display

10. Select GRAPH (A). The exact voltage (B) is displayed at the top of the page.
11. Raise and lower the header to see the full range of voltage readings.
12. If the sensor voltage is not within the low and high limits, or if the range between the low and high limits is insufficient, adjust the voltage limits. For instructions, refer to [Adjusting Voltage Limits – One-Sensor System, page 199](#).

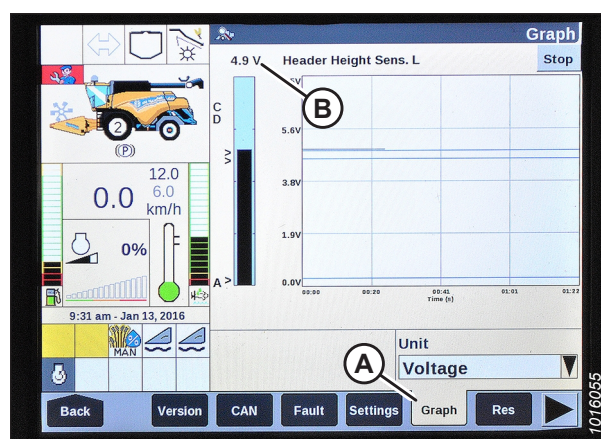


Figure 7.418: New Holland Combine Display

Setting up Auto Header Height Control – New Holland CR Series

Auto header height control (AHC) is set up using the combine display and control handle.

For best performance of the auto header height control (AHC), perform these procedures with the center-link set to **D**. When setup and calibration are complete, adjust the center-link back to desired header angle.

NOTE:

Changes may have been made to the combine controls or the display since this document was published. Refer to the combine operator's manual for the most up-to-date information.

NOTE:

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 pre-2015 New Holland combine models, refer to [7.1.18 New Holland Combines – CR/CX Series – 2014 and Prior, page 360](#).

1. Ensure the center-link is set to **D**.
2. Shut down the engine.
3. Turn the key to the run position.

SETTING UP AUTO HEADER HEIGHT CONTROL

4. Select TOOLBOX (A) on the main page. The TOOLBOX page appears.

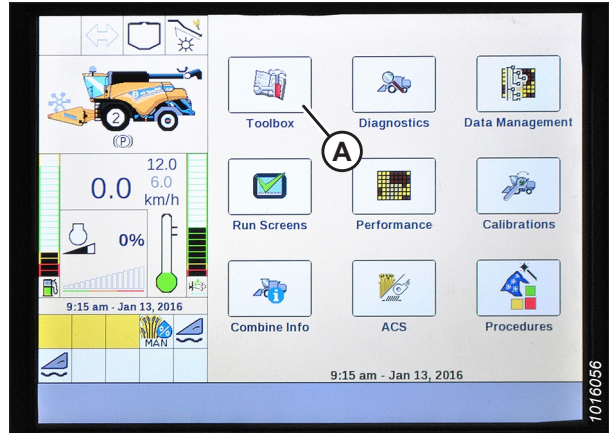


Figure 7.419: New Holland Combine Display

5. Simultaneously press UNLOAD (A) and RESUME (B) buttons on the control handle.

NOTE:

Software in some New Holland combines may not allow you to change the header from FLEX to PLATFORM or the header type from DEFAULT to 80/90 at the main menu. This is now a dealer setting, and requires you to access the DEALER SETTING page by pressing and holding both the UNLOAD and RESUME buttons on the control handle for approximately 10 seconds. The DEALER SETTING page should appear and will allow you to change the header and header type settings.

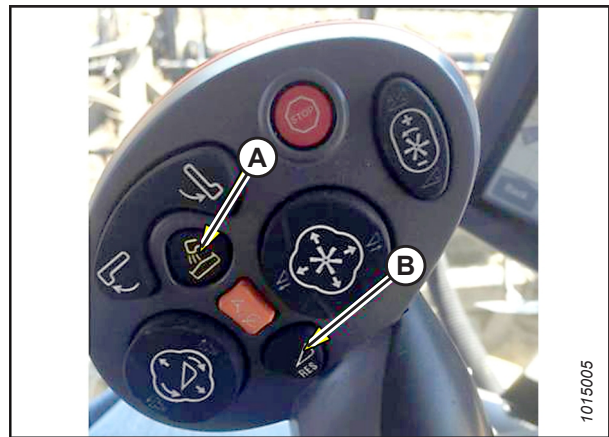


Figure 7.420: New Holland Combine Controls

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

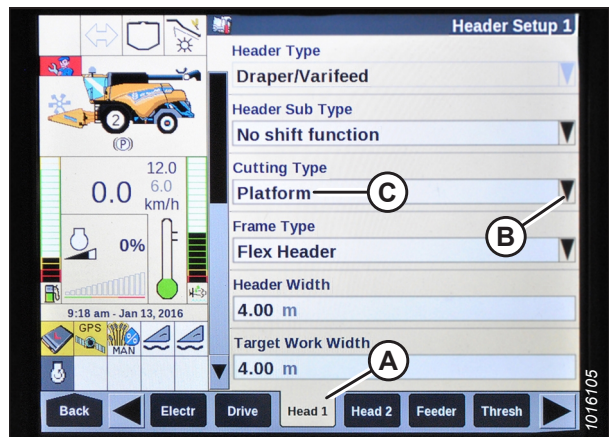


Figure 7.421: New Holland Combine Display

SETTING UP AUTO HEADER HEIGHT CONTROL

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



Figure 7.422: New Holland Combine Display

9. Set HEADER SUB TYPE to 80/90 (A) for a New Holland combine.

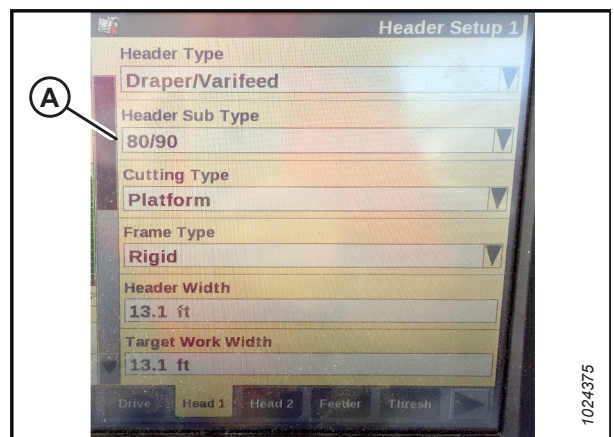


Figure 7.423: New Holland Combine Display

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



Figure 7.424: New Holland Combine Display

SETTING UP AUTO HEADER HEIGHT CONTROL

11. Select the AUTOFLOAT drop-down menu and set AUTOFLOAT to INSTALLED (A).
12. Select the AUTO HEADER LIFT drop-down menu and set AUTO HEADER LIFT to INSTALLED (B).

NOTE:

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

13. Set the values for MANUAL HHC RAISE RATE (C) and MANUAL HHC LOWER RATE (D) for best performance according to ground conditions.



Figure 7.425: New Holland Combine Display

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

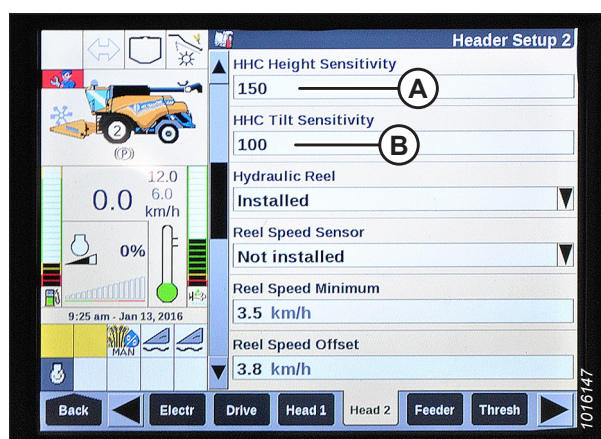


Figure 7.426: New Holland Combine Display

15. From REEL HEIGHT SENSOR menu (A), select YES.

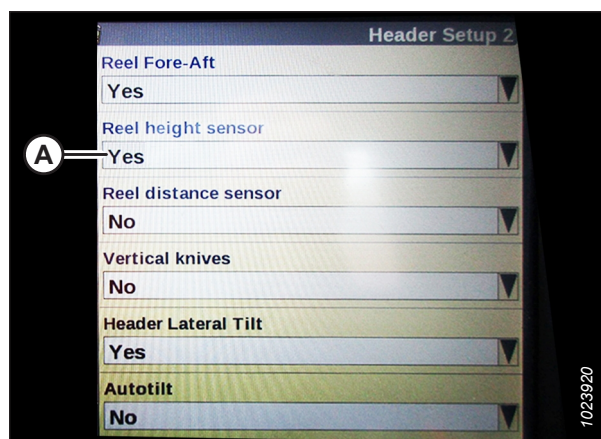


Figure 7.427: New Holland Combine Display

Setting up Reel – New Holland CR Series

You must record the reel diameter and reel displacement into the combine software before operating the reel speed.

NOTE:

Changes may have been made to the combine controls or the display since this document was published. Refer to the combine operator's manual for the most up-to-date information.

SETTING UP AUTO HEADER HEIGHT CONTROL

NOTE:

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

1. Shut down the engine.
2. Turn the key to the run position.
3. Make sure the combine display software is updated to these versions or later:
 - Model year 2015–2018: UCM v38.10.0.0
 - Model year 2019: UCM v1.4.0.0
4. Ensure the center-link is set to **D**.
5. Select **TOOLBOX (A)** on the main page. The **TOOLBOX** page appears.

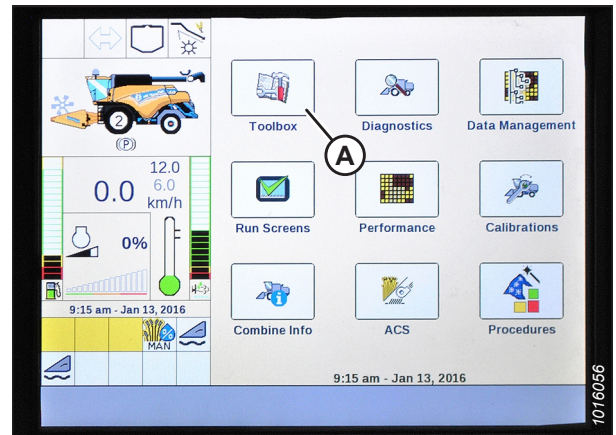


Figure 7.428: New Holland Combine Display

6. Access dealer mode by simultaneously pressing **UNLOAD (A)** and **RESUME (B)** buttons on the control handle for approximately 10 seconds. The **DEALER SETTING** page should appear and is required to change the **REEL DIAMETER** and **REEL DISPLACEMENT PER REVOLUTION** settings.

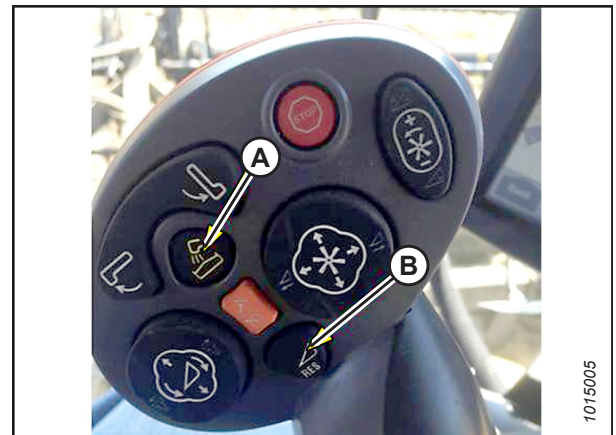


Figure 7.429: New Holland Combine Controls

SETTING UP AUTO HEADER HEIGHT CONTROL

7. Select HEAD 2 (A). The HEADER SETUP 2 page appears.
8. Select REEL DIAMETER (B) and enter "40.16".
9. Select REEL DISPLACEMENT PER REVOLUTION (C) and enter the appropriate value according to the reel drive configuration:
 - **High-torque reel drives:** "1044"
 - **Standard-torque reel drives:** "769"

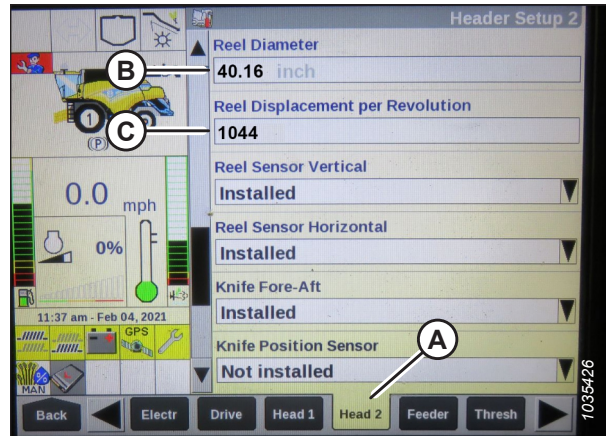


Figure 7.430: New Holland Combine Display

Calibrating Auto Header Height Control – New Holland CR Series

The auto header height control (AHHC) sensor output must be calibrated for each combine, or the AHHC feature will not work properly.

DANGER

Check to be sure all bystanders have cleared the area.

NOTE:

Changes may have been made to the combine controls or the display since this document was published. Refer to the combine operator's manual for the most up-to-date information.

NOTE:

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 pre-2015 New Holland combine models, refer to [7.1.18 New Holland Combines – CR/CX Series – 2014 and Prior, page 360](#).

NOTE:

If the header float is set too light, it can prevent the calibration of the AHHC. You may need to set the float heavier for the calibration procedure so the header does not separate from the float module.

NOTE:

For the best performance of the auto header height control (AHHC) system, perform the ground calibration with the center-link set to **D**. When calibration is complete, adjust the center-link back to the desired header angle. For instructions, refer to the header operator's manual.

Check the following conditions before starting the header calibration procedure:

- The header is attached to the combine.
- The combine is on level ground, with the header level to the ground.
- The header is on down stops, and the center-link is set to **D**.
- The engine is running.
- The combine is not moving.
- No faults have been received from the header height controller (HHC) module.
- The header/feeder is disengaged.
- The lateral float buttons are **NOT** pressed.
- The ESC key is **NOT** pressed.

SETTING UP AUTO HEADER HEIGHT CONTROL

To calibrate the AHHC, follow these steps:

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

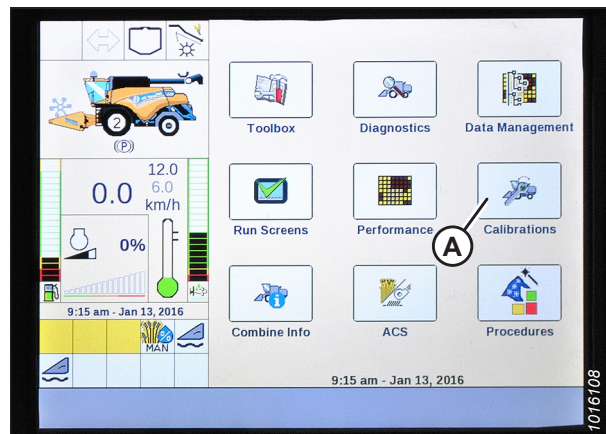


Figure 7.431: New Holland Combine Display

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



Figure 7.432: New Holland Combine Display

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

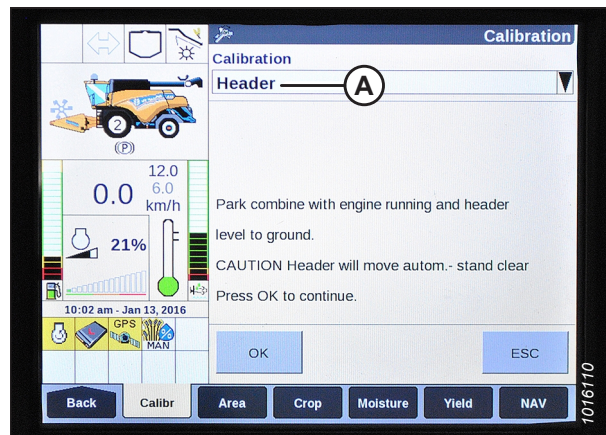


Figure 7.433: New Holland Combine Display

SETTING UP AUTO HEADER HEIGHT CONTROL

- Follow the calibration steps in the order in which they appear on the page. As you proceed through the calibration process, the display updates to show the next step.

NOTE:

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

NOTE:

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

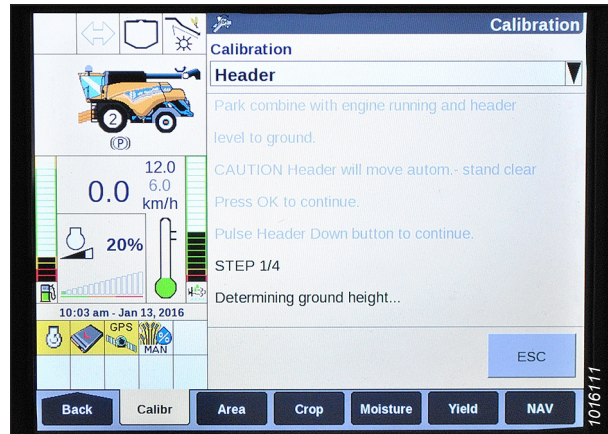


Figure 7.434: New Holland Combine Display

- When all steps have been completed, the CALIBRATION COMPLETED message appears on the page.

NOTE:

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



Figure 7.435: New Holland Combine Display

Checking Reel Height Sensor Voltages – New Holland CR Series

Check the reel height sensor voltages to ensure they are within the prescribed range.

NOTE:

Changes may have been made to the combine controls or the display since this document was published. Refer to the combine operator's manual for the most up-to-date information.

SETTING UP AUTO HEADER HEIGHT CONTROL

1. On the main page of the combine display, select **DIAGNOSTICS (A)**. The **DIAGNOSTICS** page opens.

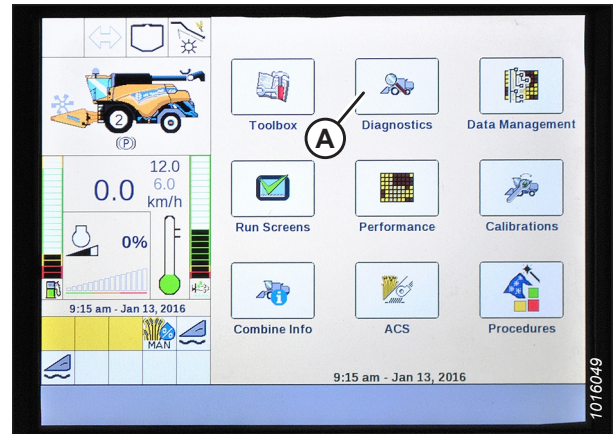


Figure 7.436: New Holland Combine Display

2. Select **SETTINGS** tab (A). The **SETTINGS** page opens.
3. From **GROUP** menu (B), select **HEADER**.
4. From **PARAMETER** menu (C), select **REEL VERTICAL POSITION**.

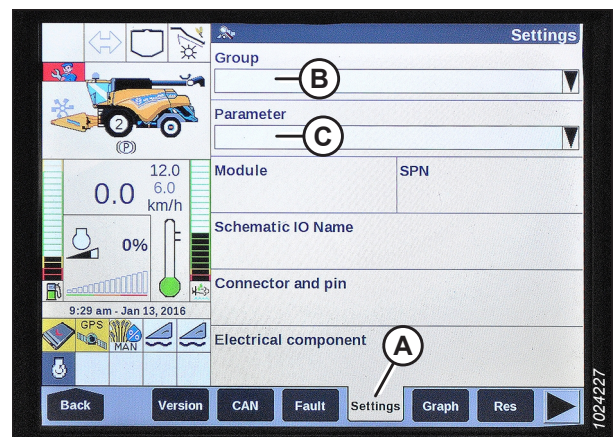


Figure 7.437: New Holland Combine Display

5. Select **GRAPH** tab (A). The **REEL VERTICAL POSITION** graph displays.
6. Raise the reel to view high voltage (B). The voltage should be 4.1–4.5 V.
7. Lower the reel to view low voltage (C). The voltage should be 0.5–0.9 V.
8. If either voltage is out of range, refer to [8.1 Checking and Adjusting Reel Height Sensor, page 387](#).

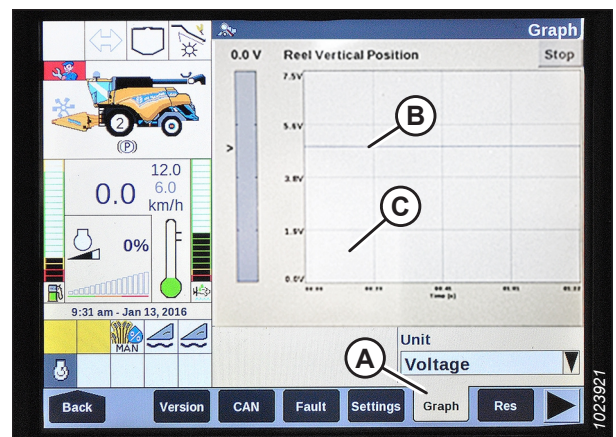


Figure 7.438: New Holland Combine Display

SETTING UP AUTO HEADER HEIGHT CONTROL

Setting Preset Cutting Height – New Holland CR Series

The cut height setting can be stored in the combine. When harvesting, the setting can be selected from the control handle.

NOTE:

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 pre-2015 New Holland combine models, refer to [7.1.18 New Holland Combines – CR/CX Series – 2014 and Prior, page 360](#).

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). Third button (C) is not configured.

DANGER

Check to be sure all bystanders have cleared the area.

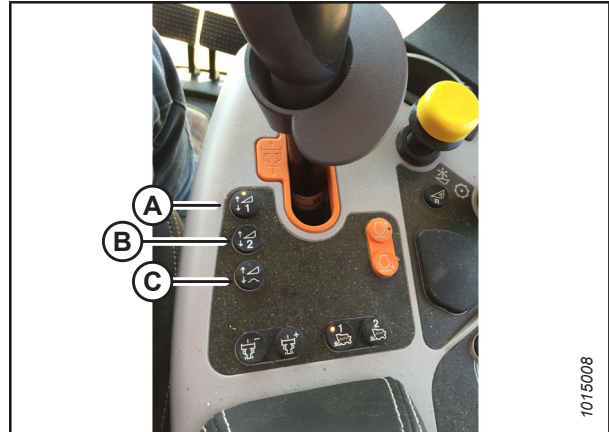


Figure 7.439: New Holland Combine Controls

To set preset cutting height, follow these steps:

1. Engage the separator and the header.
2. Select preset button 1 (A). A yellow light on the button lights up.
3. Raise or lower the header to the desired cutting height.



Figure 7.440: New Holland Combine Controls

SETTING UP AUTO HEADER HEIGHT CONTROL

4. Hold RESUME button (C) on the multifunction handle to set the preset, until the monitor beeps.

NOTE:

When setting presets, always set the header position before setting the reel position. If the header and reel are set at the same time, the reel setting will not save.

5. Raise or lower the reel to the desired working position.
6. Hold RESUME button (C) on the multifunction handle to set the preset.
7. Repeat Step 2, page 382 to Step 6, page 383, using preset button 2.



Figure 7.441: New Holland Combine Multifunction Handle

8. Lower the header to the ground.
9. Select RUN SCREENS (A) on the main page.

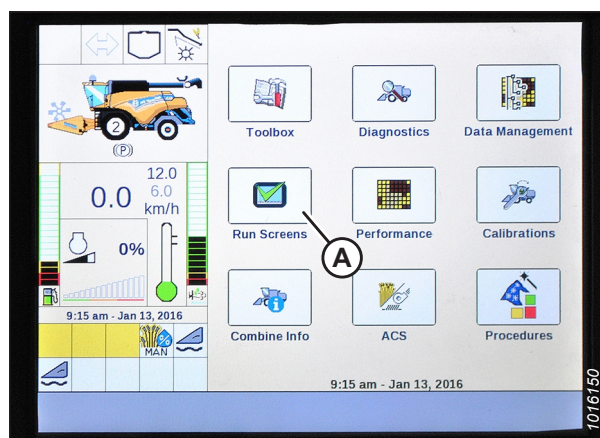


Figure 7.442: New Holland Combine Display

10. Select the RUN tab that shows MANUAL HEIGHT.

NOTE:

The MANUAL HEIGHT field may appear on any of the RUN tabs. When an auto height preset button is pressed, the display changes to AUTO HEIGHT (A).

11. Press one of the auto height preset buttons to select a preset cutting height.

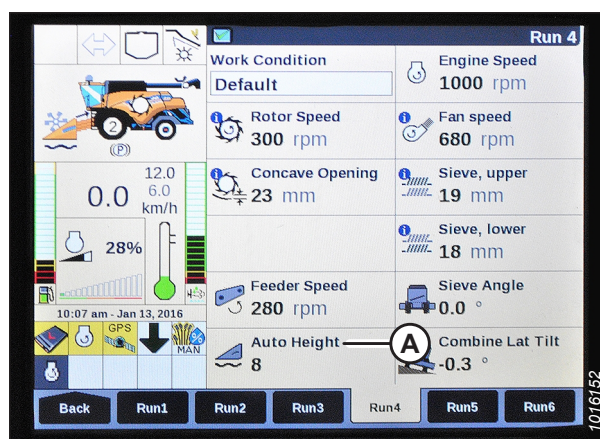


Figure 7.443: New Holland Combine Display

SETTING UP AUTO HEADER HEIGHT CONTROL

Setting Maximum Work Height – New Holland CR Series

The maximum work height can be set using the combine display.

NOTE:

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 pre-2015 New Holland combine models, refer to [7.1.18 New Holland Combines – CR/CX Series – 2014 and Prior](#), page 360.

1. Select TOOLBOX (A) on the main page. The TOOLBOX page appears.

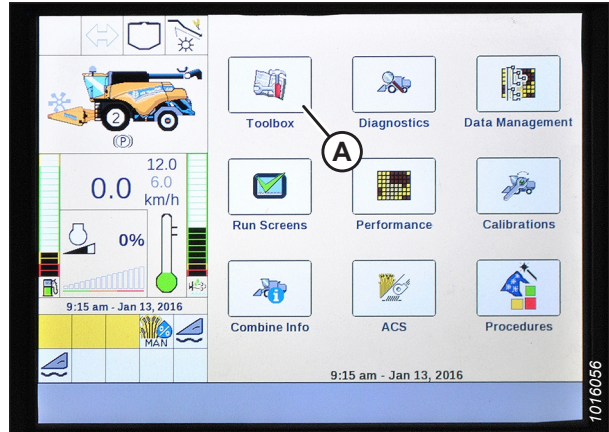


Figure 7.444: New Holland Combine Display

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

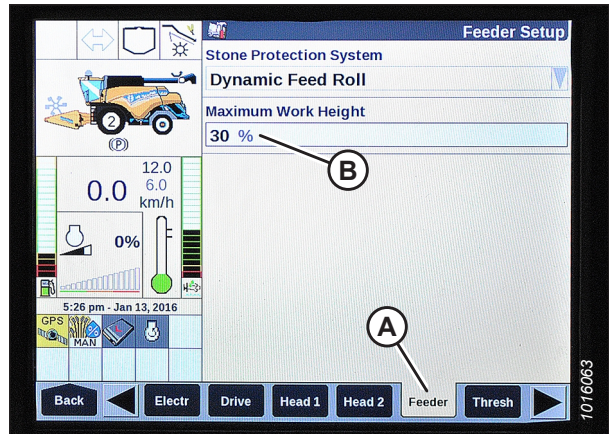


Figure 7.445: New Holland Combine Display

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



Figure 7.446: New Holland Combine Display

SETTING UP AUTO HEADER HEIGHT CONTROL

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

The reel fore-aft, header tilt, and header type settings for the auto header height control (AHHC) system can be changed by accessing the HEAD menus.

NOTE:

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 the display since this document was published. Refer to the combine operator's manual for the most up-to-date information.

1. Simultaneously press UNLOAD (A) and RESUME (B) buttons on the control handle.



Figure 7.447: New Holland Combine Controls

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

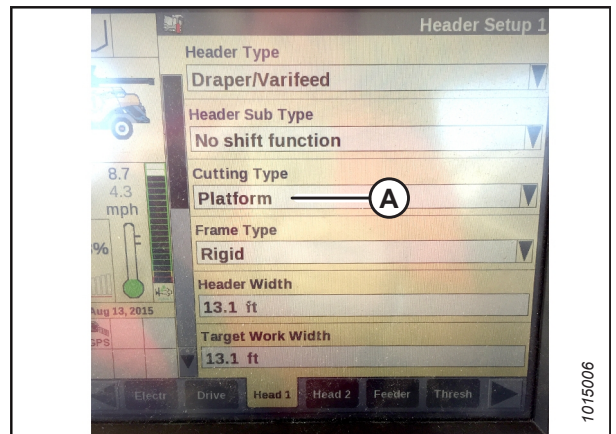


Figure 7.448: New Holland Combine Display

SETTING UP AUTO HEADER HEIGHT CONTROL

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

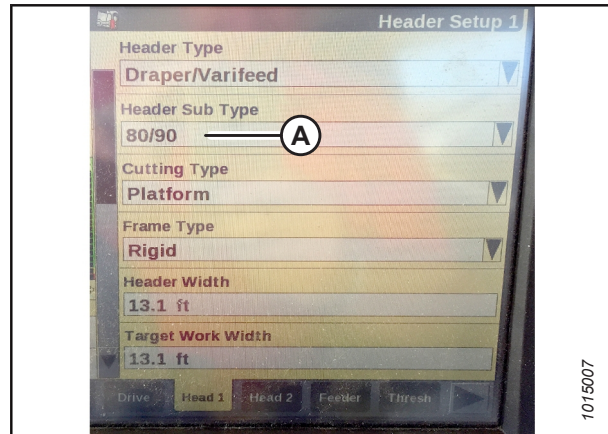


Figure 7.449: New Holland Combine Display

There are now two different buttons for the 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). Third button down (C) is not configured.

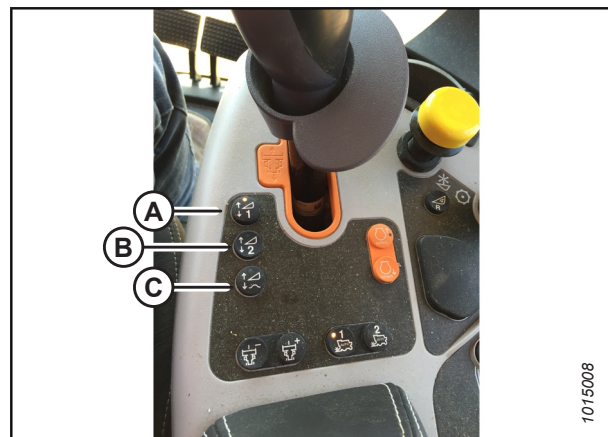


Figure 7.450: New Holland Combine Controls

Chapter 8: Setting up Reel Height Sensor

The header has multiple sensors to inform the operator where the reel is positioned.

8.1 Checking and Adjusting Reel Height Sensor

The output voltage range of the auto reel height sensor can be checked from inside the combine or manually at the sensor.

For in-cab instructions, refer to the combine operator's manual.

NOTE:

For CLAAS combines: to prevent the reel from colliding with the cab, the header is equipped with an automatic reel height limit. Some CLAAS combines have an automatic shutoff feature that engages when the automatic reel height limit is reached. When raising the header to a height greater than 80% of the header's maximum height, the reel is automatically lowered. The automatic lowering of the reel can be manually overridden, and a warning will appear on the CEBIS terminal.

DANGER

To prevent bodily injury or death from the unexpected start-up of the machine, always stop the engine and remove the key before making adjustments to the machine.

WARNING

To prevent bodily injury from the fall of a raised reel, always engage the reel safety props before going under the raised reel for any reason.

WARNING

Check to be sure all bystanders have cleared the area.

IMPORTANT:

Ensure that the minimum reel height is set before adjusting the reel height sensor. For instructions, refer to [6.11.1 Measuring Reel Clearance, page 139](#).

1. Shut down the engine, and remove the key from the ignition.

SETTING UP REEL HEIGHT SENSOR

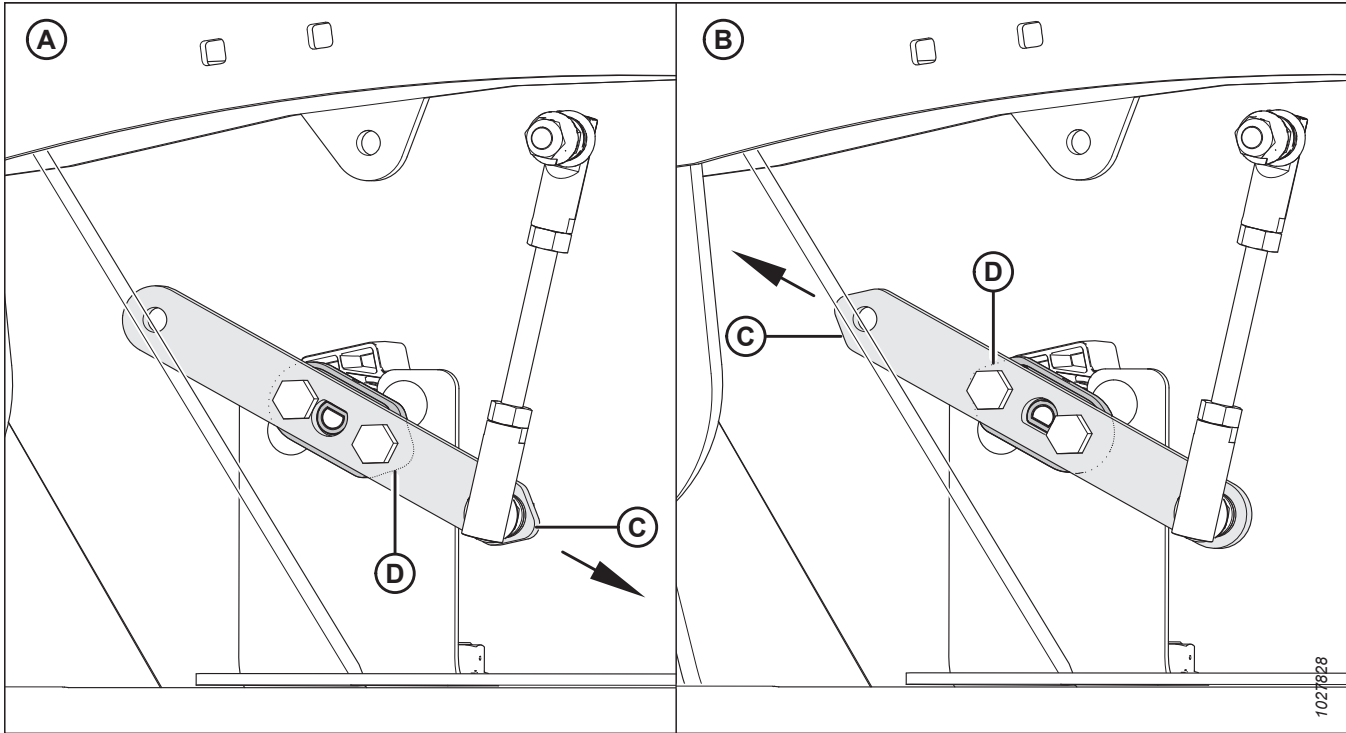


Figure 8.1: Sensor Arm/Pointer Configurations

A - Case/New Holland Configuration

B - John Deere/CLAAS/IDEAL™ Configuration

C - Sensor Arm (Shown Semitransparent)

D - Sensor Pointer (Shown Under Sensor Arm)

2. Check that sensor arm (C) and pointer (D) are configured properly for your machine. Refer to Figure 8.1, page 388.

NOTE:

- For configuration (A), pointer (D) points to the **FRONT** of the header.
- For configuration (B), pointer (D) points to the **REAR** of the header.
- The sensor arm is semitransparent in the illustration above, so you can see the sensor pointer behind it.

IMPORTANT:

To measure the output voltage of the reel height sensor, the combine engine needs to be running and supplying power to the sensor. Engage the combine parking brake and remain at a safe distance from the reel when measuring the sensor's output voltage manually.

Table 8.1 Reel Height Sensor Voltage Limits

Combine Type	Voltage Range	
	X Voltage	Y Voltage
Case/New Holland	0.5–0.9 V	4.1–4.5 V
CLAAS	4.1–4.5 V	0.5–0.9 V
IDEAL™ Series	4.1–4.5 V	0.5–0.9 V
John Deere	4.1–4.5 V	0.5–0.9 V

To check the voltage range manually, follow these steps:

3. Engage the parking brake.
4. Start the engine. For instructions, refer to the combine operator's manual.

SETTING UP REEL HEIGHT SENSOR

- Lower the reel fully.
- Use the combine display or a voltmeter (if measuring the sensor manually) to measure voltage range **Y**. Refer to Table 8.1, page 388 for the range requirements.
- If using a voltmeter, measure the voltage between the ground wire (pin 2) and the signal wire (pin 3) at reel height sensor (B).
- Shut down the engine, and remove the key from the ignition.
- Adjust the length of threaded rod (A) to modify voltage range **Y**.

NOTE:

Dimension (C) is factory set to 41.7 mm (1.6 in).

- Repeat Step 6, page 389 to Step 9, page 389 until voltage range **Y** is within the range specified.
- Start the engine.
- Raise the reel fully.
- Shut down the engine, and remove the key from the ignition.
- Engage the reel safety props. For instructions, refer to 10.1.1 Engaging Reel Safety Props, page 401 the header operator's manual.
- Start the engine.
- Use the combine display or a voltmeter (if measuring the sensor manually) to measure voltage range **X**. Refer to Table 8.1, page 388 for range requirements.
- If using a voltmeter, measure the voltage between the ground (Pin 2 wire) and the signal (Pin 3 wire) at reel height sensor (A).
- Shut down the engine, and remove the key from the ignition.
- Loosen two M5 hex nuts (B) and rotate sensor (A) to modify voltage range **X**.
- Repeat Step 16, page 389 to Step 19, page 389 until voltage range **X** is within the range specified.
- Disengage the reel safety props.
- Start the engine.
- Lower the reel fully.
- Recheck voltage range **Y** and ensure it is still within the range specified. Adjust it if required.

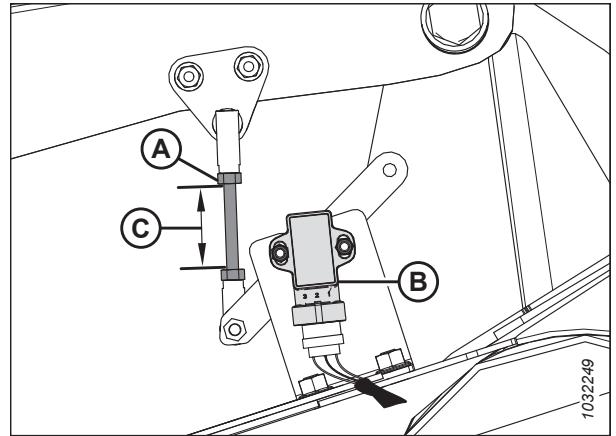


Figure 8.2: Reel Height Sensor – Right Reel Arm with Reel Down

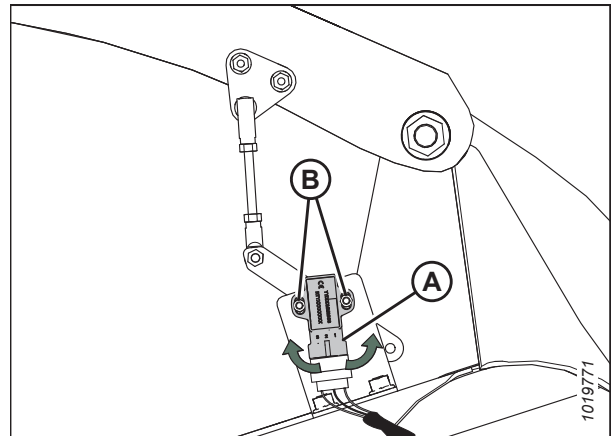


Figure 8.3: Reel Height Sensor – Right Reel Arm with Reel Up

Chapter 9: Running up Header

To run up the header, follow the steps in the order in which they are listed.

DANGER

To prevent bodily injury or death from the unexpected start-up or fall of a raised machine, always stop the engine and remove the key before leaving the operator's seat, and always engage the safety props before going under the machine for any reason.

DANGER

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

1. Start the combine and raise the header fully.
2. Shut down the engine, and remove the key from the ignition.
3. Engage the safety props. For instructions, refer to [10.1.1 Engaging Reel Safety Props, page 401](#).
4. Rotate latches (A) to unlock handles (B).
5. Hold pan (C) and rotate handles (B) to release the pan. Lower the pan to expose the draper.

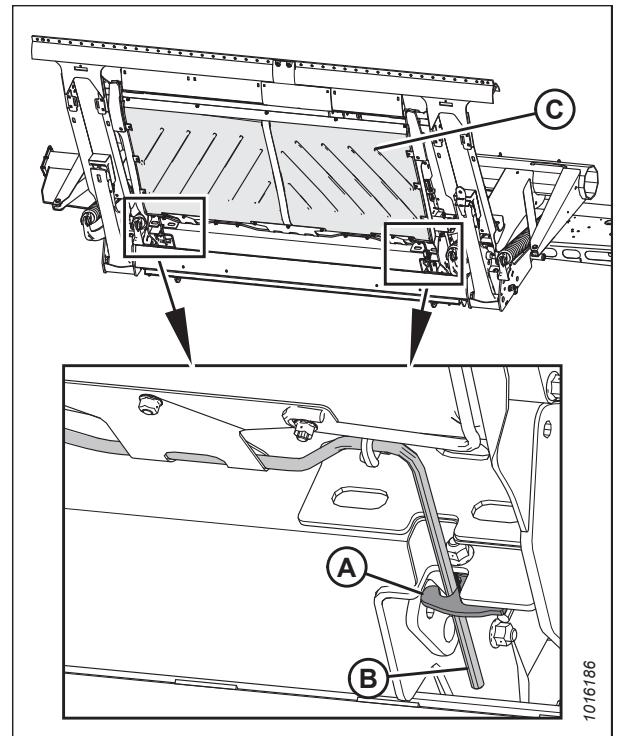


Figure 9.1: Float Module Plastic Pan

6. Check pan (A) and the draper for debris, and remove any debris from the pan and the draper..

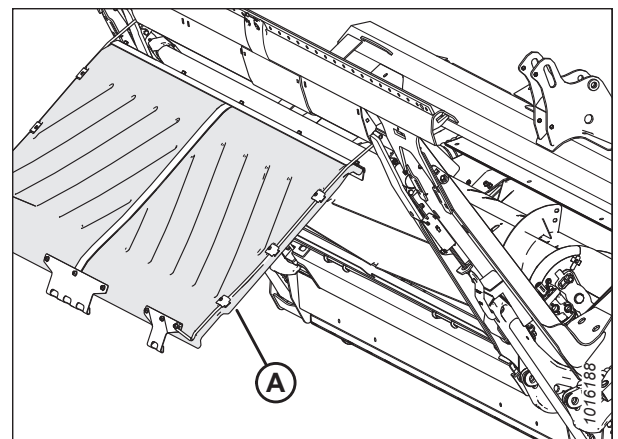


Figure 9.2: Float Module Plastic Pan

RUNNING UP HEADER

7. Raise the pan and rotate handle (A) so that the rod engages clips (B) on the pan.

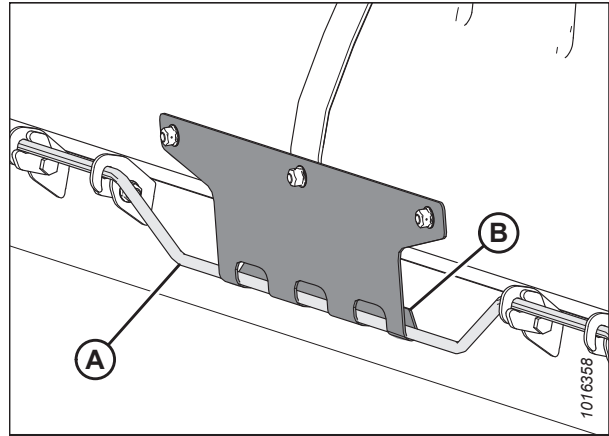


Figure 9.3: Clips Engaged

8. Push handle (A) into the slot and secure it with latches (B).
9. Open the left endshield.

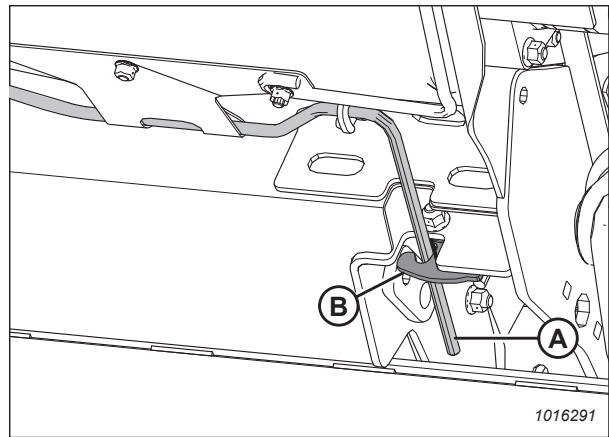


Figure 9.4: Latches Secured

RUNNING UP HEADER

10. Ensure flow control (A) is set to position 6.
11. If a variable feeder house speed option is installed, ensure that the feeder house variable speed is set to MINIMUM.

DANGER

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

12. Start the combine and run the machine slowly for 5 minutes while watching and listening **FROM THE OPERATOR'S SEAT** for binding or interfering parts.

NOTE:

The reel and side drapers will not operate until oil flow fills the hoses.

13. Run the machine at operating speed for 15 minutes. Listen for any unusual sounds or abnormal vibration.
14. Perform the run-up check as listed on the [Predelivery Checklist, page 417](#) (the yellow sheet attached to this instruction) to ensure the machine is field-ready.

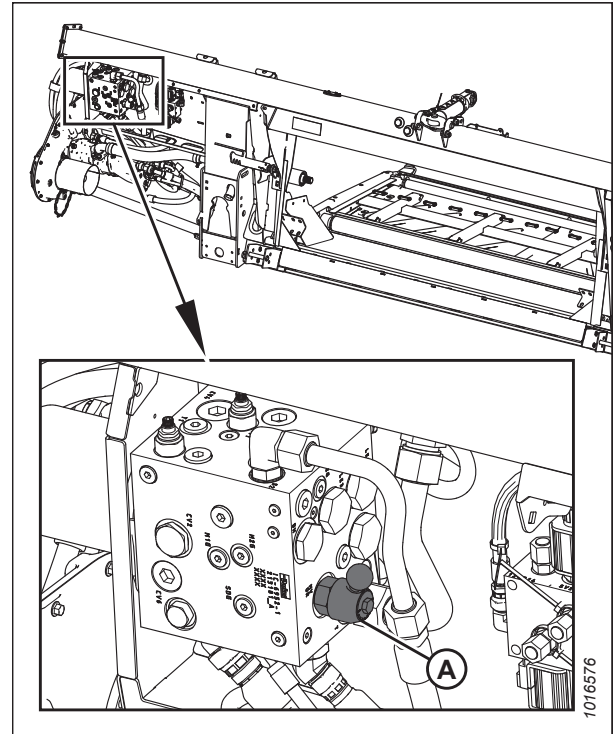


Figure 9.5: Flow Control on Manifold

9.1 Adjusting Knife Speed

The header knife drive is driven by the hydraulic pump mounted on the float module. The following speeds are factory-set for the combine feeder house:

- AGCO: 625 rpm (includes Challenger, Gleaner, Massey Ferguson, and IDEAL™)
- Case: 580 rpm
- John Deere: 490 rpm
- CLAAS 600/700: 750 rpm (420 on combine display)¹⁴
- CLAAS 7000/8000: 750 rpm
- New Holland: 580 rpm

DANGER

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

IMPORTANT:

This is the **MINIMUM** speed setting for variable speed feeder houses. To avoid damage to the header, do **NOT** operate at speeds higher than the minimum speed settings.

-
14. For CLAAS 600/700 combines, the value on the display reflects the top shaft speed, not the output shaft speed. When the display value is 420 rpm, the actual output shaft speed will be 750 rpm.

RUNNING UP HEADER

1. Shut down the engine, and remove the key from the ignition.
2. Push release lever (A) located on the backside of the endshield to unlock the shield.
3. Pull the endshield open using handle depression (B).

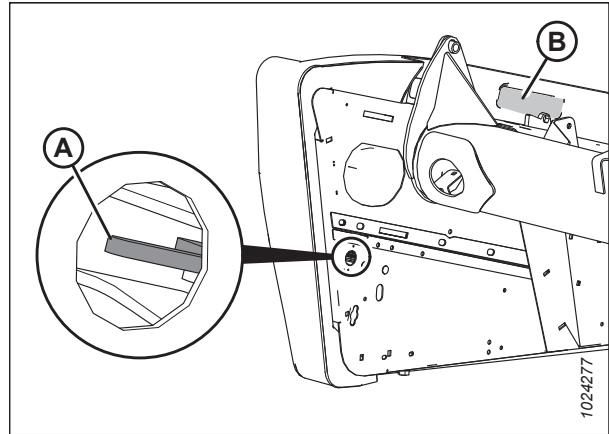


Figure 9.6: Endshield Latch Access

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

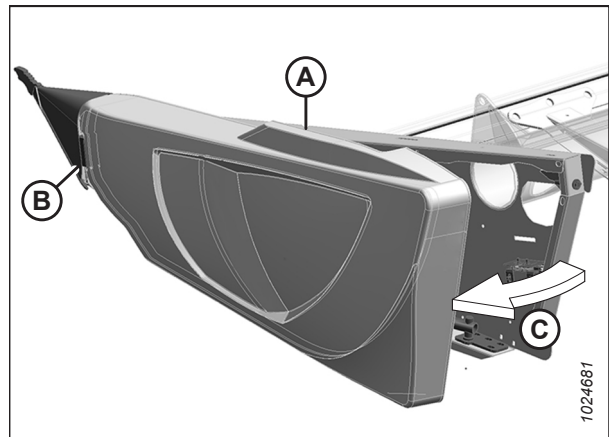


Figure 9.7: Left Endshield

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

DANGER

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

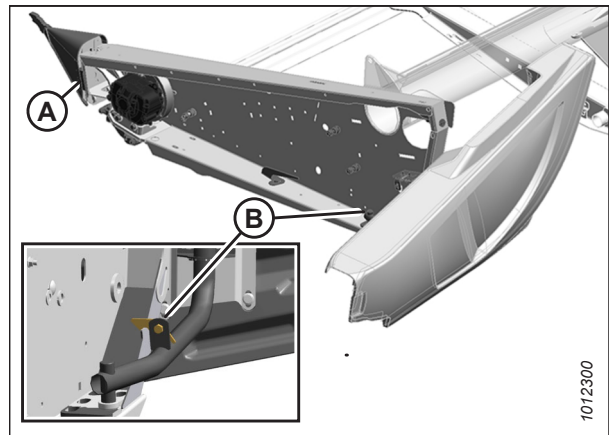


Figure 9.8: Left Endshield

RUNNING UP HEADER

7. Start the engine, engage the header drive, and run the combine at operating rpm.
8. Check the rpm of knife drive box pulley (A) using a handheld tachometer.
9. Stop the engine, remove the key, and close the endshield.

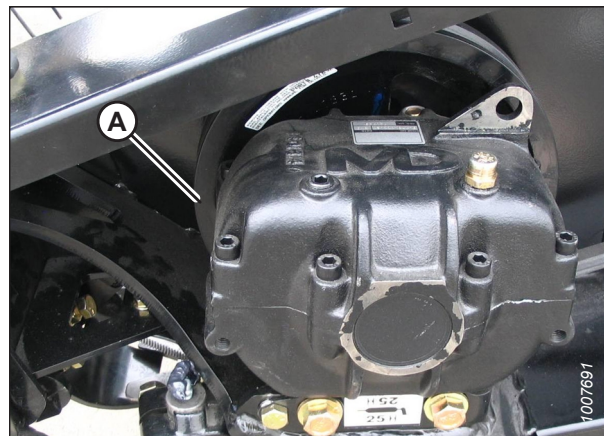


Figure 9.9: Knife Drive Box

10. Compare actual pulley rpm with values in the following chart:

Table 9.1 Recommended Knife Drive Speed (rpm)

Header Size	Recommended Knife Drive Speed Range (rpm)	
	Single Knife	Double Knife
FD125	600–725	—
FD130	600–700	—
FD135	550–600	—
FD140	525–600	550–700
FD145	—	550–700

11. If adjustment to knife drive box pulley rpm is necessary, refer to the header technical manual.

9.2 Performing Post Run-Up Adjustments

After the initial run-up of the header, a few final adjustments may be necessary.

Stop the engine and perform the post run-up checks listed on the Predelivery Checklist (the yellow sheet attached to this instruction— [Predelivery Checklist, page 417](#)) to ensure that the machine is field-ready.

DANGER

To prevent bodily injury or death from the unexpected startup of the machine, always stop the engine and remove the key before adjusting the machine.

Some adjustments may be necessary after the run-up. For instructions, refer to the following:

- [9.2.1 Adjusting Knife, page 397](#)
- [9.2.2 Checking and Adjusting Feed Draper Tension, page 398](#)

9.2.1 Adjusting Knife

Adjust the knife if you notice signs of overheating after running up the header.

DANGER

To prevent bodily injury or death from the unexpected startup of the machine, always stop the engine and remove the key before adjusting the machine.

1. Shut down the engine, and remove the key from the ignition.
2. Check the guards for signs of overheating occurring during the initial run-up procedure.

NOTE:

Overheating can be caused by insufficient clearance between the guard and the knife.

3. Check the gap between knifehead (A) and pitman arm (B). A feeler gauge set to 0.4 mm (0.016 in.) should slide easily through the gap. If the gap is too small, adjust the gap by loosening the bolt, and tapping knifehead (A) with a hammer. Retighten the bolt when your adjustments are complete.

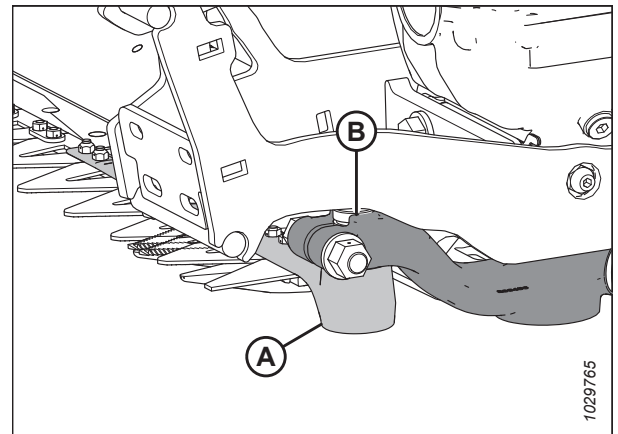


Figure 9.10: Knifehead and Pitman Arm

4. Adjust the guard alignment as needed using the guard-straightening tool (MD #140135). Adjust the guard tips upwards by positioning the tool as shown and then pulling up on the tool.



Figure 9.11: Straightening Tool – Upward Adjustment

RUNNING UP HEADER

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

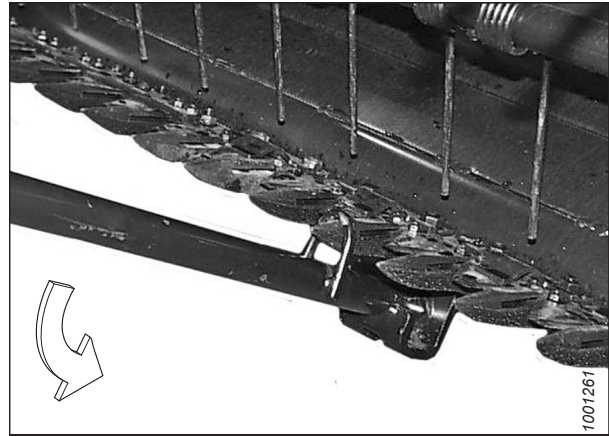


Figure 9.12: Straightening Tool – Downward Adjustment

9.2.2 Checking and Adjusting Feed Draper Tension

Check and possibly adjust the feed draper tension to ensure the feed draper operates as it was designed to do.

DANGER

To prevent bodily injury or death from the unexpected start-up or fall of a raised machine, always stop the engine and remove the key before leaving the operator's seat, and always engage the safety props before going under the machine for any reason.

1. Raise the header fully.
2. Shut down the engine, and remove the key from the ignition.
3. Engage the header safety props.

Checking draper tension:

4. Ensure the draper guide (the rubber track on the underside of the draper) is properly engaged in the groove on the drive roller, and the idler roller is between the guides.

NOTE:

The illustrations show the left side of the float module. The right side is opposite.

NOTE:

The default position of spring retainer (A) (white indicator) is centered (B) in the spring box window; however, the position of the spring retainer varies with draper tracking adjustment at the factory.

5. Check the position of white indicator (A). If the feed draper tracks properly and the spring retainers on both sides of the draper are correctly positioned, then no adjustment is necessary.
6. If adjustment is necessary, proceed to Step 7, page 399.

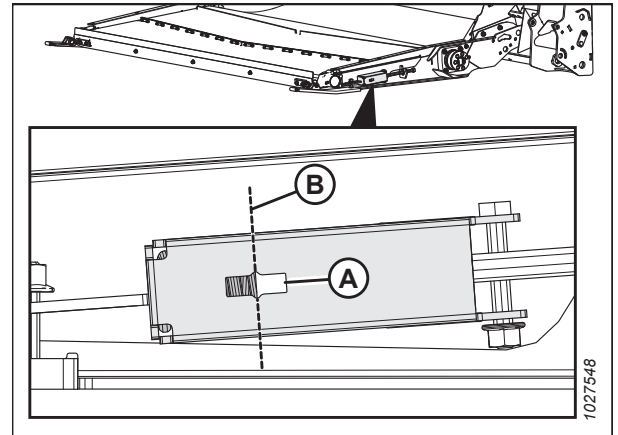


Figure 9.13: Feed Draper Tensioner

Adjusting draper tension:

7. Adjust the draper tension by loosening jam nut (A) and turning bolt (B) clockwise to increase the draper tension, or turning bolt (B) counterclockwise to decrease the draper tension. The draper tension can be adjusted as follows:
 - Tensioner loosened to 3 mm (1/8 in.) (D) (aft of center in indicator window [E])
 - Tensioner tightened to 6 mm (1/4 in.) (C) (forward of center in indicator window [E])

NOTE:

For small tension adjustments, you may need to only adjust one side of the draper. For larger tension adjustments and to avoid uneven draper tracking, you may need to adjust both sides of the draper an equal amount.

8. Tighten jam nut (A).

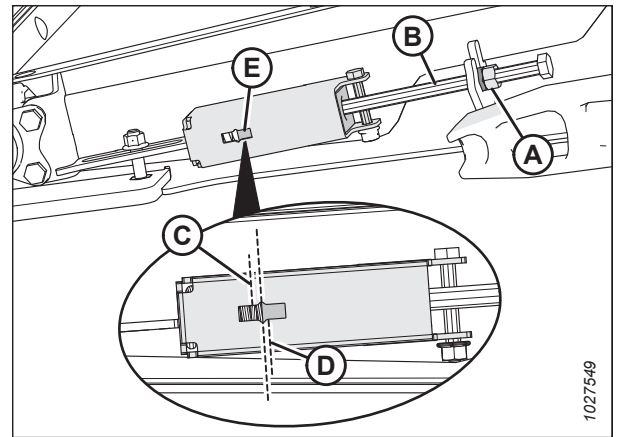


Figure 9.14: Feed Draper Tensioner

Chapter 10: Reference

The reference section provides additional, support information on topics such as torque specifications, the requirements for lifting equipment, unit measurement conversions, and terminology definitions. Refer to this section as needed.

10.1 Reel Safety Props

The reel safety props are located on the reel support arms and prevent the reel from falling unexpectedly.

DANGER

To prevent bodily injury or death from the unexpected start-up or fall of a raised machine, always stop the engine and remove the key before leaving the operator's seat, and always engage the safety props before going under the machine for any reason.

IMPORTANT:

To prevent damage to the reel support arms, do **NOT** transport the header when the reel safety props are engaged.

10.1.1 Engaging Reel Safety Props

Engage the reel safety props whenever you intend to work on or around a raised reel. When engaged, the reel safety props prevent the reel from falling unexpectedly.

1. Raise the reel fully.
2. Move reel safety prop (A) to the engaged position.

NOTE:

Keep pivot bolt (B) sufficiently tight that the prop remains in the stored position when it is not in use, but can be engaged using hand force.

3. Repeat the previous step on the opposite reel arm.

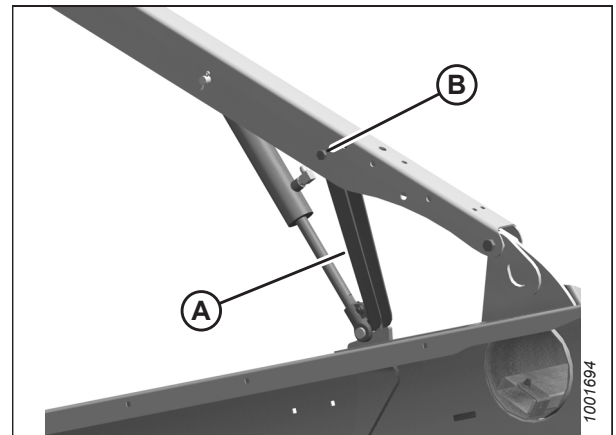


Figure 10.1: Engaged Reel Safety Prop – Left Shown

REFERENCE

4. Use handle (A) to move the lock rod to inboard position (B), which engages pin (C) under the prop.
5. Lower the reel until the safety props contact the outer arm cylinder mounts and the center arm pins.

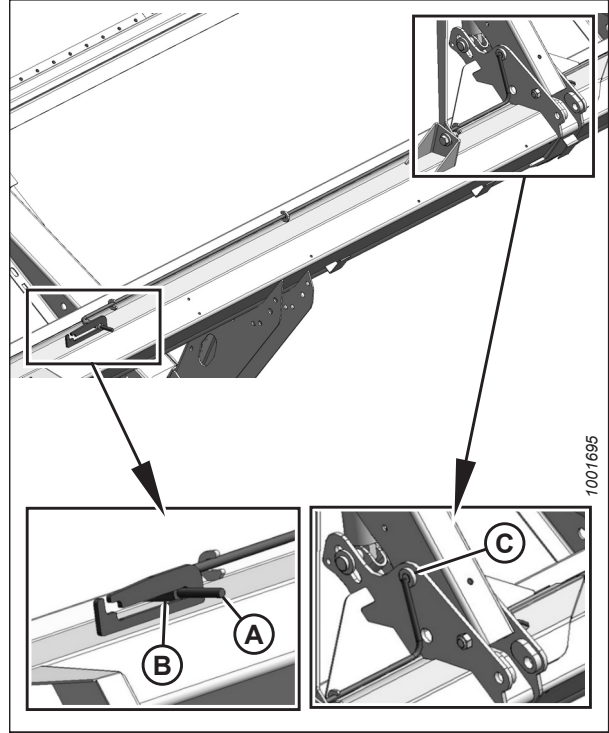


Figure 10.2: Reel Safety Prop – Center Arm

10.1.2 Disengaging Reel Safety Props

Disengage the reel safety props once you have completed working on or around a raised reel.

1. Raise the reel to its maximum height.
2. Move reel safety prop (A) inside the reel arm.
3. Repeat the previous step on the opposite end of the reel.

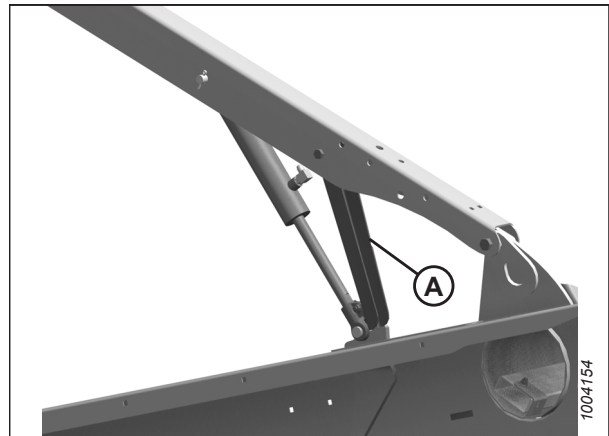


Figure 10.3: Left Reel Safety Prop

REFERENCE

4. Use handle (B) to move lock rod (A) to the outboard position.

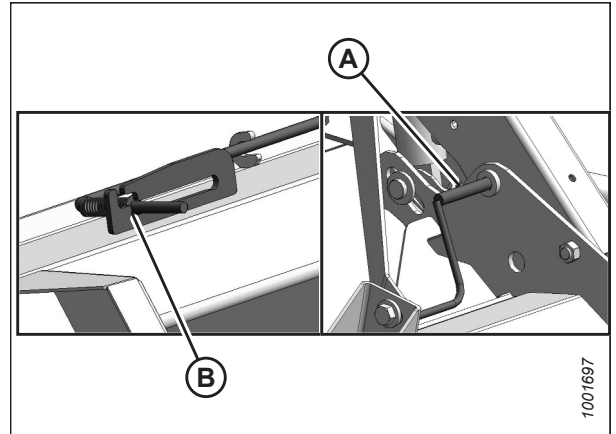


Figure 10.4: Reel Safety Prop – Center Arm

10.2 Torque Specifications

The following tables provide torque values for various bolts, cap screws, and hydraulic fittings. Use these values only when no other torque value has been specified in a given procedure.

- Tighten all bolts to the torque values specified in the charts below, unless you are directed otherwise in this manual.
- Replace removed hardware with hardware of the same strength and grade.
- Use the torque value tables as a guide when periodically checking the tightness of bolts.
- Understand the torque categories for bolts and cap screws by reading the markings on their heads.

Jam nuts

Jam nuts require less torque than nuts used for other purposes. When applying torque to finished jam nuts, multiply the torque applied to regular nuts by 0.65 to obtain the modified torque value.

Self-tapping screws

Use the standard torque values when installing self-tapping screws. Do **NOT** install self-tapping screws on structural or otherwise critical joints.

10.2.1 Metric Bolt Specifications

The torque values provided in the following metric bolt torque tables apply to hardware installed dry; that is, hardware with no grease, oil, or threadlocker on the threads or heads. Do **NOT** grease or oil bolts or cap screws unless directed to do so in this manual.

Table 10.1 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

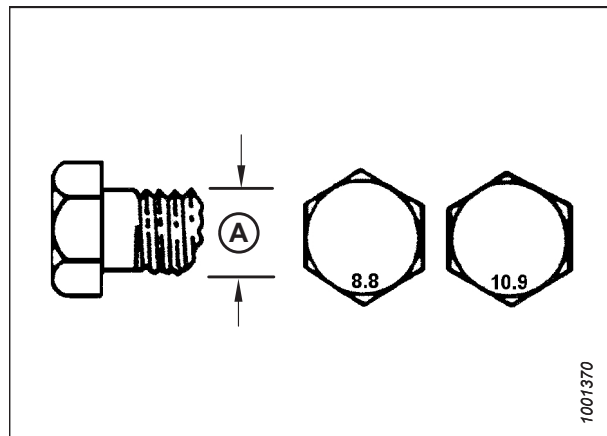


Figure 10.5: Bolt Grades

REFERENCE

Table 10.2 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

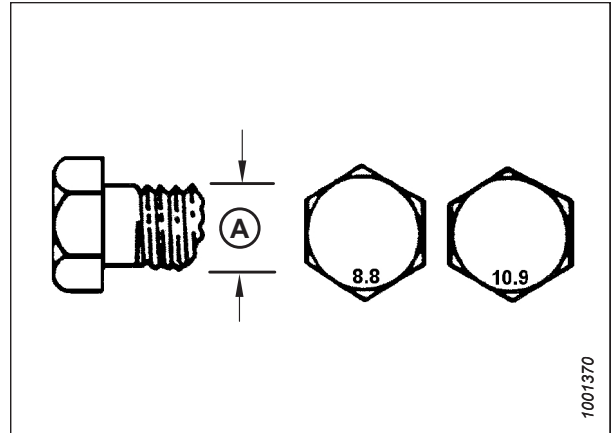


Figure 10.6: Bolt Grades

Table 10.3 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

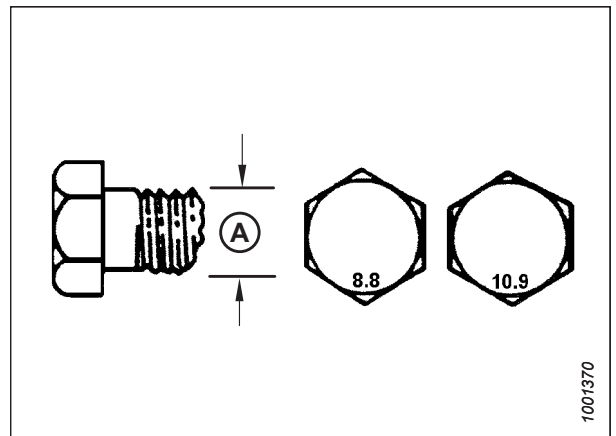


Figure 10.7: Bolt Grades

REFERENCE

Table 10.4 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

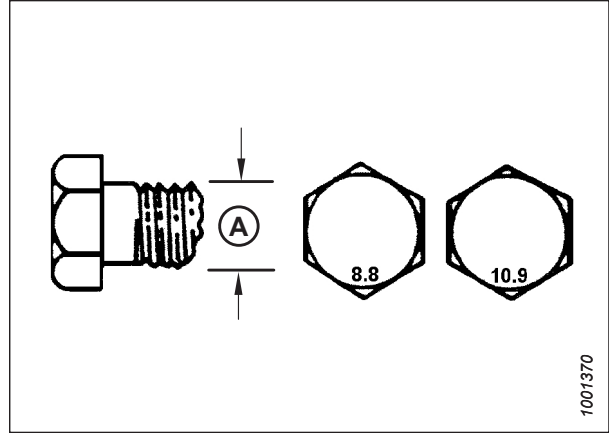


Figure 10.8: Bolt Grades

10.2.2 Metric Bolt Specifications Bolting into Cast Aluminum

The torque values provided in the following metric bolt torque tables apply to hardware installed dry; that is, hardware with no grease, oil, or threadlocker on the threads or heads. Do **NOT** grease or oil bolts or cap screws unless directed to do so in this manual.

Table 10.5 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	–	–	–	–

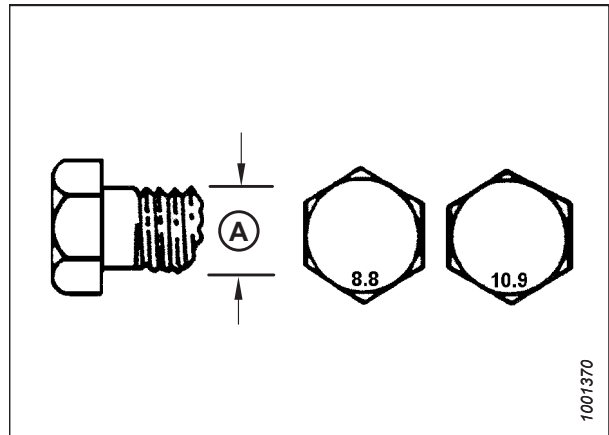


Figure 10.9: Bolt Grades

10.2.3 Flare-Type Hydraulic Fittings

1. Check flare (A) and flare seat (B) for defects that might cause leakage.
2. Align tube (C) with fitting (D) and thread nut (E) onto the fitting without lubrication until contact is made between the flared surfaces.
3. Torque fitting nut (E) to the specified number of flats from finger tight (FFFT) or to a given torque value in Table 10.6, page 407.
4. Use two wrenches to prevent fitting (D) from rotating. Place one wrench on fitting body (D), and tighten nut (E) with the other wrench to the torque value shown.
5. Assess the final condition of connection.

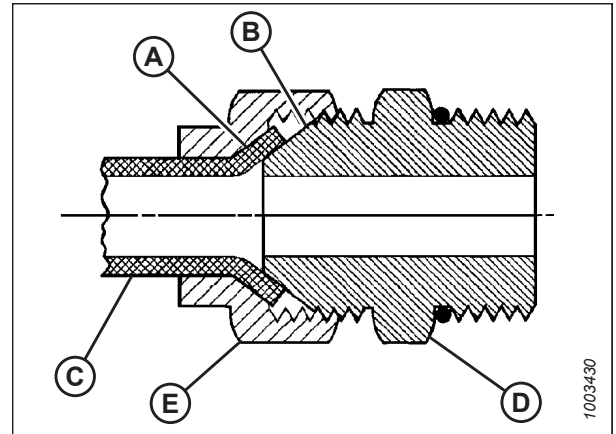


Figure 10.10: Hydraulic Fitting

Table 10.6 Flare-Type Hydraulic Tube Fittings

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

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

10.2.4 O-Ring Boss Hydraulic Fittings – Adjustable

The standard torque values are provided for adjustable hydraulic fittings. If a procedure specifies a different torque value for the same type and size of fitting found in this topic, use the value specified in the procedure instead.

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 the threads. Adjust O-ring (A) if necessary.
4. Apply hydraulic system oil to O-ring (A).

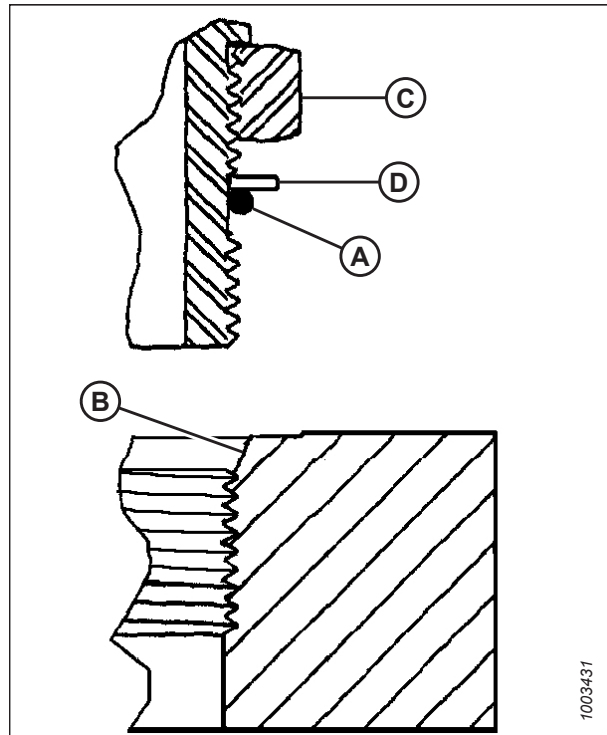


Figure 10.11: Hydraulic Fitting

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

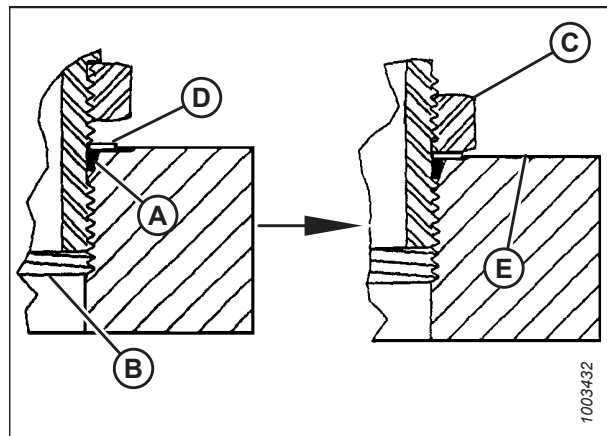


Figure 10.12: Hydraulic Fitting

Table 10.7 O-Ring Boss (ORB) Hydraulic Fittings – Adjustable

SAE Dash Size	Thread Size (in.)	Torque Value ¹⁶	
		Nm	lbf·ft (*lbf·in)
-2	5/16–24	6–7	*53–62
-3	3/8–24	12–13	*106–115

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

REFERENCE

Table 10.7 O-Ring Boss (ORB) Hydraulic Fittings – Adjustable (continued)

SAE Dash Size	Thread Size (in.)	Torque Value ¹⁷	
		Nm	lbf·ft (*lbf·in)
-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

10.2.5 O-Ring Boss Hydraulic Fittings – Non-Adjustable

The standard torque values are provided for non-adjustable hydraulic fittings. If a procedure specifies a different torque value for the same type and size of fitting found in this topic, use the value specified in the procedure instead.

Torque values are shown in the table below.

1. Inspect O-ring (A) and seat (B) for dirt or obvious defects.
2. Check that O-ring (A) is **NOT** on the threads. Adjust O-ring (A) if necessary.
3. Apply hydraulic system oil to the O-ring.
4. Install fitting (C) into the port until the fitting is hand-tight.
5. Torque fitting (C) according to values in Table 10.8, page 410.
6. Check the final condition of the fitting.

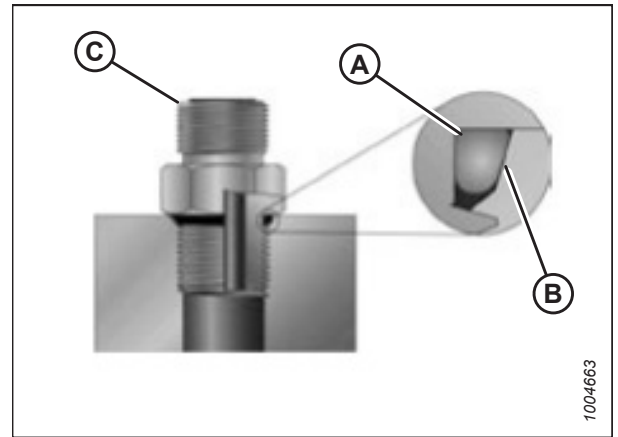


Figure 10.13: Hydraulic Fitting

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

REFERENCE

Table 10.8 O-Ring Boss (ORB) Hydraulic Fittings – Non-Adjustable

SAE Dash Size	Thread Size (in.)	Torque Value ¹⁸	
		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

10.2.6 O-Ring Face Seal Hydraulic Fittings

The standard torque values are provided for O-ring face seal hydraulic fittings. If a procedure specifies a different torque value for the same type and size of fitting found in this topic, use the value specified in the procedure instead.

Torque values are shown in the table below.

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



Figure 10.14: Hydraulic Fitting

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

REFERENCE

2. Apply hydraulic system oil to O-ring (B).
3. Align the tube or hose assembly so that the flat face of sleeve (A) or (C) comes into full contact with O-ring (B).
4. Thread tube or hose nut (D) until it is hand-tight. The nut should turn freely until it bottoms out.
5. Torque the fittings according to values in Table 10.9, page 411.

NOTE:

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

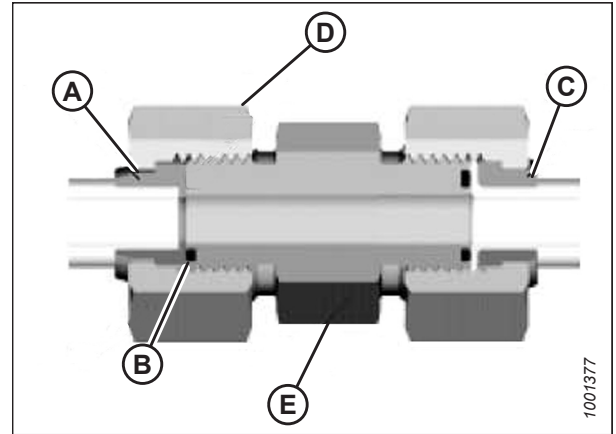


Figure 10.15: Hydraulic Fitting

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

Table 10.9 O-Ring Face Seal (ORFS) Hydraulic Fittings

SAE Dash Size	Thread Size (in.)	Tube O.D. (in.)	Torque Value ¹⁹	
			Nm	lbf-ft
-3	Note ²⁰	3/16	–	–
-4	9/16	1/4	25–28	18–21
-5	Note ²⁰	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
-14	Note ²⁰	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

10.2.7 Tapered Pipe Thread Fittings

The standard torque values are provided for tapered pipe thread fittings. If a procedure specifies a different torque value for the same type and size of fitting found in this topic, use the value specified in the procedure instead.

Assemble pipe fittings as follows:

1. Check the components to ensure that the fitting and the port threads are free of burrs, nicks, scratches, and any other form of contamination.
2. Apply paste-type pipe thread sealant to the external pipe threads.
3. Thread the fitting into the port until it is hand-tight.

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

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

REFERENCE

4. Torque the connector to the appropriate torque angle. The turns from finger tight (TFFT) and flats from finger tight (FFFT) values are shown in Table 10.10, page 412. Make sure that the tube end of a shaped connector (typically a 45° or 90° elbow) is aligned to receive the incoming tube or hose assembly. Always finish the alignment of the fitting in the direction of tightening. Never back off (i.e., loosen) the threaded connectors to achieve alignment.
5. Clean all residue and any excess thread conditioner with an appropriate cleaner.
6. Assess the final condition of the fitting. Pay special attention to the possibility of cracks in the port opening.
7. Mark the final position of the fitting. If a fitting leaks, disassemble the fitting and check it for damage.

NOTE:

The failure of fittings due to overtorquing may not be evident until the fittings are disassembled and inspected.

Table 10.10 Hydraulic Fitting Pipe Thread

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

10.3 Lifting Vehicle Specifications

To handle a header safely, use a lifting vehicle appropriate to the task.

⚠ DANGER

To prevent injury to bystanders caused by being struck by machinery, do NOT allow people to stand in the unloading area.

⚠ DANGER

The equipment used for loading or unloading a header must meet or exceed the requirements specified in this document. Using inadequate equipment may result in chain breakage, vehicle tipping, machine damage or bodily harm to operators or bystanders.

NOTE:

When a header and float module are ordered together, they are shipped with the float module already installed in the header.

IMPORTANT:

The load center of a sample load is indicated by dimension (A). Forklifts are normally rated for a load center projected forward 610 mm (24 in.) from the back end of the forks. To learn the forklift capacity for a load center at 1220 mm (48 in.) (dimension [B]), contact your forklift distributor. The minimum fork length (shown by dimension [C]) required to unload the header is 1981 mm (78 in.).

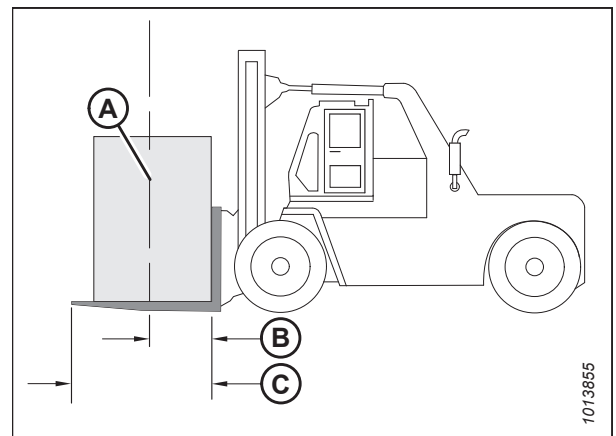


Figure 10.16: Minimum Lifting Capacity

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

Table 10.11 Lifting Chain Requirements

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

10.4 Conversion Chart

Both SI units (including metric) and US customary units (sometimes referred to as standard units) of measurement are used in this manual. A list of those units along with their abbreviations and conversion factors is provided here for your reference.

Table 10.12 Conversion Chart

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

REFERENCE

10.5 Definitions

The following terms, abbreviations, and acronyms may be used in this instruction.

Term	Definition
AHHC	Automatic header height control
API	American Petroleum Institute
ASTM	American Society of Testing and Materials
Bolt	A headed and externally threaded fastener designed to be paired with a nut
Center-link	A hydraulic cylinder connection between the header and the vehicle, which is used to change the angle of the header relative to the vehicle
CGVW	Combined gross vehicle weight
D1 Series Header	MacDon D120, D125, D130, D135, D140, and D145 rigid draper headers for combines
DDD	Double-draper drive
DK	Double knife
DKD	Double-knife drive
DR	Double reel
Export header	The header configuration typical outside North America
FD1 Series header	MacDon FD125, FD130, FD135, FD140, or FD145 FlexDraper® header
FFFT	Flats from finger tight
Finger tight	Finger tight is a reference position in which the given sealing surfaces or components are making contact with each other and the fitting has been tightened by hand to a point where the fitting is no longer loose and cannot be tightened further by hand
FM100	The float module used with a D1 or FD1 Series header for combining
GVW	Gross vehicle weight
Hard joint	A joint made with use of a fastener where joining materials are highly incompressible
Header	A machine that cuts crop and feeds it into an attached combine
Hex key	A tool of hexagonal cross-section used to drive bolts and screws that have a hexagonal socket in the head (internal-wrenching hexagon drive); also known as an Allen key
HDS	Hydraulic deck shift
hp	Horsepower
JIC	Joint Industrial Council: A standards body that developed standard sizing and shape for original 37° flared fitting
Knife	A cutting device found on a header's cutterbar which uses a reciprocating cutter (also called a sickle) to cut crop so that it can be fed into the header
MDS	Mechanical Deck Shift
n/a	Not applicable
North American header	The header configuration typical in North America
NPT	National Pipe Thread: A style of fitting used for low-pressure port openings. Threads on NPT fittings are uniquely tapered for an interference fit
Nut	An internally threaded fastener designed to be paired with a bolt
ORB	O-ring boss: A style of fitting commonly used in port openings on manifolds, pumps, and motors
ORFS	O-ring face seal: A style of fitting commonly used for connecting hoses and tubes. This style of fitting is also commonly called ORS, which stands for O-Ring Seal
RoHS (Reduction of Hazardous Substances)	A directive by the European Union to restrict use of certain hazardous substances (such as hexavalent chromium used in some yellow zinc platings)

REFERENCE

Term	Definition
rpm	Revolutions per minute
SAE	Society of Automotive Engineers
Screw	A headed and externally threaded fastener that threads into preformed threads or forms its own thread when inserted into a mating part
SDD	Single-drapeer drive
Soft joint	A flexible joint made by use of a fastener in which the joining materials compress or relax over a period of time
spm	Strokes per minute
Tension	An axial load placed on a bolt or screw, usually measured in Newtons (N) or pounds (lb.). This term can also be used to describe the force a belt exerts on a pulley or sprocket
TFFT	Turns from finger tight
Torque	The product of a force * the length of a lever arm, usually measured in Newton-meters (Nm) or foot-pounds (lbf-ft)
Torque angle	A tightening procedure in which a fitting is assembled to a specified tightness (usually finger tight) and then the nut is turned farther by a specified number of degrees until it achieves its final position
Torque-tension	The relationship between the assembly torque applied to a piece of hardware and the axial load it induces in a bolt or screw
Truck	A four-wheel highway/road vehicle weighing no less than 3400 kg (7500 lb.)
UCA	Upper cross auger
Untimed knife drive	Unsynchronized motion applied at the cutterbar to two separately driven knives from a single hydraulic motor or from two hydraulic motors
Washer	A thin cylinder with a hole or a slot located in the center, used as a spacer, a load distribution element, or a locking mechanism

Predelivery Checklist

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

CAUTION

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

Header Serial Number:

Float Module Serial Number:

FD1 Series FlexDraper® / FM100 Float Module Predelivery Checklist – North America

✓	Item	Reference
	Check for shipping damage or missing parts. Be sure all the shipping dunnage is removed.	—
	Check for loose hardware. Tighten loose hardware to the required torque.	10.2 Torque Specifications, page 404
	Check the tire(s) pressure (Transport/Stabilizer Option).	6.2 Checking Tire Pressure – Transport and Stabilizer Wheels, page 127
	Check the wheel bolt(s) torque (Transport/Stabilizer Option).	6.3 Checking Wheel Bolt Torque, page 128
	Check the knife drive box breather position.	6.4 Checking Knife Drive Box, page 129
	Check the knife drive box oil level.	6.4 Checking Knife Drive Box, page 129
	Check the float module gearbox oil level.	6.5 Checking Oil Level in Header Drive Gearbox, page 130
	Check the hydraulic reservoir oil level before and after run-up.	6.6 Checking Oil Level in Hydraulic Reservoir, page 131
	Check the knife drive belt(s) tension.	6.7 Checking Knife Drive Belt Tension, page 132
	Check if the reel is centered between the header endsheets (with the header in full smile).	6.9 Centering Reel on Double-Reel Header, page 135
	Grease all the bearings and drivelines.	6.17 Lubricating Header, page 169
	Check the side draper tension.	6.15 Checking and Adjusting Draper Tension, page 162
	Check the draper seal.	6.16 Checking and Adjusting Draper Seal, page 164
	Check the header float.	6.12 Checking and Adjusting Header Float, page 145
	Check the wing balance.	6.13.1 Checking Wing Balance, page 150
	Check the reel tine to cutterbar clearance.	6.11.1 Measuring Reel Clearance, page 139
	Check the auger flighting to feed pan clearance.	6.14 Adjusting Auger to Pan Clearance, page 159
	Check the knife hold-down adjustment.	6.8 Checking Pointed Guard Hold-Downs, page 133
	Check the fitment of the endshields.	6.18 Checking and Adjusting Endshields, page 176
	Ensure the skid shoes are evenly adjusted at a setting appropriate for the first crop.	—
	Ensure the feeder house variable speed is set to minimum.	—
	Ensure the auto header height is calibrated and functioning correctly.	7.1 Auto Header Height Control, page 181

REFERENCE

✓	Item	Reference
Run-up procedure		<i>9 Running up Header, page 391</i>
	Check the hydraulic hose and wiring harness routing for clearance when raising or lowering the header and the reel.	—
	Ensure the lights are functional.	—
	Check the knife speed.	<i>9.1 Adjusting Knife Speed, page 393</i>
Post run-up check. Stop engine.		<i>9.2 Performing Post Run-Up Adjustments, page 396</i>
	Check the knife sections for discoloration caused by misalignment of components.	<i>9.2.1 Adjusting Knife, page 397</i>
	Check the feed draper tension.	<i>9.2.2 Checking and Adjusting Feed Draper Tension, page 398</i>
	Check for hydraulic leaks.	—
	Check that the manual storage case contains all of the required manuals.	<i>6.19 Checking Manuals, page 180</i>

Date Checked:

Checked by:

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