



MacDon

FD75 FlexDraper[®] Combine Header with CA25 Combine Adapter

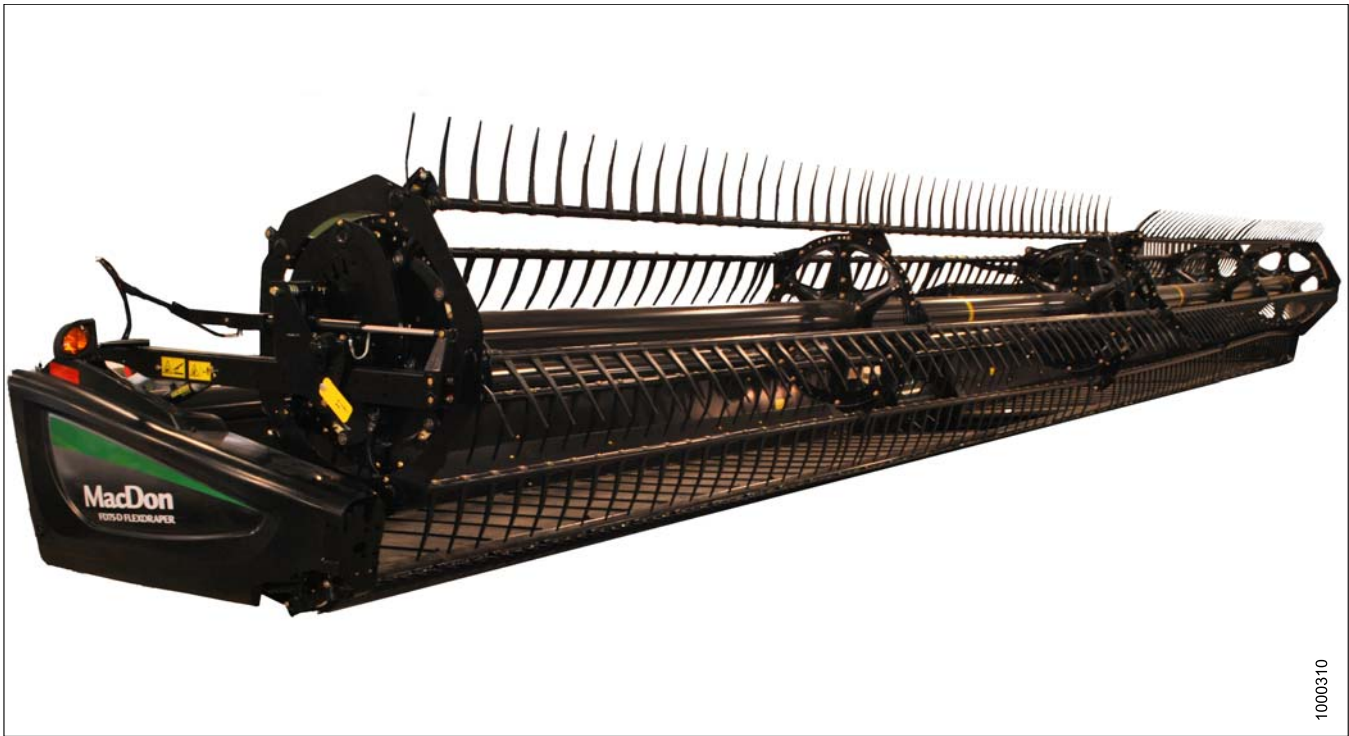
Unloading and Assembly Instructions (North America)

147698 Revision A
2016 Model Year
Original Instruction

Featuring MacDon FLEX-FLOAT Technology™

The harvesting specialists.

FD75 FlexDraper® Header for Combines



1000310

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Introduction

This instruction manual describes the unloading, setup, and predelivery requirements for the MacDon FD75 FlexDraper® Combine Header with CA25 Combine Adapter.

To ensure your customers receive the best performance and safety from this product, carefully follow the unload and assembly procedure from the beginning through to completion.

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

Retain this instruction for future reference.

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).

A French language version of this manual can be downloaded from our MacDon International website (www.macdon.com) and the Dealer portal (<https://portal.macdon.com>) (login required).

List of Revisions

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

Summary of Change	Location
Added the model year to the cover page.	Front cover
Added callouts to illustrations and instructions throughout the manual.	Throughout
Added instructions for removing the new fork slider channels.	2.3 Removing Shipping Stands, page 10
Added torque values for attaching the rod end of cylinder to reel arm.	3.1 Attaching Reel Lift Cylinders, page 15
Updated the reel fore-aft/header tilt switch installation instructions for John Deere combines.	<ul style="list-style-type: none"> • Installing Reel Fore-Aft/Header Tilt Switch: S-Series Combines, page 40 • Installing Reel Fore-Aft/Header Tilt Switch: 50, 60, and 70 Series Combines, page 45
Added the procedure for checking knife guard hold-downs.	4.7 Checking Knife Hold-Downs, page 87
Added the procedure for checking auger flighting to feed pan clearance.	4.12 Adjusting Auger to Pan Clearance, page 109
Created a reference chapter for the torque specifications, conversion chart, and definitions.	8 Reference, page 219
Added checking knife hold-downs and auger to feed pan clearance to the predelivery checklist.	Predelivery Checklist, page 235

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1 Safety

1.1 Signal Words

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

DANGER

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

WARNING

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

CAUTION

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

1.2 General Safety

CAUTION

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

Protect yourself.

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

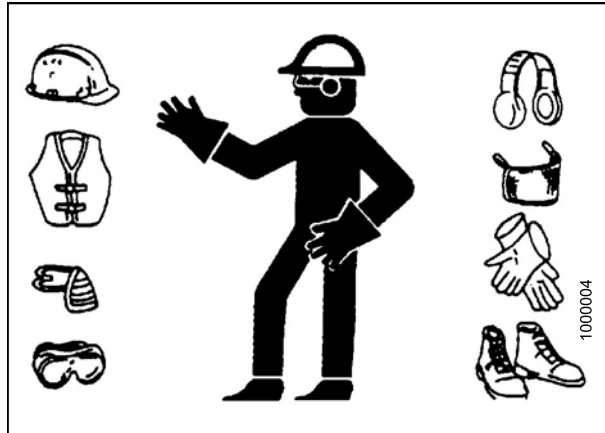


Figure 1.1: Safety Equipment



Figure 1.2: Safety Equipment

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

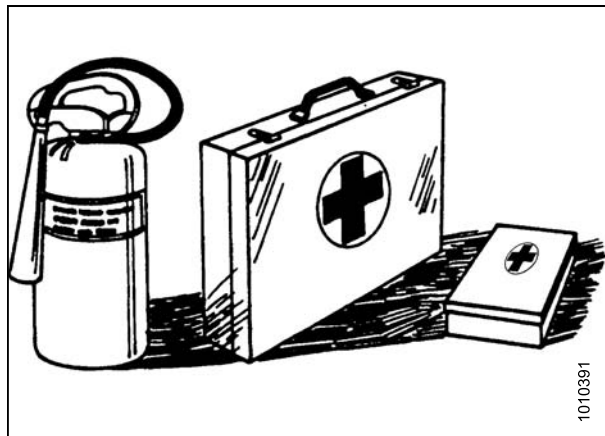


Figure 1.3: Safety Equipment

SAFETY

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



Figure 1.4: Safety Around Equipment

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

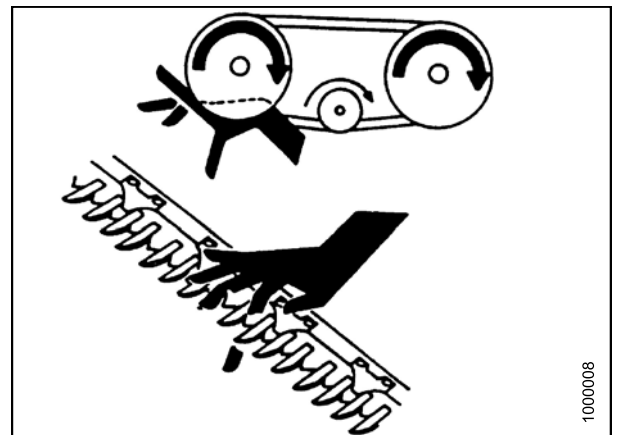


Figure 1.5: Safety Around Equipment

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



Figure 1.6: Safety Around Equipment

1.3 Safety Signs

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

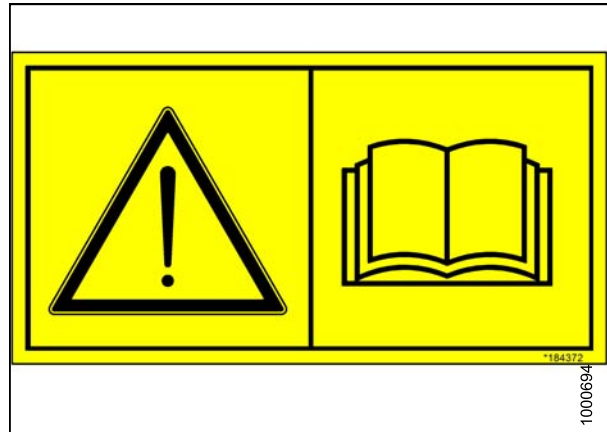


Figure 1.7: Operator's Manual Decal

2 Unloading Header and Adapter

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

2.1 Unloading Header and Adapter from Trailer

CAUTION

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

CAUTION

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

IMPORTANT:

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

Table 2.1 Lifting Vehicle

Minimum Lifting Capacity	9000 lb (4082 kg) load center (A) at 48 in. (1220 mm) (B) from back of forks
Minimum Fork Length (C)	78 in. (1981 mm)

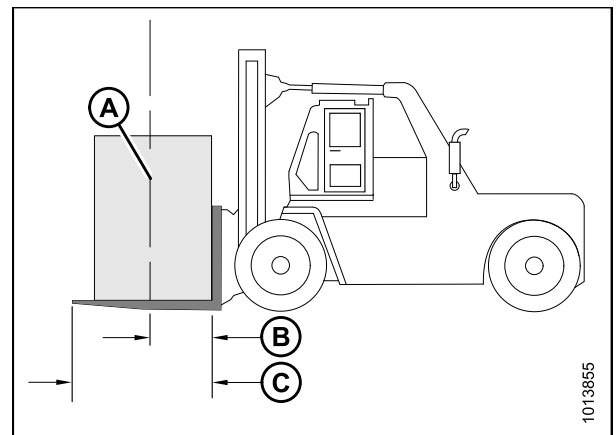


Figure 2.1: Minimum Lifting Capacity

A - Center of Gravity of the Load
B - Load Center 48 inches (1220 mm) form Back of Forks
C - Minimum Fork Length 78 inches (1981 mm)

To unload headers and adapters from a trailer, follow these steps:

1. Move trailer into position and block trailer wheels.
2. Lower trailer storage stands.

IMPORTANT:

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

UNLOADING HEADER AND ADAPTER

3. Approach the header and line up forks (A) with fork slider channels (B) under the adapter frame.
4. Slide forks (A) underneath fork slider channels (B) as far as possible without contacting the shipping support of the opposite header.
5. Remove hauler's tie-down straps, chains, and wooden blocks.
6. Slowly raise header off trailer deck.

WARNING

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

7. Back up until unit clears trailer and slowly lower to 6 in. (150 mm) from ground.

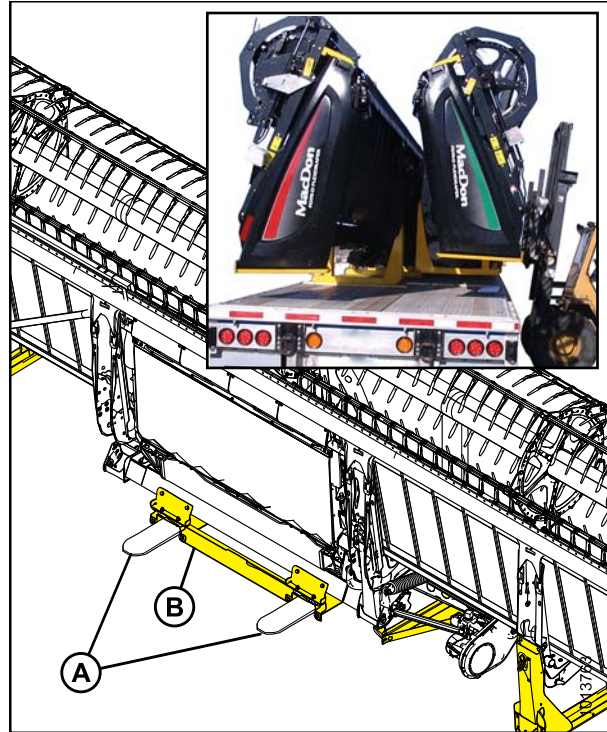


Figure 2.2: Header Shipping Supports

8. Take header to the storage or setup area. Ensure ground is flat and free of rocks or debris that could damage the header.
9. Repeat above steps for second header.
10. Check for shipping damage and missing parts.

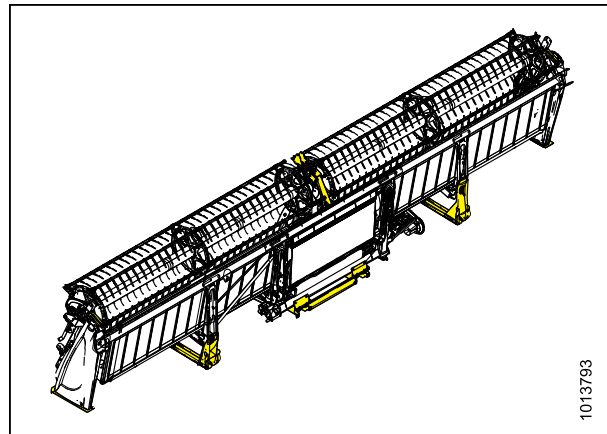


Figure 2.3: Header Lowered onto Level Ground

2.2 Lowering Header

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

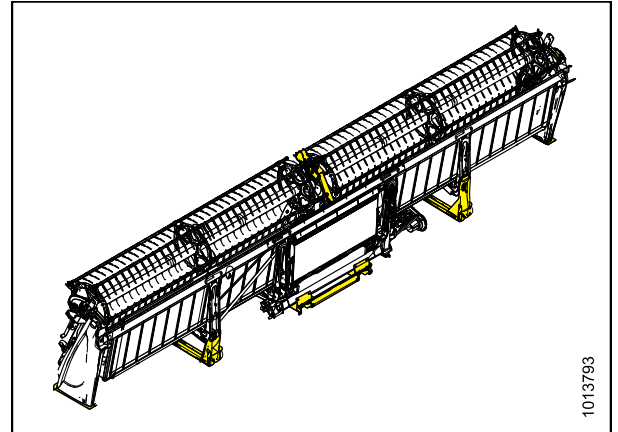


Figure 2.4: Underside of Header

2. Attach chain to shipping support (A) at center reel arm.

IMPORTANT:

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

CAUTION

Stand clear of header when lowering. Machine may swing.

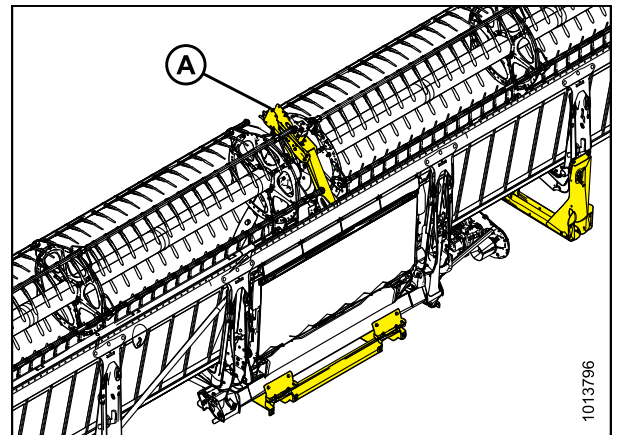


Figure 2.5: Shipping Support

UNLOADING HEADER AND ADAPTER

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



Figure 2.6: Lowering the Header

UNLOADING HEADER AND ADAPTER

4. Place 6 inch (150 mm) blocks (A) under each end and at the center of cutterbar, then lower header onto blocks.
5. Remove chain.

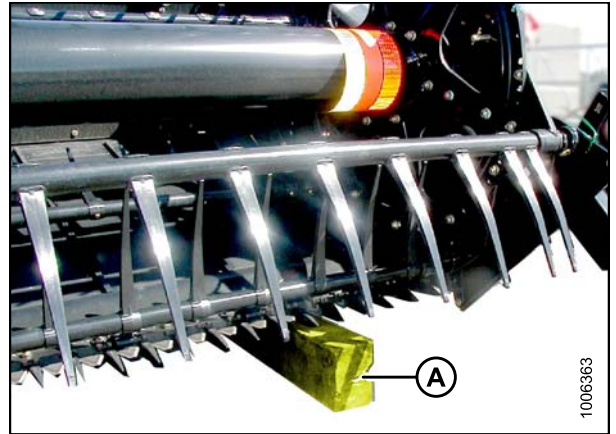


Figure 2.7: Blocks at Each End of Cutterbar

2.3 Removing Shipping Stands

NOTE:

Unless otherwise specified, discard stands, shipping material, and hardware. The removable stands are painted yellow.

1. Remove the two bolts (A) securing the right fork slider channel to the brace (C).

NOTE:

To access the bolts at the lower fork slider brace, the header must be supported on 6 in. (150 mm) blocks, as directed in Step 4, page 9.

2. Remove two bolts (B) securing the right fork slider channel to the lower brace (D).
3. Repeat the steps above for the left side.

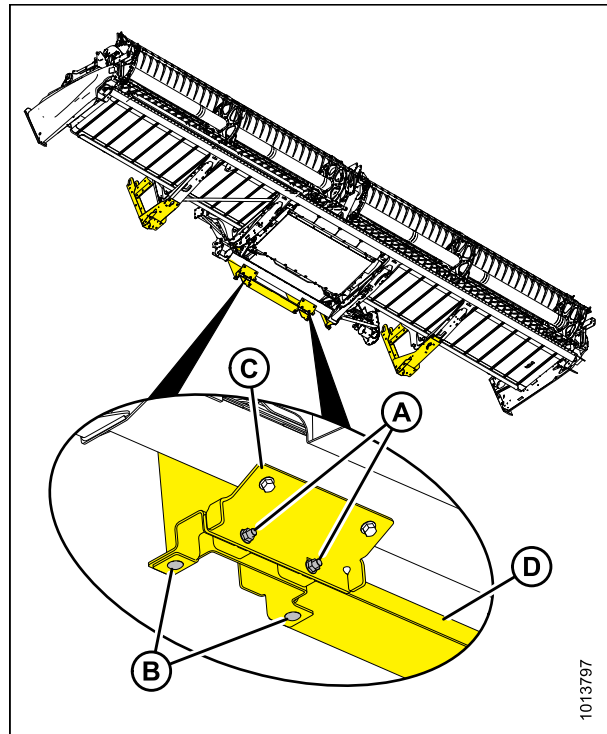


Figure 2.8: Fork Slider Channels

4. Remove the bottom brace (A).

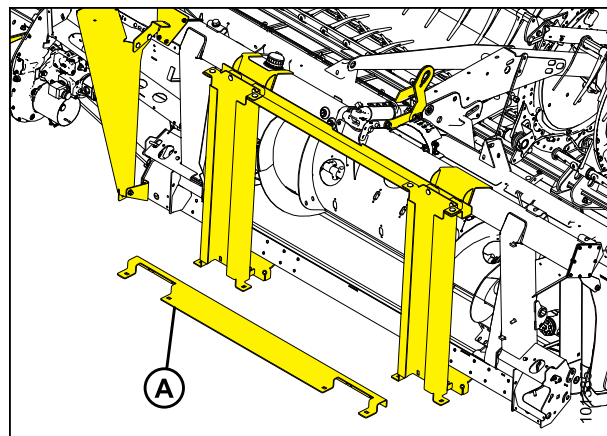


Figure 2.9: Lower Brace Removal

UNLOADING HEADER AND ADAPTER

5. Remove the two bolts (A) followed by the two bolts (B) from the upper brace.
6. Remove the right fork slider channel.
7. Repeat for the left side and remove the left fork slider channel.

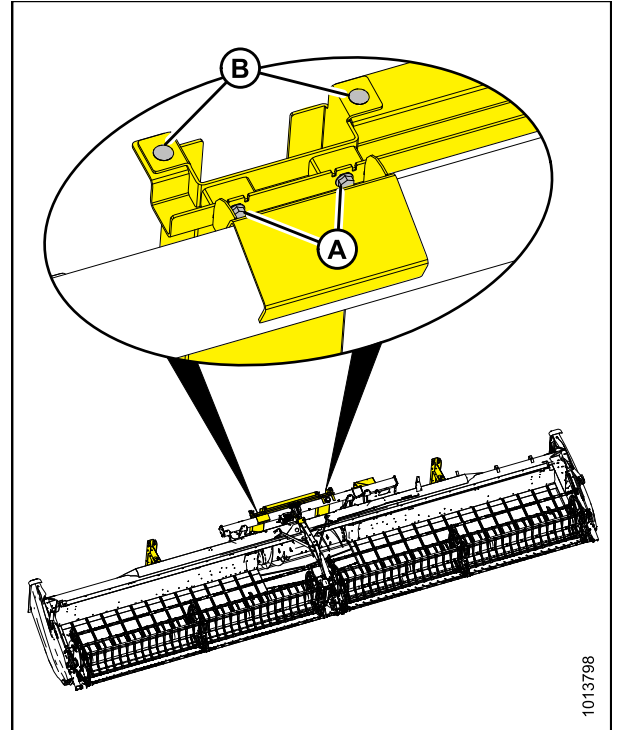


Figure 2.10: Fork Slider Channels

8. Remove the upper brace (A).

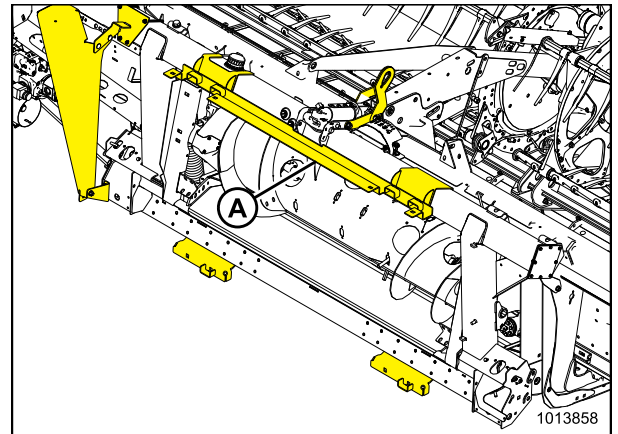


Figure 2.11: Upper Brace Removal

UNLOADING HEADER AND ADAPTER

- Remove four bolts (A) and remove braces (B) from the bottom of the adapter.

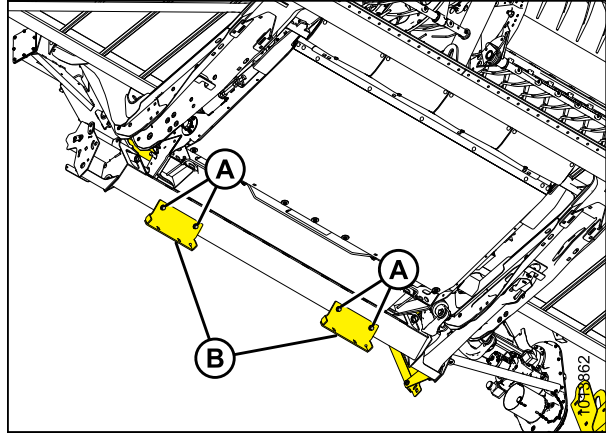


Figure 2.12: View from Below the Header

- Remove the two bolts from the bottom multicoupler guard bracket (A).
- Remove the four bolts securing the clamps at the top bracket (B).
- Remove the multicoupler guard (C).

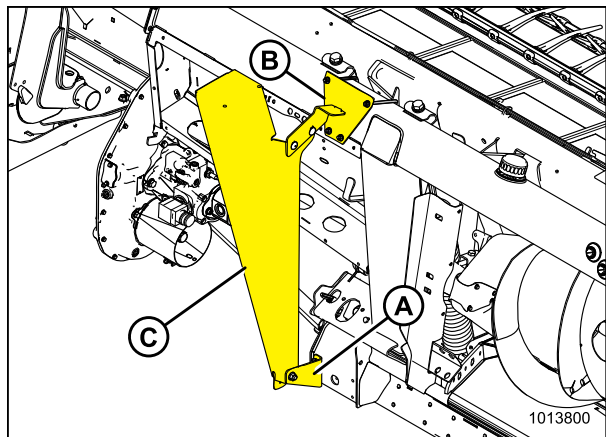


Figure 2.13: Multicoupler Guard

- Remove the four bolts (A) and two bolts (B) from the shipping stands at both outboard header legs. Remove stands.

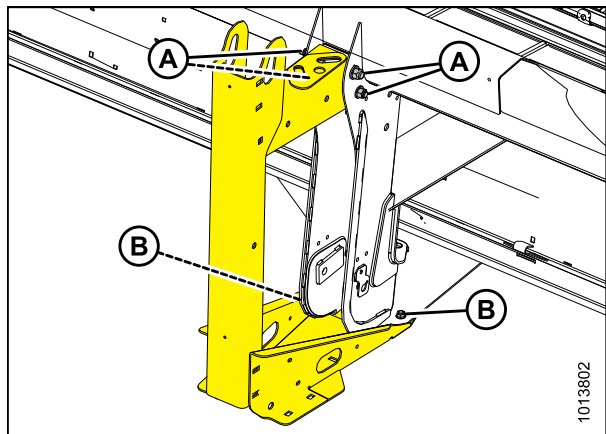


Figure 2.14: Shipping Stands at Outboard Header Legs (Right Side Shown)

UNLOADING HEADER AND ADAPTER

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

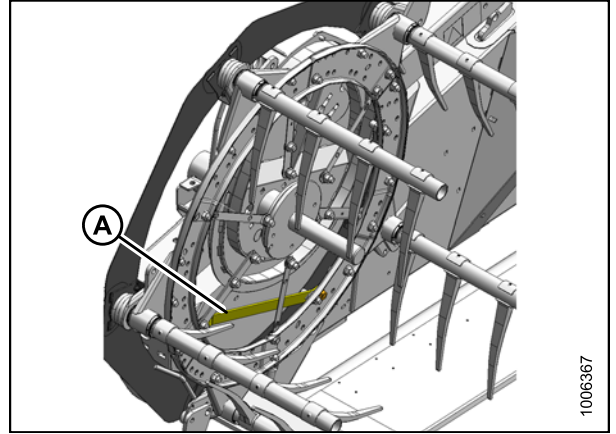


Figure 2.15: Reel Anti-Rotation Strap

15. Loosen three bolts (A) in each endshield guard and remove guards. Hardware can be removed when header endshields are opened.

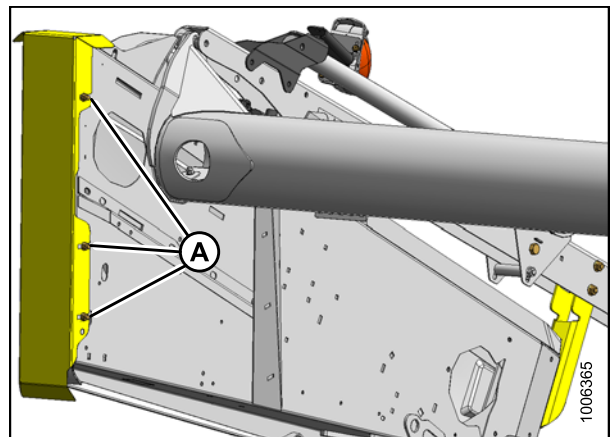


Figure 2.16: Endshield Guards

3 Assembling the Header and Adapter

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

3.1 Attaching Reel Lift Cylinders

CAUTION

Braces on reel arms keep reel from sliding forward. Do NOT remove.

1. Remove two top bolts (A) on outboard reel arm support—both ends.

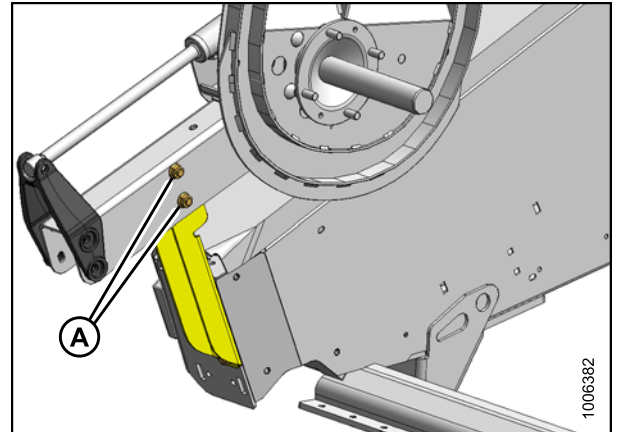


Figure 3.1: Outboard Reel Arm Support

2. Remove two top bolts (A) on center reel arm.

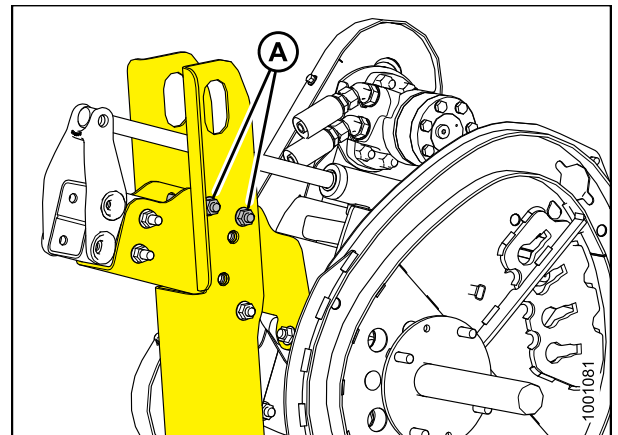


Figure 3.2: Center Reel Arm

3. Position sling (A) around the reel tube (B) close to outboard end of reel and attach sling to a forklift (or equivalent).
4. Remove shipping wire/banding from cylinder and remove pins from lug and arm.
5. Lift reel so the reel lift cylinder mounting holes line up with lug on endsheet and hole in reel arm.

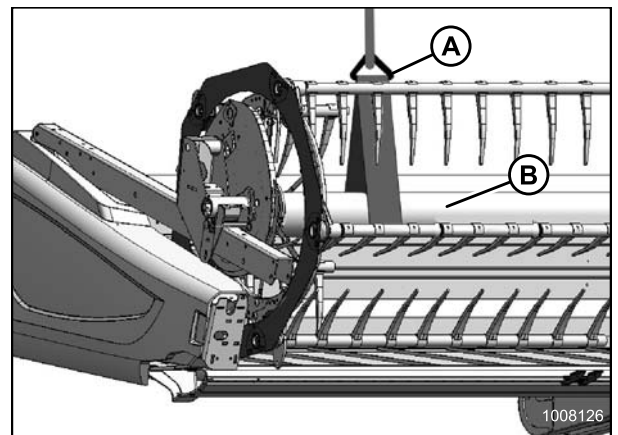


Figure 3.3: Reel Tube

ASSEMBLING THE HEADER AND ADAPTER

- Secure cylinder to endsheet and reel arm with pins as shown.

NOTE:

Insert cotter pin **OUTBOARD** at reel arm and insert cotter pin **INBOARD** at endsheet.

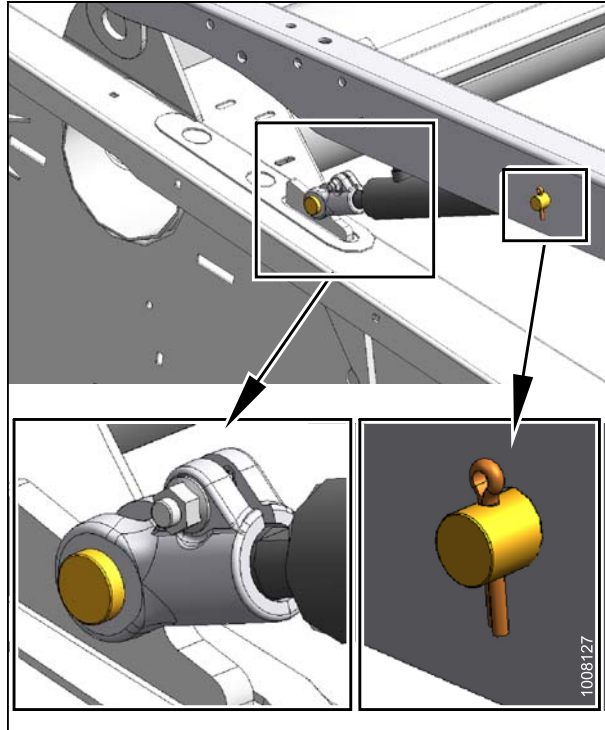


Figure 3.4: Right-Hand Shown – Left-Hand Opposite

- At outer arm, move reel safety props (A) to engaged position (B).

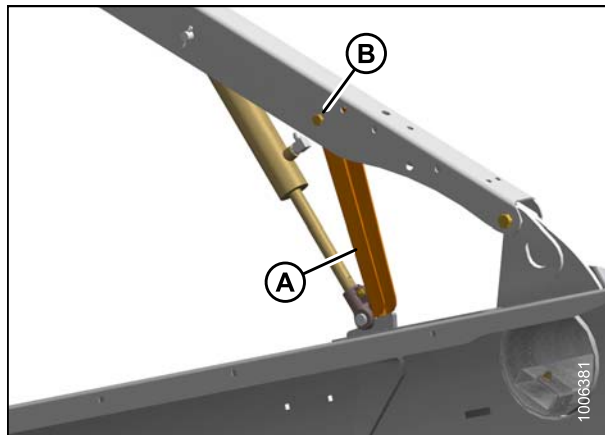


Figure 3.5: Reel Safety Props

ASSEMBLING THE HEADER AND ADAPTER

8. Position sling (A) around the reel tube near the reel center support arm.
9. Remove shipping wire and banding from center reel lift cylinder and remove socket head bolt and nut from cylinder rod.

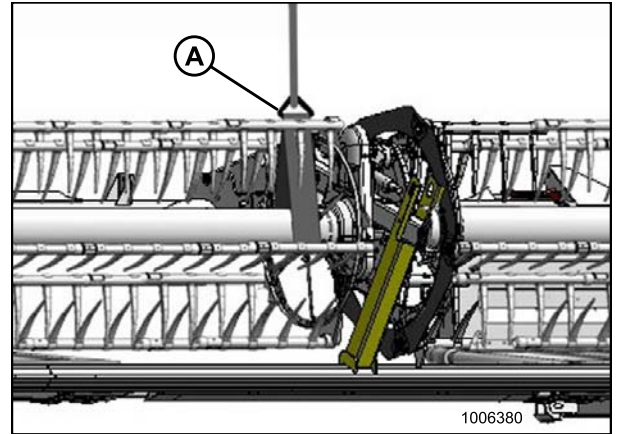


Figure 3.6: Lifting the Reel

10. Lift reel so that hole in center lift cylinder rod lines up with mounting hole in reel arm.
11. Attach rod end of cylinder to reel arm with socket head bolt and nut (A). Access hardware through holes in reel arm braces.
12. Torque bolt and nut (A) to 40–45 ft·lbf (54–61 N·m).

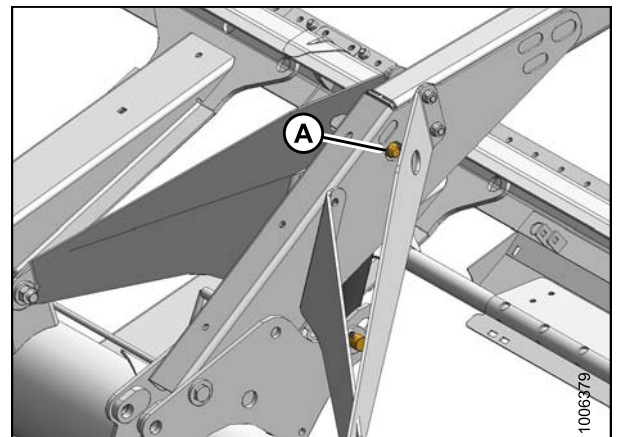


Figure 3.7: Reel Arm Braces

ASSEMBLING THE HEADER AND ADAPTER

13. Use handle (A) to move lock rod to inboard position (B), engaging pin (C) into lock in arm.
14. Lower reel until props contact cylinder mounts on outer reel arms and pin at center arm.
15. Remove pin at barrel end of cylinder.
16. Adjust reel height so pin can be installed at barrel end of cylinder and mounting structure.

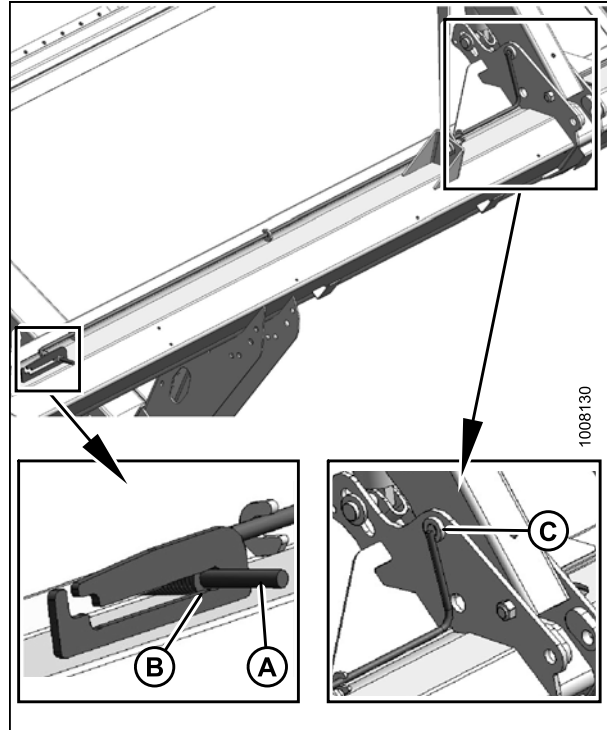


Figure 3.8: Lock Rod

17. Remove sling and reposition around reel tube near opposite outboard reel arm.
18. Remove shipping wire and banding from cylinder and remove pins from lug and arm.

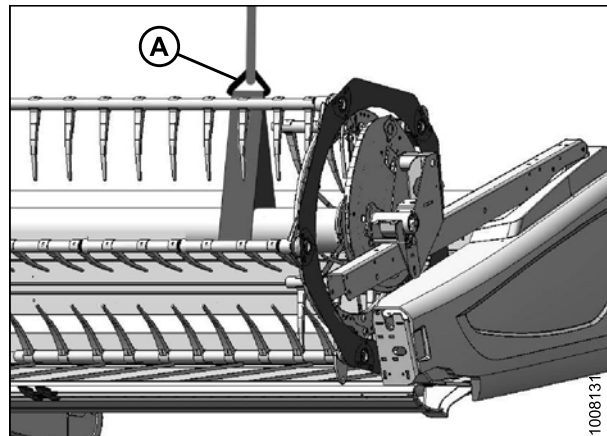


Figure 3.9: Outboard Reel Arm

ASSEMBLING THE HEADER AND ADAPTER

19. At opposite outboard reel arm, move reel safety props (A) to engaged position (B).
20. Remove shipping wire and banding from cylinder and remove pins from lug and arm.
21. Lift reel so that reel lift cylinder mounting holes line up with lug on endsheet and hole in reel arm.

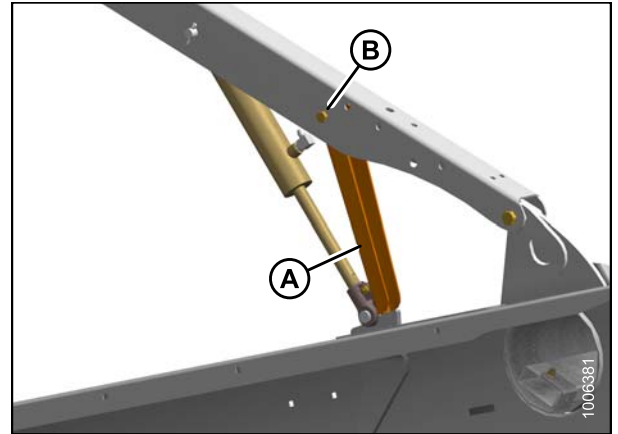


Figure 3.10: Reel Safety Prop

22. Secure cylinder to endsheet and reel arm with pins.
 - Insert cotter pin (A) **OUTBOARD** at reel arm
 - Insert cotter pin (B) **INBOARD** at endsheet

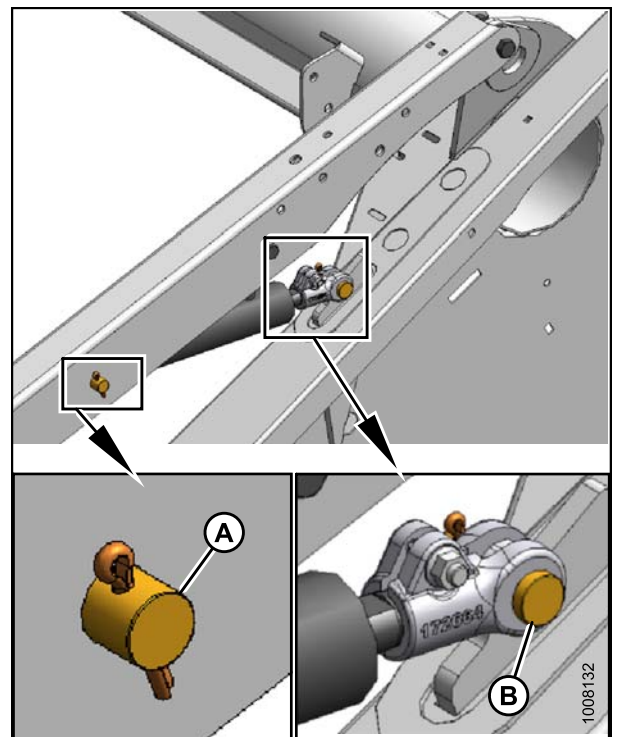


Figure 3.11: Cylinder and Endsheet

ASSEMBLING THE HEADER AND ADAPTER

23. Remove the three remaining bolts (A). Disengage center reel arm shipping support from cutterbar and remove.

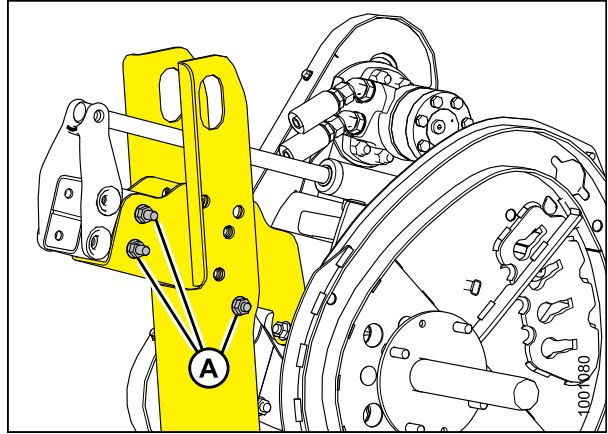


Figure 3.12: Center Reel Arm Shipping Support

24. Remove two bolts (A) from reel arm support at endsheet and remove support. Repeat at other side.

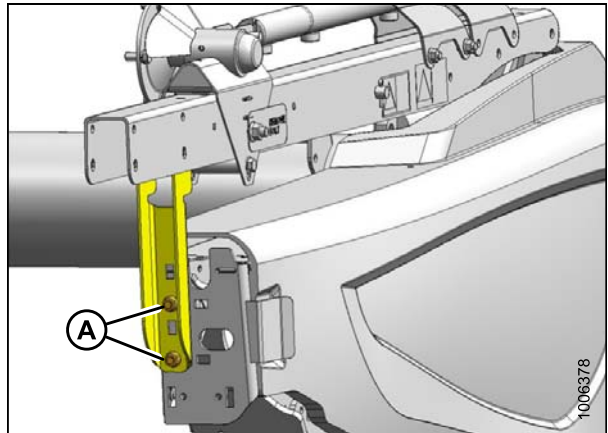


Figure 3.13: Outboard Reel Arm Supports

ASSEMBLING THE HEADER AND ADAPTER

25. Remove bolts and tags (A and B) locking reel fore-aft position at outer reel arms.

CAUTION

Bolts (with tags) on reel arms keep reel from sliding forward. Do NOT remove bolt until the cylinders are attached.

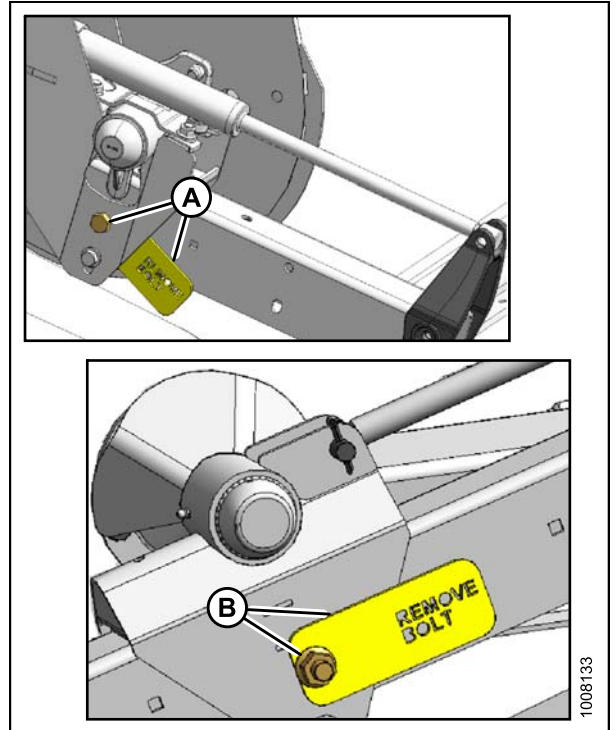


Figure 3.14: Right-Hand and Left-Hand Arm

A - Right-Hand Arm

B - Left-Hand Arm

26. Remove bolt (A) locking reel fore-aft position at the center reel arm and remove shipping channel (B).

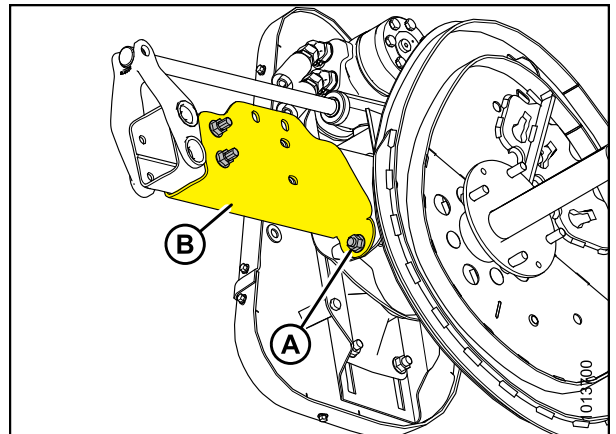


Figure 3.15: Center Reel Arm Shipping Channel

3.2 Setting Up Combine Adapter

Setting up the adapter requires that the following four procedures be completed in the order in which they are listed:

1. [3.2.1 Installing Filler Cap, page 22](#)
2. [3.2.2 Installing Flighting Extensions, page 24](#)
3. [3.2.3 Removing Stripper Bars, page 25](#)
4. [3.2.4 Replacing CR Feeder Deflectors, page 25](#)

3.2.1 Installing Filler Cap

1. Remove filler cap from bag (A).

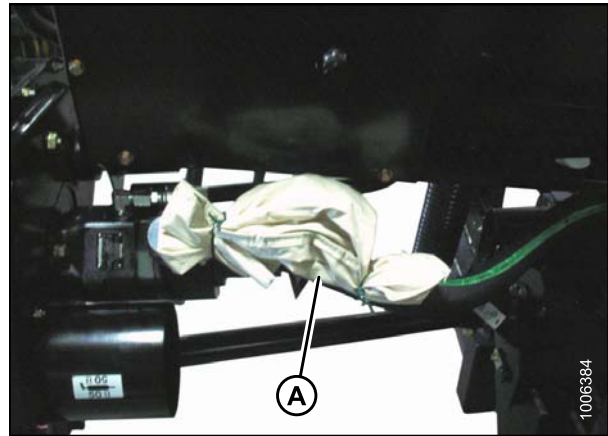


Figure 3.16: Hardware Bag

2. Remove yellow shipping cover (A) from adapter frame. Discard cover. Keep screws.

CAUTION

Cap may be under pressure. Allow pressure to equalize by lifting cap slightly with some of the screws remaining.



Figure 3.17: Yellow Shipping Cover

ASSEMBLING THE HEADER AND ADAPTER

3. Remove top gasket (A) for use in the next step.

NOTE:

There are two gaskets—one on either side of the filler strainer flange.

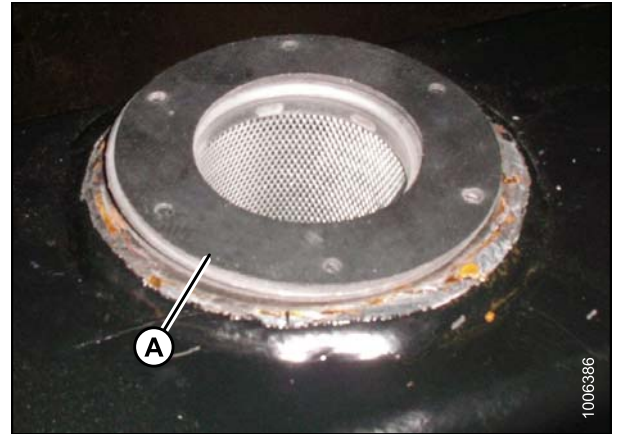


Figure 3.18: Top Gasket

4. Place gasket (A) (removed from the top of the filler strainer) onto the filler cap neck (B) and align holes.
5. Install #10-32 screws on filler cap neck (B) pressing screws through the gasket (A).
6. Apply Loctite® #565 (or equivalent) to screws.

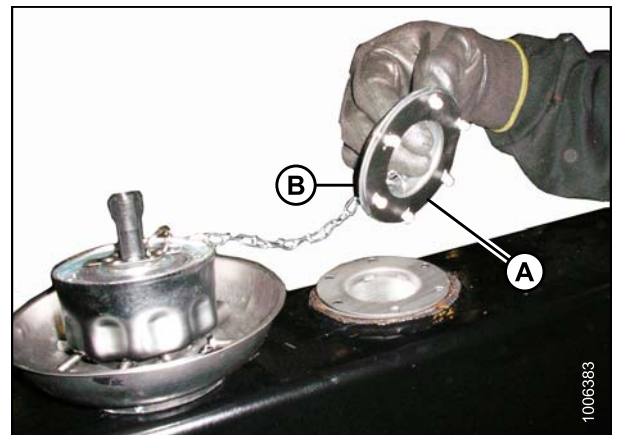


Figure 3.19: Filler Cap Neck

7. Place filler cap neck (A) (complete with screws) over opening and ensure the machine screws are aligned with the threaded holes.
8. Carefully thread in the machine screws using a cross pattern (as shown) in order to prevent cross threading of tapped holes.
9. Repeat pattern to gradually tighten screws to 31 in·lbf (3.5 N·m).

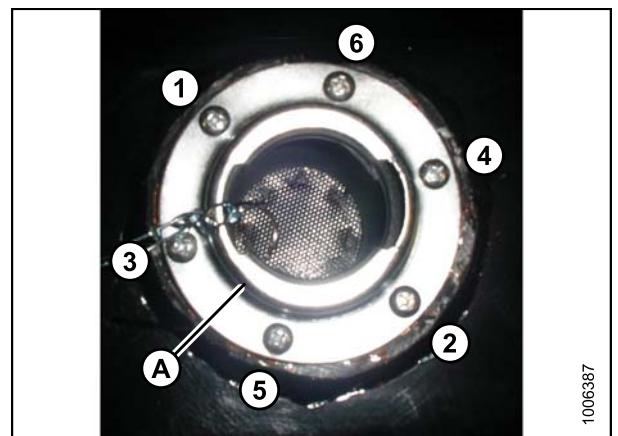


Figure 3.20: Screw Hole Locations

ASSEMBLING THE HEADER AND ADAPTER

10. Install filler cap (A).

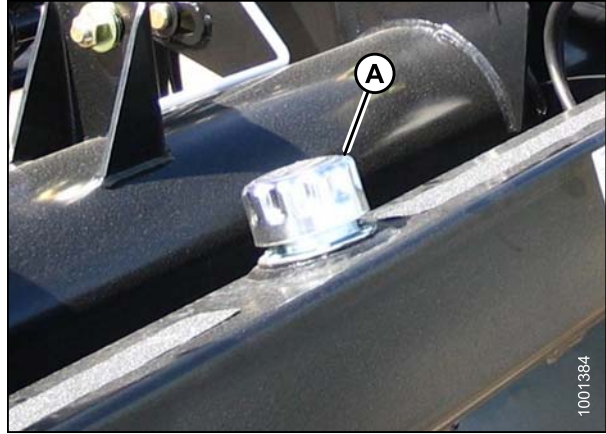


Figure 3.21: Filler Cap

3.2.2 Installing Flighting Extensions

Flighting extension kits may have been supplied with your header to improve feeding in certain crops such as rice. They are **NOT** recommended for cereal crops.

APPLICABLE COMBINES: All except New Holland CR960, 9060, 970, 9070, and 9080.

If necessary, remove auger flighting extensions as follows:

1. Remove access cover (A).
2. Remove eight bolts (B), washers, and nuts that secure flighting extension (C) to auger, and remove extension.
3. Repeat for other flighting extensions.
4. Reinstall access cover (A).

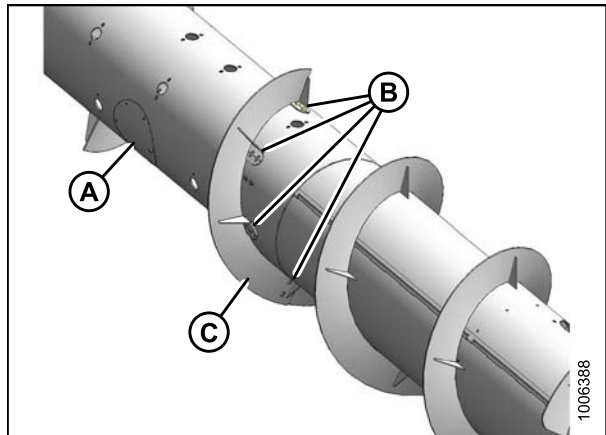


Figure 3.22: Auger Flighting Extension

3.2.3 Removing Stripper Bars

Stripper bar kits may have been supplied with your header to improve feeding in certain crops such as rice. They are **NOT** recommended for cereal crops.

If necessary, remove auger stripper bars as follows:

1. Remove four bolts (A) and nuts securing bars (B) to adapter frame, and remove bars.
2. Repeat for opposite set of stripper bars.

NOTE:

Procedure does NOT apply to New Holland CR960, 9060, 970, 9070, and 9080 combines.

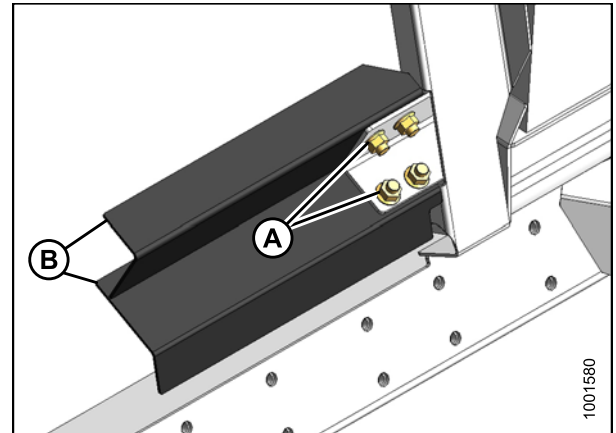


Figure 3.23: Auger Stripper Bar

3.2.4 Replacing CR Feeder Deflectors

For New Holland CR 960, 9070, and 9080 combines, feeder kits have been installed on the adapter at the factory to improve feeding into the feeder house. They may also have been installed as an option on older machines. If necessary, they can be replaced.

CA25 adapters for the CR Models listed in Table 3.1 *CA25 Combine Adapters for the CR Models, page 25* have short feeder kits installed at the factory. Long feeder kits are provided for narrow feeder house combines, and are dealer-installed to replace short feeder kits.

Table 3.1 CA25 Combine Adapters for the CR Models

Combine Model	Feeder House Size	Feeder Kit Size
CR970, 9070, 9080	Wide	Short: 200 mm
CR960, 9060, 940, 9040	Narrow	Long: 325 mm

ASSEMBLING THE HEADER AND ADAPTER

If required, replace the feeder deflectors as follows:

1. Determine position of existing deflector (A) by measuring gap 'X' between deflector forward edge and pan.
2. Remove two bolts (B) and nuts securing deflector (A) to adapter frame, and remove deflector.
3. Position replacement deflector, and secure with bolts (B) and nuts. Apply gap dimension 'X' from existing deflector to replacement deflector.
4. Repeat for opposite deflector.
5. Attach header to combine, fully extend center-link, and check gap between deflector and pan. Maintain 7/8 in. (22 mm) +/- 1/8 in. (3 mm).

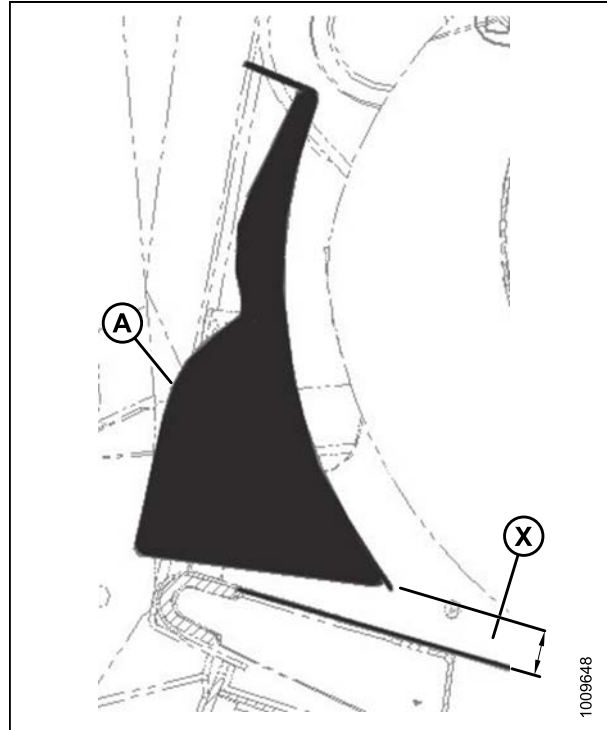


Figure 3.24: Existing Deflector

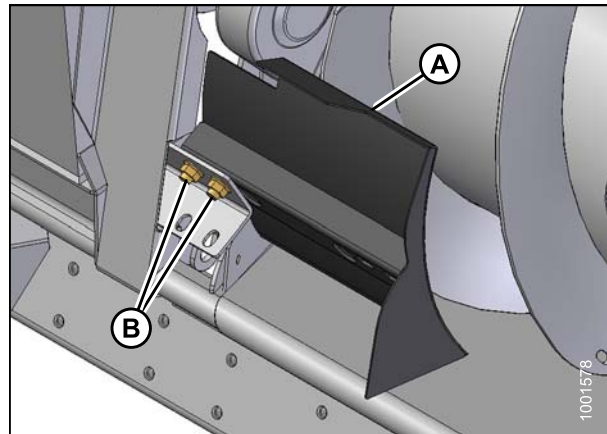


Figure 3.25: Replacement Deflector: Left-Hand Shown – Right-Hand Opposite

3.3 Attaching Header to Combine

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 3.2 Combine Model Header Attachment Procedures

Combine	Refer to
AGCO Gleaner R and S Series; Challenger 660, 670, 680B, 540C, and 560C; Massey 9690, 9790, 9895, 9520, 9540, and 9560	3.3.1 Challenger, Gleaner, and Massey Ferguson Combines, page 27
Case IH 7010, 8010, 7120, 8120, 9120, 5088, 6088, 7088, 5130, 6130, 7130, 7230, 8230, and 9230	3.3.2 Case IH Combines, page 35
John Deere 60, 70, and S Series	3.3.3 John Deere Combines, page 40
Lexion 500 and 700 (R Series)	3.3.4 Lexion Combines, page 52
New Holland CR and CX	3.3.5 New Holland Combines, page 67

NOTE:

Kits are available to allow attachment to Case 23 and 25 Series combines, as well as to John Deere 50 Series combines.

IMPORTANT:

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

3.3.1 Challenger, Gleaner, and Massey Ferguson Combines

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

Gleaner Models:

NOTE:

Gleaner combines are NOT equipped to have 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

IMPORTANT:

To prevent possible damage to electronic components, disconnect the positive cable from the combine battery before connecting harness to combine connectors.

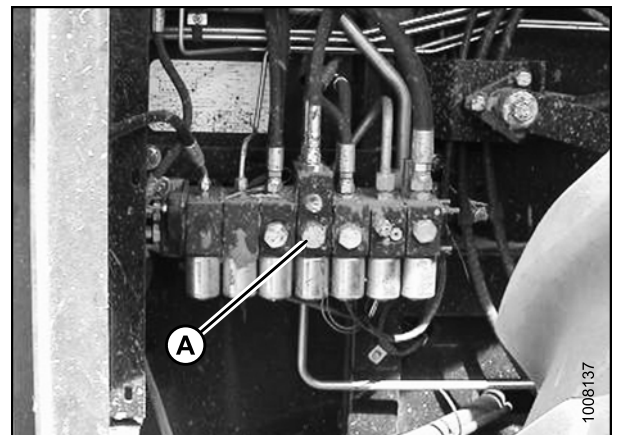


Figure 3.26: Converted AGCO R72 Shown

ASSEMBLING THE HEADER AND ADAPTER

1. Before attaching any cable ties, route harness (A) from the front of the feeder house to the power point in the cab. Ensure the harness will attach to the wiring at the selector valve with the header tilted forward, and that the feeder house can be fully lowered with adequate slack in the harness.

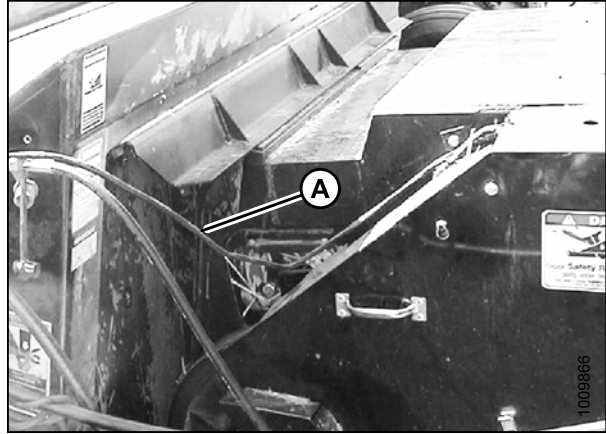


Figure 3.27: Switch Harness Routing

2. Use the cable ties provided to tie the switch harness (A) to the main harness on left side of feeder house and under cab floor at (B).

IMPORTANT:

To prevent damage to harness, fully lower feeder house and ensure there is adequate slack before attaching cable tie to harness at (B).

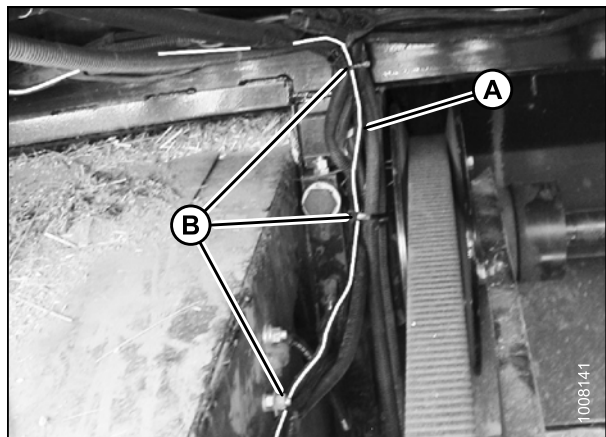


Figure 3.28: Left-Hand Side of Feeder House

3. Route the switch harness (A) at the rear of the feeder house up to the underside of the cab floor at (B).
4. Use the cable ties provided to tie the switch harness (A) to the main harness under cab floor at (B).

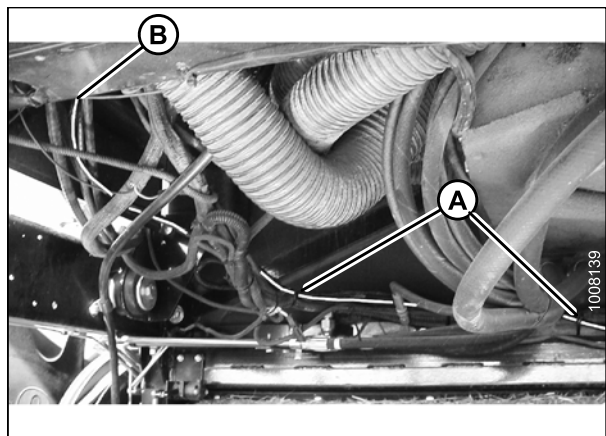


Figure 3.29: Harness under Right-Hand Side of Cab Floor

ASSEMBLING THE HEADER AND ADAPTER

5. Route harness (A) under cab, through cab floor into console (B) at foam seal (C).

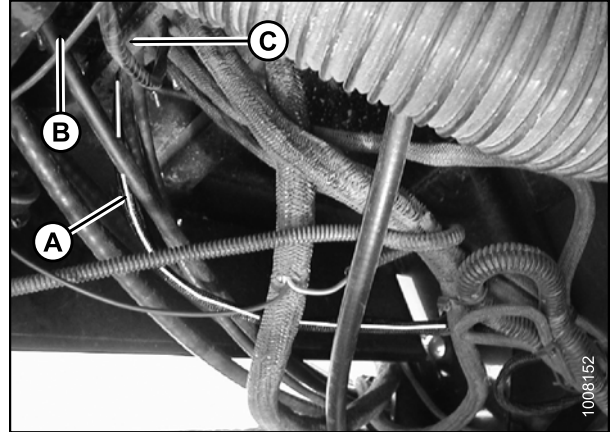


Figure 3.30: Harness through Cab Floor

6. Remove console cover (A) as shown.
7. Tap into power supply inside the console at (B).
 - The red wire from the in-line fuse goes to the **switched power supply** (B).
 - The double black wire goes to an appropriate ground.

IMPORTANT:

Connecting the harness to an unswitched power supply or cigarette lighter adapter may drain the combine battery if the circuit is left powered (activating the header tilt side of the solenoid valve) during extended shutdown periods.

8. Route switch harness through grommet (C), and replace cover (A).

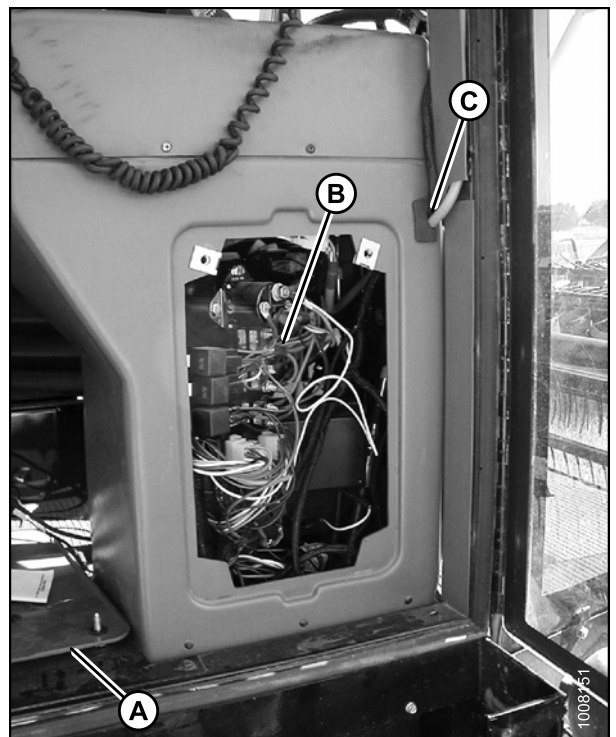


Figure 3.31: Switched Power Supply

ASSEMBLING THE HEADER AND ADAPTER

9. Mount switch plate onto console (A) in a comfortable position.
10. Connect harness to switch with red wire (B) to center terminal, and white wire (C) to either outer terminal.
11. Reconnect the battery cable.
12. Operate the switch to select either REEL FORE-AFT or HEADER TILT function.

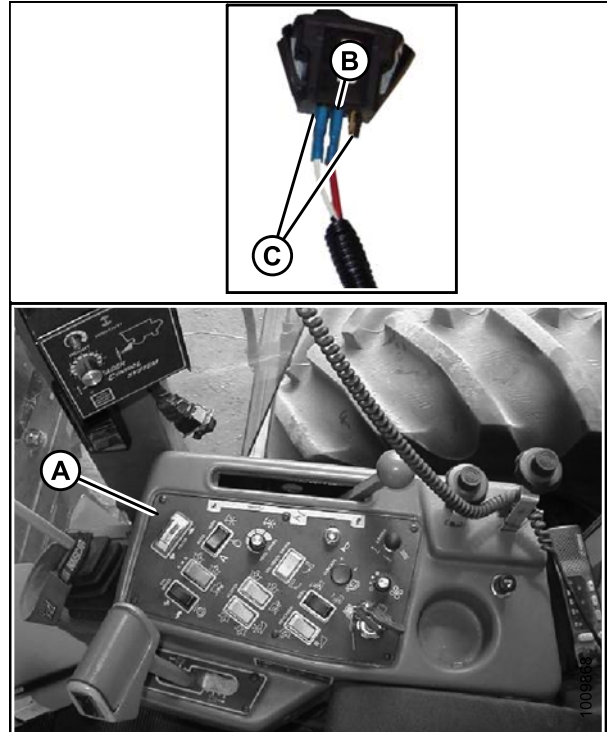


Figure 3.32: Switch and Console

Attaching Header to Challenger, Gleaner, or Massey Ferguson Combine

To attach a header to a Challenger, Gleaner, or Massey Ferguson combine, complete the following steps:

⚠ DANGER

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

1. Retract lugs (A) at base of feeder house with lock handle (B).

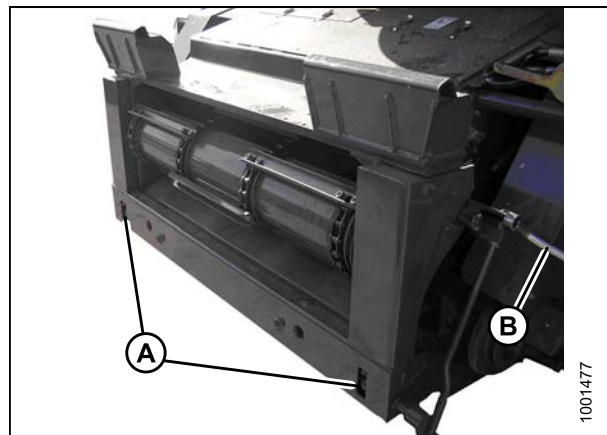


Figure 3.33: Challenger and Massey Ferguson

ASSEMBLING THE HEADER AND ADAPTER

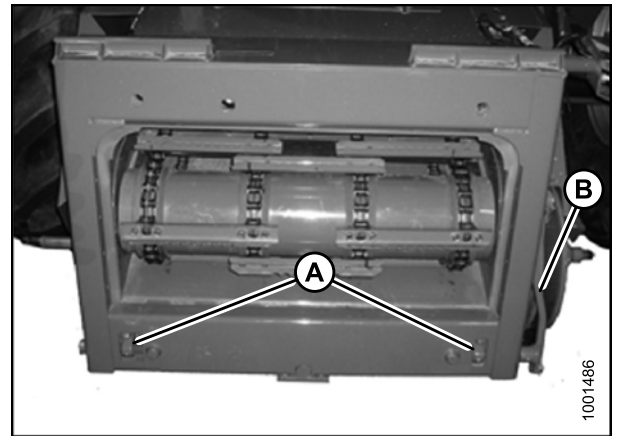


Figure 3.34: Gleaner R and S Series

CAUTION

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

2. Start engine, and slowly drive combine up to header until feeder house is directly under the adapter top cross member (A), and alignment pins (B) on feeder house are aligned with holes (C) in adapter frame.

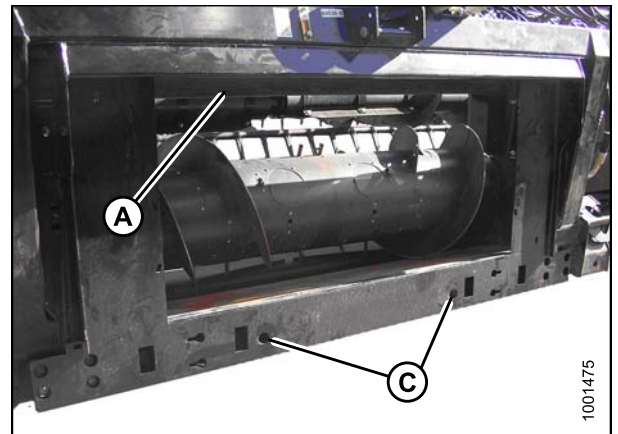


Figure 3.35: Adapter

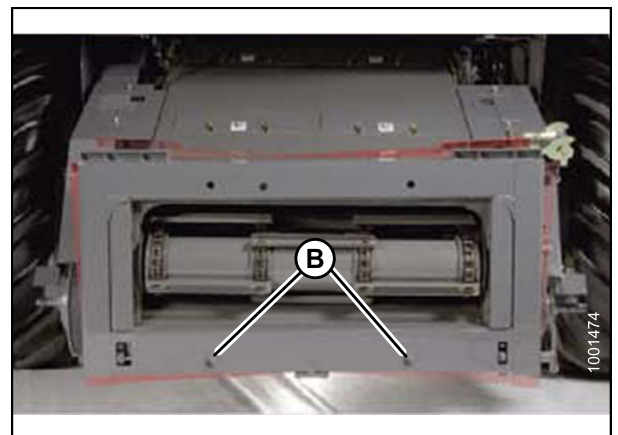


Figure 3.36: Challenger and Massey Ferguson Alignment Pins

ASSEMBLING THE HEADER AND ADAPTER

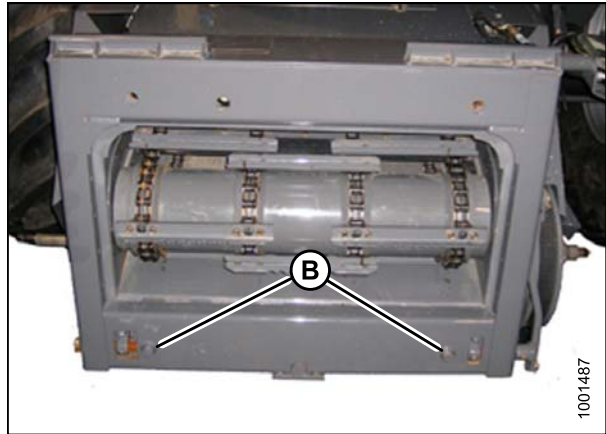


Figure 3.37: Gleaner R and S Series Alignment Pins

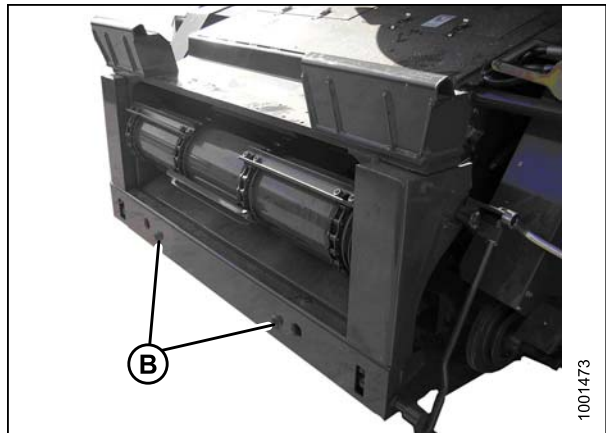


Figure 3.38: Gleaner LL Model Alignment Pins

3. Raise feeder house to lift header ensuring feeder house saddle (A) and alignment pins are properly engaged in adapter frame.
4. Raise header slightly off the ground.
5. Stop engine and remove key from ignition.



Figure 3.39: Feeder House and Adapter

ASSEMBLING THE HEADER AND ADAPTER

- Engage lugs (A) with adapter using lock handle (B).

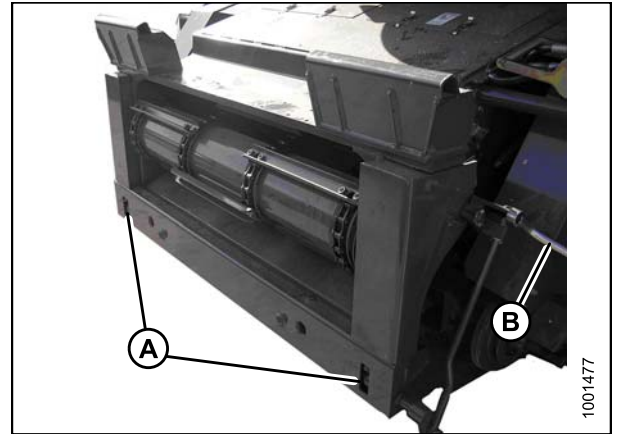


Figure 3.40: Challenger and Massey Ferguson

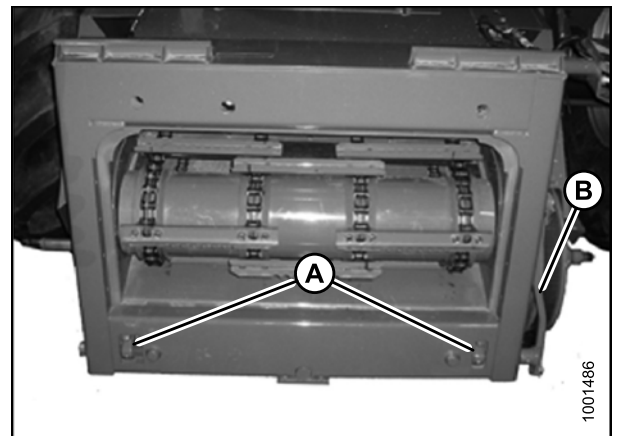


Figure 3.41: Gleaner R and S Series

- Remove blocks from under cutterbar.

CAUTION

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

- Start engine and lower header.
- Stop engine and remove key from ignition.

NOTE:

The CA25 Combine Adapter 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 [3.3 Multicoupler Kits, page 34](#) for a list of kits and installation instructions that are available through your combine Dealer.

ASSEMBLING THE HEADER AND ADAPTER

Table 3.3 Multicoupler Kits

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

10. Raise handle (A) to release coupler (B) from adapter.

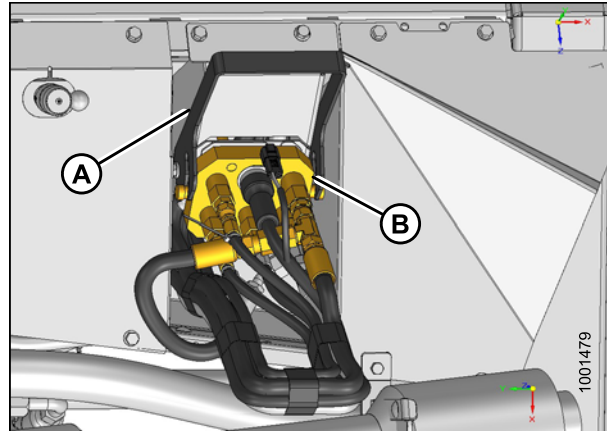


Figure 3.42: Adapter Coupler

11. Push handle (A) on combine to full open position.

12. Clean mating surfaces of coupler (B) and receptacle if necessary.

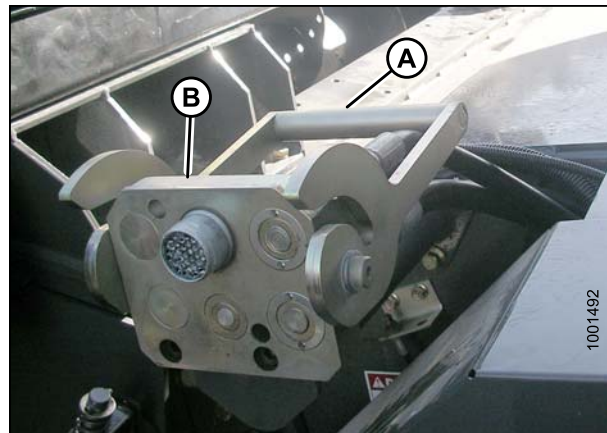


Figure 3.43: Combine Receptacle

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

14. Connect reel fore-aft/header tilt selector harness (C) to combine harness (D).

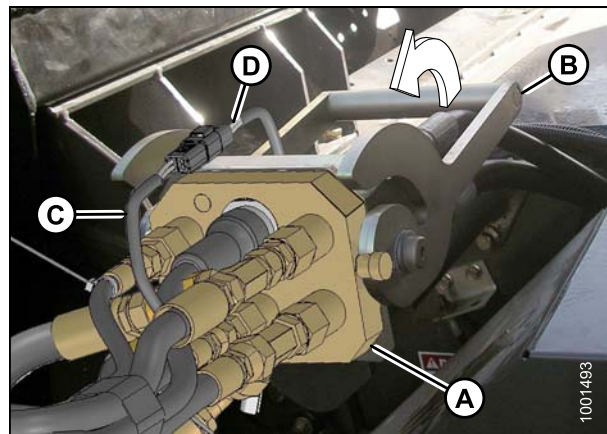


Figure 3.44: Coupler

ASSEMBLING THE HEADER AND ADAPTER

15. Remove shipping wire from driveline (A) and float lock lever (B).

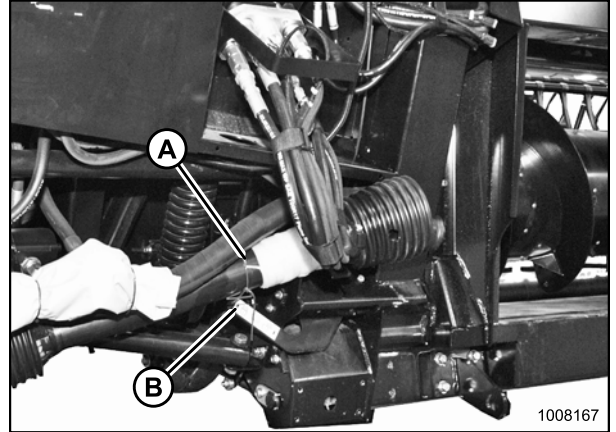


Figure 3.45: Shipping Wire on Driveline and Float Lock Lever

3.3.2 Case IH Combines

Attaching Header to Case IH Combine

DANGER

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

1. Remove nut (A) and flip lever (B) horizontally on the combine adapter.

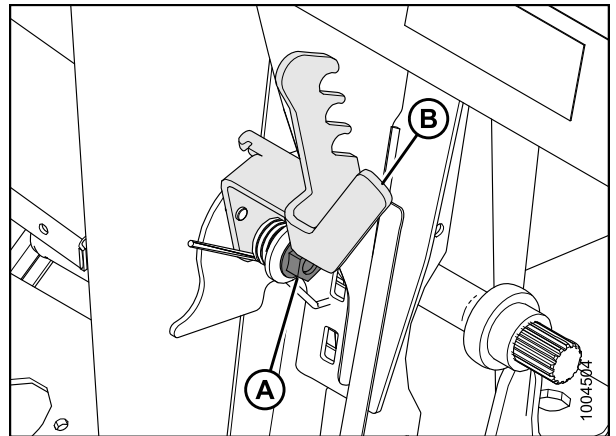


Figure 3.46: Combine Adapter Left-Hand Side

ASSEMBLING THE HEADER AND ADAPTER

2. Position lever (B) onto stud, place spring arm (C) into hook on lever (B) to preload it, and tighten nut (A) onto the combine adapter.

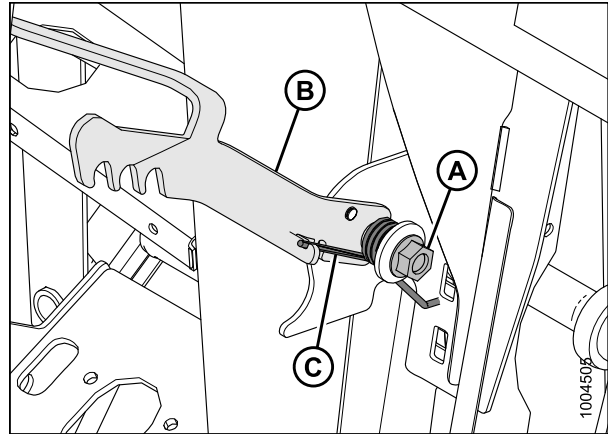


Figure 3.47: Combine Adapter Left-Hand Side

3. Ensure handle (A) is positioned so the hooks (B) can engage the adapter.

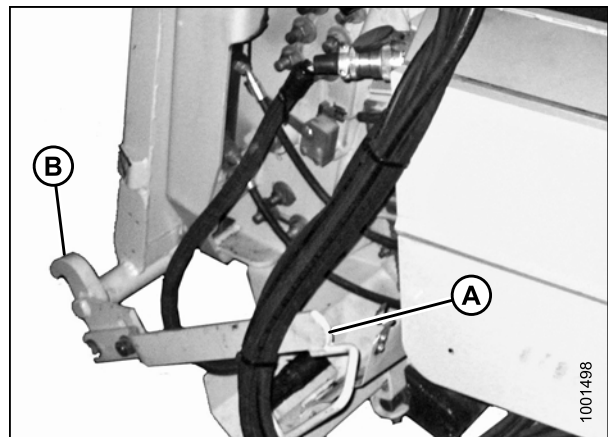


Figure 3.48: Feeder House Locks

CAUTION

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

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

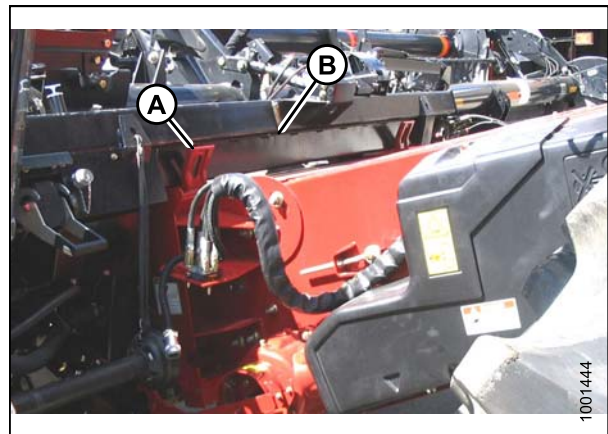


Figure 3.49: Combine and Adapter

ASSEMBLING THE HEADER AND ADAPTER

7. Lift lever (A) on the adapter on the left side of the feeder house, and push the handle (B) on the combine to engage the locks (C) on both sides of the feeder house.
8. Push down on the lever (A) so the slot in the lever engages the handle and locks the handle in place.
9. Loosen bolts (D) and adjust lock if lock (C) does not fully engage the pin on the adapter when the lever (A) and handle (B) are engaged. Retighten bolts.

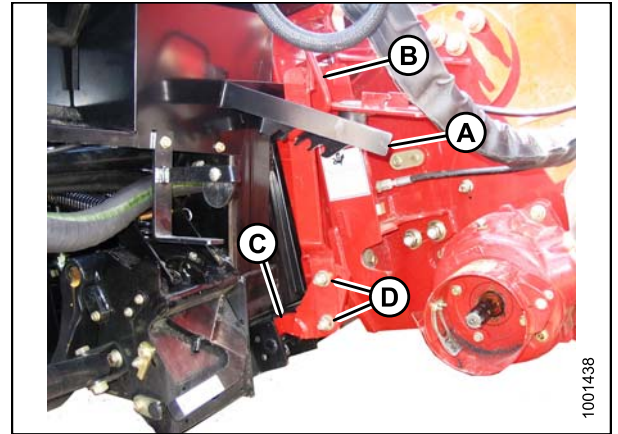


Figure 3.50: Combine and Adapter

10. Open the receptacle cover (A) on the header.
11. Push in the lock button (B) and the pull handle (C) to the full open position.
12. Clean the coupler face on the header.

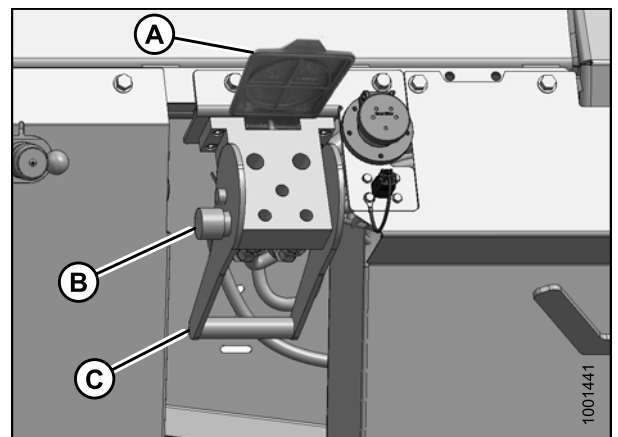


Figure 3.51: Adapter Receptacle

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



Figure 3.52: Combine

ASSEMBLING THE HEADER AND ADAPTER

14. Position the coupler on the header receptacle (A) and push the handle (B) (not shown) to engage the coupler pins into the receptacle.
15. Push the handle (B) to the closed position until the lock button (C) snaps out.

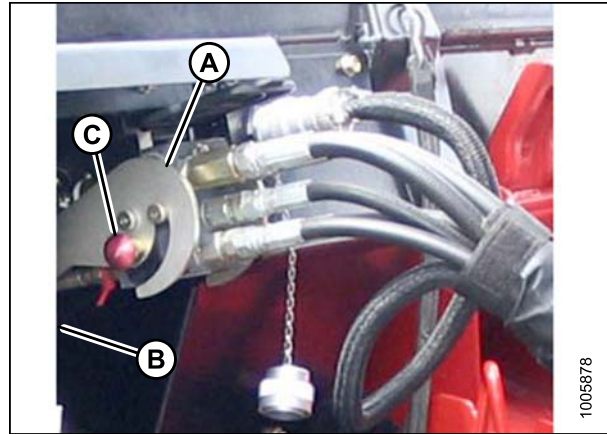


Figure 3.53: Hydraulic Connection

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

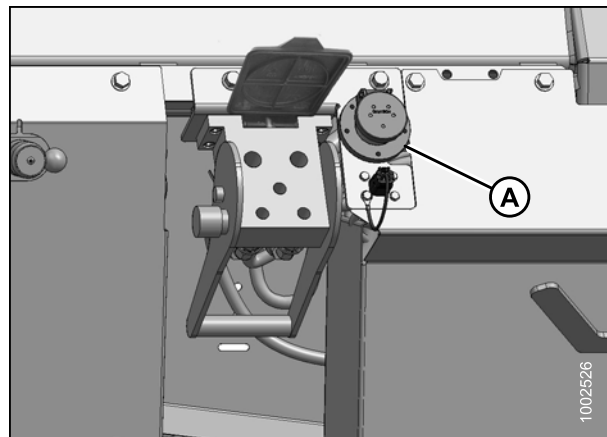


Figure 3.54: Electrical Receptacle

17. Remove the electrical connector (A) from the storage cup on the combine and route it to the adapter receptacle.



Figure 3.55: Combine

ASSEMBLING THE HEADER AND ADAPTER

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

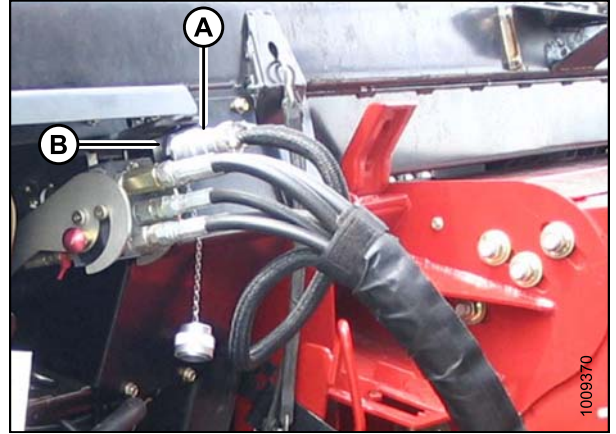


Figure 3.56: Electrical Connection

- Remove shipping wire from driveline and float lock lever.

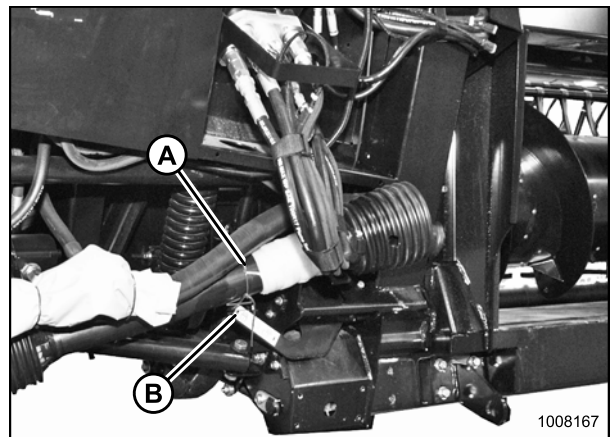


Figure 3.57: Shipping Wire on Driveline and Float Lock Lever

- Rotate the disc (A) on the adapter driveline storage hook, and remove the driveline from the hook.

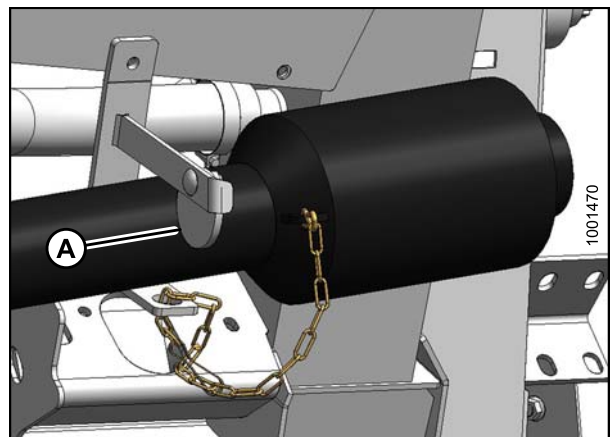


Figure 3.58: Disc on Adapter Driveline Storage Hook

ASSEMBLING THE HEADER AND ADAPTER

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

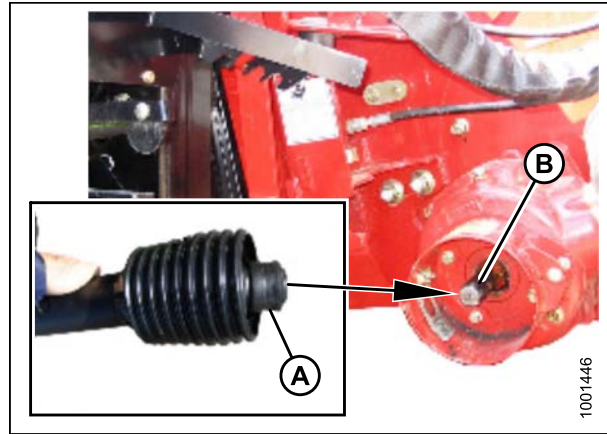


Figure 3.59: Combine Output Shaft

22. Disengage both adapter float locks by moving latches (A) away from the adapter and moving both header float lock levers (B) down (UNLOCK).

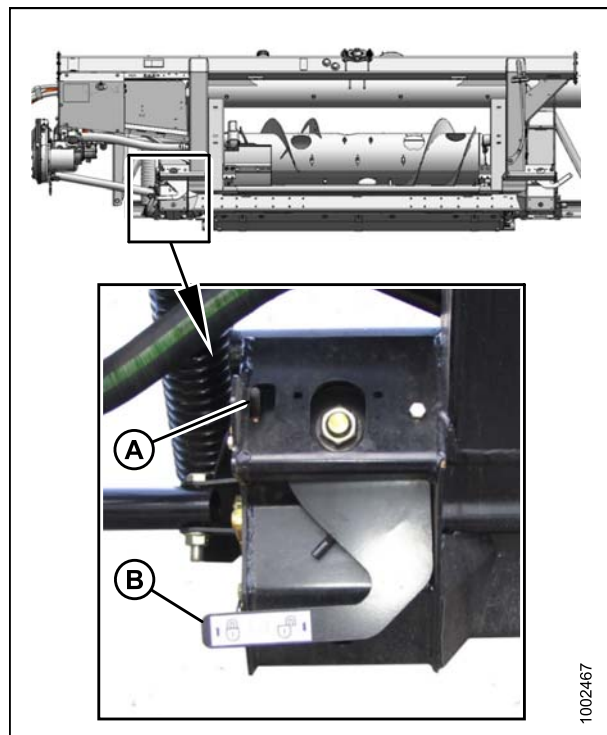


Figure 3.60: Float Lock in UNLOCK Position

23. Proceed to [3.4 Attaching Cam Arms, page 72](#).

3.3.3 John Deere Combines

Installing Reel Fore-Aft/Header Tilt Switch: S-Series Combines

The switch allows the combine Operator to select either reel FORE-AFT or HEADER TILT mode.

⚠ WARNING

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

This procedure is applicable ONLY to John Deere S-Series combines.

ASSEMBLING THE HEADER AND ADAPTER

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

1. Open storage compartment on the console.
2. Remove the two screws (A) attaching compartment cover (B) to console and remove cover.

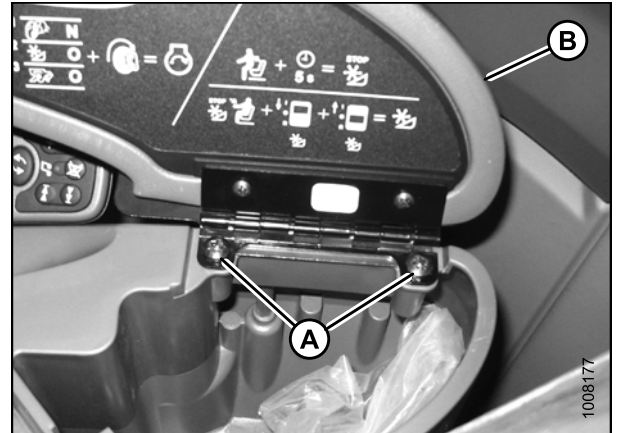


Figure 3.61: Storage Compartment and Cover

3. Lift floor mat (A) at forward right corner to expose knockout (B). Prop the floor mat for access to the knockout.
4. Remove the knockout (B).

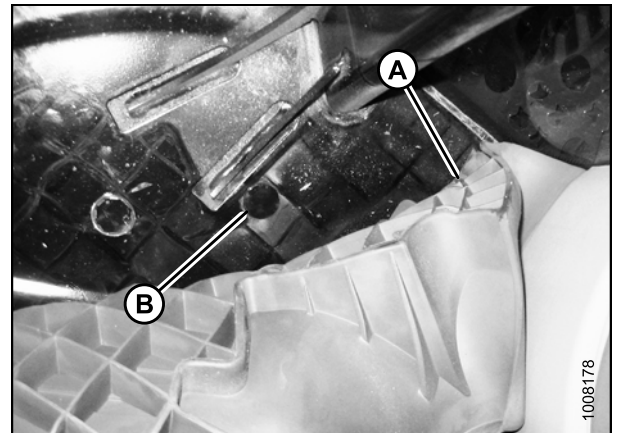


Figure 3.62: Floor Mat at Forward Right Corner and Knockout

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

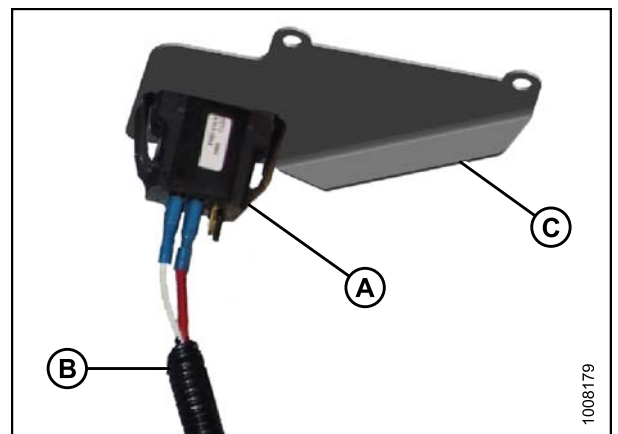


Figure 3.63: Switch and Harness

ASSEMBLING THE HEADER AND ADAPTER

7. Connect the switch end of harness (A) to switch (B) with one of the wires to center terminal and the other wire to either outer terminal. The color of the wires does not matter; ensure one wire terminates to the center terminal.

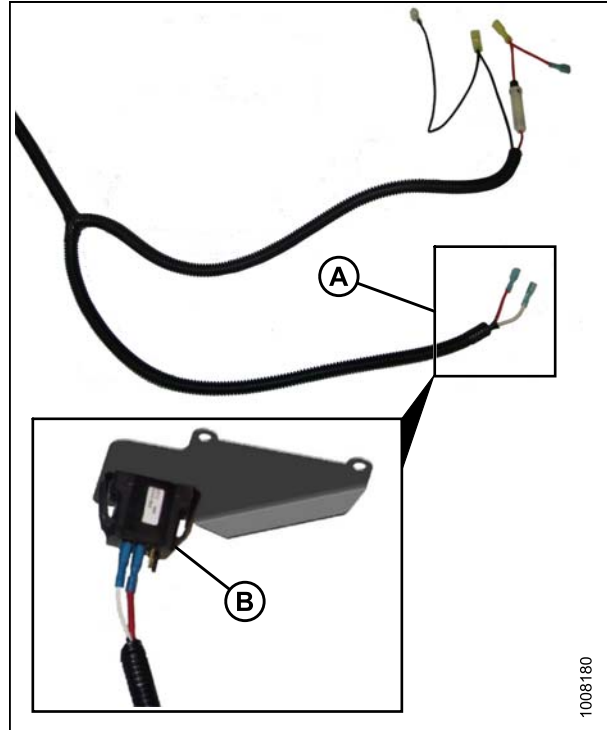


Figure 3.64: Switch End of Harness and Switch

8. Position support (C) onto console and align the holes in support with holes in the console.
9. Reinstall cover (B) with existing screws (A).

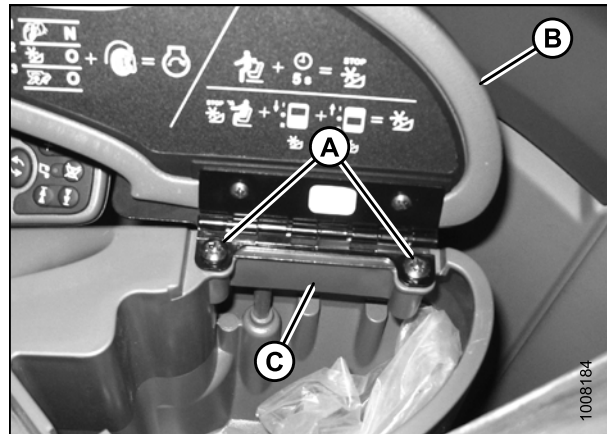


Figure 3.65: Support Position on Console

ASSEMBLING THE HEADER AND ADAPTER

10. Close cover and check secureness of switch (A) and support (B).

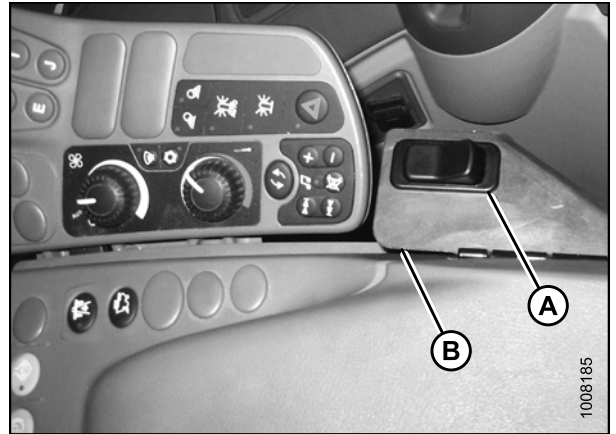


Figure 3.66: Secured Switch

11. Connect the feed end of harness (A) to the auxiliary power outlet strip on the right side of the cab floor.

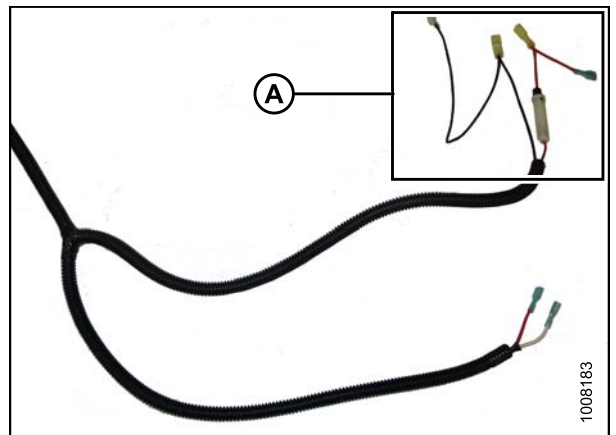


Figure 3.67: Feed End of Harness

ASSEMBLING THE HEADER AND ADAPTER

- Route harness (A) along the existing hoses under the cab to left side of the feeder house and to the multicoupler (B). Route harness under hose shield (C).
- Secure the harness to hoses with cable ties as required.

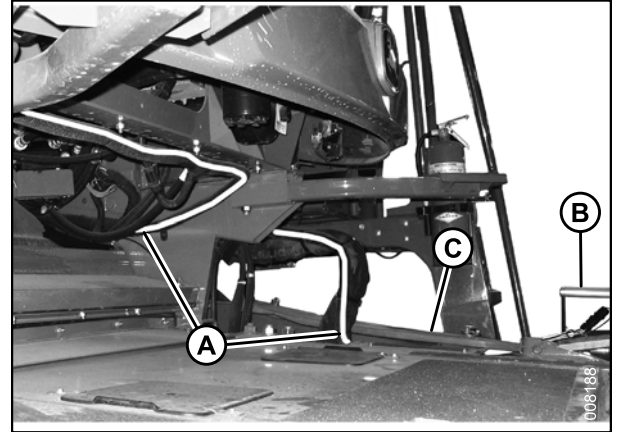


Figure 3.70: Harness and Feeder House Multicoupler

Installing Reel Fore-Aft/Header Tilt Switch: 50, 60, and 70 Series Combines

The switch allows the combine Operator to select either reel FORE-AFT or HEADER TILT mode.

⚠ WARNING

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

This procedure is applicable ONLY to John Deere 50, 60, 70 Series combines.

IMPORTANT:

To prevent damage to electronic components, disconnect the positive cable from the combine battery before connecting harness to combine connectors.

- Lay the harness along the route from front of the feeder house to the auxiliary power supply in the cab as per these instructions. Ensure the harness will attach to selector valve wiring (with header tilted forward) and that the feeder house can be fully lowered with adequate slack in the harness.

50 Series Harness Routing

- Tie the switch harness (A) to the main harness on the left side of the feeder house with cable ties provided. Leave 10 inches (250 mm) extending past the end of main harness (B).

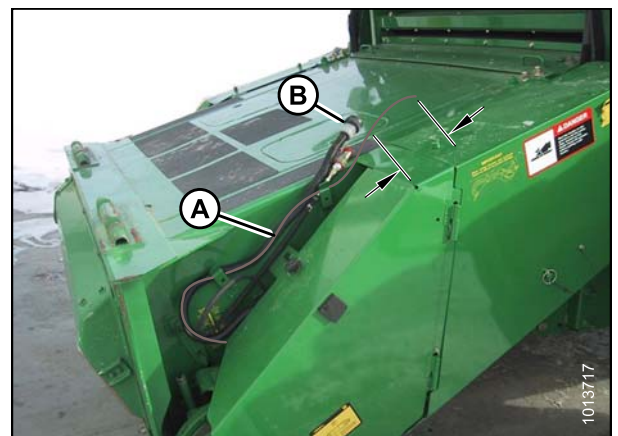


Figure 3.71: 50 Series Harness Routing

ASSEMBLING THE HEADER AND ADAPTER

60/70 Series Harness Routing

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

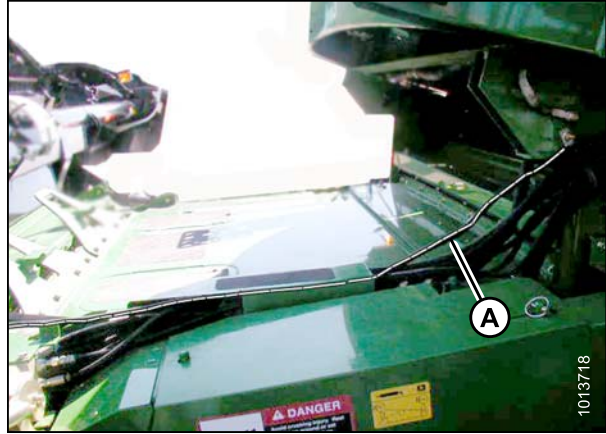


Figure 3.72: 60/70 Series Harness Routing

2. Secure the switch harness (A) at multi-coupler with a cable tie. Leave 40 in. (100 cm) extending past location (B).

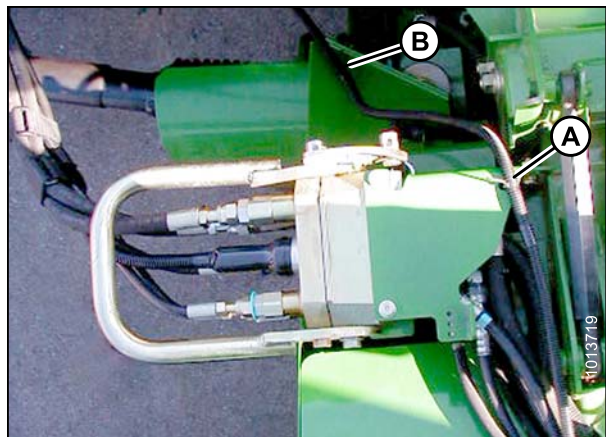


Figure 3.73: Switch Harness Routing

3. Route the switch harness (A) up to the underside of the cab floor.

IMPORTANT:

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

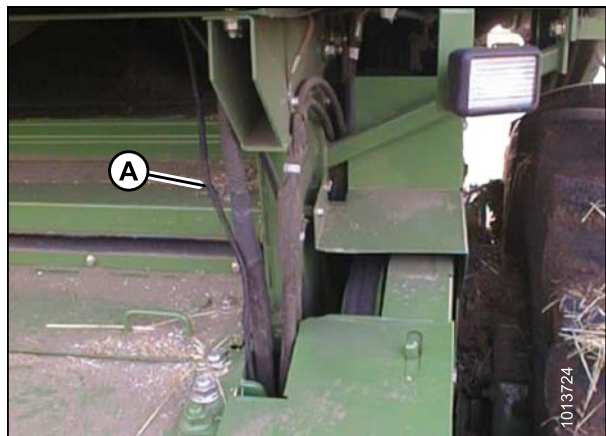


Figure 3.74: Switch Harness Routing

ASSEMBLING THE HEADER AND ADAPTER

4. Secure the switch harness (A) at the rear of the feeder house with cable tie.
5. Route harness (A) under cab and across to the right side.

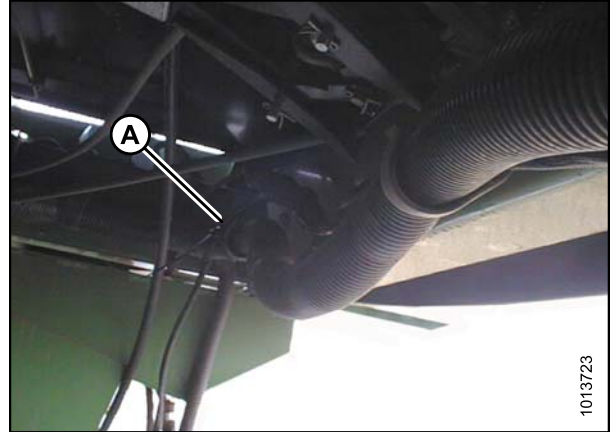


Figure 3.75: Switch Harness Routing

6. Route the switch harness (A) through the existing grommet (B) on the electrical plate located at the rear of the RH side window.

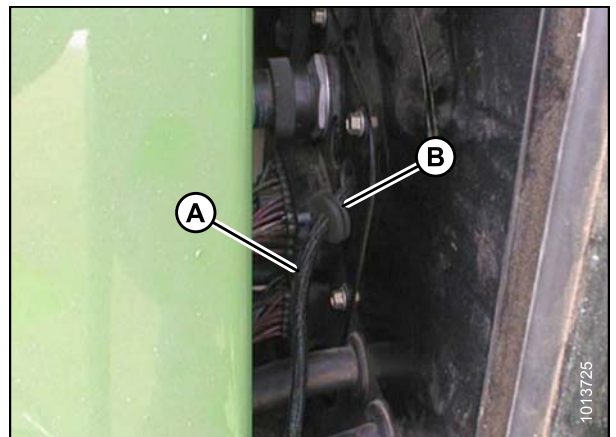


Figure 3.76: Switch Harness Routing

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

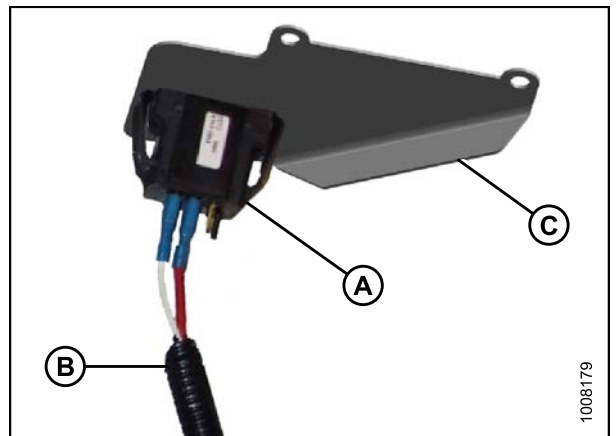


Figure 3.77: Switch and Harness

ASSEMBLING THE HEADER AND ADAPTER

9. Connect the switch end of harness (A) to switch (B) with one of the wires to center terminal and the other wire to either outer terminal. The color of the wires does not matter; ensure one wire terminates to the center terminal.

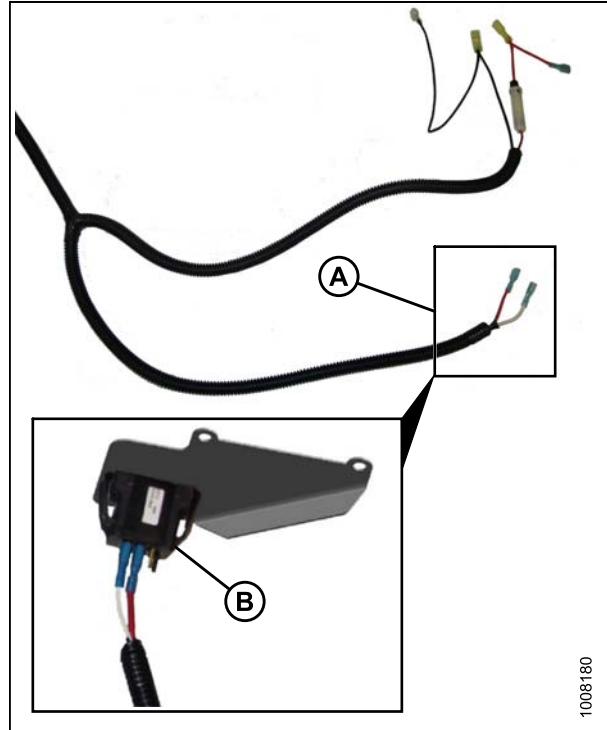


Figure 3.78: Switch End of Harness and Switch

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

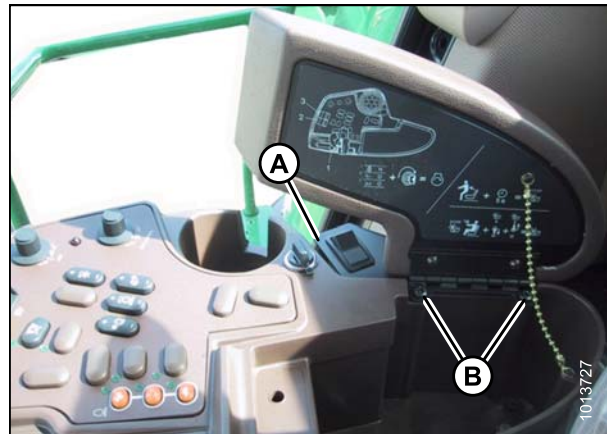


Figure 3.79: Switch Plate Mounting

ASSEMBLING THE HEADER AND ADAPTER

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

IMPORTANT:

Connecting the harness to an unswitched power supply or cigar lighter may drain the combine battery if the circuit is left powered (activating the header tilt side of the solenoid valve) during extended shutdown periods.

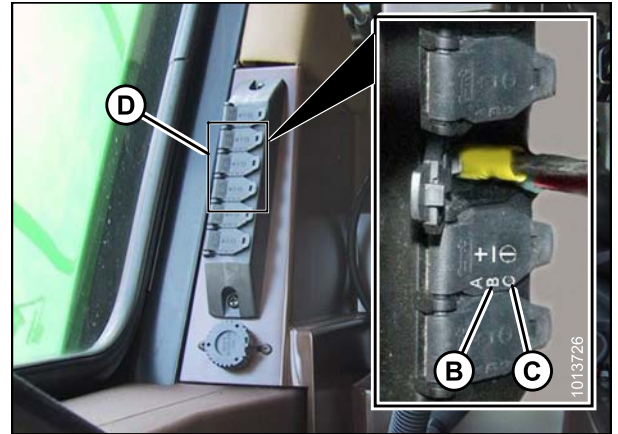


Figure 3.80: Auxiliary Power Supply

Attaching Header to John Deere Combine

DANGER

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

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

CAUTION

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

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

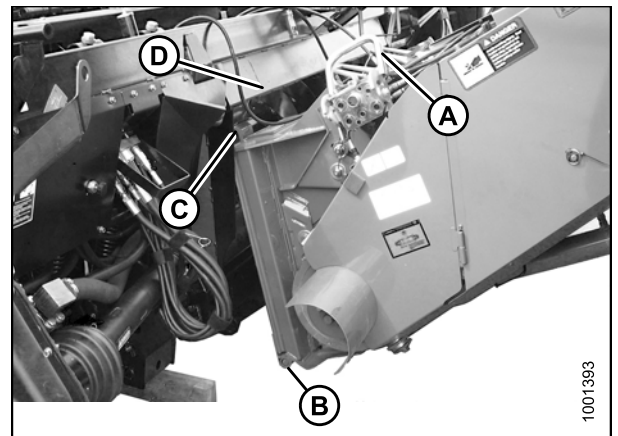


Figure 3.81: Combine and Adapter

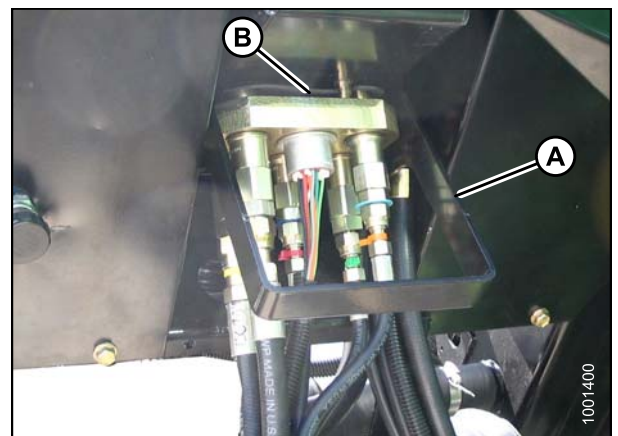


Figure 3.82: Coupler Storage

ASSEMBLING THE HEADER AND ADAPTER

6. Position the coupler (A) onto the receptacle, and pull the handle (B) to engage the lugs on the coupler into the handle.
7. Pull the handle (B) to full horizontal position and ensure the coupler (A) is fully engaged into the receptacle and the two feeder house pins (C) are fully engaged into the adapter brackets.
8. Ensure bolts (D) are tight.

NOTE:

If the pins (C) do not fully engage the adapter brackets, loosen the bolts (D) and adjust the bracket as required. Retighten the bolts.

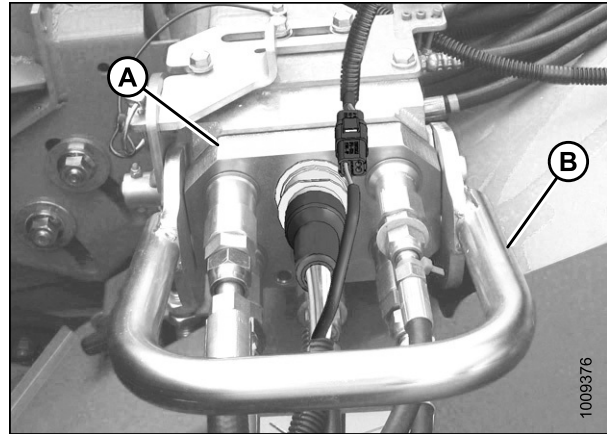


Figure 3.83: Coupler

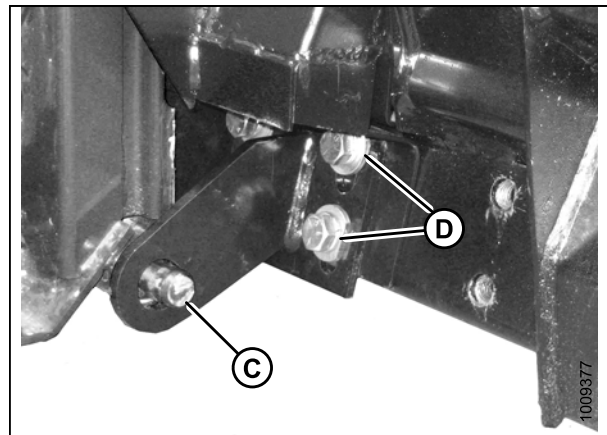


Figure 3.84: Feeder House Pin

9. Slide the latch (A) to lock the handle (B) in position and secure with the lynch pin (C).
10. Connect the harness (D) to the combine connector (E) (only if the adapter is equipped with the reel fore-aft/header tilt selector).

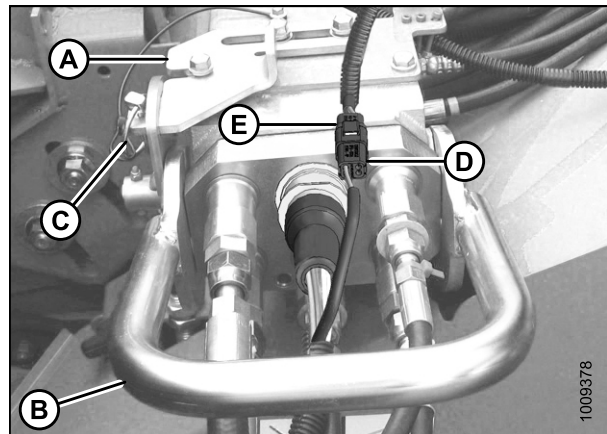


Figure 3.85: Coupler

ASSEMBLING THE HEADER AND ADAPTER

11. Rotate the disc (A) on the adapter driveline storage hook, and remove the driveline from the hook.

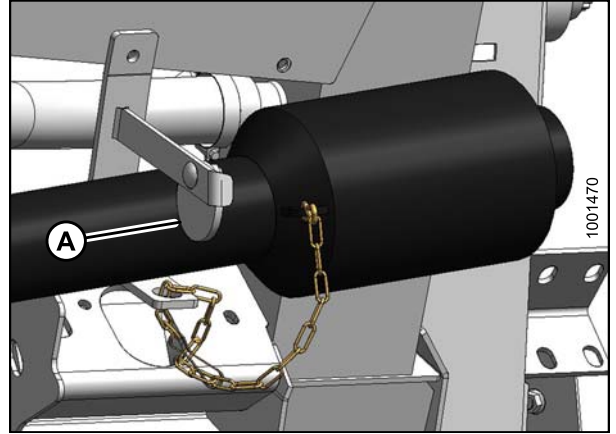


Figure 3.86: Driveline

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

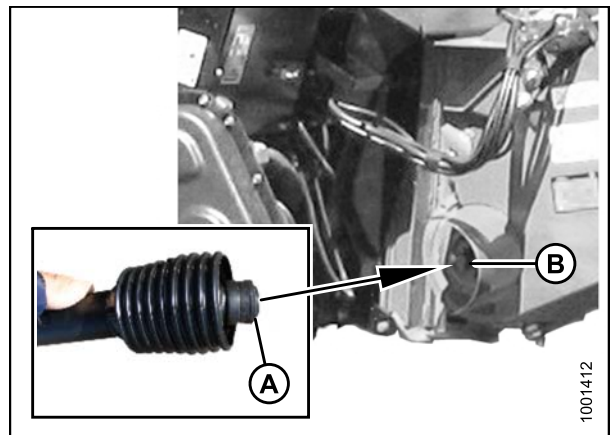


Figure 3.87: Driveline

ASSEMBLING THE HEADER AND ADAPTER

13. Disengage each adapter float lock by moving the latch (A) away from the adapter and moving both header float lock levers (B) down (UNLOCK).

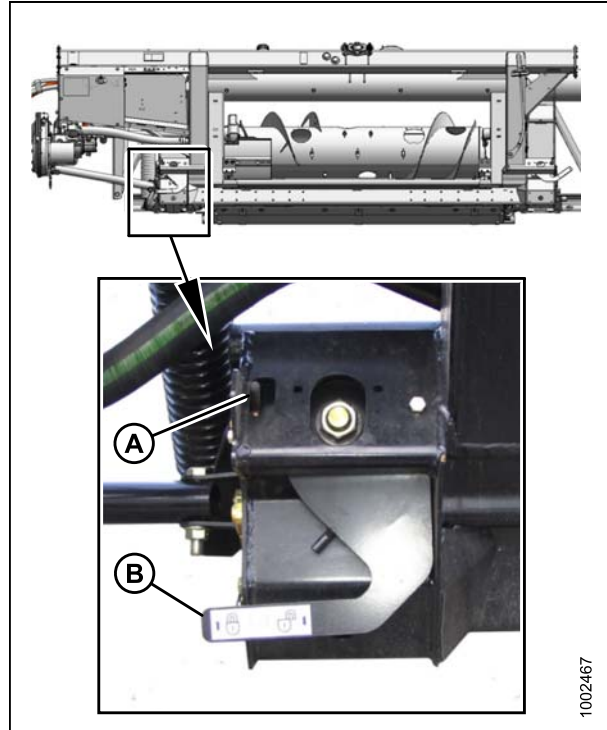


Figure 3.88: Float Lock in UNLOCK Position

14. Proceed to [3.4 Attaching Cam Arms, page 72](#).

3.3.4 Lexion Combines

500 Series: Installing Reel Fore-Aft/Header Tilt Selector Switch and Harness

1. Remove storage tray (A) from console.



Figure 3.89: Console Tray

ASSEMBLING THE HEADER AND ADAPTER

2. Remove 13 mm hex nut (A) and washer from under combine monitor at front of console as shown.

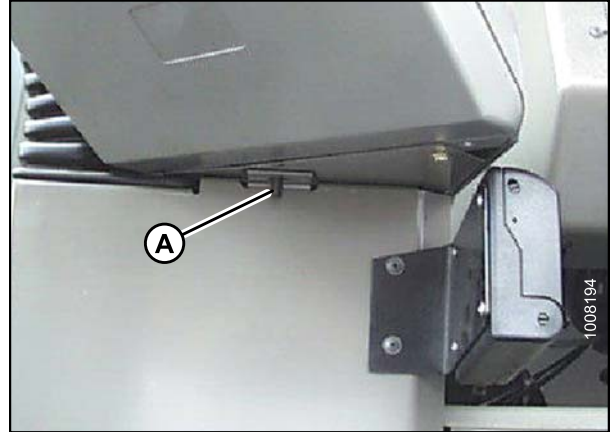


Figure 3.90: Combine Monitor

3. Tilt console (A) back.

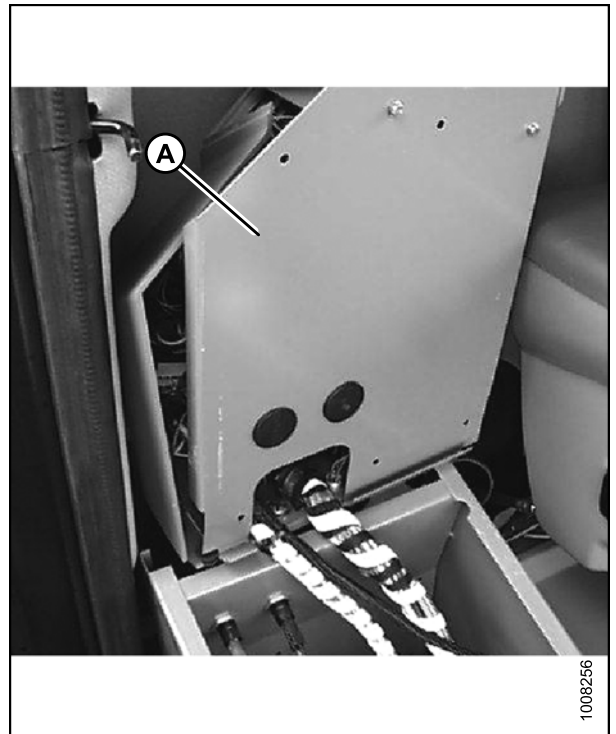


Figure 3.91: Tilted Console

ASSEMBLING THE HEADER AND ADAPTER

4. Remove plug (A) from cab floor under console. Install adapter connector through hole and route harness through hole.
5. Cut a slit in the rubber floor plug (A) and slide plug over wiring harness.

NOTE:

Maintain some wire slack to prevent damage to harness.

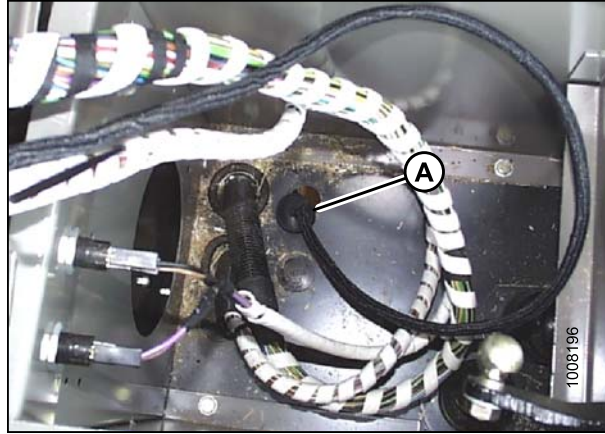


Figure 3.92: Harness through Hole in Floor

6. Remove five screws (A) to access wiring connections underneath console.

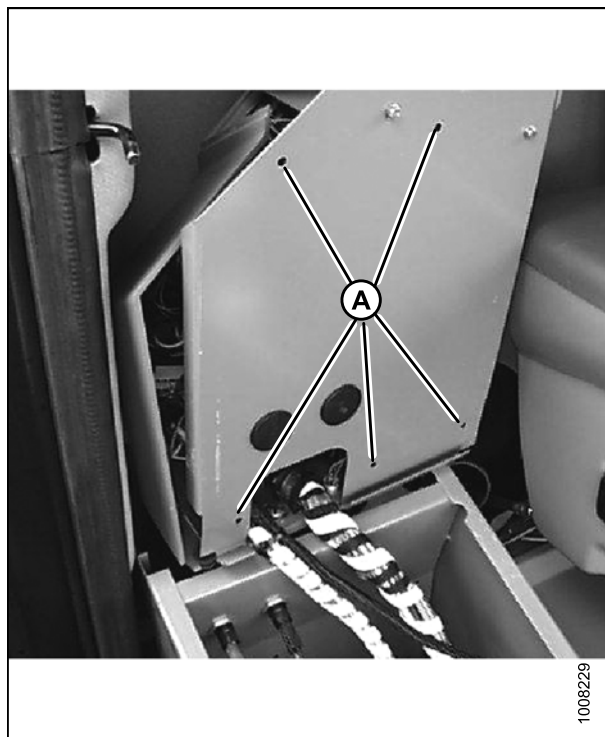


Figure 3.93: Five Screws in Console

ASSEMBLING THE HEADER AND ADAPTER

7. Remove switch plug from top side of console at location shown (A) and push switch connector through the backside of console.

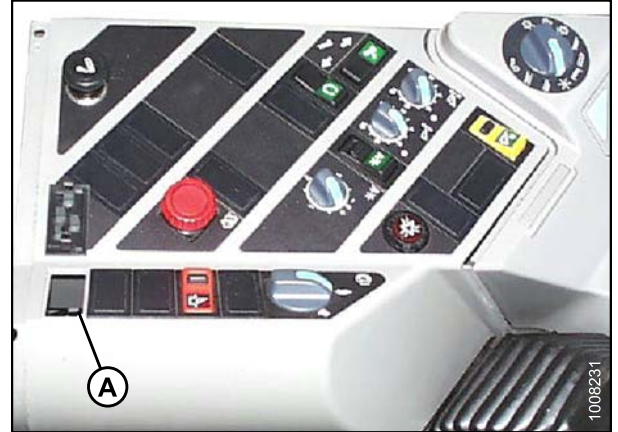


Figure 3.94: Switch Plug in Console

8. Connect switch (A) to harness with the red wire connected to center terminal, and the white wire connected to either outer terminal.
9. Snap switch (A) into place.



Figure 3.95: Rocker Switch in Place

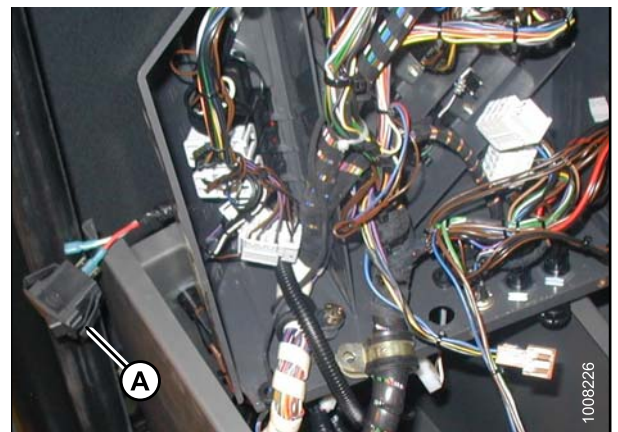


Figure 3.96: Back of Console (Rocker Switch [A] Shown Before Placement)

ASSEMBLING THE HEADER AND ADAPTER

10. Attach switch harness to existing wires (A) using a cable tie.

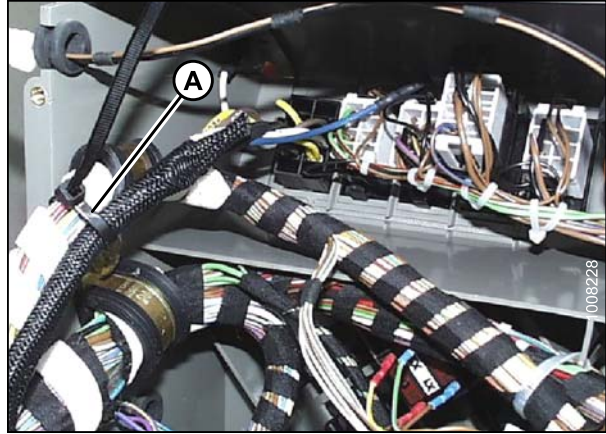


Figure 3.97: Cable Ties, Harness, and Existing Wires

11. Reinstall plug (A) in floor.
12. Return switch console to its original position and tilt console back. Replace the five screws that were removed in Step 6., [page 54](#).

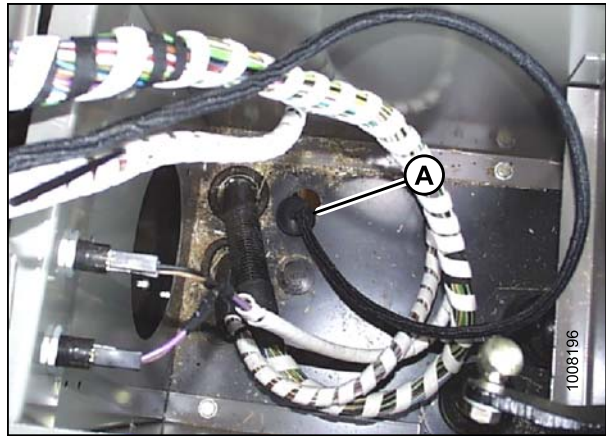


Figure 3.98: Plug in Floor

ASSEMBLING THE HEADER AND ADAPTER

13. For Two Individual Connector Hookups

- a. Remove brown wire (A) from power source under console and replace it with the black wire (B).
- b. Remove black wire (B) from power source and replace it with the red wire (C).
- c. Attach wires removed from switch (brown wire (A) and black wire (B)) to the wires coming from the harness.
- d. Ensure that wires are attached properly (black to black, and brown to red).

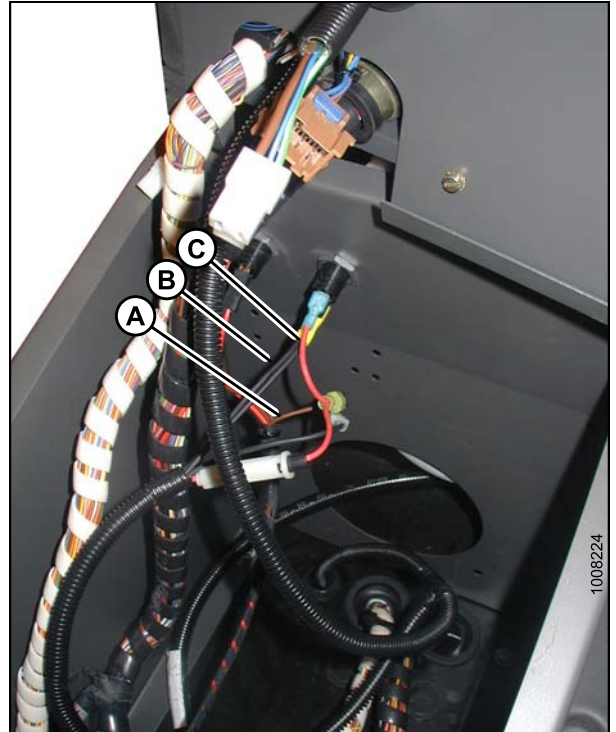


Figure 3.99: Two Individual Connector Hookups

14. For One Individual Connector Hookup

NOTE:

Remove the insulation from the male blades on the wire harness so they attach to plug (A).

- a. Remove white plug (A) with brown and black wire from power source under console.
- b. Replace white plug with the black wire (B) on the top terminal and the red wire (C) on the bottom terminal.
- c. Attach white plug (D) to the remaining wires coming from harness. Ensure that wires are properly attached (black to black, and brown to red).

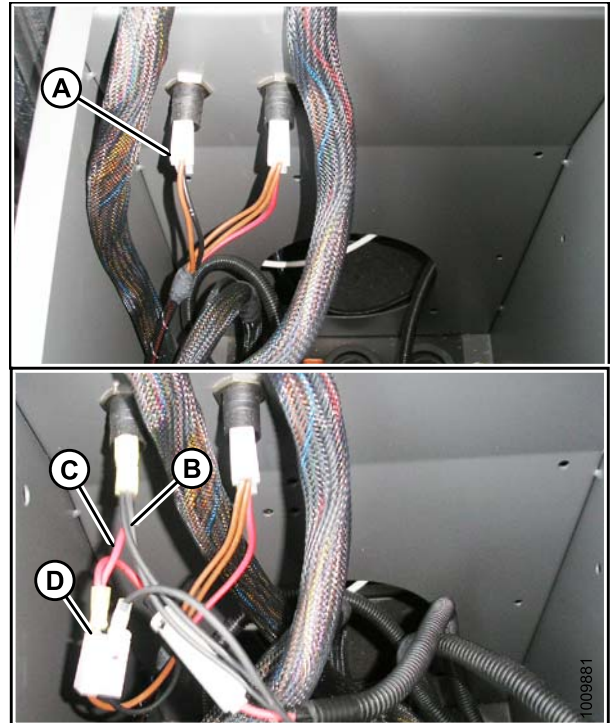


Figure 3.100: One Individual Connector Hookup

ASSEMBLING THE HEADER AND ADAPTER

15. Return console to its original position and install the washer and 13 mm hex nut (A), removed in Step 2., [page 53](#).

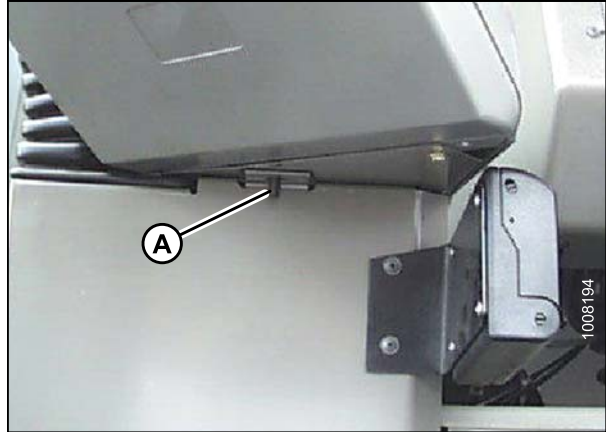


Figure 3.101: Combine Monitor in Original Position

16. Route wiring harness (A) underneath cab floor. Place harness in steel tray (B) along underside of cab floor to prevent it from being damaged.

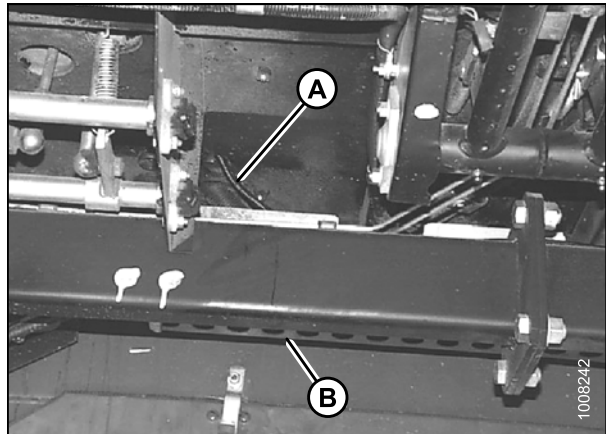


Figure 3.102: Harness underneath Cab Floor

17. Route wiring harness from the left corner of steel tray to conduit (A), between cab floor and frame as shown at (B), and along conduit (A) to the multicoupler.

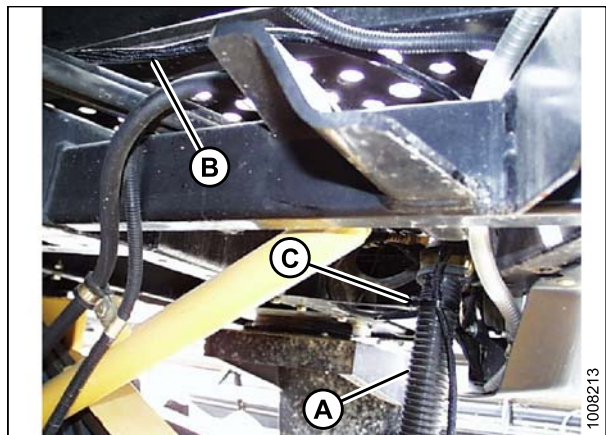


Figure 3.103: Harness between Steel Tray and Conduit

A - Conduit
C - Cable Tie

B - Routing Location

ASSEMBLING THE HEADER AND ADAPTER

18. Secure wiring harness to conduit (B) (starting from the multicoupler end) using cable ties at location (A).

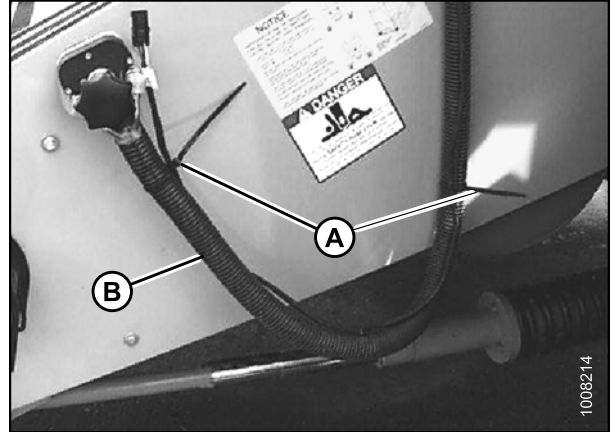


Figure 3.104: Cable Ties, Harness, and Conduit

700 Series: Installing Reel Fore-Aft/Header Tilt Selector Switch and Harness

1. Remove two screws (A) from panel, and remove panel to access compartment.
2. Pull up on tab (B) to unlatch console.
3. Rotate console up to expose the underside of the console and make it easier to insert wire harness.



Figure 3.105: Console

4. Insert wire through bottom of console alongside wire (A) that goes to the CEBIS monitor.

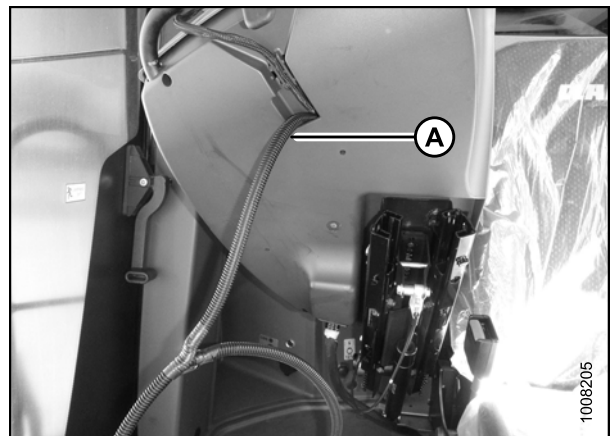


Figure 3.106: Bottom of Console

ASSEMBLING THE HEADER AND ADAPTER

5. Remove blank cap from operator's panel at (A).
6. Run wire from the panel that was previously removed through opening and connect the switch (not shown) to harness (B). the red wire is connected to center terminal, and the white wire is connected to either outer terminal.
7. Snap switch into place.

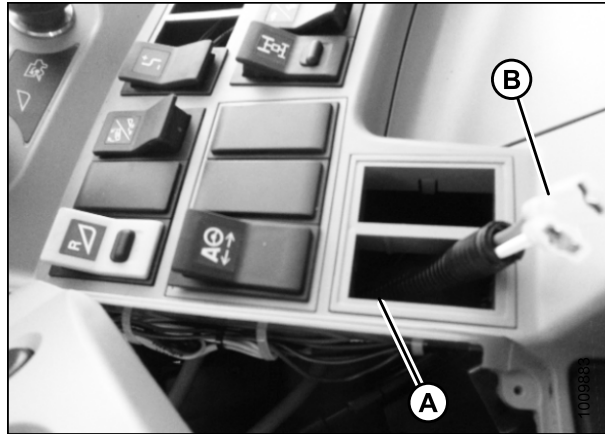


Figure 3.107: Switch and Console

8. Secure switch (A) into console and screw down the operator's panel.
9. Pull back the slack on the wire harness and use cable ties to secure it to the wire harness running to the CEBIS monitor (refer to Step 4., page 59).

NOTE:

If autosteer is installed, select the blank plug next to (A).



Figure 3.108: Switch in Console

10. Locate terminal compartment (A) on the floor at the right-hand side of the cab and remove lid to access the 12 volt switched power.

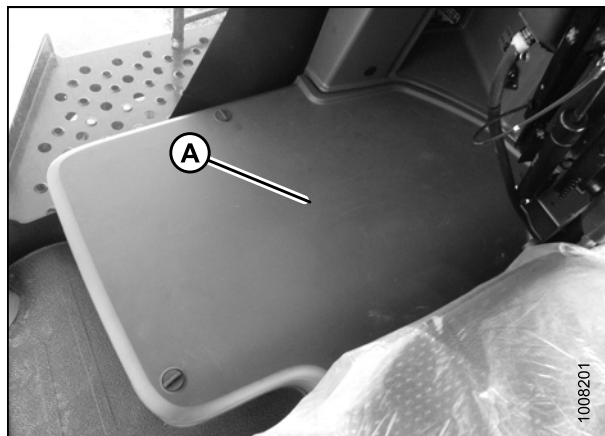


Figure 3.109: Lid of Terminal Compartment

ASSEMBLING THE HEADER AND ADAPTER

11. Locate the single-wire harness (A) that provides switch power.
 - a. Remove the insulation from the two male blades on the MacDon wire harness.
 - b. Attach red wire in plug (B) to brown wire in plug (C) and connect the black wire in plug (C) to black wire in plug (A).

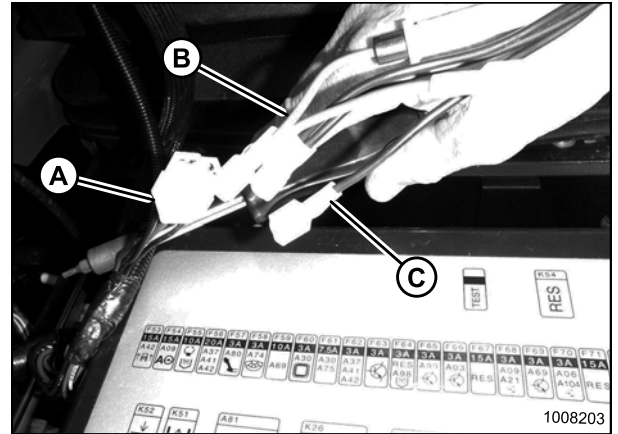


Figure 3.110: Wire Harness

12. Make a harness exit hole in one of the blank covers to the left side of the box at (A).
13. Route the two-prong wire black/white connector of the MacDon harness through the hole.

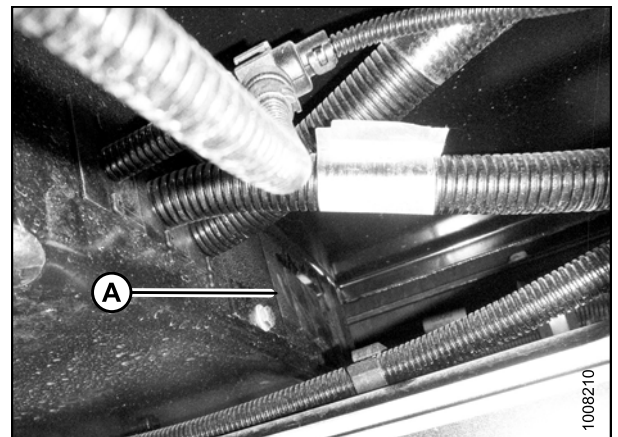


Figure 3.111: Exit Hole and MacDon Harness

14. Route wiring harness (A) along underside of cab floor with existing harnesses (500 Series Lexion shown at right). Do NOT secure harness with cable ties until routing is complete.

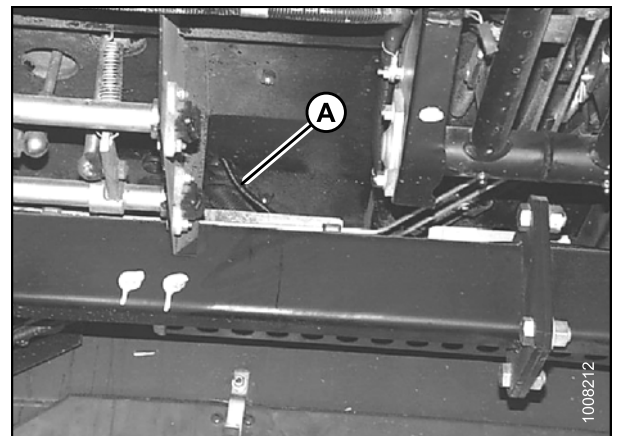


Figure 3.112: Wiring Harness along underside of Cab Floor

ASSEMBLING THE HEADER AND ADAPTER

15. Route wiring harness from bottom left corner of cab to conduit (A), between cab floor and frame as shown at (B) (500 Series Lexion shown at right), and along conduit (A) to multicoupler.

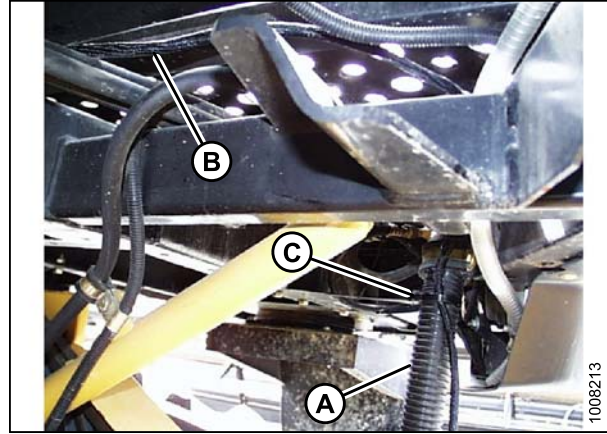


Figure 3.113: Harness through Conduit

A - Conduit
C - Cable Tie

B - Routing Location

16. Secure wiring harness to conduit (B) (starting from the multicoupler end) using cable ties at location (A) (500 Series Lexion shown at right).

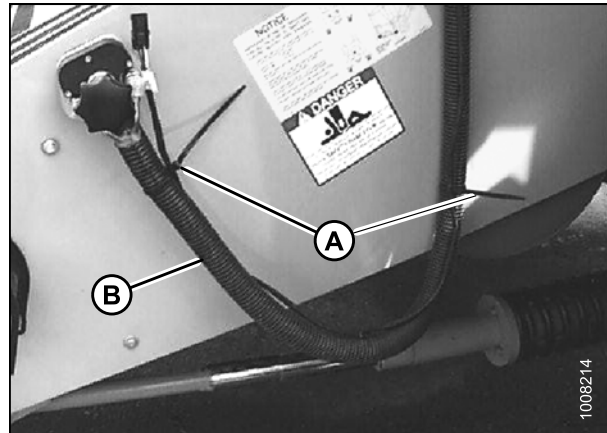


Figure 3.114: Cable Ties, Harness, and Conduit

17. Push excess harness back into terminal box once harness is secured with cable ties, and use cable ties to attach MacDon harness to existing harness (A) running to the console. This will prevent the harness from getting tangled when seat or console are moved.

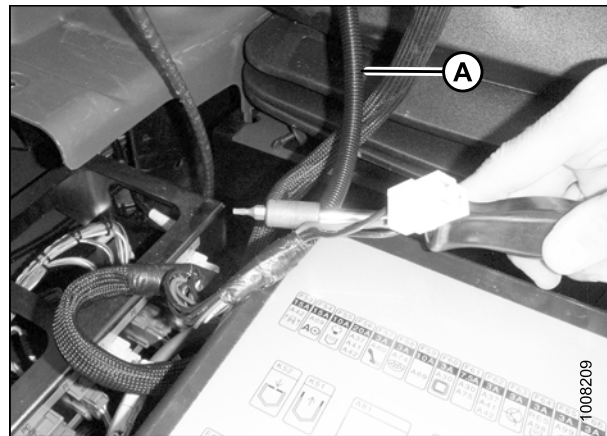


Figure 3.115: Existing Harness and MacDon Harness

ASSEMBLING THE HEADER AND ADAPTER

Attaching Header to Lexion Combine

DANGER

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

To attach the header to a Lexion combine, complete the following steps:

1. Move handle (A) on the CA25 Combine Adapter into raised position, and ensure pins (B) at bottom corners of adapter are retracted.

CAUTION

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

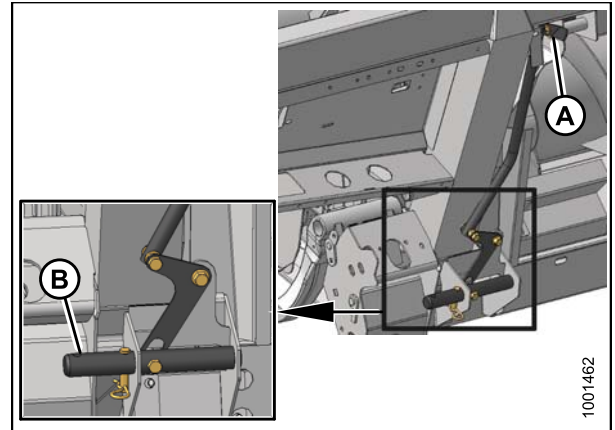


Figure 3.116: Pins Retracted

2. Start engine and slowly drive combine up to adapter until feeder house is directly under the adapter top cross member.
3. Raise feeder house to lift header, ensuring feeder house posts (A) are properly engaged in adapter frame (B).
4. Position header slightly off the ground.
5. Stop engine and remove key from ignition.

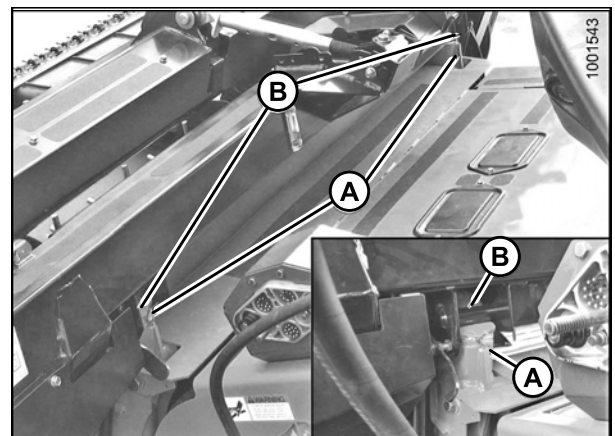


Figure 3.117: Header on Combine

6. Remove locking pin (B) from adapter pin (A).

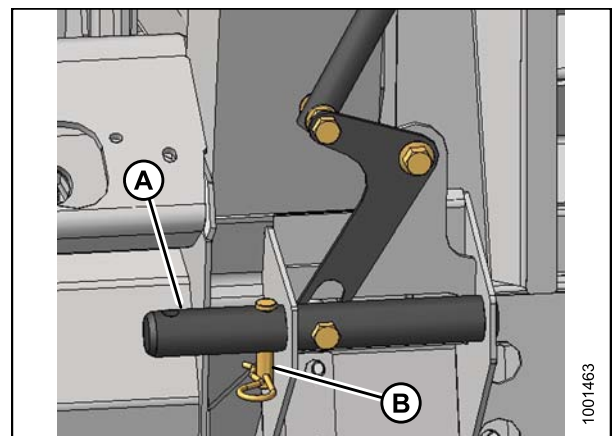


Figure 3.118: Locking Pins

ASSEMBLING THE HEADER AND ADAPTER

- Lower handle (A) to engage adapter pins (B) into feeder house. Reinsert locking pin (C) and secure with hairpin.

- Remove blocks from under cutterbar.

CAUTION

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

- Start engine and lower header.
- Stop engine and remove key from ignition.

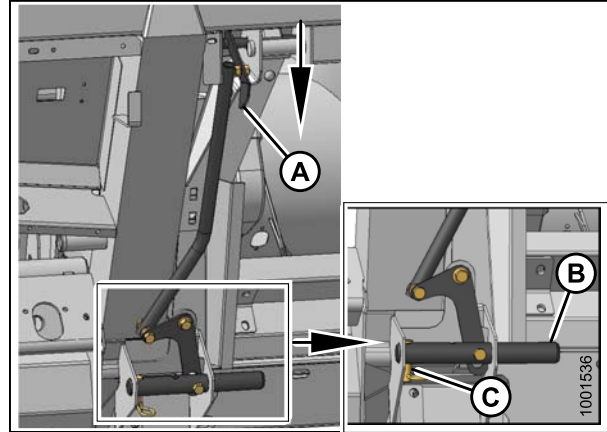


Figure 3.119: Engaging Pins

- Unscrew knob (A) on combine coupler (B) to release coupler from combine receptacle and clean coupler.

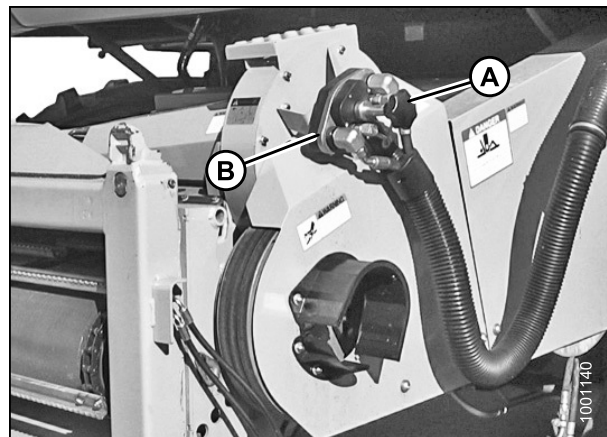


Figure 3.120: Combine Coupler

- Remove adapter receptacle cover (A).

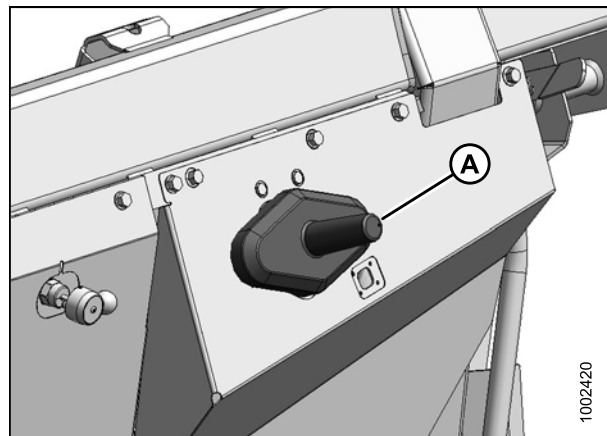


Figure 3.121: Receptacle Cover

ASSEMBLING THE HEADER AND ADAPTER

13. Place adapter receptacle cover (A) onto combine receptacle.

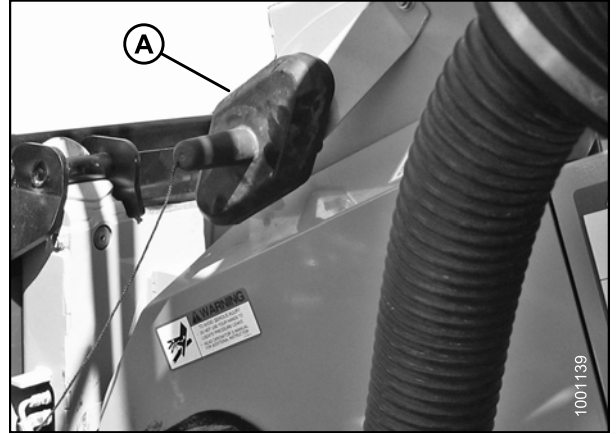


Figure 3.122: Receptacle Cover

14. Clean mating surface of coupler (A) and position onto adapter receptacle (B).
15. Turn knob (C) to secure coupler to receptacle.
16. Connect combine harness (D) to reel fore-aft/header tilt selector receptacle (E).

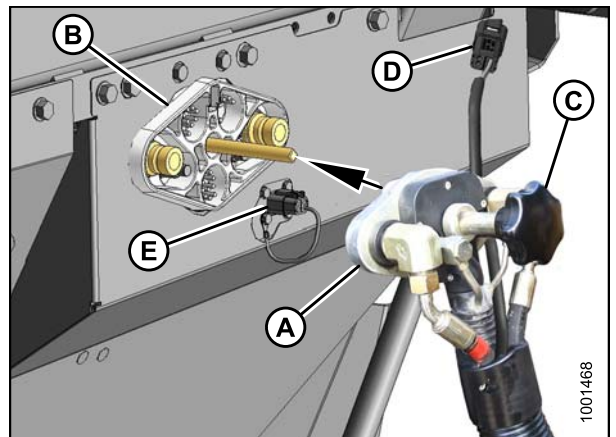


Figure 3.123: Coupler

17. Remove shipping wire from driveline (A) and float lock lever (B).

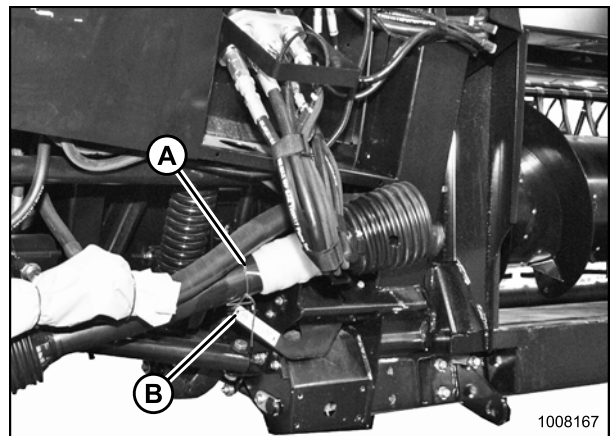


Figure 3.124: Shipping Wire on Driveline and Float Lock Lever

ASSEMBLING THE HEADER AND ADAPTER

18. Rotate disc (A) on adapter driveline storage hook and remove driveline from hook.

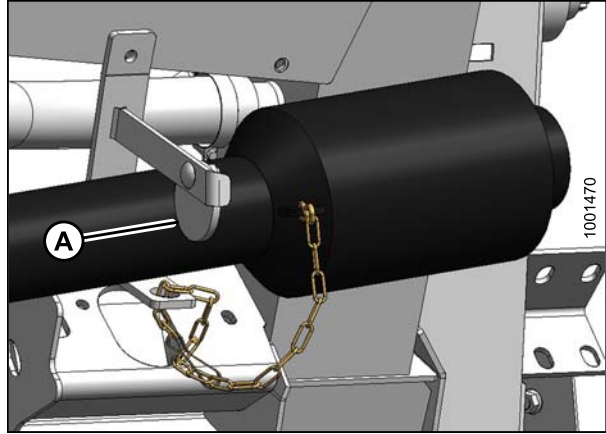


Figure 3.125: Driveline

19. Attach driveline (A) to combine output shaft.

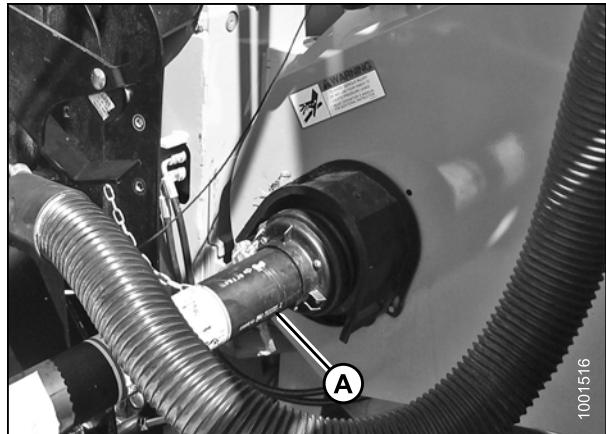


Figure 3.126: Driveline and Output Shaft

ASSEMBLING THE HEADER AND ADAPTER

20. Disengage both adapter float locks by moving latch (A) away from adapter and moving both header float lock levers (B) down (UNLOCK).

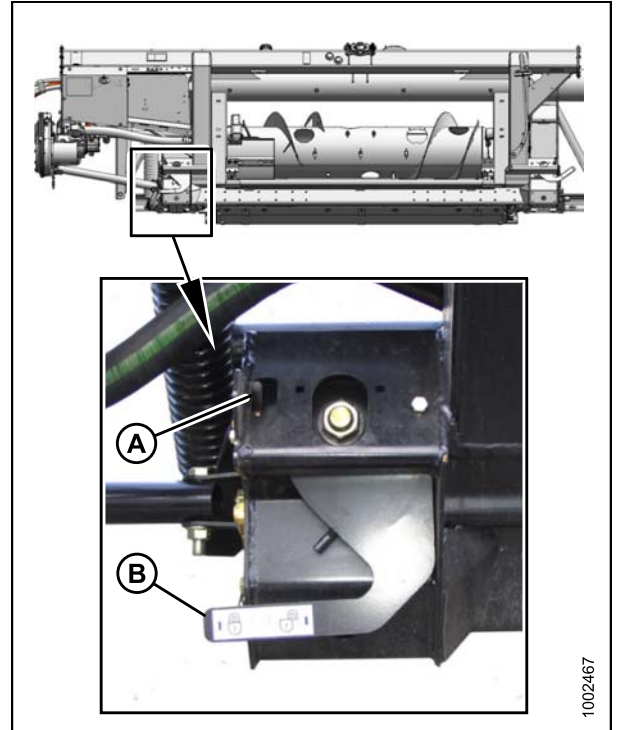


Figure 3.127: Float Lock in UNLOCK Position

21. Proceed to [3.4 Attaching Cam Arms, page 72](#).

3.3.5 New Holland Combines

Attaching Header to New Holland CR/CX Combine

DANGER

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

To attach a header to a New Holland combine, complete the following steps:

1. Remove nut (A) and flip lever (B) horizontally on the combine adapter.

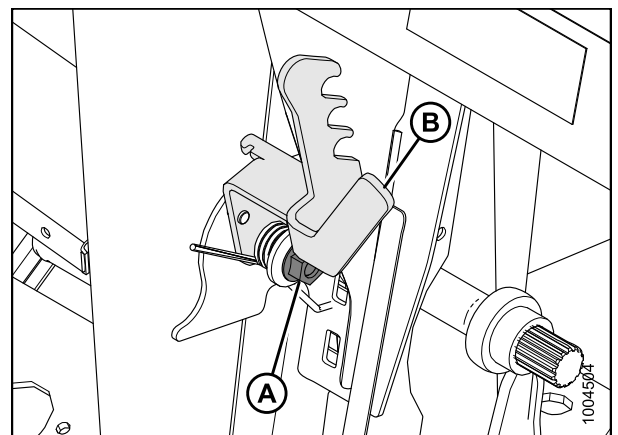


Figure 3.128: Combine Adapter Left-Hand Side

ASSEMBLING THE HEADER AND ADAPTER

2. Position lever (B) onto stud, place spring arm (C) into hook on lever (B) to preload it, and tighten nut (A) onto the combine adapter.

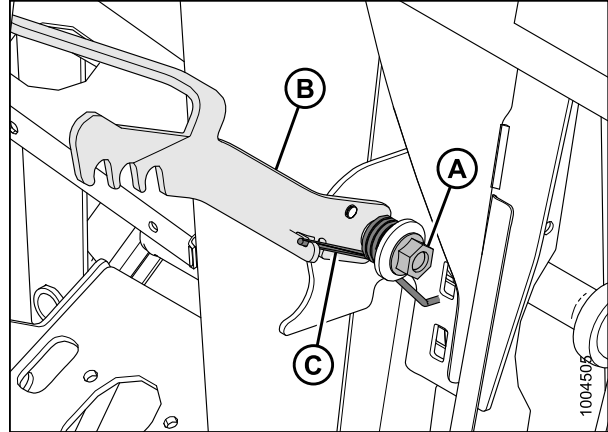


Figure 3.129: Combine Adapter Left-Hand Side

3. Ensure handle (A) is positioned so that hooks (B) can engage adapter.

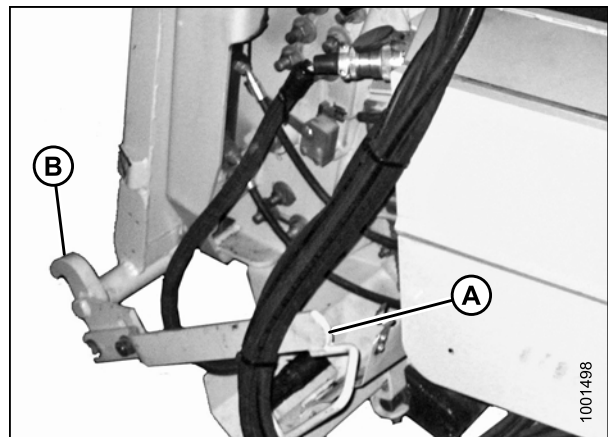


Figure 3.130: Feeder House Locks

CAUTION

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

4. Start engine and slowly drive combine up to adapter until feeder house saddle (A) is directly under the adapter top cross member (B).
5. Raise feeder house to lift header ensuring feeder saddle is properly engaged in adapter frame.
6. Stop engine and remove key from ignition.

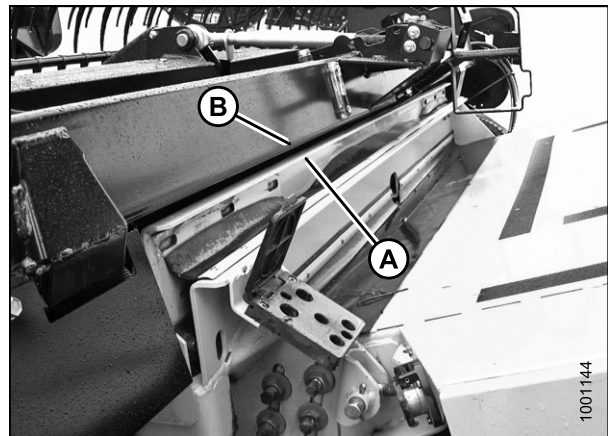


Figure 3.131: Header on Combine

ASSEMBLING THE HEADER AND ADAPTER

7. Lift lever (A) on adapter at left side of feeder house, and push handle (B) on combine so that hooks (C) engage pins (D) on both sides of the feeder house.
8. Push down on lever (A) so that slot in lever engages handle and locks handle in place.
9. If hooks (C) do not fully engage pins (D) on adapter when (A) and (B) are engaged, loosen bolts (E) and adjust locks as required. Retighten bolts.

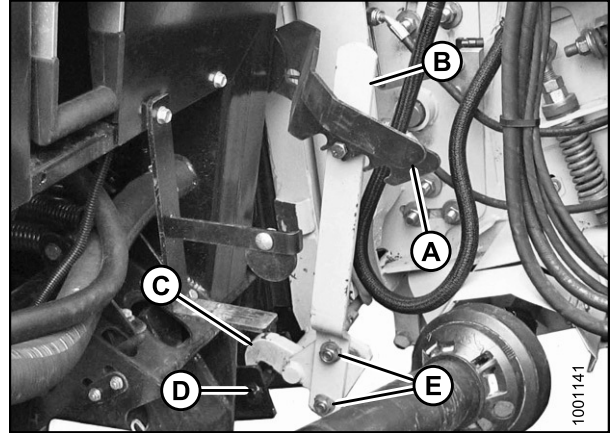


Figure 3.132: Feeder House Locks

10. Open receptacle cover (A) on adapter.
11. Push in lock button (B) and pull handle (C) to full open position.
12. Clean coupler face on adapter.

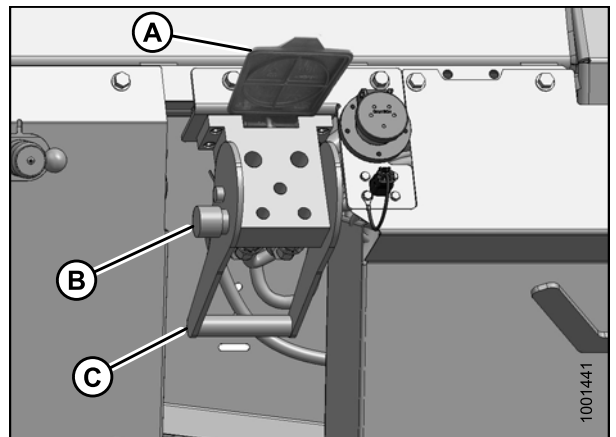


Figure 3.133: Adapter Receptacle

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

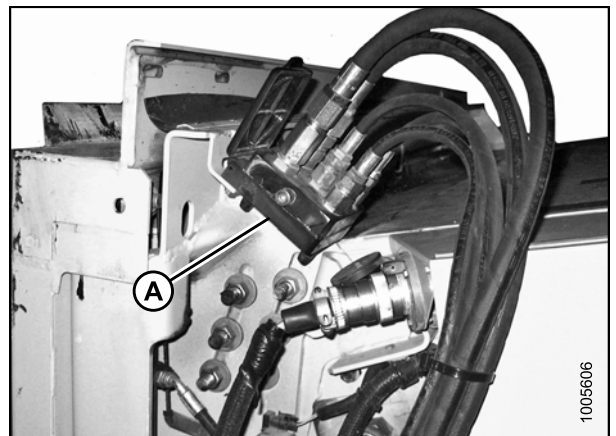


Figure 3.134: Combine Coupler

ASSEMBLING THE HEADER AND ADAPTER

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

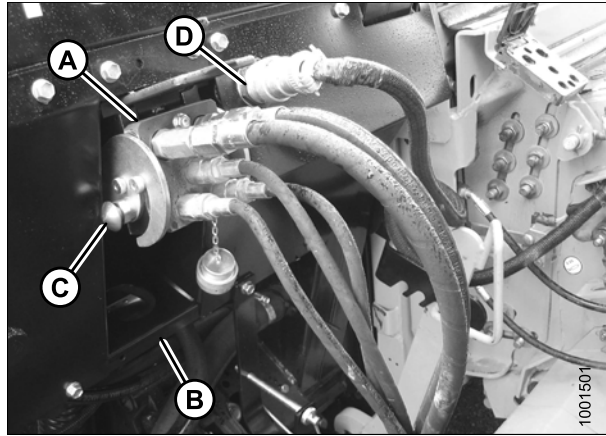


Figure 3.135: Connections

19. Remove shipping wire from driveline and float lock lever.

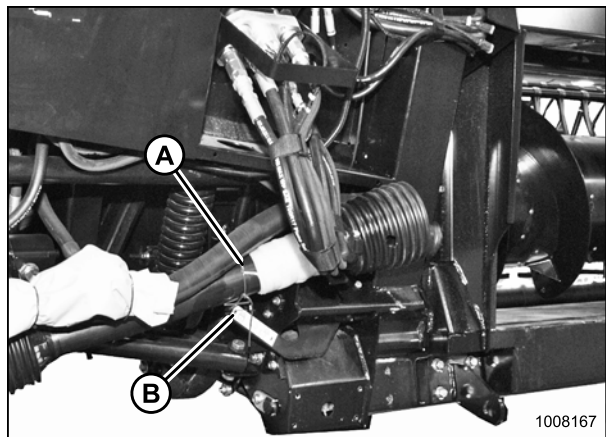


Figure 3.136: Shipping Wire on Driveline and Float Lock Lever

20. Rotate disc (A) on adapter driveline storage hook, and remove driveline from hook.

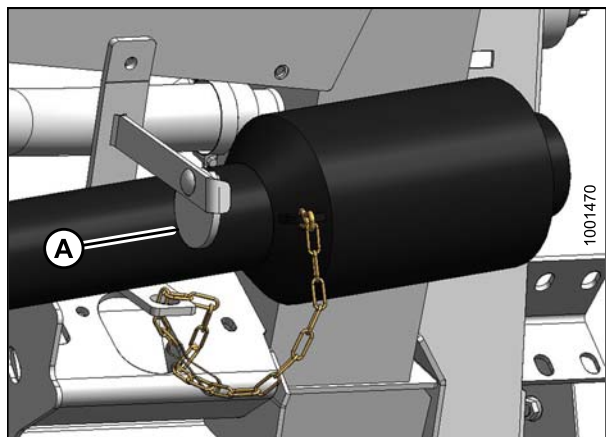


Figure 3.137: Driveline

ASSEMBLING THE HEADER AND ADAPTER

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

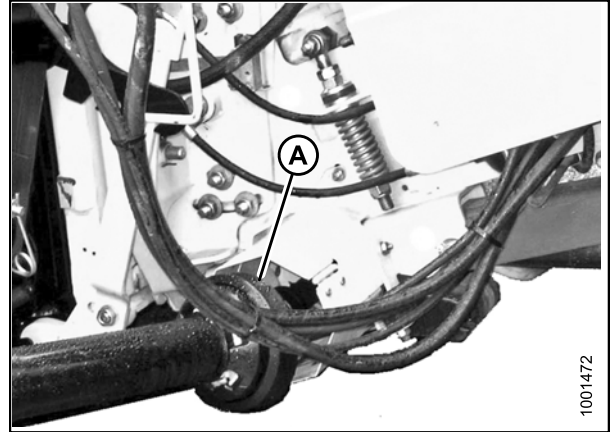


Figure 3.138: Driveline and Output Shaft

22. Disengage both adapter float locks by moving latch (A) away from adapter, and moving both header float lock levers (B) down (UNLOCK).

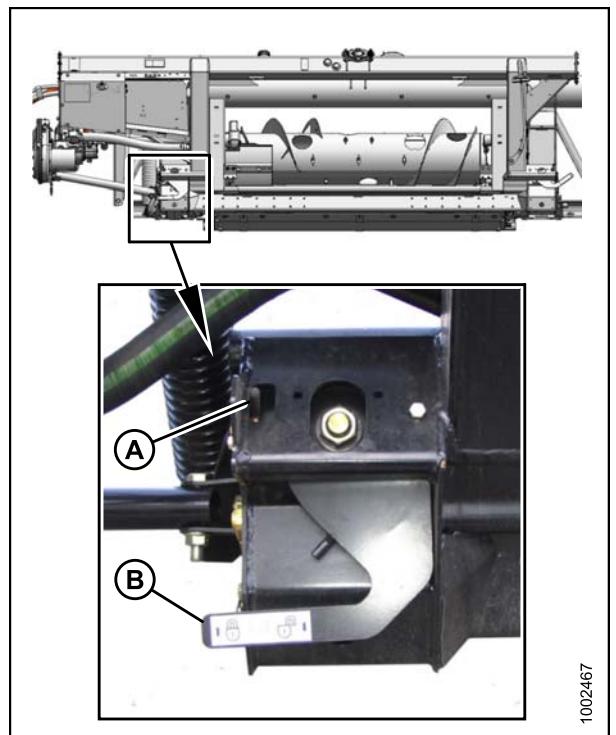


Figure 3.139: Float Lock in UNLOCK Position

23. Proceed to [3.4 Attaching Cam Arms, page 72](#).

3.4 Attaching Cam Arms

To attach the reel cam arms, follow these steps:

1. Rotate the reel manually until the tine bars with disconnected cam links are accessible.
2. Remove shipping wire (if not already removed).

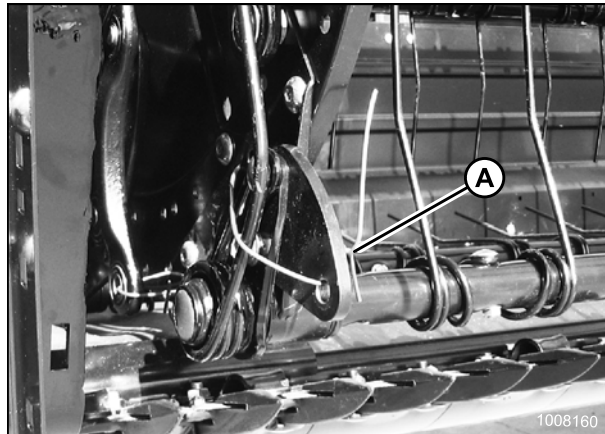


Figure 3.140: Disconnected Cam Links and Shipping Wire

3. Remove bag of hardware (A) from tine bar. It contains hardware for cam links and endshields.

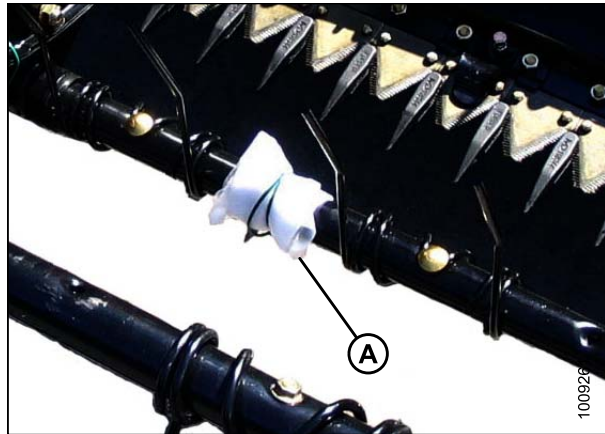


Figure 3.141: Hardware Bag Right-Hand Reel

4. Rotate tine bar crank (A), and position link (B) so attachment holes in bar crank are aligned with hole in link.
5. Install bolt (C) in link, and position shim (D) on bolt so that shim is between link and tine bar crank.

NOTE:

Bolts are pre-coated with Loctite®, so no further locking method is required.

6. Realign link (B) and tine bar crank (A), and thread in bolt (C).
7. Repeat for remaining tine bars, and torque bolts to 120 ft-lbf (165 N·m).

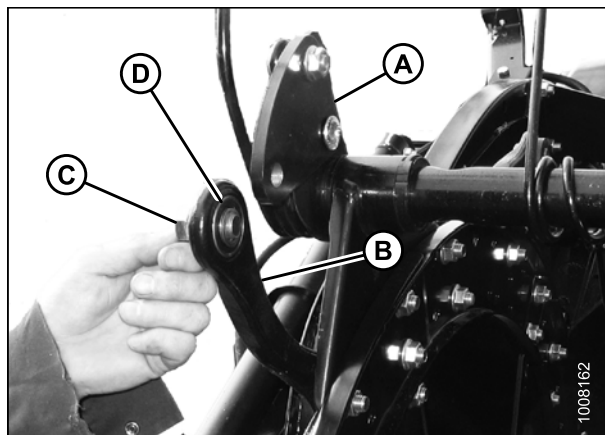


Figure 3.142: Bar Crank Attachment Holes and Link Alignment

ASSEMBLING THE HEADER AND ADAPTER

8. Position pitch at '4' to access bolt after rotating the reel. Reposition reel to '2' when done.

NOTE:

This procedure is done only on the right-hand reel.



Figure 3.143: Right-Hand Reel with Cam Arms Attached

3.5 Repositioning Gearbox

To reposition the gearbox, follow these steps:

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

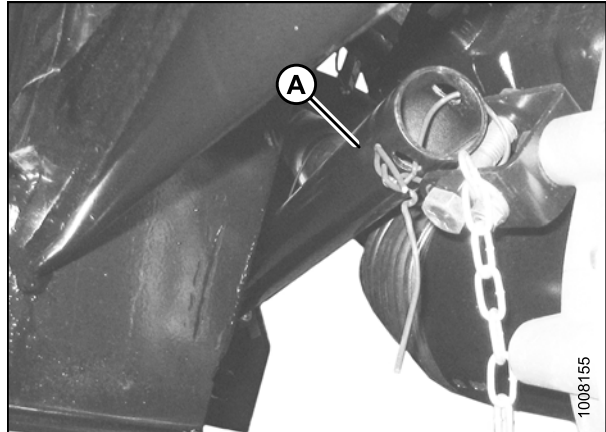


Figure 3.144: Shipping Wire and Brace

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

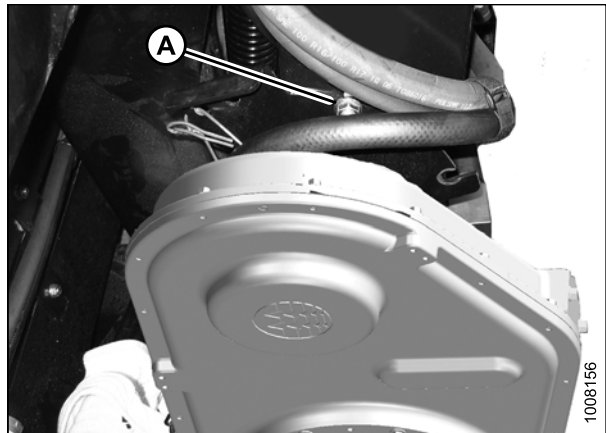


Figure 3.145: Shipping Position

3. Rotate gearbox and insert bolt into working position slot (A). Tighten nut.

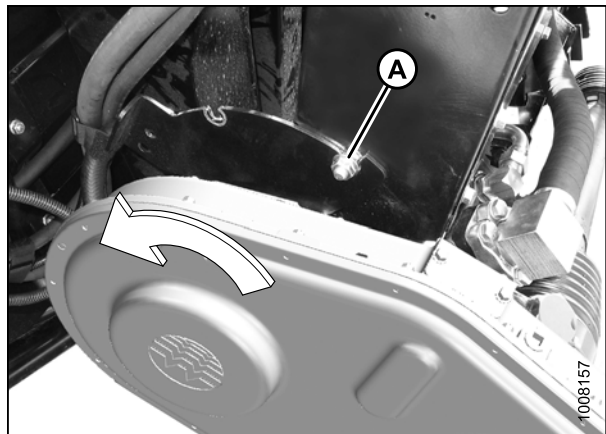


Figure 3.146: Working Position

ASSEMBLING THE HEADER AND ADAPTER

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

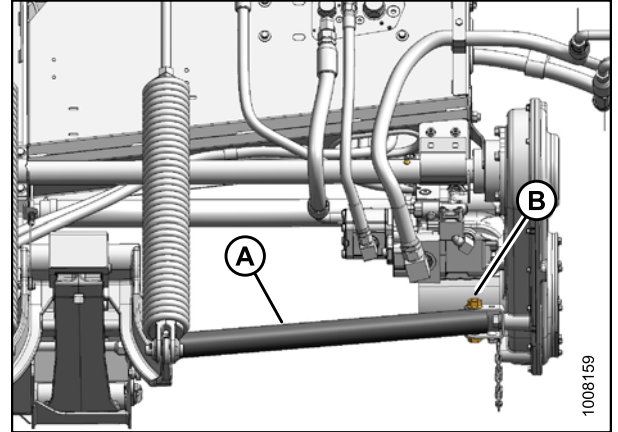


Figure 3.147: Brace Position

3.6 Removing Shipping Supports

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

NOTE:

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

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

NOTE:

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

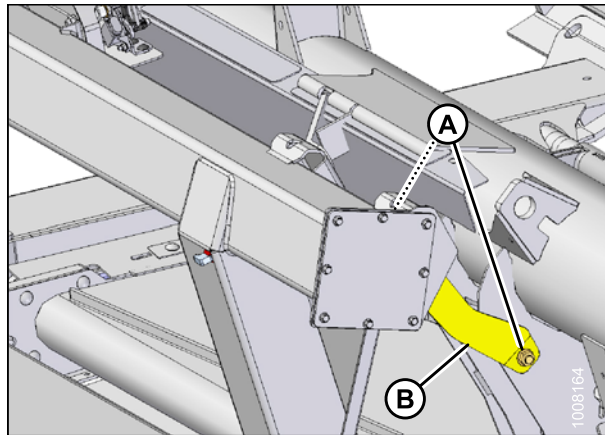


Figure 3.148: Strap on Center Frame

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

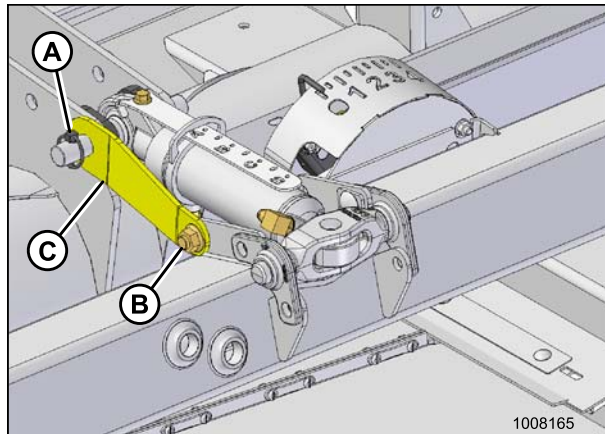


Figure 3.149: Lynch Pin, Hardware, and Shipping Brace

3.7 Positioning Transport Lights

Transport lights are located on each of the outboard reel arms.

1. Position lights (A) perpendicular to header.

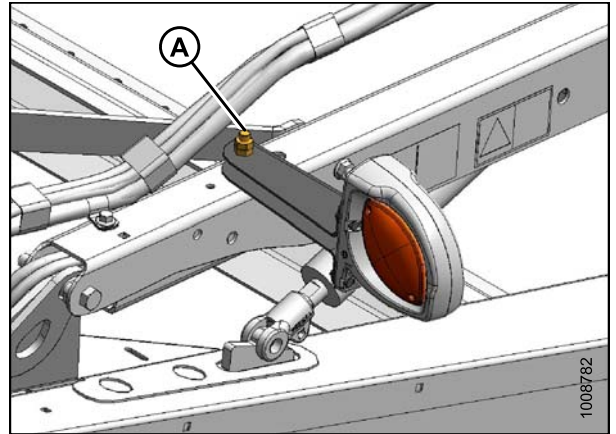


Figure 3.150: Transport Light Perpendicular to Header

3.8 Installing Crop Dividers

Dividers are stored on inboard side of endsheets.

1. Support the divider, remove shipping wire (A) at front end, and remove bolt (B).
2. Remove bolt and washer (C).

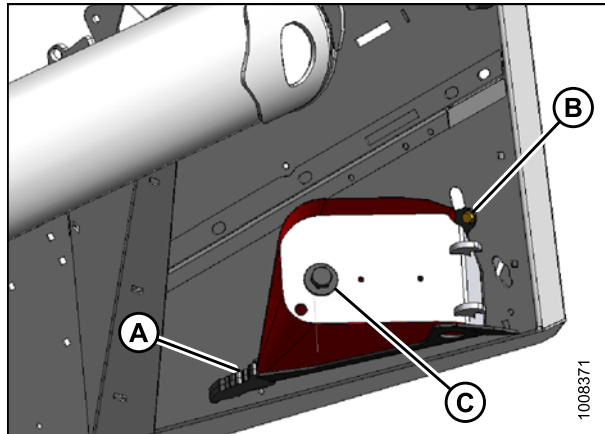


Figure 3.151: Crop Divider on Endsheet

3. Position crop divider as shown, and insert lugs (A) into slots (B) in endsheet.

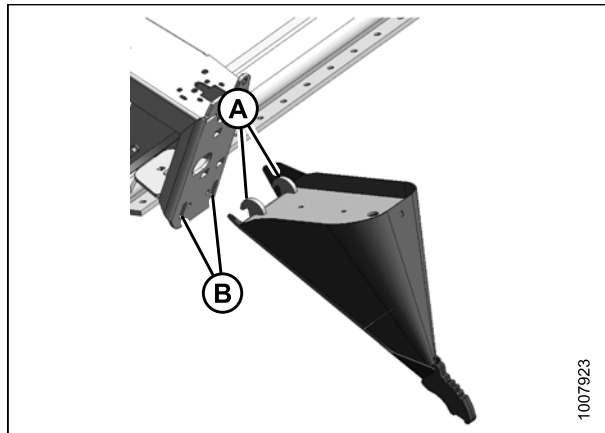


Figure 3.152: Crop Divider Lugs and Endsheet Slots

4. Lift forward end of divider up to endsheet, and install washer (A) and bolt (B).

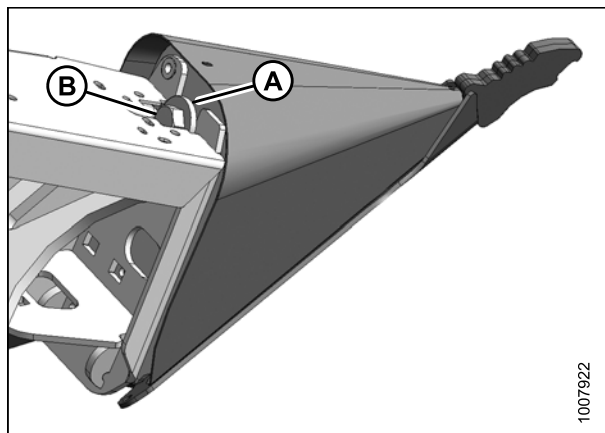


Figure 3.153: Installation Hardware

ASSEMBLING THE HEADER AND ADAPTER

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

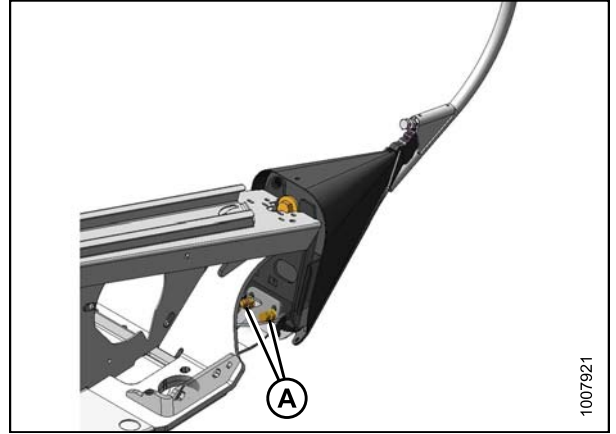


Figure 3.154: Adjustment Hardware

3.9 Installing Options

1. Retrieve the kits supplied as options with the header and install them according to the instructions supplied with each kit.
2. Proceed to [4 Performing Predelivery Checks, page 81](#).

4 Performing Predelivery Checks

This machine has been set at the factory and should not require further adjustments; however, the following checks will ensure your machine provides the maximum performance. If adjustments are necessary, follow the procedures in this chapter in the correct order.

WARNING

Stop combine engine and remove key before making adjustments to machine. A child or even a pet could engage the drive.

IMPORTANT:

To avoid machine damage, check that no shipping dunnage has fallen into the machine.

1. Perform the final checks as listed on the **Predelivery Checklist** (yellow sheet attached to this instruction – [Predelivery Checklist, page 235](#)) to ensure the machine is field-ready. Refer to the following pages for detailed instructions as indicated on the Checklist. The completed Checklist should be retained either by the Operator or the Dealer.

4.1 Checking Tire Pressure: Transport and Stabilizer Wheels

Check tire inflation pressure. If necessary, inflate according to the following table:

Table 4.1 Tire Inflation Pressure

Size	Load Range	Pressure
ST205/75 R15	D	65 psi (448 kPa)
	E	80 psi (552 kPa)

IMPORTANT:

Do NOT exceed maximum pressure specified on tire sidewall.

4.2 Checking Wheel Bolt Torque

Perform the following procedure to ensure that transport and stabilizer wheel bolts are correctly torqued:

1. Check wheel bolt torque is 80–90 ft-lbf (110–120 N·m).
Refer to bolt tightening sequence illustration at right.

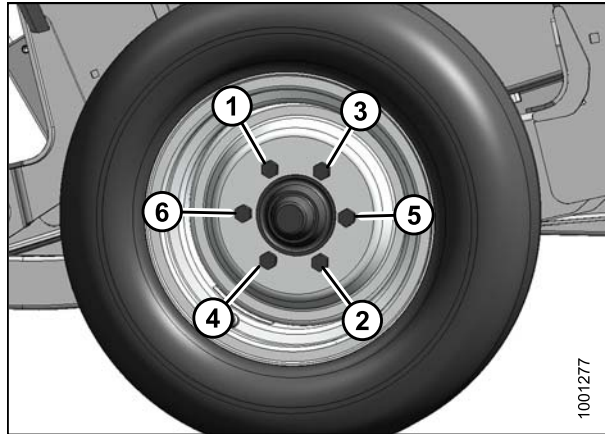


Figure 4.1: Bolt Tightening Sequence

4.3 Checking Knife Drive Box

For access to knife drive box(es), endshield(s) must be fully opened.

1. Remove lynch pin (A), and tool (B) from pin (C) at top rear of endshield.

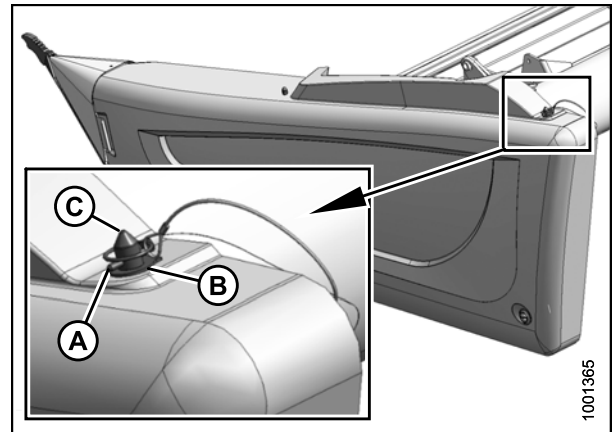


Figure 4.2: Left-Hand Endshield

2. Use tool (B) to unlock latch (A) at lower rear corner of endshield.
3. Lift endshield at aft end to clear pin.
4. Swing endshield out and away from header while maintaining forward pressure to prevent shield from slipping out of tab (C) at front of endsheet.
5. Carefully disengage front of endshield from tab (C), and swing front of endshield away from header.

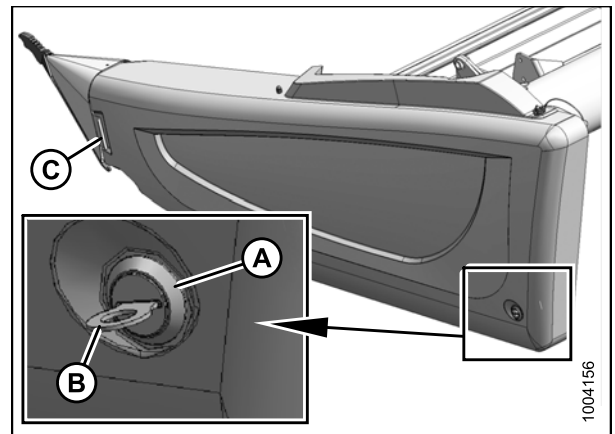


Figure 4.3: Left-Hand Endshield Unlock Tool

6. Check position of plug (A) and breather (B) at knife drive box. Position MUST be as shown.
7. Check oil level. It should be between the lower hole (C) on the dipstick and the bottom end of the dipstick.

NOTE:

Check oil level with top of knife drive box horizontal.

8. Leave endshield(s) open.

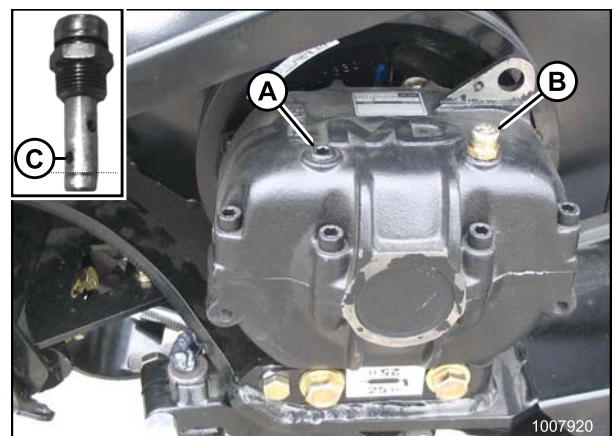


Figure 4.4: Knife Drive Box

4.4 Checking Oil Level in Header Drive Gearbox

DANGER

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

1. Set cutterbar to working position. Shutdown combine and remove key from ignition.
2. Remove plug (A). Oil level should be to bottom of hole.
3. Install plug (A).

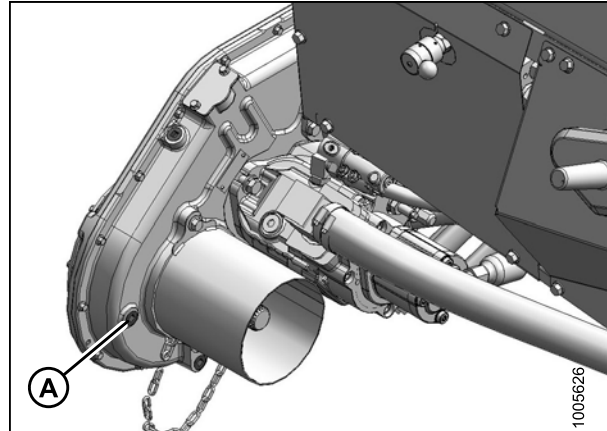


Figure 4.5: Gearbox

4.5 Checking Oil Level in Hydraulic Reservoir

1. Check oil level at lower sight (A) and upper sight (B) with cutterbar just touching ground.

NOTE:

Check level when oil is cold, and with center-link retracted.

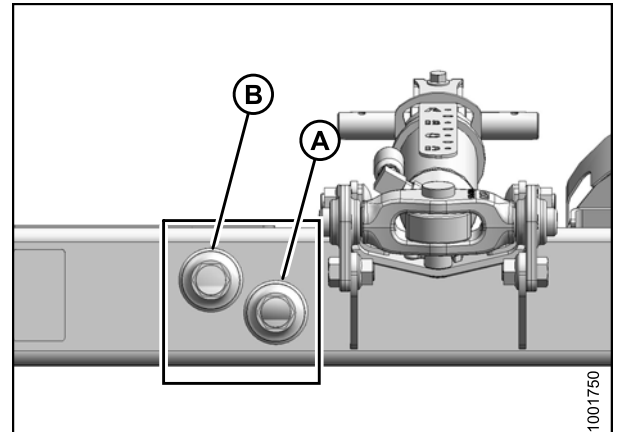


Figure 4.6: Oil Level Sights

2. Maintain level for **Nominal - Normal Terrain** (D) so lower sight (A) is full, and upper sight (B) is empty.

NOTE:

When ambient temperatures are above 95°F (35°C), it may be necessary to lower oil level slightly to prevent overflow at breather under operating temperatures.

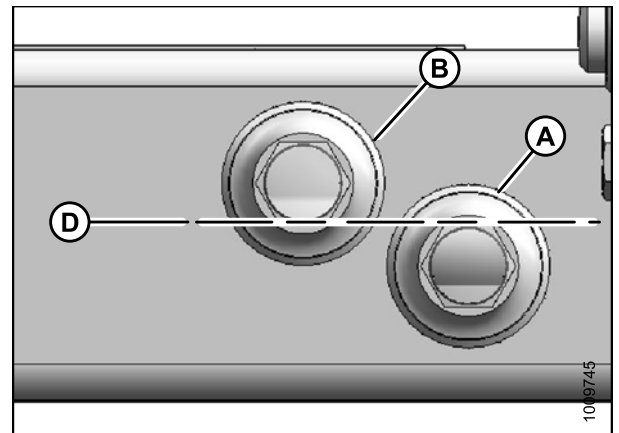


Figure 4.7: Oil Level for Nominal – Normal Terrain

4.6 Checking and Adjusting Knife Drive Belt Tension

IMPORTANT:

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

1. Open endshield(s).

NOTE:

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

2. Loosen the two bolts (A) that secure the motor assembly to header endsheet.
3. Turn adjuster bolt (B) clockwise to move the drive motor until a force of 20 lbf (90 N) deflects belt (C) 3/4 in. (18 mm) at mid-span.

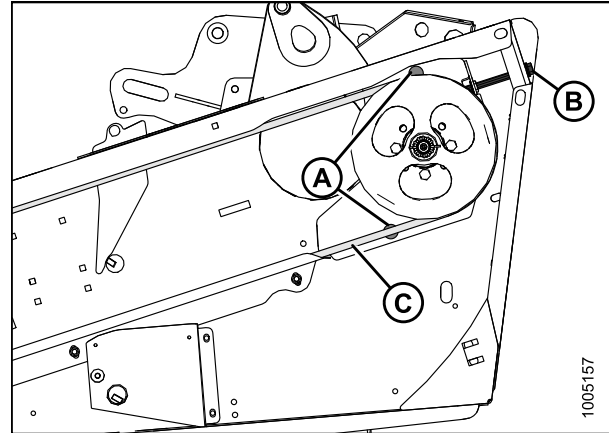


Figure 4.8: Left-Hand Shown – Right-Hand Opposite for Double-Knife Headers

4. Ensure that clearance between belt (A) and belt guide (B) is 1/32 in. (1 mm).
5. Loosen three bolts (C), and adjust position of guide (B) as required.
6. Tighten bolts (C).
7. Close endshield(s).

NOTE:

Readjust the tension of a new belt after a five hour run-in period.

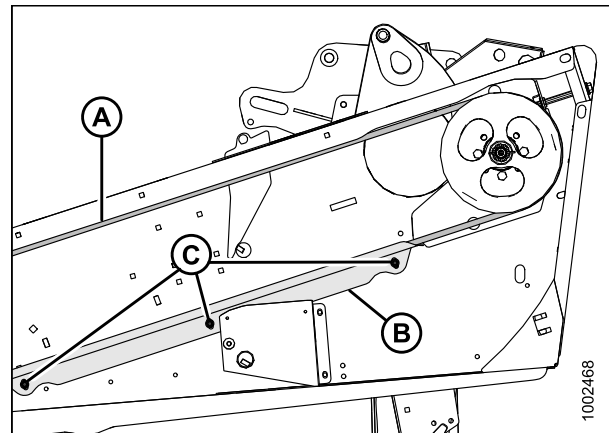


Figure 4.9: Knife Drive

4.7 Checking Knife Hold-Downs

Check that knife hold-downs are set to prevent knife sections from lifting off guards, but still permit knife to slide without binding. If there is evidence that the hold-downs are not properly adjusted, check the clearance between the hold-down and knife section with a feeler gauge.

Refer to:

- [4.7.1 Adjusting Hold-Downs with Pointed Guards, page 87](#)
- [4.7.2 Adjusting Hold-Downs with Stub Guards, page 88](#)

4.7.1 Adjusting Hold-Downs with Pointed Guards

To adjust the clearance between hold-downs and knife on header with pointed guards, follow these steps:

1. Check the clearance (A) between the normal hold-down and knife section with a feeler gauge. The clearance should be 0.004–0.024 in. (0.1–0.6 mm).
2. Adjust as required by turning bolt (B).

NOTE:

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

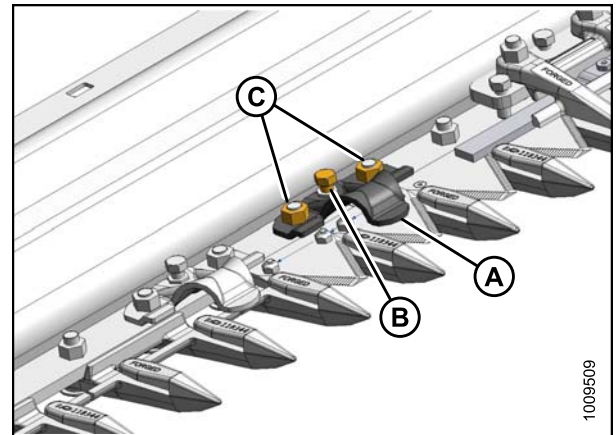


Figure 4.10: Hold-Down Clearance

3. Check the clearances between the center guard hold-down (A) and knife section with a feeler gauge. The clearances should be:
 - 0.004–0.016 in. (0.1–0.4 mm) at guide tip (B)
 - 0.004–0.040 in. (0.1–1.0 mm) at rear of guide (C)
4. If required, adjust clearances as follows:
 - a. Torque nuts (D) to 35 ft·lbf (46 N·m).
 - b. Turn the three adjuster bolts (E) as required.
 - c. Torque nuts (D) to 53 ft·lbf (72 N·m).
5. After adjusting all hold-downs, run header at a low engine speed and listen for noise due to insufficient clearance. Insufficient clearance will also result in overheating of the knife and guards. Readjust as necessary.

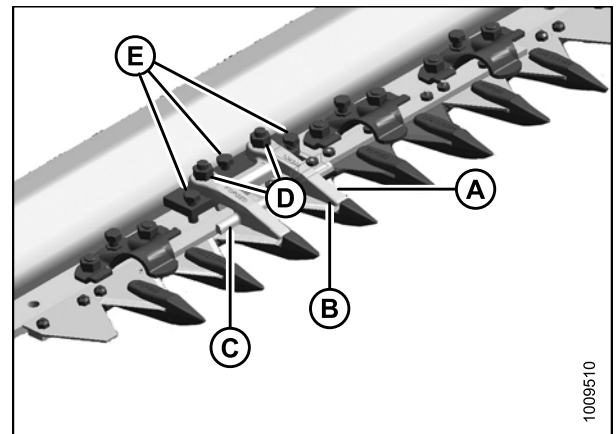


Figure 4.11: Hold-Down Clearance

4.7.2 Adjusting Hold-Downs with Stub Guards

To adjust the clearance between hold-downs and knife for all stub guards, follow these steps:

1. Check the clearances between the center guard hold-down (A) and knife section with a feeler gauge. The clearances should be:
 - 0.004–0.016 in. (0.1–0.4 mm) at guide tip (B)
 - 0.004–0.040 in. (0.1–1.0 mm) at rear of guide (C)
2. If required, adjust clearances as follows:
 - a. Torque nuts (D) to 35 ft·lbf (46 N·m).
 - b. Turn the three adjuster bolts (E) as required.
 - c. Torque nuts (D) to 53 ft·lbf (72 N·m).
3. After adjusting all hold-downs, run header at a low engine speed and listen for noise due to insufficient clearance. Insufficient clearance will also result in overheating of the knife and guards. Readjust as necessary.

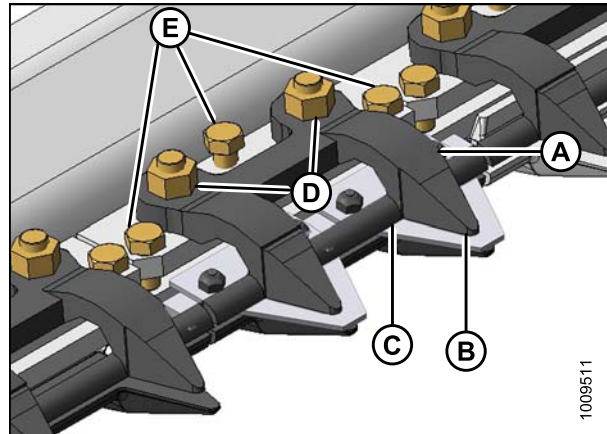


Figure 4.12: Stub Guards

4.8 Centering the Reel

To check and center the reel, follow these steps:

DANGER

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

CAUTION

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

1. Start engine and raise header.
2. Stop engine and remove key from ignition.
3. Engage header lift cylinder stops.
4. Place two 6 inch (150 mm) blocks (B) at ends of the cutterbar.
5. Disengage float locks and header lift cylinder locks.
6. Start combine and lower header fully—allowing header to flex into a full smile.
7. Stop engine and remove key from ignition.
8. Measure the clearance (A) between reels and endsheets at both ends of the header. The clearances will be the same when the reels are centered.
9. If required, center the reels as follows:
 - a. Loosen bolt (A) on each brace (B).
 - b. Move the forward end of center support arm (C) laterally as required to center both reels.
 - c. Tighten bolts (A) and torque to 265 ft-lbf (359 N·m).

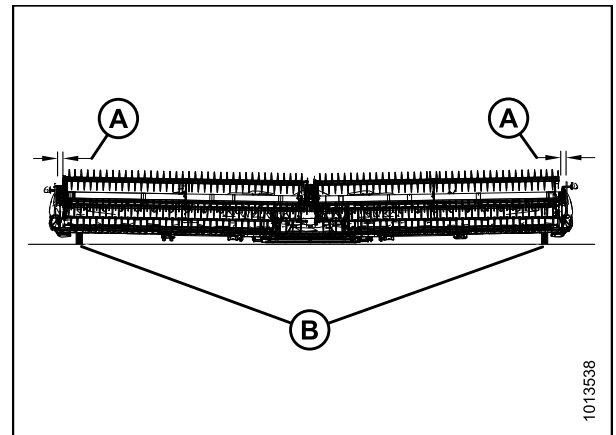


Figure 4.13: Header on Blocks

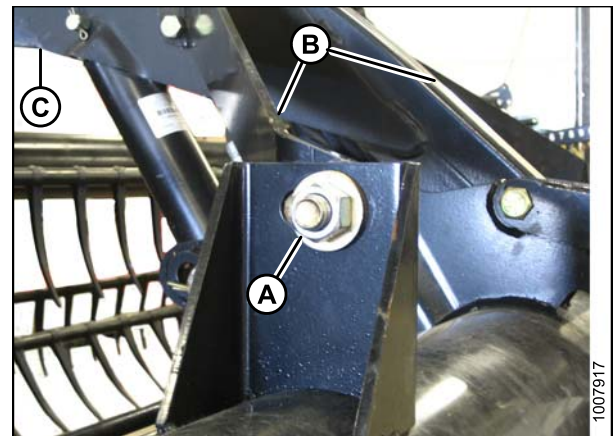


Figure 4.14: Clearance between Reels and Endsheets

4.9 Checking and Adjusting Header Float

DANGER

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

1. Park combine on level surface.
2. Lower the reel fully.
3. Adjust the fore-aft position to between '5' and '6' on the position indicator decal (A) located on the right side reel arm.

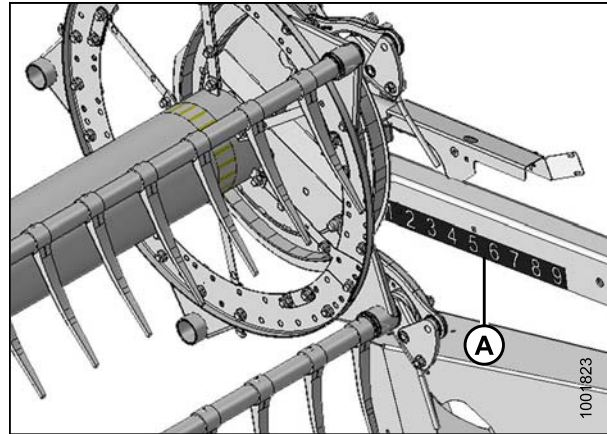


Figure 4.15: Fore-Aft Position

4. Adjust the center-link to between 'B' and 'C' on the indicator (A).
5. Position cutterbar 8–12 in. (200–300 mm) off the ground.
6. Stop the engine and remove the key from the ignition.

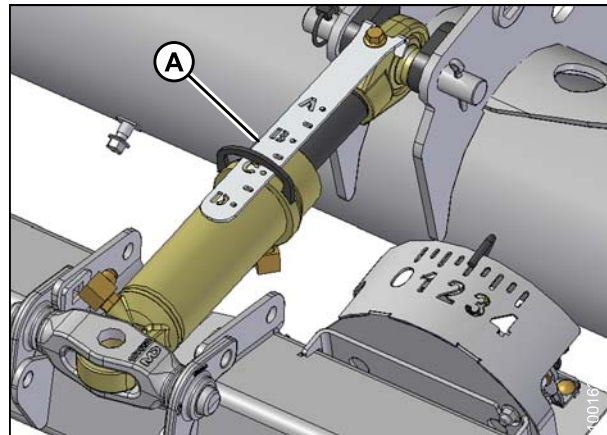


Figure 4.16: Center-Link

IMPORTANT:

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

7. Check that the adapter is level. If the adapter is **NOT** level, perform the following checks prior to adjusting the levelling linkages:
 - a. Check the combine tire pressures.
 - b. Check that the combine feeder house is level. Refer to your combine operator's manual for instructions.
 - c. Check that the top of the adapter is level with the combine axle.

PERFORMING PREDELIVERY CHECKS

8. Place wing lock spring handles (A) in lock (upper) position.

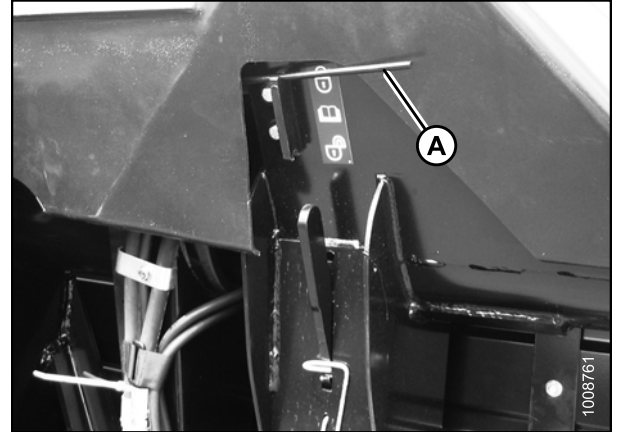


Figure 4.17: Wing Lock in Lock Position

9. Move both header float lock levers (A) down (UNLOCK).

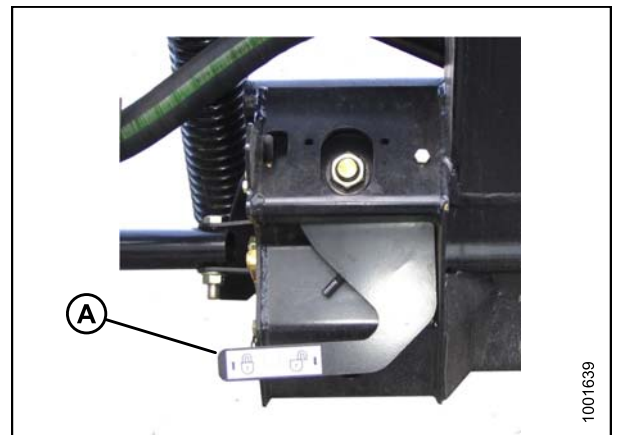


Figure 4.18: Header Float Lock in UNLOCK Position

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

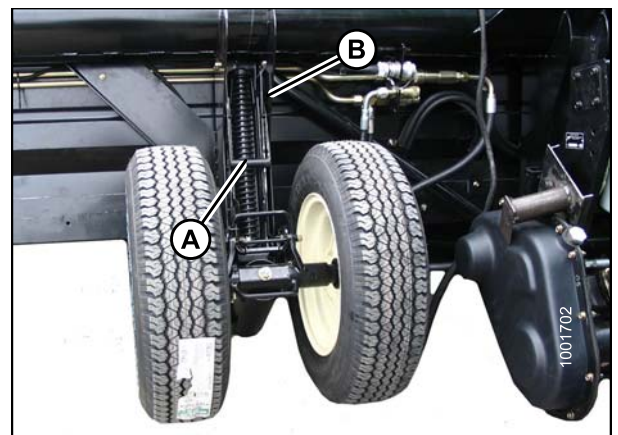


Figure 4.19: Left Wheels Shown – Right Wheels Similar

PERFORMING PREDELIVERY CHECKS

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

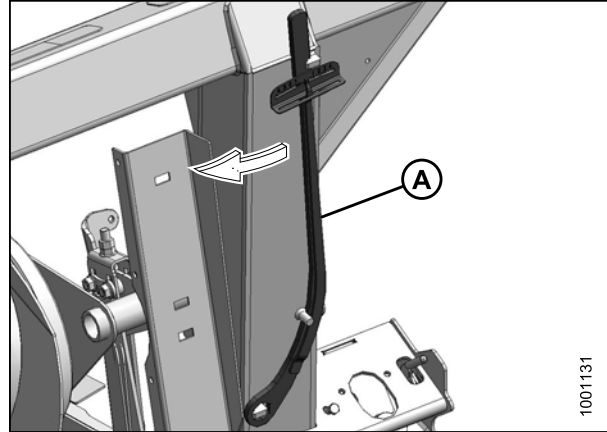


Figure 4.20: Torque Wrench

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

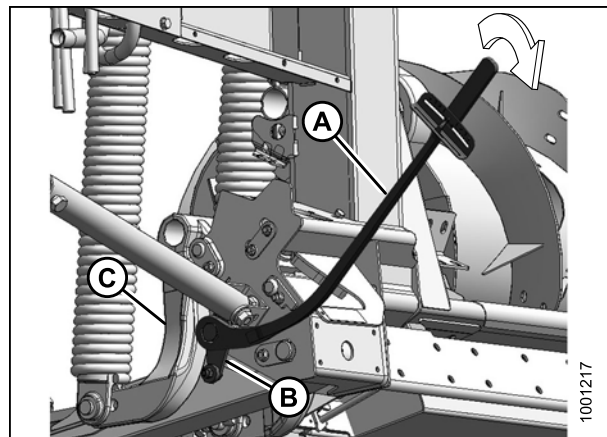


Figure 4.21: Left Side

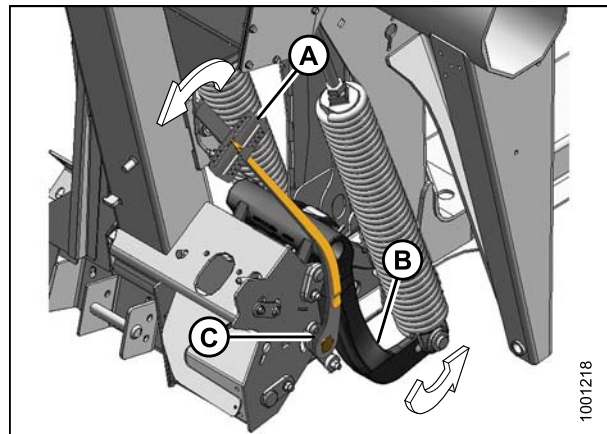


Figure 4.22: Right Side

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 and repeat at opposite side.
15. Use the following table as a guide for float settings:
 - If reading on the wrench is high, the header is heavy.
 - If reading on the wrench is low, the header is light.

Table 4.2 Float Settings

Header Size	Torque Settings	
	Cutting on the Ground	Cutting off the Ground
30 and 35 ft.	1-1/2 to 2	2 to 2-1/2
40 and 45 ft.	2 to 2-1/2	2-1/2 to 3

16. Increase float (decrease header weight) by loosening jam nuts, turning left side adjustment bolts (A) and ride side adjustment bolts (B) clockwise, and tightening jam nuts.
17. Decrease float (increase header weight) by loosening jam nuts, turning left side adjustment bolts (A) and ride side adjustment bolts (B) counterclockwise, and tightening jam nuts.

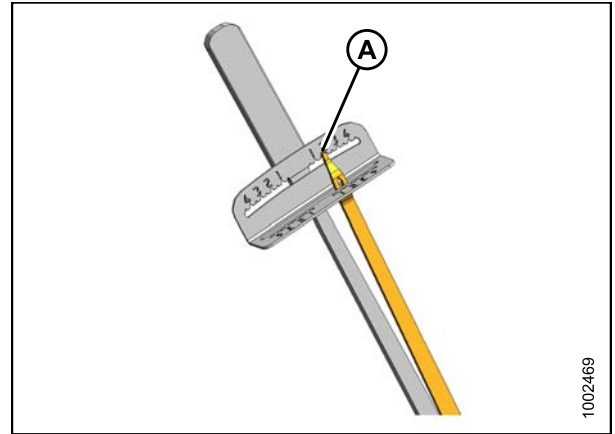


Figure 4.23: Indicator

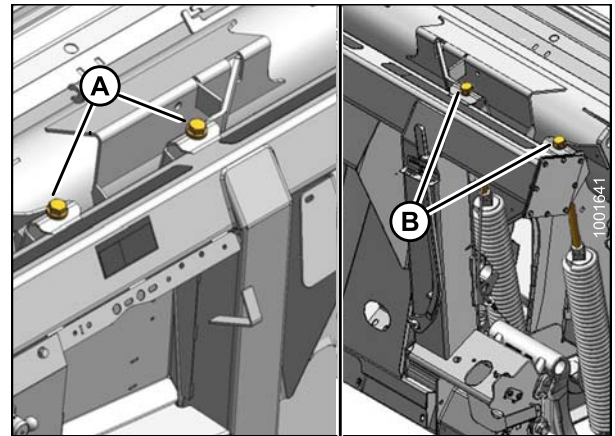


Figure 4.24: Float Adjustment

18. Use the following guidelines when adjusting float:
 - Adjust the float so the wrench readings are equal on both sides of the header.
 - **For 40- and 45-foot 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.
 - Turn each bolt pair equal amounts, refer to Step 14, page 93, and repeat torque wrench reading procedure.
 - Set header float as light as possible without causing excessive bouncing to prevent knife component breakage, soil scooping, or soil build-up at the cutterbar in wet conditions.
 - Use a slower ground speed with a light float setting, if necessary, to avoid excessive bouncing and leaving a ragged cut.
 - Use the stabilizer wheels in conjunction with header float to minimize bouncing at the header ends and to control cut height when cutting off the ground.

NOTE:

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

PERFORMING PREDELIVERY CHECKS

19. Return the torque wrench (A) to its storage location at the right-hand side of the adapter frame.

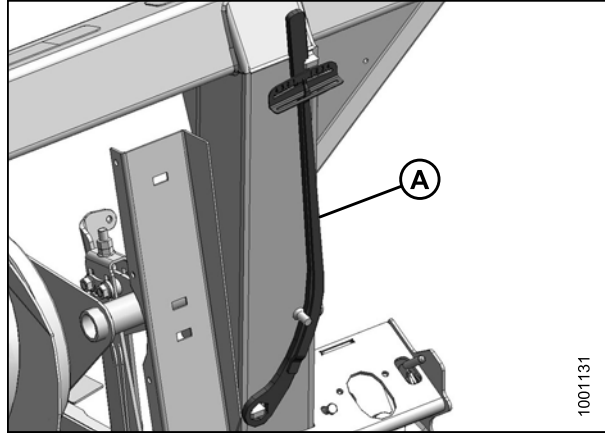


Figure 4.25: Torque Wrench

4.10 Checking and Adjusting Header Wing Balance

The header wing float allows the wings to react to changing ground conditions. If set too light, the wings will bounce on the ground. If set too heavy, the wings will dig into the ground. The wings need to be balanced for the float system to work properly.

4.10.1 Checking Wing Balance

This procedure describes how to check the balance of each wing.

WARNING

To avoid bodily injury or death from unexpected startup of machine, always stop combine engine and remove key before making adjustments to machine.

If a wing has a tendency to be in a smile (A) or frown (B) position, wing balance may require adjusting. Perform the following steps to verify if the wings are not balanced and the degree of imbalance:

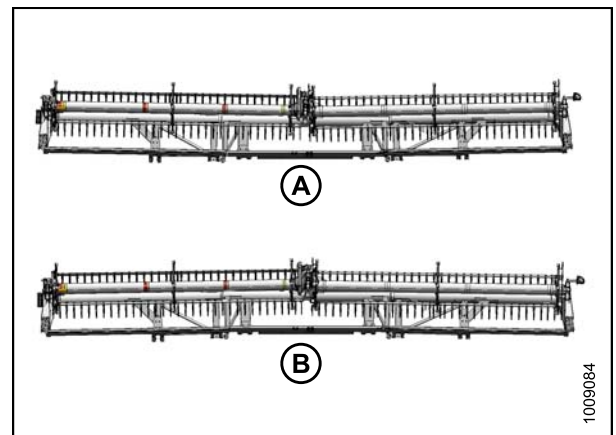


Figure 4.26: Wing Imbalance

1. Adjust the header center-link to approximately halfway between 'B' and 'C' on indicator (A).
2. Park combine on level ground and raise header until cutterbar is 6–10 in. (152–254 mm) off the ground.
3. Stop engine and remove key.
4. If installed, move transport/stabilizer wheels so that they are supported by header. Refer to instructions provided with the transport/stabilizer system.

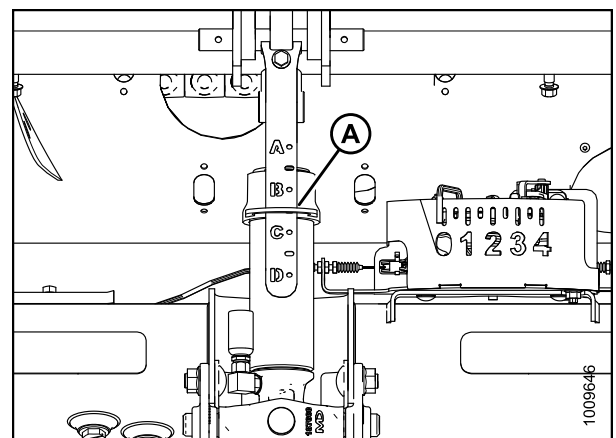


Figure 4.27: Center-Link

PERFORMING PREDELIVERY CHECKS

5. Remove linkage cover (A) by removing bolt (B) and rotating cover upward until inboard end can be lifted off.

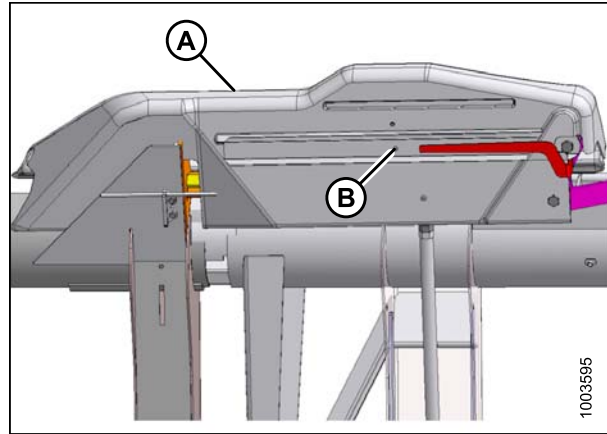


Figure 4.28: Linkage Cover

NOTE:

Refer to the decal (A) inside each linkage cover.

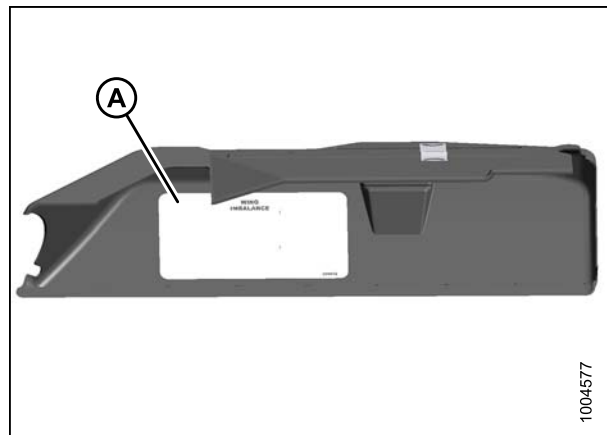


Figure 4.29: Linkage Cover

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

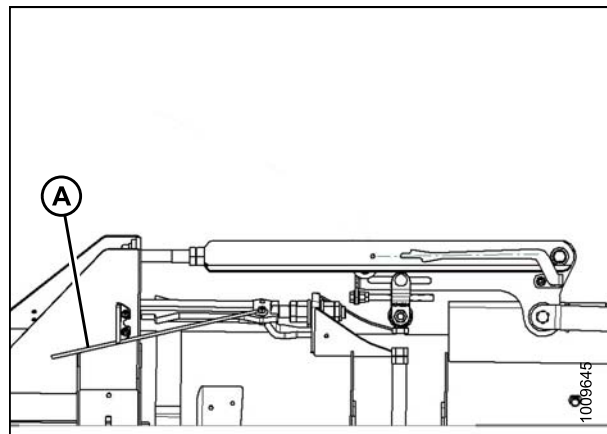


Figure 4.30: Wing Lock in UNLOCK Position

PERFORMING PREDELIVERY CHECKS

7. Retrieve wrench (A) from right-hand adapter leg.

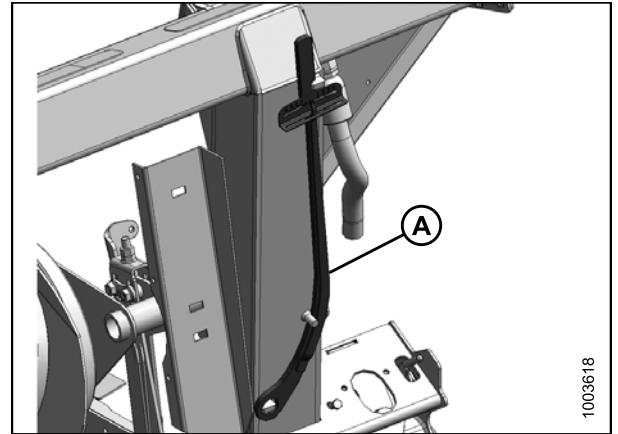


Figure 4.31: Torque Wrench

8. Place torque wrench (A) on bolt (B).

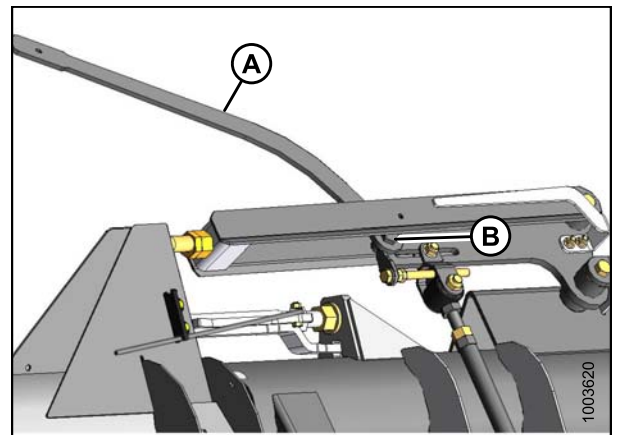


Figure 4.32: Balance Linkage

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

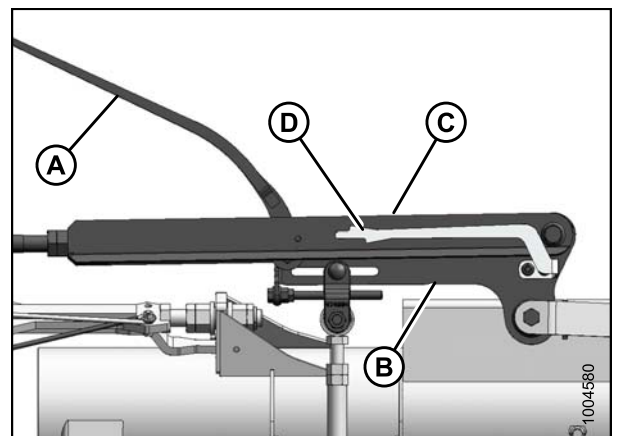


Figure 4.33: Balance Linkage

PERFORMING PREDELIVERY CHECKS

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

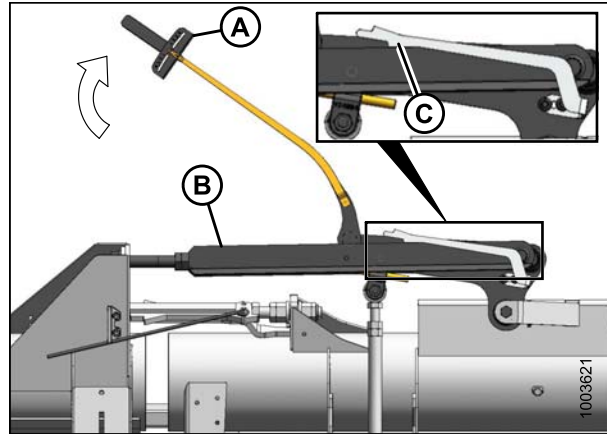


Figure 4.34: Balance Linkage

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

- If the difference between the readings is 1 or less, the wing is balanced and no further adjustment is required. Follow the steps below to reinstall the linkage cover.
- If the difference between the readings is more than 1, the wing is not balanced. Refer to [4.10.2 Adjusting Wing Balance, page 100](#).

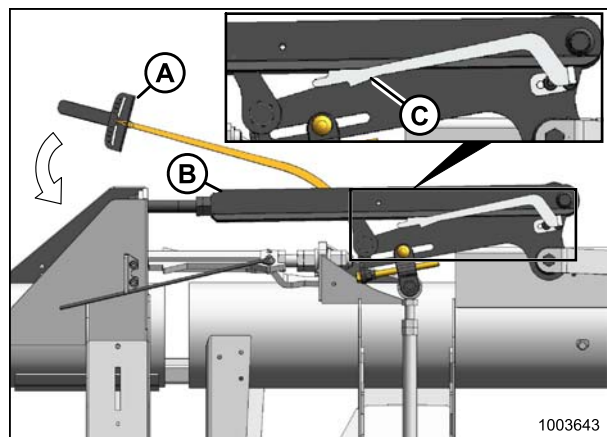


Figure 4.35: Balance Linkage

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

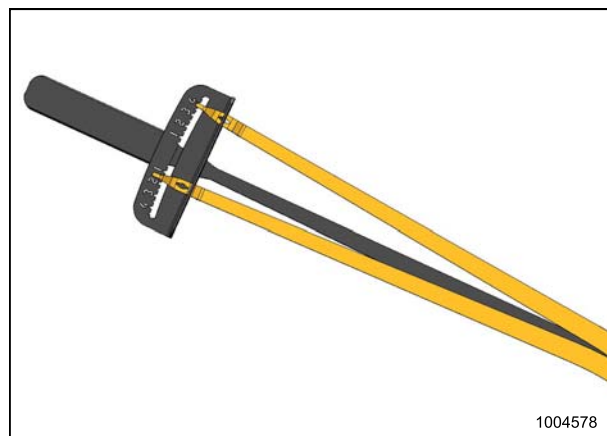


Figure 4.36: Wrench Indicator

PERFORMING PREDELIVERY CHECKS

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

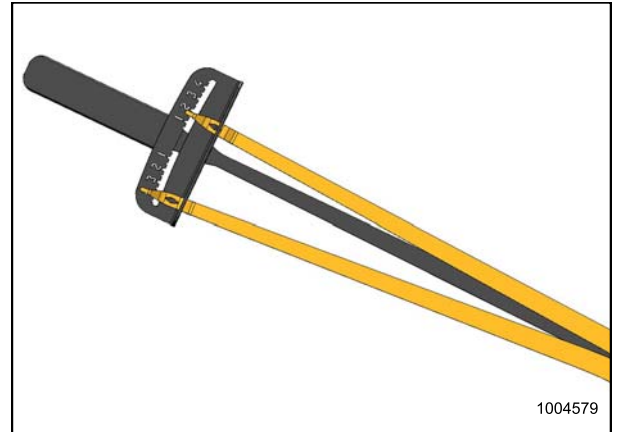


Figure 4.37: Wrench Indicator

12. Place wrench (A) back onto the right-hand adapter leg.

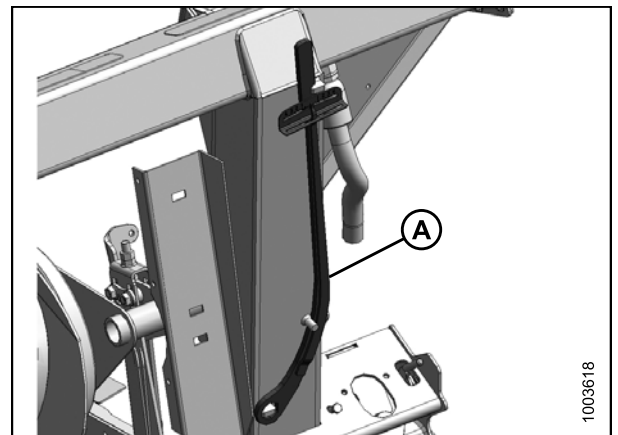


Figure 4.38: Torque Wrench

13. Lock the wings by moving spring handles (A) to upper LOCK position.

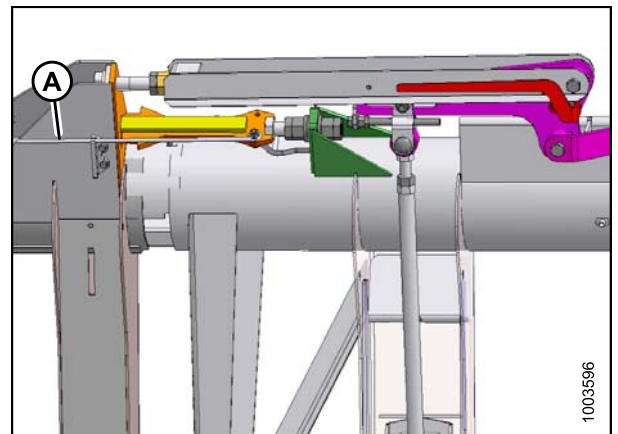


Figure 4.39: Wing Lock in Lock Position

PERFORMING PREDELIVERY CHECKS

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

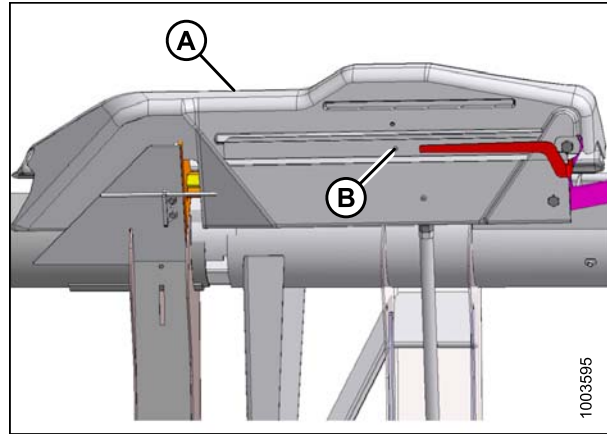


Figure 4.40: Linkage Cover

4.10.2 Adjusting Wing Balance

WARNING

To avoid bodily injury or death from unexpected startup of machine, always stop combine engine and remove key before making adjustments to machine.

Before proceeding, check the wing balance to verify how to adjust the wing. Refer to [4.10.1 Checking Wing Balance](#), page 95.

NOTE:

Left-hand side is shown.

1. Extend the header center-link to between B and C on indicator (A).
2. Park combine on level ground and raise header until cutterbar is 6–10 in. (152–254 mm) off the ground.
3. Stop engine and remove key.
4. If installed, move transport/stabilizer wheels so that they are supported by header. Refer to instructions provided with the transport/stabilizer system.

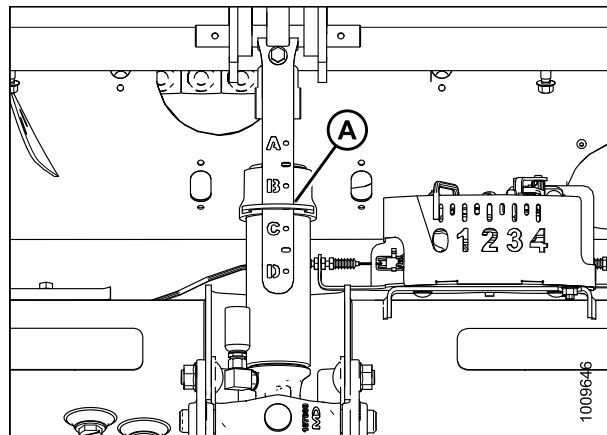


Figure 4.41: Center-Link

PERFORMING PREDELIVERY CHECKS

5. Remove linkage cover (A) by removing bolt (B).

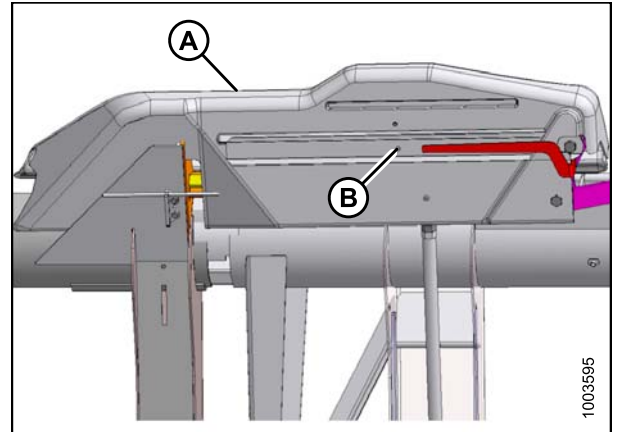


Figure 4.42: Linkage Cover

NOTE:

Refer to decal (A) inside each linkage cover.

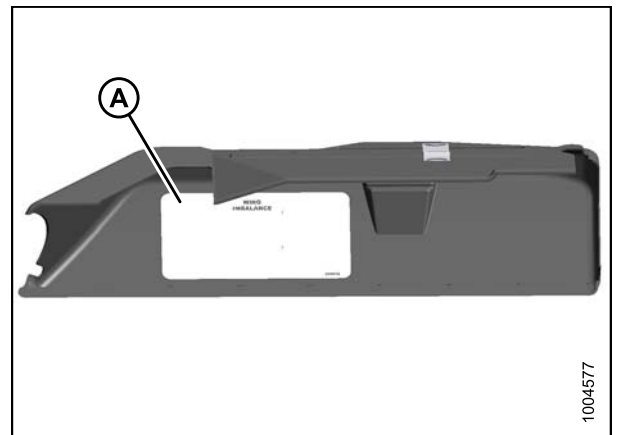


Figure 4.43: Linkage Cover

6. Unlock the wings by moving handle (A) to lower (UNLOCK) position.

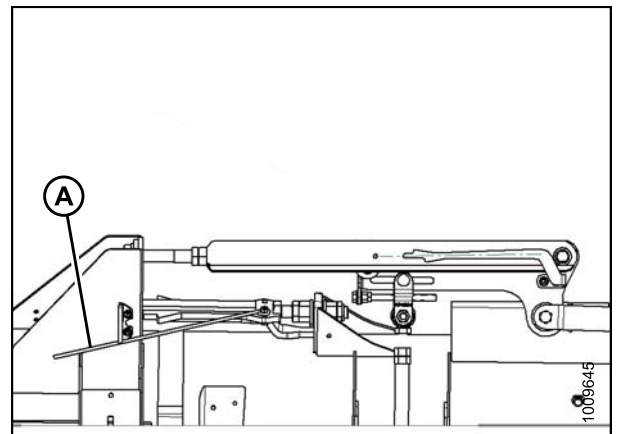


Figure 4.44: Wing Lock in UNLOCK Position

PERFORMING PREDELIVERY CHECKS

- Retrieve wrench (A) from adapter leg.

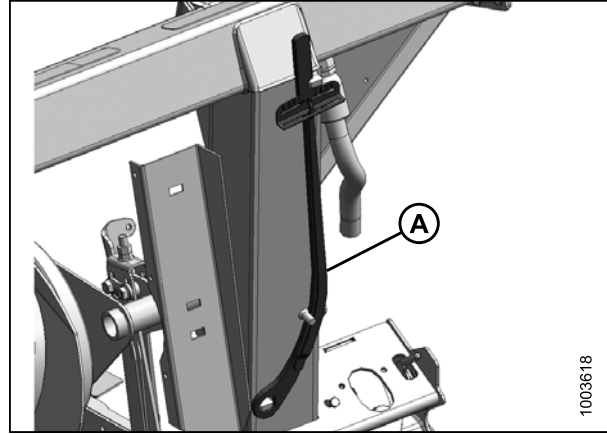


Figure 4.45: Torque Wrench

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

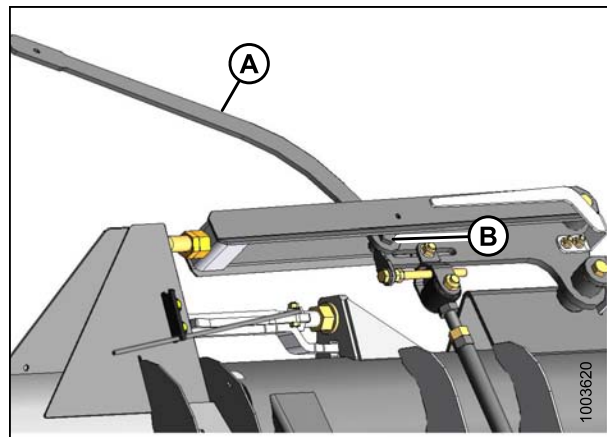


Figure 4.46: Balance Linkage

- Loosen the clevis bolt (A) for the wing requiring adjustment as determined by the wing balance check.

NOTE:

Do **NOT** loosen any other hardware.

- Adjust bolt (B) and set dimension (C), refer to Table 4.3 [Wing Balance Chart, page 103](#).

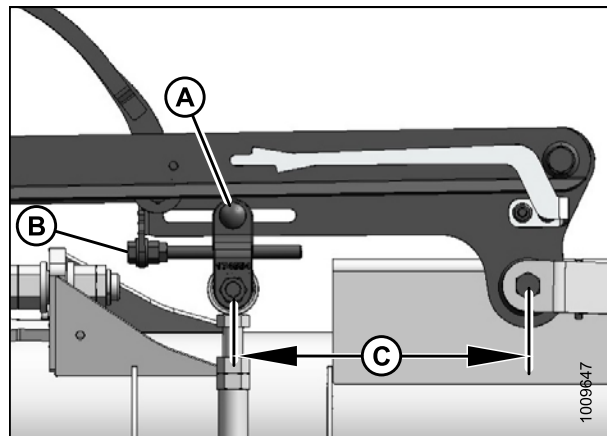


Figure 4.47: Balance Linkage

PERFORMING PREDELIVERY CHECKS

Table 4.3 Wing Balance Chart

Header Configuration	Wing Dimension (B) ¹	
	Left Wing in. (mm)	Right Wing in. (mm)
30-foot	11-13/32 (290)	11-1/4 (285)
35-foot	11-13/16 (300)	11-13/16 (300)
40-foot single-knife drive (SKD)	12 (305)	12-19/32 (320)
40-foot double-knife drive (DKD)	12 (305)	12-3/16 (310)
40-foot double-knife drive (DKD) split frame	12 (305)	12-3/16 (310)
45-foot double-knife drive (DKD) split frame	12-3/16 (310)	12-3/16 (310)

11. Recheck the wing balance. Refer to [4.10.1 Checking Wing Balance, page 95](#).
12. If necessary, perform the following adjustments:
 - If the wing is too heavy, turn adjuster bolt (B) to move clevis (C) outboard (D).
 - If the wing is too light, turn adjuster bolt (B) to move clevis (C) inboard (E).
13. Adjust clevis (C) position if necessary until indicator readings are within one increment.
14. Tighten clevis bolt (A).
15. Move handle to the upper LOCK position.
16. If lock does not engage, move the wing up and down with torque wrench until it locks. When locked, there will be some movement in the linkage.
17. If the cutterbar is not straight when wings are in lock mode, then further adjustments are required.

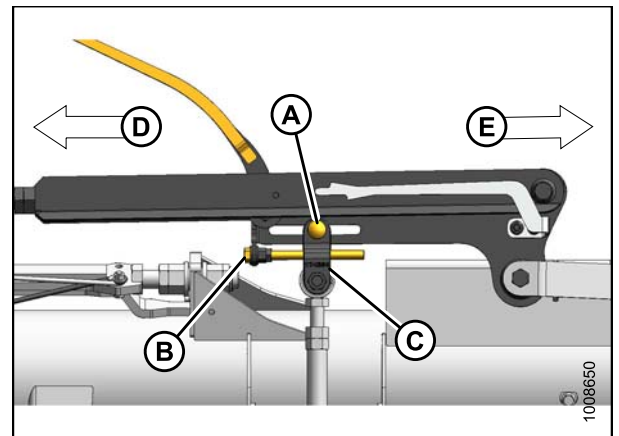


Figure 4.48: Balance Linkage

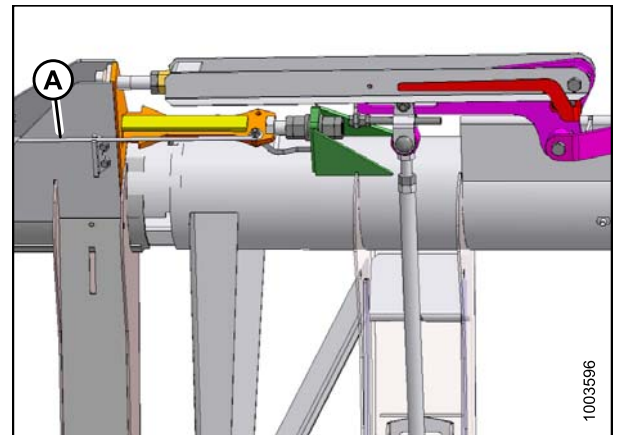


Figure 4.49: Wing Lock in Lock Position

1. These dimensions are initial settings. Further adjustment will be required if any optional kits have been installed by the Dealer.

PERFORMING PREDELIVERY CHECKS

18. Replace torque wrench on adapter frame.
19. Reinstall linkage cover (A) and secure it with bolt (B).

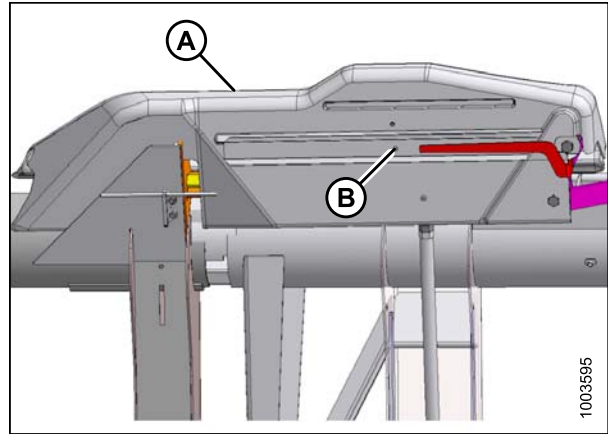


Figure 4.50: Linkage Cover

4.11 Measuring and Adjusting Reel Clearance to Cutterbar

The minimum clearance between the reel fingers and the cutterbar ensures that the reel fingers do not contact the cutterbar during operation. The clearance is adjusted at the factory, but adjustments may be necessary before the header is put into operation.

The finger to guard/cutterbar clearances with reels fully lowered are shown in Table 4.4 *Finger to Guard/Cutterbar Clearance, page 105*.

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 4.4 Finger to Guard/Cutterbar Clearance

Header Width	'X' +/- 1/8 in. (3 mm) at Reel Ends and Flex Locations
30 ft.	3/4 in. (20 mm)
35 ft.	
40 ft.	
45 ft.	

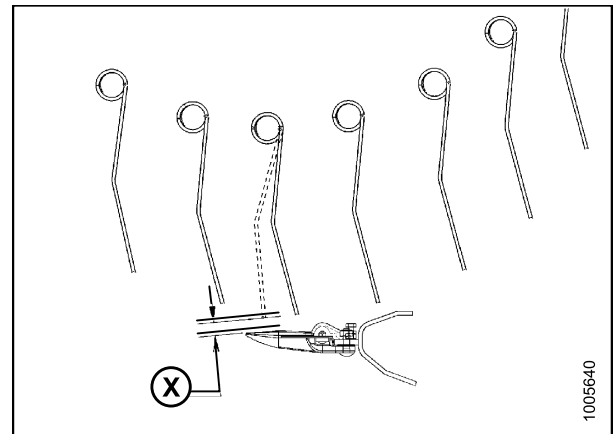


Figure 4.51: Clearance with Reel Fully Lowered

4.11.1 Measuring Reel Clearance

To measure the finger-to-guard/cutterbar clearance, follow these steps:

⚠ DANGER

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

1. Park header on level ground.
2. Move spring handles (A) down to (UNLOCK) position.

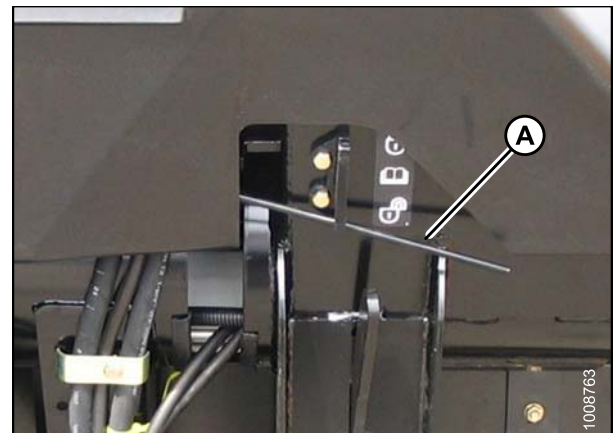


Figure 4.52: Wing Lock in UNLOCK Position

PERFORMING PREDELIVERY CHECKS

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

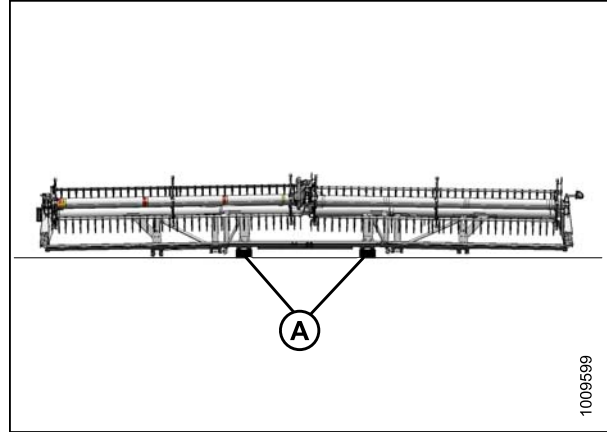


Figure 4.53: FlexDraper® Block Locations

5. Set the fore-aft position to the middle position on the reel arm indicator decal (A).
6. Fully lower the reel.
7. Shut down engine. Remove key from ignition.

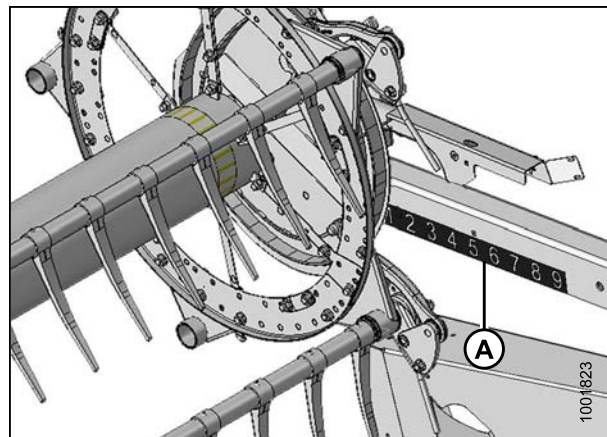


Figure 4.54: Fore-Aft Position

PERFORMING PREDELIVERY CHECKS

8. Measure clearance (X) between points (Y) and (Z) at ends of each reel (A), and at flex locations (B).

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.

9. Check all possible points of contact between points (Y) and (Z). Depending on reel fore-aft position, minimum clearance can occur at guard tine, hold-down, or cutterbar.

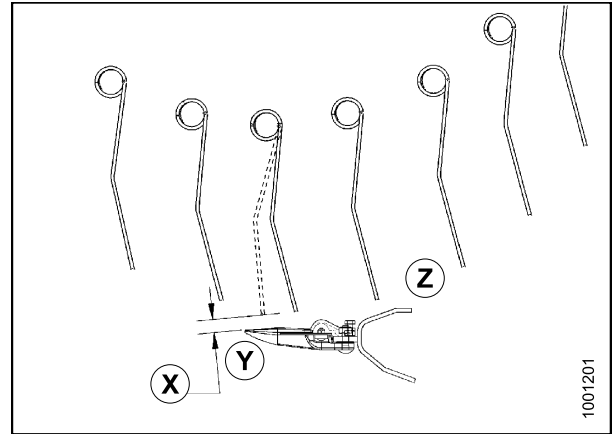


Figure 4.55: Clearance

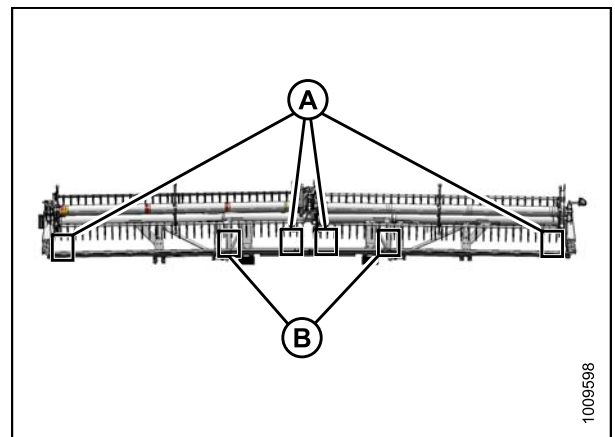


Figure 4.56: Measurement Locations

10. If necessary, refer to [4.11.2 Adjusting Reel Clearance](#), [page 107](#) for adjustment procedure.

4.11.2 Adjusting Reel Clearance

⚠ DANGER

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

PERFORMING PREDELIVERY CHECKS

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

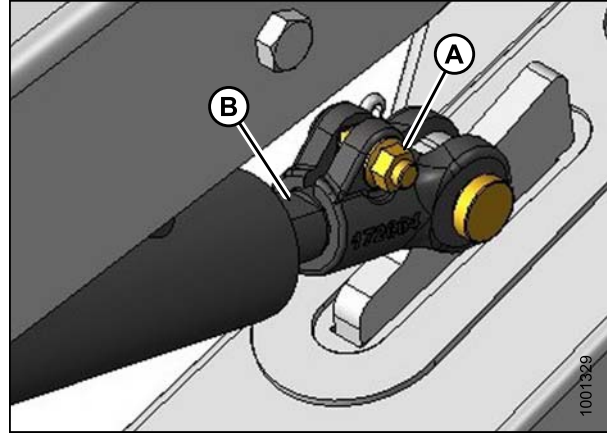


Figure 4.57: Outside Reel Arm

2. Adjust center arm lift cylinder stop (A) to change clearance at inboard ends of reels and clearance at flex points as follows:
 - a. Loosen nut (B).
 - b. Turn nut (C) counterclockwise to raise reel and increase clearance to cutterbar, or clockwise to lower reel and decrease clearance.
 - c. Tighten nut (B).

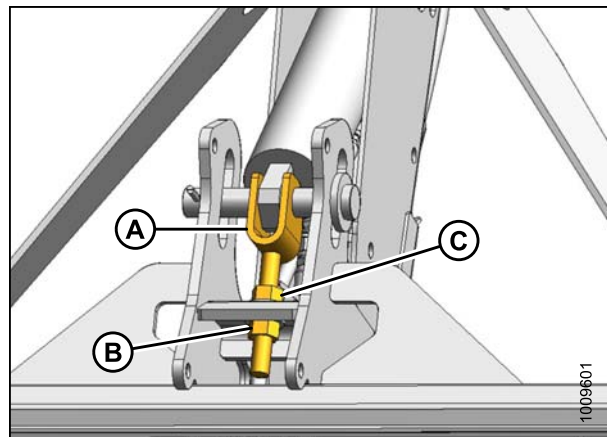


Figure 4.58: Looking Up at Arm Underside

4.12 Adjusting Auger to Pan Clearance

DANGER

To avoid bodily injury or death from unexpected start-up of machine, always stop engine and remove key from ignition before leaving 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 tines or flights contacting and damaging the draper or feed pan under certain orientations of the header. Look for evidence of contact when greasing the adapter.

To adjust the auger pan clearance, follow these steps:

1. Extend center-link to maximum for steepest header angle and position the header 6–10 in. (150–254 mm) off the ground.
2. Lock header wings.
3. Shut down combine and remove key from ignition.
4. Check that float lock linkage is on down stops (washer [A] and nut [B] cannot be moved) at both locations.

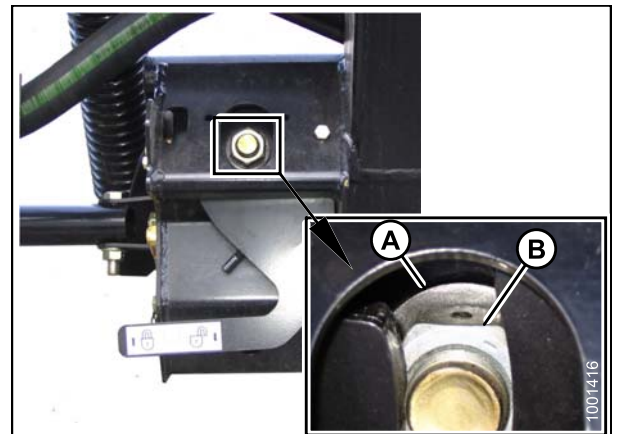


Figure 4.59: Float Lock

5. Check that linkage bars (A) are against studs (B) at lower end of bars at both ends of the auger.

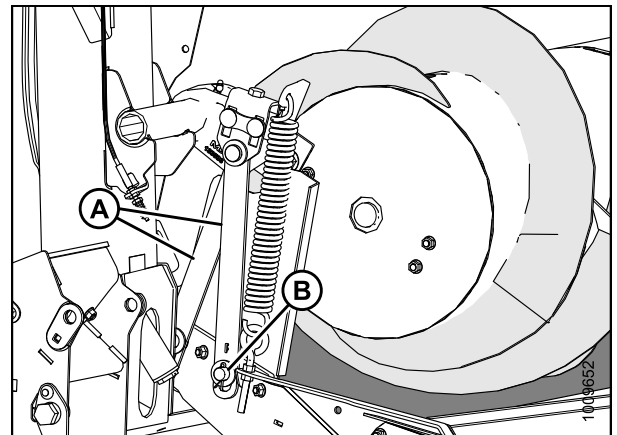


Figure 4.60: Linkage Bars

PERFORMING PREDELIVERY CHECKS

6. Loosen two nuts (B).
7. Set clearance (C) to 3/16–3/8 in. (5–10 mm) with adjuster bolt (A). Turn bolt clockwise to increase clearance, counterclockwise to decrease.

NOTE:

The clearance increases to 1–1-1/2 in. (25–40 mm) when the center-link fully retracts for a flatter header angle.

8. Repeat Steps 6, [page 110](#) and 7, [page 110](#) for other end of auger.
9. Tighten nuts (B) on both ends of feed auger. Torque nuts to 79–87 ft·lbf (106–118 N·m).

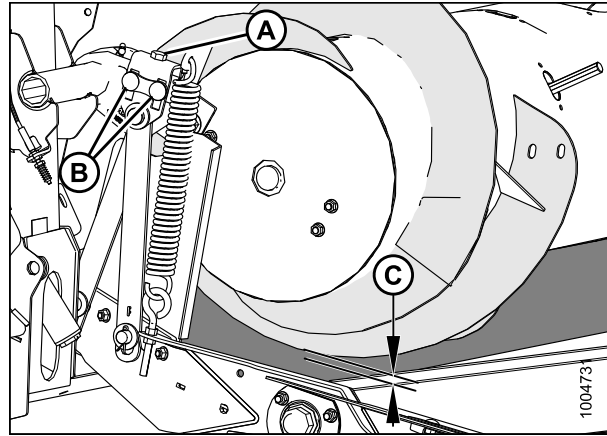


Figure 4.61: Auger Clearance

4.13 Adjusting Side Draper Tension

WARNING

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

NOTE:

The drapers are tensioned at the factory and should NOT require adjustment. If adjustment is required, draper tension should be just enough to prevent slipping and to keep the draper from sagging below the cutterbar.

1. Ensure white bar (A) is about halfway in the window.

CAUTION

Check to be sure all bystanders have cleared the area.

2. Start engine and raise header.
3. Stop engine, remove key, and engage header safety props.
4. Check that draper guide (rubber track on underside of draper) is properly engaged in groove of drive roller.

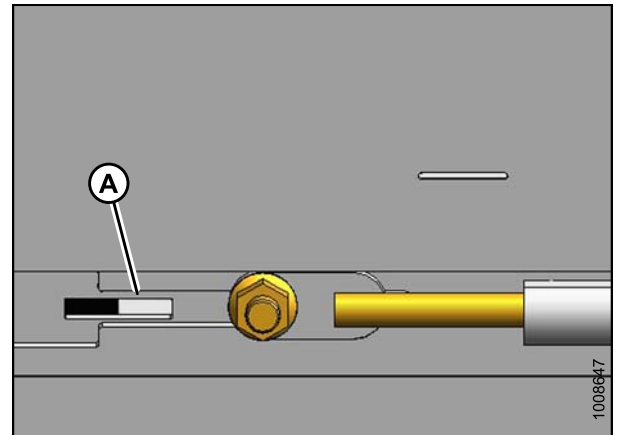


Figure 4.62: Tension Adjuster: Left-Hand Shown – Right-Hand Opposite

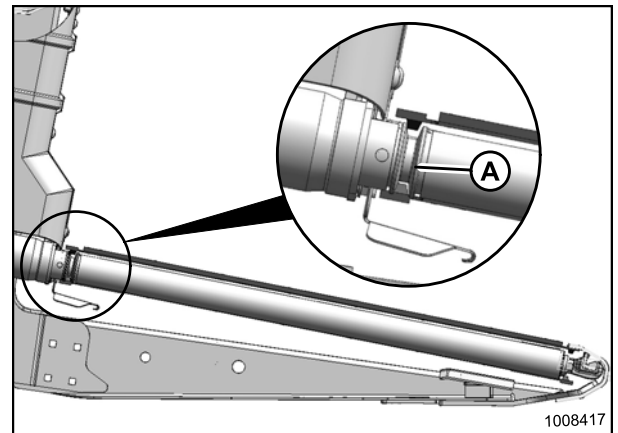


Figure 4.63: Drive Roller

PERFORMING PREDELIVERY CHECKS

5. Check that idler roller is between the guides.

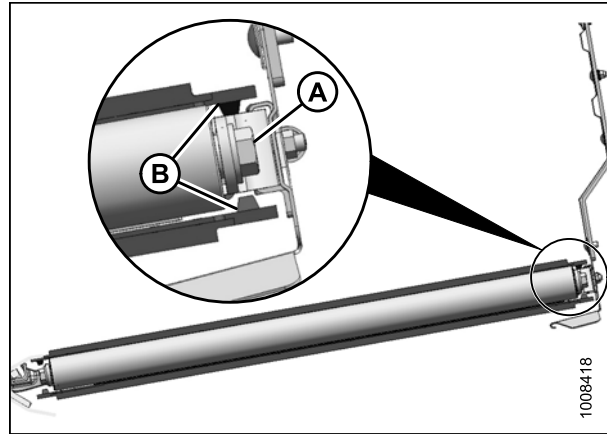


Figure 4.64: Idler Roller

IMPORTANT:

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

6. Turn adjuster bolt (A) counterclockwise to loosen, and white indicator bar (B) will move outboard in direction of arrow (D) to indicate that draper is loosening. Loosen until bar is about halfway in window.
7. Turn adjuster bolt (A) clockwise to tighten, and white indicator bar (B) will move inboard in direction of arrow (E) to indicate that draper is tightening. Tighten until bar is about halfway in window.

IMPORTANT:

- To avoid premature failure of draper, draper rollers, and/or tightener components, do not operate with tension set so that white bar is not visible.
- To prevent the draper from scooping dirt, ensure draper is tight enough that it does not sag below point where cutterbar contacts the ground.

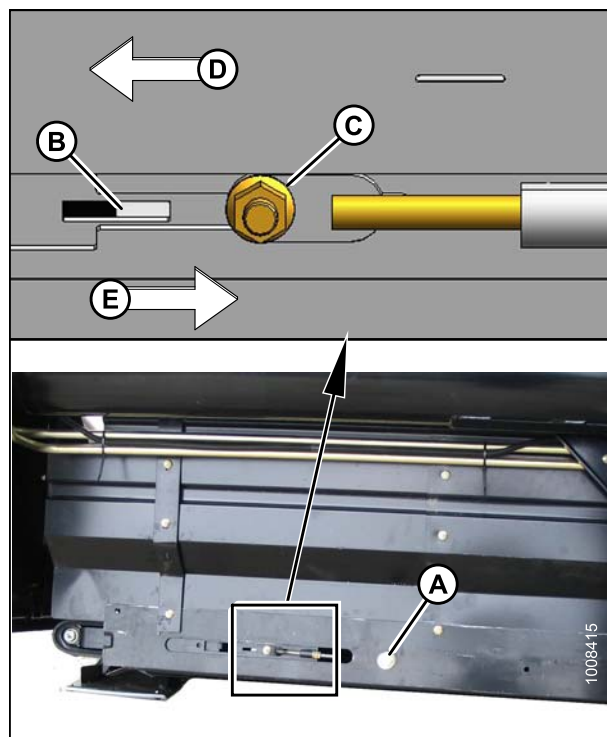


Figure 4.65: Tension Adjuster: Left-Hand Shown – Right-Hand Opposite

4.14 Checking and Adjusting Draper Seal

IMPORTANT:

Maintain deck height so that the draper runs just below cutterbar. With a new header or newly installed draper, set the initial gap to 1/8 in. (3 mm). To prevent material from entering the drapers and cutterbar, you may need to decrease the deck clearance to 0–1/32 in. (0–1 mm) after the initial break-in period of approximately 50 hours.

1. Check deck height. Draper (A) should run just below cutterbar (B) with a gap of 1/8 in. (3 mm) between the top of deck front track and cutterbar.

NOTE:

Measurement is at supports with header in working position and decks slid fully forward.

If deck height is acceptable, skip the remaining steps and proceed to [4.15 Lubricating the Header, page 115](#).

If deck height is NOT acceptable, adjust seal as described in the following steps:

2. Loosen tension on drapers. For instructions, refer to [4.13 Adjusting Side Draper Tension, page 111](#).
3. Lift draper (A) up at front edge past cutterbar (B).

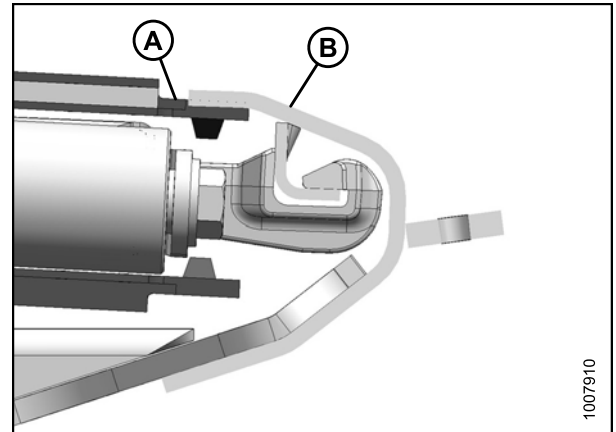


Figure 4.66: Draper Height Measurement

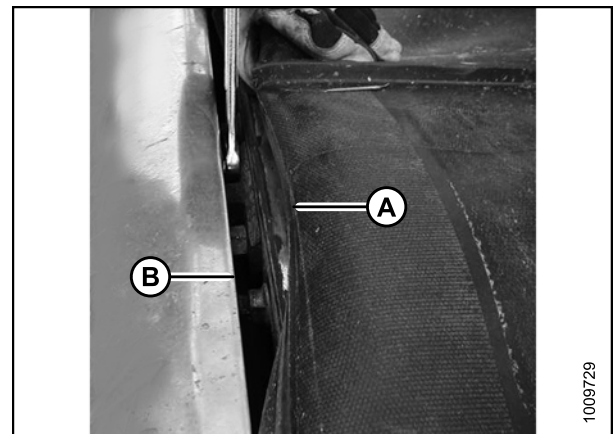


Figure 4.67: Draper Adjustment

PERFORMING PREDELIVERY CHECKS

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

NOTE:

There are between two and eight supports per deck depending on header size.

- Tap deck (C) to lower deck relative to supports and achieve the recommended setting. Tap support (B) using a punch to raise deck relative to supports.
- Tighten deck support hardware (A).
- Tension drapers. For instructions, refer to [4.13 Adjusting Side Draper Tension, page 111](#).

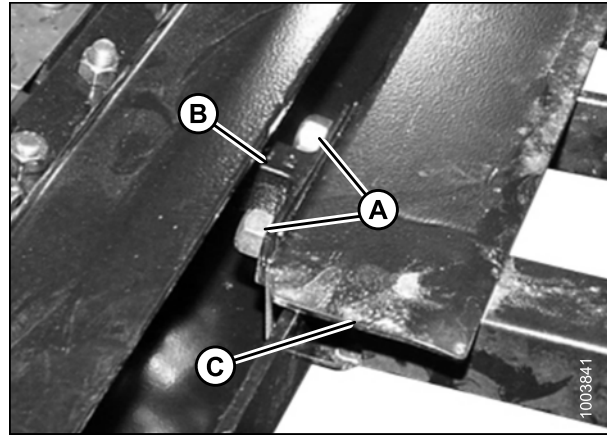


Figure 4.68: Draper Removed for Clarity

4.15 Lubricating the Header

Table 4.5 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
	High temperature, extreme pressure (EP) performance with 10% max molybdenum disulphide (NLGI Grade 2) lithium base	Driveline slip-joints

4.15.1 Greasing Procedure

Greasing points are marked on the machine by decals showing a grease gun and grease interval in hours of operation. Master grease point location decals as shown below are provided on the header and adapter back frame.

DANGER

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

1. Wipe grease fitting with a clean cloth before greasing to avoid injecting dirt and grit.
2. Inject grease through fitting with grease gun until grease overflows fitting (except where noted).
3. Leave excess grease on fitting to keep out dirt.
4. Replace any loose or broken fittings immediately.
5. Remove and thoroughly clean any fitting that will not take grease. Also clean lubricant passageway. Replace fitting if necessary.
6. Use clean, high temperature extreme pressure grease.

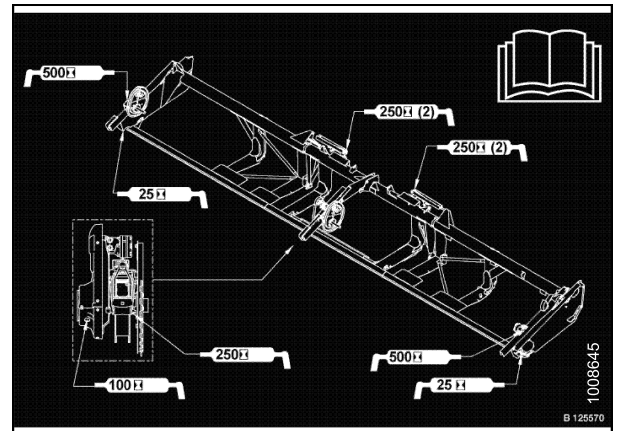


Figure 4.69: FD75 Greasing Decal

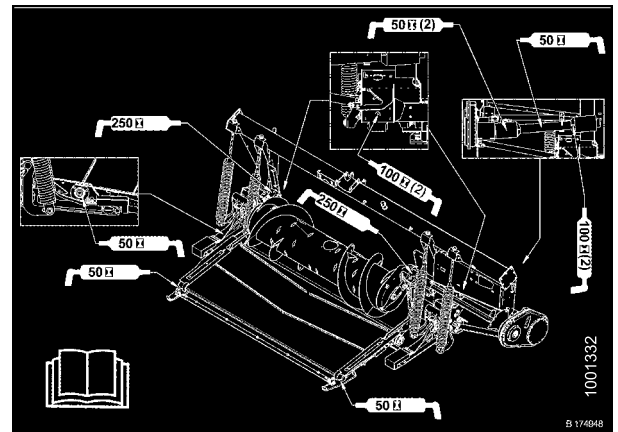


Figure 4.70: CA25 Adapter Greasing Decal

4.15.2 Lubrication Points

Refer to the illustrations on the following pages to identify the various locations that require lubrication.

Knifehead

NOTE:

- To prevent binding and/or excessive wear caused by knife pressing on guards, do **NOT** over grease the knifehead (A).
- Apply only 1–2 pumps of grease with a mechanical grease gun (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.
- Check for signs of excessive heating on first few guards after greasing. If required, relieve pressure by pressing check-ball in grease fitting.

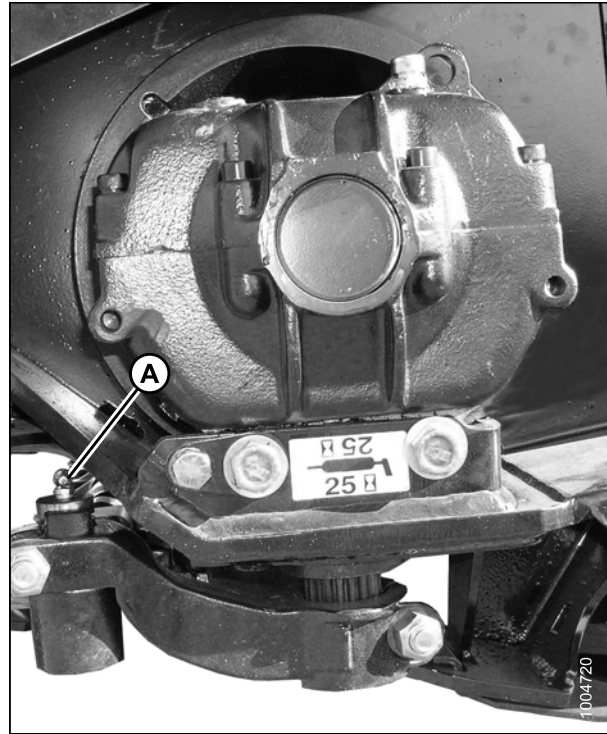


Figure 4.71: Knifehead (Single Knife - One Place) (Double Knife - Two Places)

PERFORMING PREDELIVERY CHECKS

Drive Roller Bearing, Idler Roller, Slip Joint, and Driveline Universal

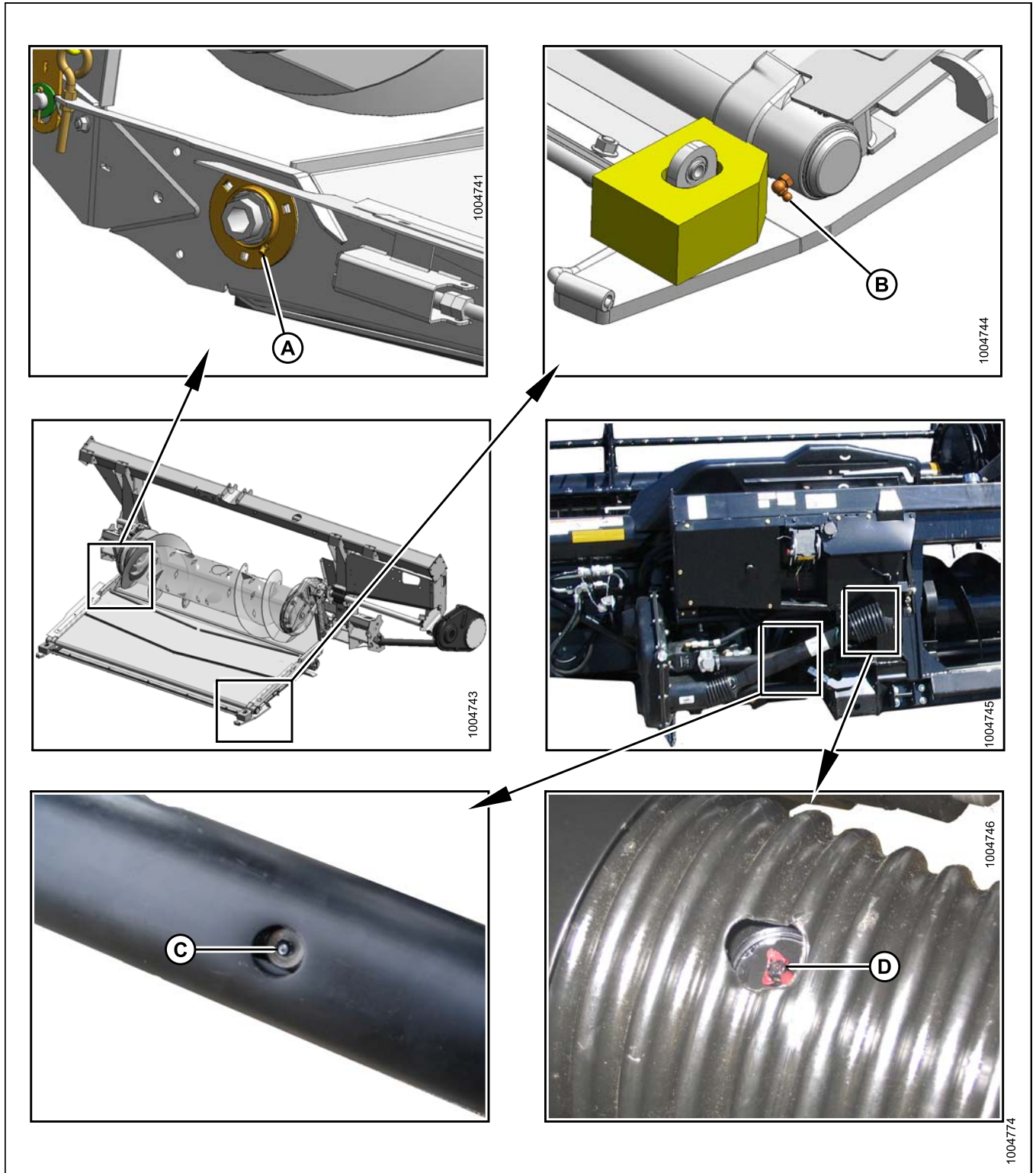


Figure 4.72: Use High Temperature Extreme Pressure (EP2) Performance with 1% Max Molybdenum Disulphide (NLGI Grade 2) Lithium Base.

A - Drive Roller Bearing

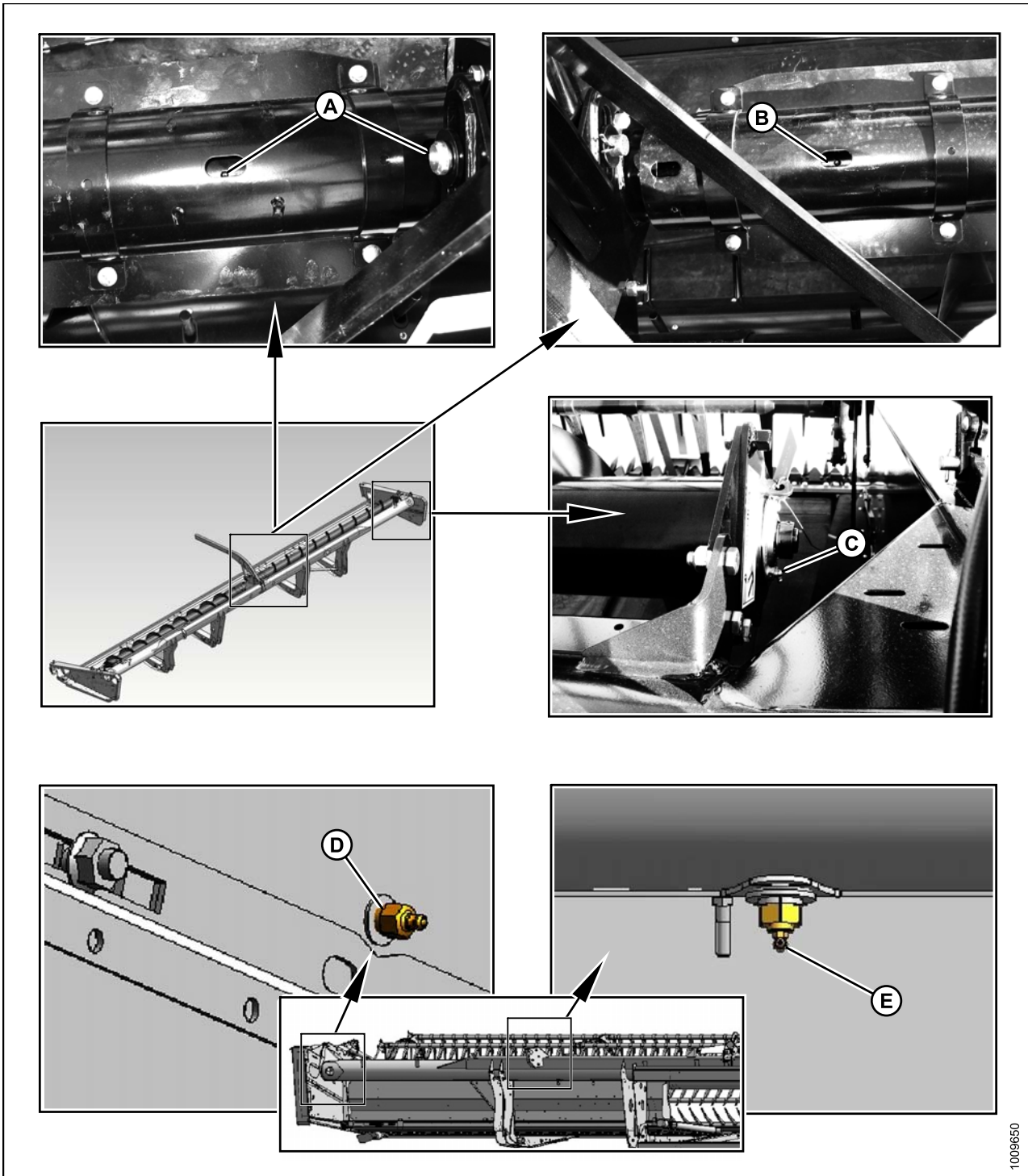
B - Idler Roller - Both Sides

C - Driveline Slip Joint

D - Driveline Universal (Two Places)

PERFORMING PREDELIVERY CHECKS

Upper Cross Auger and Knife Drive (Double-Knife Timed Drive)



1009650

Figure 4.73: Use High Temperature Extreme Pressure (EP2) Performance with 1% Max Molybdenum Disulphide (NLGI Grade 2) Lithium Base.

- A - Upper Cross Auger U-Joint and Bearing
- C - Upper Cross Auger (One Place)
- E - Knife Drive Shaft - Double-Knife Timed Drive (Both Sides) 15 Pumps Minimum

- B - Upper Cross Auger Bearing (One Place)
- D - Knife Drive Bearing - Double-Knife Timed Drive (Both Sides)

PERFORMING PREDELIVERY CHECKS

Float Pivot, Driveline Guard, Flex Linkage, and Auger Pivot

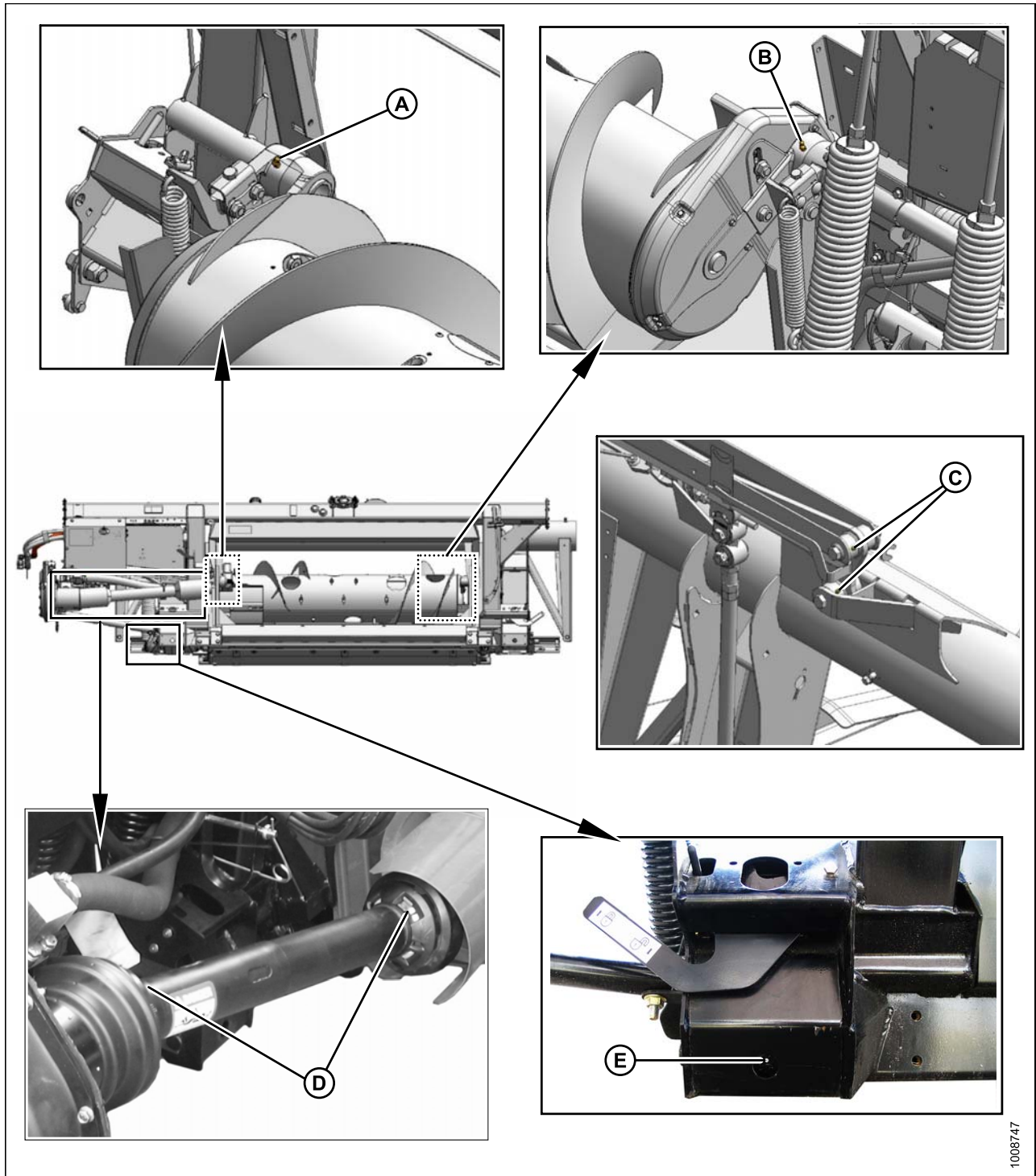


Figure 4.74: Use High Temperature Extreme Pressure (EP2) Performance with 1% Max Molybdenum Disulphide (NLGI Grade 2) Lithium Base.

A - Auger Pivot (First Place)

B - Auger Pivot (Second Place)

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

D - Driveline Guard (Two Places)

E - Float Pivot (Two Places)

PERFORMING PREDELIVERY CHECKS

Reel Shaft Bearings

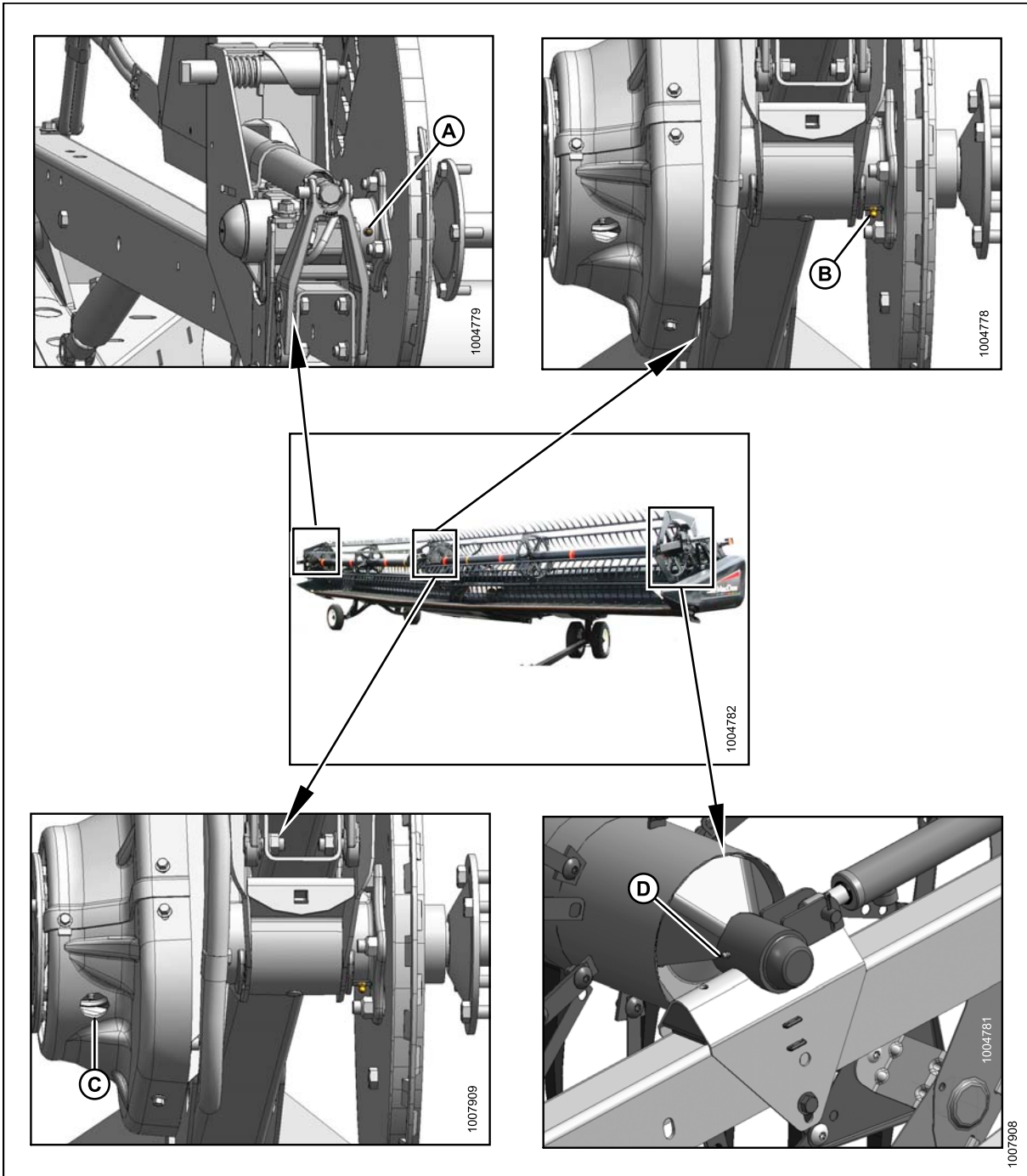


Figure 4.75: Use High Temperature Extreme Pressure (EP2) Performance with 1% Max Molybdenum Disulphide (NLGI Grade 2) Lithium Base.

IMPORTANT:

U-joint has an extended lubrication cross and bearing kit. Stop greasing when greasing becomes difficult or if U-joint stops taking grease. **OVERGREASING WILL DAMAGE U-JOINT.** Six to eight pumps is sufficient at first grease (factory). Decrease grease interval as U-joint wears and requires more than six pumps.

A - Reel Shaft Right-Hand Bearing (One Place)
D - Reel Shaft Left-Hand Bearing (One Place)

B - Reel Center Bearing (One Place)

C - Reel Universal (One Place)

PERFORMING PREDELIVERY CHECKS

Rear Wheel Axle, Wheel Bearings, Frame/Wheel Pivot, and Front Wheel Pivot

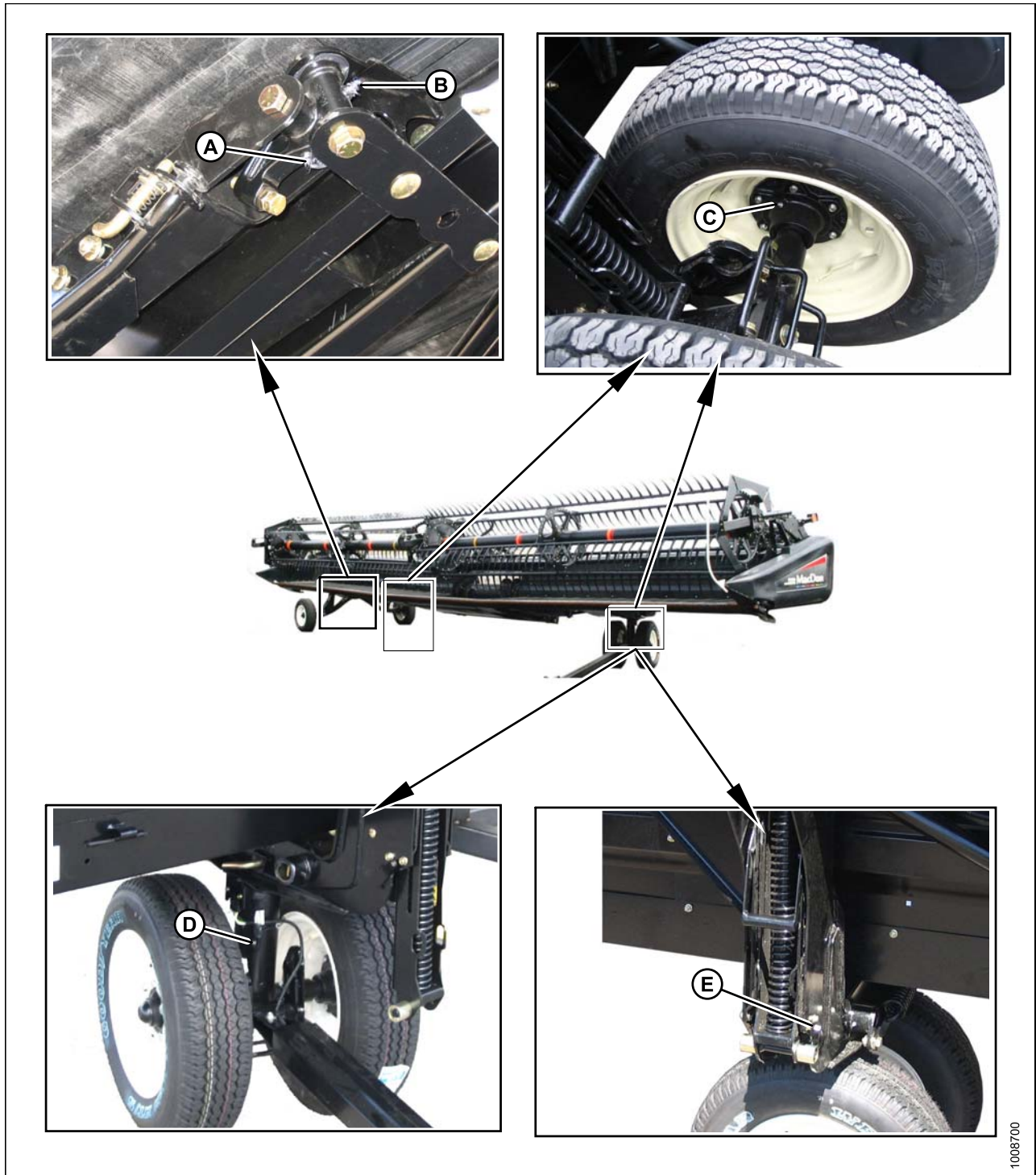


Figure 4.76: Use High Temperature Extreme Pressure (EP2) Performance with 1% Max Molybdenum Disulphide (NLGI Grade 2) Lithium Base.

A - Rear Wheel Axle (First Place)
D - Front Wheel Pivot (One Place)

B - Rear Wheel Axle (Second Place)
E - Frame/Wheel Pivot (One Place) Both Sides

C - Wheel Bearings (Four Places)

4.16 Checking and Adjusting Endshields

Plastic endshields are subject to expansion or contraction depending on large temperature variations. The position of the top pin and lower catch can be adjusted to compensate for dimensional changes.

1. Check gap 'X' between front end of shields and header frame, and compare to the values in Table 4.6 *Gap "X" at Different Temperatures, page 122.*

Table 4.6 Gap "X" at Different Temperatures

Temperature in Degrees °F (°C)	Gap "X" in Inches (mm)
25 (-4)	1-1/10 (28)
45 (7)	1 (24)
65 (18)	13/16 (20)
85 (29)	5/8 (16)
105 (41)	1/2 (12)
125 (52)	5/16 (8)
145 (63)	3/16 (4)
165 (89)	0

NOTE:

If the gap is correct, skip to the next procedure.

If the gap is incorrect, follow Step 2, [page 122](#) to Step 12, [page 123](#) to adjust.

Opening the endshield:

2. Remove lynch pin (A) and tool (B) from pin (C) at top rear of endshield.

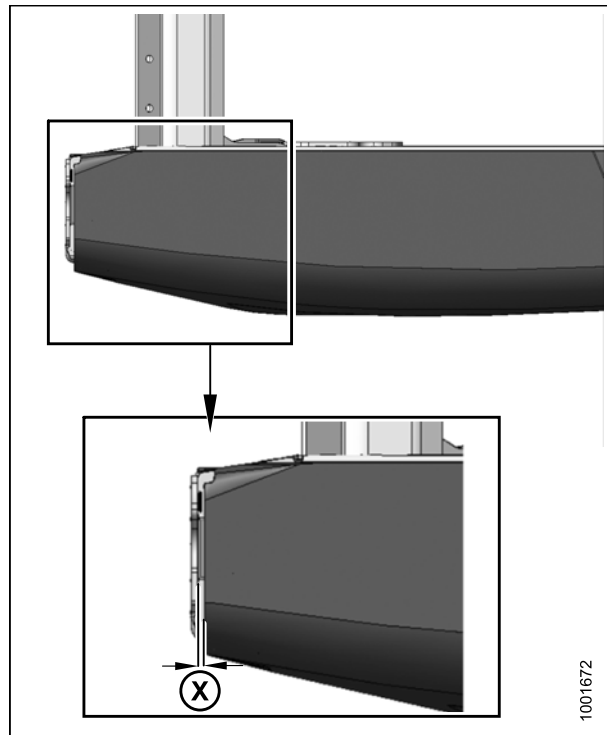


Figure 4.77: Gap Between Endshield and Header Frame

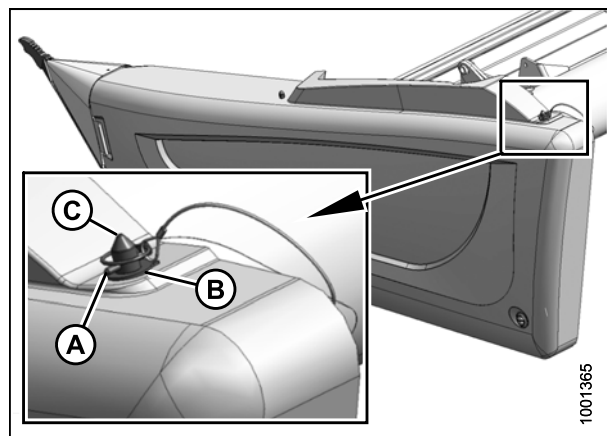


Figure 4.78: Left-Hand Endshield

PERFORMING PREDELIVERY CHECKS

3. Use tool (B) to unlock latch (A) at lower rear corner of endshield.
4. Lift shield at aft end to clear pin.
5. Swing shield out and away from header while maintaining forward pressure to prevent shield from slipping out of tab (C) at front of endsheet.

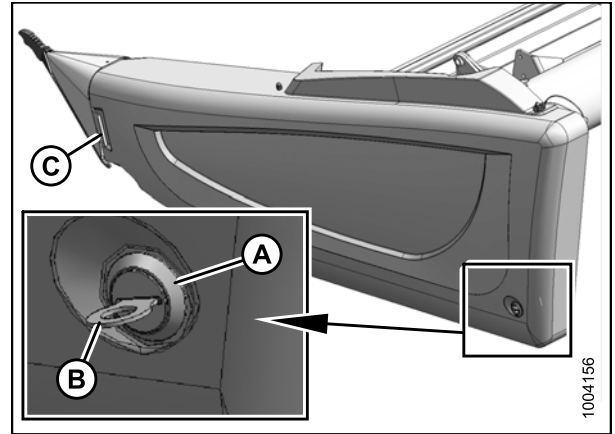


Figure 4.79: Tool to Unlock Endshield

Adjusting the endshield gap:

6. Loosen nut (A) on pin (B) from inside endsheet.
7. Close endshield and adjust position to achieve gap 'X' between the front end of shield and header frame in accordance with Table [4.6 Gap "X" at Different Temperatures, page 122](#).
8. Open endshield, and tighten nut (A).
9. Check for a snug fit between top of shield and header frame, and for full engagement of endshield on pin (B).
10. If necessary, loosen bolts on catch (C), and adjust catch as required to reposition shield.
11. Tighten bolts on catch (C).
12. Close endshield.

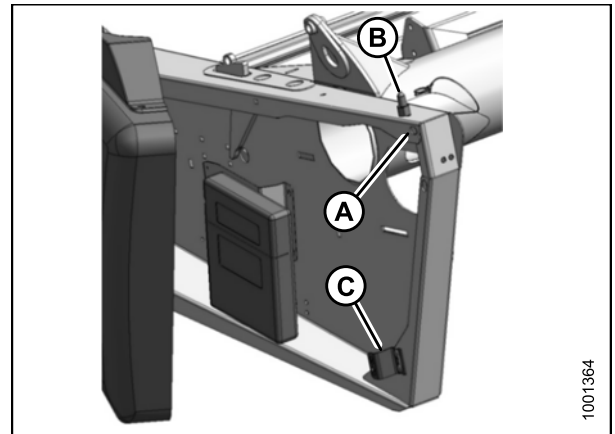


Figure 4.80: Endshield Gap

4.17 Checking Manuals

Check manual case contents. The manual case is located inside the left-hand endshield.

1. Open the left-hand endshield and remove the cable tie on the manual case.

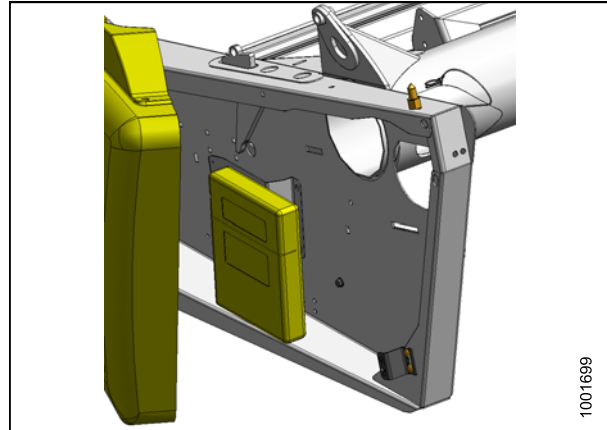


Figure 4.81: Manual Case

2. Confirm that the case contains the following manuals:

- FD75 FlexDraper® Operator's Manual
- FD75 FlexDraper® Quick Card
- FD75 FlexDraper® Parts Catalog
- CA25 Combine Adapter Parts Catalog



Figure 4.82: FD75 and CA25 Manuals

5 Setting Up Auto Header Height Control

5.1 Auto Header Height Control (AHHC)

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

A sensor is installed in the float indicator box (A) on the CA25 Combine Adapter. This sensor sends a signal to the combine allowing it to maintain a consistent cutting height and an optimum adapter float as the header follows ground contours.

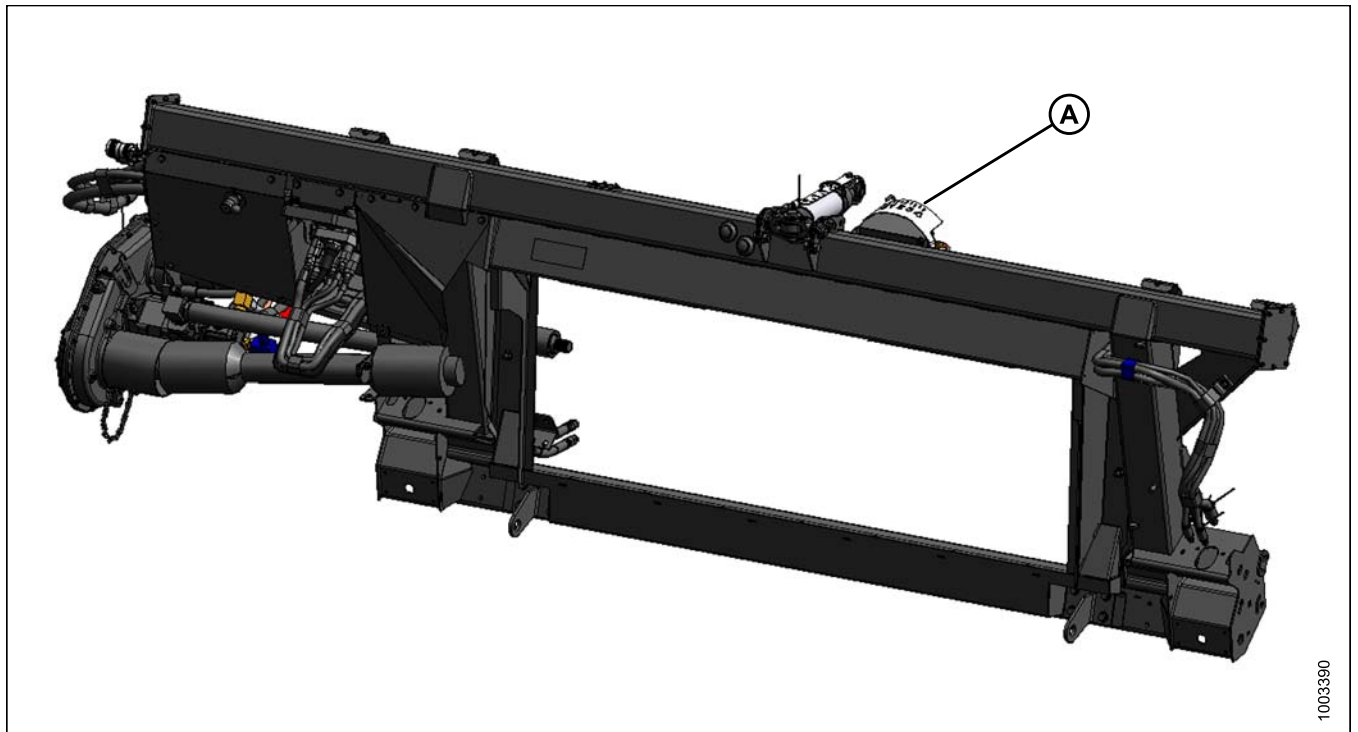


Figure 5.1: CA25 Combine Adapter

CA25 Combine Adapters are factory-equipped for AHHC; however, before using the AHHC feature, you must do the following:

1. Ensure that the AHHC sensor's output voltage range is appropriate for the combine.
For more information, refer to [5.1.1 Auto Header Height Control Sensor Output Voltage Range – Combine Requirements, page 127](#).
2. Prepare the combine to use the AHHC feature (applies only to some combine models—refer to the instructions for your combine).
3. Calibrate the AHHC system so that the combine can correctly interpret data from the height sensor on the combine adapter (refer to the instructions for your combine).

NOTE:

Once calibration is complete, you are ready to use the AHHC feature in the field. For each combine, certain operation settings can be used to improve the performance of the AHHC feature (refer to the instructions for your combine).

SETTING UP AUTO HEADER HEIGHT CONTROL

NOTE:

If your CA25 Combine Adapter is not equipped to work with a specific combine model, you will need to install the appropriate combine completion package. Completion packages come with instructions for installing the AHHC sensor on the combine adapter.

Refer to the following instructions for your specific combine model:

- [5.1.2 Challenger 6 and 7 Series Combines, page 130](#)
- [5.1.3 Case IH 2300/2500 and 5088/6088/7088 Combines, page 138](#)
- [5.1.4 Case IH 5130/6130/7130, 7010/8010, 7120/8120/9120, and 7230/8230/9230 Combines, page 141](#)
- [5.1.5 Gleaner R62/R72 Combines, page 150](#)
- [5.1.6 Gleaner R65/R75 Combines, page 153](#)
- [5.1.7 John Deere 50 Series Combines, page 163](#)
- [5.1.8 John Deere 60 Series Combines, page 167](#)
- [5.1.9 John Deere 70 Series Combines, page 174](#)
- [5.1.10 John Deere S Series Combines, page 180](#)
- [5.1.11 Lexion 500 Series Combines, page 187](#)
- [5.1.12 Lexion 700 Series Combines, page 194](#)
- [5.1.13 New Holland Combines, page 200](#)

SETTING UP AUTO HEADER HEIGHT CONTROL

5.1.1 Auto Header Height Control 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 5.1 Combine Voltage Limits

Combine	Low Voltage Limit	High Voltage Limit	Range (Difference between High and Low Limits)
Challenger, Gleaner A, Massey Ferguson	0.5 V	4.5 V	2.5 V
Case IH 5088/6088/7088, 5130/6130/7130, 7010/8010, 7120/8120/9120, and 7230/8230/9230	0.5 V	4.5 V	2.5 V
Case IH 2300/2500	2.8 V	7.2 V	4.0 V
Gleaner R and S Series	0.5 V	4.5 V	2.5 V
John Deere 50, 60, 70, and S Series	0.5 V	4.5 V	2.5 V
Lexion 500/600/700 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 23/2588 series, Lexion 500/700 series). For these models, check output voltage manually—refer to [Manually Checking Voltage Range, page 127](#).

Manually Checking Voltage Range

You can confirm the output voltage range of the Auto Header Height Control (AHHC) sensor at the float indicator box; however, some combines will allow you to check the voltage range from inside the cab. Refer to your either combine operator's manual or the AHHC instructions for your combine model in this document.

To check the output range of the Auto Header Height Control (AHHC), follow these steps:

1. Position the header 6 in. (150 mm) above the ground, and unlock the adapter float.

SETTING UP AUTO HEADER HEIGHT CONTROL

2. Check that float lock linkage is on down stops (washer [A] and nut [B] cannot be moved) at both locations.

NOTE:

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

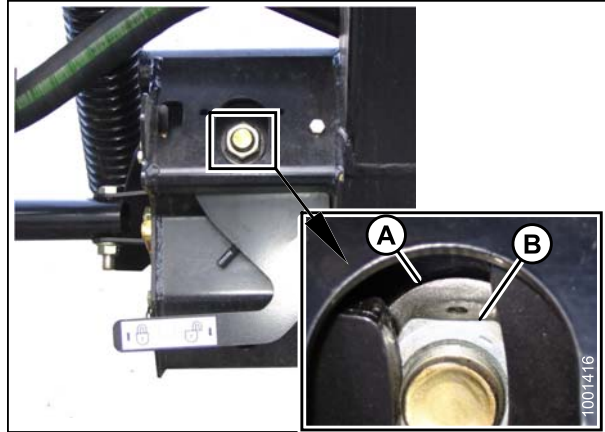


Figure 5.2: Float Lock

3. Adjust the cable take-up bracket (B) (if necessary) until the pointer (A) on the float indicator is on '0'.

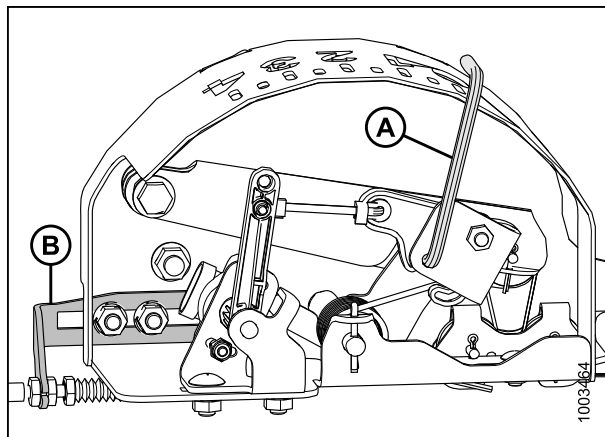


Figure 5.3: Float Indicator Box (Most Common 5 Volt AHHC Sensor Assembly Shown)

4. Using a voltmeter (A), measure the voltage between the ground (Pin 2) and signal (Pin 3) wires at the AHHC sensor in the float indicator box. It should be at the high voltage limit for the combine—refer to [Table 5.1 Combine Voltage Limits, page 127](#).

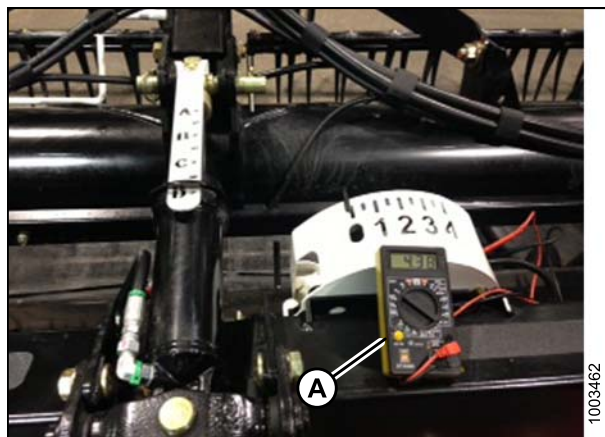


Figure 5.4: Voltmeter between Ground and Signal Wires

SETTING UP AUTO HEADER HEIGHT CONTROL

5. Fully lower the combine feeder house, and float the header up off the down stops (float indicator should be at '4', and the adapter 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.

6. Using a voltmeter (A), measure the voltage between the ground and signal wires at the AHHC sensor in the float indicator box. It should be at the low voltage limit for the combine—refer to Table [5.1 Combine Voltage Limits, page 127](#).
7. Adjust the voltage limits (refer to [Adjusting Voltage Limits, page 129](#)) 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 Table [5.1 Combine Voltage Limits, page 127](#)).

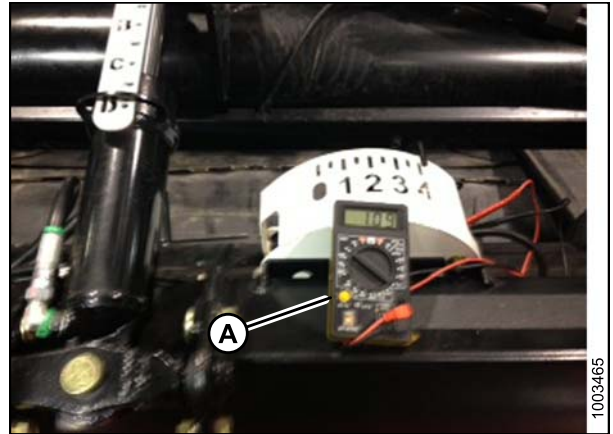


Figure 5.5: Voltmeter between Ground and Signal Wires

Adjusting Voltage Limits

NOTE:

The Auto Header Height Control (AHHC) sensor assemblies used for Lexion and some New Holland combines are slightly different from the sensor assemblies used for other combine models—all three assemblies are illustrated in this procedure.

1. Complete the following steps to adjust the high voltage limit:
 - a. Extend guard angle fully; the header angle indicator should be at 'D'.
 - b. Position header 6–10 in. above the ground; the float indicator should be at '0'.
 - c. Loosen sensor mounting bolts (A).
 - d. Rotate potentiometer (B) clockwise to increase the low voltage limit, and counterclockwise to decrease it.
 - e. Tighten sensor mounting bolts (A).

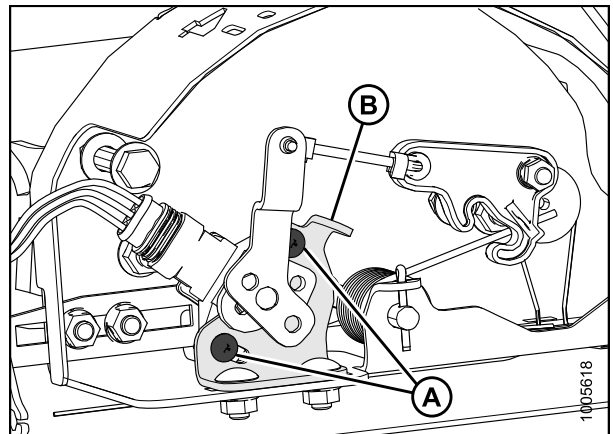


Figure 5.6: AHHC Sensor Assembly for Use with Lexion Combines

SETTING UP AUTO HEADER HEIGHT CONTROL

2. Complete the following steps to adjust the low voltage limit:
 - a. Extend guard angle fully; the header angle indicator should be at 'D'.
 - b. Fully lower header on the ground; the float indicator should be at '4'.
 - c. Loosen mounting bolts (A).
 - d. Rotate potentiometer (B) clockwise to increase the low voltage limit, and counterclockwise to decrease it.
 - e. Tighten sensor mounting bolts (A).

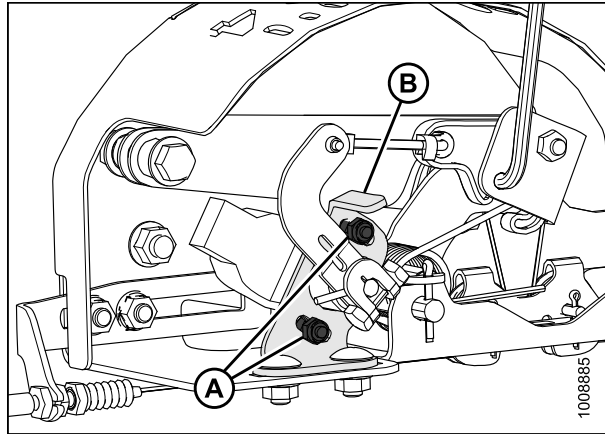


Figure 5.7: 10 Volt AHHC Sensor Assembly for Use with Some New Holland Combines

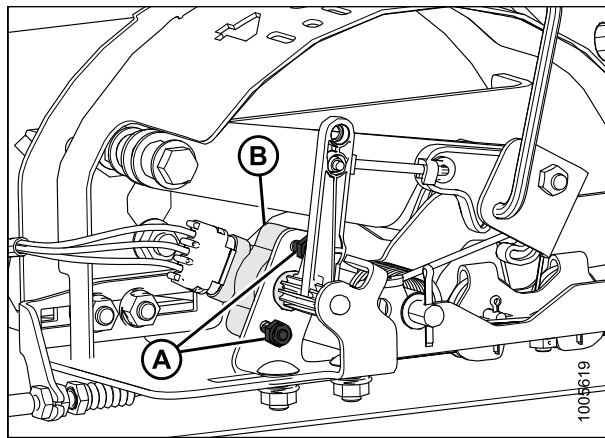


Figure 5.8: Most Common 5 Volt AHHC Sensor Assembly

5.1.2 Challenger 6 and 7 Series Combines

Checking Voltage Range from the Combine Cab (Challenger 6 and 7 Series)

NOTE:

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

To check the sensor's output voltage range from the combine cab, follow these steps:

1. Position the header 6 in. (150 mm) above the ground, and unlock the adapter float.

SETTING UP AUTO HEADER HEIGHT CONTROL

2. Check that float lock linkage is on down stops (washer [A] and nut [B] cannot be moved) at both locations.

NOTE:

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

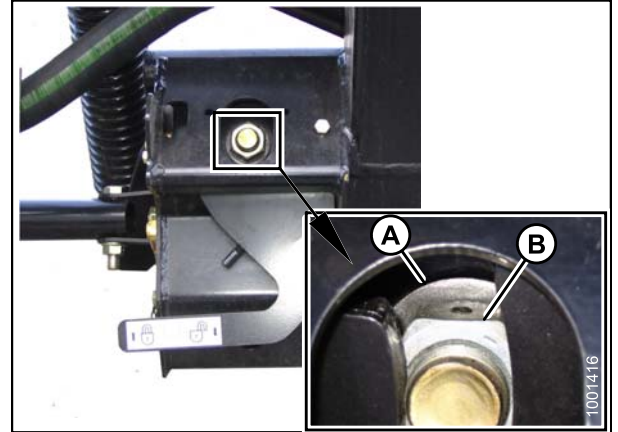


Figure 5.9: Float Lock

3. Adjust the cable take-up bracket (B) (if necessary) until the pointer (A) on the float indicator is on '0'.

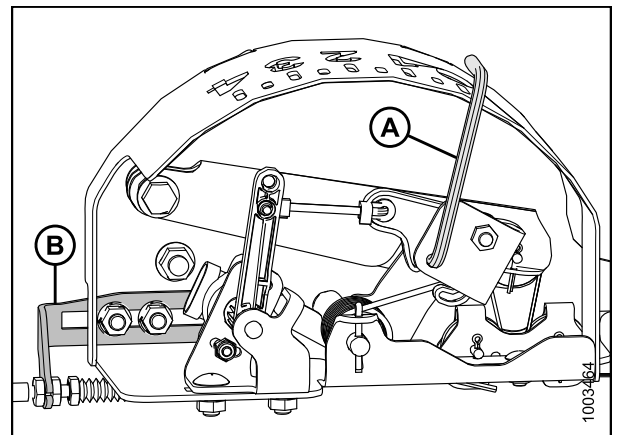


Figure 5.10: Float Indicator Box

4. Go to the FIELD page on the combine monitor, and then press the diagnostics icon. The MISCELLANEOUS page displays.
5. Press the VMM DIAGNOSTIC button (A). The VMM DIAGNOSTIC page displays.

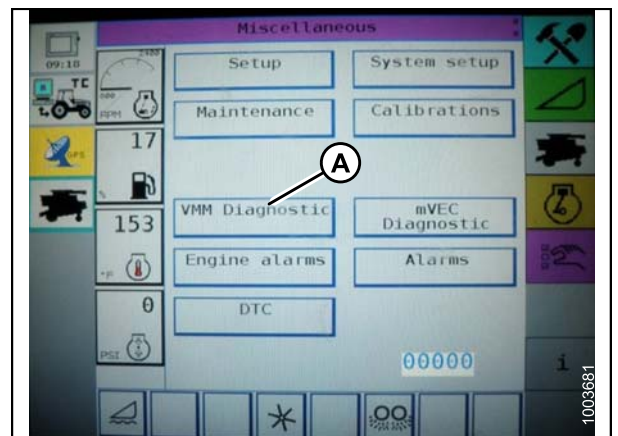


Figure 5.11: Challenger Combine Display

SETTING UP AUTO HEADER HEIGHT CONTROL

- Go to the ANALOG IN tab, 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 screen as HEADER HEIGHT RIGHT POT and HEADER HEIGHT LEFT POT. Both readings should be identical.

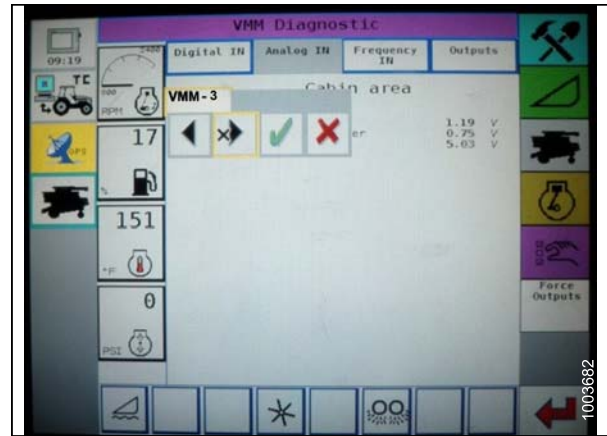


Figure 5.12: Challenger Combine Display

- Fully lower the combine feeder house adapter 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 voltage.
- Raise header so cutterbar is 6 in. (150 mm) off the ground.
- Read voltage.
- Adjust the voltage limits (refer to [Adjusting Voltage Limits, page 129](#)) 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 [Table 5.1 Combine Voltage Limits, page 127](#)).

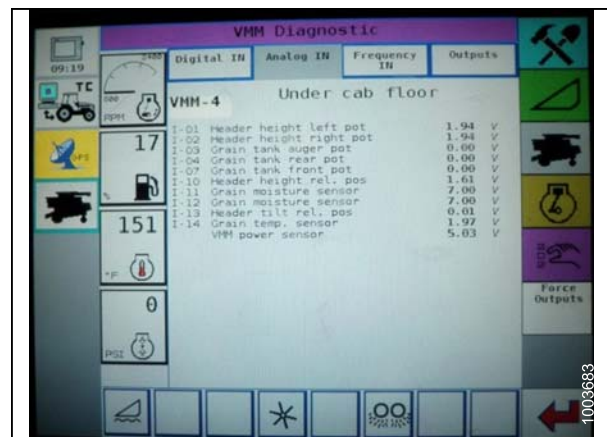


Figure 5.13: Challenger Combine Display

Engaging the Auto Header Height Control (Challenger 6 Series)

NOTE:

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

The following system components are required in order for the Auto Header Height Control (AHHC) to work:

SETTING UP AUTO HEADER HEIGHT CONTROL

- Main module (PCB board) and header driver module (PCB board) mounted in card box in Fuse Panel Module (FP).
- Multi-Function Control Handle operator inputs.
- Operator inputs mounted in the control console module (CC) panel.

NOTE:

In addition to the above components, the electro hydraulic header lift control valve also is an integral part of the system.

Engage the AHHC as follows:

1. Scroll through the header control options on the combine display using the header control switch until the AHHC icon 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.

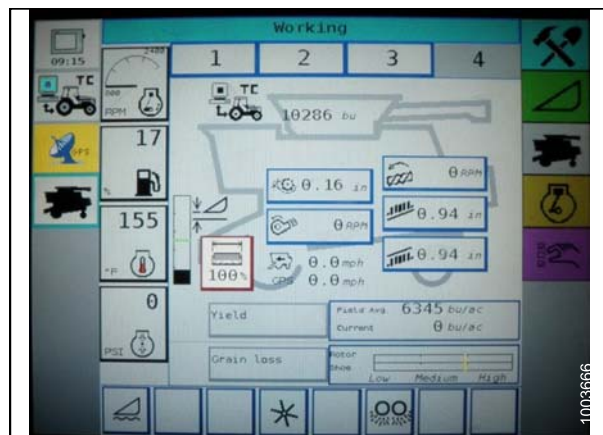


Figure 5.14: Challenger Combine Display

Calibrating the Auto Header Height Control (Challenger 6 Series)

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. Refer to Header Angle in the header operator's manual.

NOTE:

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

To calibrate the AHHC system, follow these steps:

1. Ensure center-link is set to D.
2. On the FIELD page, press the DIAGNOSTICS icon. The MISCELLANEOUS page appears.

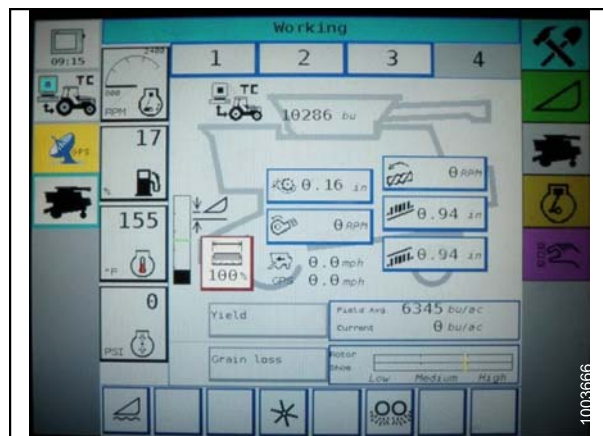


Figure 5.15: Challenger Combine Display

SETTING UP AUTO HEADER HEIGHT CONTROL

3. Press the CALIBRATIONS button. The CALIBRATIONS page appears.

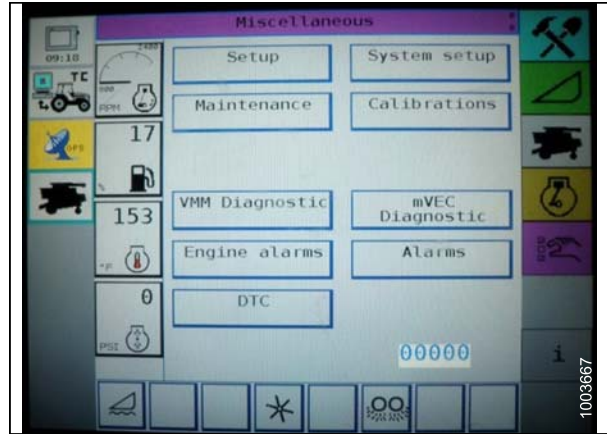


Figure 5.16: Challenger Combine Display

4. Press the HEADER button. The HEADER CALIBRATION page displays a warning.

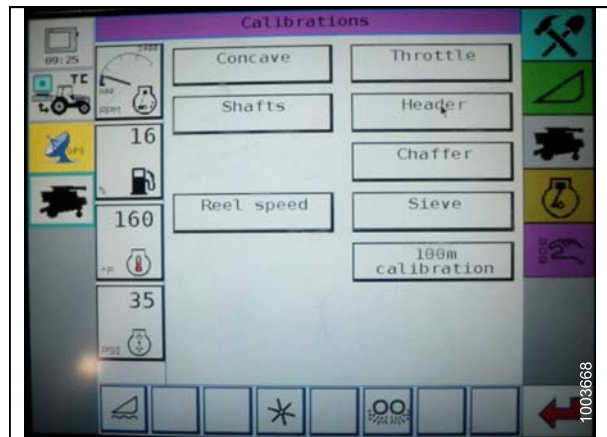


Figure 5.17: Challenger Combine Display

5. Read the warning message, and then press the green check mark button.

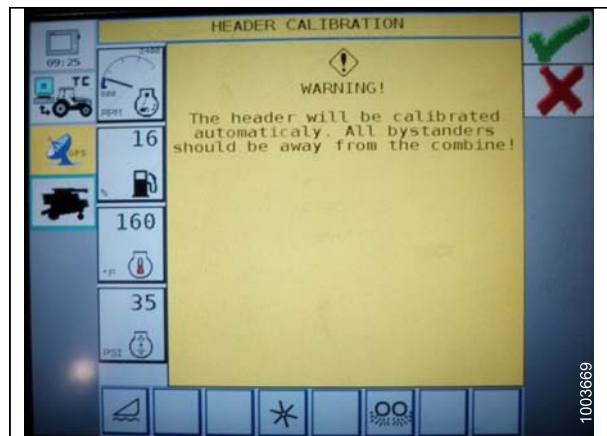


Figure 5.18: Challenger Combine Display

SETTING UP AUTO HEADER HEIGHT CONTROL

6. Follow the on-screen prompts to complete calibration.

NOTE:

The calibration procedure can be cancelled at anytime by pressing the cancel button in the bottom right corner of 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.

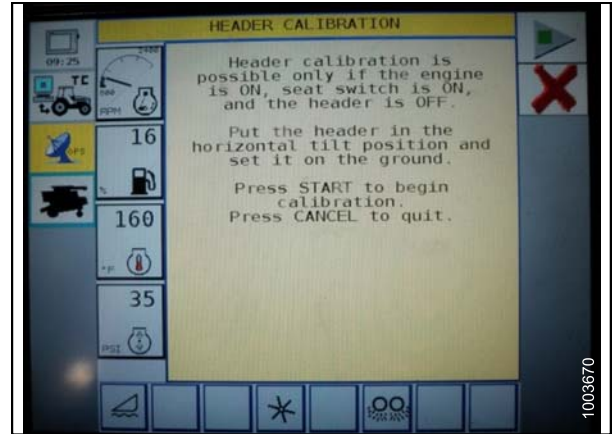


Figure 5.19: Challenger Combine Display

Adjusting the Header Height (Challenger 6 Series)

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.

NOTE:

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

The selected AHHC height is adjusted using the height adjustment knob on the control console. Turning the knob clockwise increases the selected height, and turning the knob counterclockwise decreases the selected height.



Figure 5.20: Height Adjustment Knob on the Combine Control Console

Adjusting the Header Raise/Lower Rate (Challenger 6 Series)

NOTE:

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

SETTING UP AUTO HEADER HEIGHT CONTROL

1. Press the Header icon on the FIELD page. The HEADER page displays.



Figure 5.21: Challenger Combine Display

2. Press HEADER CONTROL (A). The HEADER CONTROL page displays.

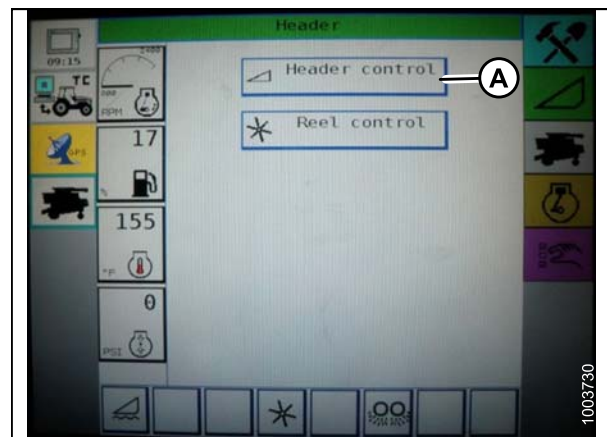


Figure 5.22: Challenger Combine Display

3. Go to the TABLE SETTINGS tab.
4. Press up arrow on MAX UP PWM to increase percentage number and increase raise speed; Press down arrow on MAX UP PWM to decrease percentage number and decrease raise speed.
5. Press up arrow on MAX DOWN PWM to increase percentage number and increase lower speed; Press down arrow on MAX DOWN PWM to decrease percentage number and decrease lower speed.

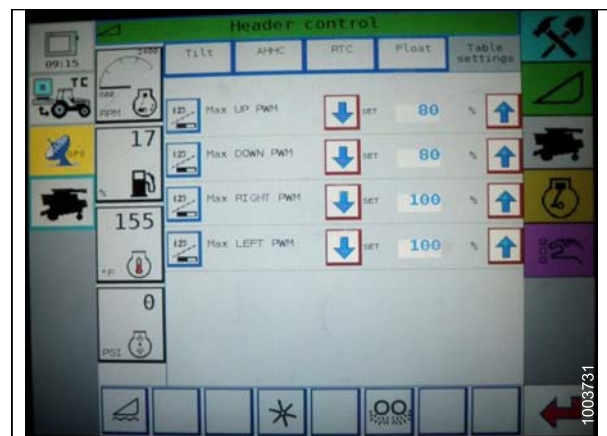


Figure 5.23: Challenger Combine Display

SETTING UP AUTO HEADER HEIGHT CONTROL

Setting the Sensitivity of the Auto Header Height Control (Challenger 6 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 display since this document was published. Refer to the combine operator's manual for updates.

1. Press the HEADER icon on the FIELD page. The HEADER page appears.
2. Press the HEADER CONTROL button (A). The HEADER CONTROL page appears. You can adjust sensitivity on this page using the up and down arrows.

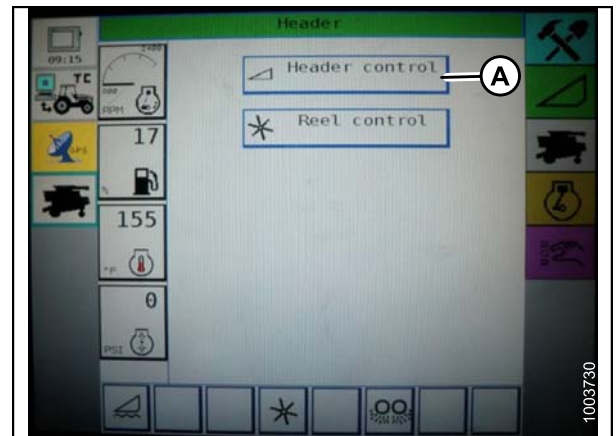


Figure 5.24: Challenger Combine Display

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.

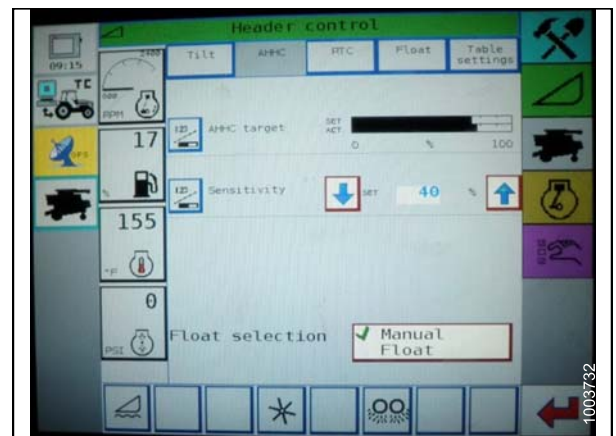


Figure 5.25: Challenger Combine Display

SETTING UP AUTO HEADER HEIGHT CONTROL

5.1.3 Case IH 2300/2500 and 5088/6088/7088 Combines

Engaging the Auto Header Height Control (Case IH 2300)

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. Turn mode select switch (A) to HT.
2. Set the desired header height with position control knob (B). The AHHC will raise and lower the header to maintain this fixed distance from the ground.
3. Turn feeder ON.
4. Push header LOWER switch.

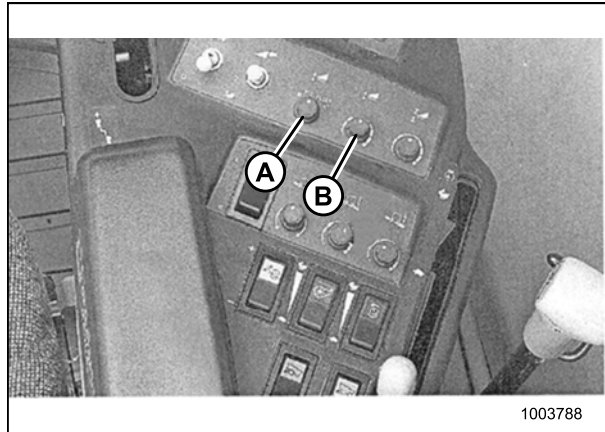


Figure 5.26: Combine Controls

5. Use header raise rate control (A) and header lower rate control (B) as required to adjust the rate at which the header raises or lowers to maintain the desired header height.



Figure 5.27: Combine Controls

6. Use sensitivity control (A) to set the sensitivity to changing ground conditions.

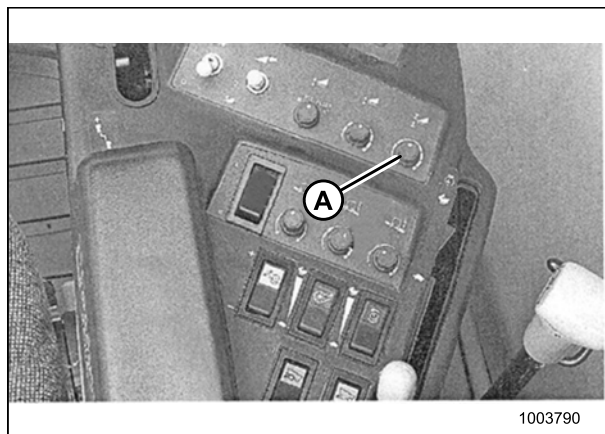


Figure 5.28: Combine Controls

SETTING UP AUTO HEADER HEIGHT CONTROL

Calibrating the Auto Header Height Control (Case IH 2300/2500 and 5088/6088/7088)

For best performance of the Auto Header Height Control (AHHC) system, perform ground calibration with center-link set to D. When calibration is complete, adjust the center-link back to desired header angle. Refer to Header Angle in the header operator's manual for instructions.

NOTE:

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

To calibrate the AHHC system, follow these steps:

1. Ensure center-link is set to D.
2. Set the flotation on the header and adapter package, refer to operator's manual for instructions. Position fore-aft in mid span.
3. Start combine engine, but do NOT have separator or feeder house engaged.
4. Locate header control switch (A) on the right-hand console, and set to "HT" (this is AHHC mode).

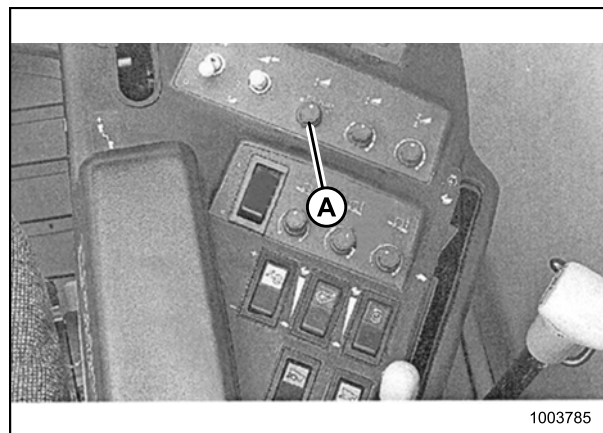


Figure 5.29: Right-Hand Console

5. Press the header lower switch (A) on the joystick lever until the adapter and header are fully lowered. You may need to hold the switch for several seconds.
6. Press the header raise switch (A) on the joystick lever. 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 float was set heavier to complete the ground calibration procedure, adjust to recommended operating float after the calibration is complete.

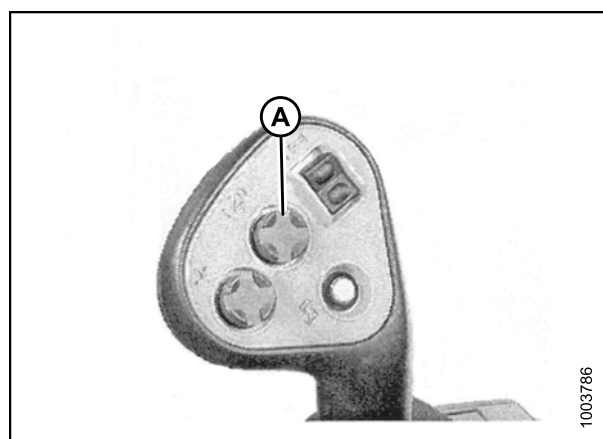


Figure 5.30: Joystick Lever (Case IH 2300/2500)

SETTING UP AUTO HEADER HEIGHT CONTROL

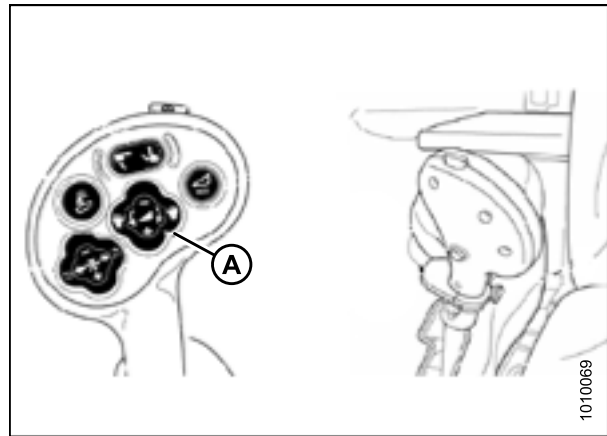


Figure 5.31: Joystick Lever (Case IH 5088/6088/7088)

Setting the Sensitivity of the Auto Header Height (Case IH 2300/2500 and 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 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 display since this document was published. Refer to the combine operator's manual for updates.

1. Use the HEADER SETTINGS key (M) to display the HEADER SENSITIVITY CHANGE SCREEN.
2. Use the UP or DOWN keys (E and H) 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 the HEADER SETTINGS key (M) to highlight the next changeable item.
4. Use the 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 five seconds.

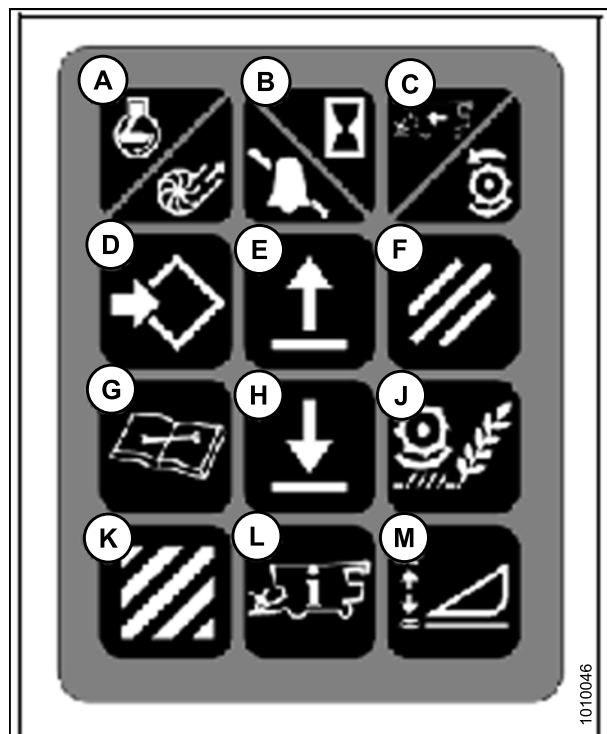


Figure 5.32: Combine Controls

SETTING UP AUTO HEADER HEIGHT CONTROL

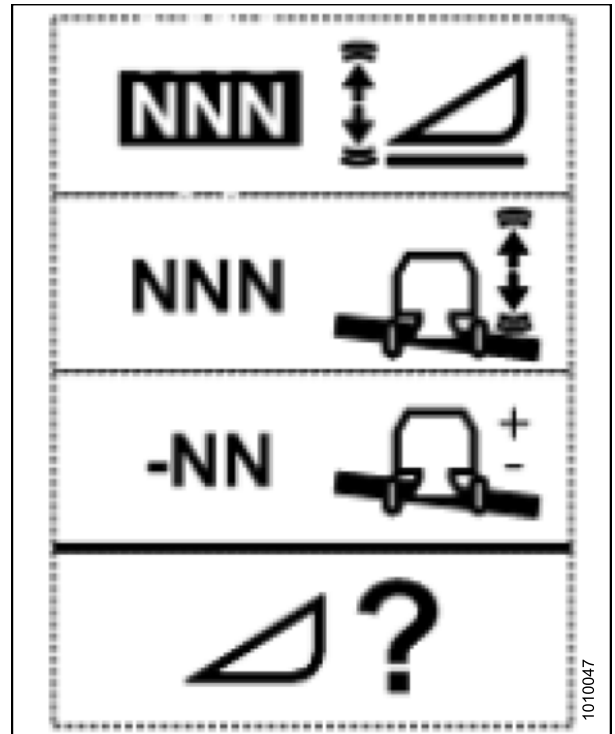


Figure 5.33: Height Sensitivity Change Screen

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

Checking Voltage Range from the Combine Cab (Case 8010)

NOTE:

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

To check the sensor output voltage range from the combine cab for Universal Display, follow these steps:

1. Position the header 6 in. (150 mm) above the ground, and unlock the adapter float.
2. Check that float lock linkage is on down stops (washer [A] and nut [B] cannot be moved) at both locations.

NOTE:

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

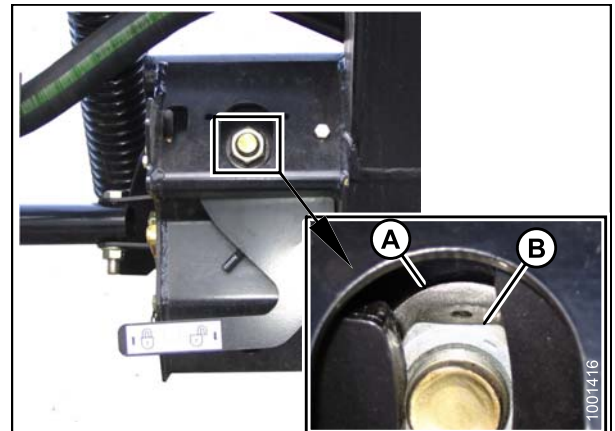


Figure 5.34: Float Lock

SETTING UP AUTO HEADER HEIGHT CONTROL

- Adjust the cable take-up bracket (B) (if necessary) until the pointer (A) on the float indicator is on '0'.

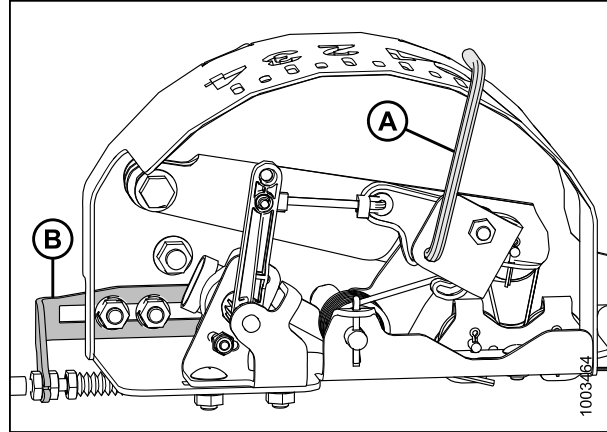


Figure 5.35: Float Indicator Box

- Ensure header float is unlocked.
- Select DIAG (A) on the Universal display MAIN screen. The DIAG screen opens.

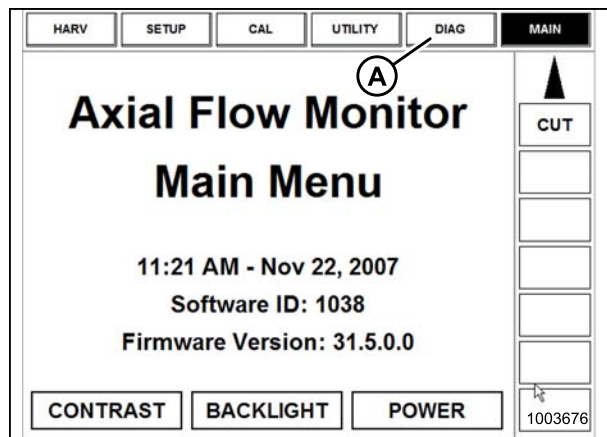


Figure 5.36: Case 8010 Combine Display

- Select SUB SYSTEM (A). The SUB SYSTEM window opens.

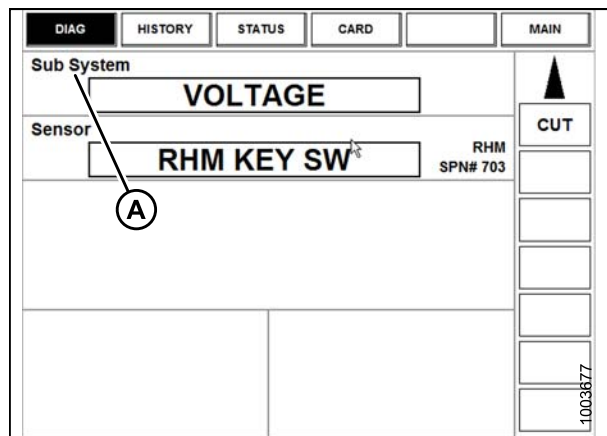


Figure 5.37: Case 8010 Combine Display

SETTING UP AUTO HEADER HEIGHT CONTROL

7. Select HDR HEIGHT/TILT (A). The SENSOR window opens.

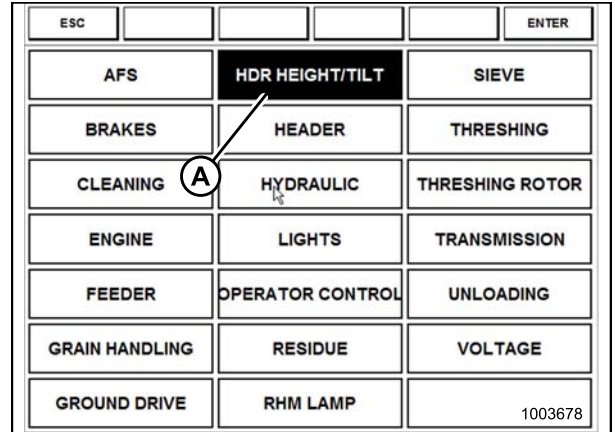


Figure 5.38: Case 8010 Combine Display

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

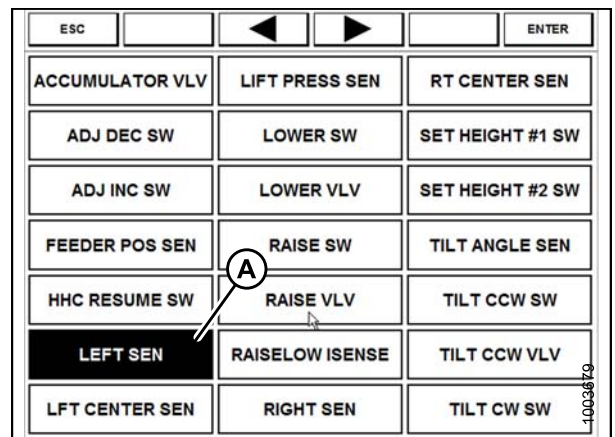


Figure 5.39: Case 8010 Combine Display

9. Adjust the voltage limits (refer to [Adjusting Voltage Limits, page 129](#)) 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 [Table 5.1 Combine Voltage Limits, page 127](#)).



Figure 5.40: Case 8010 Combine Display

SETTING UP AUTO HEADER HEIGHT CONTROL

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

NOTE:

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

To check the sensor output voltage range from the combine cab for Pro 600 Display, follow these steps:

1. Position the header 6 in. (150 mm) above the ground, and unlock the adapter float.
2. Check that float lock linkage is on down stops (washer [A] and nut [B] cannot be moved) at both locations.

NOTE:

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

3. Adjust the cable take-up bracket (B) (if necessary) until the pointer (A) on the float indicator is on '0'.

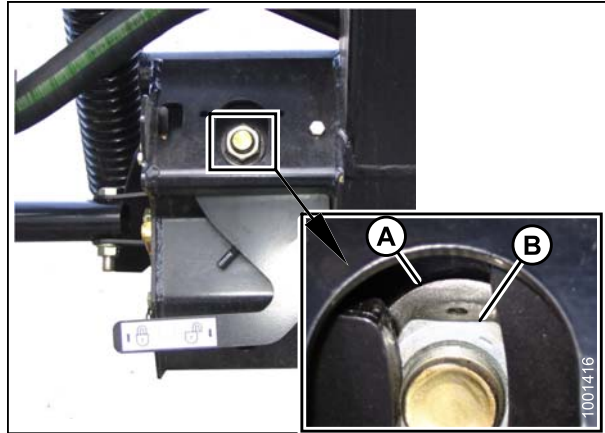


Figure 5.41: Float Lock

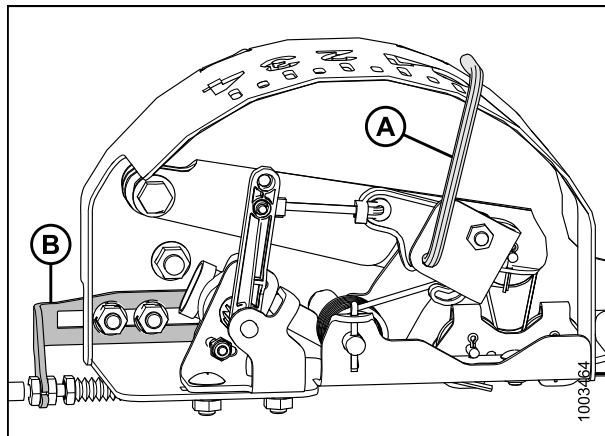


Figure 5.42: Float Indicator Box

SETTING UP AUTO HEADER HEIGHT CONTROL

4. Ensure header float is unlocked.
5. Select DIAGNOSTICS (A) on the MAIN screen. The DIAGNOSTICS screen opens.
6. Select SETTINGS. The SETTINGS screen displays.

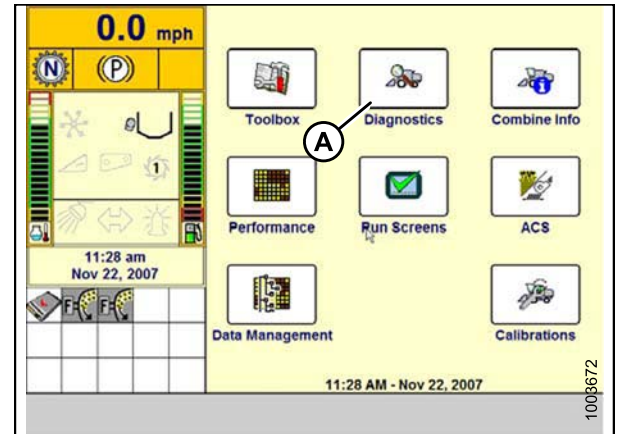


Figure 5.43: Case IH Combine Display

7. Select the GROUP arrow (A). The GROUP window opens.

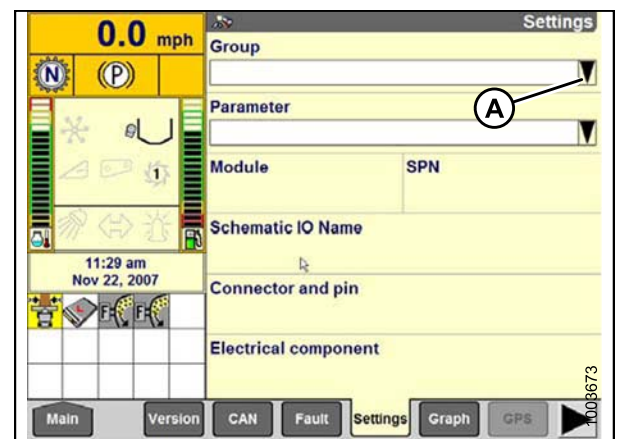


Figure 5.44: Case IH Combine Display

8. Select HEADER HEIGHT/TILT (A). The PARAMETER window opens.

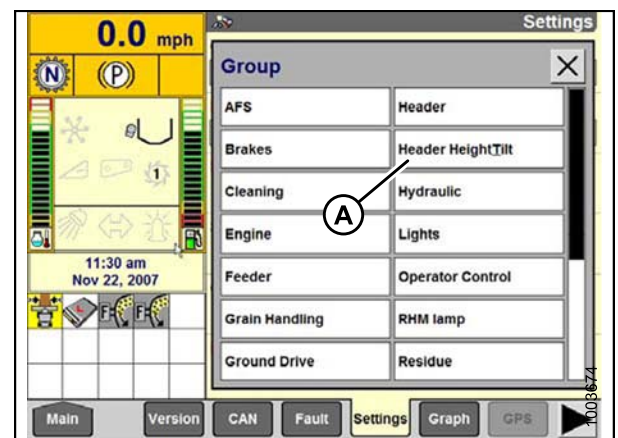


Figure 5.45: Case IH Combine Display

SETTING UP AUTO HEADER HEIGHT CONTROL

9. Select LEFT HEADER HEIGHT SEN (A), and then select the GRAPH button (B). The exact voltage is displayed at top of screen. Raise and lower the header to see the full range of voltage readings.
10. Adjust the voltage limits (refer to [Adjusting Voltage Limits, page 129](#)) 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 Table [5.1 Combine Voltage Limits, page 127](#)).

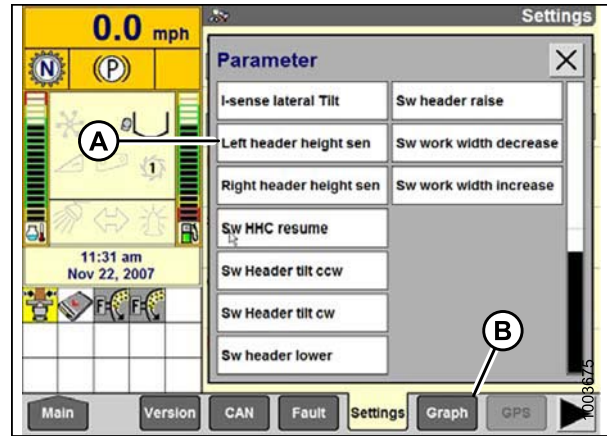


Figure 5.46: Case IH Combine Display

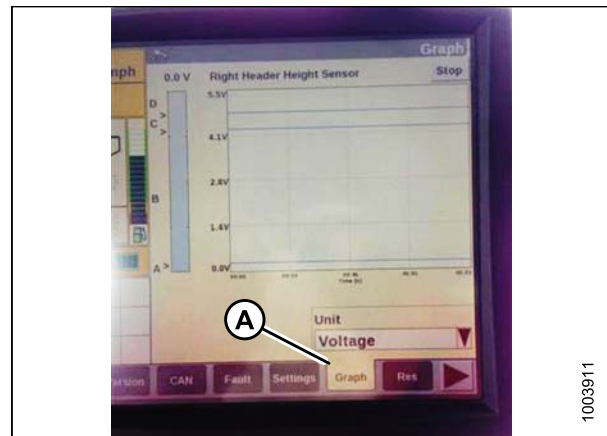


Figure 5.47: Case IH Combine Display

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

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. Refer to Header Angle in the header operator's manual for instructions.

NOTE:

This procedure applies to combines with a software version below 28.00. For instructions on calibrating the AHHC for combines with software version 28.00 or above, refer to [Calibrating the Auto Header Height Control System \(Case Combines with Version 28.00 Software\), page 148](#).

NOTE:

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

To calibrate the AHHC, follow these steps:

SETTING UP AUTO HEADER HEIGHT CONTROL

1. Ensure center-link is set to D.
2. Ensure all header and adapter electrical and hydraulic connections are made.
3. Select TOOLBOX on the MAIN screen, and then select HEADER.
4. Set appropriate HEADER STYLE.

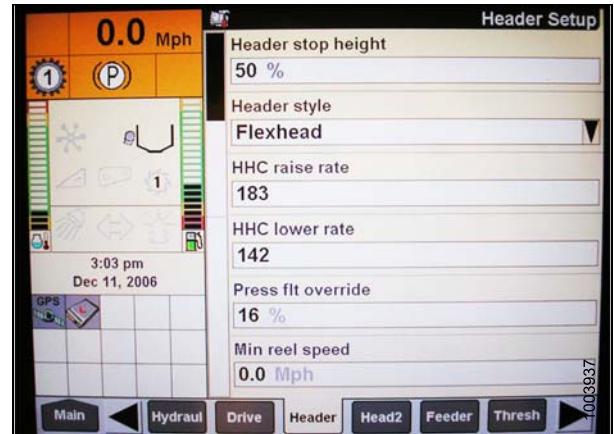


Figure 5.48: Case IH Combine Display

5. Set AUTO REEL SPEED SLOPE.
6. Set HEADER PRESSURE FLOAT to YES if equipped, and ensure REEL DRIVE is HYDRAULIC.

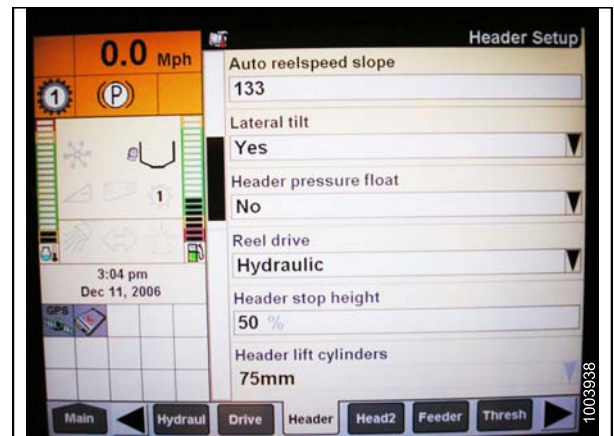


Figure 5.49: Case IH Combine Display

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

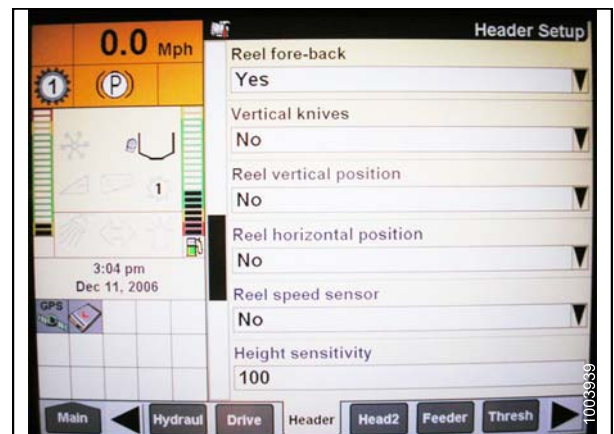


Figure 5.50: Case IH Combine Display

SETTING UP AUTO HEADER HEIGHT CONTROL

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

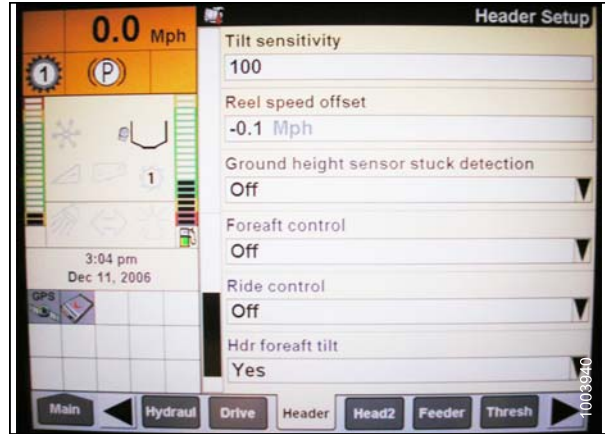


Figure 5.51: Case IH Combine Display

10. Press HEAD2 at bottom of screen.
11. Ensure HEADER TYPE is DRAPER.

NOTE:

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

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

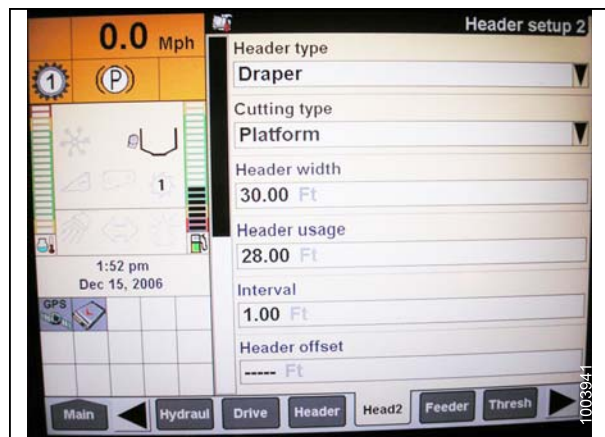


Figure 5.52: Case IH Combine Display

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

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. Refer to Header Angle in the header operator's manual for instructions.

NOTE:

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

1. Ensure center-link is set to D.

SETTING UP AUTO HEADER HEIGHT CONTROL

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



Figure 5.53: Combine Display

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

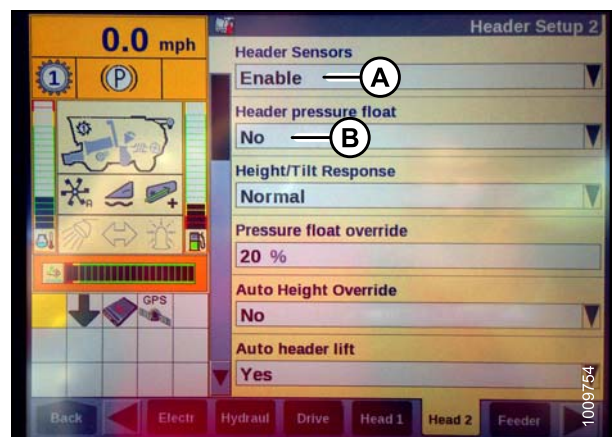


Figure 5.54: Combine Display

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

NOTE:

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

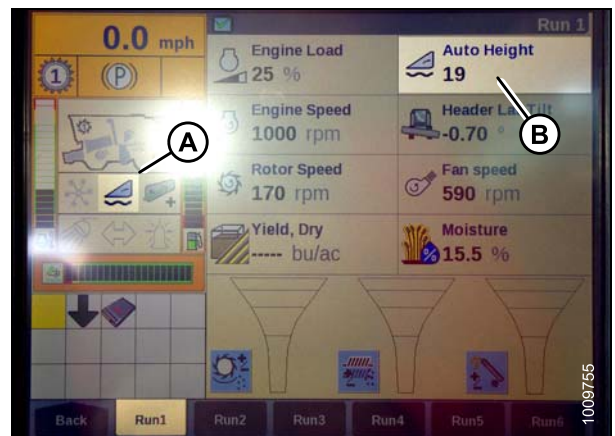


Figure 5.55: Combine Display

SETTING UP AUTO HEADER HEIGHT CONTROL

5.1.5 Gleaner R62/R72 Combines

Determining System Requirements (Gleaner R62/R72)

NOTE:

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

The following system components are required in order for the Auto Header Height Control (AHHC) system to work:

- Main module (PCB board) and header driver module (PCB board) mounted in card box in Fuse Panel Module (FP).
- Multi-Function Control Handle operator inputs.
- Operator inputs mounted in the control console module (CC) panel.

In addition to the components listed above, the electro hydraulic header lift control valve is also an integral part of the system.

Calibrating the Auto Header Height Control (Gleaner R62/R72)

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. Refer to Header Angle in the header operator's manual for instructions.

NOTE:

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

To calibrate the AHHC, follow these steps:

1. Ensure center-link is set to D.
2. Start the combine engine, and press and hold the hidden C1 button (A) until the LED light (B) flashes briefly.
3. Lower the feeder house as far as it will go.
4. Press and hold the hidden L2 button (C) until the LED light (B) flashes briefly. The AHHC system is now calibrated.

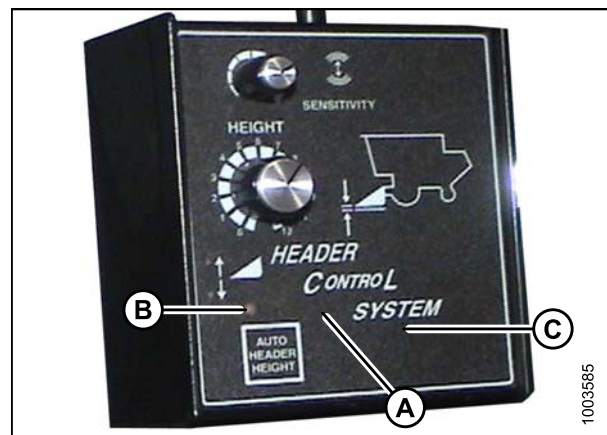


Figure 5.56: Combine Header Control System

Setting the Sensitivity of the Auto Header Height Control (Gleaner R62/R72 Series)

NOTE:

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

SETTING UP AUTO HEADER HEIGHT CONTROL

1. Engage the Main Threshing Clutch (A) and Header Clutch (B).

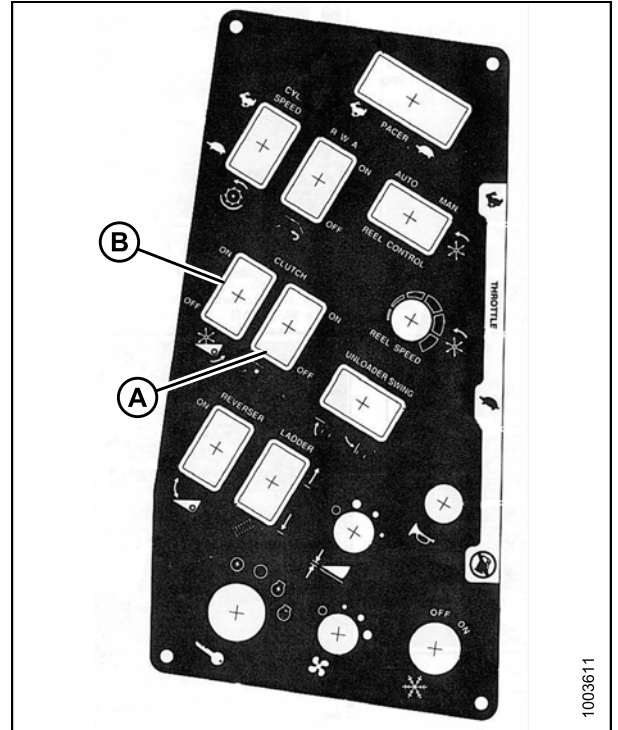


Figure 5.57: Combine Control Console

2. Speed the throttle (A) to over 2000 rpm.

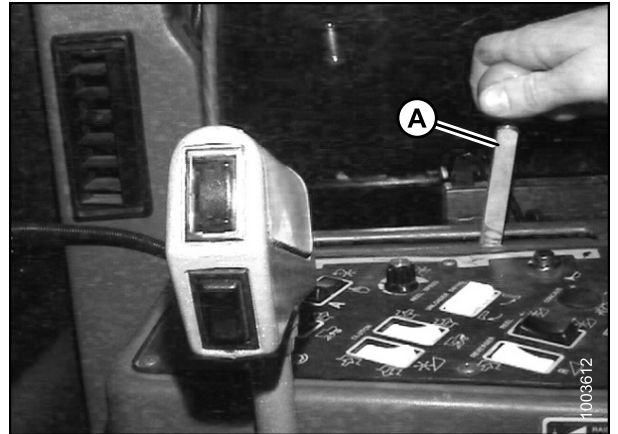


Figure 5.58: Throttle

SETTING UP AUTO HEADER HEIGHT CONTROL

3. Push the AUTO HEADER HEIGHT button (A). The LED light (B) should flash continuously indicating that it is in standby mode and waiting for a response from the operator.

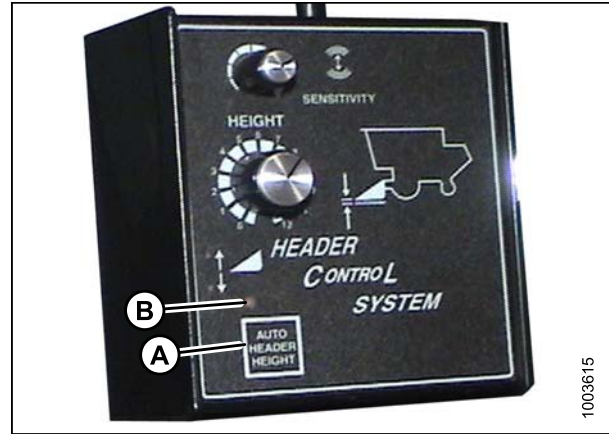


Figure 5.59: Combine Header Control System

4. Briefly press the header down button (A). The header should lower automatically and the LED light should stay illuminated indicating that the auto height system is engaged and working.



Figure 5.60: Header Down Button

5. Turn Height dial (A) to increase or decrease ground pressure.
6. Turn the Sensitivity dial (B) to control how quickly the AHHC reacts to varying ground conditions.

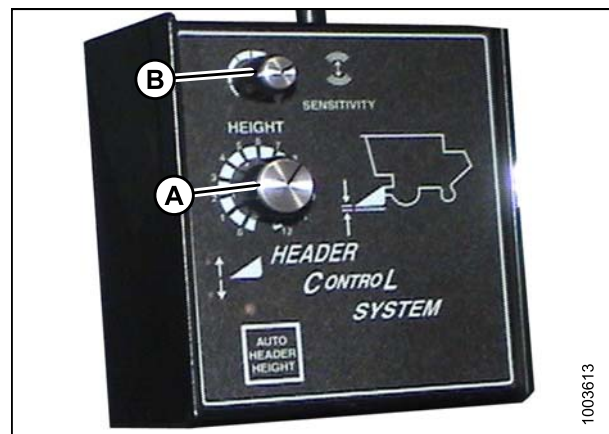


Figure 5.61: Combine Header Control System

SETTING UP AUTO HEADER HEIGHT CONTROL

5.1.6 Gleaner R65/R75 Combines

Checking Voltage Range from the Combine Cab (Gleaner R65/R75)

NOTE:

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

To check the sensors output voltage range from the combine cab, follow these steps:

1. Position the header 6 in. (150 mm) above the ground, and unlock the adapter float.
2. Check that float lock linkage is on down stops (washer [A] and nut [B] cannot be moved) at both locations.

NOTE:

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

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

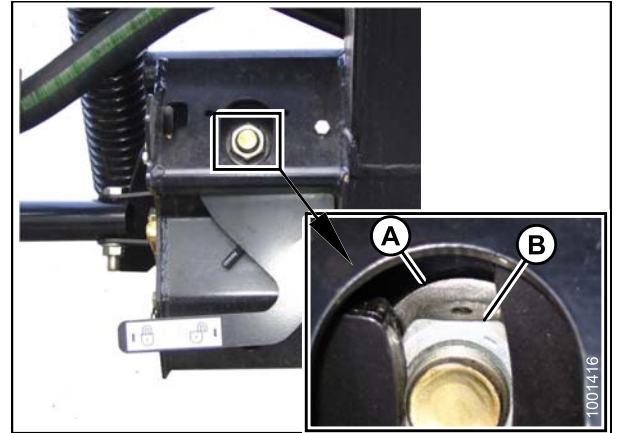


Figure 5.62: Float Lock

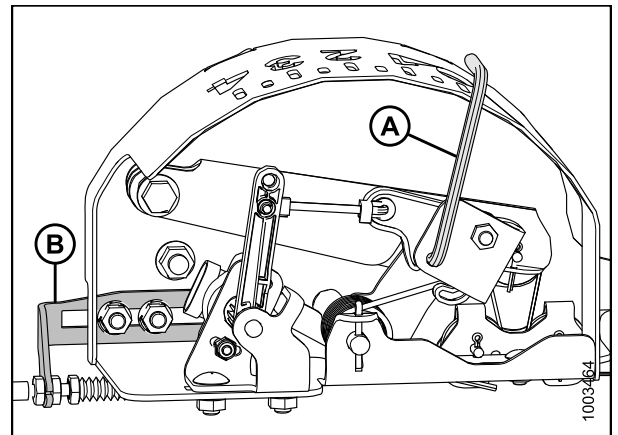


Figure 5.63: Float Indicator Box

SETTING UP AUTO HEADER HEIGHT CONTROL

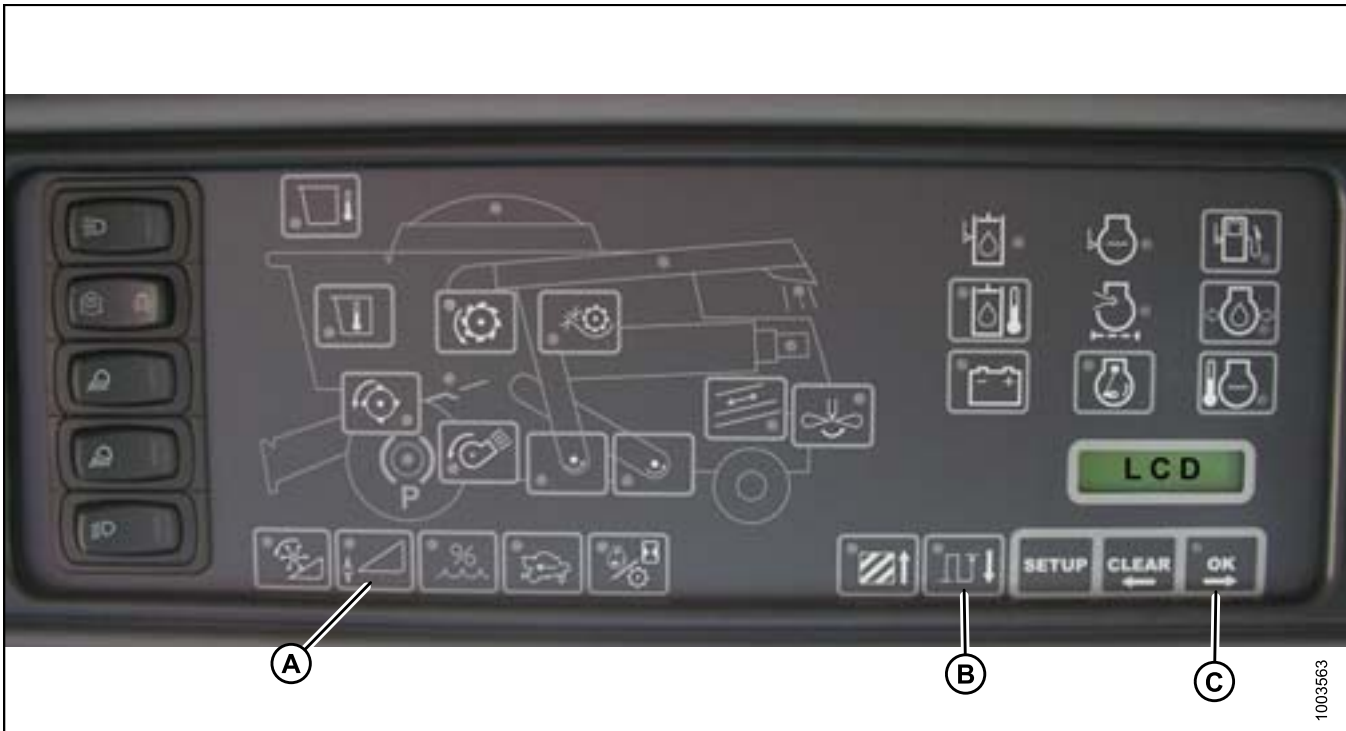


Figure 5.64: Combine Heads Up Display

4. Ensure header float is unlocked.
5. Press and hold button (A) on the heads-up display for three seconds to enter diagnostic mode.
6. Scroll down using button (B) until LEFT is displayed on the LCD screen.
7. Press the OK button (C). The number indicated on the LCD screen is the voltage reading from the sensor of the AHHC. Raise and lower the header to see the full range of voltage readings.

Engaging the Auto Header Height Control (Gleaner R65/R75)

NOTE:

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

The 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 card box in Fuse Panel Module (FP).
- Multi-Function Control Handle operator inputs.
- Operator inputs mounted in the control console module (CC) panel.

NOTE:

In addition to the above components, the electro hydraulic header lift control valve also is an integral part of the system.

SETTING UP AUTO HEADER HEIGHT CONTROL



Figure 5.65: Combine AHHCs

1. Press the AUTO MODE (A) button until the AHHC LED light (B) begins flashing. If the RTC light is flashing, press the AUTO MODE (A) button again until it switches to AHHC.
2. Briefly press button (A) on the control handle. The AHHC light should change from flashing to solid. The header also should drop toward the ground. The AHHC is now engaged and can be adjusted for height and sensitivity.
3. Use controls to adjust height and sensitivity to changing ground conditions such as shallow gullies and field drainage trenches.

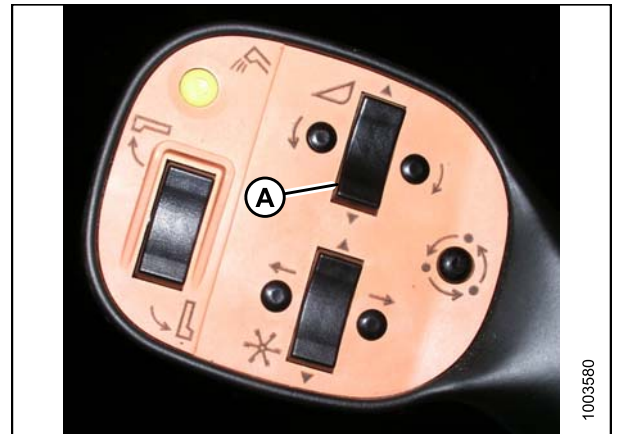


Figure 5.66: Control Handle

SETTING UP AUTO HEADER HEIGHT CONTROL

Calibrating the Auto Header Height Control (Gleaner R65/R75)

Calibration should be done on flat, level ground without the header clutches engaged. Header height and header tilt 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 Auto Header Height Control (AHHC). Refer to combine manual for instructions.

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.

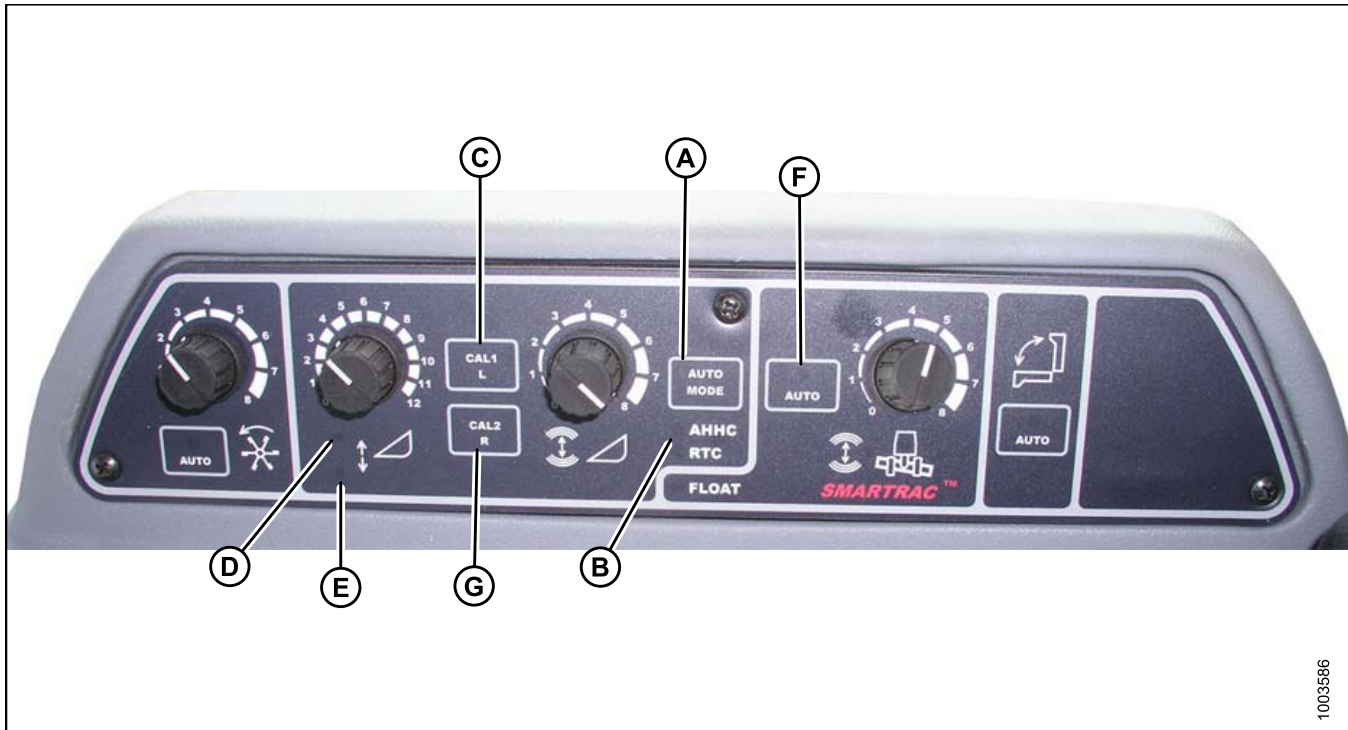


Figure 5.67: Combine AHHCs

A - AUTO MODE Button
D - Raise Header
G - CAL2 Button

B - AHHC Light
E - Lower Header

C - CAL1 Button
F - Auto Mode

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. Refer to Header Angle in the header operator's manual for instructions.

1. Ensure center-link is set to D.
2. Press AUTO MODE button (A) until the AHHC light (B) is illuminated.
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 adapter has separated from header.

SETTING UP AUTO HEADER HEIGHT CONTROL

5. Press CAL2 button (G) until lower header light (E) stops flashing, and release it when the raise header light (D) begins flashing.
6. Raise header to its maximum height (ensure the header is resting on the down-stop pads).
7. Press CAL2 button (G) until the 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 header to the maximum left position.
9. Press CAL2 button (G) until the HEADER TILT LEFT light (not shown) stops flashing, and release 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 to the memory. All lights should stop flashing.

Turning the Accumulator Off (Gleaner R65/R75)

The accumulator will affect the combine's reaction time and greatly inhibit the Auto Header Height Control's performance.

Refer to the combine operator's manual for proper procedure when turning 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 5.68: Combine Accumulator On/Off Switch

A - Accumulator Lever (Off Position)

SETTING UP AUTO HEADER HEIGHT CONTROL

Adjusting the Header Raise/Lower Rate (Gleaner R65/R75)

NOTE:

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

The Auto Header Height Control (AHHC) system's stability is affected by hydraulic flow rates. Ensure that the header raise (A) and header lower (B) adjustable restrictors in the hydraulic valve block are adjusted so it takes approximately six seconds to raise the header from ground level to maximum height (hydraulic cylinders fully extended), and approximately six seconds to lower the header from maximum height to ground level.

NOTE:

Make this adjustment with the hydraulic system at normal operating temperature (130°F [54.4°C]) and the engine running at full throttle.

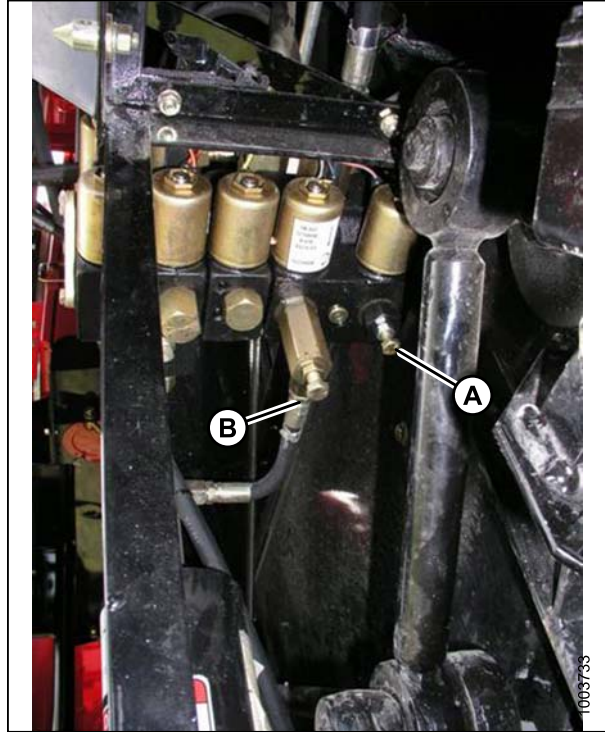


Figure 5.69: Header Raise and Lower Adjustable Restrictors

Adjusting Ground Pressure (Gleaner R65/R75)

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.

SETTING UP AUTO HEADER HEIGHT CONTROL

To adjust header height, ensure the header is in Auto Header Height Control (AHHC) mode. This is indicated by the AUTO MODE LED light (A) displaying a continuous, solid light. The header will lower to the height (ground pressure) corresponding to the position selected with the height control knob (B).

Turn the knob counterclockwise for minimum ground pressure, and clockwise for maximum ground pressure.

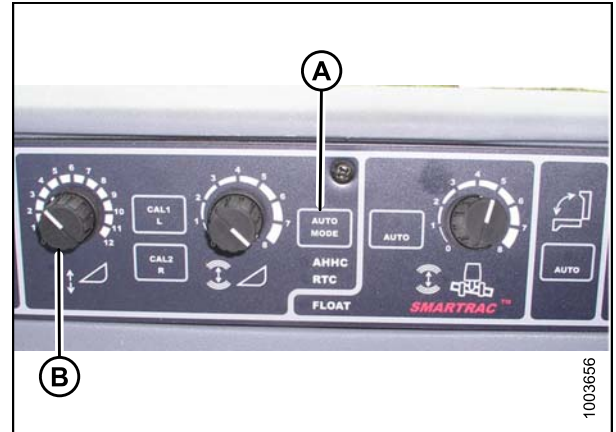


Figure 5.70: AHHC Console

NOTE:

The ideal ground pressure, in most cases, is one number of separation on the AHHC from having the header fully suspended off the ground (B) to just resting on the ground (A).

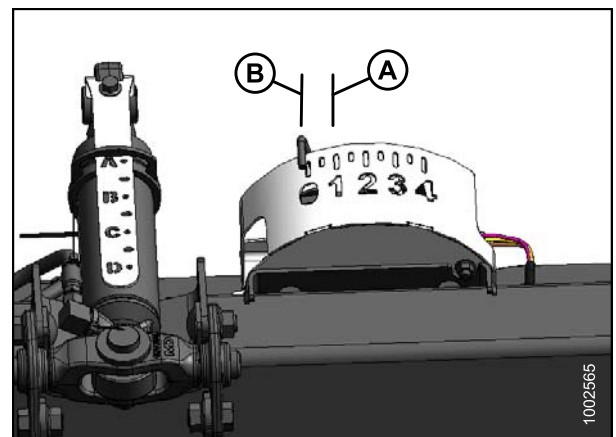


Figure 5.71: Float Indicator Box

Adjusting the Sensitivity of the Auto Header Height Control (Gleaner R65/R75)

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.

SETTING UP AUTO HEADER HEIGHT CONTROL



Figure 5.72: Auto Header Height Control (AHHC) Console

The sensitivity adjustment dial (A) controls the distance the cutterbar must travel up or down before the AHHC reacts and raises or lowers the feeder house.

When the 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 approximately 3/4 in. (19 mm) before the control module signals the hydraulic control valve to raise or lower the header frame.

When the 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 2 in. (51 mm) 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 4 in. (102 mm) of vertical travel before correction is made.

Troubleshooting Alarms and Diagnostic Faults (Gleaner R65/R75)

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.

SETTING UP AUTO HEADER HEIGHT CONTROL

Display type:

Displayed on tachometer (A) as 'XX' or 'XXX'.



Figure 5.73: Tachometer

Displayed on LCD (A) as 'XX in.' or 'XXX cm'.

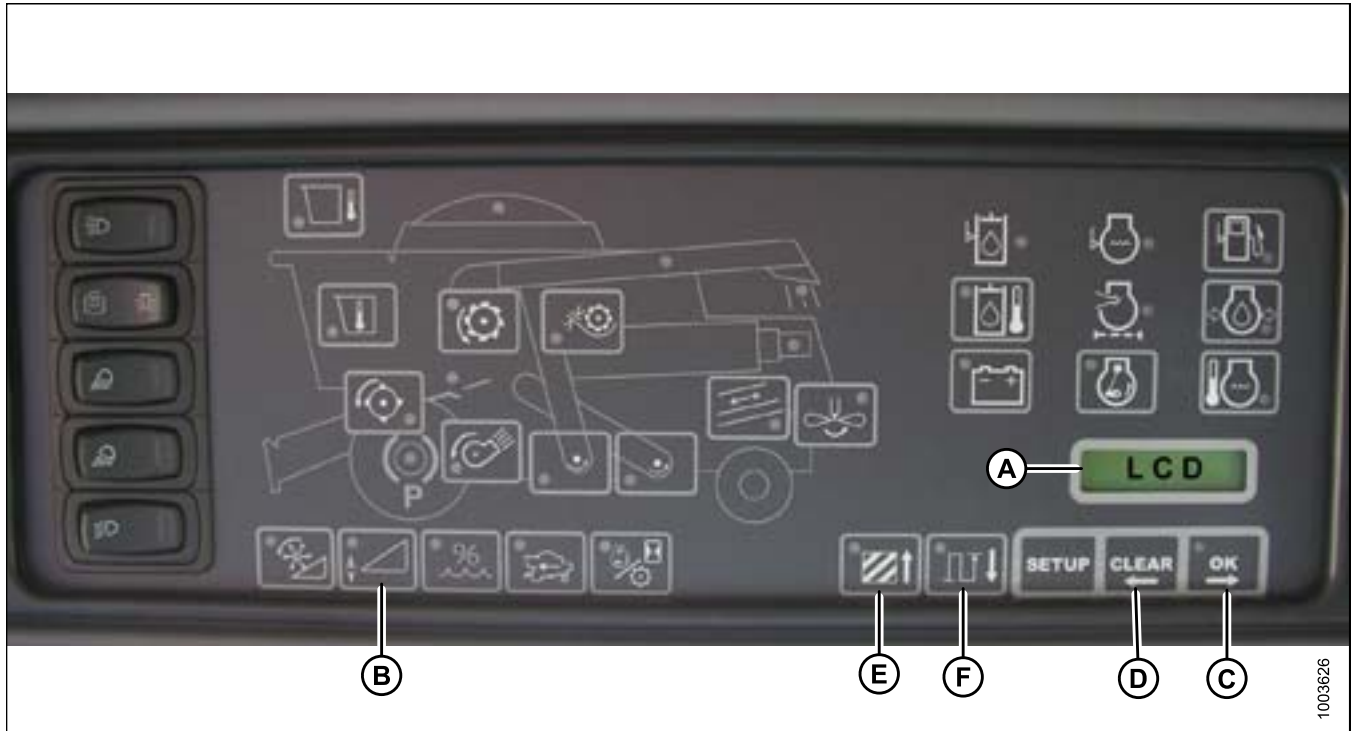


Figure 5.74: Combine Heads Up Display

SETTING UP AUTO HEADER HEIGHT CONTROL

Alarm conditions:

If an error message is received from the fuse panel, an audible alarm sounds. The LCD 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.

The alarm also is noted by the buzzer sounding five times every ten seconds.

NOTE:

If the header height switch (B) is pressed for five seconds or longer, the EIP goes into auto header height/tilt (HTC) control diagnostic mode.

When an alarm condition occurs, switch green LED flashes on and off (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:

Pressing the header height switch (B) for a minimum of five seconds will put the EIP in header diagnostic mode.

The LCD (shown on previous page) will display the message HDR DIAG when the EIP has entered header diagnostic mode.

In this mode, after three seconds, header fault parameter labels are displayed on the EIP LCD.

NOTE:

All the information displayed is read-only.

The OK (C) and CLEAR (D) buttons allow the operator to scroll through the list of parameters.

NOTE:

If there are no active fault codes, the EIP LCD will display NO CODE.

When a parameter is displayed, its label is displayed for three 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 the OK button (C) is pressed before three seconds, the parameter's value will be displayed.

Pressing AREA (E) will cycle through the options.

NOTE:

When LEFT is displayed on the LCD, press the OK button (C), and the Auto Header Height Control (AHHC) voltage will be shown on the display.

Press the DIST button (F) to cycle back through the table.

Press the CLEAR button (D) to exit header diagnostics and return to normal mode.

Refer to [5.1.14 Sensor Operation, page 208](#).

SETTING UP AUTO HEADER HEIGHT CONTROL

5.1.7 John Deere 50 Series Combines

Checking Voltage Range from the Combine Cab (John Deere 50 Series)

NOTE:

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

To check the sensor output voltage range from the combine cab, follow these steps:

1. Position the header 6 in. (150 mm) above the ground, and unlock the adapter float.
2. Check that float lock linkage is on down stops (washer [A] and nut [B] cannot be moved) at both locations.

NOTE:

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

3. Adjust the cable take-up bracket (B) (if necessary) until the pointer (A) on the float indicator is on '0'.

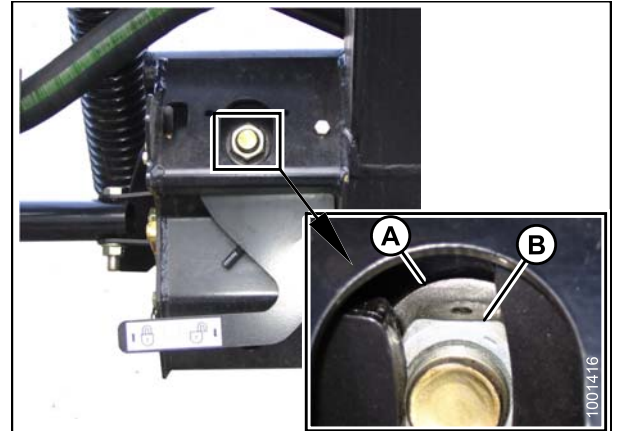


Figure 5.75: Float Lock

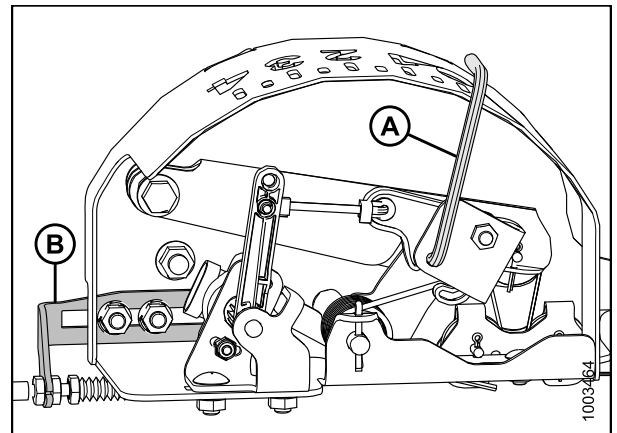


Figure 5.76: Float Indicator Box

SETTING UP AUTO HEADER HEIGHT CONTROL

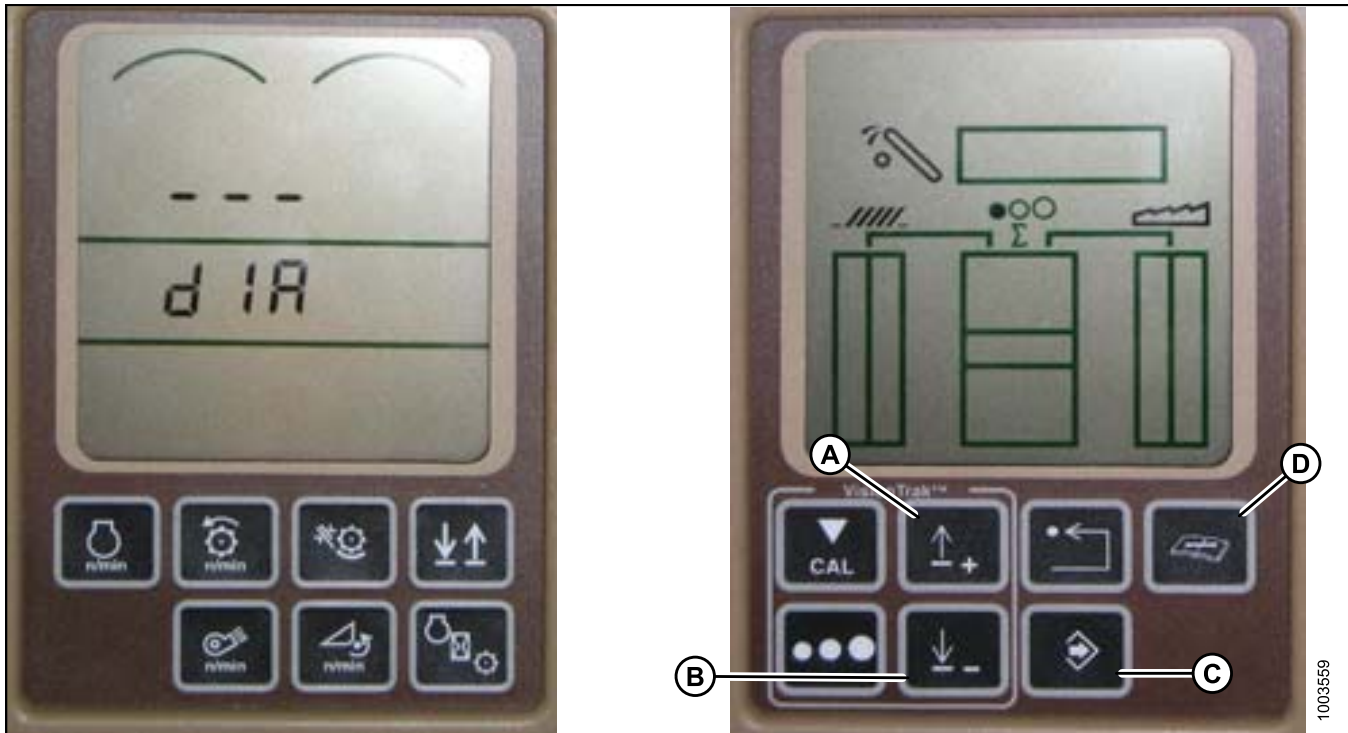


Figure 5.77: Combine HHS Monitor

4. Press the DIAGNOSTIC button (D) on the monitor – DIA appears on the monitor.
5. Press the UP button (A) until EO1 appears on the monitor – this is the header adjustments.
6. Press the ENTER button (C).
7. Press the UP (A) or DOWN button (B) until '24' is displayed on the top portion of the monitor – this is the voltage reading for the sensor.
8. Ensure header float is unlocked.
9. Start the combine, and fully lower feeder house to the ground.

NOTE:

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

10. Check the sensor reading on the monitor.
11. Raise the header so it is just off the ground, and recheck the sensor reading.
12. Adjust the voltage limits (refer to [Adjusting Voltage Limits, page 129](#)) 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 [Table 5.1 Combine Voltage Limits, page 127](#)).

SETTING UP AUTO HEADER HEIGHT CONTROL

Calibrating the Auto Header Height Control (John Deere 50 Series)

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. Refer to Header Angle in the header operator's manual for instructions.

NOTE:

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

1. Ensure center-link is set to D.
2. Rest header on down stops, and unlock adapter float.
3. Put wings in locked position.
4. Start the combine.
5. Press the DIAGNOSTIC button (D) on the monitor—DIA appears on the monitor.
6. Press the CAL button (B) – DIA-CAL appears on the monitor.

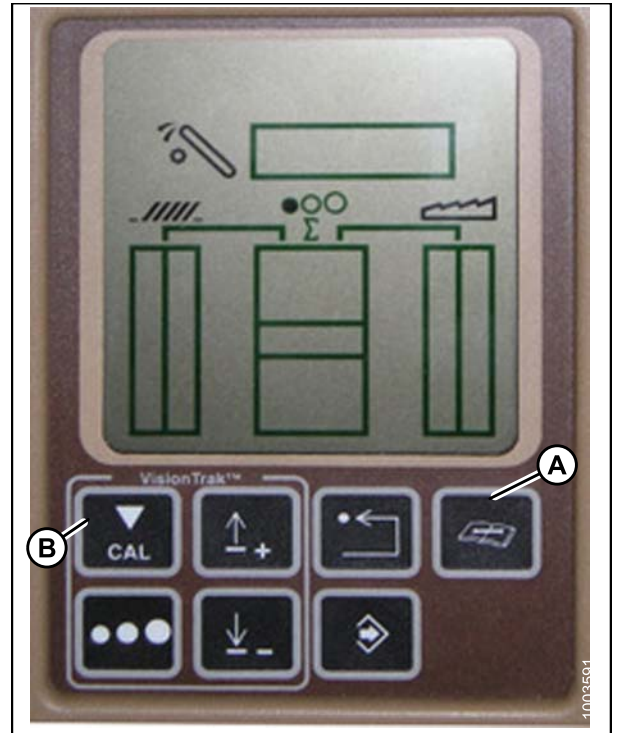


Figure 5.78: Combine Display

SETTING UP AUTO HEADER HEIGHT CONTROL

7. Press the UP or DOWN buttons until `hdr` appears on the monitor.
8. Press the enter button – `HDR H-DN` appears on the monitor.

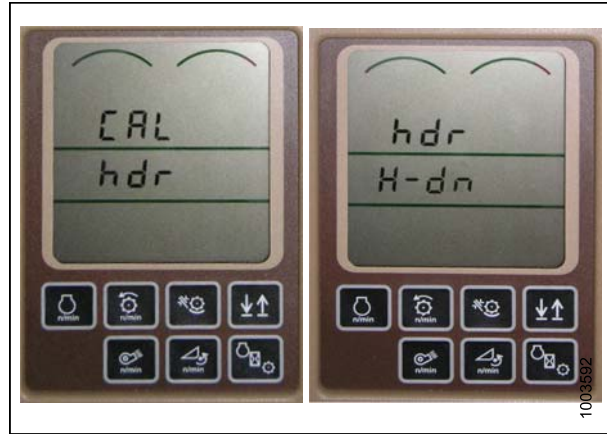


Figure 5.79: Combine Display

9. Fully lower feeder house to the ground.

NOTE:

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

10. Press the CAL button (A) to save the calibration of the header – `HDR H-UP` appears on the monitor.
11. Raise the header three feet off the ground, and press the CAL (A) button – `EOC` appears on the monitor.
12. Press the enter button (B) to save the calibration of the header. Your AHHC is now calibrated.

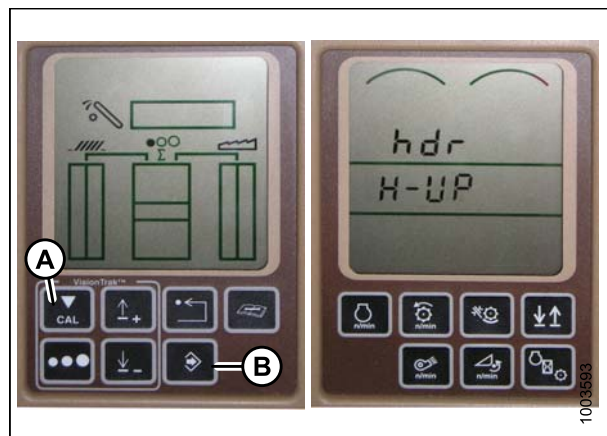


Figure 5.80: Combine Display

13. Adjust the voltage limits (refer to [Adjusting Voltage Limits, page 129](#)) 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 Table [5.1 Combine Voltage Limits, page 127](#)).

NOTE:

After the calibration is complete, specific combine operation settings need to be made to ensure proper field operation.

SETTING UP AUTO HEADER HEIGHT CONTROL

5.1.8 John Deere 60 Series Combines

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

NOTE:

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

To check the sensor output voltage range from the combine cab, follow these steps:

1. Position the header 6 in. (150 mm) above the ground, and unlock the adapter float.
2. Check that float lock linkage is on down stops (washer [A] and nut [B] cannot be moved) at both locations.

NOTE:

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

3. Adjust the cable take-up bracket (B) (if necessary) until the pointer (A) on the float indicator is on '0'.

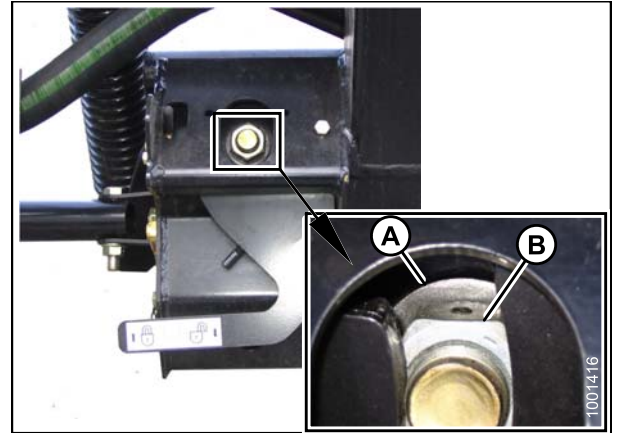


Figure 5.81: Float Lock

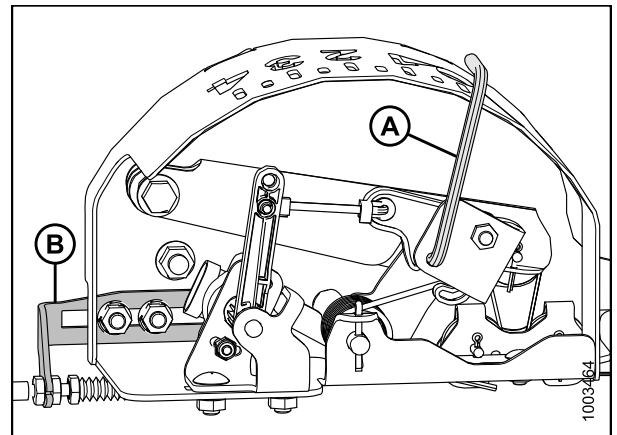


Figure 5.82: Float Indicator Box

SETTING UP AUTO HEADER HEIGHT CONTROL

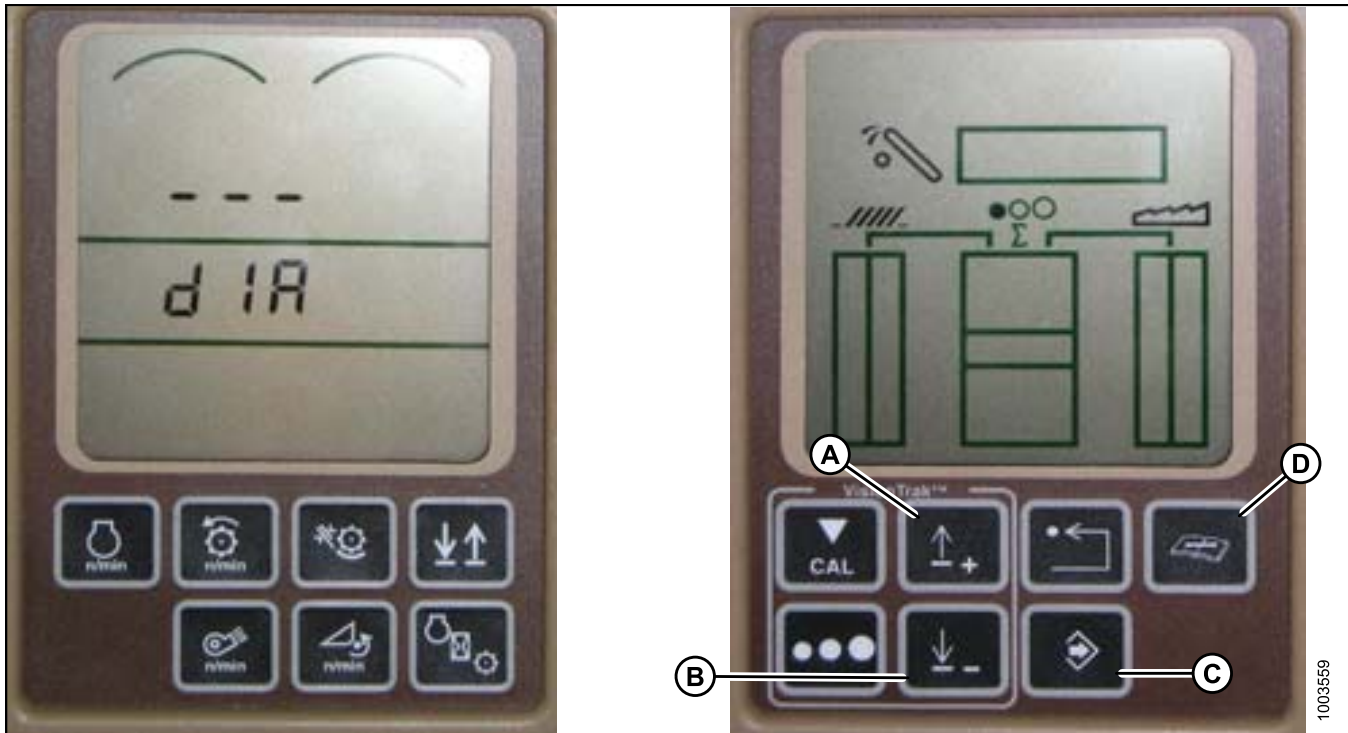


Figure 5.83: Combine HHS Monitor

4. Press the DIAGNOSTIC button (D) on the monitor – DIA appears on the monitor.
5. Press the UP button (A) until EO1 appears on the monitor – this is the header adjustments.
6. Press the ENTER button (C).
7. Press the UP (A) or DOWN button (B) until '24' is displayed on the top portion of the monitor – this is the voltage reading for the sensor.
8. Ensure header float is unlocked.
9. Start the combine, and fully lower feeder house to the ground.

NOTE:

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

10. Check the sensor reading on the monitor.
11. Raise the header so it is just off the ground, and recheck the sensor reading.
12. Adjust the voltage limits (refer to [Adjusting Voltage Limits, page 129](#)) 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 [Table 5.1 Combine Voltage Limits, page 127](#)).

SETTING UP AUTO HEADER HEIGHT CONTROL

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

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. Refer to Header Angle in the header operator's manual for instructions.

NOTE:

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

1. Ensure center-link is set to D.
2. Rest header on down stops, and unlock adapter float.
3. Put wings in locked position.
4. Start the combine.
5. Press the DIAGNOSTIC button (A) on the monitor. DIA appears on the monitor.
6. Press the CAL button (B). DIA-CAL appears on the monitor.

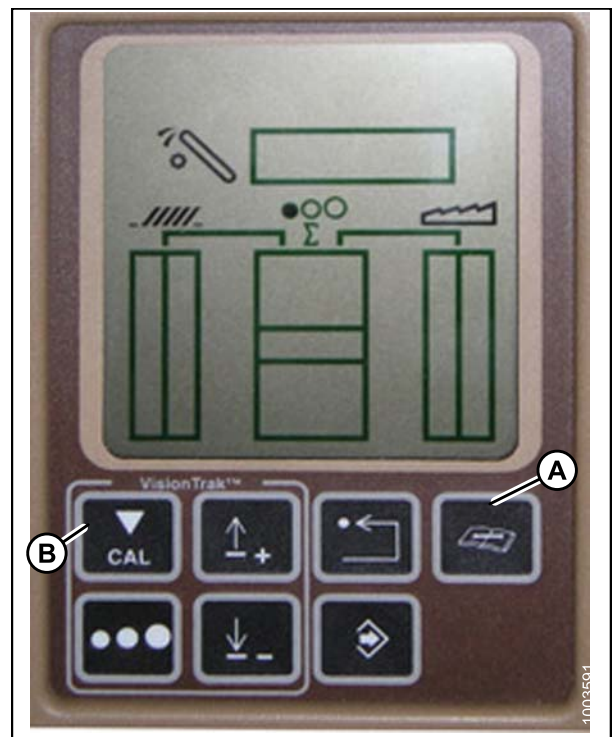


Figure 5.84: Combine Display

SETTING UP AUTO HEADER HEIGHT CONTROL

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

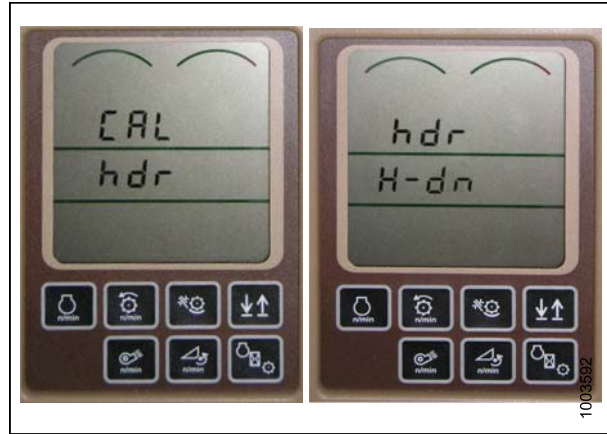


Figure 5.85: Combine Display

- Fully lower feeder house to the ground.

NOTE:

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

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

NOTE:

If an error code appears during calibration, the sensor is out of voltage range and will require adjustment. Refer to [Checking Voltage Range from the Combine Cab \(John Deere 60 Series\)](#), page 167.

NOTE:

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

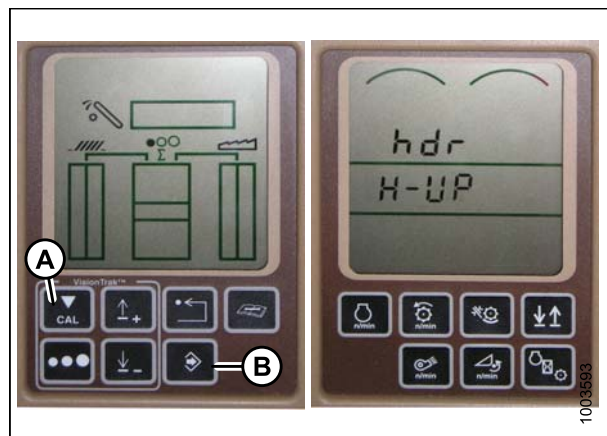


Figure 5.86: Combine Display

Turning the Accumulator Off (John Deere 60 Series)

NOTE:

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

SETTING UP AUTO HEADER HEIGHT CONTROL

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

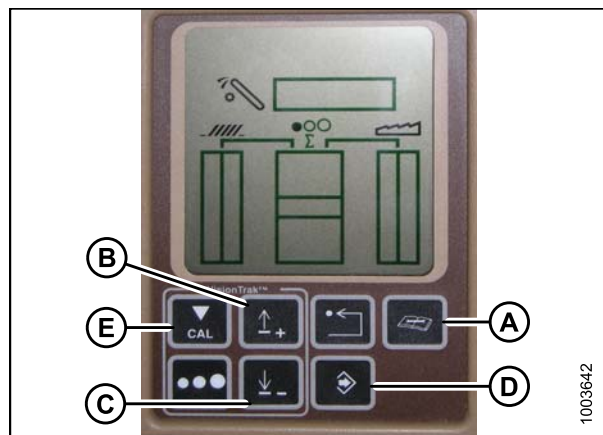


Figure 5.87: Combine Display

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

NOTE:

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

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

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

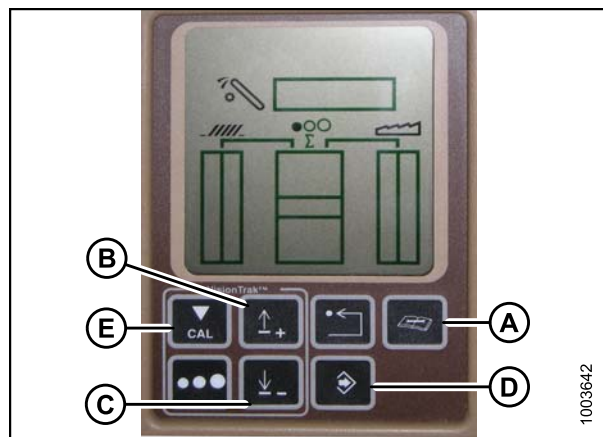


Figure 5.88: Combine Display

SETTING UP AUTO HEADER HEIGHT CONTROL

NOTE:

Do **NOT** use the active header float function (A) in combination with the MacDon Auto Header Height Control (AHHC)—the two systems will counteract one another. The header symbol (B) on the display should NOT have a wavy line under it and should appear exactly as shown on the Active Header Control Display in Figure 5.89: *Combine Display*, page 172.

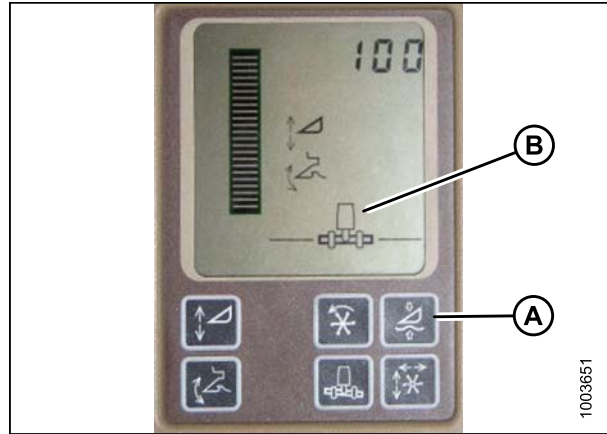


Figure 5.89: Combine Display

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

This is also known as dead band adjustment.

NOTE:

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

SETTING UP AUTO HEADER HEIGHT CONTROL

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

NOTE:

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

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

NOTE:

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

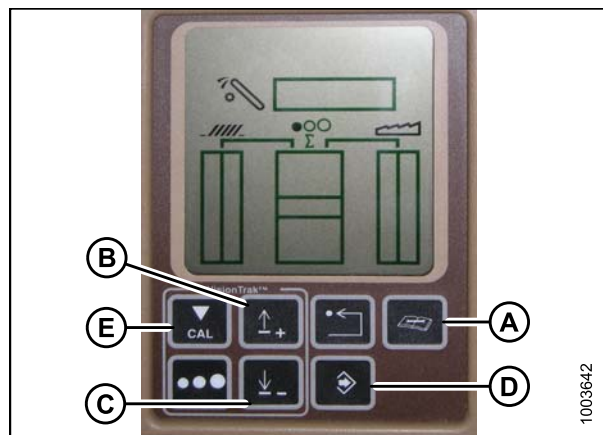


Figure 5.90: Combine Display

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

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

NOTE:

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

SETTING UP AUTO HEADER HEIGHT CONTROL

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

NOTE:

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

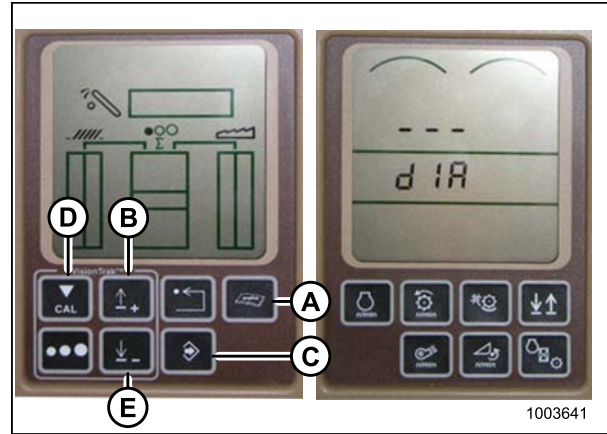


Figure 5.91: Combine Display

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

NOTE:

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

5.1.9 John Deere 70 Series Combines

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

NOTE:

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

To check the sensor output voltage range from the combine cab, follow these steps:

1. Position the header 6 in. (150 mm) above the ground, and unlock the adapter float.

SETTING UP AUTO HEADER HEIGHT CONTROL

2. Check that float lock linkage is on down stops (washer [A] and nut [B] cannot be moved) at both locations.

NOTE:

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

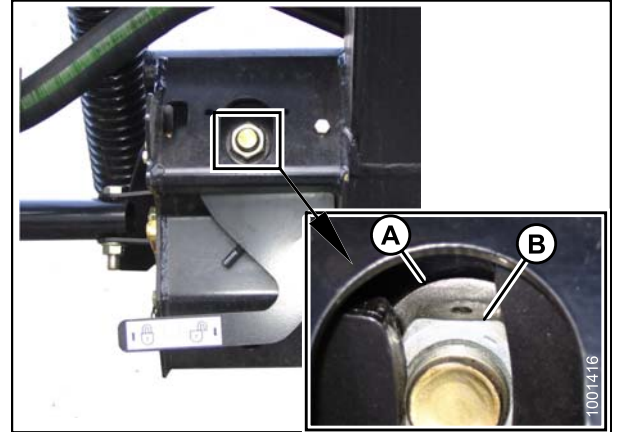


Figure 5.92: Float Lock

3. Adjust the cable take-up bracket (B) (if necessary) until the pointer (A) on the float indicator is on '0'.

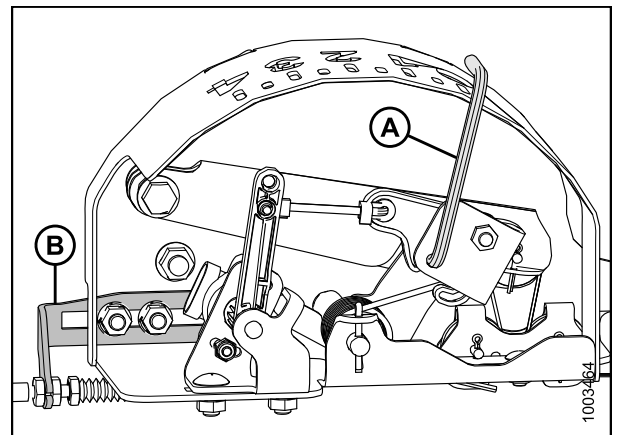


Figure 5.93: Float Indicator Box

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



Figure 5.94: Combine Display

SETTING UP AUTO HEADER HEIGHT CONTROL

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



Figure 5.95: Combine Display

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

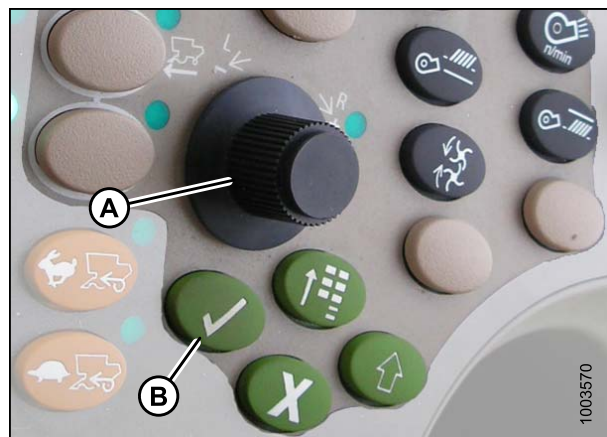


Figure 5.96: Combine Controls

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



Figure 5.97: Combine Display

SETTING UP AUTO HEADER HEIGHT CONTROL

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



Figure 5.98: Combine Display

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

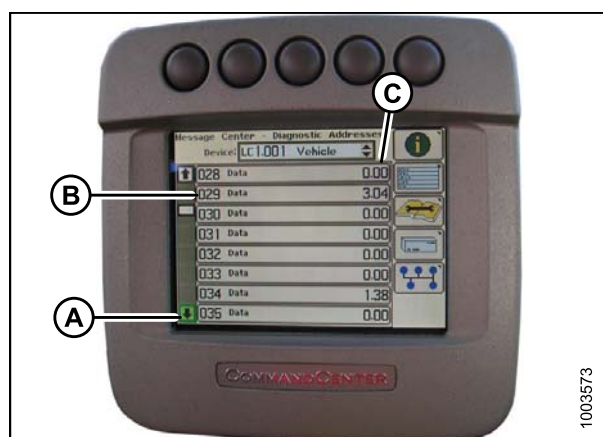


Figure 5.99: Combine Display

- Ensure header float is unlocked.
- Start the combine and fully lower feeder house to the ground.

NOTE:

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

- Check the sensor reading on the monitor.
- Raise the header so it is just off the ground and recheck the sensor reading.
- Adjust the voltage limits (refer to [Adjusting Voltage Limits, page 129](#)) 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 [Table 5.1 Combine Voltage Limits, page 127](#)).

SETTING UP AUTO HEADER HEIGHT CONTROL

Calibrating Feeder House Speed (John Deere 70 Series)

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

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

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. Refer to Header Angle in the header operator's manual for instructions.

NOTE:

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

1. Ensure center-link is set to D.
2. Rest header on down stops and unlock adapter float.
3. Place wings in locked position.
4. Start the combine.
5. Press the button located fourth from the left along the top of the monitor (A) to select the icon that resembles an open book with a wrench on it (B).
6. Press the top button (A) a second time to enter diagnostics and calibration mode.



Figure 5.100: Combine Display

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

NOTE:

If an error code appears on screen, the sensor is not in the correct working range. Refer to [Checking Voltage Range from the Combine Cab \(John Deere 70 Series\), page 174](#) to check and adjust the range.

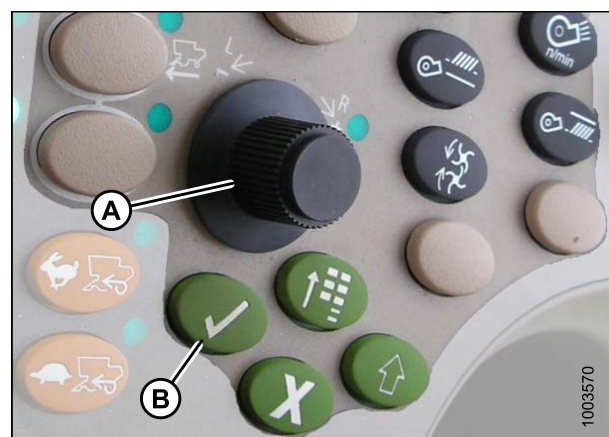


Figure 5.101: Combine Control Console

SETTING UP AUTO HEADER HEIGHT CONTROL

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

NOTE:

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

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

NOTE:

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

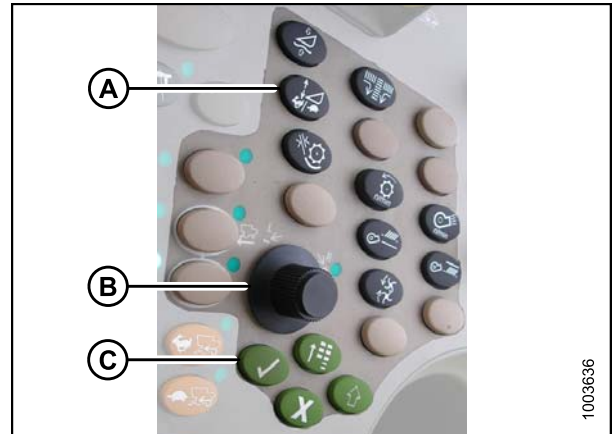


Figure 5.102: Combine Control Console

NOTE:

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



Figure 5.103: Combine Display

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

NOTE:

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

SETTING UP AUTO HEADER HEIGHT CONTROL

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

NOTE:

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

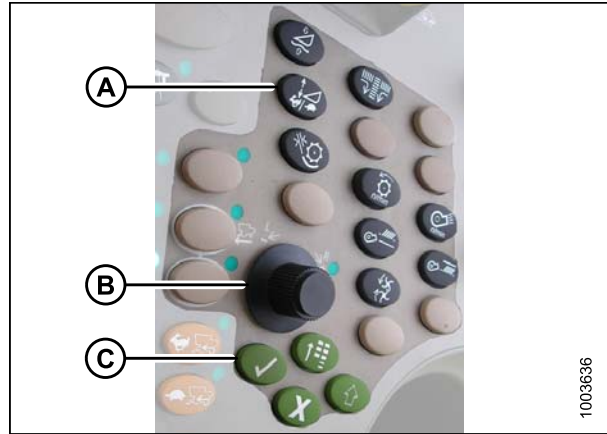


Figure 5.104: Combine Control Console

NOTE:

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



Figure 5.105: Combine Display

5.1.10 John Deere S Series Combines

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

NOTE:

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

To check the sensor output voltage range from the combine cab, follow these steps:

1. Position the header 6 in. (150 mm) above the ground, and unlock the adapter float.

SETTING UP AUTO HEADER HEIGHT CONTROL

2. Check that float lock linkage is on down stops (washer [A] and nut [B] cannot be moved) at both locations.

NOTE:

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

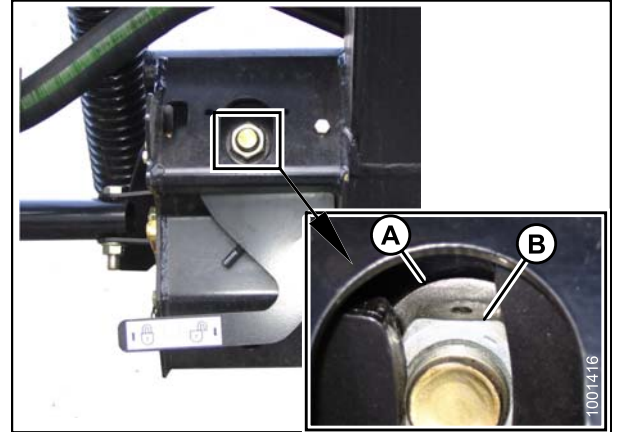


Figure 5.106: Float Lock

3. Adjust the cable take-up bracket (B) (if necessary) until the pointer (A) on the float indicator is on '0'.

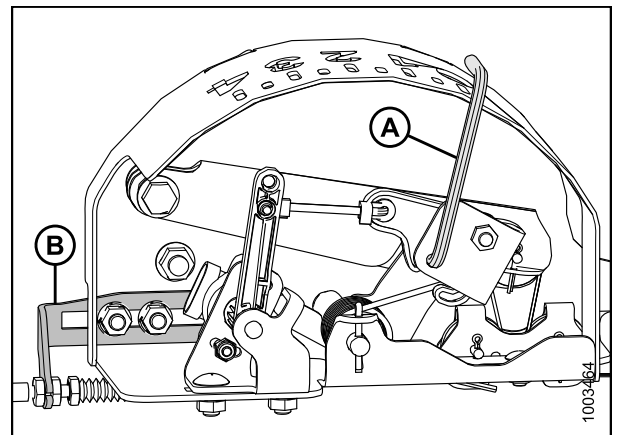


Figure 5.107: Float Indicator Box

4. Press the CALIBRATION icon (A) on the main page of the monitor. The CALIBRATION page appears.

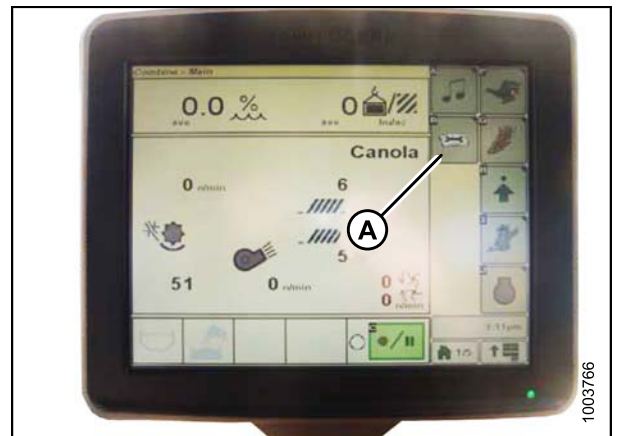


Figure 5.108: Combine Display

SETTING UP AUTO HEADER HEIGHT CONTROL

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

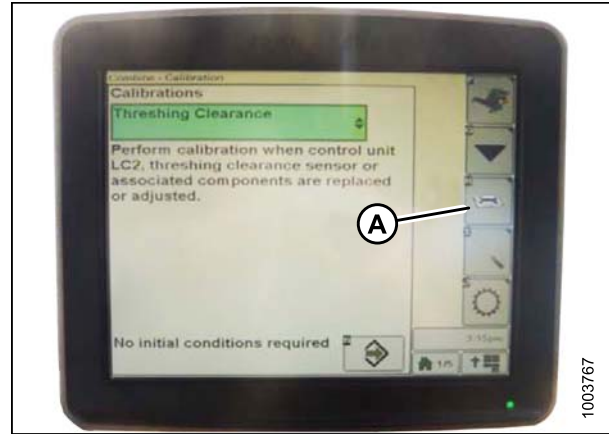


Figure 5.109: Combine Display

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

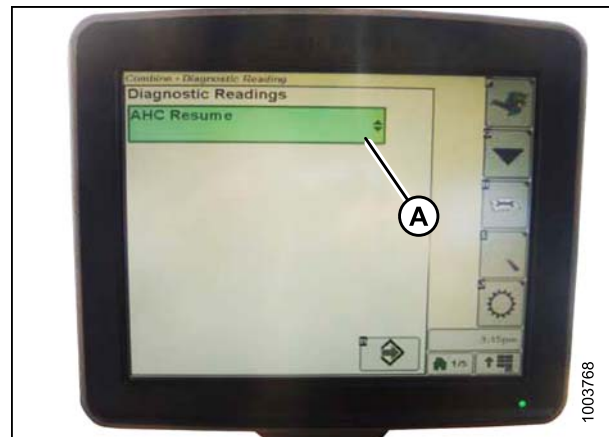


Figure 5.110: Combine Display

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



Figure 5.111: Combine Display

SETTING UP AUTO HEADER HEIGHT CONTROL

9. 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 only the center header height sensor. On the MacDon header, there is only one sensor located in the float indicator box on top of the CA25.

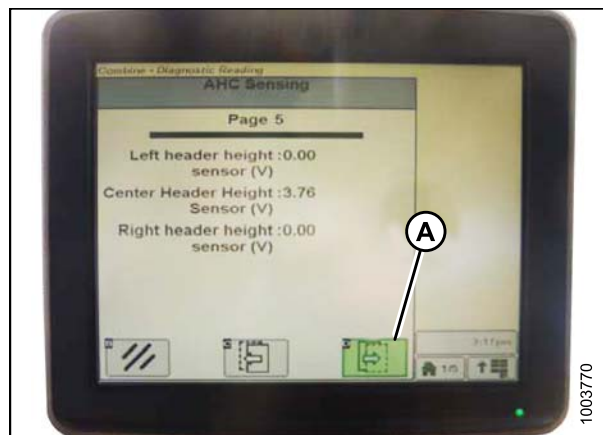


Figure 5.112: Combine Display

10. Ensure header float is unlocked.
11. Start the combine and fully lower feeder house to the ground.

NOTE:

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

12. Check the sensor reading on the monitor.
13. Adjust the voltage limits (refer to [Adjusting Voltage Limits, page 129](#)) 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 Table [5.1 Combine Voltage Limits, page 127](#)).

Calibrating the Auto Header Height Control (John Deere S Series)

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. Refer to Header Angle in the header operator's manual for instructions.

NOTE:

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

To calibrate the AHHC, follow these steps:

1. Ensure center-link is set to D.
2. Rest header on down stops and unlock adapter float.
3. Place wings in locked position.

SETTING UP AUTO HEADER HEIGHT CONTROL

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

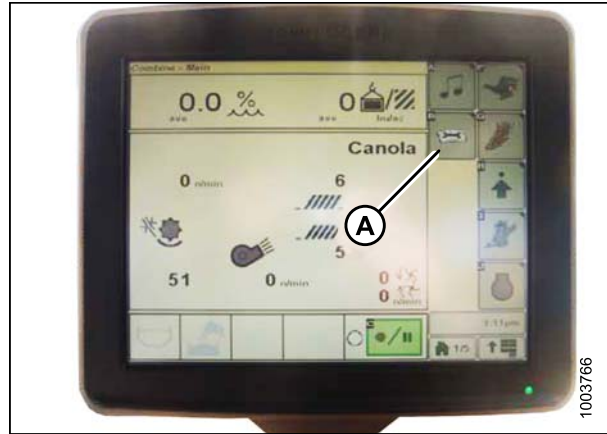


Figure 5.113: Combine Display

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

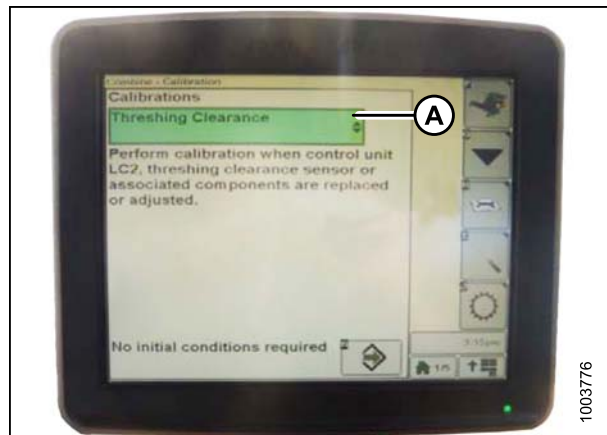


Figure 5.114: Combine Display

6. Select FEEDER HOUSE SPEED (A) and calibrate.
7. Select HEADER (B) and calibrate.

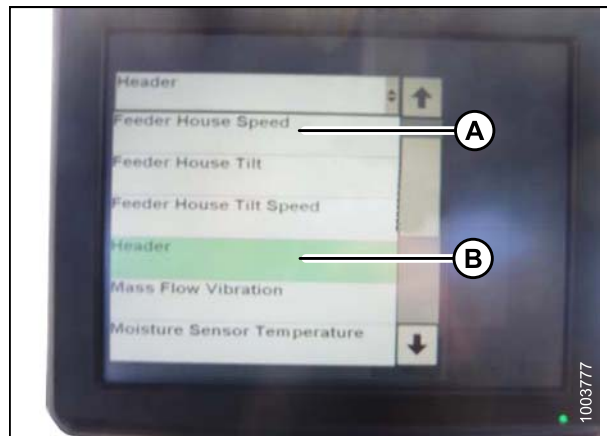


Figure 5.115: Combine Display

SETTING UP AUTO HEADER HEIGHT CONTROL

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

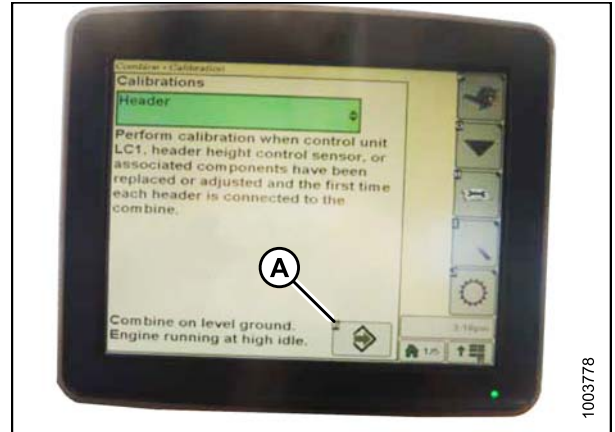


Figure 5.116: Combine Display

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

NOTE:

If an error code appears during calibration, the sensor is out of voltage range and will require adjustment. Refer to [Checking Voltage Range from the Combine Cab \(John Deere S Series\)](#), page 180.

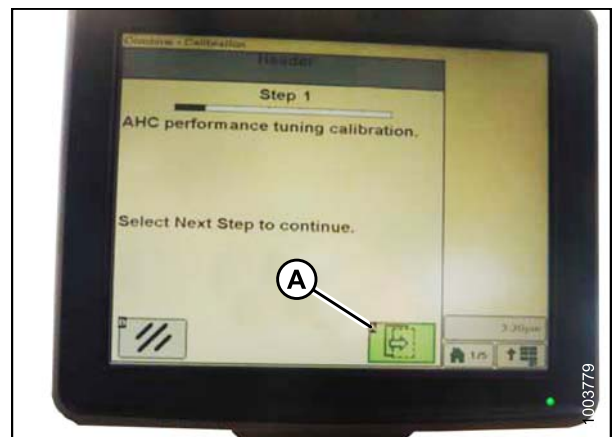


Figure 5.117: Combine Display

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

NOTE:

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

- Press button (A) twice and the current sensitivity setting will appear on the monitor.



Figure 5.118: Combine Command Center

SETTING UP AUTO HEADER HEIGHT CONTROL

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

NOTE:

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

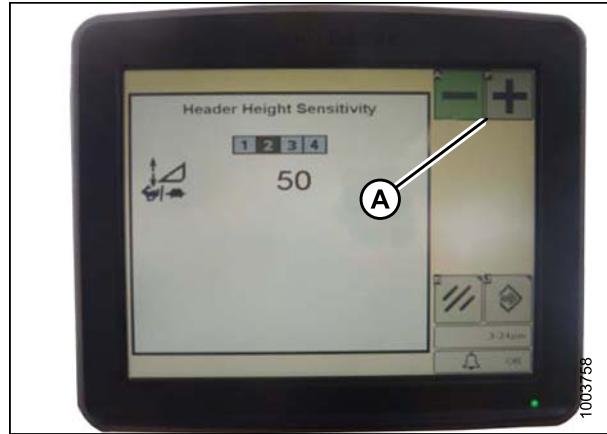


Figure 5.119: Combine Display

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

NOTE:

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

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



Figure 5.120: Combine Command Center

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

NOTE:

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

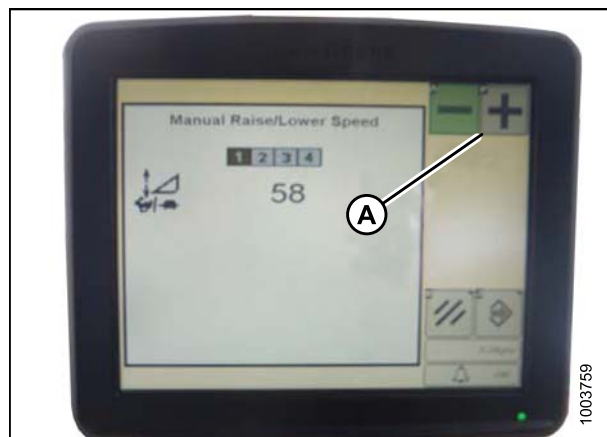


Figure 5.121: Combine Display

5.1.11 Lexion 500 Series Combines

Calibrating the Auto Header Height Control (Lexion 500 Series)

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. Refer to Header Angle in the header operator's manual for instructions.

NOTE:

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

To calibrate the (AHHC), follow these steps:

1. Ensure center-link is set to D.
2. Use the '<' key (A) or '>' key (B) to select AUTO HEADER, and press the OK key (C). The 'E5' window displays whether the automatic header height is on or off.

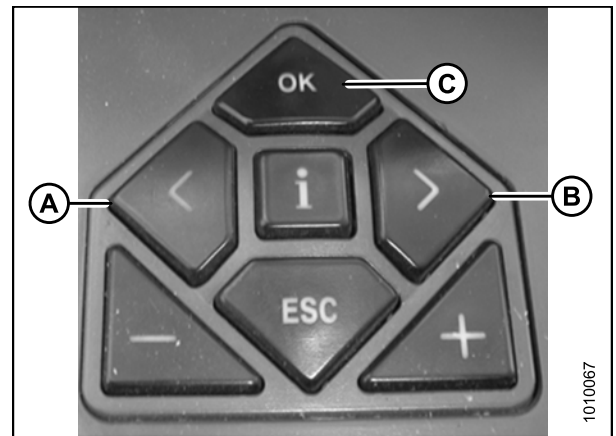


Figure 5.122: Combine Controls

3. Use the '-' key (A) or the '+' key (B) to turn the AHHC on, and press the OK key (C).
4. Engage the threshing mechanism and the header.

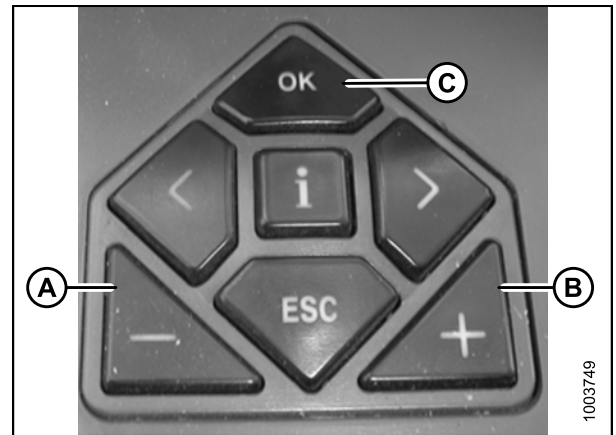


Figure 5.123: Combine Controls

SETTING UP AUTO HEADER HEIGHT CONTROL

- Use the '<' or '>' key to select CUTT.HEIGHT LIMITS, and press the OK key (C).
- Follow the procedure displayed on the screen to program the upper and lower limits of the header into the CEBIS.

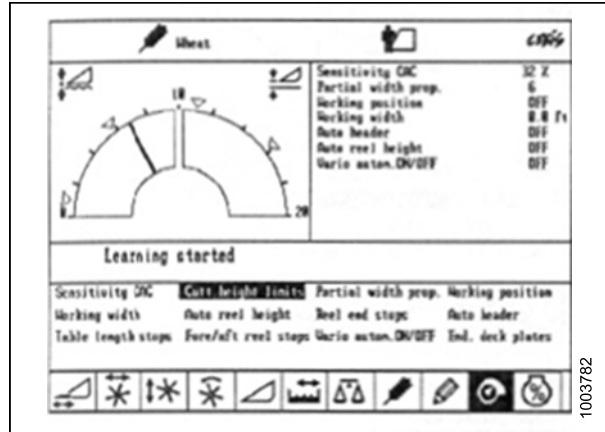


Figure 5.124: Combine Display

- Use the '<' or '>' key to select SENSITIVITY CAC, and press the OK key (C).

NOTE:

Setting the sensitivity of the AHHC system impacts the reaction speed of the AHHC on the header.

- Use the '-' key or the '+' key to change the setting of the reaction speed, and press the OK key (C).

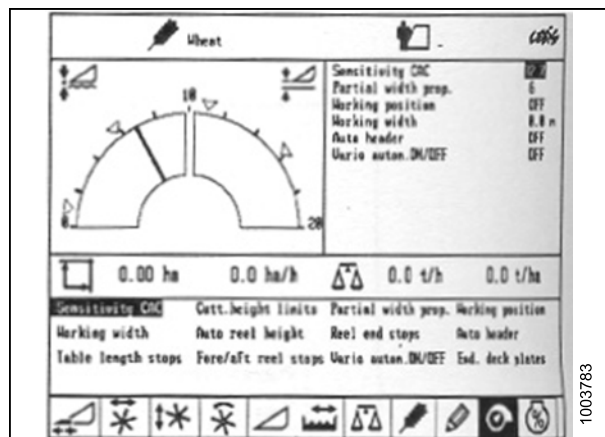


Figure 5.125: Combine Display

- 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%.

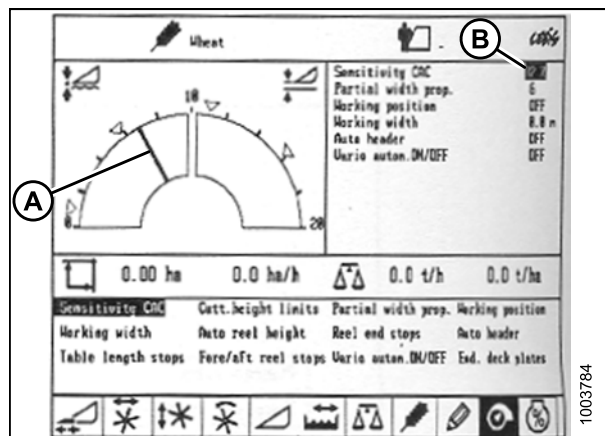


Figure 5.126: Combine Display

SETTING UP AUTO HEADER HEIGHT CONTROL

Setting Cutting Height (Lexion 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 5.9 in. (150 mm), and use the auto contour system for cutting heights below 5.9 in. (150 mm).

Setting Preset Cutting Height (Lexion 500 Series)

NOTE:

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

1. Start the engine.
2. Activate the machine enable switch.
3. Engage the threshing mechanism.
4. Engage the header.
5. 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 5.127: Joystick Buttons

6. Use the '<' key (C) or '>' key (D) to select the CUTTING HEIGHT window, and press the OK key (E).
7. Use the '-' key (A) or the '+' key (B) to set the desired cutting height. An arrow indicates the selected cutting height on the scale.

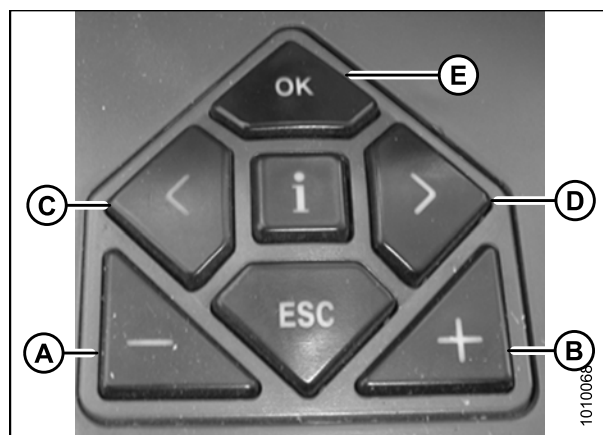


Figure 5.128: Combine Controls

SETTING UP AUTO HEADER HEIGHT CONTROL

- Briefly press button (A) or button (B) in order to select the set point.
- Repeat Step 7., [page 189](#) for the set point.



Figure 5.129: Joystick Buttons

Setting Cutting Height Manually (Lexion 500 Series)

NOTE:

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

- Use button (A) to raise the header or button (B) to lower the header to the desired cutting height.
- Press and hold button (C) for three seconds to store the cutting height into the CEBIS (an alarm will sound when the new setting has been stored).
- 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 into the CEBIS (an alarm will sound when the new setting has been stored).



Figure 5.130: Joystick Buttons

NOTE:

For above the ground cutting, repeat Step 1., [page 190](#), and use button (D) instead of button (C) while repeating Step 2., [page 190](#).

Setting the Sensitivity of the Auto Header Height Control (Lexion 500 Series)

Setting the sensitivity of the Auto Header Height Control (AHHC) system impacts the reaction speed of the AHHC on the header.

NOTE:

The upper and lower limits of the header must be programmed into the CEBIS before adjusting the sensitivity of the AHHC system. 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%.

SETTING UP AUTO HEADER HEIGHT 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. Use the '<' key (C) or the '>' key (D) to select SENSITIVITY CAC, and press the OK key (E).
2. Use the '-' key (A) or the '+' key (B) to change the reaction speed setting, and press the OK key (E).

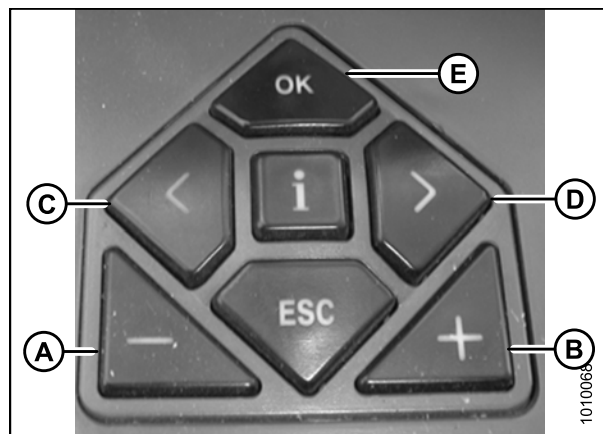


Figure 5.131: Combine Controls

3. Use line (A) or value (B) to determine the sensitivity setting.

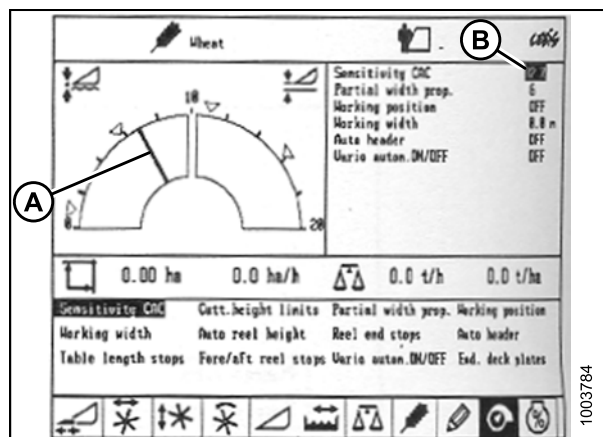
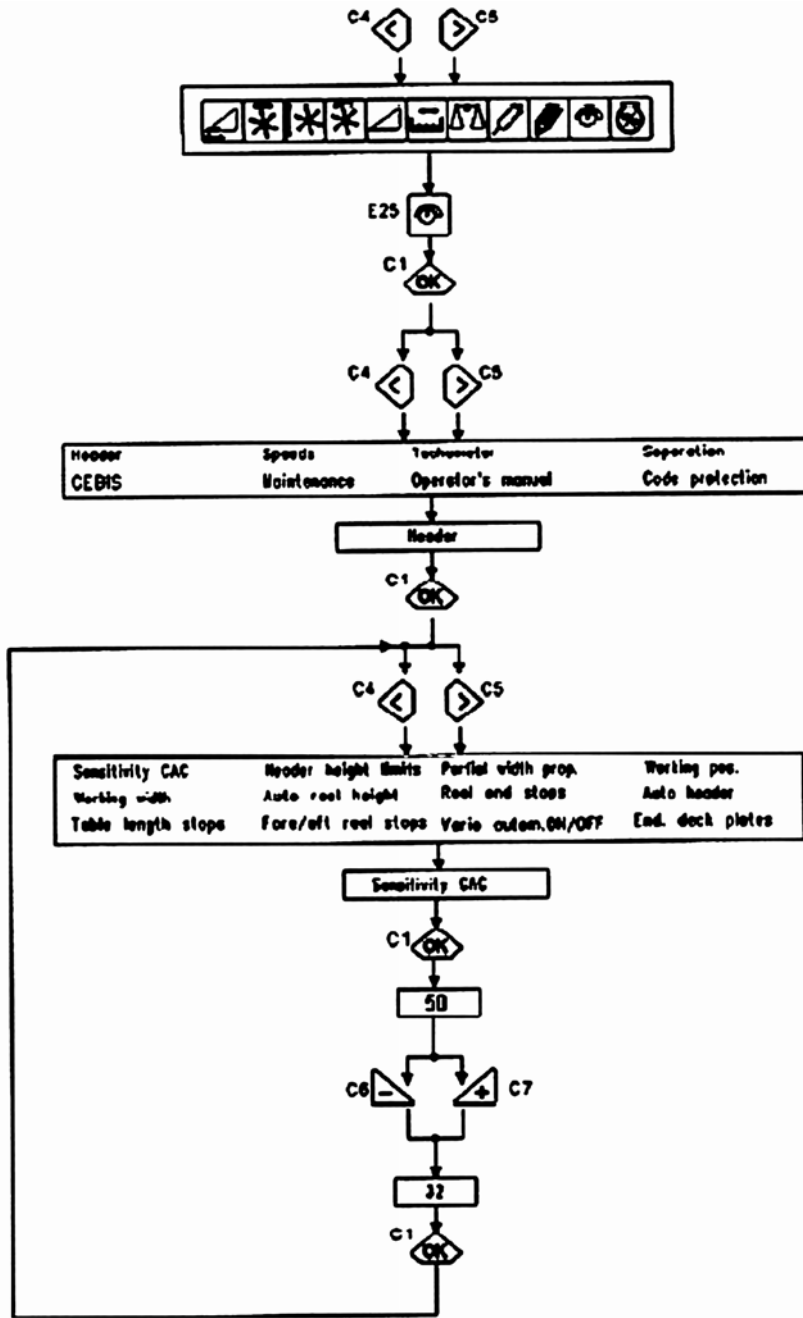


Figure 5.132: Combine Display

SETTING UP AUTO HEADER HEIGHT CONTROL



1003798

Figure 5.133: Flow Chart for Setting the Sensitivity of the Float Optimizer

SETTING UP AUTO HEADER HEIGHT CONTROL

Adjusting Auto Reel Speed (Lexion 700 Series)

NOTE:

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

1. Use control knob (A) to highlight the HEADER/REEL icon (B), and press control knob (A) to select it. The HEADER/REEL window opens.

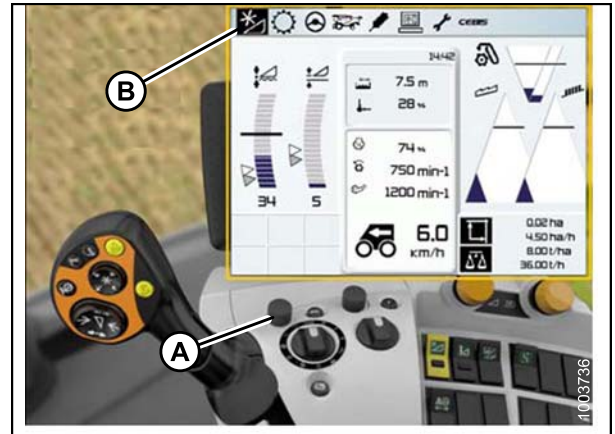


Figure 5.134: Combine Display, Console, and Joystick Lever

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 displays in the window.



Figure 5.135: Combine Display, Console, and Joystick Lever

SETTING UP AUTO HEADER HEIGHT CONTROL

3. Select ACTUAL VALUE (A) from the AUTO REEL SPEED window (if you are using Auto Reel Speed). The ACTUAL VALUE window opens and displays the auto reel speed.



Figure 5.136: Combine Display, Console, and Joystick Lever

4. Use control knob (A) to raise or lower the reel speed.



Figure 5.137: Combine Display, Console, and Joystick Lever

5.1.12 Lexion 700 Series Combines

Calibrating the Auto Header Height Control (Lexion 700 Series)

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. Refer to Header Angle in the header operator's manual for instructions.

NOTE:

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

To calibrate the AHHC, follow these steps:

1. Ensure center-link is set to D.
2. Ensure that the header float is unlocked (A).

SETTING UP AUTO HEADER HEIGHT CONTROL

- Use control knob (A) to highlight the AUTO CONTOUR icon (B) and press control knob (A) to select it.

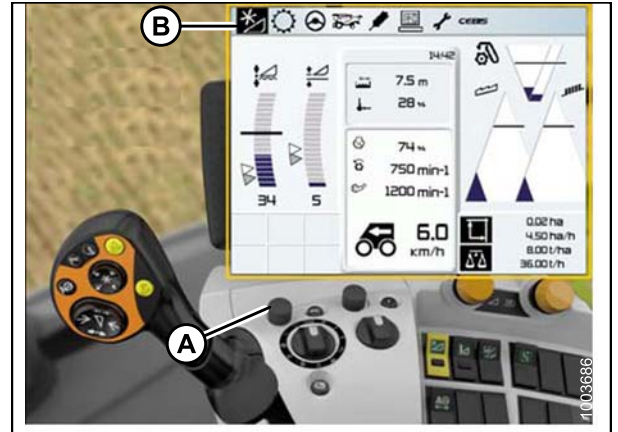


Figure 5.138: Combine Display, Console, and Joystick Lever

- Use control knob (A) to highlight the icon that resembles a header with up and down arrows (not shown), and press control knob (A) to select it. The highlighted header icon (B) will be displayed on the screen.



Figure 5.139: Combine Display, Console, and Joystick Lever

- Use control knob (A) to highlight the icon that resembles a header with up and down arrows (C), and press control knob (A) to select it.

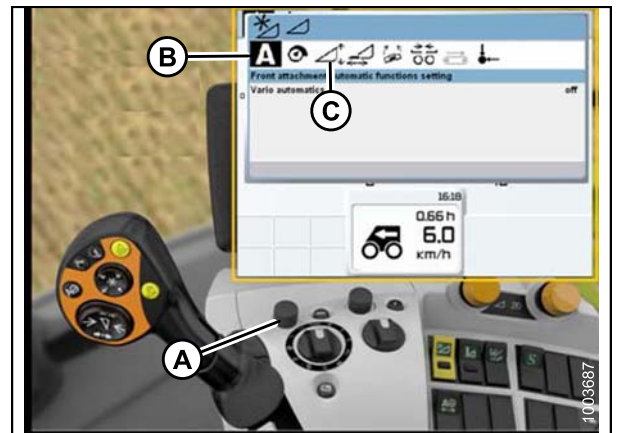


Figure 5.140: Combine Display, Console, and Joystick Lever

SETTING UP AUTO HEADER HEIGHT CONTROL

- Use control knob (A) to highlight the icon that resembles a screwdriver (B).
- Engage the combine separator and feeder house.
- Press control knob (A) and a progress bar chart will appear.



Figure 5.141: Combine Display, Console, and Joystick Lever

- Fully raise the feeder house and the progress bar chart will advance to 25% (A).
- Fully lower the feeder house, and the progress bar chart will advance to 50%.
- Fully raise the feeder house and the progress bar chart will advance to 75%.
- Fully lower the feeder house, and the progress bar chart will advance to 100%.



Figure 5.142: Combine Display, Console, and Joystick Lever

- Ensure the progress bar chart displays 100% (A). The calibration procedure is now complete.

NOTE:

If the voltage is not within the range of 0.5–4.5 volts at any time throughout the calibration process, the monitor will indicate learning procedure not concluded.

NOTE:

If header float is set too light, an error message will appear. Back float off three full-turns of the adjuster bolts to adjust float to approximately 100–125 lbs.



Figure 5.143: Combine Display, Console, and Joystick Lever

SETTING UP AUTO HEADER HEIGHT CONTROL

Setting Cutting Height (Lexion 700 Series)

NOTE:

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

1. Lower the header to desired cutting height or ground pressure setting. The float indicator box should be set to 1.5.

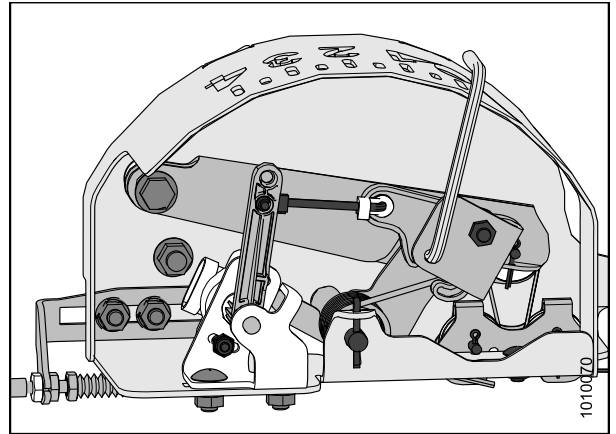


Figure 5.144: Float Indicator Box

2. Hold the left side of the header raise and lower switch (A) until you hear a ping.

NOTE:

You can set two different cutting heights.



Figure 5.145: Combine Display, Console, and Joystick Lever

Setting the Sensitivity of the Auto Header Height Control (Lexion 700 Series)

NOTE:

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

SETTING UP AUTO HEADER HEIGHT CONTROL

1. Use control knob (A) to highlight the HEADER/REEL icon (B), and press control knob (A) to select it. The HEADER/REEL window opens.
2. Select HEADER icon.

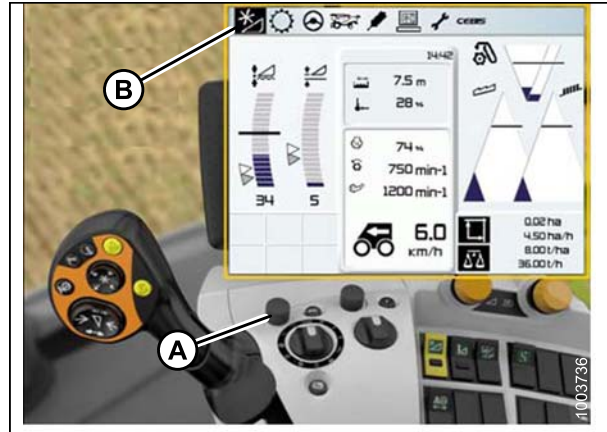


Figure 5.146: Combine Display, Console, and Joystick Lever

3. Select the FRONT ATTACHMENT PARAMETER SETTINGS icon (A). A list of settings appears.
4. Select SENSITIVITY CAC (B) from the list.



Figure 5.147: Combine Display, Console, and Joystick Lever

5. Select the SENSITIVITY CAC icon (A).

NOTE:

To set the sensitivity, you will have to change the CUTTING HEIGHT ADJUSTMENT from the '0' default. The settings from 1–50 provide a faster response, whereas the settings from -1– -50 provide a slower response. For best results, make adjustments in increments of five.

6. Increase the CUTTING HEIGHT ADJUSTMENT setting if the reaction time between the header and the adapter is too slow while cutting on the ground, and decrease the CUTTING HEIGHT ADJUSTMENT setting if the reaction time between the header and the adapter is too fast.
7. Increase the sensitivity if the header is lowered too slowly, and decrease the sensitivity if the header hits the ground too hard or is lowered too quickly.



Figure 5.148: Combine Display

SETTING UP AUTO HEADER HEIGHT CONTROL

Adjusting Auto Reel Speed (Lexion 700 Series)

NOTE:

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

1. Use control knob (A) to highlight the HEADER/REEL icon (B), and press control knob (A) to select it. The HEADER/REEL window opens.

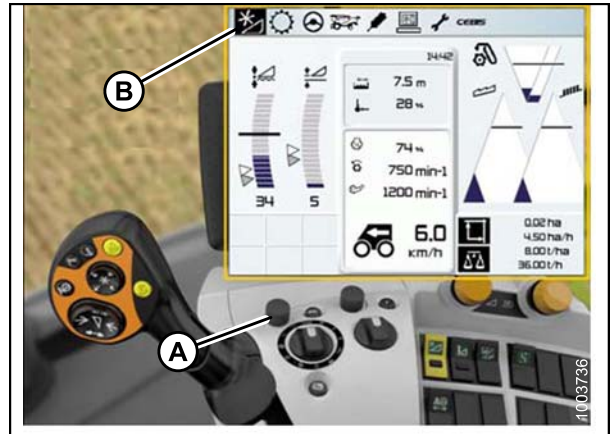


Figure 5.149: Combine Display, Console, and Joystick Lever

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 displays in the window.



Figure 5.150: Combine Display, Console, and Joystick Lever

SETTING UP AUTO HEADER HEIGHT CONTROL

3. Select ACTUAL VALUE (A) from the AUTO REEL SPEED window (if you are using Auto Reel Speed). The ACTUAL VALUE window opens and displays the auto reel speed.



Figure 5.151: Combine Display, Console, and Joystick Lever

4. Use control knob (A) to raise or lower the reel speed.



Figure 5.152: Combine Display, Console, and Joystick Lever

5.1.13 New Holland Combines

Checking Voltage Range from the Combine Cab (New Holland)

NOTE:

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

To check the sensor output voltage range from the combine cab, follow these steps:

1. Position the header 6 in. (150 mm) above the ground, and unlock the adapter float.

SETTING UP AUTO HEADER HEIGHT CONTROL

2. Check that float lock linkage is on down stops (washer [A] and nut [B] cannot be moved) at both locations.

NOTE:

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

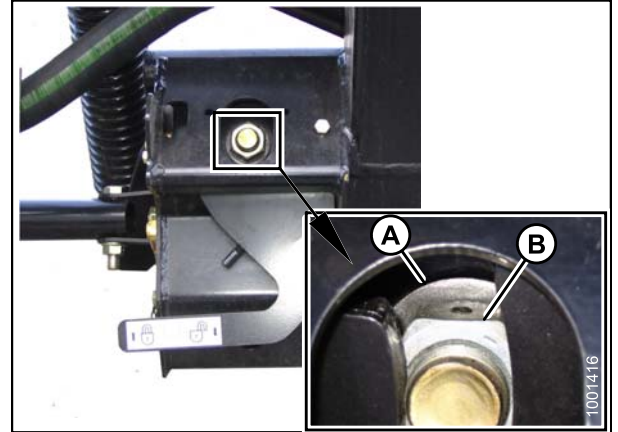


Figure 5.153: Float Lock

3. Adjust the cable take-up bracket (B) (if necessary) until the pointer (A) on the float indicator is on '0'.

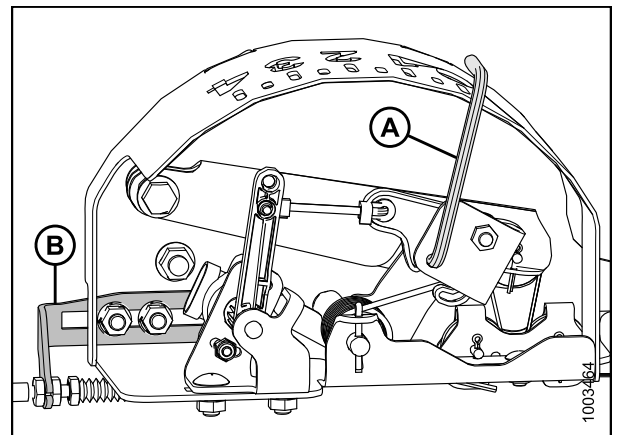


Figure 5.154: 5 Volt AHHC Sensor Assembly

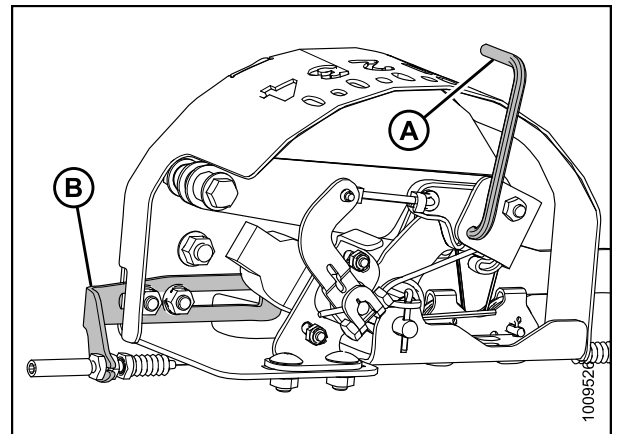


Figure 5.155: 10 Volt AHHC Sensor Assembly

SETTING UP AUTO HEADER HEIGHT CONTROL

4. Ensure header float is unlocked.
5. Select DIAGNOSTICS (A) on the main screen. The DIAGNOSTICS screen displays.
6. Select SETTINGS. The SETTINGS screen displays.

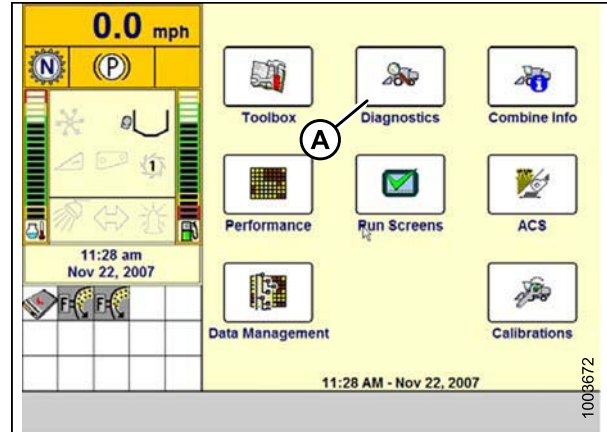


Figure 5.156: Combine Display

7. Select the GROUP drop-down arrow (A). The GROUP window opens.

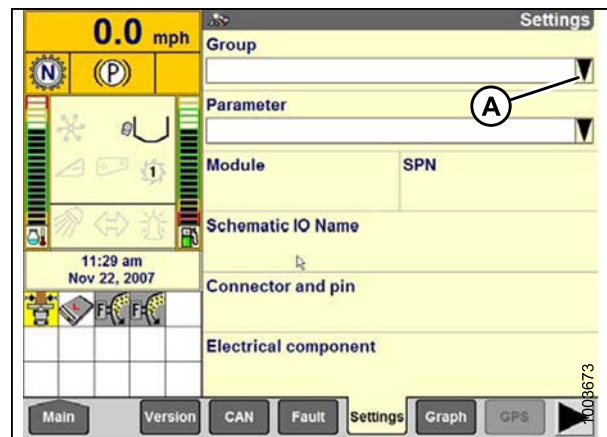


Figure 5.157: Combine Display

8. Select HEADER HEIGHT/TILT(A). The PARAMETER window opens.

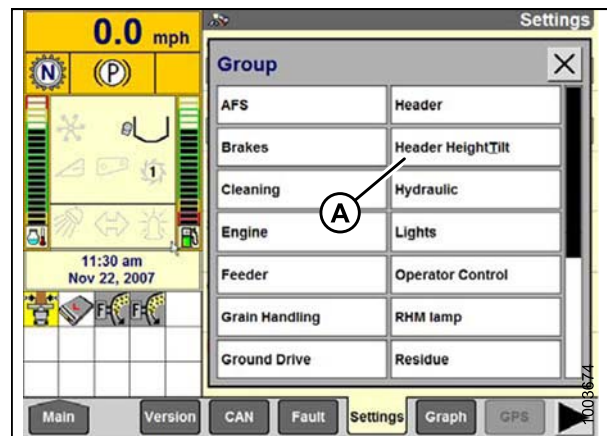


Figure 5.158: Combine Display

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 screen.
10. Raise and lower the header to see the full range of voltage readings.
11. Adjust the voltage limits (refer to [Adjusting Voltage Limits, page 129](#)) 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 Table [5.1 Combine Voltage Limits, page 127](#)).

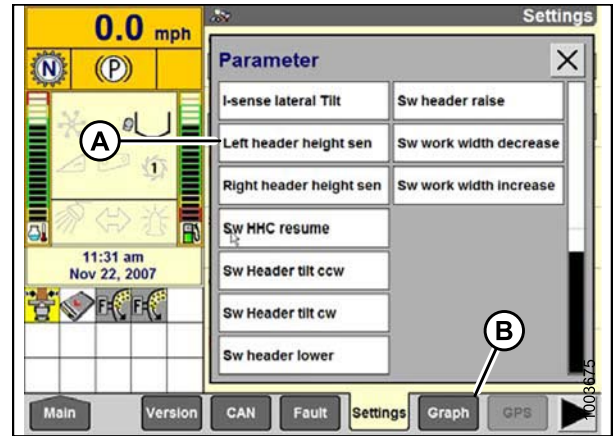


Figure 5.159: Combine Display

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

NOTE:

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

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



Figure 5.160: Combine Display

3. Select HEADER AUTOFLOAT on the combine display screen, and press ENTER.
4. Use the up and down navigation keys to move between options, and select INSTALLED from the open window.

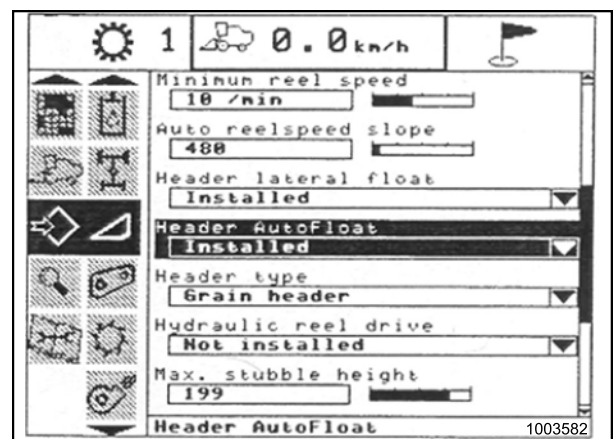


Figure 5.161: Combine Display

SETTING UP AUTO HEADER HEIGHT CONTROL

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

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. Refer to Header Angle in the header operator's manual for instructions.

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.

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

To calibrate the Auto Header Height Control, 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 window opens.

NOTE:

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

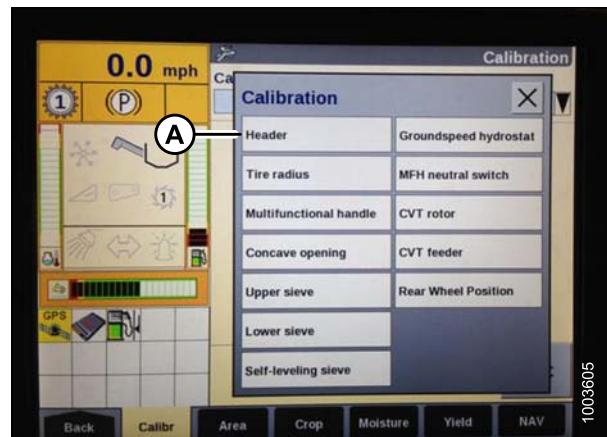


Figure 5.162: Combine Display

SETTING UP AUTO HEADER HEIGHT CONTROL

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

NOTE:

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

NOTE:

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

4. Ensure that CALIBRATION SUCCESSFUL message is displayed on the screen when all steps have been completed, and exit the CALIBRATION menu by pressing the ENTER or ESC key.

NOTE:

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

5. Conduct the maximum stubble height calibration if unit does not function properly.

Calibrating Maximum Stubble Height

This procedure describes how to calibrate the area counter to know from which height it should stop or start counting. When the header is raised above this level, the area counter assumes you are not cutting crop; therefore, you must raise the header to a specific height that you will always exceed when not cutting, and lower the header to a specific height you will always stay below when cutting.

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

IMPORTANT:

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

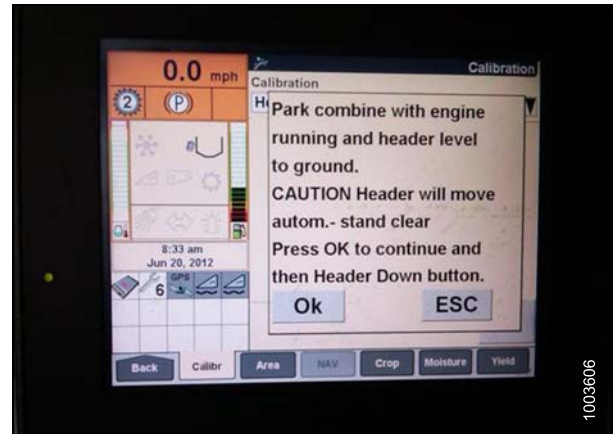


Figure 5.163: Combine Display

SETTING UP AUTO HEADER HEIGHT CONTROL

1. Select the MAXIMUM STUBBLE HEIGHT calibration window.

Message: "Set header to desired maximum stubble height".

Message: "Then press ENTER".

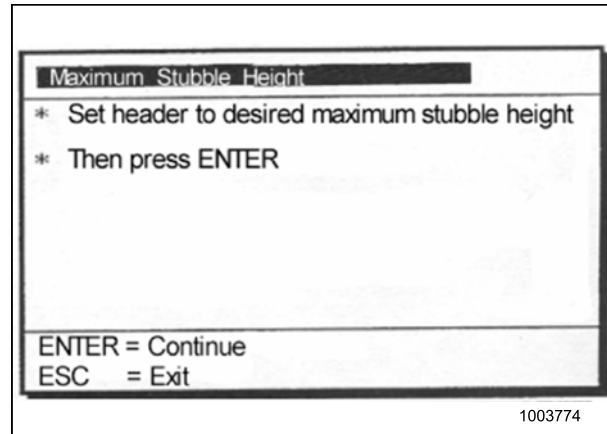


Figure 5.164: Calibration Window

2. Move header to the correct position using the header up or down control switch on the multifunction handle.
3. Press ENTER to continue.
Message: "Calibration successful".
4. Press ENTER or ESC to close the calibration window.
The calibration is now complete.

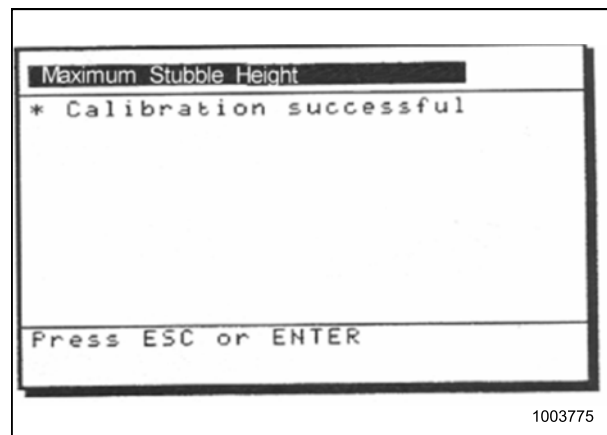


Figure 5.165: Calibration Window

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

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

NOTE:

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

SETTING UP AUTO HEADER HEIGHT CONTROL

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

NOTE:

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

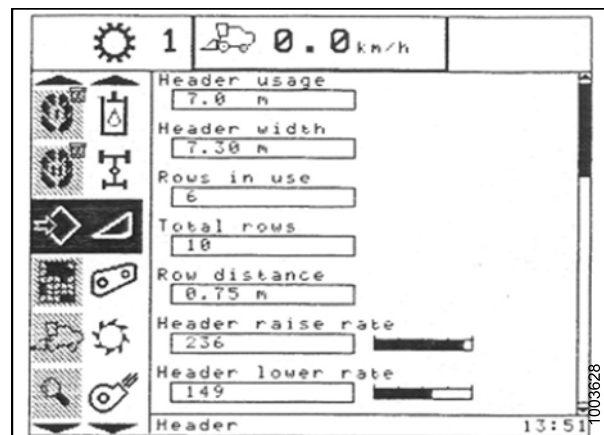


Figure 5.166: Combine Display

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

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

NOTE:

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

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

NOTE:

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

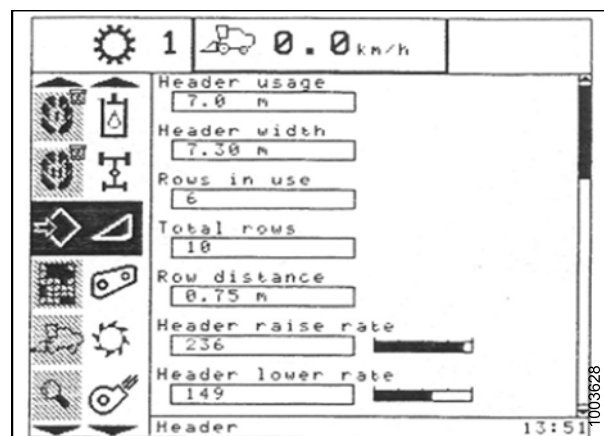


Figure 5.167: Combine Display

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

NOTE:

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

To set the Auto Header Height Control sensitivity, follow these steps:

SETTING UP AUTO HEADER HEIGHT CONTROL

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

NOTE:

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

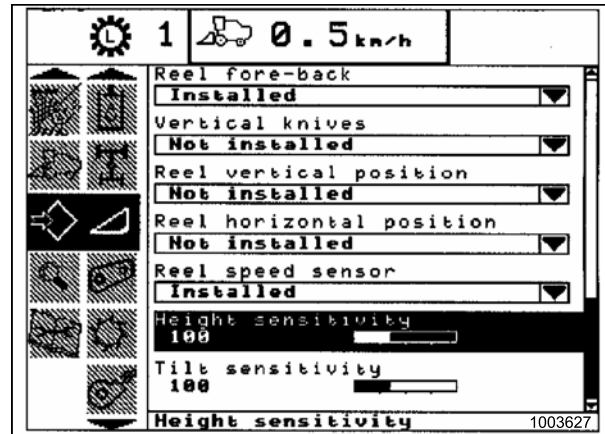


Figure 5.168: Combine Display

5.1.14 Sensor Operation

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

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

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

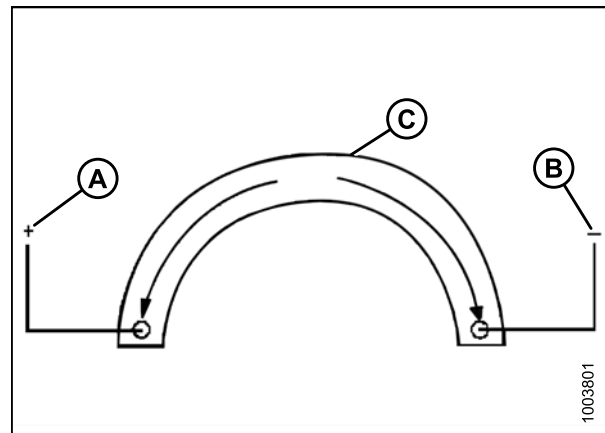


Figure 5.169: Power, Ground, and Signal Wires

SETTING UP AUTO HEADER HEIGHT CONTROL

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

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

NOTE:

Ground and power wires may differ depending on combine.

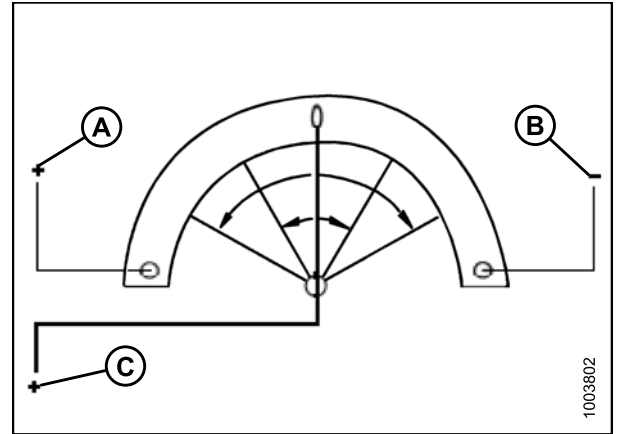


Figure 5.170: Power, Ground, and Signal Wires

6 Running Up Header

To run up the header, follow these steps:

DANGER

Engage header safety props and reel props before working under header or reel.

DANGER

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

CAUTION

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

1. Start combine, raise header fully, and engage header lift cylinder locks.
2. Stop engine and remove key.
1. Lower poly pan under adapter and check for shipping materials/debris that may have fallen under adapter draper.
2. Rotate latches (A) to unlock handles (B).
3. Hold pan (C) and rotate handles (B) to release pan. Lower pan to expose draper.

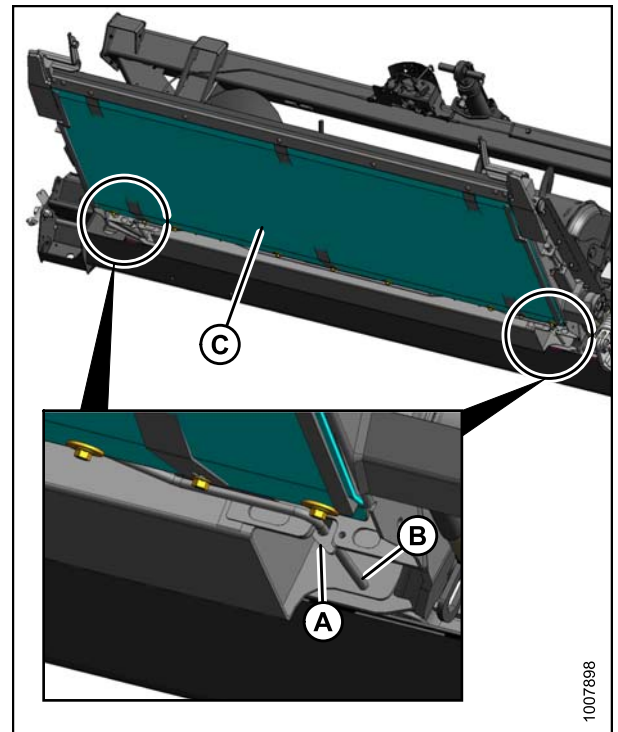


Figure 6.1: Adapter Poly Pan

RUNNING UP HEADER

4. Check and remove debris from pan (A) and draper.

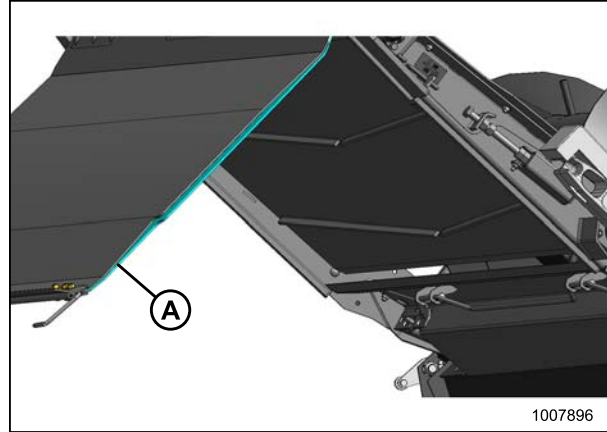


Figure 6.2: Adapter Poly Pan

5. Raise pan and rotate handle (B) so that rod engages clips (D) on pan.

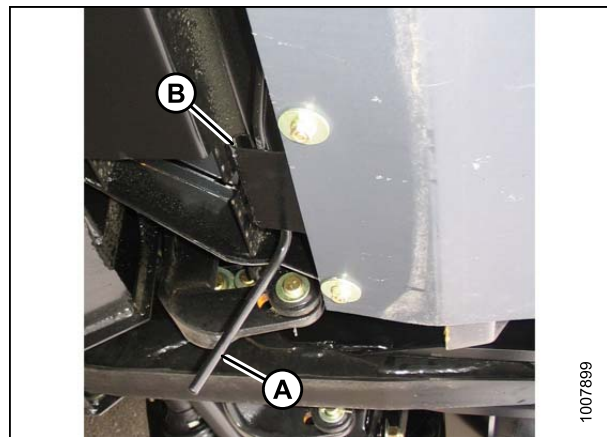


Figure 6.3: Clips Engaged

6. Push handle (B) into slot and secure it with latches (A).
7. Open left-hand endshield.

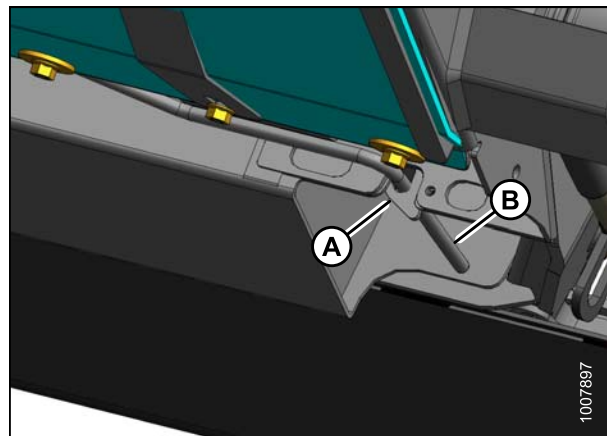


Figure 6.4: Latches Secured

RUNNING UP HEADER

8. Ensure flow control (A) is set to position 6 as shown. If required, turn knob until desired setting lines up with the slot in panel.
9. Ensure feeder house variable speed is set to MINIMUM.

CAUTION

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

10. Start combine and run the machine slowly for five minutes while watching and listening **from the operator's seat** for binding or interfering parts.

NOTE:

Reel and side drapers will not operate until oil flow fills the lines.

11. Run the machine at operating speed for 15 minutes. Listen for any unusual sounds or abnormal vibration.
12. Perform run-up check as listed on [Predelivery Checklist, page 235](#) (yellow sheet attached to this instruction) to ensure the machine is field-ready.

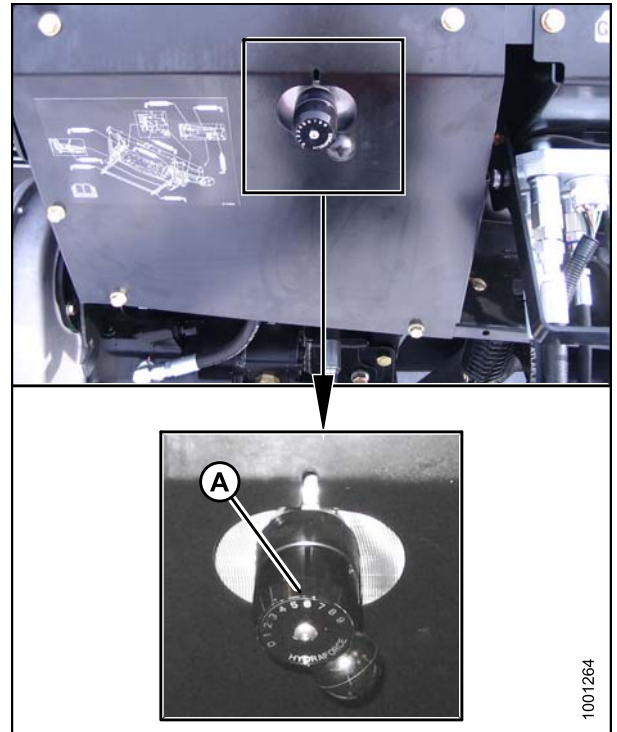


Figure 6.5: Flow Control

7 Performing Post Run-Up Adjustments

Perform post run-up check as listed on the Predelivery Checklist (yellow sheet attached to this instruction - [Predelivery Checklist, page 235](#)) to ensure machine is field-ready.

WARNING

To avoid bodily injury or death from unexpected startup of machine, always stop combine engine and remove key before making adjustments to machine.

Some adjustments may be necessary after the run-up. Refer to the following:

- [7.1 Adjusting Knife, page 215](#)
- [7.2 Adjusting Knife Speed, page 217](#)

7.1 Adjusting Knife

CAUTION

To avoid bodily injury or death from unexpected startup of machine, always stop combine engine and remove key before making adjustments to machine.

1. Check guards for signs of heating during run-up due to insufficient clearance between guard and knife.
2. If heating is evident, check gap between knifehead (A) and pitman arm (B). A business card should slide easily through the gap. If not, adjust gap by loosening bolt and tapping knifehead (A) with a hammer. Retighten bolt.
3. Adjust guard alignment as necessary using guard straightening tool (MD #140135). Adjust guard tips upwards by positioning tool as shown and pulling up.

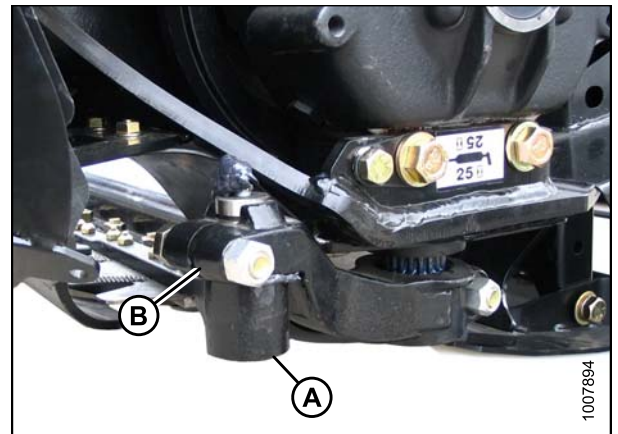


Figure 7.1: Knifehead and Pitman Arm



Figure 7.2: Guard Tips – Upward Adjustment

PERFORMING POST RUN-UP ADJUSTMENTS

4. Adjust guard tips downward by positioning tool as shown and pushing down.



Figure 7.3: Guard Tips – Downward Adjustment

7.2 Adjusting Knife Speed

WARNING

Stop combine engine and remove key before making adjustments to machine. A child or even a pet could engage the drive.

The header knife drive is driven by the adapter mounted hydraulic pump. The following knife drive speeds are factory-set for the combine feeder house:

- CNH: 580 rpm
- John Deere: 490 rpm
- AGCO: 625 rpm
- Lexion: 750 rpm (420 on combine display)

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.

1. Stop combine engine and remove key.
2. To open left-hand endshield, remove lynch pin (A), and tool (B) from pin (C) at top rear of endshield.

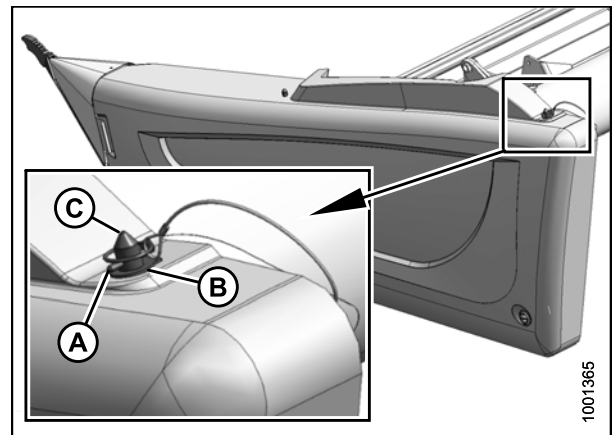


Figure 7.4: Lynch Pin and Tool

3. Use tool (B) to unlock latch (A) at lower rear corner of endshield.
4. Lift shield at aft end to clear pin.
5. Swing shield out and away from header while maintaining forward pressure to prevent shield from slipping out of tab (C) at front of endsheet.
6. Carefully disengage front of shield from tab (C) and swing front of shield away from header.

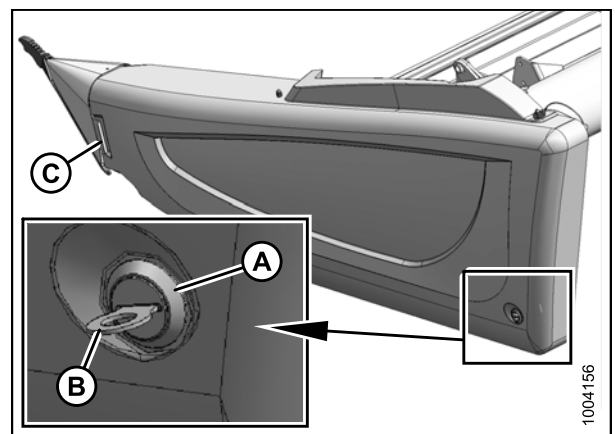


Figure 7.5: Left-Hand Endshield Latch

PERFORMING POST RUN-UP ADJUSTMENTS

CAUTION

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

7. Start engine, engage header drive, and run combine at operating rpm.
8. Have someone check the rpm of knife drive box pulley using a handheld tachometer.
9. Stop engine, remove key, and close endshield.

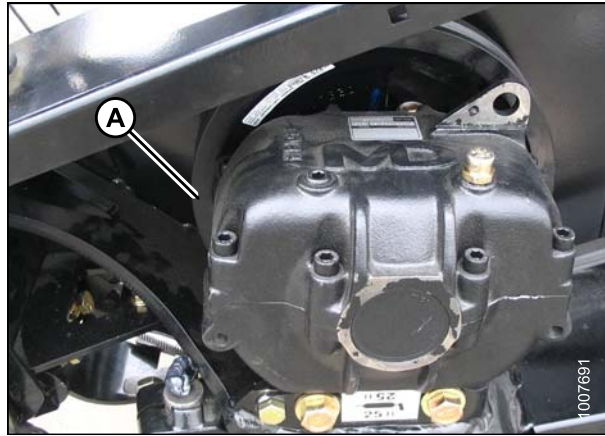


Figure 7.6: Knife Drive Box

10. Compare actual pulley rpm with values in the following chart:

Table 7.1 Recommended Knife Drive Speed (rpm)

Header Size	Recommended Knife Drive Speed Range (rpm)	
	Single Knife	Double Knife
30 FT	550–650	—
35 FT	550–600	—
40 FT	525–600	550–650
45 FT	N/A	

11. If adjustment to knife drive box pulley rpm is necessary, refer to the header technical manual.

8 Reference

8.1 Torque Specifications

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

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

8.1.1 SAE Bolt Torque Specifications

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

Table 8.1 SAE Grade 5 Bolt and Grade 5 Free Spinning Nut

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

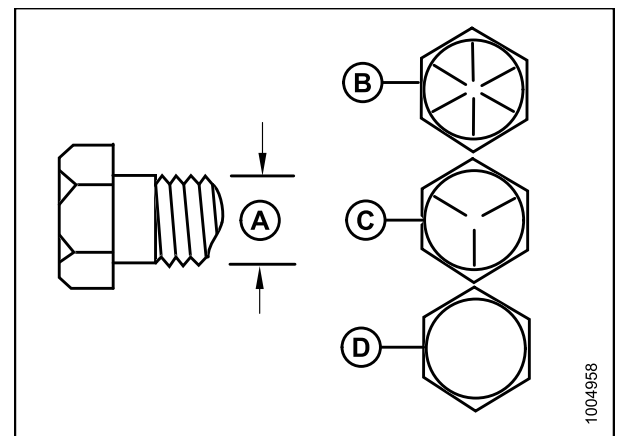


Figure 8.1: Bolt Grades

A - Nominal Size
C - SAE-5

B - SAE-8
D - SAE-2

REFERENCE

Table 8.2 SAE Grade 5 Bolt and Grade F Distorted Thread Nut

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

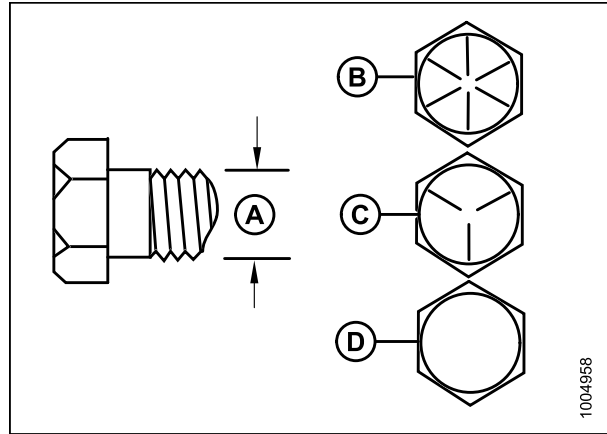


Figure 8.2: Bolt Grades

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

Table 8.3 SAE Grade 8 Bolt and Grade G Distorted Thread Nut

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

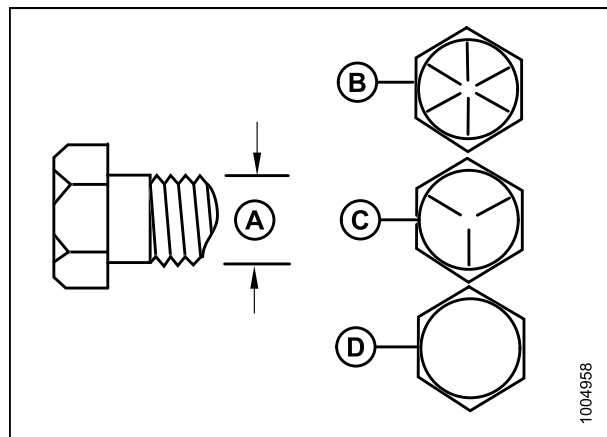


Figure 8.3: Bolt Grades

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

REFERENCE

Table 8.4 SAE Grade 8 Bolt and Grade 8 Free Spinning Nut

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

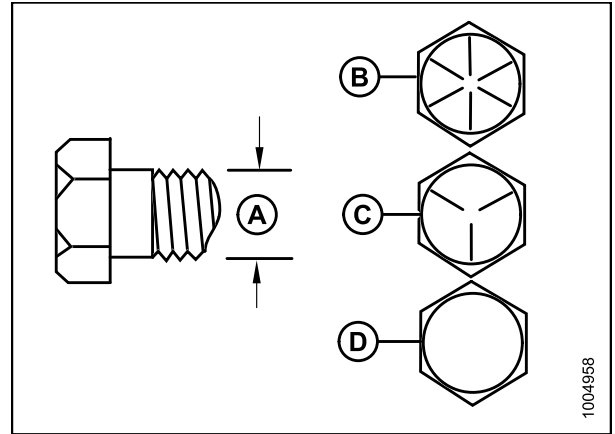


Figure 8.4: Bolt Grades

A - Nominal Size
C - SAE-5

B - SAE-8
D - SAE-2

8.1.2 Metric Bolt Specifications

Table 8.5 Metric Class 8.8 Bolts and Class 9 Free Spinning Nut

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

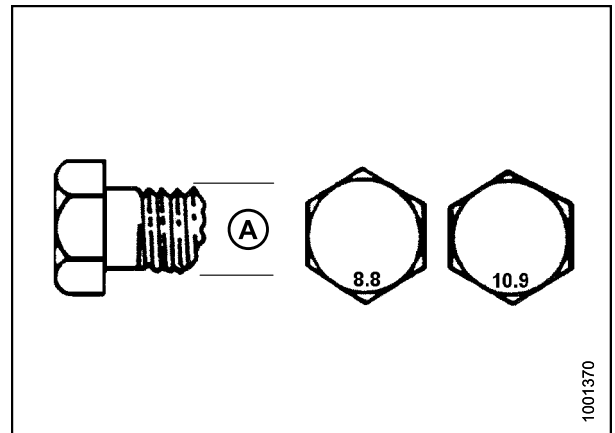


Figure 8.5: Bolt Grades

REFERENCE

Table 8.6 Metric Class 8.8 Bolts and Class 9 Distorted Thread Nut

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

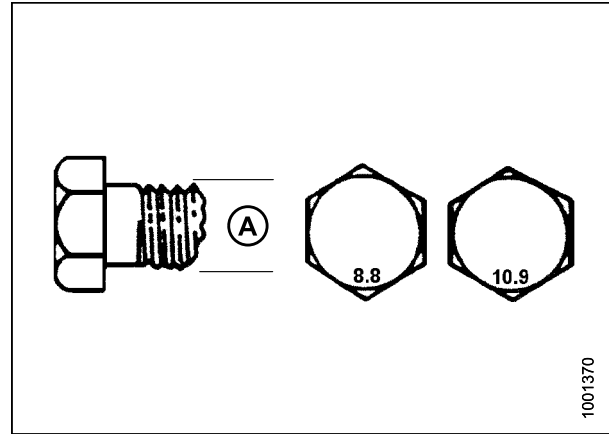


Figure 8.6: Bolt Grades

Table 8.7 Metric Class 10.9 Bolts and Class 10 Free Spinning Nut

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

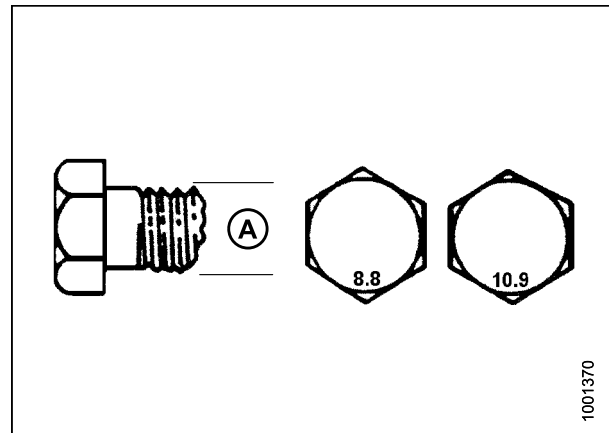


Figure 8.7: Bolt Grades

REFERENCE

Table 8.8 Metric Class 10.9 Bolts and Class 10 Distorted Thread Nut

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

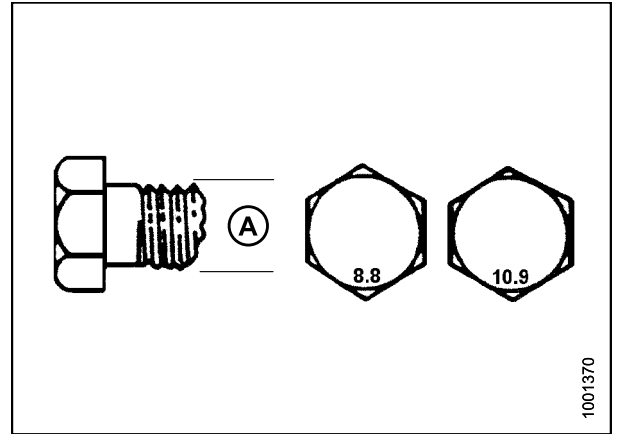


Figure 8.8: Bolt Grades

8.1.3 Metric Bolt Specifications Bolting into Cast Aluminum

Table 8.9 Metric Bolt Bolting into Cast Aluminum

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

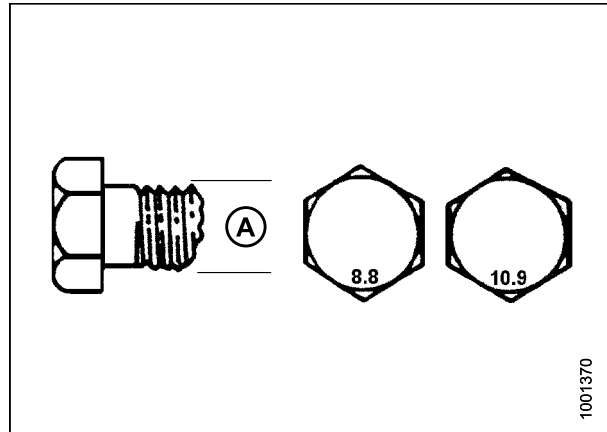


Figure 8.9: Bolt Grades

8.1.4 Flare-Type Hydraulic Fittings

1. Check flare (A) and flare seat (B) for defects that might cause leakage.
2. Align tube (C) with fitting (D) and thread nut (E) onto fitting without lubrication until contact has been made between the flared surfaces.
3. Torque the fitting nut (E) to the specified number of flats from finger tight (FFFT) or to a given torque value in [Table 8.10 Flare-Type Hydraulic Tube Fittings, page 225](#).
4. Use two wrenches to prevent fitting (D) from rotating. Place one wrench on the fitting body (D) and tighten nut (E) with the other wrench to the torque shown.
5. Assess the final condition of the connection.

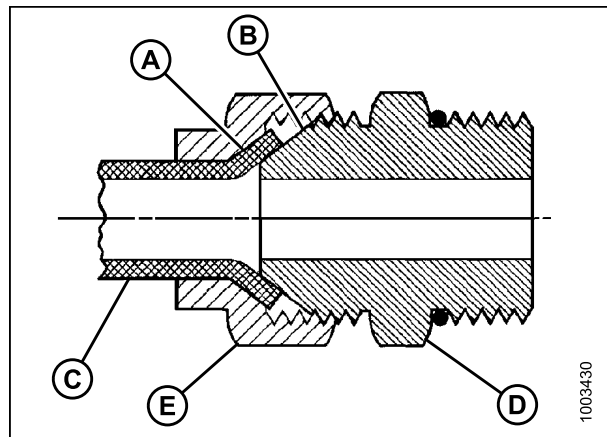


Figure 8.10: Hydraulic Fitting

REFERENCE

Table 8.10 Flare-Type Hydraulic Tube Fittings

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

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

REFERENCE

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

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

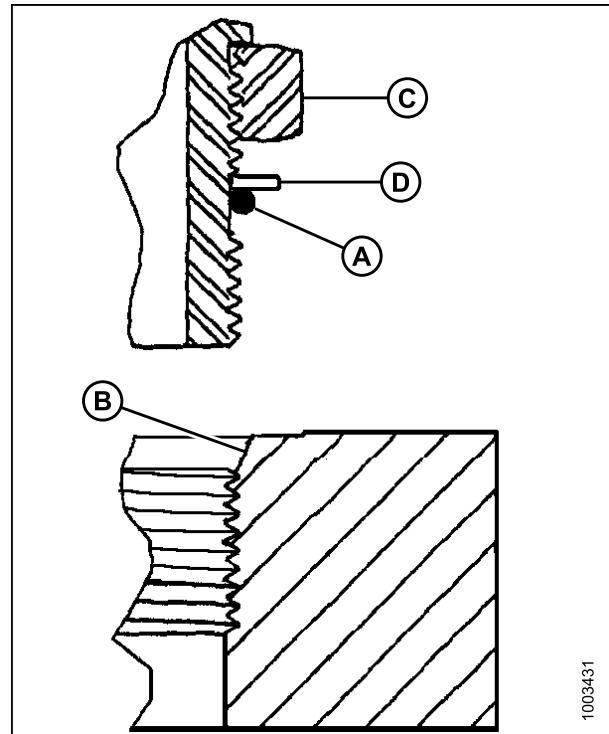


Figure 8.11: Hydraulic Fitting

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

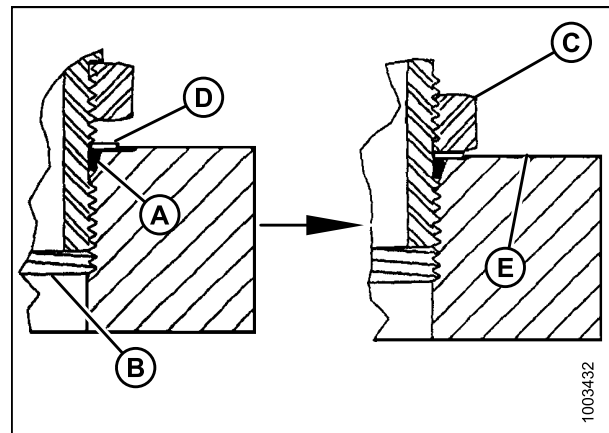


Figure 8.12: Hydraulic Fitting

REFERENCE

Table 8.11 O-Ring Boss (ORB) Hydraulic Fittings (Adjustable)

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

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

REFERENCE

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

1. Inspect O-ring (A) and seat (B) for dirt or obvious defects.
2. Check that O-ring (A) is **NOT** on the threads and adjust if necessary.
3. Apply hydraulic system oil to the O-ring.
4. Install fitting (C) into port until fitting is hand tight.
5. Torque fitting (C) according to the values in Table 8.12 *O-Ring Boss (ORB) Hydraulic Fittings (Non-Adjustable)*, page 228.
6. Check the final condition of the fitting.

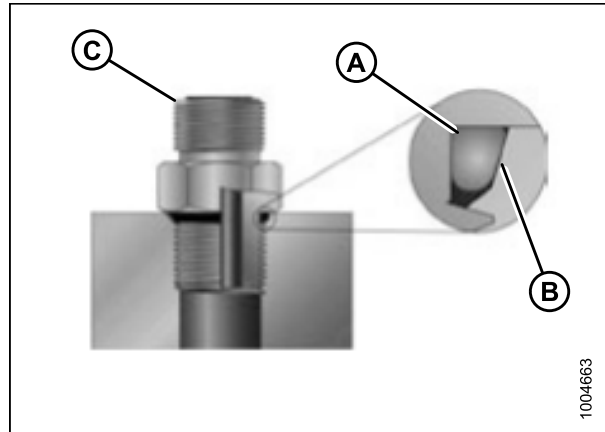


Figure 8.13: Hydraulic Fitting

Table 8.12 O-Ring Boss (ORB) Hydraulic Fittings (Non-Adjustable)

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

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

REFERENCE

8.1.7 O-Ring Face Seal (ORFS) Hydraulic Fittings

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



Figure 8.14: Hydraulic Fitting

2. Apply hydraulic system oil to the O-ring (B).
3. Align the tube or hose assembly so that the flat face of the sleeve (A) or (C) comes in full contact with O-ring (B).
4. Thread tube or hose nut (D) until hand-tight. The nut should turn freely until it is bottomed out.
5. Torque fittings according to the values in Table [8.13 O-Ring Face Seal \(ORFS\) Hydraulic Fittings, page 230](#).

NOTE:

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

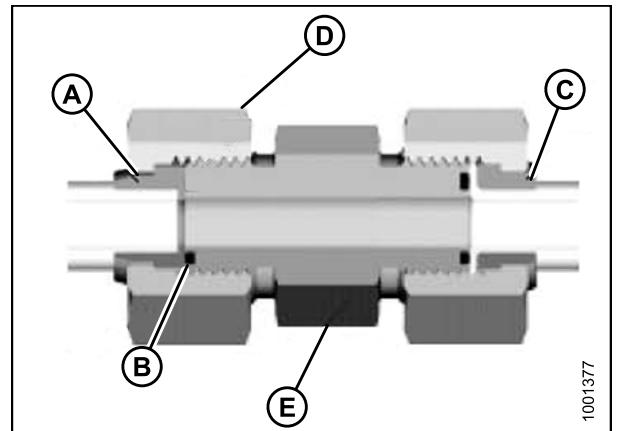


Figure 8.15: Hydraulic Fitting

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

REFERENCE

Table 8.13 O-Ring Face Seal (ORFS) Hydraulic Fittings

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

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

6. O-ring face seal type end not defined for this tube size.

REFERENCE

8.2 Conversion Chart

Table 8.14 Conversion Chart

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

REFERENCE

8.3 Definitions

The following terms and acronyms may be used in this manual.

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 that is designed to be paired with a nut
Center-link	A hydraulic cylinder link between the header and the machine to which it is attached: It is used to change header angle
CGVW	Combined vehicle gross weight
D-Series header	MacDon's D50, D60, and D65 rigid draper headers
DK	Double knife
DKD	Double-knife drive
DDD	Double-draper drive
DR	Double reel
FD-Series header	MacDon's FD70 and FD75 FlexDraper® headers
Finger tight	Finger tight is a reference position where sealing surfaces or components are making contact with each other and the fitting has been tightened to a point where the fitting is no longer loose
FFFT	Flats from finger tight
GSL	Ground speed lever
GVW	Gross vehicle weight
Hard joint	A joint made with the use of a fastener where the joining materials are highly incompressible
Header	A machine that cuts crop and feeds it into an attached combine
Hex key	A hex key or Allen key (also known by various other synonyms) is a tool of hexagonal cross-section used to drive bolts and screws that have a hexagonal socket in the head (internal-wrenching hexagon drive)
HDS	Hydraulic deck shift
hp	Horsepower
ISC	Intermediate Speed Control
JIC	Joint Industrial Council: A standards body that developed the standard sizing and shape for original 37° flared fitting
Knife	A cutting device which uses a reciprocating cutter (also called a sickle)
MDS	Mechanical deck shift
n/a	Not applicable
Nut	An internally threaded fastener that is designed to be paired with a bolt

REFERENCE

Term	Definition
NPT	National Pipe Thread: A style of fitting used for low pressure port openings Threads on NPT fittings are uniquely tapered for an interference fit
ORB	O-ring boss: A style of fitting commonly used in port opening on manifolds, pumps, and motors
ORFS	O-ring face seal: A style of fitting commonly used for connecting hoses and tubes This style of fitting is also commonly called ORS, which stands for O-ring seal
PTO	Power take-off
RoHS (Reduction of Hazardous Substances)	A directive by the European Union to restrict the use of certain hazardous substances (such as hexavalent chromium used in some yellow zinc platings)
SAE	Society of Automotive Engineers
Screw	A headed and externally threaded fastener that threads into preformed threads or forms its own thread in one of the mating parts
SDD	Single-drapeer drive
SK	Single knife
SKD	Single-knife drive
Soft joint	A joint made with the use of a fastener where the joining materials are compressible or experience relaxation over a period of time
spm	Strokes per minute
SR	Single reel
Tractor	Agricultural type tractor
Truck	A four-wheel highway/road vehicle weighing no less than 7500 lbs (3400 kg)
Tension	Axial load placed on a bolt or screw, usually measured in pounds (lb) or Newtons (N)
TFFT	Turns from finger tight
Torque	The product of a force X lever arm length, usually measured in foot-pounds (ft·lbf) or Newton-meters (N·m)
Torque angle	A tightening procedure where the fitting is assembled to a precondition (finger tight) and then the nut is turned further a number of degrees or a number of flats to achieve its final position
Torque-tension	The relationship between the assembly torque applied to a piece of hardware and the axial load it induces in the bolt or screw
UCA	Upper cross auger
Untimed knife drive	Unsynchronized motion applied at the cutterbar to two separately driven knives from a single hydraulic motor or two hydraulic motors
Washer	A thin cylinder with a hole or slot located in the center that is to be used as a spacer, load distribution element, or a locking mechanism

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:

Adapter Serial Number:

Table 1 Model FD75 FlexDraper®/CA25 Combine Adapter Predelivery Checklist – North America

✓	Item	Reference
	Check for shipping damage or missing parts. Be sure all shipping dunnage is removed.	—
	Check for loose hardware. Tighten to required torque.	
	Check tire pressure (Transport/Stabilizer Option).	4.1 Checking Tire Pressure: Transport and Stabilizer Wheels, page 81
	Check wheel bolt torque (Transport/Stabilizer Option).	4.2 Checking Wheel Bolt Torque, page 82
	Check knife drive box breather position.	4.3 Checking Knife Drive Box, page 83
	Check knife drive box lube level.	4.3 Checking Knife Drive Box, page 83
	Check adapter gearbox lube level.	4.4 Checking Oil Level in Header Drive Gearbox, page 84
	Check hydraulic reservoir lube level before and after run-up.	4.5 Checking Oil Level in Hydraulic Reservoir, page 85
	Check knife drive belt(s) tension.	4.6 Checking and Adjusting Knife Drive Belt Tension, page 86
	Check if reel is centered between header endsheets (with header in full smile).	4.8 Centering the Reel, page 89
	Grease all bearings and drivelines.	4.15 Lubricating the Header, page 115
	Check side draper tension.	4.13 Adjusting Side Draper Tension, page 111
	Check draper seal.	4.14 Checking and Adjusting Draper Seal, page 113
	Check wing balance.	4.10.1 Checking Wing Balance, page 95
	Check header float.	4.9 Checking and Adjusting Header Float, page 90
	Check reel tine to cutterbar clearance.	4.11.1 Measuring Reel Clearance, page 105
	Check auger flighting to feed pan clearance.	4.12 Adjusting Auger to Pan Clearance, page 109
	Check the knife hold-down adjustment.	4.7 Checking Knife Hold-Downs, page 87

PREDELIVERY CHECKLIST

✓	Item	Reference
	Check fitment of endshields.	4.16 Checking and Adjusting Endshields, page 122
	Check skid shoes are evenly adjusted at a setting appropriate for first crop.	—
	Ensure feeder house variable speed is set to minimum.	—
	Ensure Auto Header Height is calibrated and functioning correctly.	5.1 Auto Header Height Control (AHHC), page 125
Run-up procedure		6 Running Up Header, page 211
	Check hydraulic hose and wiring harness routing for clearance when raising or lowering header and reel.	—
	Check lights are functional.	—
	Check knife speed.	7.2 Adjusting Knife Speed, page 217
Post run-up check. Stop engine.		7 Performing Post Run-Up Adjustments, page 215
	Check knife sections for discoloration caused by misalignment of components.	7.1 Adjusting Knife, page 215
	Check for hydraulic leaks.	—
	Check that the manual storage case contains all of the required manuals.	4.17 Checking Manuals, page 124

Date Checked:

Checked by:

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