



MacDon

FD75 FlexDraper[®] Combine Header with CA25 Combine Adapter

Unloading and Assembly Instructions (North America)

147945 Revision A
2017 Model Year
Original Instruction

Featuring MacDon FLEX-FLOAT Technology™

The harvesting specialists.

FD75 FlexDraper® Combine Header



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
Changed measurement format so that metric appears first, followed by imperial in parenthesis.	—
Draper seal adjusting procedure changed to checking only and updated.	4.15 Checking Draper Seal, page 124
Installing Crop Dividers topic deleted.	—
Removing Crop Dividers from Storage topic added.	3.4.6 Removing Crop Dividers from Storage, page 86
Installing Crop Dividers with Latch topic added.	3.4.8 Installing Crop Dividers with Latch Option, page 88
Installing Crop Dividers without Latch topic added.	3.4.7 Installing Crop Divider without Latch Option, page 87
Opening Endshields and Closing Endshields topics added.	3.4.5 Opening Endshield, page 85 3.4.9 Closing Endshield, page 89
Illustrations added to Lubrication Points and existing illustration updated.	4.12 Adjusting Auger to Pan Clearance, page 119
Left-hand and right-hand changed to left and right respectively.	—
Illustration for Transport Lights revised.	3.4.4 Positioning Transport Lights, page 85
Checking and Adjusting Knife Drive Belts topic added.	4.6 Checking and Adjusting Non-Timed Knife Drive Belt Tension, page 96
Centering the Reel condensed into one topic.	4.8 Centering the Reel, page 99
Procedure changes in Adjusting Reel Clearance, Checking and Adjusting Skid Shoes.	4.11.2 Adjusting Reel Clearance, page 117 4.14 Checking and Adjusting Skid Shoes, page 123
Check procedure added.	4.6 Checking and Adjusting Non-Timed Knife Drive Belt Tension, page 96
Checking and Adjusting Knife Hold-Downs procedure added	4.7 Checking and Adjusting Knife Hold-Downs, page 97
Tapered Pipe Thread Fitting assembly added to Torque Specifications.	7 Reference, page 277
Lifting Equipment Requirements deleted from Reference chapter	—
Checking Knife Hold-Downs added to Predelivery Checklist	Predelivery Checklist, page 293

TABLE OF CONTENTS

Introduction	i
List of Revisions	ii
1 Safety	1
1.1 Signal Words	1
1.2 General Safety	2
1.3 Safety Signs	4
2 Unloading Header and Adapter	5
2.1 Unloading Header and Adapter from Trailer	5
2.2 Lowering Header	7
2.3 Removing Shipping Stands	10
3 Assembling Header and Adapter	15
3.1 Attaching Reel Lift Cylinders	15
3.2 Setting Up Combine Adapter	22
3.2.1 Installing Filler Cap	22
3.2.2 Removing Auger Flighting Extensions	24
3.2.3 Removing Stripper Bars	25
3.2.4 Replacing Feeder Deflectors: New Holland CR Combines	25
3.3 Attaching Header to Combine	27
3.3.1 Challenger, Gleaner, and Massey Ferguson Combines	28
Installing Reel Fore-Aft / Header Tilt Selector Switch and Harness	28
Attaching Header to a Challenger, Gleaner, or Massey Ferguson Combine	31
3.3.2 Case IH Combines	35
Attaching Header to Case IH Combine	35
3.3.3 John Deere Combines	41
Installing Reel Fore-Aft / Header Tilt Switch: S-Series Combines	41
Installing Reel Fore-Aft/Header Tilt Switch: 50, 60, and 70 Series Combines	45
Attaching Header to John Deere Combine	49
3.3.4 Lexion Combines	53
Lexion 500 Series: Installing Reel Fore-Aft/Header Tilt Selector Switch and Harness	53
Lexion 700 Series: Installing Reel Fore-Aft/Header Tilt Selector Switch and Harness	62
Attaching Header to Lexion Combine	71
3.3.5 New Holland Combines	77
Attaching Header to New Holland CR/CX Combine	77
3.4 Completing the Header Assembly	82
3.4.1 Attaching Cam Arms	82
3.4.2 Repositioning Gearbox	83
3.4.3 Removing Shipping Supports	84
3.4.4 Positioning Transport Lights	85
3.4.5 Opening Endshield	85
3.4.6 Removing Crop Dividers from Storage	86
3.4.7 Installing Crop Divider without Latch Option	87
3.4.8 Installing Crop Dividers with Latch Option	88
3.4.9 Closing Endshield	89
3.4.10 Installing Crop Divider Rods	89
3.4.11 Installing Options	90
4 Performing Predelivery Checks	91
4.1 Checking Transport / Stabilizer Tire Pressure	91
4.2 Checking Wheel Bolt Torque	92
4.3 Checking Knife Drive Box	93
4.4 Checking Oil Level in Header Drive Gearbox	94
4.5 Checking Oil Level in Hydraulic Reservoir	95
4.6 Checking and Adjusting Non-Timed Knife Drive Belt Tension	96
4.7 Checking and Adjusting Knife Hold-Downs	97

TABLE OF CONTENTS

4.7.1	Checking Pointed Guard Hold-Downs.....	97
	Adjusting Pointed Guard Hold-Downs	98
	Adjusting Hold-Down at Double-Knife Center Pointed Guard	98
4.8	Centering the Reel.....	99
4.9	Checking and Adjusting Header Float	100
4.10	Checking and Adjusting Header Wing Balance	105
4.10.1	Checking Wing Balance.....	105
4.10.2	Adjusting Wing Balance.....	110
4.11	Measuring and Adjusting Reel Clearance to Cutterbar	115
4.11.1	Measuring Reel Clearance.....	115
4.11.2	Adjusting Reel Clearance	117
4.12	Adjusting Auger to Pan Clearance	119
4.13	Checking and Adjusting Side Draper Tension	121
4.14	Checking and Adjusting Skid Shoes.....	123
4.15	Checking Draper Seal.....	124
4.16	Lubricating Header	126
4.16.1	Greasing Procedure	126
4.16.2	Lubrication Points.....	126
4.17	Checking and Adjusting Endshields	133
4.18	Checking Manuals	134
5	Setting Up Auto Header Height Control.....	135
5.1	Auto Header Height Control (AHHC).....	135
5.1.1	Sensor Output Voltage Range – Combine Requirements	136
	Manually Checking Voltage Range.....	137
	Adjusting Voltage Limits	138
5.1.2	Case IH 2300/2500 and 5088/6088/7088 Combines.....	140
	Engaging the Auto Header Height Control (Case IH 2300).....	140
	Calibrating the Auto Header Height Control (AHHC) (Case IH 2300/2500 and 5088/6088/7088).....	141
	Setting the Sensitivity of the Auto Header Height Control (Case IH 2300/2500 and 5088/6088/7088).....	142
5.1.3	Case IH 5130/6130/7130, 7010/8010, 7120/8120/9120, and 7230/8230/9230 Combines	143
	Checking Voltage Range from the Combine Cab (Case 8010)	143
	Checking Voltage Range from the Combine Cab (Case IH 5130/6130/7130, 7010/8010; 7120/8120/9120; 7230/8230/9230).....	146
	Calibrating the Auto Header Height Control (Case IH 5130/6130/7130, 7010/8010; 7120/8120/9120; 7230/8230/9230).....	148
	Calibrating the Auto Header Height Control (Case Combines with Version 28.00 or Higher Software)	150
	Setting Preset Cutting Height (Case 7010/8010, 7120/8120/9120, 7230/8230/9230)	153
5.1.4	Challenger 6 and 7 Series Combines.....	154
	Checking Voltage Range from the Combine Cab (Challenger 6 and 7 Series).....	154
	Engaging the Auto Header Height Control (Challenger 6 Series).....	156
	Calibrating the Auto Header Height Control (Challenger 6 Series).....	157
	Adjusting the Header Height (Challenger 6 Series).....	159
	Adjusting the Header Raise/Lower Rate (Challenger 6 Series).....	159
	Setting the Sensitivity of the Auto Header Height Control (Challenger 6 Series)	160
5.1.5	Gleaner R62/R72 Combines	162
	System Requirements (Gleaner R62/R72).....	162
	Calibrating the Auto Header Height Control (Gleaner R62/R72)	162
	Setting the Sensitivity of the Auto Header Height Control (Gleaner R62/R72 Series)	163
5.1.6	Gleaner R65/R66/R75/R76 and S Series Combines	165
	Checking Voltage Range from the Combine Cab (Gleaner R65/R66/R75/R76 and S Series).....	165

TABLE OF CONTENTS

	Engaging the Auto Header Height Control (Gleaner R65/R66/R75/R76 and S Series).....	166
	Calibrating the Auto Header Height Control (Gleaner R65/R66/R75/R76 and S Series).....	167
	Turning off the Accumulator (Gleaner R65/R66/R75/R76 and S Series).....	169
	Adjusting the Header Raise/Lower Rate (Gleaner R65/R66/R75/R76 and S Series)	169
	Adjusting Ground Pressure (Gleaner R65/R66/R75/R76 and S Series)	170
	Adjusting the Sensitivity of the Auto Header Height Control (Gleaner R65/R66/R75/R76 and S Series).....	171
	Troubleshooting Alarms and Diagnostic Faults (Gleaner R65/R66/R75/R76 and S Series).....	172
5.1.7	Gleaner S9 Series Combines.....	174
	Setting up the Header (Gleaner S9)	174
	Setting up Reel Settings (Gleaner S9).....	178
	Setting up Automatic Header Controls (Gleaner S9 Series)	180
	Calibrating the Header (Gleaner S9 Series).....	182
	Operating with a Gleaner S9 Combine	185
	Header In-Field Settings.....	187
5.1.8	John Deere 50 Series Combines.....	188
	Output Voltage Range.....	188
	Calibrating Auto Header Height	192
	Setting the Sensitivity of the Auto Header Height Control.....	194
	Adjusting the Threshold for the Drop Rate Valve	195
	Operating Auto Header Height.....	196
	Replacing the Auto Header Height Control (AHHC) Sensor	198
5.1.9	John Deere 60 Series Combines.....	200
	Checking Voltage Range from the Combine Cab (John Deere 60 Series)	200
	Calibrating the Auto Header Height Control (John Deere 60 Series).....	202
	Turning the Accumulator off (John Deere 60 Series)	203
	Setting the Sensing Grain Header Height to 50 (John Deere 60 Series).....	204
	Setting the Sensitivity of the Auto Header Height Control (John Deere 60 Series)	205
	Adjusting the Threshold for the Drop Rate Valve (John Deere 60 Series).....	206
5.1.10	John Deere 70 Series Combines.....	207
	Checking Voltage Range from the Combine Cab (John Deere 70 Series)	207
	Calibrating Feeder House Speed (John Deere 70 Series).....	211
	Calibrating the Auto Header Height Control (John Deere 70 Series).....	211
	Setting the Sensitivity of the Auto Header Height Control (John Deere 70 Series)	212
	Adjusting the Manual Header Raise/Lower Rate (John Deere 70 Series).....	213
5.1.11	John Deere S-Series and T-Series Combines	214
	Checking Voltage Range from the Combine Cab (John Deere S-Series)	214
	Calibrating Feeder House Fore/Aft Tilt Range (John Deere S-Series).....	217
	Calibrating the Auto Header Height Control (John Deere S-Series)	220
	Setting the Sensitivity of the Auto Header Height Control (John Deere S-Series).....	222
	Adjusting the Manual Header Raise/Lower Rate (John Deere S-Series)	223
	Setting Preset Cutting Height (John Deere S-Series).....	224
5.1.12	Lexion 500-Series Combines	226
	Auto Header Height Sensor Voltage Requirements	226
	Checking the Sensor's Output Voltage Range	226
	Calibrating the Auto Header Height System.....	228
	Auto Header Height Sensor Voltage Requirements	230
	Setting Cutting Height (Lexion 500 Series)	231
	Setting Preset Cutting Height (Lexion 500 Series).....	231
	Setting Cutting Height Manually (Lexion 500 Series)	232
	Setting the Sensitivity of the Auto Header Height Control (Lexion 500 Series).....	233

TABLE OF CONTENTS

	Adjusting Auto Reel Speed (Lexion 500 Series)	235
5.1.13	Lexion 700-Series Combines	239
	Auto Header Height Sensor Voltage Requirements	239
	Checking the Sensor's Output Voltage Range	239
	Calibrating the Auto Header Height System	241
	Setting Cutting Height (Lexion 700 Series)	244
	Setting the Sensitivity of the Auto Header Height Control (Lexion 700 Series)	244
	Adjusting Auto Reel Speed (Lexion 700 Series)	246
5.1.14	New Holland Combines CX/CR Series (CR Series—Model Year 2014 and Earlier)	248
	Checking Voltage Range from the Combine Cab (New Holland)	248
	Engaging the Auto Header Height Control (New Holland CR/CX Series)	250
	Calibrating the Auto Header Height Control (New Holland CR/CX Series)	252
	Adjusting Header Raise Rate (New Holland CR/CX Series)	254
	Setting the Header Lower Rate to 50 (New Holland CR/CX Series)	255
	Setting the Sensitivity of the Auto Header Height Control to 200 (New Holland CR/CX Series)	255
	Setting Preset Cutting Height (New Holland CR/CX Series)	256
	Configuring Reel Fore-Aft, Header Tilt, and Header Type (New Holland CR Series)	258
5.1.15	New Holland Combines (CR Series—Model Year 2015 and Later)	259
	Engaging the Auto Header Height Control (New Holland CR Series)	259
	Checking Voltage Range from the Combine Cab (New Holland CR Series)	262
	Calibrating the Auto Header Height Control (New Holland CR Series)	265
	Setting Auto Height (New Holland CR Series)	267
	Setting Maximum Work Height (New Holland CR Series)	268
5.1.16	Sensor Operation	269
6	Running Up Header	271
6.1	Performing Post Run-Up Adjustments	273
6.1.1	Adjusting Knife and Guards	273
6.1.2	Adjusting Knife Speed	275
7	Reference	277
7.1	Torque Specifications	277
7.1.1	SAE Bolt Torque Specifications	277
7.1.2	Metric Bolt Specifications	279
7.1.3	Metric Bolt Specifications Bolting into Cast Aluminum	282
7.1.4	Flare-Type Hydraulic Fittings	282
7.1.5	O-Ring Boss (ORB) Hydraulic Fittings (Adjustable)	284
7.1.6	O-Ring Boss (ORB) Hydraulic Fittings (Non-Adjustable)	286
7.1.7	O-Ring Face Seal (ORFS) Hydraulic Fittings	287
7.1.8	Tapered Pipe Thread Fittings	289
7.2	Conversion Chart	290
7.3	Definitions	291
	Predelivery Checklist	293

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

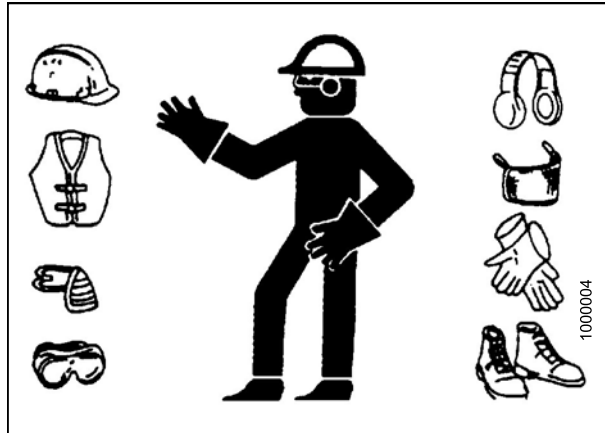


Figure 1.1: Safety Equipment



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.

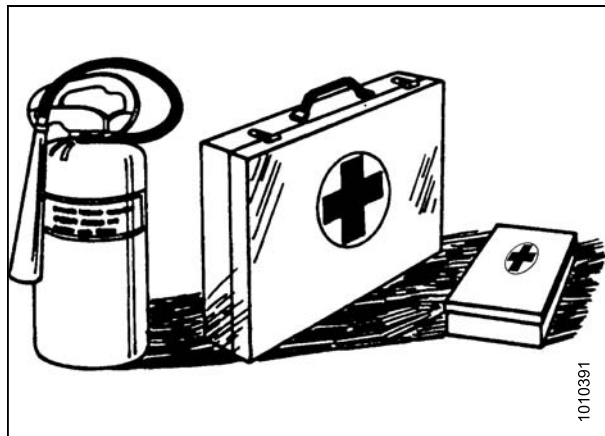


Figure 1.3: Safety Equipment

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 the engine and remove the key from ignition before leaving operator's seat for any reason.

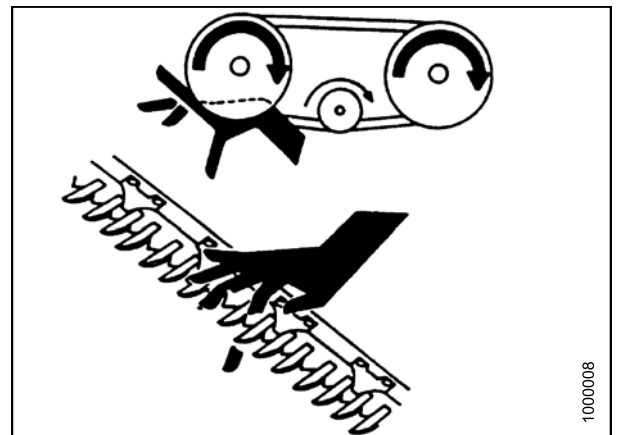


Figure 1.5: Safety around Equipment

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



Figure 1.6: Safety around Equipment

1.3 Safety Signs

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

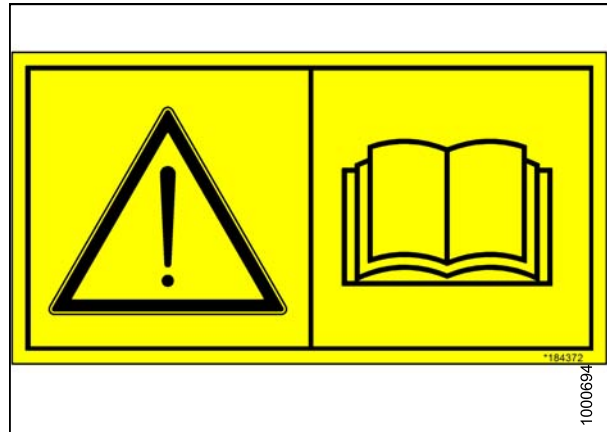


Figure 1.7: Operator's Manual Decal

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

The following procedure assumes that two headers were shipped on the 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 610 mm (24 in.) from the back end of forks. To obtain forklift capacity for a load centered at 1220 mm (48 in.), check with your forklift distributor.

Table 2.1 Lifting Vehicle

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

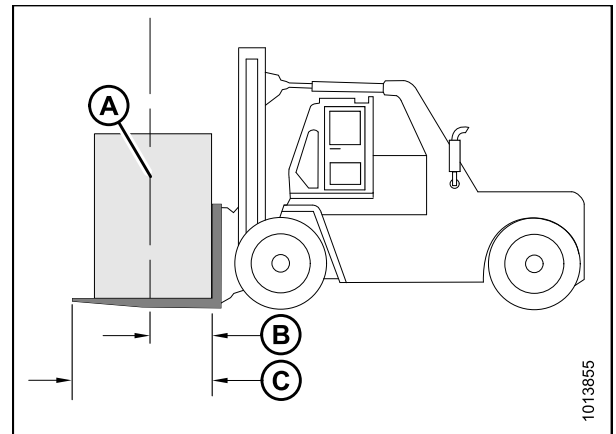


Figure 2.1: Minimum Lifting Capacity

A - Center of Gravity of Load
B - Load Center 1220 mm (48 in.) from Back of Forks
C - Minimum Fork Length 1981 mm (78 in.)

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 forks do not interfere with shipping frame. If forks contact second header, damage to headers may occur.

UNLOADING HEADER AND ADAPTER

3. Approach header and line up forks (A) with fork slider channels (B) under adapter frame.
4. Slide forks (A) underneath fork slider channels (B) as far as possible without contacting shipping support of 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 150 mm (6 in.) from ground.

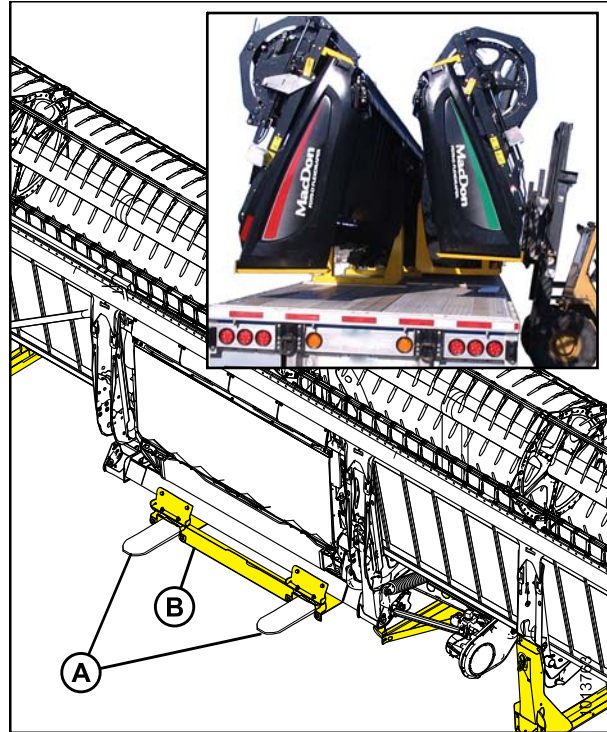


Figure 2.2: Header Shipping Supports

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

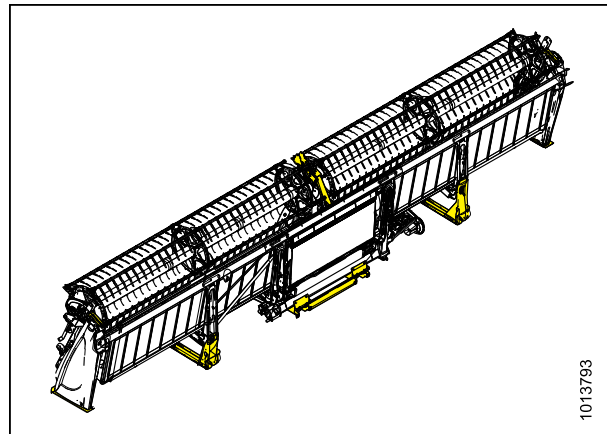


Figure 2.3: Header after Unloading

2.2 Lowering Header

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

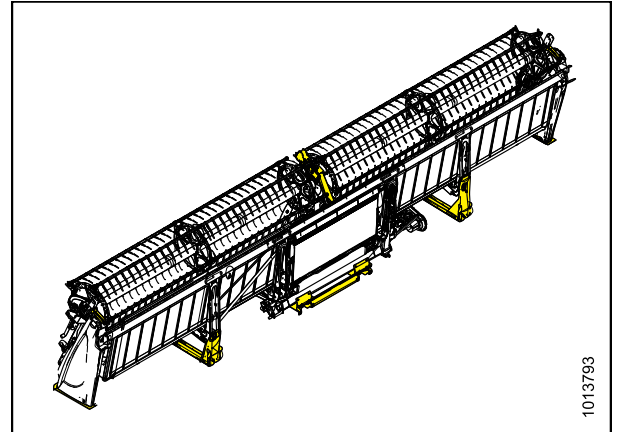


Figure 2.4: Underside of Header

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.

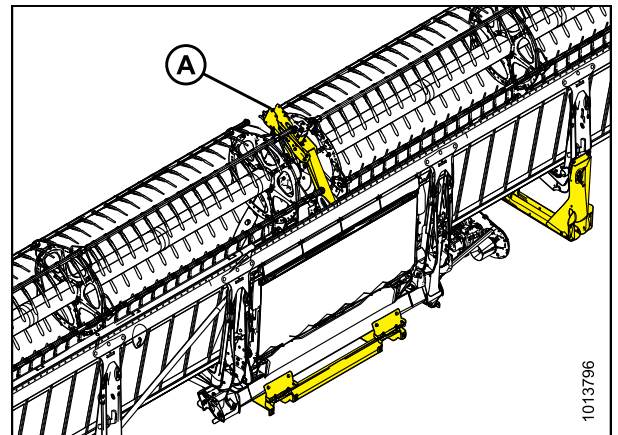


Figure 2.5: Header before Lowering

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.

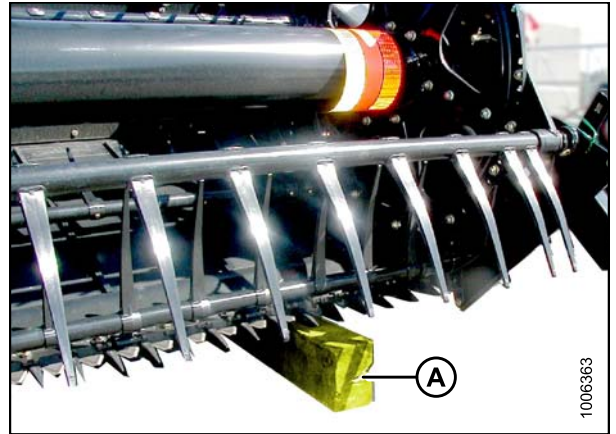


Figure 2.7: Blocks at Each End of Cutterbar

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.

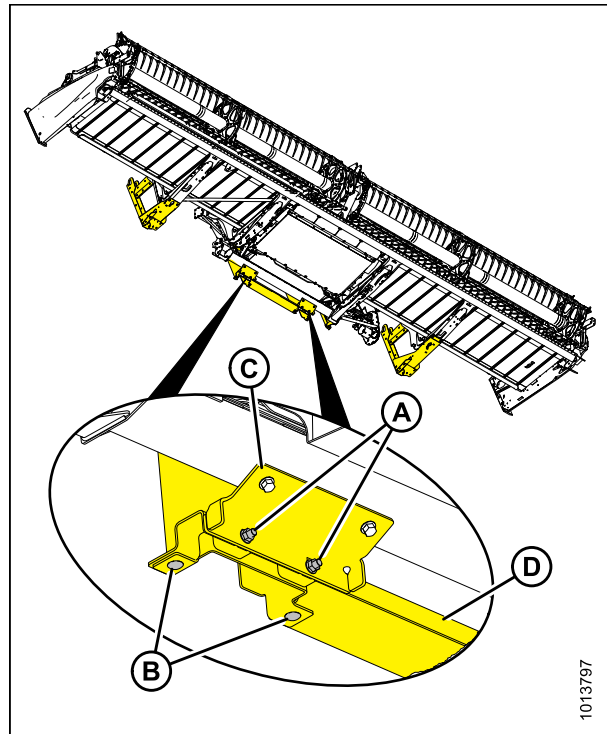


Figure 2.8: Fork Slider Channels

4. Remove the bottom brace (A).

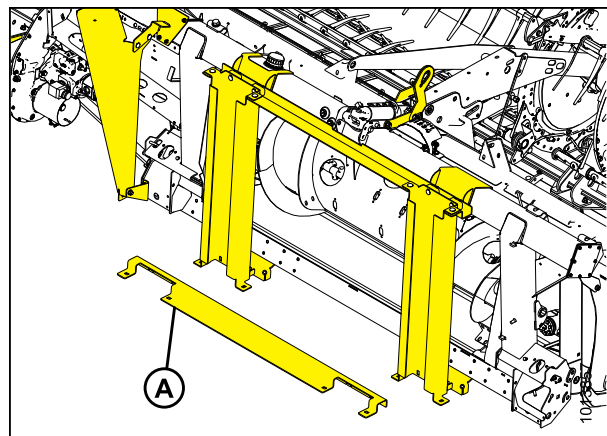


Figure 2.9: Lower Brace Removal

UNLOADING HEADER AND ADAPTER

5. From the upper brace, remove the two bolts (A) followed by the two bolts (B). Repeat for the opposite side.
6. Remove the right and left fork slider channels.

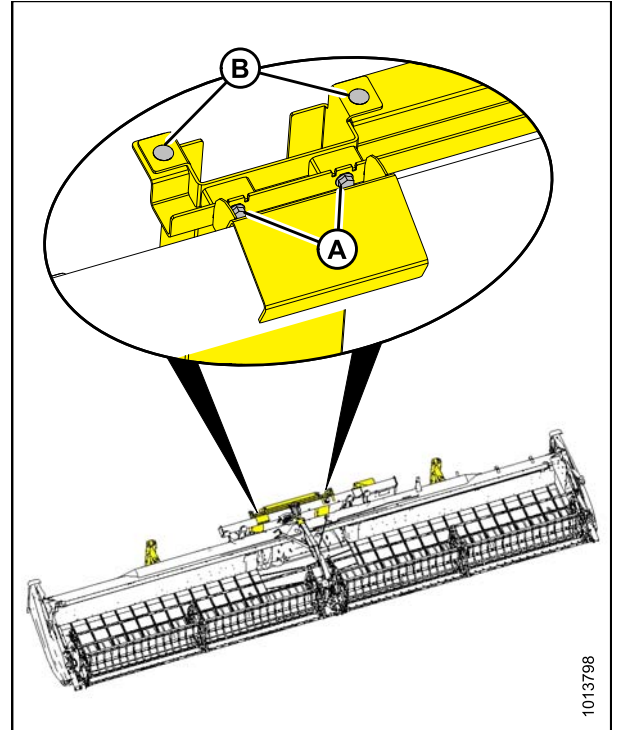


Figure 2.10: Fork Slider Channels

7. Remove the upper brace (A).

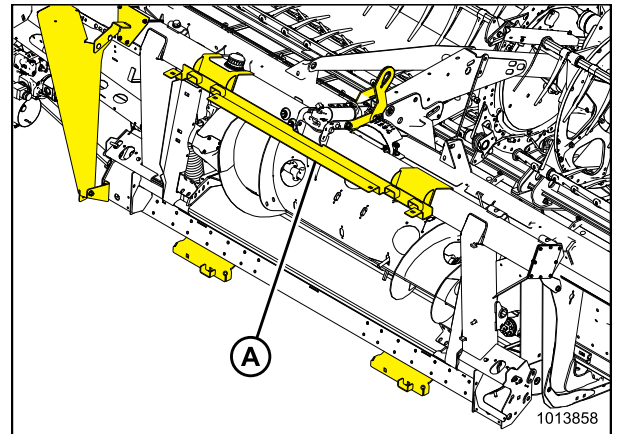


Figure 2.11: Upper Brace Removal

UNLOADING HEADER AND ADAPTER

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

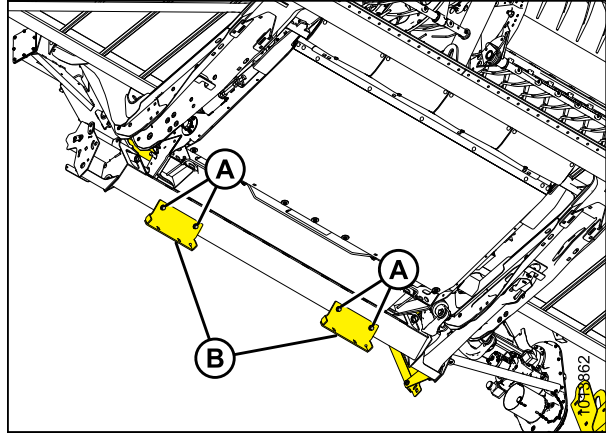


Figure 2.12: View from Below the Header

- 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).

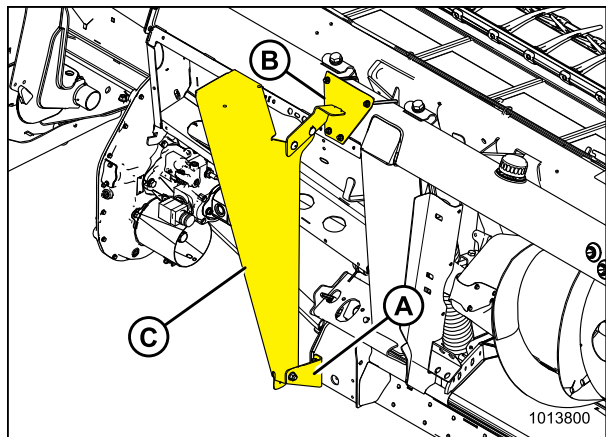


Figure 2.13: Multicoupler Guard

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

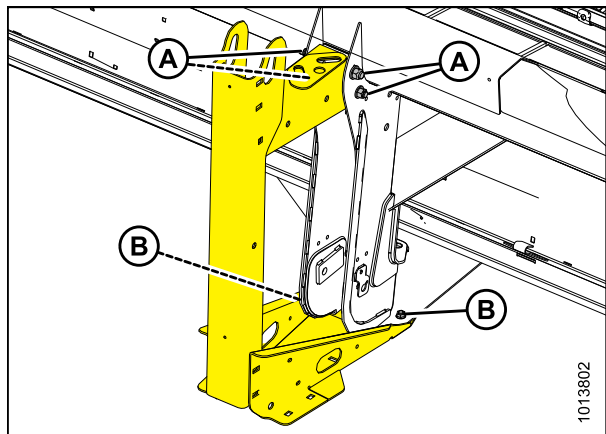


Figure 2.14: Shipping Stands at Outboard Header Legs (Right side shown)

UNLOADING HEADER AND ADAPTER

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

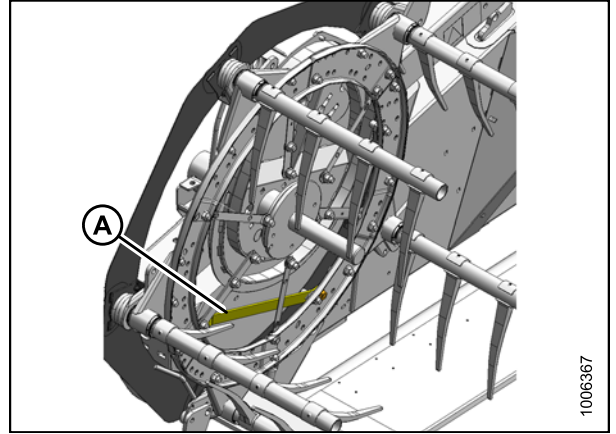


Figure 2.15: Reel Anti-Rotation Strap

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

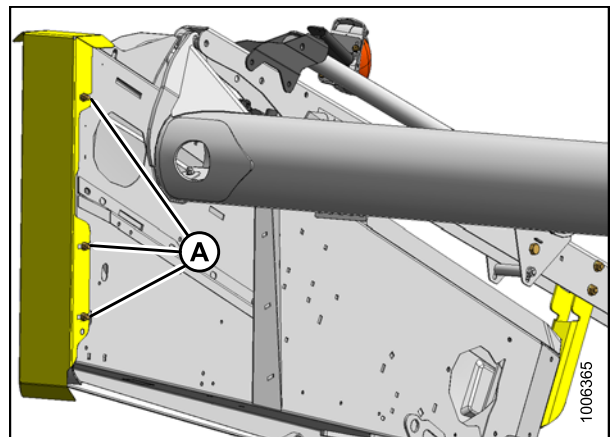


Figure 2.16: Endshield Guards

3 Assembling Header and Adapter

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

3.1 Attaching Reel Lift Cylinders

Unless otherwise stated, the following procedure applies to single and double reel headers.

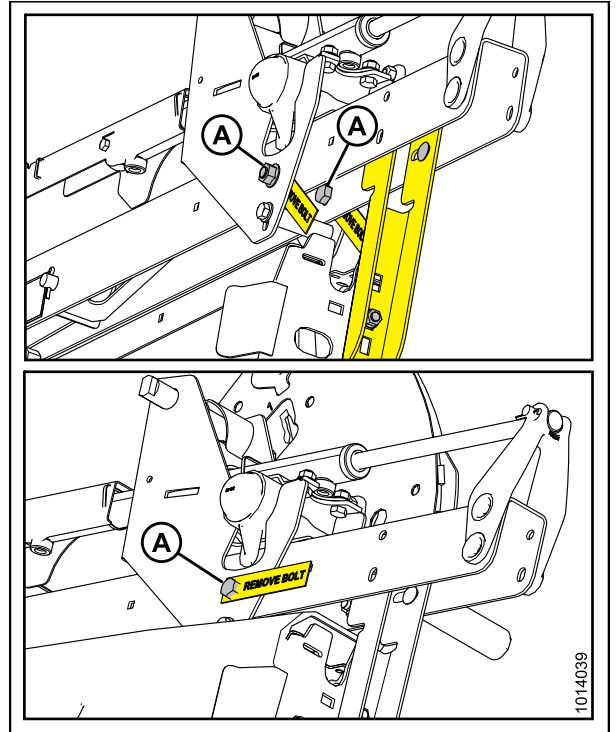


Figure 3.1: Reel Right Arm (Parts Removed for Clarity)

Top Image - Single Reel

Bottom Image - Double Reel

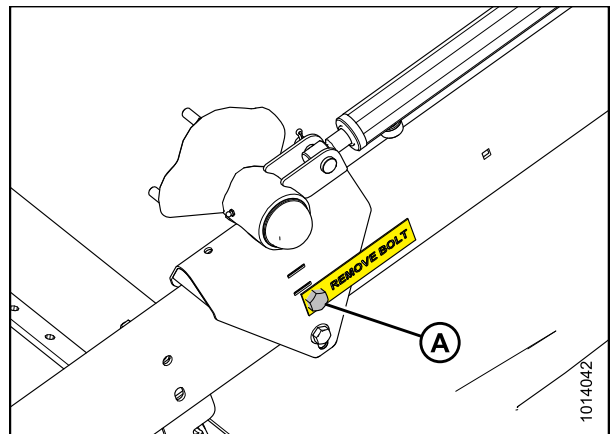


Figure 3.2: Reel Left Arm

ASSEMBLING HEADER AND ADAPTER

1. Remove two top bolts (A) on outboard reel arm supports. Repeat for opposite side.

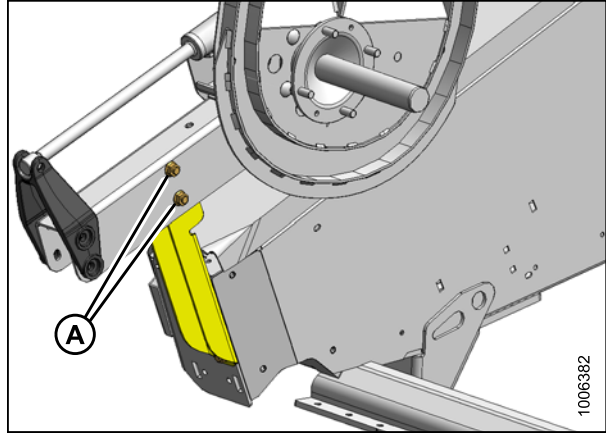


Figure 3.3: Reel Outboard Support Arm

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

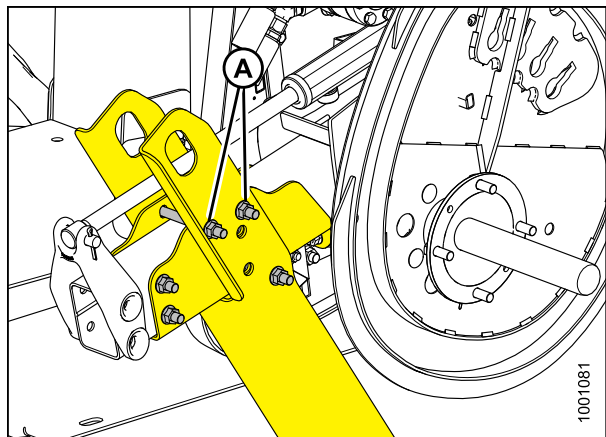


Figure 3.4: Reel Center Arm

3. Position sling (A) around reel tube (B) close to outboard end of reel, and attach sling to a forklift (or equivalent).
4. Remove shipping wire/banding from reel lift cylinder.

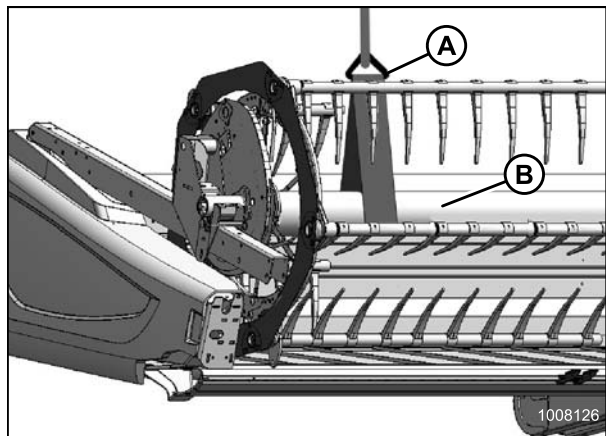


Figure 3.5: Lifting Reel

ASSEMBLING HEADER AND ADAPTER

5. Lift reel, and remove pins from endsheet and reel arm.
6. Align reel lift cylinder mounting holes until they line up with lug on endsheet and hole in reel arm.
7. Secure cylinder to endsheet and reel arm with clevis pins (A) and (B) as shown.
 - Insert cotter pin into clevis pin (A) on **OUTBOARD** side of reel arm
 - Insert cotter pin into clevis pin (B) on **INBOARD** side of endsheet

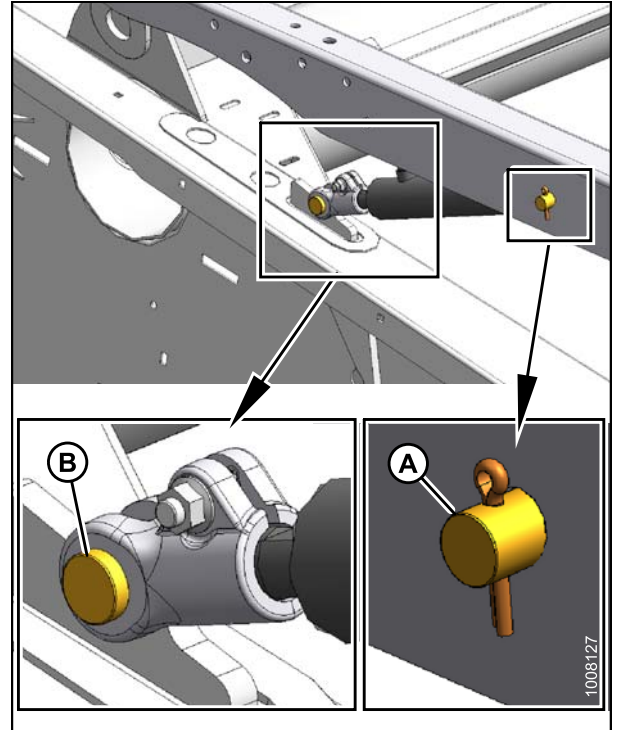


Figure 3.6: Reel Arm

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

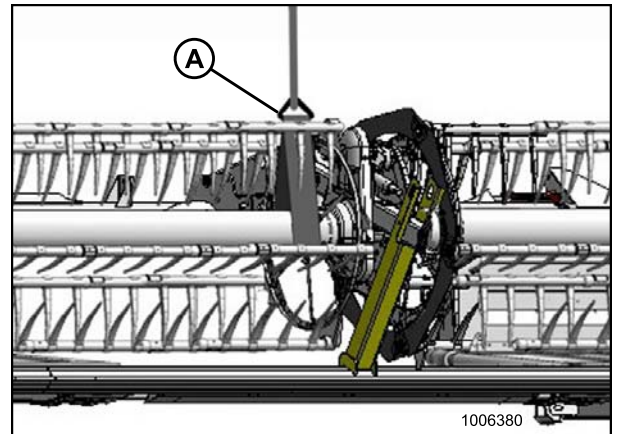


Figure 3.7: Lifting Double Reel

ASSEMBLING HEADER AND ADAPTER

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

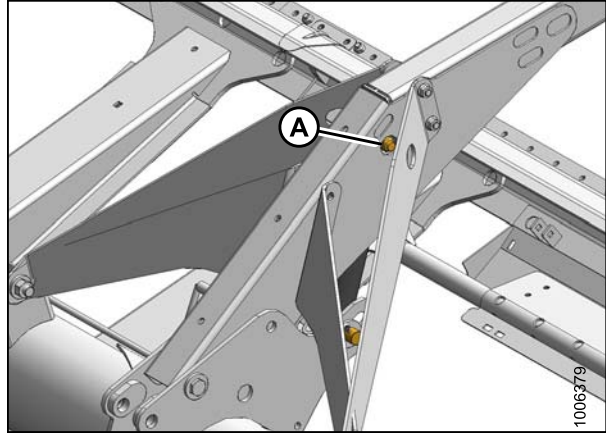


Figure 3.8: Reel Arm Braces

17. Reposition sling (A) around reel tube near opposite outboard reel arm.
18. Remove shipping wire and banding from reel lift cylinder.

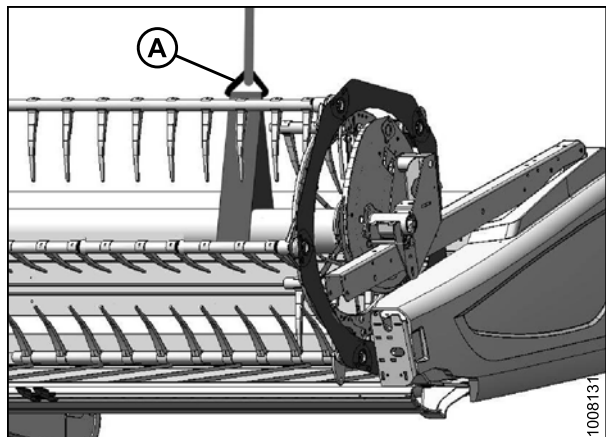


Figure 3.9: Lifting Reel

ASSEMBLING HEADER AND ADAPTER

19. Lift reel and remove pins from endsheet and reel arm.
20. Align reel lift cylinder mounting holes until they line up with lug on endsheet and hole in reel arm.
21. Secure cylinder to endsheet and reel arm with clevis pins (A) and (B) as shown.
 - Insert cotter pin into clevis pin (A) at **OUTBOARD** side of reel arm
 - Insert cotter pin into clevis pin (B) at **INBOARD** side of endsheet

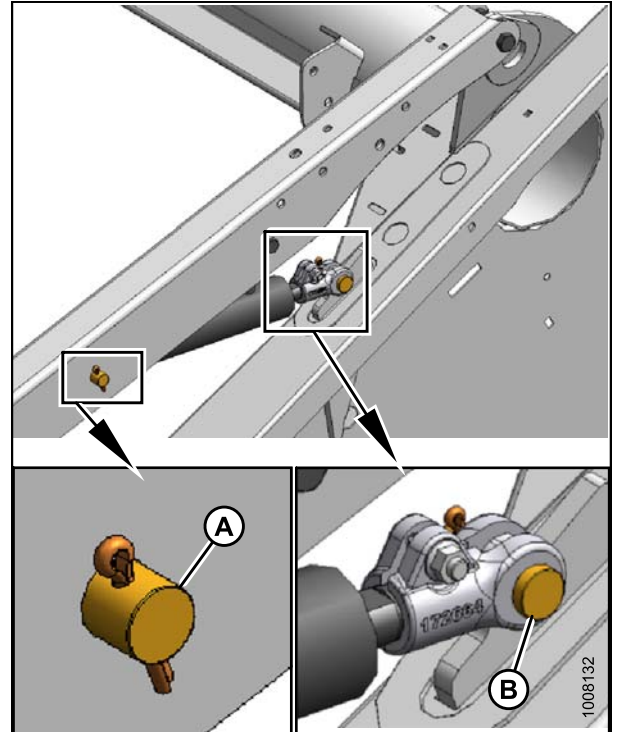


Figure 3.10: Reel Left Arm

22. Remove remaining bolt (A), disengage center reel arm shipping support (B) from cutterbar, and remove shipping support.

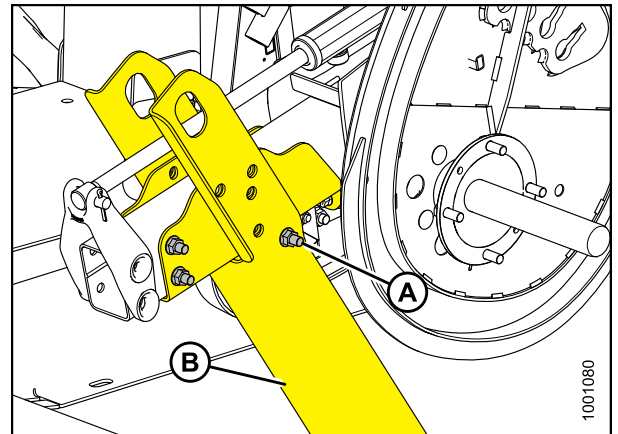


Figure 3.11: Reel Center Arm Shipping Support

ASSEMBLING HEADER AND ADAPTER

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

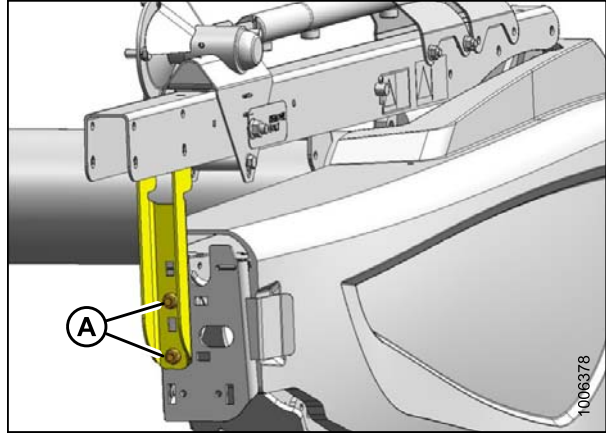


Figure 3.12: Reel Outboard Arm Support

ASSEMBLING HEADER AND ADAPTER

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

IMPORTANT:

To prevent damaging the fore-aft cylinders or structure, do **NOT** use fore-aft cylinders to assist with removing the bolts.

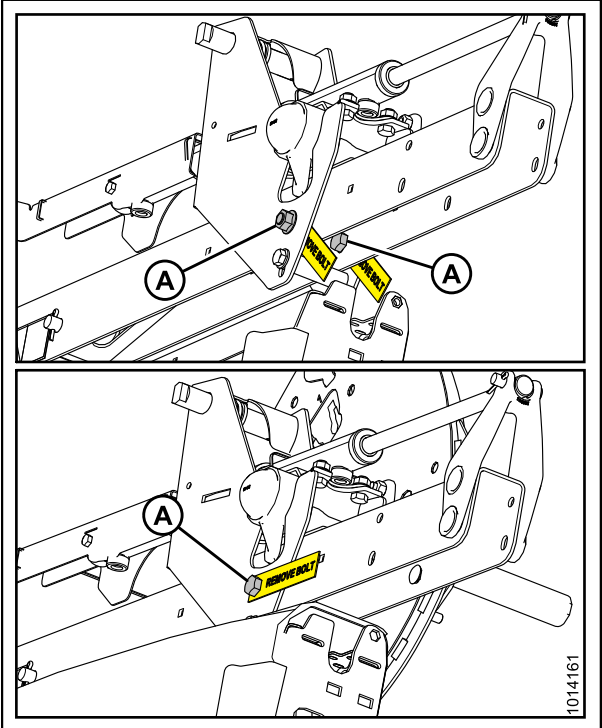


Figure 3.13: Reel Right Arm

Top Image - Single Reel
Bottom Image - Double Reel

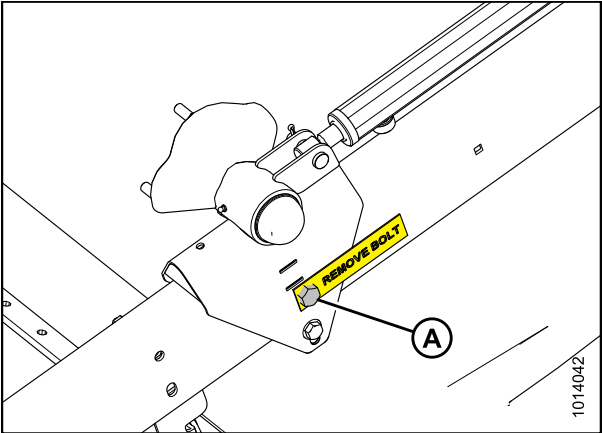


Figure 3.14: Reel Left Arm

3.2 Setting Up Combine Adapter

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

- [3.2.1 Installing Filler Cap, page 22](#)
- [3.2.2 Removing Auger Flighting Extensions, page 24](#)
- [3.2.3 Removing Stripper Bars, page 25](#)
- [3.2.4 Replacing Feeder Deflectors: New Holland CR Combines, page 25](#)

3.2.1 Installing Filler Cap

1. Remove filler cap from bag (A).

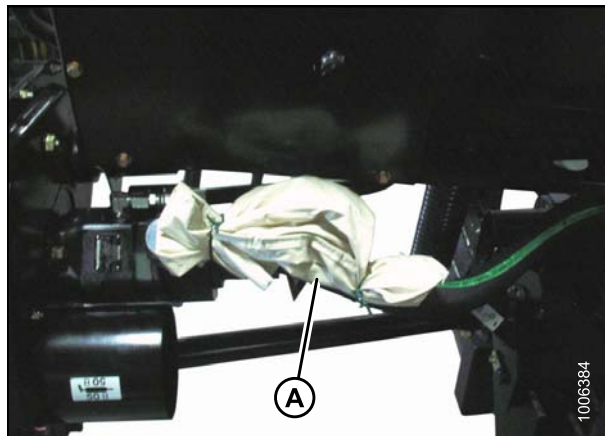


Figure 3.15: Hardware Bag

CAUTION

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

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



Figure 3.16: Yellow Shipping Cover

ASSEMBLING 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.

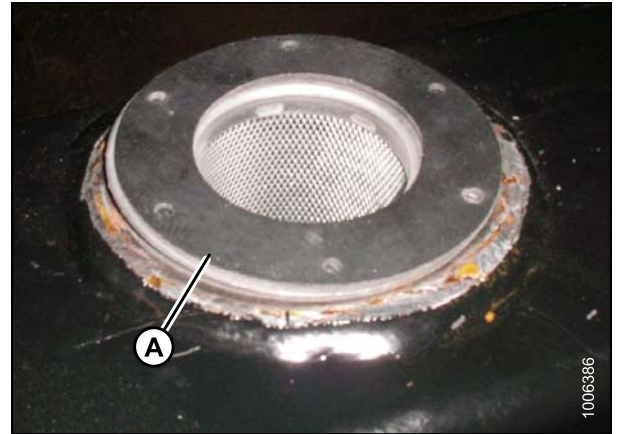


Figure 3.17: Top Gasket

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.

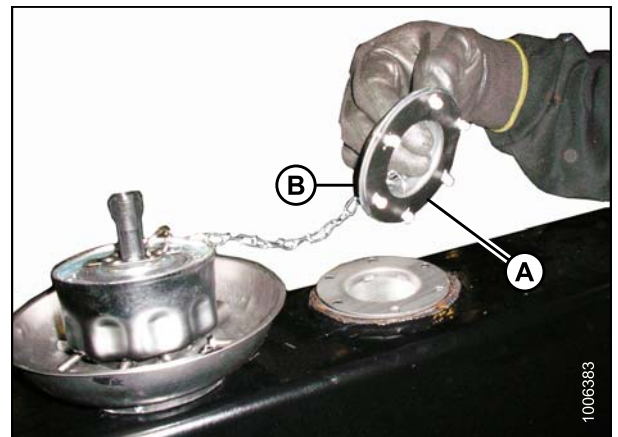


Figure 3.18: Filler Cap Neck

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).

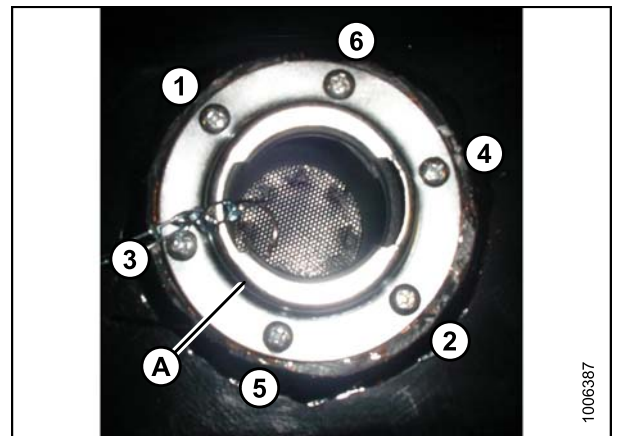


Figure 3.19: Screw Hole Locations

ASSEMBLING HEADER AND ADAPTER

10. Install filler cap (A).

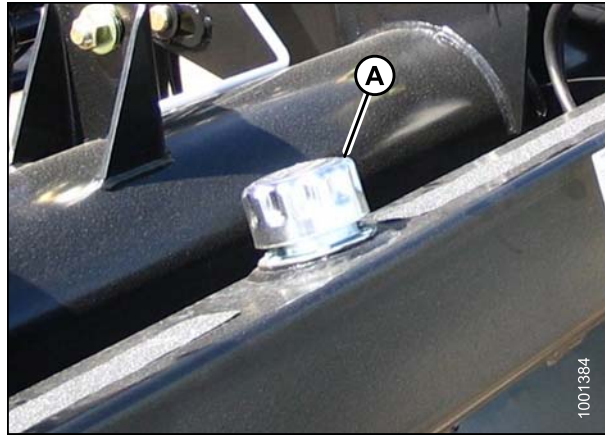


Figure 3.20: Filler Cap

3.2.2 Removing Auger 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. If necessary, remove auger flighting extensions as follows:

NOTE:

Do not use flighting extensions on New Holland CR960, 9060, 970, 9070, and 9080 combines.

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).

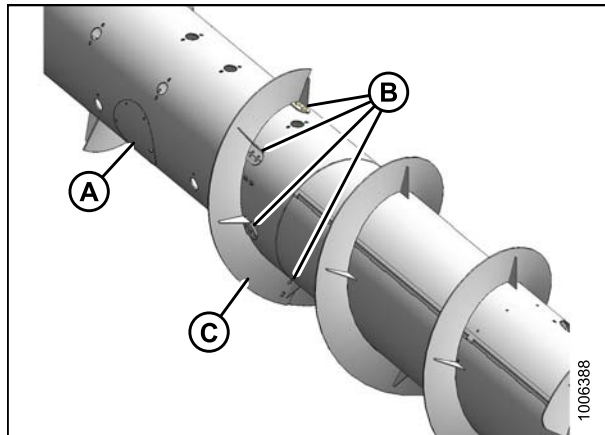


Figure 3.21: Auger Flighting Extension

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.

NOTE:

The following procedure does **NOT** apply to New Holland CR960, 9060, 970, 9070, and 9080 combines. For these combines, proceed to [3.2.4 Replacing Feeder Deflectors: New Holland CR Combines, page 25](#)

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.
3. Proceed to [3.3 Attaching Header to Combine, page 27](#)

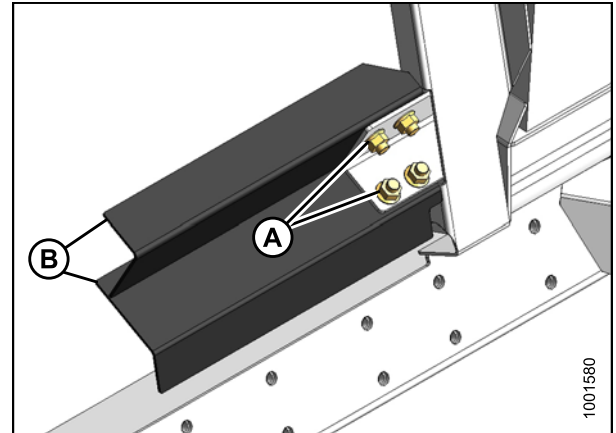


Figure 3.22: Auger Stripper Bar

3.2.4 Replacing Feeder Deflectors: New Holland CR Combines

If the header is configured for a New Holland CR 960, 9070, or 9080 combine, the adapter has a factory installed feeder deflector kit to improve feeding into the feeder house. The kit can be replaced if necessary.

⚠ 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 machine for any reason.

The D65/CA25FD75/CA25 combine completion package for New Holland models includes both a short feeder kit (installed at the factory) and a long feeder kit for narrow feeder house combines. Refer to [Table 3.1 CA25 Feeder Kits for CR Model Combines, page 25](#)

Table 3.1 CA25 Feeder Kits for CR Model Combines

Combine Model	Feeder House Size	Feeder Kit Size
CR970, 9070, 9080	Wide	Short: 200 mm (7-7/8 in.)
CR960, 9060, 940, 9040	Narrow	Long: 325 mm (12-13/16 in.)

ASSEMBLING HEADER AND ADAPTER

If required, replace the feeder deflectors as follows:

1. Determine the position of existing deflector (A) by measuring the gap (X) between the deflector's forward edge and the pan. Record this measurement.
2. Remove the two bolts and nuts (B) securing the deflector (A) to the adapter frame and remove deflector.
3. Position the replacement deflector and reinstall bolts and nuts (B). Do not tighten bolts.

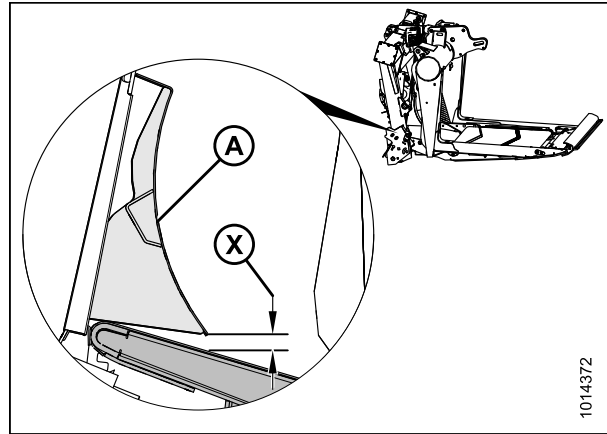


Figure 3.23: Side View of Deflector

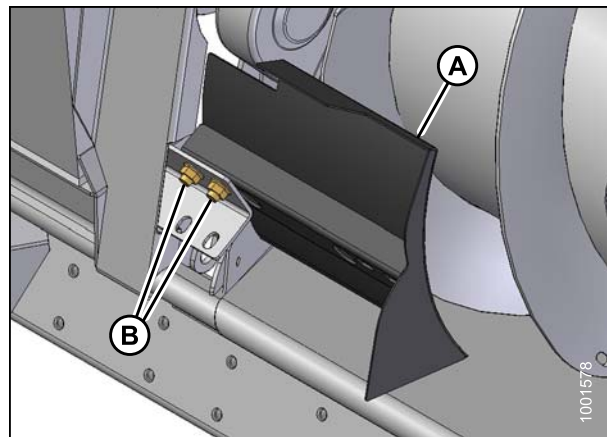


Figure 3.24: Replacement Deflector: Left Shown – Right Opposite

4. Set the gap (X) to the dimension recorded in Step 1., [page 26](#) and tighten the nuts.
5. Repeat for the opposite deflector.

CAUTION

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

6. Attach the header to a combine, fully extend center-link.
7. Turn off the combine and remove the key from the ignition.
8. Recheck the gap (X) between the deflector (A) and the pan.

NOTE:

The minimum gap—when attached to the combine—should be 22 +/- 3 mm (7/8 +/- 1/8 in.) ().

9. If necessary, detach header from the combine and adjust the deflector to achieve the minimum gap.

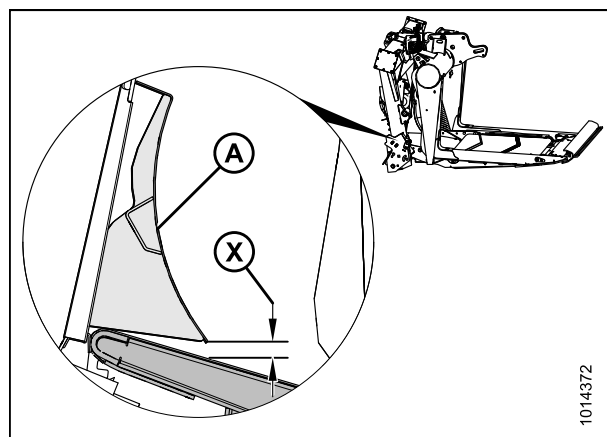


Figure 3.25: Side View of Deflector

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 28
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 41
Lexion 500 and 700 (R Series)	3.3.4 Lexion Combines, page 53
New Holland CR and CX	3.3.5 New Holland Combines, page 77

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 Switch and Harness

Gleaner combines prior to 2014 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

NOTE:

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

IMPORTANT:

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

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

1. Before attaching any cable ties, route switch harness (A) from the front of the feeder house to the power connection point in the cab. Ensure the harness is long enough to reach 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.

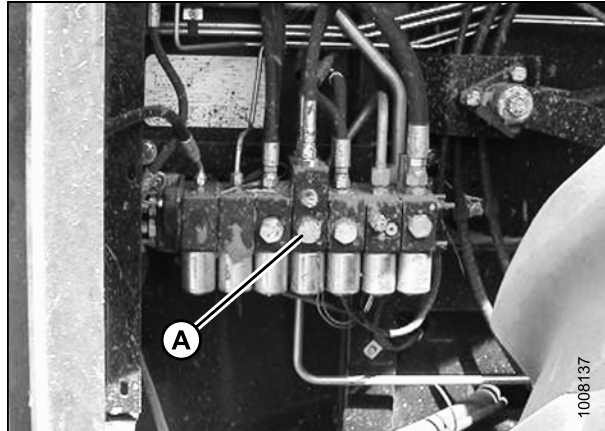


Figure 3.26: Converted Gleaner R72 Shown

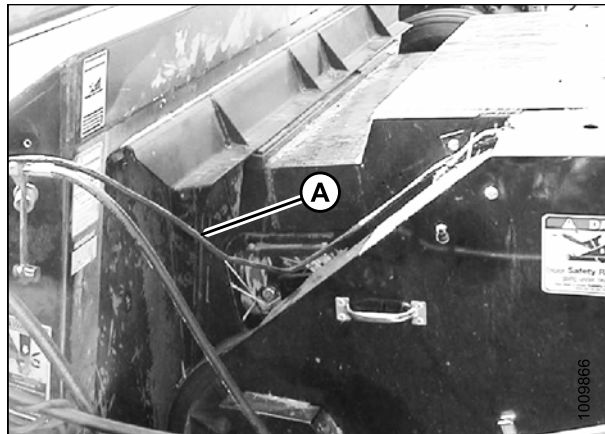


Figure 3.27: Switch Harness Routing

ASSEMBLING HEADER AND ADAPTER

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

IMPORTANT:

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

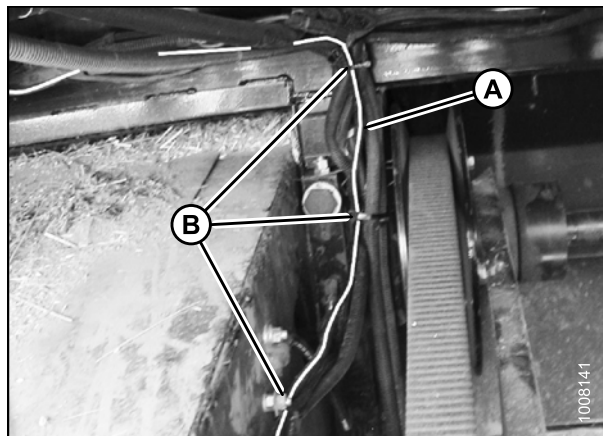


Figure 3.28: Left Side of Feeder House

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 fasten the switch harness (A) to the main harness under cab floor at (B).

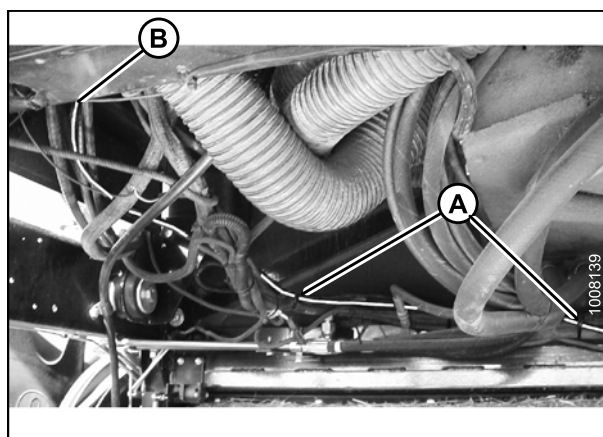


Figure 3.29: Harness under Right Side of Cab Floor

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

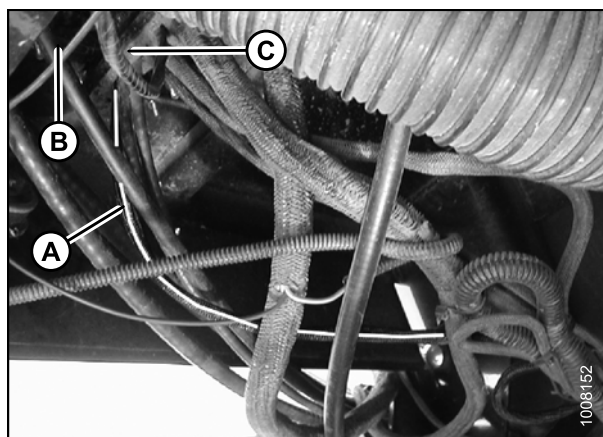


Figure 3.30: Harness through Cab Floor

ASSEMBLING HEADER AND ADAPTER

6. Remove the console cover (A) as shown.
7. Connect the switch harness to the 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 ground.

IMPORTANT:

Connecting the switch harness to an unswitched power supply or cigarette lighter will supply constant power to the header tilt side of the solenoid valve and drain the combine battery during extended shutdown periods.

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

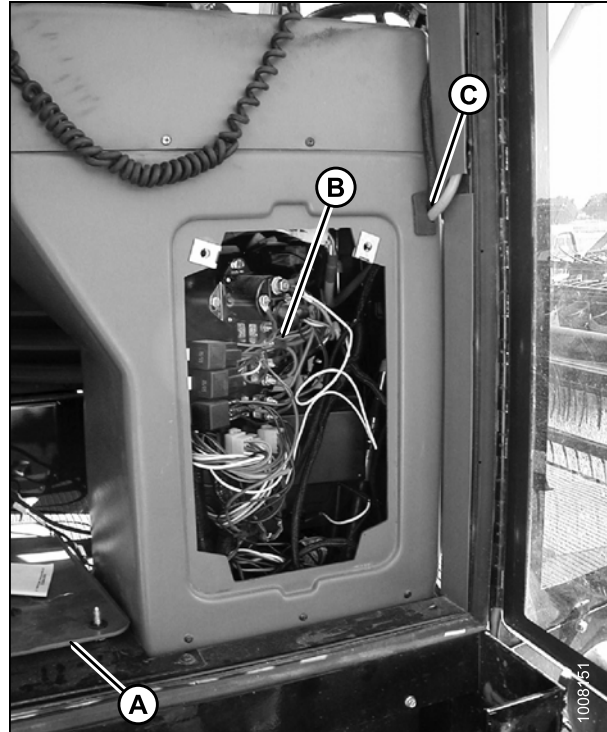


Figure 3.31: Switch Console

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

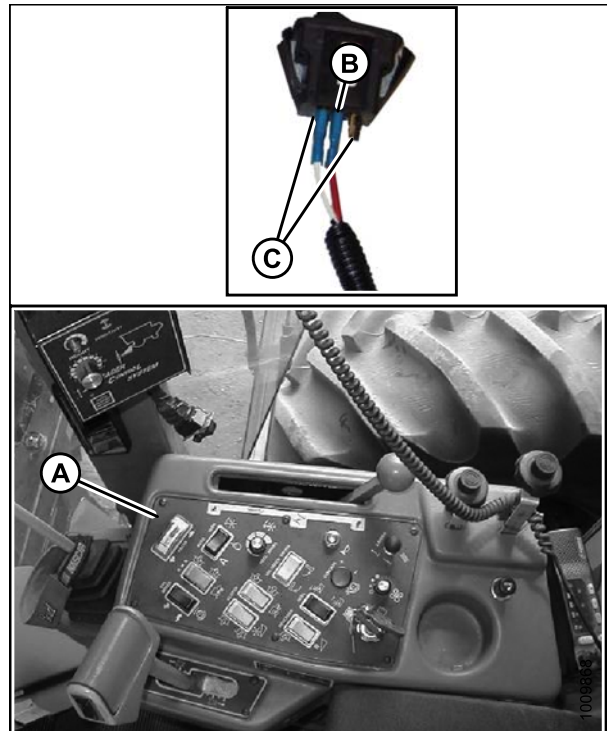


Figure 3.32: Switch and Console

ASSEMBLING HEADER AND ADAPTER

Attaching Header to a Challenger, Gleaner, or Massey Ferguson 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. Use the lock handle (B) to retract the lugs (A) at the base of the feeder house.

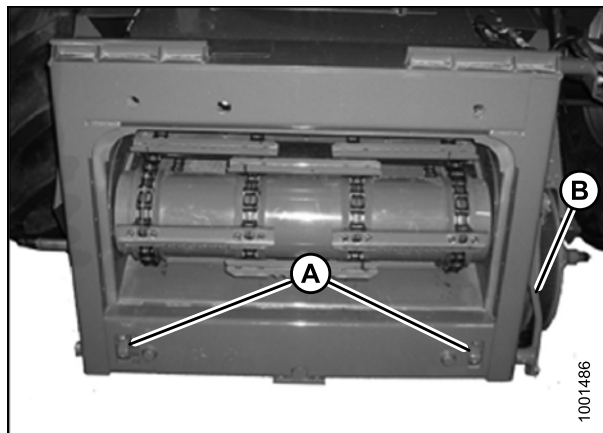


Figure 3.33: AGCO Group Feeder House

CAUTION

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

2. Start the engine and slowly approach the header until the feeder house is directly under the adapter top cross member (A) and the alignment pins (C) on the feeder house (shown in the image below) are aligned with the holes (B) in the adapter frame.

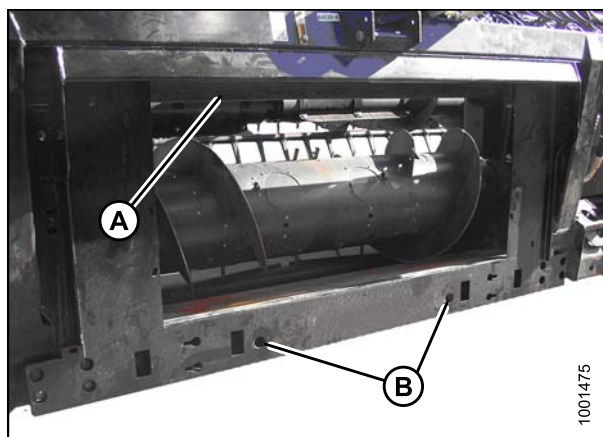


Figure 3.34: Adapter

Alignment pins (C).

NOTE:

Your AGCO Group combine feeder house may not be exactly as shown.

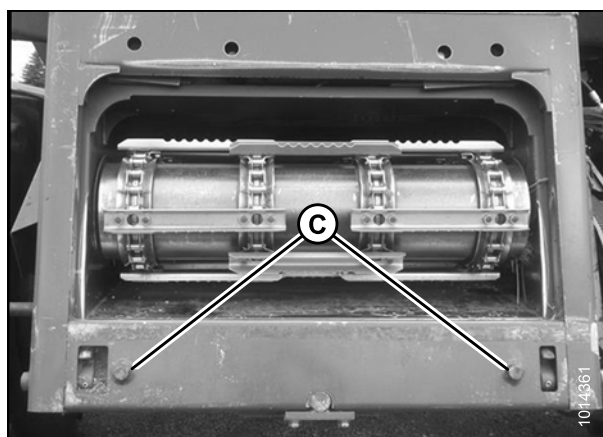


Figure 3.35: AGCO Group Alignment Pins

ASSEMBLING HEADER AND ADAPTER

3. Raise the feeder house slightly to lift the header, ensuring the feeder house saddle (A) is properly engaged in the adapter frame.
4. Stop the engine and remove the key from the ignition.

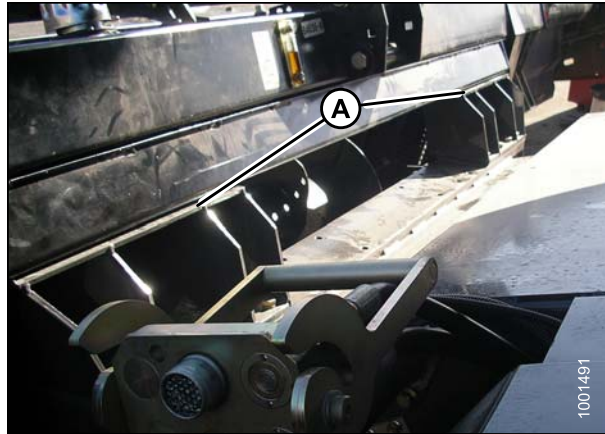


Figure 3.36: Feeder House and Adapter

5. Use the lock handle (B) to engage lugs (A) with the adapter.

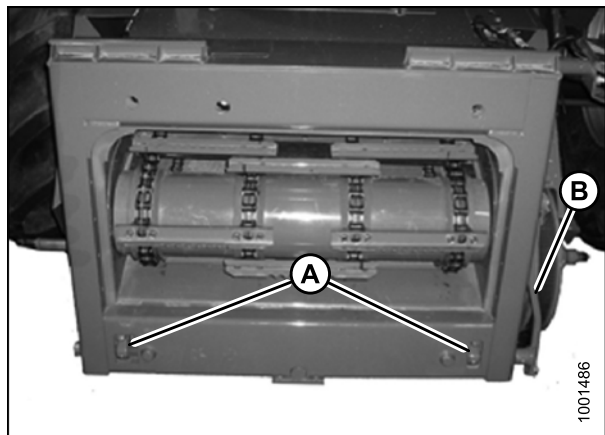


Figure 3.37: AGCO Group Feeder House

CAUTION

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

6. Start the engine and lower the header.
7. Stop the engine and remove the key from the 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 32 for a list of kits and installation instructions that are available through your combine Dealer.

Table 3.3 Multicoupler Kits

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

ASSEMBLING HEADER AND ADAPTER

8. Raise the handle (A) to release the multicoupler (B) from the adapter.

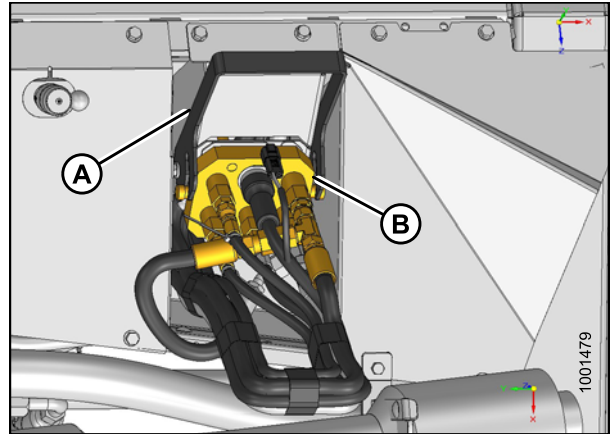


Figure 3.38: Adapter Multicoupler

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

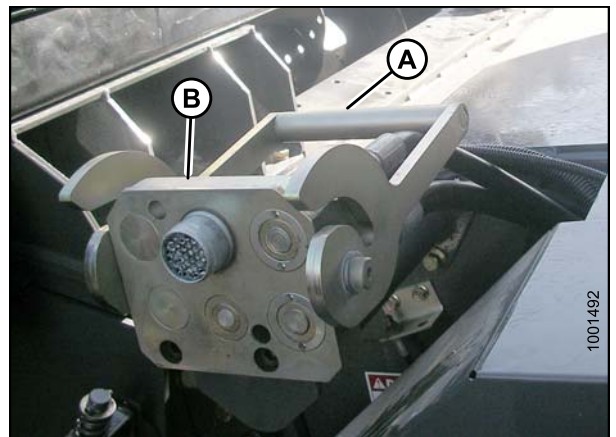


Figure 3.39: Combine Receptacle

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

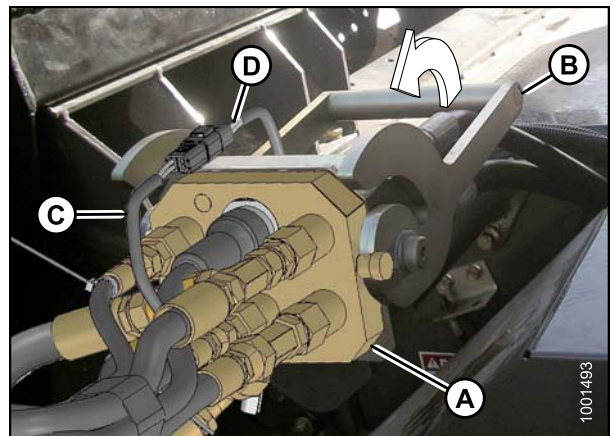


Figure 3.40: Multicoupler

ASSEMBLING HEADER AND ADAPTER

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

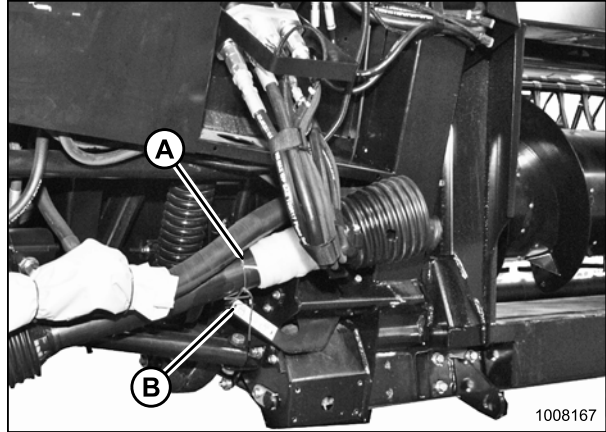


Figure 3.41: Adapter Shipping Configuration

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

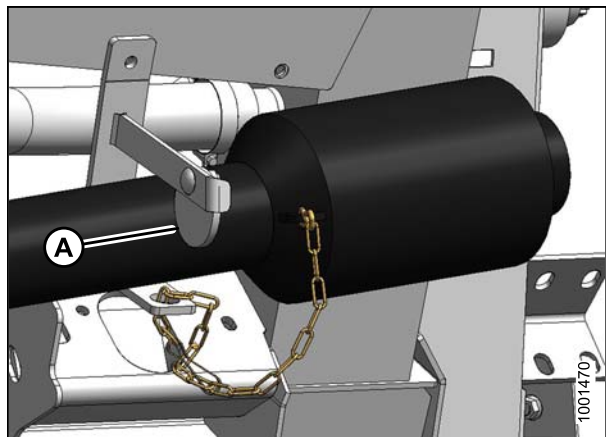


Figure 3.42: Driveline

15. 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.

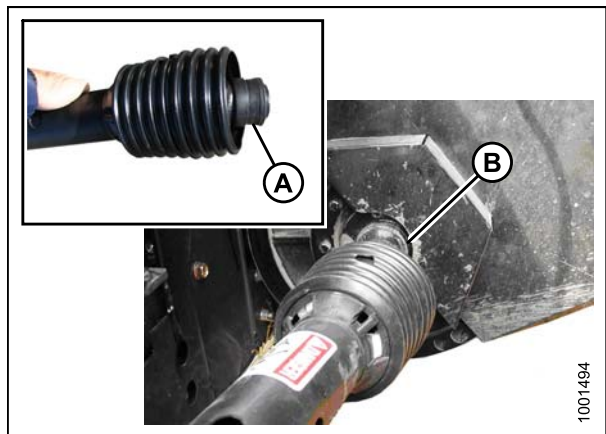


Figure 3.43: Driveline

16. Proceed to [3.4 Completing the Header Assembly, page 82](#).

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. On the upper left side of the combine adapter, remove nut (A) and flip lever (B) horizontally.

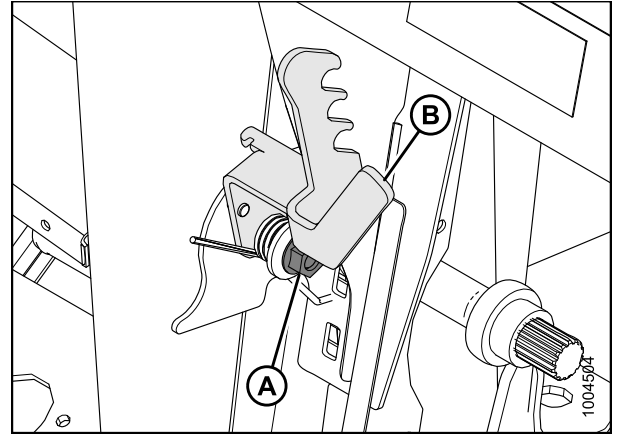


Figure 3.44: Feeder House Lever Lock on Adapter

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

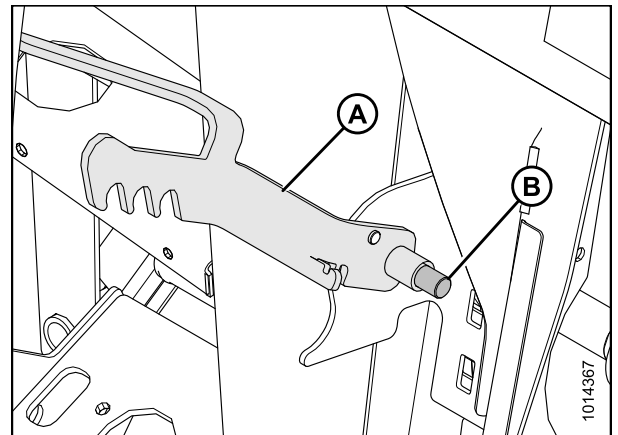


Figure 3.45: Feeder House Lever Lock on Adapter

ASSEMBLING HEADER AND ADAPTER

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

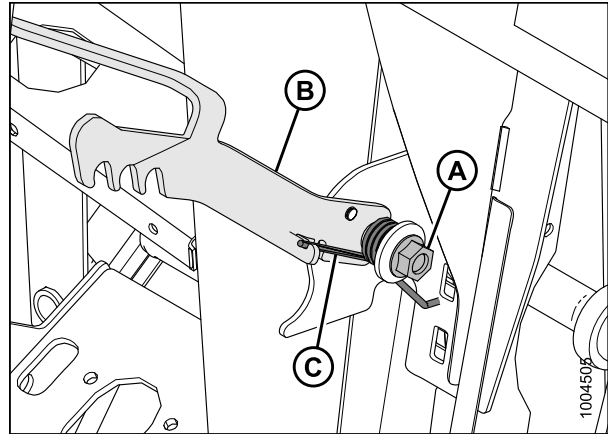


Figure 3.46: Feeder House Lever Lock on Adapter

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

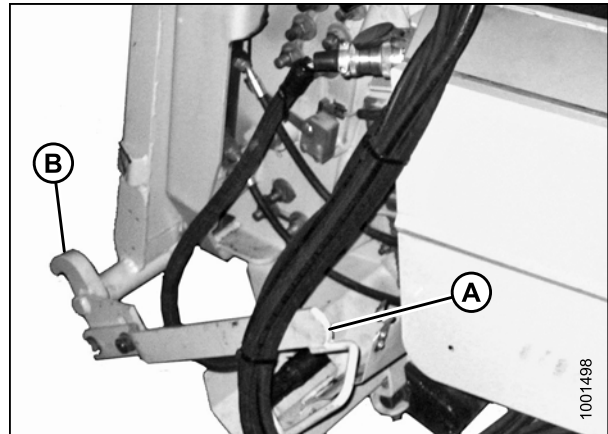


Figure 3.47: Feeder House Lock

CAUTION

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

- 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).
- Raise the feeder house slightly to lift the header, ensuring the feeder saddle is properly engaged in the adapter frame.
- Stop the engine and remove the key from the ignition.

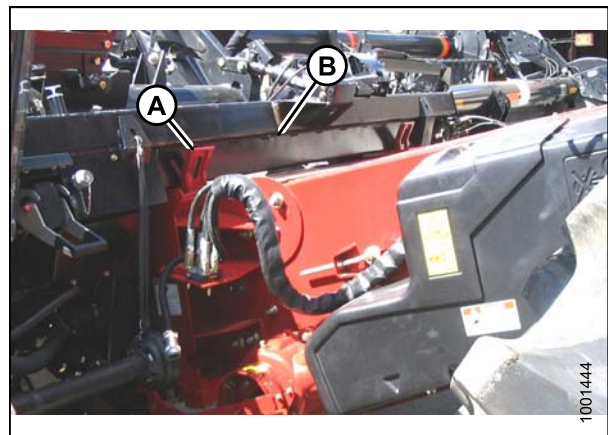


Figure 3.48: Combine and Adapter

ASSEMBLING HEADER AND ADAPTER

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

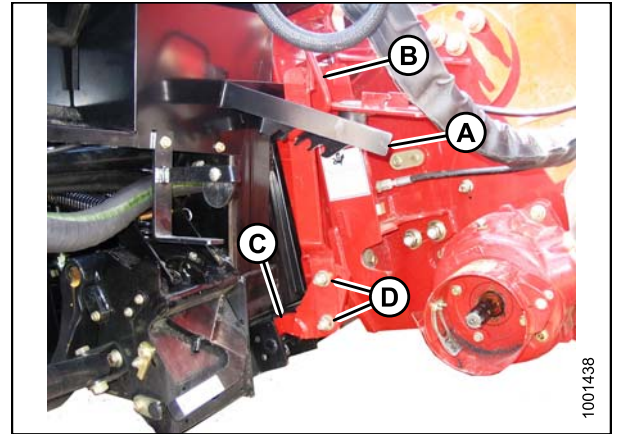


Figure 3.49: Combine and Adapter

- Open the receptacle cover (A) on the adapter.
- Press the lock button (B) and pull the handle (C) to the fully open position.
- Clean the receptacle mating surfaces.

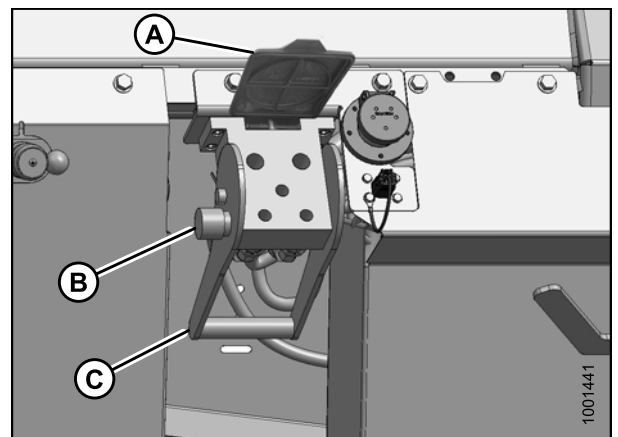


Figure 3.50: Adapter Receptacle

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



Figure 3.51: Combine Connectors

ASSEMBLING HEADER AND ADAPTER

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

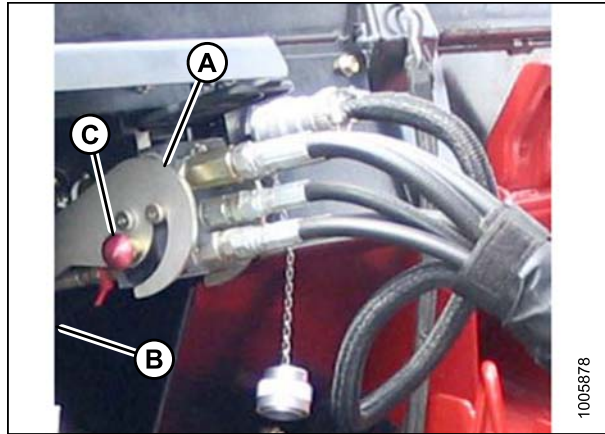


Figure 3.52: Hydraulic Connection

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

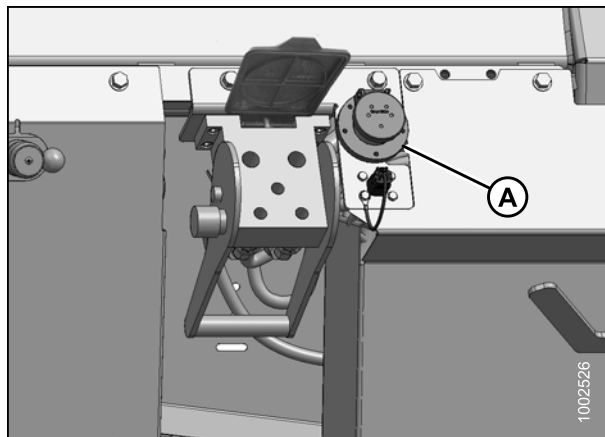


Figure 3.53: Electrical Receptacle

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



Figure 3.54: Combine Connectors

ASSEMBLING 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.

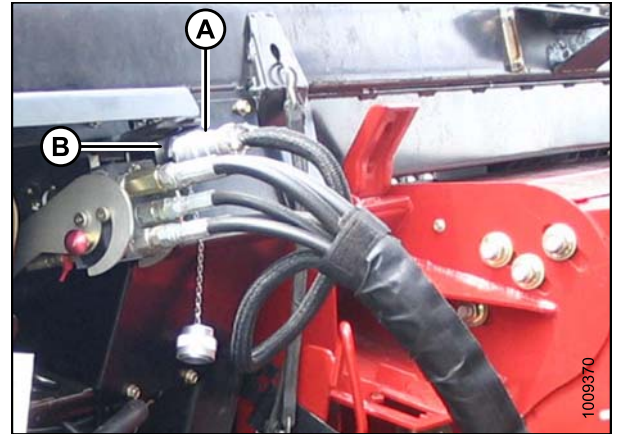


Figure 3.55: Electrical Connection

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

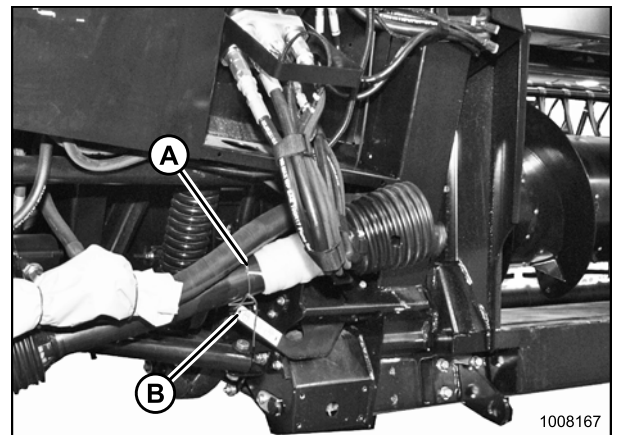


Figure 3.56: Shipping Wire on Driveline and Float Lock Lever

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

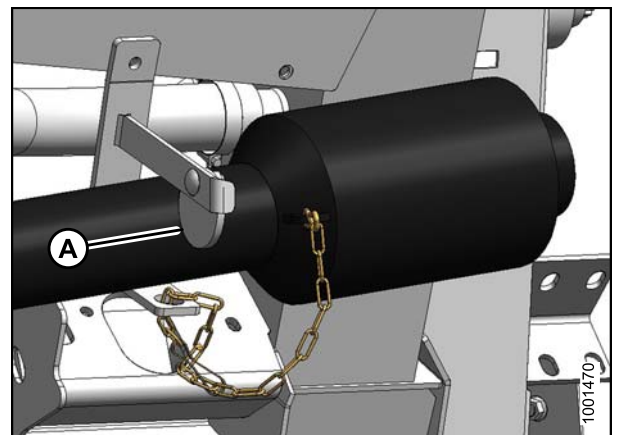


Figure 3.57: Driveline Storage Hook

ASSEMBLING HEADER AND ADAPTER

22. 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.

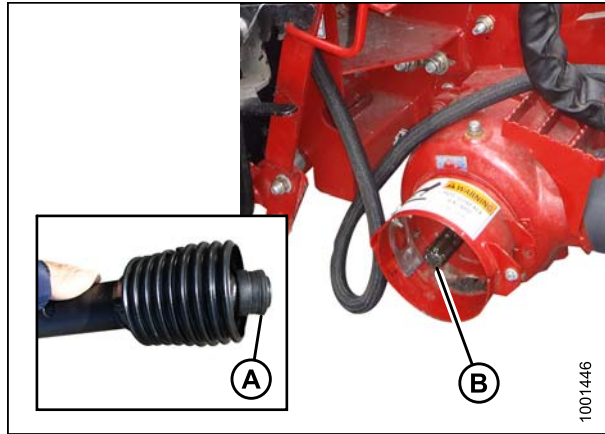


Figure 3.58: Combine Output Shaft

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

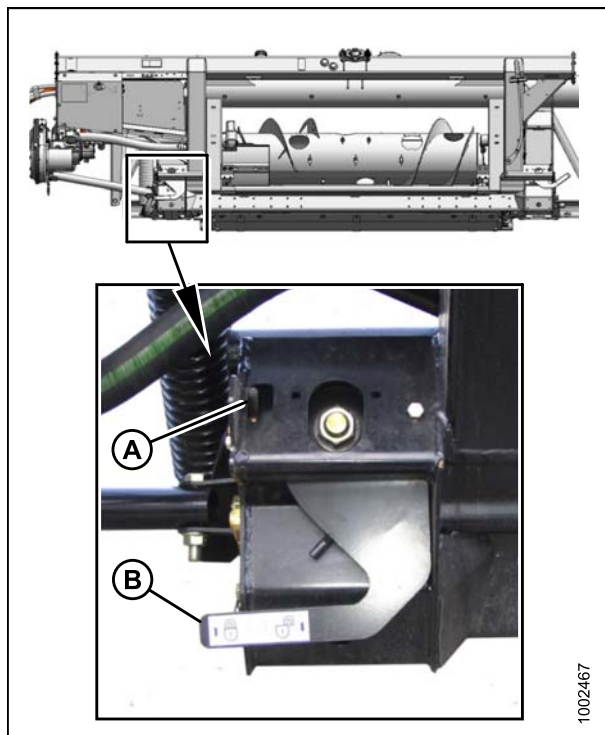


Figure 3.59: Float Lock in UNLOCK Position

24. Proceed to [3.4 Completing the Header Assembly, page 82](#).

3.3.3 John Deere Combines

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

The reel fore-aft/header tilt 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 to John Deere S-Series combines only. For John Deere 60 or 70 Series combines, refer to [Installing Reel Fore-Aft/Header Tilt Switch: 50, 60, and 70 Series Combines, page 45](#).

IMPORTANT:

To prevent damage to electronic components, disconnect the positive cable from the combine battery and turn the battery disconnect switch to the OFF position before connecting the reel fore-aft/header tilt harness to the combine's auxiliary power connectors.

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

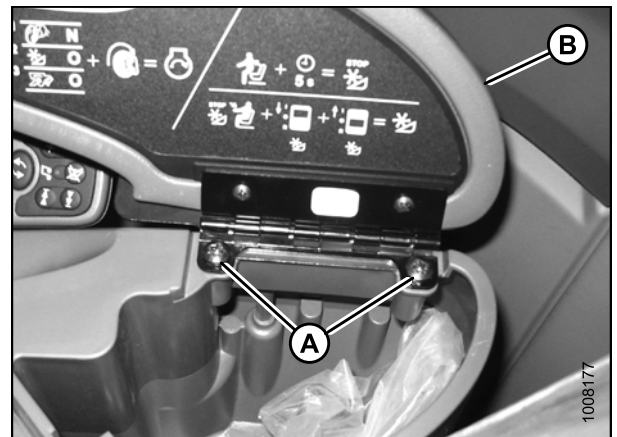


Figure 3.60: Storage Compartment and Cover

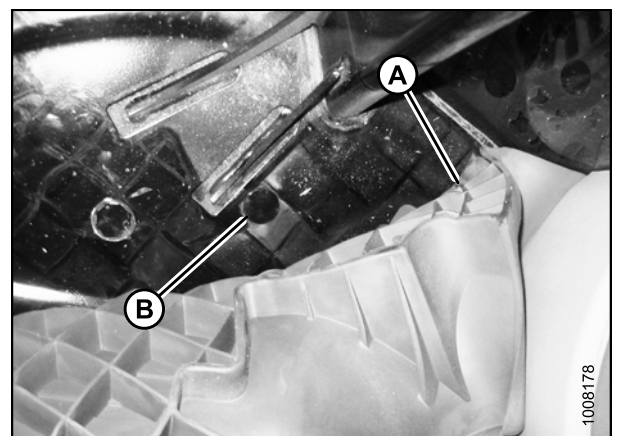


Figure 3.61: Floor Mat at Forward Right Corner and Knockout

ASSEMBLING HEADER AND ADAPTER

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

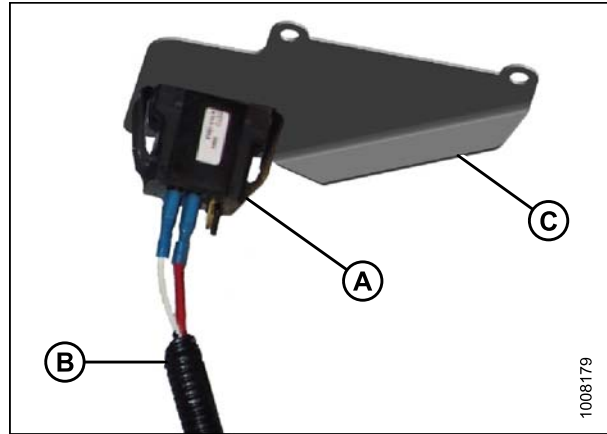


Figure 3.62: Switch and Harness

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 at the center terminal.

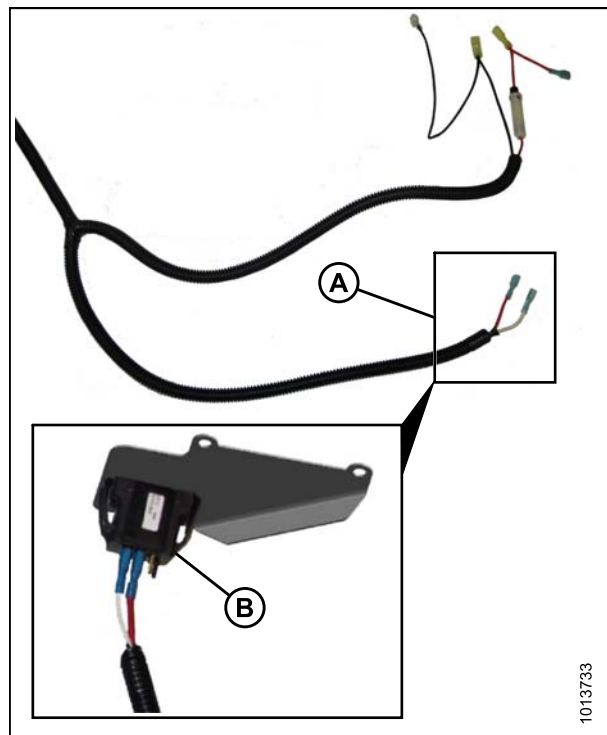


Figure 3.63: Switch End of Harness and Switch

ASSEMBLING HEADER AND ADAPTER

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).

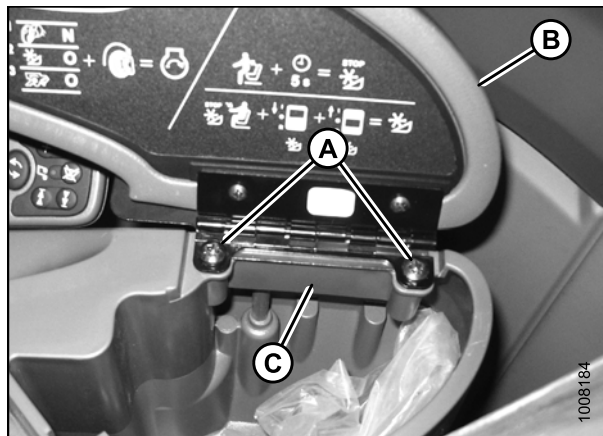


Figure 3.64: Support Position on Console

10. Close cover and ensure that switch (A) and support (B) are secure.

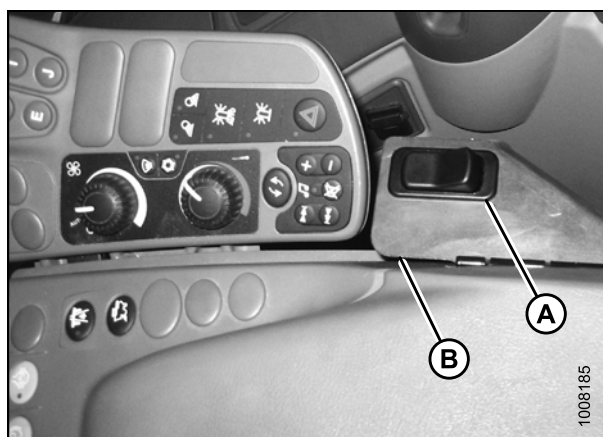


Figure 3.65: Secured Switch

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

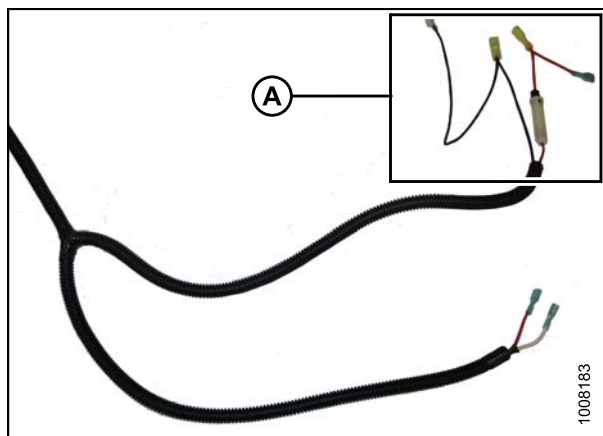


Figure 3.66: Feed End of Harness

ASSEMBLING HEADER AND ADAPTER

12. Connect the harness end to one of the auxiliary power supply points (D).
13. Connect the wire (from the in-line fuse) to the switched power supply (C).
14. Connect the other wire to ground (B).

IMPORTANT:

Connecting the switch harness to an unswitched power supply or cigarette lighter will supply constant power to the header tilt side of the solenoid valve and drain the combine battery during extended shutdown periods.

15. Tape unused wire jumpers to harness.

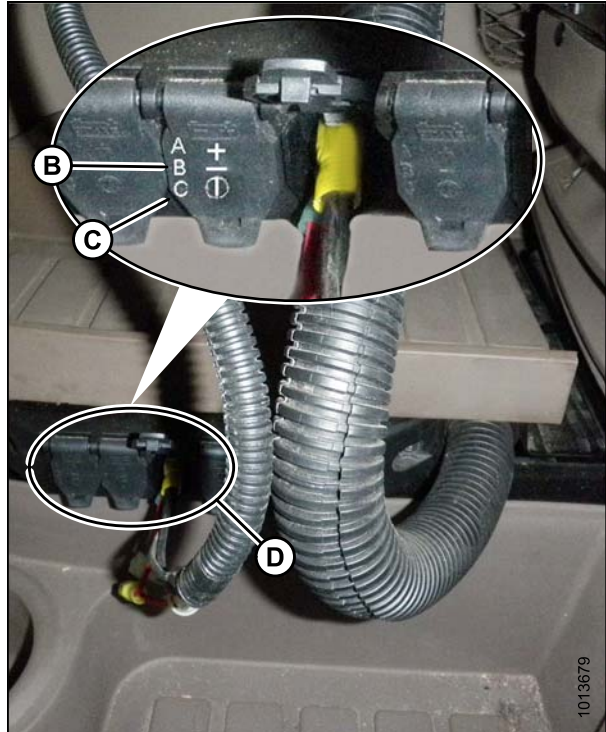


Figure 3.67: Combine Auxiliary Power Supply

16. Route plug end of harness (A) through hole (B) in cab floor, and feed the entire length outside the cab. Leave some slack in the cab to allow for console adjustment.
17. Replace floor mat.

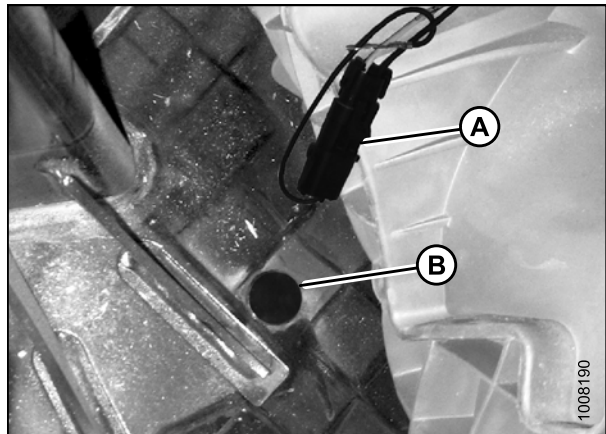


Figure 3.68: Plug End of Harness

ASSEMBLING HEADER AND ADAPTER

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

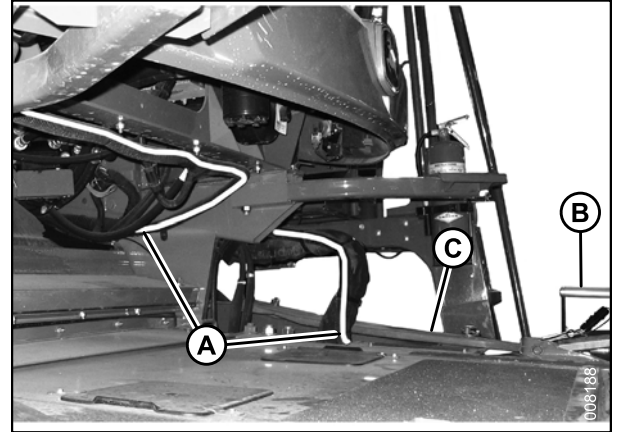


Figure 3.69: Harness and Feeder House Multicoupler

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, and 70 Series combines.

IMPORTANT:

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

1. Lay the switch harness along the route from front of the feeder house to the auxiliary power supply in the cab as per these instructions. Ensure the switch 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

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

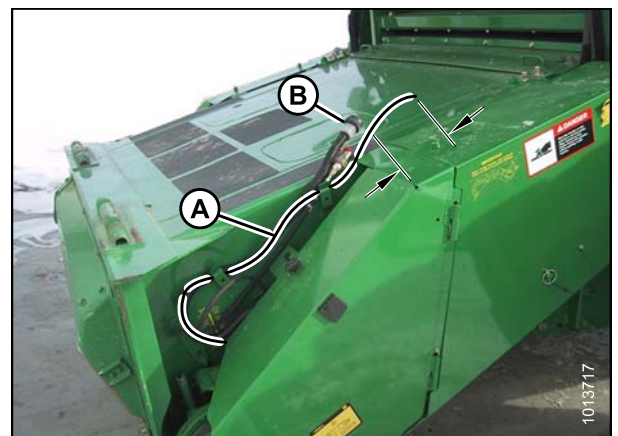


Figure 3.70: 50 Series Harness Routing

ASSEMBLING HEADER AND ADAPTER

60/70 Series Harness Routing

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

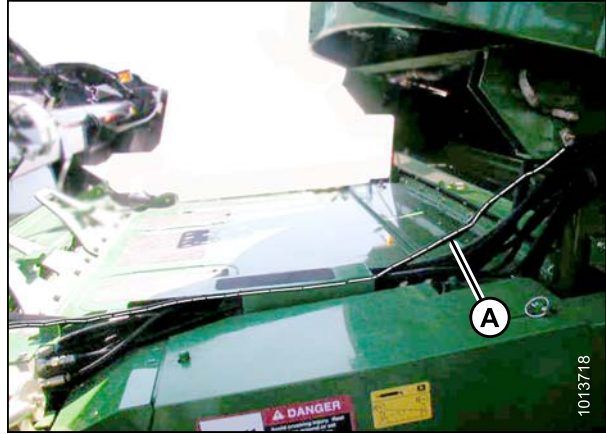


Figure 3.71: 60/70 Series Harness Routing

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

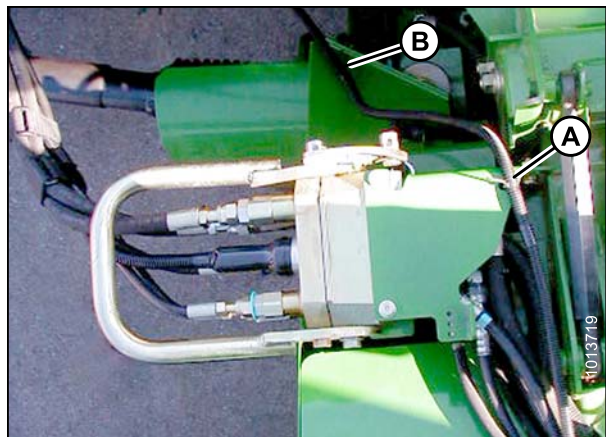


Figure 3.72: Switch Harness Routing

5. 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.

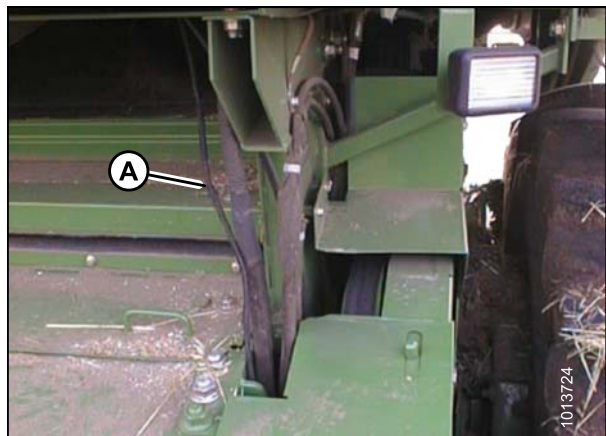


Figure 3.73: Switch Harness Routing

ASSEMBLING HEADER AND ADAPTER

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



Figure 3.74: Switch Harness Routing

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

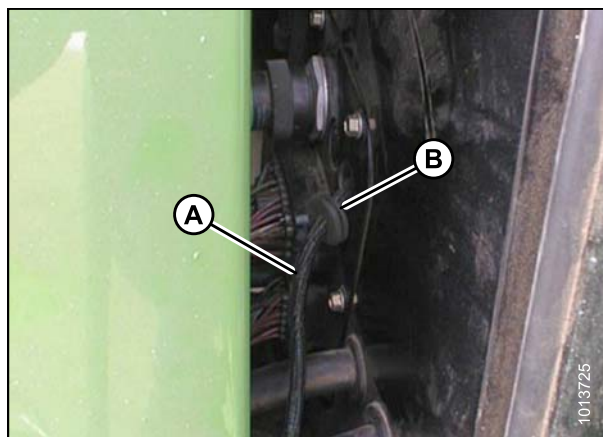


Figure 3.75: Switch Harness Routing

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

NOTE:

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

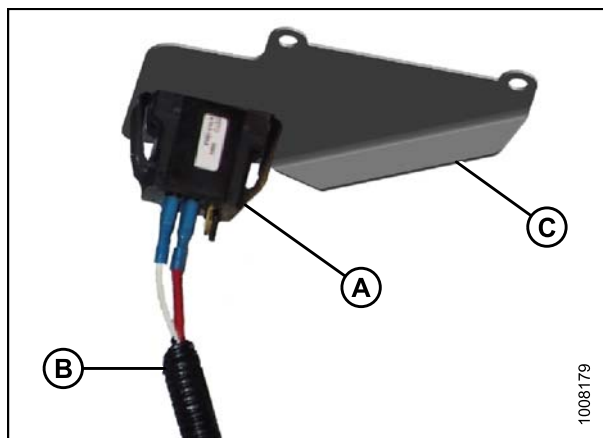


Figure 3.76: Switch and Harness

ASSEMBLING HEADER AND ADAPTER

11. 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 at the center terminal.

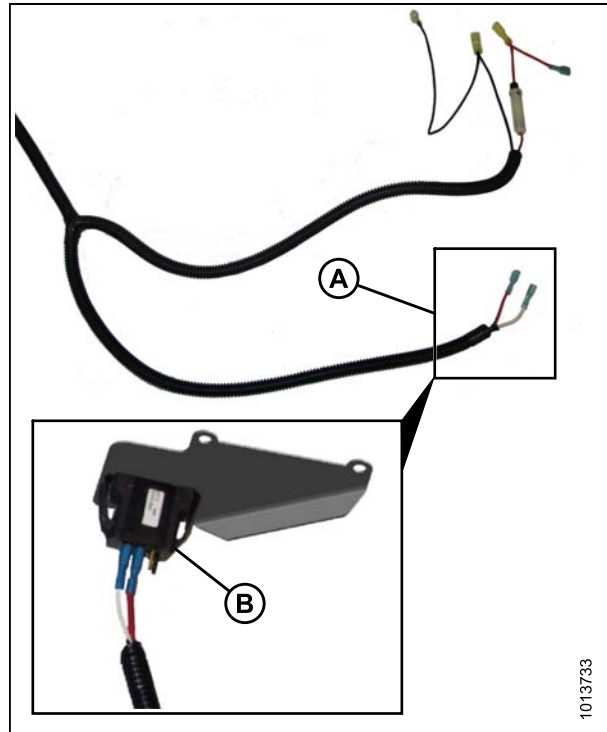


Figure 3.77: Switch End of Harness and Switch

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

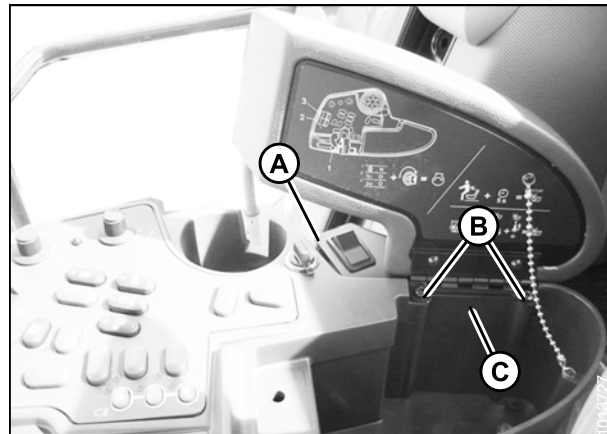


Figure 3.78: Switch Plate Mounting

ASSEMBLING HEADER AND ADAPTER

13. 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 switch harness to an unswitched power supply or cigarette lighter will supply constant power to the header tilt side of the solenoid valve and drain the combine battery during extended shutdown periods.

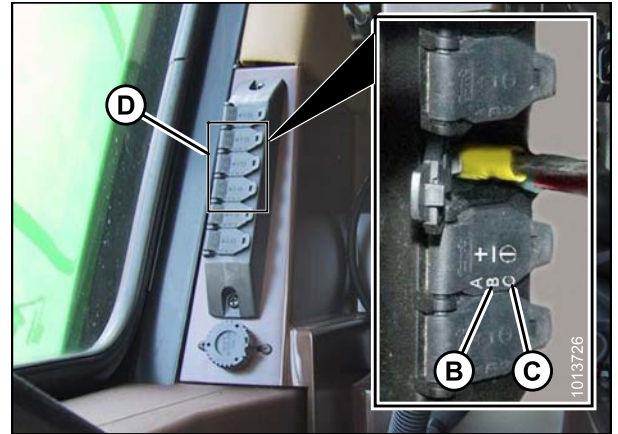


Figure 3.79: Auxiliary Power Supply

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 multicoupler receptacle towards 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 house 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 multicoupler (B) from the storage position. Remove the multicoupler, and push the handle back into the adapter to store.

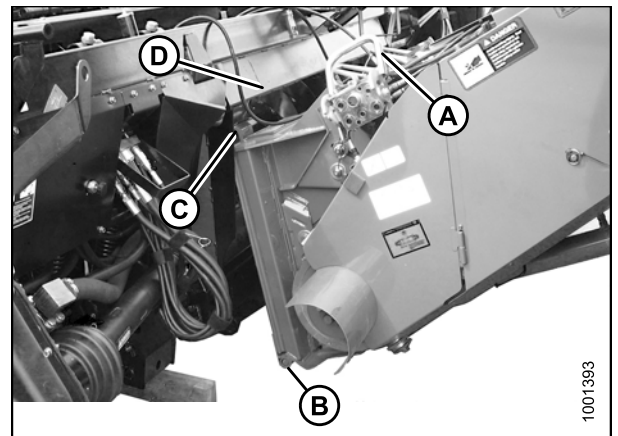


Figure 3.80: Combine and Adapter

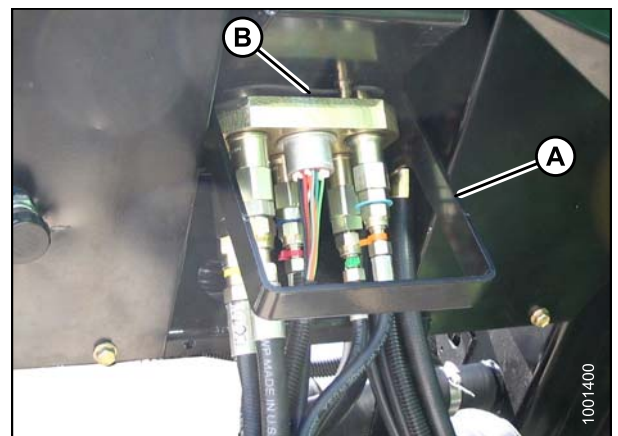


Figure 3.81: Multicoupler Storage

ASSEMBLING HEADER AND ADAPTER

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

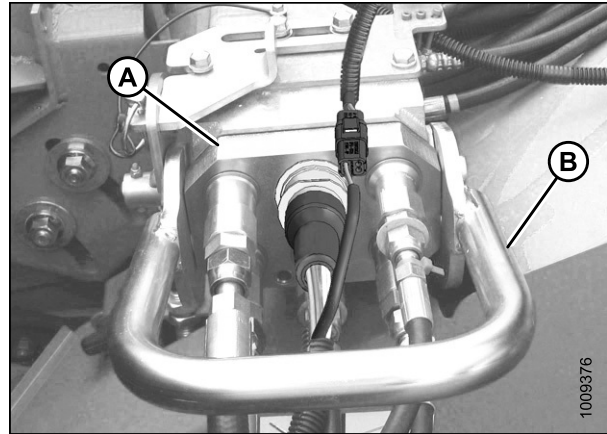


Figure 3.82: Multicoupler

- Ensure that both feeder house pins (C) are fully engaged into the adapter brackets.

NOTE:

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

- Tighten bolts (D).

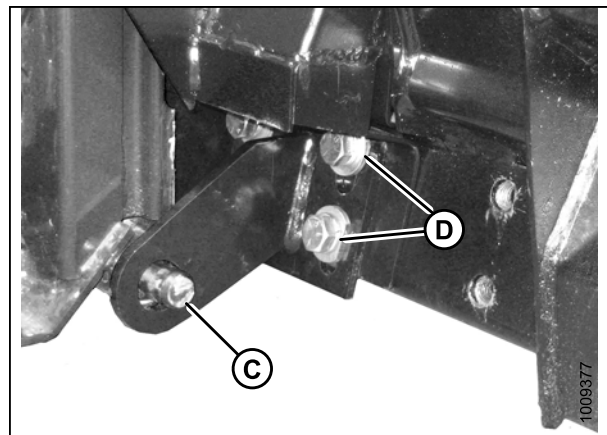


Figure 3.83: Feeder House Pin

- Slide the latch (A) to lock the handle (B) in position and secure with the lynch pin (C).
- Connect the harness (D) to the combine connector (E).

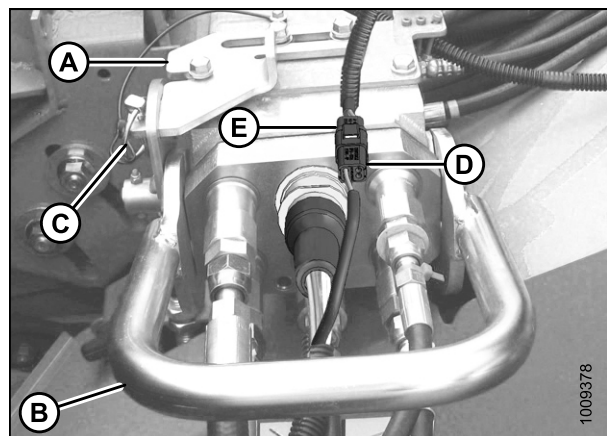


Figure 3.84: Multicoupler

ASSEMBLING HEADER AND ADAPTER

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

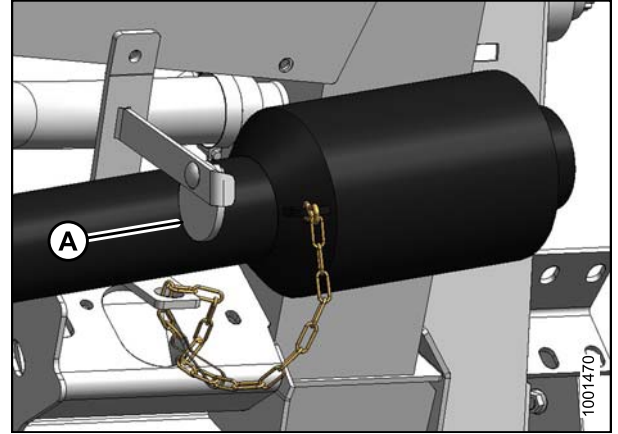


Figure 3.85: Driveline

13. 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.

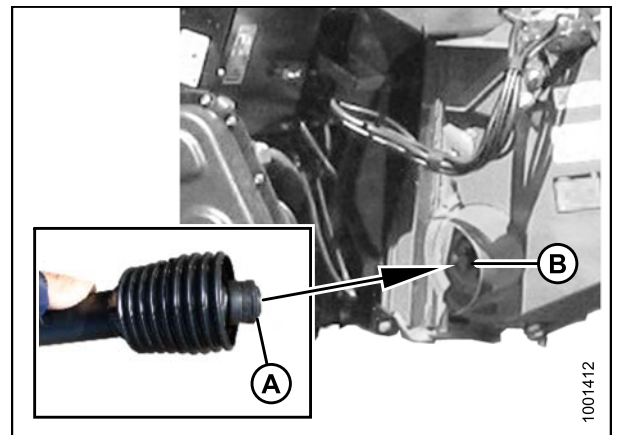


Figure 3.86: Driveline

ASSEMBLING HEADER AND ADAPTER

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

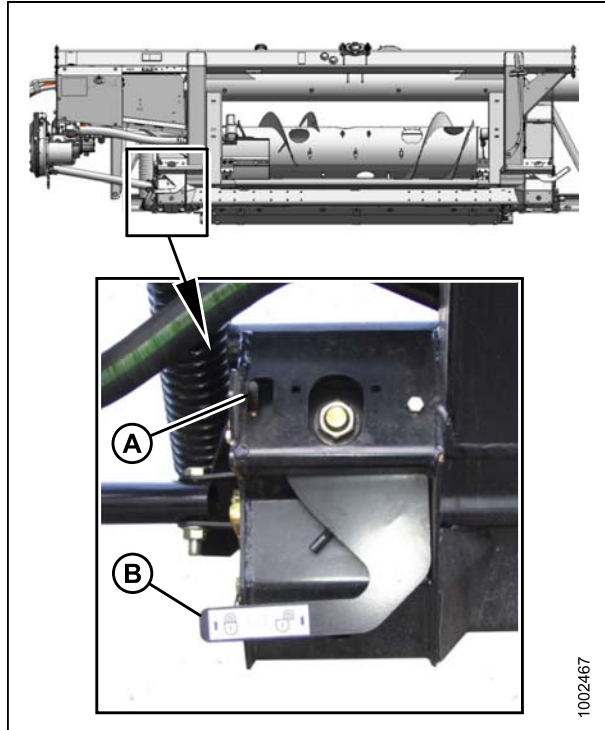


Figure 3.87: Float Lock in UNLOCK Position

15. Proceed to [3.4 Completing the Header Assembly, page 82](#).

3.3.4 Lexion Combines

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

IMPORTANT:

To prevent possible damage to electronic components, disconnect the positive cable from the combine battery and turn BATTERY DISCONNECT switch OFF before connecting harness to combine connectors.

1. Prepare to install the REEL FORE-AFT/HEADER TILT switch:
 - a. Fully lower combine feeder house.
 - b. Shut down the combine. Disconnect the battery cable.
 - c. Obtain the long reel fore-aft/header tilt switch wire harness (MD #220337) from the completion package kit.

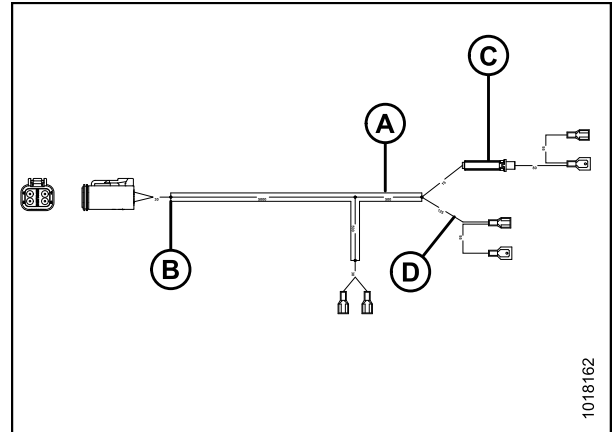


Figure 3.88: MD #220337 Wiring Harness

- A - End Routed to the Cab For Switch and Power Connections
- B - End Routed to the Combine Multicoupler
- C - Used for in-cab Power Supply Connectors
- D - Used for In-cab Rocker Switch Connectors

2. Remove storage tray (A) from console in combine cab.



Figure 3.89: Console Tray

ASSEMBLING HEADER AND ADAPTER

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

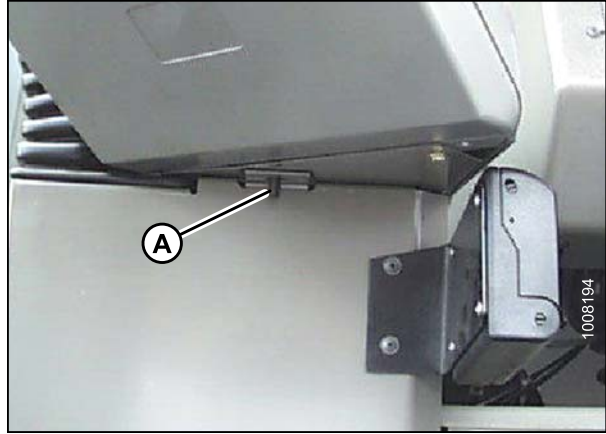


Figure 3.90: Combine Monitor

4. Rotate console (A) to expose wiring.

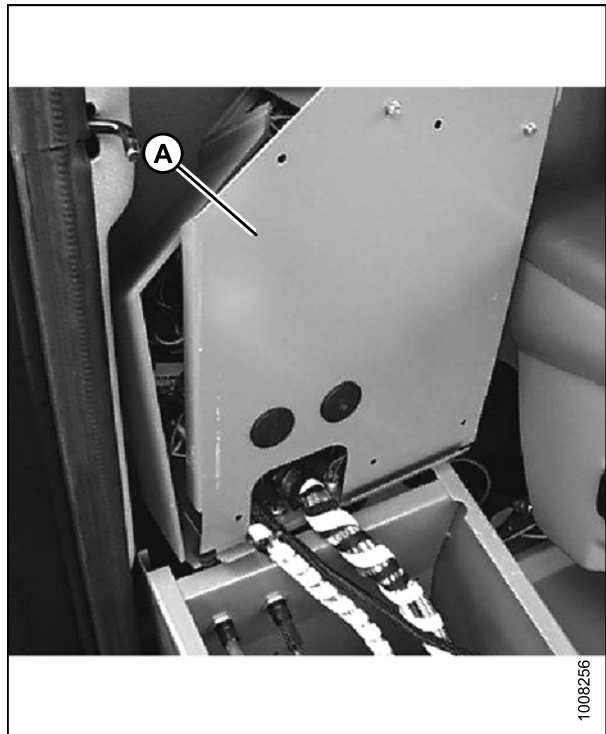


Figure 3.91: Opened Console

ASSEMBLING HEADER AND ADAPTER

5. Remove plug (A) from cab floor under the console. Push the MacDon wire harness adapter end connector through the hole, and route most of the harness through hole.
6. Cut a slit in the rubber floor plug (A), and slide plug over wiring harness so that it is secure to the floor.

NOTE:

Maintain slack in the harness to prevent damage to harness.

7. Remove five screws (A) and cover to access wiring connections inside console.

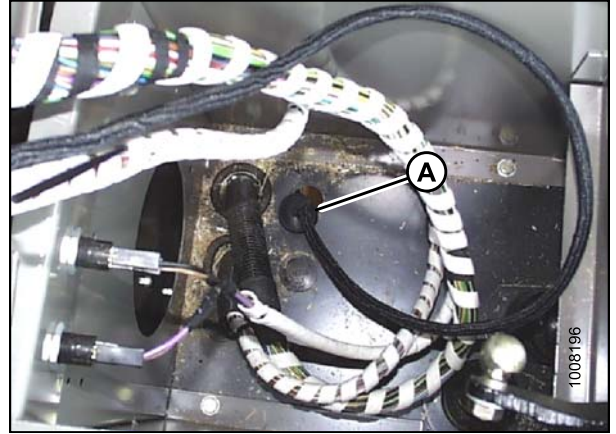


Figure 3.92: Harness Routing

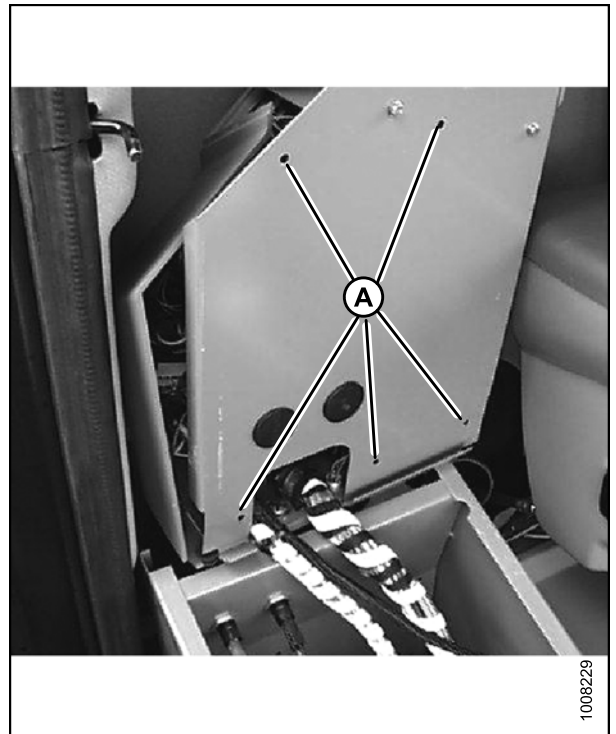


Figure 3.93: Console Underside

ASSEMBLING HEADER AND ADAPTER

- Remove the blank switch plug from top side of console at location shown (A). Route switch harness from under the console through the hole in console.



Figure 3.94: Switch Plug in Console

- Connect rocker switch (B) to the switch end (A) of the MacDon wiring harness (E):
 - red wire (C) to center terminal
 - white wire (D) to either outer terminal

NOTE:

Some MacDon wiring harnesses have 2 red wires (i.e., there is no white wire). In that case, connect one red wire to the center terminal, and the second red wire to either outer terminal. It does not matter which outer terminal is used.

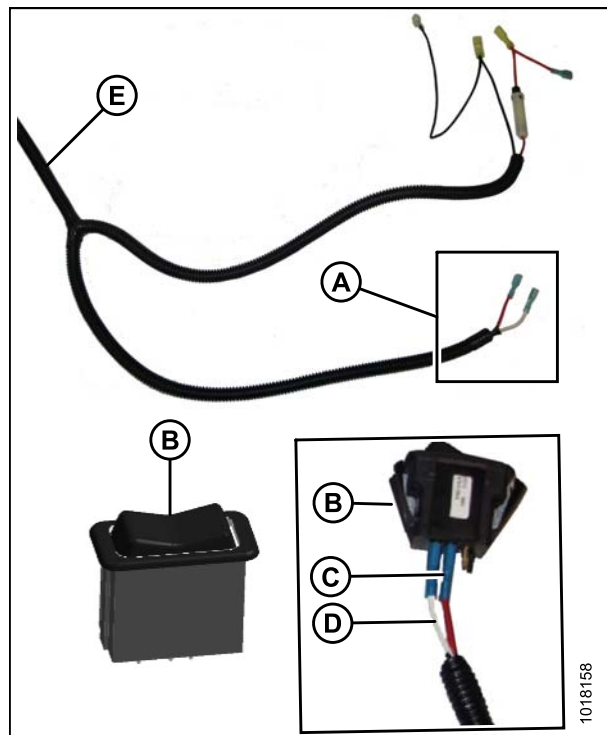


Figure 3.95: Switch End of MacDon Wiring Harness

ASSEMBLING HEADER AND ADAPTER

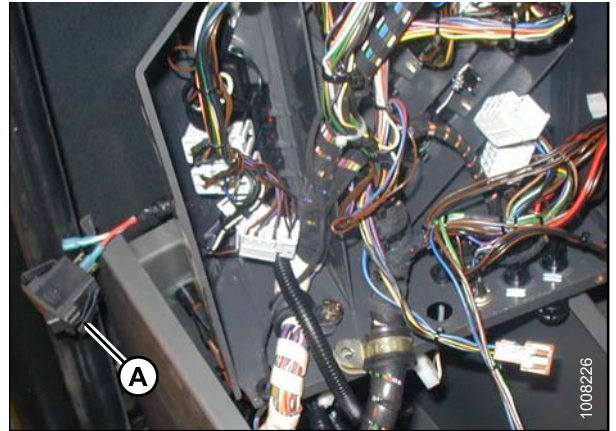


Figure 3.96: Connected Switch (A) from Console Underside

10. From the top, snap the rocker switch (A) into place.

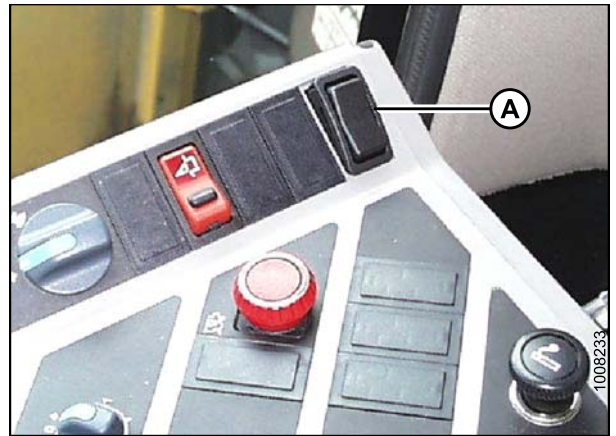


Figure 3.97: Rocker Switch

11. Secure the MacDon harness (A) to existing wires (B) with cable tie (C).

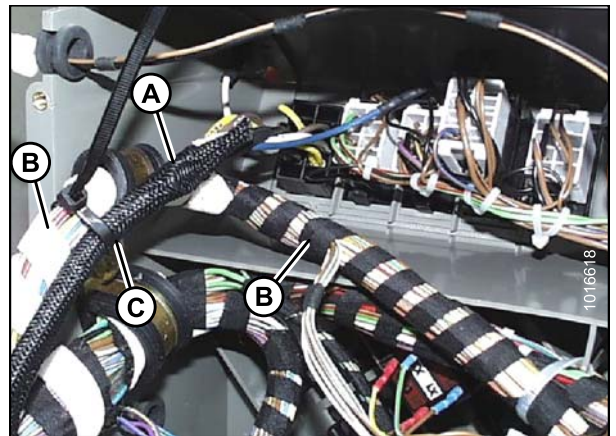


Figure 3.98: Console Underside

ASSEMBLING HEADER AND ADAPTER

12. Reinstall floor plug (A) with MacDon harness (C) in floor (B).

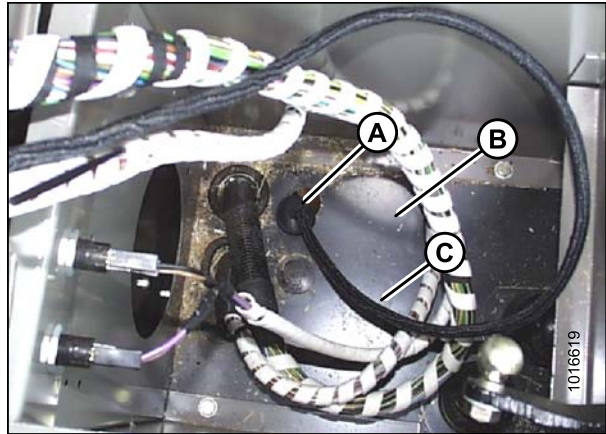


Figure 3.99: Plug in Floor

A - Plug

B - Floor

C - Switch Harness

13. Replace console cover and secure with five screws that were removed in Step 7., [page 55](#).

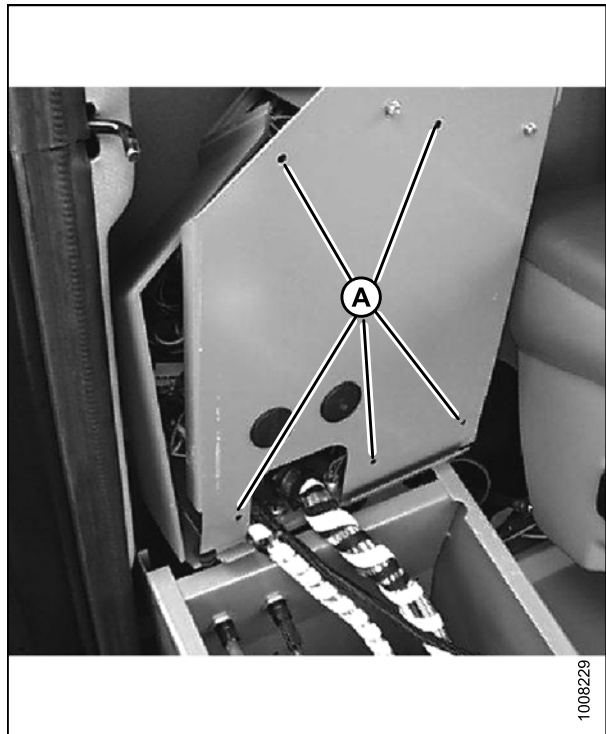


Figure 3.100: Console Underside

ASSEMBLING HEADER AND ADAPTER

14. Connect the power source end (A) of the MacDon wire harness to the in-cab power source (under the console) as follows, depending on the type of connection required (two connectors or one single connection).

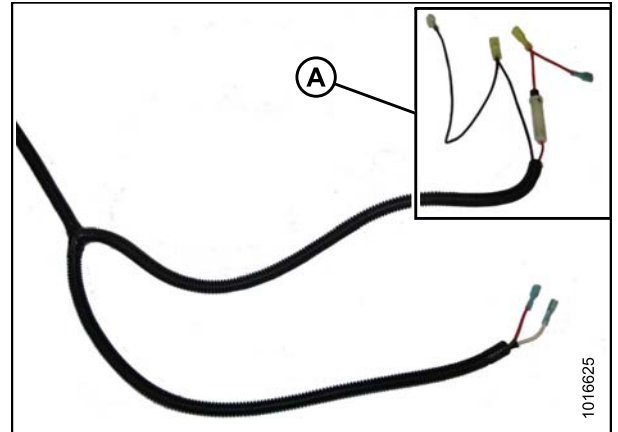


Figure 3.101: Power Source End (A) of MacDon Harness

15. TWO CONNECTOR hookups:

- a. Remove the brown wire (A) from the power source under the console, and replace it with the black wire (B) from the MacDon harness.
- b. Remove the black wire from the power source, and replace it with the red wire (C) from the MacDon harness.
- c. Attach the brown wire (removed from the power source) to the other red wire coming from the MacDon harness.
- d. Attach the black wire (removed from the power source) to the other black wire coming from the MacDon harness.

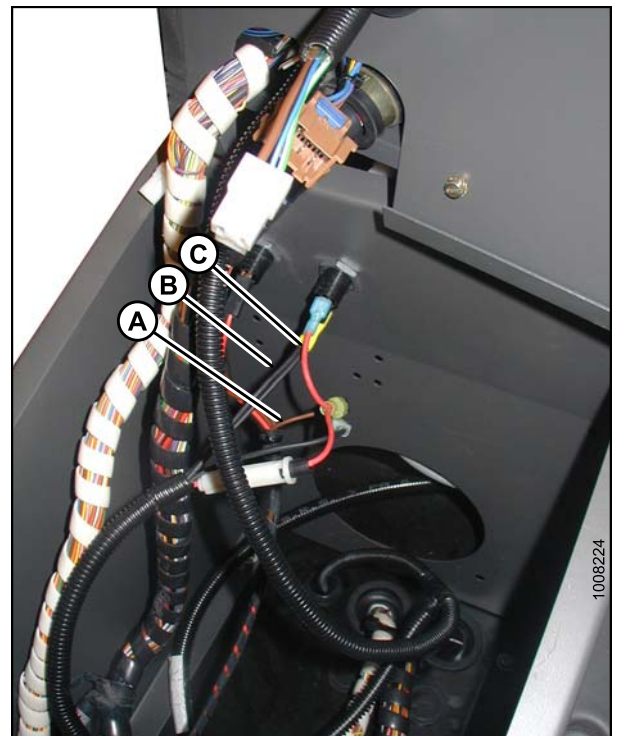


Figure 3.102: Two Connector Hookup: Switch Harness Installed

ASSEMBLING HEADER AND ADAPTER

16. SINGLE CONNECTOR hookups:

- a. Remove the existing white plug (A) with the brown and black wires from the power source.

NOTE:

Remove the insulation covering from the male blades on the MacDon wire harness to allow the blades to attach to plug (A).

- b. Replace the white plug with the black wire (B) from the MacDon switch harness on the top terminal. Attach one of the red wires (C) to the bottom terminal. There are male and female ends to both the black and red wires.
- c. Attach the remaining wires coming from MacDon harness to the previously removed white plug (in its new position [D]). Ensure the wires are attached black to black, and brown to red onto the white plug.

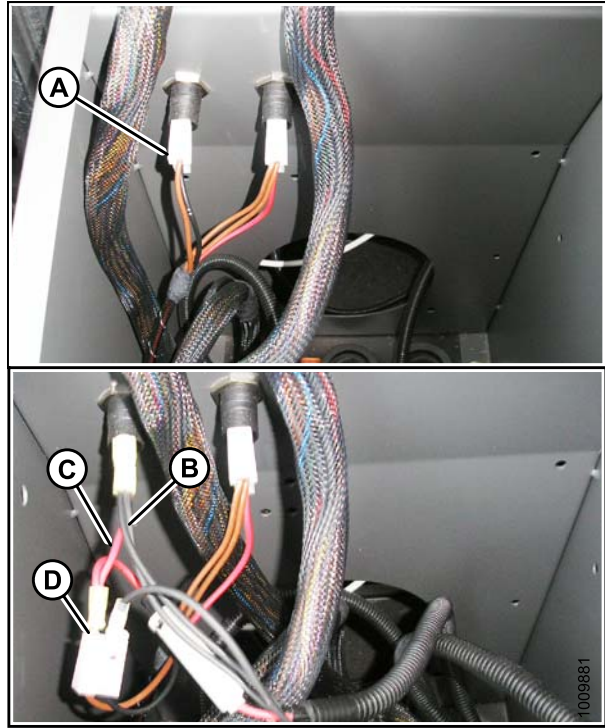


Figure 3.103: One Connector Hookup

Top - Before Connecting the Switch Harness
Bottom - After Connecting the Switch Harness

Finishing details and routing to the combine multicoupler:

17. Return the console to its original position, and install the washer and 13 mm hex nut (A) removed in Step 3, [page 54](#).

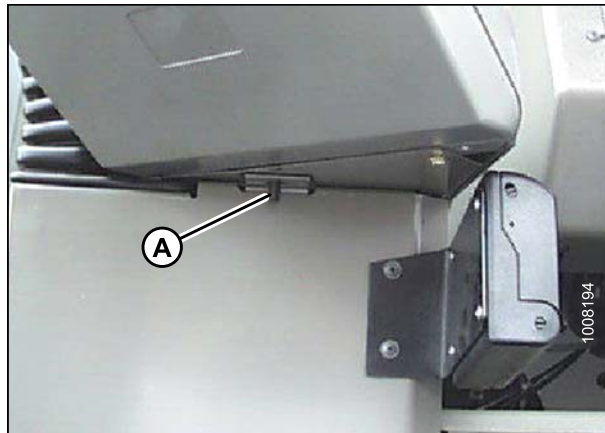


Figure 3.104: Combine Monitor

ASSEMBLING HEADER AND ADAPTER

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

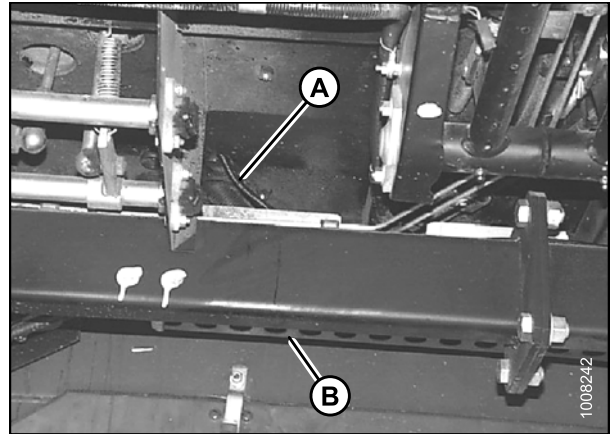


Figure 3.105: Cab Underside

- 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) down to the combine multicoupler.

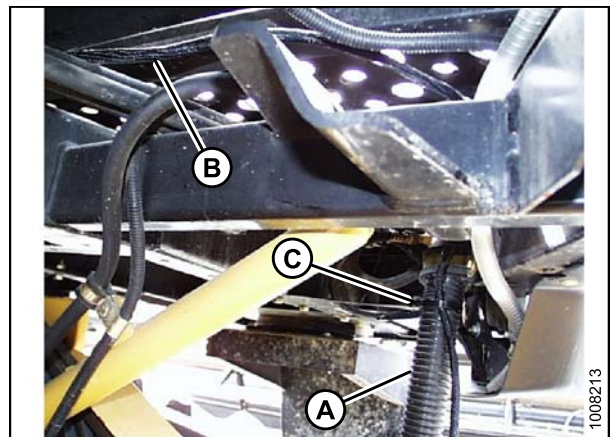


Figure 3.106: Cab Underside

- Secure the MacDon wiring harness to conduit (B) (starting from the multicoupler end) with plastic cable ties at locations (A).

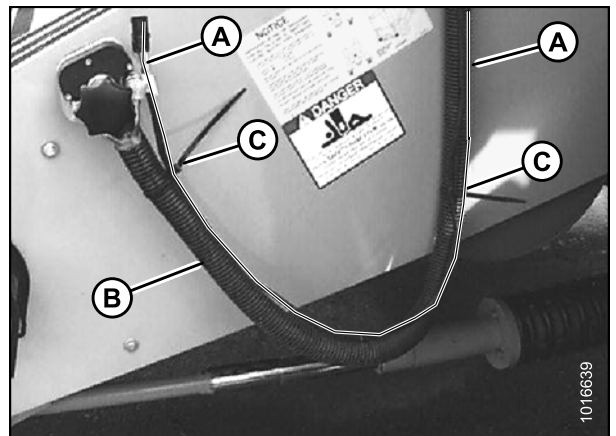


Figure 3.107: Combine Multicoupler

ASSEMBLING HEADER AND ADAPTER

21. Later, when the combine and the header adapter are attached, the mating surface of the multicoupler (A) is positioned onto the adapter receptacle (B). The combine harness (C) is connected to the reel fore-aft/header tilt selector receptacle (D) on the adapter. Refer to the header attachment section of the header operator's manual for instruction.

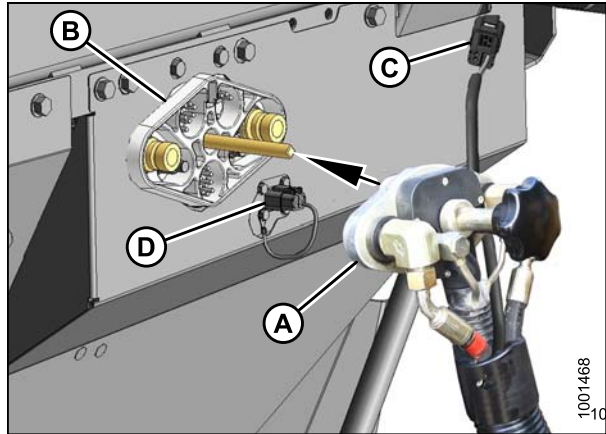


Figure 3.108: Header Adapter Attachment

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

IMPORTANT:

To prevent possible damage to electronic components, disconnect the positive cable from the combine battery and turn BATTERY DISCONNECT switch OFF before connecting harness to combine connectors.

INSTALL REEL FORE-AFT SWITCH.

1. Open the operator's panel beside the seat:
 - a. Remove two screws (A) from the panel as shown. Remove the panel to the access compartment.
 - b. Pull up on tab (B) to unlatch the console.
 - c. Rotate the console upwards to expose the underside of the cover.



Figure 3.109: Operator's Console

ASSEMBLING HEADER AND ADAPTER

- 2. Insert the switch end (A) of the MacDon wiring harness through the bottom of console alongside the wire (A) that goes to the CEBIS (CLAAS Electronic on-Board Information System) monitor.

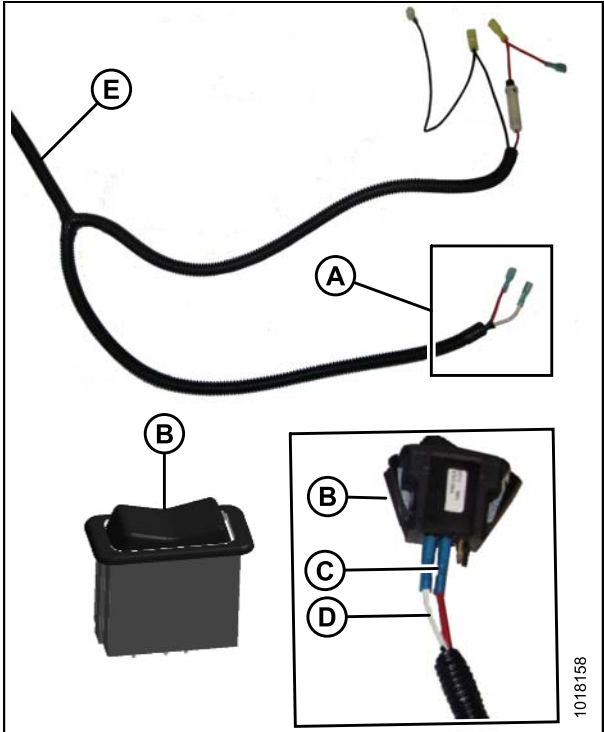


Figure 3.110: Switch End of MacDon Wiring Harness

Image shows the underside of the console, and the Lexion wire (A) referred to in the last step (going to the CEBIS (CLAAS Electronic on-Board Information System) monitor).

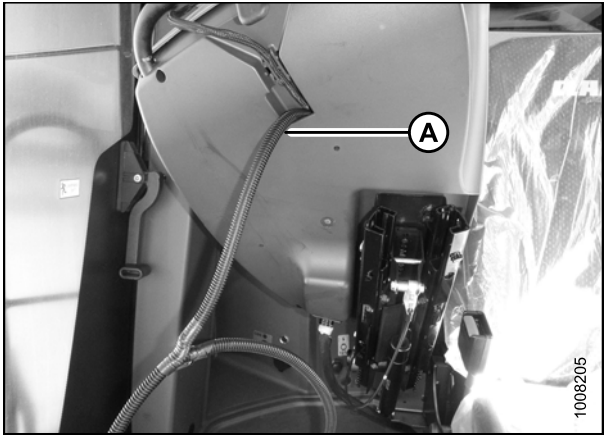


Figure 3.111: Console Underside

ASSEMBLING HEADER AND ADAPTER

3. Remove a blank cap from operator's panel at (A).
4. Run the switch end of the MacDon wiring harness (B) up through the cap opening (A).

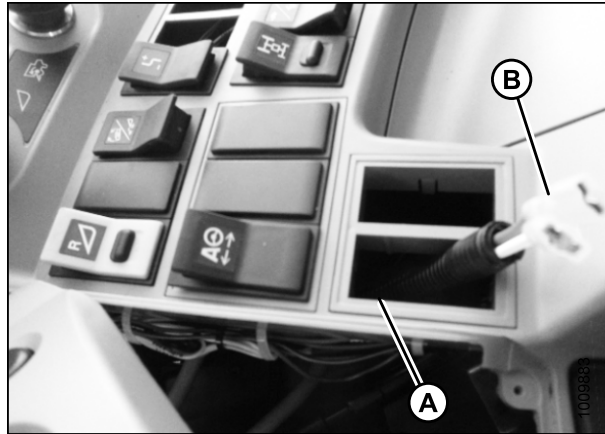


Figure 3.112: Switch and Console

5. Connect the provided fore-aft rocker switch (B) to the switch end of the MacDon wiring harness (E). The switch end has two wires (one red and one white wire, or two red wires)
 - a. Connect the red wire (C) to the center terminal of the rocker switch (B)
 - b. Connect the white wire (D) to either outer terminal of the rocker switch (B). It does not matter which outer terminal is used.

NOTE:

Some MacDon wire harnesses have 2 red wires (i.e., there is no white wire). In that case, connect one red wire to the center terminal, and the second red wire to either outer terminal.

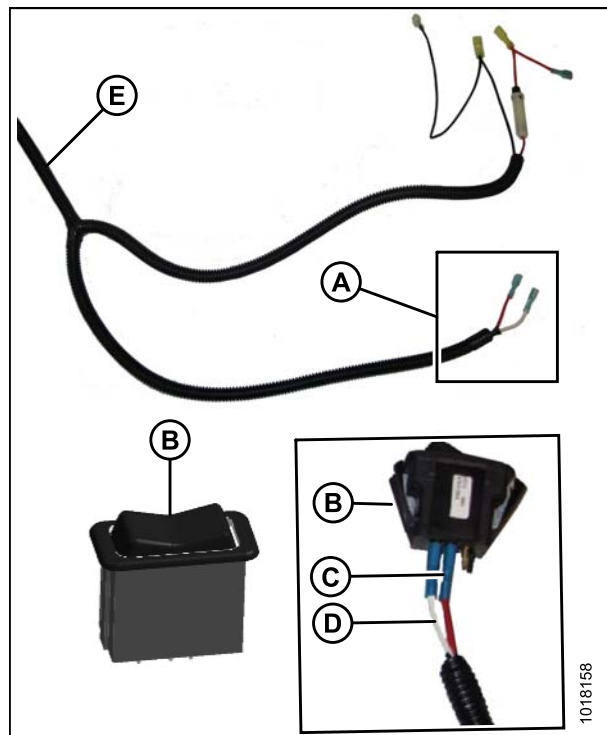


Figure 3.113: Switch End of MacDon Wiring Harness

ASSEMBLING HEADER AND ADAPTER

NOTE:

If LASER PILOT autosteer is installed, select the blank plug next to (A) as the location of the reel fore-aft/header tilt rocker switch.

6. Snap the newly-connected fore-aft rocker switch (A) down into the panel. Screw down the operator's panel.
7. Replace operator's panel onto the console. Secure with the two previously removed screws (B).



Figure 3.114: Console

CONNECT SWITCH HARNESS TO COMBINE POWER

8. Locate the power source for the switch on your combine, and connect the MacDon wiring harness. The location of the power source depends on your Lexion combine model.
9. **Switched Power Source 1:** If the power source is under the terminal compartment cover on the floor of the cab, there will be a white plug with 2 wires as shown. Proceed to Step [12.](#), [page 66](#) for next steps.

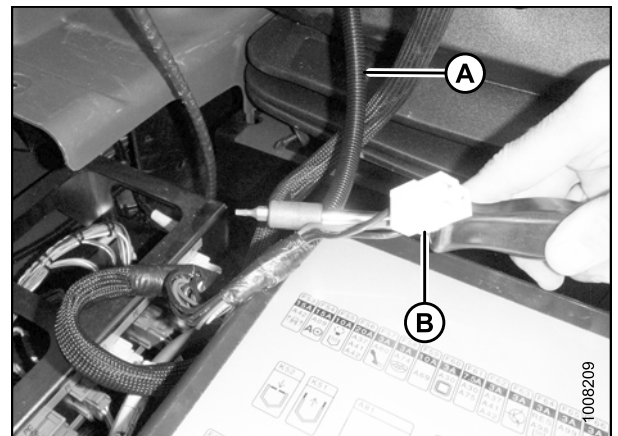


Figure 3.115: White Plug in Terminal Compartment

10. **Switched Power Source 2:** Newer Lexion combines have a switched power source behind the panel that is beside the ignition. If this is available on your combine, proceed to Step [10.](#), [page 65](#) for next steps.



Figure 3.116: White Plug in Panel Beside Ignition

ASSEMBLING HEADER AND ADAPTER

11. **Unswitched 12V Power Source 3:** If there are no available plugs in the switched power supply, unswitched power or a cigarette lighter adapter harness can be used. Proceed to Step 23., page 69 for next steps.

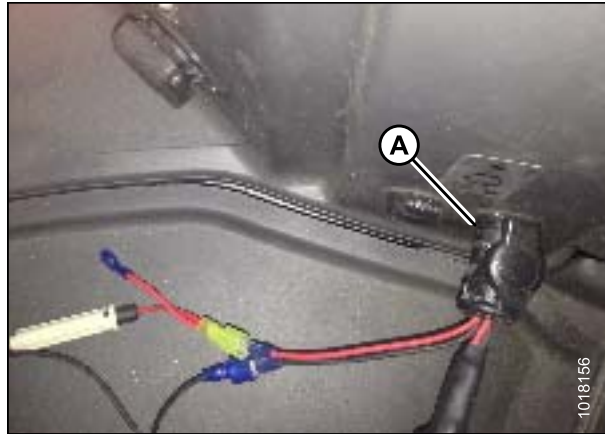


Figure 3.117: Unswitched 12V Power Using Cigarette Lighter Adapter Extension

Detail for Power Source 1:

12. For combines with an available single Lexion wire harness with a white plug for switched power in the terminal compartment [A].
13. On the floor at the right side of the cab, locate the terminal compartment (A). Remove the terminal compartment cover for access to 12-volt switched power.
14. In the terminal compartment, locate the Lexion single-wire harness (A) that provides switched power. One brown wire and one black wire are connected to the white plug (B).

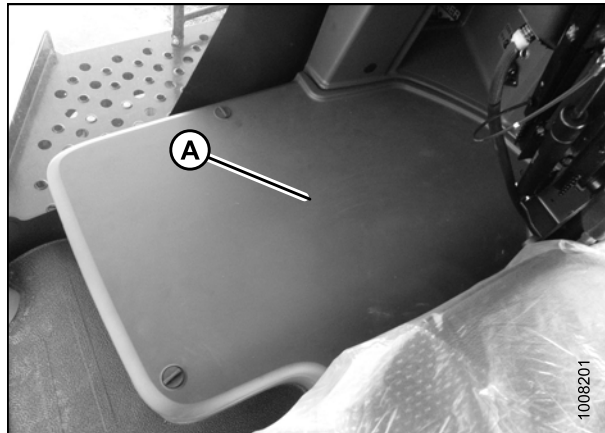


Figure 3.118: In Terminal Compartment

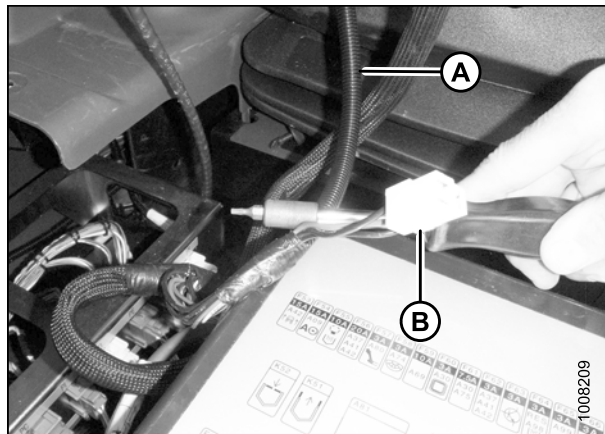


Figure 3.119: Combine Switched Power Location

ASSEMBLING HEADER AND ADAPTER

15. Locate the power source end (A) of the MacDon wire harness.

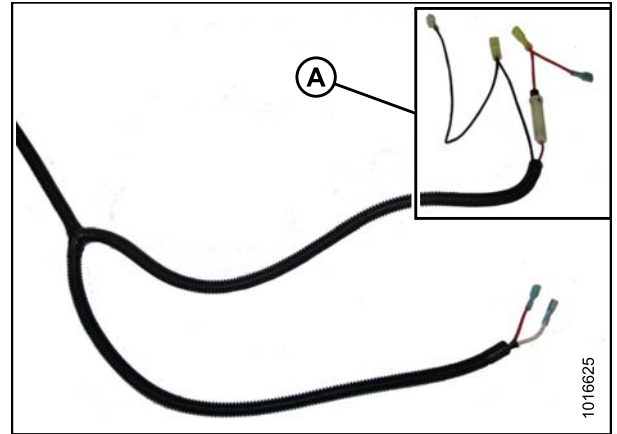


Figure 3.120: Power Source End (A) of MacDon Wire Harness

16. Connect wires from the MacDon wiring harness (D) to the Lexion single-wire harness (A):
 - a. On the MacDon harness (D), remove the insulation from the two male blades (one red and one black).
 - b. Attach the red wire (B) in the MacDon harness to the brown wire in the Lexion white plug (A).
 - c. Attach the black wire (C) in the MacDon harness to the black wire in the Lexion white plug (A).
17. Proceed to Step [25., page 70](#) to connect to the combine multicoupler.

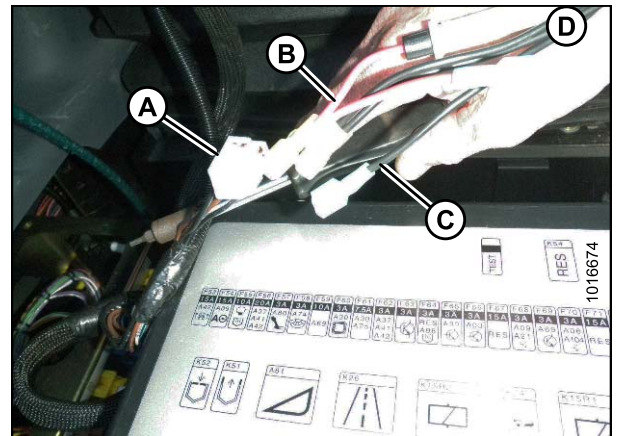


Figure 3.121: Attaching MacDon Wire Harness to Lexion Power Source

18. **Detail for Switched Power Source 2:** Remove the rear access panel (A) (beside the ignition) to gain access to rear of cigarette lighter (B). If a white power plug with two wires is available, it can be used to connect the MacDon wiring harness.

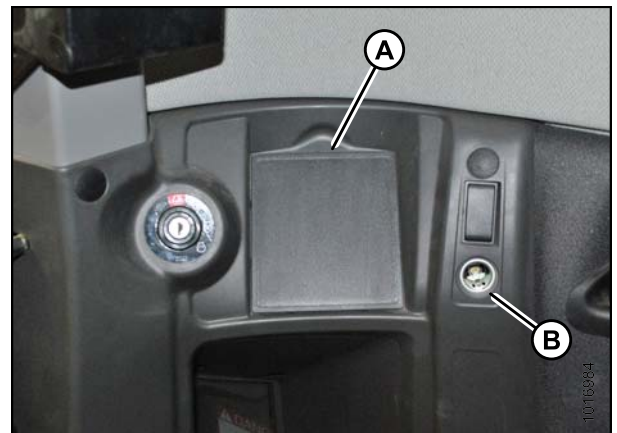


Figure 3.122: Panel

ASSEMBLING HEADER AND ADAPTER

19. Retrieve the white plug of the Lexion cigarette lighter wiring harness (A) from the rear of the cigarette lighter.
20. Route the MacDon wiring harness from under the fore-aft rotary switch up to the rear right corner of the cab to the back of cigarette lighter. If necessary, add an extension or additional length to the MacDon wiring harness so that there is sufficient length to connect to the white plug on the Lexion harness.

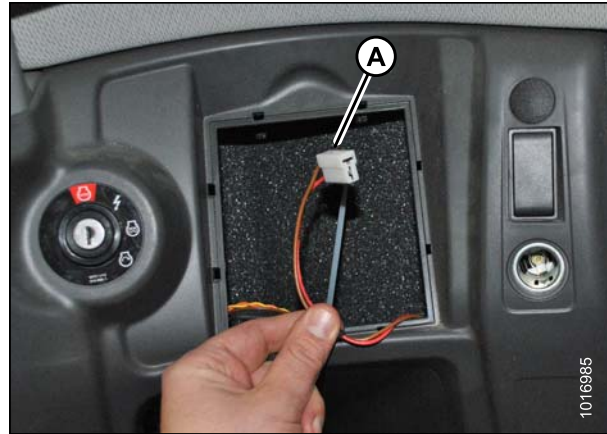


Figure 3.123: Switched Power Harness Plug

21. Install the MacDon wiring harness between the cigarette lighter and the cigarette lighter harness:
 - a. On the MacDon harness, remove the insulation from the two male blades (one red and one black).
 - b. Remove the Lexion harness from the cigarette lighter.
 - c. Plug the red female wire from the MacDon harness into the power terminal on the cigarette lighter.
 - d. Plug the black female wire from the MacDon harness into the negative terminal on the cigarette lighter.
 - e. Plug the red male and black male blades into the same colored wires in the Lexion harness (red to red; black to black).
 - f. Reinstall plastic cover.
 - g. Cable-tie harness along route where necessary.
22. Proceed to Step [25., page 70](#) to connect to the combine multicoupler.

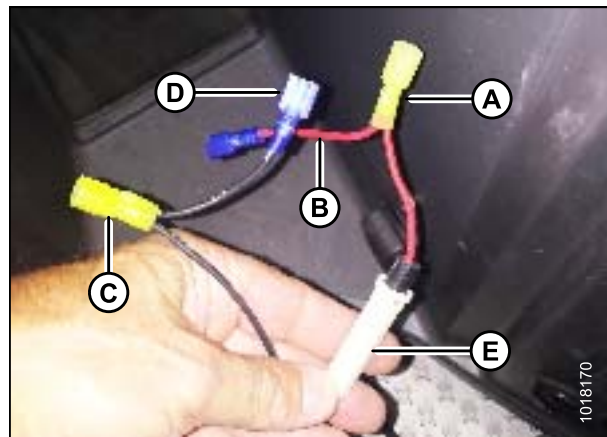


Figure 3.124: Wiring Harnesses

- A - Red Female Wire (To Cigarette Lighter Power Terminal)
- B - Red Male Blade (To Red Wire in Lexion Harness)
- C - Black Female (To Cigarette Lighter Negative Terminal)
- D - Black Male Blade (To Black Wire in Lexion Harness)
- E - Inline Fuse MacDon Harness

ASSEMBLING HEADER AND ADAPTER

Detail for Unswitched 12V Power Source 3: If there are no available plugs in the switched power supply, unswitched power or a cigarette lighter adapter harness can be used.

IMPORTANT:

This is **NOT** recommended because constant power is supplied to the header tilt side of the solenoid valve. If the circuit is left powered during extended shutdown periods, the combine battery will be drained.

NOTE: This harness is not included in the kit, and can be ordered from MacDon parts as MD #220570.

23. Obtain a short cigarette lighter harness (B) and connect it to the MacDon wiring harness. Whenever use of the fore-aft/header tilt switch is needed, plug the short harness into the cigarette lighter.

IMPORTANT:

Remember to disconnect the unswitched 12V power connection when the reel fore-aft movement is not needed, so that the combine battery does not drain.

24. Proceed to next step to connect to the combine multicoupler.

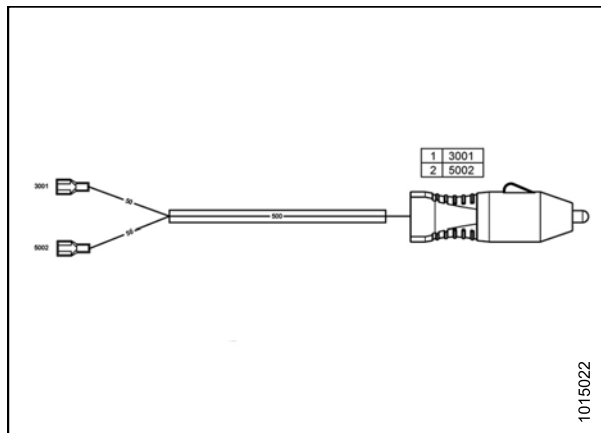


Figure 3.125: Optional Cigarette Lighter Adapter (MD #220570)

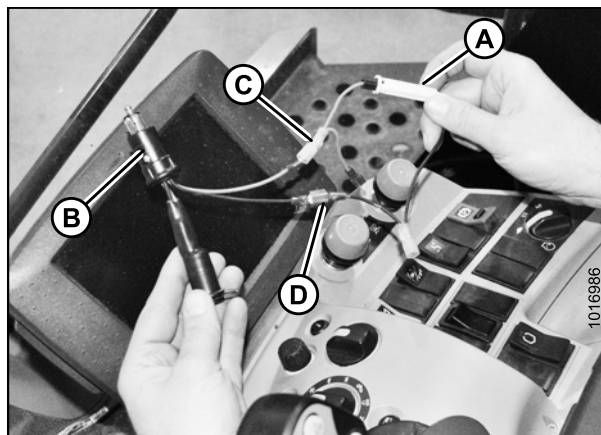


Figure 3.126: Cigarette Lighter Adapter Connections

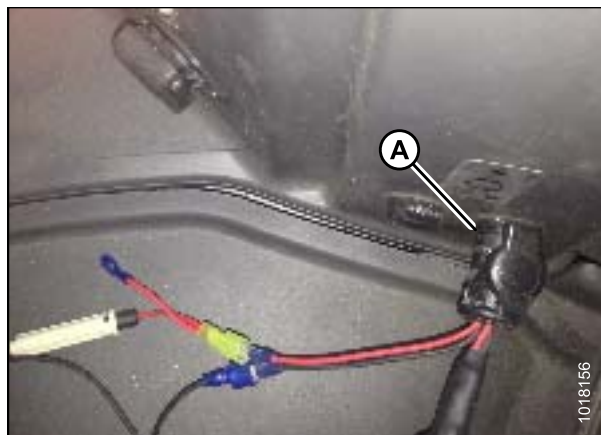


Figure 3.127: Cigarette Lighter Receptacle

ASSEMBLING HEADER AND ADAPTER

ROUTE HARNESS FROM THE CAB TO THE COMBINE MULTICOUPLER

25. After the switch wiring harness is connected to a power source, route it from the cab to the multicoupler at the front left of the combine:
 - a. Make an exit hole for the MacDon switch harness in one of the blank covers to the left side of the compartment at (A).
 - b. Route the two-prong wire (black/white connector) of the switch harness through the hole.

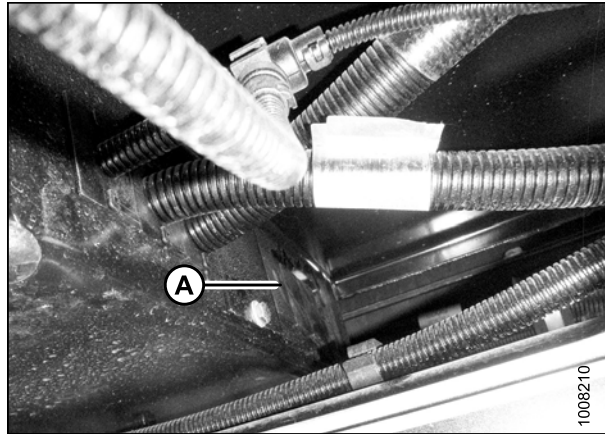


Figure 3.128: Switch Harness

NOTE:

Images shown are for Lexion 500 Series.

26. Route switch harness (A) under the cab floor alongside the existing harnesses. Do **NOT** secure harness with cable ties until routing is complete.

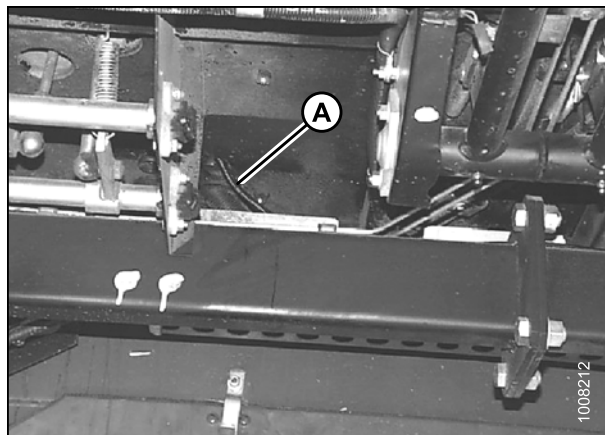


Figure 3.129: Cab Underside (500 Series Lexion Shown)

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

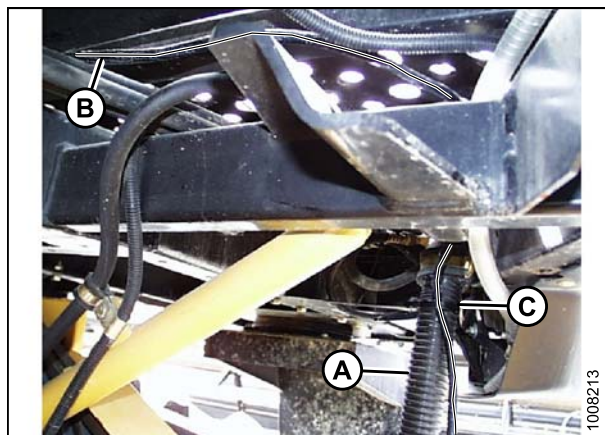


Figure 3.130: 500 Series Lexion Shown

ASSEMBLING HEADER AND ADAPTER

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

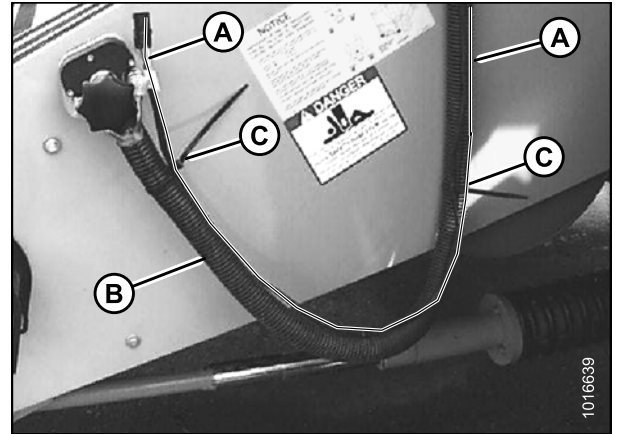


Figure 3.131: Combine Multicoupler

29. Once external work is complete, return to the cab and push any excess harness length back into the terminal compartment.
30. Cable tie the MacDon harness to the existing Lexion harness that goes to the console at (A). This prevents the harness getting tangled or damaged when the seat or console are moved.

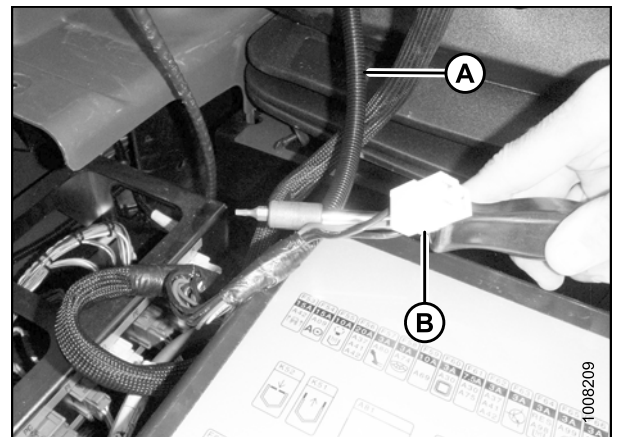


Figure 3.132: Existing Harness and MacDon Harness

31. Later, when the combine and the header adapter are attached, the mating surface of the multicoupler (A) is positioned onto the adapter receptacle (B). The combine harness (C) is connected to the reel fore-aft/header tilt selector receptacle (D) on the adapter. Refer to the header attachment section of the header operator's manual for instruction.

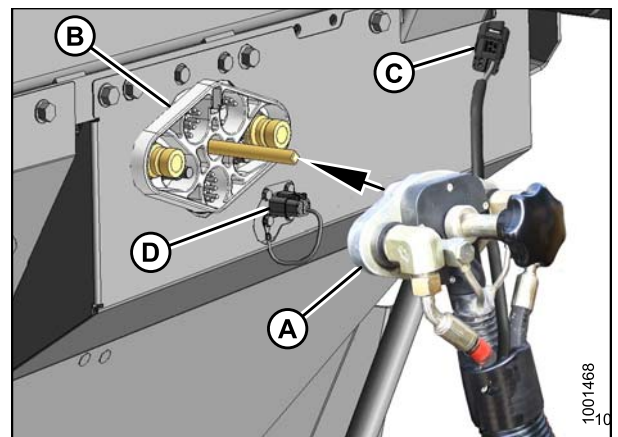


Figure 3.133: Header Adapter Attachment

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.

ASSEMBLING HEADER AND ADAPTER

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

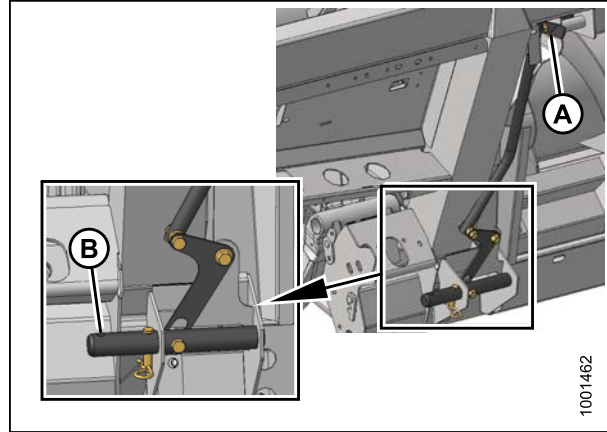


Figure 3.134: Pins Retracted

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 (A) is directly under the adapter top cross member (B).
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. Remove the locking pin (B) from the adapter pin (A).

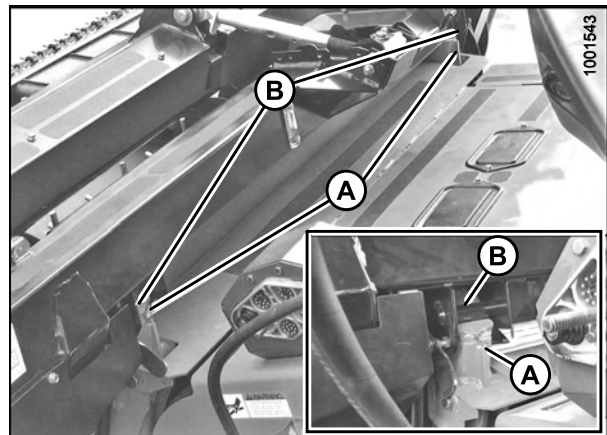


Figure 3.135: Header on Combine

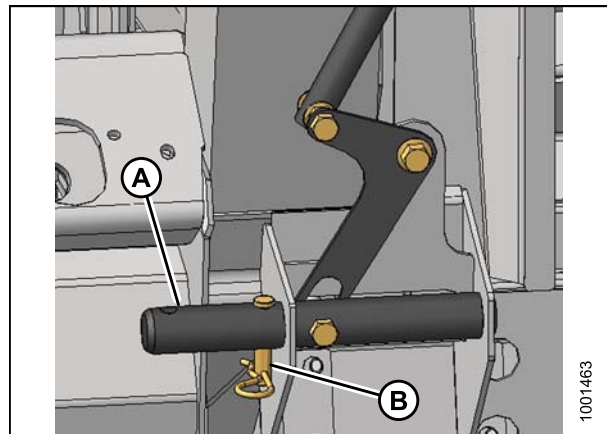


Figure 3.136: Locking Pins

ASSEMBLING HEADER AND ADAPTER

6. Lower the handle (A) to engage the CA25 pins (B) into the feeder house. Reinsert the locking pin (C) and secure with the hairpin.
7. Remove the blocks from under the cutterbar.



CAUTION

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

8. Start the engine and lower the header.
9. Stop the engine and remove the key from the ignition.

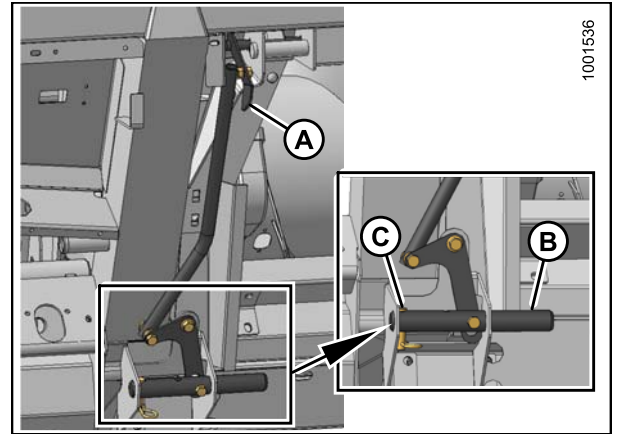


Figure 3.137: Engaging Pins

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

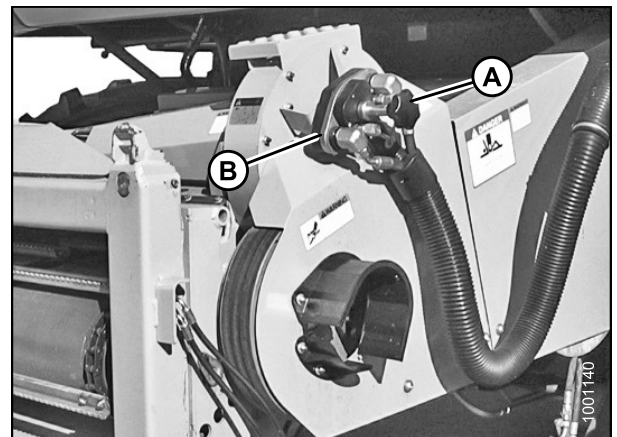


Figure 3.138: Combine Coupler

11. Remove CA25 receptacle cover (A).

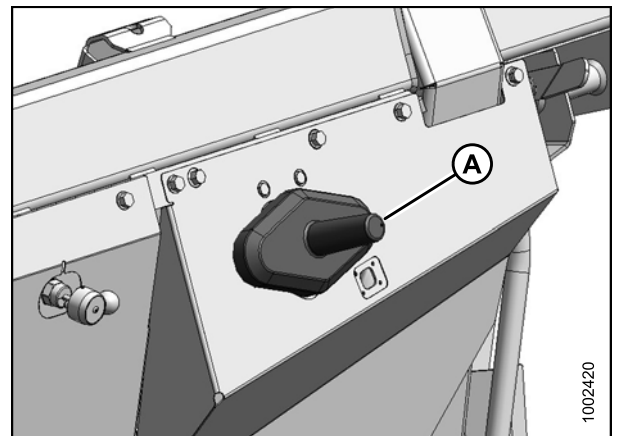


Figure 3.139: Receptacle Cover

ASSEMBLING HEADER AND ADAPTER

12. Place the CA25 receptacle cover (A) onto the combine receptacle.

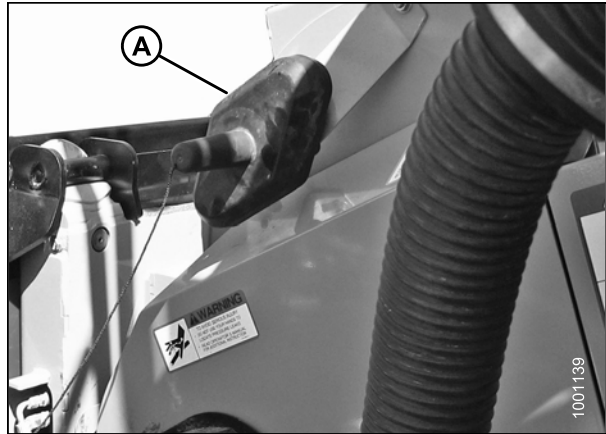


Figure 3.140: Receptacle Cover

13. Clean the mating surface of the coupler (A) and position onto the CA25 receptacle (B).
14. Turn the knob (C) to secure the coupler to the receptacle.
15. Connect the combine harness (D) to the reel fore-aft/header tilt selector receptacle (E).

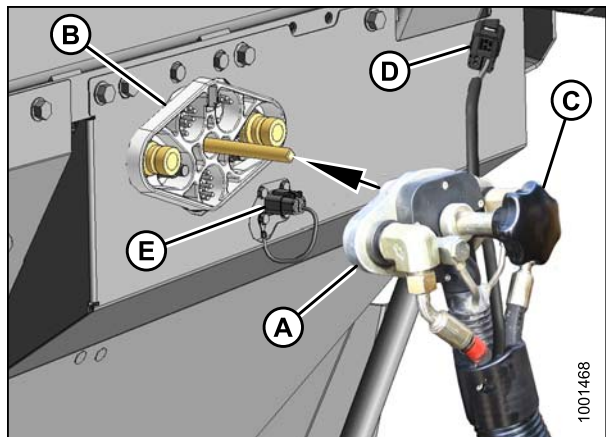


Figure 3.141: Coupler

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

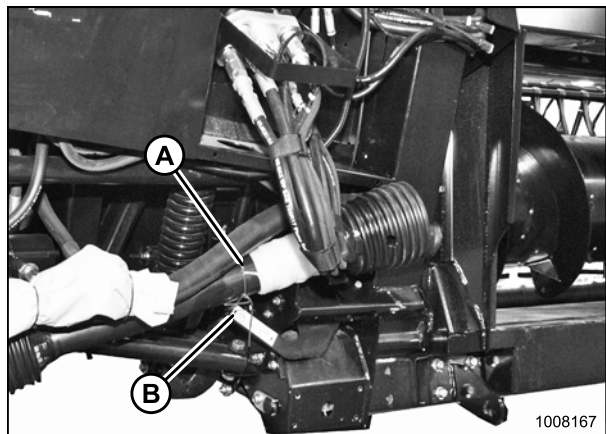


Figure 3.142: Shipping Wire on Driveline and Float Lock Lever

ASSEMBLING HEADER AND ADAPTER

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

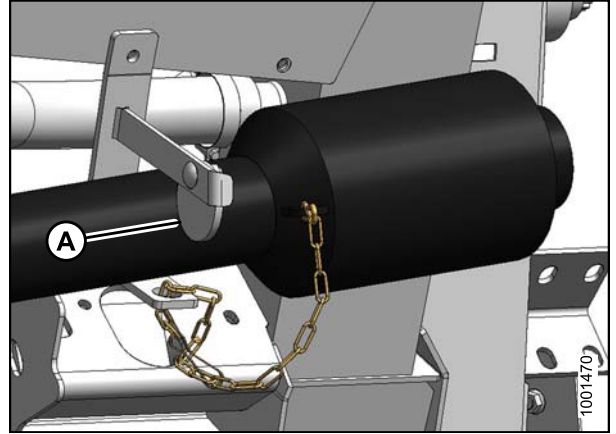


Figure 3.143: Driveline

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

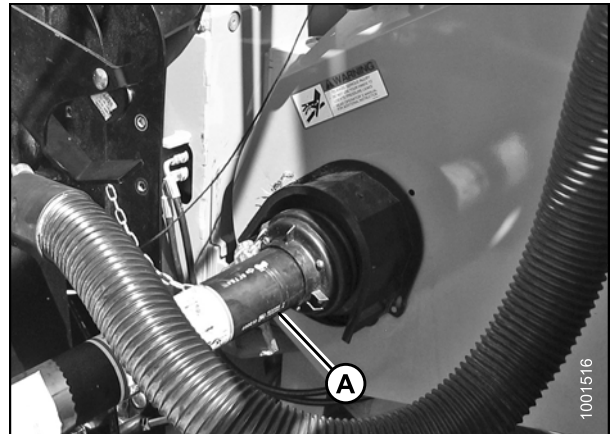


Figure 3.144: Driveline and Output Shaft

ASSEMBLING HEADER AND ADAPTER

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

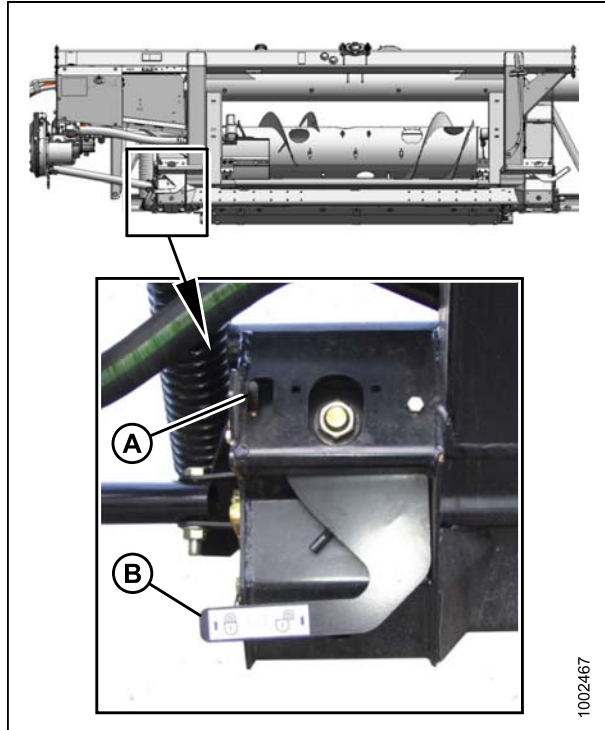


Figure 3.145: Float Lock in UNLOCK Position

20. Proceed to [3.4 Completing the Header Assembly, page 82](#).

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.

1. On the upper left side of the combine CA25, remove nut (A) and flip lever (B) horizontally.

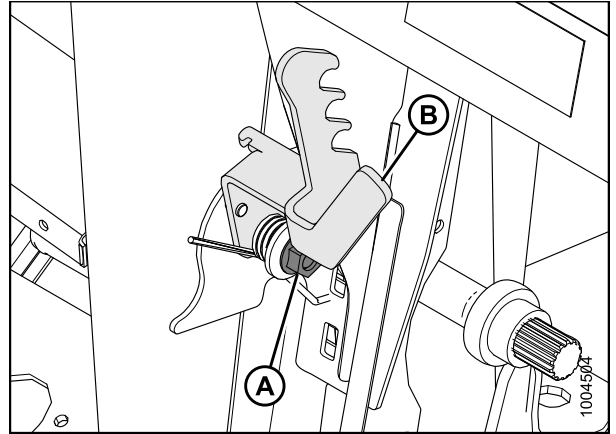


Figure 3.146: Feeder House Lever Lock on CA25

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

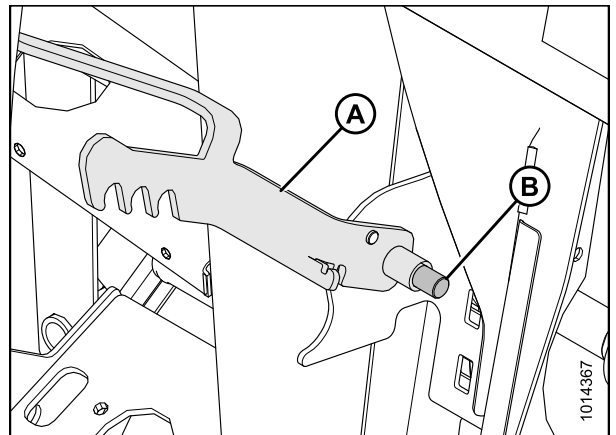


Figure 3.147: Feeder House Lever Lock on CA25

ASSEMBLING HEADER AND ADAPTER

- Place spring arm (C) into hook on lever (B) to preload it, and tighten nut (A) with washer onto the combine CA25.

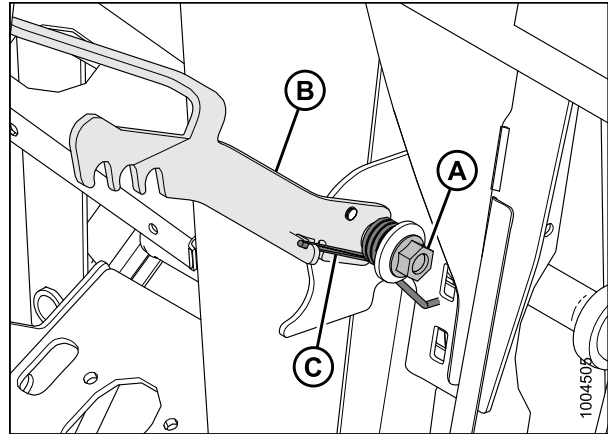


Figure 3.148: Feeder House Lever Lock on CA25

- Ensure the handle (A) is positioned so the hooks (B) can engage the CA25.

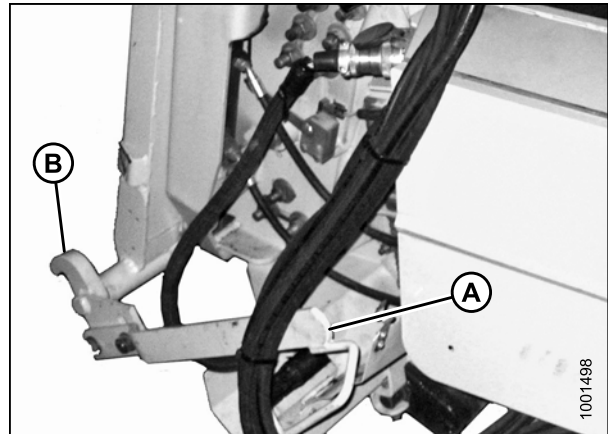


Figure 3.149: Feeder House Locks

CAUTION

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

- Start the engine and slowly drive the combine up to the CA25 until the feeder house saddle (A) is directly under the CA25 top cross member (B).
- Raise the feeder house slightly to lift the header ensuring the feeder saddle is properly engaged in the CA25 frame.
- Stop the engine and remove the key from the ignition.

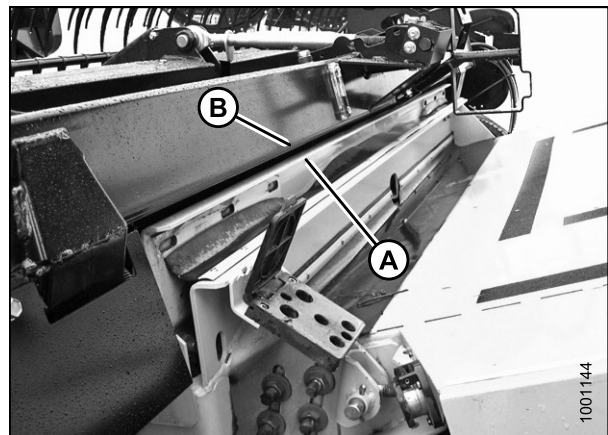


Figure 3.150: Header on Combine

ASSEMBLING HEADER AND ADAPTER

- Lift lever (A) on the CA25 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.
- Push down on the lever (A) so the slot in the lever engages the handle and locks the handle in place.
- Loosen bolts (E) and adjust the lock (C) if lock does not fully engage the pin on the CA25 when the lever (A) and handle (B) are engaged. Retighten bolts.

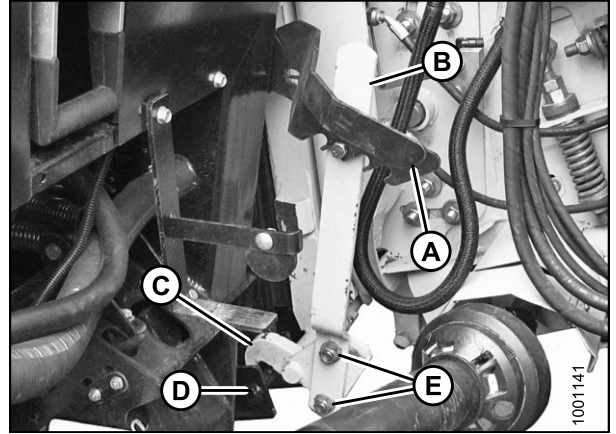


Figure 3.151: Feeder House Locks

- Open the receptacle cover (A) on the CA25.
- Push in the lock button (B) and pull the handle (C) to the full open position.
- Clean the receptacle mating surfaces.

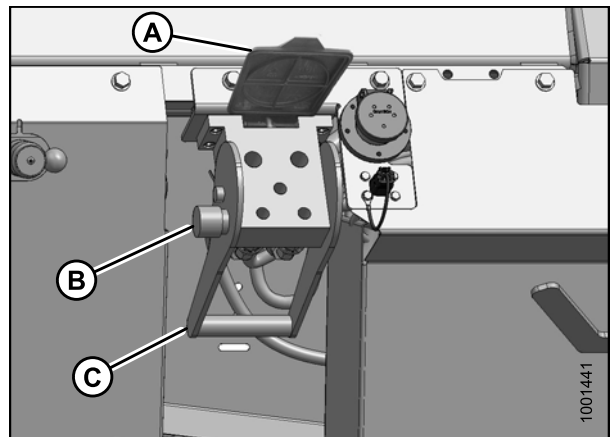


Figure 3.152: Adapter Receptacle

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

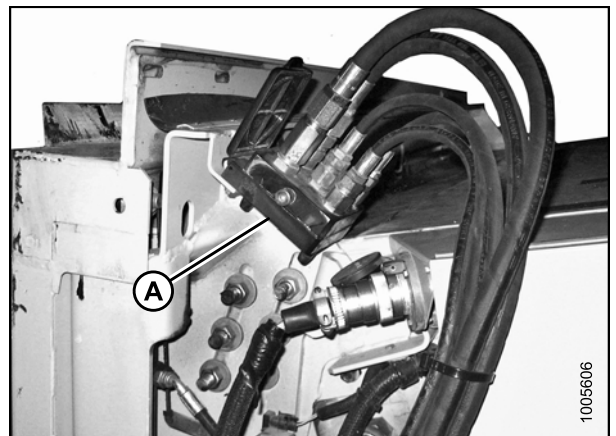


Figure 3.153: Combine Coupler

ASSEMBLING HEADER AND ADAPTER

15. Position the coupler (A) onto the CA25 receptacle, and push the handle (B) to engage the pins into the receptacle.
16. Push the handle (B) to closed position until the lock button (C) snaps out.
17. Remove the cover on the CA25 electrical receptacle.
18. Remove the connector (D) from the combine.
19. Align the lugs on the connector (D) with the slots in the CA25 receptacle, and push the connector onto the receptacle. Turn the collar on the connector to lock it in place.

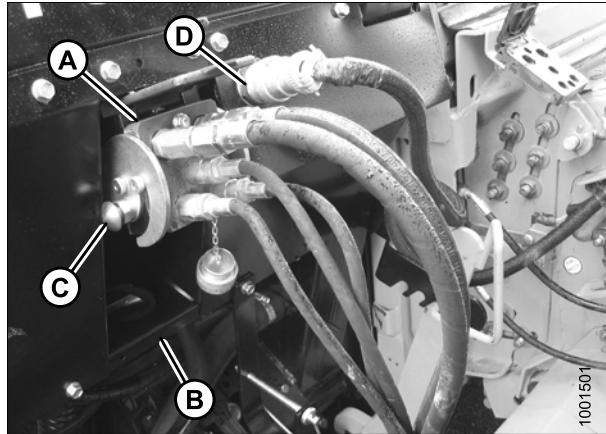


Figure 3.154: Connections

20. Remove the shipping wire from the driveline and float lock lever.

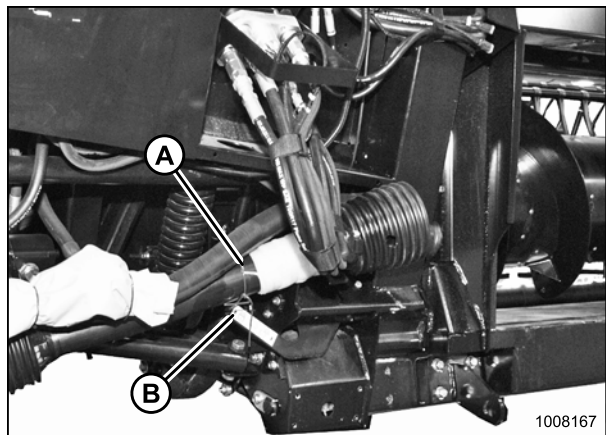


Figure 3.155: Shipping Wire on Driveline and Float Lock Lever

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

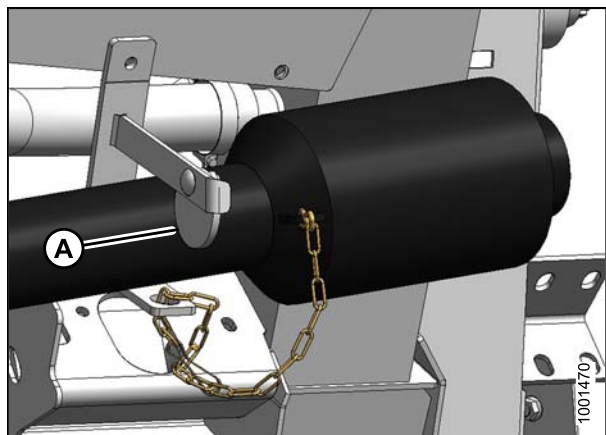


Figure 3.156: Driveline

ASSEMBLING HEADER AND ADAPTER

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

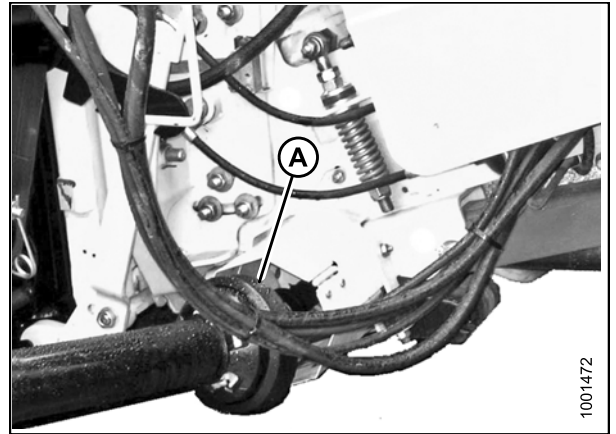


Figure 3.157: Driveline and Output Shaft

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

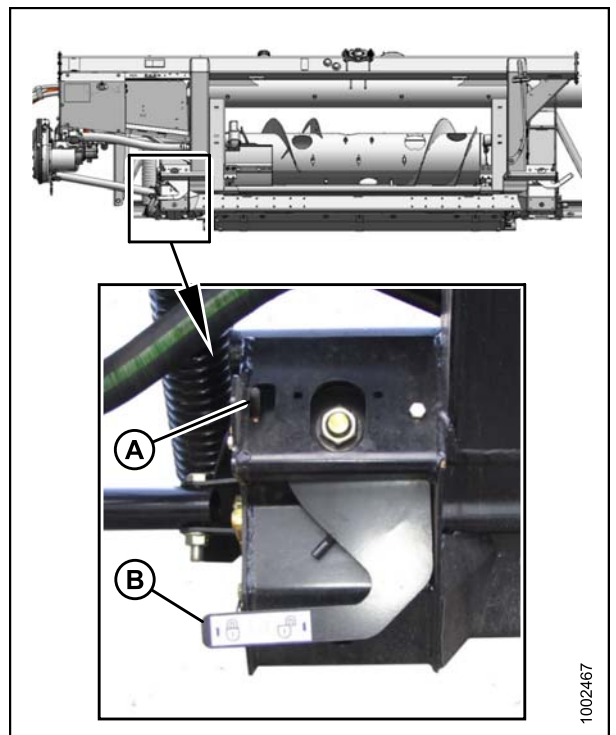


Figure 3.158: Float Lock in UNLOCK Position

24. Proceed to [3.4 Completing the Header Assembly, page 82](#).

3.4 Completing the Header Assembly

3.4.1 Attaching Cam Arms

To attach reel cam arms, follow these steps:

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

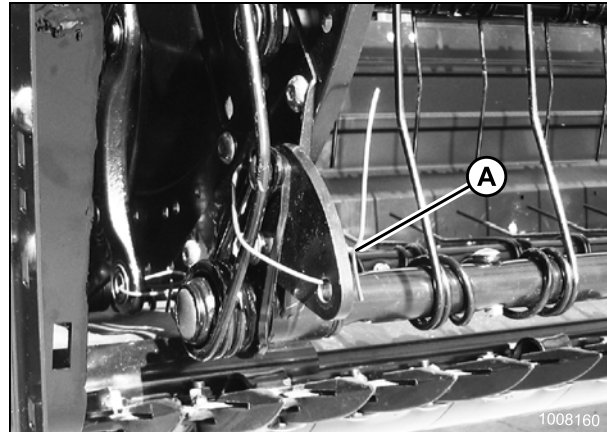


Figure 3.159: Disconnected Cam Links and Shipping Wire

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

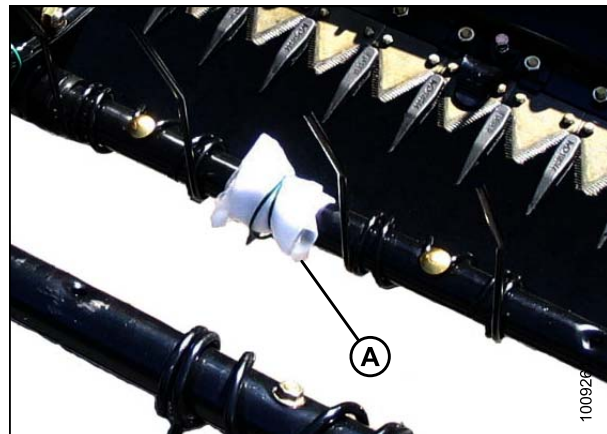


Figure 3.160: Hardware Bag Right Reel

4. Rotate tine tube 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 165 N·m (120 ft·lbf).

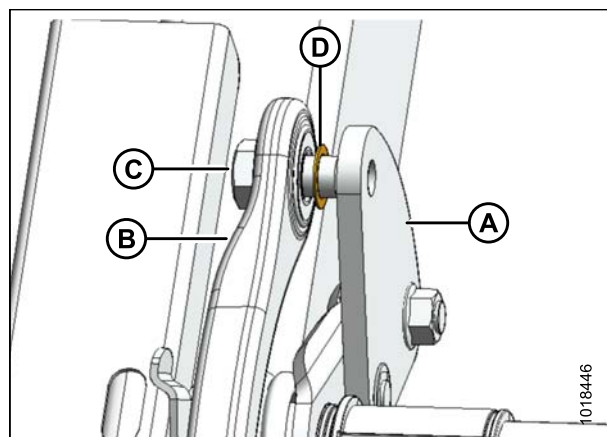


Figure 3.161: Tine Bar Crank and Link

ASSEMBLING HEADER AND ADAPTER

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

NOTE:

This procedure is done only on right reel.



Figure 3.162: Right Reel with Cam Arms Attached

3.4.2 Repositioning Gearbox

To reposition the gearbox, follow these steps:

1. Remove shipping wire and wrapping on brace (A). Swing brace clear of gearbox.
2. Loosen nut (A) and move bolt out of shipping position slot.

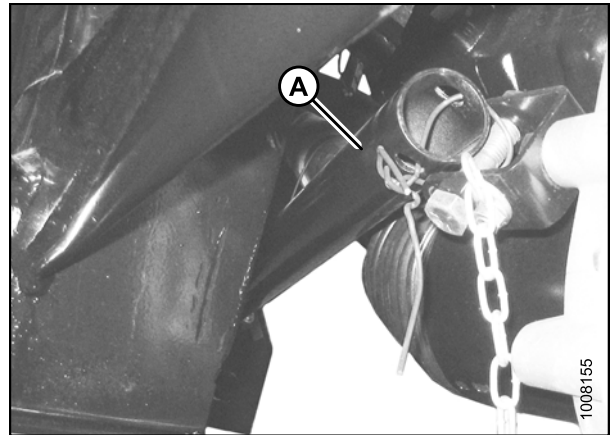


Figure 3.163: Shipping Wire and Brace



Figure 3.164: Shipping Position

ASSEMBLING HEADER AND ADAPTER

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

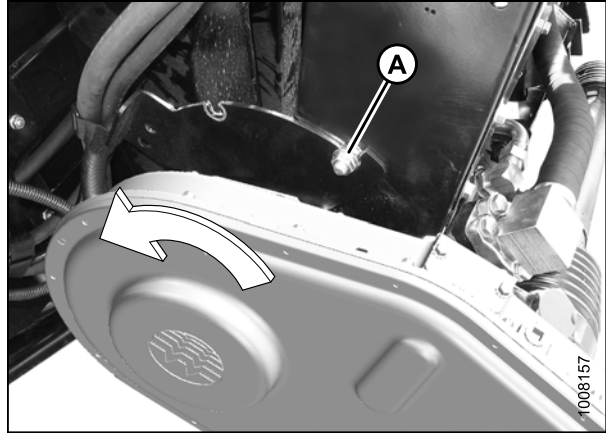


Figure 3.165: Working Position

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

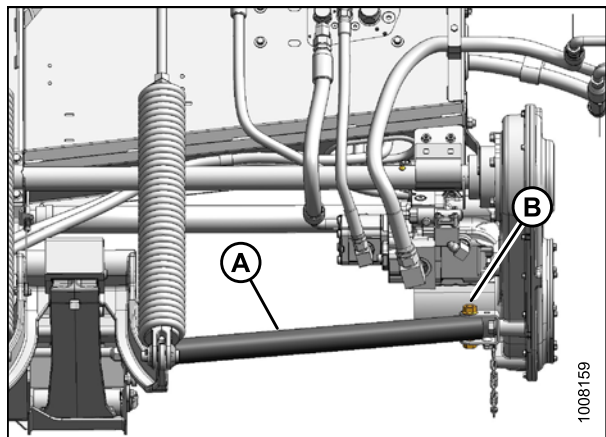


Figure 3.166: Brace Position

3.4.3 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.

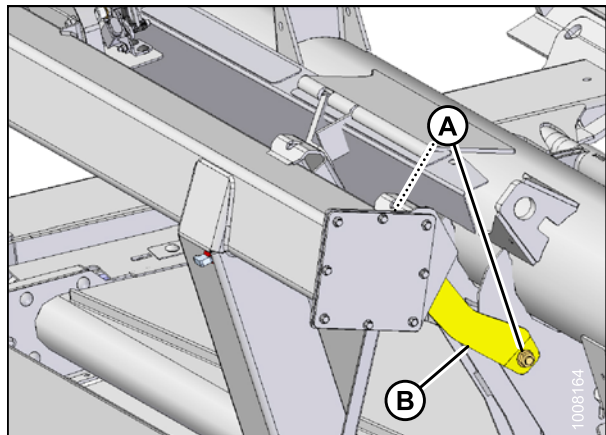


Figure 3.167: Strap on Center Frame

ASSEMBLING HEADER AND ADAPTER

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

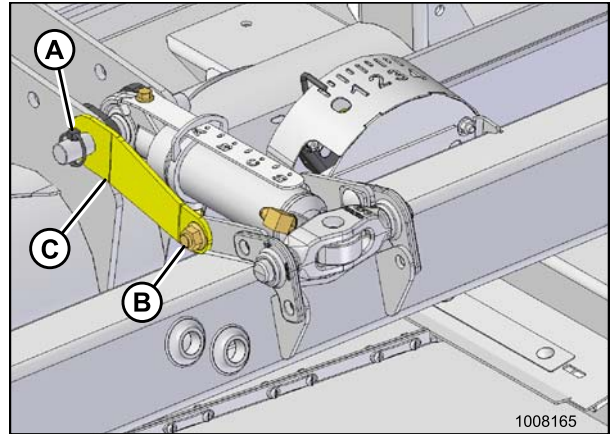


Figure 3.168: Shipping Brace

3.4.4 Positioning Transport Lights

Transport lights are located on each of outboard reel arms.

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

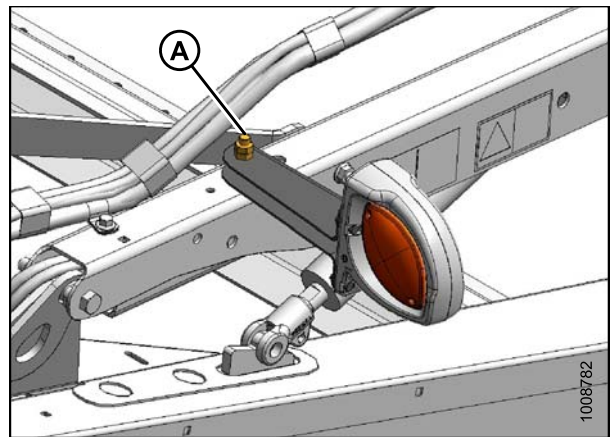


Figure 3.169: Transport Light

3.4.5 Opening Endshield

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

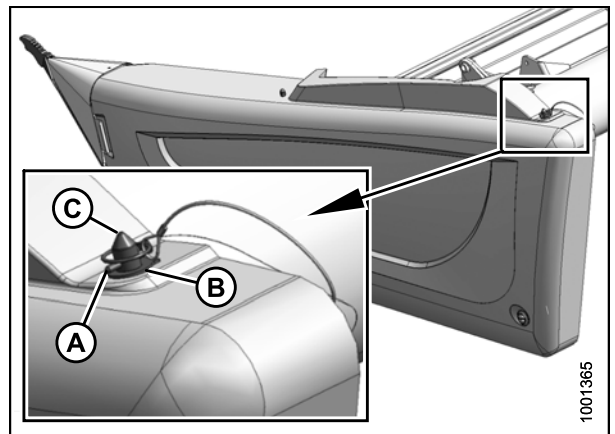


Figure 3.170: Left Endshield

ASSEMBLING HEADER AND ADAPTER

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

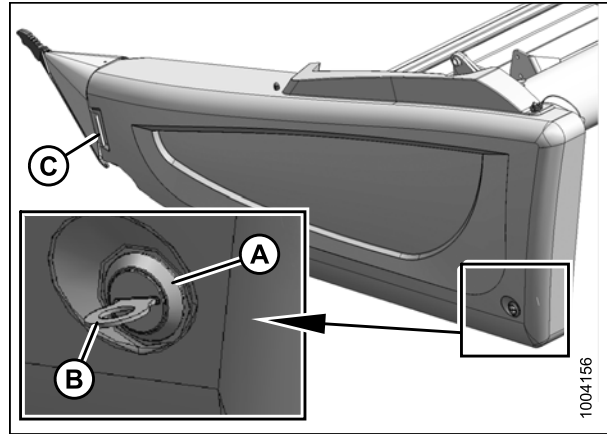


Figure 3.171: Left Endshield Open

IMPORTANT:

Do **NOT** force endshield once it has reached its end of travel or damage to endshield structure may result. The endshield is designed to open sufficiently to allow access to drive system and manual case.

NOTE:

If additional access is required to front of drives area, carefully disengage front of endshield from tab (C) at front of endsheet and swing front of endshield away from header.

5.

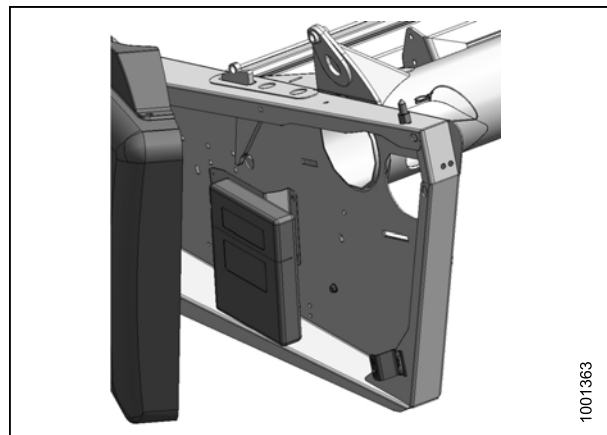


Figure 3.172: Left Endshield Open

3.4.6 Removing Crop Dividers from Storage

Crop dividers are shipped attached to inboard side of endsheets. To remove crop dividers, follow these steps:

1. Open endshields. Refer to [3.4.5 Opening Endshield, page 85](#).
2. Support crop divider and remove shipping wire at front end (A).
3. Remove bolt (B).
4. Remove bolt with washer (C) and retain for installation.
5. Repeat above steps for opposite end.

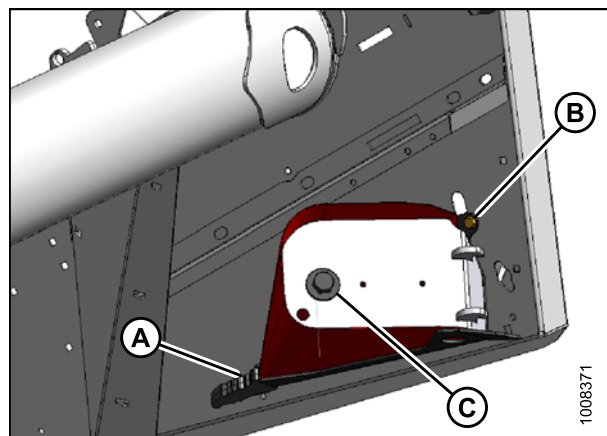


Figure 3.173: Crop Divider Storage

3.4.7 Installing Crop Divider without Latch Option

NOTE:

If crop divider latch option was ordered with header, proceed to [3.4.8 Installing Crop Dividers with Latch Option, page 88](#). Otherwise, complete the following procedure:

1. If not already open, open endshields. Refer to [3.4.5 Opening Endshield, page 85](#).
2. Position crop divider as shown by inserting lugs (A) into holes (B) in endsheet.

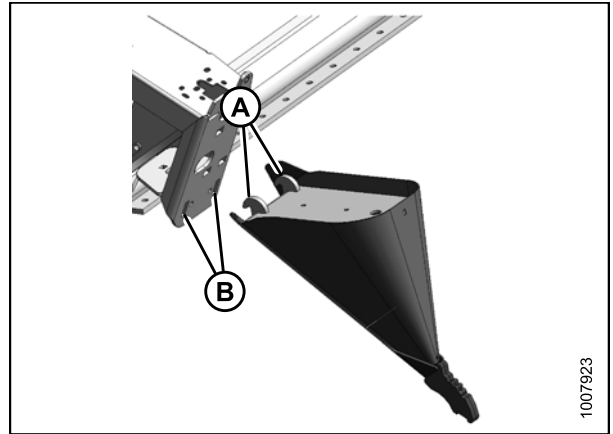


Figure 3.174: Crop Divider Installation

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

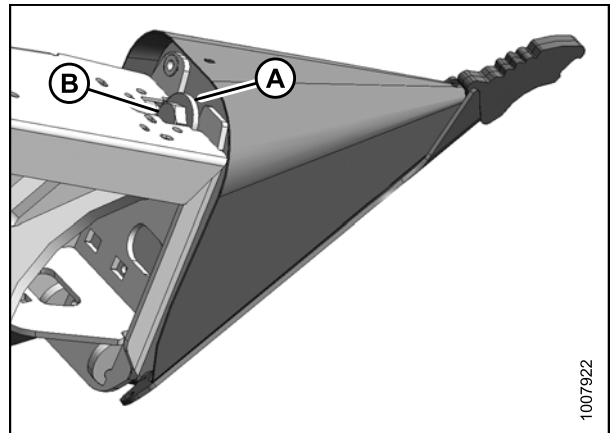


Figure 3.175: Crop Divider Installation

4. Check that divider does not move laterally. Adjust bolts (A) as required to tighten divider and remove lateral play when pulling at divider tip.
5. Close endshield. Refer to [3.4.9 Closing Endshield, page 89](#).

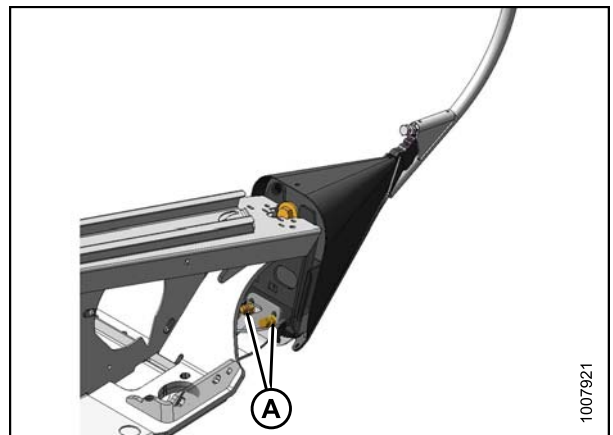


Figure 3.176: Crop Divider Adjustment

3.4.8 Installing Crop Dividers with Latch Option

1. If not already open, open endshields. Refer to [3.4.5 Opening Endshield, page 85](#).
2. Position crop divider as shown by inserting lugs (A) into holes in endsheet.
3. Lift forward end of divider until pin (B) engages and closes latch (C).
4. Push safety lever (D) down to lock pin in latch.

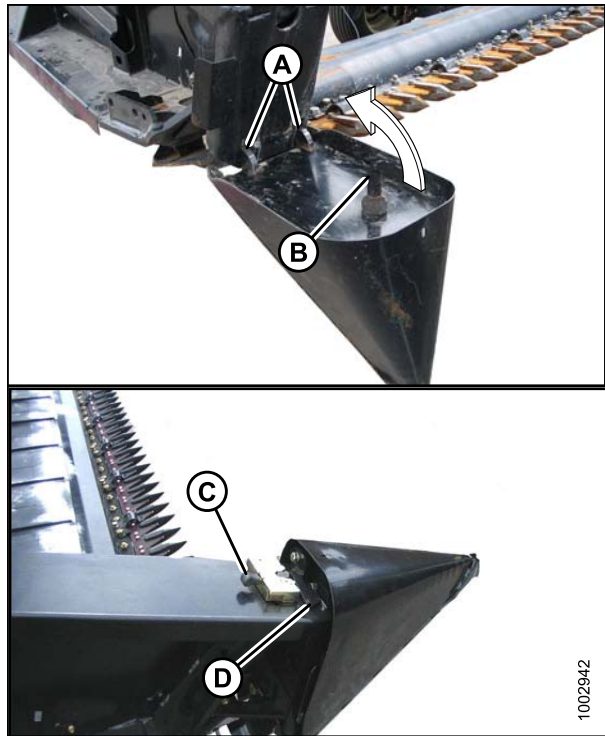


Figure 3.177: Crop Divider Installation

5. Close endshield. Refer to [3.4.9 Closing Endshield, page 89](#).

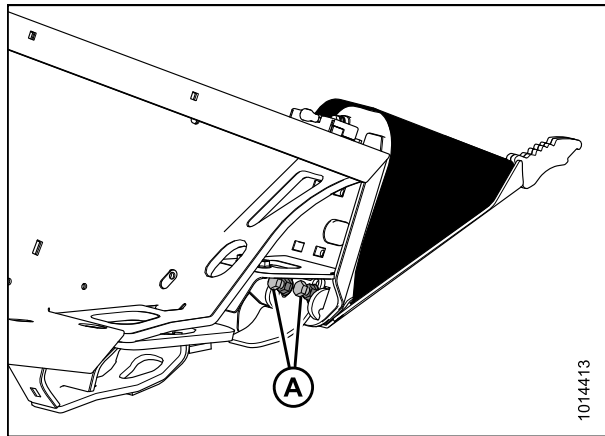


Figure 3.178: Crop Divider Adjustment

3.4.9 Closing Endshield

1. Maintain forward pressure and swing the rear of the endshield towards the header.
2. Lift the endshield and engage pin (A) located on the top of the endsheet frame with the hole in endshield (B).

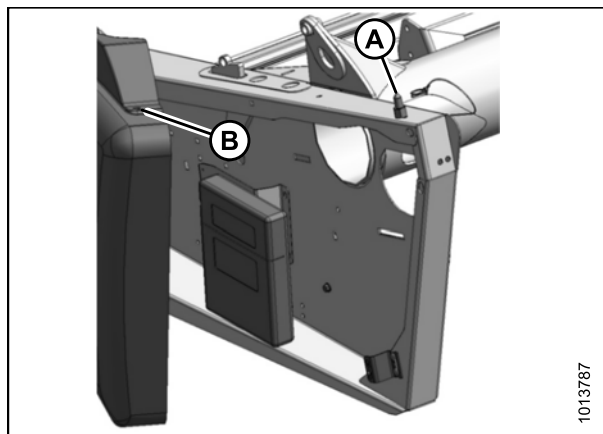


Figure 3.179: Left Endshield

3. Push in the endshield to engage lower latch (A).
4. Use tool (B) to lock lower latch (A).

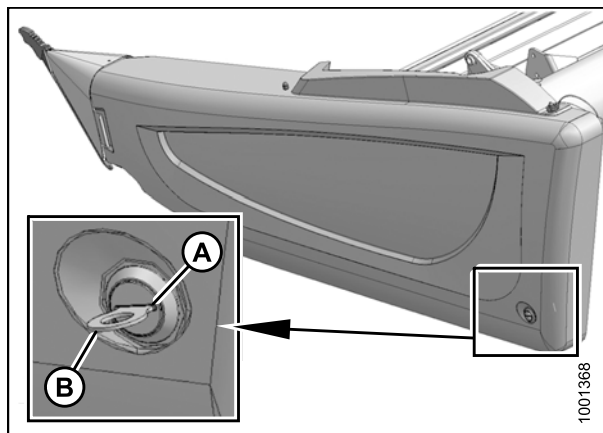


Figure 3.180: Left Endshield

5. Replace tool (B) and lynch pin (A) on top pin (C).

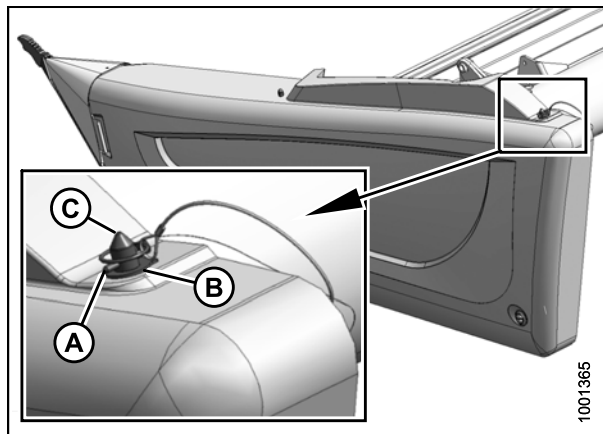


Figure 3.181: Left Endshield Pin

3.4.10 Installing Crop Divider Rods

1. Remove divider rods from shipping location on header endsheet.

ASSEMBLING HEADER AND ADAPTER

2. Position crop divider rod (B) on tip of crop divider as shown, and tighten bolt (A).
3. Repeat procedure at opposite end of header.

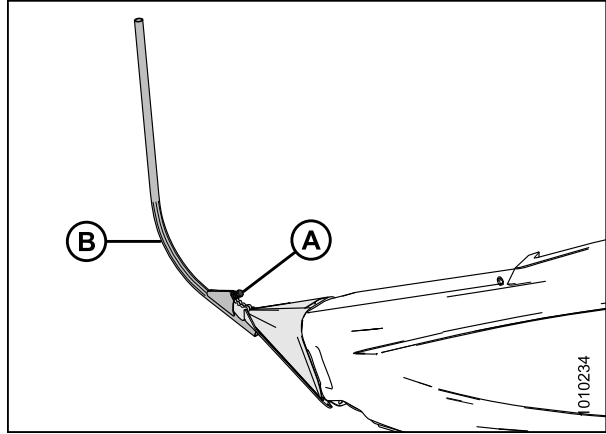


Figure 3.182: Divider Rod on Crop Divider

3.4.11 Installing Options

1. Retrieve kits supplied as options with header and install them according to instructions supplied with each kit.
2. Proceed to [4 Performing Predelivery Checks, page 91](#).

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 maximum performance. If adjustments are necessary, follow the procedures in this chapter.

WARNING

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

IMPORTANT:

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

1. Perform final checks as listed on the **Predelivery Checklist** (yellow sheet attached to this instruction – [Predelivery Checklist, page 293](#)) to ensure machine is field-ready. Refer to following pages for detailed instructions as indicated on Checklist. The completed Checklist should be retained either by Operator or Dealer.

4.1 Checking Transport / Stabilizer Tire Pressure

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

Table 4.1 Tire Inflation Pressure

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

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 110–120 N·m (80–90 ft·lbf).
Refer to bolt tightening sequence illustration at right.

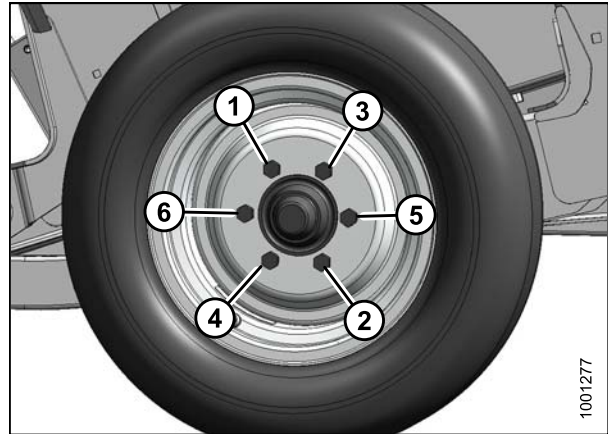


Figure 4.1: Bolt Tightening Sequence

4.3 Checking Knife Drive Box

To access the knife drive box, the endshield must be fully opened.

1. Fully open endshield(s) for access to knife drive box. Refer to [3.4.5 Opening Endshield, page 85](#).

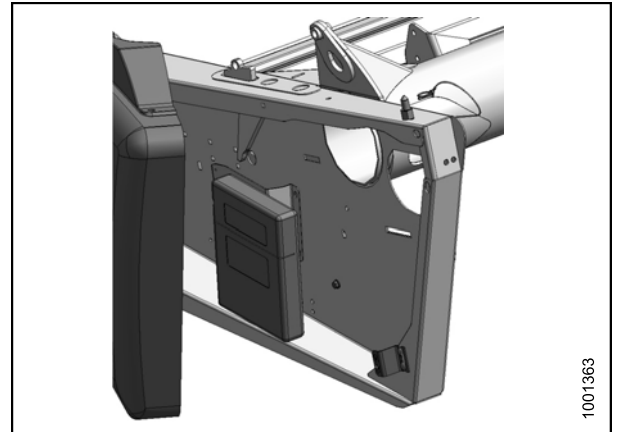


Figure 4.2: Left Endshield Open

IMPORTANT:

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

2. Check position of plug (A) and breather (B) at knife drive box. Position **MUST** be as shown. Reposition if necessary.
3. Check oil level. It should be between lower hole (C) on dipstick and bottom end of dipstick. If necessary, add oil. Use clean SAE 85W-140 lubricant.

IMPORTANT:

Check oil level with top of knife drive box horizontal.

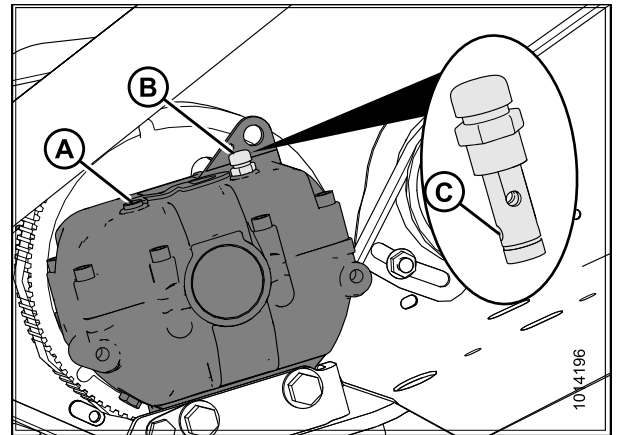


Figure 4.3: Knife Drive Box

4. Close endshield(s). Refer to [3.4.9 Closing Endshield, page 89](#).

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. Lower the cutterbar to the ground and ensure the gearbox is in working position.
2. Shut down the combine and remove the key from the ignition.
3. Remove the oil level plug (A) and check that the oil level is up to the bottom of the hole.
4. If no oil is required, replace the oil level plug (A).

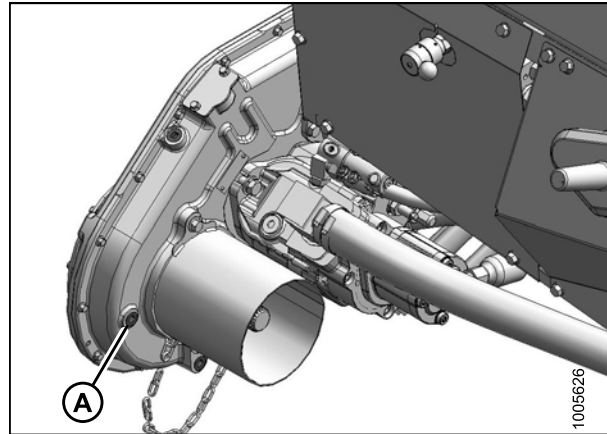


Figure 4.4: Header Drive Gearbox

4.5 Checking Oil Level in Hydraulic Reservoir

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

NOTE:

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

2. Ensure the oil is at the appropriate level for the terrain as follows:
 - **Hilly terrain (C):** Maintain level so lower sight (A) is full, and upper sight (B) is up to one-half filled.
 - **Normal terrain (D):** Maintain level so lower sight (A) is full, and upper sight (B) is empty.
 - **Level ground (E):** For slopes of 6° or less, oil level may be kept slightly lower if desired. Maintain level so lower sight (A) is one-half filled or slightly higher.
3. Maintain level for normal terrain (D) so lower sight (A) is full, and upper sight (B) is empty.

NOTE:

It may be necessary to slightly reduce the oil level when ambient temperatures are above 35°C (95°F) to prevent overflow at the breather when normal operating temperatures are reached.

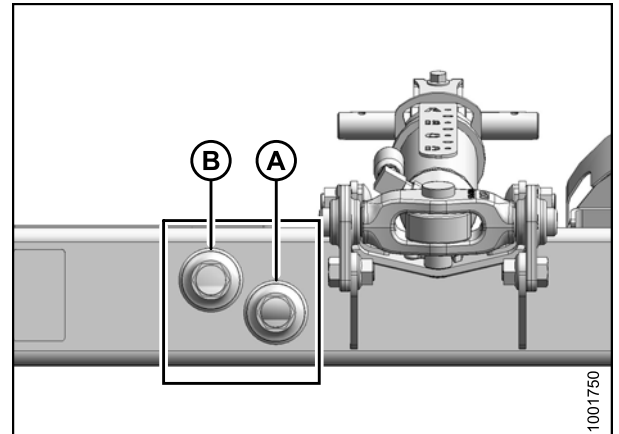


Figure 4.5: Oil Level Sight Glass

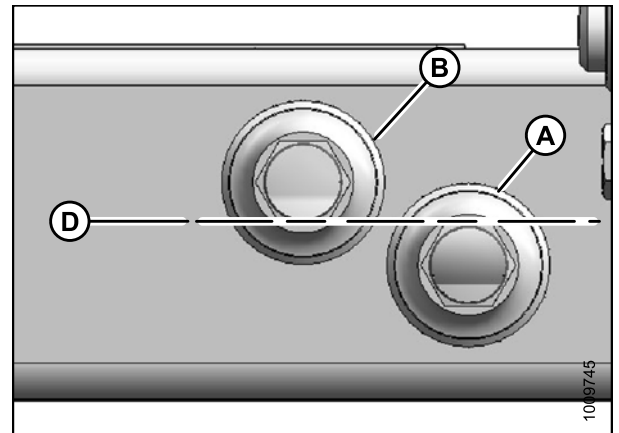


Figure 4.6: Oil Level Sight Glass

4.6 Checking and Adjusting Non-Timed Knife Drive Belt Tension

This procedure applies to single and double knife drive headers with non-timed knife drives.

1. Shut down and remove key from ignition.
2. Open endshield(s). Refer to [3.4.5 Opening Endshield, page 85](#).

NOTE:

The knife drive is identical on both sides of the header for double-knife headers.

3. Apply a force of 90 N (20 lbf) to mid-span (A) of belt. The belt should deflect 18 mm (3/4 in.). If necessary, adjust tension as per the following steps.

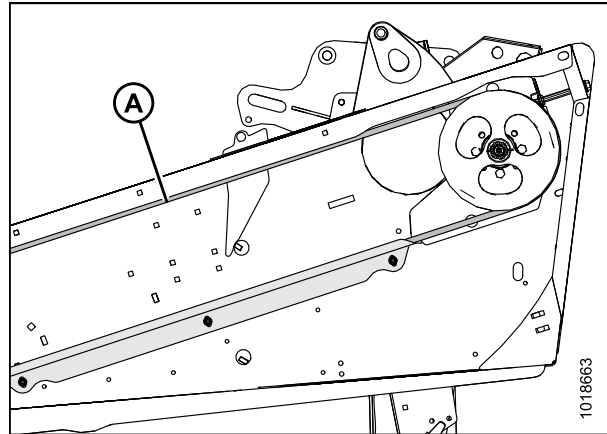


Figure 4.7: Left Shown – Right Opposite Double-Knife Headers

IMPORTANT:

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

4. Loosen the two bolts (A) that secure the motor assembly to header endsheet.
5. Turn adjuster bolt (B) as required to move the drive motor to achieve belt deflection as per above. Tighten bolts (A).
6. Ensure that clearance between belt (C) and belt guide (E) is 1 mm (1/32 in.).
7. Loosen three bolts (D), and adjust position of guide (E) as required.
8. Tighten bolts (D).
9. Close endshield(s). [3.4.9 Closing Endshield, page 89](#).

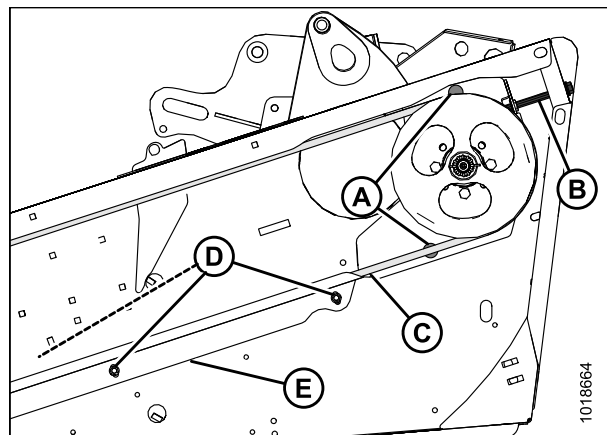


Figure 4.8: Knife Drive

NOTE:

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

4.7 Checking and Adjusting Knife Hold-Downs

NOTE:

Align guards prior to checking and adjusting the hold-downs. Refer to .

Refer to the following procedures as applicable:

- [4.7.1 Checking Pointed Guard Hold-Downs, page 97](#)

4.7.1 Checking Pointed Guard Hold-Downs

This procedure is applicable to single- and double-knife headers with pointed guards.

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

⚠ WARNING

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

1. Shut down combine, and remove key from ignition.
2. Manually stroke knife to locate section (A) under the hold-down (B).
3. At the standard guard locations, push the knife section (A) down against the guard (C) and measure the clearance between the hold-down (B) and the knife section (A) with a feeler gauge. The clearance should be 0.1–0.6 mm (0.004–0.024 in.).
4. If necessary, refer to [Adjusting Pointed Guard Hold-Downs, page 98](#).

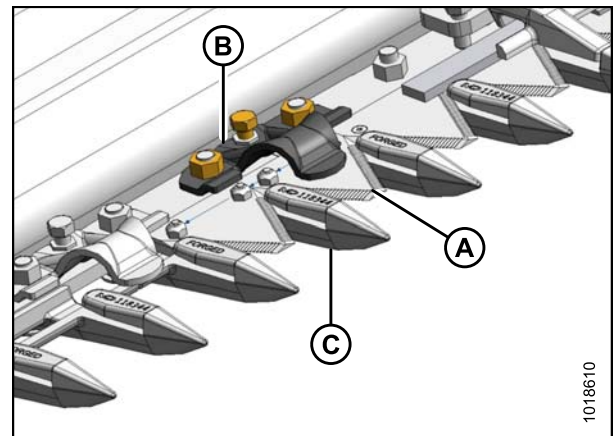


Figure 4.9: Normal Guard Hold-Down

Double-Knife:

5. Manually stroke knife to locate sections (A) and (C) under the center hold-down (B).
6. Insert a screwdriver or equivalent between the sections at center guard location to force upper section (A) against the hold-down (B) and lower section (C) against the guard (D).
7. Measure the clearance between the knife sections (A) and (C) with a feeler gauge. The clearances should be:
 - **At Hold-Down Tip (B):** 0.1–0.4 mm (0.004–0.016 in.)
 - **At Rear of Hold-Down (C):** 0.1–1.0 mm (0.004–0.040 in.)
8. If necessary, refer to [Adjusting Hold-Down at Double-Knife Center Pointed Guard, page 98](#).

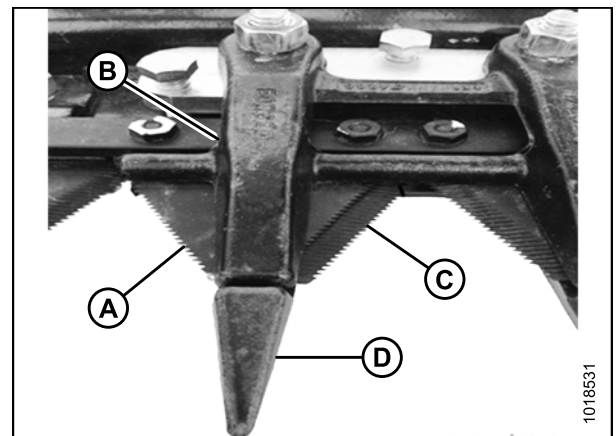


Figure 4.10: Double-Knife Center Guard Hold-Down

PERFORMING PREDELIVERY CHECKS

Adjusting Pointed Guard Hold-Downs

This procedure is applicable to normal formed sheet metal hold-downs on single- and double-knife headers. Do NOT use this procedure for the hold-down at the center guard position where the knives overlap on double-knife (DK) headers. For the center guard, refer to [Adjusting Hold-Down at Double-Knife Center Pointed Guard, page 98](#).

WARNING

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

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

NOTE:

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

3. Recheck clearance and readjust as required.

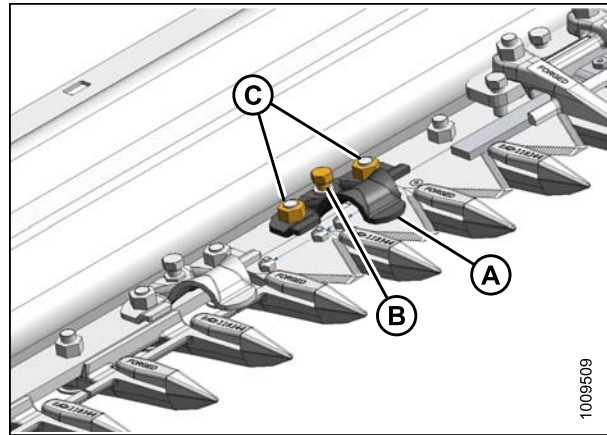


Figure 4.11: Normal Guard Hold-Down

Adjusting Hold-Down at Double-Knife Center Pointed Guard

WARNING

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

1. Shut down combine, and remove key from ignition.
2. Manually stroke the knives so that the sections (A) are under the hold-down (B) as shown.
3. Loosen nuts (C) and back off bolts (D) until they don't contact the cutterbar.
4. Lightly clamp hold-down (B) to guard (E) with a C-clamp or equivalent. Position clamp on trash-bar at (F) as shown.
5. Turn bolts (D) until they contact cutterbar, then tighten **ONE** turn.
6. Remove clamp.
7. Tighten nuts (C) and torque to 45 N·m (35 lbf·ft).
8. Check clearances. Refer to [4.7.1 Checking Pointed Guard Hold-Downs, page 97](#).

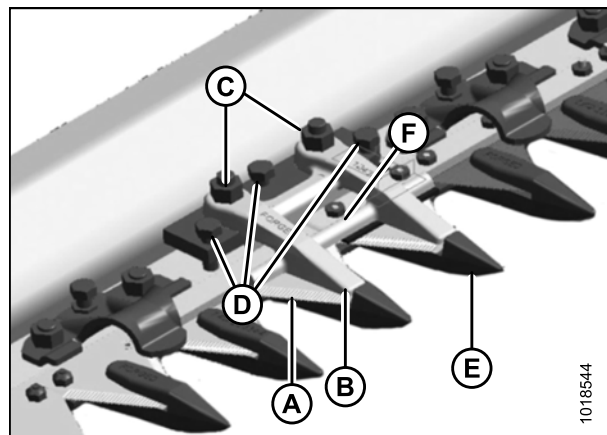


Figure 4.12: Center Guard

4.8 Centering the Reel

WARNING

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

1. Start engine and set cutterbar height at approximately 150 mm (6 in.) above the ground.
2. Lower reel and adjust fore-aft position to 5 on reel arm decal.
3. Stop engine and remove key from ignition.
4. Engage float locks and wing locks.
5. Manually rotate reel to position a tine tube above cutterbar.
6. Measure clearance (A) at locations (B) between reel tine tube and endsheet at both ends of header. The clearances should be same if reel is centered. Refer to the following steps to center the reel.

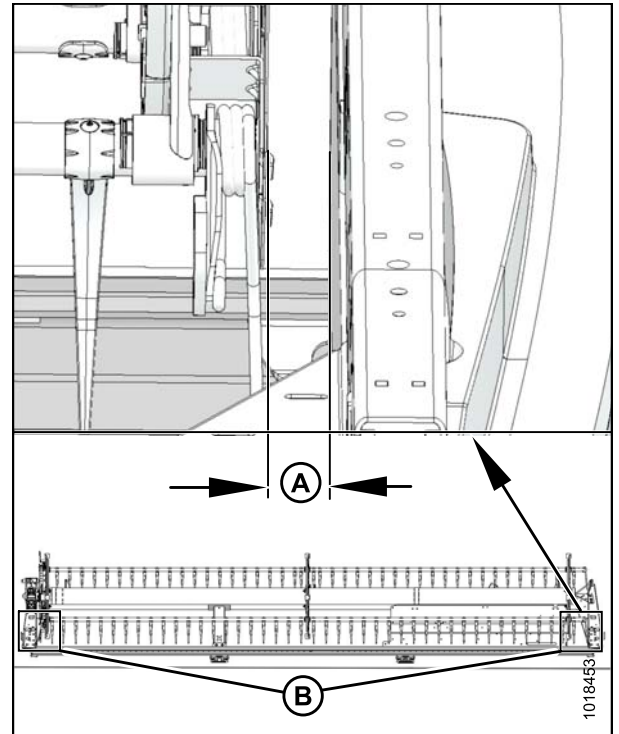


Figure 4.13: Centering the Reel – Single Reel Shown, Double Reel Similar

7. Loosen bolts (A) on braces (B) at center support arm.
8. Move forward end of reel support arm (C) laterally as required to center the reel.
9. Tighten bolts (A) and torque to 359 N·m (265 ft·lbf).

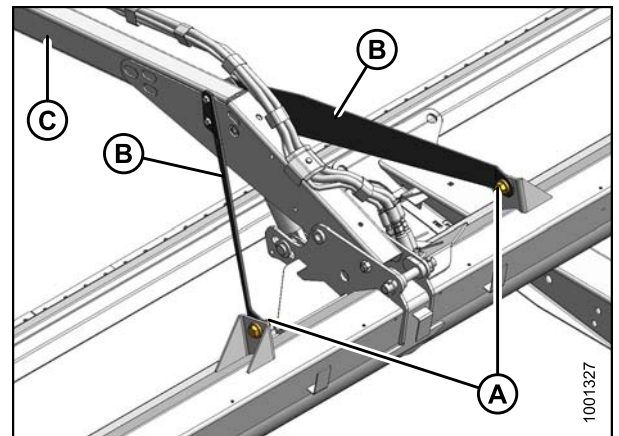


Figure 4.14: Center Support Arm

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.

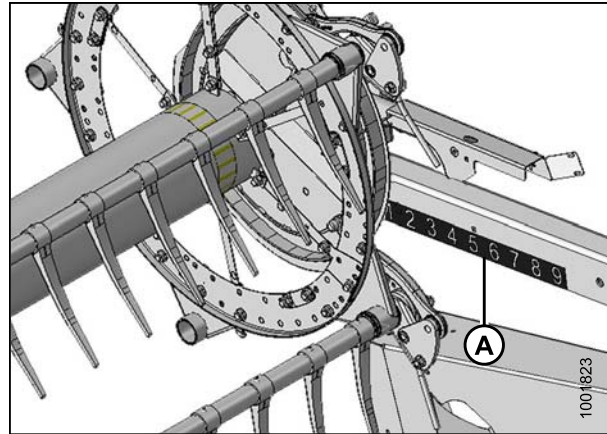


Figure 4.15: Fore-Aft Position

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

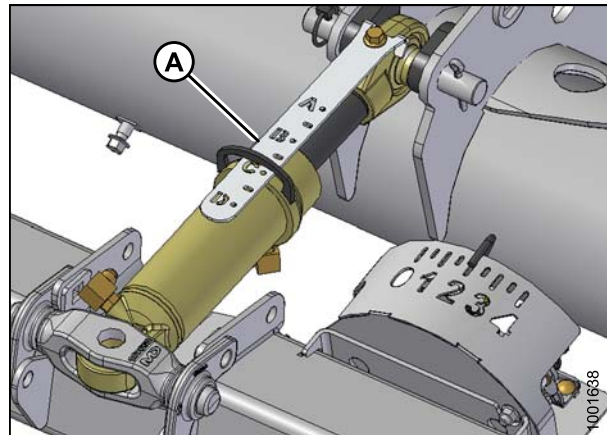


Figure 4.16: Center-Link

IMPORTANT:

Do **NOT** use the CA25 float springs to level the header.

7. Check that the CA25 is level. If the CA25 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 CA25 is level with the combine axle.

PERFORMING PREDELIVERY CHECKS

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

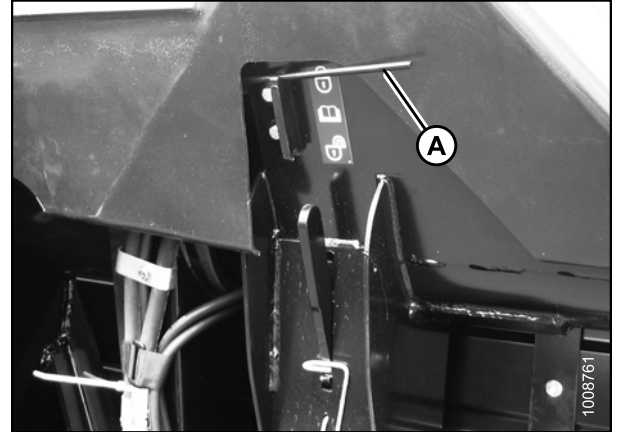


Figure 4.17: Wing Lock in Lock Position

9. Check that both header float lock levers (A) are in the down (UNLOCK) position.

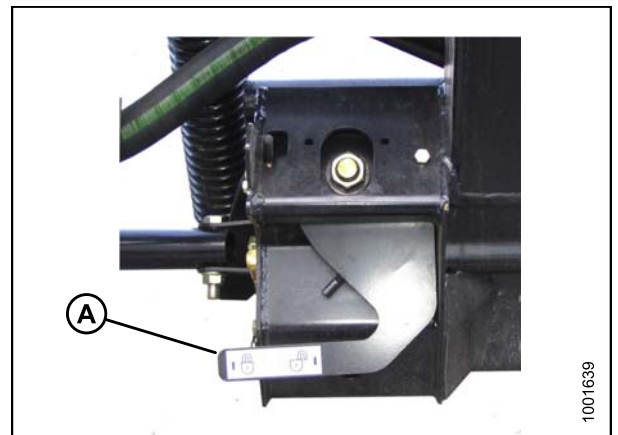


Figure 4.18: Header Float Lock in Unlock Position

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

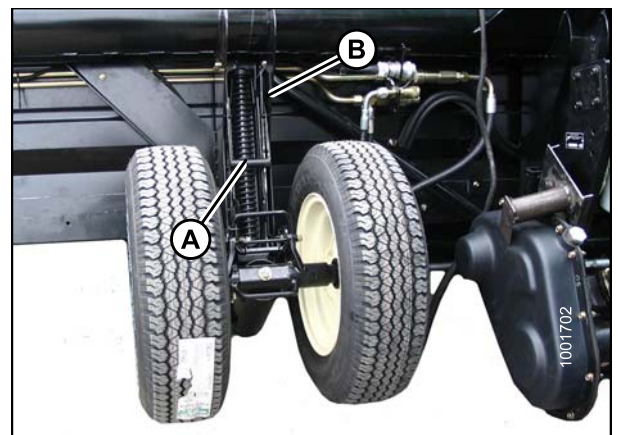


Figure 4.19: Left Wheel

PERFORMING PREDELIVERY CHECKS

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

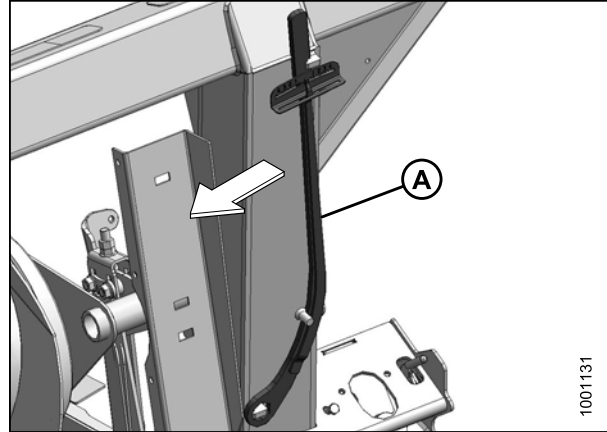


Figure 4.20: Torque Wrench

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.

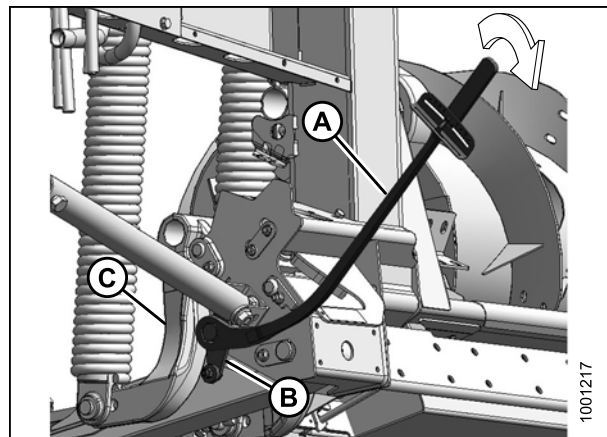


Figure 4.21: Left Side

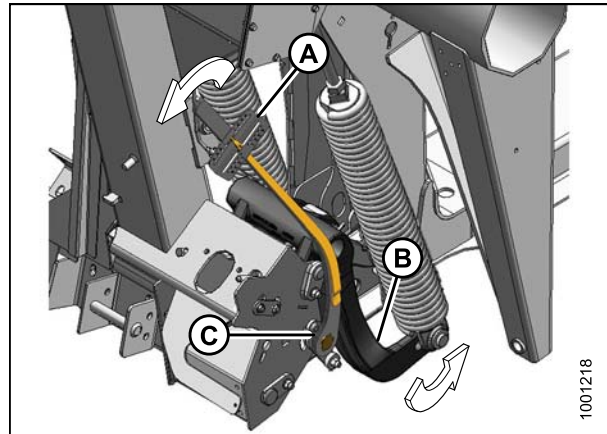


Figure 4.22: Right Side

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 (feet)	Torque Settings	
	Cutting on the Ground	Cutting off the Ground
30 and 35	1-1/2 to 2	2 to 2-1/2
40 and 45	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 right 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 right side adjustment bolts (B) counterclockwise, and tightening jam nuts.

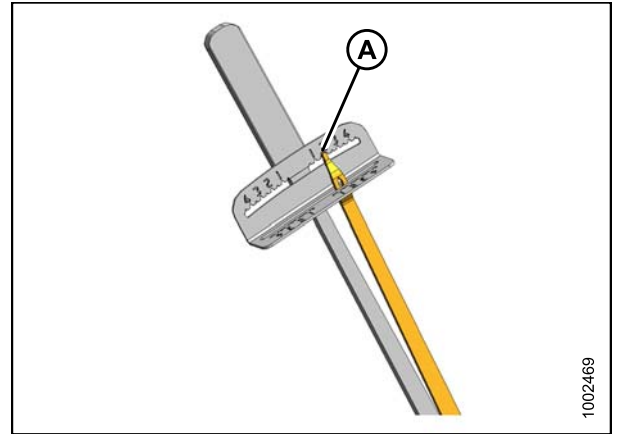


Figure 4.23: Indicator

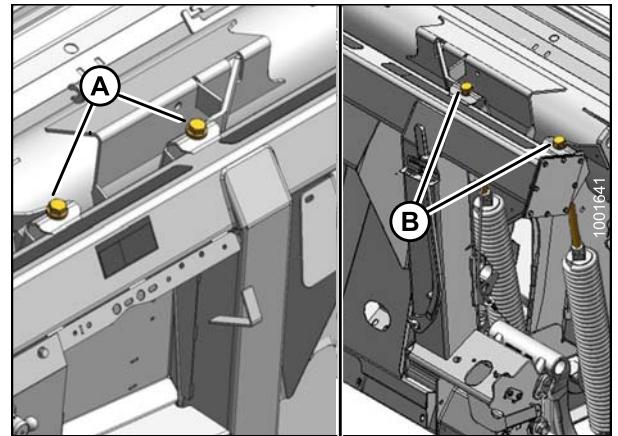


Figure 4.24: Float Adjustment

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 103](#), and repeat torque wrench reading procedure.

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 side of the adapter frame.

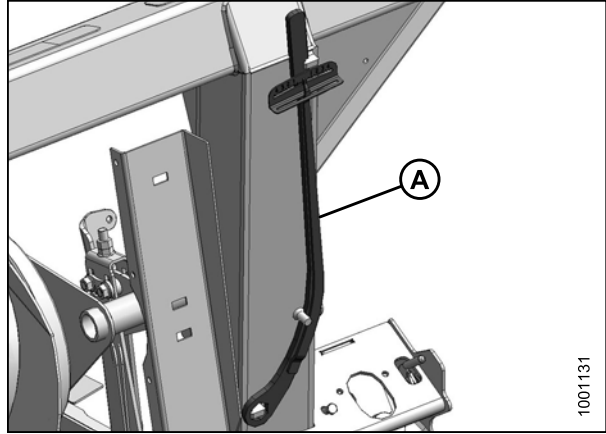


Figure 4.25: Torque Wrench

4.10 Checking and Adjusting Header Wing Balance

NOTE:

Before proceeding, the header float must be set properly. Refer to [4.9 Checking and Adjusting Header Float](#), page 100.

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

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 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:

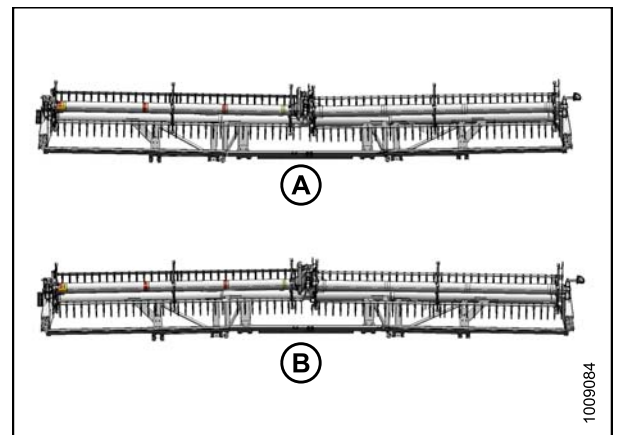


Figure 4.26: Wing Imbalance

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 152–254 mm (6–10 in.) 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.

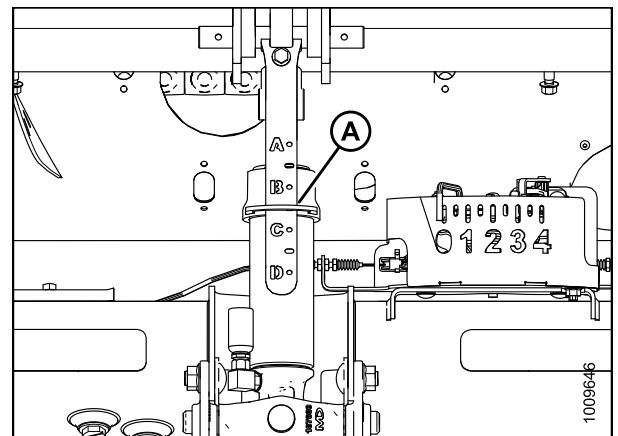


Figure 4.27: Center-Link

PERFORMING PREDELIVERY CHECKS

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

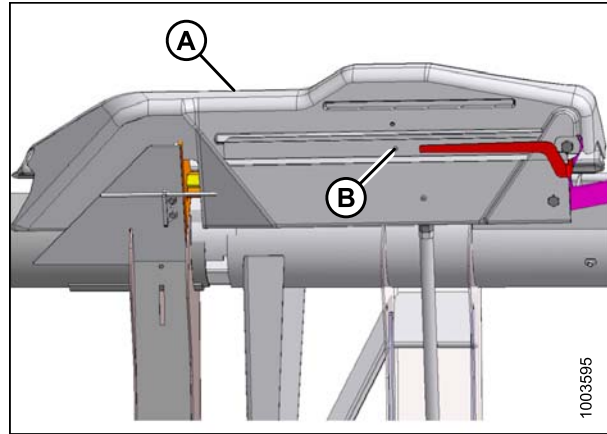


Figure 4.28: Linkage Cover

NOTE:

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

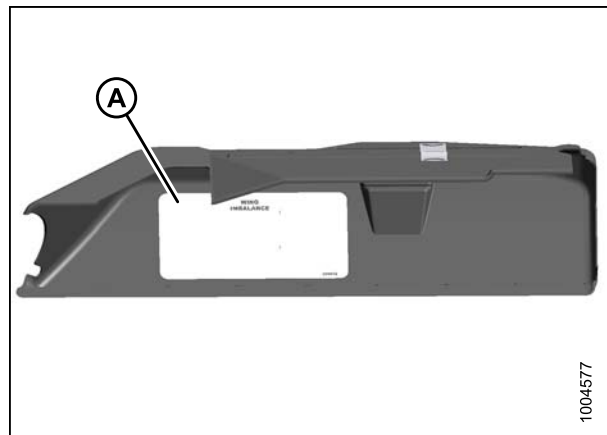


Figure 4.29: Linkage Cover

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

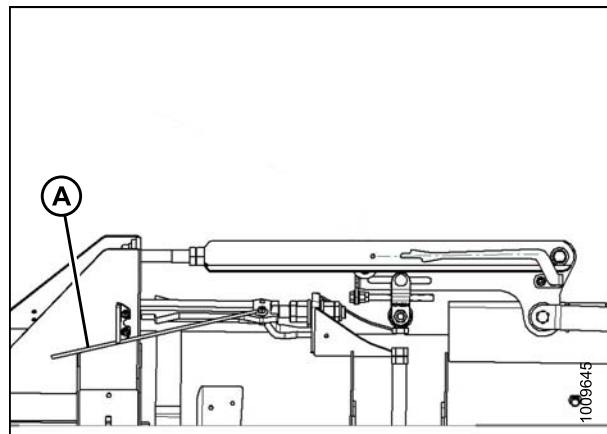


Figure 4.30: Wing Lock in UNLOCK Position

PERFORMING PREDELIVERY CHECKS

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

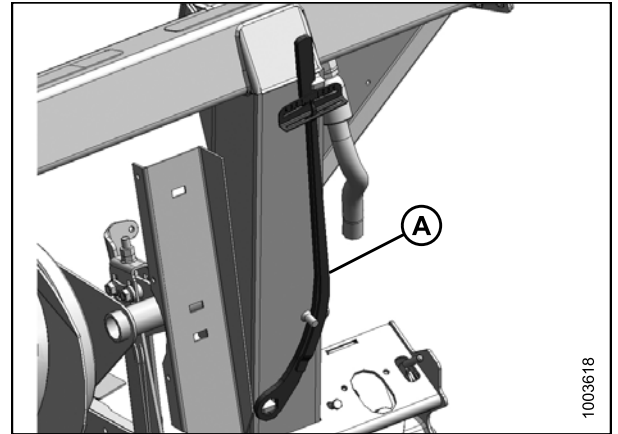


Figure 4.31: Torque Wrench

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

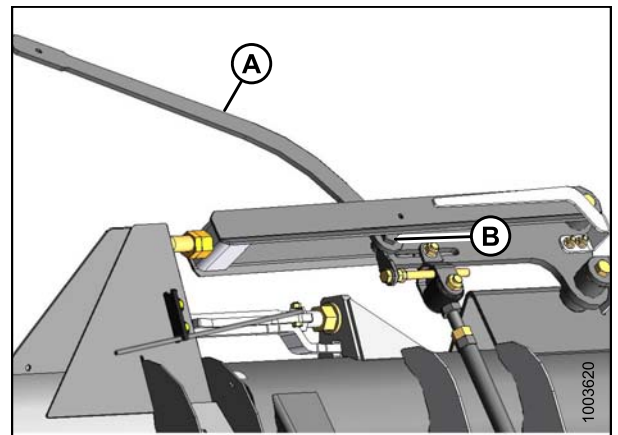


Figure 4.32: Balance Linkage

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.

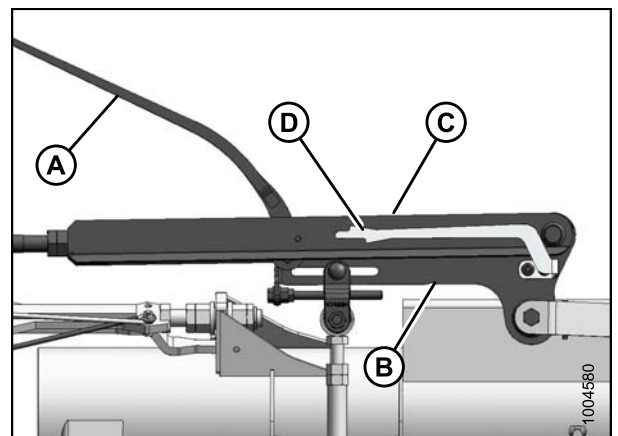


Figure 4.33: Balance Linkage

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.

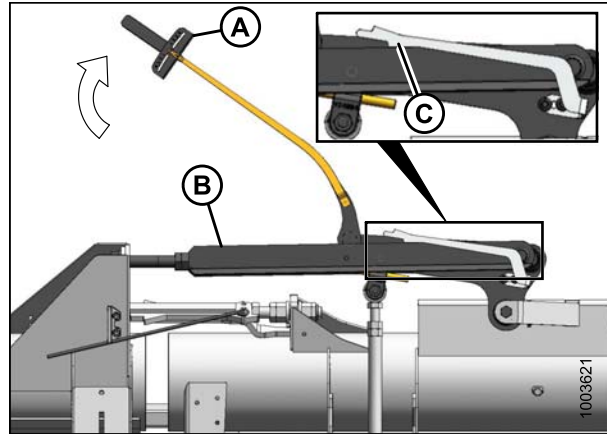


Figure 4.34: Balance Linkage

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 0.5 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 0.5, the wing is not balanced. Refer to [4.10.2 Adjusting Wing Balance, page 110](#).

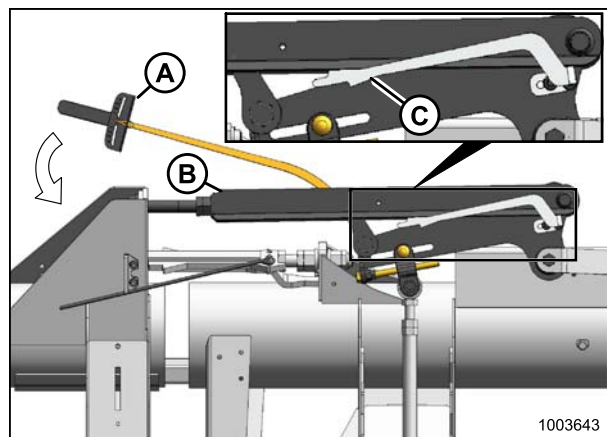


Figure 4.35: Balance Linkage

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

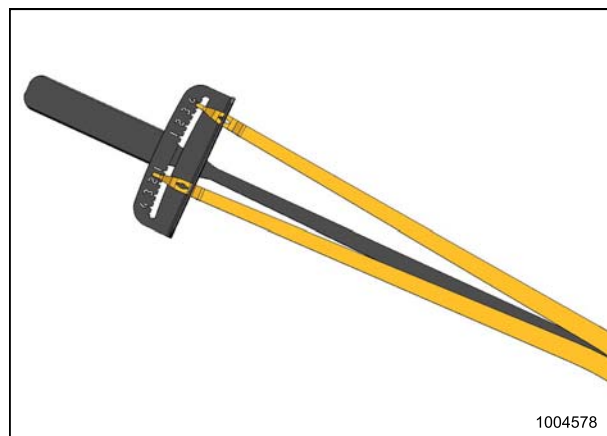


Figure 4.36: Wrench Indicator

PERFORMING PREDELIVERY CHECKS

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

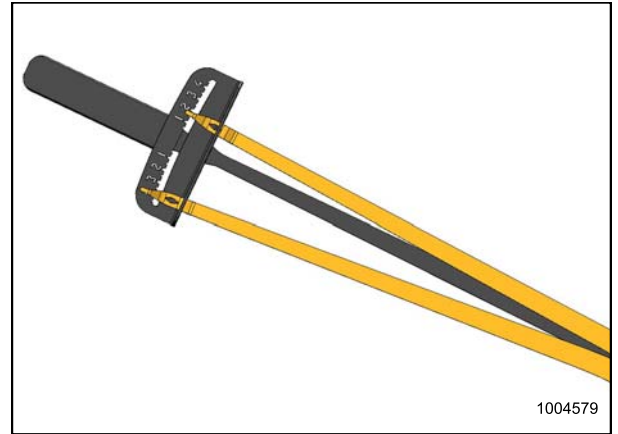


Figure 4.37: Wrench Indicator

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

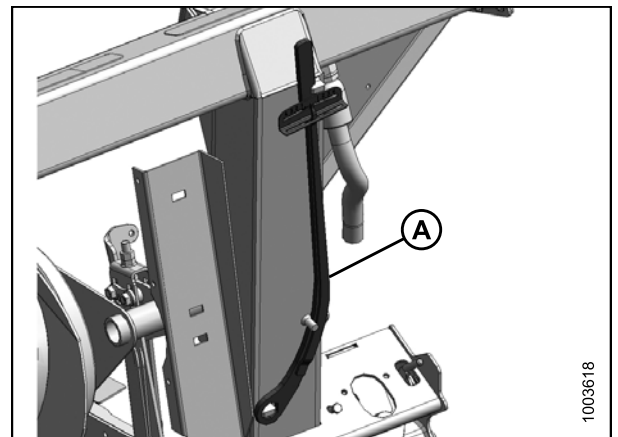


Figure 4.38: Torque Wrench

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

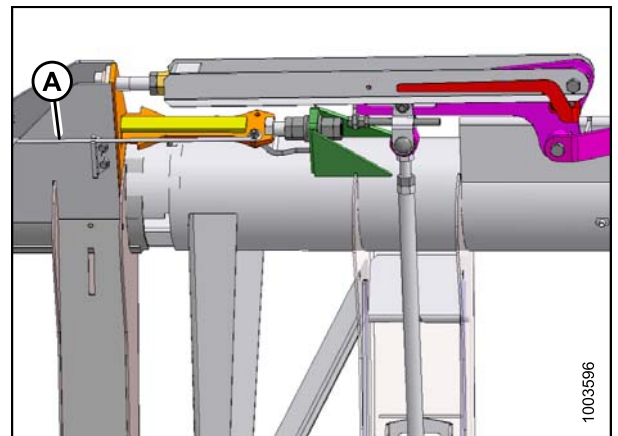


Figure 4.39: Wing Lock in Lock Position

PERFORMING PREDELIVERY CHECKS

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

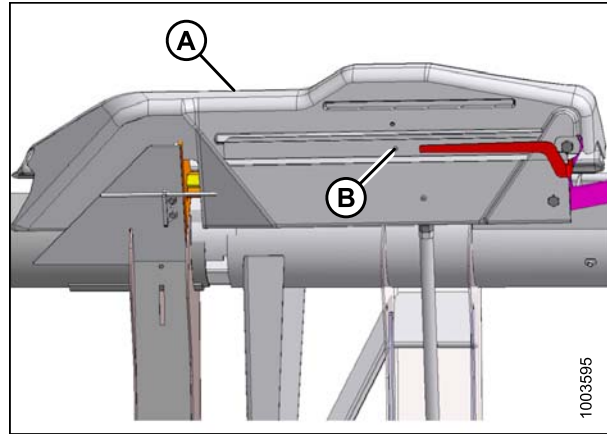


Figure 4.40: Linkage Cover

4.10.2 Adjusting Wing Balance

WARNING

To avoid bodily injury or death from unexpected startup of machine, always stop 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 105.

NOTE:

left 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 152–254 mm (6–10 in.) 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.

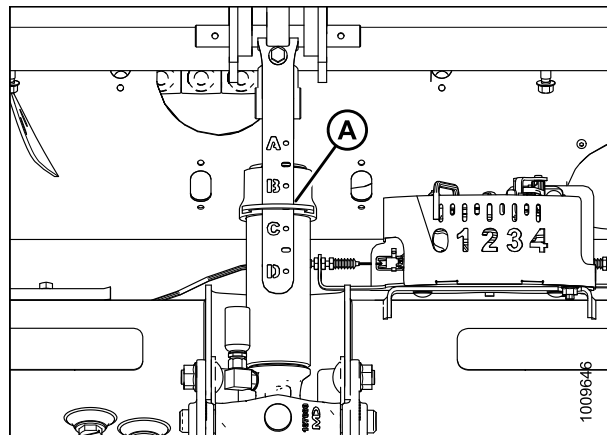


Figure 4.41: Center-Link

PERFORMING PREDELIVERY CHECKS

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

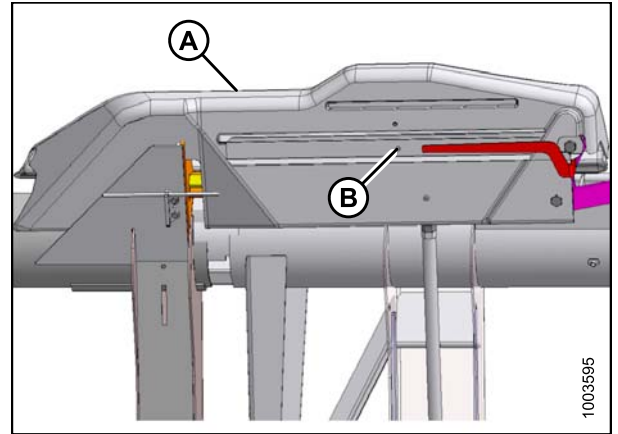


Figure 4.42: Linkage Cover

NOTE:

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

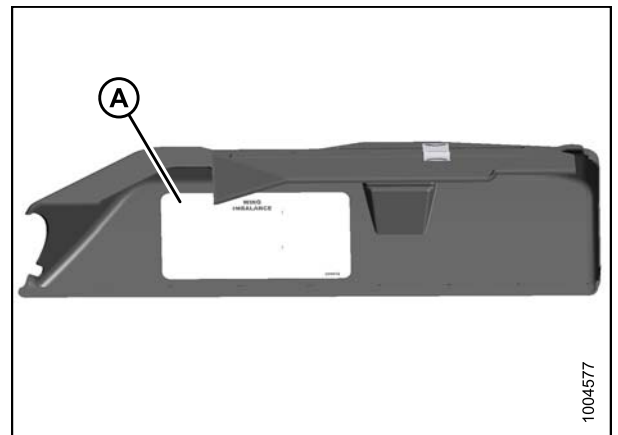


Figure 4.43: Linkage Cover

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

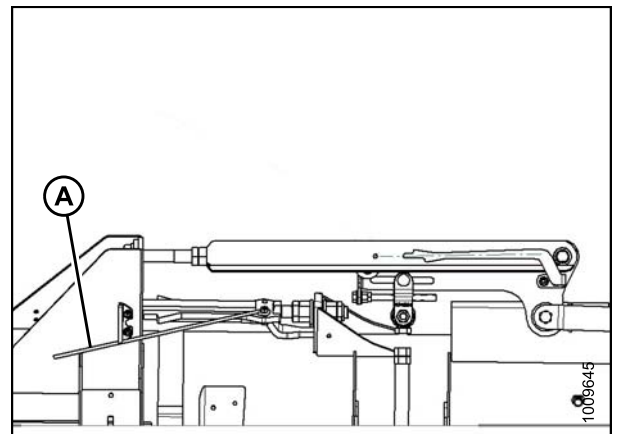


Figure 4.44: Wing Lock in UNLOCK Position

PERFORMING PREDELIVERY CHECKS

- Retrieve wrench (A) from adapter leg.

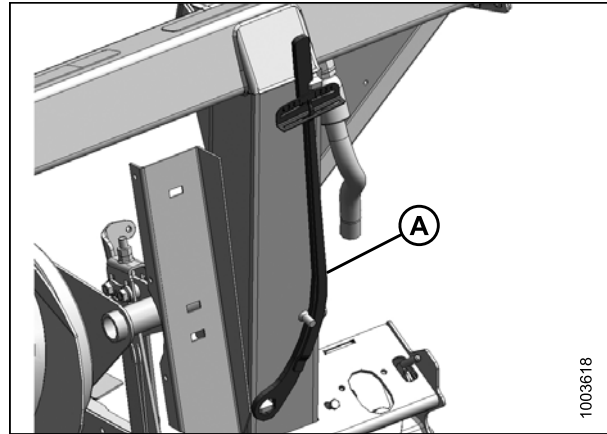


Figure 4.45: Torque Wrench

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

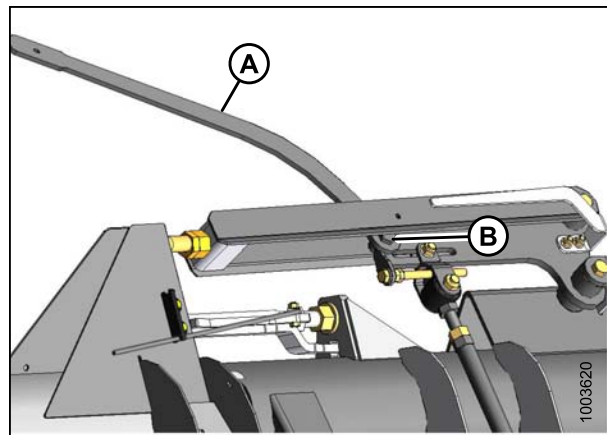


Figure 4.46: Balance Linkage

- 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 113](#).

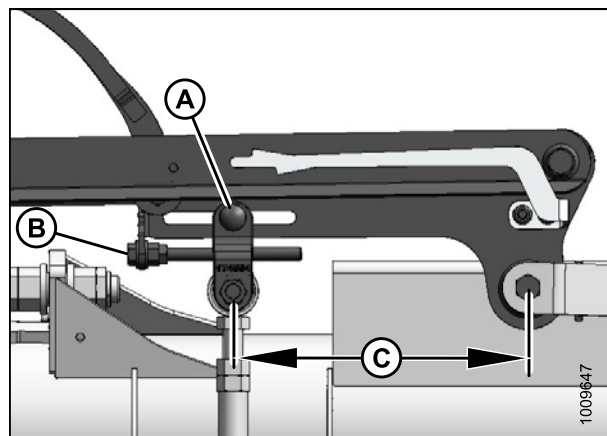


Figure 4.47: Balance Linkage

PERFORMING PREDELIVERY CHECKS

Table 4.3 Wing Balance Chart

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

11. Recheck the wing balance. Refer to [4.10.1 Checking Wing Balance, page 105](#).
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.

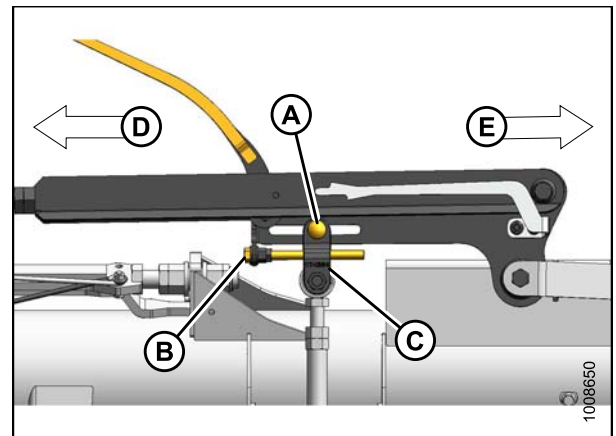


Figure 4.48: Balance Linkage

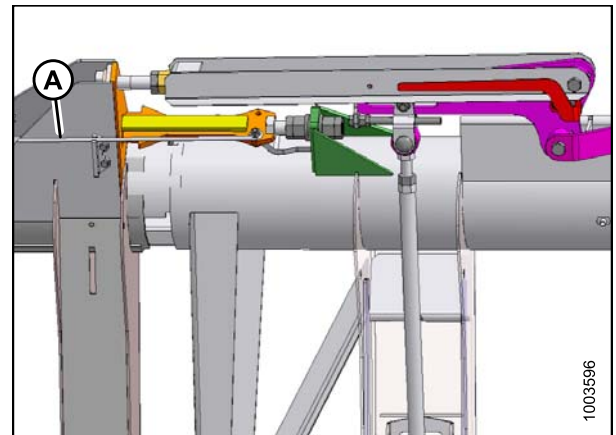


Figure 4.49: Wing Lock in Lock Position

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

PERFORMING PREDELIVERY CHECKS

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

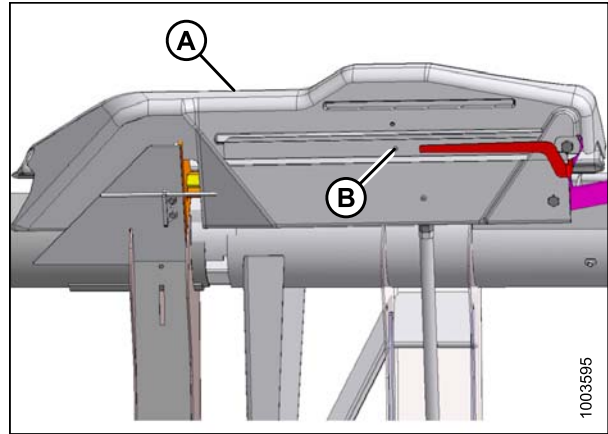


Figure 4.50: Linkage Cover

4.11 Measuring and Adjusting Reel Clearance to Cutterbar

The minimum clearance between reel fingers and cutterbar ensures that reel fingers do not contact cutterbar during operation. The clearance is set at the factory, but some adjustment may be necessary before operation or if there is evidence of contact during operation.

The finger to guard/cutterbar clearances with the reel fully lowered are shown in Table 4.4 *Finger to Guard/Cutterbar Clearance*, page 115.

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) +/- 3 mm (1/8 in.) at Reel Ends and Flex Locations
All	20 mm (3/4 in.)

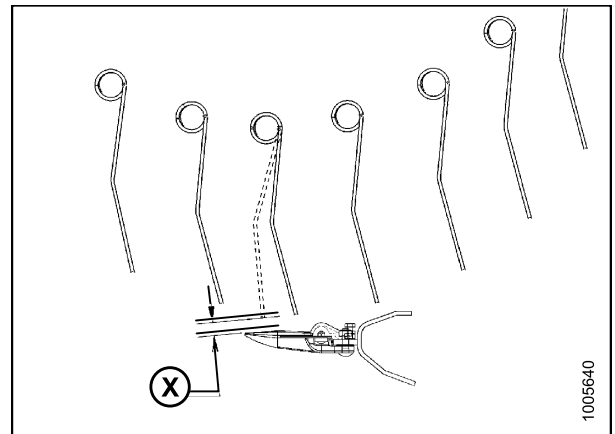


Figure 4.51: Finger Clearance

4.11.1 Measuring 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.

1. Park machine on level ground.
2. Adjust header to working height.
3. Move spring handles (A) down to (UNLOCK) position.

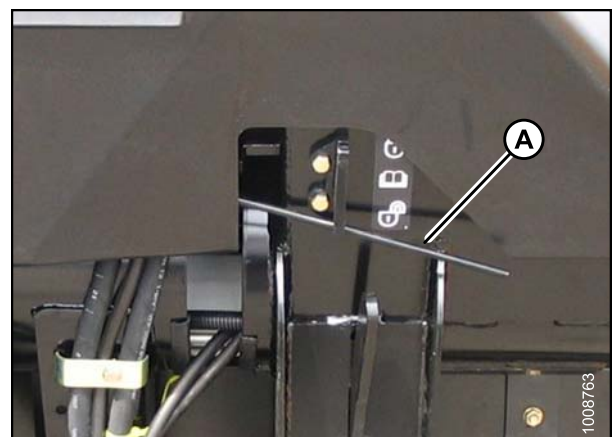


Figure 4.52: Wing Unlocked

PERFORMING PREDELIVERY CHECKS

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

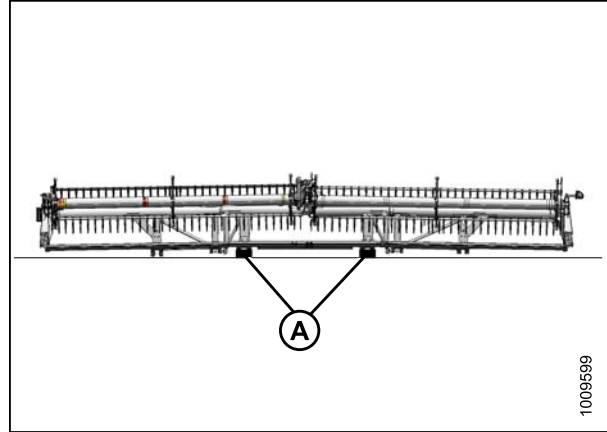


Figure 4.53: FlexDraper® Block Locations

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

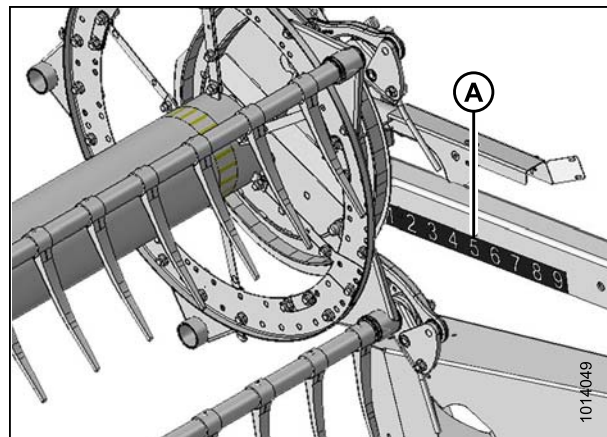


Figure 4.54: Fore-Aft Position

9. Measure clearance at ends (A) of each reel and at flex locations (B).

NOTE:

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

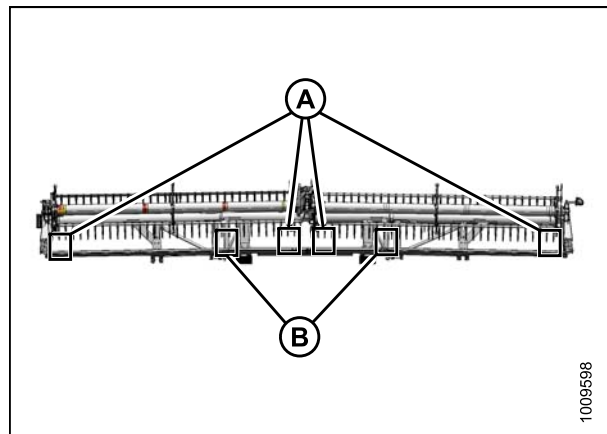


Figure 4.55: Measurement Locations

A - Clearance Points

B - Flex Points

PERFORMING PREDELIVERY CHECKS

10. Check clearance between (A) and (B). Depending on reel fore-aft position, minimum clearance can result at guard tine, hold-down, or cutterbar.
11. Adjust reel if necessary. Refer to [4.11.2 Adjusting Reel Clearance](#), page 117.

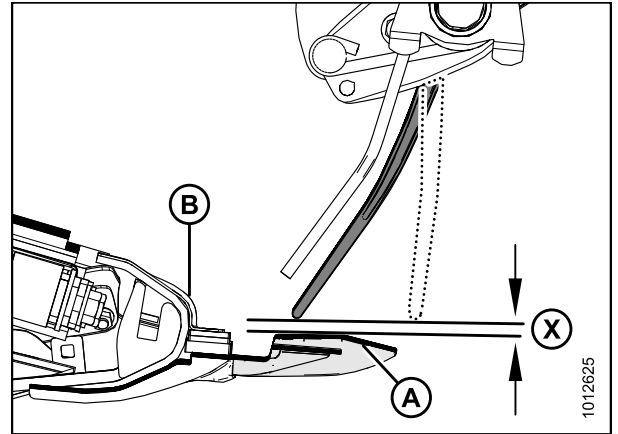


Figure 4.56: Reel Clearance

4.11.2 Adjusting Reel Clearance

Perform this procedure with reel at mid-point of fore-aft range and fully lowered.

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. Adjust outboard reel arm lift cylinders to set clearance 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.

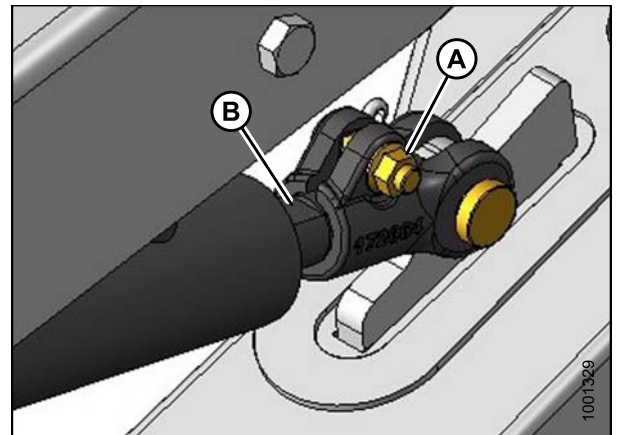


Figure 4.57: Reel Outboard Arm

PERFORMING PREDELIVERY CHECKS

2. Adjust center arm lift cylinder link (A) to set clearance at center of reel 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).
3. Move reel back to ensure steel end fingers do not contact deflector shields.
4. If contact is evident, adjust reel upward to maintain clearance at all reel fore/aft positions. Alternatively, trim steel end fingers to obtain proper clearance.
5. Periodically check for evidence of contact, and adjust clearance as required.

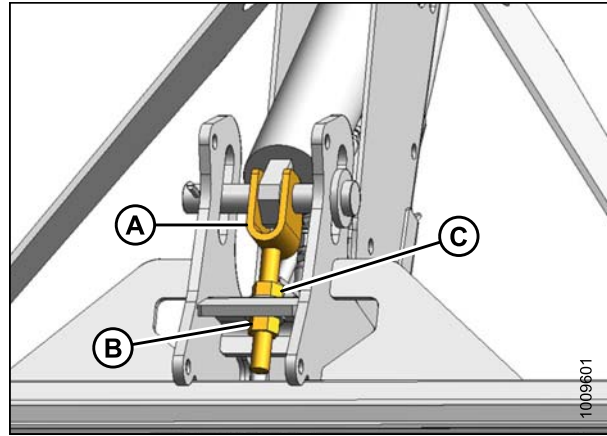


Figure 4.58: Double-Reel Center Arm

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 flighting contacting and damaging the feed draper or pan when operating the header at certain angles. Look for evidence of contact when greasing the adapter.

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

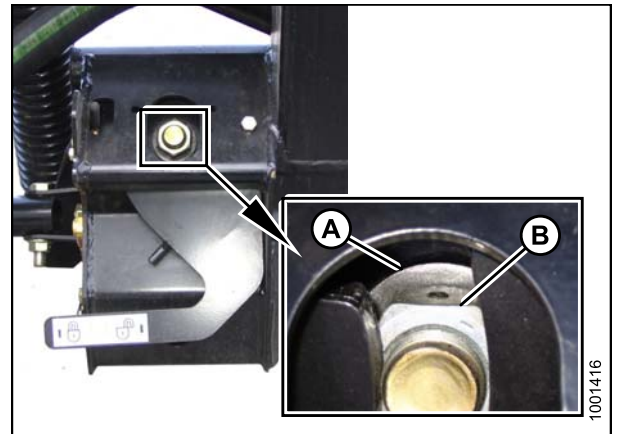


Figure 4.59: Float Lock

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

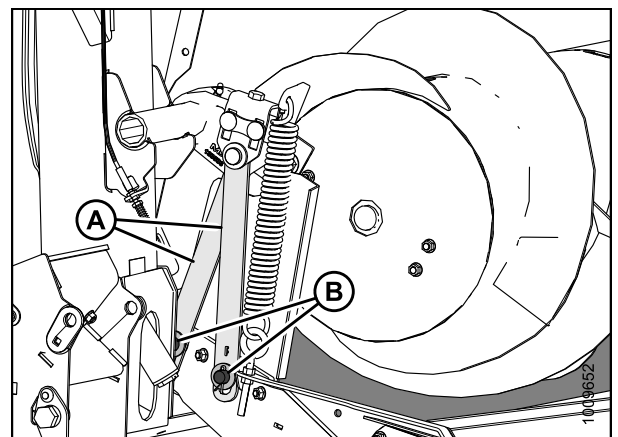


Figure 4.60: Linkage Bars

PERFORMING PREDELIVERY CHECKS

- Loosen two nuts (B).
- Use adjuster bolt (A) to set the clearance (C) to 5–10 mm (3/16–3/8 in.). Turn the adjuster bolt (A) clockwise to increase the clearance and counterclockwise to decrease the clearance.

NOTE:

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

- Repeat Step 6, [page 120](#) and Step 7, [page 120](#) for the opposite end of the auger.
- Tighten nuts (B) on both ends of the feed auger. Torque the nuts to 106–118 N·m (79–87 ft·lbf).

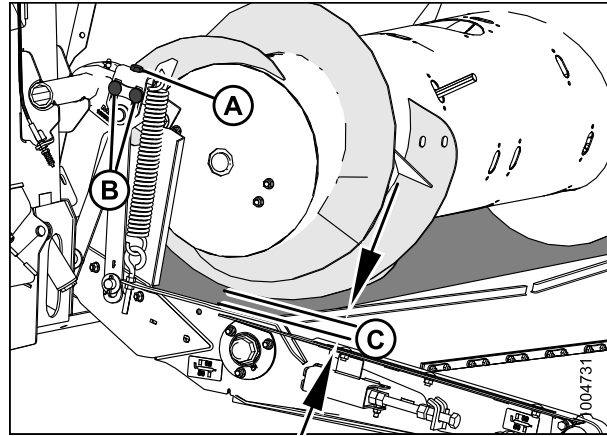


Figure 4.61: Auger Clearance

4.13 Checking and 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.

The drapers are tensioned at the factory and should not require adjustment. Draper tension should be just enough to prevent slipping and to keep draper from sagging below cutterbar.

1. Check that white bar (A) is approximately halfway in window.

NOTE:

Draper tension should be just enough to prevent slipping and to keep draper from sagging below cutterbar.

To adjust draper tension, follow these steps:

⚠️ 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 (A) of drive roller.

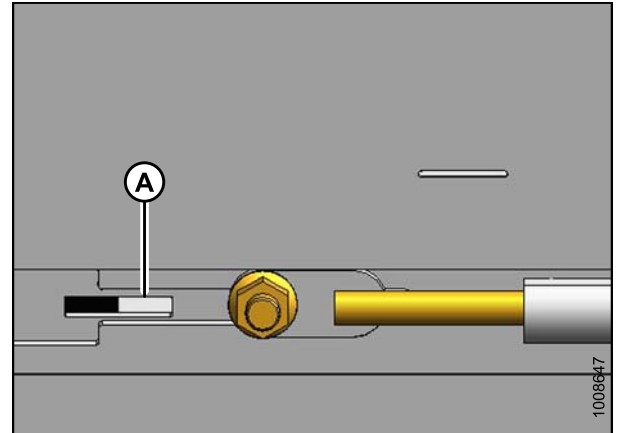


Figure 4.62: Tension Adjuster: Left Shown – Right Opposite

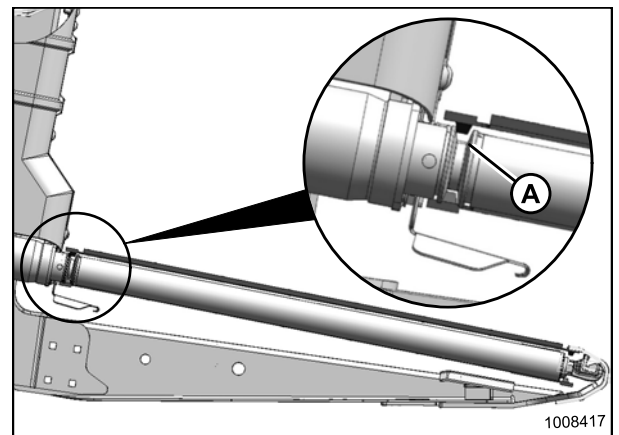


Figure 4.63: Drive Roller

PERFORMING PREDELIVERY CHECKS

5. Check that idler roller (A) is between guides (B).

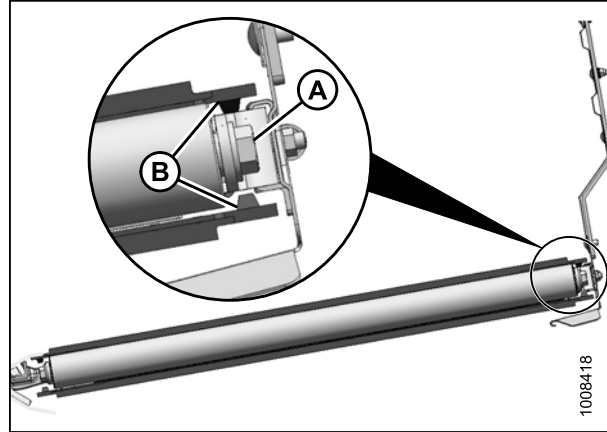


Figure 4.64: Idler Roller – Typical Both Ends of Roller

IMPORTANT:

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

6. Turn adjuster bolt (A) counterclockwise to loosen draper. The 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 draper. The 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 draper from scooping dirt, ensure draper is tight enough that it does **NOT** sag below point where cutterbar contacts the ground.

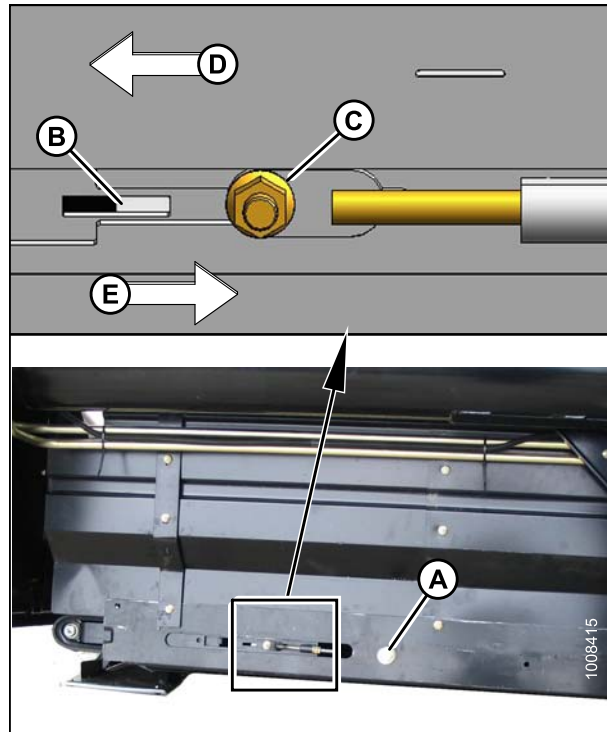


Figure 4.65: Tension Adjuster: Left Shown – Right Opposite

4.14 Checking and Adjusting Skid Shoes

If optional skid shoes are installed, check position and adjust if necessary.

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.

DANGER

Engage header safety props and reel props before working under header or reel.

1. Check skid shoes are set to same position.
2. If necessary, adjust skid shoe as follows:
 - a. Raise header fully and engage header safety props. Shutdown engine and remove key from ignition.
 - b. Remove lynch pin (B).
 - c. Hold shoe and remove pin (C) by disengaging frame and then pulling away from shoe.
 - d. Raise or lower skid shoe to desired position using holes in support as a guide.
 - e. Reinsert pin (C), engage in frame, and secure with lynch pin (B).
 - f. Check that all skid shoes are adjusted to same position.

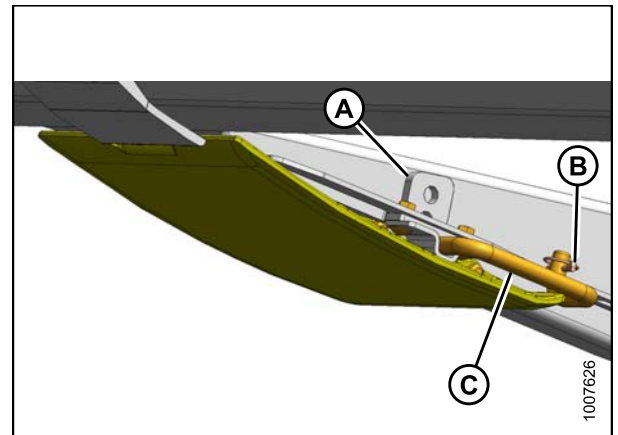


Figure 4.66: Inner Skid Shoe

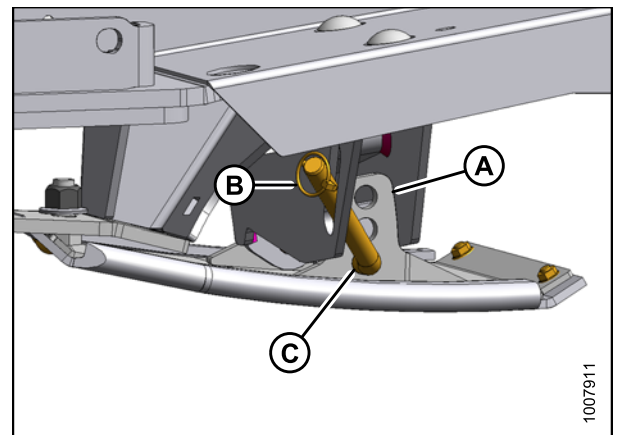


Figure 4.67: Outer Skid Shoe

4.15 Checking Draper Seal

WARNING

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

1. Lower header to working position. Stop engine, and remove key from ignition.
2. Check clearance (A) between draper (B) and cutterbar (C) is 0–3 mm (1/8 in.). Take measurements at deck support locations. Refer to chart and illustration on following page for approximate support locations.

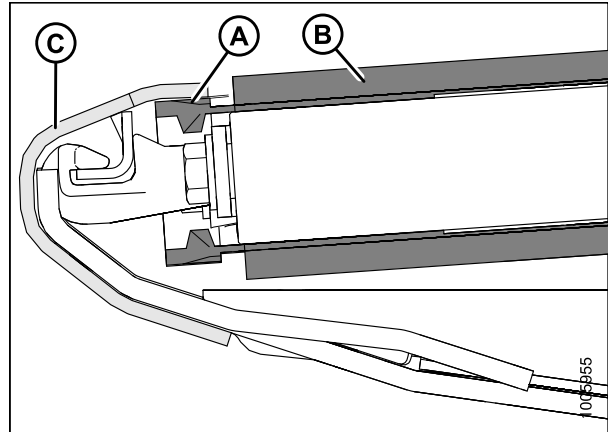


Figure 4.68: Draper Seal

PERFORMING PREDELIVERY CHECKS

Table 4.5 Deck Support Locations

Header Size (ft.)	Approximate Location of Support from Drive Roller (mm. [in.])				
	A	B	C	D	E
15 (F)	354 (13-15/16)	994 (39-1/8)	-	-	-
20 (F)	354 (13-15/16)	1662 (65-7/16)	-	-	-
25 (G)	354 (13-15/16)	1392 (54-13/16)	2427 (95-9/16)	-	-
30 (G)	354 (13-15/16)	1773 (69-13/16)	3191 (125-5/8)	-	-
35 (H)	354 (13-15/16)	1550 (61)	2747 (108-3/16)	3949 (155-7/16)	-
40 (H)	354 (13-15/16)	1809 (71-1/8)	3258 (128-1/4)	4710 (185-7/16)	-
45 (J)	354 (13-15/16)	1864 (73-3/8)	3486 (137-1/4)	4483 (176-1/2)	5479 (215-11/16)

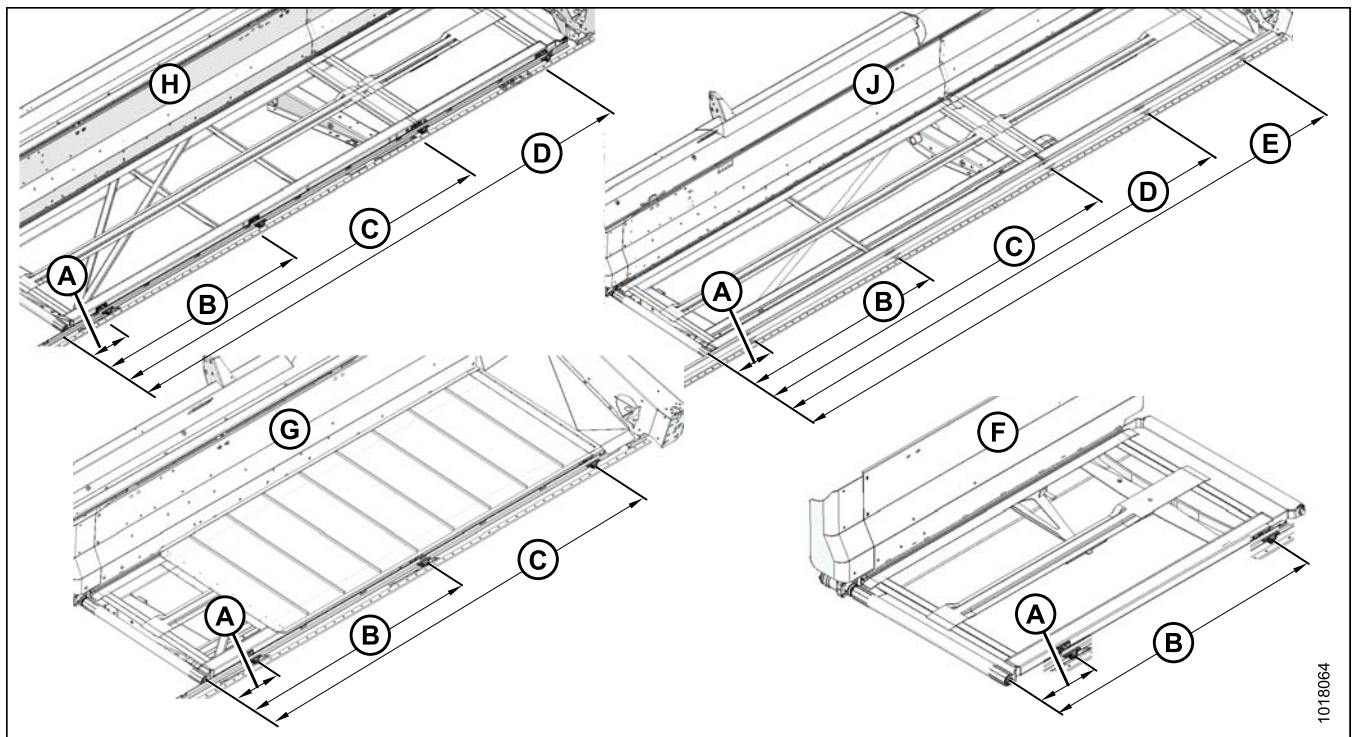


Figure 4.69: Deck Support Locations – Left Shown, Right Opposite

4.16 Lubricating Header

Table 4.6 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

4.16.1 Greasing Procedure

Greasing points are marked on machine by decals showing a grease gun and grease interval in hours of operation. Master grease point location decals are provided on 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.

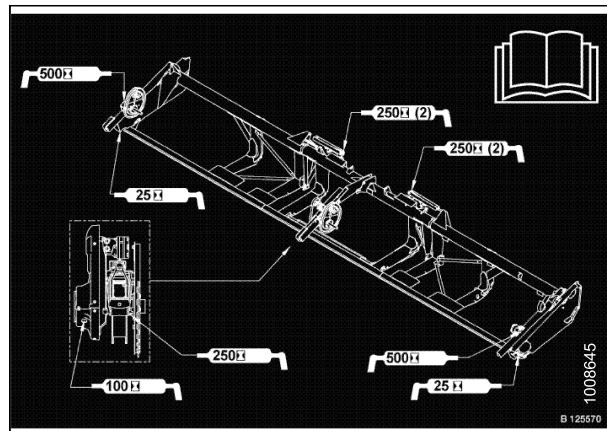


Figure 4.70: FD75 Master Grease Point Decal

4.16.2 Lubrication Points

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

Knifehead

PERFORMING PREDELIVERY CHECKS

IMPORTANT:

Overgreasing can cause the knife to bend and make contact with the guards closest to the knifehead. Check for signs of excessive heating on first few guards after greasing. If required, relieve some pressure by removing the grease fitting.

- 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 grease gun, or just until the knifehead starts to move away from the arm. Do **NOT** use an electric grease gun.
- If more than 6–8 pumps of the grease gun are required to fill the cavity, replace the seal in the knifehead.
- Check for signs of excessive heating on first few guards after greasing. If required, relieve pressure by pressing check-ball in grease fitting.

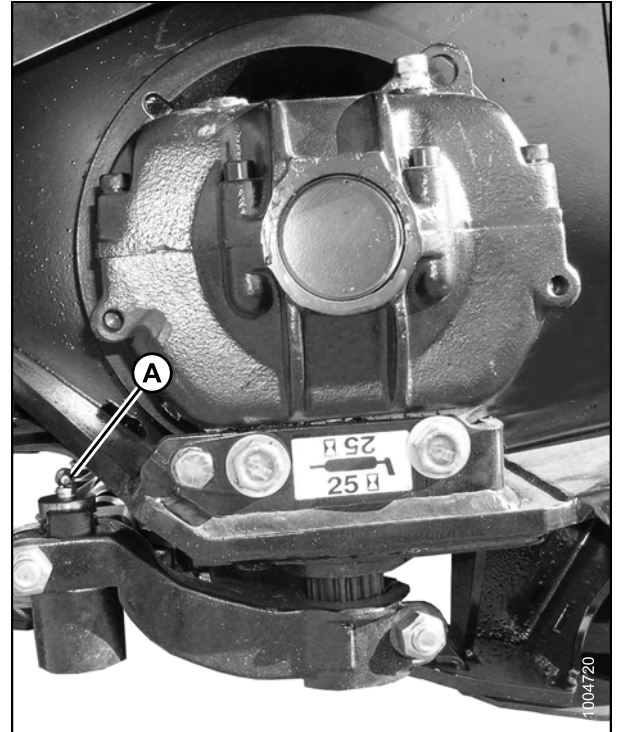


Figure 4.71: Knifehead

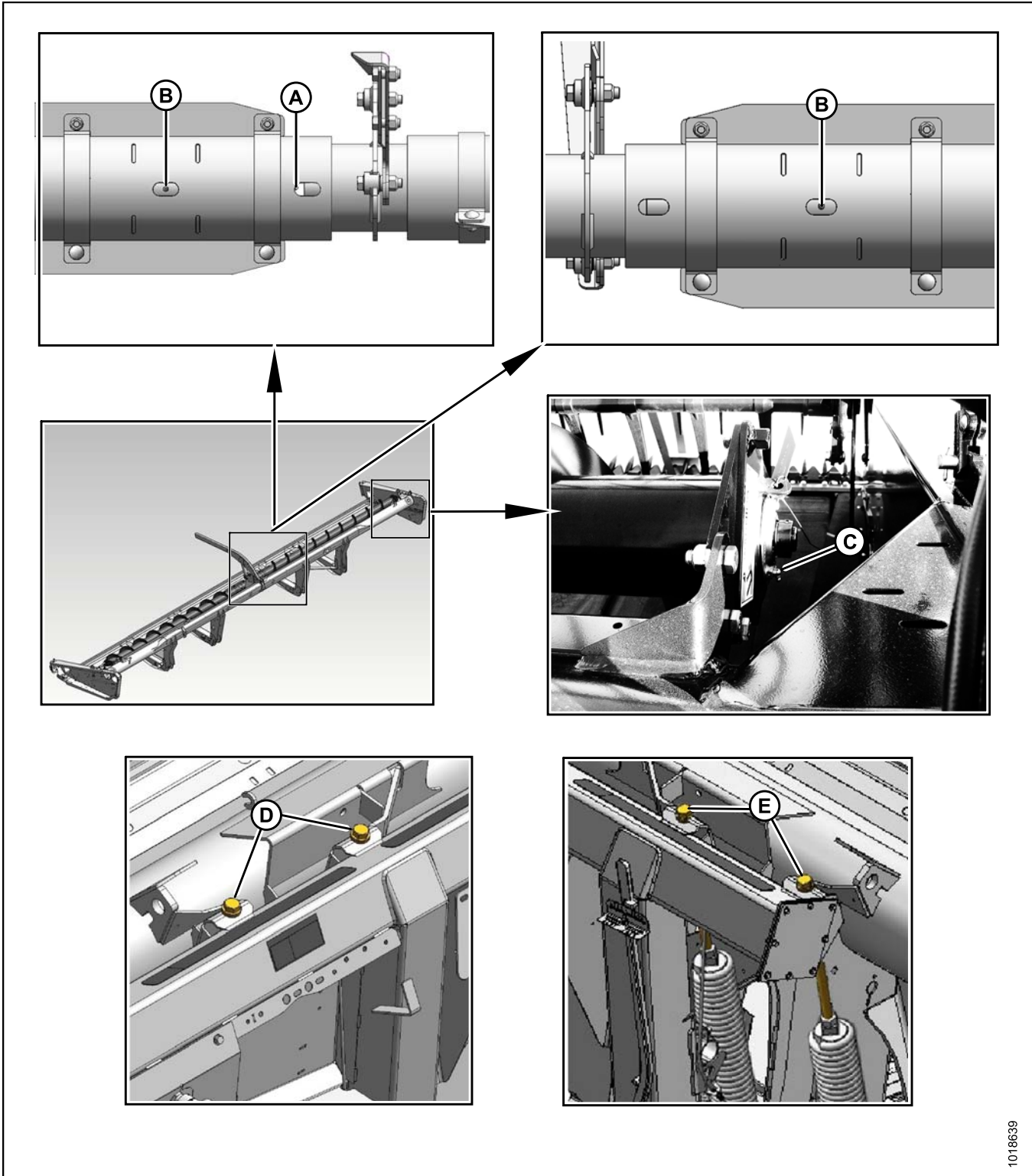
(Single Knife – 1 Place)

(Double Knife – 2 Places)

NOTE:

Use High Temperature Extreme Pressure (EP2) Performance with 1% Max Molybdenum Disulphide (NLGI Grade 2) Lithium Base grease unless otherwise specified.

PERFORMING PREDELIVERY CHECKS



1018639

Figure 4.72: Upper Cross Auger and Float Spring Tensioners

A - Upper Cross Auger U-joint
D - Float Spring Tensioners - Left

B - Upper Cross Auger Bearing
E - Float Spring Tensioners - Right

C - Upper Cross Auger Bearing

PERFORMING PREDELIVERY CHECKS

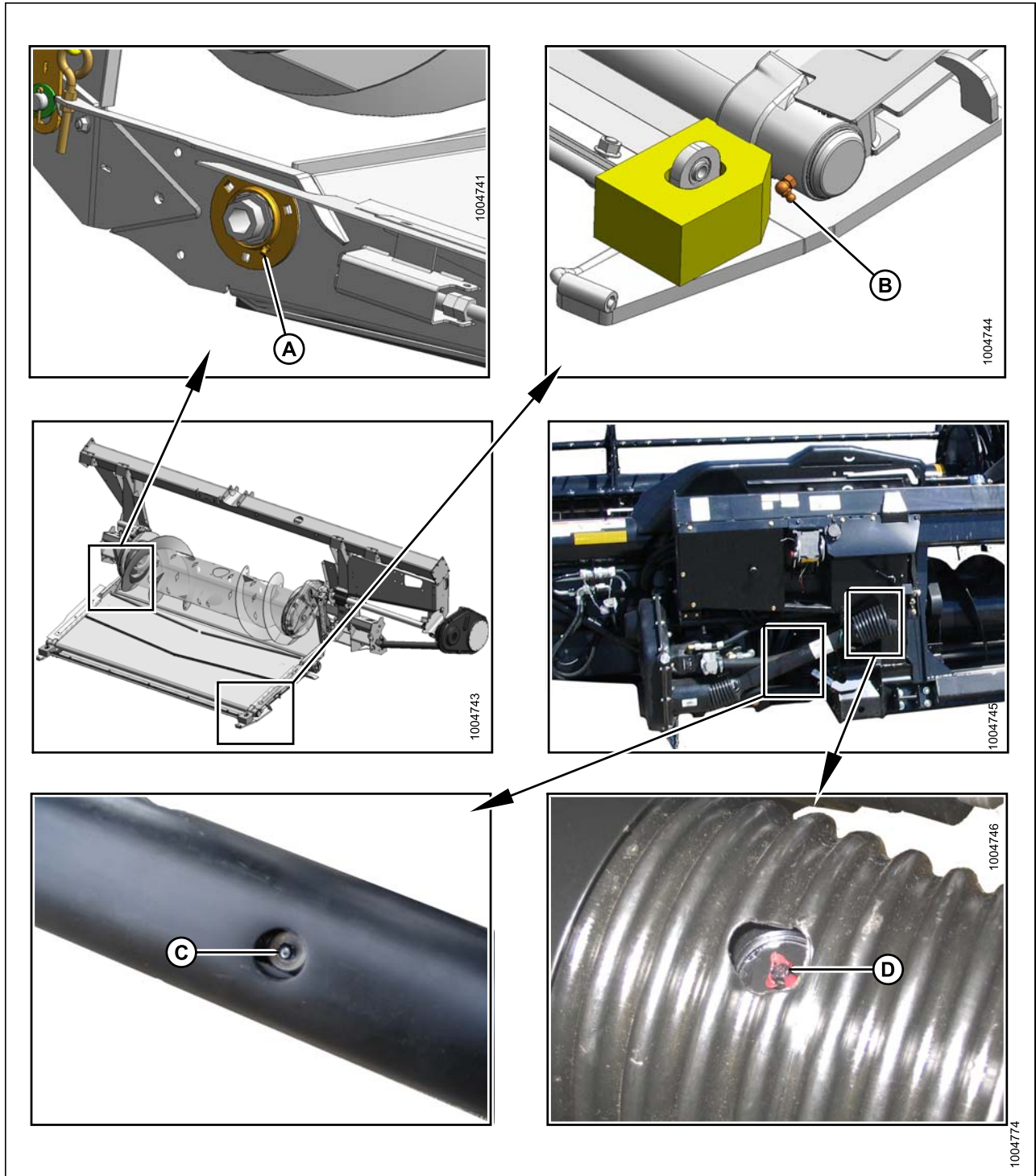


Figure 4.73: Drive Roller Bearing, Idler Roller, Slip Joint, and Driveline Universal

A - Drive Roller Bearing

B - Idler Roller - Both Sides

C - Driveline Slip Joint²

D - Driveline Universal (2 Places)

2. 10% moly grease is recommended for the driveline slip joint.

PERFORMING PREDELIVERY CHECKS

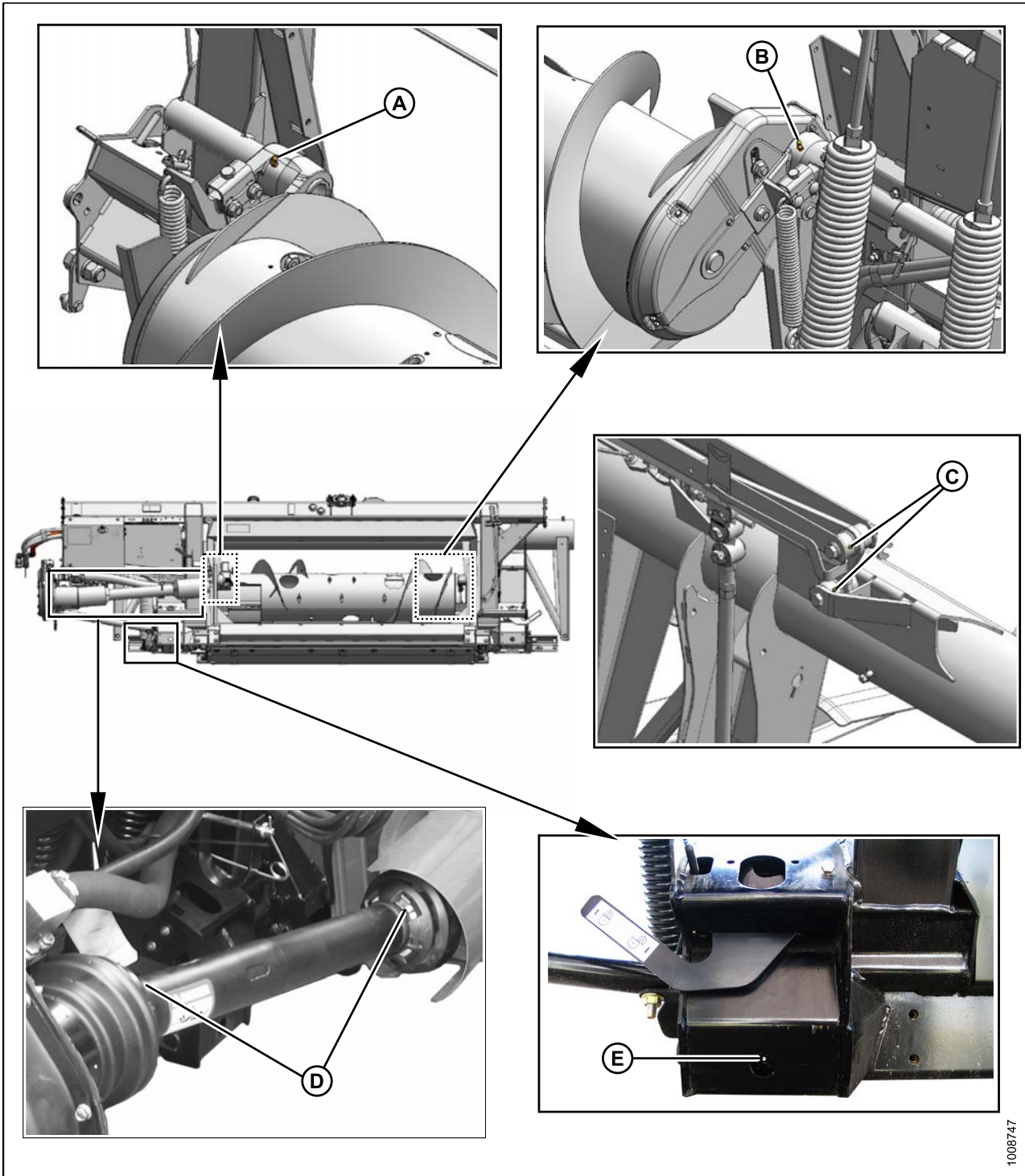


Figure 4.74: Float Pivot, Driveline Guard, Flex Linkage, and Auger Pivot

- A - Auger Right Pivot
- B - Auger Left Pivot
- C - Flex Linkage (2 Places) (Both Sides)
- D - Driveline Guard (2 Places)
- E - Float Pivot (2 Places)

PERFORMING PREDELIVERY CHECKS

IMPORTANT:

The reel U-joint (C) 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). As U-joint wears and requires more than six pumps, grease the joint more often.

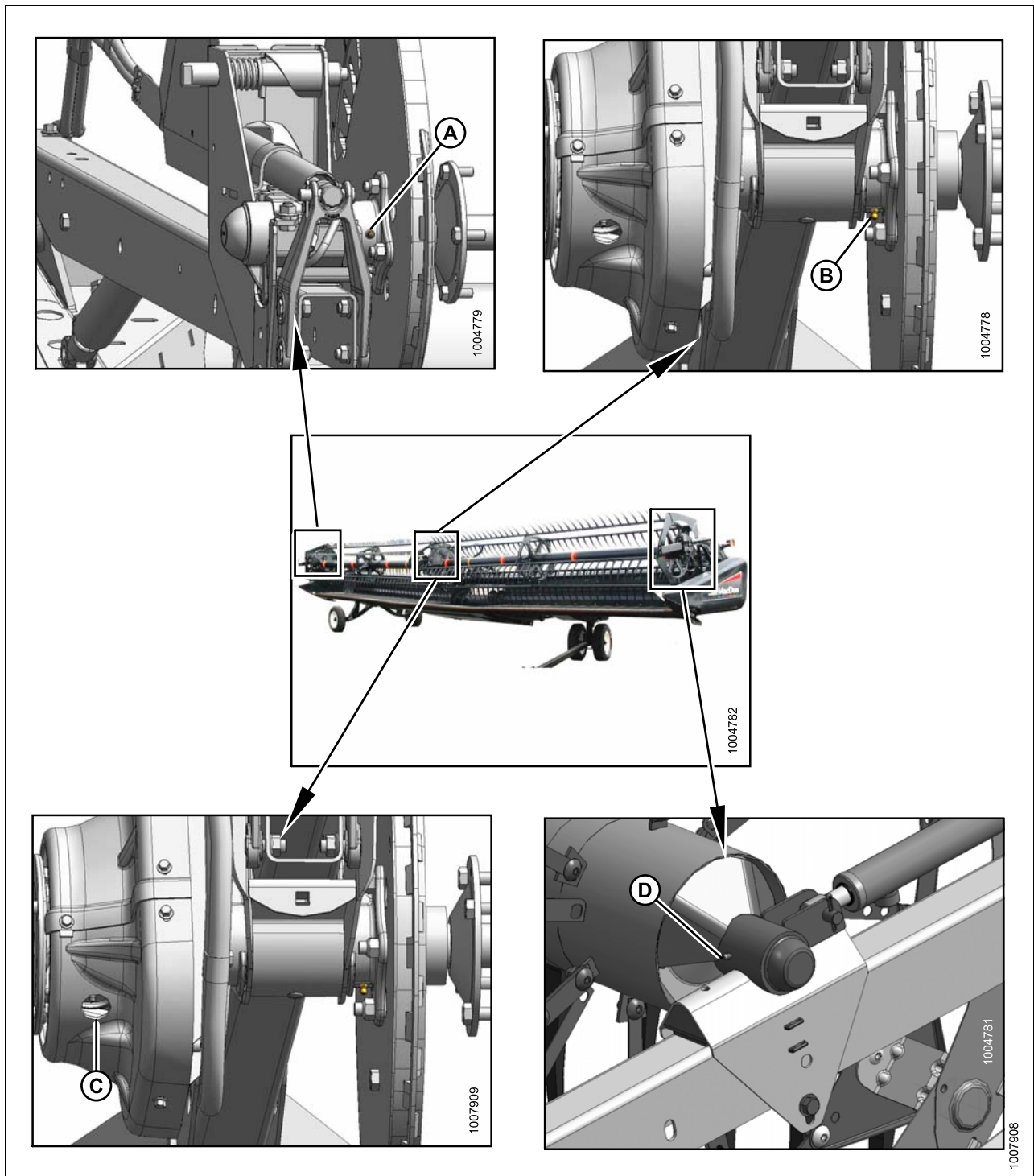


Figure 4.75: Reel Shaft Bearings

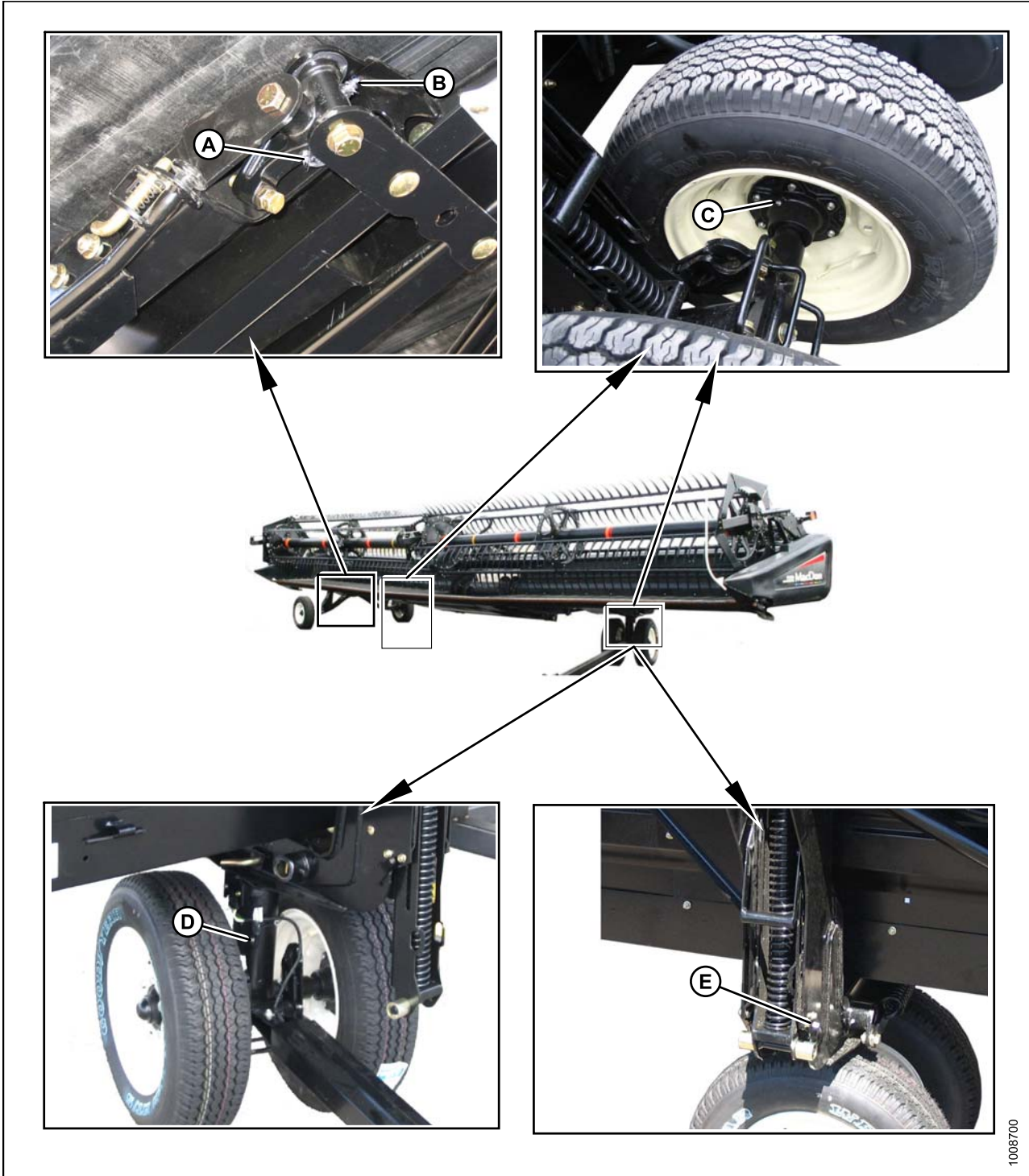
A - Reel Shaft Right Bearing (1 Place)

B - Reel Center Bearing (1 Place)

C - Reel Universal (1 Place)

D - Reel Shaft Left Bearing (1 Place)

PERFORMING PREDELIVERY CHECKS



4.17 Checking and Adjusting Endshields

Plastic endshields are subject to expansion or contraction caused by 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 values in Table 4.7 *Endshield Gap at Various Temperatures*, page 133.

Table 4.7 Endshield Gap at Various Temperatures

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

NOTE:

If endshield gap is correct, skip to next procedure. If adjustment is required, follow these steps:

2. Open endshield. Refer to 3.4.5 *Opening Endshield*, page 85.
3. Loosen nut (A) on pin (B) from inside endsheet.
4. Close endshield and adjust position to achieve desired gap between front end of shield and header frame in accordance with Table 4.7 *Endshield Gap at Various Temperatures*, page 133.
5. Open endshield and tighten nut (A).
6. Check for a snug fit between top of shield and header frame, and for full engagement of endshield on pin (B).
7. If necessary, loosen bolts on catch (C) and adjust catch as required to reposition shield.
8. Tighten bolts on catch (C).
9. Close endshield. Refer to 3.4.9 *Closing Endshield*, page 89.

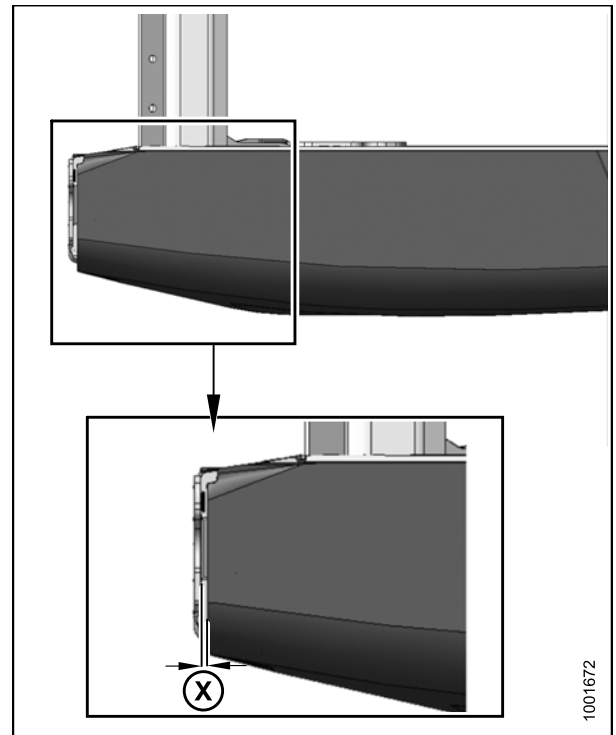


Figure 4.77: Gap Between Endshield and Header Frame

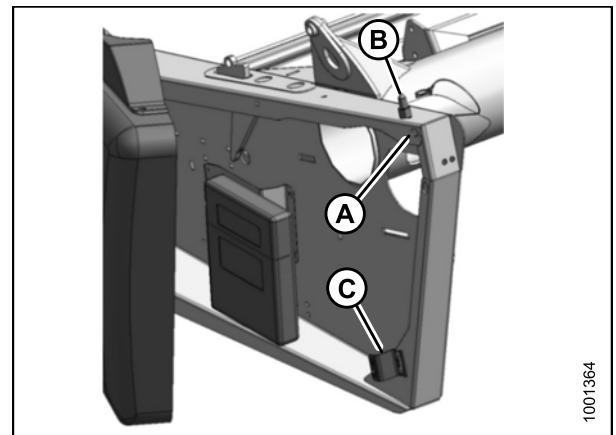


Figure 4.78: Endshield Adjustment

4.18 Checking Manuals

Check manual case contents. The manual case is located inside left endshield.

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

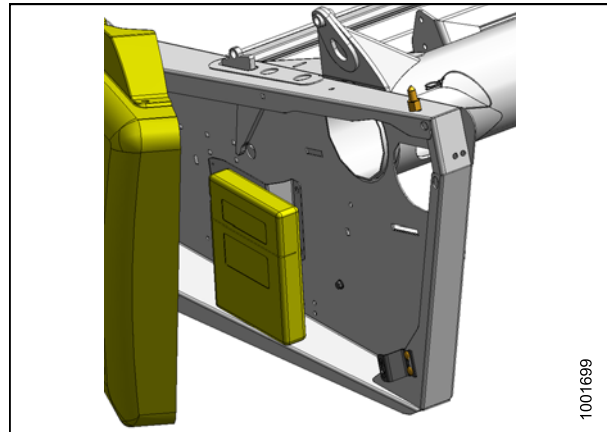


Figure 4.79: Manual Case

2. Confirm that case contains following manuals:

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



Figure 4.80: 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.

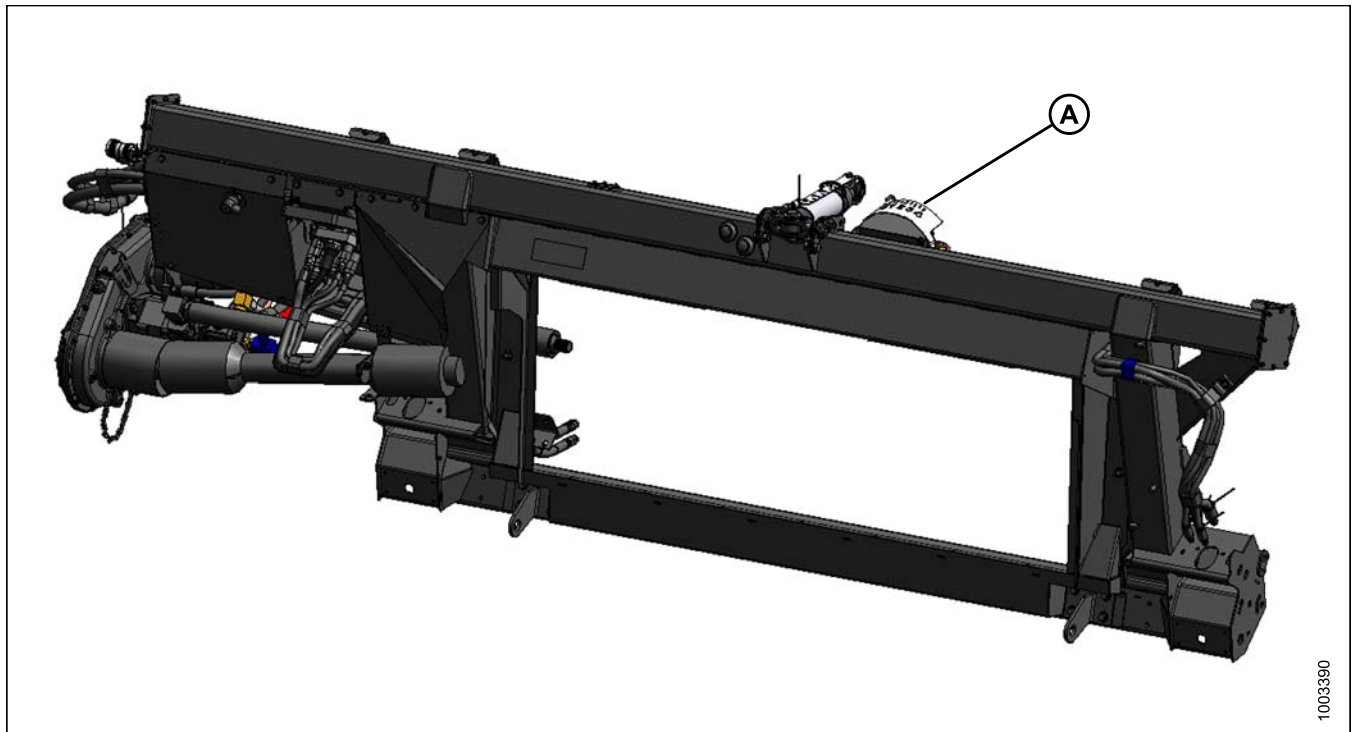


Figure 5.1: CA25 Combine Adapter

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 Sensor Output Voltage Range – Combine Requirements, page 136](#).
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. Individual combine settings can improve AHHC performance (refer to your combine instruction manual).

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 Case IH 2300/2500 and 5088/6088/7088 Combines, page 140](#)
- [5.1.3 Case IH 5130/6130/7130, 7010/8010, 7120/8120/9120, and 7230/8230/9230 Combines, page 143](#)
- [5.1.4 Challenger 6 and 7 Series Combines, page 154](#)
- [5.1.5 Gleaner R62/R72 Combines, page 162](#)
- [5.1.6 Gleaner R65/R66/R75/R76 and S Series Combines, page 165](#)
- [5.1.7 Gleaner S9 Series Combines, page 174](#)
- [5.1.8 John Deere 50 Series Combines, page 188](#)
- [5.1.9 John Deere 60 Series Combines, page 200](#)
- [5.1.10 John Deere 70 Series Combines, page 207](#)
- [5.1.11 John Deere S-Series and T-Series Combines, page 214](#)
- [5.1.12 Lexion 500-Series Combines, page 226](#)
- [5.1.13 Lexion 700-Series Combines, page 239](#)
- [5.1.14 New Holland Combines CX/CR Series \(CR Series—Model Year 2014 and Earlier\), page 248](#)
- [5.1.15 New Holland Combines \(CR Series—Model Year 2015 and Later\), page 259](#)

5.1.1 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 Sensor Voltage Limits

Combine	Low Voltage Limit	High Voltage Limit	Minimum Voltage Range
Challenger, Gleaner A, Gleaner S, 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	0.7 V	4.3 V	2.5 V

SETTING UP AUTO HEADER HEIGHT CONTROL

Combine	Low Voltage Limit	High Voltage Limit	Minimum Voltage Range
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 137](#).

Manually Checking Voltage Range

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

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

1. Position the header 150 mm (6 in.) 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 the 0.

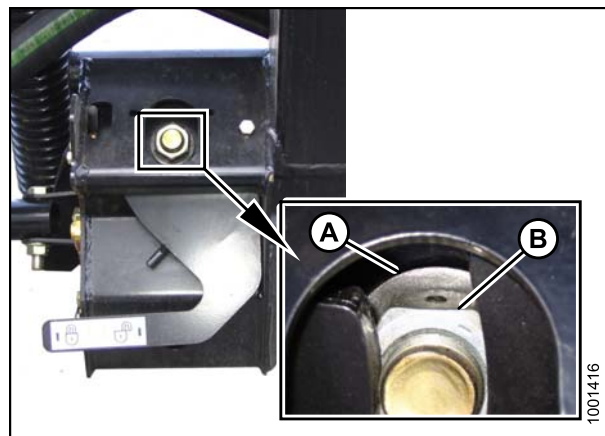


Figure 5.2: Float Lock

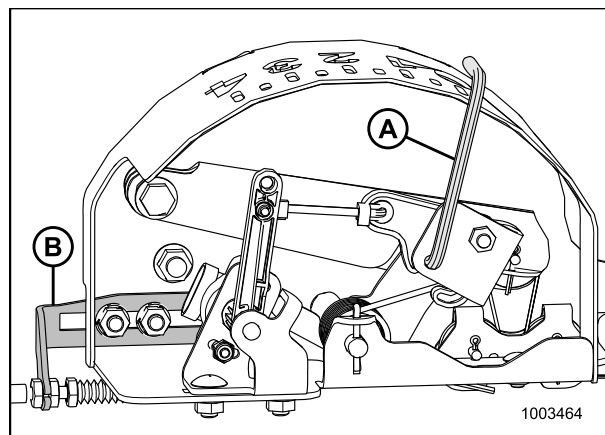


Figure 5.3: Float Indicator Box (Most Common 5 Volt AHHC Sensor Assembly Shown)

SETTING UP AUTO HEADER HEIGHT CONTROL

4. Use a voltmeter (A) to measure the voltage between the ground (Pin 2) and signal (Pin 3) wires at the AHHC sensor in the float indicator box. Ensure it is at the high voltage limit for the combine. Refer to Table 5.1 *Sensor Voltage Limits, page 136*.

NOTE:

The harness connector must be plugged into the sensor.

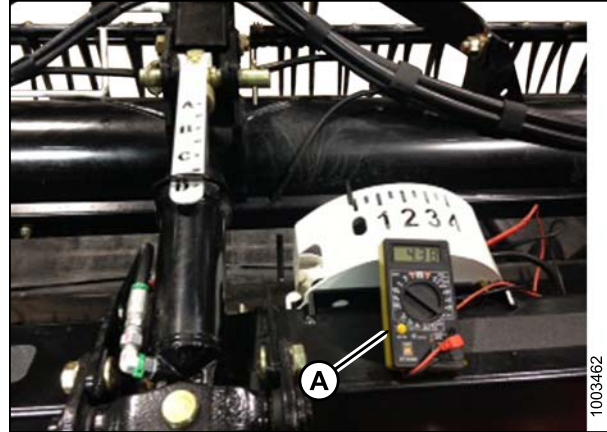


Figure 5.4: Measuring Voltage at Float Indicator Box

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. Use a voltmeter (A) to 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 *Sensor Voltage Limits, page 136*.

NOTE:

The harness connector must be plugged into the sensor.

7. Adjust the voltage limits (refer to *Adjusting Voltage Limits, page 138*) 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 *Sensor Voltage Limits, page 136*).

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.

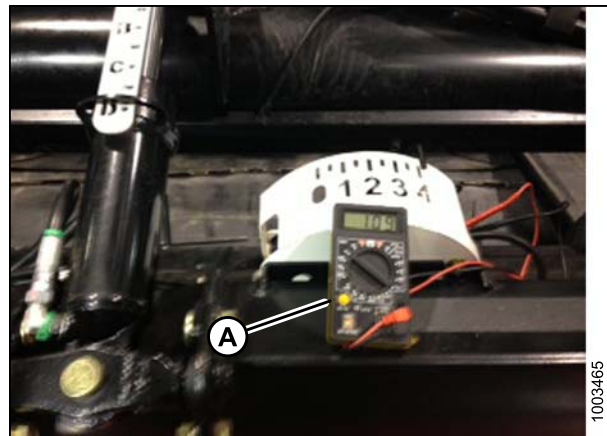


Figure 5.5: Measuring Voltage at Float Indicator Box

SETTING UP AUTO HEADER HEIGHT CONTROL

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 152–254 mm (6–10 in.) above the ground; the float indicator should be at the 0.
 - c. Loosen sensor mounting bolts (A).
 - d. Slide sensor support (B) to the right to increase the high voltage limit and to the left to decrease it.
 - e. Tighten sensor mounting bolts (A).

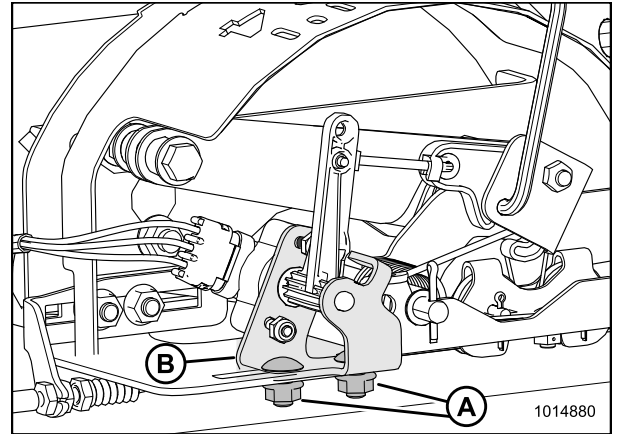


Figure 5.6: AHHC Sensor Assembly for Use with Lexion Combines

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 sensor (B) clockwise to increase the low voltage limit, and counterclockwise to decrease it.
 - e. Tighten sensor mounting bolts (A).

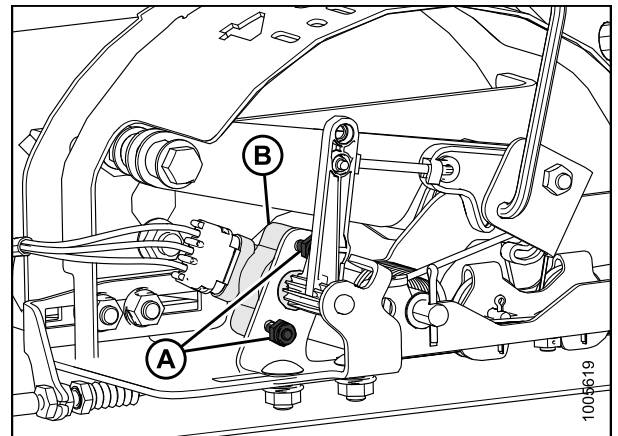


Figure 5.7: Most Common 5 Volt AHHC Sensor Assembly

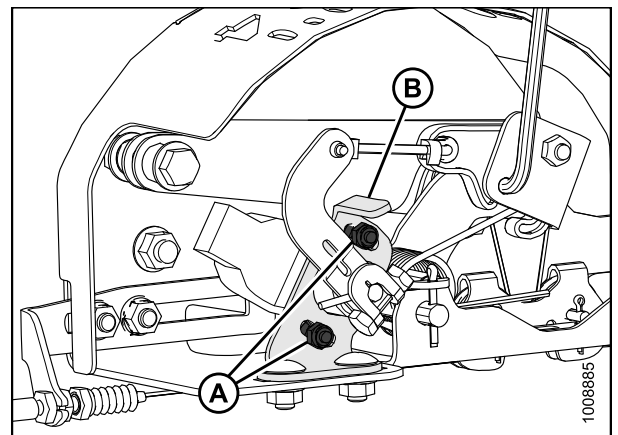


Figure 5.8: 10 Volt AHHC Sensor Assembly for Use with Some New Holland Combines

SETTING UP AUTO HEADER HEIGHT CONTROL

5.1.2 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.

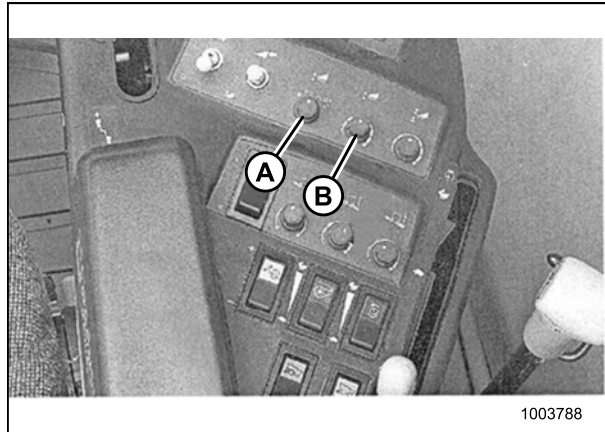


Figure 5.9: Combine Controls

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 5.10: Combine Controls

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

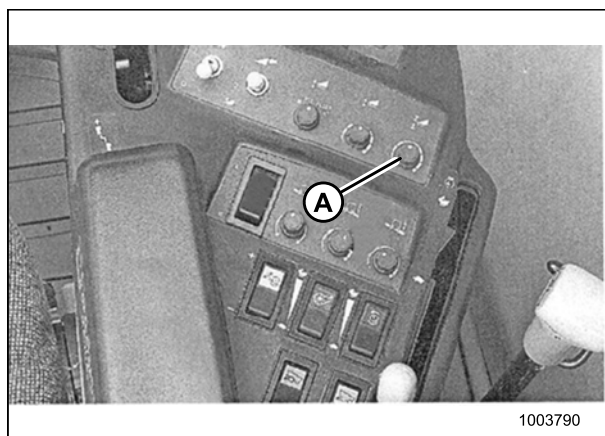


Figure 5.11: Combine Controls

SETTING UP AUTO HEADER HEIGHT CONTROL

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

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

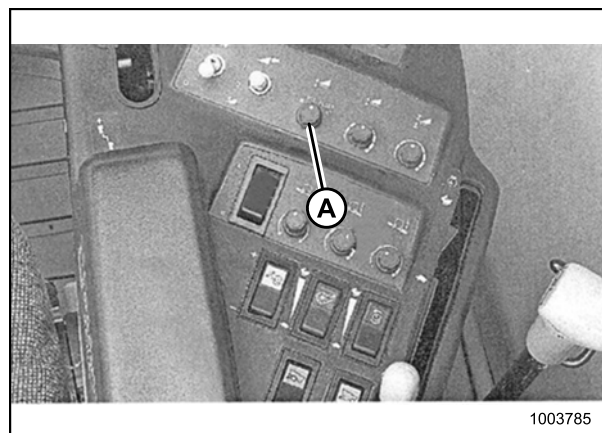


Figure 5.12: Right Console

4. 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.
5. 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.

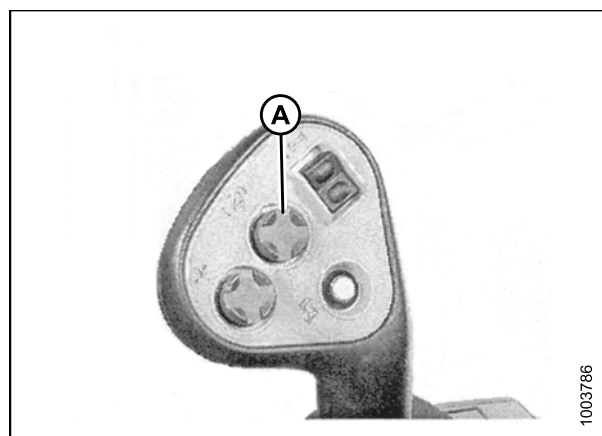


Figure 5.13: Joystick Lever (Case IH 2300/2500)

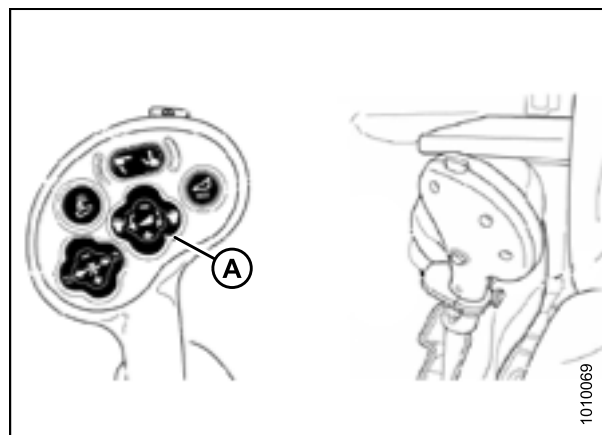


Figure 5.14: Joystick Lever (Case IH 5088/6088/7088)

SETTING UP AUTO HEADER HEIGHT CONTROL

NOTE:

The ideal ground pressure—in most cases—is one number (on the float indicator box) above the header suspended off the ground. For example, if the float indicator needle (B) is positioned at 0 with the header suspended off the ground, then the ideal ground pressure will be achieved with the needle positioned at 1 (A). Operating with heavier pressures can wear the cutterbar wearplate prematurely.

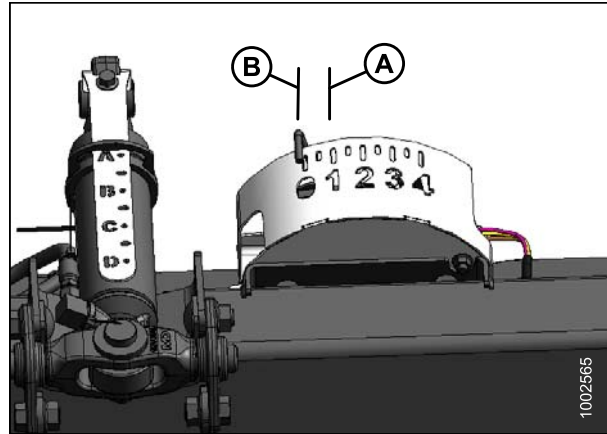


Figure 5.15: Float Indicator Box

Setting the Sensitivity of the Auto Header Height Control (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 page.
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 page. If there are no changes, the screen will return to the monitor page after five seconds.

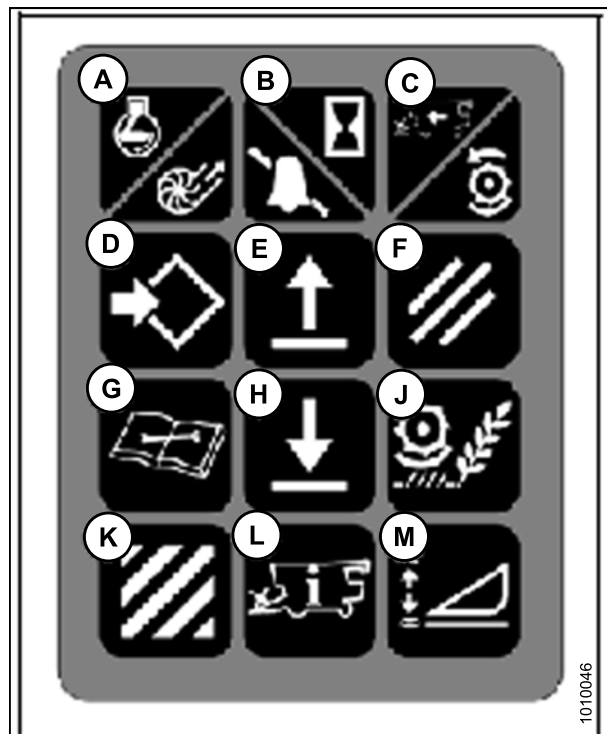


Figure 5.16: Combine Controls

SETTING UP AUTO HEADER HEIGHT CONTROL

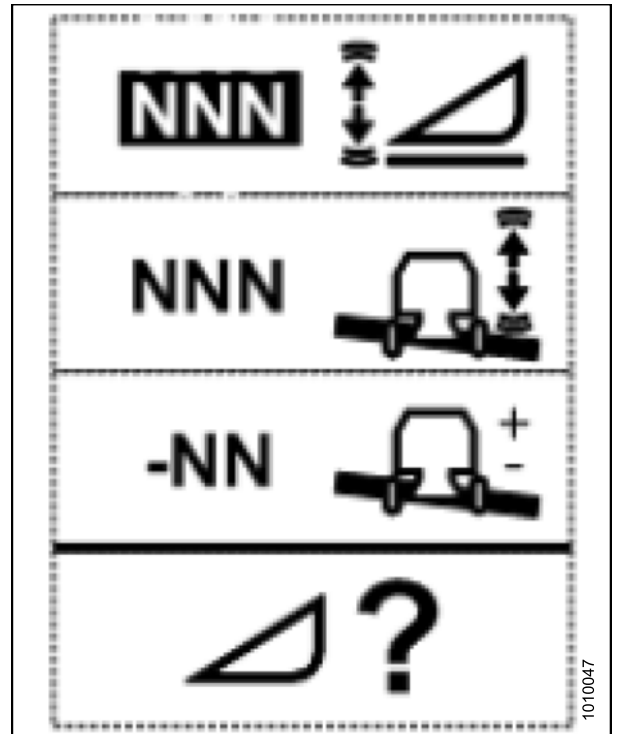


Figure 5.17: Height Sensitivity Change Page

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

Checking Voltage Range from the Combine Cab (Case 8010)

NOTE:

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

⚠ CAUTION

Check to be sure all bystanders have cleared the area.

1. Position the header 150 mm (6 in.) above the ground, and unlock the CA25 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.

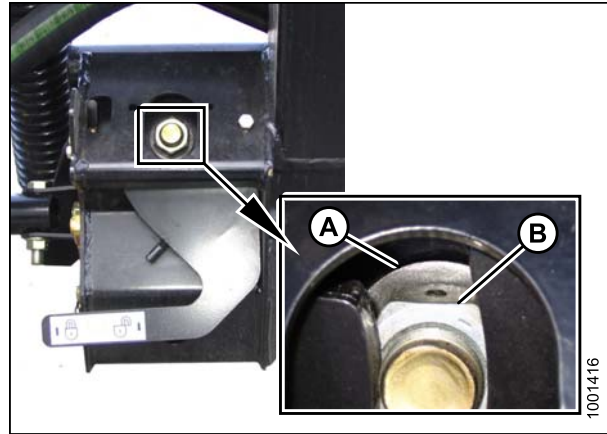


Figure 5.18: Float Lock

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

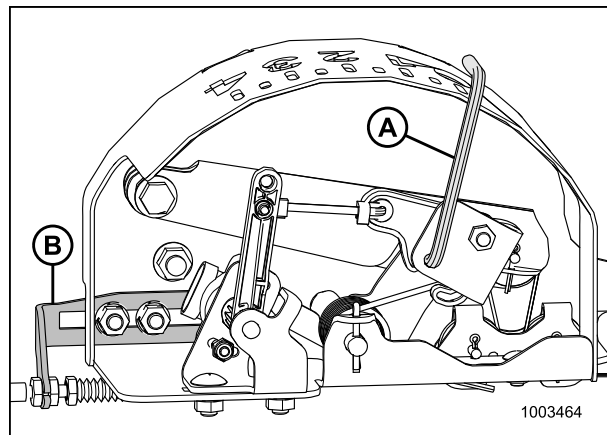


Figure 5.19: Float Indicator Box

4. Ensure header float is unlocked.
5. Select DIAG (A) on the Universal display MAIN page. The DIAG page displays.

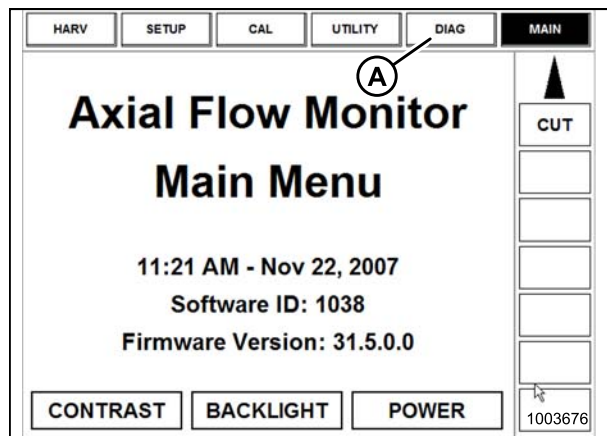


Figure 5.20: Case 8010 Combine Display

SETTING UP AUTO HEADER HEIGHT CONTROL

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

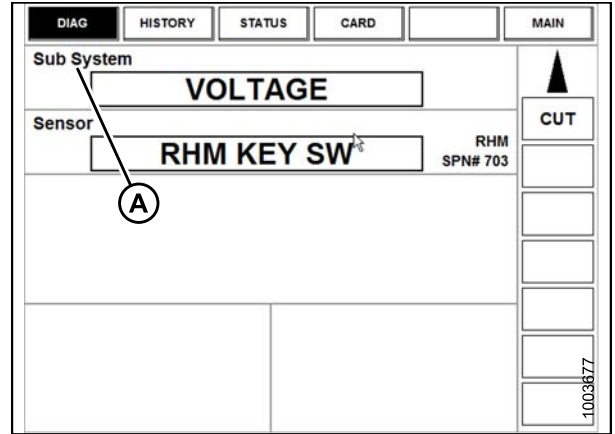


Figure 5.21: Case 8010 Combine Display

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

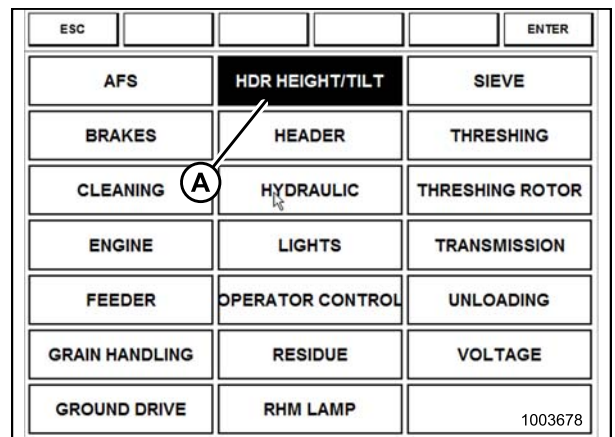


Figure 5.22: Case 8010 Combine Display

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

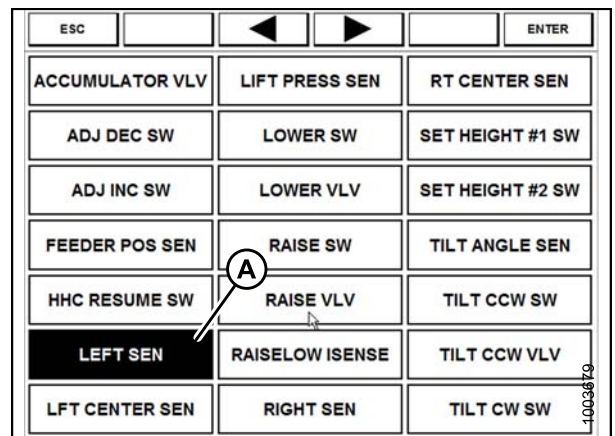


Figure 5.23: Case 8010 Combine Display

SETTING UP AUTO HEADER HEIGHT CONTROL

- Adjust the voltage limits (refer to [Adjusting Voltage Limits, page 138](#)) 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 Sensor Voltage Limits, page 136](#)).



Figure 5.24: Case 8010 Combine Display

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

NOTE:

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

CAUTION

Check to be sure all bystanders have cleared the area.

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

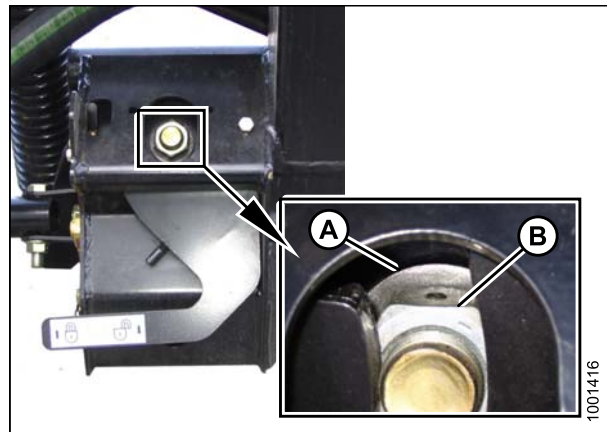


Figure 5.25: Float Lock

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 the 0.

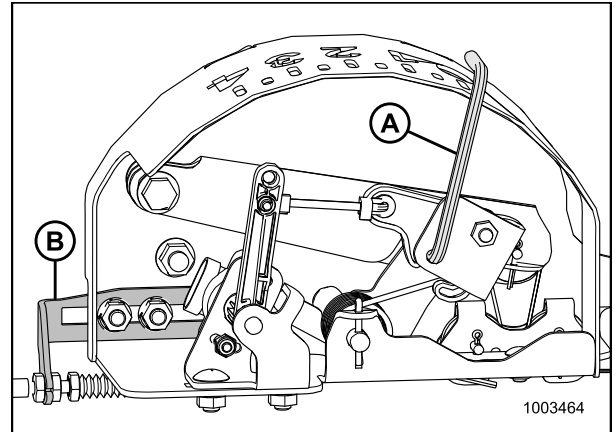


Figure 5.26: Float Indicator Box

- Ensure header float is unlocked.
- Select DIAGNOSTICS (A) on the MAIN page. The DIAGNOSTICS page opens.
- Select SETTINGS. The SETTINGS page opens.

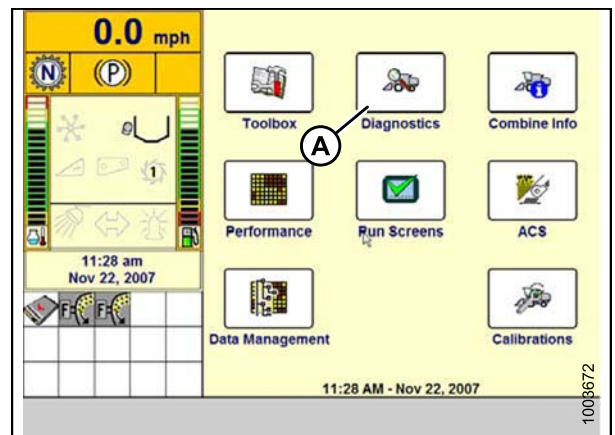


Figure 5.27: Case IH Combine Display

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

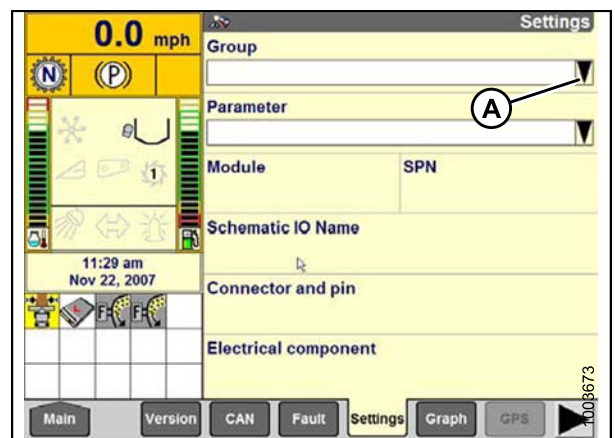


Figure 5.28: Case IH Combine Display

SETTING UP AUTO HEADER HEIGHT CONTROL

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

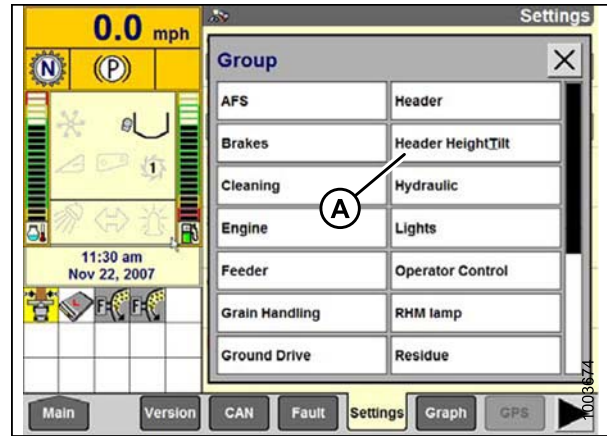


Figure 5.29: Case IH Combine Display

9. Select LEFT HEADER HEIGHT SEN (A), and then select the GRAPH button (B). The exact voltage is displayed at top of page. Raise and lower the header to see the full range of voltage readings.
10. Adjust the voltage limits (refer to [Adjusting Voltage Limits, page 138](#)) 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 [Sensor Voltage Limits, page 136](#)).

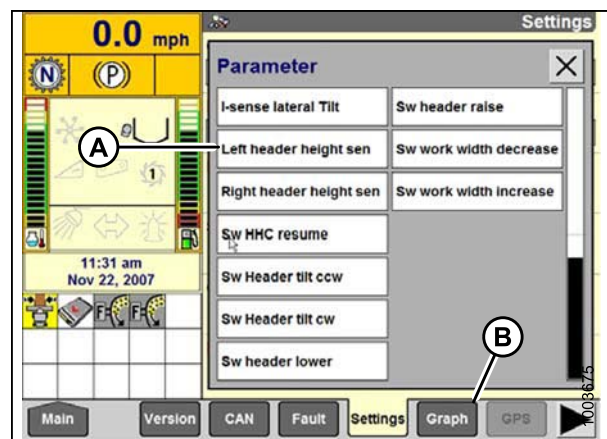


Figure 5.30: Case IH Combine Display

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

For best performance from 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 \(Case Combines with Version 28.00 or Higher Software\), page 150](#).

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. Ensure all header and adapter electrical and hydraulic connections are made.
3. Select TOOLBOX on the MAIN page, and then select HEADER.

SETTING UP AUTO HEADER HEIGHT CONTROL

4. Set appropriate HEADER STYLE.

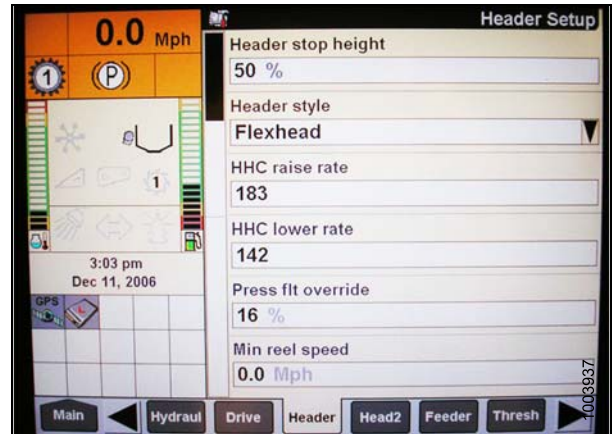


Figure 5.31: Case IH Combine Display

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



Figure 5.32: Case IH Combine Display

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

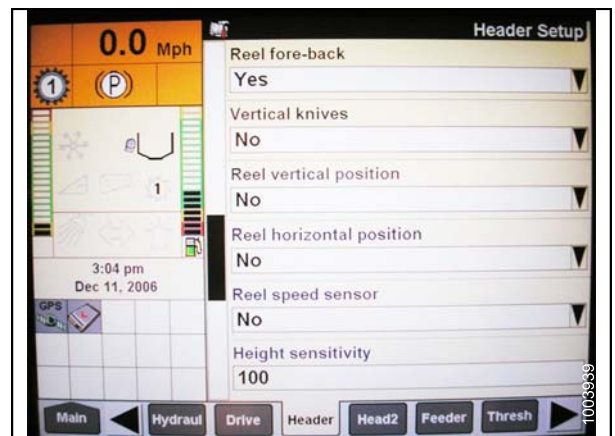


Figure 5.33: Case IH Combine Display

SETTING UP AUTO HEADER HEIGHT CONTROL

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

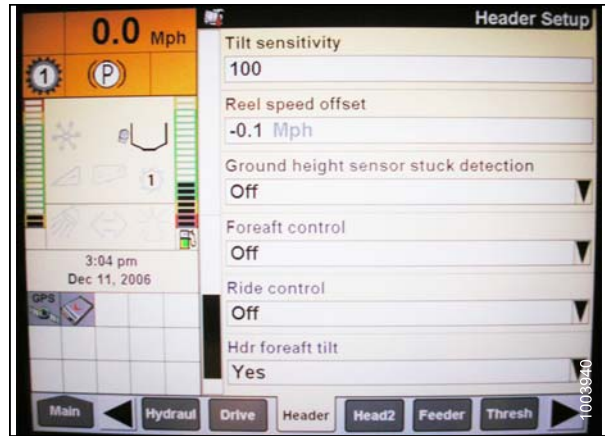


Figure 5.34: Case IH Combine Display

10. Press HEAD2 at bottom of page.
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.

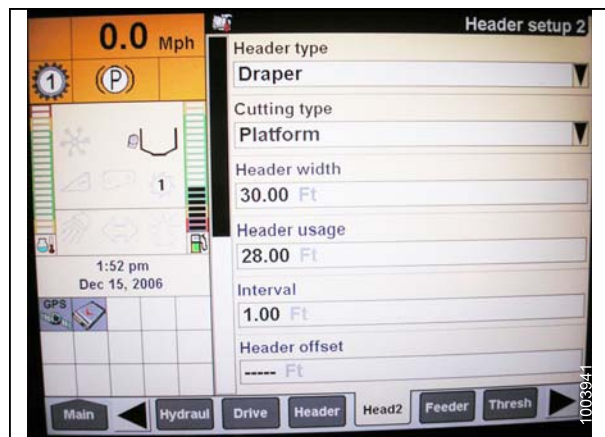


Figure 5.35: Case IH Combine Display

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

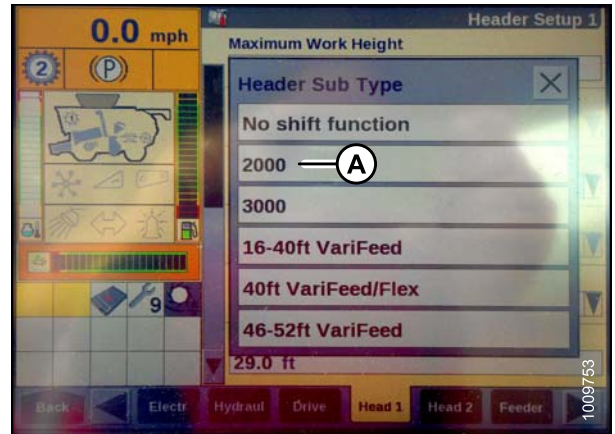


Figure 5.36: Case IH Combine Display

5. Locate the HEADER SENSORS and HEADER PRESSURE FLOAT 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 FLOAT field.

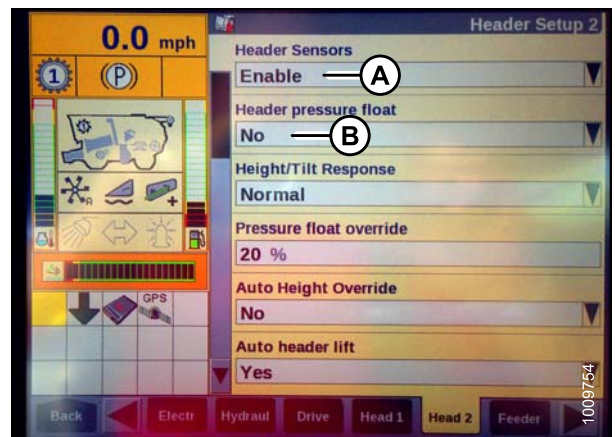


Figure 5.37: Case IH Combine Display

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.

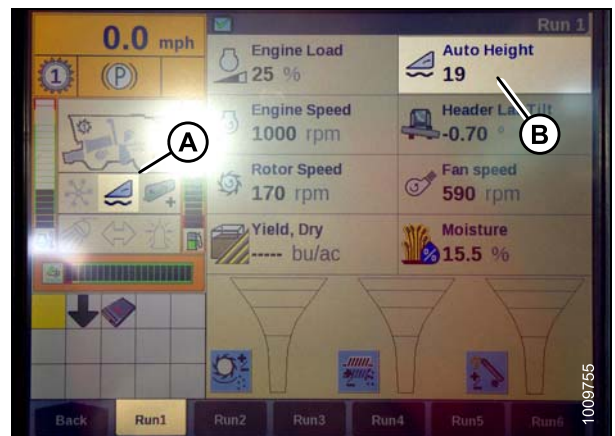


Figure 5.38: Case IH Combine Display

SETTING UP AUTO HEADER HEIGHT CONTROL

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

NOTE:

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

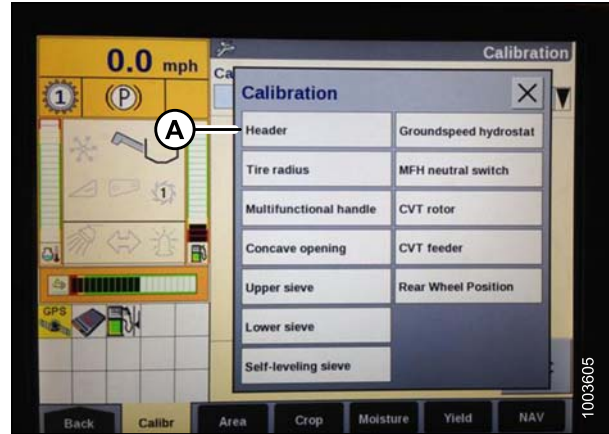


Figure 5.39: Case IH Combine Display

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

NOTE:

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

NOTE:

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

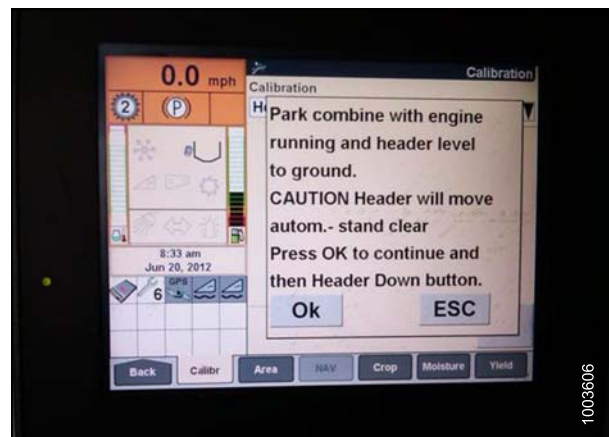


Figure 5.40: Case IH Combine Display

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

NOTE:

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

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

SETTING UP AUTO HEADER HEIGHT CONTROL

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

To set the preset cutting height, follow these steps:

NOTE:

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

CAUTION

Check to be sure all bystanders have cleared the area.

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

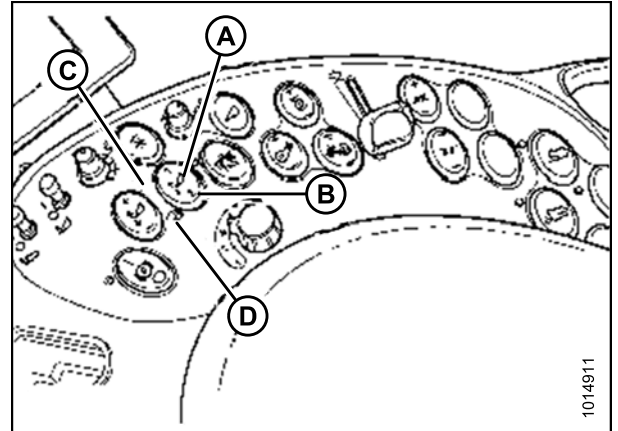


Figure 5.41: Case Combine Controls

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

NOTE:

You can fine adjust these set points by using the FINE ADJUST switch (A).

NOTE:

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



Figure 5.42: Case Combine Controls

SETTING UP AUTO HEADER HEIGHT CONTROL

NOTE:

The ideal ground pressure—in most cases—is one number (on the float indicator box) above the header suspended off the ground. For example, if the float indicator needle (A) is positioned at 0 with the header suspended off the ground, then the ideal ground pressure will be achieved with the needle positioned at 1. Operating with heavier pressures can wear the cutterbar wearplate prematurely.

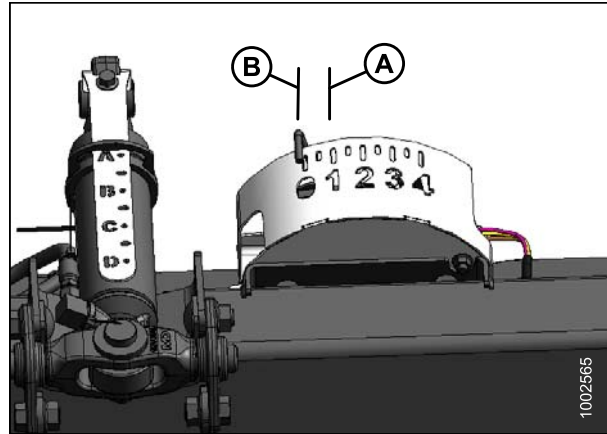


Figure 5.43: Float Indicator Box

5.1.4 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.

1. Position the header 150 mm (6 in.) 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.

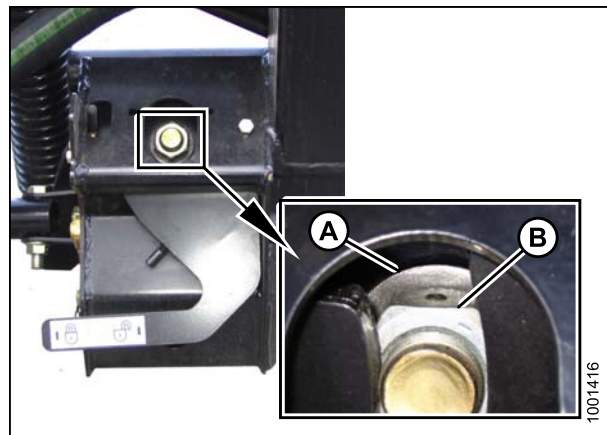


Figure 5.44: Float Lock

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 the 0.

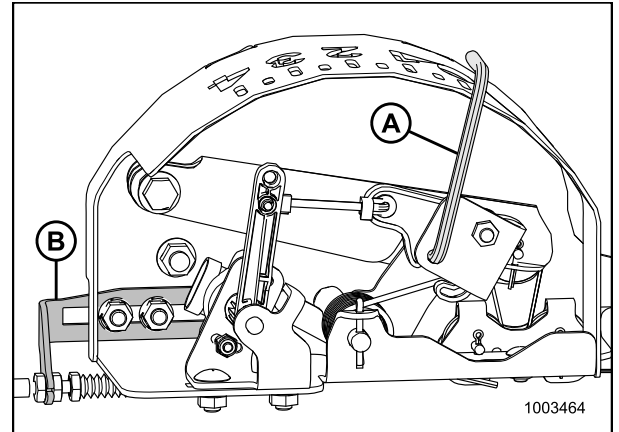


Figure 5.45: Float Indicator Box

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

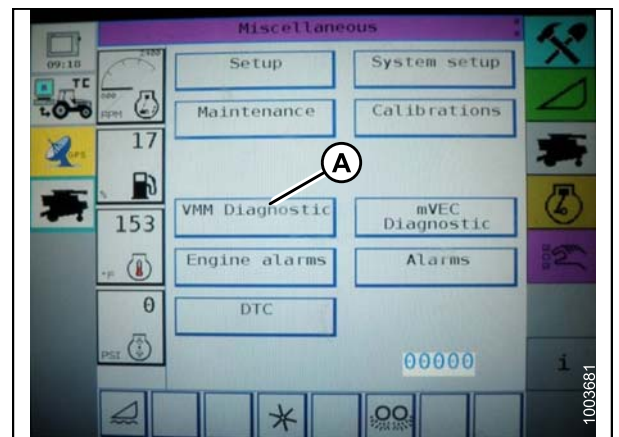


Figure 5.46: Challenger Combine Display

- 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 page as HEADER HEIGHT RIGHT POT and HEADER HEIGHT LEFT POT. Both readings should be identical.

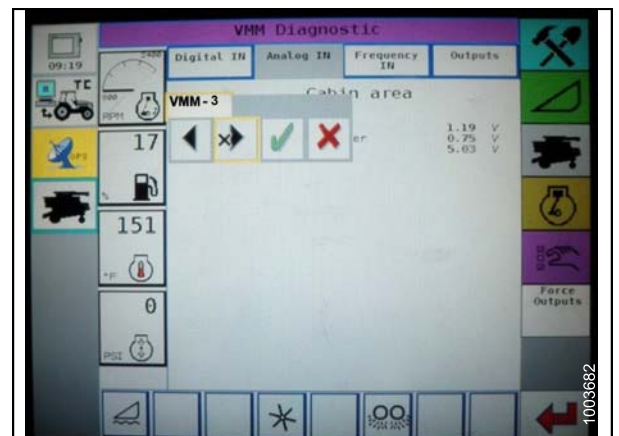


Figure 5.47: Challenger Combine Display

SETTING UP AUTO HEADER HEIGHT CONTROL

- 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 150 mm (6 in.) off the ground.
- Read voltage.
- Adjust the voltage limits (refer to [Adjusting Voltage Limits, page 138](#)) 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 Sensor Voltage Limits, page 136](#)).

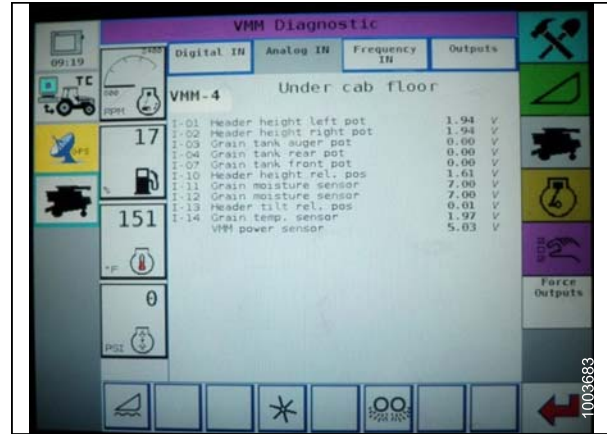


Figure 5.48: Challenger Combine Display

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:

- 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 is an integral part of the system.

Engage the AHHC as follows:

- 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 5.49: Challenger Combine Display

SETTING UP AUTO HEADER HEIGHT CONTROL

Calibrating the Auto Header Height Control (Challenger 6 Series)

NOTE:

For best performance of the auto header height control (AHH) 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.

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

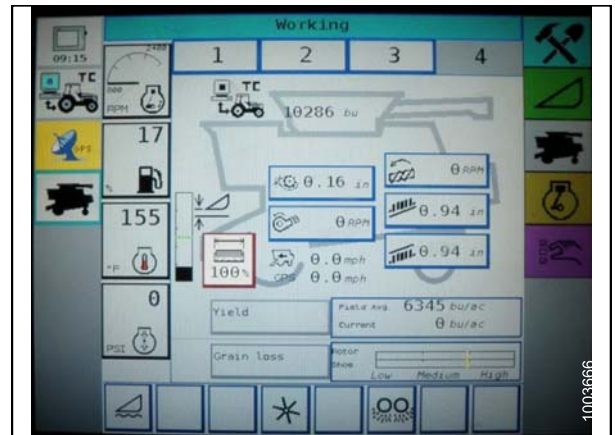


Figure 5.50: Challenger Combine Display

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

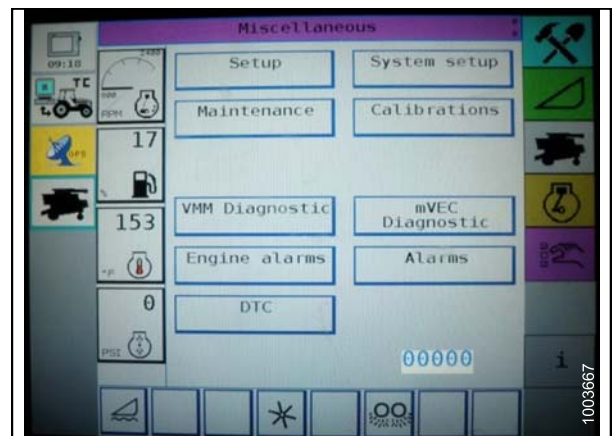


Figure 5.51: Challenger Combine Display

SETTING UP AUTO HEADER HEIGHT CONTROL

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

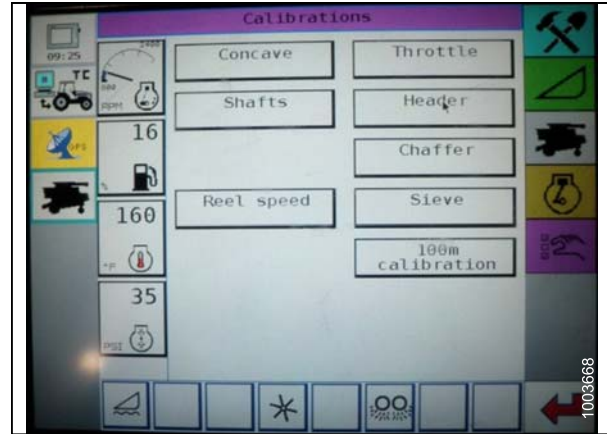


Figure 5.52: Challenger Combine Display

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

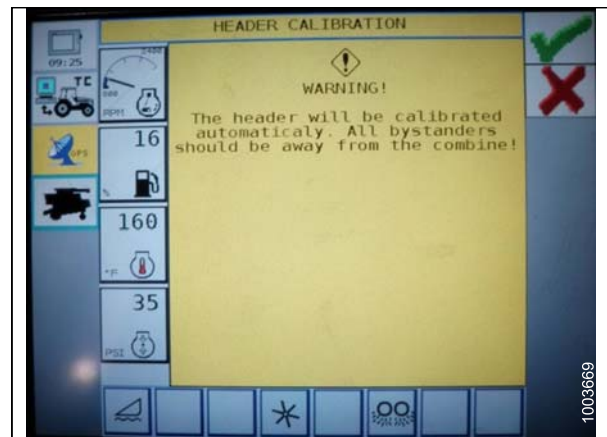


Figure 5.53: Challenger Combine Display

- 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 page. 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.

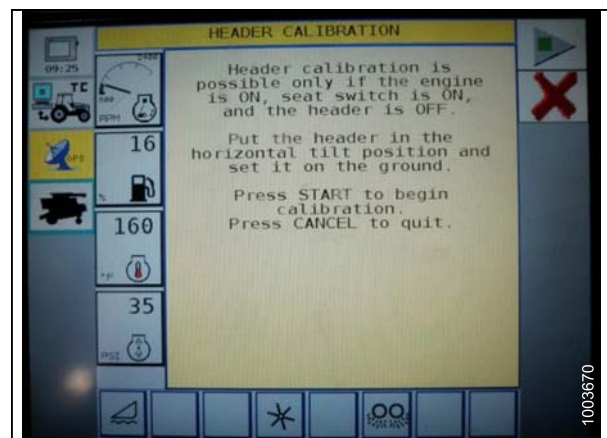


Figure 5.54: Challenger Combine Display

SETTING UP AUTO HEADER HEIGHT CONTROL

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 5.55: 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.

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



Figure 5.56: Challenger Combine Display

SETTING UP AUTO HEADER HEIGHT CONTROL

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

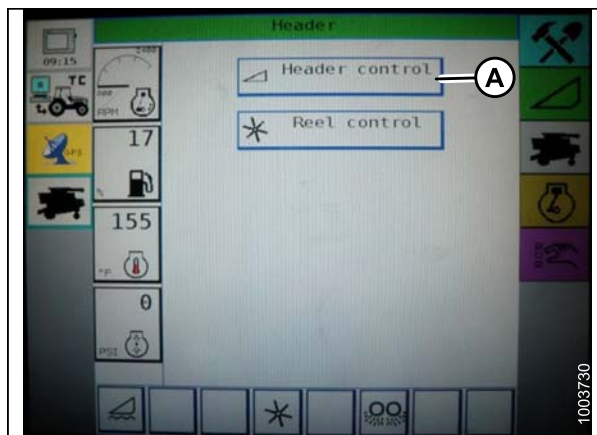


Figure 5.57: Challenger Combine Display

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.

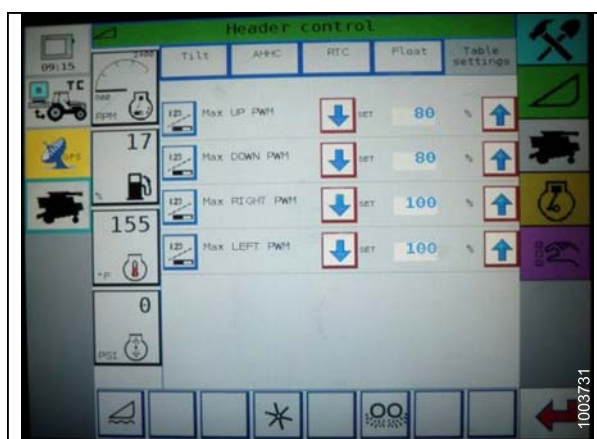


Figure 5.58: Challenger Combine Display

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 (AHC) reacts and raises or lowers the feeder house. When the sensitivity is set to maximum, only small changes in ground height are needed to cause the feeder house to raise or lower. When the sensitivity is set to minimum, large changes in the ground height are needed to cause the feeder house to raise or lower.

NOTE:

Changes may have been made to the combine controls or 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.

SETTING UP AUTO HEADER HEIGHT CONTROL

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.

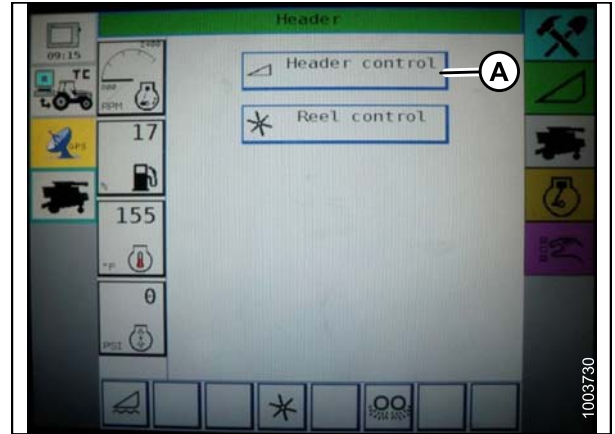


Figure 5.59: Challenger Combine Display

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.

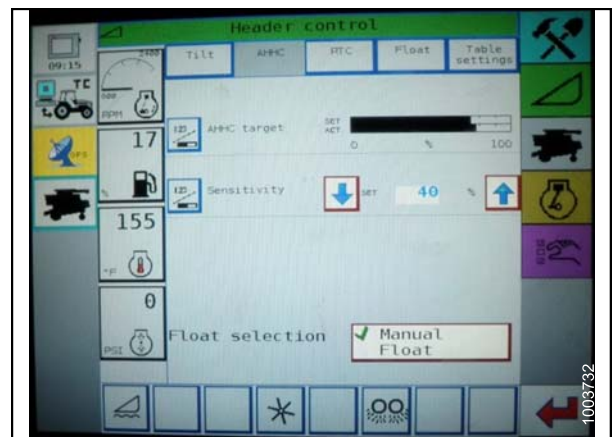


Figure 5.60: Challenger Combine Display

SETTING UP AUTO HEADER HEIGHT CONTROL

5.1.5 Gleaner R62/R72 Combines

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

NOTE:

In addition to the components listed above, the electro hydraulic header lift control valve is 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 auto header height control, follow these steps:

CAUTION

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

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.

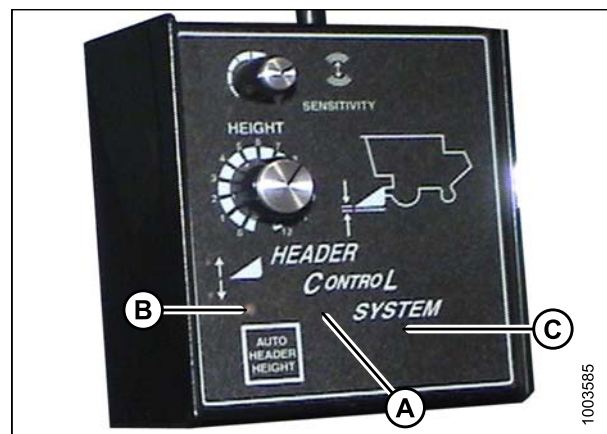


Figure 5.61: Combine Header Control System

SETTING UP AUTO HEADER HEIGHT CONTROL

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.

1. Engage the main threshing clutch (A) and header clutch (B).

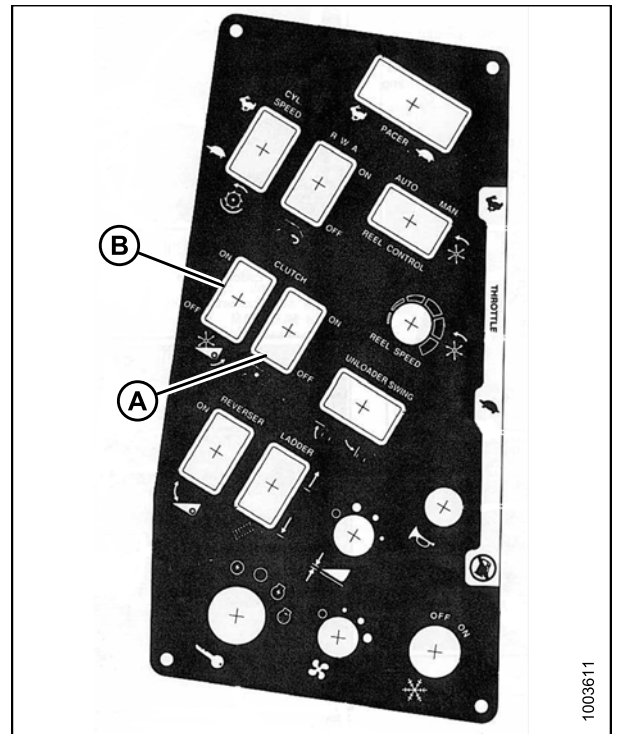


Figure 5.62: Combine Control Console

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

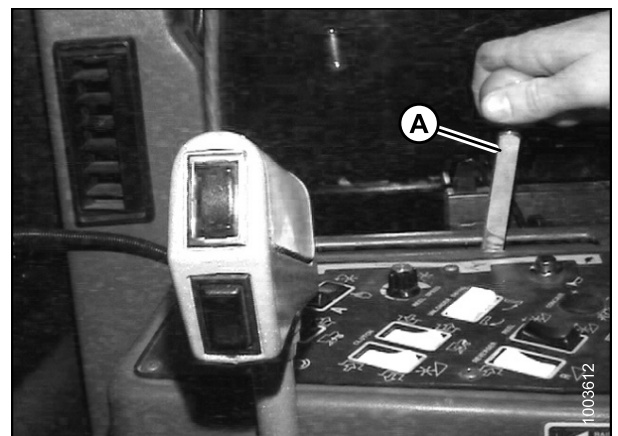


Figure 5.63: Throttle

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.

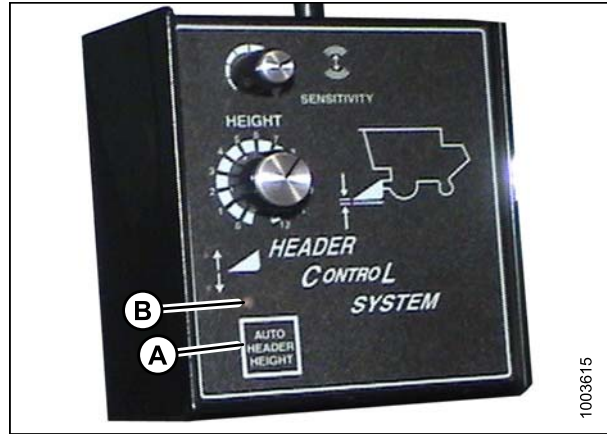


Figure 5.64: Combine Header Control System

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 5.65: 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.

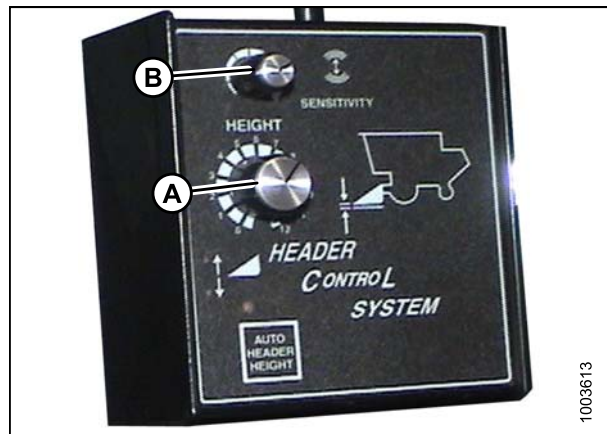


Figure 5.66: Combine Header Control System

SETTING UP AUTO HEADER HEIGHT CONTROL

5.1.6 Gleaner R65/R66/R75/R76 and S Series Combines

Checking Voltage Range from the Combine Cab (Gleaner R65/R66/R75/R76 and 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.

NOTE:

Refer to [5.1.7 Gleaner S9 Series Combines, page 174](#) for information specific to the Gleaner S9 Series.

1. Position the header 150 mm (6 in.) above the ground, and unlock the CA25 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.

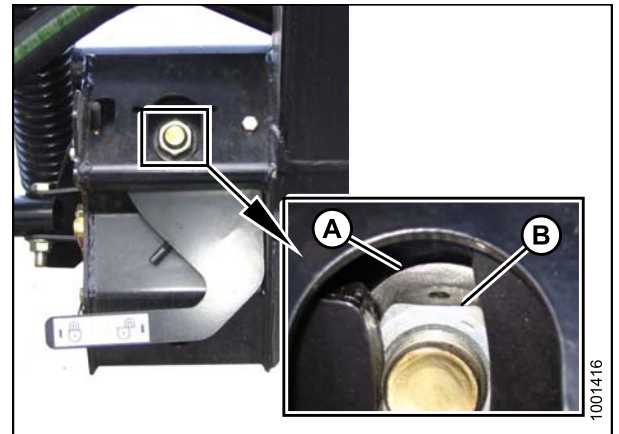


Figure 5.67: Float Lock

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.

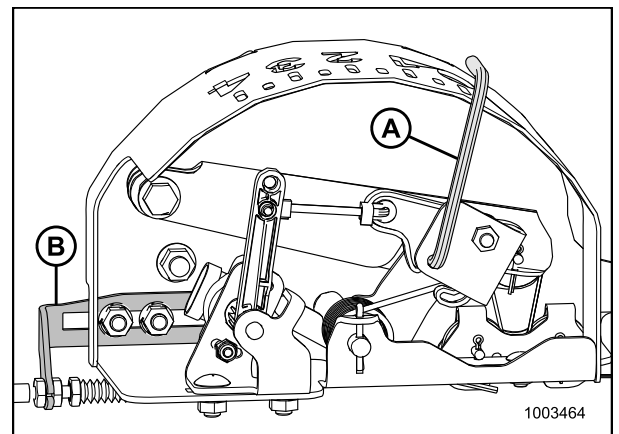


Figure 5.68: Float Indicator Box

SETTING UP AUTO HEADER HEIGHT CONTROL

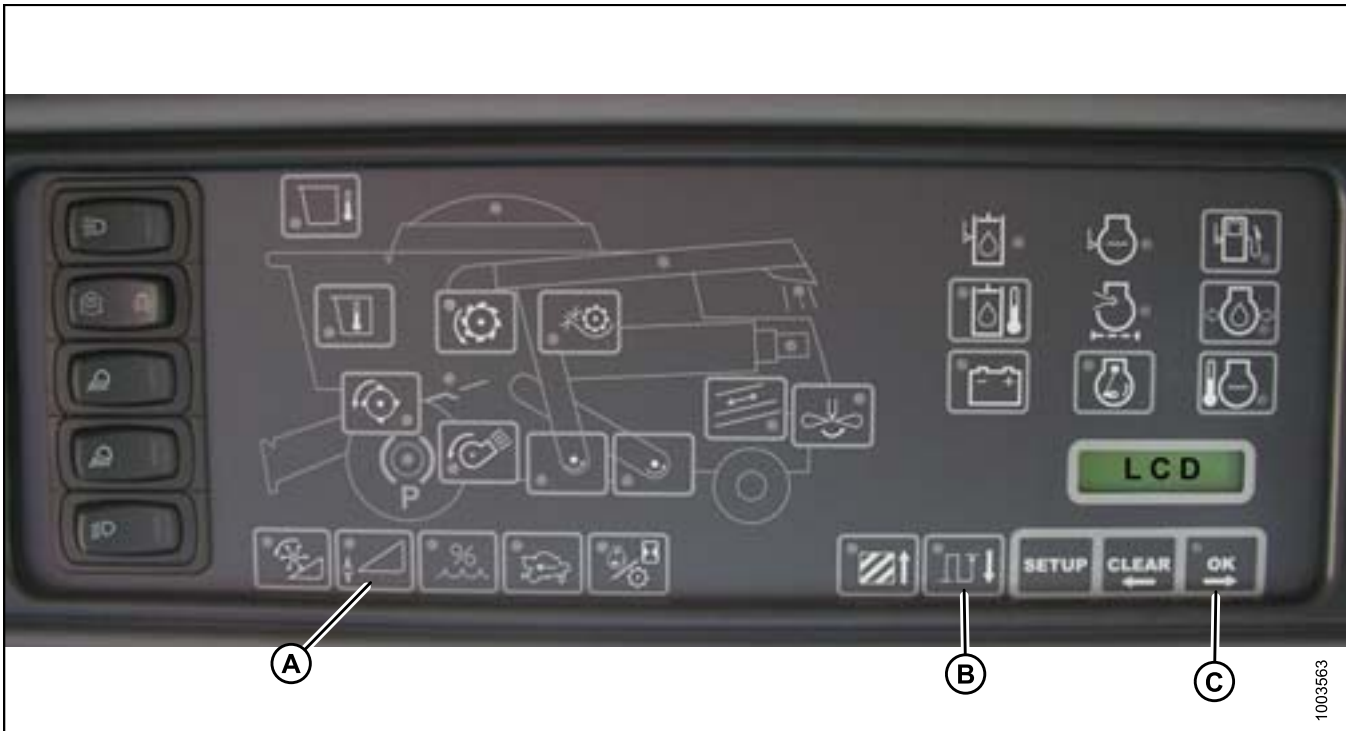


Figure 5.69: Combine Heads-Up Display

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/R66/R75/R76 and S Series)

NOTE:

Refer to [5.1.7 Gleaner S9 Series Combines, page 174](#) for information specific to the Gleaner S9 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:

- Main module (PCB board) and header driver module (PCB board) mounted in card box in fuse pane 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 5.70: Combine Auto Header Height Controls

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.

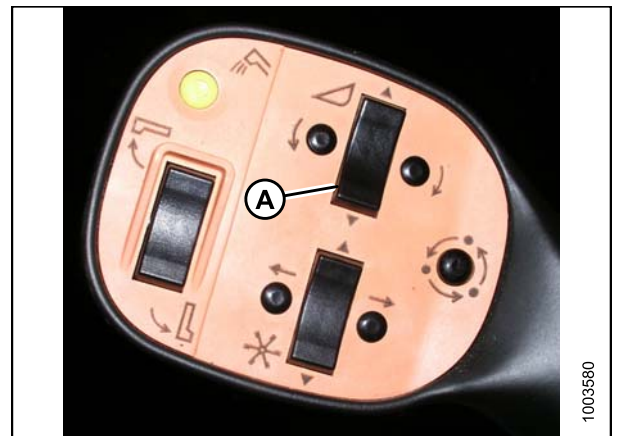


Figure 5.71: Control Handle

Calibrating the Auto Header Height Control (Gleaner R65/R66/R75/R76 and S Series)

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:

Refer to [5.1.7 Gleaner S9 Series Combines, page 174](#) for information specific to the Gleaner S9 Series.

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.



Figure 5.72: Combine Auto Header Height Controls

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.
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.

SETTING UP AUTO HEADER HEIGHT CONTROL

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 off the Accumulator (Gleaner R65/R66/R75/R76 and S Series)

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 5.73: Combine Accumulator ON/OFF Switch

A - Accumulator Lever (Off Position)

Adjusting the Header Raise/Lower Rate (Gleaner R65/R66/R75/R76 and S Series)

NOTE:

Refer to [5.1.7 Gleaner S9 Series Combines, page 174](#) for information specific to the Gleaner S9 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

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 that 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.

If there is too much header movement (for example, hunting) when the header is on the ground, adjust the lower rate to a slower rate of drop: seven or eight seconds.

NOTE:

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

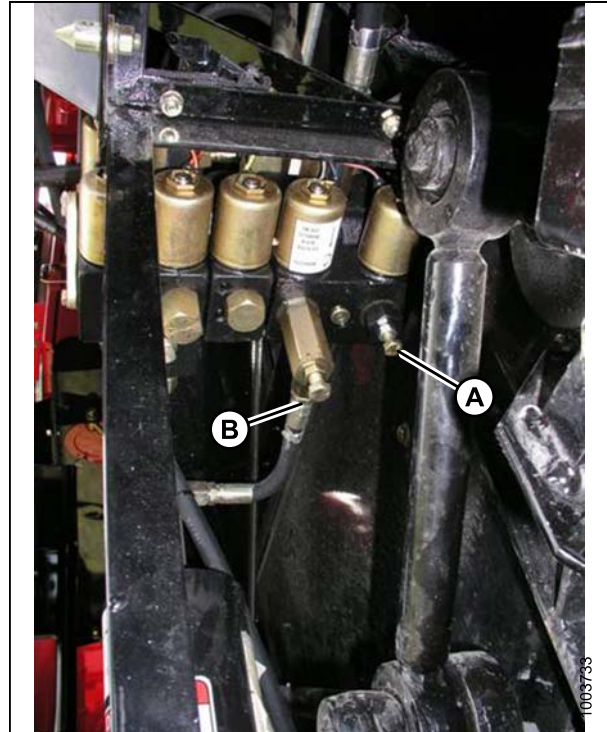


Figure 5.74: Header Raise and Lower Adjustable Restrictors

Adjusting Ground Pressure (Gleaner R65/R66/R75/R76 and S Series)

NOTE:

Refer to [5.1.7 Gleaner S9 Series Combines, page 174](#) for information specific to the Gleaner S9 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 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.

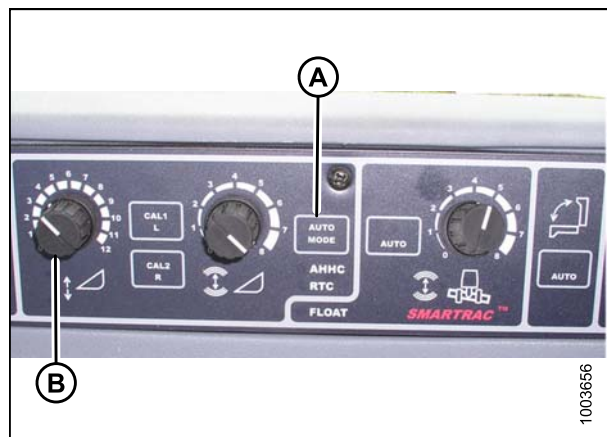


Figure 5.75: Auto Header Height Control Console

SETTING UP AUTO HEADER HEIGHT CONTROL

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).

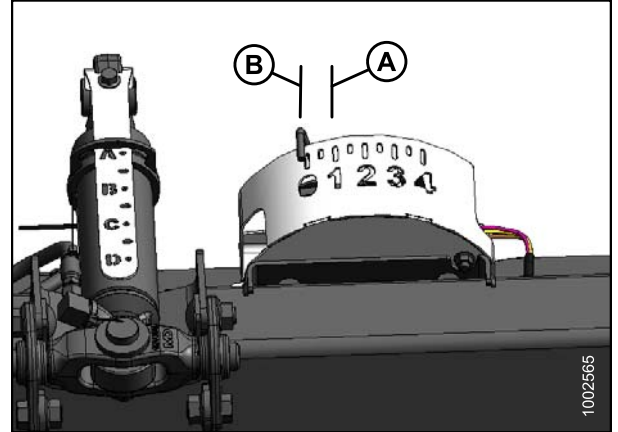


Figure 5.76: Float Indicator Box

Adjusting the Sensitivity of the Auto Header Height Control (Gleaner R65/R66/R75/R76 and S Series)

NOTE:

Refer to [5.1.7 Gleaner S9 Series Combines, page 174](#) for information specific to the Gleaner S9 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.



Figure 5.77: Auto Header Height Control Console

SETTING UP AUTO HEADER HEIGHT CONTROL

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 19 mm (3/4 in.) 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 51 mm (2 in.) before the control module signals the hydraulic control valve to raise or lower the header frame.

The HEADER SENSE LINE input also changes the range of the sensitivity. When connected to a draper, the counterclockwise position (least sensitive) allows for approximately 102 mm (4 in.) of vertical travel before correction is made.

Troubleshooting Alarms and Diagnostic Faults (Gleaner R65/R66/R75/R76 and S Series)

NOTE:

Refer to [5.1.7 Gleaner S9 Series Combines, page 174](#) for information specific to the Gleaner S9 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.

Display type:

Displayed on tachometer (A) as XX or XXX.



Figure 5.78: Tachometer

SETTING UP AUTO HEADER HEIGHT CONTROL

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

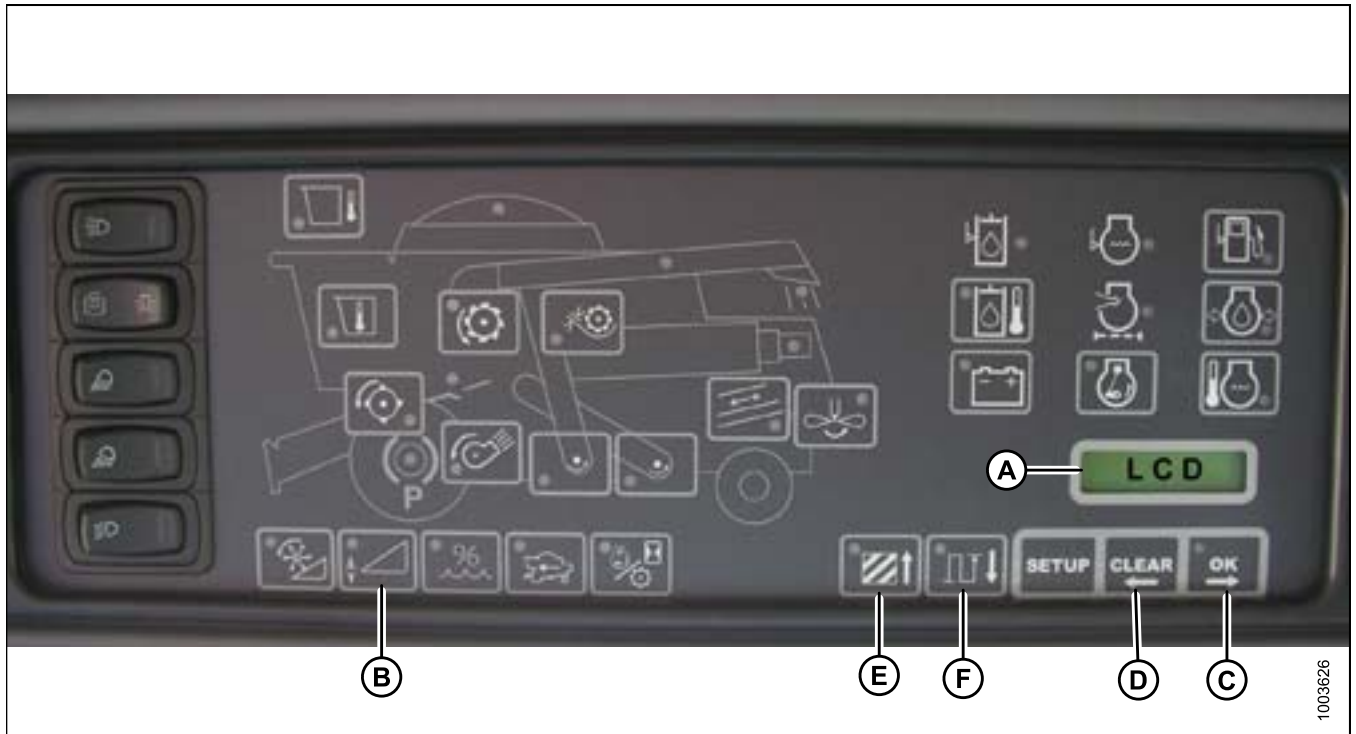


Figure 5.79: Combine Heads-Up Display

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.

When an alarm condition occurs, a 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.

SETTING UP AUTO HEADER HEIGHT CONTROL

Diagnostic fault failures: Refer to Figure 5.79: *Combine Heads-Up Display, page 173*.

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. All the information displayed is read-only.

The OK (C) and CLEAR (D) buttons allow you to scroll through the list of parameters. If there are no active fault codes, the EIP LCD will display NO CODE.

When a parameter is displayed, its label is displayed for three seconds, after which its value is automatically displayed.

Pressing the 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. 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 [5.1.16 Sensor Operation, page 269](#).

5.1.7 Gleaner S9 Series Combines

This section is for Gleaner S9 Series combines only.

Setting up the Header (Gleaner S9)

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 AGCO Tyton terminal is used to set up and manage a MacDon draper header on an Gleaner S9 combine. The terminal has a touch screen so you can simply touch the desired area on the terminal screen to select an item.



Figure 5.80: Gleaner S9

A - Tyton Terminal B - Hydro Handle / Ground Speed Lever
C - Throttle Lever D - Header Control Cluster

SETTING UP AUTO HEADER HEIGHT CONTROL

1. On the top right quadrant of the home page, touch the COMBINE icon (A) on the top right. The COMBINE MAIN MENU opens.



Figure 5.81: Combine Icon on Home Page

2. On the COMBINE MAIN MENU, touch HEADER SETTINGS (A). The HEADER SETTINGS page opens.

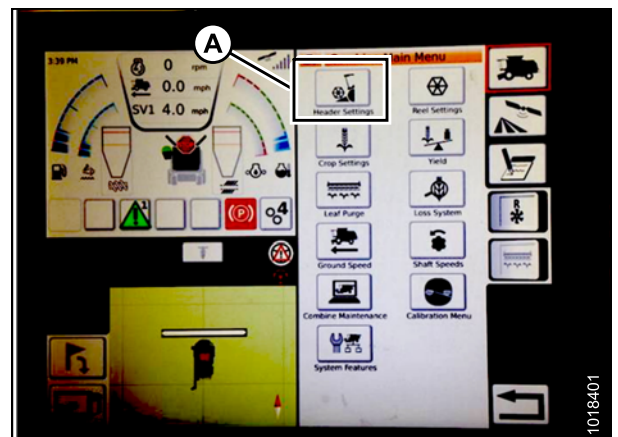


Figure 5.82: Header Settings in Combine Main Menu

SETTING UP AUTO HEADER HEIGHT CONTROL

3. Touch the HEADER CONFIGURATION field (A). A page showing pre-defined headers opens.
 - If your MacDon header is already set up, it appears on the header list. Touch the MacDon header title (B) to highlight the selection in blue, and then touch the green check mark (E) to continue.
 - If only the default header (D) is shown, touch the ADD/KEYBOARD button (C), and use the on-screen keyboard to enter the MacDon header information. When complete, touch one of the areas at the bottom of the page and you will be returned to the HEADER SETTINGS page.
 - The green check mark saves the settings
 - The garbage can icon deletes the highlighted header from the list
 - The red X cancels the change(s)

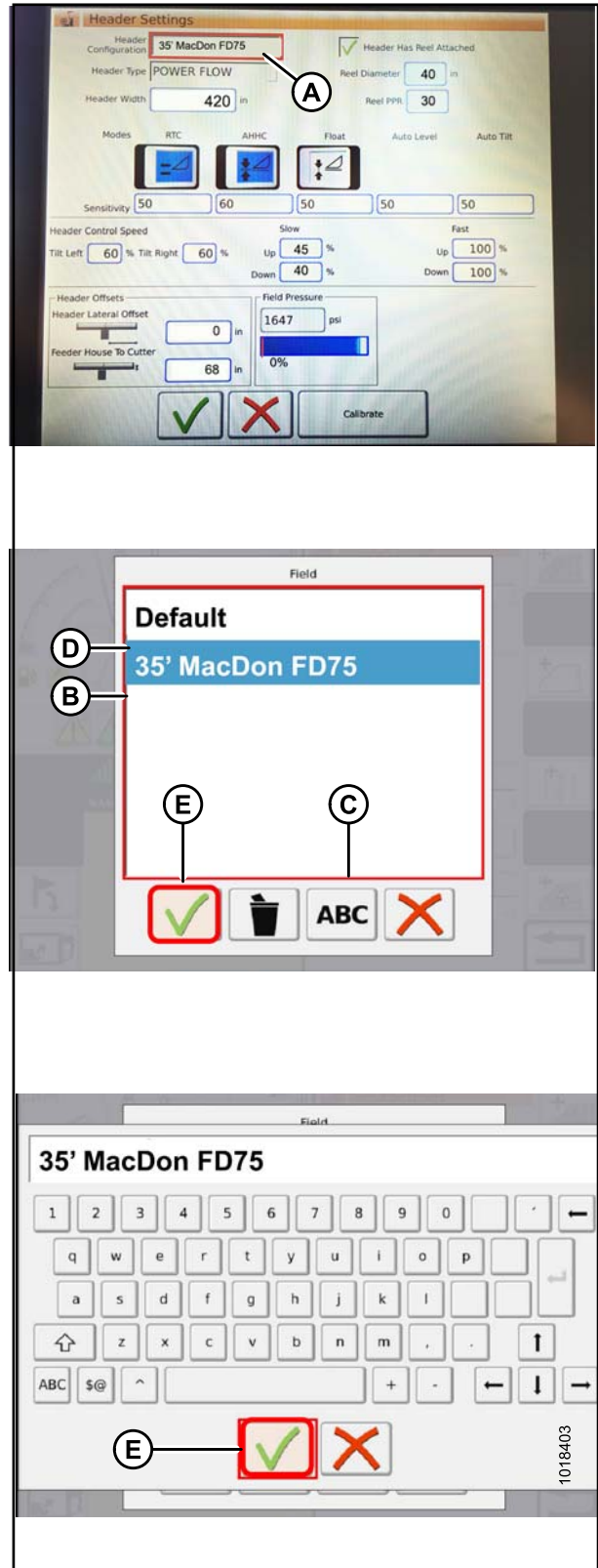


Figure 5.83: Header Configuration Menu on Header Settings Page

SETTING UP AUTO HEADER HEIGHT CONTROL

- To specify the type of header installed on the machine, touch the HEADER TYPE field (A).

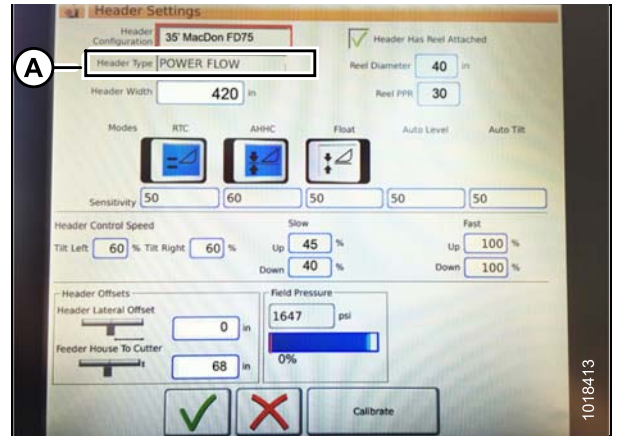


Figure 5.84: Header Settings

- A list of pre-defined header types appears.
 - For MacDon D65 and FD75 FlexDraper headers, touch POWER FLOW (A)
 - Touch the green check mark (B) to save the selection and continue.

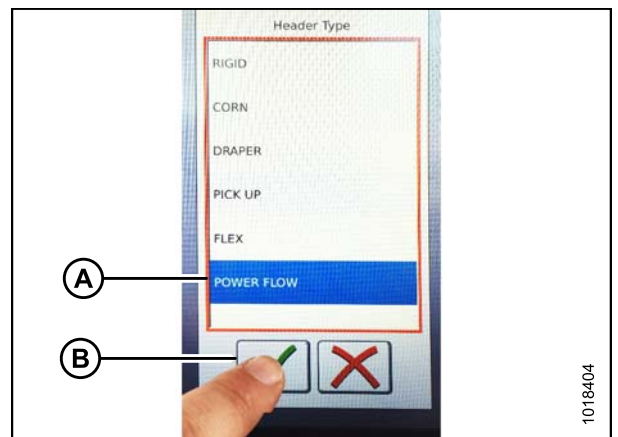


Figure 5.85: Header Type

- Make sure that the HEADER HAS REEL ATTACHED green check box (A) is checked.

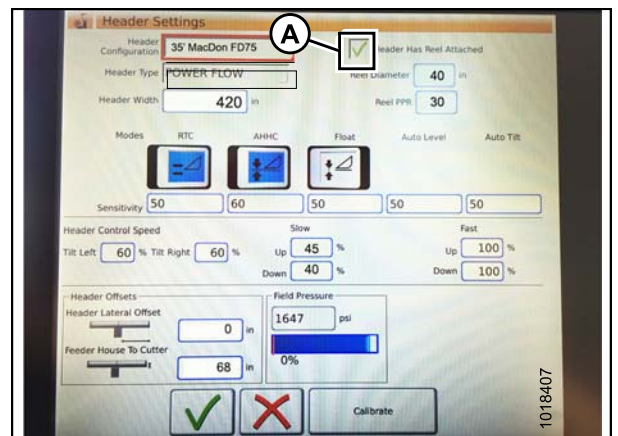


Figure 5.86: Header Settings

SETTING UP AUTO HEADER HEIGHT CONTROL

7. Touch the REEL DIAMETER field (A) and a numeric keypad displays. Enter **40** as the MacDon Reel Diameter.
8. Touch the REEL PPR (Speed Pulses Per Revolution) field (B) and enter **30** as the PPR value for your MacDon header. (PPR is the number of teeth on the reel speed sprocket. MacDon headers have 30 teeth on the sensor pickup reel).

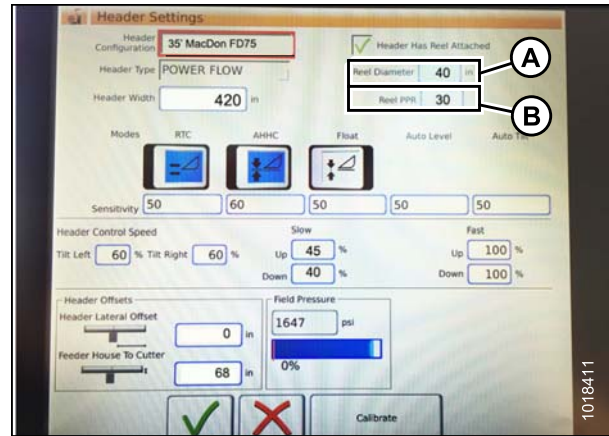


Figure 5.87: Header Settings

9. Touch the green check mark (B) at the bottom of the numeric keypad (A) when complete, or the red X to cancel.

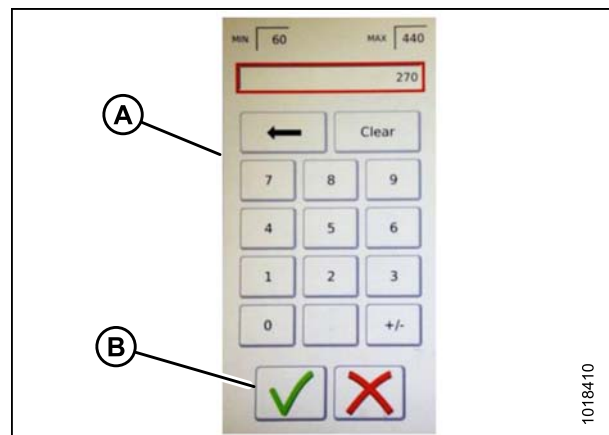


Figure 5.88: Numeric Keypad

10. When entries are complete, touch the green check mark (A) at the bottom of the HEADER SETTINGS page.

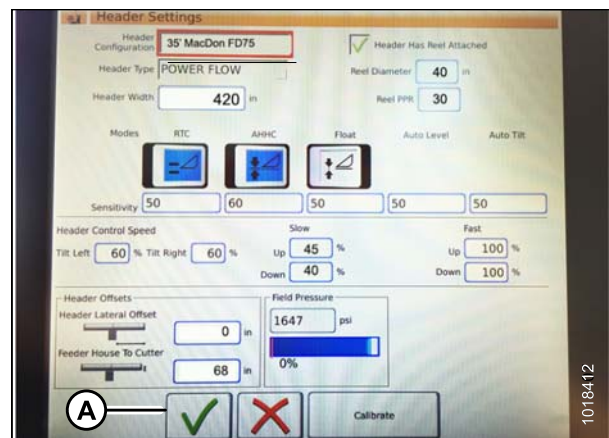


Figure 5.89: Header Settings Page

Setting up Reel Settings (Gleaner S9)

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.

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. From the COMBINE MAIN MENU, touch REEL SETTINGS (A) to open the REEL SETTINGS page.



Figure 5.90: Reel Settings on Combine Main Menu

2. To set minimum reel speed, touch the SPEED MINIMUM FIELD (B). The on-screen keyboard displays. Enter the desired value. Touch the green check mark to accept the new value, or the red X to cancel. The reel speed (in mph) and rpm are shown.

NOTE:

At the bottom of the REEL SETTINGS page, the reel diameter and reel pulses per revolution are displayed. These values have already been set in the HEADER SETTINGS page.

3. Reel speed is calibrated in the REEL SETTINGS page by touching the CALIBRATE button (A) in the top right of the page.
4. The CALIBRATION WIZARD opens and displays a hazard message warning page.

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.

5. Make sure all the conditions listed on the CALIBRATION WIZARD warning page are met. Press the green check mark to accept and start reel calibration. Pressing the red X will cancel the calibration procedure.

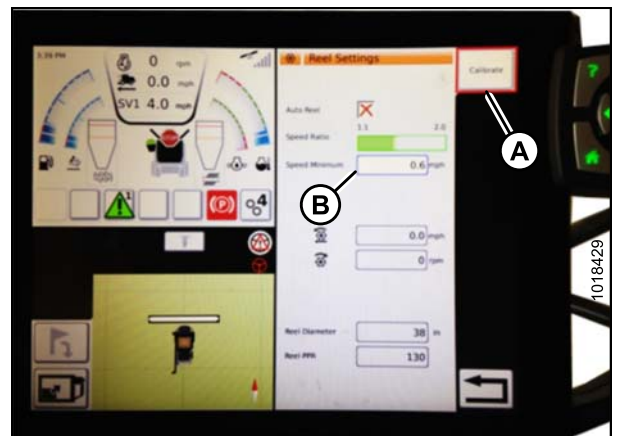


Figure 5.91: Reel Settings Calibration



Figure 5.92: Calibration Wizard

SETTING UP AUTO HEADER HEIGHT CONTROL

- An informational message appears in the CALIBRATION WIZARD that reel calibration has started. The reel will begin turning slowly and increase to high speed. A progress bar is provided. If necessary, touch the red X to cancel. Otherwise, wait for the message that reel calibration has completed successfully. Touch the green check mark to save the calibrated settings.

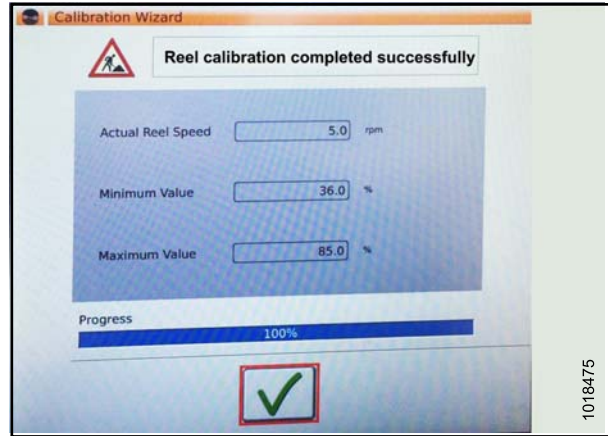


Figure 5.93: Calibration Progress

Setting up Automatic Header Controls (Gleaner S9 Series)

Automatic header functions are configured on the HEADER SETTINGS page.

NOTE:

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

SETTING UP AUTO HEADER HEIGHT CONTROL

1. **Automatic Control Functions:** There are toggle (OFF/ON) switches on the HEADER SETTINGS page for the automatic control functions. For MacDon headers, ensure the following two functions are enabled as shown:
 - RTC (return to cut) (A)
 - AHHC (automatic header height control) (B)

All other switches are disabled (and are not highlighted).

2. The **Sensitivity** setting (C) controls how responsive a control (RTC or AHHC) is to a given change in sensor feedback. The setting fields are located directly below the toggle switches. To enter a new sensitivity setting, touch the setting field below the specific toggle switch, and enter the new value in the on-screen keyboard.

- If the combine does not change the feeder position quickly enough when in Auto Mode, increase sensitivity.
- If the combine hunts for a position in Auto Mode, decrease sensitivity.

NOTE:

Recommended sensitivity starting points for MacDon headers are:

- **50** for RTC (A)
- **60** for AHHC (B)

3. **Header Speed:** The speed at which the header moves is adjusted in the HEADER CONTROL SPEED area (A) of the HEADER SETTINGS page. The following speeds can be adjusted:

- Tilt left and right is the lateral tilt of the combine faceplate.
- Header up and down (slow and fast speeds) is a two-stage button with slow speed on the first detent and fast on the second.

NOTE:

Recommended header control speed starting points for MacDon headers are:

- Slow: 45 up / 40 down
- Fast: 100 up / 100 down

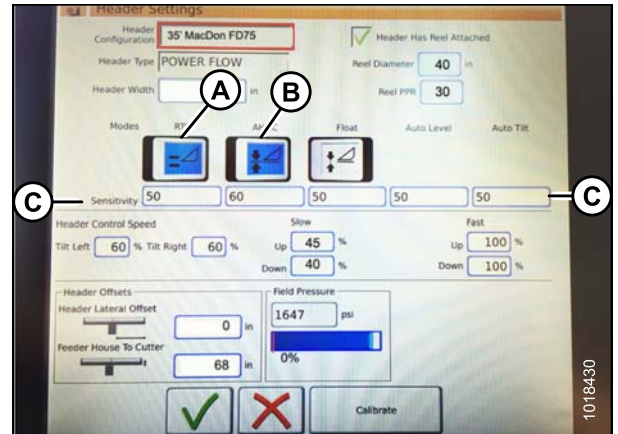


Figure 5.94: Automatic Controls and Sensitivity Settings

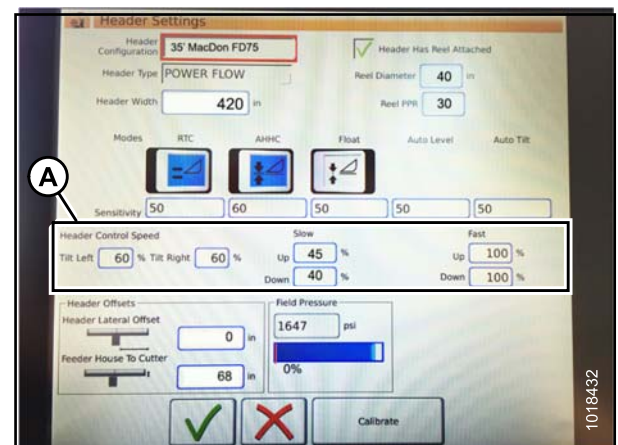


Figure 5.95: Header Speed Control Settings

SETTING UP AUTO HEADER HEIGHT CONTROL

4. **Header Offsets (A):** Offset distances are important for yield mapping. There are two dimensions that can be adjusted on the HEADER SETTINGS page:

- Header Lateral Offset: the distance between the centerline of the header and the centerline of the machine. This should be set at **0** for a MacDon header.
- Feeder House to Cutter: the distance from the machine interface to the cutterbar. This should be set at **68** for a MacDon header.

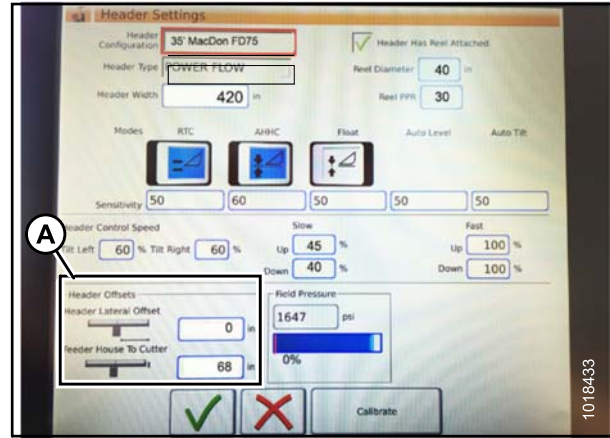


Figure 5.96: Header Offset Settings

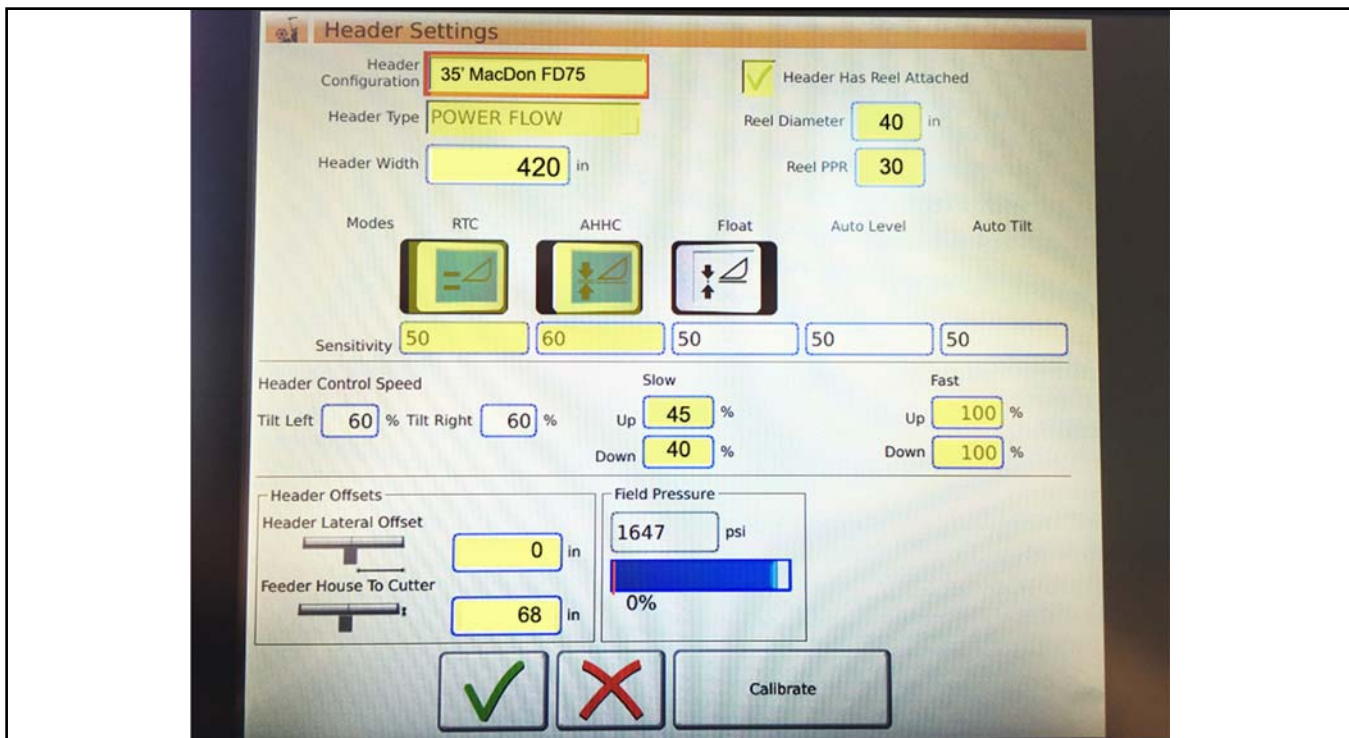


Figure 5.97: Header Settings Inputs for MacDon Headers

Calibrating the Header (Gleaner S9 Series)

The auto header control functions are configured on the HEADER SETTINGS page.

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.

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. On the COMBINE MAIN MENU, touch HEADER SETTINGS (A).

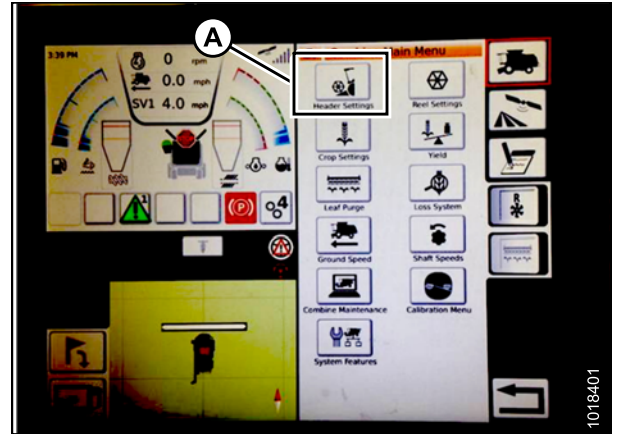


Figure 5.98: Combine Main Menu

2. Touch CALIBRATE (A) at the bottom right of the page. The HEADER CALIBRATION page displays.

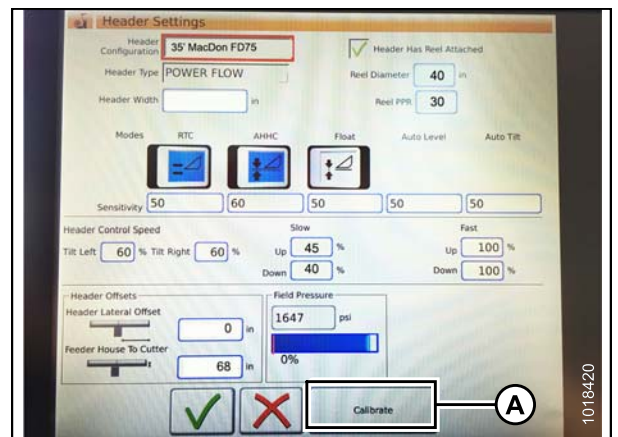


Figure 5.99: Calibration

The right side of the page shows calibration information (A). Results are shown for a variety of sensors (B) at the top of the list:

- Left and right header sensor (v) (values will be the same with MacDon headers)
- Header height sensor (mA)
- Tilt position sensor (mA)

The modes applicable to MacDon headers are shown with check marks below line (C):

- Return to cut
- Automatic header height control

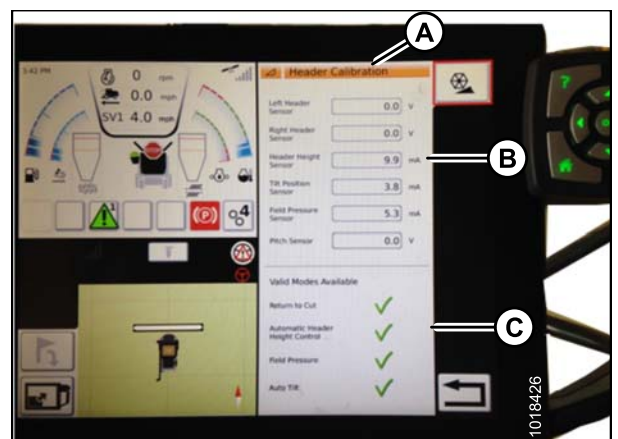


Figure 5.100: Header Calibration Page

SETTING UP AUTO HEADER HEIGHT CONTROL

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.

3. On the ground speed lever (GSL), touch the HEADER DOWN button (A). Sensor values start changing on the HEADER CALIBRATION page as the header lowers.

NOTE:

The header needs to be lowered all the way, and then raised off the ground. The range should be between **0.5 and 4.5v**. If the value is not in that range, the sensor needs to be adjusted.

4. When the sensor values are stable, touch the CALIBRATE icon (A).

5. The hazard message warning page for HEADER CALIBRATION appears. Before proceeding with calibration by touching the green check mark, make sure that all conditions on the page are met.
6. Touch the green check mark at the bottom of the page to start the CALIBRATION WIZARD.



Figure 5.101: Header Down Switch

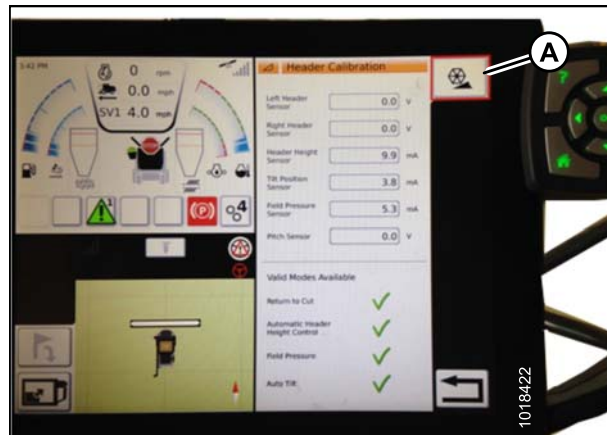


Figure 5.102: Header Calibration

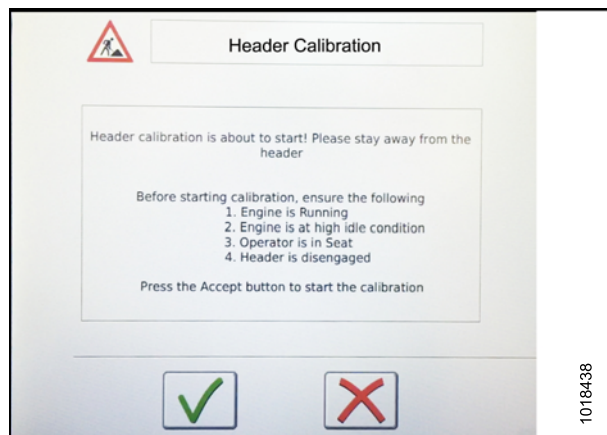


Figure 5.103: Header Calibration Warning

SETTING UP AUTO HEADER HEIGHT CONTROL

A progress bar is provided and the wizard can be stopped at any time by touching the red X. The header moves automatically and erratically during this process.

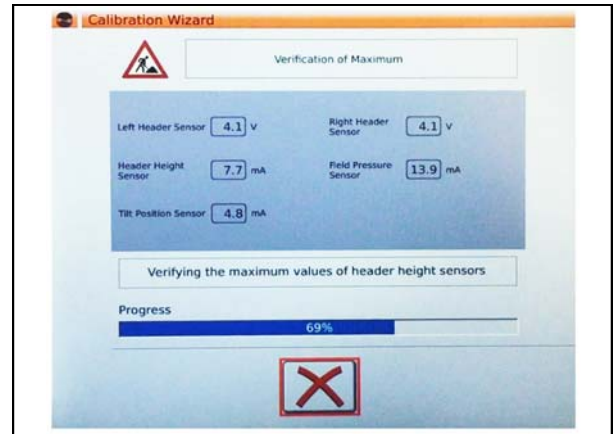


Figure 5.104: Calibration In Progress

- When the calibration is complete, a message displays, and summary information (A) is shown. Green check marks confirm the functions have been calibrated (B). Touch the bottom green check mark (C) to save.



Figure 5.105: Completed Calibration Page

TIP:

On the COMBINE MAIN MENU page, there is a CALIBRATION icon (A) that when touched opens a general CALIBRATION menu where you can directly choose from a variety of calibrations including header and reel calibration.



Figure 5.106: Direct Calibration Menu

Operating with a Gleaner S9 Combine

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

These are the primary controls to be used to engage and use the auto header height control (AHHC) function.



Figure 5.107: Gleaner S9

A - Tyton Terminal B - Hydro Handle / Ground Speed Lever
C - Throttle Lever D - Header Control Cluster

1. With the header running, set Lateral Tilt to MANUAL by pressing switch (A) upward to the MAN position.
2. Engage the AHHC by pressing the switch (B) upward to the I position

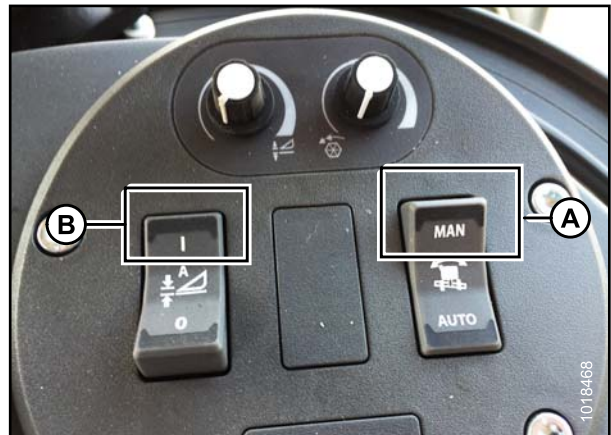


Figure 5.108: Header Control Cluster

3. Press the AHHC control switch (A) on the ground speed lever (GSL) to engage the AHHC. The header positions itself in the current setpoint position.



Figure 5.109: AHHC on GSL

SETTING UP AUTO HEADER HEIGHT CONTROL

4. Use the HEADER HEIGHT SETPOINT control dial (A) as necessary to fine-tune the setpoint position.



Figure 5.110: Header Control Cluster

Header In-Field Settings

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. To quickly view header group settings, touch the HEADER icon (A) that is second from the bottom on the right side of the Tryton Terminal home page.
2. The display area shows:
 - (B) – The left header height indicator is the current position of the header.
 - (C) – The red line on the current header height position indicator (B) shows the setpoint cut-off position.
 - (D) – Adjust the setpoint cut-off position by touching the HEADER symbol and using the scroll wheel on the right side of the Tyton terminal. As the scroll wheel is moved, the position of the cut-off will move.
 - (E) – The right indicator is the set cut height for the AHHC. Fine-tune the cutting height with the header height setpoint control dial on the header control cluster. As the control is adjusted, the cut height indicator will move.
 - (F) – The header working width.
 - (G) – Header pitch.
3. Touching a field opens the on-screen keyboard so that values can be adjusted. Enter the new value and touch the green check mark when complete.

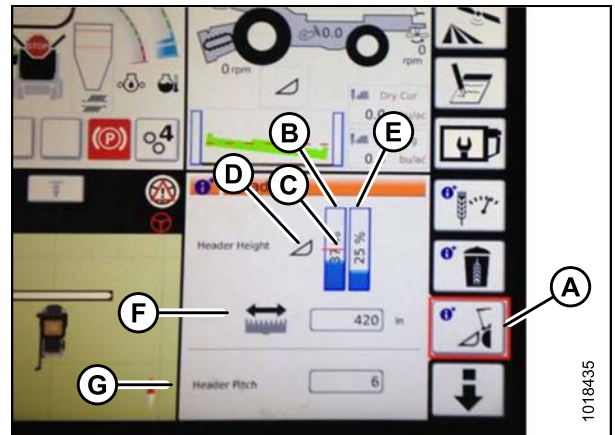


Figure 5.111: Header Groups

SETTING UP AUTO HEADER HEIGHT CONTROL

The scroll wheel (A) is on the right side of the Tyton terminal.



Figure 5.112: Scroll Wheel for Adjustments

Header height setpoint control dial (A) is on the header control cluster.

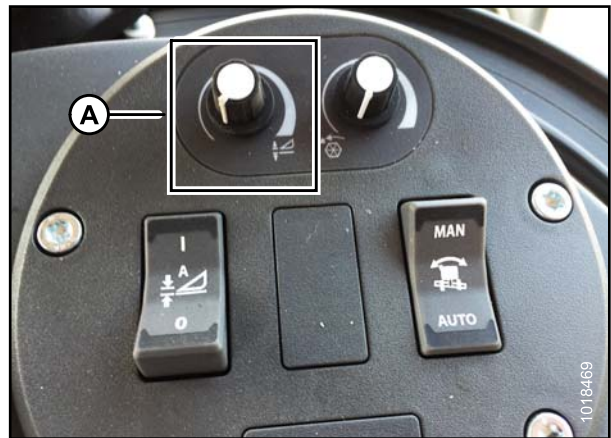


Figure 5.113: Header Control Cluster

5.1.8 John Deere 50 Series Combines

Output Voltage Range

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

Combine	Low Voltage Limit	High Voltage Limit	Minimum Range
John Deere 50 Series	0.5 V	4.5 V	3.0 V

Check the sensor's output voltage range from the combine cab or manually at the float indicator box according to instructions that follow.

Manually Checking the Output Voltage Range

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

SETTING UP AUTO HEADER HEIGHT CONTROL

1. Position the header 150 mm (6 in.) above the ground, and rest it on the safety props. Unlock the adapter float.

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 auto header height control (AHHC) system.

2. The pointer (A) on the float indicator box should point at **0**. If it does not, adjust the cable take-up bracket (B) until the pointer (A) on the float indicator box points to **0**.

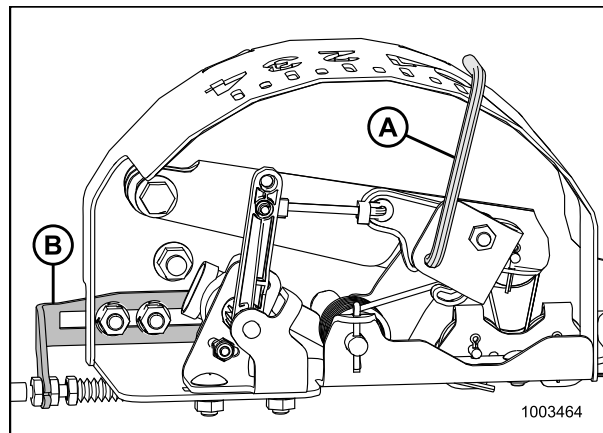


Figure 5.114: Float Indicator Box with Auto Header Height Sensor

3. Use a voltmeter (A) to measure the voltage between the ground and signal wires at the AHHC sensor in the float indicator box.

NOTE:

The voltage reading should be below **4.5 V**.

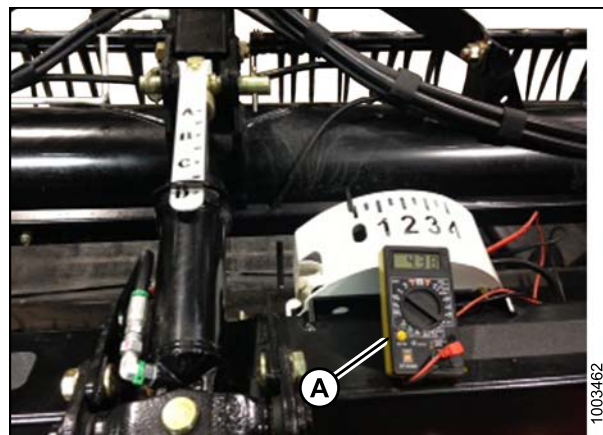


Figure 5.115: Checking Voltage with Voltmeter

4. Fully lower the combine feeder house, and float the header up off the safety props (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.

5. Use a voltmeter (A) to 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—**0.5 V**.

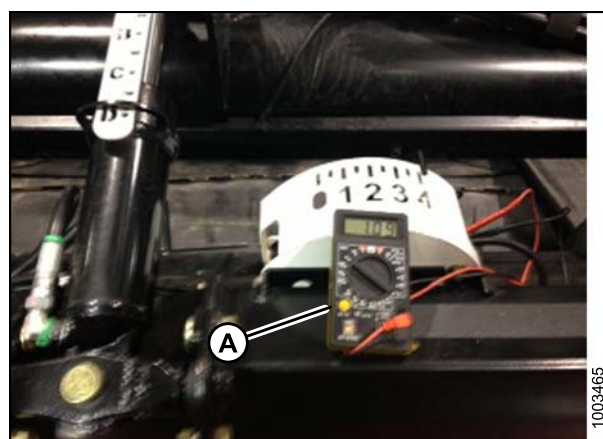


Figure 5.116: Checking Voltage with Voltmeter

6. If the sensor voltage is not within the low and high limits, or if the range between the low and high limits is insufficient (on this combine, it should be **at least 3.0 V**), make adjustments according to [Adjusting Voltage Limits, page 192](#).

SETTING UP AUTO HEADER HEIGHT CONTROL

Checking Voltage Range from the Combine Cab

Before checking the voltage range, follow these steps:

1. Position the header 150 mm (6 in.) 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. The pointer (A) on the float indicator box should point at **0**. If it does not point at zero, adjust the cable take-up bracket (B) until it does.

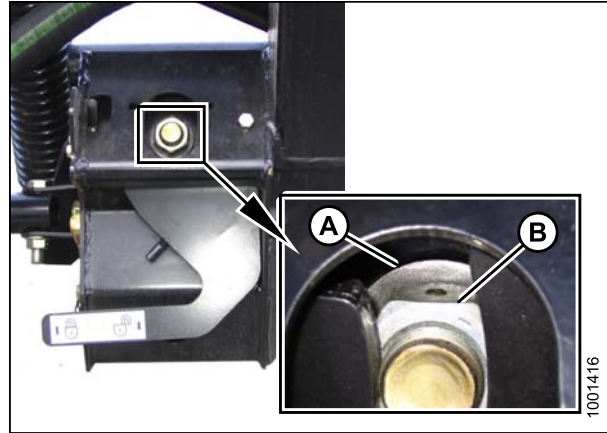


Figure 5.117: Float Lock

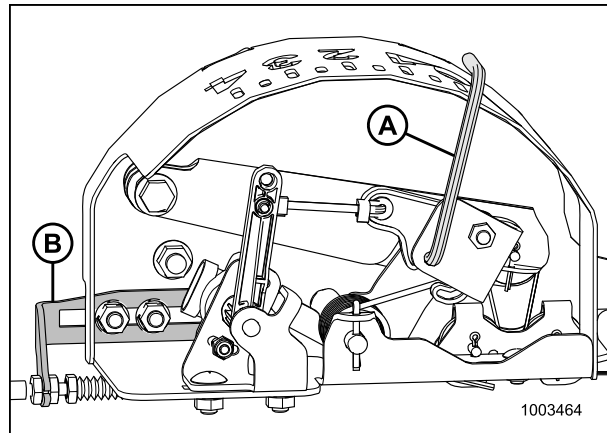


Figure 5.118: Float Indicator Box with Auto Header Height Sensor

SETTING UP AUTO HEADER HEIGHT CONTROL

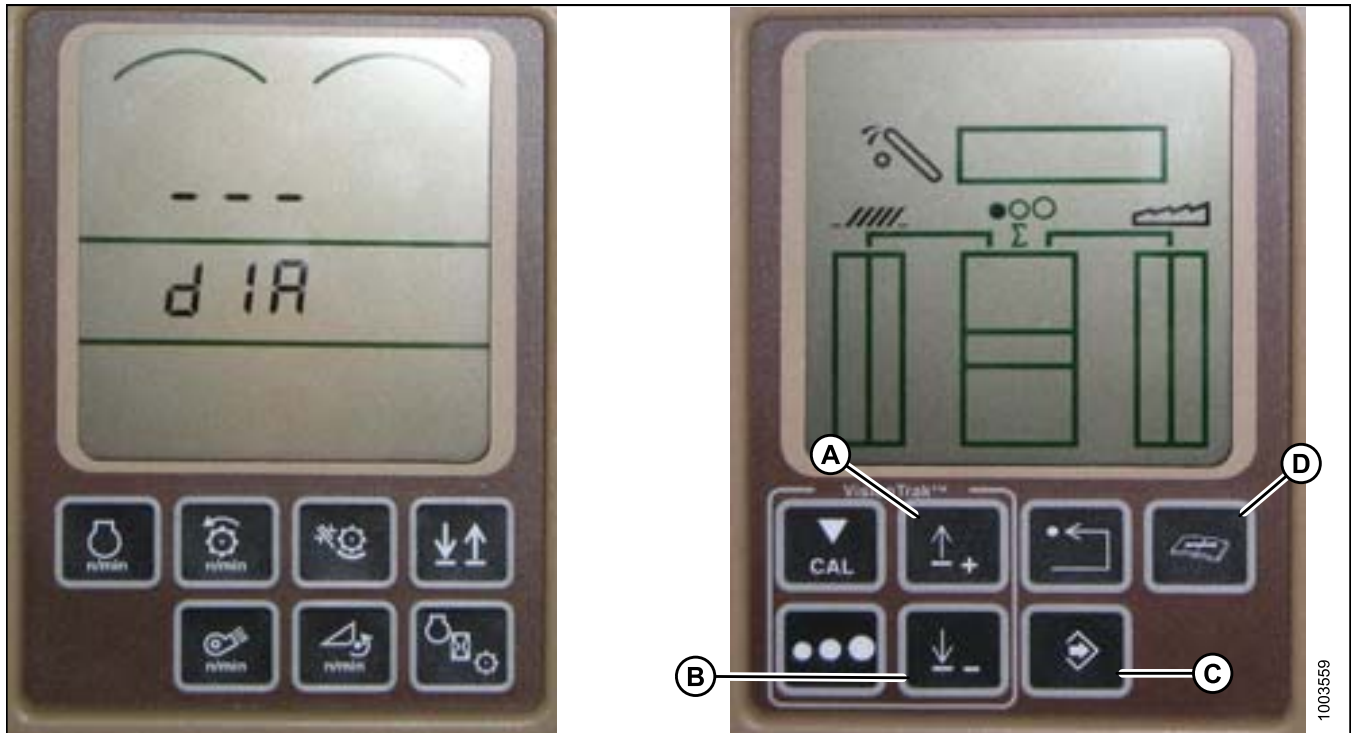


Figure 5.119: John Deere Combine Display

4. Press the DIAGNOSTIC button (D) on the monitor—**d1A** appears on the monitor.
5. Press the UP button (A) until **EO1** appears on the monitor—this is the header adjustment.
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. The adapter should be completely 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.

10. Check the sensor reading on the monitor. It should be at or above **0.5 V**.
11. Raise the header so it is just off the ground, and recheck the sensor reading.
12. Raise the header so it is just off the ground and check the sensor reading again. It should be below **4.5 V**.
13. If the sensor voltage is not within the low and high limits (**0.5–4.5 V**), or if the range between the low and high limits is less than **3.0 V**, you need to make adjustments according to [Adjusting Voltage Limits, page 192](#).

SETTING UP AUTO HEADER HEIGHT CONTROL

Adjusting Voltage Limits

1. To adjust the high voltage limit:
 - a. Extend guard angle fully. Header angle indicator should be at **D**.
 - b. Position header 150–254 mm (6–10 in.) above the ground. Float indicator should be at **0**.
 - c. Loosen sensor mounting bolts (A).
 - d. Slide sensor support (B) to the right to increase the high voltage limit, or to the left to decrease it.
 - e. Tighten sensor mounting bolts (A).
2. To adjust the low voltage limit:
 - a. Extend guard angle fully. Header angle indicator should be at **D**.
 - b. Fully lower header on the ground. Float indicator should be at **4**.
 - c. Loosen mounting bolts (C).
 - d. Rotate the potentiometer (D) clockwise to increase the low voltage limit, or counterclockwise to decrease it.
 - e. Tighten sensor mounting bolts (C).
3. If the readings are in the proper range, the auto header height control can be calibrated.

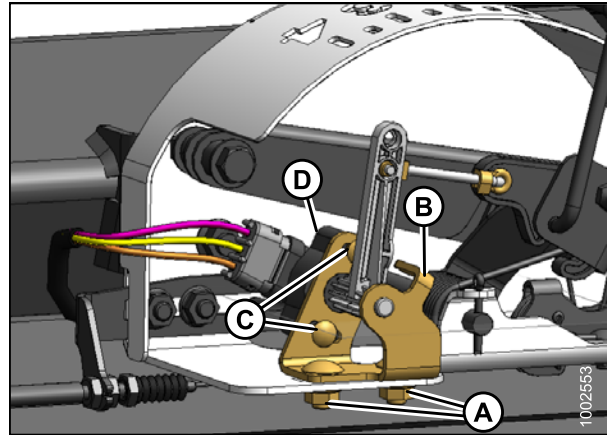


Figure 5.120: AHHC Sensor Assembly

A - Sensor Support Mounting Bolts B - Sensor Support
C - Sensor Mounting Bolts D - Potentiometer

Calibrating Auto Header Height

The calibration procedure determines the limits of the auto header height sensor for John Deere 50 series combines. Calibrate the auto header height system after initial header installation and after replacement or adjustment of any component of the auto header height system. If the system does not function properly, repeat calibration before proceeding to other troubleshooting steps.

NOTE:

For best performance of the auto header height system, perform these procedures with the center-link adjusted as long as possible. When setup and calibration is complete, adjust the center-link back to desired header angle. See header angle topic in the operations section of the header operator's manual.

1. Rest header on down stops, and unlock adapter float.
2. Put wings in locked position.
3. Start the combine.

SETTING UP AUTO HEADER HEIGHT CONTROL

4. Press the DIAGNOSTIC button (D) on the monitor—**dIA** appears on the monitor.

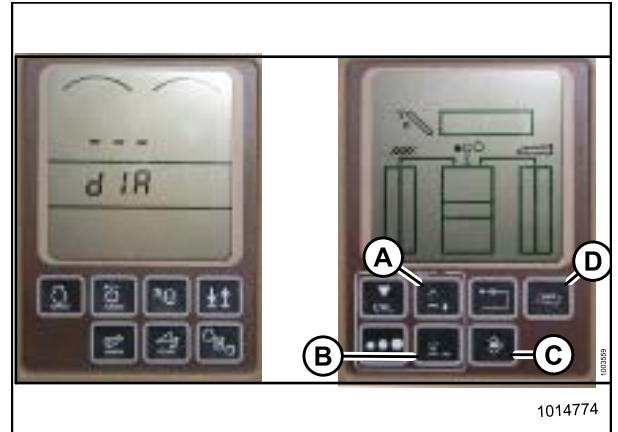


Figure 5.121: Diagnostic Button on Monitor

5. Press the CAL button (B)—**dIA-CAL** appears on the monitor.

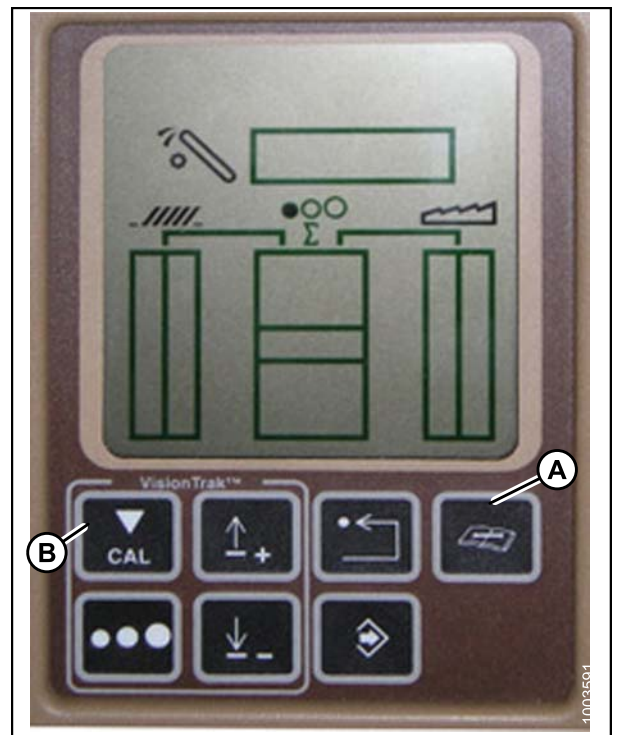


Figure 5.122: VisionTrak Monitor

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.

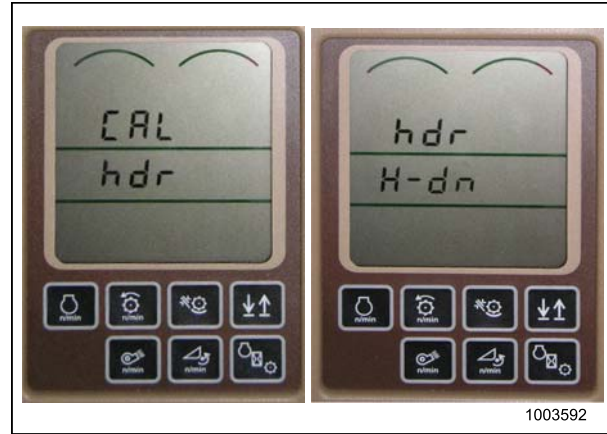


Figure 5.123: Triple Display Tachometer

- Fully lower feeder house to the ground.

NOTE:

Hold the HEADER DOWN switch for 5–8 seconds to ensure the feeder house is fully lowered.

- Press the CAL button (A) to save the lower 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 on the screen, the sensor is not in the correct working range. Go back to [Output Voltage Range, page 188](#) to check and adjust the range.

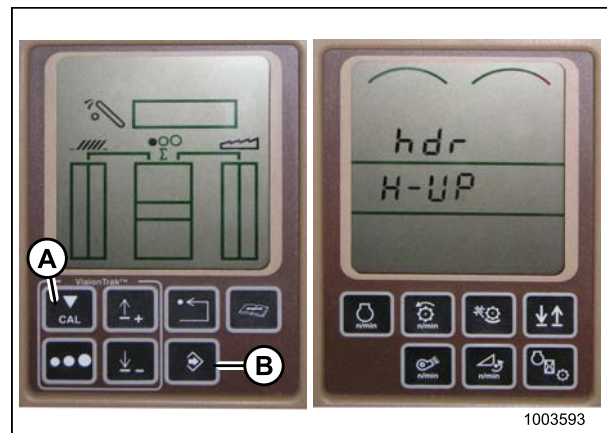


Figure 5.124: Combine Display

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

Setting the Sensitivity of the Auto Header Height Control

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.

To increase the sensitivity of the auto header height, follow these steps:

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.

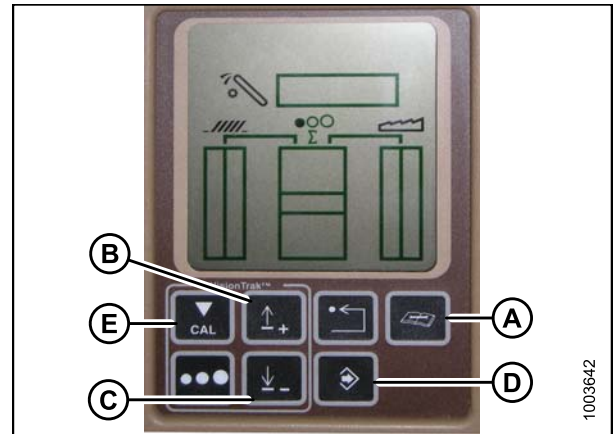


Figure 5.125: John Deere Combine Display

Adjusting the Threshold for the Drop Rate Valve

This procedure explains how to adjust 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.

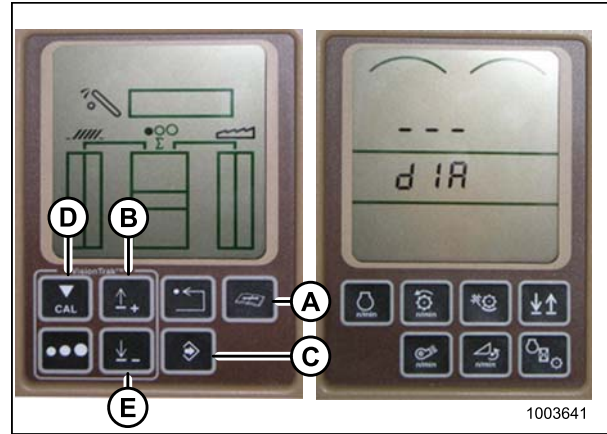


Figure 5.126: John Deere Combine Display

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.

Operating Auto Header Height

To operate your auto header height, follow these steps:

IMPORTANT:

For proper performance, deactivate the accumulator (A) as described in the combine's operator's manual.



Figure 5.127: Accumulator Shut-off

SETTING UP AUTO HEADER HEIGHT CONTROL

1. Ensure HEADER HEIGHT RESUME and ACTIVE HEADER CONTROL functions are ON by pressing the buttons on the top monitor. Icons will appear on the monitor with the same picture that is displayed on the buttons. This indicates that your auto header height, resume, and active header control are turned ON.
 - **ACTIVE HEADER HEIGHT (A)** is indicated with an arrow going up and down in front of it (A).
 - **HEADER HEIGHT RESUME (B)** is indicated with a header diagram with a curved arrow in front of it (B).



Figure 5.128: Active Header Control Display

2. Once HEADER HEIGHT RESUME and AUTO HEADER CONTROL are turned ON, use buttons 2 (B) and 3 (C) on your hydrostatic lever for active header control.

NOTE:

Button 1 (A) is reserved for AUTO HEIGHT RESUME which will return the header to a certain height, but will not automatically compensate for ground variation.

NOTE:

In order to use any of the buttons the combine must be running, the AUTO HEADER HEIGHT SENSING must be turned ON, and the header switch and feeder house must also be engaged.

3. Push the button you would like to use, and the header will position itself at a default height.

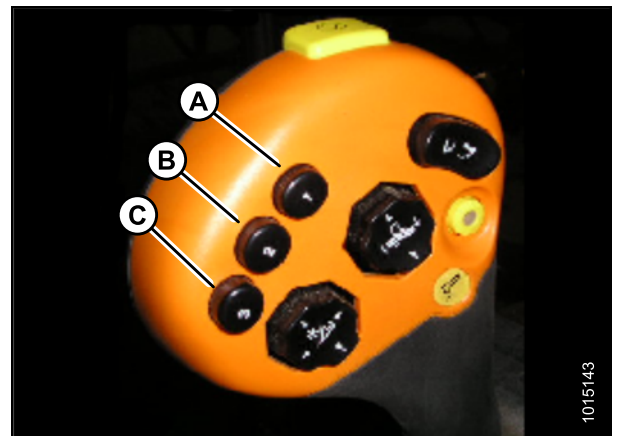


Figure 5.129: Hydrostatic Lever

SETTING UP AUTO HEADER HEIGHT CONTROL

- Adjust the header to the desired ground pressure by turning your auto header control dial located at the upper right corner of the console (A). Once you have set your desired ground pressure, the auto header height will now maintain constant float at this ground pressure (it will lower or raise the feeder house to compensate for the changes in ground height).

NOTE:

Auto header height is designed to optimize your float when cutting on the ground. It does not function when the cutterbar is off the ground.



Figure 5.130: Auto Header Control Dial

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). Operating with heavier pressures can wear the cutterbar wearplate prematurely.

- The additional buttons (2 or 3) on the hydrostatic lever are used for two different ground pressure settings. The header control dial on the console will work for the specific button that was pushed to activate auto header height control. Each time the button is pushed, the header will return to that specific ground pressure.

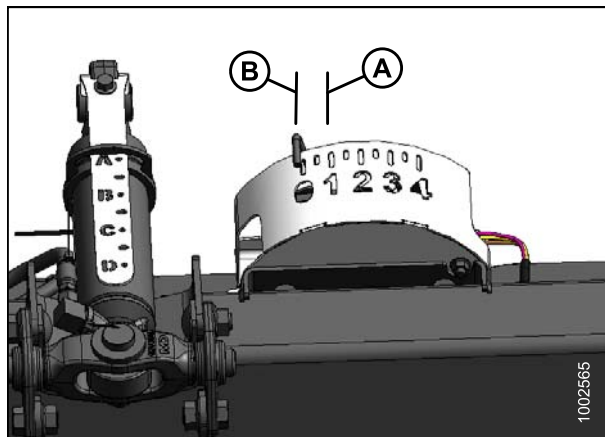


Figure 5.131: Float Indicator Box

Replacing the Auto Header Height Control (AHHC) Sensor

The auto header height control (AHHC) sensor/potentiometer sends a signal to the combine allowing it to maintain a cutting height and optimize float as the header follows ground contours. To replace the AHHC sensor, follow these steps:

- Disconnect the wiring harness from the existing sensor (A).
- Remove the two nuts and bolts (B) that secure the sensor to the bracket and remove the sensor (A).

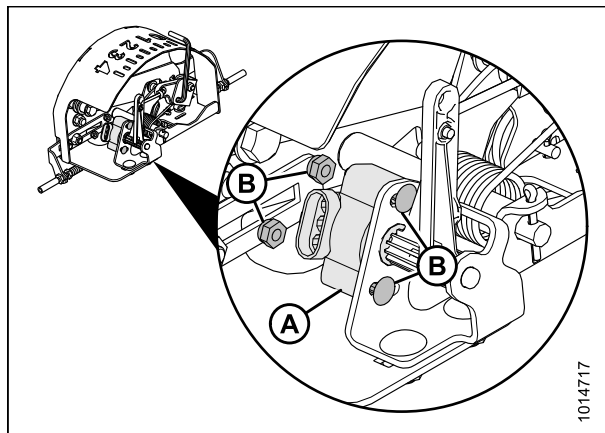


Figure 5.132: AHHC Sensor

SETTING UP AUTO HEADER HEIGHT CONTROL

IMPORTANT:

To avoid damaging the new sensor, install sensor as follows:

3. Position the sensor control arm (A) against the stop (B).
4. Install the new sensor (C) onto the linkage arm with the wiring plug facing away from the stop.
5. Pretension the sensor's internal spring by rotating the sensor (C) until the bolt holes align with holes on the bracket.

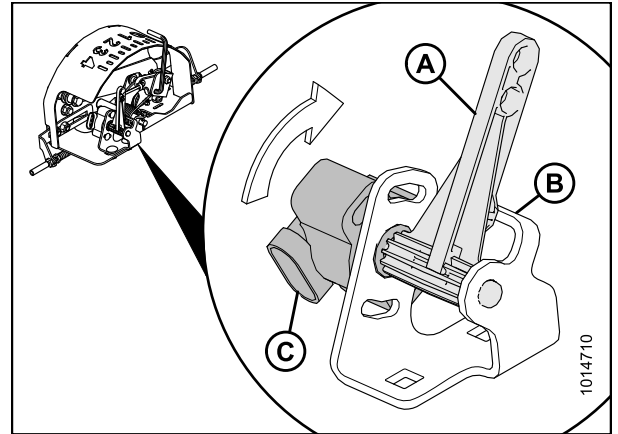


Figure 5.133: AHHC Sensor

6. Secure the new sensor (A) to the bracket with two nuts and bolts (B).

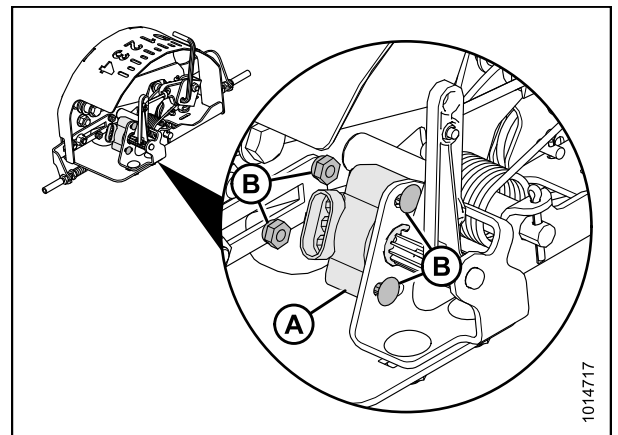


Figure 5.134: AHHC Sensor

7. Ensure linkage (A) operates freely (arrow indicates the approximate range).
8. Reconnect the wiring harness to the plug (B) on the sensor.
9. Check the voltage range of the new sensor and adjust if necessary.

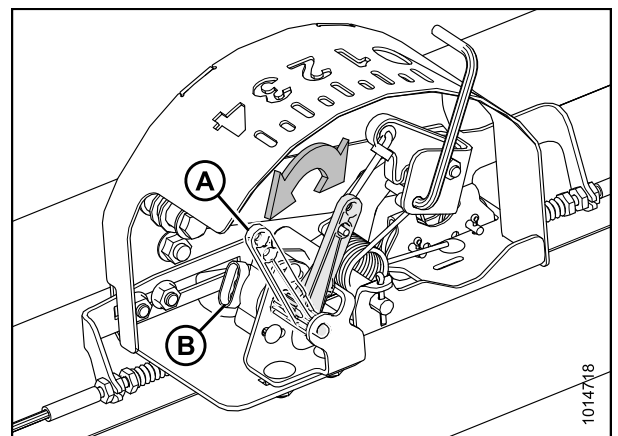


Figure 5.135: AHHC Sensor Range

SETTING UP AUTO HEADER HEIGHT CONTROL

5.1.9 John Deere 60 Series Combines

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

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

Combine	Low Voltage Limit	High Voltage Limit	Minimum Range
John Deere 60 Series	0.5 V	4.5 V	3.0 V

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

NOTE:

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

CAUTION

Check to be sure all bystanders have cleared the area.

1. Position the header 150 mm (6 in.) 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 the 0.

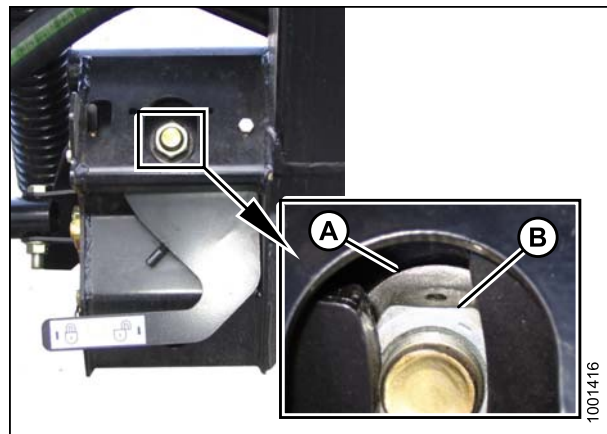


Figure 5.136: Float Lock

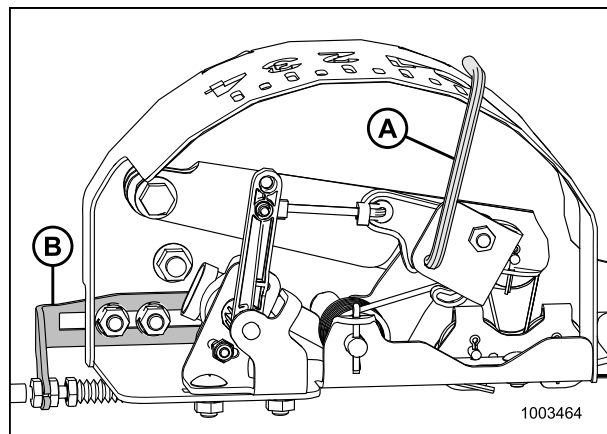


Figure 5.137: Float Indicator Box

SETTING UP AUTO HEADER HEIGHT CONTROL

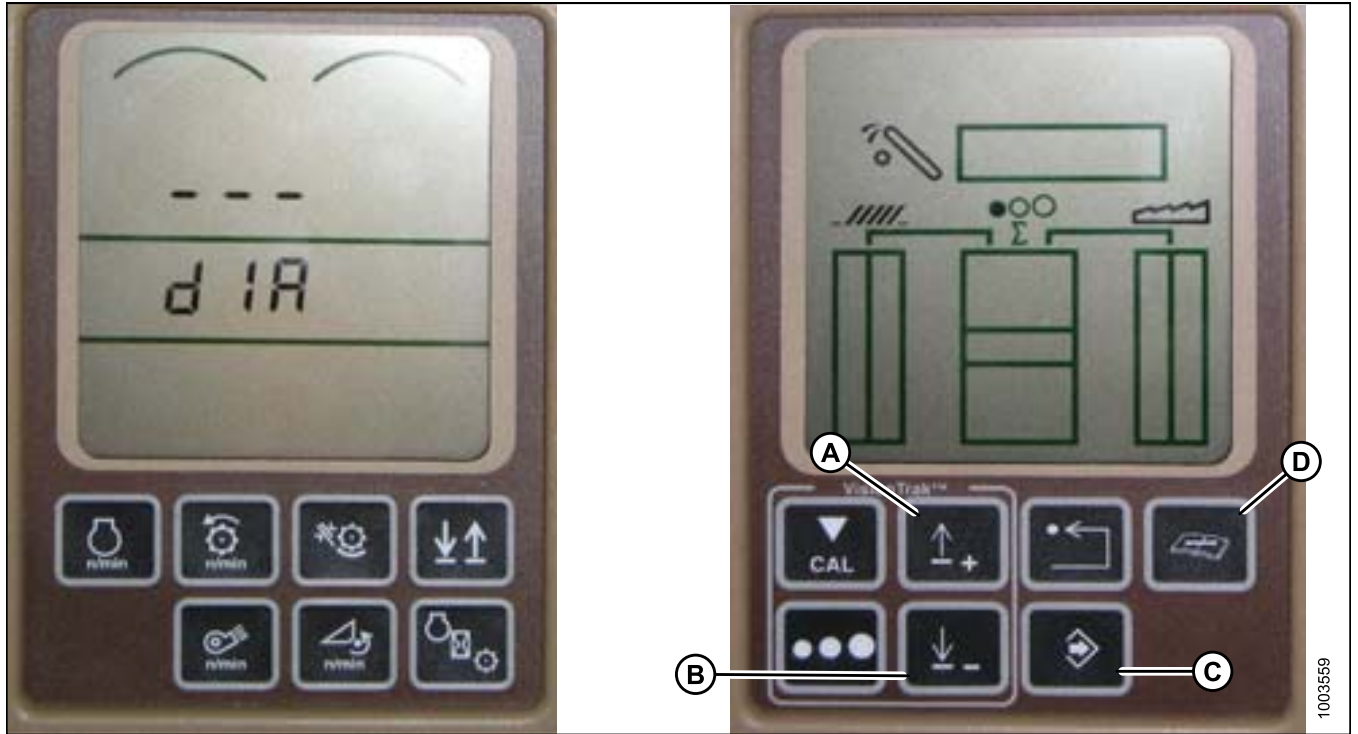


Figure 5.138: John Deere Combine Display

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. If the sensor voltage is not within the low and high limits or if the range between the low and high limits is insufficient, refer to [Adjusting Voltage Limits, page 138](#).

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.

CAUTION

Check to be sure all bystanders have cleared the area.

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.

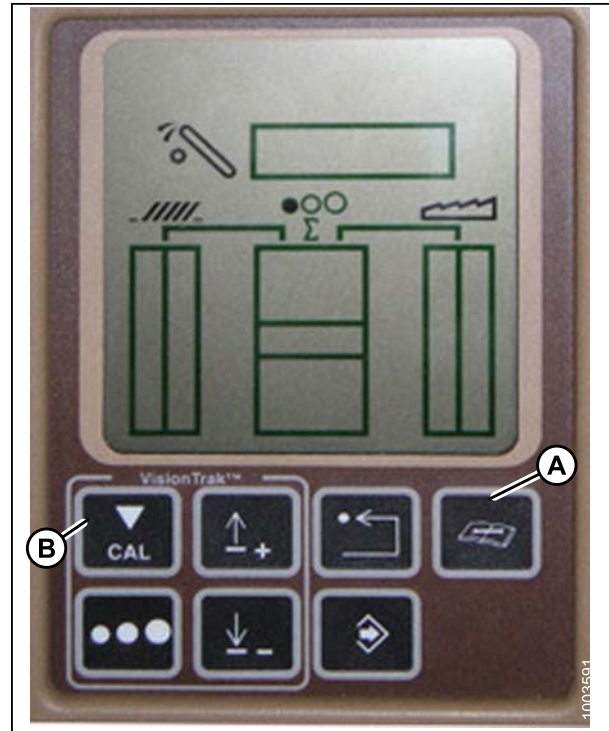


Figure 5.139: John Deere Combine Display

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.

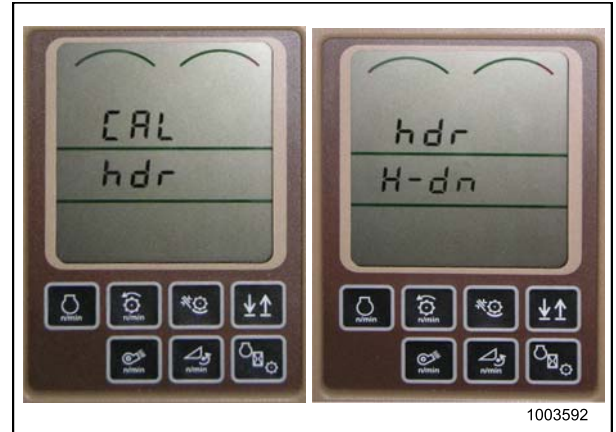


Figure 5.140: John Deere Combine Display

- 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 200.

NOTE:

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

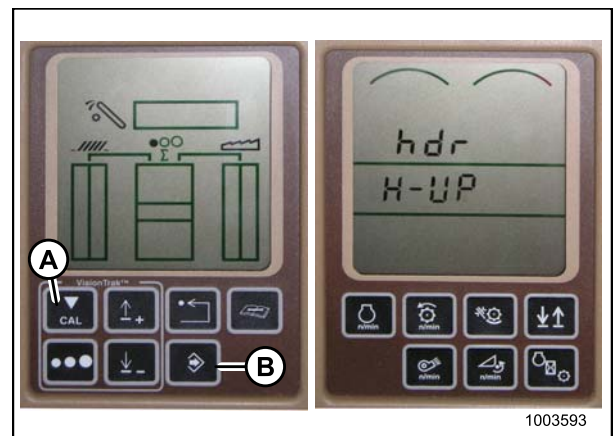


Figure 5.141: John Deere Combine Display

Turning the Accumulator off (John Deere 60 Series)

NOTE:

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

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.

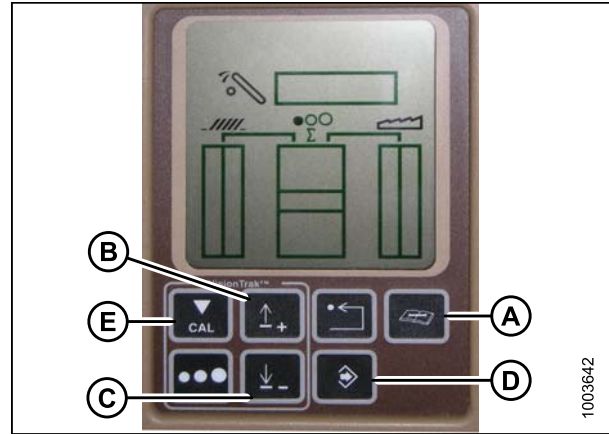


Figure 5.142: John Deere Combine Display

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

NOTE:

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

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

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

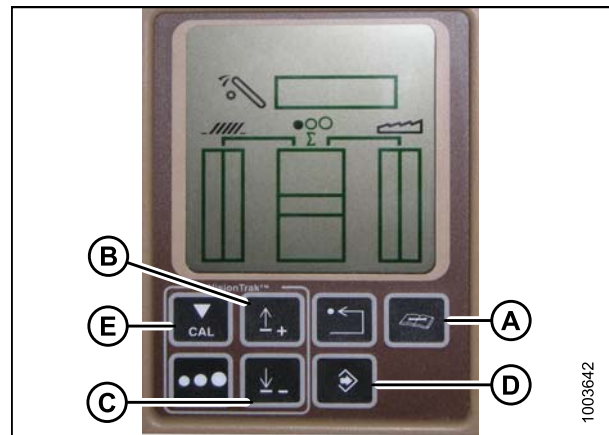


Figure 5.143: John Deere Combine Display

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 5.144: *John Deere Combine Display*, page 205.

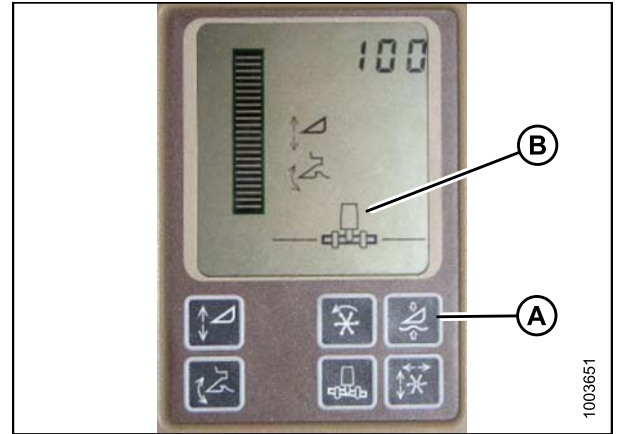


Figure 5.144: John Deere Combine Display

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

This is also known as dead band adjustment.

NOTE:

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

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.

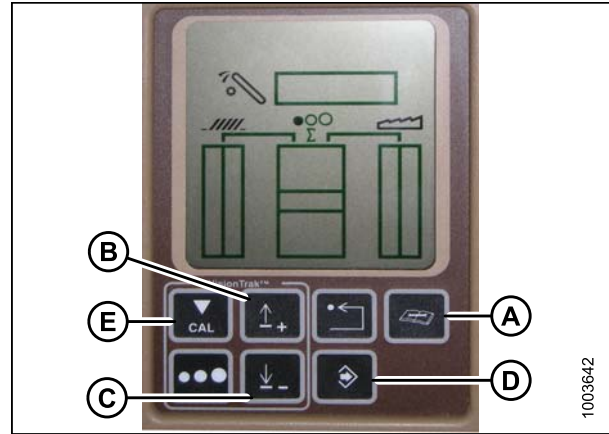


Figure 5.145: John Deere Combine Display

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.

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

This procedure explains how to adjust 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.

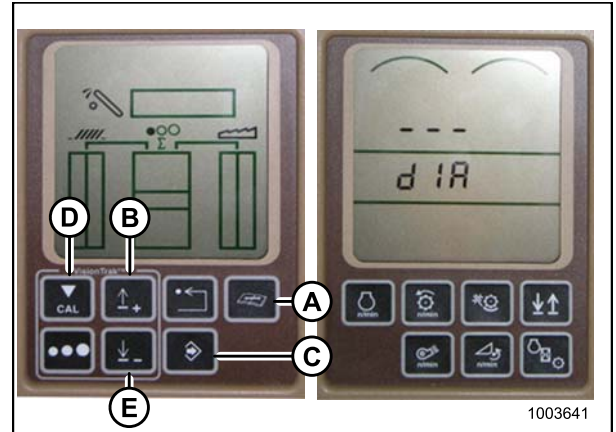


Figure 5.146: John Deere Combine Display

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.

5.1.10 John Deere 70 Series Combines

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

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

Combine	Low Voltage Limit	High Voltage Limit	Minimum Range
John Deere 70 Series	0.5 V	4.5 V	3.0 V

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

NOTE:

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

CAUTION

Check to be sure all bystanders have cleared the area.

1. Position the header 150 mm (6 in.) 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.

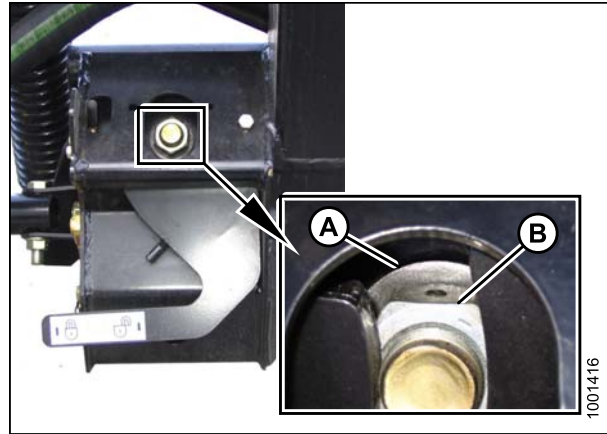


Figure 5.147: Float Lock

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

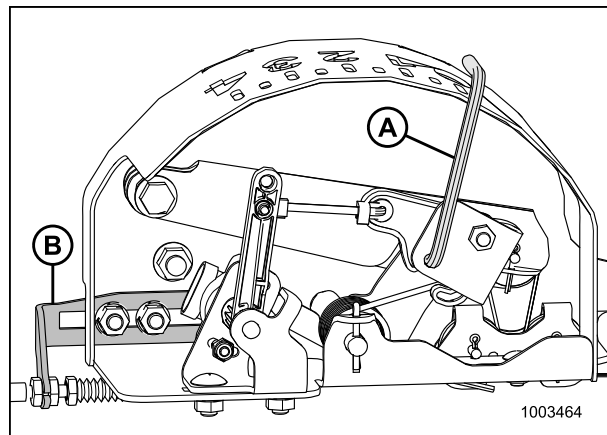


Figure 5.148: Float Indicator Box

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



Figure 5.149: John Deere Combine Display

SETTING UP AUTO HEADER HEIGHT CONTROL

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



Figure 5.150: John Deere 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 display the Message Center.



Figure 5.151: John Deere Combine Control Console

7. Use the scroll knob to highlight DIAGNOSTIC ADDRESSES (A) from the right column, and then 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 5.152: John Deere Combine Display

SETTING UP AUTO HEADER HEIGHT CONTROL

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



Figure 5.153: John Deere 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 combine display.

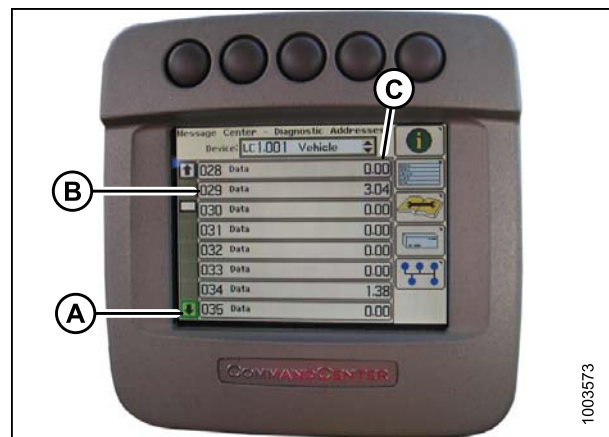


Figure 5.154: John Deere Combine Display

- 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.
- If the sensor voltage is not within the low and high limits or if the range between the low and high limits is insufficient, refer to [Adjusting Voltage Limits, page 138](#).

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.

CAUTION

Check to be sure all bystanders have cleared the area.

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 5.155: John Deere Combine Display

SETTING UP AUTO HEADER HEIGHT CONTROL

7. Select HEADER in box (A) by scrolling down to the box using the scroll knob, and then pressing the check mark button (knob and button are shown in Figure 5.157: *John Deere Combine Control Console*, page 212).
8. Scroll down to the lower right icon that resembles an arrow in a diamond (B) and press the check mark button to select it.

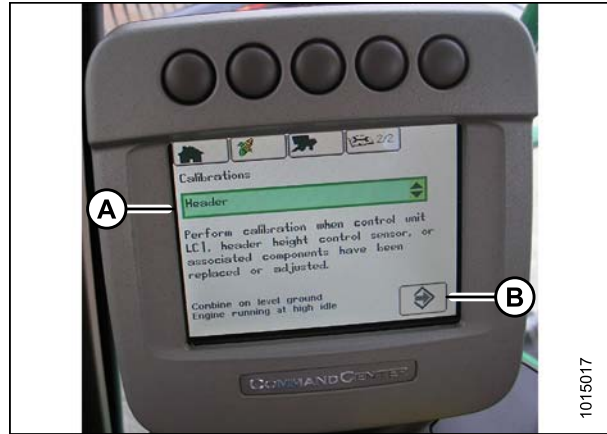


Figure 5.156: John Deere Combine Display

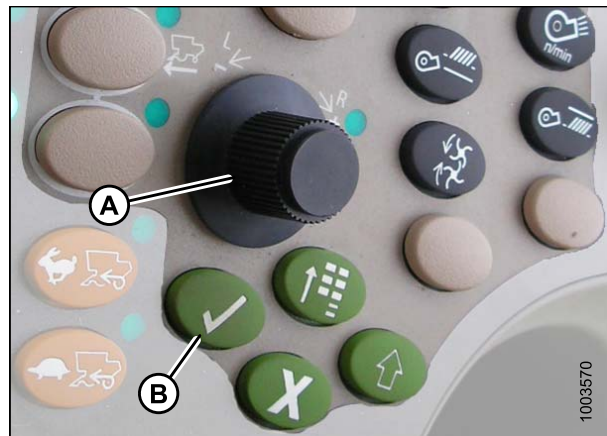


Figure 5.157: John Deere Combine Control Console

A - Scroll Knob

B - Check Mark Button

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

NOTE:

If an error code appears on page, the sensor is not in the correct working range. Refer to [Checking Voltage Range from the Combine Cab \(John Deere 70 Series\)](#), page 207 to check and adjust the range.

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.

SETTING UP AUTO HEADER HEIGHT CONTROL

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

NOTE:

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

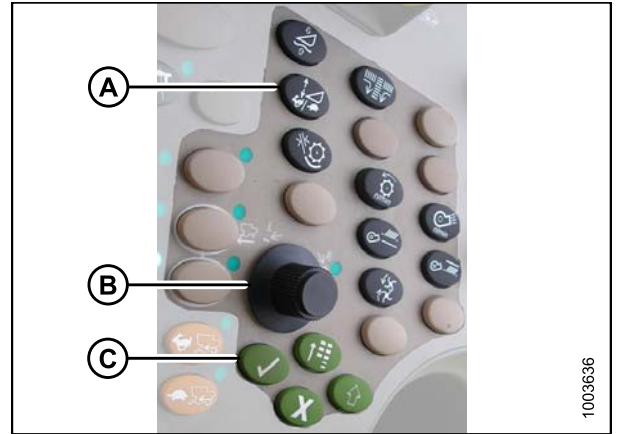


Figure 5.158: John Deere Combine Control Console

NOTE:

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



Figure 5.159: John Deere Combine Display

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

NOTE:

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

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.

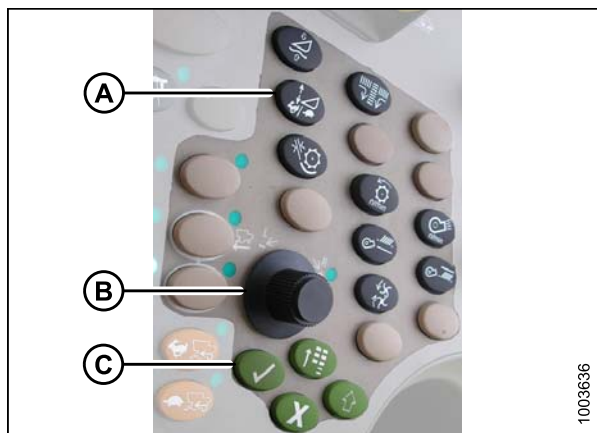


Figure 5.160: John Deere Combine Control Console

NOTE:

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



Figure 5.161: John Deere Combine Display

5.1.11 John Deere S-Series and T-Series Combines

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

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

Combine	Low Voltage Limit	High Voltage Limit	Minimum Range
John Deere S and T-Series	0.5 V	4.5 V	3.0 V

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

NOTE:

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

CAUTION

Check to be sure all bystanders have cleared the area.

1. Position the header 150 mm (6 in.) 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.

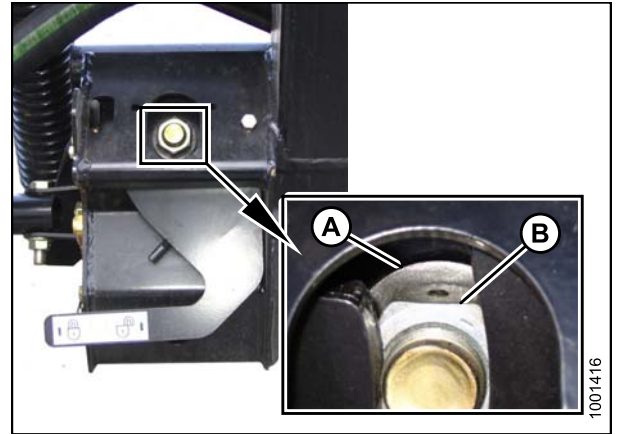


Figure 5.162: Float Lock

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

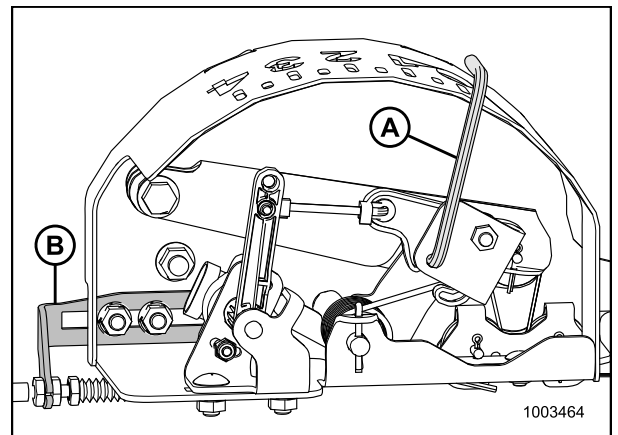


Figure 5.163: Float Indicator Box

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

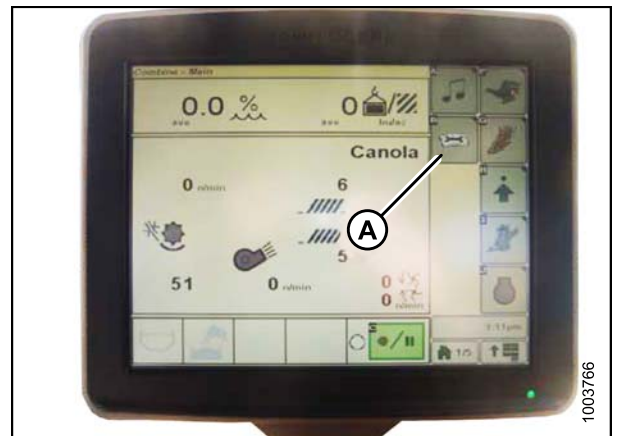


Figure 5.164: John Deere Combine Display

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.

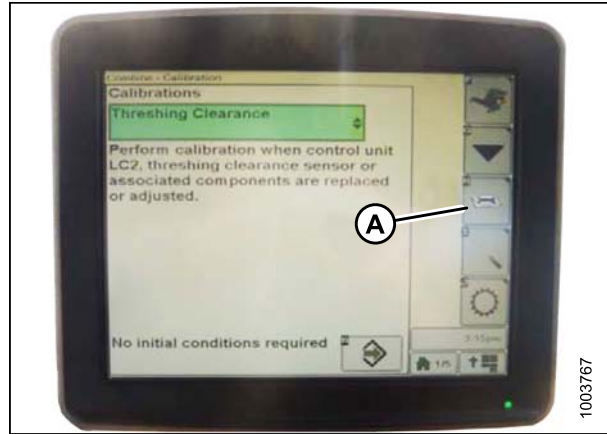


Figure 5.165: John Deere Combine Display

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



Figure 5.166: John Deere 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 5.167: John Deere 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 5.168: John Deere 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. If the sensor voltage is not within the low and high limits or if the range between the low and high limits is insufficient refer to [Adjusting Voltage Limits, page 138](#).

Calibrating Feeder House Fore/Aft Tilt Range (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.

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

NOTE:

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

SETTING UP AUTO HEADER HEIGHT CONTROL

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



Figure 5.169: John Deere Hydro Handle

NOTE:

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

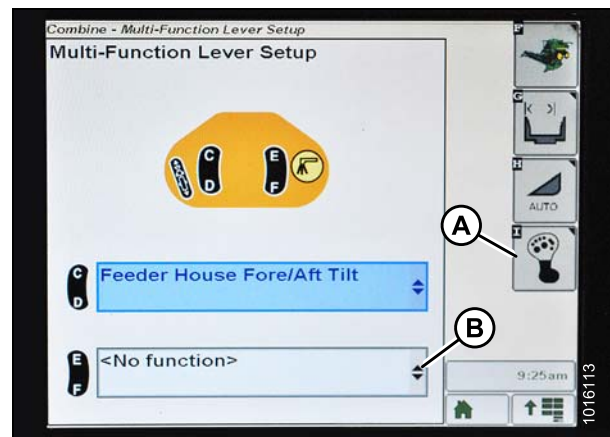


Figure 5.170: John Deere Combine Display

To calibrate the feeder house fore/aft tilt range, 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.
4. Press the DIAGNOSTIC icon (A) on the main page of the combine display. The CALIBRATION page displays.

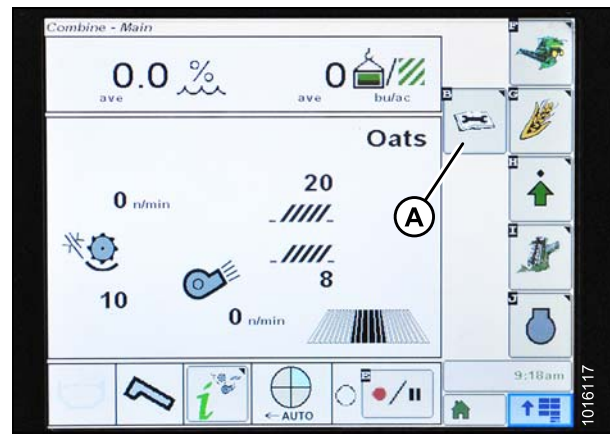


Figure 5.171: John Deere Combine Display

SETTING UP AUTO HEADER HEIGHT CONTROL

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

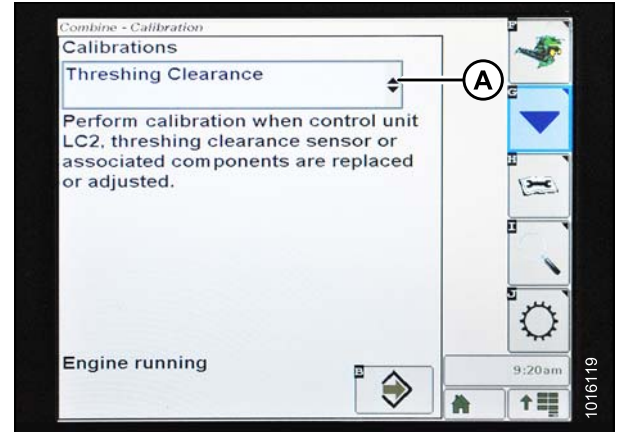


Figure 5.172: John Deere Combine Display

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

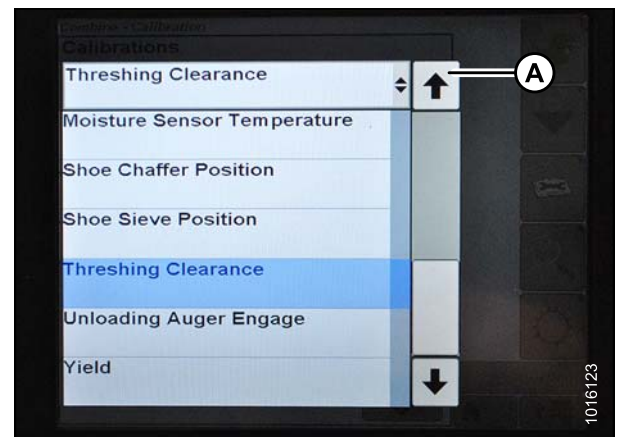


Figure 5.173: John Deere Combine Display

7. Press the ENTER icon (A).

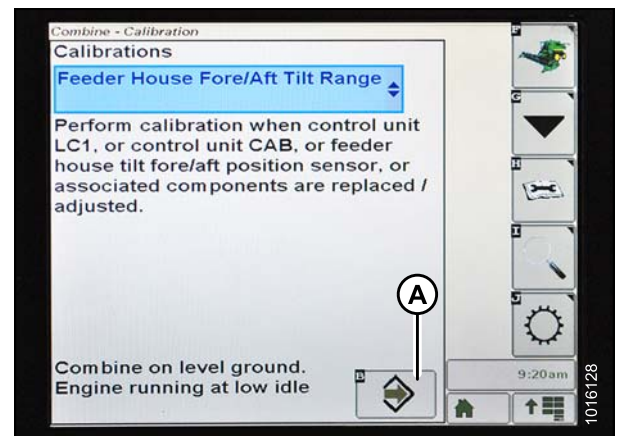


Figure 5.174: John Deere Combine Display

SETTING UP AUTO HEADER HEIGHT CONTROL

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

NOTE:

If an error code appears during 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 214.

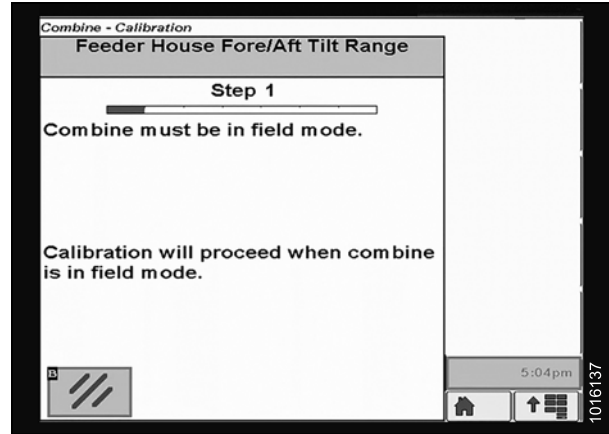


Figure 5.175: John Deere Combine Display

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.

- Ensure center-link is set to D.
- Rest header on down stops and unlock adapter float.
- Place wings in locked position.
- Press the DIAGNOSTIC icon (A) on the main page of the monitor. The CALIBRATION page appears.

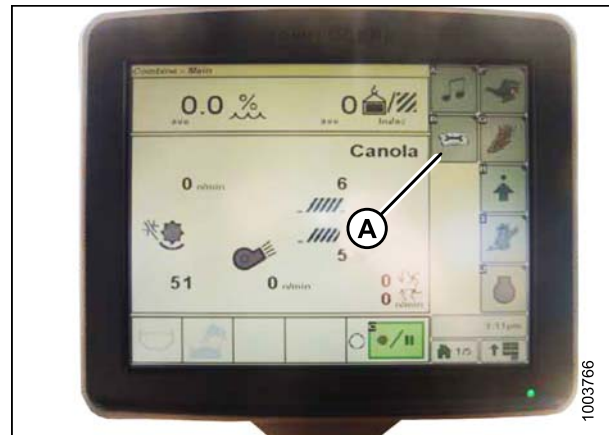


Figure 5.176: John Deere Combine Display

SETTING UP AUTO HEADER HEIGHT CONTROL

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

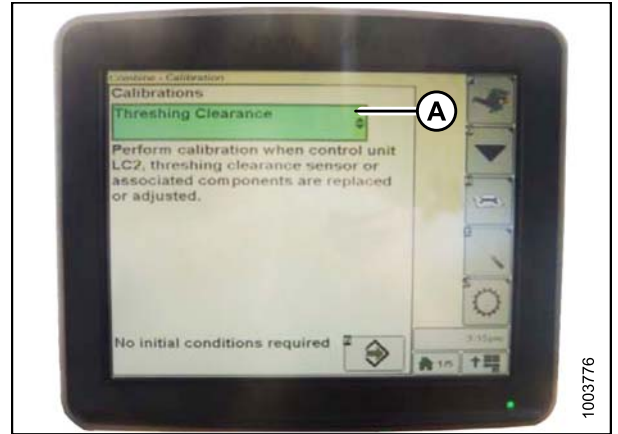


Figure 5.177: John Deere Combine Display

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

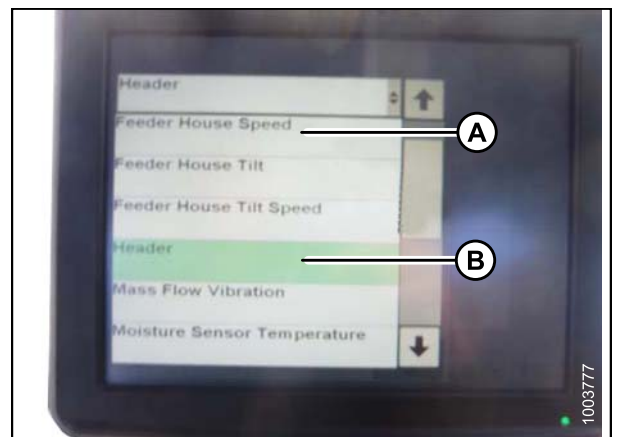


Figure 5.178: John Deere Combine Display

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

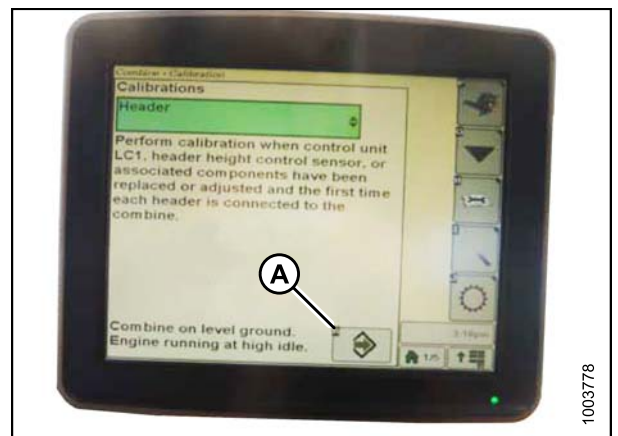


Figure 5.179: John Deere Combine Display

SETTING UP AUTO HEADER HEIGHT CONTROL

- 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 [Adjusting Voltage Limits](#), page 138.

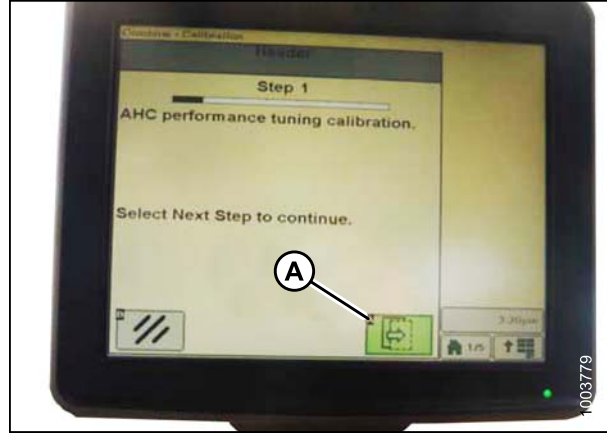


Figure 5.180: John Deere Combine Display

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

NOTE:

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

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



Figure 5.181: John Deere Combine Command Center

- 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.

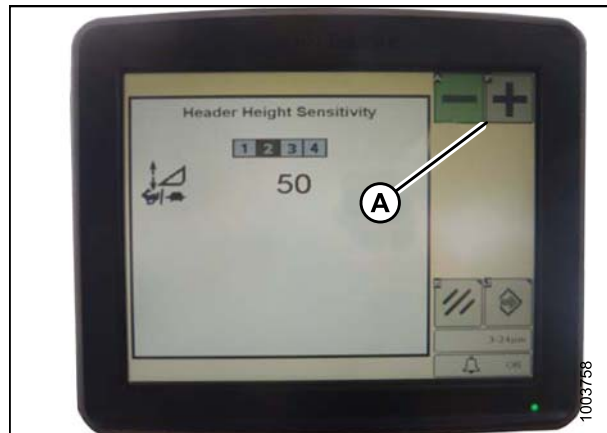


Figure 5.182: John Deere Combine Display

SETTING UP AUTO HEADER HEIGHT CONTROL

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 5.183: John Deere Combine Command Center

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

NOTE:

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

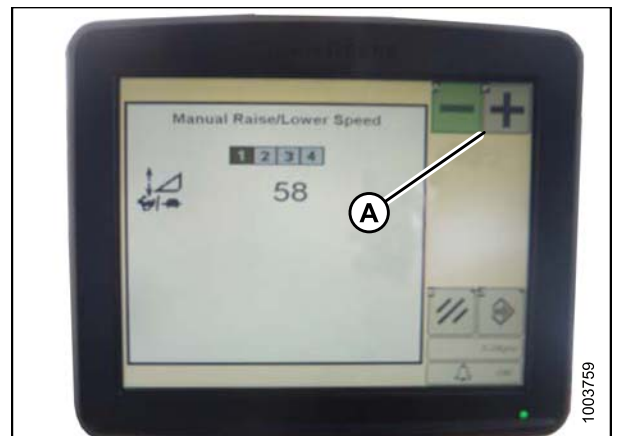


Figure 5.184: John Deere Combine Display

NOTE:

The ideal ground pressure—in most cases—is one number (on the float indicator box) above the header suspended off the ground. For example, if the float indicator needle (A) is positioned at 0 with the header suspended off the ground, then the ideal ground pressure will be achieved with the needle positioned at 1. Operating with heavier pressures can wear the cutterbar wearplate prematurely.

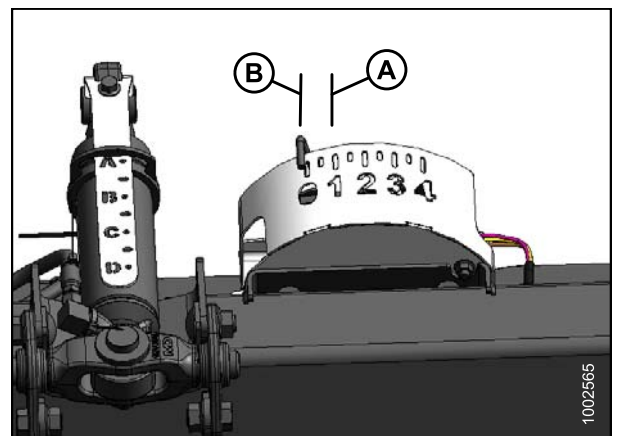


Figure 5.185: Float Indicator Box

SETTING UP AUTO HEADER HEIGHT CONTROL

Setting Preset Cutting Height (John Deere S-Series)

NOTE:

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

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



Figure 5.186: Combine Display

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



Figure 5.187: Combine Display

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

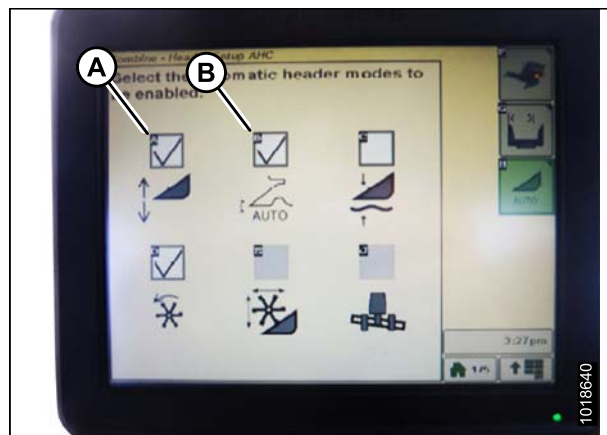


Figure 5.188: Combine Display

SETTING UP AUTO HEADER HEIGHT CONTROL

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

NOTE:

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



Figure 5.189: Joystick Buttons

NOTE:

The ideal ground pressure—in most cases—is one number (on the float indicator box) above the header suspended off the ground. For example, if the float indicator needle (A) is positioned at 0 with the header suspended off the ground, then the ideal ground pressure will be achieved with the needle positioned at 1. Operating with heavier pressures can wear the cutterbar wearplate prematurely.

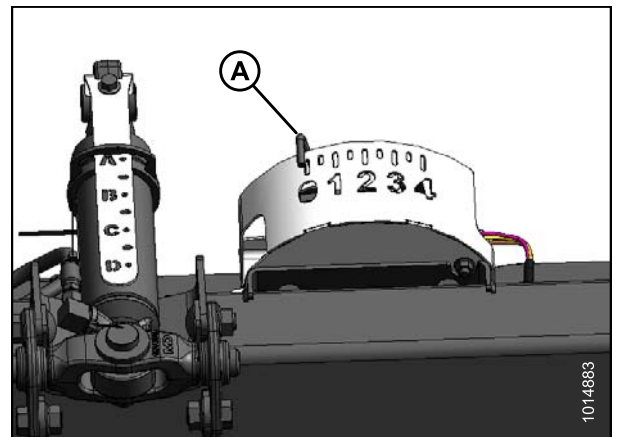


Figure 5.190: Float Indicator Box

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



Figure 5.191: Combine Control Console

SETTING UP AUTO HEADER HEIGHT CONTROL

NOTE:

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

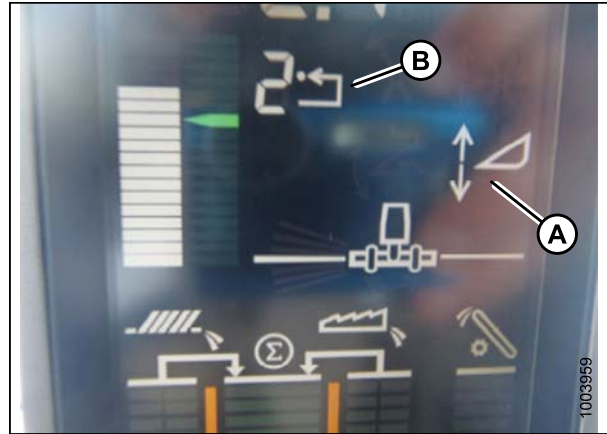


Figure 5.192: Combine Display

5.1.12 Lexion 500-Series Combines

Auto Header Height Sensor Voltage Requirements

The auto header height sensor output must be within a specific voltage range for the feature to work properly.

Combine	Lower voltage limit (+/- 0.2)	Upper voltage limit (+/- 0.2)	Minimum range difference
Lexion 500/600/700 Series	0.7 V	4.3 V	2.5 V

Check the sensor's output voltage range at the float indicator according to instructions that follow.

Checking the Sensor's Output Voltage Range

The auto header height sensor output must be within a specific range for the feature to work properly. To check the sensor's output voltage range, follow these steps:

1. Position the header 150 mm (6 in.) above the ground, and rest it on the safety props. Unlock the adapter float.

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.

SETTING UP AUTO HEADER HEIGHT CONTROL

- The pointer (A) on the float indicator should point at **0**. If it does not, adjust the cable bracket (B) until the pointer (A) on the float indicator points to **0**.

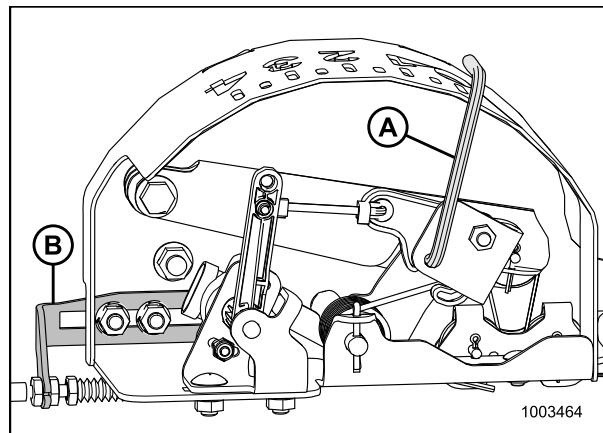


Figure 5.193: Float Indicator with Auto Header Height Sensor

- Measure the voltage between the ground and signal wires at the AHHC sensor in the float indicator with a voltmeter.

NOTE:

The voltage reading should be below **4.5 V**.

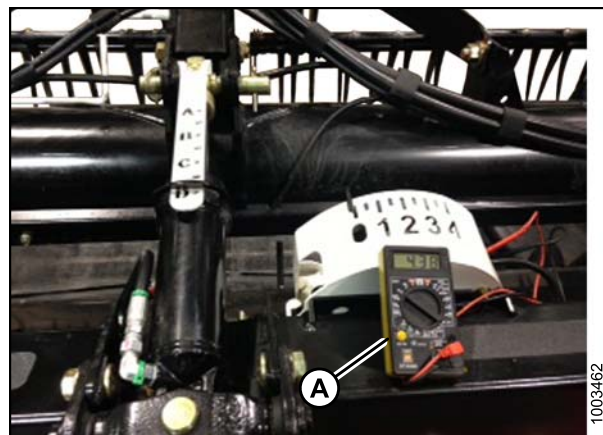


Figure 5.194: Float Indicator Reading 1 V

- Fully lower the combine feeder house until the adapter is no longer supporting the header. The float indicator should read **4**.

NOTE:

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

- Measure the voltage between the ground and signal wires at the AHHC sensor in the float indicator with a voltmeter (A). It should be at the low voltage limit for the combine – **0.5 V**.

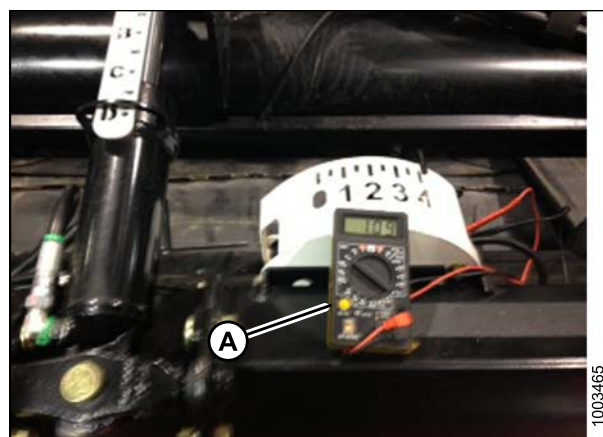


Figure 5.195: Float Indicator Reading 4.5 V

- If the sensor voltage is not within the low and high limits, or if the range between the low and high limits less than **3.0 V**, make adjustments according to [Adjusting Voltage Limits, page 228](#).

SETTING UP AUTO HEADER HEIGHT CONTROL

Adjusting Voltage Limits

- To adjust the high voltage limit:
 - Extend guard angle fully. Header angle indicator should be at **D**.
 - Position header 150–254 mm (6–10 in.) above the ground. Float indicator should be at **0**.
 - Loosen sensor mounting bolts (A).
 - Slide sensor support (B) to the right to increase the high voltage limit, or to the left to decrease it.
 - Tighten sensor mounting bolts (A).
- To adjust the low voltage limit:
 - Fully extend center-link, (i.e. increase header/guard angle to maximum). Header angle indicator should be at **D**.
 - Fully lower header to the ground. Float indicator should be at **4**.
 - Loosen mounting bolts (C).
 - Rotate the potentiometer (D) clockwise to increase the low voltage limit, or counterclockwise to decrease it.
 - Tighten sensor mounting bolts (C).
- When the readings are in the proper range, the auto header height control can be calibrated.

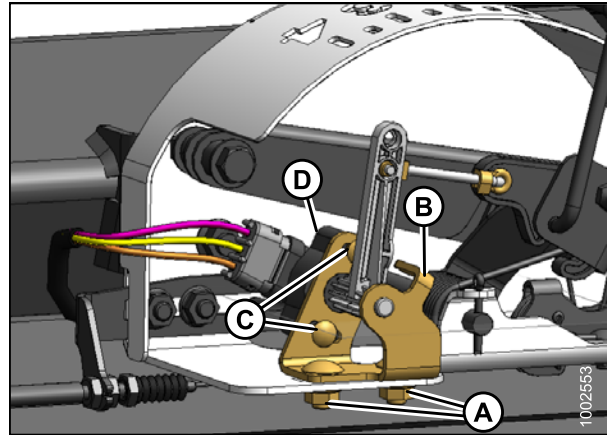


Figure 5.196: AHHC Sensor Assembly

A - Sensor Mounting Bolts B - Sensor Support
C - Potentiometer Mounting Bolts D - Potentiometer

Calibrating the Auto Header Height System

The calibration procedure determines the limits of the auto header height sensor.

Calibrate the auto header height system after initial header installation, and after replacing or adjusting any component of the auto header height system. If the system does not function, calibrate it again.

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.

- Ensure center-link is set to **D**.

SETTING UP AUTO HEADER HEIGHT CONTROL

- Use the < key (A) or > key (B) to select AUTO HEADER, and press the OK key (C). The E5 page displays whether the automatic header height is ON or OFF.

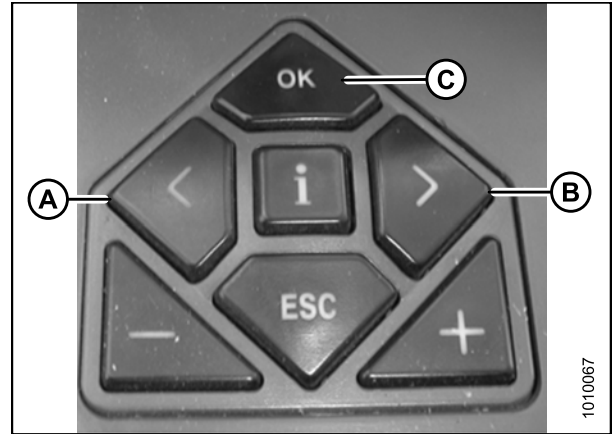


Figure 5.197: Lexion Combine Controls

- Use the – key (A) or the + key (B) to turn ON the AHHC, and press OK (C).
- Engage the threshing mechanism and the header.

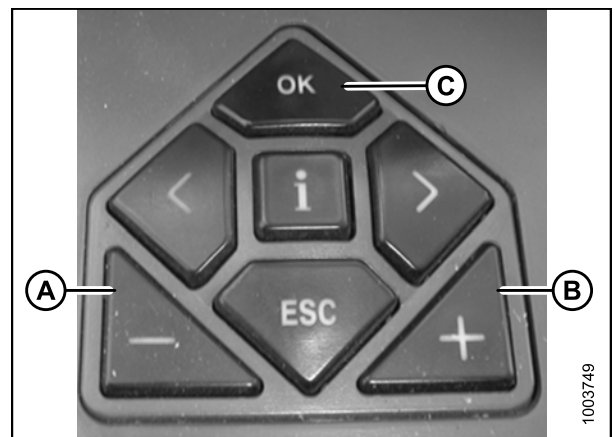


Figure 5.198: Lexion Combine Controls

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

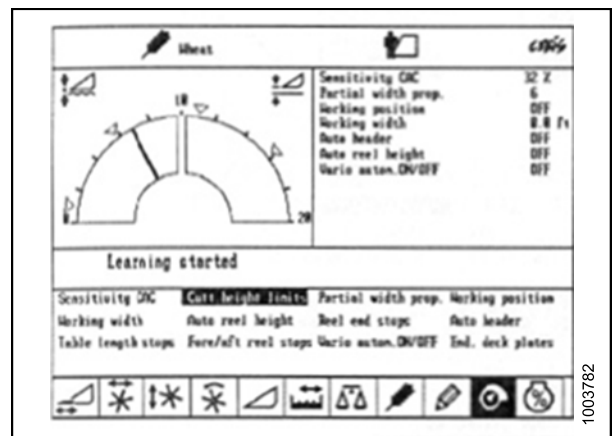


Figure 5.199: Lexion Combine Display

SETTING UP AUTO HEADER HEIGHT CONTROL

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

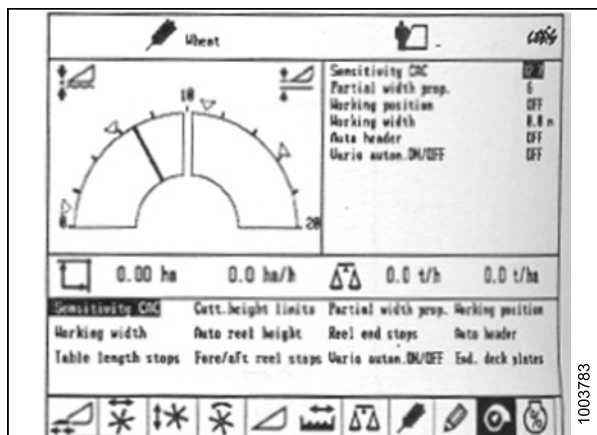


Figure 5.200: Lexion Combine Display

- 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%.

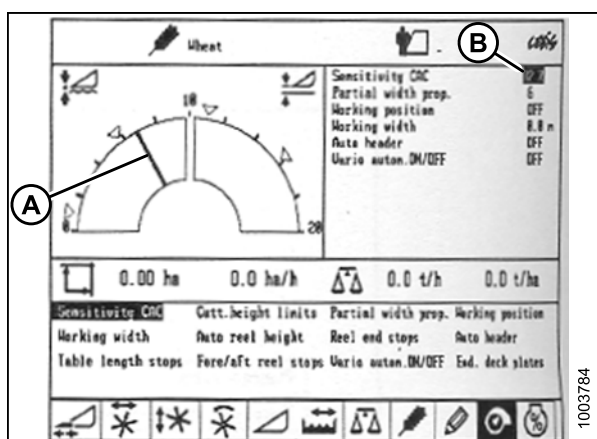


Figure 5.201: Lexion Combine Display

Auto Header Height Sensor Voltage Requirements

The auto header height sensor output must be within a specific voltage range for the feature to work properly.

Combine	Lower voltage limit (+/- 0.2)	Upper voltage limit (+/- 0.2)	Minimum range difference
Lexion 500/600/700 Series	0.7 V	4.3 V	2.5 V

Check the sensor's output voltage range at the float indicator according to instructions that follow.

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

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 5.202: Joystick Buttons

6. Use the < key (C) or > key (D) to select the CUTTING HEIGHT page, 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.

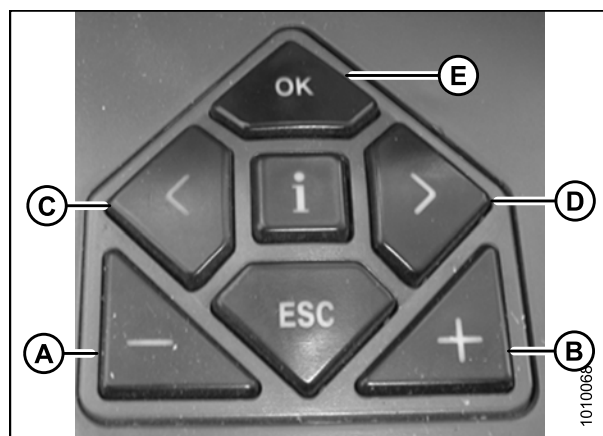


Figure 5.203: Lexion Combine Controls

SETTING UP AUTO HEADER HEIGHT CONTROL

- Briefly press button (A) or button (B) in order to select the set point.
- Repeat Step 7., [page 231](#) for the set point.



Figure 5.204: Joystick Buttons

Setting Cutting Height Manually (Lexion 500 Series)

To set the cutting height manually, follow these steps:

NOTE:

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

- Use button (A) to raise the header, or button (B) to lower the header to the desired cutting height.
- Then press and hold button (C) for three seconds to store the cutting height into the CEBIS (CLAAS Electronic on-Board Information System). An alarm will sound when the new setting has been stored.
- If desired, program a second set point 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 5.205: Joystick Buttons

NOTE:

For above the ground cutting, repeat Step 1., [page 232](#), and use button (D) instead of button (C) while repeating Step 2., [page 232](#).

SETTING UP AUTO HEADER HEIGHT CONTROL

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%.

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 + (B) key to change the reaction speed setting, and press the OK key (E).

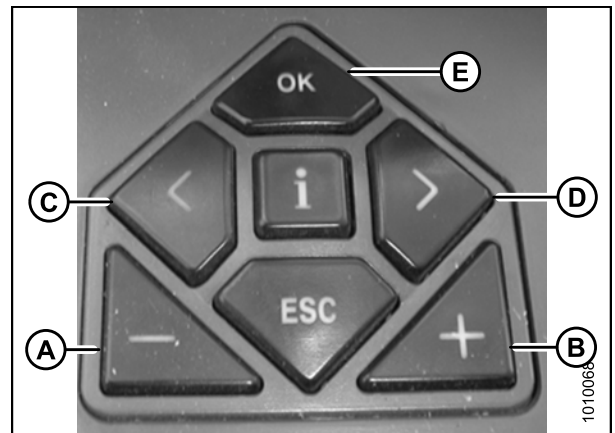


Figure 5.206: Lexion Combine Controls

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

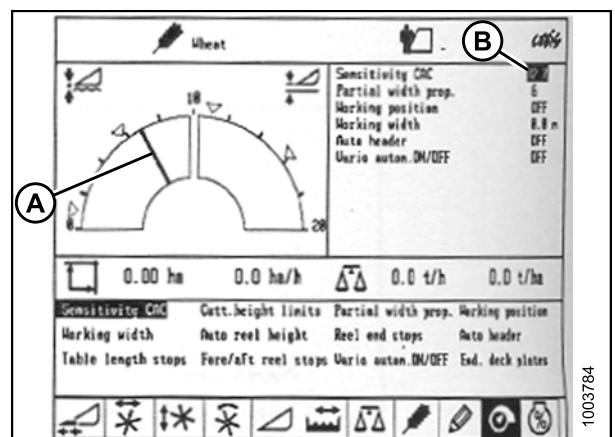
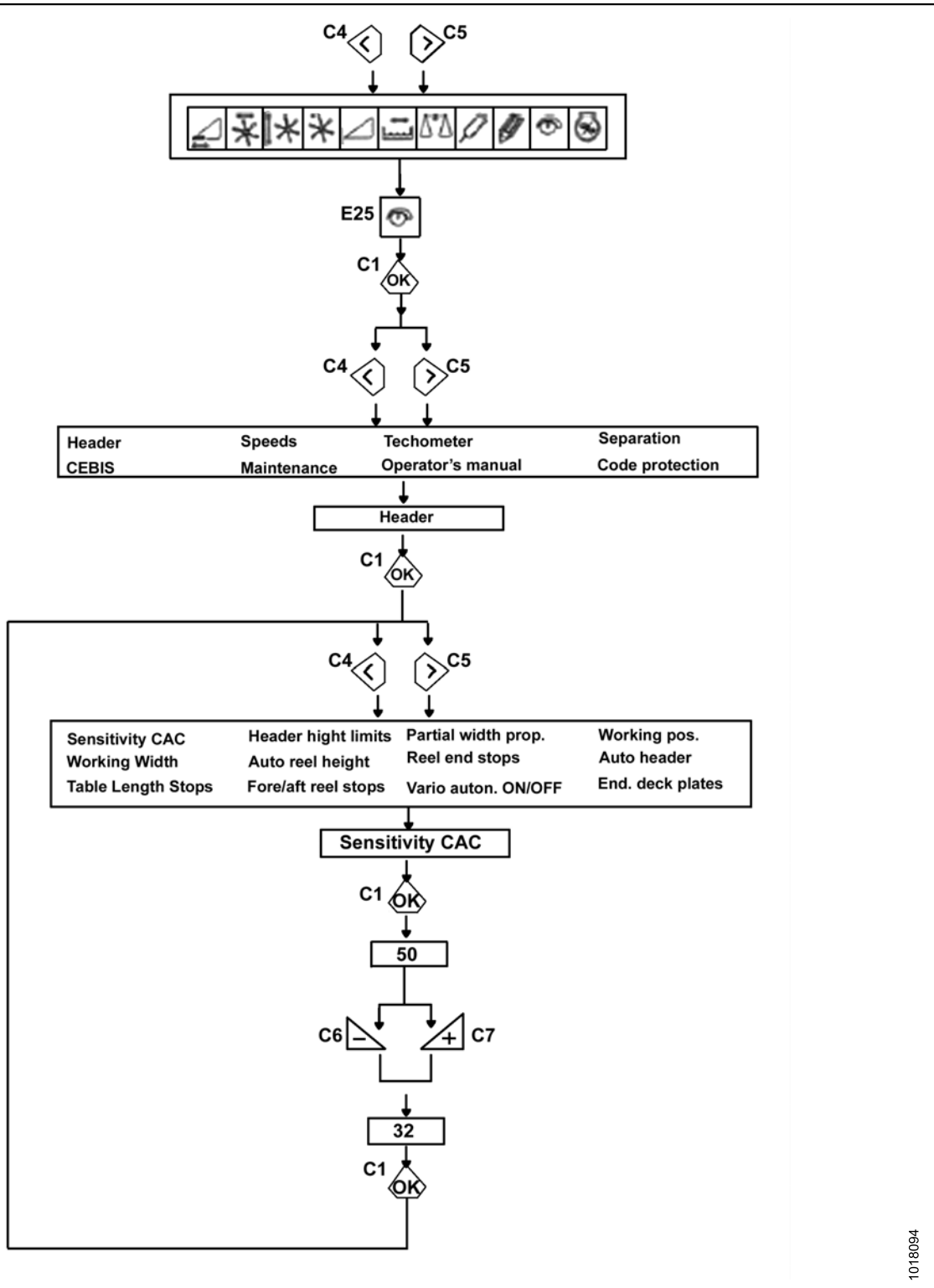


Figure 5.207: Lexion Combine Display

SETTING UP AUTO HEADER HEIGHT CONTROL



1018094

Figure 5.208: Flow Chart for Setting the Sensitivity of the Float Optimizer

SETTING UP AUTO HEADER HEIGHT CONTROL

Adjusting Auto Reel Speed (Lexion 500 Series)

The reel speed can be preset when the automatic header functions are activated. Follow these steps to preset the reel speed.

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 < or > key to select REEL WINDOW. Window **E15** will display the current advance or retard speed of the reel in relation to the ground speed.

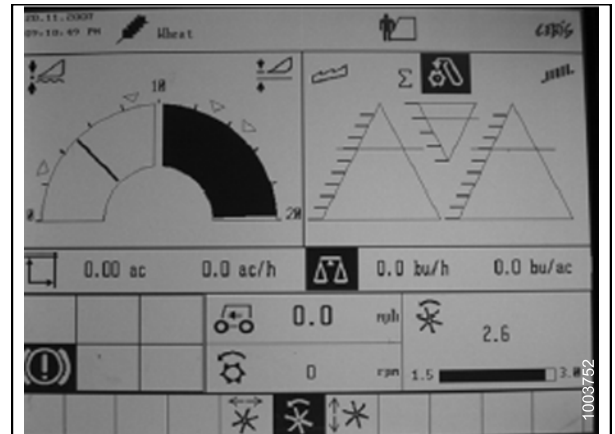


Figure 5.209: Combine Display

2. Press the OK key (C) to open the REEL SPEED window.
3. Use the – key (A) or the + key (B) to set the reel speed in relation to the current ground speed. Window **E15** will display the selected reel speed.

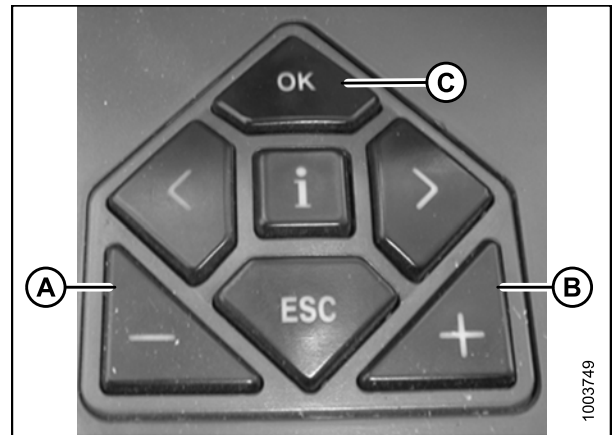


Figure 5.210: Combine Controls

SETTING UP AUTO HEADER HEIGHT CONTROL

4. If desired, manually adjust the reel speed by rotating the rotary switch to the reel position (A), and then use the – or + key to set the reel speed. Window **E15** will display the selected reel speed.

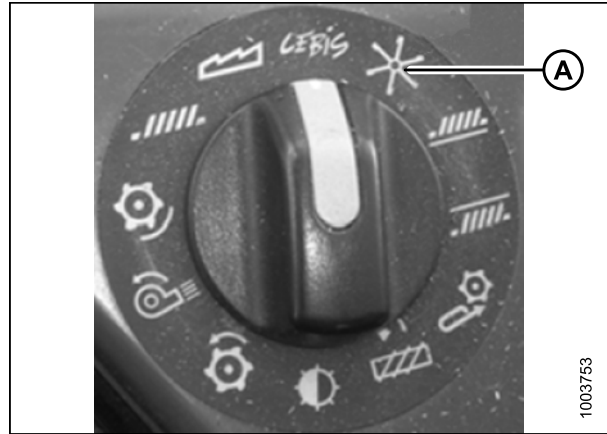


Figure 5.211: Combine Rotary Switch

5. Press and hold button (A) or button (B) for three seconds to store the setting into the CEBIS (CLAAS Electronic on-Board Information System). An alarm will sound when the new setting has been stored.

NOTE:

Whenever button (A) or button (B) is pressed for three seconds, the current positions for reel speed and cutting height are stored.



Figure 5.212: Joystick Buttons

SETTING UP AUTO HEADER HEIGHT CONTROL

- Use the < or > key to select the REEL WINDOW. When the reel window is selected, window **E15** will display the current advance or retard speed of the reel in relation to the ground speed.



Figure 5.213: Combine Display

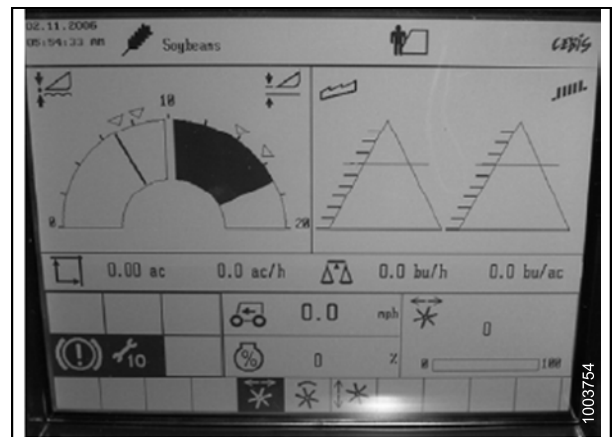


Figure 5.214: Combine Display

- Press the OK key (E), and use the < key (C) or the > key (D) to select the REEL FORE AND AFT window.
- Use the – key (A) or the + key (B) to set the reel fore-aft position.

NOTE:

Joystick button (A) or button (B) also can be used to set the reel fore-aft position.

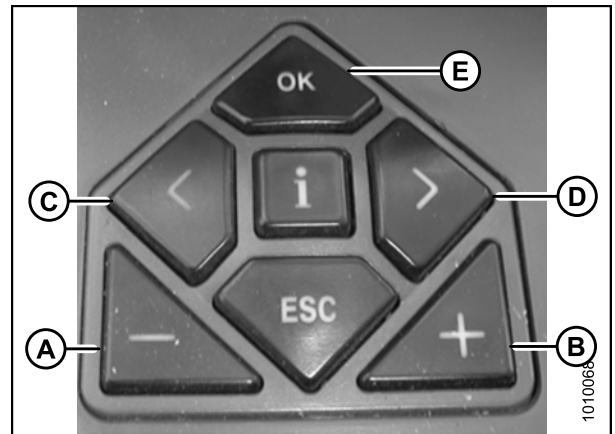


Figure 5.215: Combine Controls

SETTING UP AUTO HEADER HEIGHT CONTROL

- Buttons (A) or (B) set the fore-aft position of the reel.
- Press and hold button (C) or button (D) for three seconds to store the setting into the CEBIS (CLAAS Electronic on-Board Information System). An alarm will sound when the new setting has been stored.

NOTE:

Whenever button (C) or button (D) is pressed for three seconds, the current positions for reel speed and cutting height are stored.

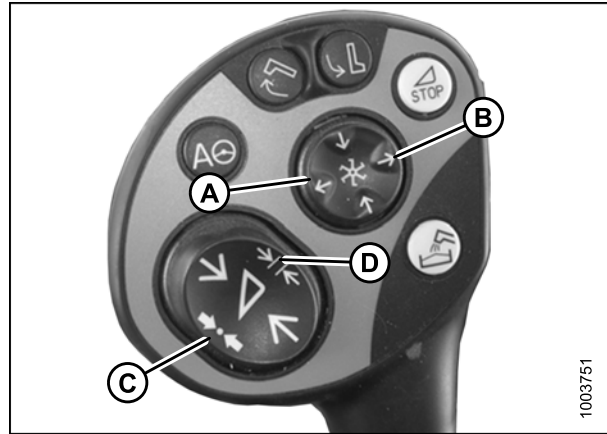


Figure 5.216: Joystick Buttons

SETTING UP AUTO HEADER HEIGHT CONTROL

5.1.13 Lexion 700-Series Combines

This section applies to Lexion 700-series combines. Refer to [5.1.12 Lexion 500-Series Combines, page 226](#) for Lexion 500-series.

Auto Header Height Sensor Voltage Requirements

The auto header height sensor output must be within a specific voltage range for the feature to work properly.

Combine	Lower voltage limit (+/- 0.2)	Upper voltage limit (+/- 0.2)	Minimum range difference
Lexion 500/600/700 Series	0.7 V	4.3 V	2.5 V

Check the sensor's output voltage range at the float indicator according to instructions that follow.

Checking the Sensor's Output Voltage Range

The auto header height sensor output must be within a specific range for the feature to work properly. To check the sensor's output voltage range, follow these steps:

1. Position the header 150 mm (6 in.) above the ground, and rest it on the safety props. Unlock the adapter float.

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.

2. The pointer (A) on the float indicator should point at **0**. If it does not, adjust the cable bracket (B) until the pointer (A) on the float indicator points to **0**.

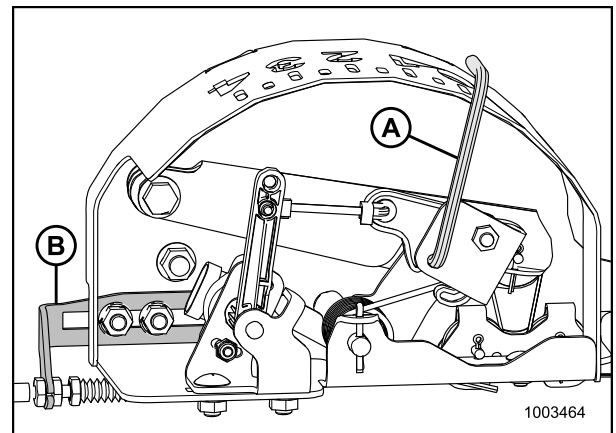


Figure 5.217: Float Indicator with Auto Header Height Sensor

SETTING UP AUTO HEADER HEIGHT CONTROL

3. Measure the voltage between the ground and signal wires at the AHHC sensor in the float indicator with a voltmeter.

NOTE:

The voltage reading should be below **4.5 V**.

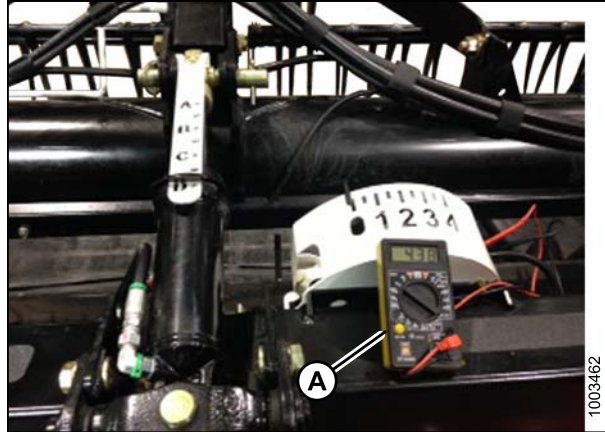


Figure 5.218: Float Indicator Reading 1 V

4. Fully lower the combine feeder house until the adapter is no longer supporting the header. The float indicator should read **4**.

NOTE:

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

5. Measure the voltage between the ground and signal wires at the AHHC sensor in the float indicator with a voltmeter (A). It should be at the low voltage limit for the combine – **0.5 V**.

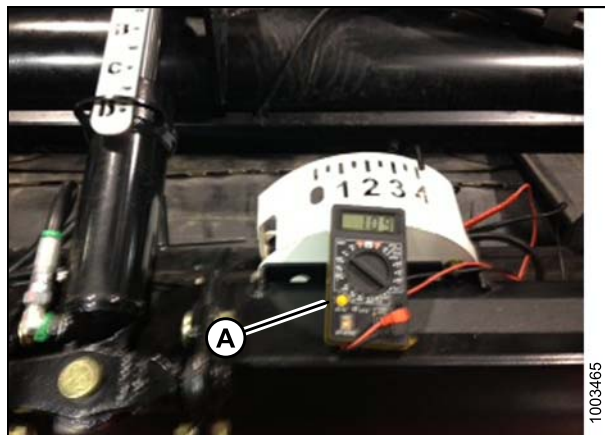


Figure 5.219: Float Indicator Reading 4.5 V

6. If the sensor voltage is not within the low and high limits, or if the range between the low and high limits less than **3.0 V**, make adjustments according to [Adjusting Voltage Limits, page 228](#).

SETTING UP AUTO HEADER HEIGHT CONTROL

Adjusting Voltage Limits

- To adjust the high voltage limit:
 - Extend guard angle fully. Header angle indicator should be at **D**.
 - Position header 150–254 mm (6–10 in.) above the ground. Float indicator should be at **0**.
 - Loosen sensor mounting bolts (A).
 - Slide sensor support (B) to the right to increase the high voltage limit, or to the left to decrease it.
 - Tighten sensor mounting bolts (A).
- To adjust the low voltage limit:
 - Fully extend center-link, (i.e. increase header/guard angle to maximum). Header angle indicator should be at **D**.
 - Fully lower header to the ground. Float indicator should be at **4**.
 - Loosen mounting bolts (C).
 - Rotate the potentiometer (D) clockwise to increase the low voltage limit, or counterclockwise to decrease it.
 - Tighten sensor mounting bolts (C).
- When the readings are in the proper range, the auto header height control can be calibrated.

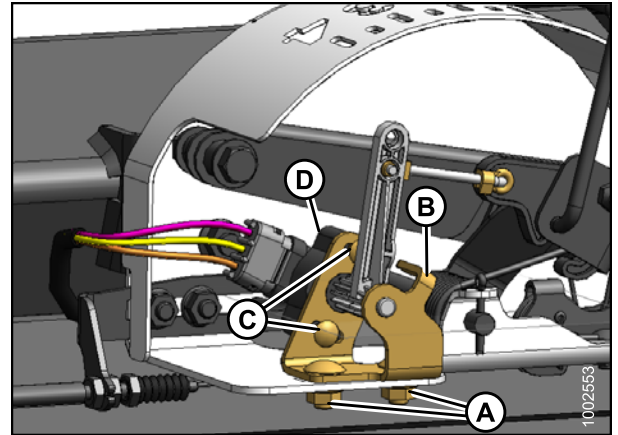


Figure 5.220: AHHC Sensor Assembly

A - Sensor Mounting Bolts B - Sensor Support
C - Potentiometer Mounting Bolts D - Potentiometer

Calibrating the Auto Header Height System

The calibration procedure determines the limits of the auto header height sensor.

Calibrate the auto header height system after initial header installation, and after replacing or adjusting any component of the auto header height system. If the system does not function, calibrate it again.

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.

- Ensure center-link is set to **D**.
- Ensure that the header float is unlocked.

SETTING UP AUTO HEADER HEIGHT CONTROL

- To calibrate the AUTO CONTOUR, use control knob (A) to scroll left and right in the top row until the AUTO CONTOUR icon (B) is highlighted. Press control knob (A) to select it.

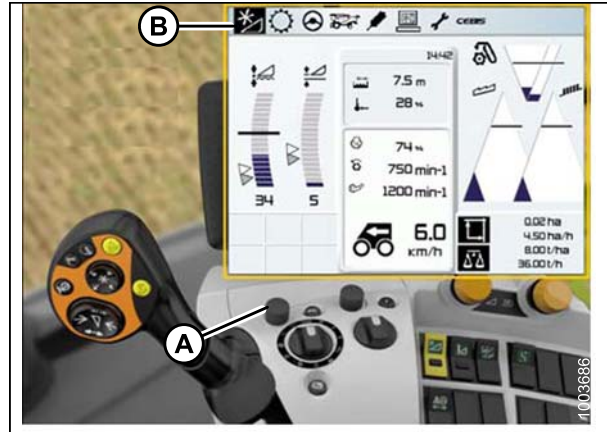


Figure 5.221: Lexion Combine Display, Console, and Joystick

- 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 5.222: Lexion Combine Display, Console, and Joystick

- With the letter A highlighted (shown as B in the image to the right), use the control knob (A) to move to highlight the icon that resembles a header with up and down arrows (C), and press the control knob (A) to select it.

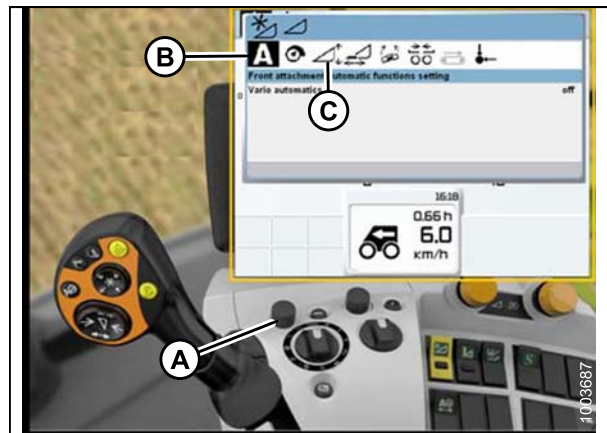


Figure 5.223: Lexion Combine Display, Console, and Joystick

SETTING UP AUTO HEADER HEIGHT CONTROL

6. After pressing the control knob, the letter **A** and the screwdriver icon appear on the screen (as shown).
7. Use control knob (A) to move to highlight the icon that resembles a screwdriver (B).
8. Exit the cab to engage the combine separator and feeder house.
9. Press control knob (A) and a progress bar chart will appear.



Figure 5.224: Lexion Combine Display, Console, and Joystick

10. Fully raise the feeder house and the progress bar chart will advance to 25% (A).
11. Fully lower the feeder house until the header stops moving. Header float should be unlocked. The progress bar chart will advance to 50%.
12. Fully raise the feeder house a second time and the progress bar chart will advance to 75%.
13. Fully lower the feeder house until the header stops moving, and the progress bar chart will advance to 100%.



Figure 5.225: Lexion Combine Display, Console, and Joystick

14. Once the calibrations are complete, the progress bar chart displays 100% (A). The procedure is now complete.

NOTE:

At any time during the calibration, if the voltage is not within the range of 0.5–4.5 volts, the monitor will indicate that the learning procedure has not concluded.

NOTE:

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



Figure 5.226: Lexion Combine Display, Console, and Joystick

15. The calibration procedure is now complete.

SETTING UP AUTO HEADER HEIGHT CONTROL

Setting Cutting Height (Lexion 700 Series)

To set cutting height, follow these steps.

CAUTION

Check to be sure all bystanders have cleared the area.

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 (the white module on top of the CA25 adapter) should be set to **1.5**.

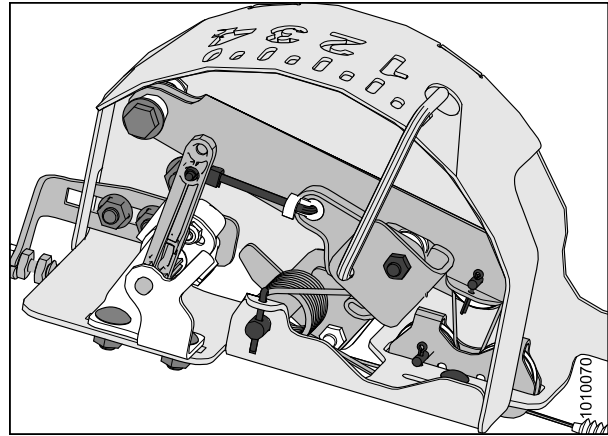


Figure 5.227: Float Indicator

2. Push and hold the left side of the header. Raise and lower switch (A) until you hear a ping.

NOTE:

Two different cutting heights can be programmed.



Figure 5.228: Lexion Combine Display, Console, and Joystick

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 dialog box opens.
2. Select HEADER icon.

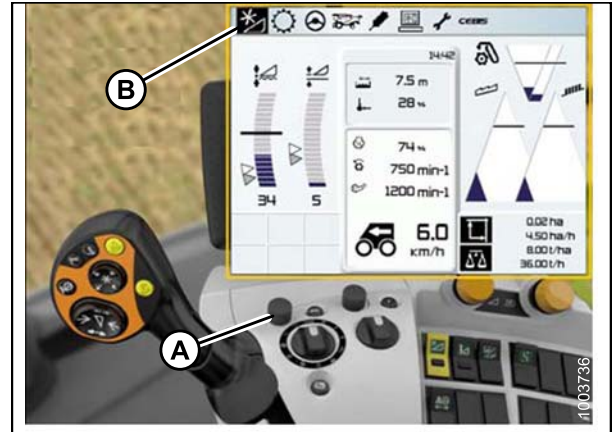


Figure 5.229: Lexion Combine Display, Console, and Joystick Lever

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



Figure 5.230: Lexion 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 (B) from the 0 default. The settings from 1–50 provide a faster response, whereas the settings from -1 to -50 provide a slower response. For best results, make adjustments in increments of five.

6. Increase the CUTTING HEIGHT ADJUSTMENT setting (B) 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 (B) 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 5.231: Lexion Combine Display

SETTING UP AUTO HEADER HEIGHT CONTROL

Adjusting Auto Reel Speed (Lexion 700 Series)

Adjust the auto reel speed as follows:

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

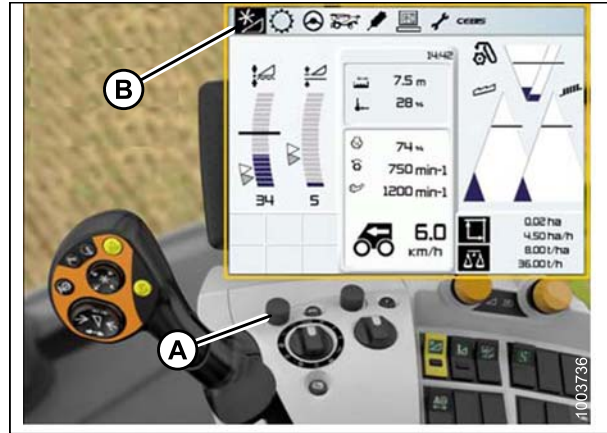


Figure 5.232: Lexion Combine Display, Console, and Joystick

2. Turn 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 dialog menu.



Figure 5.233: Lexion Combine Display, Console, and Joystick

SETTING UP AUTO HEADER HEIGHT CONTROL

3. Select ACTUAL VALUE (A) from the AUTO REEL SPEED dialog menu (if you are using Auto Reel Speed). The ACTUAL VALUE indicates the auto reel speed.



Figure 5.234: Lexion Combine Display, Console, and Joystick

4. Use control knob (A) to change the reel speed.



Figure 5.235: Lexion Combine Display, Console, and Joystick

NOTE:

In most cases, the ideal ground pressure is one number higher than the value on the float indicator with the header off the ground. For example, if the float indicator needle (A) is positioned at **0** with the header off the ground, then the ideal ground pressure will be achieved with the needle positioned at **1**. Operating with heavier pressures can wear the cutterbar wearplate prematurely.

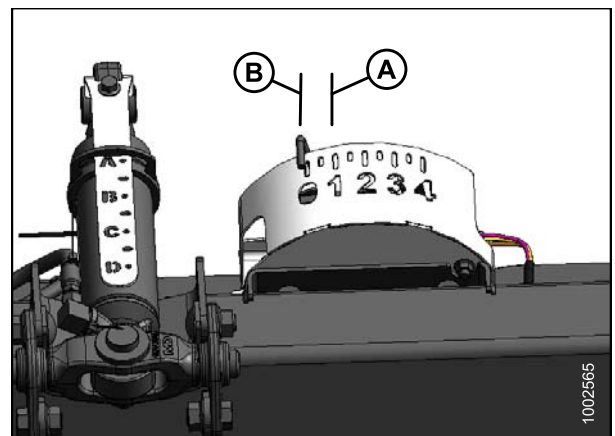


Figure 5.236: Float Indicator

5.1.14 New Holland Combines CX/CR Series (CR Series—Model Year 2014 and Earlier)

NOTE:

For New Holland CR models 6.80, 6.90, 7.90, 8.90, 9.90, and 10.90, refer to [5.1.15 New Holland Combines \(CR Series—Model Year 2015 and Later\)](#), page 259.

Checking Voltage Range from the Combine Cab (New Holland)

NOTE:

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

⚠ CAUTION

Check to be sure all bystanders have cleared the area.

1. Position the header 150 mm (6 in.) 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.

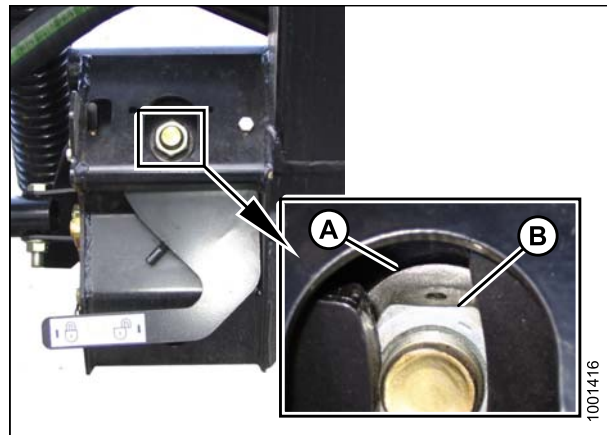


Figure 5.237: Float Lock

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 the 0.

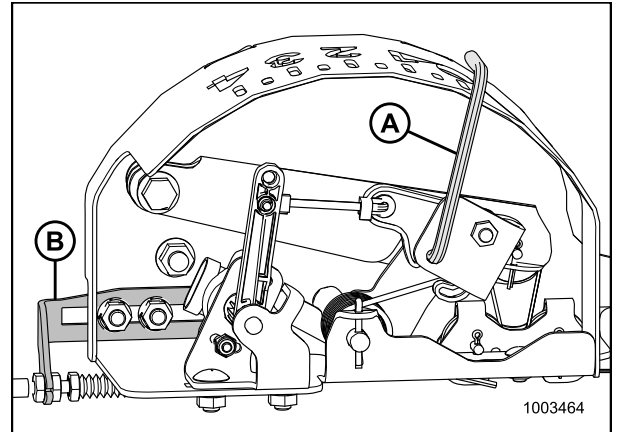


Figure 5.238: 5-Volt AHC Sensor Assembly

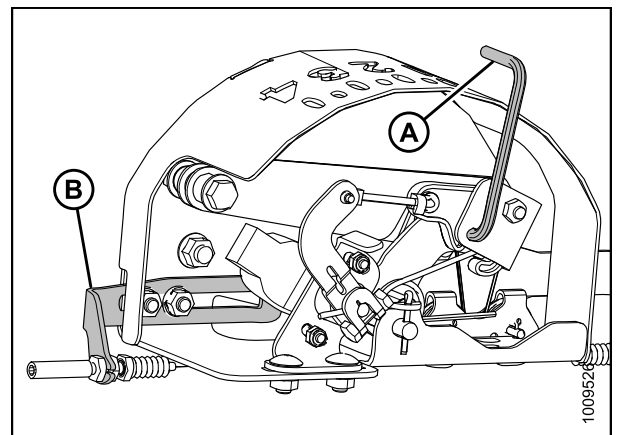


Figure 5.239: 10-Volt AHC Sensor Assembly

- Ensure header float is unlocked.
- Select DIAGNOSTICS (A) on the main page. The DIAGNOSTICS page displays.
- Select SETTINGS. The SETTINGS page displays.

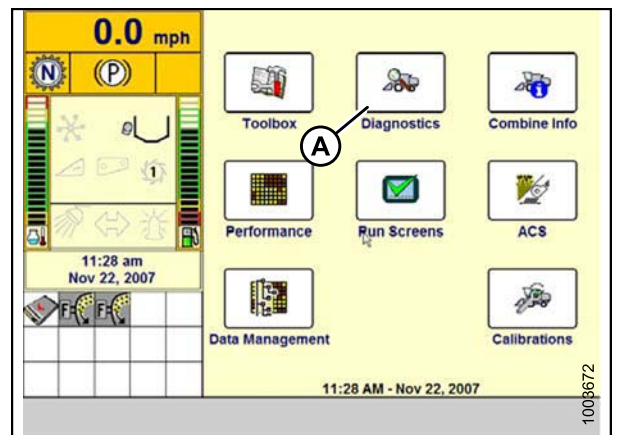


Figure 5.240: New Holland Combine Display

SETTING UP AUTO HEADER HEIGHT CONTROL

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

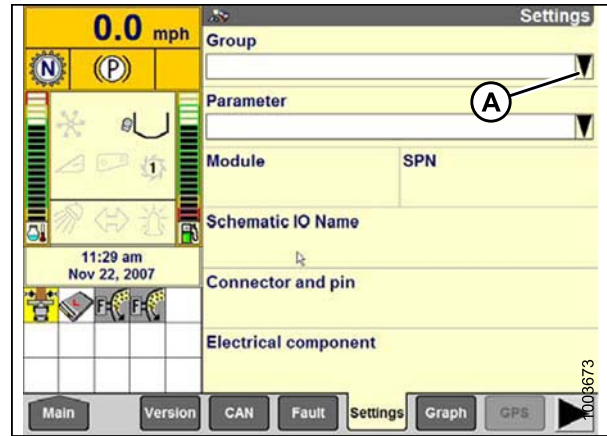


Figure 5.241: New Holland Combine Display

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

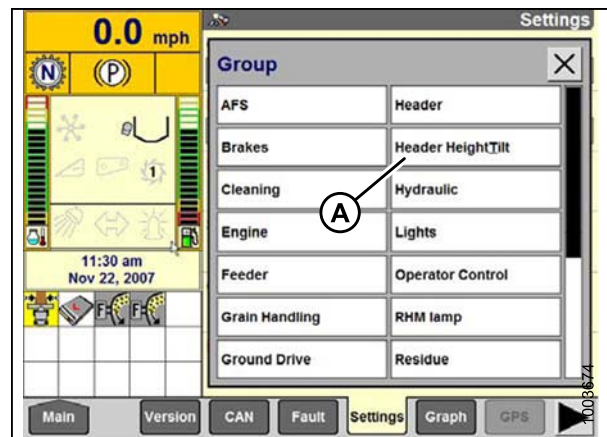


Figure 5.242: New Holland Combine Display

9. Select LEFT HEADER HEIGHT SEN (A), and then select GRAPH button (B). The exact voltage is displayed at the top of the page.
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 138](#)) 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 Sensor Voltage Limits, page 136](#)).

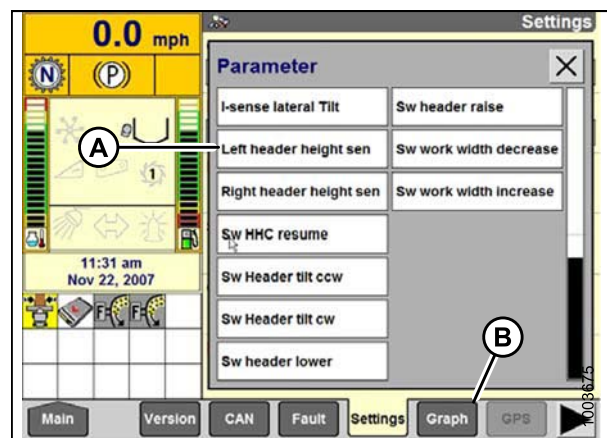


Figure 5.243: New Holland Combine Display

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

NOTE:

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

SETTING UP AUTO HEADER HEIGHT CONTROL

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

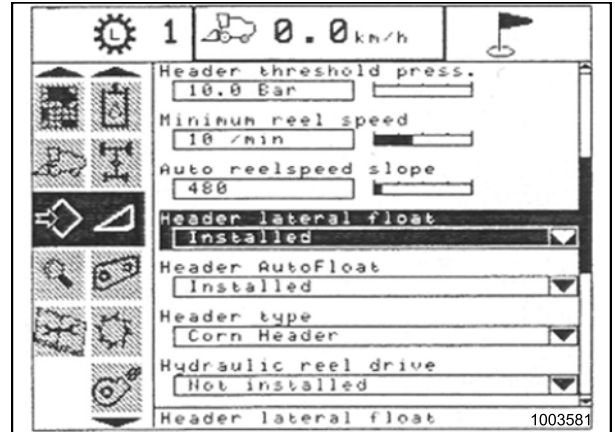


Figure 5.244: New Holland Combine Display

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

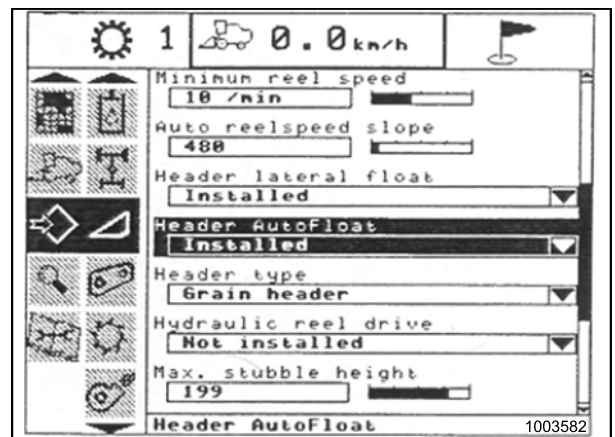


Figure 5.245: New Holland Combine Display

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.

CAUTION

Check to be sure all bystanders have cleared the area.

Check the following conditions before starting the header calibration procedure:

- The header is attached to the combine.
- The combine is on level ground, with the header level to the ground.
- The 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 AHHC, follow these steps:

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

NOTE:

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

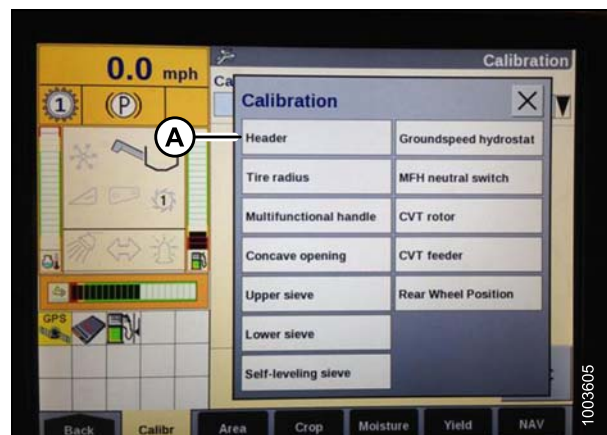


Figure 5.246: New Holland Combine Display

SETTING UP AUTO HEADER HEIGHT CONTROL

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

NOTE:

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

NOTE:

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

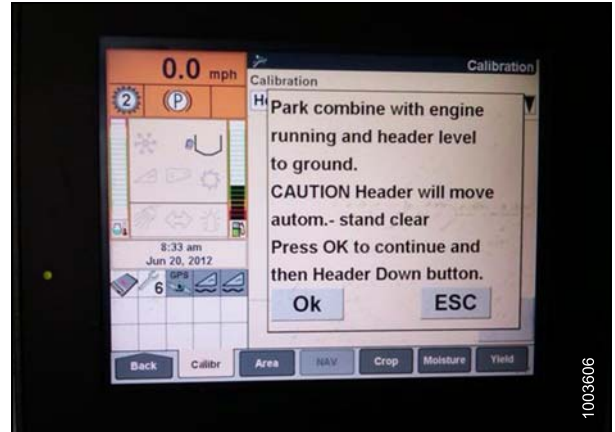


Figure 5.247: New Holland Combine Display

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

NOTE:

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

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

Calibrating Maximum Stubble Height

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

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

IMPORTANT:

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

CAUTION

Check to be sure all bystanders have cleared the area.

SETTING UP AUTO HEADER HEIGHT CONTROL

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

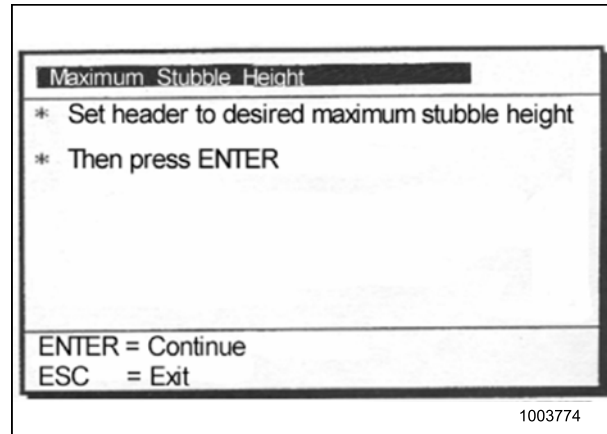


Figure 5.248: New Holland Calibration Dialog Box

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

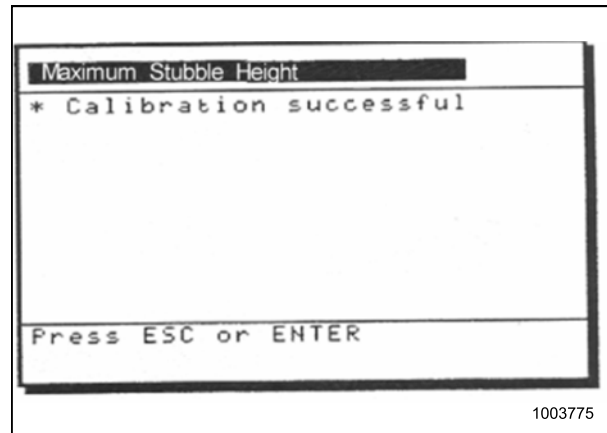


Figure 5.249: New Holland Calibration Dialog Box

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

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

NOTE:

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

SETTING UP AUTO HEADER HEIGHT CONTROL

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

NOTE:

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

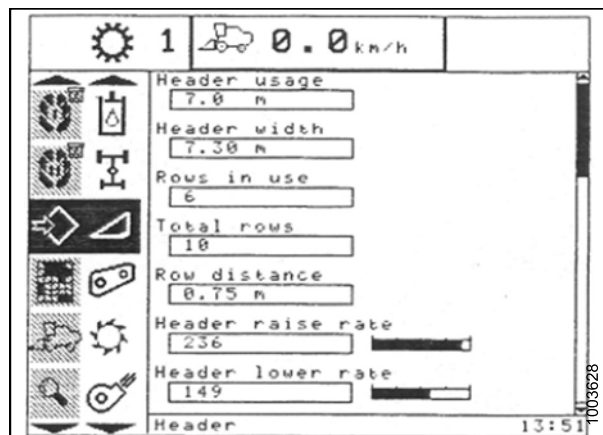


Figure 5.250: New Holland Combine Display

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

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

NOTE:

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

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

NOTE:

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

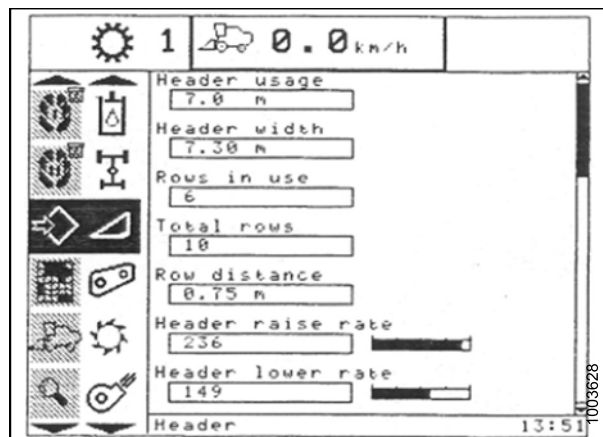


Figure 5.251: New Holland Combine Display

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

NOTE:

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

CAUTION

Check to be sure all bystanders have cleared the area.

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 to 250 in steps of 10. It is factory-set to 100.

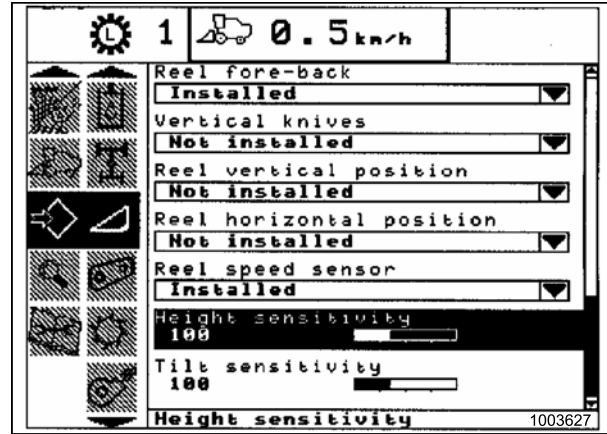


Figure 5.252: New Holland Combine Display

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

To set the preset cutting height, follow these steps:

NOTE:

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

SETTING UP AUTO HEADER HEIGHT CONTROL

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

NOTE:

It is possible to store two different header height values by using HEADER MEMORY rocker switch (D) in STUBBLE HEIGHT/AUTOFLOAT MODE position (A) or (B).

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

NOTE:

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

NOTE:

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

NOTE:

The ideal ground pressure—in most cases—is one number (on the float indicator box) above the header suspended off the ground. For example, if the float indicator needle (A) is positioned at 0 with the header suspended off the ground, then the ideal ground pressure will be achieved with the needle positioned at 1. Operating with heavier pressures can wear the cutterbar wearplate prematurely.

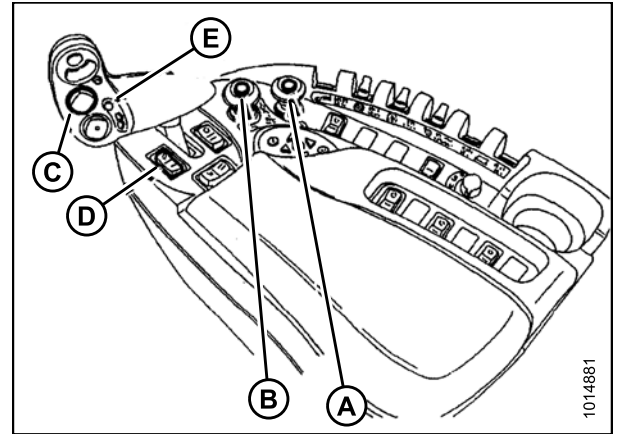


Figure 5.253: New Holland Combine Controls

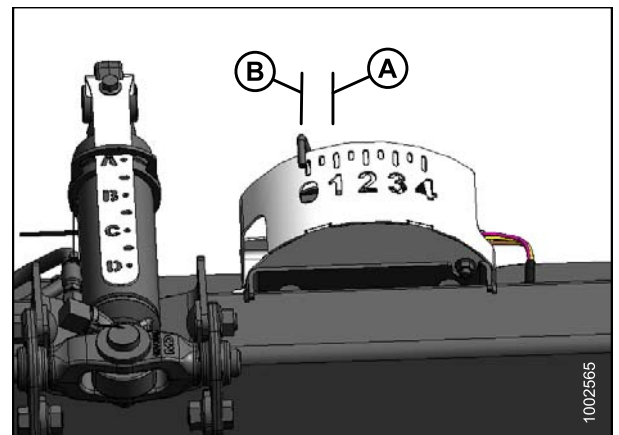


Figure 5.254: Float Indicator Box

SETTING UP AUTO HEADER HEIGHT CONTROL

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

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

NOTE:

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

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

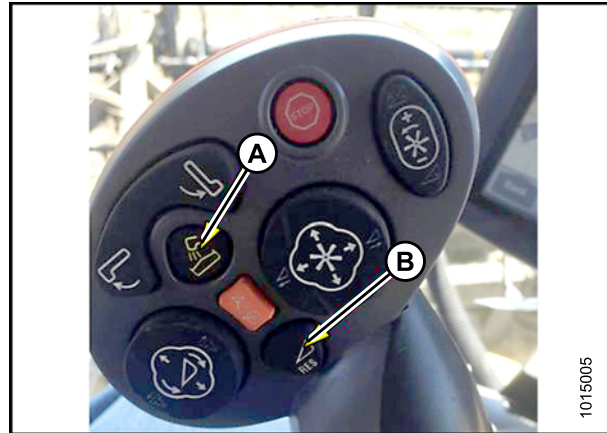


Figure 5.255: New Holland Combine Controls

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



Figure 5.256: New Holland Combine Display

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

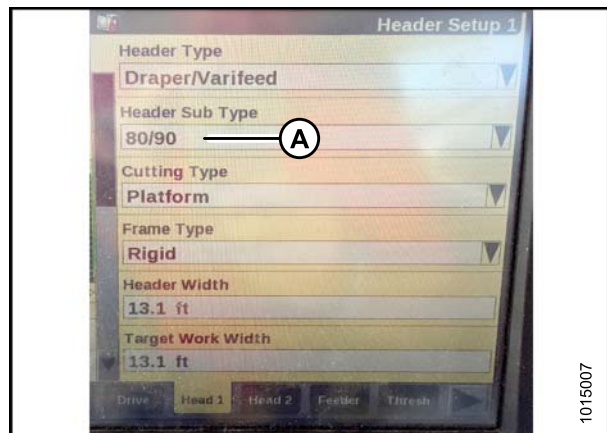


Figure 5.257: New Holland Combine Display

SETTING UP AUTO HEADER HEIGHT CONTROL

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

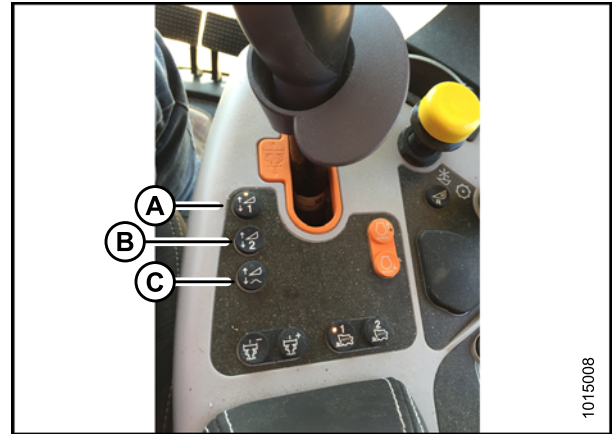


Figure 5.258: New Holland Combine Controls

5.1.15 New Holland Combines (CR Series—Model Year 2015 and Later)

This section applies only to 2015 and later CR models (6.80, 6.90, 7.90, 8.90, 9.90, and 10.90). For other New Holland combine models, refer to [5.1.14 New Holland Combines CX/CR Series \(CR Series—Model Year 2014 and Earlier\)](#), page 248.

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

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

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.

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

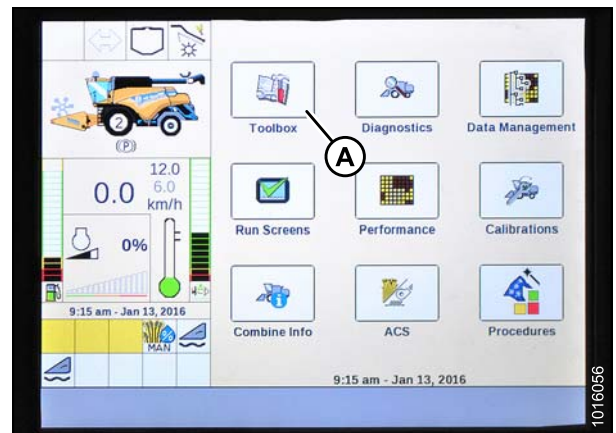


Figure 5.259: New Holland Combine Display

SETTING UP AUTO HEADER HEIGHT CONTROL

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

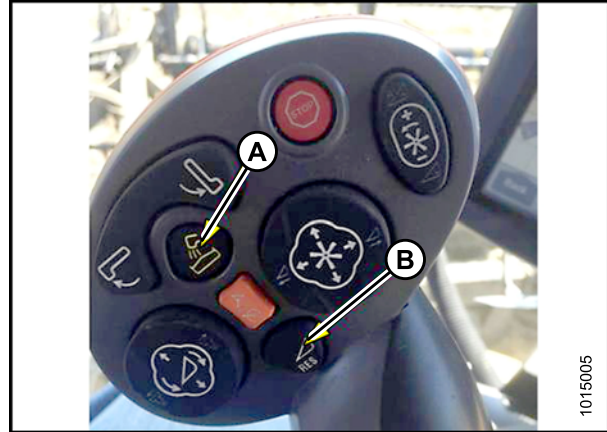


Figure 5.260: New Holland Combine Controls

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

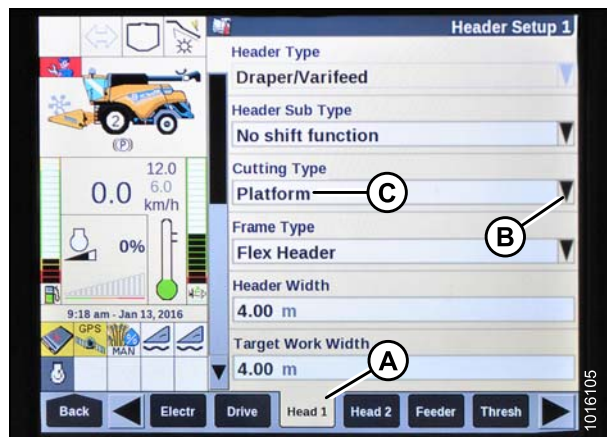


Figure 5.261: New Holland Combine Display

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



Figure 5.262: New Holland Combine Display

SETTING UP AUTO HEADER HEIGHT CONTROL

7. Select 80/90 (A).



Figure 5.263: New Holland Combine Display

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



Figure 5.264: New Holland Combine Display

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

NOTE:

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

11. Set the values for MANUAL HHC RAISE RATE (C) and MANUAL HHC LOWER RATE (D) for best performance according to ground conditions.



Figure 5.265: New Holland Combine Display

SETTING UP AUTO HEADER HEIGHT CONTROL

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

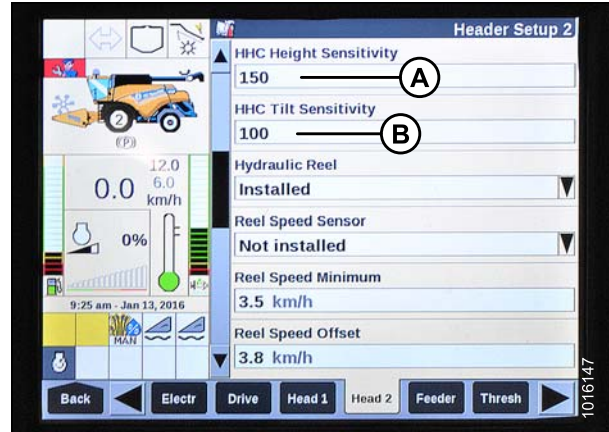


Figure 5.266: New Holland Combine Display

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

NOTE:

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

CAUTION

Check to be sure all bystanders have cleared the area.

- Position the header 150 mm (6 in.) above the ground, and unlock the adapter float.
- 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 the down stops, the float is too light. Readjust the float if necessary.

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.

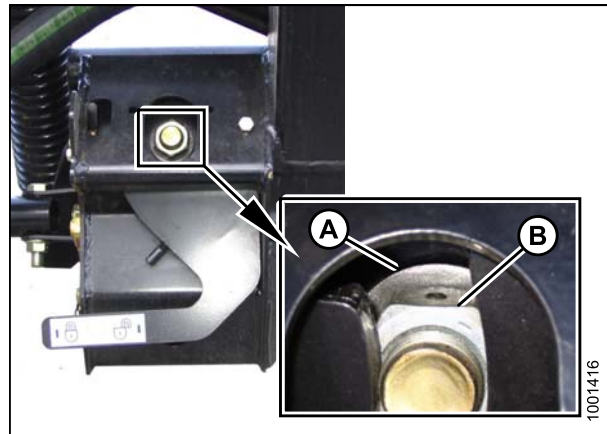


Figure 5.267: Float Lock

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 the 0.

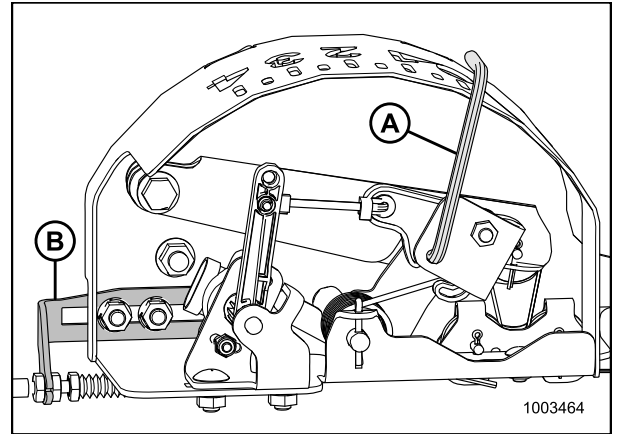


Figure 5.268: 5 Volt AHC Sensor Assembly

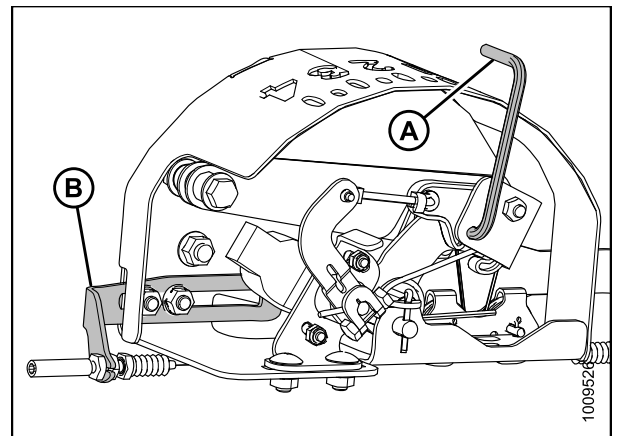


Figure 5.269: 10 Volt AHC Sensor Assembly

- Ensure header float is unlocked.
- Select DIAGNOSTICS (A) on the main page. The DIAGNOSTICS page displays.

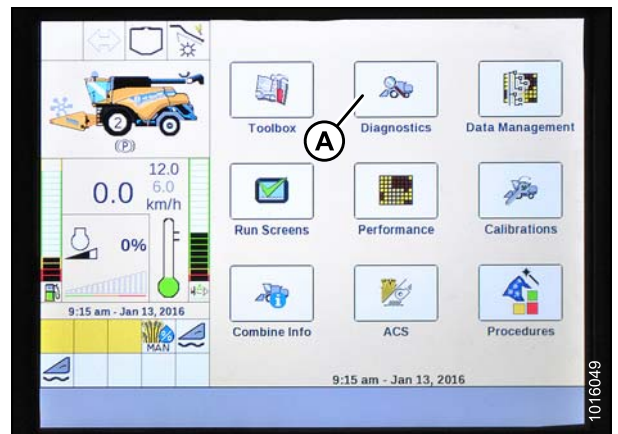


Figure 5.270: New Holland Combine Display

SETTING UP AUTO HEADER HEIGHT CONTROL

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

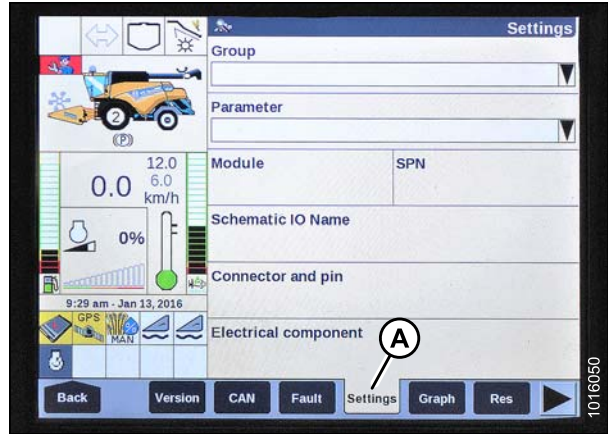


Figure 5.271: New Holland Combine Display

7. Select HEADER HEIGHT/TILT (A) from the GROUP drop-down menu.
8. Select HEADER HEIGHT SENS. L (B) from the PARAMETER drop-down menu.

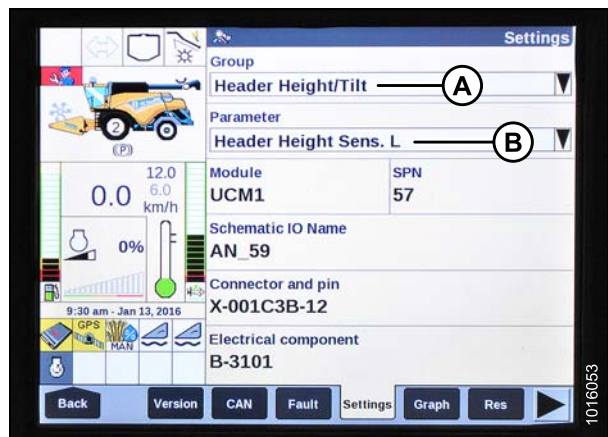


Figure 5.272: New Holland Combine Display

9. Select GRAPH (A). The exact voltage (B) is displayed at the top of the page.
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 138](#)) 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 Sensor Voltage Limits, page 136](#)).

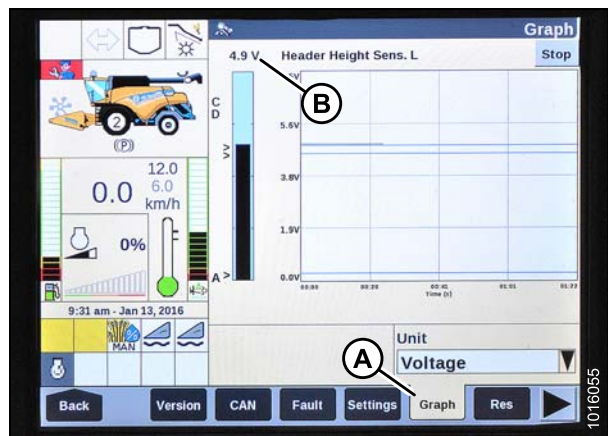


Figure 5.273: New Holland Combine Display

SETTING UP AUTO HEADER HEIGHT CONTROL

Calibrating the Auto Header Height Control (New Holland CR 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.

CAUTION

Check to be sure all bystanders have cleared the area.

Check the following conditions before starting the header calibration procedure:

- The header is attached to the combine.
- The combine is on level ground, with the header level to the ground.
- The 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 AHHC, follow these steps:

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

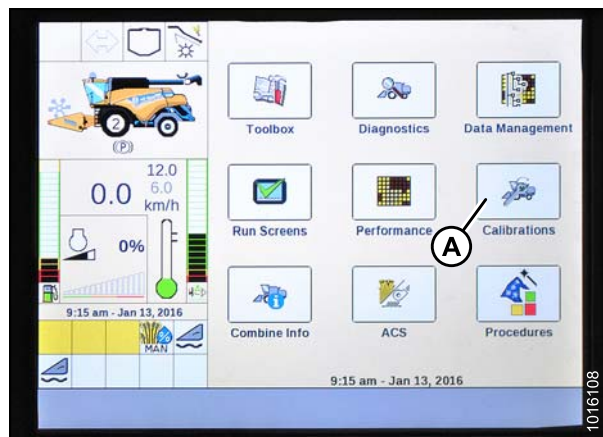


Figure 5.274: New Holland Combine Display

SETTING UP AUTO HEADER HEIGHT CONTROL

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

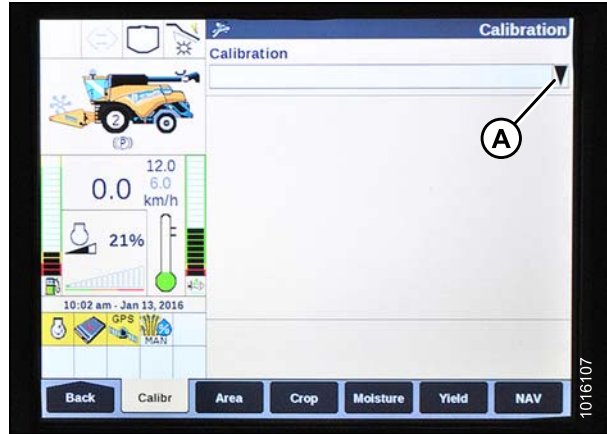


Figure 5.275: New Holland Combine Display

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

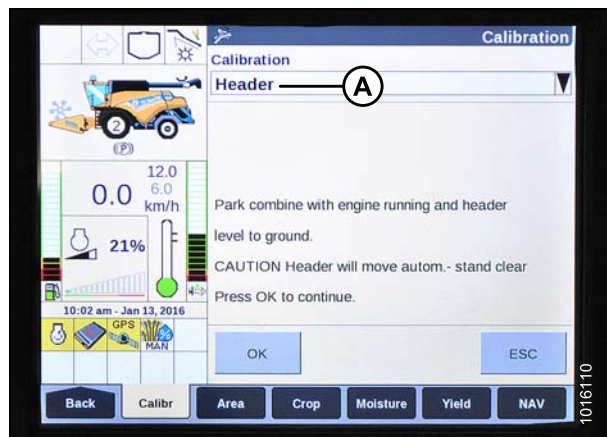


Figure 5.276: New Holland Combine Display

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

NOTE:

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

NOTE:

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



Figure 5.277: New Holland Combine Display

SETTING UP AUTO HEADER HEIGHT CONTROL

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

NOTE:

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



Figure 5.278: New Holland Combine Display

Setting Auto Height (New Holland CR Series)

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

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

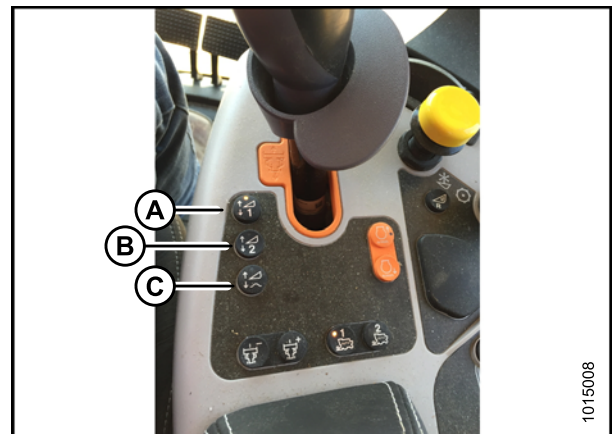


Figure 5.279: New Holland Combine Controls

To set the auto height, follow these steps:

- Engage separator and header.
- Select RUN SCREENS (A) on the main page.

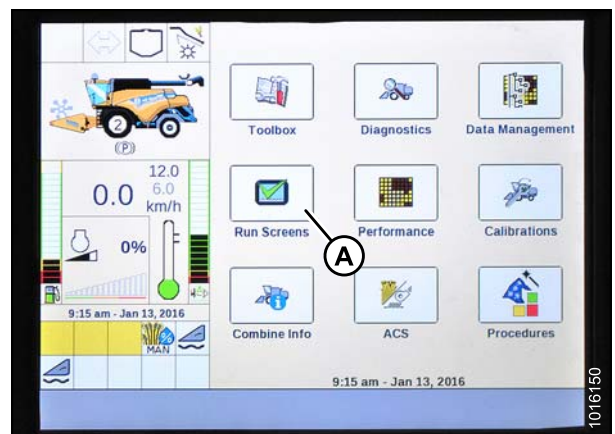


Figure 5.280: New Holland Combine Display

SETTING UP AUTO HEADER HEIGHT CONTROL

3. Select the RUN tab that shows MANUAL HEIGHT.

NOTE:

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

4. Lower the header to the ground.
5. Select one of the auto height set point buttons shown in Figure 5.279: *New Holland Combine Controls, page 267*.
 - Press the SET 1 button for a light ground setting (1 on the float indicator box)
 - Press the SET 2 button for a heavier ground setting (2 on the float indicator box)

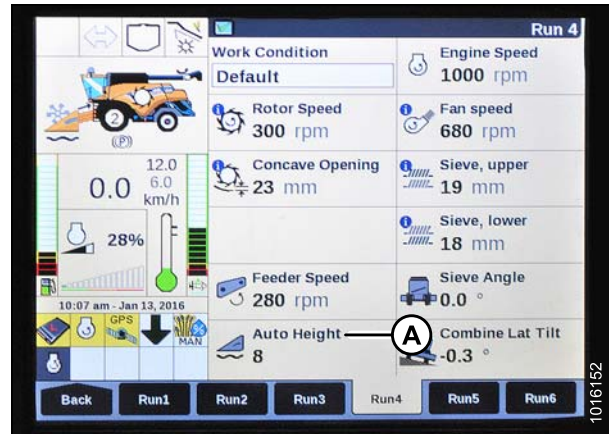


Figure 5.281: New Holland Combine Display

Setting Maximum Work Height (New Holland CR Series)

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

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

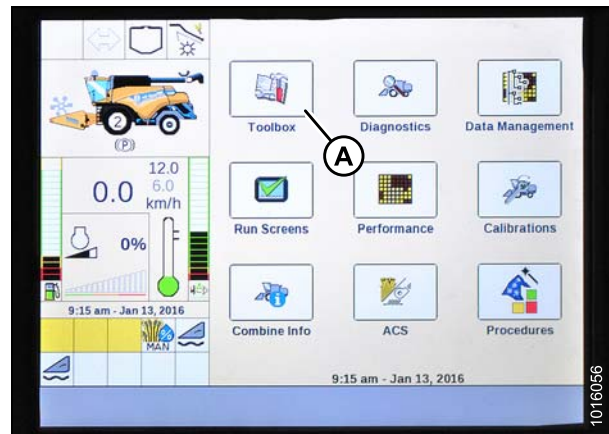


Figure 5.282: New Holland Combine Display

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

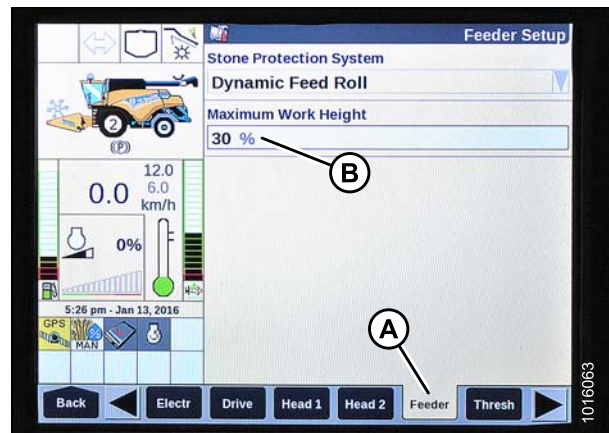


Figure 5.283: New Holland Combine Display

SETTING UP AUTO HEADER HEIGHT CONTROL

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



Figure 5.284: New Holland Combine Display

5.1.16 Sensor Operation

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

- A sensor operating with a signal voltage **below 5%** is considered to be shorted
- 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).

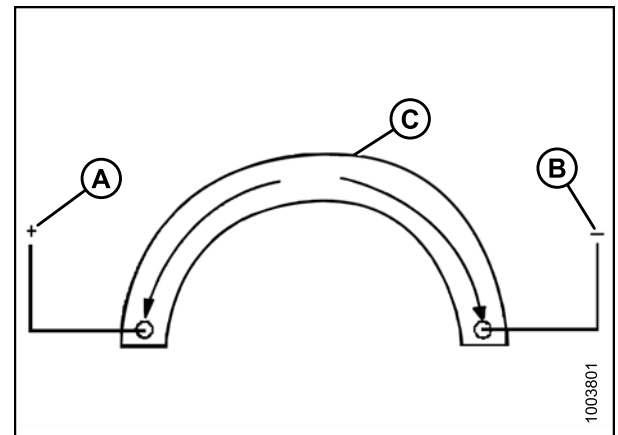


Figure 5.285: Power, Ground, and Signal Wires

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

NOTE:

Ground and power wires may differ depending on combine.

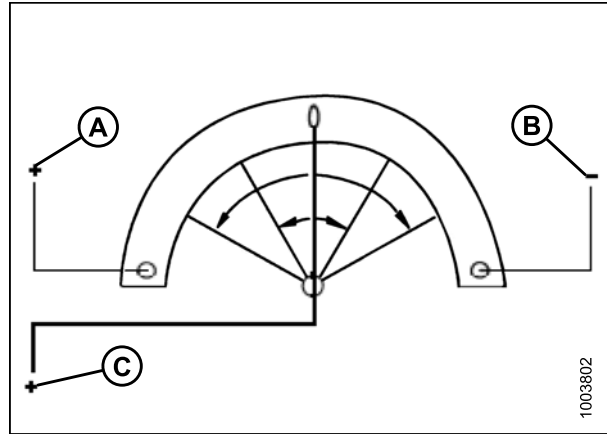


Figure 5.286: Power, Ground, and Signal Wires

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 plastic 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.

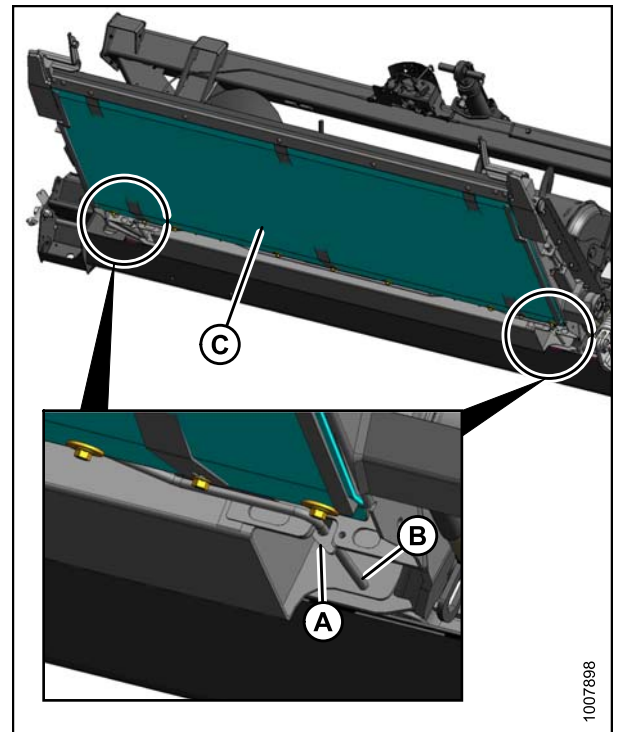


Figure 6.1: Adapter Plastic Pan

RUNNING UP HEADER

4. Check and remove debris from pan (A) and draper.

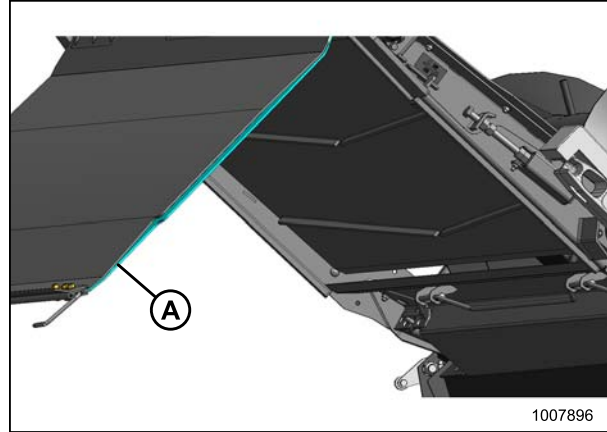


Figure 6.2: Adapter Plastic Pan

5. Raise pan and rotate handle (B) so that rod engages clips (D) on pan.

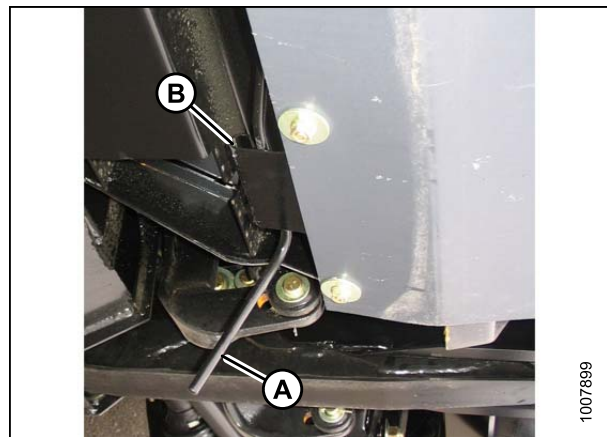


Figure 6.3: Clips Engaged

6. Push handle (B) into slot and secure it with latches (A).
7. Open left endshield.

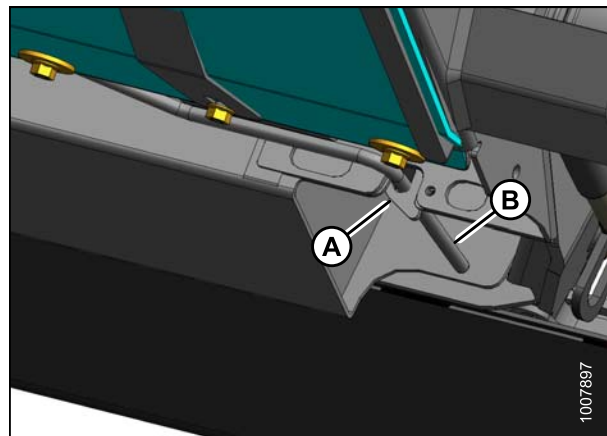


Figure 6.4: Latches Secured

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 293](#) (yellow sheet attached to this instruction) to ensure the machine is field-ready.

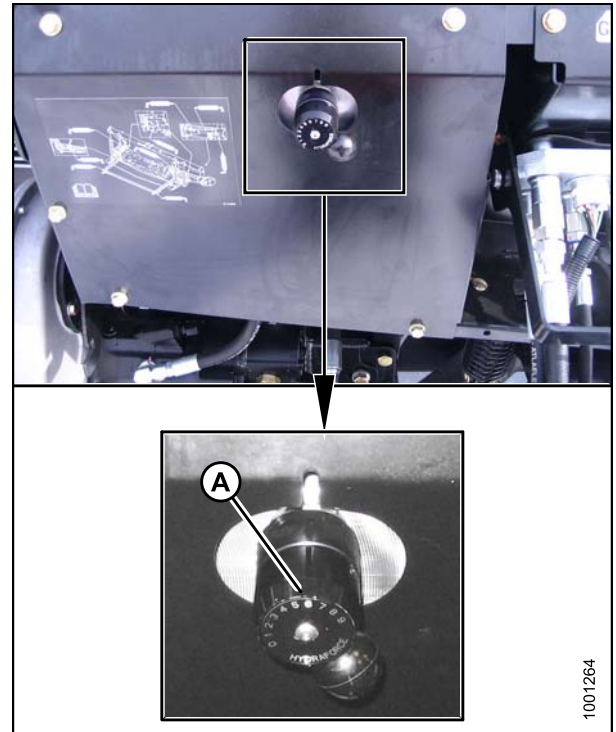


Figure 6.5: Flow Control

6.1 Performing Post Run-Up Adjustments

Perform post run-up check as listed on the Predelivery Checklist. Refer to yellow sheet [Predelivery Checklist, page 293](#) attached to this instruction to ensure machine is field-ready.

WARNING

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

Some adjustments may be necessary after run-up. Refer to the following:

- [6.1.1 Adjusting Knife and Guards, page 273](#)
- [6.1.2 Adjusting Knife Speed, page 275](#)

6.1.1 Adjusting Knife and Guards

WARNING

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

RUNNING UP HEADER

1. Stop engine and remove key.
2. Check guards for signs of heating during run-up due to insufficient clearance between guard and knife.
3. If heating is evident, check gap between knifehead (A) and pitman arm (B). A business card should slide easily through gap. If not, adjust gap by loosening bolt and tapping knifehead (A) with a hammer. Retighten bolt.

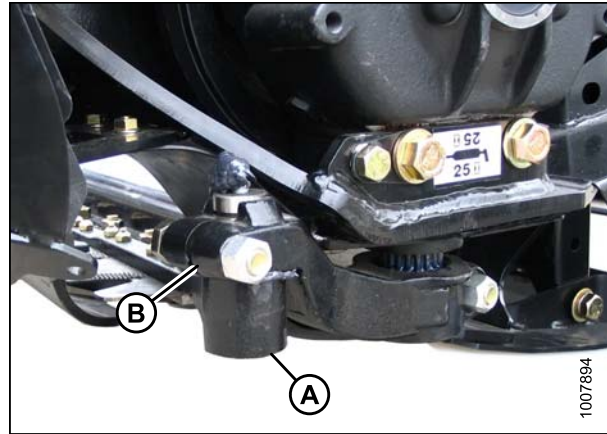


Figure 6.6: Knifehead and Pitman Arm

4. Adjust guard alignment as necessary using guard straightening tool (MD #140135). Adjust guard tips upwards by positioning tool as shown and pulling up.



Figure 6.7: Guard Tips – Upward Adjustment

5. Adjust guard tips downward by positioning tool as shown and pushing down.



Figure 6.8: Guard Tips – Downward Adjustment

6.1.2 Adjusting Knife Speed

The header knife drive is driven by the adapter-mounted hydraulic pump. The following speeds are factory-set for the combine feeder house:

- AGCO: 625 rpm (includes Challenger, Gleaner, and Massey Ferguson)
- Case: 580 rpm
- John Deere: 490 rpm
- Lexion: 750 rpm (420 on combine display)
- New Holland: 580 rpm

DANGER

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

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. Open endshield(s). Refer to [3.4.5 Opening Endshield, page 85](#).

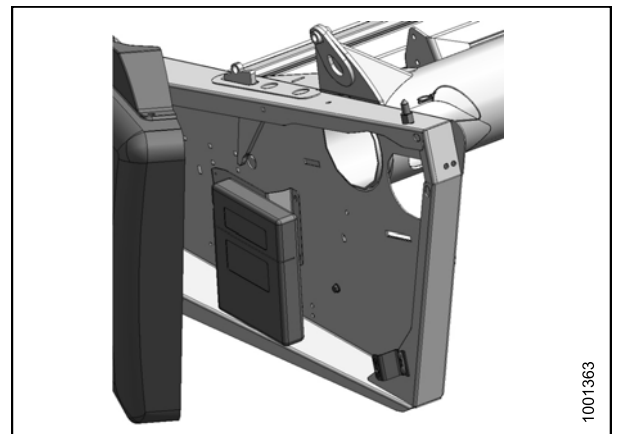


Figure 6.9: Open Endshield

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.

3. Start engine, engage header drive, and run combine at operating rpm.
4. Check the rpm of knife drive box pulley using a handheld tachometer.
5. Stop engine, remove key, and close endshield. Refer to [3.4.9 Closing Endshield, page 89](#).

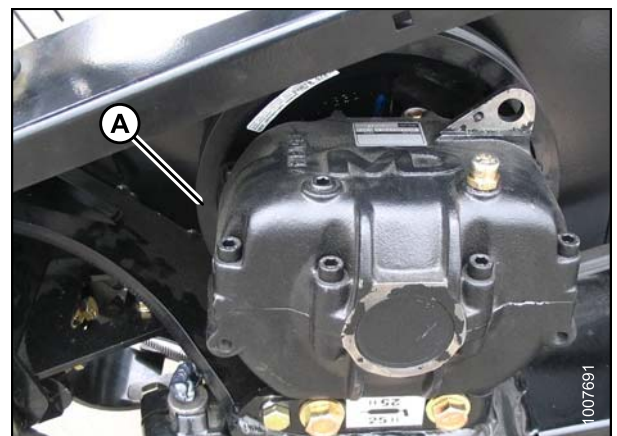


Figure 6.10: Knife Drive Box

RUNNING UP HEADER

6. Compare actual pulley rpm with values in the following chart:

Table 6.1 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	

7. If adjustment to knife drive box pulley rpm is necessary, refer to the header technical manual.

7 Reference

7.1 Torque Specifications

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

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

7.1.1 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 7.1 SAE Grade 5 Bolt and Grade 5 Free Spinning Nut

Nominal Size (A)	Torque (N·m)		Torque (ft·lbf) (*in·lbf)	
	Min.	Max.	Min.	Max.
1/4-20	11.9	13.2	*106	*117
5/16-18	24.6	27.1	*218	*241
3/8-16	44	48	32	36
7/16-14	70	77	52	57
1/2-13	106	118	79	87
9/16-12	153	170	114	126
5/8-11	212	234	157	173
3/4-10	380	420	281	311
7/8-9	606	669	449	496
1-8	825	912	611	676

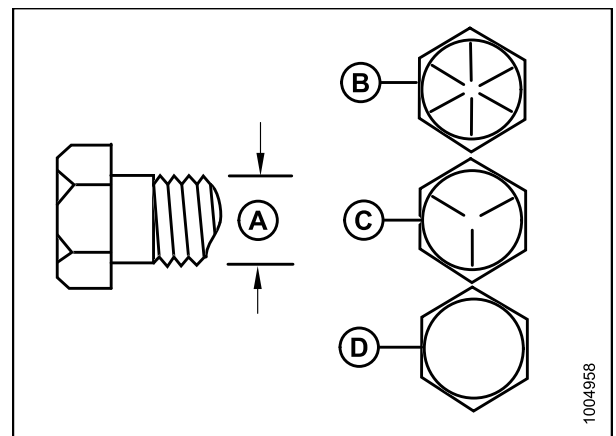


Figure 7.1: Bolt Grades

A - Nominal Size
C - SAE-5

B - SAE-8
D - SAE-2

1004958

REFERENCE

Table 7.2 SAE Grade 5 Bolt and Grade F Distorted Thread Nut

Nominal Size (A)	Torque (N·m)		Torque (ft·lbf) (*in·lbf)	
	Min.	Max.	Min.	Max.
1/4-20	8.1	9	*72	*80
5/16-18	16.7	18.5	*149	*164
3/8-16	30	33	22	24
7/16-14	48	53	35	39
1/2-13	73	80	54	59
9/16-12	105	116	77	86
5/8-11	144	160	107	118
3/4-10	259	286	192	212
7/8-9	413	456	306	338
1-8	619	684	459	507

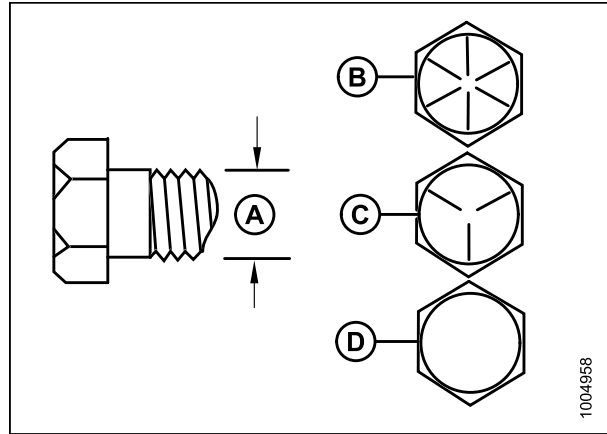


Figure 7.2: Bolt Grades

A - Nominal Size
 B - SAE-8
 C - SAE-5
 D - SAE-2

Table 7.3 SAE Grade 8 Bolt and Grade G Distorted Thread Nut

Nominal Size (A)	Torque (N·m)		Torque (ft·lbf) (*in·lbf)	
	Min.	Max.	Min.	Max.
1/4-20	16.8	18.6	*150	*165
5/16-18	24	26	18	19
3/8-16	42	46	31	34
7/16-14	67	74	50	55
1/2-13	102	113	76	84
9/16-12	148	163	109	121
5/8-11	204	225	151	167
3/4-10	362	400	268	296
7/8-9	583	644	432	477
1-8	874	966	647	716

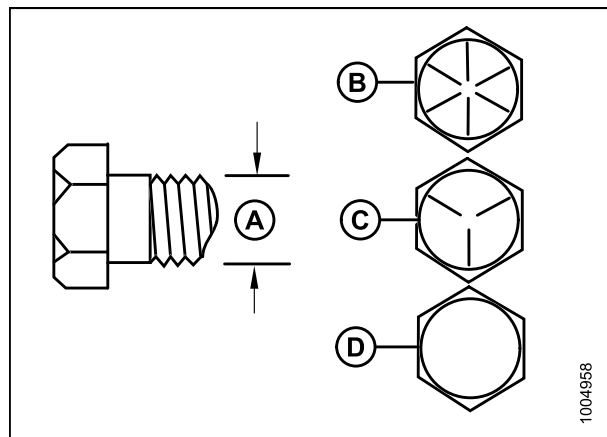


Figure 7.3: Bolt Grades

A - Nominal Size
 B - SAE-8
 C - SAE-5
 D - SAE-2

REFERENCE

Table 7.4 SAE Grade 8 Bolt and Grade 8 Free Spinning Nut

Nominal Size (A)	Torque (N-m)		Torque (ft-lbf) (*in-lbf)	
	Min.	Max.	Min.	Max.
1/4-20	16.8	18.6	*150	*165
5/16-18	35	38	26	28
3/8-16	61	68	46	50
7/16-14	98	109	73	81
1/2-13	150	166	111	123
9/16-12	217	239	160	177
5/8-11	299	330	221	345
3/4-10	531	587	393	435
7/8-9	855	945	633	700
1-8	1165	1288	863	954

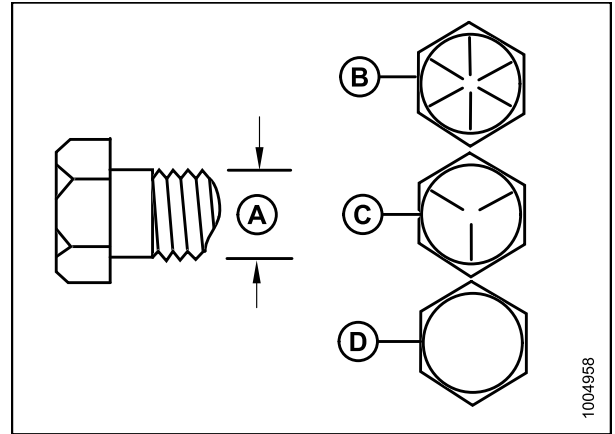


Figure 7.4: Bolt Grades

A - Nominal Size
C - SAE-5

B - SAE-8
D - SAE-2

7.1.2 Metric Bolt Specifications

Table 7.5 Metric Class 8.8 Bolts and Class 9 Free Spinning Nut

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

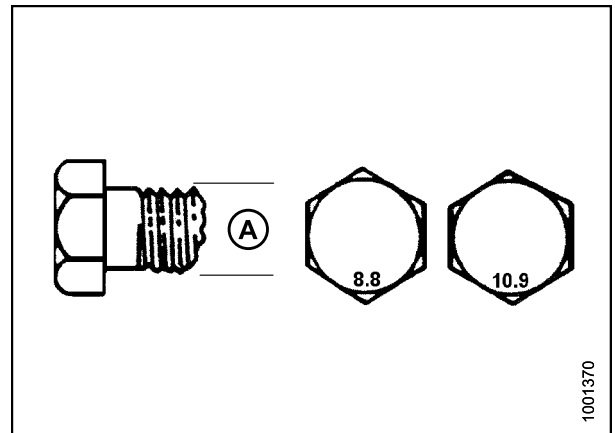


Figure 7.5: Bolt Grades

REFERENCE

Table 7.6 Metric Class 8.8 Bolts and Class 9 Distorted Thread Nut

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

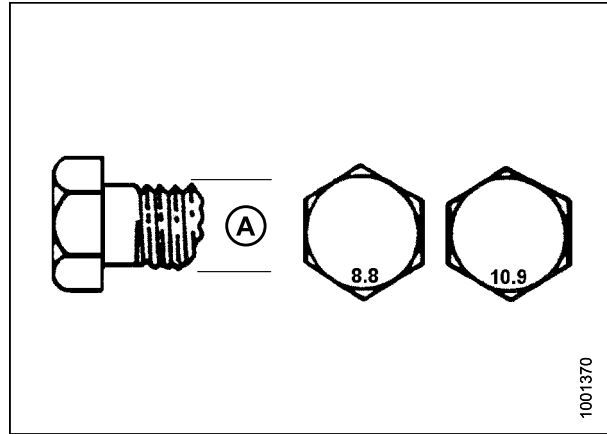


Figure 7.6: Bolt Grades

Table 7.7 Metric Class 10.9 Bolts and Class 10 Free Spinning Nut

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

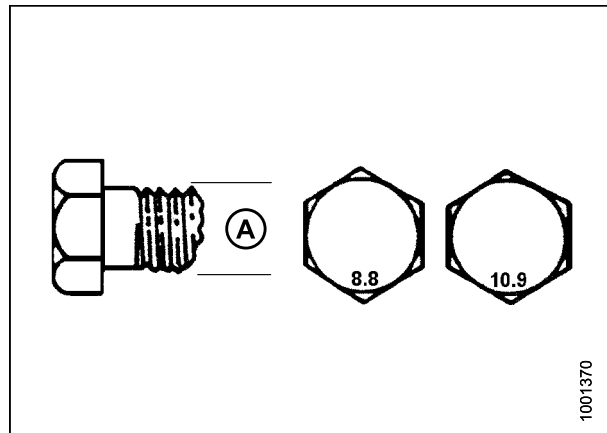


Figure 7.7: Bolt Grades

REFERENCE

Table 7.8 Metric Class 10.9 Bolts and Class 10 Distorted Thread Nut

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

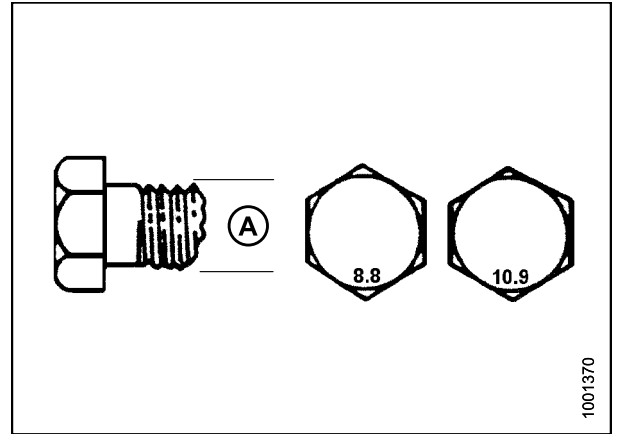


Figure 7.8: Bolt Grades

7.1.3 Metric Bolt Specifications Bolting into Cast Aluminum

Table 7.9 Metric Bolt Bolting into Cast Aluminum

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

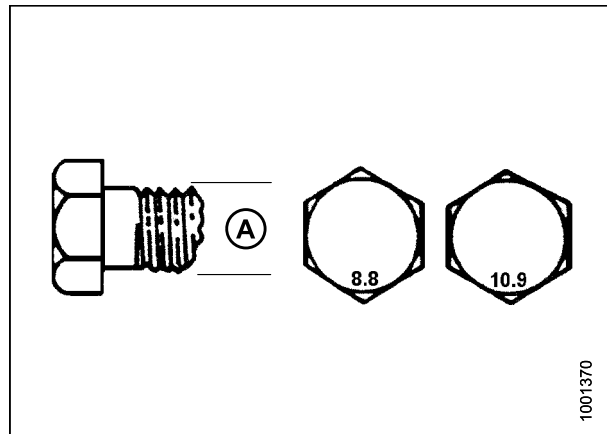


Figure 7.9: Bolt Grades

7.1.4 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 flared surfaces.
3. Torque fitting nut (E) to specified number of flats from finger tight (FFFT) or to a given torque value in [Table 7.10 Flare-Type Hydraulic Tube Fittings, page 283](#).
4. Use two wrenches to prevent fitting (D) from rotating. Place one wrench on fitting body (D), and tighten nut (E) with other wrench to torque shown.
5. Assess final condition of connection.

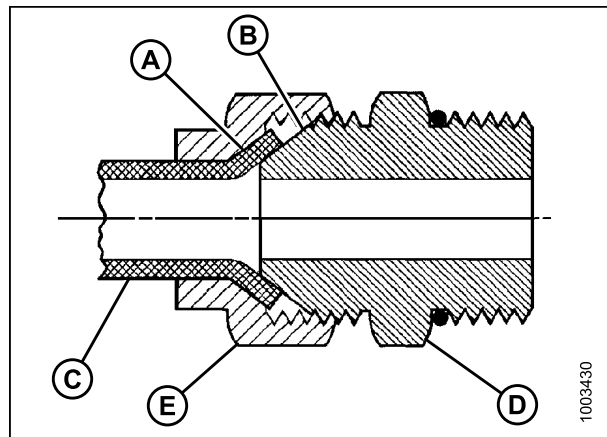


Figure 7.10: Hydraulic Fitting

REFERENCE

Table 7.10 Flare-Type Hydraulic Tube Fittings

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

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

REFERENCE

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

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

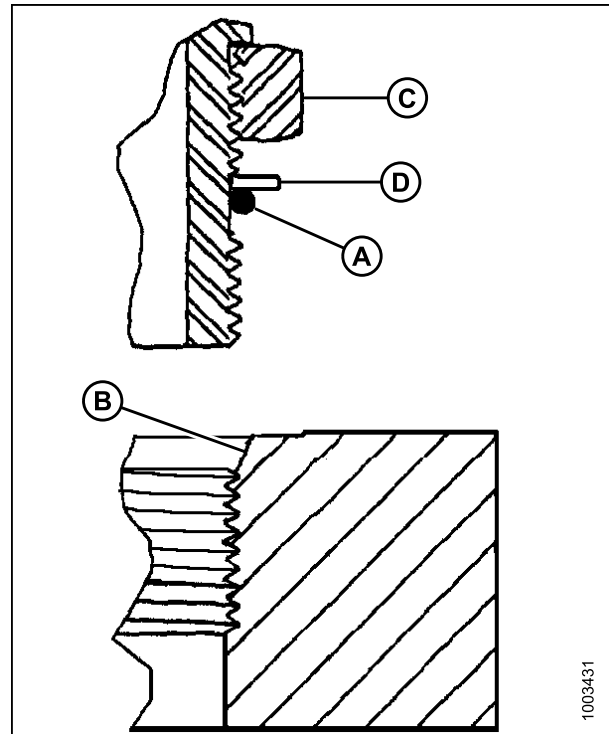


Figure 7.11: Hydraulic Fitting

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

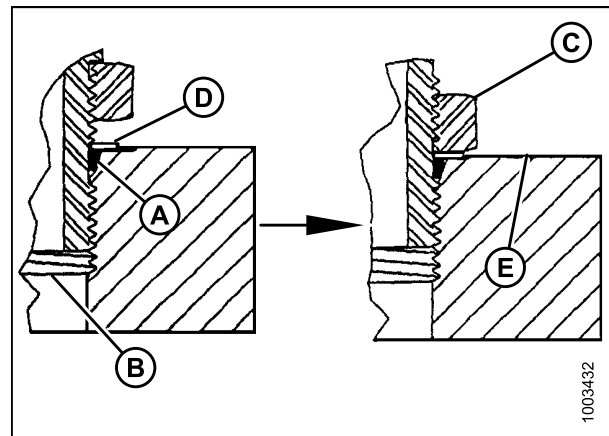


Figure 7.12: Hydraulic Fitting

REFERENCE

Table 7.11 O-Ring Boss (ORB) Hydraulic Fittings (Adjustable)

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

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

REFERENCE

7.1.6 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 threads and adjust if necessary.
3. Apply hydraulic system oil to O-ring.
4. Install fitting (C) into port until fitting is hand tight.
5. Torque fitting (C) according to values in Table 7.12 *O-Ring Boss (ORB) Hydraulic Fittings (Non-Adjustable)*, page 286.
6. Check final condition of fitting.

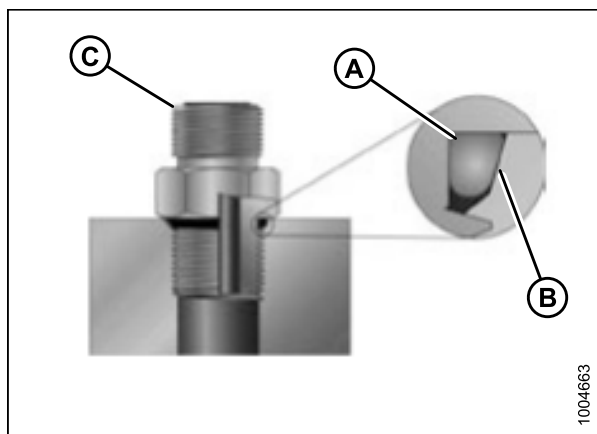


Figure 7.13: Hydraulic Fitting

Table 7.12 O-Ring Boss (ORB) Hydraulic Fittings (Non-Adjustable)

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

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

7.1.7 O-Ring Face Seal (ORFS) Hydraulic Fittings

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



Figure 7.14: Hydraulic Fitting

2. Apply hydraulic system oil to O-ring (B).
3. Align tube or hose assembly so that flat face of sleeve (A) or (C) comes in full contact with O-ring (B).
4. Thread tube or hose nut (D) until hand-tight. The nut should turn freely until it is bottomed out.
5. Torque fittings according to values in Table 7.13 *O-Ring Face Seal (ORFS) Hydraulic Fittings, page 288*.

NOTE:

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

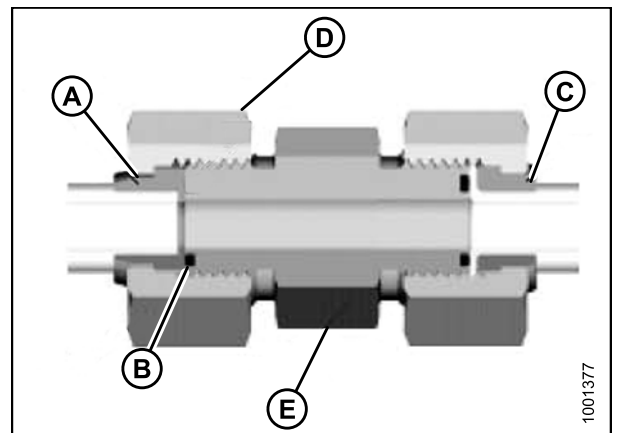


Figure 7.15: Hydraulic Fitting

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

REFERENCE

Table 7.13 O-Ring Face Seal (ORFS) Hydraulic Fittings

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

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

7. O-ring face seal type end not defined for this tube size.

REFERENCE

7.1.8 Tapered Pipe Thread Fittings

Assemble pipe fittings as follows:

1. Check components to ensure that fitting and port threads are free of burrs, nicks and scratches, or any form of contamination.
2. Apply pipe thread sealant (paste type) to external pipe threads.
3. Thread fitting into port until hand-tight.
4. Torque connector to appropriate torque angle. The Turns From Finger Tight (TFFT) values are shown in Table [7.14 Hydraulic Fitting Pipe Thread, page 289](#). Make sure that tube end of a shaped connector (typically 45° or 90°) is aligned to receive incoming tube or hose assembly. Always finish alignment of fitting in tightening direction. Never back off (loosen) pipe threaded connectors to achieve alignment.
5. Clean all residue and any excess thread conditioner with appropriate cleaner.
6. Assess final condition of fitting. Pay special attention to possibility of cracks to port opening.
7. Mark final position of fitting. If a fitting leaks, disassemble fitting and check for damage.

NOTE:

Over-torque failure of fittings may not be evident until fittings are disassembled.

Table 7.14 Hydraulic Fitting Pipe Thread

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

REFERENCE

7.2 Conversion Chart

Table 7.15 Conversion Chart

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

REFERENCE

7.3 Definitions

The following terms and acronyms may be used in this manual.

Term	Definition
API	American Petroleum Institute
ASTM	American Society of Testing and Materials
Bolt	A headed and externally threaded fastener that is designed to be paired with a nut
Center-link	A hydraulic cylinder link between header and machine to which it is attached: It is used to change header angle
CGVW	Combined vehicle gross weight
DWA	Double Windrow Attachment
Finger tight	Finger tight is a reference position where sealing surfaces or components are making contact with each other and fitting has been tightened to a point where 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 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 head (internal-wrenching hexagon drive)
hp	Horsepower
ISC	Intermediate Speed Control
JIC	Joint Industrial Council: A standards body that developed standard sizing and shape for original 37° flared fitting
n/a	Not applicable
Nut	An internally threaded fastener that is designed to be paired with a bolt
NPT	National Pipe Thread: A style of fitting used for low pressure port openings Threads on NPT fittings are uniquely tapered for an interference fit
ORB	O-ring boss: A style of fitting commonly used in port opening on manifolds, pumps, and motors
ORFS	O-ring face seal: A style of fitting commonly used for connecting hoses and tubes This style of fitting is also commonly called ORS, which stands for O-ring seal
RoHS (Reduction of Hazardous Substances)	A directive by the European Union to restrict use of certain hazardous substances (such as hexavalent chromium used in some yellow zinc platings)
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 mating parts

REFERENCE

Term	Definition
Soft joint	A joint made with use of a fastener where joining materials are compressible or experience relaxation over a period of time
Truck	A four-wheel highway/road vehicle weighing no less than 3400 kg (7500 lb.)
Tension	Axial load placed on a bolt or screw, usually measured in Newtons (N) or pounds (lb.)
TFFT	Turns from finger tight
Torque	The product of a force X lever arm length, usually measured in Newton-meters (N·m) or foot-pounds (ft·lbf)
Torque angle	A tightening procedure where fitting is assembled to a precondition (finger tight) and then nut is turned further a number of degrees or a number of flats to achieve its final position
Torque-tension	The relationship between assembly torque applied to a piece of hardware and axial load it induces in bolt or screw
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.	7.1 Torque Specifications, page 277
	Check tire pressure (Transport/Stabilizer Option).	4.1 Checking Transport / Stabilizer Tire Pressure, page 91
	Check wheel bolt torque (Transport/Stabilizer Option).	4.2 Checking Wheel Bolt Torque, page 92
	Check knife drive box breather position.	4.3 Checking Knife Drive Box, page 93
	Check knife drive box lube level.	4.3 Checking Knife Drive Box, page 93
	Check adapter gearbox lube level.	4.4 Checking Oil Level in Header Drive Gearbox, page 94
	Check hydraulic reservoir lube level before and after run-up.	4.5 Checking Oil Level in Hydraulic Reservoir, page 95
	Check knife drive belt(s) tension.	4.6 Checking and Adjusting Non-Timed Knife Drive Belt Tension, page 96
	Check if reel is centered between header endsheets (with header in full smile).	4.8 Centering the Reel, page 99
	Grease all bearings and drivelines.	4.16 Lubricating Header, page 126
	Check side draper tension.	4.13 Checking and Adjusting Side Draper Tension, page 121
	Check draper seal.	4.15 Checking Draper Seal, page 124
	Check wing balance.	4.10.1 Checking Wing Balance, page 105
	Check header float.	4.9 Checking and Adjusting Header Float, page 100
	Check reel tine to cutterbar clearance.	4.11.1 Measuring Reel Clearance, page 115
	Check auger flighting to feed pan clearance.	4.12 Adjusting Auger to Pan Clearance, page 119
	Check the knife hold-down adjustment.	4.7 Checking and Adjusting Knife Hold-Downs, page 97

PREDELIVERY CHECKLIST

✓	Item	Reference
	Check fitment of endshields.	4.17 Checking and Adjusting Endshields, page 133
	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 135
Run-up procedure		6 Running Up Header, page 271
	Check hydraulic hose and wiring harness routing for clearance when raising or lowering header and reel.	—
	Check lights are functional.	—
	Check knife speed.	6.1.2 Adjusting Knife Speed, page 275
Post run-up check. Stop engine.		6.1 Performing Post Run-Up Adjustments, page 273
	Check knife sections for discoloration caused by misalignment of components.	6.1.1 Adjusting Knife and Guards, page 273
	Check for hydraulic leaks.	—
	Check that the manual storage case contains all of the required manuals.	4.18 Checking Manuals, page 134

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