

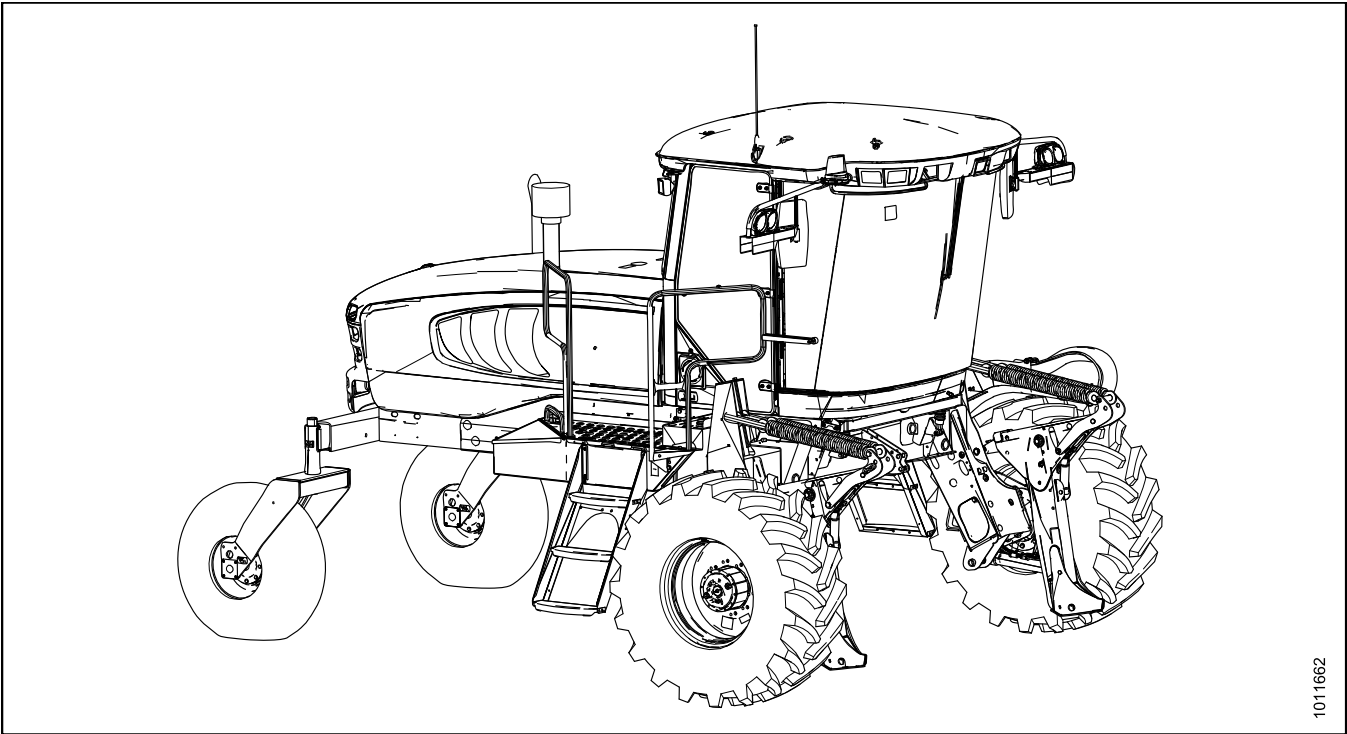
M155E4

Self-Propelled Windrower

Unloading and Assembly Instructions (Container Shipments)

214040 Revision A
2017 Model Year
Original Instruction

Featuring the Dual Direction® and Ultra Glide® suspension on the M155E4.



1011662

Published in June, 2016

Introduction

This instruction manual describes the unloading, setup, and predelivery requirements for the MacDon M155E4 Self-Propelled Windrowers shipped in containers.

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

Retain this instruction for future reference.

Conventions

The following conventions are used in this document: Right- and left-hand are determined from the operator's position. The front of the windrower is the side that faces the crop.

NOTE:

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

EC Declaration of Conformity—Windrower Lift Sling

Table 1 EC Declaration of Conformity



EC Declaration of Conformity

MacDon Industries Ltd
680 Moray Street
Winnipeg, Manitoba, Canada R3J 3S3

The person named below declares that:

Machine type: Windrower Lift Sling
Model: Part 163871
Serial Number(s): Not Applicable

fulfills all relevant provisions and essential requirements of the following directives:

Directive	Number	Certification Method
Machinery Directive	2006/42/EC	Self-Certification

Name and address of the person in the European Community authorized to compile the technical construction file:


Johannes Molitor
Schwarzwald Strasse 67
66482 Zweibrucken / Germany
HRB 31002, Amtgericht Zweibrucken

Place of Declaration: Winnipeg, Manitoba, Canada **Name:** Ibrahim Saleh
Date of Declaration: 21 May 2013 **Title:** Director, Product Integrity

1006109

EC Declaration of Conformity—Windrower Assembly Supports

Table 2 EC Declaration of Conformity

	EC Declaration of Conformity	
	MacDon Industries Ltd 680 Moray Street Winnipeg, Manitoba, Canada R3J 3S3	
<i>The person named below declares that:</i>		
	Machine type:	Windrower Assembly Supports
	Model:	Part 163655
	Serial Number(s):	<u>Not Applicable</u>
<i>fulfills all relevant provisions and essential requirements of the following directives:</i>		
Directive	Number	Certification Method
Machinery Directive	2006/42/EC	Self-Certification
<i>Name and address of the person in the European Community authorized to compile the technical construction file:</i>		
Johannes Molitor Schwarzwald Strasse 67 66482 Zweibrucken / Germany HRB 31002, Amtsgericht Zweibrucken		
Place of Declaration:	<u>Winnipeg, Manitoba, Canada</u>	Name: <u>Ibrahim Saleh</u>
Date of Declaration:	<u>21 May 2013</u>	Title: <u>Director, Product Integrity</u>

1006110

List of Revisions

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

Summary of Change	Location
Removed a step and updated illustration to point to the right part.	5.9 Checking Gearbox Lubricant Level, page 198
Changed measurement format so that metric appear first followed by imperial in parenthesis.	Throughout the book
Changed the term selective catalytic reduction (SCR) canister to exhaust canister.	3.11 Installing Exhaust Stack, page 58
Revised Intermediate Speed Control (ISC).	4.4.15 Setting the Engine Intermediate Speed Control (ISC) RPM, page 150
Added procedure	5.8 Draining and Refilling the Diesel Exhaust Fluid (DEF) Tank, page 196
Added a step to add fuel, fluids, or lubricants.	<ul style="list-style-type: none"> • 5.2 Checking Wheel Drive Lubricant Level, page 188 • 5.5 Checking Hydraulic Oil, page 193 • 5.7 Checking Engine Coolant, page 195 • 5.9 Checking Gearbox Lubricant Level, page 198
Changed illustrations to show the new battery hold-down.	<ul style="list-style-type: none"> • 3.7 Removing Battery Shipping Shield, page 50 • 3.14 Connecting Batteries, page 65
Replaced the M155E4 supplement with a complete version of unloading and assembly instruction intended for M155E4 export market.	This book (MD #214040)

TABLE OF CONTENTS

Introduction	i
EC Declaration of Conformity—Windrower Lift Sling	ii
EC Declaration of Conformity—Windrower Assembly Supports.....	iii
List of Revisions	iv
1 Safety	1
1.1 Signal Words.....	1
1.2 General Safety	2
1.3 Battery Safety.....	4
1.4 Safety Signs.....	5
2 Unloading the Windrower.....	7
2.1 Unloading Container	7
2.2 Moving to Assembly Area.....	8
2.2.1 Moving to Assembly Area: Crane Method	8
2.2.2 Moving to Assembly Area: Forklift Method	10
2.3 Removing Wheel and Step Assembly.....	12
2.4 Removing Drive Wheels.....	16
2.5 Removing Platforms.....	18
2.6 Removing Hand Rails and Exhaust Stack.....	20
2.7 Removing Leg Assemblies	21
2.8 Removing Wheel and Platform Support.....	24
3 Assembling the Windrower	27
3.1 Assembling Support Stand	27
3.2 Lifting Windrower onto Stand.....	28
3.2.1 Lifting Windrower onto Stand: Crane Method	28
3.2.2 Lifting Windrower onto Stand: Forklift Method	30
3.3 Installing Legs	31
3.4 Installing Drive Wheels.....	34
3.5 Installing Caster Wheels.....	36
3.6 Installing Hydraulics	40
3.7 Removing Battery Shipping Shield.....	50
3.8 Unpacking Ignition Keys.....	51
3.9 Installing Platforms	53
3.10 Installing Steps	57
3.11 Installing Exhaust Stack	58
3.12 Installing Pre-cleaner	61
3.12.1 Adjusting Pre-cleaner	62
3.13 Positioning Light and Mirror Assemblies.....	64
3.14 Connecting Batteries.....	65
3.15 Priming Hydraulic System	66
3.16 Starting Engine.....	70
3.17 Checking Traction Drive	73
3.18 Removing Windrower from Stand	74
3.18.1 Removing Windrower from Factory Stand.....	74
3.18.2 Removing Windrower from Field Stand.....	75
3.19 Installing AM/FM Radio	76
3.20 Installing Beacons.....	80
3.21 Installing the Slow Moving Vehicle (SMV) Sign	82
3.22 Attaching Headers	83
3.22.1 Attaching Header Boots.....	83
3.22.2 Attaching a D-Series Header.....	84
Attaching a D-Series Header: Hydraulic Center-Link with Optional Self-Alignment	84
Attaching a D-Series Header: Hydraulic Center-Link without Self-Alignment	89
3.22.3 Attaching an A-Series Header	95

TABLE OF CONTENTS

Attaching an A-Series Header: Hydraulic Center-Link with Optional Self-Alignment.....	96
Attaching an A-Series Header: Hydraulic Center-Link without Self-Alignment	101
3.22.4 Attaching an R-Series Header	107
Attaching an R-Series Header: Hydraulic Center-Link with Optional Self-Alignment	107
Attaching an R-Series Header: Hydraulic Center-Link without Self-Alignment	112
3.23 Lubricating the Windrower	118
3.23.1 Lubrication Procedure	118
3.23.2 Lubrication Points.....	119
3.24 Fuel and Diesel Exhaust Fluid (DEF) Display Module.....	120
4 Cab Display Module (CDM).....	123
4.1 Cab Display Module (CDM) Programming	123
4.2 Cab Display Options	125
4.2.1 Setting the Cab Display Language.....	125
4.2.2 Changing the Windrower Display Units	126
4.2.3 Adjusting the Cab Display Buzzer Volume.....	127
4.2.4 Adjusting the Cab Display Backlighting	128
4.2.5 Adjusting the Cab Display Contrast	129
4.3 Calibrating the Header Sensors	131
4.3.1 Calibrating the Header Height Sensor.....	131
4.3.2 Calibrating the Header Tilt Sensor	133
4.3.3 Calibrating the Header Float Sensors	135
4.4 Programming the Windrower	137
4.4.1 Activating the Hydraulic Center-Link	137
4.4.2 Activating the Rotary Header Drive Hydraulics	137
4.4.3 Setting the Header Knife Speed	138
4.4.4 Setting the Knife Overload Speed.....	139
4.4.5 Setting the Rotary Disc Overload Speed	140
4.4.6 Setting the Hydraulic Overload Pressure.....	141
4.4.7 Setting the Header Index Mode	142
4.4.8 Setting the Return to Cut Mode	143
4.4.9 Setting the Header Cut Width.....	144
4.4.10 Activating the Double Windrow Attachment (DWA)	144
4.4.11 Setting the Auto Raise Height	146
4.4.12 Activating the Hay Conditioner	147
4.4.13 Displaying Reel Speed	148
4.4.14 Setting the Windrower's Tire Size.....	149
4.4.15 Setting the Engine Intermediate Speed Control (ISC) RPM	150
4.4.16 Clearing Sub-Acres	151
4.5 Activating Cab Display Lockouts.....	152
4.5.1 Activating Knife Speed Control Lockout	152
4.5.2 Activating Rotary Disc Speed Control Lockout.....	153
4.5.3 Activating the Header Float Control Lockout.....	154
4.5.4 Activating the Draper Speed Control Lockout	155
4.5.5 Activating the Auger Speed Control Lockout	157
4.5.6 Activating the Reel Speed Control Lockout	158
4.5.7 Activating the Reel Fore-Aft Control Lockout.....	159
4.5.8 Activating the Header Tilt Control Lockout.....	160
4.6 Displaying Activated Cab Display Lockouts	161
4.7 Troubleshooting Windrower Problems.....	163
4.7.1 Displaying the Windrower and Engine Error Codes.....	163
4.7.2 Switching the Installed Header Sensors ON or OFF.....	164
4.7.3 Displaying Header Sensor Input Signals	165
4.7.4 Forcing a Header ID	167
4.8 Troubleshooting Header Problems.....	169

TABLE OF CONTENTS

4.8.1	Testing the Header Up/Down Activate Function Using the Cab Display Module (CDM)	169
4.8.2	Testing the Reel Up/Down Activate Function Using the Cab Display Module (CDM).....	170
4.8.3	Testing the Header Tilt Activate Function Using the Cab Display Module (CDM).....	172
4.8.4	Testing the Reel Fore-Aft Activate Function Using the Cab Display Module (CDM)	174
4.8.5	Activating the Hydraulic Purge Using the Cab Display Module (CDM)	175
4.8.6	Testing the Knife Drive Circuit Using the Cab Display Module (CDM).....	177
4.8.7	Testing the Draper Drive Circuit Activate Function Using the Cab Display Module (CDM)	179
4.8.8	Testing the Reel Drive Circuit Activate Function Using the Cab Display Module (CDM)	180
4.8.9	Testing the Rotary Disc Drive Circuit Activate Function Using the Cab Display Module (CDM)	182
4.8.10	Testing the Double Windrower Attachment (DWA) Drive Activate Function Using the Cab Display Module (CDM)	184
5	Performing Predelivery Checks.....	187
5.1	Recording Serial Numbers	187
5.2	Checking Wheel Drive Lubricant Level	188
5.3	Checking Tire Pressures and Adding Tire Ballast.....	189
5.3.1	Checking Tire Pressures.....	189
5.3.2	Adding Tire Ballast	189
5.4	Checking Engine Air Intake	191
5.5	Checking Hydraulic Oil.....	193
5.6	Checking Fuel Separator.....	194
5.7	Checking Engine Coolant.....	195
5.8	Draining and Refilling the Diesel Exhaust Fluid (DEF) Tank	196
5.9	Checking Gearbox Lubricant Level	198
5.10	Checking Air Conditioning (A/C) Compressor Belts	199
5.11	Checking Safety System	200
5.12	Performing Operational Checks	202
5.12.1	Checking Engine Warning Lights.....	202
5.12.2	Checking Windrower Startup.....	203
5.12.3	Checking Engine Speed	203
5.12.4	Checking Gauges and Cab Display Module (CDM) Display.....	204
5.12.5	Checking Electrical System.....	204
5.12.6	Checking Operator's Presence System.....	205
5.12.7	Checking Exterior Lights	207
5.12.8	Checking Auto Road Light	209
5.12.9	Checking Horn	210
5.12.10	Checking Interior Lights	210
5.12.11	Checking Air Conditioning (A/C) and Heater.....	211
5.13	Checking Manuals	212
5.14	Performing Final Steps.....	213
6	Reference.....	215
6.1	Torque Specifications.....	215
6.1.1	SAE Bolt Torque Specifications	215
6.1.2	Metric Bolt Specifications.....	217
6.1.3	Metric Bolt Specifications Bolting into Cast Aluminum	220
6.1.4	Flare-Type Hydraulic Fittings.....	220
6.1.5	O-Ring Boss (ORB) Hydraulic Fittings (Adjustable).....	222
6.1.6	O-Ring Boss (ORB) Hydraulic Fittings (Non-Adjustable)	224
6.1.7	O-Ring Face Seal (ORFS) Hydraulic Fittings.....	225
6.1.8	Tapered Pipe Thread Fittings	227
6.2	Conversion Chart.....	228
6.3	Definitions	229
	Predelivery Checklist	233

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.

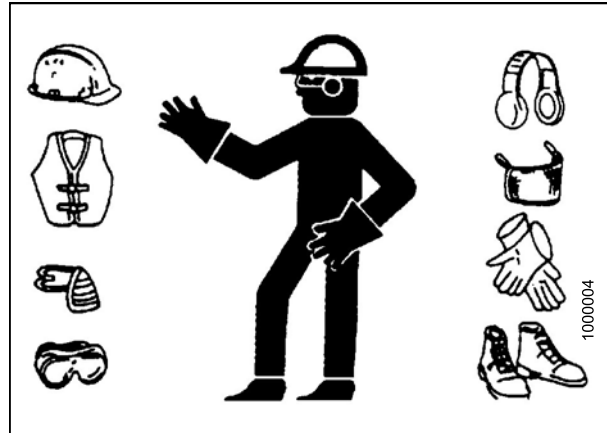


Figure 1.1: Safety Equipment



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.

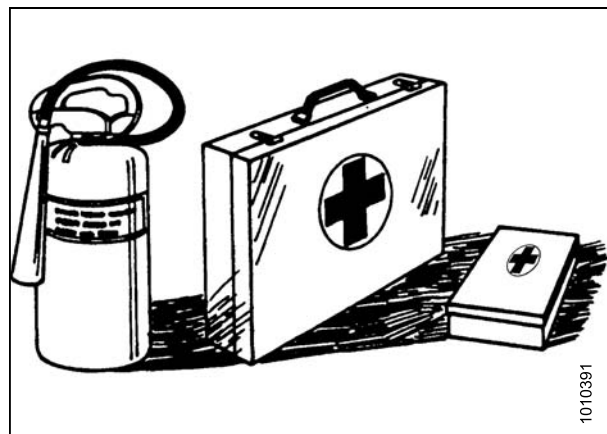


Figure 1.3: Safety Equipment

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.

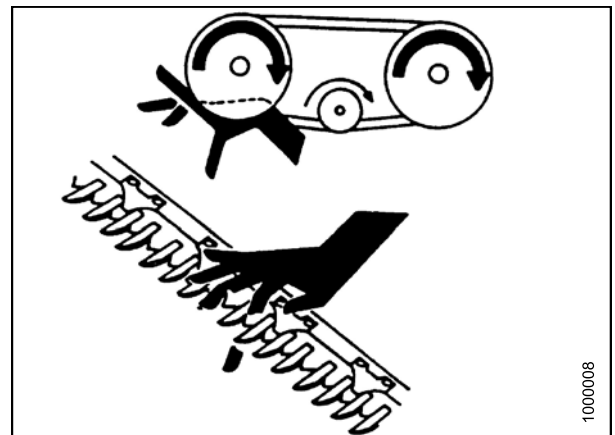


Figure 1.5: Safety around Equipment

- 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 Battery Safety

WARNING

- Keep all sparks and flames away from the batteries, as a gas given off by electrolyte is explosive.
- Ventilate when charging in enclosed space.

WARNING

- Wear safety glasses when working near batteries.
- Do NOT tip batteries more than 45° to avoid electrolyte loss.
- Battery electrolyte causes severe burns. Avoid contact with skin, eyes, or clothing.
- Electrolyte splashed into the eyes is extremely dangerous. Should this occur, force the eye open, and flood with cool, clean water for five minutes. Call a doctor immediately.
- If electrolyte is spilled or splashed on clothing or the body, neutralize it immediately with a solution of baking soda and water, then rinse with clear water.

WARNING

- To avoid injury from spark or short circuit, disconnect battery ground cable before servicing and part of electrical system.
- Do NOT operate the engine with alternator or battery disconnected. With battery cables disconnected and engine running, a high voltage can be built up if terminals touch the frame. Anyone touching the frame under these conditions would be severely shocked.
- When working around storage batteries, remember that all of the exposed metal parts are live. Never lay a metal object across the terminals because a spark or short circuit will result.
- Keep batteries out of reach of children.



Figure 1.7: Safety around Batteries

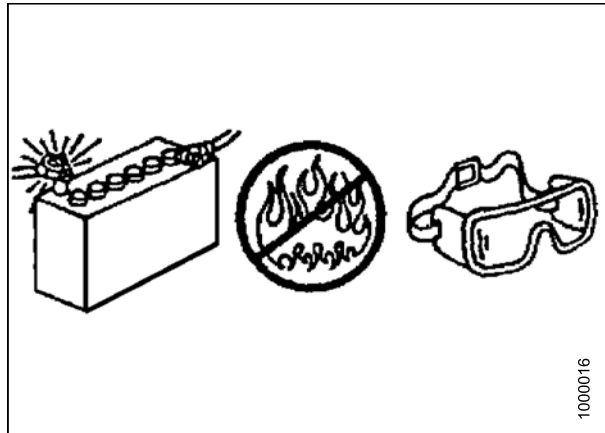


Figure 1.8: Safety around Batteries

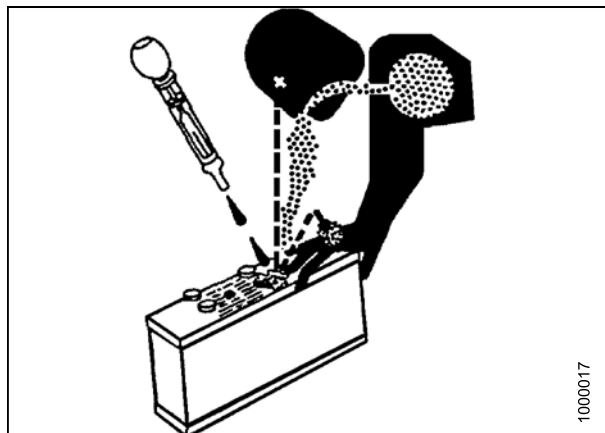


Figure 1.9: Safety around Batteries

1.4 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.

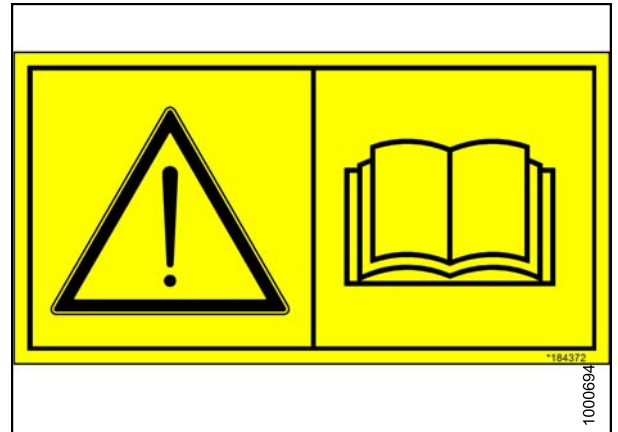


Figure 1.10: Operator's Manual Decal

2 Unloading the Windrower

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

2.1 Unloading Container

CAUTION

To prevent injury to bystanders and avoid striking them with machinery, do NOT allow people to stand in the unloading area.

1. Move trailer into position and block trailer wheels.
2. Lower trailer storage stands.
3. Unlock and open container doors and remove all blocking.
4. Check container floor for nails or other obstructions and remove if necessary.
5. Position platform or ramp at container opening.
6. Attach chain/pull strap to slots in support channels (A).
7. Pull the windrower slowly from the container onto the platform.



Figure 2.1: Windrower Shipping Assembly

2.2 Moving to Assembly Area

The windrower can be moved to the assembly area using either a crane (refer to [2.2.1 Moving to Assembly Area: Crane Method, page 8](#)) or a forklift (refer to [2.2.2 Moving to Assembly Area: Forklift Method, page 10](#)).

2.2.1 Moving to Assembly Area: Crane Method

CAUTION

To prevent injury to bystanders and avoid striking them with machinery, do NOT allow people to stand in the unloading area.

CAUTION

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

Lift Sling	
Type	MacDon Part #163871
Maximum Working Load	12,884 kg (28,404 lb)
Chain	
Type	Overhead 1/2 in. lifting quality
Minimum Working Load	3221 kg (7100 lb)
Lifting Vehicle	
Minimum Lifting Capacity	9072 kg (20,000 lb)

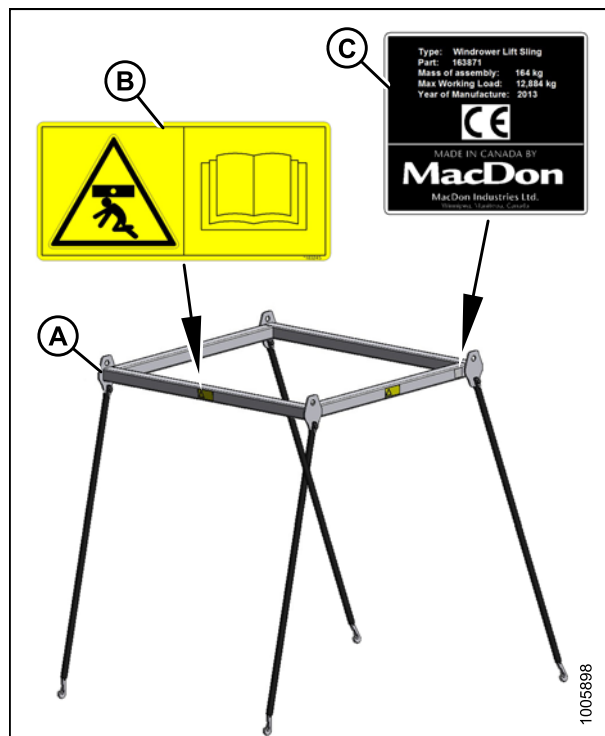


Figure 2.2: Lift Sling

- A - Lift Sling (MD #163871)
- B - Decal (MD #183245) (Four Places)
- C - Decal (MD #183248)

UNLOADING THE WINDROWER

1. Attach chains or cables to the four lifting points on the lift sling (MD #163871), and connect the loop ends to the crane hook.

IMPORTANT:

Use cables or chains with a minimum lifting capacity of 3221 kg (7100 lb).

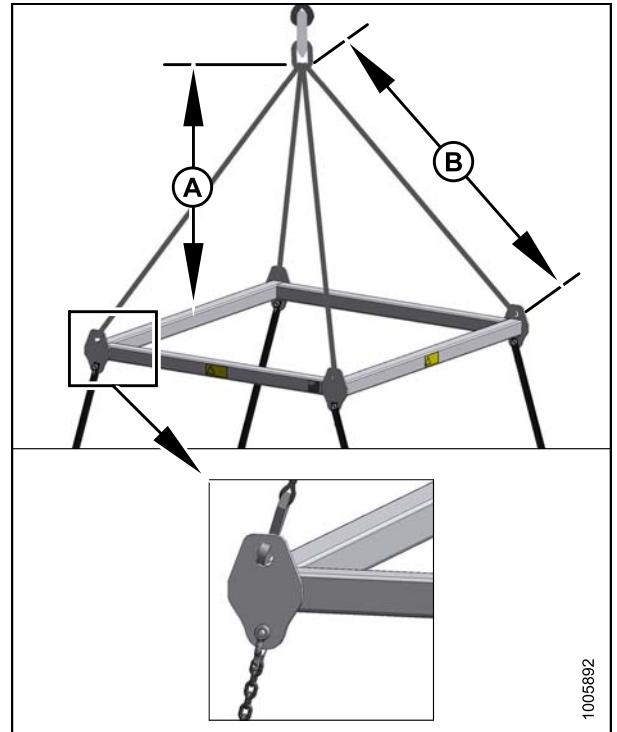


Figure 2.3: Lift Sling

A - 1500 mm (59 in.) Minimum B - 2120 mm (83.5 in.) Typical

2. Attach lift sling (MD #163871) to the four designated lifting points on the windrower shipping frame.

⚠ DANGER

To avoid injury or death from a swinging or falling load, keep all bystanders clear when lifting. Equipment used for lifting must exceed the maximum requirements specified in this section.

3. Lift the windrower off the platform and move to the setup area.



Figure 2.4: Shipping Frame Lifting Points

UNLOADING THE WINDROWER

4. Lower assembly onto 127–152 mm (5–6 in.) blocks as shown.
5. Remove chains from shipping frame.
6. Check for shipping damage and missing parts.

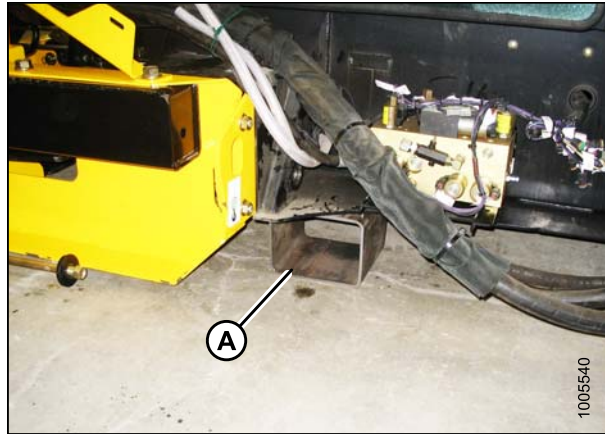


Figure 2.5: Windrower Shipping Assembly on Blocks

2.2.2 Moving to Assembly Area: Forklift Method

CAUTION

To prevent injury to bystanders and avoid striking them with machinery, do NOT allow people to stand in the unloading area.

CAUTION

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

Lifting Vehicle	
Minimum Lifting Capacity ¹	9072 kg (20,000 lb)

IMPORTANT:

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

WARNING

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

1. Approach the windrower from the hood end and slide the forks underneath the lifting framework.
2. Raise the windrower off the platform and move to the assembly area.



Figure 2.6: Forklift Method Lifting Points

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

UNLOADING THE WINDROWER

3. Lower assembly onto 127–152 mm (5–6 in.) blocks as shown.
4. Check for shipping damage and missing parts.

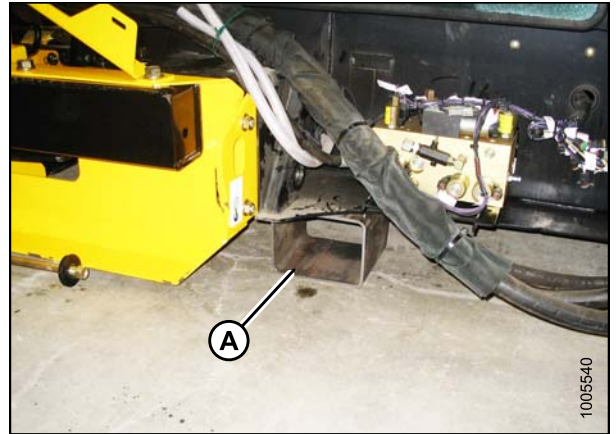


Figure 2.7: Windrower Shipping Assembly on Blocks

2.3 Removing Wheel and Step Assembly

1. Remove shipping wire (A) and bolt securing the hose support to the shipping frame, and remove the hose support.
2. Lay hose support off to the side.



Figure 2.8: Shipping Frame

3. Remove two 3/4 in. x 16.5 in. bolts (A) (one per side) from the front frame beam. Retain for reinstallation.



Figure 2.9: Front Frame Beam

UNLOADING THE WINDROWER

4. Remove the 25.4 mm (1 in.) pin (A) from the center-link.



Figure 2.10: Center-Link

5. Remove the four (two per side) carriage bolts from the rear of the wheel/step assembly.



Figure 2.11: Rear of Wheel/Step Assembly

UNLOADING THE WINDROWER

6. Remove the plastic cable tie (A) and shipping wire (B) securing the hose bundles to the frame.



Figure 2.12: Hose Bundles on Frame



Figure 2.13: Hose Bundles on Frame

UNLOADING THE WINDROWER

7. Attach a chain to the wheel/step assembly (A) and a lifting device and pull away from the shipping assembly.

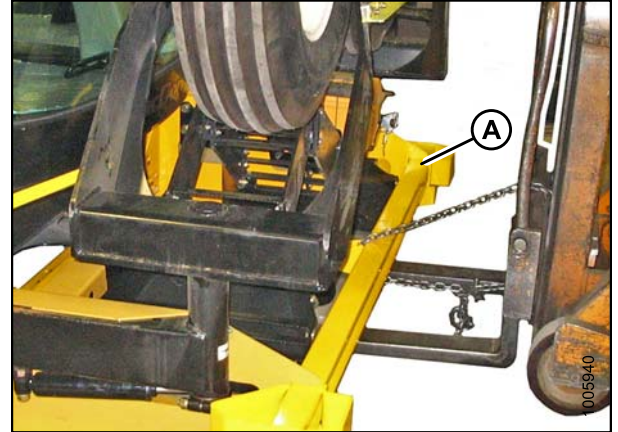


Figure 2.14: Wheel/Step Shipping Assembly

8. Lift center-link (A) until it clears the wheel/step assembly frame (B).

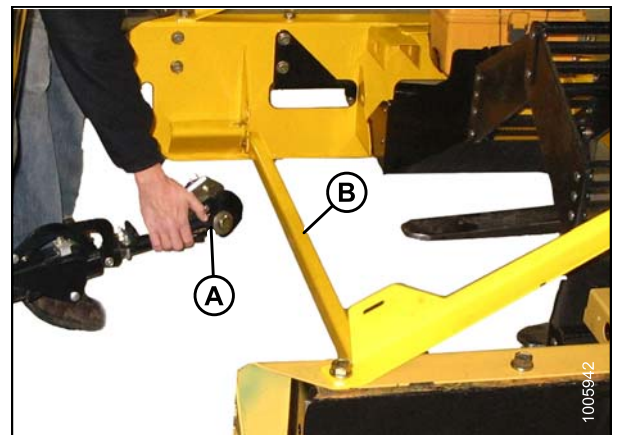


Figure 2.15: Wheel/Step Assembly Frame

9. Install leg bolts, washers, and nuts to secure the lifting plate onto the mainframe.

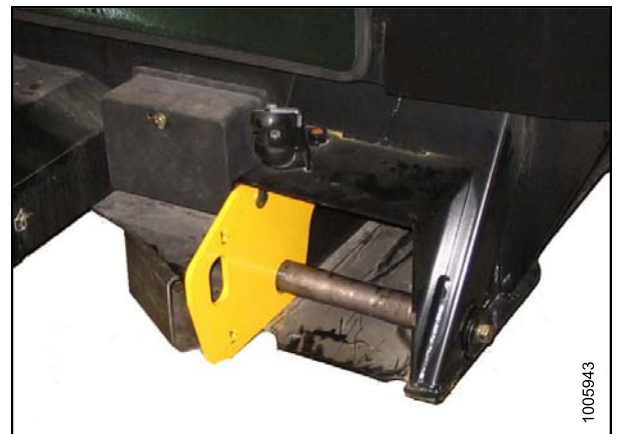


Figure 2.16: Lifting Plate

2.4 Removing Drive Wheels

IMPORTANT:

Remove the drive wheels as a pair from above the hood.

1. Remove the two bolts (A) from the front cross member over the hood.
2. Remove one bolt (A) from the rear of the hood directly under the center of the drive wheel.
3. Attach a lifting device to the lift hooks (A) located in the center of each drive wheel.

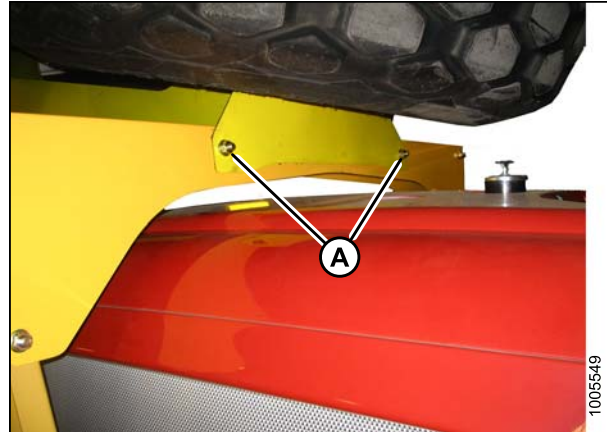


Figure 2.17: Front Cross Member on Hood

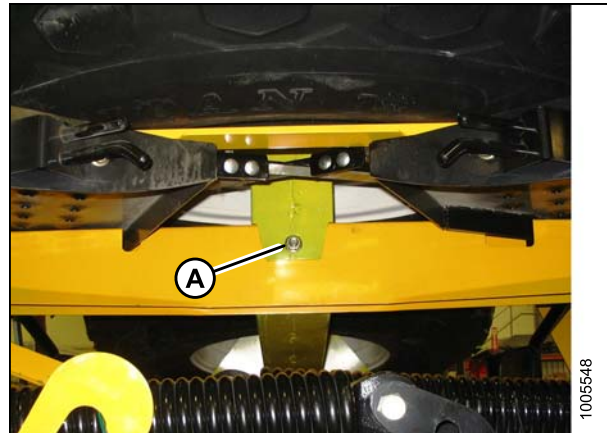


Figure 2.18: Rear of Hood

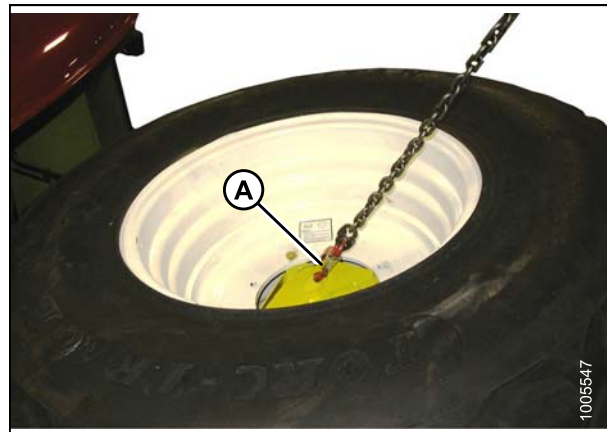


Figure 2.19: Drive Wheel

UNLOADING THE WINDROWER

4. Carefully lift the wheels off the frame.

IMPORTANT:

Ensure the tire is guided away from the cab roof when lifting wheels to prevent damaging the cab. The chain on the forward wheel should be snug, and the chain on the aft wheel should be loose.

5. Set wheels aside for later installation.



Figure 2.20: Wheels on Frame

2.5 Removing Platforms

1. Remove the two support tubes on either side of the hood.
2. Attach two slings and a chain to the platform at the locations shown to prevent damaging the paint.
3. Attach opposite ends of slings and chain to a lifting device with a minimum lifting capacity of 2268 kg (5000 lb) and a lift height of 4 m (13 ft.).

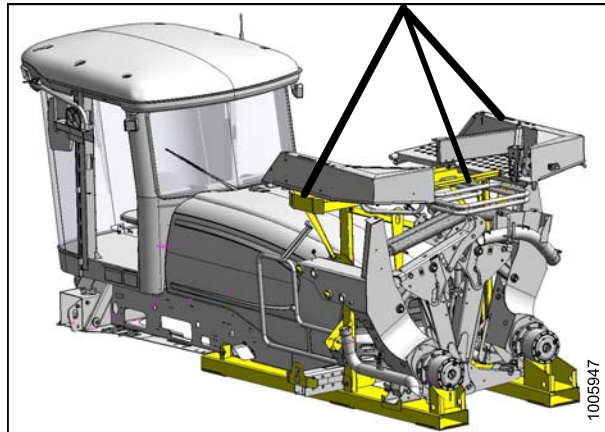


Figure 2.21: Platforms on Hood

4. Remove two 5/8 in. x 5 in. bolts (B) at the top of the vertical supports, and remove two 5/8 in. x 1-1/4 in. bolts (A) attaching the angle braces to the platforms.
5. Use care and lift the platform assembly off the frame.

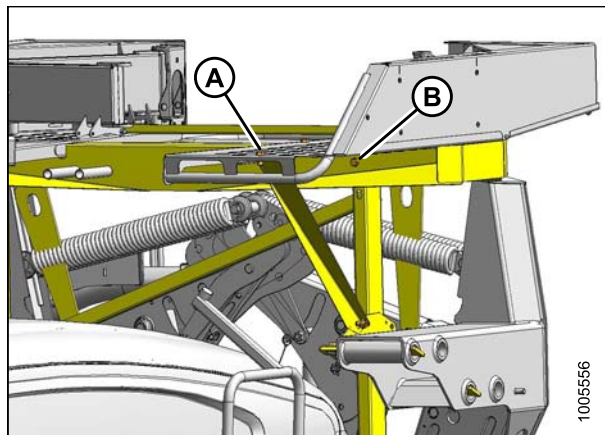


Figure 2.22: Platforms on Hood

6. Back away from the windrower and set the platform assembly on a level surface.
7. Unhook one sling and chain.
8. Lift one end of the platform assembly so it can be inverted and laid down with the base on the floor. Use a piece of cardboard under the platform assembly to protect the paint.

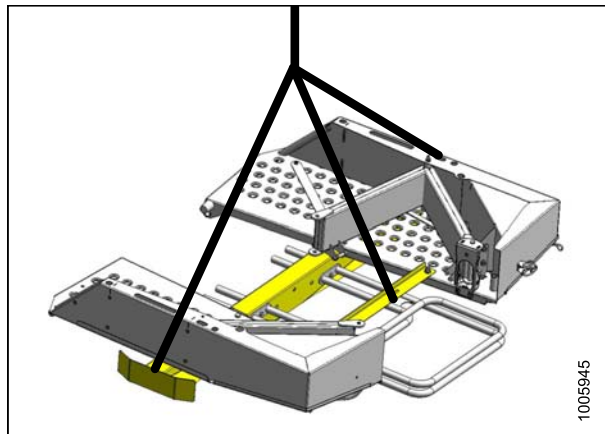


Figure 2.23: Platforms

UNLOADING THE WINDROWER

9. Unhook the remaining sling.

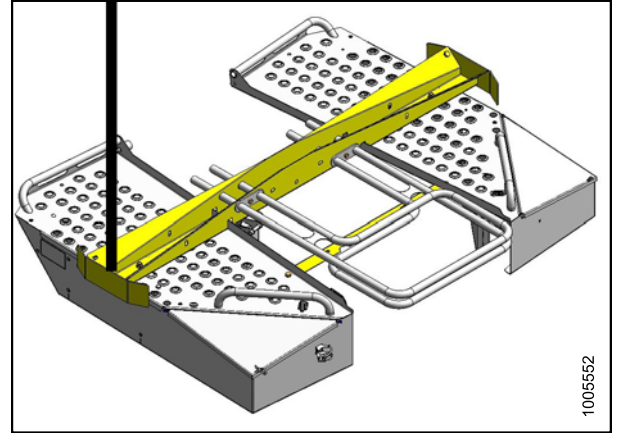


Figure 2.24: Platforms

2.6 Removing Hand Rails and Exhaust Stack

1. Cut the plastic cable ties and move the hose bundle clear of the platform.

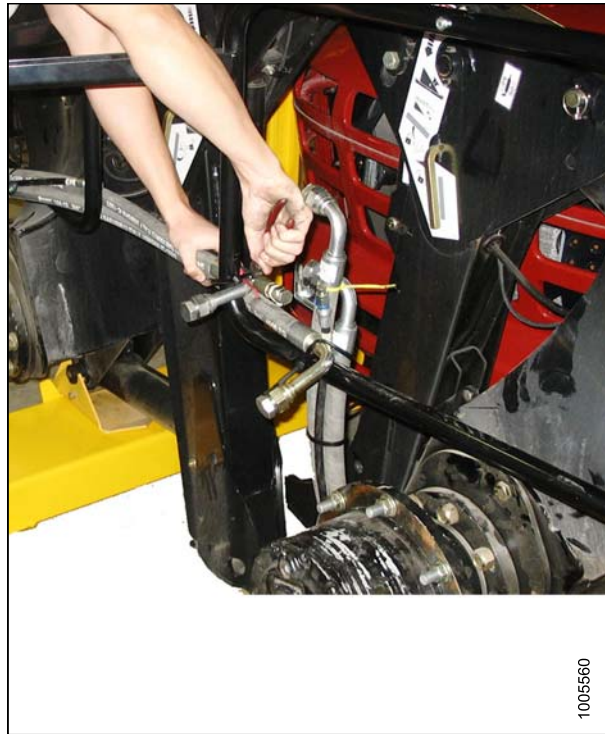


Figure 2.25: Hand Rails and Exhaust Stack Shipping Assembly

2. Remove shipping wire and foam from the exhaust stack (A).
3. Remove nuts (B) from clamp (C), and remove the exhaust stack (A) and clamp from the shipping frame.
4. Reinstall nuts (B) onto clamp (C) and set exhaust stack (A) aside for later installation.
5. Remove the two bolts (D) securing the hand rail (E) to the shipping frame, and remove the hand rail.
6. Repeat for the other hand rail on the opposite side. Retain hardware.
7. Set parts aside for later installation.

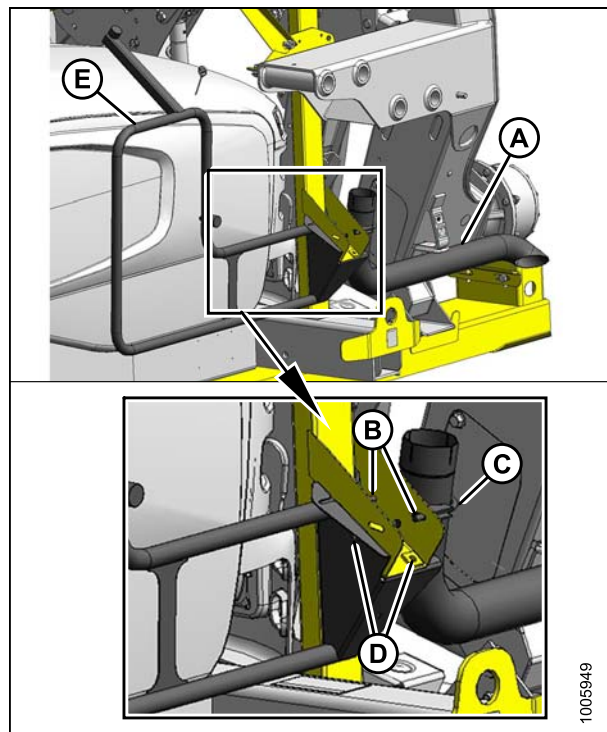


Figure 2.26: Hand Rails and Exhaust Stack Shipping Position

2.7 Removing Leg Assemblies

1. Ensure the lift bar is attached to the leg assembly as shown and the clevis pin is installed with the head on near side.
2. Attach the chain (A) to the lifting bar (B) on the leg assembly, and connect the chain to a lifting device with a minimum lifting capacity of 2268 kg (5000 lb).

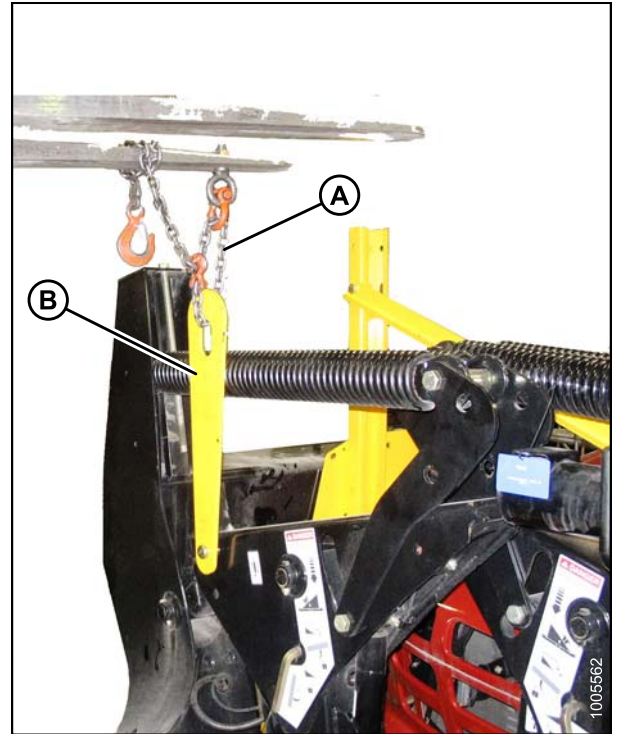


Figure 2.27: Leg Shipping Assembly

3. Remove two bolts (A) from the lower support channel.

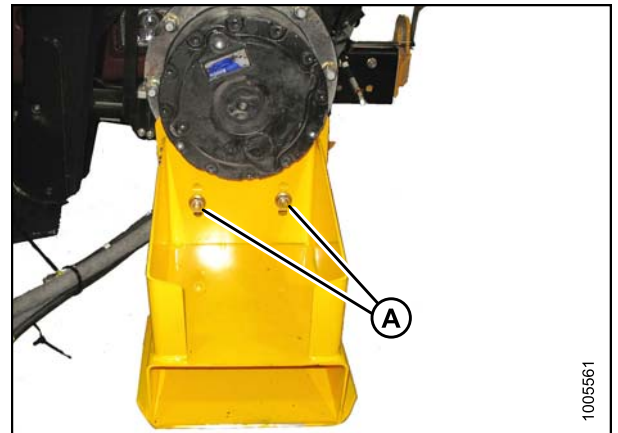


Figure 2.28: Lower Support Channel

UNLOADING THE WINDROWER

4. Remove two bolts (A) from the shipping channel located at the top of the leg.

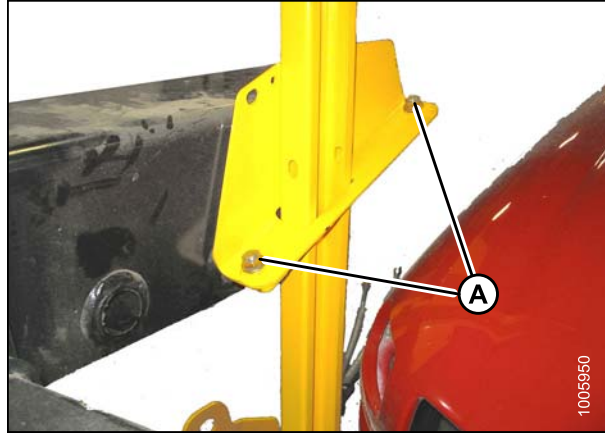


Figure 2.29: Shipping Channel on Leg

5. Remove bars (A) from leg.

NOTE:

Insert cardboard or foam between the leg assembly and the hood to prevent damaging the hood.

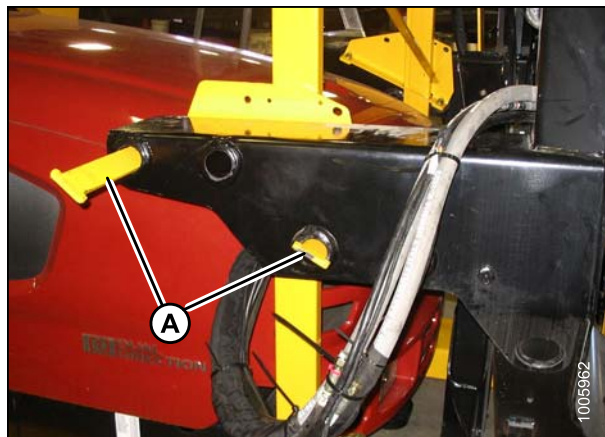


Figure 2.30: Leg Shipping Assembly

UNLOADING THE WINDROWER

6. Lift off the leg assembly (A), and securely set the assembly on level ground as shown (B).
7. Repeat the above steps for the second leg assembly.

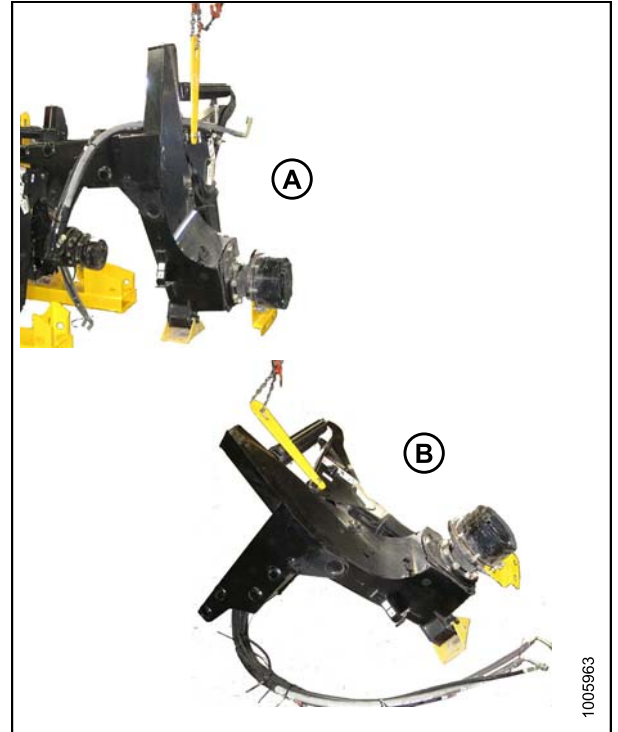


Figure 2.31: Leg Assembly Positioning

2.8 Removing Wheel and Platform Support

1. Remove the cross brace (A) and the two upright supports (B and C) from the frame.



Figure 2.32: Wheel and Platform Support

2. Remove the cross member from above the hood (A).

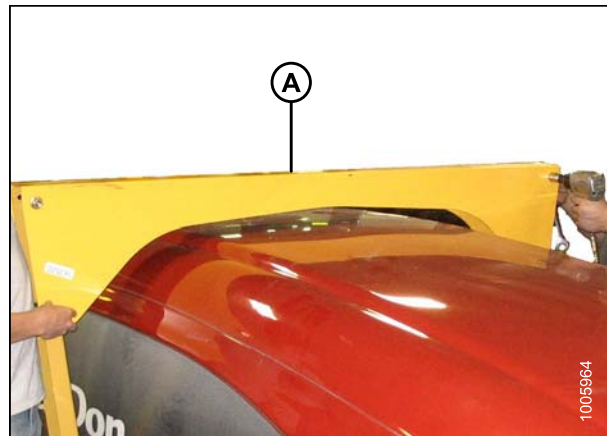


Figure 2.33: Wheel and Platform Support

UNLOADING THE WINDROWER

3. Remove the two uprights (A) on both sides of the hood.



Figure 2.34: Wheel and Platform Support

3 Assembling the Windrower

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

3.1 Assembling Support Stand

Special stands for assembling the windrower are available from the factory. If the stands are not available, use an equivalent support system.

IMPORTANT:

The stands must be capable of supporting a 6800 kg (15,000 lb) load.

1. Remove all shipping materials from the stands and set aside the air control valve tripod (D).
2. Arrange forward (A) and rear (B) stands on level ground so the attachment lugs on each stand face each other.
3. Attach four support tubes (C) to the stands as shown, and secure with the hardware provided with the stands.

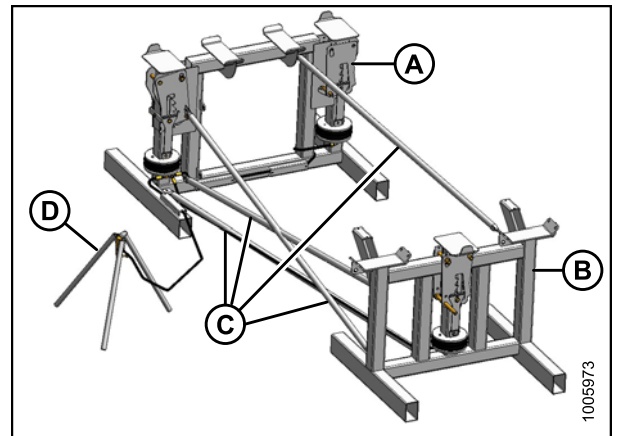


Figure 3.1: Support Stand

4. Set up the air control valve tripod, remove plug (A) from the valve, and install a 690 kPa (100 psi) air line. The stand is now operational and instructions for its use are provided throughout this manual.

WARNING

Use stand only as instructed in this manual. Do NOT use stand for any other purpose. Do NOT pressurize air bags beyond 690 kPa (100 psi).

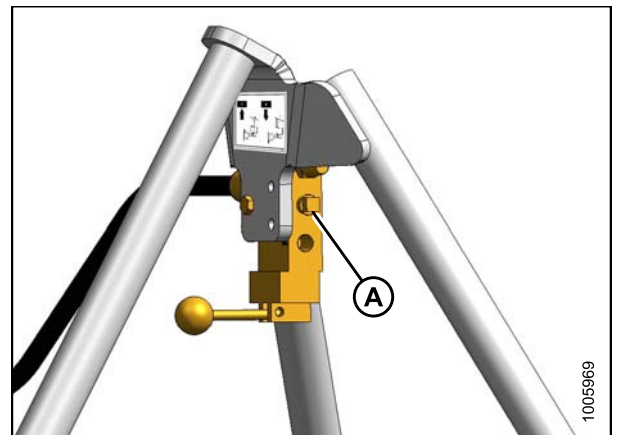


Figure 3.2: Air Control Valve Tripod

3.2 Lifting Windrower onto Stand

The windrower can be lifted onto the support stand using either a crane (refer to [3.2.1 Lifting Windrower onto Stand: Crane Method, page 28](#)) or a forklift (refer to [3.2.1 Lifting Windrower onto Stand: Crane Method, page 28](#)).

3.2.1 Lifting Windrower onto Stand: Crane Method

CAUTION

To prevent injury to bystanders and avoid striking them with machinery, do NOT allow people to stand in the unloading area.

CAUTION

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

Lift Sling	
Type	MacDon Part #163871
Maximum Working Load	12,884 kg (28,404 lb)
Chain	
Type	Overhead 1/2 in. lifting quality
Minimum Working Load	3221 kg (7100 lb)
Crane Lifting Vehicle	
Minimum Lifting Capacity	9072 kg (20,000 lb)

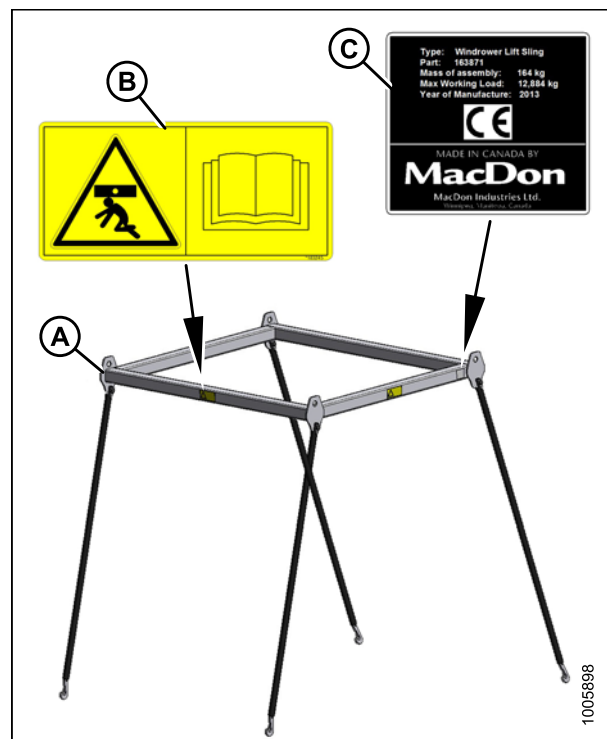


Figure 3.3: Lift Sling

- A - Lift Sling (MD #163871)
- B - Decal (MD #183245) (Four Places)
- C - Decal (MD #183248)

ASSEMBLING THE WINDROWER

1. Attach chains or cables to the four lifting points (A) on the lift sling (MD #163871), and connect the loop ends to the crane hook.

IMPORTANT:

Use cables or chains with a minimum lifting capacity of 3221 kg (7100 lb).

2. Attach the lift sling to the four designated lifting points on the windrower shipping frame as shown.

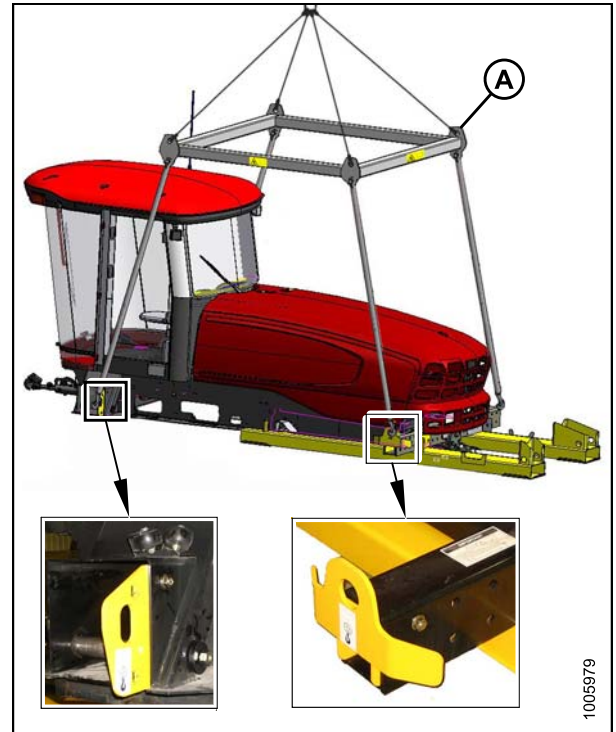


Figure 3.4: Shipping Frame Lifting Points

⚠ DANGER

To avoid injury or death from a swinging or falling load, keep all bystanders clear when lifting. Equipment used for lifting must exceed the maximum requirements specified in this section.

3. Lift the windrower onto the support stand (A).
4. Remove chains from shipping frame and move lift sling (B) clear of the work area.

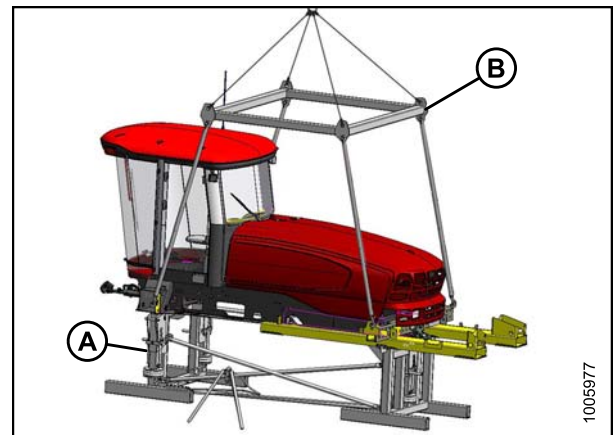


Figure 3.5: Windrower on Support Stand

3.2.2 Lifting Windrower onto Stand: Forklift Method

⚠ CAUTION

To prevent injury to bystanders and avoid striking them with machinery, do NOT allow people to stand in the unloading area.

⚠ CAUTION

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

Lifting Vehicle	
Minimum Lifting Capacity ²	9072 kg (20,000 lb)

IMPORTANT:

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

1. Approach the windrower from the hood end and slide the forks fully into shipping support channels (A).



Figure 3.6: Forklift Method Lifting Points

2. Raise the windrower and lower onto the support stand.
3. Back away forklift.

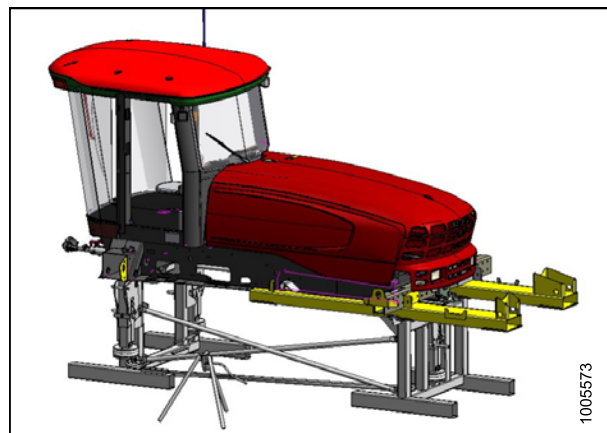


Figure 3.7: Windrower on Support Stand

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

ASSEMBLING THE WINDROWER

3.3 Installing Legs

1. Remove the front leg bolts (A) and pins (B) and set aside for reinstallation. Remove carriage bolt (C) and remove lifting plate (D).

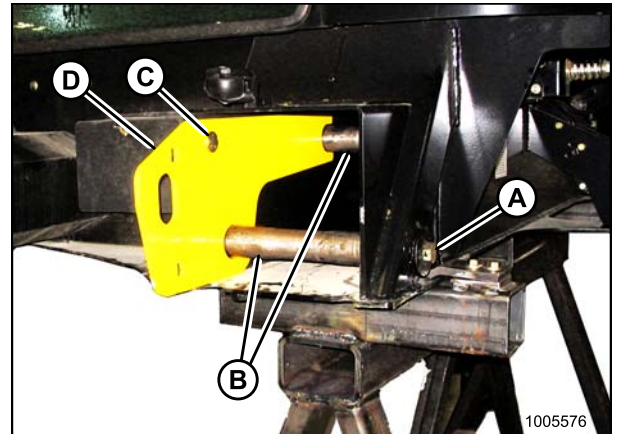


Figure 3.8: Lifting Plate

2. Attach the front leg to a lifting device using lifting bar (A).
3. Position the leg at the frame.

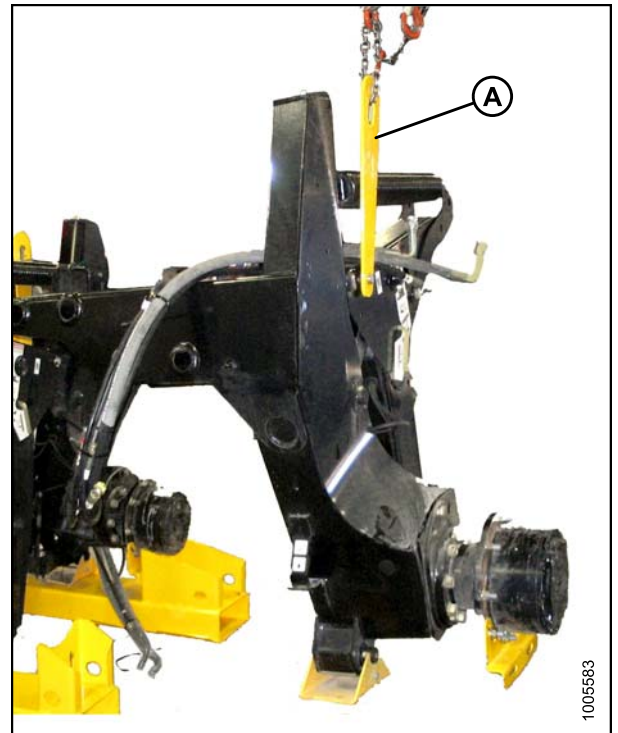


Figure 3.9: Leg Position

ASSEMBLING THE WINDROWER

4. Feed the hydraulic hose bundle (A) into the frame and through the hole (B) at the center of the frame.

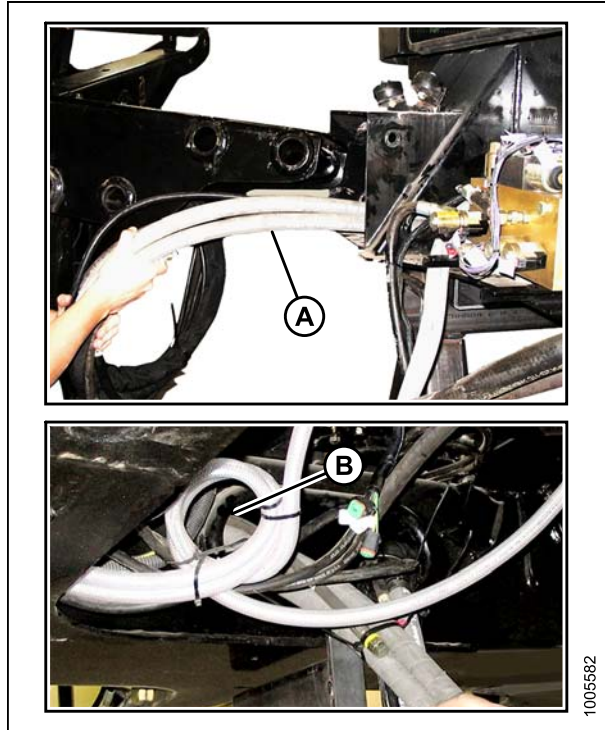


Figure 3.10: Hydraulic Hoses

5. Insert the leg into the frame and line-up the holes in the frame and the leg at the first position (widest tread with one exposed hole [A]).
6. Insert pins and secure with 3/4 in. x 16-1/2 in. long bolts (B), washers, and nuts. Torque to 136 N-m (100 ft-lbf).
7. Repeat for opposite leg.

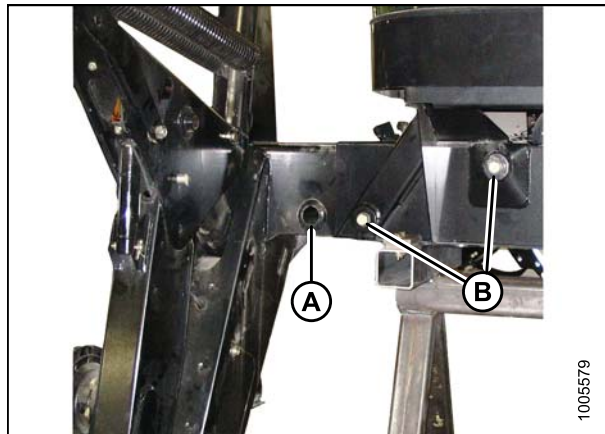


Figure 3.11: Leg Position on Frame

ASSEMBLING THE WINDROWER

8. Use the lifting device to slightly lift the header lift arms, and remove the lifting bars (A) from the legs.
9. Relocate the spring locking pins (B) to the front of the lift arms.

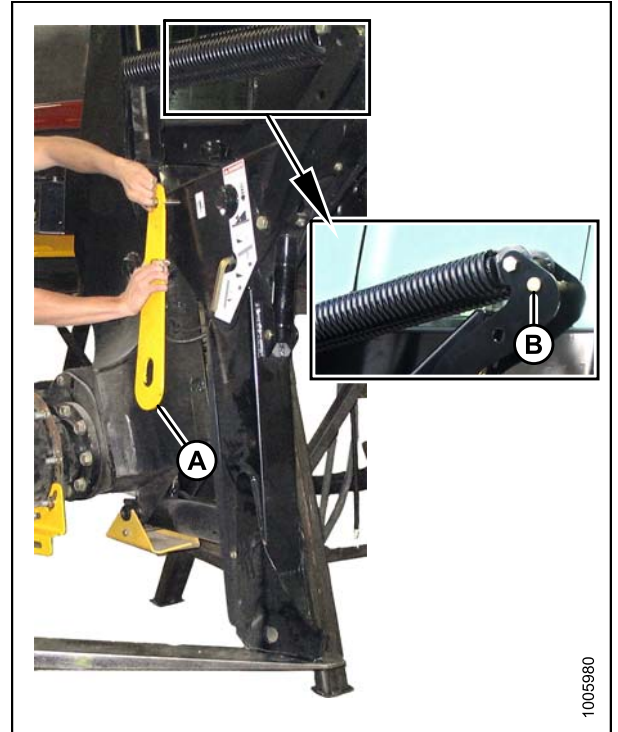


Figure 3.12: Header Lift

1005980

3.4 Installing Drive Wheels

NOTE:

If using the factory stand, proceed to Step 1, page 34; otherwise, skip to Step 5, page 34.

1. Ensure the three (one at rear, two at front) lift locks are activated on the lift mechanism.

NOTE:

Lock is activated when keeper (A) is vertical and latch (B) is free to move back and forth.

2. Pressurize the air bag system (690 kPa [100 psi] air pressure required) and raise the windrower to the maximum height (approximately 178 mm [7 in.] above the stand).

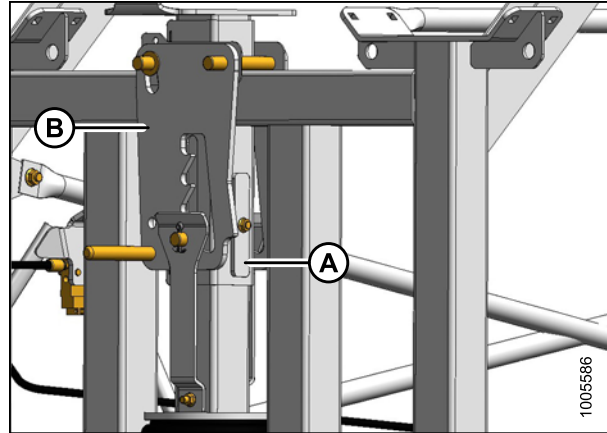


Figure 3.13: Lift Locks

3. Verify that all three locks are engaged before proceeding to the next step.

NOTE:

Lock is engaged when the witness hole (A) above the pin is exposed.

4. Release pressure until the locks support the weight of the windrower.

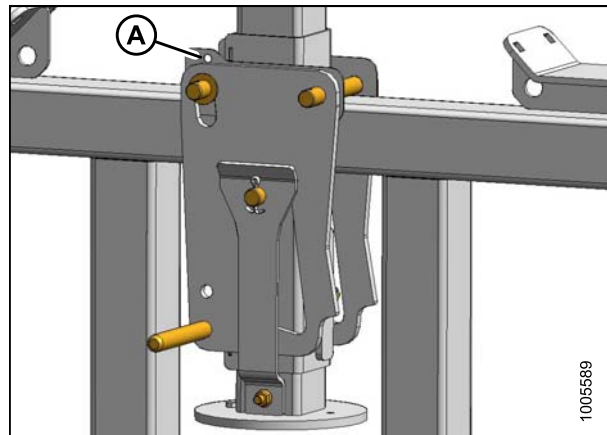


Figure 3.14: Lift Locks

5. Remove shipping support (A) from the drive wheel hub, and remove the wheel lug nuts (B).

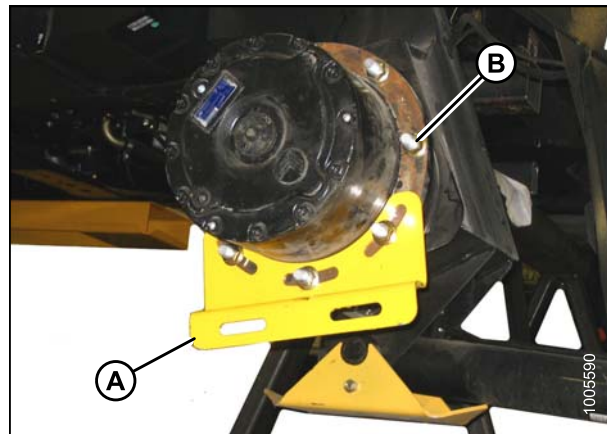


Figure 3.15: Drive Wheel Shipping Support

ASSEMBLING THE WINDROWER

6. Position the wheels against the hubs so the air valves (A) are on the outside and the tire tread points forward.

NOTE:

For turf tires (diamond tread), be sure arrow on sidewall points in forward rotation with windrower in cab-forward orientation.

7. Lift wheel onto hub using a lifting device.
8. Lower lifting device.



Figure 3.16: Wheel Position

9. Line up the holes in the rim with the studs on the wheel drive hub and install wheel nuts (A).

IMPORTANT:

To avoid damage to wheel rims and studs, tighten nuts by hand. Do **NOT** use an impact gun, do **NOT** use lubricant or Never-Seez® compound, and do **NOT** overtighten wheel nuts.

10. Torque drive wheel nuts to 510 N·m (375 ft·lbf) using the tightening sequence shown.

IMPORTANT:

Use only manufacturer specified nuts (MD #205397).

11. Repeat torque procedure every hour until two consecutive checks confirm there is no movement of the nuts.

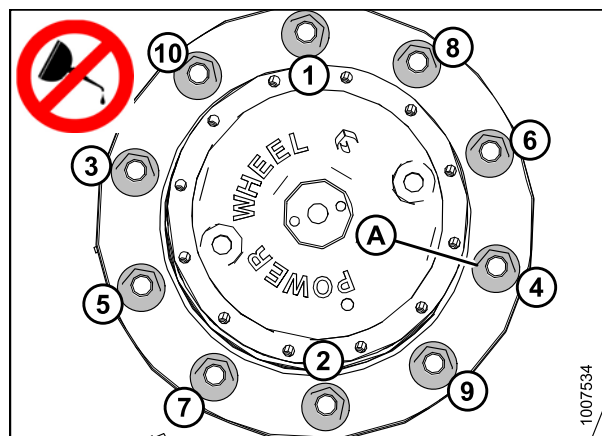


Figure 3.17: Wheel Nuts

3.5 Installing Caster Wheels

1. Remove two guide plates (A) from the ends of the walking beam.

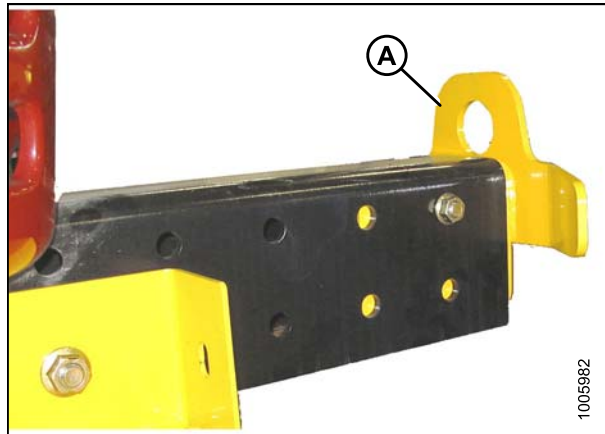


Figure 3.18: Guide Plate on Walking Beam

2. Support the shipping frame channel and remove the bolts attaching the shipping frame to the walking beam and mainframe side rail. Remove the shipping frame.

NOTE:

Shipping frame does not need to be removed if air bag lifting stand is used; however, ensure the bolts are removed prior to moving the windrower off the stand.

3. Repeat for opposite shipping frame channel.

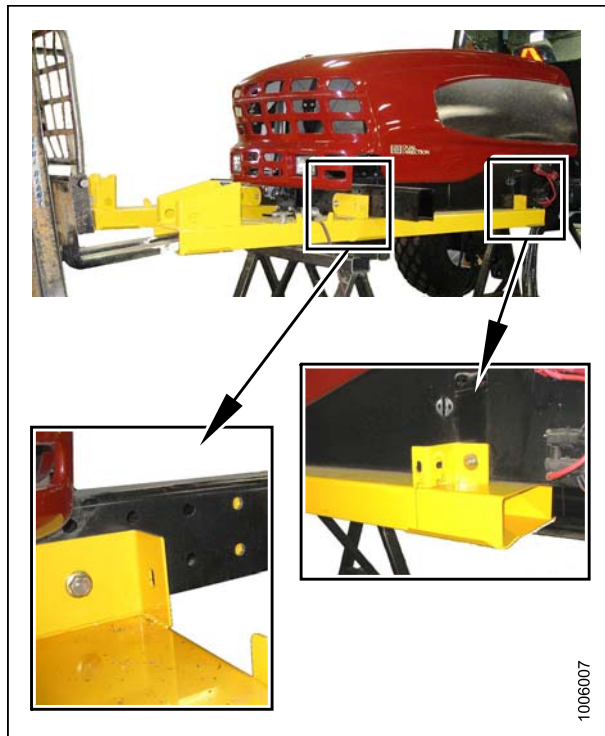


Figure 3.19: Shipping Frame

ASSEMBLING THE WINDROWER

4. Remove tie bar (A) between the two caster wheels.



Figure 3.20: Caster Wheel Shipping Assembly

5. Remove the two caster supports (A) from the caster wheels and frame. Retain bolts for attaching caster to walking beam.

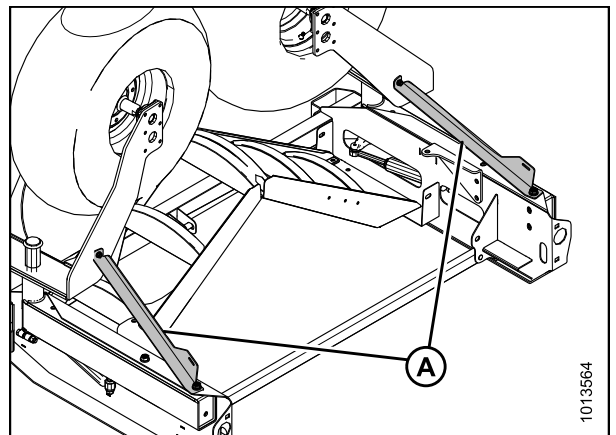


Figure 3.21: Caster Supports

ASSEMBLING THE WINDROWER

6. Attach a chain to the right-hand caster and support caster with lifting device.

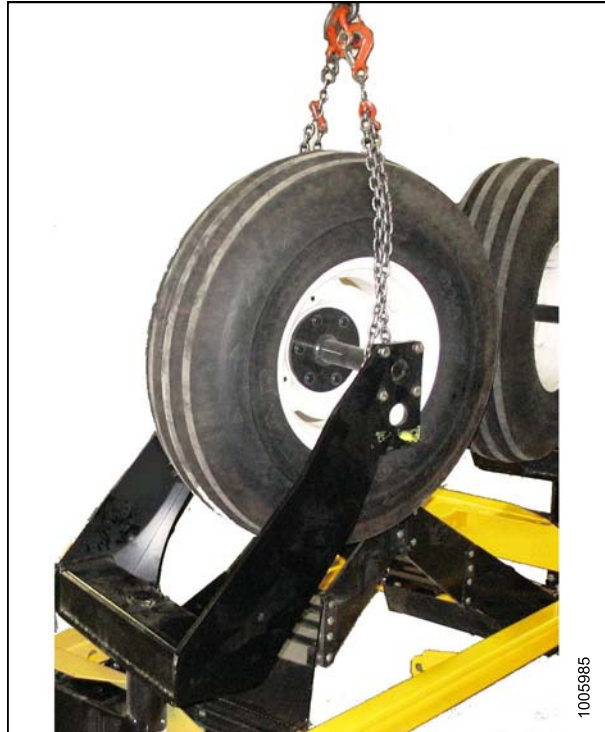


Figure 3.22: Lifting Device on Caster

7. Remove the five remaining bolts (A) securing the caster to the shipping frame. Retain bolts for attaching caster to walking beam.

⚠ CAUTION

Stand clear when lifting, as caster may swing.

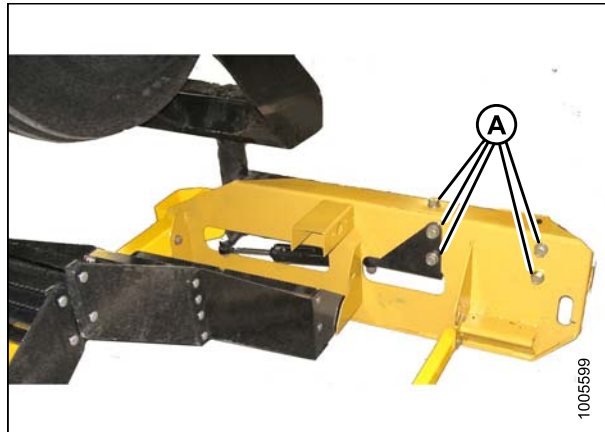


Figure 3.23: Shipping Frame on Caster

ASSEMBLING THE WINDROWER

8. Lift caster assembly off shipping frame and position at end of walking beam (A).
9. Insert right-hand caster extension into walking beam and position for desired tread.



Figure 3.24: Walking Beam

10. Install six 3/4 in. bolts (A) and hardened washers into walking beam and caster beam. Use longer bolts through anti-shimmy bracket (B).
11. Tighten bolts as follows:
 - a. Snug up the two bolts underneath beam.
 - b. Tighten the four back bolts to 447 N·m (330 ft·lbf).
 - c. Tighten bolts underneath beam to 447 N·m (330 ft·lbf).
12. Repeat Steps 7, page 38 through 11, page 39 for left-hand caster.
13. Retighten bolts at five and ten hours of operation.

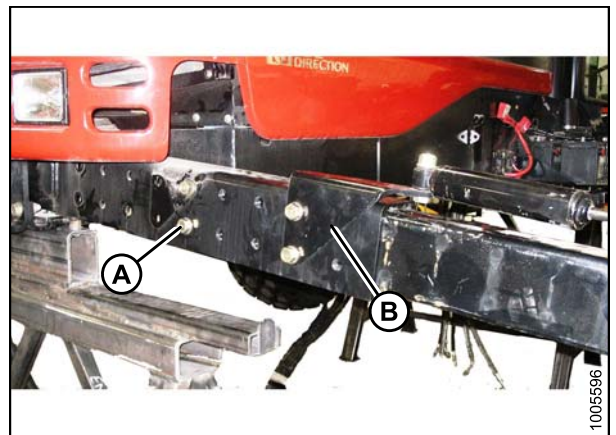


Figure 3.25: Walking Beam

3.6 Installing Hydraulics

1. Locate hose clip (A) under the cab and remove the clip.

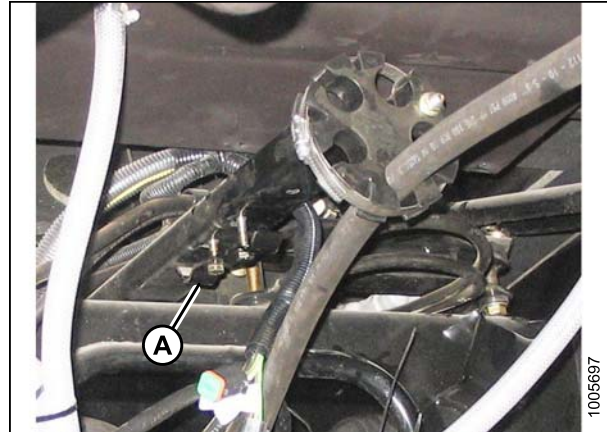


Figure 3.26: Hose Clip

2. Position hose (MD #111323 [orange tie]) (D) and hose (MD #111324 [white tie]) (E) with tee under the center of the clip as shown, and loosely install two bolts and nuts.

NOTE:

Part numbers are marked on the hoses (M200 also requires placement of hose [MD #1132A] with tee under clip).

3. Position remaining hoses under clip as shown and tighten bolts.

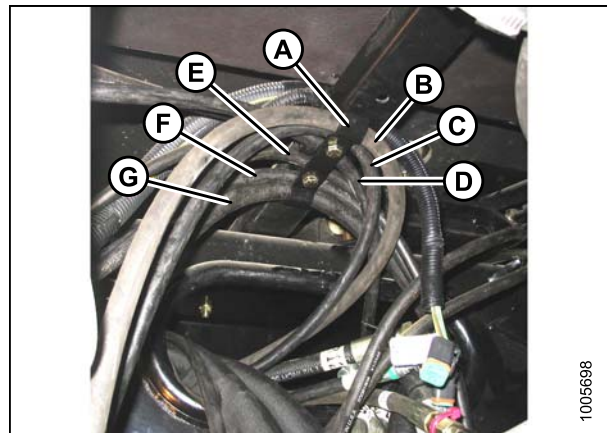


Figure 3.27: Hose Routing (View Looking Forward)

- | | |
|----------------------------|-----------------------------|
| A - Hose Clip | B - Yellow Tie (MD #111557) |
| C - Blue Tie (MD #111323) | D - Orange Tie (MD #111323) |
| E - White Tie (MD #111324) | F - Green Tie (MD #111327) |
| G - White Tie (MD #111328) | |

4. Locate two hoses (MD #111327 [green ties]) (A) in frame opening and existing tee fitting (green tie) on the hose from the valve block.
5. Remove caps from the hoses (A) only.
6. Remove one cap from tee fitting, and quickly attach hose (A) to minimize oil spillage.
7. Remove second cap from tee fitting, and quickly connect other hose (A).
8. Tighten fittings.
9. Position hoses into frame.

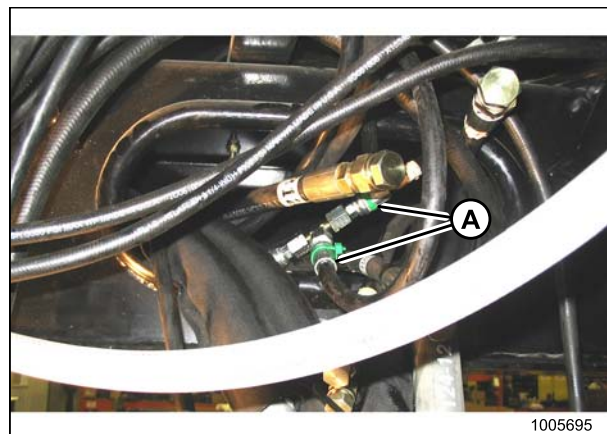


Figure 3.28: Hose Routing

ASSEMBLING THE WINDROWER

10. Locate two hoses (white ties) inside frame and hose (MD #111324) with existing tee fitting (white tie) (A).
11. Remove caps, make connections, and tighten fittings.
12. Position hoses into frame.

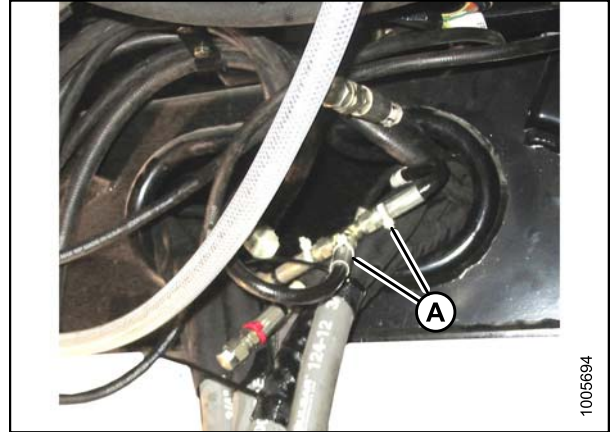


Figure 3.29: Hose Routing

13. Locate two hoses (red ties) (A) inside frame.
14. Route right-hand hose behind bundle.
15. Remove caps, make connection, and tighten fitting.
16. Position hoses into frame.

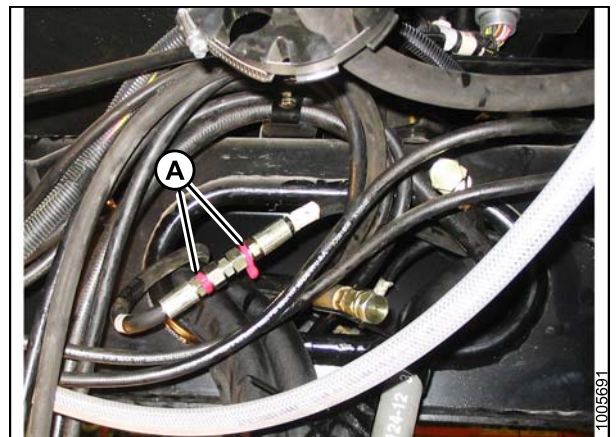


Figure 3.30: Hose Routing

17. Retrieve long hose (MD #119328 [white tie]) (A) and route through the hole in the left-hand frame.

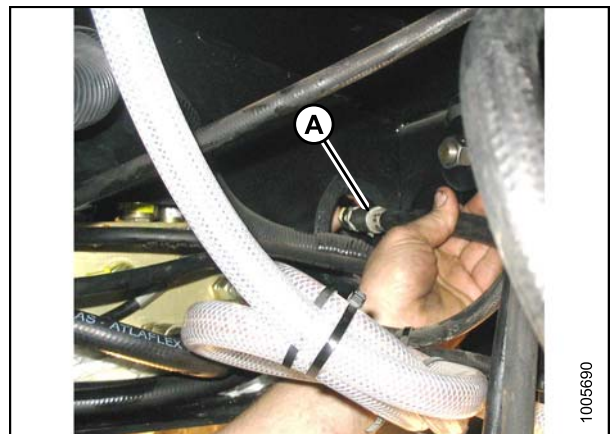


Figure 3.31: Hose Routing

ASSEMBLING THE WINDROWER

18. Remove caps on hose (A) and valve block fitting (white tie) (B) and make connection. Tighten fitting.

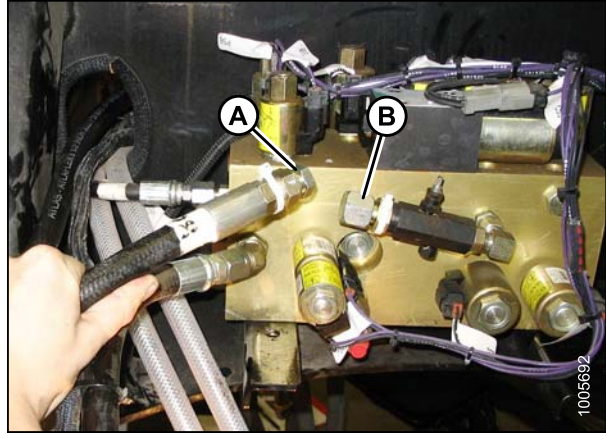


Figure 3.32: Valve Block

19. Remove the caps from three fittings (blue [A], orange [B], and yellow [C] ties) on the valve block from the inboard side of the frame.

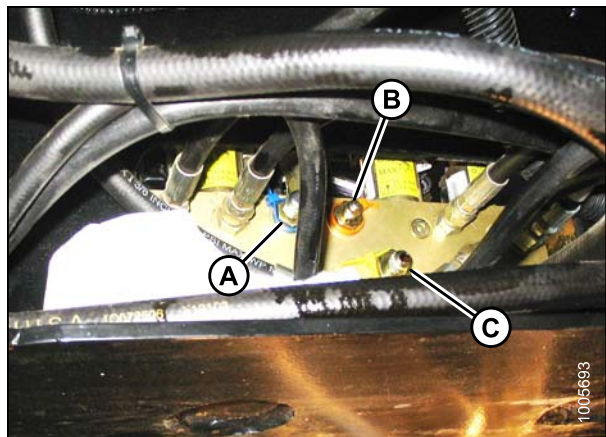


Figure 3.33: Valve Block

20. Loosen bolts (A) and move valve block to improve access through the hole in the frame in order to insert wrenches and tighten fittings.

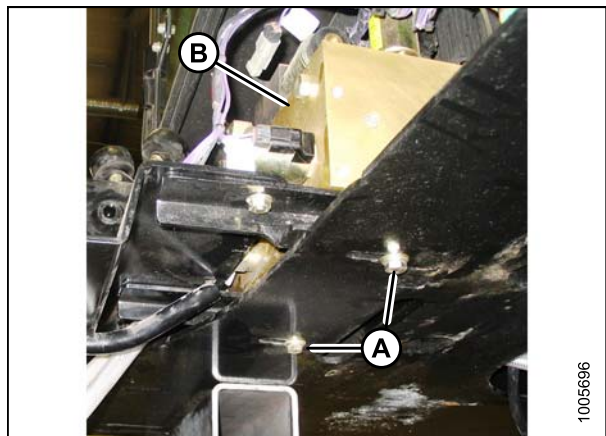


Figure 3.34: Valve Block

ASSEMBLING THE WINDROWER

21. Retrieve matching hoses (blue [A], orange [B], and yellow [C] ties) and make connections on valve block. Tighten fittings.
22. Reposition valve block and retighten bolts.

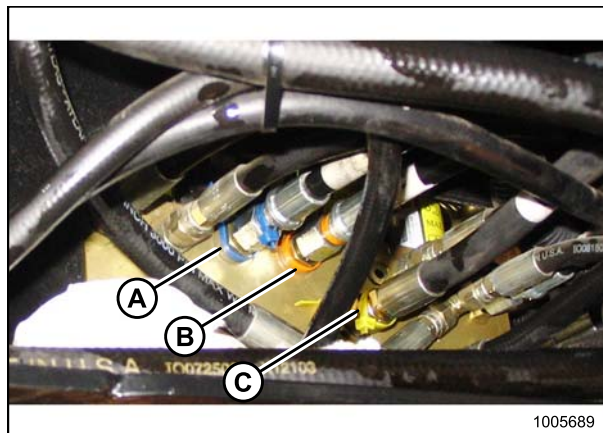


Figure 3.35: Valve Block

23. Remove clamp (A) from round plastic hose block (case drain hose is preinstalled in block).

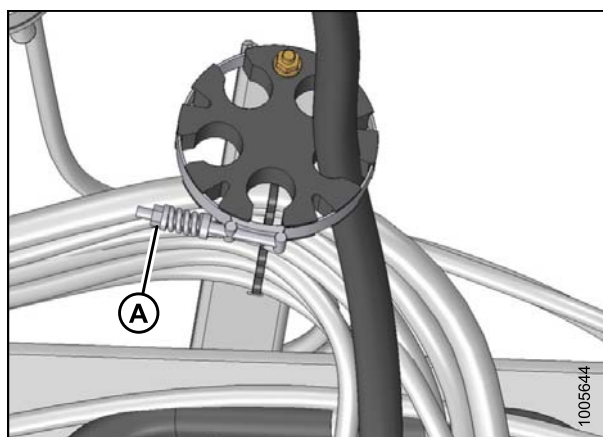


Figure 3.36: Hose Block

NOTE:

Case drain hose (C) is preinstalled in block.

24. Insert two left-hand traction drive hoses (A) into hose block as shown.
25. Insert two right-hand traction drive hoses (B) into hose block as shown.
26. Reinstall clamp.

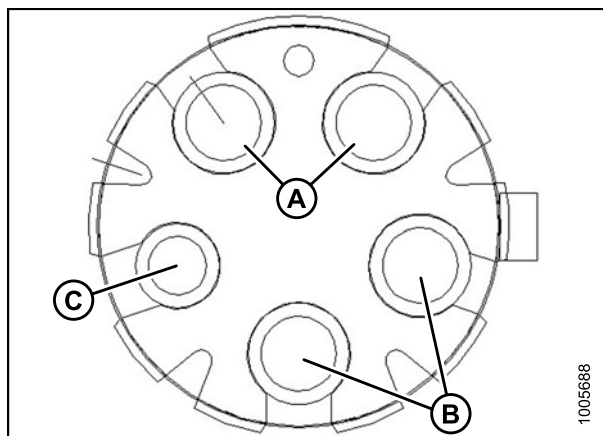


Figure 3.37: Hose Block (View Looking Forward)

ASSEMBLING THE WINDROWER

27. Remove caps and attach hoses with short elbows (A) to respective side of pump (either yellow or no tie). Tighten fittings.

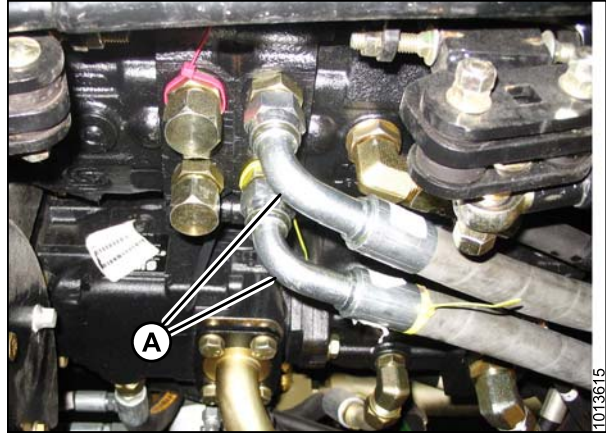


Figure 3.38: Pump

28. Remove caps and attach hoses with long elbows (A) to respective side of pump (either red or no tie). Tighten fittings.

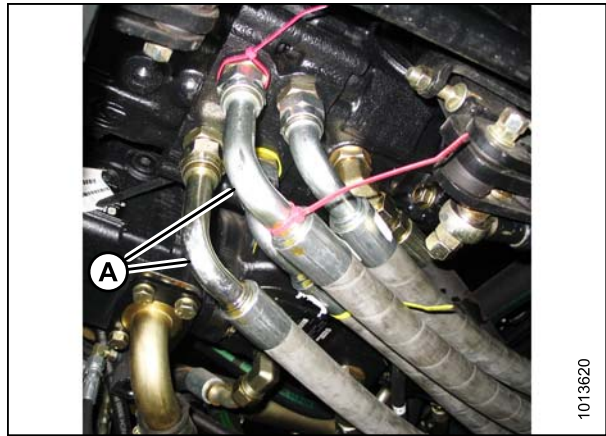


Figure 3.39: Pump

ASSEMBLING THE WINDROWER

29. Retrieve the two motor case drain hoses (MD #111312) at the front frame and the 7/8 in. tee fitting (B) on the hose from the pump.
30. Remove the caps (A) from the hoses only.

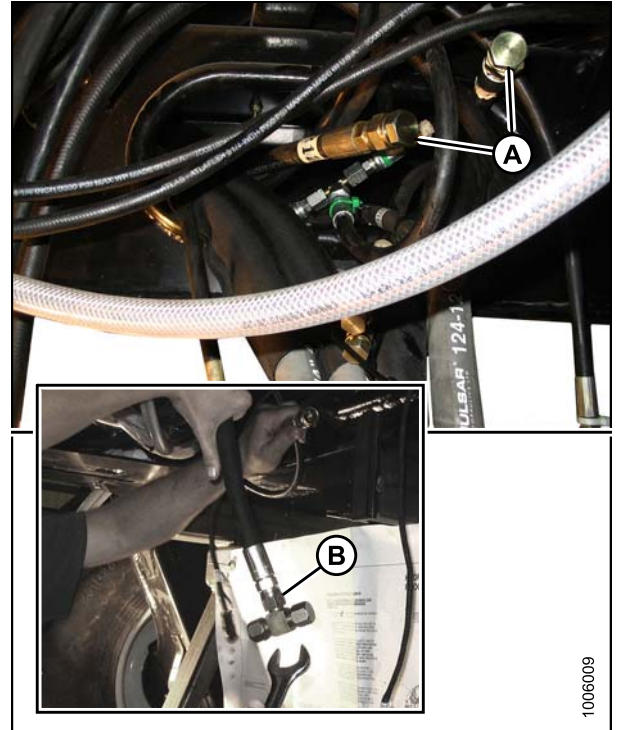


Figure 3.40: Motor Case Drain Hoses

31. Remove one cap from tee fitting (A) and quickly attach hose to minimize oil spillage.
32. Remove second cap from tee (A) and quickly connect other hose.
33. Tighten fittings.

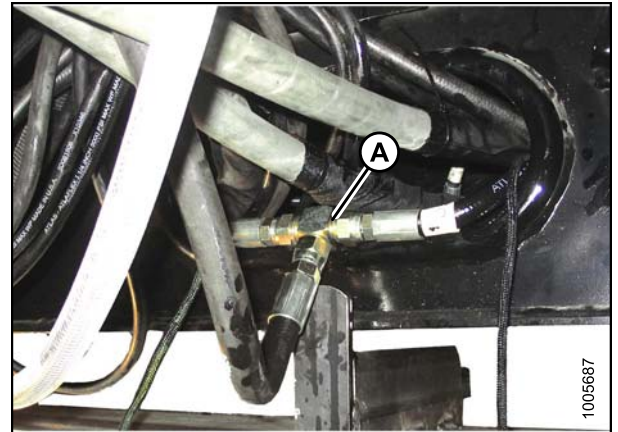


Figure 3.41: Tee Fitting

ASSEMBLING THE WINDROWER

34. Position hose bundle (A) from the valve blocks on the left-hand side of the frame onto the tire.
35. Note routing of electrical harness.

IMPORTANT:

The electrical harness must be routed on the topside of the hose bundle and on the outside of the hose support to prevent chafing of the electrical wires when the windrower is operating with a header.

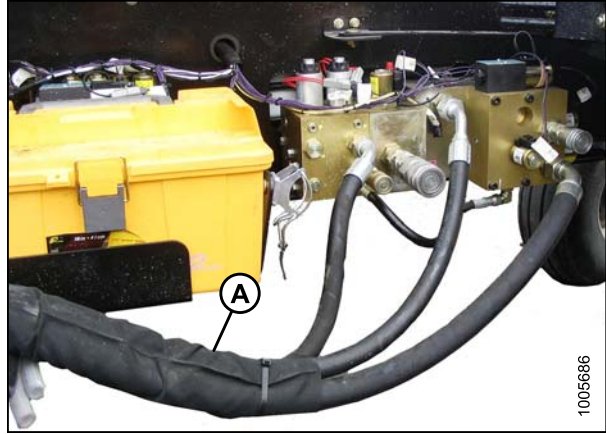


Figure 3.42: Hose Routing

36. Undo strap (A), cut plastic cable ties (B), and move harness (C) away from the hose bundle.

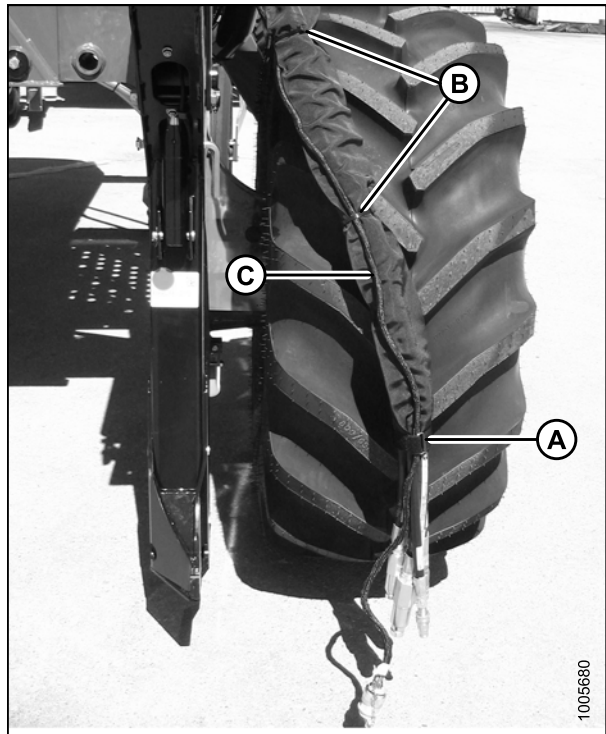


Figure 3.43: Electric Harness and Hose Bundle

ASSEMBLING THE WINDROWER

37. Route the hose bundle (A) through the hose support and lay on the tire.
38. Route the harness along the outside of the hose support and along the hose bundle to the hose ends.



Figure 3.44: Hose Routing

39. Attach harness (A) to hose support with hose clip (B).

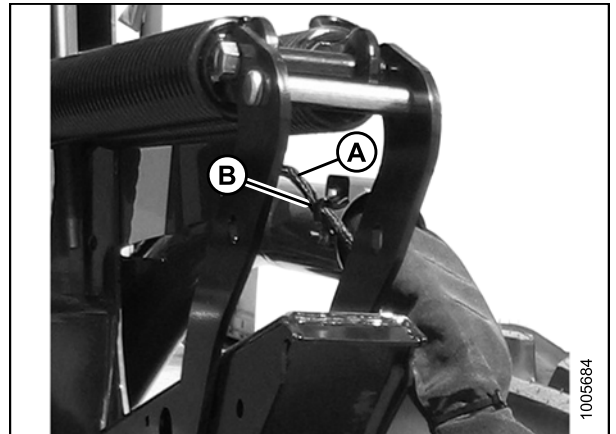


Figure 3.45: Hose Support

ASSEMBLING THE WINDROWER

- Secure harness (C) to hose bundle with strap (A) and new plastic cable ties (B). Ensure harness is clear of pinch and friction points.

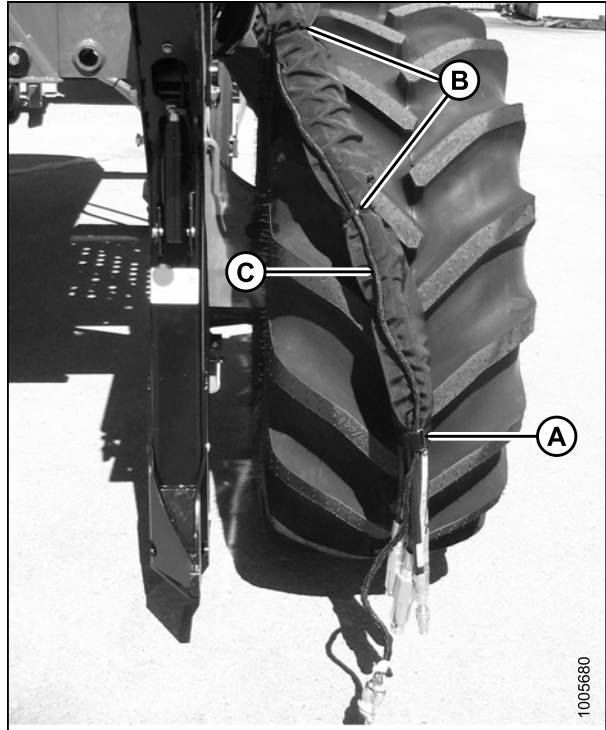


Figure 3.46: Electric Harness and Hose Bundle

- Disengage and rotate hook (A) to fully up position.
- Position hose bundle (B) over hose support and under hook.

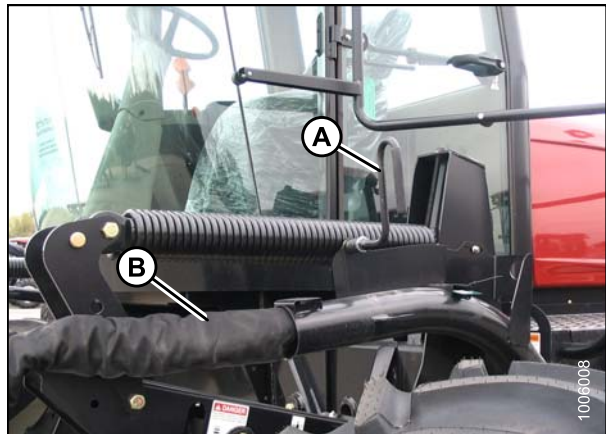


Figure 3.47: Hook Positioning

ASSEMBLING THE WINDROWER

43. Lower hook (A) and engage in bracket in down position.



Figure 3.48: Hook Positioning

44. Attach the reel hose support tube to the right-hand reel leg with two 3/8 in. x 1.0 in. carriage bolts (A) and nuts.

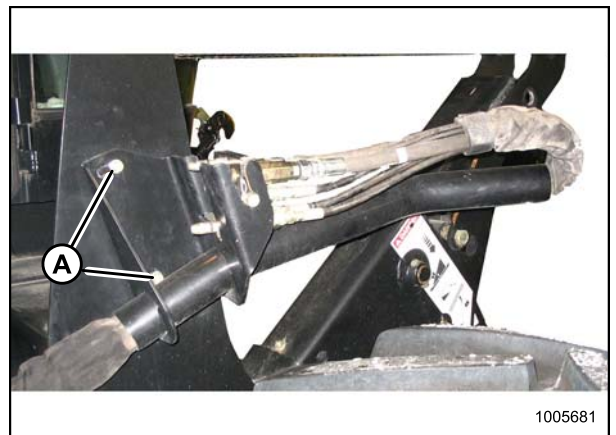


Figure 3.49: Reel Hose Support

3.7 Removing Battery Shipping Shield

1. Loosen nut (A) on the battery clamp.
2. Slide shield (B) out from under the battery and discard.
3. Tighten nut (A) on the battery clamp.

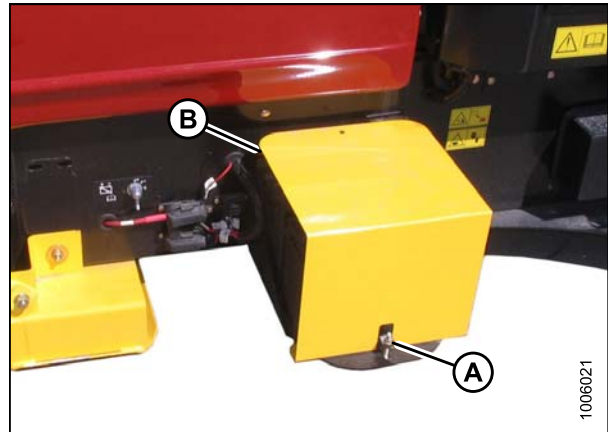


Figure 3.50: Battery Shipping Shield

4. Remove one of the two bolts (A) and nuts, and loosen the other.

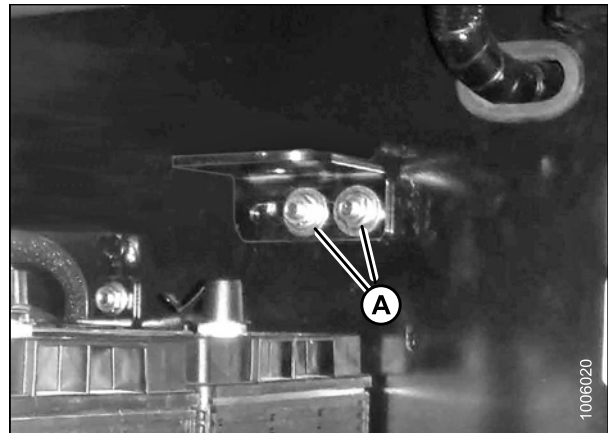


Figure 3.51: Bracket Shipping Position

5. Rotate angle (A) 180°, align holes, and reinstall the bolt (B) and nut. Leave bolts loose.

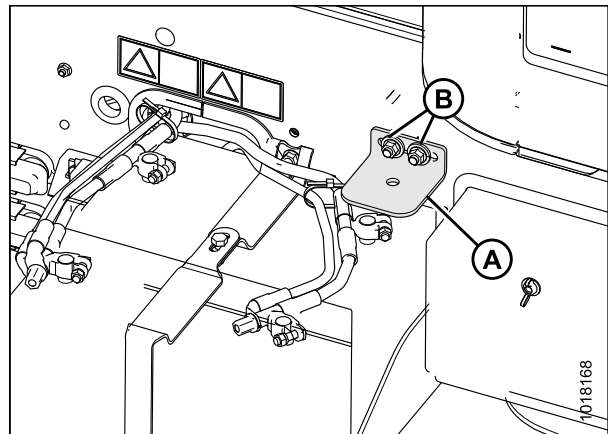


Figure 3.52: Bracket Repositioned

3.8 Unpacking Ignition Keys

The fuse box is mounted on the right (cab-forward) side of the frame under the platform.

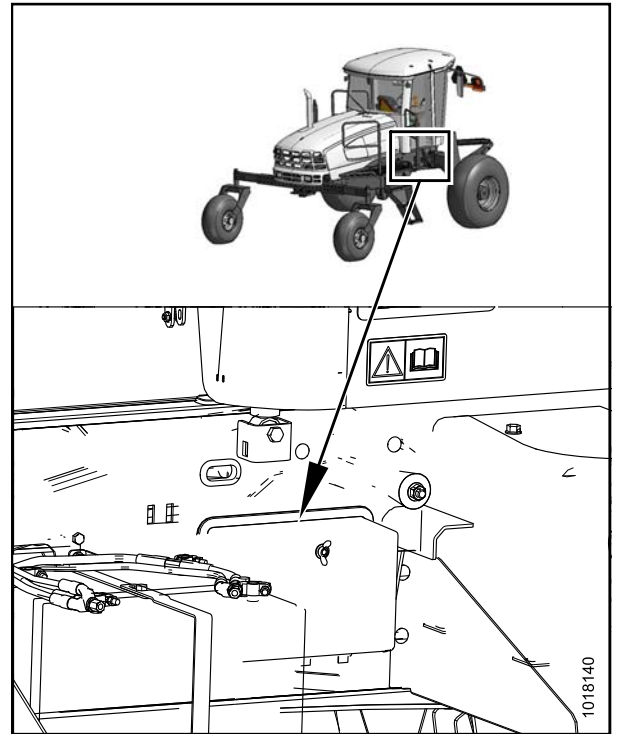


Figure 3.53: Fuse Box Location

1. Remove wing nut (A) from fuse box cover (B) and remove cover.

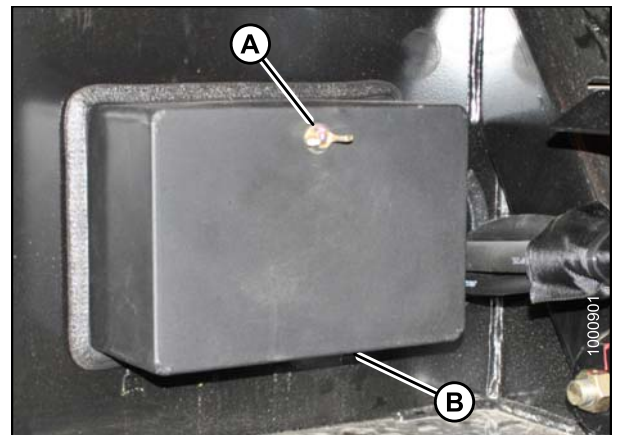


Figure 3.54: Fuse Box

ASSEMBLING THE WINDROWER

2. Remove tape and keys (A) from inside the cover.
3. Unlock cab doors and place keys on console.
4. Close cab doors.
5. Install fuse box cover (B) and secure with wing nut.

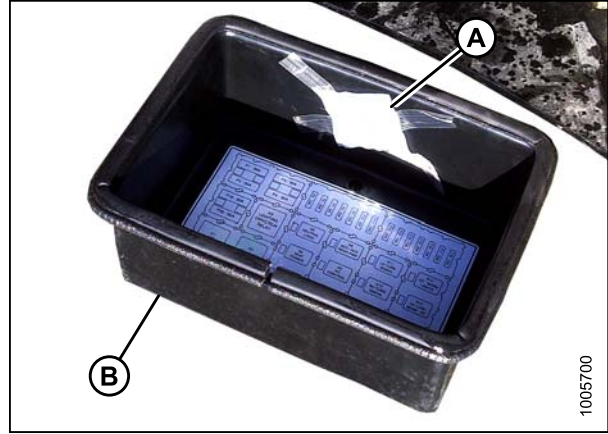


Figure 3.55: Fuse Cover

3.9 Installing Platforms

1. Remove the two 1/2 in. x 3/4 in. bolts (A) securing the rails to the shipping beam, and remove the rails. Retain hardware.
2. Remove the shipping brackets from the platform assembly. Retain hardware.

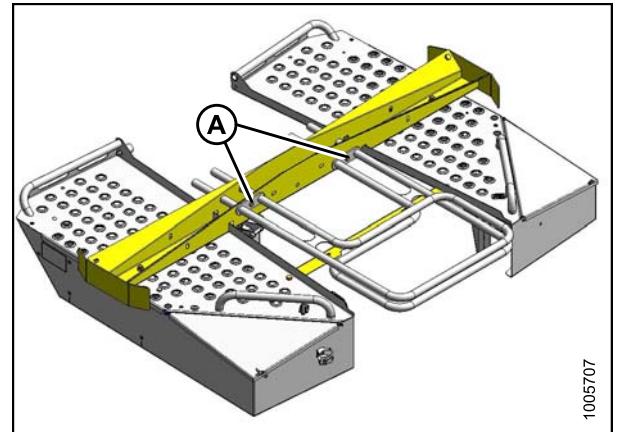


Figure 3.56: Platform Shipping Assembly

3. Attach one end of a sling to the platform and the other end to a lifting device.

⚠ DANGER

To avoid injury or death from fall or swinging of raised load, keep all bystanders clear when lifting.

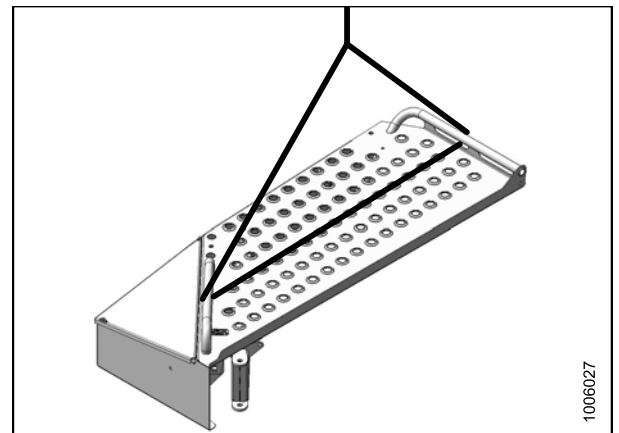


Figure 3.57: Left-Hand Platform

4. Position the platform against the windrower frame.

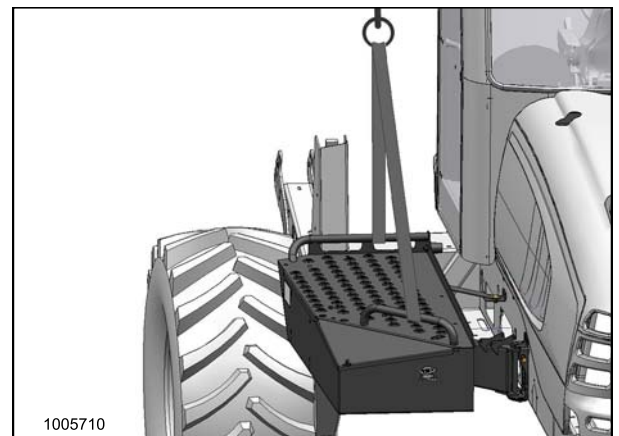


Figure 3.58: Left-Hand Platform

ASSEMBLING THE WINDROWER

5. Attach the main beam of the left-hand platform to the side frame using three 1/2 in. x 1-1/4 in. long carriage bolts (A). Ensure the bolt heads face inboard, and tighten just enough to permit adjustment.

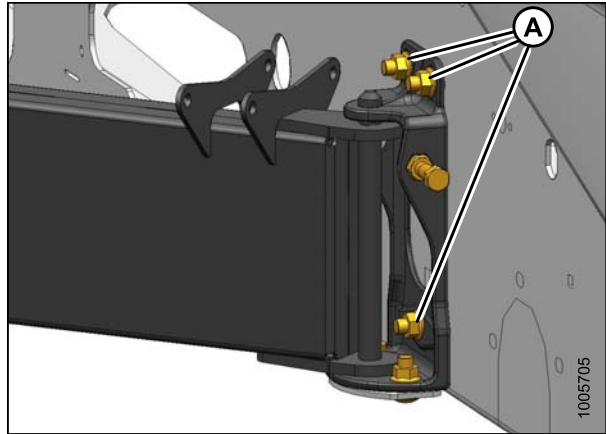


Figure 3.59: Left-Hand Platform – Main Beam

6. Attach the steering arm to the frame with two 3/8 in. x 3/4 in. long carriage bolts and nuts (A). Ensure the bolt heads face inboard, and tighten bolts.
7. Remove sling.

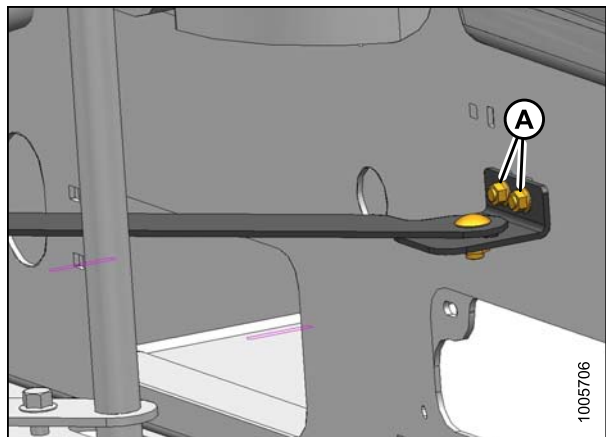


Figure 3.60: Left-Hand Platform – Steering Arm

8. Attach the railings to the platform with 1/2 in. x 3/4 in. locking bolts (A) provided. Tighten bolts to 102 N-m (75 ft-lbf).

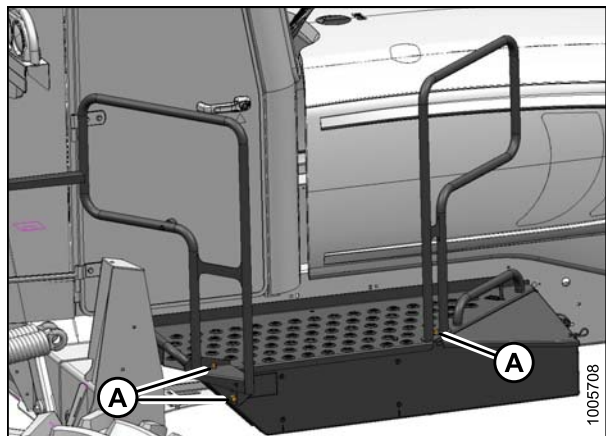


Figure 3.61: Left-Hand Platform – Railings

ASSEMBLING THE WINDROWER

9. Slowly close the platform and check that the vertical rail tubes are parallel with the cab posts when viewing from the rear.

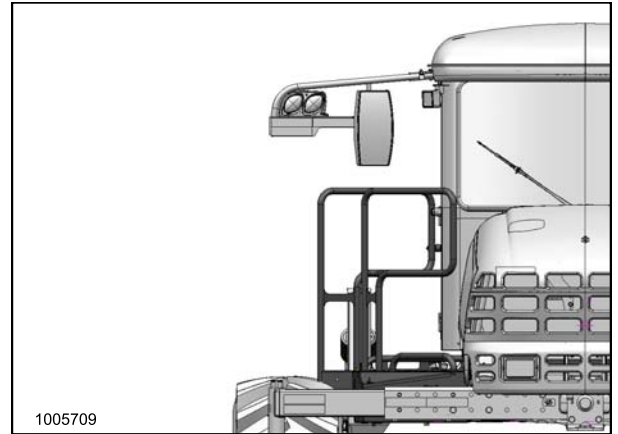


Figure 3.62: Left-Hand Platform

10. Laterally adjust the king pin mounting (A) as required.

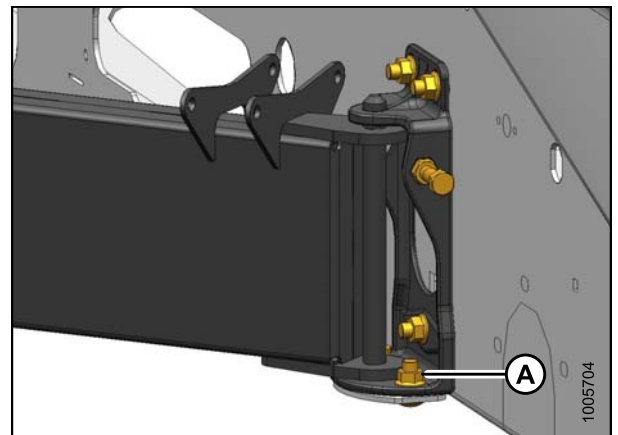


Figure 3.63: Left-Hand Platform – Main Beam

11. Ensure the rubber bumper (A) is contacting the frame.

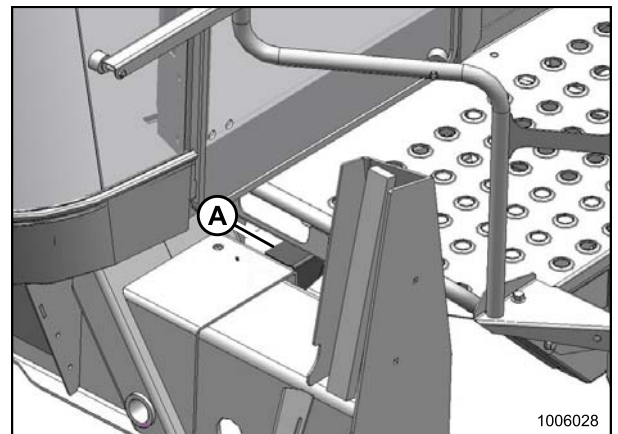


Figure 3.64: Left-Hand Platform – Rubber Bumper

ASSEMBLING THE WINDROWER

12. Ensure the front of the platform is contacting the guide (A).

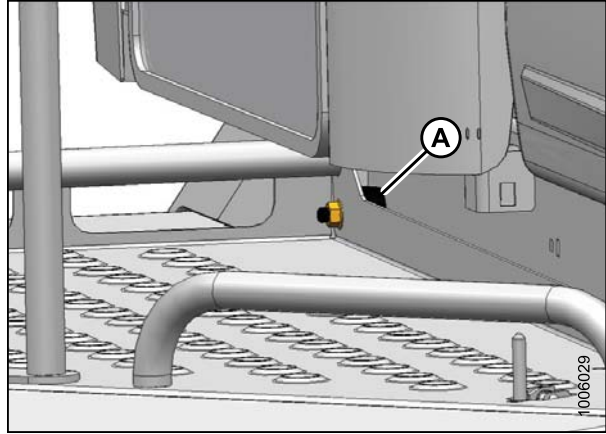


Figure 3.65: Left-Hand Platform – Guide

13. Adjust the platform horizontally with the 1/2 in. x 2-1/4 in. bolt (A) as required.

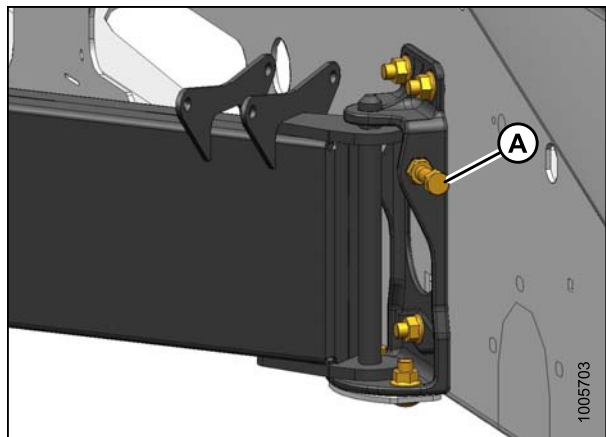


Figure 3.66: Left-Hand Platform – Main Beam

14. Relocate the steering arm (A) into either of the other holes on the bracket (B) if major adjustment is required.
15. Tighten the three main beam attachment bolts to 108 N·m (80 ft·lbf).
16. Repeat procedure to install the right-hand platform.

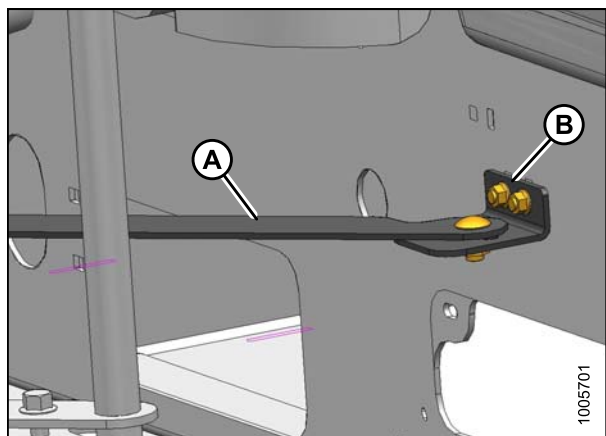


Figure 3.67: Left-Hand Platform – Steering Arm

3.10 Installing Steps

NOTE:

Procedure for left-hand installation shown—right-hand installation similar.

1. Remove the two existing upper bolts (A).
2. Ensure the two lower bolts (B) are not threaded in fully.

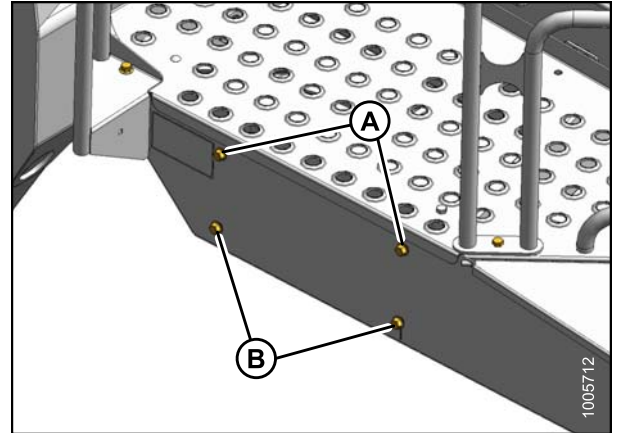


Figure 3.68: Left-Hand Platform

3. Hang step assembly on lower bolts (B) (back off bolts, if necessary).
4. Install two bolts (A) in upper holes of step and platform.
5. Torque all bolts to 20 N·m (15 ft·lbf).
6. Repeat for opposite step assembly.

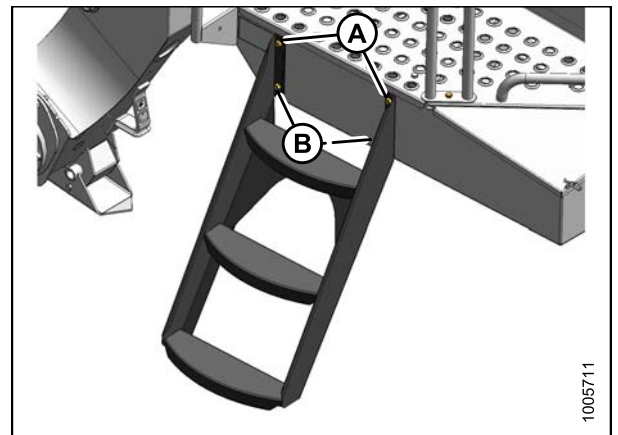


Figure 3.69: Left-Hand Steps Installed

3.11 Installing Exhaust Stack

1. Open the engine compartment hood.
2. Retrieve the exhaust stack (A) and clamp (B) (unpacked in [2.6 Removing Hand Rails and Exhaust Stack, page 20](#)).
3. Loosen the clamp (B) on the exhaust stack (A).

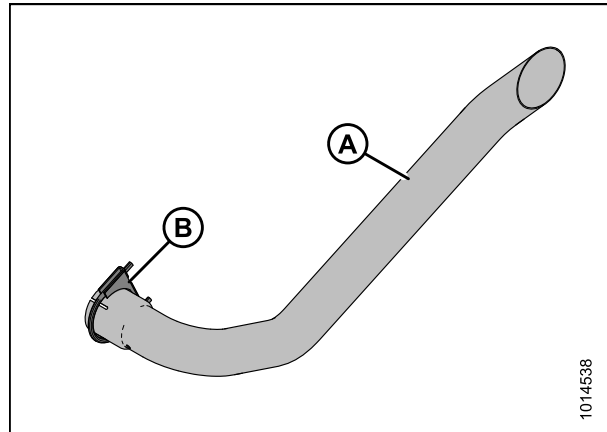


Figure 3.70: Exhaust Stack

4. Remove the covering from the exhaust canister (A), and loosen the clamp (B) on the exhaust canister.

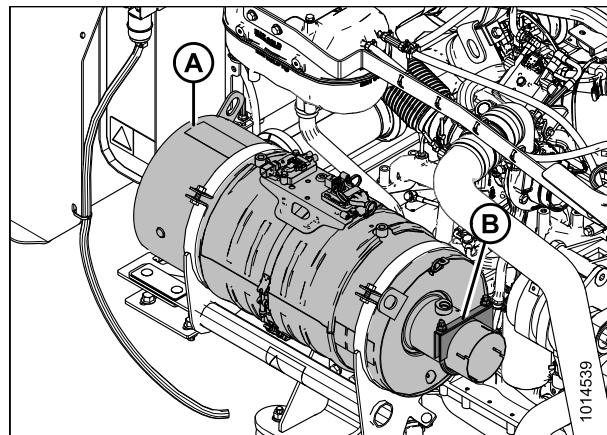


Figure 3.71: Exhaust Canister

5. Loosen the clamp (A) just enough to allow the charge air cooler (CAC) tube (B) to move, and move the CAC tube so the exhaust stack can be installed.
6. Loosen the wing nut (C) on the exhaust shroud (D), and move the shroud so the exhaust stack can be installed.

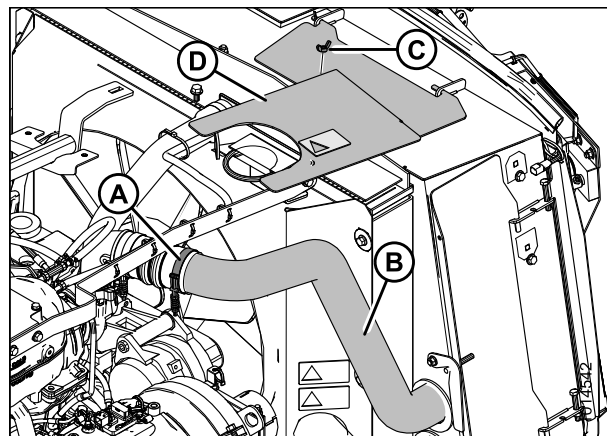


Figure 3.72: Charge Air Cooler Tube and Exhaust Shroud

ASSEMBLING THE WINDROWER

- Loosen the clamp (A), position the stack (B) into the clamp as shown, and connect the stack to the exhaust canister (C).

NOTE:

If the bracket (D) interferes with the stack (B), loosen the hex nuts (E) on the bracket and move the bracket so the stack can be installed.

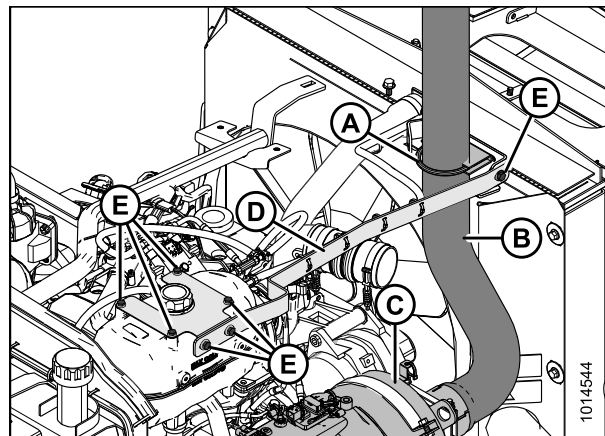


Figure 3.73: Exhaust Stack under Hood

- Tighten both clamps (A) just enough to permit the stack (B) to move.

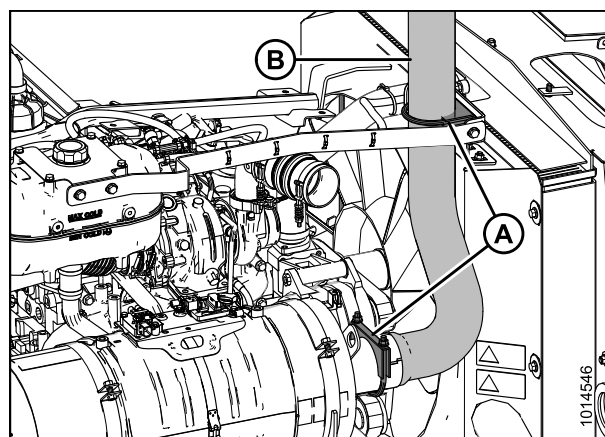


Figure 3.74: Exhaust Stack under Hood

- Reposition the CAC tube (B), and tighten the clamp (A) just enough to allow the CAC tube to move.
- Reposition the exhaust shroud (D), and the tighten wing nut (C) just enough to allow the exhaust shroud to move.

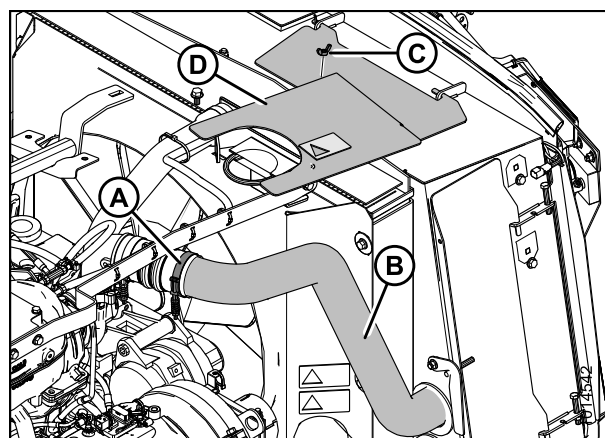


Figure 3.75: Charge Air Cooler Tube and Exhaust Shroud (Exhaust Stack Removed for Clarity)

ASSEMBLING THE WINDROWER

11. Close the hood slowly so the stack (A) enters the hole (B) in the hood. Adjust the position of the stack as required to clear the hole in the hood.

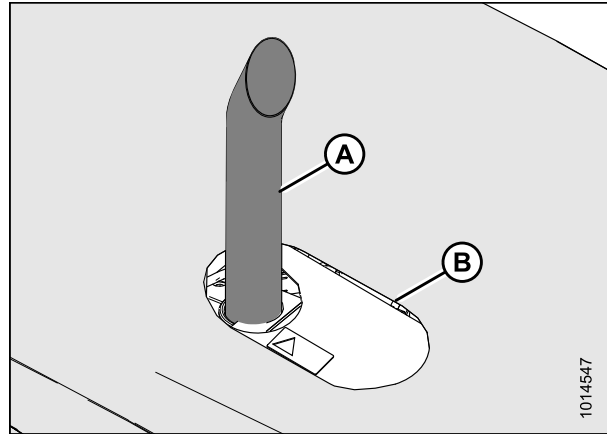


Figure 3.76: Exhaust Stack Installed

12. Raise the hood.
13. Tighten clamps (A) on exhaust stack (B).

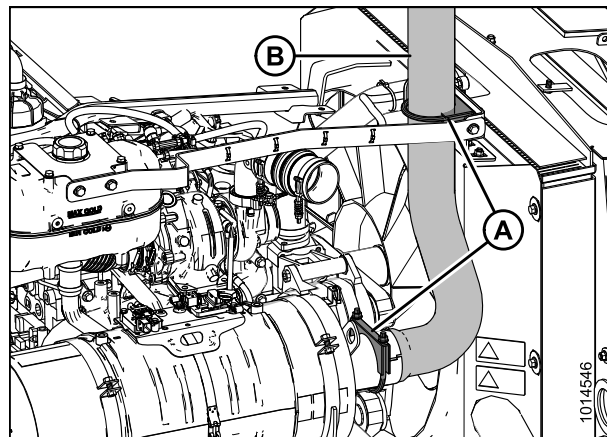


Figure 3.77: Exhaust Stack under Hood (Charge Air Cooler Tube and Exhaust Shroud Removed for Clarity)

14. Tighten the clamp (A) on the CAC tube (B).
15. Tighten the wing nut (C) on the exhaust shroud (D).

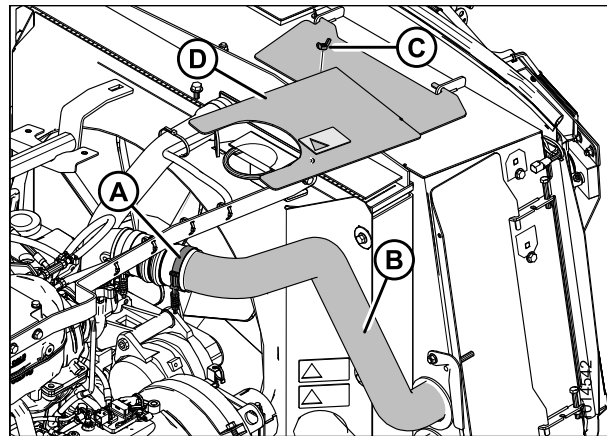


Figure 3.78: Charge Air Cooler Tube and Exhaust Shroud (Exhaust Stack Removed for Clarity)

3.12 Installing Pre-cleaner

⚠ DANGER

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

1. Shut down the engine and remove the key.
2. Open the hood. Refer to the windrower operator's manual or the windrower technical manual.
3. Retrieve the pre-cleaner (A) and pre-cleaner support (B) inside the windrower cab, and loosen the clamp (C).
4. Remove the pre-cleaner (A) and clamp (C) from the pre-cleaner support (B).

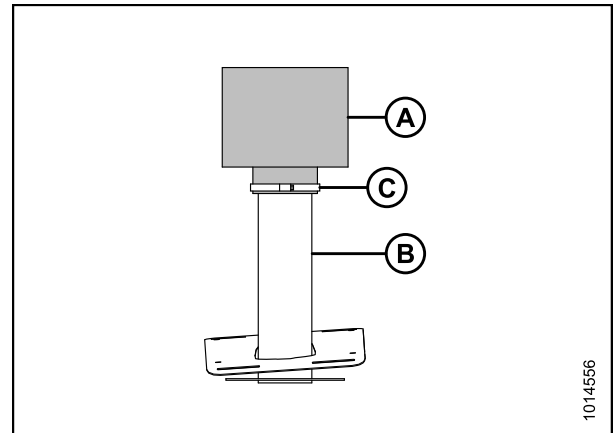


Figure 3.79: Pre-Cleaner Assembly

5. From inside the hood, loosen hardware (A) and install the pre-cleaner support (B) into the cutout in the hood.
6. Install the four bolts (A) that secure the pre-cleaner support (B) to the hood.

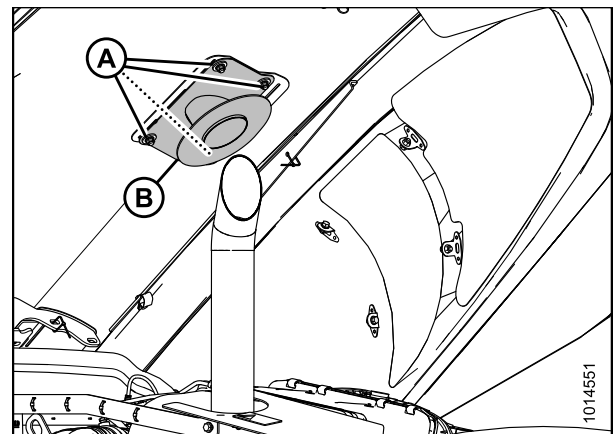


Figure 3.80: Pre-Cleaner Support

ASSEMBLING THE WINDROWER

7. Close the hood. Refer to the windrower operator's manual or the windrower technical manual.
8. Install the pre-cleaner (B) onto the support tube (C).
9. Install the clamp (A) to secure the pre-cleaner (B).
10. Adjust the pre-cleaner support. Refer to [3.12.1 Adjusting Pre-cleaner, page 62](#).

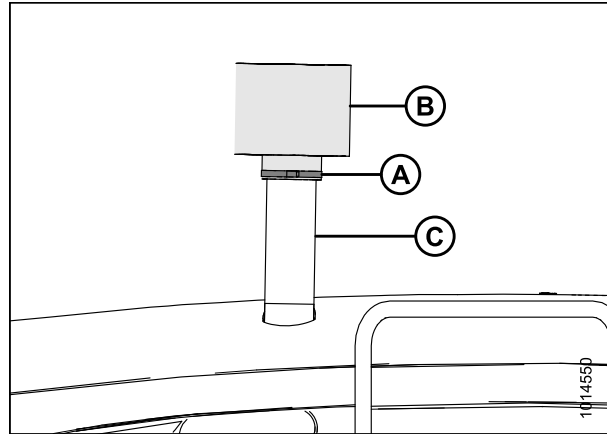


Figure 3.81: Pre-Cleaner

3.12.1 Adjusting Pre-cleaner

DANGER

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

1. Open the right-hand platform. Refer to the windrower operator's manual or the windrower technical manual.
2. Open the hood. Refer to the windrower operator's manual or the windrower technical manual.
3. From inside the hood, on the right-hand panel in the cab-forward position, locate the removable access panel (B).
4. Remove the four bolts (A) that secure the access panel (B).
5. Remove access panel (B).
6. Close the hood. Refer to the windrower operator's manual or the windrower technical manual.

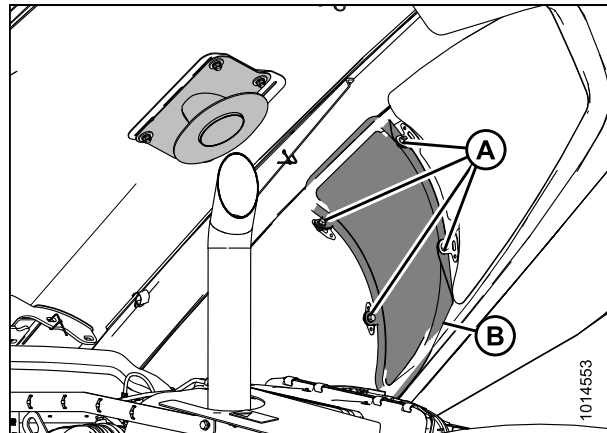


Figure 3.82: Access Panel

ASSEMBLING THE WINDROWER

NOTE:

Side panel has been made transparent to show items under the hood.

7. Check that the rubber seal (A) on the air intake stack is compressed against the plate (B) on the pre-cleaner support. If adjustment is required, open the hood and loosen nuts (C).
8. Loosen bolts (C) on the air intake stack.
9. Close the hood. Refer to the windrower operator's manual or the windrower technical manual.
10. Access the air intake stack through access hole (D). Adjust the air intake stack.
11. Install access panel (B).
12. Install the four bolts (A) that secure the access panel (B) to the side panel.
13. Close the hood. Refer to the windrower operator's manual or the windrower technical manual.

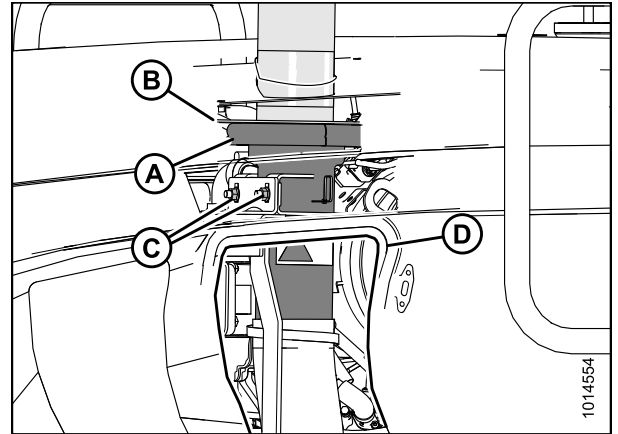


Figure 3.83: Air Intake Stack

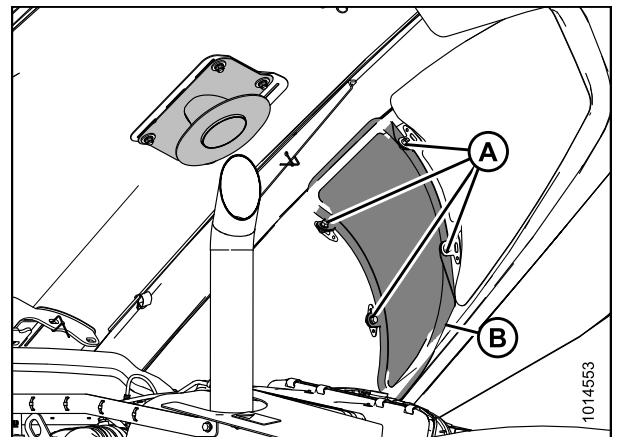


Figure 3.84: Access Panel

3.13 Positioning Light and Mirror Assemblies

1. Remove the nut and bolt (A) securing the light and mirror assembly in the shipping position.
2. Swing the light and mirror assembly (B) forwards and upwards.

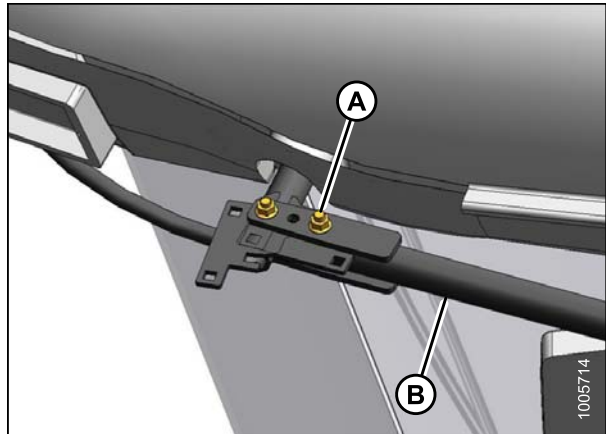


Figure 3.85: Light and Mirror Assembly in Shipping Position

3. Reinstall the bolt (A) and nut in other hole.
4. Repeat for opposite mirror assembly.

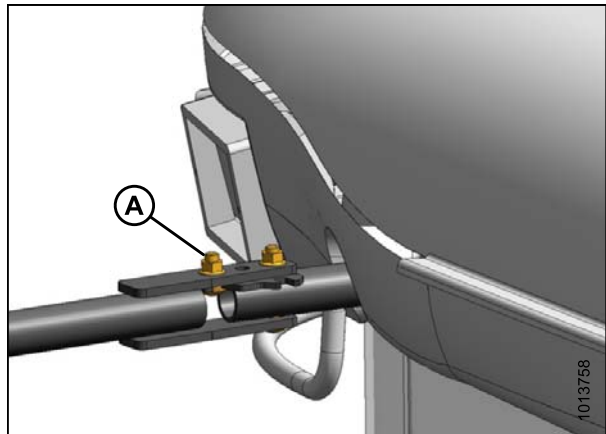


Figure 3.86: Light and Mirror Assembly in Working Position

3.14 Connecting Batteries

DANGER

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

1. Stop engine and remove key from ignition.
2. Open the right-hand (cab-forward) maintenance platform.
3. Ensure the battery main disconnect switch (A) is turned to the POWER OFF position (the battery main disconnect switch is located on the right-hand frame rail beside the batteries).
4. Remove the cable ties securing the battery cables to the battery clamps.

IMPORTANT:

Batteries are negative grounded. Always connect red starter cables to the positive (+) terminals of the batteries and black ground cables to the negative (-) terminals of the batteries. Reversed polarity in the batteries or alternator may result in permanent damage to the electrical system.

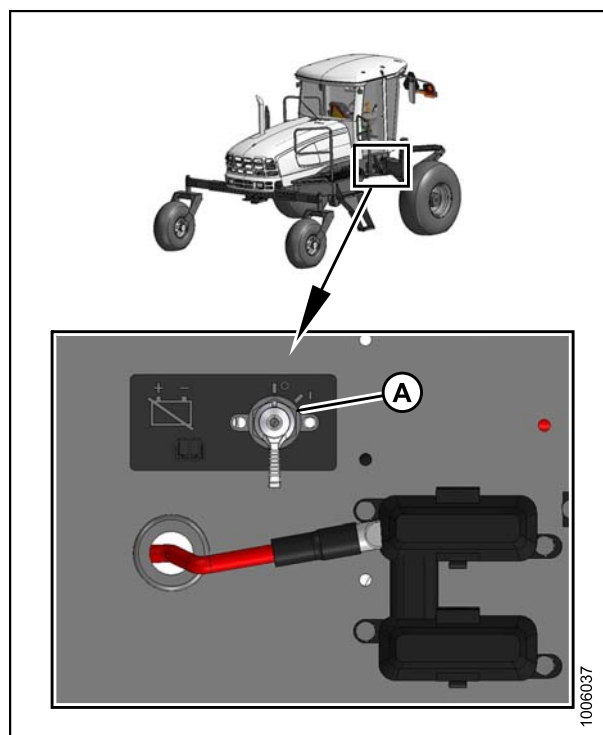


Figure 3.87: Battery Main Disconnect Switch

5. Remove the plastic caps from the battery posts.
6. Attach the red positive (+) cable terminals to the positive posts (A) on the batteries and tighten clamps. Reposition plastic covers onto clamps.
7. Attach the black negative (-) cable terminals to the negative posts (B) on the batteries and tighten clamps. Reposition plastic covers onto clamps.
8. Turn the battery switch to the POWER ON position.
9. Move the right-hand (cab-forward) maintenance platform forward to the closed position.

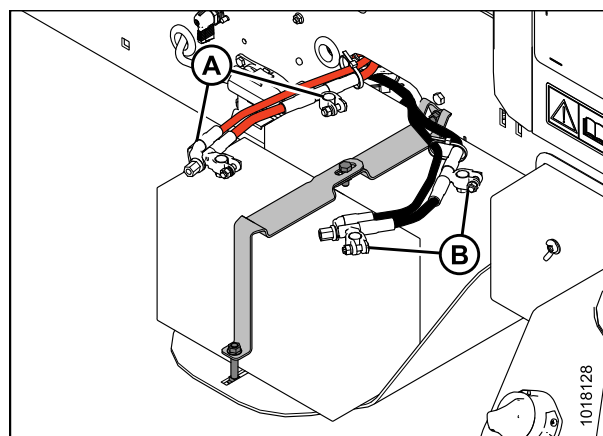


Figure 3.88: Batteries

3.15 Priming Hydraulic System

1. Shut down the engine, and remove the key from the ignition.
2. Remove the hydraulic oil reservoir filler cap/dipstick (A).
3. Open the engine compartment hood to the highest position. For instructions, refer to the windrower operator's manual or the windrower technical manual.

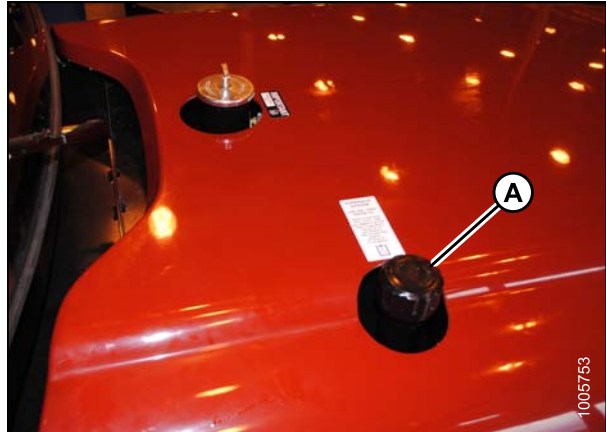


Figure 3.89: Filler Cap/Dipstick

4. From underneath the machine, locate plug (A) on the side of the header drive pump housing.
5. Loosen plug (A) to bleed the pump housing. Retighten the plug once oil starts to run out.

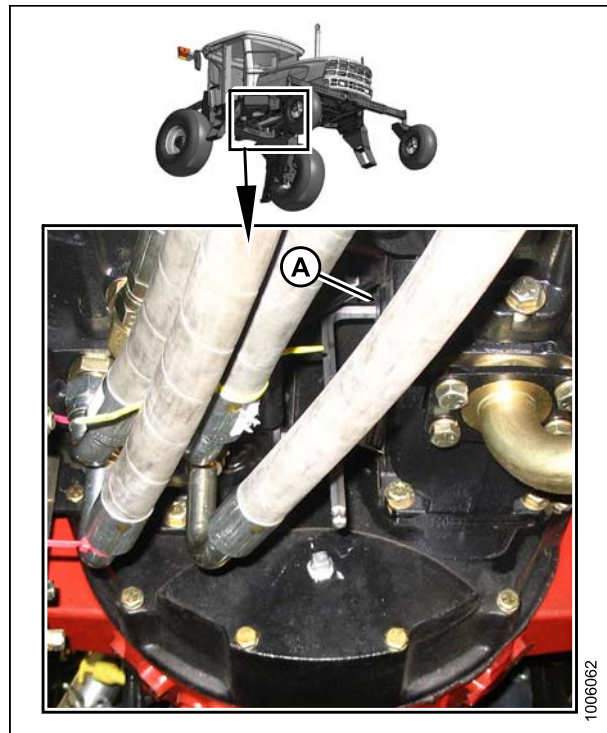


Figure 3.90: Header Drive Pump Housing

ASSEMBLING THE WINDROWER

6. From above the machine, locate plug (A) on the top of the header drive pump housing.
7. Loosen plug (A) to bleed the pump housing. Retighten the plug once oil starts to run out.

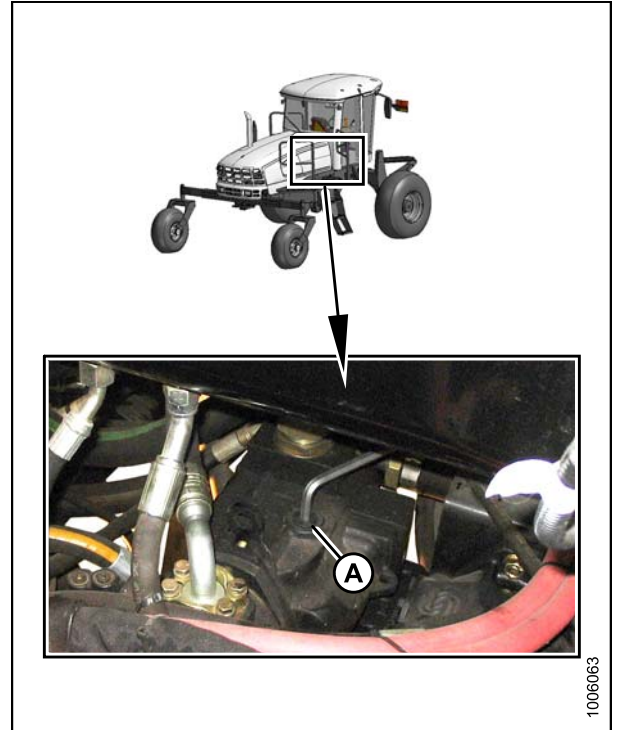


Figure 3.91: Header Drive Pump Housing

8. From above the machine, locate plug (A) on the top of the traction drive pump housing.
9. Loosen plug (A) to bleed the pump housing. Retighten the plug once oil starts to run out.
10. Replace the hydraulic oil reservoir filler cap.

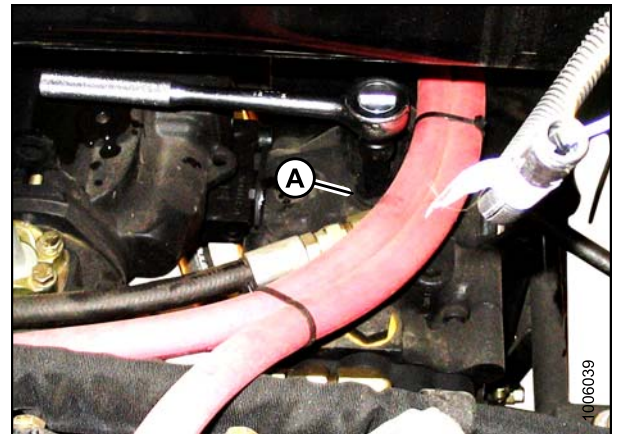


Figure 3.92: Traction Drive Pump Housing

ASSEMBLING THE WINDROWER

11. Open the left-hand (cab-forward) platform.
12. Disconnect the brake engage solenoid plug (P44) (A) at the multifunction block on the left-hand side of the windrower.

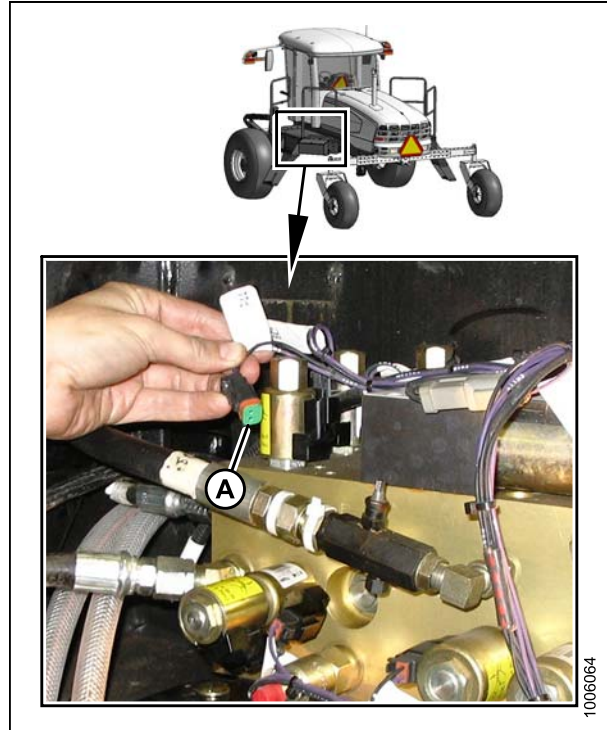


Figure 3.93: Multifunction Control Block

13. Disconnect the electrical connection (A) at the fuel pump on the right side of the engine.

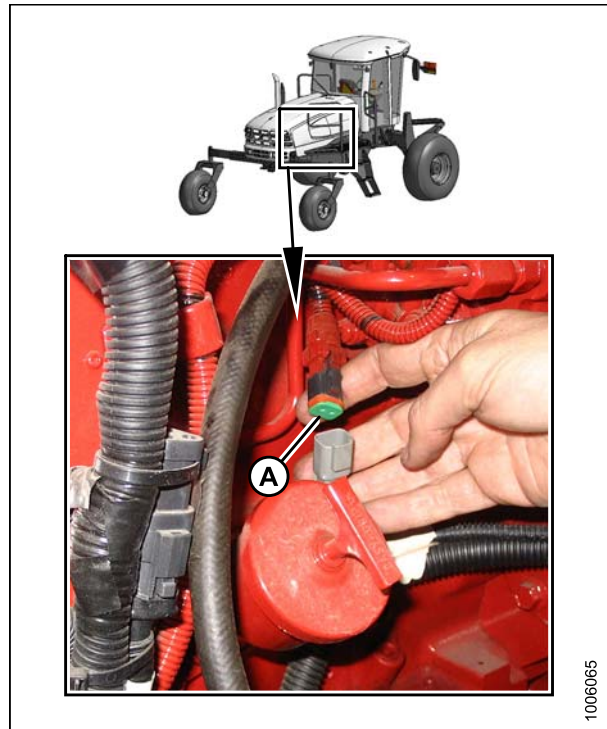


Figure 3.94: Fuel Pump Location

ASSEMBLING THE WINDROWER

14. Open the maintenance platform on the right-hand (cab-forward) side.
15. Open the circuit breaker/fuse box (A), and remove the engine control module (ECM) ignition fuse (5A) (B).

CAUTION

Check to be sure all bystanders have cleared the area.

16. Prime the system by cranking the engine with the starter for 15 seconds.
17. Reconnect the electrical connection at the fuel pump and at the brake engage solenoid.
18. Reinstall ECM ignition fuse (5A) (B) and the circuit breaker/fuse box (A).
19. Close the engine compartment hood.

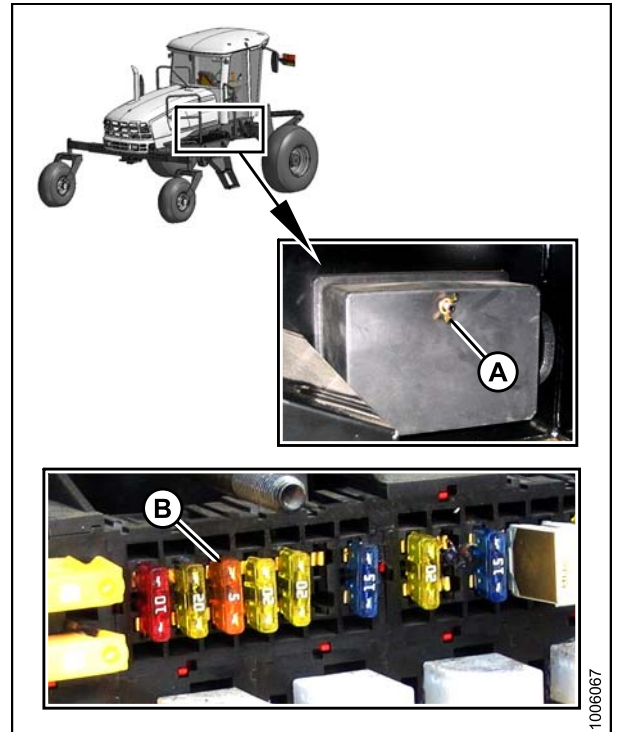


Figure 3.95: Circuit Breaker/Fuse Box

20. Check the hydraulic oil level in the reservoir (add SAE 15W-40 oil if necessary). Refer to [5.5 Checking Hydraulic Oil, page 193](#).
21. Close the platforms.

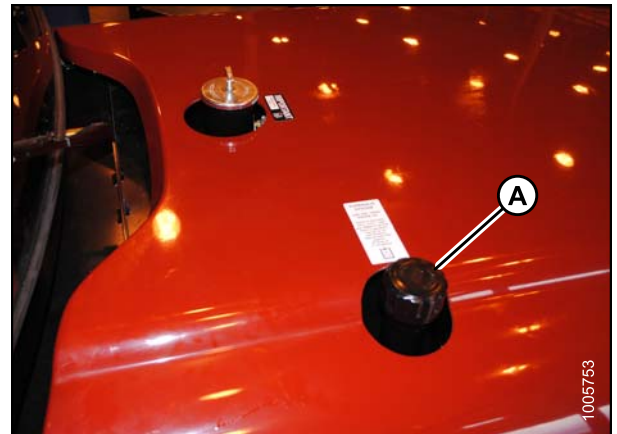


Figure 3.96: Filler Cap/Dipstick

3.16 Starting Engine

1. Ensure there is sufficient fuel and diesel exhaust fluid (DEF) for a 15 minute run.

NOTE:

Ensure there is sufficient diesel exhaust fluid (DEF) to avoid DEF level warnings. Refer to [3.24 Fuel and Diesel Exhaust Fluid \(DEF\) Display Module, page 120](#).

2. Move the ground speed lever (GSL) (A) into the N-DETENT position.
3. Turn the steering wheel until it locks.
4. Push header drive switch (B) to the OFF position.

CAUTION

Check to be sure all bystanders have cleared the area.

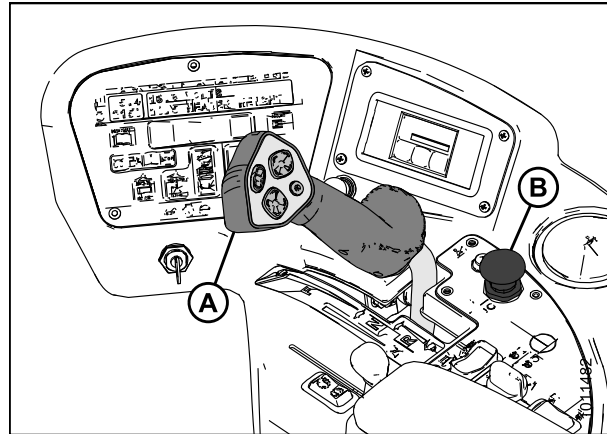


Figure 3.97: Operator Console

Normal Start (All Engines):

5. Follow these steps when starting engine in temperatures above 16°C (60°F):
 - a. Move throttle fully back to START position (A).
 - b. Sound horn three times.
 - c. Turn ignition key (B) to RUN position.

NOTE:

A single loud tone will sound, engine warning lights will illuminate, and the cab display module will display "HEADER DISENGAGED" and "IN PARK".

WARNING

If starter engages with steering wheel unlocked, ground speed lever out of NEUTRAL, or header clutch engaged, do NOT start engine. Refer to the technical manual.

- d. Turn ignition key (B) to START position until engine starts and then release the key. The tone will cease and warning lights will go out.

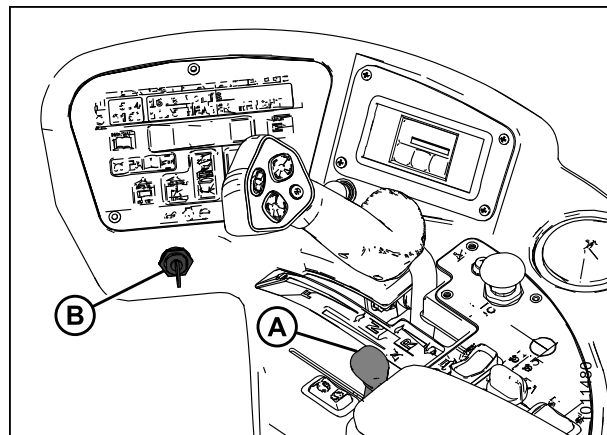


Figure 3.98: Operator Console

ASSEMBLING THE WINDROWER

IMPORTANT:

- Do **NOT** operate starter for longer than 15 seconds at a time.
- If engine does **NOT** start, wait at least 2 minutes before trying again.
- After the third 15 second crank attempt, allow the starter motor to cool for 10 minutes before further cranking attempts.
- If engine still does **NOT** start, refer to Table [3.1 Engine Start Troubleshooting, page 71](#).

Cold Start:

NOTE:

Engines are equipped with cold start assist system.

6. Use cold start for engine temperatures below 5°C (40°F). Refer to Step [5, page 70](#) for engine temperatures below 5°C (40°F), but adhere to the following *NOTE* and *IMPORTANT* statements while starting the engine.

NOTE:

Engine will cycle through a period when it appears to labour during engine warm up. The throttle is nonresponsive while engine is in warm up mode. Warm up mode lasts between 30 seconds and 3 minutes depending on the temperature. The throttle will become active after the engine has stabilized and is idling normally.

IMPORTANT:

Do **NOT** operate engine above 1500 rpm until engine temperature is above 40°C (100°F).

Table 3.1 Engine Start Troubleshooting

Problem	Solution
Controls not in NEUTRAL	<ul style="list-style-type: none"> • Move GSL to NEUTRAL • Move steering wheel to locked position • Disengage header clutch
Operator's station not locked	<ul style="list-style-type: none"> • Adjust position of operator's station • Ensure lock is engaged
Neutral interlock misadjusted	<ul style="list-style-type: none"> • Refer to the windrower technical manual
No fuel to engine	<ul style="list-style-type: none"> • Fill empty fuel tank • Replace clogged filter • Ensure fuel shut off valve is in open position
Old fuel in tank	<ul style="list-style-type: none"> • Drain tank • Refill with fresh fuel
Water, dirt, or air in fuel system	<ul style="list-style-type: none"> • Drain, flush, fill, and prime system
Improper type of fuel	<ul style="list-style-type: none"> • Use proper fuel for operating conditions
Crankcase oil too heavy	<ul style="list-style-type: none"> • Use recommended oil

ASSEMBLING THE WINDROWER

Problem	Solution
Low battery output	<ul style="list-style-type: none">• Test the battery• Check battery electrolyte level
Poor battery connection	<ul style="list-style-type: none">• Clean and tighten loose connections
Faulty starter	<ul style="list-style-type: none">• Refer to the windrower technical manual
Wiring shorted, circuit breaker open	<ul style="list-style-type: none">• Check continuity of wiring and breaker (manually reset)
Faulty injectors	<ul style="list-style-type: none">• Refer to the windrower technical manual

3.17 Checking Traction Drive

CAUTION

Check to be sure all bystanders have cleared the area.

1. Move the ground speed lever (GSL) (A) out of N-DETENT and slowly move the GSL forwards. Ensure the wheels are rotating in the forward direction and at the same speed.
2. Turn the steering wheel and observe the motion of the drive wheels. Ensure the wheels rotate at different speeds with the slower rotating wheel on the same side of the machine that the steering wheel is turned towards.
3. Turn the steering wheel in the opposite direction and ensure the slower rotating wheel is on the same side of the machine that the steering wheel is turned towards.
4. Move the GSL backwards into reverse. Ensure the wheels are rotating in the reverse direction and at the same speed.
5. Move the GSL forwards into N-DETENT and shut down the engine.

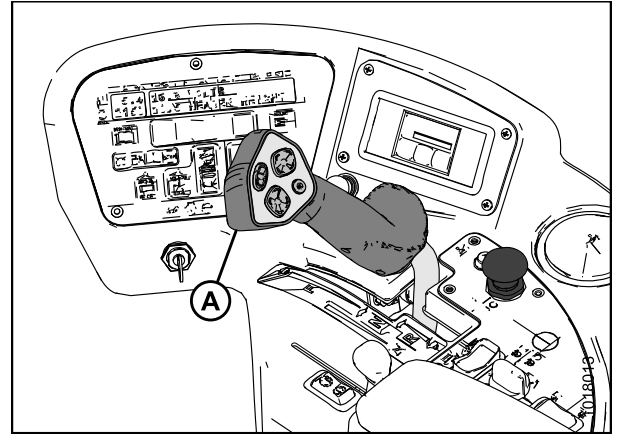


Figure 3.99: Operator Console

3.18 Removing Windrower from Stand

The procedure for removing the windrower from the support stand differs depending on whether you are using a factory-built stand or a field-constructed stand. Refer to the following procedures according to for your specific stand:

- [3.18.1 Removing Windrower from Factory Stand, page 74](#)
- [3.18.2 Removing Windrower from Field Stand, page 75](#)

3.18.1 Removing Windrower from Factory Stand

1. Move valve handle (A) upwards to slightly raise the windrower and take load off the lift locks.

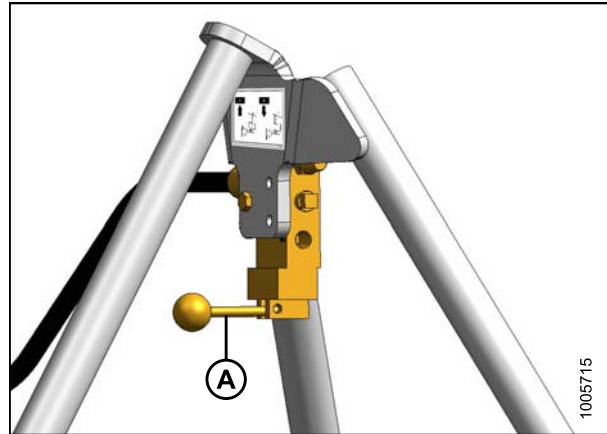


Figure 3.100: Air Control Valve Tripod

2. Release the lift lock mechanisms (three places) and turn keeper to keep the lock in the released position.
3. Move the valve handle downwards to slowly release the pressure from the air bag system and lower the windrower to the ground.

CAUTION

Ensure all three lifts have fully retracted and are clear of the windrower frame before driving windrower ahead.

4. Start the engine and drive the machine straight ahead leaving the shipping support channels supported on the rear support stand.

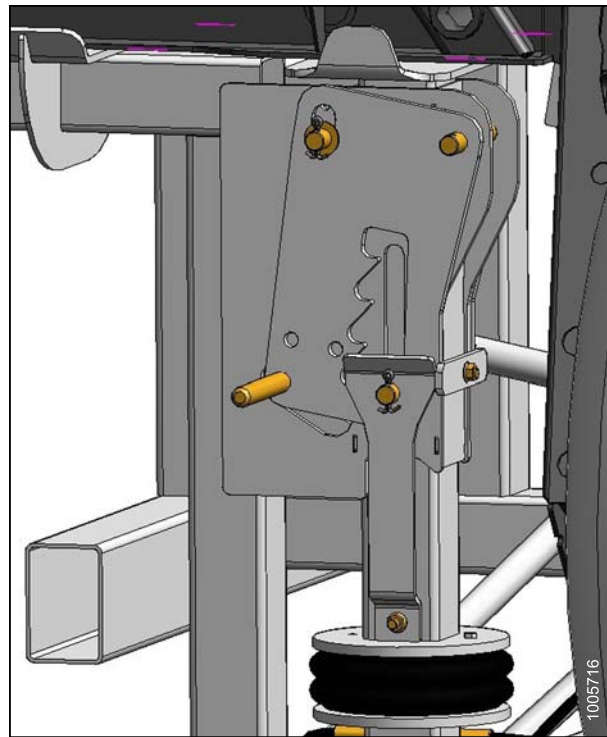


Figure 3.101: Lift System

3.18.2 Removing Windrower from Field Stand

1. Position a jack under the jack point of each drive wheel leg and under the rear hitch.
2. Raise the jacks to take the weight off the stands, and remove the stands.
3. Lower the windrower slowly to the ground, and remove the jacks.

3.19 Installing AM/FM Radio

M155E4 Windrowers are designed to accept a DIN E style AM/FM radio with a depth (X) of 161 mm and having a 5 mm threaded stud (A) centered on the rear for support. Adjustments are possible if the radio falls outside these parameters.

In order to retain radio settings and preset memory with the battery disconnect turned off, select a radio with non-volatile settings memory.

NOTE:

An approved radio package is available from Radio Engineering Industries (REI) of Omaha, Nebraska.

1. Ensure the ignition is turned to the OFF position.
2. Remove radio panel by removing four screws (A).

3. Remove screw and nuts (A) and (C) to remove support (B) from panel. Retain nut (C) and lock washer.

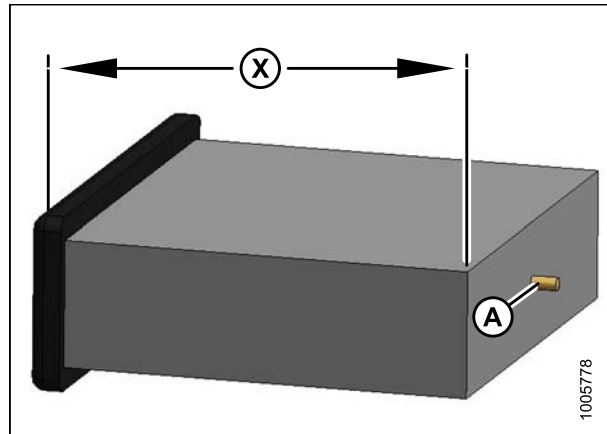


Figure 3.102: Mounting Dimension

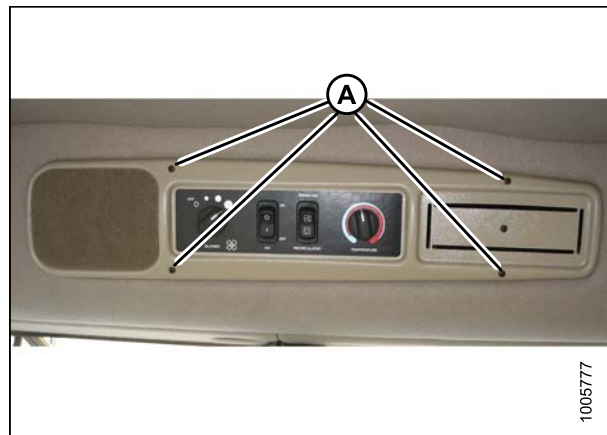


Figure 3.103: Radio Panel

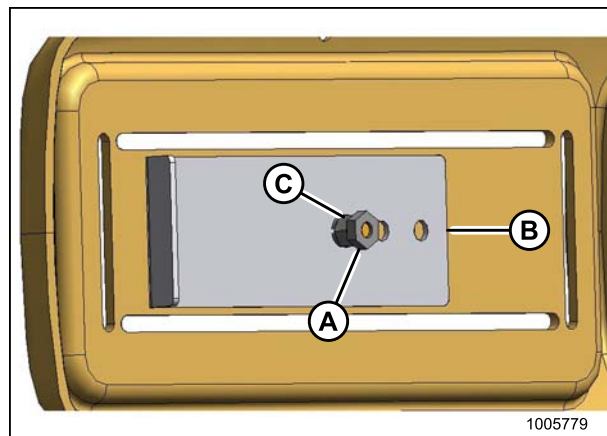


Figure 3.104: Panel Support

ASSEMBLING THE WINDROWER

4. Remove the cutout by cutting the tabs (A) in the panel. Remove sharp edges from the panel.

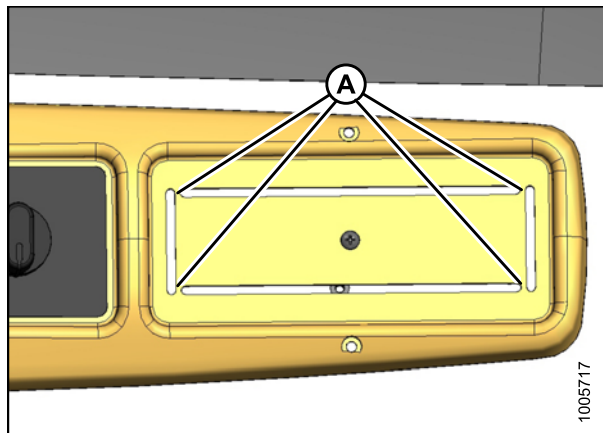


Figure 3.105: Panel

5. Position receptacle (A) (supplied with radio) into opening and secure by bending tabs (B) on receptacle against panel.

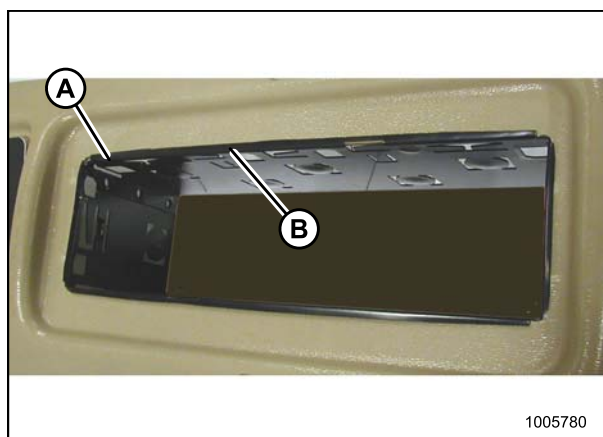


Figure 3.106: Radio Receptacle

6. Insert radio into receptacle and attach radio bezel. Ensure radio locks into position and faceplate (A) is against the panel.



Figure 3.107: Radio Installed

ASSEMBLING THE WINDROWER

7. Ensure the radio has a six-pin connector (Packard #2977042) and a terminal arrangement as shown at right. This enables the radio to connect to the windrower's six-pin radio connector wiring harness.
8. Attach the following two additional wires from the wiring harness to the radio:
 - a. **Circuit 503:** Red live-wire with 1/4 in. female blade terminal provides power for the radio clock/memory if radio is equipped with this feature.
 - b. **Circuit 315:** Black ground-wire attaches to the radio body.
9. Plug antenna cable into radio.

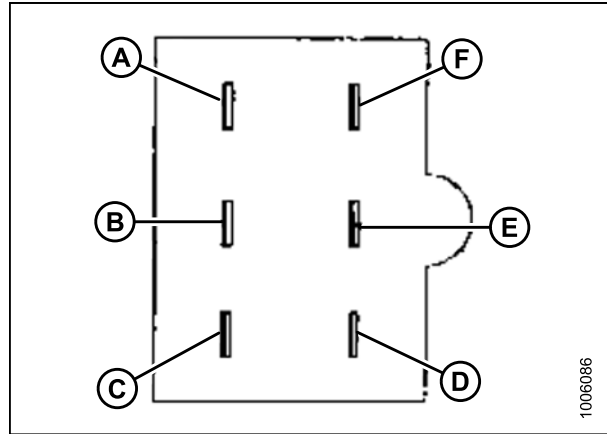


Figure 3.108: Six-Pin Connector Terminal Arrangement

- A - Left Speaker Power (+)
- B - Left Speaker Ground (-)
- C - Radio Ground (-)
- D - Right Speaker Ground (-)
- E - Right Speaker Power (+)
- F - Radio Power (+) (Live when Ignition is ON)

10. Attach stud (supplied with radio) to center rear of radio.
11. Attach support (B) to stud on back of radio chassis with nut (A) and lock washer supplied with the support.

NOTE:

Support can be attached to chassis in multiple locations to allow for proper radio mounting.

12. Install radio panel using original screws.

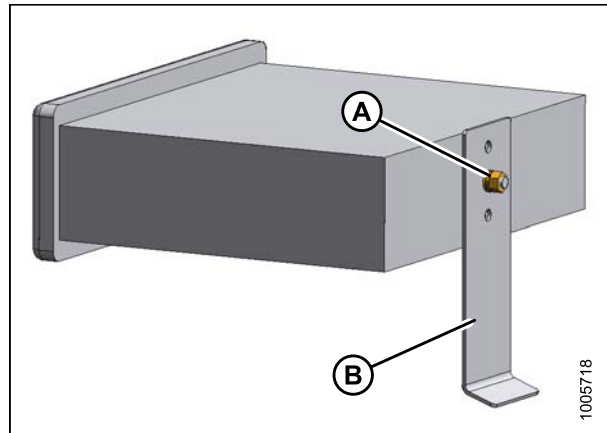


Figure 3.109: Radio and Support

13. Adjust bracket (A) (if necessary) by loosening nuts (B) to allow radio to slide into opening and securely capture support (C).
14. Retrieve antenna from inside cab and remove protective cover from base.

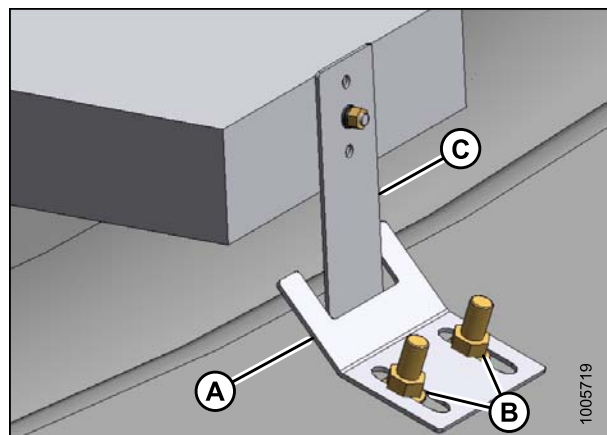


Figure 3.110: Radio and Support

ASSEMBLING THE WINDROWER

15. Remove protective cover (A) from antenna mount on cab roof and thread antenna onto base until hand tight.

NOTE:

Store protective cover in cab and reinstall to protect antenna mount if antenna needs to be removed.

16. Turn the ignition key to ACC, switch radio ON, and check operation in accordance with instructions supplied with the radio.
17. Turn the ignition key to the OFF position.

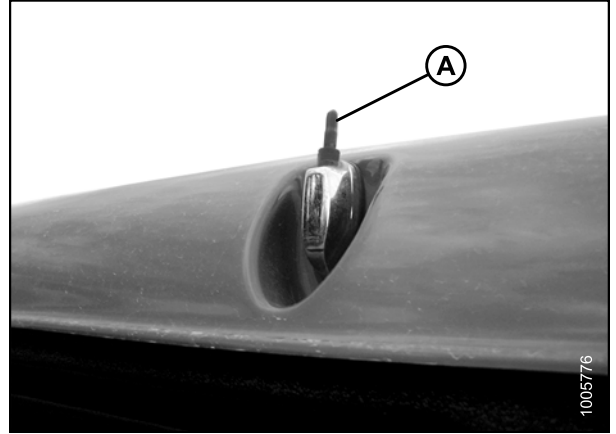


Figure 3.111: Antenna Mount on Cab Roof

3.20 Installing Beacons

1. Retrieve the two beacons from the shipment.
2. Remove the hardware and rubber base from one of the beacons as shown.



Figure 3.112: Beacon Light

3. Feed the connectors from the harness through the center hole in the rubber base.
4. Place the base on the beacon bracket ensuring that the mounting holes in the rubber base line-up with the holes in the bracket.



Figure 3.113: Rubber Beacon Base on Mounting Bracket

5. Connect the orange wire (A) from the harness to the red wire (B) in the beacon.
6. Connect the black wire (C) from the harness to the ground terminal in the beacon.

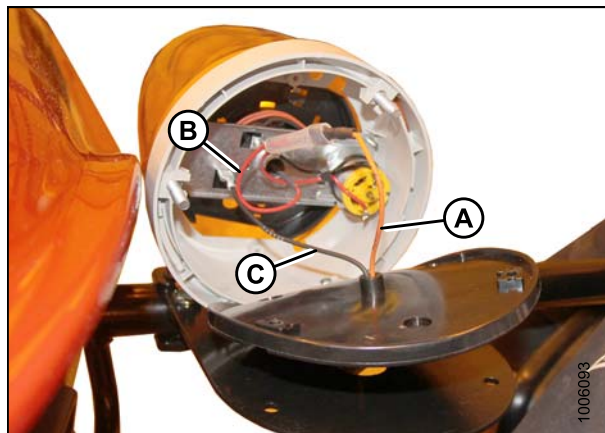


Figure 3.114: Beacon Light Wire Routing

ASSEMBLING THE WINDROWER

7. Fit the beacon onto the base making sure the beacon is oriented with the point on the lens facing forward (cab-forward) as shown.



Figure 3.115: Beacon Light Orientation

8. Mount the beacon to the base with the lock washers and nuts (A) supplied with the beacon.
9. Install the second beacon on the opposite side of the cab roof.



Figure 3.116: Beacon Light

3.21 Installing the Slow Moving Vehicle (SMV) Sign

1. Install the SMV sign (A) (shipped inside the cab) onto the windrower in accordance with the instructions supplied with the sign. SMV signs must be visible when travelling on the road.

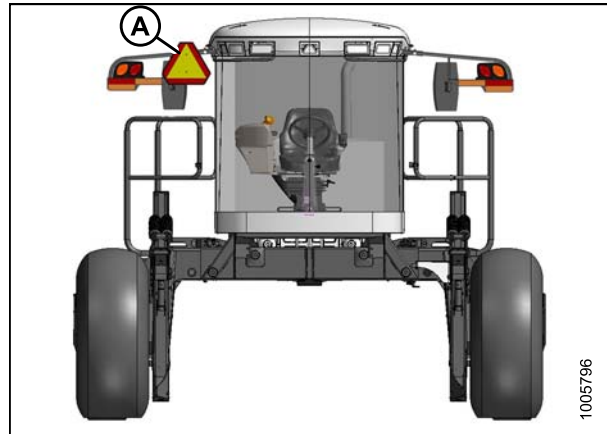


Figure 3.117: Engine-Forward Location

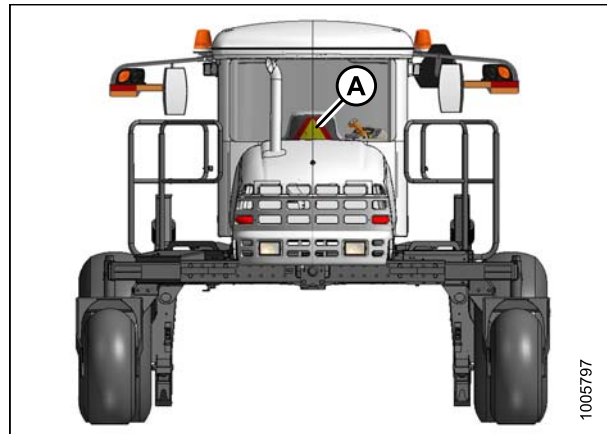


Figure 3.118: Cab-Forward

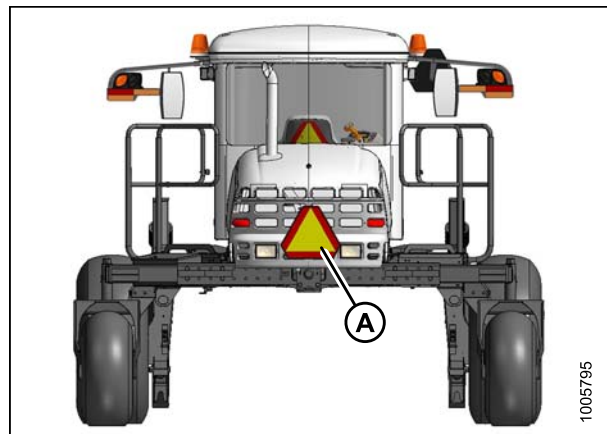


Figure 3.119: Alternate Location (Cab-Forward)

3.22 Attaching Headers

3.22.1 Attaching Header Boots

Header boots are required to attach a D-Series draper header to the windrower. Attach header boots (supplied with header) to windrower lift linkage if not already installed.

CAUTION

To prevent damage to the lift system when lowering header lift linkages without a header or weight box attached to the windrower, ensure the float engagement pin is installed in storage position (B) and NOT in engaged position (A).

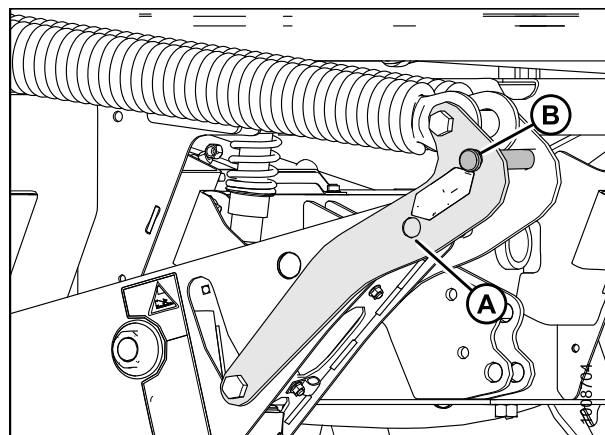


Figure 3.120: Header Float Linkage

1. Remove pin (B) from boot (A).

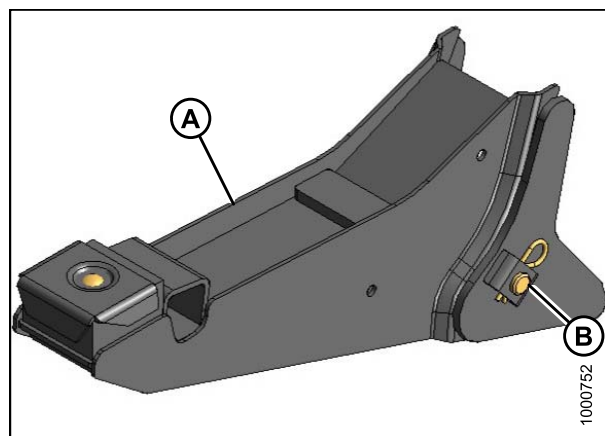


Figure 3.121: Header Boot

2. Position boot (B) onto lift linkage (A) and reinstall pin (C). Pin may be installed from either side of boot.
3. Secure pin (C) with hairpin (D).
4. Repeat for opposite side.

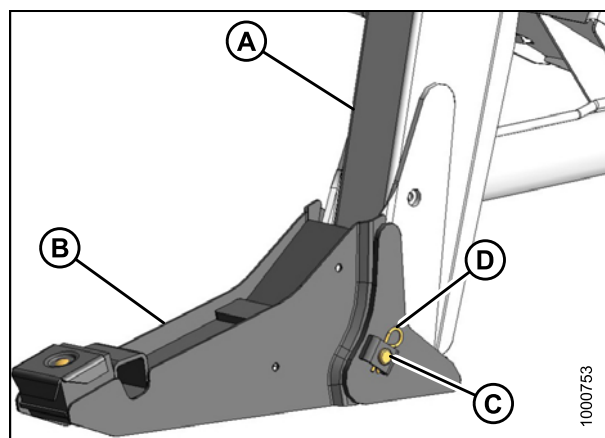


Figure 3.122: Header Boot

3.22.2 Attaching a D-Series Header

D50, D60, and D65 headers can be attached to an M155E4 Self-Propelled Windrower.

The M155E4 Self-Propelled Windrower is factory-equipped to run a D-Series Draper Header.

If installing an HC10 Hay Conditioner, reverser kit MD #B4656 is recommended. If necessary, obtain the recommended kit and install it in accordance with the instructions supplied with the kit.

Refer to the following instructions based on the type of center-link installed on your windrower:

- [Attaching a D-Series Header: Hydraulic Center-Link with Optional Self-Alignment, page 84](#)
- [Attaching a D-Series Header: Hydraulic Center-Link without Self-Alignment, page 89](#)

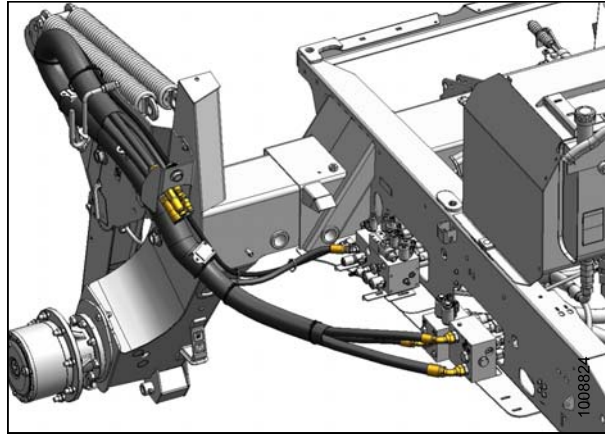


Figure 3.123: M155E4 Draper Header Hydraulics

Attaching a D-Series Header: Hydraulic Center-Link with Optional Self-Alignment

NOTE:

Draper header boots must be installed onto the windrower lift linkage before starting this procedure. Refer to [3.22.1 Attaching Header Boots, page 83](#).

⚠ DANGER

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

1. Remove hairpin (A) from pins (B), and remove pins from both header legs.

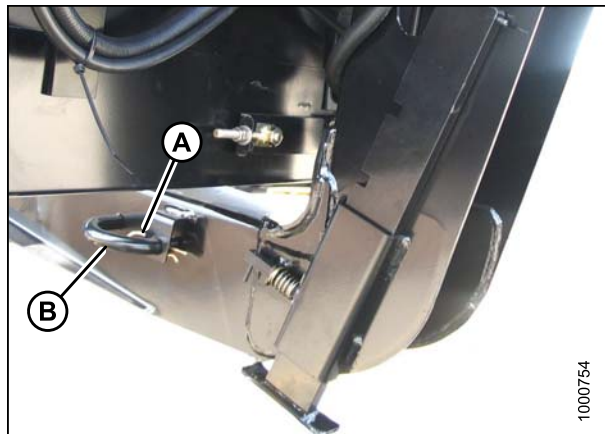


Figure 3.124: Header Leg

ASSEMBLING THE WINDROWER

CAUTION

Check to be sure all bystanders have cleared the area.

IMPORTANT:

Remove protective cover from exhaust stack prior to starting engine.

2. Start the engine and activate the HEADER DOWN button (A) on the ground speed lever (GSL) to fully retract header lift cylinders.



Figure 3.125: Ground Speed Lever

3. Activate the REEL UP switch (A) on the GSL to raise the center-link until the hook is above the attachment pin on the header.

IMPORTANT:

If the center-link is too low, it may contact the header as the windrower approaches the header for hookup.

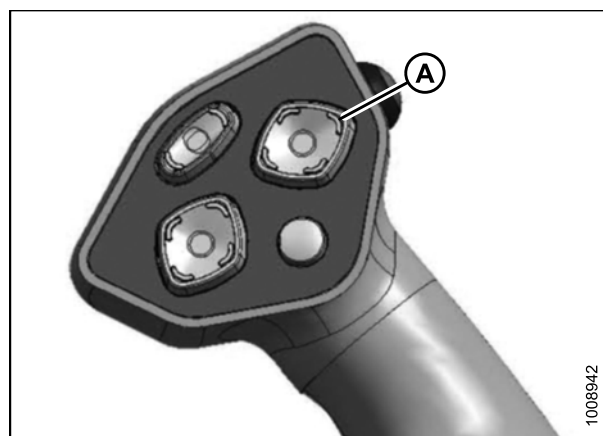


Figure 3.126: Ground Speed Lever

4. Drive the windrower slowly forward until the boots (A) enter the header legs (B). Continue driving slowly forward until lift linkages contact the support plates in the header legs and the header nudges forward.
5. Ensure the lift linkages are properly engaged in the header legs and are contacting the support plates.

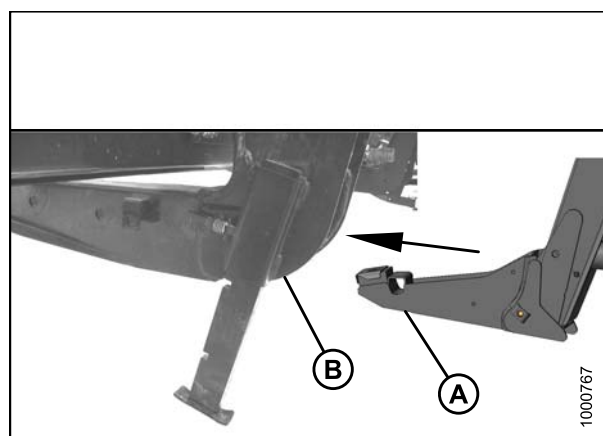


Figure 3.127: Header Leg and Boot

ASSEMBLING THE WINDROWER

6. Use the following GSL functions to position the center-link hook above the header attachment pin:
- Reel up (A) to raise the center-link
 - Reel down (B) to lower the center-link
 - Header tilt up (C) to retract the center-link
 - Header tilt down (D) to extend the center-link

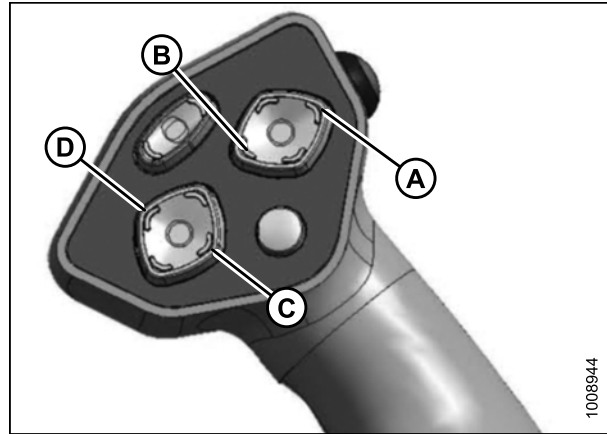


Figure 3.128: Ground Speed Lever

7. Adjust position of the center-link cylinder (A) with the REEL UP, REEL DOWN, AND HEADER TILT switches on the GSL until the hook is above the header attachment pin.

IMPORTANT:

Hook release must be down to enable self-locking mechanism. If the release is open (up), manually push it down after hook engages header pin.

8. Lower center-link (A) onto the header with the REEL DOWN switch on the GSL until it locks into position (hook release [B] is down).
9. Check that center-link is locked onto header by pressing the REEL UP switch on the GSL.

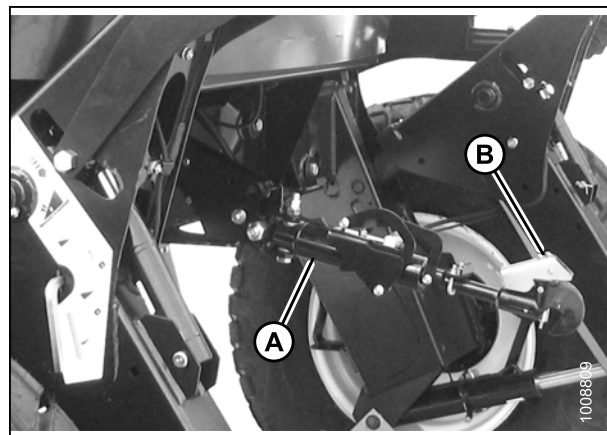


Figure 3.129: Hydraulic Center-Link

CAUTION

Check to be sure all bystanders have cleared the area.

10. Press the HEADER UP switch (A) to raise header to maximum height.

NOTE:

If one end of the header does **NOT** fully rise, rephase the lift cylinders as follows:

- Press and hold the HEADER UP switch until both cylinders stop moving.
- Continue to hold the switch for 3–4 seconds. Cylinders are now phased.

NOTE:

It may be necessary to repeat this procedure if there is air in the system.



Figure 3.130: Ground Speed Lever

ASSEMBLING THE WINDROWER

11. Engage safety props on both lift cylinders as follows:
 - a. Stop engine and remove key from ignition.
 - b. Pull lever (A) and rotate towards the header to release and lower safety prop (B) onto the lift cylinder.
 - c. Repeat for opposite lift cylinder.

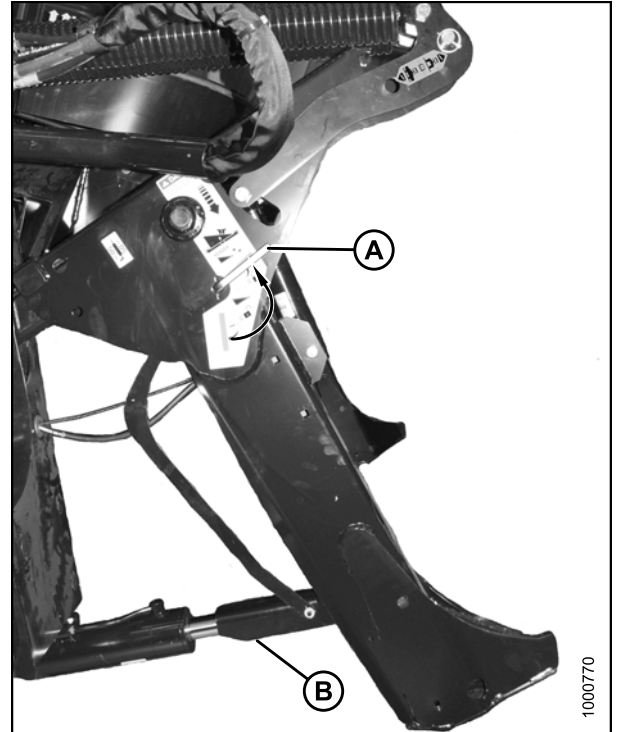


Figure 3.131: Safety Prop

12. Install pin (B) through the header leg (engaging U-bracket in lift linkage) on both sides and secure with hairpin (A).
13. Raise header stand (D) to storage position by pulling spring pin (C) and lifting stand into uppermost position. Release spring pin.

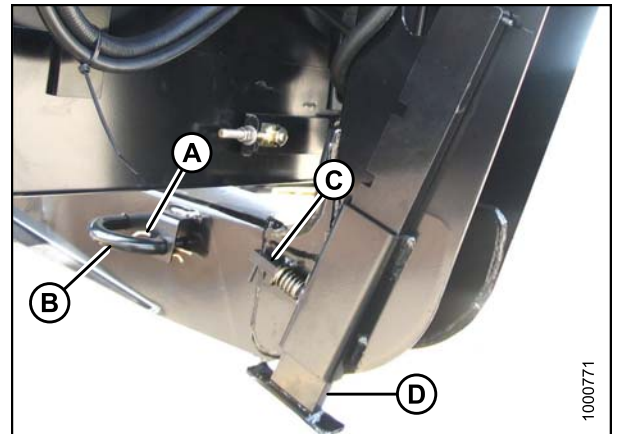


Figure 3.132: Header Leg

ASSEMBLING THE WINDROWER

14. Remove clevis pin from storage position (B) in linkage and insert into hole (A) to engage float springs. Secure with hairpin.

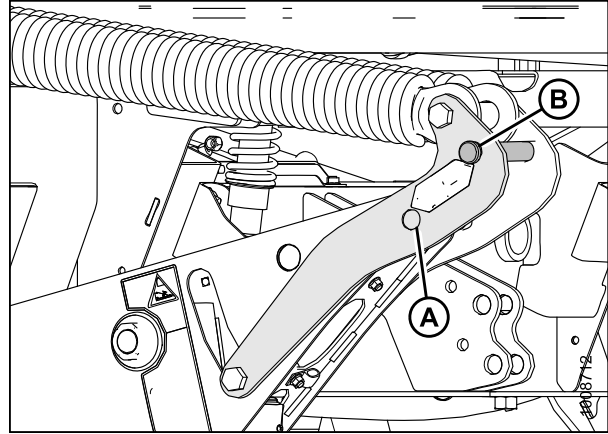


Figure 3.133: Header Float Linkage

15. Disengage safety prop by turning lever (A) downwards to release and lower stop until lever locks into vertical position.
16. Repeat for opposite safety prop.

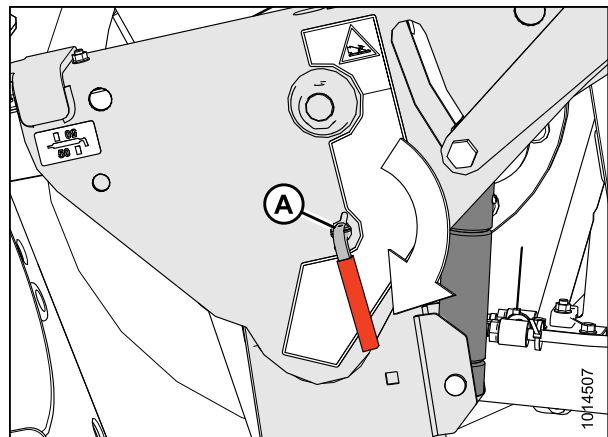


Figure 3.134: Safety Prop

CAUTION

Check to be sure all bystanders have cleared the area.

17. Start the engine and activate the HEADER DOWN switch (A) on the GSL to fully lower the header.
18. Stop engine and remove key from ignition.

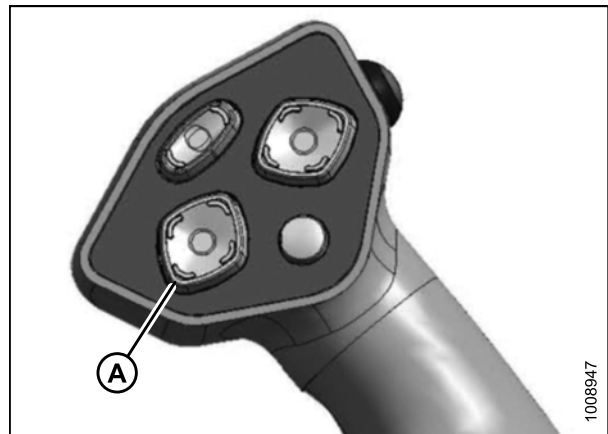


Figure 3.135: Ground Speed Lever

ASSEMBLING THE WINDROWER

19. Connect header drive hoses (A) and electrical harness (B) to header. Refer to the draper header operator's manual.

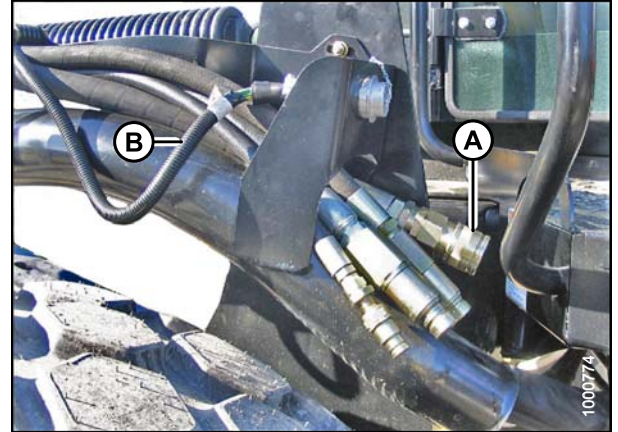


Figure 3.136: Header Drive Hoses and Harness

20. Connect reel hydraulics (A) at right cab-forward side of windrower. Refer to the draper header operator's manual.
21. Start engine and raise and lower the header and the reel a few times to remove trapped air.

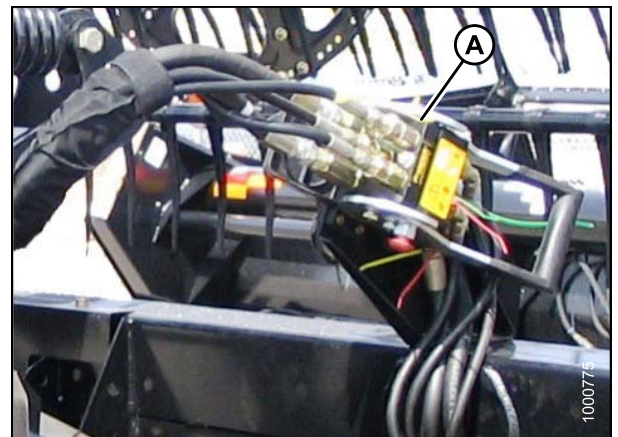


Figure 3.137: Reel Hydraulics

Attaching a D-Series Header: Hydraulic Center-Link without Self-Alignment

NOTE:

Draper header boots must be installed onto the windrower lift linkage before starting this procedure. Refer to [3.22.1 Attaching Header Boots, page 83](#).

DANGER

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

ASSEMBLING THE WINDROWER

1. Remove hairpin (A) from pins (B), and remove pins from both header legs.

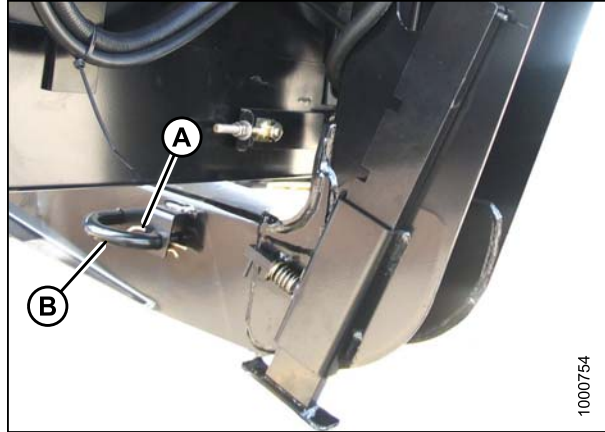


Figure 3.138: Header Leg

CAUTION

Check to be sure all bystanders have cleared the area.

IMPORTANT:

Remove protective cover from exhaust stack prior to starting engine.

2. Start the engine and activate the HEADER DOWN button (A) on the ground speed lever (GSL) to fully retract header lift cylinders.

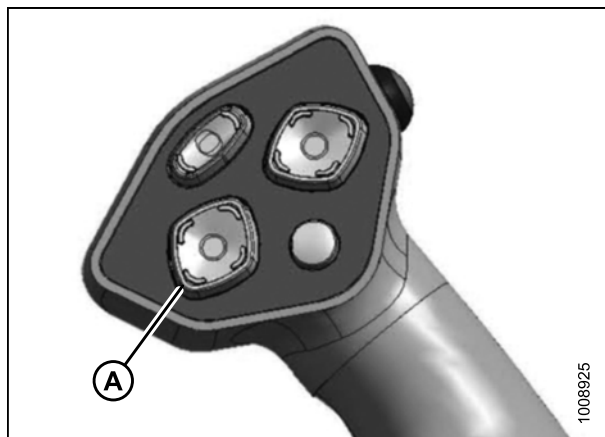


Figure 3.139: Ground Speed Lever

3. Relocate pin (A) in frame linkage as required to raise the center-link (B) until the hook is above the attachment pin on the header.

IMPORTANT:

If the center-link is too low, it may contact the header as the windrower approaches the header for hookup.

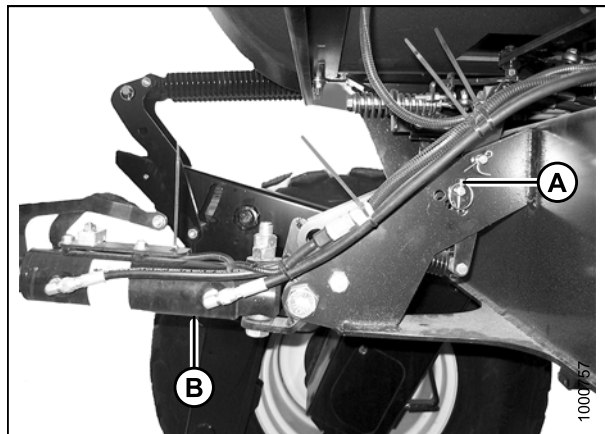


Figure 3.140: Hydraulic Center-Link without Self-Alignment Kit

ASSEMBLING THE WINDROWER

4. Drive the windrower slowly forward until the boots (A) enter the header legs (B). Continue driving slowly forward until lift linkages contact the support plates in the header legs and the header nudges forward.
5. Ensure the lift linkages are properly engaged in the header legs and are contacting the support plates.

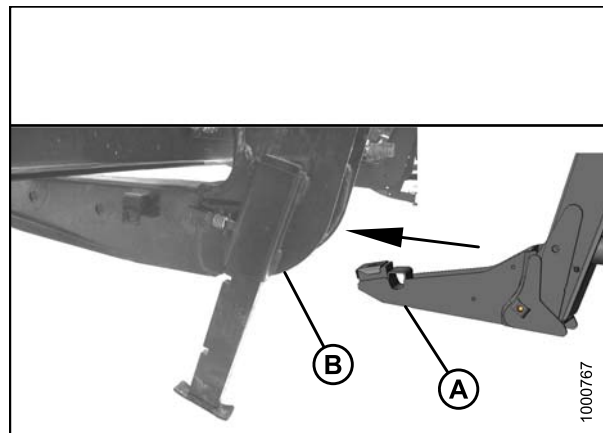


Figure 3.141: Header Leg and Boot

6. Use the following GSL functions to position the center-link hook above the header attachment pin:
 - Header tilt up (A) to retract the center-link
 - Header tilt down (B) to extend the center-link
7. Stop engine and remove key from ignition.

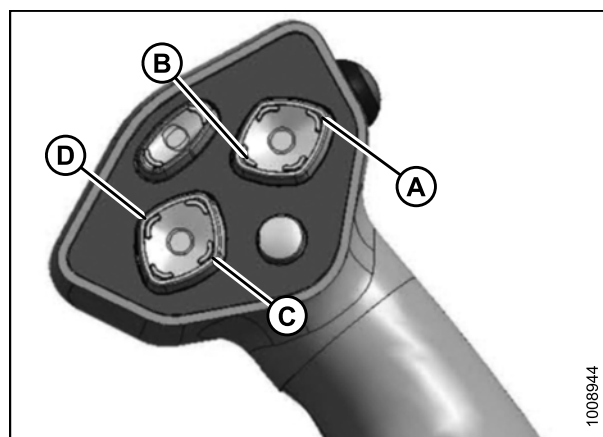


Figure 3.142: Ground Speed Lever

8. Push down on rod end of link cylinder (B) until hook engages and locks onto header pin.

IMPORTANT:

Hook release must be down to enable self-locking mechanism. If the release is open (up), manually push it down after hook engages header pin.

9. Check that center-link (A) is locked onto header by pulling upward on rod end (B) of cylinder.

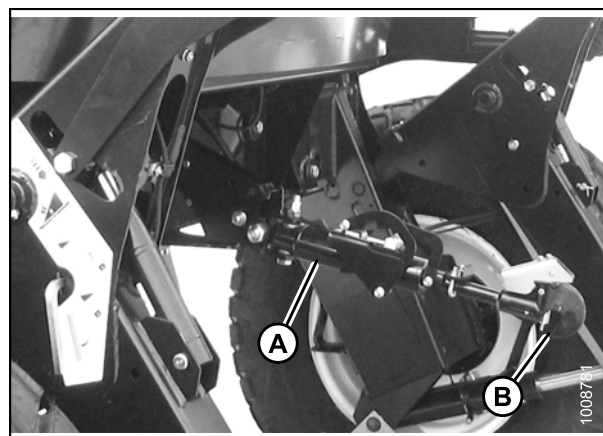


Figure 3.143: Hydraulic Center-Link

ASSEMBLING THE WINDROWER

CAUTION

Check to be sure all bystanders have cleared the area.

10. Start the engine.
11. Press the HEADER UP switch (A) to raise header to maximum height.

NOTE:

If one end of the header does **NOT** fully rise, rephase the lift cylinders as follows:

- a. Press and hold the HEADER UP switch until both cylinders stop moving.
- b. Continue to hold the switch for 3–4 seconds. Cylinders are now phased.

NOTE:

It may be necessary to repeat this procedure if there is air in the system.

12. Engage safety props on both lift cylinders as follows:
 - a. Stop engine and remove key from ignition.
 - b. Pull lever (A) and rotate towards the header to release and lower safety prop (B) onto the lift cylinder.
 - c. Repeat for opposite lift cylinder.

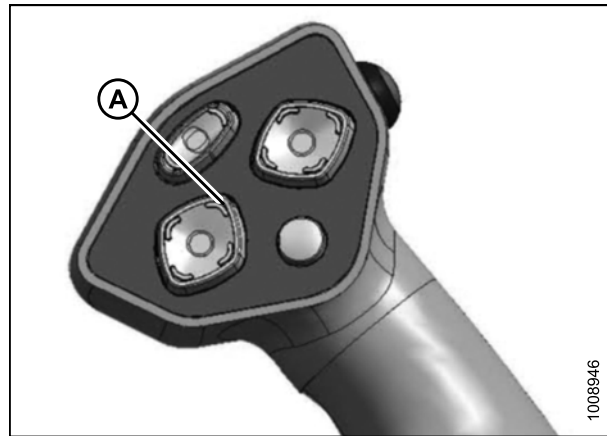


Figure 3.144: Ground Speed Lever

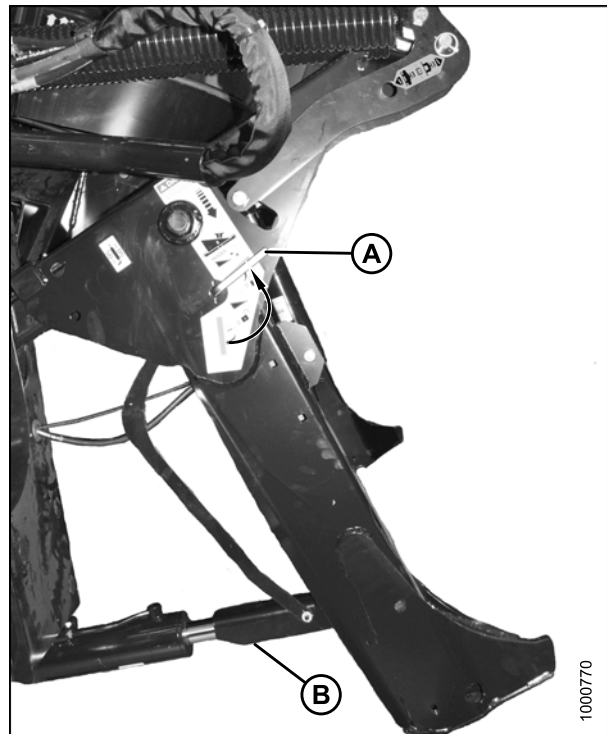


Figure 3.145: Safety Prop

ASSEMBLING THE WINDROWER

13. Install pin (B) through the header leg (engaging U-bracket in lift linkage) on both sides and secure with hairpin (A).
14. Raise header stand (D) to storage position by pulling spring pin (C) and lifting stand into uppermost position. Release spring pin.

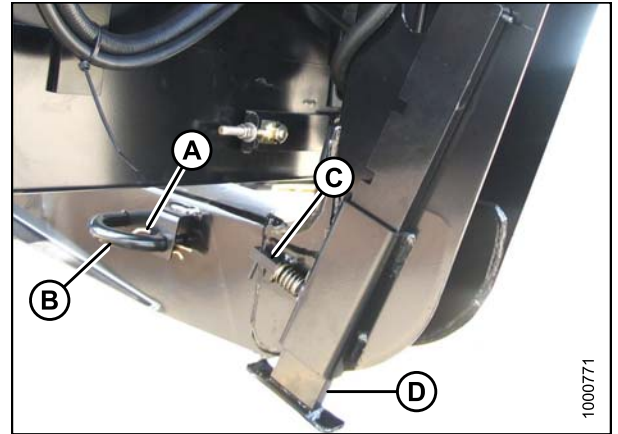


Figure 3.146: Header Leg

15. Remove clevis pin from storage position (B) in linkage and insert into hole (A) to engage float springs. Secure with hairpin.

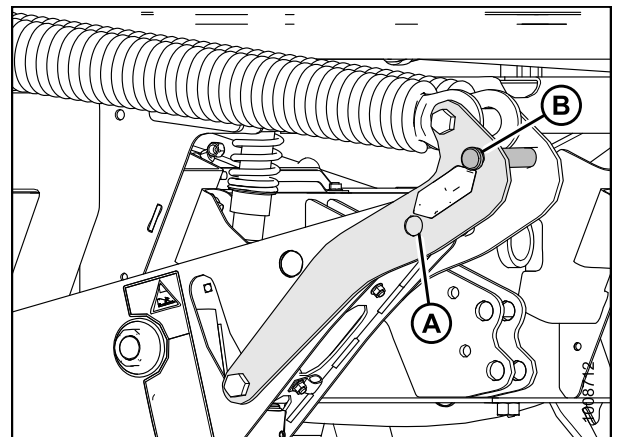


Figure 3.147: Header Float Linkage

16. Disengage safety prop by turning lever (A) downwards to release and lower stop until lever locks into vertical position.
17. Repeat for opposite safety prop.

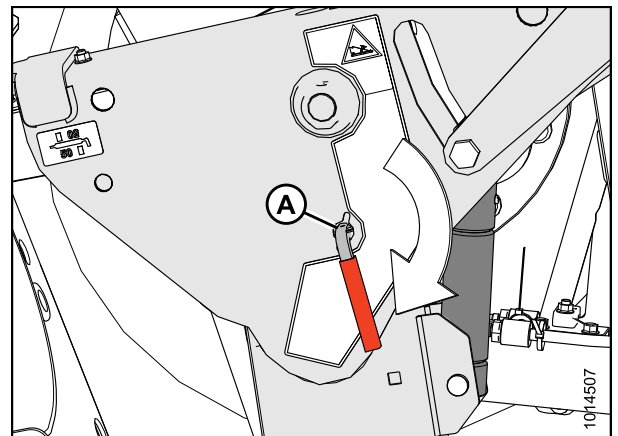


Figure 3.148: Safety Prop

ASSEMBLING THE WINDROWER

CAUTION

Check to be sure all bystanders have cleared the area.

18. Start the engine and activate the HEADER DOWN switch (A) on the GSL to fully lower the header.
19. Stop engine and remove key from ignition.

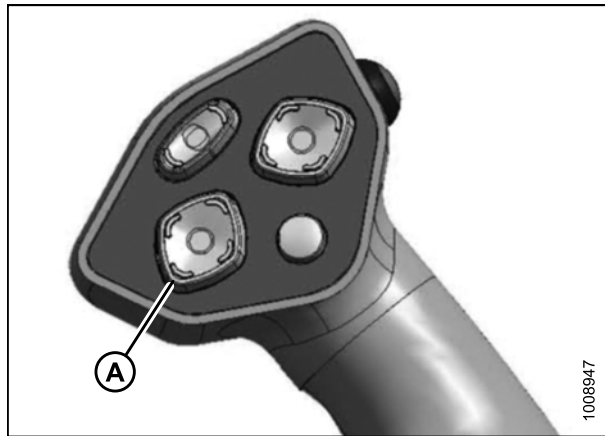


Figure 3.149: Ground Speed Lever

20. Connect header drive hoses (A) and electrical harness (B) to header. Refer to the draper header operator's manual.

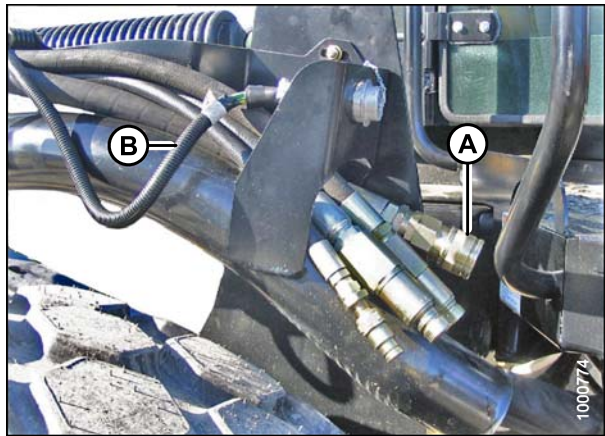


Figure 3.150: Header Drive Hoses and Harness

21. Connect reel hydraulics (A) at right cab-forward side of windrower. Refer to the draper header operator's manual.
22. Start engine and raise and lower the header and the reel a few times to remove trapped air.

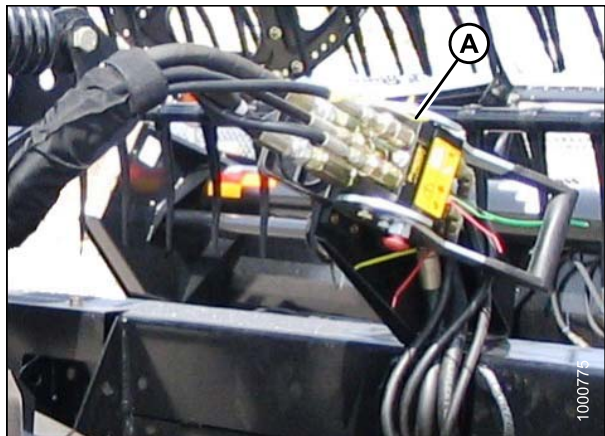


Figure 3.151: Reel Hydraulics

3.22.3 Attaching an A-Series Header

A30-D, A30-S, and A40-D headers can be attached to an M155E4 Self-Propelled Windrower.

The M155E4 Self-Propelled Windrower is factory-equipped to run an A-Series Auger Header.

Windrowers equipped with A-Series hydraulics have four header-drive hoses on the left-hand side.

The attachment procedure varies depending on the type of center-link installed on the windrower. Refer to the following instructions based on the type of center-link installed on your windrower:

- [Attaching an A-Series Header: Hydraulic Center-Link with Optional Self-Alignment, page 96](#)
- [Attaching an A-Series Header: Hydraulic Center-Link without Self-Alignment, page 101](#)



Figure 3.152: M155E4 and A40-D Auger Header

ASSEMBLING THE WINDROWER

Attaching an A-Series Header: Hydraulic Center-Link with Optional Self-Alignment

DANGER

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

1. Remove hairpin (A) from clevis pin (B) and remove clevis pin from the header boots (C) on both sides of the header.

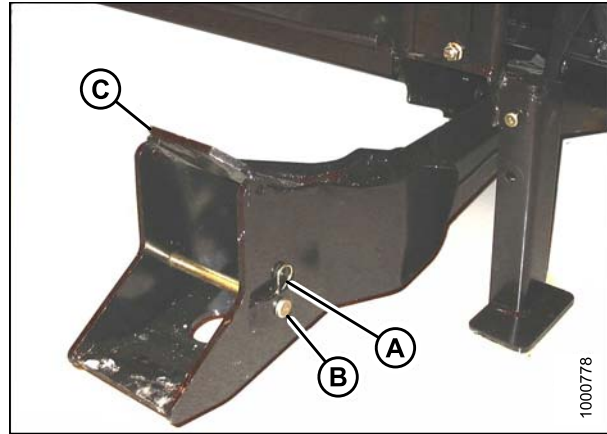


Figure 3.153: Header Boot

CAUTION

To prevent damage to the lift system when lowering header lift linkages without a header or weight box attached to the windrower, ensure the float engagement pin is installed in storage position (B) and NOT in engaged position (A).

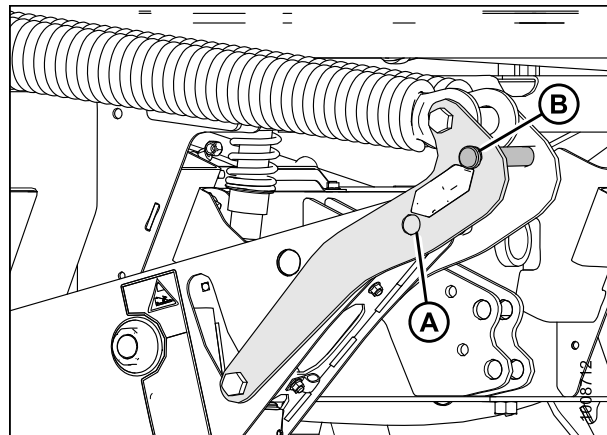


Figure 3.154: Header Float Linkage

CAUTION

Check to be sure all bystanders have cleared the area.

IMPORTANT:

Remove protective cover from exhaust stack prior to starting engine.

2. Start the engine and activate the HEADER DOWN button (A) on the ground speed lever (GSL) to fully retract header lift cylinders.

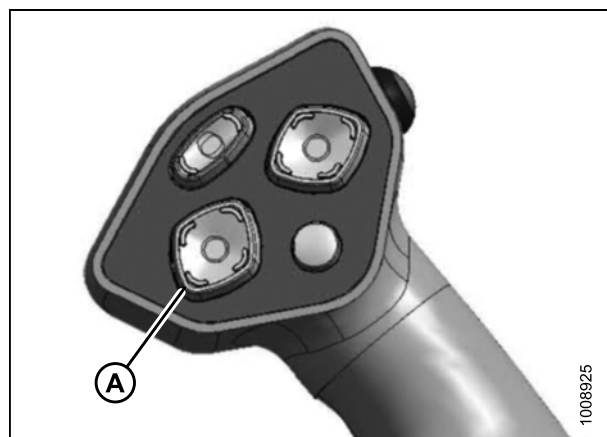


Figure 3.155: Ground Speed Lever

ASSEMBLING THE WINDROWER

3. Activate the REEL UP switch (A) on the GSL to raise the center-link until the hook is above the attachment pin on the header.

IMPORTANT:

If the center-link is too low, it may contact the header as the windrower approaches the header for hookup.

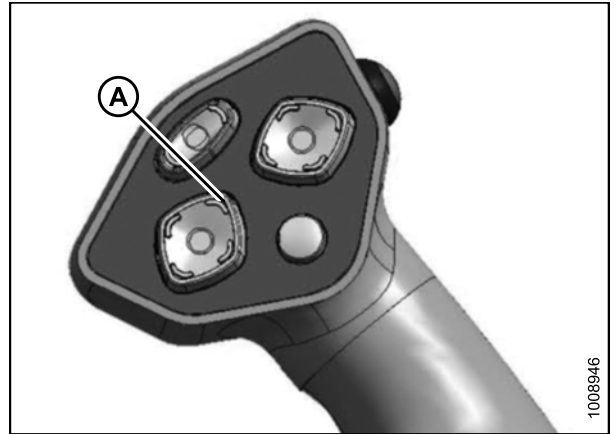


Figure 3.156: Ground Speed Lever

4. Drive the windrower slowly forward until the windrower feet (A) enter the header boots (B). Continue driving slowly forward until the feet engage the boots and the header nudges forward.

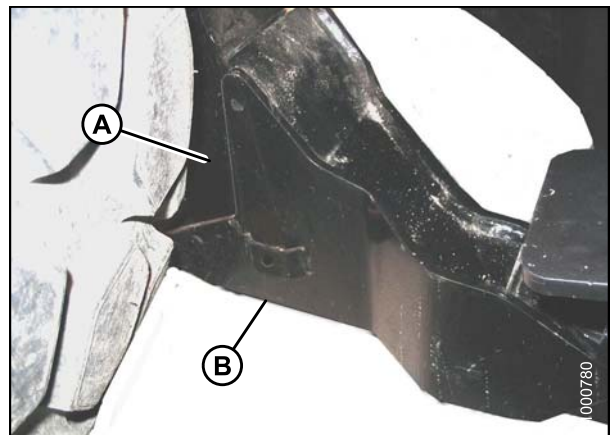


Figure 3.157: Header Boot

5. Use the following GSL functions to position the center-link hook above the header attachment pin:
 - Reel up (A) to raise the center-link
 - Reel down (B) to lower the center-link
 - Header tilt up (C) to retract the center-link
 - Header tilt down (D) to extend the center-link

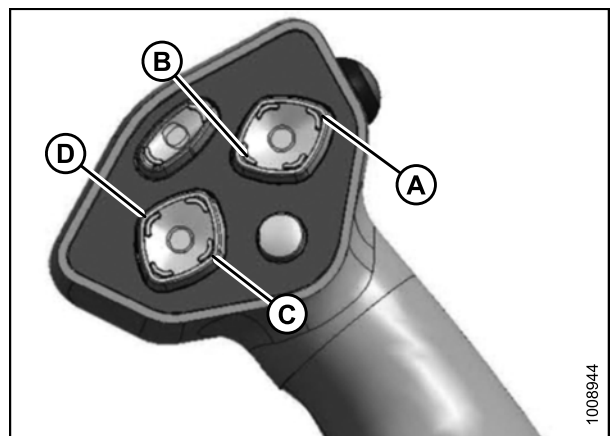


Figure 3.158: Ground Speed Lever

ASSEMBLING THE WINDROWER

- Adjust position of the center-link cylinder (A) with the REEL UP and REEL DOWN switches on the GSL until the hook is positioned above the header attachment pin.

IMPORTANT:

Hook release must be down to enable self-locking mechanism. If the release is open (up), manually push it down after hook engages header pin.

- Lower center-link (A) onto the header with REEL DOWN switch until it locks into position (hook release [B] is down).
- Check that center-link is locked onto header by pressing the REEL UP switch on the GSL.

CAUTION

Check to be sure all bystanders have cleared the area.

- Press the HEADER UP switch (A) to raise header to maximum height.

NOTE:

If one end of the header does **NOT** fully rise, rephase the lift cylinders as follows:

- Press and hold the HEADER UP switch until both cylinders stop moving.
- Continue to hold the switch for 3–4 seconds. Cylinders are now phased.

NOTE:

It may be necessary to repeat this procedure if there is air in the system.

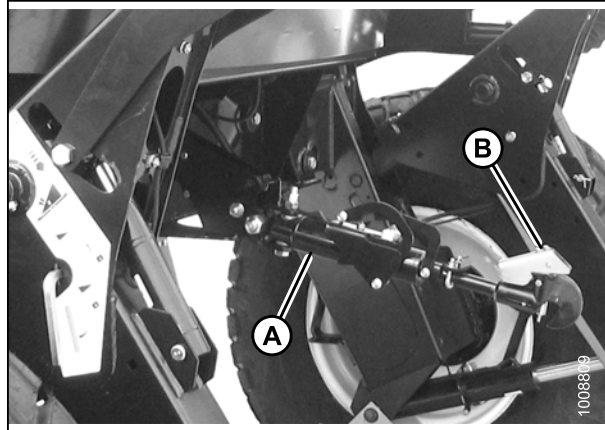


Figure 3.159: Hydraulic Center-Link



Figure 3.160: Ground Speed Lever

ASSEMBLING THE WINDROWER

10. Engage safety props on both lift cylinders as follows:
 - a. Stop engine and remove key from ignition.
 - b. Pull lever (A) and rotate towards the header to release and lower safety prop (B) onto the lift cylinder.
 - c. Repeat for opposite lift cylinder.

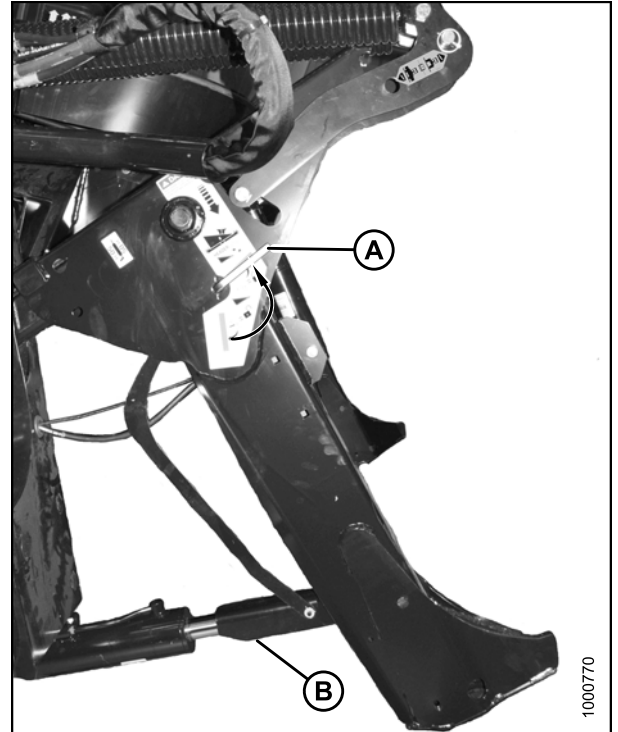


Figure 3.161: Safety Prop

11. Install clevis pin (A) through boot and foot and secure with hairpin. Repeat for opposite boot.

IMPORTANT:

Ensure clevis pin (A) is fully inserted and hairpin is installed behind bracket.

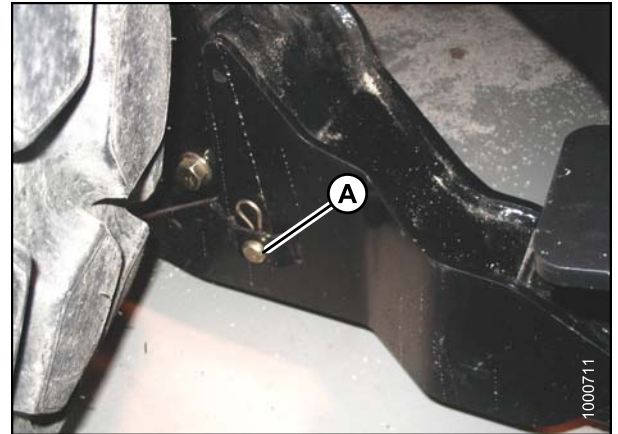


Figure 3.162: Header Boot

ASSEMBLING THE WINDROWER

12. Remove lynch pin from clevis pin (A) in stand (B).
13. Hold stand (B) and remove pin (A).
14. Move stand (B) to storage position by inverting and relocating onto bracket as shown. Reinsert clevis pin (A) and secure with lynch pin.

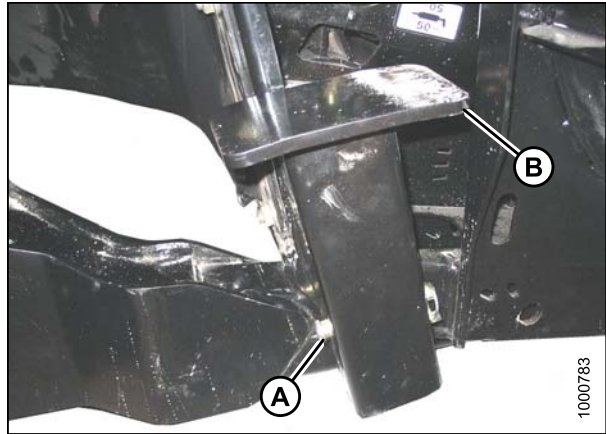


Figure 3.163: Header Stand

15. Remove clevis pin from storage position (B) in linkage and insert into hole (A) to engage float springs. Secure with hairpin.

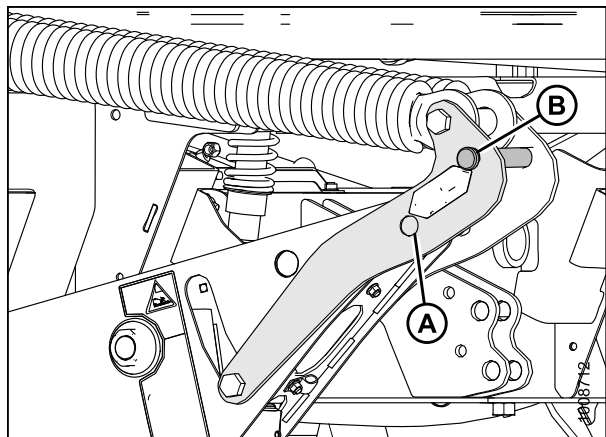


Figure 3.164: Header Float Linkage

16. Disengage safety prop by turning lever (A) downwards to release and lower stop until lever locks into vertical position.
17. Repeat for opposite safety prop.

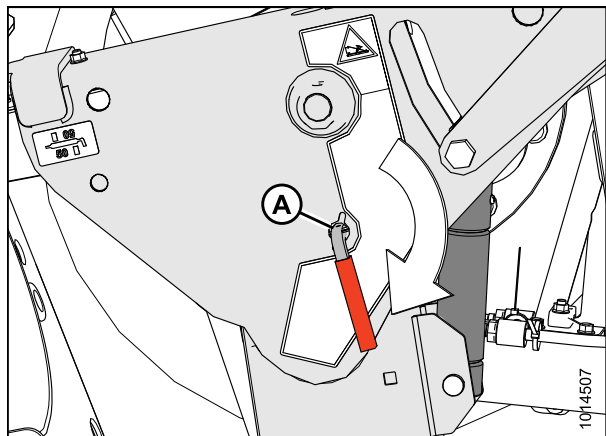


Figure 3.165: Safety Prop

ASSEMBLING THE WINDROWER

CAUTION

Check to be sure all bystanders have cleared the area.

18. Start the engine and activate the HEADER DOWN switch (A) on the GSL to fully lower the header.
19. Stop engine and remove key from ignition.

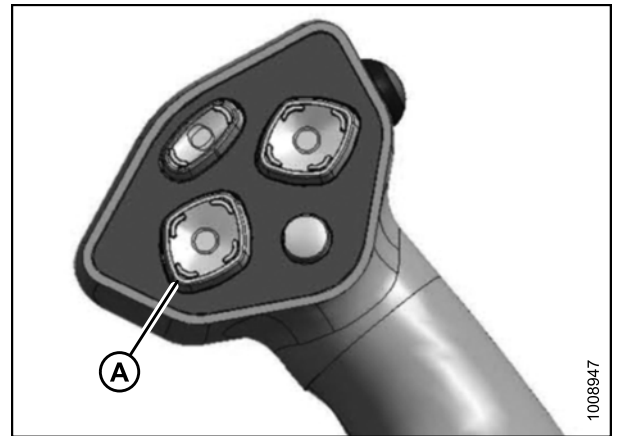


Figure 3.166: Ground Speed Lever

20. Connect header drive hoses (A) and electrical harness (B) to header. Refer to the auger header operator's manual.

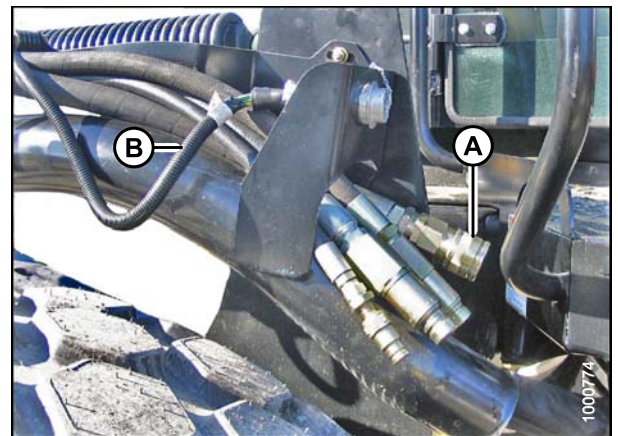


Figure 3.167: Header Drive Hoses and Harness

Attaching an A-Series Header: Hydraulic Center-Link without Self-Alignment

DANGER

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

1. Remove hairpin (A) from clevis pin (B) and remove clevis pin from the header boots (C) on both sides of the header.

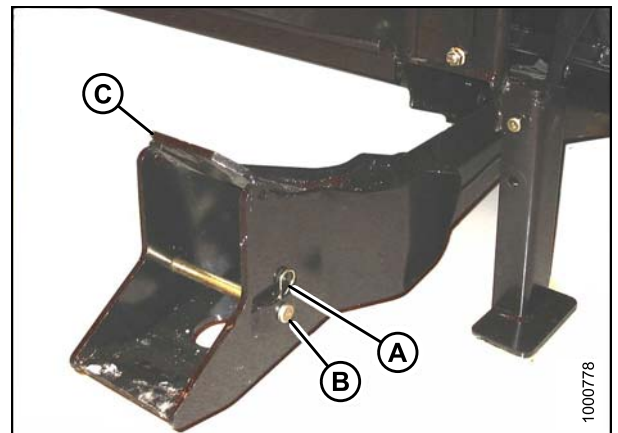


Figure 3.168: Header Boot

ASSEMBLING THE WINDROWER

CAUTION

To prevent damage to the lift system when lowering header lift linkages without a header or weight box attached to the windrower, ensure the float engagement pin is installed in storage position (B) and NOT in engaged position (A).

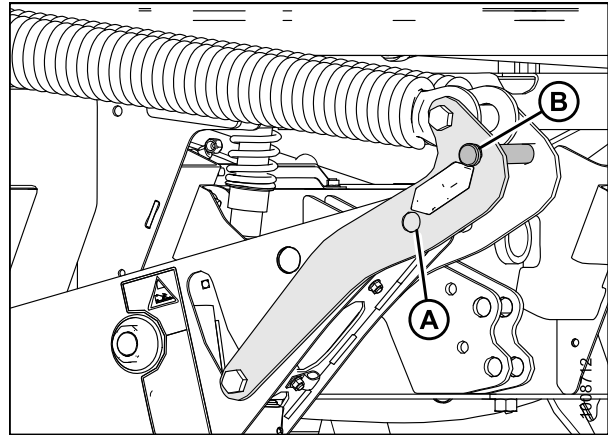


Figure 3.169: Header Float Linkage

CAUTION

Check to be sure all bystanders have cleared the area.

IMPORTANT:

Remove protective cover from exhaust stack prior to starting engine.

2. Start the engine and activate the HEADER DOWN button (A) on the ground speed lever (GSL) to fully retract header lift cylinders.
3. Relocate pin (A) in frame linkage as required to raise the center-link (B) until the hook is above the attachment pin on the header.

IMPORTANT:

If the center-link is too low, it may contact the header as the windrower approaches the header for hookup.

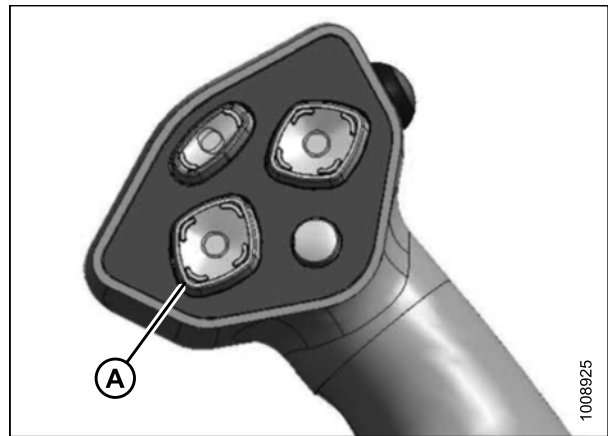


Figure 3.170: Ground Speed Lever

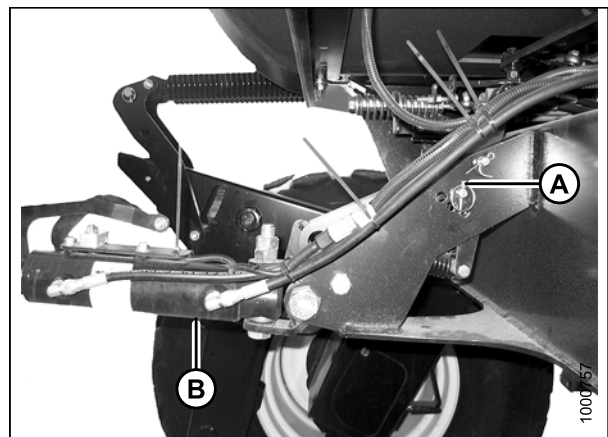


Figure 3.171: Hydraulic Center-Link without Self-Alignment Kit

ASSEMBLING THE WINDROWER

4. Drive the windrower slowly forward until the windrower feet (A) enter the header boots (B). Continue driving slowly forward until the feet engage the boots and the header nudges forward.

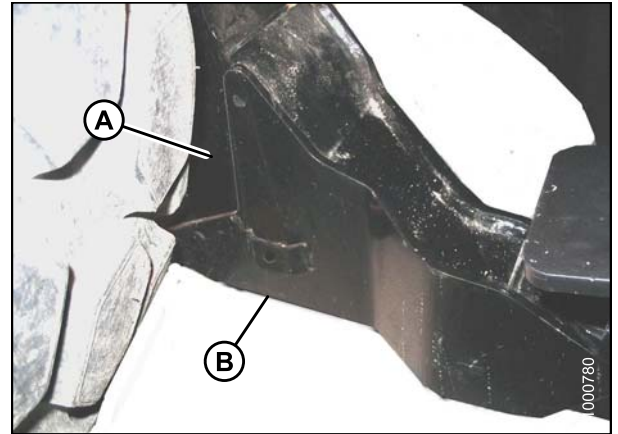


Figure 3.172: Header Boot

5. Use the following GSL functions to position the center-link hook above the header attachment pin:
 - Header tilt up (A) to retract center-link
 - Header tilt down (B) to extend center-link
6. Stop engine and remove key from ignition.

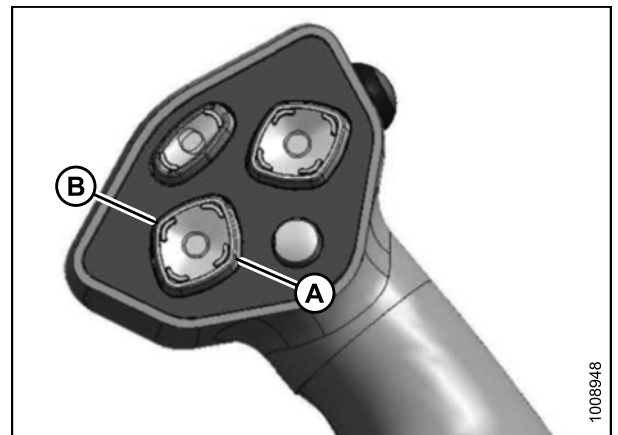


Figure 3.173: Ground Speed Lever

7. Push down on rod end of link cylinder (B) until hook engages and locks onto header pin.

IMPORTANT:

Hook release must be down to enable self-locking mechanism. If the release is open (up), manually push it down after hook engages header pin.

8. Check that center-link (A) is locked onto header by pulling upward on rod end (B) of cylinder.

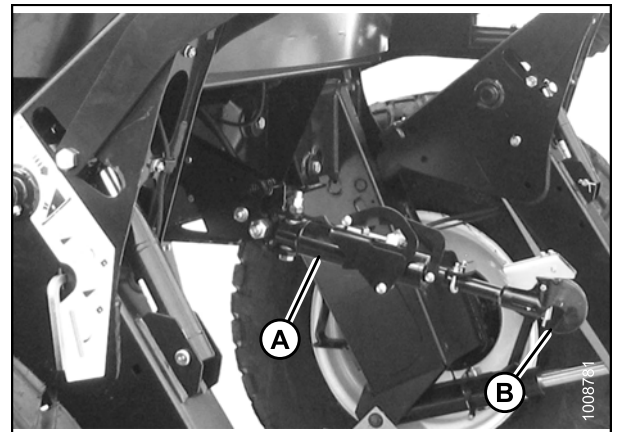


Figure 3.174: Hydraulic Center-Link

ASSEMBLING THE WINDROWER

CAUTION

Check to be sure all bystanders have cleared the area.

9. Start the engine.
10. Press the HEADER UP switch (A) to raise header to maximum height.

NOTE:

If one end of the header does **NOT** fully rise, rephase the lift cylinders as follows:

- a. Press and hold the HEADER UP switch until both cylinders stop moving.
- b. Continue to hold the switch for 3–4 seconds. Cylinders are now phased.

NOTE:

It may be necessary to repeat this procedure if there is air in the system.

11. Engage safety props on both lift cylinders as follows:
 - a. Stop engine and remove key from ignition.
 - b. Pull lever (A) and rotate towards the header to release and lower safety prop (B) onto the lift cylinder.
 - c. Repeat for opposite lift cylinder.

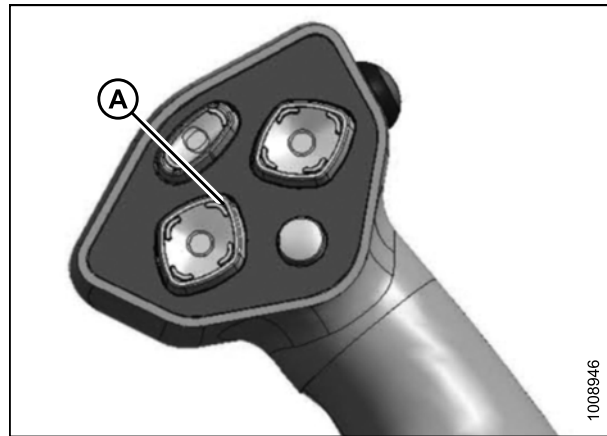


Figure 3.175: Ground Speed Lever

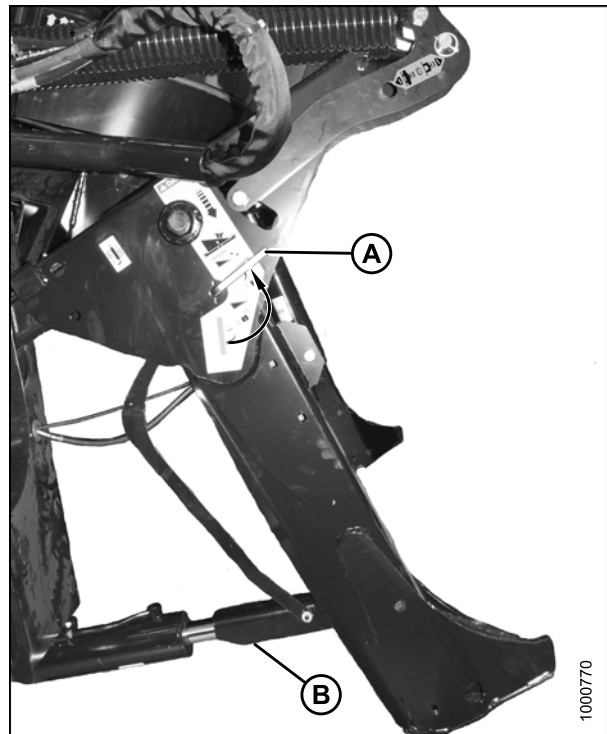


Figure 3.176: Safety Prop

ASSEMBLING THE WINDROWER

12. Install clevis pin (A) through boot and foot and secure with hairpin. Repeat for opposite boot.

IMPORTANT:

Ensure clevis pin (A) is fully inserted and hairpin is installed behind bracket.

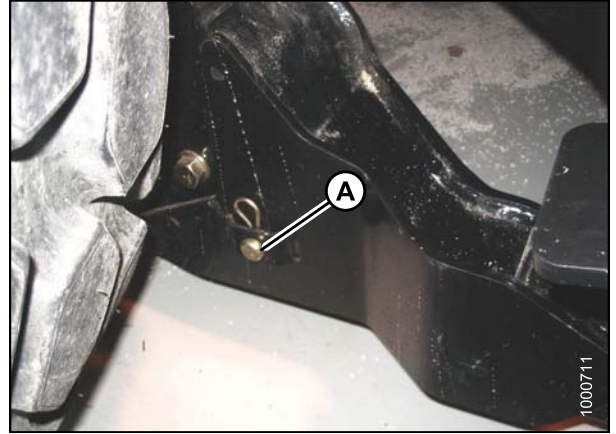


Figure 3.177: Header Boot

13. Remove lynch pin from clevis pin (A) in stand (B).
14. Hold stand (B) and remove pin (A).
15. Move stand (B) to storage position by inverting and relocating onto bracket as shown. Reinsert clevis pin (A) and secure with lynch pin.

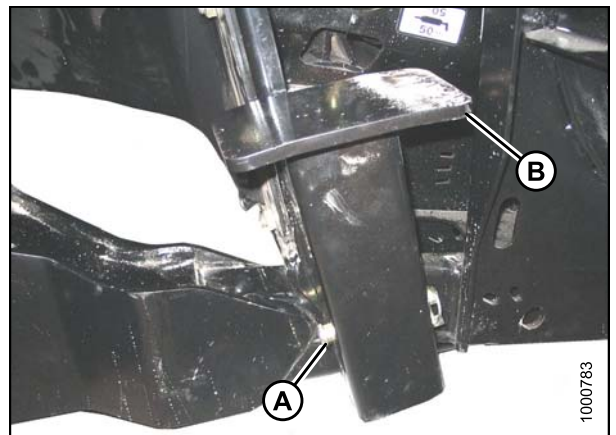


Figure 3.178: Header Stand

16. Remove clevis pin from storage position (B) in linkage and insert into hole (A) to engage float springs. Secure with hairpin.

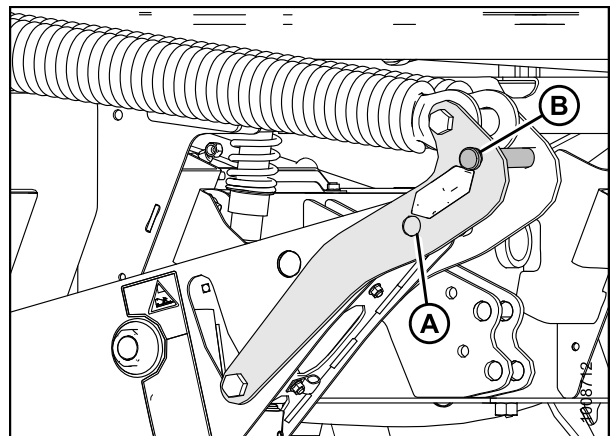


Figure 3.179: Header Float Linkage

ASSEMBLING THE WINDROWER

17. Disengage safety prop by turning lever (A) downwards to release and lower stop until lever locks into vertical position.
18. Repeat for opposite safety prop.

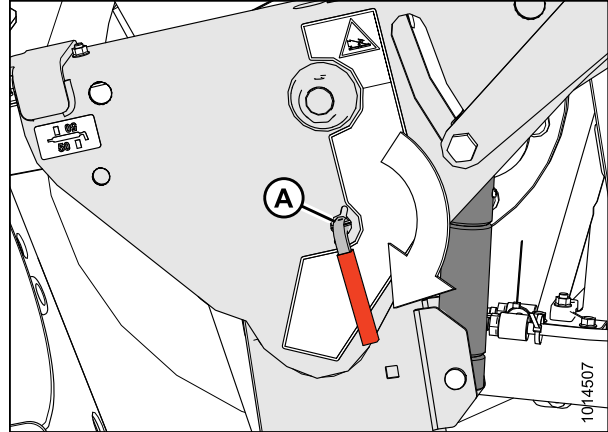


Figure 3.180: Safety Prop

CAUTION

Check to be sure all bystanders have cleared the area.

19. Start the engine and activate the HEADER DOWN switch (A) on the GSL to fully lower the header.
20. Stop engine and remove key from ignition.

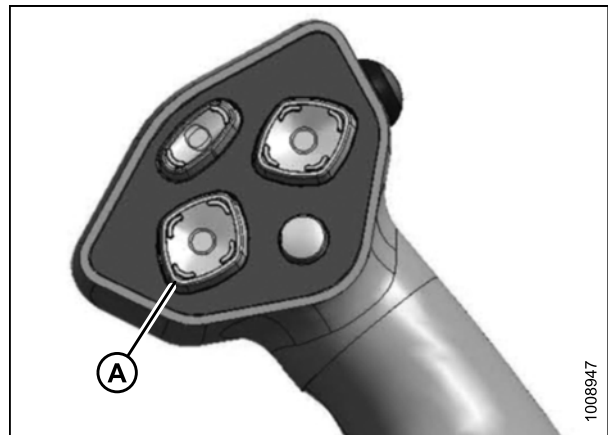


Figure 3.181: Ground Speed Lever

21. Connect header drive hoses (A) and electrical harness (B) to header. Refer to the auger header operator's manual.

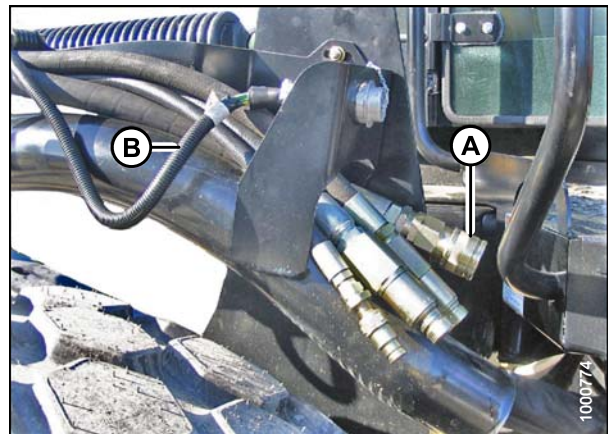


Figure 3.182: Header Drive Hoses and Harness

3.22.4 Attaching an R-Series Header

Only a 13-foot R-Series Rotary Disc Header (R80 and R85) can be attached to an M155E4 Self-Propelled Windrower.

The M155E4 Self-Propelled Windrower can operate 13-foot R80 and R85 Rotary Disc Headers **only**. These headers are shipped without the motor or hoses installed, so a separate motor, hose bundle, and hydraulic valve kit is required to operate the header.

If necessary, obtain the following kits and install them in accordance with the instructions supplied with the kits.

Table 3.2 Rotary Disc Header Bundles

Kit Description	Kit Number
Hydraulic Drive kit	MD #B5510
Hydraulic Valve kit	MD #B4657

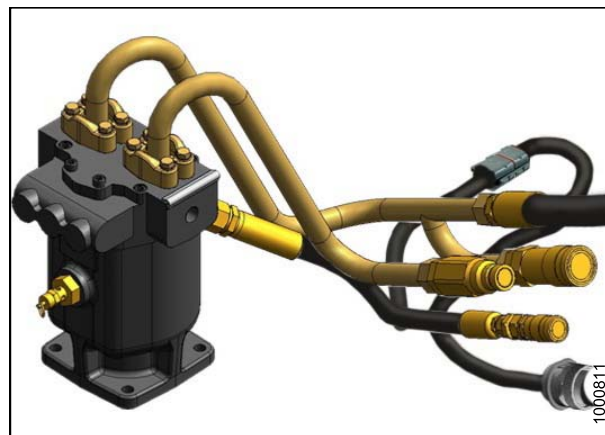


Figure 3.183: Hydraulic Drive Kit (MD #B5510)

Refer to the following instructions based on the type of center-link installed on your windrower:

- [Attaching an R-Series Header: Hydraulic Center-Link with Optional Self-Alignment, page 107](#)
- [Attaching an R-Series Header: Hydraulic Center-Link without Self-Alignment, page 112](#)

Attaching an R-Series Header: Hydraulic Center-Link with Optional Self-Alignment

DANGER

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

1. Remove hairpin (B) from clevis pin (A) and remove clevis pin from the header boots (C) on both sides of the header.

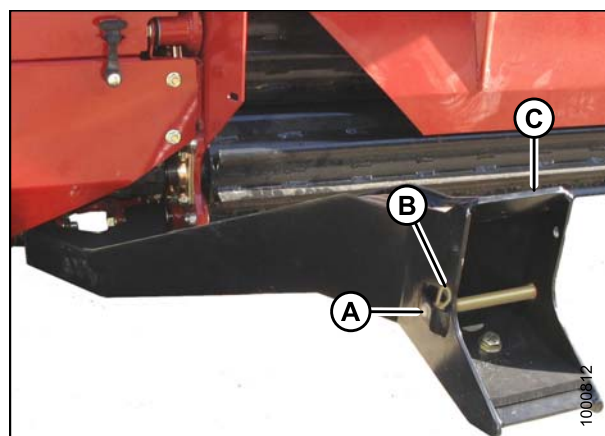


Figure 3.184: Header Boot

ASSEMBLING THE WINDROWER

CAUTION

To prevent damage to the lift system when lowering header lift linkages without a header or weight box attached to the windrower, ensure the float engagement pin is installed in storage position (B) and NOT in engaged position (A).

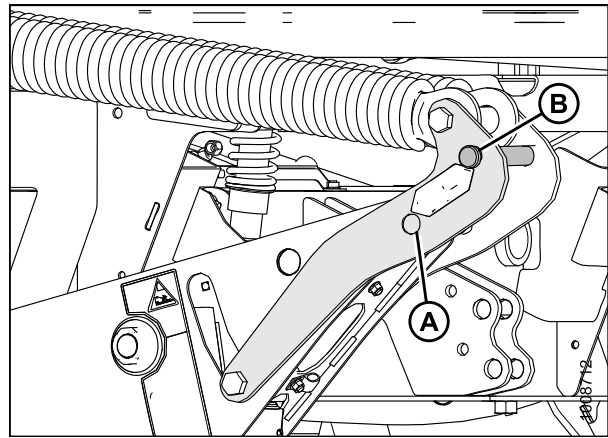


Figure 3.185: Header Float Linkage

CAUTION

Check to be sure all bystanders have cleared the area.

IMPORTANT:

Remove protective cover from exhaust stack prior to starting engine.

2. Start the engine and activate the HEADER DOWN button (A) on the ground speed lever (GSL) to fully retract header lift cylinders.

IMPORTANT:

If the center-link is too low, it may contact the header as the windrower approaches the header for hookup.

3. Activate the REEL UP switch (A) on the GSL to raise the center-link until the hook is above the attachment pin on the header.

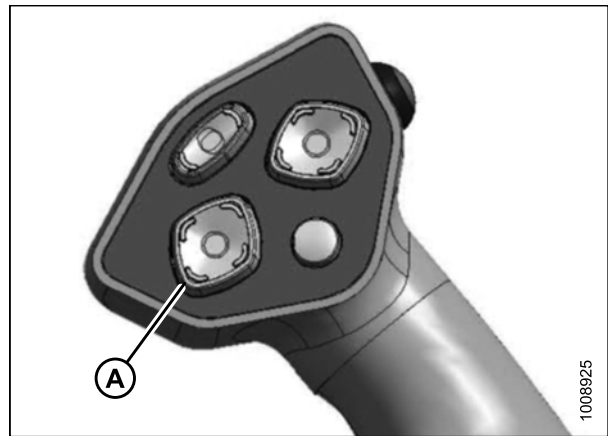


Figure 3.186: Ground Speed Lever

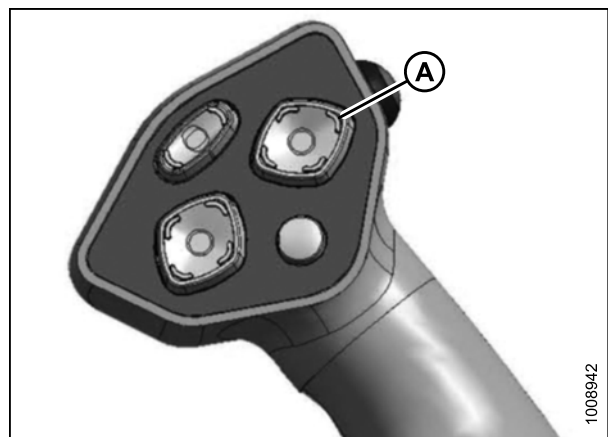


Figure 3.187: Ground Speed Lever

ASSEMBLING THE WINDROWER

4. Drive the windrower slowly forward until the windrower feet (A) enter the header boots (B). Continue driving slowly forward until the feet engage the boots and the header nudges forward.

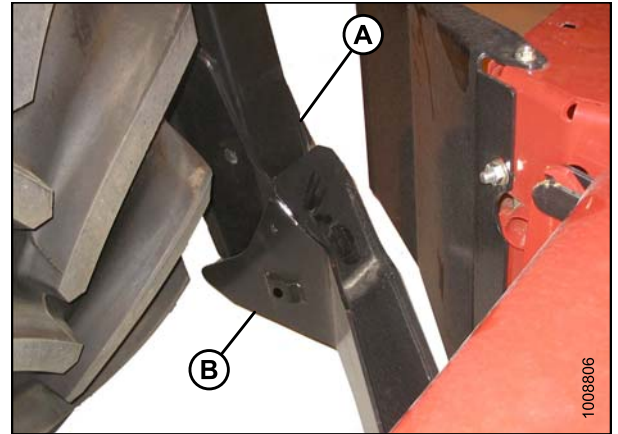


Figure 3.188: Header Boot

5. Use the following GSL functions to position the center-link hook above the header attachment pin:
 - Reel up (A) to raise the center-link
 - Reel down (B) to lower the center-link
 - Header tilt up (C) to retract the center-link
 - Header tilt down (D) to extend the center-link

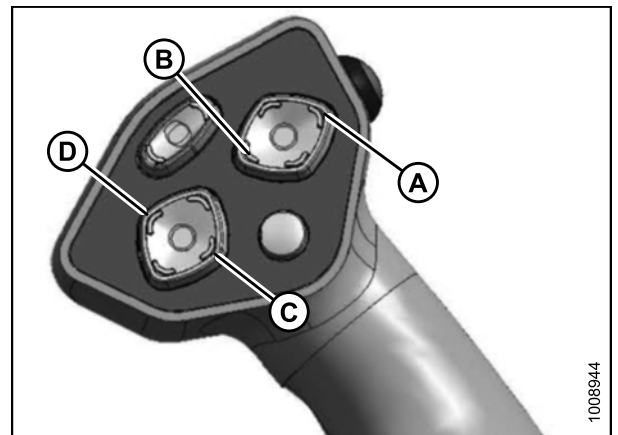


Figure 3.189: Ground Speed Lever

6. Adjust position of the center-link cylinder (A) with the REEL UP and REEL DOWN switches on the GSL until the hook is positioned above the header attachment pin.

IMPORTANT:

Hook release must be down to enable self-locking mechanism. If the release is open (up), manually push it down after hook engages header pin.

7. Lower center-link (A) onto the header with REEL DOWN switch until it locks into position (hook release [B] is down).
8. Check that center-link is locked onto header by pressing the REEL UP switch on the GSL.

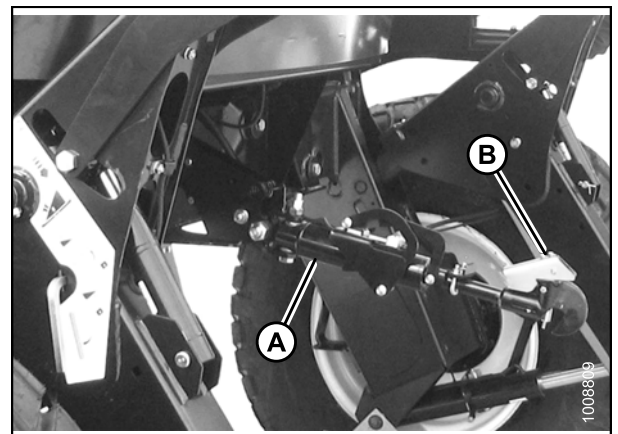


Figure 3.190: Hydraulic Center-Link

ASSEMBLING THE WINDROWER

CAUTION

Check to be sure all bystanders have cleared the area.

9. Press the HEADER UP switch (A) to raise header to maximum height.

NOTE:

If one end of the header does **NOT** fully rise, rephase the lift cylinders as follows:

- a. Press and hold the HEADER UP switch until both cylinders stop moving.
- b. Continue to hold the switch for 3–4 seconds. Cylinders are now phased.

NOTE:

It may be necessary to repeat this procedure if there is air in the system.

10. Engage safety props on both lift cylinders as follows:

- a. Stop engine and remove key from ignition.
- b. Pull lever (A) and rotate towards the header to release and lower safety prop (B) onto the lift cylinder.
- c. Repeat for opposite lift cylinder.

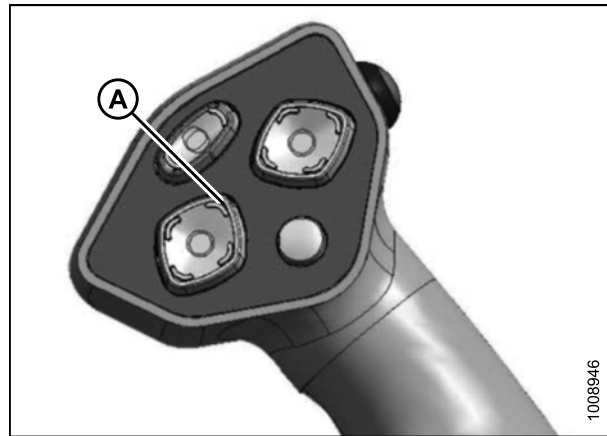


Figure 3.191: Ground Speed Lever

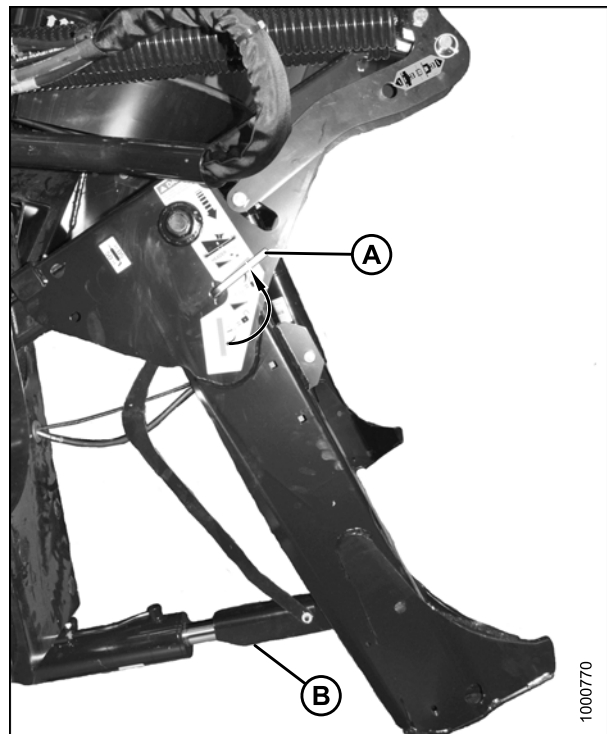


Figure 3.192: Safety Prop

ASSEMBLING THE WINDROWER

11. Install clevis pin (A) through boot and foot and secure with hairpin (B). Repeat for opposite side.

IMPORTANT:

Ensure clevis pin (A) is fully inserted and hairpin is installed behind bracket.

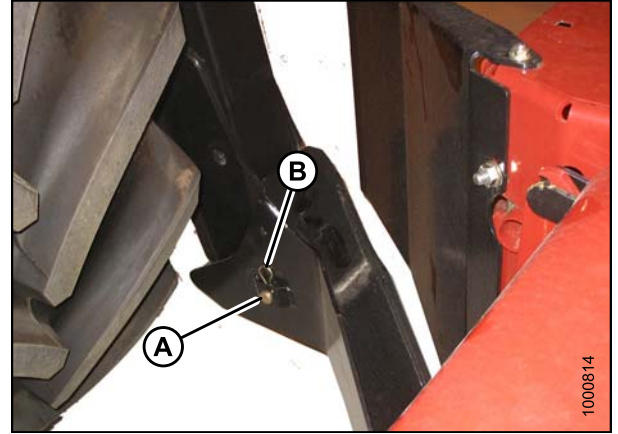


Figure 3.193: Header Boot

12. Remove clevis pin from storage position (B) in linkage and insert into hole (A) to engage float springs. Secure with hairpin.

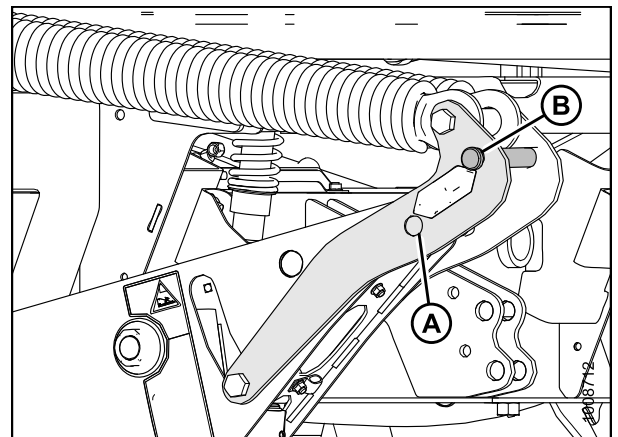


Figure 3.194: Header Float Linkage

13. Disengage safety prop by turning lever (A) downwards to release and lower stop until lever locks into vertical position.
14. Repeat for opposite safety prop.

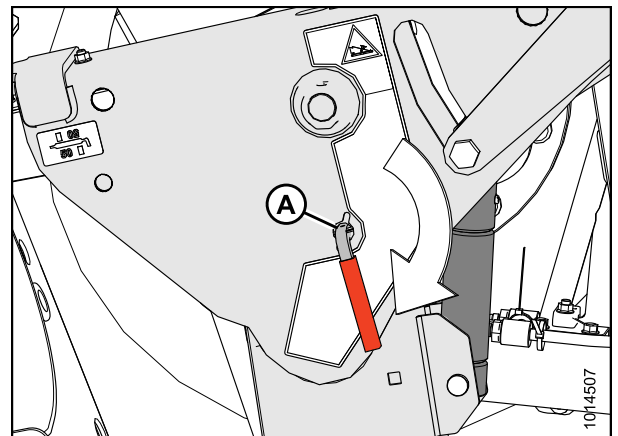


Figure 3.195: Safety Prop

ASSEMBLING THE WINDROWER

CAUTION

Check to be sure all bystanders have cleared the area.

15. Start the engine and activate the HEADER DOWN switch (A) on the GSL to fully lower the header.
16. Stop engine and remove key from ignition.

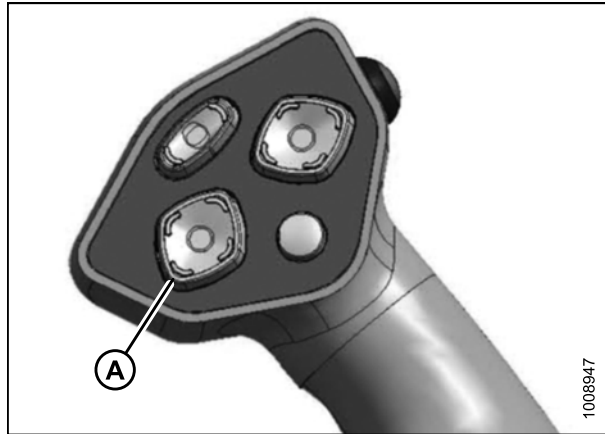


Figure 3.196: Ground Speed Lever

17. Connect header drive hoses (A) and electrical harness (B) to header. Refer to the rotary disc header operator's manual.

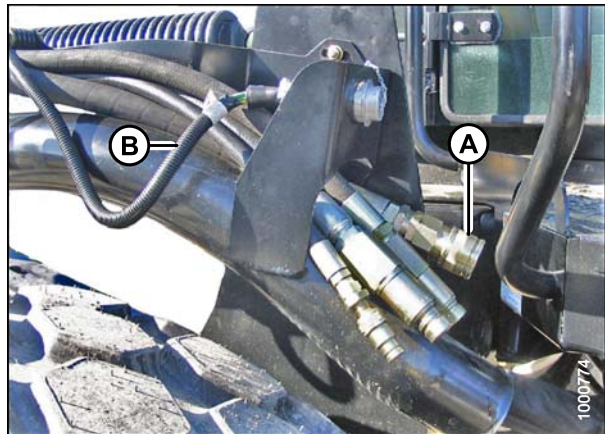


Figure 3.197: Header Drive Hoses and Harness

Attaching an R-Series Header: Hydraulic Center-Link without Self-Alignment

DANGER

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

1. Remove hairpin (B) from clevis pin (A) and remove clevis pin from the header boots (C) on both sides of the header.

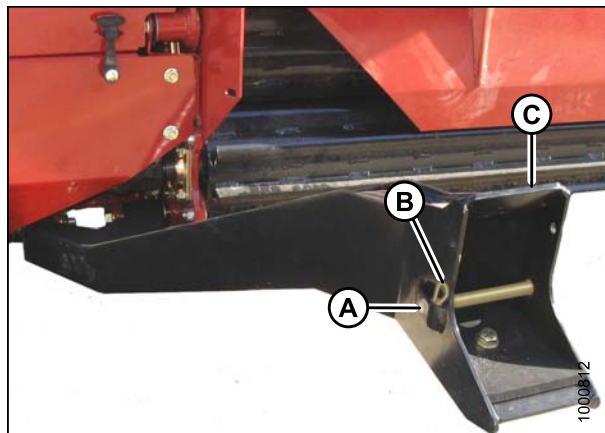


Figure 3.198: Header Boot

ASSEMBLING THE WINDROWER

CAUTION

To prevent damage to the lift system when lowering header lift linkages without a header or weight box attached to the windrower, ensure the float engagement pin is installed in storage position (B) and NOT in engaged position (A).

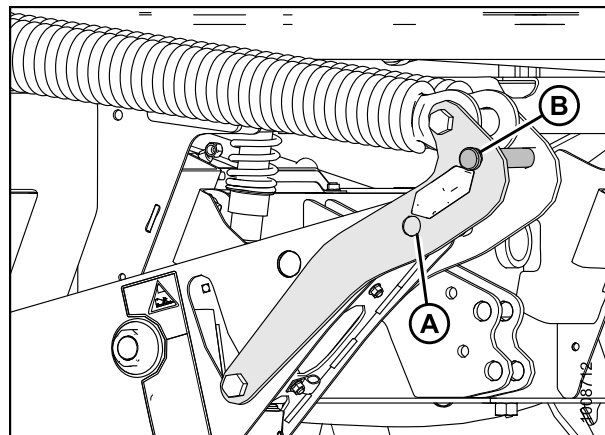


Figure 3.199: Header Float Linkage

CAUTION

Check to be sure all bystanders have cleared the area.

IMPORTANT:

Remove protective cover from exhaust stack prior to starting engine.

2. Start the engine and activate the HEADER DOWN button (A) on the ground speed lever (GSL) to fully retract header lift cylinders.



Figure 3.200: Ground Speed Lever

3. Relocate pin (A) in frame linkage as required to raise the center-link (B) until the hook is above the attachment pin on the header.

IMPORTANT:

If the center-link is too low, it may contact the header as the windrower approaches the header for hookup.

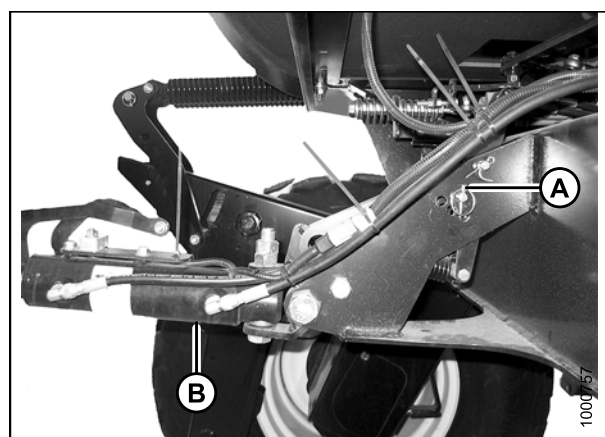


Figure 3.201: Hydraulic Center-Link without Self-Alignment Kit

ASSEMBLING THE WINDROWER

4. Drive the windrower slowly forward until the windrower feet (A) enter the header boots (B). Continue driving slowly forward until the feet engage the boots and the header nudges forward.

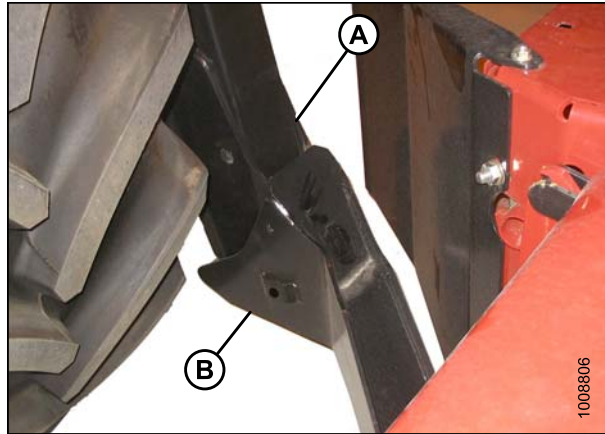


Figure 3.202: Header Boot

5. Use the following GSL functions to position the center-link hook above the header attachment pin:
 - Header tilt up (A) to retract the center-link
 - Header tilt down (B) to extend the center-link
6. Stop engine and remove key from ignition.

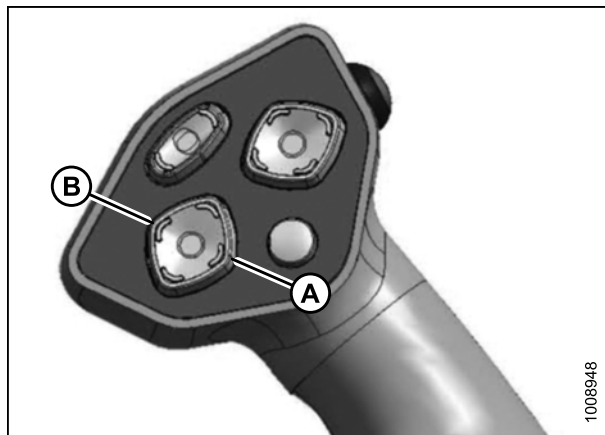


Figure 3.203: Ground Speed Lever

7. Push down on rod end of link cylinder (B) until hook engages and locks onto header pin.

IMPORTANT:

Hook release must be down to enable self-locking mechanism. If the release is open (up), manually push it down after hook engages header pin.

8. Check that center-link (A) is locked onto header by pulling upward on rod end (B) of cylinder.

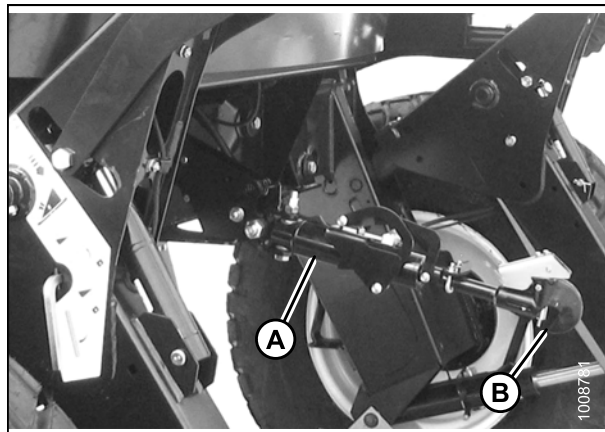


Figure 3.204: Hydraulic Center-Link

ASSEMBLING THE WINDROWER

CAUTION

Check to be sure all bystanders have cleared the area.

9. Start the engine.
10. Press the HEADER UP switch (A) to raise header to maximum height.

NOTE:

If one end of the header does **NOT** fully rise, rephase the lift cylinders as follows:

- a. Press and hold the HEADER UP switch until both cylinders stop moving.
- b. Continue to hold the switch for 3–4 seconds. Cylinders are now phased.

NOTE:

It may be necessary to repeat this procedure if there is air in the system.

11. Engage safety props on both lift cylinders as follows:
 - a. Stop engine and remove key from ignition.
 - b. Pull lever (A) and rotate towards the header to release and lower safety prop (B) onto the lift cylinder.
 - c. Repeat for opposite lift cylinder.

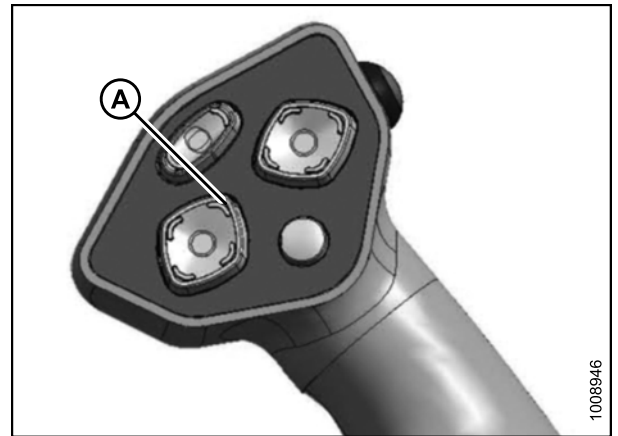


Figure 3.205: Ground Speed Lever

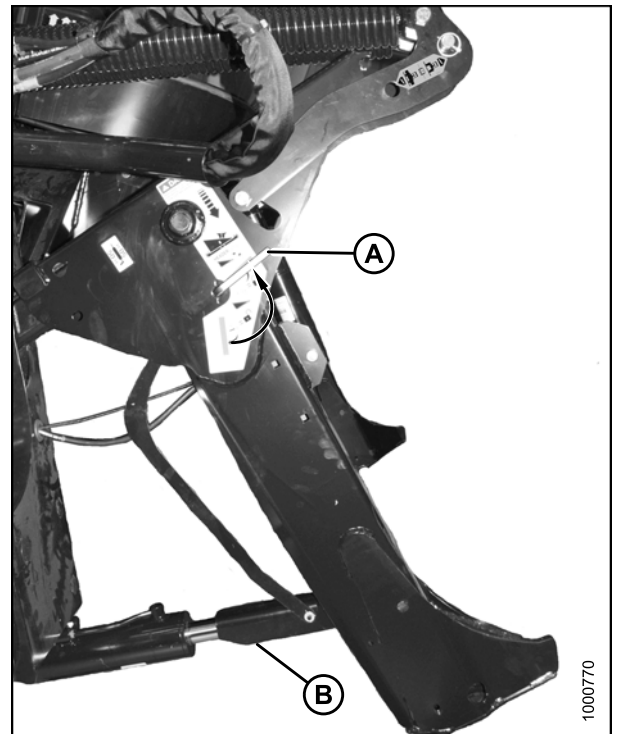


Figure 3.206: Safety Prop

ASSEMBLING THE WINDROWER

12. Install clevis pin (A) through boot and foot and secure with hairpin (B). Repeat for opposite side.

IMPORTANT:

Ensure clevis pin (A) is fully inserted and hairpin is installed behind bracket.

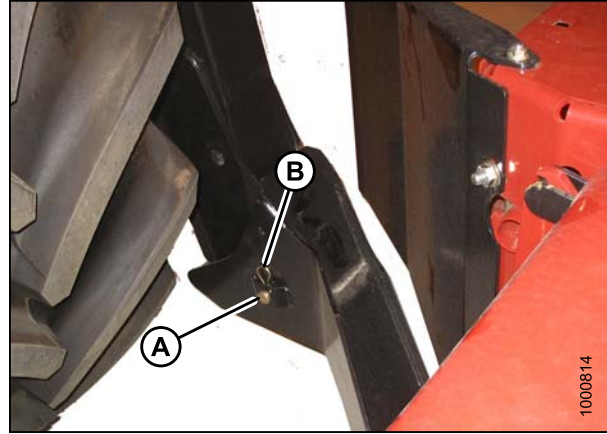


Figure 3.207: Header Boot

13. Remove clevis pin from storage position (B) in linkage and insert into hole (A) to engage float springs. Secure with hairpin.

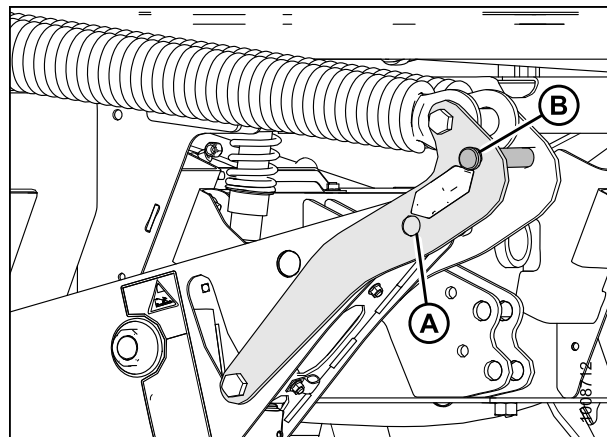


Figure 3.208: Header Float Linkage

14. Disengage safety prop by turning lever (A) downwards to release and lower stop until lever locks into vertical position.
15. Repeat for opposite safety prop.

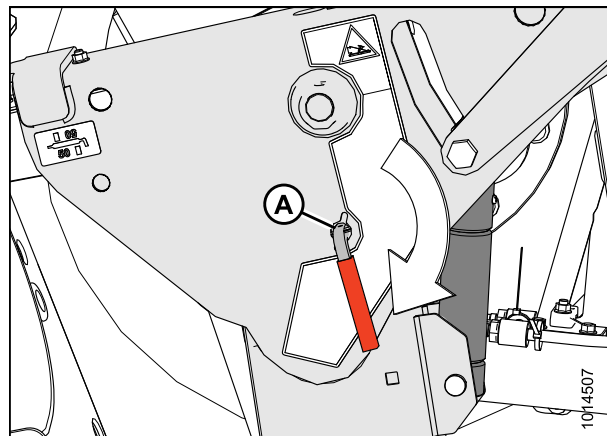


Figure 3.209: Safety Prop

ASSEMBLING THE WINDROWER

CAUTION

Check to be sure all bystanders have cleared the area.

16. Start the engine and activate the HEADER DOWN switch (A) on the GSL to fully lower the header.
17. Stop engine and remove key from ignition.

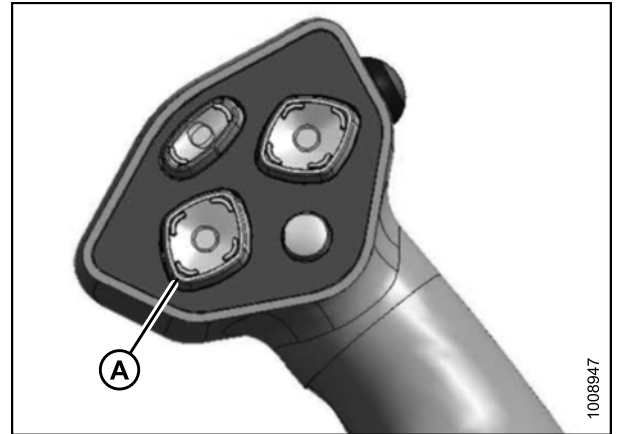


Figure 3.210: Ground Speed Lever

18. Connect header drive hoses (A) and electrical harness (B) to header. Refer to the rotary disc header operator's manual.

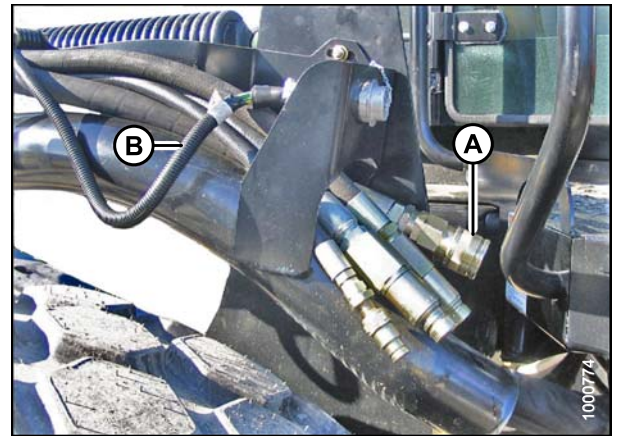


Figure 3.211: Header Drive Hoses and Harness

3.23 Lubricating the Windrower

Table 3.3 Recommended Lubricant

Specification	Description	Use
SAE Multi-Purpose	High temperature, extreme pressure (EP2) performance with 1% max molybdenum disulphide (NLGI Grade 2) lithium base	As required unless otherwise specified.

3.23.1 Lubrication Procedure

 **DANGER**

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

1. Wipe grease fitting with a clean cloth before greasing to avoid injecting dirt and grit.
2. Inject grease through fitting with grease gun until grease overflows fitting. Do **NOT** overgrease wheel bearings.
3. Leave excess grease on fitting to keep out dirt.
4. Replace any loose or broken fittings immediately.
5. Remove and thoroughly clean any fitting that will not take grease. Also clean lubricant passageway. Replace fitting if necessary.

3.23.2 Lubrication Points

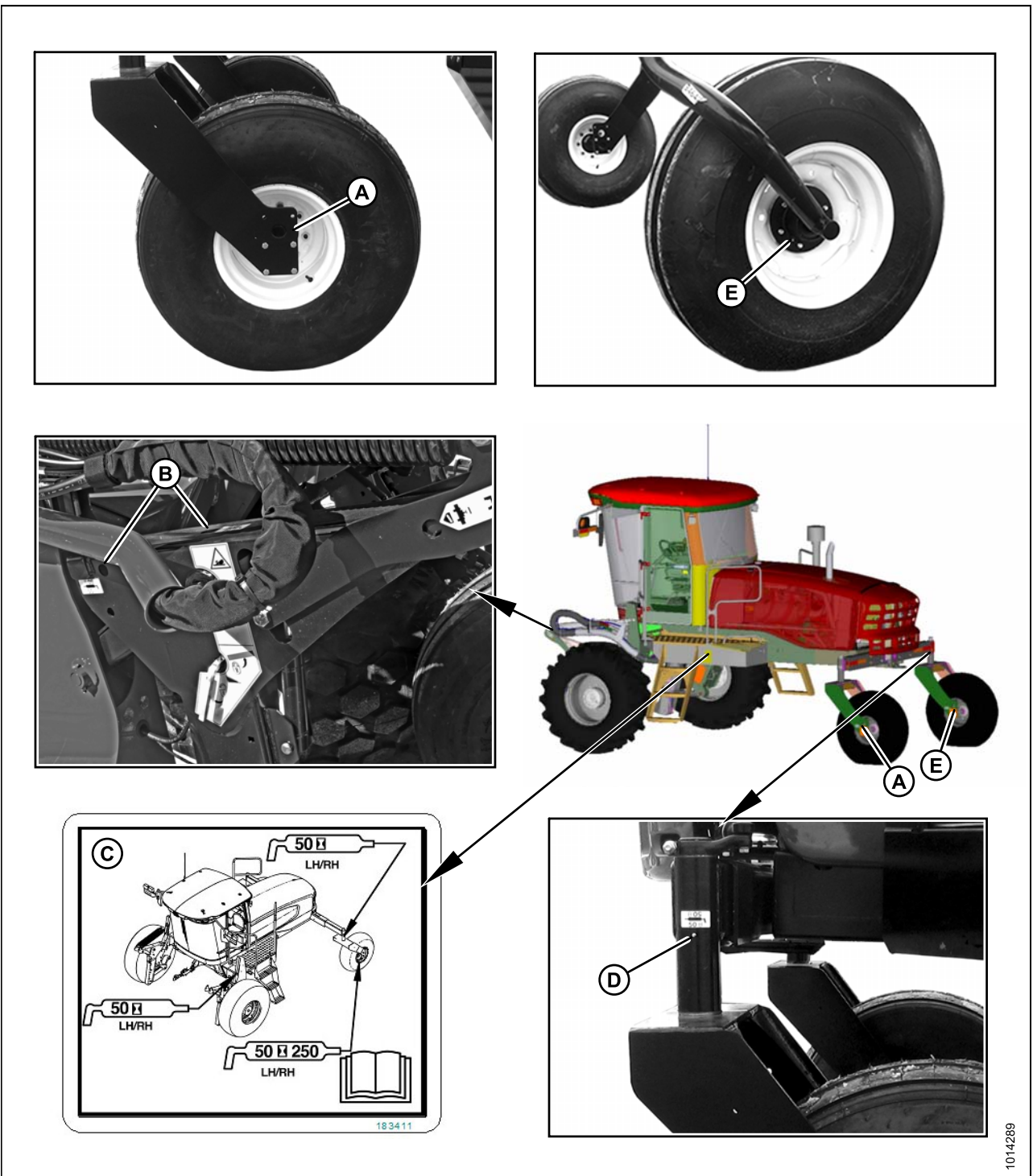


Figure 3.212: Lubrication Points

- A - Forked Caster Wheel Bearing (Two Places) (Outer – Both Wheels)
- B - Top-Link (2 Places) (Both Sides)
- C - Lubrication Decal (MD #183411)
- D - Caster Pivot (Both Sides)
- E - Forked/Formed Caster Wheel Bearing (Two Places) (Inner – Both Wheels) (50 Hrs/250 Hrs)

1014289

3.24 Fuel and Diesel Exhaust Fluid (DEF) Display Module



Figure 3.213: Fuel and Diesel Exhaust Fluid (DEF) Display Module

A - Fuel and DEF Level

C - Inhibit Selective Catalytic Reduction (SCR) System Cleaning

B - High Exhaust System Temperature (HEST)

D - Force SCR System Cleaning

Fuel and DEF level

- Level gauge appears green when levels are between full and 1/8, and appears red when levels are between 1/8 and empty.
- When the levels are in the green range, switches (icons) appear white. When the levels are in the red range, switches (icons) turn black and are backlit with amber light. The amber lights blink when the tank level is depleted to 1/16.

IMPORTANT:

Running out of DEF will cause the engine to derate and will eventually limit throttle to idle.

WARNING

Do NOT park vehicle indoors when HEST lamp is on.

- When the HEST warning is active, the switch (icon) turns black and a warning lamp is backlit with amber light at location (A) (warning lamp not shown).
- The HEST lamp appears when the engine enters a selective catalytic reduction (SCR) system cleaning—this will not hinder normal vehicle operation.
- When the HEST warning is inactive, the switch (icon) is not visible and will appear entirely black (A).

IMPORTANT:

A forced system cleaning can only be initiated if the Operator is prompted by a flashing icon. A forced system cleaning cannot be initiated at other times.

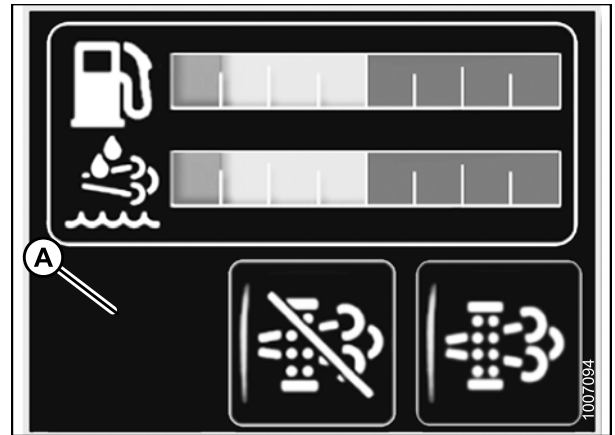


Figure 3.214: Inactive HEST Icon

SCR System Cleaning Inhibit and SCR System Cleaning Forced

SCR system cleaning is a high-temperature clean-out cycle to keep the after-treatment free of crystallized DEF.

A passive system cleaning may occur depending on engine duty cycles, and may last for 15–30 minutes. It will not have an impact on operation other than high exhaust temperature. A forced SCR system cleaning may be required for extensive clean-out (e.g., when the inhibit switch has been left ON for a long period of time). The system will derate if the forced SCR system cleaning is not done.

- Switches (icons) (A) and (B) work as lamps and switches.
- The switches (icons) turn gray when the function is not active. When the function is active, the switches (icons) turn black and are backlit with amber light.
- To activate the functions, press and hold the switch (icon) (SCR system cleaning inhibit [A] or SCR system cleaning forced [B]) for 3 seconds. During the 3-second interval, the fuel icon and gauge are replaced with the following red text at location (C), HOLD 3 SECONDS, and the red border turns white. After which, the fuel gauge returns and the white border starts blinking. The border reverts to solid red when the switch (icon) is released.

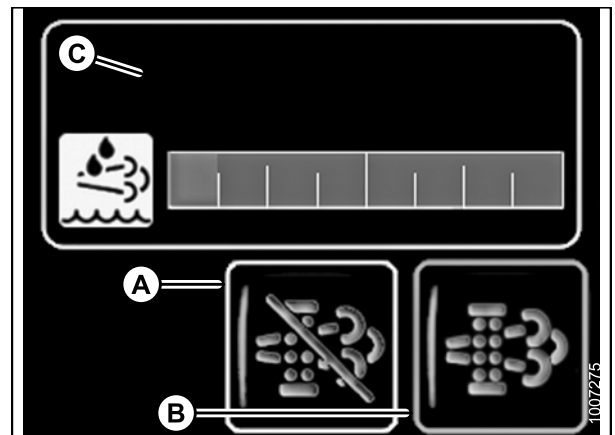


Figure 3.215: SCR System Cleaning Icons

ASSEMBLING THE WINDROWER

IMPORTANT:

- SCR System Cleaning inhibit (A) allows the Operator to temporarily prevent the machine from performing an SCR System Cleaning. It should be used only when the environment is unsafe to allow high exhaust temperatures (e.g., inside of a building).
- SCR System Cleaning Forced (B) will rarely require activation by the Operator. If required, the switch (icon) will flash amber. If the SCR System Cleaning Forced switch (icon) begins to flash, park the windrower outside in a safe environment for high exhaust temperatures. Place the ground speed lever (GSL) in N-Detent, throttle to idle, and press and hold the SCR System Cleaning Forced switch (icon) for 3 seconds. The engine will then take over throttle control. During the 3-second interval, the fuel icon and gauge will be replaced with the following red text, HOLD 3 SECONDS (C), and the red border will turn white. After which, the fuel gauge will return and the white border will start blinking. The border will revert to solid red when the switch (icon) is released.

4 Cab Display Module (CDM)

Although the other procedures in this manual are intended to be followed in the order in which they are listed, the sections in this chapter can be referred to in any order according to your specific requirements.

4.1 Cab Display Module (CDM) Programming



Figure 4.1: CDM

A - Side Display
D - Menu Item Scroll Forward

B - Main Display
E - Menu Item Scroll Backward

C - Select Switch
F - Program Switch

Side Display: Displays software revision status.

- Upper Line – C### (CDM)
- Lower Line – E### (WCM)

Main Display: Displays menu item and selection³.

- Upper Line – Menu Item
- Lower Line – Selection

Select Switch: Places monitor into Program Mode with PROGRAM switch. Press to accept menu item and advance to next item.

Menu Item Scroll Forward: Displays value under menu item.

- Push to scroll forward
- Hold down for fast scroll⁴

3. The current selection is flashing.

4. Fast scroll applies only when changing KNIFE SPEED, OVERLOAD PRESSURE, and TIRE SIZE.

CAB DISPLAY MODULE (CDM)

Menu Item Scroll Backward: Displays value under menu item.

- Push to scroll backward
- Hold down for fast scroll⁴

Program Switch: Places monitor into program mode. Press while pressing select switch.

NOTE:

The following menus are available when ignition key is set to RUN:

- WINDROWER SETUP
- CAB DISPLAY SETUP
- DIAGNOSTIC MODE

The CALIBRATE SENSORS menu is available only when engine is running.

4.2 Cab Display Options

The display and sound features of the cab display module (CDM) can be adjusted to suit each particular Operator.

NOTE:

The procedures listed in this section are current for cab display module (CDM) software version C507 and windrower control module (WCM) E228. The WCM is supplied preloaded with the latest released version of the operating software. Any subsequent updates will be made available via internet download from the MacDon Dealer Portal (<https://portal.macdon.com>).

NOTE:

Screens may appear differently if running newer or older versions of software, and not all features are available on every machine.

4.2.1 Setting the Cab Display Language

1. Turn ignition key to RUN, or start the engine.
2. Press PROGRAM (A) and SELECT (C) on cab display module (CDM) to enter Programming Mode.
 - WINDROWER SETUP? is displayed on the upper line.
 - NO/YES is displayed on the lower line.

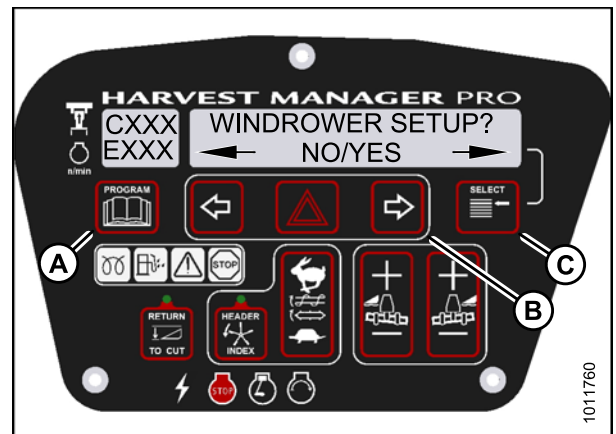


Figure 4.2: CDM Programming Buttons

3. Press SELECT (B) until CAB DISPLAY SETUP? is displayed on the upper line.
 - NO/YES is displayed on the lower line.

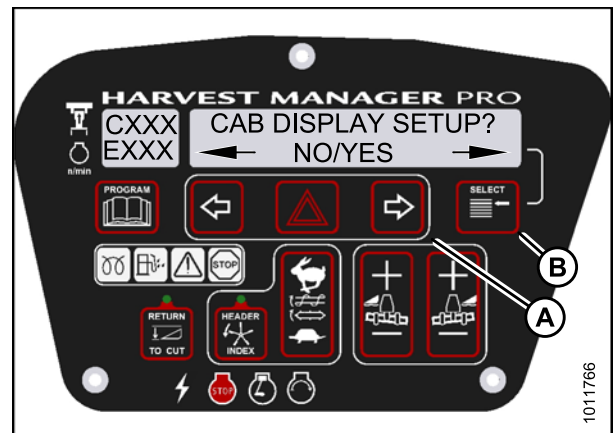


Figure 4.3: Cab Display Setup

CAB DISPLAY MODULE (CDM)

- Press right (C) arrow select YES. Press SELECT (D).
- DISPLAY LANGUAGE? is displayed on the upper line.
 - Default language is displayed on the lower line.
- Press left (B) or right (C) arrow to select preferred language.

NOTE:

English, Russian, and Spanish language options are available on windrowers. Not all language options are available on all windrowers.

- Press PROGRAM (A) to exit Programming Mode or press SELECT (D) to proceed to next CAB DISPLAY SETUP? action.

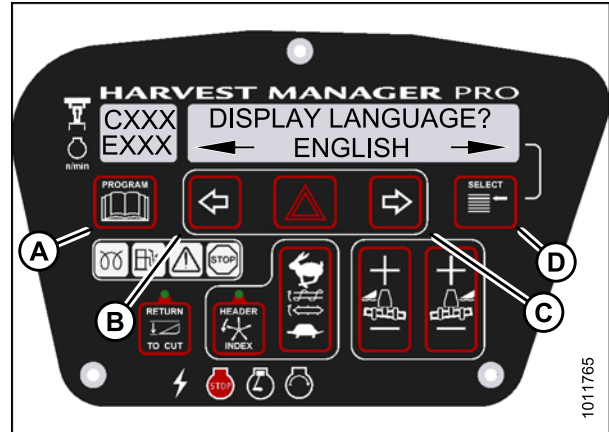


Figure 4.4: Display Language

4.2.2 Changing the Windrower Display Units

- Turn ignition key to RUN, or start the engine.
- Press PROGRAM (A) and SELECT (C) on cab display module (CDM) to enter Programming Mode.
 - WINDROWER SETUP? is displayed on the upper line.
 - NO/YES is displayed on the lower line.

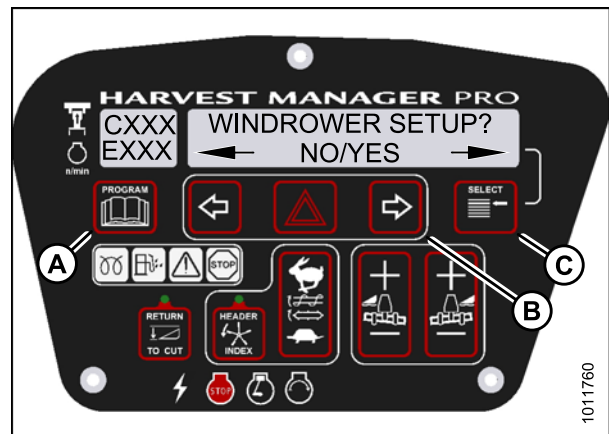


Figure 4.5: CDM Programming Buttons

- Press SELECT (B) until CAB DISPLAY SETUP? is displayed on the upper line.
 - NO/YES is displayed on the lower line.
- Press right (A) arrow to select YES. Press SELECT (B).
- DISPLAY LANGUAGE? is displayed on the upper line.

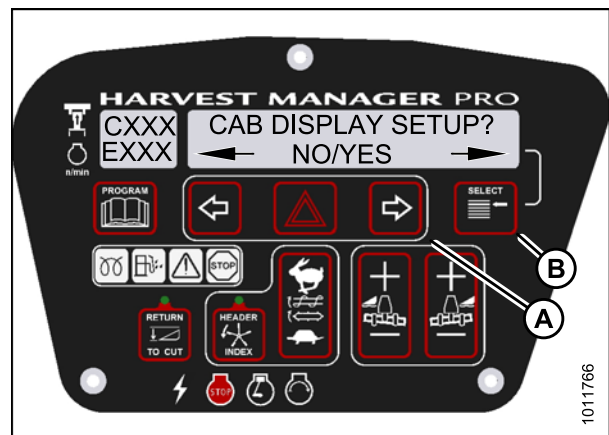


Figure 4.6: Cab Display Setup

CAB DISPLAY MODULE (CDM)

5. Press SELECT (D) until DISPLAY UNITS? is displayed on the upper line.
 - Default setting is displayed on the lower line.
6. Press left (B) or right (C) arrow to select either METRIC or IMPERIAL speed display.
7. Press PROGRAM (A) to exit Programming Mode or press SELECT (D) to proceed to next CAB DISPLAY SETUP? action.

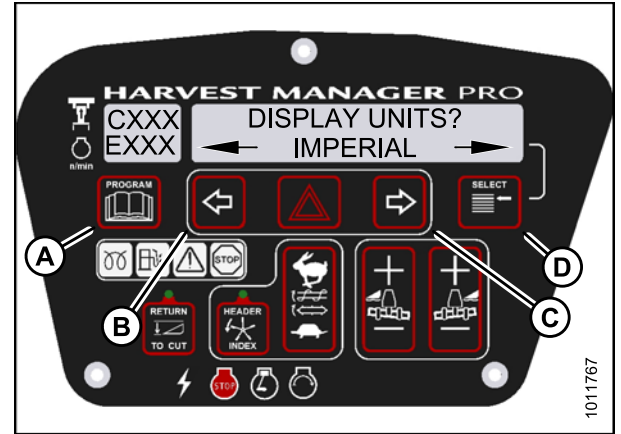


Figure 4.7: Display Units

4.2.3 Adjusting the Cab Display Buzzer Volume

1. Turn ignition key to RUN, or start the engine.
2. Press PROGRAM (A) and SELECT (C) on cab display module (CDM) to enter Programming Mode.
 - WINDROWER SETUP? is displayed on the upper line.
 - NO/YES is displayed on the lower line.

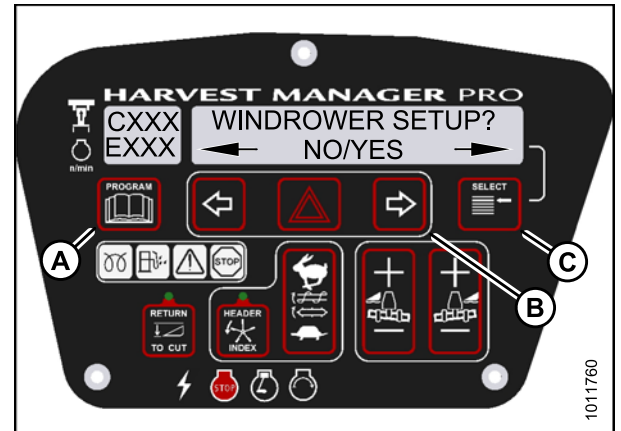


Figure 4.8: CDM Programming Buttons

3. Press SELECT (B) until CAB DISPLAY SETUP? is displayed on the upper line.
 - NO/YES is displayed on the lower line.
4. Press right (A) arrow to select YES. Press SELECT (B).
 - DISPLAY LANGUAGE? is displayed on the upper line.

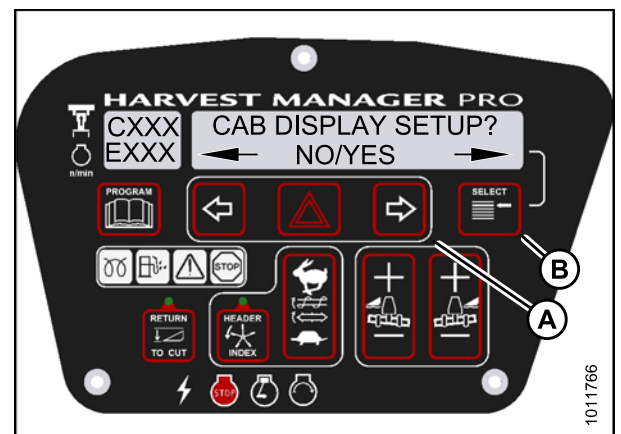


Figure 4.9: Cab Display Setup

CAB DISPLAY MODULE (CDM)

5. Press SELECT (D) until BUZZER VOLUME is displayed on the upper line.
 - Previous setting is displayed on the lower line.
6. Press left (B) or right (C) arrows to adjust buzzer volume.
7. Press PROGRAM (A) to exit Programming Mode or press SELECT (D) to proceed to next CAB DISPLAY SETUP? action.

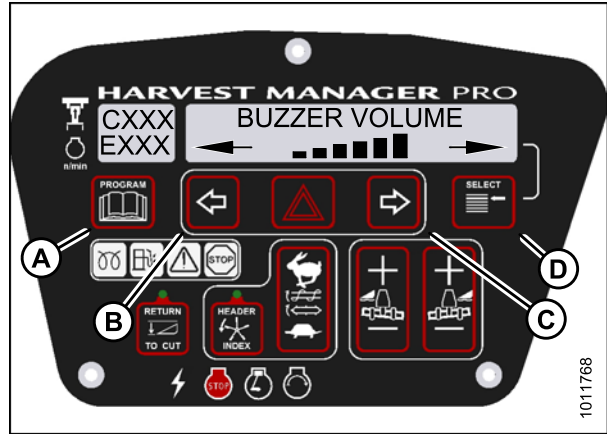


Figure 4.10: Buzzer Volume

4.2.4 Adjusting the Cab Display Backlighting

The backlighting feature brightens the display screen helping you read the cab display module (CDM) in low light situations.

1. Turn ignition key to RUN, or start the engine.
2. Press PROGRAM (A) and SELECT (C) on cab display module (CDM) to enter Programming Mode.
 - WINDROWER SETUP? is displayed on the upper line.
 - NO/YES is displayed on the lower line.

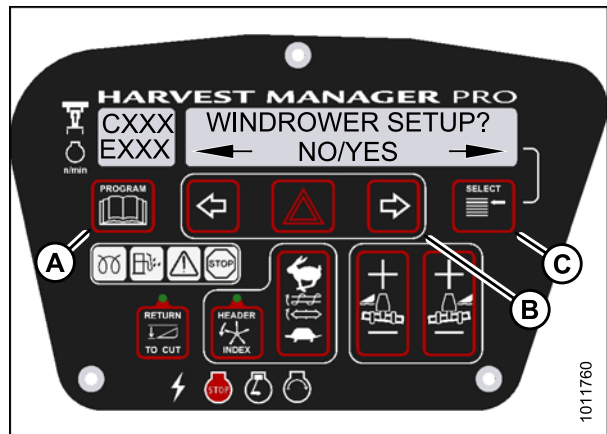


Figure 4.11: CDM Programming Buttons

3. Press SELECT (B) until CAB DISPLAY SETUP? is displayed on the upper line.
 - NO/YES is displayed on the lower line.
4. Press right (A) arrow to select YES. Press SELECT (B).
 - DISPLAY LANGUAGE? is displayed on the upper line.

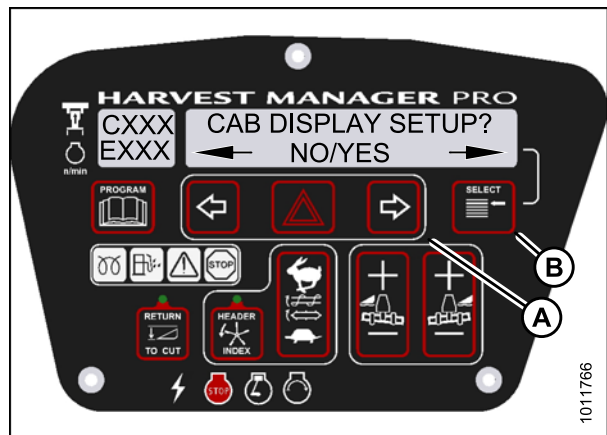


Figure 4.12: Cab Display Setup

CAB DISPLAY MODULE (CDM)

5. Press SELECT (D) until BACKLIGHTING is displayed on the upper line.
 - Default setting is displayed on the lower line.
6. Press left (B) or right (C) arrows to adjust display backlighting.
7. Press PROGRAM (A) to exit Programming Mode or press SELECT (D) to proceed to next CAB DISPLAY SETUP? action.

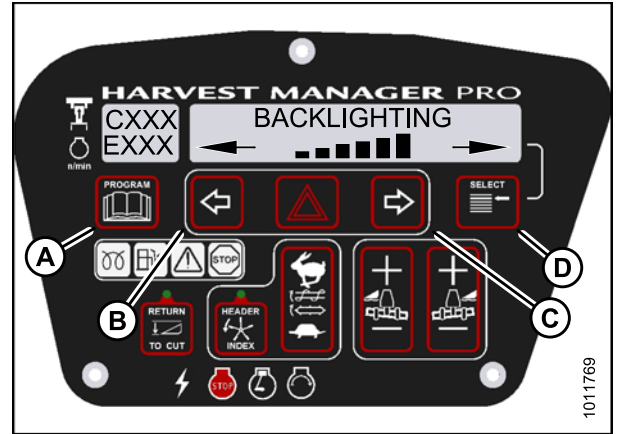


Figure 4.13: Backlighting

4.2.5 Adjusting the Cab Display Contrast

1. Turn ignition key to RUN, or start the engine.
2. Press PROGRAM (A) and SELECT (C) on cab display module (CDM) to enter Programming Mode.
 - WINDROWER SETUP? is displayed on the upper line.
 - NO/YES is displayed on the lower line.

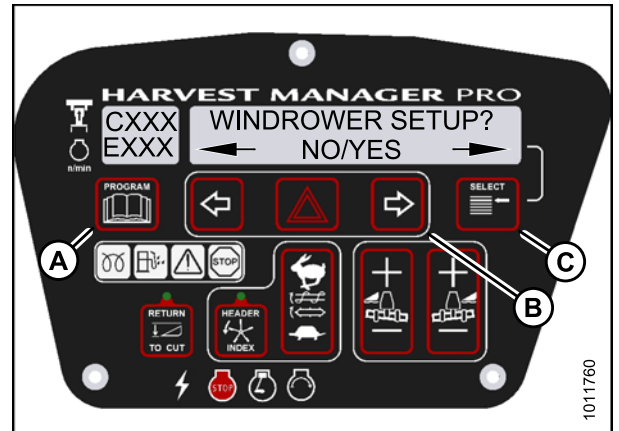


Figure 4.14: CDM Programming Buttons

3. Press SELECT (B) until CAB DISPLAY SETUP? is displayed on the upper line.
 - NO/YES is displayed on the lower line.
4. Press right (A) arrow to select YES. Press SELECT (B).
 - DISPLAY LANGUAGE? is displayed on the upper line.

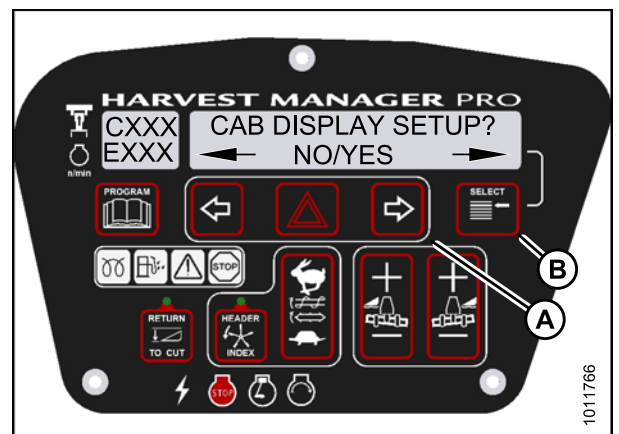


Figure 4.15: Cab Display Setup

CAB DISPLAY MODULE (CDM)

5. Press SELECT (D) until DISPLAY CONTRAST is displayed on the upper line.
 - Default setting is displayed on the lower line.
6. Press left (B) or right (C) arrows to adjust display contrast.
7. Press PROGRAM (A) to exit Programming Mode or press SELECT (D) to proceed to next CAB DISPLAY SETUP? action.

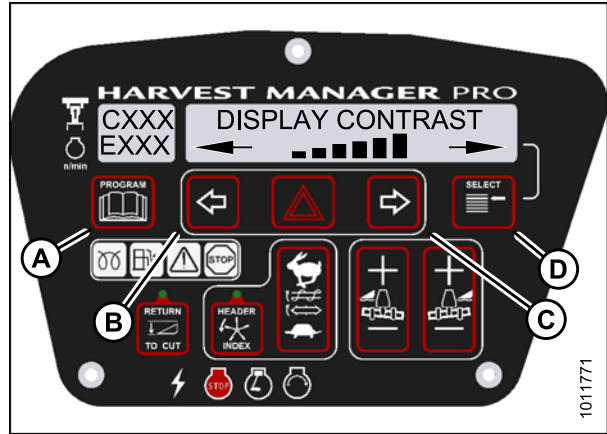


Figure 4.16: Display Contrast

4.3 Calibrating the Header Sensors

Sensor calibration programs the windrower control module (WCM) with settings for the attached header.

4.3.1 Calibrating the Header Height Sensor

NOTE:

- The header **MUST** be attached to the windrower to perform this procedure. The cab display module (CDM) automatically adjusts its programming for each header.
- The engine **MUST** be running to perform this procedure.

1. Turn ignition key to RUN, or start the engine.
2. Press PROGRAM (A) and SELECT (C) on cab display module (CDM) to enter Programming Mode.
 - WINDROWER SETUP? is displayed on the upper line.
3. Press SELECT (C) until CALIBRATE SENSORS? is displayed on the upper line.
 - NO/YES is displayed on the lower line.

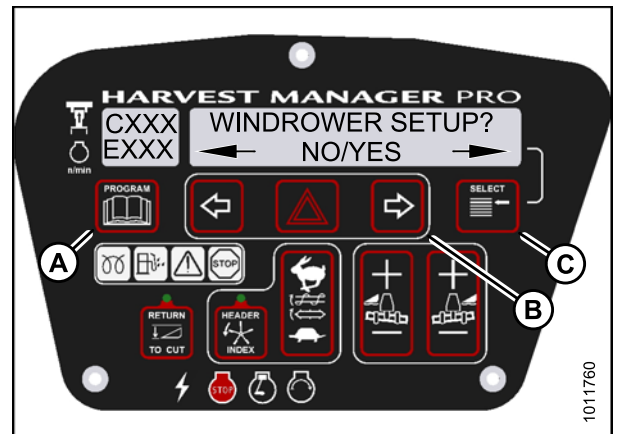


Figure 4.17: CDM Programming Buttons

4. Press right (B) arrow to select Yes. Press SELECT (C).
 - TO CALIBRATE SELECT is displayed in upper line.
5. Press left (A) or right (B) arrow until HEADER HEIGHT is displayed on the lower line. Press SELECT (C).
 - CALIBRATING HEIGHT is displayed on the upper line.
 - RAISE HEADER HOLD is displayed on the lower line.



Figure 4.18: Header Height Calibration

CAUTION

Check to be sure all bystanders have cleared the area.

6. Press and hold the HEADER UP (C) button on the ground speed lever (GSL).
 - CALIBRATING HEIGHT is displayed on the upper line.
 - RAISE HEADER HOLD is displayed on the lower line.

NOTE:

The word HOLD will flash during calibration. RAISE HEADER DONE will display on the lower line once calibration is complete.

7. Release the HEADER UP (C) button.
 - HEIGHT SENSOR CAL is displayed on the upper line.
 - PRESS LOWER HEADER is displayed on the lower line.

8. Press and hold HEADER DOWN (A) button on GSL.

NOTE:

The word HOLD will flash during calibration. HT SENSOR COMPLETE will display on the lower line once calibration is complete.

9. Release HEADER DOWN (A) button.
 - TO CALIBRATE SELECT is displayed on the upper line.
 - HEADER HEIGHT is displayed on the lower line.
10. Press right arrow to select next header sensor calibration or STOP & EXIT. Press SELECT. Refer to [4.3.2 Calibrating the Header Tilt Sensor, page 133](#) or [4.3.3 Calibrating the Header Float Sensors, page 135](#).
11. Press PROGRAM to exit Programming Mode.

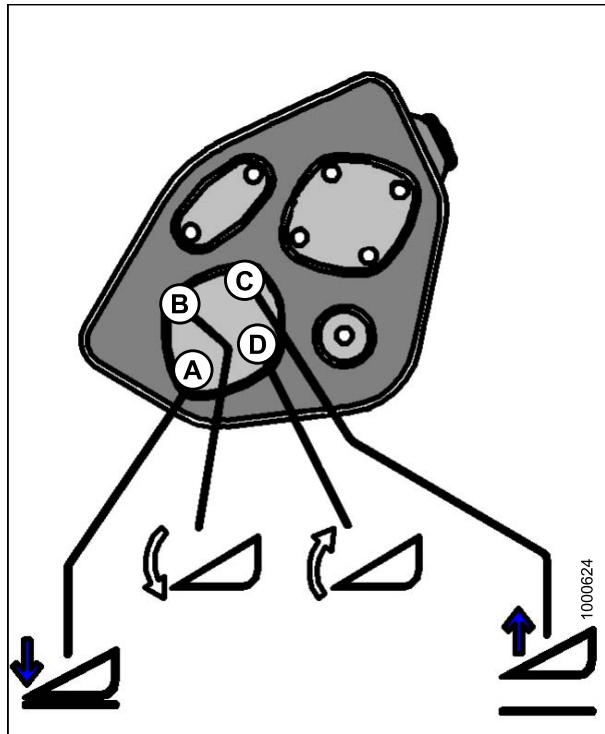


Figure 4.19: Header Height Controls on Ground Speed Lever

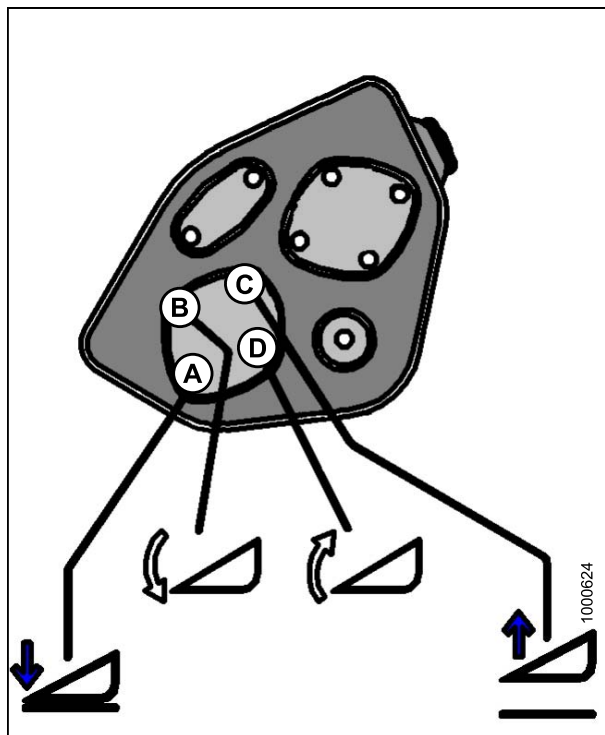


Figure 4.20: Header Height Controls on Ground Speed Lever

CAB DISPLAY MODULE (CDM)

4.3.2 Calibrating the Header Tilt Sensor

NOTE:

- The header **MUST** be attached to the windrower to perform this procedure. The cab display module (CDM) automatically adjusts its programming for each header.
- The engine **MUST** be running to perform this procedure.

1. Turn ignition key to RUN, or start the engine.
2. Press PROGRAM (A) and SELECT (C) on cab display module (CDM) to enter Programming Mode.
 - WINDROWER SETUP? is displayed on the upper line.
3. Press SELECT (C) until CALIBRATE SENSORS? is displayed on the upper line.
 - NO/YES is displayed on the lower line.

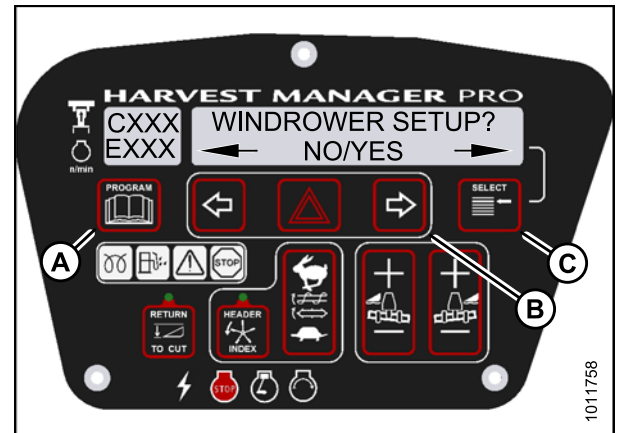


Figure 4.21: CDM Programming Buttons

4. Press right (B) arrow to select YES. Press SELECT (C).
 - TO CALIBRATE SELECT is displayed in upper line.
5. Press left (A) or right (B) arrow until HEADER TILT is displayed on the lower line. Press SELECT (C).
 - HDR TILT SENSOR CAL is displayed on the upper line.
 - EXTEND TILT TO START is displayed on the lower line.

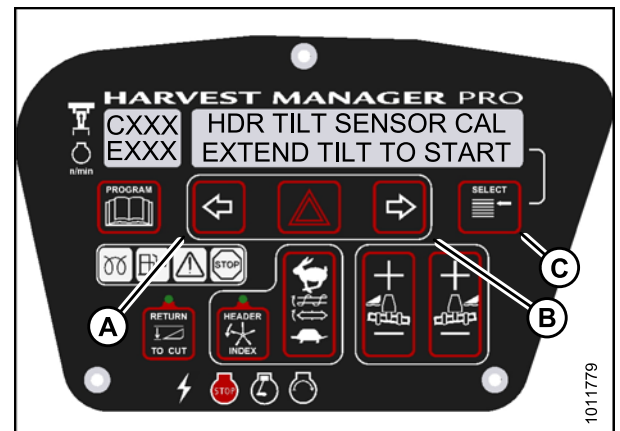


Figure 4.22: Header Tilt

CAUTION

Check to be sure all bystanders have cleared the area.

6. Press and hold the HEADER TILT EXTEND (B) button on the ground speed lever (GSL).
 - CALIBRATING TILT is displayed on the upper line.
 - EXTEND TILT HOLD is displayed on the lower line.

NOTE:

The word HOLD will flash during calibration. HEADER TILT DONE will display on the lower line once calibration is complete.

7. Release the HEADER TILT EXTEND (B) button.
 - HEADER TILT SENSOR CAL is displayed on upper line.
 - PRESS RETRACT TILT is displayed on the lower line.

8. Press and hold HEADER TILT RETRACT (D) button on GSL.
 - CALIBRATING TILT is displayed on the upper line.
 - RETRACT TILT HOLD is displayed on the lower line.

NOTE:

The word HOLD will flash during calibration. HEADER TILT COMPLETE will display on the lower line once calibration is complete.

9. Release HEADER TILT RETRACT (D) button.
 - TO CALIBRATE SELECT is displayed on the upper line.
 - HEADER TILT is displayed on the lower line.

10. Press right arrow to select next header sensor calibration or STOP & EXIT. Press SELECT. Refer to [4.3.1 Calibrating the Header Height Sensor, page 131](#) or [4.3.3 Calibrating the Header Float Sensors, page 135](#).

11. Press PROGRAM to exit Programming Mode.

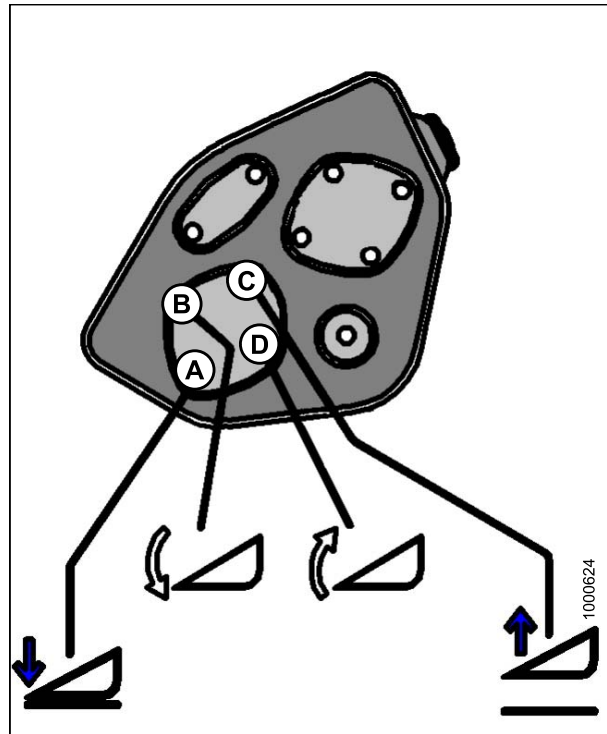


Figure 4.23: Header Tilt Controls on Ground Speed Lever

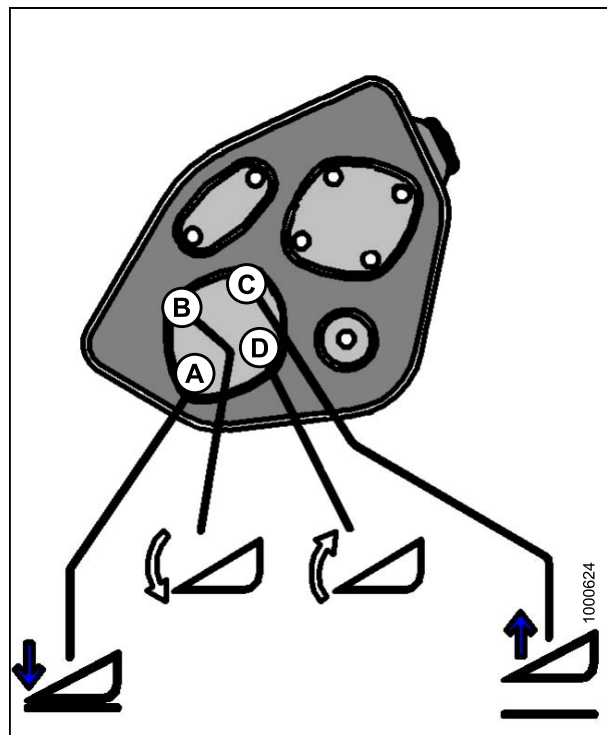


Figure 4.24: Header Tilt Controls on Ground Speed Lever

CAB DISPLAY MODULE (CDM)

4.3.3 Calibrating the Header Float Sensors

NOTE:

- The header **MUST** be attached to the windrower to perform this procedure. The cab display module (CDM) automatically adjusts its programming for each header.
- The Operator can use the left or right FLOAT buttons on the cab display module (CDM) to perform this procedure.

1. Turn ignition key to RUN, or start the engine.
2. Press PROGRAM (A) and SELECT (C) on cab display module (CDM) to enter Programming Mode.
 - WINDROWER SETUP? is displayed on the upper line.
3. Press SELECT (C) until CALIBRATE SENSORS? is displayed on the upper line.
 - NO/YES is displayed on the lower line.

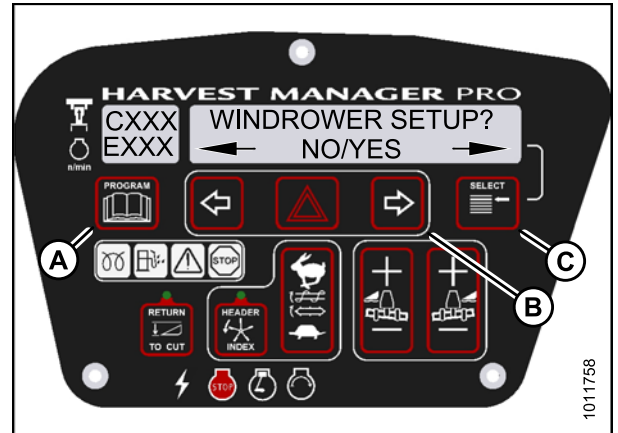


Figure 4.25: CDM Programming Buttons

4. Press right (B) arrow to select Yes. Press SELECT (C).
 - TO CALIBRATE SELECT is displayed in upper line.
5. Press left (A) or right (B) arrow until HEADER FLOAT is displayed on the lower line. Press SELECT (C).
 - CALIBRATING FLOAT is displayed on the upper line.
 - PRESS FLOAT + TO START is displayed on the lower line.

CAUTION

Check to be sure all bystanders have cleared the area.

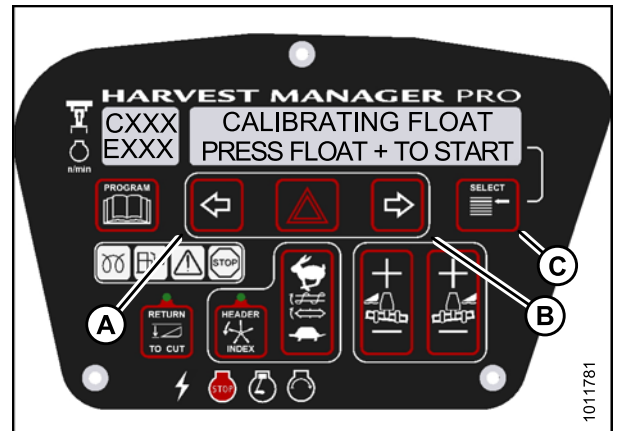


Figure 4.26: Header Float

CAB DISPLAY MODULE (CDM)

- Press and hold FLOAT + button (A) on the CDM.
 - CALIBRATING FLOAT is displayed on the upper line.
 - FLOAT (+) HOLD is displayed on the lower line.

NOTE:

The word HOLD will flash during calibration.
FLOAT (+) DONE will display on the lower line once calibration is complete.

- Release the FLOAT + button (A).
 - CALIBRATING FLOAT is displayed on the upper line.
 - FLOAT (-) HOLD is displayed on the lower line.

- Press and hold FLOAT - button (A) on CDM.
 - CALIBRATING FLOAT is displayed on the upper line.
 - FLOAT (-) HOLD is displayed on the lower line.

NOTE:

The word HOLD will flash during calibration.
HDR FLOAT COMPLETE will display on the lower line once calibration is complete.

- Release FLOAT - button (A).
 - TO CALIBRATE SELECT is displayed on the upper line.
 - HEADER FLOAT is displayed on the lower line.

- Press right arrow to select next header sensor calibration or STOP & EXIT. Press SELECT
Refer to [4.3.1 Calibrating the Header Height Sensor, page 131](#) or [4.3.2 Calibrating the Header Tilt Sensor, page 133](#).

- Press PROGRAM to exit Programming Mode.



Figure 4.27: Positive Header Float



Figure 4.28: Negative Header Float

4.4 Programming the Windrower

The windrower can be programmed to meet changing crop conditions, activate newly added options, indicate a change of header type, or increase your comfort level.

4.4.1 Activating the Hydraulic Center-Link

1. Turn ignition key to RUN, or start the engine. Refer to [3.16 Starting Engine, page 70](#).
2. Press PROGRAM (A) and SELECT (C) on cab display module (CDM) to enter Programming Mode.
 - WINDROWER SETUP? is displayed on the upper line.
 - NO/YES is displayed on the lower line.
3. Press right (B) arrow to select YES. Press SELECT (C).
 - SET KNIFE SPEED? is displayed on the upper line.

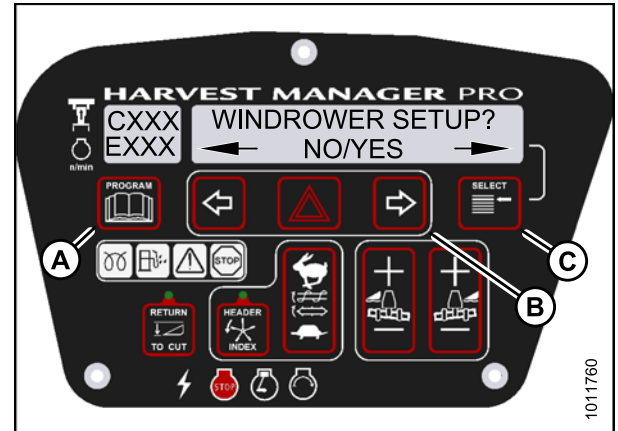


Figure 4.29: CDM Programming Buttons

4. Press SELECT (C) until TILT CYL INSTALLED? is displayed on the upper line.
 - NO/YES is displayed on the lower line.
5. Press right (B) arrow to select YES. Press SELECT (C).
6. Press PROGRAM (A) to exit Programming Mode or press SELECT (C) to proceed to next WINDROWER SETUP action.

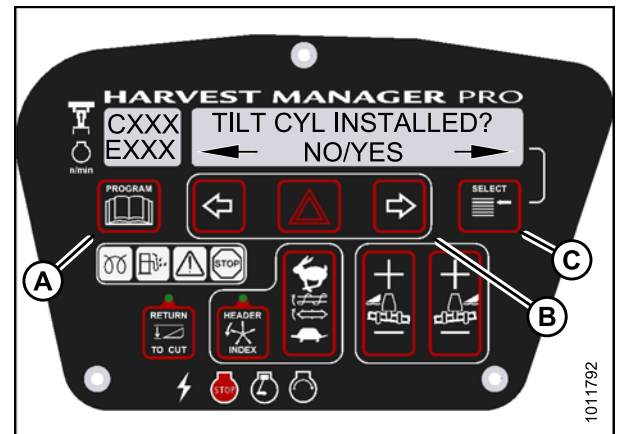


Figure 4.30: Hydraulic Center-Link

4.4.2 Activating the Rotary Header Drive Hydraulics

NOTE:

This procedure requires installation of the optional Rotary Header Drive Hydraulics (MD #B5510). For more information, refer to the rotary disc header operator's manual.

CAB DISPLAY MODULE (CDM)

1. Turn ignition key to RUN, or start the engine. Refer to [3.16 Starting Engine, page 70](#).
2. Press PROGRAM (A) and SELECT (C) on cab display module (CDM) to enter Programming Mode.
 - WINDROWER SETUP? is displayed on the upper line.
 - NO/YES is displayed on the lower line.
3. Press right (B) arrow to select YES. Press SELECT (C).
 - SET KNIFE SPEED? is displayed on the upper line.

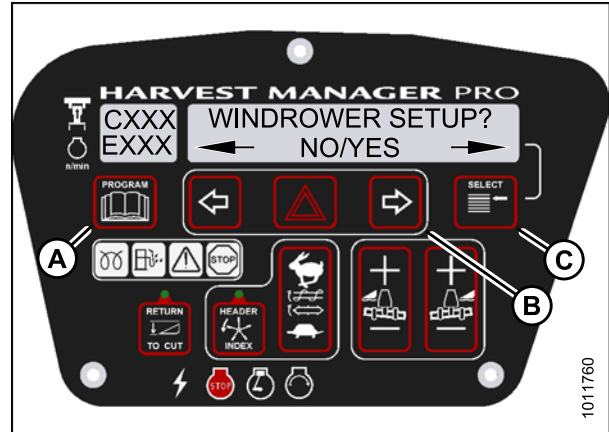


Figure 4.31: CDM Programming Buttons

4. Press SELECT (C) until DISC BLK INSTALLED? is displayed on the upper line.
 - NO/YES is displayed on the lower line.
5. Press right (B) arrow to select YES. Press SELECT (C).
6. Press PROGRAM (A) to exit Programming Mode or press SELECT (C) to proceed to next WINDROWER SETUP action.

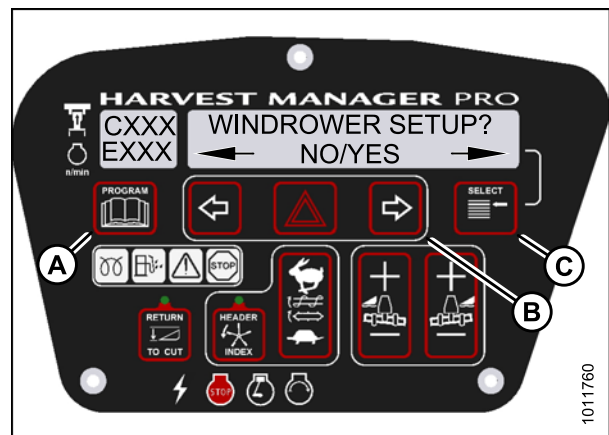


Figure 4.32: Rotary Disc Hydraulics

4.4.3 Setting the Header Knife Speed

NOTE:

The header **MUST** be attached to the windrower to perform this procedure. The cab display module (CDM) automatically adjusts its programming for each header.

1. Turn ignition key to RUN, or start the engine.
2. Press PROGRAM (A) and SELECT (C) on cab display module (CDM) to enter Programming Mode.
 - WINDROWER SETUP? is displayed on the upper line.
 - NO/YES is displayed on the lower line.
3. Press right (B) arrow to select YES. Press SELECT (C).
 - SET KNIFE SPEED? is displayed.
 - The current knife speed is displayed on the lower line.

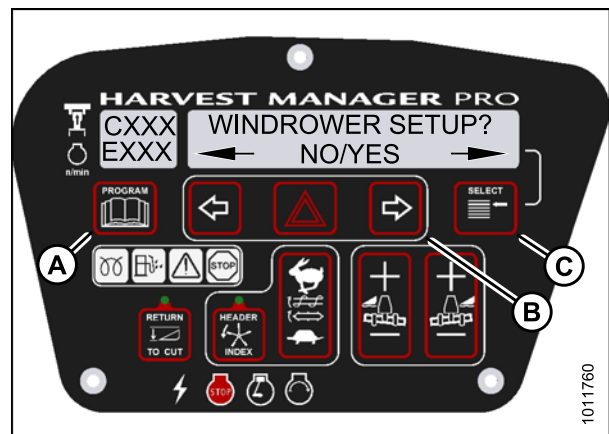


Figure 4.33: CDM Programming Buttons

CAB DISPLAY MODULE (CDM)

4. Press left (B) or right (C) arrows to select knife speed. Press SELECT (D).
5. Press PROGRAM (A) to exit Programming Mode or press SELECT (D) to proceed to next WINDROWER SETUP action.

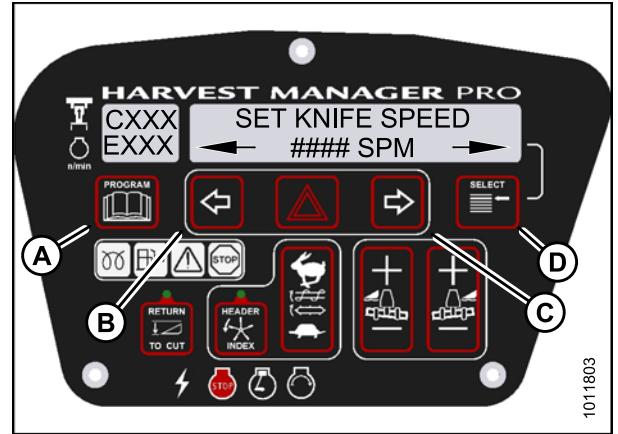


Figure 4.34: Knife Speed

4.4.4 Setting the Knife Overload Speed

NOTE:

- The header **MUST** be attached to the windrower to perform this procedure. The cab display module (CDM) automatically adjusts its programming for each header.
- The recommended knife overload speed is 75% of knife speed.

1. Turn ignition key to RUN, or start the engine.
2. Press PROGRAM (A) and SELECT (C) on cab display module (CDM) to enter Programming Mode.
 - WINDROWER SETUP? is displayed on the upper line.
 - NO/YES is displayed on the lower line.
3. Press right (B) arrow to select YES. Press SELECT (C).
 - SET KNIFE SPEED? is displayed.

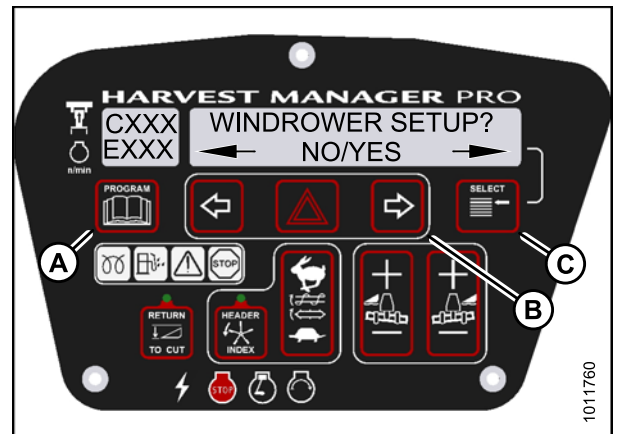


Figure 4.35: CDM Programming Buttons

CAB DISPLAY MODULE (CDM)

4. Press SELECT (D) until KNIFE OVERLOAD SPD? is displayed on the upper line.

- Current overload speed is displayed on the lower line.

NOTE:

Default setting is -300 spm. Range is -500 to -100 spm.

5. Press left (B) or right (C) arrows to set knife overload speed. Press SELECT (D).
6. Press PROGRAM (A) to exit Programming Mode or press SELECT (D) to proceed to next WINDROWER SETUP action.



Figure 4.36: Knife Overload Speed

4.4.5 Setting the Rotary Disc Overload Speed

NOTE:

- The header **MUST** be attached to the windrower to perform this procedure. The cab display module (CDM) automatically adjusts its programming for each header.
- The recommended disc overload speed is 75% of disc speed. For more information refer to the rotary disc header operator's manual to determine proper overload speed.

1. Turn ignition key to RUN, or start the engine.
2. Press PROGRAM (A) and SELECT (C) on cab display module (CDM) to enter Programming Mode.
 - WINDROWER SETUP? is displayed on the upper line. NO/YES is displayed on the lower line.
3. Press right (B) arrow to select YES. Press SELECT (C).
 - SET KNIFE SPEED? is displayed.

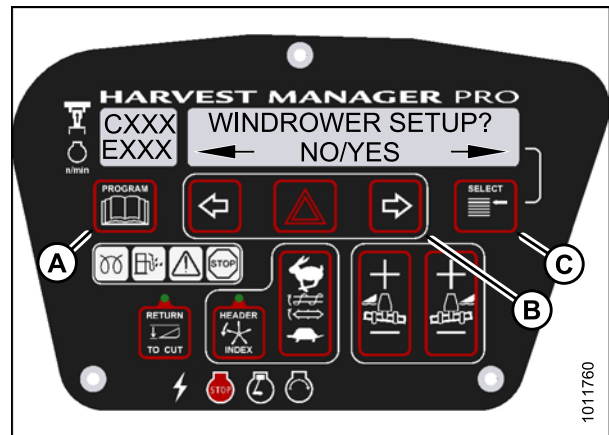


Figure 4.37: CDM Programming Buttons

CAB DISPLAY MODULE (CDM)

4. Press SELECT (D) until DISK OVERLOAD SPD? is displayed on the upper line.

- The current overload speed is displayed on the lower line.

NOTE:

Default setting is -300 rpm. Range is -500 to -100 rpm.

5. Press left (B) or right (C) arrows to set disc overload speed. Press SELECT (D).
6. Press PROGRAM (A) to exit Programming Mode or press SELECT (D) to proceed to next WINDROWER SETUP action.

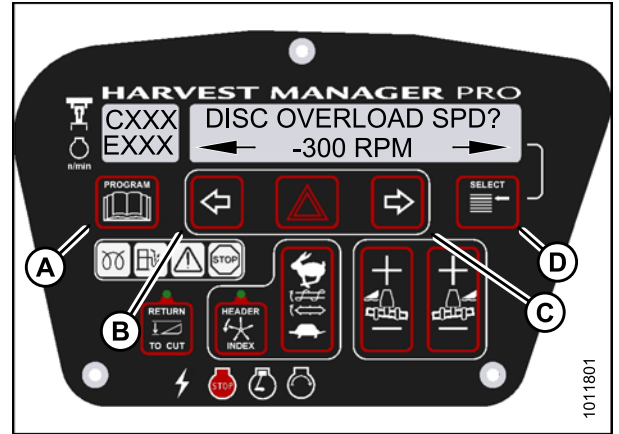


Figure 4.38: Disc Overload Speed

4.4.6 Setting the Hydraulic Overload Pressure

NOTE:

- This procedure requires installation of the optional pressure sensor (MD #B5574). For overload pressure values, refer to pressure sensor installation instructions (MD #169031).
- To enable sensor, refer to [4.7.2 Switching the Installed Header Sensors ON or OFF, page 164](#).

1. Turn ignition key to RUN, or start the engine.
2. Press PROGRAM (A) and SELECT (C) on cab display module (CDM) to enter Programming Mode.
 - WINDROWER SETUP? is displayed on the upper line.
 - NO/YES is displayed on the lower line.
3. Press right (B) arrow to select YES. Press SELECT (C).
 - SET KNIFE SPEED? is displayed.

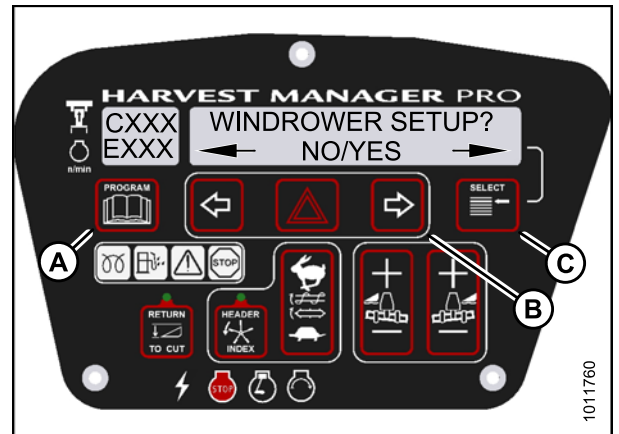


Figure 4.39: CDM Programming Buttons

CAB DISPLAY MODULE (CDM)

4. Press SELECT (D) until OVERLOAD PRESSURE? is displayed on the upper line.

- The current overload pressure is displayed on lower line.

NOTE:

Pressure range is 17,237–34,474 kPa (2500–5000 psi).

5. Press left (B) or right (C) arrows to set hydraulic overload pressure. Press SELECT (D).
6. Press PROGRAM (A) to exit Programming Mode or press SELECT (D) to proceed to next WINDROWER SETUP action.

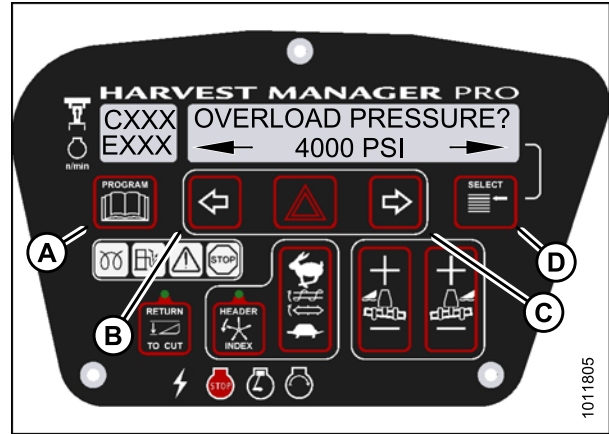


Figure 4.40: Hydraulic Overload Pressure

4.4.7 Setting the Header Index Mode

Header Index feature is not applicable to rotary headers.

NOTE:

The header **MUST** be attached to the windrower to perform this procedure. The cab display module (CDM) automatically adjusts its programming for each header.

1. Turn ignition key to RUN, or start the engine.
2. Press PROGRAM (A) and SELECT (C) on cab display module (CDM) to enter Programming Mode.
 - WINDROWER SETUP? is displayed on the upper line.
 - NO/YES is displayed on the lower line.
3. Press right (B) arrow to select YES. Press SELECT (C).
 - SET KNIFE SPEED? is displayed on the upper line.

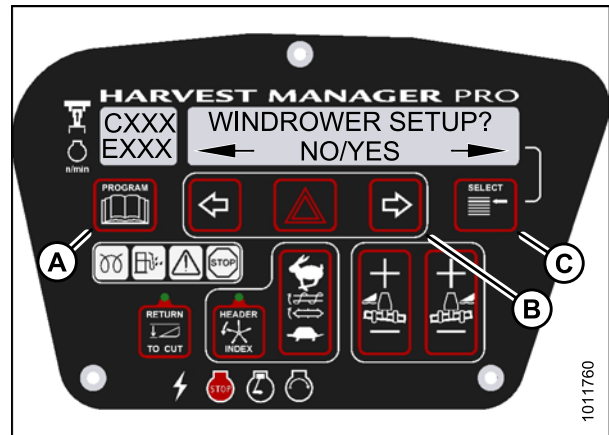


Figure 4.41: CDM Programming Buttons

CAB DISPLAY MODULE (CDM)

- Press SELECT (D) until HEADER INDEX MODE? is displayed on the upper line.
 - REEL & CONVEYOR or REEL ONLY is displayed on the lower line.
- Press left (B) or right (C) arrows to set header index mode. Press SELECT (D).
- Press PROGRAM (A) to exit Programming Mode or press SELECT (D) to proceed to next WINDROWER SETUP action.

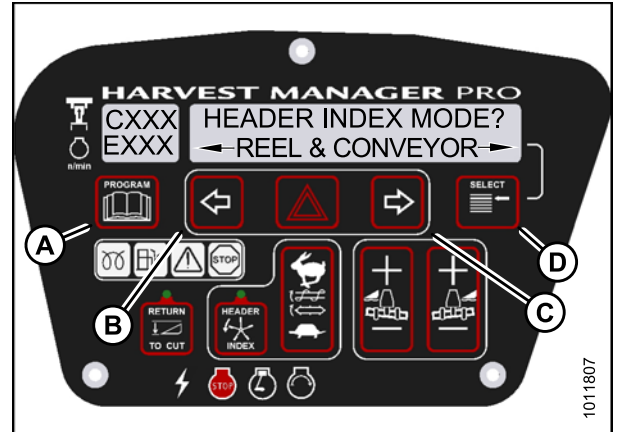


Figure 4.42: Header Index Mode

4.4.8 Setting the Return to Cut Mode

NOTE:

The header **MUST** be attached to the windrower to perform this procedure. The cab display module (CDM) automatically adjusts its programming for each header.

- Turn ignition key to RUN, or start the engine.
- Press PROGRAM (A) and SELECT (C) on cab display module (CDM) to enter Programming Mode.
 - WINDROWER SETUP? is displayed on the upper line.
 - NO/YES is displayed on the lower line.
- Press right (B) arrow to select YES. Press SELECT (C).
 - SET KNIFE SPEED? is displayed.

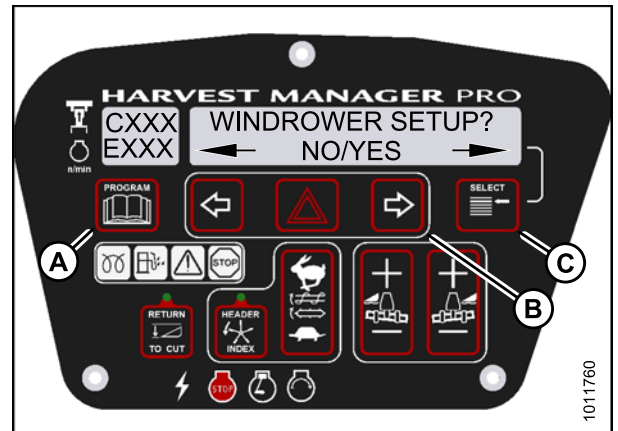


Figure 4.43: CDM Programming Buttons

- Press SELECT (D) until RETURN TO CUT MODE? is displayed on the upper line.
 - HEIGHT & TILT or HEIGHT ONLY will be displayed on the lower line.
- Press left (B) or right (C) arrows to select return to cut mode. Press SELECT (D).
- Press PROGRAM (A) to exit Programming Mode or press SELECT (D) to proceed to next WINDROWER SETUP action.

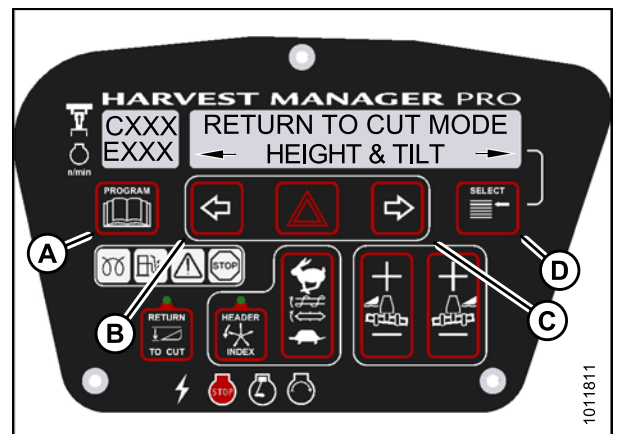


Figure 4.44: Return to Cut Mode

4.4.9 Setting the Header Cut Width

NOTE:

- The header **MUST** be attached to the windrower to perform this procedure. The cab display module (CDM) automatically adjusts its programming for each header.
- Header cut width is less than actual header width to accurately measure number of acres cut.
- The headers sends an electrical signal to the windrower to produce a header ID; however, the cut width will always default to the smallest header size available for each header type. For example, A-Series Auger Headers come in 14-, 16-, and 18-foot sizes, but the cut width will automatically default to the smallest 14-foot size and will need to be changed to your specific header's size.

1. Turn ignition key to RUN, or start the engine.
2. Press PROGRAM (A) and SELECT (C) on cab display module (CDM) to enter Programming Mode.
 - WINDROWER SETUP? is displayed on the upper line.
 - NO/YES is displayed on the lower line.
3. Press right (B) arrow to select YES. Press SELECT (C).
 - SET KNIFE SPEED? is displayed.

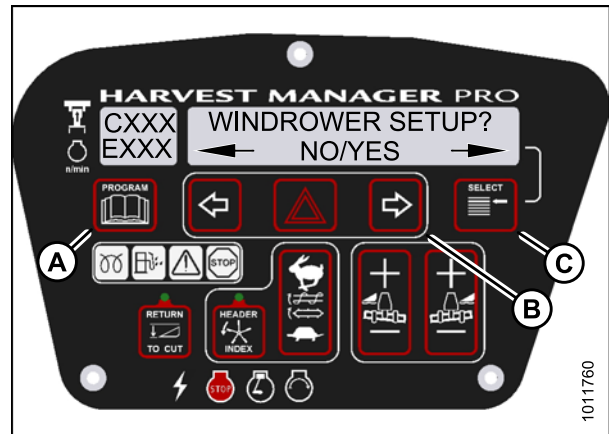


Figure 4.45: CDM Programming Buttons

4. Press SELECT (D) until HDR CUT WIDTH? #### is displayed on the upper line.
 - Previous cutting width is displayed on the lower line.
5. Press left (B) or right (C) arrows to change the headers cut width. Press SELECT (D).
6. Press PROGRAM (A) to exit Programming Mode or press SELECT (D) to proceed to next WINDROWER SETUP action.

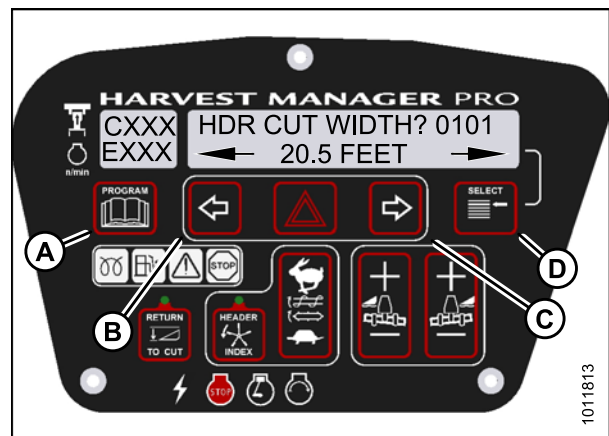


Figure 4.46: Header Cut Width

4.4.10 Activating the Double Windrow Attachment (DWA)

NOTE:

- Follow this procedure if installing the DWA; however, refer to the DWA manual if you require additional installation instructions.
- Follow this procedure if installing a drive manifold (MD #139508).

CAB DISPLAY MODULE (CDM)

1. Turn ignition key to RUN, or start the engine.
2. Press PROGRAM (A) and SELECT (C) on cab display module (CDM) to enter Programming Mode.
 - WINDROWER SETUP? is displayed on the upper line.
 - NO/YES is displayed on the lower line.
3. Press right (B) arrow to select YES. Press SELECT (C).
 - SET KNIFE SPEED? is displayed on the upper line.

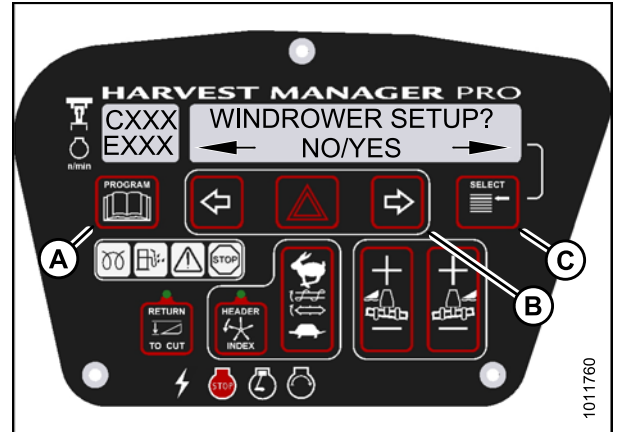


Figure 4.47: CDM Programming Buttons

4. Press SELECT (B) until DWA INSTALLED? is displayed on the upper line.
 - NO/YES is displayed on the lower line.
5. Press right (A) arrow to select YES. Press SELECT (B).

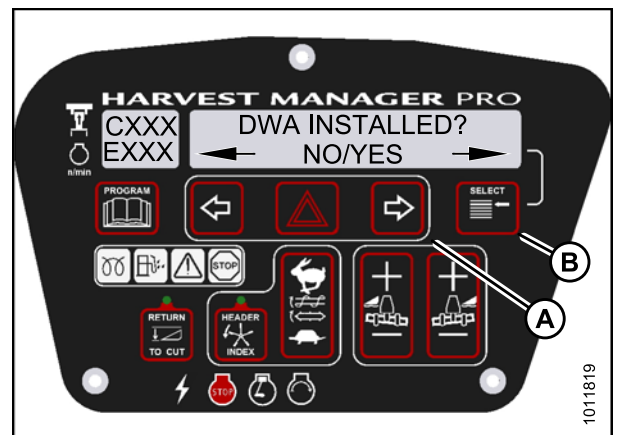


Figure 4.48: DWA Controls

6. SWAP DWA CONTROLS? is displayed on the upper line.
 - NO/YES is displayed on the lower line.

NOTE:

This step swaps the DWA controls from the console switch to the ground speed lever (GSL) reel fore-aft buttons.

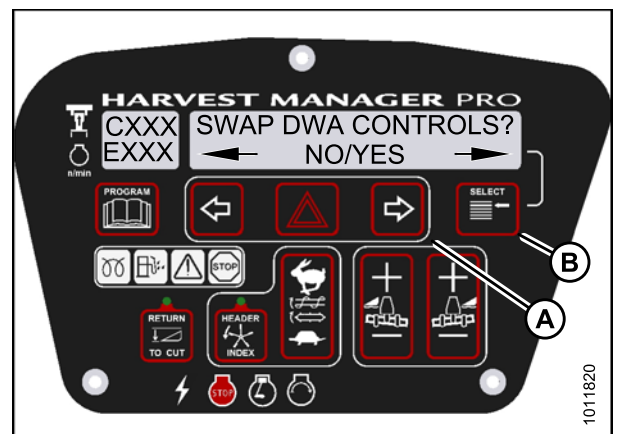


Figure 4.49: DWA Controls

CAB DISPLAY MODULE (CDM)

- Press right (C) arrow to select YES. Press SELECT (D).
- DWA AUTO UP/DOWN? is displayed on the upper line.
- NO/YES is displayed on the lower line.

NOTE:

If the Operator selects YES, the DWA Auto-Up function will be activated by the GSL Reel Fore-Aft button.

- Press right (C) arrow to select YES. Press SELECT (D).
- Press PROGRAM to exit Programming Mode or press SELECT to proceed to next WINDROWER SETUP action.

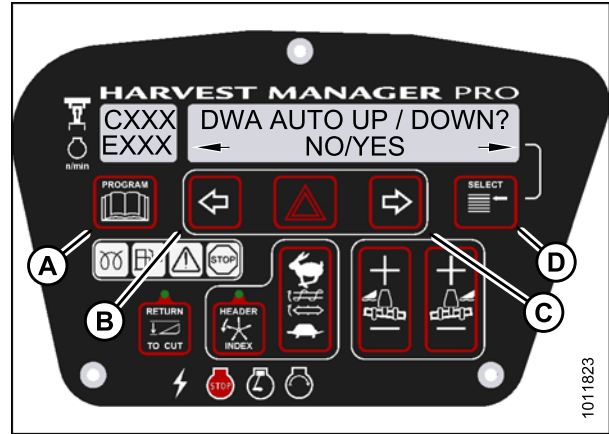


Figure 4.50: DWA Auto Up/Down

4.4.11 Setting the Auto Raise Height

NOTE:

The header **MUST** be attached to the windrower to perform this procedure. The cab display module (CDM) automatically adjusts its programming for each header.

- Turn ignition key to RUN, or start the engine.
- Press PROGRAM (A) and SELECT (C) on cab display module (CDM) to enter Programming Mode.
 - WINDROWER SETUP? is displayed on the upper line.
 - NO/YES is displayed on the lower line.
- Press right (B) arrow to select YES. Press SELECT (C).
 - SET KNIFE SPEED? is displayed on the upper line.

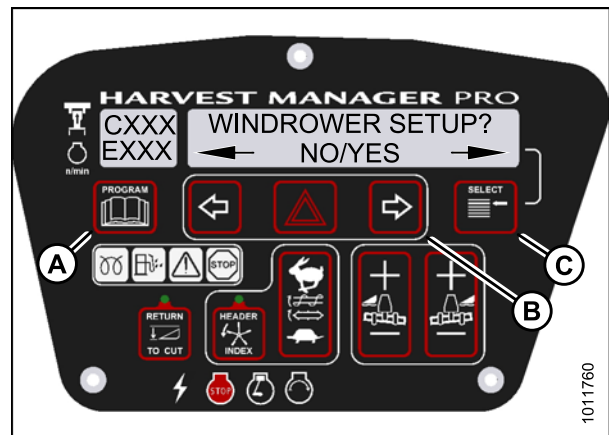


Figure 4.51: CDM Programming Buttons

CAB DISPLAY MODULE (CDM)

4. Press SELECT (D) until AUTO RAISE HEIGHT? is displayed on the upper line.

- Last measurement is displayed on the lower line.

NOTE:

The auto raise height ranges from 4.0 (minimum) to 9.5 (maximum), in 0.5 increments. A setting of 10 disables the auto raise function.

5. Press left (B) arrow or right (C) arrow to change auto-raise height.
6. Press PROGRAM (A) to exit Programming Mode or press SELECT (D) to proceed to next WINDROWER SETUP action.

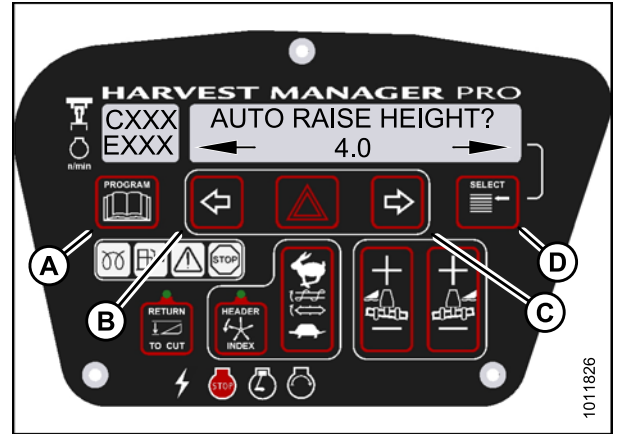


Figure 4.52: Auto Raise Height

4.4.12 Activating the Hay Conditioner

NOTE:

- This procedure is for draper headers only.
- The header **MUST** be attached to the windrower to perform this procedure. The cab display module (CDM) automatically adjusts its programming for each header.

1. Turn ignition key to RUN, or start the engine.
2. Press PROGRAM (A) and SELECT (C) on cab display module (CDM) to enter Programming Mode.
 - WINDROWER SETUP? is displayed on the upper line.
 - NO/YES is displayed on the lower line.
3. Press right (B) arrow to select YES. Press SELECT (C).
 - SET KNIFE SPEED? is displayed on the upper line.

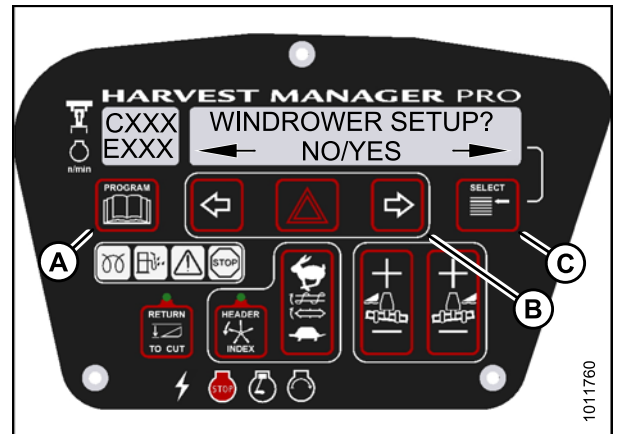


Figure 4.53: CDM Programming Buttons

CAB DISPLAY MODULE (CDM)

4. Press SELECT (C) until HAY CONDITIONER? is displayed on the upper line.
 - NO/YES is displayed on the lower line.
5. Press right (B) arrow to select YES. Press SELECT (C).
6. Press PROGRAM (A) to exit Programming Mode or press SELECT (C) to proceed to next WINDROWER SETUP action.

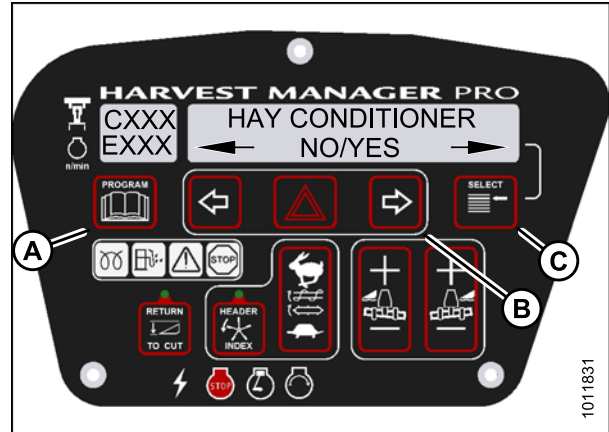


Figure 4.54: Hay Conditioner

4.4.13 Displaying Reel Speed

NOTE:

- This procedure is for draper and auger headers. It does not apply to rotary disc headers.
 - The header **MUST** be attached to the windrower to perform this procedure. The cab display module (CDM) automatically adjusts its programming for each header.
1. Turn ignition key to RUN, or start the engine.
 2. Press PROGRAM (A) and SELECT (C) on CDM to enter Programming Mode.
 - WINDROWER SETUP? is displayed on the upper line.
 - NO/YES is displayed on the lower line.
 3. Press right (B) arrow to select YES. Press SELECT (C).
 - SET KNIFE SPEED? is displayed on the upper line.

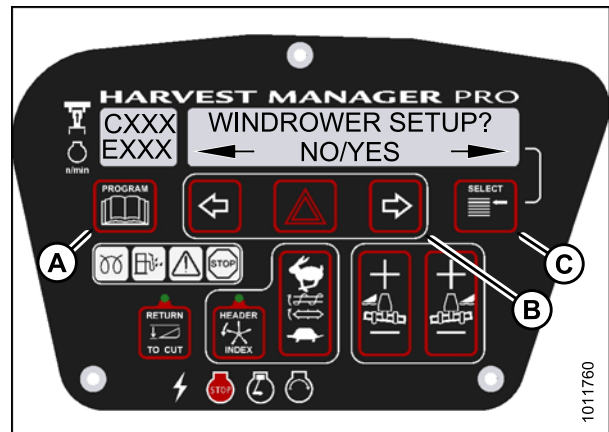


Figure 4.55: CDM Programming Buttons

CAB DISPLAY MODULE (CDM)

4. Press SELECT (D) until HEADER REEL SPEED? is displayed on the upper line.
 - RPM/MPH or RPM/KPH is displayed on the lower line.
5. Press left (B) or right (C) arrow to select either Imperial or Metric units. Press SELECT (D).
6. Press PROGRAM (A) to exit Programming Mode or press SELECT (D) to proceed to next WINDROWER SETUP action.

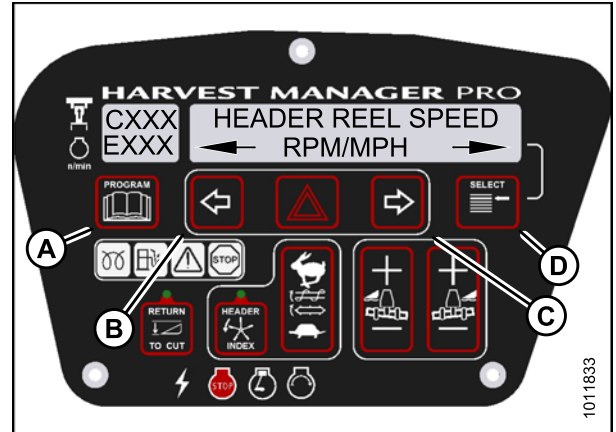


Figure 4.56: Reel Speed Display

4.4.14 Setting the Windrower's Tire Size

1. Turn ignition key to RUN, or start the engine.
2. Press PROGRAM (A) and SELECT (C) on cab display module (CDM) to enter Programming Mode.
 - WINDROWER SETUP? is displayed on the upper line.
 - NO/YES is displayed on the lower line.
3. Press right (B) arrow to select YES. Press SELECT (C).
 - SET KNIFE SPEED? is displayed on the upper line.

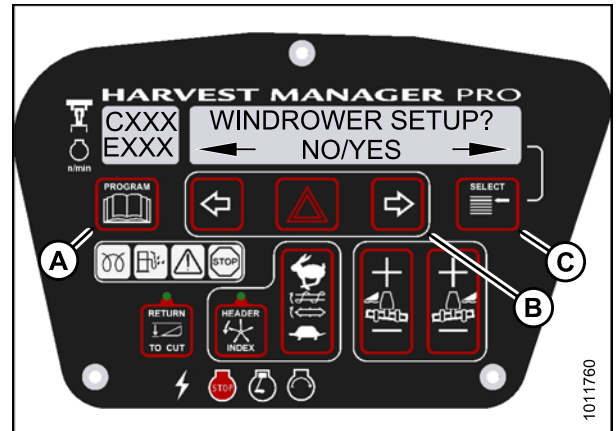


Figure 4.57: CDM Programming Buttons

4. Press SELECT (D) until SET TIRE SIZE? is displayed on the upper line.
 - Currently installed tire size is displayed on the lower line.

NOTE:

The following tire sizes are available:

- 18.4 x 26 TURF
- 18.4 x 26 BAR
- 23.1 x 26 TURF
- 600 – 65 R28

5. Press left (B) or right (C) arrow and select tire size. Press SELECT (D).
6. Press PROGRAM (A) to exit Programming Mode or press SELECT (D) to proceed to next WINDROWER SETUP action.

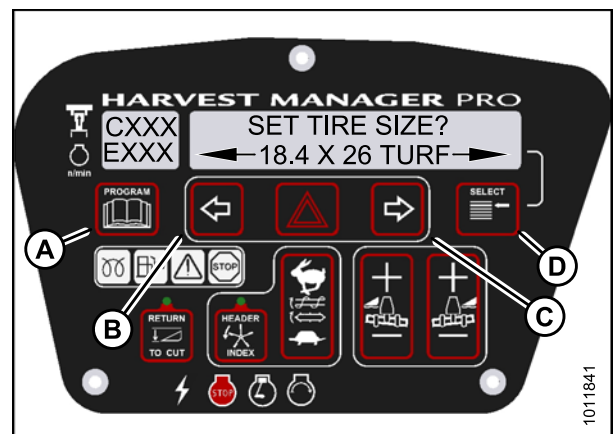


Figure 4.58: Tire Size

4.4.15 Setting the Engine Intermediate Speed Control (ISC) RPM

NOTE:

The engine **MUST** be running to perform this procedure.

1. Turn ignition key to RUN, or start the engine.
2. Press PROGRAM (A) and SELECT (C) on cab display module (CDM) to enter Programming Mode.
 - WINDROWER SETUP? is displayed on the upper line.
 - NO/YES is displayed on the lower line.
3. Press right (B) arrow to select YES. Press SELECT (C).
 - SET KNIFE SPEED? is displayed on the upper line.

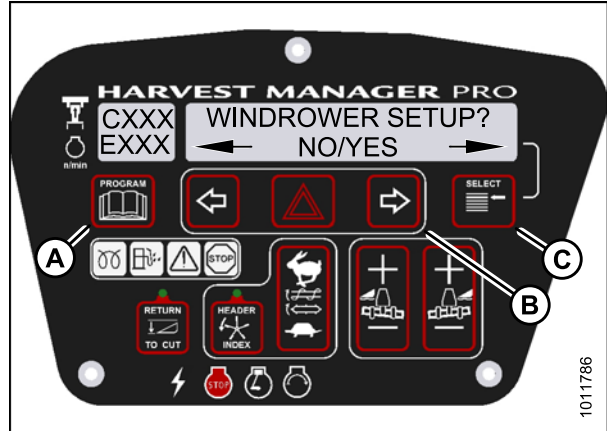


Figure 4.59: CDM Programming Buttons

4. Press SELECT (C) until SET ENGINE ISC RPM? is displayed on the upper line.
 - NO/YES is displayed on the lower line.
5. Press right (B) arrow to select YES. Press SELECT (C).
 - PRESS HAZARD TO SET is displayed on the upper line.
 - ISC RPM ##### is displayed on the lower line.

Table 4.1 ISC Settings

ISC and RPM		
Off ⁵	1	2
High Idle	2050	1900

NOTE:

The previously selected ISC rpm will be flashing.

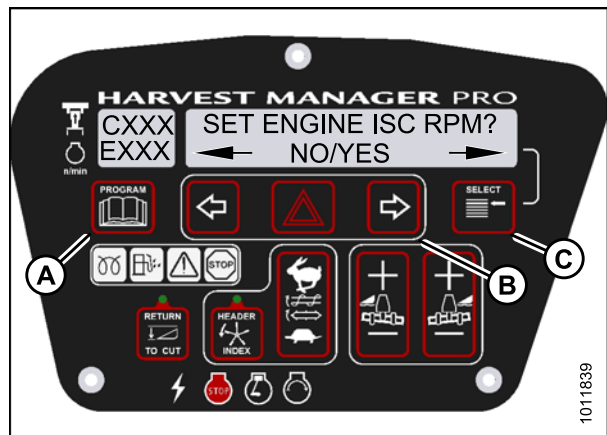


Figure 4.60: Engine ISC RPM

5. Off is always used when the header is not engaged.

CAB DISPLAY MODULE (CDM)

6. Press right (C) arrow to cycle between rpm options. Press HAZARD (B) to set.
7. Press Select (D).
 - EXIT ENGINE ISC? is displayed on the upper line.
 - NO/YES is displayed on the lower line.
8. Press right (C) arrow to select YES. Press SELECT (D).
9. Press PROGRAM (A) to exit Programming Mode.

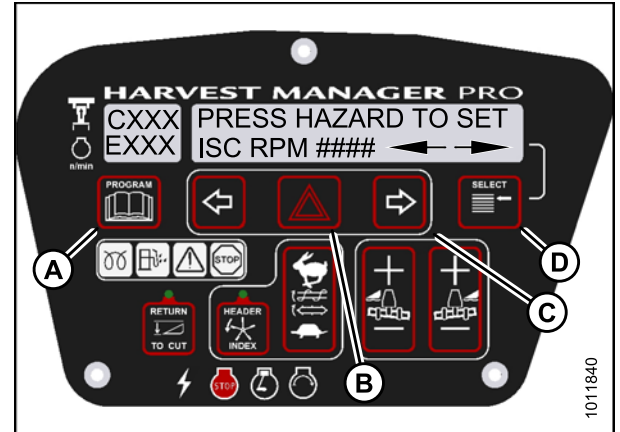


Figure 4.61: ISC RPM

4.4.16 Clearing Sub-Acres

1. With the key in the ON position, and the operator's station in cab-forward mode, press SELECT until the cab display module (CDM) displays sub-acres on the bottom line. Then press and hold the PROGRAM (A) button on the CDM until the sub-acres are cleared.



Figure 4.62: Cab Display Module (CDM)

4.5 Activating Cab Display Lockouts

You can lock some of the header functions controlled by the cab display module (CDM) to prevent accidental changes to header settings. You can use this feature to keep header settings constant when several different Operators use the windrower.

NOTE:

FUNCTION LOCKED flashes on CDM when locked header function switch is pressed.

4.5.1 Activating Knife Speed Control Lockout

NOTE:

The header **MUST** be attached to the windrower to perform this procedure. The cab display module (CDM) automatically adjusts its programming for each header.

1. Turn ignition key to RUN, or start the engine.
2. Press PROGRAM (A) and SELECT (C) on cab display module (CDM) to enter Programming Mode.
 - WINDROWER SETUP? is displayed on the upper line.
 - NO/YES is displayed on the lower line.
3. Press right (B) arrow to select YES. Press SELECT (C).
 - SET KNIFE SPEED? is displayed on the upper line.

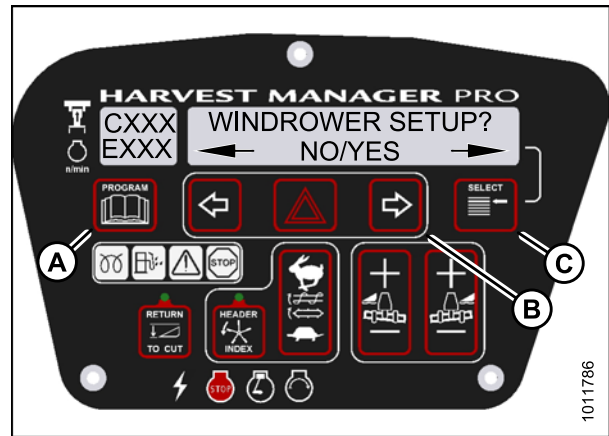


Figure 4.63: CDM Programming Buttons

4. Press SELECT (B) until SET CONTROL LOCKS? is displayed on the upper line.
 - NO/YES is displayed on the lower line.
5. Press right (A) arrow to select YES. Press SELECT (B).

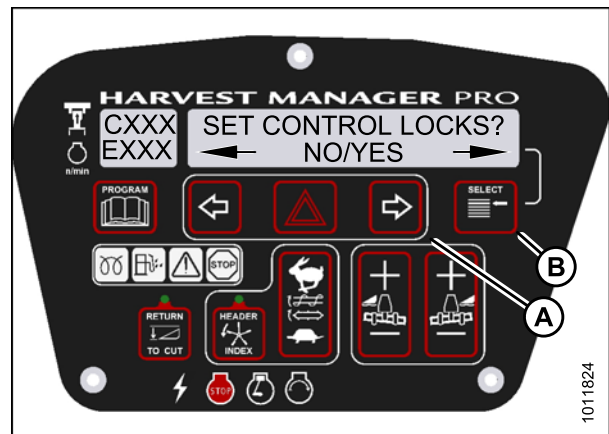


Figure 4.64: Control Locks

CAB DISPLAY MODULE (CDM)

- Press SELECT (D) until KNIFE SPEED is displayed on the upper line.
 - ENABLED/LOCKED is displayed on the lower line.
- Press left arrow (B) to enable KNIFE SPEED control switch, or press right arrow (C) to lock KNIFE SPEED control switch.
- Press PROGRAM (A) to exit Programming Mode or press SELECT (D) to proceed to next WINDROWER SETUP action.

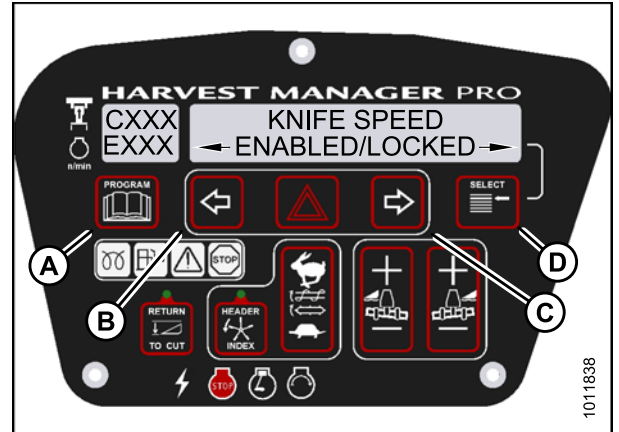


Figure 4.65: Knife Speed Control Lock

4.5.2 Activating Rotary Disc Speed Control Lockout

NOTE:

- This procedure is for rotary disc headers only.
 - The header **MUST** be attached to the windrower to perform this procedure. The cab display module (CDM) automatically adjusts its programming for each header.
- Turn ignition key to RUN, or start the engine.
 - Press PROGRAM (A) and SELECT (C) on cab display module (CDM) to enter Programming Mode.
 - WINDROWER SETUP? is displayed on the upper line.
 - NO/YES is displayed on the lower line.
 - Press right (B) arrow to select YES. Press SELECT (C).
 - SET KNIFE SPEED? is displayed on the upper line.

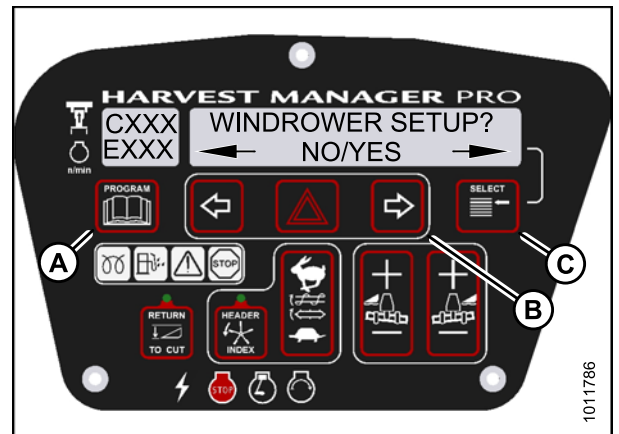


Figure 4.66: CDM Programming Buttons

CAB DISPLAY MODULE (CDM)

4. Press SELECT (B) until SET CONTROL LOCKS? is displayed on the upper line.
 - NO/YES is displayed on the lower line.
5. Press right (A) arrow to select YES. Press SELECT (B).



Figure 4.67: Control Locks

6. Press SELECT (D) until DISK SPEED is displayed on the upper line.
 - ENABLED/LOCKED is displayed on the lower line.
7. Press left arrow (B) to enable DISK SPEED control switch, or press right arrow (C) to lock DISK SPEED control switch.
8. Press PROGRAM (A) to exit Programming Mode or press SELECT (D) to proceed to next WINDROWER SETUP action.

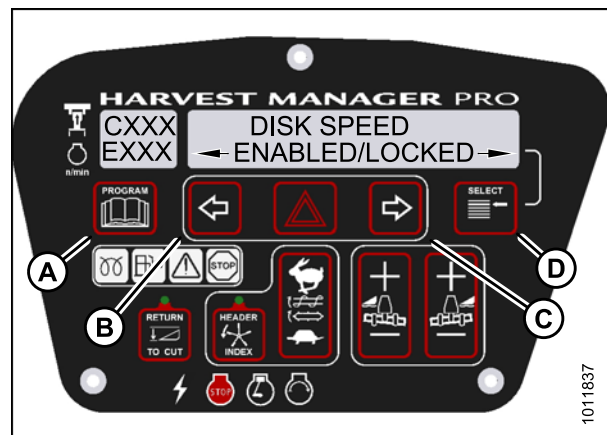


Figure 4.68: Disc Speed Control Lock

4.5.3 Activating the Header Float Control Lockout

NOTE:

The header **MUST** be attached to the windrower to perform this procedure. The cab display module (CDM) automatically adjusts its programming for each header.

1. Turn ignition key to RUN, or start the engine.
2. Press PROGRAM (A) and SELECT (C) on cab display module (CDM) to enter Programming Mode.
 - WINDROWER SETUP? is displayed on the upper line.
 - NO/YES is displayed on the lower line.
3. Press right (B) arrow to select YES. Press SELECT (C).
 - SET KNIFE SPEED? is displayed on the upper line.

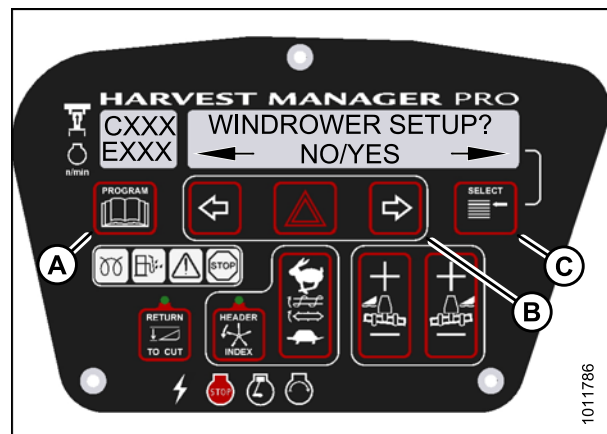


Figure 4.69: CDM Programming Buttons

CAB DISPLAY MODULE (CDM)

4. Press SELECT (B) until SET CONTROL LOCKS? is displayed on the upper line.
 - NO/YES is displayed on the lower line.
5. Press right (A) arrow to select YES. Press SELECT (B).

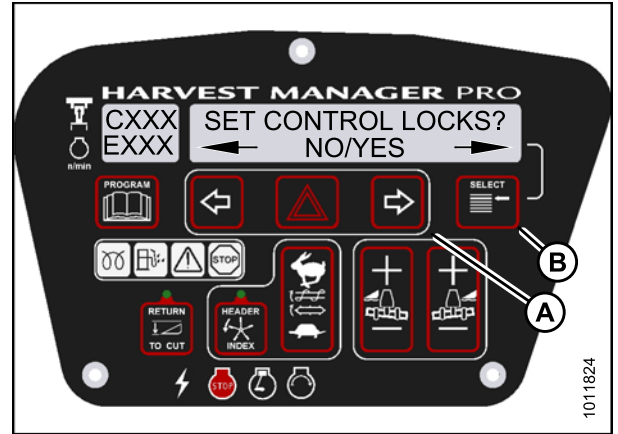


Figure 4.70: Control Locks

6. Press SELECT (D) until HEADER FLOAT is displayed on the upper line.
 - ENABLED/LOCKED is displayed on the lower line.
7. Press left arrow (B) to enable HEADER FLOAT control switch, or press right arrow (C) to lock HEADER FLOAT control switch.
8. Press PROGRAM (A) to exit Programming Mode or press SELECT (D) to proceed to next WINDROWER SETUP action.

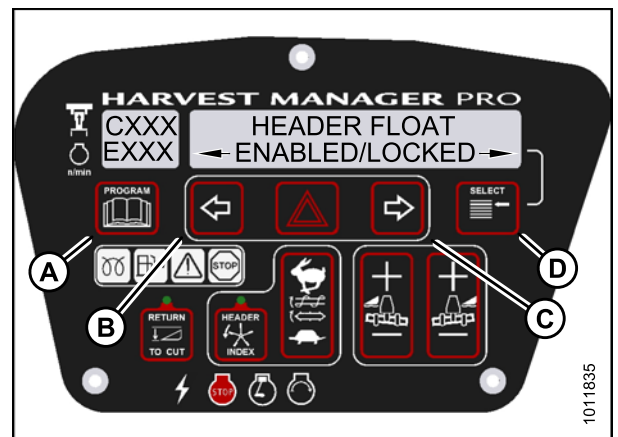


Figure 4.71: Header Float Control Lock

4.5.4 Activating the Draper Speed Control Lockout

NOTE:

- This procedure is for draper headers only.
- The header **MUST** be attached to the windrower to perform this procedure. The cab display module (CDM) automatically adjusts its programming for each header.

CAB DISPLAY MODULE (CDM)

1. Turn ignition key to RUN, or start the engine.
2. Press PROGRAM (A) and SELECT (C) on cab display module (CDM) to enter Programming Mode.
 - WINDROWER SETUP? is displayed on the upper line.
 - NO/YES is displayed on the lower line.
3. Press right (B) arrow to select YES. Press SELECT (C).
 - SET KNIFE SPEED? is displayed on the upper line.

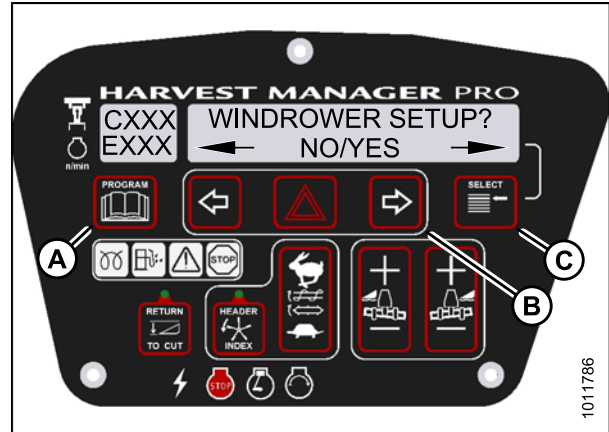


Figure 4.72: CDM Programming Buttons

4. Press SELECT (B) until SET CONTROL LOCKS? is displayed on the upper line.
 - NO/YES is displayed on the lower line.
5. Press right (A) arrow to select YES. Press SELECT (B).



Figure 4.73: Control Locks

6. Press SELECT (D) until DRAPER SPEED is displayed on the upper line.
 - ENABLED/LOCKED is displayed on the lower line.
7. Press left arrow (B) to enable DRAPER SPEED control switch, or press right arrow (C) to lock DRAPER SPEED control switch.
8. Press PROGRAM (A) to exit Programming Mode or press SELECT (D) to proceed to next WINDROWER SETUP action.

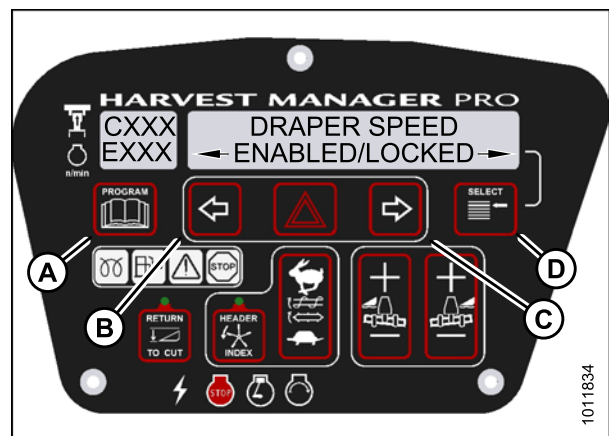


Figure 4.74: Draper Control Lock

CAB DISPLAY MODULE (CDM)

4.5.5 Activating the Auger Speed Control Lockout

NOTE:

- This procedure is for A40-D Headers only.
- An auger header **MUST** be attached to the windrower to perform this procedure. The cab display module (CDM) automatically adjusts its programming for each header.

1. Turn ignition key to RUN, or start the engine.
2. Press PROGRAM (A) and SELECT (C) on cab display module (CDM) to enter Programming Mode.
 - WINDROWER SETUP? is displayed on the upper line.
 - NO/YES is displayed on the lower line.
3. Press right (B) arrow to select YES. Press SELECT (C).
 - SET KNIFE SPEED? is displayed on the upper line.

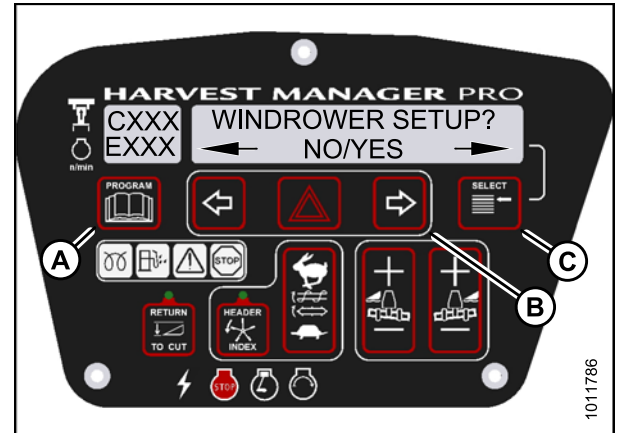


Figure 4.75: CDM Programming Buttons

4. Press SELECT (B) until SET CONTROL LOCKS? is displayed on the upper line.
 - NO/YES is displayed on the lower line.
5. Press right (A) arrow to select YES. Press SELECT (B).

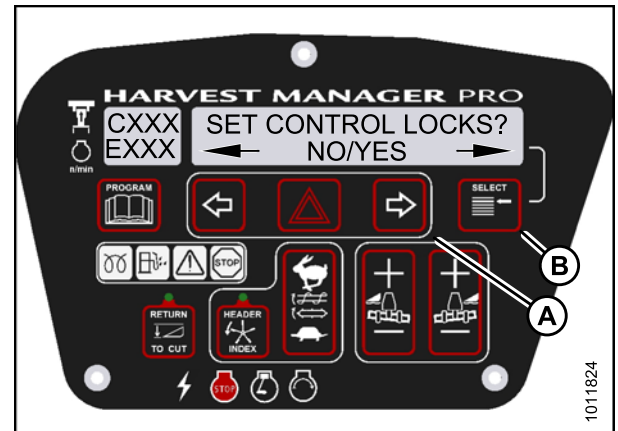


Figure 4.76: Control Locks

6. Press SELECT (D) until AUGER SPEED is displayed on the upper line.
 - ENABLED/LOCKED is displayed on the lower line.
7. Press left (B) arrow to enable AUGER SPEED control switch. Press right (C) arrow to lock AUGER SPEED control switch.
8. Press PROGRAM (A) to exit Programming Mode, or press SELECT (D) to proceed to next WINDROWER SETUP action.

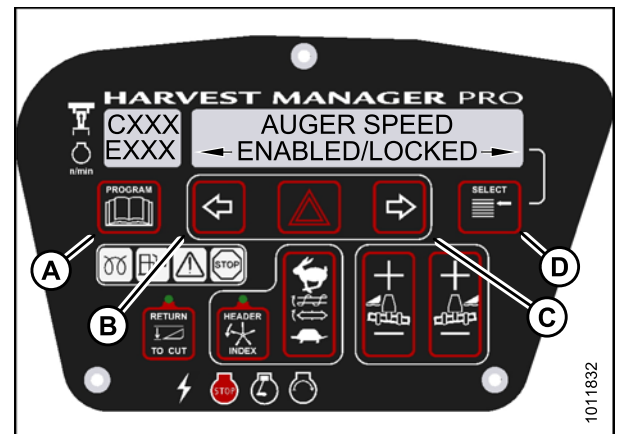


Figure 4.77: Auger Control Lock

CAB DISPLAY MODULE (CDM)

4.5.6 Activating the Reel Speed Control Lockout

NOTE:

The header **MUST** be attached to the windrower to perform this procedure. The cab display module (CDM) automatically adjusts its programming for each header.

1. Turn ignition key to RUN, or start the engine.
2. Press PROGRAM (A) and SELECT (C) on cab display module (CDM) to enter Programming Mode.
 - WINDROWER SETUP? is displayed on the upper line.
 - NO/YES is displayed on the lower line.
3. Press right (B) arrow to select YES. Press SELECT (C).
 - SET KNIFE SPEED? is displayed on the upper line.

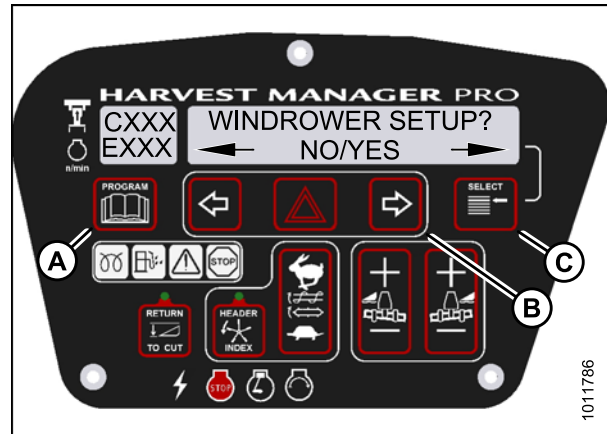


Figure 4.78: CDM Programming Buttons

4. Press SELECT (B) until SET CONTROL LOCKS? is displayed on the upper line.
 - NO/YES is displayed on the lower line.
5. Press right (A) arrow to select YES. Press SELECT (B).

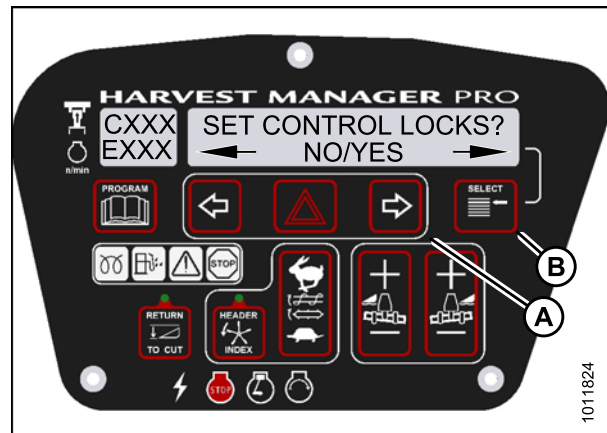


Figure 4.79: Control Locks

6. Press SELECT (D) until REEL SPEED is displayed on the upper line.
 - ENABLED/LOCKED is displayed on the lower line.
7. Press left (B) arrow to enable REEL SPEED control switch. Press right (C) arrow to lock REEL SPEED control switch.
8. Press PROGRAM (A) to exit Programming Mode, or press SELECT (D) to proceed to next WINDROWER SETUP action.

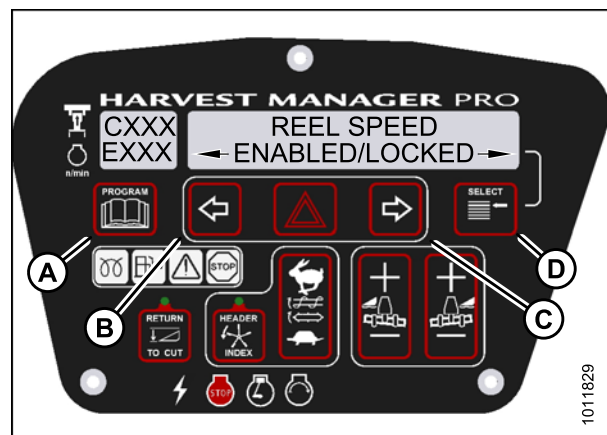


Figure 4.80: Reel Speed Control Lock

CAB DISPLAY MODULE (CDM)

4.5.7 Activating the Reel Fore-Aft Control Lockout

NOTE:

- This procedure is for draper headers only.
- The header **MUST** be attached to the windrower to perform this procedure. The cab display module (CDM) automatically adjusts its programming for each header.

1. Turn ignition key to RUN, or start the engine.
2. Press PROGRAM (A) and SELECT (C) on cab display module (CDM) to enter Programming Mode.
 - WINDROWER SETUP? is displayed on the upper line.
 - NO/YES is displayed on the lower line.
3. Press right (B) arrow to select YES. Press SELECT (C).
 - SET KNIFE SPEED? is displayed on the upper line.

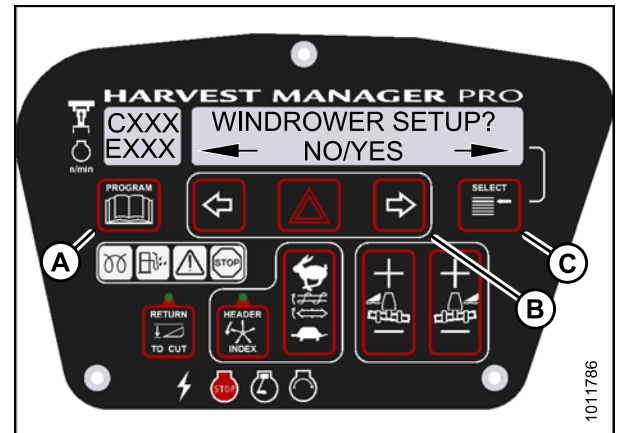


Figure 4.81: CDM Programming Buttons

4. Press SELECT (B) until SET CONTROL LOCKS? is displayed on the upper line.
 - NO/YES is displayed on the lower line.
5. Press right (A) arrow to select YES. Press SELECT (B).



Figure 4.82: Control Locks

6. Press SELECT (D) until REEL FORE/AFT is displayed on the upper line.
 - ENABLED/LOCKED is displayed on the lower line.
7. Press left (B) arrow to enable REEL FORE/AFT control switch. Press right (C) arrow to lock REEL FORE/AFT control switch.
8. Press PROGRAM (A) to exit Programming Mode, or press SELECT (D) to proceed to next WINDROWER SETUP action.

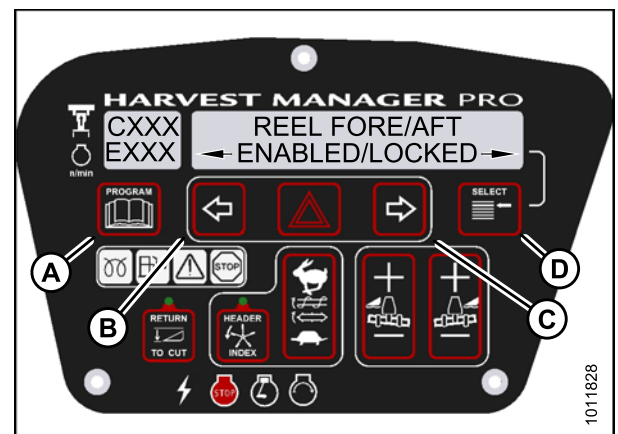


Figure 4.83: Reel Fore-Aft Control Lock

4.5.8 Activating the Header Tilt Control Lockout

NOTE:

- The header **MUST** be attached to the windrower to perform this procedure. The cab display module (CDM) automatically adjusts its programming for each header.

- Turn ignition key to RUN, or start the engine.
- Press PROGRAM (A) and SELECT (C) on cab display module (CDM) to enter Programming Mode.
 - WINDROWER SETUP? is displayed on the upper line.
 - NO/YES is displayed on the lower line.
- Press right (B) arrow to select YES. Press SELECT (C).
 - SET KNIFE SPEED? is displayed on the upper line.

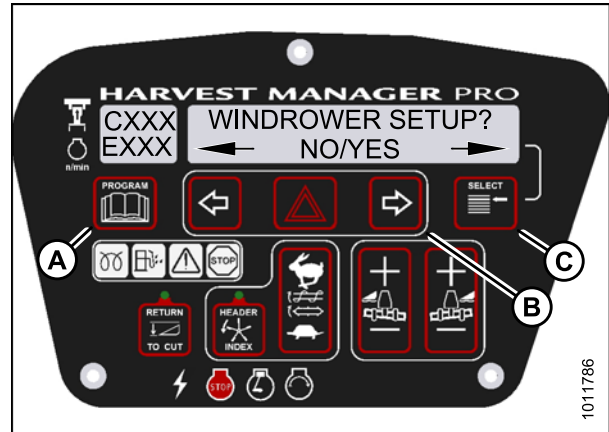


Figure 4.84: CDM Programming Buttons

- Press SELECT (B) until SET CONTROL LOCKS? is displayed on the upper line.
 - NO/YES is displayed on the lower line.
- Press right (A) arrow to select YES. Press SELECT (B).

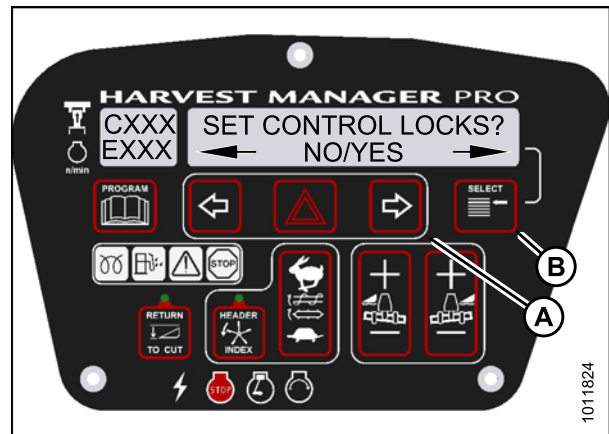


Figure 4.85: Control Locks

- Press SELECT (D) until HEADER TILT is displayed on the upper line.
 - ENABLED/LOCKED is displayed on the lower line.
- Press left (B) arrow to enable HEADER TILT control switch. Press right (C) arrow to lock HEADER TILT control switch.
- Press PROGRAM (A) to exit Programming Mode, or press SELECT (D) to proceed to next WINDROWER SETUP action.

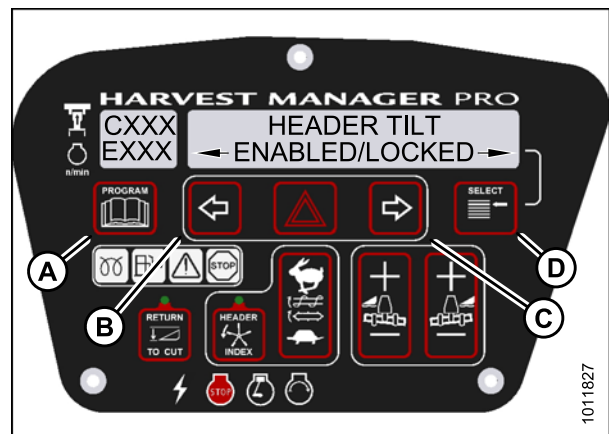


Figure 4.86: Header Tilt Control Lock

4.6 Displaying Activated Cab Display Lockouts

Displaying the activated control locks allows you to quickly determine which controls are locked on the cab display module (CDM).

1. Turn ignition key to RUN, or start the engine.
2. Press PROGRAM (A) and SELECT (C) on cab display module (CDM) to enter Programming Mode.
 - WINDROWER SETUP? is displayed on the upper line.
 - NO/YES is displayed on the lower line.
3. Press right (B) arrow to select YES. Press SELECT (C).
 - SET KNIFE SPEED? is displayed on the upper line.

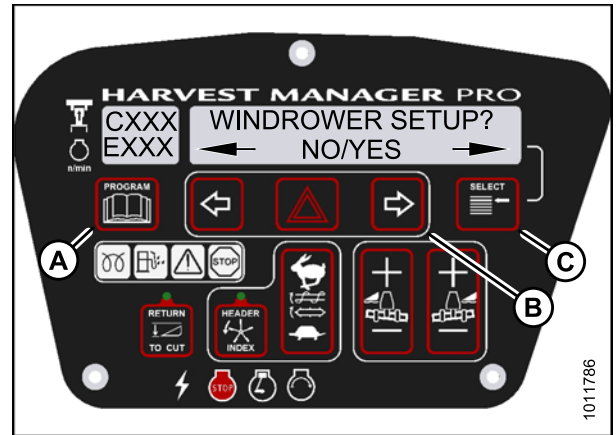


Figure 4.87: CDM Programming Buttons

4. Press SELECT (B) until VIEW CONTROL LOCKS? is displayed on the upper line.
 - NO/YES is displayed on the lower line.
5. Press right (A) arrow to select YES. Press SELECT (B).
 - HEADER TILT is displayed on the upper line.
 - The control switch status is displayed on the lower line. The hours displayed indicate when a switch was enabled or locked.

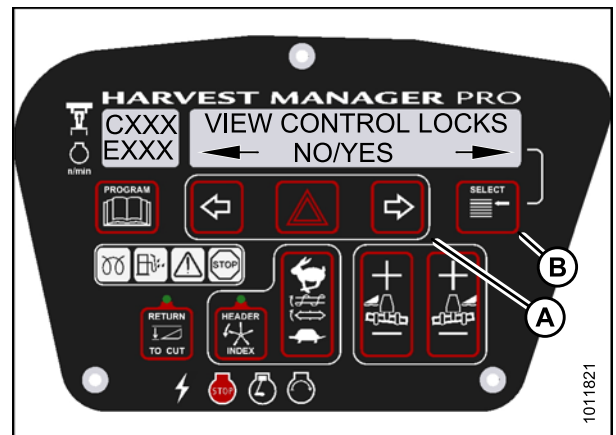


Figure 4.88: Control Locks

CAB DISPLAY MODULE (CDM)

6. Press left (B) or right (C) arrow to cycle between control switch lock outs. The displayed control switches are as follows:
 - HEADER TILT
 - HEADER FLOAT
 - REEL FORE/AFT
 - DRAPER SPEED
 - AUGER SPEED
 - KNIFE SPEED
 - DISK SPEED
 - REEL SPEED

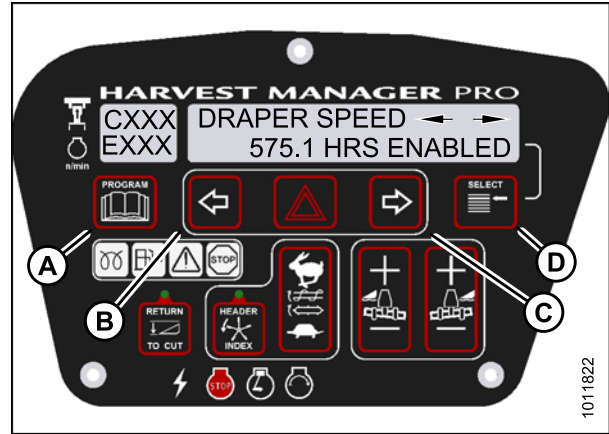


Figure 4.89: Control Locks

NOTE:

Not all control locks apply to every header.

7. Press SELECT.
 - EXIT VIEW LOCKOUTS? is displayed on the upper line.
 - NO/YES is displayed on the lower line.
8. Press right to select YES.
9. Press PROGRAM to exit Programming Mode or press SELECT to proceed to next WINDROWER SETUP action.

4.7 Troubleshooting Windrower Problems

4.7.1 Displaying the Windrower and Engine Error Codes

1. Turn ignition key to RUN, or start the engine.
2. Press PROGRAM (A) and SELECT (C) on cab display module (CDM) to enter Programming Mode. Press SELECT (C).
 - WINDROWER SETUP? is displayed on the upper line.
3. Press SELECT (C) until DIAGNOSTIC MODE? is displayed in upper line.
 - NO/YES is displayed on the lower line.

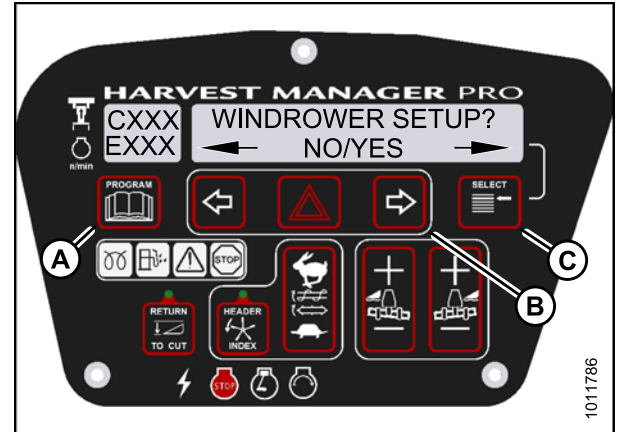


Figure 4.90: CDM Programming Buttons

4. Press right (A) arrow to select Yes. Press SELECT (B).
5. VIEW ERROR CODES? is displayed on the upper line.
 - NO/YES is displayed on the lower line.
6. Press right (A) arrow to select YES. Press SELECT (B).
 - VIEW WINDRWR CODES? is displayed on the upper line.
 - NO/YES is displayed on the lower line.

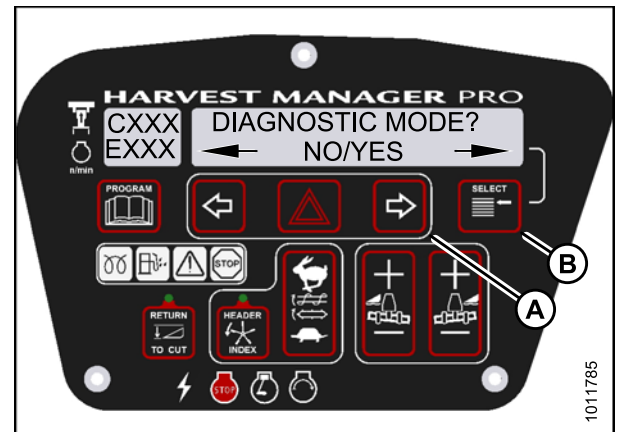


Figure 4.91: Diagnostic Functions

7. Press right (C) arrow to select YES. Press SELECT (D).
8. Press and left (B) or right (C) arrow to cycle through the last ten recorded windrower error codes until EXIT WINDROWER CODES is displayed.
9. Press right (C) arrow to select YES. Press SELECT (D).
 - VIEW ENGINE CODES is displayed on the upper line.
 - NO/YES is displayed on the lower line.

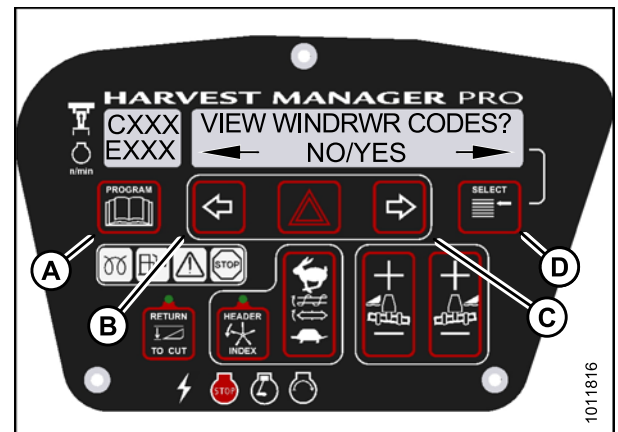


Figure 4.92: Windrower Codes

CAB DISPLAY MODULE (CDM)

10. Press right (C) arrow to select YES. Press SELECT (D).
11. Press left (B) or right (C) arrow to cycle through the last ten recorded engine error codes until EXIT ENGINE CODES is displayed.
12. Press right (C) arrow to select YES. Press SELECT (D).
13. Press PROGRAM (A) to exit Programming Mode or press SELECT (D) to proceed to next DIAGNOSTIC MODE.

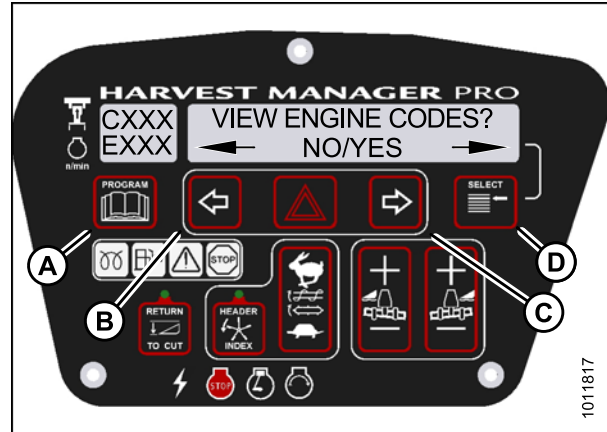


Figure 4.93: Engine Codes

4.7.2 Switching the Installed Header Sensors ON or OFF

You can selectively enable or disable header sensors in the event of a malfunction or as part of a troubleshooting routine.

NOTE:

- The header **MUST** be attached to the windrower to perform this procedure. The cab display module (CDM) automatically adjusts its programming for each header.
- Disabled sensors flash the word SENSOR on CDM during regular operation.

1. Turn ignition key to RUN, or start the engine.
2. Press PROGRAM (A) and SELECT (C) on cab display module (CDM) to enter Programming Mode.
 - WINDROWER SETUP? is displayed on the upper line.
 - NO/YES is displayed on the lower line.
3. Press SELECT (C) until DIAGNOSTIC MODE? is displayed on the upper line.
 - NO/YES is displayed on the lower line.
4. Press right (B) arrow to select YES. Press SELECT (C).
 - VIEW ERROR CODES? is displayed on the upper line.

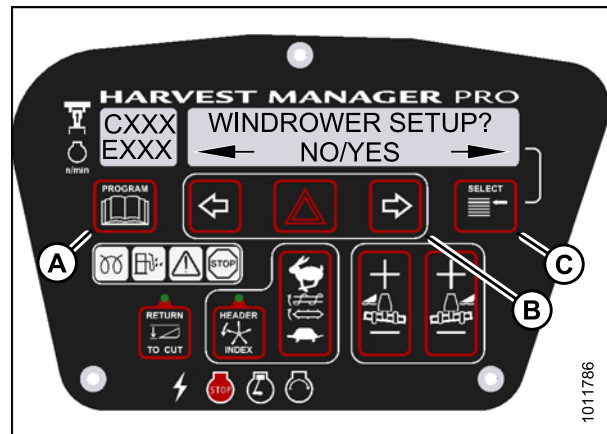


Figure 4.94: CDM Programming Buttons

CAB DISPLAY MODULE (CDM)

5. Press SELECT (B) until ENTER SENSOR SETUP? is displayed on the upper line.
 - NO/YES is displayed on the lower line.
6. Press right (A) arrow to select YES. Press SELECT (B).
 - KNIFE SPEED SENSOR is displayed on the lower line.
 - ENABLE/DISABLE is displayed on the lower line.

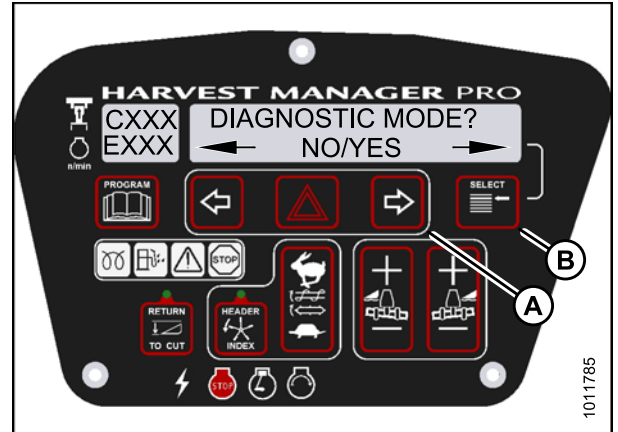


Figure 4.95: Diagnostic Functions

7. Press left (B) arrow to enable a sensor. Press right (C) arrow to disable sensor. Press SELECT (D) to confirm selection and move on to next sensor. The following sensors are available:
 - HEADER HT SENSOR
 - HEADER TILT SENSOR
 - KNIFE SPEED SENSOR
 - REEL SPEED SENSOR
 - HEADER FLOAT SENSOR
 - OVERLOAD PRESSURE⁶
 - HYD OIL TEMP SENSOR

When sensors have been modified, press SELECT (D) to display the EXIT SENSOR SETUP? selection.

8. Press right arrow to select YES. Press SELECT.
9. Press PROGRAM to exit Programming Mode or press SELECT to proceed to next DIAGNOSTIC MODE.

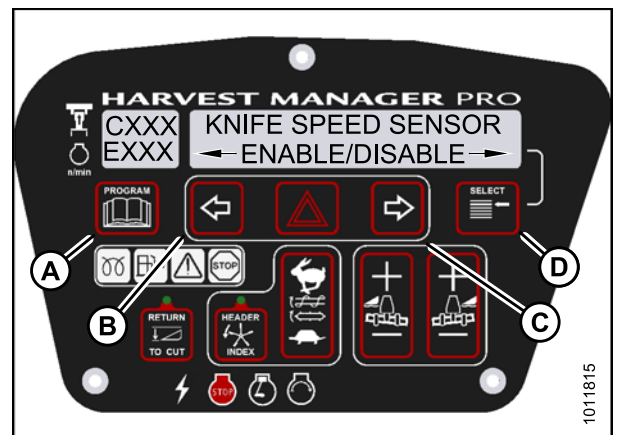


Figure 4.96: Header Sensors

4.7.3 Displaying Header Sensor Input Signals

You can display individual sensor input signals in the event of a malfunction or as part of a troubleshooting routine.

NOTE:

The header **MUST** be attached to the windrower to perform this procedure. The cab display module (CDM) automatically adjusts its programming for each header.

6. Requires installation of optional pressure sensor (MD #B5574).

CAB DISPLAY MODULE (CDM)

1. Turn ignition key to RUN, or start the engine.
2. Press PROGRAM (A) and SELECT (C) on cab display module (CDM) to enter Programming Mode.
 - WINDROWER SETUP? is displayed on the upper line.
 - NO/YES is displayed on the lower line.

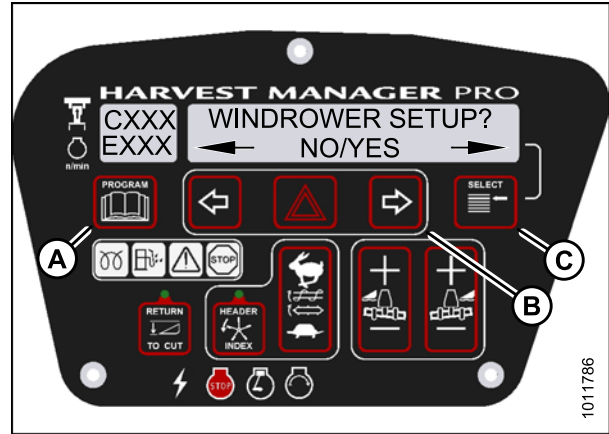


Figure 4.97: CDM Programming Buttons

3. Press SELECT (B) until DIAGNOSTIC MODE? is displayed on the upper line.
 - NO/YES is displayed on the lower line.
4. Press right (A) arrow to select YES. Press SELECT (B).
 - VIEW ERROR CODES? is displayed on the upper line.
5. Press SELECT (B) until READ SENSOR SETUP? is displayed on the upper line.
 - NO/YES is displayed on the lower line.

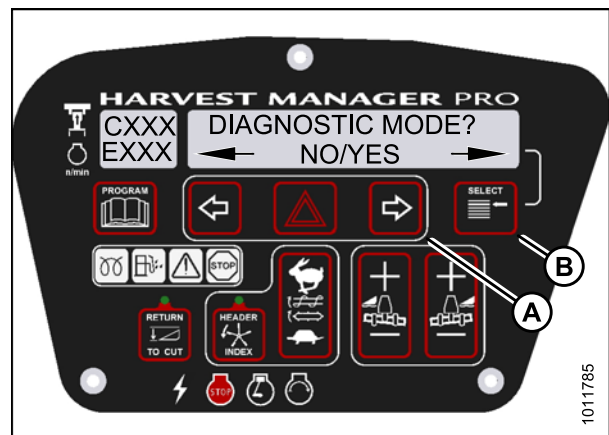


Figure 4.98: Diagnostic Functions

6. Press right (C) arrow to select YES. Press SELECT (D).
 - SENSOR INPUT is displayed on the upper line.
 - HDR HEIGHT 1.23 V is displayed on the lower line.
7. Press left (B) or right (C) arrow to cycle between individual sensor readers.
8. Press SELECT (D) to skip to EXIT READ SENSORS? selection.

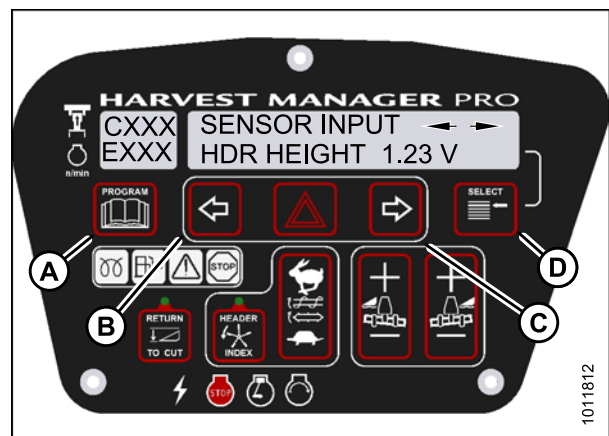


Figure 4.99: Header Sensors

9. Press right arrow to select YES. Press SELECT.
10. Press PROGRAM to exit Programming Mode or press SELECT to proceed to next DIAGNOSTIC MODE.

CAB DISPLAY MODULE (CDM)

4.7.4 Forcing a Header ID

The header must be attached to the windrower to troubleshoot certain issues. If damage has occurred to the header wiring or no header is available, you can force the windrower control module (WCM) to read a header ID. The WCM reverts to reading NO HEADER each time the engine ignition is cycled.

IMPORTANT:

Forcing a Header ID that is different from the attached header can damage the windrower and header. Doing so can lead to vibration, belt failures, and other over-speeding related problems.

1. Turn ignition key to RUN, or start the engine.
2. Press PROGRAM (A) and SELECT (C) on cab display module (CDM) to enter Programming Mode.
 - WINDROWER SETUP? is displayed on the upper line.

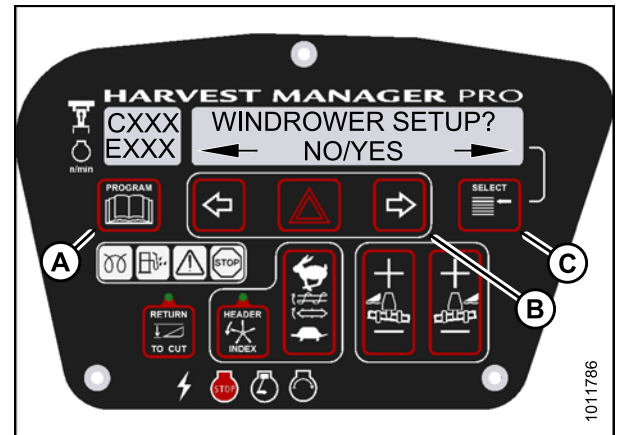


Figure 4.100: CDM Programming Buttons

3. Press SELECT (B) until DIAGNOSTIC MODE? is displayed in upper line.
 - NO/YES is displayed on the lower line.
4. Press right (A) arrow to select YES. Press SELECT (B).

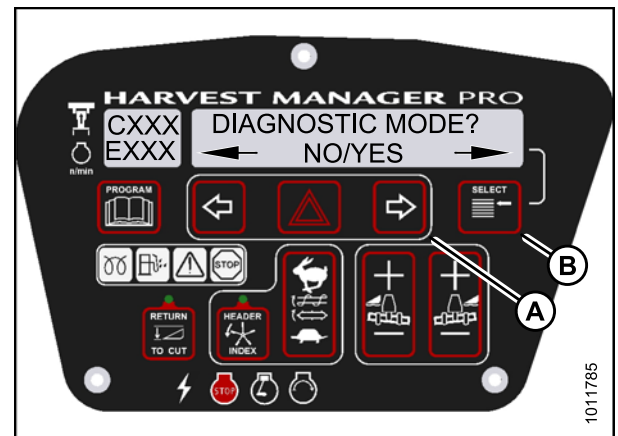


Figure 4.101: Diagnostic Functions

CAB DISPLAY MODULE (CDM)

5. Press SELECT (B) until FORCE HEADER TYPE? is displayed on the upper line.
 - NO/YES is displayed on the lower line.
6. Press right (A) arrow to select YES. Press SELECT (B).
 - SELECT HEADER TYPE is displayed on the upper line.
 - DISK HEADER is displayed on the lower line.

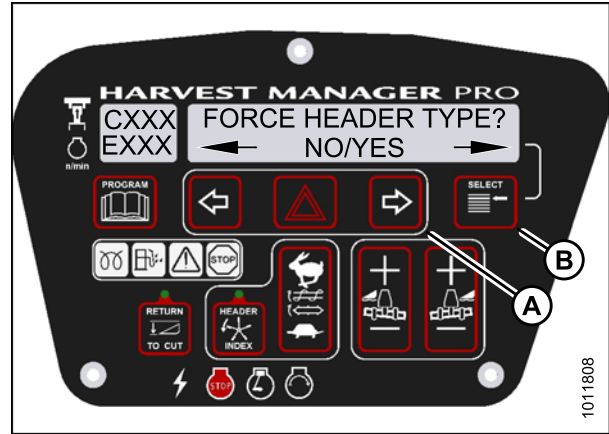


Figure 4.102: Header Type

7. Press left (A) or right (B) arrow to cycle through list of header types.
8. When desired header type is displayed press SELECT (C).
 - EXIT FORCE HEADER? is displayed on the upper line.
 - NO/YES is displayed on the lower line.
9. Press right arrow (B) to select YES. Press SELECT (C). Proceed to next DIAGNOSTIC MODE or press PROGRAM to exit programming mode.

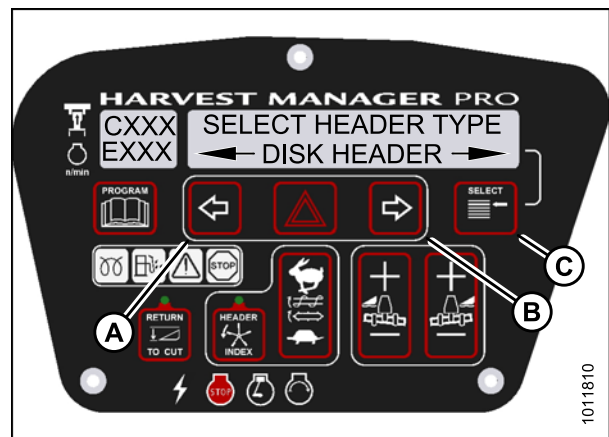


Figure 4.103: Header Type

4.8 Troubleshooting Header Problems

You can test individual parts of the header as part of a troubleshooting routine.

4.8.1 Testing the Header Up/Down Activate Function Using the Cab Display Module (CDM)

NOTE:

- The header **MUST** be attached to the windrower to perform this procedure. The cab display module (CDM) automatically adjusts its programming for each header.
- The engine **MUST** be running to perform this procedure.

1. Turn ignition key to RUN, or start the engine.
2. Press PROGRAM (A) and SELECT (C) on cab display module (CDM) to enter Programming Mode. Press SELECT (C).
 - WINDROWER SETUP? is displayed on the upper line.

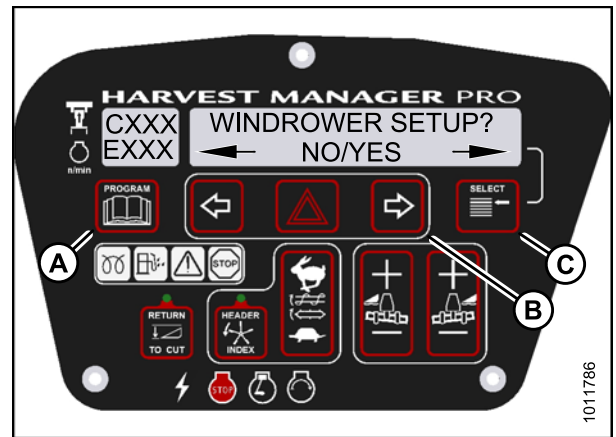


Figure 4.104: CDM Programming Buttons

3. Press SELECT (B) until DIAGNOSTIC MODE? is displayed in upper line.
 - NO/YES is displayed on the lower line.
4. Press right (A) arrow to select YES. Press SELECT (B).

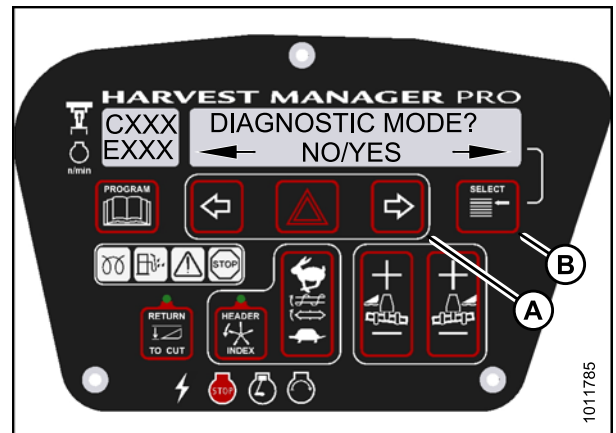


Figure 4.105: Diagnostic Functions

CAB DISPLAY MODULE (CDM)

5. Press SELECT (B) until ACTIVATE FUNCTIONS? is displayed on the upper line.
 - NO/YES is displayed on the lower line.
6. Press right (A) arrow to select YES. Press SELECT (B).



Figure 4.106: Functions

CAUTION

Check to be sure all bystanders have cleared the area.

7. Press SELECT (D) until ACTIVATE HEADER HT is displayed on the upper line.
 - DOWN/UP is displayed on the lower line.
8. Press and hold left (B) arrow to lower header, or press and hold right (C) arrow to raise header. Verify header is functioning properly.
9. Press PROGRAM (A) to exit Programming Mode or press SELECT (D) to proceed to next ACTIVATE FUNCTION.

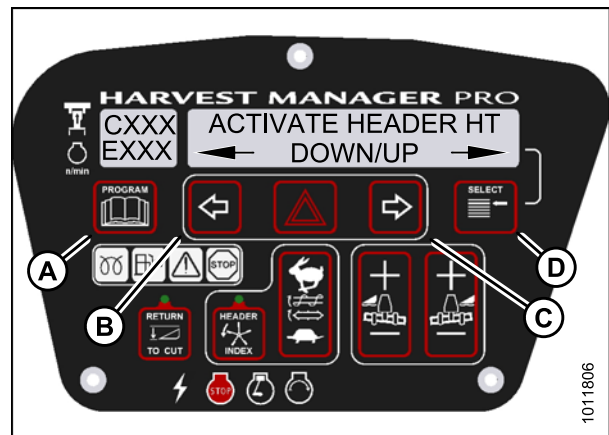


Figure 4.107: Header Height

4.8.2 Testing the Reel Up/Down Activate Function Using the Cab Display Module (CDM)

NOTE:

- This procedure is for draper headers only.
- The header **MUST** be attached to the windrower to perform this procedure. The cab display module (CDM) automatically adjusts its programming for each header.

CAB DISPLAY MODULE (CDM)

1. Turn ignition key to RUN, or start the engine.
2. Press PROGRAM (A) and SELECT (C) on cab display module (CDM) to enter Programming Mode. Press SELECT (C).

- WINDROWER SETUP? is displayed on the upper line.

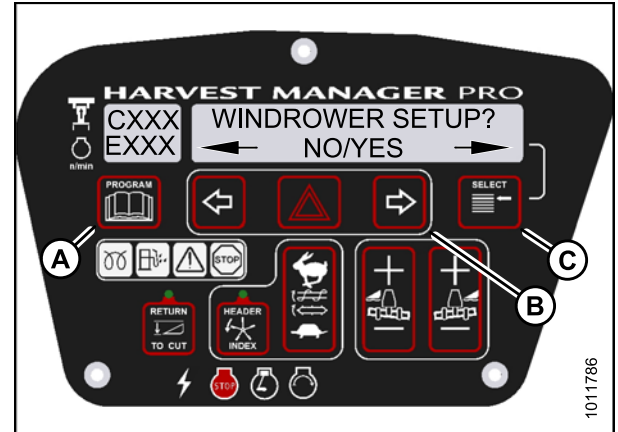


Figure 4.108: CDM Programming Buttons

3. Press SELECT (B) until DIAGNOSTIC MODE? is displayed in upper line.

- NO/YES is displayed on the lower line.

4. Press right (A) arrow to select YES. Press SELECT (B).

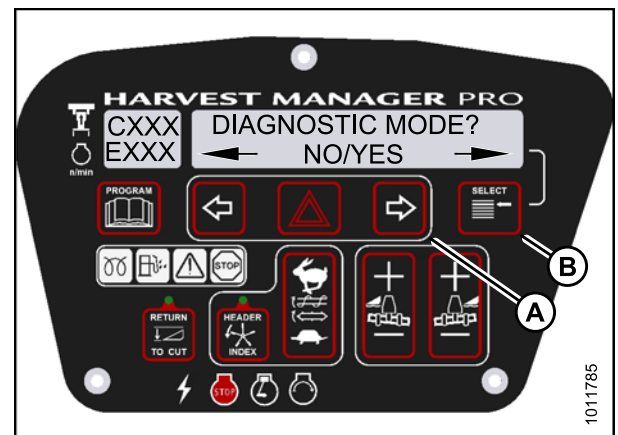


Figure 4.109: Diagnostic Functions

5. Press SELECT (D) until ACTIVATE FUNCTIONS? is displayed on the upper line.

- NO/YES is displayed on the lower line.

6. Press right (C) arrow to select YES. Press SELECT (D).

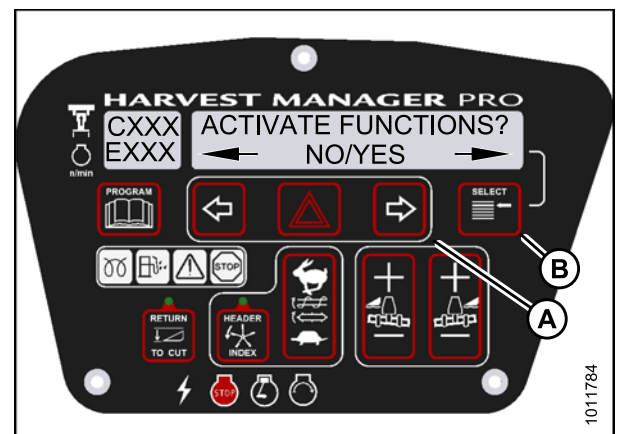


Figure 4.110: Functions

CAB DISPLAY MODULE (CDM)

CAUTION

Check to be sure all bystanders have cleared the area.

- Press SELECT (D) until ACTIVATE REEL HT is displayed on the upper line.
 - DOWN/UP is displayed on the lower line.
- Press and hold left (B) arrow to **lower** reel. Press and hold right (C) arrow to **raise** reel.
Verify reel is functioning properly.
- Press PROGRAM (A) to exit Programming Mode or press SELECT (D) to proceed to next ACTIVATE FUNCTION.

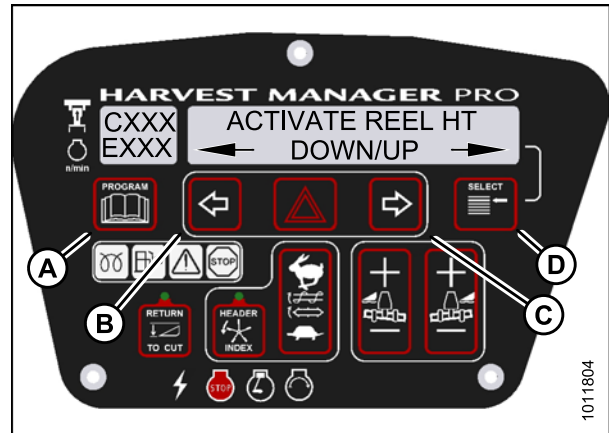


Figure 4.111: Reel Height

4.8.3 Testing the Header Tilt Activate Function Using the Cab Display Module (CDM)

NOTE:

- The header **MUST** be attached to the windrower to perform this procedure. The cab display module (CDM) automatically adjusts its programming for each header.
 - The engine **MUST** be running to perform this procedure.
- Turn ignition key to RUN, or start the engine.
 - Press PROGRAM (A) and SELECT (C) on cab display module (CDM) to enter Programming Mode.
 - WINDROWER SETUP? is displayed on the upper line.

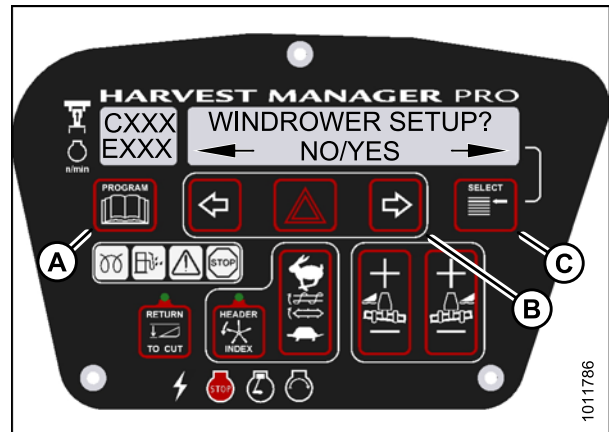


Figure 4.112: CDM Programming Buttons

CAB DISPLAY MODULE (CDM)

3. Press SELECT (B) until DIAGNOSTIC MODE? is displayed in upper line.
 - NO/YES is displayed on the lower line.
4. Press right (A) arrow to select YES. Press SELECT (B).

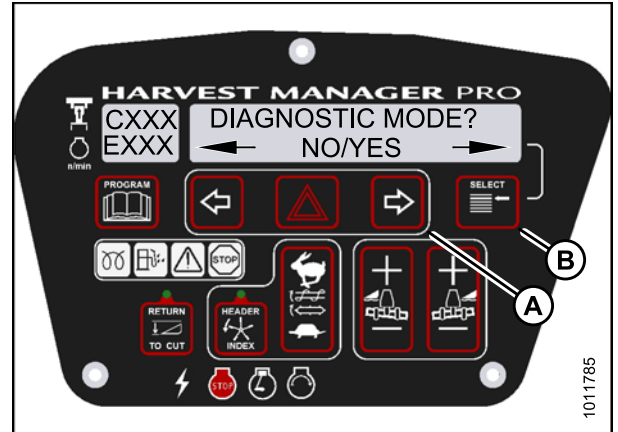


Figure 4.113: Diagnostic Functions

5. Press SELECT (D) until ACTIVATE FUNCTIONS? is displayed on the upper line.
 - NO/YES is displayed on the lower line.
6. Press right (C) arrow to select YES. Press SELECT (D).

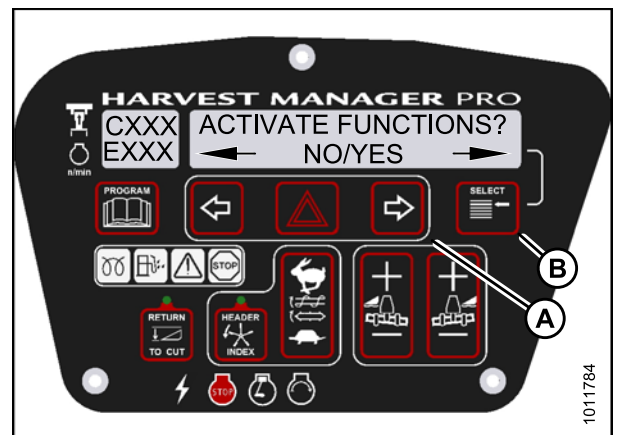


Figure 4.114: Functions

CAUTION

Check to be sure all bystanders have cleared the area.

7. Press SELECT (D) until ACTIVATE HDR TILT is displayed on the upper line.
 - IN/OUT is displayed on the lower line.
8. Press and hold left (B) arrow to **decrease** header tilt. Press and hold right (C) arrow to **increase** header tilt. **Verify header is functioning properly.**
9. Press PROGRAM (A) to exit Programming Mode or press SELECT (D) to proceed to next ACTIVATE FUNCTION.

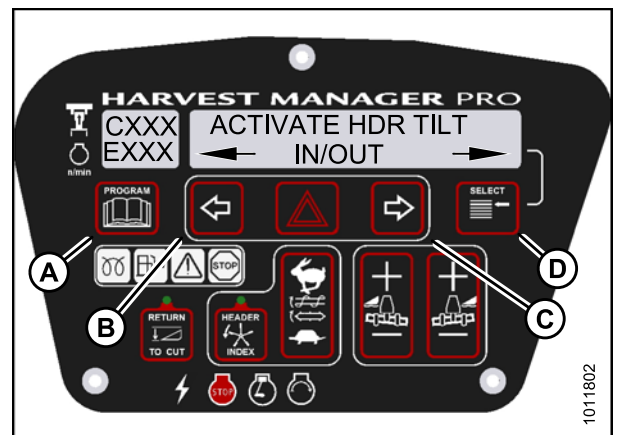


Figure 4.115: Header Tilt Angle

CAB DISPLAY MODULE (CDM)

4.8.4 Testing the Reel Fore-Aft Activate Function Using the Cab Display Module (CDM)

NOTE:

- The header **MUST** be attached to windrower to perform this procedure.
- The engine **MUST** be running to perform this procedure.

1. Turn ignition key to RUN, or start the engine.
2. Press PROGRAM (A) and SELECT (C) on cab display module (CDM) to enter Programming Mode.
 - WINDROWER SETUP? is displayed on the upper line.

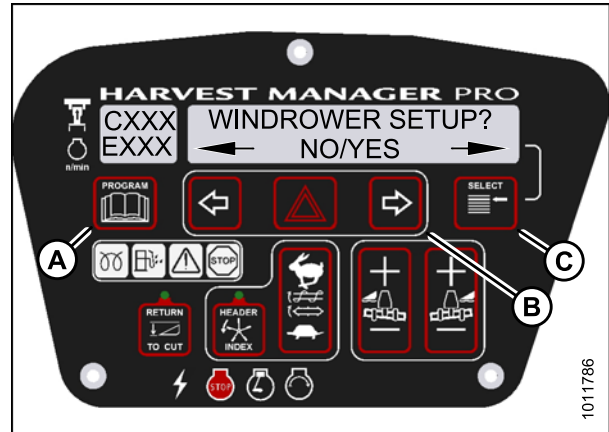


Figure 4.116: CDM Programming Buttons

3. Press SELECT (B) until DIAGNOSTIC MODE? is displayed in upper line.
 - NO/YES is displayed on the lower line.
4. Press right (A) arrow to select YES. Press SELECT (B).

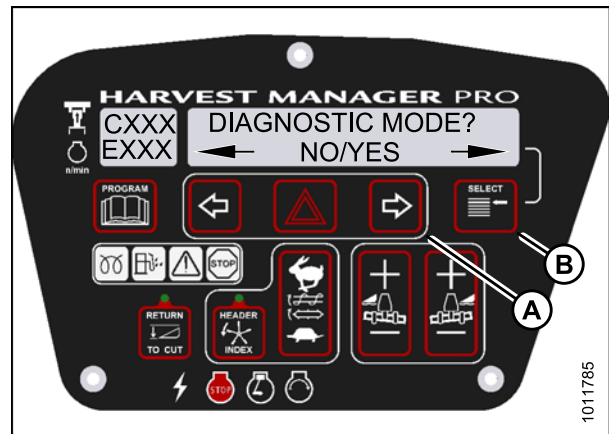


Figure 4.117: Diagnostic Functions

CAB DISPLAY MODULE (CDM)

5. Press SELECT (D) until ACTIVATE FUNCTIONS? is displayed on the upper line.
 - NO/YES is displayed on the lower line.
6. Press right (C) arrow to select YES. Press SELECT (D).

CAUTION

Check to be sure all bystanders have cleared the area.



Figure 4.118: Functions

7. Press SELECT (D) until ACTIVATE REEL F/A is displayed on the upper line.
 - FORE/AFT is displayed on the lower line.
8. Verify reel fore-aft is functioning properly.
 - a. Press and hold left (B) arrow to move reel **forward**. Press and hold right (C) arrow to move reel **backward**.
 - b. Press PROGRAM (A) to exit Programming Mode or press SELECT (D) to proceed to next ACTIVATE FUNCTION.

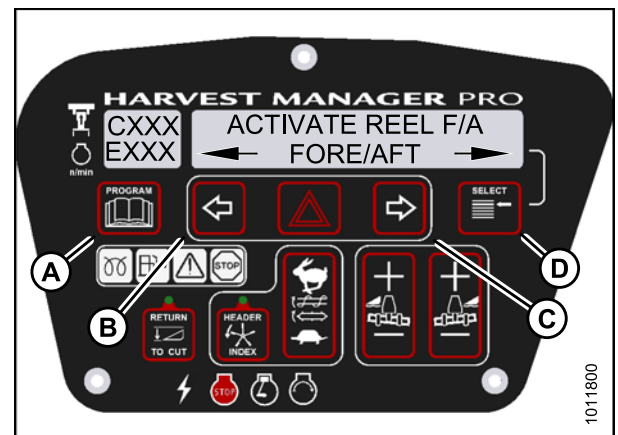


Figure 4.119: Reel Fore-Aft

4.8.5 Activating the Hydraulic Purge Using the Cab Display Module (CDM)

The hydraulic purge removes air from the hydraulic pump system after it has been repaired or changed.

NOTE:

Engine **MUST** be running to perform this procedure.

1. Turn ignition key to RUN, or start the engine.
2. Press PROGRAM (A) and SELECT (C) on cab display module (CDM) to enter Programming Mode.
 - WINDROWER SETUP? is displayed on the upper line.

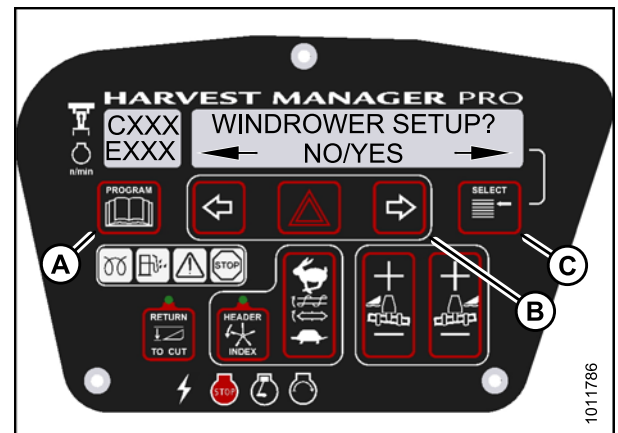


Figure 4.120: CDM Programming Buttons

CAB DISPLAY MODULE (CDM)

3. Press SELECT (B) until DIAGNOSTIC MODE? is displayed in upper line.
 - NO/YES is displayed on the lower line.
4. Press right (A) arrow to select YES. Press SELECT (B).

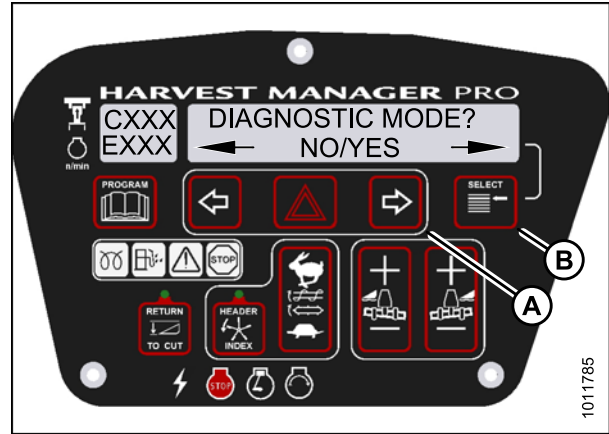


Figure 4.121: Diagnostic Functions

5. Press SELECT (B) until ACTIVATE FUNCTIONS? is displayed on the upper line.
 - NO/YES is displayed on the lower line.
6. Press right (A) arrow to select YES. Press SELECT (B).
 - ACTIVATE HEADER HT is displayed on the upper line.
 - DOWN/UP is displayed on the lower line.



Figure 4.122: Functions

7. Press SELECT (B) until ACTIVATE HYD PURGE? is displayed on the upper line.
 - NO/YES is displayed on the lower line.
8. Press right (A) arrow to select YES. Press SELECT (B).
 - TO ACTIVATE PURGE is displayed on the upper line.
 - PRESS AND HOLD is displayed on the lower line.

CAUTION

Check to be sure all bystanders have cleared the area.



Figure 4.123: Hydraulic Purge

CAB DISPLAY MODULE (CDM)

NOTE:

Holding the right arrow (A) activates a timed purge cycle. The CDM will jump to the exit menu if the arrow is released before the end of the timed cycle.

9. Press and hold right (A) arrow to activate purge cycle.
 - PURGE CYCLE STARTED will display on the upper line.
10. When PURGE CYCLE ENDED is displayed release right (A) arrow.
 - NO EXIT YES is displayed on the lower line.
11. Press right arrow to select YES. Press SELECT.
12. Press PROGRAM to exit Programming Mode or press SELECT to proceed to next ACTIVATE FUNCTION.



Figure 4.124: Hydraulic Purge Cycle

4.8.6 Testing the Knife Drive Circuit Using the Cab Display Module (CDM)

IMPORTANT:

Do not over-speed a drive. Over-speeding can lead to vibration, belt failures, or other over-speeding related problems.

NOTE:

- The header **MUST** be attached to windrower to follow this procedure.
1. Turn ignition key to RUN, or start the engine.
 2. Press PROGRAM (A) and SELECT (C) on cab display module (CDM) to enter Programming Mode. Press SELECT (C).
 - WINDROWER SETUP? is displayed on the upper line.

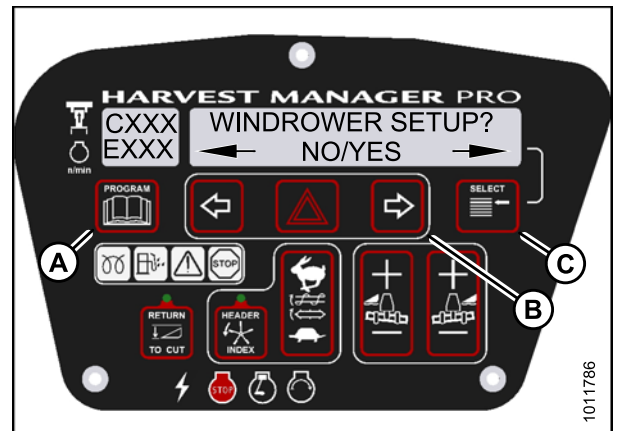


Figure 4.125: CDM Programming Buttons

CAB DISPLAY MODULE (CDM)

3. Press SELECT (B) until DIAGNOSTIC MODE? is displayed in upper line.
 - NO/YES is displayed on the lower line.
4. Press right (A) arrow to select YES. Press SELECT (B).

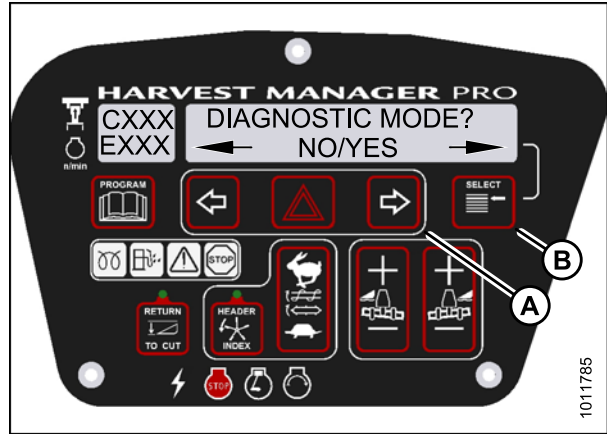


Figure 4.126: Diagnostic Functions

5. Press SELECT (B) until ACTIVATE FUNCTIONS? is displayed on the upper line.
 - NO/YES is displayed on the lower line.
6. Press right (A) arrow to select YES. Press SELECT (B).
 - ACTIVATE HEADER HT is displayed on the upper line.

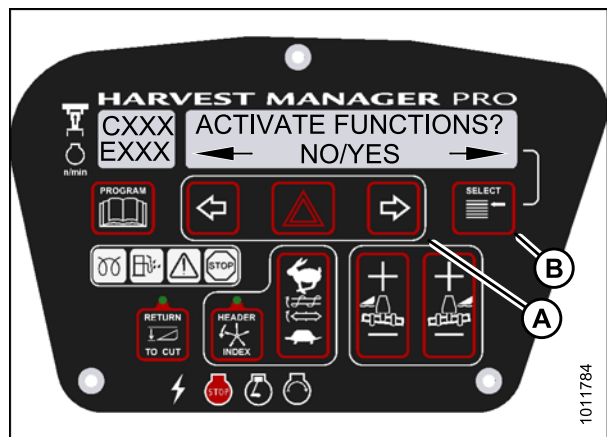


Figure 4.127: Functions

CAUTION

Check to be sure all bystanders have cleared the area.

7. Press SELECT (E) until KNIFE DRIVE SPD XXXX is displayed on the upper line.

IMPORTANT:

Do **NOT** over speed the knife drive.

8. Press and hold HAZARD (C) button.
 - Press left (B) arrow to **decrease** knife speed.
 - Press right (D) arrow to **increase** knife speed.

Verify the knife drive is functioning properly.

9. Release the HAZARD (C) button. The knife will stop.
10. Press PROGRAM (A) to exit Programming Mode or press SELECT (E) to proceed to next ACTIVATE FUNCTION.

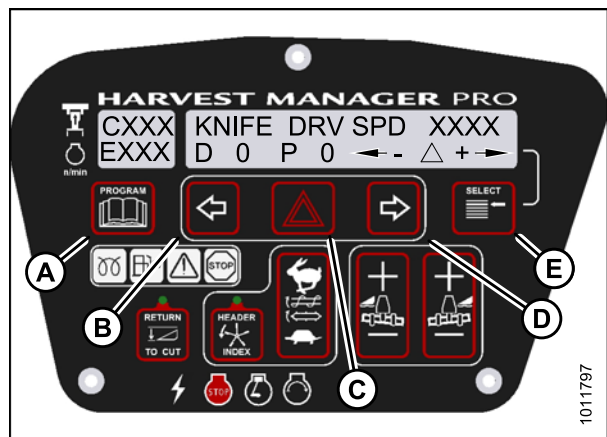


Figure 4.128: Knife Drive

CAB DISPLAY MODULE (CDM)

4.8.7 Testing the Draper Drive Circuit Activate Function Using the Cab Display Module (CDM)

IMPORTANT:

Do not over-speed a drive. Over-speeding can lead to vibration, belt failures, or other over-speeding related problems.

NOTE:

- A draper header **MUST** be attached to windrower to follow this procedure.
 - The engine **MUST** be running to perform this procedure.
1. Turn ignition key to RUN, or start the engine.
 2. Press PROGRAM (A) and SELECT (C) on cab display module (CDM) to enter Programming Mode.
 - WINDROWER SETUP? is displayed on the upper line.

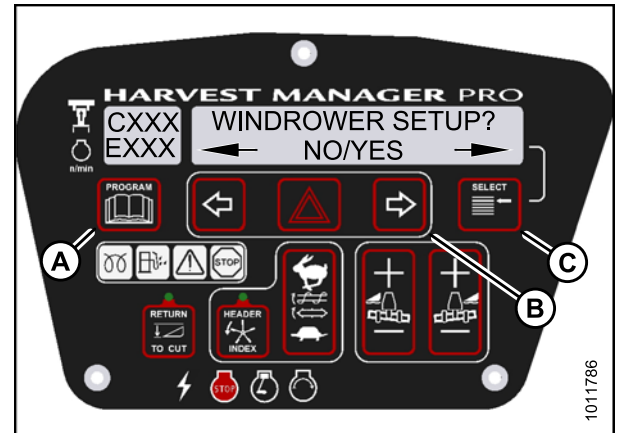


Figure 4.129: CDM Programming Buttons

3. Press SELECT (B) until DIAGNOSTIC MODE? is displayed in upper line.
 - NO/YES is displayed on the lower line.
4. Press right (A) arrow to select YES. Press SELECT (B).

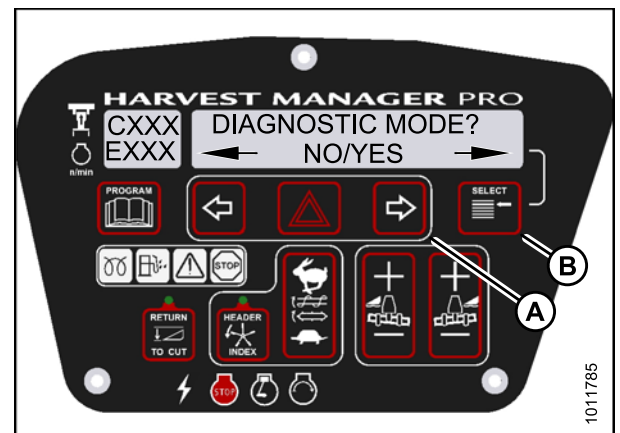


Figure 4.130: Diagnostic Functions

CAB DISPLAY MODULE (CDM)

5. Press SELECT (B) until ACTIVATE FUNCTIONS? is displayed on the upper line.
 - NO/YES is displayed on the lower line.
6. Press right (A) arrow to select YES. Press SELECT (B).
 - ACTIVATE HEADER HT is displayed on the upper line.



Figure 4.131: Functions

CAUTION

Check to be sure all bystanders have cleared the area.

7. Press SELECT (B) until DRAPER DRV SPD XXXX is displayed on the upper line.

IMPORTANT:

Do **NOT** over speed the drapers.

8. Press and hold HAZARD (C) button.
 - Press left (B) arrow to **decrease** draper speed.
 - Press right (D) arrow to **increase** draper speed.

Verify the draper drive is functioning properly.

9. Release the HAZARD (C) button. The drapers will stop.
10. Press PROGRAM (A) to exit Programming Mode or press SELECT (E) to proceed to next ACTIVATE FUNCTION.

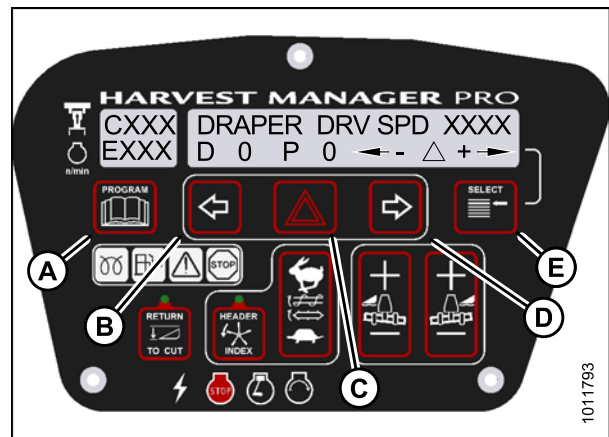


Figure 4.132: Draper Drive

4.8.8 Testing the Reel Drive Circuit Activate Function Using the Cab Display Module (CDM)

IMPORTANT:

Do not over-speed a drive. Over-speeding can lead to vibration, belt failures, or other over-speeding related problems.

NOTE:

- The header **MUST** be attached to windrower to follow this procedure.
- This procedure does not apply to rotary disc headers.
- The engine **MUST** be running to perform this procedure.

CAB DISPLAY MODULE (CDM)

1. Turn ignition key to RUN, or start the engine.
2. Press PROGRAM (A) and SELECT (C) on cab display module (CDM) to enter Programming Mode.
 - WINDROWER SETUP? is displayed on the upper line.

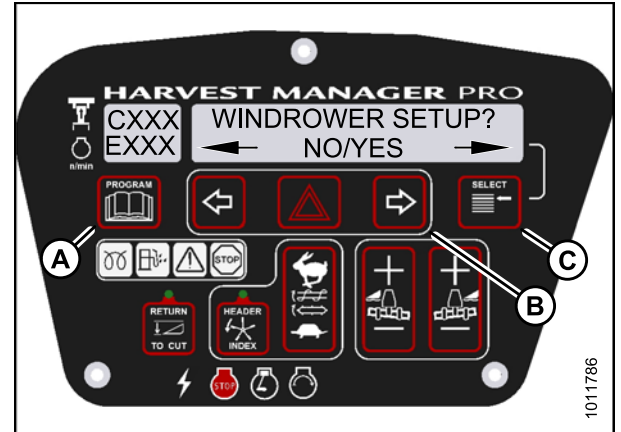


Figure 4.133: CDM Programming Buttons

3. Press SELECT (B) until DIAGNOSTIC MODE? is displayed in upper line.
 - NO/YES is displayed on the lower line.
4. Press right (A) arrow to select YES. Press SELECT (B).

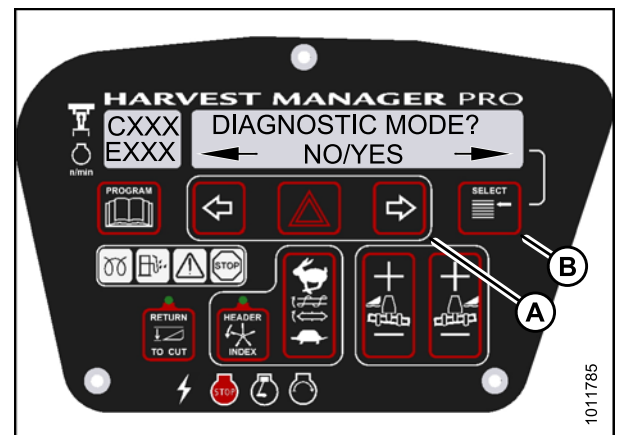


Figure 4.134: Diagnostic Functions

5. Press SELECT (B) until ACTIVATE FUNCTIONS? is displayed on the upper line.
 - NO/YES is displayed on the lower line.
6. Press right (A) arrow to select YES. Press SELECT (B).
 - ACTIVATE HEADER HT is displayed on the upper line.

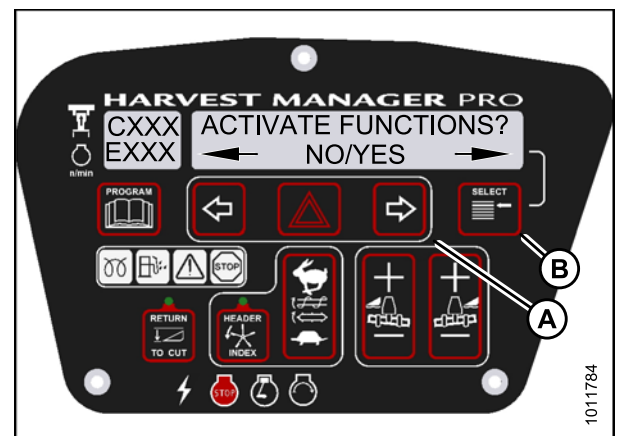


Figure 4.135: Functions

CAB DISPLAY MODULE (CDM)

CAUTION

Check to be sure all bystanders have cleared the area.

7. Press SELECT (E) until REEL DRV SPD XXXX is displayed on the upper line.

IMPORTANT:

Do **NOT** over speed the reel.

8. Press and hold HAZARD (C) button.
 - Press left (B) arrow to **decrease** reel speed.
 - Press right (D) arrow to **increase** reel speed.

Verify the reel drive is functioning properly.

9. Release the HAZARD (C) button. The reel will stop.
10. Press PROGRAM (A) to exit Programming Mode or press SELECT (E) to proceed to next ACTIVATE FUNCTION.

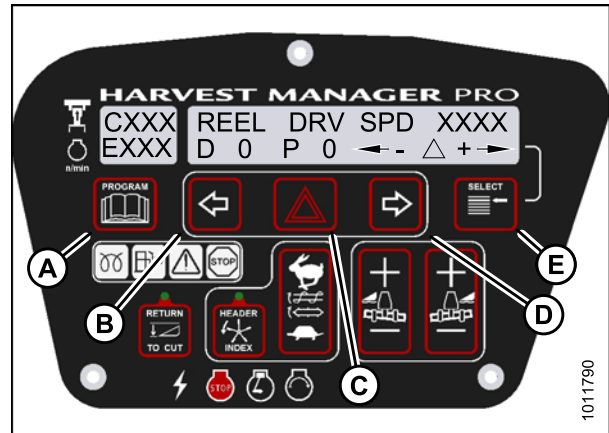


Figure 4.136: Reel Drive

4.8.9 Testing the Rotary Disc Drive Circuit Activate Function Using the Cab Display Module (CDM)

IMPORTANT:

Do not over-speed a drive. Over-speeding can lead to vibration, belt failures, or other over-speeding related problems.

NOTE:

- A rotary disc header **MUST** be attached to windrower to follow this procedure.
- The engine **MUST** be running to perform this procedure.

1. Turn ignition key to RUN, or start the engine.
2. Press PROGRAM (A) and SELECT (C) on cab display module (CDM) to enter Programming Mode.
 - WINDROWER SETUP? is displayed on the upper line.

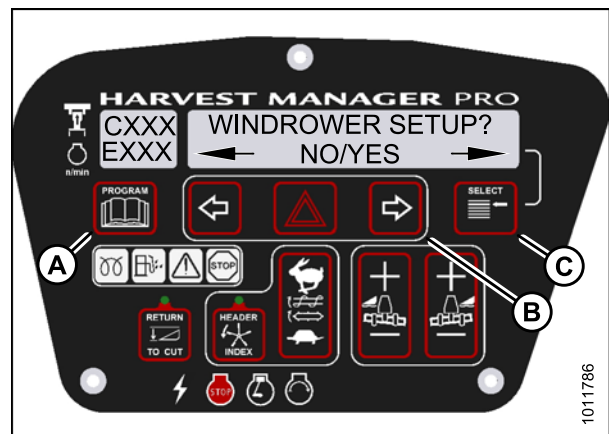


Figure 4.137: CDM Programming Buttons

CAB DISPLAY MODULE (CDM)

3. Press SELECT (B) until DIAGNOSTIC MODE? is displayed in upper line.
 - NO/YES is displayed on the lower line.
4. Press right (A) arrow to select YES. Press SELECT (B).

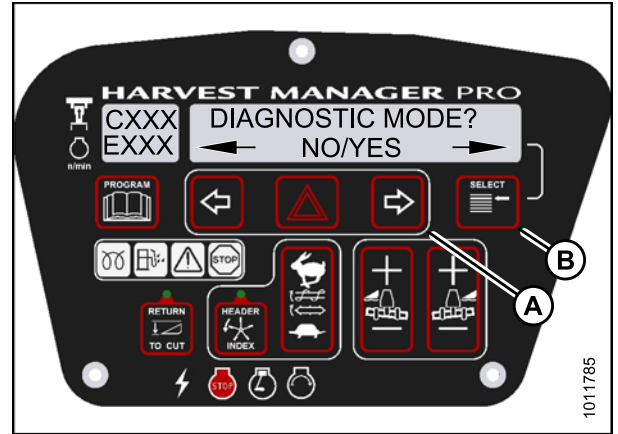


Figure 4.138: Diagnostic Functions

5. Press SELECT (B) until ACTIVATE FUNCTIONS? is displayed on the upper line.
 - NO/YES is displayed on the lower line.
6. Press right (A) arrow to select YES. Press SELECT (B).
 - ACTIVATE HEADER HT is displayed on the upper line.

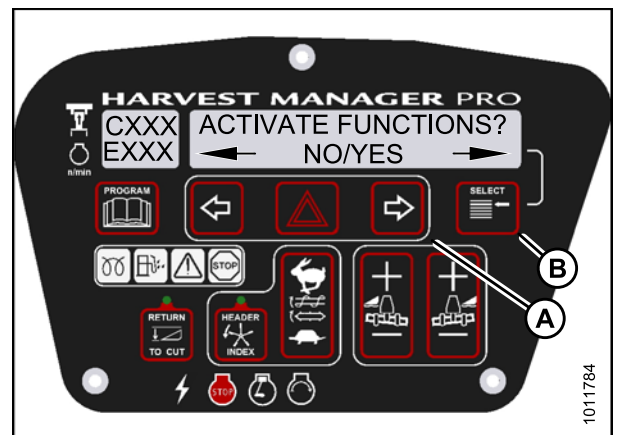


Figure 4.139: Functions

CAUTION

Check to be sure all bystanders have cleared the area.

7. Press SELECT (E) until DISC DRV SPD XXXX is displayed on the upper line.

IMPORTANT:

Do **NOT** over speed the disc drive.

8. Press and hold HAZARD (C) button.
 - Press left (B) arrow to **decrease** disc speed.
 - Press right (D) arrow to **increase** disc speed.

Verify the disc drive is functioning properly.

9. Release the HAZARD (C) button. The disc drive will stop.
10. Press PROGRAM to exit Programming Mode or press SELECT to proceed to next ACTIVATE FUNCTION.

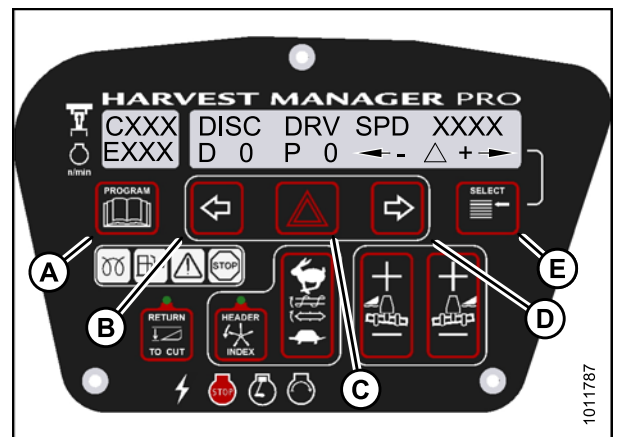


Figure 4.140: Disc Drive

4.8.10 Testing the Double Windrower Attachment (DWA) Drive Activate Function Using the Cab Display Module (CDM)

IMPORTANT:

Do not over-speed a drive. Over-speeding can lead to vibration, belt failures, or other over-speeding related problems.

NOTE:

- DWA must be attached to windrower and activated under the WINDROWER SETUP menu. For more information, refer to [4.4.10 Activating the Double Windrow Attachment \(DWA\), page 144](#).

- Engine **MUST** be running to perform this procedure.

- Turn ignition key to RUN, or start the engine.
- Press PROGRAM (A) and SELECT (C) on cab display module (CDM) to enter Programming Mode. Press SELECT (C).
 - WINDROWER SETUP? is displayed on the upper line.

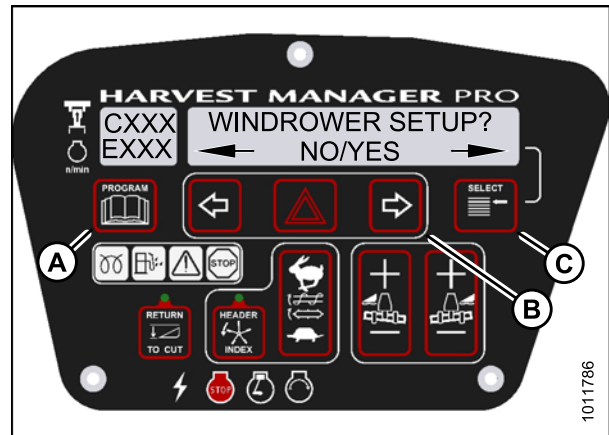


Figure 4.141: CDM Programming Buttons

- Press SELECT (B) until DIAGNOSTIC MODE? is displayed in upper line.
 - NO/YES is displayed on the lower line.
- Press right (A) arrow to select YES. Press SELECT (B).

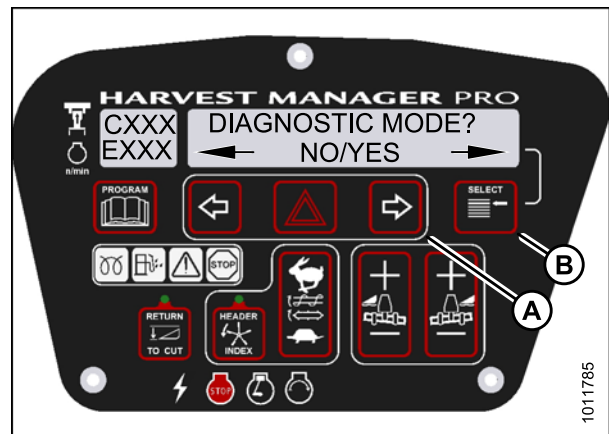


Figure 4.142: Diagnostic Functions

CAB DISPLAY MODULE (CDM)

5. Press SELECT (B) until ACTIVATE FUNCTIONS? is displayed on the upper line.
 - NO/YES is displayed on the lower line.
6. Press right (A) arrow to select YES. Press SELECT (B).
 - ACTIVATE HEADER HT is displayed on the upper line.



Figure 4.143: Functions

7. Press SELECT (E) until ACTIVATE DWA DRV is displayed on the upper line.

CAUTION

Check to be sure all bystanders have cleared the area.

IMPORTANT:

Do **NOT** over speed the DWA drive.

8. Press and hold HAZARD (C) button.
 - Press left (B) arrow to decrease DWA drive speed.
 - Press right (D) arrow to increase DWA drive speed.

Verify the DWA drive is functioning properly.

9. Release the HAZARD (C) button. The DWA drive will stop.
10. Press PROGRAM (A) to exit Programming Mode or press SELECT (E) to proceed to next ACTIVATE FUNCTION.

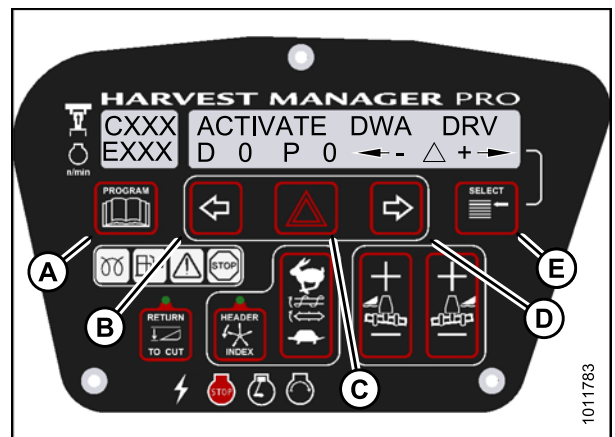


Figure 4.144: DWA Drive

5 Performing Predelivery Checks

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

DANGER

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

IMPORTANT:

The machine is factory-set and should not require further adjustments; however, perform the following checks to ensure your machine operates at maximum performance. Adjustments should be made only if absolutely necessary and in accordance with the instructions in this manual.

5.1 Recording Serial Numbers

Record the windrower and engine serial numbers on the Predelivery Checklist.

1. The windrower serial number plate (A) is located on the left side of the main frame near the walking beam as shown.

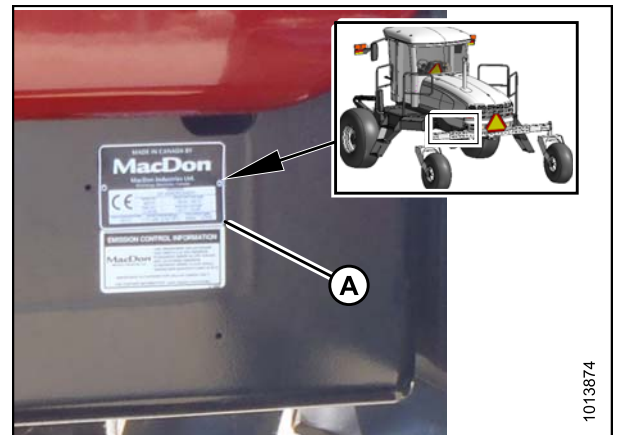


Figure 5.1: Serial Number Location

2. The engine serial number plate (A) is located on top of the engine cylinder head cover as shown.

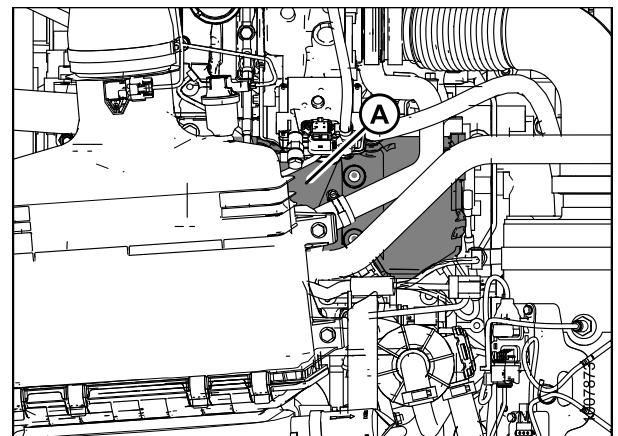


Figure 5.2: Engine Serial Number Location

5.2 Checking Wheel Drive Lubricant Level

⚠ DANGER

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

1. Park the windrower on level ground.
2. Position windrower so plugs (A and B) are horizontally aligned with the center (C) of the hub.
3. Stop the engine and remove the key.
4. Remove plug (A or B). The lubricant should be visible through the port or running out slightly. If lubricant needs to be added, refer to the windrower operator's manual for specifications.
5. Reinstall plugs and tighten.

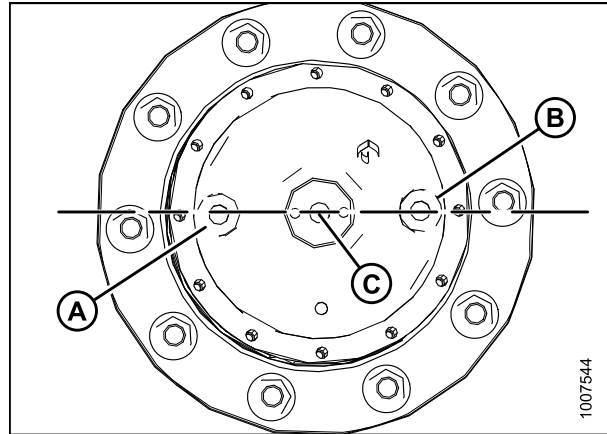


Figure 5.3: Drive Wheel Hub

5.3 Checking Tire Pressures and Adding Tire Ballast

5.3.1 Checking Tire Pressures

Check tire pressures with a gauge.

- Bar: 221 kPa (32 psi).
- Turf: 138 kPa (20 psi).
- Caster: 69 kPa (10 psi).

5.3.2 Adding Tire Ballast

When using large headers on windrower, adding fluid ballast to rear caster tires will improve machine stability.

Machine stability is also affected by different attachments, windrower options, terrains, and driving techniques.

Ballast capability per tire is at a maximum fill of 75% or when fluid is level with valve stem when stem is positioned at 12 o'clock position.

Always add an equal amount of fluid on both sides. Fluid can be added to any level up to maximum fill.

Table 5.1 Fluid per Tire

Tire Size	Fluid per Tire at 75% Fill Liters (U.S. Gal.)	Total Weight of Both Tires Kg (Lb.) ⁷
7.5 x 16	38 (10)	91 (200)
10 x 16	69 (18)	170 (380)
16.5 x 16.1	158 (41)	377 (830)

7. Weights given are for typical calcium chloride and water mixtures. Weight is reduced by 20% if only water is used (for areas that do not require antifreeze protection).

PERFORMING PREDELIVERY CHECKS

Table 5.2 Recommended Ballast

Header Description		Recommended Tire Size	Recommended Ballast			
			Level Ground		Hills	
Type	Size		Per Tire liters (U.S. Gal.)	Both Tires kg (lb.) ⁸	Per Tire liters (U.S. Gal.)	Both Tires kg (lb.) ⁸
A-Series (all options)	All	7.5 x 16 10 x 16 16.5 x 16.1	0	0	0	0
D-Series	25 ft. and less		0	0	0	0
	30 ft. single reel or double reel (without conditioner)	7.5 x 16 10 x 16 16.5 x 16.1	69 (18)	170 (380)	115 (30)	288 (630)
	35 ft. single reel					
	30 ft. double reel (with steel fingers and conditioner)	Level ground: 10 x 16 16.5 x 16.1	115 (30)	288 (630)	158 (41)	377 (830)
	35 ft. double reel (5- or 6-bat)	Hills: 16.5 x 16.1				
40 ft.	16.5 x 16.1					
R-Series (all options)	13 ft.	7.5 x 16 10 x 16 16.5 x 16.1	0	0	0	0

8. If only water is used, increase volume of water by 20% (up to maximum allowable fill per tire) to compensate.

5.4 Checking Engine Air Intake

DANGER

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

1. Ensure clips (A) are properly latched to, and plenum box (C) is securely attached onto, cover (B).

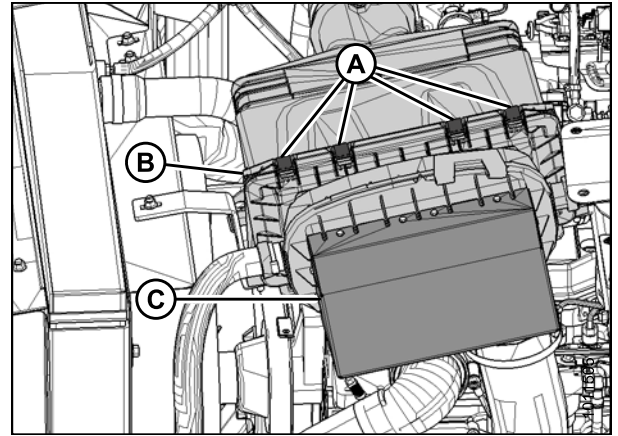


Figure 5.4: Air Intake System

2. Check gap of constant torque clamps by holding an 0.46 mm (0.018 in.) gauge (A) between the middle coils (B). Tighten clamps until gauge is snug, and remove gauge.

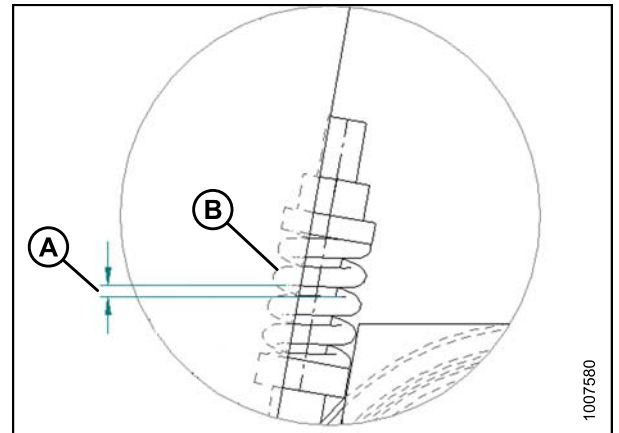


Figure 5.5: Constant Torque Clamp

3. Check four constant torque clamps (A) (two at air intake duct [B] and two at turbocharger tube [C]).

NOTE:

Some parts removed from illustration for clarity.

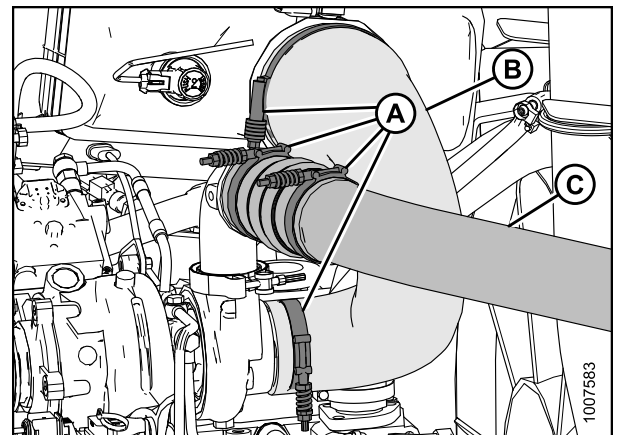


Figure 5.6: Air Intake System

PERFORMING PREDELIVERY CHECKS

4. Check the constant torque clamps (A) securing tube (B) from the cooler to the engine air intake.

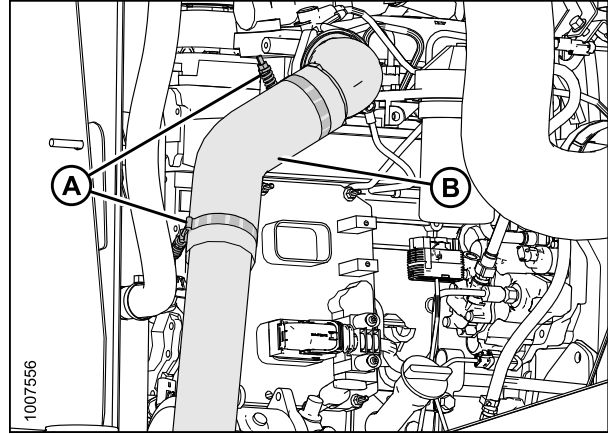


Figure 5.7: Air Intake System

5.5 Checking Hydraulic Oil

DANGER

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

1. Clean cap (A) and surrounding area.
2. Turn filler cap (A) counterclockwise to unlock cap and remove dipstick.

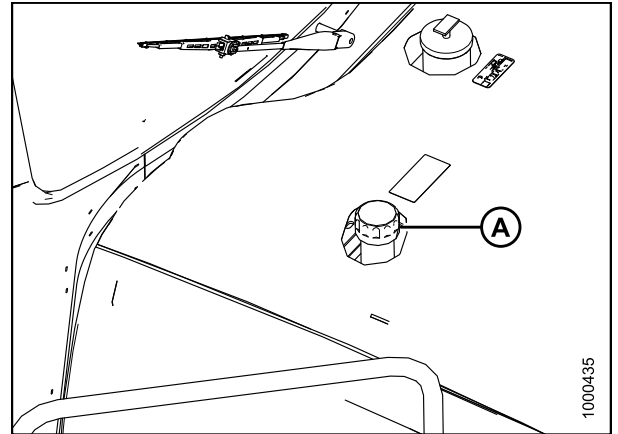


Figure 5.8: Engine Hood

3. Ensure hydraulic oil level is between the low (L) and full (H) marks.
4. If necessary, add oil to maintain a level between the low (L) and full (H) marks. Refer to the windrower operator's manual for specifications.
5. Reinstall dipstick and filler cap, and turn clockwise to tighten/lock.

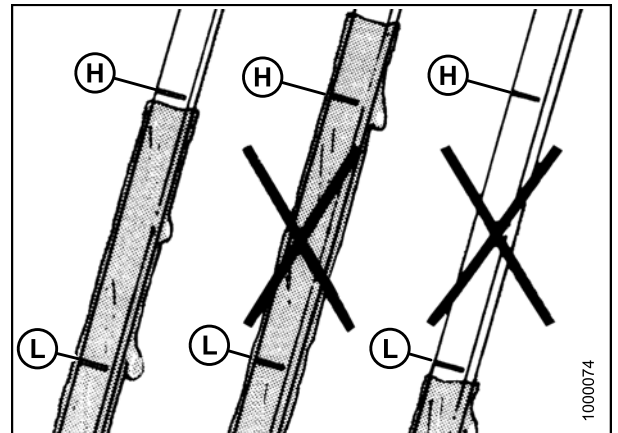


Figure 5.9: Hydraulic Oil Levels

5.6 Checking Fuel Separator

1. Place a container under the filter drain (A).
2. Turn drain valve (A) by hand 1-1/2 to 2 turns counterclockwise until fuel begins draining.
3. Drain the filter sump of water and sediment until clear fuel is visible. Clean as necessary.
4. Turn the drain valve (A) by hand 1-1/2 to 2 turns clockwise until tight.
5. Dispose of fluid in container in a safe manner.

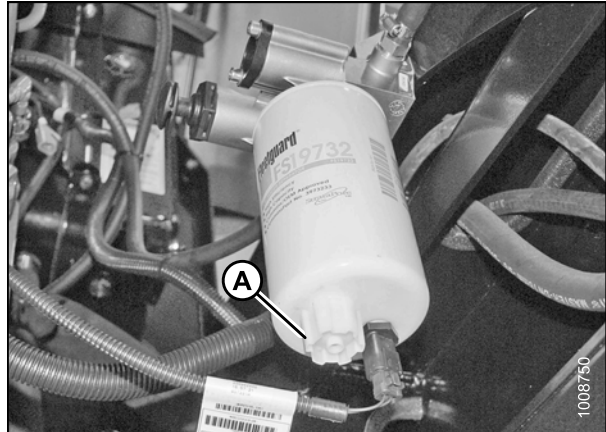


Figure 5.10: Fuel Filter

5.7 Checking Engine Coolant

1. Check the coolant level in the pressurized coolant tank (A).

NOTE:

Allow the engine to cool before checking coolant level. The pressurized coolant tank has MAX COLD and MIN COLD coolant level indicators (B), and coolant levels should be between these lines.

2. If necessary, add coolant. Refer to windrower operator's manual for specifications.
3. Ensure coolant concentration in the radiator is rated for temperatures of -34°C (-30°F).

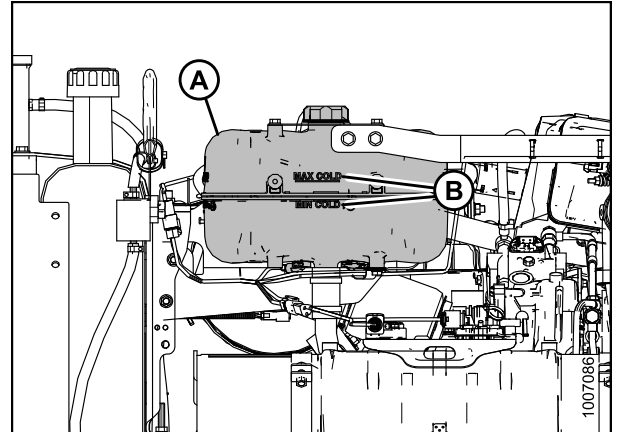


Figure 5.11: Pressurized Coolant Tank

5.8 Draining and Refilling the Diesel Exhaust Fluid (DEF) Tank

Drain the DEF tank at the time the windrower is received and refill with fresh DEF.

DANGER

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

1. Open the maintenance platform on right cab-forward side.
2. Place a drain pan under the DEF tank.

IMPORTANT:

Any spilled DEF must be contained and absorbed by non-combustible absorbent material like sand and then shovelled to a suitable container for disposal. DEF is corrosive. If spilled on tank or any surface of the vehicle, rinse thoroughly with water.

WARNING

Diesel Exhaust Fluid (DEF) contains urea. Do NOT get the substance in your eyes. In case of contact, immediately flush eyes with water for a minimum of 15 minutes. Do NOT swallow. In the event the DEF is ingested, contact physician immediately.

3. Remove the drain plug (A) from under the tank (B) and drain.
4. Add some DEF to the tank (B) to flush out remaining contaminants.
5. Drain the DEF that was used to clean the tank.
6. Reinstall drain plug (A) in the tank (B).

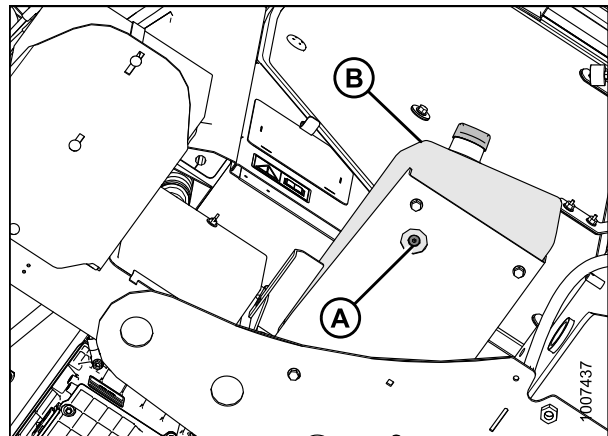


Figure 5.12: View from beneath Tank

IMPORTANT:

Before refilling the DEF tank, read the following instructions from decal (A) located on the tank cover.

- Before storing machine for periods of time greater than six months, drain DEF tank to prevent degradation of fluid.
- Before storing the machine in temperatures below 0°C (32°F), ensure level of fluid in DEF tank is 75 percent or lower.

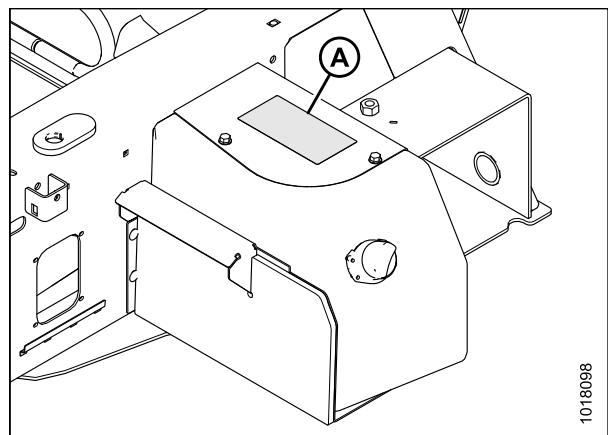


Figure 5.13: DEF Tank

PERFORMING PREDELIVERY CHECKS

Take the following precautions when handling DEF to prevent contamination:

- Avoid using funnels and containers that have been used with fuels or lubricants
 - Use only distilled water to rinse the components that store or deliver DEF; tap water can contaminate DEF
 - If distilled water is not available, use clean tap water, then rinse components with DEF
7. Clean around filler cap (A).
 8. Turn cap (A) counterclockwise until loose and remove cap.
 9. Fill the tank with an approved DEF. Refer to the windrower operator's manual for specifications.
 10. Replace filler cap (A) and turn clockwise until tight.
 11. Close the maintenance platform.

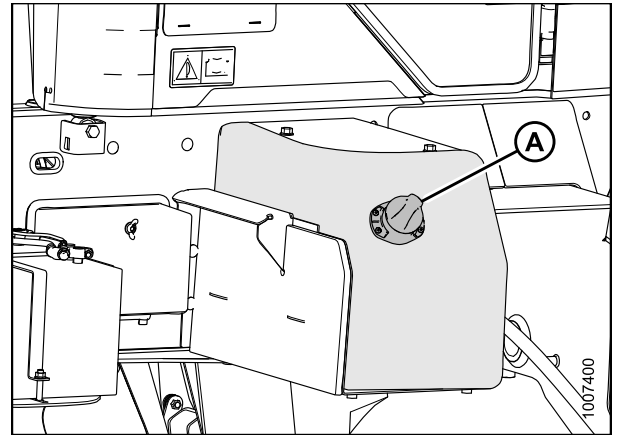


Figure 5.14: DEF Tank

5.9 Checking Gearbox Lubricant Level

1. Remove plug (A) and ensure lubricant is visible or slightly running out.
2. Add gearbox oil, if necessary. Refer to the windrower operator's manual for specifications.
3. Replace plug (A) and tighten.

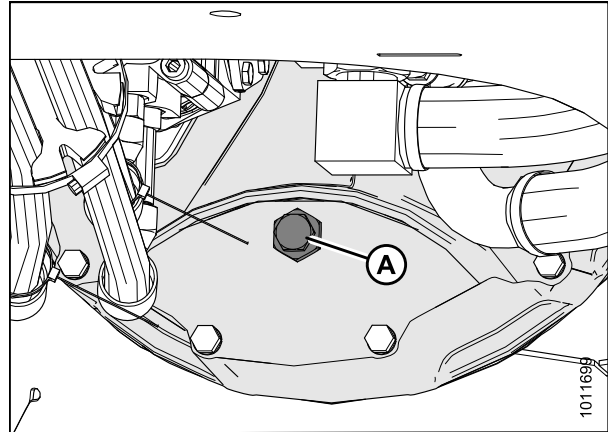


Figure 5.15: Gearbox

5.10 Checking Air Conditioning (A/C) Compressor Belts

1. Ensure A/C compressor belt (A) is tensioned so that a force of 35–55 N (8–12 lbf) on belt deflects belt 5 mm (3/16 in.) at mid-span.

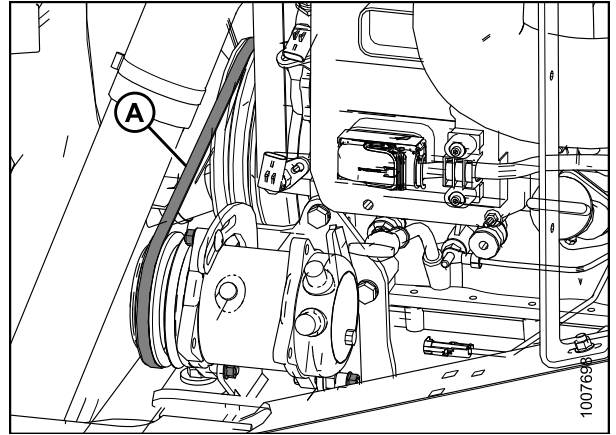


Figure 5.16: A/C Compressor Belt

5.11 Checking Safety System

Ensure the battery disconnect switch is in the POWER ON position. Refer to [5.12 Performing Operational Checks, page 202](#).

A properly functioning system should operate as follows:

- The starter should engage **only** when the ground speed lever (GSL) is in N-DETENT, the steering wheel is locked in the center position, and the header drive switch is in the OFF position. The brake should engage and the machine should NOT move after engine start-up.
- The steering wheel should **NOT** lock with the engine running and the GSL out of N-DETENT.
- The machine should **NOT** move with the engine running and with the steering wheel centered when the GSL is pulled straight out of N-DETENT (not in forward or reverse).

IMPORTANT:

If the safety system does not function as described, refer to the windrower technical manual.

 **DANGER**

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

 **CAUTION**

Check to be sure all bystanders have cleared the area.

Perform the following procedures to ensure the safety system is operating properly:

1. Shut down the engine and engage header drive switch. Try starting the engine and confirm the cab display module (CDM) displays HEADER ENGAGED on the upper line and DISENGAGE HEADER on the lower line.

IMPORTANT:

If the engine turns over, the safety system requires adjustment. Refer to the windrower technical manual for adjustment procedures.

PERFORMING PREDELIVERY CHECKS

2. Shut down the engine and perform the following safety system checks:

- a. Open engine compartment hood.
- b. Pry the steering interlock away from pintle arms (A) by inserting a wedge or pry bar between one of the interlock channels (B) and pintle arm.
- c. Insert a wooden block approximately 19 mm (3/4 in.) thick between the opposite channel and the pintle arm so the interlock channel is clear of the pintle arm.
- d. Turn the steering wheel off-center and move the GSL to N-DETENT.
- e. Try starting the engine and confirm the CDM flashes CENTER STEERING accompanied by a short beep with each flash. The engine should **NOT** turn over.

IMPORTANT:

If the engine turns over, the safety system requires adjustment. Refer to the windrower technical manual for adjustment procedures.

- f. Remove key from ignition.
- g. Remove wooden block and close hood.

3. Shut down the engine and center the steering wheel. Place the GSL in NEUTRAL but not in N-DETENT. Try starting the engine and confirm the CDM flashes CENTER STEERING on the upper line and PLACE GSL INTO N on the lower line accompanied by a short beep with each flash. The engine should NOT turn over.

IMPORTANT:

If the engine turns over, the safety system requires adjustment. Refer to the windrower technical manual for adjustment procedures.

4. Shut down the engine and center the steering wheel. Place the GSL in N-DETENT and ensure the operator's station is **NOT** locked. Try starting the engine and confirm that the engine cranks but does NOT start, and the CDM displays SEAT BASE NOT LOCKED.

IMPORTANT:

If the engine starts, the safety system requires adjustment. Refer to the windrower technical manual for adjustment procedures.

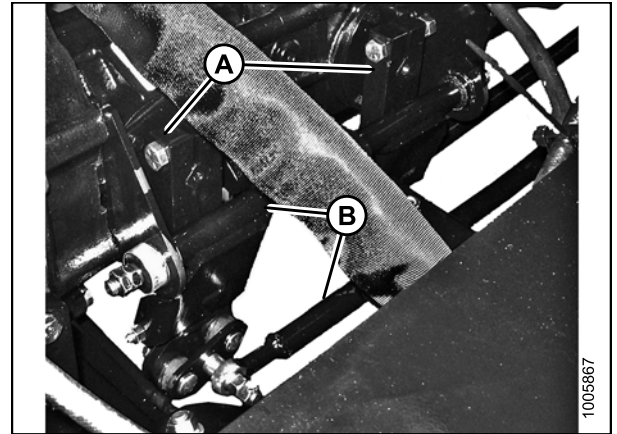


Figure 5.17: Pintle Arms

5.12 Performing Operational Checks

⚠ DANGER

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

The battery disconnect switch (A) is located on the right-hand (cab-forward) frame rail behind the maintenance platform and can be accessed by moving the platform rearwards.

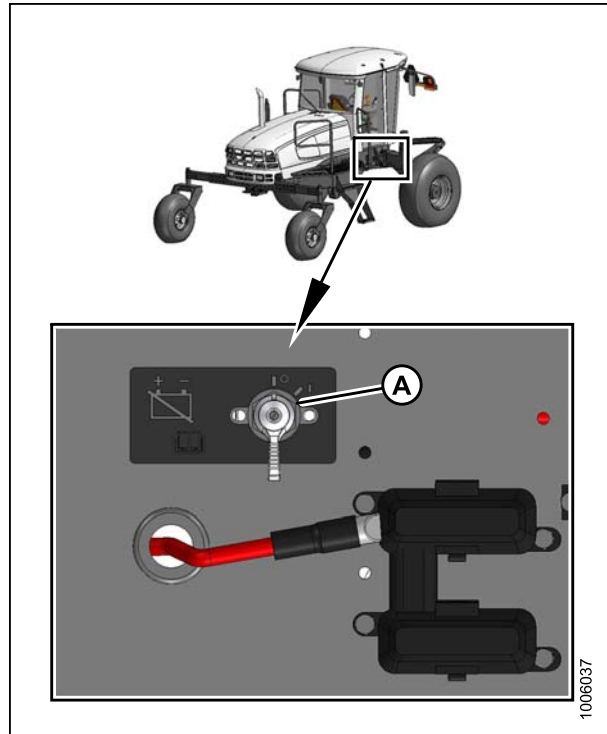


Figure 5.18: Battery Switch

5.12.1 Checking Engine Warning Lights

1. Turn ignition key (A) to RUN position. A single loud tone will be audible and the engine warning lights (B) will illuminate.
2. Turn ignition key (A) to OFF position.

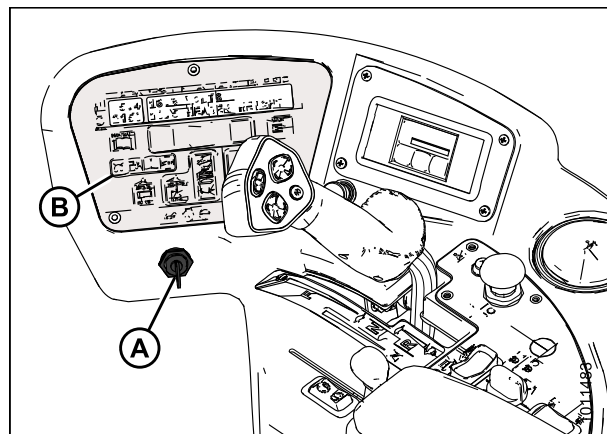


Figure 5.19: Operator Console

5.12.2 Checking Windrower Startup

CAUTION

Check to be sure all bystanders have cleared the area.

1. Start the engine. For instructions, refer to [3.16 Starting Engine, page 70](#).

NOTE:

The brakes should engage and the machine should not move after engine start-up.

2. Ensure the steering wheel is centered. Move ground speed lever (GSL) (A) straight out of N-DETENT (neither forward nor reverse). The machine should not move.
3. Check that the steering wheel is free to move.

IMPORTANT:

If the machine does not function as described, the system requires adjustment. Refer to the windrower technical manual.

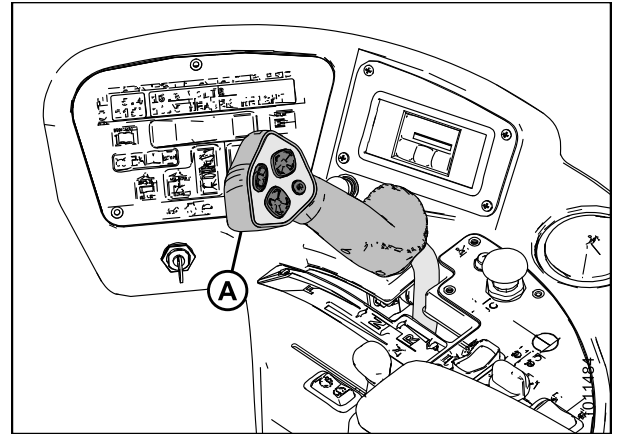


Figure 5.20: Operator Console

5.12.3 Checking Engine Speed

1. Move throttle to idle position.
2. Check engine speed on cab display module (CDM) (A) and compare to value in table.
3. Move throttle to maximum rpm position.
4. Check engine speed on cab display module (CDM) (A) and compare to value in table.

Table 5.3 Engine Speed

Idle rpm	Maximum rpm (No Load)
1000 +/- 30 rpm	2300 +/- 30 rpm

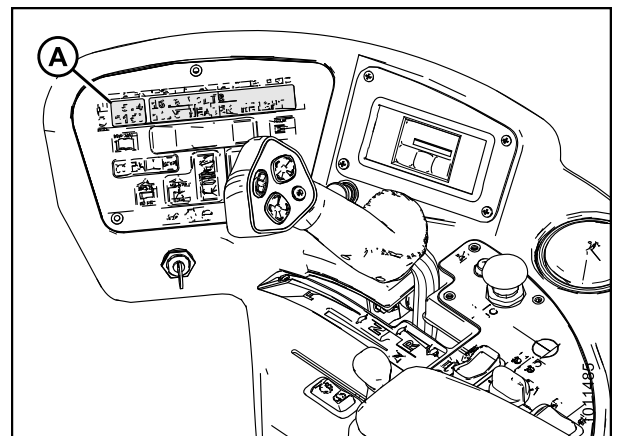


Figure 5.21: Cab Display Module (CDM)

5.12.4 Checking Gauges and Cab Display Module (CDM) Display

1. Check that fuel and diesel exhaust fluid (DEF) gauges are working by pressing and holding the fuel gauge icon (A) for 2 seconds—the brightness symbol and backlight function becomes active. The fuel gauge icon will reappear if nothing is pressed for 5 seconds.



Figure 5.22: Fuel and DEF Gauges

2. Ensure the CDM display (A) is working by pushing the SELECT (B) button on the CDM or the SELECT (C) button on the ground speed lever (GSL).

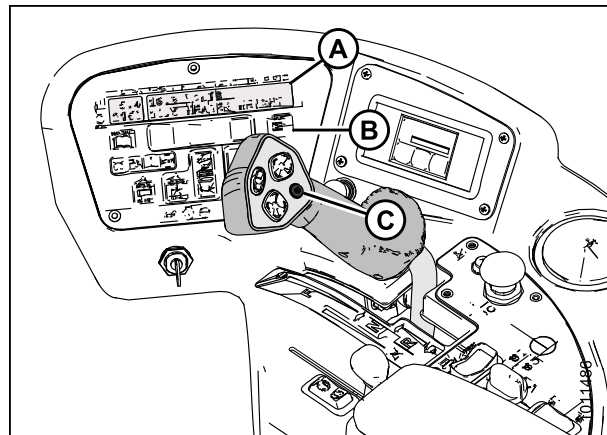


Figure 5.23: Operator Console

5.12.5 Checking Electrical System

1. Push the SELECT button (C) on the ground speed lever (GSL) or the SELECT button (B) on the cab display module (CDM) until the CDM display (A) displays VOLTS. The display indicates the condition of the battery and alternator. Refer to [Table 5.4 Battery and Alternator Condition, page 205](#).

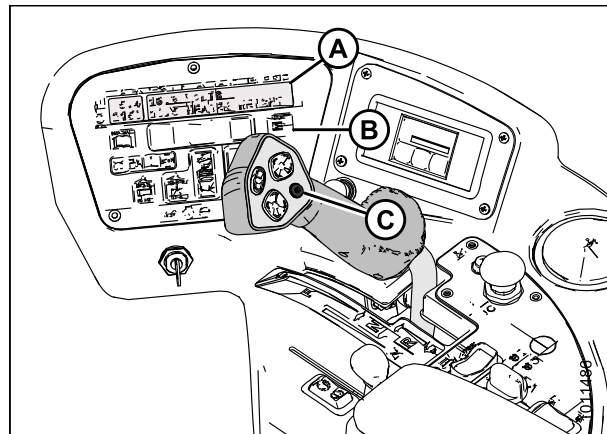


Figure 5.24: Operator Console

PERFORMING PREDELIVERY CHECKS

Table 5.4 Battery and Alternator Condition

Ignition	Engine	Reading	Indicated Condition
ON	Running	13.8–15.0	Normal
		>16.0 (see note)	Regulator out of adjustment
	<12.5 (see note)	Alternator not working or Regulator out of adjustment	
	Shut down	12.0	Battery normal

NOTE:

Display flashes voltage reading accompanied by a single loud tone every 30 minutes until condition is fixed.

5.12.6 Checking Operator's Presence System

CAUTION

Check to be sure all bystanders have cleared the area.

1. Start the engine.
2. Place the ground speed lever (GSL) (A) in NEUTRAL and turn the steering wheel until it locks.
3. Engage header drive switch (B).
4. Stand up from the operator's seat. The header should shut off after approximately 5 seconds. If the header does not shut off, the Operator Presence System requires adjustment. Refer to the technical manual.

NOTE:

To restart the header, move the header drive switch (B) to the OFF position and then back to the ON position.

5. Start the engine and position the GSL (A) in NEUTRAL and in N-DETENT.
 - a. Swivel the operator's station but do **NOT** lock into position.
 - b. Move the GSL out of N-DETENT. The engine should shutdown and the lower display will flash LOCK SEAT BASE → CENTER STEERING WHEEL → NOT IN NEUTRAL.
 - c. Swivel and lock the operator's station and the display should return to normal.
 - d. If the engine does not shut down, the seat position switches require adjustment. Refer to the technical manual.
6. Start the engine and drive the windrower at a speed **less than** 8 km/h (5 mph):

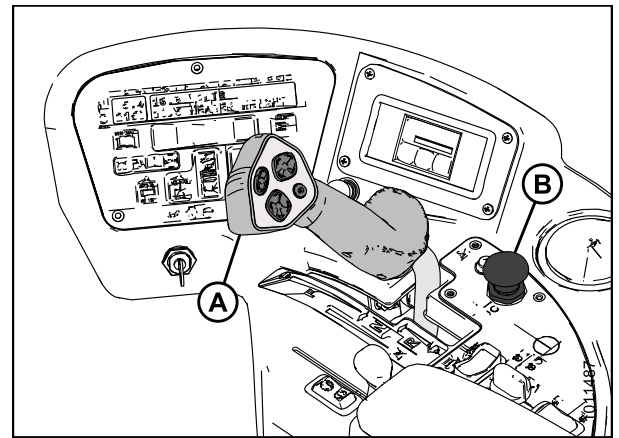


Figure 5.25: Operator Console

PERFORMING PREDELIVERY CHECKS

- a. Stand up from the operator's seat.
 - b. Ensure the CDM flashes NO OPERATOR on the upper line and ENGINE SHUTDOWN 5...4...3...2...1...0 on the lower line accompanied by a steady tone. When the CDM display reaches 0, the engine will shut down.
 - c. If the engine does not shut down, the Operator Presence System requires adjustment. Refer to the technical manual.
7. Start the engine and drive the windrower at a speed **more than** 8 km/h (5 mph):
- a. Stand up from the operator's seat.
 - b. The CDM beeps once and displays NO OPERATOR on the lower line.
 - c. If the CDM does not beep and display message, the Operator Presence System requires adjustment. Refer to the technical manual.

5.12.7 Checking Exterior Lights

1. Rotate the operator's seat to cab-forward mode.
2. Turn field light switch (A) to the ON position and ensure the front field lights (B) and rear swath lights (C) are functioning.

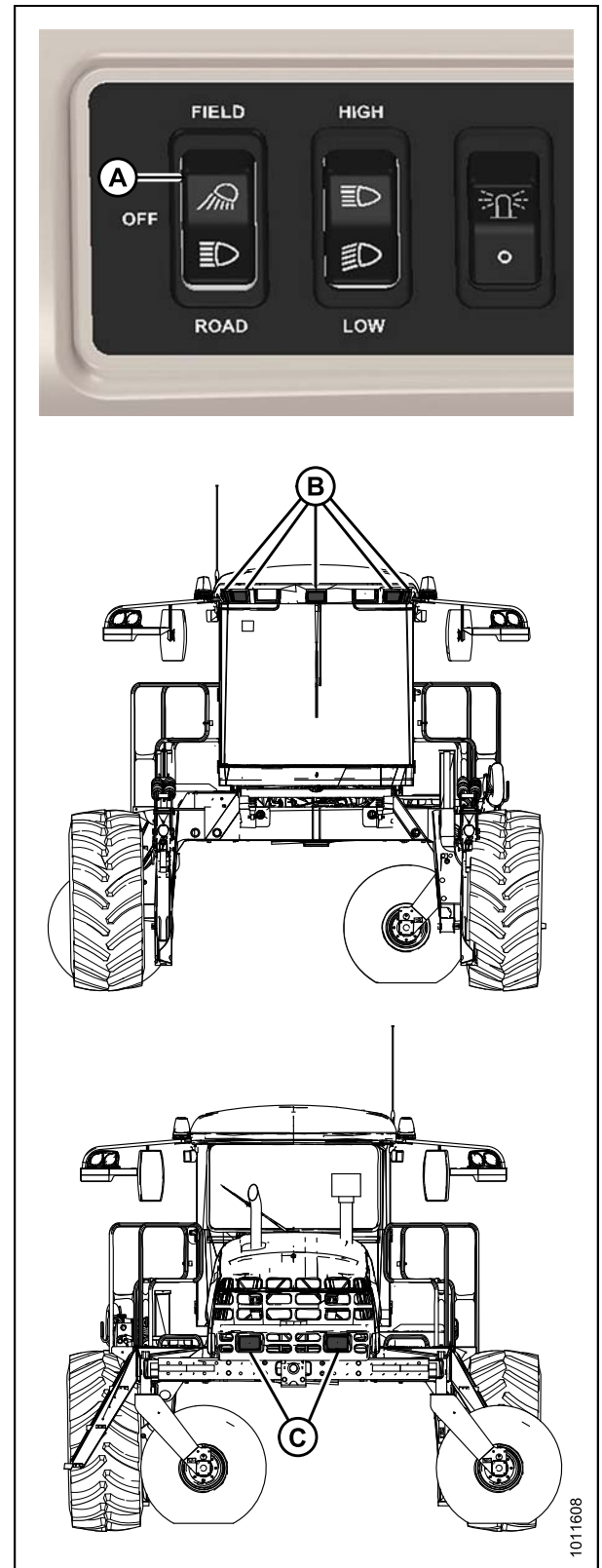


Figure 5.26: Exterior Lights – Cab Forward

PERFORMING PREDELIVERY CHECKS

3. Turn the road light switch (A) to the ON position and ensure the front road lights (B) and rear red tail/brake lights (C) (if equipped) are functioning.
4. Activate the high/low switch (D) and check lights.
5. Activate the amber turn signal/hazard warning lights (E) using switches on the cab display module (CDM) and check lights.
6. Turn OFF lights.

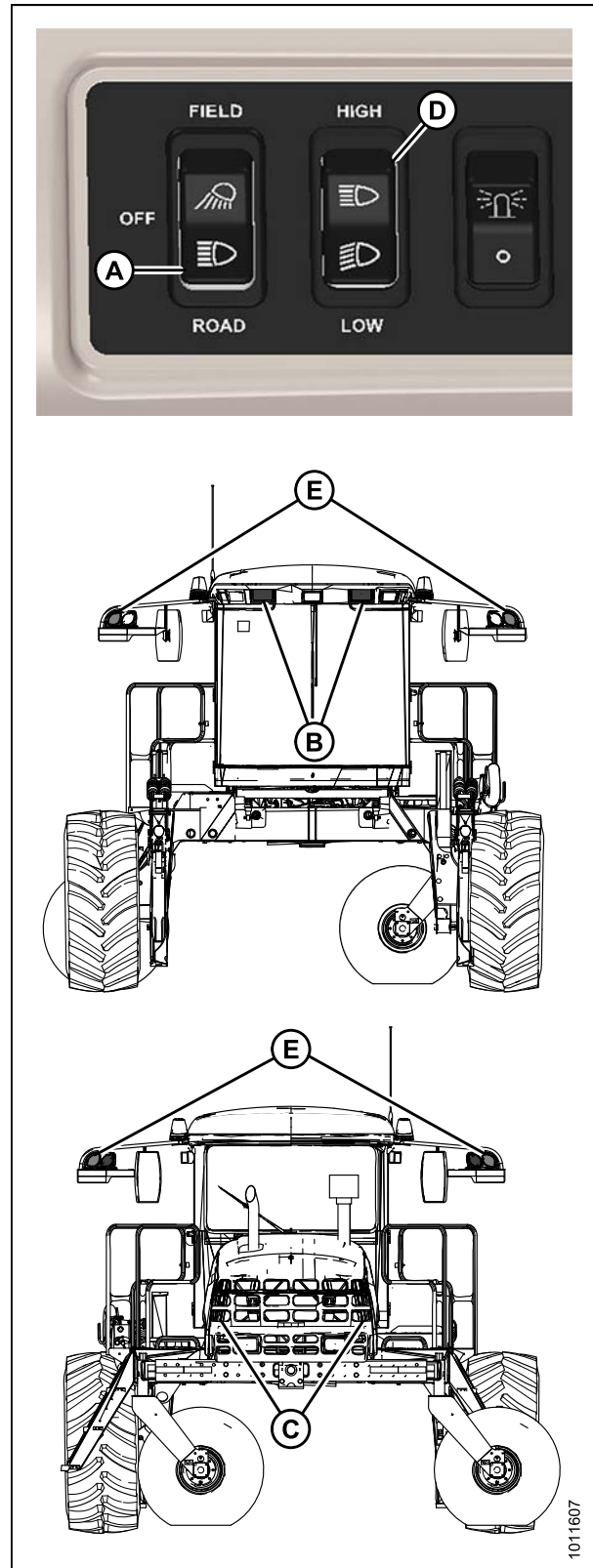


Figure 5.27: Exterior Lights – Cab Forward

PERFORMING PREDELIVERY CHECKS

7. Turn beacon switch (A) to the ON position and ensure the amber beacons (B) are functioning.

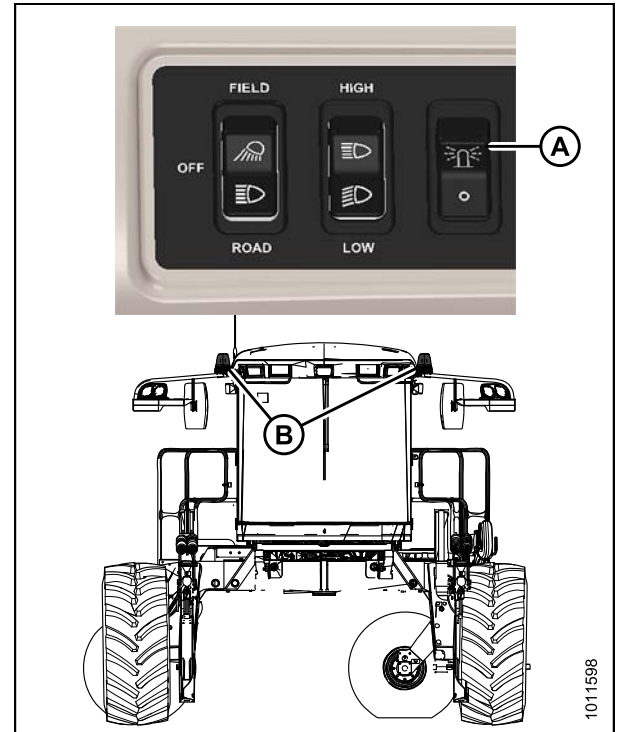


Figure 5.28: Exterior Lights – Beacons

5.12.8 Checking Auto Road Light

The beacon and hazard lights are included in the auto road light feature. The beacon and hazard lights will turn on when this feature is activated, and can only be turned off by engaging the header drive.

This feature will activate when:

- Windrower is in cab- or engine-forward mode
- Engine is running
- Header is disengaged
- Transmission is in either mid or high range

Moving the ground speed lever (GSL) out of neutral (brake off) will switch the white lights from field/work lights to road lights, if the switch is in the field/road lights position.

PERFORMING PREDELIVERY CHECKS

5.12.9 Checking Horn

1. Push HORN button (A) and listen for horn.

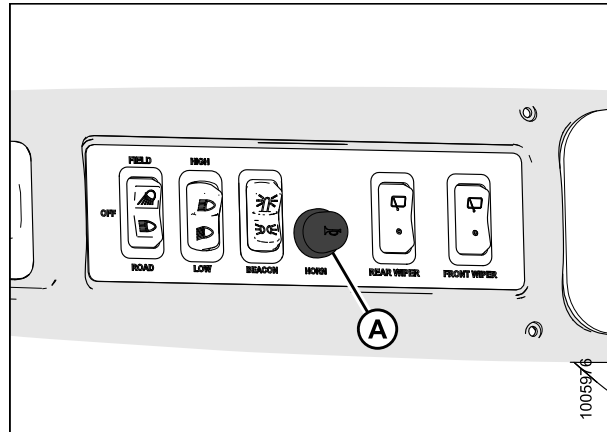


Figure 5.29: Horn Button

5.12.10 Checking Interior Lights

1. Switch road and field lights ON and OFF using switch (A).

NOTE:

Ambient light in roof liner (B) and interior light (C) work only when road or field lights (A) are switched ON.

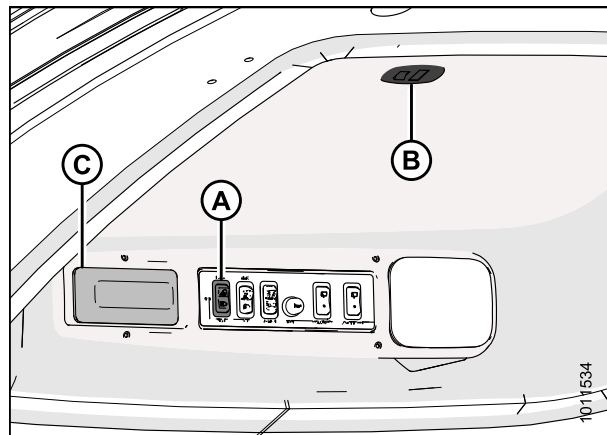


Figure 5.30: Interior Lights

5.12.11 Checking Air Conditioning (A/C) and Heater



Figure 5.31: A/C and Heater Controls

- **Blower switch (A):** Controls blower speed. Switch settings are OFF, LO, MEDIUM, and HI.
- **Air conditioning switch (B):** Controls A/C system. When set to ON, A/C operates if blower switch (A) is switched ON. When set to OFF, the A/C system does not operate.
- **Outside air switch (C):** Controls air source. When set to FRESH AIR, booster fan starts and draws filtered outside air into the cab. When set to RECIRCULATED, booster fan stops and air inside cab is recirculated.
- **Temperature control (D):** Controls cab temperature. Turn knob clockwise to increase temperature, and turn knob counterclockwise to decrease temperature.

IMPORTANT:

To distribute oil throughout the A/C system, perform the following steps after starting a machine that has been stored for more than one week:

1. Start engine and turn blower switch (A) to the first position, turn temperature control (D) to maximum heating, and turn A/C switch (B) to OFF.
2. Turn A/C switch (B) from OFF to ON position for 1 second, then back to OFF for 5 to 10 seconds. Repeat this step ten times.

PERFORMING PREDELIVERY CHECKS

5.13 Checking Manuals

Manuals are stored in the manual storage case (A) behind the operator's seat.

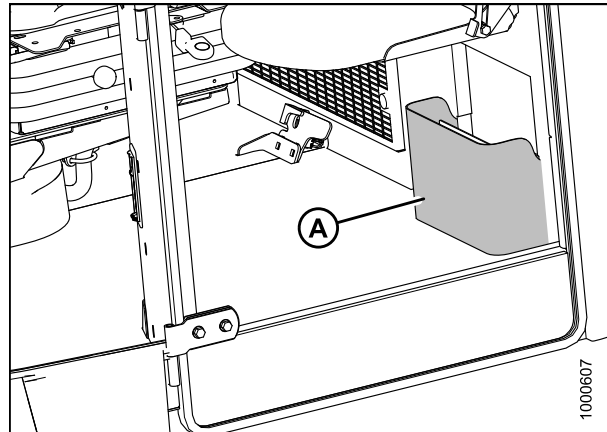


Figure 5.32: Manual Storage Case

1. Ensure the following manuals are included with the windrower:

- Operator's Manual
- Parts Catalog
- Quick Card
- Engine Manual

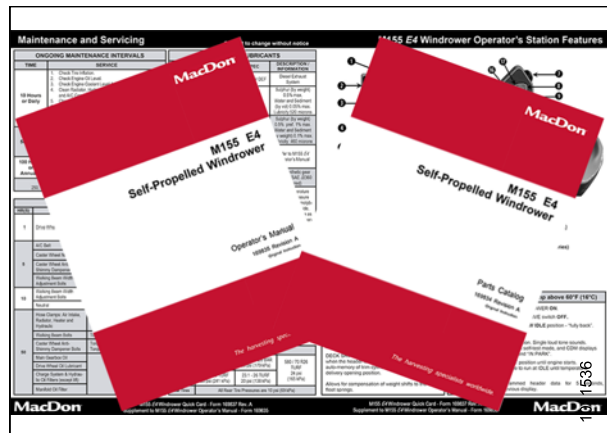


Figure 5.33: Manuals and Quick Card

5.14 Performing Final Steps

1. Remove plastic covering from cab display module (CDM), and seats after predelivery checks are complete.
2. Locate bag inside the cab containing the GPS mount kit, and install kit in accordance with the instructions in the kit. If not installing kit, label bag (GPS Completion Kit) and place kit in toolbox for safekeeping.
3. Remove decal (MD #166705) from windshield only **AFTER** machine is delivered to the end user.

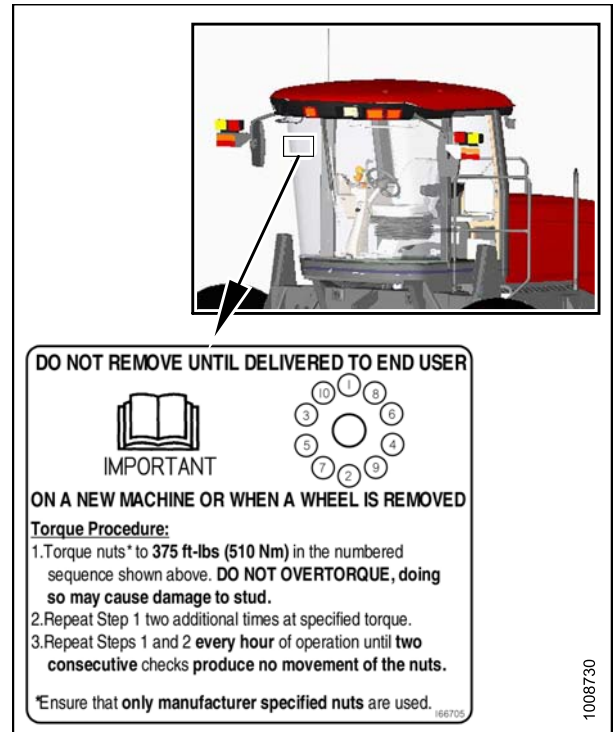


Figure 5.34: Windshield Decal (MD #166705)

6 Reference

6.1 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.

6.1.1 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 6.1 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

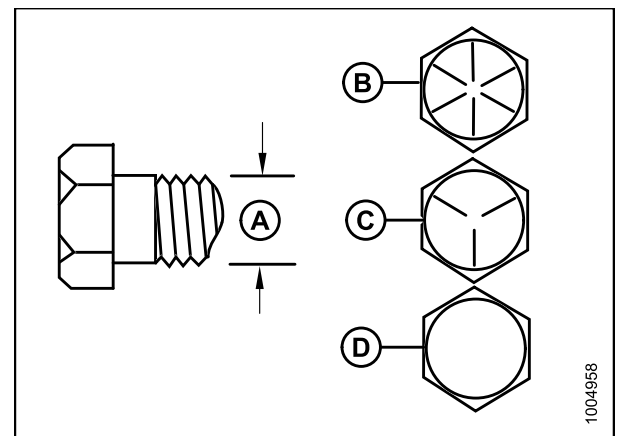


Figure 6.1: Bolt Grades

A - Nominal Size
C - SAE-5

B - SAE-8
D - SAE-2

REFERENCE

Table 6.2 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

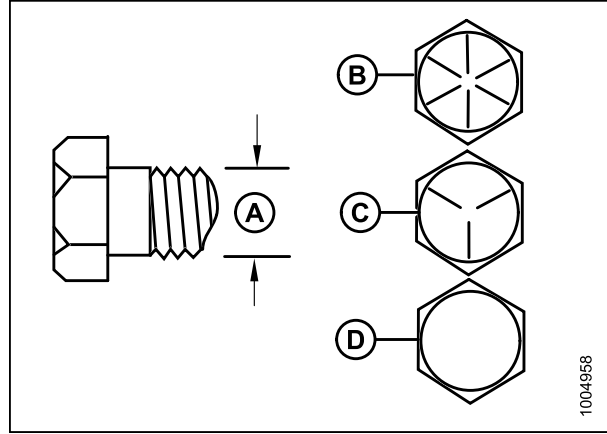


Figure 6.2: Bolt Grades

A - Nominal Size
 C - SAE-5
 B - SAE-8
 D - SAE-2

1004958

Table 6.3 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

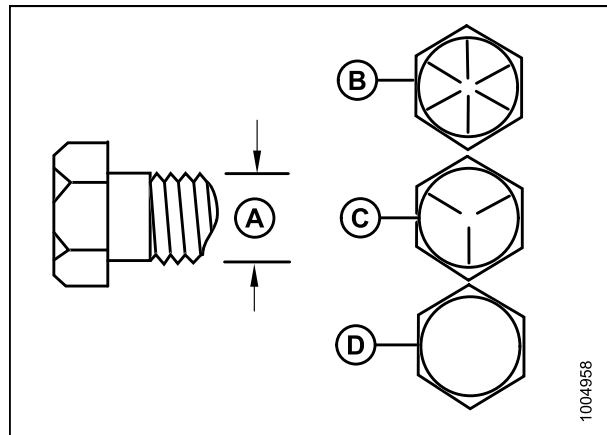


Figure 6.3: Bolt Grades

A - Nominal Size
 C - SAE-5
 B - SAE-8
 D - SAE-2

1004958

REFERENCE

Table 6.4 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

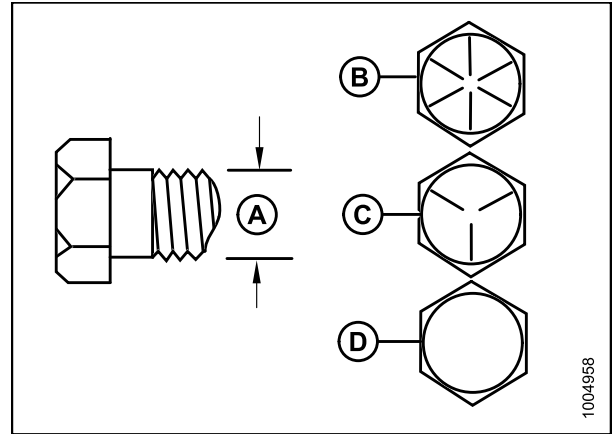


Figure 6.4: Bolt Grades

A - Nominal Size
C - SAE-5

B - SAE-8
D - SAE-2

6.1.2 Metric Bolt Specifications

Table 6.5 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

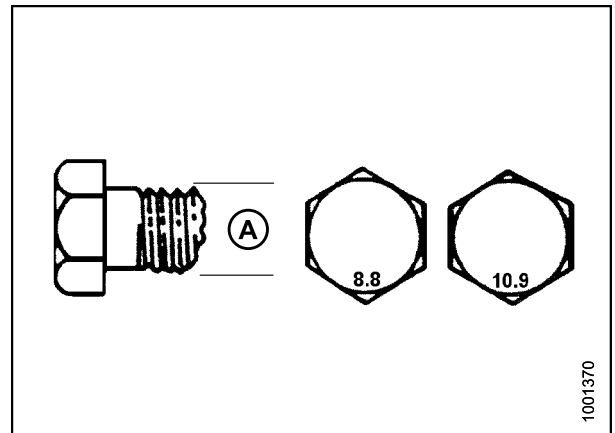


Figure 6.5: Bolt Grades

REFERENCE

Table 6.6 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

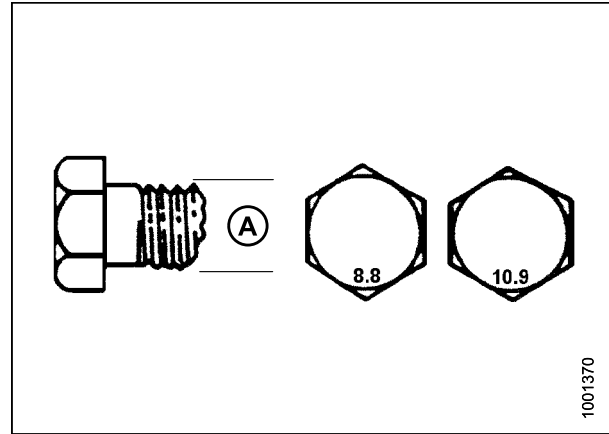


Figure 6.6: Bolt Grades

Table 6.7 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

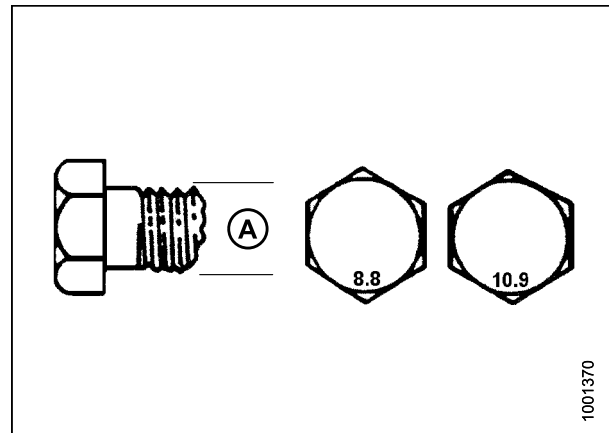


Figure 6.7: Bolt Grades

REFERENCE

Table 6.8 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

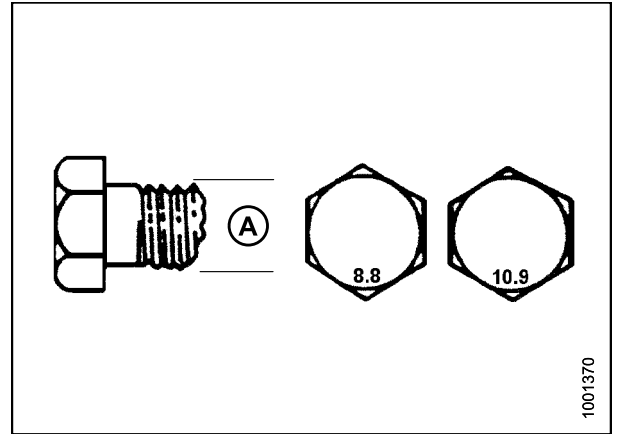


Figure 6.8: Bolt Grades

6.1.3 Metric Bolt Specifications Bolting into Cast Aluminum

Table 6.9 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	–	–	–	–

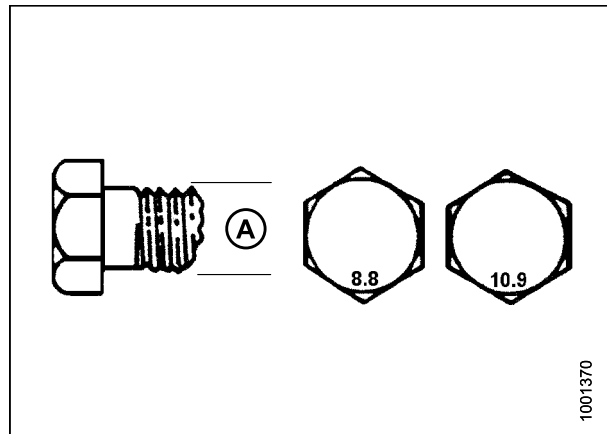


Figure 6.9: Bolt Grades

6.1.4 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 6.10 Flare-Type Hydraulic Tube Fittings, page 221](#).
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.

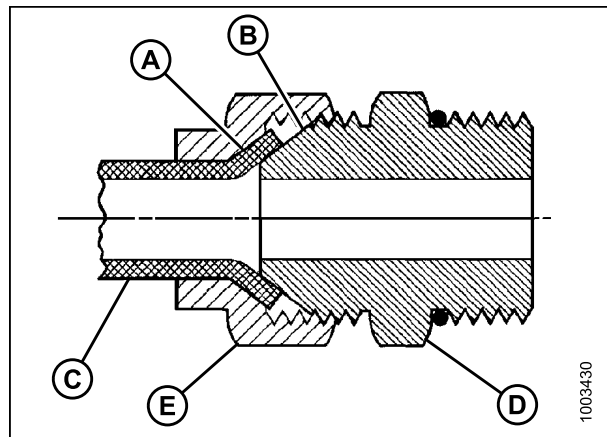


Figure 6.10: Hydraulic Fitting

REFERENCE

Table 6.10 Flare-Type Hydraulic Tube Fittings

SAE Dash Size	Thread Size (in.)	Torque Value ⁹		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

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

REFERENCE

6.1.5 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).

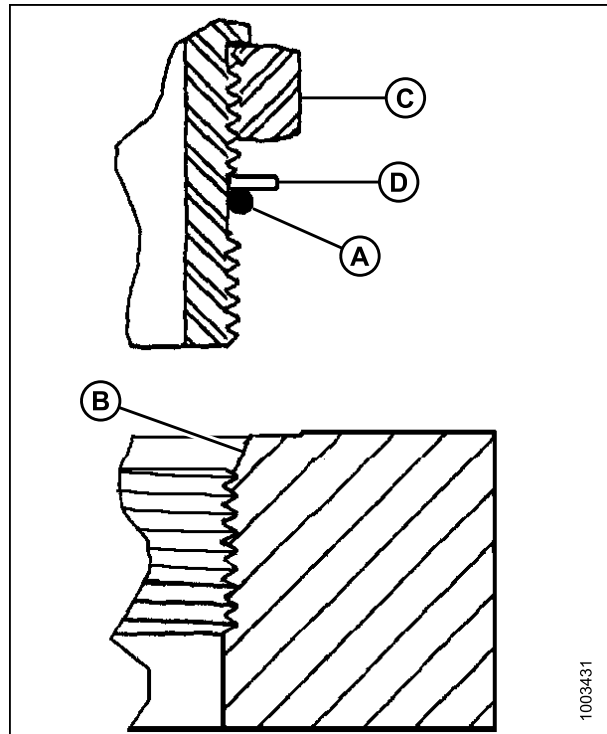


Figure 6.11: Hydraulic Fitting

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.

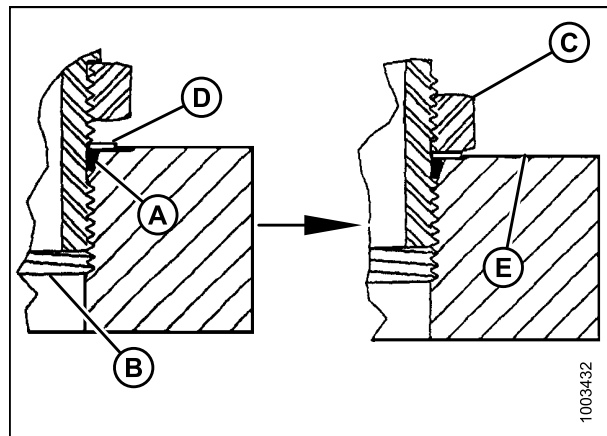


Figure 6.12: Hydraulic Fitting

REFERENCE

Table 6.11 O-Ring Boss (ORB) Hydraulic Fittings (Adjustable)

SAE Dash Size	Thread Size (in.)	Torque Value ¹⁰	
		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

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

REFERENCE

6.1.6 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 6.12 *O-Ring Boss (ORB) Hydraulic Fittings (Non-Adjustable)*, page 224.
6. Check final condition of fitting.

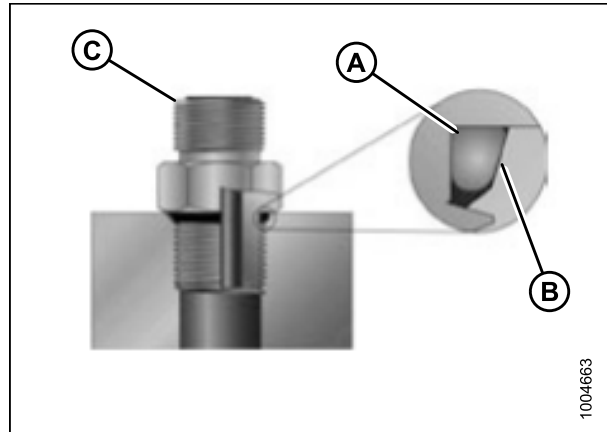


Figure 6.13: Hydraulic Fitting

Table 6.12 O-Ring Boss (ORB) Hydraulic Fittings (Non-Adjustable)

SAE Dash Size	Thread Size (in.)	Torque Value ¹¹	
		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

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

6.1.7 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 6.14: 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 6.13 *O-Ring Face Seal (ORFS) Hydraulic Fittings*, page 226.

NOTE:

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

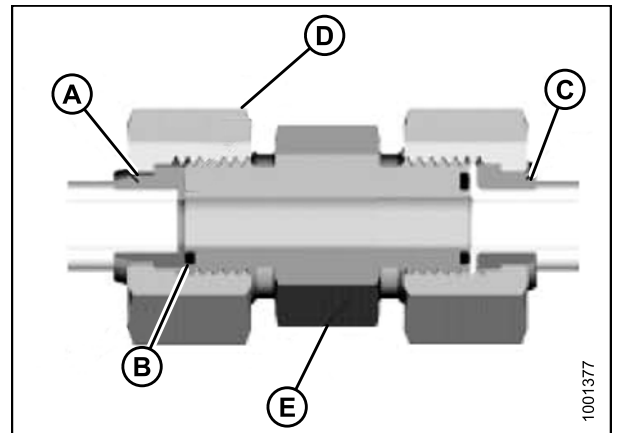


Figure 6.15: Hydraulic Fitting

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

REFERENCE

Table 6.13 O-Ring Face Seal (ORFS) Hydraulic Fittings

SAE Dash Size	Thread Size (in.)	Tube O.D. (in.)	Torque Value ¹²	
			N·m	ft·lbf
-3	Note ¹³	3/16	–	–
-4	9/16	1/4	25–28	18–21
-5	Note ¹³	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 ¹³	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

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

13. O-ring face seal type end not defined for this tube size.

6.1.8 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 [6.14 Hydraulic Fitting Pipe Thread, page 227](#). 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 6.14 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

6.2 Conversion Chart

Table 6.15 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

6.3 Definitions

The following terms and acronyms may be used in this manual.

Term	Definition
A-Series header	MacDon A30-D and A40-D auger headers
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
Cab-forward	Windrower operation with Operator and cab facing in direction of travel
CDM	Cab display module on a self-propelled windrower
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
D-Series header	MacDon D50, D60, and D65 rigid draper headers
DEF	Diesel exhaust fluid; also called AdBlue in Europe, and AUS 32 in Australia
DEF supply module	Pumps diesel exhaust fluid through system
DM	Dosing module
DK	Double knife
DKD	Double-knife drive
DDD	Double-draper drive
DOC	Diesel oxidation catalyst
DRT	Decomposition reactor tube
DWA	Double Windrow Attachment
ECM	Engine control module
ECU	Electronic control unit
Engine-forward	Windrower operation with Operator and engine facing in direction of travel
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
GSS	Grass Seed Special
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 and lays crop into a windrow and is attached to a self-propelled windrower

REFERENCE

Term	Definition
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)
HDS	Hydraulic deck shift
hp	Horsepower
ISC	Intermediate Speed Control
JIC	Joint Industrial Council: A standards body that developed standard sizing and shape for original 37° flared fitting
Knife	A cutting device which uses a reciprocating cutter (also called a sickle)
MDS	Mechanical deck shift
n/a	Not applicable
Nut	An internally threaded fastener that is designed to be paired with a bolt
N-DETENT	The slot opposite the NEUTRAL position on operator's console
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
rpm	Revolutions per minute
R-Series header	MacDon R80 and R85 rotary disc headers
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
SCR	Selective catalytic reduction
Screw	A headed and externally threaded fastener that threads into preformed threads or forms its own thread in one of mating parts
SDD	Single-drapeer drive
Self-Propelled (SP) Windrower	Self-propelled machine consisting of a power unit with a header
SK	Single knife
SKD	Single-knife drive
Soft joint	A joint made with use of a fastener where joining materials are compressible or experience relaxation over a period of time
spm	Strokes per minute
Tension	Axial load placed on a bolt or screw, usually measured in Newtons (N) or pounds (lb.)
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)

REFERENCE

Term	Definition
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
ULSD	Ultra low sulphur diesel
UCA	Upper cross auger
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
Windrower	Power unit of a self-propelled header
WCM	Windrower control module

Predelivery Checklist

Perform these checks and adjustments prior to delivery to your Customer. 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.

Windrower Serial Number:

Engine Serial Number:

Table 3 M155E4 Self-Propelled Windrower Predelivery Checklist – Export

✓	Item	Reference
	Check for shipping damage or missing parts. Be sure all shipping dunnage is removed.	—
	Check for loose hardware. Tighten to required torque.	6 Reference, page 215
	Check tire air pressures and adjust as required.	5.3.1 Checking Tire Pressures, page 189
	Check final drive hub lubricant level.	5.2 Checking Wheel Drive Lubricant Level, page 188
	Check engine coolant level and strength at reserve tank.	5.7 Checking Engine Coolant, page 195
	Check that Diesel Exhaust Fluid (DEF) has been drained and tank refilled with fresh DEF.	5.8 Draining and Refilling the Diesel Exhaust Fluid (DEF) Tank, page 196
	Check air cleaner and clamps.	5.4 Checking Engine Air Intake, page 191
	Check hydraulic oil level and check for leaks along lines.	5.5 Checking Hydraulic Oil, page 193
	Check fuel separator for water and foreign material. Drain and clean as necessary. Add fuel.	5.6 Checking Fuel Separator, page 194
	Check gear box lubricant level.	5.9 Checking Gearbox Lubricant Level, page 198
	Check tension of air conditioning compressor belt.	5.10 Checking Air Conditioning (A/C) Compressor Belts, page 199
	Check that machine is completely lubricated.	3.23 Lubricating the Windrower, page 118
	Check neutral interlock system.	5.11 Checking Safety System, page 200
	Check engine oil pressure indicator light at cab display module (CDM).	5.12.1 Checking Engine Warning Lights, page 202
	Start engine and run to operating temperature.	5.12.2 Checking Windrower Startup, page 203
	Check CDM for operation.	5.12.4 Checking Gauges and Cab Display Module (CDM) Display, page 204
	Check Operator's Presence System.	5.12.6 Checking Operator's Presence System, page 205
	Check alternator charge rate on CDM.	5.12.5 Checking Electrical System, page 204
	Check fuel gauge/indicator for operation.	5.12.4 Checking Gauges and Cab Display Module (CDM) Display, page 204

PREDELIVERY CHECKLIST

✓	Item	Reference
	Check that air conditioning is functioning properly.	5.12.11 Checking Air Conditioning (A/C) and Heater, page 211
	Check that heater is functioning properly.	5.12.11 Checking Air Conditioning (A/C) and Heater, page 211
	Check instrument console gauge lights.	5.12.4 Checking Gauges and Cab Display Module (CDM) Display, page 204
	Check maximum (no load) engine speed at CDM.	5.12.3 Checking Engine Speed, page 203
	Check that exterior lights are functioning properly.	5.12.7 Checking Exterior Lights, page 207
	Check that interior lights are functioning properly.	5.12.10 Checking Interior Lights, page 210
	Complete the header's Predelivery Checklist.	—
	Check that manuals are in the windrower manual case.	5.13 Checking Manuals, page 212
	Check that plastic coverings from cab interior have been removed.	5.14 Performing Final Steps, page 213

Date Checked:

Checked by:

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