MacDon

M2170 and M2260 Windrower

Unloading and Assembly Instructions (North America)

262669 Revision A

Original Instruction

The Harvesting Specialists.

M2 Series Windrowers, featuring Dual Direction® and CrossFlex™ rear suspension

Published: June 2024

Introduction

This manual contains unloading, assembly, and predelivery information for MacDon M2170 and M2260 Windrowers. When paired with one of the following MacDon auger, draper, or rotary disc headers, this windrower ably cuts and lays a variety of grain, hay, and specialty crops in windrows:

- A40DX Auger Headers
- D1X or D1XL Series Draper Headers
- D2 SP Draper Headers
- R216 Rotary Disc Headers
- R216 Rotary Disc Headers

  IMPORTANT:

  – R113 SP Rotary Disc Header is compatible with an M2170 or M2260 Windrower.

  – R116 SP Rotary Disc Header is compatible with an M2170 Windrower, but **NOT** an M2260 Windrower.

The windrower features Dual Direction® capability, meaning that it can be driven in cab-forward or engine-forward mode.

The designations right and left are determined by which direction the Operator is facing. The Operator is considered to be looking cab-forward when they are facing the drive wheels, and engine-forward when facing the engine. This manual uses the terms right cab-forward, left cab-forward, right engine-forward, and left engine-forward to refer to specific locations on the machine.

The windrower's ignition keys should have been bundled with the shipping documents. They are used to start the engine and to lock the cab doors and tool box compartment.

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).

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

This document is currently available in English only.

Summary of Changes

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

Section	Summary of Change	Internal Use Only
Throughout	Updated HarvestTouch™ Display operational checks procedures.	Product Support
Introduction, page i	Updated email address for Europe.	Product Support
4.1.1 Recording Serial Numbers, page 50	Updated topic.	ECN 65018
4.1.2 Checking Engine Air Intake, page 51	Updated topic.	Product Support ECN 64951
4.1.11 Checking and Adding Wheel Drive Lubricant – 10 Bolt Wheels, page 63	Updated topic.	ECN 64924
5.2.1 Attaching Draper Header Supports, page 118	Updated topic.	ECN 65336
5.3.1 Attaching Draper Header Supports, page 140	Updated topic.	ECN 65336
Lubricants, Fluids, and System Capacities	Updated fill amount.	ECN 64942

Chapter 1: Safety

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

1.1 Safety Alert Symbols

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

This symbol means:

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

Carefully read and follow the safety message accompanying this symbol.

Why is safety important to you?

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

Figure 1.1: Safety Symbol

1.2 Signal Words

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

Signal words are selected using the following guidelines:

DANGER

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

WARNING

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

CAUTION

Indicates a potentially hazardous situation that, if it is not prevented, may result in minor or moderate injury. It may also be used to alert you to unsafe practices.

IMPORTANT:

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

NOTE:

Provides additional information or advice.

1.3 General Safety

Operating, servicing, and assembling machinery presents several safety risks. These risks can be reduced or eliminated by following the relevant safety procedures and wearing the appropriate personal protective equipment.

CAUTION

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

Wear all protective clothing and personal safety devices that could be necessary for the job at hand. Do **NOT** take chances. You may need the following:

- Hard hat
- Protective footwear with slip-resistant soles
- Protective glasses or goggles
- Heavy gloves
- Wet weather gear
- Respirator or filter mask

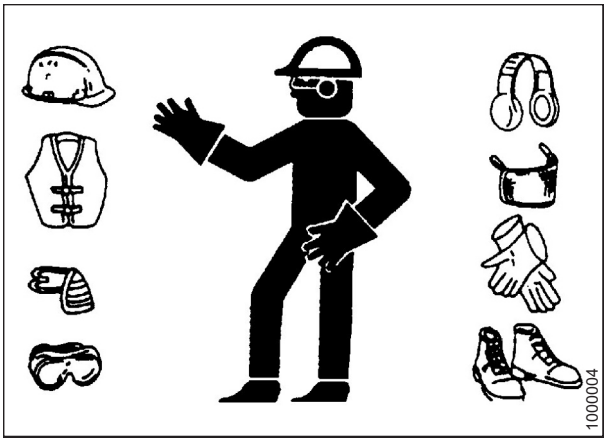


Figure 1.2: Safety Equipment

In addition, take the following precautions:

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

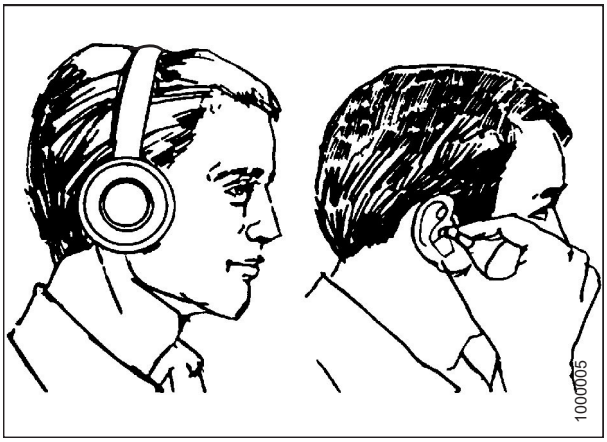


Figure 1.3: Safety Equipment

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

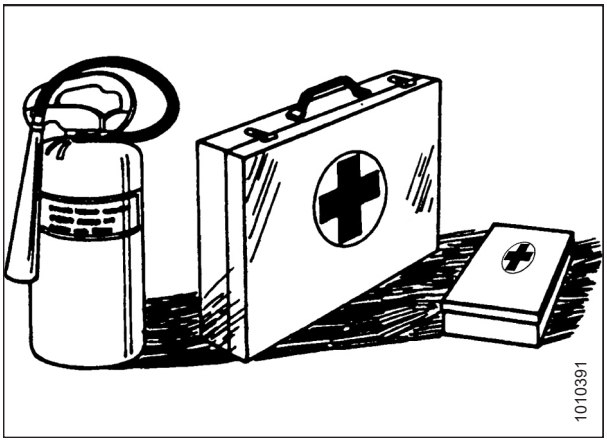


Figure 1.4: Safety Equipment

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

Figure 1.5: Safety around Equipment

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

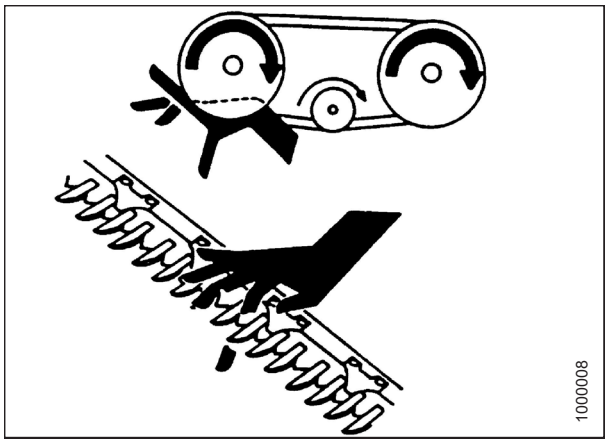


Figure 1.6: Safety around Equipment

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

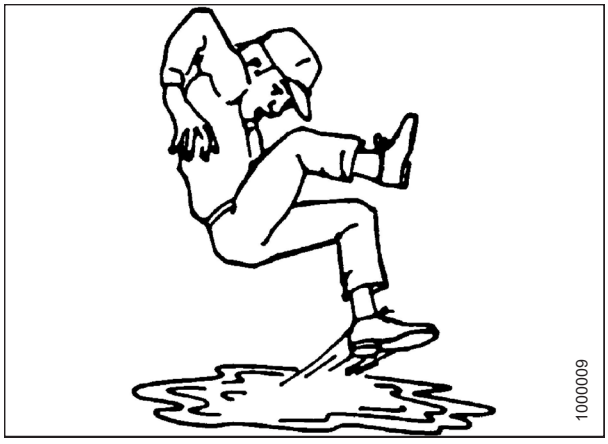


Figure 1.7: Safety around Equipment

1.4 Hydraulic Safety

Because hydraulic fluid is under extreme pressure, hydraulic fluid leaks can be very dangerous. Follow the proper safety procedures when inspecting hydraulic fluid leaks and servicing hydraulic equipment.

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

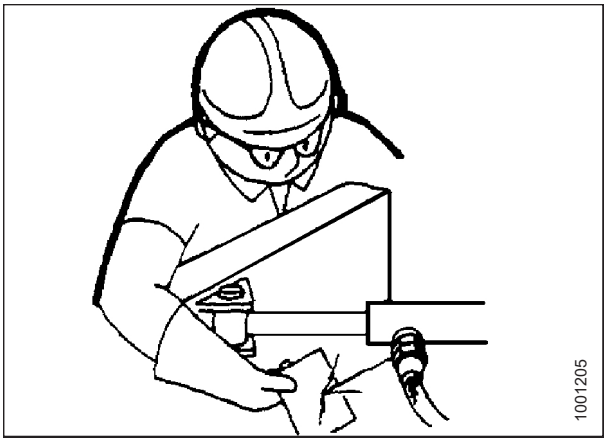


Figure 1.8: Testing for Hydraulic Leaks

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

Figure 1.9: Hydraulic Pressure Hazard

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

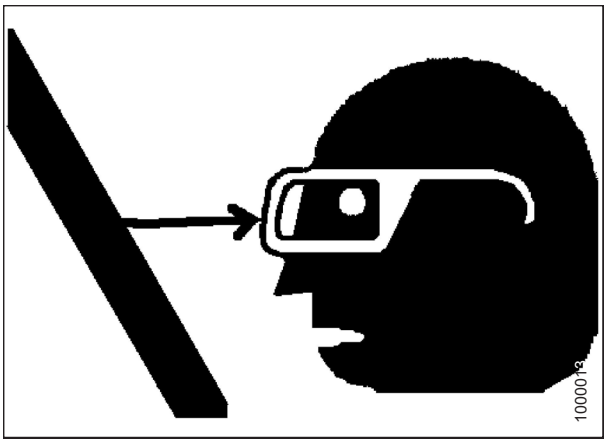


Figure 1.10: Safety around Equipment

1.5 Tire Safety

Understand the risks of handling tires before performing maintenance tasks.

WARNING

- **A tire can explode during inflation, causing serious injury or death.**
- **Follow the proper procedures when mounting a tire. Failure to do so can produce an explosion, causing serious injury or death.**

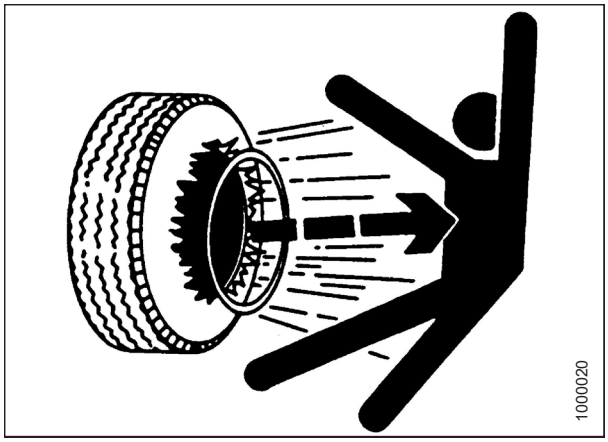


Figure 1.11: Overinflated Tire

WARNING

- **Do NOT remove, install, or repair a tire on a rim unless you have the proper equipment and experience to perform the task. Take the tire and rim to a qualified tire repair shop if necessary.**
- **Ensure that the tire is correctly seated on the rim before inflating it. If the tire is not correctly positioned on the rim or is overinflated, the tire bead can loosen on one side causing air to escape at high speed and with great force. An air leak of this nature can thrust the tire in any direction, endangering anyone in the area.**
- **Do NOT stand over the tire when inflating it. Use a clip-on chuck and extension hose when inflating a tire.**
- **Do NOT exceed the maximum inflation pressure indicated on the tire label.**

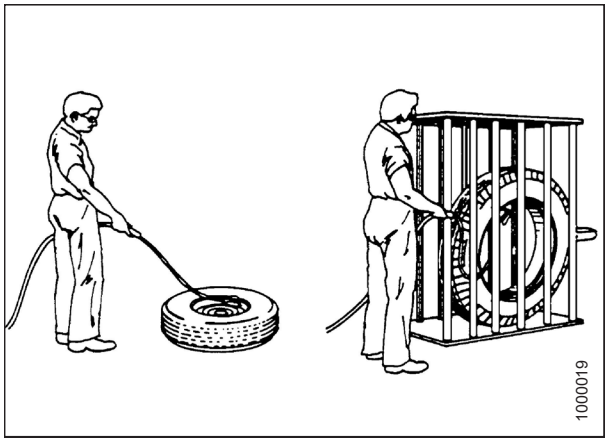


Figure 1.12: Safely Inflating Tire

- **Never use force on an inflated or partially-inflated tire.**
- **Ensure that all air is removed from the tire before removing the tire from the rim.**
- **Never weld a wheel rim.**
- **Replace tires that have defects. Replace wheel rims that are cracked, worn, or severely rusted.**

1.6 Battery Safety

Working with lead-acid vehicle batteries presents several safety risks.

WARNING

- **Keep all sparks and flames away from batteries. The electrolyte fluid in the battery cells emits an explosive gas which can build up over time.**
- **Ensure that there is adequate ventilation when charging the battery.**

Figure 1.13: Safety around Batteries

WARNING

- **Wear safety glasses when working near batteries.**
- **To avoid the loss of electrolyte fluid, do NOT tip a battery more than 45° off of its base.**
- **Battery electrolyte causes severe burns. Ensure that it does not contact your skin, eyes, or clothing.**
- **Electrolyte splashed into the eyes is extremely damaging. If you are treating this condition: force the eye open and flush it with cool, clean water for 5 minutes. Call a doctor immediately.**
- **If electrolyte is spilled or splashed on one's clothing or their body, neutralize it immediately with a solution of baking soda and water, then rinse the strained area with clean water.**

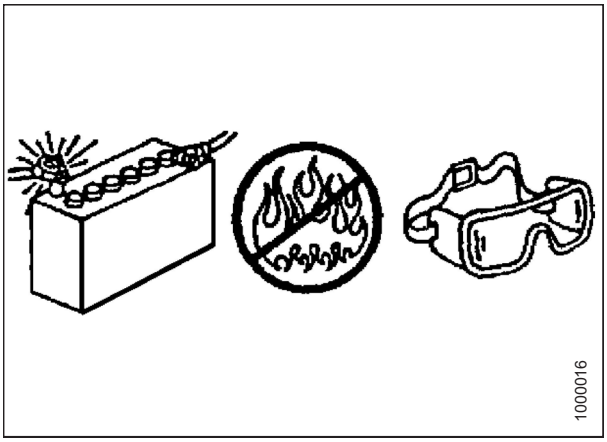


Figure 1.14: Safety around Batteries

WARNING

- **To avoid injury from a spark or short circuit, disconnect the battery ground cable before servicing any part of the electrical system.**
- **Do NOT operate the engine with the alternator or battery disconnected. With the battery cables disconnected and the engine running, a high voltage can be built up if the cable terminals touch the machine frame. Anyone touching the machine frame under these conditions may be electrocuted.**
- **When working around batteries, remember that all of the exposed metal parts are live. Never lay a metal object across the terminals; this will generate a powerful spark and can electrocute the holder of the tool if they are not properly grounded.**
- **Keep batteries out of reach of children.**

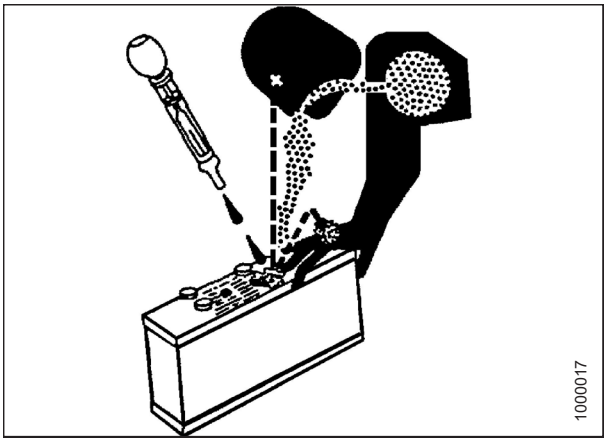


Figure 1.15: Safety around Batteries

1.7 Welding Precautions

Understand these critical precautions before attempting to weld anything on the windrower.

IMPORTANT:

If the procedures below are not followed, the windrower's electronic components may become damaged and fail intermittently. It is more difficult to diagnose these failures accurately.

Whenever possible, remove electronic components from the windrower instead of leaving them in place.

These same guidelines apply to plasma cutting, or any other high-current electrical operation performed on the machine.

If it is not practical to disconnect the header from the windrower before welding, disconnect the following electrical components from the windrower:

IMPORTANT:

Before disconnecting anything, park the windrower on a level surface, shut down the engine, and remove the key from the ignition.

- Negative battery terminals (A) (two connections)

  IMPORTANT:

  Always disconnect the battery terminals first, and reconnect them last.

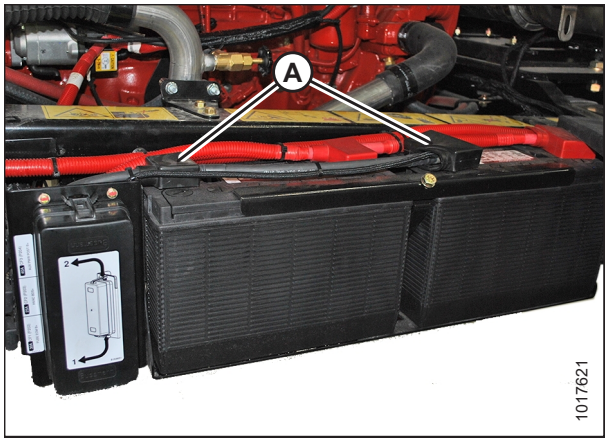


Figure 1.16: Negative Terminals

- Primary controller (A)
  Two connectors: P225 and P224

  Location: Behind the cab, near the header lift/fan manifold

  To disconnect a connector, press center red tab (B) to release the latch, then lift the latch and pull the connector away from the primary controller.

  IMPORTANT:

  When reconnecting these connectors, make sure to latch them in place.

  IMPORTANT:

  Do **NOT** power up or operate the windrower until these connectors are latched into place.

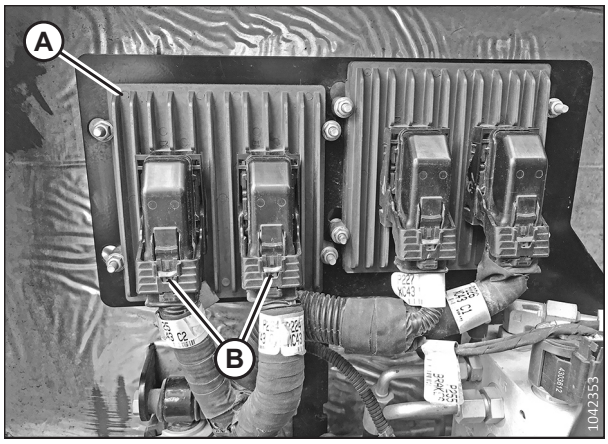


Figure 1.17: Primary Controller

- Firewall extension module (A)
  Two connectors: P227 and P226

  Location: Behind the cab, near the header lift/fan manifold

  To disconnect a connector, press center red tab (B), to release the latch, then lift the latch and pull the connector away from the module.

  IMPORTANT:

  When reconnecting these connectors, make sure to latch them in place.

  IMPORTANT:

  Do **NOT** power up or operate the windrower until these connectors are latched into place.

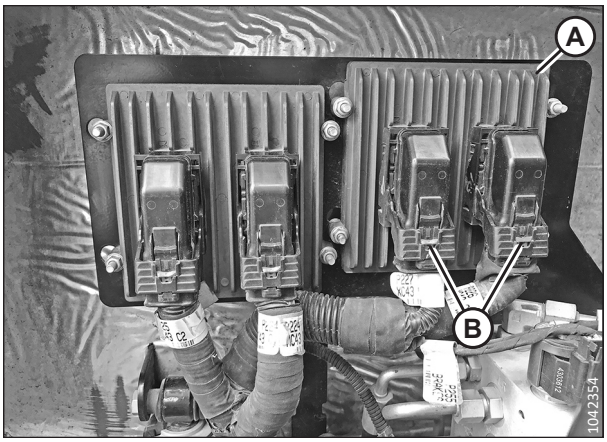


Figure 1.18: Firewall Extension Module

- Engine control module (ECM)
  Two connectors for Cummins: P100 (A) and J1 Cummins Proprietary ECM Connector (B)

  Location: On the engine

  To disconnect the connectors, pull the rubber boot off the cover, unlock the latch, then undo the main over-center latch. Remove bolts (C) so that the connectors can be pulled away from the ECM.

  IMPORTANT:

  Disconnect both connectors. Note the locations for reinstallation. Do **NOT** cross connect the connectors.

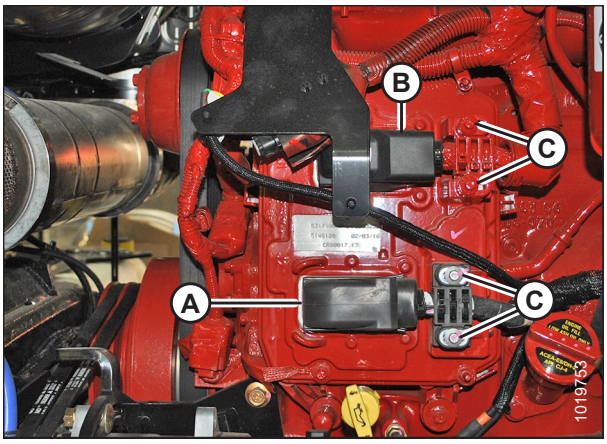


Figure 1.19: Engine Control Module

- Cab connectors (A)
  Two round connectors: C1 and C2

  Location: Under the cab

  NOTE:

  To disconnect circular Deutsch connectors, rotate the outer collar counterclockwise.

  IMPORTANT:

  To connect circular Deutsch connectors without bending the pins, fully align the plug with the receptacle before pressing the connector in.

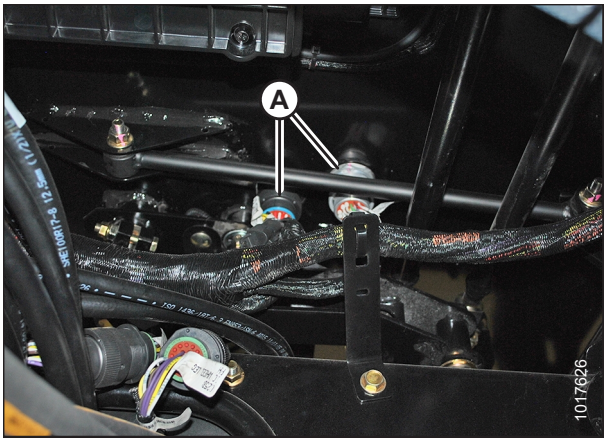


Figure 1.20: Cab Connectors

- Roof connectors (A)
  Four connectors: C10, C12, C13, and C14

  Location: Under the cab at the base of the left cab post

  NOTE:

  To disconnect circular Deutsch connectors, rotate the outer collar counterclockwise.

  IMPORTANT:

  To connect circular Deutsch connectors without bending the pins, fully align the plug with the receptacle before pressing the connector in.

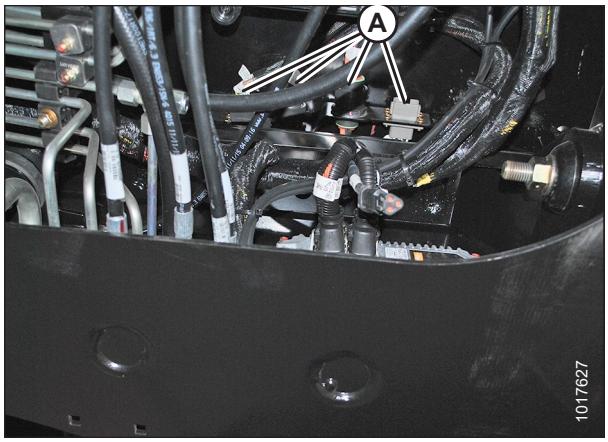


Figure 1.21: Roof Connectors

- Chassis relay module (A)
  Three connectors: P240, P241, and P242

  Location: Outside the left frame rail near the batteries

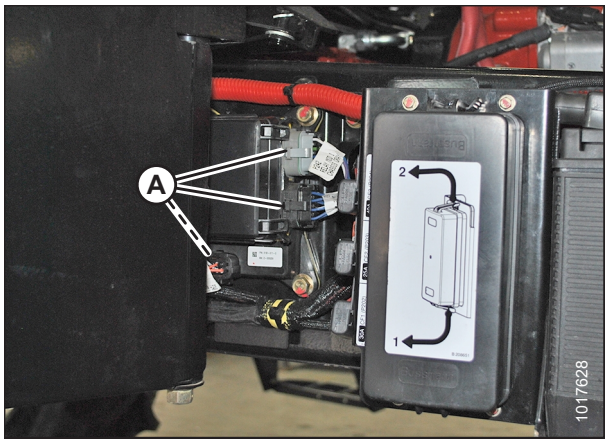


Figure 1.22: Chassis Relay Module

- Engine harness (A)
  Two round connectors: C30 and C31

  Location: Inside the left frame rail, at the rear of the windrower

  NOTE:

  To disconnect circular Deutsch connectors, rotate the outer collar counterclockwise.

  IMPORTANT:

  To connect circular Deutsch connectors without bending the pins, fully align the plug with the receptacle before pressing the connector in.

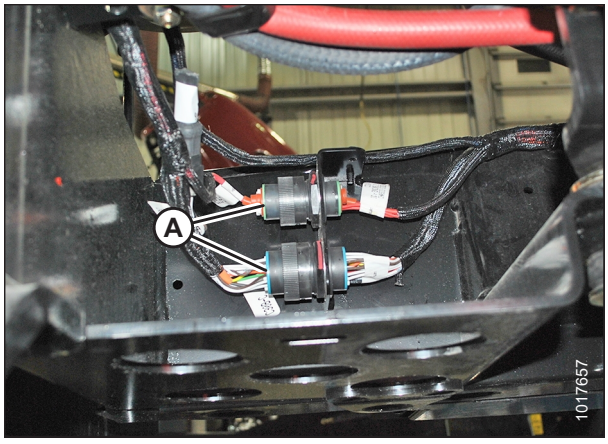


Figure 1.23: Engine Harness

- Air conditioning (A/C) box connectors (A)
  Two connectors: C15 and C16

  Location: Rear of the A/C box

  NOTE:

  To disconnect circular Deutsch connectors, rotate the outer collar counterclockwise.

  IMPORTANT:

  To connect circular Deutsch connectors without bending the pins, fully align the plug with the receptacle before pressing the connector in.

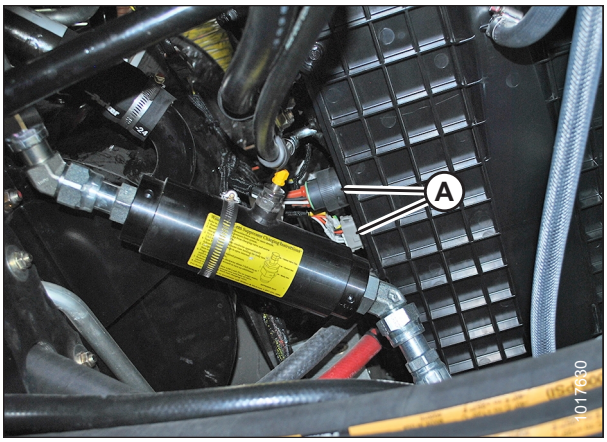


Figure 1.24: A/C Box Connectors

- Wheel motor connectors (A)
  Two round connectors: C25 and C26

  Location: Under the center of the frame, just behind the front cross member

  NOTE:

  To disconnect circular Deutsch connectors, rotate the outer collar counterclockwise.

  IMPORTANT:

  To connect circular Deutsch connectors without bending the pins, fully align the plug with the receptacle before pressing the connector in.

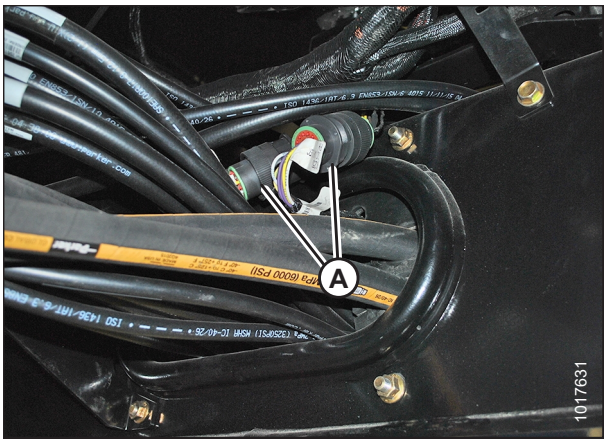


Figure 1.25: Wheel Motor Connectors

NOTE:

To align round connectors:

1. Observe the channel cuts and the mating channel protrusions on the inner walls of the connectors.
2. Face the mating connectors towards each other, then align the channels in the connectors.
3. While turning the outer connector clockwise, press the connectors together until the collar locks.

1.8 Engine Safety

Operating, maintaining, and servicing an engine presents several safety risks. These risks can be reduced or eliminated by following the relevant safety recommendations.

WARNING

Do NOT use aerosol starting aids such as ether when attempting to start the engine. Use of these substances could result in an explosion.

CAUTION

- **When starting up a new, serviced, or repaired engine, always be ready to stop the engine to prevent overspeeding. Do this by shutting off the air and/or fuel supply to the engine.**
- **Do NOT bypass or disable automatic shutoff circuits. These circuits help prevent injury and damage to the engine. For instructions, refer to the technical manual.**
- **Inspect the engine for potential hazards.**
- **Before starting the engine, ensure that no one is on, underneath, or close to the engine. Ensure that bystanders are clear of the area.**
- **All protective guards and covers must be installed if the engine must be started to perform service procedures.**
- **Work around rotating parts carefully.**
- **If a warning tag is attached to the engine start switch or controls, do NOT start the engine or move the controls. Consult whoever attached the warning tag before starting the engine.**
- **Start the engine from the operator's station. Follow the procedure in the Starting Engine section of the operator's manual. Following the correct procedure will help prevent major damage to engine components and prevent personal injury.**
- **To ensure that the jacket water heater (if equipped) and/or lubricant oil heater (if equipped) are working correctly, check the water temperature gauge and/or oil temperature gauge during heater operation.**
- **Engine exhaust contains combustion products, which can be harmful to your health. Always start and operate the engine in a well-ventilated area. If the engine is started in an enclosed area, vent the exhaust to the outside.**
- **Engine exhaust gases become very hot during operation and can burn people and common materials. Stay clear of the rear of machine and avoid exhaust gases when the engine is running.**

NOTE:

If the engine will be operated in very cold conditions, then an additional cold-starting aid may be required.

1.8.1 High-Pressure Rail

Fuel is delivered to the engine under high pressure. The risks of working with fuel under pressure must be understood before the fuel system can be serviced.

WARNING

- **Before disconnecting fuel lines or any other components under high pressure between the fuel pump and the high-pressure common rail fuel system, confirm that the fuel pressure has been relieved.**
- **Contact with high-pressure fuel may cause fluid penetration and burn hazards. High-pressure fuel spray presents a potential fire hazard. Failure to follow these instructions may cause injury or death.**

1.8.2 Engine Electronics

The engine control module (ECM) is a sensitive piece of equipment, which can be damaged if the proper safety procedures are not followed. The ECM also regulates various aspects of engine performance, which can affect the safe use of the machine.

WARNING

Tampering with the electronic system or the original equipment manufacturer (OEM) wiring installation is dangerous and could result in injury to people, death, or damage to the equipment.

WARNING

The electronic unit injectors use DC voltage. The ECM sends this voltage to the electronic unit injectors. Do NOT touch the harness connector for the electronic unit injectors while the engine is operating. Failure to follow this instruction could result in an electrical shock, causing personal injury or death.

This engine has a comprehensive, programmable engine monitoring system. The ECM has the ability to monitor engine operating conditions. If certain conditions exceed their allowable range, the ECM will initiate immediate action.

The engine monitoring system can initiate the following actions:

- Warning
- Derate
- Shut down

Abnormalities in the following monitored conditions can limit engine speed and/or engine power:

- Engine coolant temperature
- Engine oil pressure
- Engine speed
- Intake manifold air temperature

1.9 Safety Signs

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

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

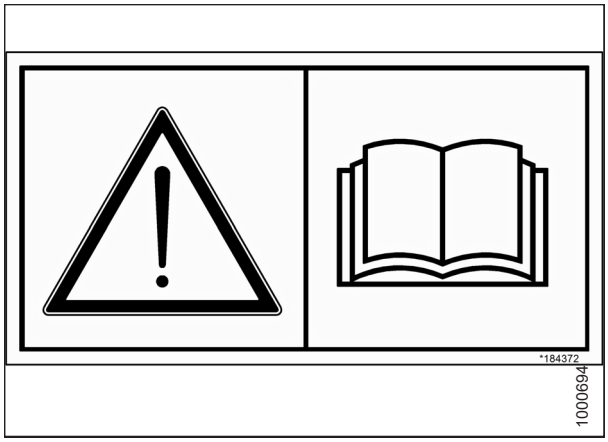


Figure 1.26: Operator's Manual Decal

Chapter 2: Unloading Windrower

The windrower will need to be unloaded from the trailer with a forklift before it can be assembled.

DANGER

The equipment used to unload the shipment must meet or exceed the specifications listed below. Using inadequate equipment may result in damage to the equipment and/or personal injury.

DANGER

Do NOT allow bystanders in the unloading area.

Table 2.1 Forklift Requirements

Minimum capacity[1]	7037 kg (15,500 lb.)
Minimum fork length	198.1 cm (78 in.)

IMPORTANT:

Forklifts are normally rated for a load located 610 mm (24 in.) ahead of the back end of the forks. To determine the forklift capacity when the load sits 122.2 cm (48 in.) ahead of the back of the forks, check with your forklift distributor.

To unload the windrower, do the following:

1. Move the trailer onto level ground. Block the trailer wheels.
2. Set the forklift's forks to the widest possible setting.
3. Position the forklift so that it is on the side of the trailer opposite windrower fuel tank (A).

   IMPORTANT:

   Ensure that the forks do **NOT** contact fuel tank (A) or windrower engine oil pan (B) (not shown).
4. Position forks (C) under the windrower frame so that fuel tank (A) sits between the forks.

   IMPORTANT:

   Ensure that the forks extend beyond the far side of the frame.

   NOTE:

   The windrower's center of gravity is approximately 157.5 cm (62 in.) rearwards from the center of its drive wheel.

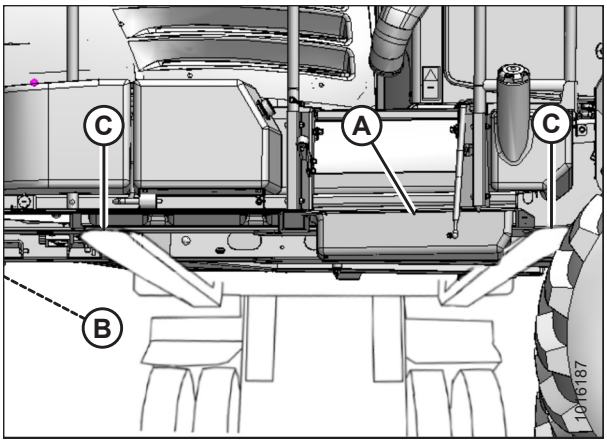


Figure 2.1: Windrower on Trailer

5. Lift the windrower until it clears the trailer deck.
6. Slowly back the forklift away from the trailer until the windrower is clear of the trailer deck.
7. Lower the windrower slowly to the ground. If the ground is soft, place wooden blocks under the front shipping stands.
8. Carefully back the forklift away from the windrower.
9. Check the windrower for shipping damage. Check the rest of the shipment for missing parts.

1. When the load is positioned 122.2 cm (48 in.) from the back end of the forks.

10. In case of shipping damage or missing parts, confirm that the serial number matches the shipping manifest, then contact MacDon immediately with any damage or shortage claims.

Chapter 3: Assembling Windrower

Once the windrower has been unloaded, assembly can begin.

3.1 Lowering Steps

Lowering the steps allows safe and easy access to the cab.

1. Locate the left cab-forward steps. Remove and discard stop bolt and nut (A).
2. Loosen pivot bolts (B) securing steps (C).

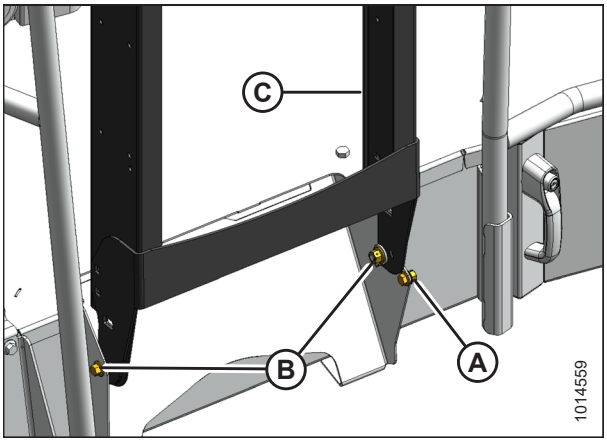


Figure 3.1: Left Step – Shipping Position

3. Lower left steps (A) to the working position.
4. Ensure that clips (B) are engaged in the steps.
5. Tighten pivot bolts (C) to 95 Nm (70 lbf·ft).

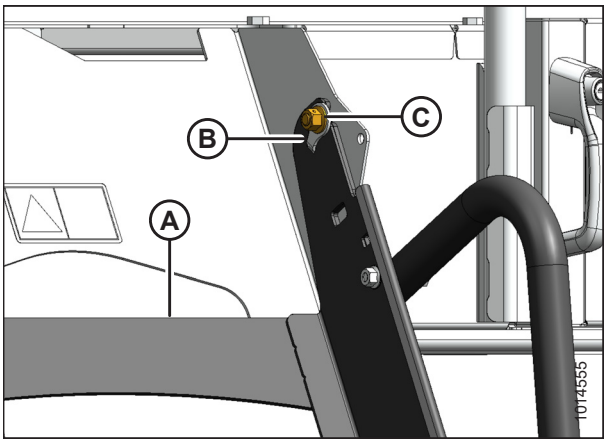


Figure 3.2: Left Step – Working Position

3.2 Retrieving Ignition Keys and Checking Shipped Parts

Make sure you have received all of the parts necessary for assembling the windrower.

1. From the document package that contained this manual:
   - One set of ignition keys (A) (MD #134717)
   - One Speed Identification Symbol (30 mile/h) (B) (MD #208900)

     NOTE:

     This decal will only be used if the windrower will be used in the United States of America.

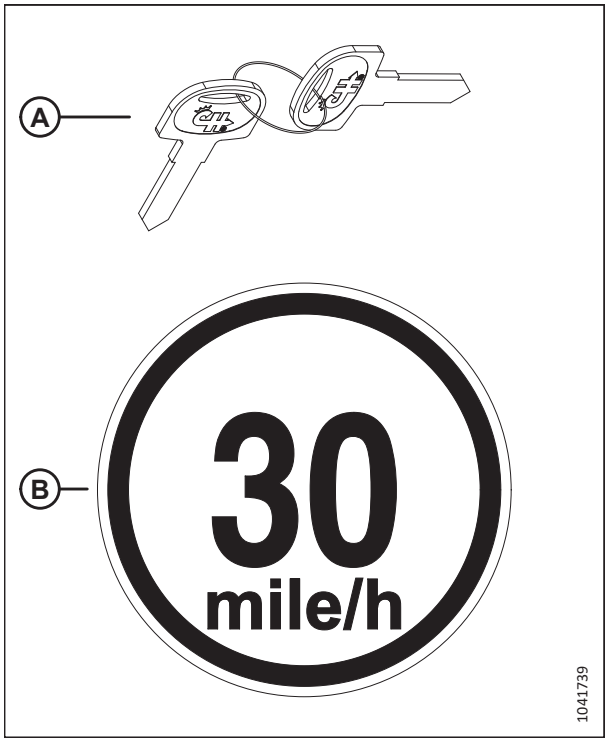


Figure 3.3: Parts Supplied in Document Package

2. Use the ignition key to unlock the storage compartment that contains toolbox (A).
3. Confirm the tool box contains all of the parts listed in Table *3.1, page 20*.

Figure 3.4: Windrower Tool Box

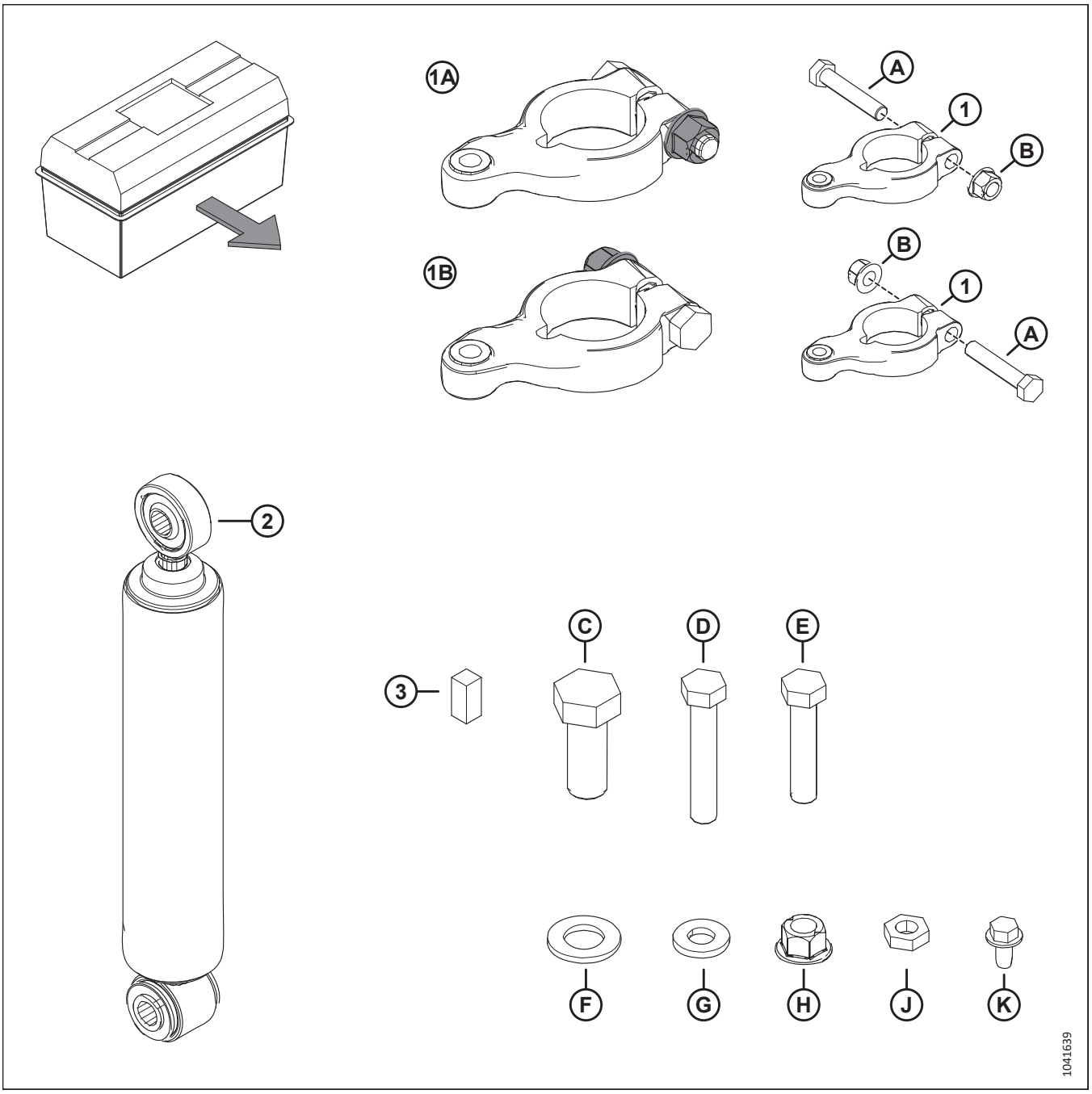


Figure 3.5: Parts Supplied in Tool Box

NOTE:

The toolbox contains the parts needed to set up the walking beam and caster wheels, and to install the windshield access step.

Table 3.1 Parts Supplied in Tool Box

Ref	Part Number	Description	Quantity
1A	—	This anti–shimmy arm is shipped assembled for RIGHT side of the walking beam using one arm (1), bolt (A), and nut (B).	1
1B	—	This anti–shimmy arm is shipped assembled for LEFT side of the walking beam using one arm (1), bolt (A), and nut (B).	1
1	202896	ARM – ANTI SHIMMY MACHINED	2
2	202898	DAMPENER – ANTI SHIMMY	4
3	135296	KEY	2
A	136455	BOLT – HEX HD M16 X 2 X 85 – 8.8 – AA3L	2
B	152520	NUT – HEX FLG TECH LK M16 X 2 – 10 – AA1J	2
C	136366	BOLT – HEX HD TFL M24 X 3 X 60 – 10.9 – AA1J	4
D	252533	BOLT – HEX HD TFL M16 X 2 X 90 – 10.9 – AA3L	4
E	181511	BOLT – HEX HD M16 X 2 X 75 – 10.9 – AA1J	2
F	136367	WASHER – FLAT REG M24 – 300HV – AA1J	4
G	120901	WASHER – HARD L9SPCL 5/8 – 82/85HR15N – AB0C	6
H	152520	NUT – HEX FLG TECH LK M16 X 2 – 10 – AA1J	1
J	136473	NUT – HEX THIN M16 X 2 – 05 – AA1J	2
K	136209	SCR – HEX WASHER HD M10 X 1.5 X 20 – SPCL – 450HV	3

4. Confirm the cab contains all of the parts listed in Table *3.2, page 21*.

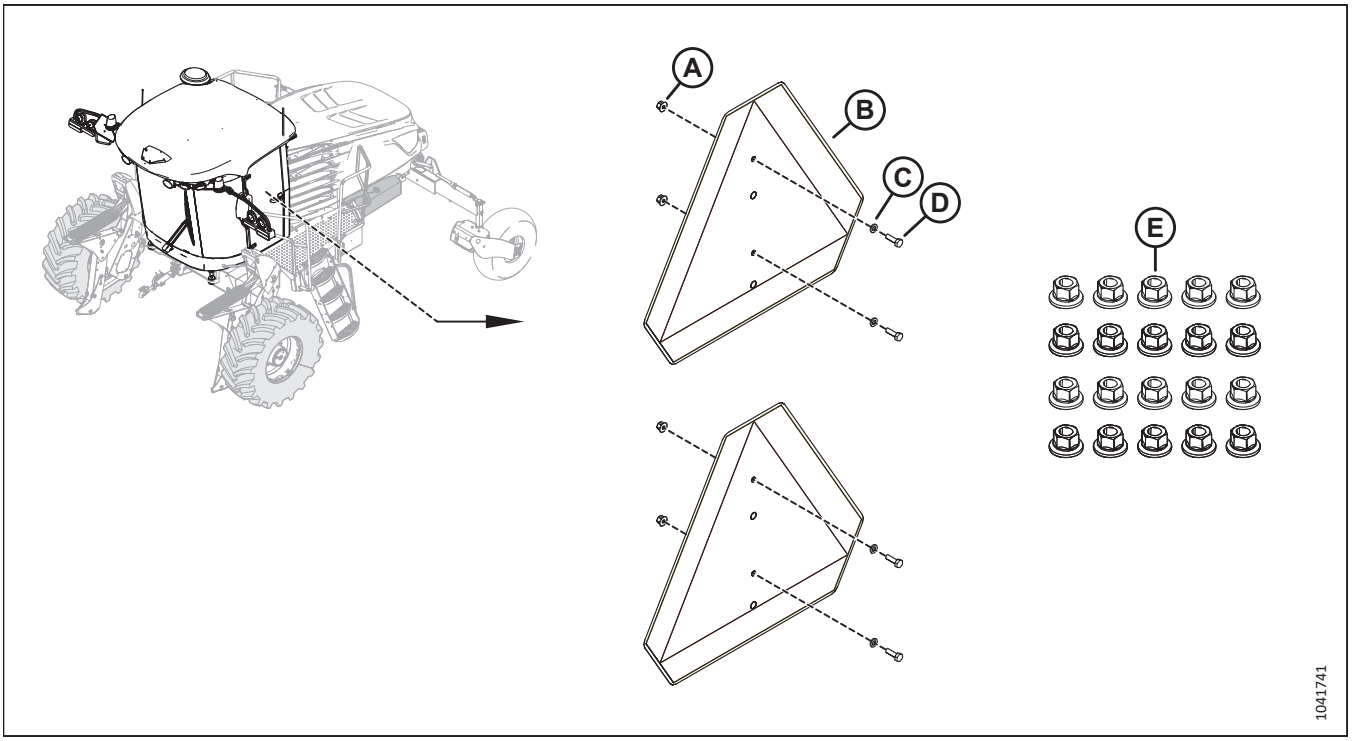


Figure 3.6: Parts Supplied in Cab

NOTE:

The cab contains slow-moving vehicle signs for the mirror arm and the walking beam, and nuts for the drive wheels.

Table 3.2 Parts Supplied in Cab

Ref	Part Number	Description	Quantity
	—	Slow moving vehicle signs (B) are shipped with two nuts (A), two washers (C), and two bolts (D) attached to each sign.	
A	152668	NUT – HEX FLG CTR LOC M6 X 1-8	4
B	21032	SMV SIGN – METAL & REFLECTOR	2
C	184705	WASHER – FLAT M6 – 200HV – AA1J	4
D	184646	BOLT – HEX HD TFL M6 X 1 X 20 – 8.8 – AA1J	4
E	205397	NUT – WHEEL DIN 74361N M20 X 1.5 X GR 10.9	20 or 24

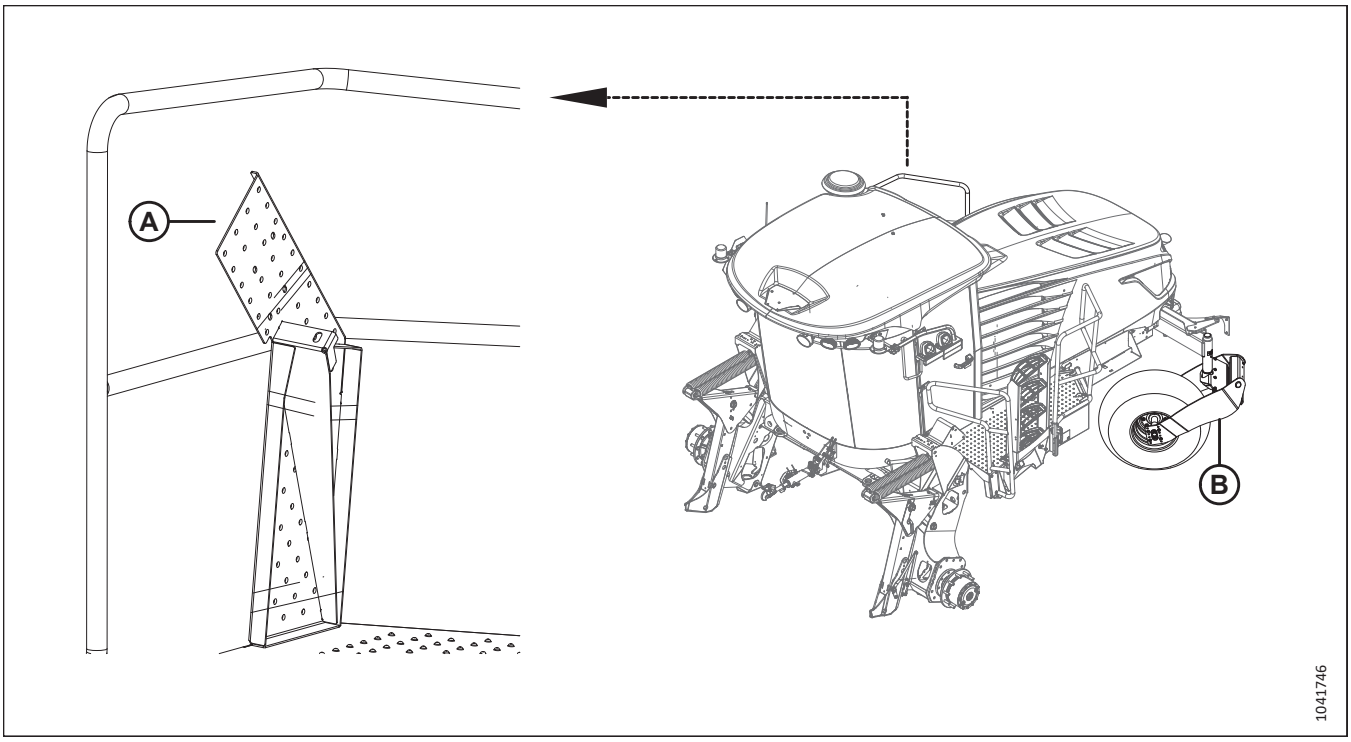


Figure 3.7: Large Loose Parts

5. Confirm windshield access step (A) was shipped attached to railing.

6. In most cases, caster wheels (B) are shipped partially installed on the windrower. If they were shipped detached from the windrower, retrieve them from the shipment now.

3.3 Installing Caster Wheels

The windrower's caster wheels may have been shipped removed from the windrower. They will need to be installed now.

If the caster wheels are already installed, proceed to *3.4 Installing Drive Wheels, page 26*.

DANGER

Ensure that all bystanders have cleared the area.

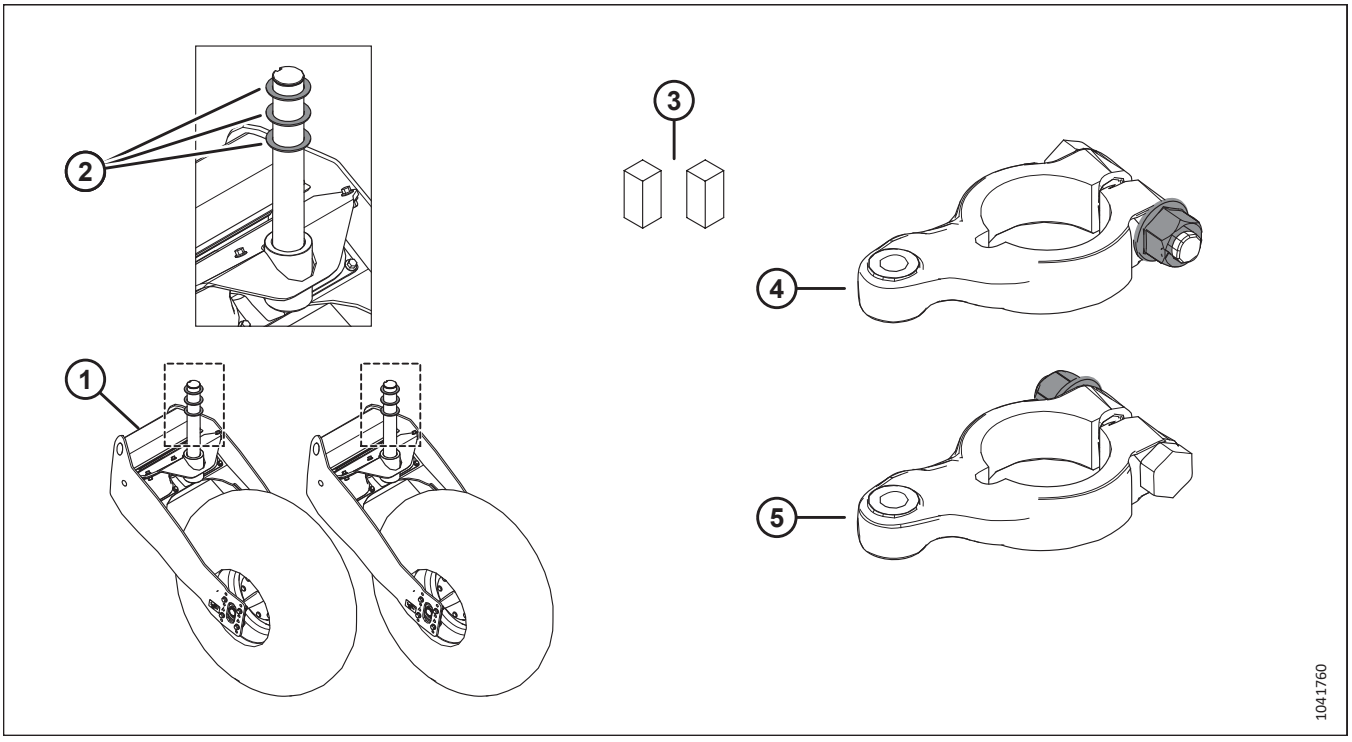


Figure 3.8: Parts Required for Caster Wheel Installation

1. Retrieve both caster wheels (1). Make sure each wheel spindle has three washers (2). Remove and retain one washer from each caster wheel.
2. Retrieve the remaining parts from the tool box:
   - Two keys (MD #135296) (3)
   - Anti-shimmy arm (4) is shipped assembled for RIGHT side of the walking beam
   - Anti-shimmy arm (5) is shipped assembled for LEFT side of the walking beam

3. Remove banding and blocking (A) securing the walking beam to the frame.

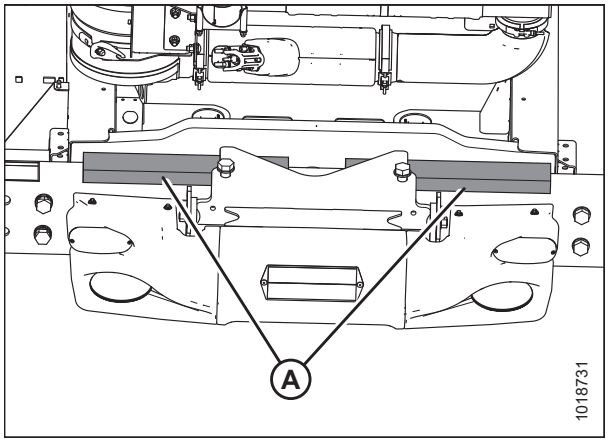


Figure 3.9: Walking Beam Secured to Frame

4. Approach the front of the windrower with a forklift. Slide the forks under the frame.

   IMPORTANT:

   Ensure that the forks do **NOT** contact fuel tank (A). Ensure that the forks lift **ONLY** the windrower's frame.

5. Raise the windrower approximately 152 cm (60 in.) off of the ground. Place suitable stands under the drive wheel legs and the rear frame. Lower the windrower onto the stands so that the forklift's forks are partially unloaded.

Figure 3.10: Lifting Windrower

6. Attach sling (B) to caster assembly (A).

7. Confirm two washers (C) are already placed on caster wheel spindle (D).

8. If caster assembly (A) is on a pallet, remove the banding and shipping material securing the assembly to the pallet.

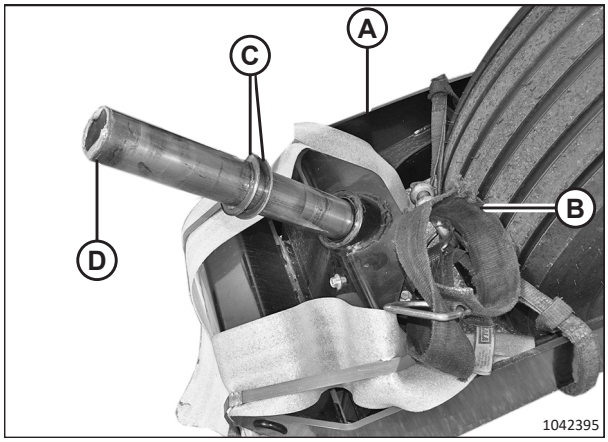


Figure 3.11: Caster Wheel Assembly in Shipping Configuration

9. Attach sling (A) on caster assembly (B) to a suitable lifting device.
10. Tilt walking beam (C) and maneuver caster assembly (B) so that spindle (D) can be installed onto walking beam (C).

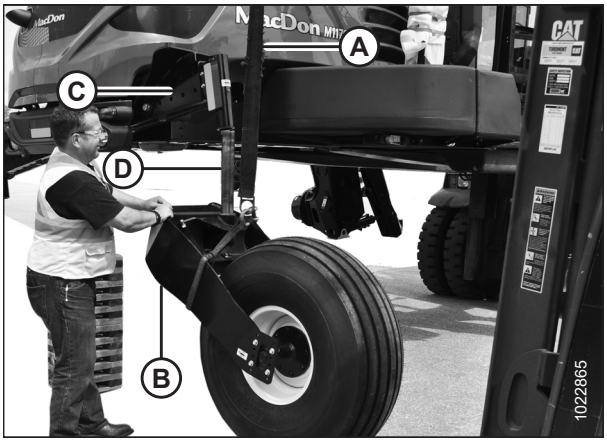


Figure 3.12: Caster Assembly Ready for Installation

11. Install washer (A) onto the spindle.

    NOTE:

    Washer (A) was retained during Step *1, page 23*.

12. Place anti-shimmy arm (B) (left assembly shown) onto the spindle and washer (A).

    NOTE:

    Ensure that the arm is positioned so that there is no clearance at the top and bottom of the walking beam extension.

13. Rotate the spindle until notch (C) aligns with the notch in the anti-shimmy arm (left arm shown).
14. Install key (D) (MD #135296) into the notch.
15. Install retaining ring (E).
16. Tighten nut (F). Torque the nut to 195 Nm (144 lbf·ft).
17. Remove the sling from the caster assembly.
18. Repeat Step *6, page 24* to Step *17, page 25* to install the second caster assembly.

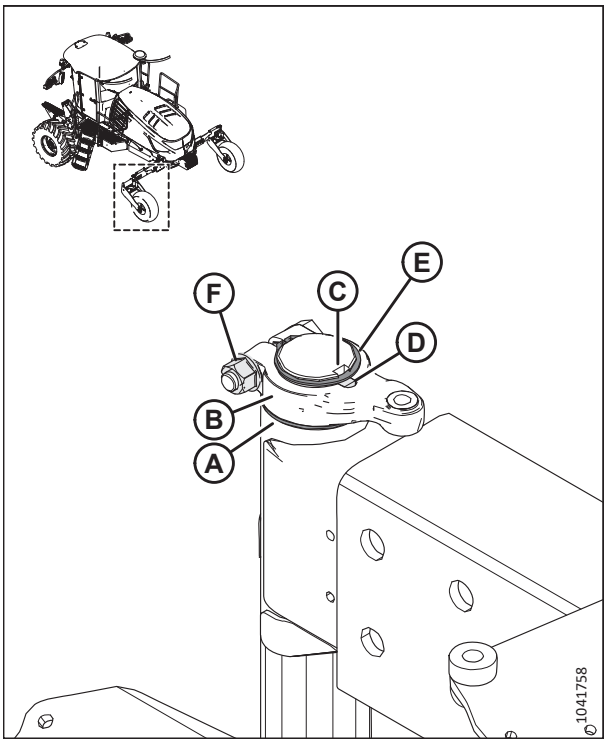


Figure 3.13: Caster Arm

3.4 Installing Drive Wheels

A drive wheel includes a rim and a bar or turf tire, depending on the application. The windrower is shipped with the drive wheels unattached. They will need to be installed on the windrower.

DANGER

Ensure that all bystanders have cleared the area.

CAUTION

Use a lifting device capable of supporting a minimum of 907 kg (2000 lb.) to lift the wheel assembly.

IMPORTANT:

The windrower must be supported with stands while the drive wheels are being installed.

1. Retrieve the bag of M20 nuts from the cab.

   NOTE:

   The bag contains 20 or 24 nuts (MD #205397).

2. Use a forklift to lift the cab end of the windrower approximately 130 cm (51 in.) (B) off of the ground, or enough so that left cab-forward drive wheel assembly (A) can be positioned as shown. Place stand (C) under the windrower frame.

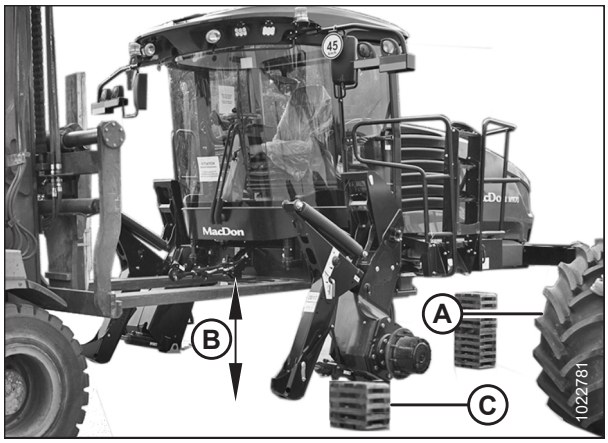


Figure 3.14: Windrower Supports in Place

3. Remove and discard shipping shoe (A) and its mounting hardware (B) from both wheel legs (C).

4. Clean the mounting surface on the wheel drive and the rim.

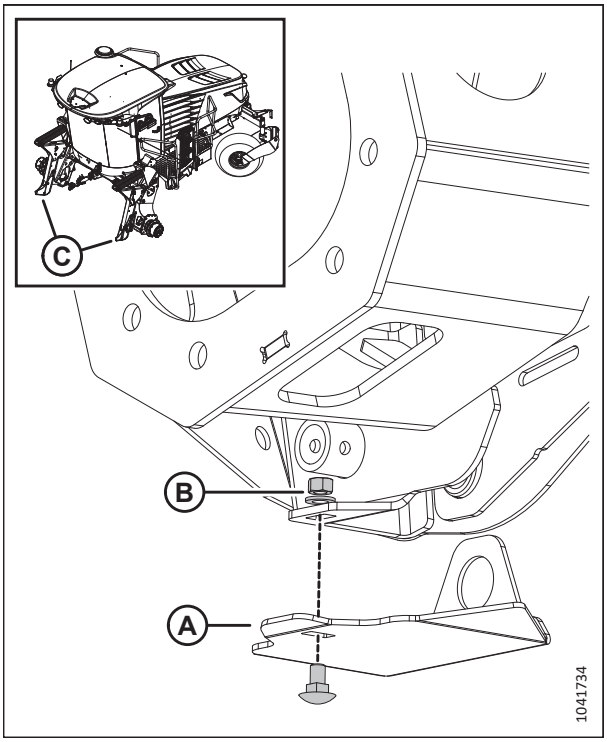


Figure 3.15: Wheel Leg Shipping Shoe

5. Position lifting device (A) under the wheel as shown. Raise the wheel slightly.

6. Position the wheel against the wheel drive hub so that air valve (B) is on the outside and tread (C) points cab-forward.

   NOTE:

   For wheels equipped with turf tires (those with a diamond tread pattern), ensure that the arrow on the sidewall points cab-forward.

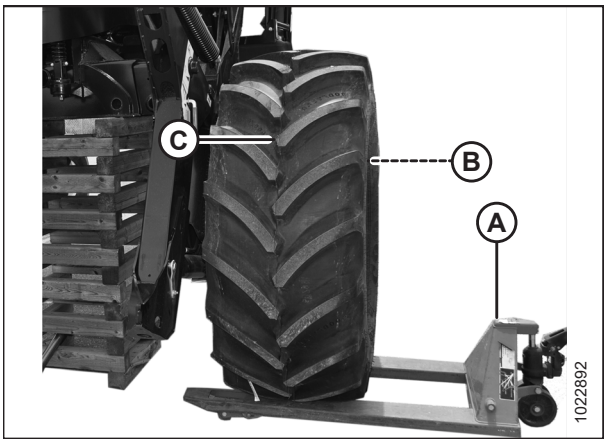


Figure 3.16: Drive Wheel Ready for Installation

7. Align the wheel rim with the studs on the hub. Push the wheel onto the hub.
8. Install and hand-tighten wheel nuts (A).

   IMPORTANT:

   To prevent damage to the wheel rims and the studs, do **NOT** use an impact wrench to tighten the nuts. The stud threads must be clean and dry. Do **NOT** apply lubricant or anti-seize compound to the stud threads. Do **NOT** overtighten the wheel nuts.

9. Torque the drive wheel nuts to 510 Nm (375 lbf·ft). Follow the tightening sequence shown in the illustration.

   IMPORTANT:

   Only use lug nuts (MD #205397) specified by MacDon.

10. Repeat the tightening sequence two additional times. Ensure that the specified torque is achieved each time.
11. Repeat Step *4, page 27* to Step *10, page 28* in order to install the other drive wheel.
12. Use the forklift to raise the windrower. Remove the stand.
13. Lower the windrower.
14. Repeat the wheel nut torquing procedure every hour of operation until two consecutive checks confirm that there is no movement of the nuts.

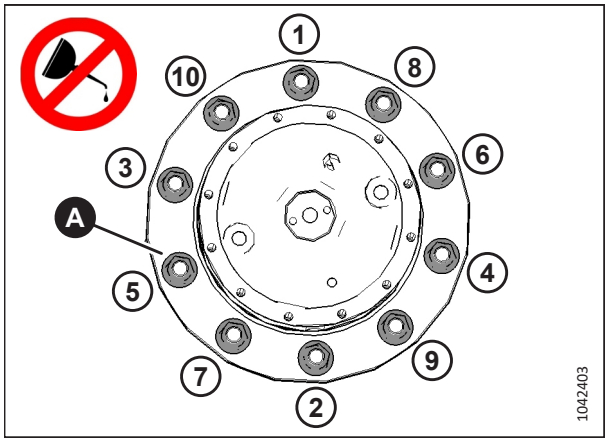


Figure 3.17: Tightening Sequence – 10-Bolt Wheel

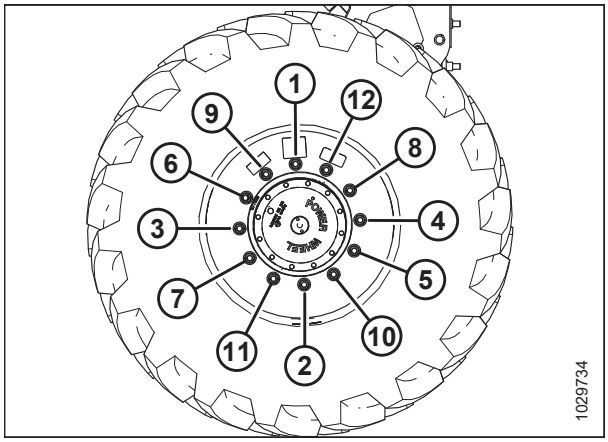


Figure 3.18: Tightening Sequence – 12-Bolt Wheel

3.5 Repositioning Right Leg

The right cab-forward leg must be changed from the shipping configuration to the field configuration.

DANGER

Ensure that all bystanders have cleared the area.

IMPORTANT:

Do **NOT** open the right cab-forward door while the right leg is in the shipping configuration. If the door contacts the leg, the door glass may shatter, or the door seals may be damaged.

1. Using a forklift, lift the front of the windrower. Use stand (A) (or an equivalent) to support the front of the windrower so that right drive wheel (B) remains off of the ground.
2. Slowly lower the windrower onto stand (A).
3. Place pallet jack (C) (or an equivalent) under right drive wheel (B). Raise the pallet jack so that the right drive wheel is supported and the right cab-forward leg does not bear any of the wheel's weight.

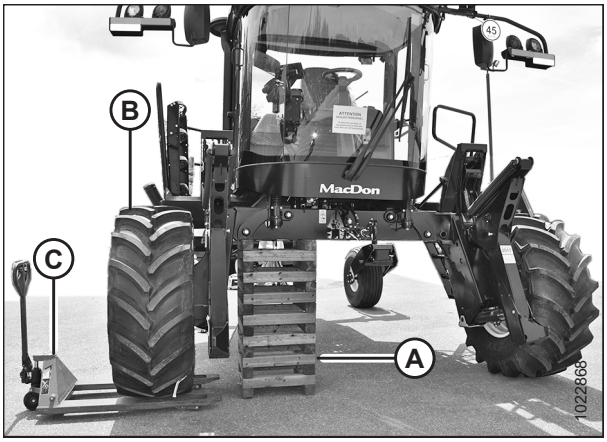


Figure 3.19: Windrower Right Leg Supported

4. Remove shipping tag and wire (A) from the traction drive hoses under the cab.

Figure 3.20: Shipping Tag Under Windrower Cab

5. Remove and retain the following from the frame for reinstallation later in this procedure:
   - Two M20 x 500 leg pin bolts (A)
   - Four washers (B)
   - Two M20 nuts (C)

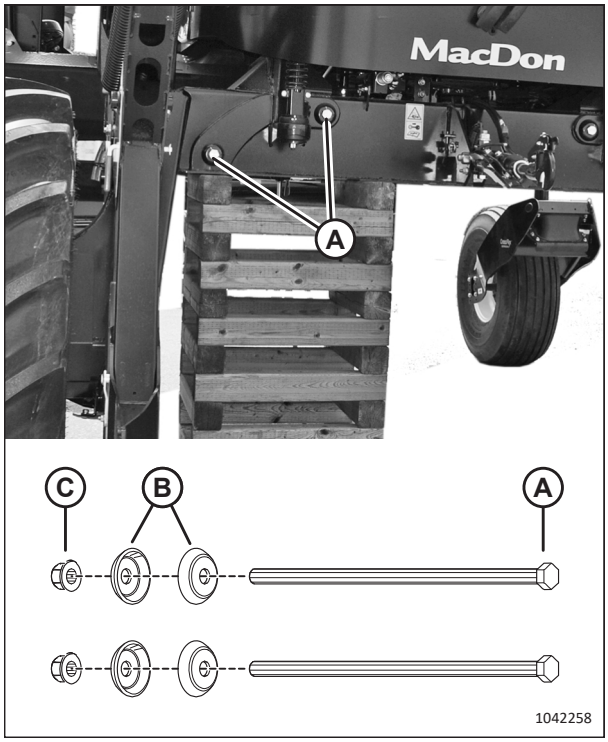


Figure 3.21: Windrower Right Leg Bolts

6. Adjust the lifting device's lift height until pin (A) is loose. Use slide hammer (B) (MD #209816) to extract the pin from the front of the frame.

   NOTE:

   Use of a special tool is necessary due to the limited amount of space in front of the fuel tank.

   NOTE:

   Removing the pins will be difficult if the right leg is bearing any of the wheel's weight.

7. Remove the second pin.

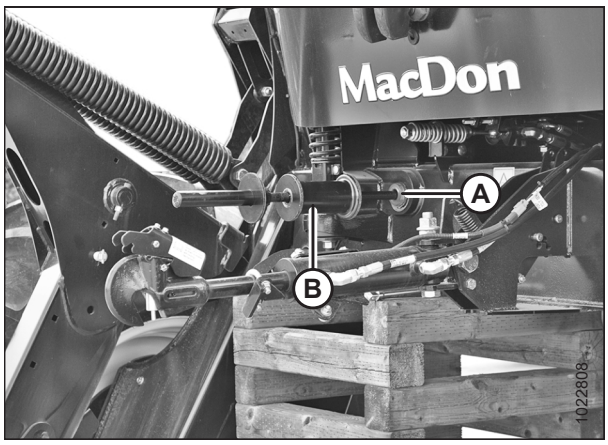


Figure 3.22: Slide Hammer

8. Move the leg outward to expose hole (A) in the frame.

Figure 3.23: Right Leg Ready to Move

9. Align the holes at the pin locations. Use slide hammer (B) to reinstall pins (A). If necessary, adjust the jack to prevent damage to the outer edges of the pins.

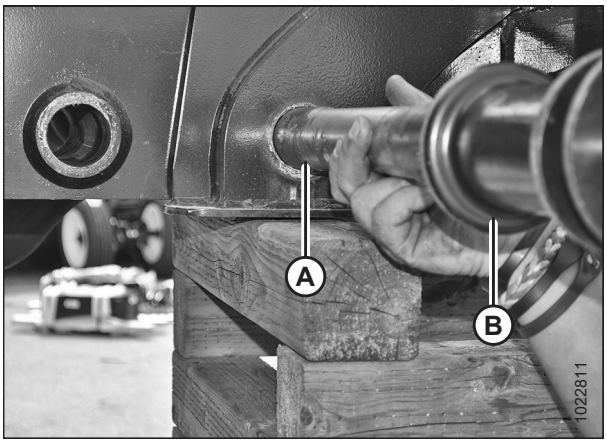


Figure 3.24: Leg Pin

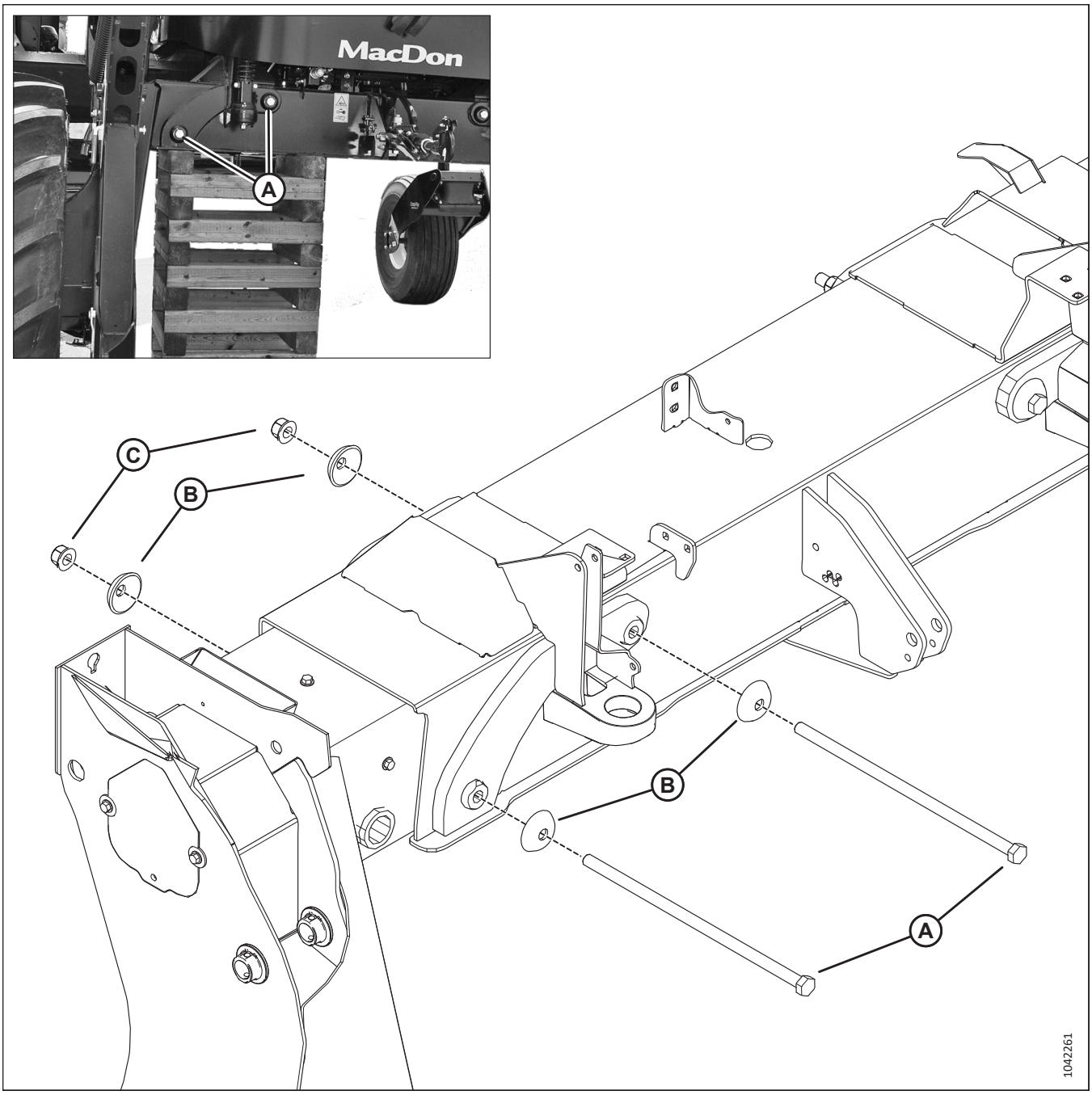


Figure 3.25: Right Leg Pins Installed

10. Secure the pins with M20 x 500 leg pin bolts (A), washers (B), and M20 nuts (C).
11. Tighten nuts (C) to 136 Nm (100 lbf·ft).
12. Lower the pallet jack. Remove the pallet jack from the work area.
13. Support the windrower with a forklift, and remove the stand. Lower the windrower to the ground.

3.6 Repositioning Casters and Installing Anti-Shimmy Dampeners

The caster wheels will need to be repositioned and the anti-shimmy dampeners will need to be installed before the windrower can be operated. The anti-shimmy dampeners prevent the caster wheels from rotating too quickly.

DANGER

Ensure that all bystanders have cleared the area.

1. Retrieve the parts listed in Table *3.3, page 33* from the tool box.

   NOTE:

   If you previously installed the caster wheels (*3.3 Installing Caster Wheels, page 23*), then arms (1) and (2), and keys (4) are already installed.

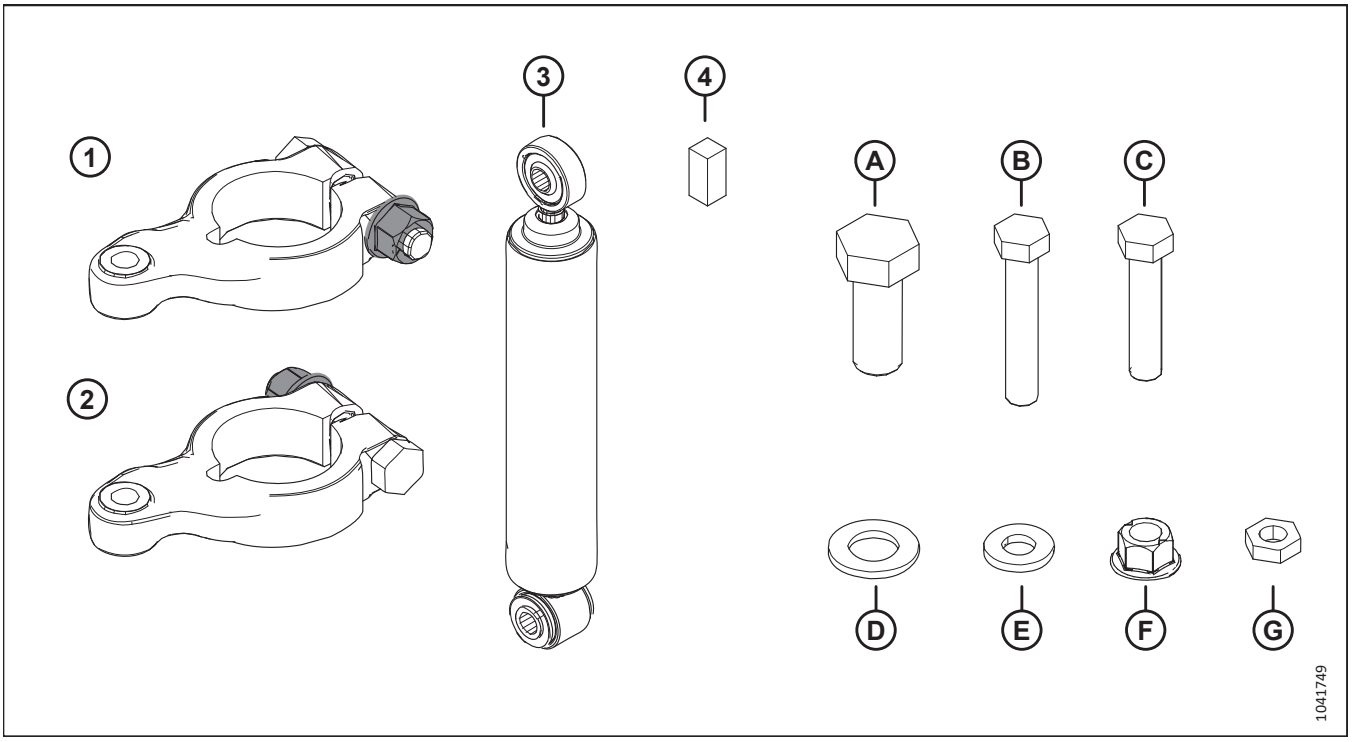


Figure 3.26: Walking Beam Parts Supplied in Tool Box

Table 3.3 Walking Beam Parts in Tool Box

Ref	Part Number	Description	Quantity
1	—	This anti–shimmy arm is shipped assembled for RIGHT side of the walking beam.	1
2	—	This anti–shimmy arm is shipped assembled for LEFT side of the walking beam.	1
3	202898	DAMPENER – ANTI-SHIMMY	4
4	135296	KEY	2
A	136366	BOLT – HEX HD TFL M24 X 3 X 60 – 10.9 – AA1J	4
B	252533	BOLT – HEX HD TFL M16 X 2 X 90 – 10.9 – AA3L	4
C	181511	BOLT – HEX HD M16 X 2 X 75 – 10.9 – AA1J	2
D	136367	WASHER – FLAT REG M24 – 300HV – AA1J	4
E	120901	WASHER – HARD L9SPCL 5/8 – 82/85HR15N – AB0C	6

Table 3.3 Walking Beam Parts in Tool Box (continued)

Ref	Part Number	Description	Quantity
F	152520	NUT – HEX FLG TECH LK M16 X 2 – 10 – AA1J	1
G	136473	NUT – HEX THIN M16 X 2 – 05 – AA1J	2

2. Using a forklift, lift the windrower so that the caster wheels are not bearing the windrower's weight.

Figure 3.27: Windrower Supported

3. Remove banding and blocking (A) securing the walking beam to the frame.

   NOTE:

   The banding and blocking may have been removed already.

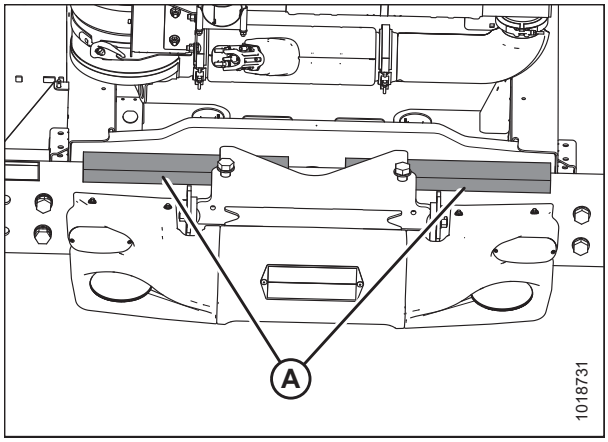


Figure 3.28: Walking Beam Secured

4. Remove and retain the following parts from the walking beam:

   - Four M24 x 60 bolts (MD #136366) and M24 washers (A) (MD #136367)

     NOTE:

     The M24 bolts and M24 washers are the same as the ones supplied in the tool box.

   - Shock support bracket (B)
   - Slow moving vehicle (SMV) sign support bracket (C)

   NOTE:

   SMV support bracket (C) is preinstalled on shock support brackets (B) at the left cab-forward walking beam.

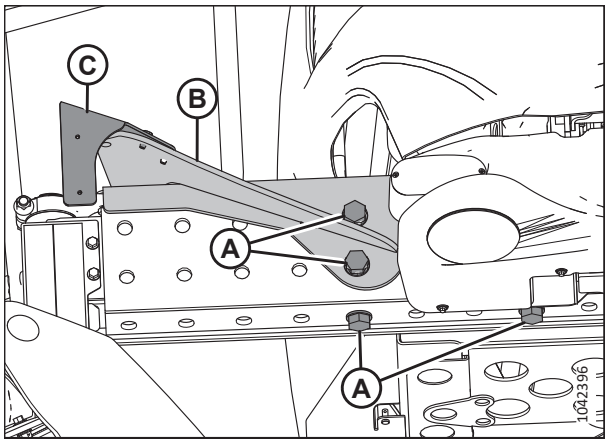


Figure 3.29: Walking Beam Hardware

5. Rotate the caster so that wheel (A) is parallel to the walking beam. This will make it easier to move the extensions. Pull walking beam extension (B) out to the desired position and line up the bolt holes.

   NOTE:

   Walking beam extension (B) can be in one of three working positions. In general, a narrower caster tread width is better suited for smaller headers, while a wider caster tread width reduces the amount of crop trampled by the windrower when large windrows are being harvested.

6. Retrieve all M24 x 60 bolts (MD #136366) and M24 flat washers (MD #136367). Coat the threads of the bolts with anti-seize compound.

7. Install two bolts (MD #136366) and M24 washers (C) (MD #136367) on the bottom of the beam. Do **NOT** fully tighten the hardware yet.

8. Install two M24 bolts (MD #136366) and washers (A) (MD #136367) in the outboard side of the walking beam. Do **NOT** fully tighten the hardware yet.

   NOTE:

   The outboard bolts may need to be installed first.

9. Place support brackets (B) onto the walking beam as shown and secure them with two M24 bolts (MD #136366) and washers (C) (MD #136367). Do **NOT** fully tighten the hardware yet.

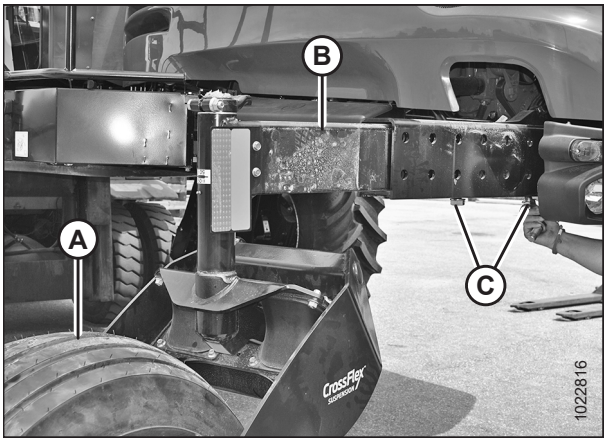


Figure 3.30: Walking Beam Extension

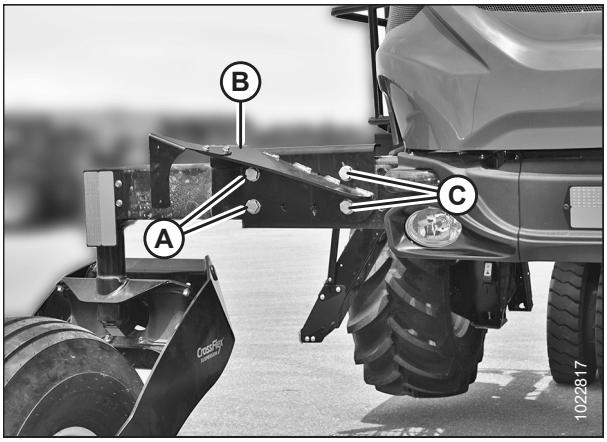


Figure 3.31: Anti-Shimmy Brackets

10. Tighten the hardware as follows:

    a. Snug bottom bolts (A), then snug rear bolts (B).

    b. Torque rear bolts (B) to 757 Nm (560 lbf·ft).

    c. Torque bottom bolts (A) to 757 Nm (560 lbf·ft).

    IMPORTANT:

    Torque the bolts again after the first five hours of operation, and then once more after ten hours of operation.

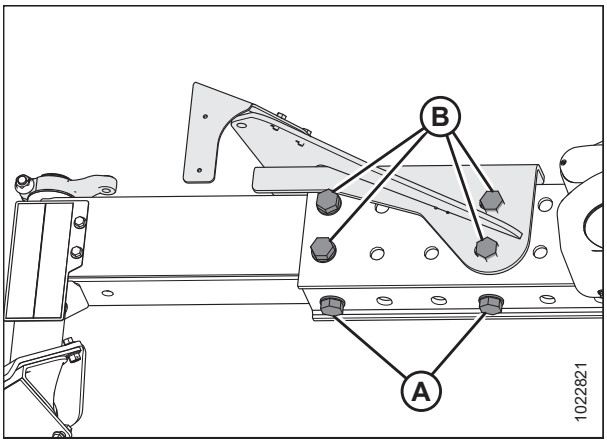


Figure 3.32: Walking Beam Bolts

11. Repeat Step *4, page 34* to Step *10, page 35* to reposition the other caster. Ensure that the casters are spaced equally from the center of the windrower as shown.
12. Lower the windrower to the ground.

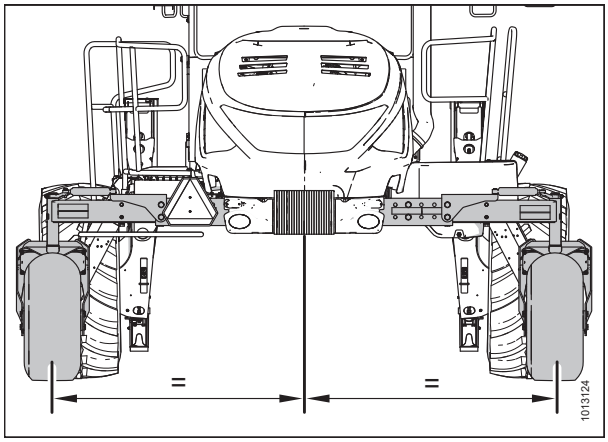


Figure 3.33: Walking Beam Adjustment

13. If the windrower already has casters installed:
    a. Remove and retain retaining ring (A).
    b. Remove and discard yellow spacer (B). Leave washer (C) in place.
    c. Place anti-shimmy arm (left assembly shown) (D) onto the spindle and washer (E).

       NOTE:

       Ensure that the arm is positioned so that there is no clearance at the top and bottom of the walking beam extension.

    d. Rotate the spindle until notch (F) aligns with the notch in the anti-shimmy arm.
    e. Install key (G) (MD #135296) into the notch.
    f. Secure the arm using retaining ring (H) as shown.
    g. Tighten nut (J), and torque it to 195 Nm (144 lbf·ft).

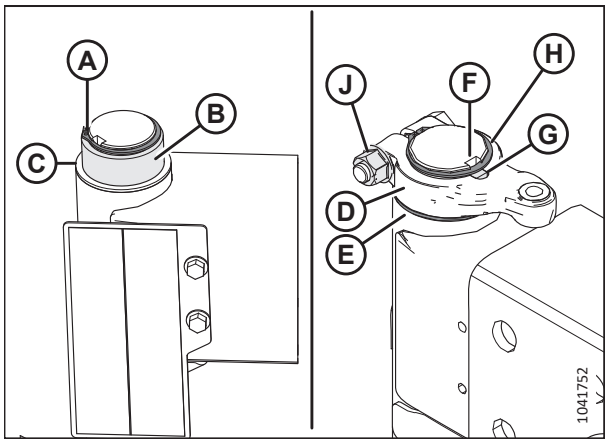


Figure 3.34: Anti-Shimmy Arm – Left Side

14. Secure the barrel end of anti-shimmy dampener (A) (MD #202898) to the forward hole in support (B) with one M16 x 75 bolt (C) (MD #181511) and one M16 nut (D) (MD #152520). Install the bolt from under the support.

    NOTE:

    Do **NOT** fully tighten the hardware yet.

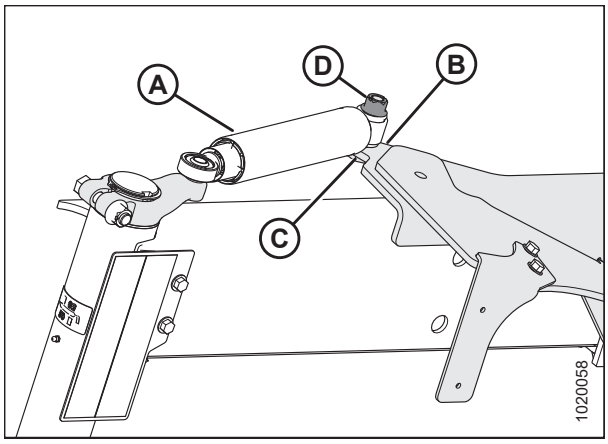


Figure 3.35: Anti-Shimmy System – Left Side

15. Secure the barrel end of second anti-shimmy dampener (A) (MD #202898) to support (B) at the aft hole location with one M16 x 90 bolt (MD #252533) and M16 nut (C) (MD #152520). Install the bolt from under the support.

    NOTE:

    Do **NOT** fully tighten the hardware yet.

16. Rotate the caster so that arm (D) is aligned with the walking beam.

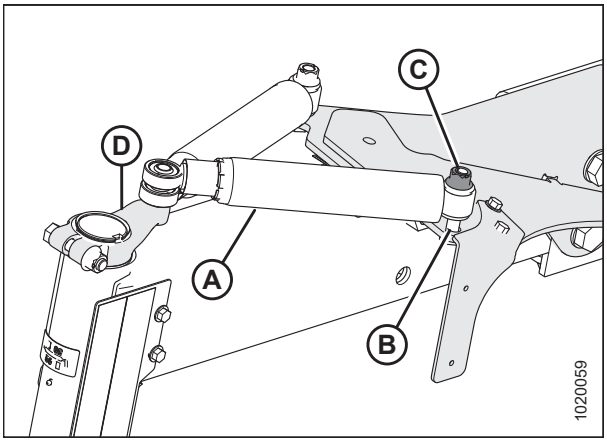


Figure 3.36: Anti-Shimmy System – Left Side

17. Attach the rod ends of the anti-shimmy dampeners to the arm with M16 x 90 bolt (A) (MD #252533) and three hardened washers (B) (MD #120901).

    NOTE:

    Washers (B) are stamped with “L9”.

18. Torque bolt (A) to 244 Nm (180 lbf·ft).

19. Install jam nut (C) (MD #136473). Torque the nut to 138 Nm (102 lbf·ft).

20. Tighten bolts (D) at the barrel end of the anti-shimmy dampeners. Torque the nuts on bolts (D) to 138 Nm (102 lbf·ft).

    IMPORTANT:

    Ensure that the arm remains parallel to the walking beam while the hardware is tightened. Do **NOT** overtighten the hardware.

21. Repeat Step *13, page 36* to Step *20, page 37* to install the anti-shimmy system on the opposite side of the windrower.

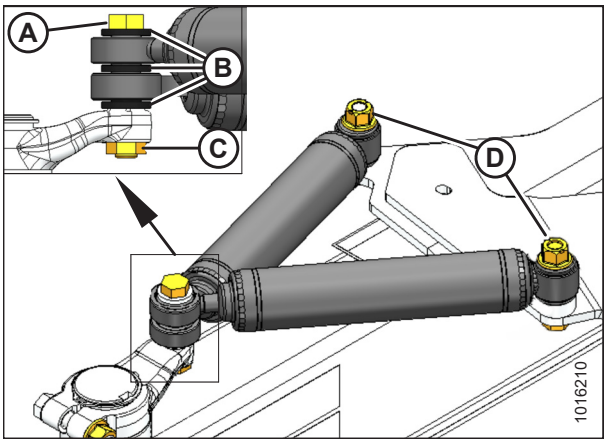


Figure 3.37: Anti-Shimmy System – Left Side

3.7 Installing Windshield Access Step

The windshield access step will need to be installed onto the railing of the windrower's right cab-forward side platform.

1. Remove windshield access step (A) from the shipping location on the right platform. Remove packing materials (B) from the step and the railing.

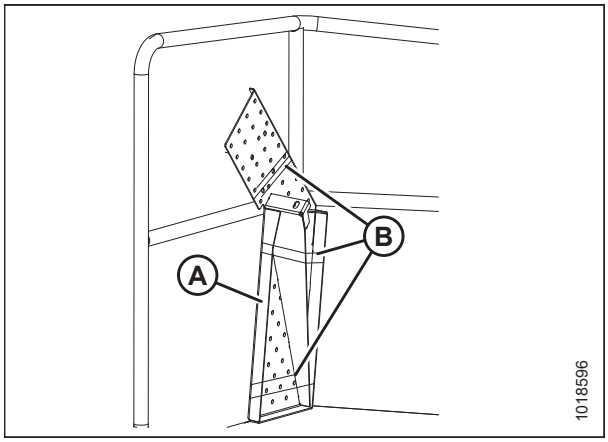


Figure 3.38: Step in Shipping Position

2. Retrieve three M10 screws (A) (MD #136209) from the toolbox.

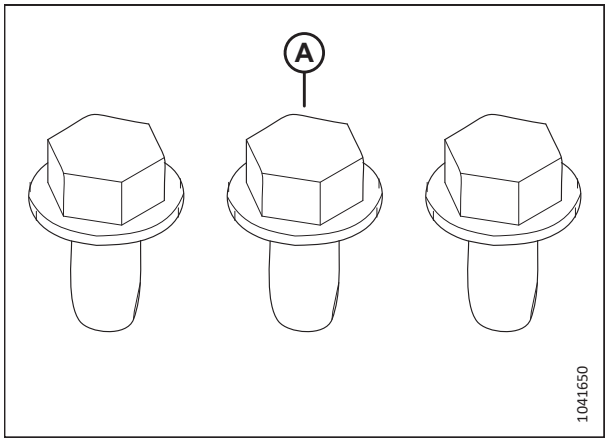


Figure 3.39: (MD #136209)

3. Position step (A) on the right cab-forward leg at the forward end of the platform as shown.
4. Install two M10 screws (B) (MD #136209) through the top of the step. Do **NOT** tighten the hardware yet.
5. Install one M10 screw (C) (MD #136209) through the step support.
6. Tighten the screws to 57 Nm (43 lbf·ft).

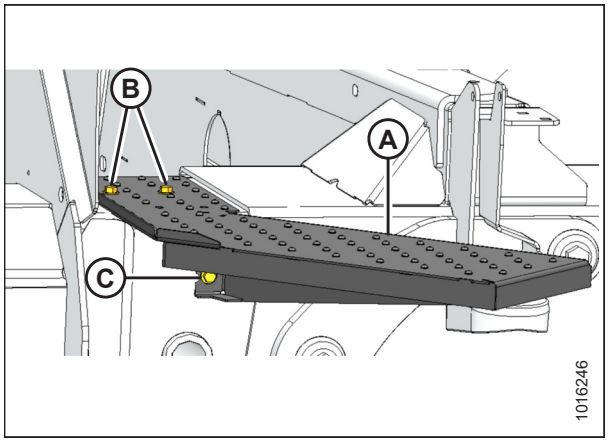


Figure 3.40: Windshield Access Step Installed

3.8 Positioning Mirror Arms

The mirror arms must be moved to the field position.

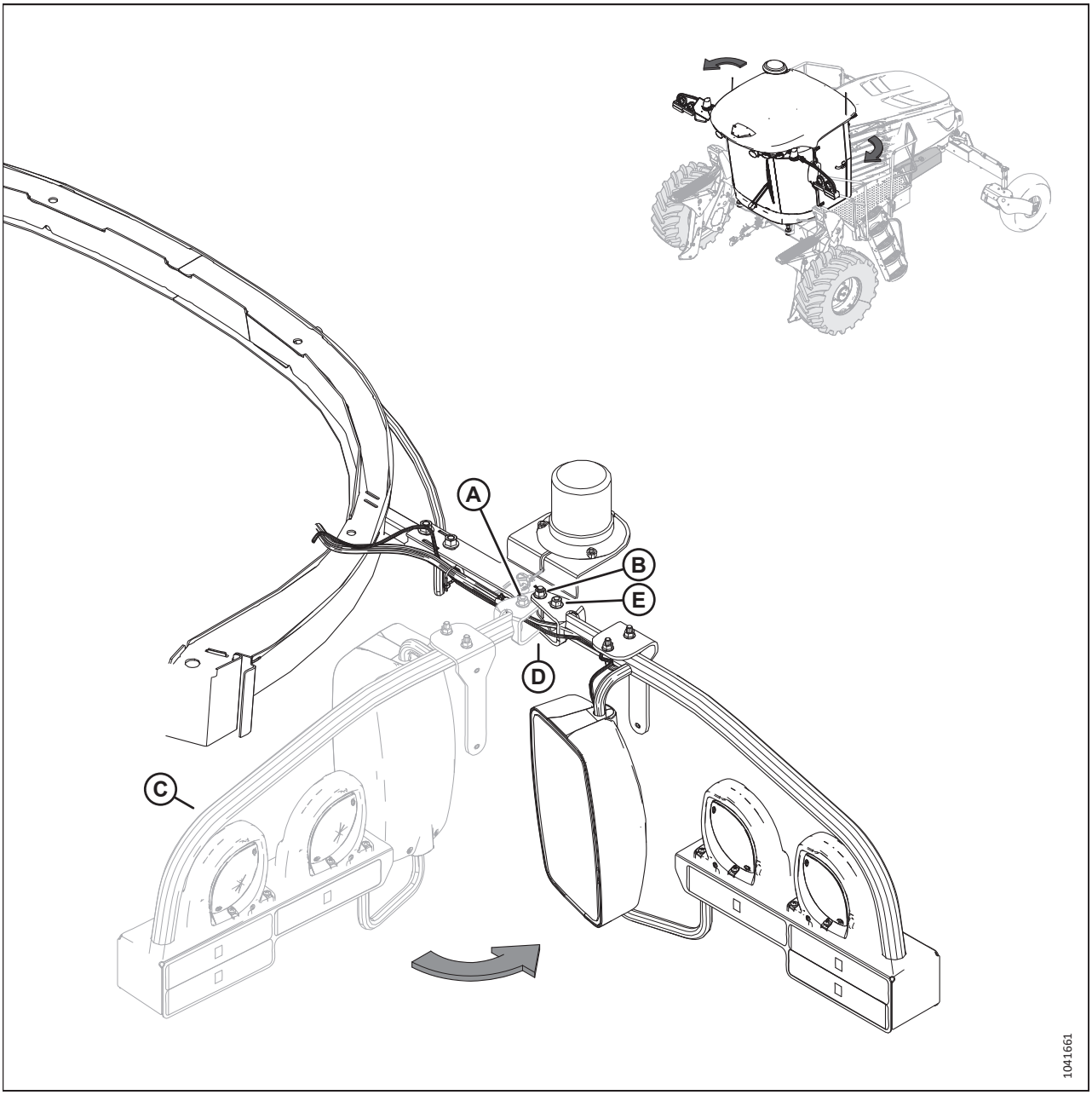


Figure 3.41: Mirror Arm Swiveled into Field Position

1. Loosen retaining nut (A) and pivot nut (B) on support arm (C). Swivel the support arm cab-forward by 90°.

   IMPORTANT:
   Do **NOT** allow any wiring harness to get caught in the swivel mechanism (D).

2. Torque retaining nut (E) to 48 Nm (35 lbf·ft).
3. Torque pivot nut (B) to 26 Nm (19 lbf·ft [230 lbf·in]).
4. Repeat this procedure for the other mirror arm.

3.9 Installing Slow Moving Vehicle Signs

Slow moving vehicle (SMV) signs let other drivers know that the windrower is not capable of moving at a high speed. The signs will need to be installed on the windrower.

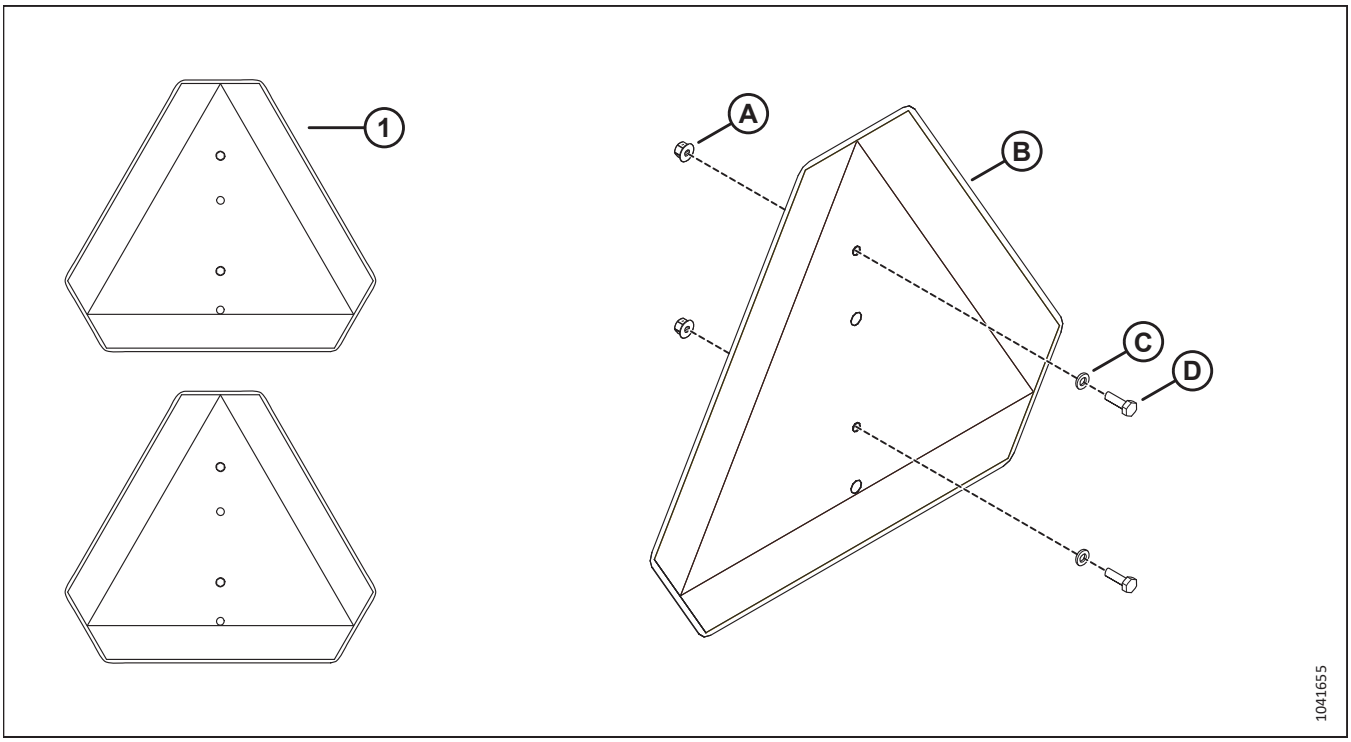


Figure 3.42: SMV Signs

1. Retrieve both SMV signs (1) from inside the cab.
2. Remove and retain both nuts (A), washers (B), and bolts (D) from each sign.

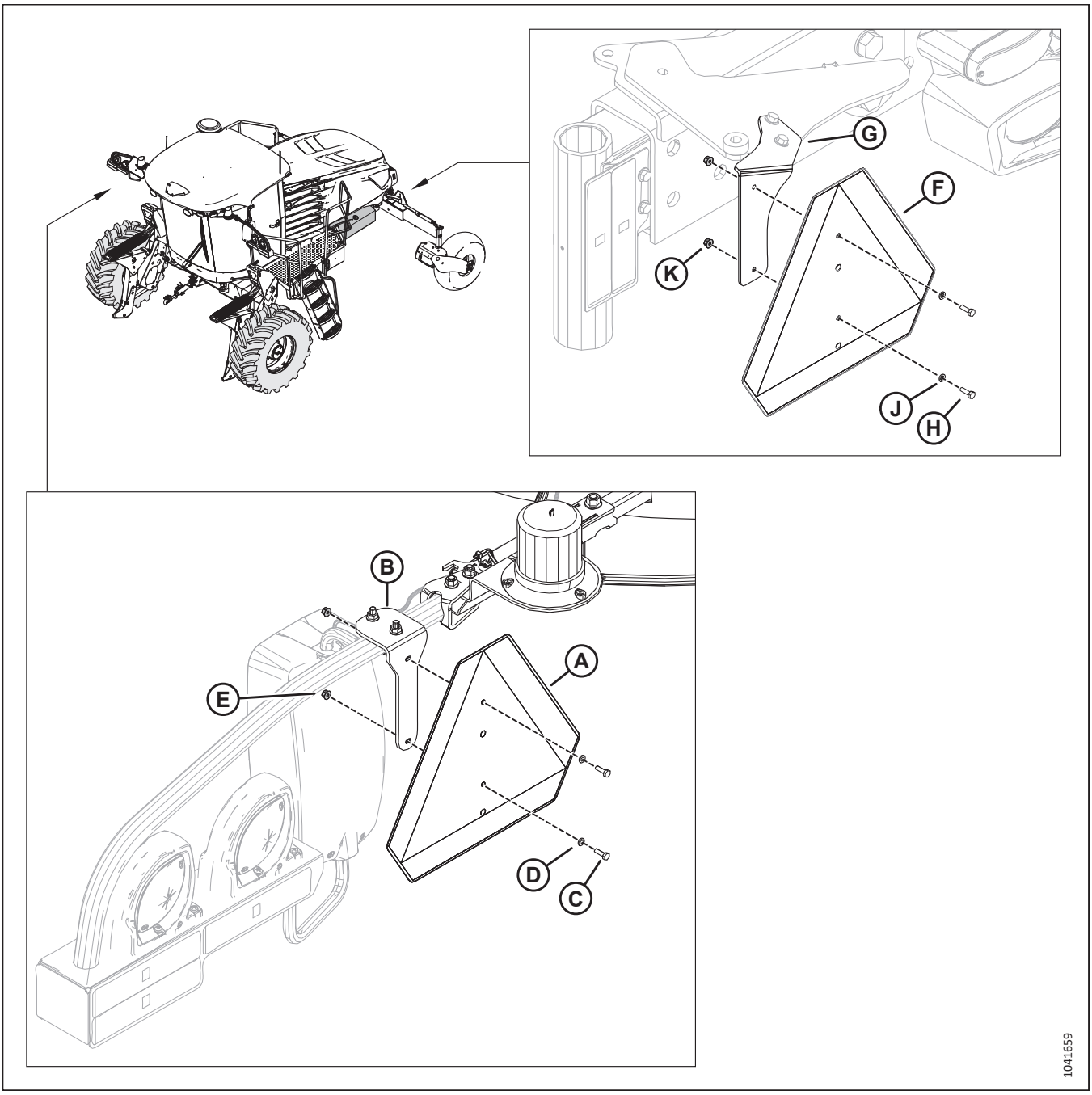


Figure 3.43: SMV Signs Installed

3. On the right mirror arm, attach sign (A) to bracket (B) using two bolts (H), washers (J), and nuts (K).

   IMPORTANT:

   Ensure that the SMV sign does **NOT** cover the brake light.

4. On the left end of the walking beam, attach sign (F) to bracket (G) using two bolts (C), washers (D), and nuts (E).

5. For M2170 Windrowers proceed to . For M2260 Windrowers proceed to .

3.10 Replacing Speed Identification Symbol Decal – For Windrowers used in the United States of America only

The speed identification symbols will need to be installed on windrowers intended for use in the United States of America.

1. Retrieve 30 mile/h decal (A) (MD #208900) from the document package that contained this manual.

Figure 3.44: SIS Decal – USA Only

2. Locate the already installed speed identification symbol (SIS) decal bracket on the left mirror/lighting arm.
3. Wipe the already installed decal with a clean cloth to remove any dirt or grease.
4. Apply 30 mile/h SIS decal (A) over the already installed 45 km/h decal.

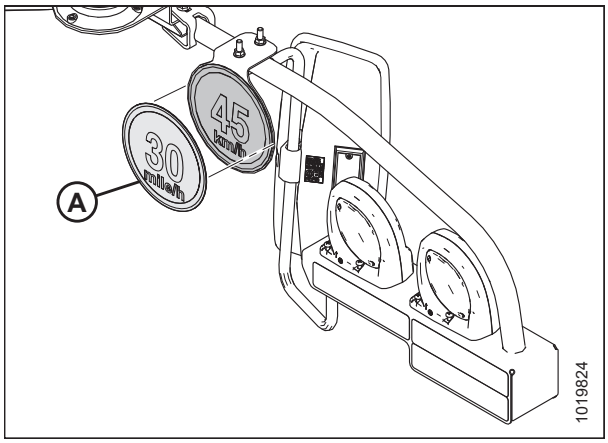


Figure 3.45: SIS Decal – USA Only

3.11 Installing Rear Ballast Package – For use with Draper Headers Only

Ballast must be added to the aft end of the windrower when it is paired with a heavy header.

NOTE:

If pairing the windrower with an auger or rotary disc header, skip this procedure.

1. On one of the following tables, locate the draper header that be will paired with the windrower, and check if any ballast kits are required:
   - D2 Series Draper Headers: Table *3.4, page 44*
   - D1X and D1XL Series Draper Headers: Table *3.5, page 46*
2. Install any ballast kits according to the instructions provided with the kit.

Table 3.4 Ballast and Tire Pressure Specifications – M2 Series Windrowers Paired with D2 Series Draper Headers

Header Type	Description	Installed Options	Booster Springs Kit Required	Quantity of Initial Rear Ballast Base Kits (B6053) Required	Quantity of Additional Rear Ballast Kits (B6054) Required	Drive Wheel Tire Type	Pressure kPa (psi)
D215	4.6 m (15 ft.), single reel, double knife, short knife guards, center delivery	Base + short knife guards	–	–	–	Bar or turf	138 (20)
D215	4.6 m (15 ft.), single reel, double knife, pointed guards, center delivery	Base + pointed guards	–	1	–	Bar or turf	138 (20)
D220	6.1 m (20 ft.), single reel, double knife, pointed guards, center delivery	Base + pointed guards	B6047	1	–	Bar or turf	138 (20)
D225	7.6 m (25 ft.), single reel, double knife, pointed guards, hydraulic triple delivery	Base + pointed guards + hydraulic triple delivery	–	1	1	Bar or turf	159 (23)
D225	7.6 m (25 ft.), single reel, double knife, short knife guards, hydraulic triple delivery	Base + short knife guards + hydraulic triple delivery	B6047	1	1	Bar or turf	159 (23)
D230	9.1 m (30 ft.), double reel, double knife, pointed guards, hydraulic triple delivery	Transport + upper cross auger + vertical knives	B6106, B6047	1	2	Bar or turf	241 (35)
D230	9.1 m (30 ft.), double reel, double knife, short knife guards, hydraulic triple delivery	Short Knife Guards + Plumbing for Upper Cross Auger	–	1	1	Bar	200 (29)
D230	9.1 m (30 ft.), double reel, double knife, short knife guards, hydraulic triple delivery	Short Knife Guards + Plumbing for Upper Cross Auger	–	1	1	Turf	241 (35)
D235	10.6 m (35 ft.), double reel	Base	–	1	1	Bar	221 (32)
D235	10.6 m (35 ft.), double reel	Base	–	1	1	Turf	241 (35)
D235	10.6 m (35 ft.), double reel	Transport	B6106, B6047	1	1	Bar or turf	241 (35)
D235	10.6 m (35 ft.), double reel	Transport + upper cross auger + vertical knives	B6106, B6047	1	2	Bar	283 (41)
D235	10.6 m (35 ft.), double reel	Transport + upper cross auger + vertical knives	B6106, B6047	1	2	Turf	241 (35)

Table 3.4 Ballast and Tire Pressure Specifications – M2 Series Windrowers Paired with D2 Series Draper Headers (continued)

Header Type	Description	Installed Options	Booster Springs Kit Required	Quantity of Initial Rear Ballast Base Kits (B6053) Required	Quantity of Additional Rear Ballast Kits (B6054) Required	Drive Wheel Tire Type	Pressure kPa (psi)
D241	12.5 m (41 ft.), double reel double knife, short knife guards, center delivery, plumbing for upper cross auger	Transport	B6106, B6047	1	1	Bar or turf	241 (35)
D241	12.5 m (41 ft.), double reel double knife, short knife guards, center delivery	Transport + upper cross auger + vertical knives	B6106, B6047	1	2	Bar	283 (41)
D241	12.5 m (41 ft.), double reel double knife, short knife guards, center delivery	Transport + upper cross auger + vertical knives	B6106, B6047	1	2	Turf	241 (35)

Table 3.5 Ballast and Tire Pressure Specifications – M2 Series Windrowers Paired with D1X and D1XL Series Draper Headers

Header Type	Description	Installed Options	Booster Springs Kit Required	Quantity of Initial Rear Ballast Base Kits (B6053) Required	Quantity of Additional Rear Ballast Kits (B6054) Required	Drive Wheel Tire Type	Pressure kPa (psi)
D115X	4.6 m (15 ft.), single reel, double knife, timed	–	–	–	–	Bar or turf	138 (20)
D120X	6.1 m (20 ft.), single reel, double knife, timed	–	–	–	–	Bar or turf	138 (20)
D125X	7.6 m (25 ft.), single reel, double knife, timed	–	–	–	–	Bar or turf	159 (23)
D130XL	9.1 m (30 ft.), single reel, double knife, timed	Base	–	–	–	Bar	200 (29)
D130XL	9.1 m (30 ft.), single reel, double knife, timed	Base	–	–	–	Turf	241 (35)
D130XL	9.1 m (30 ft.), single reel, double knife, timed	Transport	–	1	–	Bar	200 (29)
D130XL	9.1 m (30 ft.), single reel, double knife, timed	Transport	–	1	–	Turf	241 (35)
D130XL	9.1 m (30 ft.), single reel, double knife, timed	Transport + upper cross auger + vertical knives	B6047	1	2	Bar or turf	241 (35)
D135XL	10.6 m (35 ft.), single reel, double knife, timed	Base	–	1	1	Bar	200 (29)
D135XL	10.6 m (35 ft.), single reel, double knife, timed	Base	–	1	1	Turf	241 (35)
D135XL	10.6 m (35 ft.), single reel, double knife, timed	Transport	B6047	1	1	Bar or turf	241 (35)
D135XL	10.6 m (35 ft.), single reel, double knife, timed	Transport + upper cross auger + vertical knives	B6047	1	2	Bar or turf	241 (35)
D135XL	10.6 m (35 ft.), double reel, double knife, timed	Base	–	1	1	Bar	221 (32)
D135XL	10.6 m (35 ft.), double reel, double knife, timed	Base	–	1	1	Turf	241 (35)
D135XL	10.6 m (35 ft.), double reel, double knife, timed	Transport	B6047	1	1	Bar or turf	241 (35)

Table 3.5 Ballast and Tire Pressure Specifications – M2 Series Windrowers Paired with D1X and D1XL Series Draper Headers (continued)

Header Type	Description	Installed Options	Booster Springs Kit Required	Quantity of Initial Rear Ballast Base Kits (B6053) Required	Quantity of Additional Rear Ballast Kits (B6054) Required	Drive Wheel Tire Type	Pressure kPa (psi)
D135XL	10.6 m (35 ft.), double reel, double knife, timed	Transport + upper cross auger + vertical knives	B6047	1	2	Bar	283 (41)
D135XL	10.6 m (35 ft.), double reel, double knife, timed	Transport + upper cross auger + vertical knives	B6047	1	2	Turf	241 (35)
D140XL	12.2 m (40 ft.), double reel, double knife, untimed	Base	–	1	1	Bar or turf	241 (35)
D140XL	12.2 m (40 ft.), double reel, double knife, untimed	Transport	B6047	1	1	Bar or turf	241 (35)
D140XL	12.2 m (40 ft.), double reel, double knife, untimed	Transport + upper cross auger + vertical knives	B6047	1	2	Bar	283 (41)
D140XL	12.2 m (40 ft.), double reel, double knife, untimed	Transport + upper cross auger + vertical knives	B6047	1	2	Turf	241 (35)
D145XL	13.7 m (45 ft.), double reel, double knife, untimed	Base	–	1	1	Bar or turf	241 (35)
D145XL	13.7 m (45 ft.), double reel, double knife, untimed	Transport	B6047	1	2	Bar	262 (38)
D145XL	13.7 m (45 ft.), double reel, double knife, untimed	Transport	B6047	1	2	Turf	241 (35)
D145XL	13.7 m (45 ft.), double reel, double knife, untimed	Transport + upper cross auger + vertical knives	B6106	1	2	Bar	283 (41)
D145XL	13.7 m (45 ft.), double reel, double knife, untimed	Transport + upper cross auger + vertical knives	B6106	1	2	Turf	241 (35)

3.12 Lubricating Windrower

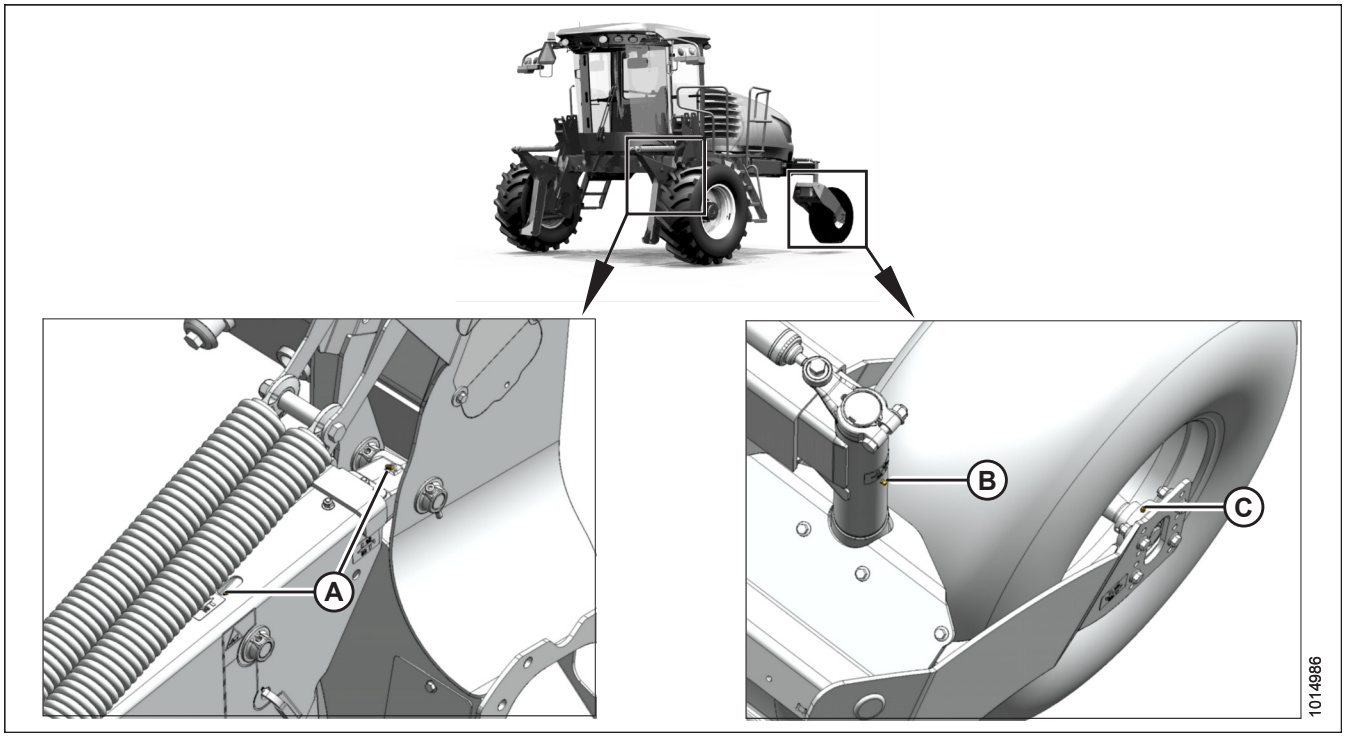
The windrower should have been greased at the factory, but the grease fittings will need to be inspected to ensure that they are properly lubricated. Follow this procedure to add grease to a fitting.

Ensure that the grease fittings indicated in the illustration below are lubricated. A single pump of grease should be sufficient to confirm that the fitting has been lubricated.

For information on the type of lubricants to use, refer to Lubricants, Fluids, and System Capacities on the inside back cover.

1. Wipe the grease fitting with a clean cloth.
2. Inject grease into the fitting with a grease gun until grease overflows the greased component. Do **NOT** overgrease the wheel bearings.
3. If the fitting is loose or will not take grease, remove and clean the fitting, or replace it.
4. Leave a blob of excess grease on the fitting.

Figure 3.46: Lubrication Points



A - Top Link (Two Places) (Both Sides)
B - Caster Pivot (Both Sides)
C - Forked Caster Wheel Bearing (Two Places) (Both Wheels)

Chapter 4: Performing Predelivery Checks

All pre-delivery and operational checks must be completed before the windrower is delivered to the customer.

1. Perform the predelivery checks listed in the *Predelivery Checklist, page 255*. Make adjustments to the windrower only if absolutely necessary and only in accordance with the instructions in this manual.

2. Perform the operational checks listed on the *Predelivery Checklist, page 255*.

4.1 Completing Predelivery Checklist

The predelivery checklist contains all the features of the machine that require inspection.

Perform the final checks and adjustments listed on the *Predelivery Checklist, page 255* (the yellow sheet attached to this instruction) to ensure that the machine is field-ready. Ensure that the Operator or the Dealer retains the completed Predelivery Checklist.

DANGER

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

DANGER

Ensure that all bystanders have cleared the area.

WARNING

Do NOT inspect the hydraulic system for leaks using a part of your body. High-pressure fluid escaping through a pinhole leak can penetrate the skin, causing serious injury.

CAUTION

Park on a level surface with the ground speed lever (GSL) in the PARK position and the steering wheel in the locked (centered) position. Wait for the HarvestTouch™ Display to beep and display a red P symbol to confirm that the parking brake is engaged.

4.1.1 Recording Serial Numbers

1. Locate engine serial number plate (A) on top of the engine. Record the serial number on the *Predelivery Checklist, page 255*.

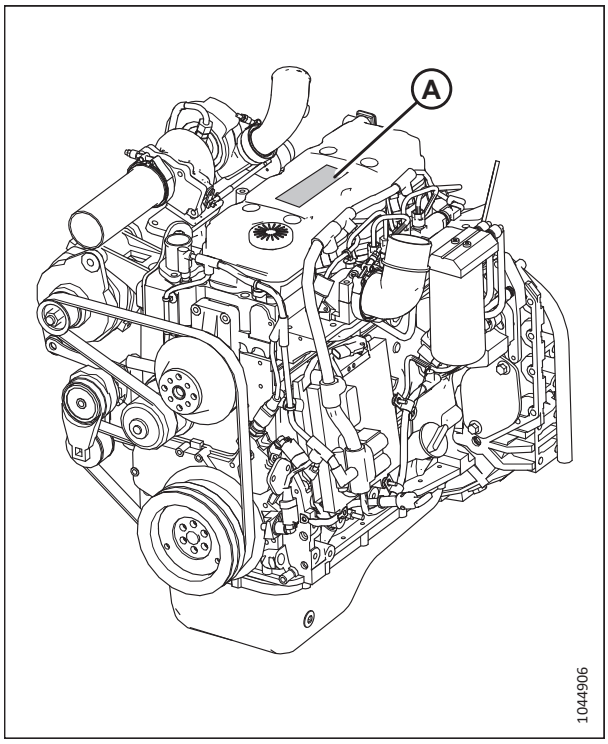


Figure 4.1: Engine Serial Number Location

2. Locate windrower serial number plate (A) on the left side of the main frame. Record the serial number on the *Predelivery Checklist, page 255*.
3. Confirm that the serial numbers match the shipping manifest or work order.

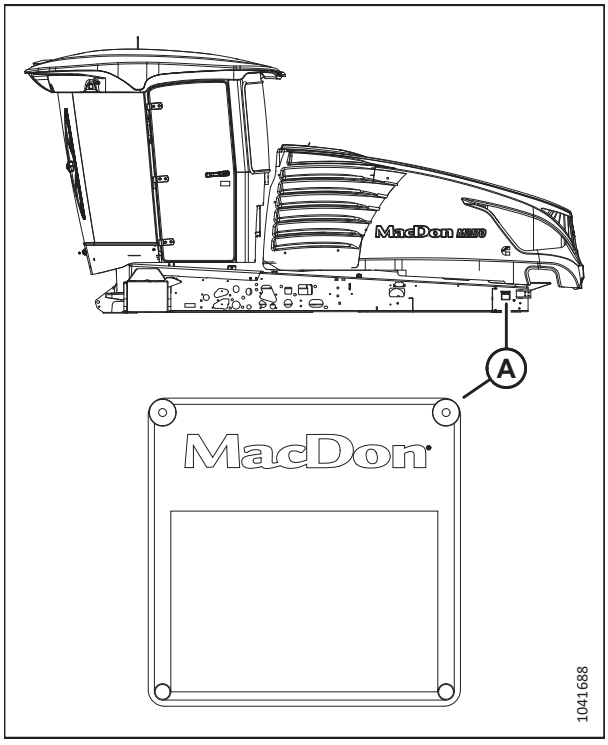


Figure 4.2: Windrower Serial Number Location

4.1.2 Checking Engine Air Intake

1. Ensure that engine air intake ducting (A) is securely fastened. Tighten the hose clamps as needed.

   NOTE:

   Ensure that the hardware on the air filter canister is tight.

2. Ensure that end cap (B) is secure.

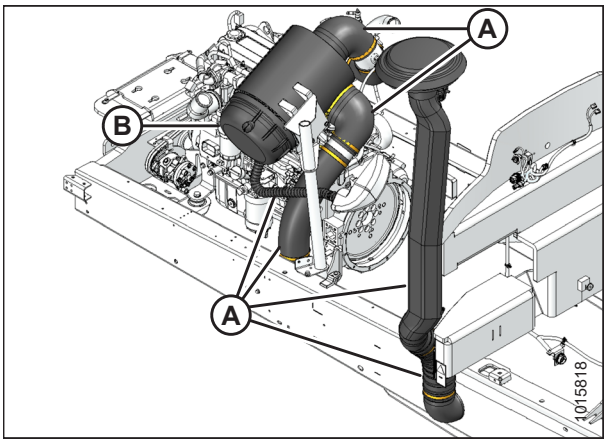


Figure 4.3: Engine Air Intake

3. **M2170 Windrowers** – Complete the checks listed below:

   - Ensure that the internal surface of three clamps (A) is clean prior to securing them to the air intake inlets.
   - Ensure that one of clamps (A) is positioned within 5 mm from air cleaner (G).
   - Ensure that the internal surface of three clamp (B) are clean prior to securing them onto the inlets. Clamps (B) are secure when screw tip (C) extends beyond the housing and Belleville washers (D) are almost flat.
   - Ensure that clamp (E) is positioned within 5 mm (3/16 in.) of bead (F).

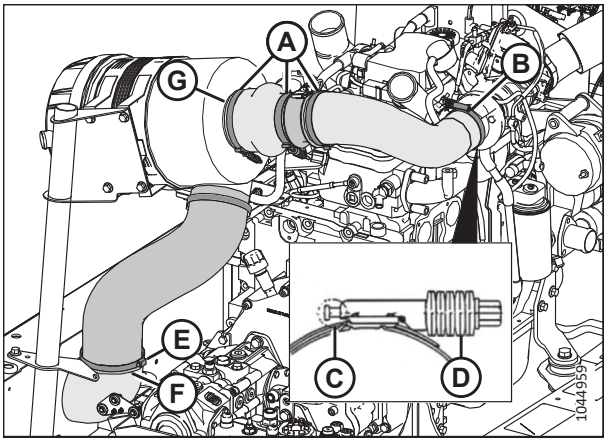


Figure 4.4: Constant Torque Clamps – M2170

4. **M2170 Windrowers:** Ensure that gaps (B) between the beads and clamps (A) are within 5 mm (3/16 in.), in the locations shown.

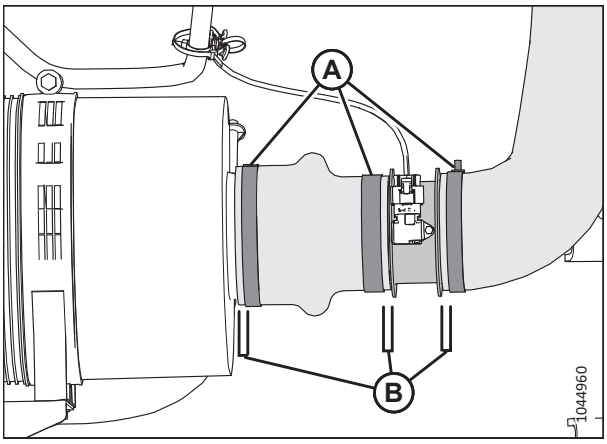


Figure 4.5: Clamp Positioning – M2170

5. **M2260 Windrowers** – Complete the checks listed below:

   - Ensure that the internal surface of clamps (A) is clean prior to securing them to the air intake inlets.
   - Ensure that the internal surface of three clamps (B) are clean prior to securing them onto the inlets. Clamps (B) are secure when screw tip (C) extends beyond the housing and Belleville washers (D) are almost flat.
   - Ensure that sensor mount hole (E) aligns with center line rib (F) on the elbow inlet.
   - Ensure that the there is a minimum clearance of 10 mm (3/8 in.) between the surface of air intake inlet (G) and oil cap (H) of the valve cover.

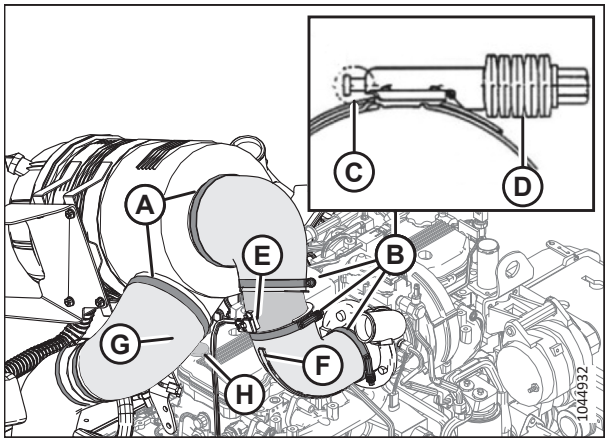


Figure 4.6: Constant Torque Clamps – M2260

4.1.3 Checking and Adding Engine Oil

Checking engine oil level

1. Locate engine oil dipstick (A) on the right side of the windrower. Turn the dipstick counterclockwise to unlock it. Remove the dipstick.
2. Wipe the dipstick clean. Reinsert the dipstick it into the dipstick tube.

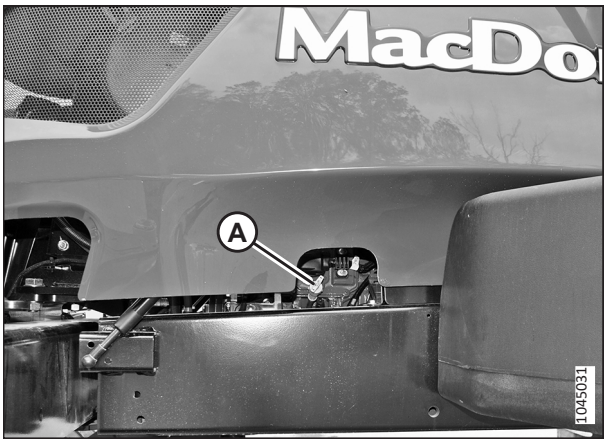


Figure 4.7: Engine Oil Dipstick Location

3. Remove the dipstick again. Check the oil level. The oil level should be between the LOW (L) and HIGH (H) marks on the dipstick. If the oil level is below the LOW mark, oil will need to be added to the crankcase.

   NOTE:

   Adding 1.9 liters (2 U.S. quarts) of engine oil will raise the level from LOW to HIGH.

4. Replace the dipstick. Turn the dipstick clockwise to lock it.

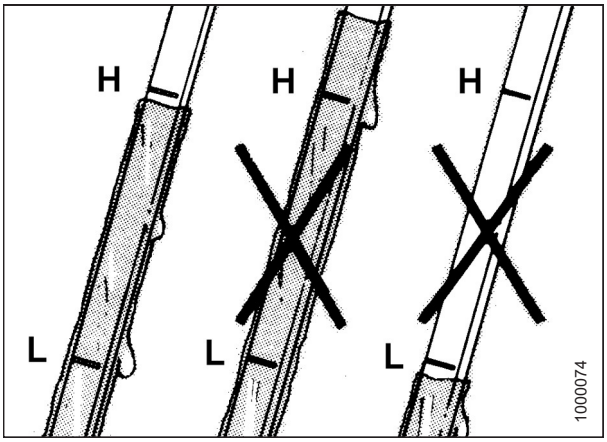


Figure 4.8: Engine Oil Level on Dipstick

Adding engine oil

5. Clean the area around filler cap (A). Turn the cap counterclockwise to unlock it. Remove the cap.
6. Use a funnel to add oil to the crankcase. For information on the oil specifications, refer to the inside back cover.

   IMPORTANT:

   Do **NOT** overfill the crankcase with oil. Operating the engine while it is overfilled with oil can damage the engine.

7. Install oil filler cap (A). Turn the cap clockwise until it is snug.

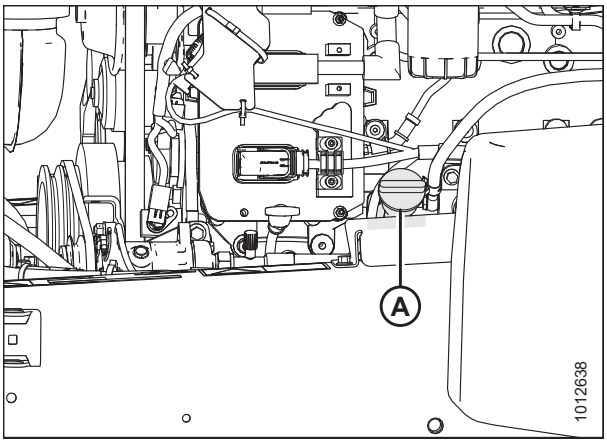


Figure 4.9: Oil Filler Cap

4.1.4 Checking and Adding Hydraulic Oil

Checking hydraulic oil level

1. Locate sight glass (A) on the right side of the hydraulic fluid tank.

   NOTE:

   The sight glass allows the Operator to visually inspect the oil level and its quality. The sight glass can be inspected while the hood is closed.

2. Ensure that the hydraulic oil level is between the low and the full indicator marks on the sight glass.

   IMPORTANT:

   If the oil is not visible in the sight glass, then the oil level is below the ADD mark on the dipstick. This problem should be addressed immediately.

3. If the hydraulic oil level is too low, add hydraulic oil to the reservoir.

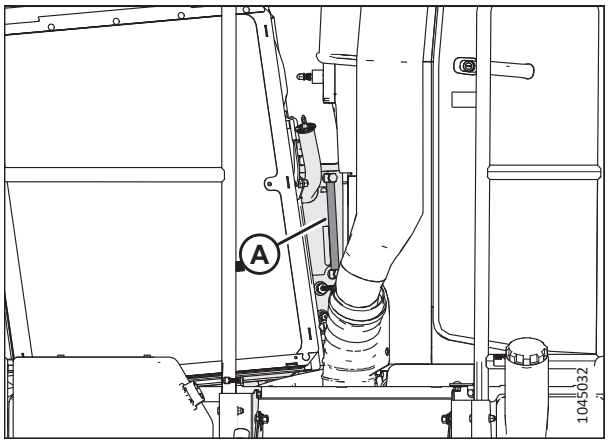


Figure 4.10: Hydraulic Oil Sight Glass

Adding hydraulic oil

4. To add hydraulic oil to the hydraulic oil reservoir, do the following:

   a. Refer to the inside back cover to determine what type of hydraulic fluid is needed.

   b. Clean the area around the filler plug to prevent debris from entering the tank.

   c. Turn plug handle (B) counterclockwise until it is loose. Pull the plug out.

   d. Open breather cap (A).

   e. Add hydraulic oil through the filler plug until the level in the tank is at the FULL indicator mark.

   f. Reinstall breather cap (A) and filler plug (B). Turn the filler plug handle clockwise until it is secure.

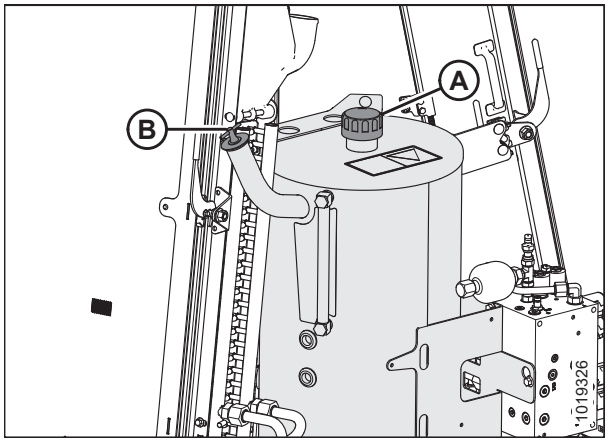


Figure 4.11: Hydraulic Oil Filler Neck and Breather Tube

NOTE:

After a header is run up for the first time, check the oil level again.

4.1.5 Checking Fuel Separator

1. Place a container under filter drain valve (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 the sump as needed.
4. Turn drain valve (A) by hand 1 1/2 to 2 turns clockwise until it is tight.
5. Dispose of the fuel in a safe manner.

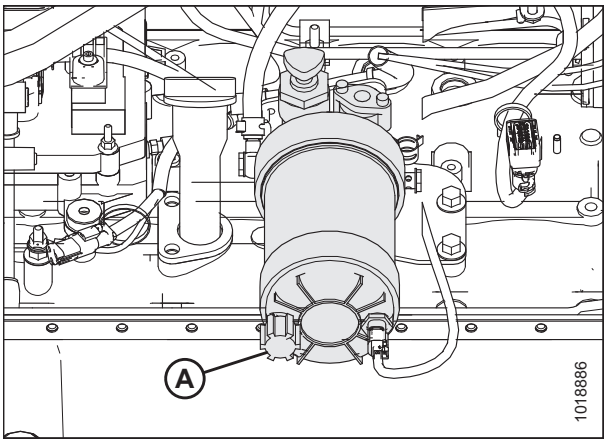


Figure 4.12: Fuel Filter

4.1.6 Checking And Adding Engine Coolant

Checking engine coolant level

1. Locate coolant recovery tank (A).
2. Visually inspect the coolant level. Ensure that the coolant level is at MAX COLD line (B). If the coolant level is too low, add coolant.

   NOTE:

   For the coolant specifications, refer to the inside back cover.

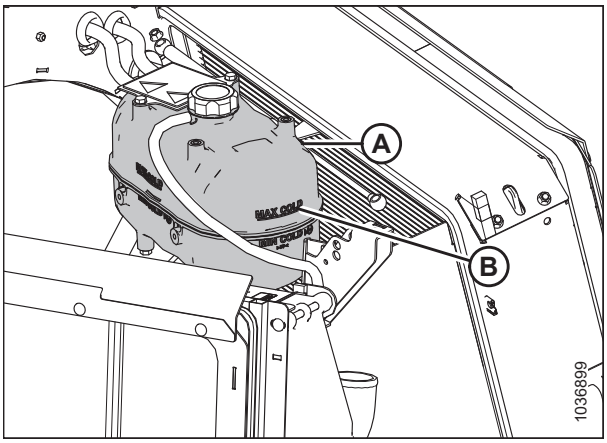


Figure 4.13: Coolant Recovery Tank

Adding engine coolant

3. Add coolant to the recovery tank as follows:
   a. Remove pressurized cap (A) from the coolant recovery tank.
   b. Add coolant to the recovery tank at a rate not exceeding 11 L/min (3 gpm) until the recovery tank is half-full and the coolant level is at MAX COLD line (B).
   c. Replace cap (A).
4. For M2710 Windrowers, proceed to *4.1.7 Checking Engine Gearbox Lubricant Level and Adding Lubricant, page 56*. For M2260 Windrowers, proceed to *4.1.8 Checking Engine Gearbox Lubricant Level and Adding Lubricant – M2260, page 57*.

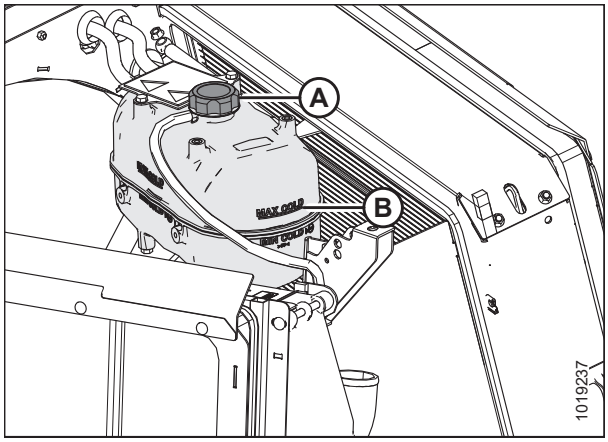


Figure 4.14: Coolant Recovery Tank Cap and MAX COLD Fill Line

4.1.7 Checking Engine Gearbox Lubricant Level and Adding Lubricant

1. Locate gearbox oil level check plug (A) under the windrower.
2. Remove oil level check plug (A). The lubricant should be visible through the hole. Some lubricant may leak from the level check port.

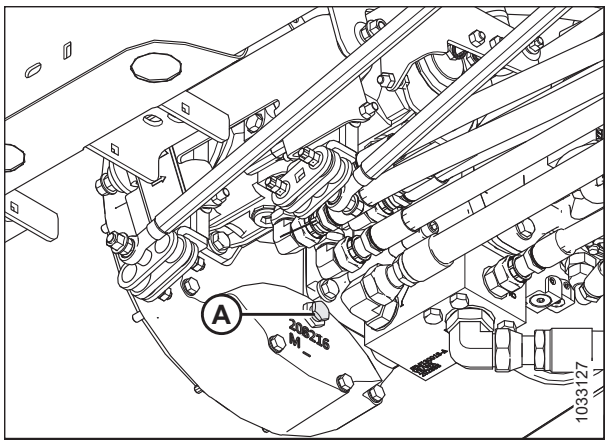


Figure 4.15: Gearbox Lubricant Check Plug

3. If lubricant is needed, remove breather cap (A) and add lubricant until it runs out of the level check port.

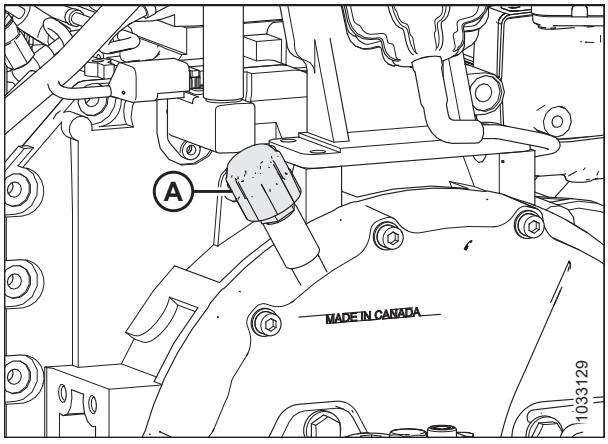


Figure 4.16: Gearbox Lubricant Filler

4. Replace oil level check plug (A) and the breather cap, and tighten both.

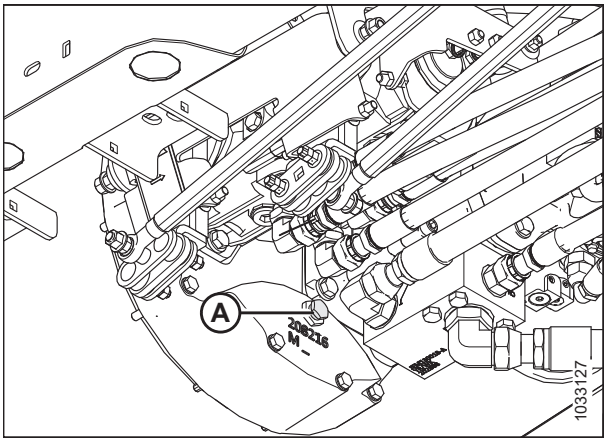


Figure 4.17: Gearbox Lubricant Check Plug

4.1.8 Checking Engine Gearbox Lubricant Level and Adding Lubricant – M2260

1. To check the gearbox oil level, remove dipstick (A) located next to the breather cap tube and wipe it clean.
2. Reinsert the dipstick into the gearbox fully to get a clean level reading. Remove the dipstick again and check the level; the lubricant should be between ADD line (C) and FULL line (D).

   NOTE:

   Adding 200 mL (6.75 oz.) of gearbox lubricant will raise the level from the ADD line to the FULL line.
3. If lubricant is needed, remove breather cap (B) and add lubricant until the lubricant level reaches the FULL line on the dipstick.

   NOTE:

   For oil requirements, refer to the inside back cover.
4. Replace dipstick (A) into the gearbox and press it in to secure.
5. Replace breather cap (B) and tighten it.

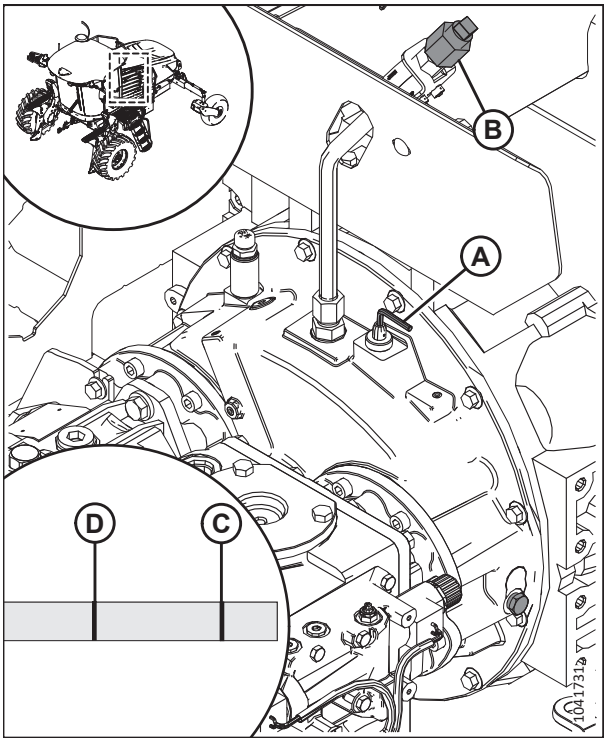


Figure 4.18: Gearbox Lubricant Check Plug

4.1.9 Checking Air Conditioning Compressor Belts

Ensure that air conditioning (A/C) compressor belts (A) are tensioned so that a force of 45 N (10 lbf) applied to the midspan of each belt deflects it by 5 mm (3/16 in.).

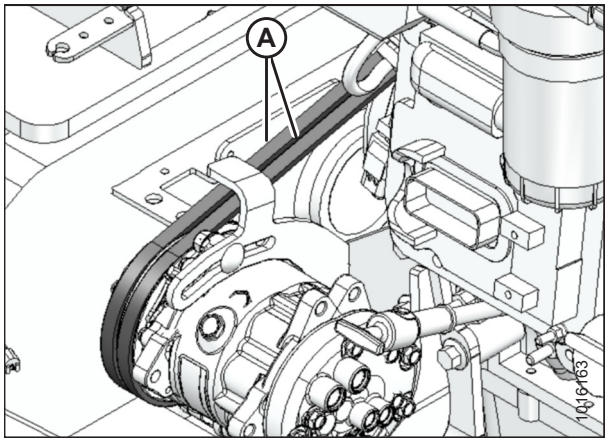


Figure 4.19: A/C Compressor Belts

4.1.10 Starting Engine

Once the other predelivery checks have been completed, the engine can be started. The windrower's computer will allow the engine to be started only when certain safety conditions have been met.

DANGER

- **Start the engine only when the windrower is in a well-ventilated space.**
- **The windrower is equipped with safety devices which allow the engine to start only when the ground speed lever (GSL) is in PARK, the steering wheel is locked in the PARK position, and the HEADER ENGAGE switch is in the OFF position. Under NO circumstances are these devices to be deliberately rewired or adjusted so that the engine can be started when the GSL is out of the NEUTRAL position.**
- **Do NOT start the engine by creating a short across the starter or the starter relay terminals. If the normal starting circuitry is bypassed, the machine can start while the drive is engaged and potentially start moving.**
- **Do NOT start the engine from any other position except the operator's seat.**
- **Do NOT start the engine while someone is under or near the machine.**

IMPORTANT:

Do **NOT** tow the machine to start the engine. This will damage the hydrostatic drives.

NOTE:

When the HarvestTouch™ Display receives a wake-up signal, the display wakes up from sleep mode and closes the battery disconnect relay. The display enters a boot-up sequence which takes approximately 40 seconds. The following items trigger a wake-up signal for the console:

- Key switch ignition or accessory positions
- Cab door switch
- Horn button
- Hazards button
- Field lights button
- Clearance lights button
- Road lights button
- High beam button

To start the windrower's engine, follow this procedure:

1. Ensure that engine exhaust pipe (A) is not covered or obstructed.

Figure 4.20: Engine Exhaust

2. Ensure that cab-forward or engine-forward directional lock (A) at the base of the steering column is engaged.

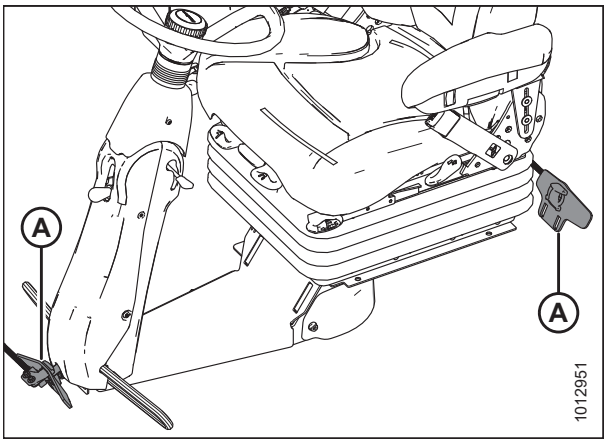


Figure 4.21: Direction Locks

3. Move ground speed lever GSL (A) into PARK (C).

4. Turn the steering wheel until it locks.

   IMPORTANT:

   Do **NOT** attempt to force the wheel out of the locked position or the steering system may become damaged.

   NOTE:

   The steering wheel will be able to move slightly when it is in the locked position.

5. Fasten your seat belt.

6. Push HEADER ENGAGE switch (B) to ensure it is in the OFF position.

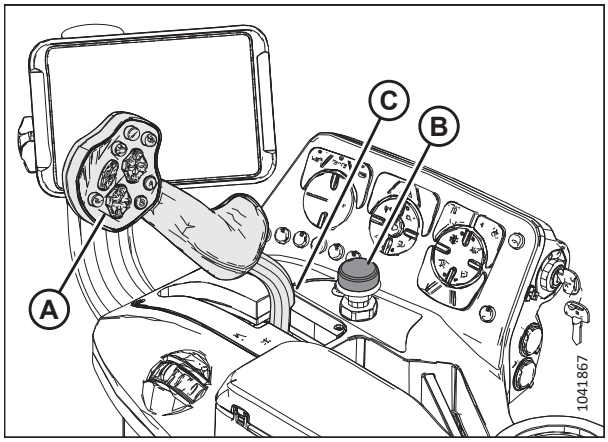


Figure 4.22: Operator Controls – M2 Series Windrower

7. Press HORN button (A) three times.

8. Turn IGNITION switch (B) to the ON position. HarvestTouch™ Display (C) will light up. Wait for WAIT TO START (WTS) symbol (D) to disappear.

   IMPORTANT:

   Over-crank protection symbol (E) will appear if the starter has been disabled due to overheating.

9. Ensure that red PARK symbol light (F) is ON and that there are no error messages on the screen.

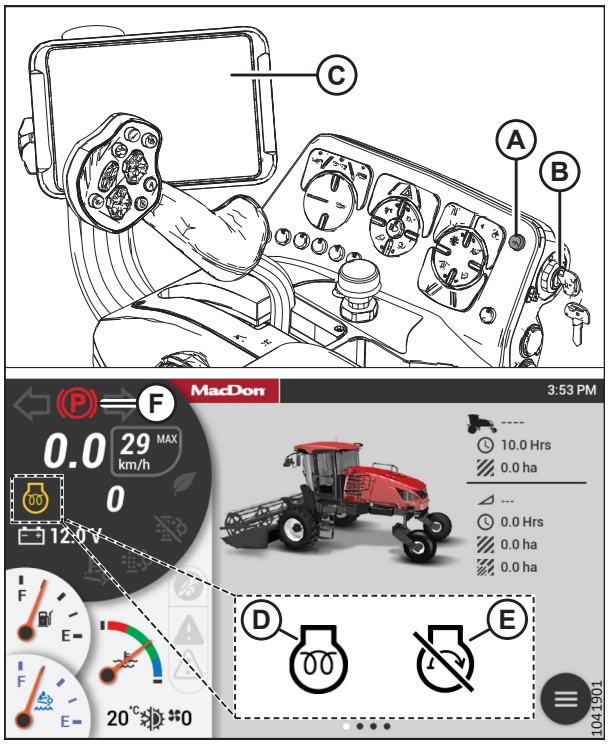


Figure 4.23: Console and HarvestTouch™ Display

10. Turn the IGNITION switch to crank position (A).

IMPORTANT:

Do **NOT** move the GSL out of PARK until the hydraulic oil temperature is at least 32°C (90°F). To check the hydraulic oil temperature, swipe right on home page area (B) until the page displays hydraulic oil temperature (C).

IMPORTANT:

- Do **NOT** operate the starter for longer than 15 seconds at a time.
- If the engine does not start, wait at least 2 minutes before you attempt to start the engine again.
- If the engine is cranked for longer than 30 seconds in a 2-minute period, the windrower's computer will lock the starter circuit, and the over-crank protection symbol will appear on the display. Wait for the over-crank protection symbol to disappear before attempting to crank the engine again.
- If the engine still does not start, refer to the windrower operator's manual.

NOTE:

When the engine is running and the header is not engaged, the HarvestTouch™ Display will show header disengaged page (B).

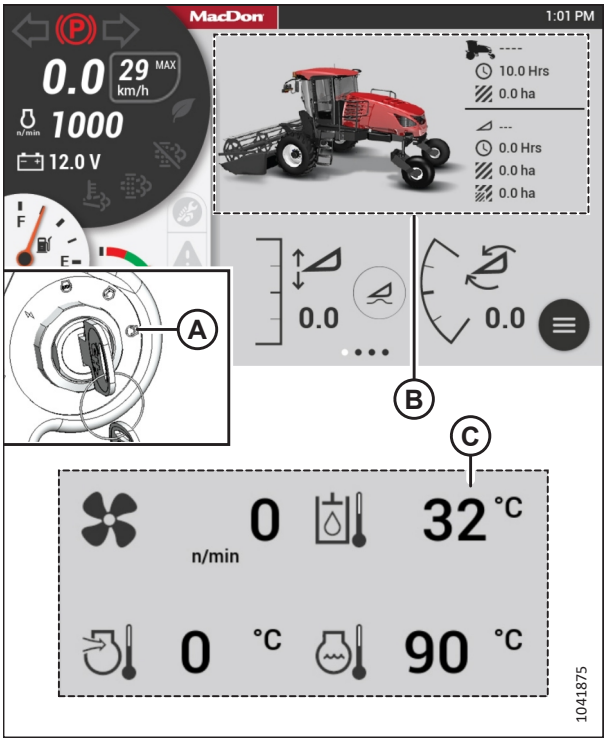


Figure 4.24: HarvestTouch™ Display

NOTE:

If the engine is started when the ambient temperature is below 5°C (40°F), the engine will cycle through a period during which it will sound as though it is struggling to stay running. This is the engine's warm-up mode. The throttle will be unresponsive while the engine is in warm-up mode. Warm-up mode lasts between 30 seconds and 3 minutes, depending on the ambient temperature. The throttle will become active after the engine has stabilized and is idling normally. Do **NOT** operate the engine above 1500 rpm until the engine temperature gauge is above blue range (A).

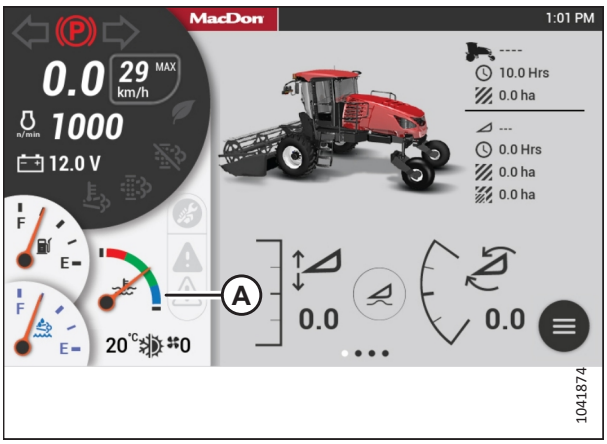


Figure 4.25: HarvestTouch™ Display

Troubleshooting Engine Starting Problems

If the windrower's engine is difficult to start, the problem will need to be diagnosed. Follow the instructions in this section for troubleshooting the windrower's engine.

IMPORTANT:

Do **NOT** tow the machine to start the engine. Towing the windrower can cause damage to the hydrostatic drives.

Use the following table to diagnose problems with starting the windrower's engine:

Table 4.1 Engine Start Troubleshooting

Problem	Solution
Controls are not in the NEUTRAL position	• Move the GSL to NEUTRAL • Move the steering wheel to the locked (centered) position • Disengage the HEADER switch
Neutral interlock is out of adjustment	• Refer to the windrower's technical manual
Fuel not reaching the engine	• Fill the fuel tank • Replace the fuel filter
Old fuel in the fuel tank	• Drain the fuel tank • Refill the fuel tank with fresh fuel
Water, dirt, or air in the fuel system	• Drain, flush, fill, and prime the fuel system
Improper type of fuel in the fuel tank	• Drain the fuel tank • Refill the fuel tank with the correct type of fuel
Crankcase oil too heavy	• Replace with recommended oil
Low voltage output from the battery	• Test the battery • Check the battery's electrolyte levels
Poor battery connection	• Clean and tighten loose battery connections
Faulty starter	• Refer to the windrower's technical manual
Wiring is shorted or the circuit breaker is open	• Check the continuity of the wiring and the breaker; manually reset the circuit breaker
Faulty fuel injectors	• Contact a MacDon Dealer or MacDon Product Support
Aftertreatment error on start up	• Check diesel exhaust fluid (DEF) coolant hose routing, ensure the coolant pressure lines, marked with red cable ties, are connected together, and not crossed with the return line.

4.1.11 Checking and Adding Wheel Drive Lubricant – 10 Bolt Wheels

1. Park the windrower on level ground.
2. Shut down the engine, and remove the key from the ignition.
3. Remove plug (A) or (B). The lubricant should be visible through the port. Some fluid may spill from the port.
4. If necessary, add lubricant until lubricant runs out from open port (A) or (B). For lubricant specifications, refer to the inside back cover.

   IMPORTANT:

   The lubricant used for the first wheel drive lubricant change differs from the type of lubricant used at the factory. For lubricant specifications, refer to the inside back cover.
5. Reinstall the plug and tighten it to 24 Nm (18 lbf·ft [216 lbf·in]).

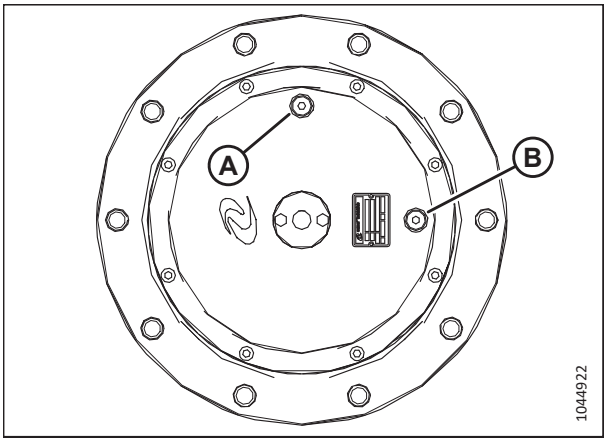


Figure 4.26: Drive Wheel Hub

4.1.12 Checking and Adding Wheel Drive Lubricant – 12 Bolt Wheels (Optional)

1. Park the windrower on level ground.
2. Rotate the wheel drive until fill/drain plug (A) is at the 12 o'clock position and check plug (B) is at the 3 o'clock position as shown.

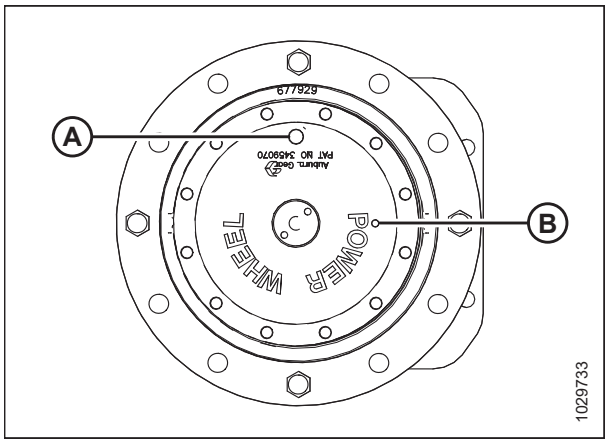


Figure 4.27: Wheel Drive – 12 Bolt

WARNING

Use caution when removing the plug, as the fluid may still be under pressure.

3. Remove check plug (B). The lubricant should be visible through the port. Some lubricant may leak from the port.
4. Reinstall check plug (B). Torque the plug to 7.5 Nm (5.5 lbf·ft [66 lbf·in]).
5. If removed, reinstall fill/drain plug (A). Torque the plug to 24 Nm (18 lbf·ft [216 lbf·in]).

4.1.13 Checking Tire Pressure

Caster wheel tires: Inflate all caster wheel tires (B) to 110 kPa (16 psi).

Drive wheel tires: Drive wheel (A) tire pressures are determined by tire type, header size, and by the options installed on the windrower. Refer to the following tables to determine the appropriate tire pressure for the windrower:

- D2 Series Draper Headers: Table *4.2, page 65*
- D1X/D1XL Series Draper Headers: Table *4.3, page 67*
- Rotary Disc Headers: Table *4.4, page 69*
- Auger Headers: Table *4.5, page 69*

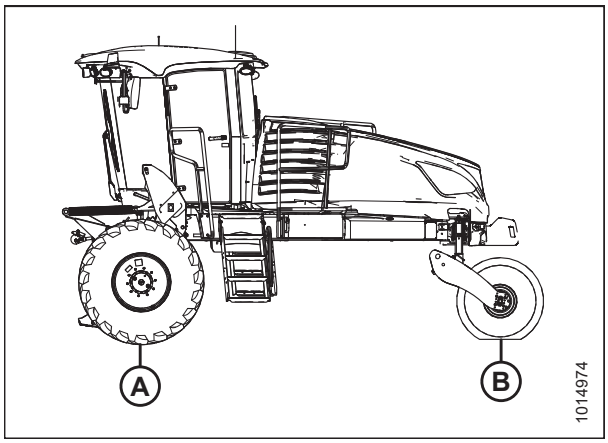


Figure 4.28: Windrower Tires

Table 4.2 Ballast and Tire Pressure Specifications – M2 Series Windrowers Paired with D2 Series Draper Headers

Header Type	Description	Installed Options	Booster Springs Kit Required	Quantity of Initial Rear Ballast Base Kits (B6053) Required	Quantity of Additional Rear Ballast Kits (B6054) Required	Drive Wheel Tire Type	Pressure kPa (psi)
D215	4.6 m (15 ft.), single reel, double knife, short knife guards, center delivery	Base + short knife guards	–	–	–	Bar or turf	138 (20)
D215	4.6 m (15 ft.), single reel, double knife, pointed guards, center delivery	Base + pointed guards	–	1	–	Bar or turf	138 (20)
D220	6.1 m (20 ft.), single reel, double knife, pointed guards, center delivery	Base + pointed guards	B6047	1	–	Bar or turf	138 (20)
D225	7.6 m (25 ft.), single reel, double knife, pointed guards, hydraulic triple delivery	Base + pointed guards + hydraulic triple delivery	–	1	1	Bar or turf	159 (23)
D225	7.6 m (25 ft.), single reel, double knife, short knife guards, hydraulic triple delivery	Base + short knife guards + hydraulic triple delivery	B6047	1	1	Bar or turf	159 (23)
D230	9.1 m (30 ft.), double reel, double knife, pointed guards, hydraulic triple delivery	Transport + upper cross auger + vertical knives	B6047	1	2	Bar or turf	241 (35)
D230	9.1 m (30 ft.), double reel, double knife, short knife guards, hydraulic triple delivery	Short Knife Guards + Plumbing for Upper Cross Auger	–	1	1	Bar	200 (29)
D230	9.1 m (30 ft.), double reel, double knife, short knife guards, hydraulic triple delivery	Short Knife Guards + Plumbing for Upper Cross Auger	–	1	1	Turf	241 (35)
D235	10.6 m (35 ft.), double reel	Base	–	1	1	Bar	221 (32)
D235	10.6 m (35 ft.), double reel	Base	–	1	1	Turf	241 (35)
D235	10.6 m (35 ft.), double reel	Transport	B6047	1	1	Bar or turf	241 (35)
D235	10.6 m (35 ft.), double reel	Transport + upper cross auger + vertical knives	B6047	1	2	Bar	283 (41)
D235	10.6 m (35 ft.), double reel	Transport + upper cross auger + vertical knives	B6047	1	2	Turf	241 (35)

Table 4.2 Ballast and Tire Pressure Specifications – M2 Series Windrowers Paired with D2 Series Draper Headers (continued)

Header Type	Description	Installed Options	Booster Springs Kit Required	Quantity of Initial Rear Ballast Base Kits (B6053) Required	Quantity of Additional Rear Ballast Kits (B6054) Required	Drive Wheel Tire Type	Pressure kPa (psi)
D241	12.5 m (41 ft.), double reel double knife, short knife guards, center delivery, plumbing for upper cross auger	Transport	B6047	1	1	Bar or turf	241 (35)
D241	12.5 m (41 ft.), double reel double knife, short knife guards, center delivery	Transport + upper cross auger + vertical knives	B6047	1	2	Bar	283 (41)
D241	12.5 m (41 ft.), double reel double knife, short knife guards, center delivery	Transport + upper cross auger + vertical knives	B6047	1	2	Turf	241 (35)

Table 4.3 Ballast and Tire Pressure Specifications – M2 Series Windrowers Paired with D1X and D1XL Series Draper Headers

Header Type	Description	Installed Options	Booster Springs Kit Required	Quantity of Initial Rear Ballast Base Kits (B6053) Required	Quantity of Additional Rear Ballast Kits (B6054) Required	Drive Wheel Tire Type	Pressure kPa (psi)
D115X	4.6 m (15 ft.), single reel, double knife, timed	–	–	–	–	Bar or turf	138 (20)
D120X	6.1 m (20 ft.), single reel, double knife, timed	–	–	–	–	Bar or turf	138 (20)
D125X	7.6 m (25 ft.), single reel, double knife, timed	–	–	–	–	Bar or turf	159 (23)
D130XL	9.1 m (30 ft.), single reel, double knife, timed	Base	–	–	–	Bar	200 (29)
D130XL	9.1 m (30 ft.), single reel, double knife, timed	Base	–	–	–	Turf	241 (35)
D130XL	9.1 m (30 ft.), single reel, double knife, timed	Transport	–	1	–	Bar	200 (29)
D130XL	9.1 m (30 ft.), single reel, double knife, timed	Transport	–	1	–	Turf	241 (35)
D130XL	9.1 m (30 ft.), single reel, double knife, timed	Transport + upper cross auger + vertical knives	B6047	1	2	Bar or turf	241 (35)
D135XL	10.6 m (35 ft.), single reel, double knife, timed	Base	–	1	1	Bar	200 (29)
D135XL	10.6 m (35 ft.), single reel, double knife, timed	Base	–	1	1	Turf	241 (35)
D135XL	10.6 m (35 ft.), single reel, double knife, timed	Transport	B6047	1	1	Bar or turf	241 (35)
D135XL	10.6 m (35 ft.), single reel, double knife, timed	Transport + upper cross auger + vertical knives	B6047	1	2	Bar or turf	241 (35)
D135XL	10.6 m (35 ft.), double reel, double knife, timed	Base	–	1	1	Bar	221 (32)
D135XL	10.6 m (35 ft.), double reel, double knife, timed	Base	–	1	1	Turf	241 (35)
D135XL	10.6 m (35 ft.), double reel, double knife, timed	Transport	B6047	1	1	Bar or turf	241 (35)

Table 4.3 Ballast and Tire Pressure Specifications – M2 Series Windrowers Paired with D1X and D1XL Series Draper Headers (continued)

Header Type	Description	Installed Options	Booster Springs Kit Required	Quantity of Initial Rear Ballast Base Kits (B6053) Required	Quantity of Additional Rear Ballast Kits (B6054) Required	Drive Wheel Tire Type	Pressure kPa (psi)
D135XL	10.6 m (35 ft.), double reel, double knife, timed	Transport + upper cross auger + vertical knives	B6047	1	2	Bar	283 (41)
D135XL	10.6 m (35 ft.), double reel, double knife, timed	Transport + upper cross auger + vertical knives	B6047	1	2	Turf	241 (35)
D140XL	12.2 m (40 ft.), double reel, double knife, untimed	Base	–	1	1	Bar or turf	241 (35)
D140XL	12.2 m (40 ft.), double reel, double knife, untimed	Transport	B6047	1	1	Bar or turf	241 (35)
D140XL	12.2 m (40 ft.), double reel, double knife, untimed	Transport + upper cross auger + vertical knives	B6047	1	2	Bar	283 (41)
D140XL	12.2 m (40 ft.), double reel, double knife, untimed	Transport + upper cross auger + vertical knives	B6047	1	2	Turf	241 (35)
D145XL	13.7 m (45 ft.), double reel, double knife, untimed	Base	–	1	1	Bar or turf	241 (35)
D145XL	13.7 m (45 ft.), double reel, double knife, untimed	Transport	B6047	1	2	Bar	262 (38)
D145XL	13.7 m (45 ft.), double reel, double knife, untimed	Transport	B6047	1	2	Turf	241 (35)
D145XL	13.7 m (45 ft.), double reel, double knife, untimed	Transport + upper cross auger + vertical knives	B6106	1	2	Bar	283 (41)
D145XL	13.7 m (45 ft.), double reel, double knife, untimed	Transport + upper cross auger + vertical knives	B6106	1	2	Turf	241 (35)

Table 4.4 Tire Pressure Specifications – M2 Series Windrowers Paired with Rotary Disc Headers

Header Type	Description	Installed Options	Drive Wheel Tire Type	Pressure kPa (psi)
IMPORTANT: • R113 Rotary Disc Headers are compatible with M2170 and M2260 Windrowers. • R116 Rotary Disc Headers are compatible with M2170 Windrowers, but not M2260 Windrowers. • R216 Grass Seed Headers are compatible with M2260 Windrowers, but not M2170 Windrowers.				
R113/R116	4 m (13 ft.) / 4.9 m (16 ft.)	No conditioner	Bar or turf	138 (20)
R113/R116	4 m (13 ft.) / 4.9 m (16 ft.)	Steel or poly roll	Bar	179 (26)
R113/R116	4 m (13 ft.) / 4.9 m (16 ft.)	Steel or poly roll	Turf	159 (23)
R216	4.9 m (16 ft.)	Steel or poly roll	Bar or turf	200 (29)
R216 GSS	4.9 m (16 ft.)	Grass seed module	Bar or turf	200 (29)

Table 4.5 Tire Pressure Specifications – M2 Series Windrowers Paired with Auger Headers

Header Type	Description	Drive Wheel Tire Type	Pressure kPa (psi)
A40DX	4.9 m (16 ft.)	Bar or Turf	200 (29)
A40DX GSS	4.9 m (16 ft.) (Grass Seed)	Bar or Turf	159 (23)
A40DX	5.5 m (18 ft.)	Bar	200 (29)
A40DX	5.5 m (18 ft.)	Turf	220 (32)

4.2 Performing Operational Checks

The operating characteristics of the windrower will need to be inspected.

1. Perform the operational check procedures provided in this chapter and fill out the relevant items in the *Predelivery Checklist, page 255*.

2. Ensure that the Operator or the Dealer retains the completed Predelivery Checklist.

For information on navigating the windrower's HarvestTouch™ Display, refer to XX.

4.2.1 Checking Operating Safety System

1. With the engine running and the seat base in engine-forward mode, press the HEADER ENGAGE switch. Confirm that the header drive does **NOT** engage and that the HarvestTouch™ Display displays LOCK SEAT BASE IN CAB-FORWARD.

2. With the engine running and the seat base in cab-forward mode, stand up and engage the HEADER DRIVE switch. The header drive should **NOT** engage and the HarvestTouch™ Display should display OPERATOR MUST BE SEATED.

3. With the engine running and the seat base unlocked, move the ground speed lever (GSL) out of PARK. Confirm that the engine immediately shuts down and that the HarvestTouch™ Display displays LOCK SEAT BASE and sounds a tone.

4. Shut down the engine and press the HEADER ENGAGE switch. Try starting the engine to confirm that the HarvestTouch™ Display displays DISENGAGE HEADER. If the engine turns over, the safety system requires adjustment. Refer to the windrower's technical manual for the adjustment procedures.

5. Shut down the engine and open the cooler box door. Try starting the engine to confirm that the HarvestTouch™ Display displays CLOSE COOLER BOX DOOR. If the engine turns over, the safety system requires adjustment. Refer to the windrower's technical manual for the adjustment procedures.

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

   a. Open the hood.

   b. Pry the steering interlock away from pintle arms (A) by inserting a wedge or a pry bar between one of interlock channels (B) and the pintle arm.

   c. Insert a wooden block approximately 19 mm (3/4 in.) thick between the opposite channel and the pintle arm so that the interlock channel is clear of the pintle arm.

   d. Turn the steering wheel off-center and move the GSL to PARK.

   e. Try starting the engine to confirm that the HarvestTouch™ Display displays LOCK STEERING WHEEL IN CENTER POSITION. The engine should **NOT** turn over. If the engine turns over, the safety system requires adjustment. Refer to the windrower's technical manual for the adjustment procedures.

   f. Remove the key from the ignition.

   g. Remove the wooden block and close the hood.

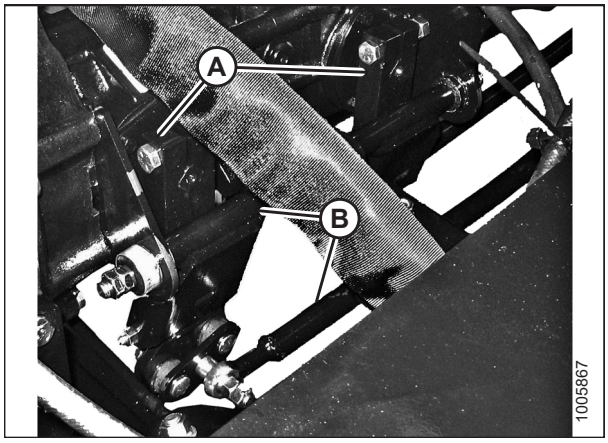


Figure 4.29: Pintle Arms

7. Center the steering wheel. Place the GSL in NEUTRAL but not in PARK. Try starting the engine to confirm that the HarvestTouch™ Display displays MOVE GSL INTO PARK. The engine should **NOT** turn over. If the engine turns over, the safety system requires adjustment. Refer to the windrower's technical manual for the adjustment procedures.

8. With the engine off, center the steering wheel. Place the GSL in PARK and ensure that the operator's station is **NOT** locked. Try starting the engine and confirm that the engine does **NOT** turn over, and the HarvestTouch™ Display displays LOCK SEAT BASE. If the engine starts, the safety system requires adjustment. Refer to the windrower's technical manual for the adjustment procedures.

4.2.2 Checking HarvestTouch™ Display Status Screen and Auto Lights

1. Open the cab door, turn the IGNITION switch to the ON position, and confirm that the HarvestTouch™ Display boots up and shows the MacDon logo.

2. Start the engine. For instructions, refer to *4.1.10 Starting Engine, page 58*.

Figure 4.30: HarvestTouch™ Display – Boot-Up

3. If a header is attached to the windrower, confirm that the HarvestTouch™ Display displays header-disengaged page (A).

   NOTE:

   The illustration shows a draper header attached to the windrower. If an auger or rotary disc header is attached to the windrower, the page will look similar.

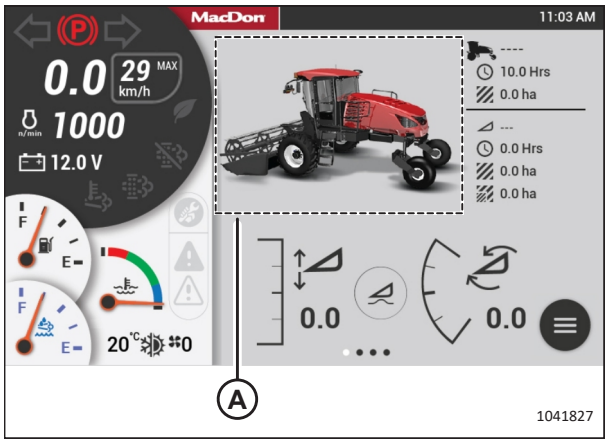


Figure 4.31: HarvestTouch™ Display – Header Disengaged

4. If a header is not attached to the windrower, confirm that the HarvestTouch™ Display displays no-header page (A).

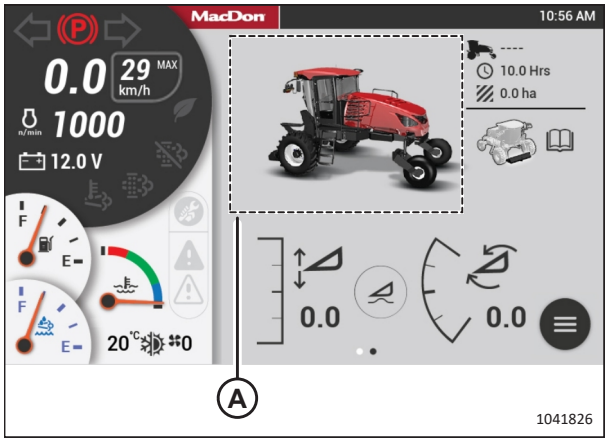


Figure 4.32: HarvestTouch™ Display – No Header

5. Press LIGHT switch (A) to turn on the headlights.

6. Shut down the engine. Leave the cab, but do **NOT** turn off the headlights. Confirm that the HarvestTouch™ Display, the headlights, and the egress light shut off after 3 minutes.

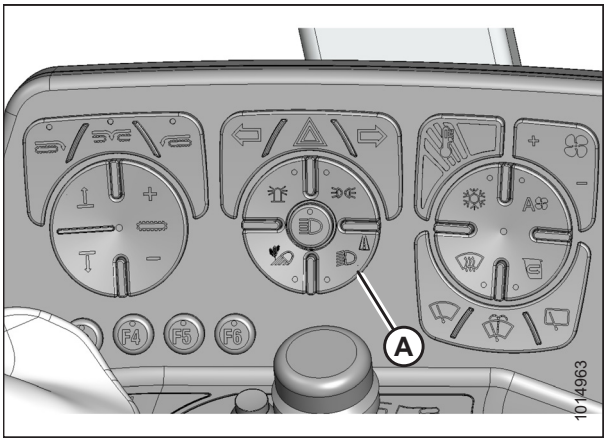


Figure 4.33: Headlight Switch

4.2.3 Checking HarvestTouch™ Display Gauges

1. If the windrower engine is not already running, start it. For instructions, refer to *4.1.10 Starting Engine, page 58*.

2. If a header is not attached to the windrower, confirm that the HarvestTouch™ Display displays no-header page (A).

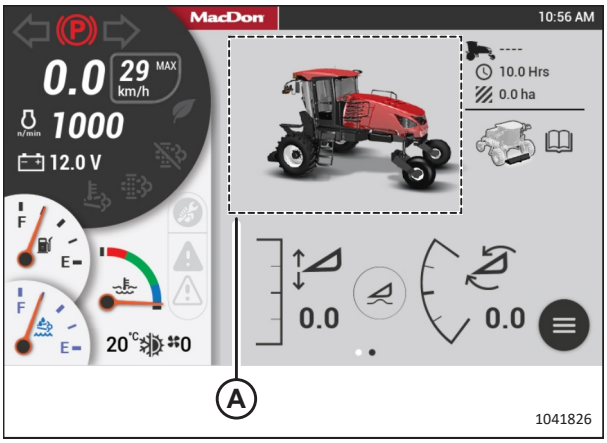


Figure 4.34: HarvestTouch™ Display – No Header

3. If a header is attached to the windrower, confirm that header page (A) appears.

4. Confirm red park symbol (B) is lit.

5. Confirm the following gauges appear:
   - Engine rpm (C)
   - Fuel gauge (D)
   - Temperature gauge (E)
   - DEF gauge (F)

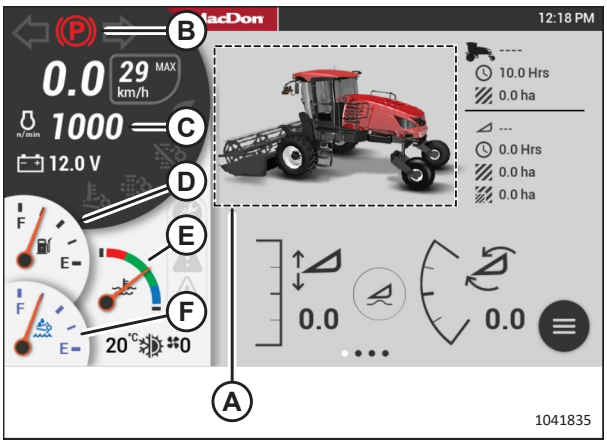


Figure 4.35: HarvestTouch™ Display – Header Attached

4.2.4 Setting Language, Units of Measurement, Time, Date, Tire Size, and Wheel Type

Complete the setup in the order provided.

DANGER

Ensure that all bystanders have cleared the area.

1. Turn the key to the ON or ACC position.

Setting Language

1. Select MENU icon (A).

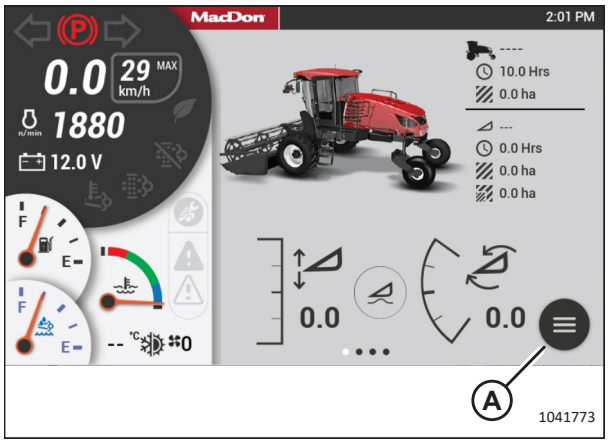


Figure 4.36: HarvestTouch™ Display

2. Select SETUP (A).

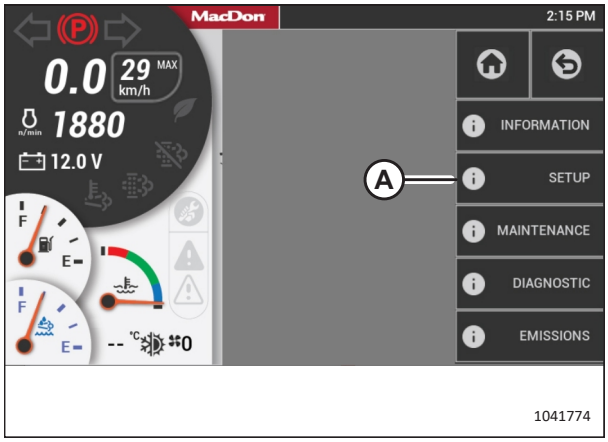


Figure 4.37: HarvestTouch™ Display Menu

3. Select DISPLAY (A).

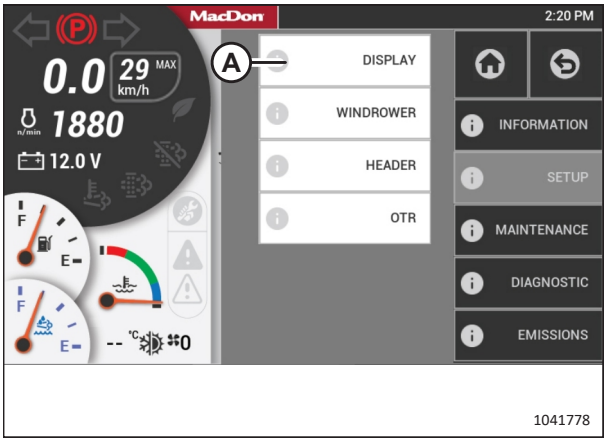


Figure 4.38: HarvestTouch™ Display Setup Menu

4. Select LANGUAGE (A).

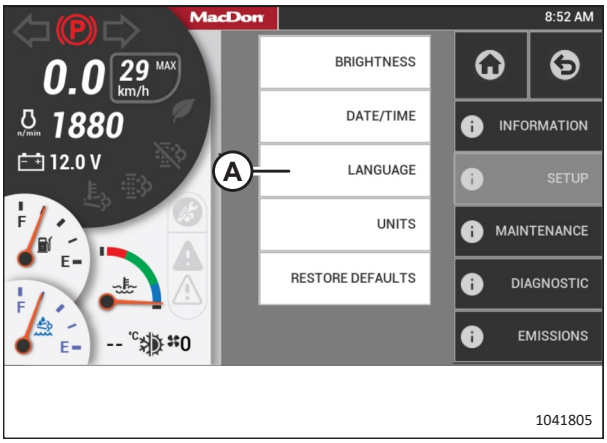


Figure 4.39: HarvestTouch™ Display Setup Menu

5. Select a language (A).
6. To save the changes, select checkmark (B).

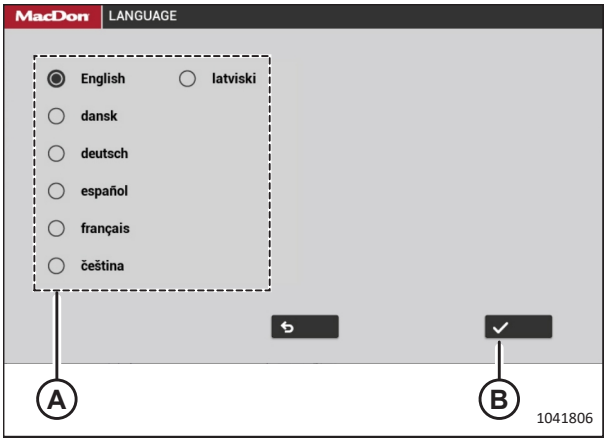


Figure 4.40: HarvestTouch™ Display Language Page

Setting Units of Measurement

1. Select MENU icon (A).

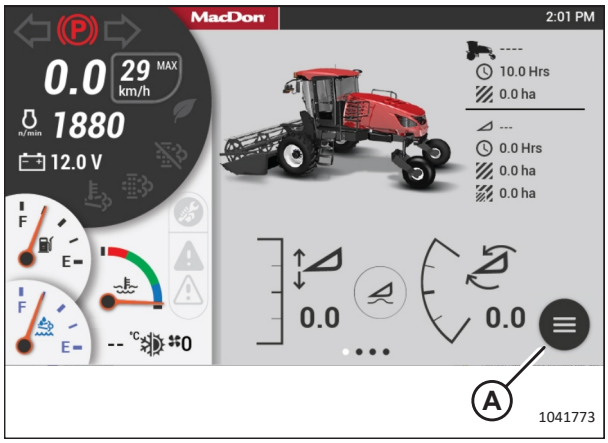


Figure 4.41: HarvestTouch™ Display

2. Select SETUP (A).

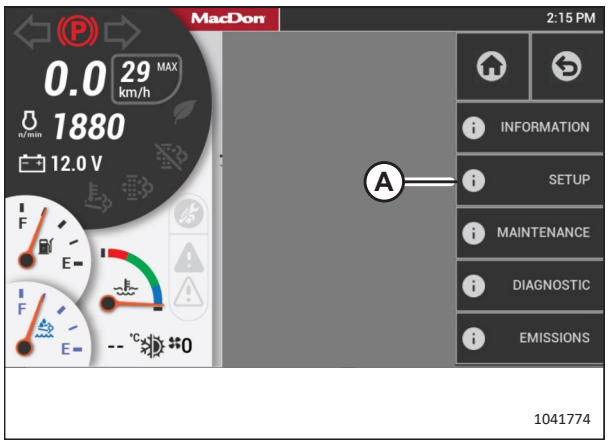


Figure 4.42: HarvestTouch™ Display Menu

3. Select DISPLAY (A).

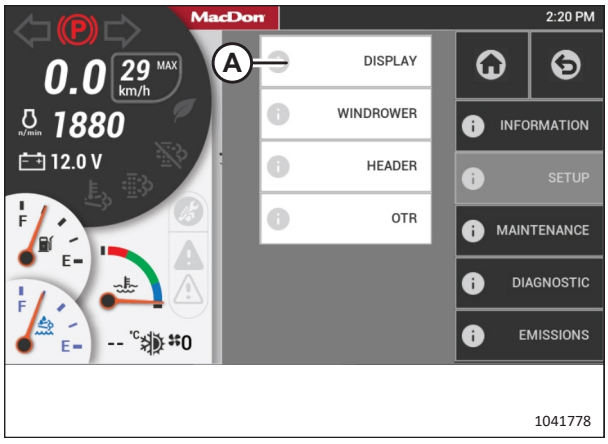


Figure 4.43: HarvestTouch™ Display Setup Menu

4. Select UNITS (A).

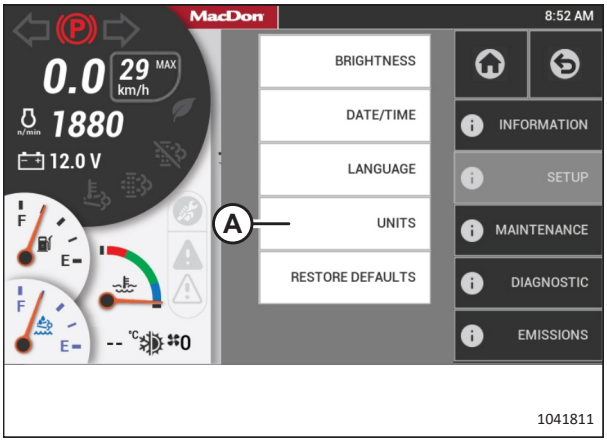


Figure 4.44: Display Menu

5. Select a unit of measurement (A).

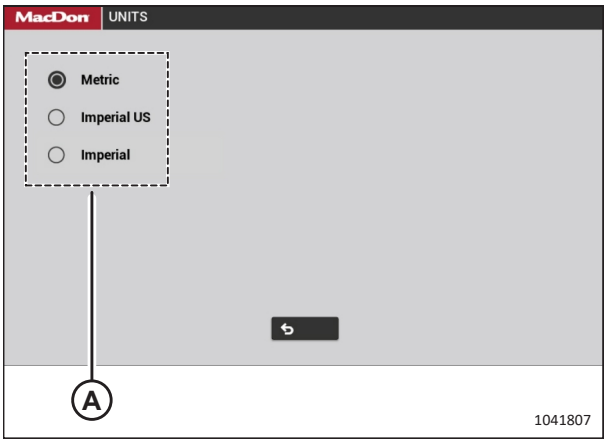


Figure 4.45: Units Page

Setting Time and Date

1. Select MENU icon (A).

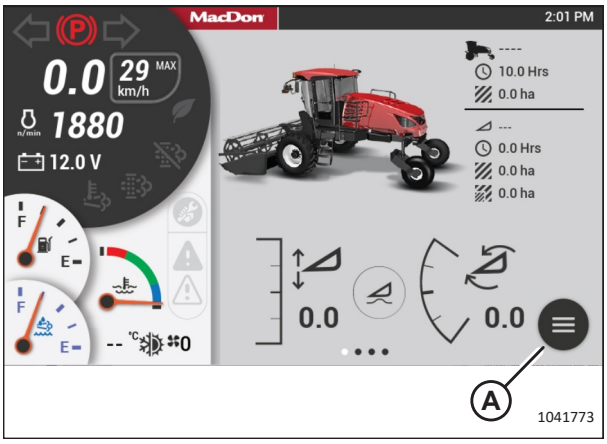


Figure 4.46: HarvestTouch™ Display

2. Select SETUP (A).

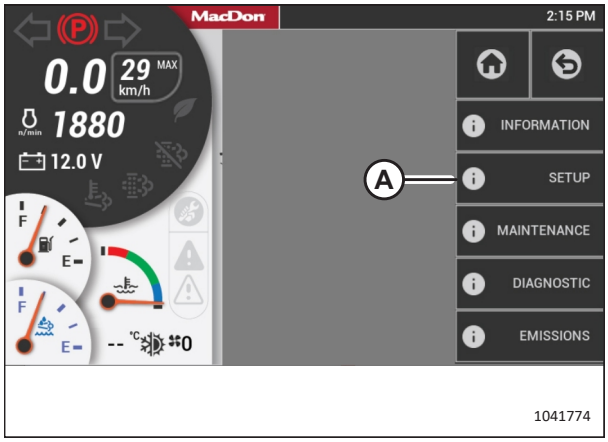


Figure 4.47: HarvestTouch™ Display Menu

3. Select DISPLAY (A).

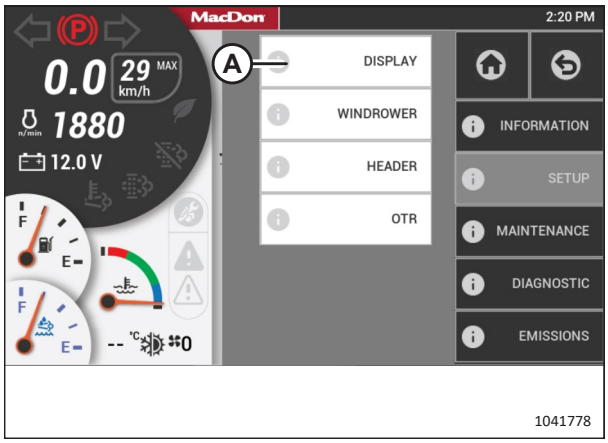


Figure 4.48: HarvestTouch™ Display Setup Menu

4. Select DATE/TIME (A).

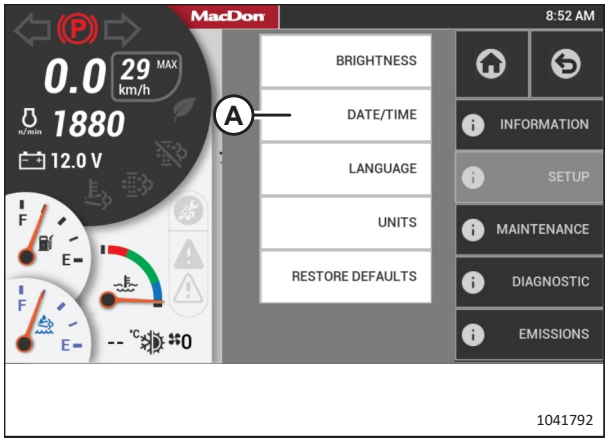


Figure 4.49: HarvestTouch™ Display Menu

5. Select one of the following:
   - To change the time, select time field (A). Proceed to Step *6, page 79*.
   - To change the date, select date field (B). Proceed to Step *8, page 79*.

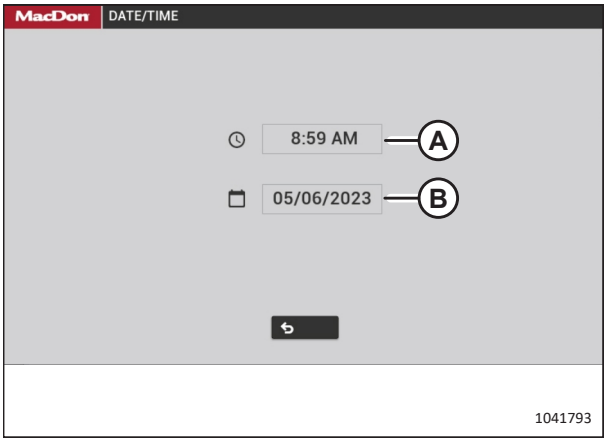


Figure 4.50: Date/Time Page

6. To change the time, select arrows (A).
   - To switch between 12-hour and 24-hour formats, select switch (B).
7. To save the changes, select checkmark (C).
   - To return to the previous page without saving changes, select back arrow (D).

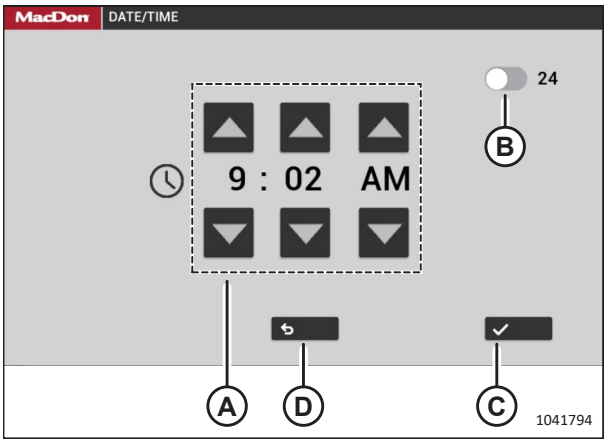


Figure 4.51: Date/Time Page

8. To change the date, select arrows (A).
9. To save the changes, select checkmark (B).
   - To return to the previous page without saving changes, select back arrow (C).

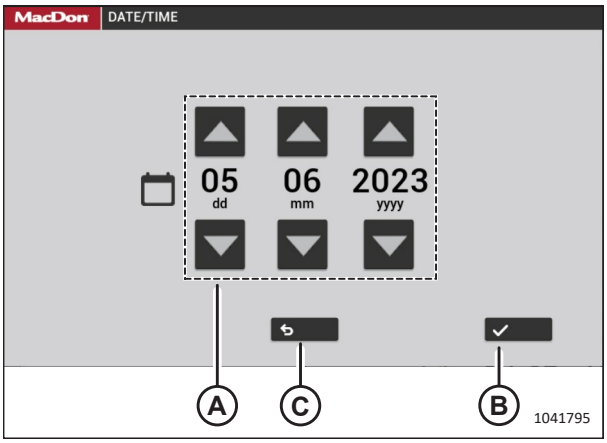


Figure 4.52: Date/Time Page

Setting Wheel Drive Options – Narrow Transport, Tire Size, and Wheel Type

1. Select MENU icon (A).

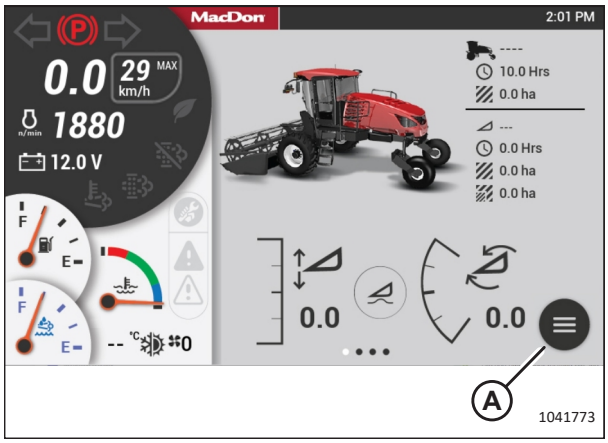


Figure 4.53: HarvestTouch™ Display

2. Select SETUP (A).

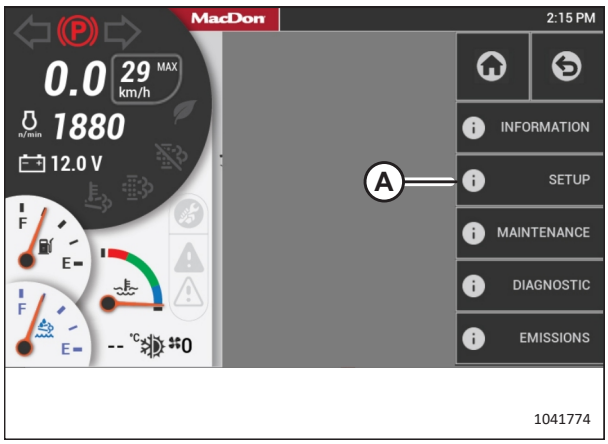


Figure 4.54: HarvestTouch™ Display Menu

3. Select WINDROWER (A).

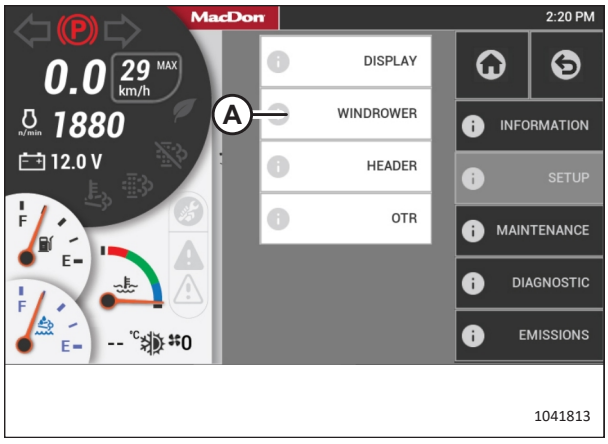


Figure 4.55: HarvestTouch™ Display Setup Menu

4. Select WHEEL DRIVE (A).

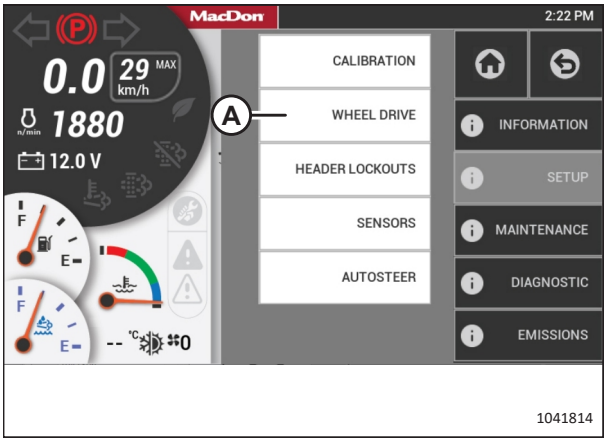


Figure 4.56: Windrower Menu

5. Select the drive tires from SELECT DRIVE TIRES list (A) that are already installed on the windrower.
6. Return to the main menu.

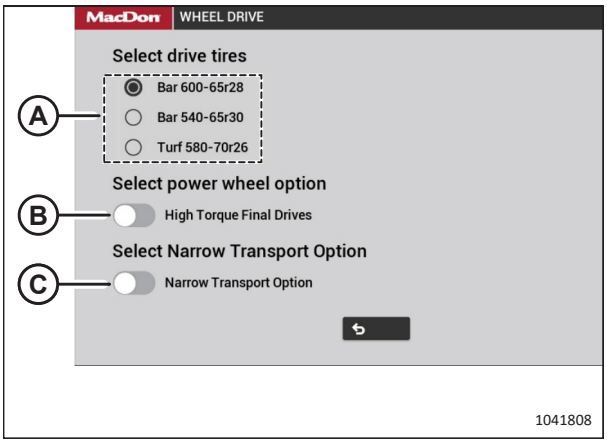


Figure 4.57: Wheel Drive Page

7. Turn the key to the OFF position.

4.2.5 Checking Engine Speed

1. Start the engine.
2. Move the throttle to the idle position.

3. Check engine speed (A) on the HarvestTouch™ Display. Compare the current engine speed to the value in the table below.
4. Move the throttle to its highest possible setting.
5. Check engine speed (A) on the HarvestTouch™ Display. Compare the current engine speed to the value in Table *4.6, page 82*.

   NOTE:

   The engine speed specifications in the table below are provided on the assumption that the windrower's Eco Engine Control (EEC) feature is **NOT ACTIVE**. For more information about EEC, refer to the windrower operator's manual.

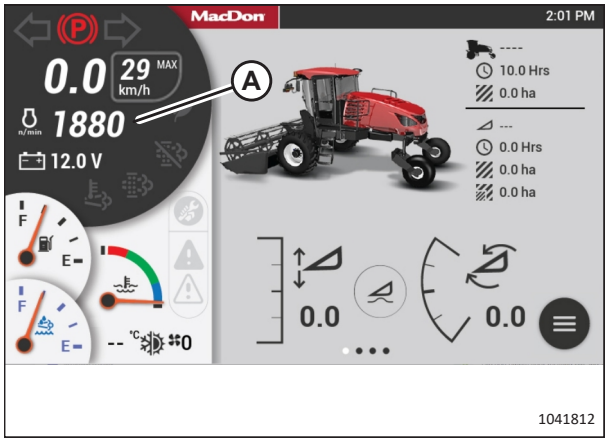


Figure 4.58: HarvestTouch™ Display

Table 4.6 Engine Speed

Idle	Maximum (No Load)
1000 rpm	2300 rpm

6. Shut down the engine, and remove the key from the ignition.

4.2.6 Checking Selective Catalytic Regeneration Conditioning Mode

1. Turn the key to the ON or ACC position.

The SCR conditioning inhibit mode is off when indicator (A) on the HarvestTouch™ Display is not highlighted.

The SCR conditioning inhibit mode is on when indicator (A) on the HarvestTouch™ Display is highlighted. This will prevent the SCR process from occurring.

NOTE:

If the SCR system is inhibited for an extended period, the engine will begin to derate its power levels until manual SCR conditioning is performed. Refer to the windrower operator's manual for more information.

If the SCR conditioning inhibit symbol is highlighted, turn SCR inhibit mode off as follows:

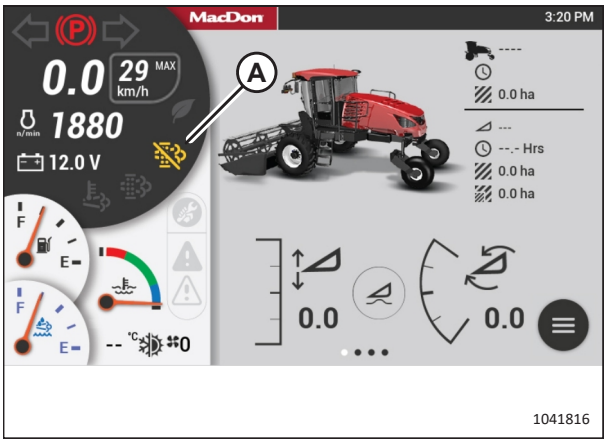


Figure 4.59: HarvestTouch™ Display

2. Select MENU icon (A).

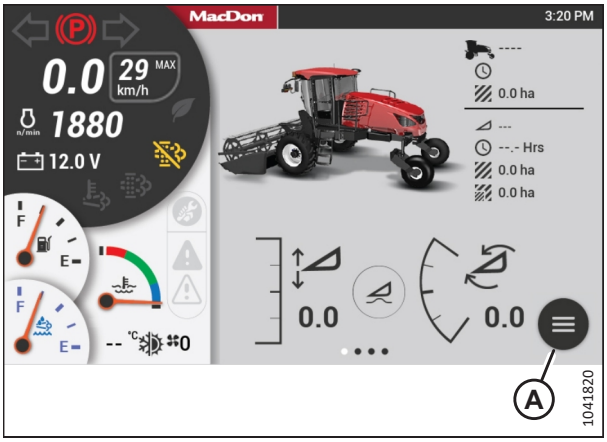


Figure 4.60: HarvestTouch™ Display

3. Select EMISSIONS (A).

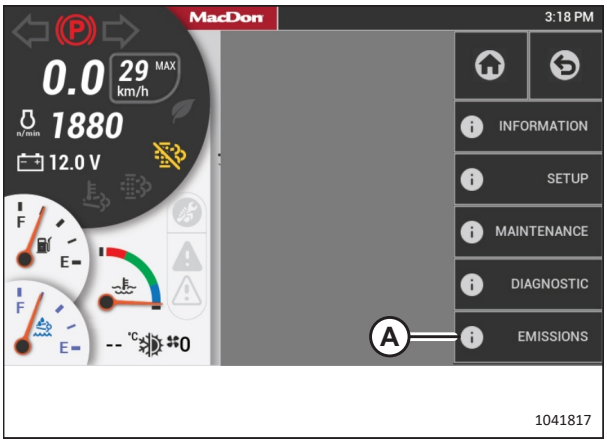


Figure 4.61: HarvestTouch™ Display

4. To turn off SCR conditioning inhibit mode, select and hold INHIBIT icon (A) for 3 seconds. Highlighted SCR CONDITIONING INHIBIT icon (B) will turn off.

5. To return to the home page, press back arrow (C).

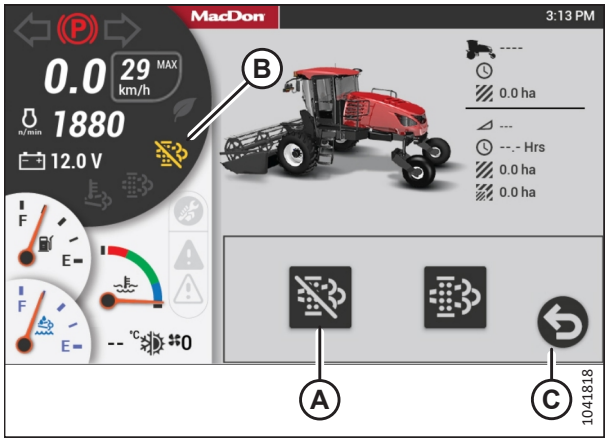


Figure 4.62: HarvestTouch™ Display

6. Turn the key to the OFF position.

4.2.7 Checking Exterior Lights

1. ***For models with LED lighting:*** remove the plastic film from the LED lighting.
2. Rotate the operator's seat to the cab-forward position.
3. Press FIELD LIGHT switch (A).
4. Ensure that front field lights (B), rear field lights (C), and rear swath lights (D) are functional.

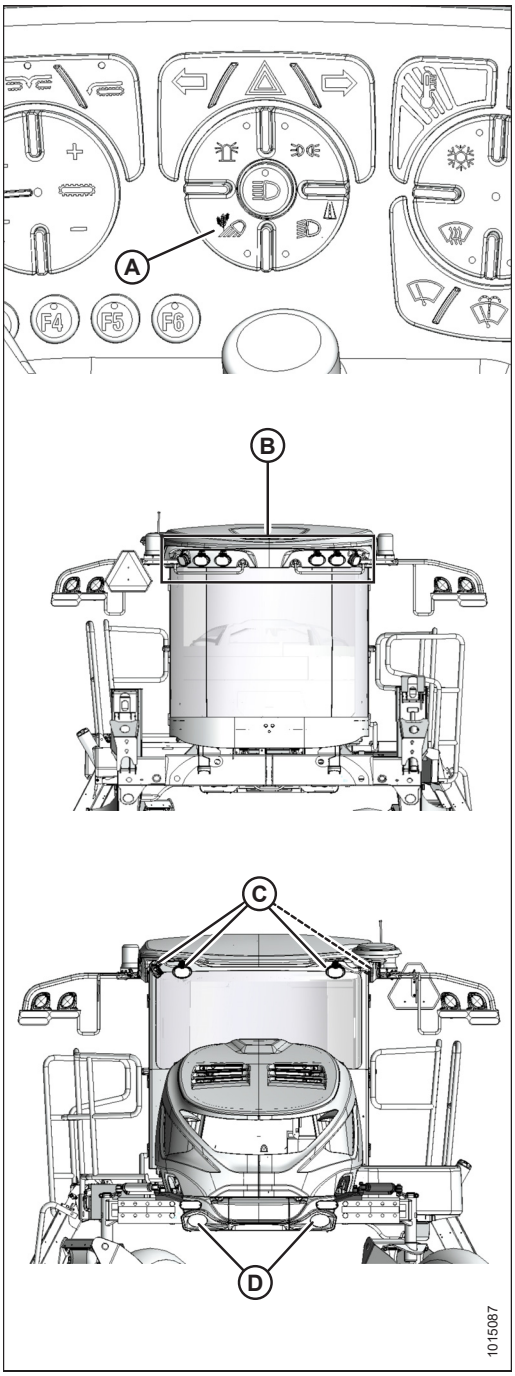


Figure 4.63: Field Lights

5. Press ROAD LIGHT switch (A). Ensure that front road lights (B) and rear red tail/brake lights (C) are functional.
6. Press HIGH/LOW switch (D). Ensure that lights (B) are functional.
7. Press TURN SIGNAL switches (E) on the console. Ensure that amber lights (F) are functional.
8. Press HAZARD LIGHT switch (G). Ensure that flashing hazard lights (F) are functional.
9. Press the switches to shut off the lights.

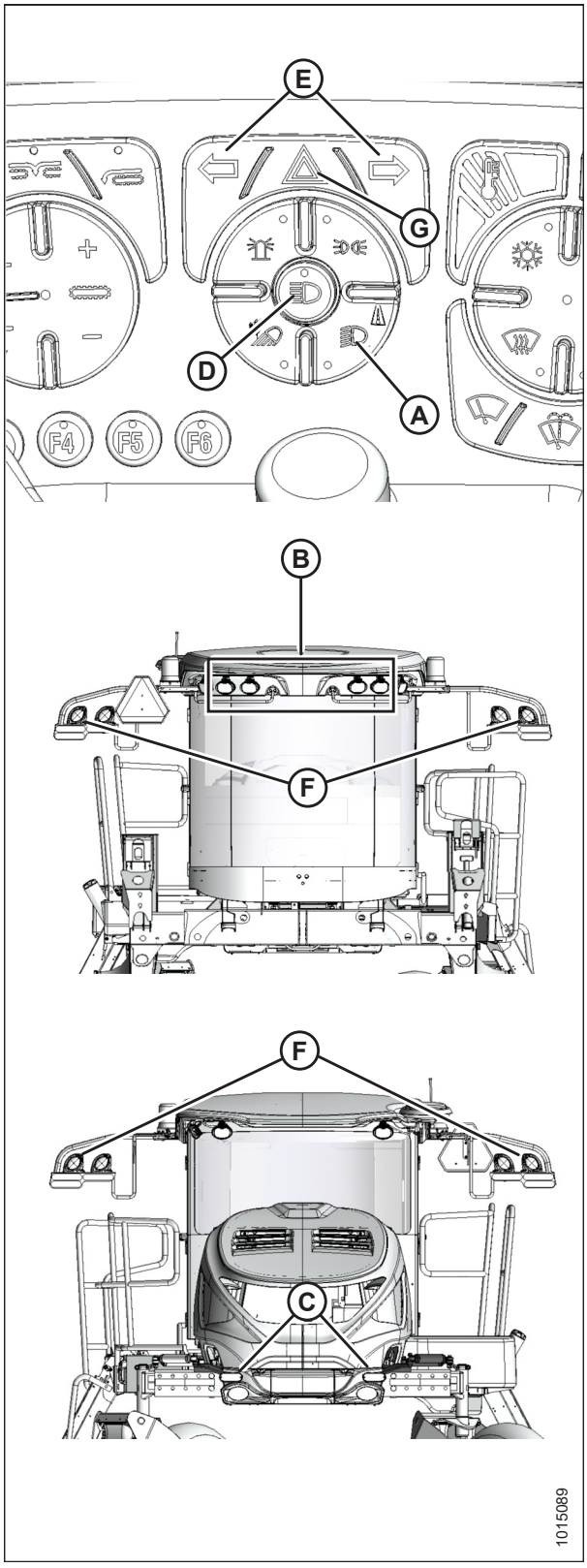


Figure 4.64: Road Lights – Cab-Forward

10. Rotate the operator's seat to the engine-forward position.
11. Press ROAD LIGHT switch (A). Ensure that front road lights (B) and rear red tail/brake lights (C) are functional.
12. Press HIGH/LOW switch (D). Ensure that lights (B) are functional.
13. Press TURN SIGNAL switches (E) on the console. Ensure that amber lights (F) are functional.
14. Press HAZARD LIGHT switch (G). Ensure that flashing hazard lights (F) are functional.
15. Press the switches again to shut off the lights.

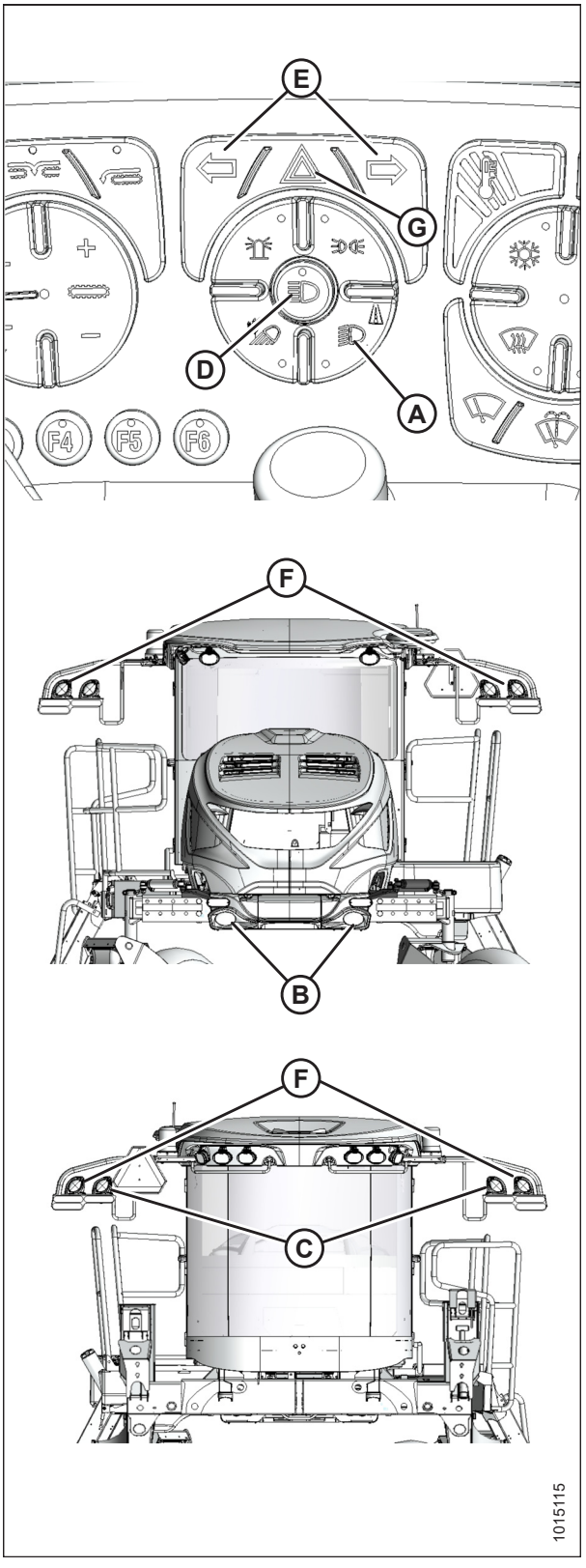


Figure 4.65: Road Lights – Engine-Forward

16. Push BEACON switch (A). Ensure that amber beacons (B) are functional.
17. Press BEACON switch (A) to shut off the beacons.

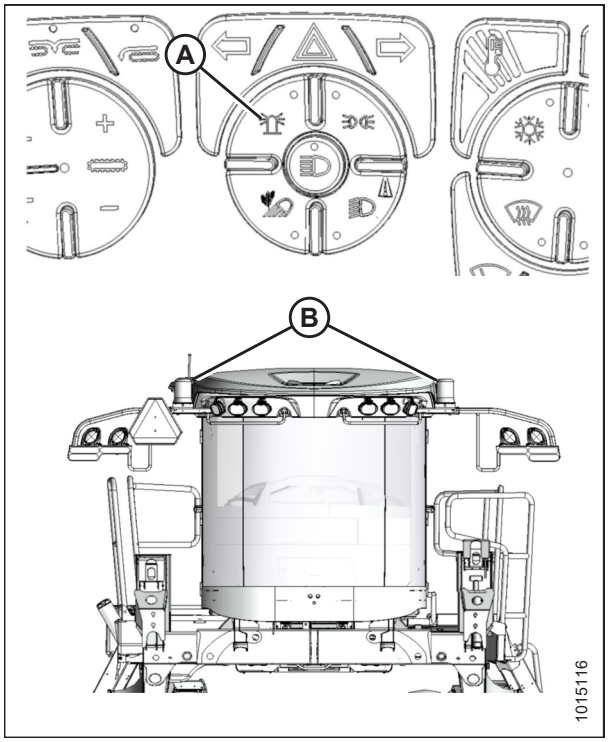


Figure 4.66: Beacons

4.2.8 Checking Horn

Press HORN button (A) and listen for the horn.

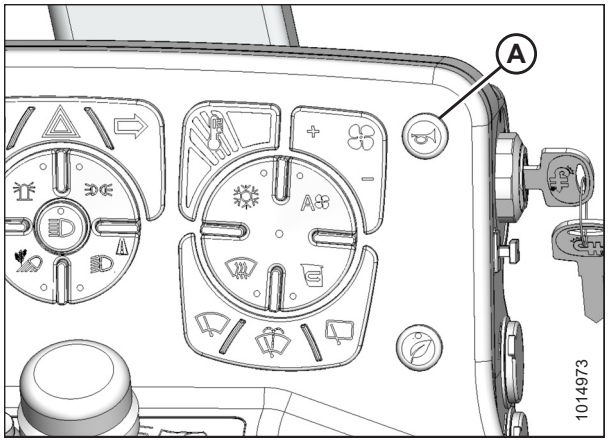


Figure 4.67: Horn Button

4.2.9 Checking Interior Lights

1. Open the cab door. Confirm that interior light (A) turns on.
2. Enter the cab and close the door. Confirm that interior light (A) darkens.

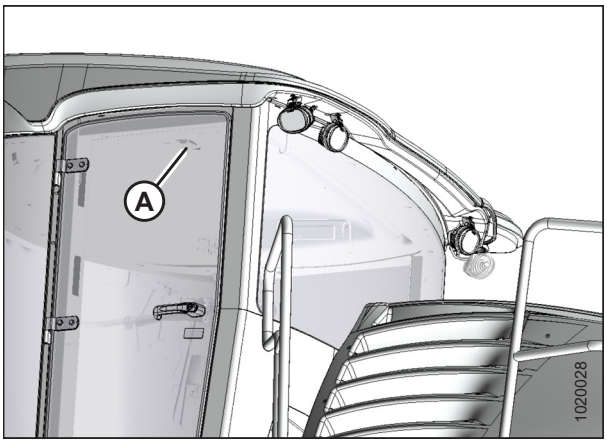


Figure 4.68: Interior Light

3. Turn the IGNITION key to the RUN position.
4. Push OVERHEAD DOME LIGHT switch (A) to ON position (B). Confirm that the light turns on.
5. Push the LIGHT switch to DOOR position (C). Confirm that the light is off.
6. Open the door and check that the light turns on. Leave the door open.
7. Push switch (A) to OFF position (D). Confirm that the light is off.

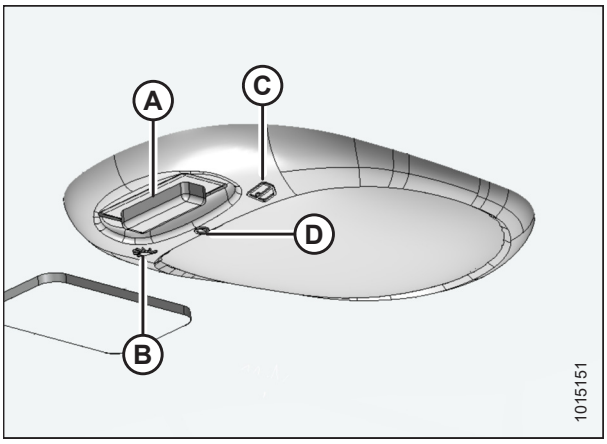


Figure 4.69: Interior Light

4.2.10 Checking Climate Controls

1. Start the engine. Allow the engine to reach operating temperature.
2. If the windrower has not been operated in the past seven days, refresh the A/C system as follows:
   a. Press + button (A) on the FAN SPEED switch to start the fan.
   b. Adjust temperature control (B) to the highest heat setting.
   c. Press A/C switch (C) if necessary so that the LED light is **NOT** lit.
   d. Move A/C switch (C) to the ON position. The A/C LED will light up. Leave the A/C switch in the ON position for 1 second.
   e. Move A/C switch (C) to the OFF position for 5 to 10 seconds.
   f. Repeat the A/C refresh procedure 10 more times.
3. Press AUTO FAN switch (A). The orange LED will light up.
4. Press RED TEMPERATURE CONTROL switch (B) until warm air flows through the cab vents.
5. Press BLUE TEMPERATURE CONTROL switch (C) until cool air enters the cab.
6. Press FAN SPEED switch (D) (+ or –). Note any change in airflow in the cab. The AUTO FAN light should be off.
7. Press RECIRCULATING AIR switch (E). Note any change in airflow in the cab.
8. Press WINDSHIELD DEFOG/DEFROST switch (F). Confirm that the windshield vents are blowing.

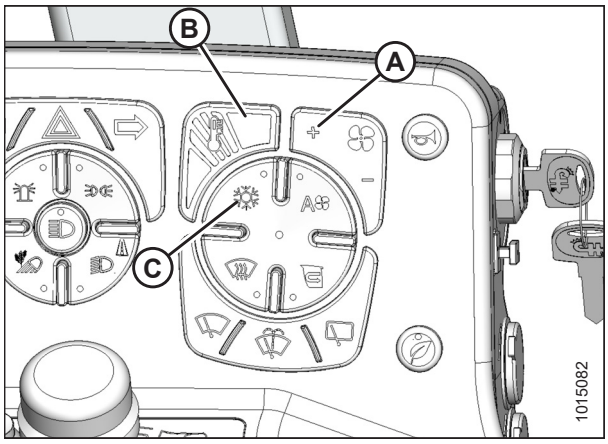


Figure 4.70: A/C Controls

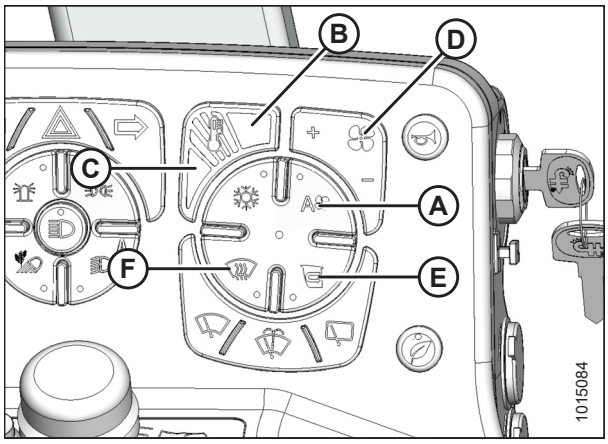


Figure 4.71: Climate Controls

4.2.11 Checking Radio and Activating Bluetooth® Feature

Radio (A) and two speakers (B) are factory-installed in the cab headliner. The radio operates in AM, FM, CD/DVD, and USB modes. It also supports Bluetooth® wireless technology audio streaming and hands-free calling.

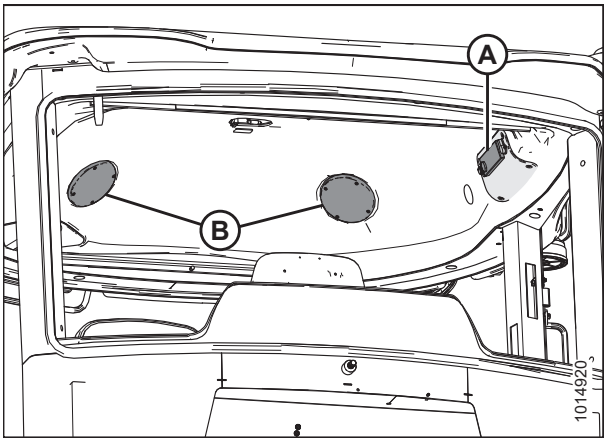


Figure 4.72: Radio and Speakers

1. To verify the functionality of the radio, follow these steps:
   a. Turn the ignition key to the RUN position.
   b. Press POWER button (A) to turn the radio on. Hold the POWER button to turn it off.

      NOTE:

      The button will light up red when OFF and blue when ON.

   c. Press BAND/BACK button (B) to change radio bands as follows:
      - FM1
      - FM2
      - FM3
      - AM1
      - AM2

   d. Rotate VOLUME/SELECT knob (C) to change the volume level.
   e. Insert a CD or DVD into disc slot (D), or connect a USB storage device to the unit. The radio will automatically switch modes and begin playback after the media is successfully loaded.

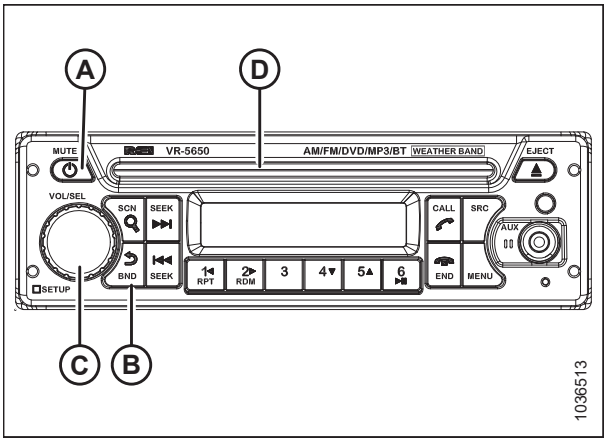


Figure 4.73: Radio

2. To activate the Bluetooth® feature:

   a. Press POWER button (A) to turn the radio on.

   b. Press and hold VOL/SEL knob (B) for 2 seconds. The menu will appear on screen (C).

   c. Rotate VOL/SEL knob (B) to highlight the BT SET menu and press the VOL/SEL knob to select it. BLUETOOTH ON/OFF will appear on screen (C).

   d. Press the VOL/SEL knob to select BLUETOOTH.

   e. Rotate the VOL/SEL knob until ON appears. Press the VOL/SEL knob.

   f. Rotate the VOL/SEL knob and select DISCOVER.

   g. Rotate the VOL/SEL knob until ON appears, and then press the VOL/SEL knob.

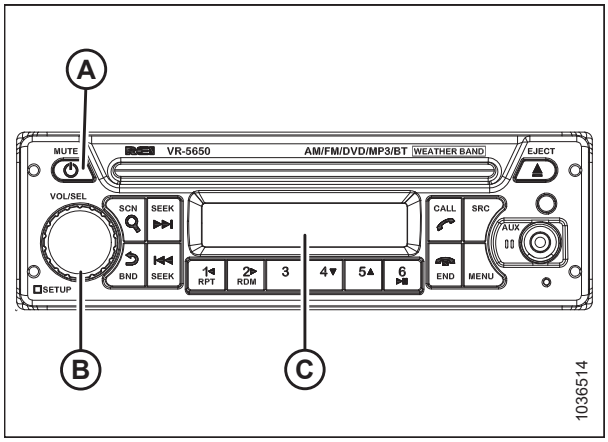


Figure 4.74: Bluetooth® Radio

4.3 Checking Manuals

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

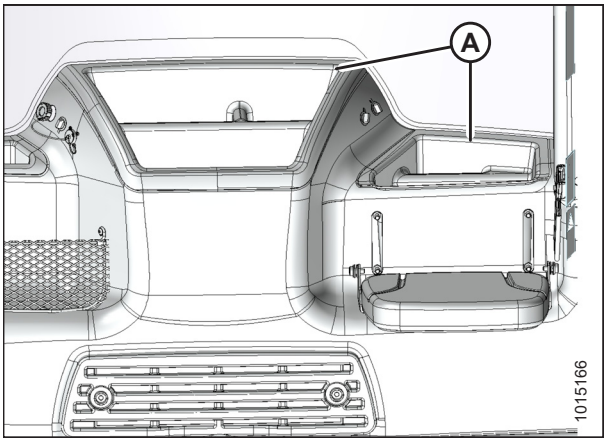


Figure 4.75: Manual Storage Case

Ensure that the following manuals are included with the windrower:

- Operator's manual
- Parts catalog
- Quick card
- Engine manual

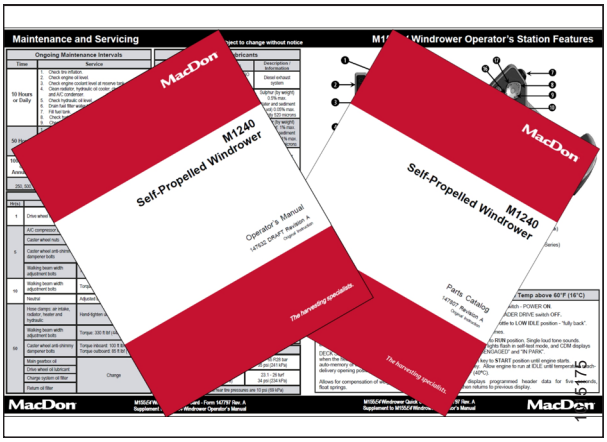


Figure 4.76: Manuals and Quick Card

4.4 Performing Final Steps

1. After the predelivery checks are complete, remove the plastic covering from HarvestTouch™ Display and the seats.
2. Remove the Keep This Door Closed sign from the right door AFTER the right leg is repositioned to field configuration.

   IMPORTANT:

   Do **NOT** remove the drive wheel torque procedure decal from the windshield.

Figure 4.77: Windshield Decal

Chapter 5: Attaching Headers to Windrower

Refer to this chapter for instructions on attaching MacDon headers to the windrower.

5.1 A40DX Auger Headers

This section details the procedures necessary to attach or detach an A40DX Auger Header to the windrower and to complete its hydraulic and electrical connections.

5.1.1 Attaching Forming Shield to Windrower

If the windrower will be paired with a MacDon A40DX Auger Header equipped with a conditioner, then the forming shield should be installed on the windrower. The forming shield is not required if the windrower will be paired with an A40DX GSS Auger Header, though it can be useful for crops such as radishes.

DANGER

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

1. Shut down the engine, and remove the key from the ignition.
2. Place spacer (B) over 1/2 x 8 in. hex bolt (A). Insert the bolt into the windrower leg as shown. Secure the bolt with the 1/2 in. nut.
3. Repeat the previous step to install the bolt, spacer, and nut on the other windrower leg.

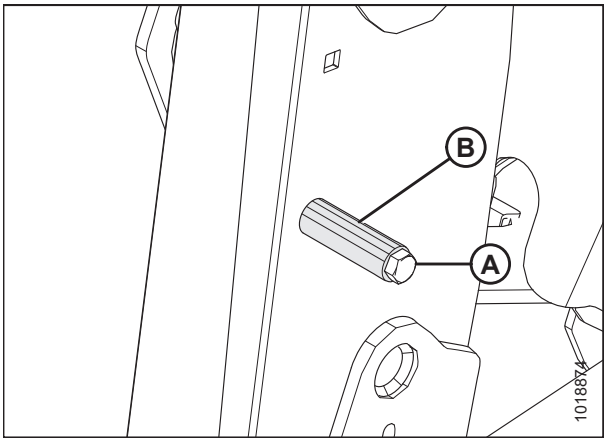


Figure 5.1: Bolt and Spacer Installed on Windrower Leg

4. Remove and retain the lynch pin from clevis pin (A) at the forward end of the forming shield. Remove and retain the clevis pin.
5. Repeat the previous step on the other side of the forming shield.

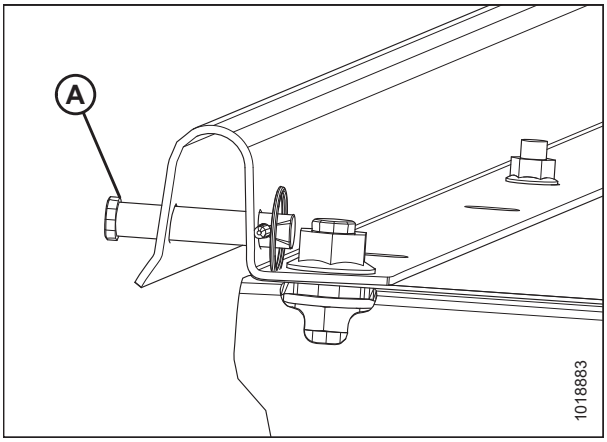


Figure 5.2: Clevis Pin at Forward End of Forming Shield

6. Position forming shield (A) under the windrower frame as shown.

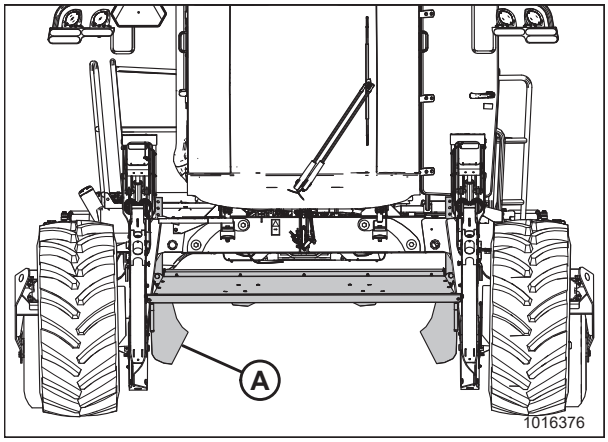


Figure 5.3: Forming Shield under Windrower Frame

7. Attach the forming shield to spacer (A) on the windrower leg using retained clevis pin (B) and lynch pin (C).

8. Repeat the previous step to secure the other side of the forming shield.

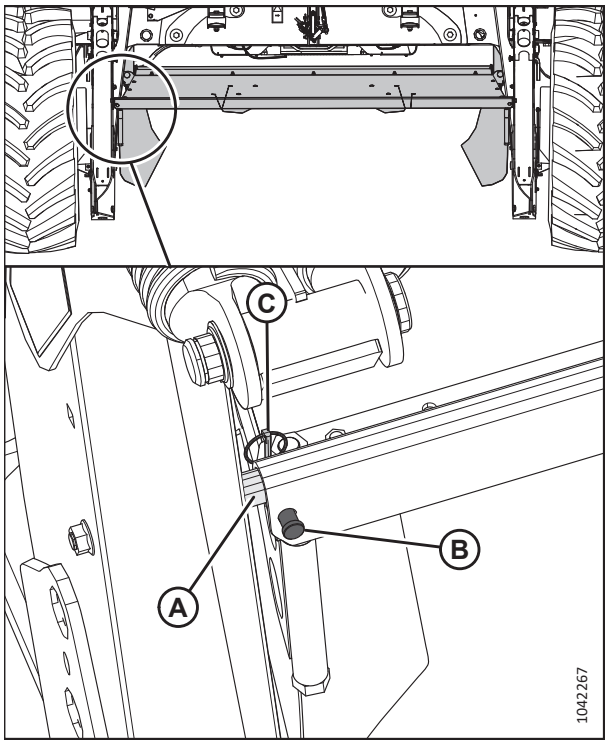


Figure 5.4: Forming Shield Secured to Windrower Leg

9. Lift the aft end of the forming shield and attach straps (B) to pins (A) on the windrower frame.

10. Install washer and hairpin to secure the strap. Use the middle hole and adjust the height to suit the crop.

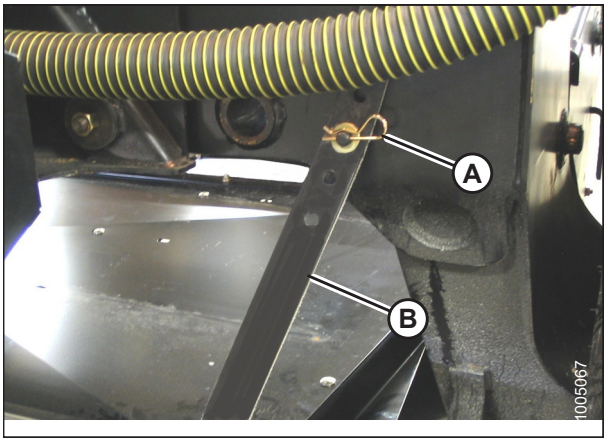


Figure 5.5: Forming Shield Strap

11. Set the forming shield side deflectors to the desired width by repositioning adjuster bars (A). Use the same hole location on both sides.

12. Adjust rear fluffer deflector (C) to the middle position. Loosen handles (B), if needed.

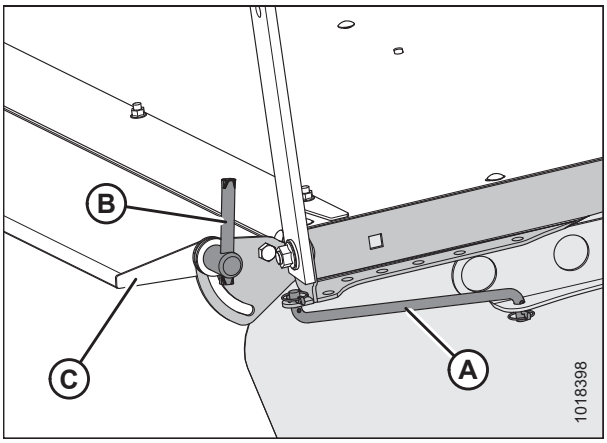


Figure 5.6: Forming Shield Adjuster Bar

5.1.2 Attaching A40DX Auger Header

The windrower's lift linkage and center-link will need to be connected to the header.

DANGER

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

DANGER

Ensure that all bystanders have cleared the area.

1. Shut down the engine, and remove the key from the ignition.
2. Remove hairpin (A) from pin (B). Remove the pin from header supports (C). Repeat this step at the opposite side of the header.
3. Start the engine.

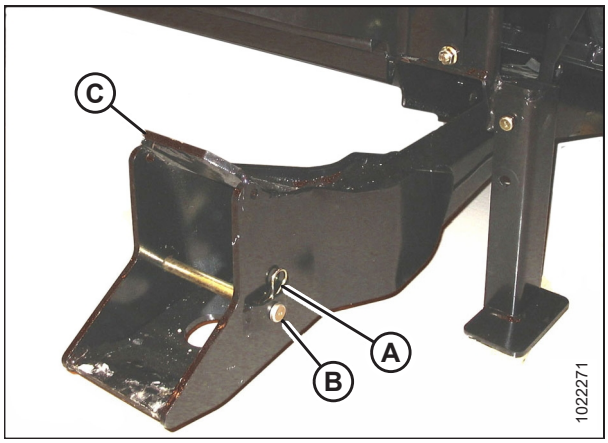


Figure 5.7: Header Support

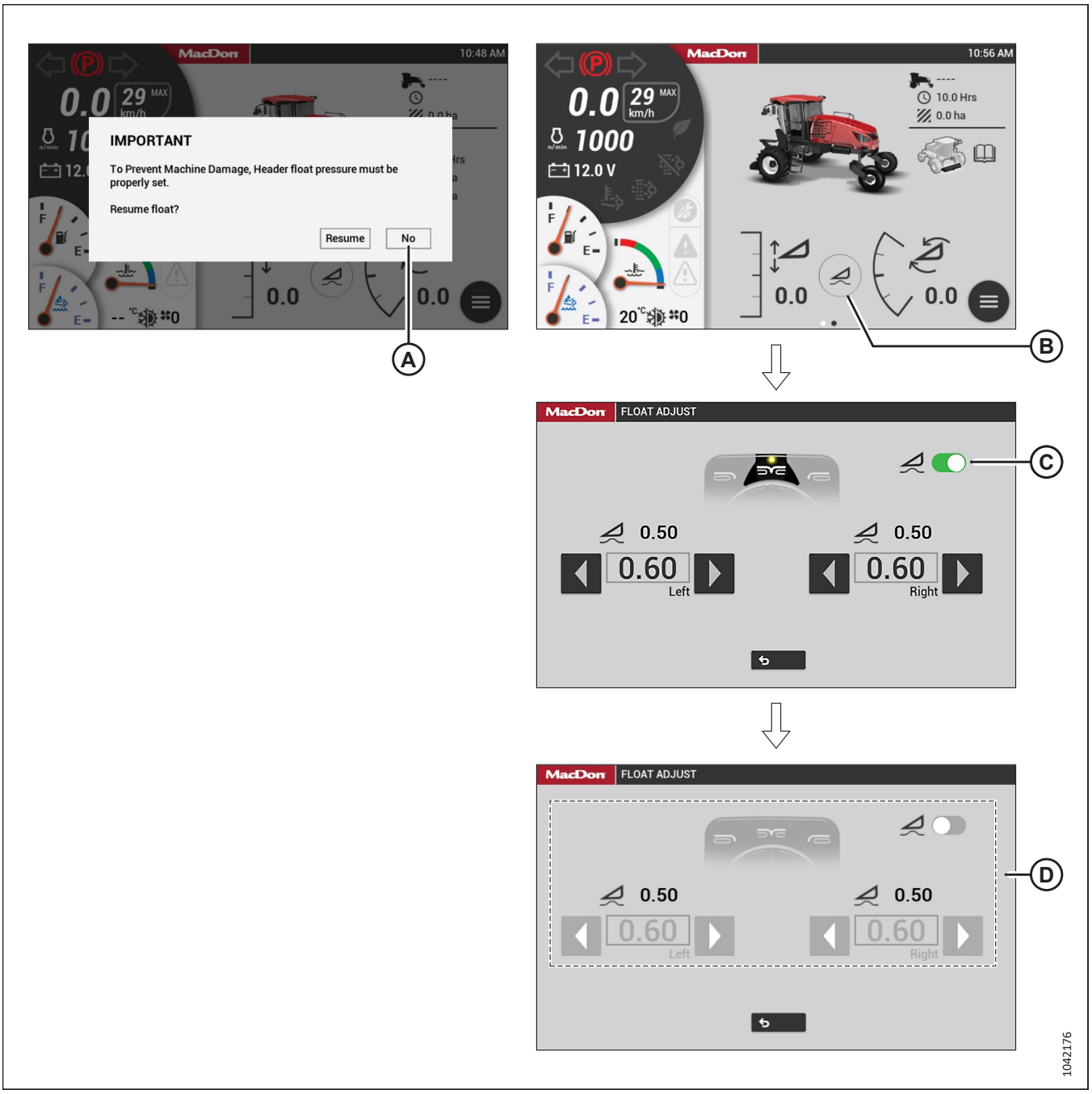


Figure 5.8: Float Removal

4. Remove the float as follows:

   - If the HarvestTouch™ Display shows the message “Resume Float?”, then select NO (A).
   - If the HarvestTouch™ Display does **NOT** show the message, then select FLOAT ADJUST (B), select switch (C), and confirm the switch and float settings (D) are grayed out.

   IMPORTANT:

   Removing the float will release the tension in the float springs. This will prevent damage to the header lift linkages when lowering the legs without a header or weight box attached to the windrower.

5. Prepare the center-link as follows:

   - **If not equipped with the Center-Link Alignment kit:** Relocate pin (A) in the frame linkage as needed to raise center-link (B) until the hook is above the attachment pin on the header.
   - **If equipped with the Center-Link Alignment kit:** Press REEL UP switch (D) on the ground speed lever (GSL) to raise the center-link until the hook is above the attachment pin on the header.

   IMPORTANT:

   Ensure that the center-link is positioned high enough that it does not contact the header as the windrower approaches the header.

6. Press HEADER DOWN switch (C) on the GSL until the windrower lift linkages are fully lowered.

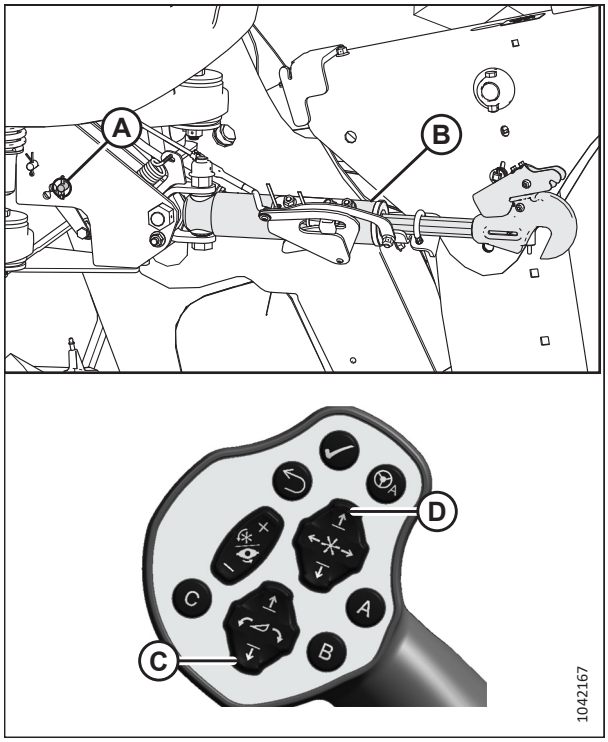


Figure 5.9: Center-Link without Self-Alignment

7. Drive the windrower forward slowly, until feet (A) on the windrower enter supports (B) on the header. Continue to drive forward until the feet engage the supports and the header is nudged forward.

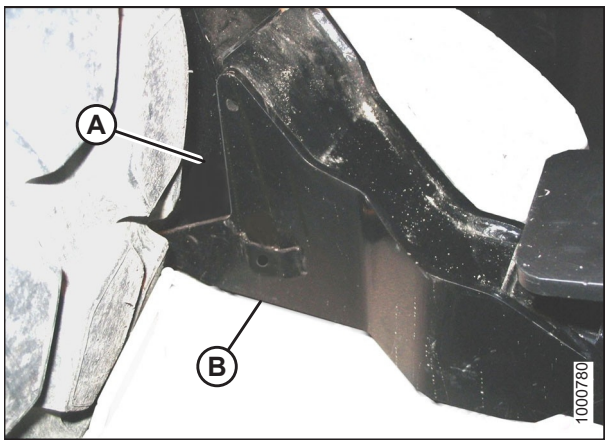


Figure 5.10: Header Support

8. **Windrowers equipped with the Center-Link Alignment kit:**

   a. Press HEADER TILT UP (A) or HEADER TILT DOWN (B) switches on the GSL to extend or retract the center-link cylinder until hook (C) is aligned with the header attachment pin.

   b. Lower the center-link onto the header with REEL DOWN (D) switch on the GSL until the center-link locks into position and hook release (E) is down.

      IMPORTANT:

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

   c. Check that the center-link is locked onto the header by pressing REEL UP (F) switch on the GSL.

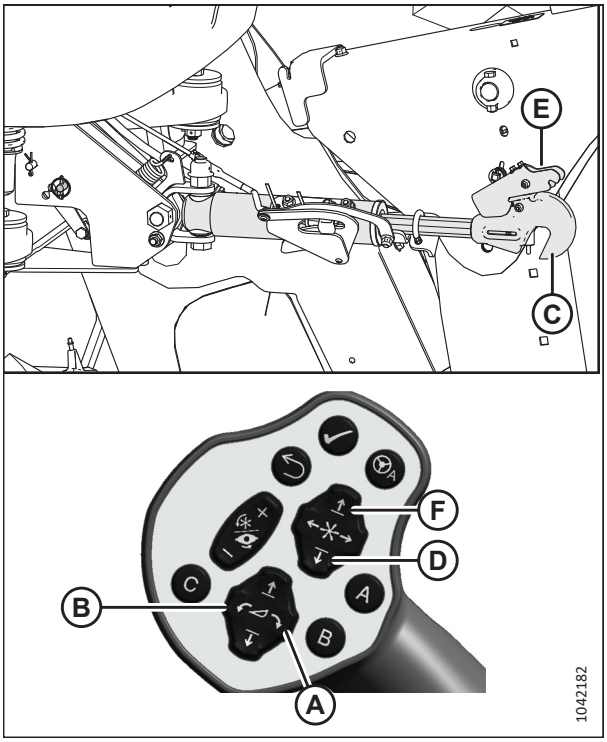


Figure 5.11: Hydraulic Center-Link

9. **Windrowers without the Center-Link Alignment kit:**

   a. Press HEADER TILT UP (A) or HEADER TILT DOWN (B) switches on the GSL to extend or retract the center-link cylinder until the hook is aligned with the header attachment pin.

   b. Shut down the engine, and remove the key from the ignition.

   c. Push down on rod end (C) of the link cylinder until hook (D) engages and locks onto the header pin.

      IMPORTANT:

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

   d. Check that the center-link is locked onto the header by pulling upward on rod end (C) of the cylinder.

   e. Start the engine.

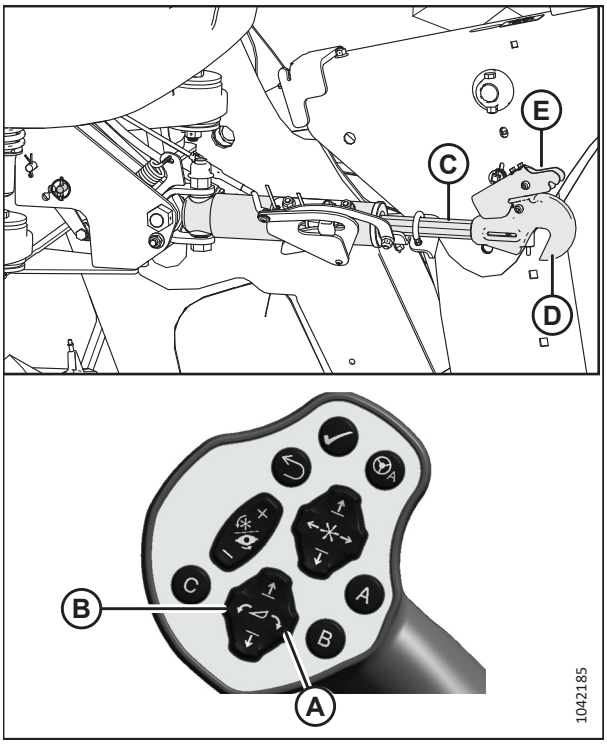


Figure 5.12: Hydraulic Center-Link

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

    NOTE:

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

    a. Press and hold HEADER UP switch (A) until both cylinders stop moving.

    b. Continue to hold the switch for 3–4 seconds. The cylinders are now phased.

11. Shut down the engine, and remove the key from the ignition.

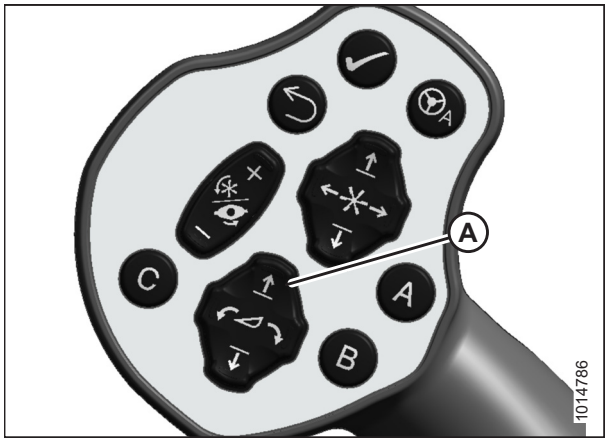


Figure 5.13: Ground Speed Lever (GSL)

12. Engage the safety props on both lift cylinders as follows:

    a. Pull lever (A) toward you to release it, then rotate it toward the header to lower the safety prop onto the cylinder.

    b. Repeat the previous step for the opposite lift cylinder.

    IMPORTANT:

    Ensure that the safety props engage over the cylinder piston rods. If the safety prop does **NOT** engage properly, raise the header until the safety prop fits over the rod.

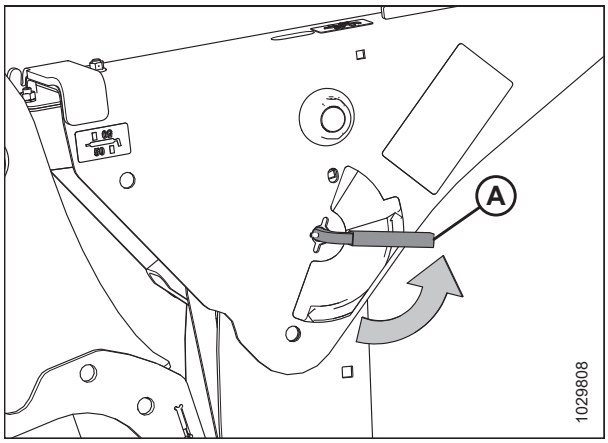


Figure 5.14: Safety Prop Lever

13. Install clevis pin (A) through the support and the foot, and secure it with a hairpin. Repeat this step for the opposite support.

    IMPORTANT:

    Ensure that clevis pin (A) is fully inserted into the support and foot holes, and that the hairpin is installed behind the bracket as shown.

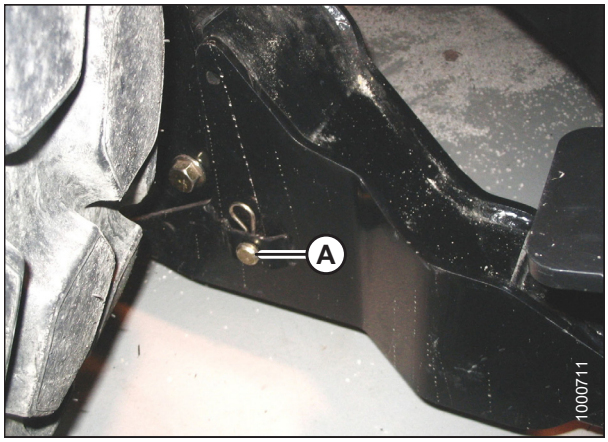


Figure 5.15: Header Support

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

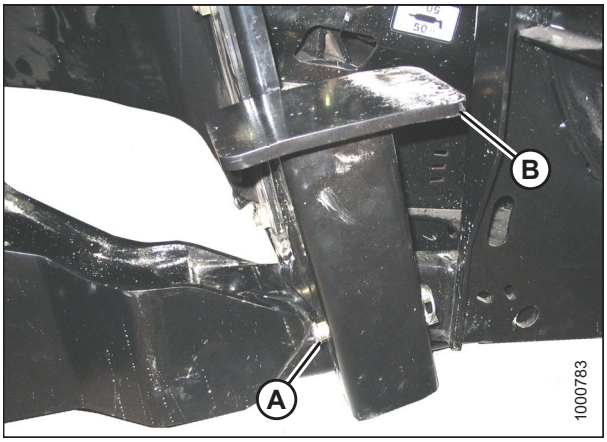


Figure 5.16: Header Stand in Storage Position

17. Disengage the safety props on both lift cylinders as follows:
    a. Turn lever (A) away from the header to raise the safety prop until the lever locks into the vertical position.
    b. Repeat the previous step for the opposite cylinder.

    NOTE:

    If the safety prop will **NOT** disengage, raise the header to release the prop.
18. Start the engine.

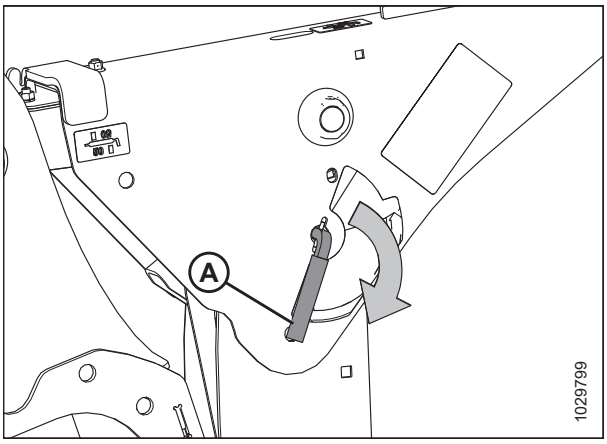


Figure 5.17: Safety Prop Lever

19. Press HEADER DOWN switch (A) on the GSL to fully lower the header.

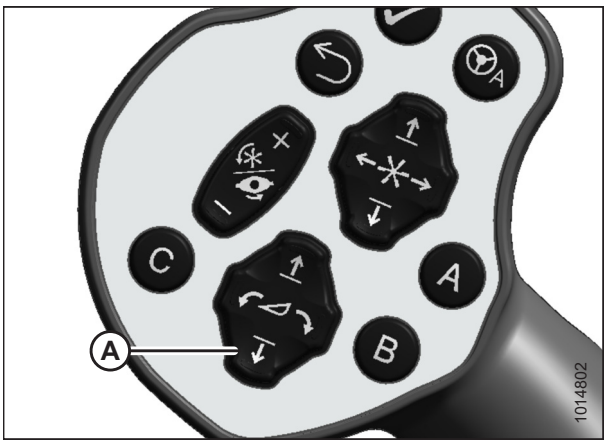


Figure 5.18: Ground Speed Lever (GSL)

20. Select FLOAT ADJUST (A).

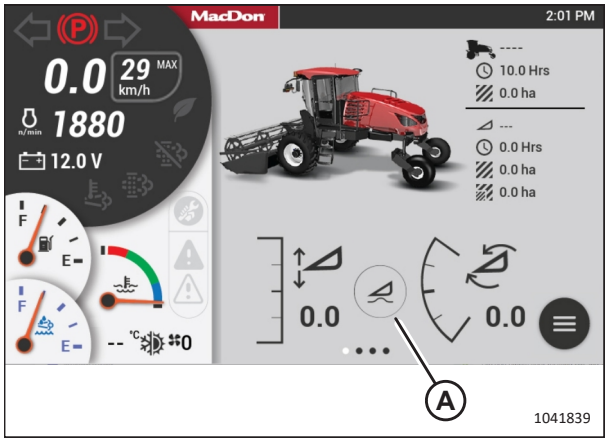


Figure 5.19: HarvestTouch™ Display

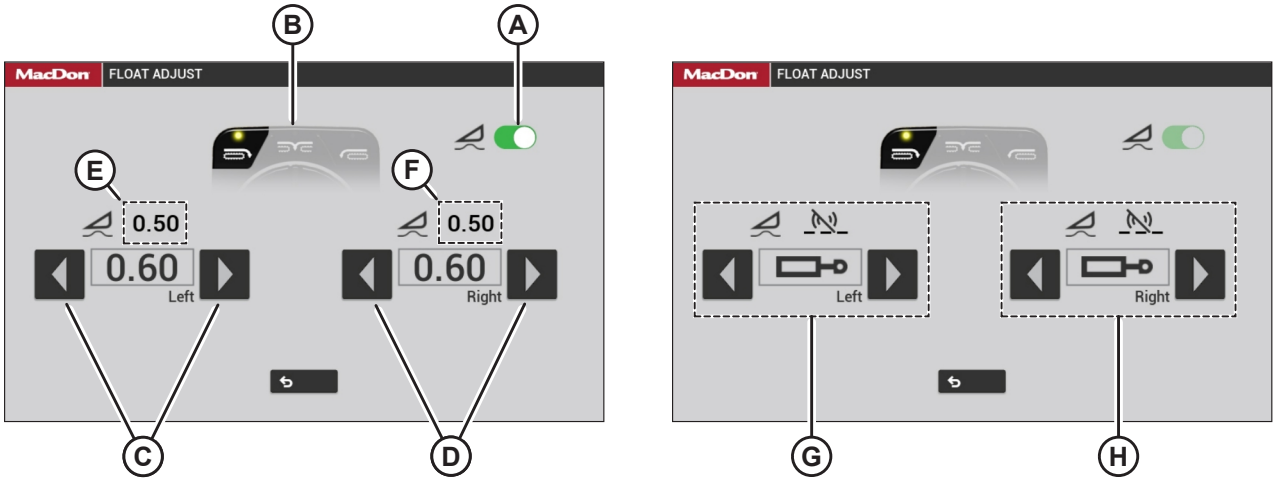


Figure 5.20: Float Adjustment

21. Select switch (A), so that it turns green, to activate the float.
22. If the float is not already set up, set the float as follows:
    a. The float preset, which is selected using the operator's console, is displayed at location (B). Confirm if the desired preset is selected.
    b. Select arrows (C) to set the target float for the left side of the header. Value (E) is the actual amount of float (measured by the left float sensor).
    c. Select arrows (D) to set the target float for the right side of the header. Value (F) is the actual amount of float (measured by the left float sensor).

    NOTE:

    Adjusting the float by increments of 1.0 (out of 10) changes the header weight at the cutterbar by approximately 91 kg (200 lb.). Adjust the float in increments of 0.05 to fine-tune the header's performance.

    NOTE:

    Symbols (G) and (H) mean the left and right float sensors are not working. You can still manually set the float, but you should first check if the sensors were disabled through the HarvestTouch™ Display (refer to MENU > SETUP > HEADER > SENSORS), or if another problem is causing the sensors to fail.
23. Shut down the engine, and remove the key from the ignition.
24. Check the float as follows:
    a. Grasp one end of the draper header and lift it. The lifting force should be 335–380 N (75–85 lbf) (with stabilizer/transport wheels raised, if they are equipped).
    b. Repeat this step on the other side of the header.
25. Proceed to *5.1.3 Connecting A40DX Auger Header Hydraulic and Electrical Systems, page 105*.

5.1.3 Connecting A40DX Auger Header Hydraulic and Electrical Systems

The header's hydraulic and electrical multicoupler will need to be connected to the windrower.

DANGER

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

CAUTION

Do NOT stand on an unlocked platform. It is unstable and may cause you to fall.

IMPORTANT:

To prevent contamination of the hydraulic system, use a clean rag to remove dirt and moisture from all (fixed and movable) hydraulic couplers.

1. Shut down the engine, and remove the key from the ignition.

2. Approach platform (A) on the left side of the windrower. Ensure that the cab door is closed.
3. Push latch (B) and pull platform (A) toward the walking beam until it stops and the latch engages.

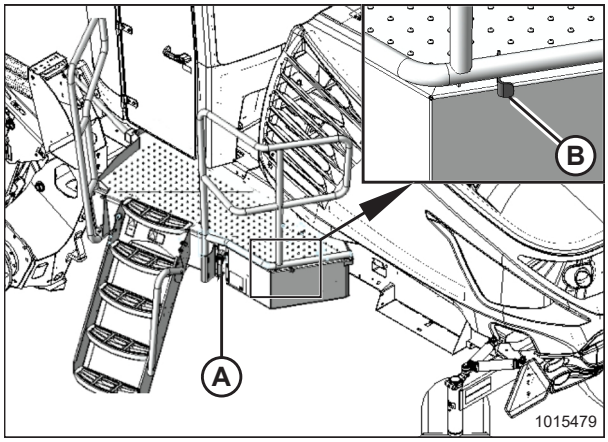


Figure 5.21: Left Platform

4. Retrieve hydraulic multicouplers (A) and electrical harness (B) from the header.
5. Route the hose/harness bundle toward the windrower through support (C).

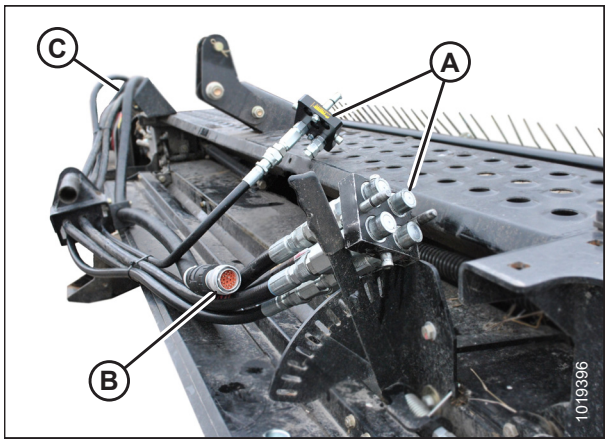


Figure 5.22: Hydraulic Hoses in Storage Position

6. Insert hose support (B) into hole (A) in the windrower's left leg. Route header hose bundle (C) under the windrower to the hydraulic and electrical couplers.

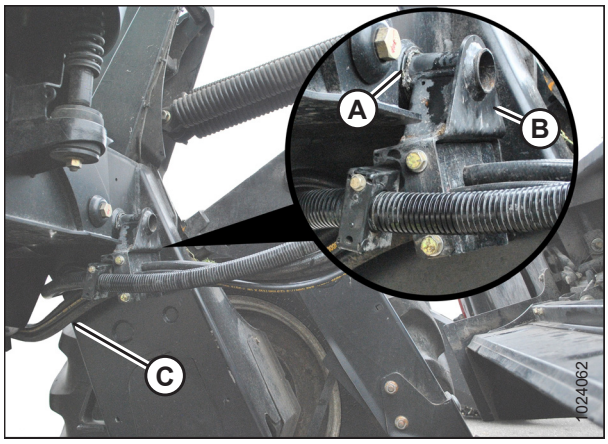


Figure 5.23: Multicoupler

7. Clean the multicouplers and receptacles to prevent contamination of the hydraulic system.

8. Push button (A) on the rear multicoupler receptacle and rotate handle (B) away from the windrower.

9. Open cover (C). Position multicoupler (D) onto the receptacle. Align the pins in the coupler with the slots in handle (B) and rotate the handle toward the windrower so that the coupler is locked onto the receptacle and button (A) pops out.

10. Push button (E) on the front multicoupler receptacle and rotate handle (F) away from the windrower.

11. Open cover (G) and position multicoupler (H) onto the receptacle. Align the pins in the coupler with the slots in the handle, and rotate the handle toward the windrower so that the coupler is locked onto the receptacle and button (E) snaps out.

12. **If a rotary disc header is being replaced by an auger header:** Remove hose (A) from storage location (B). Connect hose (A) to knife pressure receptacle (C) on the frame.

    NOTE:

    Hose quick disconnect (C) is present only on the following configurations:

    - M2170 Windrowers equipped with the R1 Series Hydraulic Drive kit (B6845)
    - M2260 Windrowers configured for draper or auger headers

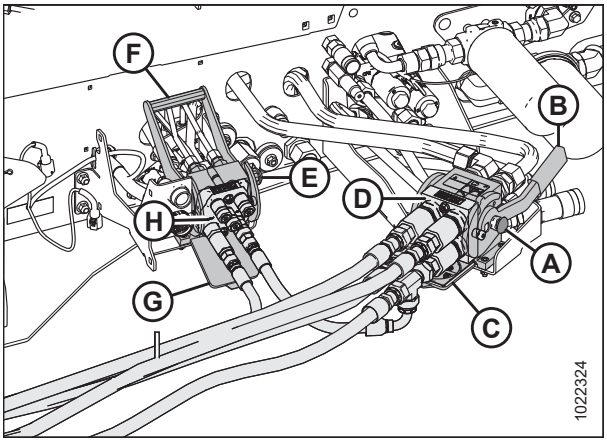


Figure 5.24: Knife/Reel/Auger Drive Multicoupler

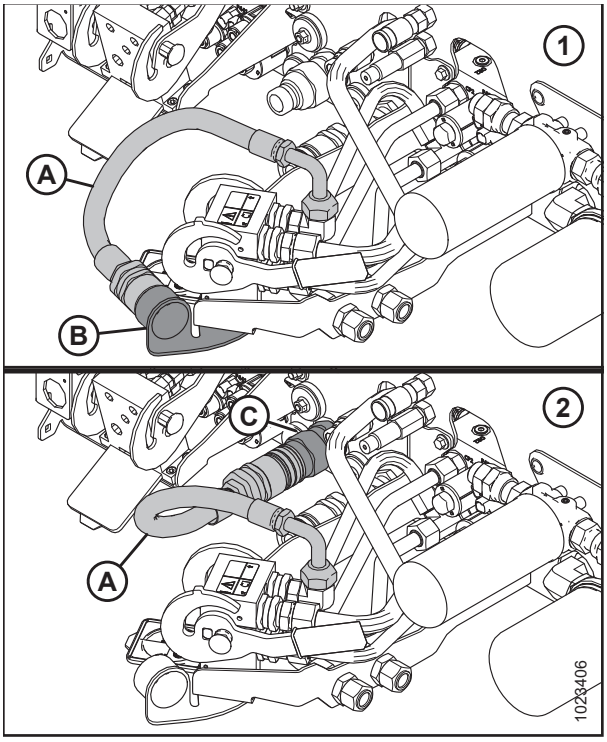


Figure 5.25: Knife Pressure Hose Positions

1 - Hose in Storage Position (Rotary Configuration)
2 - Hose to Knife Pressure Receptacle (Auger/Draper Configuration)

13. Remove the cover from receptacle (A). Connect the header's electrical harness to the receptacle.

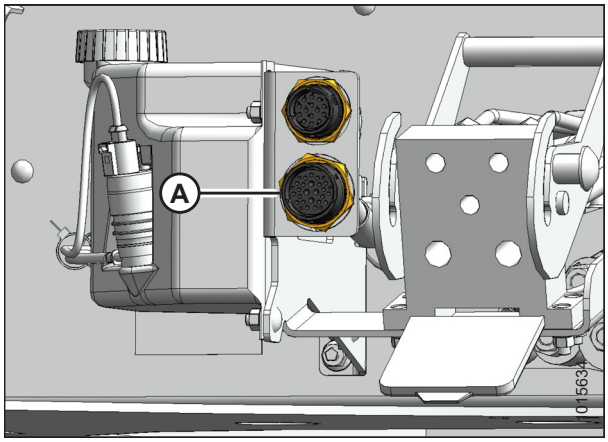


Figure 5.26: Electrical Connectors

14. Push latch (A) to unlock platform (B).

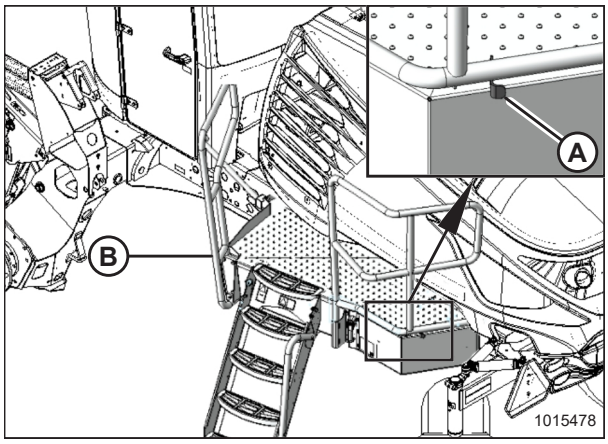


Figure 5.27: Left Platform

15. Pull platform (A) toward the cab until it stops and the latch is engaged.

16. If this is the first time the header is connected to the windrower, calibrate the header. For instructions, refer to *5.6 Calibrating Header on HarvestTouch™ Display, page 228*.

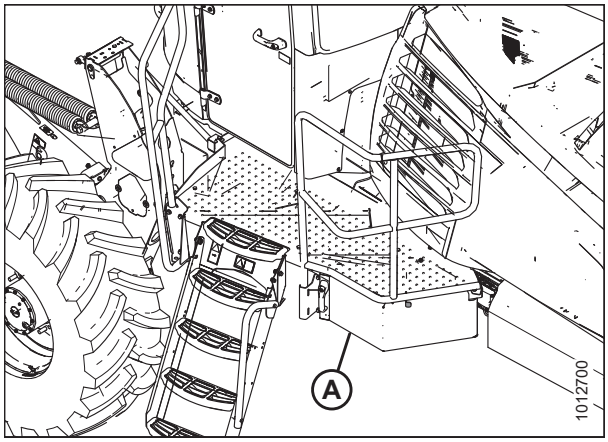


Figure 5.28: Left Platform

5.1.4 Detaching A40DX Auger Header

Detaching the A40DX electrical and hydraulic connections from the windrower is a simple procedure, thanks to the multicoupler. There is an additional step to perform if you are swapping a rotary disc header for an auger header.

DANGER

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

DANGER

Ensure that all bystanders have cleared the area.

1. Start the engine.
2. If one end of the header does **NOT** rise fully, rephase the cylinders as follows:
   a. Press and hold HEADER UP (A) switch until both cylinders stop moving.
   b. Continue to hold the switch for 3–4 seconds. The cylinders are now phased.
3. Shut down the engine, and remove the key from the ignition.

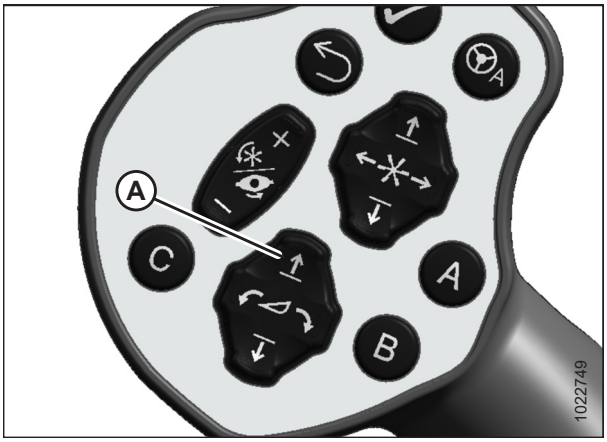


Figure 5.29: Ground Speed Lever (GSL)

4. Engage the safety props on both lift cylinders as follows:
   a. Pull lever (A) toward you to release it, then rotate it toward the header to lower the safety prop onto the cylinder.
   b. Repeat the previous step for the opposite lift cylinder.

   IMPORTANT:

   Ensure that the safety props engage over the cylinder piston rods. If the safety prop does **NOT** engage properly, raise the header until the safety prop fits over the rod.

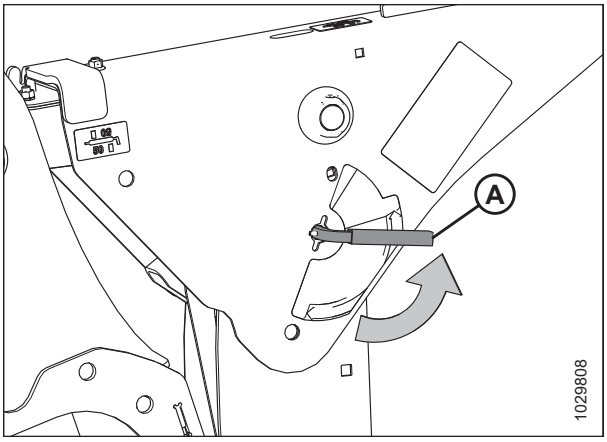


Figure 5.30: Safety Prop Lever

5. Remove the hairpin from clevis pin (A) and remove the clevis pin from header support (B) on both sides of the header.

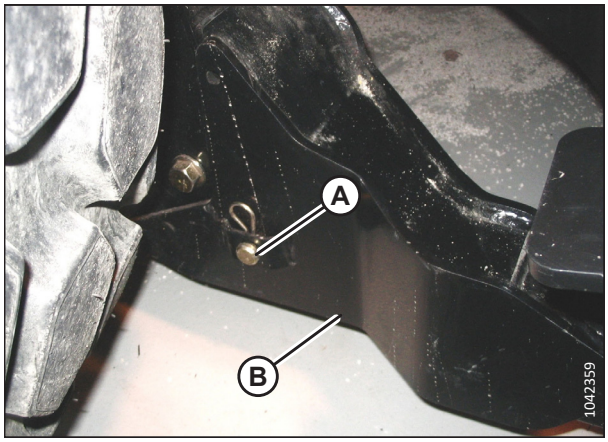


Figure 5.31: Header Support

6. Lower stand (A) by pulling clevis pin (B), inverting the stand and relocating it on the bracket. Reinsert pin (B) and secure it with the hairpin.

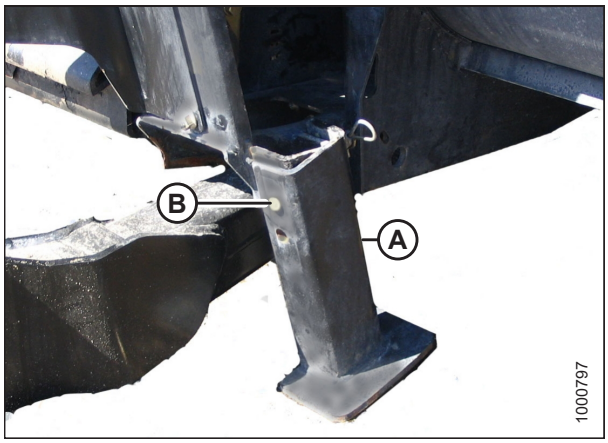


Figure 5.32: Header Stand

7. **Windrowers with self-aligning center-link:** Release center-link latch (A).

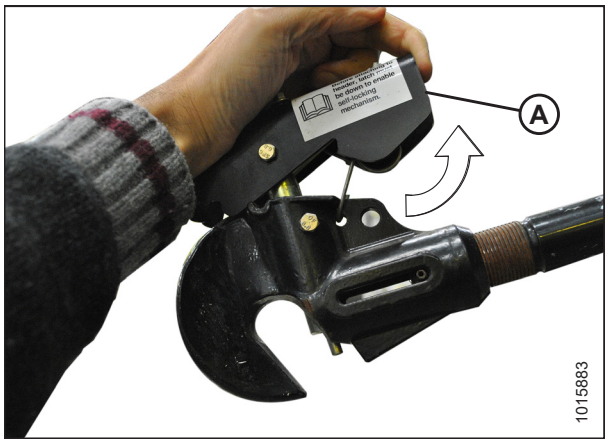


Figure 5.33: Center-Link

8. Disengage the safety props on both lift cylinders as follows:

   a. Turn lever (A) away from the header to raise the safety prop until the lever locks into the vertical position.

   b. Repeat the previous step for the opposite cylinder.

   NOTE:

   If the safety prop will **NOT** disengage, raise the header to release the prop.

9. Start the engine.

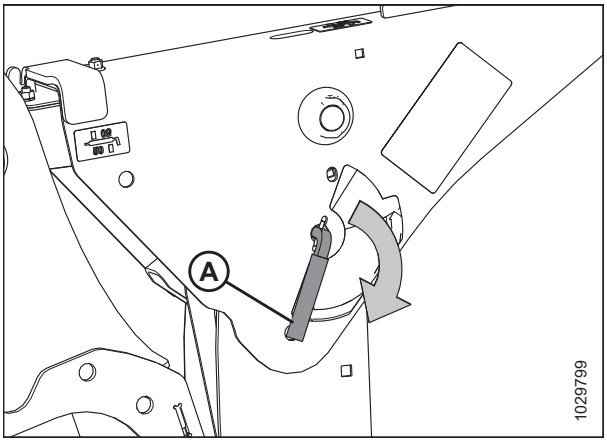


Figure 5.34: Safety Prop Lever

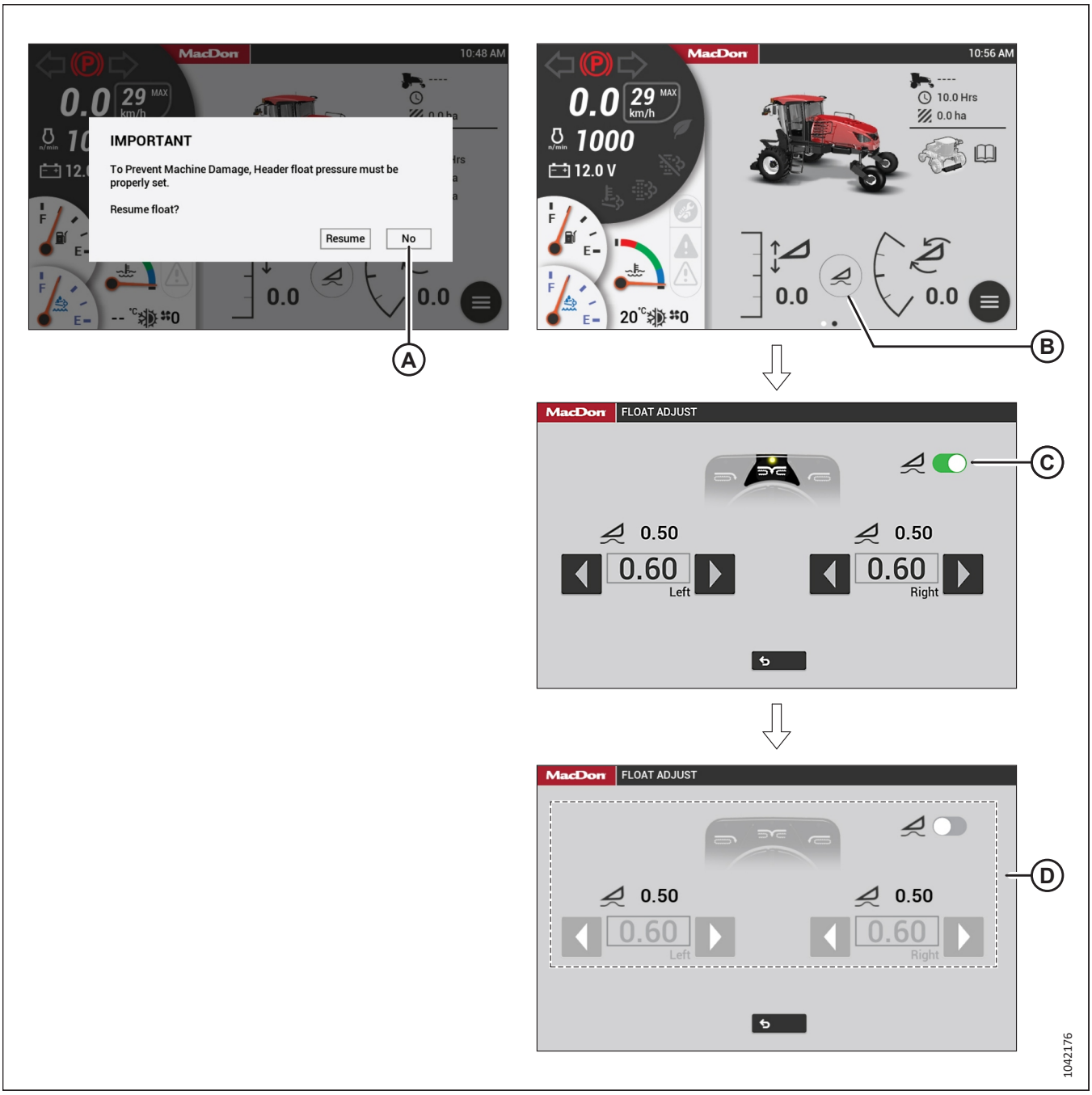


Figure 5.35: Float Removal

10. Remove the float as follows:

    - If the HarvestTouch™ Display shows the message “Resume Float?”, then select NO (A).
    - If the HarvestTouch™ Display does **NOT** show the message, then select FLOAT ADJUST (B), select switch (C), and confirm the switch and float settings (D) are grayed out.

    IMPORTANT:

    Removing the float will release the tension in the float springs. This will prevent damage to the header lift linkages when lowering the legs without a header or weight box attached to the windrower.

11. Lower the header fully using HEADER DOWN switch (A).

12. Press HEADER TILT switches (B) as needed on the GSL to release the load on the center-link.

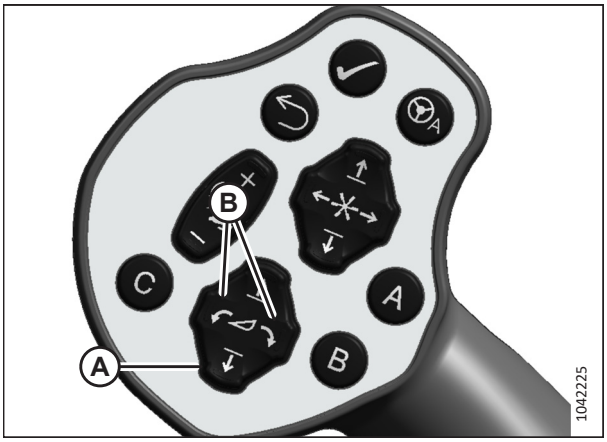


Figure 5.36: GSL

13. **Windrowers with self-aligning center-link:**

    a. Press REEL UP switch (A) to disengage the center-link from the header.

    b. Shut down the engine, and remove the key from the ignition.

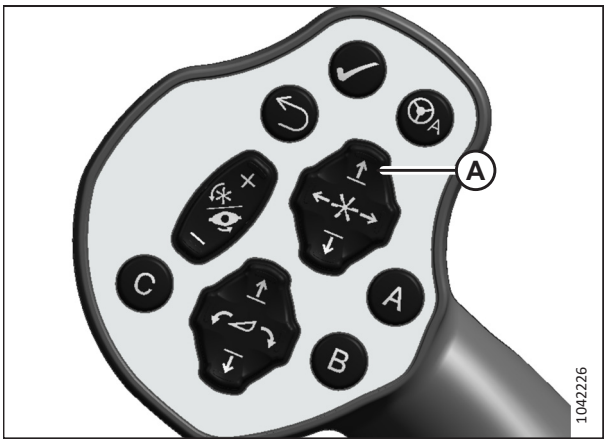


Figure 5.37: GSL

14. **Windrowers without the self-aligning center-link:**

    a. Shut down the engine, and remove the key from the ignition.

    b. Disconnect the center-link by lifting release (A) and lift hook (B) off the header.

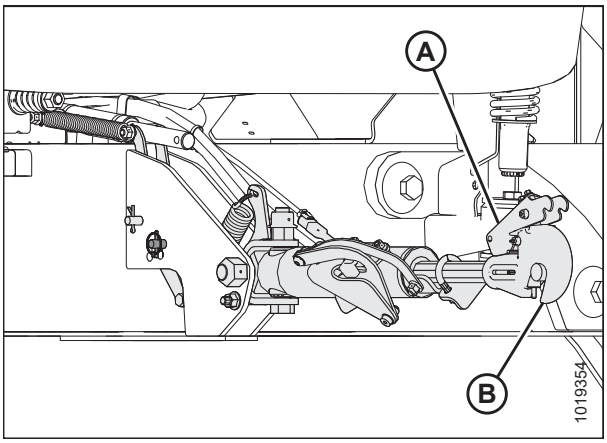


Figure 5.38: Hydraulic Center-Link

15. Approach platform (A) on the left side of the windrower. Ensure that the cab door is closed.
16. Push latch (B) and pull platform (A) toward the walking beam until it stops and the latch engages.

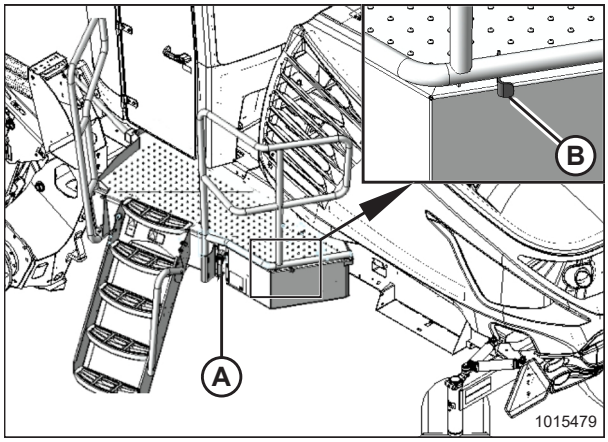


Figure 5.39: Left Platform

17. Disconnect header drive hydraulics (A) and electrical harness (B) from the windrower.

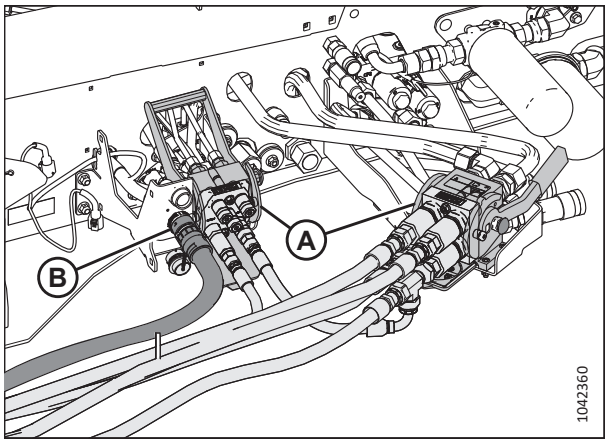


Figure 5.40: Header Drive Hydraulics

18. Push latch (A) to unlock platform (B).

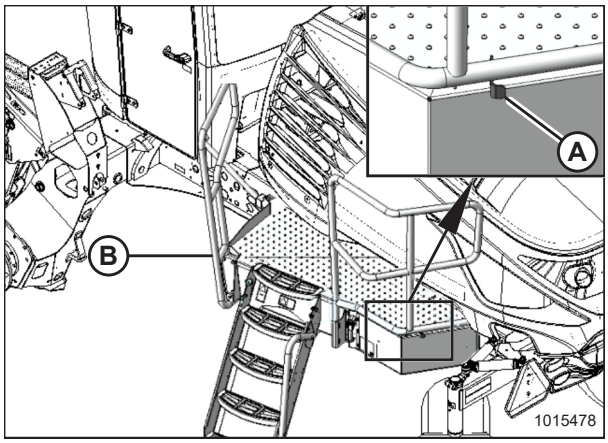


Figure 5.41: Left Platform

19. Pull platform (A) toward the cab until it stops and the latch is engaged.

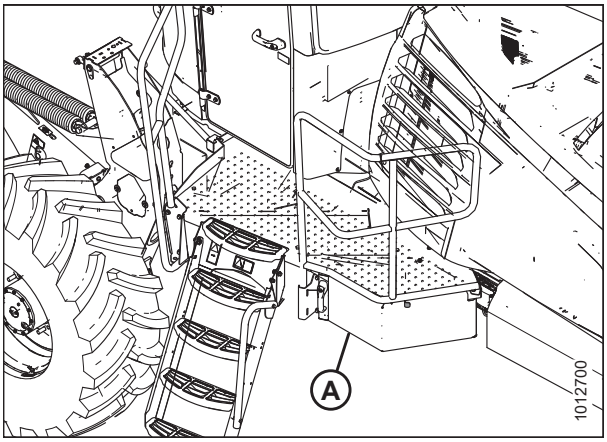


Figure 5.42: Left Platform

20. Remove hose support (A) from the windrower's left leg.

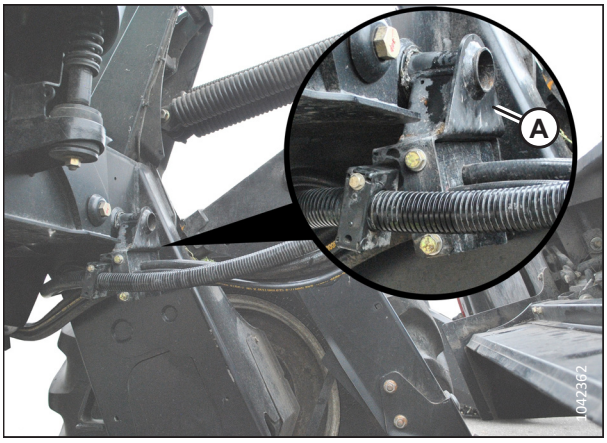


Figure 5.43: Multicoupler

21. Place hydraulics/electrical bundle (A) in the storage position on the header.
22. Back the windrower away from the header.
23. Shut down the engine, and remove the key from the ignition.

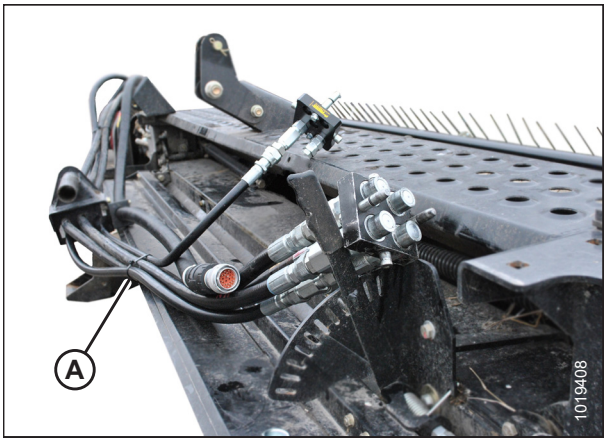


Figure 5.44: Hydraulics Hoses in Storage Position

24. Reinstall clevis pin (B) into header support (C) and secure it with hairpin (A). Repeat this step at the opposite side of the header.

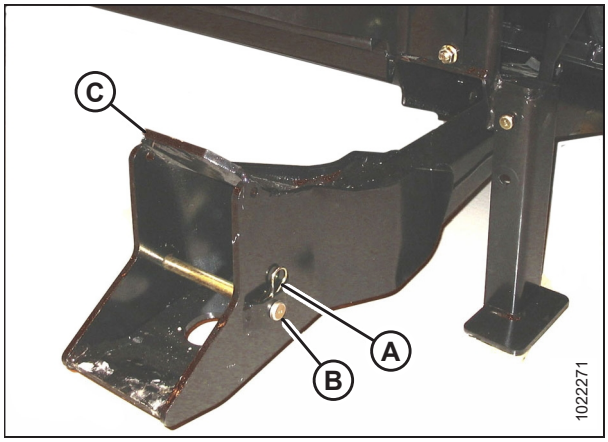


Figure 5.45: Header Support

5.1.5 Removing Forming Shield from Windrower

The forming shield controls the width and placement of the windrow. The instructions in this section will show you how to properly remove the forming shield from the windrower.

DANGER

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

NOTE:

It is **NOT** always necessary to remove the forming shield after detaching the header from the windrower.

1. Shut down the engine, and remove the key from the ignition.
2. Mark the strap location, then remove and retain hairpin (A) and washer (B) from straight pin (C).
3. Pull rubber strap (D) away from straight pin (C).
4. Lower the rear end of the forming shield.
5. Reinstall washer (B) and hairpin (A) on straight pin (C).
6. Repeat Step *2, page 116* to Step *5, page 116* on the opposite windrower leg.

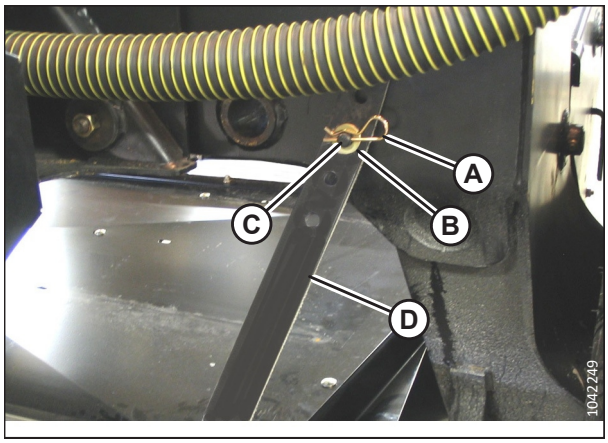


Figure 5.46: Rubber Strap Securing Forming Shield onto Windrower Leg

7. Remove lynch pin (A) and clevis pin securing forming shield (B) to bolt and spacer (C). Repeat this step at the opposite side of t he forming shield.
8. Dismount forming shield (B) from bolts and spacers (C).
9. Reattach the clevis pins and the lynch pins to the forming shield.
10. Remove the forming shield.

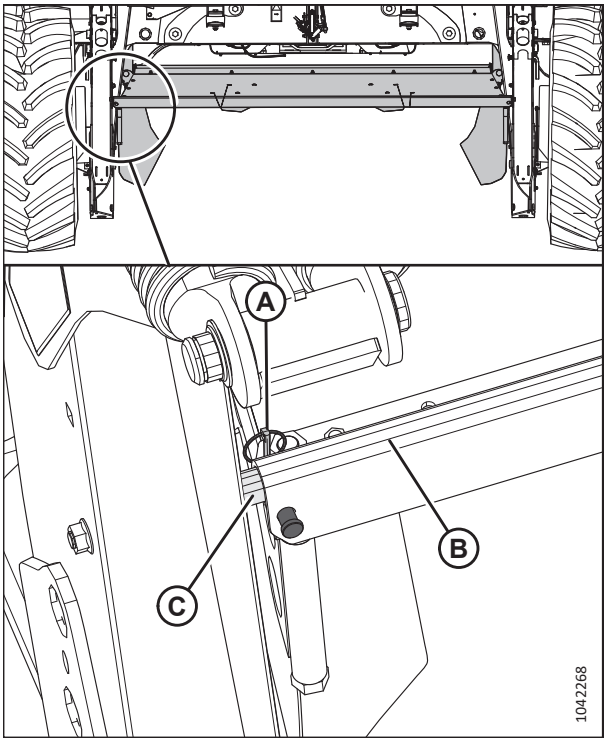


Figure 5.47: Forming Shield Secured to Front of Windrower Legs

5.2 D2 Series Draper Headers

To attach or detach the header to the windrower, follow the procedures provided here in the order presented.

5.2.1 Attaching Draper Header Supports

The draper header supports are required to attach the header to a windrower.

DANGER

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

IMPORTANT:

Ensure that the correct header supports are used:

- D2 Series Draper Headers must use RHS supports (A) and LHS supports (D).
- A feature that distinguishes these supports from all other types is that rubber block (B) is attached to the supports using pin (C).
- To order header supports, refer to the header parts catalog.

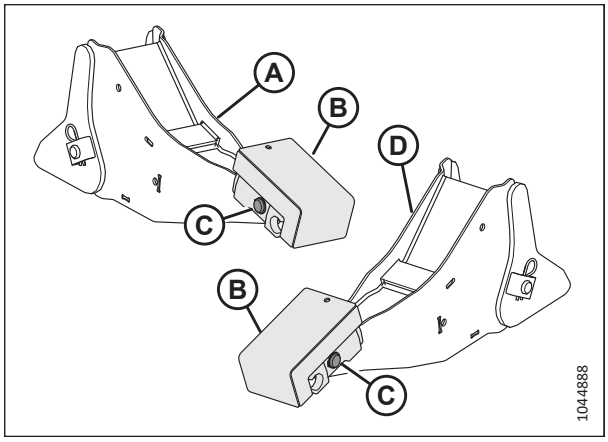


Figure 5.48: Draper Header Supports – RHS (A) and LHS (D) supports shown

1. Shut down the engine, and remove the key from the ignition.
2. Remove hairpin (A) from clevis pin (B) on draper header support (C). Remove clevis pin (B).

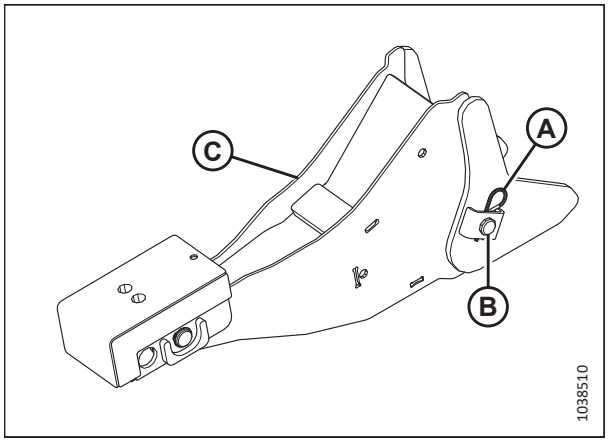


Figure 5.49: Draper Header LHS Support

3. Position draper header support (B) on windrower lift linkage (A). Reinstall clevis pin (C).

   NOTE:

   To ensure that the pin doesn't snag the windrow, install the clevis pin on the outboard side of the draper header support.

4. Secure clevis pin (C) with hairpin (D).

5. Repeat Step *2, page 118* to Step *4, page 119* to install the RHS support.

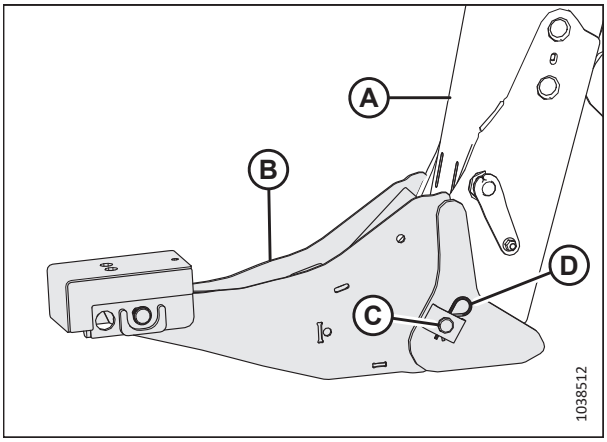


Figure 5.50: Draper Header Support

5.2.2 Attaching D2 Series Draper Header

The windrower's lift linkage and center-link will need to be connected to the header.

DANGER

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

DANGER

Ensure that all bystanders have cleared the area.

1. Shut down the engine, and remove the key from the ignition.
2. If the windrower was previously attached to an R216 Rotary Disc Header, make sure to remove the forming shield (not shown), including forming shield support brackets (A) and hardware (B) from both legs. You can store the brackets and hardware in the windrower tool box.
   - For instructions on removing the R216 forming shield, refer to *5.4.6 Removing Forming Shield from Windrower, page 198*.

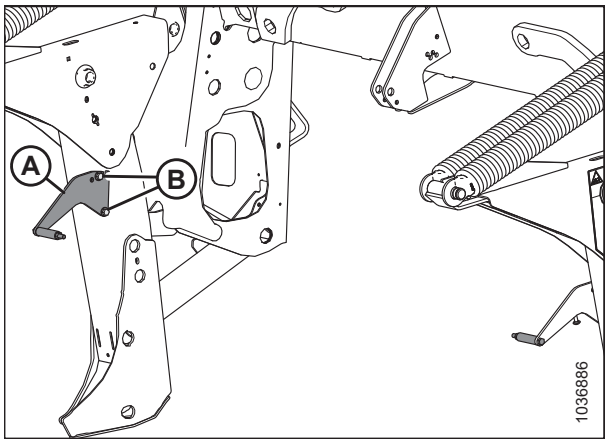


Figure 5.51: Forming Shield bracket – R2 Series

3. Before beginning this procedure, ensure draper header supports (A) are either:
   - (B) Installed on the windrower lift linkages, or
   - (C) Installed in the header legs

   For instructions on installing the header supports onto the windrower, refer to *5.2.1 Attaching Draper Header Supports, page 118*. Header supports are typically left installed in the header legs when the header is detached from the windrower.

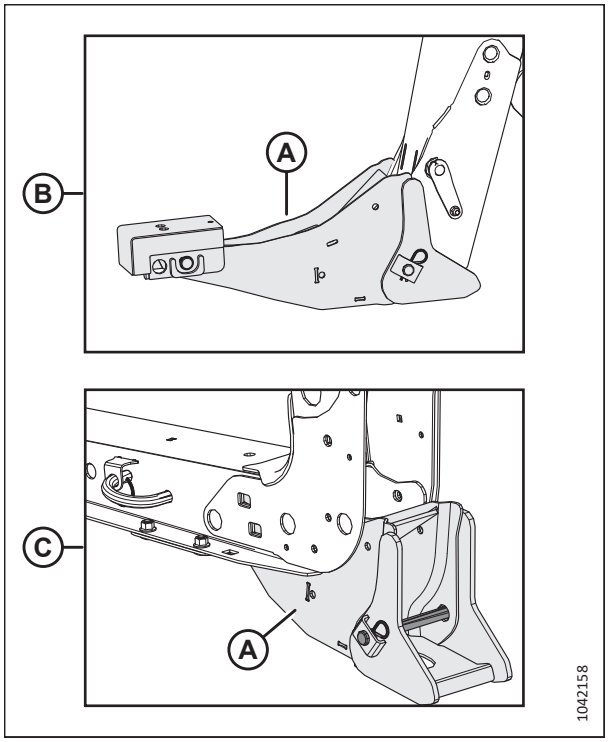


Figure 5.52: Header Supports Installed

4. Prepare the header as follows:

   - **If the header supports are installed on the windrower:** Remove ring (A) and pin (B) from the header leg.
   - **If the header supports are installed in the header:** Remove hairpin (C) and clevis pin (D) from the header support.

   Repeat this step on the other header leg.

5. Start the engine.

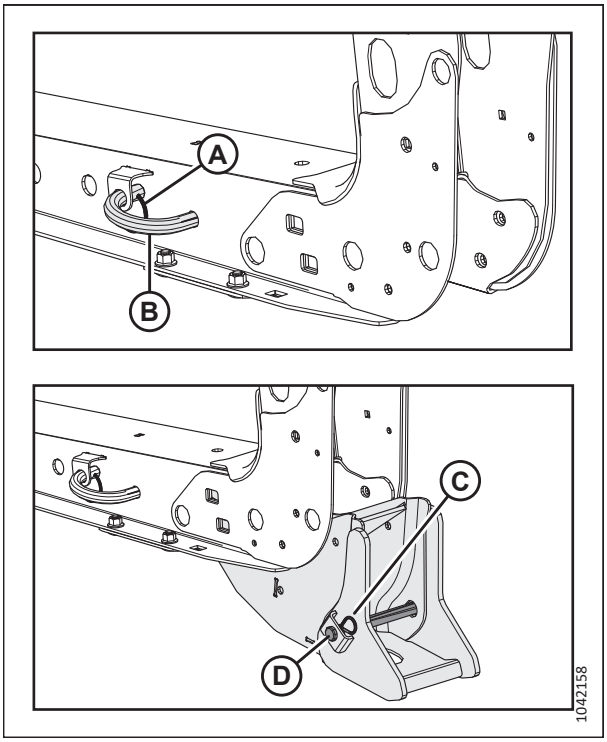


Figure 5.53: Header Leg — Left Side Shown

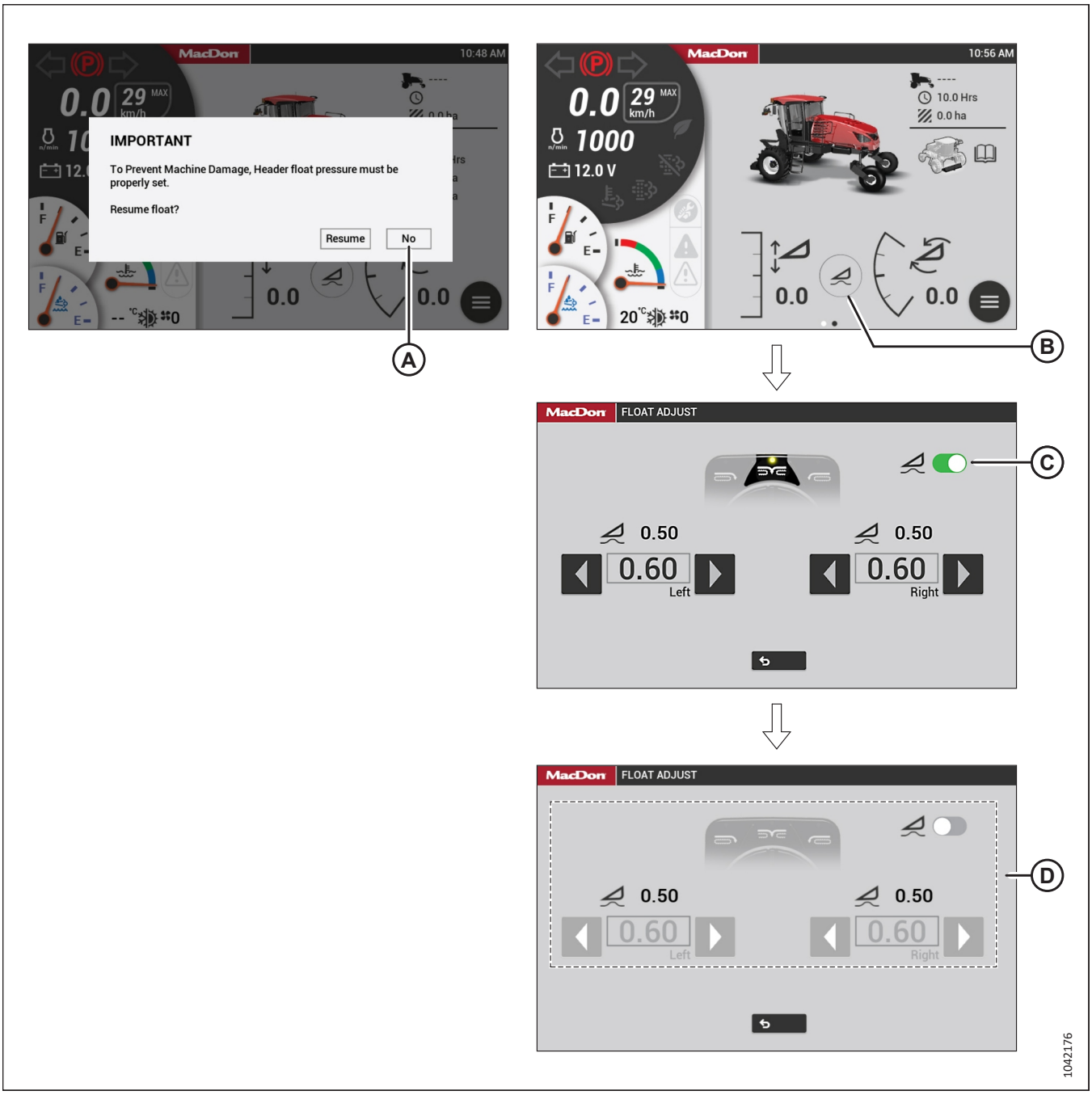


Figure 5.54: Float Removal

6. Remove the float as follows:

   - If the HarvestTouch™ Display shows the message “Resume Float?”, then select NO (A).
   - If the HarvestTouch™ Display does **NOT** show the message, then select FLOAT ADJUST (B), select switch (C), and confirm the switch and float settings (D) are grayed out.

   IMPORTANT:

   Removing the float will release the tension in the float springs. This will prevent damage to the header lift linkages when lowering the legs without a header or weight box attached to the windrower.

7. Prepare the center-link as follows:

   - **If not equipped with the Center-Link Alignment kit:** Relocate pin (A) in the frame linkage as needed to raise center-link (B) until the hook is above the attachment pin on the header.
   - **If equipped with the Center-Link Alignment kit:** Press REEL UP switch (D) on the ground speed lever (GSL) to raise the center-link until the hook is above the attachment pin on the header.

   IMPORTANT:

   Ensure that the center-link is positioned high enough that it does not contact the header as the windrower approaches the header.

8. Press HEADER DOWN switch (C) on the GSL until the windrower lift linkages are fully lowered.

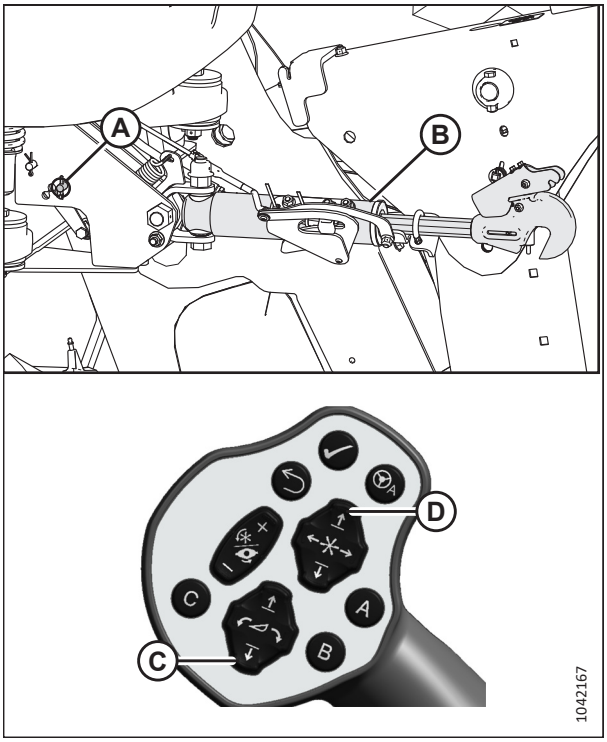


Figure 5.55: Center-Link without Self-Alignment

9. Proceed as follows:

   - **If the header supports are installed on the windrower:** Drive the windrower slowly forward until header supports (A) enter header legs (B).
   - **If the header supports are installed in the header:** Drive the windrower slowly forward until windrower lift linkages (C) enter header supports (D) in the header legs.

   Continue driving slowly forward until the header is nudged forward.

10. Ensure that the lift linkages are properly engaged in the header legs and are in contact with the support plates.

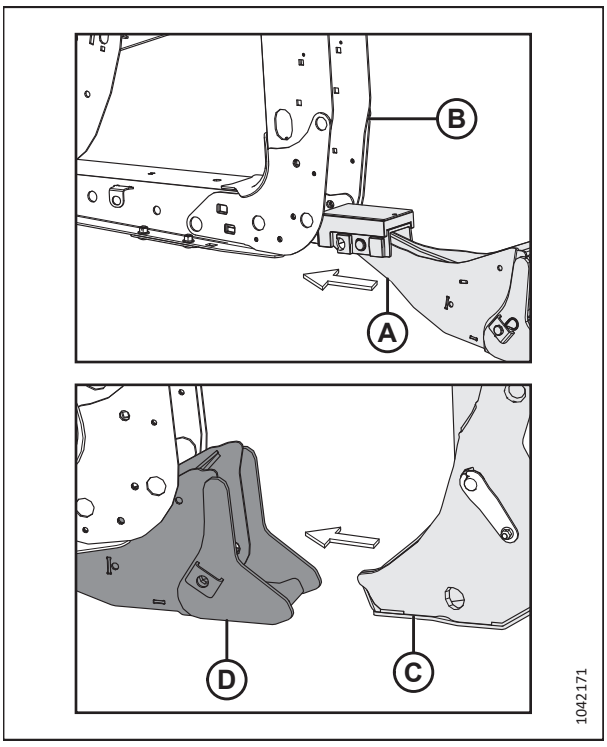


Figure 5.56: Header Leg and Support

11. **Windrowers equipped with the Center-Link Alignment kit:**

    a. Press HEADER TILT UP (A) or HEADER TILT DOWN (B) switches on the GSL to extend or retract the center-link cylinder until hook (C) is aligned with the header attachment pin.

    b. Lower the center-link onto the header with REEL DOWN (D) switch on the GSL until the center-link locks into position and hook release (E) is down.

    IMPORTANT:

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

    c. Check that the center-link is locked onto the header by pressing REEL UP (F) switch on the GSL.

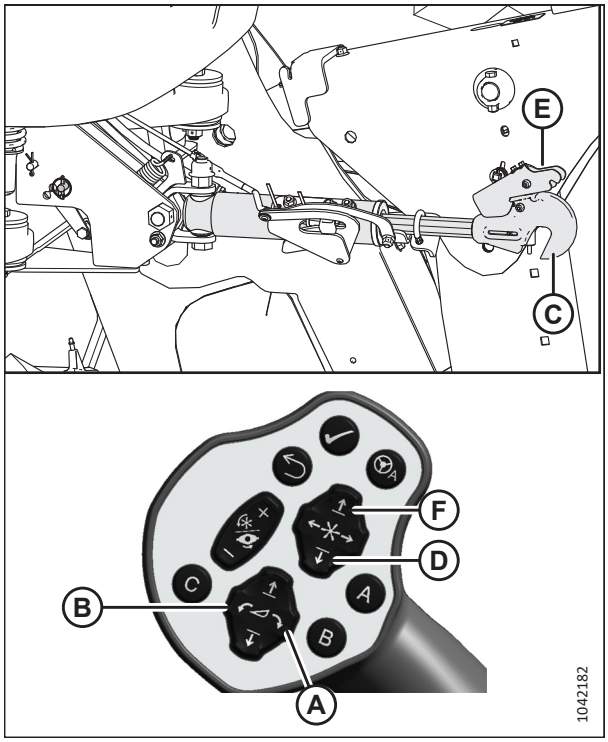


Figure 5.57: Hydraulic Center-Link

12. **Windrowers without the Center-Link Alignment kit:**

    a. Press HEADER TILT UP (A) or HEADER TILT DOWN (B) switches on the GSL to extend or retract the center-link cylinder until the hook is aligned with the header attachment pin.

    b. Shut down the engine, and remove the key from the ignition.

    c. Push down on rod end (C) of the link cylinder until hook (D) engages and locks onto the header pin.

    IMPORTANT:

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

    d. Check that the center-link is locked onto the header by pulling upward on rod end (C) of the cylinder.

    e. Start the engine.

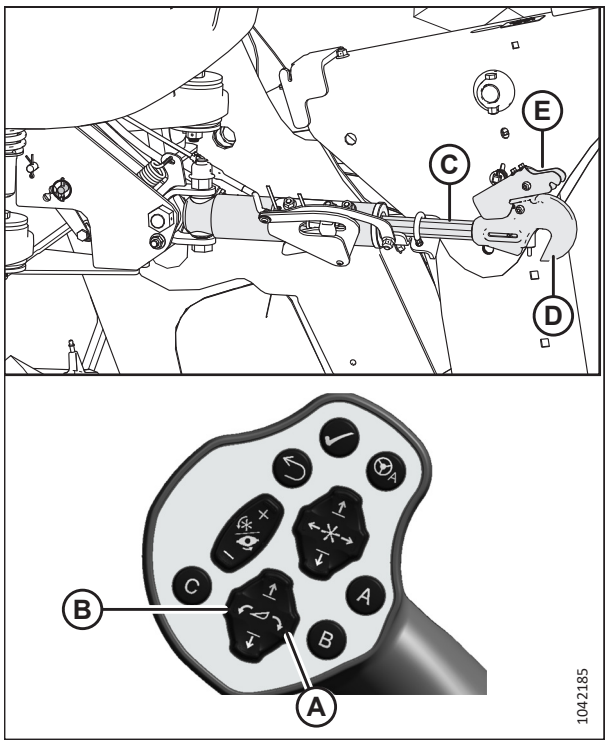


Figure 5.58: Hydraulic Center-Link

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

    NOTE:

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

    a. Press and hold HEADER UP switch (A) until both cylinders stop moving.

    b. Continue to hold the switch for 3–4 seconds. The cylinders are now phased.

14. Shut down the engine, and remove the key from the ignition.

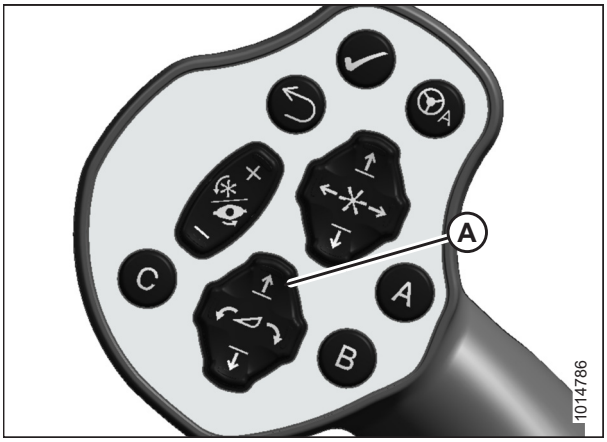


Figure 5.59: Ground Speed Lever (GSL)

15. Engage the safety props on both lift cylinders as follows:

    a. Pull lever (A) toward you to release it, then rotate it toward the header to lower the safety prop onto the cylinder.

    b. Repeat the previous step for the opposite lift cylinder.

    IMPORTANT:

    Ensure that the safety props engage over the cylinder piston rods. If the safety prop does **NOT** engage properly, raise the header until the safety prop fits over the rod.

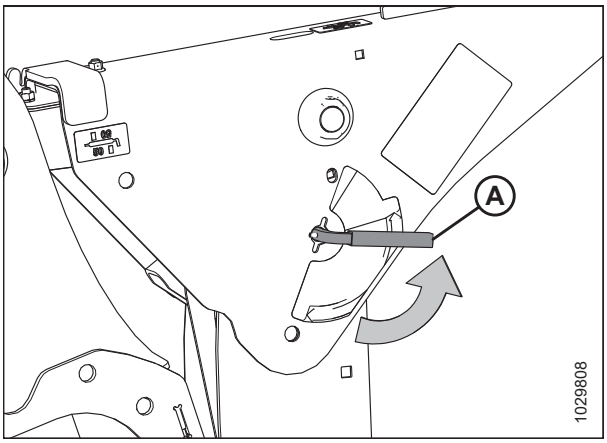


Figure 5.60: Safety Prop Lever

16. Proceed as follows:

    - **If the header supports are installed on the windrower:** Install pin (B) through the header leg, engaging the header support in the lift linkage. Secure the pin with ring (A).
    - **If the header supports are installed in the header:** Secure windrower lift linkage (C) to header supports (D) using clevis pin (E) and hairpin (F).

      NOTE:

      To ensure that the pin doesn't snag the windrow, install the clevis pin on the outboard side of the draper header support.

    Repeat this step on the other header leg.

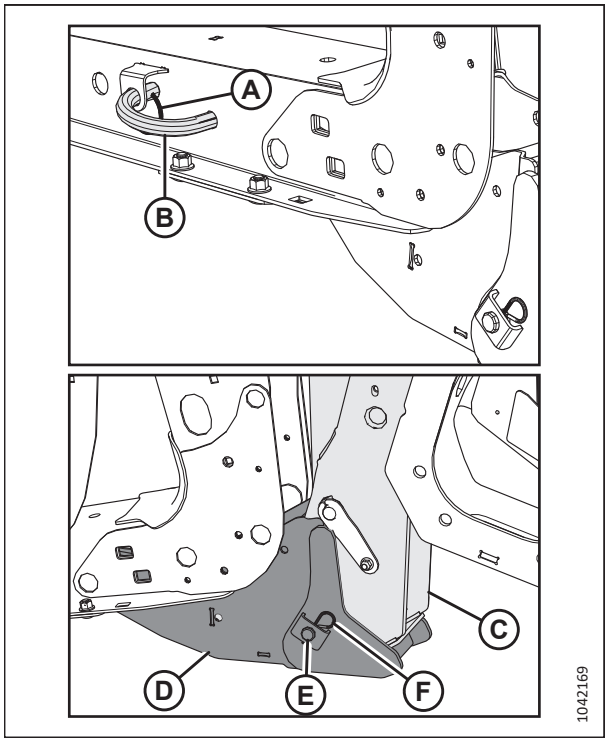


Figure 5.61: Windrower Lift Linkage and Header Leg

17. Disengage the safety props on both lift cylinders as follows:

    a. Turn lever (A) away from the header to raise the safety prop until the lever locks into the vertical position.

    b. Repeat the previous step for the opposite cylinder.

    NOTE:

    If the safety prop will **NOT** disengage, raise the header to release the prop.

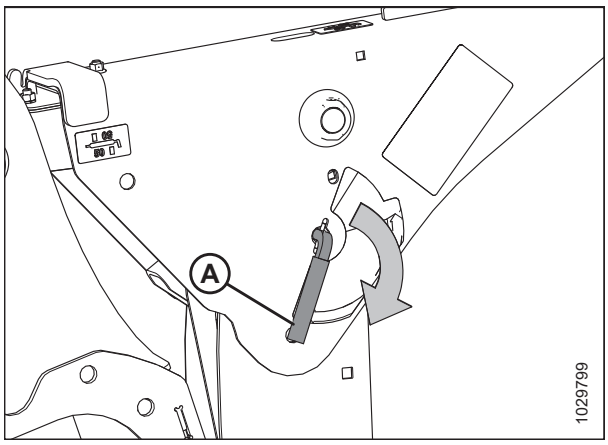


Figure 5.62: Safety Prop Lever

18. Start the engine.

19. Press HEADER DOWN switch (A) on the GSL to fully lower the header.

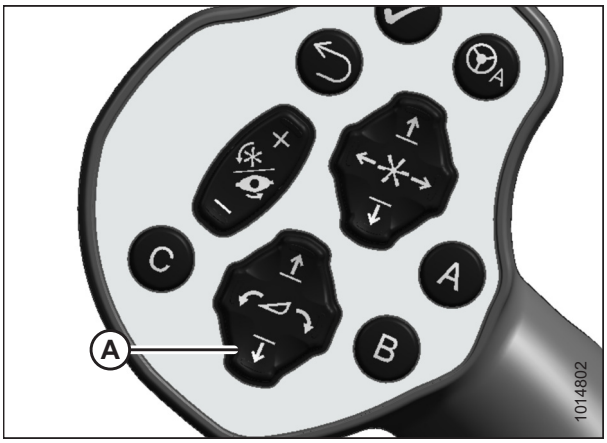


Figure 5.63: Ground Speed Lever (GSL)

20. Select FLOAT ADJUST (A).

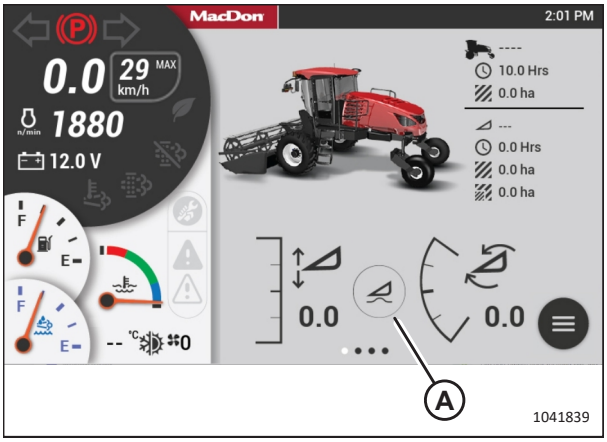


Figure 5.64: HarvestTouch™ Display

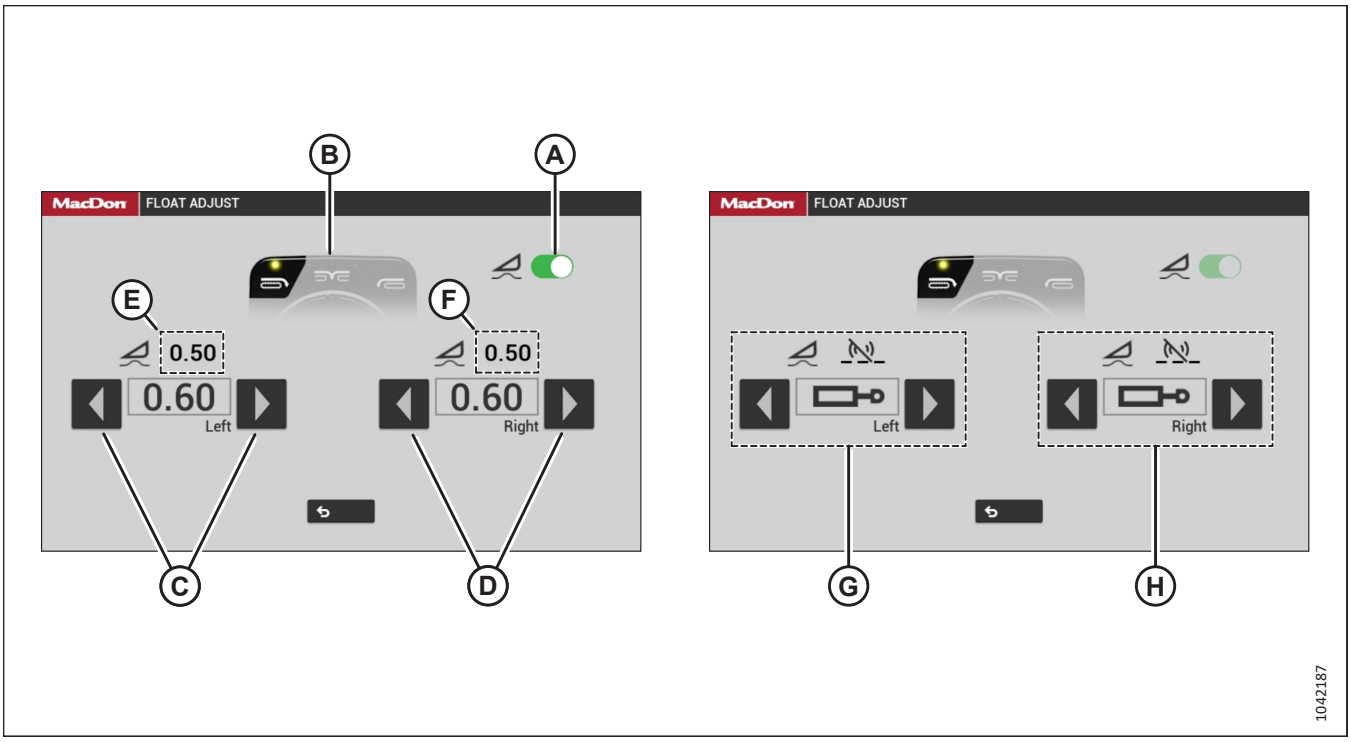


Figure 5.65: Float Adjustment

21. Select switch (A), so that it turns green, to activate the float.
22. If the float is not already set up, set the float as follows:
    a. The float preset, which is selected using the operator's console, is displayed at location (B). Confirm if the desired preset is selected.
    b. Select arrows (C) to set the target float for the left side of the header. Value (E) is the actual amount of float (measured by the left float sensor).
    c. Select arrows (D) to set the target float for the right side of the header. Value (F) is the actual amount of float (measured by the left float sensor).

    NOTE:

    Adjusting the float by increments of 1.0 (out of 10) changes the header weight at the cutterbar by approximately 91 kg (200 lb.). Adjust the float in increments of 0.05 to fine-tune the header's performance.

    NOTE:

    Symbols (G) and (H) mean the left and right float sensors are not working. You can still manually set the float, but you should first check if the sensors were disabled through the HarvestTouch™ Display (refer to MENU > SETUP > HEADER > SENSORS), or if another problem is causing the sensors to fail.
23. Shut down the engine, and remove the key from the ignition.
24. Check the float as follows:
    a. Grasp one end of the draper header and lift it. The lifting force should be 335–380 N (75–85 lbf) (with stabilizer/transport wheels raised, if they are equipped).
    b. Repeat this step on the other side of the header.
25. Proceed to *5.2.3 Connecting Header Hydraulic and Electrical Systems to M2 Series Windrower, page 129*.

5.2.3 Connecting Header Hydraulic and Electrical Systems to M2 Series Windrower

The header's hydraulic hose multicoupler will need to be connected to the windrower.

DANGER

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

CAUTION

Do NOT stand on an unlocked platform. It is unstable and may cause you to fall.

IMPORTANT:

To prevent contamination of the hydraulic system, use a clean rag to remove dirt and moisture from all (fixed and movable) hydraulic couplers.

1. Shut down the engine, and remove the key from the ignition.
2. Approach platform (A) on the left side of the windrower. Ensure that the cab door is closed.
3. Push latch (B) and pull platform (A) toward the walking beam until it stops and the latch engages.

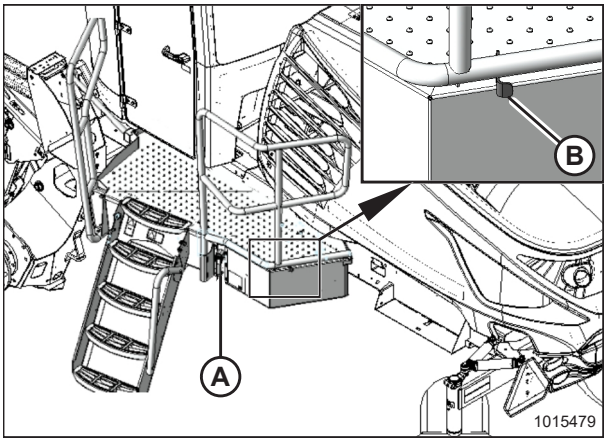


Figure 5.66: Left Platform

4. **All draper headers except D215: All draper headers except D215:** Push lever (A) up and pull arm (B) to get pin (C) out of latch (D).

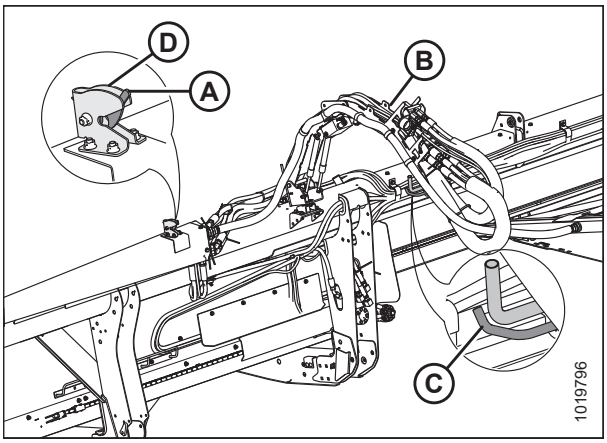


Figure 5.67: Hydraulic Hose Management System – All Draper Headers Except D215

5. Pull hydraulic hose management system (A) toward the left outboard end of the header, disengage ball stud (B) from the cradle in support (C).

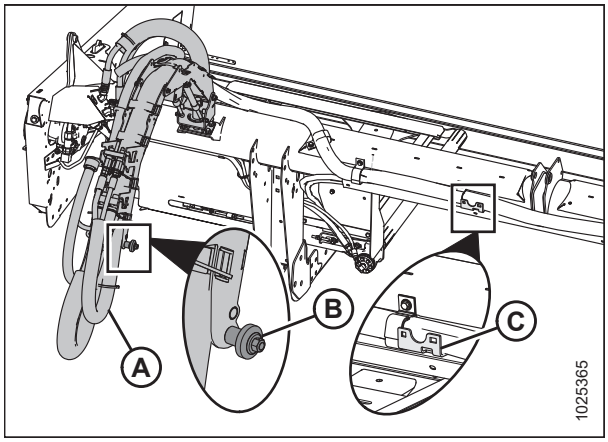


Figure 5.68: Hydraulic Hose Management System –

6. Push the link on latch (C) and pull handle (A) on hydraulic hose management system (B) rearward to disengage the arm from the latch.
7. Move hydraulic hose management system (B) toward the left cab-forward side of the windrower.

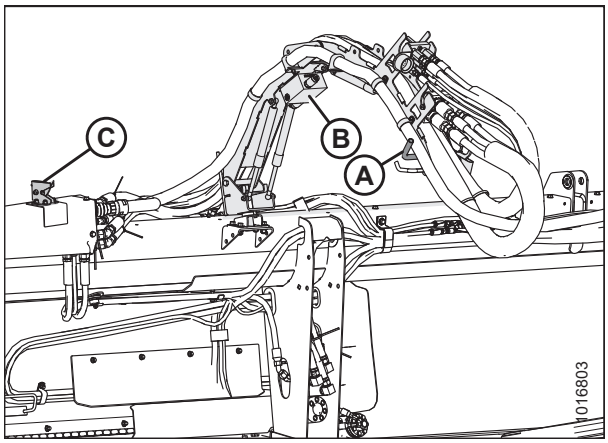


Figure 5.69: Hydraulic Hose Management System

8. Connect hydraulic hose management system (A) to the left outer leg of the windrower by pushing ball stud (B) into ball stud latch (C).

   NOTE:

   The hydraulic hoses have been removed from the illustration for clarity.

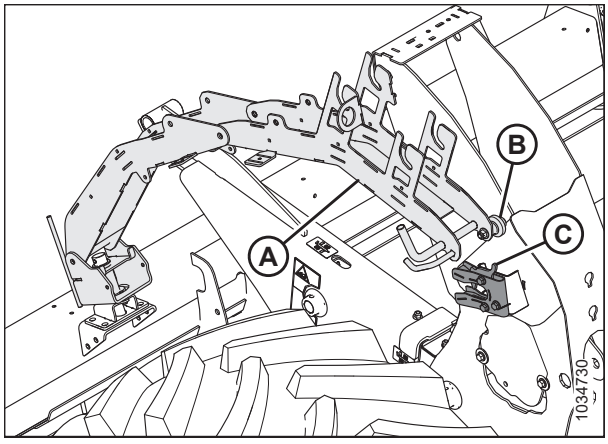


Figure 5.70: Windrower Left Outer Leg

9. Retrieve draper drive and reel control multicoupler (A) from the hydraulic hose management system.
10. Push knob (B) on the hydraulic receptacle and pull handle (C) fully away from the windrower.
11. Open cover (D) and position the coupler onto the receptacle.
12. Align the pins in the coupler with the slots in handle (C) and push the handle toward the windrower so that the coupler locks onto the receptacle and knob (B) pops out.
13. Remove the cover from electrical connector (E).
14. Push the electrical connector onto the receptacle. Secure the connector by turning the collar on the electrical connector clockwise.
15. Remove hose quick disconnect (F) from its storage location. Connect the quick disconnect to the receptacle on the frame.

    NOTE:

    Hose quick disconnect (C) is present only on the following configurations:

    - M2170 Windrowers equipped with the R1 Series Hydraulic Drive kit (B6845)
    - M2260 Windrowers configured for draper or auger headers

16. Retrieve knife and reel drive multicoupler (A) from the hydraulic hose management system.
17. Push knob (B) on the hydraulic receptacle and pull handle (C) fully away from the windrower.
18. Open cover (D) and position the coupler onto the receptacle.
19. Align the pins in the coupler with the slots in handle (C), and push the handle toward the windrower so that the coupler locks onto the receptacle and knob (B) snaps out.

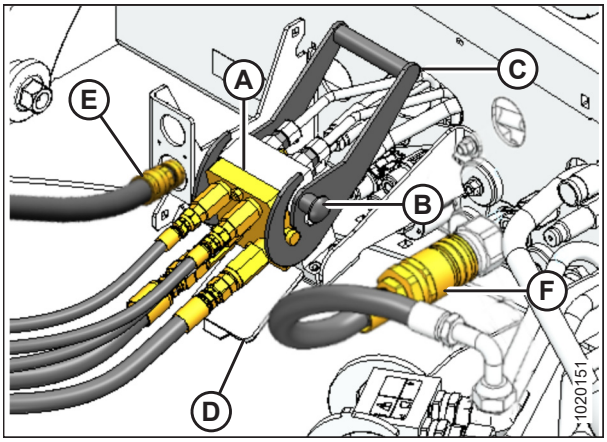


Figure 5.71: Draper/Reel Multicoupler

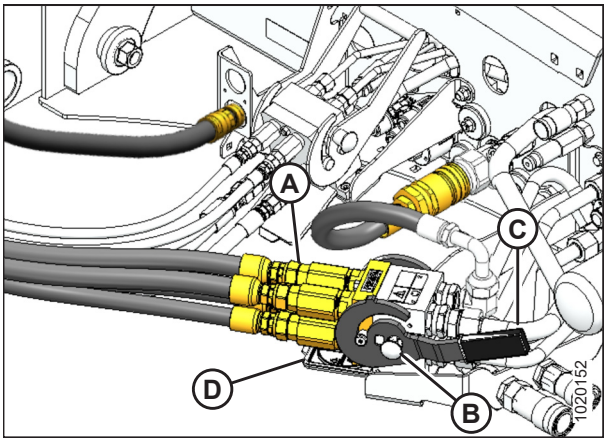


Figure 5.72: Knife/Reel Drive Multicoupler

20. Ensure that the hydraulic hose routing is as straight as possible.

    IMPORTANT:

    Straight routing will prevent abrasion damage to the hydraulic hoses.

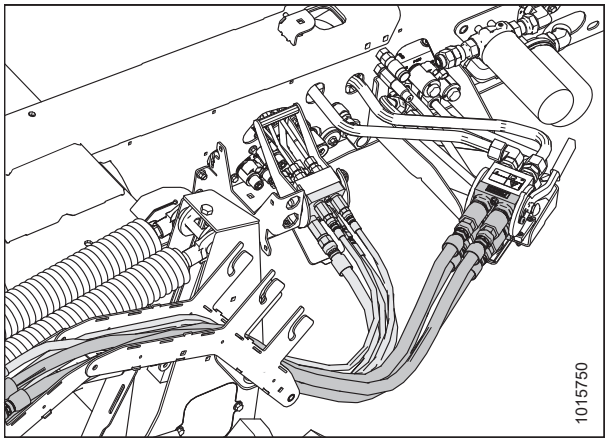


Figure 5.73: Hydraulic Multicouplers and Hose Routing

21. Push latch (A) to unlock platform (B).

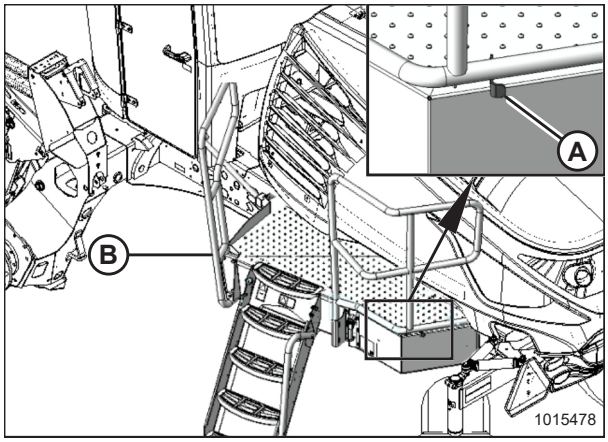


Figure 5.74: Left Platform

22. Pull platform (A) toward the cab until it stops and the latch is engaged.

23. If this is the first time the header is connected to the windrower, calibrate the header. For instructions, refer to *5.6 Calibrating Header on HarvestTouch™ Display, page 228*.

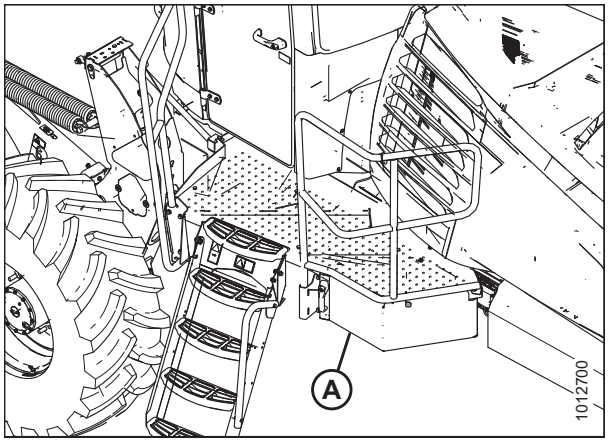


Figure 5.75: Left Platform

5.2.4 Detaching D2 Series Draper Header

The instructions in this section outline how to properly detach the header from the windrower.

DANGER

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

DANGER

Ensure that all bystanders have cleared the area.

1. Start the engine.
2. Press HEADER UP button (A) on the ground speed lever (GSL) to raise the header to maximum height.
3. If one end of the header does **NOT** rise fully, rephase the cylinders as follows:
   a. Press and hold HEADER UP (A) switch until both cylinders stop moving.
   b. Continue to hold the switch for 3–4 seconds. The cylinders are now phased.
4. Shut down the engine, and remove the key from the ignition.

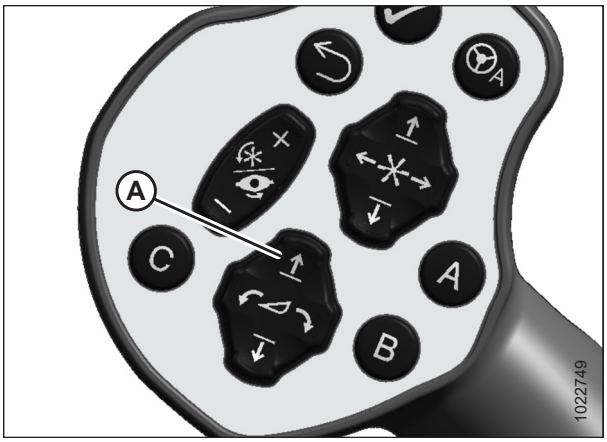


Figure 5.76: Ground Speed Lever (GSL)

5. Engage the safety props on both lift cylinders as follows:
   a. Pull lever (A) toward you to release it, then rotate it toward the header to lower the safety prop onto the cylinder.
   b. Repeat the previous step for the opposite lift cylinder.

   IMPORTANT:

   Ensure that the safety props engage over the cylinder piston rods. If the safety prop does **NOT** engage properly, raise the header until the safety prop fits over the rod.

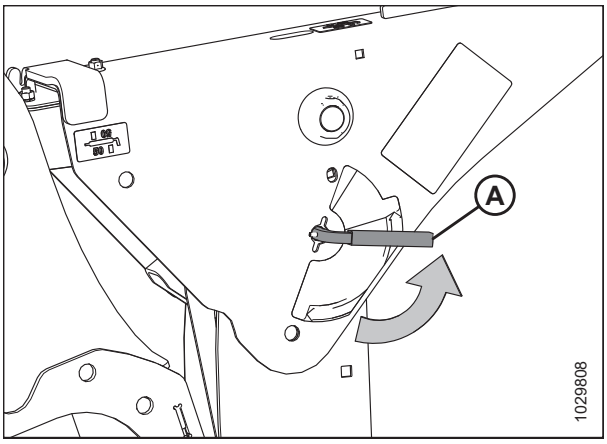


Figure 5.77: Safety Prop Lever

6. Remove and retain hairpin (D) and clevis pin (C) from header support (B) and windrower lift linkage (A). Repeat this step on the opposite side of the machine.

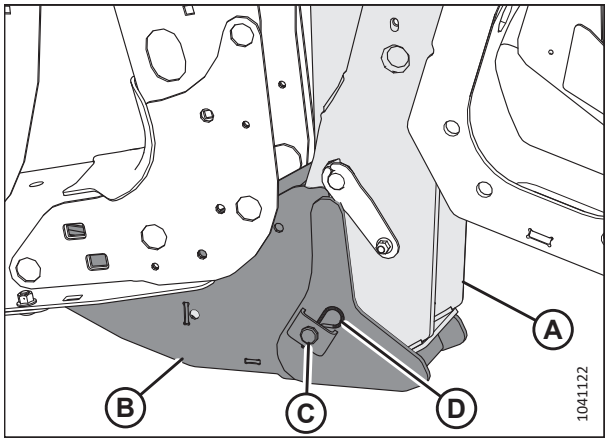


Figure 5.78: Header Leg and Windrower Lift Linkage Connected by Header Support

7. **Windrowers with self-aligning center-link:** Release center-link latch (A).

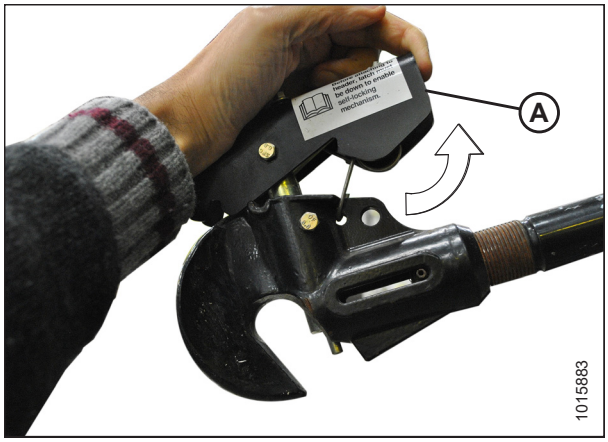


Figure 5.79: Center-Link

8. Disengage the safety props on both lift cylinders as follows:

   a. Turn lever (A) away from the header to raise the safety prop until the lever locks into the vertical position.

   b. Repeat the previous step for the opposite cylinder.

   NOTE:

   If the safety prop will **NOT** disengage, raise the header to release the prop.

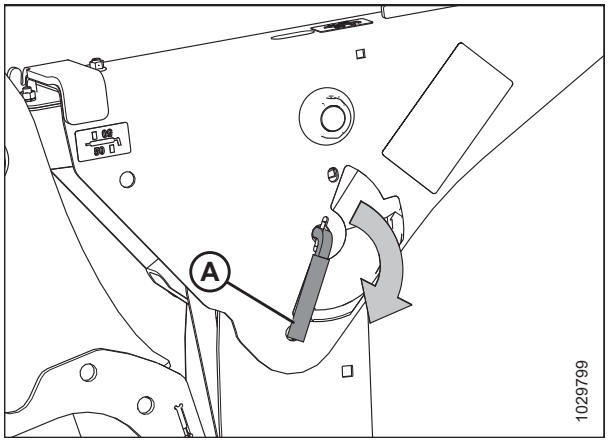


Figure 5.80: Safety Prop Lever

9. Start the engine.

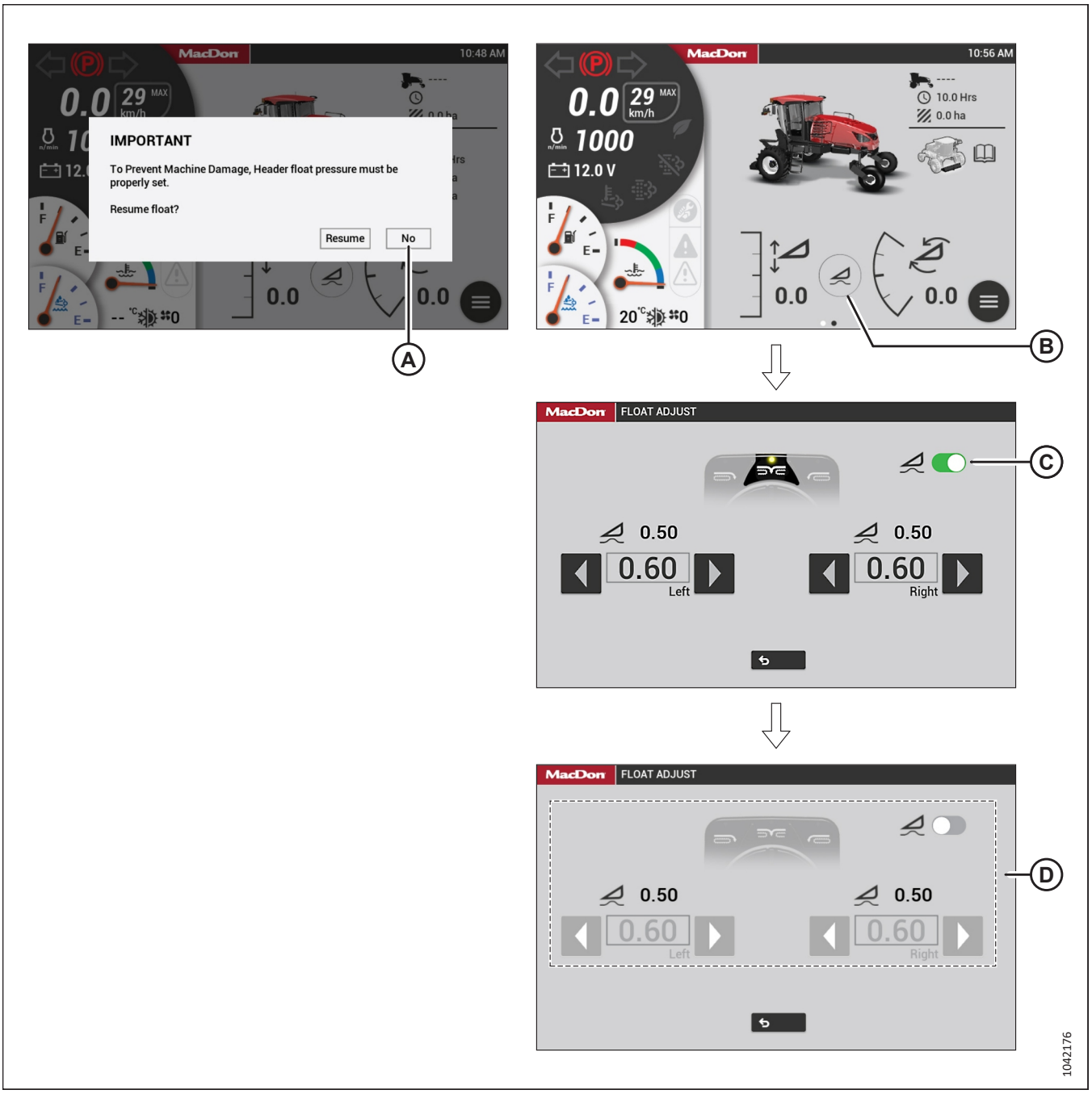


Figure 5.81: Float Removal

10. Remove the float as follows:

    - If the HarvestTouch™ Display shows the message “Resume Float?”, then select NO (A).
    - If the HarvestTouch™ Display does **NOT** show the message, then select FLOAT ADJUST (B), select switch (C), and confirm the switch and float settings (D) are grayed out.

    IMPORTANT:

    Removing the float will release the tension in the float springs. This will prevent damage to the header lift linkages when lowering the legs without a header or weight box attached to the windrower.

11. Lower the header fully using HEADER DOWN switch (A).

12. Press HEADER TILT switches (B) as needed on the GSL to release the load on the center-link.

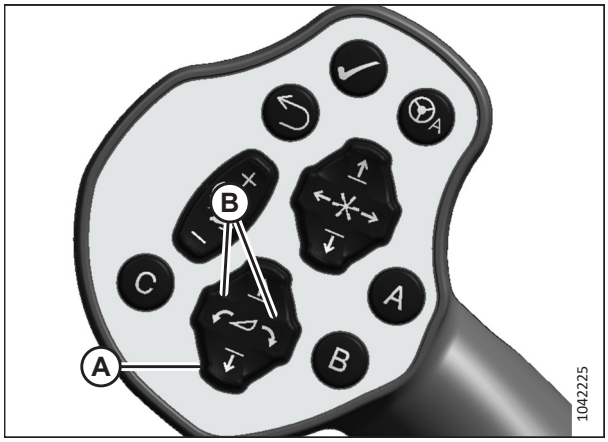


Figure 5.82: GSL

13. **Windrowers with self-aligning center-link:**

    a. Press REEL UP switch (A) to disengage the center-link from the header.

    b. Shut down the engine, and remove the key from the ignition.

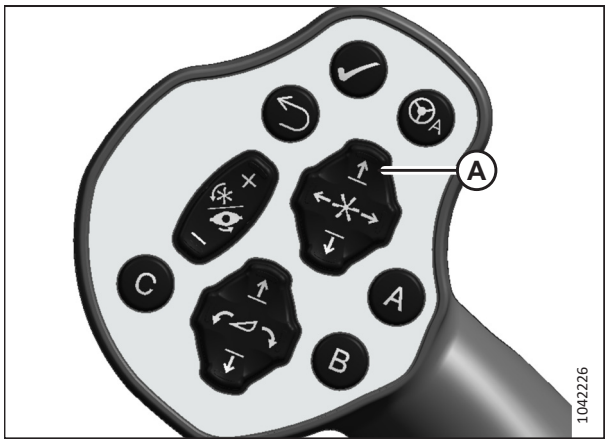


Figure 5.83: GSL

14. **Windrowers without the self-aligning center-link:**

    a. Shut down the engine, and remove the key from the ignition.

    b. Disconnect the center-link by lifting release (A) and lift hook (B) off the header.

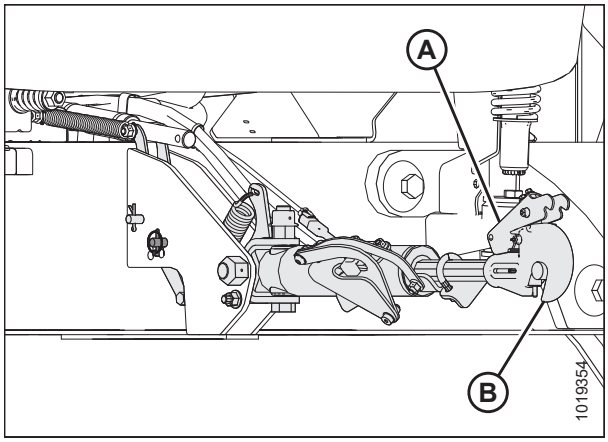


Figure 5.84: Hydraulic Center-Link

15. Approach platform (A) on the left side of the windrower. Ensure that the cab door is closed.
16. Push latch (B) and pull platform (A) toward the walking beam until it stops and the latch engages.

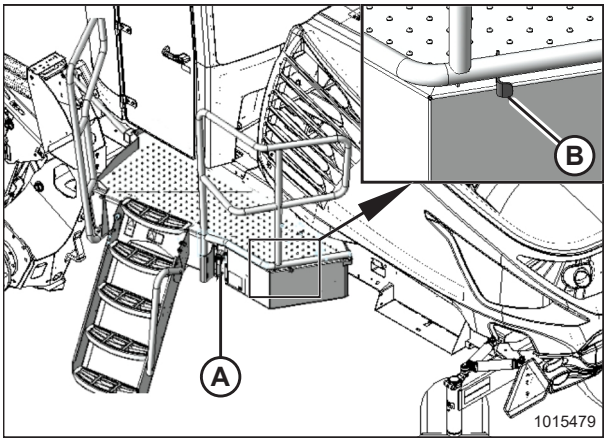


Figure 5.85: Left Platform

17. Push lock button (A) and pull handle (B) to disengage multicoupler (C). Disconnect the hydraulics from the rear knife/reel drive receptacle.

    NOTE:

    Firmly hold handle (B) when disconnecting multicoupler (C). Pressure may cause the handle to kick back with force.

18. Route the knife/reel drive hose bundle back to storage position (D) on the hydraulic hose management system.
19. Remove any debris that may have accumulated on the receptacle.

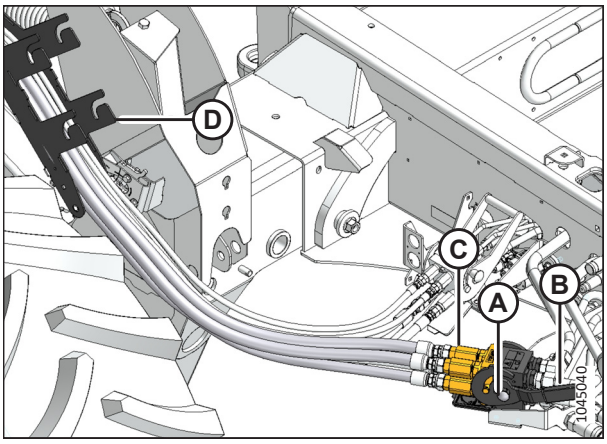


Figure 5.86: Knife/Reel Drive Multicoupler

20. Push lock button (B), and pull handle (C) to disengage multicoupler (A). Disconnect the hydraulics from the windrower draper drive/reel lift receptacle.
21. Disconnect electrical connector (D).
22. Remove any debris that may have accumulated on the receptacle.

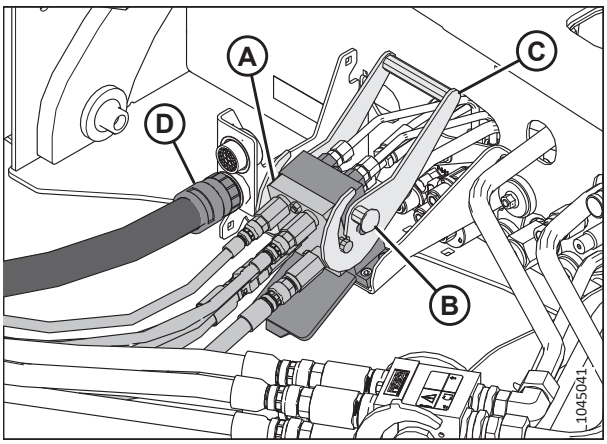


Figure 5.87: Draper/Reel Multicoupler

23. Route the draper drive/reel hose bundle back to storage position (A) on hydraulic hose management system (B).

24. Insert electrical connector into storage cup (C).

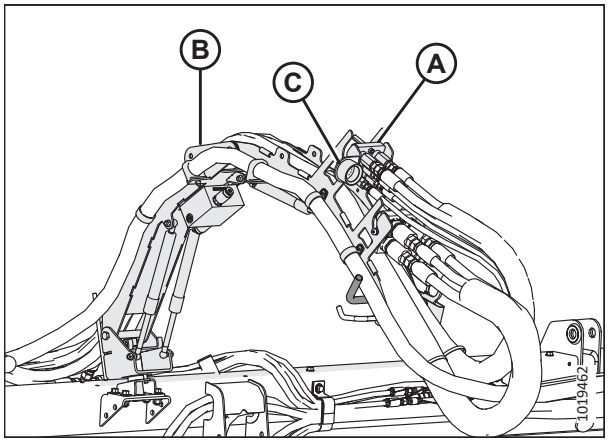


Figure 5.88: Hydraulic Hose Management System

25. Push latch (A) to unlock platform (B).

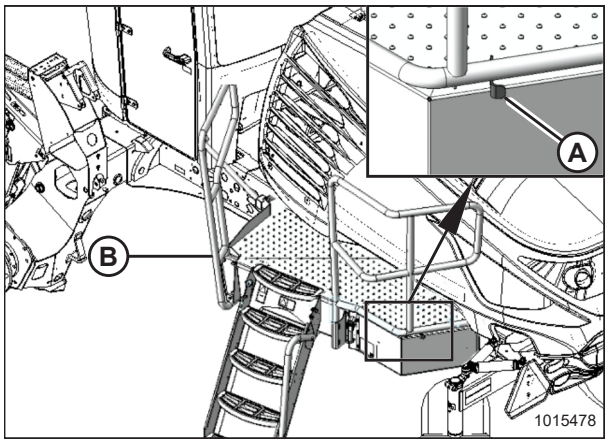


Figure 5.89: Left Platform

26. Pull platform (A) toward the cab until it stops and the latch is engaged.

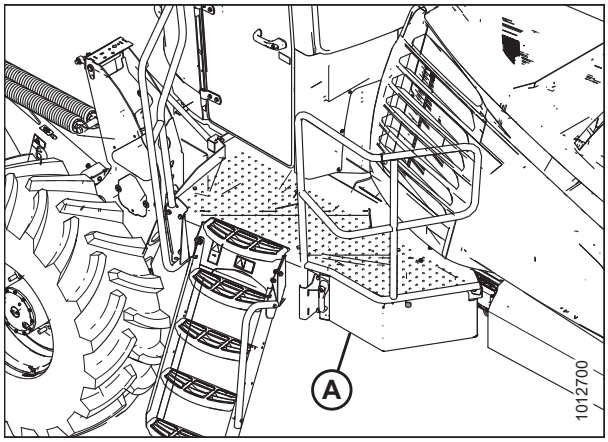


Figure 5.90: Left Platform

27. Disconnect hose management system (A) from the windrower by pulling latch lever (B) to open the latch. Keep the latch open and move hose management system (A) away from the header with handle (C).

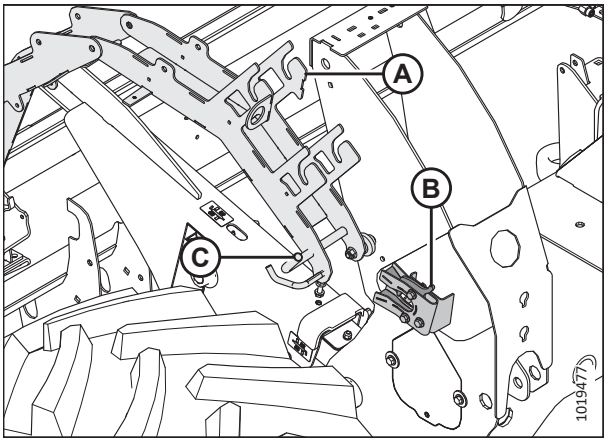


Figure 5.91: Hydraulic Hose Management System

28. Pivot hose management system (B) forward with handle (A), and engage hook (D) into latch (C) on the header.
29. Back the windrower away from the header.
30. Shut down the engine, and remove the key from the ignition.

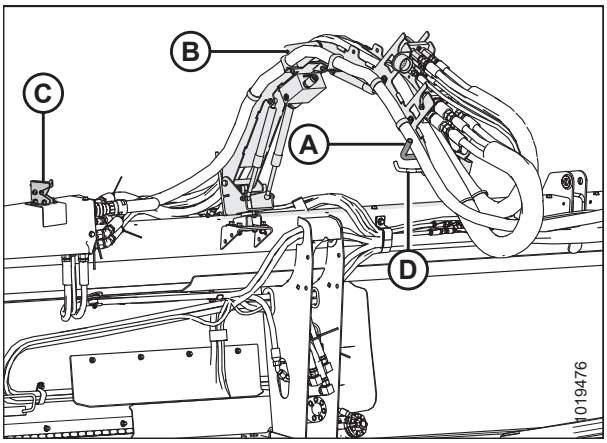


Figure 5.92: Hydraulic Hose Management System

31. Reinstall clevis pin (B) into header support (C) and secure it with hairpin (A). Repate this step on the other header leg.

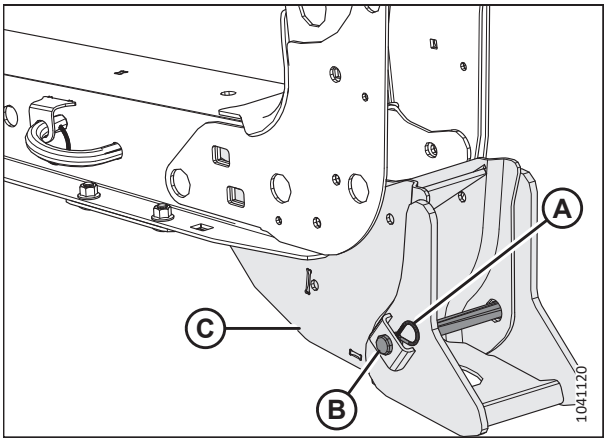


Figure 5.93: Header Stand

5.3 D1X and D1XL Series Draper Headers

This section details the procedures necessary to attach or detach a D1X or D1XL Series Draper Header to a windrower and to complete its hydraulic and electrical connections.

5.3.1 Attaching Draper Header Supports

Draper header supports are required to attach the header to the windrower.

DANGER

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

IMPORTANT:

Ensure that the correct header supports are used:

- D1XL Headers must use header supports (A).
- D1X Headers, or D1 Headers converted for use with M2 Series Windrowers, can use header supports (A) or (D).
- A feature that distinguishes support (A) from all other types is that rubber block (B) is attached to the support using two nuts (C).
- A feature that distinguishes support (D) from all other types is that metal support (E) covers the rubber block.
- To order header supports, refer to the header parts catalog.

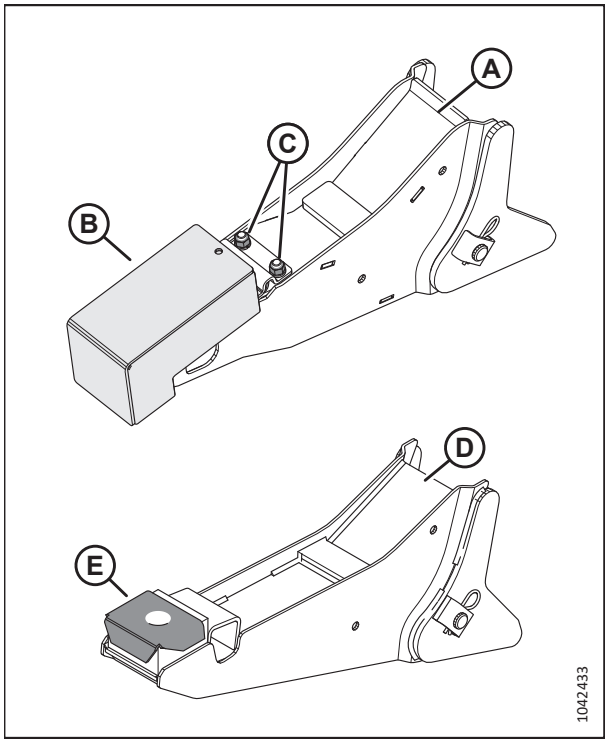


Figure 5.94: Draper Header Supports – LHS Shown

1. Shut down the engine, and remove the key from the ignition.

2. Remove the hairpin from clevis pin (B) on draper header support (A). Remove clevis pin (B).

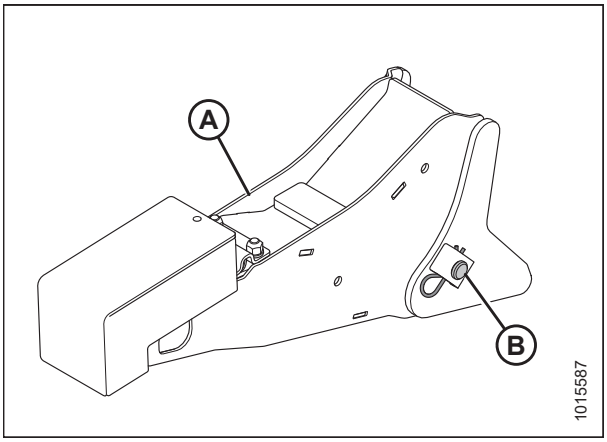


Figure 5.95: Draper Header Support

3. Position draper header support (B) on windrower lift linkage (A). Reinstall clevis pin (C).

   NOTE:

   To ensure that the pin doesn't snag the windrow, install the clevis pin on the outboard side of the draper header support.

4. Secure clevis pin (C) with hairpin (D).

5. Repeat Step *2, page 141* to Step *4, page 141* to install the other draper header supports.

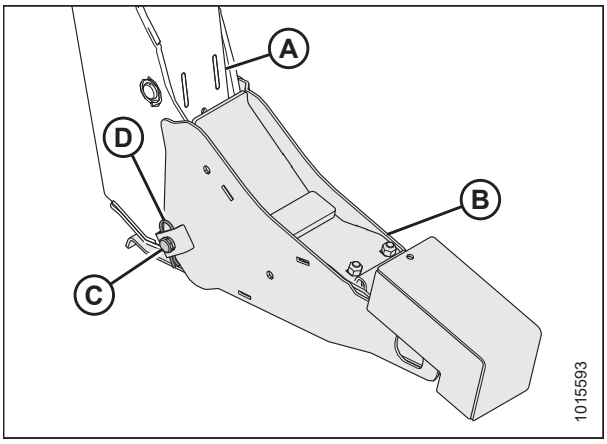


Figure 5.96: Draper Header Support

5.3.2 Attaching D1X and D1XL Series Draper Headers

The windrower's lift linkage and center-link will need to be connected to the draper header.

DANGER

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

DANGER

Ensure that all bystanders have cleared the area.

1. Shut down the engine, and remove the key from the ignition.

2. If the windrower was previously attached to an R216 Rotary Disc Header, make sure to remove the forming shield (not shown), including forming shield support brackets (A) and hardware (B) from both legs. You can store the brackets and hardware in the windrower tool box.

   - For instructions on removing the R216 forming shield, refer to *5.4.6 Removing Forming Shield from Windrower, page 198*.

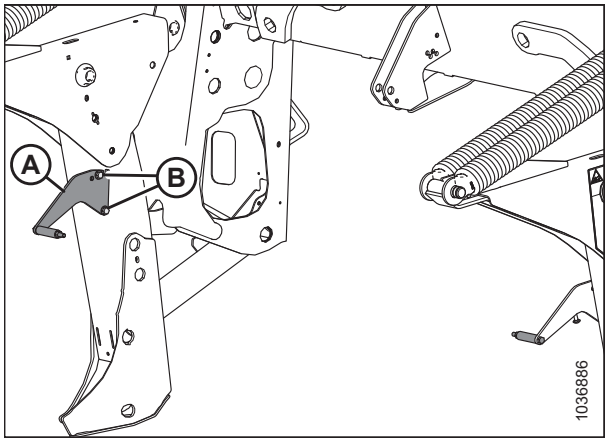


Figure 5.97: Forming Shield bracket – R2 Series

3. Before beginning this procedure, make sure draper header supports (A) are installed on both windrower lift linkages. For instructions on installing the header supports onto the windrower, refer to *5.3.1 Attaching Draper Header Supports, page 140*.

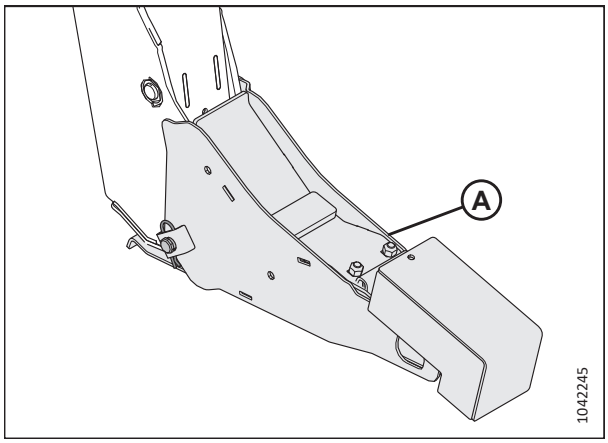


Figure 5.98: Header Supports Installed

4. Remove hairpin (A) from pin (B), and remove pin (B) from the header leg. Repeat this step on the opposite header leg.

5. Start the engine.

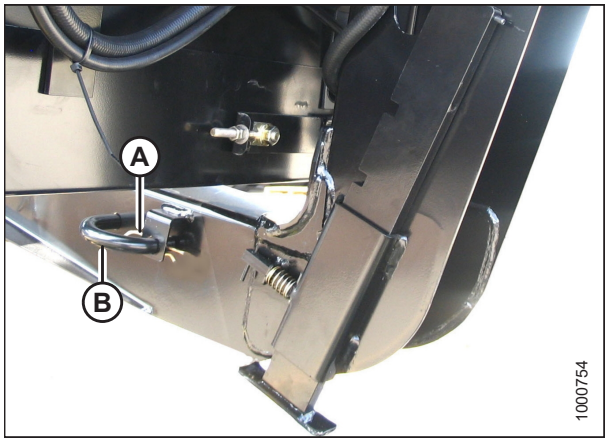


Figure 5.99: Header Leg

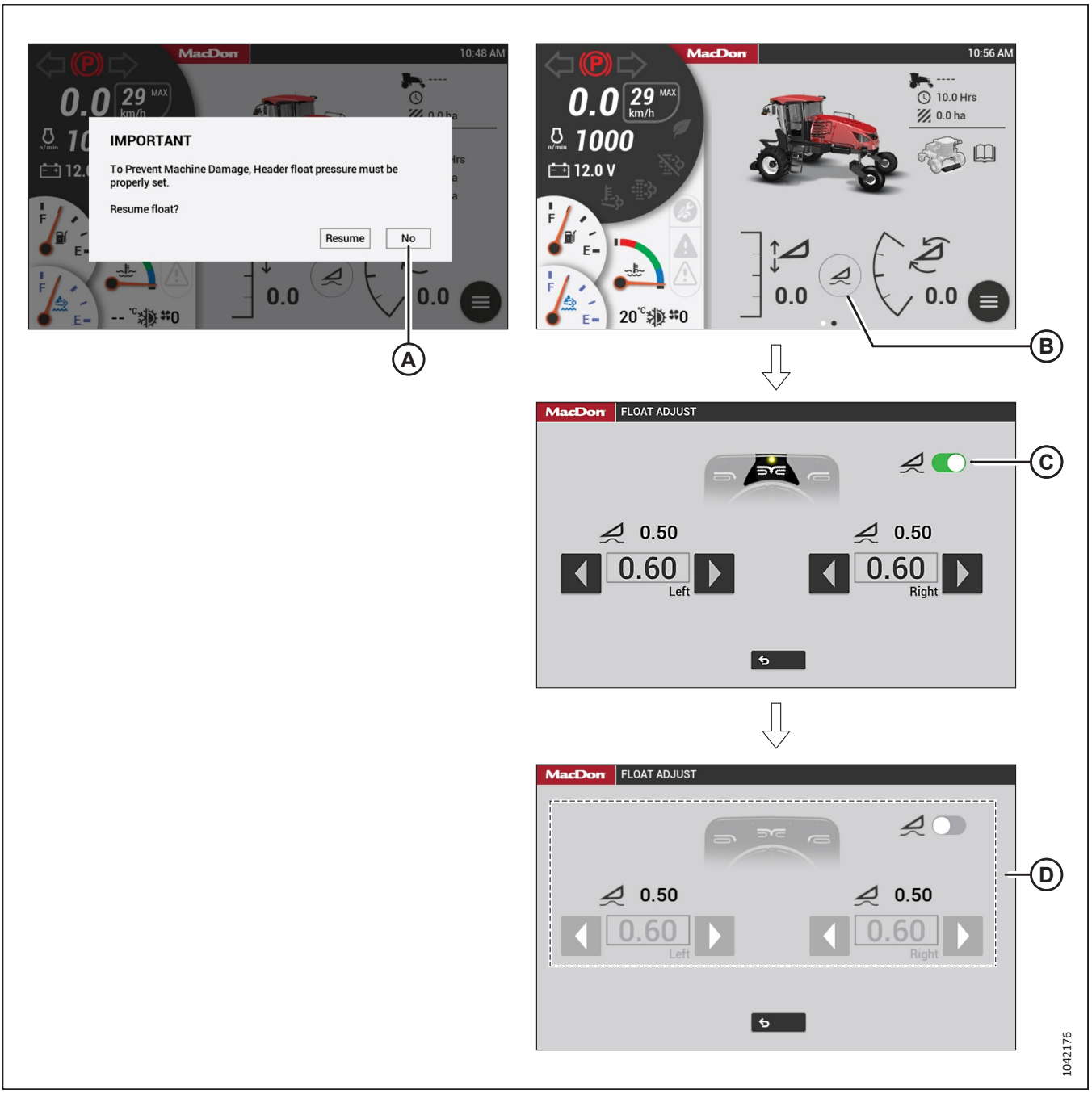


Figure 5.100: Float Removal

6. Remove the float as follows:

   - If the HarvestTouch™ Display shows the message “Resume Float?”, then select NO (A).
   - If the HarvestTouch™ Display does **NOT** show the message, then select FLOAT ADJUST (B), select switch (C), and confirm the switch and float settings (D) are grayed out.

   IMPORTANT:

   Removing the float will release the tension in the float springs. This will prevent damage to the header lift linkages when lowering the legs without a header or weight box attached to the windrower.

7. Prepare the center-link as follows:

   - **If not equipped with the Center-Link Alignment kit:** Relocate pin (A) in the frame linkage as needed to raise center-link (B) until the hook is above the attachment pin on the header.
   - **If equipped with the Center-Link Alignment kit:** Press REEL UP switch (D) on the ground speed lever (GSL) to raise the center-link until the hook is above the attachment pin on the header.

   IMPORTANT:

   Ensure that the center-link is positioned high enough that it does not contact the header as the windrower approaches the header.

8. Press HEADER DOWN switch (C) on the GSL until the windrower lift linkages are fully lowered.

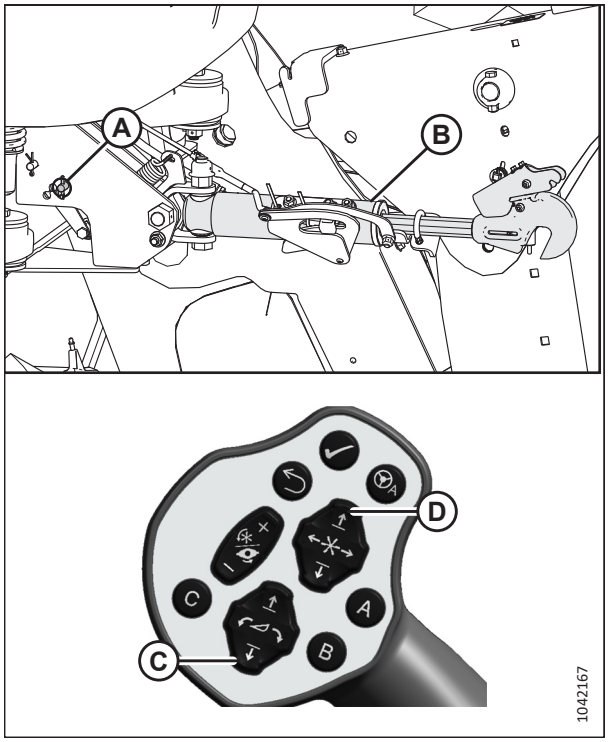


Figure 5.101: Center-Link without Self-Alignment

9. Drive the windrower slowly forward until draper header supports (A) enter header legs (B). Continue driving slowly forward until the lift linkages contact the support plates in the header legs and the header is nudged forward.

10. Ensure that the lift linkages are properly engaged in the header legs and are in contact with the support plates.

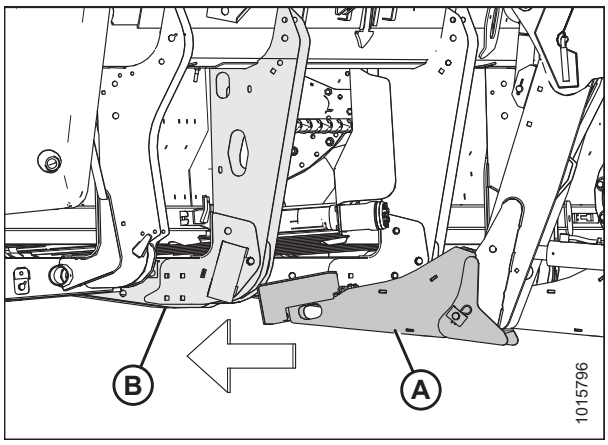


Figure 5.102: Header Leg and Draper Header Support

11. **Windrowers equipped with the Center-Link Alignment kit:**

    a. Press HEADER TILT UP (A) or HEADER TILT DOWN (B) switches on the GSL to extend or retract the center-link cylinder until hook (C) is aligned with the header attachment pin.

    b. Lower the center-link onto the header with REEL DOWN (D) switch on the GSL until the center-link locks into position and hook release (E) is down.

    IMPORTANT:

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

    c. Check that the center-link is locked onto the header by pressing REEL UP (F) switch on the GSL.

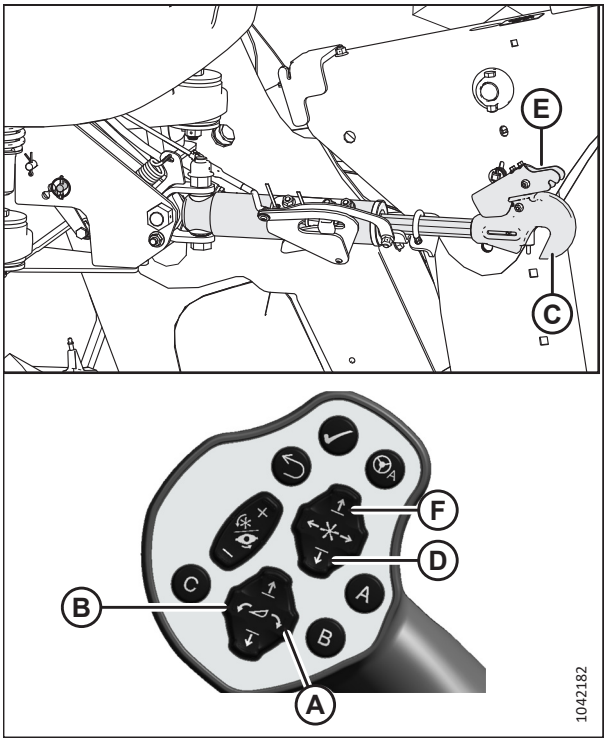


Figure 5.103: Hydraulic Center-Link

12. **Windrowers without the Center-Link Alignment kit:**

    a. Press HEADER TILT UP (A) or HEADER TILT DOWN (B) switches on the GSL to extend or retract the center-link cylinder until the hook is aligned with the header attachment pin.

    b. Shut down the engine, and remove the key from the ignition.

    c. Push down on rod end (C) of the link cylinder until hook (D) engages and locks onto the header pin.

    IMPORTANT:

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

    d. Check that the center-link is locked onto the header by pulling upward on rod end (C) of the cylinder.

    e. Start the engine.

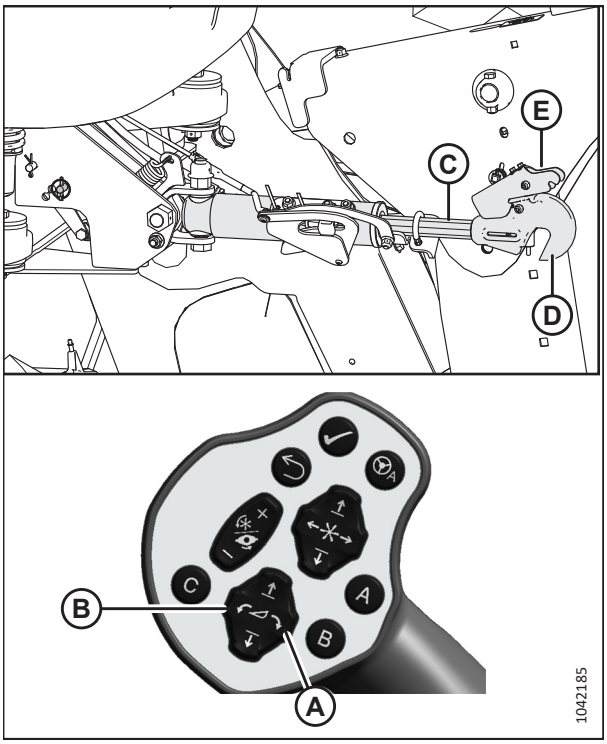


Figure 5.104: Hydraulic Center-Link

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

    NOTE:

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

    a. Press and hold HEADER UP switch (A) until both cylinders stop moving.

    b. Continue to hold the switch for 3–4 seconds. The cylinders are now phased.

14. Shut down the engine, and remove the key from the ignition.

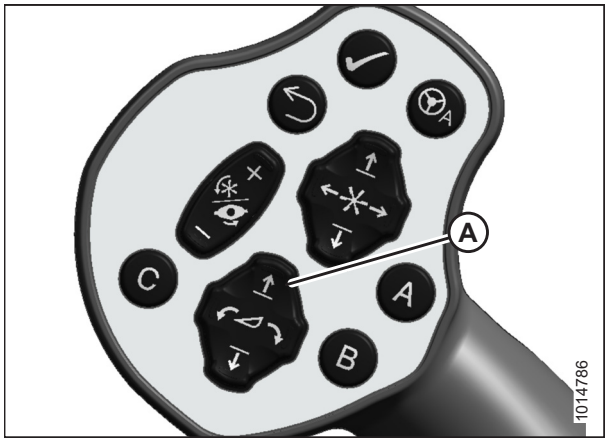


Figure 5.105: Ground Speed Lever (GSL)

15. Engage the safety props on both lift cylinders as follows:

    a. Pull lever (A) toward you to release it, then rotate it toward the header to lower the safety prop onto the cylinder.

    b. Repeat the previous step for the opposite lift cylinder.

    IMPORTANT:

    Ensure that the safety props engage over the cylinder piston rods. If the safety prop does **NOT** engage properly, raise the header until the safety prop fits over the rod.

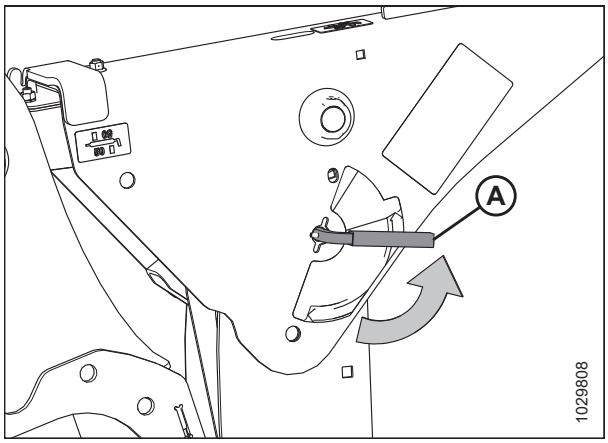


Figure 5.106: Safety Prop Lever

16. Install pin (B) through the header leg. Ensure that the pin engages the U-bracket in the draper header support. Secure the pin with hairpin (A). Repeat this step on the other side of the header.

17. Raise header stand (D) to its storage position by pulling spring pin (C) and lifting the stand. Release the spring pin to secure the stand.

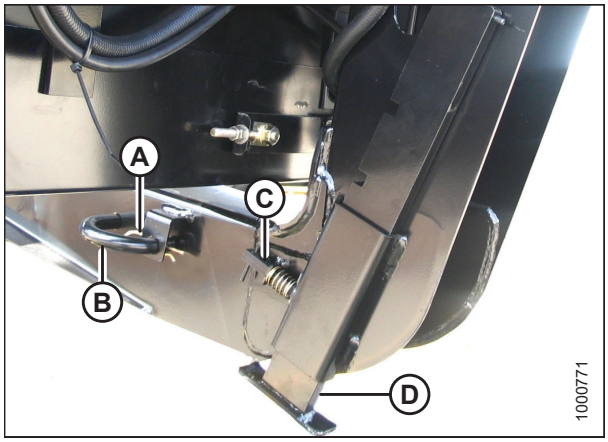


Figure 5.107: Header Leg

18. Disengage the safety props on both lift cylinders as follows:

    a. Turn lever (A) away from the header to raise the safety prop until the lever locks into the vertical position.

    b. Repeat the previous step for the opposite cylinder.

    NOTE:

    If the safety prop will **NOT** disengage, raise the header to release the prop.

19. Start the engine.

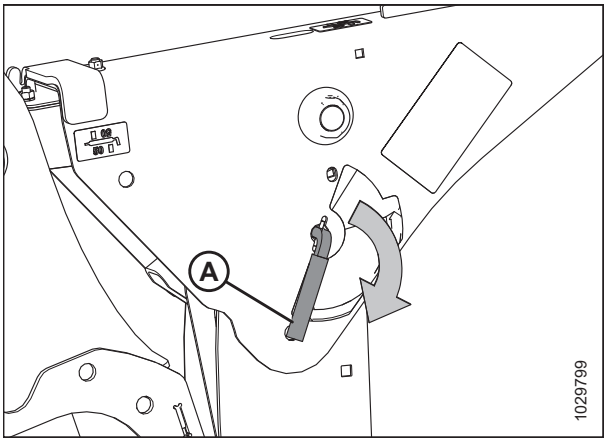


Figure 5.108: Safety Prop Lever

20. Press HEADER DOWN switch (A) on the GSL to fully lower the header.

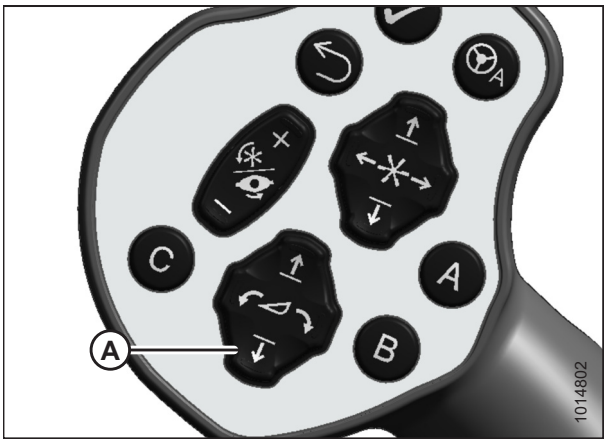


Figure 5.109: Ground Speed Lever (GSL)

21. Select FLOAT ADJUST (A).

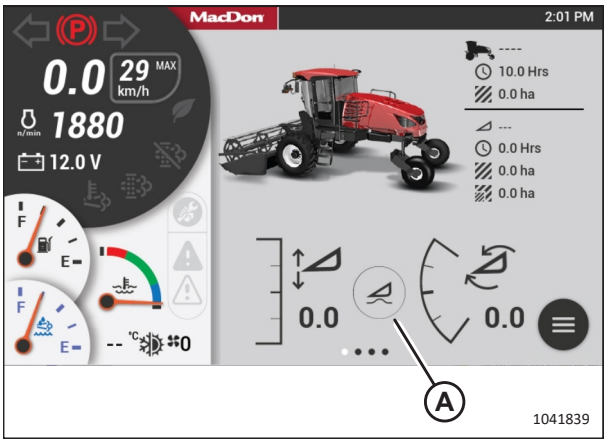


Figure 5.110: HarvestTouch™ Display

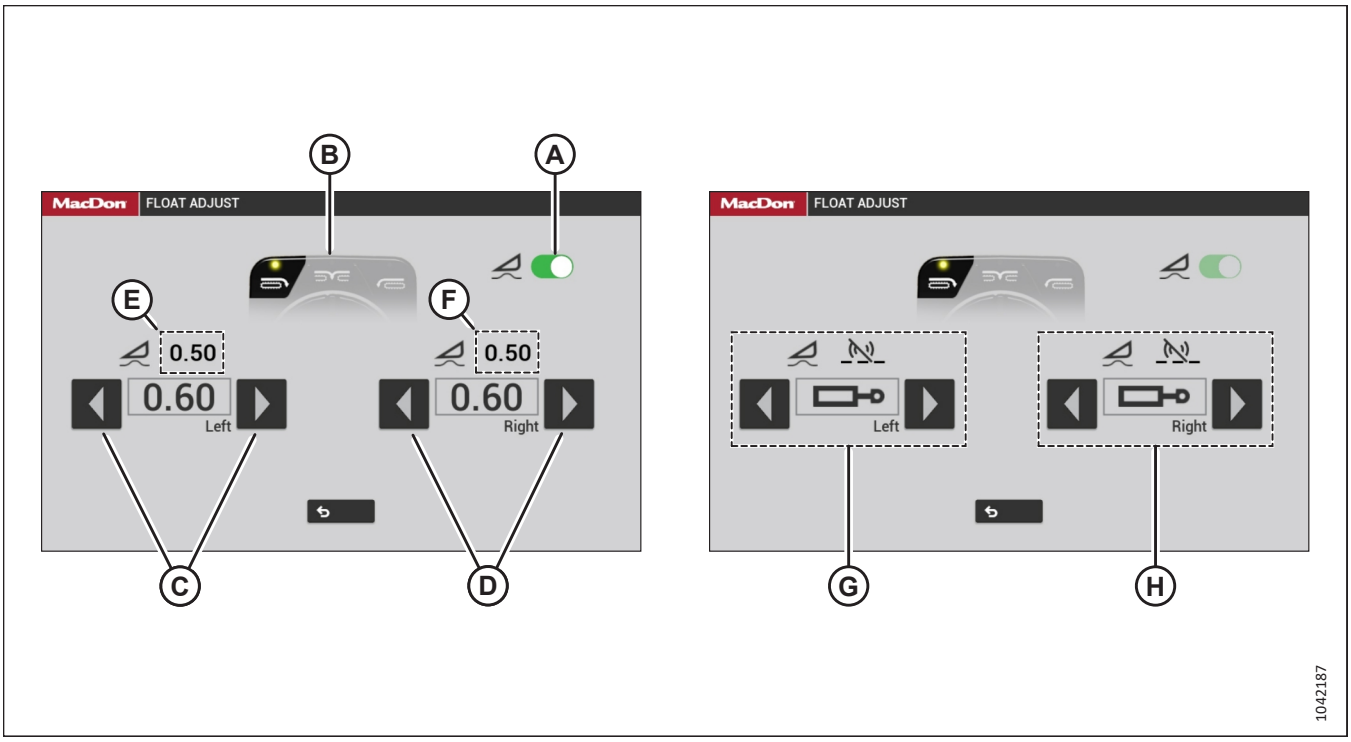


Figure 5.111: Float Adjustment

22. Select switch (A), so that it turns green, to activate the float.
23. If the float is not already set up, set the float as follows:
    a. The float preset, which is selected using the operator's console, is displayed at location (B). Confirm if the desired preset is selected.
    b. Select arrows (C) to set the target float for the left side of the header. Value (E) is the actual amount of float (measured by the left float sensor).
    c. Select arrows (D) to set the target float for the right side of the header. Value (F) is the actual amount of float (measured by the left float sensor).

    NOTE:

    Adjusting the float by increments of 1.0 (out of 10) changes the header weight at the cutterbar by approximately 91 kg (200 lb.). Adjust the float in increments of 0.05 to fine-tune the header's performance.

    NOTE:

    Symbols (G) and (H) mean the left and right float sensors are not working. You can still manually set the float, but you should first check if the sensors were disabled through the HarvestTouch™ Display (refer to MENU > SETUP > HEADER > SENSORS), or if another problem is causing the sensors to fail.
24. Shut down the engine, and remove the key from the ignition.
25. Check the float as follows:
    a. Grasp one end of the draper header and lift it. The lifting force should be 335–380 N (75–85 lbf) (with stabilizer/transport wheels raised, if they are equipped).
    b. Repeat this step on the other side of the header.
26. Proceed to *5.3.3 Connecting Header Hydraulic and Electrical Systems, page 149*.

5.3.3 Connecting Header Hydraulic and Electrical Systems

The header's hydraulic hose multicoupler will need to be connected to the windrower.

DANGER

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

CAUTION

Do NOT stand on an unlocked platform. It is unstable and may cause you to fall.

IMPORTANT:

To prevent contamination of the hydraulic system, use a clean rag to remove dirt and moisture from all hydraulic couplers.

1. Shut down the engine, and remove the key from the ignition.
2. Approach platform (A) on the left side of the windrower. Ensure that the cab door is closed.
3. Push latch (B) and pull platform (A) toward the walking beam until it stops and the latch engages.

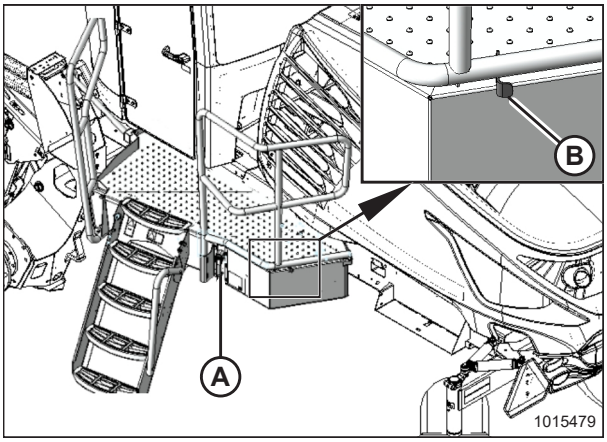


Figure 5.112: Left Platform

4. **All draper headers except D115X:** Push lever (A) up and pull arm (B) to get pin (C) out of latch (D).

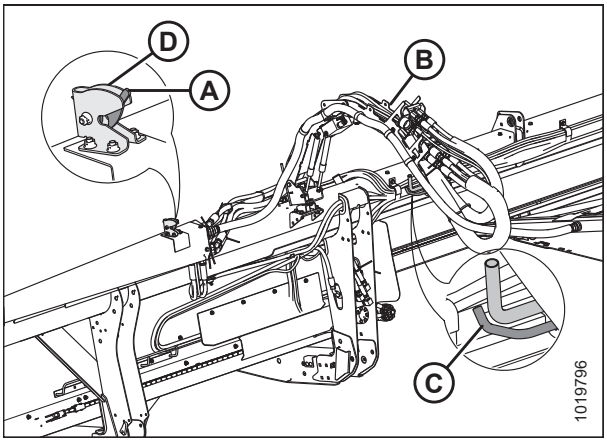


Figure 5.113: Hydraulic Hose Management System – All Draper Headers Except D115X

5. **D115X Draper Headers:** Pull hydraulic hose management system (A) towards the left outboard end of the header, disengage ball stud (B) from the cradle in support (C).

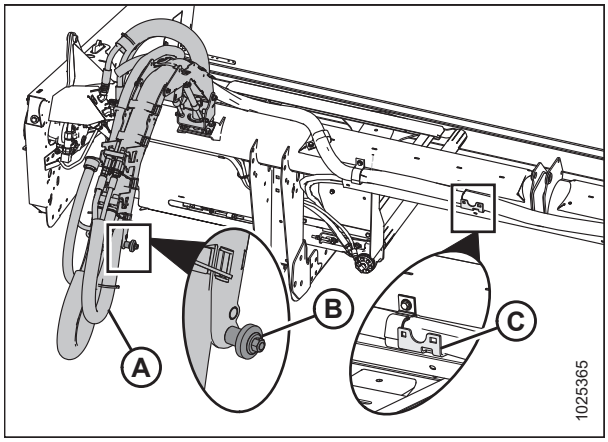


Figure 5.114: Hydraulic Hose Management System – D115X

6. Push the link on latch (C) and pull handle (A) on hydraulic hose management system (B) rearward to disengage the arm from the latch.
7. Move hydraulic hose management system (B) toward the left cab-forward side of the windrower.

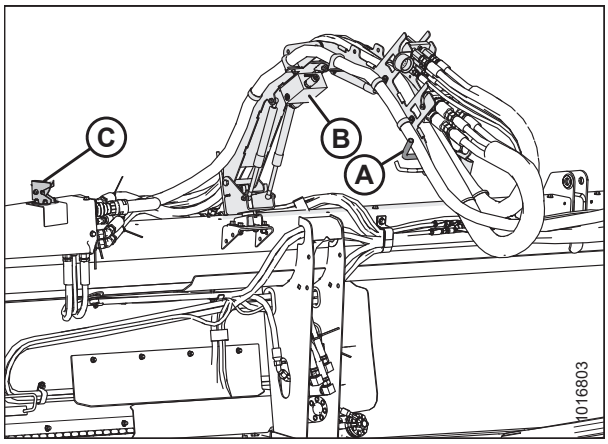


Figure 5.115: Hydraulic Hose Management System

8. Connect hydraulic hose management system (A) to the left outer leg of the windrower by pushing ball stud (B) into ball stud latch (C).

   NOTE:

   The hydraulic hoses have been removed from the illustration for clarity.

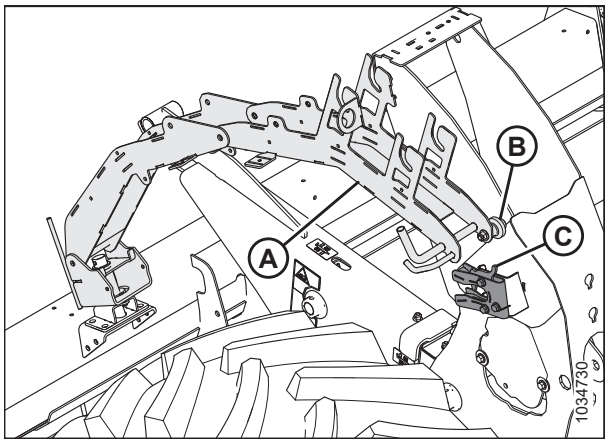


Figure 5.116: Windrower Left Outer Leg

9. Retrieve draper drive and reel control multicoupler (A) from the hydraulic hose management system.

10. Push knob (B) on the hydraulic receptacle and pull handle (C) fully away from the windrower.

11. Open cover (D) and position the coupler onto the receptacle. Align the pins in the coupler with the slots in handle (C) and push the handle toward the windrower so that the coupler locks onto the receptacle and knob (B) pops out.

12. Remove the cover from electrical connector (E). Push the electrical connector onto the receptacle. Secure the connector by turning the collar on the electrical connector clockwise.

13. Remove hose quick disconnect (F) from its storage location. Connect the quick disconnect to the receptacle on the frame.

    NOTE:

    Hose quick disconnect (F) is present only on the following configurations:

    - M2170 Windrowers equipped with the R1 Series Hydraulic Drive kit (B6845)
    - M2260 Windrowers configured for draper or auger headers

14. Retrieve knife and reel drive multicoupler (A) from the hydraulic hose management system.

15. Push knob (B) on the hydraulic receptacle and pull handle (C) fully away from the windrower.

16. Open cover (D) and position the coupler onto the receptacle. Align the pins in the coupler with the slots in handle (C), and push the handle toward the windrower so that the coupler locks onto the receptacle and knob (B) snaps out.

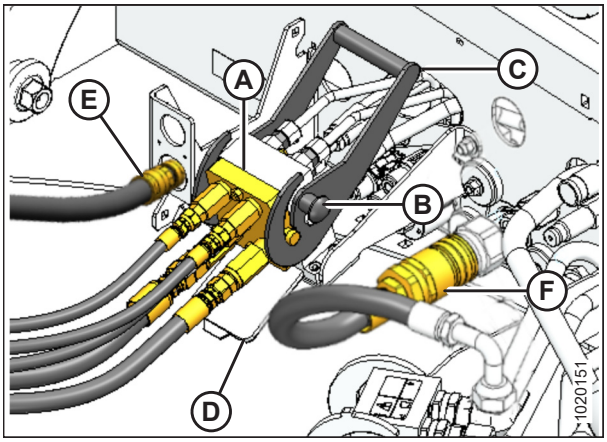


Figure 5.117: Draper/Reel Multicoupler

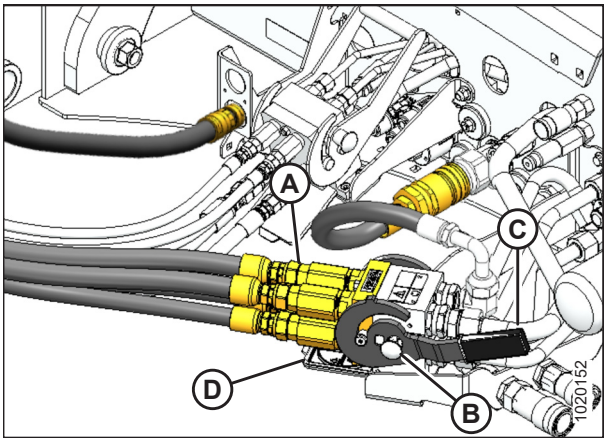


Figure 5.118: Knife/Reel Drive Multicoupler

17. Ensure that the hydraulic hose routing is as straight as possible.

    IMPORTANT:

    Straight routing will prevent abrasion damage to the hydraulic hoses.

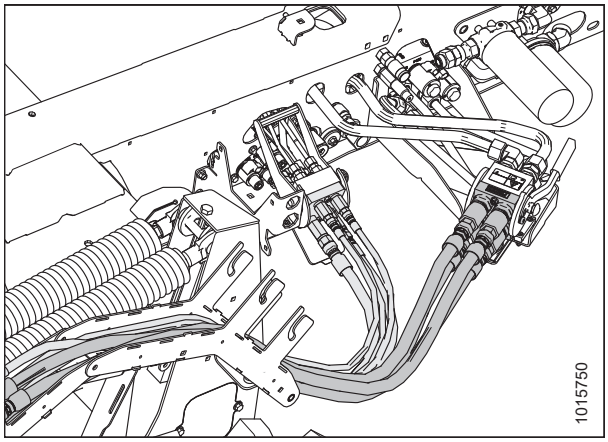


Figure 5.119: Hydraulic Multicouplers and Hose Routing

18. Push latch (A) to unlock platform (B).

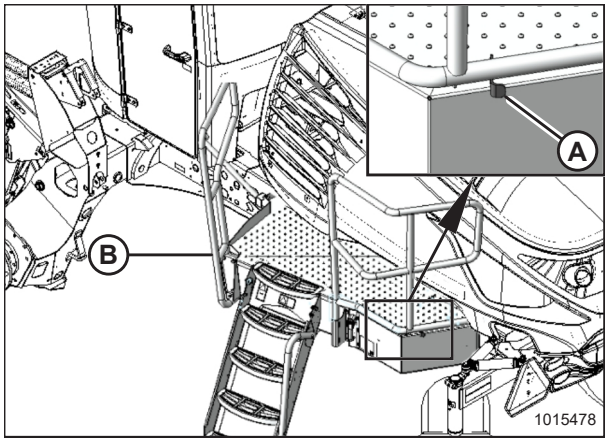


Figure 5.120: Left Platform

19. Pull platform (A) toward the cab until it stops and the latch is engaged.

20. If this is the first time the header is connected to the windrower, calibrate the header. For instructions, refer to *5.6 Calibrating Header on HarvestTouch™ Display, page 228*.

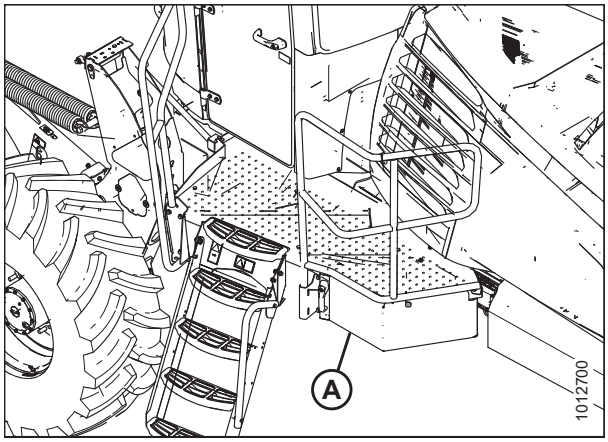


Figure 5.121: Left Platform

5.3.4 Detaching D1X and D1XL Series Draper Headers

The instructions in this section outline how to properly detach D1X and D1XL Series Draper Headers.

DANGER

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

DANGER

Ensure that all bystanders have cleared the area.

1. Start the engine.
2. If one end of the header does **NOT** rise fully, rephase the cylinders as follows:
   a. Press and hold HEADER UP (A) switch until both cylinders stop moving.
   b. Continue to hold the switch for 3–4 seconds. The cylinders are now phased.
3. Shut down the engine, and remove the key from the ignition.

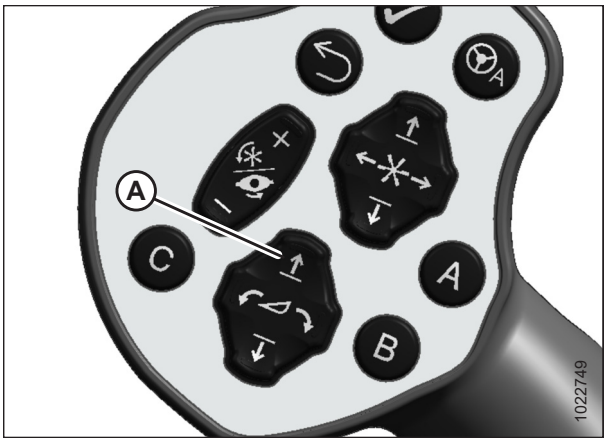


Figure 5.122: Ground Speed Lever (GSL)

4. Engage the safety props on both lift cylinders as follows:
   a. Pull lever (A) toward you to release it, then rotate it toward the header to lower the safety prop onto the cylinder.
   b. Repeat the previous step for the opposite lift cylinder.

   IMPORTANT:

   Ensure that the safety props engage over the cylinder piston rods. If the safety prop does **NOT** engage properly, raise the header until the safety prop fits over the rod.

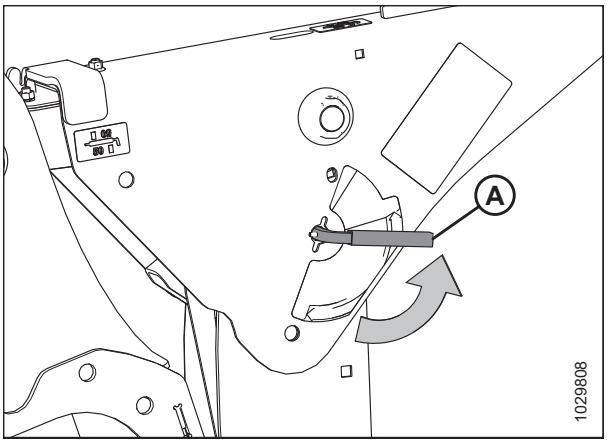


Figure 5.123: Safety Prop Lever

5. Remove header leg pin (B) by removing hairpin (A) from header leg on both sides of the header.
6. Lower header stand (D) by pulling spring loaded pin (C). Release the spring pin to secure the lock stand.

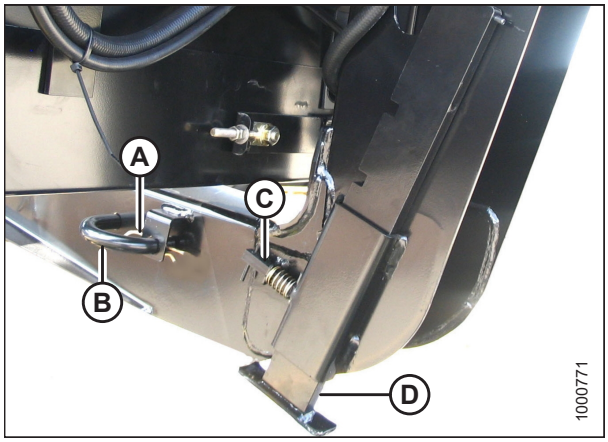


Figure 5.124: Header Leg and Header Stand

7. **Windrowers with self-aligning center-link:** Release center-link latch (A).

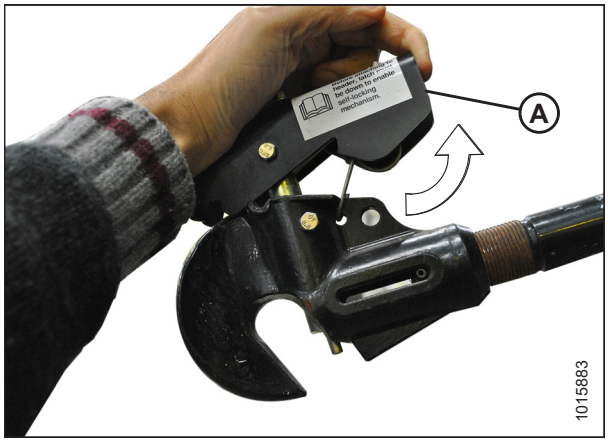


Figure 5.125: Center-Link

8. Disengage the safety props on both lift cylinders as follows:
   a. Turn lever (A) away from the header to raise the safety prop until the lever locks into the vertical position.
   b. Repeat the previous step for the opposite cylinder.

   NOTE:

   If the safety prop will **NOT** disengage, raise the header to release the prop.
9. Start the engine.

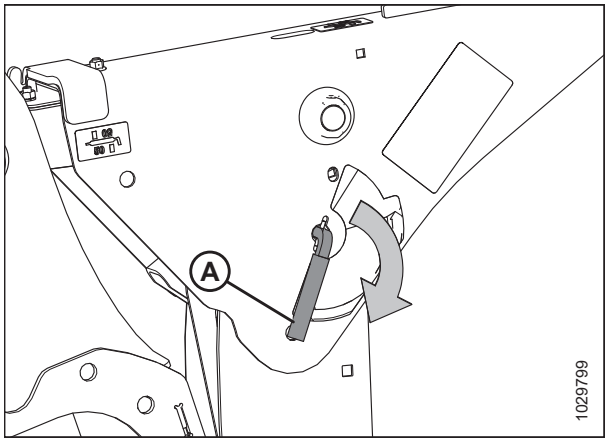


Figure 5.126: Safety Prop Lever

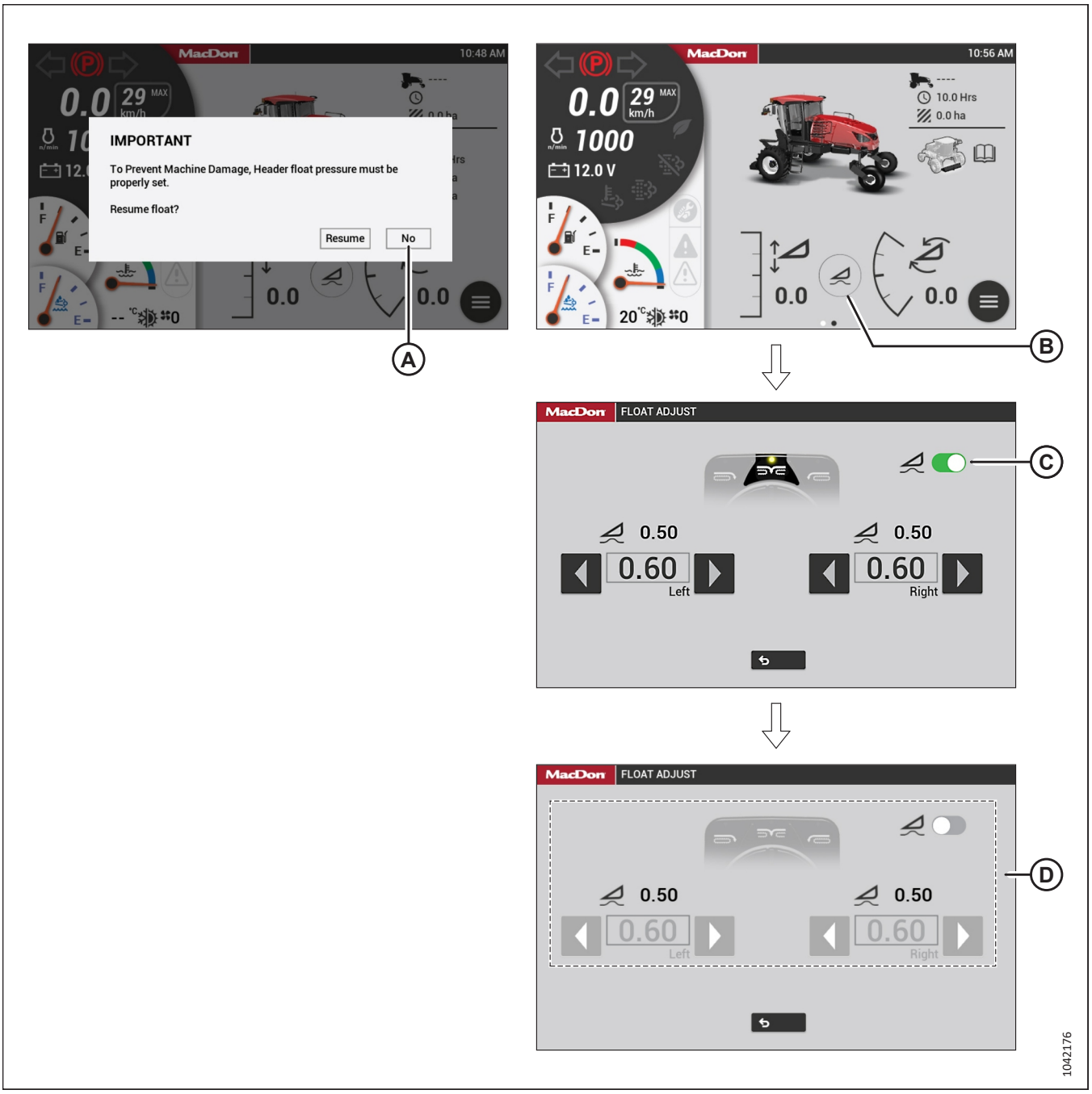


Figure 5.127: Float Removal

10. Remove the float as follows:

    - If the HarvestTouch™ Display shows the message “Resume Float?”, then select NO (A).
    - If the HarvestTouch™ Display does **NOT** show the message, then select FLOAT ADJUST (B), select switch (C), and confirm the switch and float settings (D) are grayed out.

    IMPORTANT:

    Removing the float will release the tension in the float springs. This will prevent damage to the header lift linkages when lowering the legs without a header or weight box attached to the windrower.

11. Lower the header fully using HEADER DOWN switch (A).

12. Press HEADER TILT switches (B) as needed on the GSL to release the load on the center-link.

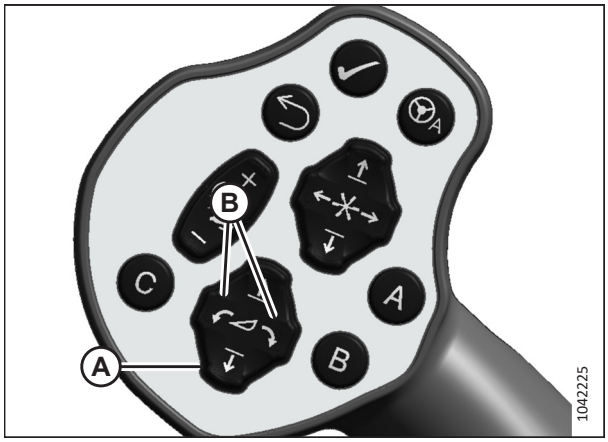


Figure 5.128: GSL

13. **Windrowers with self-aligning center-link:**

    a. Press REEL UP switch (A) to disengage the center-link from the header.

    b. Shut down the engine, and remove the key from the ignition.

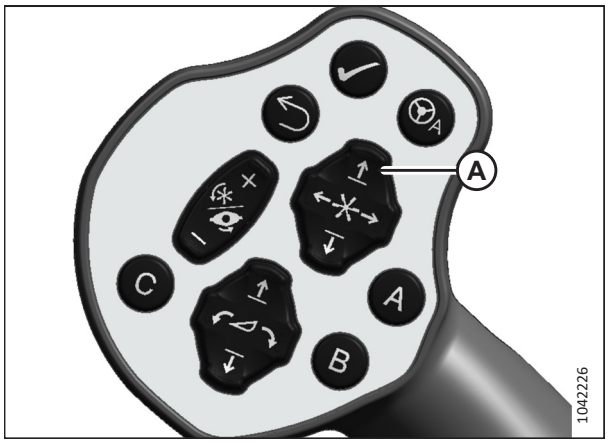


Figure 5.129: GSL

14. **Windrowers without the self-aligning center-link:**

    a. Shut down the engine, and remove the key from the ignition.

    b. Disconnect the center-link by lifting release (A) and lift hook (B) off the header.

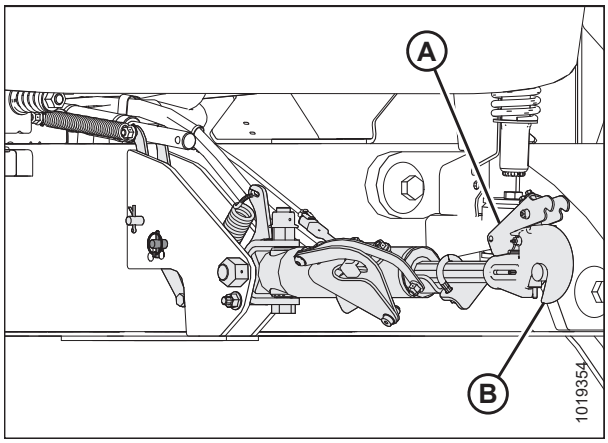


Figure 5.130: Hydraulic Center-Link

15. Approach platform (A) on the left side of the windrower. Ensure that the cab door is closed.
16. Push latch (B) and pull platform (A) toward the walking beam until it stops and the latch engages.

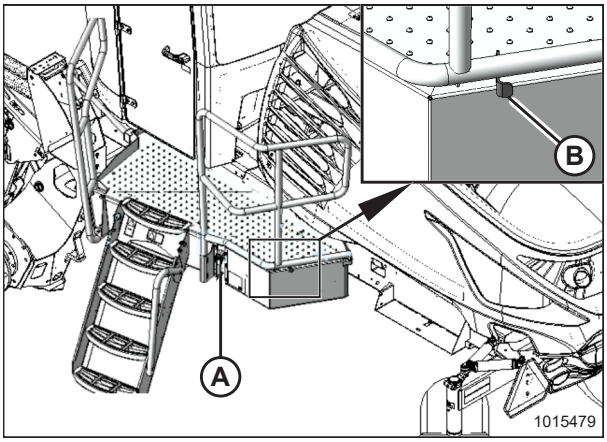


Figure 5.131: Left Platform

17. Push lock button (A) and pull handle (B) to disengage multicoupler (C). Disconnect the hydraulics from the rear knife/reel drive receptacle.

    NOTE:

    Firmly hold handle (B) when disconnecting multicoupler (C). Pressure may cause the handle to kick back with force.

18. Route the knife/reel drive hose bundle back to storage position (D) on the hydraulic hose management system.
19. Remove any debris that may have accumulated on the receptacle.

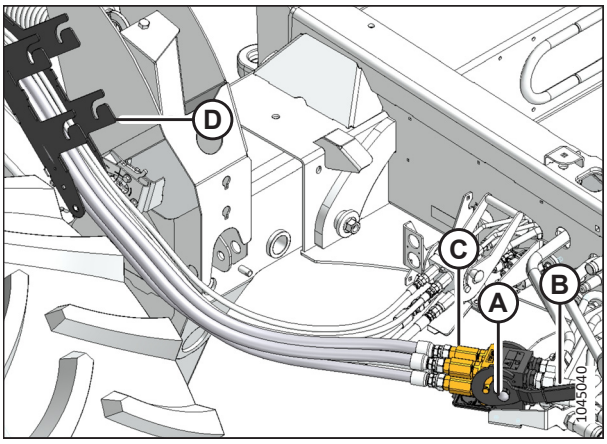


Figure 5.132: Knife/Reel Drive Multicoupler

20. Push lock button (B), and pull handle (C) to disengage multicoupler (A). Disconnect the hydraulics from the windrower draper drive/reel lift receptacle.
21. Disconnect electrical connector (D).
22. Remove any debris that may have accumulated on the receptacle.

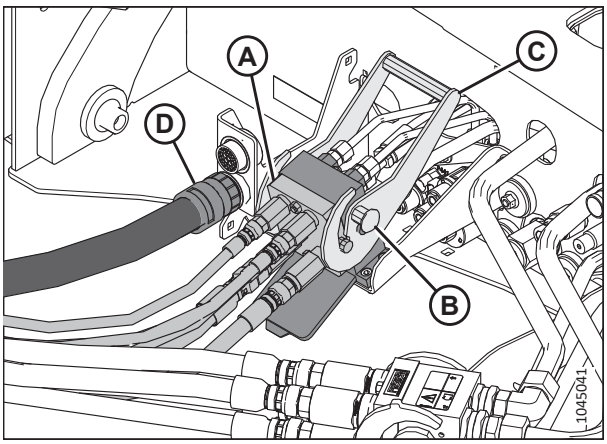


Figure 5.133: Draper/Reel Multicoupler

23. Route the draper drive/reel hose bundle back to storage position (A) on hydraulic hose management system (B).

24. Insert electrical connector into storage cup (C).

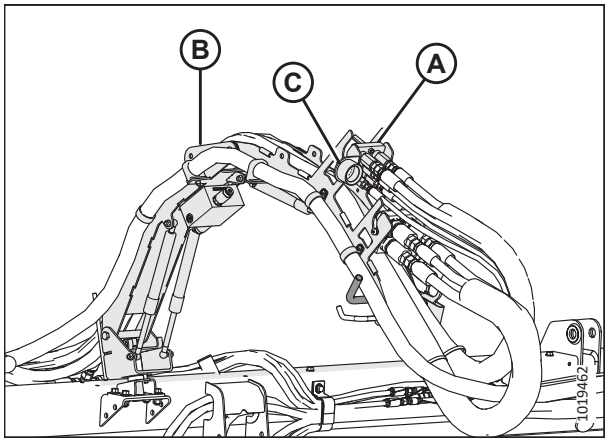


Figure 5.134: Hydraulic Hose Management System

25. Push latch (A) to unlock platform (B).

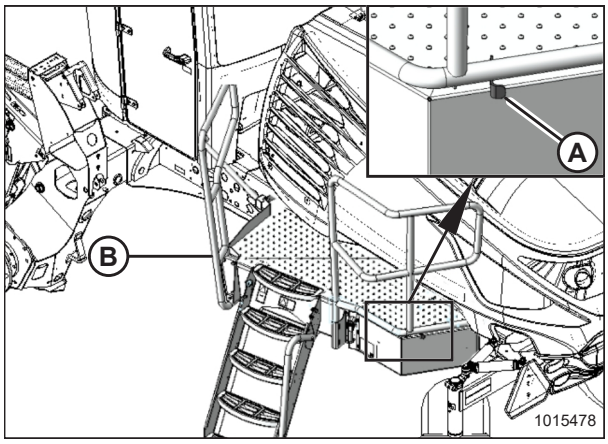


Figure 5.135: Left Platform

26. Pull platform (A) toward the cab until it stops and the latch is engaged.

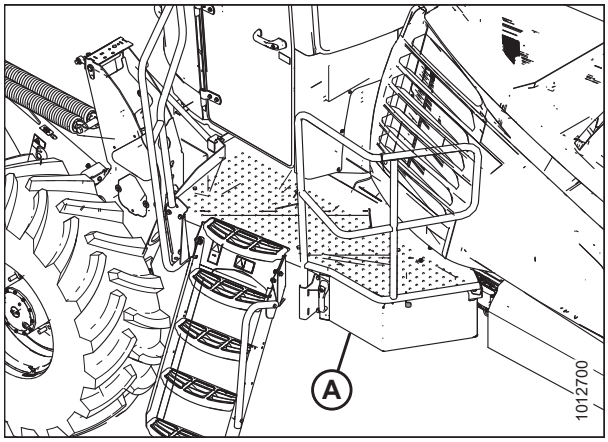


Figure 5.136: Left Platform

27. Disconnect hose management system (A) from the windrower by pulling latch lever (B) to open the latch. Keep the latch open and move hose management system (A) away from the header with handle (C).

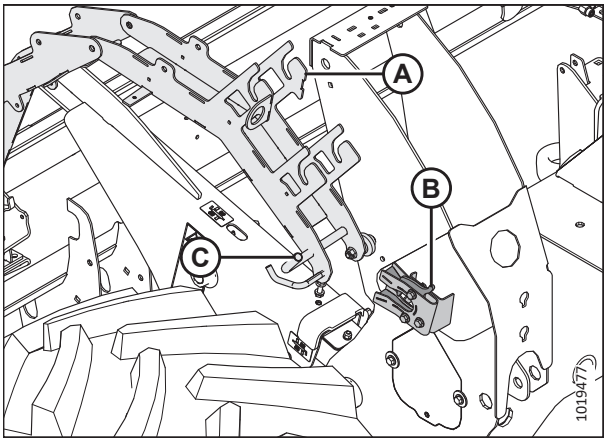


Figure 5.137: Hydraulic Hose Management System

28. Pivot hose management system (B) forward with handle (A), and engage hook (D) into latch (C) on the header.
29. Back the windrower away from the header.
30. Shut down the engine, and remove the key from the ignition.

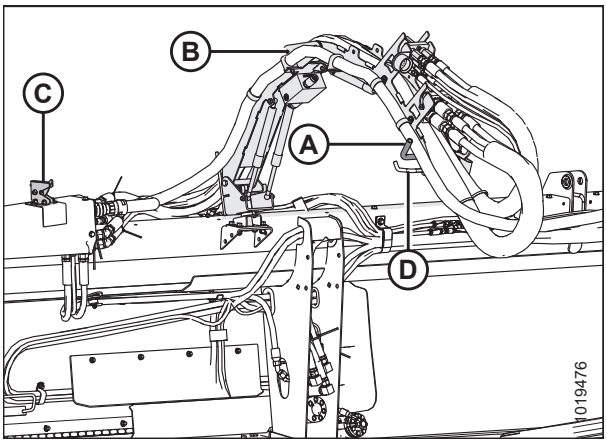


Figure 5.138: Hydraulic Hose Management System

31. Reinstall pin (A) into the header leg, and secure it with hairpin (B). Repeat this step on the opposite header leg.

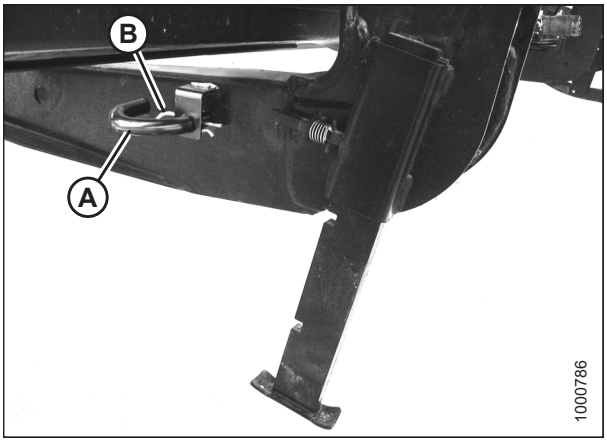


Figure 5.139: Header Stand

5.4 R2 Series Rotary Disc Header

This section details the procedures necessary to physically attach or detach an R2 Series Rotary Disc Header to a windrower and to complete its hydraulic and electrical connections.

5.4.1 Attaching Forming Shield to the Windrower

The forming shield determines the width and the placement of the windrow.

DANGER

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

1. Shut down the engine, and remove the key from the ignition.
2. If not already installed, retrieve forming shield support brackets (A) from the toolbox, and attach the brackets as follows:
   a. Position support bracket (A) as shown.
   b. Install hardware (B) to secure the support to the windrower leg.
3. Repeat the previous step on the opposite windrower leg.

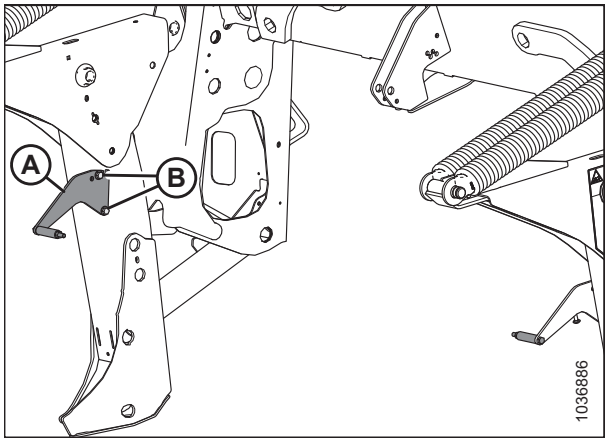


Figure 5.140: Forming Shield bracket – R2 Series

4. Position forming shield (A) in between windrower legs as shown.
5. Remove lynch pin (B) and clevis pin (C).
6. Mount forming shield (A) to bolt and spacer (D).

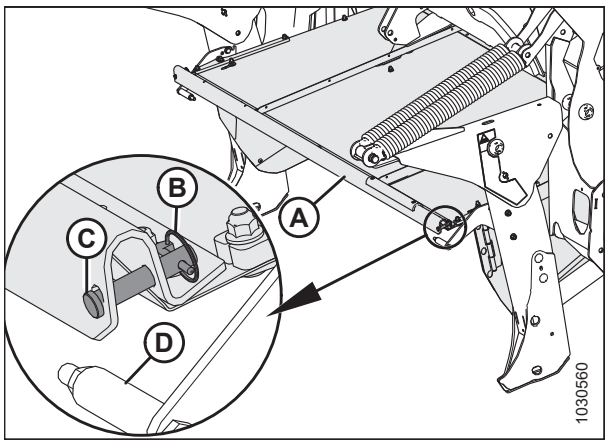


Figure 5.141: Forming Shield and Windrower

7. Secure forming shield (C) to bolt and spacer (D) using clevis pin (B) and lynch pin (A).

8. Repeat Step *5, page 160* to Step *7, page 161* on the opposite side of the forming shield.

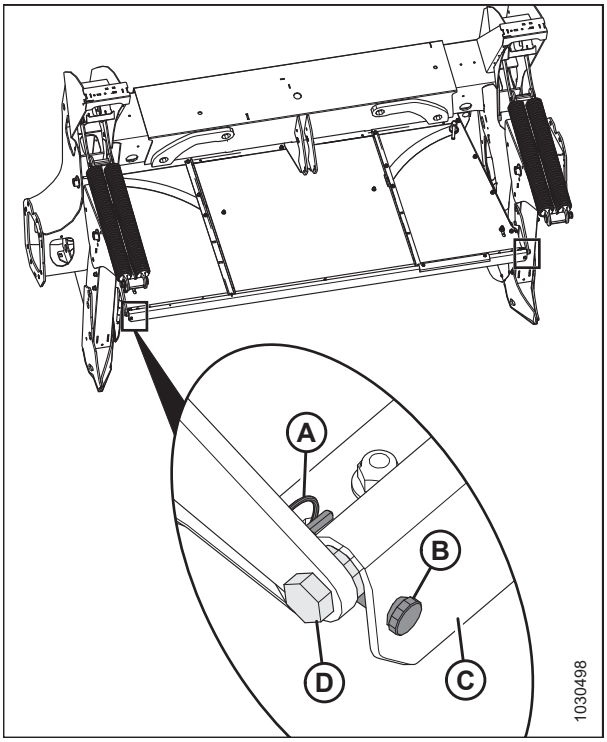


Figure 5.142: Forming Shield Secured to Front of Windrower Legs

9. Remove lynch pin (A) and washer (B) from straight pin (C).

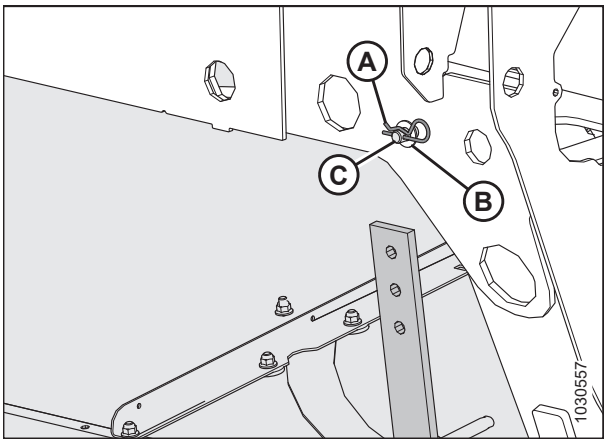


Figure 5.143: Lynch Pin and Washer at Rear of Windrower Leg

10. Attach rubber strap (D) to straight pin (C) at the rear of the windrower leg. Secure it with washer (B) and lynch pin (A).

11. Repeat Step *9, page 161* to Step *10, page 162* at the opposite side of the forming shield.

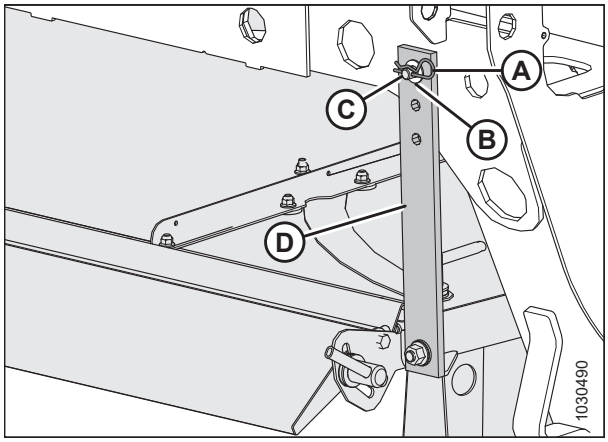


Figure 5.144: Rubber Strap Securing Forming Shield onto Windrower Leg

5.4.2 Attaching R2 Series Rotary Disc Header

The windrower's header supports and center-link will need to be connected to the rotary disc header. The windrower may be equipped with an optional self-aligning hydraulic center-link, which allows control over the vertical position of the center-link from the cab.

DANGER

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

DANGER

Ensure that all bystanders have cleared the area.

1. Shut down the engine, and remove the key from the ignition.

2. Remove hairpin (A) from clevis pin (B), and remove the pin from header support (C) on both sides of the header.

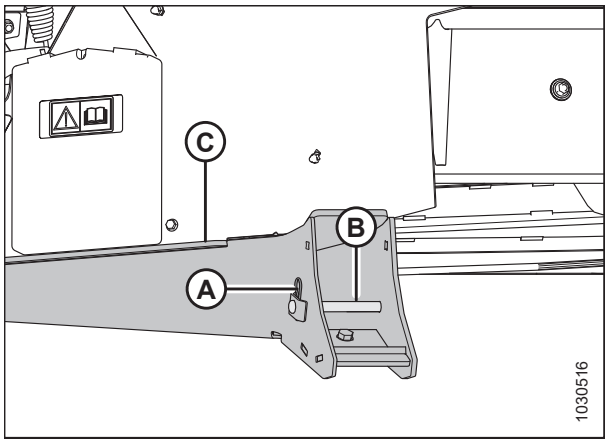


Figure 5.145: Header Support

3. Lift header support (A), and place four 35 x 89 mm (2 x 4 in.) blocks (B) under both of the header supports. Ensure that the supports bottom edge (C) is parallel with the ground.

   IMPORTANT:

   Do **NOT** stack blocks (B) crosswise; doing so can make the header unstable when you are attempting to connect the header and the windrower. Stack blocks (B) so that they are aligned with each other.

4. Start the engine.

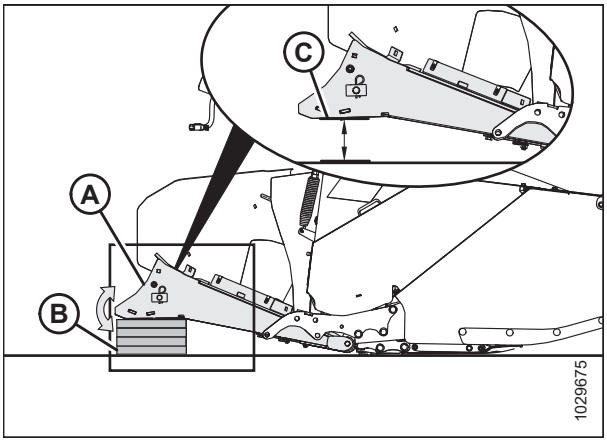


Figure 5.146: Header Support

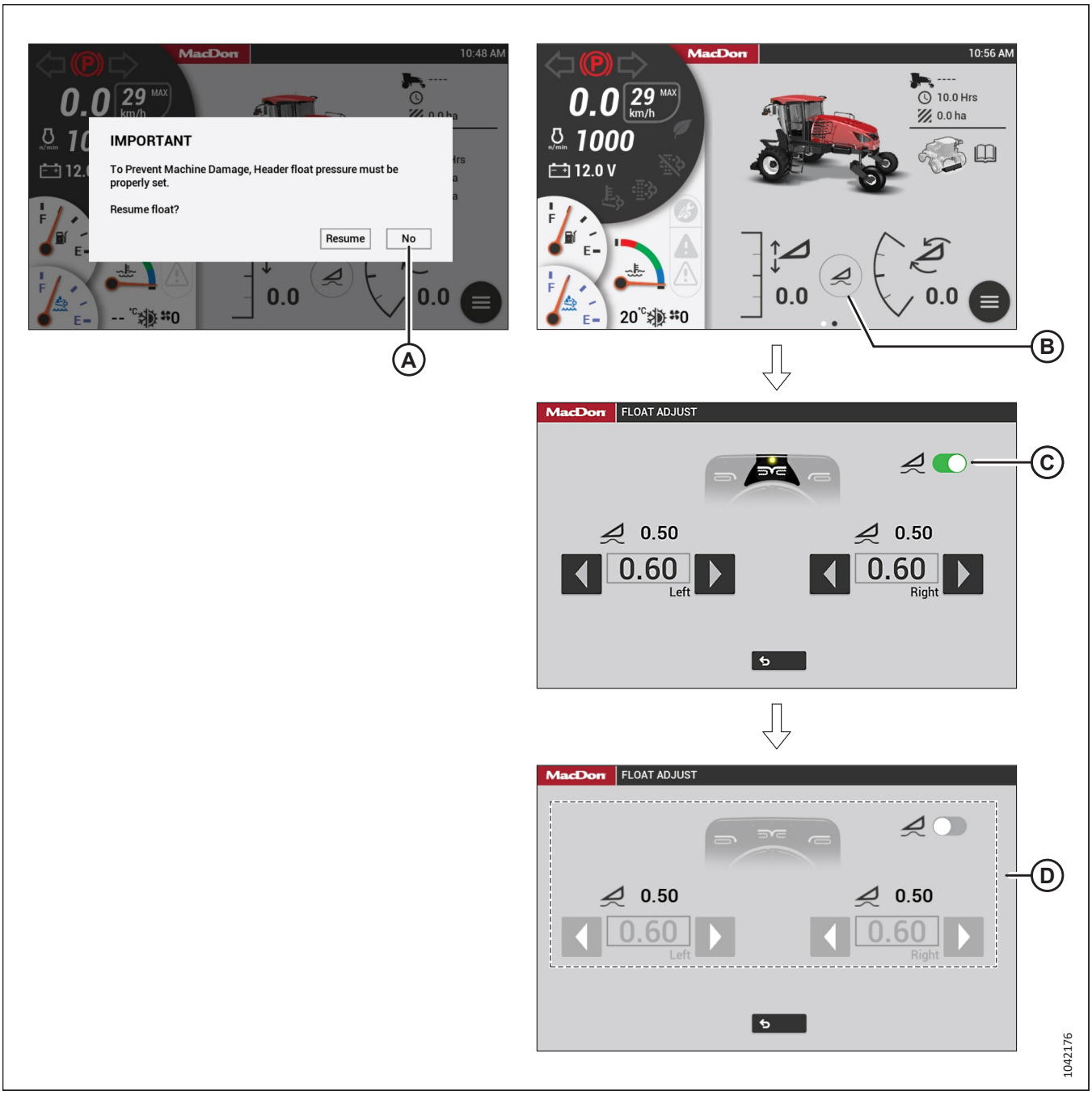


Figure 5.147: Float Removal

5. Remove the float as follows:

   - If the HarvestTouch™ Display shows the message “Resume Float?”, then select NO (A).
   - If the HarvestTouch™ Display does **NOT** show the message, then select FLOAT ADJUST (B), select switch (C), and confirm the switch and float settings (D) are grayed out.

   IMPORTANT:

   Removing the float will release the tension in the float springs. This will prevent damage to the header lift linkages when lowering the legs without a header or weight box attached to the windrower.

6. Prepare the center-link as follows:

   - **If not equipped with the Center-Link Alignment kit:** Relocate pin (A) in the frame linkage as needed to raise center-link (B) until the hook is above the attachment pin on the header.
   - **If equipped with the Center-Link Alignment kit:** Press REEL UP switch (D) on the ground speed lever (GSL) to raise the center-link until the hook is above the attachment pin on the header.

   IMPORTANT:

   Ensure that the center-link is positioned high enough that it does not contact the header as the windrower approaches the header.

7. Press HEADER DOWN switch (C) on the GSL until the windrower lift linkages are fully lowered.

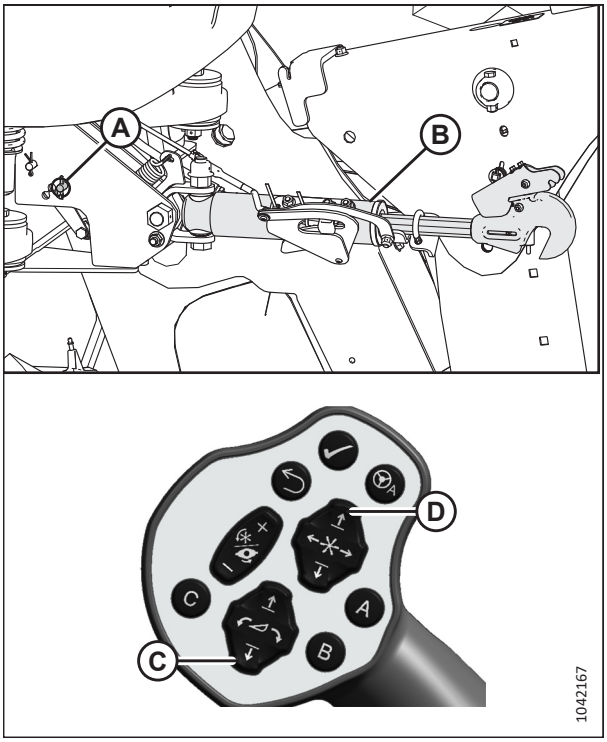


Figure 5.148: Center-Link without Self-Alignment

8. Drive the windrower slowly forward until feet (A) enter supports (B). Continue to drive slowly forward until the feet engage the supports and the header nudges forward.

9. Ensure that feet (A) are properly engaged in supports (B).

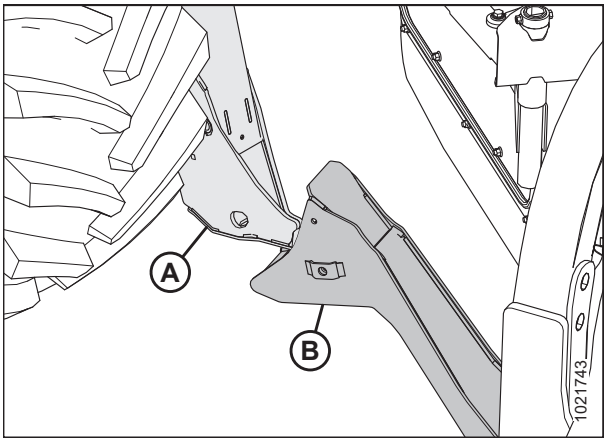


Figure 5.149: Header Support

10. **Windrowers equipped with the Center-Link Alignment kit:**

    a. Press HEADER TILT UP (A) or HEADER TILT DOWN (B) switches on the GSL to extend or retract the center-link cylinder until hook (C) is aligned with the header attachment pin.

    b. Lower the center-link onto the header with REEL DOWN (D) switch on the GSL until the center-link locks into position and hook release (E) is down.

    IMPORTANT:

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

    c. Check that the center-link is locked onto the header by pressing REEL UP (F) switch on the GSL.

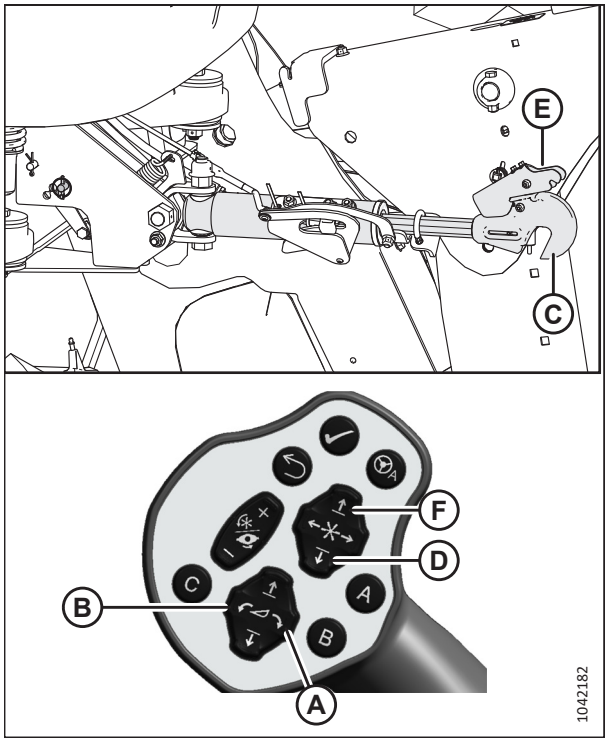


Figure 5.150: Hydraulic Center-Link

11. **Windrowers without the Center-Link Alignment kit:**

    a. Press HEADER TILT UP (A) or HEADER TILT DOWN (B) switches on the GSL to extend or retract the center-link cylinder until the hook is aligned with the header attachment pin.

    b. Shut down the engine, and remove the key from the ignition.

    c. Push down on rod end (C) of the link cylinder until hook (D) engages and locks onto the header pin.

    IMPORTANT:

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

    d. Check that the center-link is locked onto the header by pulling upward on rod end (C) of the cylinder.

    e. Start the engine.

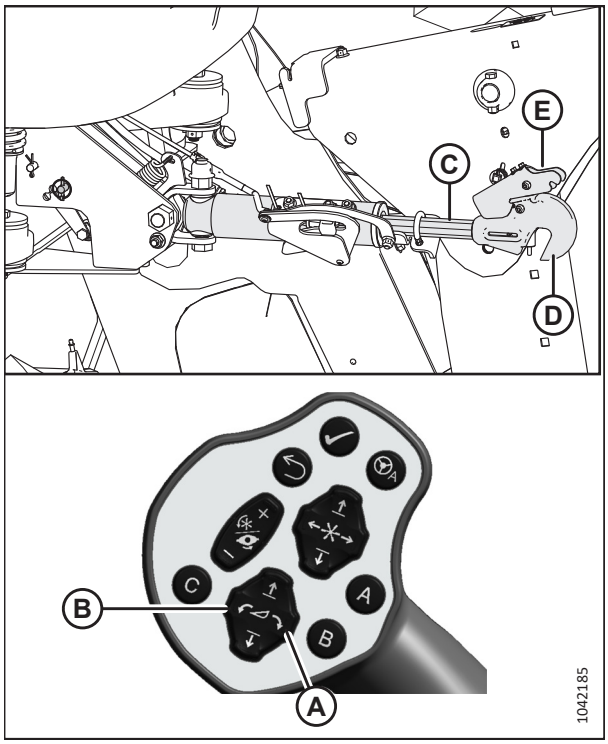


Figure 5.151: Hydraulic Center-Link

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

    NOTE:

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

    a. Press and hold HEADER UP switch (A) until both cylinders stop moving.

    b. Continue to hold the switch for 3–4 seconds. The cylinders are now phased.

13. Shut down the engine, and remove the key from the ignition.

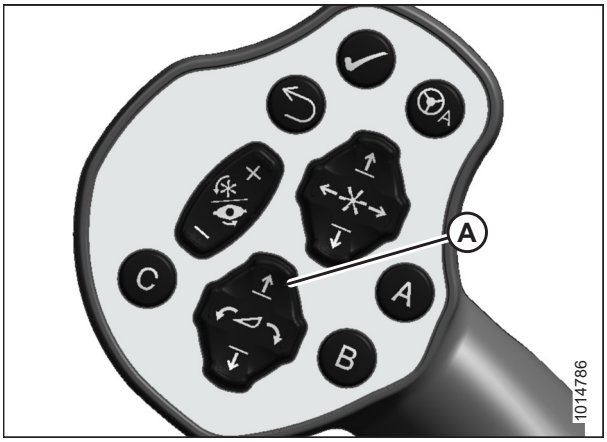


Figure 5.152: Ground Speed Lever (GSL)

14. Engage the safety props on both lift cylinders as follows:

    a. Pull lever (A) toward you to release it, then rotate it toward the header to lower the safety prop onto the cylinder.

    b. Repeat the previous step for the opposite lift cylinder.

    IMPORTANT:

    Ensure that the safety props engage over the cylinder piston rods. If the safety prop does **NOT** engage properly, raise the header until the safety prop fits over the rod.

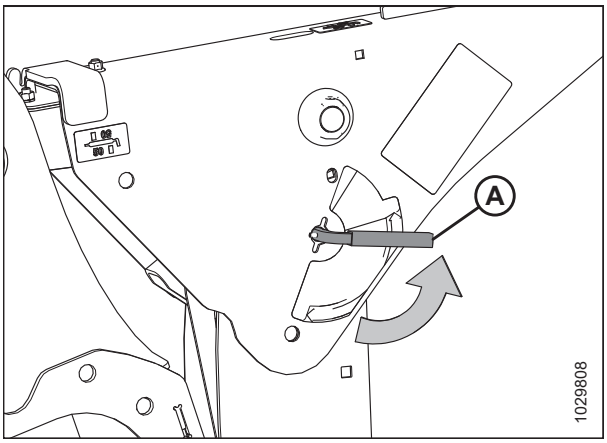


Figure 5.153: Safety Prop Lever

15. Install clevis pin (A) through the support and the windrower lift arm. Secure the clevis pin with hairpin (B). Repeat this step on the opposite side of the header.

    IMPORTANT:

    Ensure that clevis pin (A) is fully inserted, and that the hairpin is installed behind the bracket as shown.

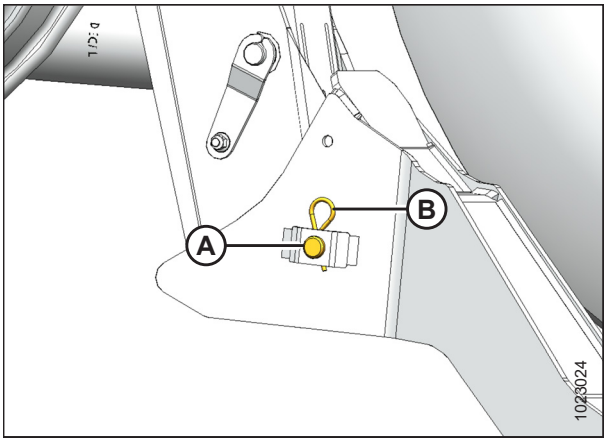


Figure 5.154: Header Support

16. Disengage the safety props on both lift cylinders as follows:

    a. Turn lever (A) away from the header to raise the safety prop until the lever locks into the vertical position.

    b. Repeat the previous step for the opposite cylinder.

    NOTE:

    If the safety prop will **NOT** disengage, raise the header to release the prop.

17. Start the engine.

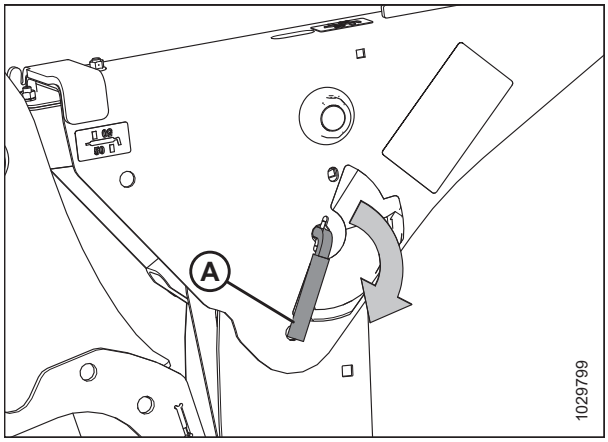


Figure 5.155: Safety Prop Lever

18. Press HEADER DOWN switch (A) on the GSL to fully lower the header.

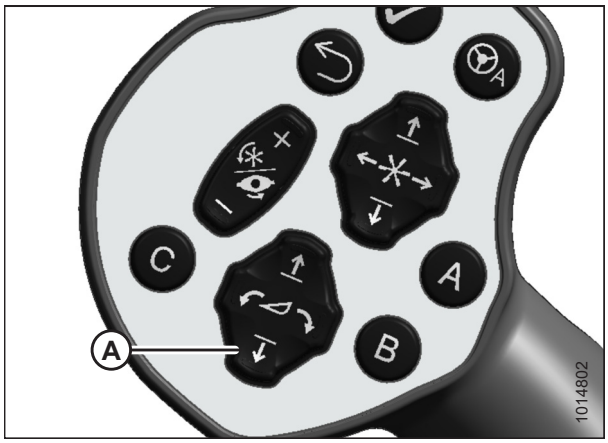


Figure 5.156: Ground Speed Lever (GSL)

19. Select FLOAT ADJUST (A).

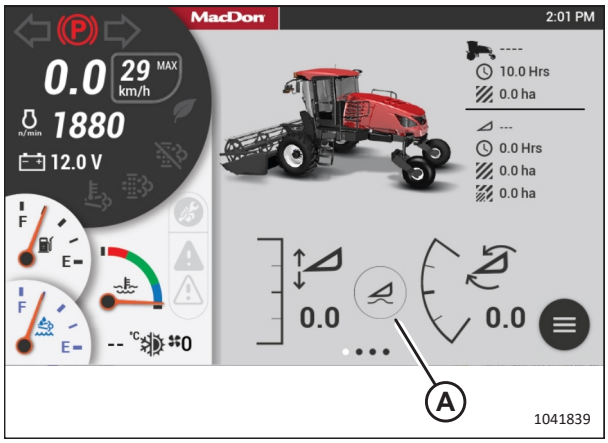


Figure 5.157: HarvestTouch™ Display

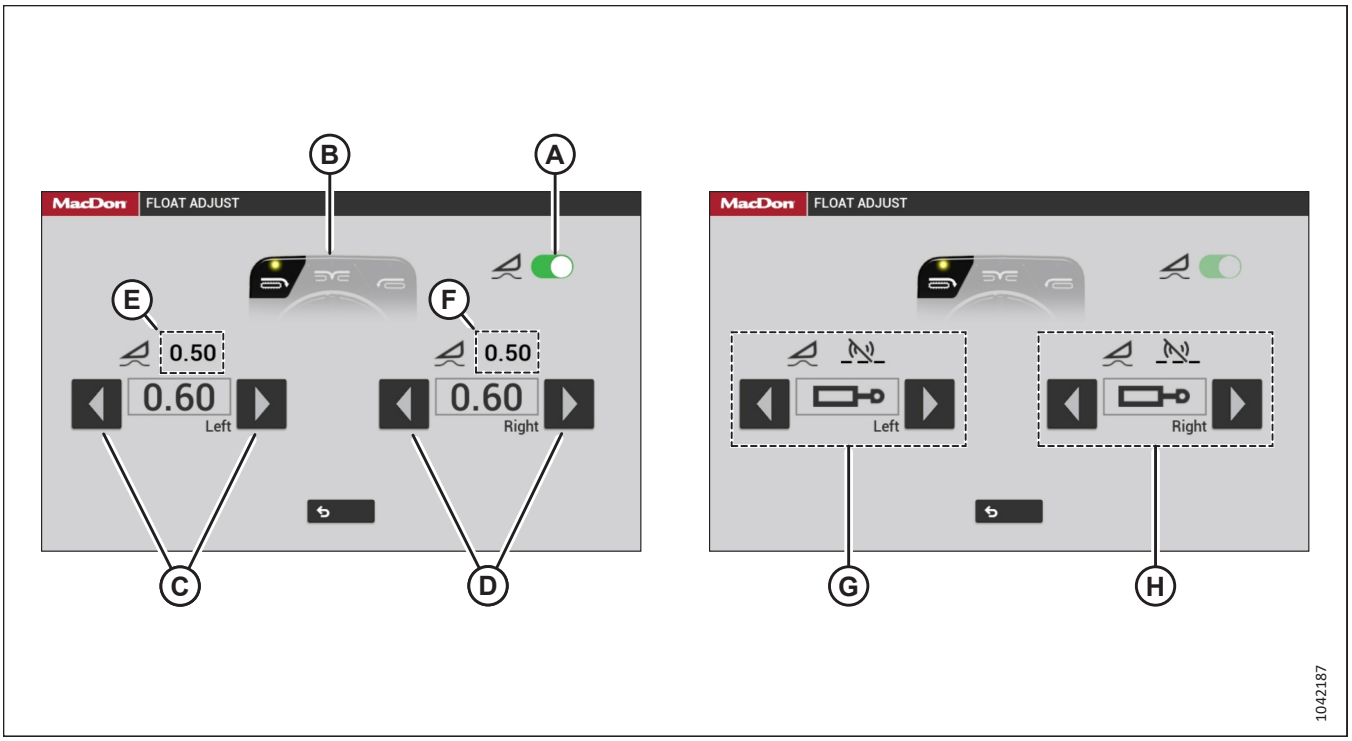


Figure 5.158: Float Adjustment

20. Select switch (A), so that it turns green, to activate the float.
21. If the float is not already set up, set the float as follows:
    a. The float preset, which is selected using the operator's console, is displayed at location (B). Confirm if the desired preset is selected.
    b. Select arrows (C) to set the target float for the left side of the header. Value (E) is the actual amount of float (measured by the left float sensor).
    c. Select arrows (D) to set the target float for the right side of the header. Value (F) is the actual amount of float (measured by the left float sensor).

    NOTE:

    Adjusting the float by increments of 1.0 (out of 10) changes the header weight at the cutterbar by approximately 91 kg (200 lb.). Adjust the float in increments of 0.05 to fine-tune the header's performance.

    NOTE:

    Symbols (G) and (H) mean the left and right float sensors are not working. You can still manually set the float, but you should first check if the sensors were disabled through the HarvestTouch™ Display (refer to MENU > SETUP > HEADER > SENSORS), or if another problem is causing the sensors to fail.
22. Shut down the engine, and remove the key from the ignition.
23. Check the float as follows:
    a. Grasp one end of the header and lift it. The lifting force used should be 426–471 N (95–105 lbf).
    b. Repeat this step on the other side of the header.

24. Proceed as follows:

    - If you are attaching the header to an M2170 Windrower: *5.4.3 Connecting R2 Series Rotary Disc Header Hydraulic and Electrical Components – M2170 Windrower, page 170*
    - If you are attaching the header to an M2260 Windrower: *5.4.4 Connecting R2 Series Rotary Disc Header Hydraulic and Electrical Systems – M2260 Windrower, page 175*

5.4.3 Connecting R2 Series Rotary Disc Header Hydraulic and Electrical Components – M2170 Windrower

Connecting the header hydraulic and electrical systems to the windrower involves attaching the header's knife drive, pressure, return, case drain, and electrical connectors to the windrower's receptacles.

DANGER

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

CAUTION

Do NOT stand on an unlocked platform. It is unstable and may cause you to fall.

IMPORTANT:

To prevent contamination of the hydraulic system, use a clean rag to remove dirt and moisture from all (fixed and movable) hydraulic couplers.

1. Shut down the engine, and remove the key from the ignition.
2. Approach platform (A) on the left side of the windrower. Ensure that the cab door is closed.
3. Push latch (B) and pull platform (A) toward the walking beam until it stops and the latch engages.

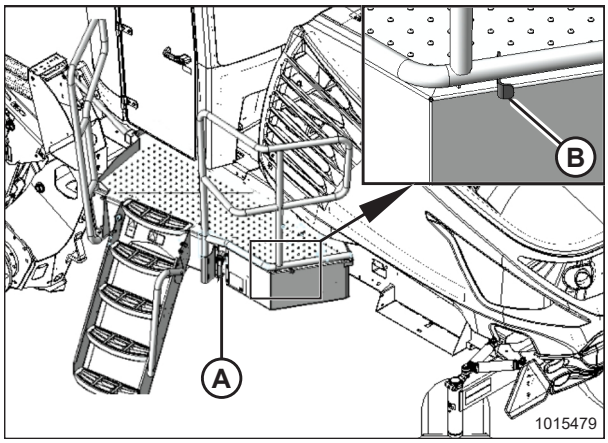


Figure 5.159: Left Platform

4. Retrieve hydraulic hoses (A) from the header and route the hose bundle under the windrower frame.

   NOTE:

   Applying anti-seize compound to the hose holder pin will make future removal easier.

5. Insert pin (B) into hole (C) in the windrower frame.

   IMPORTANT:

   Route the hydraulic hoses as straight as possible, avoiding wear points that could damage the hoses. To prevent abrasion damage, the hoses should have enough slack to pass by the multicoupler bracket without contacting it. To adjust the slack in the hoses, loosen the clamps below pin (B), adjust the hoses, then retighten the hose holder.

6. If using hard-plumbed fittings (A), proceed to Step *7, page 172*. If using quick couplers (B), proceed to Step *8, page 172*.

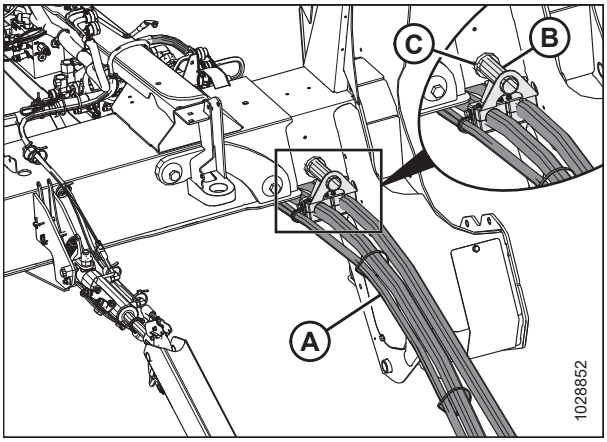


Figure 5.160: Hose Support Attachment

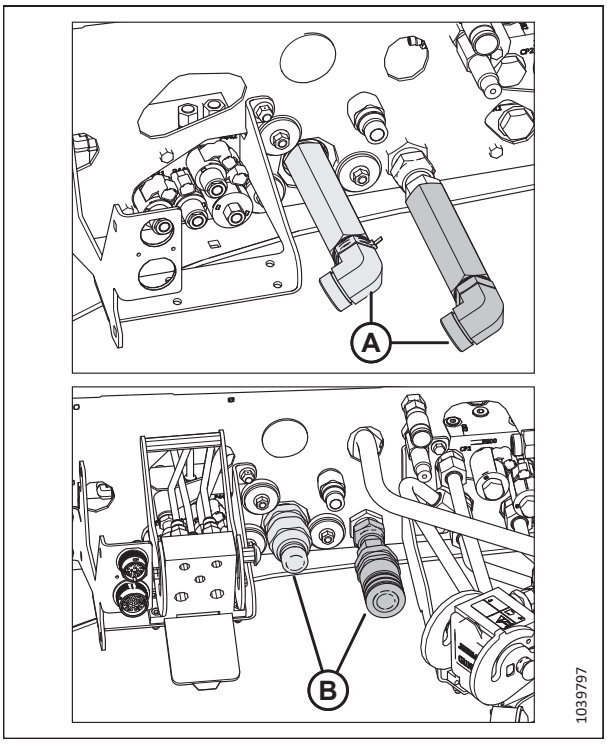


Figure 5.161: Hard-Plumbed Fittings Compared to Quick Couplers

7. **To connect hard-plumbed fittings,** connect the hydraulic hoses to the windrower as follows:

   a. Connect disc pressure hose (A) (fitted with red cable tie [B]) to hard plumb fitting (C) (fitted with a red cable tie) and torque the connection to 215 Nm (159 lbf·ft).

   b. Connect disc return hose (D) to hard plumb fitting (E) and torque the connection to 215 Nm (159 lbf·ft).

   c. Connect case drain hose (F) to fitting (G).

   d. Proceed to Step *10, page 173*.

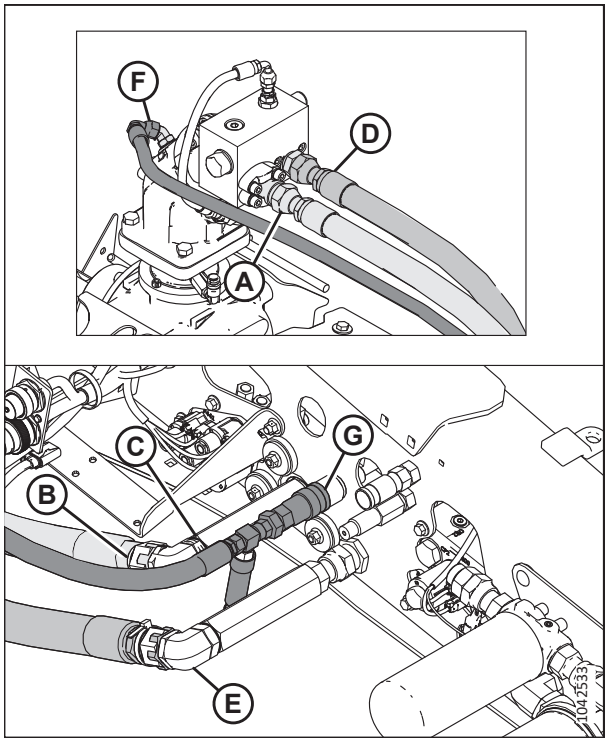


Figure 5.162: Hard-Plumbed Fittings

8. **Quick couplers:** If switching from an auger/draper header to a rotary header, disconnect hose (A) from knife pressure receptacle (C) on the frame, and move it to storage location (B).

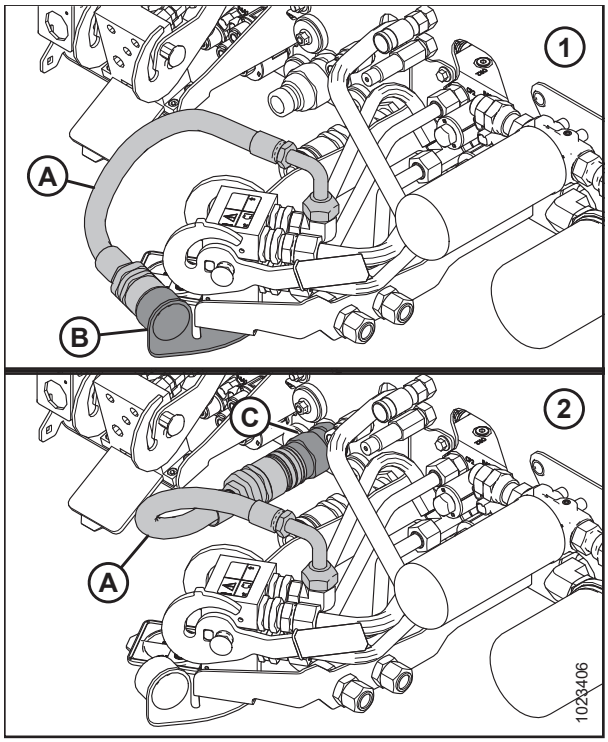


Figure 5.163: Knife Pressure Hose Positions

1 - Knife Pressure Hose in Storage Position – Rotary Configuration
2 - Hose to Knife Pressure Receptacle – Auger/Draper Configuration

9. **To connect quick couplers,** connect the hydraulic hoses to a windrower with quick coupler fittings as follows:

   a. Connect disc pressure hose (A) to coupler (B). Torque the connection to 216 Nm (159 lbf·ft).

   b. Connect disc return hose (C) to coupler (D). Torque the connection to 216 Nm (159 lbf·ft).

   c. Connect case drain hose (E) to fitting (F), with the relief valve pointing towards the ground.

      NOTE:

      Loosen and tighten fitting (F) as needed to ensure that the relief valve is pointing down.

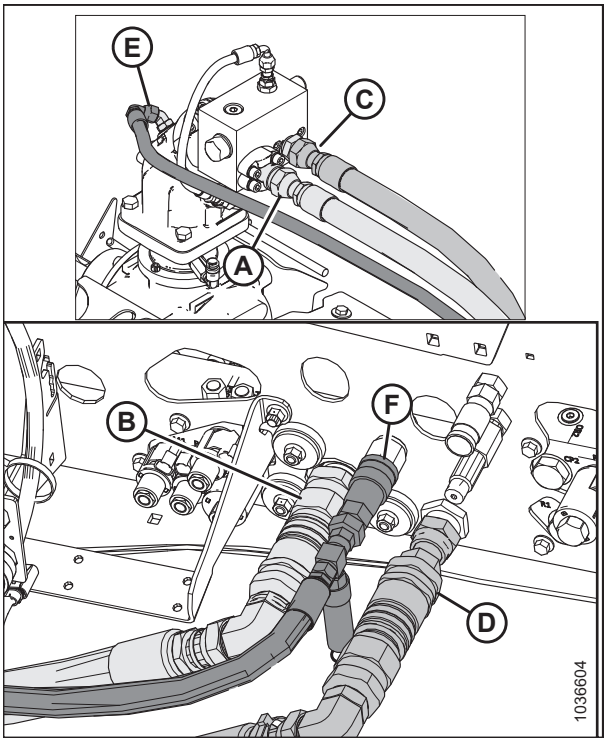


Figure 5.164: Quick Couplers

10. Free electrical harness (A) from adjustable strap (B).

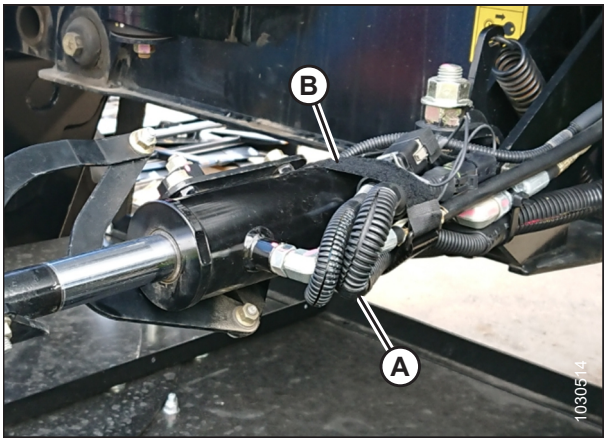


Figure 5.165: Electrical Harness Secured to Center-Link

11. Connect main header harness (A) to adapter harness (B).
12. **Headers equipped with electric baffle control kit:** connect electric baffle control harness (C) to adapter harness (D).

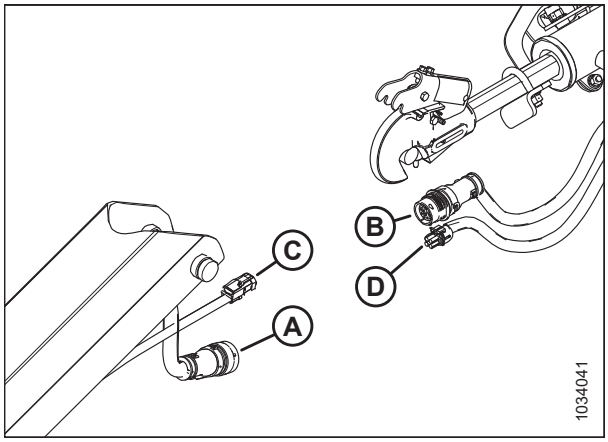


Figure 5.166: Electrical Harness Connection at Center-Link

13. Push latch (A) to unlock platform (B).

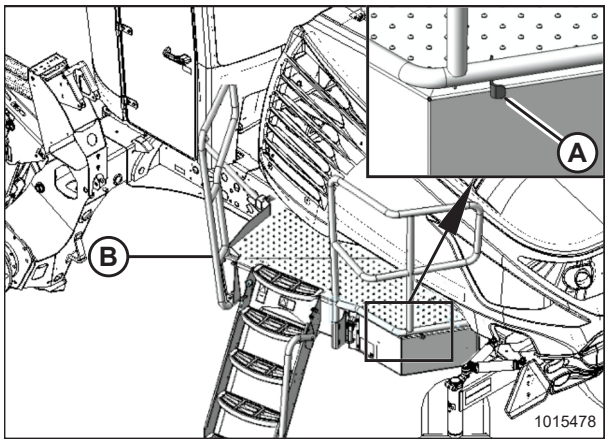


Figure 5.167: Left Platform

14. Pull platform (A) toward the cab until it stops and the latch is engaged.

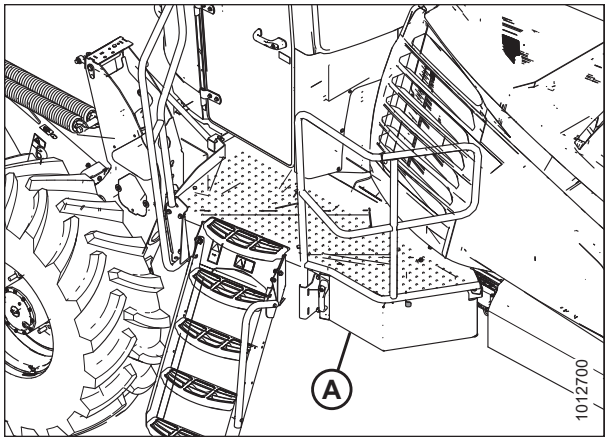


Figure 5.168: Left Platform

DANGER

Ensure that all bystanders have cleared the area.

15. Start the engine.
16. Extend center-link (A) fully. Ensure that there is some slack in harness (B).
17. Retract center-link (A) fully. Ensure that there is not an excessive amount of harness (B) hanging down.
18. Shut down the engine, and remove the key from the ignition.
19. Adjust harness (B) as needed.
20. Tighten all the cables along the harness.
21. If this is the first time the header is connected to the windrower, calibrate the header. For instructions, refer to *5.6 Calibrating Header on HarvestTouch™ Display, page 228*.

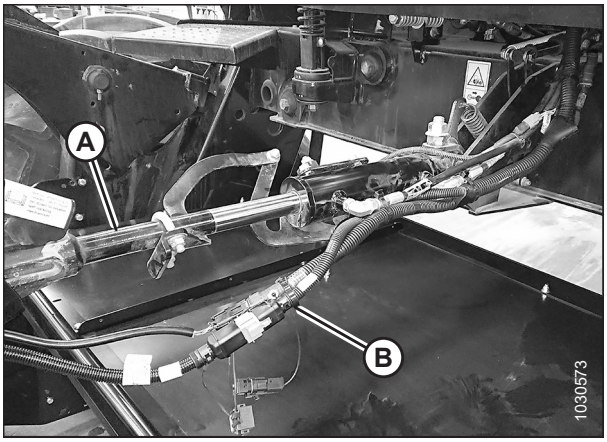


Figure 5.169: Electrical Connection

5.4.4 Connecting R2 Series Rotary Disc Header Hydraulic and Electrical Systems – M2260 Windrower

The header's hydraulic and electrical multicoupler will need to be connected to the windrower.

Proceed to the relevant procedure:

Auger/rotary disc/draper-ready configuration (A): refer to *Auger/Rotary Disc/Draper-Ready Configuration – Quick Coupler Connections, page 176* for instructions.

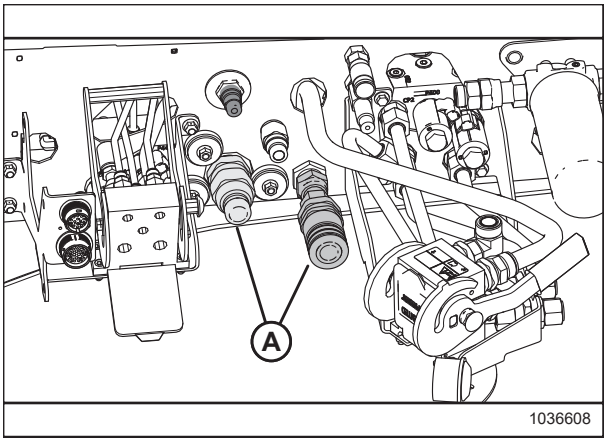


Figure 5.170: Header Hydraulics Configurations – Auger/Rotary Disc/Draper-Ready

Rotary disc-only hard-plumbed configuration (A): refer to *Rotary Disc-Only Configuration – Hard-Plumbed Connections, page 181* for instructions.

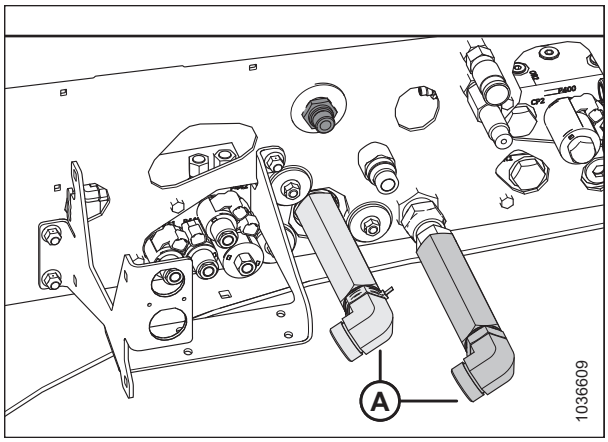


Figure 5.171: Header Hydraulics Configuration – Rotary Disc-Ready with Hard-Plumbed Connections

Rotary disc-ready configuration with quick couplers (A): refer to *Rotary Disc-Only Configuration – Quick Coupler Connections, page 185* for instructions.

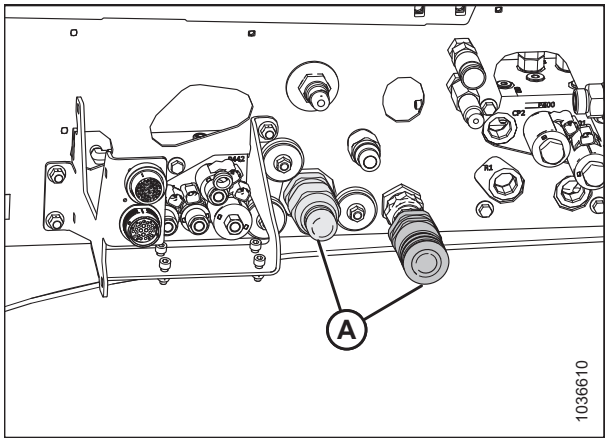


Figure 5.172: Header Hydraulics Configuration – Rotary Disc-Ready with Quick Couplers

Auger/Rotary Disc/Draper-Ready Configuration – Quick Coupler Connections

Windrowers with the auger/rotary disc/draper-ready configuration are equipped with the hydraulic connections needed to pair with an auger, rotary disc, or draper header.

DANGER

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

CAUTION

Do NOT stand on an unlocked platform. It is unstable and may cause you to fall.

IMPORTANT:

To prevent contamination of the hydraulic system, use a clean rag to remove dirt and moisture from all (fixed and movable) hydraulic couplers.

1. Shut down the engine, and remove the key from the ignition.

2. Approach platform (A) on the left side of the windrower. Ensure that the cab door is closed.
3. Push latch (B) and pull platform (A) toward the walking beam until it stops and the latch engages.

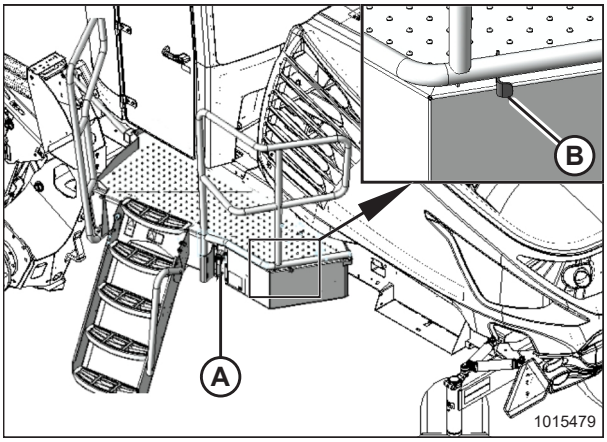


Figure 5.173: Left Platform

4. Retrieve hydraulic hoses (A) from the header and route the hose bundle under the windrower frame.

   NOTE:

   Applying anti-seize compound to the hose holder pin will make future removal easier.

5. Insert pin (B) into hole (C) in the windrower frame.

   IMPORTANT:

   Route the hydraulic hoses as straight as possible, avoiding wear points that could damage the hoses. To prevent abrasion damage, the hoses should have enough slack to pass by the multicoupler bracket without contacting it. To adjust the slack in the hoses, loosen the clamps below pin (B), adjust the hoses, then retighten the hose holder.

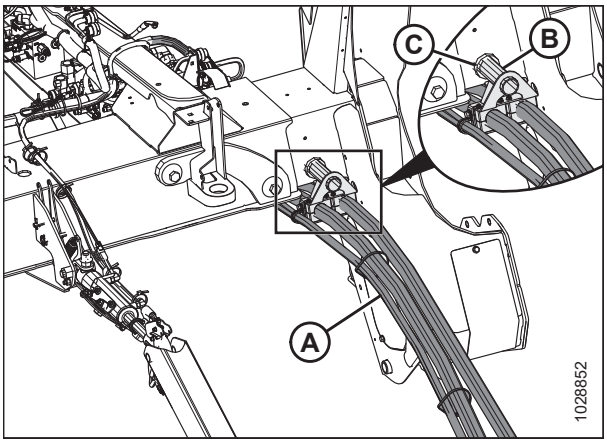


Figure 5.174: Hose Support Attachment

6. Ensure that hose (A) is disconnected from windrower receptacle (B) and placed in storage cup (C) on the multicoupler.

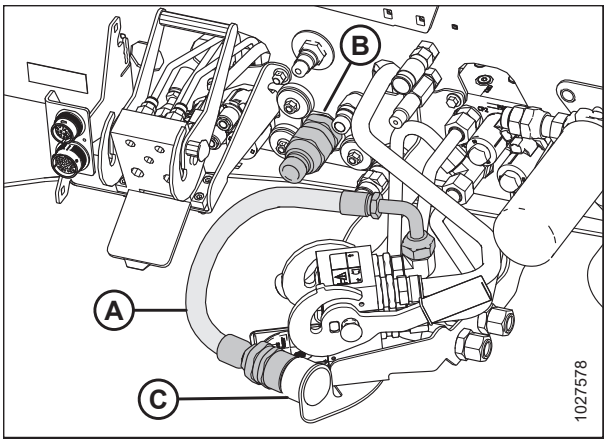


Figure 5.175: Couplers – Auger/Rotary Disc/Draper-Ready Configuration

7. Connect the hydraulic fittings to the hydraulic hoses as follows:

   NOTE:

   The two quick couplers and two elbow fittings are supplied in the Quick Coupler kit (B6277).

   a. Attach 90° elbow fitting (A) and 1 in. female coupler fitting (B) to disc pressure hose (C).

   b. Attach 90° elbow fitting (A) and 1 in. male coupler fitting (D) to disc return hose (E).

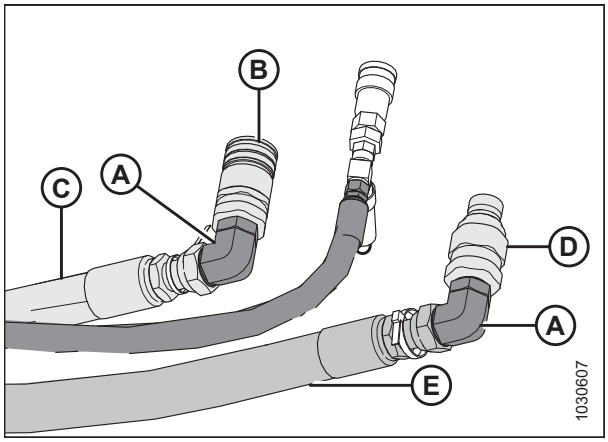


Figure 5.176: Header Hydraulic Fittings

8. Connect the hydraulic hoses to the windrower as follows:

   a. Connect disc pressure hose (A) to coupler (B).

   b. Connect disc return hose (C) to coupler (D).

   c. Connect case drain hose (E) to fitting (F) so that the relief valve points toward the ground.

   NOTE:

   Loosen and tighten fitting (F) as needed to ensure that the relief valve is pointing down.

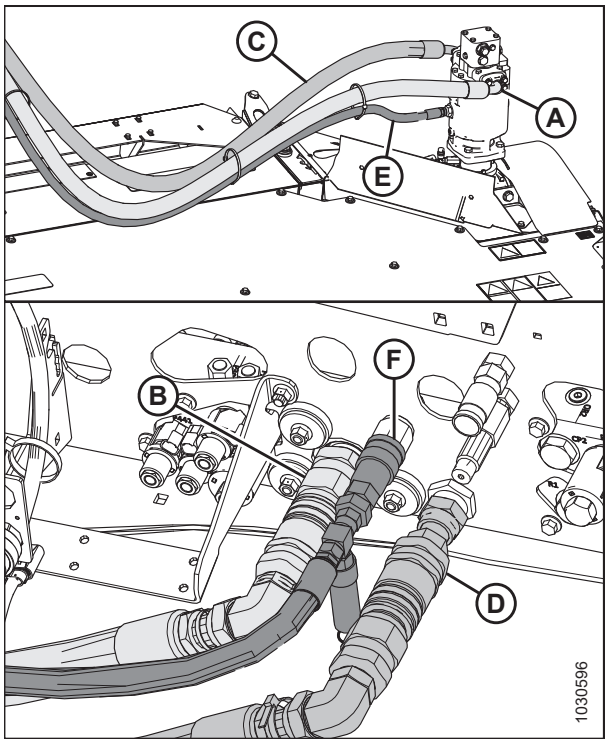


Figure 5.177: Hydraulics and Electrical – Auger/Rotary Disc/Draper-Ready Configuration

9. **For grass seed headers (GSS),** connect the additional four hoses supplied with the grass seed version of the header as follows:

   a. Connect the hose with the green cable tie with female quick coupler (A) to coupler (B) on the windrower frame.

   b. Connect the hose with the yellow cable tie with male quick coupler (C) to coupler (D) on the windrower frame.

   c. Remove the cap (not shown) from inboard bulkhead fitting (E). Connect hose (F) (red cable tie) to inboard bulkhead fitting (E).

      NOTE:

      The other end of hose (F) connects to the grass seed module's drum on the left side of the header.

   d. Remove the cap (not shown) from outboard bulkhead fitting (G). Connect hose (H) (blue cable tie) to outboard bulkhead fitting (G).

      NOTE:

      The other end of hose (H) connects to the grass seed module's drum on the right side of the header.

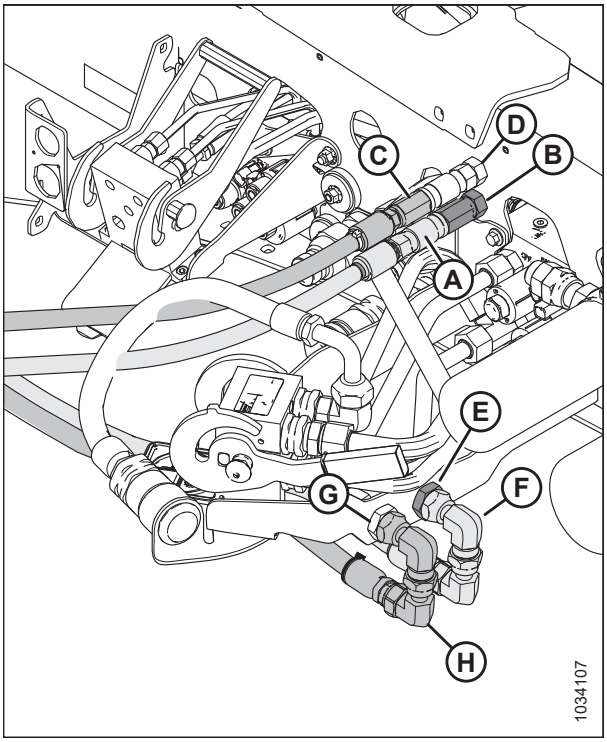


Figure 5.178: Grass Seed Hydraulic Connections – Auger/Rotary Disc/Draper-Ready Configuration

10. Free electrical harness (A) from adjustable strap (B).

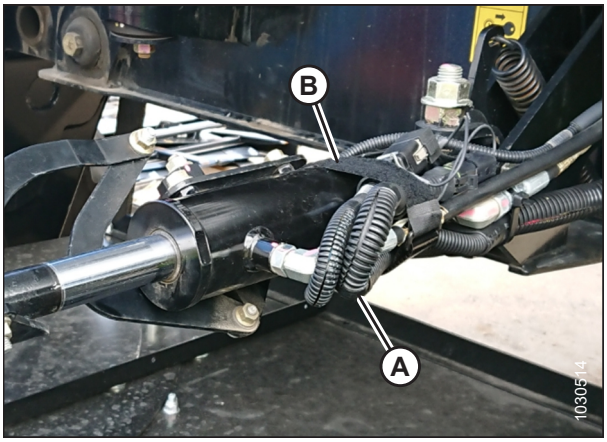


Figure 5.179: Electrical Harness Secured to Center-Link

11. Connect main header harness (A) to adapter harness (B).
12. **Headers equipped with electric baffle control kit:** connect electric baffle control harness (C) to adapter harness (D).
13. **Grass seed headers (GSS):** connect actuator harness (C) to adapter harness (D).

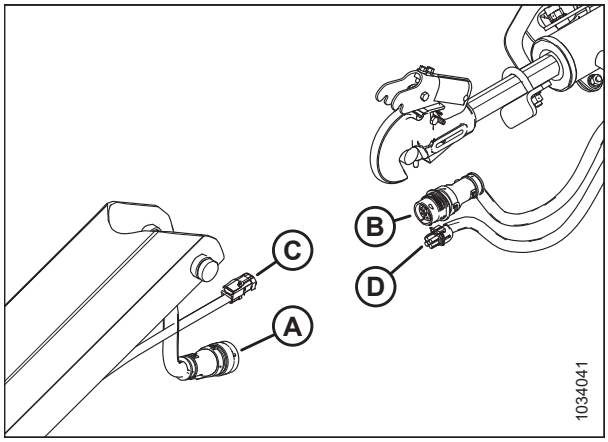


Figure 5.180: Electrical Harness Connection at Center-Link

14. Push latch (A) to unlock platform (B).

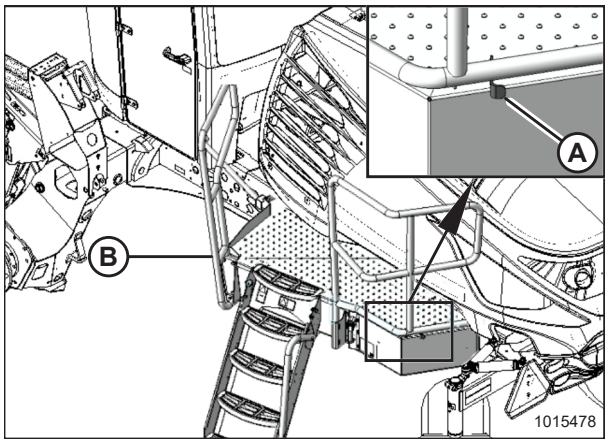


Figure 5.181: Left Platform

15. Pull platform (A) toward the cab until it stops and the latch is engaged.

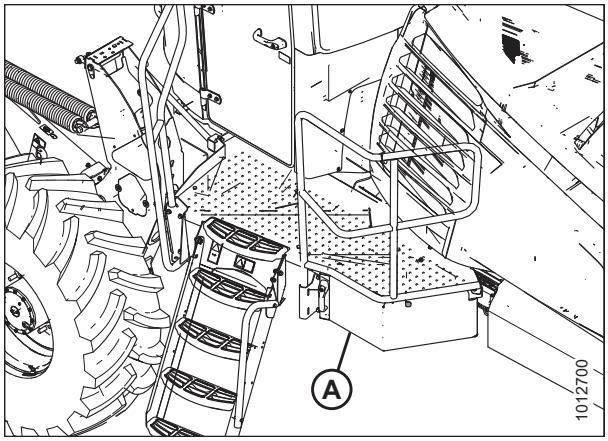


Figure 5.182: Left Platform

DANGER

Ensure that all bystanders have cleared the area.

16. Start the engine.
17. Extend center-link (A) fully. Ensure that there is some slack in harness (B).
18. Retract center-link (A) fully. Ensure that there is not an excessive amount of harness (B) hanging down.
19. Shut down the engine, and remove the key from the ignition.
20. Adjust harness (B) as needed.
21. Tighten all the cables along the harness.
22. If this is the first time the header is connected to the windrower, calibrate the header. For instructions, refer to *5.6 Calibrating Header on HarvestTouch™ Display, page 228*.

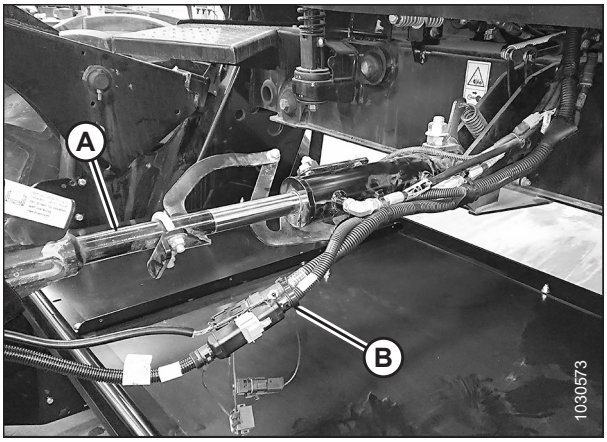


Figure 5.183: Electrical Connection

Rotary Disc-Only Configuration – Hard-Plumbed Connections

The rotary disc-only configuration allows the windrower to operate with compatible rotary disc headers. The hydraulic connections must be torqued correctly when using hard-plumbed fittings.

DANGER

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

CAUTION

Do NOT stand on an unlocked platform. It is unstable and may cause you to fall.

IMPORTANT:

To prevent contamination of the hydraulic system, use a clean rag to remove dirt and moisture from all (fixed and movable) hydraulic couplers.

1. Shut down the engine, and remove the key from the ignition.

2. Approach platform (A) on the left side of the windrower. Ensure that the cab door is closed.
3. Push latch (B) and pull platform (A) toward the walking beam until it stops and the latch engages.

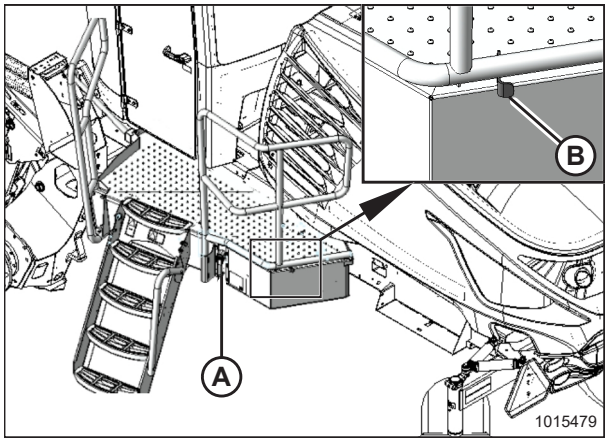


Figure 5.184: Left Platform

4. Retrieve hydraulic hoses (A) from the header and route the hose bundle under the windrower frame.

   NOTE:

   Applying anti-seize compound to the hose holder pin will make future removal easier.

5. Insert pin (B) into hole (C) in the windrower frame.

   IMPORTANT:

   Route the hydraulic hoses as straight as possible, avoiding wear points that could damage the hoses. To prevent abrasion damage, the hoses should have enough slack to pass by the multicoupler bracket without contacting it. To adjust the slack in the hoses, loosen the clamps below pin (B), adjust the hoses, then retighten the hose holder.

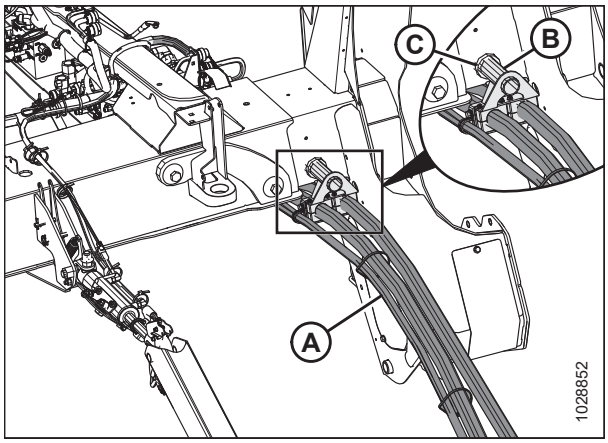


Figure 5.185: Hose Support Attachment

6. Connect the hydraulic hoses to the windrower as follows:

   a. Connect disc pressure hose (A) (fitted with red cable tie [B]) to hard plumb fitting (C) (fitted with a red cable tie) and torque the connection to 215 Nm (159 lbf·ft).

   b. Connect disc return hose (D) to hard plumb fitting (E) and torque the connection to 215 Nm (159 lbf·ft).

   c. Connect case drain hose (F) to fitting (G).

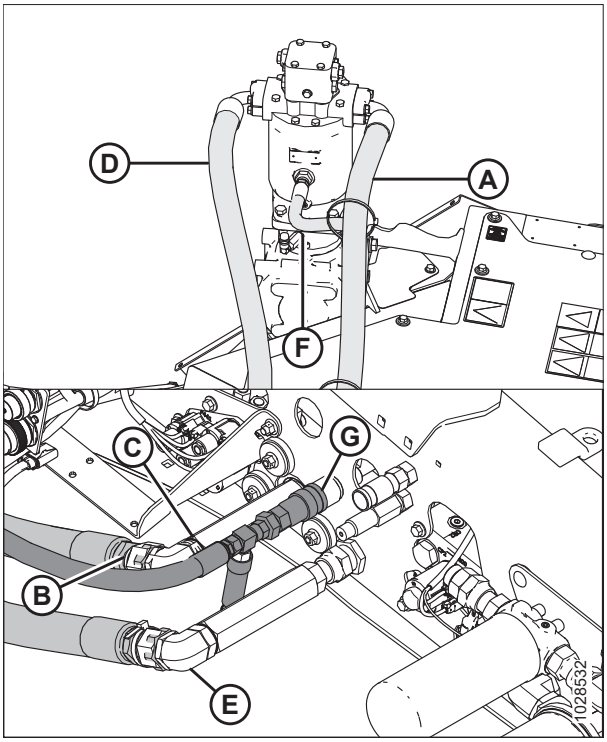


Figure 5.186: Hard-Plumbed Connections on R216 Rotary Disc Header-Ready Windrower

7. **Grass seed headers (GSS):** connect the additional four hoses supplied with the grass seed version of the header as follows:

   a. Install 45° fitting (A) in port R1. Connect hose (C) (blue cable tie) to fitting (A).

      NOTE:

      The other end of hose (C) connects to the grass seed module's drum on the right side of the header.

   b. Install 45° fitting (B) in port CP2. Connect hose (D) (red cable tie) to fitting (B).

      NOTE:

      The other end of hose (D) connects to the grass seed module's drum on the left side of the header.

   c. Connect hose (green cable tie) with female quick coupler (E) to coupler (F) as shown.

   d. Connect hose (yellow cable tie) with male quick coupler (G) to coupler (H) as shown.

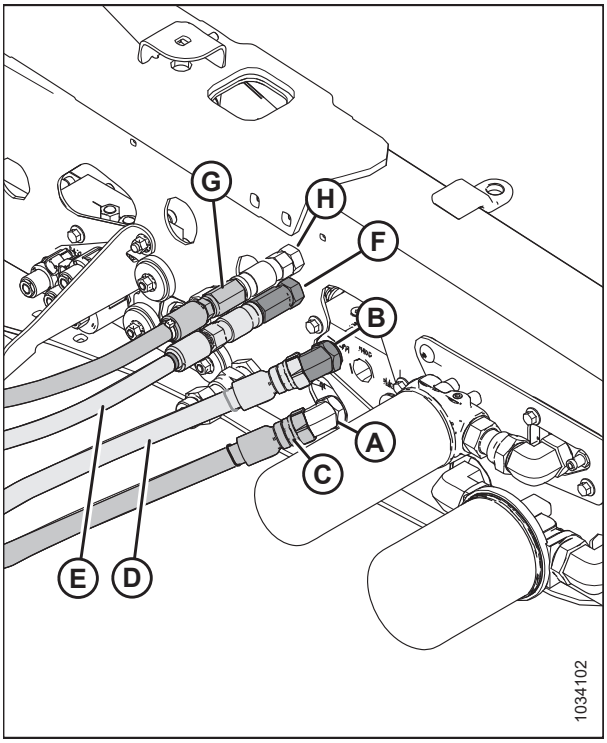


Figure 5.187: Grass Seed Hydraulic Connections – Rotary Disc Configuration

8. Free electrical harness (A) from adjustable strap (B).

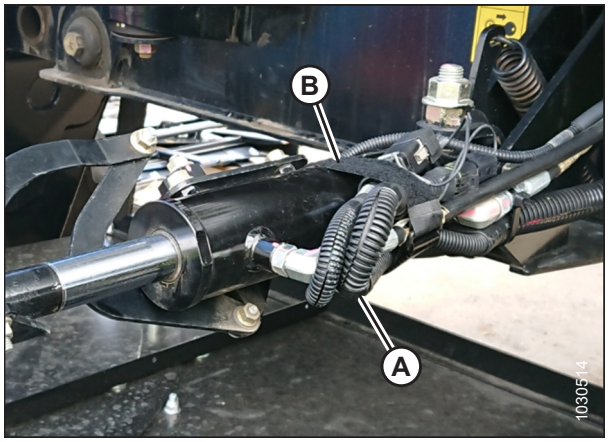


Figure 5.188: Electrical Harness Secured to Center-Link

9. Connect main header harness (A) to adapter harness (B).
10. **Headers equipped with electric baffle control kit:** connect electric baffle control harness (C) to adapter harness (D).
11. **Grass seed headers (GSS):** connect actuator harness (C) to adapter harness (D).

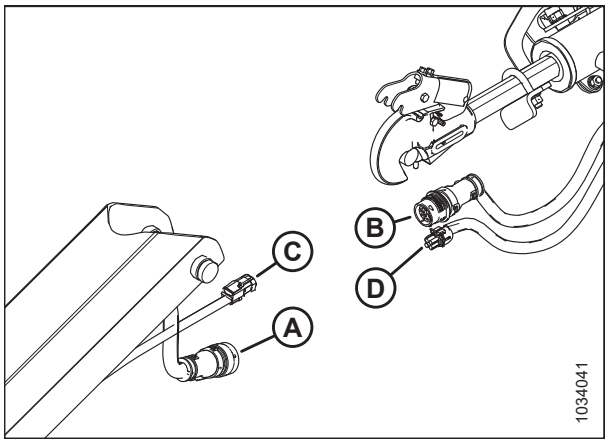


Figure 5.189: Electrical Harness Connection at Center-Link

12. Push latch (A) to unlock platform (B).

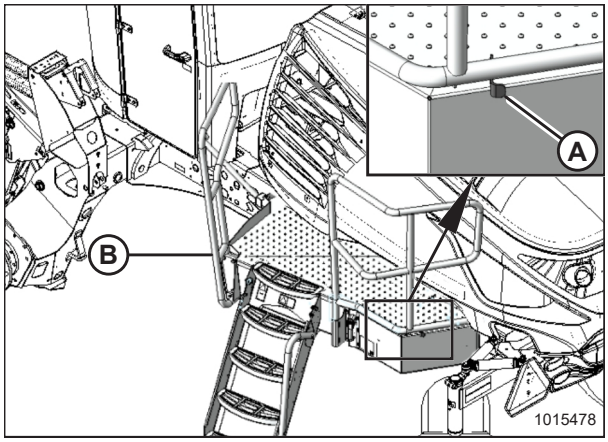


Figure 5.190: Left Platform

13. Pull platform (A) toward the cab until it stops and the latch is engaged.

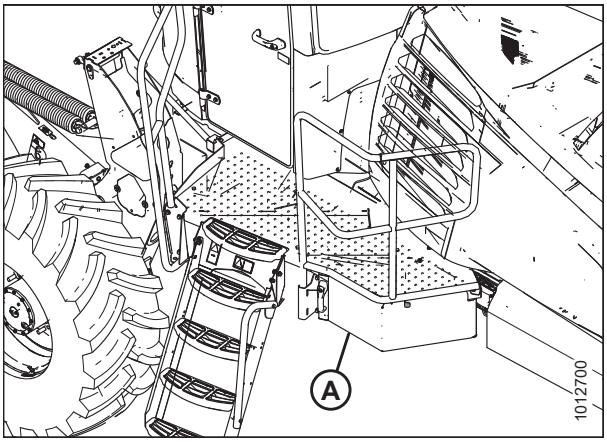


Figure 5.191: Left Platform

DANGER

Ensure that all bystanders have cleared the area.

14. Start the engine.
15. Extend center-link (A) fully. Ensure that there is some slack in harness (B).
16. Retract center-link (A) fully. Ensure that there is not an excessive amount of harness (B) hanging down.
17. Shut down the engine, and remove the key from the ignition.
18. Adjust harness (B) as needed.
19. Tighten all the cables along the harness.
20. If this is the first time the header is connected to the windrower, calibrate the header. For instructions, refer to *5.6 Calibrating Header on HarvestTouch™ Display, page 228*.

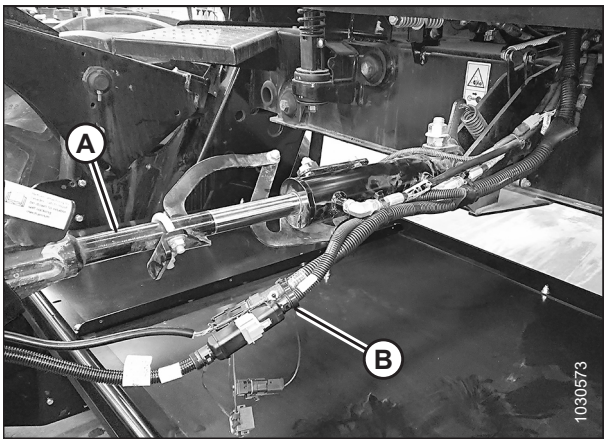


Figure 5.192: Electrical Connection

Rotary Disc-Only Configuration – Quick Coupler Connections

The rotary disc-only configuration allows the windrower to operate with compatible rotary disc headers. Attaching the header's hydraulic connections to the windrower's ports using quick couplers does not require any additional tools or hardware.

DANGER

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

CAUTION

Do NOT stand on an unlocked platform. It is unstable and may cause you to fall.

IMPORTANT:

To prevent contamination of the hydraulic system, use a clean rag to remove dirt and moisture from all (fixed and movable) hydraulic couplers.

1. Shut down the engine, and remove the key from the ignition.
2. Approach platform (A) on the left side of the windrower. Ensure that the cab door is closed.
3. Push latch (B) and pull platform (A) toward the walking beam until it stops and the latch engages.

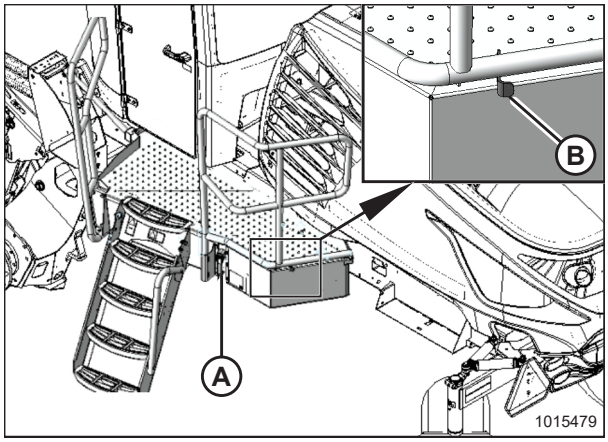


Figure 5.193: Left Platform

4. Retrieve hydraulic hoses (A) from the header and route the hose bundle under the windrower frame.

   NOTE:

   Applying anti-seize compound to the hose holder pin will make future removal easier.

5. Insert pin (B) into hole (C) in the windrower frame.

   IMPORTANT:

   Route the hydraulic hoses as straight as possible, avoiding wear points that could damage the hoses. To prevent abrasion damage, the hoses should have enough slack to pass by the multicoupler bracket without contacting it. To adjust the slack in the hoses, loosen the clamps below pin (B), adjust the hoses, then retighten the hose holder.

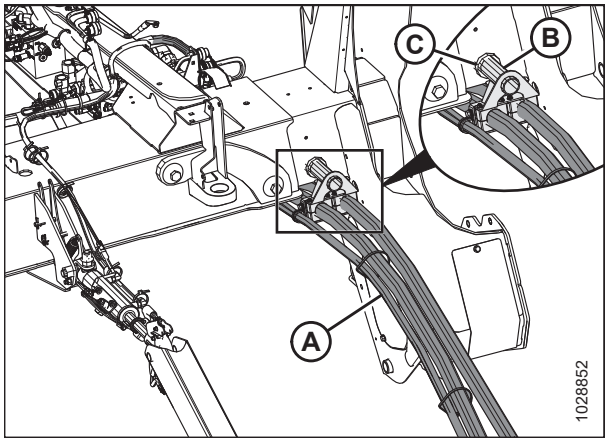


Figure 5.194: Hose Support Attachment

6. Connect the hydraulic fittings to the hydraulic hoses as follows:

   NOTE:

   Two quick couplers and two elbow fittings are supplied in the Quick Coupler kit (B6277).

   a. Attach 90° elbow fitting (A) and 1 in. female coupler fitting (B) to disc pressure hose (C).

   b. Attach 90° elbow fitting (A) and 1 in. male coupler fitting (D) to disc return hose (E).

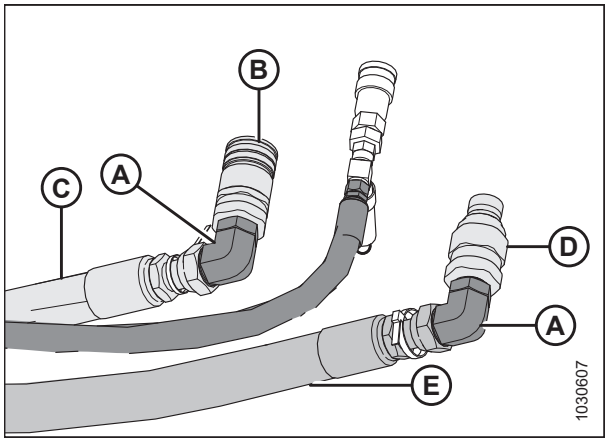


Figure 5.195: Header Hydraulic Fittings

7. Connect the header's hydraulic hoses to the windrower as follows:

   a. Connect disc pressure hose (A) to coupler (B) as shown.

   b. Connect disc return hose (C) to coupler (D) as shown.

   c. Connect case drain hose (E) to fitting (F), ensuring that the connection is oriented so that the relief valve points toward the ground.

   NOTE:

   Loosen and retighten fitting (F) as needed to ensure that the relief valve is pointing straight down as shown.

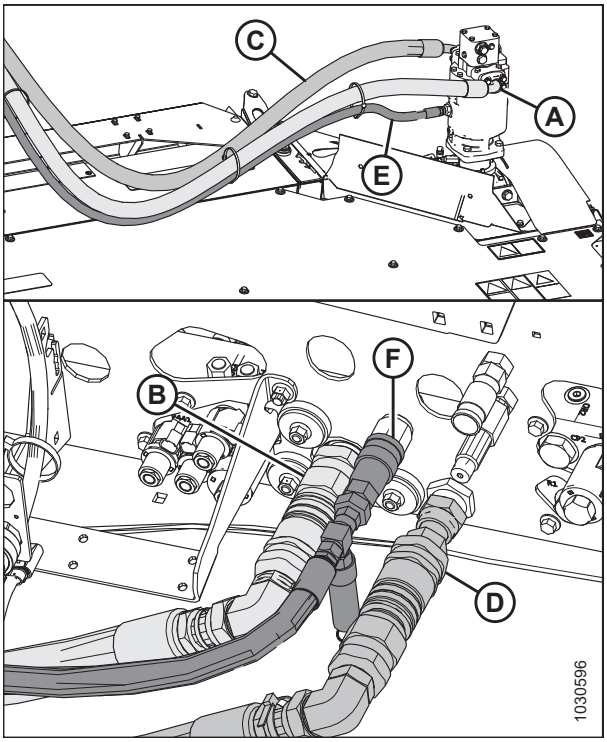


Figure 5.196: Hydraulics and Electrical – Rotary Disc Configuration with Quick Couplers Installed

8. **Grass seed headers (GSS):** connect the additional four hoses supplied with the grass seed version of the header as follows:

   a. Install 45° fitting (A) in port R1. Connect hose (C) (blue cable tie) to fitting (A).

   NOTE:

   The other end of hose (C) connects to the grass seed module's drum on the right side of the header.

   b. Install 45° fitting (B) in port CP2. Connect hose (D) (red cable tie) to fitting (B).

   NOTE:

   The other end of hose (D) connects to the grass seed module's drum on the left side of the header.

   c. Connect the hose (green cable tie) with female quick coupler (E) to coupler (F) on the windrower.

   d. Connect the hose (yellow cable tie) with male quick coupler (G) to coupler (H) on the windrower.

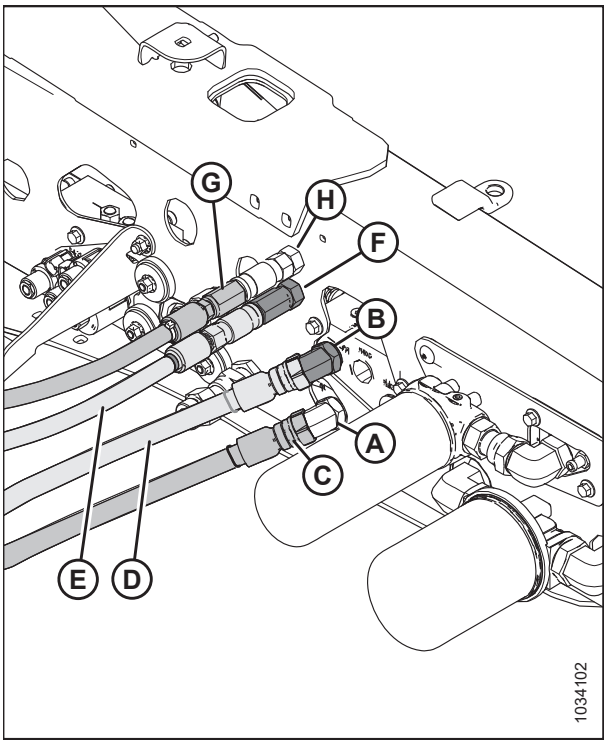


Figure 5.197: Grass Seed Hydraulic Connections – Rotary Disc Configuration

9. Free electrical harness (A) from adjustable strap (B).

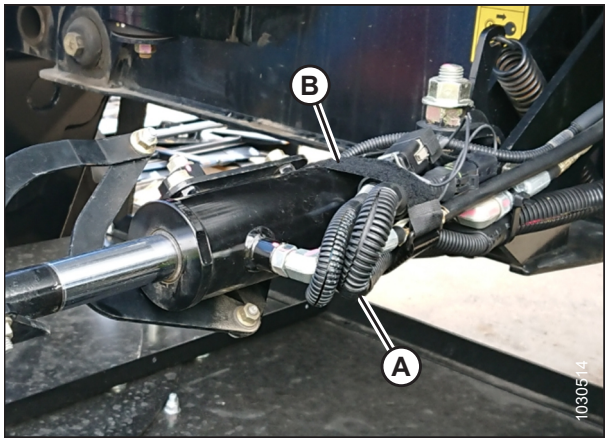


Figure 5.198: Electrical Harness Secured to Center-Link

10. Connect main header harness (A) to adapter harness (B).
11. **Headers equipped with electric baffle control kit:** connect electric baffle control harness (C) to adapter harness (D).
12. **Grass seed headers (GSS):** connect actuator harness (C) to adapter harness (D).

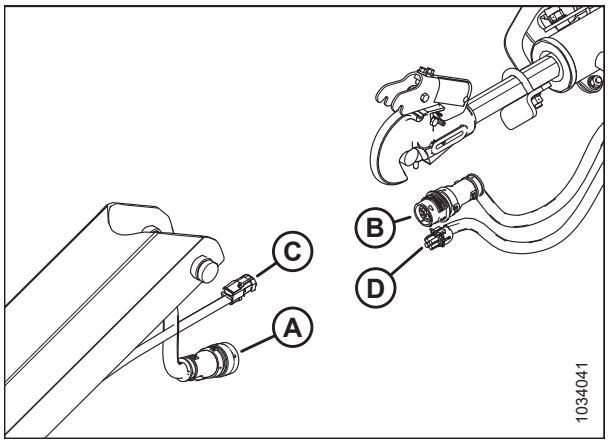


Figure 5.199: Electrical Harness Connection at Center-Link

13. Push latch (A) to unlock platform (B).

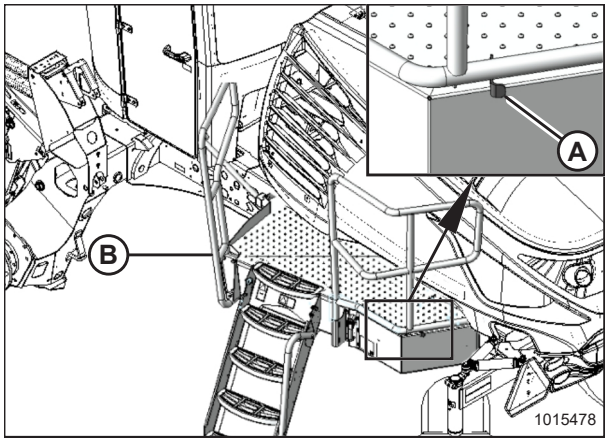


Figure 5.200: Left Platform

14. Pull platform (A) toward the cab until it stops and the latch is engaged.

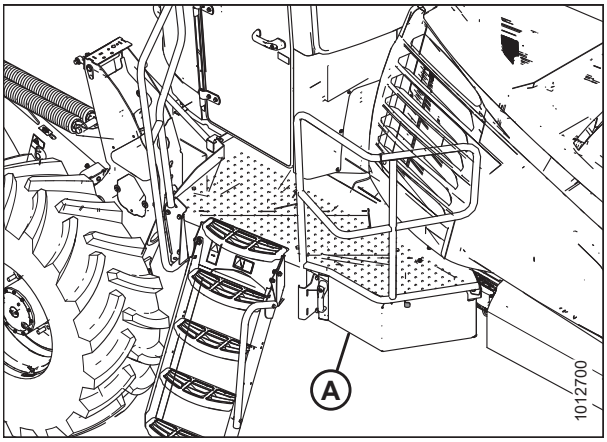


Figure 5.201: Left Platform

DANGER

Ensure that all bystanders have cleared the area.

15. Start the engine.
16. Extend center-link (A) fully. Ensure that there is some slack in harness (B).
17. Retract center-link (A) fully. Ensure that there is not an excessive amount of harness (B) hanging down.
18. Shut down the engine, and remove the key from the ignition.
19. Adjust harness (B) as needed.
20. Tighten all the cables along the harness.
21. If this is the first time the header is connected to the windrower, calibrate the header. For instructions, refer to *5.6 Calibrating Header on HarvestTouch™ Display, page 228*.

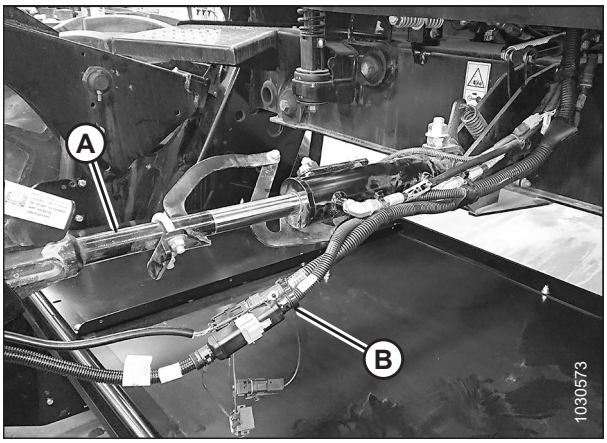


Figure 5.202: Electrical Connection

5.4.5 Detaching R2 Series Rotary Disc Header

The instructions in this section will show you how to properly detach the header when replacing the header with a different one or when storing the header.

DANGER

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

DANGER

Ensure that all bystanders have cleared the area.

IMPORTANT:

Install caps and plugs on open lines to prevent the buildup of dirt and debris.

1. Start the engine.
2. If one end of the header does **NOT** rise fully, rephase the cylinders as follows:
   a. Press and hold HEADER UP (A) switch until both cylinders stop moving.
   b. Continue to hold the switch for 3–4 seconds. The cylinders are now phased.
3. Shut down the engine, and remove the key from the ignition.

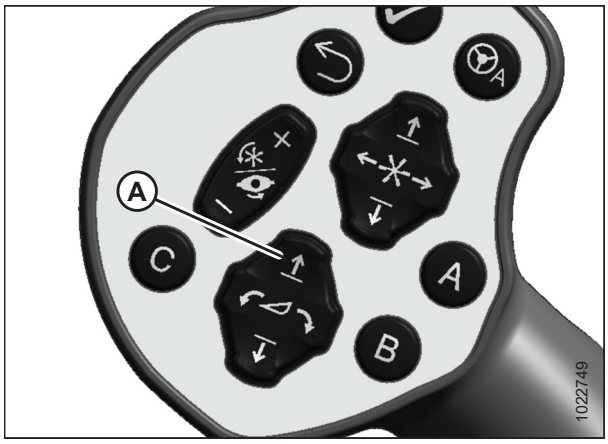


Figure 5.203: Ground Speed Lever (GSL)

4. Engage the safety props on both lift cylinders as follows:
   a. Pull lever (A) toward you to release it, then rotate it toward the header to lower the safety prop onto the cylinder.
   b. Repeat the previous step for the opposite lift cylinder.

   IMPORTANT:

   Ensure that the safety props engage over the cylinder piston rods. If the safety prop does **NOT** engage properly, raise the header until the safety prop fits over the rod.

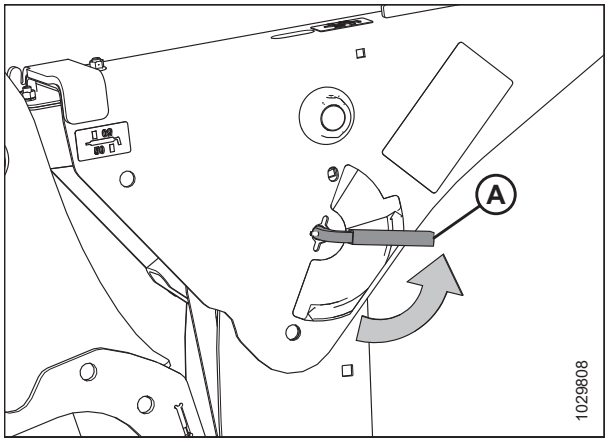


Figure 5.204: Safety Prop Lever

5. Remove hairpin (A) from clevis pin (B). Remove the clevis pin from header support (C) on both sides of the header.

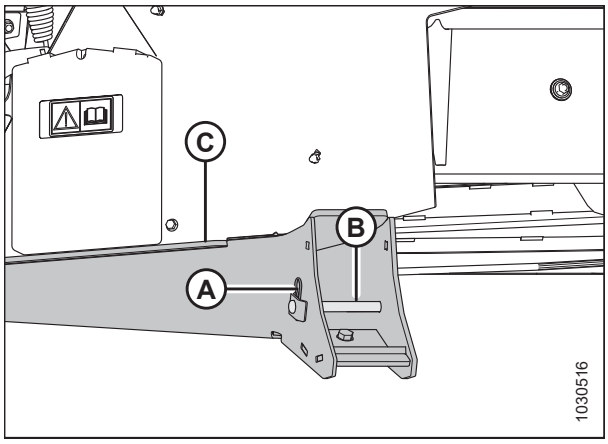


Figure 5.205: Header Supports

6. **Windrowers with self-aligning center-link:** Release center-link latch (A).

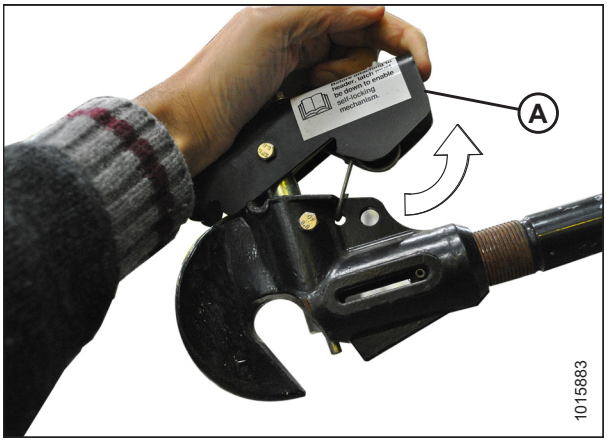


Figure 5.206: Center-Link

7. Disengage the safety props on both lift cylinders as follows:

   a. Turn lever (A) away from the header to raise the safety prop until the lever locks into the vertical position.

   b. Repeat the previous step for the opposite cylinder.

   NOTE:

   If the safety prop will **NOT** disengage, raise the header to release the prop.

8. Start the engine.

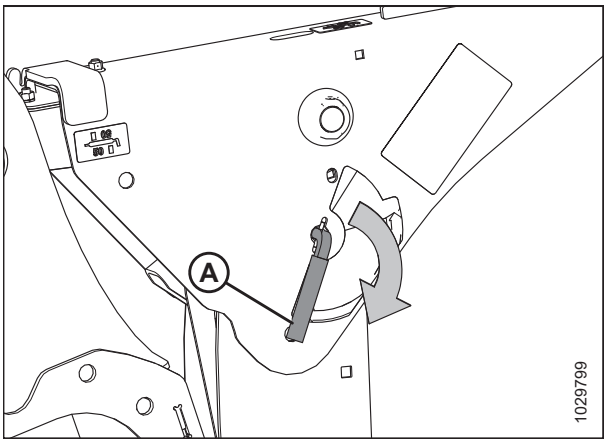


Figure 5.207: Safety Prop Lever

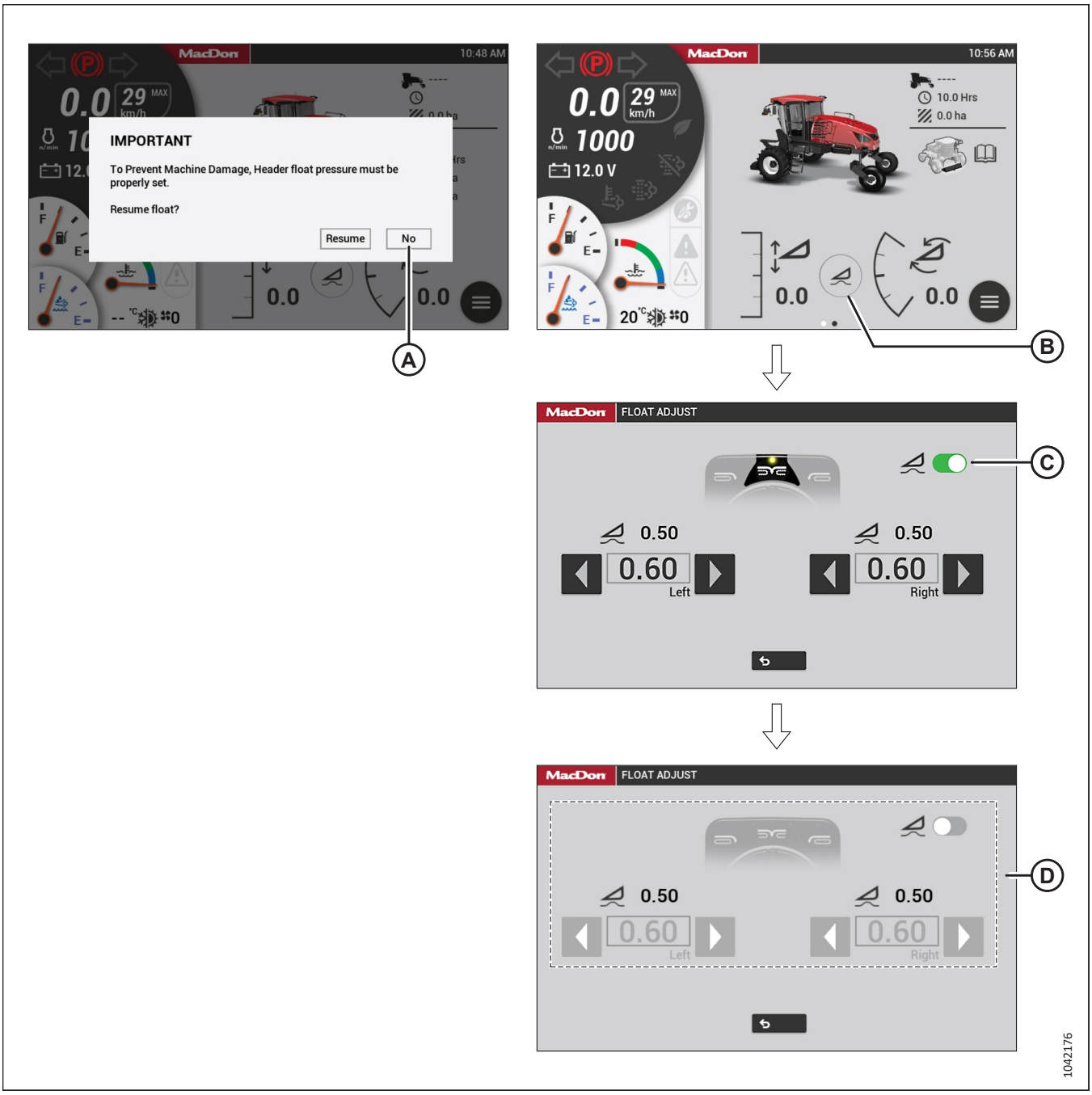


Figure 5.208: Float Removal

9. Remove the float as follows:

   - If the HarvestTouch™ Display shows the message “Resume Float?”, then select NO (A).
   - If the HarvestTouch™ Display does **NOT** show the message, then select FLOAT ADJUST (B), select switch (C), and confirm the switch and float settings (D) are grayed out.

   IMPORTANT:

   Removing the float will release the tension in the float springs. This will prevent damage to the header lift linkages when lowering the legs without a header or weight box attached to the windrower.

10. Lower the header fully using HEADER DOWN switch (A).

11. Press HEADER TILT switches (B) as needed on the GSL to release the load on the center-link.

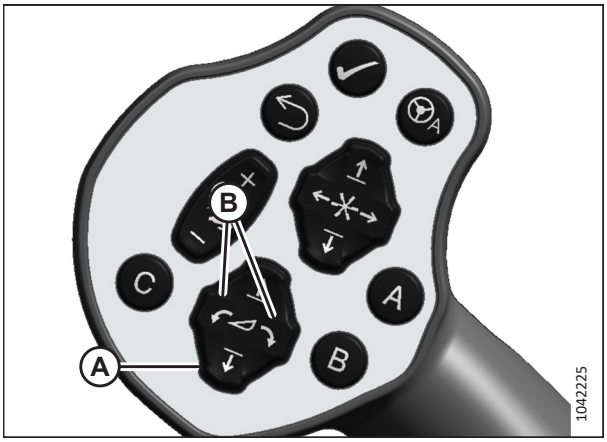


Figure 5.209: GSL

12. **Windrowers with self-aligning center-link:**

    a. Press REEL UP switch (A) to disengage the center-link from the header.

    b. Shut down the engine, and remove the key from the ignition.

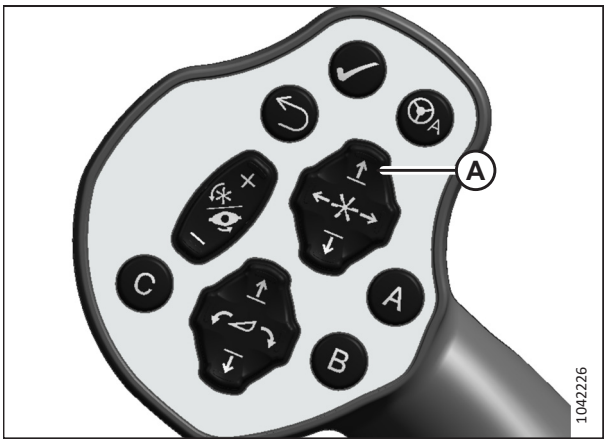


Figure 5.210: GSL

13. **Windrowers without the self-aligning center-link:**

    a. Shut down the engine, and remove the key from the ignition.

    b. Disconnect the center-link by lifting release (A) and lift hook (B) off the header.

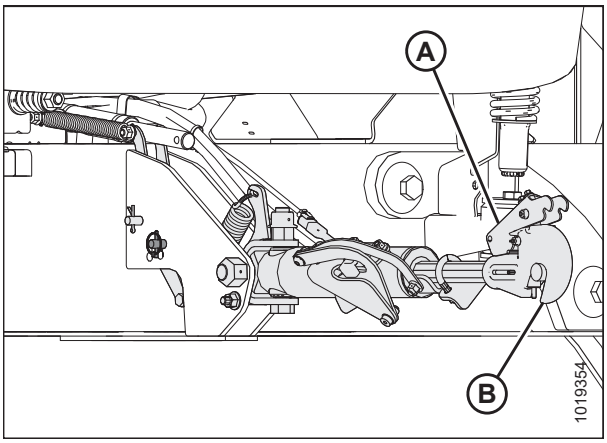


Figure 5.211: Hydraulic Center-Link

14. Approach platform (A) on the left side of the windrower. Ensure that the cab door is closed.
15. Push latch (B) and pull platform (A) toward the walking beam until it stops and the latch engages.

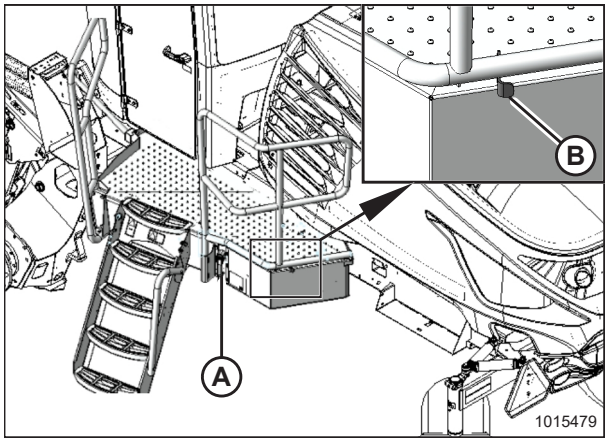


Figure 5.212: Left Platform

16. Disconnect hydraulic hoses (A), (B), and (C) from the windrower.

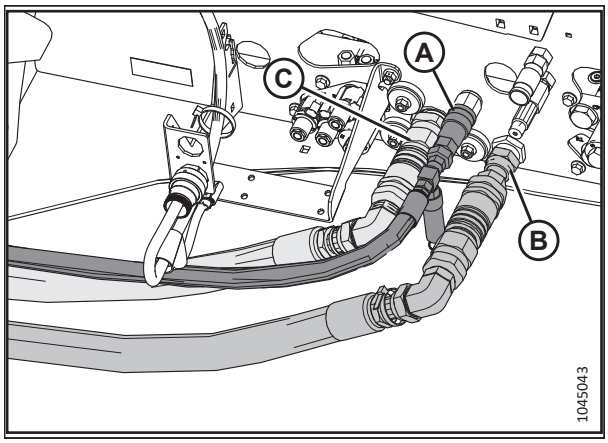


Figure 5.213: Header Drive Hydraulics – Quick Couplers

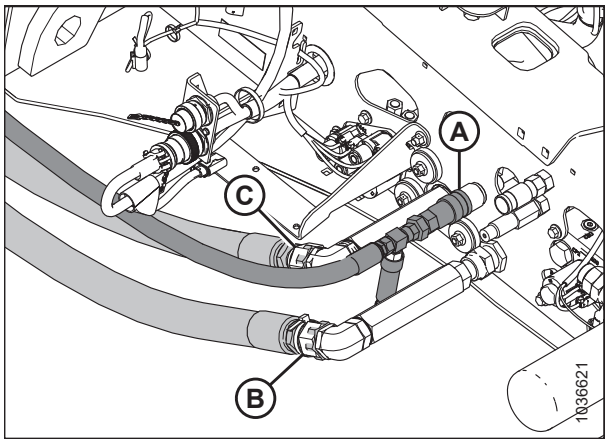


Figure 5.214: Header Drive Hydraulics – Hard-Plumbed Fittings

17. **M2260 Only, Grass seed header (GSS):** Disconnect additional four hoses (A), (B), (C), and (D).

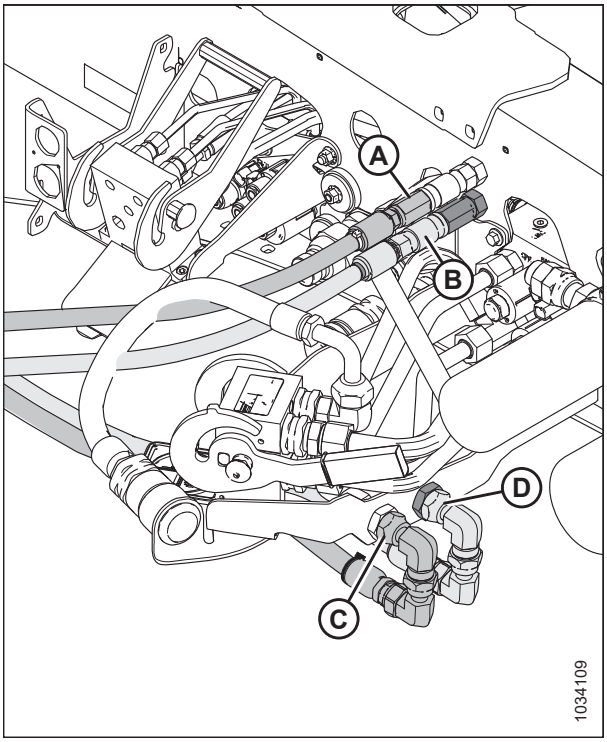


Figure 5.215: Grass Seed Hydraulic Connections – M2260 Draper/Disc-Ready Configuration

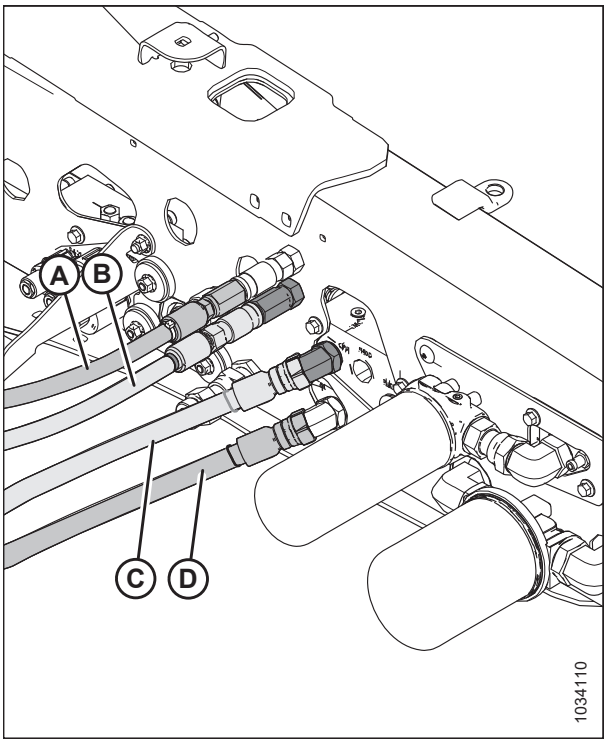


Figure 5.216: Grass Seed Hydraulic Connections – M2260 Rotary Disc Configuration

18. Push latch (A) to unlock platform (B).

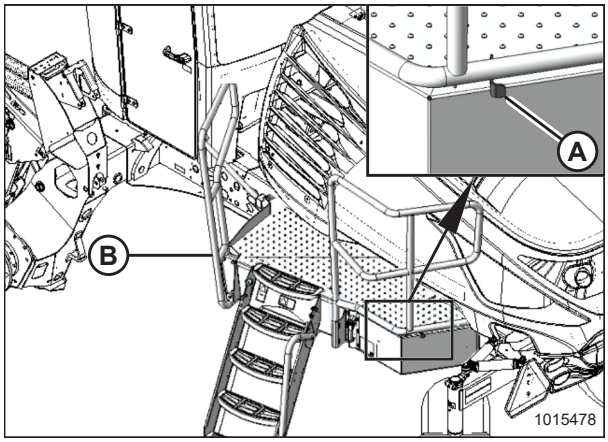


Figure 5.217: Left Platform

19. Pull platform (A) toward the cab until it stops and the latch is engaged.

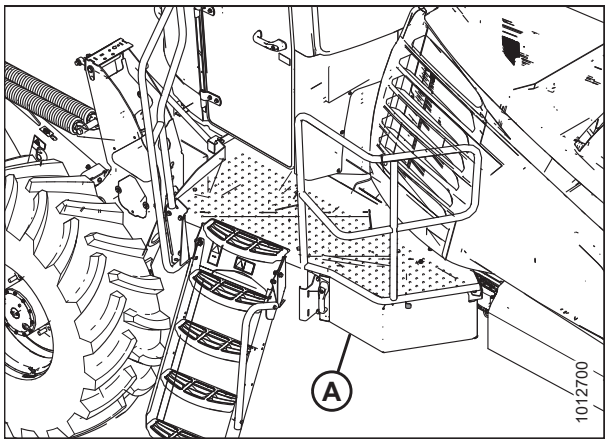


Figure 5.218: Left Platform

20. Remove hose support (A) and the hose bundle from the windrower frame.

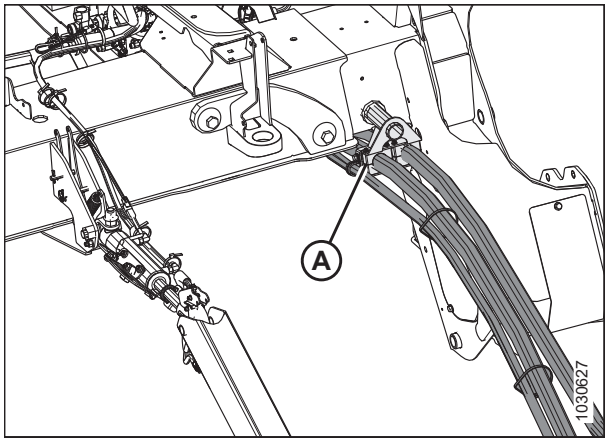


Figure 5.219: Header Hoses on Windrower

21. Rest hydraulic hose bundle (A) on the header for storage as shown.

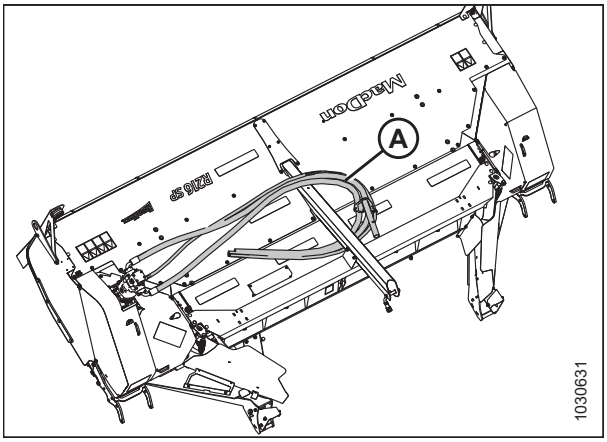


Figure 5.220: Hose Bundle Storage Position

22. Disconnect main header harness (A) from adapter harness (B).
23. **Standard headers equipped with optional electric baffle control kit:** Disconnect electric baffle control harness (C) from adapter harness (D).
24. **M2260 Only, Grass seed header (GSS):** Disconnect actuator harness (C) from adapter harness (D).

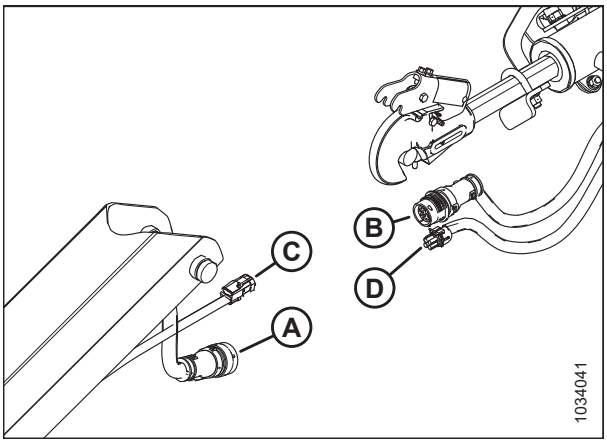


Figure 5.221: Electrical Harness Connection at Center-Link

25. Secure adapter harness (A) on the center-link with an adjustable strap (B).
26. Back the windrower away from the header.
27. Shut down the engine, and remove the key from the ignition.

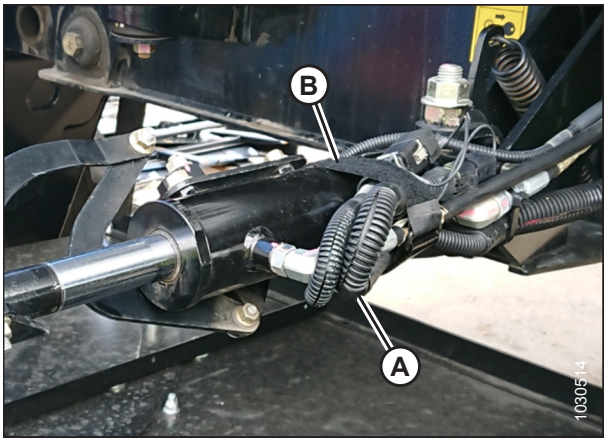


Figure 5.222: Adapter Harness

28. Reinstall clevis pin (A) through support (C) and secure it with hairpin (B). Repeat this step for the opposite side of the header.

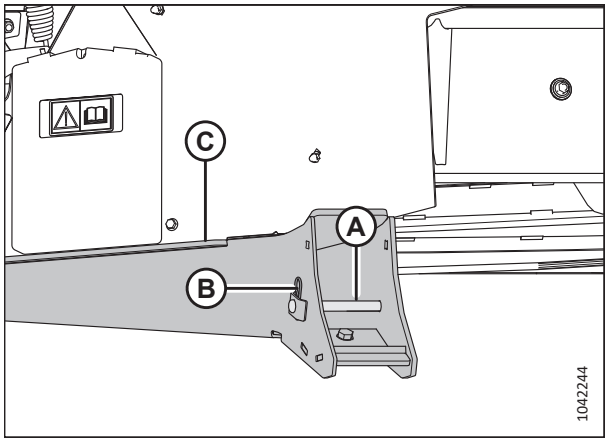


Figure 5.223: Header Support

5.4.6 Removing Forming Shield from Windrower

The forming shield controls the width and placement of the windrow. The instructions in this section will show you how to properly remove the forming shield from the windrower.

DANGER

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

NOTE:

It is **NOT** always necessary to remove the forming shield after detaching the header from the windrower.

1. Shut down the engine, and remove the key from the ignition.
2. Mark the strap location, remove and retain hairpin (A) and washer (B) from straight pin (C).
3. Pull rubber strap (D) away from straight pin (C).
4. Lower the rear end of the forming shield.
5. Reinstall washer (B) and hairpin (A) on straight pin (C).
6. Repeat Step *2, page 198* to Step *5, page 198* on the opposite windrower leg.

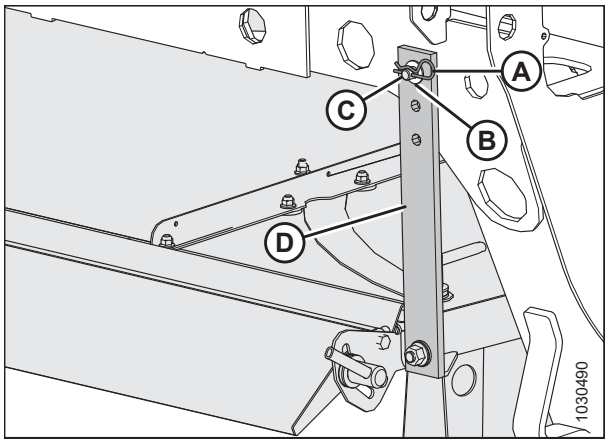


Figure 5.224: Rubber Strap Securing Forming Shield onto Windrower Leg

7. Remove lynch pin (A) and clevis pin (B) securing forming shield (C) to bolt and spacer (D). Repeat this step at the opposite side of the forming shield.

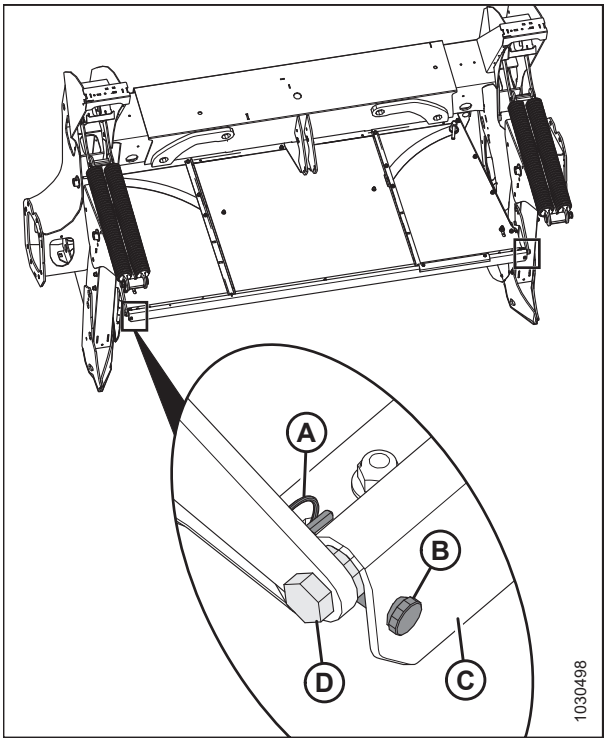


Figure 5.225: Forming Shield Secured to Front of Windrower Legs

8. Dismount forming shield (A) from bolts and spacers (B).
9. Reattach the clevis pin and the lynch pin to the forming shield.
10. Remove the forming shield.

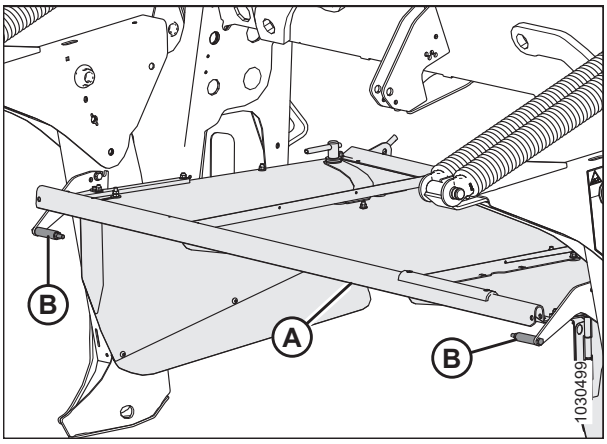


Figure 5.226: Forming Shield under Windrower Frame

5.5 R1 Series Rotary Disc Header

This section details the procedures necessary to physically attach or detach an R1 Series Rotary Disc Header to a windrower and to complete its hydraulic and electrical connections.

5.5.1 Attaching R1 Series Rotary Disc Header

The windrower's lift linkage and center-link will need to be connected to the header.

IMPORTANT:

- A R113 Rotary Disc Header is compatible with an M2170 or M2260 Windrower.
- A R116 Rotary Disc Header is compatible with an M2170 Windrower, but **NOT** an M2260 Windrower.

DANGER

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

DANGER

Ensure that all bystanders have cleared the area.

1. Shut down the engine, and remove the key from the ignition.
2. Remove hairpin (A) from clevis pin (B), and remove the pin from header support (C). Remove the hairpin and the clevis pin from the other header support.
3. Start the engine.

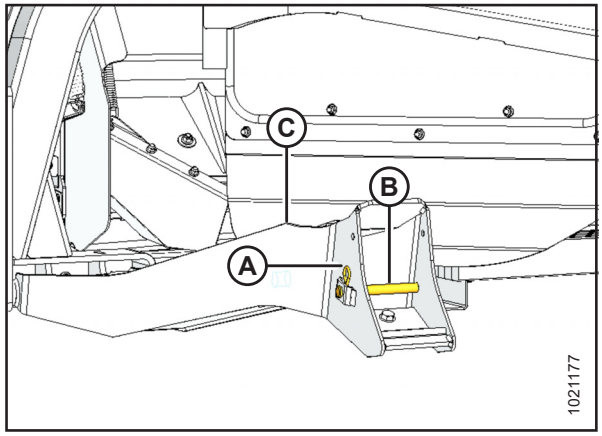


Figure 5.227: Header Support

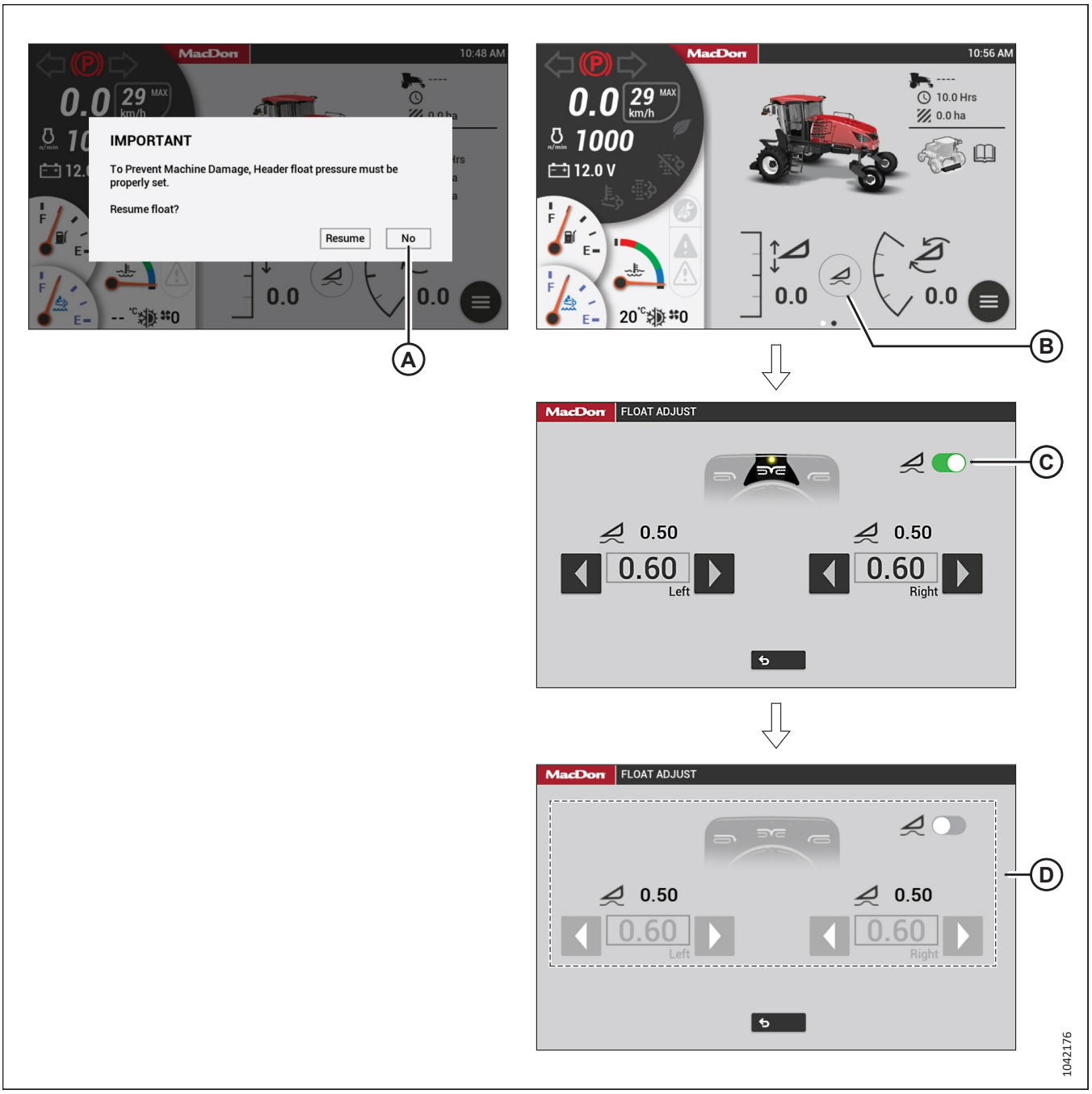


Figure 5.228: Float Removal

4. Remove the float as follows:

   - If the HarvestTouch™ Display shows the message “Resume Float?”, then select NO (A).
   - If the HarvestTouch™ Display does **NOT** show the message, then select FLOAT ADJUST (B), select switch (C), and confirm the switch and float settings (D) are grayed out.

   IMPORTANT:

   Removing the float will release the tension in the float springs. This will prevent damage to the header lift linkages when lowering the legs without a header or weight box attached to the windrower.

5. Prepare the center-link as follows:

   - **If not equipped with the Center-Link Alignment kit:** Relocate pin (A) in the frame linkage as needed to raise center-link (B) until the hook is above the attachment pin on the header.
   - **If equipped with the Center-Link Alignment kit:** Press REEL UP switch (D) on the ground speed lever (GSL) to raise the center-link until the hook is above the attachment pin on the header.

   IMPORTANT:

   Ensure that the center-link is positioned high enough that it does not contact the header as the windrower approaches the header.

6. Press HEADER DOWN switch (C) on the GSL until the windrower lift linkages are fully lowered.

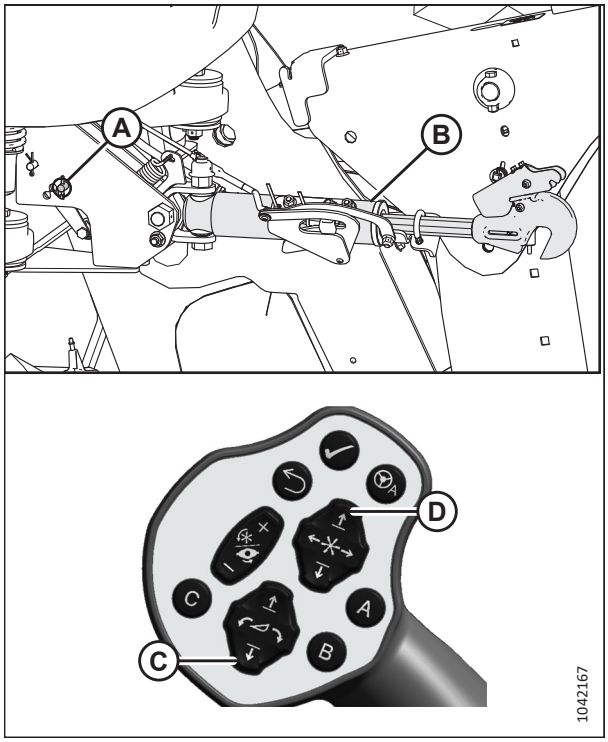


Figure 5.229: Center-Link without Self-Alignment

7. Slowly drive the windrower forward until feet (A) enter header supports (B). Continue to drive forward until the feet engage the supports and the header nudges forward.

8. Ensure that feet (A) are properly engaged in header supports (B).

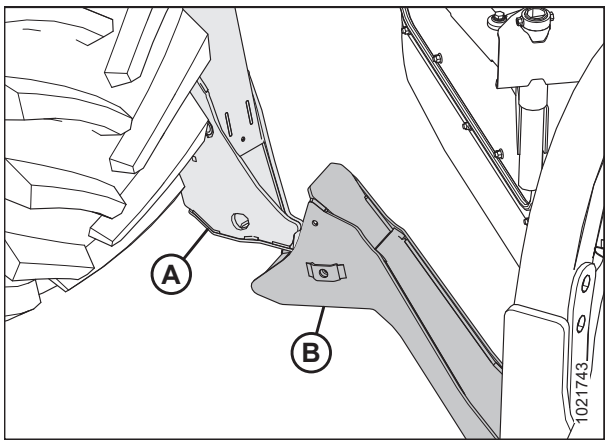


Figure 5.230: Header Support

9. **Windrowers equipped with the Center-Link Alignment kit:**

   a. Press HEADER TILT UP (A) or HEADER TILT DOWN (B) switches on the GSL to extend or retract the center-link cylinder until hook (C) is aligned with the header attachment pin.

   b. Lower the center-link onto the header with REEL DOWN (D) switch on the GSL until the center-link locks into position and hook release (E) is down.

      IMPORTANT:

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

   c. Check that the center-link is locked onto the header by pressing REEL UP (F) switch on the GSL.

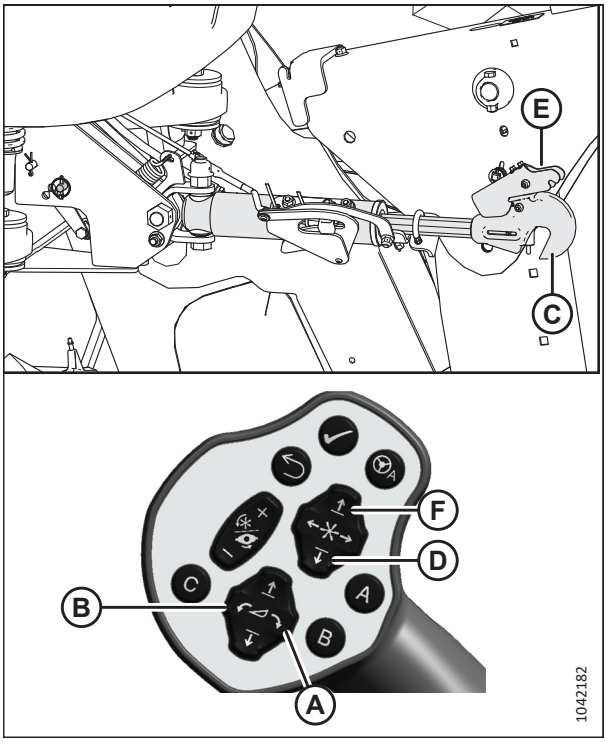


Figure 5.231: Hydraulic Center-Link

10. **Windrowers without the Center-Link Alignment kit:**

   a. Press HEADER TILT UP (A) or HEADER TILT DOWN (B) switches on the GSL to extend or retract the center-link cylinder until the hook is aligned with the header attachment pin.

   b. Shut down the engine, and remove the key from the ignition.

   c. Push down on rod end (C) of the link cylinder until hook (D) engages and locks onto the header pin.

      IMPORTANT:

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

   d. Check that the center-link is locked onto the header by pulling upward on rod end (C) of the cylinder.

   e. Start the engine.

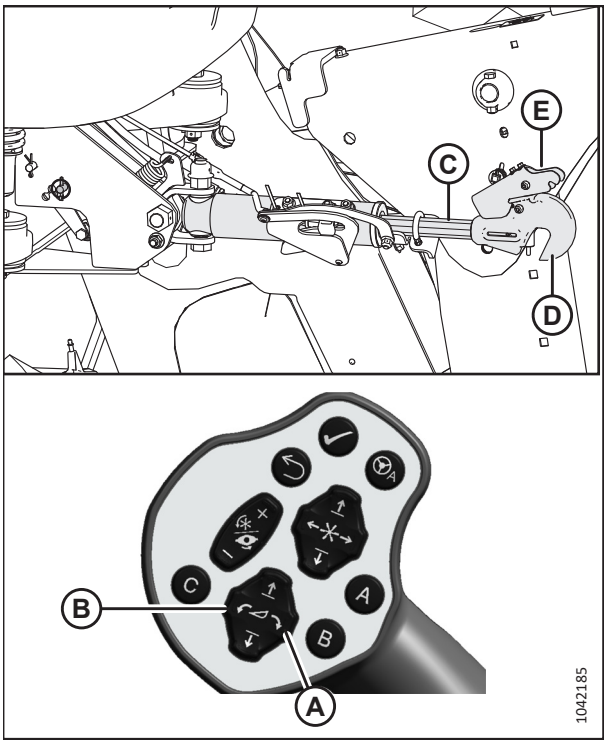


Figure 5.232: Hydraulic Center-Link

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

    NOTE:

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

    a. Press and hold HEADER UP switch (A) until both cylinders stop moving.

    b. Continue to hold the switch for 3–4 seconds. The cylinders are now phased.

12. Shut down the engine, and remove the key from the ignition.

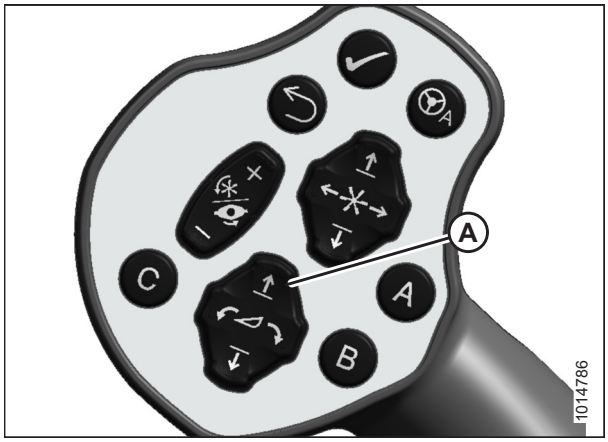


Figure 5.233: Ground Speed Lever (GSL)

13. Engage the safety props on both lift cylinders as follows:

    a. Pull lever (A) toward you to release it, then rotate it toward the header to lower the safety prop onto the cylinder.

    b. Repeat the previous step for the opposite lift cylinder.

    IMPORTANT:

    Ensure that the safety props engage over the cylinder piston rods. If the safety prop does **NOT** engage properly, raise the header until the safety prop fits over the rod.

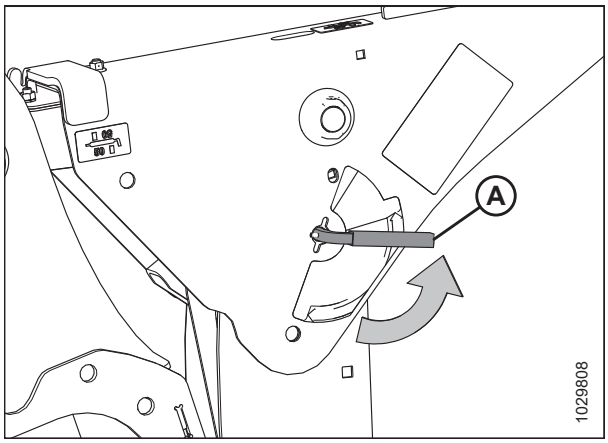


Figure 5.234: Safety Prop Lever

14. Install clevis pin (A) through the support and the windrower lift arm and secure the clevis pin with hairpin (B). Install the clevis pin and the hairpin on the opposite side of the header.

    IMPORTANT:

    Ensure that clevis pin (A) is inserted as far as possible and that the hairpin is installed behind the bracket as shown.

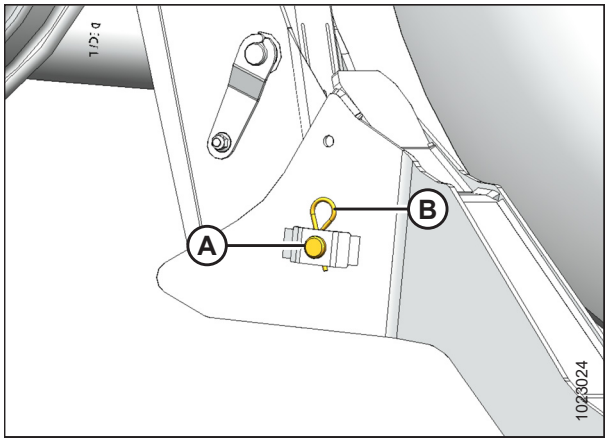


Figure 5.235: Header Support

15. Disengage the safety props on both lift cylinders as follows:

    a. Turn lever (A) away from the header to raise the safety prop until the lever locks into the vertical position.

    b. Repeat the previous step for the opposite cylinder.

    NOTE:

    If the safety prop will **NOT** disengage, raise the header to release the prop.

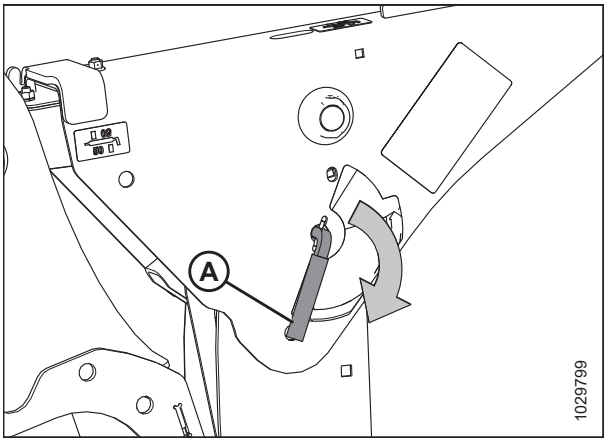


Figure 5.236: Safety Prop Lever

16. Press HEADER DOWN switch (A) on the GSL to fully lower the header.

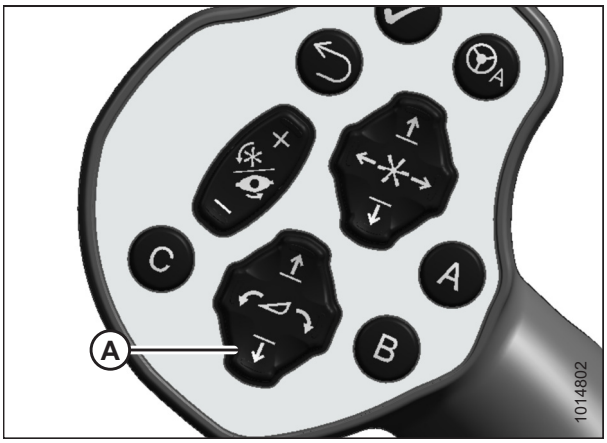


Figure 5.237: Ground Speed Lever (GSL)

17. Select FLOAT ADJUST (A).

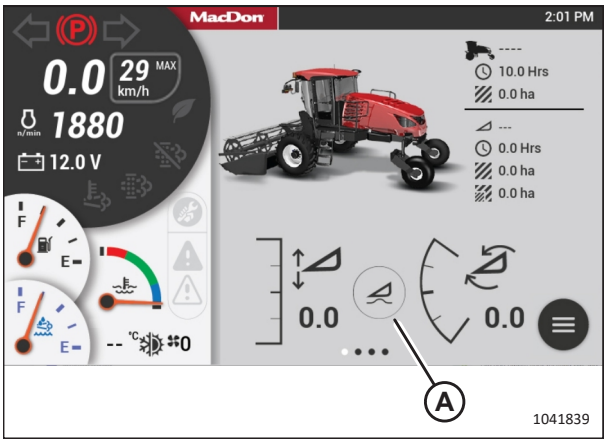


Figure 5.238: HarvestTouch™ Display

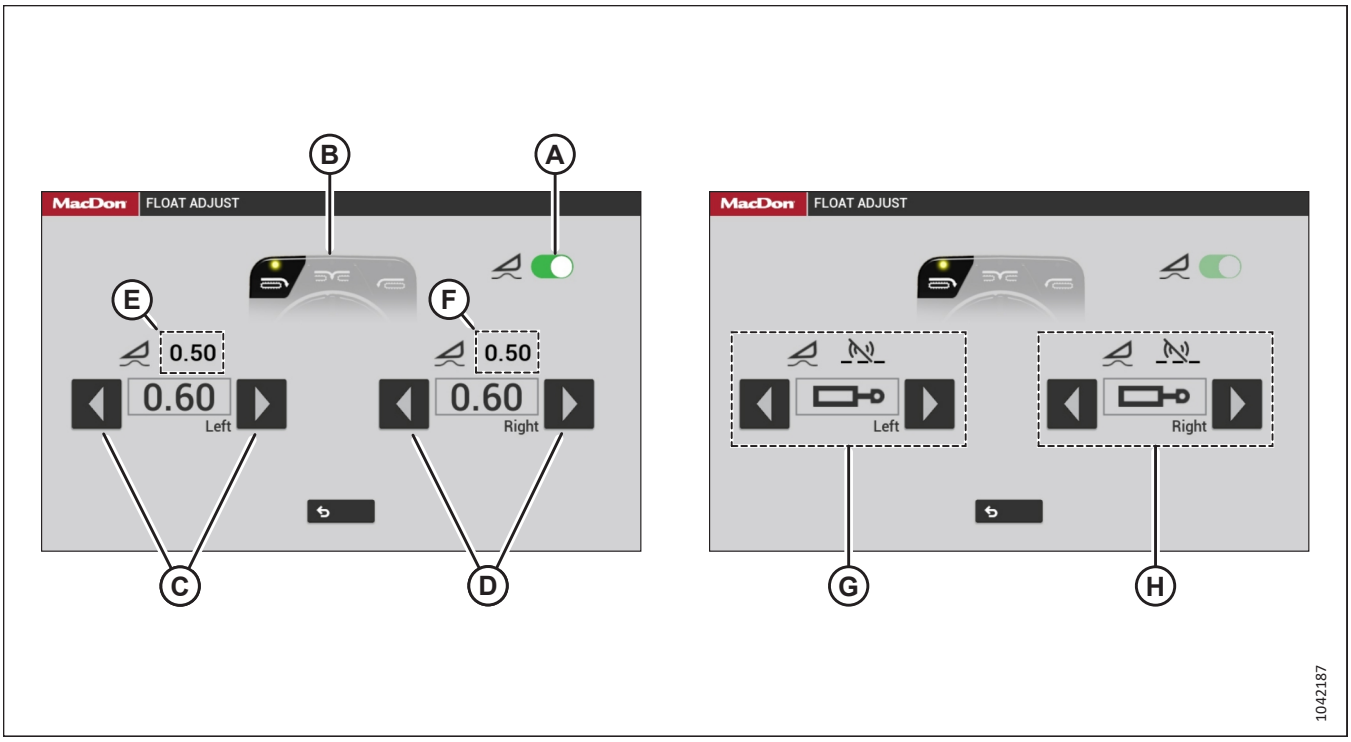


Figure 5.239: Float Adjustment

18. Select switch (A), so that it turns green, to activate the float.
19. If the float is not already set up, set the float as follows:
    a. The float preset, which is selected using the operator's console, is displayed at location (B). Confirm if the desired preset is selected.
    b. Select arrows (C) to set the target float for the left side of the header. Value (E) is the actual amount of float (measured by the left float sensor).
    c. Select arrows (D) to set the target float for the right side of the header. Value (F) is the actual amount of float (measured by the left float sensor).

    NOTE:

    Adjusting the float by increments of 1.0 (out of 10) changes the header weight at the cutterbar by approximately 91 kg (200 lb.). Adjust the float in increments of 0.05 to fine-tune the header's performance.

    NOTE:

    Symbols (G) and (H) mean the left and right float sensors are not working. You can still manually set the float, but you should first check if the sensors were disabled through the HarvestTouch™ Display (refer to MENU > SETUP > HEADER > SENSORS), or if another problem is causing the sensors to fail.
20. Shut down the engine, and remove the key from the ignition.
21. Check the float as follows:
    a. Grasp one end of the header and lift it. The lifting force used should be 426–471 N (95–105 lbf).
    b. Repeat this step on the other side of the header.

22. Proceed as follows:

    - If you are attaching the header to an M2170 Windrower, proceed to *5.5.2 Connecting R1 Series Rotary Disc Header Hydraulic and Electrical Systems – M2170 Windrower, page 207*.
    - If you are attaching the header to an M2260 Windrower, proceed to *5.5.3 Connecting R113 Rotary Disc Header Hydraulic and Electrical Systems – M2260 Windrower, page 210*.

5.5.2 Connecting R1 Series Rotary Disc Header Hydraulic and Electrical Systems – M2170 Windrower

The header's hydraulic and electrical multicoupler will need to be connected to the windrower.

DANGER

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

CAUTION

Do NOT stand on an unlocked platform. It is unstable and may cause you to fall.

IMPORTANT:

To prevent contamination of the hydraulic system, use a clean rag to remove dirt and moisture from all (fixed and movable) hydraulic couplers.

1. Shut down the engine, and remove the key from the ignition.
2. Retrieve the hydraulic hoses from the header.
3. Push latch (A) to unlock platform (B).

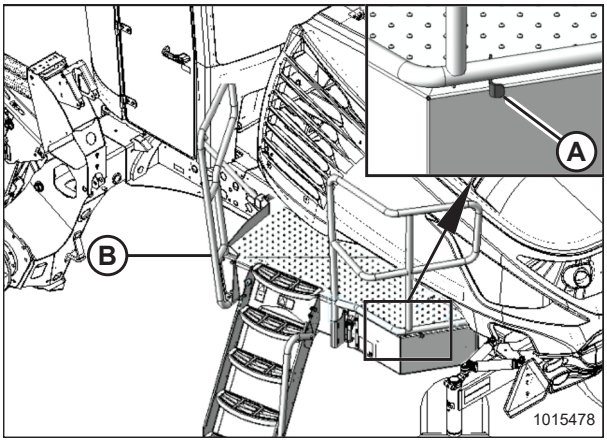


Figure 5.240: Left Platform

4. Pull platform (A) toward the cab until it stops and the latch is engaged.

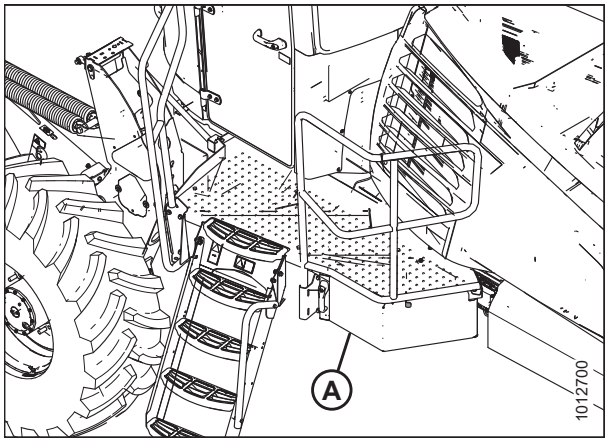


Figure 5.241: Left Platform

5. Attach hose support (A) to the frame near the windrower left cab-forward leg. Route the hoses under the frame.

   NOTE:

   Ensure that the hoses remain as straight as possible and that they are not subject to damage from abrasion.

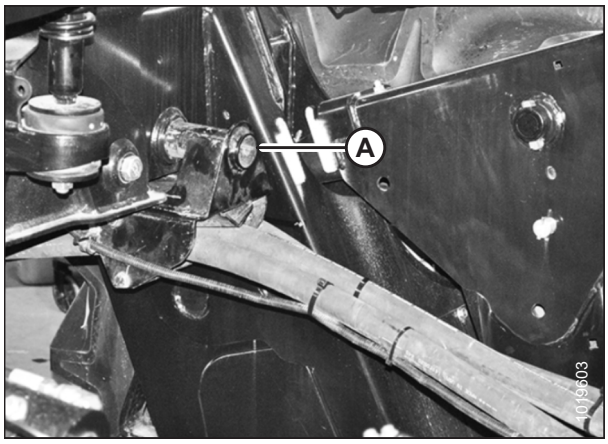


Figure 5.242: Hose Support Attachment

6. **If you are replacing an auger header with a rotary disc header:** Disconnect hose (A) from knife pressure receptacle (C) on the frame.

7. Move the hose to storage location (B).

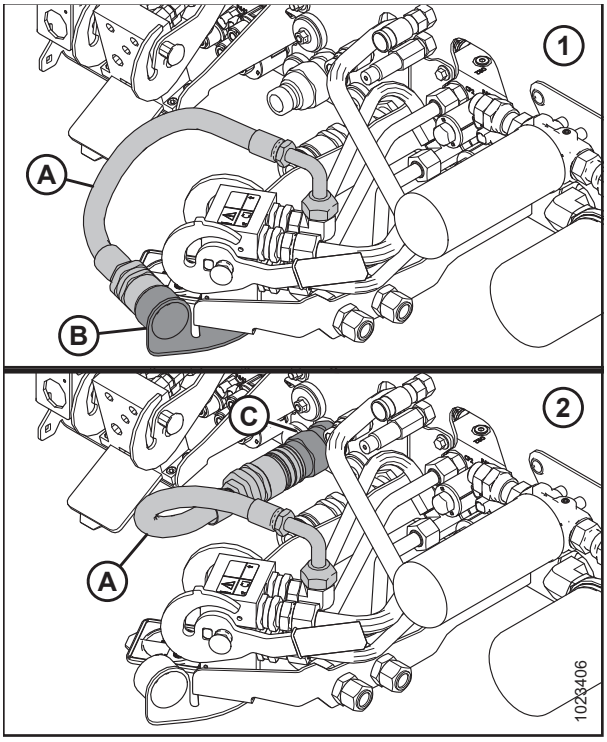


Figure 5.243: Knife Pressure Hose Positions

1 - Knife Pressure Hose in Storage Position – Rotary Configuration
2 - Hose to Knife Pressure Receptacle – Auger/Draper Configuration

8. Attach the couplers to the receptacles on the windrower as follows:

   a. Connect the pressure hose female coupler to receptacle (A).

   b. Connect the return hose male coupler to receptacle (B).

   c. Connect the case drain hose coupler to receptacle (C).

   d. Connect the electrical harness to receptacle (D).

   IMPORTANT:

   The hydraulic hoses should **NOT** come in contact with multicoupler (E). To increase the slack in the hoses, loosen and adjust the hose holder on the front windrower leg before pulling the hoses back toward the windrower.

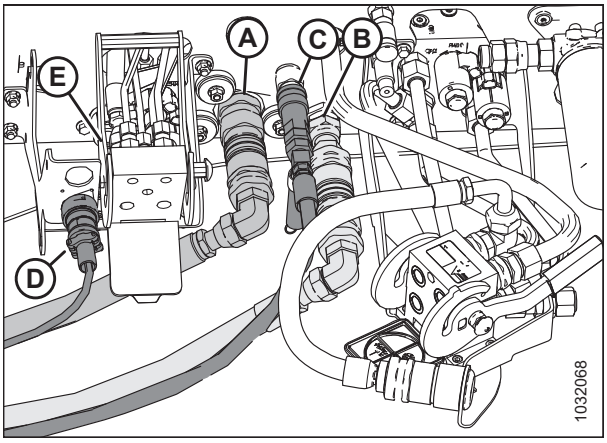


Figure 5.244: Hydraulic and Electrical Connections

9. Push latch (A) to unlock platform (B).

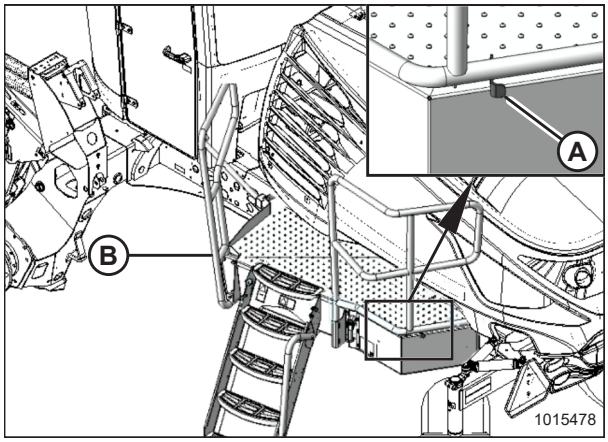


Figure 5.245: Left Platform

10. Pull platform (A) toward the cab until it stops and the latch is engaged.
11. Calibrate the header on the windrower. For instructions, refer to *5.6 Calibrating Header on HarvestTouch™ Display, page 228*.

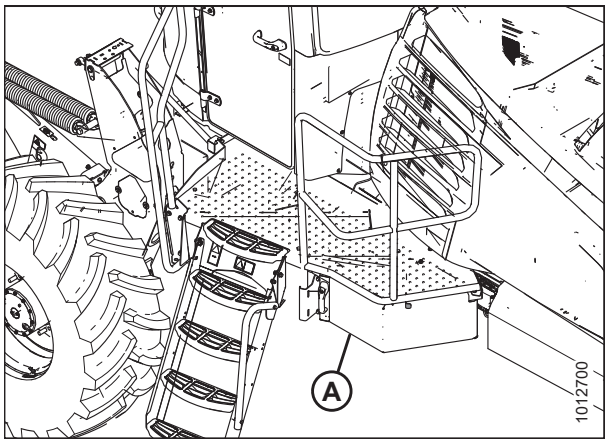


Figure 5.246: Left Platform

5.5.3 Connecting R113 Rotary Disc Header Hydraulic and Electrical Systems – M2260 Windrower

The header's electrical and hydraulic systems must be connected to the windrower. The procedure for connecting the header's hydraulic and electrical systems to the windrower differs depending on the configuration of the windrower.

IMPORTANT:

The Low Pressure Case Drain kit (B6698) must be installed on the M2260 Windrower before an R113 Rotary Disc Header can be connected.

The procedure for connecting the header's hydraulic connections to the windrower depends on the windrower's configuration:

- Auger/rotary disc/draper header-ready windrowers are equipped with a set of hydraulic quick couplers which are compatible with the header drive hoses on the rotary disc header.
- Rotary disc header-ready windrowers are equipped with hard-plumbed hydraulic connections.

NOTE:

The hydraulic bundle includes a complete set of quick couplers that can be installed onto a windrower configured for use with rotary disc headers.

Proceed to the relevant procedure:

For auger/rotary disc/draper-ready configuration (A), refer to *Auger/Rotary Disc/Draper-Ready Configuration – Quick Coupler Connections, page 212* for instructions.

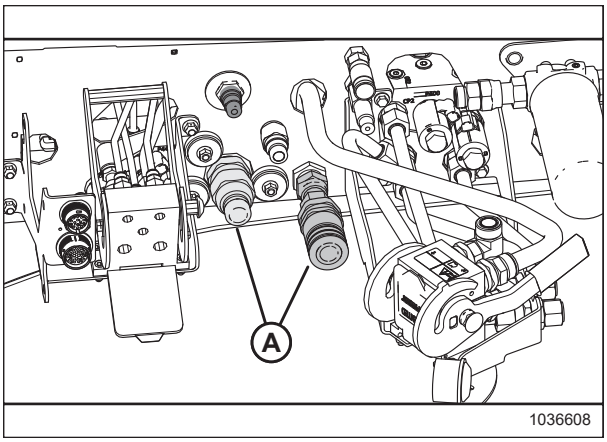


Figure 5.247: Header Hydraulics Configurations – Auger/Rotary Disc/Draper-Ready

For rotary disc-only hard-plumbed configuration (A), refer to *Rotary Disc-Only Configuration – Hard-Plumbed Fittings, page 214* for instructions.

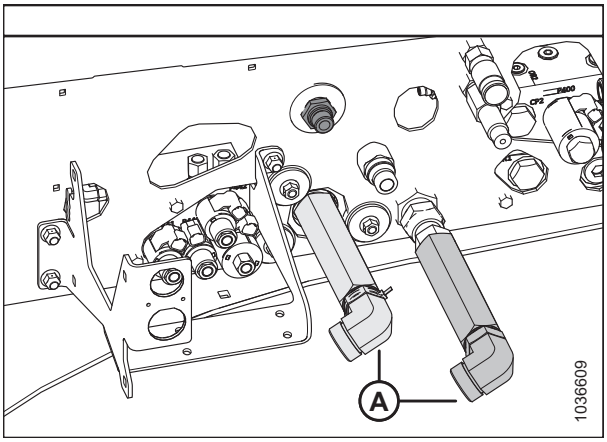


Figure 5.248: Header Hydraulics Configuration – Rotary Disc-Ready with Hard-Plumbed Connections

For rotary disc-ready configuration with quick couplers (A), refer to *Rotary Disc-Only Configuration – Quick Coupler Connections, page 217* for instructions.

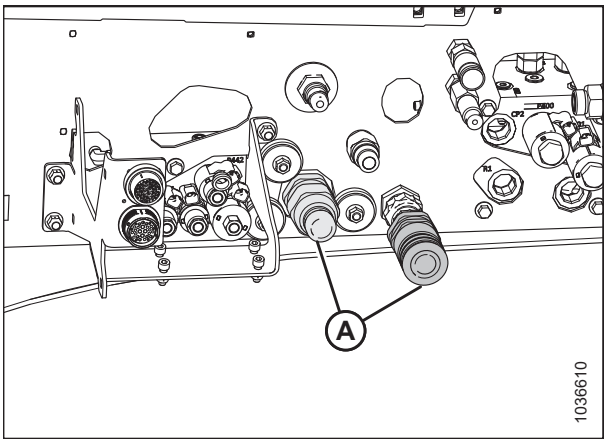


Figure 5.249: Header Hydraulics Configuration – Rotary Disc-Ready with Quick Couplers

Auger/Rotary Disc/Draper-Ready Configuration – Quick Coupler Connections

Windrowers with the auger/rotary disc/draper-ready configuration are equipped with the hydraulic connections needed to pair with an auger, rotary disc, or a draper header.

DANGER

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

CAUTION

Do NOT stand on an unlocked platform. It is unstable and may cause you to fall.

IMPORTANT:

To prevent contamination of the hydraulic system, use a clean rag to remove dirt and moisture from all (fixed and movable) hydraulic couplers.

1. Shut down the engine, and remove the key from the ignition.
2. Approach platform (A) on the left side of the windrower. Ensure that the cab door is closed.
3. Push latch (B) and pull platform (A) toward the walking beam until it stops and the latch engages.

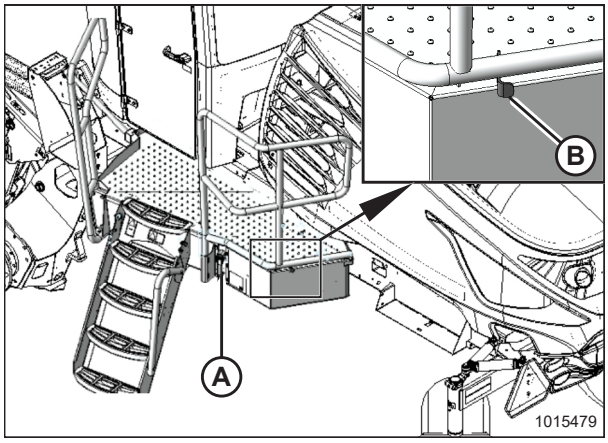


Figure 5.250: Left Platform

4. Attach hose support (A) to the frame near the windrower left cab-forward leg. Route the hoses under the frame.

   NOTE:

   Ensure that the hoses remain as straight as possible and that they are not subject to damage from abrasion.

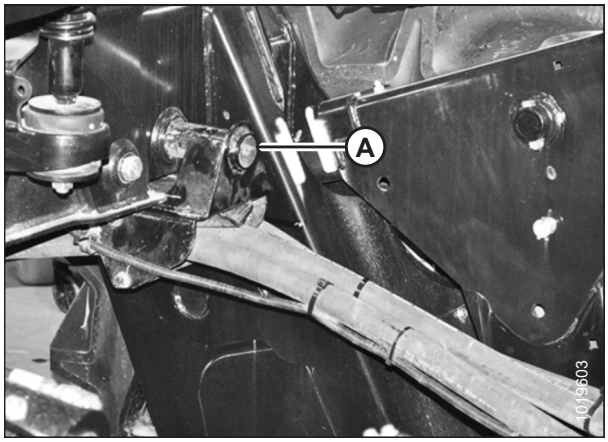


Figure 5.251: Hose Support Attachment

5. Ensure that hose (A) is disconnected from windrower receptacle (B) and placed in storage cup (C) on the multicoupler.

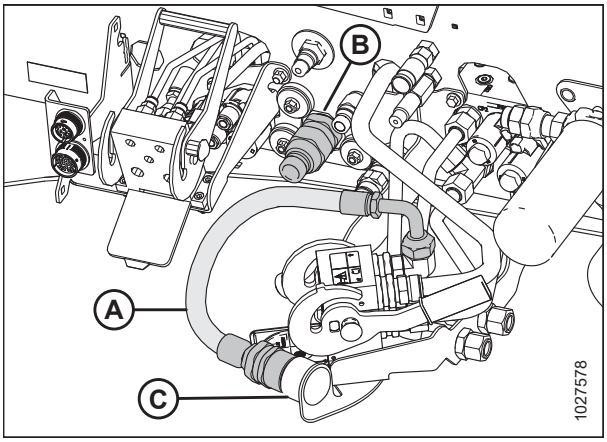


Figure 5.252: Couplers – Auger/Rotary/Draper Header-Ready Configuration with Case Drain Kit Installed

6. Remove the extra hydraulic quick couplers from pressure hose (A) and return hose (B). These can be stored and used as replacement parts.

   NOTE:

   It is normal to have an extra set of quick couplers on windrowers with the auger/rotary disc/draper-ready configuration.

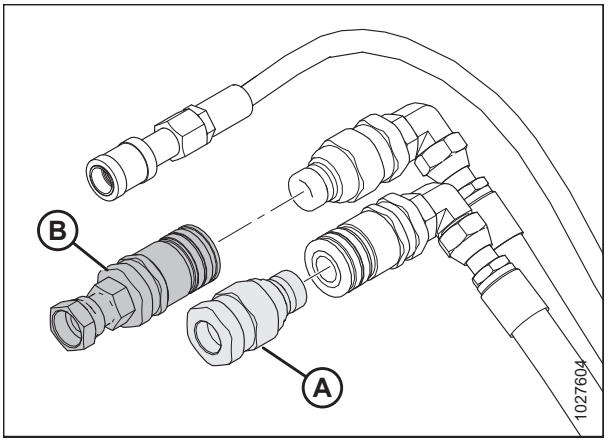


Figure 5.253: Hydraulic Quick Couplers

7. Connect the hydraulic hoses to the windrower with the quick coupler fittings as follows:

   a. Connect the pressure hose female coupler to receptacle (A).

   b. Connect the return hose male coupler to receptacle (B).

   c. Connect case drain hose (C) to the mating 1/2 in. coupler on the frame.

      NOTE:

      This coupler is only present if the Low Pressure Case Drain kit (B6698) has been installed.

      IMPORTANT:

      Do **NOT** connect the case drain coupler to 1/2 in. flat faced coupler (E).

   d. Connect the electrical harness to receptacle (D).

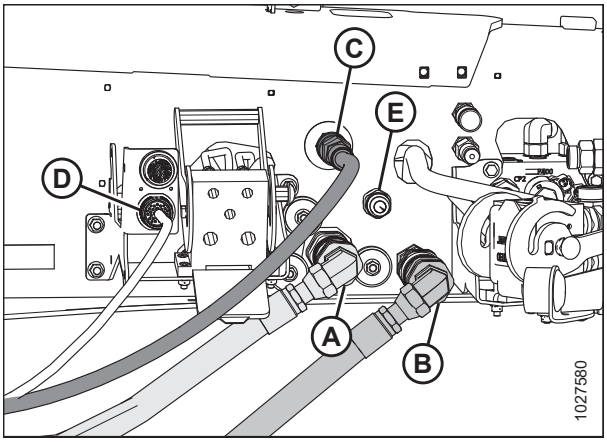


Figure 5.254: Hydraulics and Electrical Installed – Auger/Rotary/Draper-Ready Windrower

8. Push latch (A) to unlock platform (B).

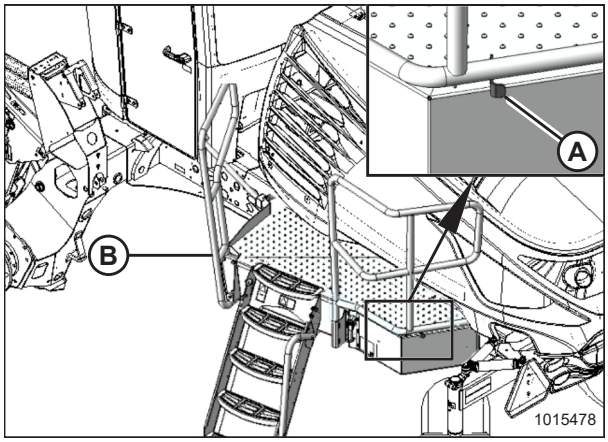


Figure 5.255: Left Platform

9. Pull platform (A) toward the cab until it stops and the latch is engaged.
10. Calibrate the header on the windrower. For instructions, refer to *5.6 Calibrating Header on HarvestTouch™ Display, page 228*.

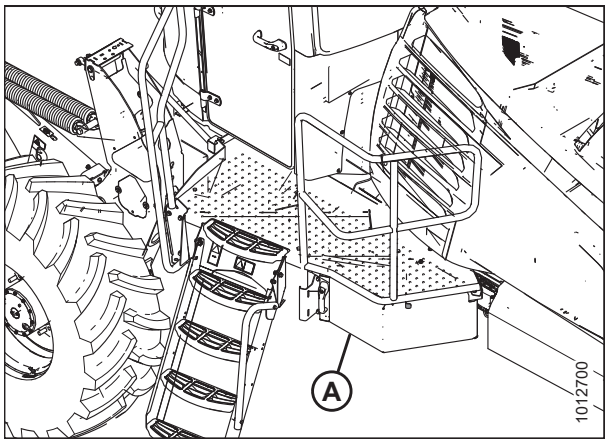


Figure 5.256: Left Platform

Rotary Disc-Only Configuration – Hard-Plumbed Fittings

The rotary disc-only configuration allows the windrower to operate with compatible rotary disc headers.

DANGER

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

CAUTION

Do NOT stand on an unlocked platform. It is unstable and may cause you to fall.

IMPORTANT:

To prevent contamination of the hydraulic system, use a clean rag to remove dirt and moisture from all (fixed and movable) hydraulic couplers.

1. Shut down the engine, and remove the key from the ignition.

2. Approach platform (A) on the left side of the windrower. Ensure that the cab door is closed.
3. Push latch (B) and pull platform (A) toward the walking beam until it stops and the latch engages.

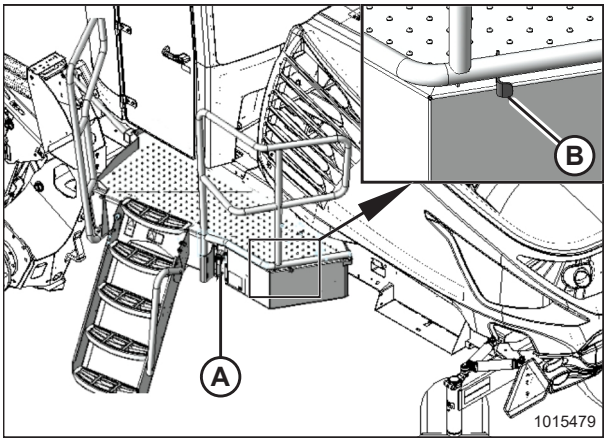


Figure 5.257: Left Platform

4. Attach hose support (A) to the frame near the windrower left cab-forward leg. Route the hoses under the frame.

   NOTE:

   Ensure that the hoses remain as straight as possible and that they are not subject to damage from abrasion.

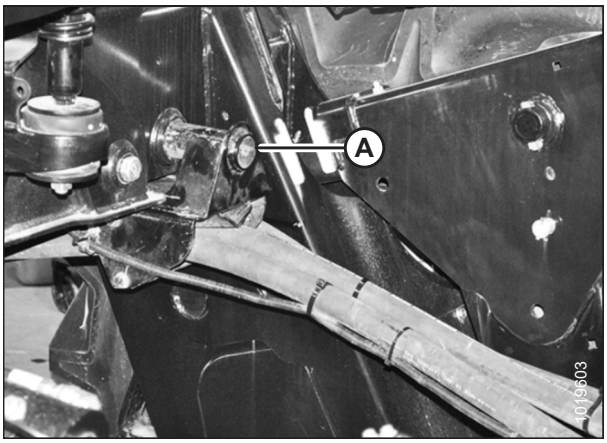


Figure 5.258: Hose Support Attachment

5. Remove the existing quick couplers and elbow fittings (if they are installed) from header hydraulic pressure hose (A) and return hose (B). Do **NOT** remove the fittings from case drain hose (C).

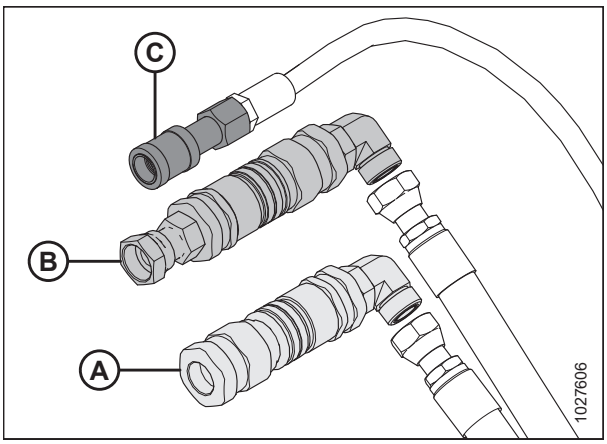


Figure 5.259: Rotary Disc Header Hose Bundle

6. Connect the hydraulic hoses to the windrower as follows:

   a. Connect rotary disc pressure hose (A) as shown and torque it to 215 Nm (159 lbf·ft).

   b. Connect rotary disc return hose (B) as shown and torque it to 215 Nm (159 lbf·ft).

   c. Connect case drain hose (C) to the mating 1/2 in. coupler as shown.

      NOTE:

      The case drain hose coupler will be present only if the Low Pressure Case Drain kit (B6698) has been installed.

      IMPORTANT:

      Ensure that the case drain hose is connected to port (C), **NOT** port (E).

   d. Connect the electrical harness to receptacle (D).

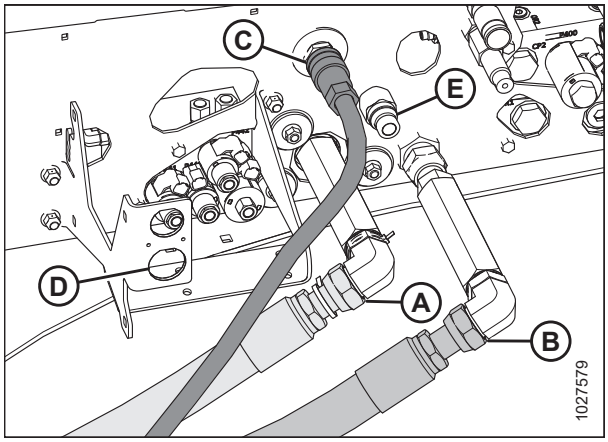


Figure 5.260: Hard Plumbed Connections on Disc Header-Ready Windrower with Case Drain Kit

7. Push latch (A) to unlock platform (B).

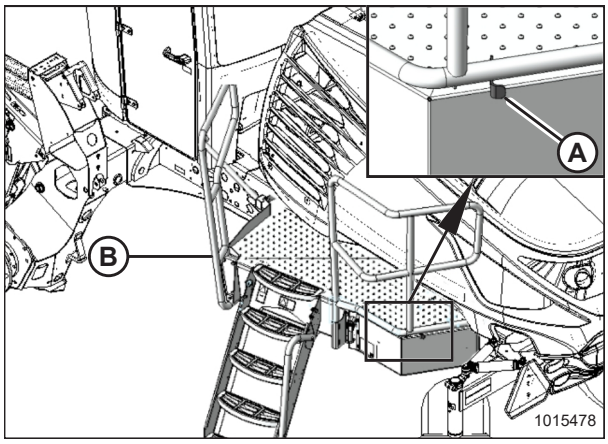


Figure 5.261: Left Platform

8. Pull platform (A) toward the cab until it stops and the latch is engaged.

9. Calibrate the header on the windrower. For instructions, refer to *5.6 Calibrating Header on HarvestTouch™ Display, page 228*.

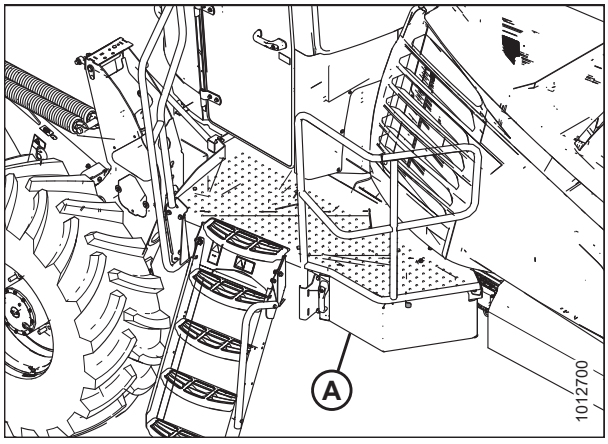


Figure 5.262: Left Platform

Rotary Disc-Only Configuration – Quick Coupler Connections

The rotary disc-only configuration allows the windrower to operate with compatible rotary disc headers. Attaching the header's hydraulic connections to the windrower's ports using quick couplers does not require any additional tools or hardware.

DANGER

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

CAUTION

Do NOT stand on an unlocked platform. It is unstable and may cause you to fall.

IMPORTANT:

To prevent contamination of the hydraulic system, use a clean rag to remove dirt and moisture from all (fixed and movable) hydraulic couplers.

1. Shut down the engine, and remove the key from the ignition.
2. Approach platform (A) on the left side of the windrower. Ensure that the cab door is closed.
3. Push latch (B) and pull platform (A) toward the walking beam until it stops and the latch engages.

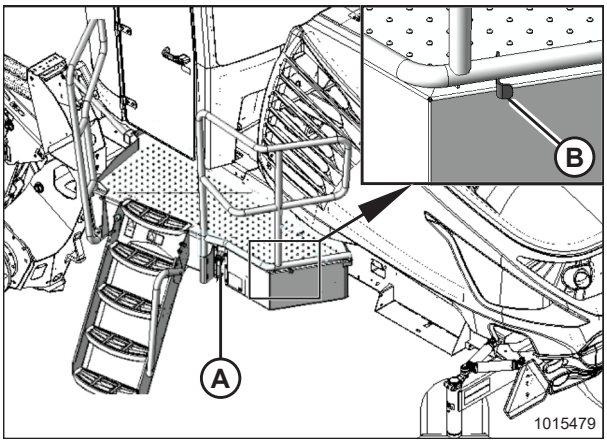


Figure 5.263: Left Platform

4. Attach hose support (A) to the frame near the windrower left cab-forward leg. Route the hoses under the frame.

   NOTE:

   Ensure that the hoses remain as straight as possible and that they are not subject to damage from abrasion.

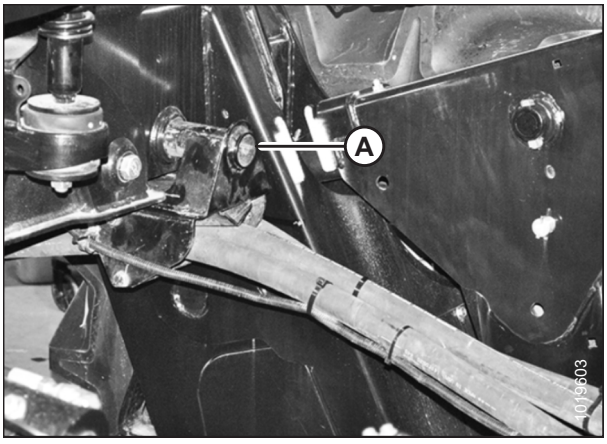


Figure 5.264: Hose Support Attachment

5. Remove extension fittings and elbows (A) from the rotary disc header's hydraulic pressure and return connections.

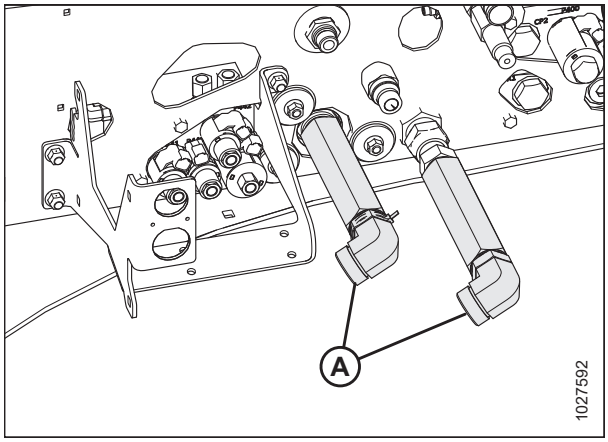


Figure 5.265: Hard Plumbed Connections – Rotary Disc-Ready Windrower

6. Remove and retain the extra hydraulic quick couplers from pressure hose (A) and return hose (B).

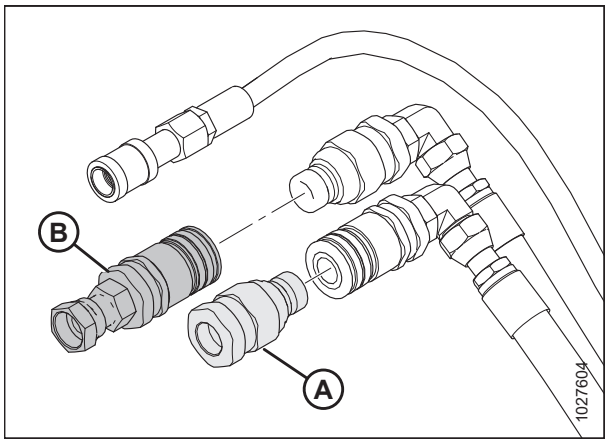


Figure 5.266: Hydraulic Quick Couplers

7. Install the male quick coupler at windrower pressure receptacle (A) as shown.
8. Install the female quick coupler at windrower return receptacle (B) as shown.

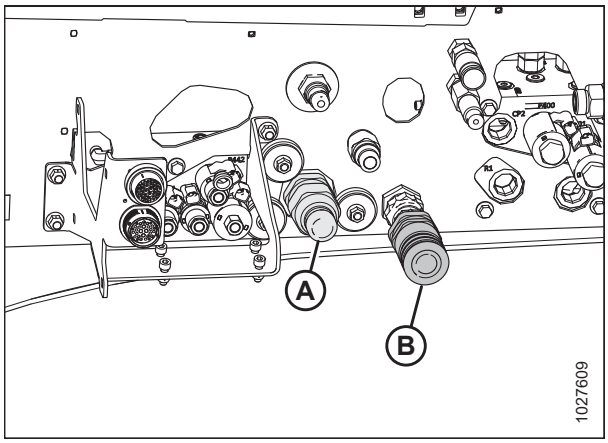


Figure 5.267: Quick Couplers on Rotary Disc-Ready Windrower

9. Connect the hydraulic hoses to the windrower as follows:

   a. Connect pressure hose female coupler (A) as shown.

   b. Connect return hose male coupler (B) as shown.

   c. Connect case drain hose (C) as shown.

      NOTE:

      The case drain hose coupler will be present only if the Low Pressure Case Drain kit (B6698) has been installed.

      IMPORTANT:

      Ensure that the case drain hose is connected to port (C), **NOT** port (E).

   d. Connect the header's electrical harness to receptacle (D).

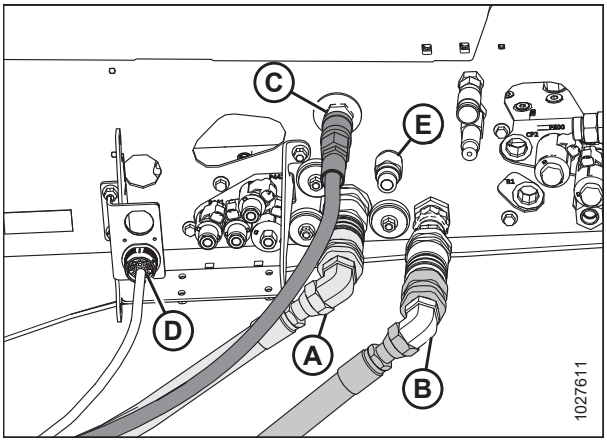


Figure 5.268: Quick Couplers on Rotary Disc-Ready Windrower with Case Drain Kit

10. Push latch (A) to unlock platform (B).

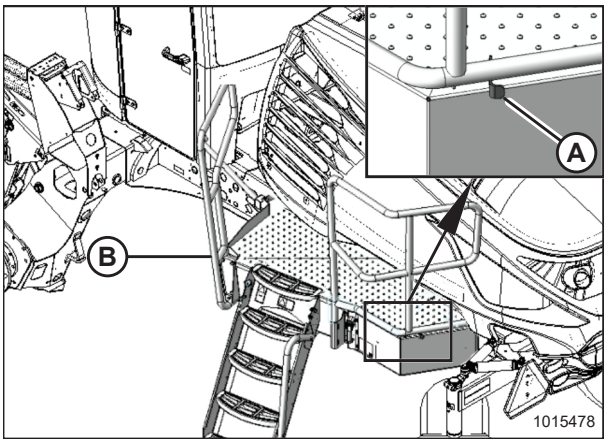


Figure 5.269: Left Platform

11. Pull platform (A) toward the cab until it stops and the latch is engaged.

12. Calibrate the header on the windrower. For instructions, refer to *5.6 Calibrating Header on HarvestTouch™ Display, page 228*.

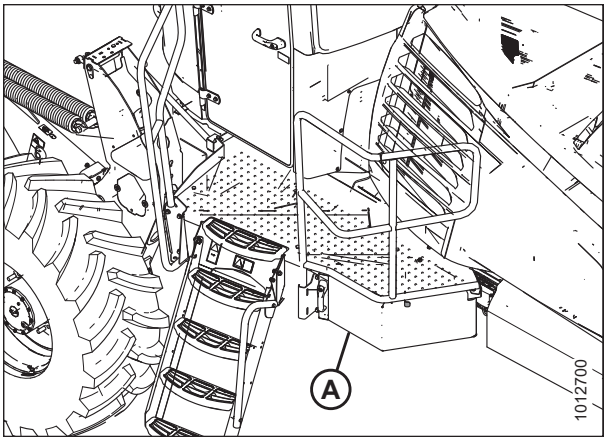


Figure 5.270: Left Platform

5.5.4 Detaching R1 Series Rotary Disc Headers

Detaching the header from the windrower requires removing the electrical and hydraulic connections, detaching the header supports, and releasing the center-link.

DANGER

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

DANGER

Ensure that all bystanders have cleared the area.

IMPORTANT:

Install caps and plugs on open lines to prevent contamination.

1. Start the engine.
2. Press HEADER UP button (A) on the ground speed lever (GSL) to fully raise the header.
3. If one end of the header does **NOT** rise fully, rephase the cylinders as follows:
   a. Press and hold HEADER UP (A) switch until both cylinders stop moving.
   b. Continue to hold the switch for 3–4 seconds. The cylinders are now phased.
4. Shut down the engine, and remove the key from the ignition.

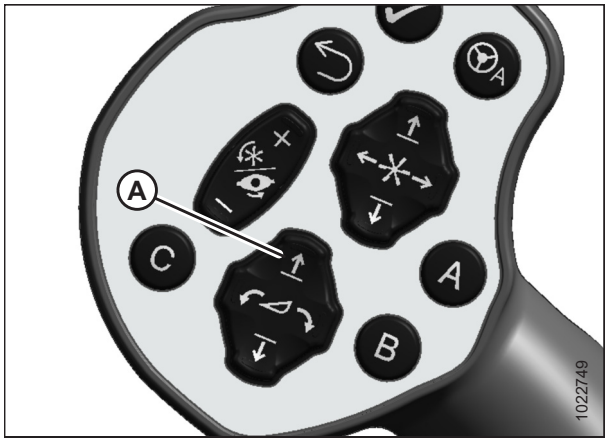


Figure 5.271: Ground Speed Lever (GSL)

5. Engage the safety props on both lift cylinders as follows:
   a. Pull lever (A) toward you to release it, then rotate it toward the header to lower the safety prop onto the cylinder.
   b. Repeat the previous step for the opposite lift cylinder.

   IMPORTANT:

   Ensure that the safety props engage over the cylinder piston rods. If the safety prop does **NOT** engage properly, raise the header until the safety prop fits over the rod.

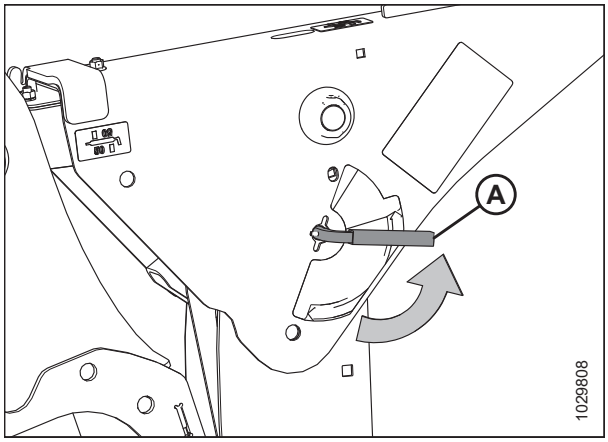


Figure 5.272: Safety Prop Lever

6. Remove hairpin (B) and clevis pin (A) from header support (C) on each side of the header.

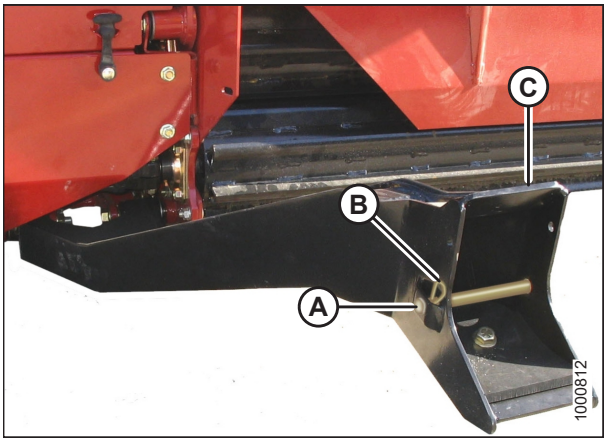


Figure 5.273: Header Support

7. **Windrowers with self-aligning center-link:** Release center-link latch (A).

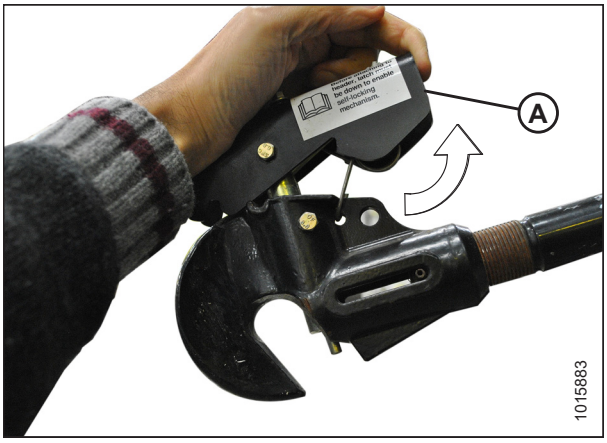


Figure 5.274: Center-Link

8. Disengage the safety props on both lift cylinders as follows:

   a. Turn lever (A) away from the header to raise the safety prop until the lever locks into the vertical position.

   b. Repeat the previous step for the opposite cylinder.

   NOTE:

   If the safety prop will **NOT** disengage, raise the header to release the prop.

9. Start the engine.

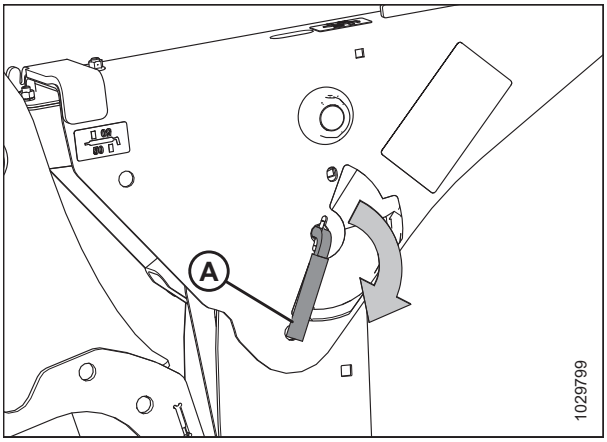


Figure 5.275: Safety Prop Lever

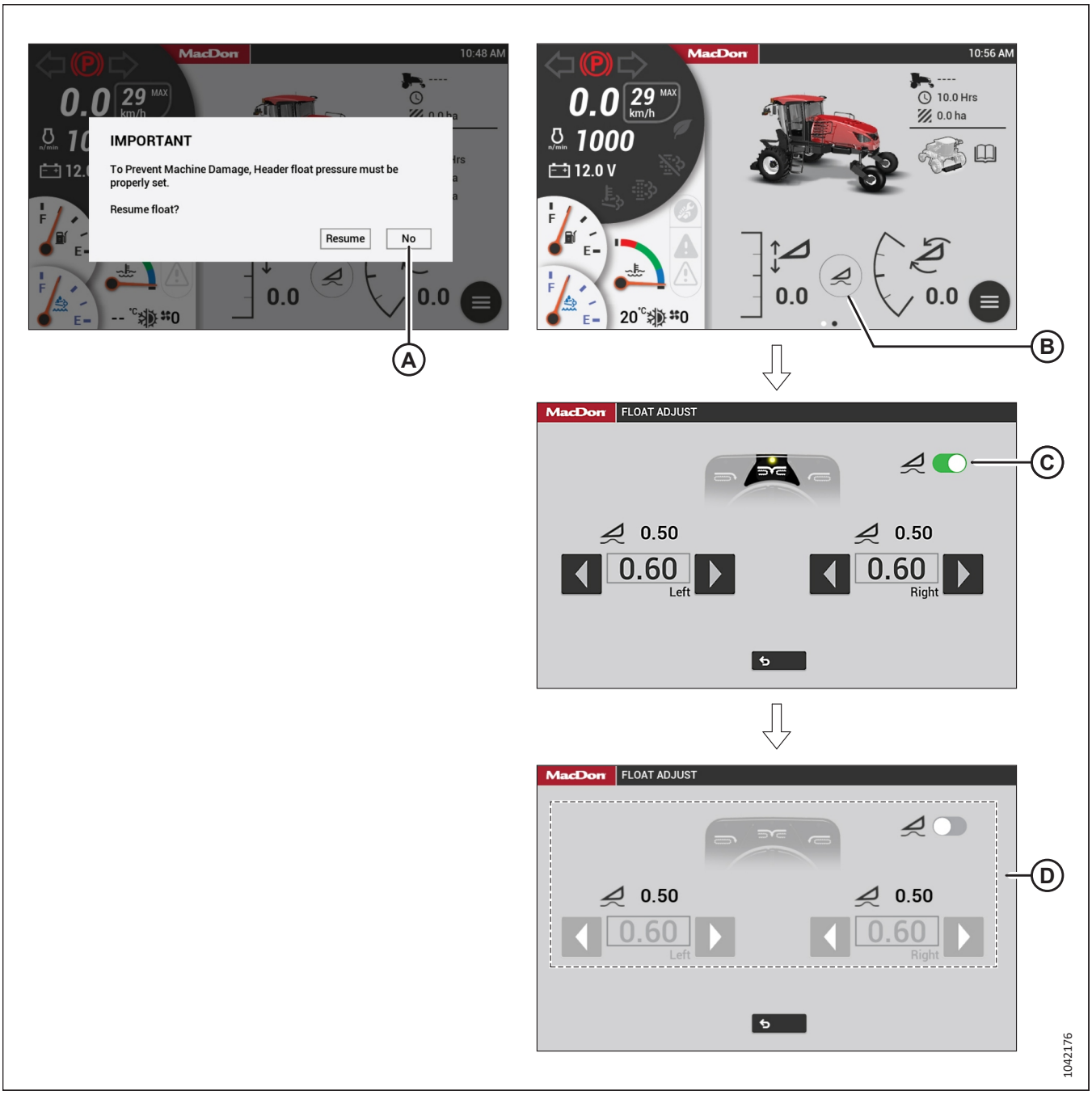


Figure 5.276: Float Removal

10. Remove the float as follows:

    - If the HarvestTouch™ Display shows the message “Resume Float?”, then select NO (A).
    - If the HarvestTouch™ Display does **NOT** show the message, then select FLOAT ADJUST (B), select switch (C), and confirm the switch and float settings (D) are grayed out.

    IMPORTANT:

    Removing the float will release the tension in the float springs. This will prevent damage to the header lift linkages when lowering the legs without a header or weight box attached to the windrower.

11. Lower the header fully using HEADER DOWN switch (A).

12. Press HEADER TILT switches (B) as needed on the GSL to release the load on the center-link.

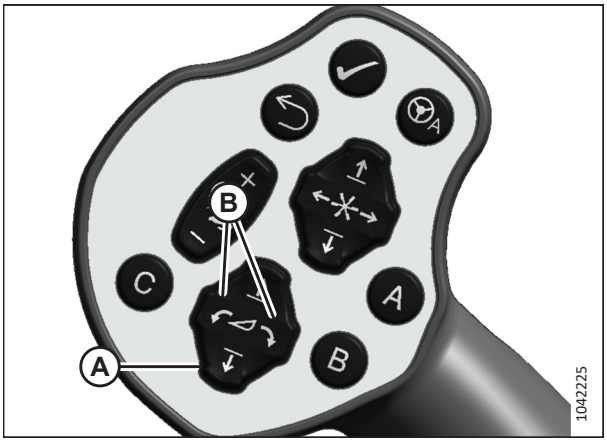


Figure 5.277: GSL

13. **Windrowers with self-aligning center-link:**

    a. Press REEL UP switch (A) to disengage the center-link from the header.

    b. Shut down the engine, and remove the key from the ignition.

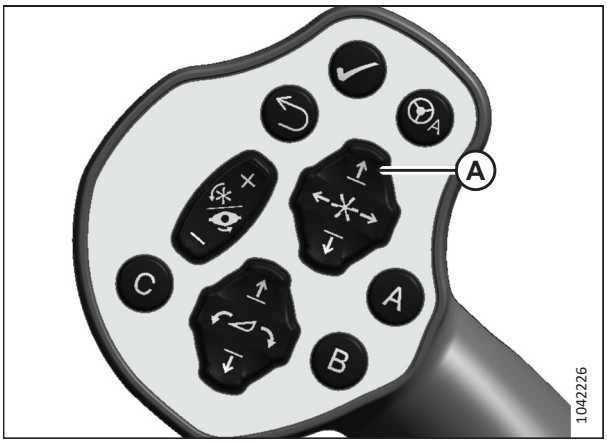


Figure 5.278: GSL

14. **Windrowers without the self-aligning center-link:**

    a. Shut down the engine, and remove the key from the ignition.

    b. Disconnect the center-link by lifting release (A) and lift hook (B) off the header.

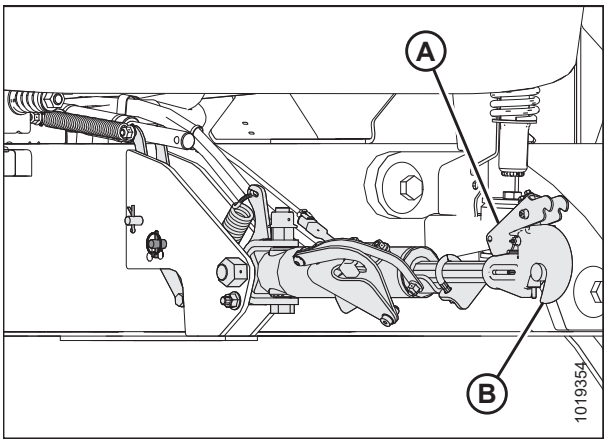


Figure 5.279: Hydraulic Center-Link

15. Approach platform (A) on the left side of the windrower. Ensure that the cab door is closed.

16. Push latch (B) and pull platform (A) toward the walking beam until it stops and the latch engages.

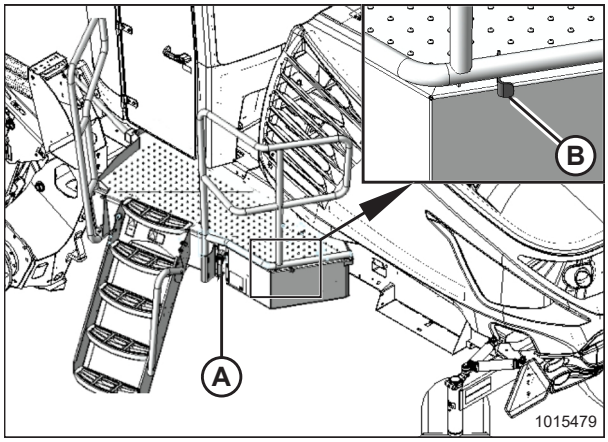


Figure 5.280: Left Platform

17. Disconnect electrical harness (D), and hydraulic hoses (A), (B), and (C) from the windrower.

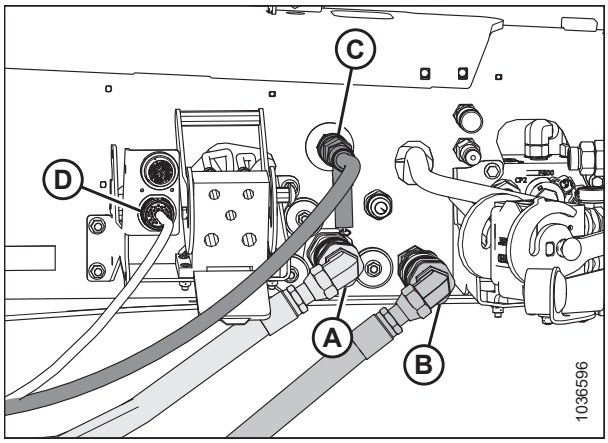


Figure 5.281: Header Drive Hydraulics – M2260 Connection Locations, Low Pressure Case Drain Kit B6698 Installed

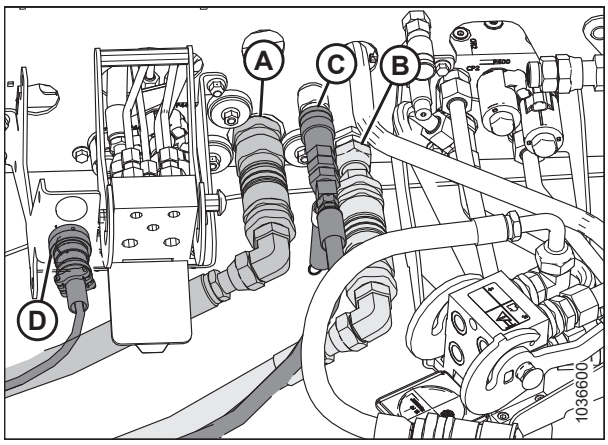


Figure 5.282: Header Drive Hydraulics – M2170 Connection Locations

18. Push latch (A) to unlock platform (B).

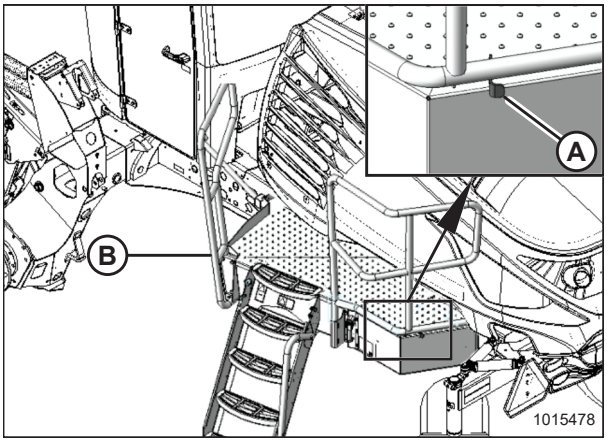


Figure 5.283: Left Platform

19. Pull platform (A) toward the cab until it stops and the latch is engaged.

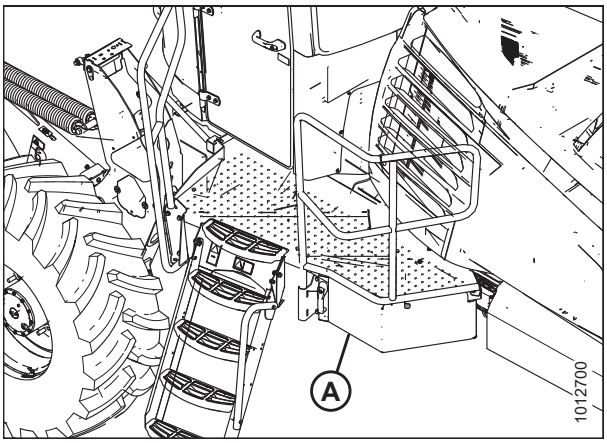


Figure 5.284: Left Platform

20. Remove hose support (A) and the hose bundle from the windrower frame.

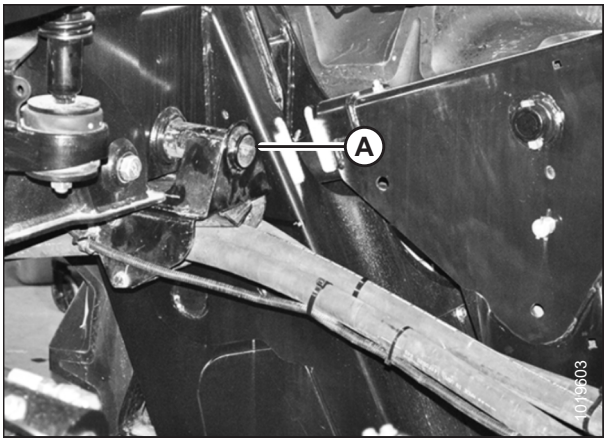


Figure 5.285: Hoses on Windrower

21. Slide support (A) into center-link support (B) and secure it with hardware (C).

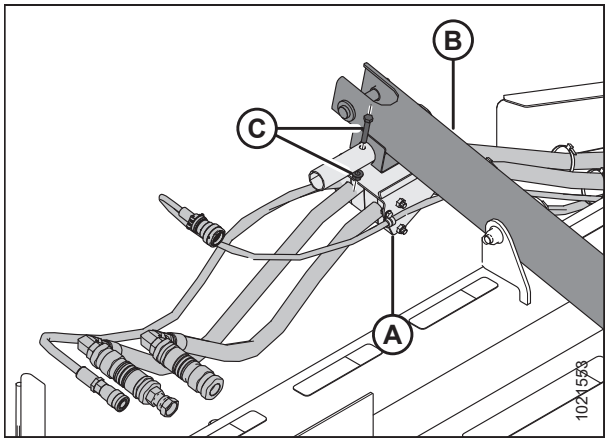


Figure 5.286: Hose Storage Position

22. Place hoses (A) and electrical harness (B) disconnected from the windrower into storage plate (C).

    NOTE:

    Install caps and plugs on open lines to prevent contamination while the header is in storage.

    NOTE:

    Some parts have been removed from the illustration for the sake of clarity.

23. Back the windrower away from the header.

24. Shut down the engine, and remove the key from the ignition.

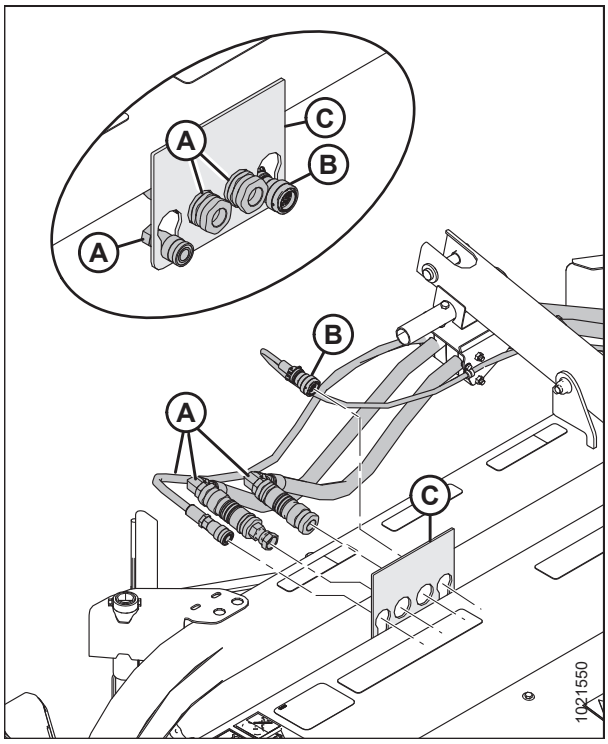


Figure 5.287: Hydraulic Storage Plate

25. Reinstall clevis pin (A) through header support (C) and secure the clevis pin with hairpin (B). Repeat this step on the opposite side of the header.

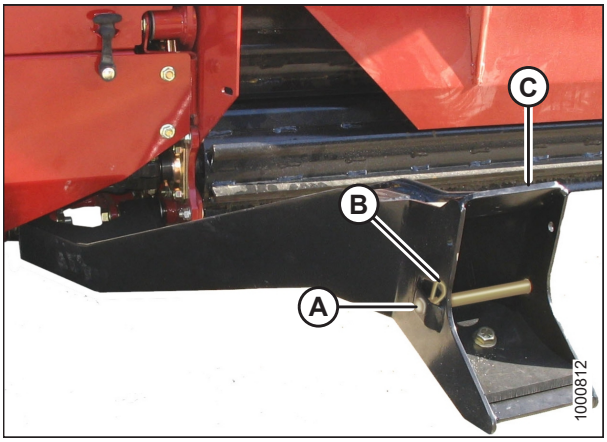


Figure 5.288: Header Support

5.6 Calibrating Header on HarvestTouch™ Display

The HarvestTouch™ Display recognizes when a header is attached to the windrower and determines which systems will require calibration.

The following sensors may require calibration, depending on the type of header attached to the windrower:

- Header height
- Header angle
- Header float left
- Header float right
- Reel height
- Reel fore-aft
- Swath compressor
- Knife drive

Recalibration is required in the following circumstances:

- The HarvestTouch™ Display is replaced
- A position sensor is replaced
- Sensor readouts are erratic
- A pump has been replaced
- A new header type or attachment is connected to the windrower

Refer to the following topics for information on calibrating header systems:

- *5.6.1 Calibrating Knife Drive on HarvestTouch™ Display, page 228*
- *5.6.2 Calibrating Header Position Sensors on HarvestTouch™ Display, page 232*

5.6.1 Calibrating Knife Drive on HarvestTouch™ Display

When a header is attached to the windrower, the windrower's HarvestTouch™ Display will recognize the header ID and choose the appropriate settings for that header. Before it can be operated, however, the header's knife drive must be calibrated to ensure that the knife drive pump output is accurate.

DANGER

Ensure that all bystanders have cleared the area.

NOTE:

This calibration **MUST** be performed with the engine running and the header engaged.

1. Start the engine.
2. Engage the header.

   NOTE:

   Once the header is engaged, header gauges (A) will appear on the HarvestTouch™ Display home page.

3. Select MENU icon (B).

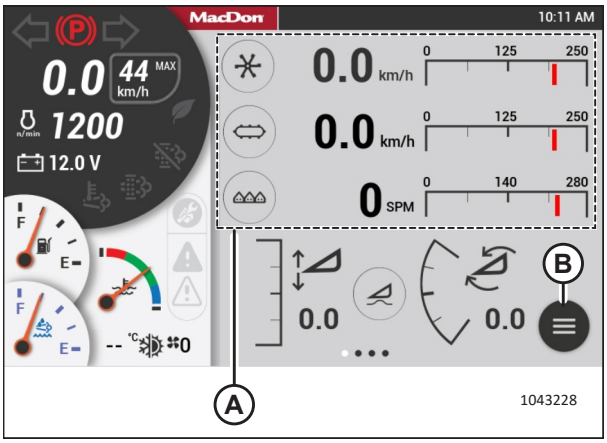


Figure 5.289: HarvestTouch™ Display

4. Select SETUP (A).

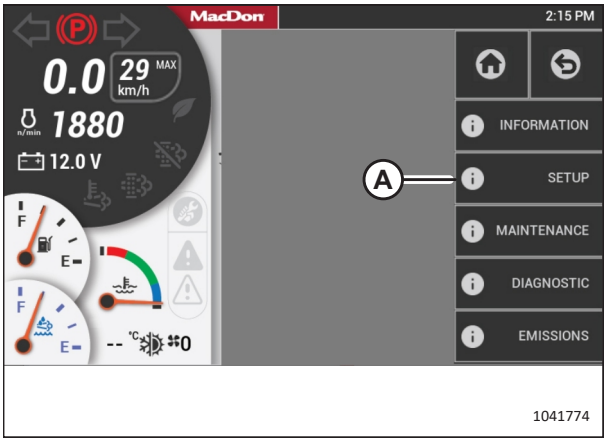


Figure 5.290: Main Menu

5. Select WINDROWER (A).

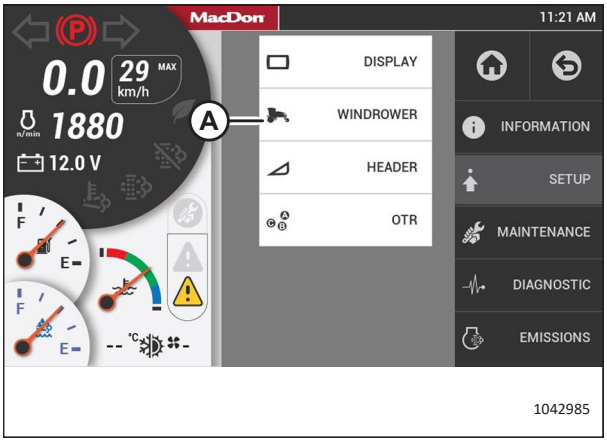


Figure 5.291: Setup Menu

6. Select CALIBRATION (A).

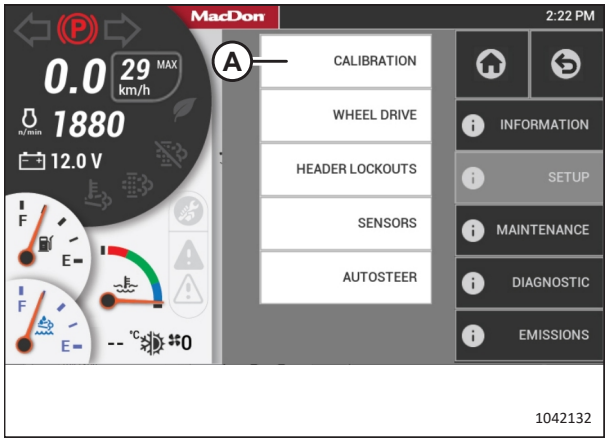


Figure 5.292: Setup Menu

7. Select KNIFE DRIVE (A).

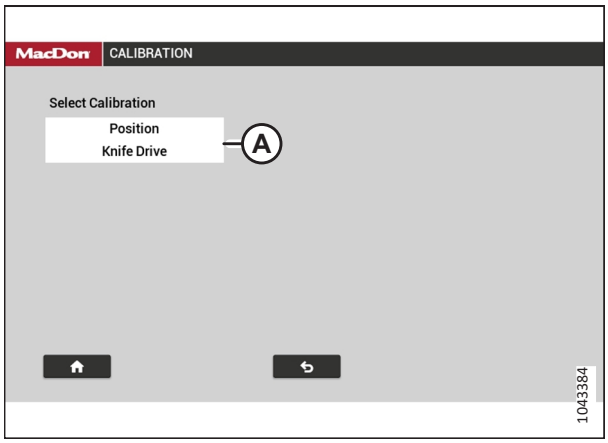


Figure 5.293: Calibration Selection Page

8. Select PLAY icon (A).

   NOTE:

   The PLAY icon will only appear if the header is engaged.

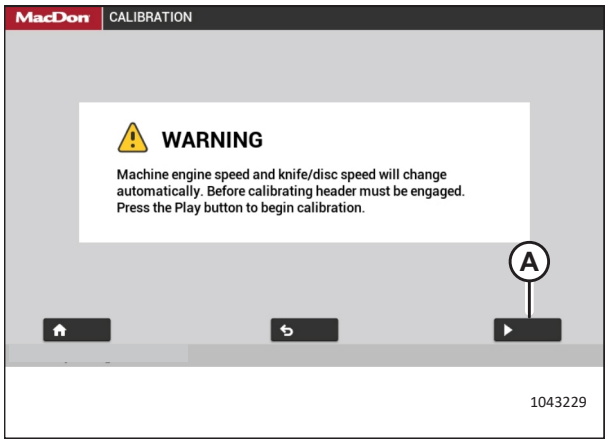


Figure 5.294: Engage Header Warning

9. The display changes to show that calibration has started. The process should automatically proceed through all nine stages.

   NOTE:

   If the engine speed is less than 1500 rpm before calibration, the system will raise the engine speed to 1500 rpm.

   NOTE:

   During the calibration process, the speed of the header and the engine will fluctuate.

   NOTE:

   Select X icon (A) on the screen or use the HEADER DISENGAGE switch at any time during the calibration process to exit the procedure without saving your progress. The engine will resume the speed at which it was operating before the calibration process began.

Figure 5.295: Calibration Page

   NOTE:

   If error message (A) appears during the calibration process, follow the instructions in the message to fix the error. Select X icon (B) to exit the message. If the knife calibration process fails:

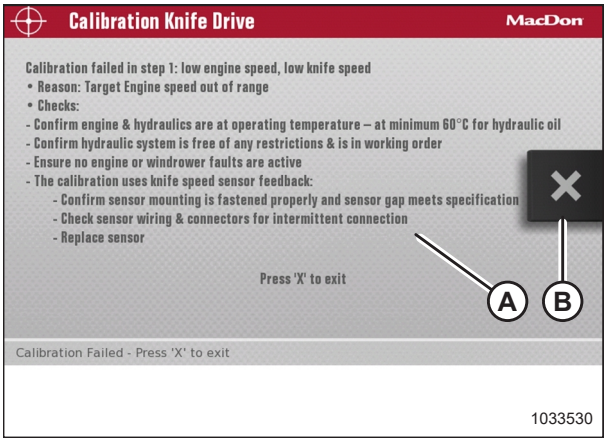


Figure 5.296: Calibration Page

   - Confirm that the engine and the hydraulics are at operating temperature.
   - Confirm that the hydraulic system is free of any restrictions and is in working order.
   - Confirm that the throttle is working:
     - Check the engine codes to confirm that the engine is not derated or throttle-inhibited.
     - The throttle is controlled via the powertrain's CAN network 1. Check the network's wiring and connectors for an open or intermittent connection.
   - Confirm that the sensor mounting is secured properly and that the sensor's gap is set correctly.
   - Check the sensor wiring and connectors for an intermittent connection.
   - Replace the sensor. For instructions, refer to the windrower technical manual.

10. Once the calibration process completes all nine stages, the message CALIBRATING COMPLETED appears. Select X icon (A) to exit the page.

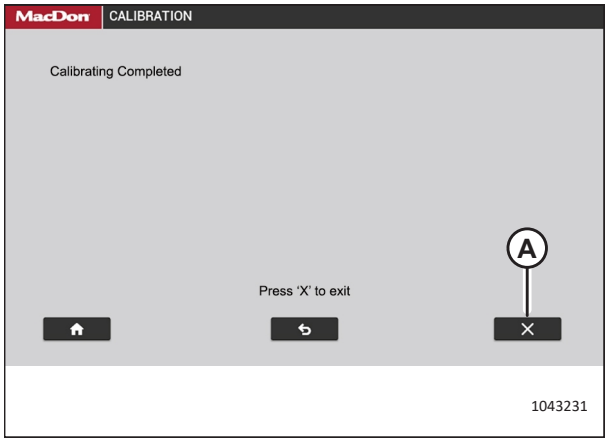


Figure 5.297: Calibration Page

5.6.2 Calibrating Header Position Sensors on HarvestTouch™ Display

The header position sensors need to be recalibrated whenever the HarvestTouch™ Display is replaced, a position sensor is replaced, sensor readouts are erratic, a pump has been replaced, or when a new header type or attachment is connected to the windrower.

DANGER

Ensure that all bystanders have cleared the area.

NOTE:

This calibration **MUST** be performed with the engine running and the header engaged.

1. Start the engine.
2. Engage the header.

   NOTE:

   Once the header is engaged, header gauges (A) will appear on the HarvestTouch™ Display home page.
3. Select MENU icon (B).

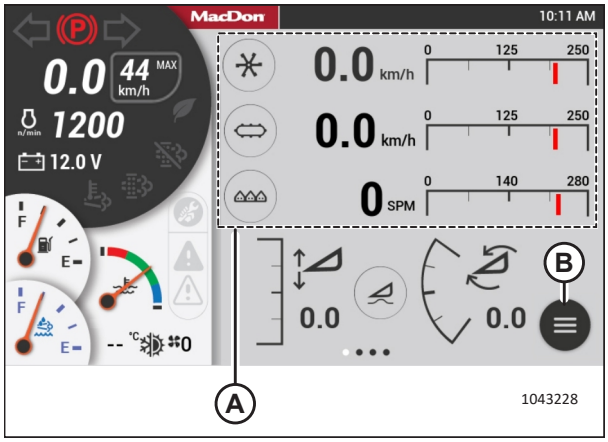


Figure 5.298: HarvestTouch™ Display

4. Select SETUP (A).

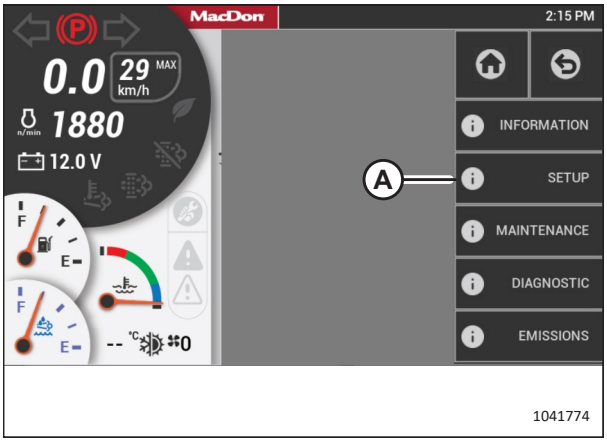


Figure 5.299: Main Menu

5. Select CALIBRATION (A).

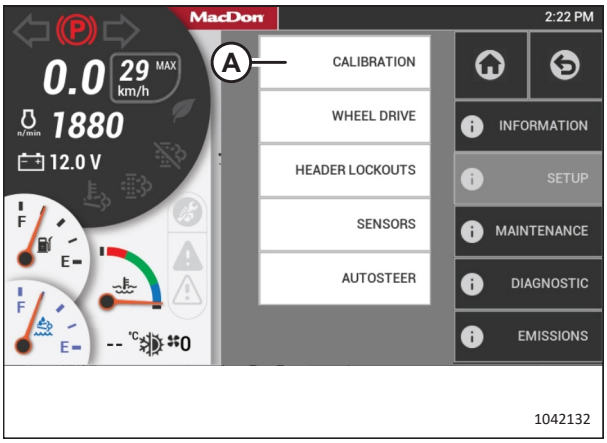


Figure 5.300: Setup Menu

6. Select POSITION (A).

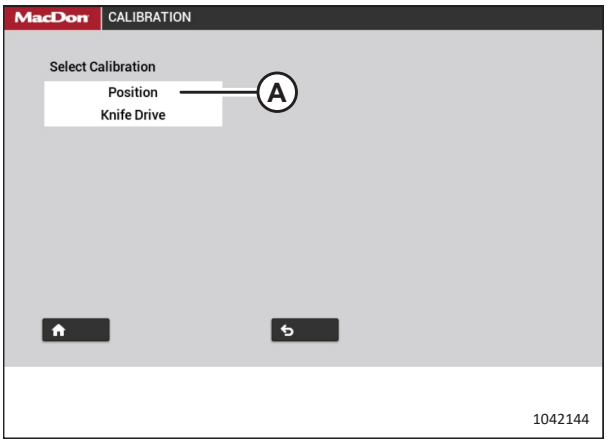


Figure 5.301: Calibration Selection Page

7. Select PLAY icon (A).

   NOTE:

   The PLAY icon will only appear if the header is engaged.

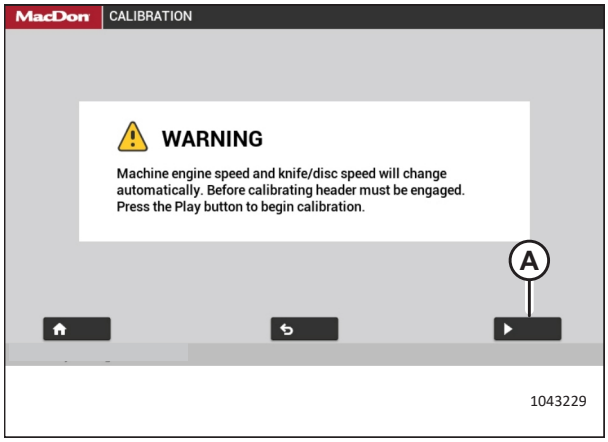


Figure 5.302: Engage Header Warning

8. The calibration will attempt the first calibration stage.

   NOTE:

   Selecting X icon (A), HOME, or BACK, or pressing any of the ground speed lever (GSL) buttons at any time during calibration will EXIT the calibration process without saving your progress. The engine speed will return to the original rpm before starting the calibration process.

   NOTE:

   If a sensor goes out of its normal operating range during the calibration process, calibration will stop and a message will appear on the screen indicating that a sensor is out of range.

Figure 5.303: Calibration Page

9. When the first stage of the calibration is complete, select PLAY icon (A) to continue with the second stage of the calibration process.

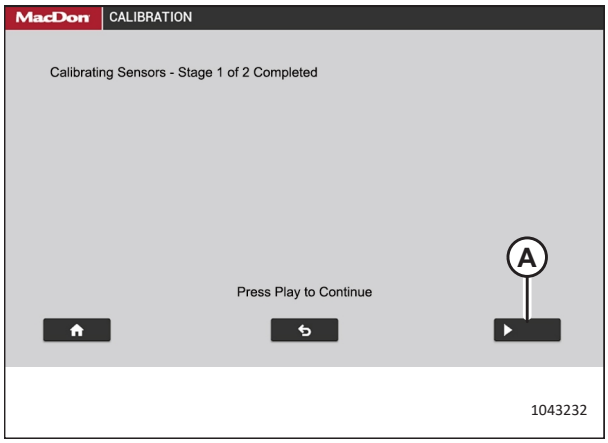


Figure 5.304: Calibration Page

NOTE:

If the voltage of any sensor falls below its acceptable range during calibration, a message appears afterward with a list of sensors reporting out-of-range voltages. Adjust the sensors as needed and repeat the calibration process from the beginning.

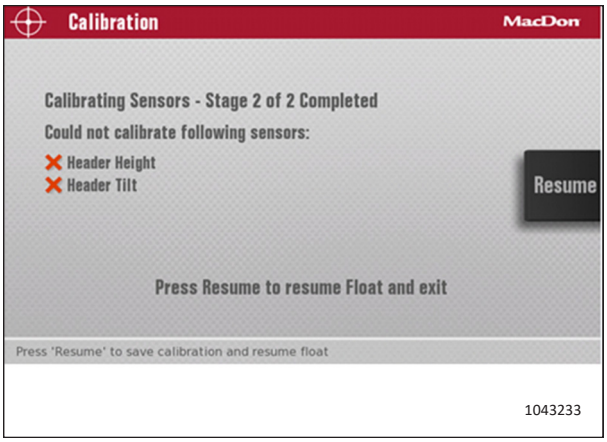


Figure 5.305: Sample of Failed Calibration Display Message

10. When the second stage of calibration is complete, calibration is complete. Select RESUME icon (A) to configure the HEADER FLOAT setting, or select the HOME or BACK icons to exit the page.

    NOTE:

    The engine speed returns to the speed prior to calibration when the second stage of the calibration is complete.

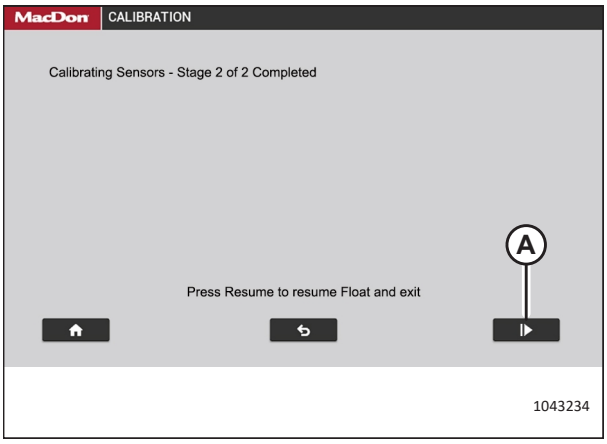


Figure 5.306: Calibration Page

5.7 Adjusting Header Settings on HarvestTouch™ Display

Some settings for the attached header can be changed using the windrower's HarvestTouch™ Display.

1. Turn the key to the ON or ACC position.
2. Select MENU icon (A).

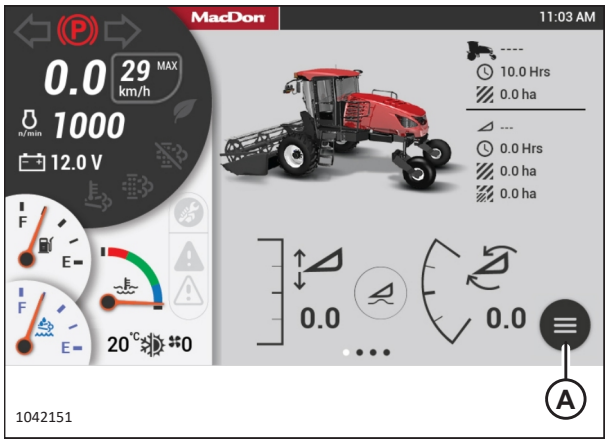


Figure 5.307: HarvestTouch™ Display – Header Disengaged

3. Select SETUP (A).

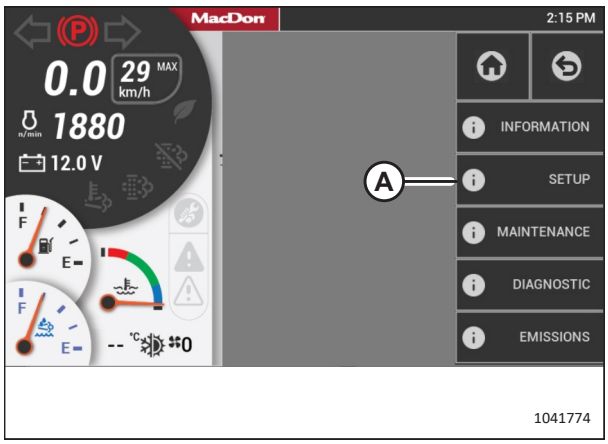


Figure 5.308: HarvestTouch™ Display

4. Select HEADER (A).

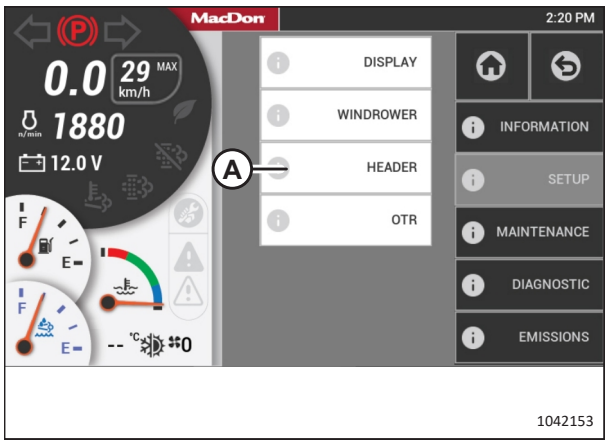


Figure 5.309: HarvestTouch™ Display

5. Select the model and configuration of header (A) that is attached to the windrower.

   NOTE:

   For example, “D230DK” means “D230 Double-knife header”.

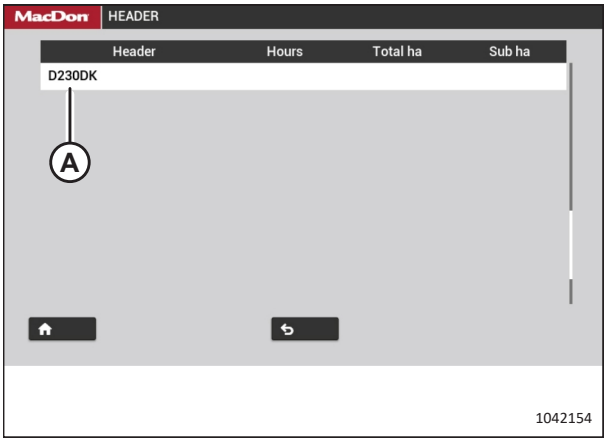


Figure 5.310: Header Settings

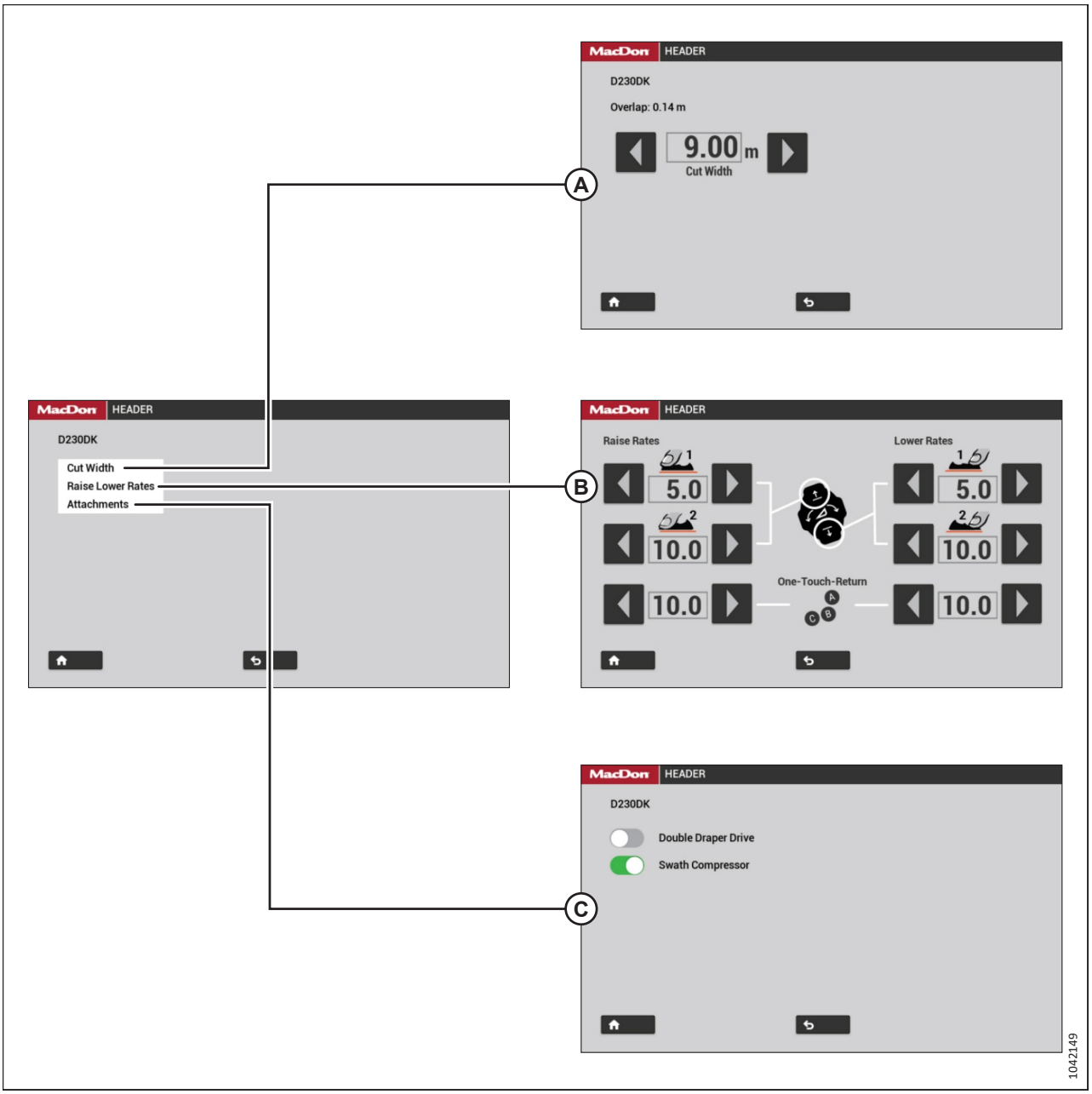


Figure 5.311: Header Settings

6. The list of settings will vary according to the type of header attached to the windrower. The illustration shows the settings available to a D2 Series Draper Header. Select and adjust the following settings as required:
   - (A) CUT WIDTH
   - (B) RAISE LOWER RATES
   - (C) ATTACHMENTS – Use this page to enable (or disable) attachments such as the double draper drive and swath compressor.
7. Calibrate the header if you are attaching it to the windrower for the first time, or if there is another reason to calibrate the header. For instructions, refer to *5.6 Calibrating Header on HarvestTouch™ Display, page 228*.
8. Turn the key to the OFF position.

Chapter 6: Reference

The reference chapter provides additional information such as the torque specification and a unit conversion chart.

6.1 Navigating HarvestTouch™ Display

The Operator can navigate the HarvestTouch™ Display by pressing or swiping the screen directly, or by using the ground speed lever (GSL) controls.

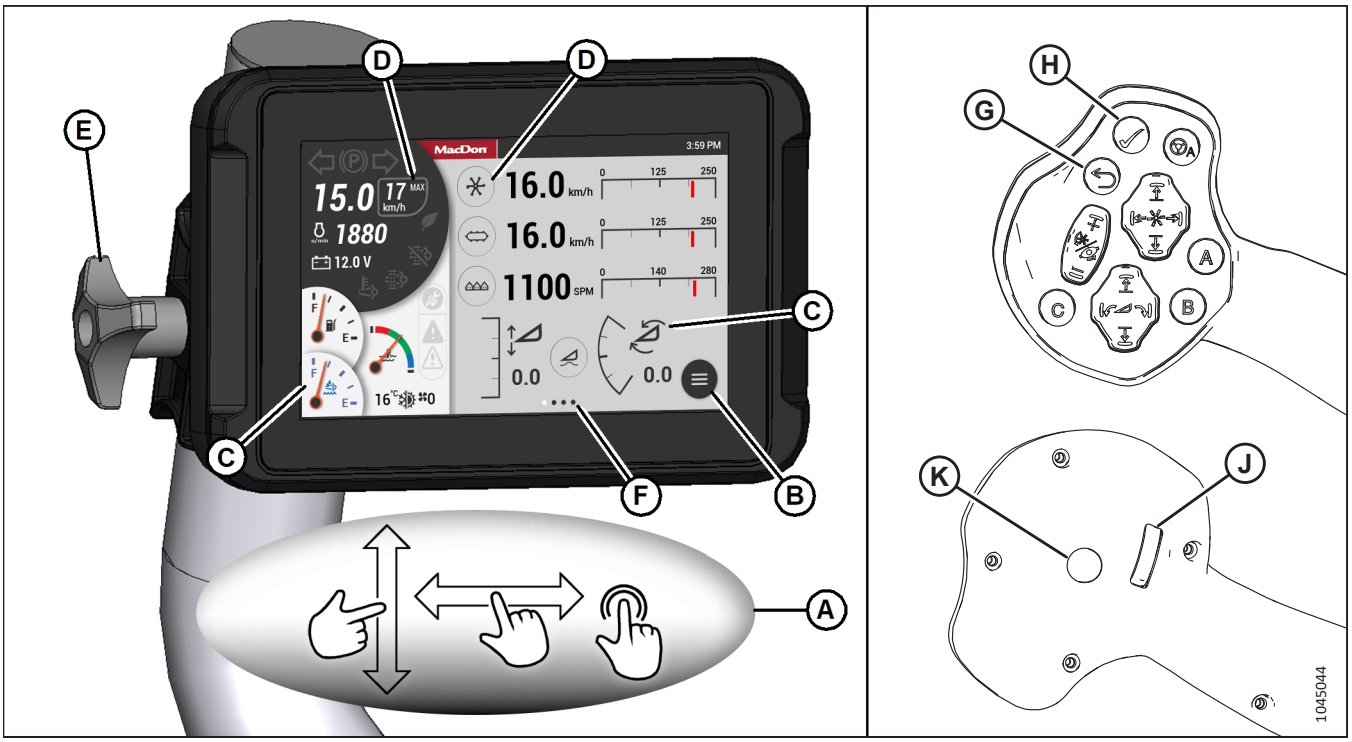


Figure 6.1: HarvestTouch™ Display and Ground Speed Lever (GSL)

Table 6.1 HarvestTouch™ Display Navigation

Callout	Function
A	Touchscreen gestures: press icons and swipe pages to access features.
B	Main menu icon: press to access windrower and header settings.
C	Icons with no border highlight information but have no press functions.
D	Bordered icons can be pressed for additional information or functions.
E	Display mount knob: loosen the knob to adjust the position of the display.
F	Multi-page dots (F) and scroll bars (not shown) indicate that you can swipe the touchscreen to access additional pages or information.
G	GSL back switch – controls display functions
H	GSL select switch – controls display functions
J	GSL scroll wheel – controls display functions
K	GSL shift switch. When the shift switch is used with a another button it performs the following functions: • SHIFT (K) + BACK (G) – Home page • SHIFT (K) + SELECT (H) – Main menu access • SHIFT (K) + SCROLL (J) – Adjust maximum ground speed

Pressing HOME icon (A) from any page will display either the windrower home page (if the header is disengaged) or the header run screen (if the header is engaged).

Pressing PREVIOUS/BACK icon (B) from any page will display the previous page.

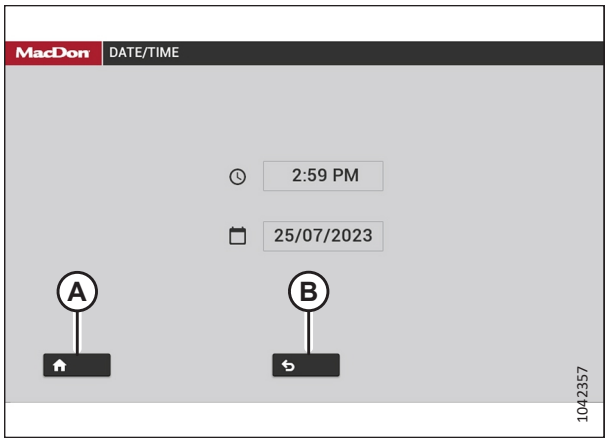


Figure 6.2: HarvestTouch™ Display Navigation

6.2 Coolant Specifications

Follow the specifications for coolant and water quality to optimize system performance and prevent damage to system components.

Recommended coolants: ASTM D-6210 and CES-14603, Peak Final Charge Global™, or Fleetguard ES Compleat™ OAT.

NOTE:

M2 Series Windrowers have Peak Final Charge Global™ coolant installed at the factory.

Mix equal parts of concentrated coolant to high quality, soft, deionized or distilled water as recommended by the supplier.

If Peak Final Charge Global™ or Fleetguard ES Compleat™ OAT is unavailable, use a coolant concentrate or prediluted coolant intended for use with heavy duty diesel engines with the following chemical and physical properties:

- Provides cylinder cavitation protection according to a fleet study run at or above 60% load capacity
- Protects the cooling system metals (cast iron, aluminum alloys, and copper alloys such as brass) from corrosion
- Coolant **MUST** be nitrite-free and **MUST** be free of 2-Ethylhexanoic (2-EH) acid

The additive package must be part of one of the following coolant mixtures:

- Ethylene glycol or propylene glycol base prediluted (40–60%) heavy duty coolant
- Ethylene glycol or propylene glycol base heavy-duty coolant concentrate in a 40–60% mixture of concentrate with quality water

Water quality is important for the performance of the cooling system. Distilled, deionized, or demineralized water is recommended for mixing with ethylene glycol and propylene glycol base engine coolant concentrate.

IMPORTANT:

Do **NOT** use cooling system sealing additives or antifreeze that contains sealing additives.

6.3 Fuel Specifications

Follow the specifications for fuel quality to optimize system performance and prevent damage to the engine or fuel components.

Use only ultra low sulphur diesel (ULSD) from a reputable supplier. For most year-round service, No. 2 ULSD fuel meeting ASTM specification D975 Grade S15 will provide good performance.

If the vehicle is exposed to extreme cold (below -7°C [20°F]) or is required to operate at colder-than-normal conditions for prolonged periods, use climatized No. 2 diesel fuel, or dilute the No. 2 ULSD fuel with 50% No. 1 ULSD fuel. This will provide better protection from fuel gelling or wax-plugging of the fuel filters.

Table 6.2 Fuel Specifications

Fuel	Specification	Sulphur (by weight)	Water and Sediment (by volume)	Cetane No. °C (°F)	Lubricity
ULSD Grade No. 2	ASTM D975	0.5% maximum	0.05% maximum	40 (104) minimum	520 Microns
ULSD Grade No. 1 and 2 mix[2]	n/a	1% maximum 0.5% maximum preferred	0.1% maximum	45–55 (113–130) cold weather / high altitude	460 Microns

In extreme situations, when available fuels are of poor quality or problems exist which are particular to certain operations, additives can be used; however, the engine manufacturer recommends consultation with the fuel supplier or engine manufacturer before using fuel additives. Situations where additives are useful include:

- A cetane improver additive can be used with low cetane fuels.
- A wax crystal modifier can help with fuels with high cold filter plugging points (CFPP).
- An anti-icer can help prevent ice formation in wet fuel during cold weather.
- An antioxidant or storage stability additive can help with fuel system deposits and poor storage stability.
- Diesel fuel conditioner can be used to increase the lubricity of fuels so that they meet the requirements given in Table *6.2, page 242*.

2. Optional when operating temperature is below 0°C (32°F).

6.4 Torque Specifications

The following tables provide torque values for various bolts, cap screws, and hydraulic fittings. Refer to these values only when no other torque value has been specified in a given procedure.

- Tighten all bolts to the torque values specified in the charts below, unless you are directed otherwise in this manual.
- Replace removed hardware with hardware of the same strength and grade.
- Refer to the torque value tables as a guide when periodically checking the tightness of bolts.
- Understand the torque categories for bolts and cap screws by reading the markings on their heads.

Jam nuts

Jam nuts require less torque than nuts used for other purposes. When applying torque to finished jam nuts, multiply the torque applied to regular nuts by 0.65 to obtain the modified torque value.

Self-tapping screws

Refer to the standard torque values when installing the self-tapping screws. Do **NOT** install the self-tapping screws on structural or otherwise critical joints.

6.4.1 Metric Bolt Specifications

Specifications are provided for the appropriate final torque values to secure various sizes of metric bolts.

NOTE:

The torque values provided in the following metric bolt torque tables apply to hardware installed dry; that is, hardware with no grease, oil, or threadlocker on the threads or heads. Do **NOT** add grease, oil, or threadlocker to bolts or cap screws unless you are directed to do so in this manual.

Table 6.3 Metric Class 8.8 Bolts and Class 9 Free Spinning Nut

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

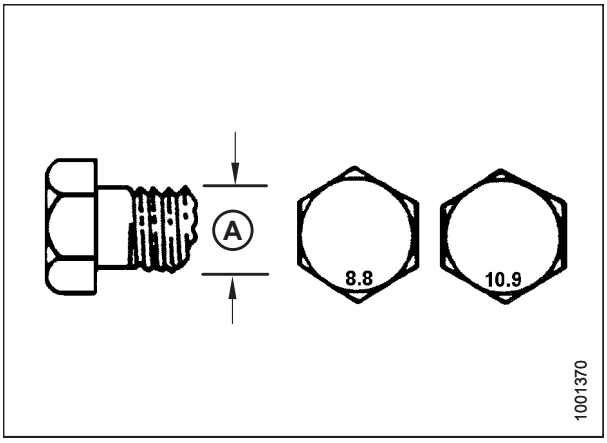


Figure 6.3: Bolt Grades

Table 6.4 Metric Class 8.8 Bolts and Class 9 Distorted Thread Nut

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

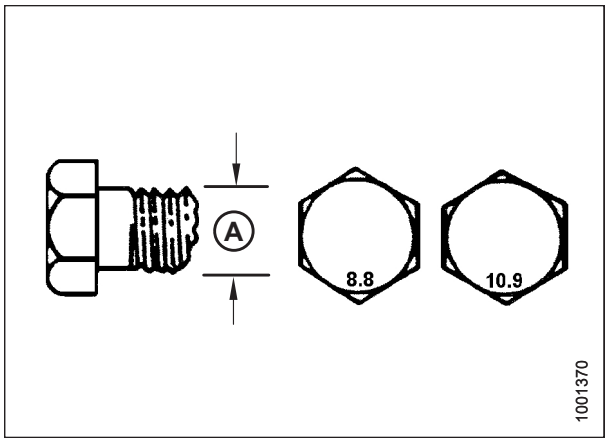


Figure 6.4: Bolt Grades

Table 6.5 Metric Class 10.9 Bolts and Class 10 Free Spinning Nut

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

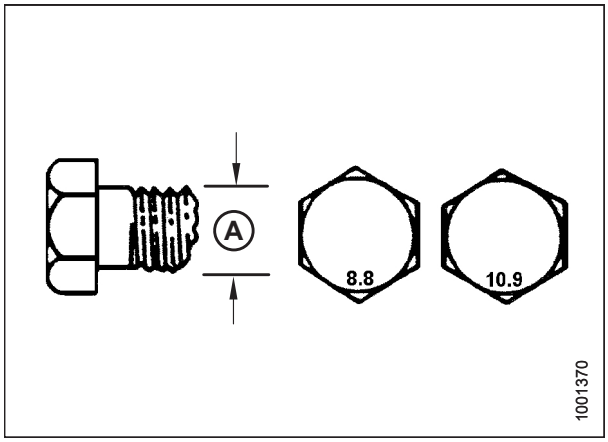


Figure 6.5: Bolt Grades

Table 6.6 Metric Class 10.9 Bolts and Class 10 Distorted Thread Nut

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

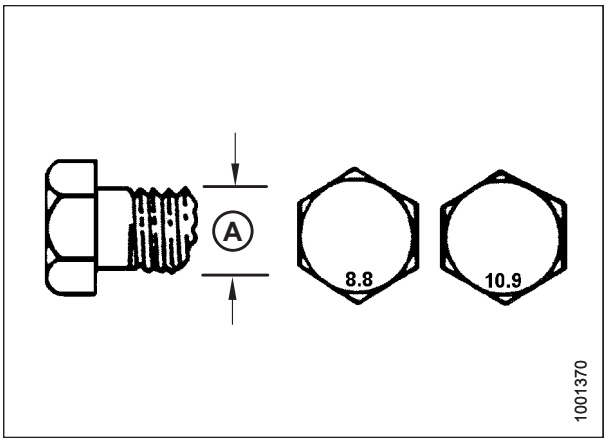


Figure 6.6: Bolt Grades

6.4.2 Metric Bolt Specifications – Cast Aluminum

Specifications are provided for the appropriate final torque values for various sizes of metric bolts in cast aluminum.

NOTE:

The torque values provided in the following metric bolt torque tables apply to hardware installed dry; that is, hardware with no grease, oil, or threadlocker on the threads or heads. Do **NOT** add grease, oil, or threadlocker to bolts or cap screws unless you are directed to do so in this manual.

Table 6.7 Metric Bolt Bolting into Cast Aluminum

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

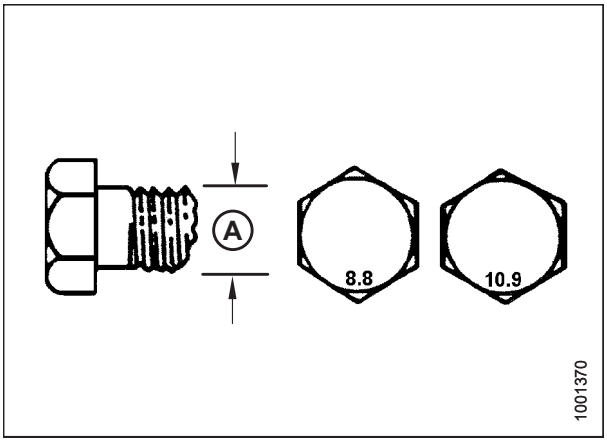


Figure 6.7: Bolt Grades

6.4.3 O-Ring Boss Hydraulic Fittings – Adjustable

The standard torque values are provided for adjustable hydraulic fittings. If a procedure specifies a different torque value for the same type and size of fitting found in this topic, refer to the value specified in the procedure instead.

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

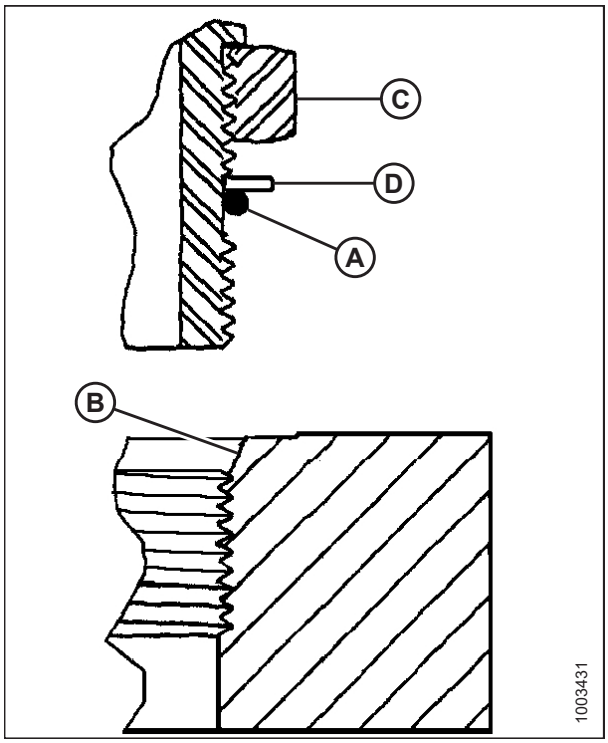


Figure 6.8: Hydraulic Fitting

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

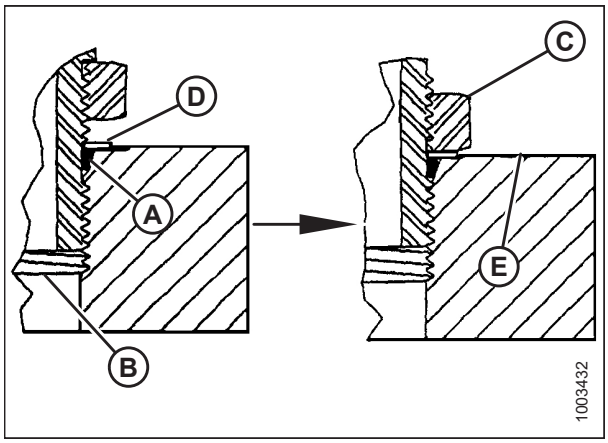


Figure 6.9: Hydraulic Fitting

Table 6.8 O-Ring Boss (ORB) Hydraulic Fittings – Adjustable and Non-Adjustable

SAE Dash Size	Thread Size (in.)	Torque Value[3]	
		Nm	lbf·ft (*lbf·in)
-2	5/16–24	10–11	*89–97
-3	3/8–24	18–20	*159–177
-4	7/16–20	29–32	21–24
-5	1/2–20	32–35	24–26
-6	9/16–18	40–44	30–32
-8	3/4–16	70–77	52–57
-10	7/8–14	115–127	85–94
-12	1 1/16–12	183–201	135–148
-14	1 3/16–12	237–261	175–193
-16	1 5/16–12	271–298	200–220
-20	1 5/8–12	339–373	250–275
-24	1 7/8–12	414–455	305–336
-32	2 1/2–12	509–560	375–413

6.4.4 O-Ring Boss Hydraulic Fittings – Non-Adjustable

The standard torque values for non-adjustable hydraulic fittings are provided. If a procedure specifies a different torque value for the same type and size of fitting found in this topic, use the value specified in the procedure instead.

1. Inspect O-ring (A) and seat (B) for dirt or defects.
2. Ensure that O-ring (A) is **NOT** on the threads. Adjust O-ring (A) if necessary.
3. Apply hydraulic system oil to the O-ring.
4. Install fitting (C) into the port until the fitting is hand-tight.
5. Torque fitting (C) according to values in Table *6.9, page 247*.
6. Verify the final condition of the fitting.

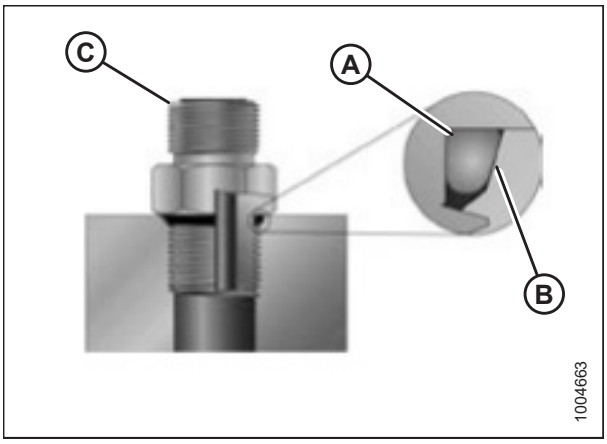


Figure 6.10: Hydraulic Fitting

Table 6.9 O-Ring Boss (ORB) Hydraulic Fittings – Adjustable and Non-Adjustable

SAE Dash Size	Thread Size (in.)	Torque Value[3]	
		Nm	lbf·ft (*lbf·in)
-2	5/16–24	10–11	*89–97
-3	3/8–24	18–20	*159–177
-4	7/16–20	29–32	21–24
-5	1/2–20	32–35	24–26

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

Table 6.9 O-Ring Boss (ORB) Hydraulic Fittings – Adjustable and Non-Adjustable (continued)

SAE Dash Size	Thread Size (in.)	Torque Value[4]	
		Nm	lbf·ft (*lbf·in)
-6	9/16–18	40–44	30–32
-8	3/4–16	70–77	52–57
-10	7/8–14	115–127	85–94
-12	1 1/16–12	183–201	135–148
-14	1 3/16–12	237–261	175–193
-16	1 5/16–12	271–298	200–220
-20	1 5/8–12	339–373	250–275
-24	1 7/8–12	414–455	305–336
-32	2 1/2–12	509–560	375–413

6.4.5 O-Ring Face Seal Hydraulic Fittings

The standard torque values are provided for O-ring face seal hydraulic fittings. If a procedure specifies a different torque value for the same type and size of fitting found in this topic, refer to the value specified in the procedure instead.

Torque values are shown in the Table *6.10, page 249*.

1. Ensure that the sealing surfaces and the fitting threads are free of burrs, nicks, scratches, and any foreign material.

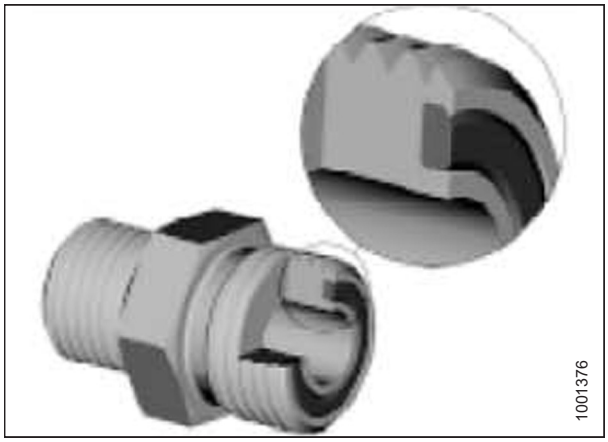


Figure 6.11: Hydraulic Fitting

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

2. Apply hydraulic system oil to O-ring (B).
3. Align the tube or hose assembly so that the flat face of sleeve (A) or (C) comes into full contact with O-ring (B).
4. Thread tube or hose nut (D) until it is hand-tight. The nut should turn freely until it bottoms out.
5. Torque the fittings according to values in Table *6.10, page 249*.

   NOTE:

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

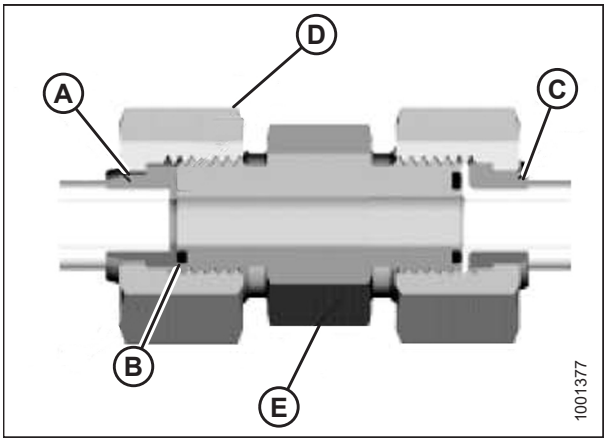


Figure 6.12: Hydraulic Fitting

Table 6.10 O-Ring Face Seal (ORFS) Hydraulic Fittings

SAE Dash Size	Thread Size (in.)	Tube O.D. (in.)	Torque Value[5]	
			Nm	lbf·ft
-3	Note[6]	3/16	–	–
-4	9/16	1/4	25–28	18–21
-5	Note[6]	5/16	–	–
-6	11/16	3/8	40–44	30–32
-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[6]	7/8	–	–
-16	1 7/16	1	150–165	111–122
-20	1 11/16	1 1/4	205–226	151–167
-24	2	1 1/2	315–347	232–256
-32	2 1/2	2	510–561	376–414

6.4.6 Tapered Pipe Thread Fittings

The standard torque values are provided for tapered pipe thread fittings. If a procedure specifies a different torque value for the same type and size of fitting found in this topic, refer to the value specified in the procedure instead.

Assemble pipe fittings as follows:

1. Ensure that the fitting and the port threads are free of burrs, nicks, scratches, and any other form of contamination.
2. Apply paste-type pipe thread sealant to the external pipe threads.
3. Thread the fitting into the port until it is hand-tight.

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

4. Torque the connector to the appropriate torque angle. The turns from finger tight (TFFT) and flats from finger tight (FFFT) values are shown in Table *6.11, page 250*. Ensure that the tube end of a shaped connector (typically a 45° or 90° elbow) is aligned to receive the incoming tube or hose assembly. Always finish the alignment of the fitting in the direction of tightening. Never loosen the threaded connectors to achieve alignment.

5. Clean all residue and any excess thread conditioner with an appropriate cleaner.

6. Inspect the final condition of the fitting. Pay special attention to the possibility of cracks in the port opening.

7. Mark the final position of the fitting. If a fitting leaks, disassemble the fitting and check it for damage.

   NOTE:

   The failure of fittings due to over-torquing may not be evident until the fittings are disassembled and inspected.

Table 6.11 Hydraulic Fitting Pipe Thread

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

6.5 Conversion Chart

This manual uses both SI units (including metric) and US customary units (sometimes referred to as standard units) of measurement. A list of those units along with their abbreviations and conversion factors is provided here for your reference.

Table 6.12 Conversion Chart

Quantity	SI Units (Metric)		Factor	US Customary Units (Standard)	
	Unit Name	Abbreviation		Unit Name	Abbreviation
Area	hectare	ha	x 2.4710 =	acre	acres
Flow	liters per minute	L/min	x 0.2642 =	US gallons per minute	gpm
Force	Newton	N	x 0.2248 =	pound force	lbf
Length	millimeter	mm	x 0.0394 =	inch	in.
Length	meter	m	x 3.2808 =	foot	ft.
Power	kilowatt	kW	x 1.341 =	horsepower	hp
Pressure	kilopascal	kPa	x 0.145 =	pounds per square inch	psi
Pressure	megapascal	MPa	x 145.038 =	pounds per square inch	psi
Pressure	bar (Non-SI)	bar	x 14.5038 =	pounds per square inch	psi
Torque	Newton meter	Nm	x 0.7376 =	pound feet or foot pounds	lbf·ft
Torque	Newton meter	Nm	x 8.8507 =	pound inches or inch pounds	lbf·in
Temperature	degrees Celsius	°C	(°C x 1.8) + 32 =	degrees Fahrenheit	°F
Velocity	meters per minute	m/min	x 3.2808 =	feet per minute	ft/min
Velocity	meters per second	m/s	x 3.2808 =	feet per second	ft/s
Velocity	kilometers per hour	km/h	x 0.6214 =	miles per hour	mph
Volume	liter	L	x 0.2642 =	US gallon	US gal
Volume	milliliter	mL	x 0.0338 =	ounce	oz.
Volume	cubic centimeter	cm^3 or cc	x 0.061 =	cubic inch	$in.^3$
Weight	kilogram	kg	x 2.2046 =	pound	lb.

6.6 Definitions

The following terms, abbreviations, and acronyms are used in this instruction.

Table 6.13 Definitions

Term	Definition
A Series Header	MacDon A30S, A30D, A40D, A40DX, standard and Grass Seed auger headers
API	American Petroleum Institute
Bolt	A headed and externally threaded fastener designed to be paired with a nut
Cab-forward	Windrower operation mode in which the operator's seat faces the header
Center-link	A hydraulic cylinder or manually adjustable turnbuckle type connection between the header and the vehicle, which is used to change the angle of the header relative to the vehicle
CGVW	Combined gross vehicle weight
D1X Series Header	MacDon D115X, D120X, and D125X rigid draper headers for M1 and M2 Series Windrowers
D1XL Series Header	MacDon D130XL, D135XL, D140XL, and D145XL rigid draper headers for M1 and M2 Series Windrowers
D2 SP Series Draper Header	MacDon D215, D220, D225, D230, D235, and D241 Draper Headers for M1 and M2 Series Windrowers
DEF	Diesel exhaust fluid; also known as AdBlue in Europe, and AUS 32 in Australia
DEF supply module	A pump that supplies diesel exhaust fluid through the exhaust aftertreatment system
DM	Dosing module
DOC	Diesel oxidation catalyst
DWA	Double Windrow Attachment
EEC	Eco engine control
Engine-forward	Windrower operation with Operator and engine facing in direction of travel
FFFT	Flats from finger tight
Finger tight	A reference position in which the given sealing surfaces or components are making contact with each other. The fitting has been tightened by hand to a point where the fitting is no longer loose and cannot be tightened further by hand
GSL	Ground speed lever
GSS	Grass Seed
HarvestTouch™ Display	The touch screen display in an M2 Series Windrower
Header	A machine that cuts and lays crop into a windrow when attached to a windrower
Hex key	A tool of hexagonal cross-section used to drive bolts and screws that have a hexagonal socket in the head (internal-wrenching hexagon drive); also known as an Allen key
HDS	Hydraulic deck shift
JIC	Joint Industrial Council: A standards body that developed standard sizing and shape for the original 37° flared fitting
Knife	A cutting device found on a header's cutterbar which uses a reciprocating cutter (also called a sickle) to cut crop so that it can be fed into the header
n/a	Not applicable
NPT	National Pipe Thread: A style of fitting used for low-pressure port openings. Threads on NPT fittings are uniquely tapered for an interference fit
Nut	An internally threaded fastener designed to be paired with a bolt
ORB	O-ring boss: A style of fitting commonly used in port openings on manifolds, pumps, and motors

Table 6.13 Definitions (continued)

Term	Definition
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
PARK	The slot opposite the NEUTRAL position on operator's console of M1 and M2 Series Windrowers
R1 SP Series Header	MacDon R113 and R116 Rotary Disc Headers for windrowers
R2 SP Series Header	MacDon R216 Rotary Disc Headers for windrowers
rpm	Revolutions per minute
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 when it is inserted into a mating part
spm	Strokes per minute
Tension	An axial load placed on a bolt or screw, usually measured in Newtons (N) or pounds (lb.). This term can also be used to describe the force a belt exerts on a pulley or sprocket
TFFT	Turns from finger tight
Timed (knife drive)	Synchronized motion applied at the cutterbar to two separately driven knives from a single hydraulic motor
Torque	The product of a force * the length of a lever arm, usually measured in Newton-meters (Nm), foot-pounds (lbf·ft), or inch-pounds (lbf·in)
Torque angle	A tightening procedure in which a fitting is assembled to a specified tightness (usually finger tight) and then the nut is turned farther by a specified number of degrees until it achieves its final position
Torque-tension	The relationship between the assembly torque applied to a piece of hardware and the axial load it induces in a bolt or screw
ULSD	Ultra-low sulphur diesel
Washer	A thin cylinder with a hole or a slot located in the center, used as a spacer, a load distribution element, or a locking mechanism
Windrower	The power unit for a header

Predelivery Checklist

Perform these checks and adjustments prior to delivery to your Customer. Complete this checklist and provide it to the Dealer or the Operator.

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:**

M2170 and M2260 Windrower Predelivery Checklist

✓	Item	Reference
	Check for shipping damage or missing parts. Ensure that all shipping material has been removed.	—
	Check for loose hardware. Tighten any loose hardware to the specified torque value.	*6.4 Torque Specifications, page 243*
	Check the pressure level of the drive and caster tires. Ensure that the pressures matches the specified values.	*4.1.13 Checking Tire Pressure, page 64*
	Check the lubricant level in the wheel drive hubs.	*4.1.11 Checking and Adding Wheel Drive Lubricant – 10 Bolt Wheels, page 63* or *4.1.12 Checking and Adding Wheel Drive Lubricant – 12 Bolt Wheels (Optional), page 64*
	Check the level of the engine coolant.	*4.1.6 Checking And Adding Engine Coolant, page 55*
	Check the engine air intake.	*4.1.2 Checking Engine Air Intake, page 51*
	Check the level of engine oil. Ensure that there are no engine oil leaks.	*4.1.3 Checking and Adding Engine Oil, page 53*
	Check the level of hydraulic oil. Ensure that there are no hydraulic fluid leaks.	*4.1.4 Checking and Adding Hydraulic Oil, page 54*
	Check the fuel separator for water and foreign material. Drain and clean the fuel separator as needed.	*4.1.5 Checking Fuel Separator, page 55*
	Check level of lubricant in the gearbox.	*4.1.7 Checking Engine Gearbox Lubricant Level and Adding Lubricant, page 56* or *4.1.8 Checking Engine Gearbox Lubricant Level and Adding Lubricant – M2260, page 57*
	Ensure that the air conditioning compressor belt is properly tensioned.	*4.1.9 Checking Air Conditioning Compressor Belts, page 58*
	Ensure that the operator presence system is working properly.	*4.2.1 Checking Operating Safety System, page 70*
	Ensure that the horn is working properly.	*4.2.8 Checking Horn, page 88*
Start the engine. Allow the engine to reach operating temperature. Perform the Operational Checks listed below.		*4.1.10 Starting Engine, page 58*
	Ensure that the fuel and diesel exhaust fluid (DEF) gauges on the HarvestTouch™ Display work properly.	*4.2.3 Checking HarvestTouch™ Display Gauges, page 73*
	Ensure that the engine speed is displayed correctly on the HarvestTouch™ Display.	*4.2.5 Checking Engine Speed, page 81*
	Ensure that selective catalytic reduction (SCR) conditioning inhibit is turned off.	*4.2.6 Checking Selective Catalytic Regeneration Conditioning Mode, page 83*

✓	Item	Reference
	Ensure that the air conditioning and heater are functioning properly.	*4.2.10 Checking Climate Controls, page 90*
	Ensure that the interior lights are functioning properly.	*4.2.9 Checking Interior Lights, page 89*
	Ensure that the exterior lights are functioning properly.	*4.2.7 Checking Exterior Lights, page 85*
	Ensure that the hazard and the signal lights are functioning properly.	*4.2.7 Checking Exterior Lights, page 85*
	Ensure that the beacons are functioning properly (if these are installed).	*4.2.7 Checking Exterior Lights, page 85*
	Complete the header's Predelivery Checklist (if applicable).	—
	Ensure that the manuals are in the windrower's manual case.	*4.3 Checking Manuals, page 93*
	Remove the plastic coverings and windshield decal from the cab.	*4.4 Performing Final Steps, page 94*

Date Checked: **Checked by:**

Lubricants, Fluids, and System Capacities

Use only the fluids and lubricants recommended by MacDon in your windrower.

Lubricant/Fluid	Location	Description	M2170 Capacity	M2260 Capacity
Diesel exhaust fluid (DEF)	Diesel exhaust fluid tank	Must meet ISO 22241 requirements.	49 liters (13 U.S. gallons)	55 liters (14.5 U.S. gallons)
Grease	As needed unless otherwise specified	SAE multi-purpose high-temperature, extreme-pressure (EP2) performance with 1% max. molybdenum disulphide (NLGI Grade 2) lithium base	As needed	
Diesel fuel	Fuel tank	Ultra low sulphur diesel (ULSD) Grade No. 2, or ULSD Grade No. 1 and 2 mix[7]; refer to *6.3 Fuel Specifications, page 242* for more information	518 liters (137 U.S. gallons)	
Hydraulic oil	Hydraulic reservoir	Single grade transmission/hydraulic fluid (THF) Viscosity at 60.1 cSt @ 40°C Viscosity at 9.5 cSt @ 100°C	60 liters (15.8 U.S. gallons)[8]	
Gearbox lubricant	Gearbox	SAE 75W-140 or 80W-140, API service class GL-5 fully synthetic gear lubricant (SAE J2360 preferred)	2.1 liters (2.2 U.S. quarts)	1.9 liters (2 U.S. quarts)
Gearbox lubricant	Standard wheel drive	SAE 75W-140 or 80W-140, API service class GL-5 fully synthetic gear lubricant (SAE J2360 preferred)	1.4 liters (1.5 U.S. quarts)	
Gearbox lubricant	High-torque wheel drive	SAE 85W-140, API service class GL-5 fully synthetic gear lubricant	—	4.5 liters (4.8 U.S. quarts)
Engine coolant	Engine cooling system	ASTM D-6210 and CES-14603, Peak Final Charge Global™ or Fleetguard ES Compleat™ OAT.	30 liters (7.92 U.S. gallons)	33 liters (8.7 U.S. gallons)
Engine oil	Engine oil pan	SAE 15W-40 compliant with SAE specs for API Class SJ and CJ-4 engine oil	11 liters (11.6 U.S. quarts)	14 liters (14.8 U.S. quarts)
Air conditioning refrigerant	Air conditioning system	R134A	2.38 kg (5.25 lb.)	
Air conditioning refrigerant oil	Air conditioning system total capacity	PAG SP-15	240 cc (8.1 fl. oz.)	
Windshield washer fluid	Windshield washer fluid tank	SAE J942 compliant	4 liters (1 U.S. gallon)	

7. Optional when operating temperature is below 0°C (32°F).
8. Denotes capacity of a dry system. Refill capacity is 58 liters (15 U.S. gallons).

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