

M1240 Windrower

Unloading and Assembly Instructions (North America)

215627 Revision A

Original Instruction

M1240 Windrower, featuring Dual Direction® and CrossFlex™ rear suspension



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Introduction

This manual contains unloading, assembly, and predelivery information for the MacDon M1240 Windrower. When paired with one of MacDon's A40DX, R85, R113, R216, D1X Series, or D1XL Series Headers, this windrower ably cuts and lays a variety of grain, hay, and specialty crops in windrows.

The M1240 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 looking at the engine. This manual uses the terms right cab-forward, left cab-forward, right engine-forward, and left engine-forward when referencing 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 website (www.macdon.com) or 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 |
|--------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|------------------------|
| <i>4.1.6 Checking Engine Coolant Level, page 46</i> | Added steps. | Technical Publications |
| <i>4.1.7 Checking Engine Gearbox Lubricant Level and Adding Lubricant, page 47</i> | Revised the procedure for checking the gearbox lubricant level. | Product Support |
| <i>4.1.11 Checking and Adding Wheel Drive Lubricant – 10 Bolt Wheels, page 54</i> | Revised the torque specification for the wheel drive fill plug. | ECN 61888 |
| <i>4.1.12 Checking and Adding Wheel Drive Lubricant – 12 Bolt Wheels, page 55</i> | Added topic. | Technical Publications |
| <i>4.2.9 Checking the Radio and Activating the Bluetooth® Feature, page 71</i> | Updated images and radio setup instructions. | ECN 61285 |
| <i>5.1.2 Connecting A40DX Auger Electrical and Hydraulics, page 80</i> | Added open and close platform steps. | Technical Publications |
| <i>5.2.3 Connecting D1X or D1XL Series Draper Header Hydraulics, page 91</i> | Added open and close platform steps. | Technical Publications |
| <i>5.3.3 Connecting R113 Rotary Disc Header Hydraulics and Electrical to Windrower, page 101</i> | New procedure for connecting R1 hydraulic and electrical systems to the windrower added. | Technical Publications |
| <i>5.4 R2 Series Rotary Disc Header, page 110</i> | Added topic. | Technical Publications |
| <i>5.5.2 Connecting R85 Rotary Disc Header Hydraulics, page 134</i> | Added open and close platform steps. | Technical Publications |

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Chapter 1: Safety

Understanding and following safety procedures consistently will help to ensure the safety of machine operators and bystanders.

1.1 Signal Words

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

Signal words are selected using the following guidelines:

DANGER

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

WARNING

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

CAUTION

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

IMPORTANT:

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

NOTE:

Provides additional information or advice.

1.2 General Safety

Protect yourself when assembling, operating, and servicing machinery.

CAUTION

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

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

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

In addition, take the following precautions:

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



Figure 1.1: Safety Equipment



Figure 1.2: 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.

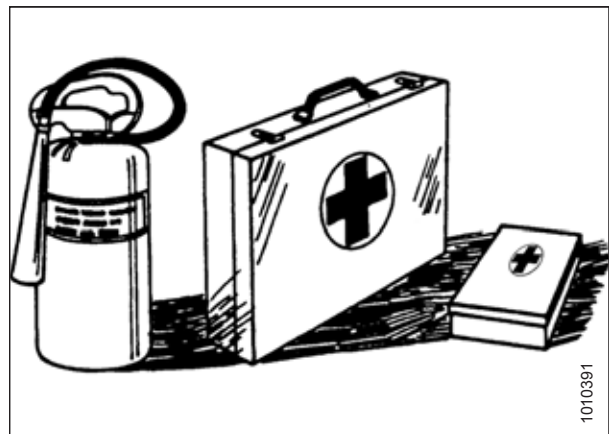


Figure 1.3: Safety Equipment

SAFETY

- Wear close-fitting clothing and cover long hair. **NEVER** wear dangling items such as scarves or bracelets.
- Keep all shields in place. **NEVER** alter or remove safety equipment. 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 1.4: Safety around Equipment

- Keep hands, feet, clothing, and hair away from moving parts. **NEVER** attempt to clear obstructions or objects from a machine while the engine is running.
- Do **NOT** modify the machine. 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.

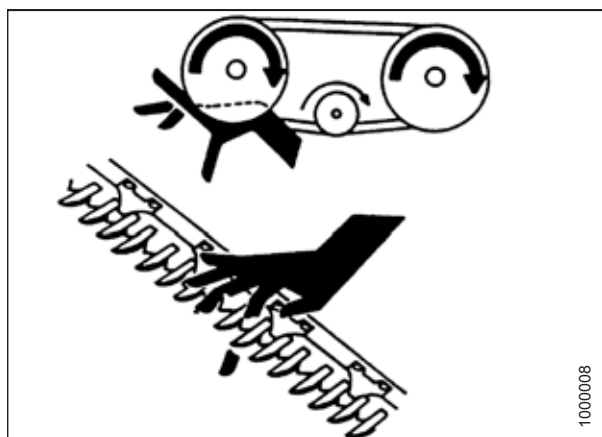


Figure 1.5: Safety around Equipment

- 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 1.6: Safety around Equipment

1.3 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 1.7: 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.
- 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.



Figure 1.8: Safely Inflating Tire

1.4 Battery Safety

Understand the risks of working with lead-acid batteries before performing installation or maintenance tasks.

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 1.9: 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.

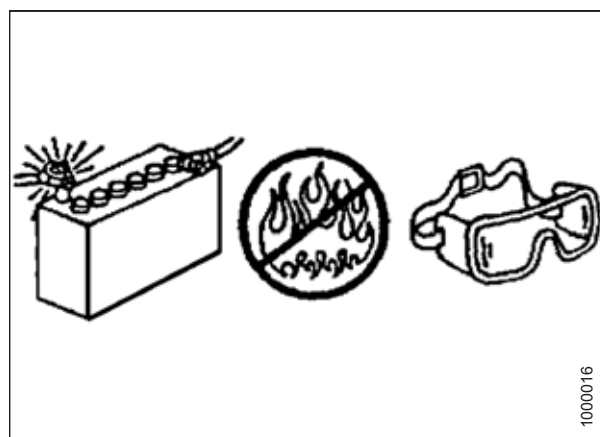


Figure 1.10: Safety around Batteries

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.

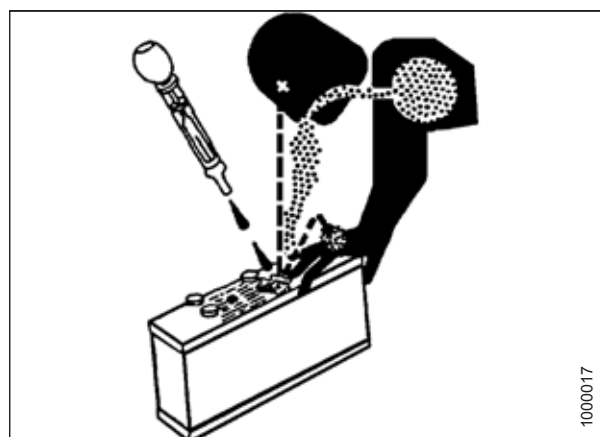


Figure 1.11: Safety around Batteries

1.5 Welding Precaution

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

IMPORTANT:

If the procedures below are not followed, damage to the windrower's electronic components may result. Some components may only be partially damaged, which would result in some electrical components failing in an intermittent way. Such faults are very difficult to diagnose reliably.

The windrower is equipped with several sensitive electronic components. Therefore, components to be welded should be removed from the windrower whenever possible rather than welded in place.

When welding needs to be performed on a header, disconnect the header completely from the windrower before beginning. These same guidelines apply to plasma cutting, or any other high-current electrical operation performed on the machine.

IMPORTANT:

Ensure that the windrower is parked on a level surface, the ignition is turned off, and the key is removed before disconnecting anything.

The following items need to be disconnected:

- Negative battery terminals (A) (two connections)

IMPORTANT:

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

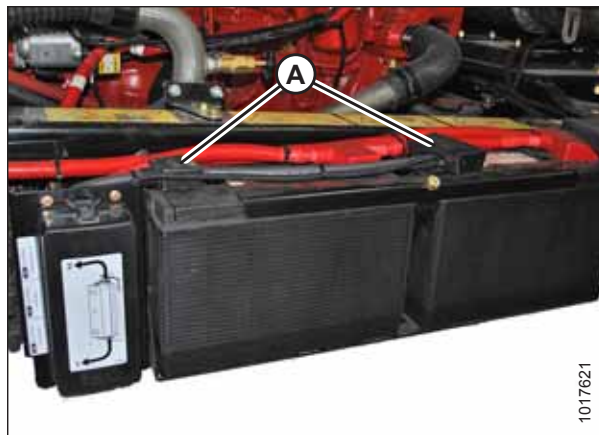


Figure 1.12: Negative Terminals

- Master controller (A)
Four connectors: P231, P232, P233, and P234

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

To disconnect the connectors, press the two outer tabs, and pull the connector away from the master controller.

IMPORTANT:

When reconnecting these connectors, ensure that the connectors are fully seated into the master controller, and that the two locking tabs on each end of all four connectors have popped outward. If the tabs are not popped outward, the connector is not fully seated.

IMPORTANT:

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



Figure 1.13: Master Controller

SAFETY

- Firewall extension module (A)
Two connectors: P235 and P236

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

To disconnect the connectors, insert the end of a small 3–6 mm (1/8–1/4 in.) blade screwdriver into the connector's locking tab. Gently pry upward (no more than 6 mm [1/4 in.]) to unlock the connector tab, and then pull the connector away from the module.



Figure 1.14: Firewall Extension Module

- Chassis extension module (A)
Two connectors: P247 and P248

Location: Under the cab, inside the left frame rail

To disconnect the connectors, insert the end of a small 3–6 mm (1/8–1/4 in.) blade screwdriver into the connector's locking tab. Gently pry upward (no more than 6 mm [1/4 in.]) to unlock the connector tab, and then pull the connector away from the module.

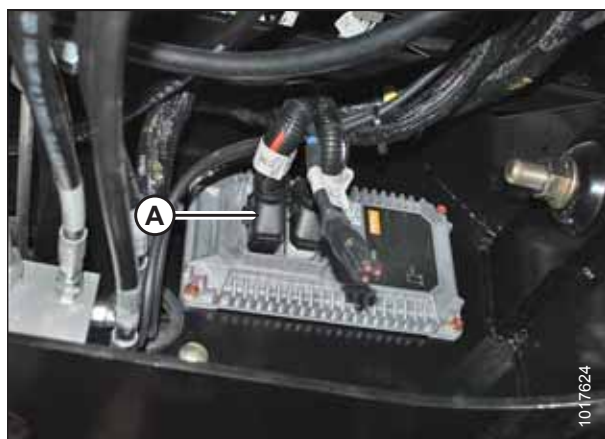


Figure 1.15: Chassis Extension Module

- 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 of the cover, unlock the latch, and undo the main over-center latch. Remove strain relief bolts (C) so that the connectors can be pulled away from the ECM.

IMPORTANT:

Be sure to disconnect both connectors. Note the connector locations for reinstallation.

IMPORTANT:

Be sure to reconnect the connectors in the proper locations. Do **NOT** cross connect the connectors.

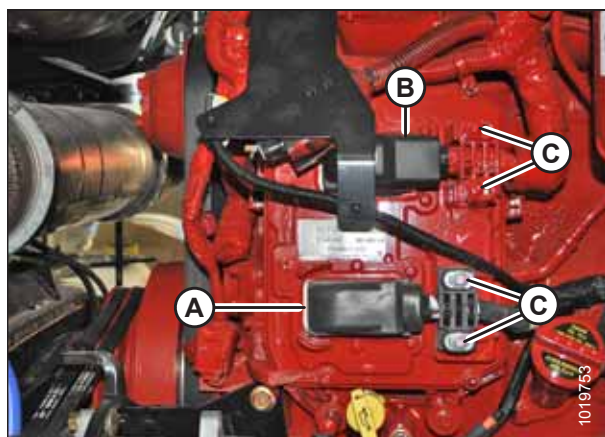


Figure 1.16: Engine Control Module

SAFETY

NOTE:

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

- Cab connectors (A)
Two round connectors: C1 and C2
Location: Under the cab
- Roof connectors (A)
Four connectors: C10, C12, C13, and C14
Location: Under the cab at the base of the left cab post
- Chassis relay module (A)
Three connectors: P240, P241, and P242
Location: Outside the left frame rail near the batteries

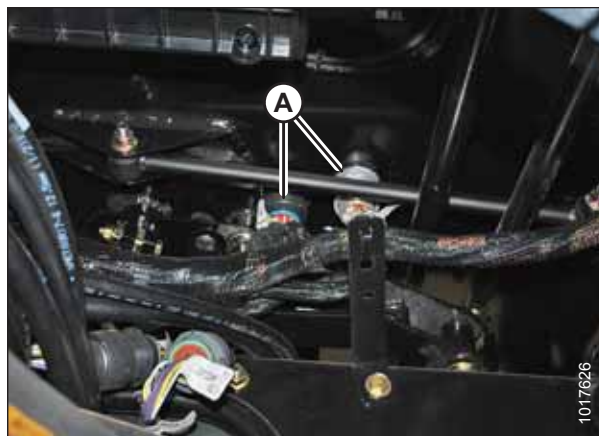


Figure 1.17: Cab Connectors

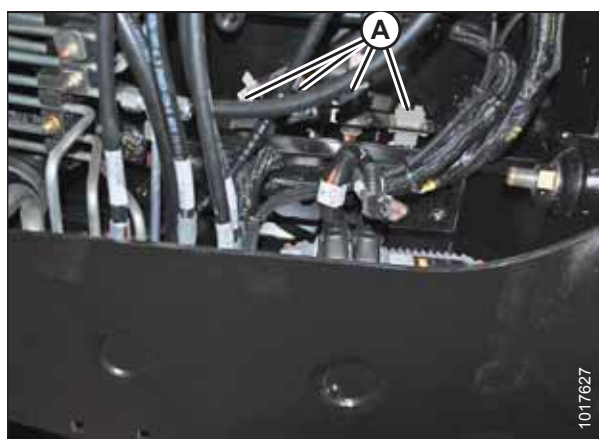


Figure 1.18: Roof Connectors



Figure 1.19: Chassis Relay Module

SAFETY

- Engine harness (A)
Two round connectors: C30 and C31
Location: Inside the left frame rail, at the rear of the windrower

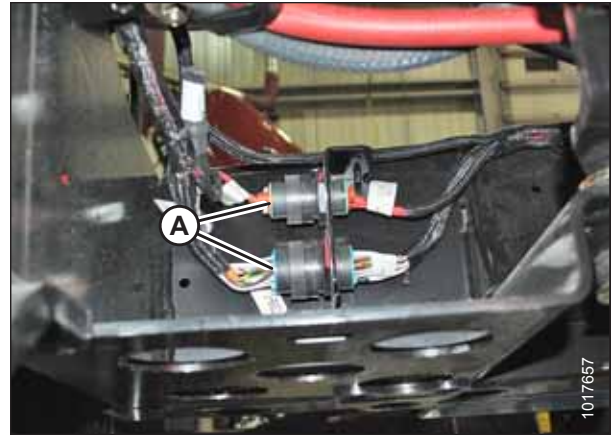


Figure 1.20: Engine Harness

- Air conditioning (A/C) box connectors (A)
Two connectors: C15 and C16
Location: Rear of the A/C box



Figure 1.21: 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

IMPORTANT:

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

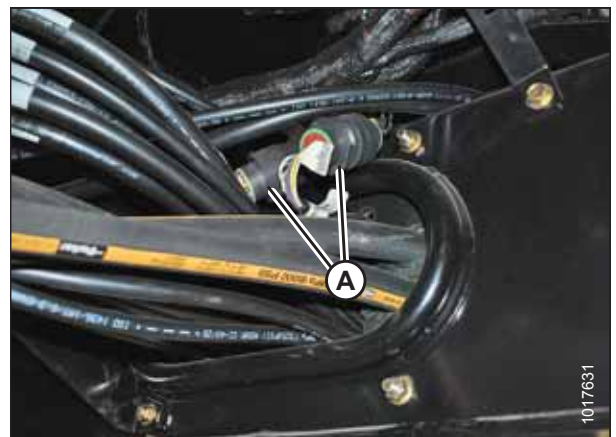


Figure 1.22: Wheel Motor Connectors

To align the connectors:

1. Observe the channel cuts and mating channel protrusions on the inner part of the circular walls of the connectors.
2. Face the mating connectors towards each other, and rotate the connectors so that the channels are aligned.
3. Press the connectors together while turning the outer connector clockwise until the collar locks.

1.6 Engine Safety

For the safety of yourself and others, understand the hazards associated with the engine before operating the machine, or before servicing the engine or nearby components.

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.

1.6.1 High-Pressure Rail

Fuel is delivered to the engine under high pressure. Understand the hazards associated with the fuel delivery system before servicing it.

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.

1.6.2 Engine Electronics

For the safety of yourself and of others, and to prevent damage to the engine control module (ECM), understand the hazards associated with engine electronics.



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

Electrical Shock Hazard. The electronic unit injectors use DC voltage. The engine control module (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 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
- Diesel exhaust fluid (DEF) system performance
- Aftertreatment system performance

1.7 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.

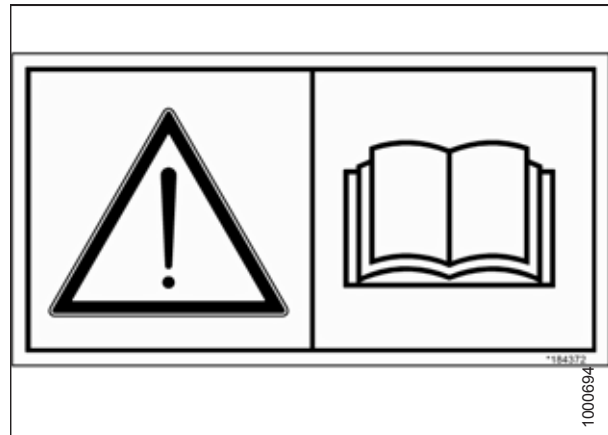


Figure 1.23: Operator's Manual Decal

Chapter 2: Unloading Windrower

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

2.1 Using One Forklift to Unload Windrower

Ensure that you use a forklift which meets the minimum length and capacity requirements when unloading the windrower.

WARNING

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

Table 2.1 Lifting Vehicle 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 learn the forklift capacity when the load sits 122.2 cm (48 in.) ahead of the back of the forks, check with your forklift distributor.

1. Move the trailer onto level ground and block the trailer wheels.
2. Set the forklift forks to the widest possible setting.

CAUTION

Ensure that the forks do NOT contact fuel tank (A) or windrower engine oil pan (B) (not shown).

3. Position the forklift so that it is on the side of the trailer opposite windrower fuel tank (A).

Position forks (C) under the windrower frame so that fuel tank (A) sits between the forks.

NOTE:

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

WARNING

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

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

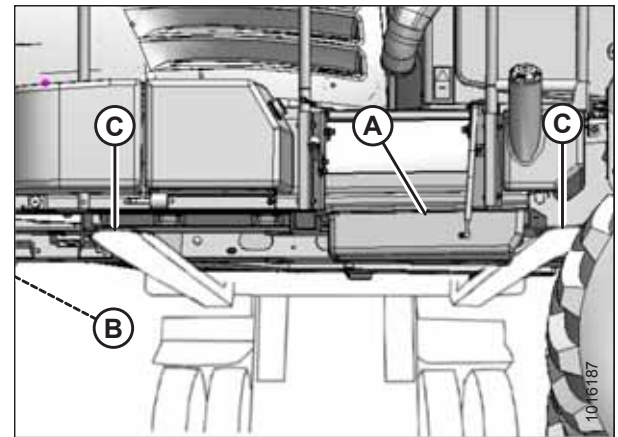


Figure 2.1: Windrower on Trailer

1. At 122.2 cm (48 in.) from back end of forks.

UNLOADING WINDROWER

9. 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 various shipping assemblies have been unloaded and separated, the windrower can be assembled into field position.

3.1 Lowering Steps

Lowering the steps allows safe and easy access to the cab. The drive wheel lug nuts are stored in the cab.

1. Locate the left steps. Remove stop bolt (A) and discard it.
2. Loosen pivot bolts (B) at both sides of steps (C).

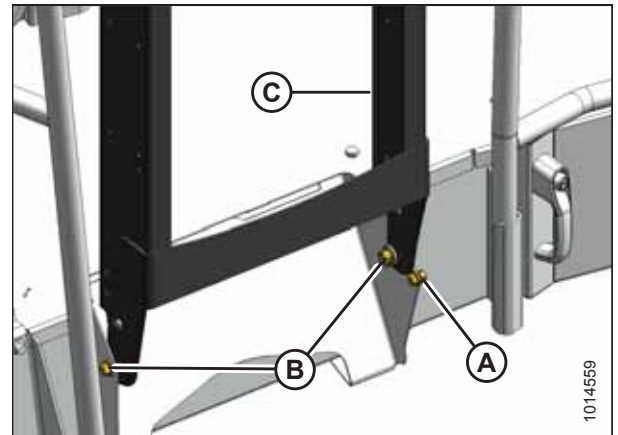


Figure 3.1: Left Step – Shipping Position

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).

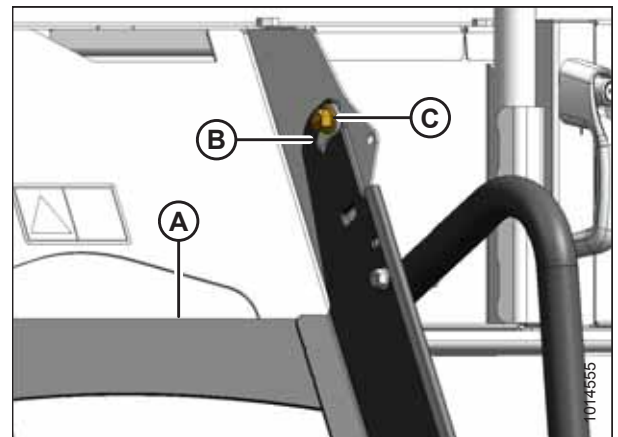


Figure 3.2: Left Step – Working Position

ASSEMBLING WINDROWER

6. Retrieve the bag containing the drive wheel nuts from storage compartment (A) behind the training seat.

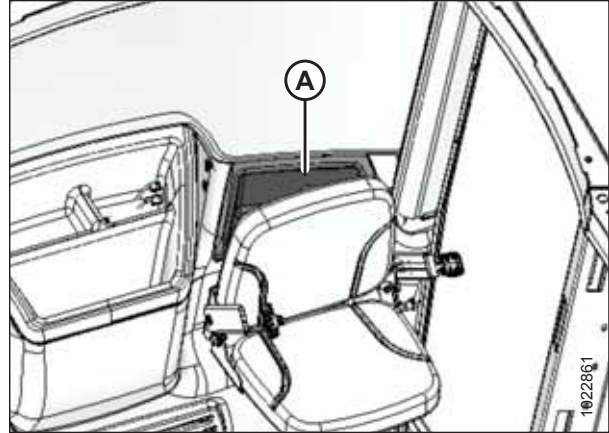


Figure 3.3: Storage Compartment

3.2 Installing Caster Wheels

The windrower's caster wheels may not have been installed at the factory. Install them now.

1. Retrieve toolbox (A) from the storage compartment. Remove the banding from the toolbox.

NOTE:

Use the ignition key to unlock the storage compartment.

2. Retrieve the caster wheel hardware from toolbox (A).

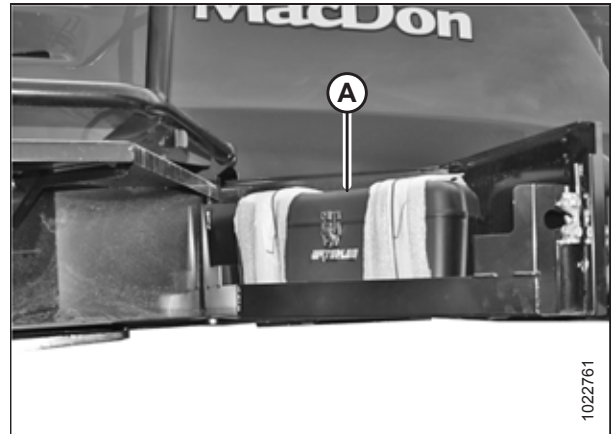


Figure 3.4: Windrower Toolbox

3. Remove banding and blocking (A) securing the walking beam to the frame.
4. Retrieve the caster wheel assemblies.

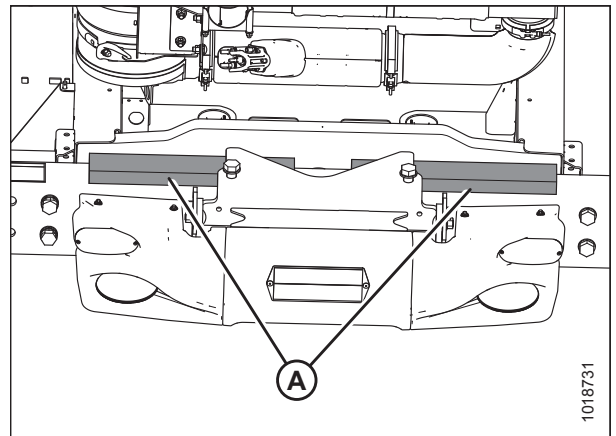


Figure 3.5: Walking Beam Secured to Frame

5. Using a forklift, approach the windrower from the front and slide the forks under the frame.

CAUTION

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

6. 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 3.6: Lifting Windrower

ASSEMBLING WINDROWER

7. Attach sling (B) to caster assembly (A).
8. Retrieve two washers (C) from the toolbox and place them on caster wheel spindle (D).
9. If caster assembly (A) is on a pallet, remove the banding and shipping material securing the assembly to the pallet.

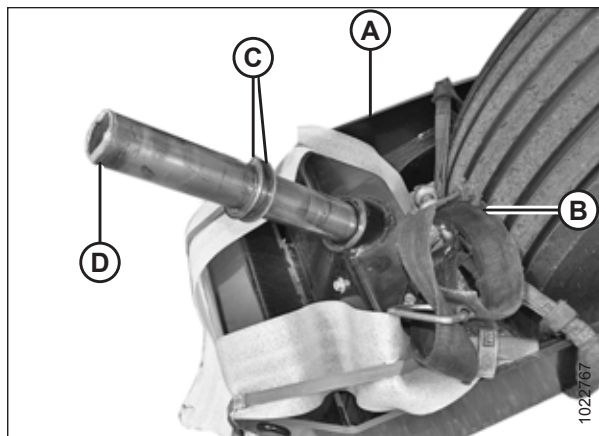


Figure 3.7: Caster Wheel Assembly in Shipping Configuration

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

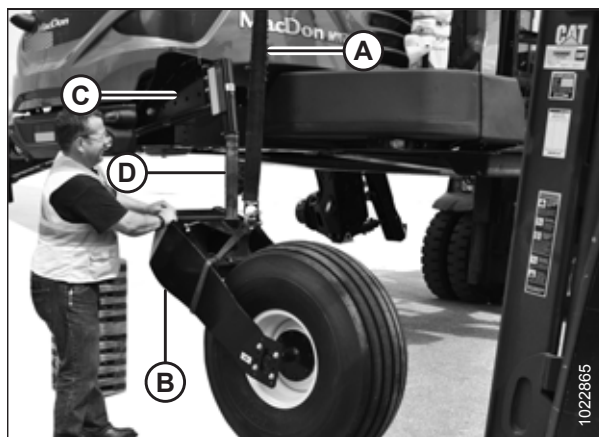


Figure 3.8: Caster Assembly Ready for Installation

12. Install flat washer (A) onto the spindle.
13. Install key (B) and arm (C) onto the spindle, ensuring that the arm is positioned so that there is no clearance at the top and bottom of the walking beam extension.
14. Install retaining ring (D).
15. Tighten nut (E) and torque it to 195 Nm (143 lbf-ft).
16. Remove the sling from the caster assembly.
17. Repeat Steps 7, page 18 to 16, page 18 to install the second caster assembly.

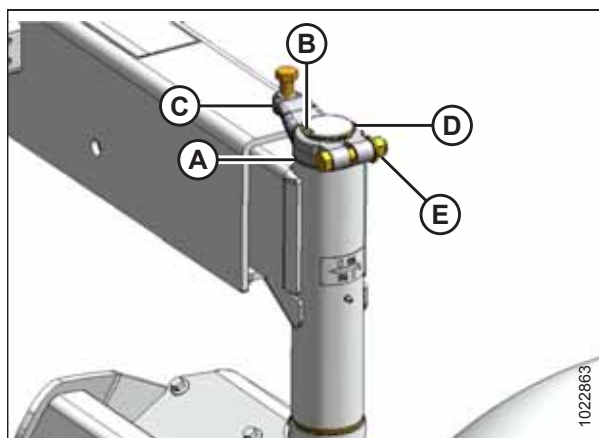


Figure 3.9: Caster Arm

3.3 Installing Drive Wheels

Be sure to check the wheel nut torque again once the windrower has begun operation.

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 off the ground with stands while the drive wheels are being installed.

1. Using a forklift, 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.
2. Clean the mounting surface on the wheel drive and the rim.

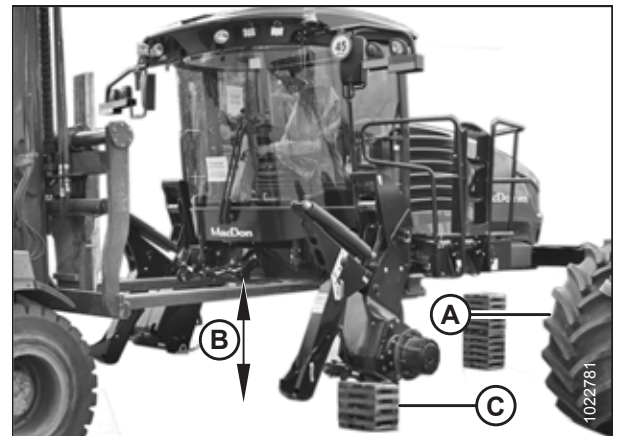


Figure 3.10: Windrower Supports in Place

3. Position lifting device (A) under the tire and raise it slightly.
4. Position the wheel against the wheel drive hub so that air valve (B) is on the outside while tread (C) points forward.

NOTE:

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

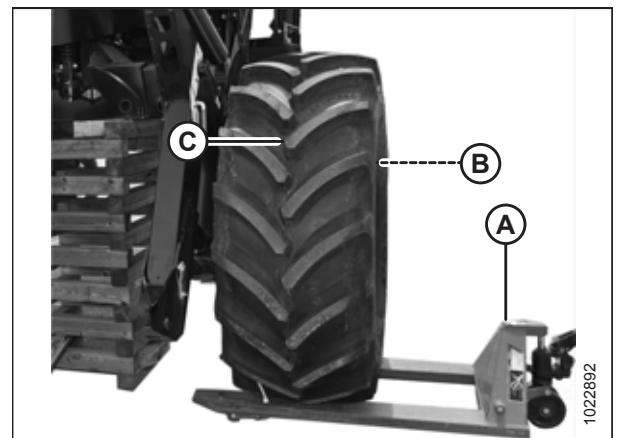


Figure 3.11: Drive Wheel Ready for Installation

ASSEMBLING WINDROWER

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

IMPORTANT:

To avoid damage to the wheel rims and 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.

- Torque the drive wheel nuts to 510 Nm (375 lbf-ft) using the tightening sequence shown.

IMPORTANT:

Use only manufacturer-specified lug nuts (MD #205397).

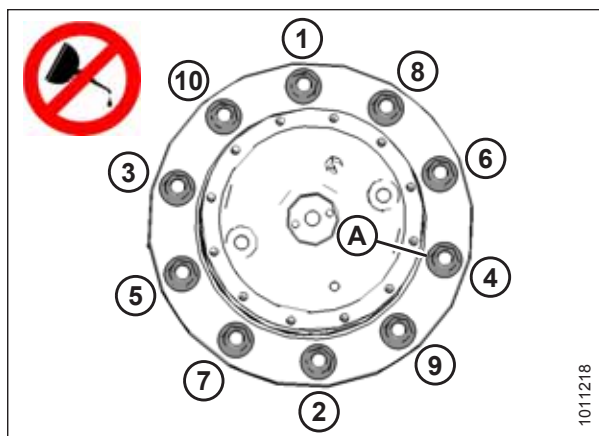


Figure 3.12: Tightening Sequence – Ten-Bolt Wheel

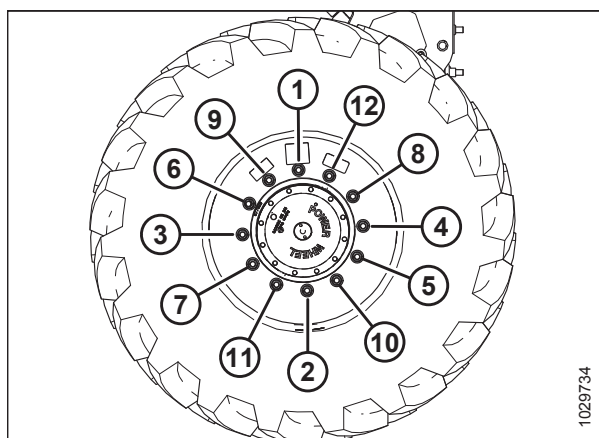


Figure 3.13: Tightening Sequence – Twelve-Bolt Wheel

- Repeat the tightening sequence two additional times, ensuring that the specified torque is achieved each time.
- Repeat Steps 2, page 19 to 9, page 20 to install the right drive wheel.
- Raise the windrower, remove the stand, and lower the windrower to the ground.
- Repeat the torque procedure every hour of operation until two consecutive checks confirm that there is no movement of the nuts.

3.4 Repositioning Right Leg

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

IMPORTANT:

Do **NOT** open the right cab-forward door when the right leg is in 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. Place stand (A) (or 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 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.

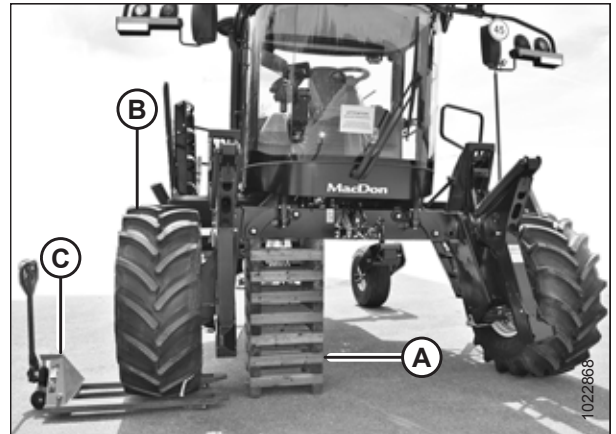


Figure 3.14: Windrower Right Leg Supported

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

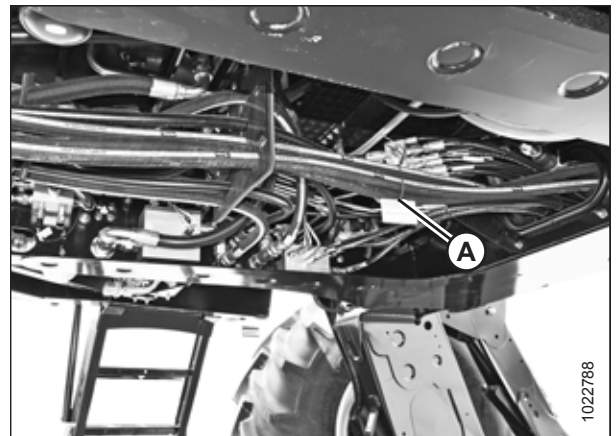


Figure 3.15: Shipping Tag Under Windrower Cab

5. Remove two bolts, washers, and nuts (A) from the frame.

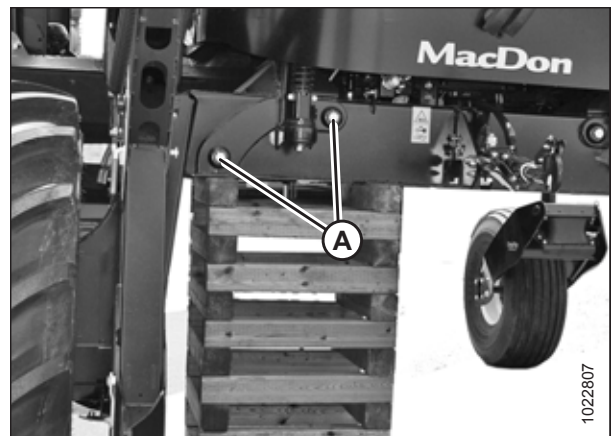


Figure 3.16: Windrower Right Leg Bolts

ASSEMBLING WINDROWER

- Adjust the lifting device's lift height until pin (A) is loose. Extract the pin from the front of the frame using slide hammer (B) (MD #209816).

NOTE:

Use of a slide hammer is required due to the limited amount of space in front of the fuel tank. Instructions are included with the tool.

NOTE:

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

- Remove the second pin.

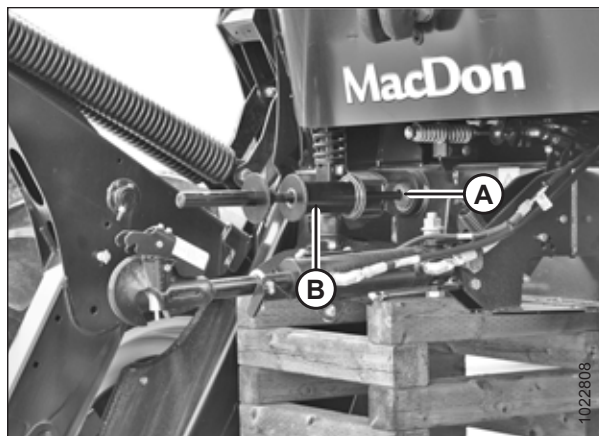


Figure 3.17: Slide Hammer

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



Figure 3.18: Right Leg Ready to Move

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

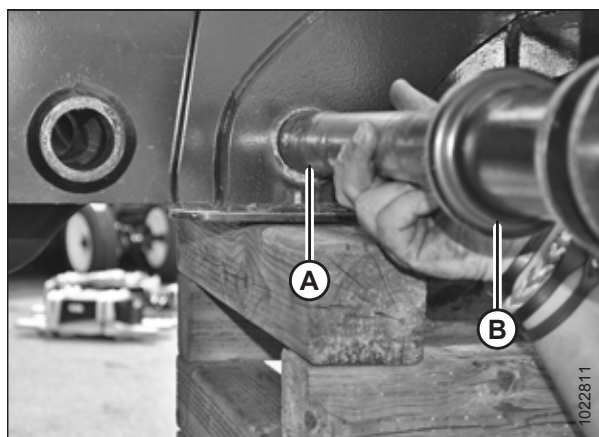


Figure 3.19: Leg Pin

ASSEMBLING WINDROWER

10. Secure the pins with bolts, washers, and nuts (A). Torque the nuts to 136 Nm (100 lbf·ft).
11. Lower the pallet jack and remove it from the work area.
12. Support the windrower with a forklift, remove the stand, and lower the windrower to the ground.

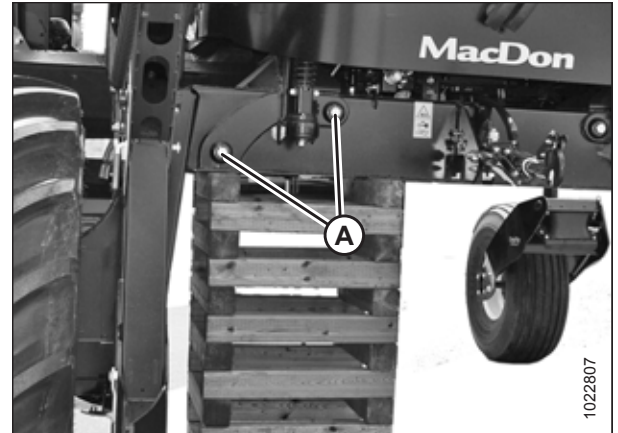


Figure 3.20: Right Leg Pins Installed

3.5 Repositioning Casters and Installing Anti-Shimmy Dampeners

A narrow caster tread width is better suited for smaller headers because it allows more space for the uncut crop and provides more maneuverability around poles, irrigation inlets, and other obstacles. A wider caster tread width reduces runover in heavy crops that produce large windrows. Anti-shimmy dampeners prevent the caster wheels from moving rapidly.

1. Lift the windrower with a forklift to take most of the weight off of the casters.



Figure 3.21: Windrower Supported

2. Remove four bolts and washers (A), shock support brackets (B), and slow moving vehicle (SMV) sign support bracket (C) from the walking beam. Retain the hardware and support brackets (B) and (C) for installation.

NOTE:

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

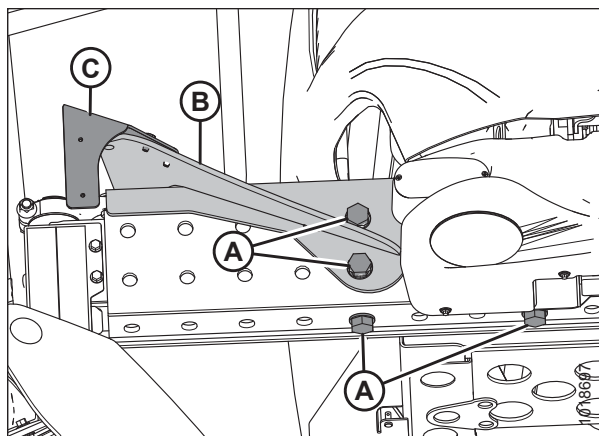


Figure 3.22: Walking Beam Hardware

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

NOTE:

The banding and blocking may have already been removed.

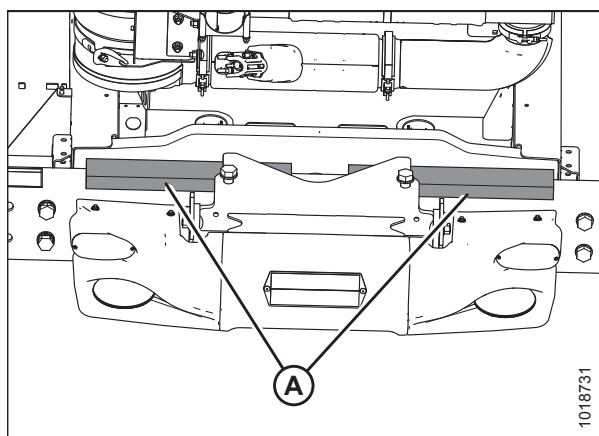


Figure 3.23: Walking Beam Secured

ASSEMBLING WINDROWER

- 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 adjusted into three working positions.

- Install two M24 x 60 bolts and washers (C) on the bottom of the beam. Do **NOT** tighten the hardware yet.

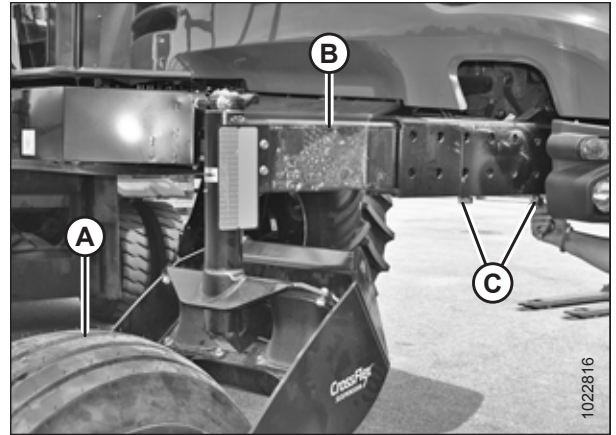


Figure 3.24: Walking Beam Extension

- Retrieve two M24 x 60 bolts and M24 flat washers from the toolbox. Coat the threads of the bolts with anti-seize compound. Install bolts and washers (A) in the outboard side of the walking beam. Do **NOT** fully tighten the hardware yet.

NOTE:

Depending on the walking beam's position, the outboard bolts may need to be installed first.

- Retrieve two M24 x 60 bolts and M24 flat washers from the toolbox. Coat the threads of the bolts with anti-seize compound. Place support brackets (B) onto the walking beam as shown and secure them with bolts and washers (C). Do **NOT** fully tighten the hardware yet.

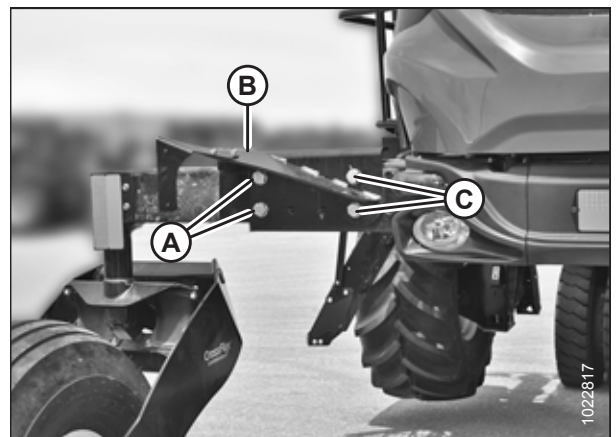


Figure 3.25: Anti-Shimmy Brackets

- Tighten the hardware as follows:
 - Snug bottom bolts (A), then snug rear bolts (B).
 - Torque rear bolts (B) to 757 Nm (560 lbf-ft).
 - 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.

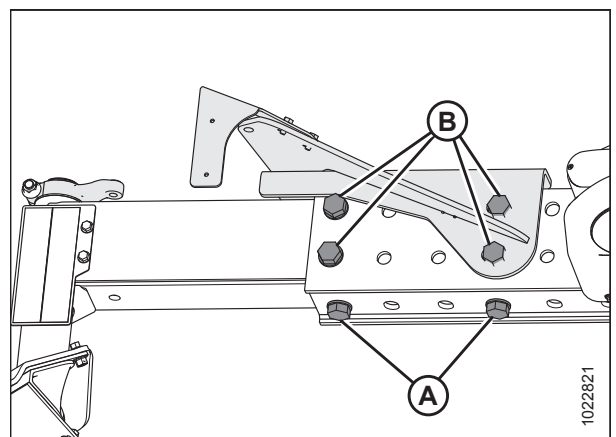


Figure 3.26: Walking Beam Bolts

ASSEMBLING WINDROWER

9. Repeat Steps 2, page 24 to 8, page 25 to reposition the caster at the opposite end of the walking beam. Ensure that the casters are spaced equally from the center of the windrower.
10. Lower the windrower to the ground.
11. Retrieve the anti-shimmy dampeners and hardware from the bag in the toolbox.

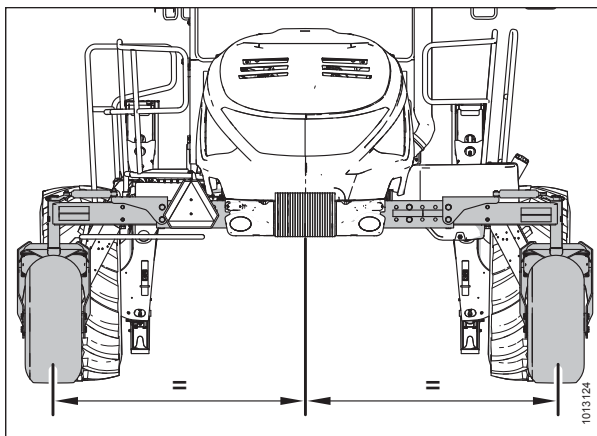


Figure 3.27: Walking Beam Adjustment

12. If the windrower already has casters installed:
 - a. Remove retaining ring (A).
 - b. Remove and discard yellow spacer (B).
 - c. Retrieve the key and the arm from the toolbox.
 - d. Install key and arm (D). Secure the arm with retaining ring (E) on the caster shaft as shown.
 - e. Tighten nut (C), and torque it to 195 Nm (144 lbf·ft).

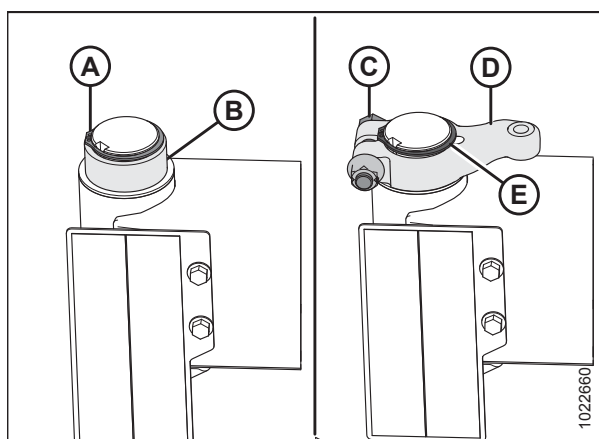


Figure 3.28: Anti-Shimmy Arm – Left Side

13. Attach the barrel end of anti-shimmy dampener (A) to the forward hole in support (B) with one M16 x 75 flange head bolt (C) and one M16 lock nut (D). Install the bolt from under the support. Do **NOT** fully tighten the hardware yet.

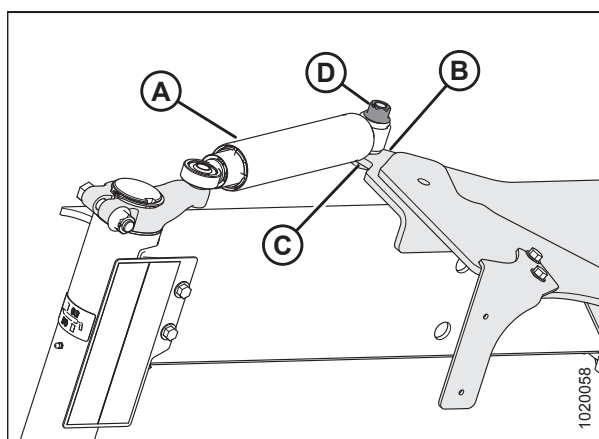


Figure 3.29: Anti-Shimmy System – Left Side

ASSEMBLING WINDROWER

14. Attach the barrel end of second anti-shimmy dampener (A) to support (B) at the aft hole location with one M16 x 90 flange head bolt and M16 lock nut (C). Install the bolt from under the support. Do **NOT** fully tighten the hardware yet.
15. Rotate the caster so that arm (D) is aligned with the walking beam.

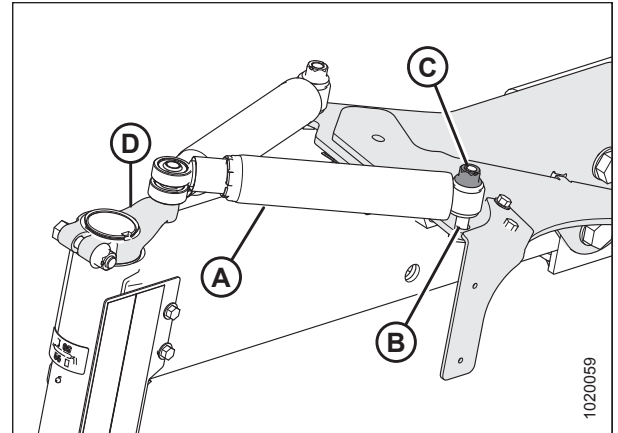


Figure 3.30: Anti-Shimmy System – Left Side

16. Attach the rod ends of the anti-shimmy dampeners to the arm with M16 x 90 flange head bolt (A) and three hardened washers (B).

NOTE:

Washers (B) are stamped with “L9”.

17. Torque bolt (A) to 244 Nm (180 lbf-ft).
18. Install jam nut (C) and torque nut (C) to 138 Nm (102 lbf-ft).
19. Tighten bolts (D) at the barrel end of the anti-shimmy dampeners, and torque the nuts on bolts (D) to 138 Nm (102 lbf-ft).

IMPORTANT:

Keep the arm parallel to the walking beam while tightening the hardware. Do **NOT** overtighten the hardware.

20. Repeat Steps 12, page 26 to 19, page 27 to install the anti-shimmer system on the opposite side of the windrower.

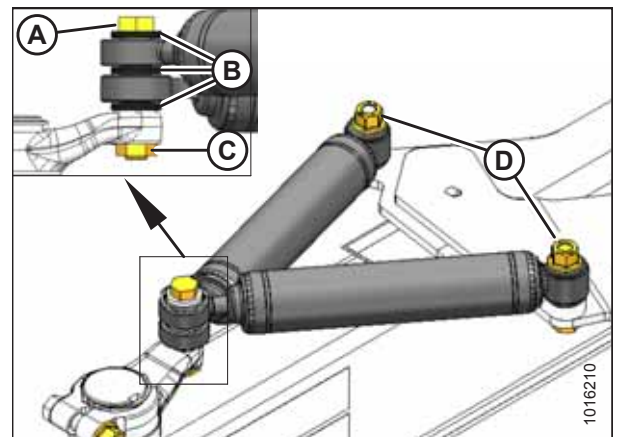


Figure 3.31: Anti-Shimmy System – Left Side

3.6 Installing Windshield Access Step

The windshield access step is secured on the railing of the 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 railing.
2. Retrieve three self-tapping screws from a bag in the toolbox.

NOTE:

Use the ignition key to unlock the toolbox compartment.

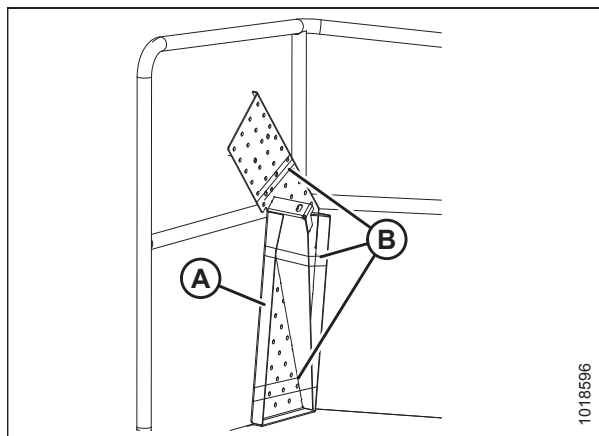


Figure 3.32: Step in Shipping Position

3. Position step (A) on the right cab-forward leg at the forward end of the platform as shown.
4. Install two M10 x 20 hex head screws (B) through the top of the step. Do **NOT** tighten the hardware yet.
5. Install one M10 x 20 hex head screw (C) through the step support.
6. Tighten the screws and torque them to 57 Nm (43 lbf-ft).

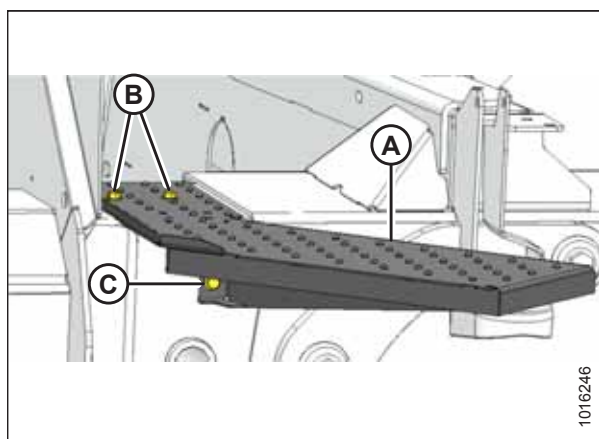


Figure 3.33: Windshield Access Step Installed

3.7 Positioning Mirror Arms

The mirror/light support arms must be moved from the shipping position to the working position.

1. Locate the mirror on the left cab-forward side of the windrower cab.
2. Loosen retaining nut (A) and pivot nut (B) on support arm (C).
3. Swivel support arm (C) cab-forward by 90°.

IMPORTANT:

Avoid pinching the wire harness when rotating the mirror arms.

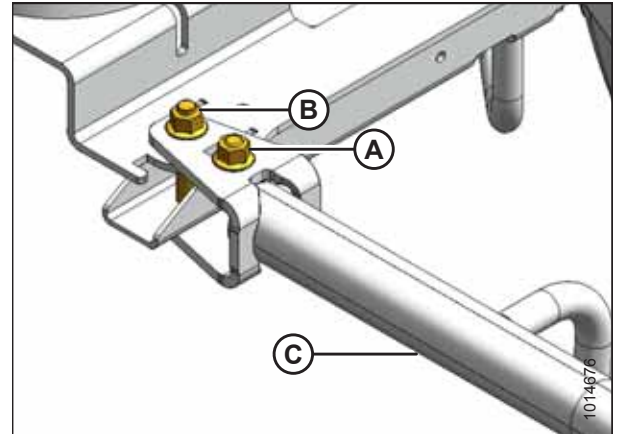


Figure 3.34: Mirror Arm in Shipping Position

4. Tighten retaining nut (A) to 39 Nm (29 lbf-ft).
5. Tighten pivot nut (B) to 26 Nm (19 lbf-ft).

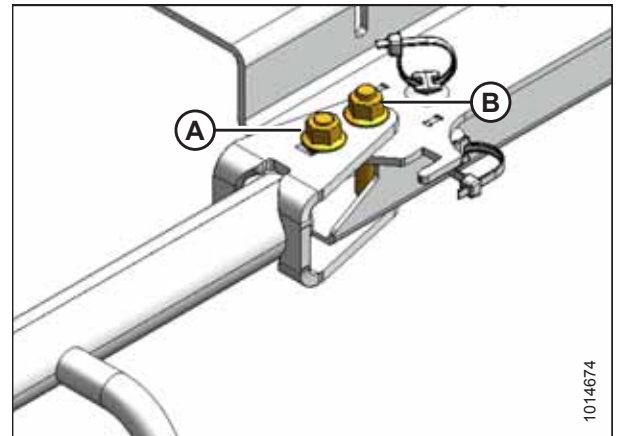


Figure 3.35: Mirror Arm in Working Position

6. To prevent pinching wires when adjusting the mirror assemblies, ensure that roof harness (A) and power mirror harness (B) (if installed) are secured as follows:
 - Roof harness (A) to supports with cable ties (C)
 - Mirror harness (B) (if installed) to roof harness (A) with cable tie (D)
 - Mirror harness (B) (if installed) to mirror arm tube with cable tie (E)
7. Repeat Steps 1, page 29 to 6, page 29 to reposition the right cab-forward mirror.

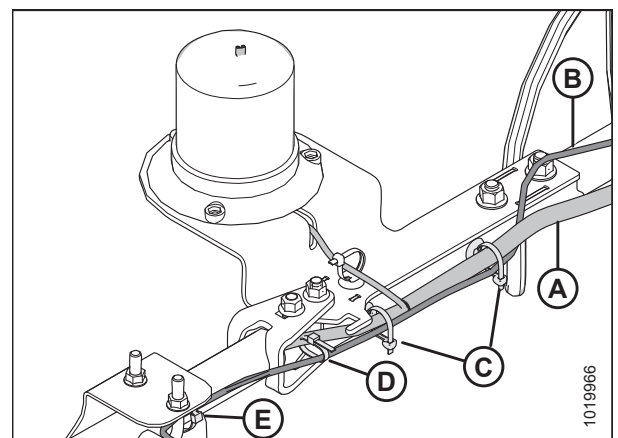


Figure 3.36: Roof Harness and Mirror Harness Secured

3.8 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.

1. Retrieve the SMV signs from inside the cab and the installation hardware from the toolbox.

NOTE:

Use the ignition key to unlock the cab door and the toolbox compartment.

2. Position sign (A) on existing bracket (B) as shown on the right cab-forward side mirror/light support, and secure it with two M6 x 20 hex head bolts and M6 lock nuts (C).

IMPORTANT:

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

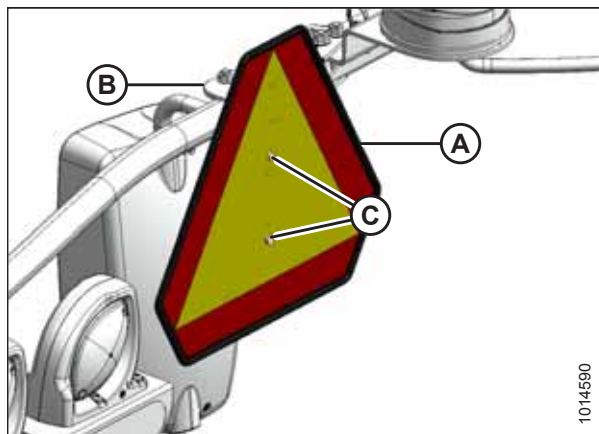


Figure 3.37: SMV Sign Installed on Mirror/Light Support – Right Cab-Forward Side

3. Locate support (A) on the left cab-forward side of the walking beam.
4. Position sign (B) on support (A) as shown, and secure it with two M6 x 20 hex head bolts and M6 lock nuts (C).

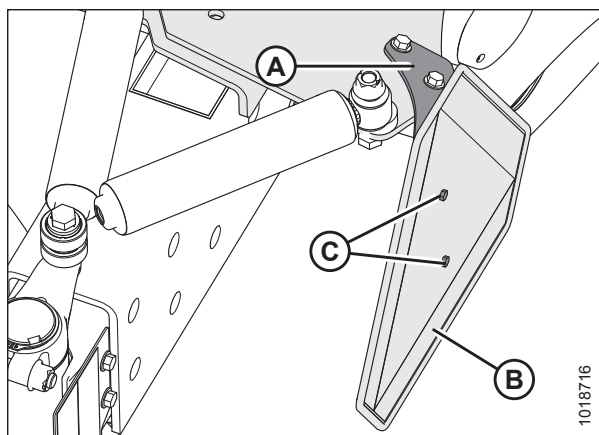


Figure 3.38: SMV Sign Installed – Left Cab-Forward Side

3.9 Replacing Speed Identification Symbol Decal – US Only

The speed identification symbols are required only on windrowers intended for use in the United States of America.

1. Locate the existing speed identification symbol (SIS) decal bracket on the left mirror/lighting arm.
2. Wipe the existing decal with a clean cloth to remove any dirt or grease.
3. Apply 30 mile/h SIS decal (A) (MD #208900) over the existing 45 km/h decal.

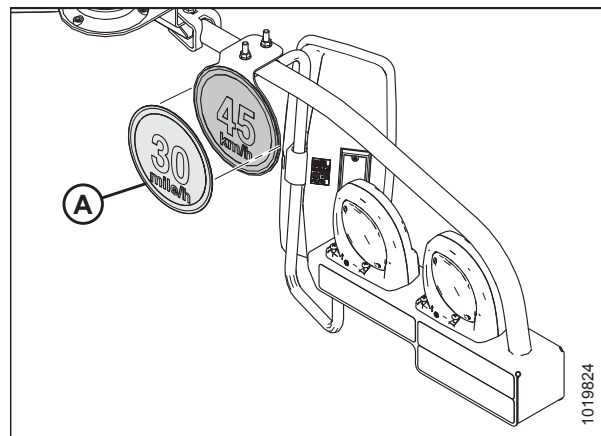


Figure 3.39: SIS Decal – US Only

3.10 Installing Rear Ballast Package

Ballast must be added to the aft end of the windrower when it is paired with a heavy header. Use the following table to determine the amount of ballast required.

Refer to [4.1.13 Checking Tire Pressure, page 55](#) for the proper tire pressures when operating with the applicable header.

Table 3.1 Ballast Specifications

| Header Type | Description | Installed Options | Base Kit | Additional Kits | Additional Float Springs (MD #) |
|-------------|-----------------------------------------------------|-------------------------------------------------|----------|-----------------|---------------------------------|
| D125X | 7.6 m (25 ft.), single reel, double knife, timed | — | 0 | 0 | 0 |
| D130XL | 9.1 m (30 ft.), single reel, double knife, timed | Base | 0 | 0 | 0 |
| D130XL | 9.1 m (30 ft.), single reel, double knife, timed | Transport | 1 | 0 | 0 |
| D130XL | 9.1 m (30 ft.), single reel, double knife, timed | Transport + upper cross auger + vertical knives | 1 | 0 | B6047 |
| D135XL | 10.6 m (35 ft.), single reel, double knife, untimed | Base | 1 | 1 | 0 |
| D135XL | 10.6 m (35 ft.), single reel, double knife, untimed | Transport | 1 | 1 | B6047 |
| D135XL | 10.6 m (35 ft.), single reel, double knife, untimed | Transport + upper cross auger + vertical knives | 1 | 2 | B6047 |
| D135XL | 10.6 m (35 ft.), double reel, double knife, untimed | Base | 1 | 1 | 0 |
| D135XL | 10.6 m (35 ft.), double reel, double knife, untimed | Transport | 1 | 1 | B6047 |
| D135XL | 10.6 m (35 ft.), double reel, double knife, untimed | Transport + upper cross auger + vertical knives | 1 | 2 | B6047 |
| D140XL | 12.2 m (40 ft.), double reel, double knife, untimed | Base | 1 | 1 | 0 |
| D140XL | 12.2 m (40 ft.), double reel, double knife, untimed | Transport | 1 | 1 | B6047 |
| D140XL | 12.2 m (40 ft.), double reel, double knife, untimed | Transport + upper cross auger + vertical knives | 1 | 2 | B6047 |
| D145XL | 13.7 m (45 ft.), double reel, double knife, untimed | Base | 1 | 1 | B6047 |
| D145XL | 13.7 m (45 ft.), double reel, double knife, untimed | Transport | 1 | 2 | B6047 |
| D145XL | 13.7 m (45 ft.), double reel, double knife, untimed | Transport + upper cross auger + vertical knives | 1 | 2 | B6106 |

NOTE:

- A kit contains eight 20.4 kg (45 lb.) weights for a total weight of 163 kg (360 lb.).
- Ballast is not required when the header is paired with an Auger or Rotary Disc Header.

ASSEMBLING WINDROWER

Installing rear ballast

1. Refer to Table 3.1, page 32 to determine the amount of ballast to add to the windrower.
2. Shut down the engine, and remove the key from the ignition.
3. Move latch (A) towards the right cab-forward side of the windrower.
4. Grasp louver (B), and lift the hood to open it.

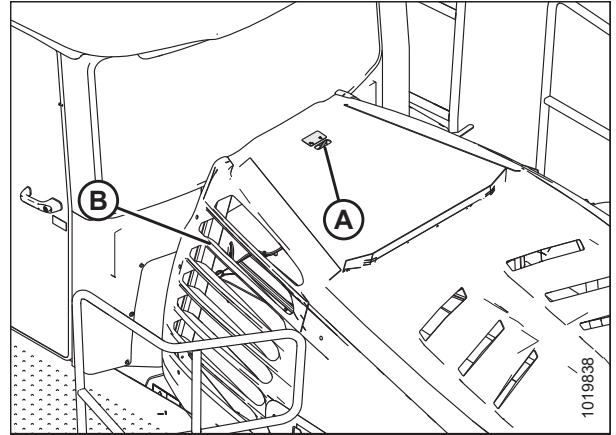


Figure 3.40: Engine Compartment Hood

5. Remove eight hex flange bolts (A).
6. Gently pull light bezel assembly (B) so that you can disconnect plugs P215 (C) and P210 (D) from the back of the red tail/brake lights inside the bezel.
7. Remove light bezel assembly (B).

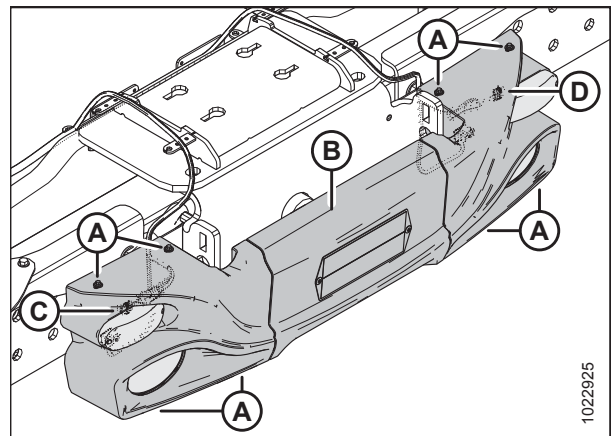


Figure 3.41: Rear Light Bezel Attached to Windrower

8. Separate light bezel assembly (A) by removing six hex screws (B).

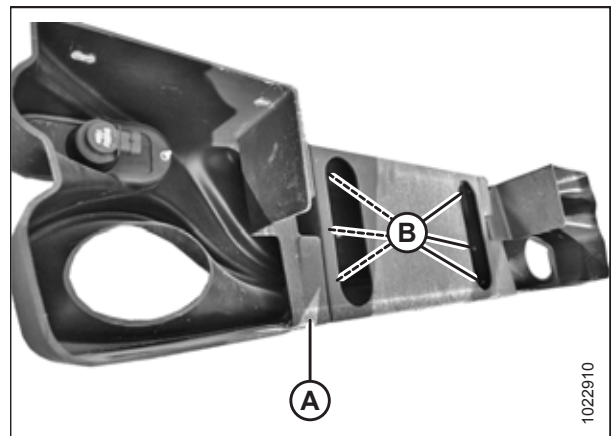


Figure 3.42: Bezel Assembly Removed from Windrower

ASSEMBLING WINDROWER

9. Retain center portion (A) of the light bezel assembly for reinstallation. Install six hex screws (B) on the side bezels.

NOTE:

These hex screws will be used when reinstalling the center portion of light bezel.

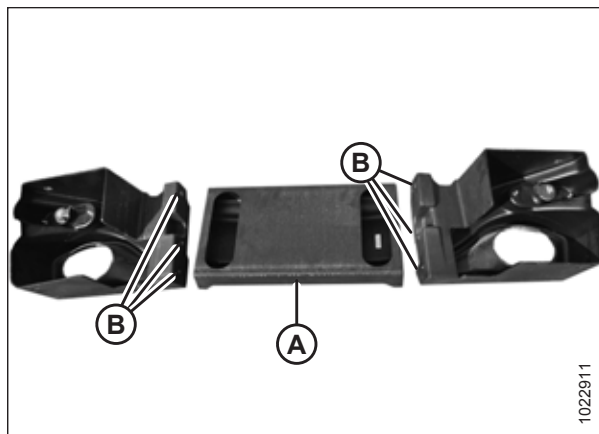


Figure 3.43: Bezel Assembly Separated

CAUTION

To avoid injury, keep your fingers clear of the weight bracket when installing the weights.

10. Install weights (A) from the outboard side of the windrower, sliding them to the middle of the bracket on the walking beam.
11. Install retaining bracket (B) on each side of the weight bundle.

IMPORTANT:

Ensure that retaining bracket (B) engages slot (C) in the bracket.

12. Install rod (D) through the retaining bracket and weights with spacers (E) as required.
13. Secure the rod with nuts (F). Tighten the nuts.

IMPORTANT:

Ensure that nuts (F) are flush with the rod.

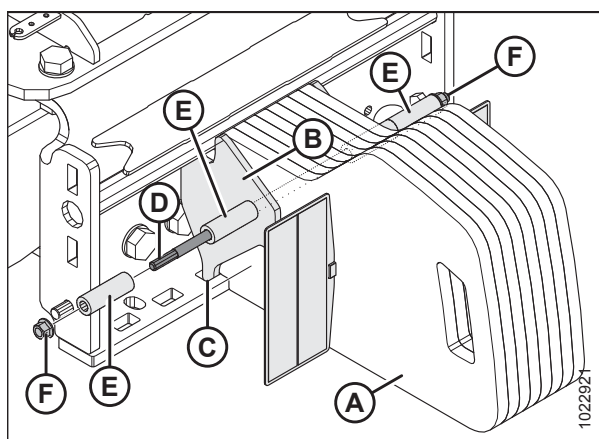


Figure 3.44: Ballast Weights Installed

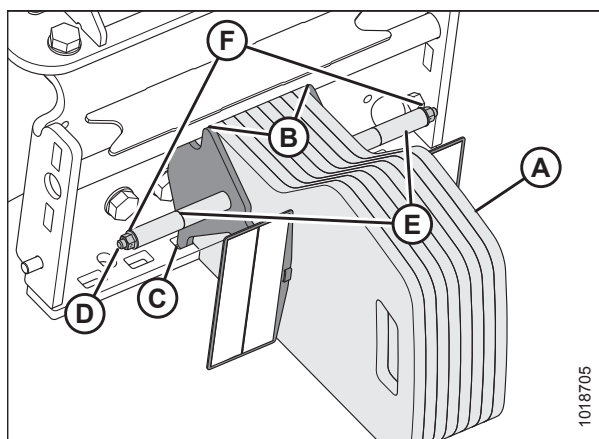


Figure 3.45: Base Ballast Kit Installed – 163 kg (360 lb.)

ASSEMBLING WINDROWER

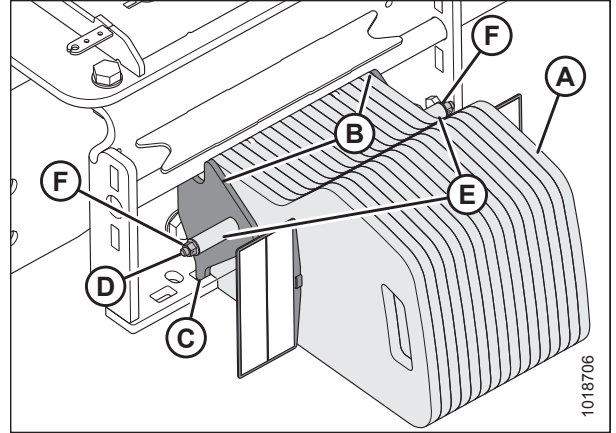


Figure 3.46: Two Ballast Kits Installed – 326 kg (720 lb.)

NOTE:

When all three sets of weights are installed, no spacers are required.

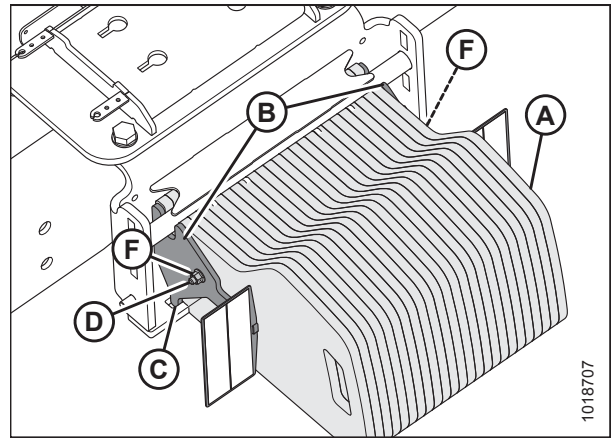


Figure 3.47: Three Ballast Kits Installed – 489 kg (1080 lb.)

14. Bring left bezel (A) close to the frame and connect plug P215 to the back of red tail/brake light (E).
15. Loosely attach left bezel (A) to the frame with four hex flange bolts (B).
16. Repeat Step 14, page 35 and Step 15, page 35, attaching plug P210 at right bezel (C).
17. Turn the IGNITION key to the RUN position, and ensure that rear swath lights (D) and red tail/brake lights (E) are working.
18. If the lights are working, tighten hex flange bolts (B) to secure the left and right light bezels.

IMPORTANT:

Ensure that rear swath lights (D) are centered in the light bezel.

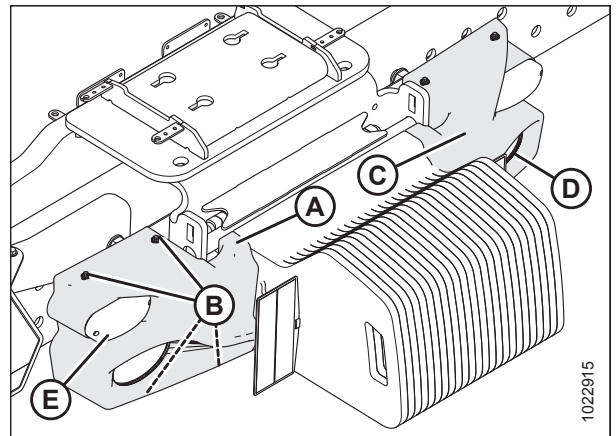


Figure 3.48: Rear Light Bezel with Ballast Kit(s) Installed

ASSEMBLING WINDROWER

19. Grasp the hood by louver (A) and lower it until the hood engages the latch.

NOTE:

To ensure the hood has latched securely, make sure that the latch lever is not tilted.

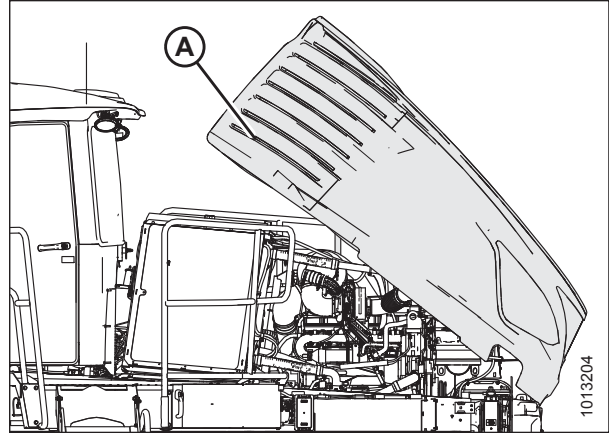


Figure 3.49: Engine Compartment

3.11 Lubrication

Proper lubrication is essential to ensuring the service life of the windrower.

For information on the type of lubricants to use, refer to *6.1 Lubricants, Fluids, and System Capacities, page 145*.

3.11.1 Lubrication Procedure

This is a general procedure which should be followed any time you are adding grease to a fitting.



DANGER

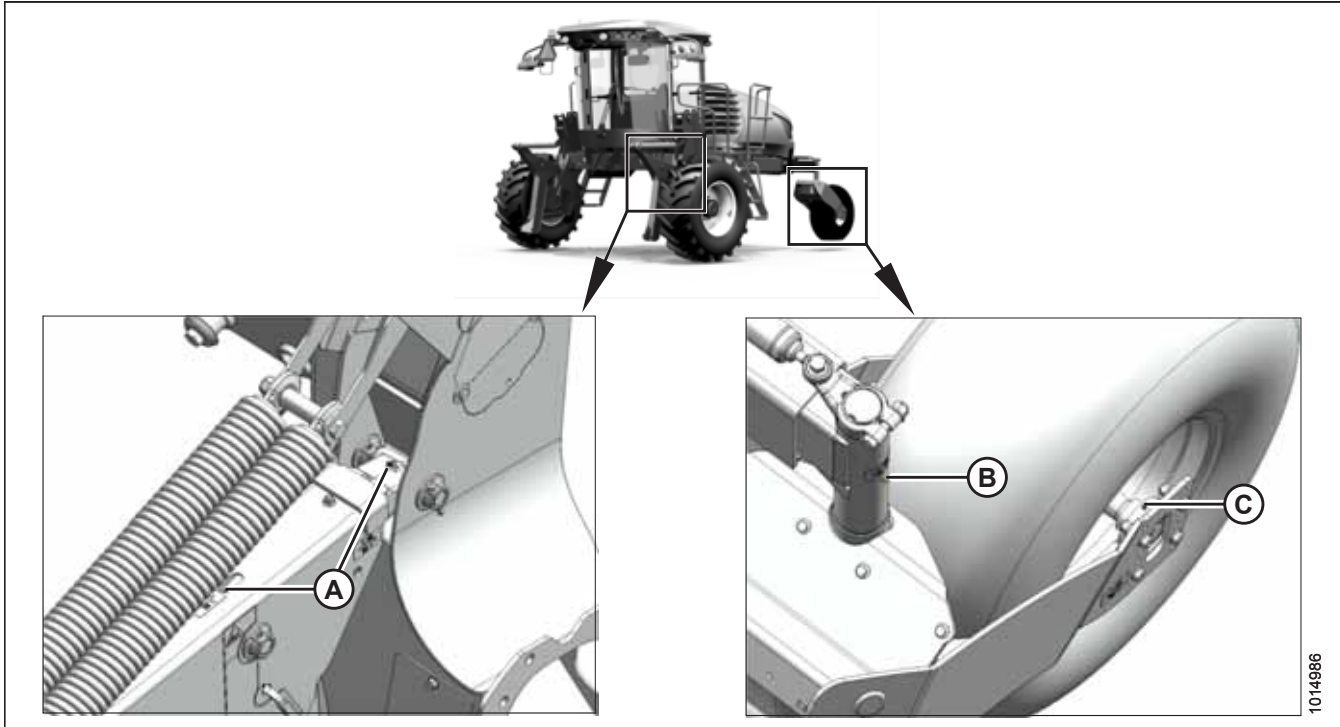
To avoid bodily injury or death from unexpected startup of the machine, always stop the engine and remove the key from the ignition before leaving the operator's seat for any reason.

1. Shut down the engine, and remove the key from the ignition.
2. Wipe the grease fitting with a clean cloth before greasing to avoid injecting dirt and grit.
3. Inject grease through the fitting with a grease gun until the grease overflows the fitting. Do **NOT** overgrease the wheel bearings.
4. Leave excess grease on the fitting to keep out dirt.
5. Replace any loose or broken fittings immediately.
6. Remove and thoroughly clean any fittings (including the lubricant passageway) that will not take grease. Replace the fitting, if necessary.

3.11.2 Lubrication Points

Add grease to these fittings before delivering the windrower. Be sure to leave a small blob of grease on top of each fitting to prevent contamination.

Figure 3.50: Lubrication Points



A - Top Link (Two Places) (Both Sides)

C - Forked Caster Wheel Bearing (Two Places) (Both Wheels)

B - Caster Pivot (Both Sides)

3.12 Connecting Batteries

Connecting the batteries provides electrical power to the windrower.

1. Move latch (A) towards the right cab-forward side of the windrower.
2. Grasp louver (B) and lift the hood to open it.

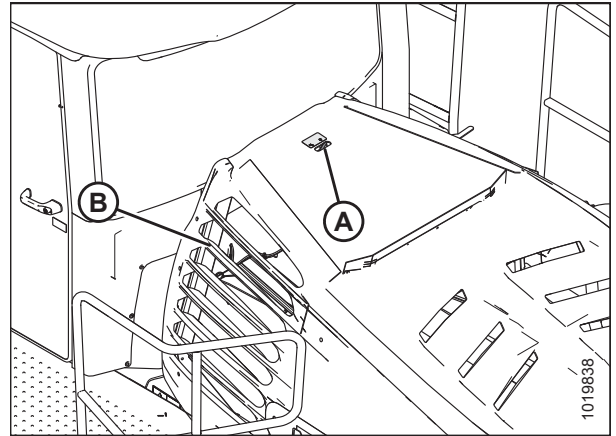


Figure 3.51: Engine Compartment Hood

3. Lift up on the cab-end of cover (A) to disengage it from retaining tab (B), and swing the cover away from the frame.
4. If you are installing a new battery, remove the plastic caps from the battery posts.

IMPORTANT:

Batteries are negative grounded. Always connect the starter cable to the positive (+) terminal of the battery and the battery ground cable to the negative (-) terminal of the battery. Reversed polarity in the battery or alternator may result in permanent damage to the electrical system.

NOTE:

Before connecting the electrical harness to the batteries, ensure that the positive terminal is positioned on the right side of the battery when the battery is installed on the battery support.

5. Attach the red positive (+) cable terminals to positive posts (B) on the batteries and tighten their clamps. Reposition the plastic covers onto the clamps.
6. Attach the black negative (-) cable terminals to negative posts (A) on the batteries and tighten their clamps. Reposition the plastic covers onto the clamps.

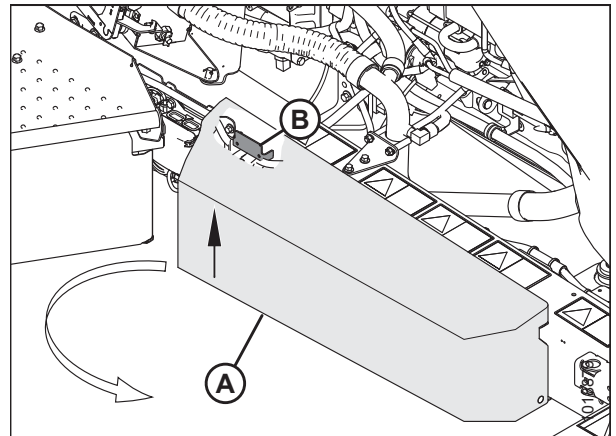


Figure 3.52: Battery Location

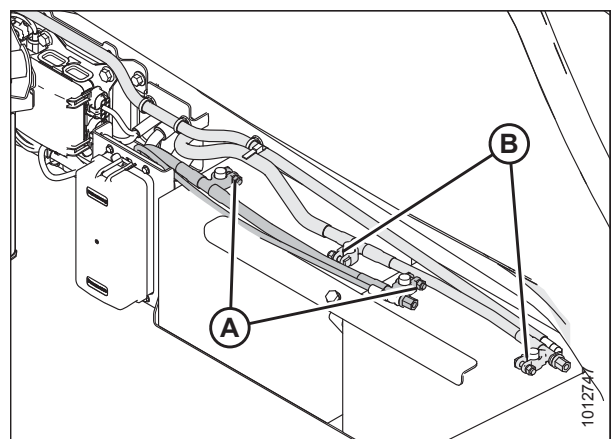


Figure 3.53: Battery Cables Installed

ASSEMBLING WINDROWER

7. Swing cover (A) towards the windrower frame. Lift up on the cab-end of the cover until it is secured by retaining tab (B) on the frame.
8. Grasp the hood by louver (C) and lower it until the hood engages the latch.

IMPORTANT:

To ensure that the hood is latched, make sure that the latch lever is not tilted.

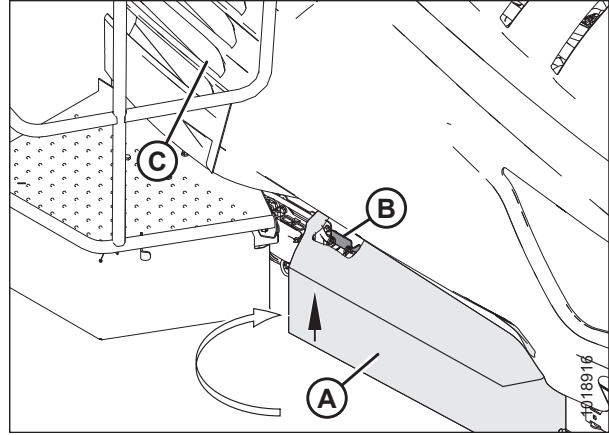


Figure 3.54: Battery Cover Secured

Chapter 4: Performing Predelivery Checks

After assembling the windrower, the machine and its features should be inspected.

IMPORTANT:

The machine should not require further adjustments after the assembly process is completed. However, to ensure that the machine is performing properly, conduct the following checks and complete the yellow predelivery checklist at the end of this book. Make adjustments only if absolutely necessary and in accordance with the instructions in this manual.

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 following pages and on the *Predelivery Checklist, page 159* (yellow sheet attached to this instruction) to ensure that the machine is field-ready.

IMPORTANT:

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

4.1.1 Recording Serial Numbers

Serial numbers identify the specific windrower, its engine, and its factory configuration.

Follow these steps to record the serial numbers.

1. Move latch (A) toward the right cab-forward side of the windrower.
2. Grasp louver (B), and lift the hood to open it.

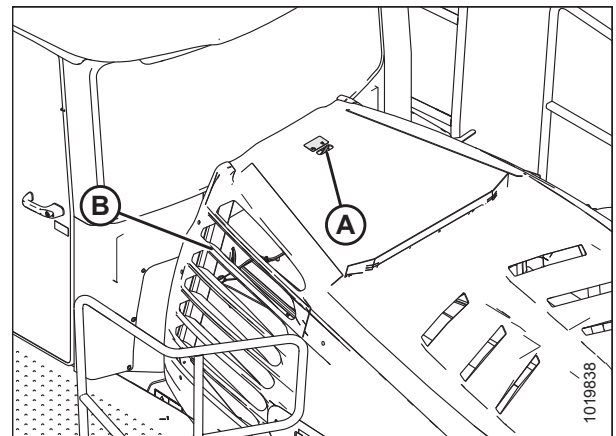


Figure 4.1: Hood

PERFORMING PREDELIVERY CHECKS

- Record the windrower and engine serial numbers on the *Preelivery Checklist, page 159*. Confirm that the serial number recorded matches that found on the shipping manifest or work order.

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

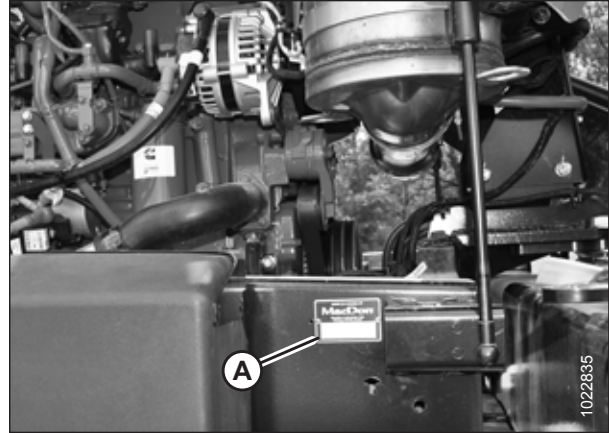


Figure 4.2: Windrower Serial Number Location

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

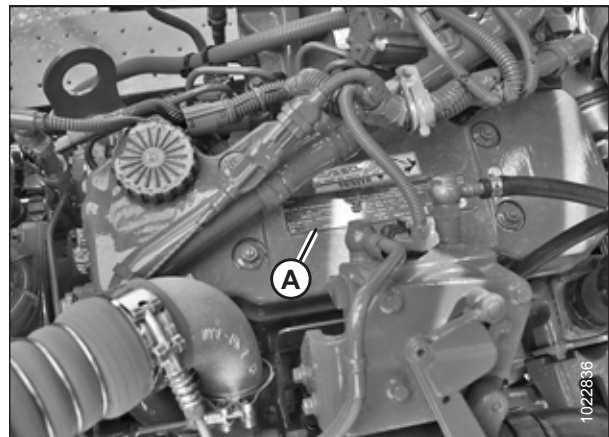


Figure 4.3: Engine Serial Number Location (M1170 Shown, M1240 Similar)

4.1.2 Checking Engine Air Intake

The engine air intake must be clear and all its components properly secured for the engine to work correctly.

- Check all engine air intake ducting (A) for looseness. Tighten the hose clamps as required.
- Check that end cap (B) is secure.

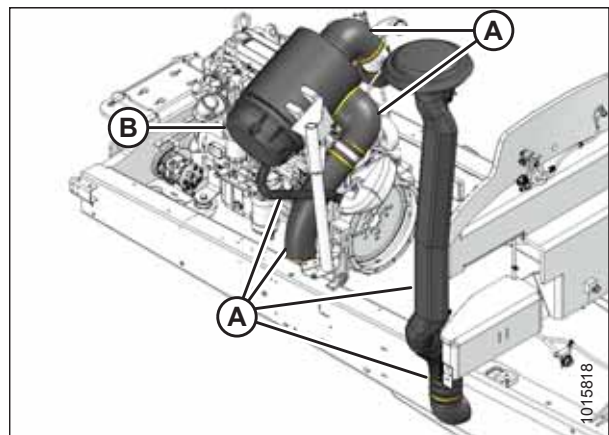


Figure 4.4: Engine Air Intake

PERFORMING PREDELIVERY CHECKS

3. Check three constant torque hose clamps (A) and spring clamp (B) on the turbocharger intake duct. Clamp (B) is properly tightened when screw tip (C) extends beyond the housing and Belleville washers (D) are almost flat.

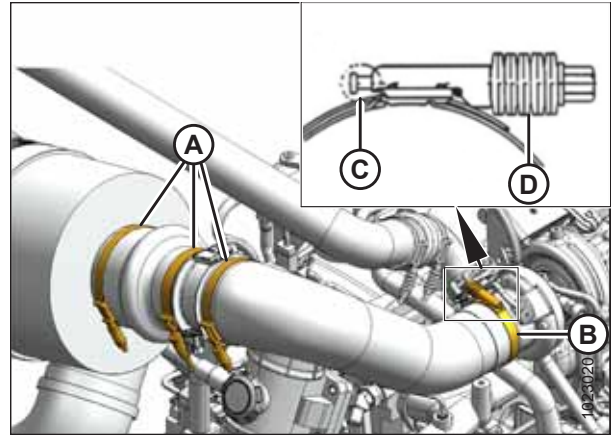


Figure 4.5: Constant Torque Clamps

4.1.3 Checking and Adding Engine Oil

Check the engine oil level and watch for any signs of leakage.

NOTE:

The engine oil level can be checked without opening the hood.

1. Locate the engine oil dipstick on the right side of the windrower. Remove dipstick (A) by turning it counterclockwise to unlock it.
2. Wipe the dipstick clean and reinsert it into the engine.

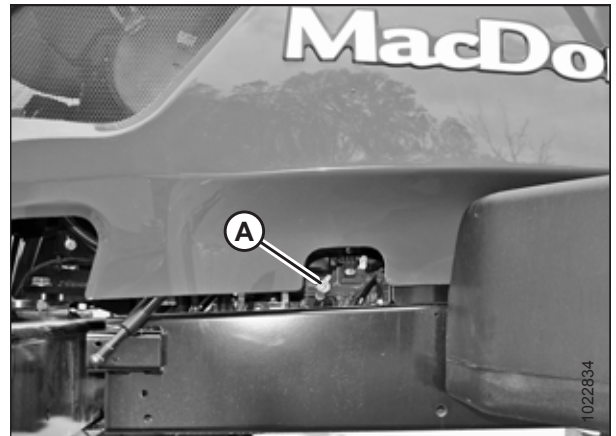


Figure 4.6: Engine Oil Dipstick Location

3. Remove the dipstick again and 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, you will need to add oil.

NOTE:

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

4. Replace the dipstick and turn it clockwise to lock it.

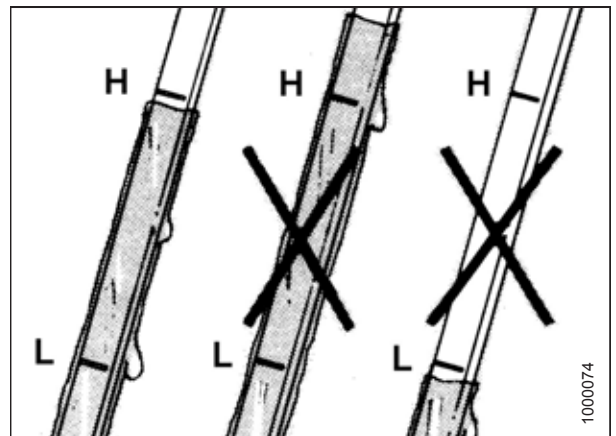


Figure 4.7: Engine Oil Level on Dipstick

PERFORMING PREDELIVERY CHECKS

If the oil level is too low, follow these steps to add oil:

5. Move latch (A) toward the right cab-forward side of the windrower.
6. Grasp louver (B), and lift the hood to open it.

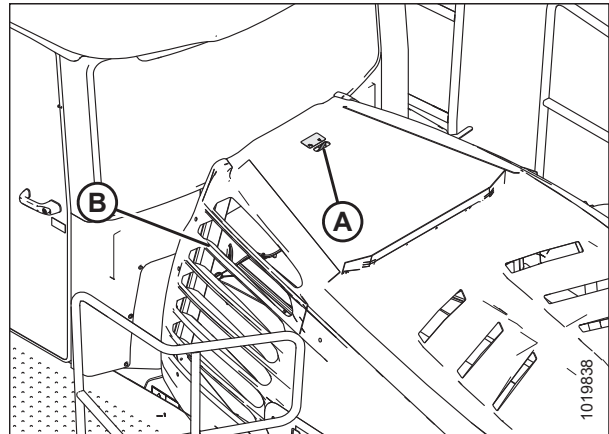


Figure 4.8: Hood

7. Clean the area around filler cap (A) and remove it by turning the cap counterclockwise.
8. Carefully add oil using a funnel to achieve the desired level. For oil specifications, refer to [6.1 Lubricants, Fluids, and System Capacities, page 145](#).

IMPORTANT:

Do **NOT** overfill the reservoir with engine oil. Running the engine with excess oil in the reservoir can result in equipment damage.

Replace oil filler cap (A) and turn it clockwise until it is snug.

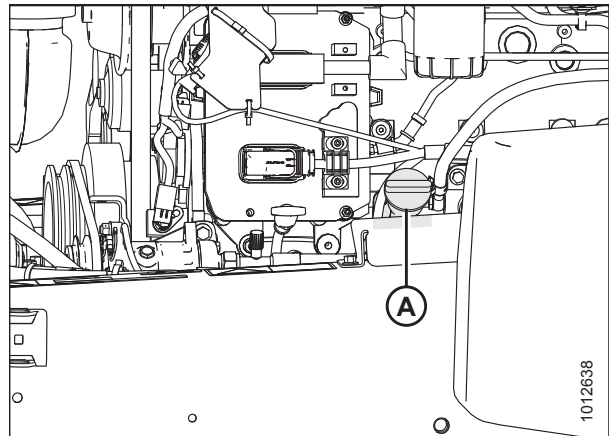


Figure 4.9: Oil Filler Cap

4.1.4 Checking and Adding Hydraulic Oil

The hydraulic system will not work correctly if the hydraulic oil level is too low or too high.



WARNING

Avoid high-pressure fluids. Escaping fluid can penetrate the skin causing serious injury.

PERFORMING PREDELIVERY CHECKS

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 seen with the hood open or closed.

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

IMPORTANT:

If you do not see any oil 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 oil level is too low, refer to [6.1 Lubricants, Fluids, and System Capacities, page 145](#) for oil specifications and add oil as follows:

IMPORTANT:

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

- a. Turn plug handle (B) counterclockwise until it is loose and remove the plug by pulling it straight out.
- b. Open breather cap (A).

NOTE:

This will allow the hydraulic system to vent, speeding up the filling process.

- c. Add hydraulic oil until the level in the tank is at the full indicator mark.
- d. Reinstall breather cap (A) and filler plug (B) and turn the filler plug handle clockwise until it is secure.

NOTE:

After running up a header, check the oil level again.

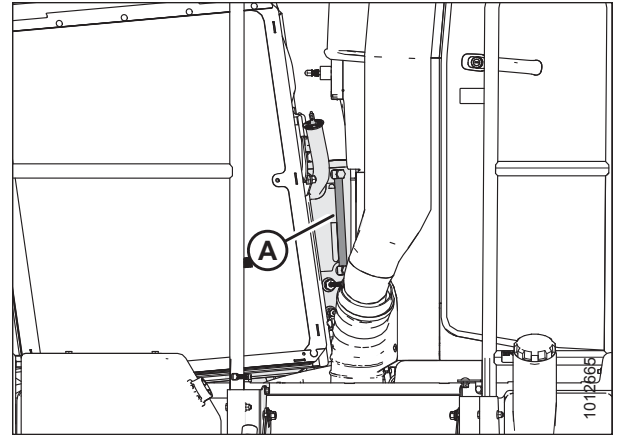


Figure 4.10: Hydraulic Oil Sight Glass

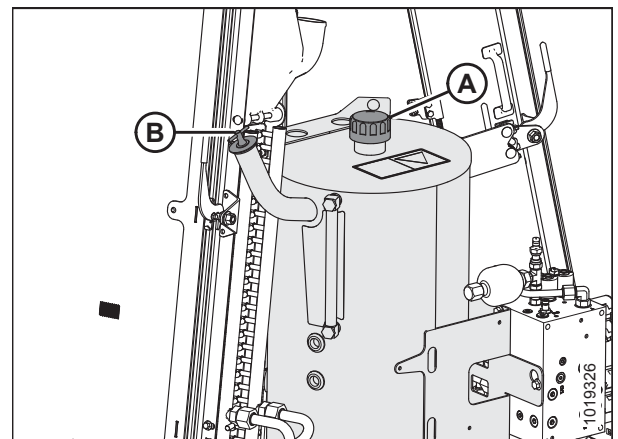


Figure 4.11: Hydraulic Oil Filler Neck and Breather Tube

PERFORMING PREDELIVERY CHECKS

4.1.5 Checking Fuel Separator

The fuel separator removes water and sediment from the fuel to prevent damage to the engine. It will need to be inspected to ensure that it is clean.

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 tight.
5. Dispose of the fuel in a safe manner.

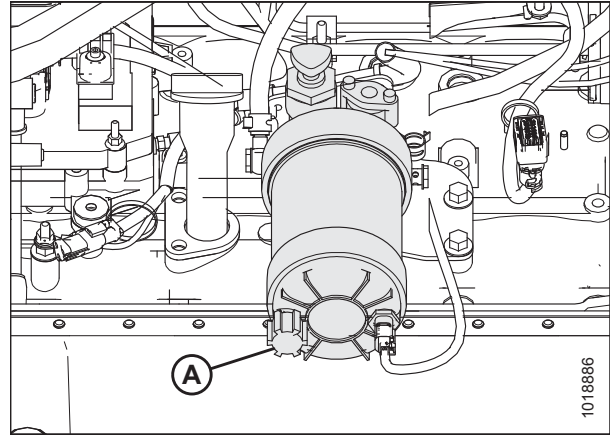


Figure 4.12: Fuel Filter

4.1.6 Checking Engine Coolant Level

Coolant is cycled through the engine to help reduce internal heat. The coolant must be at the appropriate level for the cooling system to work correctly.

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, complete Steps 3, page 47 to 5, page 47.

NOTE:

For fluid specifications, refer to [6.1 Lubricants, Fluids, and System Capacities, page 145](#).

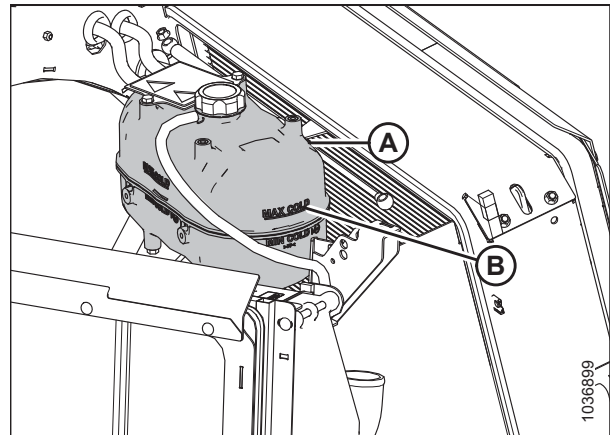


Figure 4.13: Coolant Recovery Tank

PERFORMING PREDELIVERY CHECKS

3. **To add coolant:** remove pressurized cap (A) from the coolant recovery tank.
4. Add coolant 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).
5. Replace cap (A).

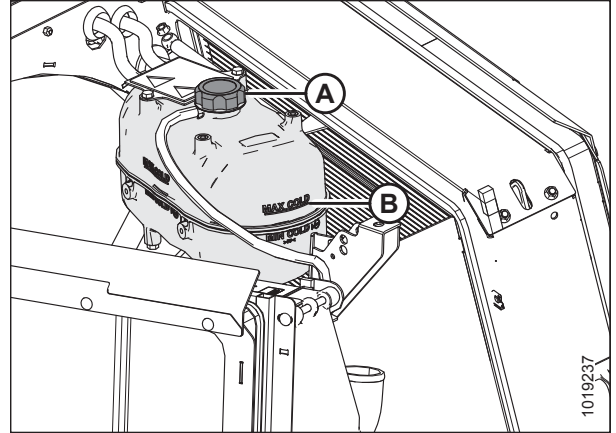


Figure 4.14: Coolant Recovery Tank Cap and MAX COLD Fill Line

4.1.7 Checking Engine Gearbox Lubricant Level and Adding Lubricant

Ensure that the lubricant level is correct to maximize the service life of the gearbox components.

1. Remove dipstick (A) and check the lubricant level.

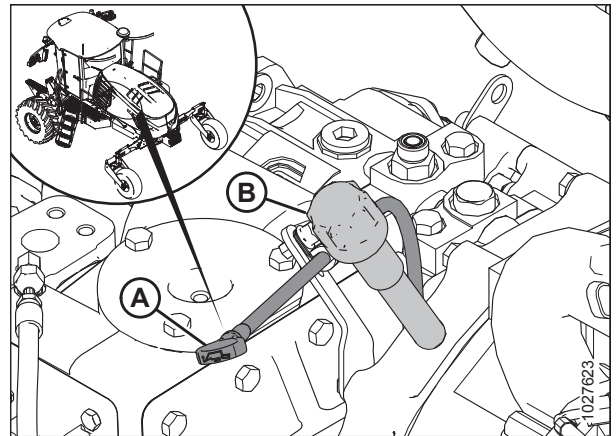


Figure 4.15: Gearbox Lubricant Dipstick

2. If the lubricant level is at or below ADD mark (A) on the dipstick, remove the breather cap ([B] in Figure 4.15, page 47) and add gearbox lubricant. Insert the dipstick again to check the lubricant level. Repeat this process until the lubricant level is between ADD mark (A) and FULL mark (B) on the dipstick.

For lubrication specifications, refer to [6.1 Lubricants, Fluids, and System Capacities, page 145](#).

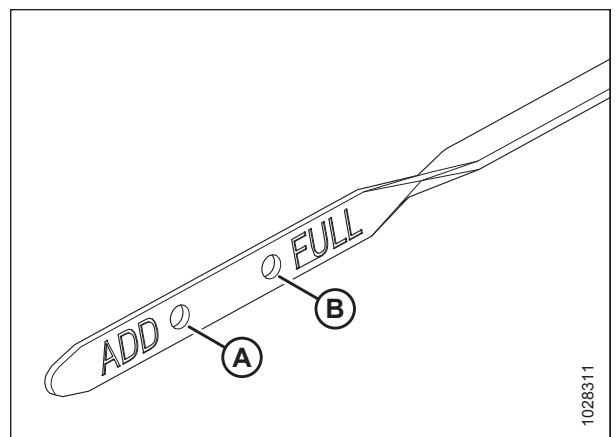


Figure 4.16: Bottom End of Dipstick

4.1.8 Checking Air Conditioning Compressor Belts

The windrower's air conditioner compressor is belt-driven. The belt must be tensioned correctly for the air conditioning system to function properly.

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

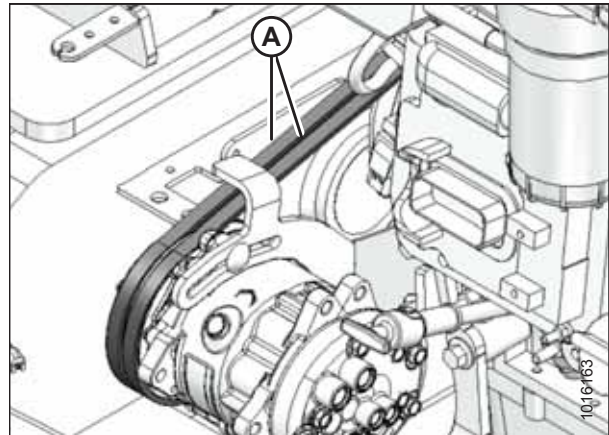


Figure 4.17: A/C Compressor Belts

4.1.9 Starting Engine

Do not start the engine until all other equipment checks have been completed. You can start the engine with the operator's seat in the cab-forward or the engine-forward position.

DANGER

- Only start the engine in a well-ventilated space.
- Ensure that there are no bystanders present when starting the machine.
- This machine has 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 shorting across the starter or starter relay terminals. If the normal starting circuitry is bypassed, the machine can start with the drive engaged and potentially start moving.
- Start the engine only from the operator's seat with the controls in PARK. NEVER start the engine while standing on the ground. NEVER try to start the engine with someone under or near the machine.

IMPORTANT:

Do NOT tow the machine to start the engine. Damage to the hydrostatic drives will result.

PERFORMING PREDELIVERY CHECKS

NOTE:

When the windrower console receives a wake-up signal, the console awakens from sleep mode and closes the battery disconnect relay. The Harvest Performance Tracker (HPT) goes into a boot-up sequence that 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
1. Before starting the engine, ensure that engine exhaust pipe (A) is not covered or obstructed.

NOTE:

Before taking the GSL out of PARK, let the hydraulic oil warm up to 32°C (90°F). You can view the hydraulic oil temperature on Run Screen 4 on the Harvest Performance Tracker (HPT) display.

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



Figure 4.18: Engine Exhaust

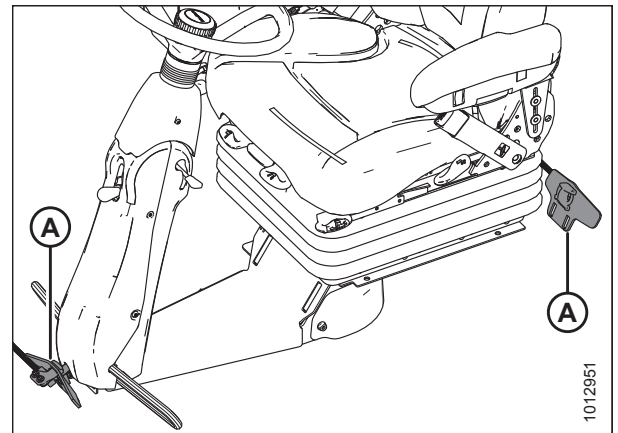


Figure 4.19: Direction Locks

PERFORMING PREDELIVERY CHECKS

3. Move GSL (A) into PARK (C).
4. Turn the steering wheel until it locks. It may be possible to move the steering wheel slightly in the locked position.

IMPORTANT:

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

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

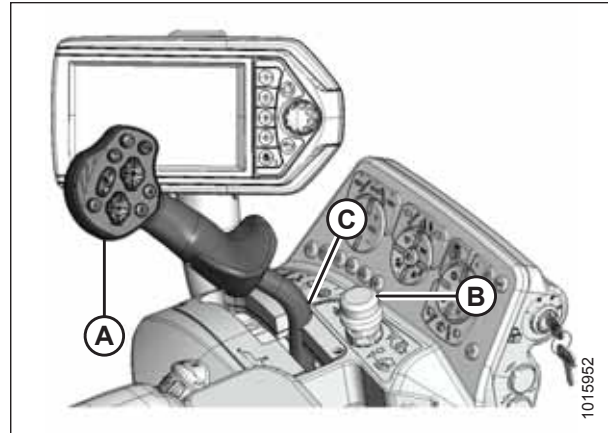


Figure 4.20: Operator Controls

7. Turn IGNITION switch (A) to the ON position; HPT display (B) will light up. If the HPT is still booting up, wait for WAIT TO START (WTS) symbol (C) to disappear before trying to start the engine.
8. Ensure that red PARK symbol light (D) is ON and that there are no error messages on the screen.
9. Press HORN button (E) three times prior to starting the engine.

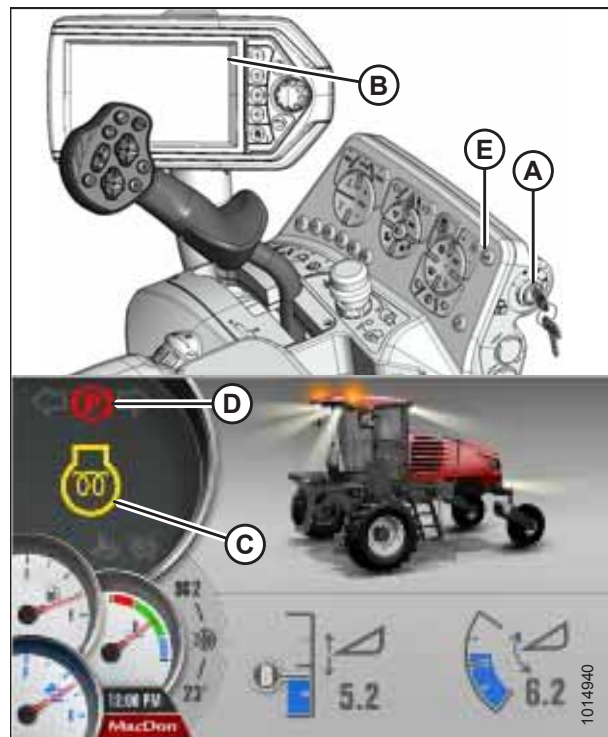


Figure 4.21: Console and HPT Run Screen

PERFORMING PREDELIVERY CHECKS

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

NOTE:

When the engine starts and the header is not engaged, the HPT displays header disengaged page (B).

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 trying again.
- If you crank the engine for more than 30 seconds within a 2-minute period, the engine will lock the starter circuit to prevent overheating, and a flashing WTS symbol will appear on the display. Wait for the WTS symbol to stop flashing before attempting to crank the engine again.
- If the engine still does not start, refer to the windrower operator's manual.

NOTE:

If you attempt to start the engine 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 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 HPT engine temperature gauge is above blue range (A).



Figure 4.22: HPT Header Disengaged Screen



Figure 4.23: HPT No Header Screen

PERFORMING PREDELIVERY CHECKS

Engine Start Troubleshooting Tips

If the windrower will not start normally, refer to the following troubleshooting table:

IMPORTANT:

Do **NOT** tow the machine to start the engine. Damage to the hydrostatic drives will result.

Table 4.1 Engine Start Troubleshooting

| Problem | Solution |
|--------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Controls are not in the NEUTRAL position | <ul style="list-style-type: none"> • Move the GSL to NEUTRAL • Move the steering wheel to the locked (centered) position • Disengage the HEADER switch |
| Operator's station is not locked | <ul style="list-style-type: none"> • Adjust the position of the operator's station • Ensure that the lock is engaged |
| Neutral interlock is out of adjustment | <ul style="list-style-type: none"> • Refer to the windrower's technical manual |
| Fuel not reaching the engine | <ul style="list-style-type: none"> • Fill the fuel tank • Replace the fuel filter • Check for blocked or damaged fuel lines |
| Old fuel in the fuel tank | <ul style="list-style-type: none"> • Drain the fuel tank • Refill the fuel tank with fresh fuel |
| Water, dirt, or air in the fuel system | <ul style="list-style-type: none"> • Drain, flush, fill, and prime the fuel system |
| Improper type of fuel in the fuel tank | <ul style="list-style-type: none"> • Drain the fuel tank • Refill the fuel tank with the correct type of fuel |
| Crankcase oil too heavy | <ul style="list-style-type: none"> • Replace with recommended oil |
| Low voltage output from the battery | <ul style="list-style-type: none"> • Test the battery • Check the battery's electrolyte levels |
| Poor battery connection | <ul style="list-style-type: none"> • Clean and tighten loose battery connections |
| Faulty starter | <ul style="list-style-type: none"> • Refer to the windrower's technical manual |
| Wiring is shorted or the circuit breaker is open | <ul style="list-style-type: none"> • Check the continuity of the wiring and the breaker; manually reset the circuit breaker |
| Faulty fuel injectors | <ul style="list-style-type: none"> • Refer to the windrower's technical manual |

4.1.10 Checking Operating Safety System

The operating safety system protects the operator and the windrower from injury or damage. Perform these checks to ensure that the operating safety system is functioning correctly.

DANGER

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

DANGER

Check to be sure all bystanders have cleared the area.

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 Harvest Performance Tracker (HPT) 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 HPT 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 HPT 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 HPT 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 HPT 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 pry bar between one of the 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 HPT 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.

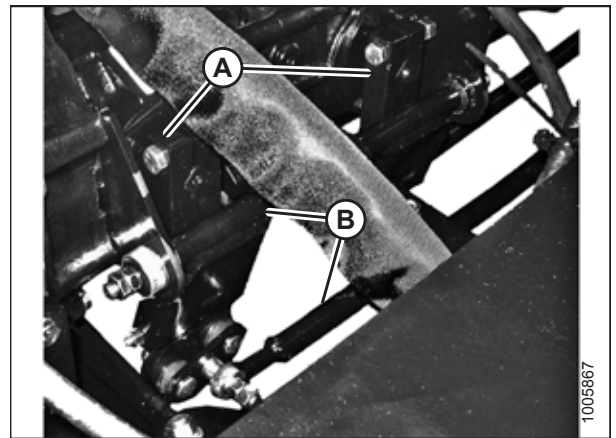


Figure 4.24: Pintle Arms

PERFORMING PREDELIVERY CHECKS

- Center the steering wheel. Place the GSL in NEUTRAL but not in PARK. Try starting the engine to confirm that the HPT 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.
- 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 HPT displays LOCK SEAT BASE. If the engine starts, the safety system requires adjustment. Refer to the windrower's technical manual for the adjustment procedures.

4.1.11 Checking and Adding Wheel Drive Lubricant – 10 Bolt Wheels

Make sure the wheel drive lubricant level is correct to maximize the service life of the components.

DANGER

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

CAUTION

Park on a flat, level surface with the header on the ground, the ground speed lever (GSL) in the PARK position, and the steering wheel in the locked position (centered). To confirm that the parking brake is engaged, wait for the HPT to beep and display a red P symbol .

The following procedure applies to windrowers equipped with 10-bolt drive wheels. If the windrower is equipped with the optional high torque power wheels, which are secured to the windrower with 12 bolts, refer to [4.1.12 Checking and Adding Wheel Drive Lubricant – 12 Bolt Wheels, page 55](#).

- Park the windrower on level ground.
- Position the windrower so that plugs (A) and (B) are horizontally aligned with center (C) of the hub.
- Shut down the engine, and remove the key from the ignition.
- Remove plug (A) or (B). The lubricant should be visible through the port. Some fluid may spill from the port.
- If necessary, add lubricant until lubricant runs out from open port (A) or (B). For lubricant specifications, refer to [6.1 Lubricants, Fluids, and System Capacities, page 145](#).

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 [6.1 Lubricants, Fluids, and System Capacities, page 145](#).

- Reinstall the plugs and tighten them to 24 Nm (18 lbf·ft).

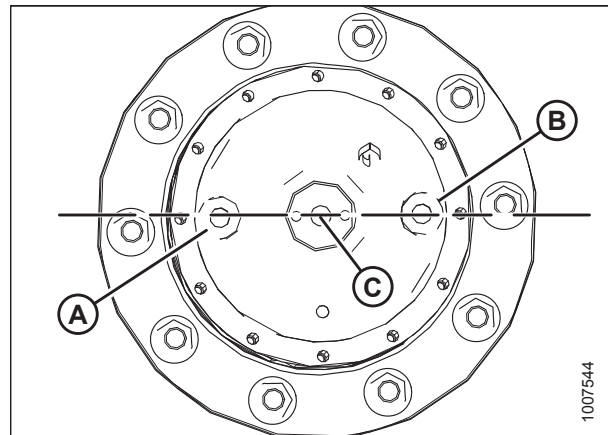


Figure 4.25: Drive Wheel Hub

4.1.12 Checking and Adding Wheel Drive Lubricant – 12 Bolt Wheels

The procedure for checking and filling the lubricant for wheel drives on 12-bolt wheels differs slightly from the procedure for doing this on 10-bolt wheels.

DANGER

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

1. Park the windrower on level ground.
2. 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.
3. Shut down the engine, and remove the key from the ignition.

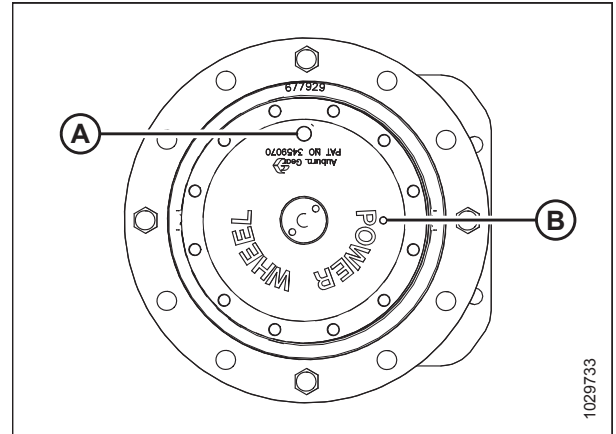


Figure 4.26: Wheel Drive – 12 Bolt

WARNING

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

4. Remove check plug (B). The lubricant should be visible through the port. Some lubricant may leak from the port.
5. Reinstall check plug (B) and torque it to 7.5 Nm (6 lbf·ft).
6. Reinstall fill/drain plug (A) and torque it to 24 Nm (18 lbf·ft).

4.1.13 Checking Tire Pressure

The tires must be at the correct operating pressure. Check the pressure of the windrower tires using a tire pressure gauge.

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

Drive Wheel Tires: For optimal performance, drive wheel (A) tire pressures are determined by tire type, header size, and additional options. For drive wheel tire pressures, refer to the following table:

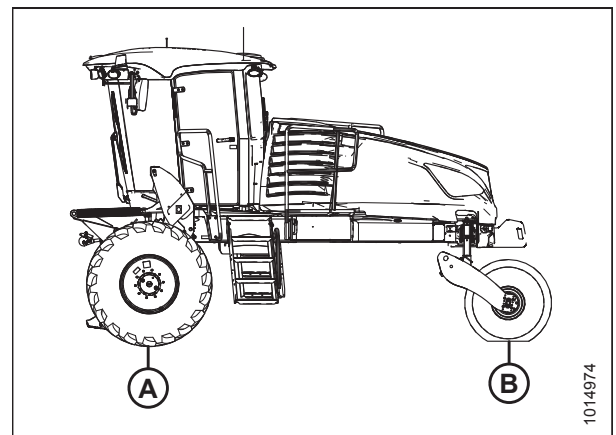


Figure 4.27: Windrower Tires

Table 4.2 Drive Tire Inflation Specifications

| Header Type | Description | Installed Options | Weight Kit | Tire Type | Pressure kPa (psi) |
|----------------------|-------------------------------------|-------------------|------------|-----------|--------------------|
| Draper Header | | | | | |
| D115X single reel | 4.6 m (15 ft.), double knife, timed | — | — | Bar | 138 (20) |

PERFORMING PREDELIVERY CHECKS

Table 4.2 Drive Tire Inflation Specifications (continued)

| Header Type | Description | Installed Options | Weight Kit | Tire Type | Pressure kPa (psi) |
|-----------------------|-------------------------------------------|----------------------------------------------------|------------|-------------|-----------------------|
| D115X single reel | 4.6 m (15 ft.), double knife, timed | — | — | Turf | 138 (20) |
| D120X single reel | 6.1 m (20 ft.), double knife, timed | — | — | Bar | 138 (20) |
| D120X single reel | 6.1 m (20 ft.), double knife, timed | — | — | Turf | 138 (20) |
| D125X single reel | 7.6 m (25 ft.), double knife, timed | — | — | Bar | 159 (23) |
| D125X single reel | 7.6 m (25 ft.), double knife, timed | — | — | Turf | 159 (23) |
| D130XL single reel | 9.1 m (30 ft.), double knife, timed | Transport | 1 | Bar | 200 (29) |
| D130XL single reel | 9.1 m (30 ft.), double knife, timed | Transport | 1 | Turf | 241 (35) |
| D130XL single reel | 9.1 m (30 ft.), double knife, timed | Transport + upper cross auger + vertical knives | 1 | Bar | 241 (35) |
| D130XL single reel | 9.1 m (30 ft.), double knife, timed | Transport + upper cross auger + vertical knives | 1 | Turf | 241 (35) |
| D135XL single reel | 10.7 m (35 ft.), double knife, untimed | Base | 2 | Bar | 200 (29) |
| D135XL single reel | 10.7 m (35 ft.), double knife, untimed | Base | 2 | Turf | 241 (35) |
| D135XL single reel | 10.7 m (35 ft.), double knife, untimed | Transport | 2 | Bar | 241 (35) |
| D135XL single reel | 10.7 m (35 ft.), double knife, untimed | Transport | 2 | Turf | 241 (35) |
| D135XL single reel | 10.7 m (35 ft.), double knife, untimed | Transport + upper cross auger + vertical knives | 3 | Bar | 241 (35) |
| D135XL single reel | 10.7 m (35 ft.), double knife, untimed | Transport + upper cross auger + vertical knives | 3 | Turf | 241 (35) |
| D135XL double reel | 10.7 m (35 ft.), double knife, untimed | Base | 2 | Bar | 221 (32) |
| D135XL double reel | 10.7 m (35 ft.), double knife, untimed | Base | 2 | Turf | 241 (35) |
| D135XL double reel | 10.7 m (35 ft.), double knife, untimed | Transport | 2 | Bar | 241 (35) |
| D135XL double reel | 10.7 m (35 ft.), double knife, untimed | Transport | 2 | Turf | 241 (35) |
| D135XL double reel | 10.7 m (35 ft.), double knife, untimed | Transport + upper cross auger + vertical knives | 3 | Bar | 283 (41) |
| D135XL double reel | 10.7 m (35 ft.), double knife, untimed | Transport + upper cross auger + vertical knives | 3 | Turf | 241 (35) |
| D140XL double reel | 12.2 m (40 ft.), double knife, untimed | Base | 2 | Bar | 241 (35) |

PERFORMING PREDELIVERY CHECKS

Table 4.2 Drive Tire Inflation Specifications (continued)

| Header Type | Description | Installed Options | Weight Kit | Tire Type | Pressure kPa (psi) |
|---------------------------|-------------------------------------------|----------------------------------------------------|------------|--------------------|-----------------------|
| D140XL double reel | 12.2 m (40 ft.), double knife, untimed | Base | 2 | Turf | 241 (35) |
| D140XL double reel | 12.2 m (40 ft.), double knife, untimed | Transport | 2 | Bar | 241 (35) |
| D140XL double reel | 12.2 m (40 ft.), double knife, untimed | Transport | 2 | Turf | 241 (35) |
| D140XL double reel | 12.2 m (40 ft.), double knife, untimed | Transport + upper cross auger + vertical knives | 3 | Bar | 283 (41) |
| D140XL double reel | 12.2 m (40 ft.), double knife, untimed | Transport + upper cross auger + vertical knives | 3 | Turf | 241 (35) |
| D145XL double reel | 13.7 m (45 ft.), double knife, untimed | Base | 2 | Bar | 241 (35) |
| D145XL double reel | 13.7 m (45 ft.), double knife, untimed | Base | 2 | Turf | 241 (35) |
| D145XL double reel | 13.7 m (45 ft.), double knife, untimed | Transport | 3 | Bar | 262 (38) |
| D145XL double reel | 13.7 m (45 ft.), double knife, untimed | Transport | 3 | Turf | 241 (35) |
| D145XL double reel | 13.7 m (45 ft.), double knife, untimed | Transport + upper cross auger + vertical knives | 3 | Bar | 283 (41) |
| D145XL double reel | 13.7 m (45 ft.), double knife, untimed | Transport + upper cross auger + vertical knives | 3 | Turf | 241 (35) |
| Rotary Disc Header | | | | | |
| R85 | 4.9 m (16 ft.) | Base | — | Bar or Turf | 200 (29) |
| R113 | 4 m (13 ft.) | No Conditioner | — | Bar or Turf | 138 (20) |
| R113 | 4 m (13 ft.) | Steel or Poly Roll | — | Bar | 179 (26) |
| R113 | 4 m (13 ft.) | Steel or Poly Roll | — | Turf | 159 (23) |
| R216 | 4.9 m (16 ft.) | Steel or Poly Roll | — | Bar | 200 (29) |
| R216 | 4.9 m (16 ft.) | Steel or Poly Roll | — | Turf | 200 (29) |
| Auger Header | | | | | |
| A40DX | 4.9 m (16 ft.) | — | — | Bar | 200 (29) |
| A40DX | 4.9 m (16 ft.) | — | — | Turf | 200 (29) |
| A40DX GSS | 4.9 m (16 ft.) (Grass Seed) | — | — | Bar | 159 (23) |
| A40DX GSS | 4.9 m (16 ft.) (Grass Seed) | — | — | 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

After performing all pre-start checks and starting the engine, the operating features of the windrower should be inspected.

1. Perform the final checks and adjustments listed on the following pages and the *Predelivery Checklist, page 159* (the yellow sheet attached to this instruction) to ensure that the machine is field-ready.
2. Ensure that the Operator or the Dealer retains the completed Predelivery Checklist.

4.2.1 Checking HPT Status Screen and Auto Lights

Confirm that the Harvest Performance Tracker (HPT) correctly recognizes whether or not a header is attached to the windrower, and check that the cab lights automatically turn off when the operator leaves the cab.

DANGER

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

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



Figure 4.28: HPT Display – Boot-Up

2. Start the engine. For instructions, refer to *4.1.9 Starting Engine, page 48*.
3. If a header is attached, confirm that the HPT initially displays the header-disengaged screen.



Figure 4.29: HPT Display – Header Disengaged

PERFORMING PREDELIVERY CHECKS

4. If a header is not attached, confirm that the HPT displays the no-header screen.



Figure 4.30: HPT Display – No Header

5. Press LIGHT switch (A) to turn on the headlights.
6. Shut down the engine and leave the cab without switching off the lights. Confirm that the HPT display, headlights, and egress light shut off after 3 minutes.

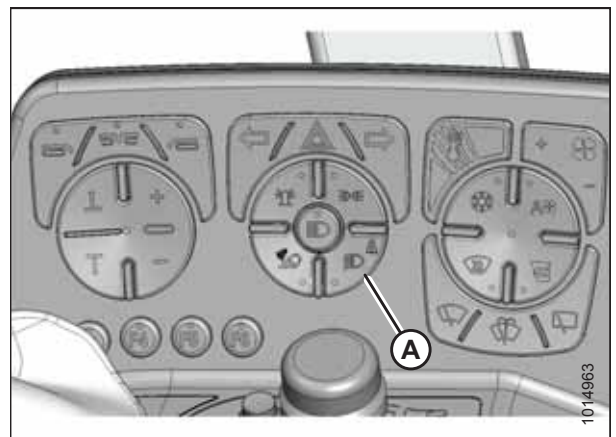


Figure 4.31: Headlight Switch

4.2.2 Checking Harvest Performance Tracker Display Gauges

The Harvest Performance Tracker (HPT) display shows the windrower's performance gauges. Ensure that the gauges appear correctly on the HPT display.

DANGER

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

WARNING

Check to be sure all bystanders have cleared the area.

PERFORMING PREDELIVERY CHECKS

1. If the windrower engine is not already running, start it. For instructions, refer to [4.1.9 Starting Engine, page 48](#).
2. If a header is not attached to the windrower, check that the no-header page appears.



Figure 4.32: HPT Display – No Header

3. If a header is attached, check that header screen (A) appears.
4. Ensure that red park symbol (B) is on.
5. Ensure that engine rpm (C) appears.
6. Ensure that fuel gauge (D), DEF gauge (E) and temperature gauge (F) appear on the display screen.

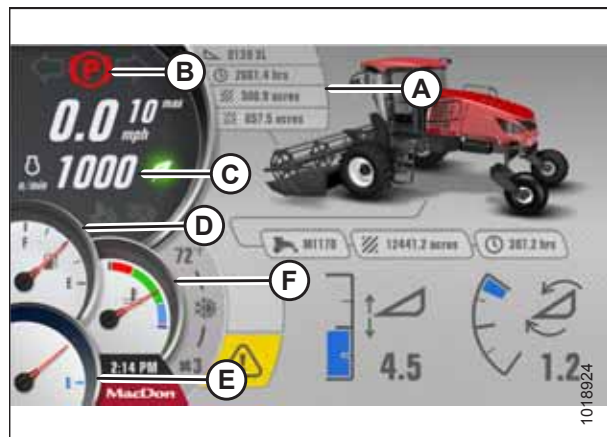


Figure 4.33: HPT Display – Header Attached

Navigating the Harvest Performance Tracker

Turning the scroll knob on the Harvest Performance Tracker (HPT) highlights the available options within a menu or changes a selected setting. Pushing the scroll knob selects a function or a menu item. The scroll and select functions are also duplicated on the ground speed lever (GSL) controls. Unless otherwise specified, these two buttons will always perform the same function. When the “select” instruction is given in this document, either the button on the GSL or the scroll knob on the HPT can be used.

1. Turn rotary scroll knob (A) clockwise to move the selection cursor down the screen, to the right of the screen, clockwise, or to increase a selected setting. Push the scroll knob to activate the selected item.
2. Turn rotary scroll knob (A) counterclockwise to move the selection cursor down the screen, to the left of the screen, counterclockwise, or to decrease a selected setting. Push the scroll knob to activate the selected item.

NOTE:

The scroll wheel on the back of the GSL and the SELECT button on the front of the GSL perform the same functions as the HPT scroll knob.



Figure 4.34: HPT Scroll Knob

PERFORMING PREDELIVERY CHECKS

3. Press soft key 5 (A) to open the main menu.
4. Use HPT scroll knob (B) or GSL scroll wheel to place the red cursor over SETTINGS icon (C).
5. Press HPT scroll knob (B) or the GSL SELECT button to activate a selected MENU option.

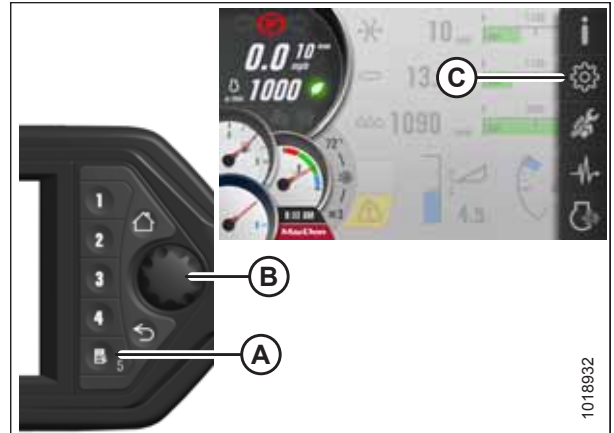


Figure 4.35: Main Menu

6. Press BACK button (A) on the HPT to return to the previous level of the menu structure.
7. Press HOME button (B) on the HPT to return to the last selected run screen (or to the header-disengaged screen).



Figure 4.36: HPT

Setting Language and Units of Measurement

The language and unit of measurement options can be set in the Harvest Performance Tracker's (HPT) SETTINGS menu.

1. Navigate to the SETTINGS menu with soft key 5 and the Harvest Performance Tracker (HPT) scroll knob. For instructions, refer to [Navigating the Harvest Performance Tracker, page 60](#).
2. Scroll to SCREEN icon (A) and select it.
3. Scroll to LANGUAGE AND UNITS icon (B), and select it to open the adjustment window.

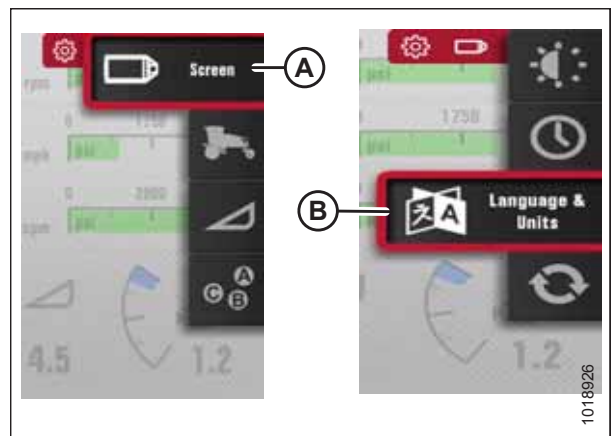


Figure 4.37: Language and Units

4. Scroll through the available options on the HPT, select the desired item, and rotate the scroll knob to move through the available options:

LANGUAGE

PERFORMING PREDELIVERY CHECKS

- CZECH
- DANISH
- ENGLISH (default)
- FRENCH
- GERMAN
- LATVIAN
- SPANISH

UNITS

- METRIC
- USA (default)

NOTE:

Refer to [6.4 Conversion Chart, page 156](#) for a comprehensive list of U.S. and metric units.

Setting Time and Date

The time and date can be set in the Harvest Performance Tracker's (HPT) SETTINGS menu.

1. Navigate to the SETTINGS menu with soft key 5 and the HPT scroll knob. For instructions, refer to [Navigating the Harvest Performance Tracker, page 60](#).
2. Scroll to SCREEN option (A) and select it.
3. Scroll to TIME AND DATE option (B), and select it to open the adjustment window.



Figure 4.38: Time and Date

4. Scroll through the available options on the HPT display, select the desired option, and rotate the scroll knob to make adjustments.



Figure 4.39: Time and Date

Setting Windrower Tire Size and Wheel Type

The Harvest Performance Tracker (HPT) is factory-configured for 600/65R28 bar tires. If the windrower is equipped with a different type of tire, you will need to change this setting. Setting the proper tire size ensures that the HPT accurately tracks the windrower's ground speed, the area cut, and other productivity data.

1. Navigate to the SETTINGS menu with soft key 5 and the HPT scroll knob. For instructions, refer to *Navigating the Harvest Performance Tracker, page 60*.
2. Scroll to WINDROWER SETTINGS icon (A) and select it.
3. Scroll to TIRES icon (B), and select it to display the adjustment window.

NOTE:

The F3 shortcut button on the operator's console will also cause the WINDROWER SETTINGS menu to appear.



Figure 4.40: Tire Size

4. Scroll to highlight appropriate tire size (A) and select it. The new selection will be displayed with a shaded green radio button.
5. If the optional high torque wheel drives are installed, scroll to the power wheel option and select HIGH TORQUE FINAL DRIVES (B). The new selection will be displayed with a shaded green radio button.

NOTE:

Do **NOT** select this option unless the high torque (36.82:1) wheel drives are installed.

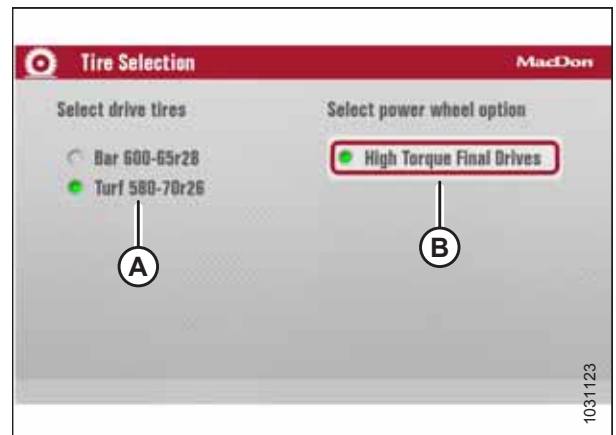


Figure 4.41: Tire Selection

4.2.3 Checking Engine Speed

Check the idle speed and maximum speed of the engine to make sure it is running properly.

! DANGER

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

! DANGER

Check to be sure all bystanders have cleared the area.

PERFORMING PREDELIVERY CHECKS

1. Start the engine.
2. Move the throttle to the idle position.
3. Check engine speed (A) on the Harvest Performance Tracker (HPT) display and compare it to the value in the table below.
4. Move the throttle to the maximum rpm position.
5. Check engine speed (A) on the HPT and compare it to the value in the table below.

NOTE:

The engine speed mentioned in the table below assumes that the Eco Engine Control (EEC) feature is **not active**. For more information about EEC, refer to the windrower operator's manual.

Table 4.3 Engine Speed

| Idle | Maximum (No Load) |
|----------|-------------------|
| 1000 rpm | 2300 rpm |

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

4.2.4 Checking Selective Catalytic Regeneration Conditioning Mode

The selective catalytic regeneration (SCR) system is part of the exhaust aftertreatment system. The SCR conditioning process can activate any time the windrower is running so long as the INHIBIT SCR CONDITIONING switch is set to OFF. Ensure that this feature can be successfully turned on and off.

The SCR conditioning inhibit mode is off when indicator (A) on the Harvest Performance Tracker (HPT) display is not highlighted.

If SCR conditioning mode is on, then indicator (A) will be 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 further details.

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



Figure 4.42: HPT Display



Figure 4.43: HPT Display

PERFORMING PREDELIVERY CHECKS

1. Press soft key 5/ menu button (A) on the HPT.
2. Press soft key 5/ menu button (A) next to EXHAUST AFTERTREATMENT icon (B).

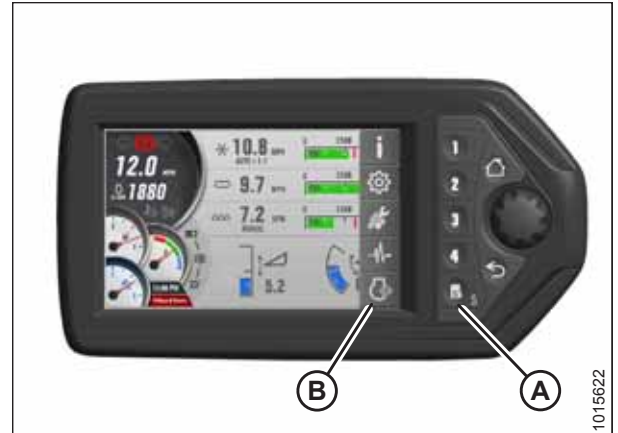


Figure 4.44: HPT Display

3. To turn off SCR conditioning inhibit mode, press soft key 5 / menu button (A) next to INHIBIT SCR CONDITIONING icon (B) and hold it for 3 seconds. Highlighted SCR CONDITIONING INHIBIT icon (C) turns off.

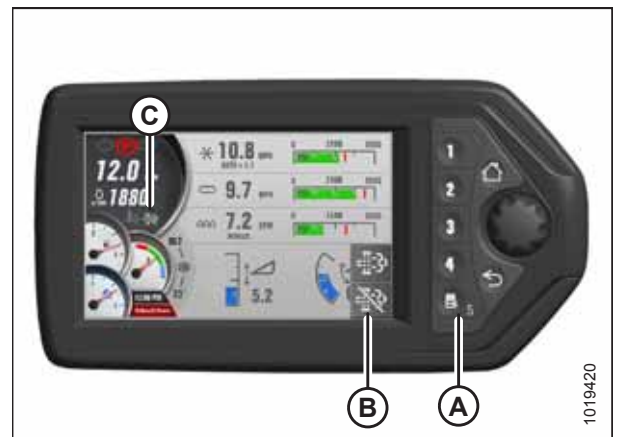


Figure 4.45: HPT Display

4.2.5 Checking Exterior Lights

The windrower's exterior lighting system is comprised of: field lights, swath lights, road lights, hazard lights, high/low beams, turn signals, and the rotary beacon. Any plastic film over the lights should be removed and all parts of the exterior lighting system should be checked for functionality.

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. Check that front field lights (B), rear field lights (C), and rear swath lights (D) are functioning.

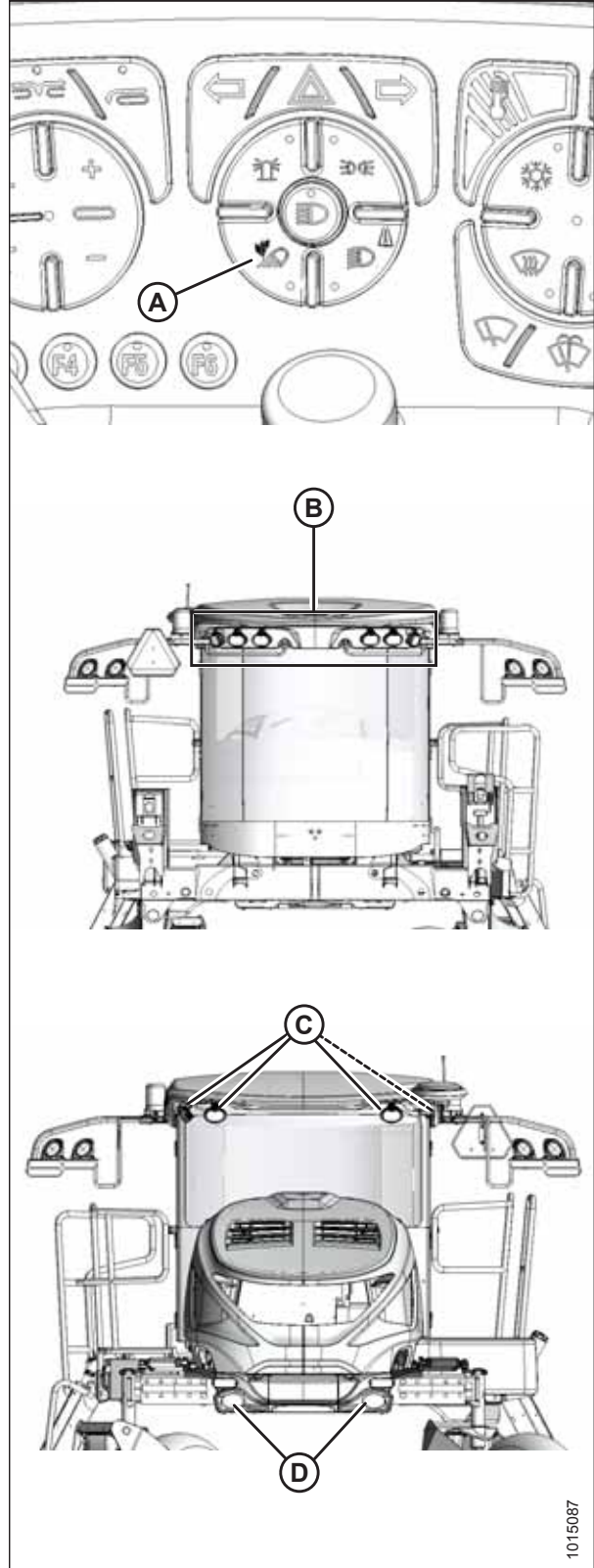


Figure 4.46: Field Lights

PERFORMING PREDELIVERY CHECKS

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

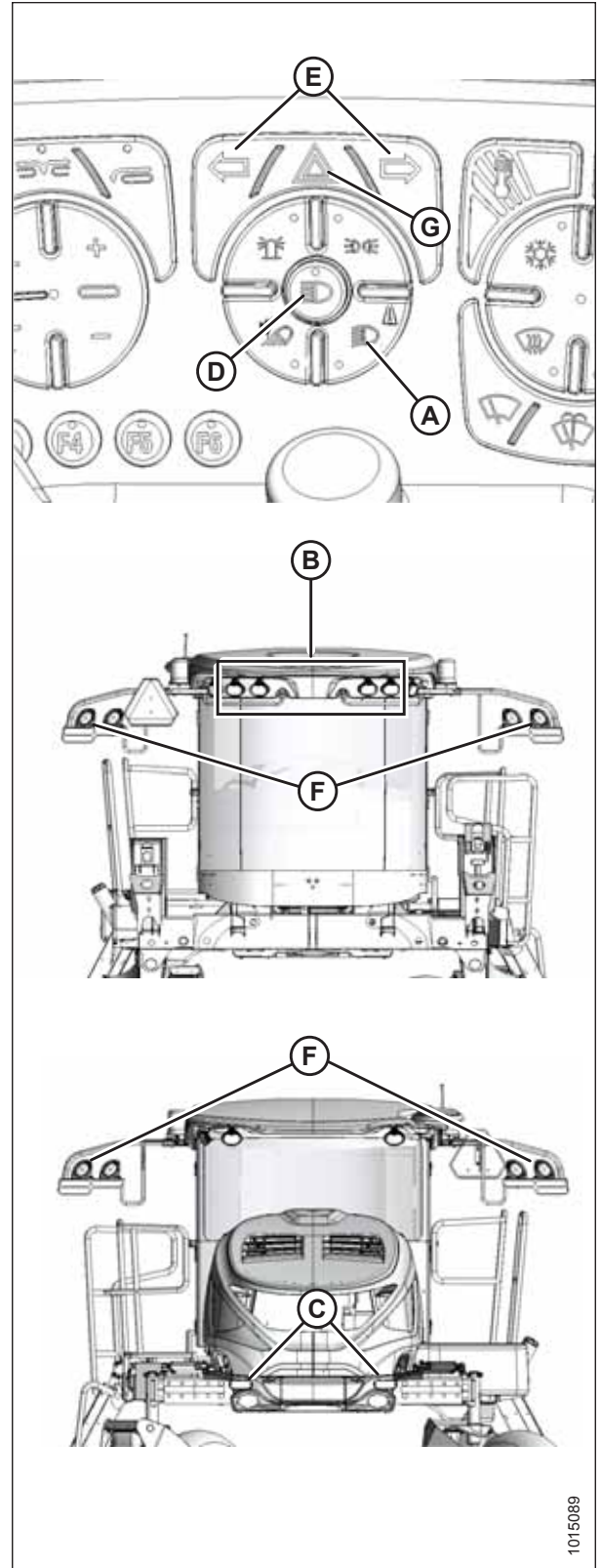


Figure 4.47: Road Lights – Cab-Forward

PERFORMING PREDELIVERY CHECKS

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

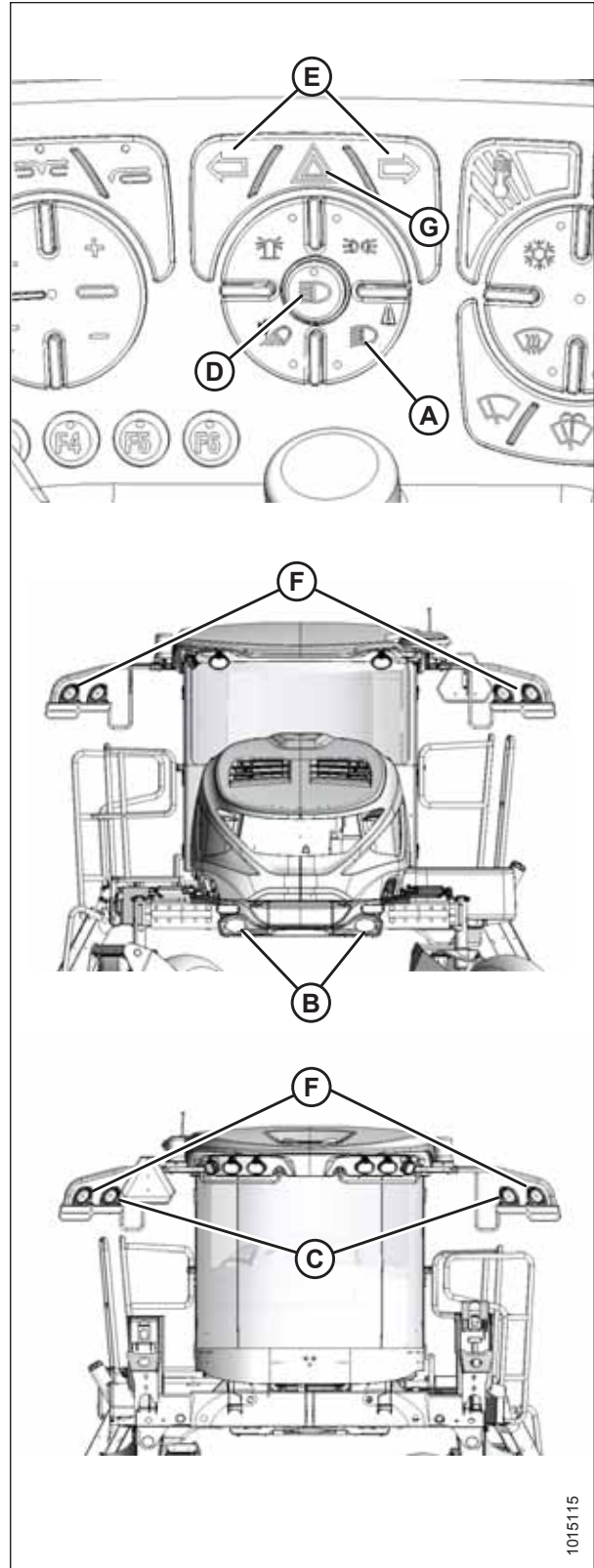


Figure 4.48: Road Lights – Engine-Forward

PERFORMING PREDELIVERY CHECKS

16. Push BEACON switch (A) and check that amber beacons (B) are functioning.
17. Press BEACH switch (A) to shut off the beacons.

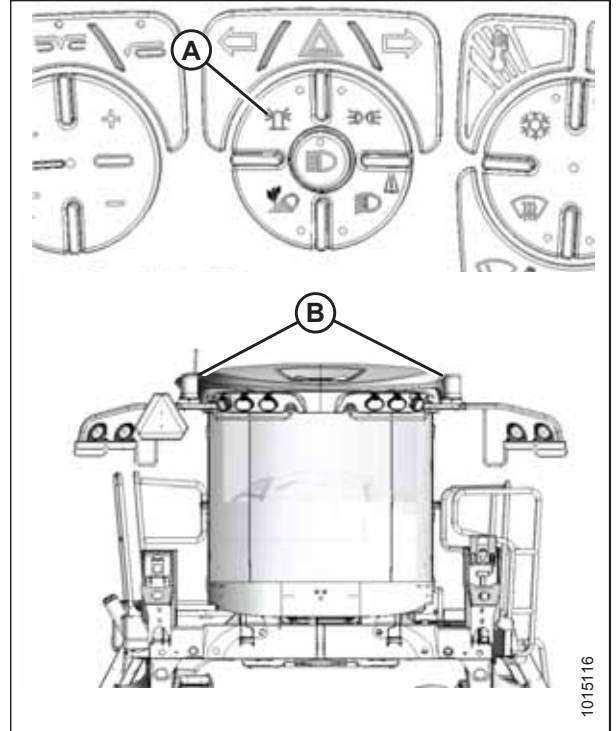


Figure 4.49: Beacons

4.2.6 Checking Horn

The horn is a safety device for notifying other people of the windrower's presence.

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

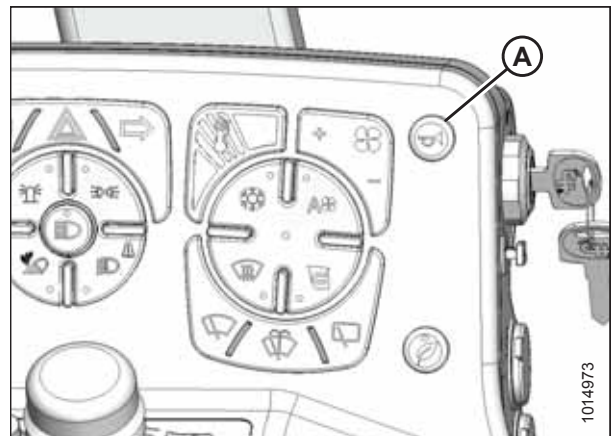


Figure 4.50: Horn Button

4.2.7 Checking Interior Lights

Interior lights provide visibility within the cab. Check all parts of the interior lighting system for functionality.

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.

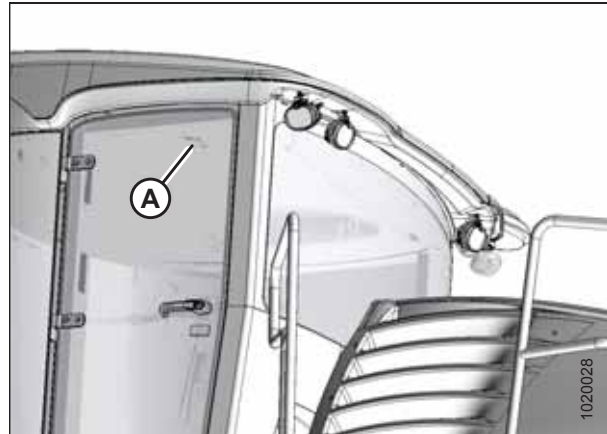


Figure 4.51: Interior Light

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.

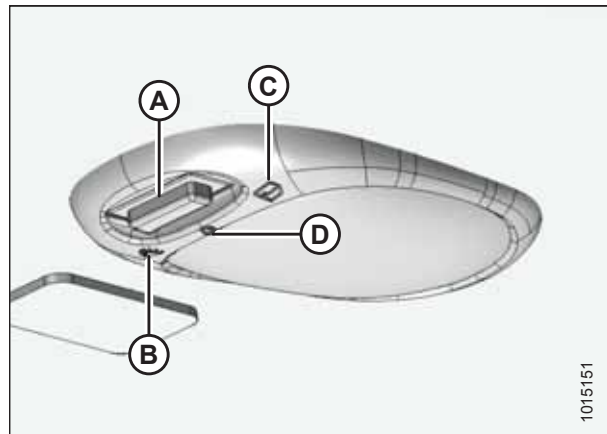


Figure 4.52: Interior Light

4.2.8 Checking Climate Controls

The cab climate system is comprised of the cab air conditioner (A/C), fans, vents, and the defroster. Check all of these features for functionality.

⚠ DANGER

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

⚠ DANGER

Check to be sure all bystanders have cleared the area.

PERFORMING PREDELIVERY CHECKS

1. Start the engine. Allow the engine to reach operating temperature.
2. If starting a machine that has been stored for more than one week, refresh the A/C system as follows:
 - a. Press + (A) on the FAN SPEED switch to start the fan, adjust temperature control (B) to the highest heat setting, and press A/C switch (C) if necessary so that the LED light is **NOT** lit.
 - b. 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 one second. Move A/C switch (C) to the OFF position for five to ten seconds. Repeat this step ten times.

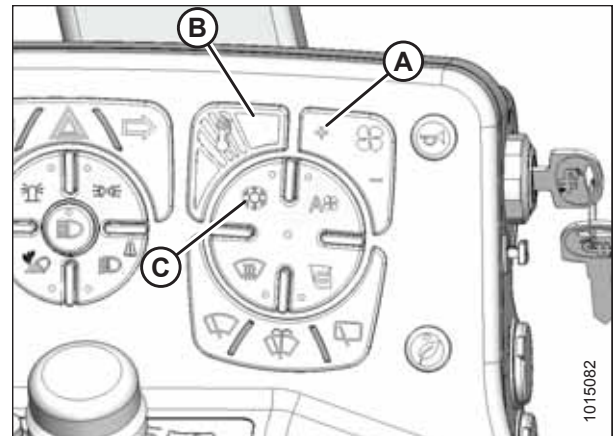


Figure 4.53: A/C Controls

3. Press AUTO FAN switch (A). The orange LED will light up. Press RED TEMPERATURE CONTROL switch (B) until warm air flows through the cab vents.
4. Press BLUE TEMPERATURE CONTROL switch (C) until cool air enters the cab.
5. Press FAN SPEED switch (D) (+ or -) and note any change in airflow in the cab. The AUTO FAN light should be off.
6. Press RECIRCULATING AIR switch (E) and note any change in airflow in the cab.
7. Press WINDSHIELD DEFOG/DEFROST switch (F) and confirm that the windshield vents are blowing.

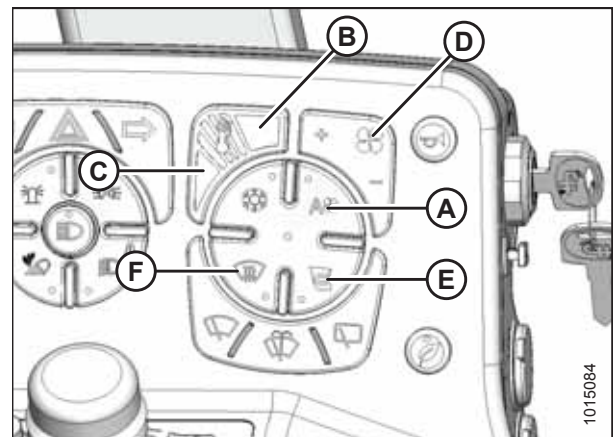


Figure 4.54: Climate Controls

4.2.9 Checking the Radio and Activating the Bluetooth® Feature

M1 Series Windrowers are factory-equipped with a Bluetooth®-enabled radio and CD/DVD player. Ensure that the radio's basic features are working correctly.

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.

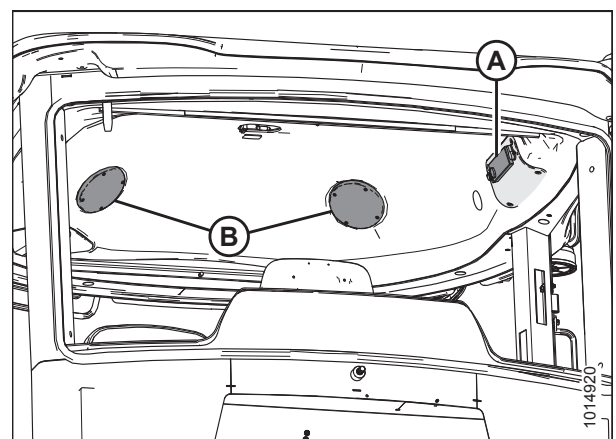


Figure 4.55: Radio and Speakers

PERFORMING PREDELIVERY CHECKS

1. To check the radio, follow this procedure:
 - 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.

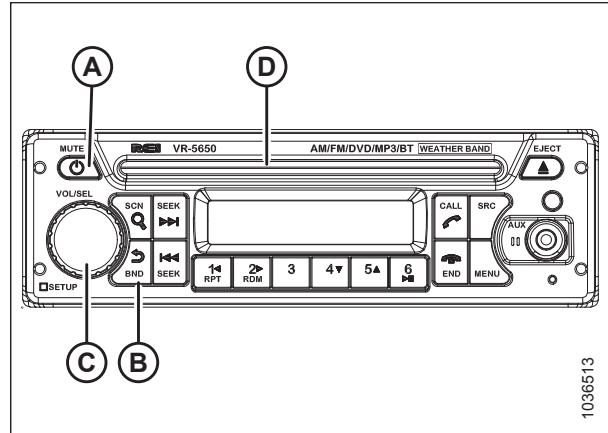


Figure 4.56: Radio

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 two seconds. MENU appears on screen (C).
 - c. Rotate VOL/SEL (B) to highlight BT SET menu and press VOL/SEL to select it. BLUETOOTH ON/OFF (C) appears.
 - d. Press VOL/SEL to select BLUETOOTH.
 - e. Rotate the VOL/SEL knob so that ON appears and press VOL/SEL.
 - f. Rotate the VOL/SEL knob and select DISCOVER.
 - g. Rotate the VOL/SEL knob to display ON and press VOL/SEL.

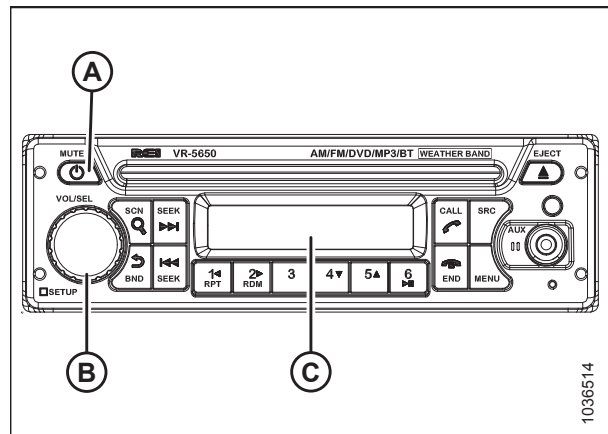


Figure 4.57: Bluetooth® Radio

4.3 Checking Manuals

MacDon provides manuals with every windrower to provide information on its safe operation and maintenance.

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

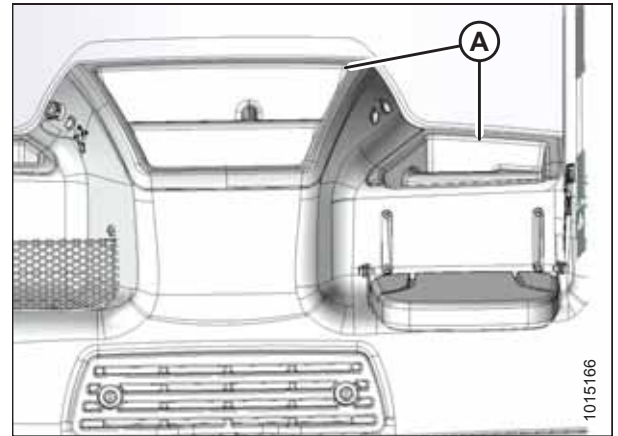


Figure 4.58: Manual Storage Case

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

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



Figure 4.59: Manuals and Quick Card

4.4 Performing Final Steps

Prepare the windrower cab for the Operator and, if necessary, install any remaining kits.

1. After the predelivery checks are complete, remove the plastic covering from the Harvest Performance Tracker (HPT) and the seats.
2. If the optional GPS kit is included, locate the GPS mount parts bag with label (A) inside the cab. Install the GPS mount according to the instructions included with the EZ-Pilot® or Autopilot™ bundle. If you will not be installing the GPS kit, store the GPS mount parts bag in the toolbox.
3. Remove the Keep This Door Closed sign from the right door **AFTER** the right leg is repositioned to the field position.



Figure 4.60: Label for Optional GPS Mounting Kit

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



Figure 4.61: Windshield Decal

Chapter 5: Attaching Headers to Windrower

This section details the steps needed to attach various MacDon headers to the windrower. Be sure to follow only the steps that apply to your particular header and windrower configuration.

5.1 A40DX Auger Header

This section details the procedures necessary to physically attach an A40DX auger header to a windrower and to attach its hydraulic and electrical connections. The procedures may vary slightly depending on the configuration of the windrower.

5.1.1 Attaching A40DX Auger Header

The windrower may have an optional self-aligning hydraulic center-link, which allows control over the vertical position of the center-link from the cab. If the windrower is so equipped, the procedure for attaching an A40DX header will be slightly different.

DANGER

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

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

WARNING

Check to be sure all bystanders have cleared the area.

2. Start the engine.

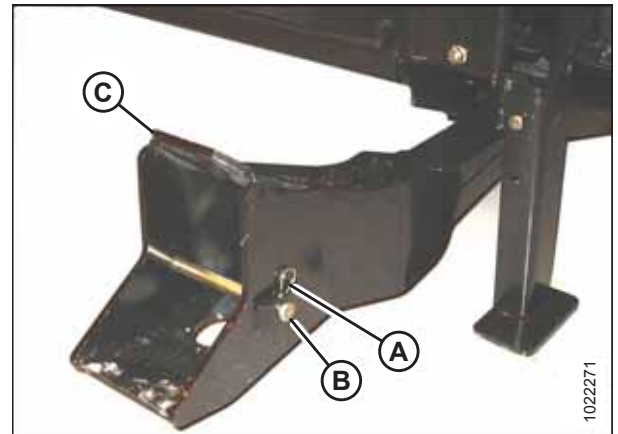


Figure 5.1: Header Support

3. If you are lowering the header lift legs WITH a header or weight box attached, proceed to Step 7, page 76.

If you are lowering the header lift legs WITHOUT a header or weight box attached to the windrower, fully release the tension in header float springs (A):

- If prompted by the Harvest Performance Tracker (HPT) to remove the float, then remove the float and proceed to Step 7, page 76.
- If not prompted by the HPT to remove the float, then proceed to Step 4, page 76 to remove the float manually.

IMPORTANT:

When lowering the header lift legs without a header or weight box attached to the windrower, ensure that the tension on the float springs is fully released to prevent damage to the header lift linkages.

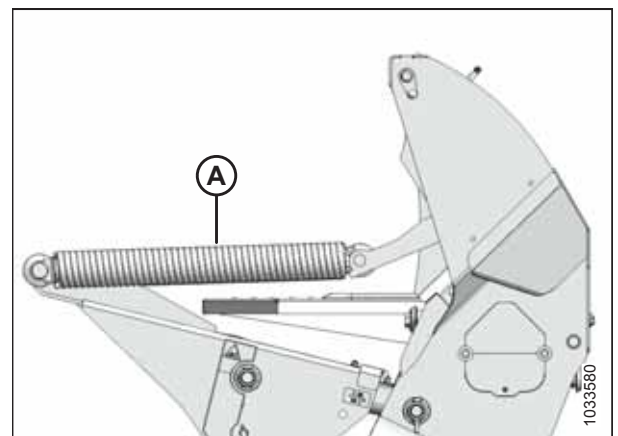


Figure 5.2: Header Float Springs

ATTACHING HEADERS TO WINDROWER

4. Press HPT scroll knob (A) to highlight QuickMenu options.
5. Rotate HPT scroll knob (A) to highlight HEADER FLOAT symbol (B) and press the scroll knob to select it.



Figure 5.3: HPT Display

6. On FLOAT ADJUST PAGE, press soft key 3 (A) to disable the float.



Figure 5.4: HPT Display

7. Press HEADER DOWN switch (A) on the ground speed lever (GSL) to fully retract the header lift cylinders.
8. **If the hydraulic center-link self-alignment kit is installed:** press REEL UP switch (B) on the 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.



Figure 5.5: GSL

ATTACHING HEADERS TO WINDROWER

9. **If the hydraulic center-link self-alignment kit is NOT installed:** relocate pin (A) in the frame linkage as required to raise center-link (B) until the hook is above the attachment pin on the header.

IMPORTANT:

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

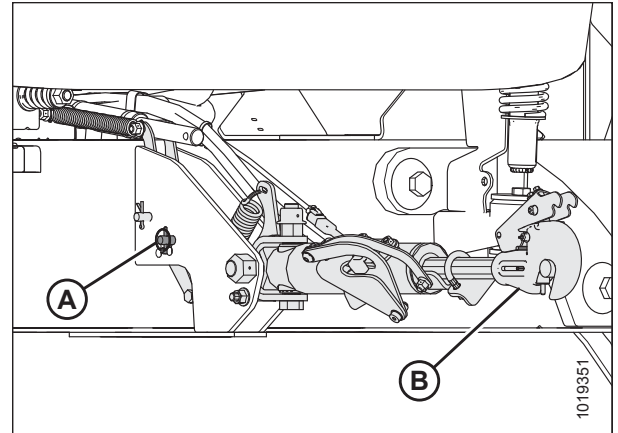


Figure 5.6: Hydraulic Center-Link without Self-Alignment Kit

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

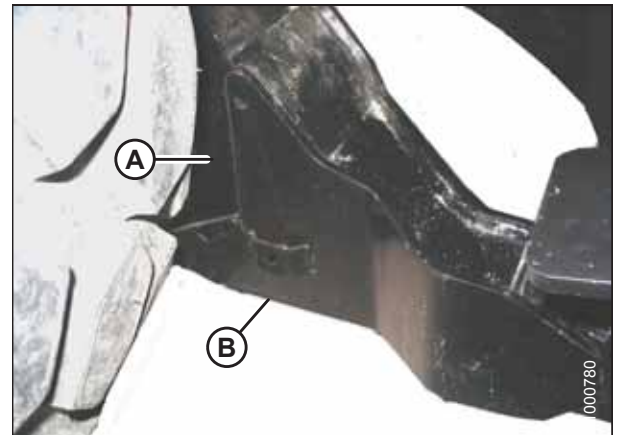


Figure 5.7: Header Support

11. **If the hydraulic center-link self-alignment kit is installed:** adjust the position of center-link cylinder (A) with the switches on the GSL until hook (B) is above the header attachment pin.
12. **If the hydraulic center-link self-alignment kit is NOT installed:** push down on the rod end of link cylinder (C) until the hook engages and locks onto the header pin.

IMPORTANT:

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

13. **If the hydraulic center-link self-alignment kit is installed:** lower center-link (A) onto the header with the REEL DOWN switch on the GSL until it locks into position and hook release (D) is in the down position.
14. **If the hydraulic center-link self-alignment kit is installed:** check that the center-link is locked onto the header by pressing the REEL UP switch on the GSL.

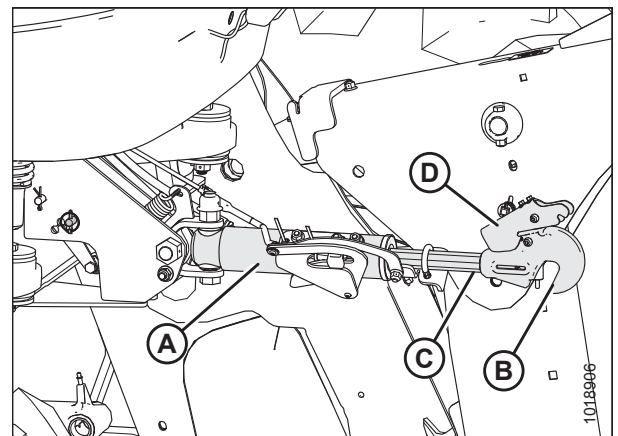


Figure 5.8: Hydraulic Center-Link

ATTACHING HEADERS TO WINDROWER

WARNING

Check to be sure all bystanders have cleared the area.

15. Press HEADER UP switch (A) to raise the header to its maximum height.
16. 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 lift cylinders are now phased.

NOTE:

This procedure may have to be repeated if there is air in the hydraulic system.

17. Shut down the engine, and remove the key from the ignition.
18. Engage the safety props on both lift cylinders as follows:
 - a. Pull lever (A) toward you to release it, and 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.

19. 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.



Figure 5.9: GSL

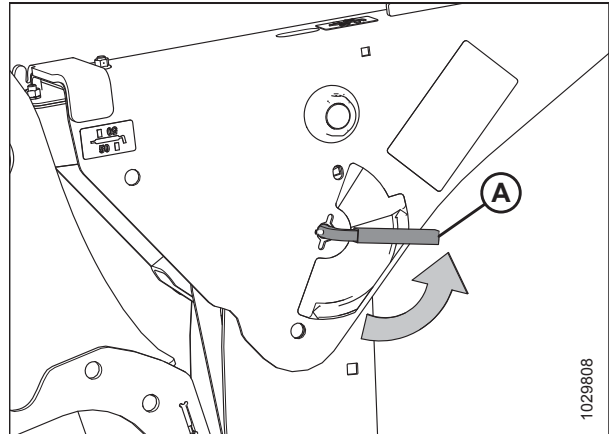


Figure 5.10: Safety Prop Lever

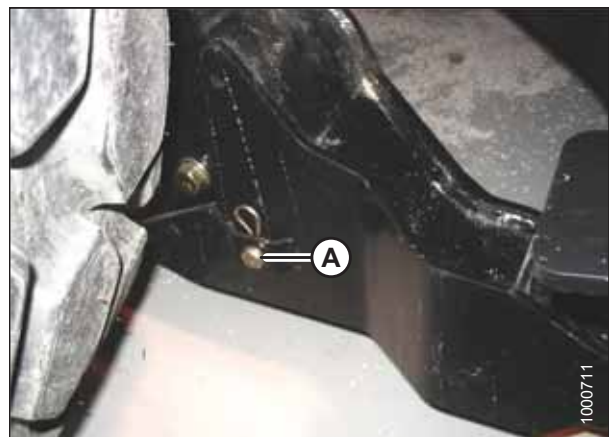


Figure 5.11: Header Support

ATTACHING HEADERS TO WINDROWER

20. Remove the lynch pin from clevis pin (A) in stand (B).
21. Hold stand (B) and remove pin (A).
22. 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.

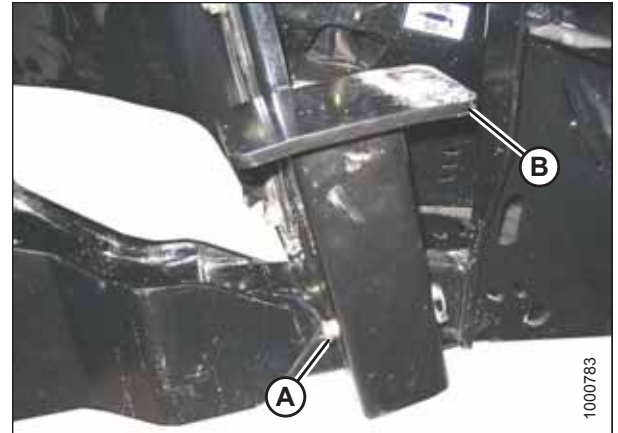


Figure 5.12: Header Stand

23. 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.

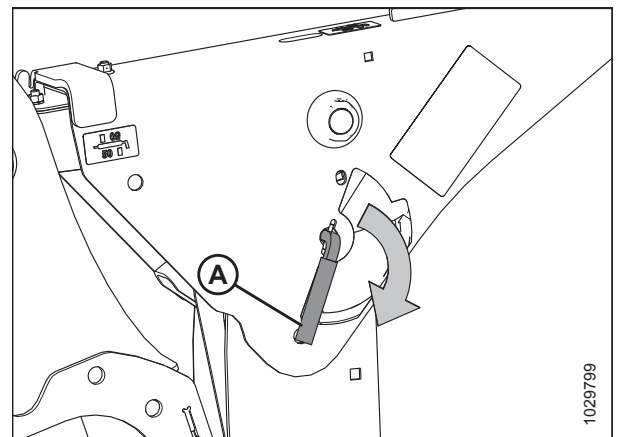


Figure 5.13: Safety Prop Lever

WARNING

Check to be sure all bystanders have cleared the area.

24. Start the engine and press HEADER DOWN switch (A) on the GSL to fully lower the header.



Figure 5.14: GSL

ATTACHING HEADERS TO WINDROWER

25. Press rotary scroll knob (A) on the HPT to highlight the QuickMenu options.
26. Rotate scroll knob (A) to highlight HEADER FLOAT symbol (B). Press the scroll knob to select it.



Figure 5.15: HPT Display

27. Turn scroll knob (A) to highlight left (B) or right (C) float and press knob (A) to activate the selection.
28. Rotate scroll knob (A) to adjust the float setting and press the knob to make your selection.

IMPORTANT:

Float adjustments of 1.0 (out of 10) change the header weight at the cutterbar by approximately 91 kg (200 lb.). Adjust the float in increments of 0.05 to fine-tune the float setting.

29. Shut down the engine, and remove the key from the ignition.
30. Grasp one end of the auger header and lift it. The lifting force used should be 357 N (80 lbf.) at both ends of the auger.



Figure 5.16: HPT Display

5.1.2 Connecting A40DX Auger Electrical and Hydraulics

Connecting the A40DX electrical and hydraulic connections to 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.



CAUTION

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

ATTACHING HEADERS TO WINDROWER

1. Approach platform (A) on the left cab-forward side of the windrower and ensure the cab door is closed.
2. Push latch (B), and pull platform (A) toward the walking beam until it stops and the latch engages.

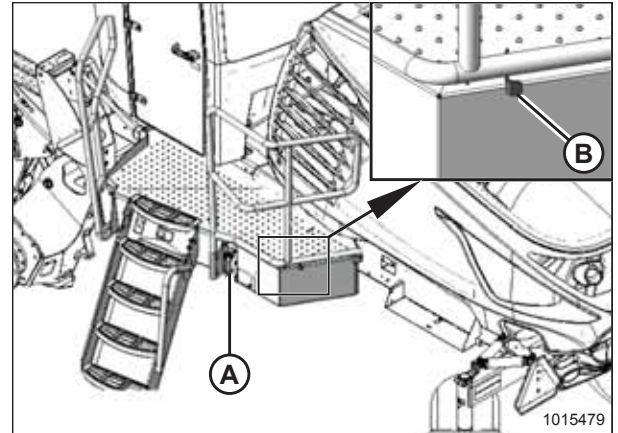


Figure 5.17: Left Cab-Forward Platform

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

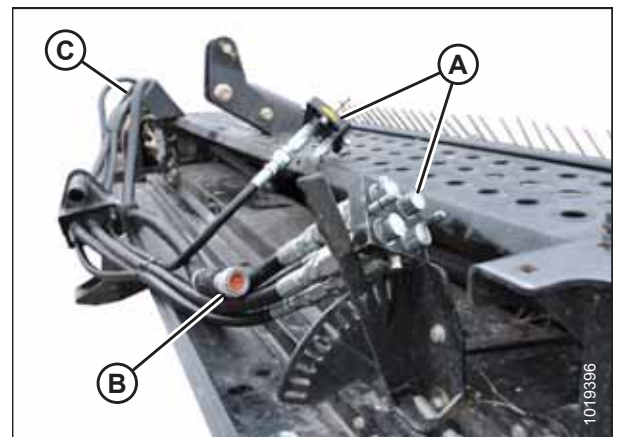


Figure 5.18: Hydraulic Hoses in Storage Position

5. Insert hose support (B) into hole (A) in the windrower left leg, and route header hose bundle (C) under the windrower to the hydraulic and electrical couplers.

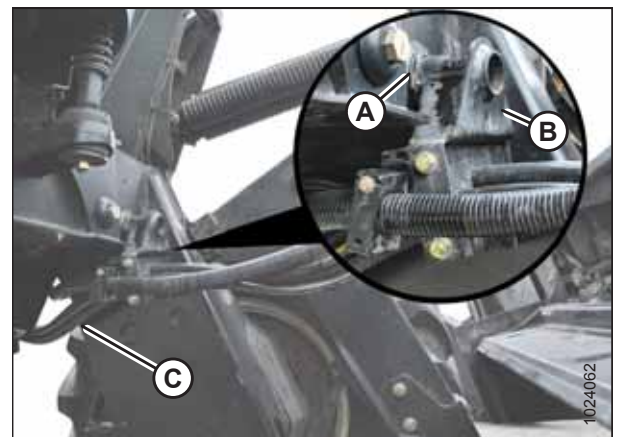


Figure 5.19: Multicoupler

ATTACHING HEADERS TO WINDROWER

- Clean the multicouplers and receptacles to prevent contamination of the hydraulic system.
- Push button (A) on the rear multicoupler receptacle and rotate handle (B) away from the windrower.
- Open cover (C) and 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.
- Push button (E) on the front multicoupler receptacle and rotate handle (F) away from the windrower.
- 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.
- If you are switching from a rotary header to an auger header:** Remove hose (A) from storage location (B) and connect it to knife pressure receptacle (C) on the frame.

NOTE:

Hose quick-disconnect (C) is only present on M1240 machines configured for draper/auger headers.

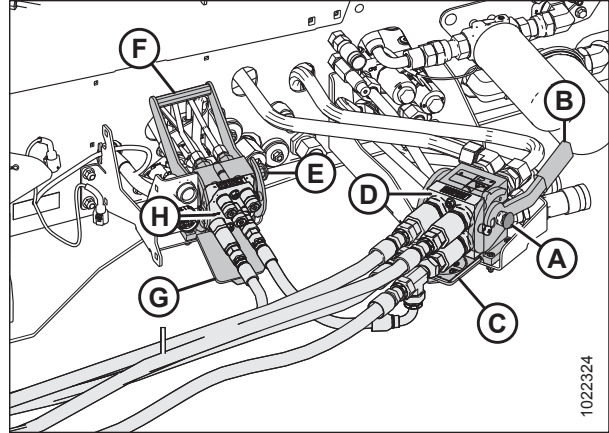


Figure 5.20: Knife/Reel/Auger Drive Multicoupler

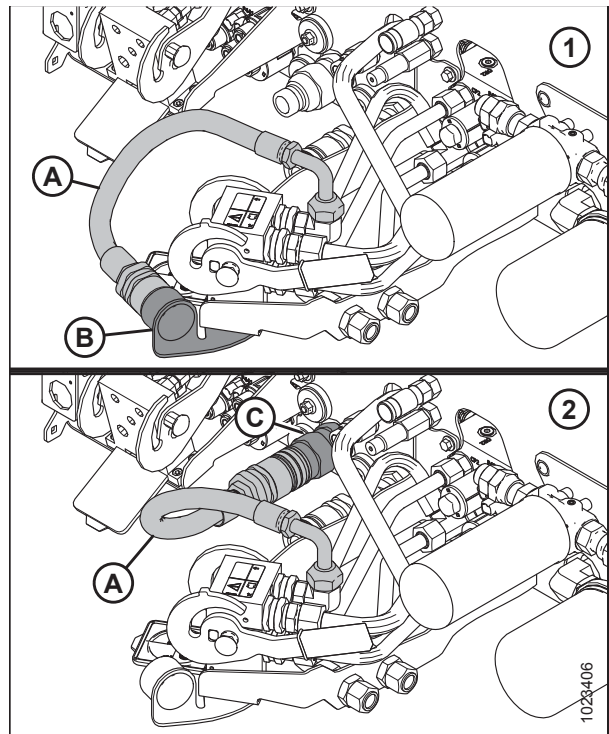


Figure 5.21: Knife Pressure Hose Positions

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

ATTACHING HEADERS TO WINDROWER

12. Remove the cover from receptacle (A), and connect the electrical harness from the header.

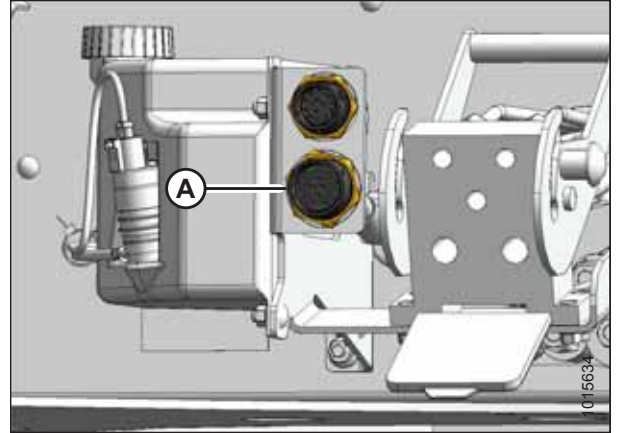


Figure 5.22: Electrical Connectors

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

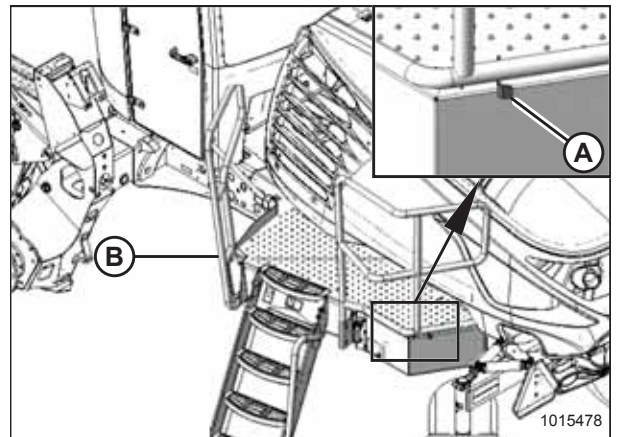


Figure 5.23: Left Cab-Forward Platform

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

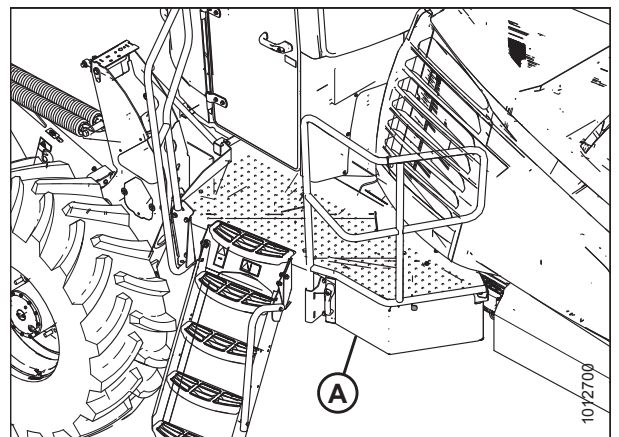


Figure 5.24: Left Cab-Forward Platform

5.2 D1X or D1XL Series Draper Header

This section details the procedures necessary to physically attach a D1X or D1XL header to a windrower and to attach its hydraulic and electrical connections. The procedures may vary slightly depending on the configuration of the windrower.

5.2.1 Attaching Draper Header Supports

Draper header supports are required to attach a D1X or D1XL Series Draper Header to the windrower.

DANGER

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

If not installed, attach the draper header support (supplied with the header) to the windrower lift linkage as follows:

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).

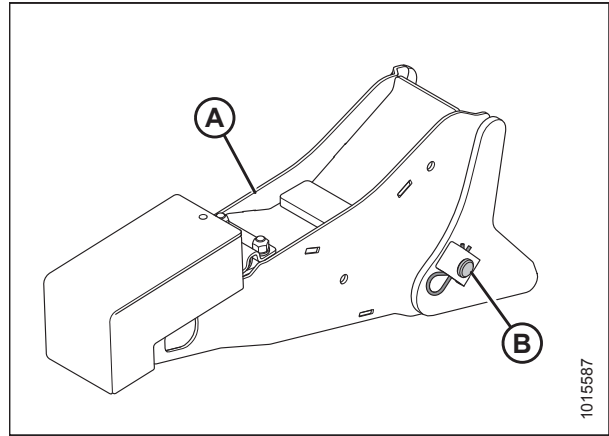


Figure 5.25: Draper Header Support

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 Steps 2, page 84 to 4, page 84 to install the remaining draper header support.

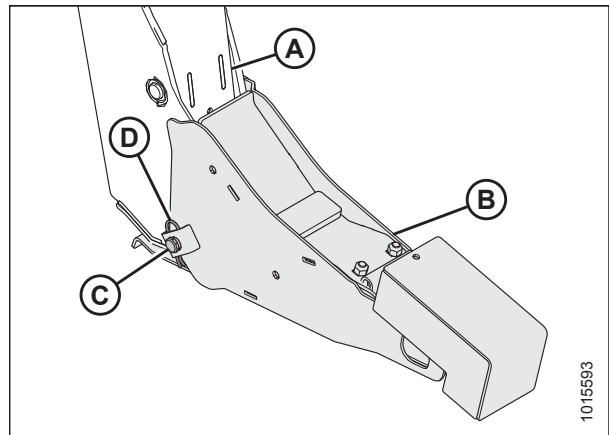


Figure 5.26: Draper Header Support

5.2.2 Attaching D1X or D1XL Series Draper Header

The windrower may have an optional self-aligning hydraulic center-link, which allows control over the vertical position of the center-link from the cab. If the windrower is so equipped, the procedure for attaching a D1X or D1XL header will be slightly different.

NOTE:

Draper header supports must be installed onto the windrower lift linkage before starting this procedure. For instructions, refer to [5.2.1 Attaching Draper Header Supports](#), page 84.

NOTE:

If an R-Series Rotary header is also used, the forming shield support brackets that are attached to the windrower lift legs must be removed to avoid contacting the draper header.

1. Remove hardware (B).
2. Remove support bracket (A). Place the bracket and hardware in the toolbox.

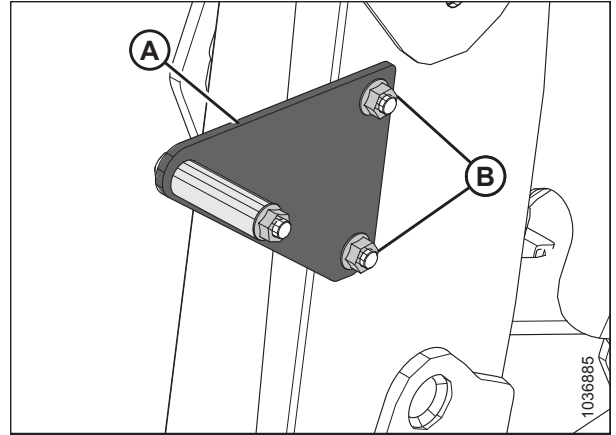


Figure 5.27: Forming Shield bracket – R1 Series

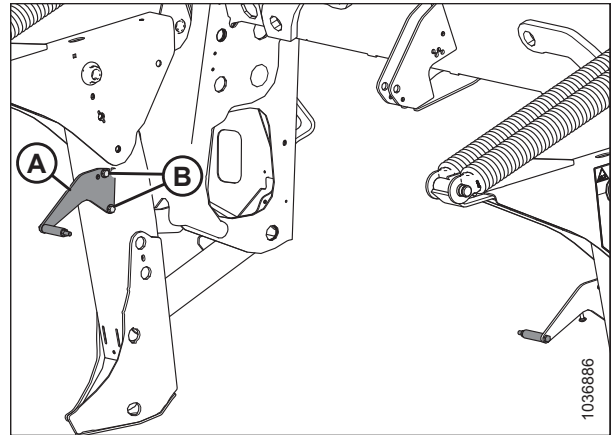


Figure 5.28: Forming Shield bracket – R2 Series

ATTACHING HEADERS TO WINDROWER

3. **Windrowers without the self-aligning center-link kit:**
Relocate pin (A) in the frame linkage as required to raise center-link (B) 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.

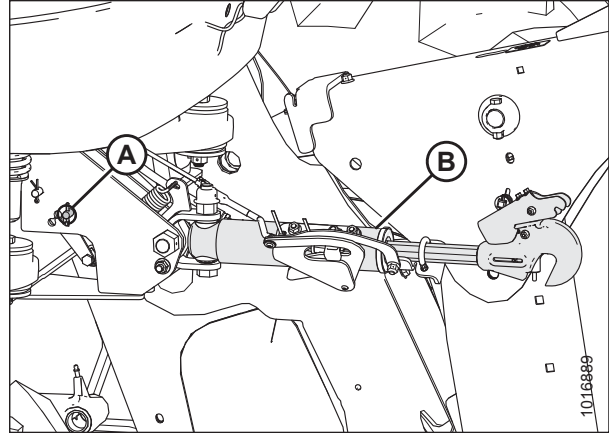


Figure 5.29: Center-Link without Self-Alignment

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

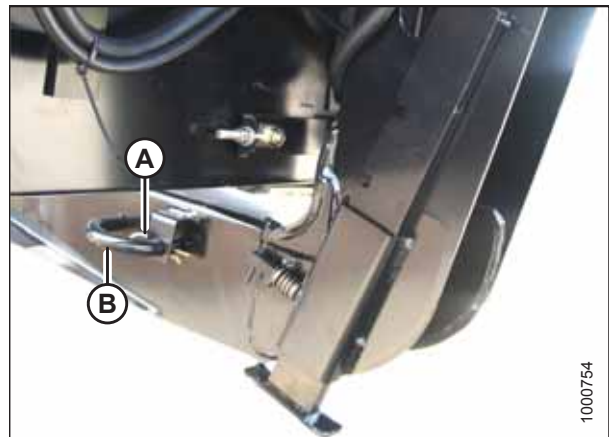


Figure 5.30: Header Leg

DANGER

Check to be sure all bystanders have cleared the area.

5. Start the engine.
6. **If you are lowering the header lift legs WITH a header or weight box attached to the windrower,** proceed to Step 10, page 87.

If you are lowering the header lift legs WITHOUT a header or weight box attached to the windrower, fully release the tension in header float springs (A):

- If prompted by the Harvest Performance Tracker (HPT) to remove the float, then remove the float and proceed to Step 10, page 87.
- If not prompted by the HPT to remove the float, then proceed to Step 7, page 87 to remove the float manually.

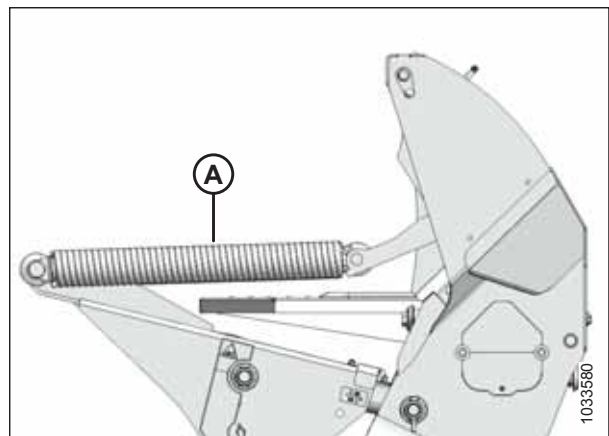


Figure 5.31: Header Float Springs

ATTACHING HEADERS TO WINDROWER

IMPORTANT:

When lowering the header lift legs without a header or weight box attached to the windrower, ensure that the tension on the float springs is fully released. This will prevent damage to the header lift linkages.

7. Press scroll knob (A) on the HPT to display the QuickMenu system.
8. Rotate scroll knob (A) to highlight HEADER FLOAT symbol (B), and press the scroll knob to select it.



Figure 5.32: HPT Display

9. On the FLOAT ADJUST page, press soft key 3 (A) to remove the float.



Figure 5.33: HPT Display

10. Windrowers equipped with the self-aligning center-link kit:

- a. Press HEADER DOWN switch (E) on the ground speed lever (GSL) to fully retract the header lift cylinders.
- b. Press REEL UP switch (B) on the GSL to raise the center-link until the hook is above the attachment pin on the header.

IMPORTANT:

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

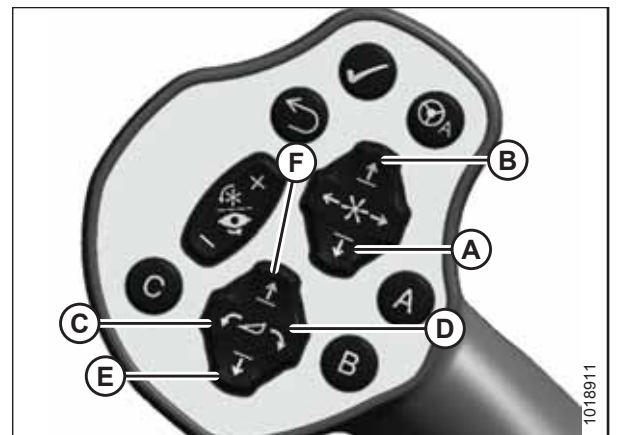


Figure 5.34: GSL Switches

- | | |
|----------------------|--------------------|
| A - Reel Down | B - Reel Up |
| C - Header Tilt Down | D - Header Tilt Up |
| E - Header Down | F - Header Up |

ATTACHING HEADERS TO WINDROWER

11. 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.
12. Ensure that the lift linkages are properly engaged in the header legs and are in contact with the support plates.

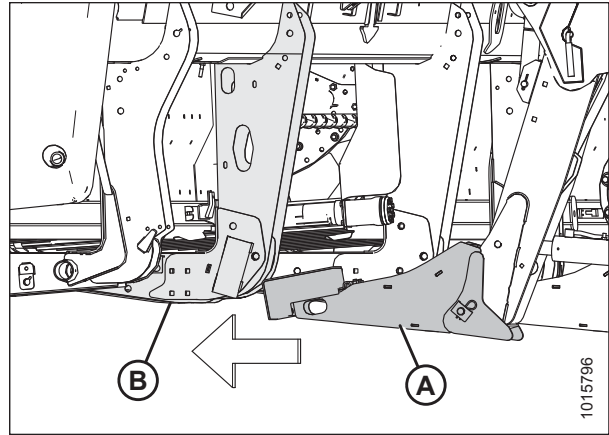


Figure 5.35: Header Leg and Draper Header Support

13. Windrowers equipped with the self-aligning center-link kit:

- a. Adjust the position of center-link cylinder (A) with the switches on the GSL until hook (B) is above the header attachment pin.

IMPORTANT:

Hook release (C) must be down to enable the self-locking mechanism to function.

- b. If hook release (C) is open (in the up position), shut down the engine, and remove the key from the ignition. Manually push hook release (C) down after the hook engages the header pin.
- c. Lower center-link (A) onto the header with the REEL DOWN switch on the GSL until the center-link locks into position and hook release (C) is down.
- d. Check that the center-link is locked onto the header by pressing the REEL UP switch on the GSL.

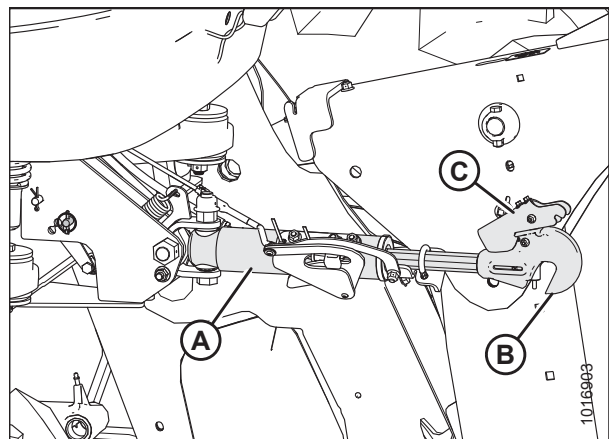


Figure 5.36: Hydraulic Center-Link

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

- a. Press the HEADER TILT UP or HEADER TILT DOWN cylinder 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 the rod end of link cylinder (B) until the hook engages and locks onto the header pin.

IMPORTANT:

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

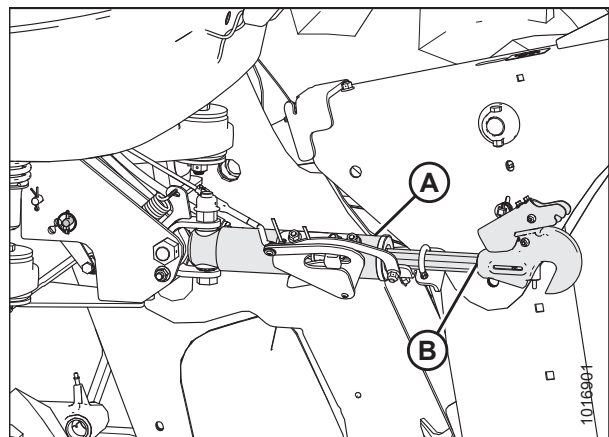


Figure 5.37: Hydraulic Center-Link

ATTACHING HEADERS TO WINDROWER

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

DANGER

Check to be sure all bystanders have cleared the area.

- e. Start the engine.
15. 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.
16. Shut down the engine, and remove the key from the ignition.



Figure 5.38: GSL

17. Engage the safety props on both lift cylinders as follows:
 - a. Pull lever (A) toward you to release it, and 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.

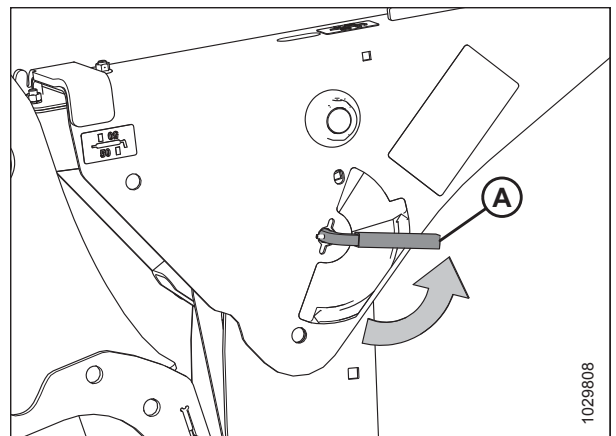


Figure 5.39: Safety Prop Lever

18. Install pin (B) through the header leg, ensuring that the pin engages the U-bracket in the draper header support and secure it with hairpin (A). Repeat this step on the other side of the header.
19. 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.

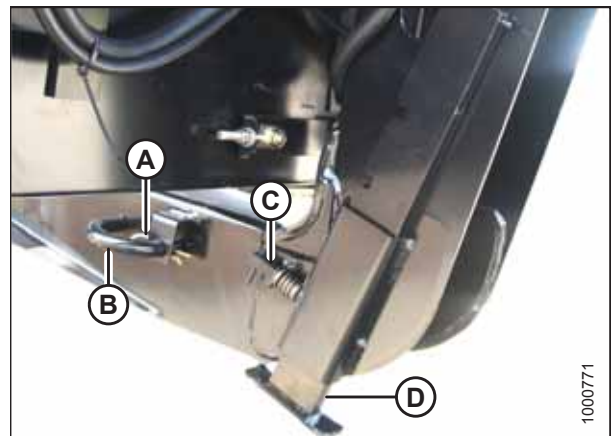


Figure 5.40: Header Leg

ATTACHING HEADERS TO WINDROWER

20. 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.

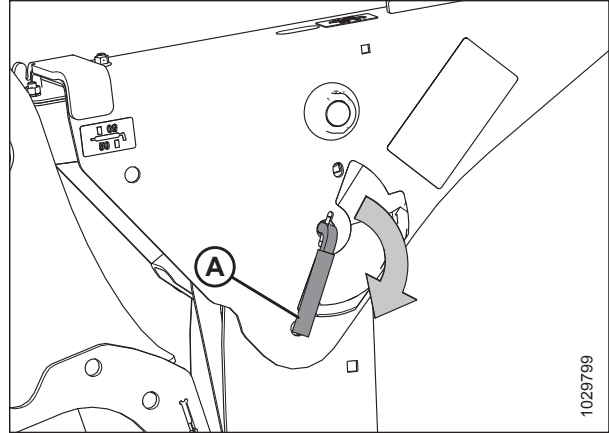


Figure 5.41: Safety Prop Lever

! DANGER

Check to be sure all bystanders have cleared the area.

21. Start the engine and press HEADER DOWN switch (A) on the GSL to fully lower the header.

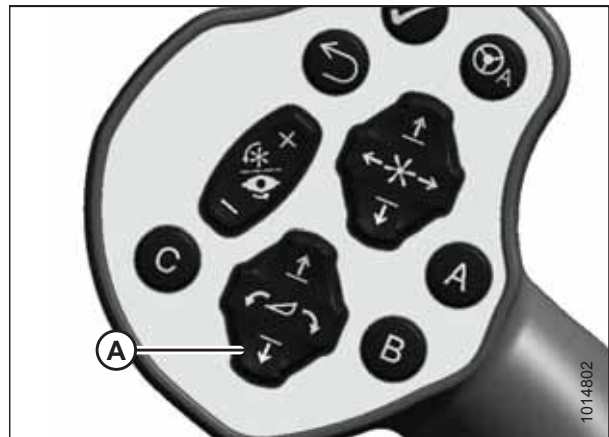


Figure 5.42: GSL

22. Press rotary scroll knob (A) on the HPT to highlight the QuickMenu options.

23. Rotate scroll knob (A) to highlight HEADER FLOAT symbol (B), and press the scroll knob to select it.



Figure 5.43: HPT Display

ATTACHING HEADERS TO WINDROWER

- Turn scroll knob (A) to highlight left (B) or right (C) float and press knob (A) to activate the selection.
- Rotate scroll knob (A) to adjust the float setting and press the knob to confirm your selection.

IMPORTANT:

Float adjustments of 1.0 (out of 10) change 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.

- Shut down the engine, and remove the key from the ignition.
- Grasp one end of the draper header and lift. The lifting force should be 357 N (80 lbf.) and should be the same at both ends.
- Proceed to [5.2.3 Connecting D1X or D1XL Series Draper Header Hydraulics](#), page 91.



Figure 5.44: HPT Display

5.2.3 Connecting D1X or D1XL Series Draper Header Hydraulics

Connecting the D1X or D1XL hydraulics to the windrower is a simple procedure, thanks to the hydraulic hose management system. There is an additional step to perform if you are switching from using a rotary header to using a draper header.

IMPORTANT:

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

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

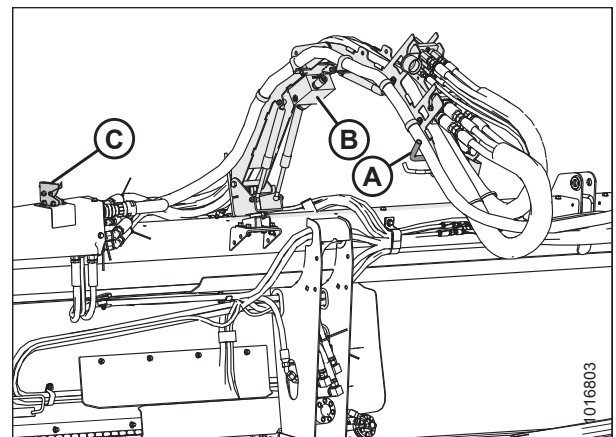


Figure 5.45: Hydraulic Hose Management System

ATTACHING HEADERS TO WINDROWER

3. Approach platform (A) on the left cab-forward side of the windrower and ensure the cab door is closed.
4. Push latch (B), and pull platform (A) toward the walking beam until it stops and the latch engages.

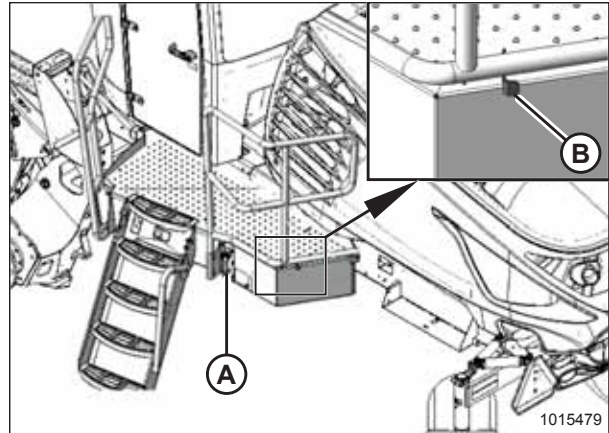


Figure 5.46: Left Cab-Forward Platform

5. Connect hydraulic hose management system (A) to the windrower by securing ball joint (B) to latch support (C) on the windrower leg.

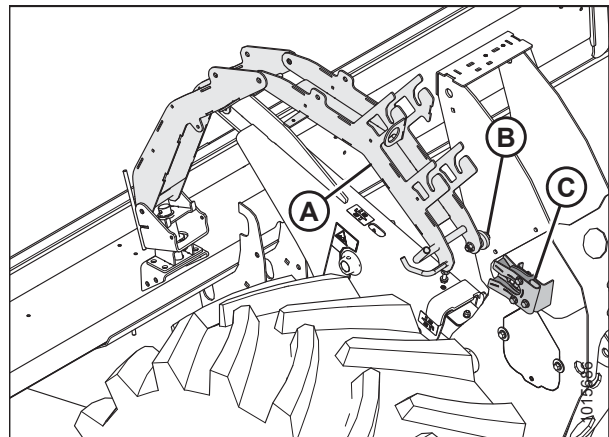


Figure 5.47: Hydraulic Hose Management System

6. Retrieve draper drive and reel control multicoupler (A) from the hydraulic hose management system.
7. Push knob (B) on the hydraulic receptacle and pull handle (C) fully away from the windrower.
8. 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.
9. Remove hose quick-disconnect (F) from the storage location and connect it to the receptacle on the frame.

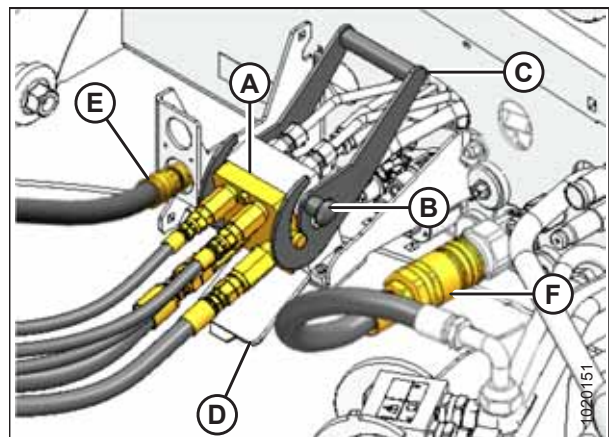


Figure 5.48: Draper/Reel Multicoupler

NOTE:

Hose quick-disconnect (C) is only present on M1240 machines configured for draper/auger headers.

10. Remove the cover from electrical connector (E), push the electrical connector onto the receptacle, and secure it by turning the collar on the electrical connector clockwise.

ATTACHING HEADERS TO WINDROWER

11. Retrieve knife and reel drive multicoupler (A) from the hydraulic hose management system.
12. Push knob (B) on the hydraulic receptacle and pull handle (C) fully away from the windrower.
13. 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.

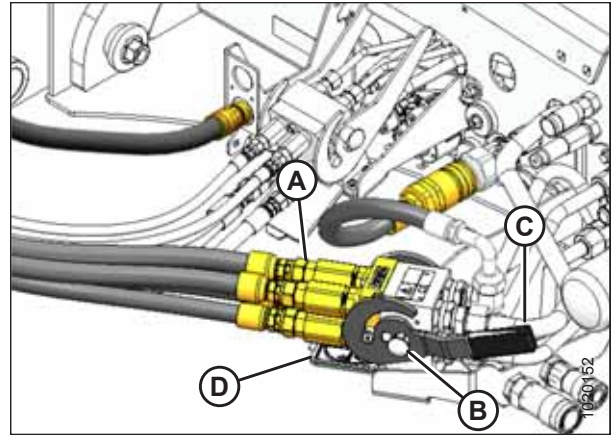


Figure 5.49: Knife/Reel Drive Multicoupler

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

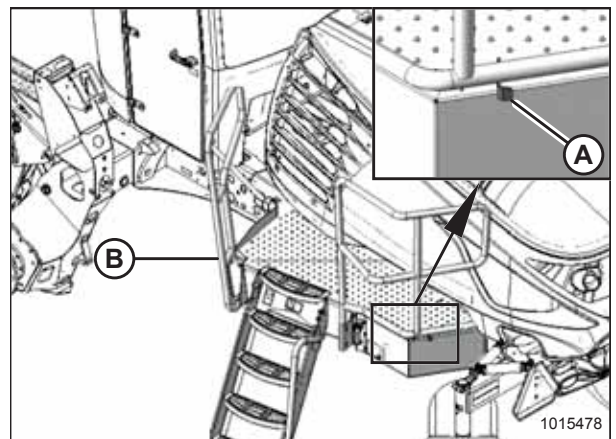


Figure 5.50: Left Cab-Forward Platform

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

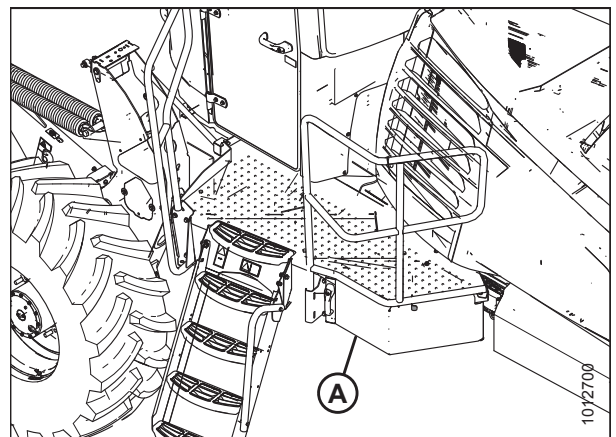


Figure 5.51: Left Cab-Forward Platform

ATTACHING HEADERS TO WINDROWER

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

IMPORTANT:

Straight routing will prevent abrasion damage to the hydraulic hoses.

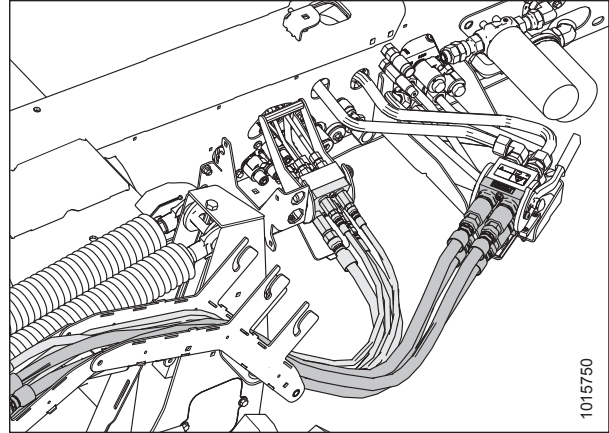


Figure 5.52: Hydraulic Multicouplers and Hose Routing

5.3 R1 Series Rotary Disc Header

This section details the procedures necessary to physically attach an R1 series rotary disc header to a windrower and to attach its hydraulic and electrical connections.

5.3.1 Attaching Forming Shield

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

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

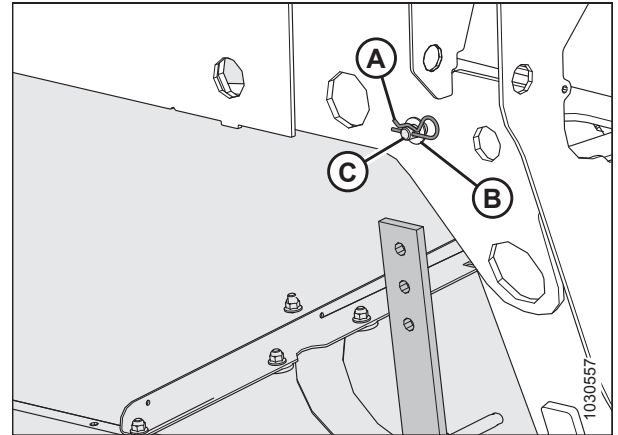


Figure 5.53: Lynch Pin and Washer at Rear of Windrower Leg

2. Attach rubber strap (D) to straight pin (C) at the rear of the windrower leg. Secure it with washer (B) and lynch pin (A).
3. Repeat Step 1, page 95 to Step 2, page 95 at the opposite side of the forming shield.

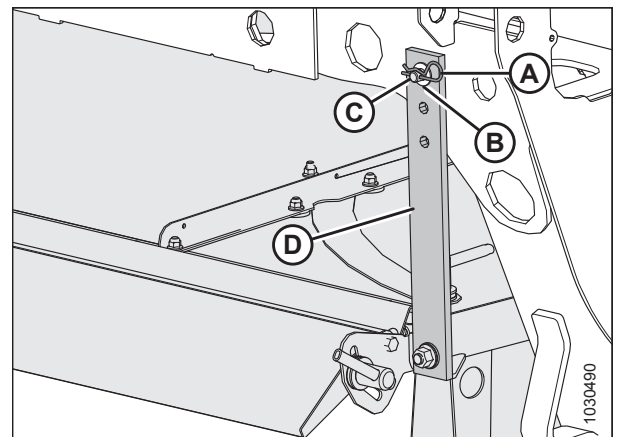


Figure 5.54: Rubber Strap Securing Forming Shield onto Windrower Leg

5.3.2 Attaching R1 Series Rotary Disc Header

The windrower may have an optional self-aligning hydraulic center-link, which allows control over the vertical position of the center-link from the cab. If the windrower is so equipped, the procedure for attaching an R1 header will be slightly different.

DANGER

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

ATTACHING HEADERS TO WINDROWER

DANGER

Check to be sure all bystanders have cleared the area.

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

2. **Windrowers without the self-aligning center-link kit:**
Remove pin (A) and raise center-link (B) until the hook is above the attachment pin on the header. Replace pin (A) to hold the center-link in place.

IMPORTANT:

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

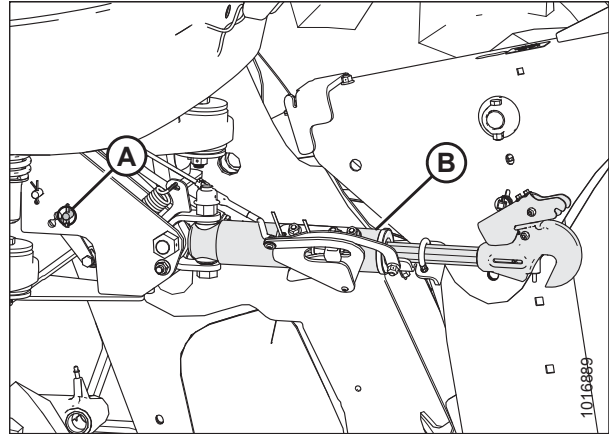


Figure 5.55: Hydraulic Center-Link

3. Remove hairpin (A) from clevis pin (B), and remove the pin from header support (C). Repeat this step on the other side of the header.

4. Start the engine.

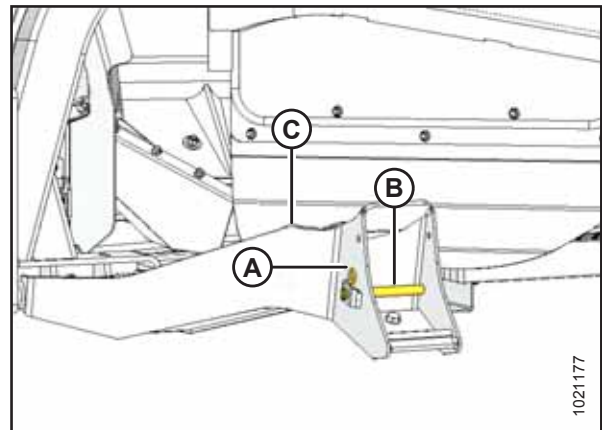


Figure 5.56: Header Support

5. **If you are lowering the header lift legs WITH a header or weight box attached to the windrower**, proceed to Step 6, [page 97](#).

If you are lowering the header lift legs WITHOUT a header or weight box attached to the windrower, proceed to Step 6, [page 976](#), [page 97](#) to release tension from header float springs (A).

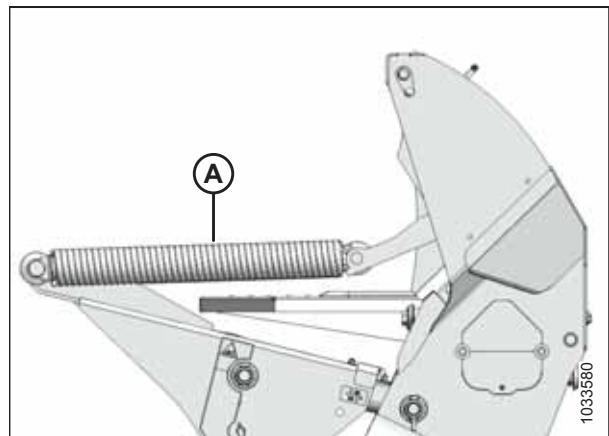


Figure 5.57: Header Float Springs

ATTACHING HEADERS TO WINDROWER

6. Press rotary scroll knob (A) on the Harvest Performance Tracker (HPT) to highlight the QuickMenu options.
7. Rotate scroll knob (A) to highlight HEADER FLOAT symbol (B), and press the scroll knob to select it. The Float Adjust page appears.



Figure 5.58: HPT Display

8. Press soft key 3 (A) to remove the header float.

NOTE:

If the header float is active, the icon at soft key 3 displays Remove Float; if the header float has been removed, the icon displays Resume Float.



Figure 5.59: HPT Display

9. Press HEADER DOWN switch (E) on the ground speed lever (GSL) to fully retract the header lift cylinders.
10. **Windrowers equipped with a self-aligning hydraulic center-link:** Press REEL UP switch (B) on the 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.

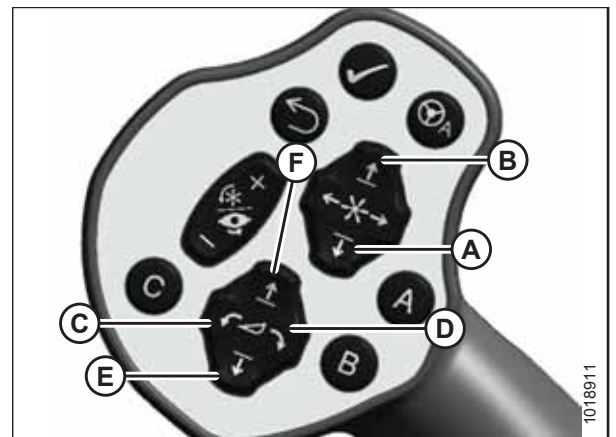


Figure 5.60: GSL

- | | |
|----------------------|--------------------|
| A - Reel Down | B - Reel Up |
| C - Header Tilt Down | D - Header Tilt Up |
| E - Header Down | F - Header Up |

ATTACHING HEADERS TO WINDROWER

11. 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 is nudged forward.
12. Ensure that feet (A) are properly engaged in supports (B).

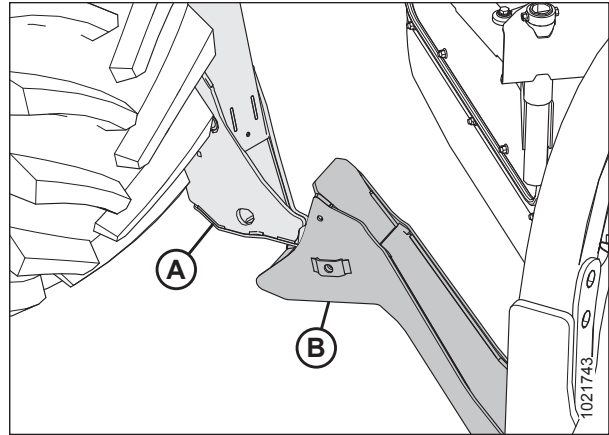


Figure 5.61: Header Support

13. Windrowers equipped with the self-aligning center-link kit:

- a. Adjust the position of center-link cylinder (A) with the switches on the GSL until hook (B) is above the header attachment pin.

IMPORTANT:

Hook release (C) must be down to enable the self-locking mechanism to function.

- b. If hook release (C) is open (in the up position), shut down the engine, and remove the key from the ignition. Manually push hook release (C) down after the hook engages the header pin.
- c. Lower center-link (A) onto the header with the REEL DOWN switch on the GSL until the center-link locks into position and hook release (C) is down.
- d. Check that the center-link is locked onto the header by pressing the REEL UP switch on the GSL.

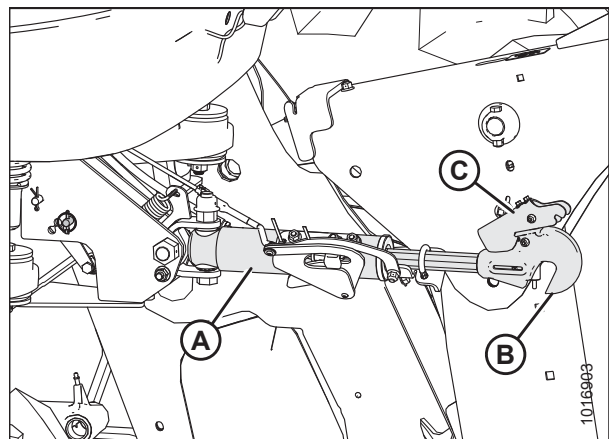


Figure 5.62: Hydraulic Center-Link

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

- a. Press the HEADER TILT UP or HEADER TILT DOWN cylinder 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 the rod end of link cylinder (B) until the hook engages and locks onto the header pin.

IMPORTANT:

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

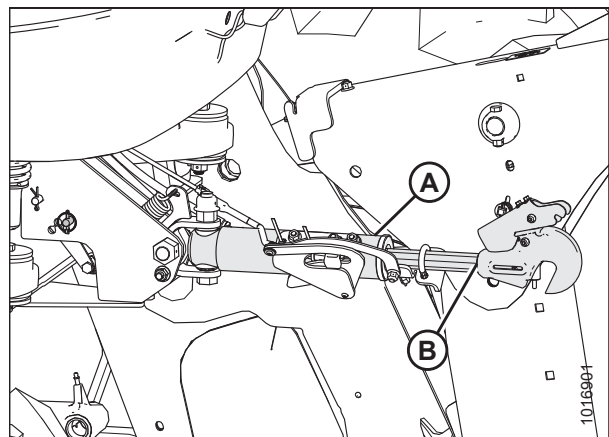


Figure 5.63: Hydraulic Center-Link

ATTACHING HEADERS TO WINDROWER

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

DANGER

Check to be sure all bystanders have cleared the area.

- e. Start the engine.
15. 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.
16. Shut down the engine, and remove the key from the ignition.



Figure 5.64: GSL

17. Engage the safety props on both lift cylinders as follows:
 - a. Pull lever (A) toward you to release it, and 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.

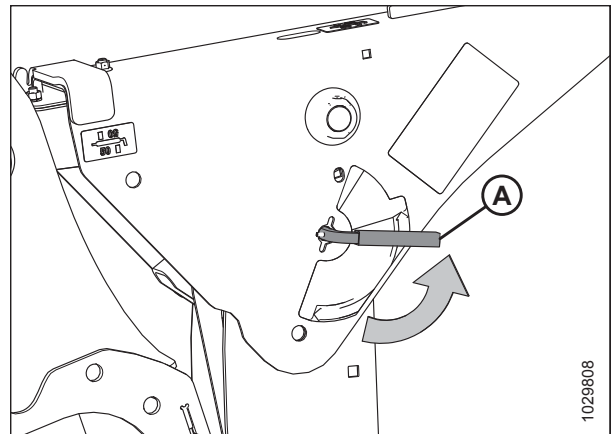


Figure 5.65: Safety Prop Lever

18. Install clevis pin (A) through the support and windrower lift arm and secure it with hairpin (B). Repeat this step for 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.

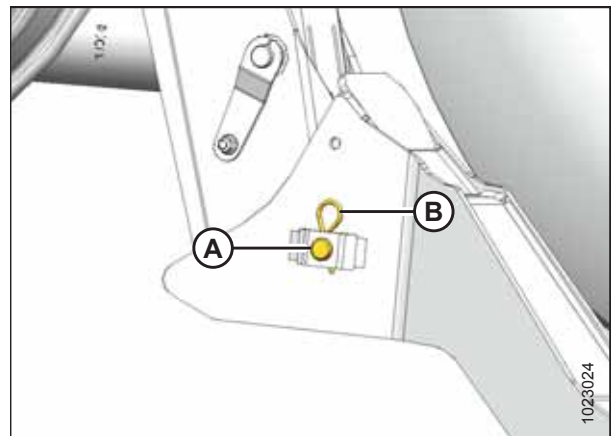


Figure 5.66: Header Support

ATTACHING HEADERS TO WINDROWER

19. 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.

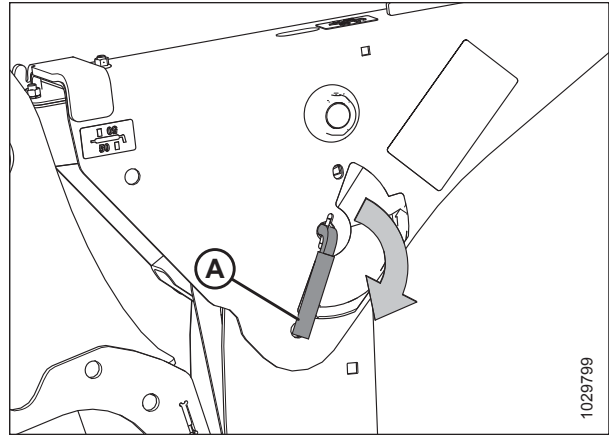


Figure 5.67: Safety Prop Lever

20. Start the engine and press HEADER DOWN switch (A) on the GSL to fully lower the header.

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

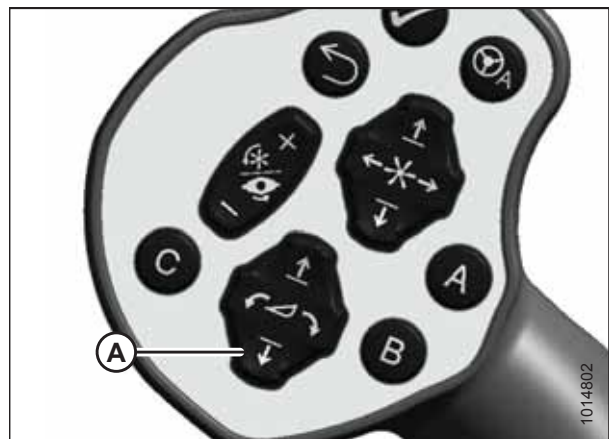


Figure 5.68: GSL

22. If you are not prompted by the HPT display to restore the header float, restore the header float manually:

- a. Press rotary scroll knob (A) on the Harvest Performance Tracker (HPT) to highlight the QuickMenu options.
- b. Rotate scroll knob (A) to highlight Header Float icon (B), and press the scroll knob to select it. The float setting page appears.



Figure 5.69: HPT Display

ATTACHING HEADERS TO WINDROWER

23. Press soft key 3 (A) to restore the header float.

NOTE:

If the header float is active, the icon at soft key 3 displays Remove Float; if the header float has been removed, the icon displays Resume Float.

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



Figure 5.70: HPT Display

5.3.3 Connecting R113 Rotary Disc Header Hydraulics and Electrical to Windrower

The procedure for connecting the R113's hydraulic and electrical systems to the windrower differs depending on the configuration of the windrower.

IMPORTANT:

Before connecting the hydraulics from an R113 Rotary Disc Header to an M1240 Windrower, first install the M1240 Low Pressure Case Drain kit (MD #B6698) by following the instructions provided included with the kit.

The procedure for connecting the R113's hydraulic connections to the windrower depends on the windrower's configuration:

- Auger/rotary disc/drapper 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.

IMPORTANT:

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

NOTE:

The R113 Rotary Disc Header hydraulic bundle includes a complete set of quick couplers that can be installed onto a rotary disc header-configured windrower.

1. Approach platform (A) on the left cab-forward side of the windrower and ensure the cab door is closed.
2. Push latch (B), and pull platform (A) toward the walking beam until it stops and the latch engages.

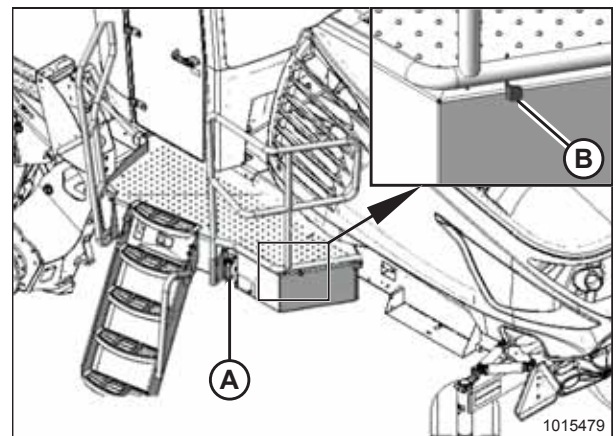


Figure 5.71: Left Cab-Forward Platform

ATTACHING HEADERS TO WINDROWER

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

NOTE:

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

- Insert pin (B) into hole (C) in the windrower frame and place the hose bundle onto support (D).

IMPORTANT:

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

Proceed with the steps that are relevant to your windrower configuration:

- Auger/rotary disc/draper-ready configuration (A):** For instructions, refer to [Auger/Rotary Disc/Draper-Ready Configuration – Quick Coupler Connections](#), page 103.
- Rotary disc only hard plumbed configuration (A):** For instructions, refer to [Rotary Disc Only Configuration – Hard-Plumbed Fittings](#), page 105.

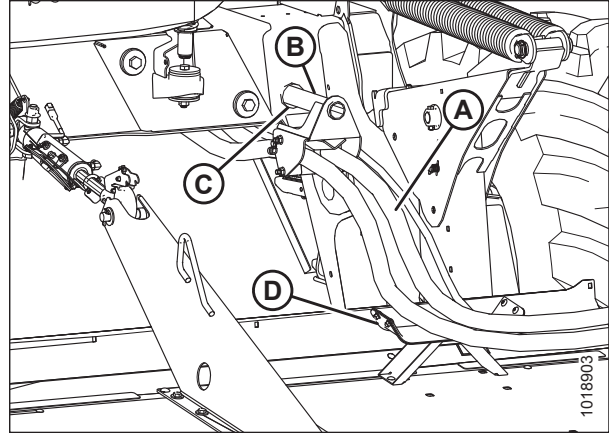


Figure 5.72: R1 Rotary Disc Header Hose Support Attachment

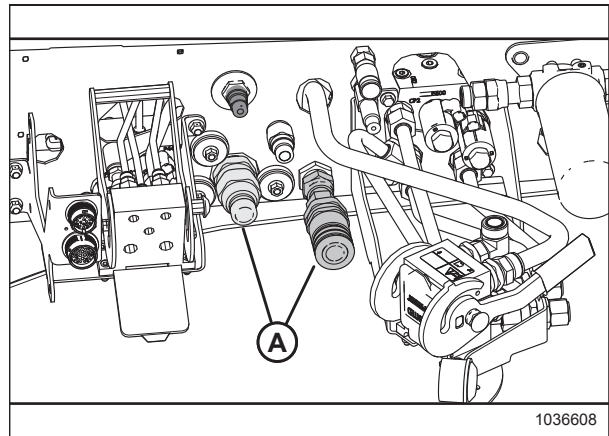


Figure 5.73: Header Hydraulics Configurations – Auger/Rotary Disc/Draper-Ready

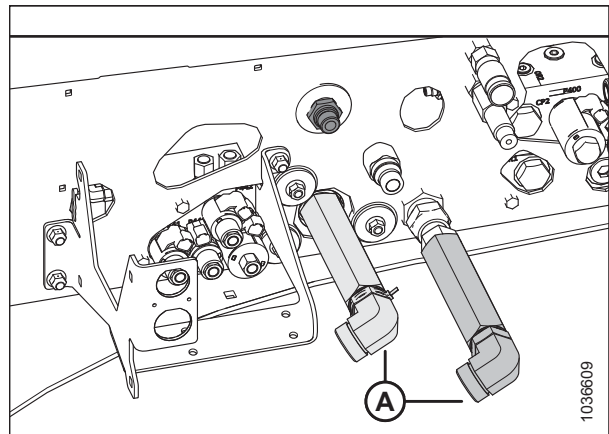


Figure 5.74: Header Hydraulics Configuration – Rotary Disc-Ready with Hard-Plumbed Connections

ATTACHING HEADERS TO WINDROWER

- **Rotary disc ready configuration with quick couplers (A):** For instructions, refer to *Rotary Disc Only Configuration – Quick Coupler Connections*, page 107.

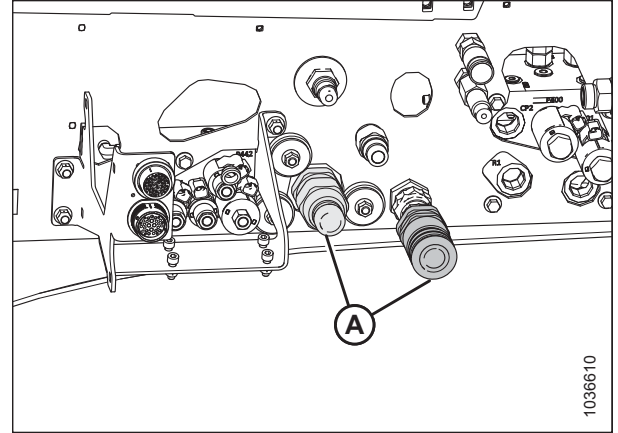


Figure 5.75: Header Hydraulics Configuration – Rotary Disc-Ready with Quick Couplers

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.

1. Ensure that hose (A) is disconnected from windrower receptacle (B) and placed in storage cup (C) on the multicoupler.

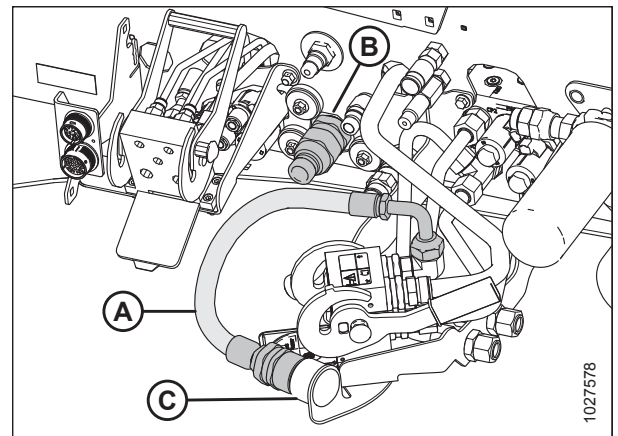


Figure 5.76: Couplers – Auger/Rotary/Draper Header-Ready Configuration with Case Drain Kit Installed

2. 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.

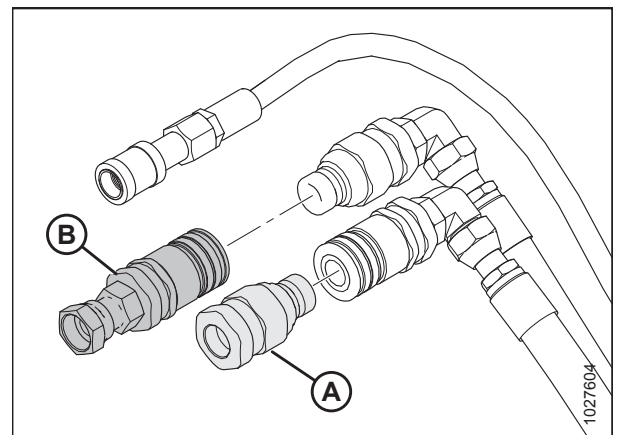


Figure 5.77: Hydraulic Quick Couplers

ATTACHING HEADERS TO WINDROWER

3. 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 M1240 Low Pressure Case Drain kit (MD #B6698) has been installed.

IMPORTANT:

Do **NOT** connect the case drain coupler to other 1/2 in. flat faced coupler (E).

- d. Connect the electrical harness to receptacle (D).
4. Push latch (A) to unlock platform (B).

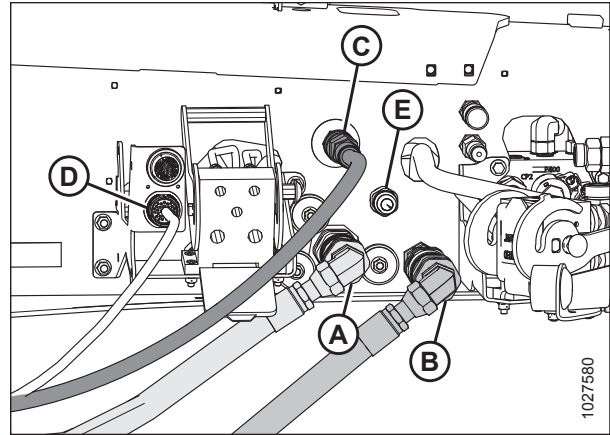


Figure 5.78: Hydraulics and Electrical Installed—Auger/Rotary/Draper-Ready Windrower

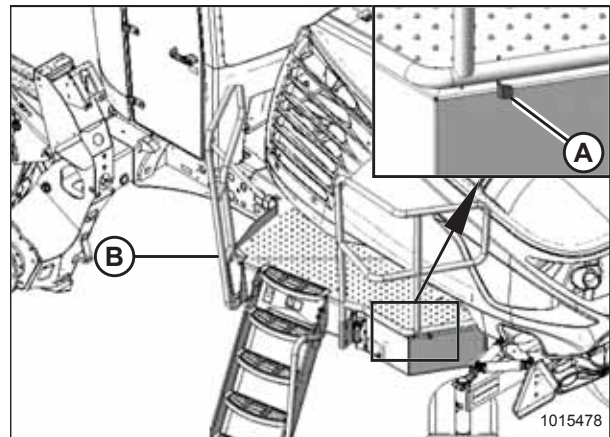


Figure 5.79: Left Cab-Forward Platform

- d. Connect the electrical harness to receptacle (D).
5. Pull platform (A) towards the cab until it stops and the latch is engaged.

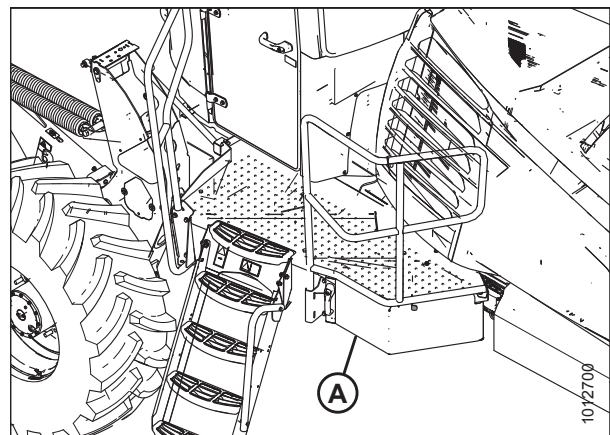


Figure 5.80: Left Cab-Forward Platform

6. If necessary, calibrate both the knife drive and header position sensors on the windrower. Calibrate both the knife drive and header position sensors whenever you are:
 - Attaching the header to the windrower for the first time

ATTACHING HEADERS TO WINDROWER

- Changing the speed sensor or hydraulic drive motor on the header
- Changing the header drive pump associated with the knife drive, Harvest Performance Tracker (HPT), or the master controller on the windrower

For instructions, refer to [5.7.1 Calibrating the Knife Drive on the Harvest Performance Tracker Display, page 139](#) and [5.7.2 Calibrating Header Position Sensors on the Harvest Performance Tracker Display, page 142](#).

Rotary Disc Only Configuration – Hard-Plumbed Fittings

The rotary disc configuration allows the windrower to operate with compatible rotary disc headers. The hydraulic connections must be torqued correctly when using hard-plumbed fittings.

1. 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).

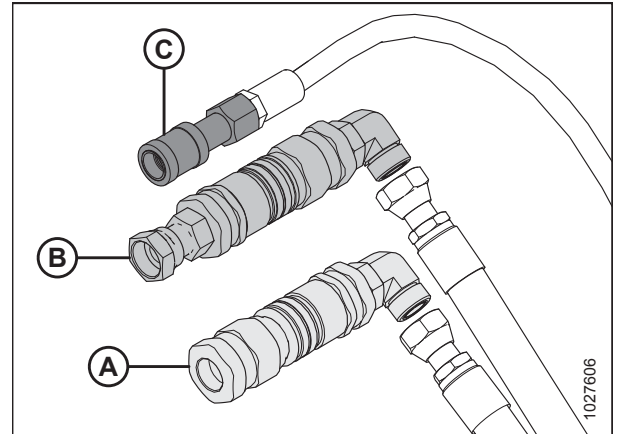


Figure 5.81: Rotary Disc Header Hose Bundle

2. 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 M1240 Low Pressure Case Drain kit (MD #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).

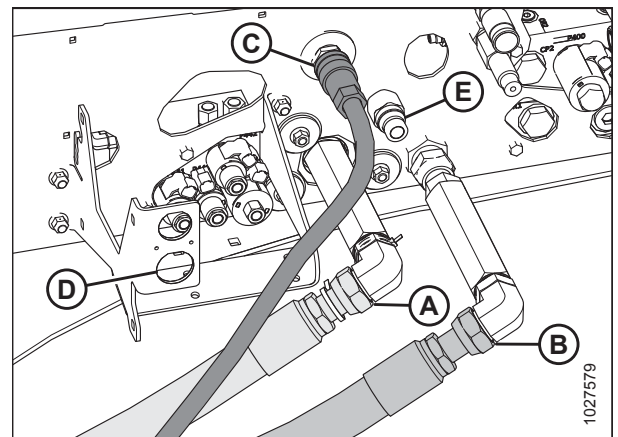


Figure 5.82: Hard Plumbed Connections on Disc Header Ready Windrower with Case Drain Kit

ATTACHING HEADERS TO WINDROWER

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

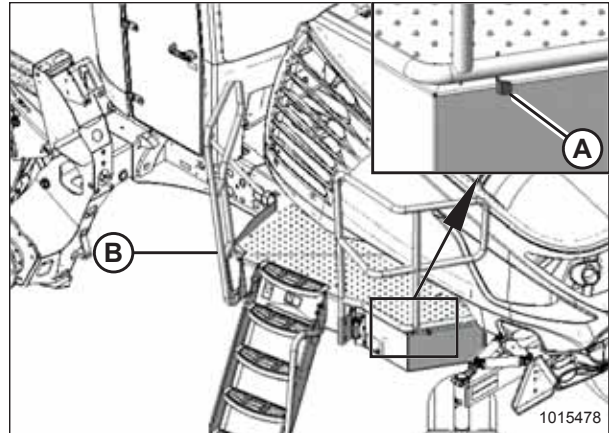


Figure 5.83: Left Cab-Forward Platform

4. Pull platform (A) towards the cab until it stops and the latch is engaged.

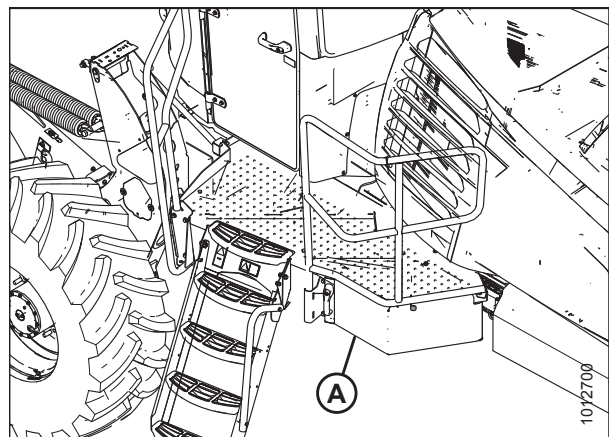


Figure 5.84: Left Cab-Forward Platform

5. If necessary, calibrate both the knife drive and header position sensors on the windrower. Calibrate both the knife drive and header position sensors whenever you are:
 - Attaching the header to the windrower for the first time
 - Changing the speed sensor or hydraulic drive motor on the header
 - Changing the header drive pump associated with the knife drive, Harvest Performance Tracker (HPT), or the master controller on the windrower

For instructions, refer to [5.7.1 Calibrating the Knife Drive on the Harvest Performance Tracker Display, page 139](#) and [5.7.2 Calibrating Header Position Sensors on the Harvest Performance Tracker Display, page 142](#).

ATTACHING HEADERS TO WINDROWER

Rotary Disc Only Configuration – Quick Coupler Connections

The rotary disc 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.

1. Remove extension fittings and elbows (A) from the rotary disc header's hydraulic pressure and return connections.

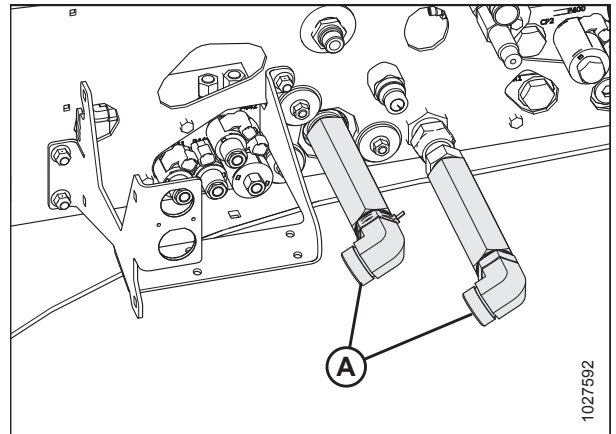


Figure 5.85: Hard Plumbed Connections – Rotary Disc Ready Windrower

2. Remove and retain the extra hydraulic quick couplers from pressure hose (A) and return hose (B).

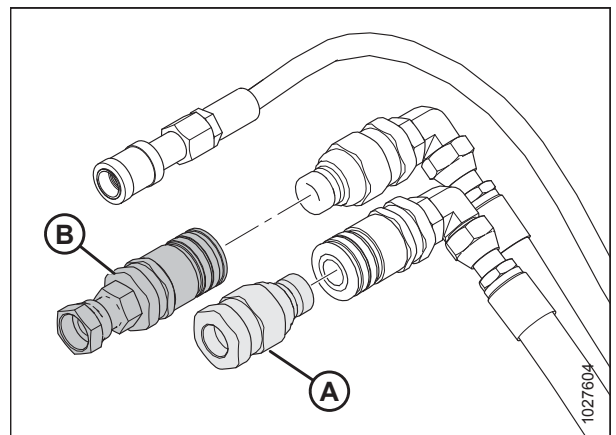


Figure 5.86: Hydraulic Quick Couplers

3. Install the male quick coupler at windrower pressure receptacle (A).
4. Install the female quick coupler at windrower return receptacle (B).

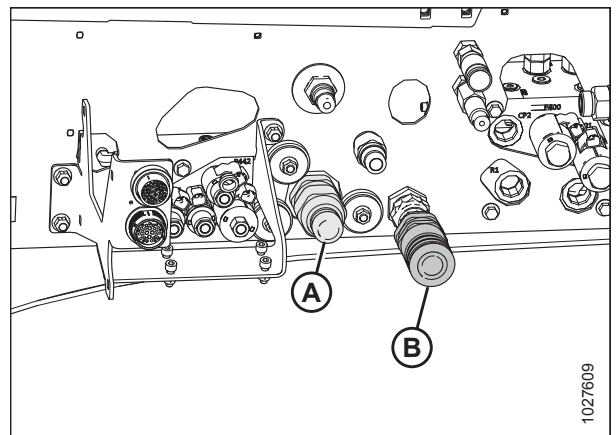


Figure 5.87: Quick Couplers on Rotary Disc Ready Windrower

ATTACHING HEADERS TO WINDROWER

5. 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 M1240 Low Pressure Case Drain kit (MD #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).
6. Push latch (A) to unlock platform (B).

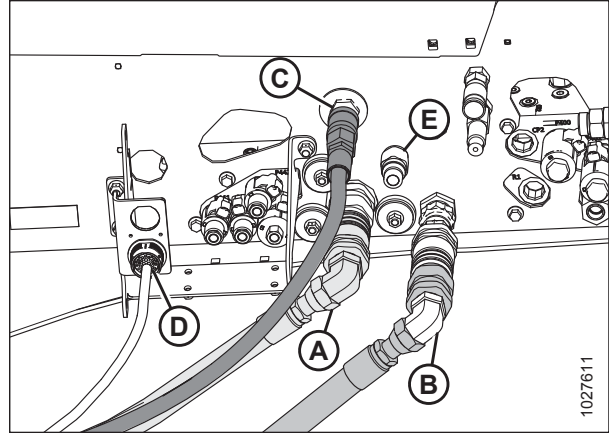


Figure 5.88: Quick Couplers on Rotary Disc Ready Windrower with Case Drain Kit

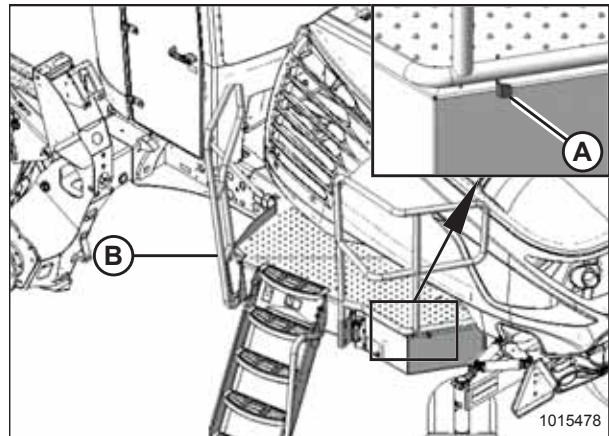


Figure 5.89: Left Cab-Forward Platform

- d. Pull platform (A) towards the cab until it stops and the latch is engaged.

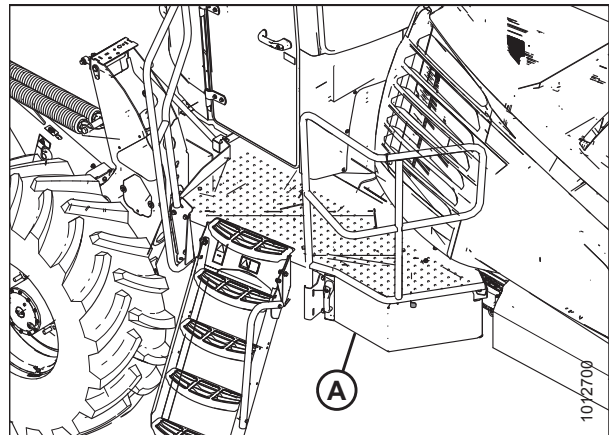


Figure 5.90: Left Cab-Forward Platform

8. If necessary, calibrate both the knife drive and header position sensors on the windrower. Calibrate both the knife drive and header position sensors whenever you are:
 - Attaching the header to the windrower for the first time
 - Changing the speed sensor or hydraulic drive motor on the header

ATTACHING HEADERS TO WINDROWER

- Changing the header drive pump associated with the knife drive, Harvest Performance Tracker (HPT), or the master controller on the windrower

For instructions, refer to [5.7.1 Calibrating the Knife Drive on the Harvest Performance Tracker Display, page 139](#) and [5.7.2 Calibrating Header Position Sensors on the Harvest Performance Tracker Display, page 142](#).

5.4 R2 Series Rotary Disc Header

This section details the procedures necessary to physically attach an R2 series rotary disc header to a windrower and to attach its hydraulic and electrical connections.

5.4.1 Attaching Forming Shield

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

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

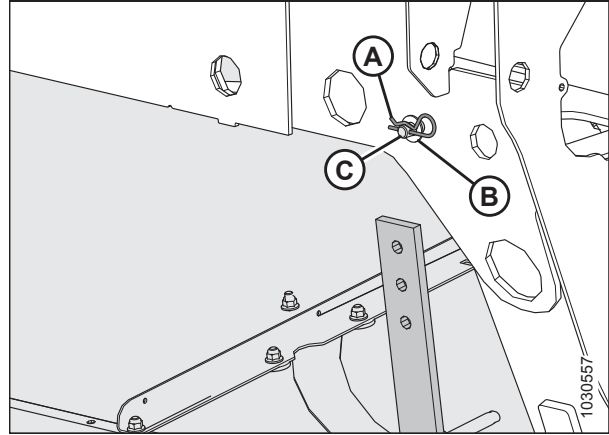


Figure 5.91: Lynch Pin and Washer at Rear of Windrower Leg

2. Attach rubber strap (D) to straight pin (C) at the rear of the windrower leg. Secure it with washer (B) and lynch pin (A).
3. Repeat Step 1, page 110 to Step 2, page 110 at the opposite side of the forming shield.

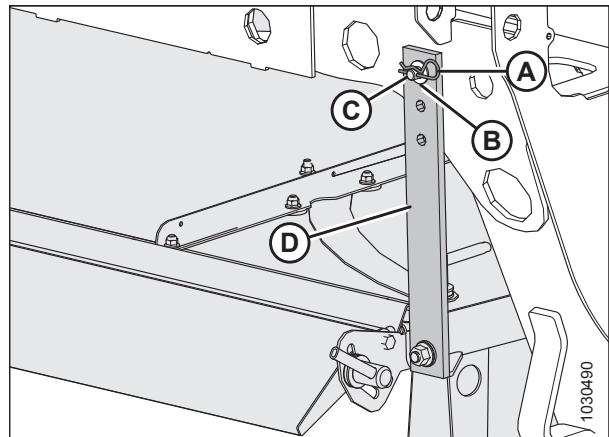


Figure 5.92: Rubber Strap Securing Forming Shield onto Windrower Leg

5.4.2 Attaching R2 Series Rotary Disc Header

The windrower may have an optional self-aligning hydraulic center-link, which allows control over the vertical position of the center-link from the cab. If the windrower is so equipped, the procedure for attaching an R2 header will be slightly different.

DANGER

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

ATTACHING HEADERS TO WINDROWER

DANGER

Check to be sure all bystanders have cleared the area.

1. Shut down the engine, and remove the key from the ignition.
2. **Windrowers equipped with a hydraulic center-link without self-alignment:** Remove pin (A) and raise center-link (B) until the hook is above the attachment pin on the header. Replace pin (A) to hold the center-link in place.

IMPORTANT:

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

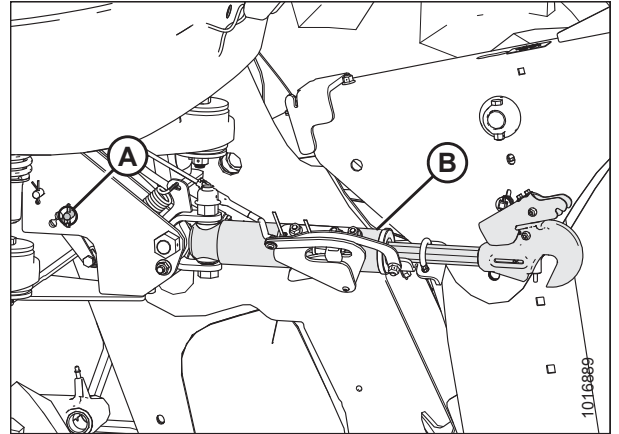


Figure 5.93: Hydraulic Center-Link

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

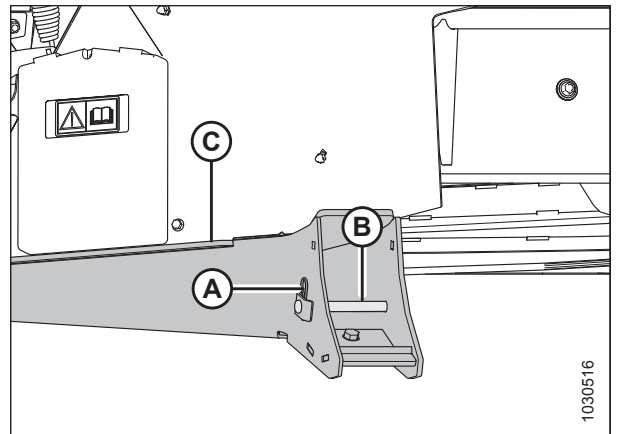


Figure 5.94: Header Support

5. Lift header support (A) and place 2 x 4 in. blocks (B) under the header support. A total of four 2 x 4 in. blocks (B) will be necessary to raise the boot up into the field position. Ensure that the boot's bottom edge (C) is parallel with the ground.

NOTE:

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.

6. Repeat Step 5, [page 111](#) on the opposite side of the header.

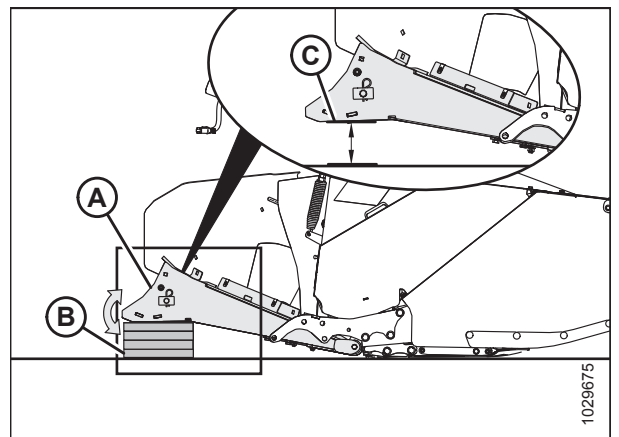


Figure 5.95: Header Support

ATTACHING HEADERS TO WINDROWER

7. If you are lowering the header lift legs **WITH** a header or weight box attached to the windrower, proceed to Step 11, page 113.

If you are lowering the header lift legs **WITHOUT** a header or weight box attached to the windrower, fully release the tension in header float springs (A):

- If you are prompted by the Harvest Performance Tracker (HPT) to remove the float, then remove the float and proceed to Step 8, page 112.

IMPORTANT:

When you are lowering the header lift legs without a header or a weight box attached to the windrower, ensure that the tension on the float springs is fully released in order to prevent damage to the header lift linkages.

8. Press rotary scroll knob (A) on the Harvest Performance Tracker (HPT) to highlight the QuickMenu options.
9. Rotate scroll knob (A) to highlight **HEADER FLOAT** symbol (B), and press the scroll knob to select it. The Float Adjust page appears.

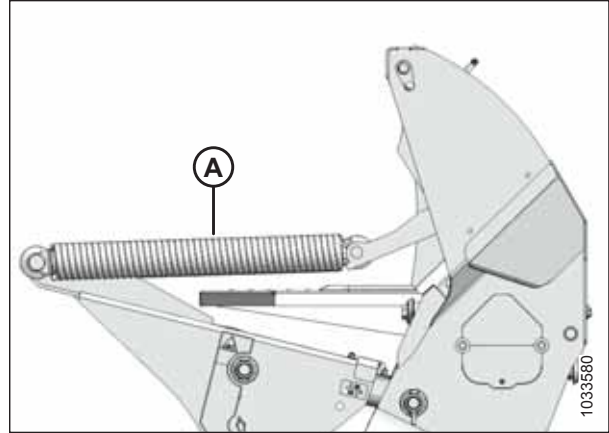


Figure 5.96: Header Float Springs



Figure 5.97: HPT Display

10. Press soft key 3 (A) to remove the header float.

NOTE:

If the header float is active, the icon at soft key 3 displays Remove Float; if the header float has been removed, then the icon displays Resume Float.



Figure 5.98: HPT Display

ATTACHING HEADERS TO WINDROWER

11. Press HEADER DOWN switch (E) on the ground speed lever (GSL) to fully retract the header lift cylinders.
12. **Windrowers equipped with a self-aligning hydraulic center-link:** Press REEL UP switch (B) on the 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.

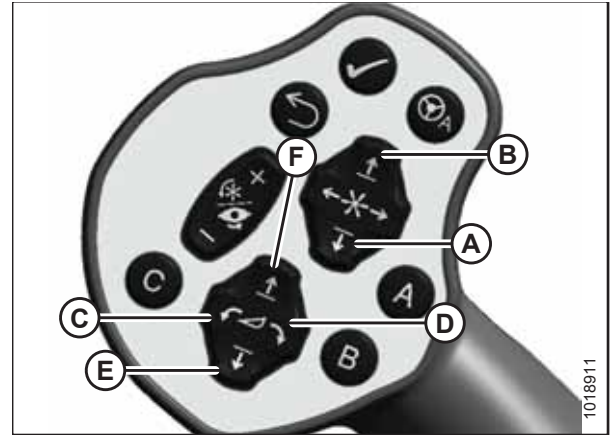


Figure 5.99: GSL

| | |
|----------------------|--------------------|
| A - Reel Down | B - Reel Up |
| C - Header Tilt Down | D - Header Tilt Up |
| E - Header Down | F - Header Up |

13. 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 is nudged forward.
14. Ensure that feet (A) are properly engaged in supports (B).

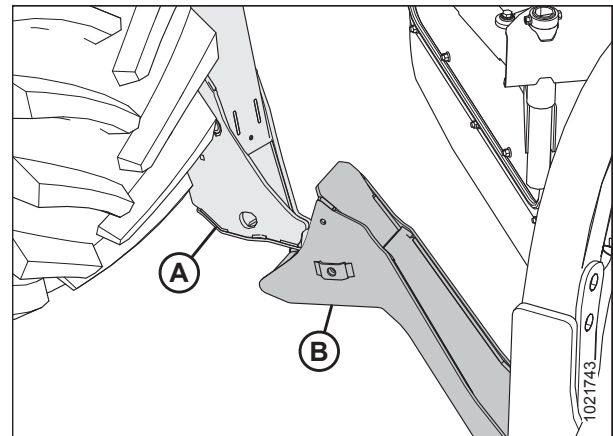


Figure 5.100: Header Support

15. **Windrowers equipped with the self-aligning center-link kit:**
 - a. Adjust the position of center-link cylinder (A) with the switches on the GSL until hook (B) is above the header attachment pin.

IMPORTANT:

Hook release (C) must be down to enable the self-locking mechanism to function.

- b. If hook release (C) is open (in the up position), shut down the engine, and remove the key from the ignition. Manually push hook release (C) down after the hook engages the header pin.
 - c. Lower center-link (A) onto the header with the REEL DOWN switch on the GSL until the center-link locks into position and hook release (C) is down.
 - d. Check that the center-link is locked onto the header by pressing the REEL UP switch on the GSL.

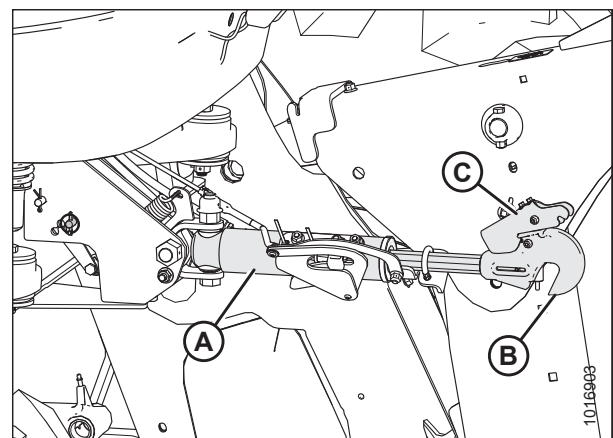


Figure 5.101: Hydraulic Center-Link

ATTACHING HEADERS TO WINDROWER

16. Windrowers without the self-aligning center-link kit:

- a. Press the HEADER TILT UP or HEADER TILT DOWN cylinder 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 the rod end of link cylinder (B) until the hook engages and locks onto the header pin.

IMPORTANT:

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

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



DANGER

Check to be sure all bystanders have cleared the area.

- e. Start the engine.

17. 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.

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

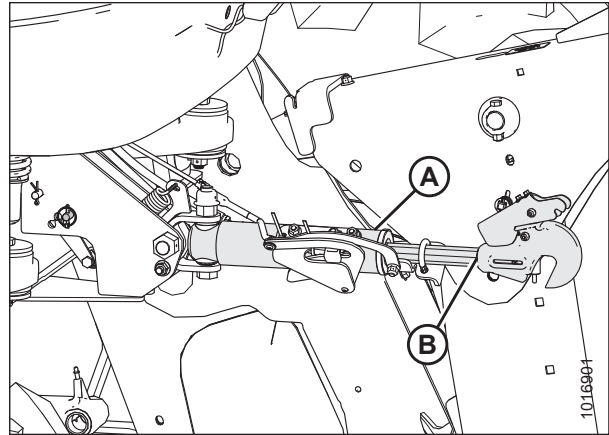


Figure 5.102: Hydraulic Center-Link



Figure 5.103: GSL

ATTACHING HEADERS TO WINDROWER

19. Engage the safety props on both lift cylinders as follows:
 - a. Pull lever (A) toward you to release it, and 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.

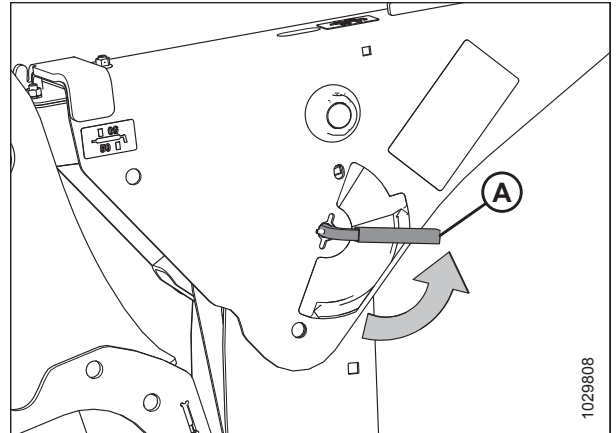


Figure 5.104: Safety Prop Lever

20. Install clevis pin (A) through the support and windrower lift arm and secure it with hairpin (B). Repeat this step for the opposite side of the header.

IMPORTANT:

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

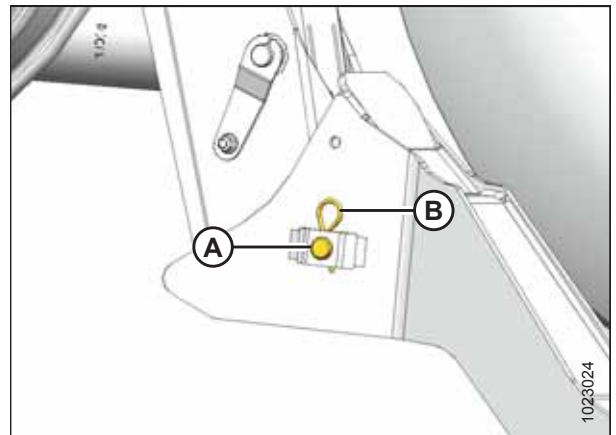


Figure 5.105: Header Support

21. 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.

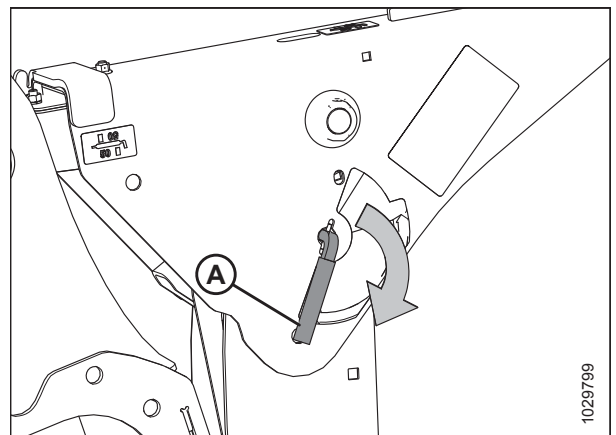


Figure 5.106: Safety Prop Lever

ATTACHING HEADERS TO WINDROWER

22. Start the engine and press HEADER DOWN switch (A) on the GSL to fully lower the header.
23. Shut down the engine, and remove the key from the ignition.

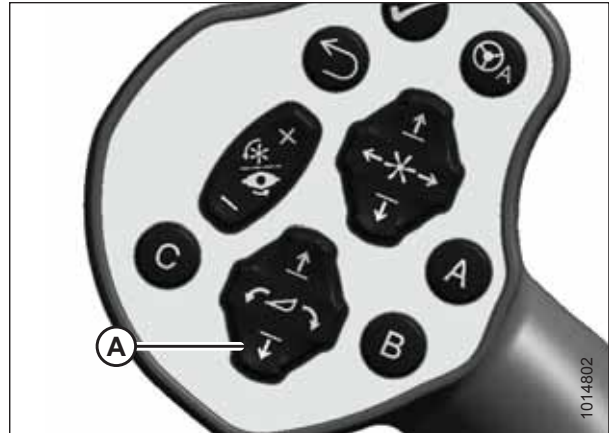


Figure 5.107: GSL

24. If you are not prompted by the HPT display to restore the header float, restore the header float manually by doing the following:
 - a. Press rotary scroll knob (A) on the Harvest Performance Tracker (HPT) to highlight the QuickMenu options.
 - b. Rotate scroll knob (A) to highlight Header Float icon (B), and press the scroll knob to select it.



Figure 5.108: HPT Display

25. Press soft key 3 (A) to restore the header float.

NOTE:

If the header float is active, the icon at soft key 3 displays Remove Float; if the header float has been removed, then the icon displays Resume Float.

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



Figure 5.109: HPT Display

5.4.3 Connecting R216 Rotary Disc Header Hydraulics and Electrical to Windrower

The procedure for connecting the R216's hydraulic and electrical systems to the windrower differs depending on the configuration of the windrower.

1. Approach platform (A) on the left cab-forward side of the windrower and ensure the cab door is closed.
2. Push latch (B), and pull platform (A) toward the walking beam until it stops and the latch engages.

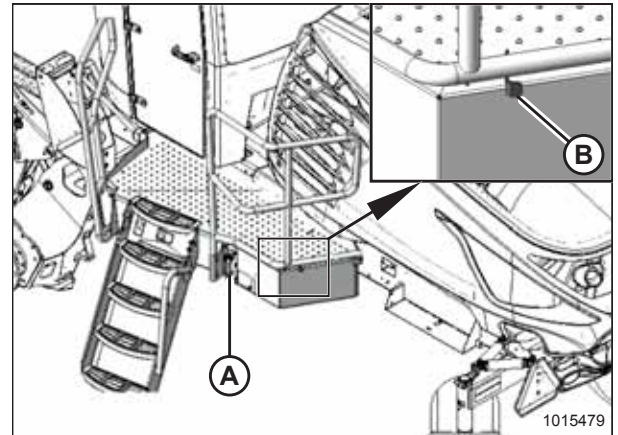


Figure 5.110: Left Cab-Forward Platform

Proceed with the steps relevant to your windrower configuration:

- **Auger/rotary disc/draper-ready configuration (A):** For instructions, refer to [Auger/Rotary Disc/Draper-Ready Configuration – Quick Coupler Connections, page 118](#).

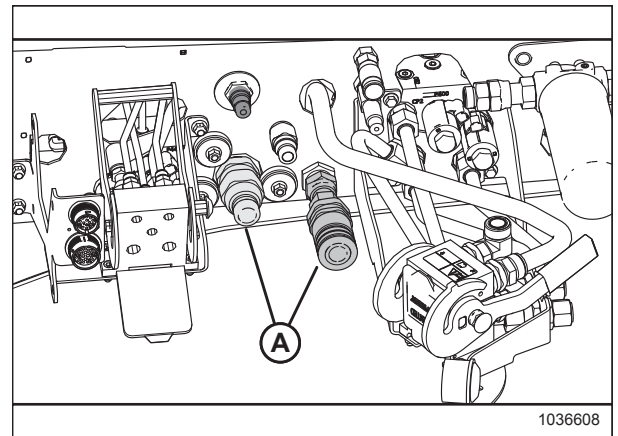


Figure 5.111: Header Hydraulics Configurations – Auger/Rotary Disc/Draper-Ready

- **Rotary disc only hard plumbed configuration (A):** For instructions, refer to [Rotary Disc Only Configuration – Hard-Plumbed Connections, page 122](#).

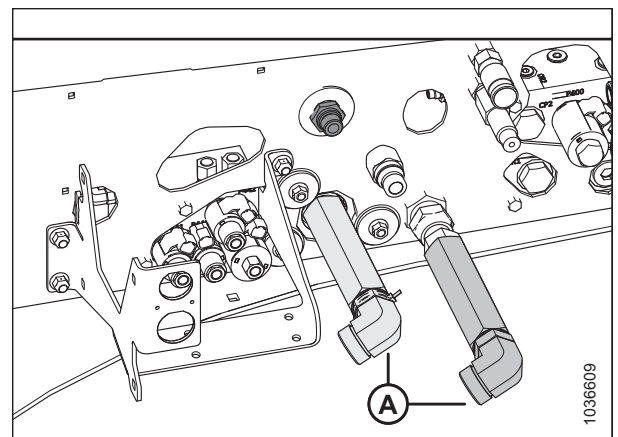


Figure 5.112: Header Hydraulics Configuration – Rotary Disc-Ready with Hard-Plumbed Connections

ATTACHING HEADERS TO WINDROWER

- **Rotary disc-ready configuration with quick couplers (A):** For instructions, refer to *Rotary Disc Only Configuration – Quick Coupler Connections*, page 126.

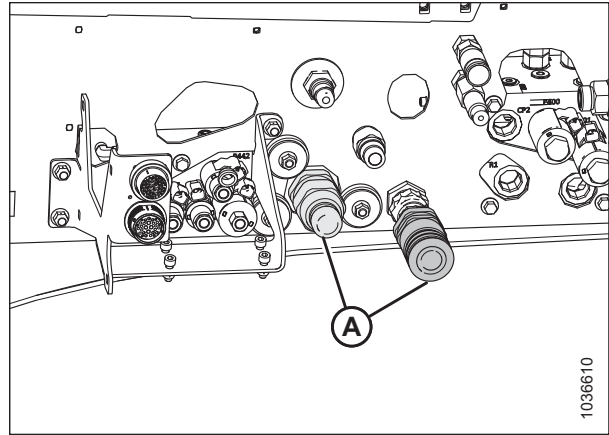


Figure 5.113: Header Hydraulics Configuration – Rotary Disc-Ready with Quick Couplers

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.

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

NOTE:

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

2. 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.

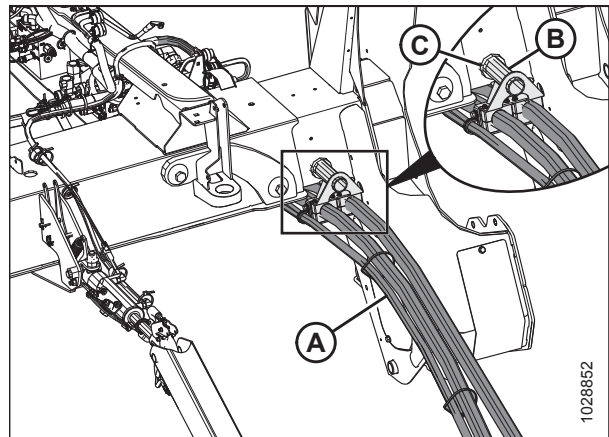


Figure 5.114: Hose Support Attachment

ATTACHING HEADERS TO WINDROWER

3. Ensure that hose (A) is disconnected from windrower receptacle (B) and placed in storage cup (C) on the multicoupler.

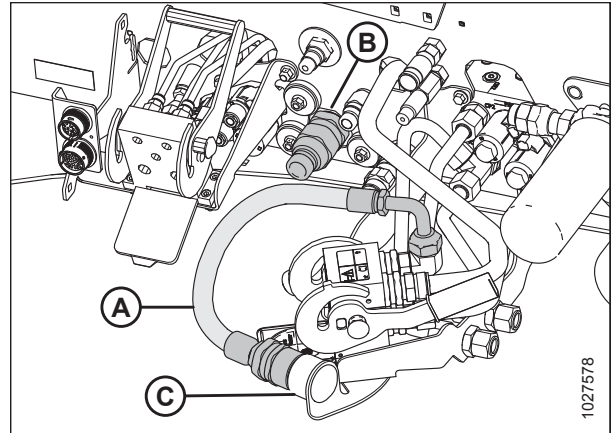


Figure 5.115: Couplers – Auger/Rotary Disc/Draper-Ready Configuration

4. 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 (MD #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).

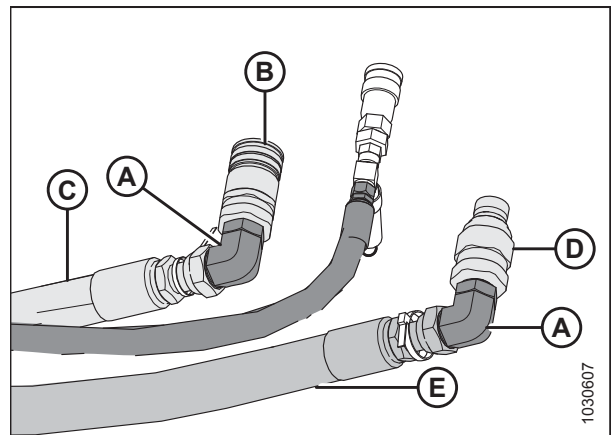


Figure 5.116: Header Hydraulic Fittings

ATTACHING HEADERS TO WINDROWER

5. Connect the hydraulic hoses to the windrower as follows:
 - a. Connect disc pressure hose (A) to coupler (B).
 - b. Connect disc return hose (C) with 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.

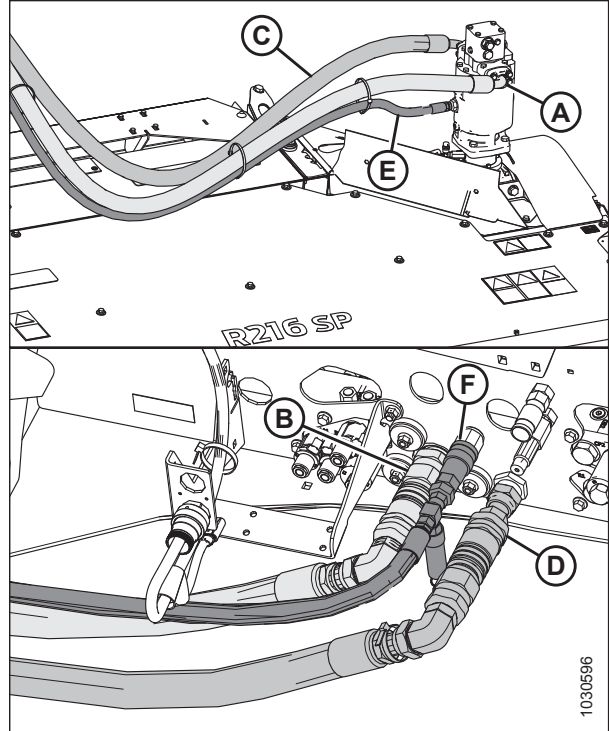


Figure 5.117: Hydraulics and Electrical – Auger/Rotary Disc/Draper-Ready Configuration

6. **Grass seed header:** 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 inboard 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.

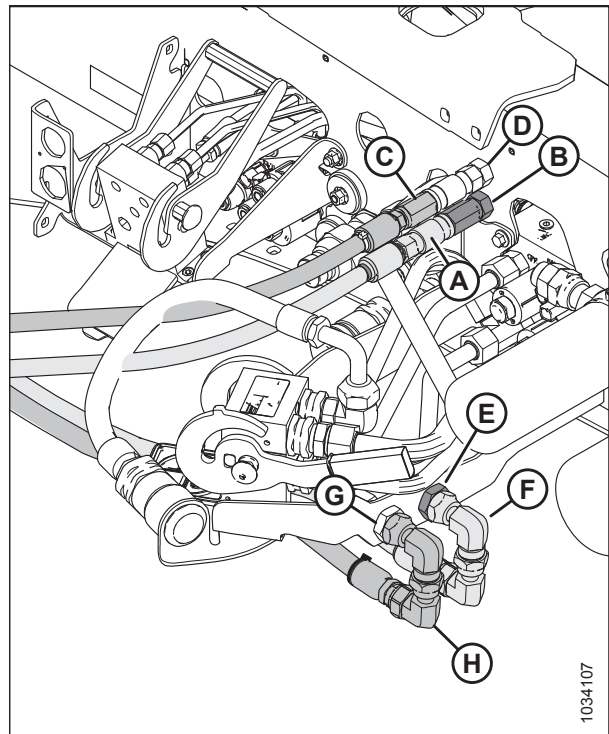


Figure 5.118: Grass Seed Hydraulic Connections – Auger/Rotary Disc/Draper—Ready Configuration

ATTACHING HEADERS TO WINDROWER

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

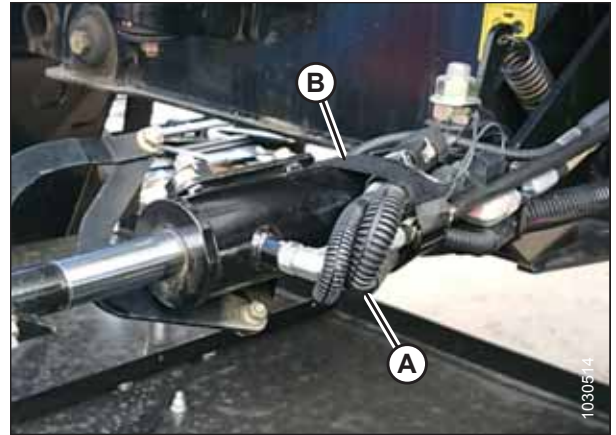


Figure 5.119: Electrical Harness Secured to Center-Link

- Connect main header harness (A) to adapter harness (B).
- If you are connecting the standard-configuration R2 header equipped with the optional electric baffle control kit:** Connect electric baffle control harness (C) to adapter harness (D).
- If you are connecting an R2 header configured for grass-seed harvesting:** Connect actuator harness (C) to adapter harness (D).

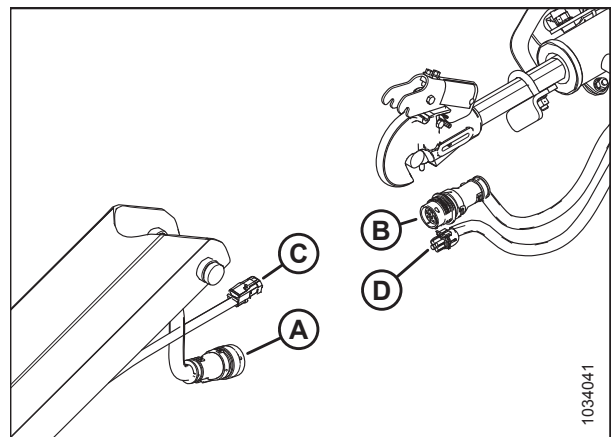


Figure 5.120: Electrical Harness Connection at Center-Link

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

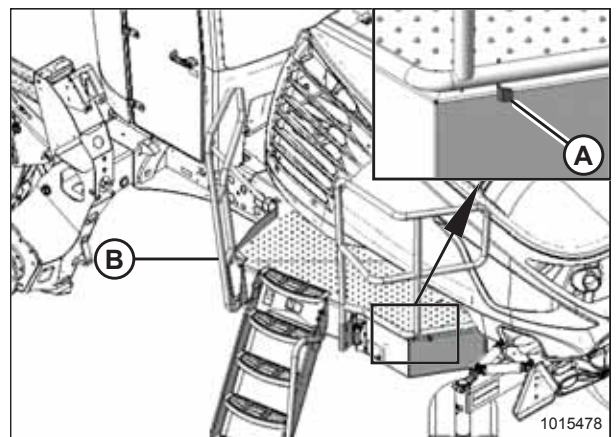


Figure 5.121: Left Cab-Forward Platform

ATTACHING HEADERS TO WINDROWER

12. Pull platform (A) towards the cab until it stops and the latch is engaged.

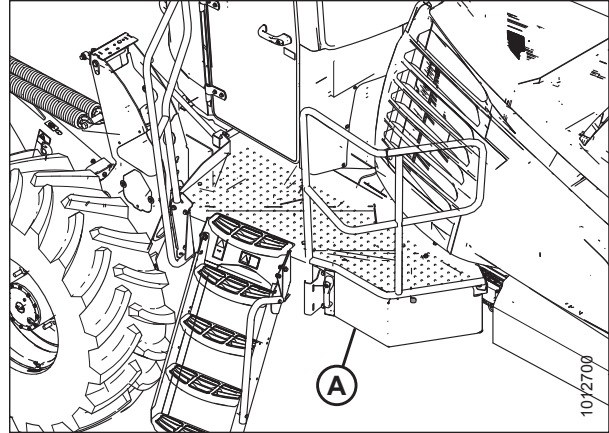


Figure 5.122: Left Cab-Forward Platform

DANGER

Check to be sure all bystanders have cleared the area.

13. Start the windrower engine.
14. Extend center-link (A) fully. Ensure that there is some slack in harness (B).
15. Retract center-link (A) fully. Ensure that there is not an excessive amount of harness (B) hanging down.
16. Turn off the windrower engine, and remove the key.
17. Adjust harness (B) as needed.
18. Tighten all the cables along the harness.

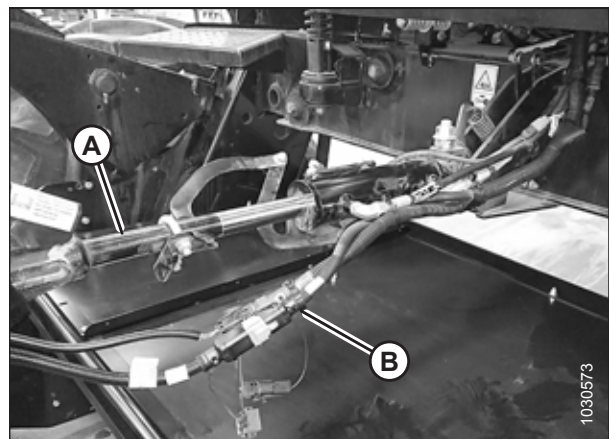


Figure 5.123: Electrical Connection

19. If necessary, calibrate both the knife drive and header position sensors on the windrower. Calibrate both the knife drive and header position sensors whenever you are:
 - Attaching the header to the windrower for the first time
 - Changing the speed sensor or hydraulic drive motor on the header
 - Changing the header drive pump associated with the knife drive, Harvest Performance Tracker (HPT), or the master controller on the windrower

For instructions, refer to [5.7.1 Calibrating the Knife Drive on the Harvest Performance Tracker Display, page 139](#) and [5.7.2 Calibrating Header Position Sensors on the Harvest Performance Tracker Display, page 142](#).

Rotary Disc Only Configuration – Hard-Plumbed Connections

The rotary disc configuration allows the windrower to operate with compatible rotary disc headers. The hydraulic connections must be torqued correctly when using hard-plumbed fittings.

IMPORTANT:

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

ATTACHING HEADERS TO WINDROWER

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

NOTE:

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

2. 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.

3. 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).

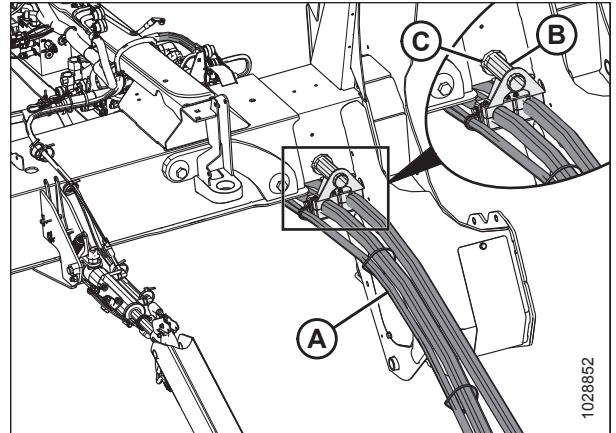


Figure 5.124: Hose Support Attachment

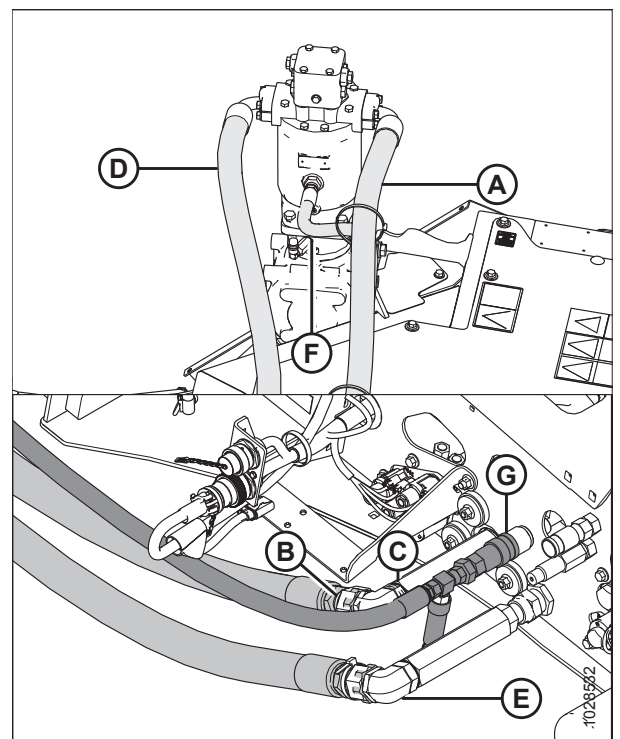


Figure 5.125: Hard Plumbed Connections on R216 Rotary Disc Header Ready Windrower

ATTACHING HEADERS TO WINDROWER

4. **Grass seed header:** Connect the additional four hoses supplied with the grass seed version of the header as follows:
- Remove the plug (not shown) from drive manifold port R1. 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.
 - Remove the plug (not shown) from drive manifold port CP2. 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.
 - Connect hose (green cable tie) with female quick coupler (E) to coupler (F) as shown.
 - Connect hose (yellow cable tie) with male quick coupler (G) to coupler (H) as shown.

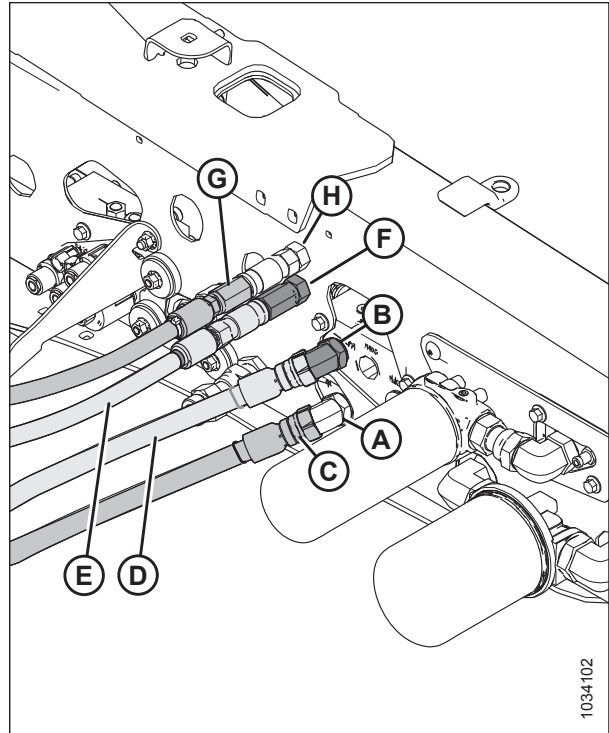


Figure 5.126: Grass Seed Hydraulic Connections – Rotary Disc Configuration

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

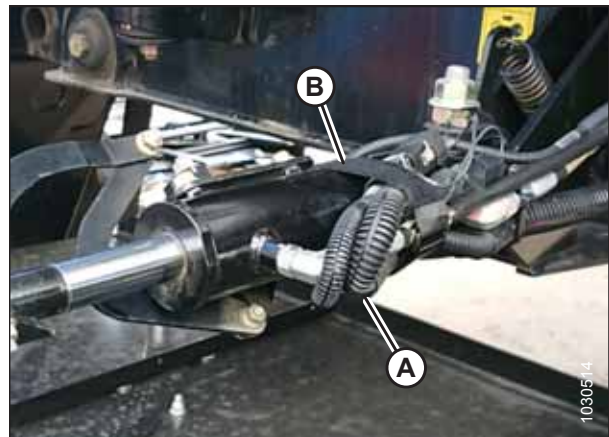


Figure 5.127: Electrical Harness Secured to Center-Link

ATTACHING HEADERS TO WINDROWER

6. Connect main header harness (A) to adapter harness (B).
7. **If you are connecting the standard-configuration R2 header equipped with the optional electric baffle control kit:** Connect electric baffle control harness (C) to adapter harness (D).
8. **If you are connecting an R2 header configured for grass-seed harvesting:** Connect actuator harness (C) to adapter harness (D).

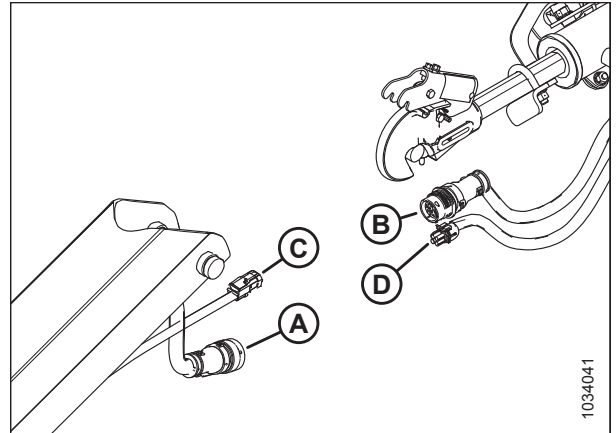


Figure 5.128: Electrical Harness Connection at Center-Link

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

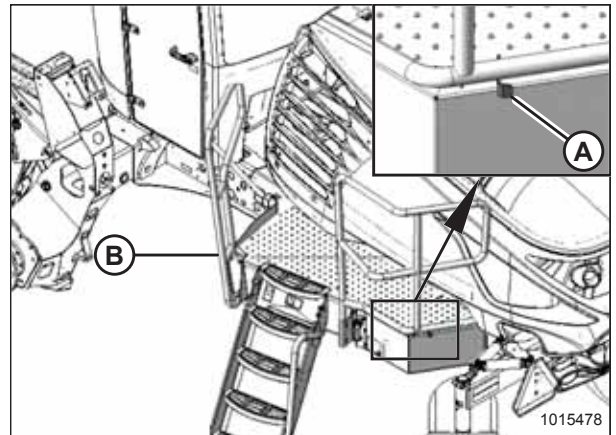


Figure 5.129: Left Cab-Forward Platform

10. Pull platform (A) towards the cab until it stops and the latch is engaged.

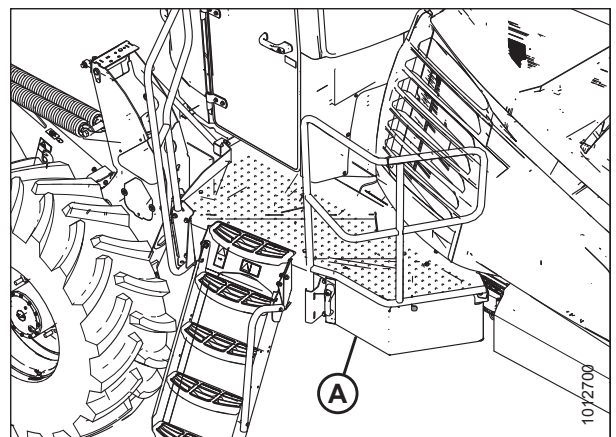


Figure 5.130: Left Cab-Forward Platform

ATTACHING HEADERS TO WINDROWER

DANGER

Check to be sure all bystanders have cleared the area.

11. Start the windrower engine.
12. Extend center-link (A) fully. Ensure that there is some slack in harness (B).
13. Retract center-link (A) fully. Ensure that there is not an excessive amount of harness (B) hanging down.
14. Turn off the windrower engine, and remove the key.
15. Adjust harness (B) as needed.
16. Tighten all the cables along the harness.

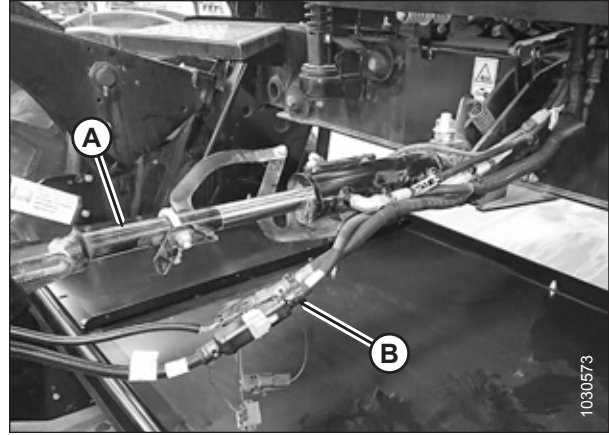


Figure 5.131: Electrical Connection

17. If necessary, calibrate both the knife drive and header position sensors on the windrower. Calibrate both the knife drive and header position sensors whenever you are:
 - Attaching the header to the windrower for the first time
 - Changing the speed sensor or hydraulic drive motor on the header
 - Changing the header drive pump associated with the knife drive, Harvest Performance Tracker (HPT), or the master controller on the windrower

For instructions, refer to [5.7.1 Calibrating the Knife Drive on the Harvest Performance Tracker Display, page 139](#) and [5.7.2 Calibrating Header Position Sensors on the Harvest Performance Tracker Display, page 142](#).

Rotary Disc Only Configuration – Quick Coupler Connections

The rotary disc 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.

IMPORTANT:

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

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

NOTE:

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

2. 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.

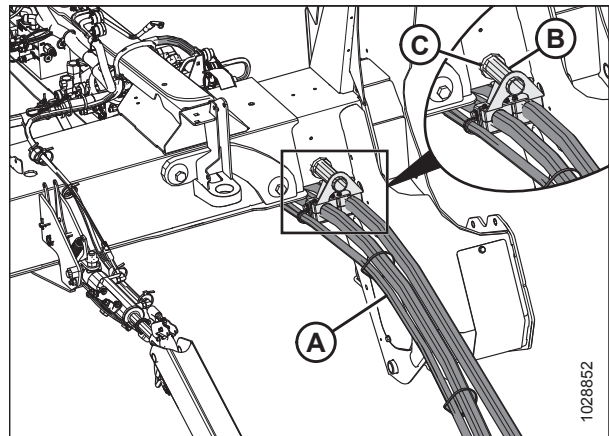


Figure 5.132: Hose Support Attachment

ATTACHING HEADERS TO WINDROWER

3. 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 (MD #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).

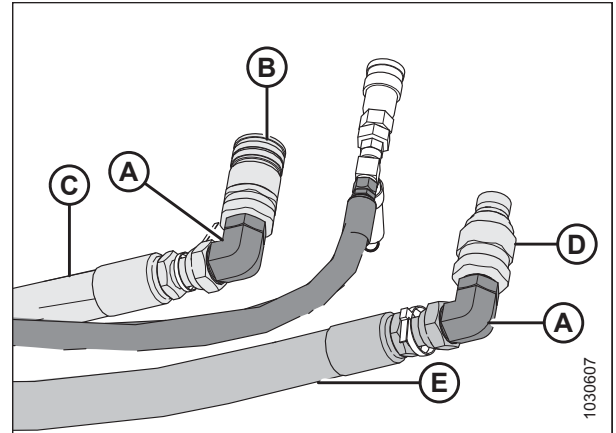


Figure 5.133: Header Hydraulic Fittings

4. Connect the header's hydraulic hoses to the windrower as follows:

- a. Connect disc pressure hose (A) with coupler (B) as shown.
- b. Connect disc return hose (C) with 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.

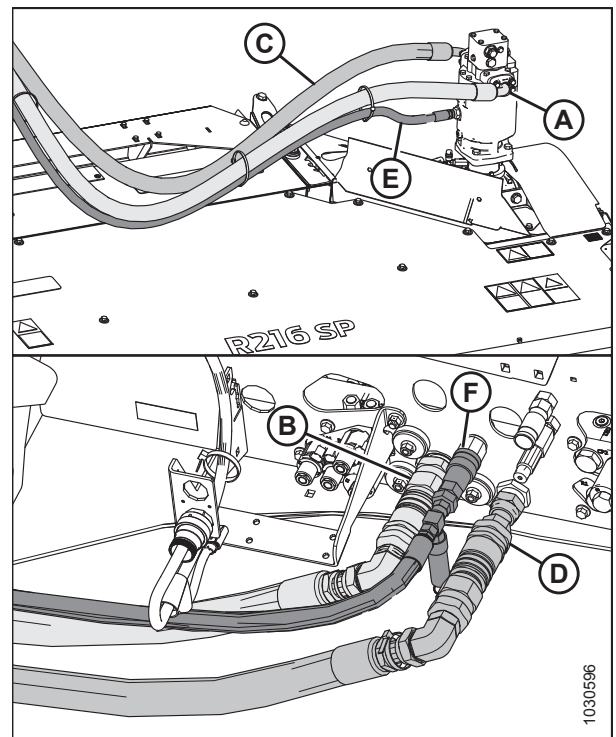


Figure 5.134: Hydraulics and Electrical – Rotary Disc Configuration with Quick Couplers Installed

ATTACHING HEADERS TO WINDROWER

5. **Grass seed header:** Connect the additional four hoses supplied with the grass seed version of the header as follows:

- a. Remove the plug (not shown) from drive manifold port R1. 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. Remove the plug (not shown) from drive manifold port CP2. 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.

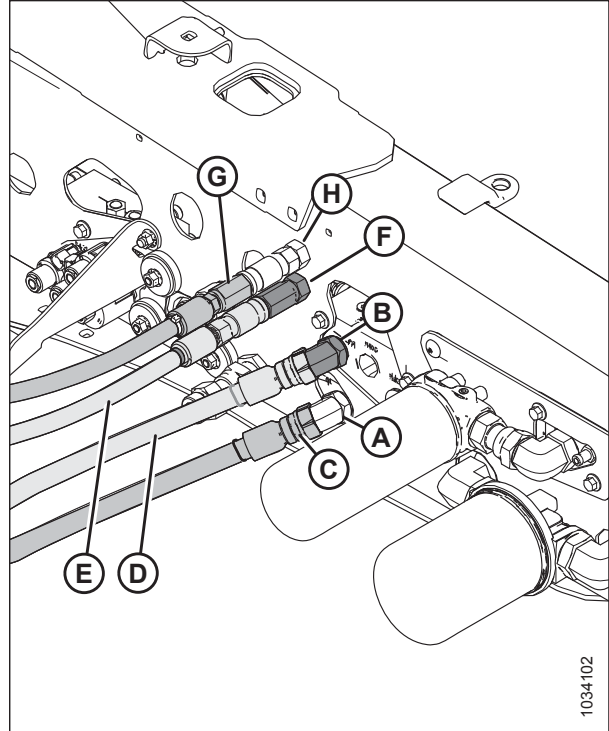


Figure 5.135: Grass Seed Hydraulic Connections – Rotary Disc Configuration

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

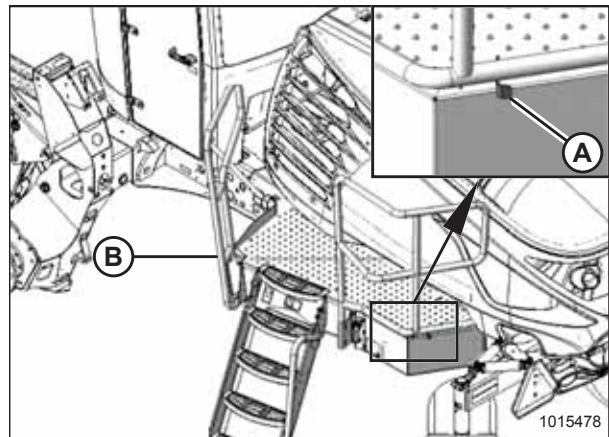


Figure 5.136: Left Cab-Forward Platform

ATTACHING HEADERS TO WINDROWER

7. Pull platform (A) towards the cab until it stops and the latch is engaged.

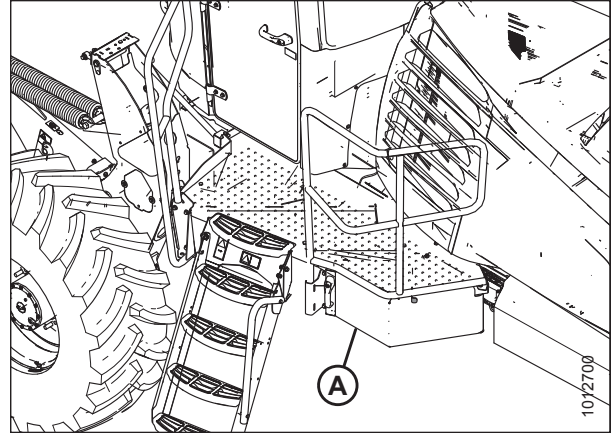


Figure 5.137: Left Cab-Forward Platform

DANGER

Check to be sure all bystanders have cleared the area.

8. Start the windrower engine.
9. Extend center-link (A) fully. Ensure that there is some slack in harness (B).
10. Retract center-link (A) fully. Ensure that there is not an excessive amount of harness (B) hanging down.
11. Turn off the windrower engine, and remove the key.
12. Adjust harness (B) as needed.
13. Tighten all the cables along the harness.

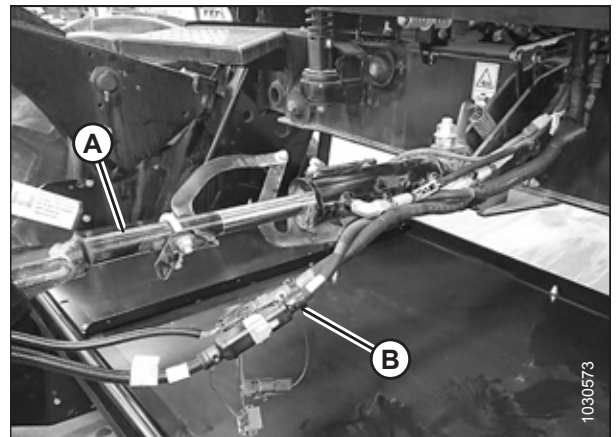


Figure 5.138: Electrical Connection

14. If necessary, calibrate both the knife drive and header position sensors on the windrower. Calibrate both the knife drive and header position sensors whenever you are:
 - Attaching the header to the windrower for the first time
 - Changing the speed sensor or hydraulic drive motor on the header
 - Changing the header drive pump associated with the knife drive, Harvest Performance Tracker (HPT), or the master controller on the windrower

For instructions, refer to [5.7.1 Calibrating the Knife Drive on the Harvest Performance Tracker Display, page 139](#) and [5.7.2 Calibrating Header Position Sensors on the Harvest Performance Tracker Display, page 142](#).

5.5 R85 Rotary Disc Header

This section details the procedures necessary to physically attach an R85 4.9 m (16 ft.) rotary disc header to a windrower and to attach its hydraulic and electrical connections.

5.5.1 Attaching R85 Rotary Disc Header

The windrower may have an optional self-aligning hydraulic center-link, which allows control over the vertical position of the center-link from the cab. If the windrower is so equipped, the procedure for attaching an R85 header will be slightly different.

DANGER

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

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

IMPORTANT:

Remove the protective cover from the exhaust stack prior to starting the engine.

DANGER

Check to be sure all bystanders have cleared the area.

2. Start the engine.

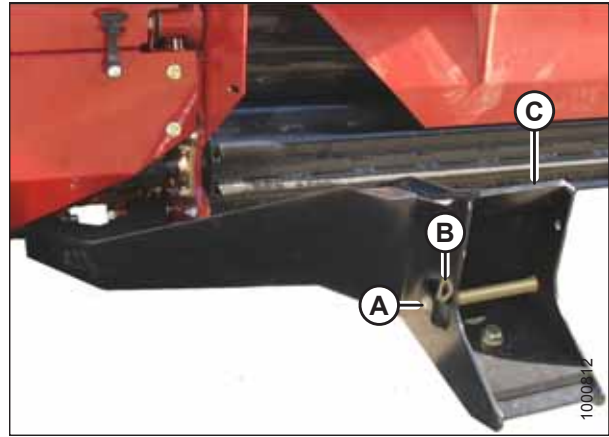


Figure 5.139: Header Support

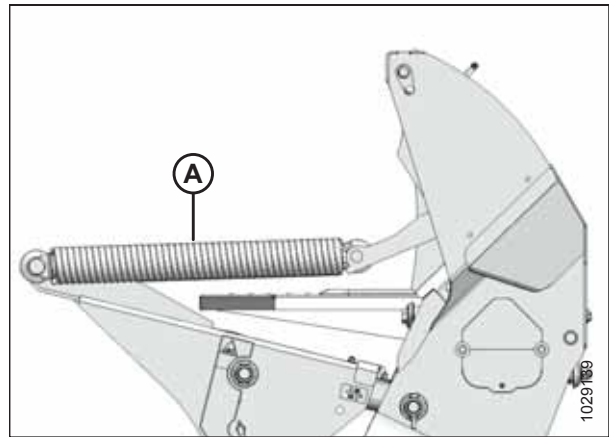


Figure 5.140: Header Float Spring

IMPORTANT:

To prevent damage to the header lift linkages when lowering the header lift legs without a header or weight box attached to the windrower, ensure that the tension on float springs (A) is fully released.

ATTACHING HEADERS TO WINDROWER

If you are not prompted by the Harvest Performance Tracker (HPT) display to remove the float, then remove the float manually as follows:

3. Press rotary scroll knob (A) on the HPT to highlight the QuickMenu options.
4. Rotate scroll knob (A) to highlight HEADER FLOAT symbol (B), and press the scroll knob to select it.



Figure 5.141: HPT Display

5. On the FLOAT ADJUST page, press soft key 3 (A) to remove the header float.

NOTE:

If the header float is active, the icon at soft key 3 will say REMOVE FLOAT; if the header float has been removed, then the icon will say RESUME FLOAT.



Figure 5.142: HPT Display

6. Press HEADER DOWN switch (E) on the ground speed lever (GSL) to fully retract the header lift cylinders.
7. Press REEL UP switch (B) on the GSL to raise the center-link until the hook is above the attachment pin on the header.

IMPORTANT:

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

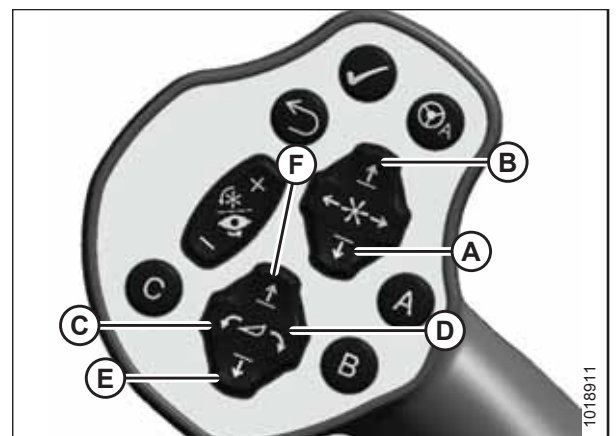


Figure 5.143: GSL

- | | |
|----------------------|--------------------|
| A - Reel Down | B - Reel Up |
| C - Header Tilt Down | D - Header Tilt Up |
| E - Header Down | F - Header Up |

ATTACHING HEADERS TO WINDROWER

8. Slowly drive the windrower forward until windrower feet (A) enter header supports (B). Continue to drive forward slowly until the feet engage the supports and the header is nudged forward.
9. Ensure that the lift linkages are properly engaged in the header legs.

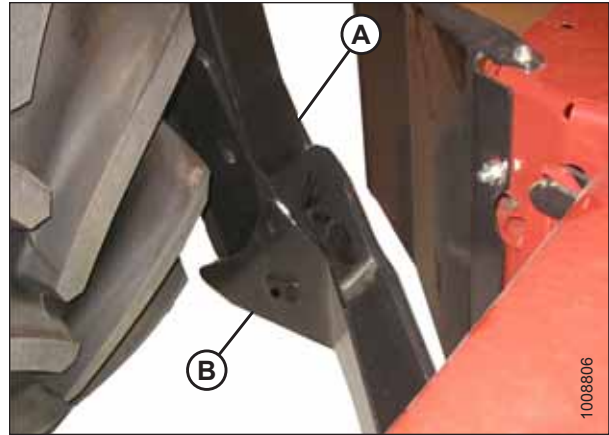


Figure 5.144: Header Support

10. Adjust the position of center-link cylinder (A) with the switches on the GSL until hook (B) is above the header attachment pin.

IMPORTANT:

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

11. Lower center-link (A) onto the header with the REEL DOWN switch on GSL until it locks into position. When this happens, hook release (C) will be in the down position. Refer to Figure 5.143, page 131 for an illustration of the GSL controls.
12. Ensure that the center-link is locked onto the header by pressing the REEL UP switch on the GSL. Refer to Figure 5.143, page 131 for an illustration of the GSL controls.

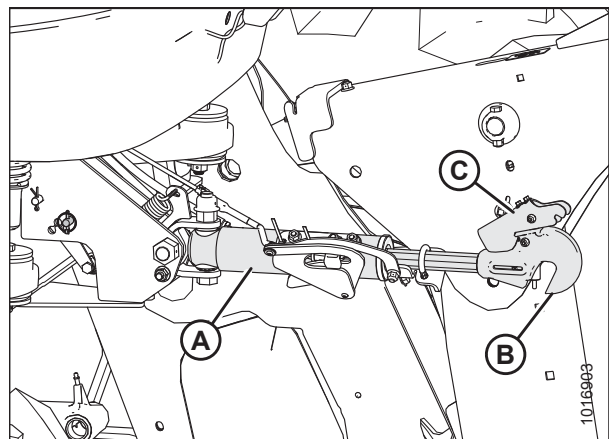


Figure 5.145: Center-Link

DANGER

Check to be sure all bystanders have cleared the area.

13. Start the engine.
14. Press HEADER UP switch (A) to raise the header to its maximum height.
15. 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.
16. Shut down the engine, and remove the key from the ignition.



Figure 5.146: GSL

ATTACHING HEADERS TO WINDROWER

17. Engage the safety props on both lift cylinders as follows:
 - a. Pull lever (A) toward you to release it, and 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.

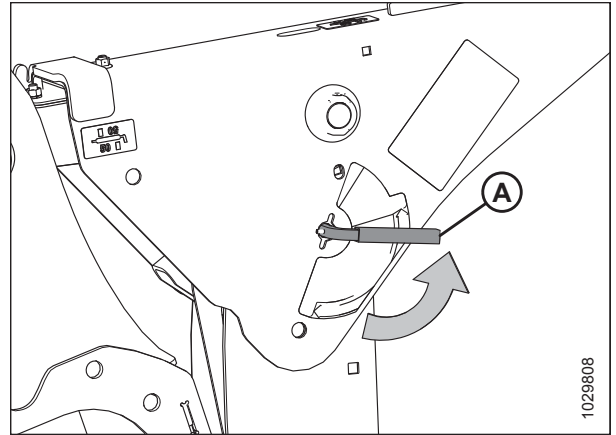


Figure 5.147: Safety Prop Lever

18. Install clevis pin (A) through the support and foot, and secure it with hairpin (B). Repeat this step to install the clevis pin 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.

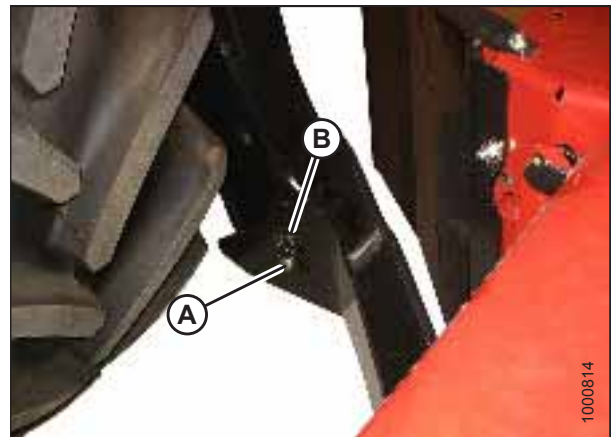


Figure 5.148: Header Support

19. 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.

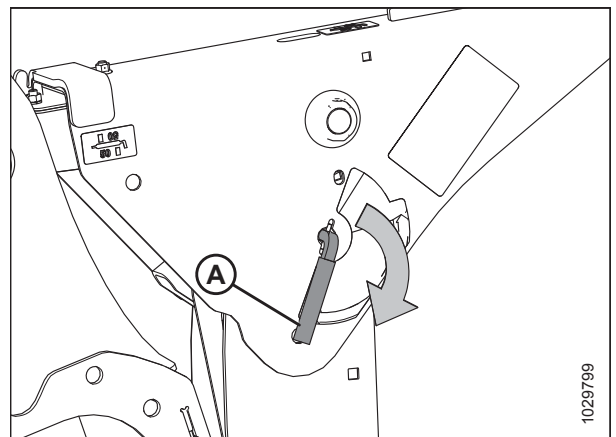


Figure 5.149: Safety Prop Lever

ATTACHING HEADERS TO WINDROWER

DANGER

Check to be sure all bystanders have cleared the area.

20. Start the engine and press HEADER DOWN switch (A) on the GSL to fully lower the header.

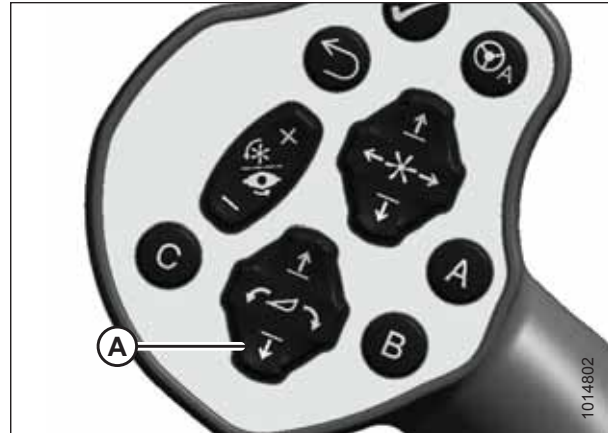


Figure 5.150: GSL

21. Press rotary scroll knob (A) on the HPT to highlight the QuickMenu options.
22. Rotate scroll knob (A) to highlight HEADER FLOAT symbol (B), and press scroll knob to select it.



Figure 5.151: HPT Display

23. Turn scroll knob (A) to highlight the left or right float setting and press knob (A) to activate the selection.
24. Rotate scroll knob (A) to adjust the float setting and press the knob when you are finished.

NOTE:

Float adjustments of 1.0 (out of 10) change the header weight at the cutterbar by approximately 91 kg (200 lb.). Adjust the float in increments of 0.05 for best performance.

25. Shut down the engine, and remove the key from the ignition.
26. Grasp one end of the rotary header and lift. The lifting force should be 448 N (100 lbf) and should be the same at both ends.



Figure 5.152: HPT Display

5.5.2 Connecting R85 Rotary Disc Header Hydraulics

The procedure for attaching the R85's hydraulic connections to the windrower differs depending on the type of hydraulic fittings the windrower is equipped with.

IMPORTANT:

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

ATTACHING HEADERS TO WINDROWER

1. Approach platform (A) on the left cab-forward side of the windrower and ensure the cab door is closed.
2. Push latch (B), and pull platform (A) toward the walking beam until it stops and the latch engages.

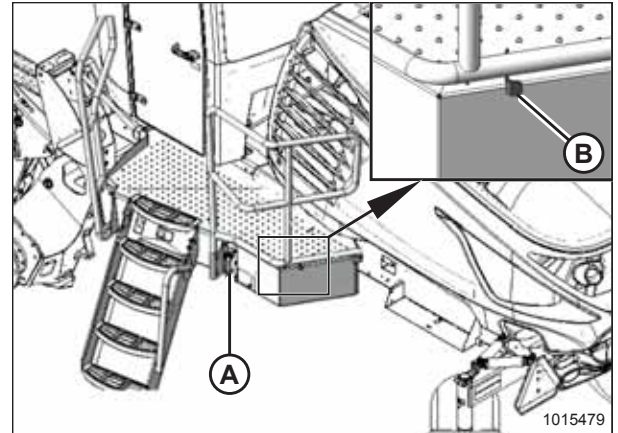


Figure 5.153: Left Cab-Forward Platform

3. Route hose bundle (A) from the header to the underside of the windrower frame.

IMPORTANT:

Route the hoses as straight as possible. To prevent damage to hoses from abrasion, ensure that the hoses are not in contact with rub or wear points.

4. Insert pin (B) into hole (C) in the windrower frame. Place hose bundle on support (D).

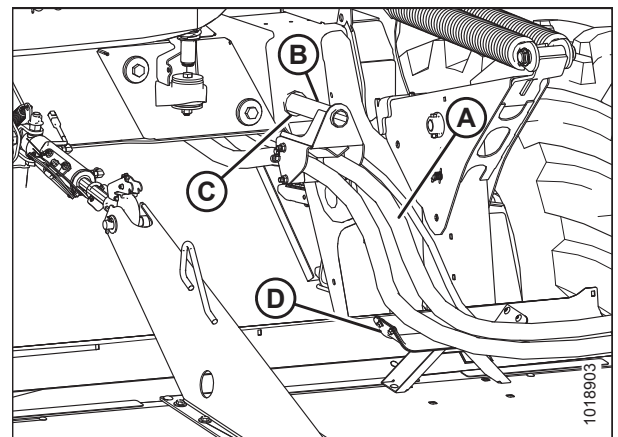


Figure 5.154: Hose and Electrical Routing

5. **Windrowers configured for both rotary disc and draper headers only:** Disconnect hose (A) from windrower receptacle (B) and place it in storage cup (C) on the multicoupler.

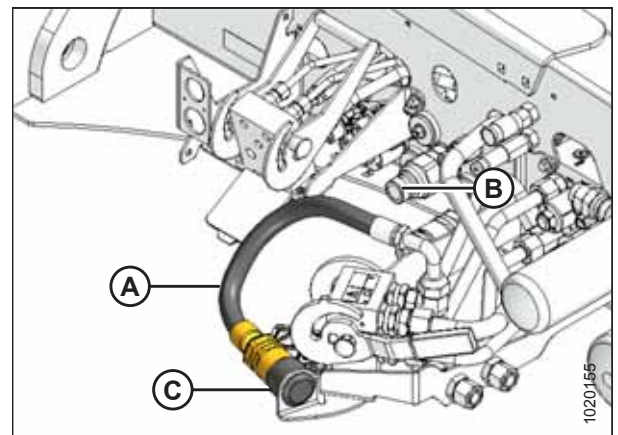


Figure 5.155: Knife Drive Hose on Rotary Disc and Draper Ready Windrower

ATTACHING HEADERS TO WINDROWER

6. Windrowers equipped with quick-disconnect fittings:

NOTE:

If the hoses are not equipped with quick-disconnect fittings, they can be attached directly to the windrower fittings as described in Step 7, [page 136](#).

NOTE:

Some parts have been removed from the illustration for the sake of clarity.

- Connect disc pressure hose (A) (indicated by its red cable tie) to receptacle (B).
- Connect disc return hose (C) to receptacle (D).
- Connect case drain hose (E) to receptacle (F).
- Connect the header's electrical harness to receptacle (G).

NOTE:

Ensure that the hydraulic hoses have sufficient slack to clear the multicoupler without coming into contact with it. If necessary, increase the slack in the hoses by loosening the hose holder at the windrower frame and moving the hoses as required.

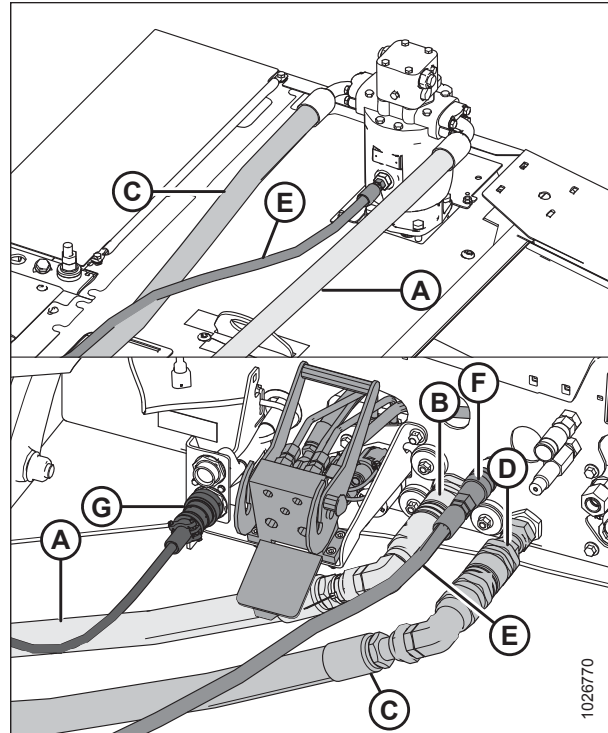


Figure 5.156: Quick-Disconnect Hydraulic and Electrical Connections

7. Windrowers equipped with hard-plumbed fittings:

NOTE:

Some parts have been removed from the illustration for the sake of clarity.

- Attach the disc pressure hose (A) to fitting on frame and torque to 205–226 Nm (151–167 lbf·ft).
- Connect the disc return hose (B) to fitting on frame and torque to 205–226 Nm (151–167 lbf·ft).
- Connect the case drain hose (C) to fitting on frame and tighten.
- Connect the electrical harness to receptacle (D).

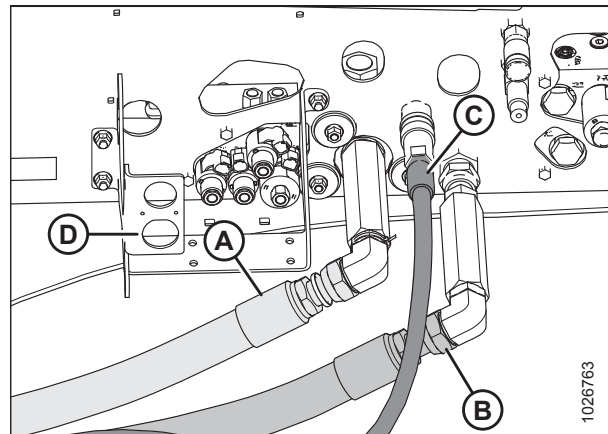


Figure 5.157: Hard-Plumbed Hydraulic and Electrical Connections on a Rotary Disc Ready Windrower

ATTACHING HEADERS TO WINDROWER

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

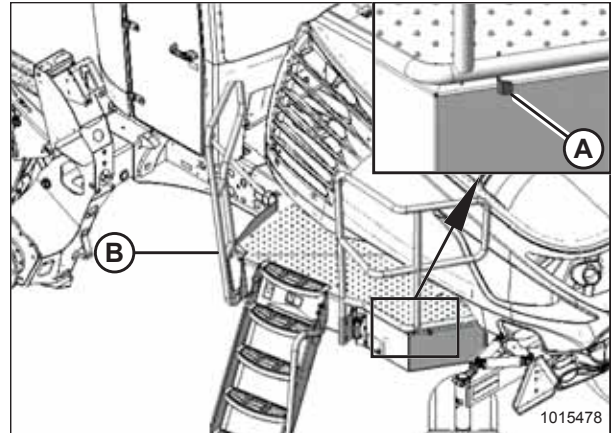


Figure 5.158: Left Cab-Forward Platform

9. Pull platform (A) towards the cab until it stops and the latch is engaged.

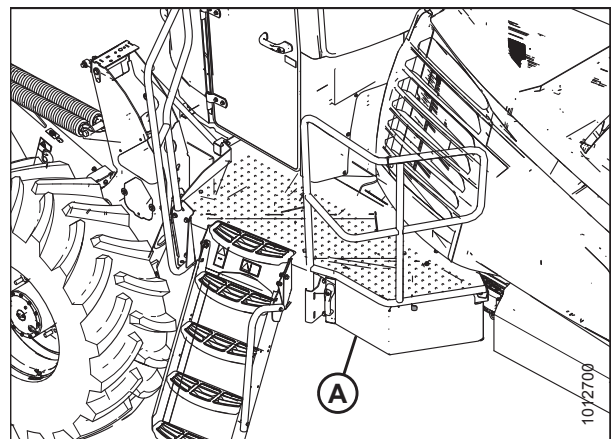


Figure 5.159: Left Cab-Forward Platform

5.6 Adjusting Header Settings on Harvest Performance Tracker

Before operating the header, ensure that the Harvest Performance Tracker (HPT) settings are appropriate for your header.

1. Navigate to the SETTINGS menu using soft key 5 and the HPT scroll knob. For instructions, refer to *Navigating the Harvest Performance Tracker, page 60*.

2. Scroll to SET-UP HEADER option (A) and press the scroll knob to select it.

NOTE:

The settings displayed will vary depending on the type of header attached to the windrower.

3. Scroll to highlight the appropriate option and press the scroll knob to select it.

For example, if a draper header is attached, and ATTACHMENTS (B) is selected, the available choice is DOUBLE DRAPER DRIVE.

4. After completing the SETTINGS, proceed to *5.7 Header System Calibration, page 139*, and *5.7.1 Calibrating the Knife Drive on the Harvest Performance Tracker Display, page 139*.

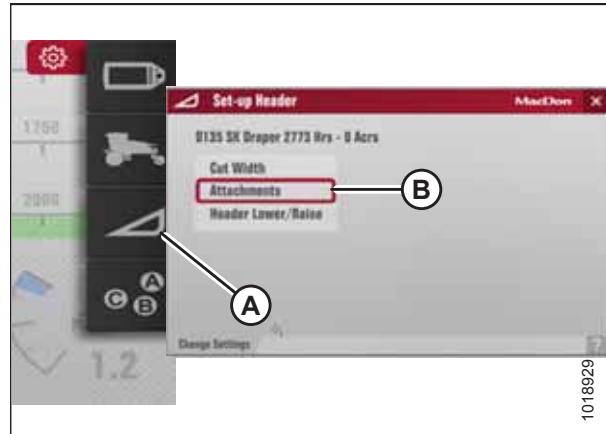


Figure 5.160: Header Settings

5.7 Header System Calibration

The Harvest Performance Tracker (HPT) 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 HPT 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

5.7.1 Calibrating the Knife Drive on the Harvest Performance Tracker Display

When a header is attached to a windrower, the Harvest Performance Tracker (HPT) will recognize the header ID and configure the windrower accordingly. The header must be calibrated to ensure that the knife drive pump output is accurate.

DANGER

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

1. Start the engine.
2. Press soft key 5 (A) to open the Harvest Performance Tracker (HPT) main menu.

NOTE:

Calibrations **MUST** be performed with the engine running. Some calibrations will not be available with the engine off.

3. Use HPT scroll knob (B) or the ground speed lever (GSL) scroll wheel (not shown) to highlight SETTINGS icon (C).
4. Press HPT scroll knob (B) or the GSL SELECT button (not shown) to activate the settings menu options.

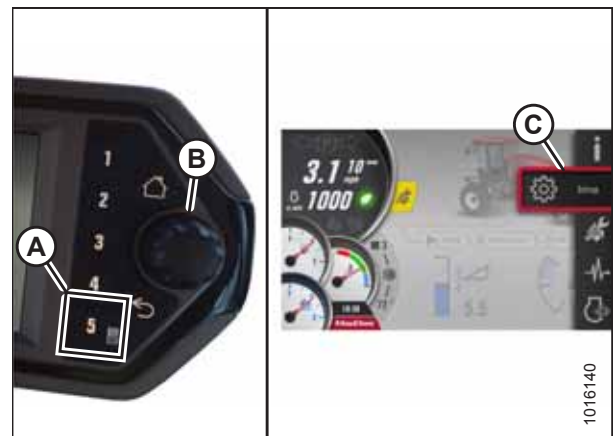


Figure 5.161: Opening the Main Menu

ATTACHING HEADERS TO WINDROWER

5. Scroll to WINDROWER SETTINGS icon (A) and press SELECT.
6. Scroll to CALIBRATION icon (B), and press SELECT to open the Calibration Selection screen.

NOTE:

The F3 shortcut button on the operator's console will also open the WINDROWER SETTINGS menu.

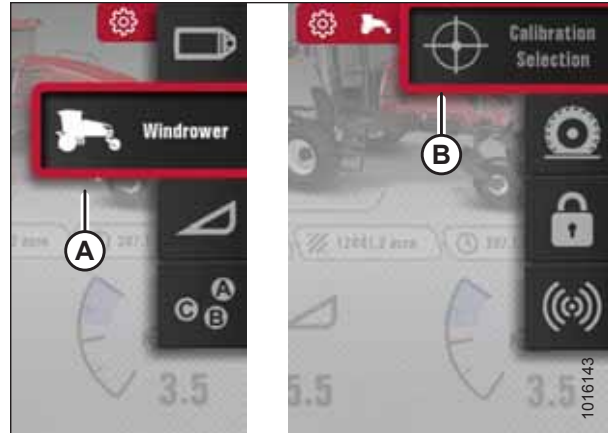


Figure 5.162: Windrower Settings Icon and Calibration Submenu Icon

7. In the Calibration Selection screen, scroll to KNIFE DRIVE (A) and press SELECT.
8. Engage the header.

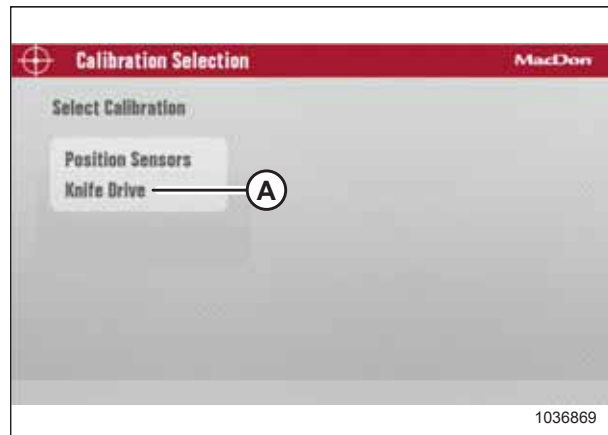


Figure 5.163: Calibration Selection Screen

NOTE:

If calibration is selected while the header is disengaged, WARNING (A) will appear. Engage the header. PLAY icon (B) appears after you engage the header.

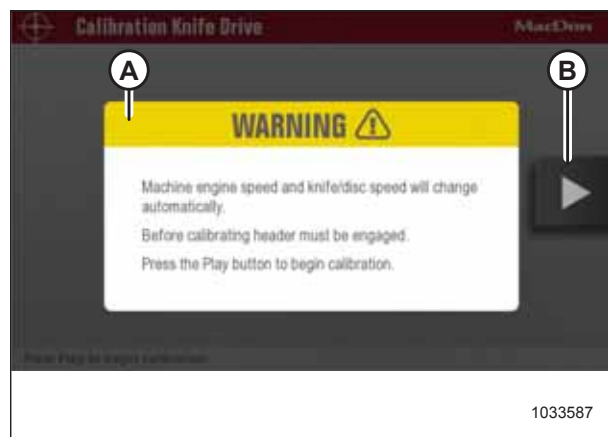


Figure 5.164: Engage Header Warning

ATTACHING HEADERS TO WINDROWER

10. Press the PLAY icon on the screen to begin the calibration process. The display on the screen changes to show that the calibration procedure has started.

NOTE:

If the engine speed is less than 1500 rpm prior to starting the calibration procedure, the system will raise the engine speed to 1500 rpm.



Figure 5.165: Calibration Screen

11. When Stage 1 of the calibration is complete, press PLAY icon (A) on the screen to continue with Stage 2 of the calibration process.

NOTE:

Knife drive calibration consists of nine stages.



Figure 5.166: Calibration Page

12. Press the PLAY icon to begin the calibration process.

NOTE:

During the calibration procedure, the windrower's computer will vary the engine rpm and header speed.

NOTE:

Press X icon (A) on the screen or use the HEADER DISENGAGE switch at any time during the calibration process to exit the calibration procedure without saving your progress. The engine speed will return to the original rpm prior to starting the calibration process.



Figure 5.167: Calibration Page

NOTE:

If error message (A) appears when calibrating the knife drive system, follow the instructions in the message to fix the error. Press X (B) to exit the message. If the knife calibration fails:

- Confirm that the engine and 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 engine is not de-rated 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.

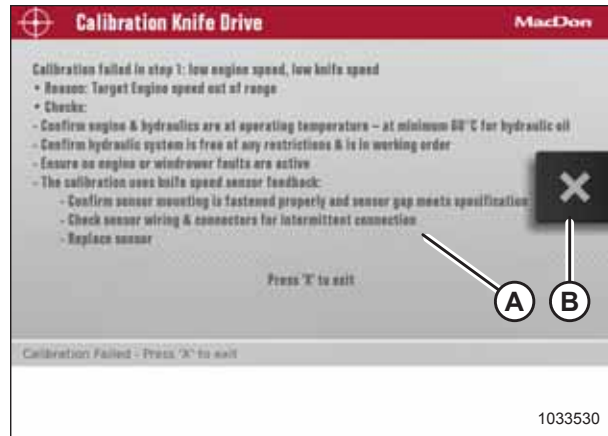


Figure 5.168: Calibration Page

5.7.2 Calibrating Header Position Sensors on the Harvest Performance Tracker Display

The header position sensors need to be recalibrated whenever the Harvest Performance Tracker (HPT) 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

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

1. Start the engine.
2. Press soft key 5 (A) to open the Harvest Performance Tracker (HPT) main menu.

NOTE:

Calibrations **MUST** be performed with the engine running. Some calibrations will not be available with the engine off.

3. Use HPT scroll knob (B) or the ground speed lever (GSL) scroll wheel (not shown) to highlight SETTINGS icon (C).
4. Press HPT scroll knob (B) or the GSL SELECT button (not shown) to activate the settings menu options.

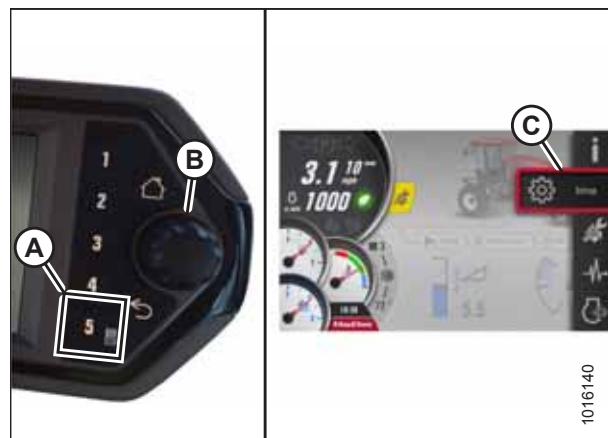


Figure 5.169: Opening the Main Menu

ATTACHING HEADERS TO WINDROWER

5. Scroll to WINDROWER SETTINGS icon (A) and press SELECT.
6. Scroll to CALIBRATION icon (B), and press SELECT to open the Calibration Selection screen.

NOTE:

The F3 shortcut button on the operator's console will also open the WINDROWER SETTINGS menu.

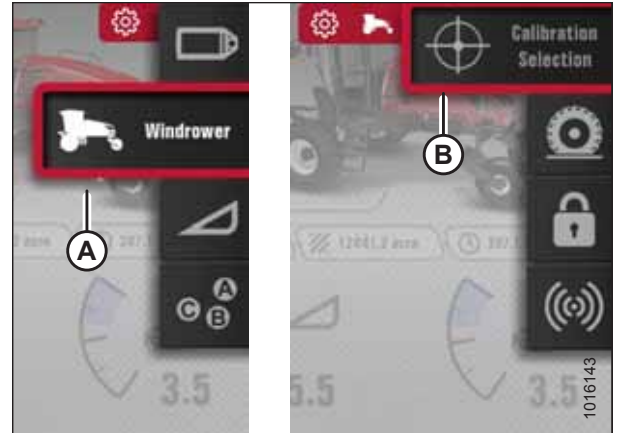


Figure 5.170: Windrower Settings Icon and Calibration Submenu Icon

7. In the Calibration Selection screen, scroll to POSITION SENSORS (A) and press SELECT.

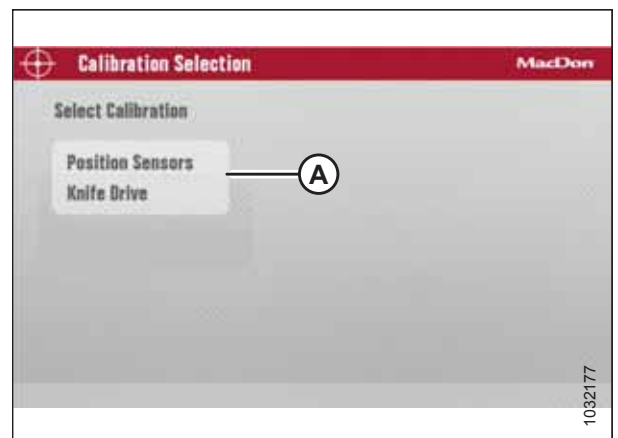


Figure 5.171: Calibration Selection Screen

NOTE:

Pressing X icon (A) on the screen (or pressing the HOME, BACK or any GSL button [buttons not shown]) at any time during the calibration process will EXIT the calibration procedure without saving your progress. The engine speed will also return to the original rpm prior to 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.

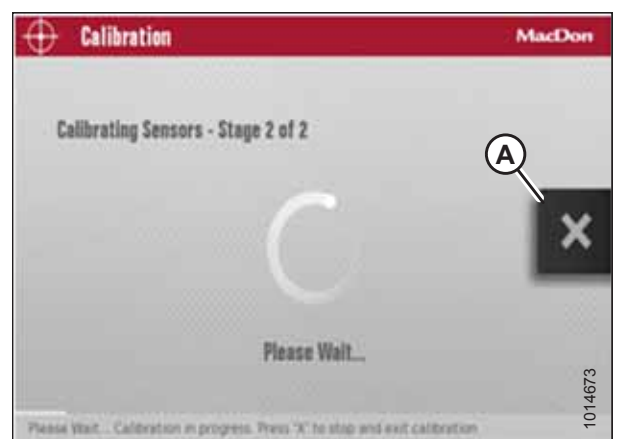


Figure 5.172: Calibration Screen

ATTACHING HEADERS TO WINDROWER

- When stage one of the calibration is complete, press PLAY icon (A) on the screen to continue with stage two of the calibration process.



Figure 5.173: Calibration Screen

- When stage two of the calibration is complete, press RESUME icon (A) on the screen to configure the HEADER FLOAT setting, or press HOME or BACK button (not shown) to exit.

NOTE:

The engine speed returns to the speed prior to calibration when stage two calibration is complete.



Figure 5.174: Calibration Screen

NOTE:

If the voltage of any sensor falls below its acceptable range during calibration, a message appears after completing the calibration with a list of sensors reporting out-of-range voltages. Adjust the sensors as needed and repeat the calibration process from the beginning.



Figure 5.175: Sample of Failed Calibration Display Message

Chapter 6: Reference

The reference section provides additional information on topics such as lubricants, fluids and their system capacities, fuel and torque specifications, and converting between metric and SAE measurement. It also details the acronyms, abbreviations, and technical terminology used in this publication.

6.1 Lubricants, Fluids, and System Capacities

To prevent damage to the machine, do not exceed the stated capacity when filling a fluid reservoir.



WARNING

To avoid injury or death, do NOT allow ANY machine fluids to enter the body.

Table 6.1 System Capacities

| Lubricant/Fluid | Location | Description | Capacity |
|------------------------------|----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|
| Diesel exhaust fluid (DEF) | Diesel exhaust fluid tank | Must meet ISO 22241 requirements. | 28 liters (7.5 U.S. gallons) |
| Grease | As required unless otherwise specified | SAE multi-purpose high temperature extreme pressure (EP2) performance with 1% max molybdenum disulphide (NLGI Grade 2) lithium base | As required unless otherwise specified |
| Diesel fuel | Fuel tank | Ultra low sulphur diesel (ULSD) Grade No. 2, or ULSD Grade No. 1 and 2 mix ² ; refer to 6.2 Fuel Specifications, page 147 for more information | 518 liters (137 U.S. gallons) |
| Hydraulic oil | Hydraulic reservoir | Single grade transmission/hydraulic fluid (THF) Recommend Viscosity: <ul style="list-style-type: none"> • 60.1 cSt @ 40°C • 9.5 cSt @ 100°C | 60 liters (15.8 U.S. gallons) ³ |
| Gear lubricant | Gearbox | SAE 75W-140 or 80W-140, API service class GL-5 fully synthetic gear lubricant (SAE J2360 preferred) | 2.3 liters (2.4 U.S. quarts) |
| Gear 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) |
| Gear 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) |
| Antifreeze | Engine cooling system | ASTM D-6210 and Fleetguard ES Compleat ^{®4} | 33 liters (8.7 U.S. gallons) ⁵ |
| Engine oil | Engine oil pan | SAE 15W-40 compliant with SAE specs for API Class SJ and CJ-4 engine oil | 14 liters (14.8 U.S. quarts) |
| Air conditioning refrigerant | Air conditioning system | R134A | 2.38 kg (5.25 lb.) |

2. Optional when operating temperature is below 0°C (32°F).

3. Denotes capacity of a dry system. Refill capacity is 58 liters (15 U.S. gallons).

4. See comments on next page

5. Equal parts with water; high quality, soft, deionized or distilled water as recommended by Supplier.

REFERENCE

Table 6.1 System Capacities (continued)

| Lubricant/Fluid | Location | Description | Capacity |
|----------------------------------|----------------------------------------|--------------------|--------------------------|
| 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) |

If Fleetguard ES Compleat® is unavailable: use a coolant concentrate or prediluted coolant intended for use with heavy duty diesel engines and with a minimum of 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.

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 to 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.

6.2 Fuel Specifications

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.

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 ⁶ | 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 147](#).

6. Optional when operating temperature is below 0°C (32°F).

6.3 Torque Specifications

The following tables provide torque values for various bolts, cap screws, and hydraulic fittings. Use these values only when no other torque value has been specified in a given procedure.

- Tighten all bolts to the torque values specified in the charts below, unless you are directed otherwise in this manual.
- Replace removed hardware with hardware of the same strength and grade.
- Use the torque value tables as a guide when periodically checking the tightness of bolts.
- Understand the torque categories for bolts and cap screws by reading the markings on their heads.

Jam nuts

Jam nuts require less torque than nuts used for other purposes. When applying torque to finished jam nuts, multiply the torque applied to regular nuts by $f=0.65$.

Self-tapping screws

Use the standard torque values when installing self-tapping screws. Do **NOT** install self-tapping screws on structural or otherwise critical joints.

6.3.1 Metric Bolt Specifications

The torque values provided in the following metric bolt torque tables apply to hardware installed dry; that is, hardware with no grease, oil, or threadlocker on the threads or heads. Do **NOT** grease or oil bolts or cap screws unless directed to do so in this manual.

Table 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 |

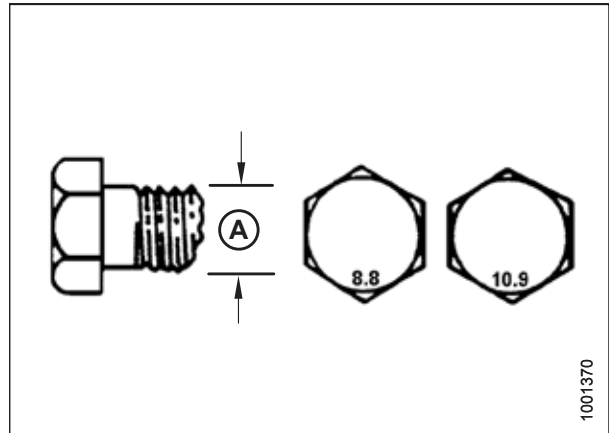


Figure 6.1: Bolt Grades

REFERENCE

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 |

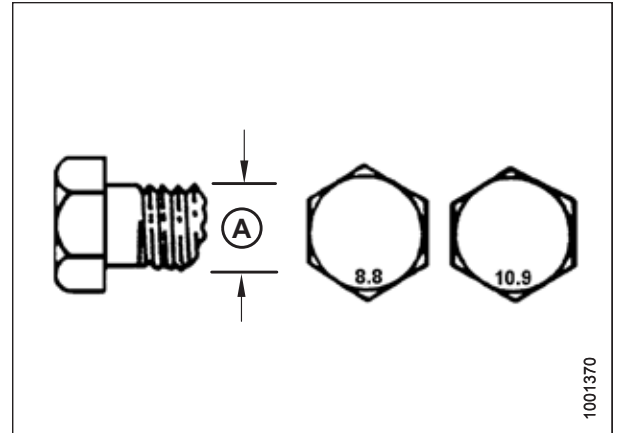


Figure 6.2: Bolt Grades

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 |

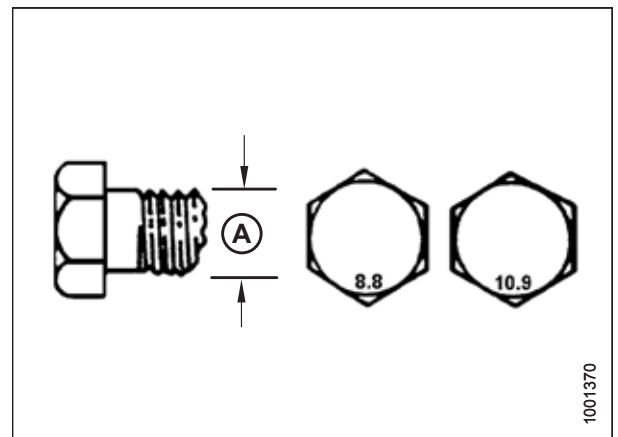


Figure 6.3: Bolt Grades

REFERENCE

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 |

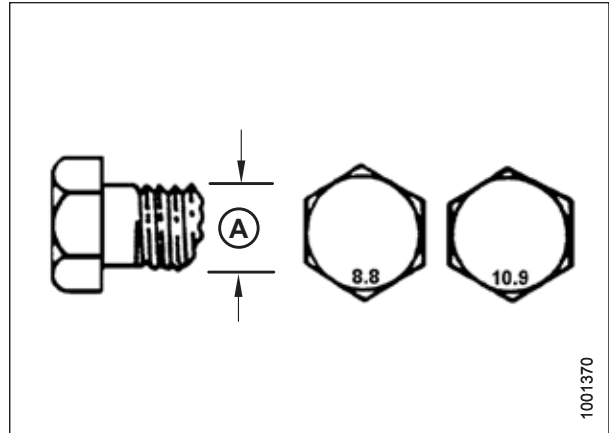


Figure 6.4: Bolt Grades

6.3.2 Metric Bolt Specifications Bolting into Cast Aluminum

Torque values shown in following tables are valid for non-greased, or non-oiled threads and heads; therefore, do **NOT** grease or oil bolts or cap screws unless otherwise specified in this manual.

Table 6.7 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 | – | – | – | – |

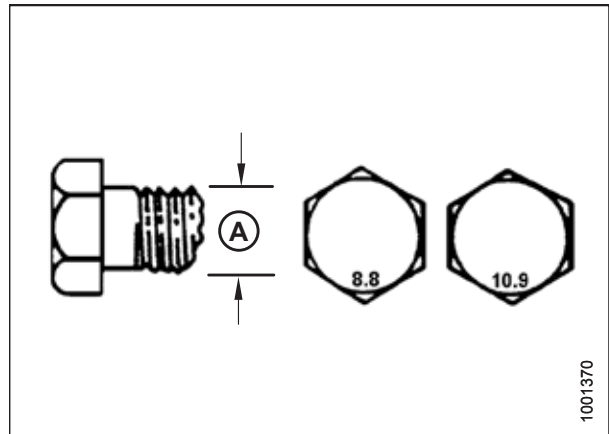


Figure 6.5: Bolt Grades

6.3.3 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, use the value specified in the procedure instead.

1. Inspect O-ring (A) and seat (B) for dirt or obvious defects.
2. Back off lock nut (C) as far as possible. Ensure that washer (D) is loose and is pushed toward lock nut (C) as far as possible.
3. Check that O-ring (A) is **NOT** on the threads. Adjust O-ring (A) if necessary.
4. Apply hydraulic system oil to O-ring (A).

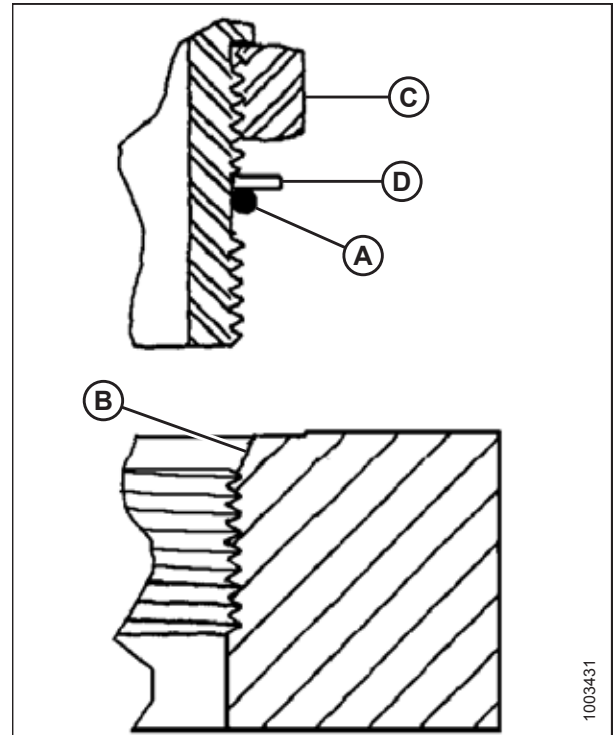


Figure 6.6: Hydraulic Fitting

5. Install fitting (B) into the port until backup washer (D) and O-ring (A) contact part face (E).
6. Position the angle fittings by unscrewing no more than one turn.
7. Turn lock nut (C) down to washer (D) and tighten it to the torque value indicated in the table. Use two wrenches, one on fitting (B) and the other on lock nut (C).
8. Check the final condition of the fitting.

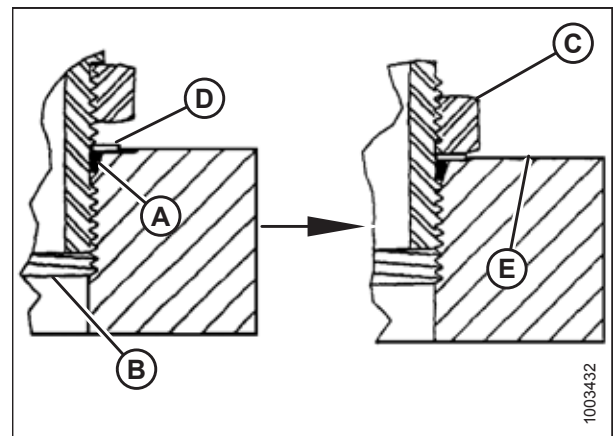


Figure 6.7: Hydraulic Fitting

Table 6.8 O-Ring Boss (ORB) Hydraulic Fittings – Adjustable

| SAE Dash Size | Thread Size (in.) | Torque Value ⁷ | |
|---------------|-------------------|---------------------------|------------------|
| | | Nm | lbf·ft (*lbf·in) |
| -2 | 5/16–24 | 6–7 | *53–62 |
| -3 | 3/8–24 | 12–13 | *106–115 |

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

REFERENCE

Table 6.8 O-Ring Boss (ORB) Hydraulic Fittings – Adjustable (continued)

| SAE Dash Size | Thread Size (in.) | Torque Value ⁸ | |
|---------------|-------------------|---------------------------|------------------|
| | | Nm | lbf·ft (*lbf·in) |
| -4 | 7/16-20 | 19-21 | 14-15 |
| -5 | 1/2-20 | 21-33 | 15-24 |
| -6 | 9/16-18 | 26-29 | 19-21 |
| -8 | 3/4-16 | 46-50 | 34-37 |
| -10 | 7/8-14 | 75-82 | 55-60 |
| -12 | 1 1/16-12 | 120-132 | 88-97 |
| -14 | 1 3/8-12 | 153-168 | 113-124 |
| -16 | 1 5/16-12 | 176-193 | 130-142 |
| -20 | 1 5/8-12 | 221-243 | 163-179 |
| -24 | 1 7/8-12 | 270-298 | 199-220 |
| -32 | 2 1/2-12 | 332-365 | 245-269 |

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

6.3.4 O-Ring Boss Hydraulic Fittings – Non-Adjustable

The standard torque values are provided for non-adjustable hydraulic fittings. If a procedure specifies a different torque value for the same type and size of fitting found in this topic, use the value specified in the procedure instead.

Torque values are shown in following table below.

1. Inspect O-ring (A) and seat (B) for dirt or obvious defects.
2. Check that O-ring (A) is **NOT** on the threads. Adjust O-ring (A) if necessary.
3. Apply hydraulic system oil to the O-ring.
4. Install fitting (C) into the port until the fitting is hand-tight.
5. Torque fitting (C) according to values in Table 6.9, page 153.
6. Check the final condition of the fitting.

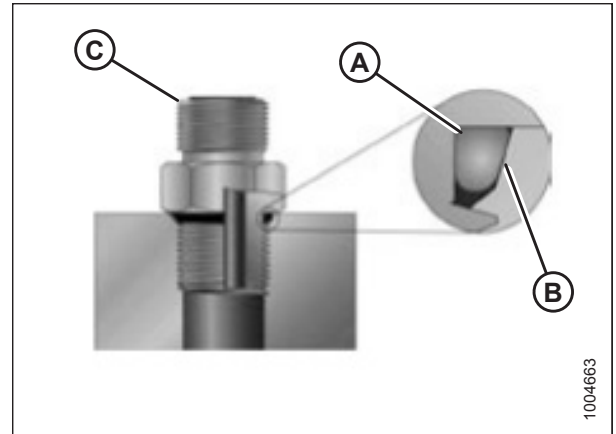


Figure 6.8: Hydraulic Fitting

Table 6.9 O-Ring Boss (ORB) Hydraulic Fittings – Non-Adjustable

| SAE Dash Size | Thread Size (in.) | Torque Value ⁹ | |
|---------------|-------------------|---------------------------|------------------|
| | | Nm | lbf·ft (*lbf·in) |
| -2 | 5/16–24 | 6–7 | *53–62 |
| -3 | 3/8–24 | 12–13 | *106–115 |
| -4 | 7/16–20 | 19–21 | 14–15 |
| -5 | 1/2–20 | 21–33 | 15–24 |
| -6 | 9/16–18 | 26–29 | 19–21 |
| -8 | 3/4–16 | 46–50 | 34–37 |
| -10 | 7/8–14 | 75–82 | 55–60 |
| -12 | 1 1/16–12 | 120–132 | 88–97 |
| -14 | 1 3/8–12 | 153–168 | 113–124 |
| -16 | 1 5/16–12 | 176–193 | 130–142 |
| -20 | 1 5/8–12 | 221–243 | 163–179 |
| -24 | 1 7/8–12 | 270–298 | 199–220 |
| -32 | 2 1/2–12 | 332–365 | 245–269 |

6.3.5 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, use the value specified in the procedure instead.

Torque values are shown in following table below.

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

REFERENCE

1. Check the components to ensure that the sealing surfaces and the fitting threads are free of burrs, nicks, scratches, and any foreign material.



Figure 6.9: Hydraulic Fitting

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 in 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 154.

NOTE:

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

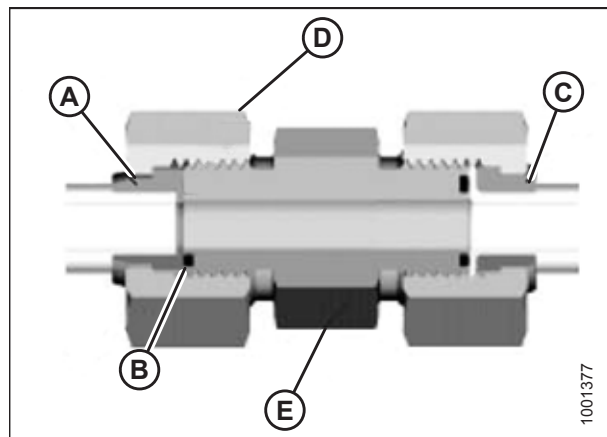


Figure 6.10: Hydraulic Fitting

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

Table 6.10 O-Ring Face Seal (ORFS) Hydraulic Fittings

| SAE Dash Size | Thread Size (in.) | Tube O.D. (in.) | Torque Value ¹⁰ | |
|---------------|--------------------|-----------------|----------------------------|---------|
| | | | Nm | lbf-ft |
| -3 | Note ¹¹ | 3/16 | – | – |
| -4 | 9/16 | 1/4 | 25–28 | 18–21 |
| -5 | Note ¹¹ | 5/16 | – | – |
| -6 | 11/16 | 3/8 | 40–44 | 29–32 |
| -8 | 13/16 | 1/2 | 55–61 | 41–45 |
| -10 | 1 | 5/8 | 80–88 | 59–65 |
| -12 | 1 3/16 | 3/4 | 115–127 | 85–94 |
| -14 | Note ¹¹ | 7/8 | – | – |
| -16 | 1 7/16 | 1 | 150–165 | 111–122 |
| -20 | 1 11/16 | 1 1/4 | 205–226 | 151–167 |

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

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

REFERENCE

Table 6.10 O-Ring Face Seal (ORFS) Hydraulic Fittings (continued)

| SAE Dash Size | Thread Size (in.) | Tube O.D. (in.) | Torque Value ¹² | |
|---------------|-------------------|-----------------|----------------------------|---------|
| | | | Nm | lbf-ft |
| -24 | 1-2 | 1 1/2 | 315-347 | 232-256 |
| -32 | 2 1/2 | 2 | 510-561 | 376-414 |

6.3.6 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, use the value specified in the procedure instead.

Assemble pipe fittings as follows:

1. Check the components to ensure that the fitting and the port threads are free of burrs, nicks, scratches, and any 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.
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 155. Make sure that the tube end of a shaped connector (typically 45° or 90°) is aligned to receive the incoming tube or hose assembly. Always finish the alignment of the fitting in the direction of tightening. Never back off (loosen) the threaded connectors to achieve alignment.
5. Clean all residue and any excess thread conditioner with an appropriate cleaner.
6. Assess the final condition of the fitting. Pay special attention to the possibility of cracks in the port opening.
7. Mark the final position of the fitting. If a fitting leaks, disassemble the fitting and check it for damage.

NOTE:

The failure of fittings due to overtorquing may not be evident until the fittings are disassembled.

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 |

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

6.4 Conversion Chart

Both SI units (including metric) and US customary units (sometimes referred to as standard units) of measurement are used in this manual. A list of those units along with their abbreviations and conversion factors is provided here for your reference.

Table 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. |

6.5 Definitions

The following terms, abbreviations, and acronyms may be used in this instruction.

| Term | Definition |
|---------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| A Series Header | MacDon A40D, A40DX, and Grass Seed auger headers |
| API | American Petroleum Institute |
| ASTM | American Society of Testing and Materials |
| Bolt | A headed and externally threaded fastener that is designed to be paired with a nut |
| Cab-forward | Windrower operation with Operator and cab facing in direction of travel |
| Center-link | A hydraulic cylinder link between the header and machine used to change header angle |
| CGVW | Combined gross vehicle weight |
| D1X Series Header | MacDon D115X, D120X, and D125X rigid draper headers for M1 Series Windrowers |
| D1XL Series Header | MacDon D130XL, D135XL, D140XL, and D145XL rigid draper headers for M1 Series Windrowers |
| D2 Series Header | MacDon D215, D220, D225, D230, D235, D241, and D245 combine draper headers |
| D2 SP Series Header | MacDon D215, D220, D225, D230, D235, D241, and D245 combine draper headers for windrowers |
| DDD | Double-draper drive |
| DEF | Diesel exhaust fluid; also called AdBlue in Europe, and AUS 32 in Australia |
| DEF supply module | Pump that supplies diesel exhaust fluid through system |
| DM | Dosing module |
| DK | Double knife |
| DKD | Double-knife drive |
| DOC | Diesel oxidation catalyst |
| DRT | Aftertreatment decomposition tube |
| DWA | Double Windrow Attachment |
| ECM | Engine control module |
| EEC | Eco engine control |
| Engine-forward | Windrower operation with Operator and engine facing in direction of travel |
| FFFT | Flats from finger tight |
| Finger tight | Finger tight is a reference position where sealing surfaces or components are making contact with each other, and fitting has been tightened to a point where fitting is no longer loose |
| GSL | Ground speed lever |
| GSS | Grass Seed |
| GVW | Gross vehicle weight |
| Hard joint | A joint made with use of a fastener where joining materials are highly incompressible |
| Header | A machine that cuts and lays crop into a windrow and is attached to a windrower |
| Hex key | A tool of hexagonal cross-section used to drive bolts and screws that have a hexagonal socket in head (internal-wrenching hexagon drive); also known as an Allen key and various other synonyms |
| HDS | Hydraulic deck shift |
| hp | Horsepower |
| HPT display | Harvest Performance Tracker display module on an M1 Series Windrower |

REFERENCE

| Term | Definition |
|------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| JIC | Joint Industrial Council: A standards body that developed standard sizing and shape for original 37° flared fitting |
| Knife | A cutting device which uses a reciprocating cutter (also called a sickle) |
| MDS | Mechanical deck shift |
| M1 Series Windrowers | MacDon M1170 and M1240 Windrowers |
| 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 that is designed to be paired with a bolt |
| ORB | O-ring boss: A style of fitting commonly used in port openings on manifolds, pumps, and motors |
| ORFS | O-ring face seal: A style of fitting commonly used for connecting hoses and tubes. This style of fitting is also commonly called ORS, which stands for O-ring seal |
| PARK | The slot opposite the NEUTRAL position on operator's console of M1 Series windrowers |
| R Series | MacDon R80 and R85 Rotary Disc Headers for windrowers |
| R1 SP Series | MacDon R113 and R116 Rotary Disc Headers for windrowers |
| R2 SP Series | MacDon R216 Rotary Disc Headers for windrowers |
| RoHS (Reduction of Hazardous Substances) | A directive by the European Union to restrict use of certain hazardous substances (such as hexavalent chromium used in some yellow zinc platings) |
| 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 into a mating part |
| SDD | Single-drawer drive |
| SK | Single knife |
| SKD | Single-knife drive |
| Soft joint | A joint made with use of a fastener where joining materials are compressible or experience relaxation over a period of time |
| spm | Strokes per minute |
| Tension | Axial load placed on a bolt or screw, usually measured in Newtons (N) or pounds (lb.) |
| TFFT | Turns from finger tight |
| Torque | The product of a force X lever arm length, usually measured in Newton-meters (Nm) or foot-pounds (lbf·ft) |
| Torque angle | A tightening procedure where fitting is assembled to a precondition (finger tight) and then nut is turned farther a number of degrees to achieve its final position |
| Torque-tension | The relationship between assembly torque applied to a piece of hardware and axial load it induces in bolt or screw |
| ULSD | Ultra-low sulphur diesel |
| Washer | A thin cylinder with a hole or slot located in the center that is to be used as a spacer, load distribution element, or locking mechanism |
| Windrower | Power unit for a header |
| WOT | Wide open throttle |

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.



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:

M1240 Windrower Predelivery Checklist

| ✓ | Item | Reference |
|---|--------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
| | Check for shipping damage or missing parts. Be sure all shipping dunnage is removed. | — |
| | Check for loose hardware. Tighten to required torque. | <i>6.3 Torque Specifications, page 148</i> |
| | Check tire air pressures and adjust as required. | <i>4.1.13 Checking Tire Pressure, page 55</i> |
| | Check wheel drive hub lubricant level. | <i>4.1.11 Checking and Adding Wheel Drive Lubricant – 10 Bolt Wheels, page 54</i> |
| | Check engine coolant level and strength at pressurized coolant tank. | <i>4.1.6 Checking Engine Coolant Level, page 46</i> |
| | Check air cleaner and clamps. | <i>4.1.2 Checking Engine Air Intake, page 42</i> |
| | Check engine oil level and check for leaks. | <i>4.1.3 Checking and Adding Engine Oil, page 43</i> |
| | Check hydraulic oil level and check for leaks along lines. | <i>4.1.4 Checking and Adding Hydraulic Oil, page 44</i> |
| | Check fuel separator for water and foreign material, drain and clean as necessary, and add fuel. | <i>4.1.5 Checking Fuel Separator, page 46</i> |
| | Check gearbox lubricant level. | <i>4.1.7 Checking Engine Gearbox Lubricant Level and Adding Lubricant, page 47</i> |
| | Check tension of A/C compressor belt. | <i>4.1.8 Checking Air Conditioning Compressor Belts, page 48</i> |
| | Check that machine is completely lubricated. | <i>3.11.2 Lubrication Points, page 38</i> |
| | Check Operator’s Presence System. | <i>4.1.10 Checking Operating Safety System, page 53</i> |
| | Check horn operation. | <i>4.2.6 Checking Horn, page 69</i> |
| | Start engine and run to operating temperature. | <i>4.1.9 Starting Engine, page 48</i> |
| | Check HPT, fuel, and diesel exhaust fluid (DEF) gauges for operation. | <i>4.2.2 Checking Harvest Performance Tracker Display Gauges, page 59</i> |
| | Check engine speed on HPT. | <i>4.2.3 Checking Engine Speed, page 63</i> |
| | Ensure selective catalytic reduction (SCR) conditioning inhibit is off. | <i>4.2.4 Checking Selective Catalytic Regeneration Conditioning Mode, page 64</i> |
| | Check that air conditioning and heater are functioning properly. | <i>4.2.8 Checking Climate Controls, page 70</i> |
| | Check that interior lights are functioning properly. | <i>4.2.7 Checking Interior Lights, page 70</i> |
| | Check that exterior lights are functioning properly. | <i>4.2.5 Checking Exterior Lights, page 66</i> |
| | Check that hazard and signal lights are functioning properly. | <i>4.2.5 Checking Exterior Lights, page 66</i> |
| | Check that beacons are functioning properly (if installed). | <i>4.2.5 Checking Exterior Lights, page 66</i> |

REFERENCE

| ✓ | Item | Reference |
|---|------------------------------------------------------------------|--------------------------------------------|
| | Complete the header's Predelivery Checklist (if applicable). | — |
| | Check that manuals are in the windrower manual case. | <i>4.3 Checking Manuals, page 73</i> |
| | Remove plastic coverings and windshield decal from cab interior. | <i>4.4 Performing Final Steps, page 74</i> |

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