MacDon

M1 Series Windrowers

Unloading and Assembly Instructions (Container Shipments)

215620 Revision A

Original Instruction

The Harvesting Specialists.

M1 Series Windrowers, featuring Dual Direction® and CrossFlex™ rear suspension

Published November 2021

Introduction

This manual contains unloading, assembly, and pre-delivery information for MacDon M1 Series Windrowers. When coupled with one of the compatible auger, rotary disc, or draper headers, the windrower cuts and lays a variety of grain, hay, and specialty crops in windrows.

If the shipment is damaged or is missing parts, contact the following according to your region:

- Australia: *service@macdon.com.au*
- Brazil: *garantia-brasil@macdon.com*
- Europe (except Russia): *MarketingEurope@macdon.com*
- Russia: *shortageanddamage@macdon.com*

The windrower is Dual Direction® and can be driven in cab-forward or engine-forward mode.

Right and left designations are determined by the operator's position facing the direction of travel. 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.

NOTE:

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

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
2.2.1 Moving to Assembly Area – Crane Method, page 24 • Figure *2.2, page 24*	Updated illustration to show new sling assembly.	ECN 61555
—	Removed topic titled “Removing Drive Wheel Rim Assembly” because currently rims are not shipped as described.	Product Support
2.3 Removing Caster Wheel Shipping Assembly, page 29 • Step *1, page 29*	Added step to identify caster wheel assembly.	Technical Publications
2.6 Removing Wheel Leg Assemblies, page 38 • Step *6, page 38*	Revised step and added IMPORTANT to specify that temporary nuts cannot be reused to install drive wheels.	Product Support
3.1 Lifting Windrower onto Assembly Stand, page 43	Changed the entire procedure because the lift stands have changed.	ECN 62447
3.18 Removing Windrower from Assembly Stand, page 93	Changed the entire procedure because the lift stands have changed.	ECN 62447
4.1.1 Recording Serial Numbers, page 95 • Step *1, page 95* • Step *2, page 95*	Added steps and illustration.	Technical Publications
4.1.5 Checking Engine Coolant Level, page 99 • Step *3, page 99* to Step *5, page 99*	Added steps and illustration.	Technical Publications
4.1.9 Checking Air Conditioning Compressor Belts, page 103 • Step *2, page 103*	Added step and illustration.	Technical Publications
4.1.11 Checking and Adding Wheel Drive Lubricant – 10 Bolt Wheels, page 107 • Step *6, page 107*	Added torque value.	ECN 61888
Setting Windrower Tire Size and Wheel Type, page 116	Revised entire procedure and all illustrations.	Technical Publications
4.2.3 Checking Engine Speed, page 118 • Step *5, page 118*	Added note about Eco Engine Control.	Product Support
4.2.9 Checking the Radio and Activating the Bluetooth® Feature, page 125 • Step *NA, page 125*	Added DVD capability.	ECN 61285
4.2.9 Checking the Radio and Activating the Bluetooth® Feature, page 125 • Step *1, page 126* • Step *2, page 126*	Updated illustrations to show new radio.	ECN 61285

Section	Summary of Change	Internal Use Only
4.2.10 Setting Radio for USA or European Region, page 126	Added procedure.	Product Support
4.4 Performing Final Steps, page 129 • Step *2, page 129*	Added illustration of parts bag label for clarity.	ECN 57725
5.1.1 Attaching A40DX Auger Header, page 131 • Step *3, page 131*	Added callout to illustration for clarity.	Technical Publications
5.1.3 Detaching an A40DX Auger Header, page 140	Added topic.	Technical Publications
5.2.2 Attaching D1X or D1XL Series Draper Header, page 146 • Step *2, page 146*	Added step and illustrations for removing R85/R2 forming shield parts.	Technical Publications
5.3 R85 Rotary Disc Header– M1240 Windrower Only, page 162 *5.3.1 Attaching R85 Rotary Disc Header, page 162* *5.3.2 Connecting R85 Rotary Disc Header Hydraulics, page 166*	Added R85 topics for reference only.	Technical Publications
5.4 R1 Series Rotary Disc Header, page 173	Separated all Attaching/Connecting R1 Series Rotary Disc Header topics from Attaching/Connecting R2 Series Rotary Disc Header topics for clarity.	Technical Publications
5.5 R2 Series Rotary Disc Header, page 196	Separated all Attaching/Connecting R2 Series Rotary Disc Header topics from Attaching/Connecting R2 Series Rotary Disc Header topics for clarity. Added M1170 to all R2 topics.	Technical Publications
5.7.1 Calibrating Knife Drive on Harvest Performance Tracker Display, page 230	Revised procedure and added more illustrations for clarity.	Technical Publications
6.1 Lubricants, Fluids, and System Capacities, page 237	Updated anti-freeze specification.	ECN 62224

EC Declaration of Conformity—Windrower Lift Sling

EC Declaration of Conformity

[1] MacDon

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

[2] Windrower Lift Sling

[3] Part 306489

[4] Not Applicable

[5] October 29, 2021

[6] _____
Adrienne Tankeu
Product Integrity

EN

We, [1]

Declare, that the product:

Machine Type: [2]

Name & Model: [3]

Serial Number(s): [4]

fulfils all the relevant provisions of the Directive 2006/42/EC.

Harmonized standards used, as referred to in Article 7(2):

EN ISO 4254-1:2013
EN ISO 4254-7:2009

Place and date of declaration: [5]

Identity and signature of the person empowered to draw up the declaration: [6]

Name and address of the person authorized to compile the technical file:

Benedikt von Riedesel
General Manager, MacDon Europe GmbH
Hagenauer Straße 59
65203 Wiesbaden (Germany)
bvonriedesel@macdon.com

BG

Ние, [1]

декларираме, че следният продукт:

Тип машина: [2]

Наименование и модел: [3]

Сериен номер(а) [4]

отговаря на всички приложими разпоредби на директива 2006/42/ЕО.

Използвани са следните хармонизирани стандарти според чл. 7(2):

EN ISO 4254-1:2013
EN ISO 4254-7:2009

Място и дата на декларацията: [5]

Име и подпис на лицето, упълномощено да изготви декларацията: [6]

Име и адрес на лицето, упълномощено да състави техническия файл:

Бенедикт фон Рийдезел
Управител, MacDon Europe GmbH
Hagenauer Straße 59
65203 Wiesbaden (Германия)
bvonriedesel@macdon.com

CZ

My, [1]

Prohlašujeme, že produkt:

Typ zařízení: [2]

Název a model: [3]

Sériové(á) číslo)a): [4]

splňuje všechna relevantní ustanovení směrnice 2006/42/EC.

Byly použity harmonizované standardy, jak je uvedeno v článku 7(2):

EN ISO 4254-1:2013
EN ISO 4254-7:2009

Místo a datum prohlášení: [5]

Identita a podpis osoby oprávněné k vydání prohlášení: [6]

Jméno a adresa osoby oprávněné k vyplnění technického souboru:

Benedikt von Riedesel
generální ředitel, MacDon Europe GmbH
Hagenauer Straße 59
65203 Wiesbaden (Německo)
bvonriedesel@macdon.com

DA

Vi, [1]

erklærer, at prduktet:

Maskintype [2]

Navn og model: [3]

Serienummer (-numre): [4]

Opfylder alle bestemmelser i direktiv 2006/42/EF.

Anvendte harmoniserede standarder, som henvist til i paragraf 7(2):

EN ISO 4254-1:2013
EN ISO 4254-7:2009

Sted og dato for erklæringen: [5]

Identitet på og underskrift fra den person, som er bemyndiget til at udarbejde erklæringen: [6]

Navn og adresse på den person, som er bemyndiget til at udarbejde den tekniske fil:

Benedikt von Riedesel
Direktør, MacDon Europe GmbH
Hagenauer Straße 59
D-65203 Wiesbaden (Tyskland)
bvonriedesel@macdon.com

DE

Wir, [1]

Erklären hiermit, dass das Produkt:

Maschinentyp: [2]

Name & Modell: [3]

Seriennummer (n): [4]

alle relevanten Vorschriften der Richtlinie 2006/42/EG erfüllt.

Harmonisierte Standards wurden, wie in folgenden Artikeln angegeben, verwendet 7(2):

EN ISO 4254-1:2013
EN ISO 4254-7:2009

Ort und Datum der Erklärung: [5]

Name und Unterschrift der Person, die dazu befugt ist, die Erklärung auszustellen: [6]

Name und Anschrift der Person, die dazu berechtigt ist, die technischen Unterlagen zu erstellen:

Benedikt von Riedesel
General Manager, MacDon Europe GmbH
Hagenauer Straße 59
65203 Wiesbaden
bvonriedesel@macdon.com

ES

Nosotros [1]

declaramos que el producto:

Tipo de máquina: [2]

Nombre y modelo: [3]

Números de serie: [4]

cumple con todas las disposiciones pertinentes de la directriz 2006/42/EC.

Se utilizaron normas armonizadas, según lo dispuesto en el artículo 7(2):

EN ISO 4254-1:2013
EN ISO 4254-7:2009

Lugar y fecha de la declaración: [5]

Identidad y firma de la persona facultada para draw redactar la declaración: [6]

Nombre y dirección de la persona autorizada para elaborar el expediente técnico:

Benedikt von Riedesel
Gerente general - MacDon Europe GmbH
Hagenauer Straße 59
65203 Wiesbaden (Alemania)
bvonriedesel@macdon.com

ET

Meie, [1]

deklareerime, et toode

Seadme tüüp: [2]

Nimi ja mudel: [3]

Seerianumbrid: [4]

vastab kõigile direktiivi 2006/42/EÜ asjakohastele sätetele.

Kasutatud on järgnevaid harmoniseeritud standardeid, millele on viidatud ka punktis 7(2):

EN ISO 4254-1:2013
EN ISO 4254-7:2009

Deklaratsiooni koht ja kuupäev: [5]

Deklaratsiooni koostamiseks volitatud isiku nimi ja allkiri: [6]

Tehnilise dokumendi koostamiseks volitatud isiku nimi ja aadress:

Benedikt von Riedesel
Peadirektor, MacDon Europe GmbH
Hagenauer Straße 59
65203 Wiesbaden (Saksamaa)
bvonriedesel@macdon.com

FR

Nous soussignés, [1]

Déclarons que le produit :

Type de machine : [2]

Nom et modèle : [3]

Numéro(s) de série : [4]

Est conforme à toutes les dispositions pertinentes de la directive 2006/42/EC.

Utilisation des normes harmonisées, comme indiqué dans l'Article 7(2):

EN ISO 4254-1:2013
EN ISO 4254-7:2009

Lieu et date de la déclaration : [5]

Identité et signature de la personne ayant reçu le pouvoir de rédiger cette déclaration : [6]

Nom et adresse de la personne autorisée à constituer le dossier technique :

Benedikt von Riedesel
Directeur général, MacDon Europe GmbH
Hagenauer Straße 59
65203 Wiesbaden (Allemagne)
bvonriedesel@macdon.com

The Harvesting Specialists MacDon

1037610

EC Declaration of Conformity

IT

Noi, [1]

Dichiariamo che il prodotto:

Tipo di macchina: [2]

Nome e modello: [3]

Numero(i) di serie: [4]

soddisfa tutte le disposizioni rilevanti della direttiva 2006/42/CE.

Utilizzo degli standard armonizzati, come indicato nell'Articolo 7(2):

EN ISO 4254-1:2013

EN ISO 4254-7:2009

Luogo e data della dichiarazione: [5]

Nome e firma della persona autorizzata a redigere la dichiarazione: [6]

Nome e persona autorizzata a compilare il file tecnico:

Benedikt von Riedesel
General Manager, MacDon Europe GmbH
Hagenauer Straße 59
65203 Wiesbaden (Germania)
bvonriedesel@macdon.com

HU

Mi, [1]

Ezennel kijelentjük, hogy a következő termék:

Gép típusa: [2]

Név és modell: [3]

Szériaszám(ok): [4]

teljesíti a következő irányelv összes vonatkozó előírásait: 2006/42/EK.

Az alábbi harmonizált szabványok kerültek alkalmazásra a 7(2) cikkely szerint:

EN ISO 4254-1:2013

EN ISO 4254-7:2009

A nyilatkozattétel ideje és helye: [5]

Azon személy kiléte és aláírása, aki jogosult a nyilatkozat elkészítésére: [6]

Azon személy neve és aláírása, aki felhatalmazott a műszaki dokumentáció összeállítására:

Benedikt von Riedesel
Vezérigazgató, MacDon Europe GmbH
Hagenauer Straße 59
65203 Wiesbaden (Németország)
bvonriedesel@macdon.com

LT

Mes, [1]

Pareiškiame, kad šis produktas:

Mašinos tipas: [2]

Pavadinimas ir modelis: [3]

Serijos numeris (-iai): [4]

atitinka taikomus reikalavimus pagal Direktyvą 2006/42/EB.

Naudojami harmonizuoti standartai, kai nurodoma straipsnyje 7(2):

EN ISO 4254-1:2013

EN ISO 4254-7:2009

Deklaracijos vieta ir data: [5]

Asmens tapatybės duomenys ir parašas asmens, įgalioto sudaryti šią deklaraciją: [6]

Vardas ir pavardė asmens, kuris įgaliotas sudaryti šį techninį failą:

Benedikt von Riedesel
Generalinis direktorius, MacDon Europe GmbH
Hagenauer Straße 59
65203 Wiesbaden (Vokietija)
bvonriedesel@macdon.com

LV

Mēs, [1]

Deklarējam, ka produkts:

Mašīnas tips: [2]

Nosaukums un modelis: [3]

Sērijas numurs(-i): [4]

Atbilst visām būtiskajām Direktīvas 2006/42/EK prasībām.

Piemēroti šādi saskaņotie standarti , kā minēts 7. panta 2. punktā:

EN ISO 4254-1:2013

EN ISO 4254-7:2009

Deklarācijas parakstīšanas vieta un datums: [5]

Tās personas vārds, uzvārds un paraksts, kas ir pilnvarota sagatavot šo deklarāciju: [6]

Tās personas vārds, uzvārds un adrese, kas ir pilnvarota sastādīt tehnisko dokumentāciju:

Benedikts fon Rīdzels
Ģenerāldirektors, MacDon Europe GmbH
Hagenauer Straße 59
65203 Wiesbaden (Vācija)
bvonriedesel@macdon.com

NL

Wij, [1]

Verklaren dat het product:

Machinetype: [2]

Naam en model: [3]

Serienummer(s): [4]

voldoet aan alle relevante bepalingen van de Richtlijn 2006/42/EC.

Geharmoniseerde normen toegepast, zoals vermeld in Artikel 7(2):

EN ISO 4254-1:2013

EN ISO 4254-7:2009

Plaats en datum van verklaring: [5]

Naam en handtekening van de bevoegde persoon om de verklaring op te stellen: [6]

Naam en adres van de geautoriseerde persoon om het technisch dossier samen te stellen:

Benedikt von Riedesel
Algemeen directeur, MacDon Europe GmbH
Hagenauer Straße 59
65203 Wiesbaden (Duitsland)
bvonriedesel@macdon.com

PO

My niżej podpisani, [1]

Oświadczamy, że produkt:

Typ urządzenia: [2]

Nazwa i model: [3]

Numer seryjny/numery seryjne: [4]

spełnia wszystkie odpowiednie przepisy dyrektywy 2006/42/WE.

Zastosowaliśmy następujące (zharmonizowane) normy zgodnie z artykułem 7(2):

EN ISO 4254-1:2013

EN ISO 4254-7:2009

Data i miejsce oświadczenia: [5]

Imię i nazwisko oraz podpis osoby upoważnionej do przygotowania deklaracji: [6]

Imię i nazwisko oraz adres osoby upoważnionej do przygotowania dokumentacji technicznej:

Benedikt von Riedesel
Dyrektor generalny, MacDon Europe GmbH
Hagenauer Straße 59
65203 Wiesbaden (Niemcy)
bvonriedesel@macdon.com

PT

Nós, [1]

Declaramos, que o produto:

Tipo de máquina: [2]

Nome e Modelo: [3]

Número(s) de Série: [4]

cumpre todas as disposições relevantes da Directiva 2006/42/CE.

Normas harmonizadas aplicadas, conforme referido no Artigo 7(2):

EN ISO 4254-1:2013

EN ISO 4254-7:2009

Local e data da declaração: [5]

Identidade e assinatura da pessoa autorizada a elaborar a declaração: [6]

Nome e endereço da pessoa autorizada a compilar o ficheiro técnico:

Benedikt von Riedesel
Gerente Geral, MacDon Europa Ltda.
Hagenauer Straße 59
65203 Wiesbaden (Alemanha)
bvonriedesel@macdon.com

RO

Noi, [1]

Declarăm, că următorul produs:

Tipul mașinii: [2]

Denumirea și modelul: [3]

Număr (numere) serie: [4]

corespunde tuturor dispozițiilor esențiale ale directivei 2006/42/EC.

Au fost aplicate următoarele standarde armonizate conform articolului 7(2):

EN ISO 4254-1:2013

EN ISO 4254-7:2009

Data și locul declarației: [5]

Identitatea și semnătura persoanei împuternicite pentru întocmirea declarației: [6]

Numele și semnătura persoanei autorizate pentru întocmirea cărții tehnice:

Benedikt von Riedesel
Manager General, MacDon Europe GmbH
Hagenauer Straße 59
65203 Wiesbaden (Germania)
bvonriedesel@macdon.com

SR

Mi, [1]

Izjavljujemo da proizvod

Tip mašine: [2]

Naziv i model: [3]

Serijski broj(evi): [4]

Ispunjava sve relevantne odredbe direktive 2006/42/EC.

Korišæeni su usklađeni standardi kao što je navedeno u èlanu 7(2):

EN ISO 4254-1:2013

EN ISO 4254-7:2009

Datum i mesto izdavanja deklaracije: [5]

Identitet i potpis lica ovlašæenog za sastavljanje deklaracije: [6]

Ime i adresa osobe ovlašæene za sastavljanje tehnièke datoteke:

Benedikt von Riedesel
Generalni direktor, MacDon Europe GmbH
Hagenauer Straße 59
65203 Wiesbaden (Nemačka)
bvonriedesel@macdon.com

SV

Vi, [1]

Intygar att produkten:

Maskintyp: [2]

Namn och modell: [3]

Serienummer: [4]

uppfyller alla relevanta villkor i direktivet 2006/42/EG.

Harmonierade standarder används, såsom anges i artikel 7(2):

EN ISO 4254-1:2013

EN ISO 4254-7:2009

Plats och datum för intyget: [5]

Identitet och signatur för person med befogenhet att upprätta intyget: [6]

Namn och adress för person behörig att upprätta den tekniska dokumentationen:

Benedikt von Riedesel
Administrativ chef, MacDon Europe GmbH
Hagenauer Straße 59
65203 Wiesbaden (Tyskland)
bvonriedesel@macdon.com

SL

Mi, [1]

izjavljamo, da izdelek:

Vrsta stroja: [2]

Ime in model: [3]

Serijska/-e številka/-e: [4]

ustreza vsem zadevnim določbam Direktive 2006/42/ES.

Uporabljeni usklajeni standardi, kot je navedeno v členu 7(2):

EN ISO 4254-1:2013

EN ISO 4254-7:2009

Kraj in datum izjave: [5]

Istovetnost in podpis osebe, opolnomočene za pripravo izjave: [6]

Ime in naslov osebe, pooblaščene za pripravo tehnične datoteke:

Benedikt von Riedesel
Generalni direktor, MacDon Europe GmbH
Hagenauer Straße 59
65203 Wiesbaden (Nemčija)
bvonriedesel@macdon.com

SK

My, [1]

týmto prehlasujeme, že tento výrobok:

Typ zariadenia: [2]

Názov a model: [3]

Výrobné číslo: [4]

spĺňa príslušné ustanovenia a základné požiadavky smernice č. 2006/42/ES.

Použité harmonizované normy, ktoré sa uvádzajú v Článku č. 7(2):

EN ISO 4254-1:2013

EN ISO 4254-7:2009

Miesto a dátum prehlásenia: [5]

Meno a podpis osoby oprávnenej vypracovať toto prehlásenie: [6]

Meno a adresa osoby oprávnenej zostaviť technický súbor:

Benedikt von Riedesel
Generálny riaditeľ MacDon Europe GmbH
Hagenauer Straße 59
65203 Wiesbaden (Nemecko)
bvonriedesel@macdon.com

1037611

Chapter 1: Safety

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

Safety

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

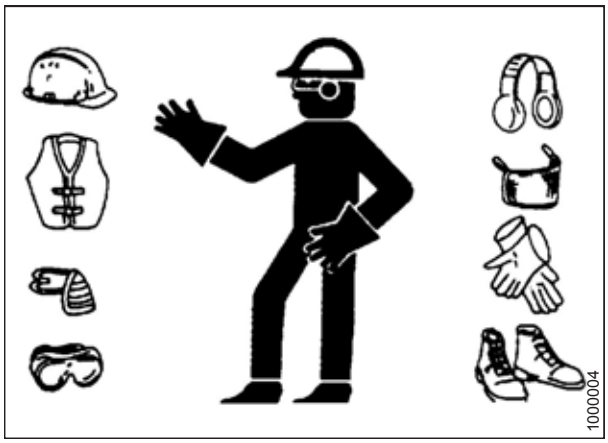


Figure 1.1: Safety Equipment

In addition, take the following precautions:

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

Figure 1.2: 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.

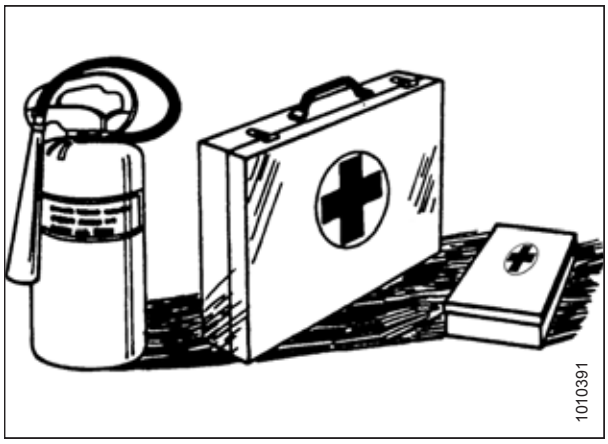


Figure 1.3: Safety Equipment

- 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.

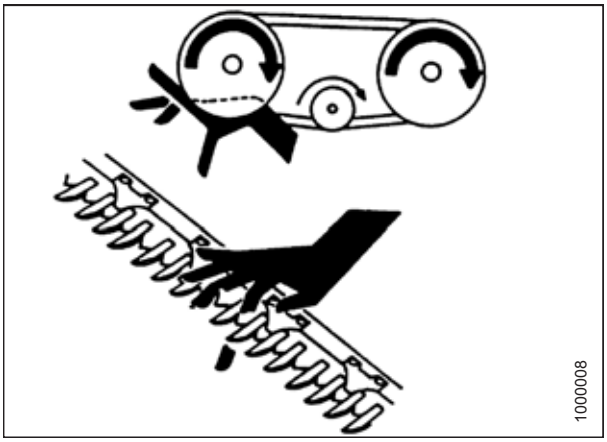


Figure 1.5: Safety around Equipment

- 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.**

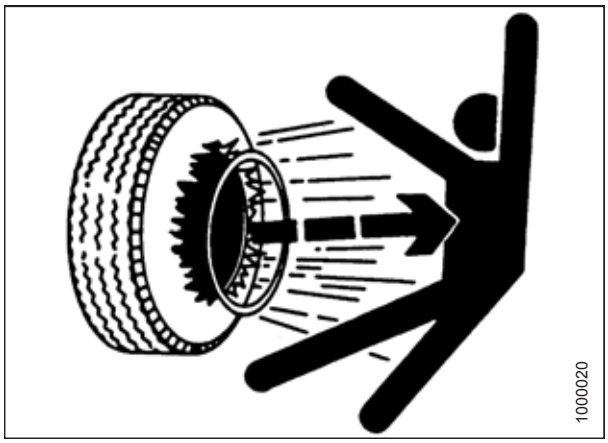


Figure 1.7: Overinflated Tire

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.**

Figure 1.8: Safely Inflating Tire

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

1.4 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.**

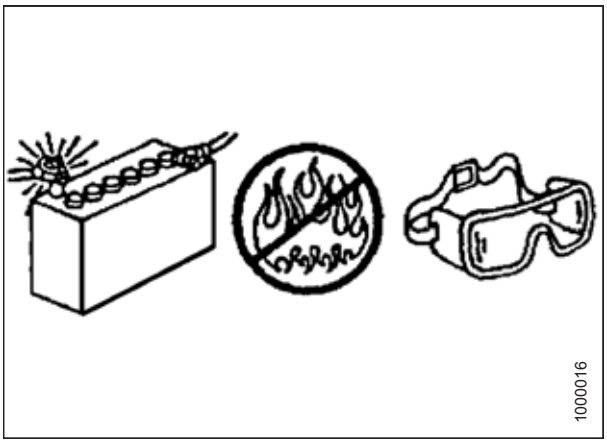


Figure 1.10: Safety around Batteries

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.**

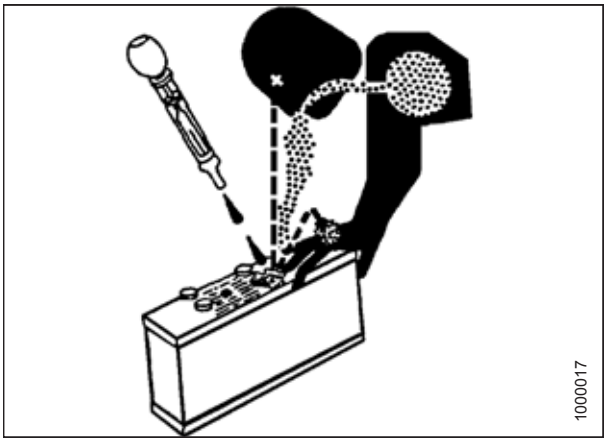


Figure 1.11: Safety around Batteries

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.

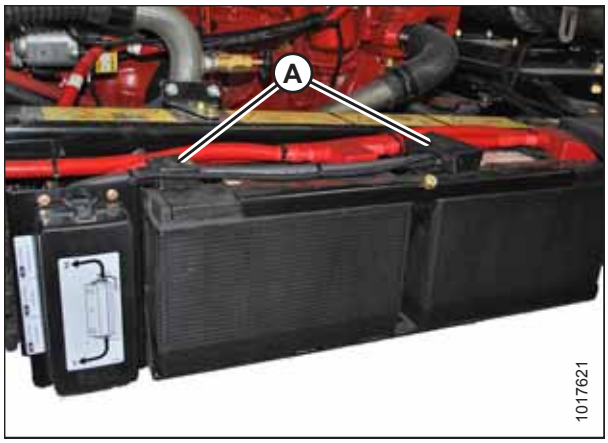


Figure 1.12: Negative Terminals

- 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

- 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 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.

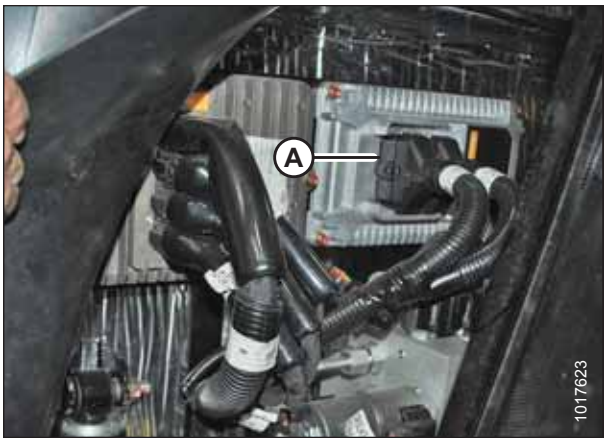


Figure 1.14: Firewall Extension Module

- 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.

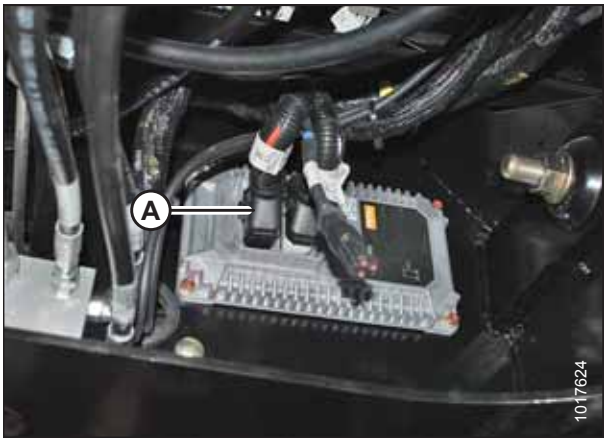


Figure 1.15: Chassis Extension Module

- 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.

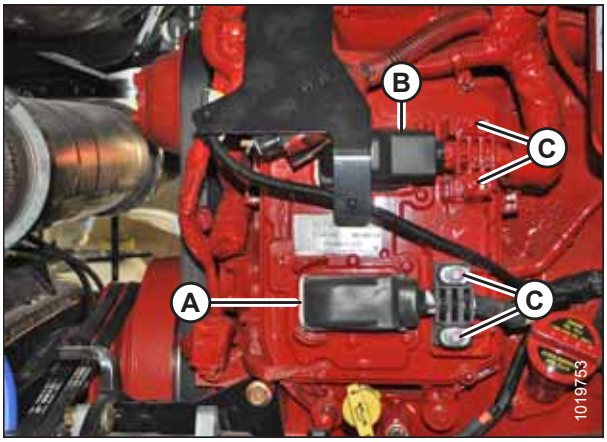


Figure 1.16: Engine Control Module

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

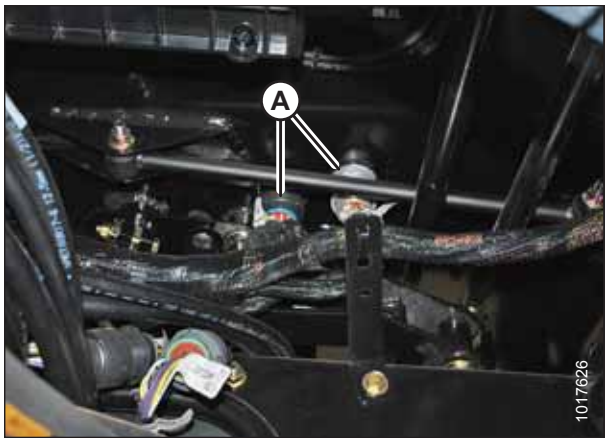


Figure 1.17: Cab Connectors

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

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

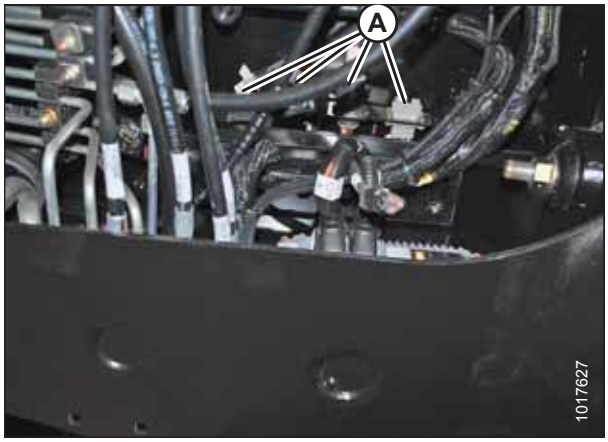


Figure 1.18: Roof Connectors

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

  Location: Outside the left frame rail near the batteries

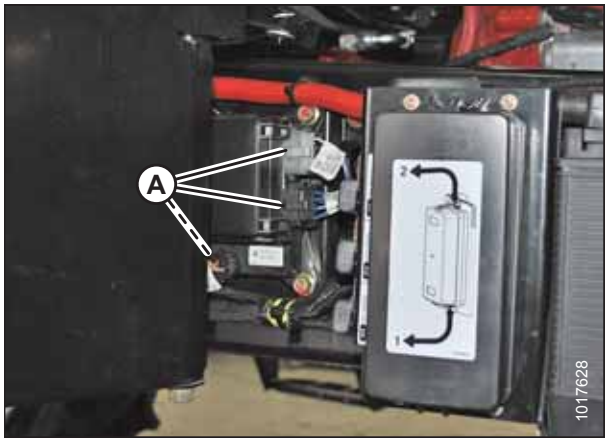


Figure 1.19: Chassis Relay Module

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

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

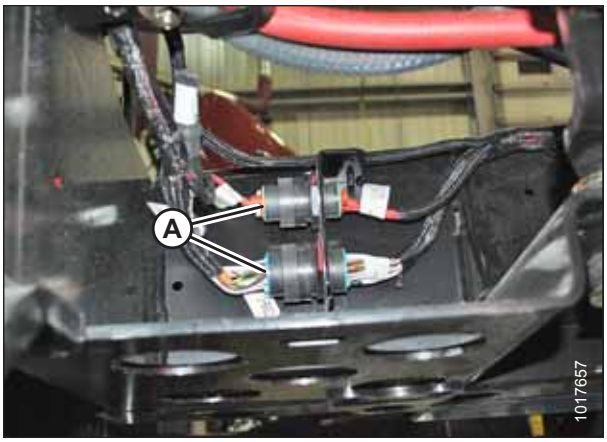


Figure 1.20: Engine Harness

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

  Location: Rear of the A/C box

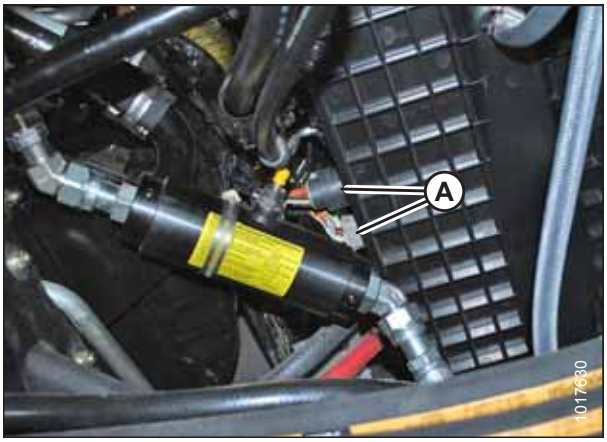


Figure 1.21: A/C Box Connectors

- 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.

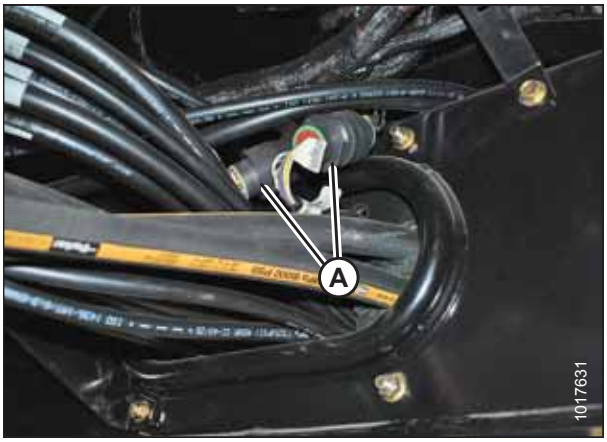


Figure 1.22: Wheel Motor Connectors

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.

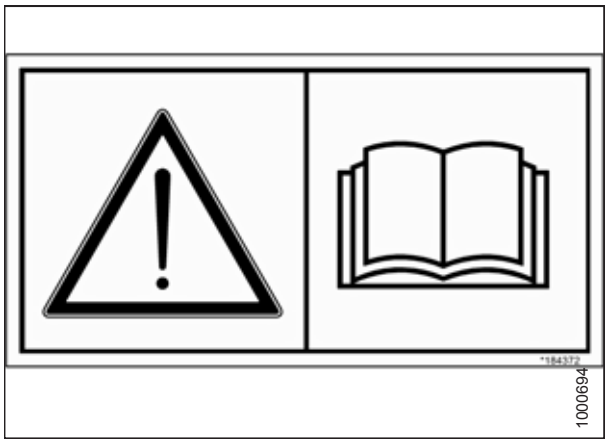


Figure 1.23: Operator's Manual Decal

1.8 Understanding Safety Signs

Consult this section to learn the hazards that each type of safety sign denotes.

MD #166234

Run-over hazard

DANGER

- The training seat is provided so that an experienced Operator can instruct a new Operator on how to use the machine.
- The training seat is **NOT** intended as a passenger seat or for use by children.
- The Operator and the Passenger must wear their safety belts when operating or riding in the machine.
- Keep all other riders off of the machine.

Figure 1.24: MD #166234

MD #166425

Run-over hazard

DANGER

To prevent the machine from moving when there is no Operator at the controls:

- Stop the engine and remove the key from the ignition before performing any maintenance or service on the steering linkage or the neutral interlock system.
- Refer to the windrower and header operator's manuals for inspection and maintenance instructions.

Figure 1.25: MD #166425

MD #166454

General hazard pertaining to machine operation and servicing

DANGER

To prevent injury or death from improper or unsafe machine operation:

- Read the operator's manual and follow all safety instructions.
- Do **NOT** allow untrained persons to operate the machine.
- Review these safety instructions with all Operators every year.
- Ensure that all safety signs are installed and legible.
- Ensure that everyone is clear of the machine before starting the engine and during its operation.
- Keep riders off the machine.
- Keep all shields in place and stay clear of moving parts.

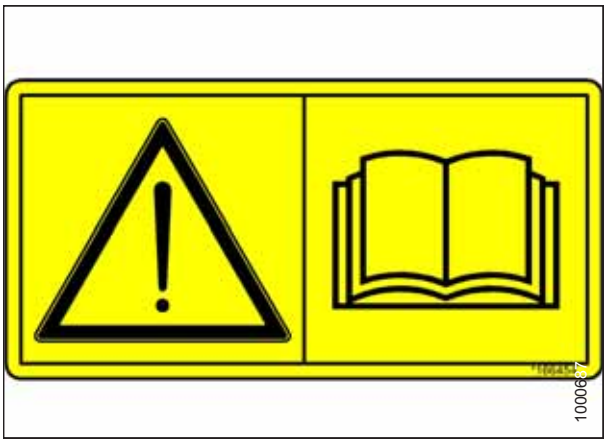


Figure 1.26: MD #166454

- Disengage the header drive, put the transmission in Neutral, and wait for all movement to stop before leaving the operator's position.
- Stop the engine and remove the key from the ignition before servicing, adjusting, lubricating, cleaning, or unplugging the machine.
- Engage the safety locks to prevent lowering of the header or reel before servicing the header when it is in the raised position.
- Use a slow-moving vehicle emblem and activate the machine's warning lights when operating on roadways, unless these actions are prohibited by law.

MD #166457

General hazard pertaining to machine operation and servicing

DANGER

To prevent injury or death from improper or unsafe machine operation:

- Read the operator's manual and follow all safety instructions.
- Do **NOT** allow untrained persons to operate the machine.
- Review these safety instructions with all Operators every year.
- Ensure that all safety signs are installed and legible.
- Ensure that everyone is clear of the machine before starting the engine and during its operation.
- Keep riders off of the machine.
- Keep all shields in place and stay clear of moving parts.
- Disengage the header drive, put the transmission in Neutral and wait for all movement to stop before leaving the operator's position.
- Stop the engine and remove the key from the ignition before servicing, adjusting, lubricating, cleaning, or unplugging the machine.
- Engage the safety locks to prevent the lowering of the header or the reel before servicing the header when it is in the raised position.
- Use a slow moving vehicle emblem and flashing warning lights when operating on roadways unless prohibited by law.

Run-over hazard

DANGER

- The machine will move if the steering wheel is turned while the engine is running.
- Steering response is the opposite of what is normally expected when backing up the machine. Turn the bottom of the steering wheel in the direction you want to go.
- Always move the ground speed lever to the slow end of the range before shifting the high-low speed control.
- To prevent machine runaway: stop the engine and remove the key from the ignition before servicing, adjusting, lubricating, cleaning, or unplugging the machine, or before performing maintenance or service on the steering linkage or neutral interlock system.
- Refer to the windrower and header operator's manuals for inspection and maintenance instructions.

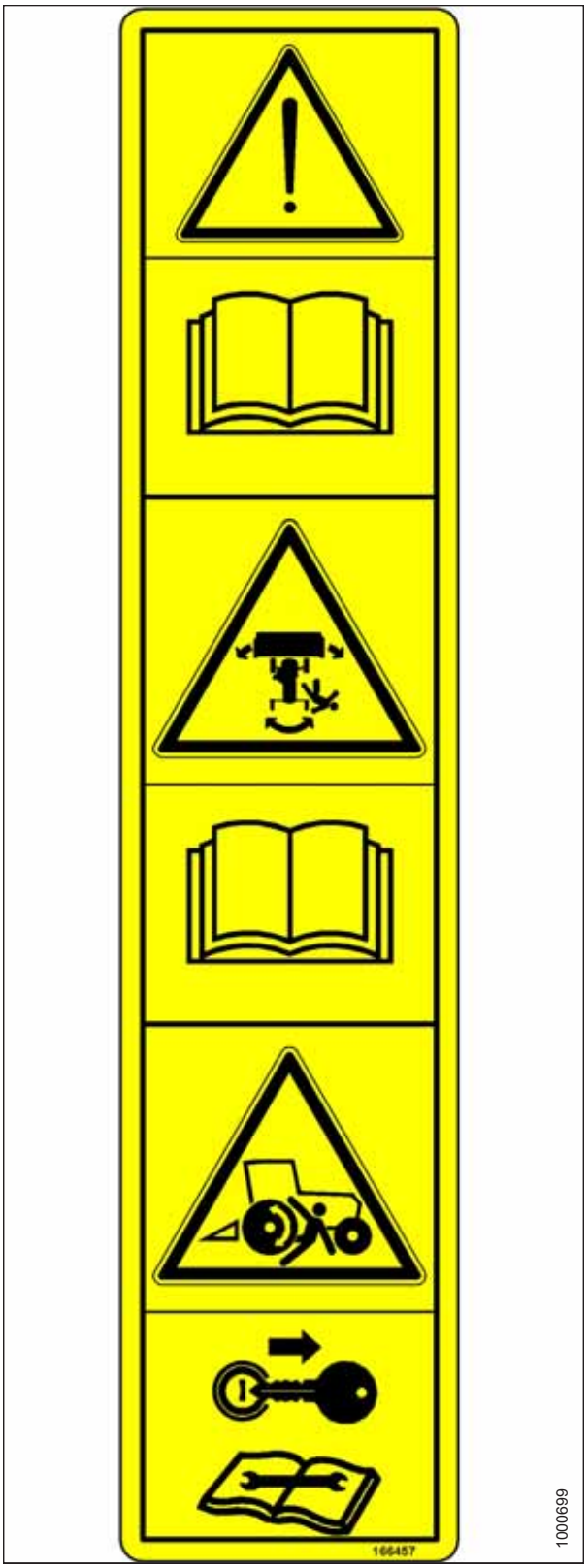


Figure 1.27: MD #166457

MD #166463

Collision hazard

DANGER

To prevent injury or death from a collision between the windrower and other vehicles when driving the windrower on public roadways:

- Obey all highway traffic regulations in your area. Use pilot vehicles in the front and the rear of the windrower (if required by law).
- Use a slow-moving vehicle emblem and activate the machine's warning lights, unless these actions are prohibited by law.
- If the width of the attached header impedes other vehicle traffic, remove the header and install a MacDon approved weight box onto the windrower. Refer to the windrower and header operator's manuals for instructions on safely towing the header.

Figure 1.28: MD #166463

MD #166824

Hot fluid spray hazard and fluid fill rate information

CAUTION

Hydraulic fluid is under pressure, and can be extremely hot. To prevent injury:

- Do **NOT** remove the fluid fill cap when the engine is hot.
- Allow the engine to cool down before opening the fluid fill cap.
- Fill the tank slowly. Do **NOT** exceed a fill rate of 11 L/min (3 gpm).

Figure 1.29: MD #166824

MD #166829

Loss of control hazard

DANGER

To prevent serious injury or death from loss of control:

- It is essential that the machine be equipped such that weights are within the specified limits.
- The weight on the tail wheels should be greater than 1179 kg (2600 lb.) with the windrower positioned in the cab-forward direction.
- Ensure the recommended rear ballast kits are installed for proper machine balance. When operating in hilly conditions, additional rear ballast kits may be required.

Figure 1.30: MD #166829

MD #166832

High-pressure oil hazard

WARNING

To prevent serious injury, gangrene, or death:

- High-pressure oil can easily puncture skin, and can cause serious injury, gangrene, or death.
- Do **NOT** go near hydraulic oil leaks.
- Do **NOT** use fingers or skin to check for hydraulic oil leaks.
- Lower the load or relieve hydraulic pressure before loosening fittings.
- If injured, seek emergency medical help. Immediate surgery is required to remove the oil which has penetrated the skin.

Figure 1.31: MD #166832

MD #166834

Run-over hazard

DANGER

To prevent machine runaway:

- Do **NOT** start the engine in gear. Starting in gear can kill.
- Do **NOT** start the engine by shorting across the starter or the starter relay terminals. The machine will start with the drive engaged and move if the starting circuitry is bypassed.
- Start the engine only from the operator's seat. Do **NOT** try to start the engine with someone under or near the machine.

Figure 1.32: MD #166834

MD #166835

Battery explosion hazard

WARNING

To prevent serious bodily injury caused by explosive battery gases:

- Keep sparks and flames away from the battery and do **NOT** connect boosting or charging cables incorrectly.
- Refer to the operator's manual for battery boosting and charging procedures.

Figure 1.33: MD #166835

MD #166836

Battery acid hazard

WARNING

To prevent injury from corrosive and poisonous battery acid:

- Wear protective clothing and personal protective devices when handling battery acid.
- Acid can severely burn your body and clothing.

Figure 1.34: MD #166836

MD #166837

Rotating fan hazard

WARNING

To prevent injury:

- Do **NOT** operate the engine with the engine hood open.
- Stop the engine and remove the key before opening the engine hood.

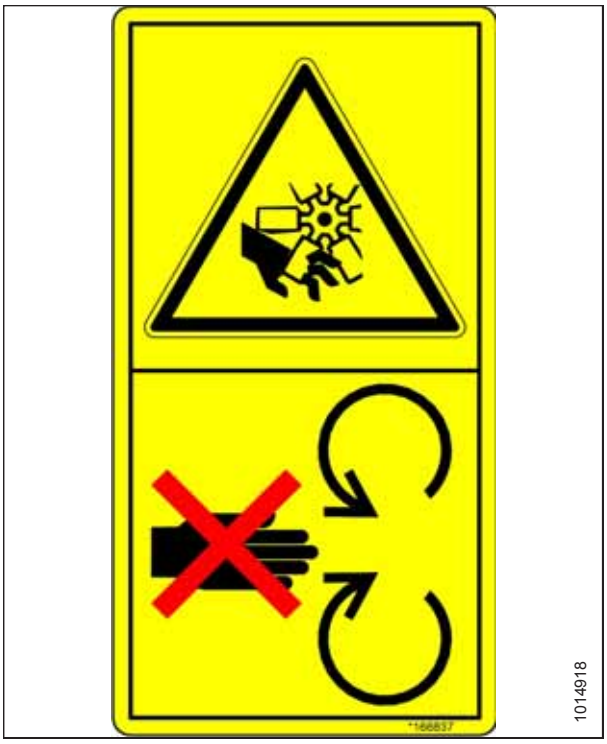


Figure 1.35: MD #166837

MD #166838

Hot surface hazard

CAUTION

To prevent injury:

- Keep a safe distance from hot surfaces.

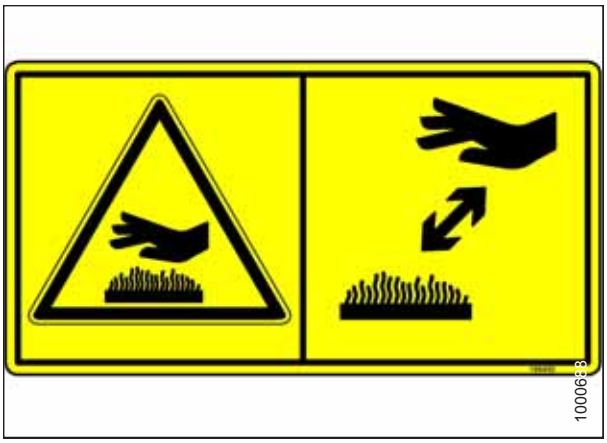


Figure 1.36: MD #166838

MD #166839

Hand and arm entanglement hazard

WARNING

To prevent injury:

- Do **NOT** operate without shields in place.
- Stop the engine and remove the key before opening the shield.

Figure 1.37: MD #166839

MD #166843

Loss of control hazard

DANGER

To prevent serious injury or death from losing control of the machine:

- Do **NOT** make abrupt changes in the direction in which you are steering.
- Slow down before turning the machine.
- Do **NOT** make sudden, sharp changes to your speed while turning, such as hard braking.

When travelling on steep slopes:

- Reduce the machine's speed and lower the header.
- Move the ground speed lever to the slow end of the range.
- Shift the high-low speed control to the low range.

When the windrower is operating without a header attached, weight must be added over the drive wheels so that the Operator can maintain steering control. If you must drive the windrower without a header or without a MacDon weight system:

- Operate the windrower in the low-speed range.
- Avoid slopes.
- Do **NOT** tow a header.
- If control of the machine is lost, immediately pull the ground speed lever to the neutral position.

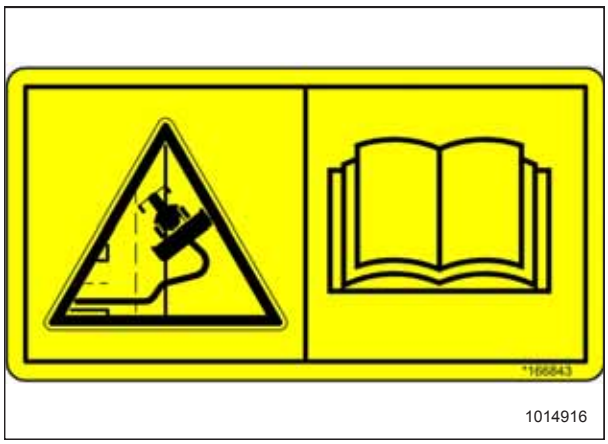


Figure 1.38: MD #166843

MD #167502

Pinch point hazard

CAUTION

To prevent injury:

- Do **NOT** reach into the pinch area.

Figure 1.39: MD #167502

MD #306179/306180/306181

Header crushing hazard

DANGER

To prevent injury or death from the fall of a raised header:

- Fully raise the header, stop the engine, remove the key from the ignition, and engage the safety props before going under the header.

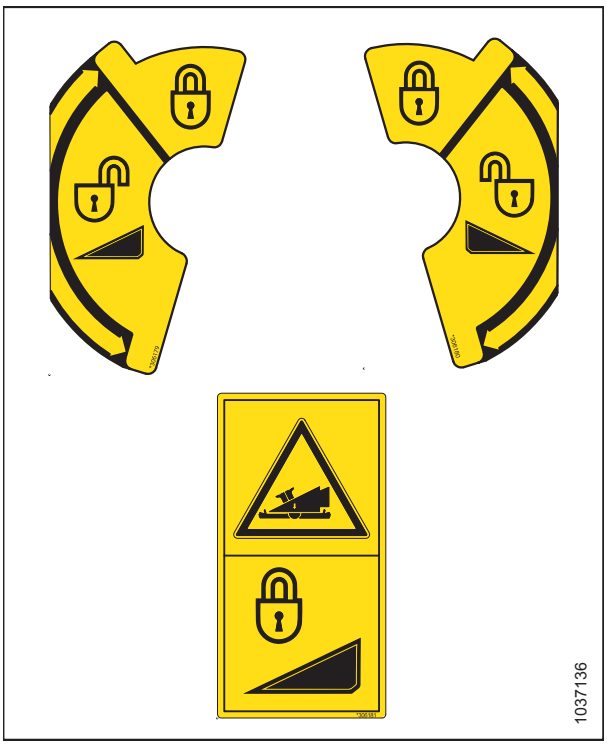


Figure 1.40: MD #306179/306180/306181

Chapter 2: Unloading Windrower

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

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

2.1 Unloading Container

Unload the windrower properly to avoid damaging the windrower.

DANGER

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

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

Figure 2.1: Windrower Shipping Assembly

2.2 Moving to Assembly Area

The windrower can be moved to the assembly area using either a crane or a forklift.

To move the windrower using a crane, refer to *2.2.1 Moving to Assembly Area – Crane Method, page 24*. To move the windrower using a forklift, refer to *2.2.2 Moving to Assembly Area – Forklift Method, page 26*.

2.2.1 Moving to Assembly Area – Crane Method

Use the specified lift sling and lifting points to crane the windrower container assembly.

DANGER

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

DANGER

The equipment used for loading or unloading a header must meet or exceed the requirements specified in this document. Using inadequate equipment may result in chain breakage, vehicle tipping, machine damage or bodily harm to operators or bystanders.

Lift Sling	
Maximum Working Load	12,884 kg (28,404 lb.)

Chain	
Type	Overhead 1/2 in. lifting quality
Minimum Working Load	3221 kg (7100 lb.)

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

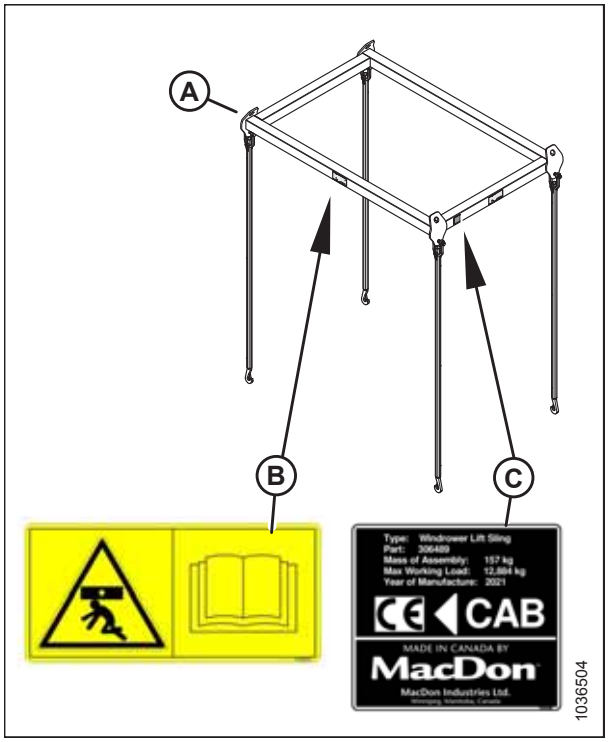


Figure 2.2: Lift Sling

A - Lift Sling
B - Decal (Four Places)
C - Decal

To move the windrower to the assembly area, follow these steps:

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

   IMPORTANT:

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

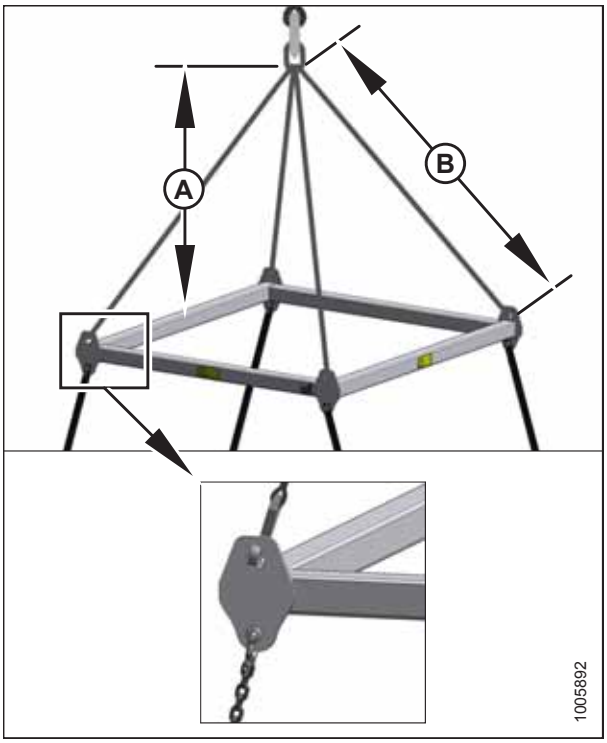


Figure 2.3: Lift Sling

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

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

DANGER

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

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

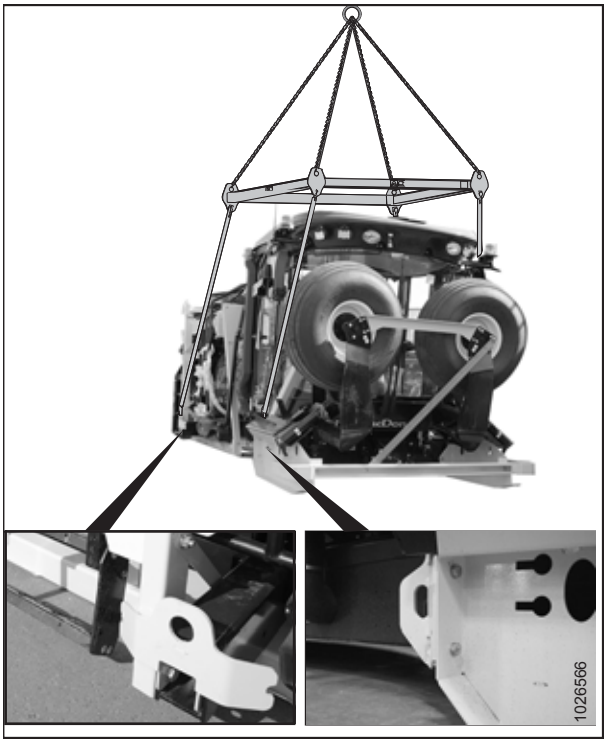


Figure 2.4: Shipping Frame Lifting Points

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

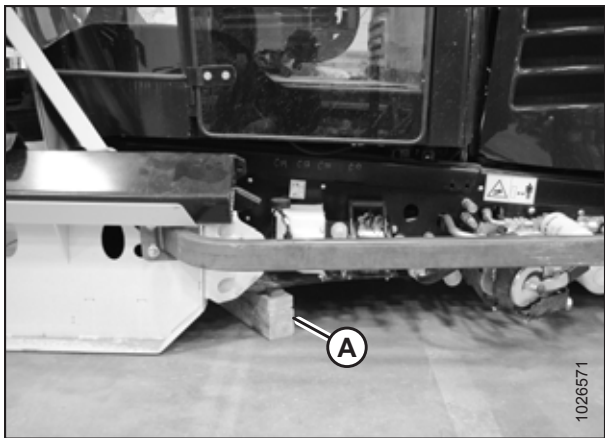


Figure 2.5: Windrower Shipping Assembly on Blocks

2.2.2 Moving to Assembly Area – Forklift Method

The windrower can be moved to the assembly area using a forklift.

DANGER

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

DANGER

The equipment used for loading or unloading a header must meet or exceed the requirements specified in this document. Using inadequate equipment may result in chain breakage, vehicle tipping, machine damage or bodily harm to operators or bystanders.

IMPORTANT:

Refer to the shipping assembly specifications in Table *2.1, page 27* and consult your forklift distributor to determine a suitable forklift.

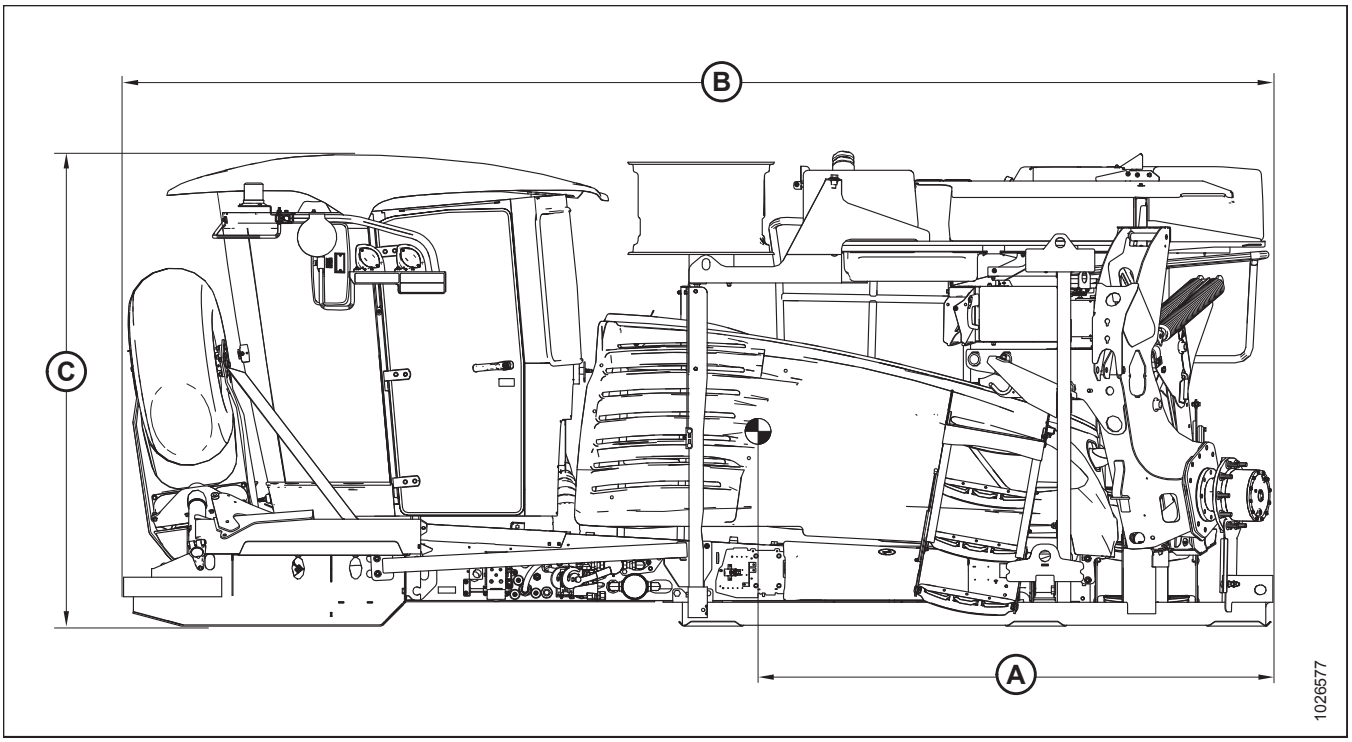


Figure 2.6: Shipping Assembly Specifications

Table 2.1 Shipping Assembly Specifications

Shipping Assembly Specifications	
Weight	6337 kg (13970 lb.)
Center of gravity (A)	2690 mm (105.9 in.)
Length (B)	6005 mm (236.4 in.)
Height (C)	2481 mm (97.7 in.)

DANGER

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

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

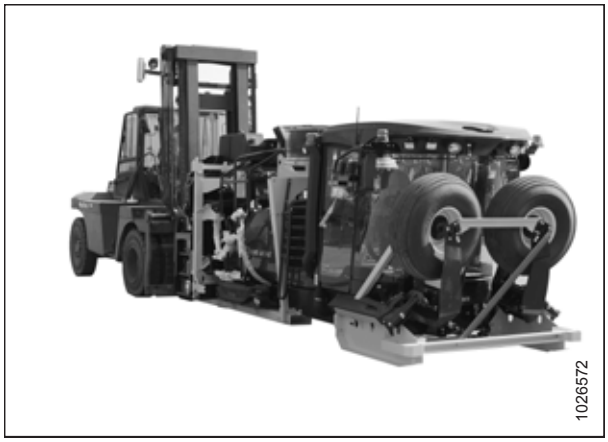


Figure 2.7: Forklift Method Lifting Points

3. Lower the windrower onto 152 mm (6 in.) blocks (A) as shown.
4. Check for shipping damage and missing parts.

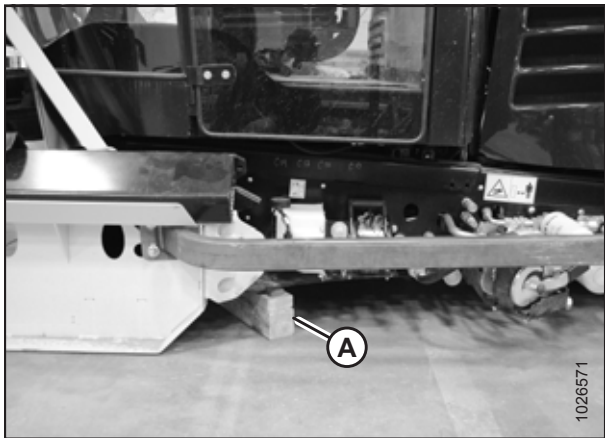


Figure 2.8: Windrower Shipping Assembly on Blocks

2.3 Removing Caster Wheel Shipping Assembly

The caster wheels are assembled together for shipping purposes. This shipping assembly needs to be pulled away from the windrower.

1. Locate caster wheel shipping assembly (A).

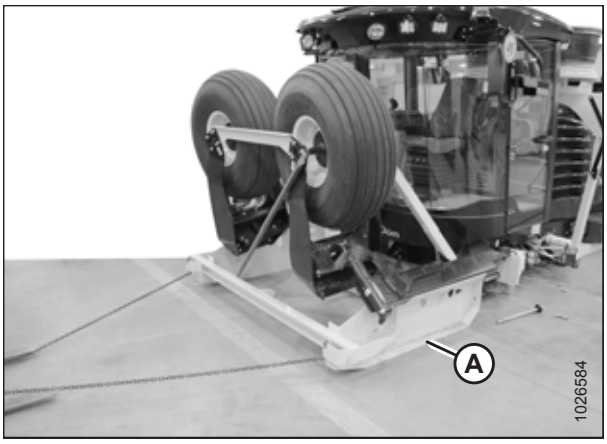


Figure 2.9: Caster Wheel Assembly

2. Remove shipping wire (A) securing center-link (B).

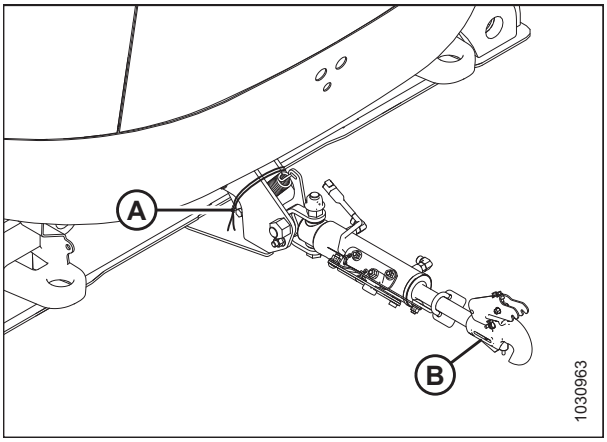


Figure 2.10: Center-Link

3. Disconnect center-link (A), and discard the pin and hardware (B).

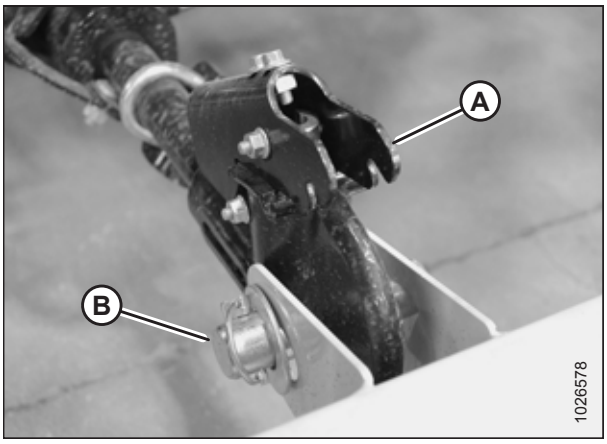


Figure 2.11: Center-Link

4. Remove two front bolts (A), and three rear bolts (B), and remove coupler guard (C).

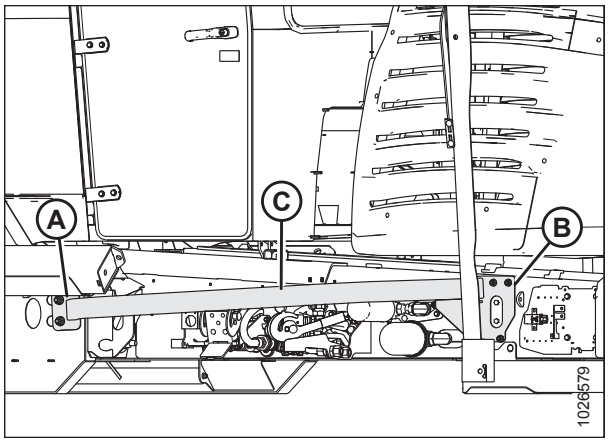


Figure 2.12: Coupler Guard

5. Remove leg pin bolts (A) from both sides, and retain caps (B) (two per side) for reuse.

   NOTE:

   If you will be moving the windrower shipping assembly with a crane, retain the leg pin bolts and nuts for reinstallation.

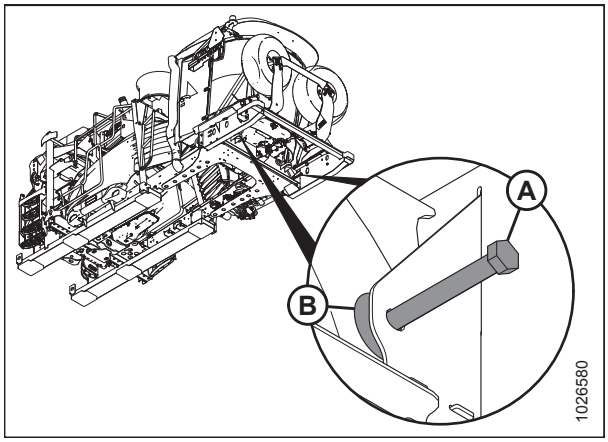


Figure 2.13: Leg Pin Bolts and Caps

6. Remove two bolts (A) securing front the skids to lifting plates (B) on each side.

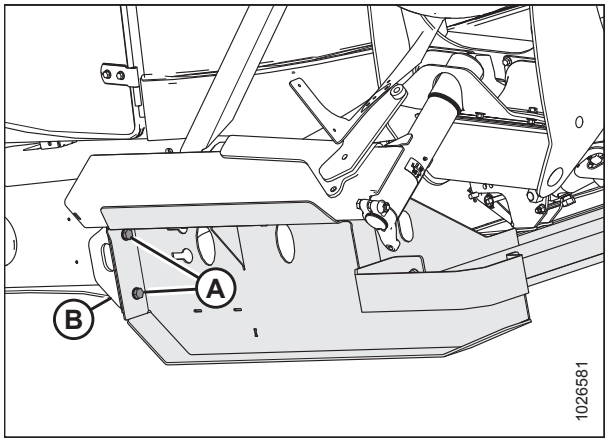


Figure 2.14: Front Skid Bolts

7. Ensuring that the center-link does **NOT** snag the front skids, use chains or cables to drag caster wheel shipping assembly (A) away from the windrower.

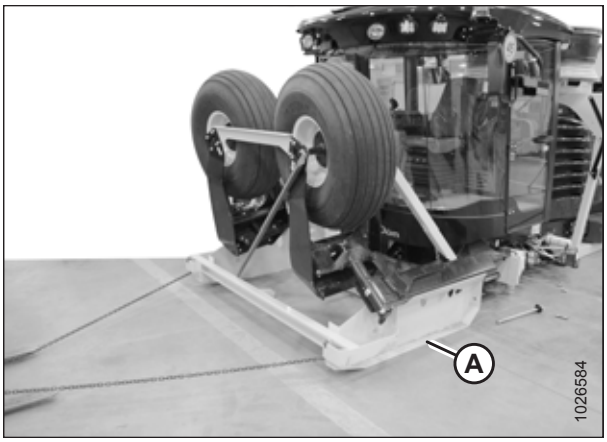


Figure 2.15: Caster Wheel Assembly

8. **If moving with a crane:** reinstall wheel leg pin bolts (A), caps (B), and nuts (C) to secure lifting plates (D) on both sides.

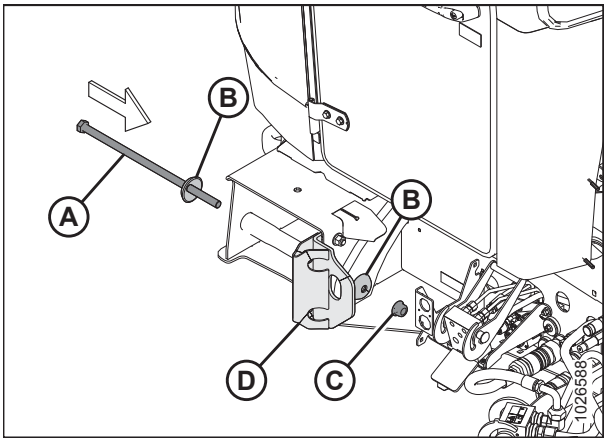


Figure 2.16: Reinstalling Leg Pin Bolt – Crane Lift Only

9. **If moving with a forklift:** remove bolt (A) from lifting plate (C), slide pin (B) out and retain for reuse. Remove lifting plates (C) on both sides.

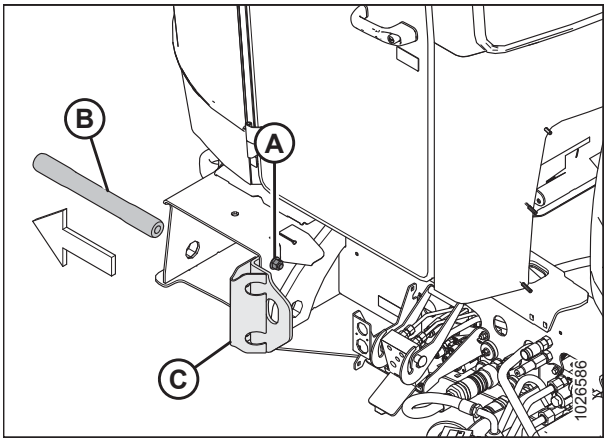


Figure 2.17: Removing Lifting Plates

2.4 Removing Fuel Tank / Right Platform Shipping Assembly

Follow these instructions to remove the handrails, fuel tank, right platform, and platform stairs. Some hardware is reused for assembly.

1. On the right side of the machine, remove shipping straps and wires (A) from handrails (B) and from the hydraulic hoses. Set the hoses down beside the machine.

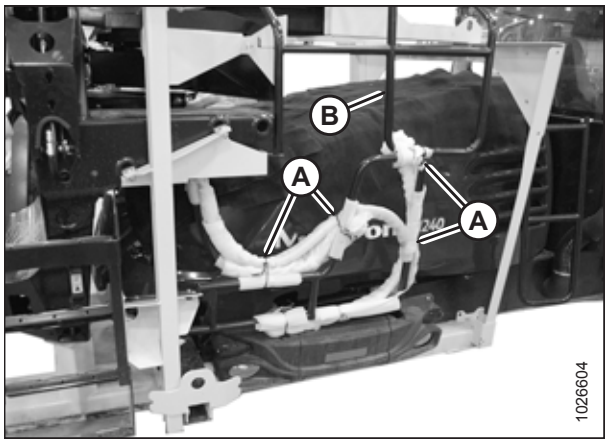


Figure 2.18: Handrails on Right Side

2. Supporting upper handrail (A), remove three bolts (B) securing the handrail to the upper shipping support, and then set the handrail aside.
3. Supporting lower handrail (C), remove three bolts (D), and then set the handrail aside.

   NOTE:

   Use care to prevent handrail (C) from contacting and scratching the hood.

4. Supporting handrail (E), remove two bolts (F), and then set the handrail aside. Retain bolts.

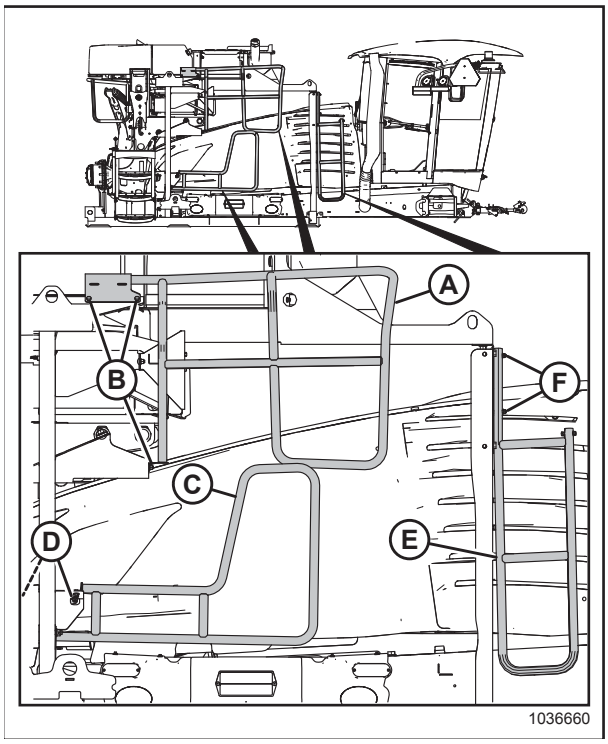


Figure 2.19: Handrails on Right Side

5. On the rear and right sides of the machine, cut remaining shipping wires (A) securing the railings and hydraulic hoses.

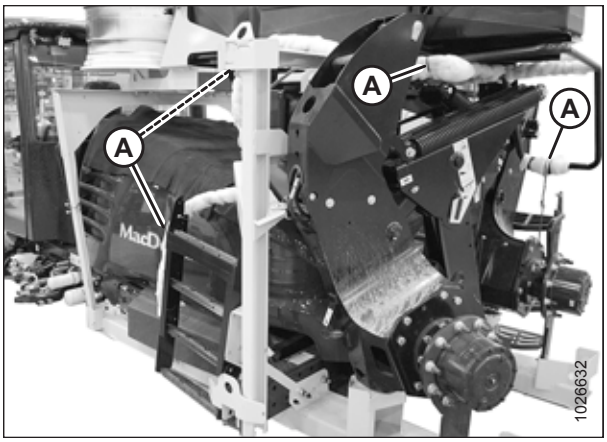


Figure 2.20: Shipping Wire Locations

6. On the left side of the machine, remove bolt (A) securing strap (B) to the horizontal shipping brace. Loosen bolt (C) and rotate the strap away from the brace.

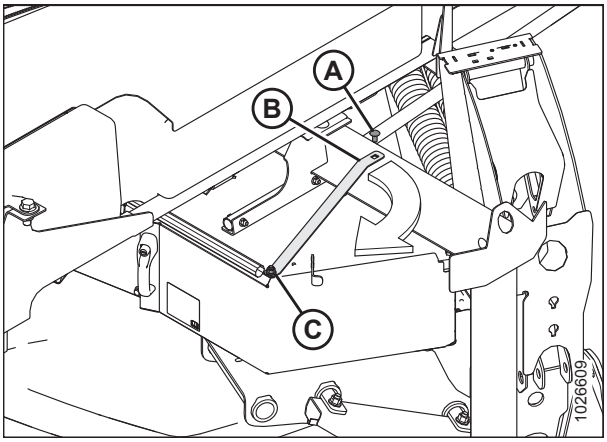


Figure 2.21: Shipping Strap

7. With the lifting device positioned behind the windrower, secure the fuel tank assembly to the lifting device with three chains as follows:

   IMPORTANT:

   To avoid damaging windrower, make sure the load is balanced.

   a. Attach a 147 cm (58 in.) chain (A) to the right lifting point on the fuel tank shipping assembly.

      NOTE:

      Avoid snagging the fuel filler neck with the chain.

   b. Attach a 145 cm (57 in.) chain (B) to the left lifting point on the fuel tank shipping assembly.

   c. Attach a 189 cm (74.5 in.) chain (C) to the left front lifting point on the fuel tank shipping assembly.

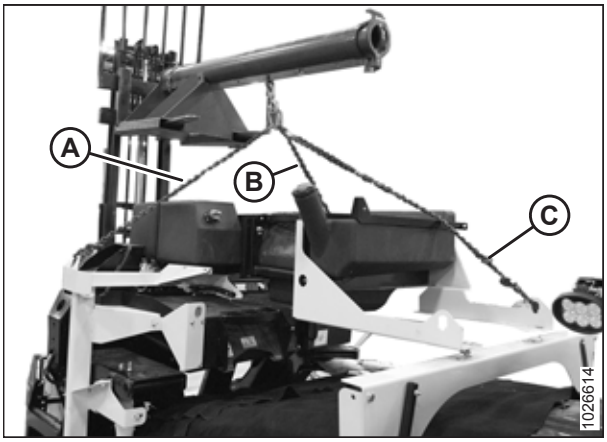


Figure 2.22: Lifting Points

8. Remove two bolts (A) securing the shipping assembly to the front horizontal brace.
9. Remove two bolts (B) securing the shipping assembly to the vertical side braces.
10. Before lifting, have a second person guide the assembly to avoid contact with the windrower.

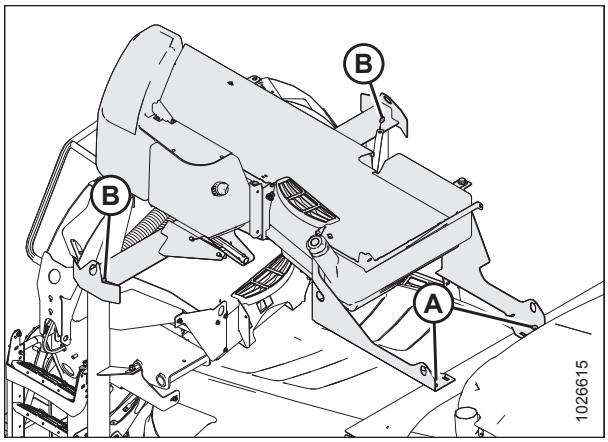


Figure 2.23: Fuel Tank Shipping Assembly

11. Slowly lift the fuel tank shipping assembly (C) away from the windrower. Avoid snagging handrail (A) on wheel leg assemblies (B).

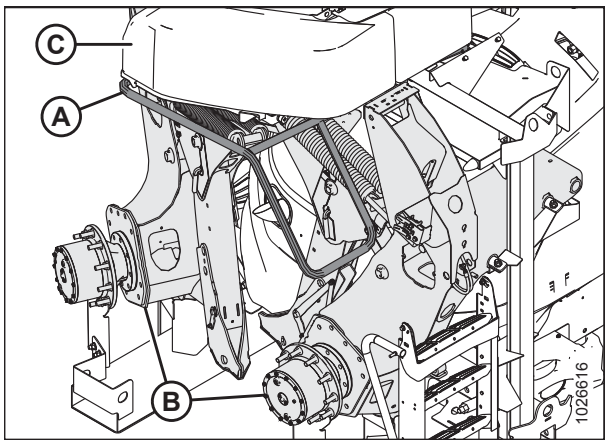


Figure 2.24: Handrail and Wheel Legs

12. With the fuel tank shipping assembly suspended off the ground, support handrail (A), remove and retain hardware (B), and then set the handrail aside. Keep the hardware with the handrail for installation.
13. Lower the fuel tank shipping assembly down onto 152 mm (6 in.) blocks to prevent damage.

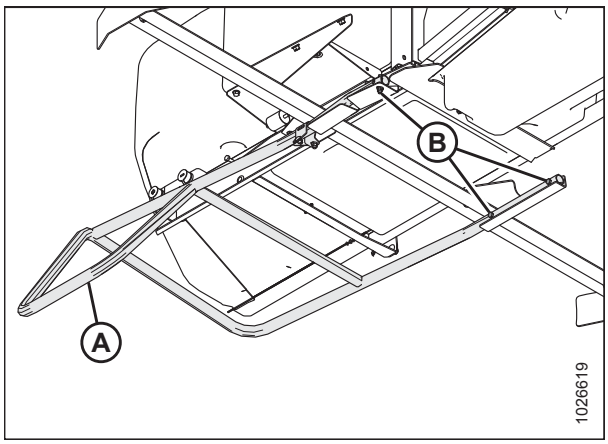


Figure 2.25: Handrail under Fuel Tank Shipping Assembly

14. Remove four bolts (A), remove stairs (B) from the windrower shipping assembly, and set the stairs aside. Repeat on the opposite side.

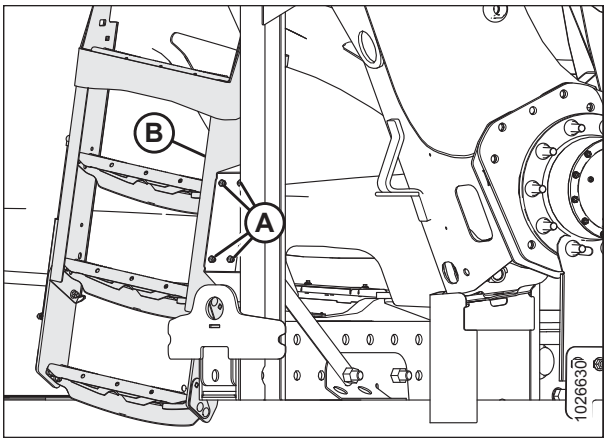


Figure 2.26: Left Platform Stairs

2.5 Removing Left Platform

Follow these instructions to remove the left platform and the door stop. Some hardware is reused for assembly.

1. At the left shipping support, remove wire (A), nut, bolt and bushing (B), and platform bar (C). Retain hardware (B) for reuse.

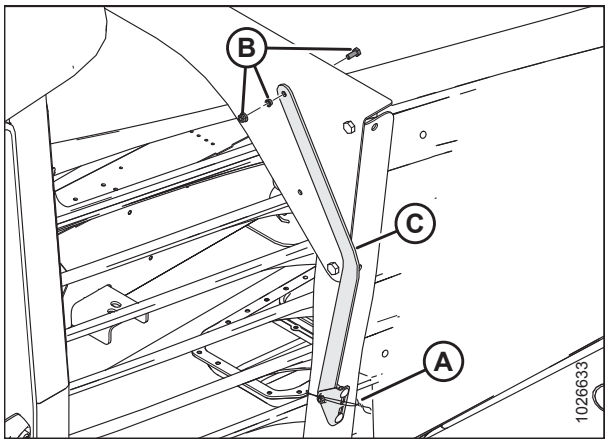


Figure 2.27: Platform Bar

2. Position the lifting device behind the windrower and attach straps/chains to lifting points (A) to support the left platform.

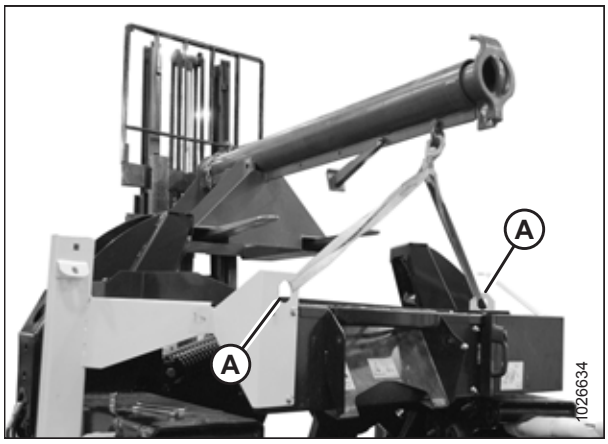


Figure 2.28: Supporting Left Platform

3. Remove nut (A) from long bolt (B) on the bottom left side of the platform. Retain nut (A). To prevent the tool box from falling out, leave long bolt (B) in place.

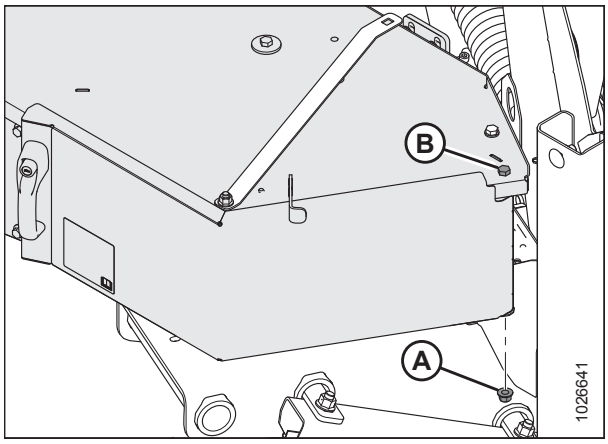


Figure 2.29: Left Platform on Left Side

4. From below the platform on the right side of windrower, remove nut and bolt (A), and remove door stop (B). Retain nut and bolt (A) for reuse.

   NOTE:

   To show the door stop under the platform, the windrower, wheel legs, and shipping supports have been removed from this illustration.

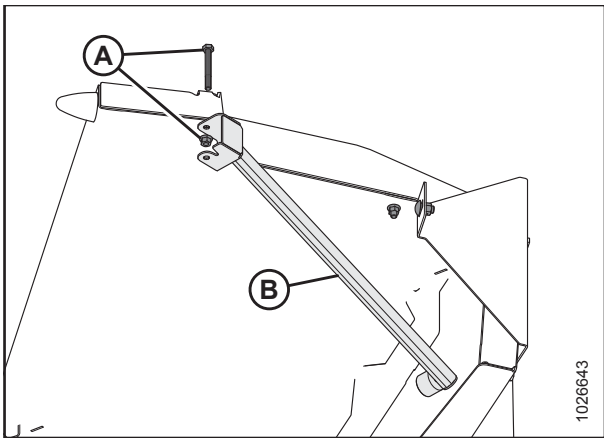


Figure 2.30: Left Platform – Right Underside

5. Remove and discard nuts and bolts (A) and (B).
6. Carefully lift the platform assembly off the frame, and set it down on a level surface.

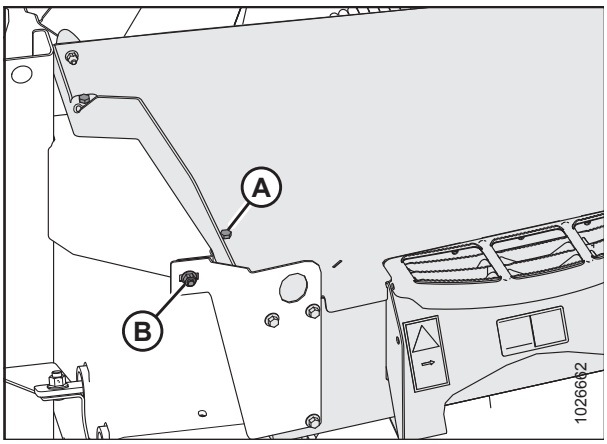


Figure 2.31: Left Platform – Right Side

7. Reinstall nut (A) on retained long toolbox bolt (B).

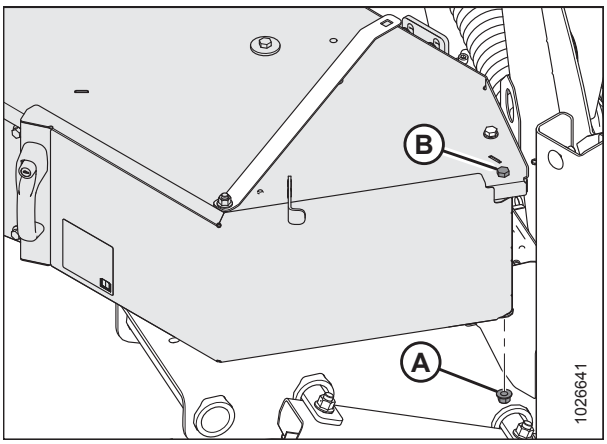


Figure 2.32: Left Platform

2.6 Removing Wheel Leg Assemblies

Remove the wheel leg assemblies from their shipping locations and set them aside for installation.

DANGER

The wheel leg assemblies are heavy and difficult to maneuver. Use a proper lifting device and arrange for adequate assistance. Falling wheel leg assemblies can result in serious personal injury.

1. Position the lifting device to remove wheel leg (A) from the left side of the windrower first.

   NOTE:

   When configured for container shipments, wheel legs are shipped with right leg (A) on the left side of the shipping assembly and left leg (B) on the right side.

2. Secure the hydraulic hoses to avoid damaging the windrower hood.

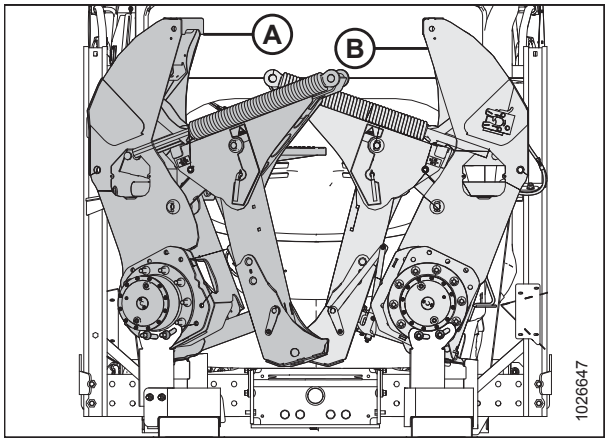


Figure 2.33: Leg Shipping Configuration

3. Feed lifting strap (A) through the top of leg assembly. Position the strap so that the leg will be balanced, but avoid damaging float sensor (B). Adjust the lifting device to support the leg.
4. Before lifting, have a second person available to prevent the leg from swinging into the hood. Lay down cardboard or rubber to prevent damage when the leg assembly is set down.

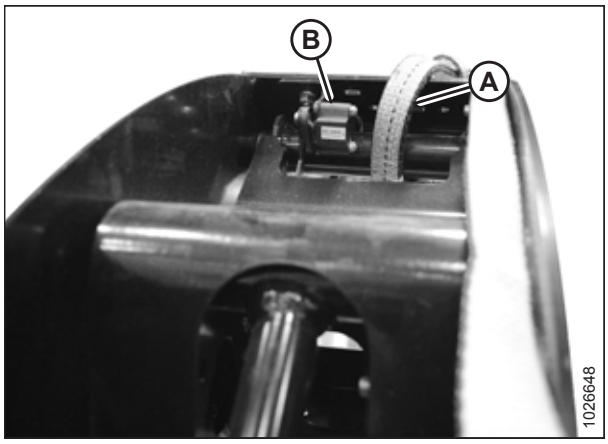


Figure 2.34: Attaching Lifting Strap

5. With the leg supported and a second person in place, remove two bolts (A) from the lower fork channel brace.
6. Remove and discard two nuts (B). Remove shipping support (C).

   IMPORTANT:

   Do **NOT** reuse nuts (B) to install the drive wheels. The specified mounting nuts and installation instructions are shipped with the drive wheels.

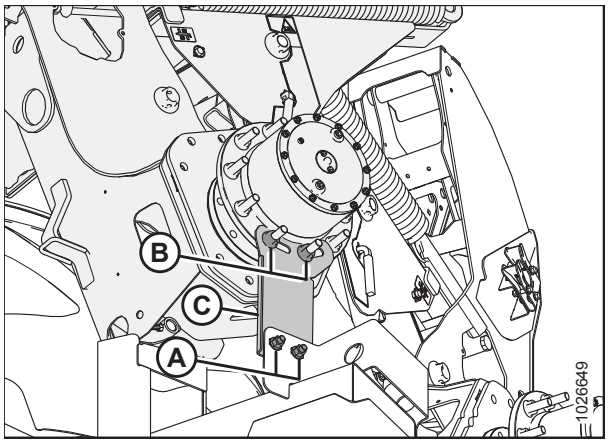


Figure 2.35: Wheel Leg on Left Side

7. Remove two bolts (A) and then pull the shipping bars out of the wheel leg members.

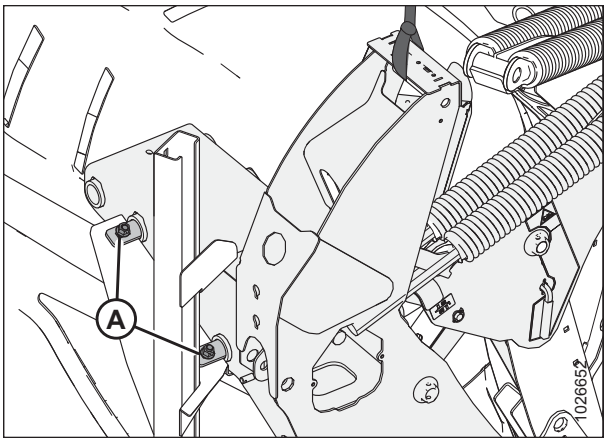


Figure 2.36: Wheel Leg on Left Side

8. Lift leg assembly away from the windrower and set it on level ground. Lay leg down as shown with leg member on block (A).
9. Repeat procedure for the second leg assembly.

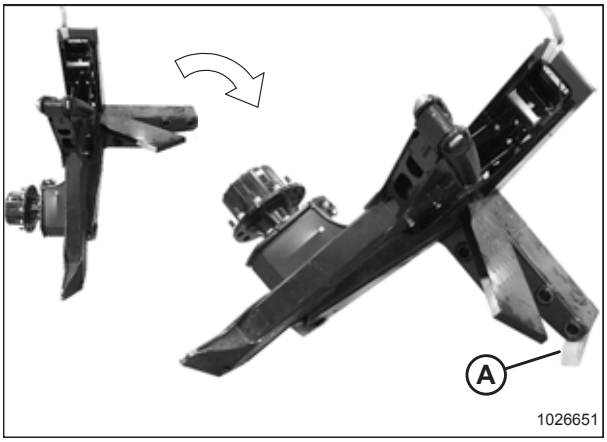


Figure 2.37: Lowering Right Leg Assembly

2.7 Removing Upper Shipping Supports

Remove the specified shipping supports in preparation for windrower assembly.

1. Support the cross member behind the cab with a suitable lifting device.
2. Remove two bolts (A) on each side and then remove the cross member.

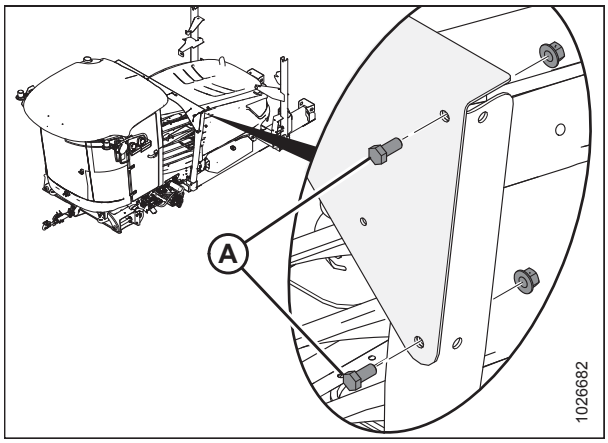


Figure 2.38: Forward Cross Member

3. Remove nut and bolt (A), and remove vertical support (B). Repeat on the opposite side.

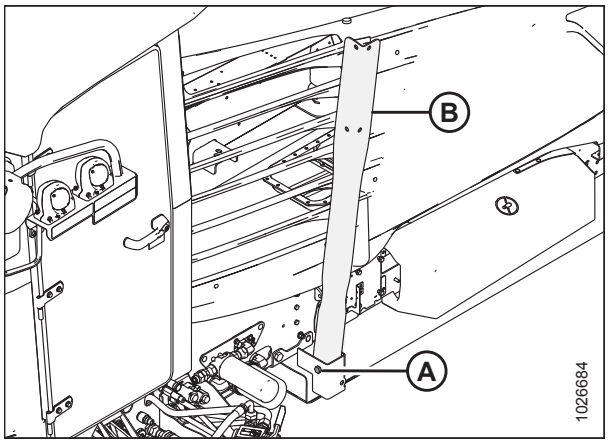


Figure 2.39: Forward Vertical Supports

4. **If lifting the windrower with a crane:** Do **NOT** remove rear vertical channels/crane lifting points (A) until after lifting the machine onto the assembly stand.

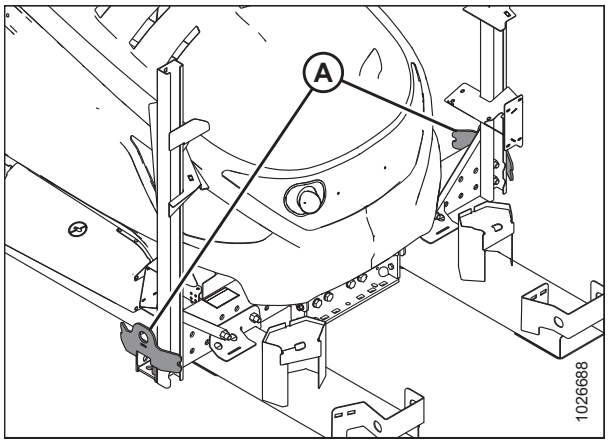


Figure 2.40: Rear Lift Points

5. Remove one nut and bolt (A) connecting vertical channel (B) to the walking beam strap.
6. Remove two nuts and bolts (C) connecting the channel to the walking beam, and the remove the channel. Repeat on the opposite side.

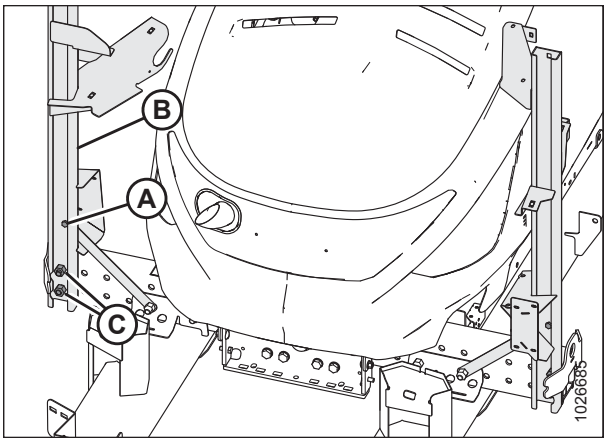


Figure 2.41: Rear Vertical Channels

Chapter 3: Assembling Windrower

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

3.1 Lifting Windrower onto Assembly Stand

The windrower must be assembled on a MacDon Export Assembly Lift Stand.

DANGER

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

DANGER

The equipment used for loading or unloading a header must meet or exceed the requirements specified in this document. Using inadequate equipment may result in chain breakage, vehicle tipping, machine damage or bodily harm to operators or bystanders.

1. Before lifting the windrower onto an assembly stand, ensure lifting device meets or exceeds the specified requirements and refer to the following topics:
   - If lifting with a forklift, refer to *2.2.2 Moving to Assembly Area – Forklift Method, page 26*
   - If lifting with a crane, refer to *2.2.1 Moving to Assembly Area – Crane Method, page 24*

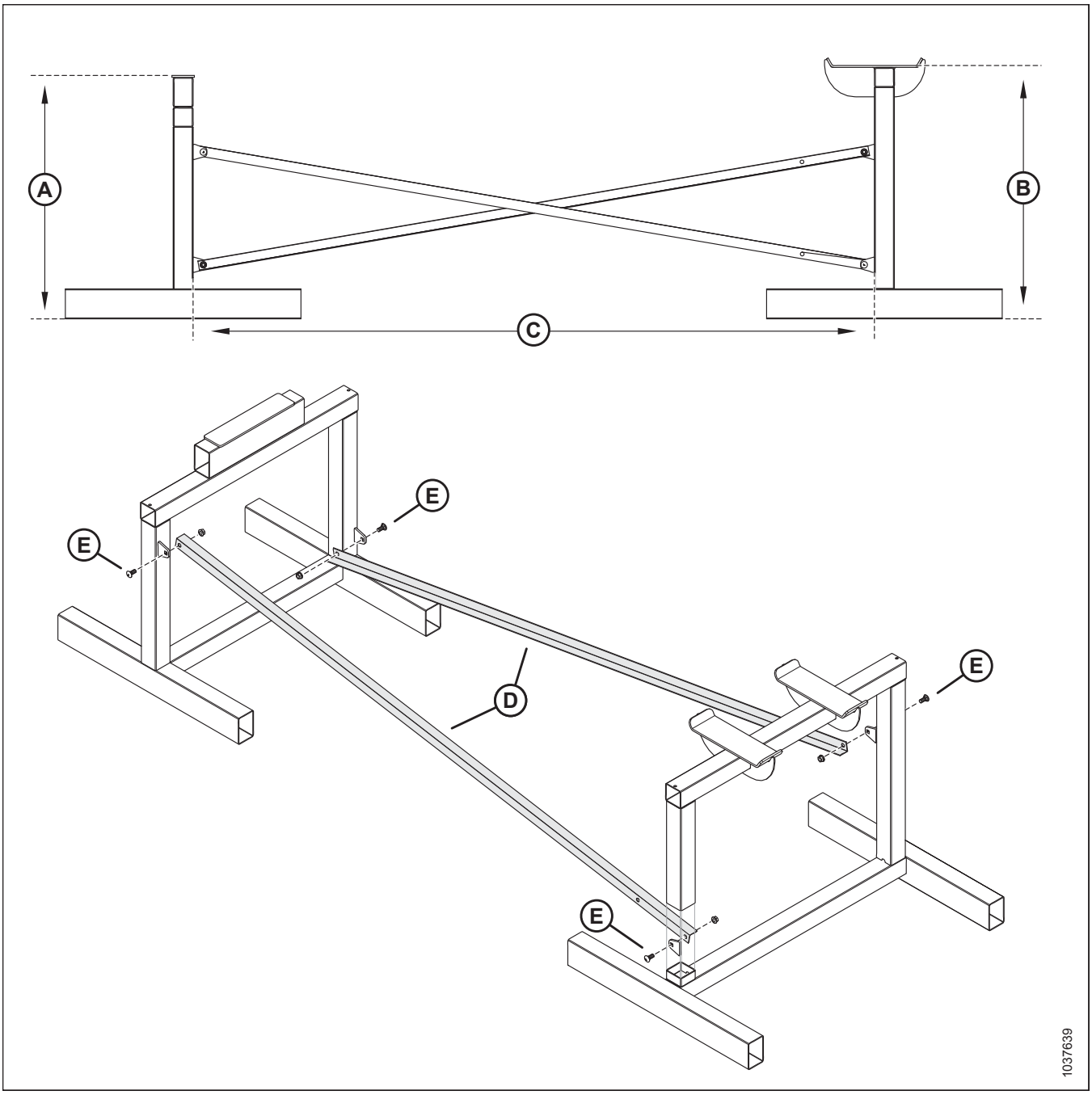


Figure 3.1: Assembly Stand Setup

2. Set the assembly stands on flat and level ground to maintain the difference in height between the assembly stands:
   - Rear assembly stand height (A) is 1240 mm (48 13/16 in.).
   - Front assembly stand height (B) is 1291 mm (50 13/16 in.)
3. Space the stands out so that dimension (C) is 3470 mm (136 5/8 in.).
4. Attach diagonal angles (D) to the stands using 5/8 x 1.5 in. bolts and nuts at locations (E).
5. Torque the nuts to 153 Nm (113 lbf·ft).

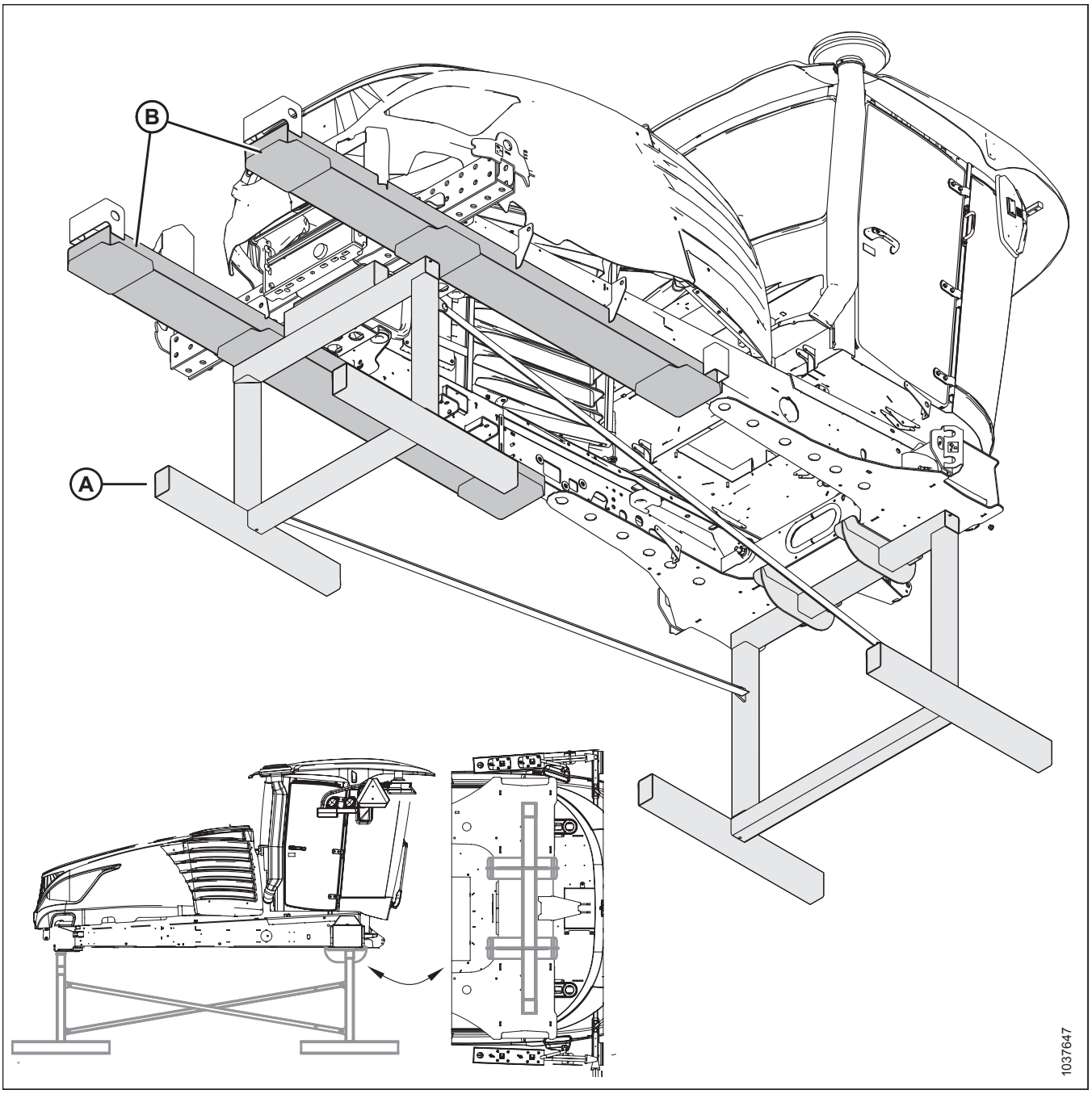


Figure 3.2: Windrower on Assembly Stands

6. Lift the windrower on the assembly stand. Front assembly stand (A) must allow removal of fork channels (B).

3.2 Removing Remaining Items from Shipping Configuration

With the windrower on the assembly lift stand, remove the rear lighting bezel, cab suspension shipping supports, and fork channels.

1. On the right side of the machine, remove two bolts (A) securing the rear lighting bezel, and then remove the bezel. Retain two nuts for installation, but discard the bolts.

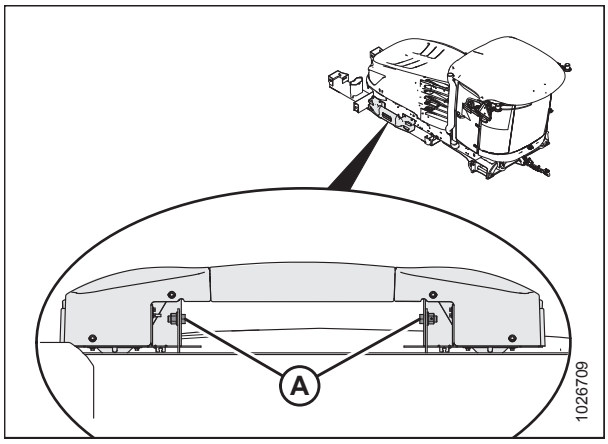


Figure 3.3: Rear Light Bezel

2. Remove two bolts and nuts (A), and cab suspension shipping support (B) from below the front cab. Repeat on the opposite side.

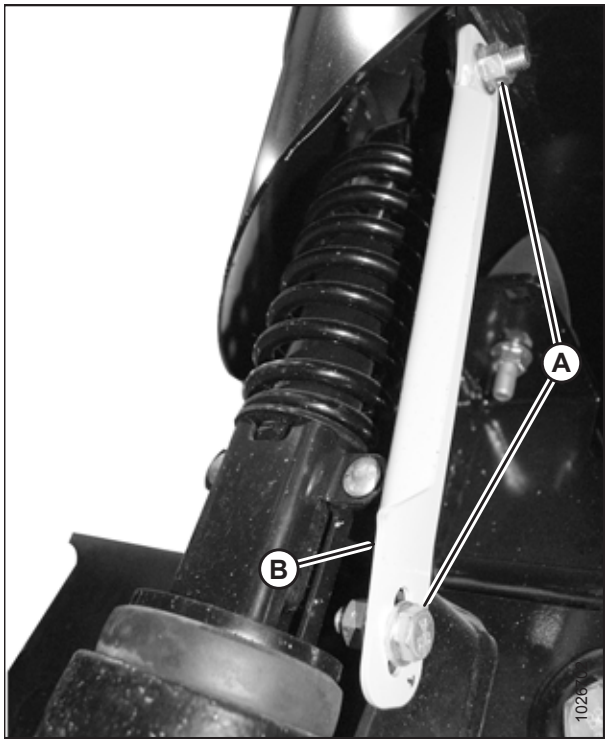


Figure 3.4: Right Cab Suspension Support

3. Support fork channel (A) with a suitable lifting device (B), and remove two bolts (C) from the walking beam.

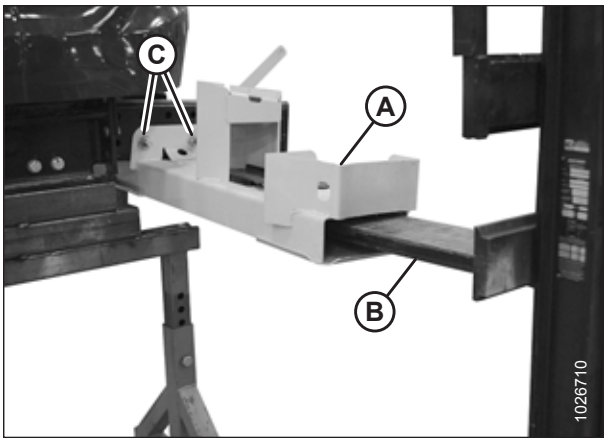


Figure 3.5: Supporting Fork Channel

4. Remove bolt (A) from the forward end of fork channel (B) at the side of the machine.
5. Ensure the hoses and electrical harnesses do not catch the lower fork channel, and move it away from the windrower.
6. Repeat on the opposite side.

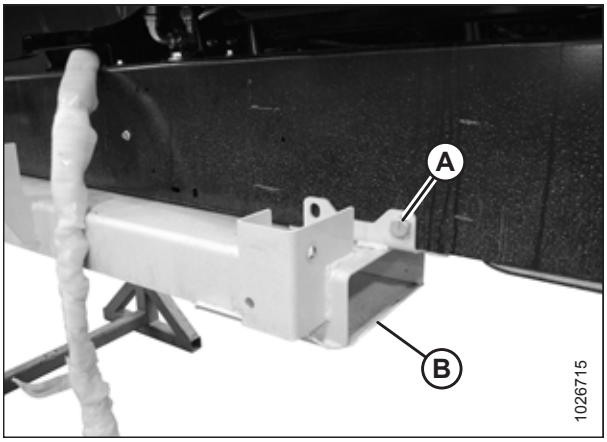


Figure 3.6: Fork Channel

3.3 Installing Wheel Legs

The right and left wheel legs are large components that must be installed before assembling the windrower any further.

DANGER

Objects are heavy and difficult to maneuver. Use a proper lifting device and arrange for adequate assistance. Falling objects can result in serious personal injury.

1. Remove the inboard leg bolt, nut, two caps, and pin (A), and retain for leg installation.

   NOTE:

   If lifting with a forklift, the outboard pin was removed previously.

2. **If lifting with a crane:** remove bolt, nut, two caps, and pin (B). Retain for installation.
3. **If lifting with a crane:** remove carriage bolt (C) and lifting plate (D).

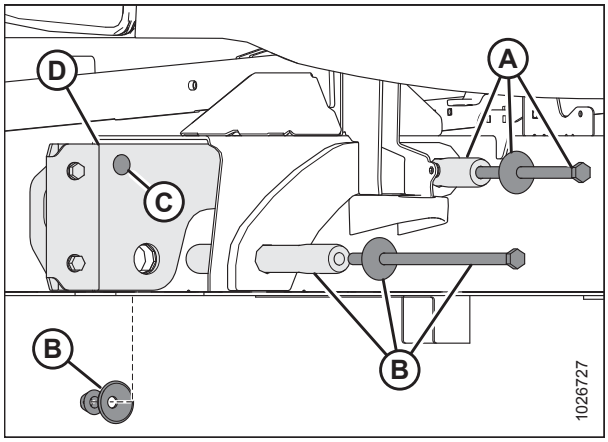


Figure 3.7: Wheel Leg Pin

4. Remove shipping material from the hydraulic and electrical bundle on wheel leg.
5. Attach lifting strap (A) to the top of the wheel leg, and use a suitable lifting device to stand it upright.

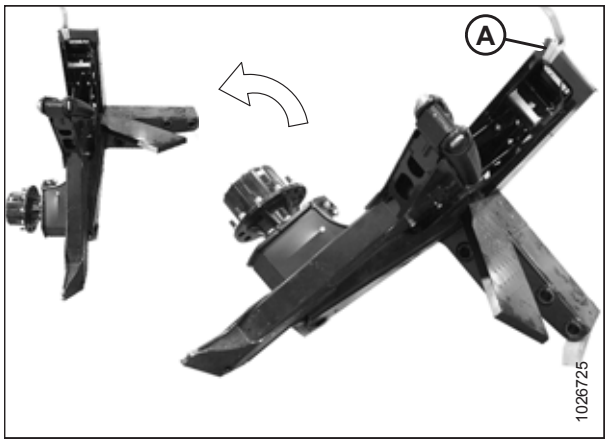


Figure 3.8: Wheel Leg

NOTE:

Ensure strap (A) will not hit sensor (B) when lifting the leg.

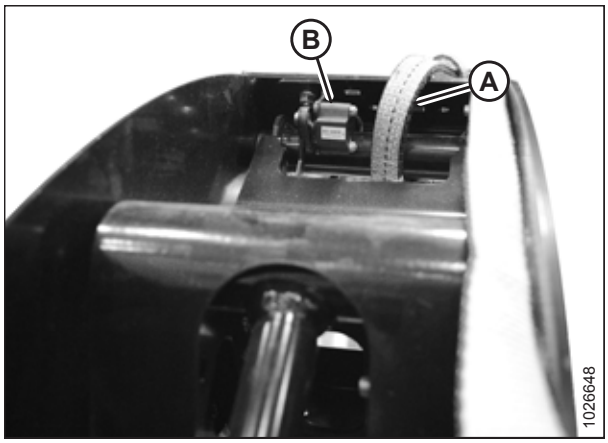


Figure 3.9: Top of Wheel Leg

7. Move the wheel leg into position next to the windrower and feed hydraulic hose and electrical bundle (A) into frame (B).

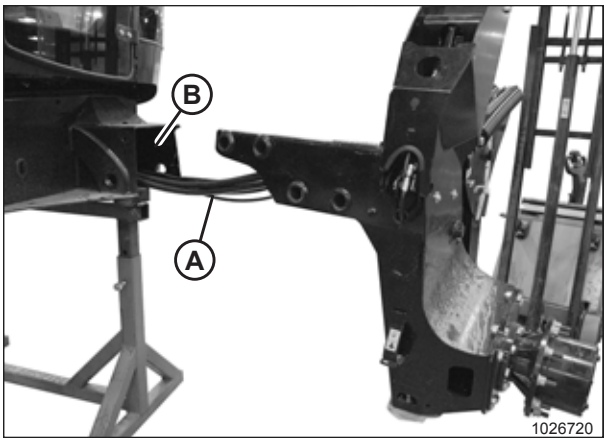


Figure 3.10: Hydraulic Hose Bundle

8. Feed bundle (A) through the hole below the windrower at the center of the frame.

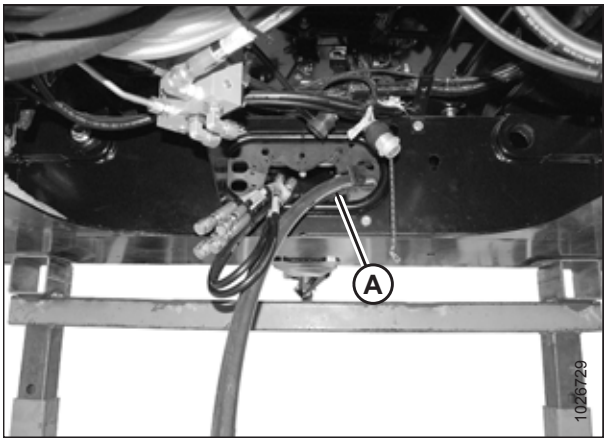


Figure 3.11: Hydraulic and Electrical Bundle

9. Insert the leg into the frame and line up with exposed hole (A).
10. Insert the pins and secure leg with long bolts (B), two caps per pin (C), and nuts (D). Torque to 136 Nm (100 lbf·ft).

    NOTE:

    If necessary, use a pry bar to align holes.

11. Repeat for the opposite wheel leg.

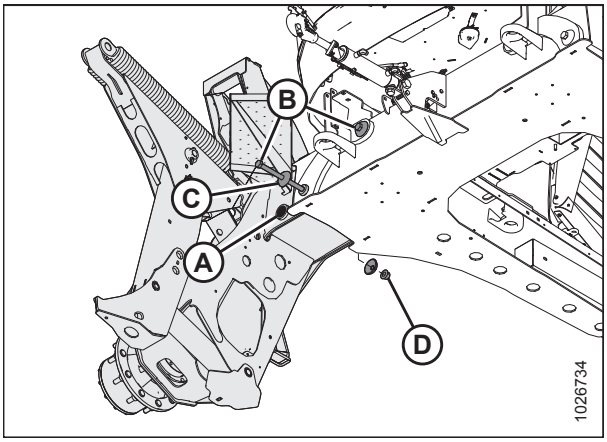


Figure 3.12: Leg Position on Frame

12. Remove lynch pin (A) and clevis pin (B) from the lift linkages on both wheel legs.

    IMPORTANT:

    Failure to remove the clevis pin from the linkage can result in damage to the linkage.

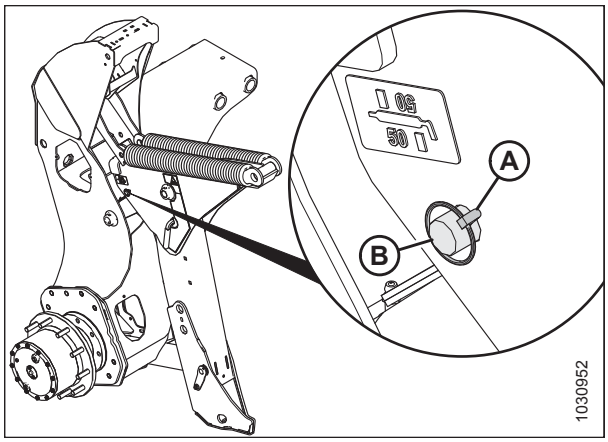


Figure 3.13: Header Lift Linkage Shipping Pin

3.4 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.

1. Retrieve windrower keys (A) from inside the chassis multiplexed Vehicle Electrical Center (mVEC), and retrieve the bag of wheel nuts from behind the operator's seat.
2. Clean the mounting surface on the wheel drive and the rim.

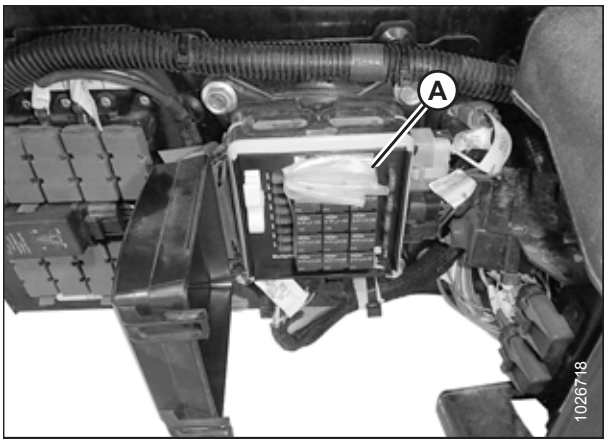


Figure 3.14: Windrower Keys Inside mVEC

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.

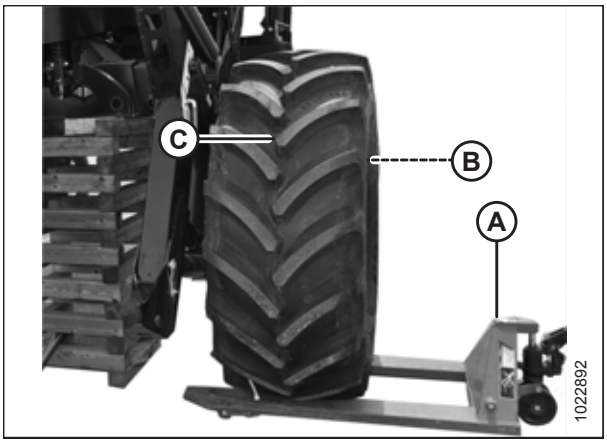


Figure 3.15: Drive Wheel Ready for Installation

5. Align the wheel rim with the studs on the hub. Push the wheel onto the hub.
6. 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.
7. Torque the drive wheel nuts to 510 Nm (375 lbf·ft) using the tightening sequence shown.

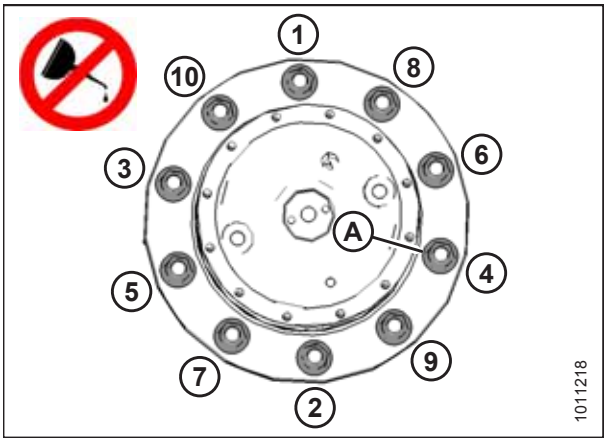


Figure 3.16: Tightening Sequence – 10-Bolt Wheel

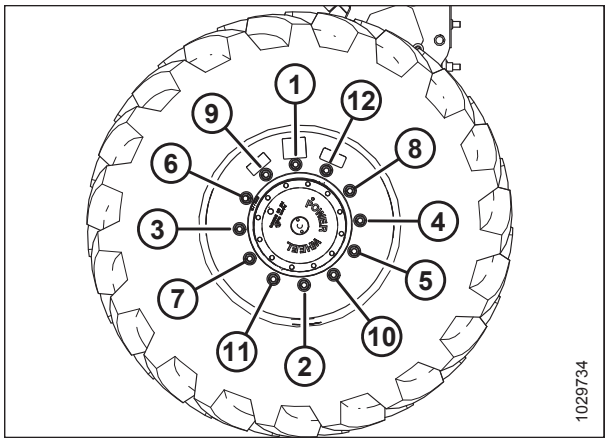


Figure 3.17: Tightening Sequence – 12-Bolt Wheel

8. Repeat the tightening sequence two additional times, ensuring that the specified torque is achieved each time.
9. Repeat Step *2, page 51* to Step *8, page 52* in order to install the right drive wheel.

3.5 Installing Caster Wheels

Install the two caster wheels onto the walking beam near the engine.

Installing right caster wheel

1. Remove bolts (A) securing anti-shimmy dampener brackets (B) to shipping stand. Retain the two M24 bolts and washers for installation.

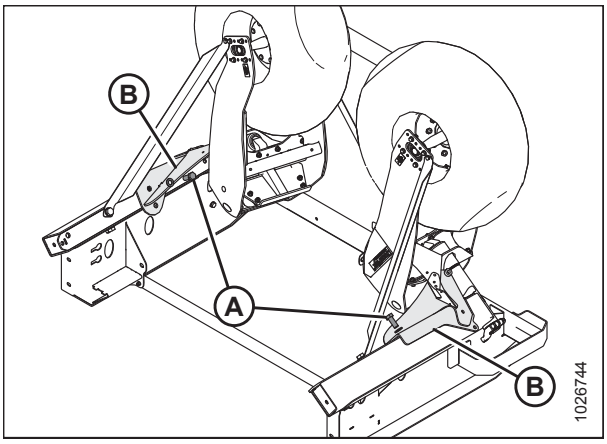


Figure 3.18: Anti-Shimmy Dampener Bracket

2. Use a suitable lifting device to support right caster wheel (A). Do **NOT** remove angled support (B).

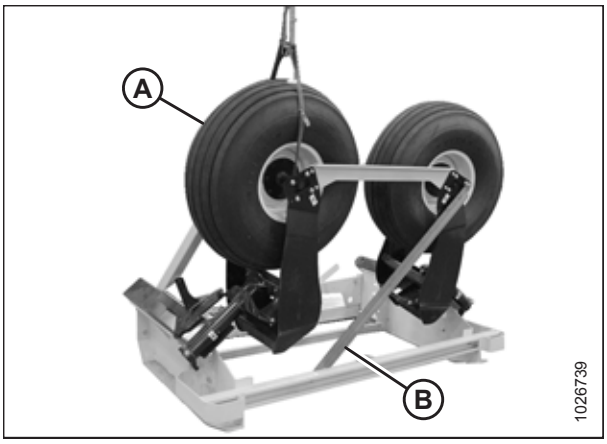


Figure 3.19: Caster Wheels Shipping Assembly

3. Remove and discard four bolts (A), and remove horizontal strap (B) between caster wheels.

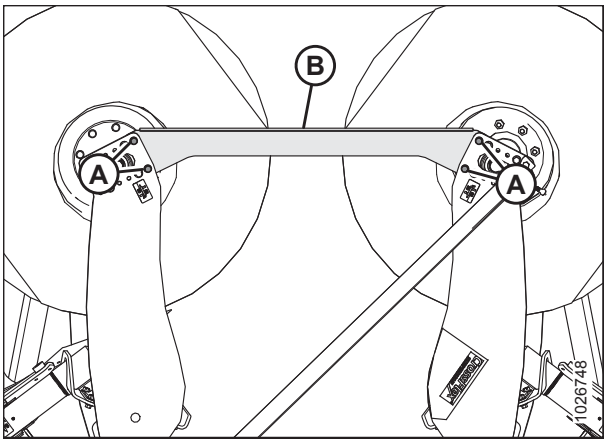


Figure 3.20: Caster Wheels Shipping Assembly

4. Remove four M24 bolts (A) securing right caster wheel (B) to shipping stand. Retain bolts with washers for installation.
5. Lift right caster wheel away from shipping assembly and set it down on a non-scratch surface.

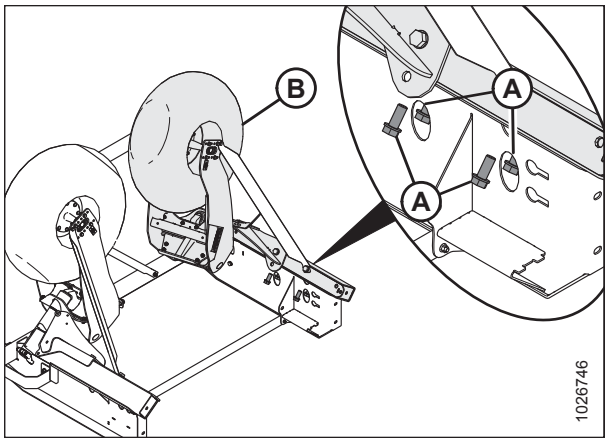


Figure 3.21: Caster Wheels Shipping Assembly

6. Reposition lifting straps (A) around caster wheel beam and shipping bracket (B), and lift wheel into position beside walking beam.
7. Insert caster wheel approximately 305 mm (12 in.) into walking beam up to shipping brace (B).

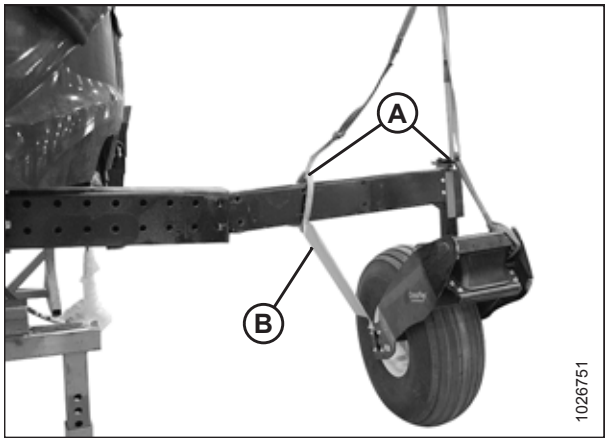


Figure 3.22: Inserting Caster Wheel

8. Remove bolts (A) and (B) securing shipping brace (C) to caster wheel. Discard bolt and nut from location (B).
9. Retain M24 bolt and washer from location (A). Discard brace (C).
10. Rotate caster wheel and insert it into walking beam to the desired caster width.
11. Apply anti-seize compound to the retained M24 bolts.

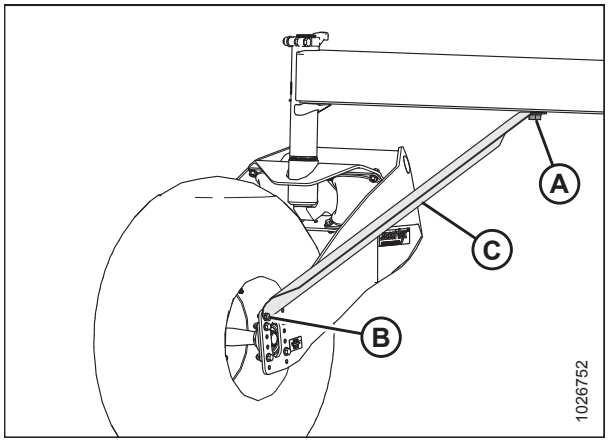


Figure 3.23: Caster Wheel Brace

12. Install two retained M24 bolts (A) with washers into bottom of walking beam. Snug bolts.

    NOTE:

    Use a pry bar to align caster wheel holes on walking beam.

13. Install anti-shimmy dampener bracket (B) onto walking beam, and secure with two retained M24 bolts and washers (C).

14. Install two retained M24 bolts and washers (D) into the outboard holes on walking beam.

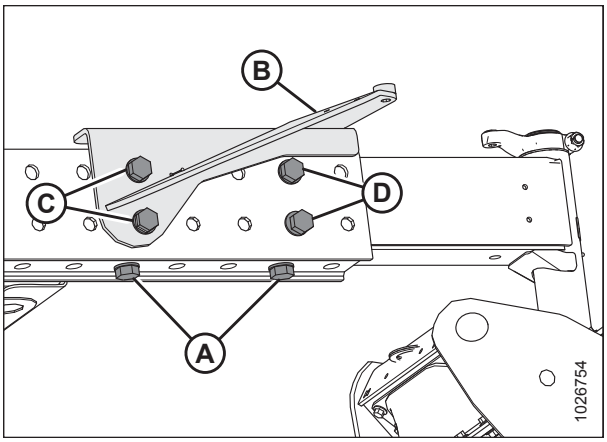


Figure 3.24: Caster Wheel Install

15. Tighten six bolts on walking beam as follows:

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

    b. Torque back bolts (B) to 745–770 Nm (550–570 lbf·ft).

    c. Torque bottom bolts (A) to 745–770 Nm (550–570 lbf·ft).

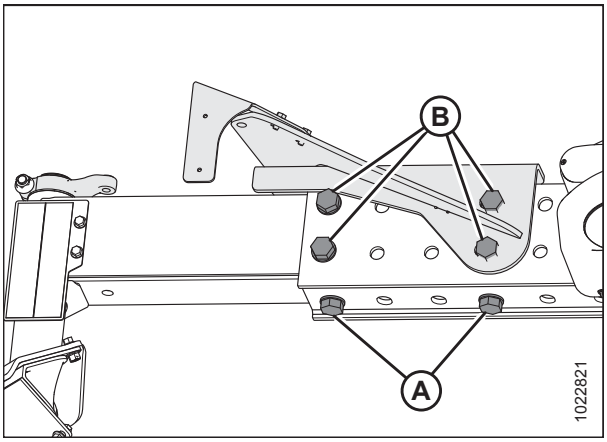


Figure 3.25: Torquing Bolts (Left Wheel Shown)

Installing left caster wheel

16. Use a suitable lifting device to support the left caster wheel (A), and remove angle brace (B).

    NOTE:

    Ensure wheel is supported; wheel may shift when brace is removed.

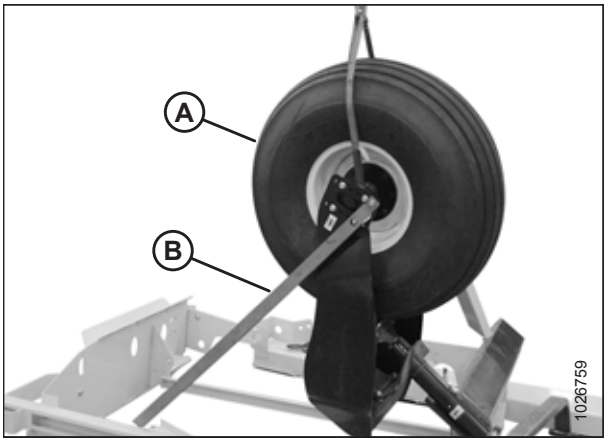


Figure 3.26: Caster Wheels Shipping Assembly

17. Remove four M24 bolts (A) securing left caster wheel beam (B) to shipping stand. Retain M24 bolts with washers for installation.
18. Lift left caster wheel away from shipping assembly and set it down on a non-scratch surface.
19. Repeat Step *6, page 54* to Step *15, page 55* to install left caster wheel.

    NOTE:

    It may be necessary to raise the left end of walking beam with a jack when installing the left caster wheel.

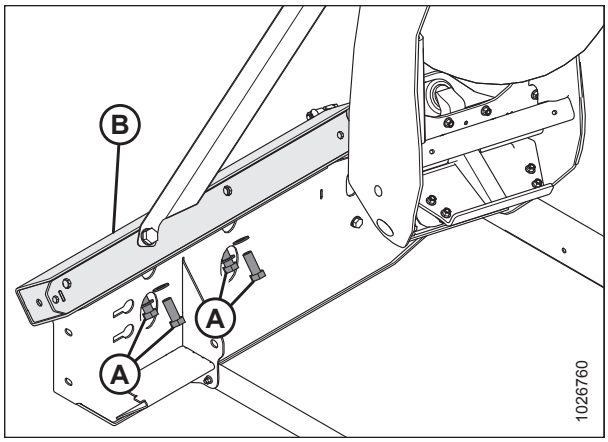


Figure 3.27: Caster Wheels Shipping Assembly

20. On left anti-shimmy dampener bracket, rotate slow moving vehicle (SMV) sign bracket (A) into working position. Secure with existing screws (B).

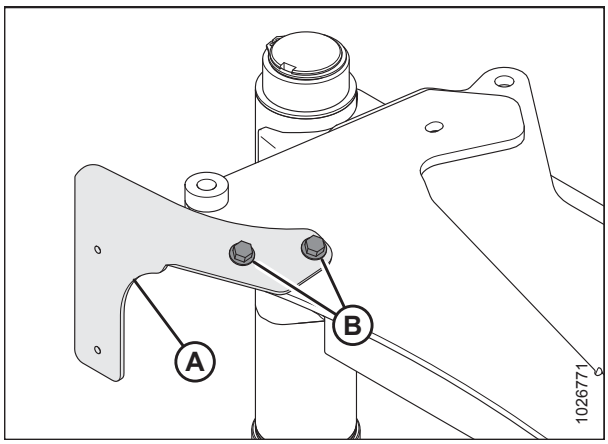


Figure 3.28: SMV Bracket in Working Position

21. Ensure left and right caster wheel width is equal.

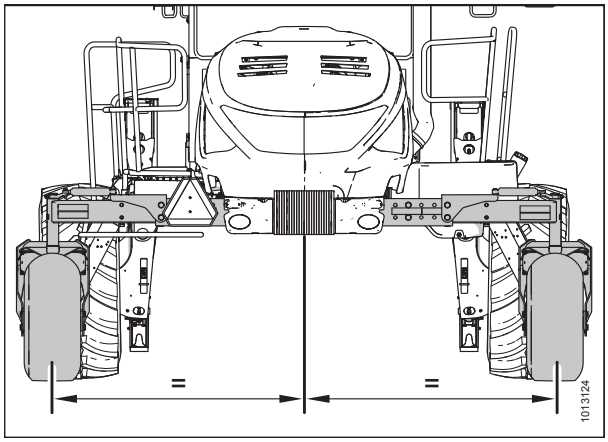


Figure 3.29: Walking Beam Adjustment

3.6 Installing Anti-Shimmy Dampeners

Anti-shimmy dampeners prevent the caster wheels from moving rapidly.

1. Retrieve the anti-shimmy dampener shocks and hardware from the toolbox.
2. 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.

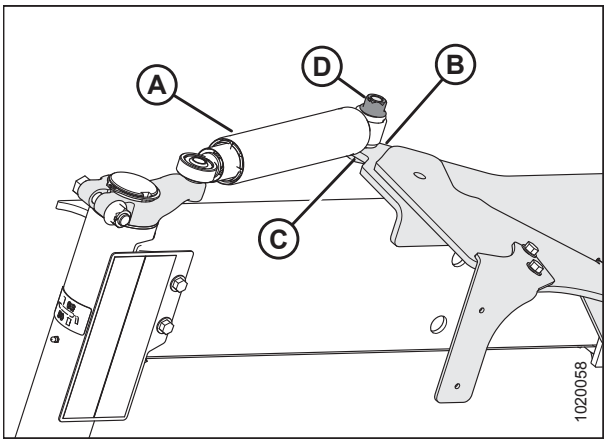


Figure 3.30: Anti-Shimmy System – Left Side

3. 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.
4. Rotate the caster so that arm (D) is aligned with the walking beam.

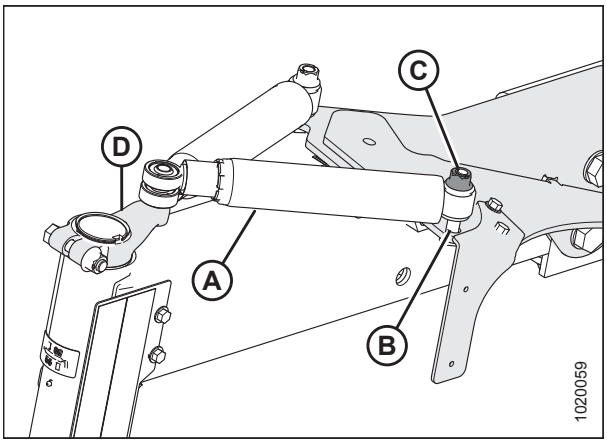


Figure 3.31: Anti-Shimmy System – Left Side

5. 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”.
6. Torque bolt (A) to 244 Nm (180 lbf·ft).
7. Install jam nut (C) and torque nut (C) to 138 Nm (102 lbf·ft).
8. 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.

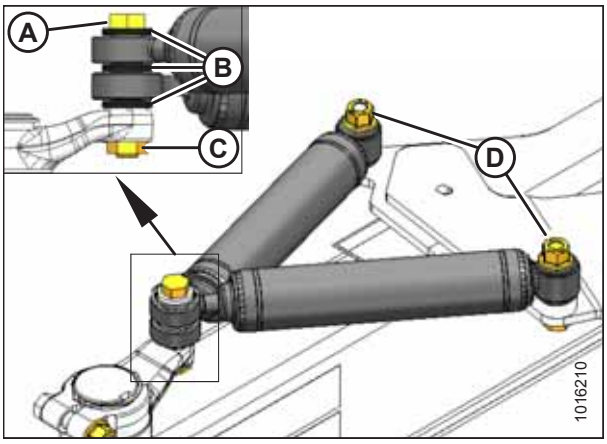


Figure 3.32: Anti-Shimmy System – Left Side

9. Repeat Steps *2, page 57* to *8, page 57* to install the anti-shimmer system on the opposite side of the windrower.

3.7 Connecting Wheel Leg Hydraulics and Electrical System

Reconnect the wheel leg hydraulic and electrical connections that were disconnected for shipping purposes.

NOTE:

A bag containing 14 medium cable ties (MD #21763) and 1 large cable tie (MD #30753) is shipped inside the windrower cab. This procedure requires medium cable ties.

Junction manifold hydraulic connections

1. Connect hoses from the left wheel leg to the junction manifold as follows:
   a. Connect the 3/8 in. internal diameter (ID) lift hose (A) with no cable tie to port HL.
   b. Connect the 1/4 in. ID float hose (B) marked with a yellow cable tie to port FL.
   c. Connect the 3/8 in. ID lift hose (C) marked with a yellow cable tie to port CL.
   d. Connect the 1/2 in. ID case drain hose (D) marked with a red cable tie to port MDL.

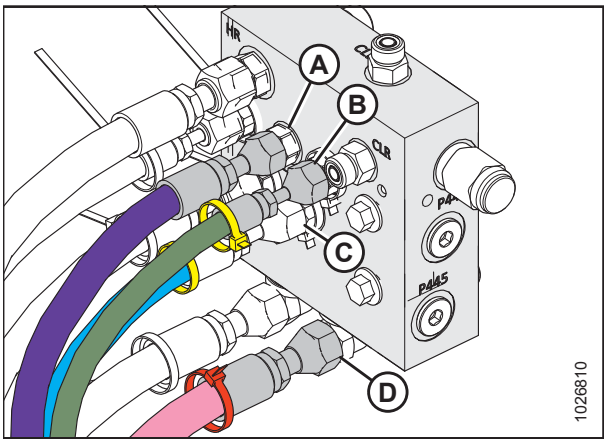


Figure 3.33: Junction Manifold Left Leg Hoses

2. Connect hoses from the right wheel leg to the junction manifold as follows:
   a. Connect the 1/2 in. internal diameter (ID) lift hose (A) with no cable tie to port HR.
   b. Connect the 1/4 in. ID float hose (B) marked with a black cable tie to port FR.
   c. Connect the 3/8 in. ID lift hose (C) marked with a black cable tie to port CR.
   d. Connect the 1/2 in. ID case drain hose (D) marked with a blue cable tie to port MDR.

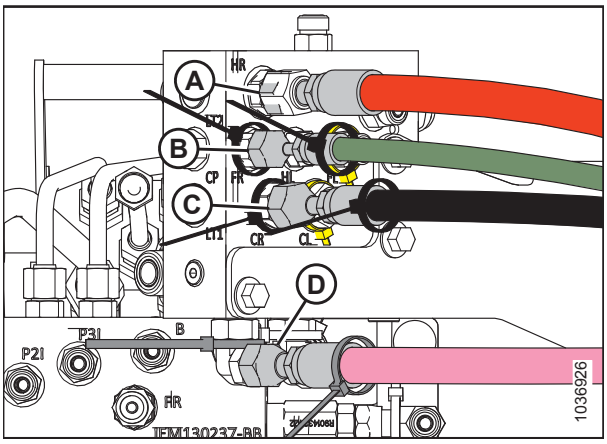


Figure 3.34: Junction Manifold Right Leg Hoses

Float selector manifold hydraulic connections

3. Connect hoses from the right wheel leg to the float selector manifold as follows:
   a. Connect the 1/4 in. ID brake hose (A) with no cable tie to port BR.
   b. Connect the 1/4 in. ID float hose (B) with no cable tie to port FR with extension.
4. Connect hoses from the left wheel leg to the float selector manifold as follows:
   a. Connect the 1/4 in. ID brake hose (C) marked with a black cable tie to port BL.
   b. Connect the 1/4 in. ID float hose (D) marked with a black cable tie to port FL with extension.
5. Use provided cable tie (A) to secure two hoses (B) (routed from the right leg to the float selector manifold) to the case drain hose marked with a blue cable tie.
6. Use provided cable tie (C) to secure two hoses (D) (routed from the left leg to the float selector manifold) to the case drain hose marked with a red cable tie.

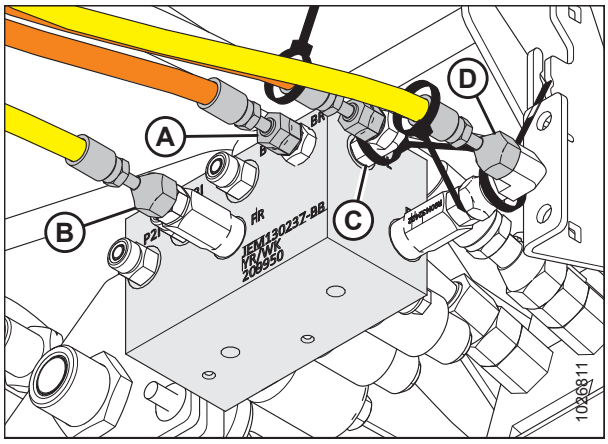


Figure 3.35: Float Selector Manifold

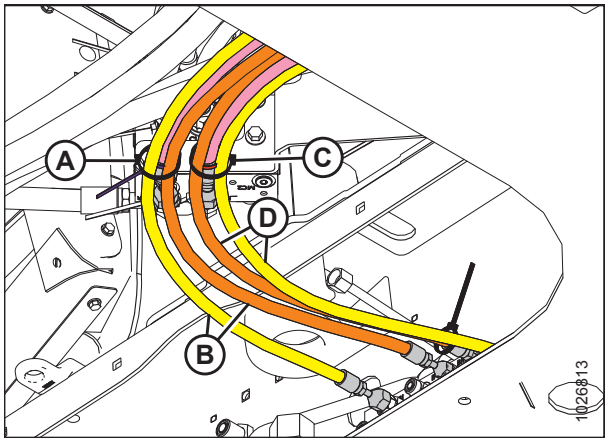


Figure 3.36: Securing Hoses

Traction drive pump hydraulic connections

7. Route the traction drive hoses through the supports inside the cross member and secure with cable ties (A).

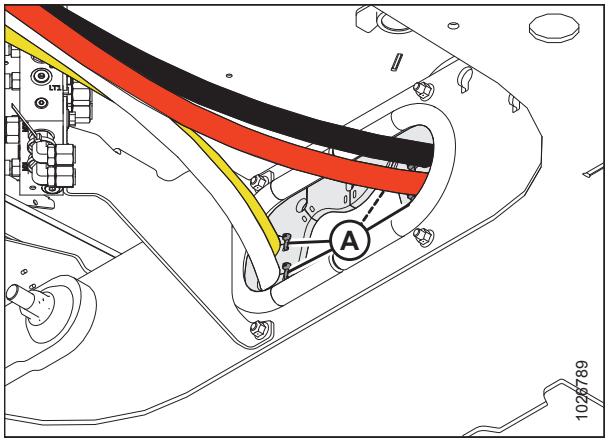


Figure 3.37: Hose Support at Cross Member

8. Remove nuts and bolts (A), and remove routing clamp (B) from hose support (C) in front of the pump stack.
9. Route the traction drive hoses through the hose support, position them so that they do **NOT** sag below the windrower frame, and then reinstall the routing clamp.

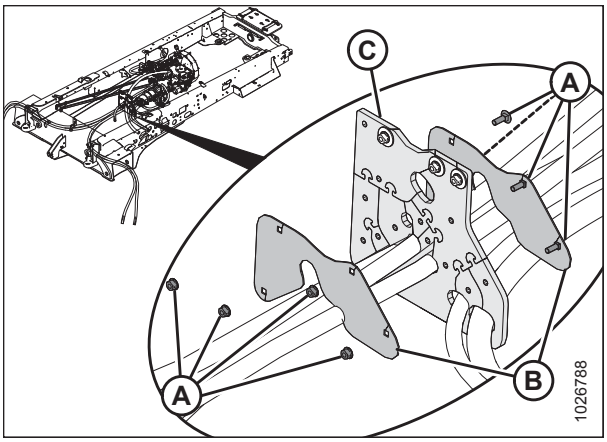


Figure 3.38: Hose Support at Pump Stack

10. Connect the hoses from the wheel drive motors to the traction drive pump as follows:
    a. Connect the hose from port B on the right wheel motor to port (A) (the one with extended adapter and marked with a black cable tie).
    b. Connect the hose from port A on the right wheel motor to port (B) (the one with extended adapter and marked with a red cable tie).
    c. Connect the hose from port B on the left wheel motor to port (C) (the one marked with a yellow cable tie).
    d. Connect the hose from port A on the left wheel motor to port (D) (the one with no cable tie).

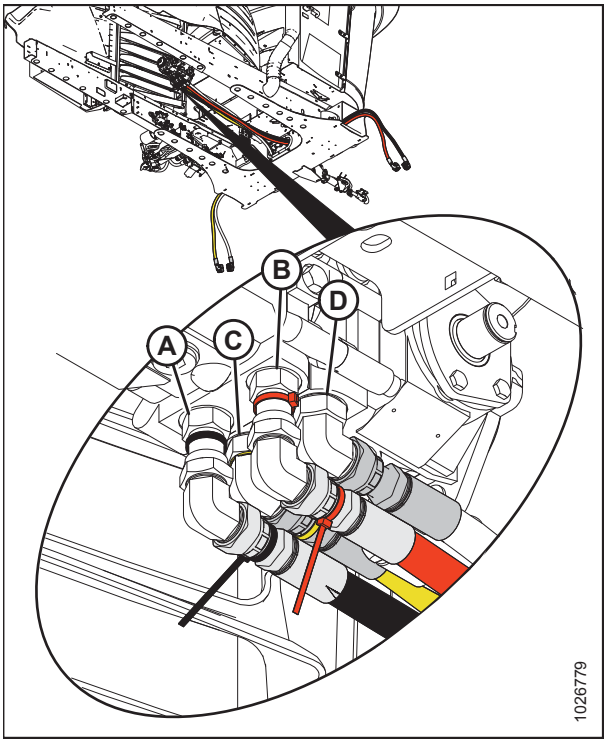


Figure 3.39: Traction Drive Pump

Electrical Connections

11. Route harness (A) from each wheel motor through the hose support behind the front cross member, and connect it to master controller harness (B) as follows:

    - Connect the right wheel motor connector C25B to master controller connector C25A.
    - Connect the left wheel motor connector C26B to master controller connector C26A.
    - Secure the harness in the hose support with cable ties (C).

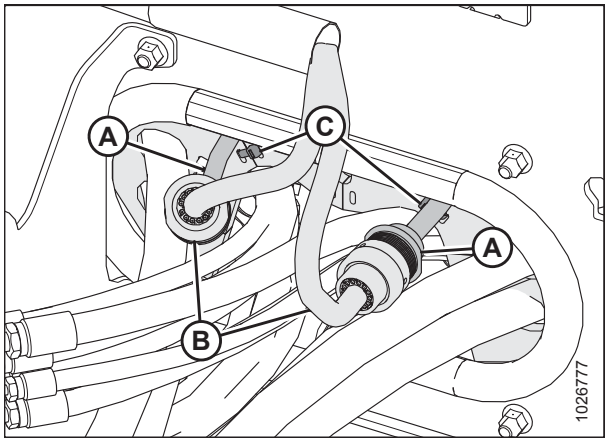


Figure 3.40: Electrical Connections

3.8 Installing Left Platform Assembly

Install the platform, railings, and steps on the left side of the windrower.

Installing left platform

1. To avoid accidental damage, raise the windrower hood.
2. Install platform linkage (A) onto the frame with two existing bolts and nuts. Nuts (B) should face outward.

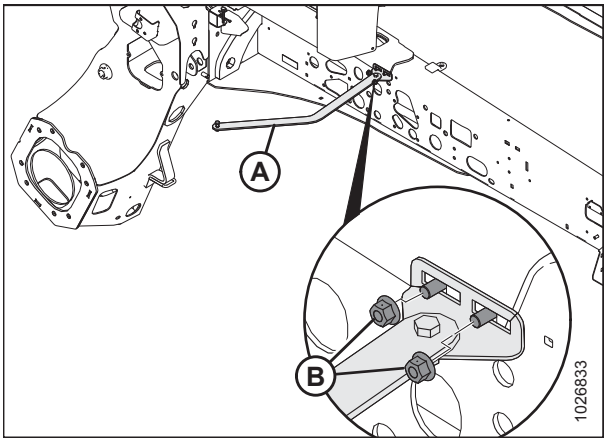


Figure 3.41: Platform Linkage

3. Remove three existing nuts and bolts (A) and adjuster bolt (B) from the left platform bracket. Retain hardware for installation.
4. Attach a suitable lifting device to lift brackets (C) and move the left platform next to the left side of windrower.

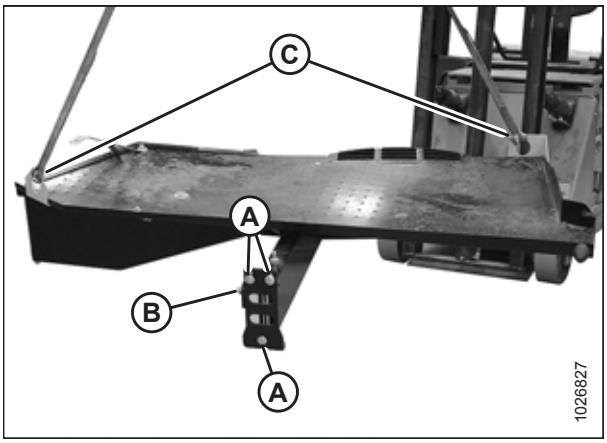


Figure 3.42: Left Platform

5. Align holes in platform bracket (A) with holes in the windrower frame, and secure bracket with three existing bolts (B) and nuts (C). Nuts should face outward.

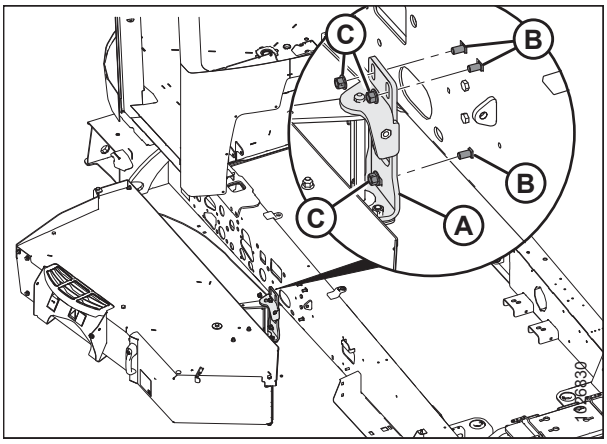


Figure 3.43: Left Platform Bracket

6. Reinstall platform adjuster bolt (A) through gusset (B) on the left frame member.

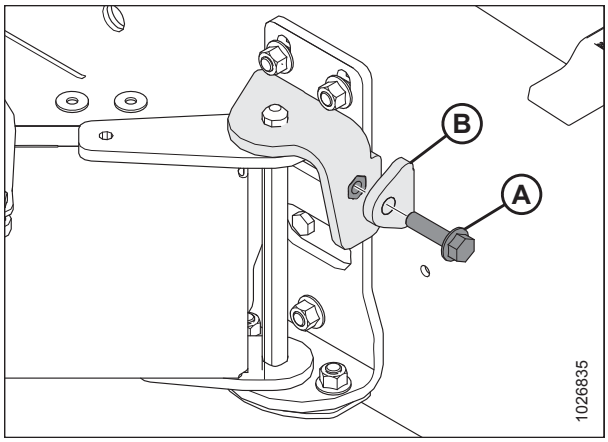


Figure 3.44: Left Platform Bracket

7. Use the existing hardware to connect platform linkage (A) to hole in the platform. Ensure bushing (B) remains in the linkage hole; nut (C) is installed below the platform. Torque nut to 14.5 Nm (11 lbf·ft).

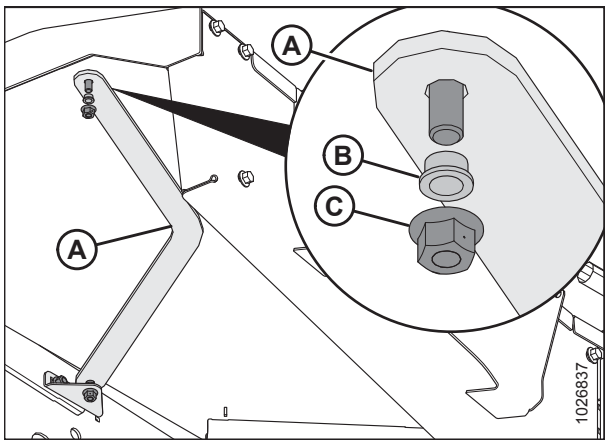


Figure 3.45: Linkage Below Platform

8. Use the existing hardware to mount door stop (A) onto the left platform. Insert bolt (B) from the top and torque nut (C) to 28.5 Nm (21 lbf·ft).

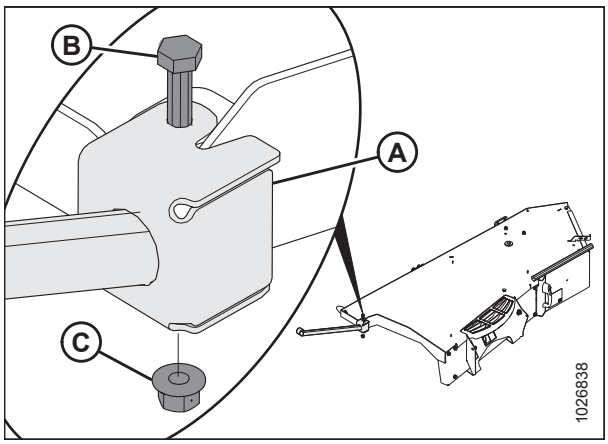


Figure 3.46: Platform Door Stop

9. Adjust the platform angle using bolt (A) until platform just touches front support (B) when closing.
10. After adjustment is complete, torque three platform bracket bolts (C) to 68.5 Nm (50.5 lbf·ft), and two linkage bolts (D) to 39.5 Nm (29 lbf·ft).

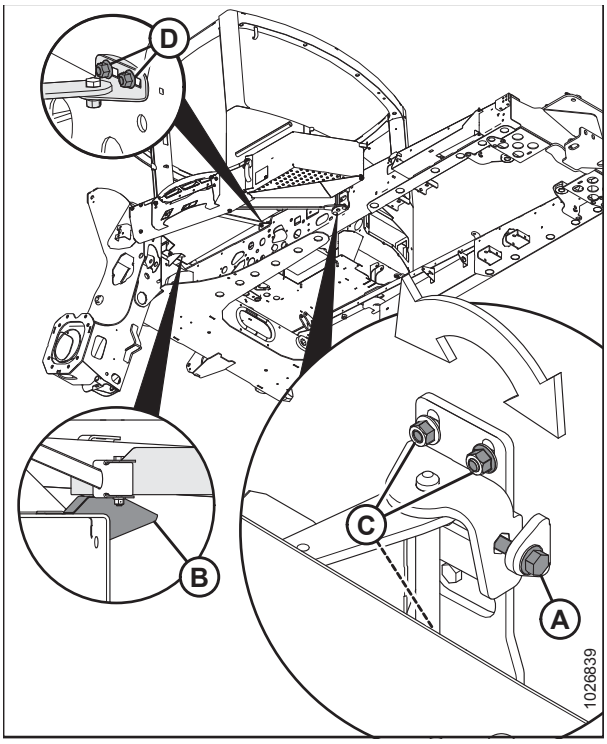


Figure 3.47: Left Platform Angle Adjust

Installing left platform handrails

11. Remove shipping strap (A) and retain the hardware.
12. Remove rear lifting bracket (B) and discard the hardware.
13. Ensure toolbox door (C) is locked, and remove long hinge bolt and nut (D). Retain the hardware.
14. Remove and retain two bolts (E) next to the toolbox.
15. Remove forward lifting bracket (F) and retain three bolts (G).

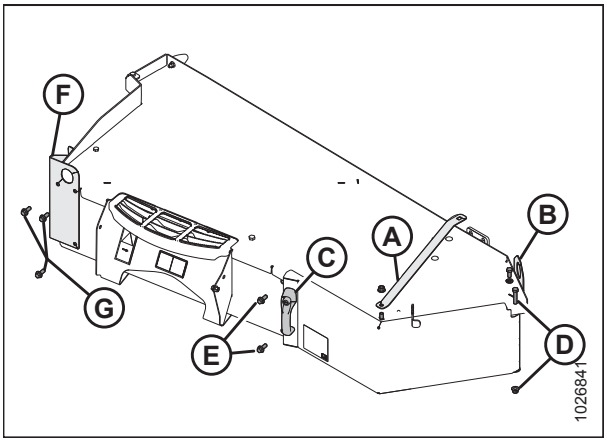


Figure 3.48: Left Platform Assembly

16. Set rear handrail (A) on platform and secure it as follows:
    a. Install existing long hinge bolt (B) with nut.
    b. Install two bolts (C) into the side platform. Torque bolts to 95 Nm (70 lbf·ft).
    c. Open toolbox tray (D) and install existing bolt and nut (E) with the bolt head on top of the platform.
17. Set front handrail (F) on platform and secure it with three existing bolts (G). Torque bolts to 95 Nm (70 lbf·ft).

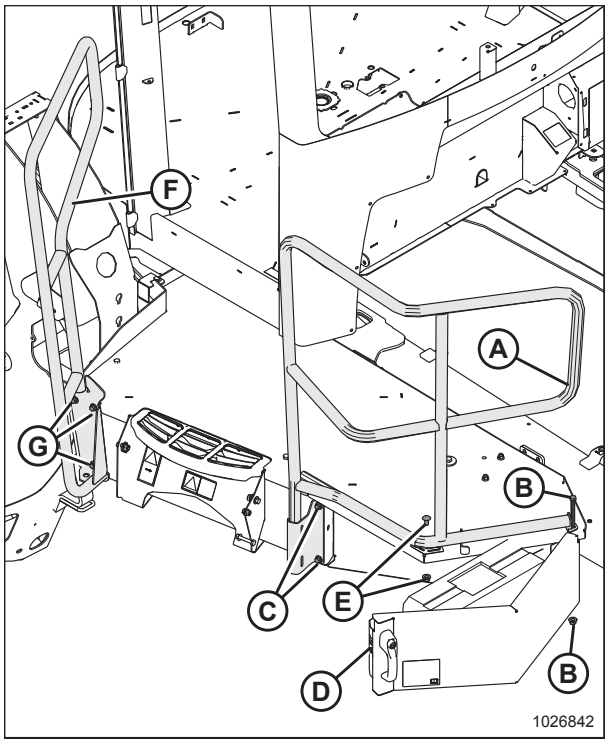


Figure 3.49: Installing Handrails

Installing left platform steps

18. Remove two nuts (A), lock clips (B), and bolts (C) from the step.

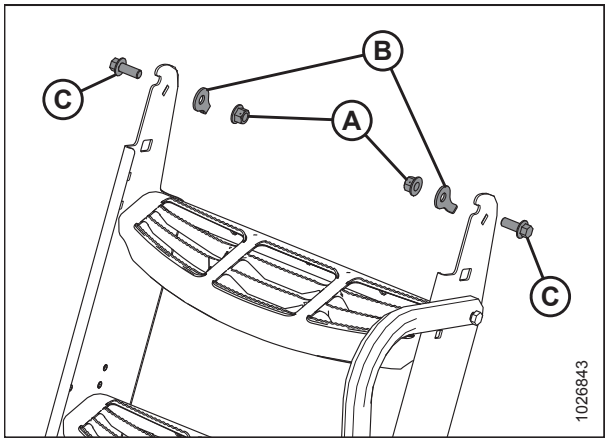


Figure 3.50: Left Platform Steps

19. Insert two bolts (A) into platform and hook steps (B) onto the bolts.
20. Install lock clips (C) with tabs in the slots and secure with nuts (D). Torque bolts to 95 Nm (70 lbf·ft).

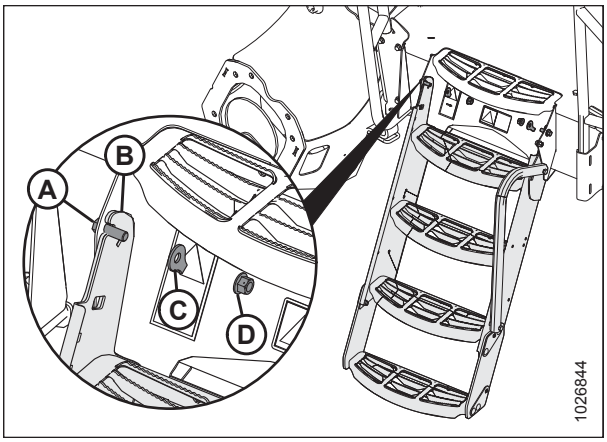


Figure 3.51: Left Platform Steps

3.9 Installing Right Platform / Fuel Tank Assembly

Install the platform/fuel tank, railings, and steps on the right side of the windrower.

Installing right platform

1. To avoid accidental damage, raise the windrower hood.
2. Set the right platform on a stand to allow access to the hardware below.
3. Remove two nuts and bolts (A) and (B) to remove shipping bracket (C).
   - Retain bolt (A) for installation, but discard the nut.
   - Retain bolt and nut (B) for installation.
4. Remove bolt and nut (D), and retain for installation.

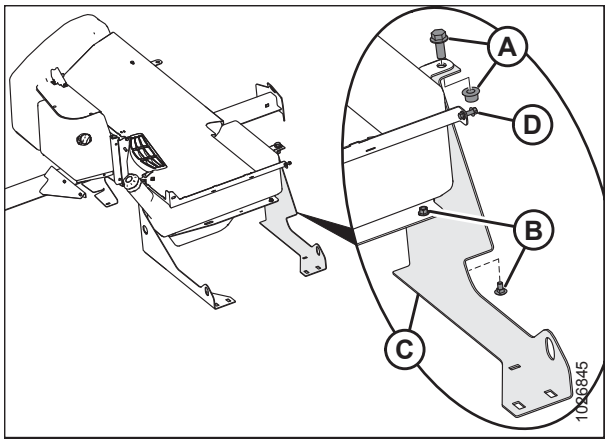


Figure 3.52: Right Platform Shipping Brackets

5. Remove two nuts and bolts (A), and remove shipping spacer tube (B) from the handrail channel.
6. Remove nuts (C) from the stud next to steps, remove shipping bracket (D), and reinstall nut (C) onto stud for installation.

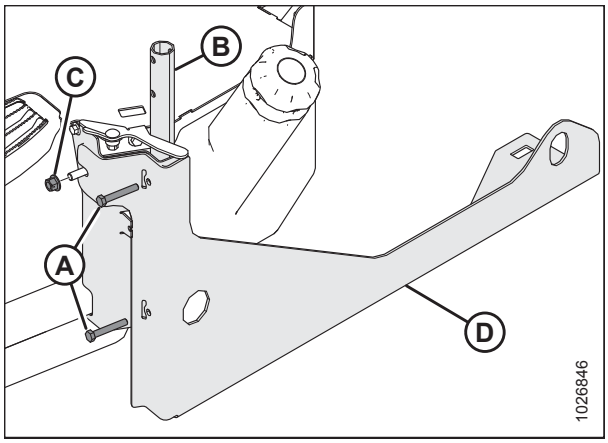


Figure 3.53: Right Platform Shipping Brackets

7. From below the right platform assembly, remove and discard three bolts and nuts (A) and (B), and remove the horizontal shipping channel.
8. Remove bolt and nut (C), and retain for installation.

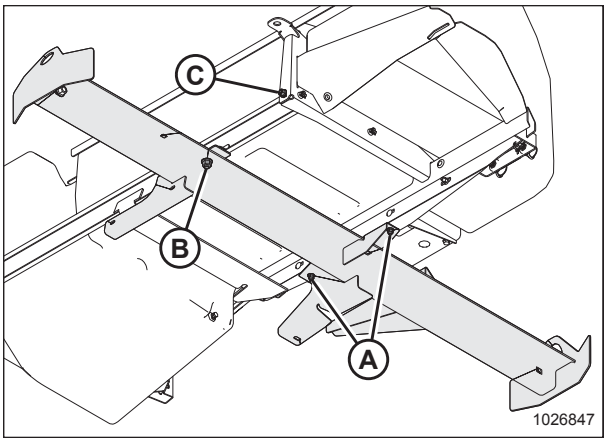


Figure 3.54: Right Platform Shipping Brackets

9. On the right chassis frame member, remove two bolts (A) and remove hose cover (B).

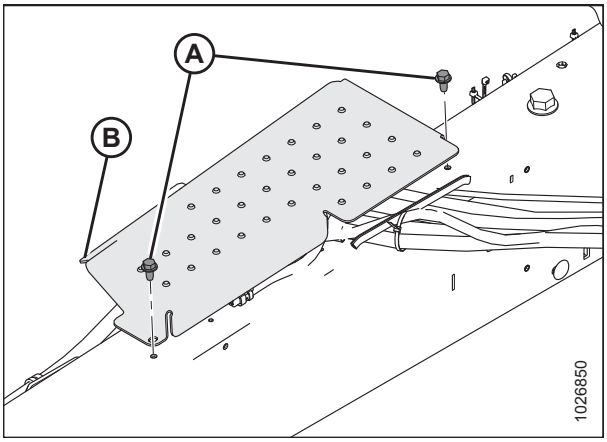


Figure 3.55: DEF Hose Cover

10. Loosen two bolts (A) securing the hose brackets and move the hoses away from platform mounting bolt (B).
11. Remove platform mounting bolt (B) and retain for installation.

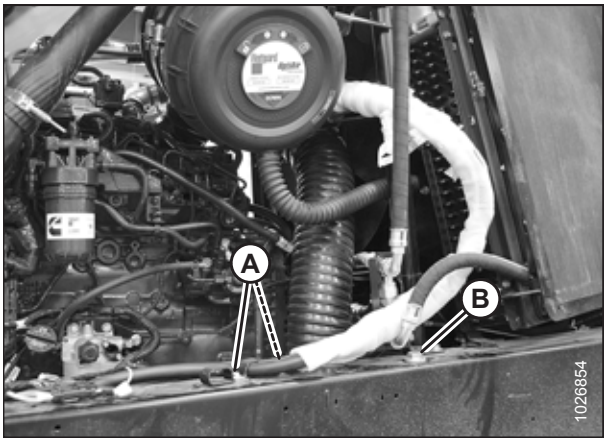


Figure 3.56: Hose Clamps on Right Frame

12. To improve access to the right platform mounting bolts, position a bottle jack (A) and a block of wood near right front cab shock (B) and lift the cab until you feel resistance.

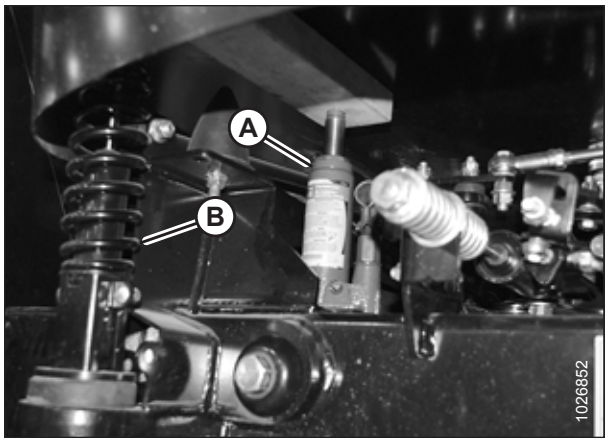


Figure 3.57: Bottle Jack Lifting Cab

13. Support right platform assembly (A) with a suitable lifting device, adjust lifting straps (B) until the platform is parallel to the ground, and move it into place on the right side of windrower. Move hose bundle (C) to prevent pinching.

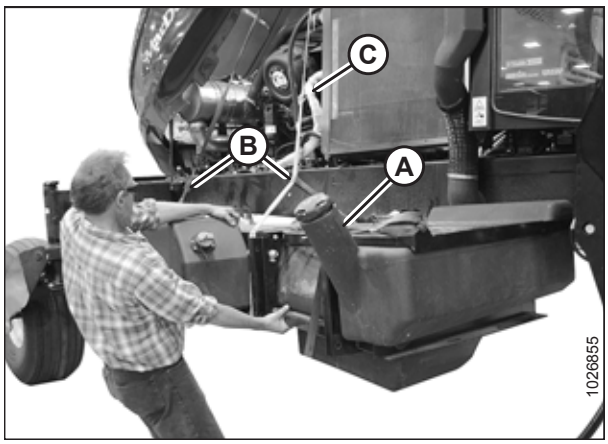


Figure 3.58: Right Platform/Fuel Tank Assembly

14. Secure the rear platform support to frame with bolt (A) retained from the frame.
15. Secure the front platform support to the frame with bolt (B) retained from the shipping configuration.
16. With the bolt head outside the frame, install existing nut and bolt (C) through the side of the frame member at the front of the platform.
17. With the bolt head below the frame, secure front of the platform to lower the frame with nut and bolt (D) retained from the shipping configuration.
18. With the bolt head outside the frame, install existing nut and bolt (E) through the side of the frame member at rear of the platform.
19. For the right platform bolt torque values, refer to Table *3.1, page 71*.

Table 3.1 Right Platform Bolt Torque

Bolt Location (Callout)	Torque Value
Rear support, top frame (A)	500 Nm (379 lbf·ft)
Front support, top frame (B)	500 Nm (379 lbf·ft)
Front side frame (C)	54 Nm (40 lbf·ft)
Front lower frame (D)	68.5 Nm (50 lbf·ft)
Rear side frame (E)	68.5 Nm (50 lbf·ft)

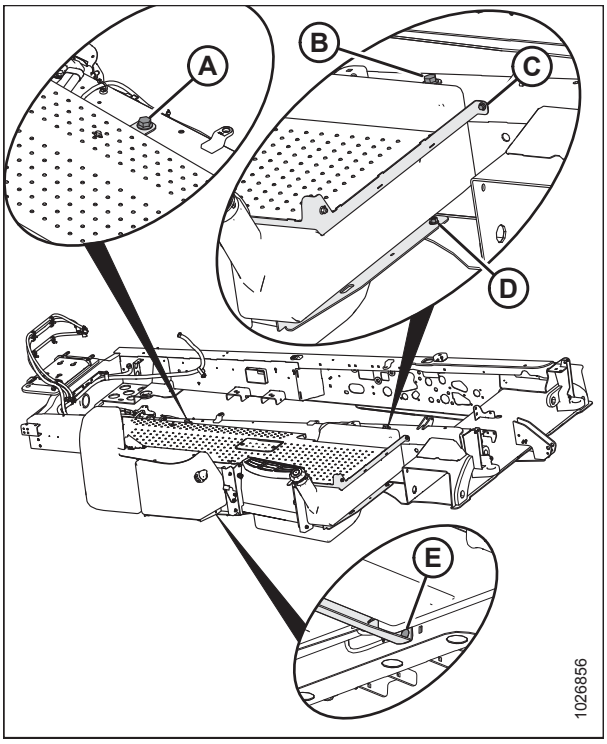


Figure 3.59: Attaching Right Platform Assembly

Installing right platform steps

20. Remove all the hardware shipped on the steps mounting-studs and install the hardware and steps in the following order:

    NOTE:

    Left stud on the steps shown; repeat installation order for the right stud.

    a. Install flat washer (A) on the studs.
    b. Hang steps (B) on the studs.
    c. Install lock clips (C) with the tab in the slot.
    d. Install conical washers (D).
    e. Install flat washer (E).
    f. Install nut (F). Torque nut to 40 Nm (29.5 lbf·ft) and then back off 1/4 turn.

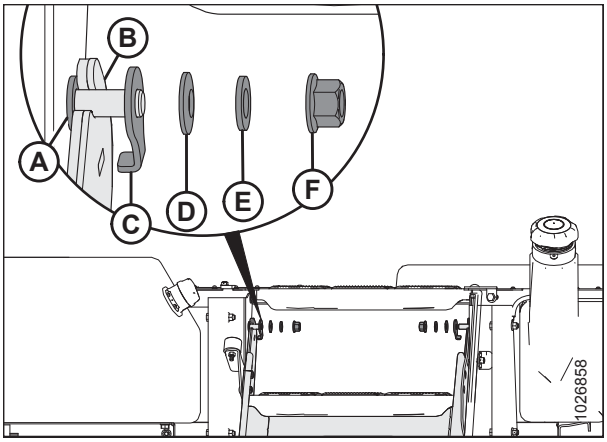


Figure 3.60: Platform Steps Hardware

21. Remove the shipping wire from shock (A) (lowered position shown transparent in illustration at right).
22. Rotate the steps up. Ensure latch (B) engages to lock the steps in place.
23. Rotate shock (A) up and connect to the steps with the existing hardware.

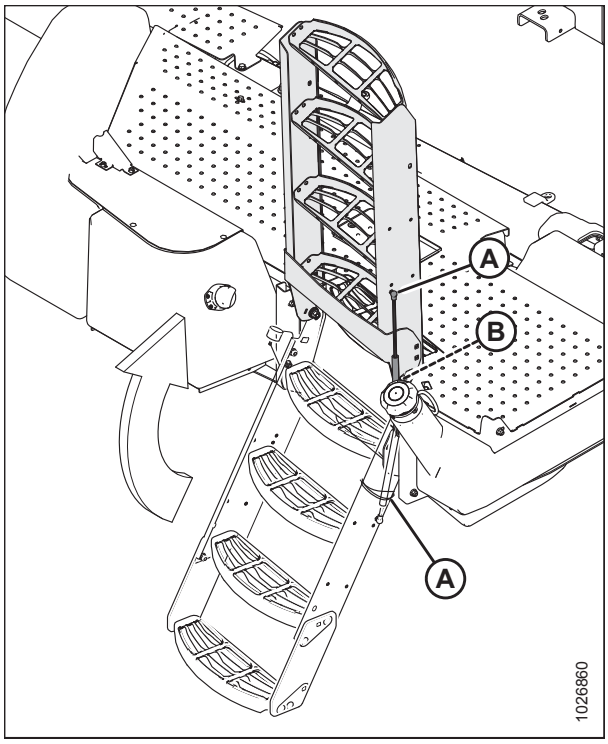


Figure 3.61: Platform Steps

Installing right platform handrails

24. Retrieve forward handrail (A). Remove and retain existing hardware (three bolts and nuts).
25. Insert the handrail tube into the channel to the right of the steps, and secure with existing hardware (B) and (C).
26. Torque the hardware to 35 Nm (26 lbf·ft).

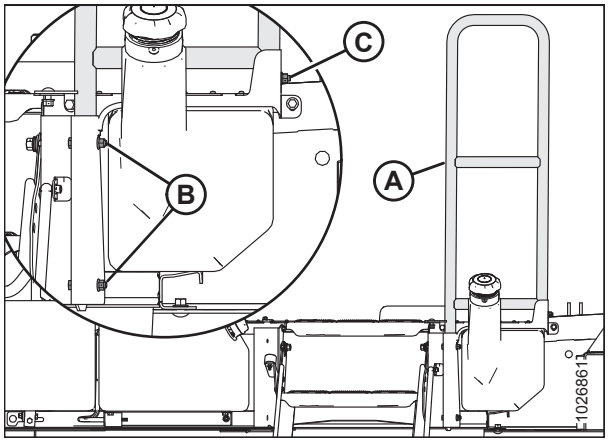


Figure 3.62: Front Handrail – Right Platform

27. Remove two top bolts (A) and loosen rear bolt (B) from DEF head cover (C).
28. Lift the cover toward the windrower and remove.
29. Retrieve the rear handrail. Remove all hardware (six nuts and bolts) and retain for installation.

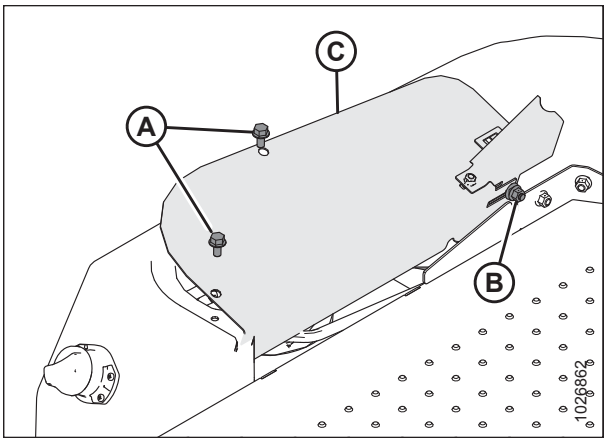


Figure 3.63: Diesel Exhaust Fluid (DEF) Head Cover

30. Insert the rear handrail into the channel next to the DEF tank and the channel left of the steps.

    NOTE:

    Fuel tank hidden to show the hardware locations.

31. Secure the bottom of the rail with two nuts and bolts (A).
32. Secure the rail near the DEF head with two nuts and bolts (B).
33. Secure the rail in the channel left of the steps with two nuts and bolts (C).
34. Torque all handrail hardware to 35 Nm (26 lbf·ft).

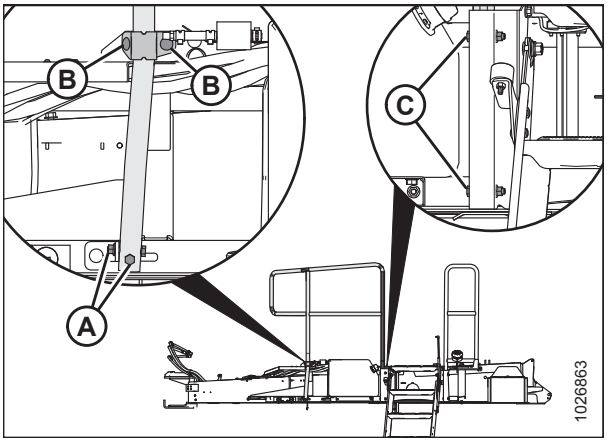


Figure 3.64: Rear Handrail – Right Platform

Positioning the air conditioning drain hoses

35. Route drain hoses (A) from air conditioning (A/C) unit through hole (B) in the frame and into the space between the front platform support and DEF tank.
36. Make a loop in drain hoses with cable ties. Loop height (C) should be 190 mm (7 1/2 in.) maximum; the remaining hose length (D) should hang 120 mm (4 3/4 in.) below bottom of the platform support.
37. Fasten the loop to slot (E) in the platform support with cable tie.
38. Pull the hose ends through hole (F) in the bottom of the platform support.

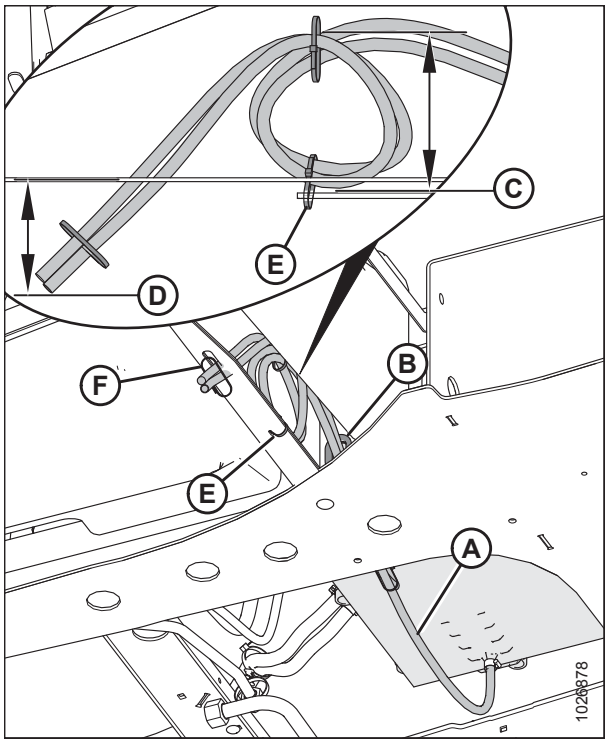


Figure 3.65: A/C Drain Hoses

3.10 Connecting Fuel and Diesel Exhaust Fluid Tanks

Reconnect the hoses and electrical connections to the right platform fuel / diesel exhaust fluid (DEF) tank assembly that were disconnected for shipping purposes.

1. Unwrap the packing material from the fuel and DEF hose bundles.
2. Remove and discard transport fitting (A) and separate the DEF heater hoses. Retain hose clamps (B) for installation.
3. Clamp the DEF heater hoses to prevent spilling the coolant.

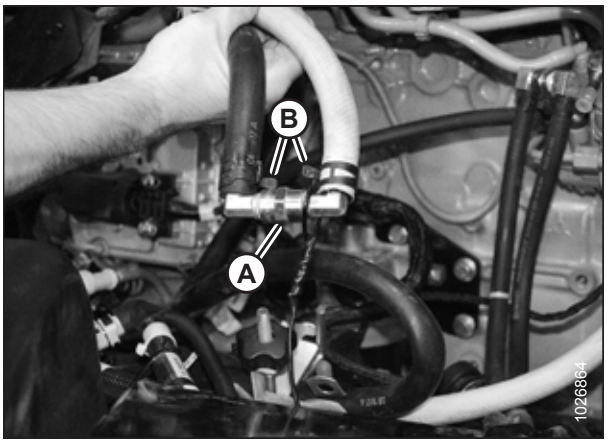


Figure 3.66: DEF Heater Hoses with Transport Fitting

4. Route DEF heater hoses (A) under platform to DEF head (B). Use a fish wire if necessary.

   NOTE:

   Platform is transparent in the illustration at right.

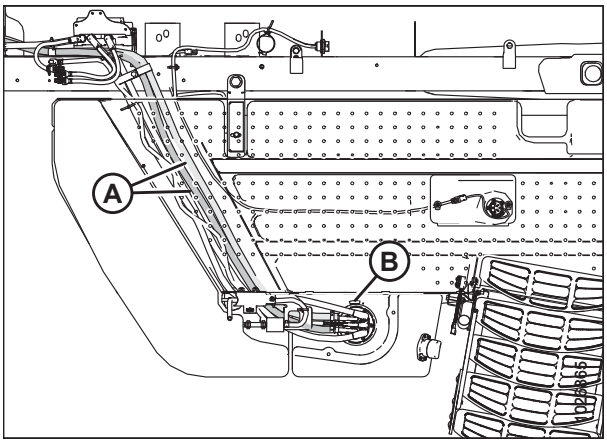


Figure 3.67: Hose Routing

5. Using existing hose clamps, connect black heater hose (A) to the DEF head port with black tie; connect red heater hose (B) to the remaining connector.

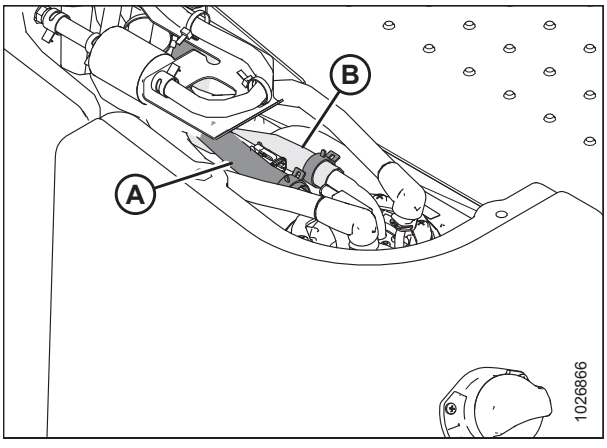


Figure 3.68: DEF Head Connections

6. Route fuel vent hose (A) up into the rear handrail.

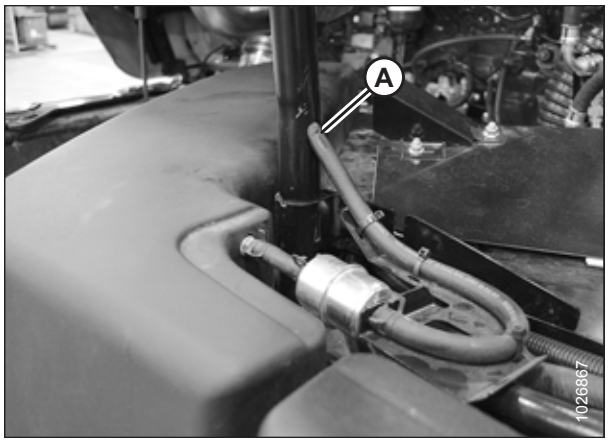


Figure 3.69: Fuel Vent Hose Routing

7. Press gently on lock (A) and pull on the connector to separate the DEF supply lines from the shipping pin. Discard the pin (not shown).

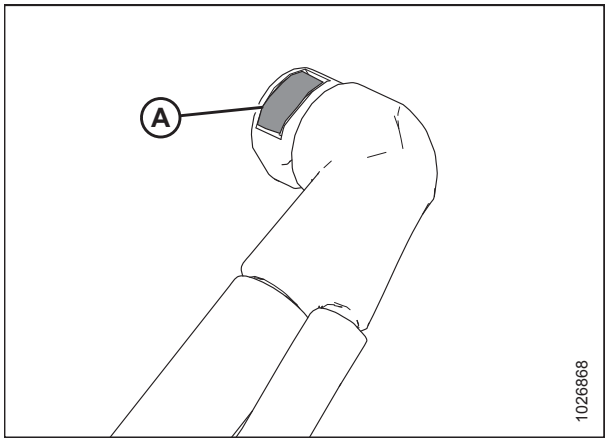


Figure 3.70: DEF Supply Hose Connectors

8. Remove the caps from the DEF supply module and connect the hoses as follows:
   - Red hose to inlet port (A) on the supply module.
   - Yellow hose to backflow port (B) on the supply module.
   - Press down on the connectors until they click.

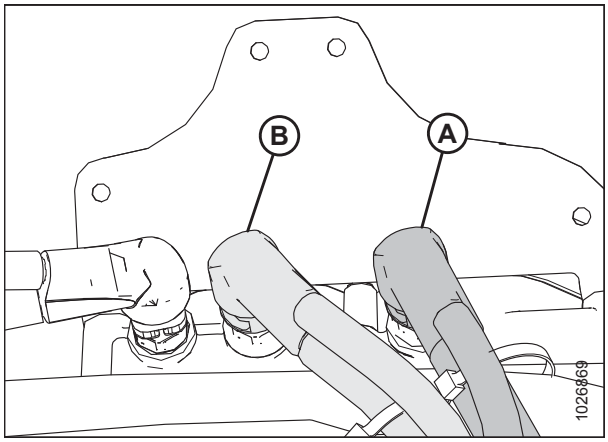


Figure 3.71: DEF Supply Module

Connecting fuel hoses

9. Remove the shipping connector from the fuel hoses. Retain the hose clamps for installation.
10. Using existing hose clamps, connect the supply hose, with the red tie, to fuel filter (A), and the return hose to fuel pump port (B).

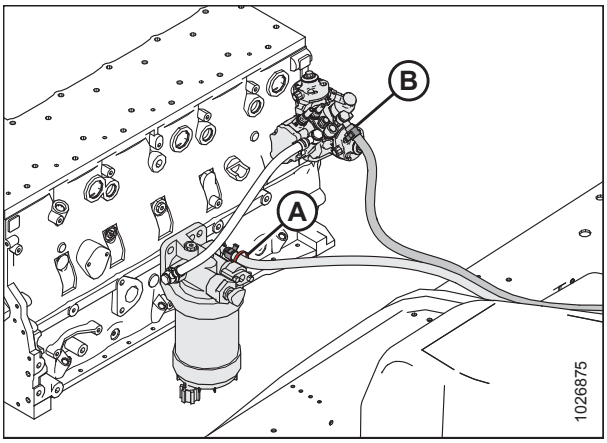


Figure 3.72: Fuel Hose Connections

11. Secure fuel hoses (A), DEF heater hoses (B), and DEF supply module hoses (C) to the frame with the existing P-clamps and torque bolts (D) to 22 Nm (16 lbf·ft).

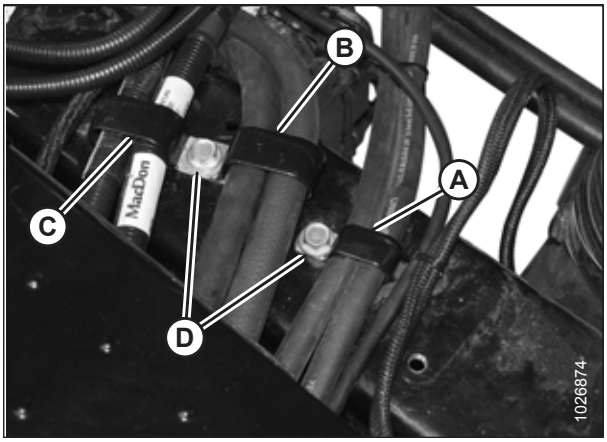


Figure 3.73: Securing Hoses to Frame with P-Clips

Electrical connections

12. Remove the protective caps and connect the following three electrical connectors:
    - Connector (A) from inlet hose to receptacle P173-C
    - Connector (B) from backflow hose to receptacle P172-C
    - Connector (C) from DEF head interconnect P164-CB to receptacle C164-CA

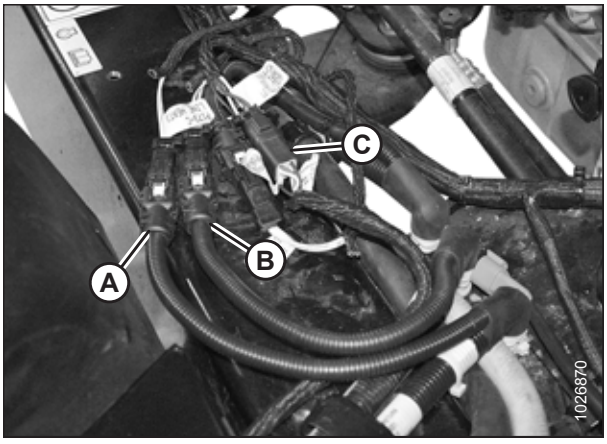


Figure 3.74: Electrical Connections

13. Secure DEF head interconnect harness (A) to the DEF supply module hose with cable ties (B).

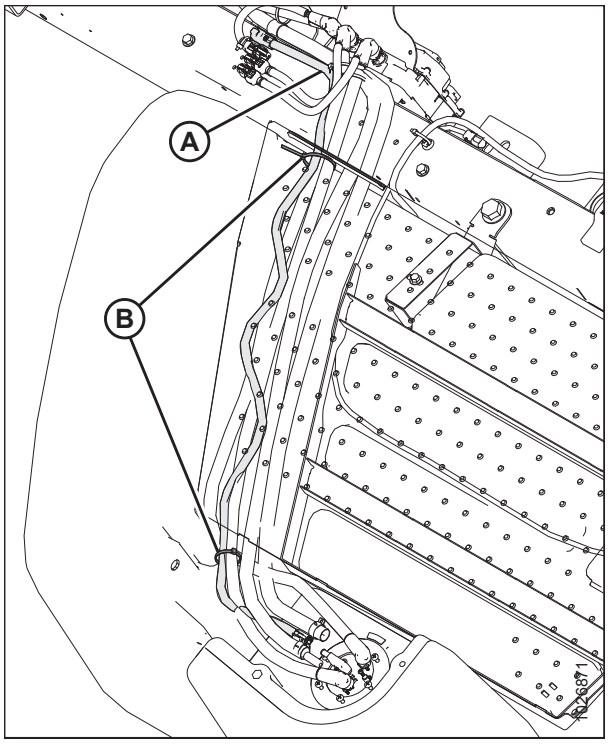


Figure 3.75: Cable Tie Locations

14. Route round auxiliary power connector (B) (C40B) from the right platform to the bracket on the frame and secure with washer and nut.
15. Connect C40B (B) to C40A (A), and secure harness to air cleaner support pipe (pipe not shown) with large cable tie (C).
16. Remove the protective cap from fuel level sender connector (D) and plug into the chassis harness P220 (not shown).
17. Secure the fuel level sender harness to the auxiliary power harness with cable tie (E).

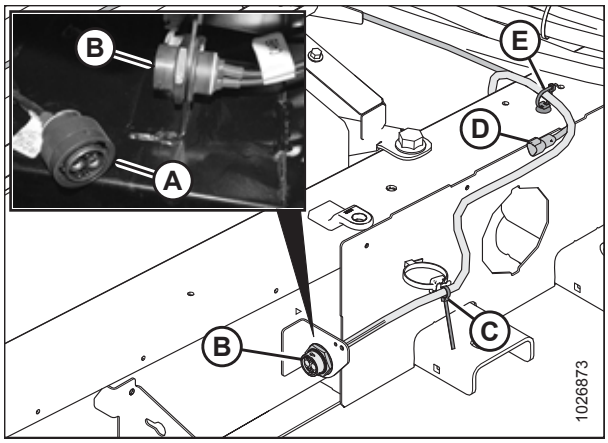


Figure 3.76: Electrical Connections

18. Replace DEF head cover (C) and secure it with two top bolts (A), and rear nut/bolt (B). Torque bolts (A) to 17 Nm (12.5 lbf·ft).

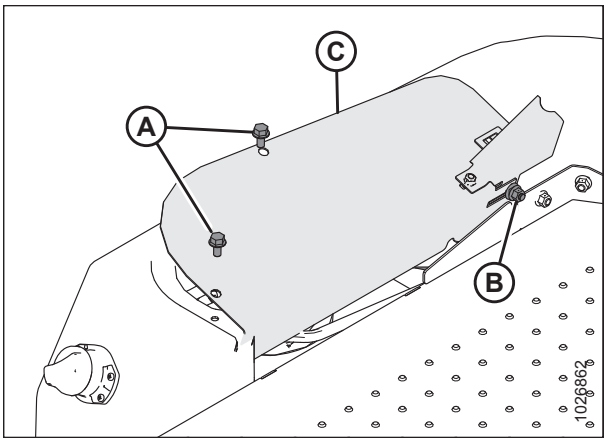


Figure 3.77: DEF Head Cover

19. Replace hose cover (B) and secure with two bolts (A).

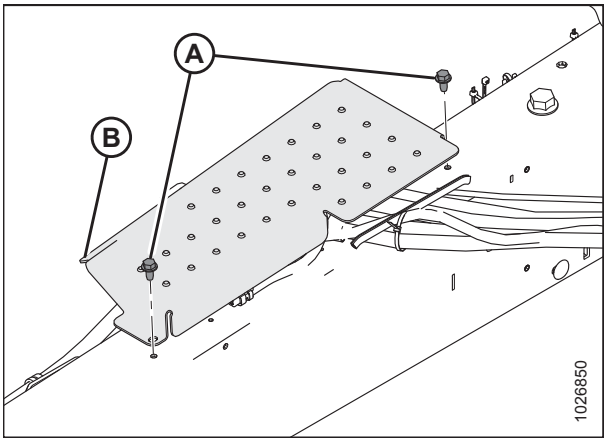


Figure 3.78: DEF Hose Cover

3.11 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.

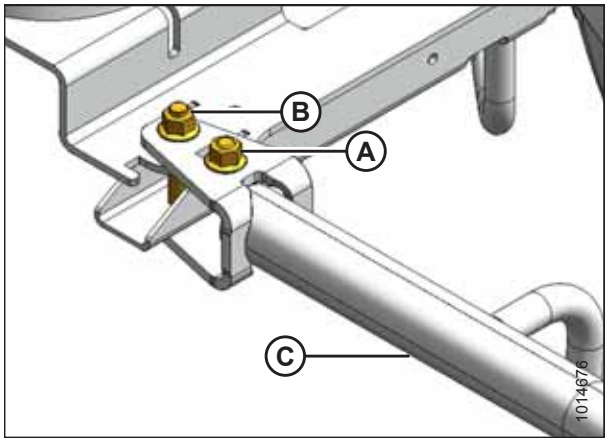


Figure 3.79: Mirror Arm in Shipping Position

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

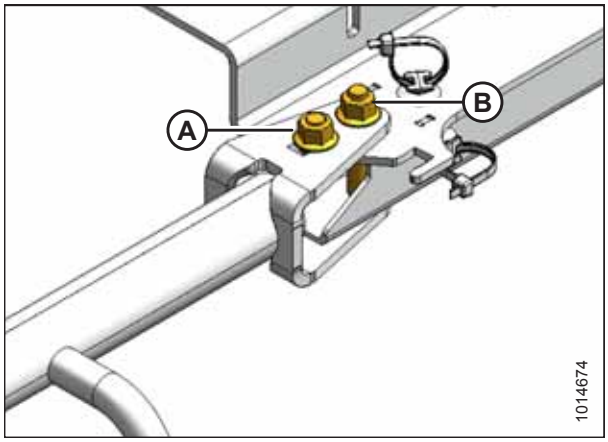


Figure 3.80: Mirror Arm in Working Position

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 80* to *6, page 80* to reposition the right cab-forward mirror.

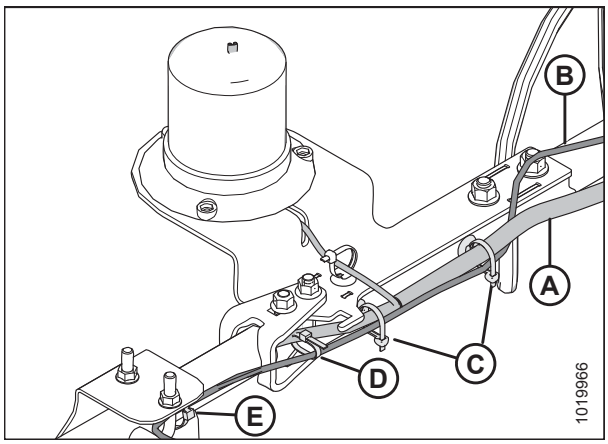


Figure 3.81: Roof Harness and Mirror Harness Secured

3.12 Installing Air Inlet Duct

The air inlet duct prevents large debris from entering the engine.

1. Retrieve the air inlet duct from inside the cab and remove the plastic cover from the breather tube.
2. Ensure there are no parts or debris inside the inlet duct.
3. At the rear right corner of the cab roof, set air inlet duct (A) over the breather tube, and rotate to align the predrilled holes for setscrew (B).
4. Tighten setscrew (B) and tighten tube clamp (C) to secure the duct onto the breather tube.

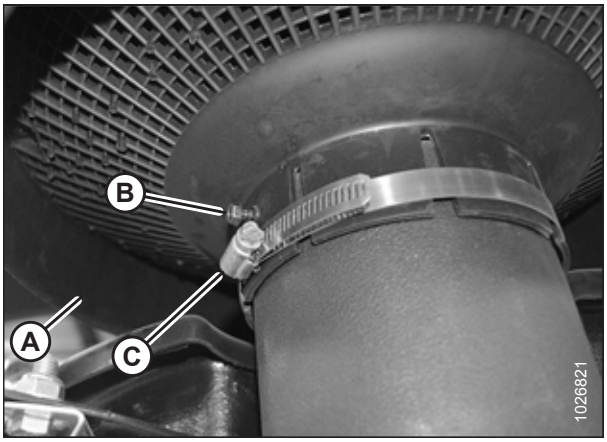


Figure 3.82: Air Inlet Duct

3.13 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.

If required by local regulations, install SMV sign onto the mirror/light support and walking beam as follows:

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.

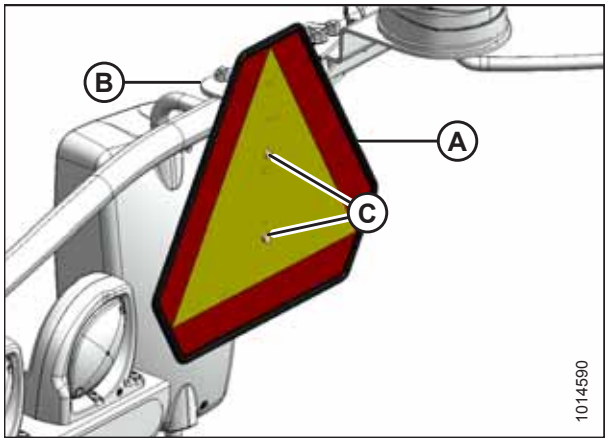


Figure 3.83: SMV Sign Installed on Mirror/Light Support – Right Cab-Forward Side

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).

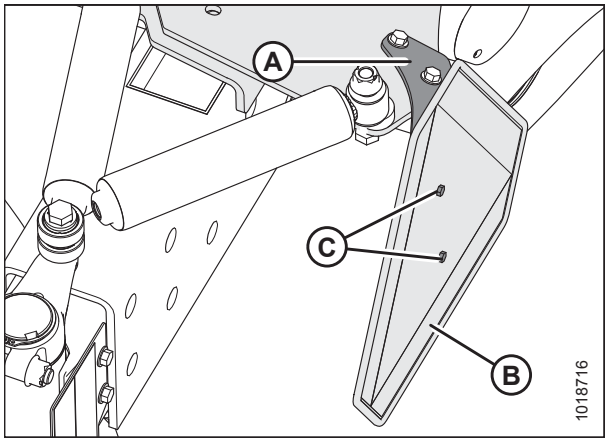


Figure 3.84: SMV Sign Installed – Left Cab-Forward Side

3.14 Installing Hydraulic Coupler Holder

The hydraulic coupler holder stores the quick-disconnect coupler/hose when the hydraulic system is not configured for rotary disc headers.

1. Remove nuts (A) from the underside of the knife/reel multicoupler and retain the nuts for installation.

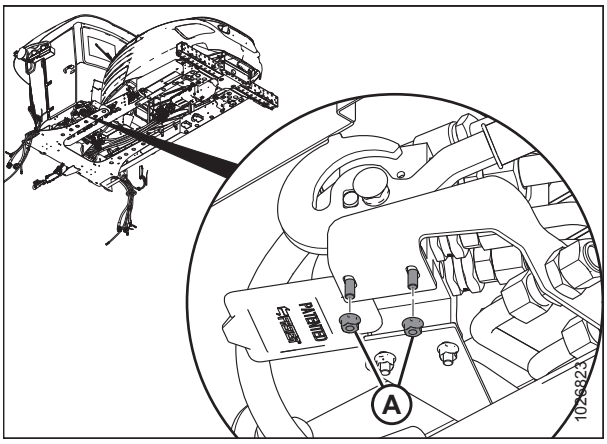


Figure 3.85: Rear Hydraulic Multicoupler

2. Retrieve hydraulic coupler holder (A) from inside the windrower cab.
3. Install coupler holder (A) onto the underside of multicoupler using existing hex head screws, and secure it with existing nuts (B).

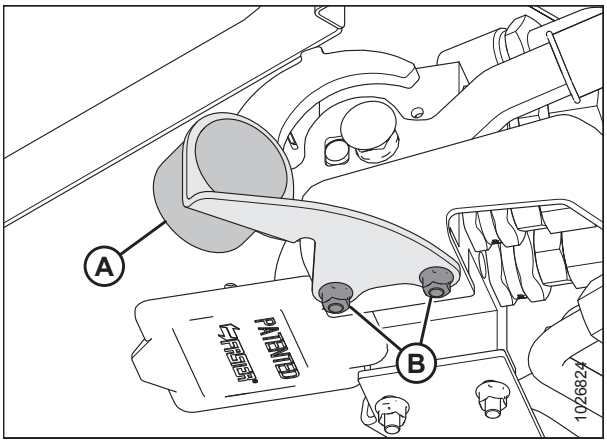


Figure 3.86: Coupler Holder Installed

3.15 Installing Rear Light Assembly and Optional 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. Review the instructions to install a rear light assembly with or without ballast package to determine if the windrower needs this feature.

Refer to *4.1.13 Checking Tire Pressure, page 108* for the proper tire pressures when operating with the applicable header.

Table 3.2 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.

Installing rear light assembly – no ballast package required

1. Remove eight bolts and washers from the rear light assembly and separate bezel (A) from left and right light supports (B).
2. Remove nuts (C) from light supports (B). Retain the hardware for installation.

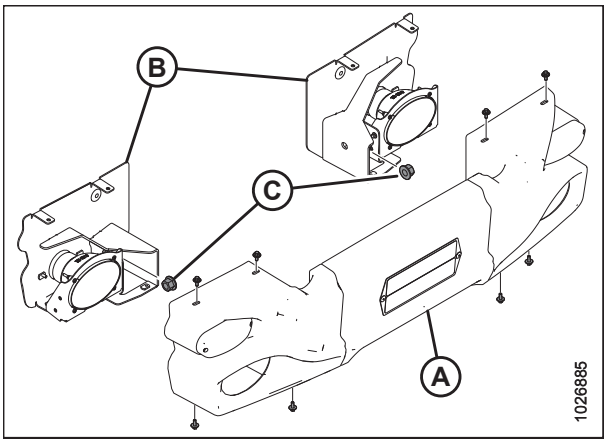


Figure 3.87: Rear Light Bezel Assembly

3. Remove two bolts (A), cover (B), and seal (C) from behind each light support.

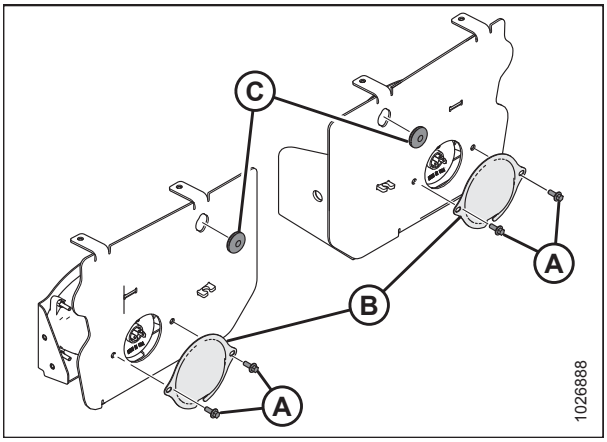


Figure 3.88: Light Supports

4. Align connector (A) and plug the engine-forward headlight harness into headlight (B) as follows:
   - Harness P214 to the right engine-forward headlight
   - Harness P213 to the left engine-forward headlight

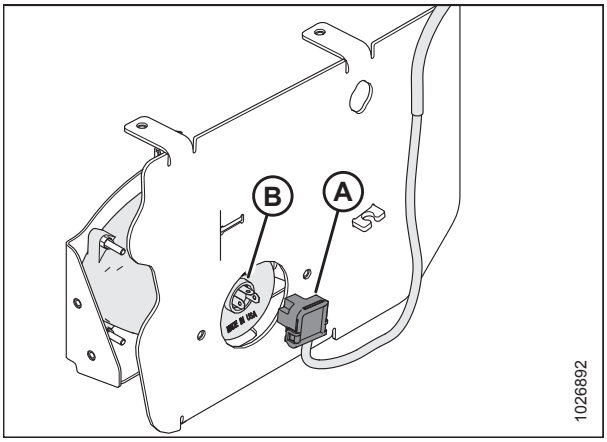


Figure 3.89: Right Light Support

5. Install seal (A) onto tail/brake light harness (B) and feed the harness through the access hole. Seat the seal into the access hole. Make the following electrical connections:
   - Harness P210 to the right tail/brake light
   - Harness P215 to the left tail/brake light
6. Replace cover (C) and secure it with bolts (D).
7. Press headlight harness (E) into clip (F) on the light support.
8. Repeat on opposite side.

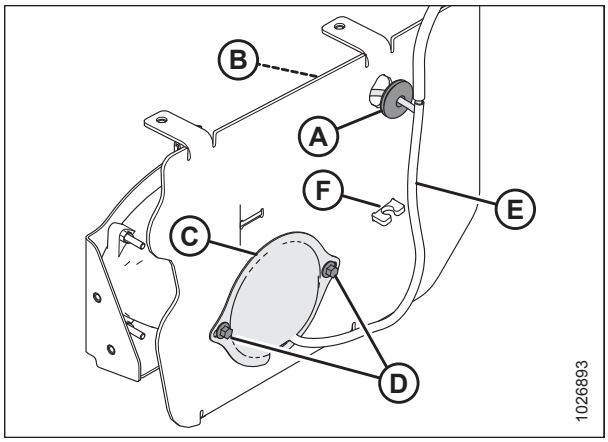


Figure 3.90: Right Light Support

9. Mount light support (A) to stud (B) on rear pivot support with existing nut (C). Repeat on opposite side.

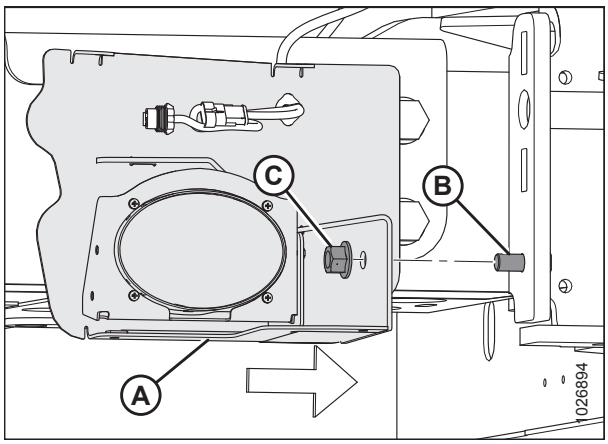


Figure 3.91: Left Light Support

10. Plug tail/brake light harnesses (A) into lights (B) on bezel assembly.

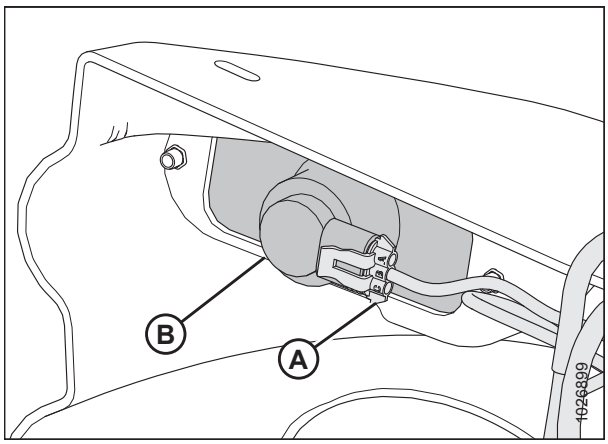


Figure 3.92: Right Tail/Brake Light

11. Use eight bolts and washers (A) to attach rear light bezel (B) to light supports.

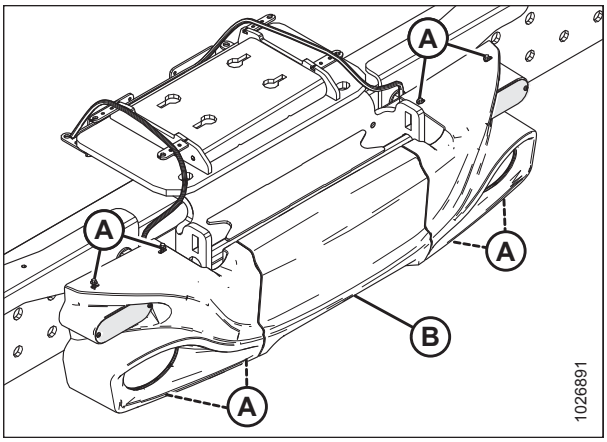


Figure 3.93: Rear Light Bezel Assembly

Installing rear light assembly – ballast required

1. Refer to Table *3.2, page 84* to determine the amount of ballast to add to the windrower.
2. Shut down the engine, and remove the key from the ignition.
3. Separate light bezel assembly (A) by removing six hex screws (B).

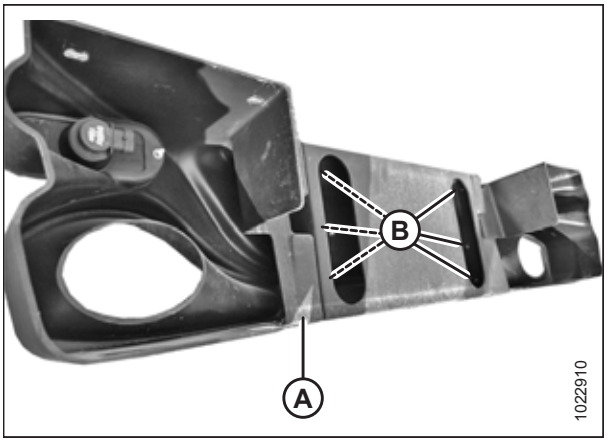


Figure 3.94: Bezel Assembly Removed from Windrower

4. 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.

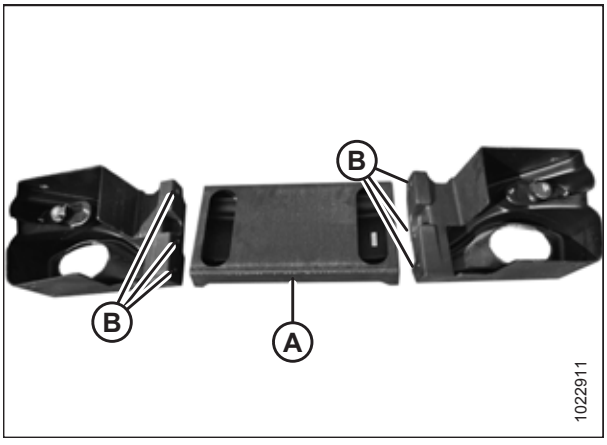


Figure 3.95: Bezel Assembly Separated

CAUTION

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

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

   IMPORTANT:

   Ensure that retaining bracket (B) engages slot (C) in the bracket.
7. Install rod (D) through the retaining bracket and weights with spacers (E) as required.
8. Secure the rod with nuts (F). Tighten the nuts.

   IMPORTANT:

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

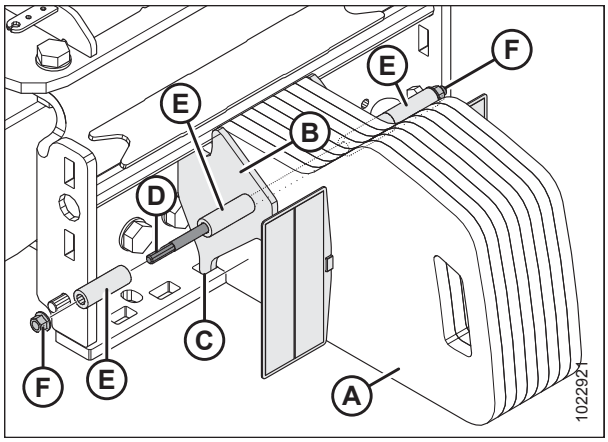


Figure 3.96: Ballast Weights Installed

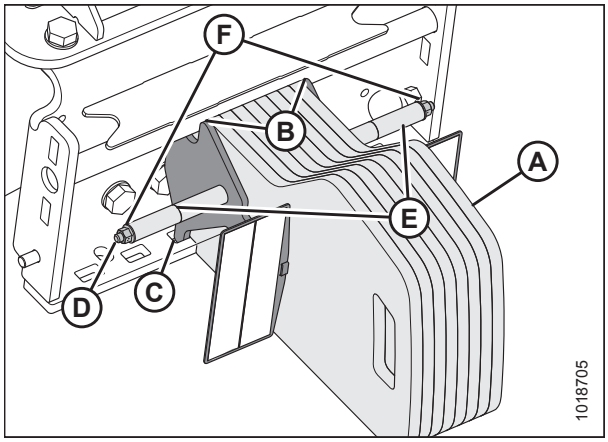


Figure 3.97: Base Ballast Kit Installed – 163 kg (360 lb.)

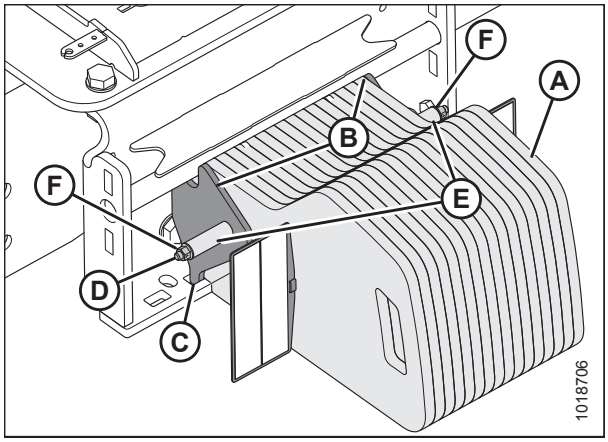


Figure 3.98: Two Ballast Kits Installed – 326 kg (720 lb.)

NOTE:

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

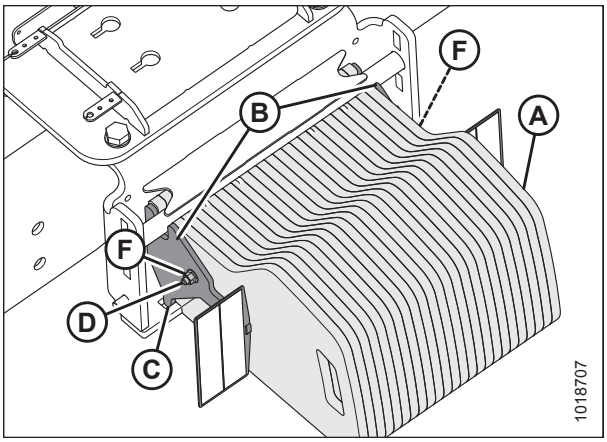


Figure 3.99: Three Ballast Kits Installed – 489 kg (1080 lb.)

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

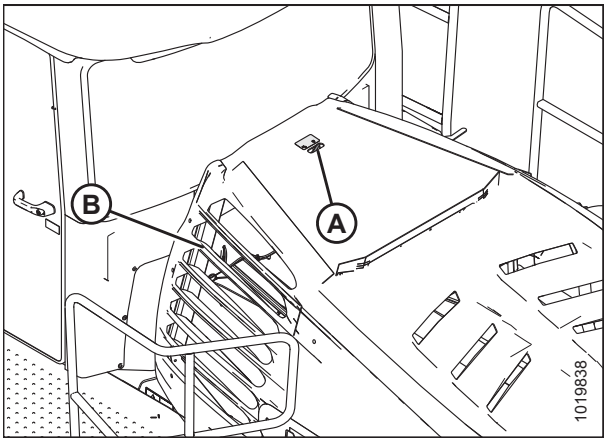


Figure 3.100: Engine Compartment Hood

11. Bring left bezel (A) close to the frame and connect plug P215 to the back of red tail/brake light (E).
12. Loosely attach left bezel (A) to the frame with four hex flange bolts (B).
13. Repeat Step *11, page 89* and Step *12, page 89*, attaching plug P210 at right bezel (C).
14. Turn the IGNITION key to the RUN position, and ensure that rear swath lights (D) and red tail/brake lights (E) are working.
15. 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.

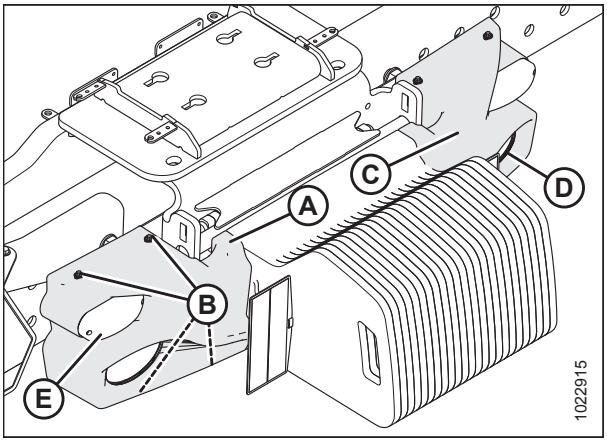


Figure 3.101: Rear Light Bezel with Ballast Kit(s) Installed

3.16 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 237*.

3.16.1 Lubrication Procedure

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

DANGER

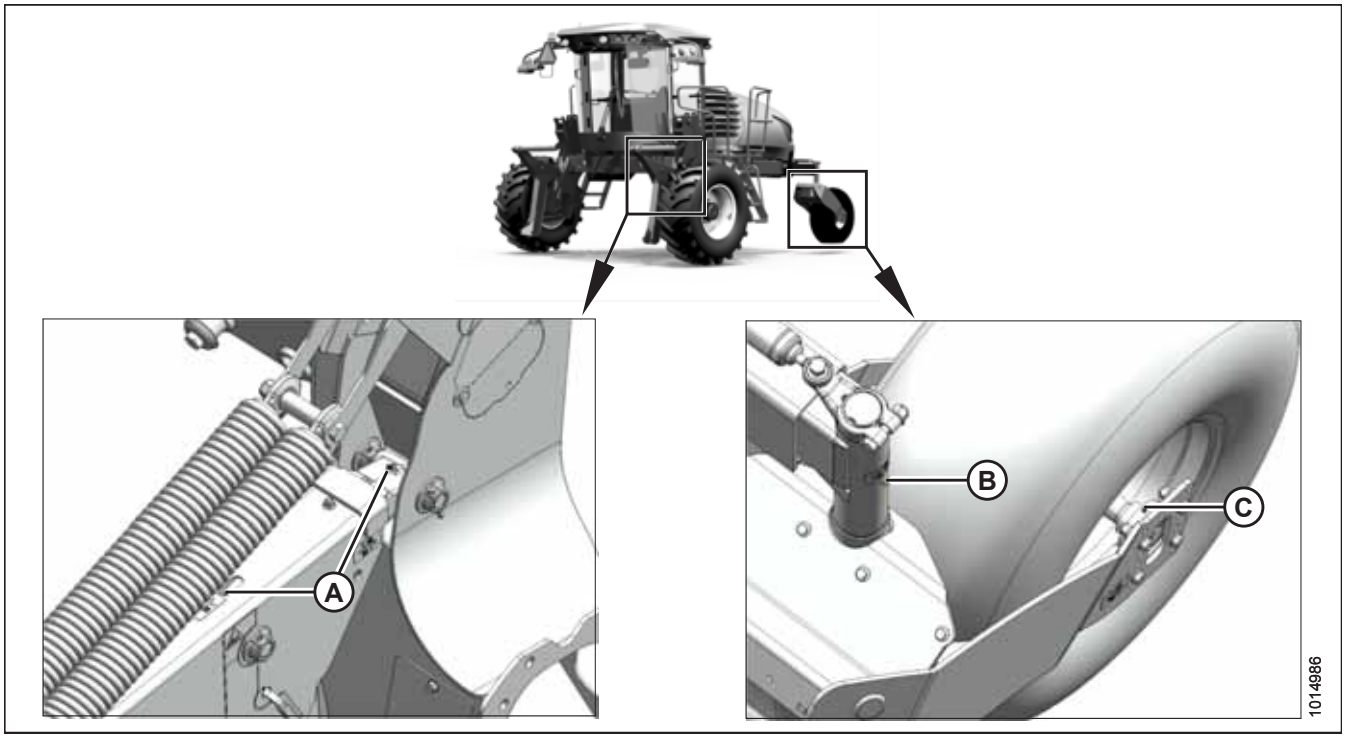
To prevent bodily injury or death from the unexpected startup of the machine, always stop the engine and remove the key from the ignition before leaving the operator's seat for any reason.

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.

3.16.2 Lubrication Points

Be sure to leave a small blob of grease on top of each fitting to prevent contamination.

Figure 3.102: Lubrication Points



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

3.17 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.

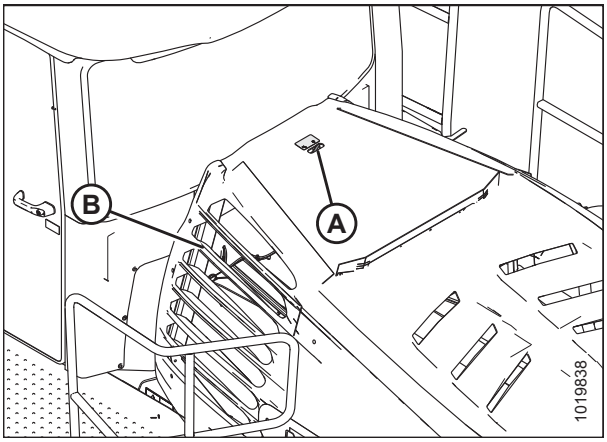


Figure 3.103: Engine Compartment Hood

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.

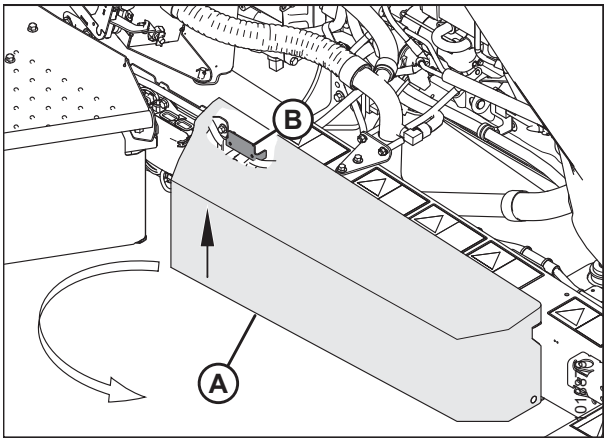


Figure 3.104: Battery Location

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.

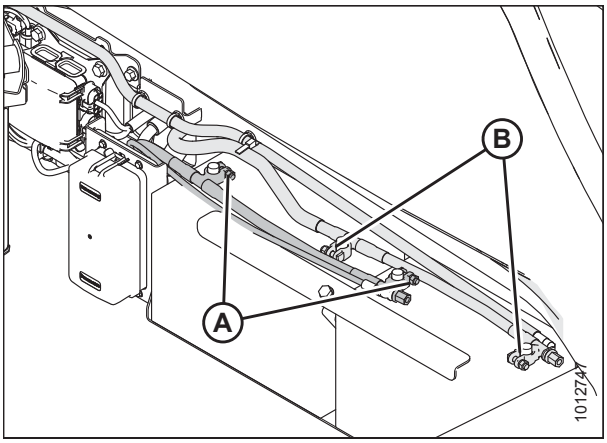


Figure 3.105: Battery Cables Installed

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.

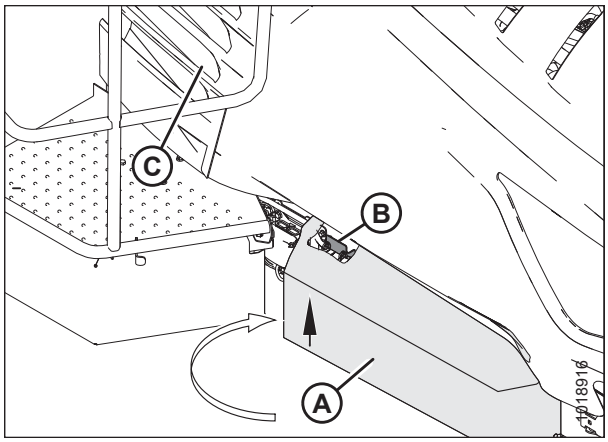


Figure 3.106: Battery Cover Secured

3.18 Removing Windrower from Assembly Stand

Remove the windrower from the lift stands before performing pre-delivery checks.

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

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 251* (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.

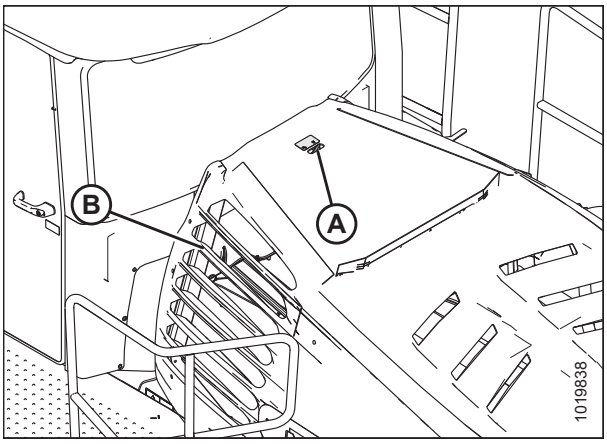


Figure 4.1: Hood

3. Record the windrower and engine serial numbers on the *Predelivery Checklist, page 251*. 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.

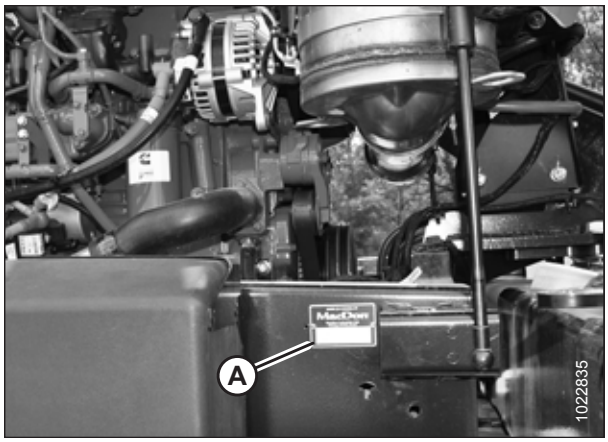


Figure 4.2: Windrower Serial Number Location

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

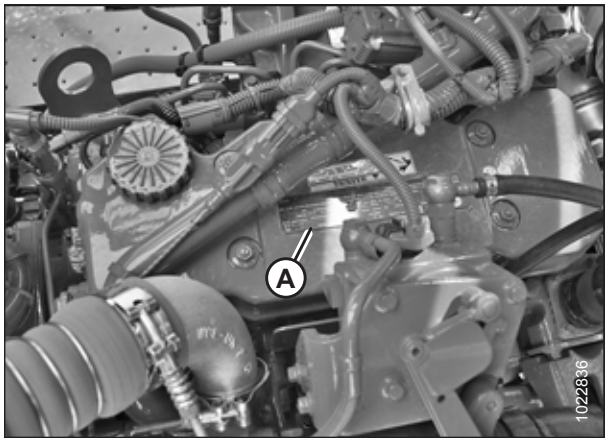


Figure 4.3: Engine Serial Number Location

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.

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

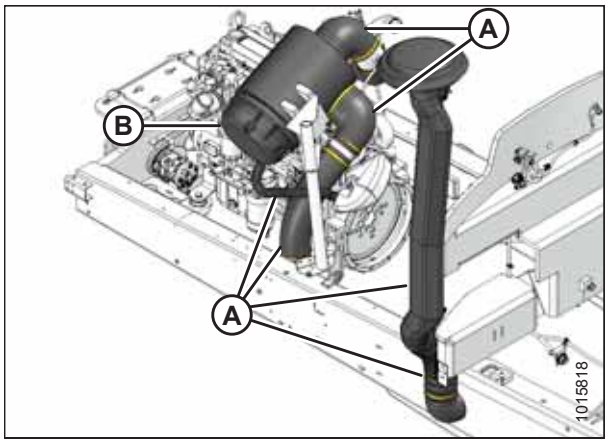


Figure 4.4: Engine Air Intake

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.

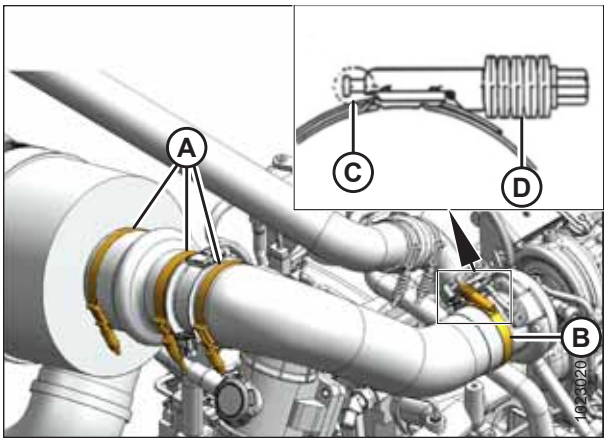


Figure 4.5: Constant Torque Clamps

4.1.3 Checking and Adding 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.

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.

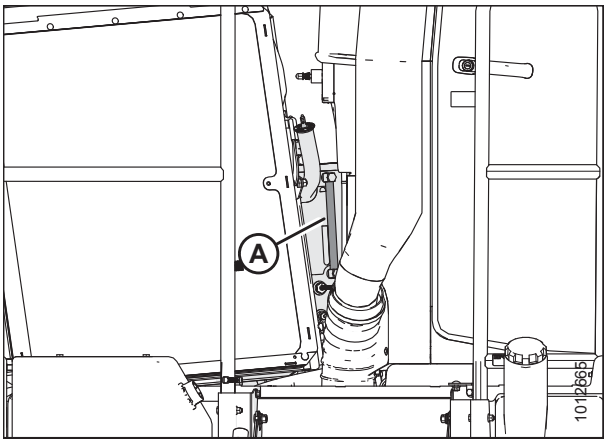


Figure 4.6: Hydraulic Oil Sight Glass

3. If the oil level is too low, refer to *6.1 Lubricants, Fluids, and System Capacities, page 237* 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.

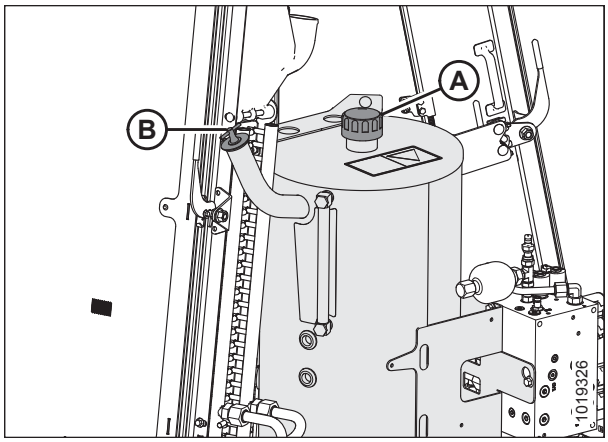


Figure 4.7: Hydraulic Oil Filler Neck and Breather Tube

4.1.4 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.

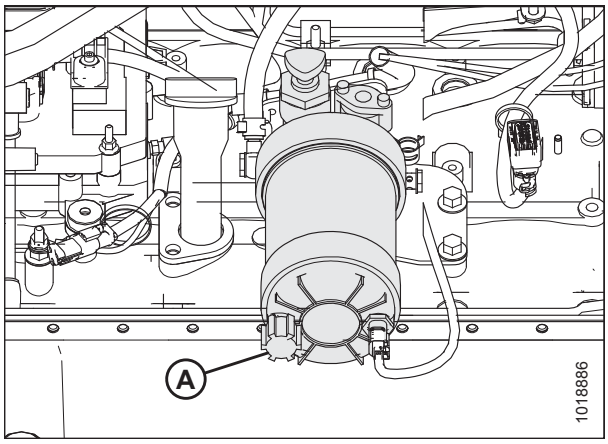


Figure 4.8: Fuel Filter

4.1.5 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 99* to *5, page 99*.

   NOTE:

   For fluid specifications, refer to *6.1 Lubricants, Fluids, and System Capacities, page 237*.

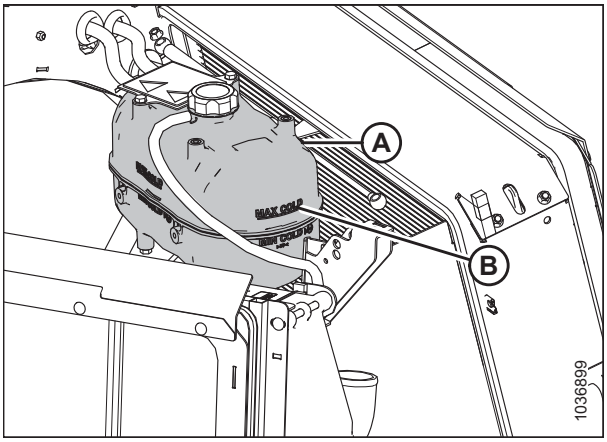


Figure 4.9: Coolant Recovery Tank

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).

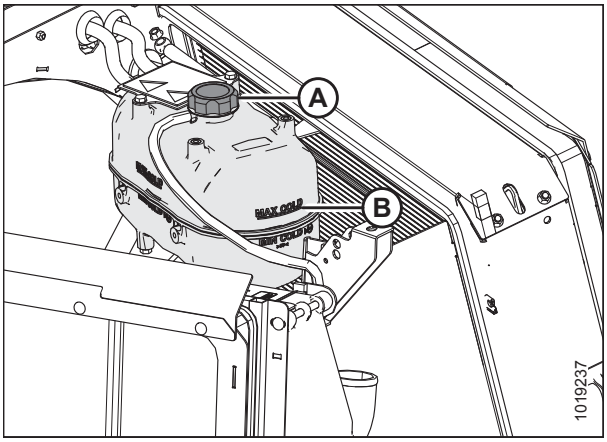


Figure 4.10: Coolant Recovery Tank Cap and MAX COLD Fill Line

4.1.6 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.

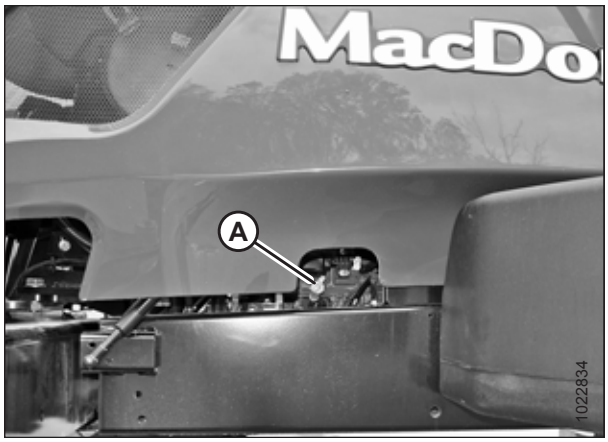


Figure 4.11: Engine Oil Dipstick Location

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.

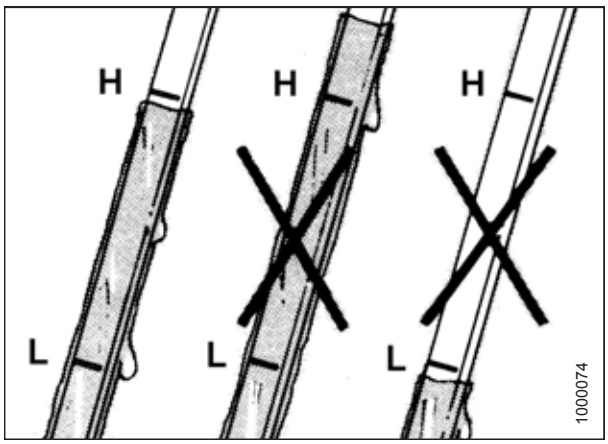


Figure 4.12: Engine Oil Level on Dipstick

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.

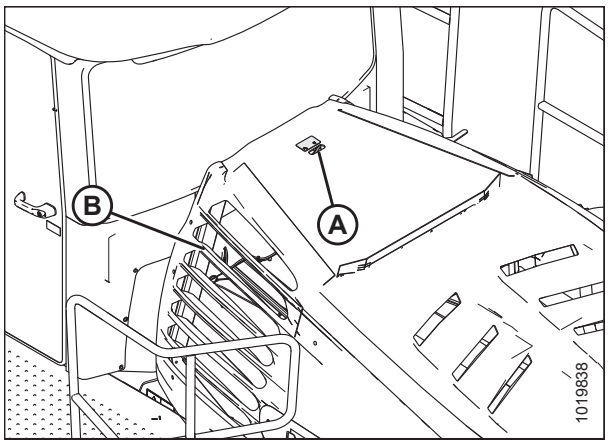


Figure 4.13: Hood

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 237*.

   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.

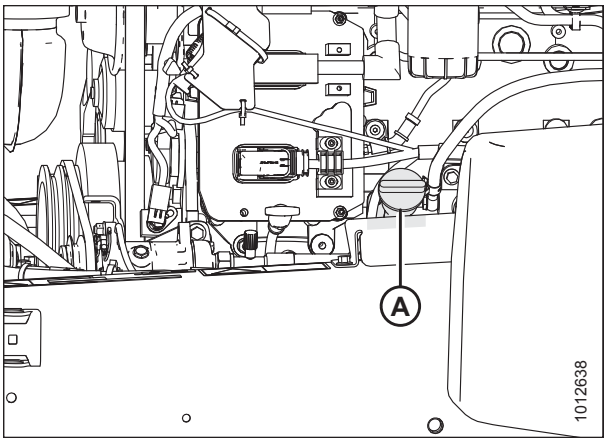


Figure 4.14: Oil Filler Cap

4.1.7 Checking Engine Gearbox Lubricant Level and Adding Lubricant – M1170

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

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

   NOTE:

   If the engine is hot, wait 10 minutes before checking the gearbox lubricant level to allow the lubricant to cool and settle in the gearbox's sump.

2. Open the hood. Refer to the operator's manual for instructions.
3. Locate gearbox oil level check plug (A) under the windrower.
4. Remove oil level check plug (A). The lubricant should be visible through the hole. Some lubricant may leak from the level check port.

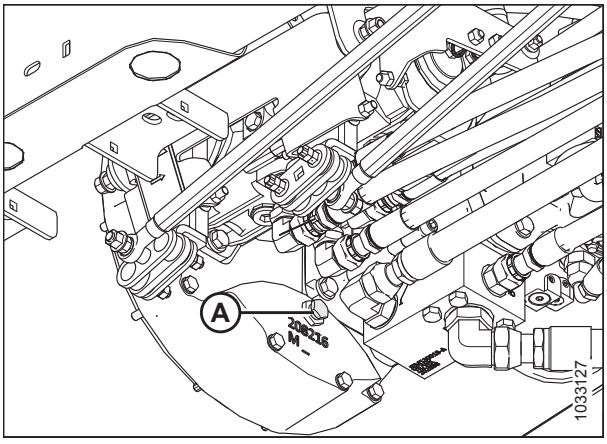


Figure 4.15: Gearbox Lubricant Check Plug

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

   NOTE:

   Refer to *6.1 Lubricants, Fluids, and System Capacities, page 237* for information on the type and quantity of gearbox lubricant needed.

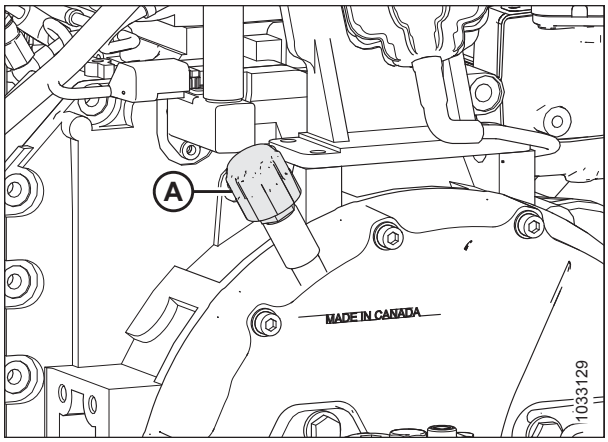


Figure 4.16: Gearbox Lubricant Filler

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

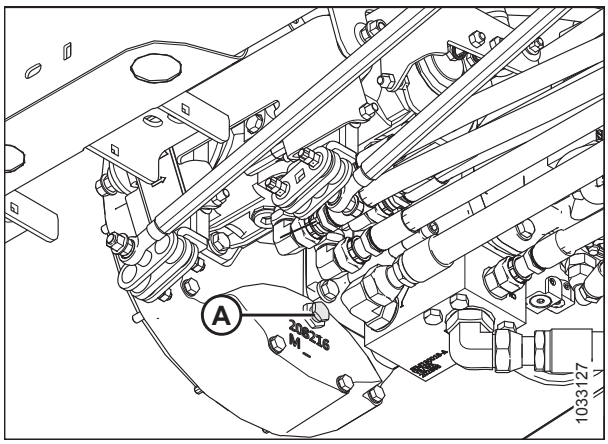


Figure 4.17: Gearbox Lubricant Check Plug

4.1.8 Checking Engine Gearbox Lubricant Level and Adding Lubricant – M1240

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.

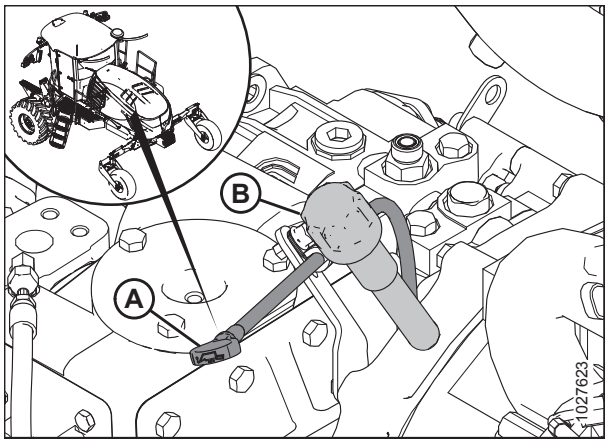


Figure 4.18: Gearbox Lubricant Dipstick

2. If the lubricant level is at or below ADD mark (A) on the dipstick, remove the breather cap ([B] in Figure *4.18, page 102*) 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 237*.

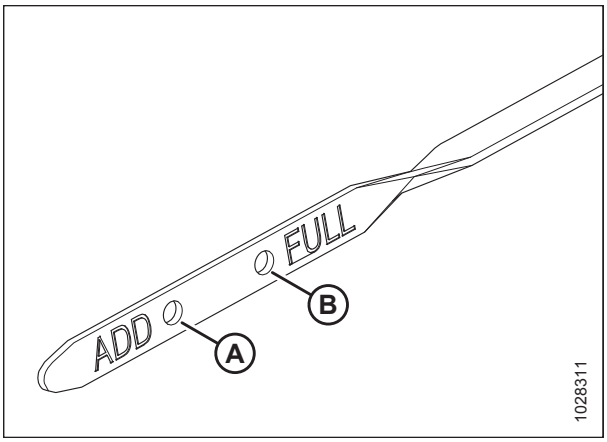


Figure 4.19: Bottom End of Dipstick

4.1.9 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.

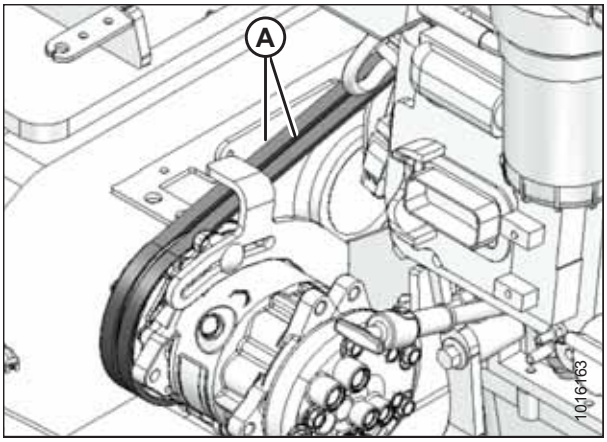


Figure 4.20: A/C Compressor Belts

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

   NOTE:

   Check that latch lever is not tilted to ensure the hood is latched.

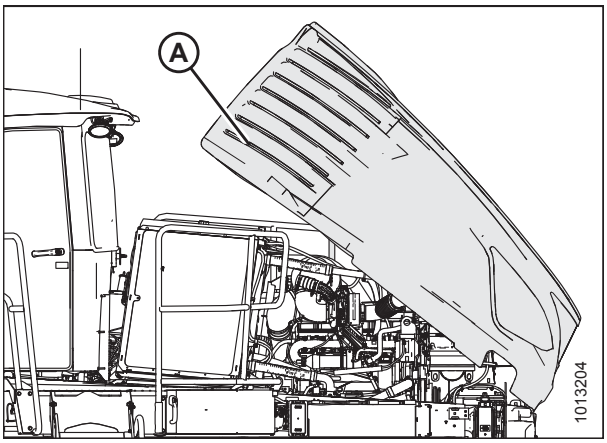


Figure 4.21: Engine Compartment

4.1.10 Starting Engine – M1240 Windrower

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.

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.

Figure 4.22: Engine Exhaust

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

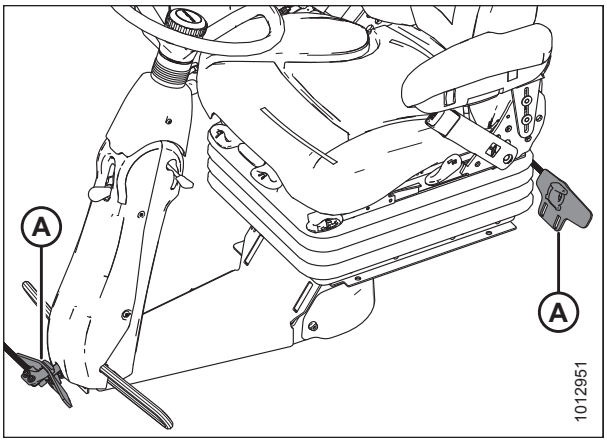


Figure 4.23: Direction Locks

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.

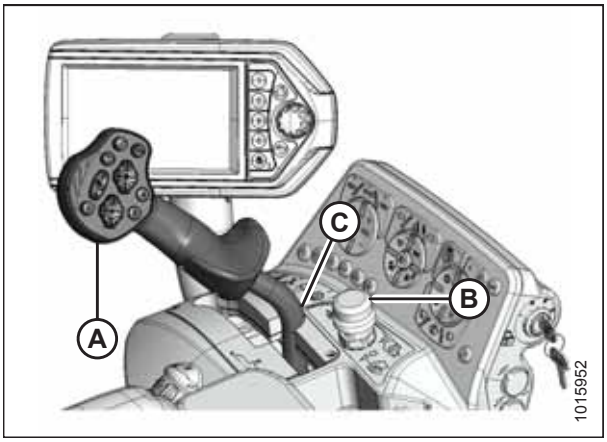


Figure 4.24: Operator Controls

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.

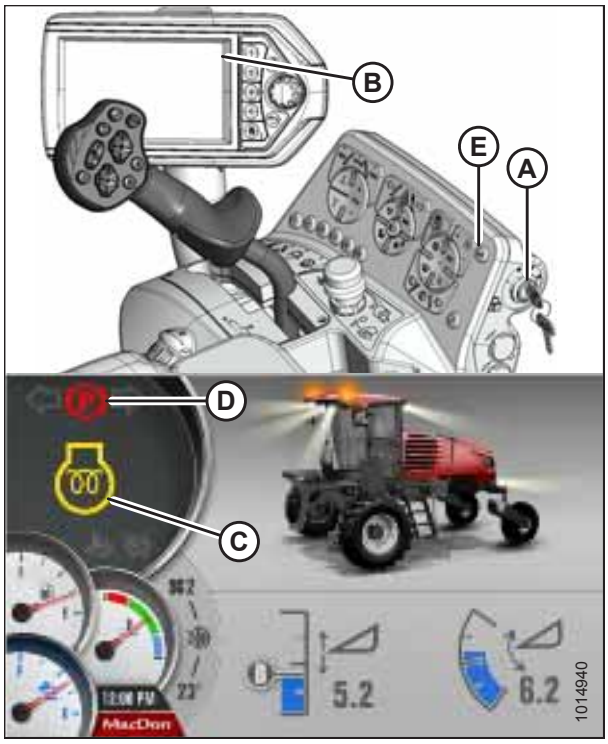


Figure 4.25: Console and HPT Run Screen

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.

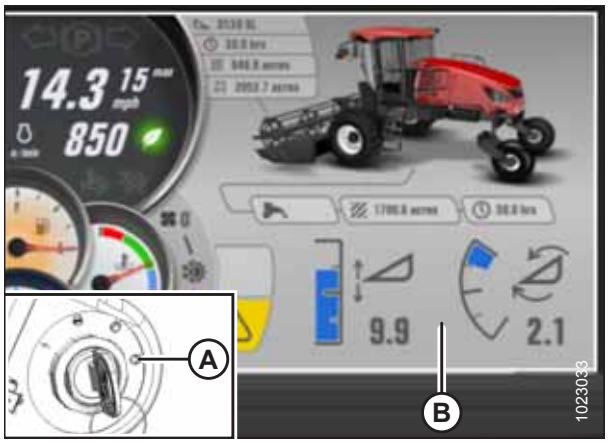


Figure 4.26: HPT Header Disengaged Screen

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 4.27: HPT No Header Screen

4.1.11 Checking and Adding Wheel Drive Lubricant – 10 Bolt Wheels

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

DANGER

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

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.

1. Park the windrower on level ground.
2. Position the windrower so that plugs (A) and (B) are horizontally aligned with center (C) of the hub.
3. Shut down the engine, and remove the key from the ignition.
4. Remove plug (A) or (B). The lubricant should be visible through the port. Some fluid may spill from the port.
5. 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 237*.

   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 237*.
6. Reinstall the plugs and tighten them to 24 Nm (18 lbf·ft).

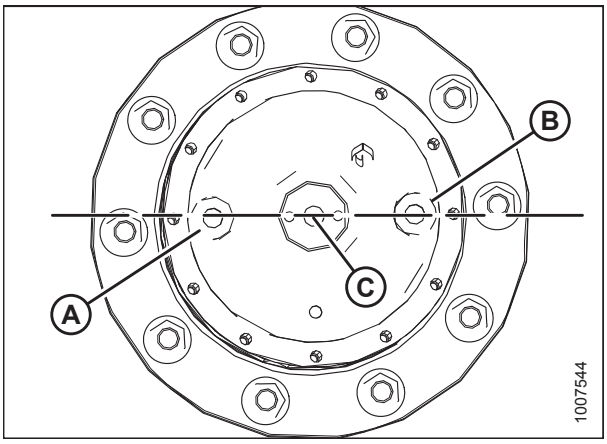


Figure 4.28: Drive Wheel Hub

4.1.12 Checking Traction Drive

The drive wheels should spin either at the same speed or at different speeds depending on how you steer the windrower.

DANGER

Ensure that all bystanders have cleared the area.

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

Figure 4.29: Operator Console

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:

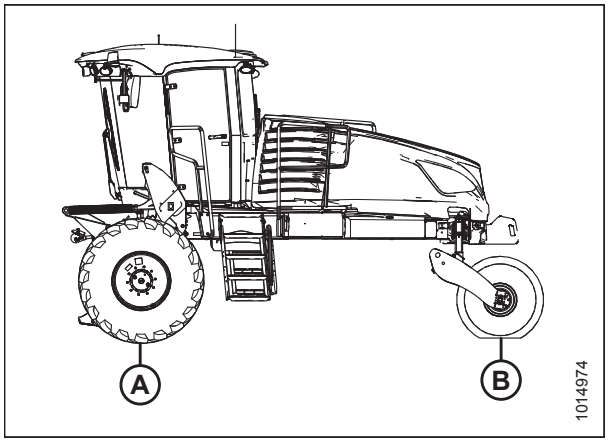


Figure 4.30: Windrower Tires

Table 4.1 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)
D115X single reel	4.6 m (15 ft.), double knife, timed	—	—	**Turf**	138 (20)

Table 4.1 Drive Tire Inflation Specifications (continued)

Header Type	Description	Installed Options	Weight Kit	Tire Type	Pressure kPa (psi)
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)
D140XL double reel	12.2 m (40 ft.), double knife, untimed	Base	2	**Turf**	241 (35)

Table 4.1 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	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 – M1170 Windrower					
R113/R116	4 m (13 ft.) / 4.9 m (16 ft.)	No Conditioner	—	**Bar** or **Turf**	138 (20)
R113/R116	4 m (13 ft.) / 4.9 m (16 ft.)	Steel or Poly Roll	—	**Bar**	179 (26)
R113/R116	4 m (13 ft.) / 4.9 m (16 ft.)	Steel or Poly Roll	—	**Turf**	159 (23)
Rotary Disc Header – M1240 Windrower					
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 251* (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 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 prevent bodily injury or death from the unexpected startup of the machine, always stop the engine and remove the key from the ignition before leaving the operator's seat for any reason.

DANGER

Ensure that all bystanders have cleared the area.

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

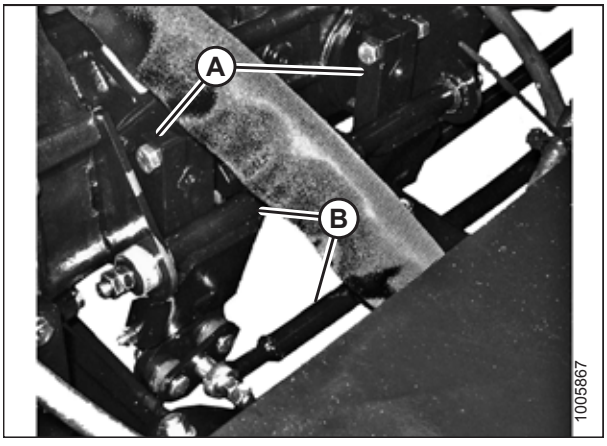


Figure 4.31: Pintle Arms

windrower's technical manual for the adjustment procedures.

f. Remove the key from the ignition.

g. Remove the wooden block and close the hood.

7. 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.

8. With the engine off, center the steering wheel. Place the GSL in PARK and ensure that the operator's station is **NOT** locked. Try starting the engine and confirm that the engine does **NOT** turn over, and the 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.

4.2.2 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.

1. If the windrower engine is not already running, start it. For instructions, refer to *4.1.10 Starting Engine – M1240 Windrower, page 104*.

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.

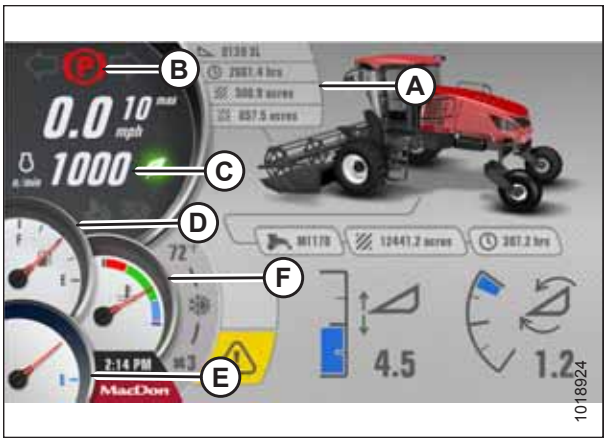


Figure 4.33: HPT Display – Header Attached

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

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.

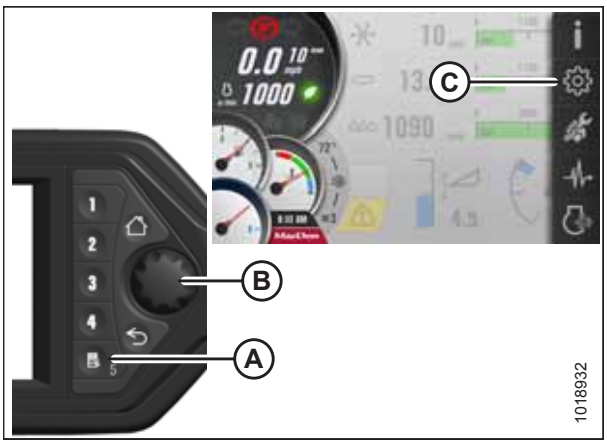


Figure 4.35: Main Menu

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 113*.
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

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

UNITS

- METRIC
- USA (default)

NOTE:

Refer to *6.4 Conversion Chart, page 248* 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 113*.
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.

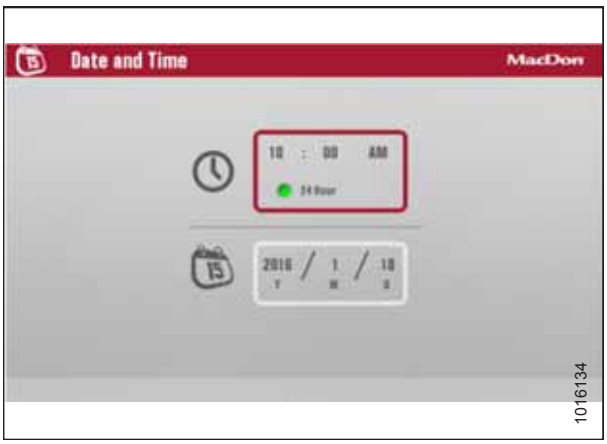


Figure 4.39: Time and Date

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 113*.
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.

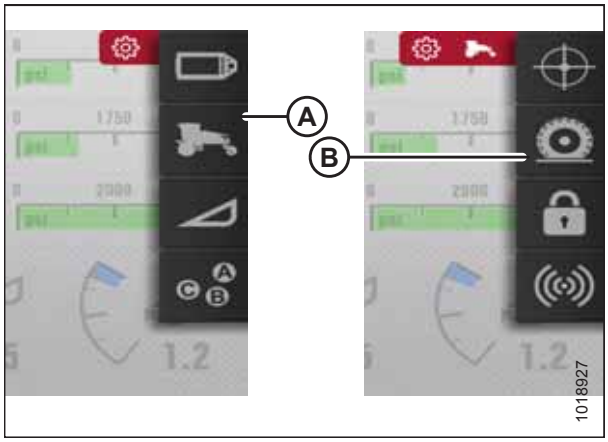


Figure 4.40: Tire Size

4. Scroll to highlight tire sizes (A) listed under SELECT DRIVE TIRES.
5. Press the scroll knob to select the list.

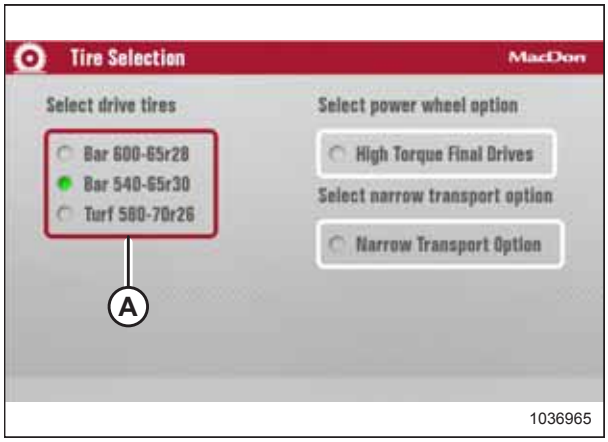


Figure 4.41: Tire Selection

6. Scroll until the correct tire size is highlighted (A).
7. Press the scroll knob. Make sure green radio button (B) appears beside the tire size.
8. The tire size is now enabled.
   - If the optional high torque wheel drives are installed, proceed to Step *9, page 117*.
   - If the optional high torque wheel are **NOT** installed, proceed to Step *13, page 117*.

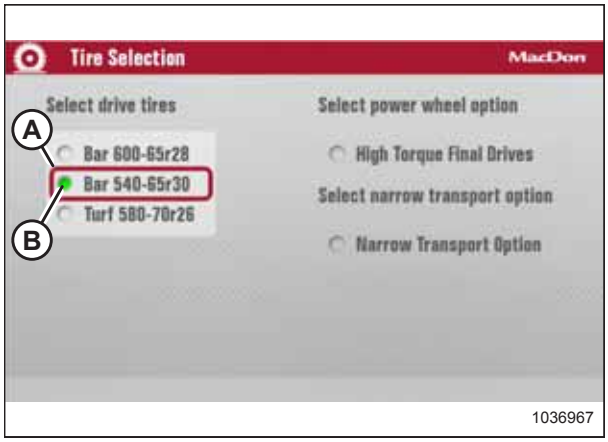


Figure 4.42: Tire Selection

9. **If the optional high torque wheel drives are installed:**
   Once the correct tire size is selected, press the BACK button to deselect the list of tire sizes, and scroll to SELECT POWER WHEEL OPTION (A).

   NOTE:

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

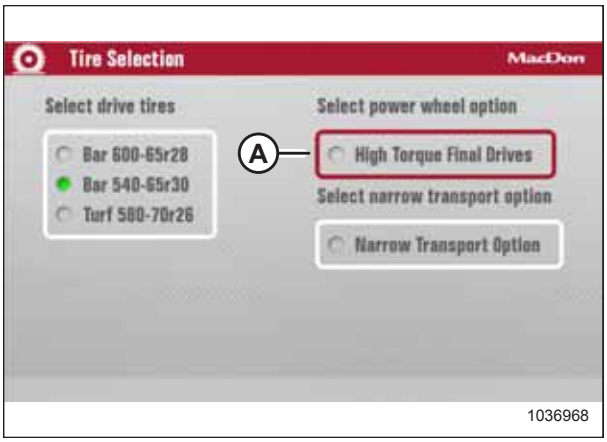


Figure 4.43: Tire Selection

10. Press the scroll knob to select (A) the list.
11. Press the scroll knob. Make sure green radio button (B) appears beside HIGH TORQUE FINAL DRIVES.
12. The high torque wheel option is now enabled (assuming there is no sudden power loss to the HPT).
13. You can now either exit the menu by pressing the BACK button, or exit the TIRE SELECTION page by pressing the HOME button.

    NOTE:

    Pressing the BACK or HOME buttons will save the settings to memory.

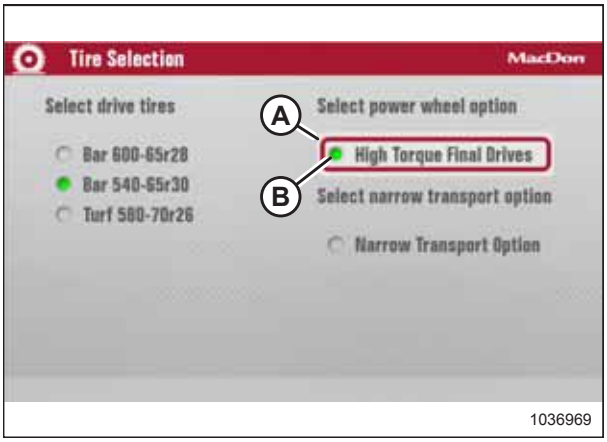


Figure 4.44: Tire Selection

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 113*.
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.

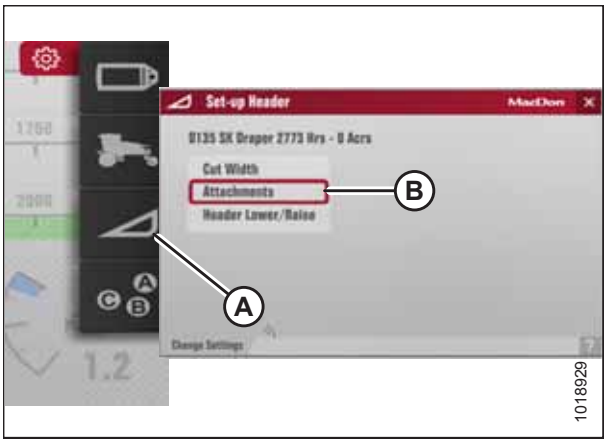


Figure 4.45: Header Settings

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

DANGER

Ensure that all bystanders have cleared the area.

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.

Figure 4.46: HPT Display

Table 4.2 Engine Speed

Model	Idle	Maximum (No Load)
M1170	1000 rpm	2500 rpm
M1240	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 4.47: HPT Display

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 4.48: 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 4.49: 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.

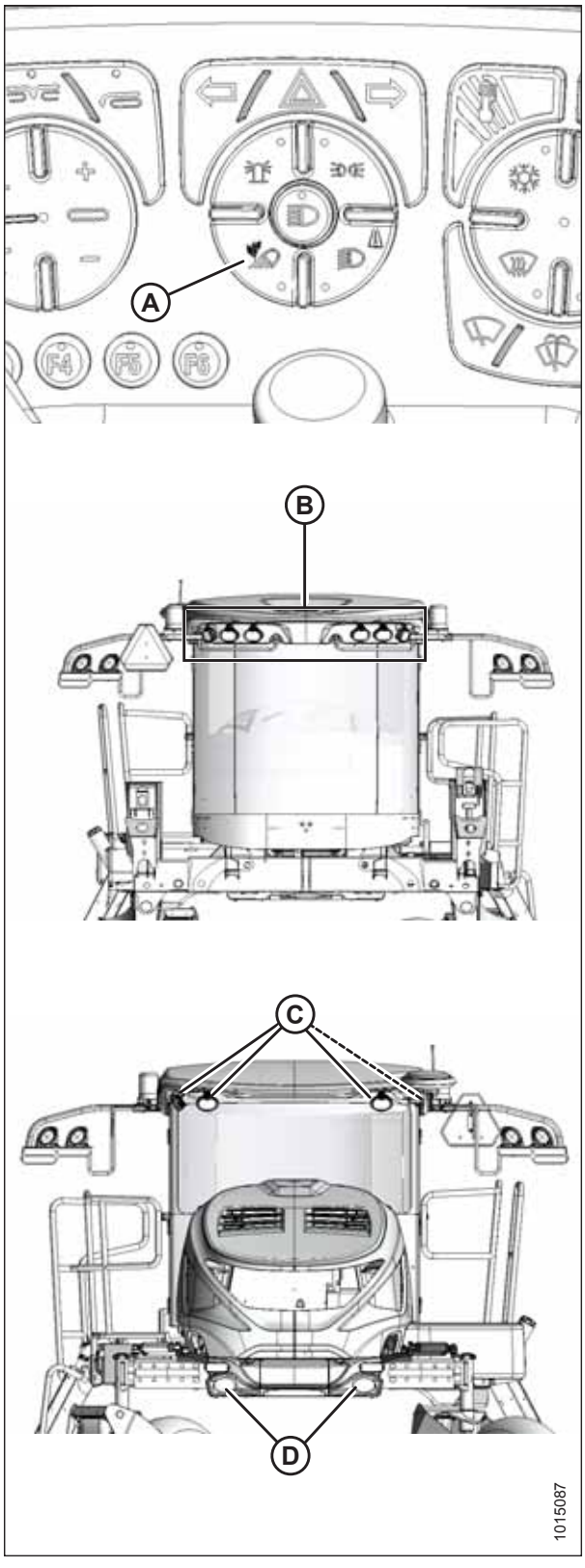


Figure 4.50: Field Lights

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.

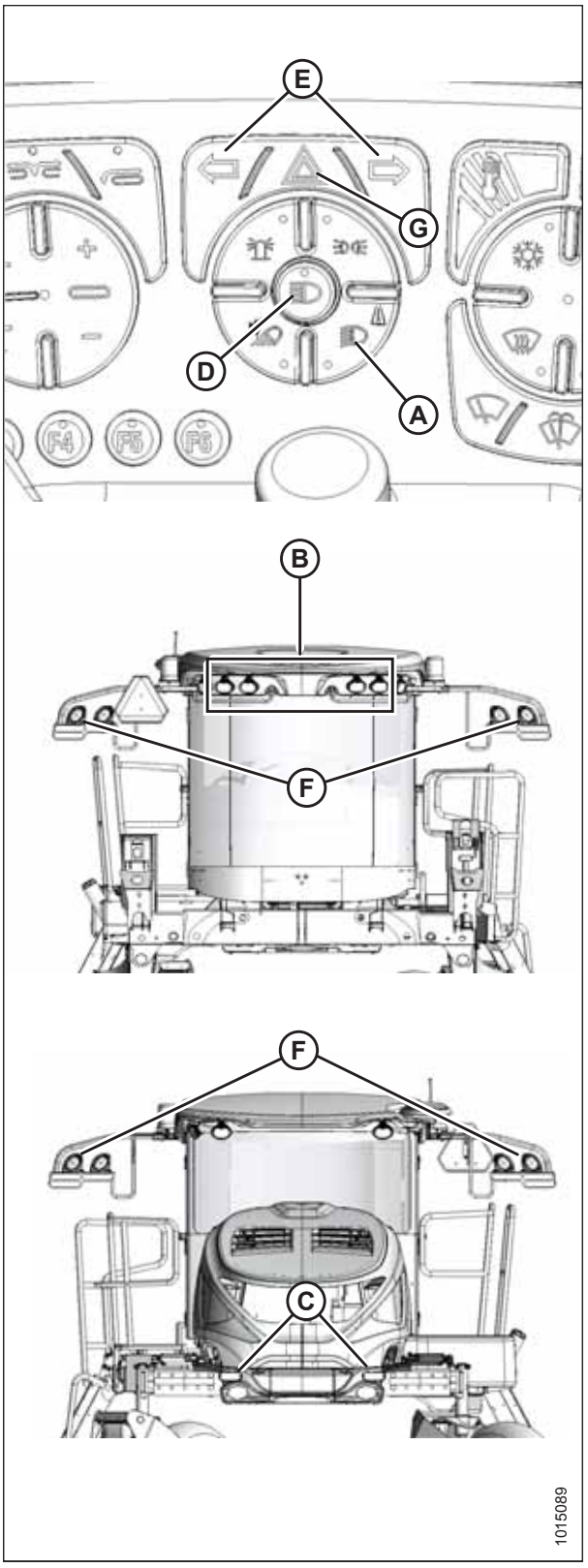


Figure 4.51: Road Lights – Cab-Forward

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.

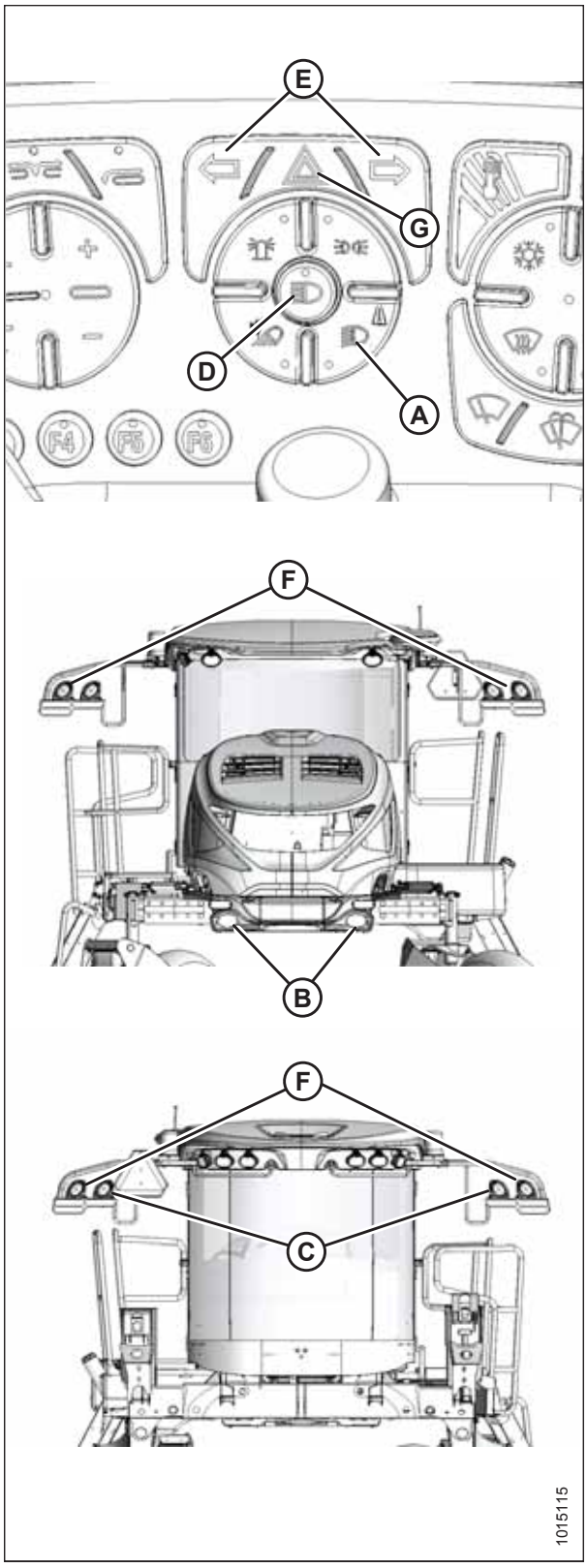


Figure 4.52: Road Lights – Engine-Forward

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

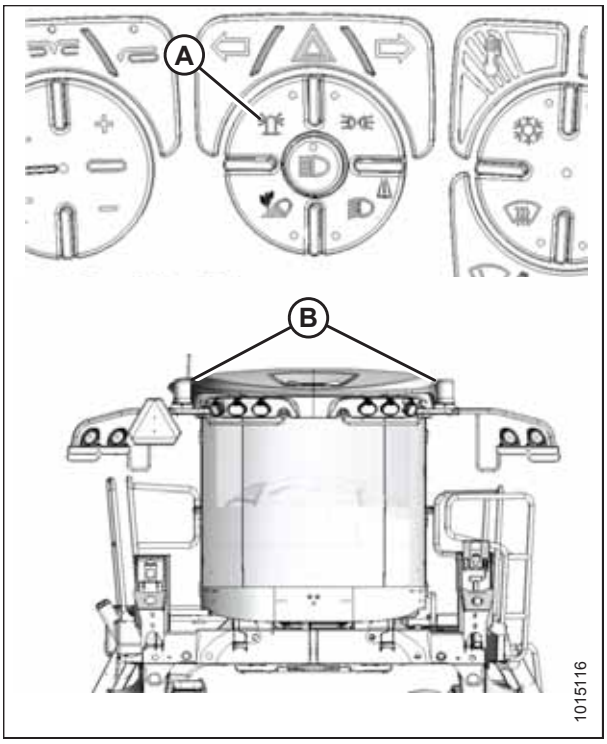


Figure 4.53: Beacons

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.

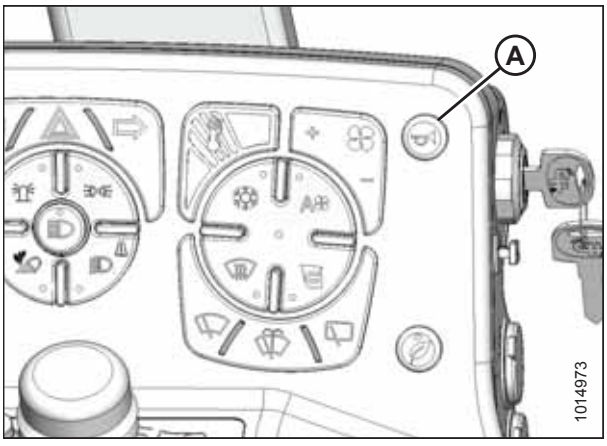


Figure 4.54: Horn Button

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.

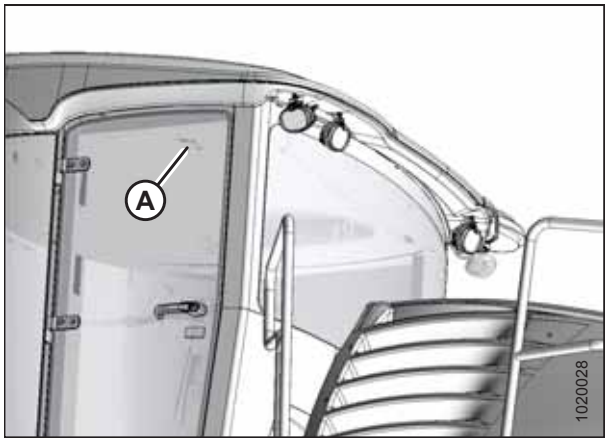


Figure 4.55: Interior Light

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.

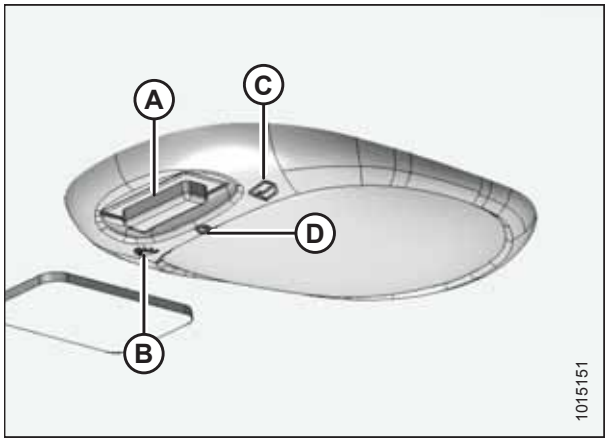


Figure 4.56: Interior Light

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

DANGER

Ensure that all bystanders have cleared the area.

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.
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.

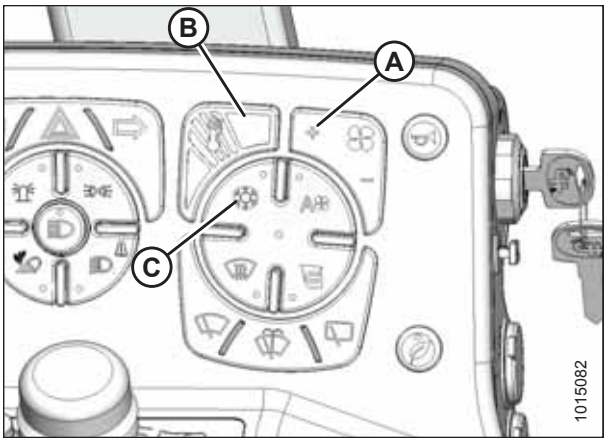


Figure 4.57: A/C Controls

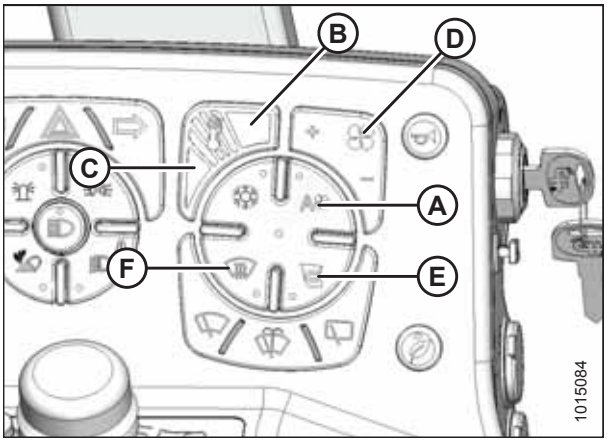


Figure 4.58: Climate Controls

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.

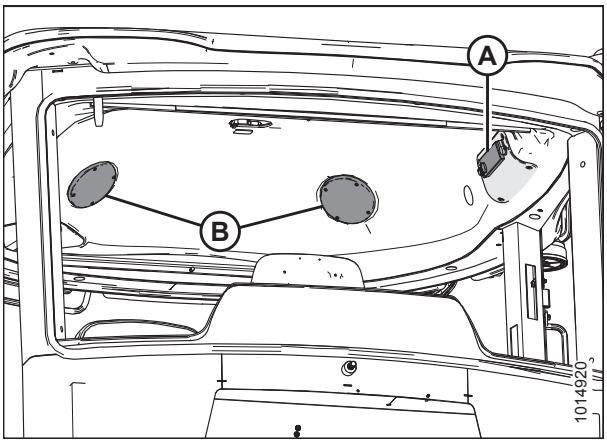


Figure 4.59: Radio and Speakers

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.

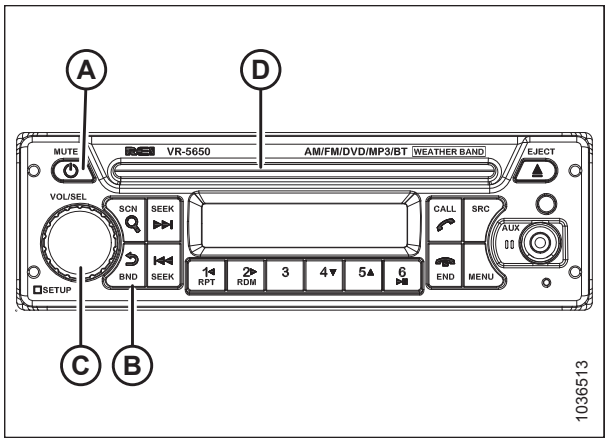


Figure 4.60: Radio

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.

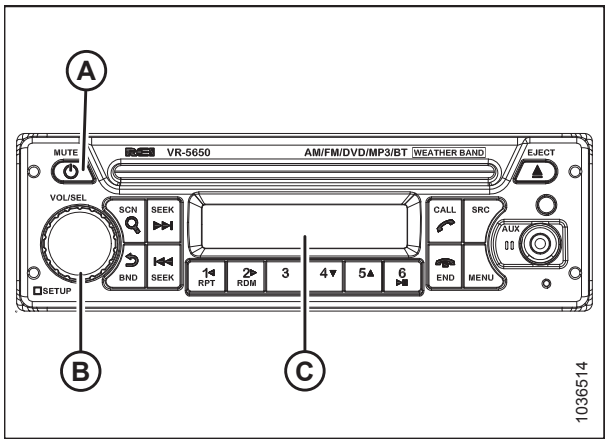


Figure 4.61: Bluetooth® Radio

4.2.10 Setting Radio for USA or European Region

Access the radio's service mode to switch between European and North American radio frequency bands.

NOTE:

The radio is set to the USA frequency at the factory.

1. Turn the radio on and select the RADIO mode.
2. To enter the SERVICE mode, press and hold buttons 1 (A), 3 (B), and SEL (C) for 3 seconds each. The word SERVICE followed by the current region setting (USA or EUR) appears.
3. Rotate the SEL button (C) to select the region (USA or EUR).
4. Presss the SEL button (C) to save the selection.

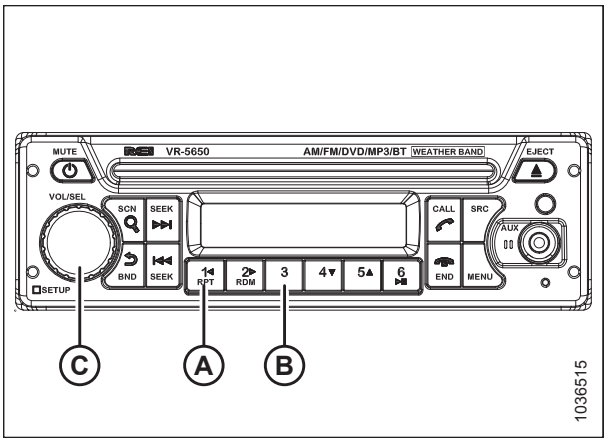


Figure 4.62: Radio Service Mode – Radio Model VR-5650

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.

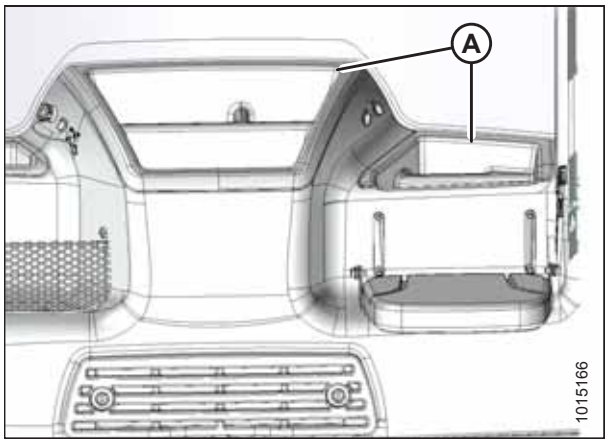


Figure 4.63: Manual Storage Case

1. Ensure that the following manuals are included with the windrower:
   - Operator's Manual
   - Parts Catalog
   - Quick Card
   - Engine Manual

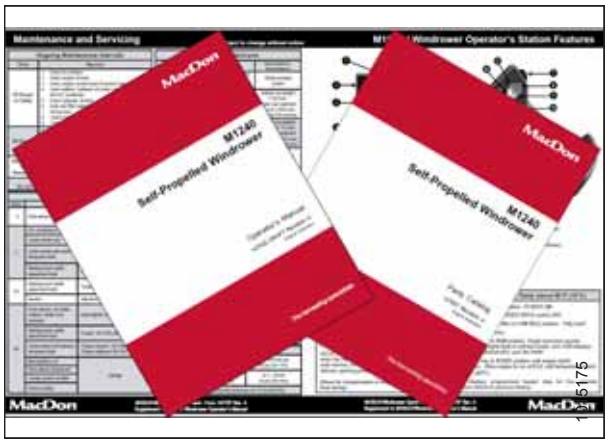


Figure 4.64: Manuals and Quick Card

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 4.65: Label for Optional GPS Mounting Kit

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

Figure 4.66: Windshield Decal

Chapter 5: Attaching a Header to the Windrower

This chapter specifies which headers are compatible with the windrower and provides instructions for attaching the header.

5.1 A40DX Auger Header

The A40DX auger header has increased windrowing capacity, reliability, conditioning and windrow formation in just about all hay and forage crops.

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.

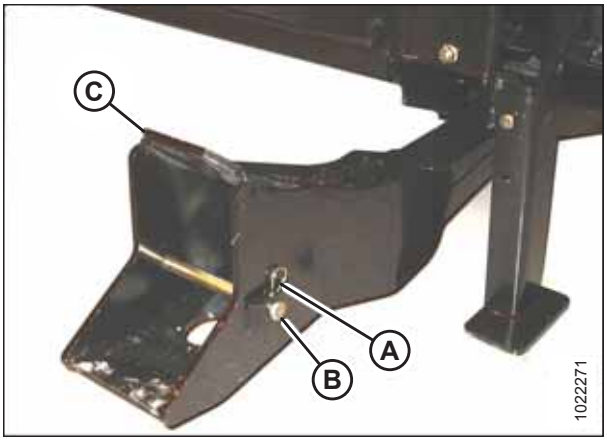


Figure 5.1: Header Support

WARNING

Check to be sure all bystanders have cleared the area.

2. Start the engine.

3. **If you are lowering the header lift legs WITH a header or weight box attached**, proceed to Step *7, page 132*.

   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 132*.
   - If not prompted by the HPT to remove the float, then proceed to Step *4, page 132* 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.

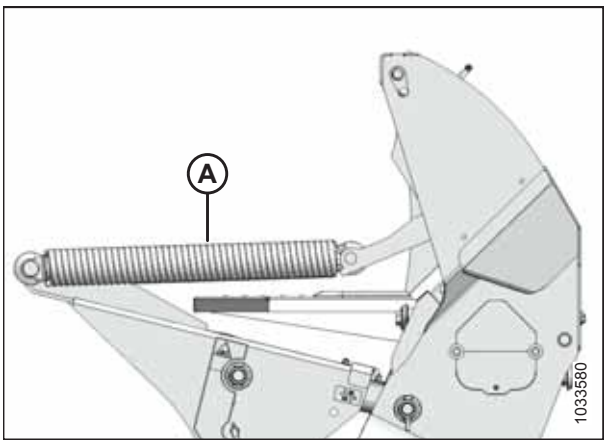


Figure 5.2: Header Float Springs

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.

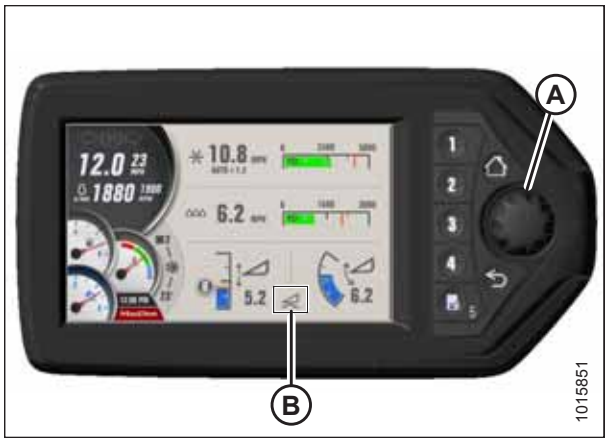


Figure 5.3: HPT Display

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.

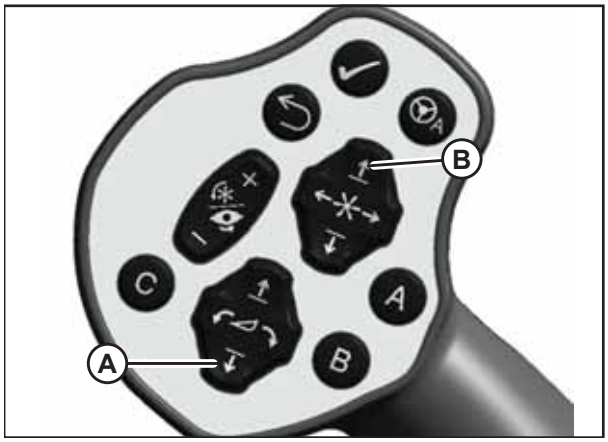


Figure 5.5: GSL

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.

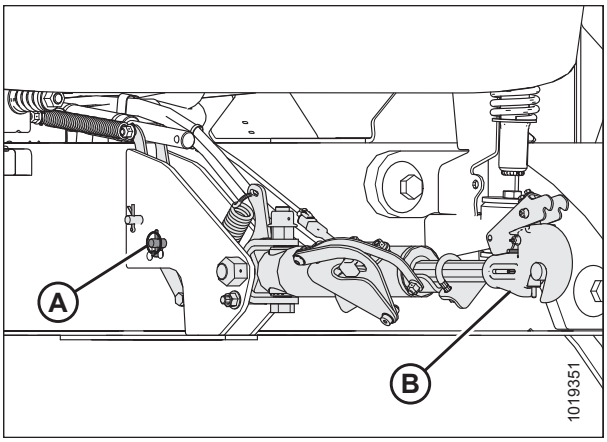


Figure 5.6: Hydraulic Center-Link without Self-Alignment Kit

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.

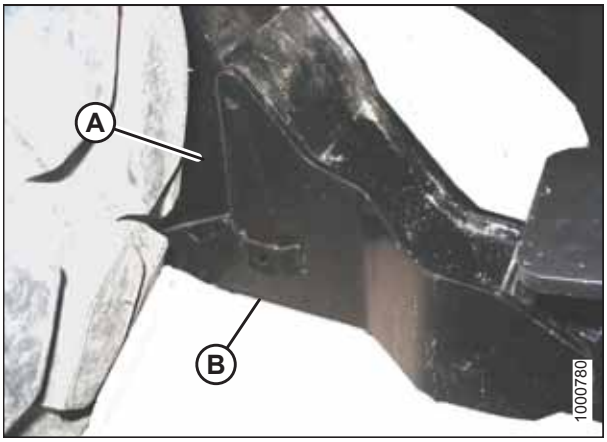


Figure 5.7: Header Support

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.

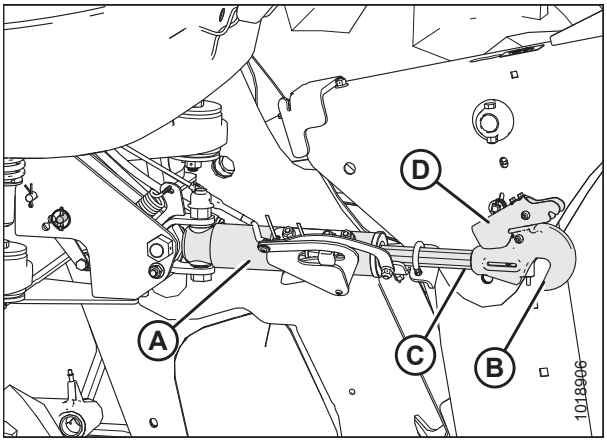


Figure 5.8: Hydraulic Center-Link

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.

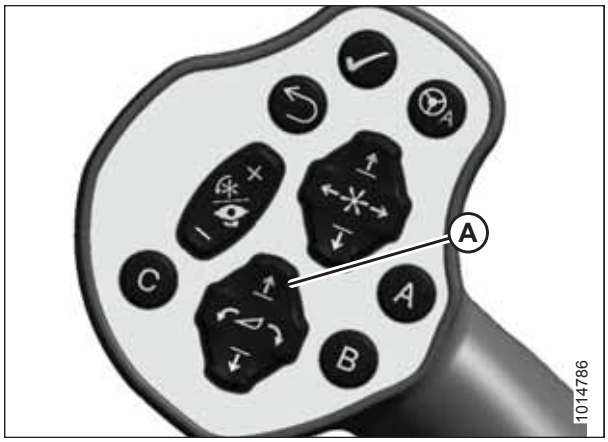


Figure 5.9: GSL

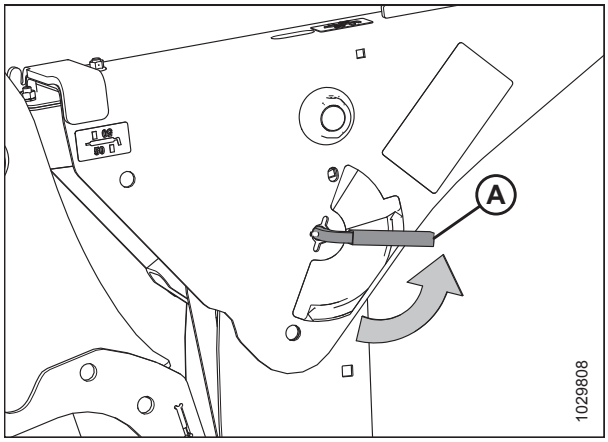


Figure 5.10: Safety Prop Lever

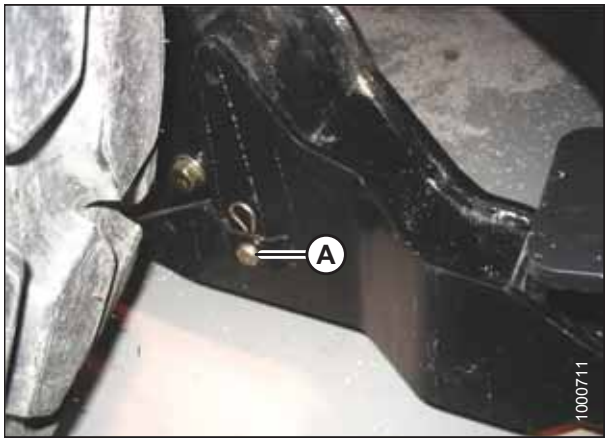


Figure 5.11: Header Support

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.

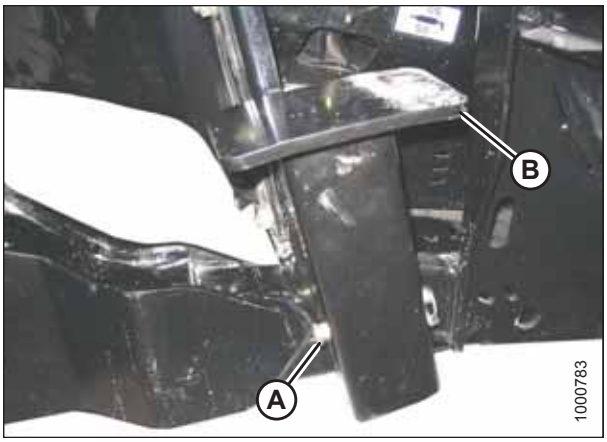


Figure 5.12: Header Stand

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.

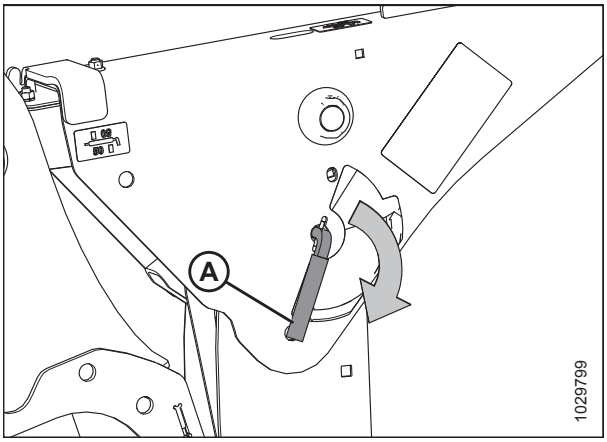


Figure 5.13: Safety Prop Lever

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.

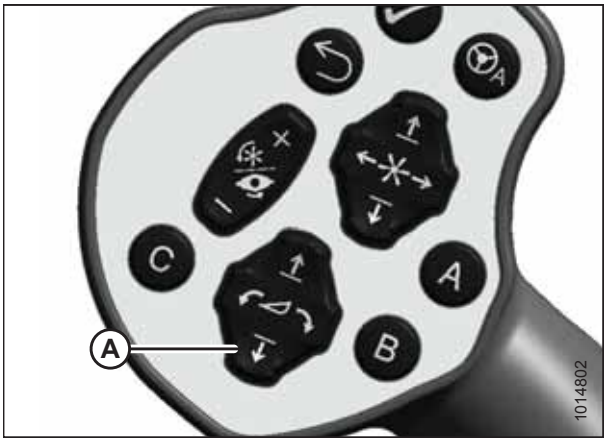


Figure 5.14: GSL

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.

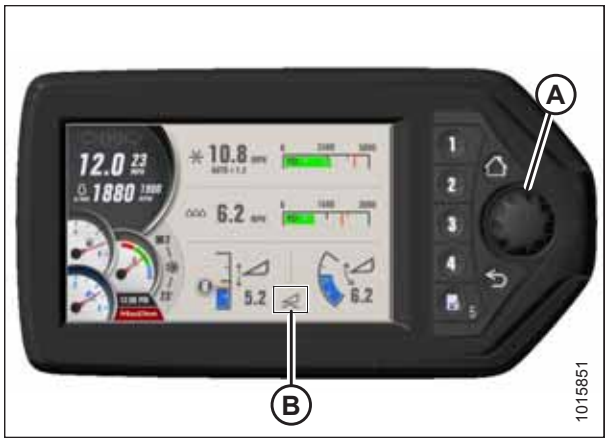


Figure 5.15: HPT Display

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.

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.

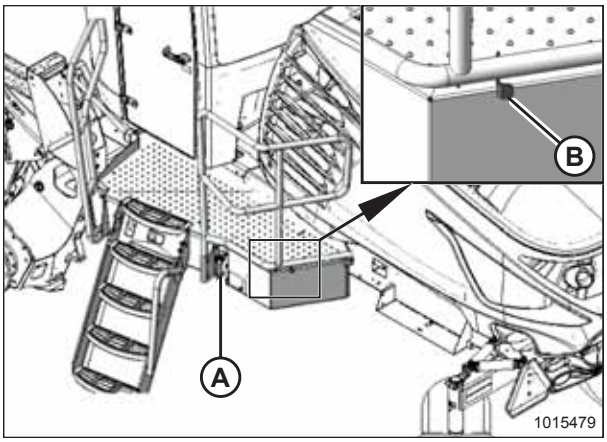


Figure 5.17: Left Cab-Forward Platform

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

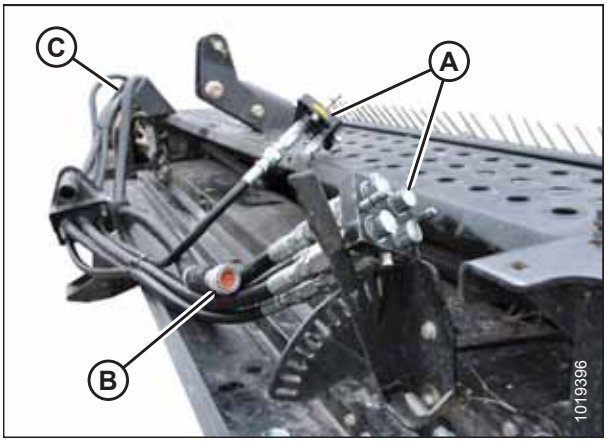


Figure 5.18: Hydraulic Hoses in Storage Position

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.

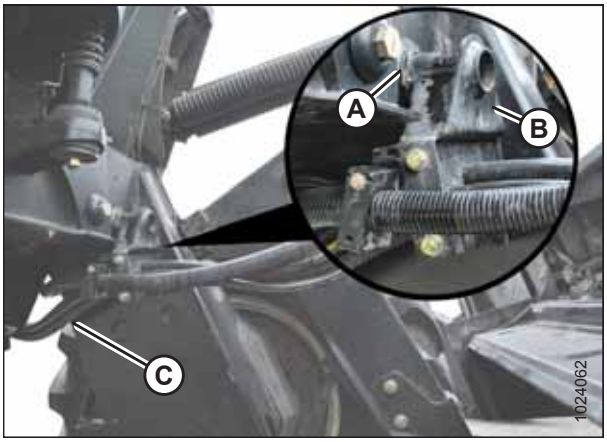


Figure 5.19: Multicoupler

6. Clean the multicouplers and receptacles to prevent contamination of the hydraulic system.
7. Push button (A) on the rear multicoupler receptacle and rotate handle (B) away from the windrower.
8. 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.
9. Push button (E) on the front multicoupler receptacle and rotate handle (F) away from the windrower.
10. 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.
11. **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.Hose quick-disconnect (C) is only present on M1170 machines with the R1 Series Hydraulic Drive kit (MD #B6845) installed.

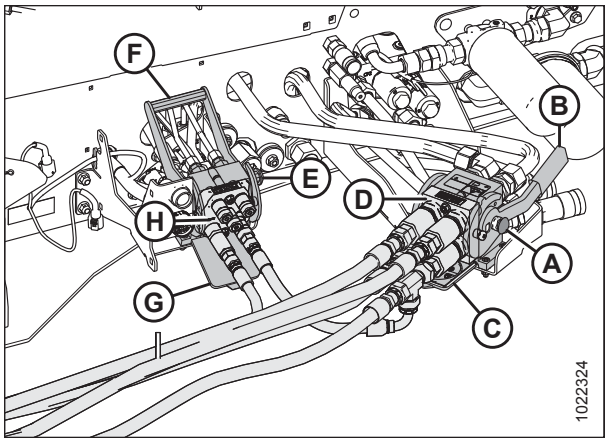


Figure 5.20: Knife/Reel/Auger Drive Multicoupler

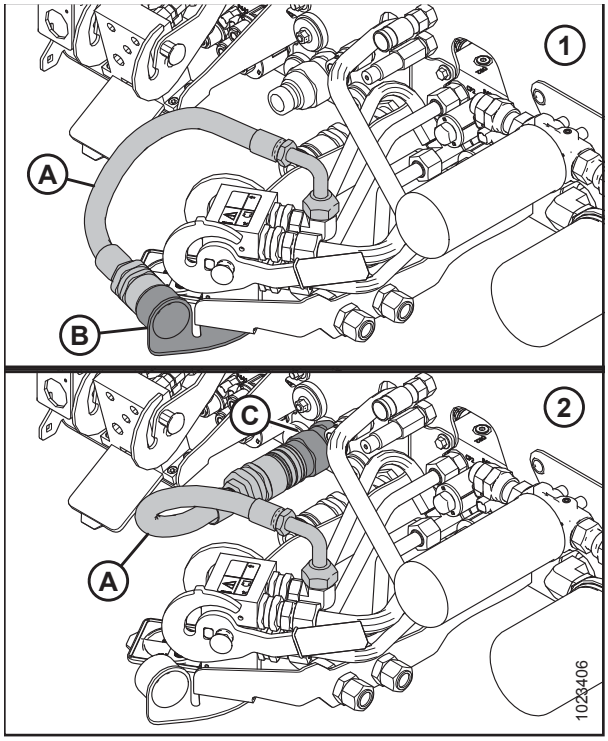


Figure 5.21: Knife Pressure Hose Positions

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

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

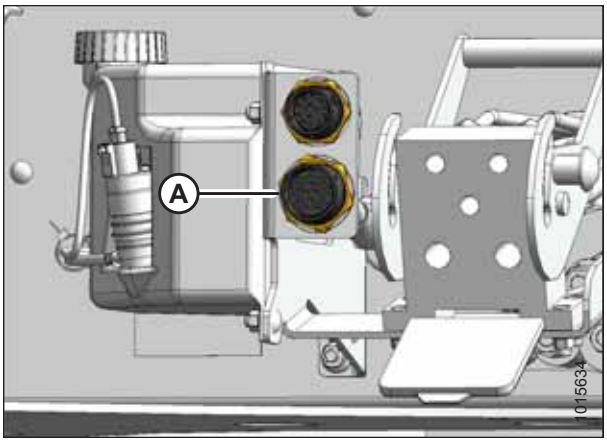


Figure 5.22: Electrical Connectors

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

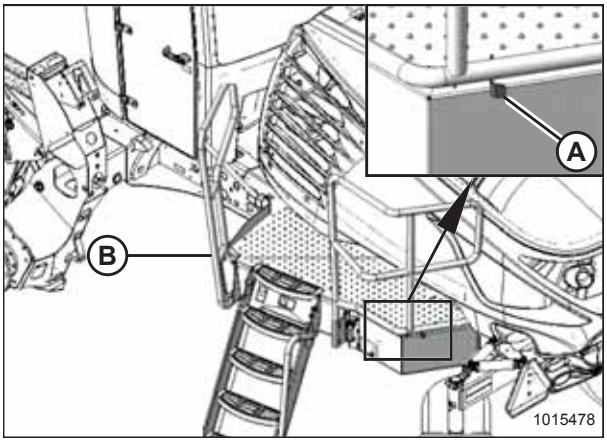


Figure 5.23: Left Cab-Forward Platform

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

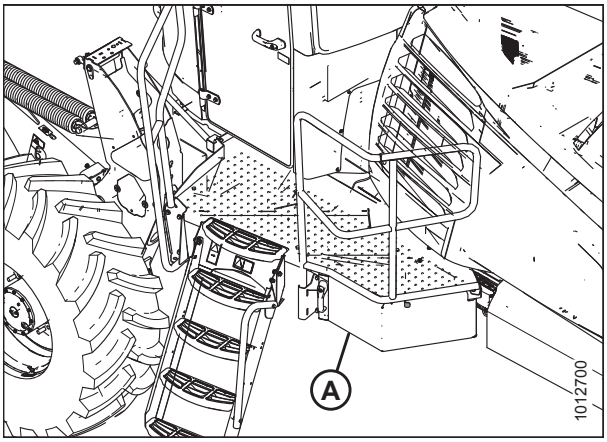


Figure 5.24: Left Cab-Forward Platform

5.1.3 Detaching an A40DX Auger Header

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

DANGER

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

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

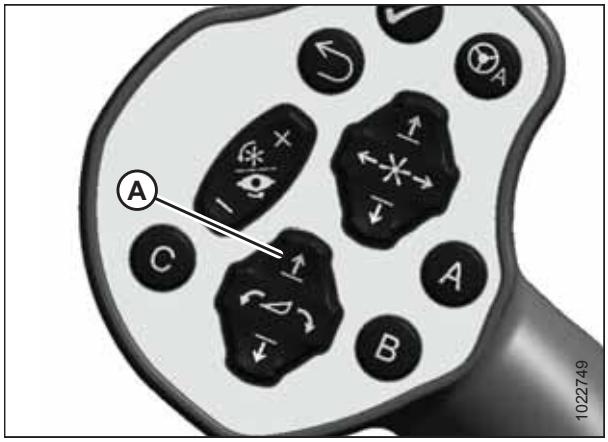


Figure 5.25: GSL

4. 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.

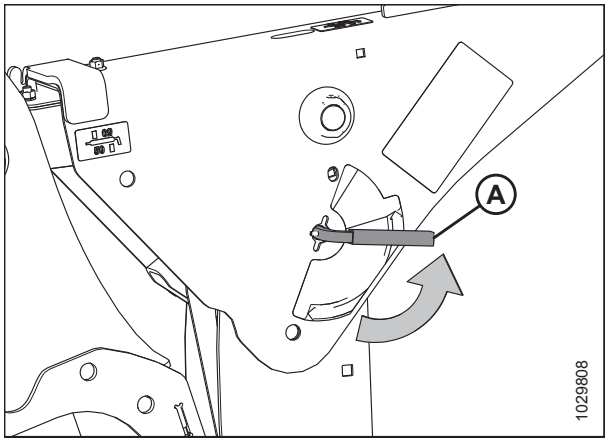


Figure 5.26: Safety Prop Lever

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

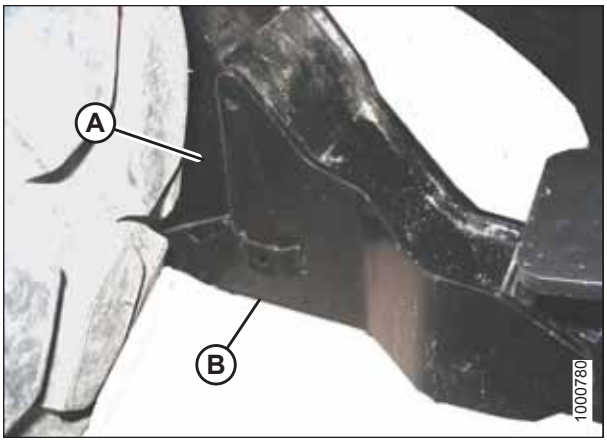


Figure 5.27: Header Support

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

WARNING

Check to be sure all bystanders have cleared the area.

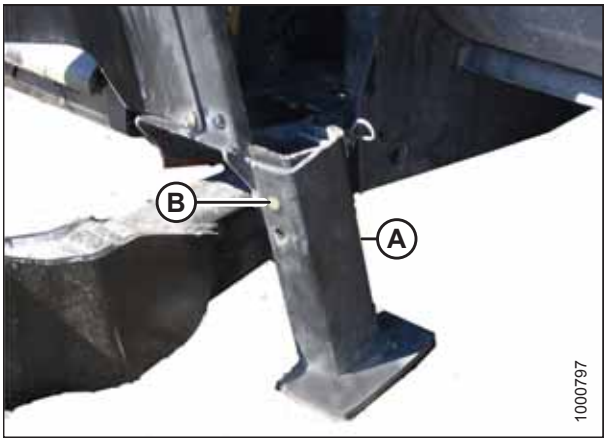


Figure 5.28: Header Stand

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

   NOTE:

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

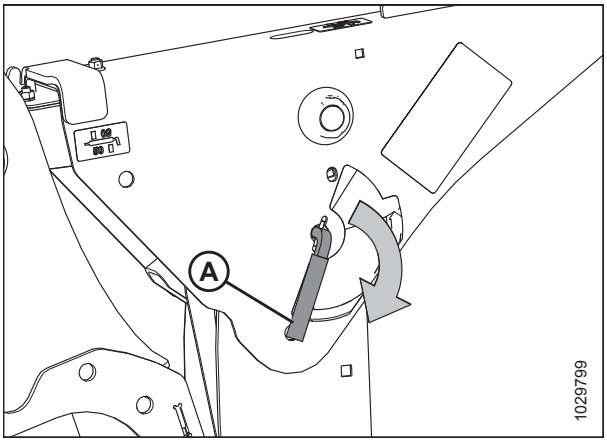


Figure 5.29: Safety Prop Lever

10. Activate HEADER TILT UP (A) and HEADER TILT DOWN (B) cylinder switches on the GSL to release the load on the center-link cylinder.
11. Shut down the engine, and remove the key from the ignition.

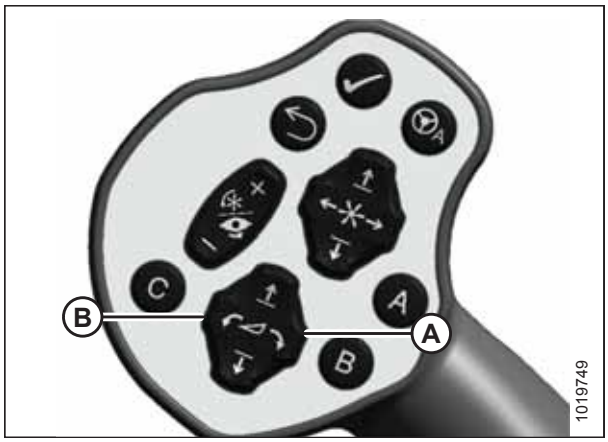


Figure 5.30: GSL

12. Lift hook release (A) and lift hook (B) off header pin.

    NOTE:

    If the optional center-link self-alignment kit is installed, lift release (A) and then operate the link lift cylinder with the REEL UP switch on the GSL to disengage the center-link from the header.

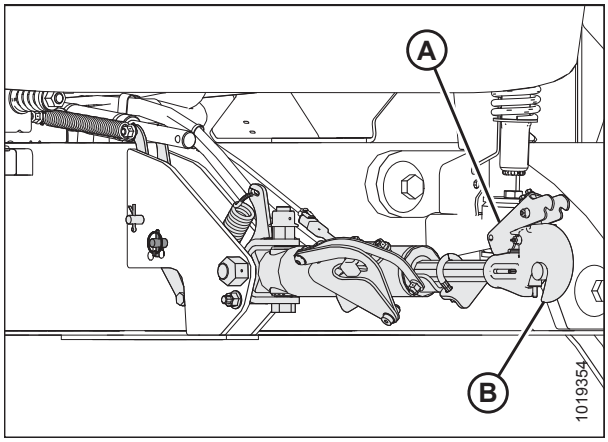


Figure 5.31: Hydraulic Center-Link

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

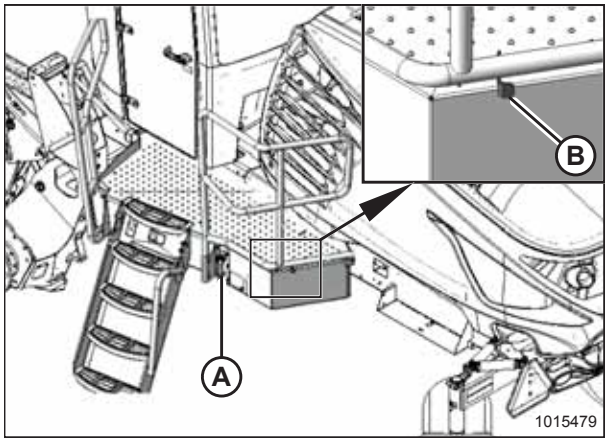


Figure 5.32: Left Cab-Forward Platform

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

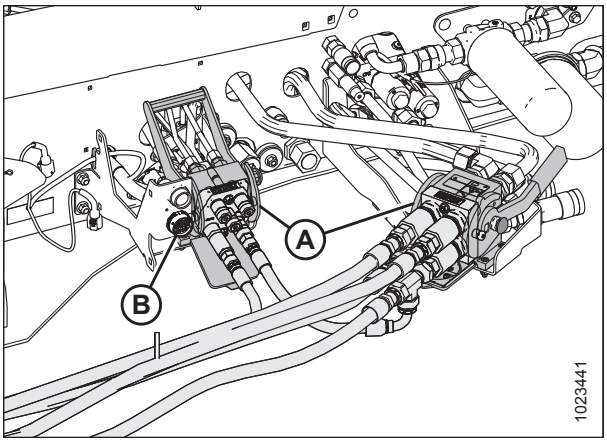


Figure 5.33: Header Drive Hydraulics

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

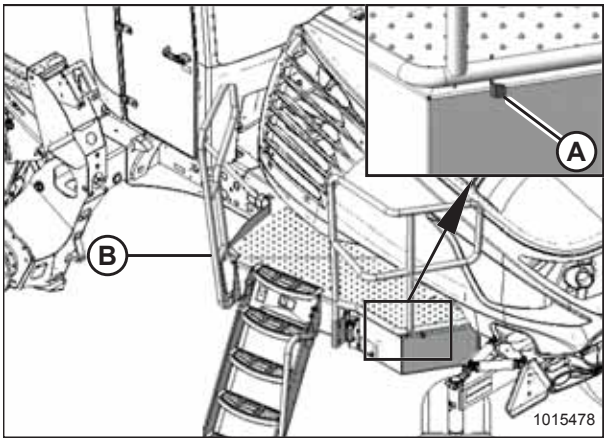


Figure 5.34: Left Cab-Forward Platform

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

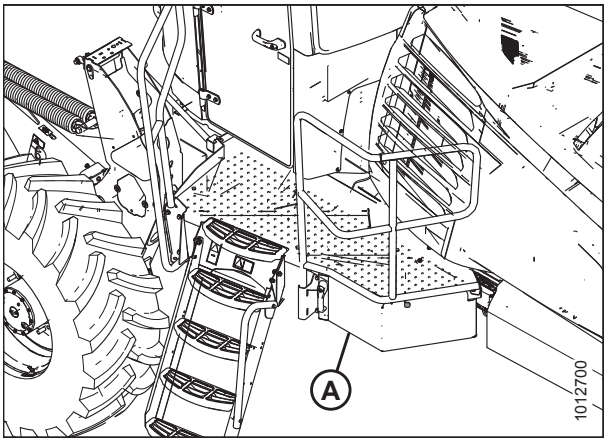


Figure 5.35: Left Cab-Forward Platform

18. Place hydraulics/electrical bundle (A) in the storage position on the header.
19. Back the windrower slowly away from the header.

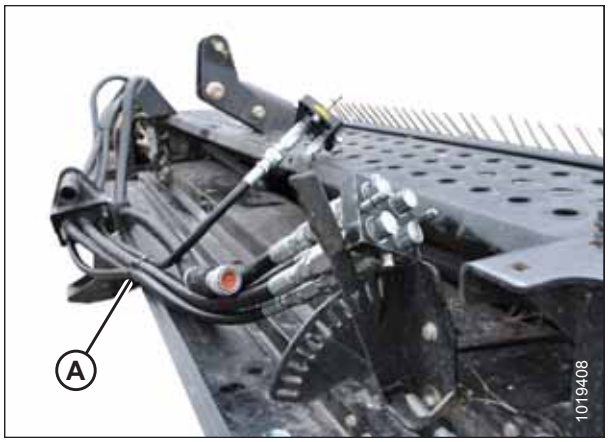


Figure 5.36: Hydraulics Hoses in Storage Position

20. Reinstall clevis pin (B) into header support (C) and secure with hairpin (A). Repate for the opposite side.

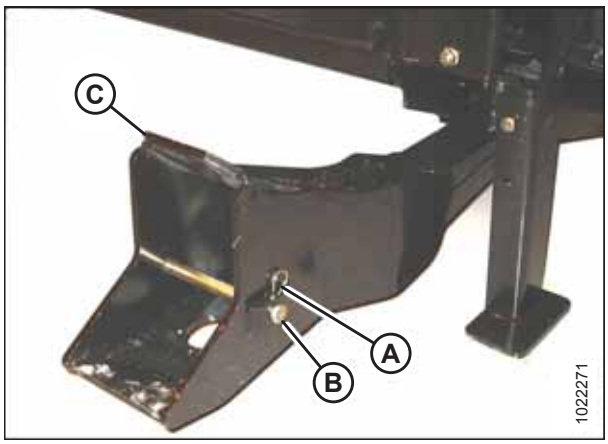


Figure 5.37: Header Support

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 the header to the windrower.

DANGER

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

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).

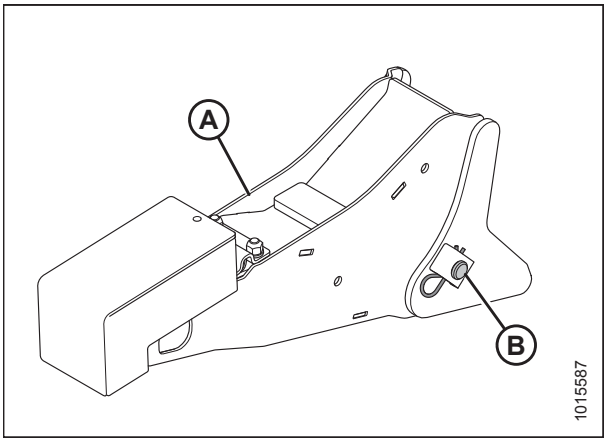


Figure 5.38: Draper Header Support

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

   NOTE:

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

4. Secure clevis pin (C) with hairpin (D).
5. Repeat Step *2, page 145* to Step *4, page 145* to install the remaining draper header support.

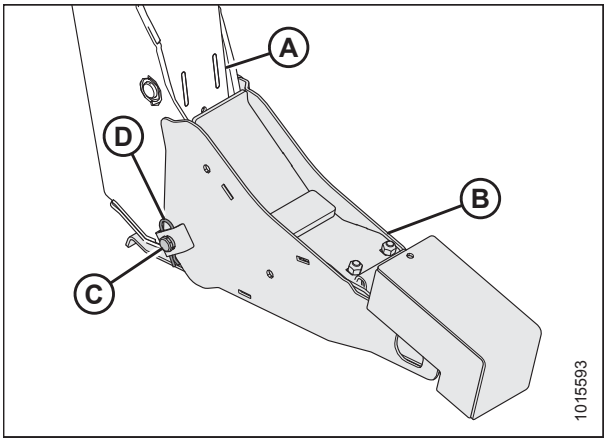


Figure 5.39: Draper Header Support

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 the header will differ slightly.

DANGER

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

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 145*.

1. Shut down the engine, and remove the key from the ignition.
2. If an R85 or R2 Series Rotary Disc 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 as follows:
   a. Remove hardware (B).
   b. Remove support bracket (A). Place the bracket and hardware in the toolbox.

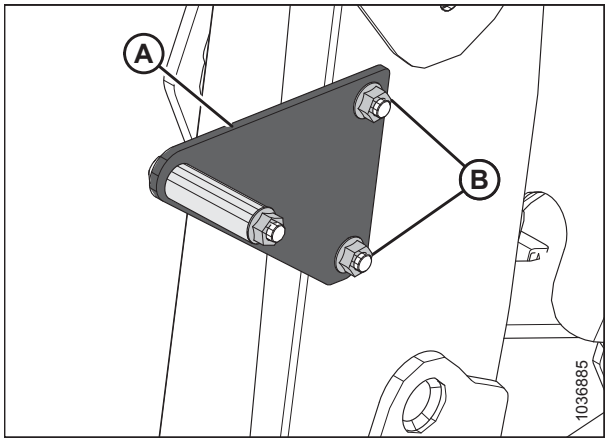


Figure 5.40: Forming Shield bracket – R85

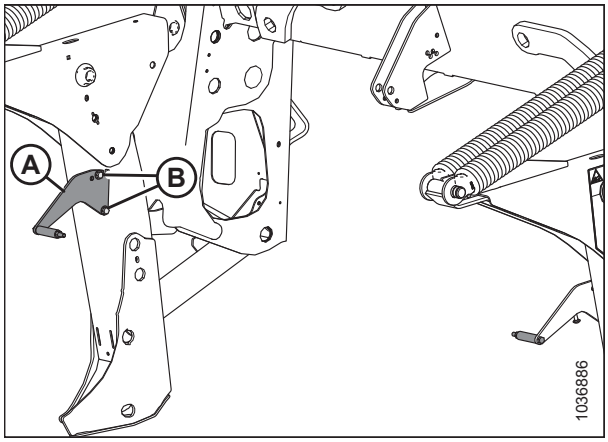


Figure 5.41: Forming Shield bracket – R2 Series

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.

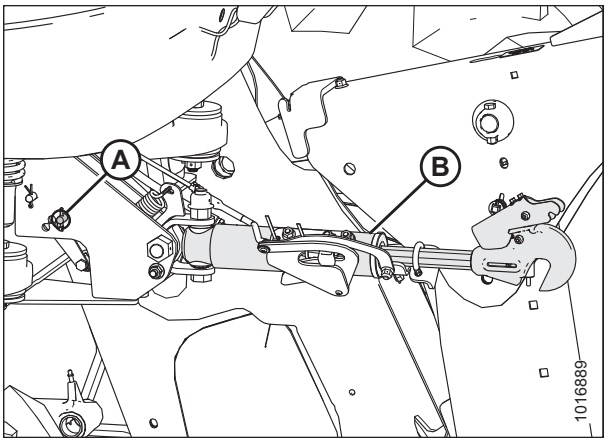


Figure 5.42: Center-Link without Self-Alignment

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

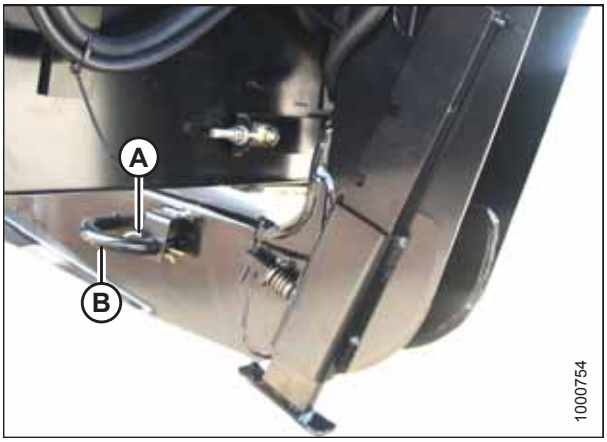


Figure 5.43: Header Leg

DANGER

Ensure that 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 148*.

   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 148*.
   - If not prompted by the HPT to remove the float, then proceed to Step *7, page 148* to remove the float manually.

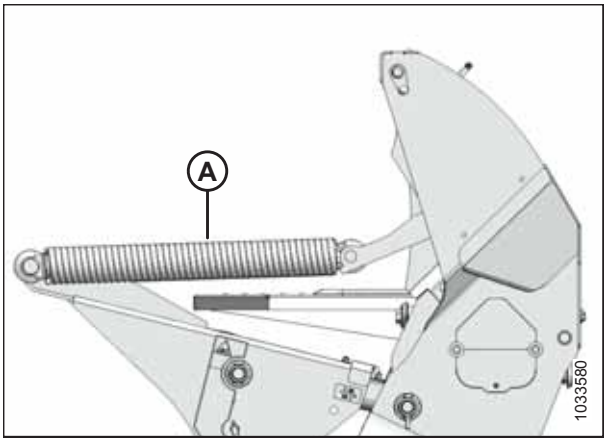


Figure 5.44: Header Float Springs

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.

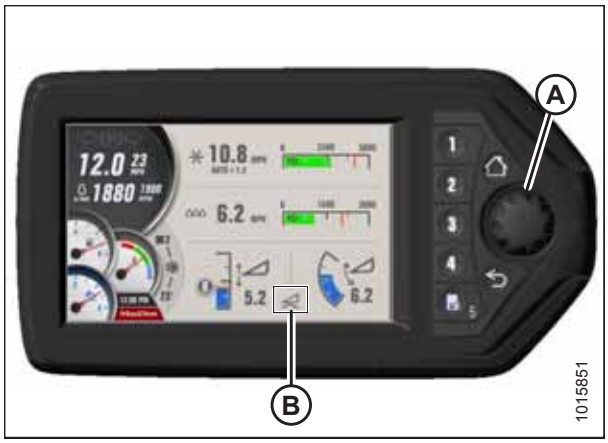


Figure 5.45: HPT Display

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

Figure 5.46: 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.

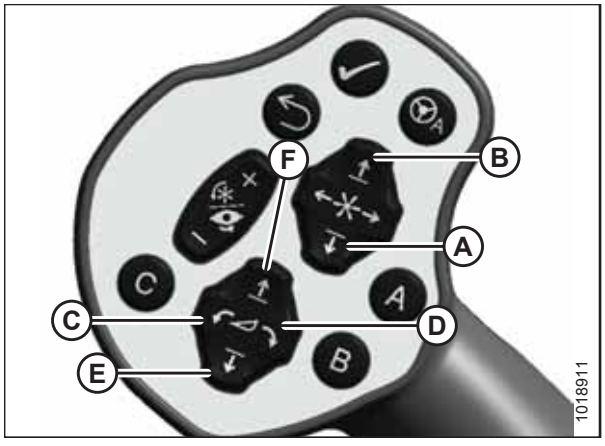


Figure 5.47: GSL Switches

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

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.

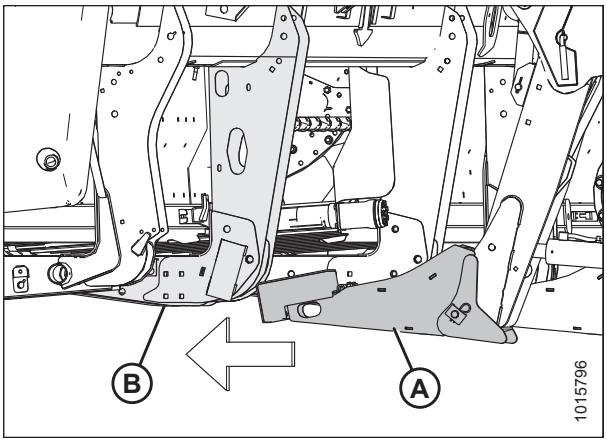


Figure 5.48: Header Leg and Draper Header Support

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.

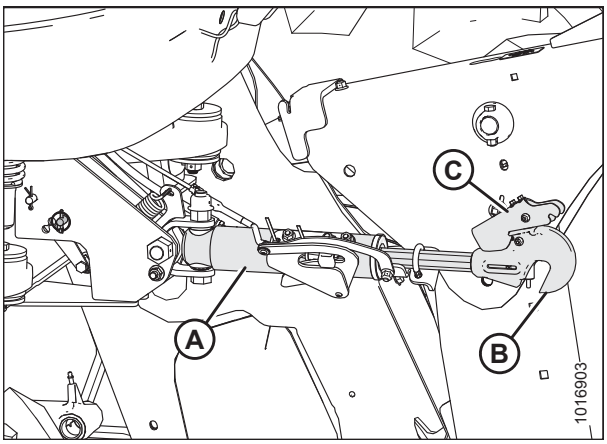


Figure 5.49: Hydraulic Center-Link

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.

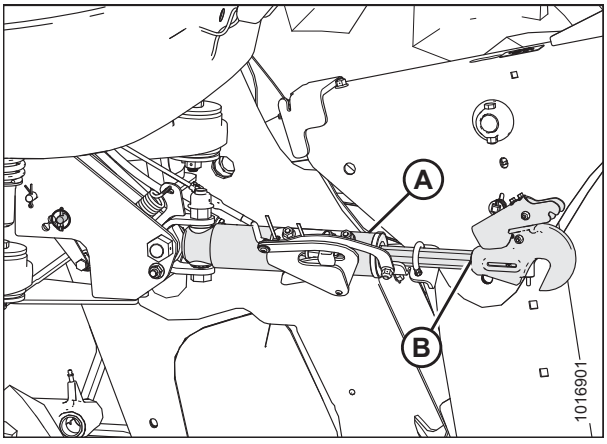


Figure 5.50: Hydraulic Center-Link

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

DANGER

Ensure that 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.

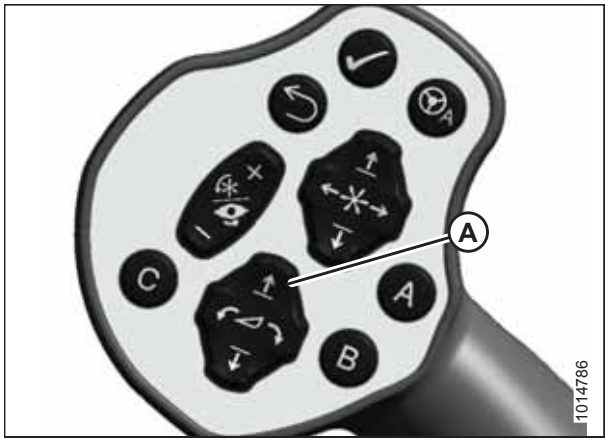


Figure 5.51: GSL

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.

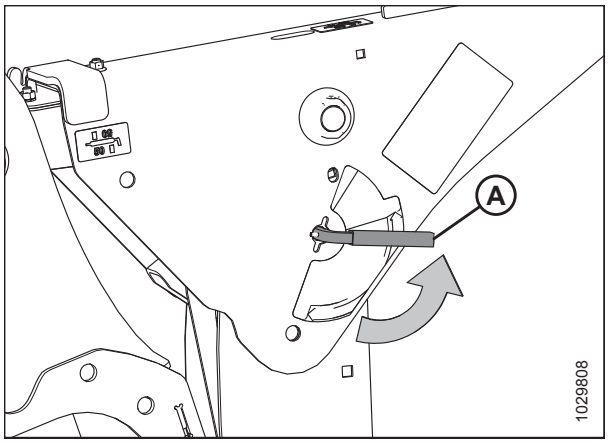


Figure 5.52: Safety Prop Lever

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.

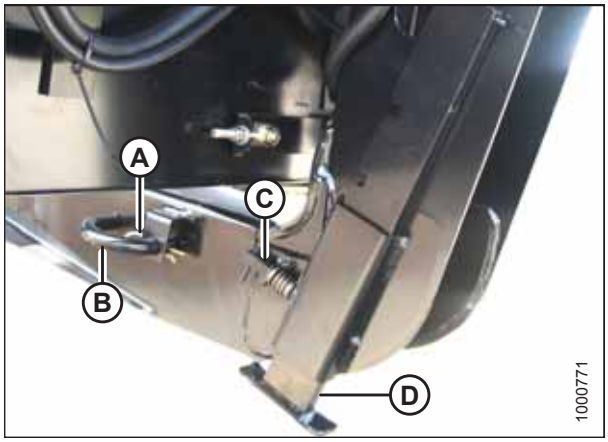


Figure 5.53: Header Leg

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.

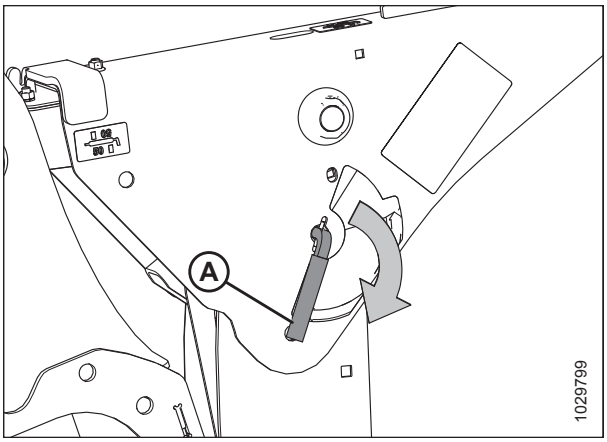


Figure 5.54: Safety Prop Lever

DANGER

Ensure that all bystanders have cleared the area.

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

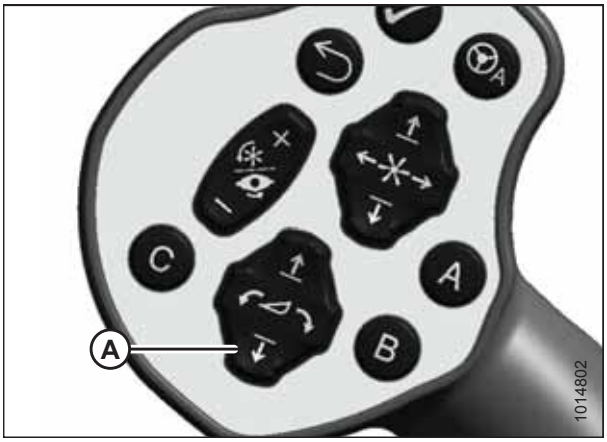


Figure 5.55: GSL

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.

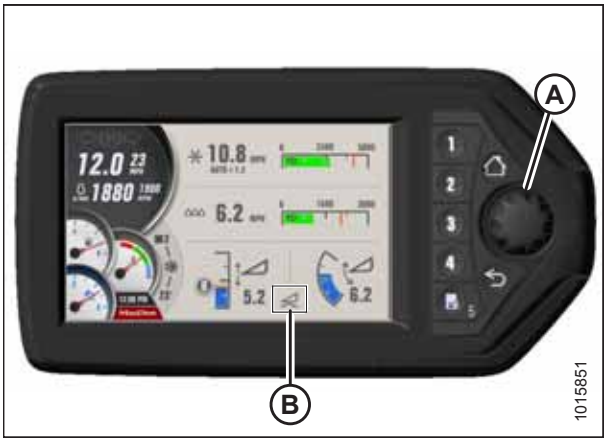


Figure 5.56: HPT Display

24. Turn scroll knob (A) to highlight left (B) or right (C) float and press knob (A) to activate the selection.
25. 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.
26. Shut down the engine, and remove the key from the ignition.
27. 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.
28. Proceed to *5.2.3 Connecting D1X or D1XL Series Draper Header Hydraulics, page 152*.

Figure 5.57: HPT Display

5.2.3 Connecting D1X or D1XL Series Draper Header Hydraulics

Connecting the header's 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.

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

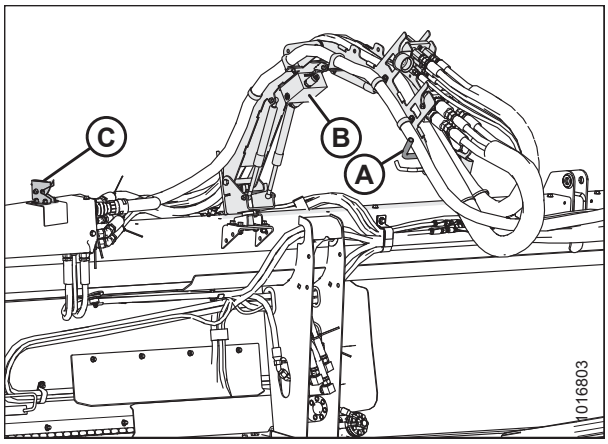


Figure 5.58: Hydraulic Hose Management System

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.

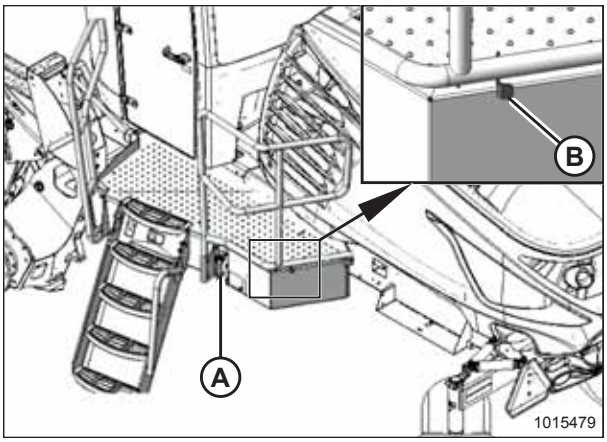


Figure 5.59: Left Cab-Forward Platform

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

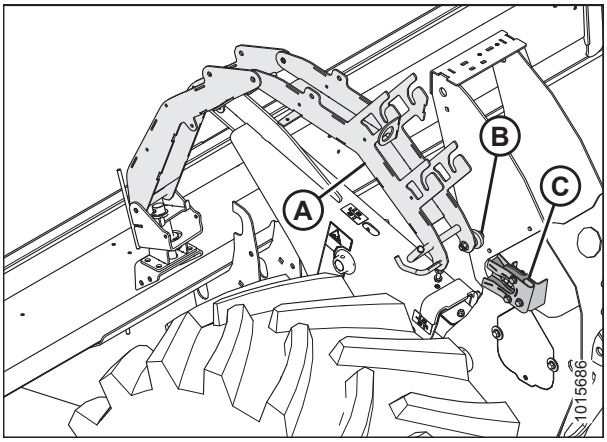


Figure 5.60: Hydraulic Hose Management System

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.

   NOTE:

   Hose quick-disconnect (F) is only present on M1240 machines configured for draper/auger headers.Hose quick-disconnect (F) is only present on M1170 machines with the R1 Series Hydraulic Drive kit (MD #B6845) installed.
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.

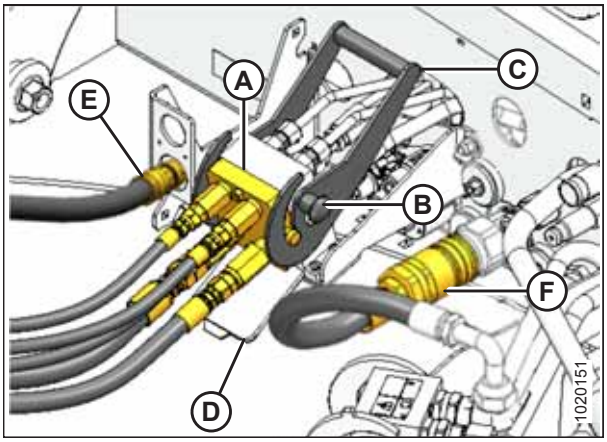


Figure 5.61: Draper/Reel Multicoupler

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.

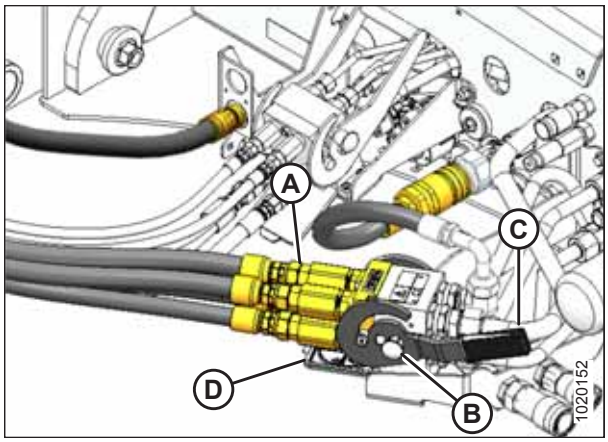


Figure 5.62: Knife/Reel Drive Multicoupler

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

    IMPORTANT:

    Straight routing will prevent abrasion damage to the hydraulic hoses.

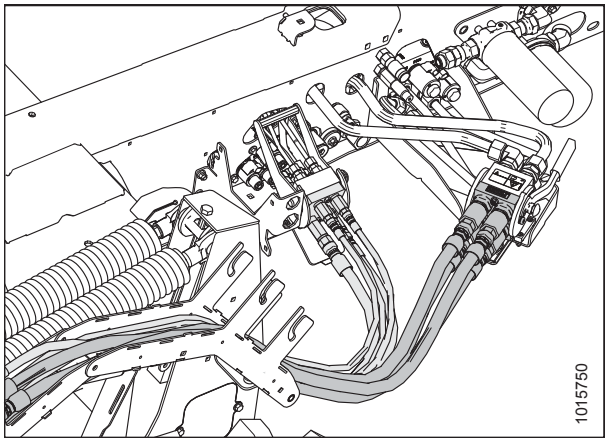


Figure 5.63: Hydraulic Multicouplers and Hose Routing

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

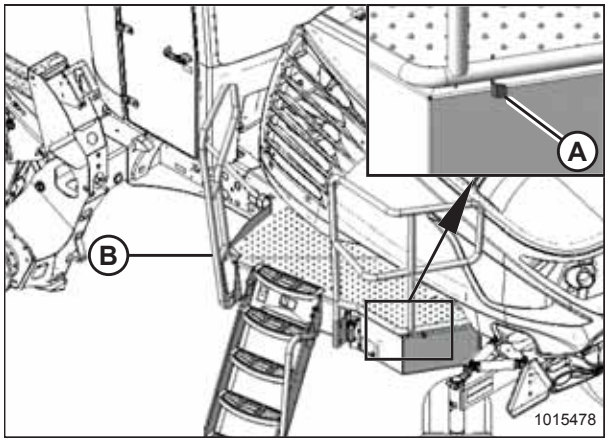


Figure 5.64: Left Cab-Forward Platform

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

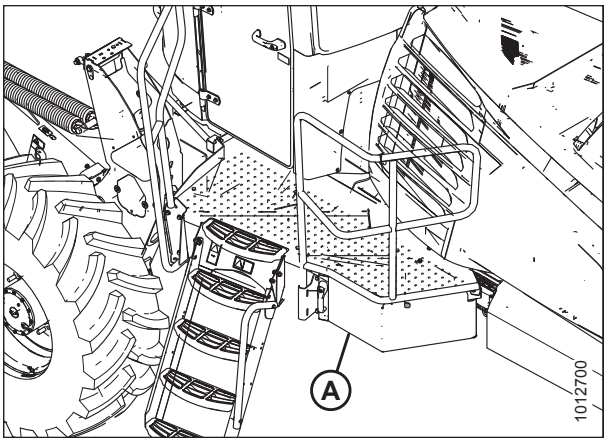


Figure 5.65: Left Cab-Forward Platform

5.2.4 Detaching D1X or D1XL Series Draper Header

DANGER

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

1. Lower the header fully.
2. Shut down the engine, and remove the key from the ignition.
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.

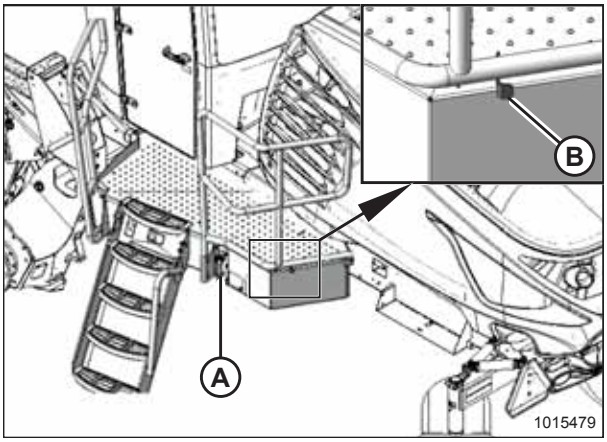


Figure 5.66: Left Cab-Forward Platform

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

   NOTE:

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

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

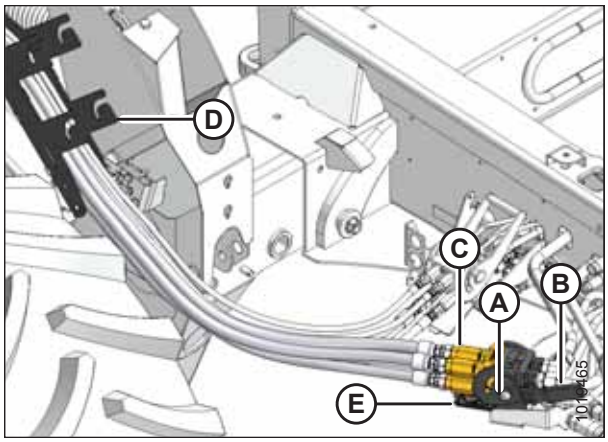


Figure 5.67: Knife/Reel Drive Multicoupler

8. Push lock button (B), and pull handle (C) to disengage multicoupler (A). Disconnect the hydraulics from the windrower draper drive/reel lift receptacle.
9. Disconnect electrical connector (E).
10. Remove any debris that may have accumulated on the windrower front receptacle, and close cover (D).

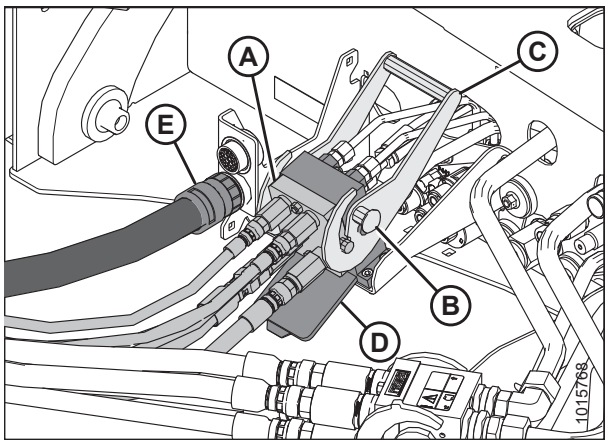


Figure 5.68: Draper/Reel Multicoupler

11. Route draper drive/reel hose bundle back to storage position (A) on hydraulic hose management system (B).
12. Insert electrical connector into storage cup (C).

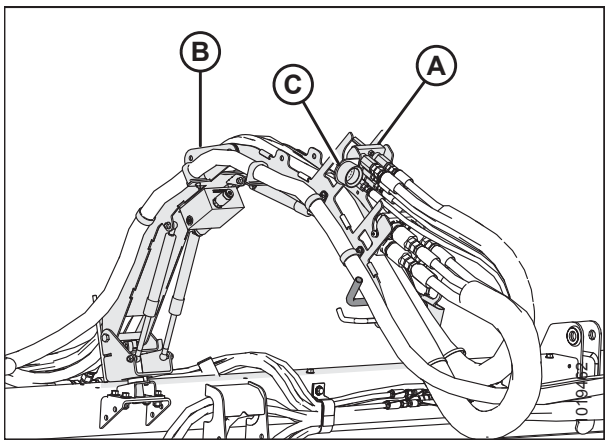


Figure 5.69: Hydraulic Hose Management System

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

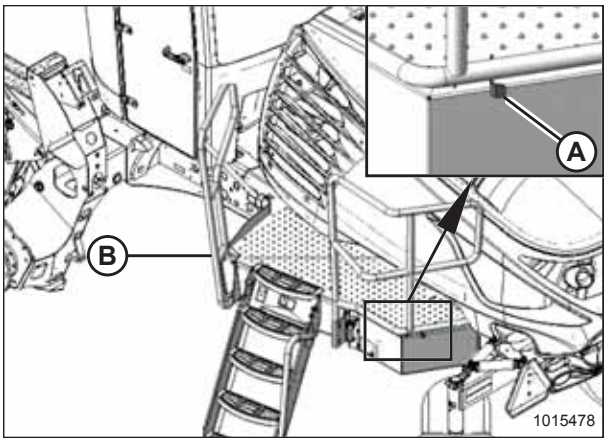


Figure 5.70: Left Cab-Forward Platform

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

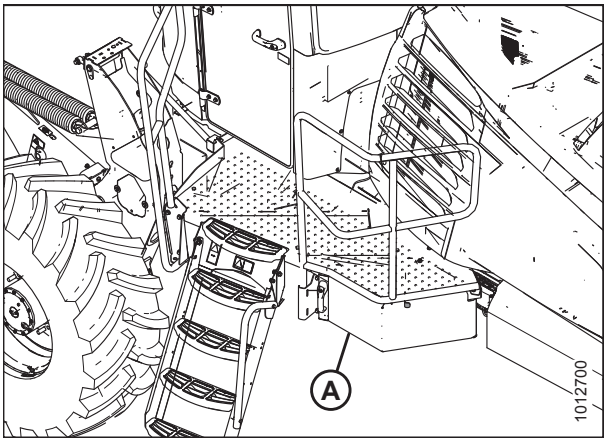


Figure 5.71: Left Cab-Forward Platform

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

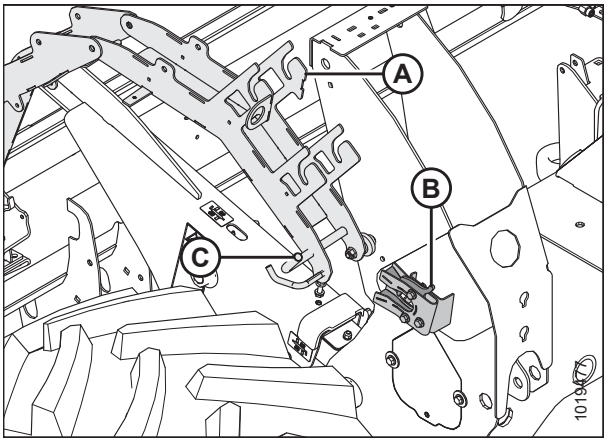


Figure 5.72: Hydraulic Hose Management System

16. Pivot hose management system (B) forward with handle (A), and engage hook (D) into latch (C) on header.

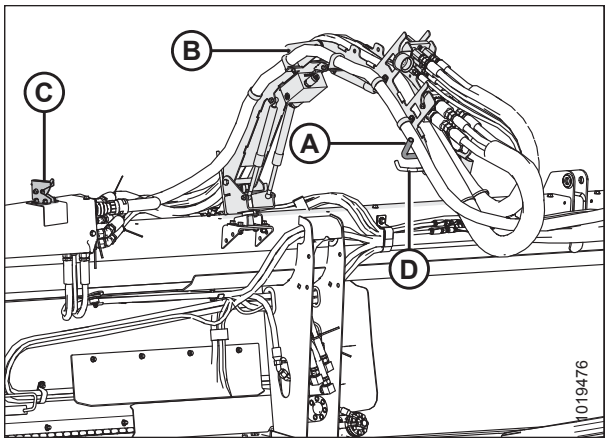


Figure 5.73: Hydraulic Hose Management System

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

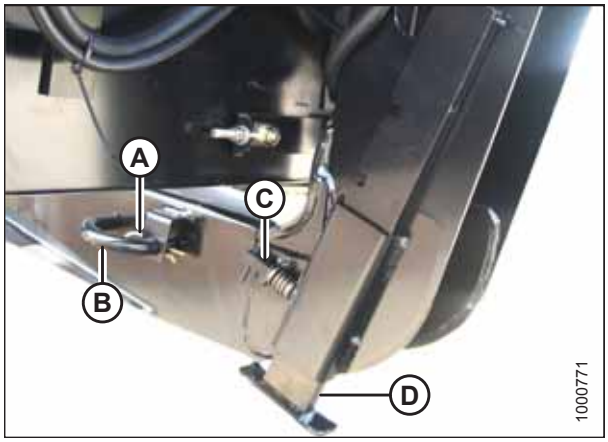


Figure 5.74: Header Stand

19. **Windrowers with self-aligning center-link:** Release center-link latch (A) before returning to the cab.

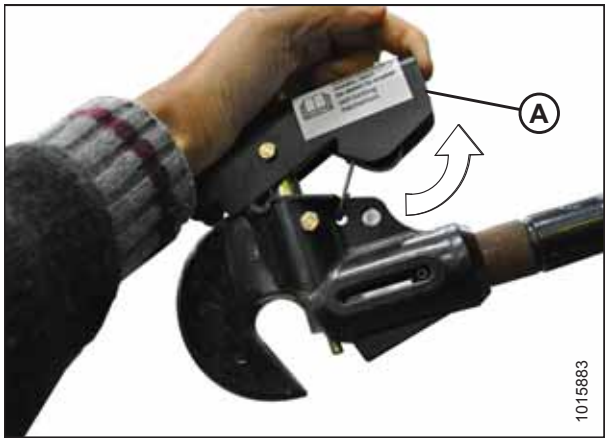


Figure 5.75: Center-Link

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.

21. Repeat for the opposite side.

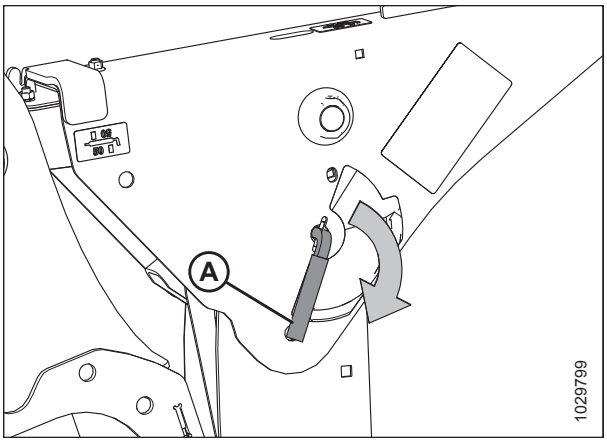


Figure 5.76: Safety Prop Lever

DANGER

Ensure that all bystanders have cleared the area.

22. Start the engine.
23. Remove header float when prompted by the Harvest Performance Tracker (HPT).

    NOTE:

    If not prompted by the HPT to remove float, remove float manually.

24. Lower the header to the ground with HEADER DOWN switch (A).
25. Press HEADER TILT switches (B) as required on GSL to release load on center-link.
26. **Windrowers with self-aligning center-link:**

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

    b. Proceed to Step *28, page 160*.

27. **Windrowers without self-aligning center-link:**

    a. Shut off the engine and remove the key.

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

    ## DANGER

    Ensure that all bystanders have cleared the area.

    c. Start the engine.

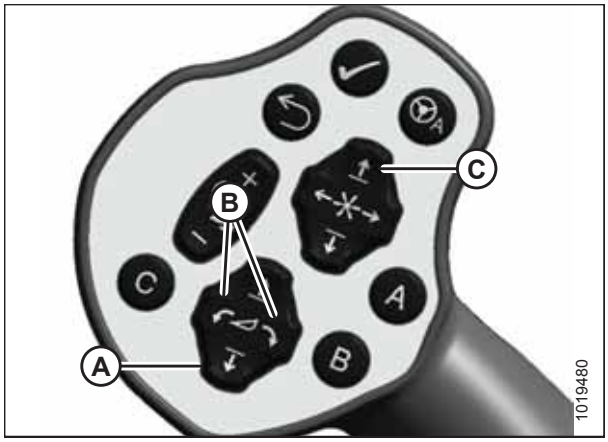


Figure 5.77: GSL

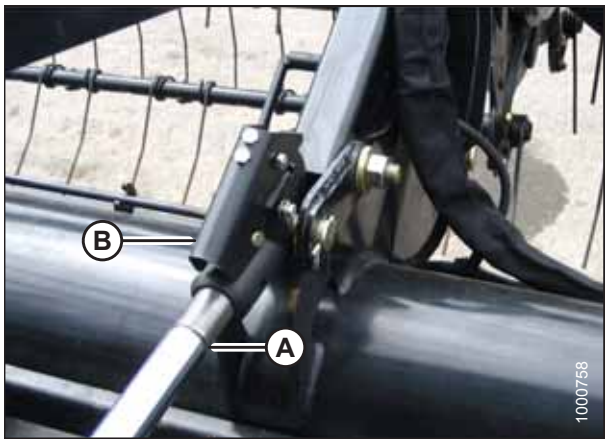


Figure 5.78: Hydraulic Center-Link

28. Back windrower away from header.
29. Reinstall pin (A) into header leg, and secure with hairpin (B). Repeat this step on the other header leg.

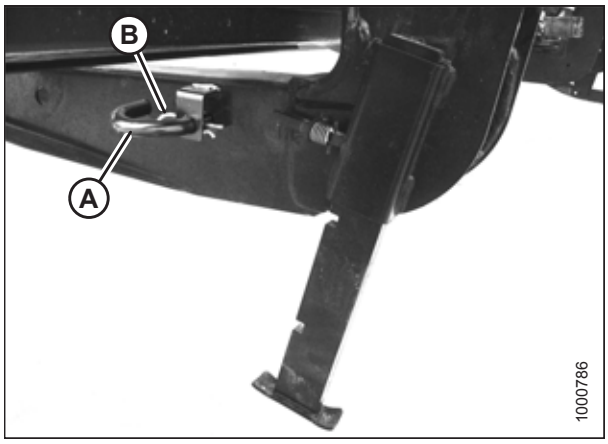


Figure 5.79: Header Stand

30. If switching to an R85 or R2 Series Rotary Disc Header, retrieve the forming shield support brackets (A) from the toolbox, and attach the brackets as follows:

    a. install support bracket (A).

    b. Install hardware (B) to secure the support to the windrower leg.

    c. Repeat on the opposite windrower leg.

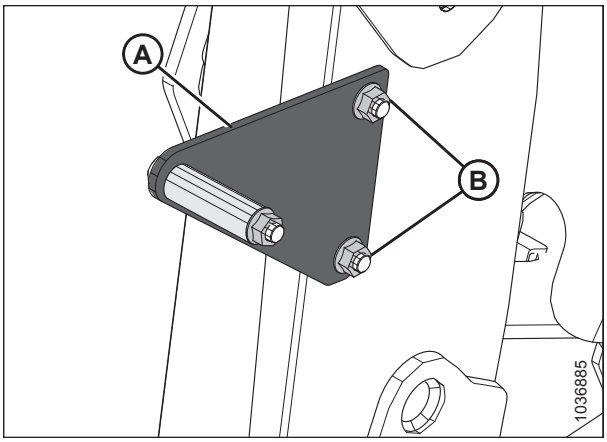


Figure 5.80: Forming Shield bracket – R85

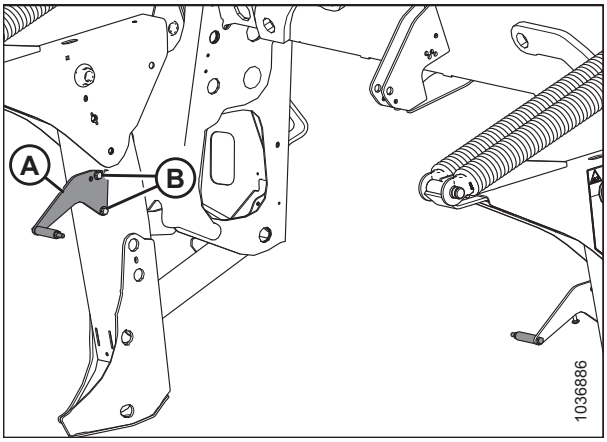


Figure 5.81: Forming Shield bracket – R2 Series

5.3 R85 Rotary Disc Header– M1240 Windrower Only

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.

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

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.

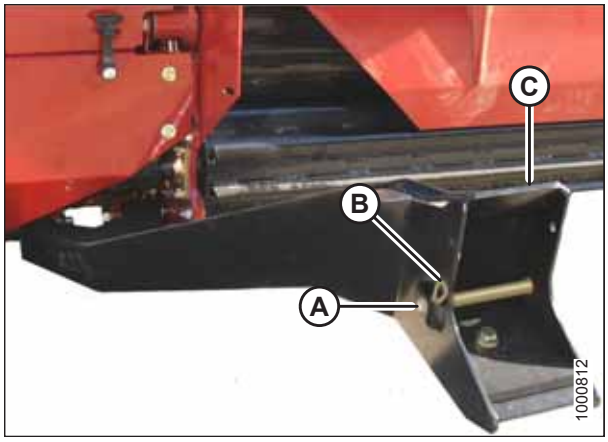


Figure 5.82: Header Support

DANGER

Ensure that all bystanders have cleared the area.

2. Start the engine.

3. **If you are lowering the header lift legs WITH a header or weight box attached to the windrower**, proceed to Step *7, page 163*.

   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 163*.
   - If not prompted by the HPT to remove the float, then proceed to Step *4, page 163* 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. This will prevent damage to the header lift linkages.

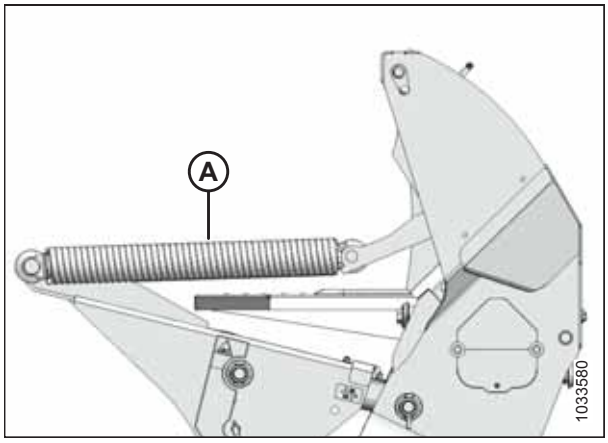


Figure 5.83: Header Float Springs

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

Figure 5.84: HPT Display

6. 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 5.85: HPT Display

7. Press HEADER DOWN switch (E) on the ground speed lever (GSL) to fully retract the header lift cylinders.
8. 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.

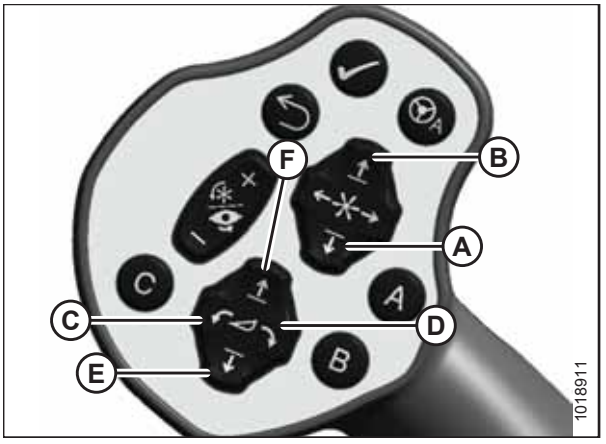


Figure 5.86: GSL

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

9. 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.
10. Ensure that the lift linkages are properly engaged in the header legs.

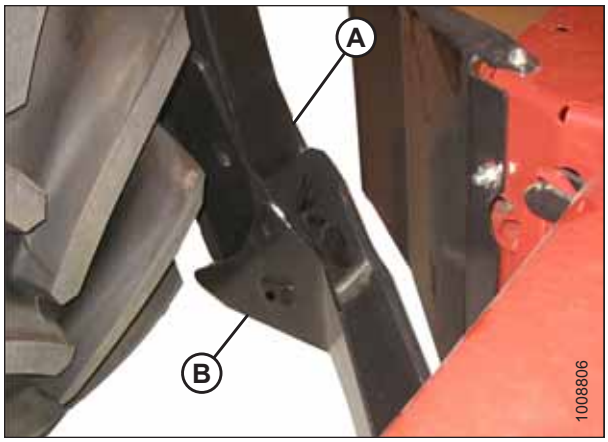


Figure 5.87: Header Support

11. 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.

12. 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 *5.86, page 163* for an illustration of the GSL controls.
13. Ensure that the center-link is locked onto the header by pressing the REEL UP switch on the GSL. Refer to Figure *5.86, page 163* for an illustration of the GSL controls.

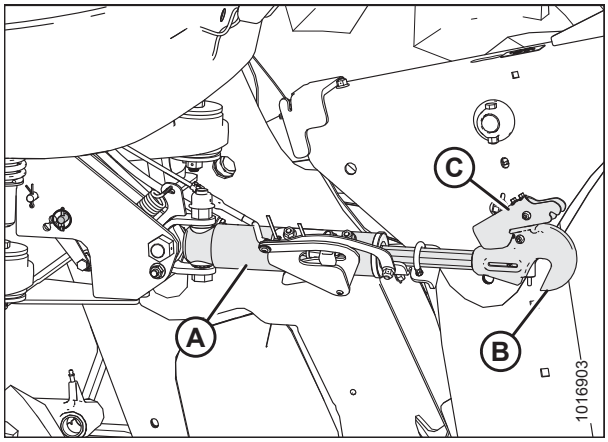


Figure 5.88: Center-Link

DANGER

Ensure that all bystanders have cleared the area.

14. Start the engine.
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 cylinders are now phased.
17. Shut down the engine, and remove the key from the ignition.

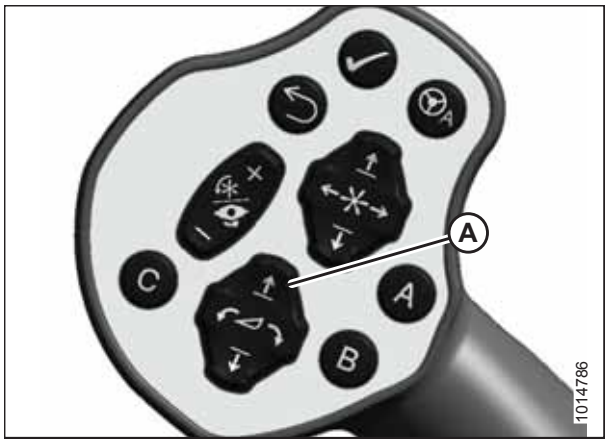


Figure 5.89: GSL

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.

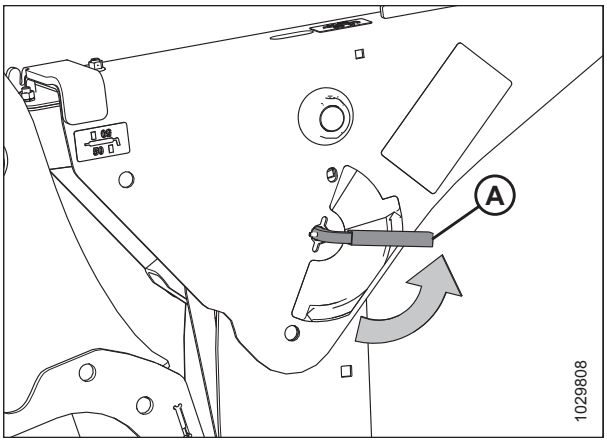


Figure 5.90: Safety Prop Lever

19. 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.

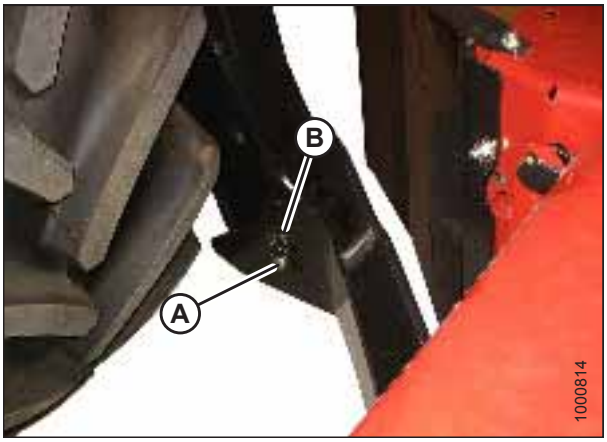


Figure 5.91: Header Support

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.

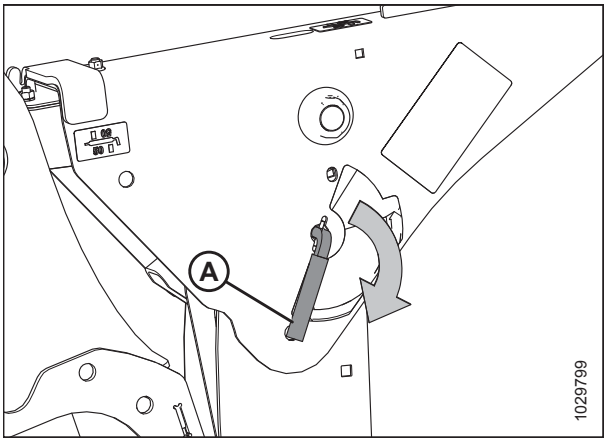


Figure 5.92: Safety Prop Lever

DANGER

Ensure that all bystanders have cleared the area.

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

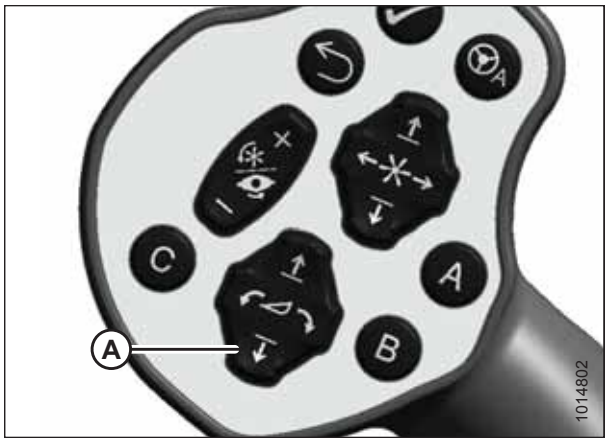


Figure 5.93: GSL

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 scroll knob to select it.

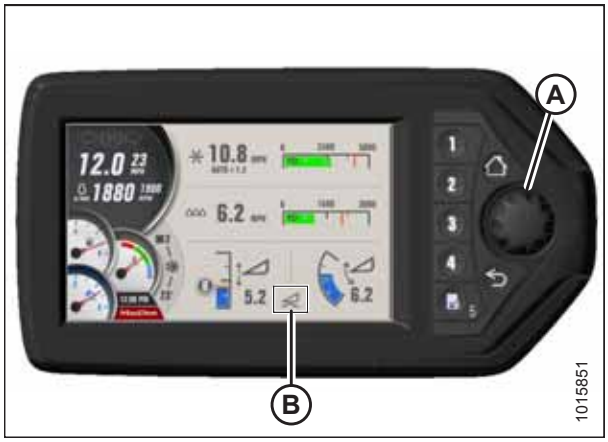


Figure 5.94: HPT Display

24. Turn scroll knob (A) to highlight the left or right float setting and press knob (A) to activate the selection.
25. 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.
26. Shut down the engine, and remove the key from the ignition.
27. 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 5.95: HPT Display

5.3.2 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.

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.

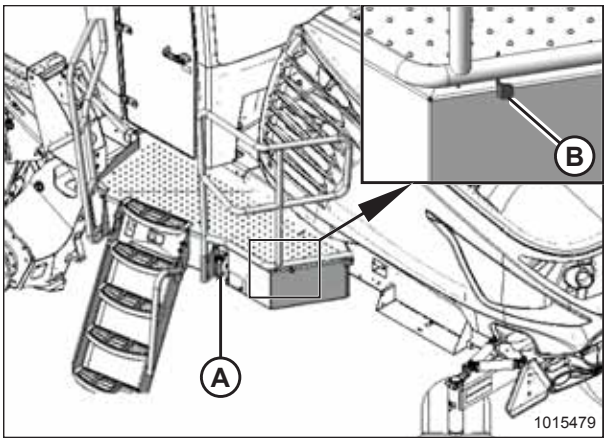


Figure 5.96: Left Cab-Forward Platform

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).

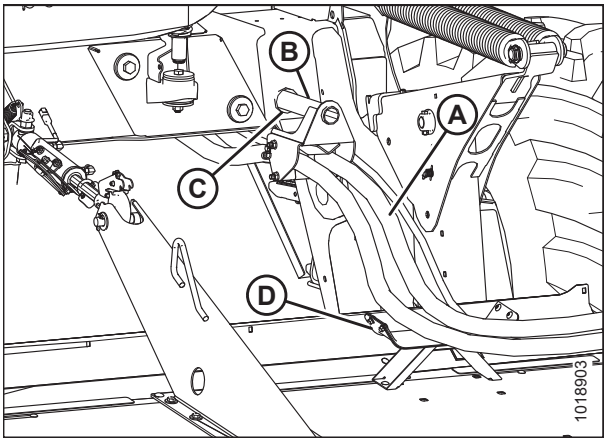


Figure 5.97: Hose and Electrical Routing

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.

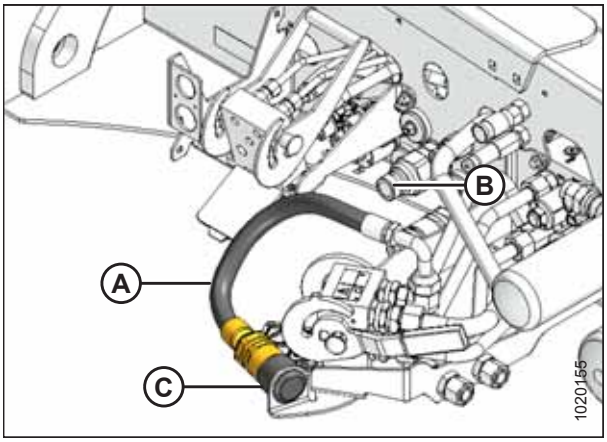


Figure 5.98: Knife Drive Hose on Rotary Disc and Draper Ready Windrower

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 168*.

   NOTE:

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

   a. Connect disc pressure hose (A) (indicated by its red cable tie) to receptacle (B).

   b. Connect disc return hose (C) to receptacle (D).

   c. Connect case drain hose (E) to receptacle (F).

   d. 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.

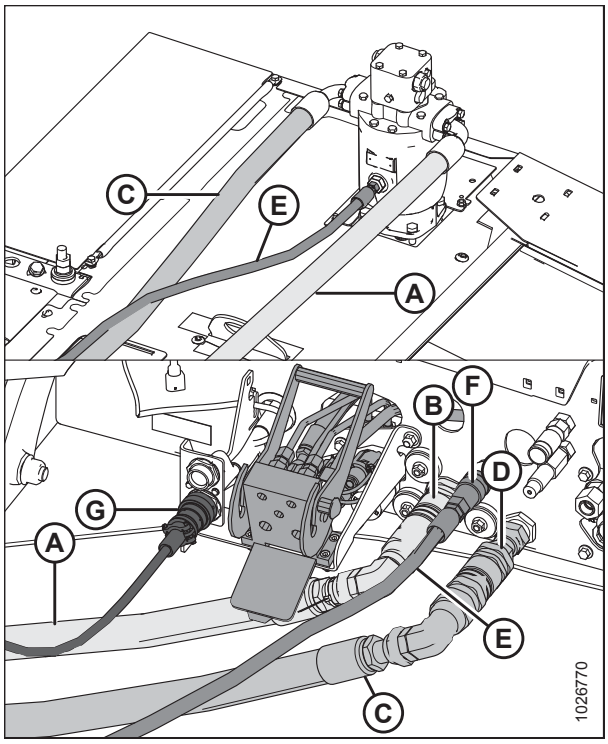


Figure 5.99: Quick-Disconnect Hydraulic and Electrical Connections

7. **Windrowers equipped with hard-plumbed fittings:**

   NOTE:

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

   a. Attach the disc pressure hose (A) to fitting on frame and torque to 216 Nm (159 lbf·ft).

   b. Connect the disc return hose (B) to fitting on frame and torque to 216 Nm (159 lbf·ft).

   c. Connect the case drain hose (C) to fitting on frame and tighten.

   d. Connect the electrical harness to receptacle (D).

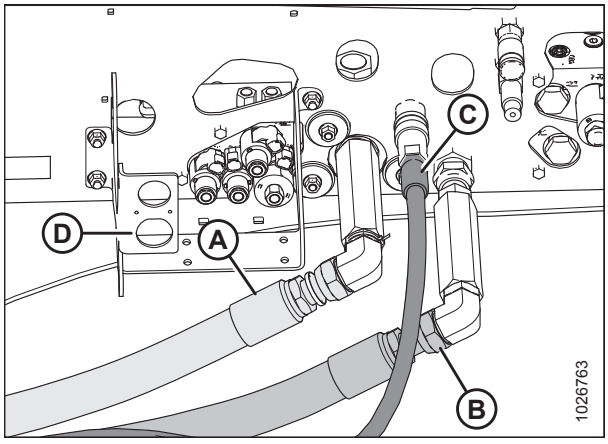


Figure 5.100: Hard-Plumbed Hydraulic and Electrical Connections on a Rotary Disc Ready Windrower

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

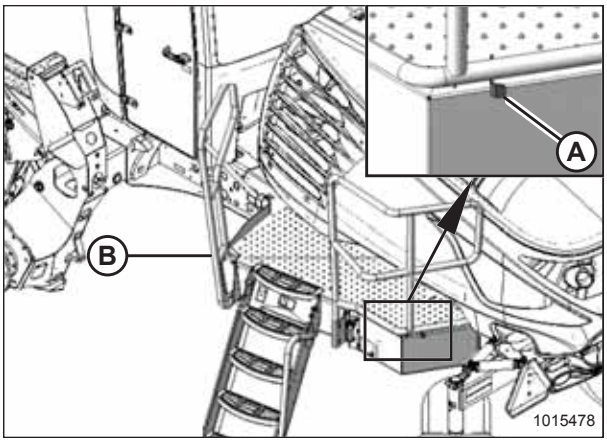


Figure 5.101: Left Cab-Forward Platform

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

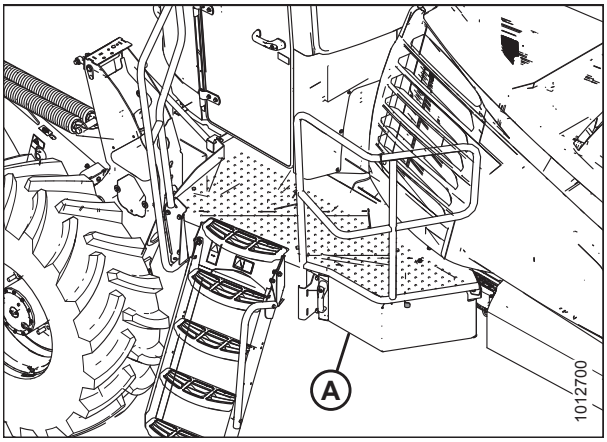


Figure 5.102: Left Cab-Forward Platform

5.3.3 Detaching R85 4.9 m (16 ft.) Rotary Disc Header

DANGER

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

DANGER

Ensure that all bystanders have cleared the area.

1. Start the engine, and press header raise switch (A) to raise the header to the maximum height.
2. Shut down the engine, and remove the key from the ignition.

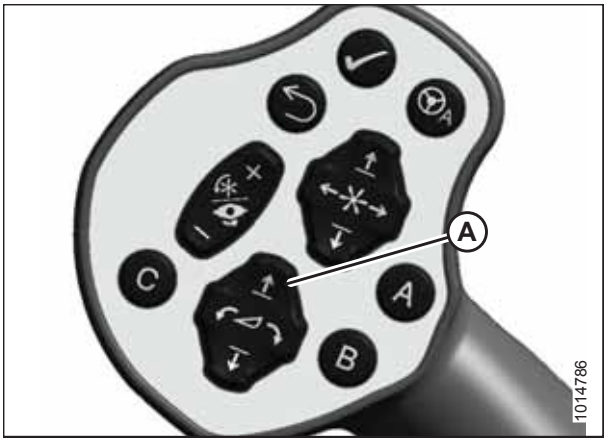


Figure 5.103: Ground Speed Lever

3. 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.

4. Open the platform. For instructions, refer to .

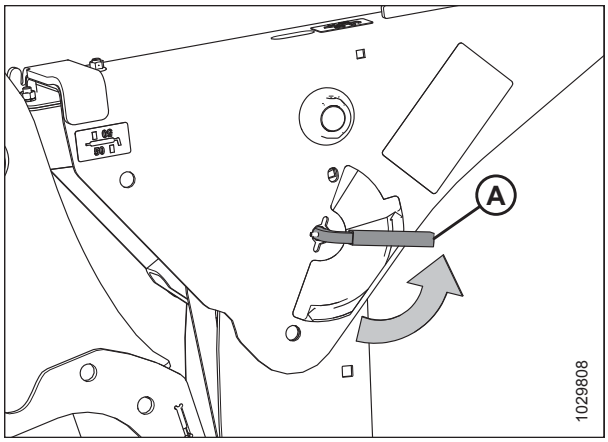


Figure 5.104: Safety Prop Lever

5. Disconnect the following electrical harness and hydraulic hoses from the windrower:

   a. Disconnect the disc pressure hose from fitting (A).

   b. Disconnect the disc return hose from fitting (B).

   c. Disconnect the case drain hose from fitting (C).

   d. Disconnect the electrical harness from receptacle (D).

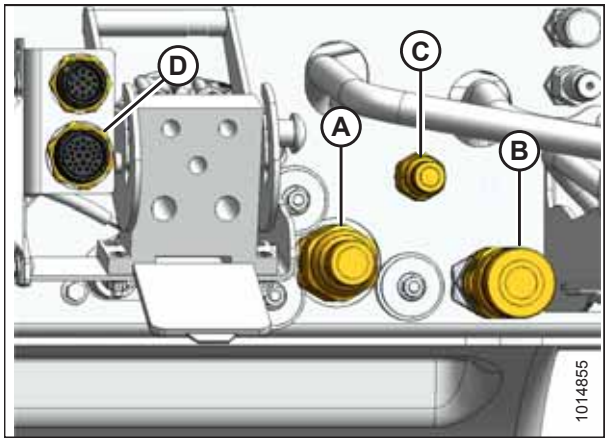


Figure 5.105: Header Drive Hydraulics

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

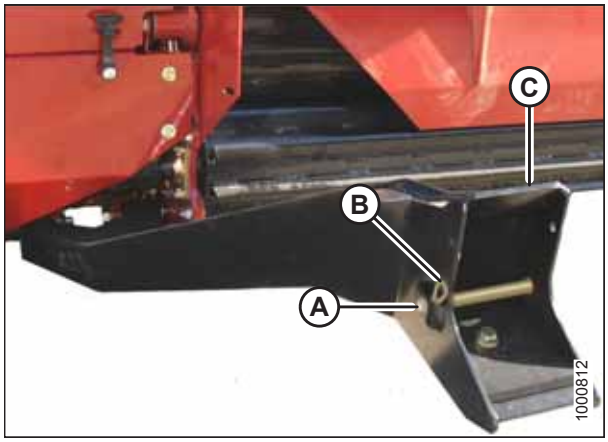


Figure 5.106: Header Supports

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

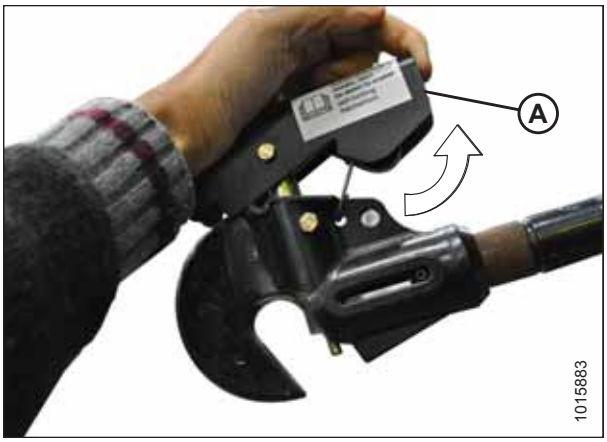


Figure 5.107: Center-Link

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

   NOTE:

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

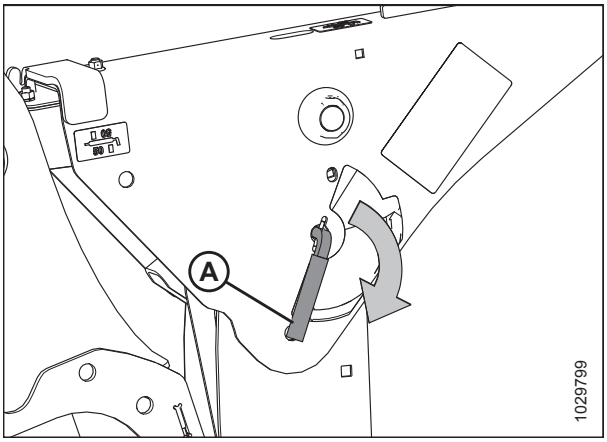


Figure 5.108: Safety Prop Lever

DANGER

Ensure that all bystanders have cleared the area.

9. Start engine and remove header float when prompted by the Harvest Performance Tracker (HPT).

   NOTE:

   If not prompted by the HPT to remove float, remove float manually.

10. Lower the header to the ground.
11. **For windrowers with self-aligning center-link:** Use HEADER TILT cylinder switches (A) on GSL to release load on center-link cylinder.
12. Operate the link lift cylinder with the REEL UP switch (B) to disengage the center-link from the header.

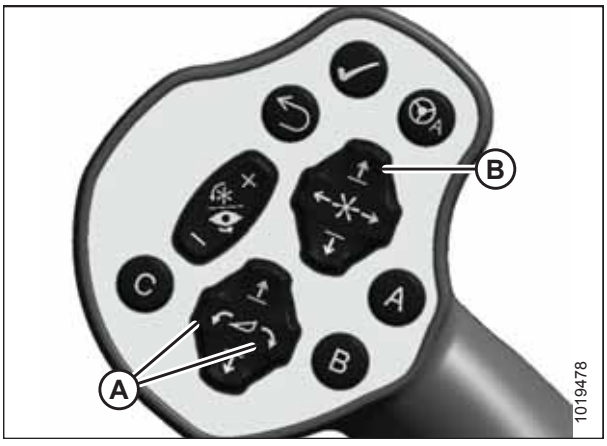


Figure 5.109: GSL

13. **For windrowers without self-aligning center-link:** Shut off the engine and remove the key.
14. Lift hook release (B) and lift hook (A) off header pin.

DANGER

Ensure that all bystanders have cleared the area.

15. Start the engine.

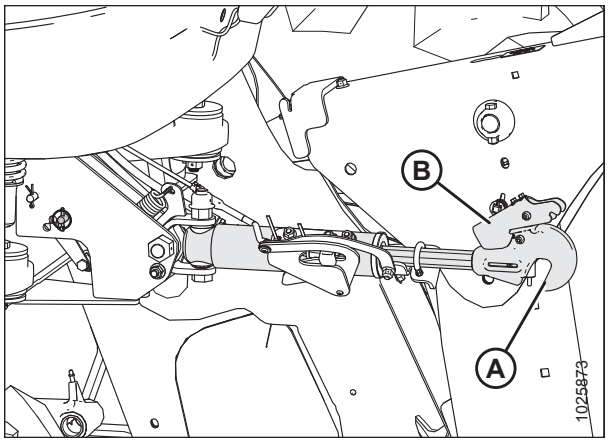


Figure 5.110: Hydraulic Center-Link

16. Slowly back the windrower away from header.
17. Reinstall clevis pin (A) through support (C) and secure with hairpin (B). Repeat for opposite side.

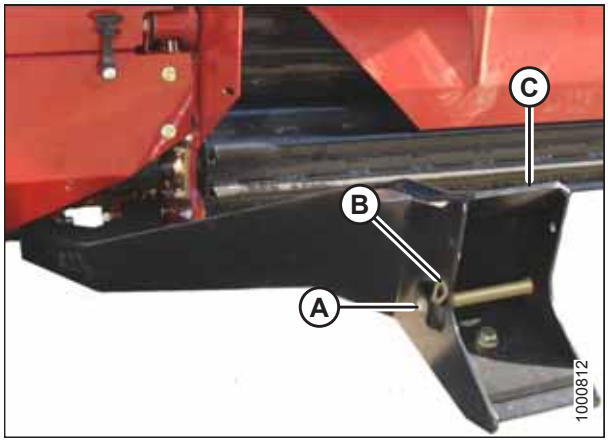


Figure 5.111: Header Support

5.4 R1 Series Rotary Disc Header

The rotary disc header, when attached to a windrower, is designed to cut, condition, and lay a wide variety of grasses and hay crops in windrows.

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

DANGER

Ensure that all bystanders have cleared the area.

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.

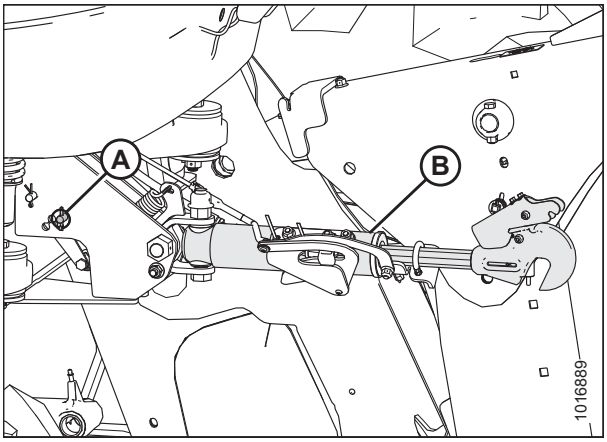


Figure 5.112: Hydraulic Center-Link

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.

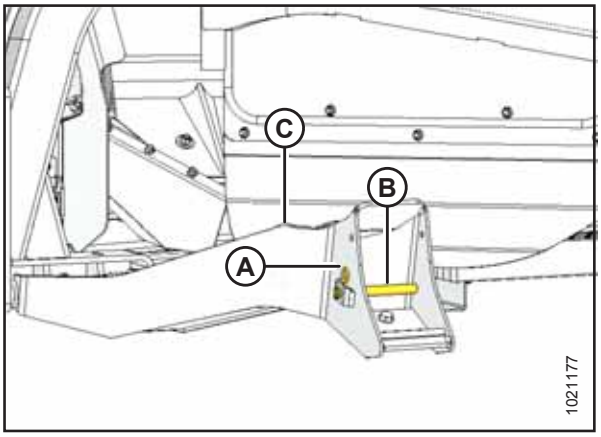


Figure 5.113: Header Support

5. **If you are lowering the header lift legs WITH a header or weight box attached to the windrower**, proceed to Step *9, page 175*.

   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 *9, page 175*.
   - If not prompted by the HPT to remove the float, then proceed to Step *6, page 174* 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. This will prevent damage to the header lift linkages.

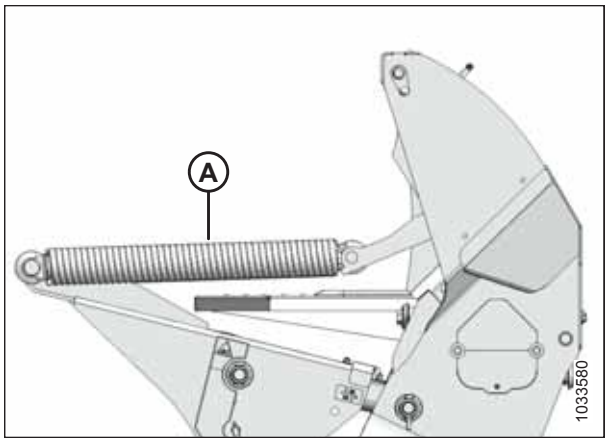


Figure 5.114: Header Float Springs

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.

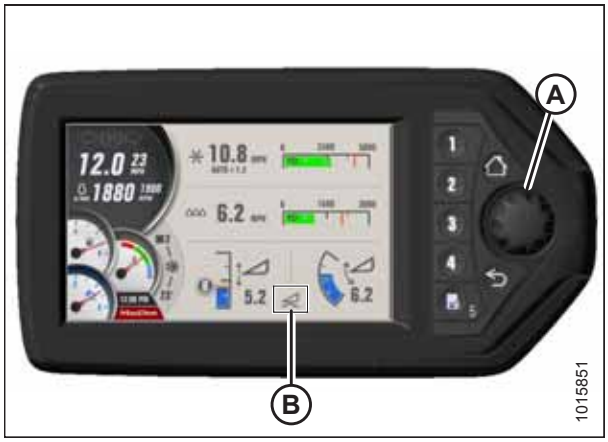


Figure 5.115: HPT Display

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 5.116: 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.

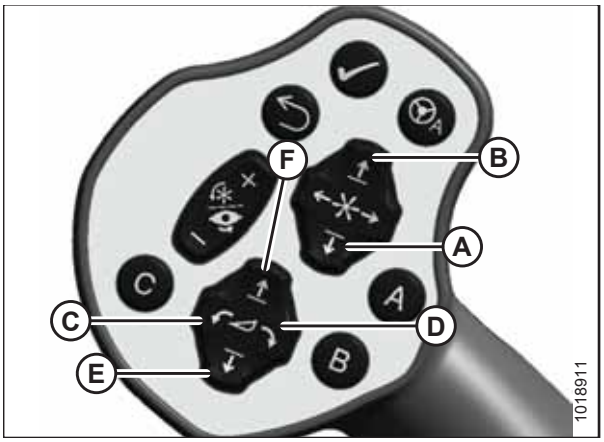


Figure 5.117: GSL

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

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).

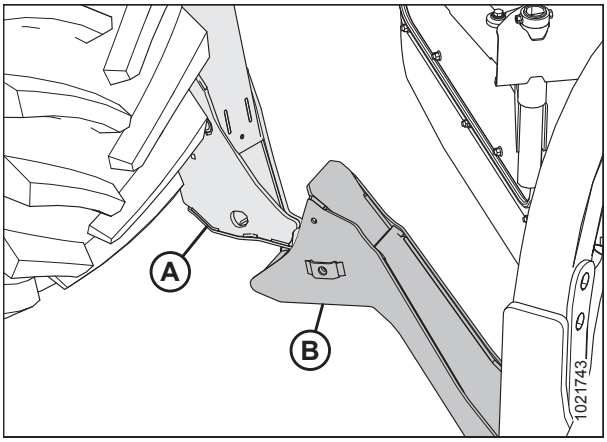


Figure 5.118: Header Support

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.

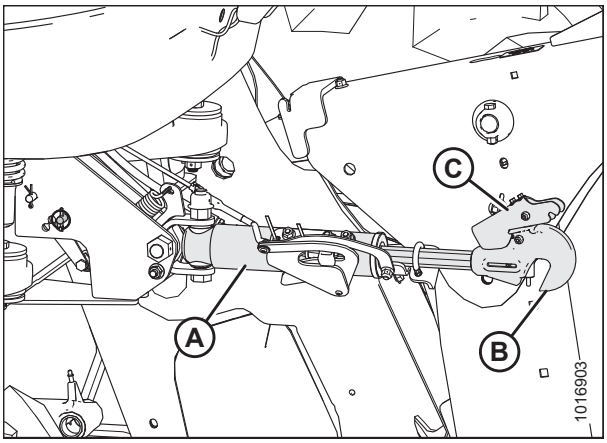


Figure 5.119: Hydraulic Center-Link

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.

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

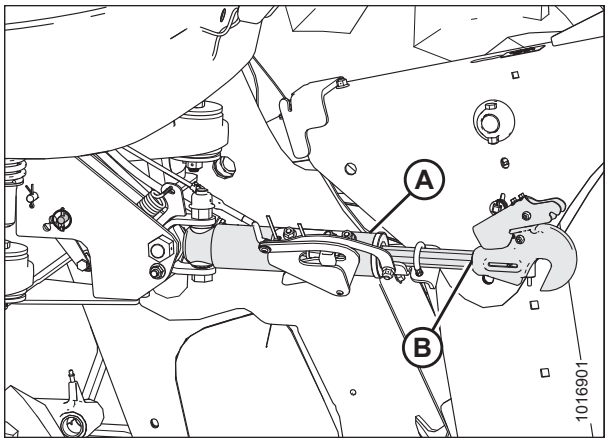


Figure 5.120: Hydraulic Center-Link

DANGER

Ensure that 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.

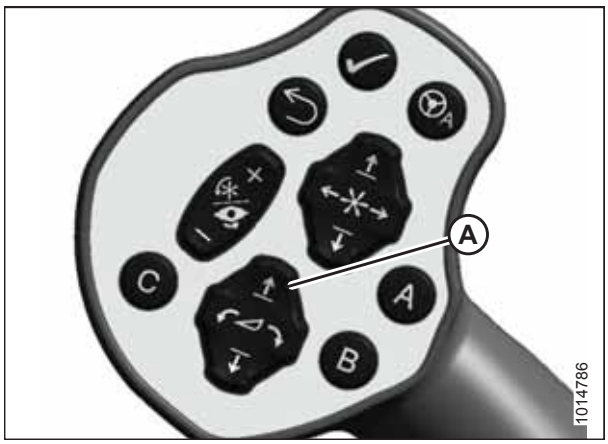


Figure 5.121: GSL

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.

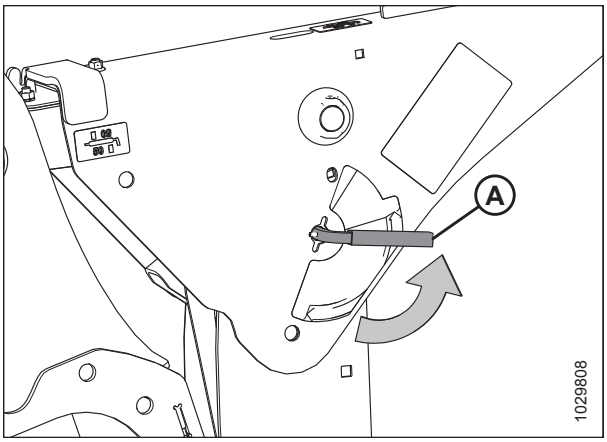


Figure 5.122: Safety Prop Lever

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.

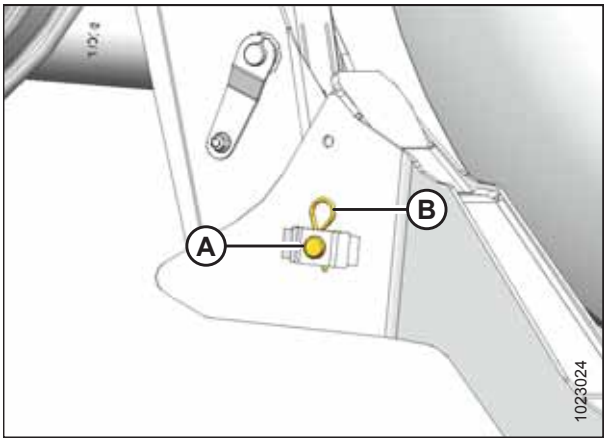


Figure 5.123: Header Support

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.

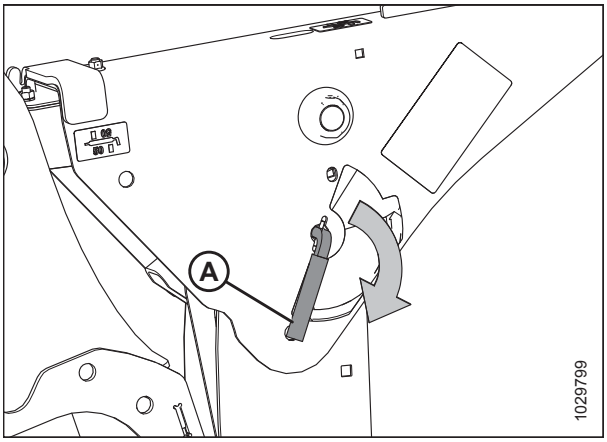


Figure 5.124: Safety Prop Lever

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.

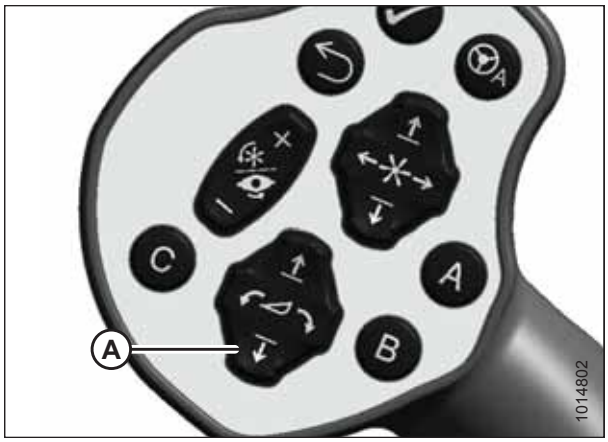


Figure 5.125: GSL

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.

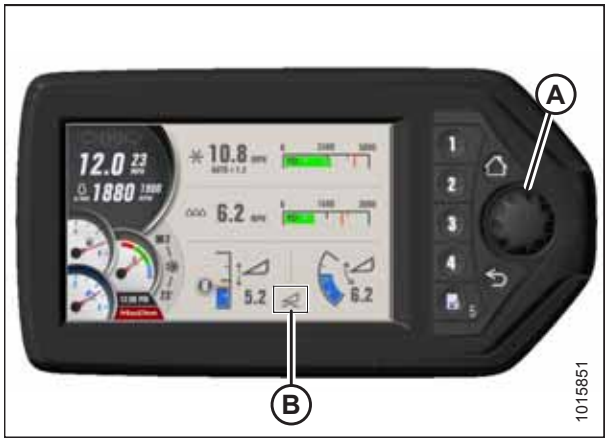


Figure 5.126: HPT Display

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 5.127: HPT Display

5.4.2 Connecting R1 Series Rotary Disc Header Hydraulic and Electrical Systems – M1170 Windrower

Connecting the R1's hydraulic and electrical systems to the windrower involves attaching the header's knife drive, pressure, return, case drain, and electrical connectors to the windrower's receptacles.

IMPORTANT:

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

1. Retrieve the hydraulic hoses from the header.
2. Push latch (A) to unlock platform (B).

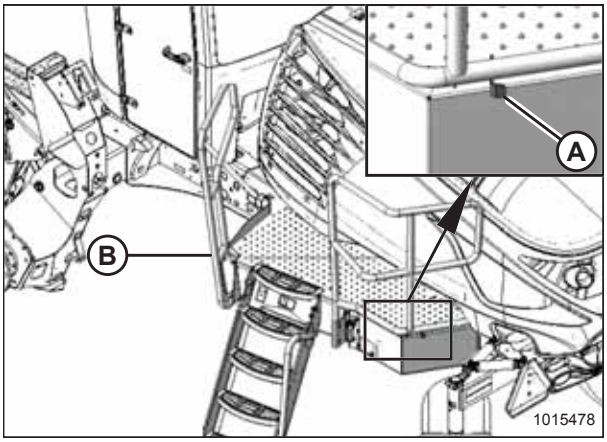


Figure 5.128: Left Cab-Forward Platform

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

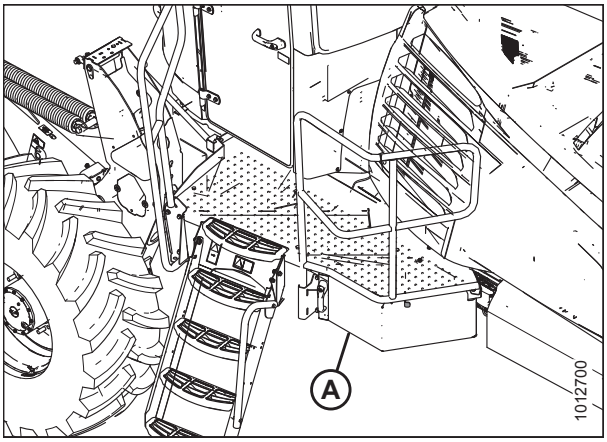


Figure 5.129: Left Cab-Forward Platform

4. Attach hose support (A) to the frame near the windrower left cab-forward leg, and route the hoses under the frame.

   NOTE:

   Route the hydraulic hoses as straight as possible, and avoid rub/wear points that could cause damage.

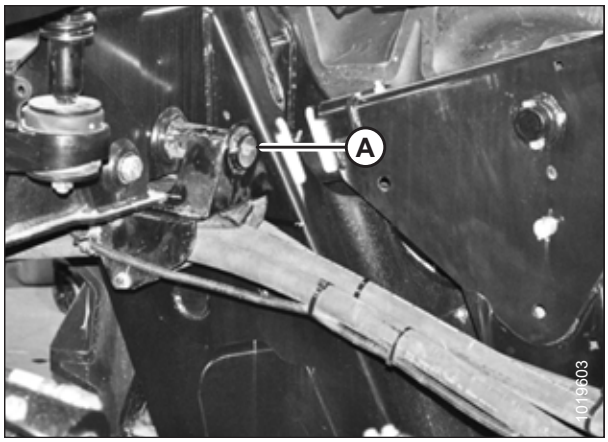


Figure 5.130: Hose Support Attachment

5. **If you are switching from an auger/draper header to a rotary header:** Disconnect hose (A) from knife pressure receptacle (C) on the frame and move it to storage location (B).

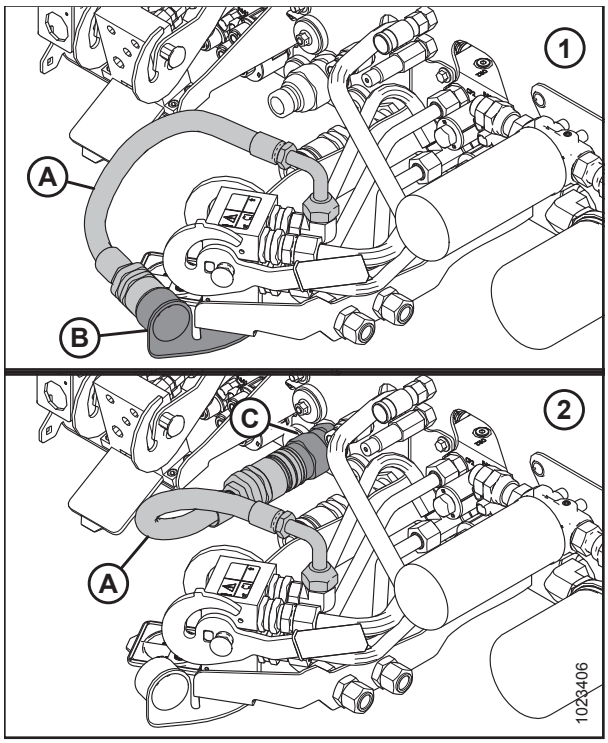


Figure 5.131: Knife Pressure Hose Positions

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

6. Attach the couplers to the receptacles on the windrower as follows:

   a. Connect the pressure hose female coupler to receptacle (A)

   b. Connect the return hose male coupler to receptacle (B)

   c. Connect the case drain hose coupler to receptacle (C)

   d. Connect the electrical harness to receptacle (D)

   IMPORTANT:

   The hydraulic hoses should have enough slack to pass by multicoupler (E) without coming into contact with it. This will protect the hoses from rubbing against the multicoupler and becoming damaged. You can increase slack in the hoses by loosening and adjusting the hose holder on the front windrower leg, and pulling the hoses backward toward the windrower.

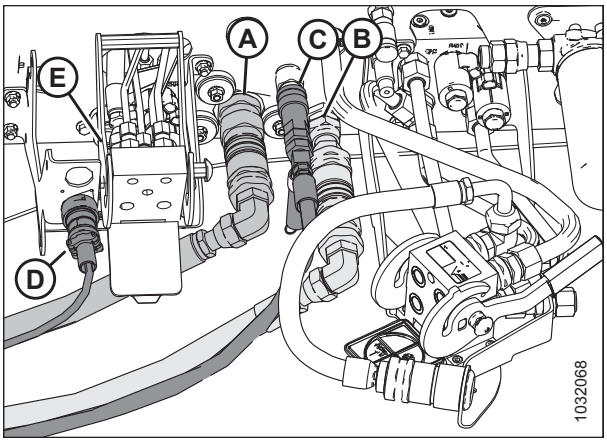


Figure 5.132: Hydraulic and Electrical Connections

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

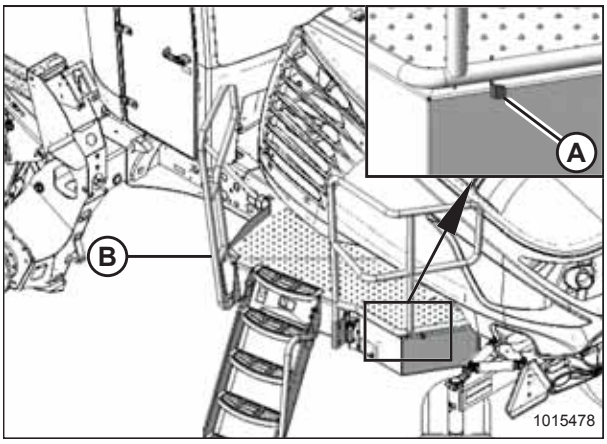


Figure 5.133: Left Cab-Forward Platform

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

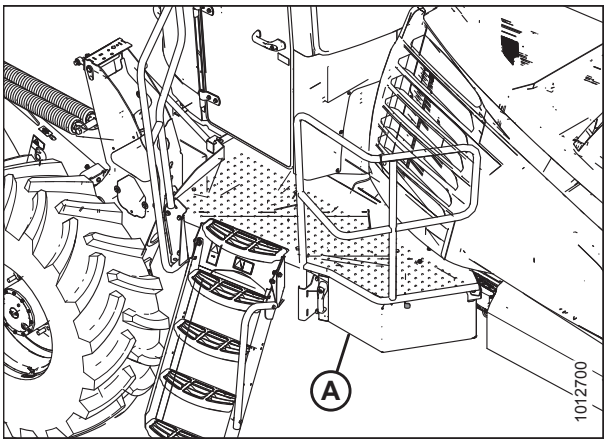


Figure 5.134: Left Cab-Forward Platform

9. 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 Knife Drive on Harvest Performance Tracker Display, page 230* and *5.7.2 Calibrating Header Position Sensors on Harvest Performance Tracker Display, page 233*.

5.4.3 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/draper header-ready windrowers are equipped with a set of hydraulic quick couplers which are compatible with the header drive hoses on the rotary disc header.
- Rotary disc header-ready windrowers are equipped with hard-plumbed hydraulic connections.

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.

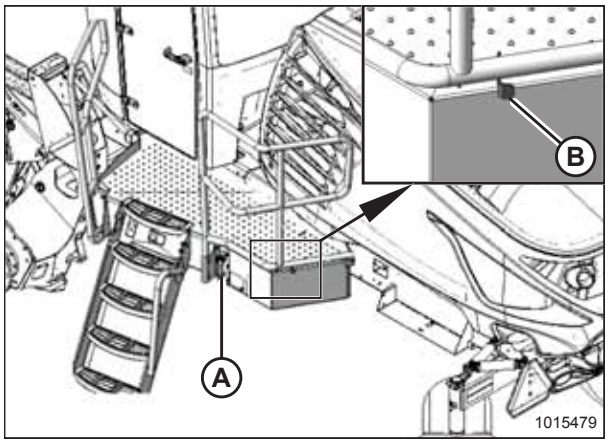


Figure 5.135: Left Cab-Forward Platform

3. 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.

4. 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.

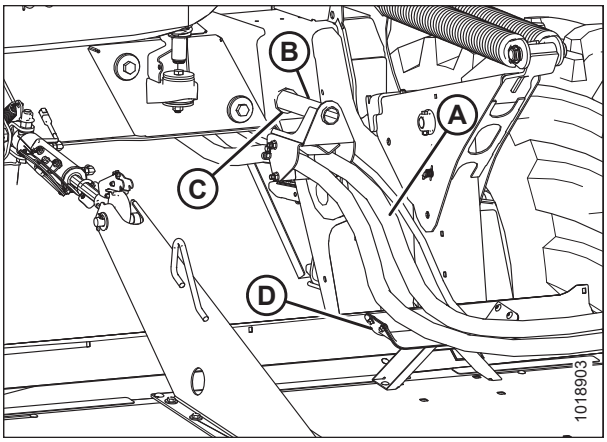


Figure 5.136: R1 Rotary Disc Header Hose Support Attachment

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 184*.

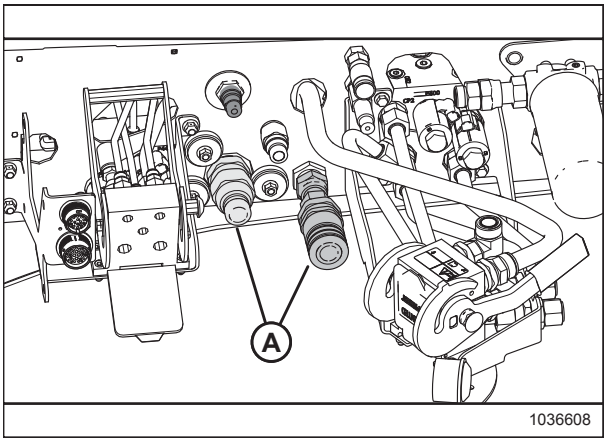


Figure 5.137: Header Hydraulics Configurations – Auger/Rotary Disc/Draper-Ready

- **Rotary disc only hard plumbed configuration (A)**: For instructions, refer to *Rotary Disc Only Configuration – Hard-Plumbed Fittings, page 186*.

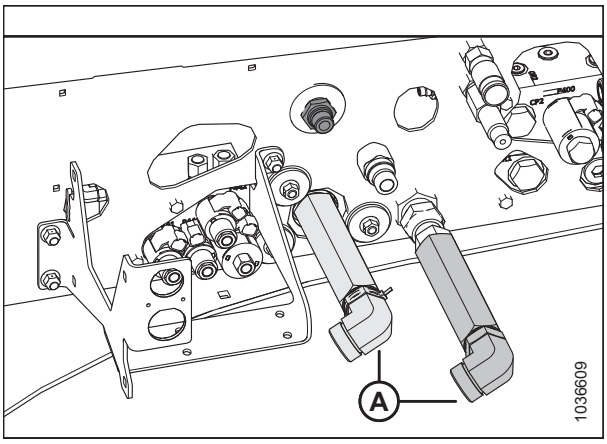


Figure 5.138: Header Hydraulics Configuration – Rotary Disc-Ready with Hard-Plumbed Connections

- **Rotary disc ready configuration with quick couplers (A)**: For instructions, refer to *Rotary Disc Only Configuration – Quick Coupler Connections, page 188*.

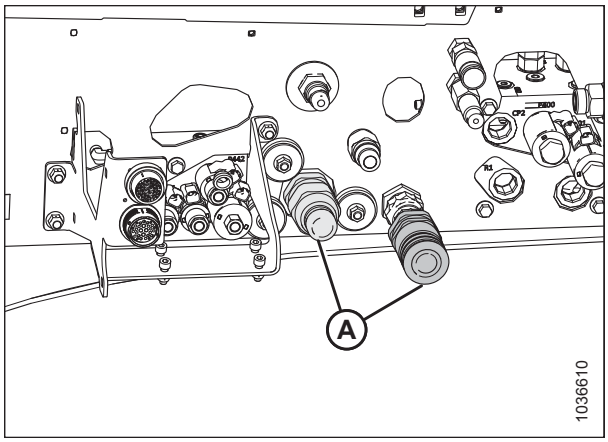


Figure 5.139: Header Hydraulics Configuration – Rotary Disc-Ready with Quick Couplers

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.

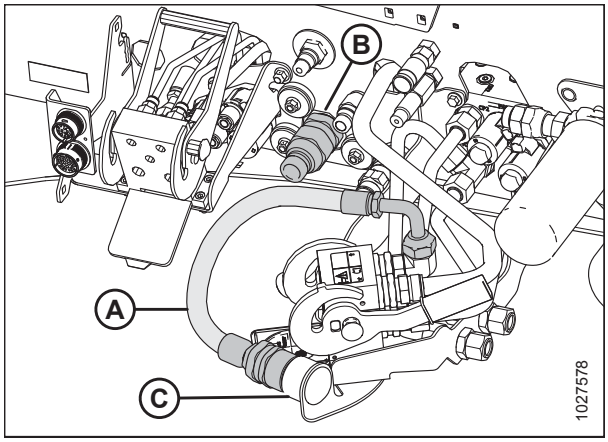


Figure 5.140: Couplers – Auger/Rotary/Draper Header-Ready Configuration with Case Drain Kit Installed

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.

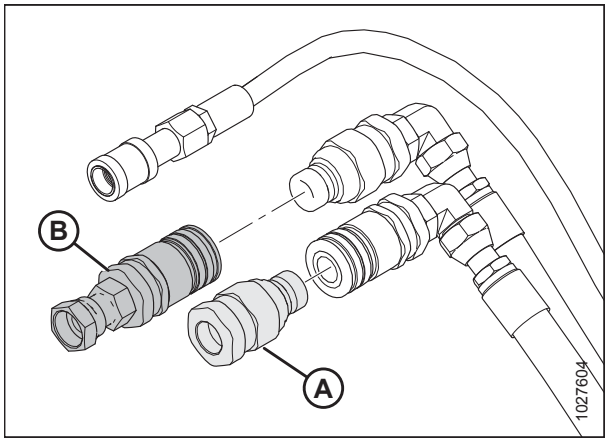


Figure 5.141: Hydraulic Quick Couplers

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).

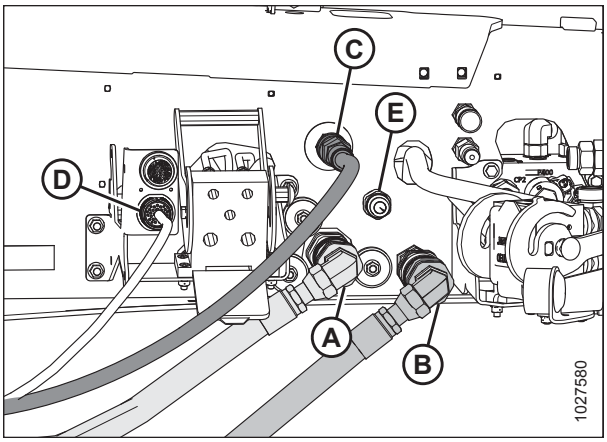


Figure 5.142: Hydraulics and Electrical Installed–Auger/Rotary/Draper-Ready Windrower

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

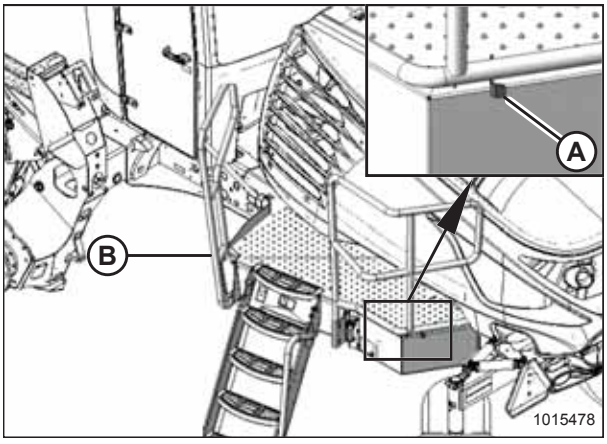


Figure 5.143: Left Cab-Forward Platform

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

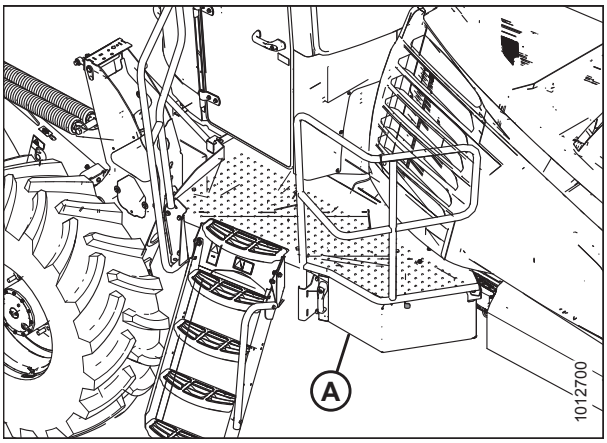


Figure 5.144: Left Cab-Forward Platform

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

- 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 Knife Drive on Harvest Performance Tracker Display, page 230* and *5.7.2 Calibrating Header Position Sensors on Harvest Performance Tracker Display, page 233*.

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).

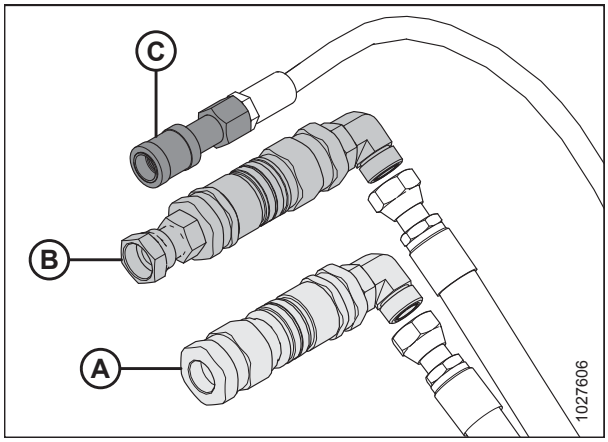


Figure 5.145: Rotary Disc Header Hose Bundle

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).

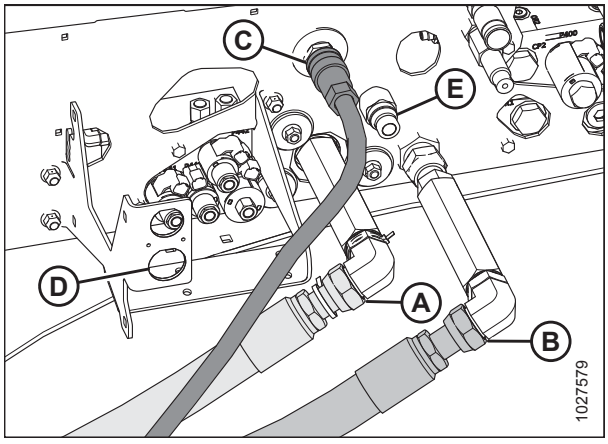


Figure 5.146: Hard Plumbed Connections on Disc Header Ready Windrower with Case Drain Kit

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

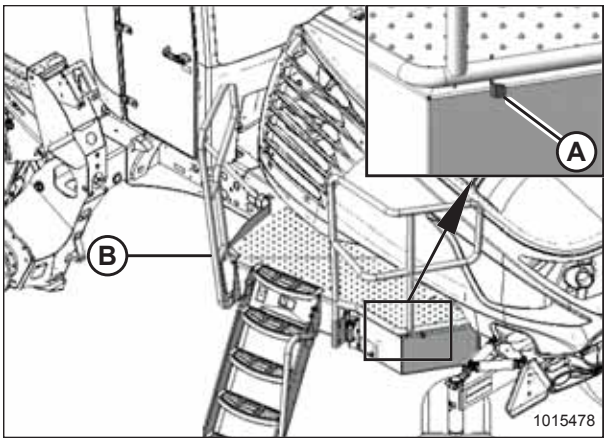


Figure 5.147: Left Cab-Forward Platform

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

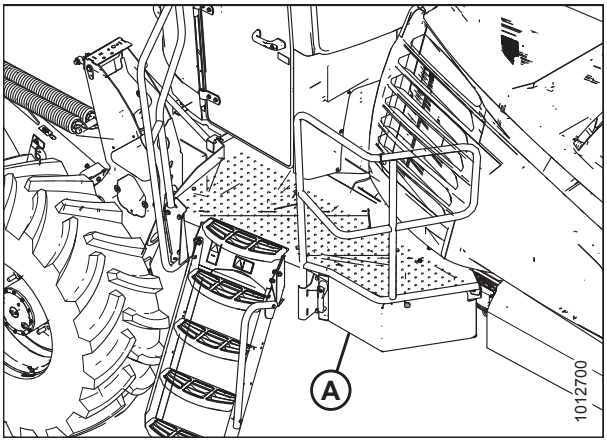


Figure 5.148: Left Cab-Forward Platform

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 Knife Drive on Harvest Performance Tracker Display, page 230* and *5.7.2 Calibrating Header Position Sensors on Harvest Performance Tracker Display, page 233*.

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.

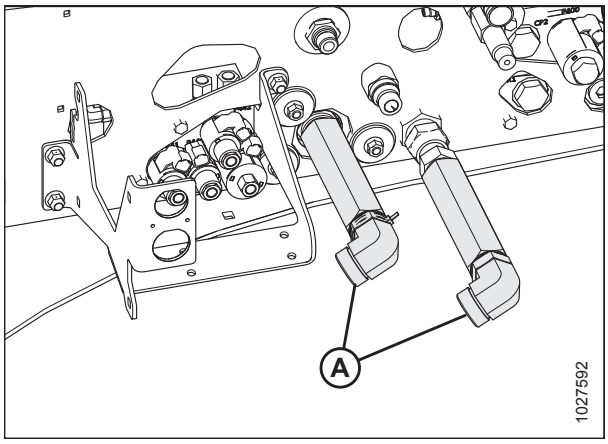


Figure 5.149: Hard Plumbed Connections – Rotary Disc Ready Windrower

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

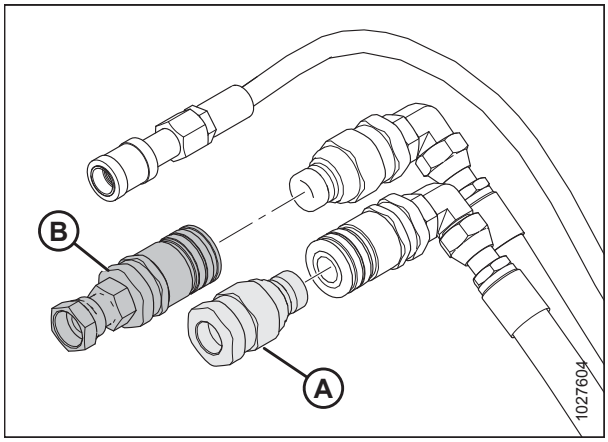


Figure 5.150: Hydraulic Quick Couplers

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

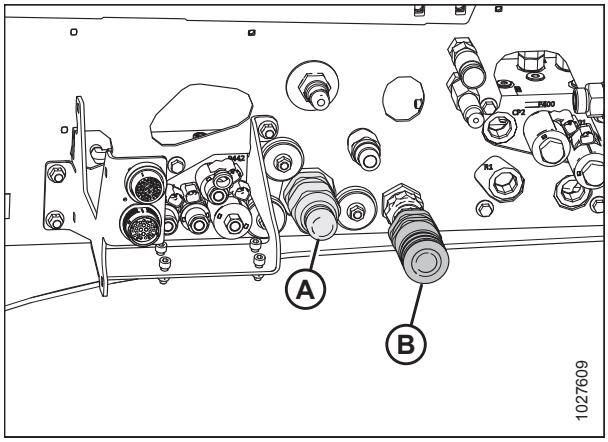


Figure 5.151: Quick Couplers on Rotary Disc Ready Windrower

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).

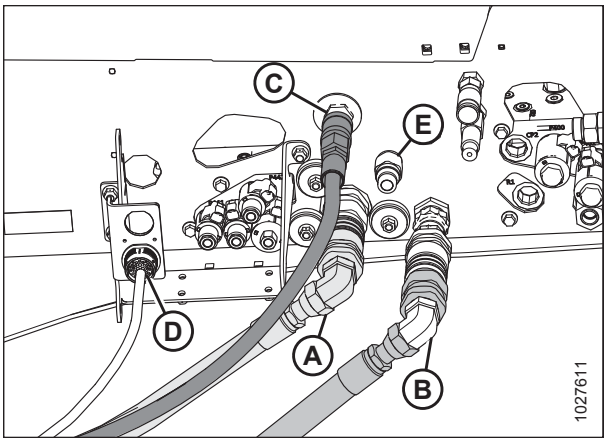


Figure 5.152: Quick Couplers on Rotary Disc Ready Windrower with Case Drain Kit

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

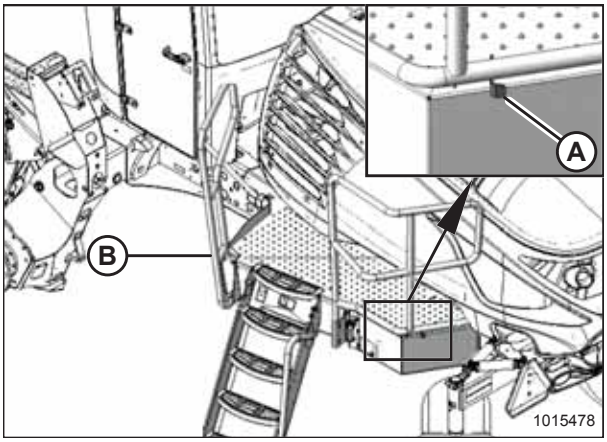


Figure 5.153: Left Cab-Forward Platform

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

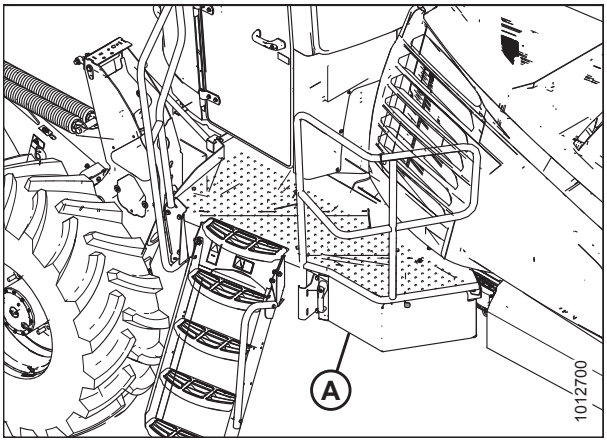


Figure 5.154: Left Cab-Forward Platform

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

- 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 Knife Drive on Harvest Performance Tracker Display, page 230* and *5.7.2 Calibrating Header Position Sensors on Harvest Performance Tracker Display, page 233*.

5.4.4 Detaching R1 Series Rotary Disc Header

Detaching an R1 Series header from an M1 Series windrower requires removing the electrical and hydraulic connections, detaching the header supports, and releasing the center link.

DANGER

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

DANGER

Ensure that all bystanders have cleared the area.

1. Start the engine.
2. Press switch (A) to raise the header to its maximum height.
3. Shut down the engine, and remove the key from the ignition.

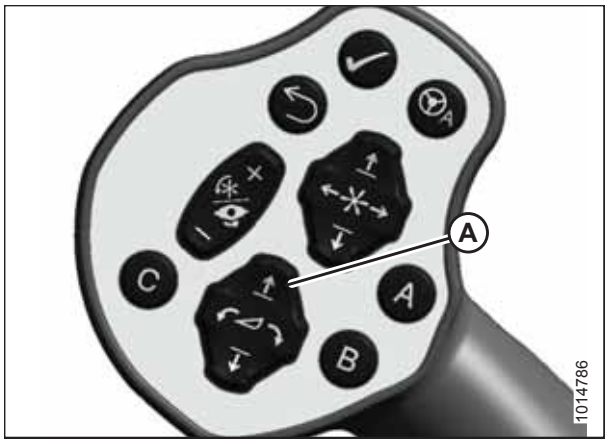


Figure 5.155: GSL

4. 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.

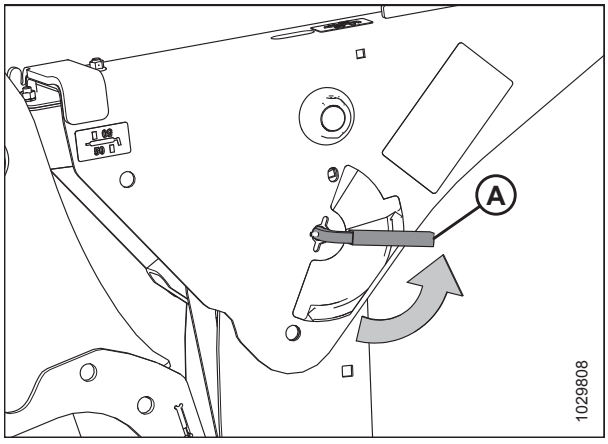


Figure 5.156: Safety Prop Lever

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

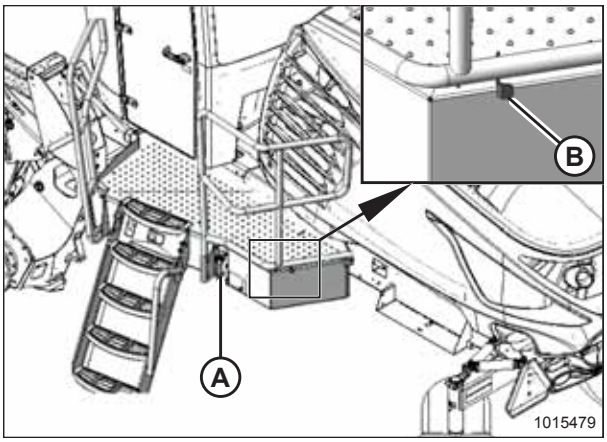


Figure 5.157: Left Cab-Forward Platform

7. Disconnect electrical harness (D), and hydraulic hoses (A), (B), and (C) from the windrower.

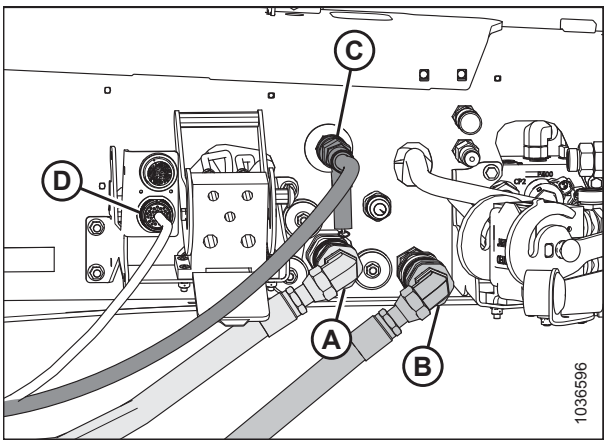


Figure 5.158: Header Drive Hydraulics – M1240 Connection Locations, Low Pressure Case Drain Kit MD #6698 Installed

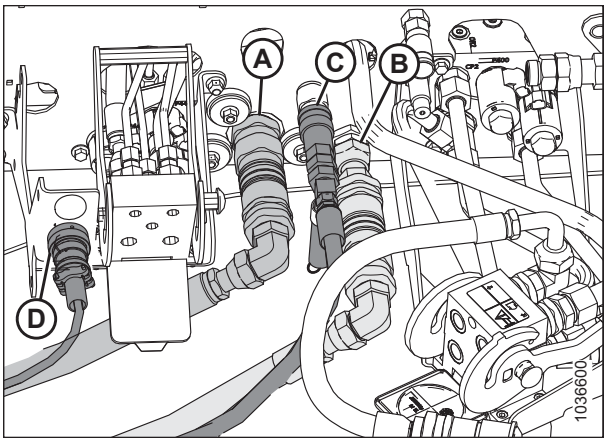


Figure 5.159: Header Drive Hydraulics – M1170 Connection Locations

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

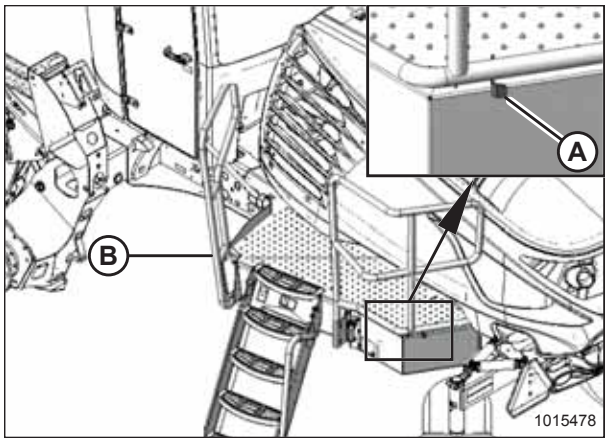


Figure 5.160: Left Cab-Forward Platform

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

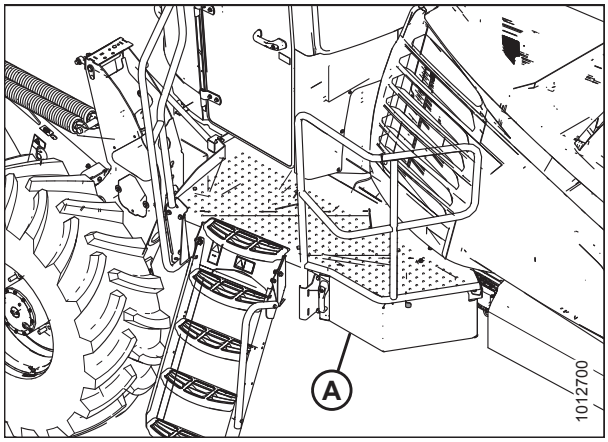


Figure 5.161: Left Cab-Forward Platform

10. Remove hose support (A) and the hose bundle from the windrower frame.

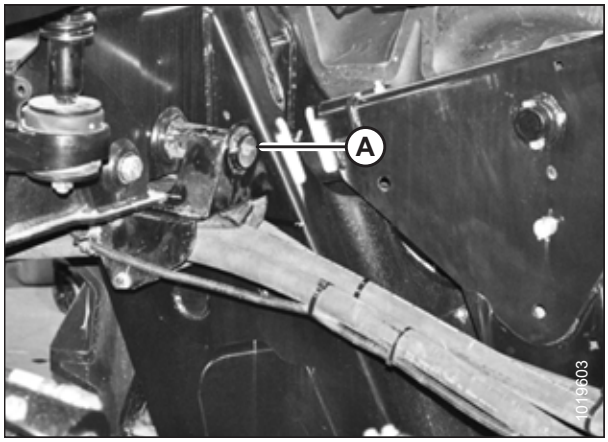


Figure 5.162: Hoses on Windrower

11. Slide support (A) into center-link support (B) and secure it with hardware (C).

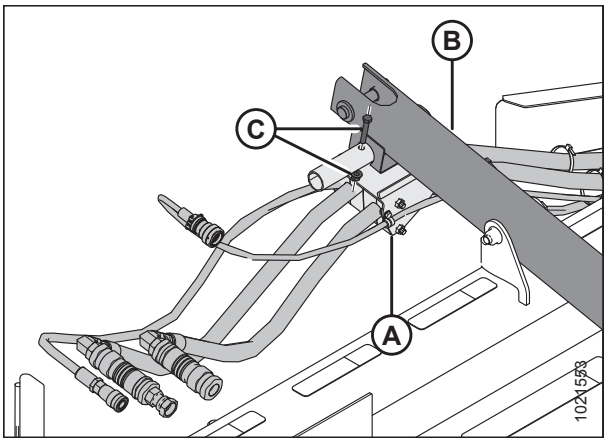


Figure 5.163: Hose Storage Position

12. Store hoses (A) and electrical harness (B) disconnected from the windrower into storage plate (C).

    NOTE:

    Install caps and plugs on open lines to prevent the buildup of dirt and debris while the header is in storage.

    NOTE:

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

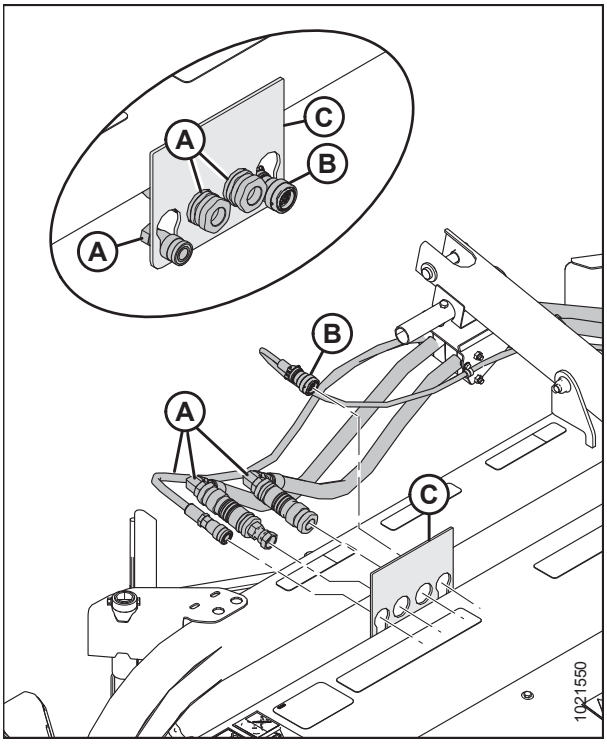


Figure 5.164: Hydraulic Storage Plate

13. Remove hairpin (B) from clevis pin (A). Remove the clevis pin from header support (C) on each side of the header.

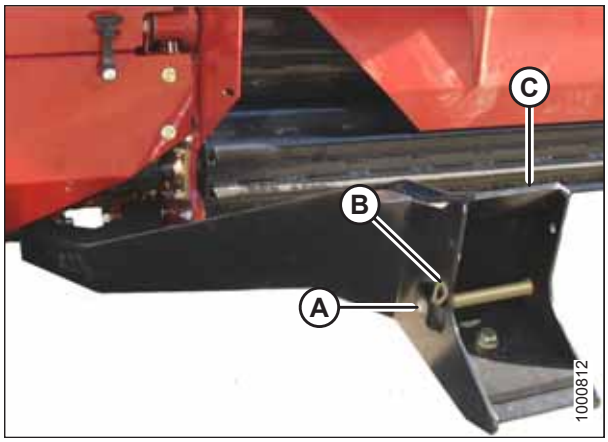


Figure 5.165: Header Supports

14. **Windrowers WITH center-link self-alignment kit:** Release center-link latch (A).

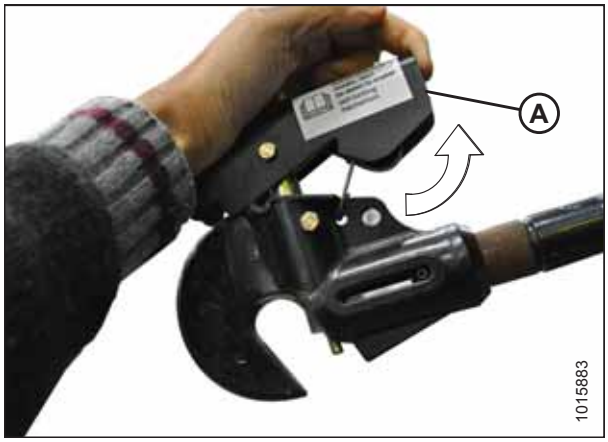


Figure 5.166: Center-Link

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

    NOTE:

    If the safety prop will **NOT** disengage, raise the header to release the prop.
16. Repeat for the opposite side.

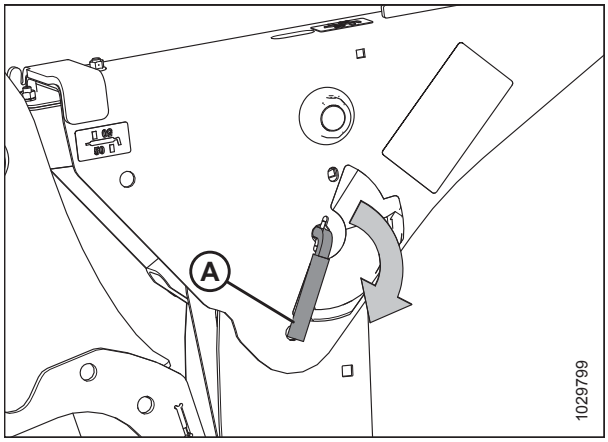


Figure 5.167: Safety Prop Lever

DANGER

Ensure that all bystanders have cleared the area.

17. Start the engine.
18. Remove the header float when prompted by the Harvest Performance Tracker (HPT).

    NOTE:

    If you are not prompted by the HPT to remove the float, remove the float manually.
19. Lower the header fully.

20. Use HEADER TILT cylinder switches (A) on the GSL to release the load on the center-link cylinder.
21. **Windrowers WITH center-link self-alignment kit:** Operate the link lift cylinder with REEL UP switch (B) to disengage the center-link from the header. Proceed to Step *25, page 195*.

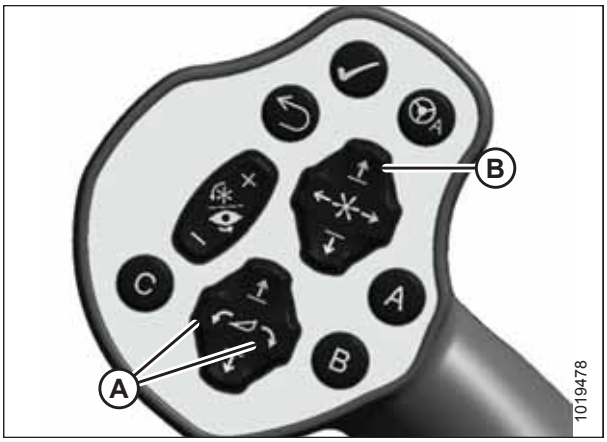


Figure 5.168: GSL

22. **Windrowers WITHOUT center-link self-alignment kit:** Shut down the engine, and remove the key from the ignition.
23. **Windrowers WITHOUT center-link self-alignment kit:** Lift hook release (A) and lift hook (B) off of the header pin.

DANGER

Ensure that all bystanders have cleared the area.

24. **Windrowers WITHOUT center-link self-alignment kit:** Start the engine.

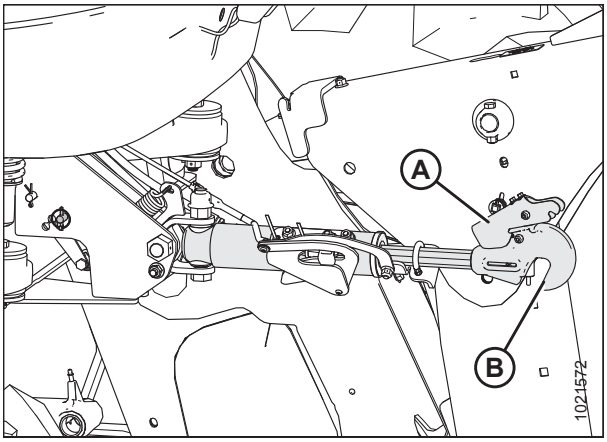


Figure 5.169: Hydraulic Center-Link

25. Back the windrower slowly away from the header.
26. Shut down the engine, and remove the key from the ignition.
27. Reinstall clevis pin (A) through support (C) and secure it with hairpin (B). Repeat this step for opposite side.

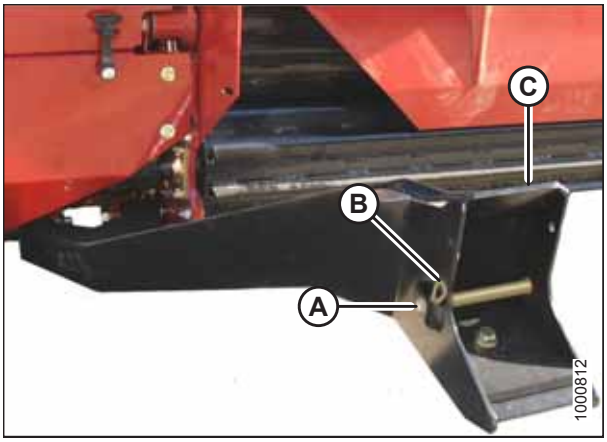


Figure 5.170: Header Support

5.5 R2 Series Rotary Disc Header

The rotary disc header, when attached to a windrower, is designed to cut, condition, and lay a wide variety of grasses and hay crops in windrows.

5.5.1 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).

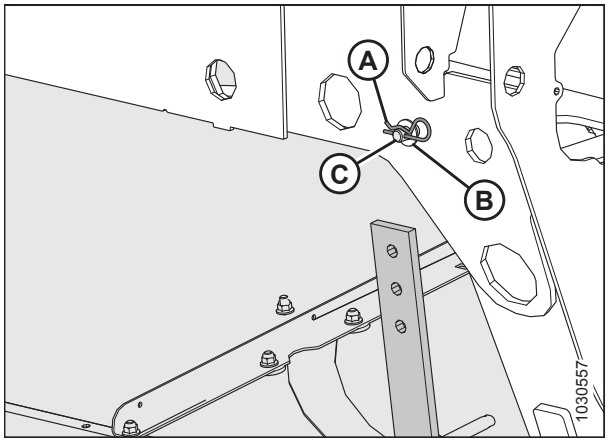


Figure 5.171: Lynch Pin and Washer at Rear of Windrower Leg

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 196* to Step *2, page 196* at the opposite side of the forming shield.

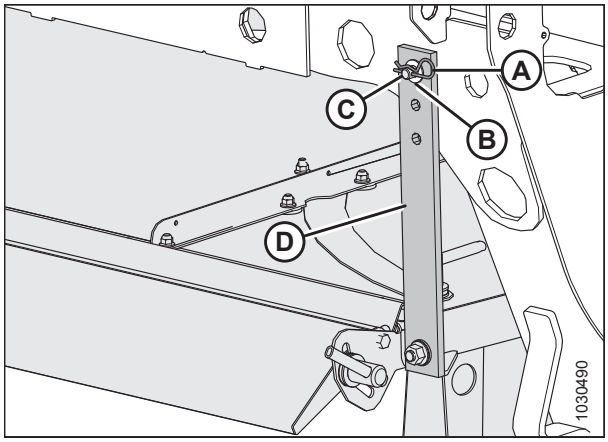


Figure 5.172: Rubber Strap Securing Forming Shield onto Windrower Leg

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

DANGER

Ensure that all bystanders have cleared the area.

IMPORTANT:

When attaching an R216 SP Rotary Disc Header to an M1 Series Windrower that has been previously configured for a D1X Series Draper Header, ensure the two shield mount plates (A) (MD #307045) are attached to the windrower and forming shield.

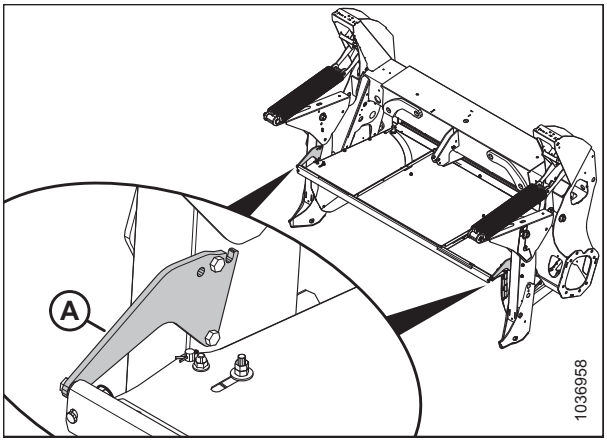


Figure 5.173: Shield Mount Plates on Forming Shield

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.

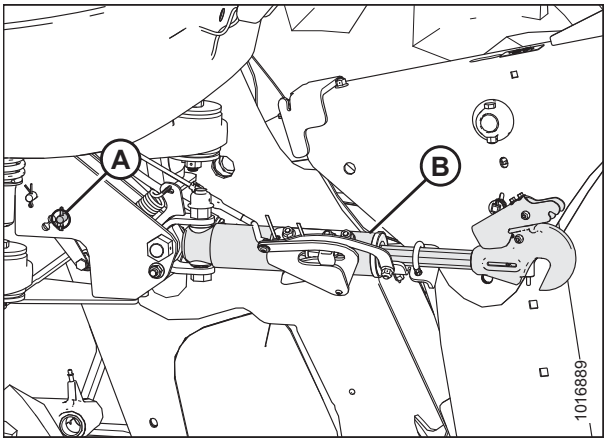


Figure 5.174: Hydraulic Center-Link

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.

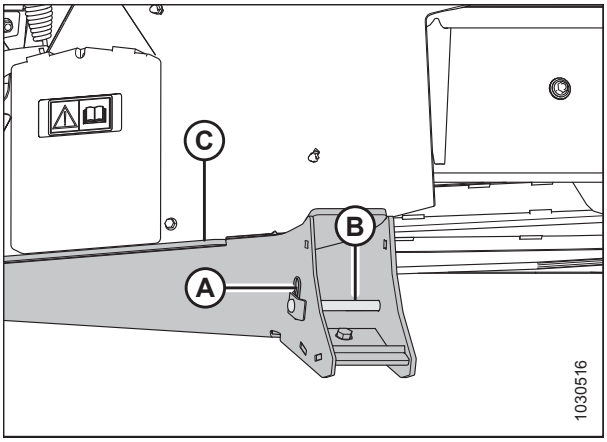


Figure 5.175: Header Support

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 198* on the opposite side of the header.

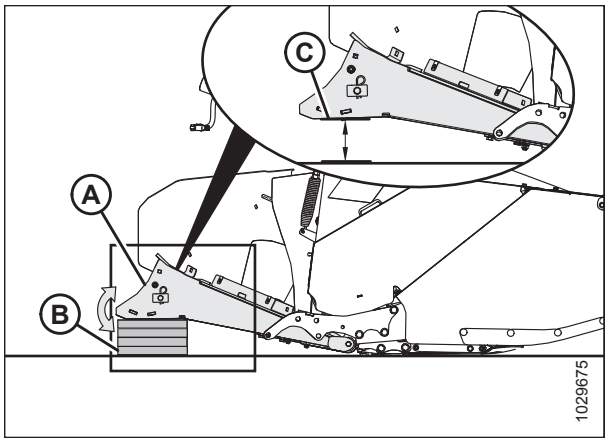


Figure 5.176: Header Support

7. **If you are lowering the header lift legs WITH a header or weight box attached to the windrower**, proceed to Step *11, page 199*.

   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 *11, page 199*.
   - If not prompted by the HPT to remove the float, then proceed to Step *8, page 198* 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. This will prevent damage to the header lift linkages.

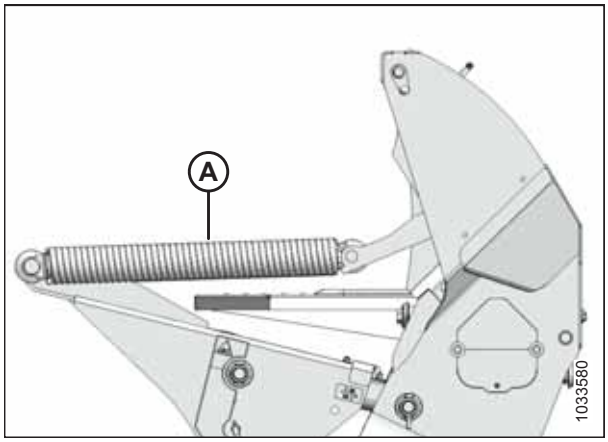


Figure 5.177: Header Float Springs

8. Press rotary scroll knob (A) on the 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.

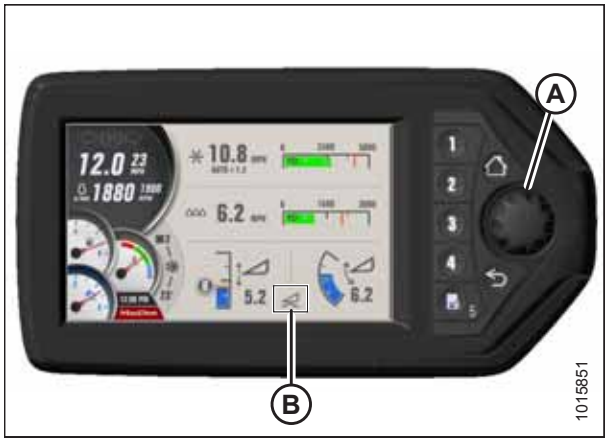


Figure 5.178: HPT Display

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 5.179: HPT Display

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.

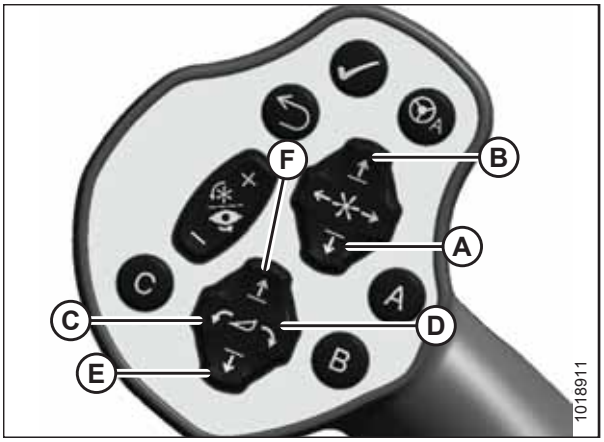


Figure 5.180: GSL

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).

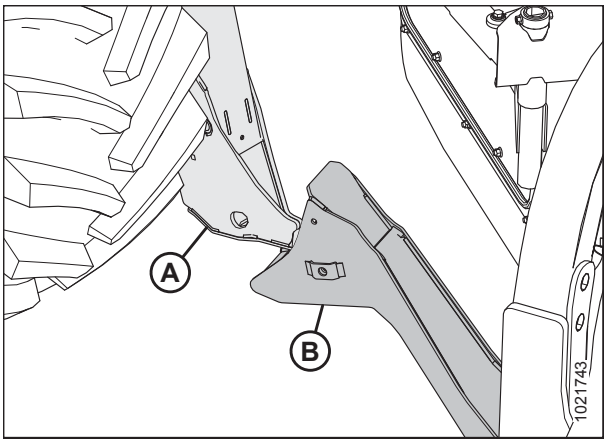


Figure 5.181: Header Support

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.

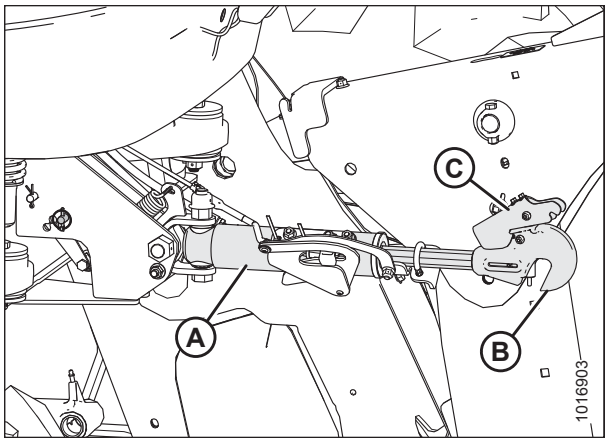


Figure 5.182: Hydraulic Center-Link

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.

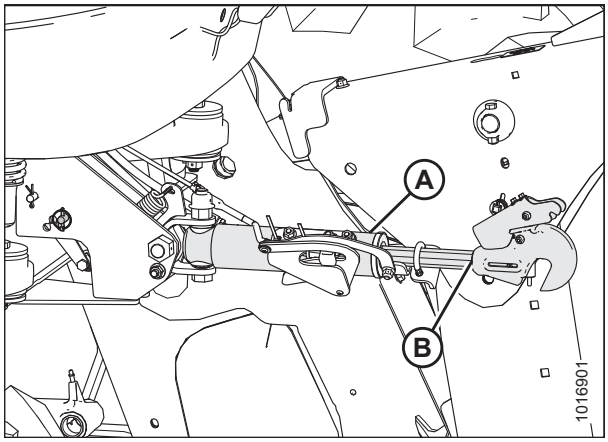


Figure 5.183: Hydraulic Center-Link

DANGER

Ensure that 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.

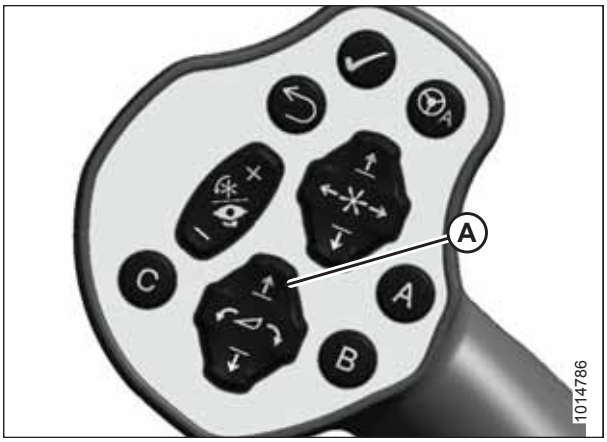


Figure 5.184: GSL

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.

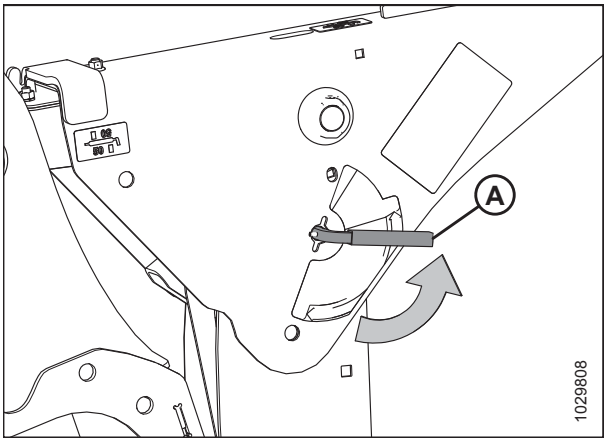


Figure 5.185: Safety Prop Lever

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.

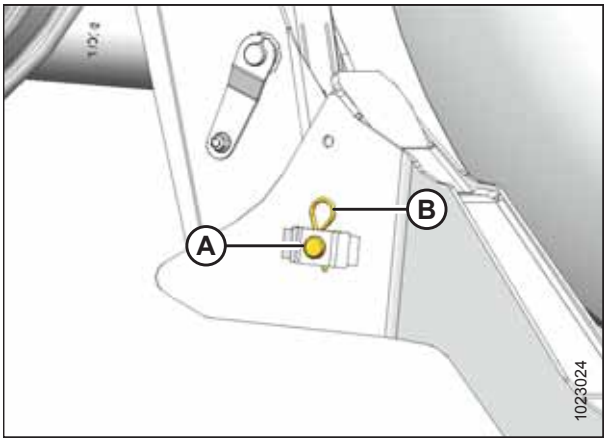


Figure 5.186: Header Support

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.

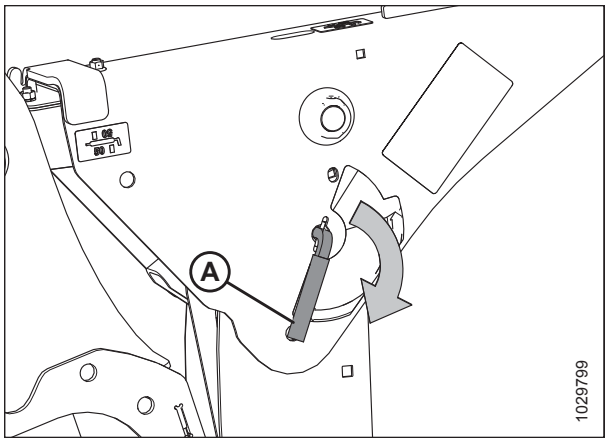


Figure 5.187: Safety Prop Lever

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.

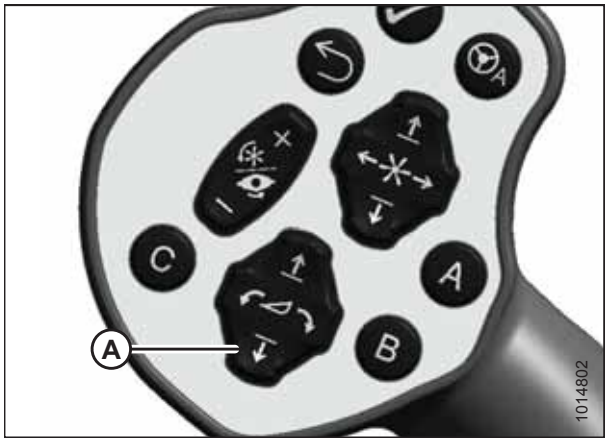


Figure 5.188: GSL

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.

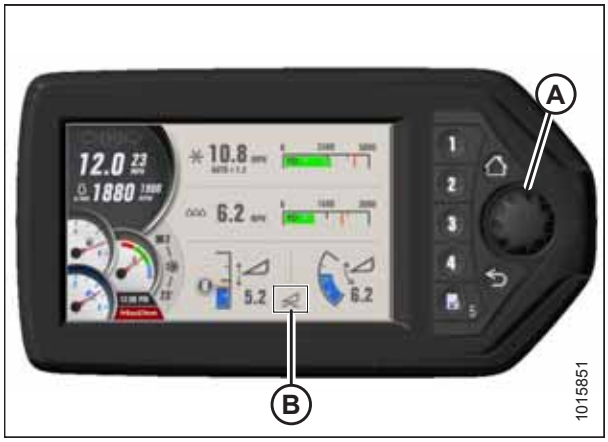


Figure 5.189: HPT Display

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 5.190: HPT Display

5.5.3 Connecting R2 Series Rotary Disc Header Hydraulics and Electrical Systems – M1170 Windrower

Connecting the R2 series header's hydraulic and electrical systems to the windrower involves attaching the header's knife drive, pressure, return, case drain, and electrical connectors to the windrower's receptacles.

IMPORTANT:

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

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.

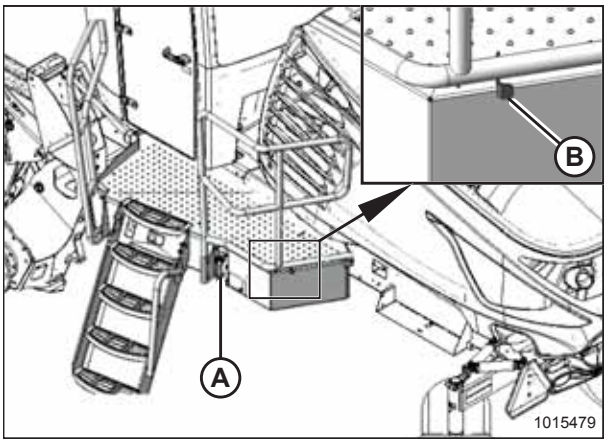


Figure 5.191: Left Cab-Forward Platform

3. 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.

4. 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.

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

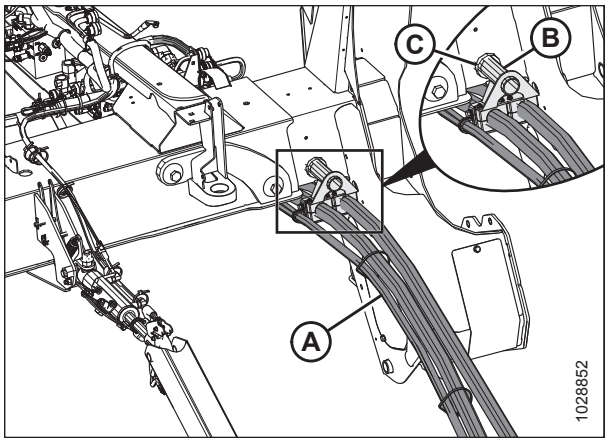


Figure 5.192: Hose Support Attachment

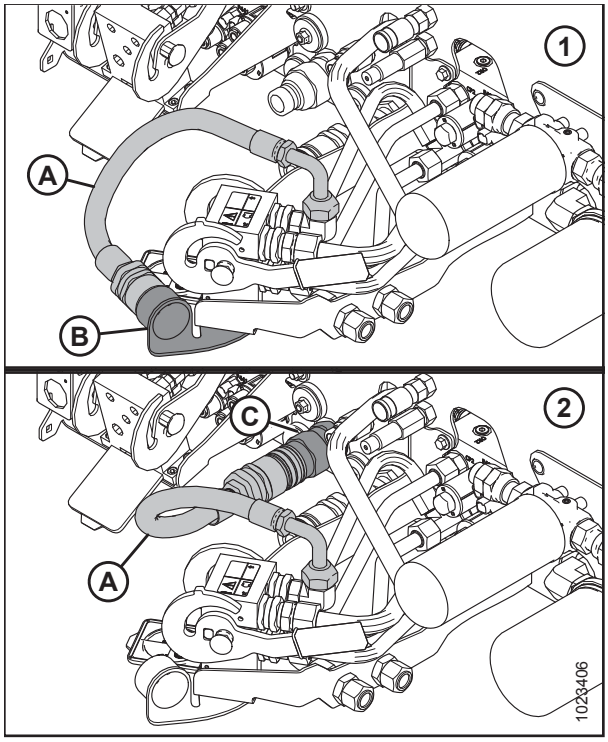


Figure 5.193: Knife Pressure Hose Positions

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

6. Connect the hydraulic hoses to a windrower with quick coupler fittings as follows:

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

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

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

   NOTE:

   If required, loosen fitting (F) and retighten it as needed to ensure that the relief valve is pointing straight down.

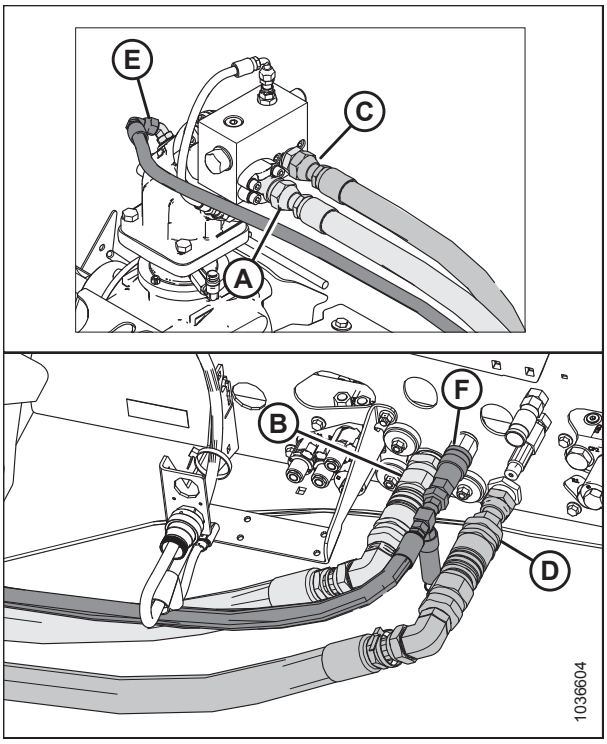


Figure 5.194: Hydraulics and Electrical

7. **To connect a grass seed header:** Connect the four additional hydraulic hoses supplied with the grass seed version of the header as follows:

   a. Connect hose (green cable tie) with female quick coupler (A) to coupler (B) on the windrower frame.

   b. Connect hose (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 drum on the left of the header.

   d. Remove 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 drum on the right side of the header.

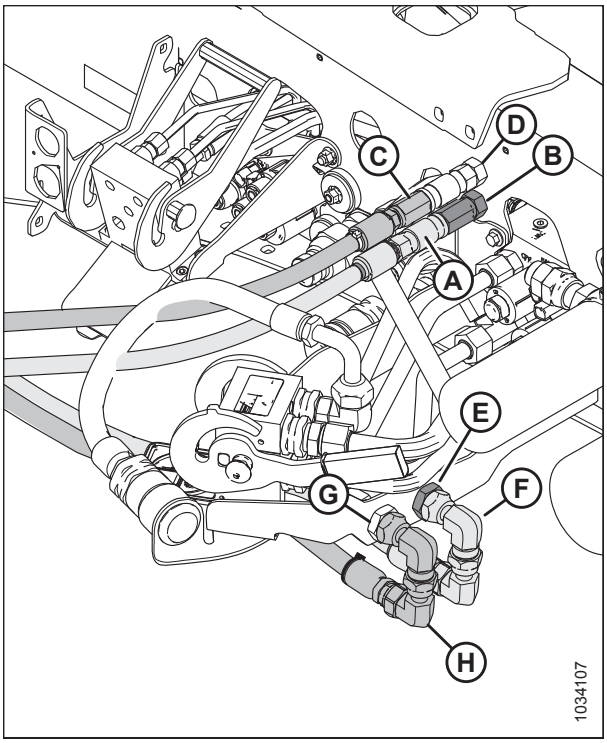


Figure 5.195: Grass Seed Header Hydraulic Connections

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

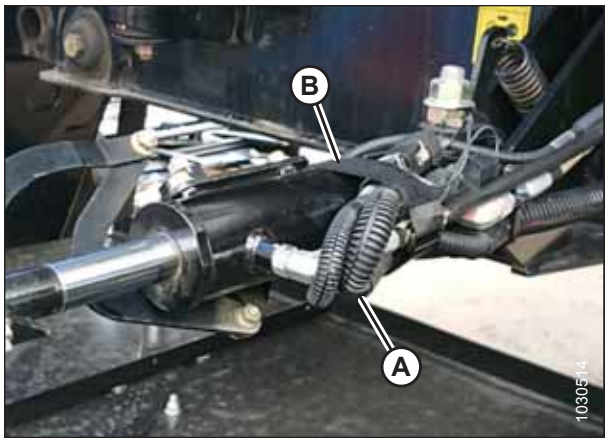


Figure 5.196: Electrical Harness Secured to Center-Link

9. Connect main header harness (A) to adapter harness (B).
10. **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).
11. **If you are connecting an R2 header configured for grass-seed harvesting:** Connect actuator harness (C) to adapter harness (D).

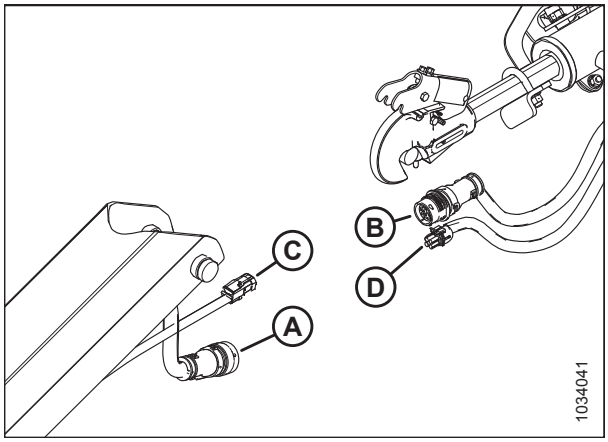


Figure 5.197: Electrical Harness Connection at Center-Link

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

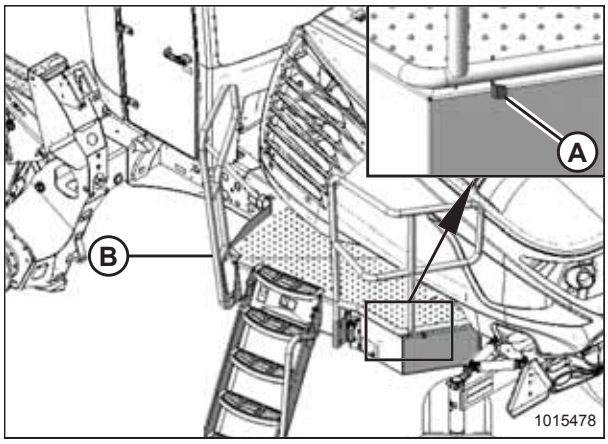


Figure 5.198: Left Cab-Forward Platform

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

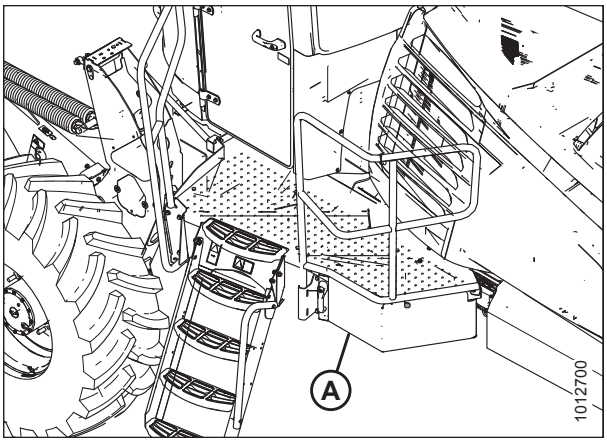


Figure 5.199: Left Cab-Forward Platform

DANGER

Ensure that all bystanders have cleared the area.

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

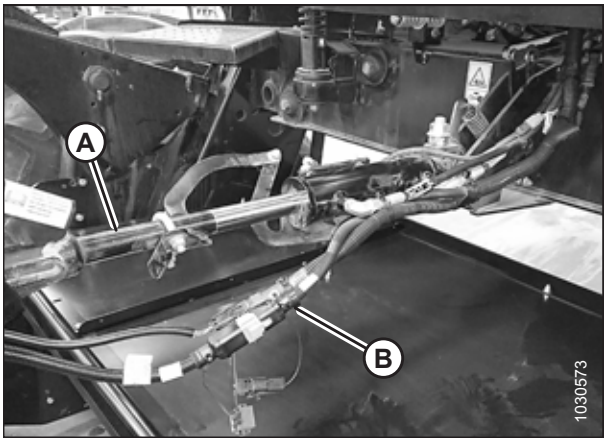


Figure 5.200: Electrical Connection

20. 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 Knife Drive on Harvest Performance Tracker Display, page 230* and *5.7.2 Calibrating Header Position Sensors on Harvest Performance Tracker Display, page 233*.

5.5.4 Connecting R216 Rotary Disc Header Hydraulics and Electrical to Windrower – M1240 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.

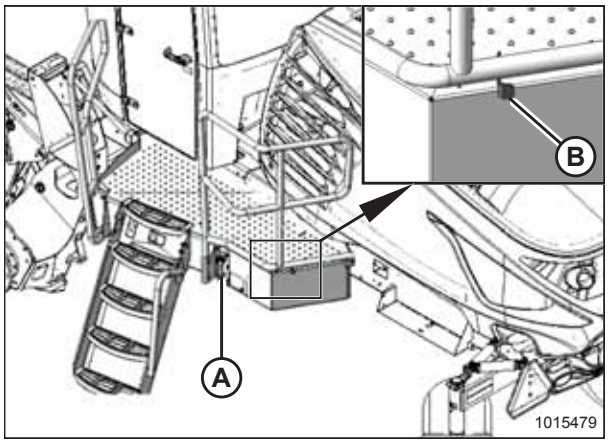


Figure 5.201: Left Cab-Forward Platform

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 209*.

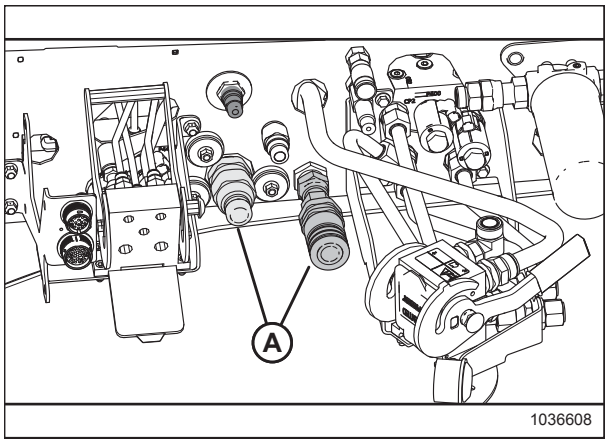


Figure 5.202: Header Hydraulics Configurations – Auger/Rotary Disc/Draper-Ready

- **Rotary disc only hard plumbed configuration (A):** For instructions, refer to *Rotary Disc Only Configuration – Hard-Plumbed Connections, page 213*.

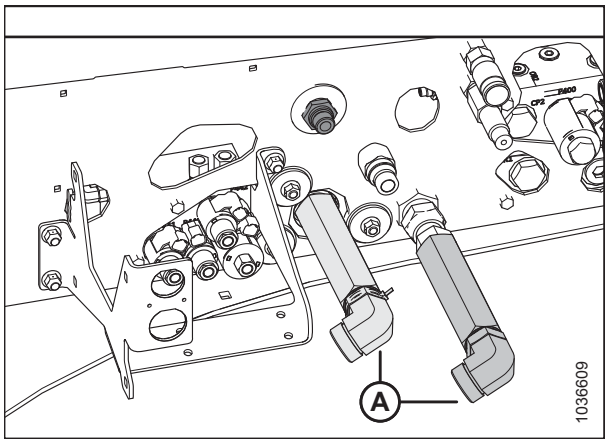


Figure 5.203: Header Hydraulics Configuration – Rotary Disc-Ready with Hard-Plumbed Connections

- **Rotary disc-ready configuration with quick couplers (A)**: For instructions, refer to *Rotary Disc Only Configuration – Quick Coupler Connections, page 217*.

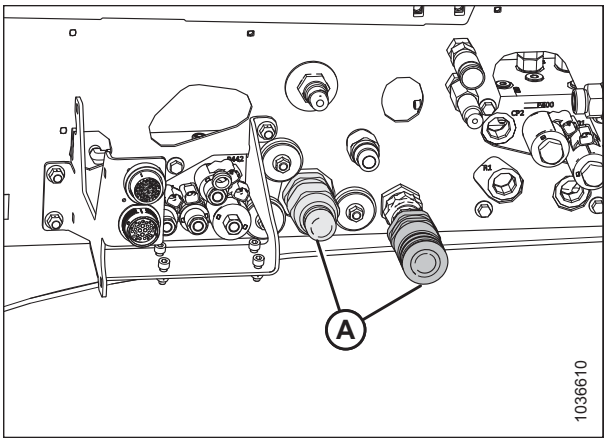


Figure 5.204: Header Hydraulics Configuration – Rotary Disc-Ready with Quick Couplers

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.

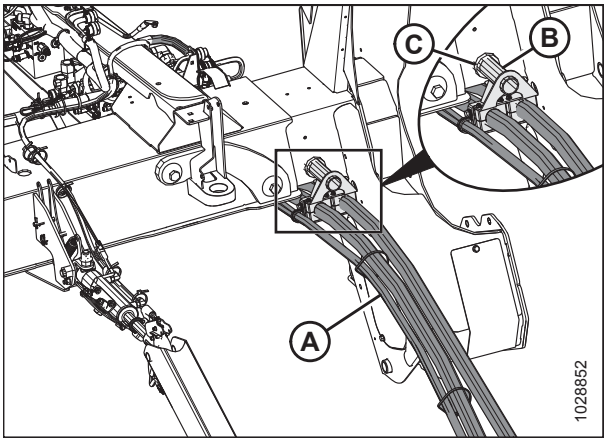


Figure 5.205: Hose Support Attachment

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

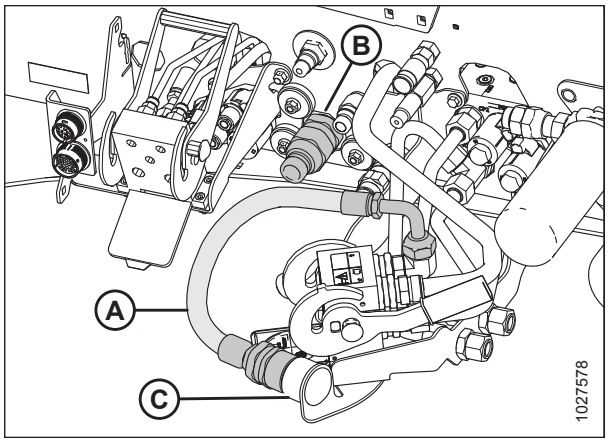


Figure 5.206: Couplers – Auger/Rotary Disc/Draper-Ready Configuration

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).

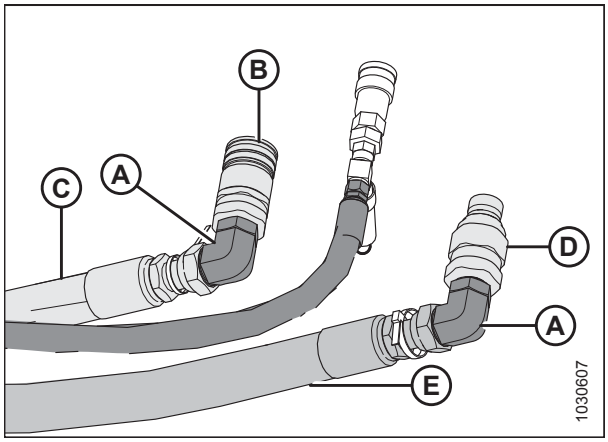


Figure 5.207: Header Hydraulic Fittings

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.

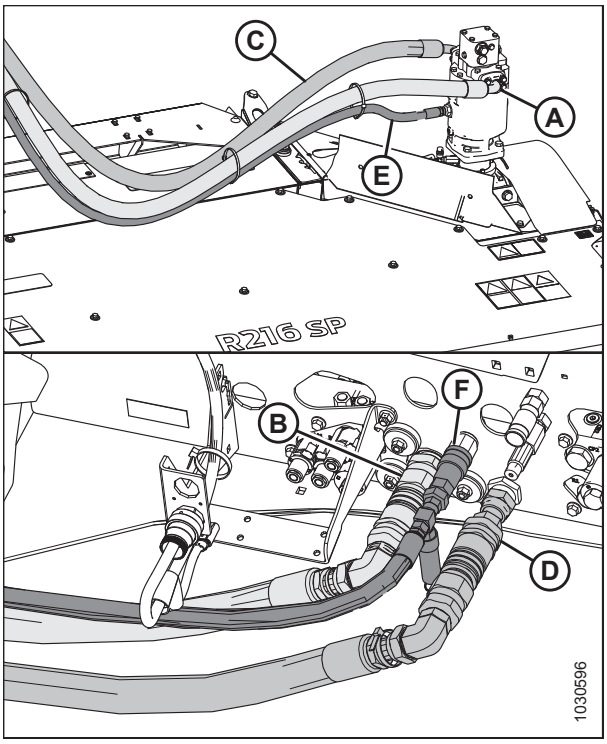


Figure 5.208: Hydraulics and Electrical – Auger/Rotary Disc/Draper-Ready Configuration

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.

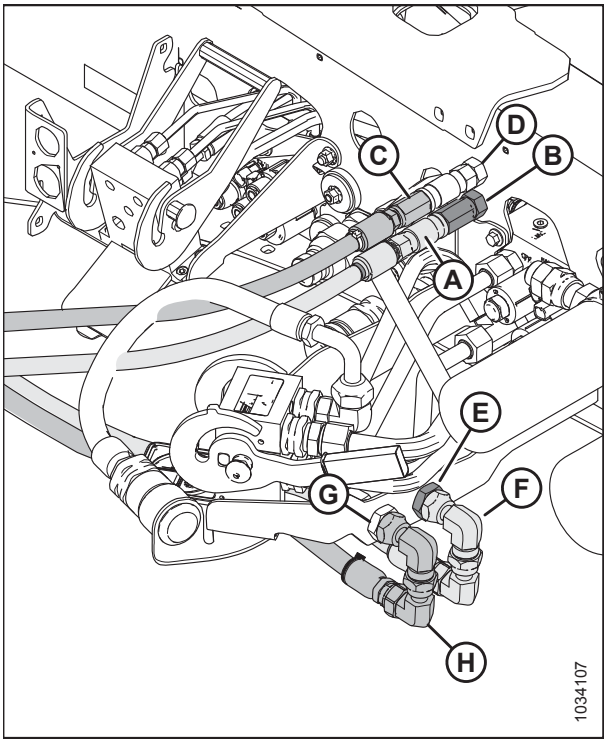


Figure 5.209: Grass Seed Hydraulic Connections – Auger/Rotary Disc/Draper—Ready Configuration

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

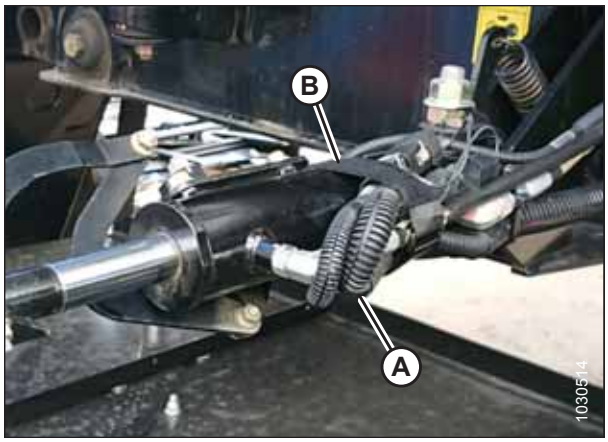


Figure 5.210: Electrical Harness Secured to Center-Link

8. Connect main header harness (A) to adapter harness (B).
9. **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).
10. **If you are connecting an R2 header configured for grass-seed harvesting:** Connect actuator harness (C) to adapter harness (D).

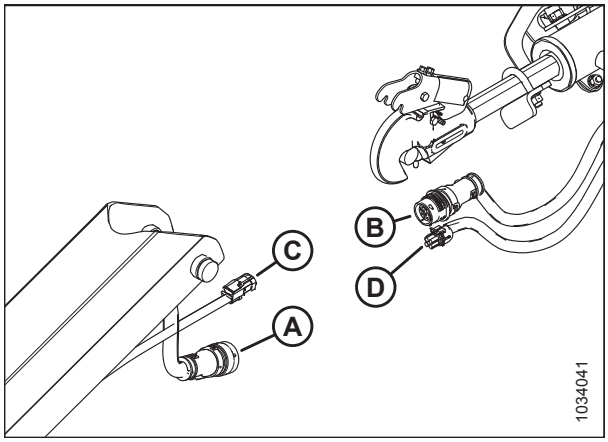


Figure 5.211: Electrical Harness Connection at Center-Link

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

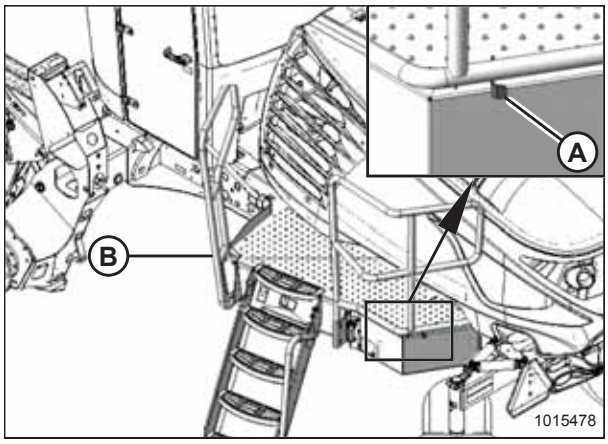


Figure 5.212: Left Cab-Forward Platform

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

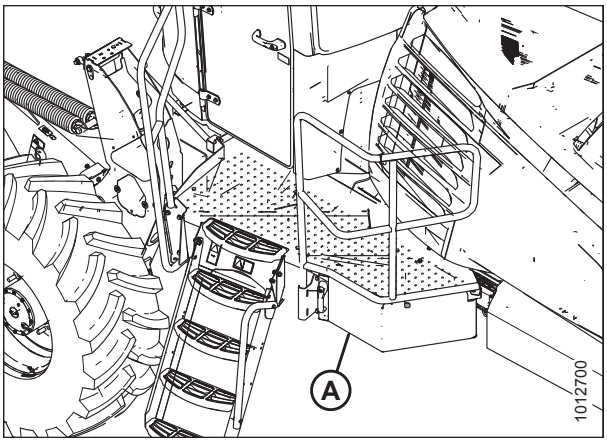


Figure 5.213: Left Cab-Forward Platform

DANGER

Ensure that 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.

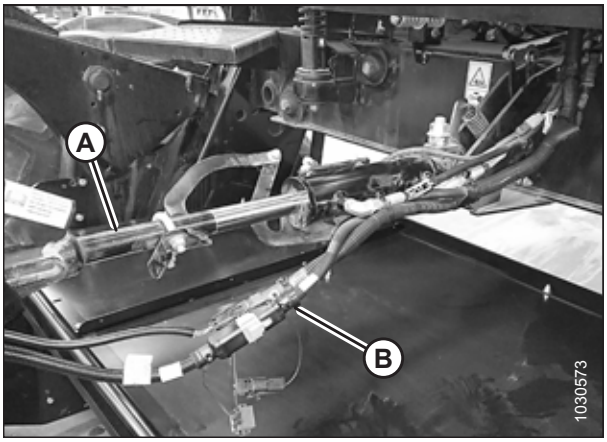


Figure 5.214: Electrical Connection

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 Knife Drive on Harvest Performance Tracker Display, page 230* and *5.7.2 Calibrating Header Position Sensors on Harvest Performance Tracker Display, page 233*.

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.

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).

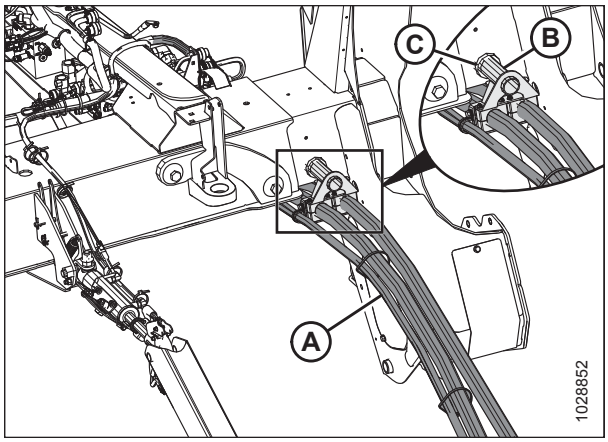


Figure 5.215: Hose Support Attachment

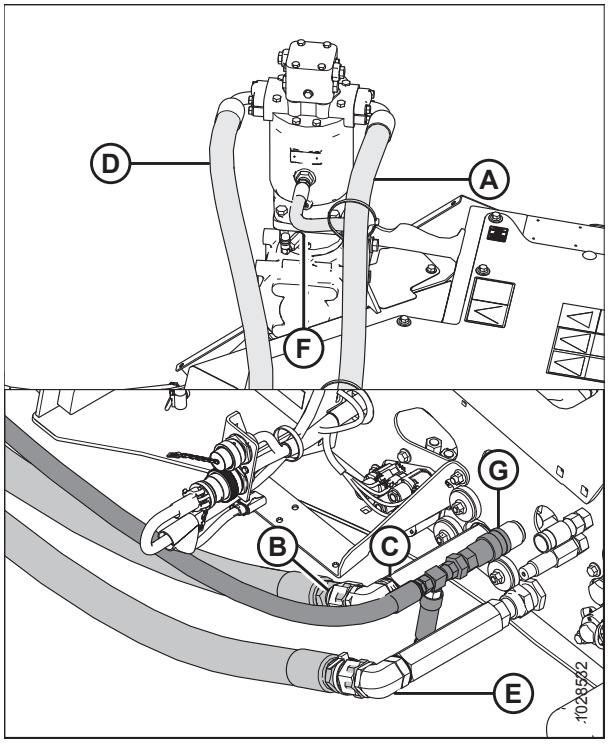


Figure 5.216: Hard Plumbed Connections on R216 Rotary Disc Header Ready Windrower

4. **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 hose (green cable tie) with female quick coupler (E) to coupler (F) as shown.

   d. Connect hose (yellow cable tie) with male quick coupler (G) to coupler (H) as shown.

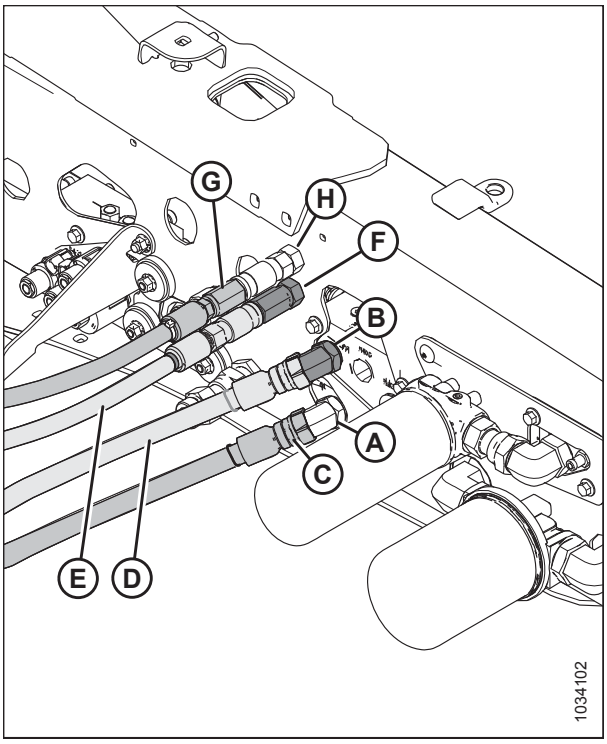


Figure 5.217: Grass Seed Hydraulic Connections – Rotary Disc Configuration

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

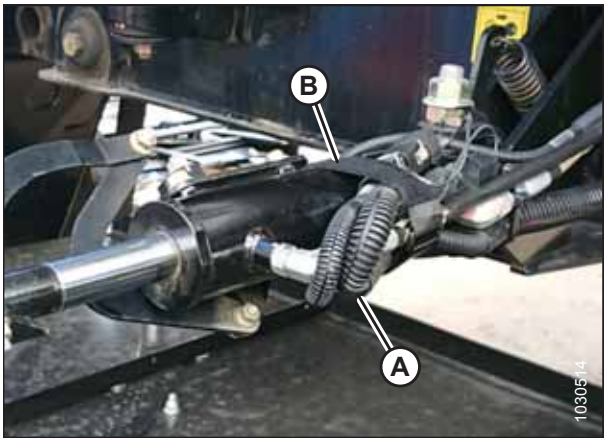


Figure 5.218: Electrical Harness Secured to Center-Link

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).

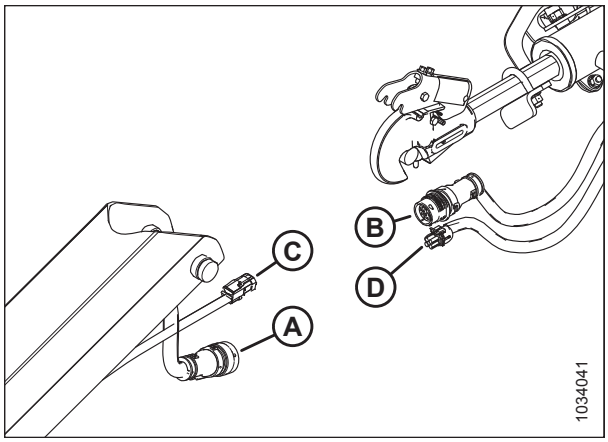


Figure 5.219: Electrical Harness Connection at Center-Link

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

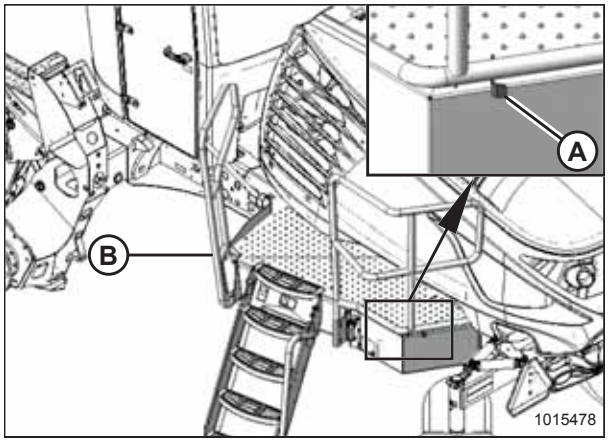


Figure 5.220: Left Cab-Forward Platform

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

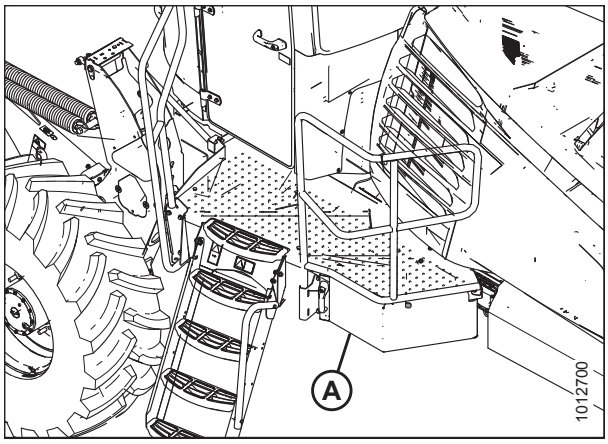


Figure 5.221: Left Cab-Forward Platform

DANGER

Ensure that 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.

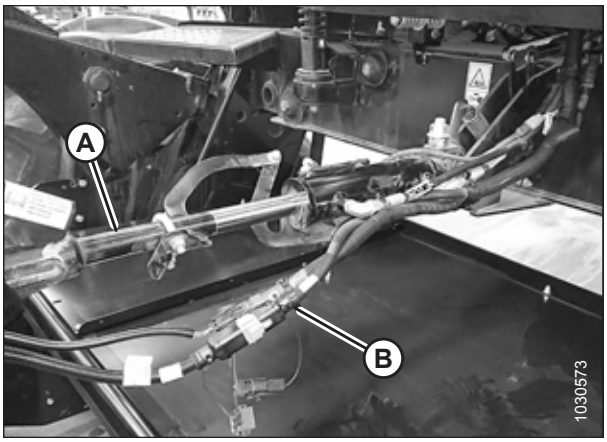


Figure 5.222: Electrical Connection

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 Knife Drive on Harvest Performance Tracker Display, page 230* and *5.7.2 Calibrating Header Position Sensors on Harvest Performance Tracker Display, page 233*.

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.

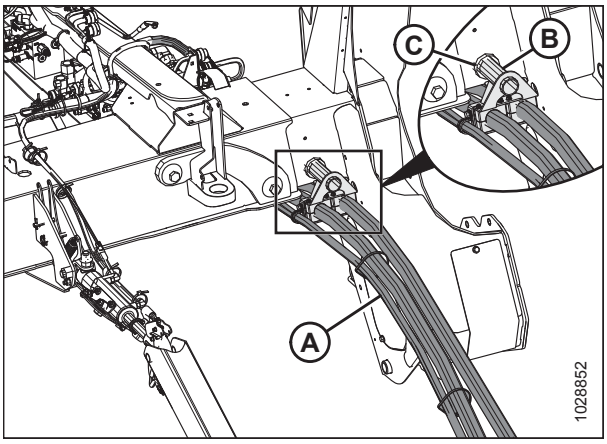


Figure 5.223: Hose Support Attachment

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).

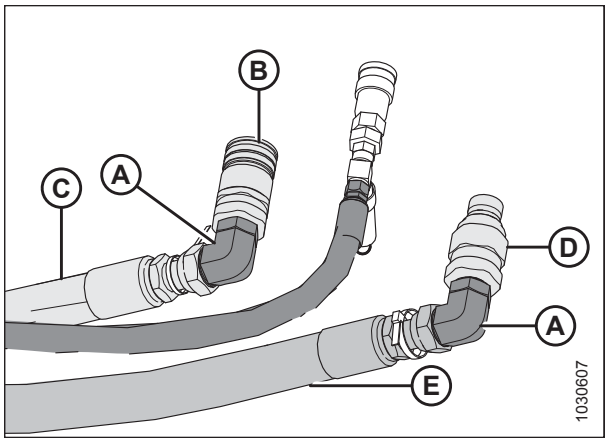


Figure 5.224: Header Hydraulic Fittings

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.

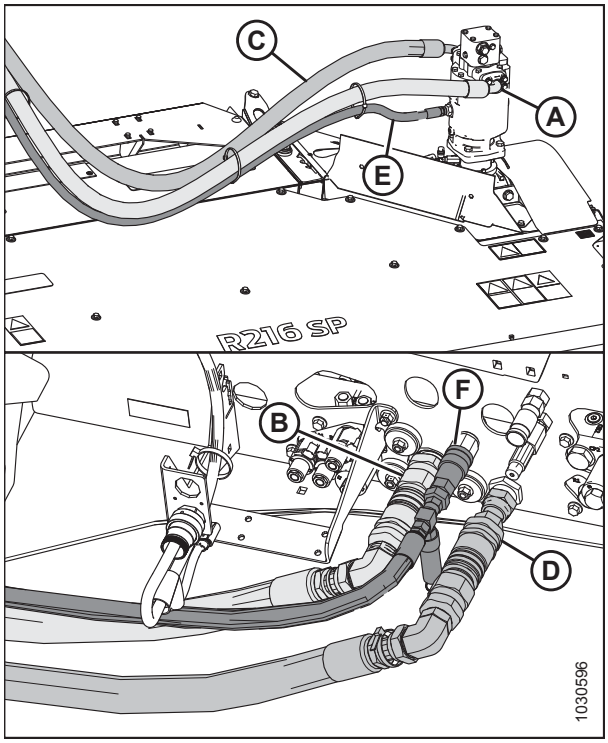


Figure 5.225: Hydraulics and Electrical – Rotary Disc Configuration with Quick Couplers Installed

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.

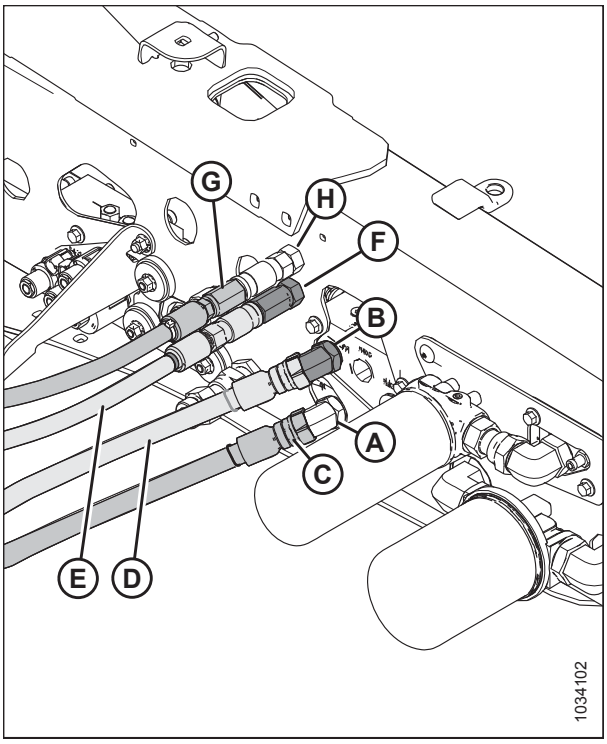


Figure 5.226: Grass Seed Hydraulic Connections – Rotary Disc Configuration

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

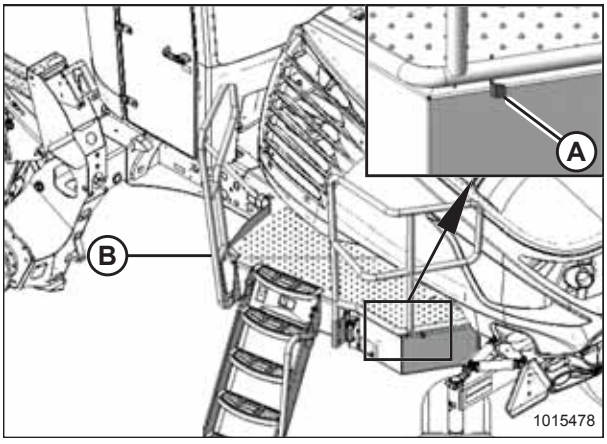


Figure 5.227: Left Cab-Forward Platform

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

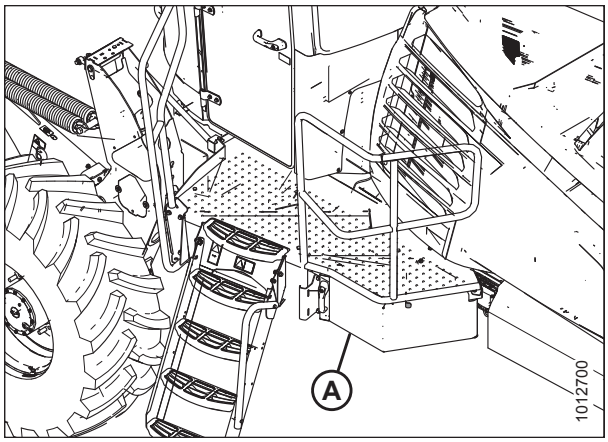


Figure 5.228: Left Cab-Forward Platform

DANGER

Ensure that 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.

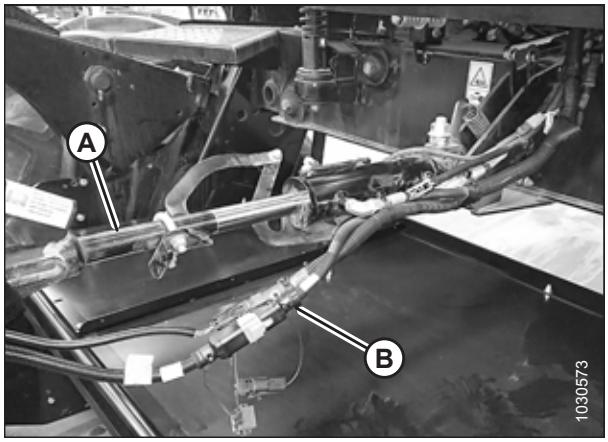


Figure 5.229: Electrical Connection

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 Knife Drive on Harvest Performance Tracker Display, page 230* and *5.7.2 Calibrating Header Position Sensors on Harvest Performance Tracker Display, page 233*.

5.5.5 Detaching R216 Rotary Disc Header

Detach the header when replacing the header with a different one or when storing the header.

DANGER

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

DANGER

Ensure that all bystanders have cleared the area.

IMPORTANT:

Install caps and plugs on open lines to prevent buildup of dirt and debris while in storage.

1. Start the engine, and press switch (A) to lower the header to the ground.
2. Shut down the engine, and remove the key from the ignition.

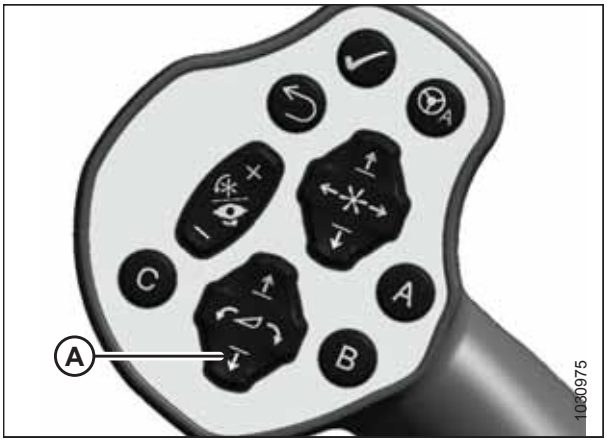


Figure 5.230: GSL

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.

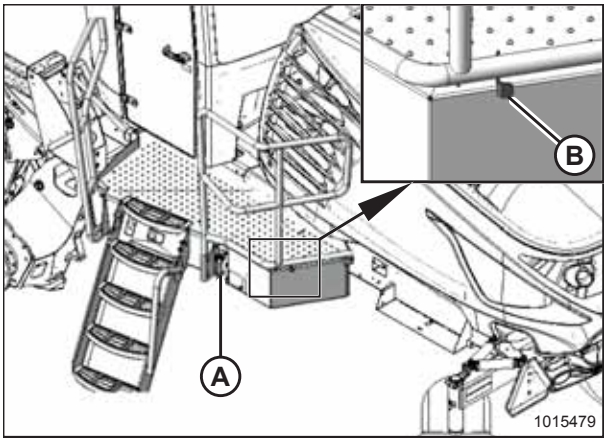


Figure 5.231: Left Cab-Forward Platform

5. Disconnect hydraulic hoses (A), (B), and (C) from the windrower.

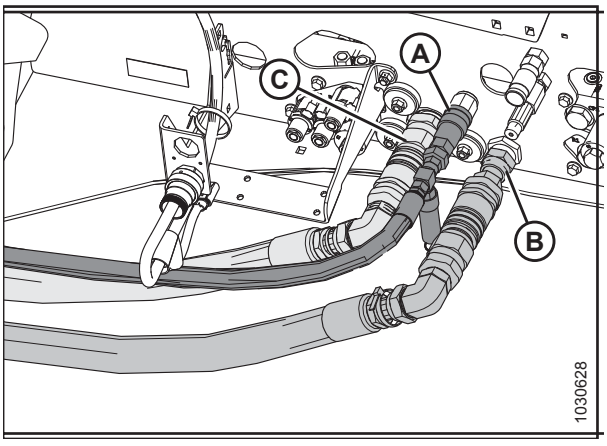


Figure 5.232: Header Drive Hydraulics – All M1 Configurations using Quick Couplers

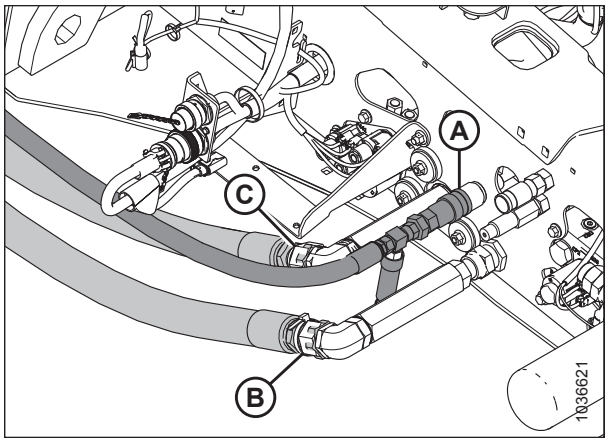


Figure 5.233: Header Drive Hydraulics – M1240, Rotary Disc Configuration with Hard Plumbed Fittings

6. **Grass seed header:** Disconnect additional four hoses (A), (B), (C), and (D).

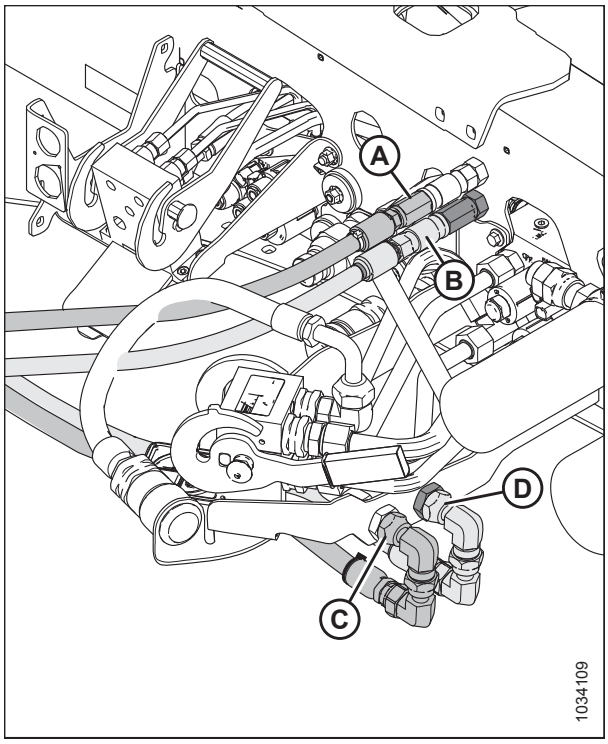


Figure 5.234: Grass Seed Hydraulic Connections – M1240 Draper/Disc ReadyM1170 Draper/Auger Ready

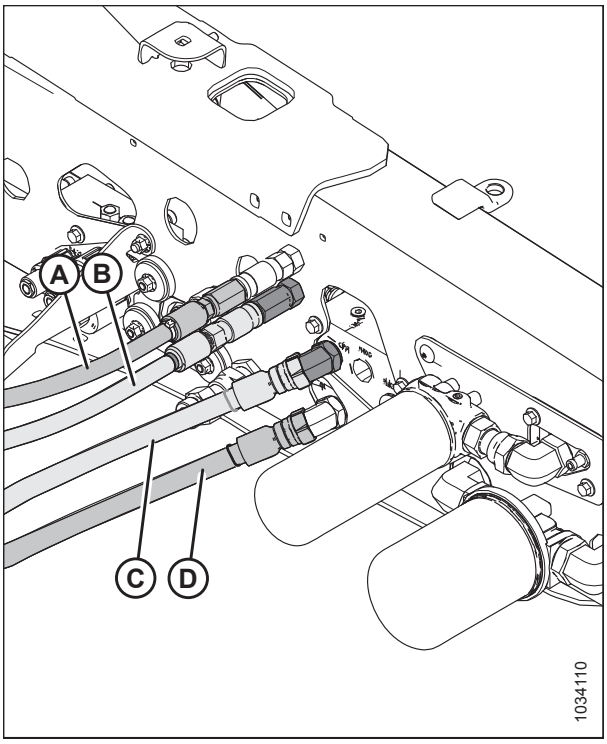


Figure 5.235: Grass Seed Hydraulic Connections – M1240 Rotary Disc Configuration

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

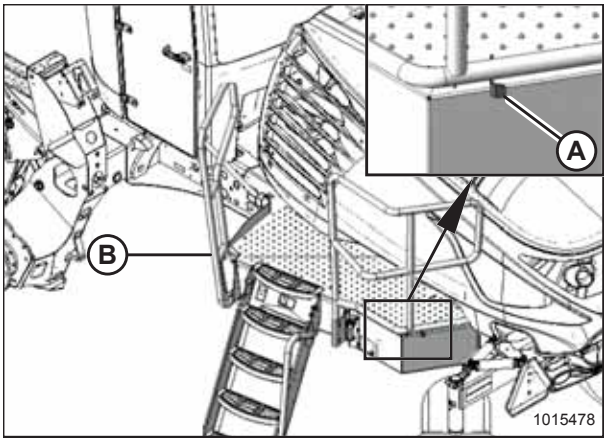


Figure 5.236: Left Cab-Forward Platform

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

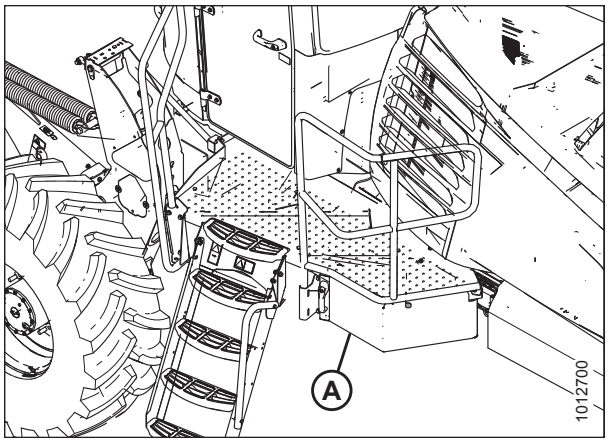


Figure 5.237: Left Cab-Forward Platform

9. Remove hose support (A) and hose bundle from windrower frame.

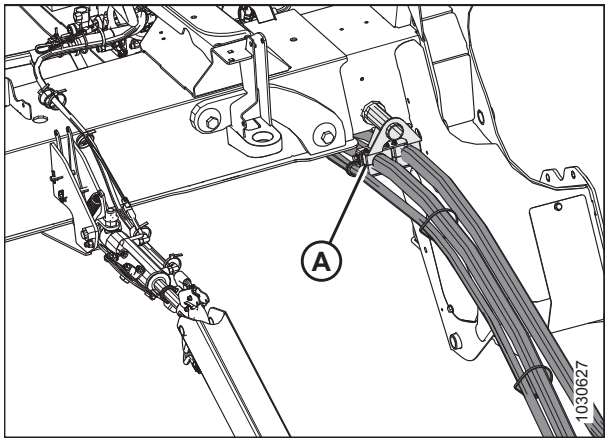


Figure 5.238: Header Hoses on Windrower

10. Rest hydraulic hose bundle (A) on header for storage as shown.

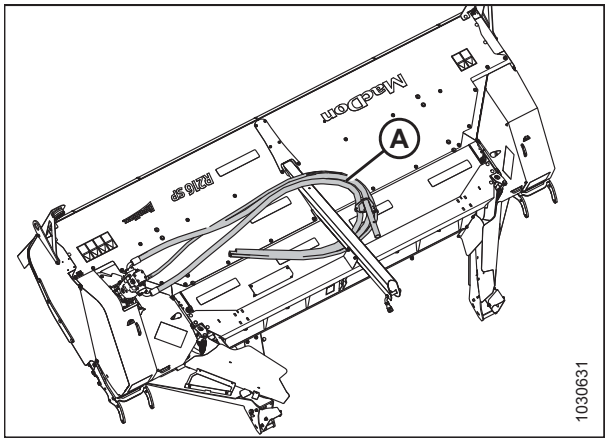


Figure 5.239: Hose Bundle Storage Position

11. Disconnect main header harness (A) from adapter harness (B).
12. **Standard headers equipped with optional electric baffle control kit:** Disconnect electric baffle control harness (C) from adapter harness (D).
13. **Grass seed:** Disconnect actuator harness (C) from adapter harness (D).

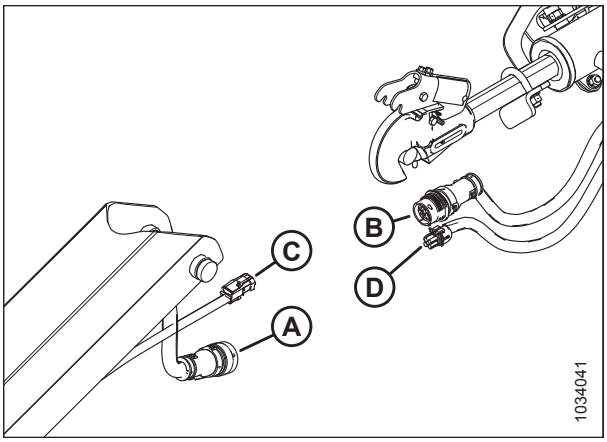


Figure 5.240: Electrical Harness Connection at Center-Link

14. Secure adapter harness (A) on the center link with an adjustable strap (B).

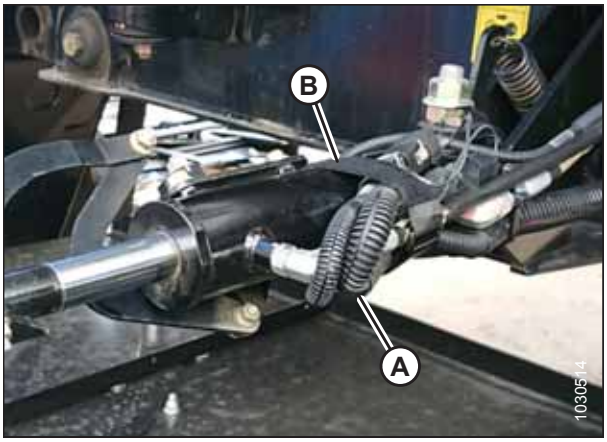


Figure 5.241: Adapter Harness

15. Remove hairpin (B) from clevis pin (A). Remove clevis pin from header support (C) on both sides of header.

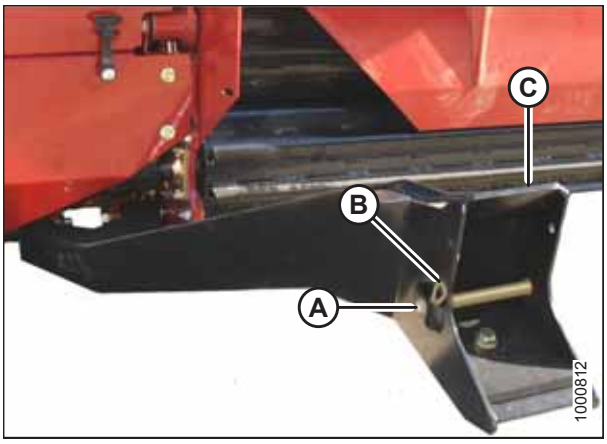


Figure 5.242: Header Supports

16. **Windrowers WITH center-link self-alignment kit:** Release center-link latch (A) before returning to the cab.

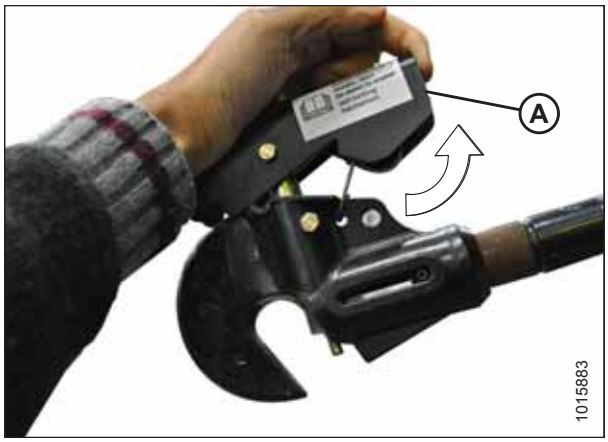


Figure 5.243: Center-Link

DANGER

Ensure that all bystanders have cleared the area.

17. Start the engine.
18. Remove header float when prompted by the Harvest Performance Tracker (HPT).

    NOTE:

    If not prompted by the HPT to remove float, remove float manually.

19. Use HEADER TILT cylinder switches (A) on GSL to release load on center-link cylinder.
20. **Windrowers WITH center-link self-alignment kit:** Operate the link lift cylinder with REEL UP switch (B) to disengage the center-link from the header. Proceed to Step *24, page 227*.

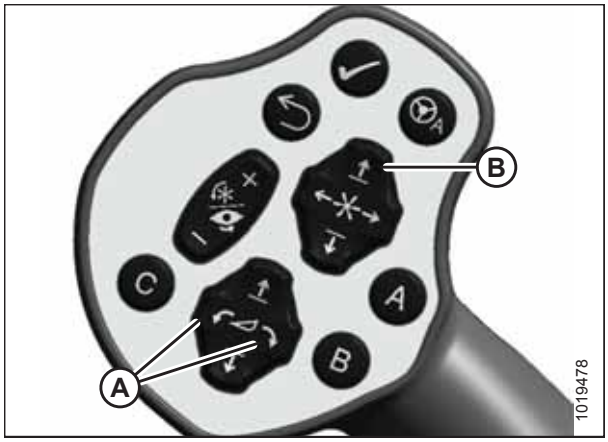


Figure 5.244: GSL

21. **Windrowers WITHOUT center-link self-alignment kit:** Shut down the engine, and remove the key from the ignition.
22. **Windrowers WITHOUT center-link self-alignment kit:** Lift hook release (A) and lift hook (B) off header pin.

DANGER

Ensure that all bystanders have cleared the area.

23. **Windrowers WITHOUT center-link self-alignment kit:** Start the engine.

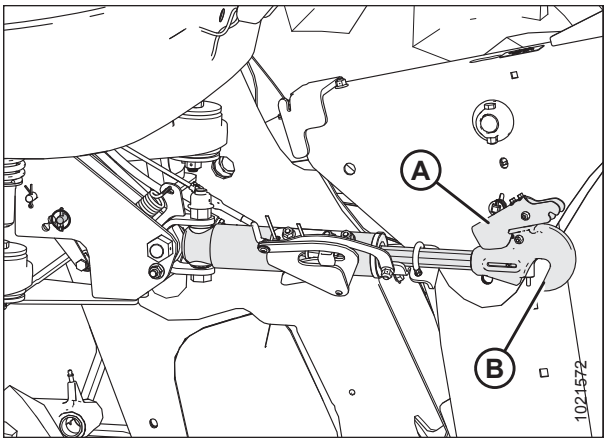


Figure 5.245: Hydraulic Center-Link

24. Back the windrower slowly away from header.
25. Shut down the engine, and remove the key from the ignition.
26. Reinstall clevis pin (A) through support (C) and secure with hairpin (B). Repeat for the opposite side of the header.

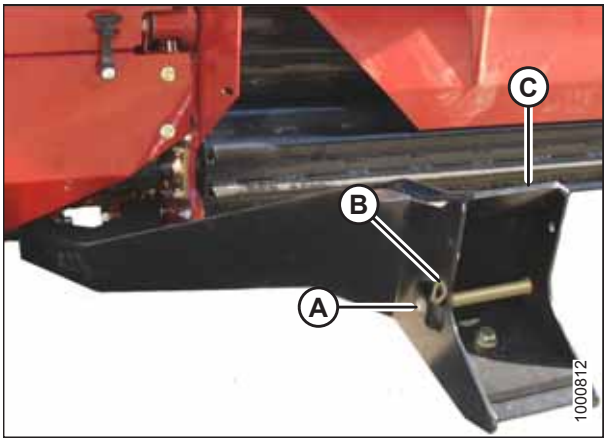


Figure 5.246: Header Support

IMPORTANT:

When detaching an R216 SP Rotary Disc Header from an M1 Series Windrower that will be configured for a D1X Series Draper Header, ensure the two shield mount plates (A) (MD #307045) are removed from the windrower and forming shield.

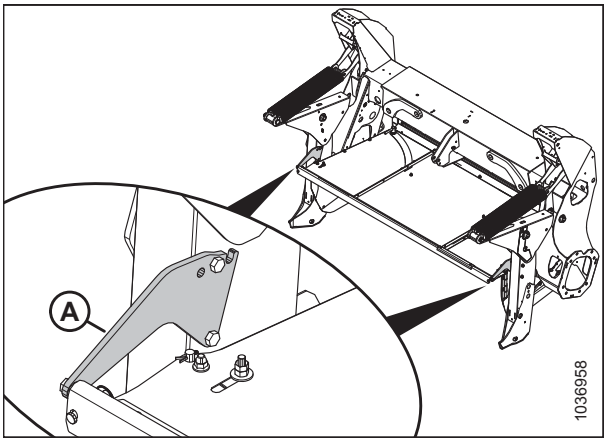


Figure 5.247: Shield Mount Plates on Forming Shield

5.5.6 Removing Forming Shield

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

NOTE:

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

1. Mark strap location, then remove and retain hairpin (A) and washer (B) from straight pin (C).
2. Pull rubber strap (D) away from straight pin (C).
3. Lower rear end of forming shield.
4. Reinstall washer (B) and hairpin (A) on straight pin (C) for storage.
5. Repeat Step *1, page 228* to Step *4, page 228* at the opposite side.
6. Reattach clevis pin and lynch pin to the forming shield for storage.
7. Remove the forming shield.

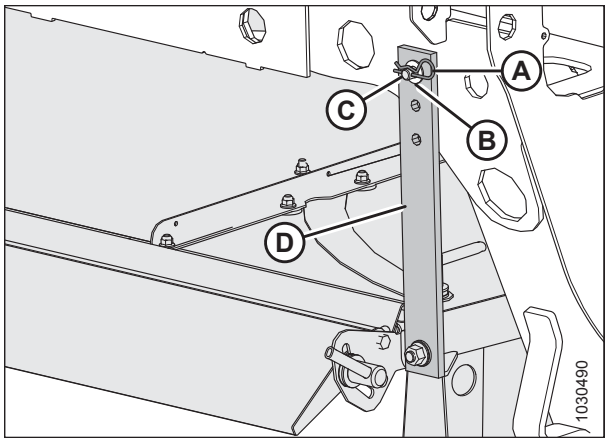


Figure 5.248: Rubber Strap Securing Forming Shield onto Windrower Leg

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 113*.
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.

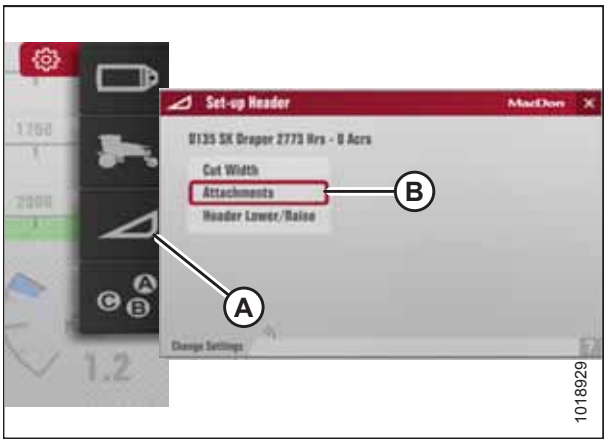


Figure 5.249: Header Settings

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 Knife Drive on 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 that 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.

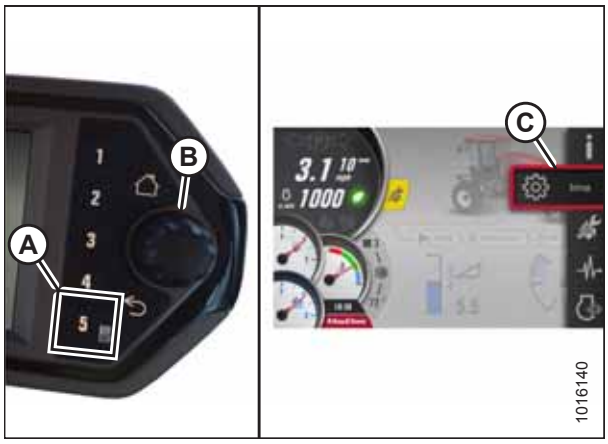


Figure 5.250: Opening the Main Menu

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.

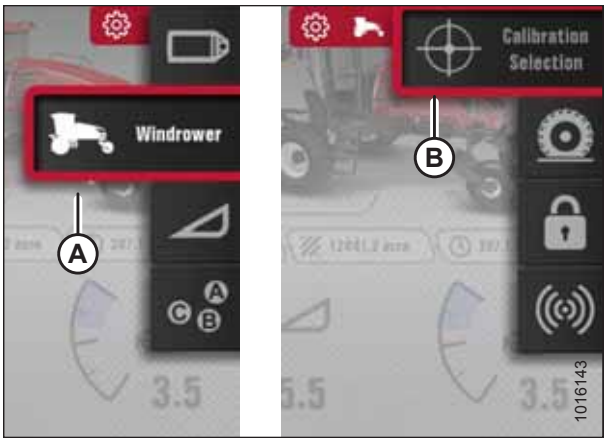


Figure 5.251: Windrower Settings Icon and Calibration Submenu Icon

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

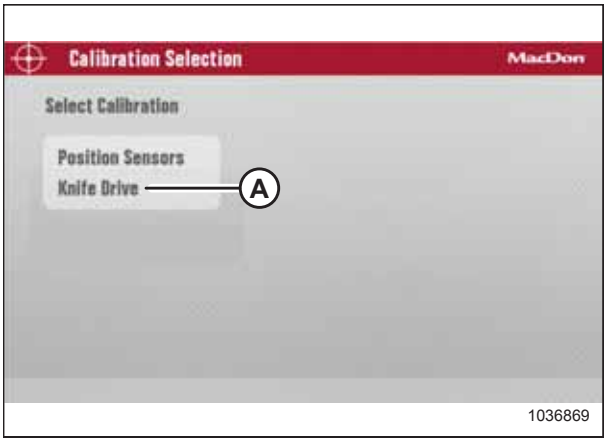


Figure 5.252: Calibration Selection Screen

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.

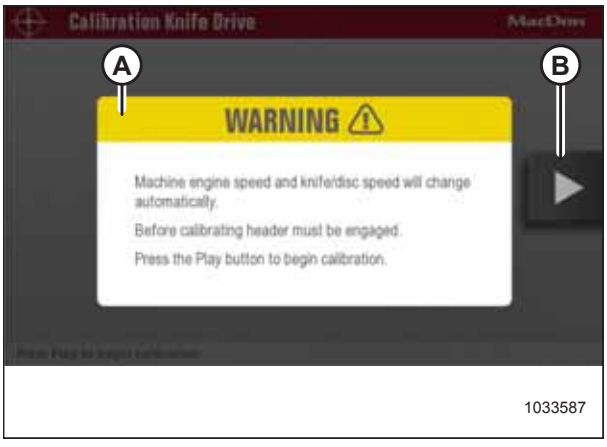


Figure 5.253: Engage Header Warning

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 5.254: 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 5.255: 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 5.256: 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:

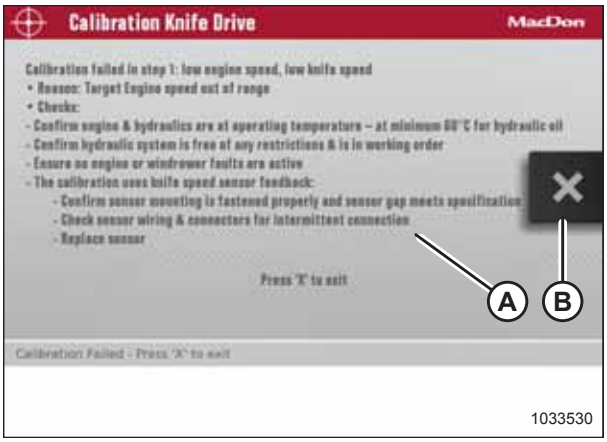


Figure 5.257: Calibration Page

- 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.

5.7.2 Calibrating Header Position Sensors on 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 that 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.

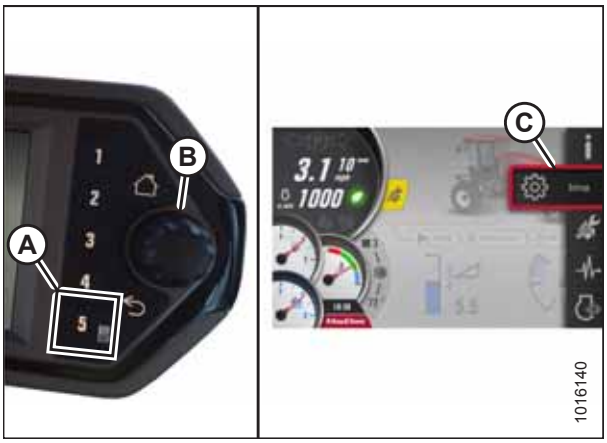


Figure 5.258: Opening the Main Menu

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.

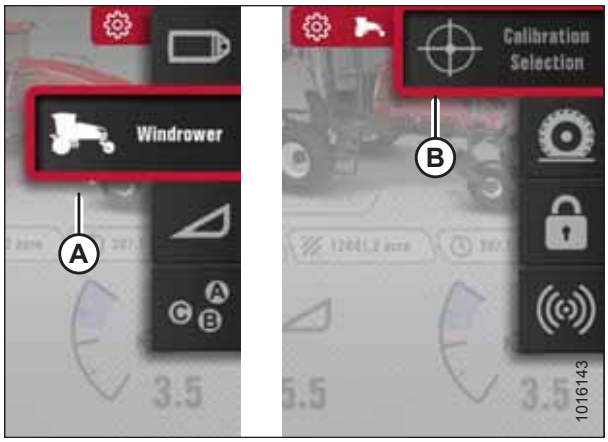


Figure 5.259: Windrower Settings Icon and Calibration Submenu Icon

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

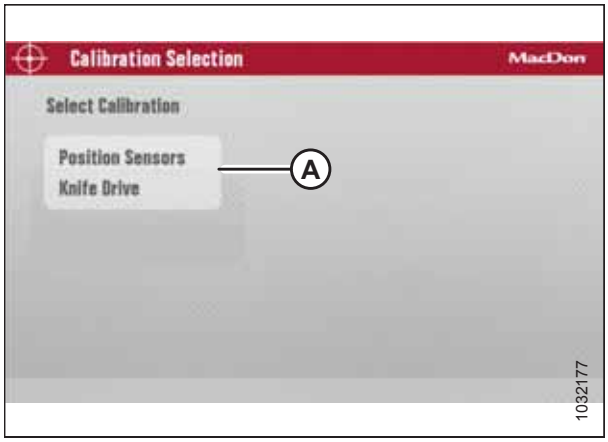


Figure 5.260: Calibration Selection Screen

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 5.261: Calibration Screen

8. 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 5.262: Calibration Screen

9. 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 5.263: 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 5.264: 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[1]; refer to *6.2 Fuel Specifications, page 239* for more information	518 liters (137 U.S. gallons)
Hydraulic oil	Hydraulic reservoir	Single grade transmission/hydraulic fluid (THF) Recommend Viscosity: • 60.1 cSt @ 40°C • 9.5 cSt @ 100°C	60 liters (15.8 U.S. gallons)[2]
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 M1240	Engine cooling system	ASTM D-6210 and CES-14603, Peak Final Charge Global™[3] or Fleetguard ES Compleat™ OAT[4]	33 liters (8.7 U.S. gallons)[5]
Antifreeze M1170	Engine cooling system	ASTM D-6210 and CES-14603, Peak Final Charge Global™ or Fleetguard ES Compleat™ OAT[4]	31 liters (8.2 U.S. gallons)
Engine oil M1240	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)

1. Optional when operating temperature is below 0°C (32°F).
2. Denotes capacity of a dry system. Refill capacity is 58 liters (15 U.S. gallons).
3.
4. See comments below.
5. Equal parts with water; high quality, soft, deionized or distilled water as recommended by Supplier.

Table 6.1 System Capacities (continued)

Lubricant/Fluid	Location	Description	Capacity
Engine oil M1170	Engine oil pan	SAE 15W-40 compliant with SAE specs for API Class SJ and CJ-4 engine oil	11 liters (11.6 U.S. quarts)
Air conditioning refrigerant	Air conditioning system	R134A	2.38 kg (5.25 lb.)
Air conditioning refrigerant oil	Air conditioning system total capacity	PAG SP-15	240 cc (8.1 fl. oz.)
Windshield washer fluid	Windshield washer fluid tank	SAE J942 compliant	4 liters (1 U.S. gallon)

If Peak Final Charge Global™ or Fleetguard ES Compleat™ OAT is unavailable: use a coolant concentrate or prediluted coolant intended for use with heavy duty diesel engines 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.
- Coolant **MUST** be nitrite-free and **MUST** be free of 2-Ethylhexanoic (2-EH) acid.

NOTE:

M1 Series windrowers have Peak Final Charge Global™ coolant installed at the factory.

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.

If the vehicle is exposed to extreme cold (below -7°C [20°F]) or is required to operate at colder-than-normal conditions for prolonged periods, use climatized No. 2 diesel fuel, or dilute the No. 2 ULSD fuel with 50% No. 1 ULSD fuel. This will provide better protection from fuel gelling or wax-plugging of the fuel filters.

Table 6.2 Fuel Specifications

Fuel	Specification	Sulphur (by weight)	Water and Sediment (by volume)	Cetane No. °C (°F)	Lubricity
ULSD Grade No. 2	ASTM D975	0.5% maximum	0.05% maximum	40 (104) minimum	520 Microns
ULSD Grade No. 1 and 2 mix[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 239*.

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 0.65 to obtain the modified torque value.

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

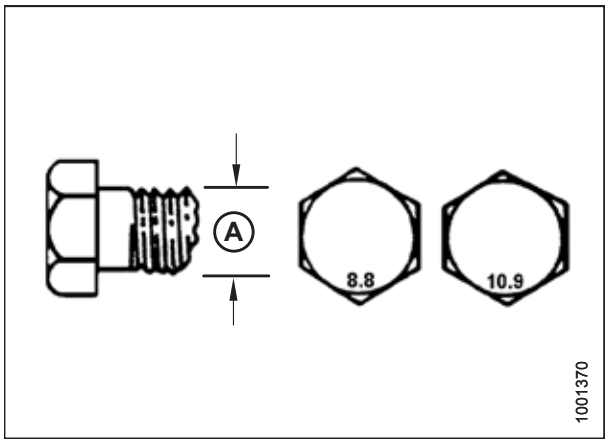


Figure 6.1: Bolt Grades

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

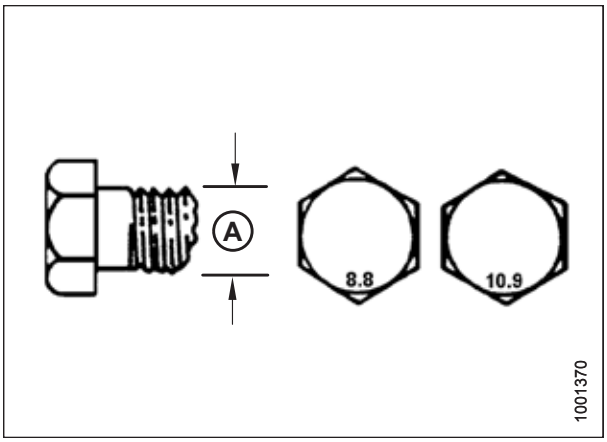


Figure 6.2: Bolt Grades

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

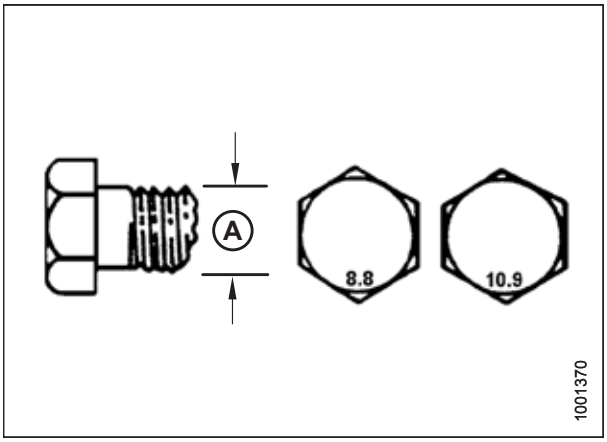


Figure 6.3: Bolt Grades

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

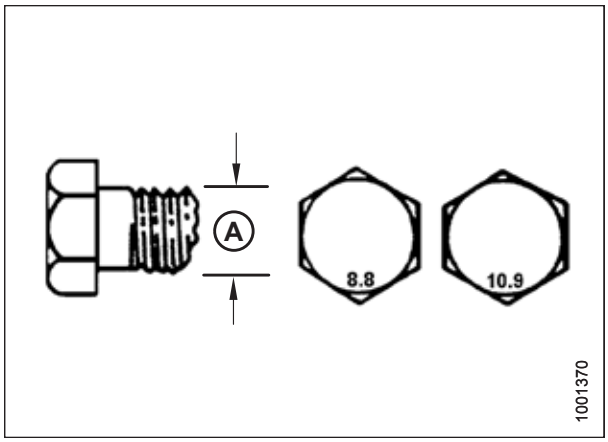


Figure 6.4: Bolt Grades

6.3.2 Metric Bolt Specifications Bolting into Cast Aluminum

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 6.7 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	–	–	–	–

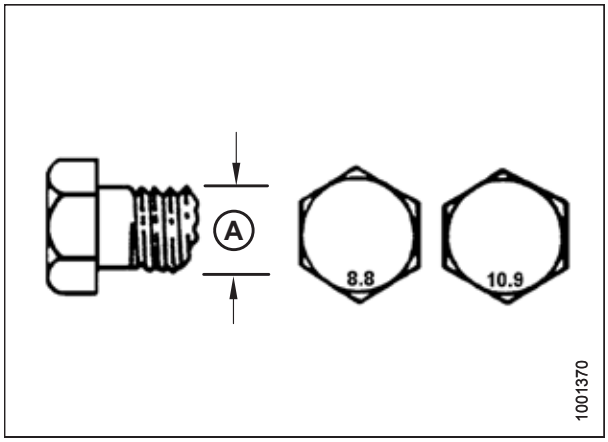


Figure 6.5: Bolt Grades

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).

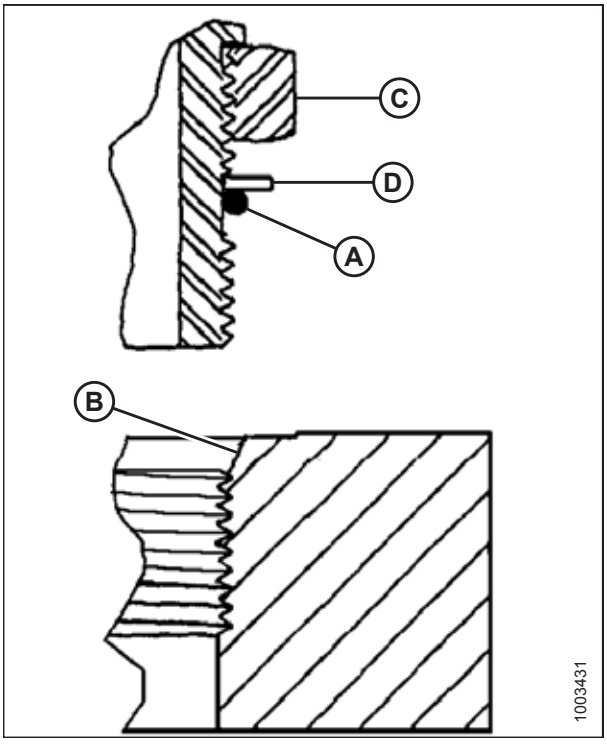


Figure 6.6: Hydraulic Fitting

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.

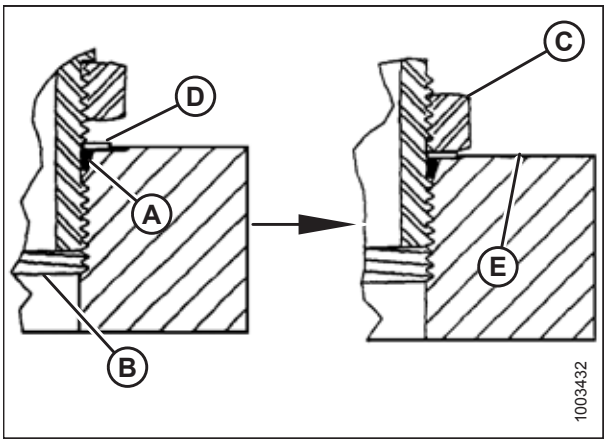


Figure 6.7: Hydraulic Fitting

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
-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

6.3.4 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 245*.
6. Check the final condition of the fitting.

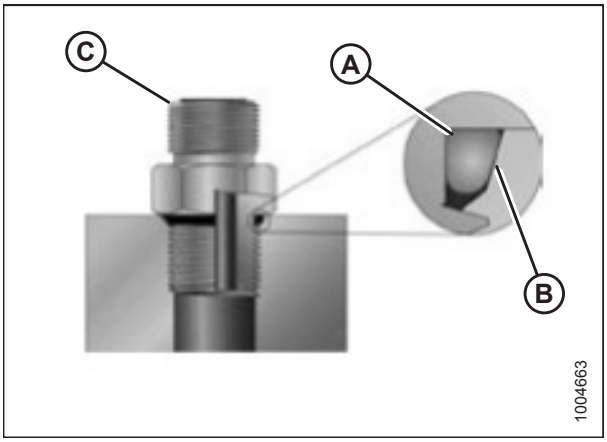


Figure 6.8: Hydraulic Fitting

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

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

SAE Dash Size	Thread Size (in.)	Torque Value[8]	
		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.

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

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

2. Apply hydraulic system oil to O-ring (B).
3. Align the tube or hose assembly so that the flat face of sleeve (A) or (C) comes into full contact with O-ring (B).
4. Thread tube or hose nut (D) until it is hand-tight. The nut should turn freely until it bottoms out.
5. Torque the fittings according to values in Table *6.10, page 246*.

   NOTE:

   If applicable, hold the hex flange on fitting body (E) to prevent the rotation of the fitting body and the hose when tightening fitting nut (D).
6. Use three wrenches when assembling unions or joining two hoses together.
7. Check the final condition of the fitting.

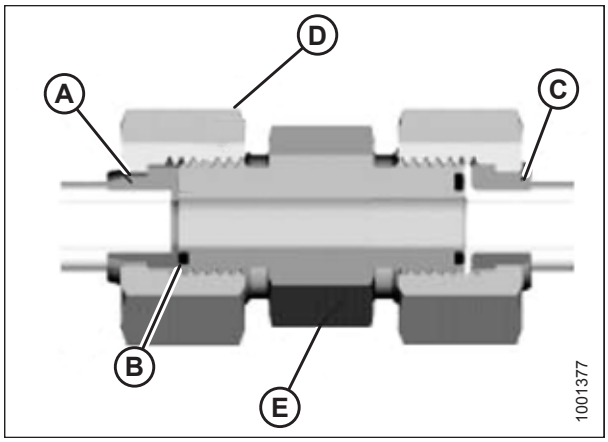


Figure 6.10: Hydraulic Fitting

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

SAE Dash Size	Thread Size (in.)	Tube O.D. (in.)	Torque Value[9]	
			Nm	lbf·ft
-3	Note[10]	3/16	–	–
-4	9/16	1/4	25–28	18–21
-5	Note[10]	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[10]	7/8	–	–
-16	1 7/16	1	150–165	111–122
-20	1 11/16	1 1/4	205–226	151–167
-24	1–2	1 1/2	315–347	232–256
-32	2 1/2	2	510–561	376–414

6.3.6 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 other form of contamination.
2. Apply paste-type pipe thread sealant to the external pipe threads.
3. Thread the fitting into the port until it is hand-tight.

9. Torque values and angles shown are based on lubricated connection as in reassembly.
10. O-ring face seal type end not defined for this tube size.

4. Torque the connector to the appropriate torque angle. The turns from finger tight (TFFT) and flats from finger tight (FFFT) values are shown in Table *6.11, page 247*. Make sure that the tube end of a shaped connector (typically a 45° or 90° elbow) is aligned to receive the incoming tube or hose assembly. Always finish the alignment of the fitting in the direction of tightening. Never back off (i.e. 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 and inspected.

Table 6.11 Hydraulic Fitting Pipe Thread

Tapered Pipe Thread Size	Recommended TFFT	Recommended FFFT
1/8–27	2–3	12–18
1/4–18	2–3	12–18
3/8–18	2–3	12–18
1/2–14	2–3	12–18
3/4–14	1.5–2.5	12–18
1–11 1/2	1.5–2.5	9–15
1 1/4–11 1/2	1.5–2.5	9–15
1 1/2–11 1/2	1.5–2.5	9–15
2–11 1/2	1.5–2.5	9–15

6.4 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 designed to be paired with a nut
Cab-forward	Windrower operation mode, in which the Operator's seat faces the header
Center-link	A hydraulic cylinder connection between the header and the vehicle, which is used to change the angle of the header relative to the vehicle
CGVW	Combined gross vehicle weight
D1X Series Header	MacDon D115X, D120X, and D125X rigid draper headers for M1 Series Windrowers
D1XL Series Header	MacDon D130XL, D135XL, D140XL, and D145XL rigid draper headers for M1 Series Windrowers
DDD	Double-draper drive
DEF	Diesel exhaust fluid; also known as AdBlue in Europe, and AUS 32 in Australia
DEF supply module	A pump that supplies diesel exhaust fluid through the exhaust aftertreatment system
DM	Dosing module
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 in which the given sealing surfaces or components are making contact with each other and the fitting has been tightened by hand to a point where the fitting is no longer loose and cannot be tightened further by hand
GSL	Ground speed lever
GSS	Grass Seed
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 when attached to a windrower
Hex key	A tool of hexagonal cross-section used to drive bolts and screws that have a hexagonal socket in the head (internal-wrenching hexagon drive); also known as an Allen key
HDS	Hydraulic deck shift
hp	Horsepower
HPT display	Harvest Performance Tracker display module on an M1 Series Windrower
JIC	Joint Industrial Council: A standards body that developed standard sizing and shape for original 37° flared fitting
Knife	A cutting device found on a header's cutterbar which uses a reciprocating cutter (also called a sickle) to cut crop so that it can be fed into the header

Term	Definition
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 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
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 when inserted into a mating part
SDD	Single-draper drive
SK	Single knife
SKD	Single-knife drive
Soft joint	A flexible joint made by use of a fastener in which the joining materials compress or relax over a period of time
spm	Strokes per minute
Tension	An axial load placed on a bolt or screw, usually measured in Newtons (N) or pounds (lb.). This term can also be used to describe the force a belt exerts on a pulley or sprocket
TFFT	Turns from finger tight
Torque	The product of a force * the length of a lever arm, usually measured in Newton-meters (Nm) or foot-pounds (lbf·ft)
Torque angle	A tightening procedure in which a fitting is assembled to a specified tightness (usually finger tight) and then the nut is turned farther by a specified number of degrees until it achieves its final position
Torque-tension	The relationship between the assembly torque applied to a piece of hardware and the axial load it induces in a bolt or screw
ULSD	Ultra-low sulphur diesel
Washer	A thin cylinder with a hole or a slot located in the center, used as a spacer, a load distribution element, or a locking mechanism
Windrower	The power unit for a header
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.

CAUTION

Carefully follow the instructions given. Be alert for safety related messages that bring your attention to hazards and unsafe practices.

Windrower Serial Number: **Engine Serial Number:**

M1 Series 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.	*6.3 Torque Specifications, page 240*
	Check tire air pressures and adjust as required.	*4.1.13 Checking Tire Pressure, page 108*
	Check wheel drive hub lubricant level.	*4.1.11 Checking and Adding Wheel Drive Lubricant – 10 Bolt Wheels, page 107*
	Check engine coolant level and strength at pressurized coolant tank.	*4.1.5 Checking Engine Coolant Level, page 99*
	Check air cleaner and clamps.	*4.1.2 Checking Engine Air Intake, page 96*
	Check engine oil level and check for leaks.	*4.1.6 Checking and Adding Engine Oil, page 99*
	Check hydraulic oil level and check for leaks along lines.	*4.1.3 Checking and Adding Hydraulic Oil, page 97*
	Check fuel separator for water and foreign material, drain and clean as necessary, and add fuel.	*4.1.4 Checking Fuel Separator, page 98*
	Check gearbox lubricant level.	*4.1.7 Checking Engine Gearbox Lubricant Level and Adding Lubricant – M1170, page 101* or *4.1.8 Checking Engine Gearbox Lubricant Level and Adding Lubricant – M1240, page 102*
	Check tension of A/C compressor belt.	*4.1.9 Checking Air Conditioning Compressor Belts, page 103*
	Check that machine is completely lubricated.	*3.16.2 Lubrication Points, page 90*
	Check Operator's Presence System.	*4.2.1 Checking Operating Safety System, page 111*
	Check horn operation.	*4.2.6 Checking Horn, page 123*
Start engine and run to operating temperature.		*4.1.10 Starting Engine – M1240 Windrower, page 104*
	Check HPT, fuel, and diesel exhaust fluid (DEF) gauges for operation.	*4.2.2 Checking Harvest Performance Tracker Display Gauges, page 112*
	Check engine speed on HPT.	*4.2.3 Checking Engine Speed, page 118*
	Ensure selective catalytic reduction (SCR) conditioning inhibit is off.	*4.2.4 Checking Selective Catalytic Regeneration Conditioning Mode, page 119*
	Check that air conditioning and heater are functioning properly.	*4.2.8 Checking Climate Controls, page 124*
	Check that interior lights are functioning properly.	*4.2.7 Checking Interior Lights, page 124*
	Check that exterior lights are functioning properly.	*4.2.5 Checking Exterior Lights, page 120*

✓	Item	Reference
	Check that hazard and signal lights are functioning properly.	*4.2.5 Checking Exterior Lights, page 120*
	Check that beacons are functioning properly (if installed).	*4.2.5 Checking Exterior Lights, page 120*
	Complete the header's Predelivery Checklist (if applicable).	—
	Check that manuals are in the windrower manual case.	*4.3 Checking Manuals, page 128*
	Remove plastic coverings and windshield decal from cab interior.	*4.4 Performing Final Steps, page 129*

Date Checked: **Checked by:**

MacDon

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