

M2170NT (Narrow Transport) Windrower

Unloading and Assembly Instructions (Container Shipments)

262177 Revision A

Original Instruction

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



1042583

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Introduction

This manual contains unloading, assembly, and predelivery information for MacDon M2170NT Windrowers. When paired with the following MacDon draper headers, this windrower ably cuts and lays a variety of grain, hay, and specialty crops in windrows:

- D1X or D1XL Series Draper Headers
- D2 Series Draper Headers

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

Conventions

The following conventions are used in this document:

- The designations right and left are determined by which direction the Operator is facing. The Operator is considered to be looking cab-forward when they are facing the drive wheels, and engine-forward when facing the engine. This manual uses the terms right cab-forward, left cab-forward, right engine-forward, and left engine-forward to refer to specific locations on the machine.
- Unless otherwise noted, use the standard torque values provided in this manual.
- When torque values of 30 Nm or less are listed, their equivalents will be provided in both foot-pounds (lbf-ft) and inch-pounds (lbf-in).

NOTE:


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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

This document is currently available in English only.

Declaration of Conformity – Windrower Lift Sling (B9063)

 <h2 style="margin: 0;">EC Declaration of Conformity</h2>	
<p>[1] MacDon</p> <p>MacDon Industries Ltd. 680 Moray Street, Winnipeg, Manitoba, Canada R3J 3S3</p>	<p>[4] Not Applicable</p> <p>[5] May 4, 2023</p>
<p>[2] Windrower Lift Sling</p> <p>[3] Part 306489</p>	<p>[6] _____</p> <p style="text-align: center;">Adrienne Tankeu Product Integrity</p>

EN	BG	CZ	DA
<p>We, [1]</p> <p>Declare, that the product:</p> <p>Machine Type: [2]</p> <p>Name & Model: [3]</p> <p>Serial Number(s): [4]</p> <p>fulfils all the relevant provisions of the Directive 2006/42/EC.</p> <p>Harmonized standards used, as referred to in Article 7(2):</p> <p style="padding-left: 20px;">EN ISO 4254-1:2013 EN ISO 4254-7:2009</p> <p>Place and date of declaration: [5]</p> <p>Identity and signature of the person empowered to draw up the declaration: [6]</p> <p>Name and address of the person authorized to compile the technical file:</p> <p>Benedikt von Riedesel General Manager, MacDon Europe GmbH Hagenauer Straße 59 65203 Wiesbaden (Germany) bvonriedesel@macdon.com</p>	<p>Ние, [1]</p> <p>декларираме, че следният продукт:</p> <p>Тип машина: [2]</p> <p>Наименование и модел: [3]</p> <p>Сериен номер(а) [4]</p> <p>отговаря на всички приложими разпоредби на директива 2006/42/ЕО.</p> <p>Използвани са следните хармонизирани стандарти според чл. 7(2):</p> <p style="padding-left: 20px;">EN ISO 4254-1:2013 EN ISO 4254-7:2009</p> <p>Място и дата на декларацията: [5]</p> <p>Име и подпис на лицето, упълномощено да изготви декларацията: [6]</p> <p>Име и адрес на лицето, упълномощено да състави техническия файл:</p> <p>Бенедикт фон Рийдесел Управител, MacDon Europe GmbH Hagenauer Straße 59 65203 Wiesbaden (Германия) bvonriedesel@macdon.com</p>	<p>My, [1]</p> <p>Prohlášíjeme, že produkt:</p> <p>Typ zařízení: [2]</p> <p>Název a model: [3]</p> <p>Sériové(á) číslo(a): [4]</p> <p>splňuje všechna relevantní ustanovení směrnice 2006/42/EC.</p> <p>Byly použity harmonizované standardy, jak je uvedeno v článku 7(2):</p> <p style="padding-left: 20px;">EN ISO 4254-1:2013 EN ISO 4254-7:2009</p> <p>Místo a datum prohlášení: [5]</p> <p>Identita a podpis osoby oprávněné k vydání prohlášení: [6]</p> <p>Jméno a adresa osoby oprávněné k vyplnění technického souboru:</p> <p>Benedikt von Riedesel generální ředitel, MacDon Europe GmbH Hagenauer Straße 59 65203 Wiesbaden (Německo) bvonriedesel@macdon.com</p>	<p>Vi, [1]</p> <p>erklærer, at produktet:</p> <p>Maskintype [2]</p> <p>Navn og model: [3]</p> <p>Serienummer (-numre): [4]</p> <p>Opfylder alle bestemmelser i direktiv 2006/42/EF.</p> <p>Anvendte harmoniserede standarder, som henviser til i paragraf 7(2):</p> <p style="padding-left: 20px;">EN ISO 4254-1:2013 EN ISO 4254-7:2009</p> <p>Sted og dato for erklæringen: [5]</p> <p>Identitet på og underskrift fra den person, som er bemyndiget til at udarbejde erklæringen: [6]</p> <p>Navn og adresse på den person, som er bemyndiget til at udarbejde den tekniske fil:</p> <p>Benedikt von Riedesel Direktør, MacDon Europe GmbH Hagenauer Straße 59 D-65203 Wiesbaden (Tyskland) bvonriedesel@macdon.com</p>

DE	ES	ET	FR
<p>Wir, [1]</p> <p>Erklären hiermit, dass das Produkt:</p> <p>Maschinentyp: [2]</p> <p>Name & Modell: [3]</p> <p>Seriennummer (n): [4]</p> <p>alle relevanten Vorschriften der Richtlinie 2006/42/EG erfüllt.</p> <p>Harmonisierte Standards wurden, wie in folgenden Artikeln angegeben, verwendet 7(2):</p> <p style="padding-left: 20px;">EN ISO 4254-1:2013 EN ISO 4254-7:2009</p> <p>Ort und Datum der Erklärung: [5]</p> <p>Name und Unterschrift der Person, die dazu befugt ist, die Erklärung auszustellen: [6]</p> <p>Name und Anschrift der Person, die dazu berechtigt ist, die technischen Unterlagen zu erstellen:</p> <p>Benedikt von Riedesel General Manager, MacDon Europe GmbH Hagenauer Straße 59 65203 Wiesbaden bvonriedesel@macdon.com</p>	<p>Nosotros [1]</p> <p>declaramos que el producto:</p> <p>Tipo de máquina: [2]</p> <p>Nombre y modelo: [3]</p> <p>Números de serie: [4]</p> <p>cumple con todas las disposiciones pertinentes de la directriz 2006/42/EC.</p> <p>Se utilizaron normas armonizadas, según lo dispuesto en el artículo 7(2):</p> <p style="padding-left: 20px;">EN ISO 4254-1:2013 EN ISO 4254-7:2009</p> <p>Lugar y fecha de la declaración: [5]</p> <p>Identidad y firma de la persona facultada para draw redactar la declaración: [6]</p> <p>Nombre y dirección de la persona autorizada para elaborar el expediente técnico:</p> <p>Benedikt von Riedesel Gerente general - MacDon Europe GmbH Hagenauer Straße 59 65203 Wiesbaden (Alemania) bvonriedesel@macdon.com</p>	<p>Meie, [1]</p> <p>deklareerime, et toode</p> <p>Seadme tüüp: [2]</p> <p>Nimi ja mudel: [3]</p> <p>Seerianumbrid: [4]</p> <p>vastab kõigile direktiivi 2006/42/EÜ asjakohastele sätetele.</p> <p>Kasutatud on järgnevaid harmoniseeritud standardeid, millele on viidatud ka punktis 7(2):</p> <p style="padding-left: 20px;">EN ISO 4254-1:2013 EN ISO 4254-7:2009</p> <p>Deklaratsiooni koht ja kuupäev: [5]</p> <p>Deklaratsiooni koostamiseks volitatud isiku nimi ja allkiri: [6]</p> <p>Tehnilise dokumendi koostamiseks volitatud isiku nimi ja aadress:</p> <p>Benedikt von Riedesel Peadirektor, MacDon Europe GmbH Hagenauer Straße 59 65203 Wiesbaden (Saksamaa) bvonriedesel@macdon.com</p>	<p>Nous soussignés, [1]</p> <p>Déclarons que le produit :</p> <p>Type de machine : [2]</p> <p>Nom et modèle : [3]</p> <p>Numéro(s) de série : [4]</p> <p>Est conforme à toutes les dispositions pertinentes de la directive 2006/42/EC.</p> <p>Utilisation des normes harmonisées, comme indiqué dans l'Article 7(2):</p> <p style="padding-left: 20px;">EN ISO 4254-1:2013 EN ISO 4254-7:2009</p> <p>Lieu et date de la déclaration : [5]</p> <p>Identité et signature de la personne ayant reçu le pouvoir de rédiger cette déclaration : [6]</p> <p>Nom et adresse de la personne autorisée à constituer le dossier technique :</p> <p>Benedikt von Riedesel Directeur général, MacDon Europe GmbH Hagenauer Straße 59 65203 Wiesbaden (Allemagne) bvonriedesel@macdon.com</p>

EC Declaration of Conformity

IT	HU	LT	LV
<p>Noi, [1] Dichiaro 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.</p> <p>Utilizzo degli standard armonizzati, come indicato nell'Articolo 7(2):</p> <p style="text-align: center;">EN ISO 4254-1:2013 EN ISO 4254-7:2009</p> <p>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</p>	<p>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.</p> <p>Az alábbi harmonizált szabványok kerültek alkalmazásra a 7(2) cikkely szerint:</p> <p style="text-align: center;">EN ISO 4254-1:2013 EN ISO 4254-7:2009</p> <p>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</p>	<p>Mes, [1] Pareiškiamė, kad šis produktas: Mašinos tipas: [2] Pavadinimas ir modelis: [3] Serijos numeris (-iai): [4] atitinka taikomus reikalavimus pagal Direktyvą 2006/42/EB.</p> <p>Naudojami harmonizuoti standartai, kai nurodoma straipsnyje 7(2):</p> <p style="text-align: center;">EN ISO 4254-1:2013 EN ISO 4254-7:2009</p> <p>Deklaracijos vieta ir data: [5] Asmens tapatybės duomenys ir parašas asmens, įgaliojoto sudaryti šią deklaraciją: [6] Vardas ir pavardė asmens, kuris įgaliojotas sudaryti šį techninį failą: Benedikt von Riedesel Generalinis direktorius, MacDon Europe GmbH Hagenauer Straße 59 65203 Wiesbaden (Vokietija) bvonriedesel@macdon.com</p>	<p>Mēs, [1] Deklarējam, ka produkts: Mašīnas tips: [2] Nosaukums un modelis: [3] Sērijas numurs(-i): [4] Atbilst visām būtiskajām Direktīvas 2006/42/EK prasībām.</p> <p>Piemēroti šādi saskaņotie standarti, kā minēts 7. pantā 2. punktā:</p> <p style="text-align: center;">EN ISO 4254-1:2013 EN ISO 4254-7:2009</p> <p>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 Rīdžels Ģenerāldirektors, MacDon Europe GmbH Hagenauer Straße 59 65203 Wiesbaden (Vācija) bvonriedesel@macdon.com</p>
<p>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.</p> <p>Geharmoniseerde normen toegepast, zoals vermeld in Artikel 7(2):</p> <p style="text-align: center;">EN ISO 4254-1:2013 EN ISO 4254-7:2009</p> <p>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</p>	<p>My niżej podpisani, [1] Oświadczamy, że produkt: Typ urządzenia: [2] Nazwa i model: [3] Numer serijny/numery seryjne: [4] spełnia wszystkie odpowiednie przepisy dyrektywy 2006/42/WE.</p> <p>Zastosowaliśmy następujące (zharmonizowane) normy zgodnie z artykułem 7(2):</p> <p style="text-align: center;">EN ISO 4254-1:2013 EN ISO 4254-7:2009</p> <p>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</p>	<p>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.</p> <p>Normas harmonizadas aplicadas, conforme referido no Artigo 7(2):</p> <p style="text-align: center;">EN ISO 4254-1:2013 EN ISO 4254-7:2009</p> <p>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</p>	<p>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.</p> <p>Au fost aplicate următoarele standarde conform articolului 7(2):</p> <p style="text-align: center;">EN ISO 4254-1:2013 EN ISO 4254-7:2009</p> <p>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</p>
<p>Mi, [1] Izjavljujem da proizvod Tip mašine: [2] Naziv i model: [3] Serijski broj(ovi): [4] Ispunjava sve relevantne odredbe direktive 2006/42/EC.</p> <p>Korišćeni su usklađeni standardi kao što je navedeno u članku 7(2):</p> <p style="text-align: center;">EN ISO 4254-1:2013 EN ISO 4254-7:2009</p> <p>Datum i mesto izdavanja deklaracije: [5] Identitet i potpis lica ovlašćenog za sastavljanje deklaracije: [6] Ime i adresa osobe ovlašćene za sastavljanje tehničke datoteke: Benedikt von Riedesel Generalni direktor, MacDon Europe GmbH Hagenauer Straße 59 65203 Wiesbaden (Nemačka) bvonriedesel@macdon.com</p>	<p>Mi, [1] Intygar att produkten: Maskintyp: [2] Namn och modell: [3] Serienummer: [4] uppfyller alla relevanta villkor i direktivet 2006/42/EG.</p> <p>Harmonierade standarder används, såsom anges i artikel 7(2):</p> <p style="text-align: center;">EN ISO 4254-1:2013 EN ISO 4254-7:2009</p> <p>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</p>	<p>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.</p> <p>Uporabljeni usklajeni standardi, kot je navedeno v členu 7(2):</p> <p style="text-align: center;">EN ISO 4254-1:2013 EN ISO 4254-7:2009</p> <p>Kraj in datum izjave: [5] Istovetnost in podpis osebe, opolnomočene za pripravo izjave: [6] Ime in naslov osebe, pooblaščenca za pripravo tehnične datoteke: Benedikt von Riedesel Generalni direktor, MacDon Europe GmbH Hagenauer Straße 59 65203 Wiesbaden (Nemčija) bvonriedesel@macdon.com</p>	<p>My, [1] týmto prehlasujeme, že tento výrobok: Typ zariadenia: [2] Názov a model: [3] Výrobné číslo: [4] splňa príslušné ustanovenia a základné požiadavky smernice č. 2006/42/ES.</p> <p>Použitá harmonizované normy, ktoré sa uvádzajú v článku č. 7(2):</p> <p style="text-align: center;">EN ISO 4254-1:2013 EN ISO 4254-7:2009</p> <p>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 Ģenerálny riaditeľ, MacDon Europe GmbH Hagenauer Straße 59 65203 Wiesbaden (Nemecko) bvonriedesel@macdon.com</p>



UK Declaration of Conformity

[1] **MacDon**

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

[4] Not Applicable

[5] May 4, 2023

[2] Windrower Lift Sling

[3] Part 306489

[6] _____

Adrienne Tankeu
Product Integrity

We, [1]

Declare, that the product:

Machine Type: [2]

Name & Model: [3]

Serial Number(s): [4]

fulfills all relevant provisions of the Supply of Machinery (Safety) Regulations 2008

Designated standards used are :

EN ISO 4254-1:2015

EN ISO 4254-7:2017

Place and date of declaration: [5]

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

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Chapter 1: Safety

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

1.1 Safety Alert Symbols

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

This symbol means:

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

Carefully read and follow the safety message accompanying this symbol.

Why is safety important to you?

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



Figure 1.1: Safety Symbol

1.2 Signal Words

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

Signal words are selected using the following guidelines:

DANGER

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

WARNING

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

CAUTION

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

IMPORTANT:

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

NOTE:

Provides additional information or advice.

1.3 General Safety

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

CAUTION

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

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

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

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.

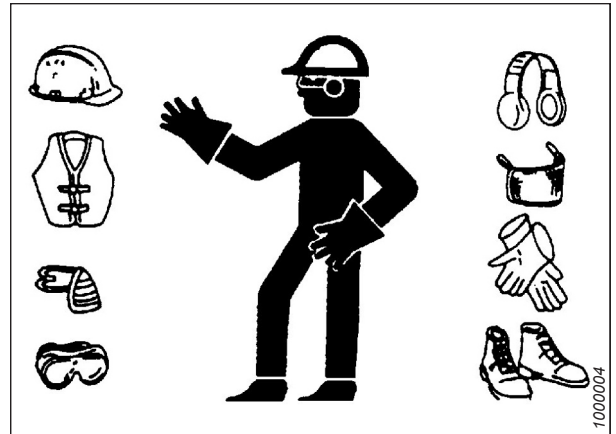


Figure 1.2: Safety Equipment

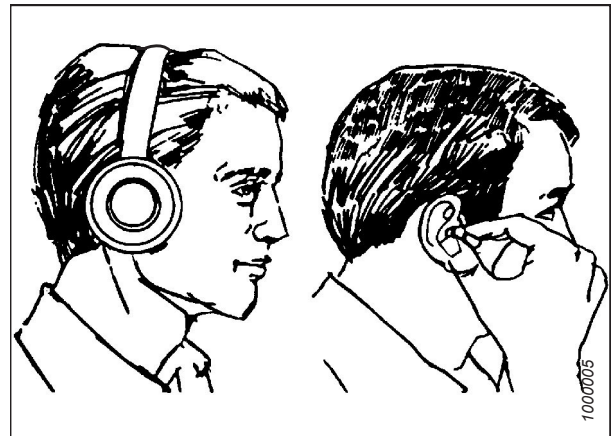


Figure 1.3: Safety Equipment

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

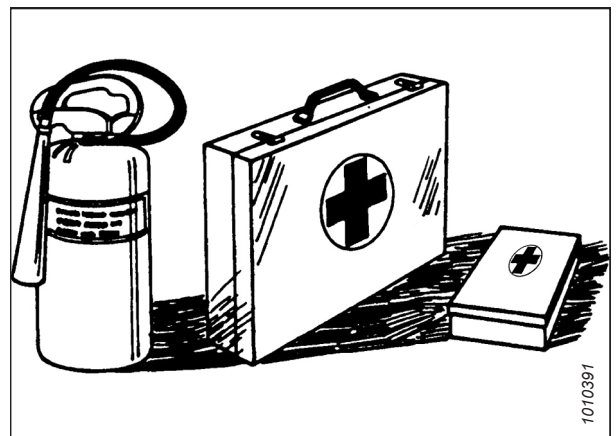


Figure 1.4: Safety Equipment

SAFETY

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



Figure 1.5: Safety around Equipment

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

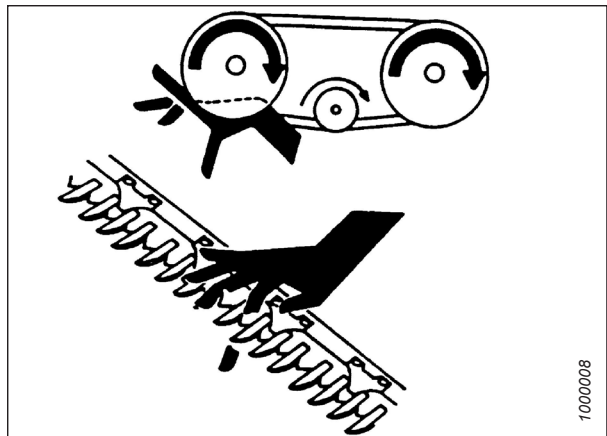


Figure 1.6: Safety around Equipment

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



Figure 1.7: Safety around Equipment

1.4 Hydraulic Safety

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

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

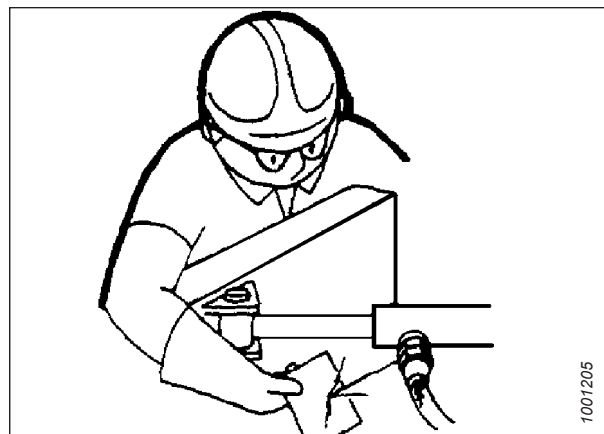


Figure 1.8: Testing for Hydraulic Leaks

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



Figure 1.9: Hydraulic Pressure Hazard

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

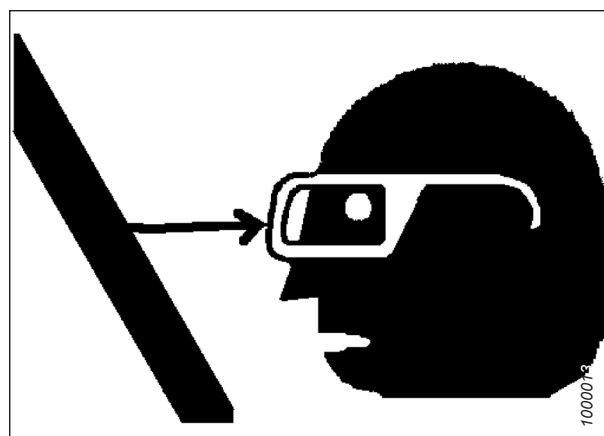


Figure 1.10: Safety around Equipment

1.5 Tire Safety

Understand the risks of handling tires before performing maintenance tasks.

WARNING

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

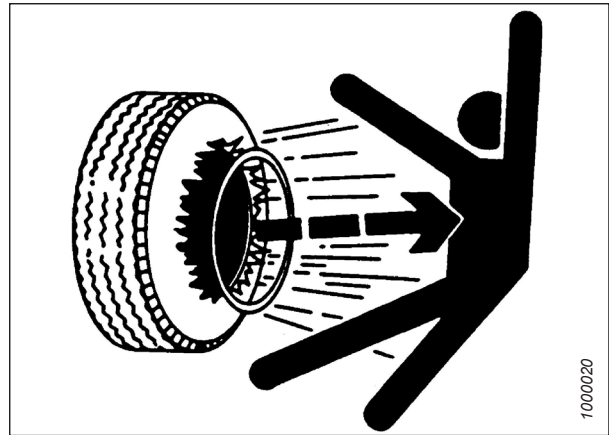


Figure 1.11: Overinflated Tire

WARNING

- Do NOT remove, install, or repair a tire on a rim unless you have the proper equipment and experience to perform the task. Take the tire and rim to a qualified tire repair shop if necessary.
- Ensure that the tire is correctly seated on the rim before inflating it. If the tire is not correctly positioned on the rim or is overinflated, the tire bead can loosen on one side causing air to escape at high speed and with great force. An air leak of this nature can thrust the tire in any direction, endangering anyone in the area.
- Do NOT stand over the tire when inflating it. Use a clip-on chuck and extension hose when inflating a tire.
- Do NOT exceed the maximum inflation pressure indicated on the tire label.
- Never use force on an inflated or partially-inflated tire.
- Ensure that all air is removed from the tire before removing the tire from the rim.
- Never weld a wheel rim.
- Replace tires that have defects. Replace wheel rims that are cracked, worn, or severely rusted.



Figure 1.12: Safely Inflating Tire

1.6 Battery Safety

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

WARNING

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



Figure 1.13: Safety around Batteries

WARNING

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

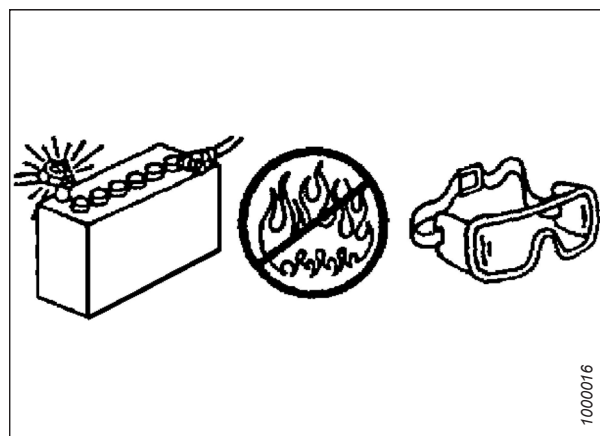


Figure 1.14: Safety around Batteries

WARNING

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

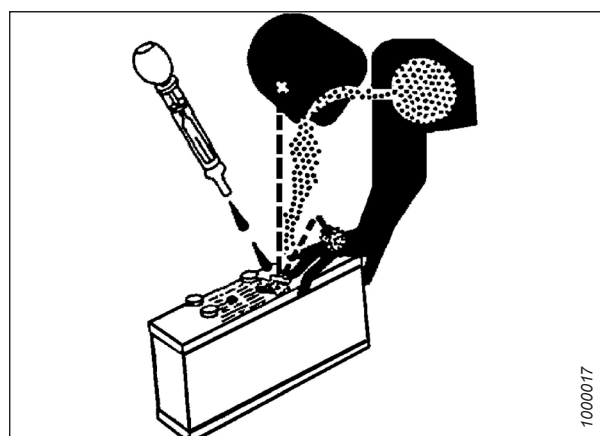


Figure 1.15: Safety around Batteries

1.7 Welding Precautions

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

IMPORTANT:

If the procedures below are not followed, the windrower's electronic components may be damaged. 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.

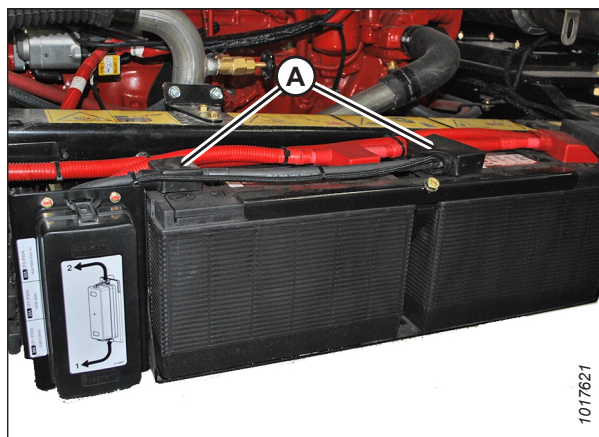


Figure 1.16: Negative Terminals

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

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

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

IMPORTANT:

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

IMPORTANT:

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

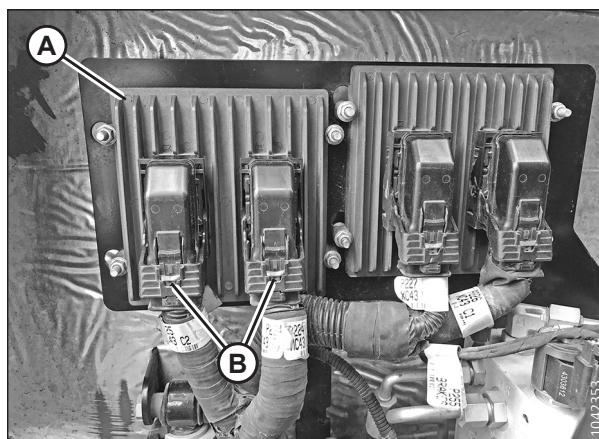


Figure 1.17: Master Controller

SAFETY

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

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

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

IMPORTANT:

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

IMPORTANT:

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

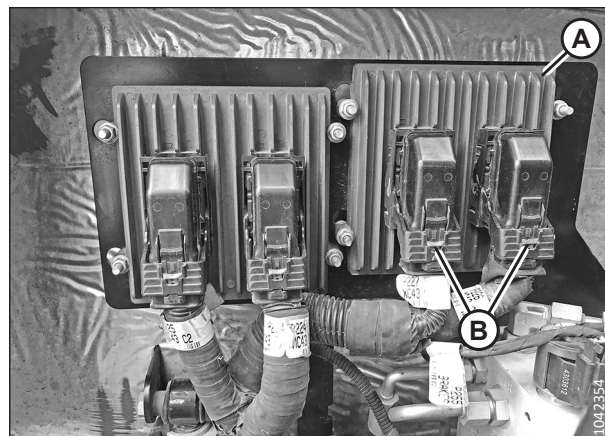


Figure 1.18: Firewall Extension Module

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

Location: On the engine

To disconnect the connectors, pull the rubber boot off 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.

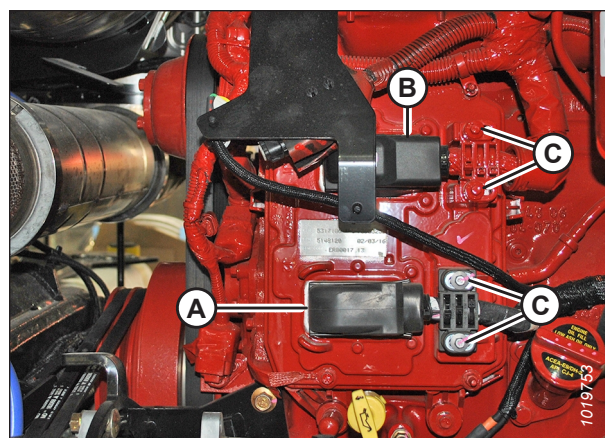


Figure 1.19: Engine Control Module

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

Location: Under the cab

NOTE:

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

IMPORTANT:

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

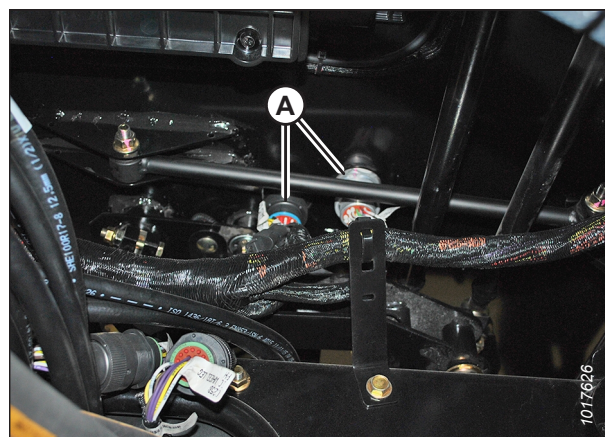


Figure 1.20: Cab Connectors

SAFETY

- Roof connectors (A)

Four connectors: C10, C12, C13, and C14

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

NOTE:

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

IMPORTANT:

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

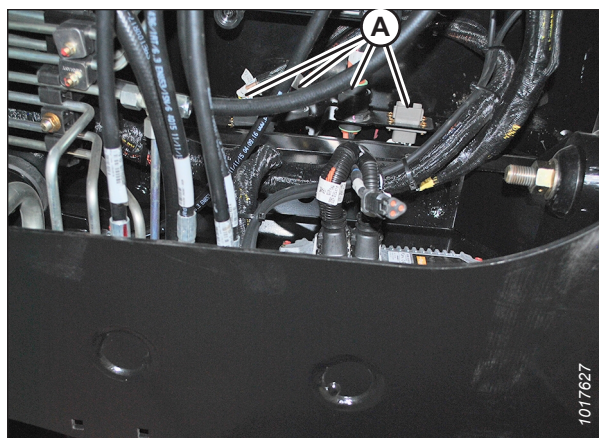


Figure 1.21: Roof Connectors

- Chassis relay module (A)

Three connectors: P240, P241, and P242

Location: Outside the left frame rail near the batteries

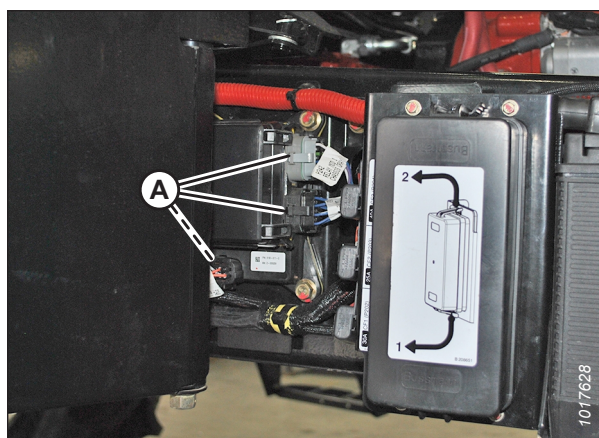


Figure 1.22: Chassis Relay Module

- Engine harness (A)

Two round connectors: C30 and C31

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

NOTE:

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

IMPORTANT:

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

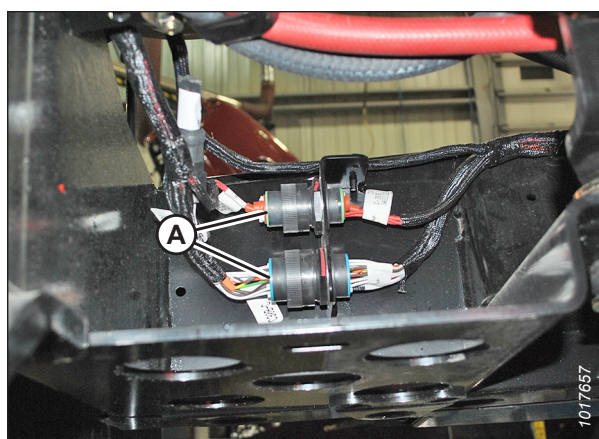


Figure 1.23: Engine Harness

SAFETY

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

Location: Rear of the A/C box

NOTE:

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

IMPORTANT:

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

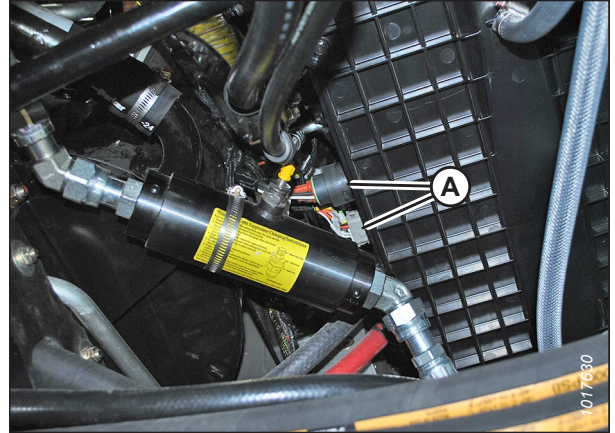


Figure 1.24: A/C Box Connectors

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

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

NOTE:

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

IMPORTANT:

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

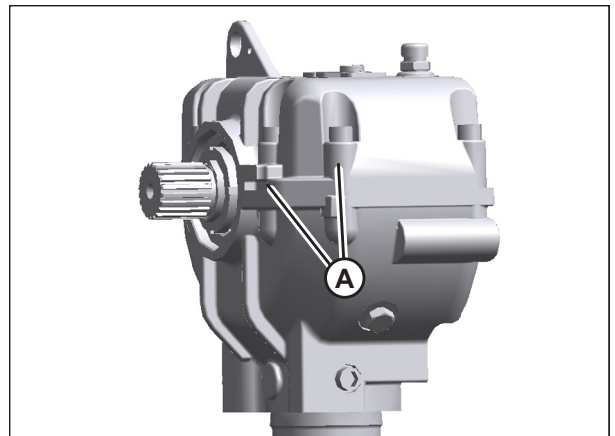


Figure 1.25: Wheel Motor Connectors

To align round 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.

1.8 Engine Safety

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

WARNING

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

CAUTION

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

NOTE:

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

1.8.1 High-Pressure Rail

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

WARNING

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

1.8.2 Engine Electronics

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



WARNING

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



WARNING

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

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

The engine monitoring system can initiate the following actions:

- Warning
- Derate
- Shut down

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

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

1.9 Safety Signs

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

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

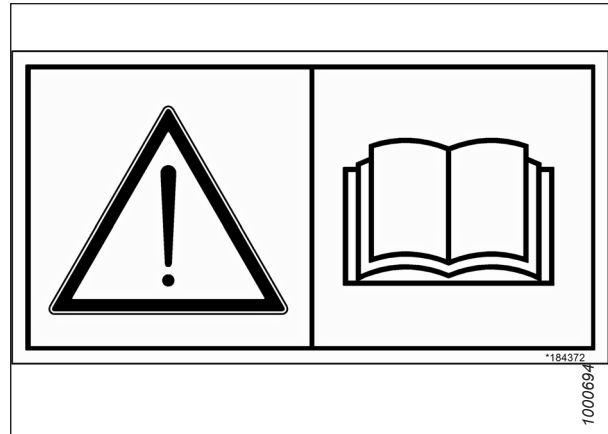


Figure 1.26: Operator's Manual Decal

Chapter 2: Unloading Windrower

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

2.1 Unloading Container

Unload the windrower properly to avoid damaging the windrower.

DANGER

Do NOT allow bystanders 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 the 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 Windrower 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 Windrower to Assembly Area – Crane Method, page 16.*
- To move the windrower using a forklift, refer to *2.2.2 Moving Windrower to Assembly Area – Forklift Method, page 18.*

2.2.1 Moving Windrower to Assembly Area – Crane Method

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

DANGER

Do NOT allow bystanders in the unloading area.

DANGER

The equipment used for loading or unloading a machine 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.)

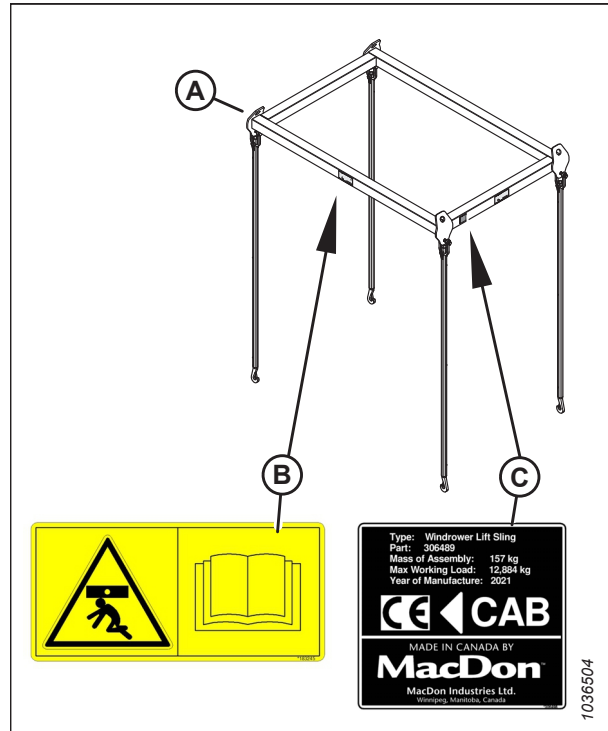


Figure 2.2: Lift Sling

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

UNLOADING WINDROWER

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.).

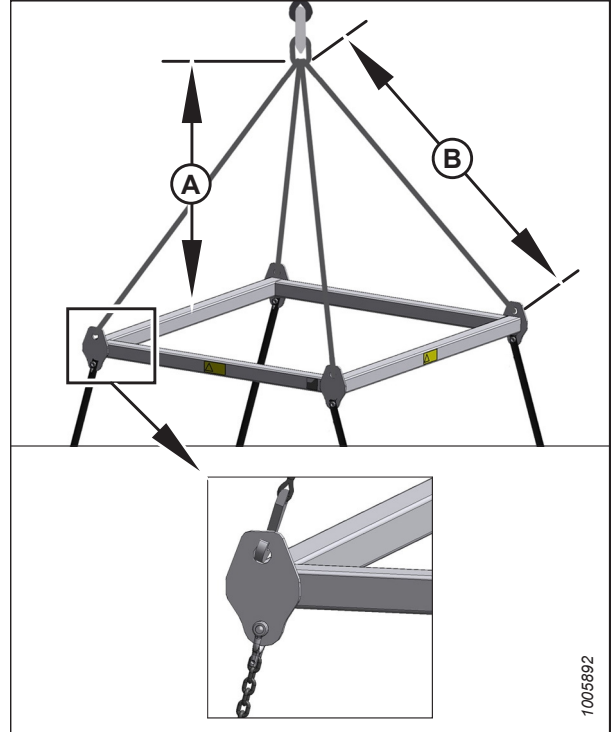


Figure 2.3: Lift Sling

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

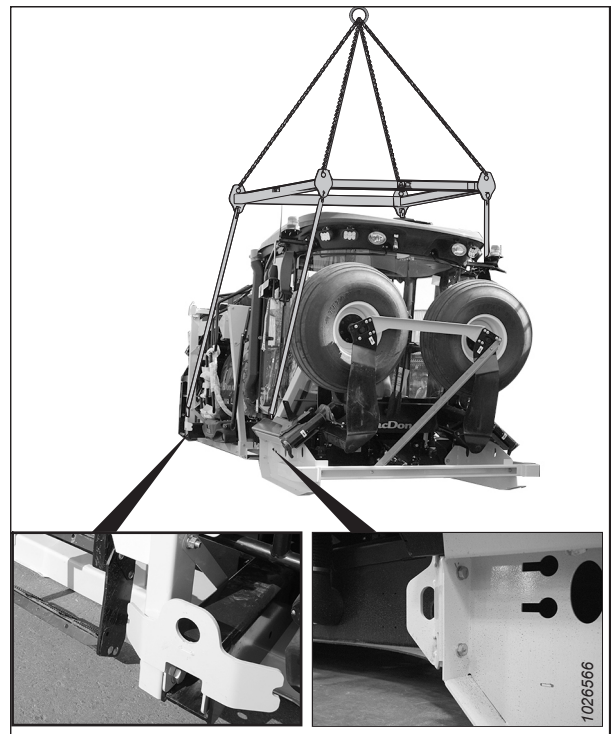


Figure 2.4: Shipping Frame Lifting Points

UNLOADING WINDROWER

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 Windrower to Assembly Area – Forklift Method

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

DANGER

Do NOT allow bystanders in the unloading area.

DANGER

The equipment used for loading or unloading a machine 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 19 and consult your forklift distributor to determine a suitable forklift.

UNLOADING WINDROWER

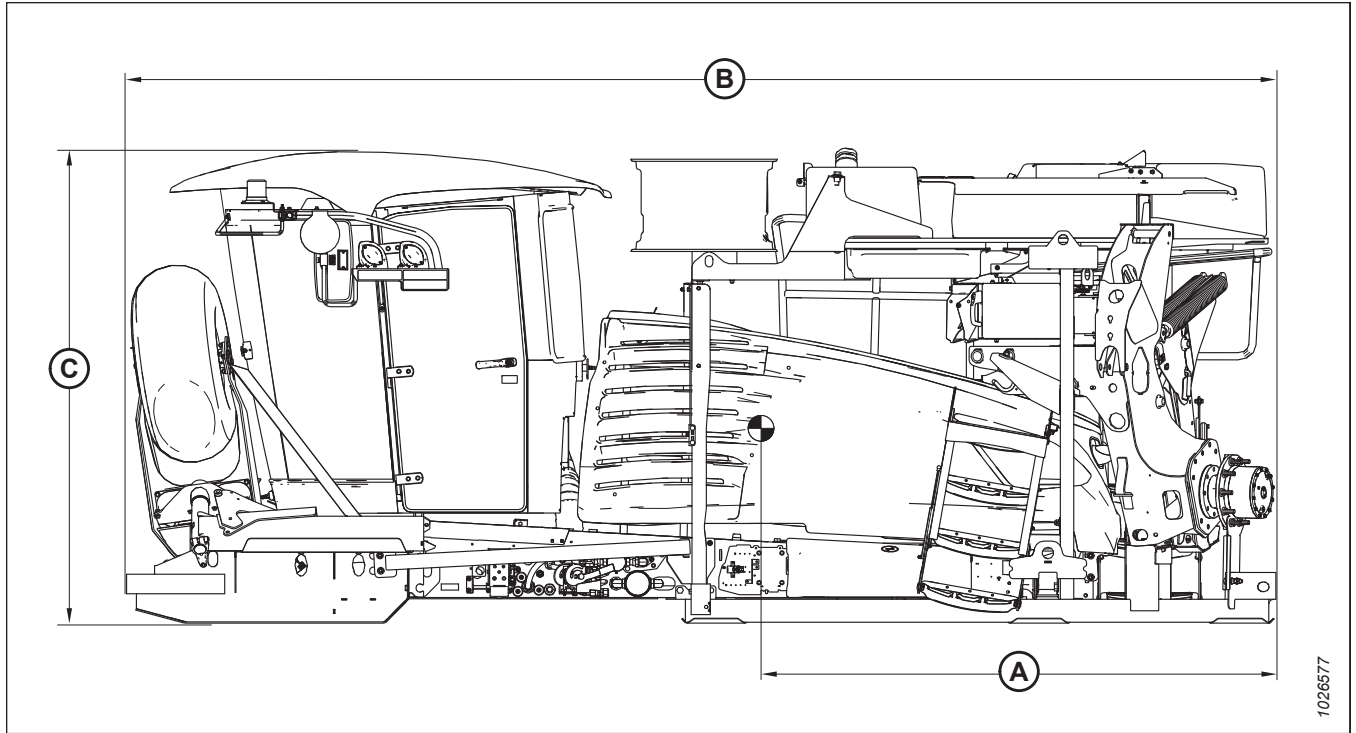


Figure 2.6: Shipping Assembly

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.)

UNLOADING WINDROWER

DANGER

Ensure that the forks are secure before moving the load. Unsupported loads may cause machine damage or bodily harm.

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

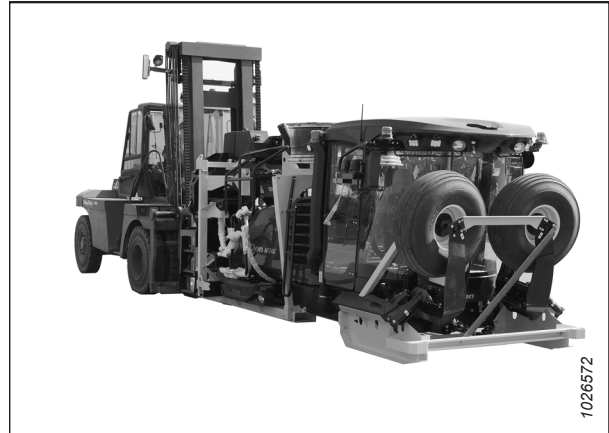


Figure 2.7: Forklift Method Lifting Points

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

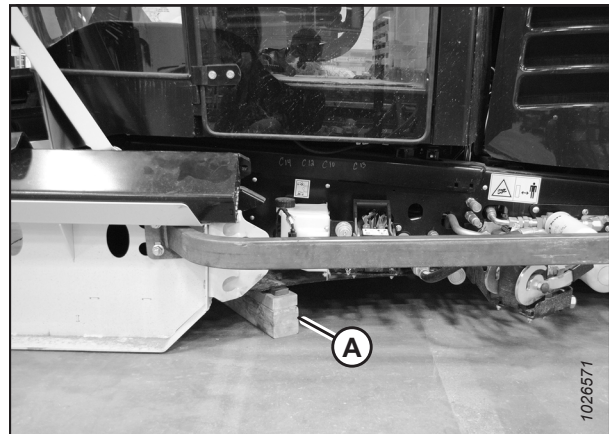


Figure 2.8: Windrower Shipping Assembly on Blocks

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.

⚠ DANGER

Ensure that all bystanders have cleared the area.

⚠ DANGER

The equipment used for loading or unloading a machine 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:

Use proper lifting equipment capable of lifting 3221 kg (7100 lb.).

1. Locate caster wheel shipping assembly (A).

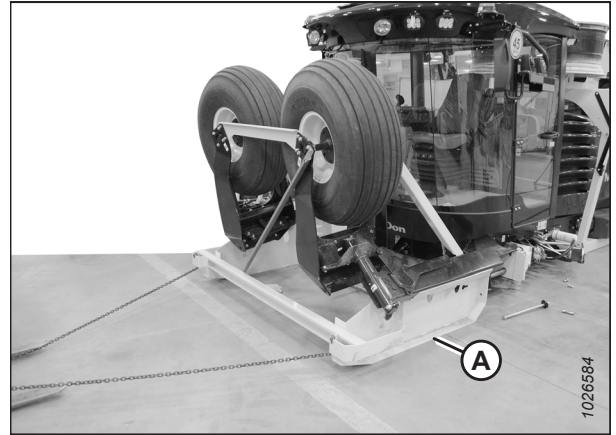


Figure 2.9: Caster Wheel Assembly

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

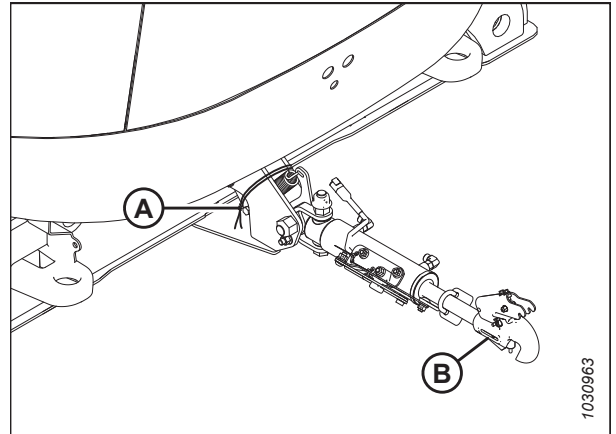


Figure 2.10: Center-Link

UNLOADING WINDROWER

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

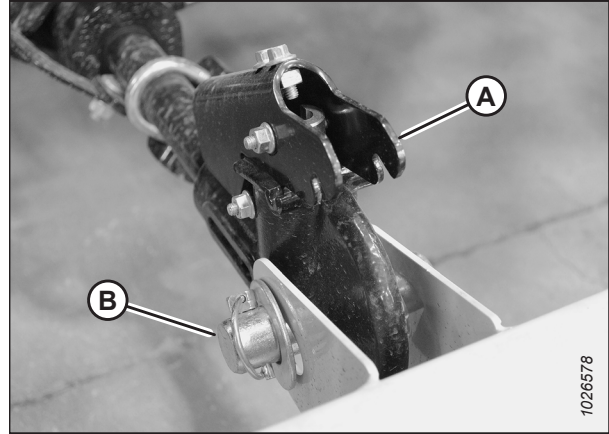


Figure 2.11: Center-Link

4. Remove and discard the following parts:
 - Two bolts and nuts (A)
 - Three bolts and nuts (B)
 - Coupler guard (C)

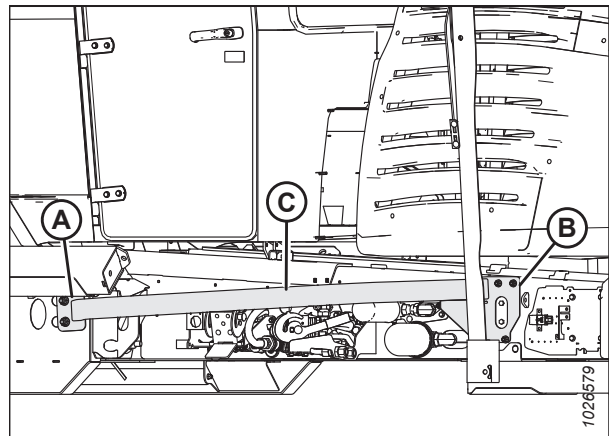


Figure 2.12: Coupler Guard

UNLOADING WINDROWER

5. Remove and retain the following parts from each side of the caster wheel shipping assembly:

- One leg pin bolt (A) (for a total of two)
- Two caps (B) (for a total of four)
- One nut (C) (for a total of two)

NOTE:

These parts are required to install the drive wheel legs. If planning to lift the windrower onto the assembly stands using a crane in the procedure [3.1 Lifting Windrower onto Assembly Stand \(B9064\), page 39](#), you will reinstall these parts in [Step 8, page 24](#).

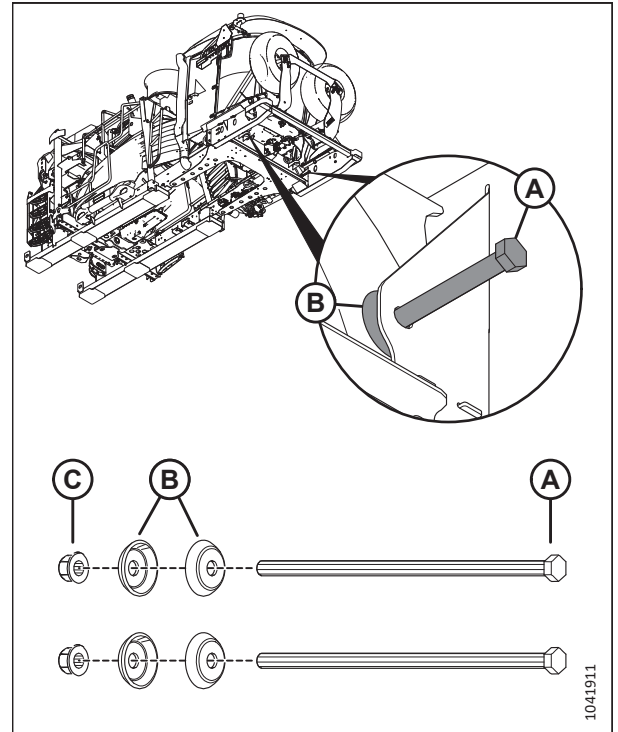


Figure 2.13: Leg Pin Bolts and Caps

6. Remove and discard two bolts (A), washers, and nuts securing the front skids to lifting plates (B) on each side.

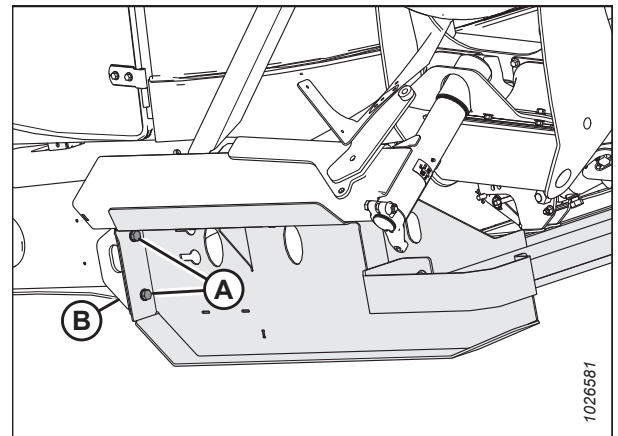


Figure 2.14: Front Skid Bolts

UNLOADING WINDROWER

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.

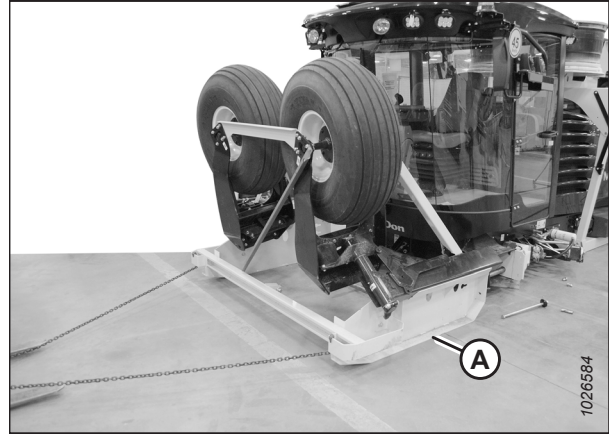


Figure 2.15: Caster Wheel Assembly

8. **If planning to lift the windrower onto the assembly stands using a crane in the procedure 3.1 Lifting Windrower onto Assembly Stand (B9064), page 39:**
 - a. Retrieve the wheel leg pin bolts, caps, and nuts that were removed in Step 5, page 23.
 - b. Reinstall wheel leg pin bolts (A), caps (B), and nuts (C) to secure lifting plates (D) on both sides.
 - c. Repeat this step on the opposite side of the windrower.

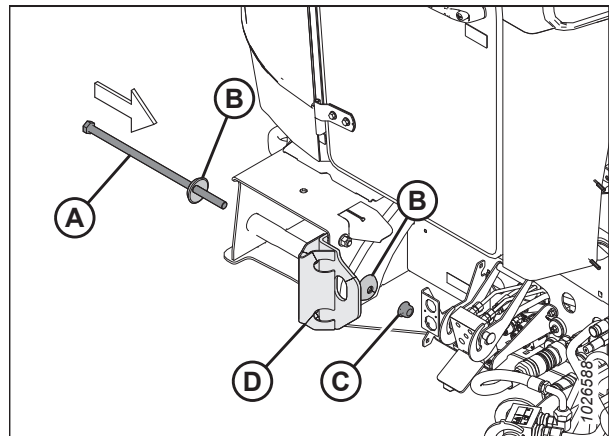


Figure 2.16: Reinstalling Leg Pin Bolt – Crane Lift Only

9. **If planning to lift the windrower onto the assembly stands using a forklift in the procedure 3.1 Lifting Windrower onto Assembly Stand (B9064), page 39:**
 - a. Remove bolt and nut (A) from lifting plate (C). Discard the bolt, nut, and lifting plate.
 - b. Slide pin (B) out and retain it for reuse.
 - c. Repeat this step on the opposite side of the windrower.

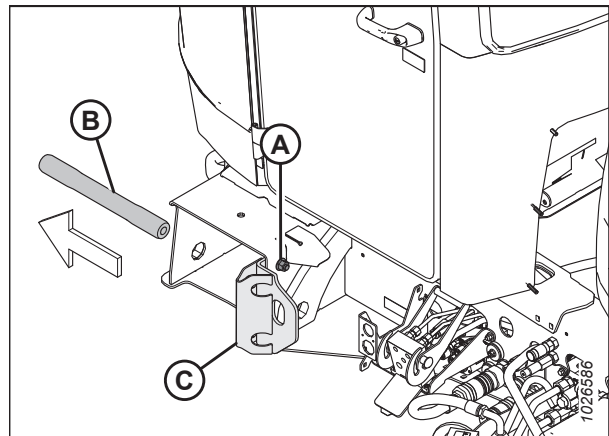


Figure 2.17: Removing Lifting Plates

2.4 Removing Handrails, Stairs, and Right Platform (Fuel Tank) from Shipping Assembly

Follow these instructions to remove all handrails, stairs, and the right platform.

DANGER

Ensure that all bystanders have cleared the area.

DANGER

The equipment used for loading or unloading a machine 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:

Use proper lifting equipment capable of lifting 3221 kg (7100 lb.).

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.

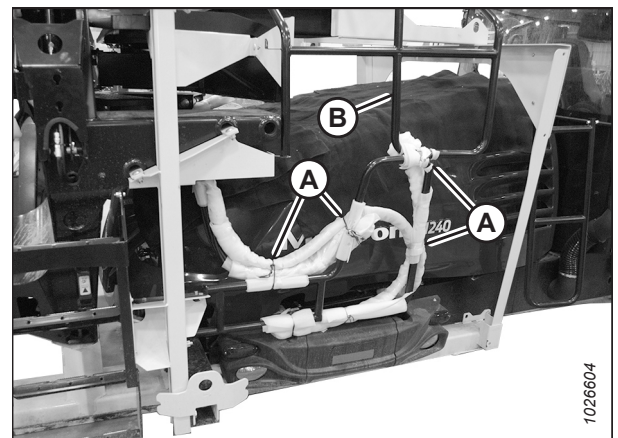


Figure 2.18: Handrails on Right Side

UNLOADING WINDROWER

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

NOTE:

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

4. While supporting handrail (E), remove and retain two bolts and two nuts (F). Set the handrail aside. Temporarily reinstall the two bolts and nuts into the handrail to keep the correct hardware with the handrail.

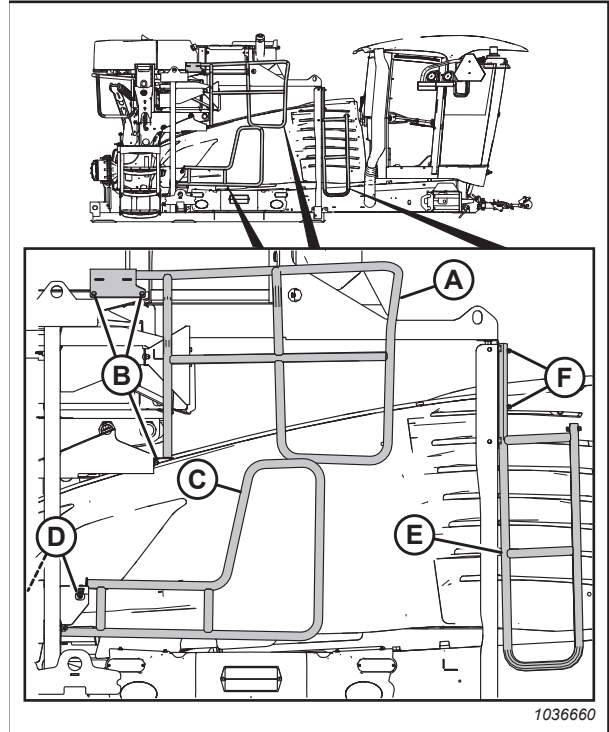


Figure 2.19: Handrails on Right Side

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

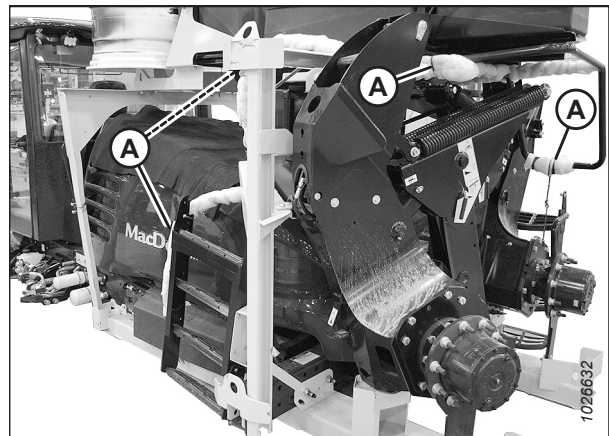


Figure 2.20: Shipping Wire Locations

UNLOADING WINDROWER

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

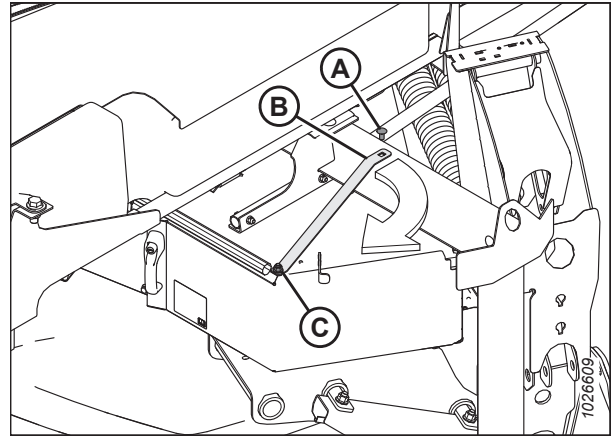


Figure 2.21: Shipping Strap

8. 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 the windrower, ensure that 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.
9. Remove and discard four bolts and four nuts (A) securing the shipping assembly to the brace.
 10. Remove and discard two bolts and two nuts (B) securing the shipping assembly to the vertical side braces.
 11. Before lifting, have a second person guide the assembly to avoid contact with the windrower.

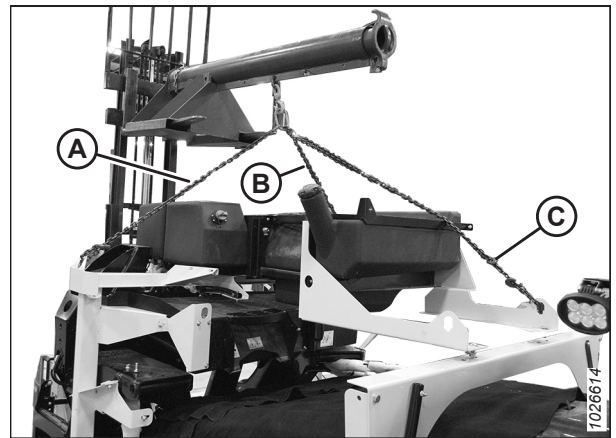


Figure 2.22: Lifting Points

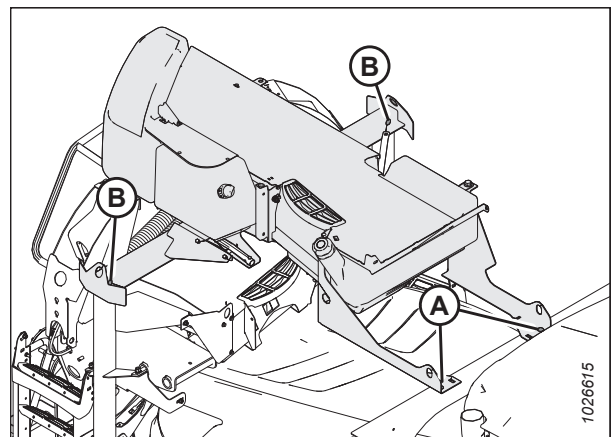


Figure 2.23: Fuel Tank Shipping Assembly

UNLOADING WINDROWER

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

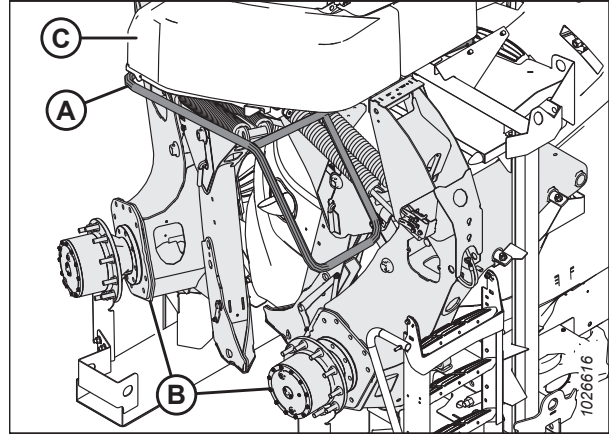


Figure 2.24: Handrail and Wheel Legs

13. With the fuel tank shipping assembly suspended off the ground, support handrail (A), remove and retain three bolts and nuts (B), and then set the handrail aside. Temporarily reinstall the three bolts and nuts into the handrail to keep the correct hardware with the handrail.
14. Lower the fuel tank shipping assembly down onto the 152 mm (6 in.) blocks to prevent damage.

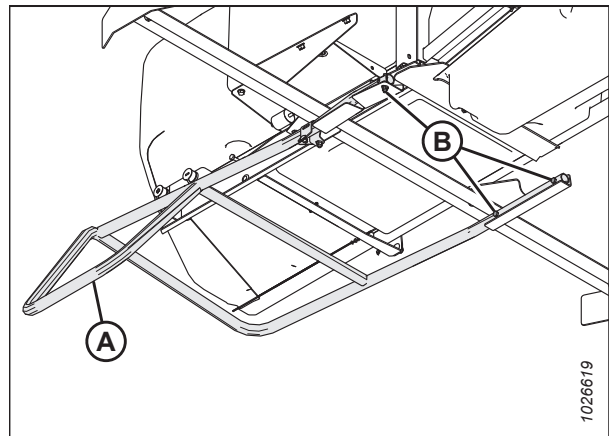


Figure 2.25: Handrail under Fuel Tank Shipping Assembly

15. Remove and discard four bolts and nuts (A). Set stairs (B) aside. Repeat this step on the opposite side.

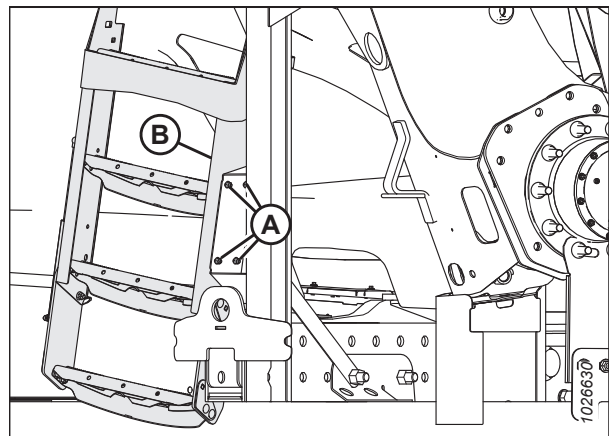


Figure 2.26: Right Platform Stairs

UNLOADING WINDROWER

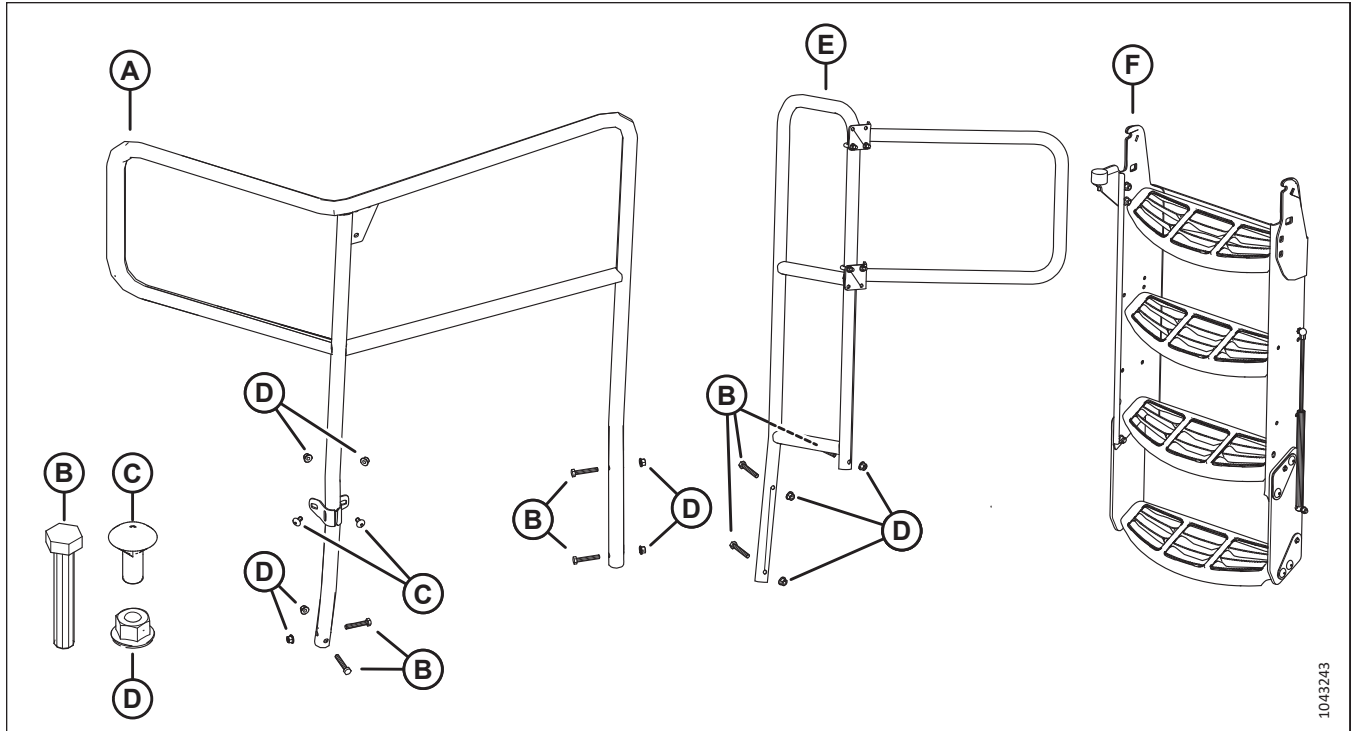


Figure 2.27: Right Platform Handrails and Stairs

16. Confirm the following parts have been set aside for installation onto the right platform:

- (A) Rear handrail with the following hardware left installed in it:
 - (B) Four M10 x 60 hex bolts
 - (C) Two M10 x 25 carriage head bolts
 - (D) Six M10 hex flange nuts
- (E) Front handrail with three bolts and nuts left installed in it
 - (B) Three M10 x 60 hex bolts
 - (D) Three M10 hex flange nuts
- (F) Right stairs

UNLOADING WINDROWER

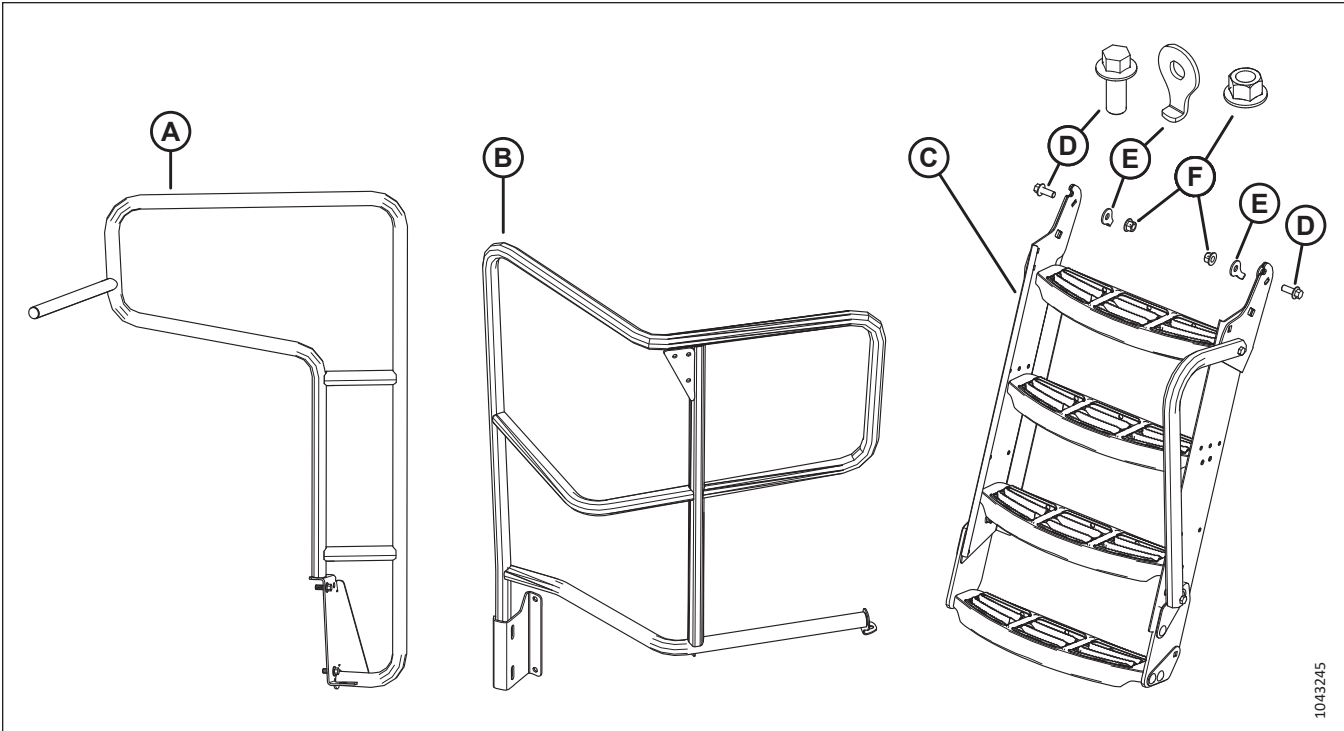


Figure 2.28: Left Platform Handrails and Stairs

17. Confirm the following parts have been set aside for installation onto the left platform:

- (A) Front handrail
- (B) Rear handrail
- (C) Stairs with mounting hardware shipped installed in it:
 - (D) Two M12 x 30 hex flange bolts
 - (E) Two clip-locks
 - (F) Two M12 hex flange nuts

2.5 Removing Left Platform

Follow these instructions to remove the left platform and the door stop.

DANGER

Ensure that all bystanders have cleared the area.

DANGER

The equipment used for loading or unloading a machine 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:

Use proper lifting equipment capable of lifting 3221 kg (7100 lb.).

1. At the left shipping support, discard wire (A).
2. Remove and retain the following parts:
 - Nut, bolt, and bushing (B)
 - Platform bar (C)

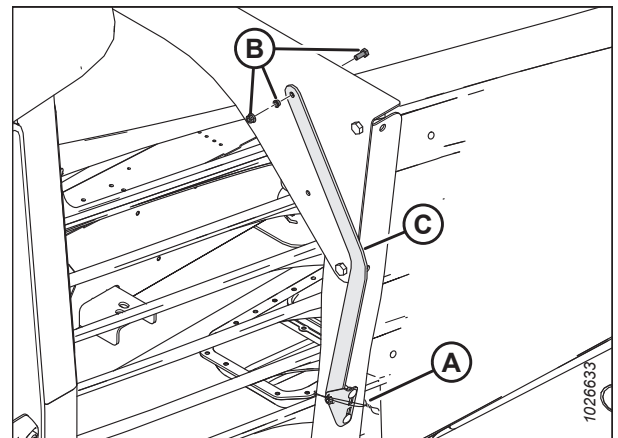


Figure 2.29: Platform Bar

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

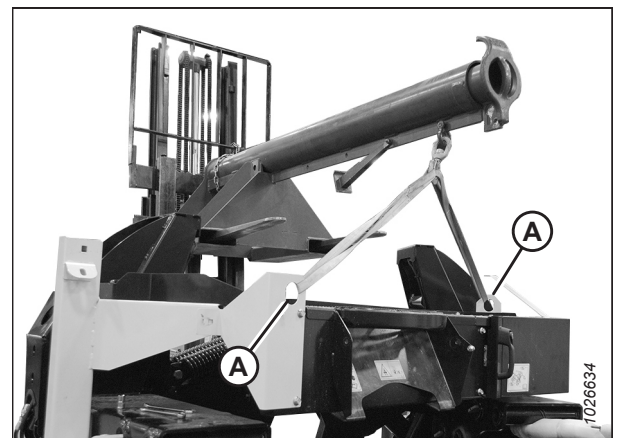


Figure 2.30: Supporting Left Platform

UNLOADING WINDROWER

4. Remove nut (A) from long bolt (B) on the bottom left side of the platform.
 - Retain M12 nut (A) for reinstallation in Step 9, page 33.
 - To prevent the tool box from falling out, leave long bolt (B) in place.

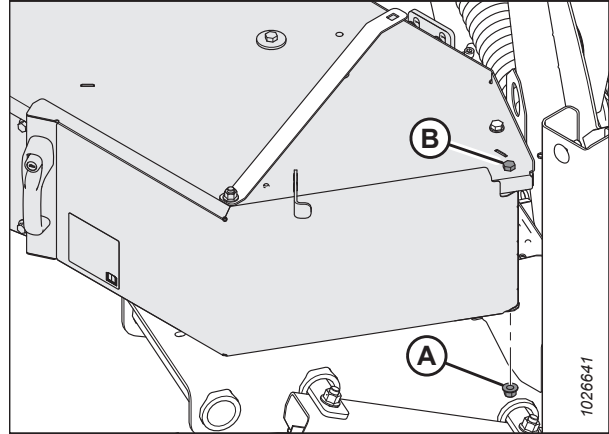


Figure 2.31: Left Platform on Left Side

5. From below the platform on the right side of windrower, remove and retain the following parts:
 - Nut and bolt (A)
 - Door stop (B)

NOTE:

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

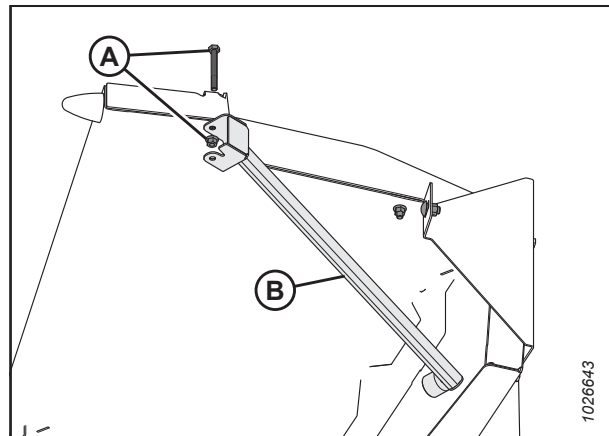


Figure 2.32: Left Platform – Right Underside

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

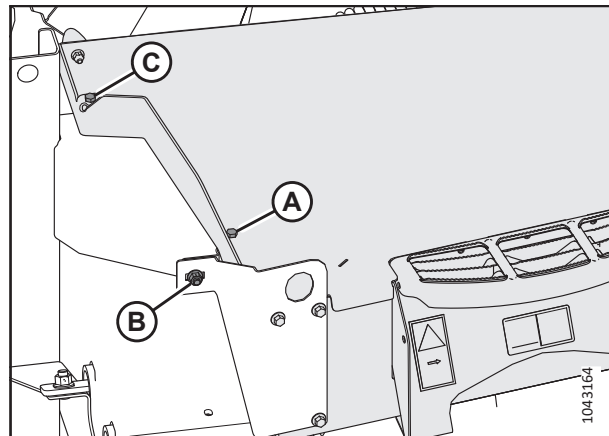


Figure 2.33: Left Platform – Right Side

UNLOADING WINDROWER

9. Reinstall M12 nut (A) (retained in Step 4, page 32) on long toolbox bolt (B).

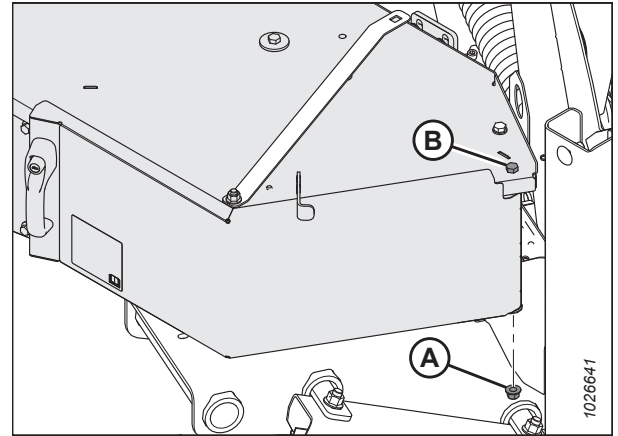


Figure 2.34: Left Platform

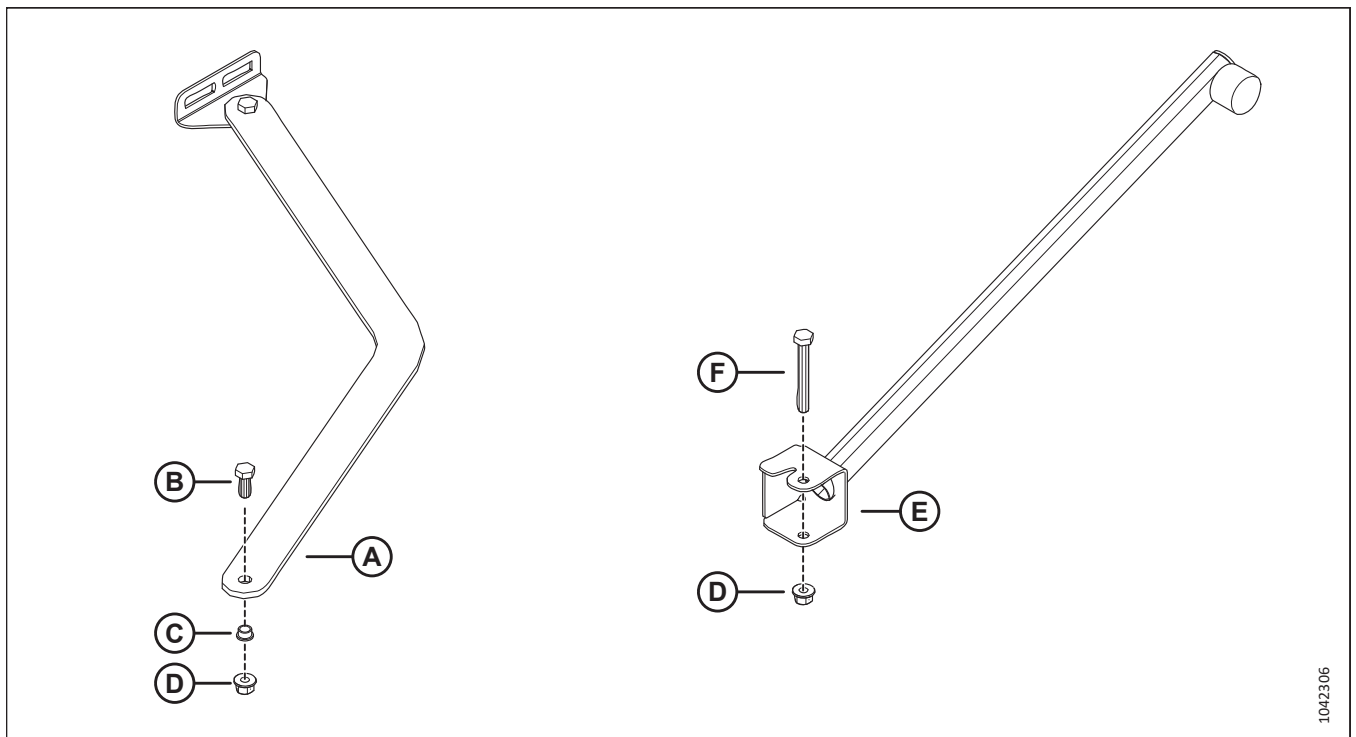


Figure 2.35: Platform Bar and Door Stop

10. Confirm the following parts have been set aside for installation onto the left platform:

- (A) Platform bar with mounting hardware:
 - (B) One M10 x 25 hex bolt
 - (C) Bushing
 - (D) One M10 hex flange nut
- (E) Door stop with mounting hardware:
 - (F) One M10 x 80 hex bolt
 - (D) One M10 hex flange nut

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. Falling wheel leg assemblies can result in serious personal injury.

CAUTION

Two people are required for this task: One person operates the lifting device while the other person helps to control the movement of the wheel leg assembly.

DANGER

Ensure that all bystanders have cleared the area.

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

NOTE:

When configured for container shipments, the 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 prevent them from damaging the windrower hood.

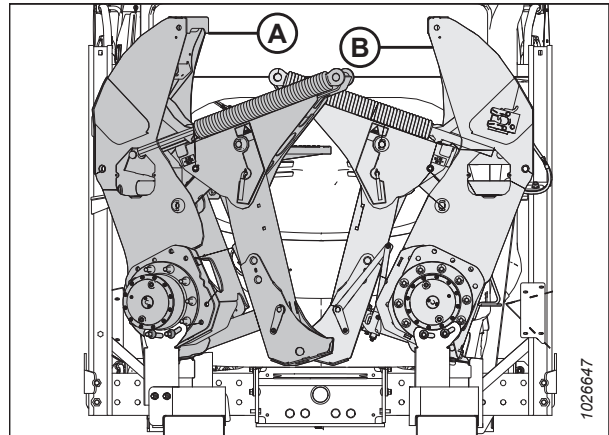


Figure 2.36: Leg Shipping Configuration

3. Feed lifting strap (A) through the top of the leg assembly.
4. Position the strap so that the leg will be balanced. Position the strap so that it will **NOT** damage float sensor (B).
5. Adjust the lifting device to support the leg.
6. To prevent damage to the leg assembly, lay down cardboard or rubber on the ground where the leg assembly will be set down.

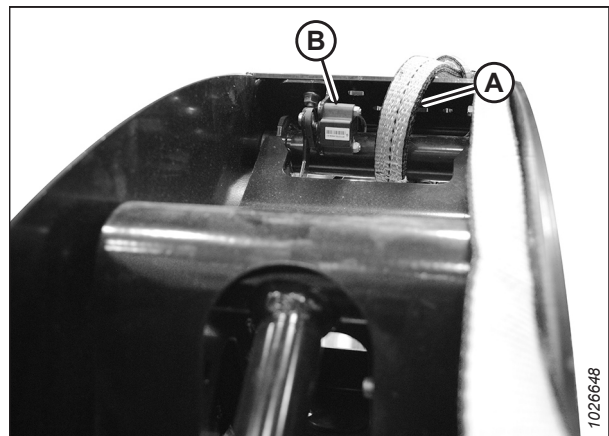


Figure 2.37: Attaching Lifting Strap

UNLOADING WINDROWER

7. With the leg supported and a second person in place, remove and discard two bolts and nuts (A) from the lower fork channel brace.
8. Remove and discard two nuts (B) and 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.

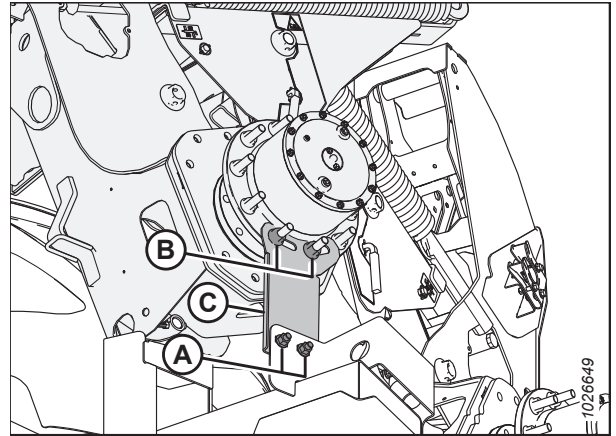


Figure 2.38: Wheel Leg on Left Side

9. Remove and discard two bolts and nuts (A).
10. Pull the shipping bars out of the wheel leg members.

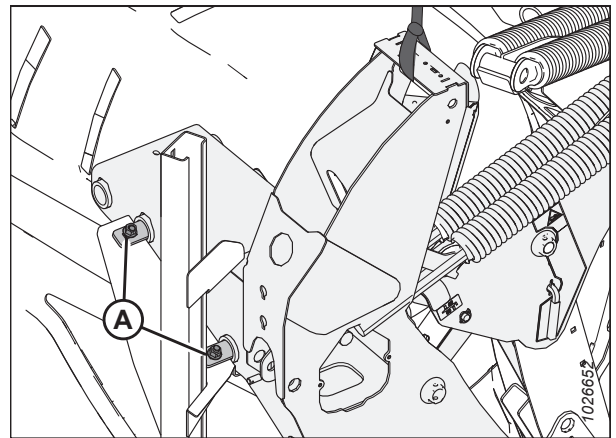


Figure 2.39: Wheel Leg on Left Side

11. Lift leg assembly (A) away from the windrower. Have a second person help control the movement of the leg assembly while it is being lifted away from the windrower.
12. Set the leg assembly onto level ground that is covered with cardboard or rubber.

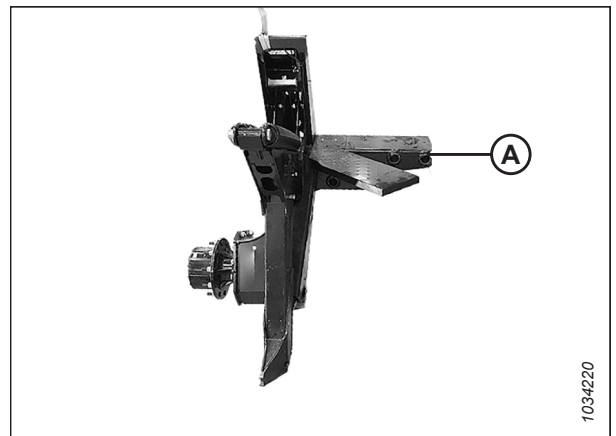


Figure 2.40: Right Leg Assembly on the Ground

UNLOADING WINDROWER

13. **For the right leg:** Retrieve internal hose guard brackets (A) from the cab, and install them as shown using M12 bolts and nuts (B).

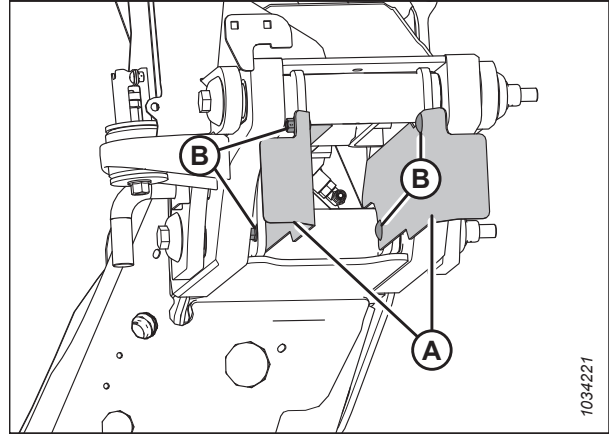


Figure 2.41: Right Drive Leg Hose Guard

14. Lay the leg down as shown with the leg member on block (A).
15. Repeat this procedure for the left leg assembly. Do **NOT** repeat Step 13, page 36.

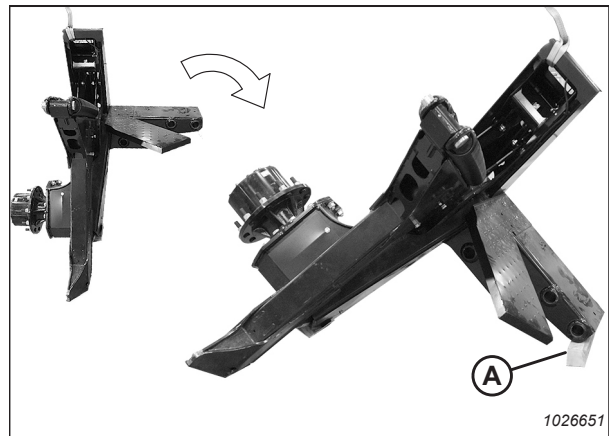


Figure 2.42: Lowering Right Leg Assembly

2.7 Removing Upper Shipping Supports

Remove the specified shipping supports in preparation for windrower assembly.

DANGER

Ensure that all bystanders have cleared the area.

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

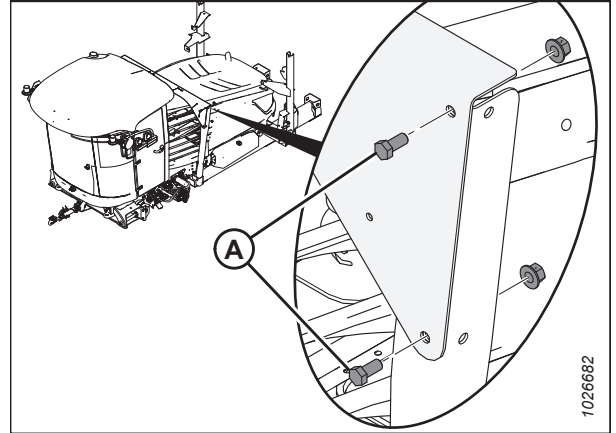


Figure 2.43: Forward Cross Member

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

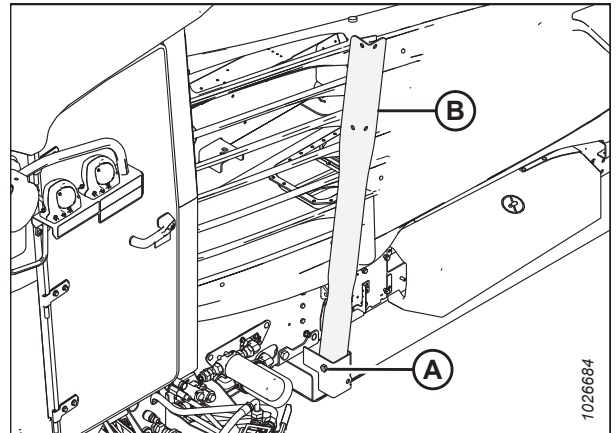
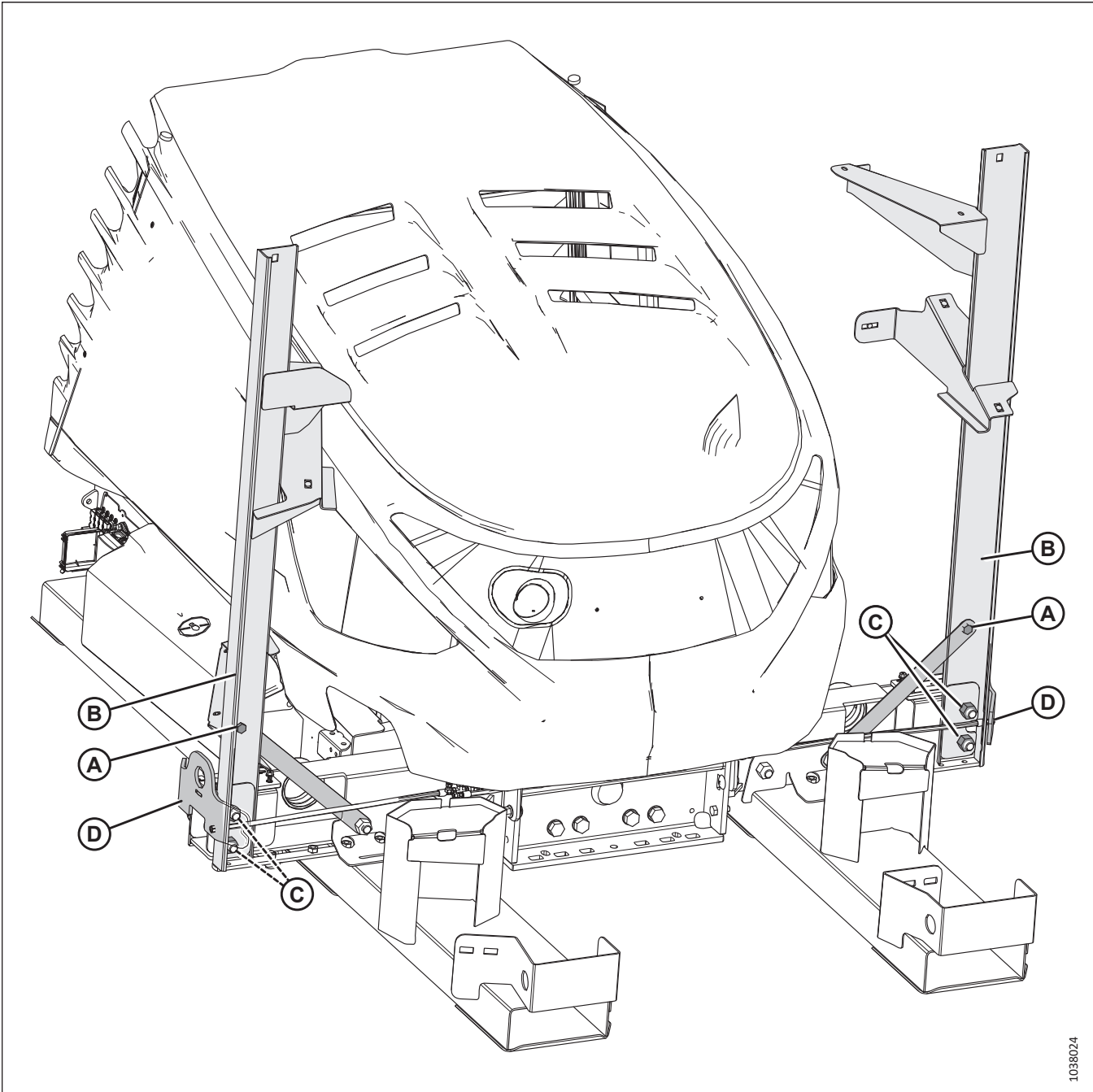


Figure 2.44: Forward Vertical Supports

UNLOADING WINDROWER



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Figure 2.45: Rear Vertical Channels and Lift Points

4. Remove one nut and bolt (A) from each vertical channel (B). Discard the nuts and bolts.
5. Remove two nuts and bolts (C) from vertical channel (B). Remove and discard the channel. Repeat this step for the other vertical channel. Proceed as follows:
 - **If planning to lift the windrower onto the assembly stands using a crane in the procedure [3.1 Lifting Windrower onto Assembly Stand \(B9064\), page 39](#):** Reinstall lifting plates (D) using two bolts and nuts (C) per plate. Torque nuts (C) to 570 Nm (420 lbf-ft).
 - **If planning to lift the windrower onto the assembly stands using a forklift in the procedure [3.1 Lifting Windrower onto Assembly Stand \(B9064\), page 39](#):** Discard nuts and bolts (C). Discard lifting plates (D).

Chapter 3: Assembling Windrower

Once the windrower has been unloaded, assembly can begin.

3.1 Lifting Windrower onto Assembly Stand (B9064)

The windrower must be assembled on a MacDon Export Assembly Stand (B9064).



DANGER

Ensure that all bystanders have cleared the area.

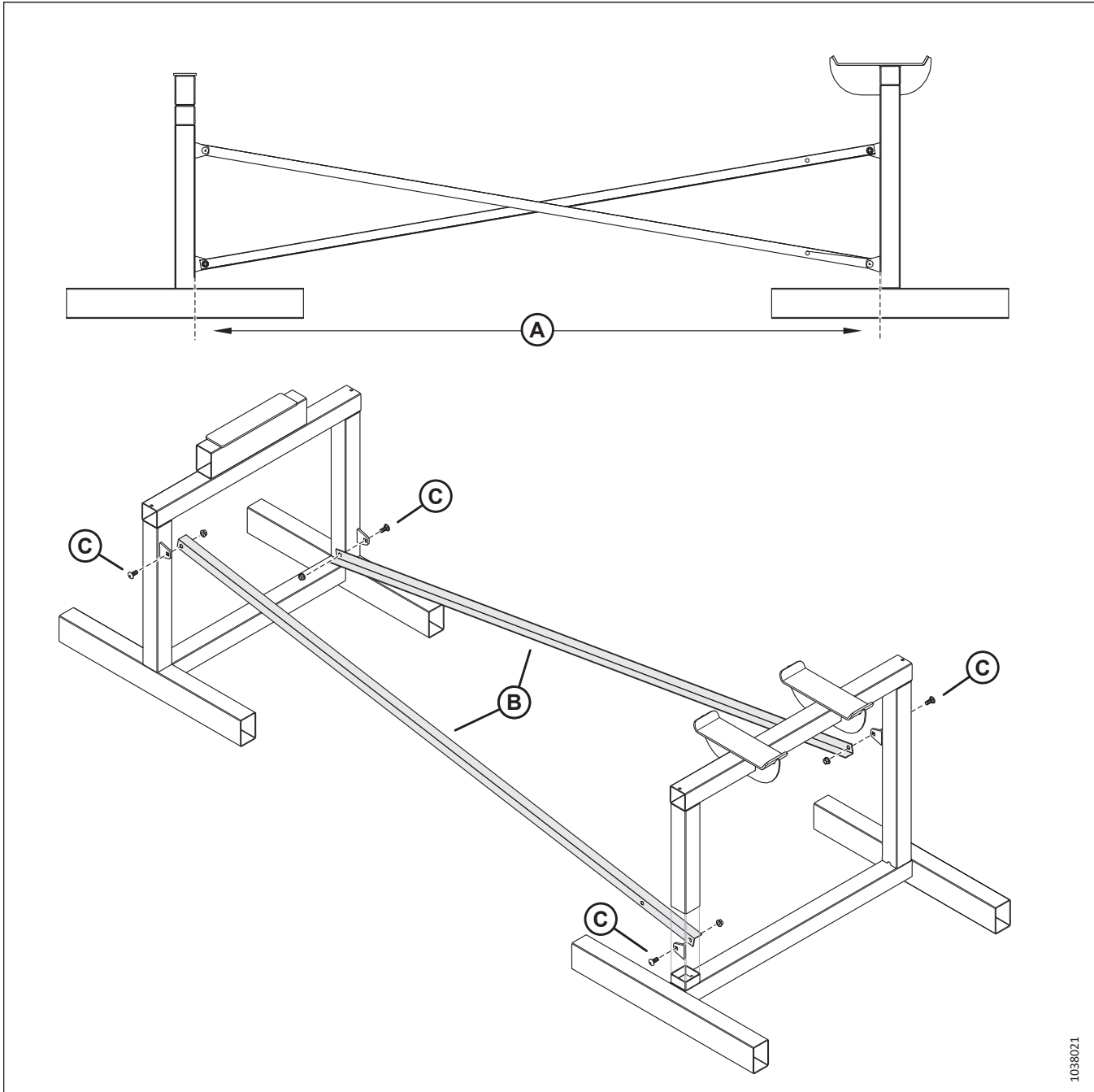


DANGER

The equipment used for loading or unloading a machine 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 that the lifting device meets or exceeds the specified requirements. For the lifting requirements, refer to the relevant topic:
 - If lifting with a forklift, refer to [2.2.2 Moving Windrower to Assembly Area – Forklift Method, page 18](#)
 - If lifting with a crane, refer to [2.2.1 Moving Windrower to Assembly Area – Crane Method, page 16](#)

ASSEMBLING WINDROWER



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Figure 3.1: Assembly Stand Setup

2. Set the assembly stands on level ground.
3. Space the stands out so that dimension (A) is 3470 mm (136 5/8 in.).
4. Attach diagonal angles (B) to the stands using a 5/8 x 1.5 in. bolt and nut at locations (C).
5. Torque the nuts to 153 Nm (113 lbf·ft).

ASSEMBLING WINDROWER

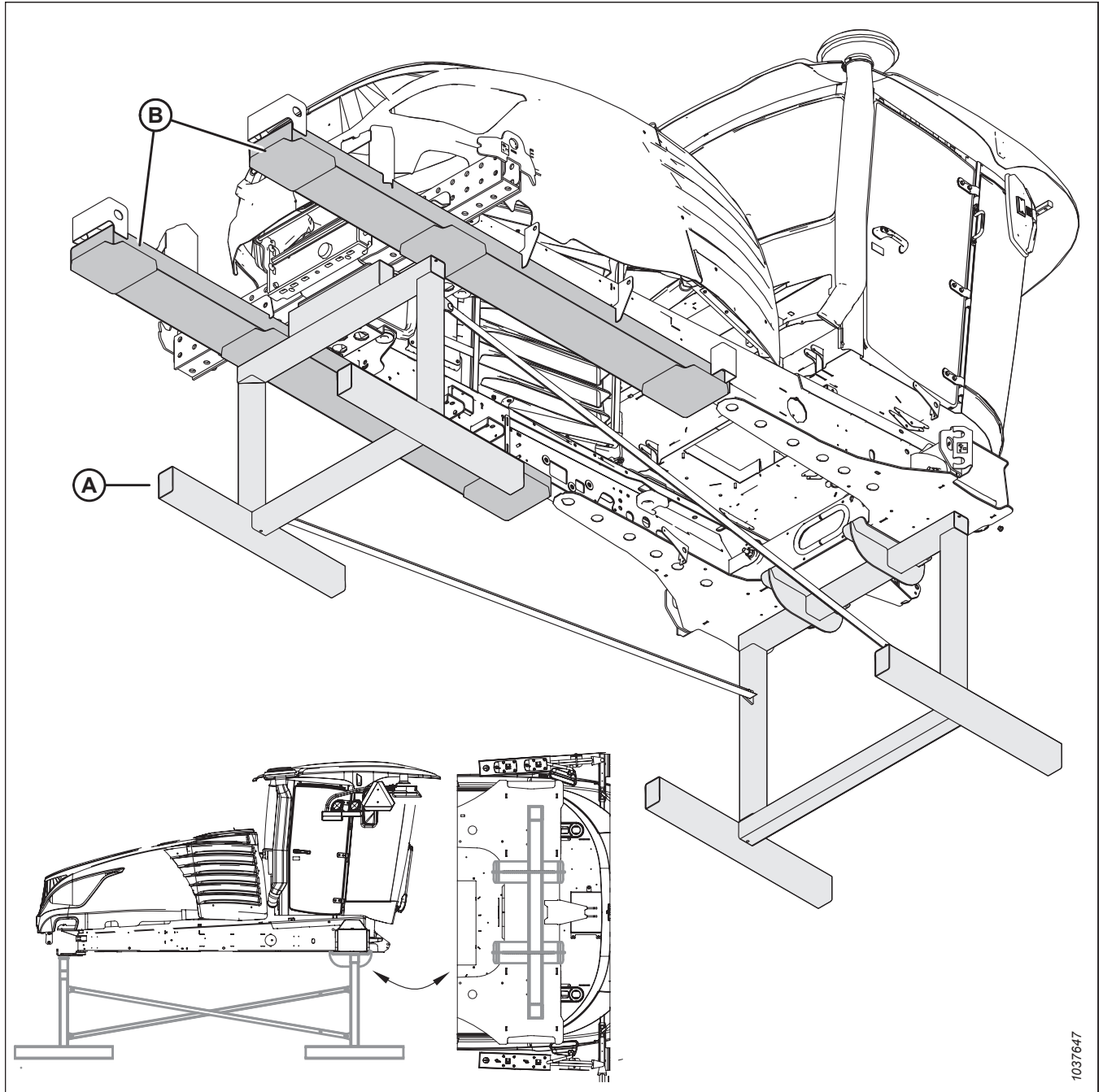


Figure 3.2: Windrower on Assembly Stands

6. Lift the windrower onto the assembly stand. Position the windrower so that you can remove fork channels (B) with a forklift, without contacting front stand (A).

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.

DANGER

Ensure that all bystanders have cleared the area.

1. On the right side of the machine, remove two bolts and two nuts (A) that secure the rear lighting bezel to the shipping bracket. Discard the bolts, but retain the nuts for reinstallation.
2. Set lighting bezel (B) aside for reinstallation.

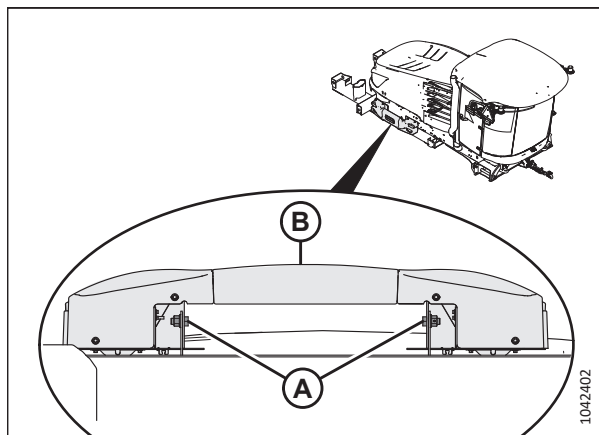


Figure 3.3: Rear Light Bezel

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

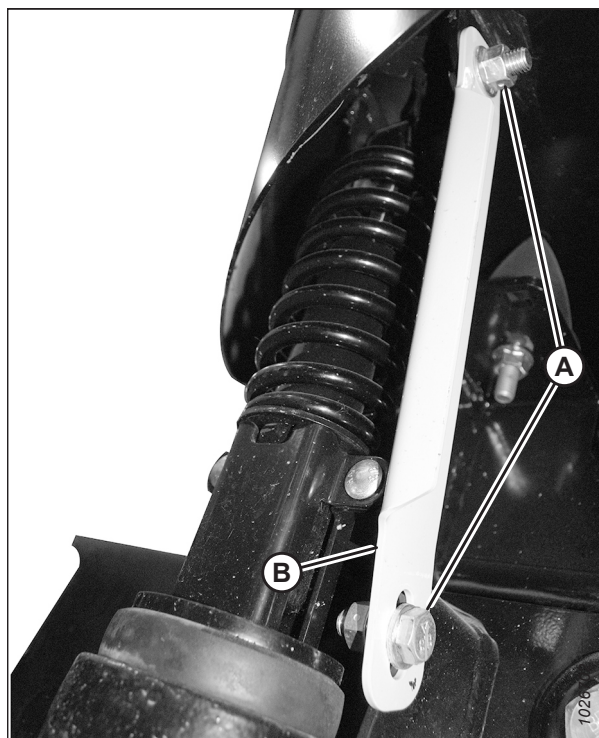


Figure 3.4: Right Cab Suspension Support

ASSEMBLING WINDROWER

4. **If the windrower was lifted onto the assembly stands using a crane:** Remove two bolts and nuts (A) attaching lifting plate (B) to the walking beam. Discard the bolts, nuts, and plate. Repeat this step for the lifting plate on the opposite side of the walking beam.

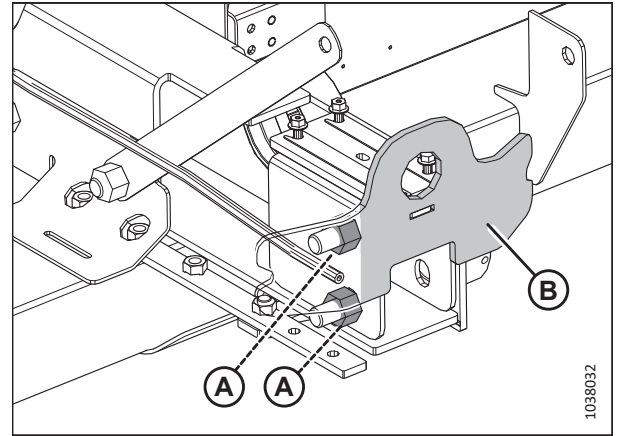


Figure 3.5: Lifting Plate

5. Support fork channel (A) with suitable lifting device (B), and remove two bolts and nuts (C), and four washers (D), from the walking beam. Discard the nuts, bolts, and washers.

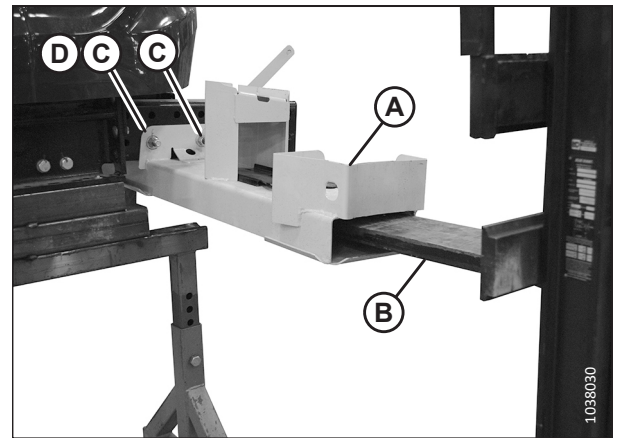


Figure 3.6: Supporting Fork Channel

6. At the side of the machine, remove nut and bolt (A) from the forward end of fork channel (B). Discard the bolt and nut.
7. Ensuring that the fork channel does not snag on the hoses and harnesses, move the fork channel away from the windrower.
8. Repeat Step 5, page 43 to Step 7, page 43 on the opposite side.

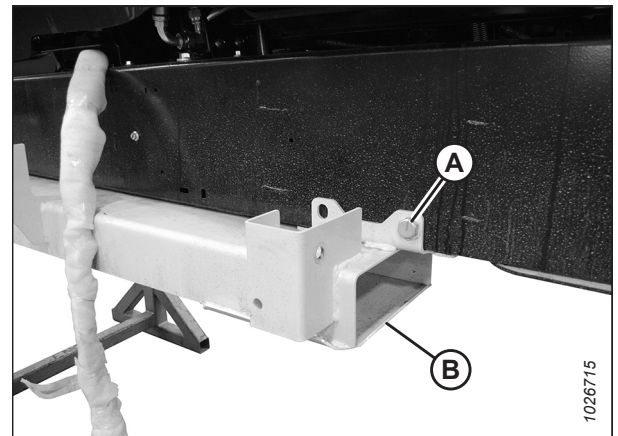


Figure 3.7: Fork Channel

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

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

⚠ CAUTION

Two people are required for this task: One person operates the lifting device while the other person helps to control the movement of the wheel leg assembly.

⚠ DANGER

Ensure that all bystanders have cleared the area.

1. Remove inboard leg bolt, nut, two caps, and pin (A). Retain these parts for installing the wheel leg.
2. **If the windrower was lifted onto the assembly stands with a forklift:** Retrieve outboard leg bolt, nut, two caps, and pin (B) that was removed previously (Step 5, page 23). Proceed to Step 4, page 44.
3. **If the windrower was lifted onto the assembly stands with a crane:**
 - a. Remove outboard bolt, nut, two caps, and pin (B). Retain these parts for installing the wheel leg.
 - b. Remove and discard bolt and nut (C), and lifting plate (D).
4. Remove the shipping material from the hydraulic and electrical bundle on the wheel leg.
5. Attach lifting strap (A) to the top of the wheel leg, and use a suitable lifting device to stand it upright as shown.

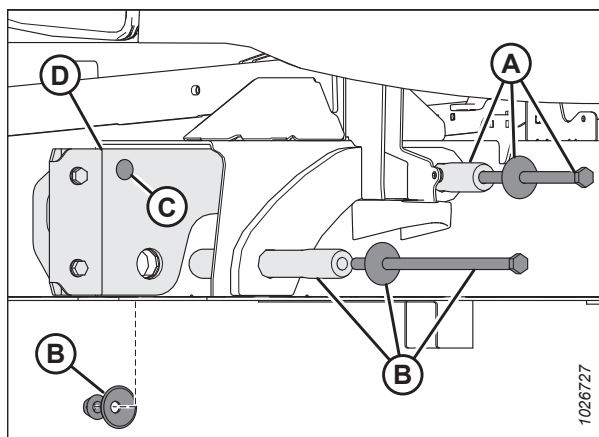


Figure 3.8: Wheel Leg Pins

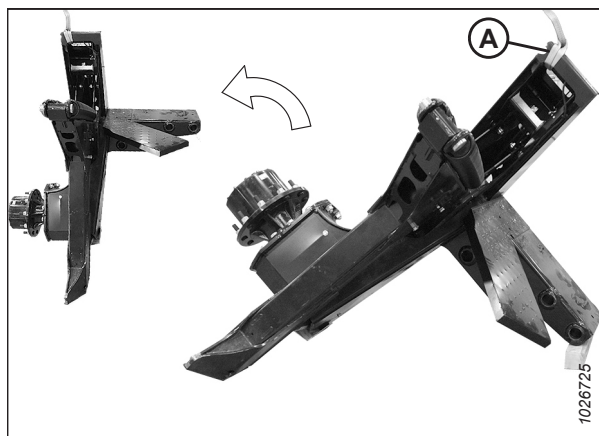


Figure 3.9: Wheel Leg

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NOTE:

Ensure that strap (A) does **NOT** hit sensor (B) when lifting the leg.

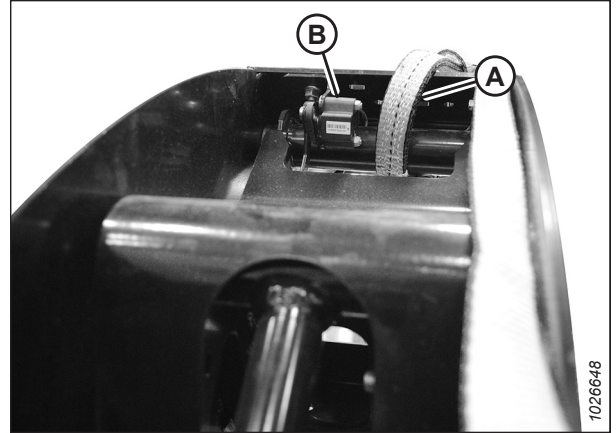


Figure 3.10: Top of Wheel Leg

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

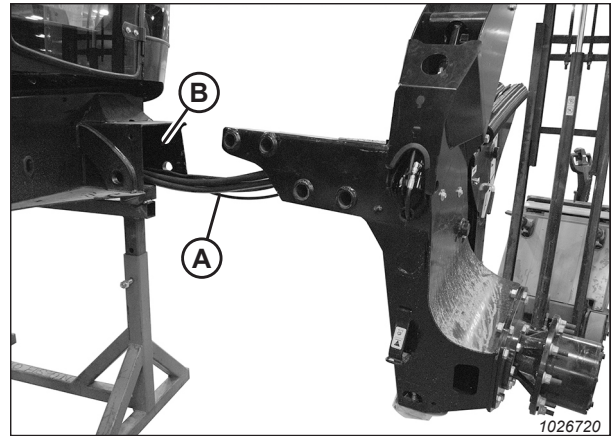


Figure 3.11: Hydraulic Hose Bundle

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

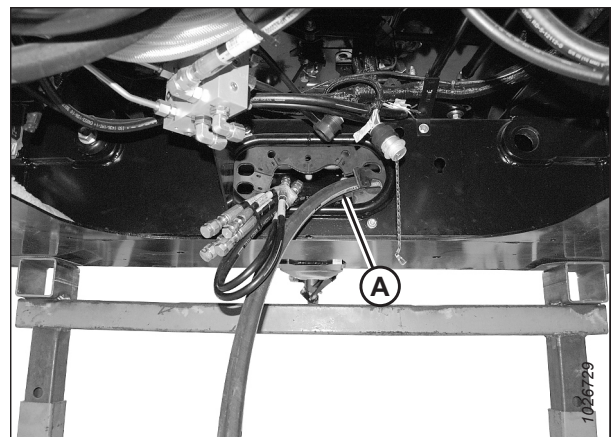


Figure 3.12: Hydraulic and Electrical Bundle

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- Ensure bushings (A) are seated into the internal mechanism in each slot on the leg.

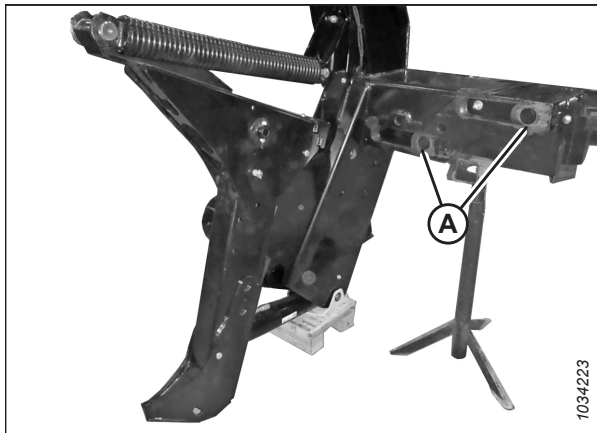


Figure 3.13: Leg Position on Frame

- Insert the leg into the frame. Line up the holes in the bushings with the holes in the frame.
- Insert pins (A) in the holes, then install long bolts (B), caps (C), and nuts (D) to secure the leg and frame. Torque the hardware to 136 Nm (100 lbf-ft).

NOTE:

If necessary, use a pry bar to align the holes.

- Repeat Step 1, page 44 to Step 11, page 46 for the opposite wheel leg.

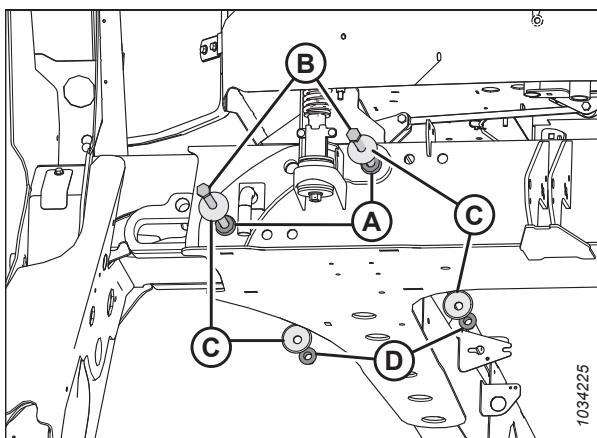


Figure 3.14: Leg Position on Frame

- Remove and discard 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.

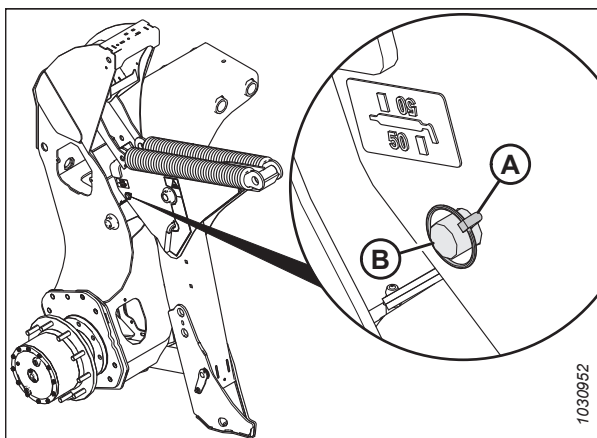


Figure 3.15: Header Lift Linkage Shipping Pin

3.4 Retrieving Ignition Keys and Checking Shipped Parts

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

1. Retrieve a set of ignition keys (A) from inside the chassis multiplexed Vehicle Electrical Center (mVEC).

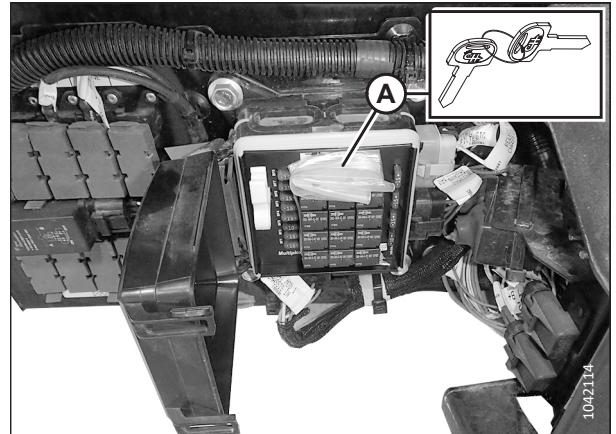


Figure 3.16: Windrower Keys Inside mVEC

2. Retrieve left platform (A). Use an ignition key to unlock storage compartment (B) that contains tool box (C).
3. Confirm that the tool box contains all of the parts listed in Table 3.1, page 48.

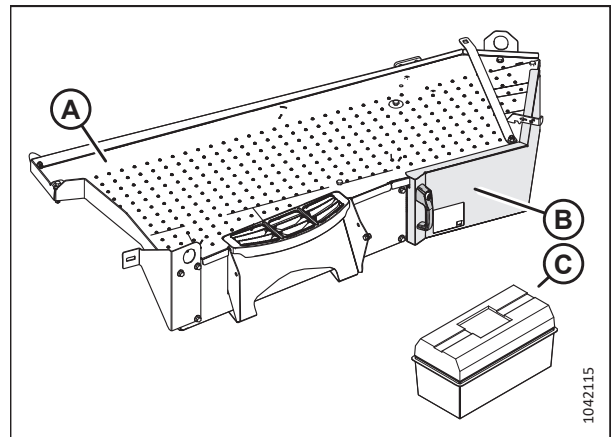


Figure 3.17: Left Platform and Tool Box

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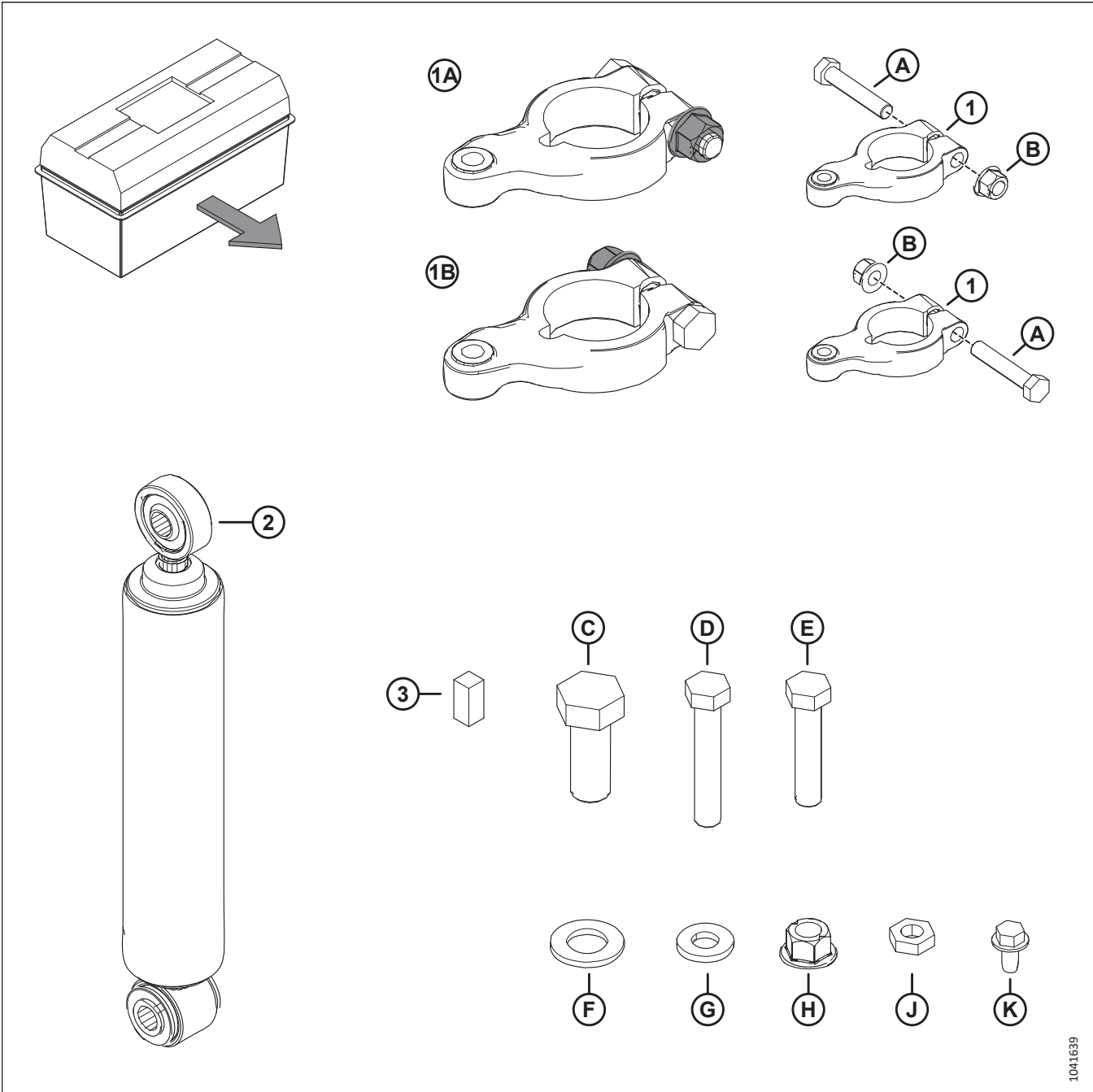


Figure 3.18: Parts Supplied in Tool Box

NOTE:

The tool box contains the parts needed to install the anti-shimmy dampeners onto the caster wheels and walking beam.

Table 3.1 Parts Supplied in Tool Box

Ref	Part Number	Description	Quantity
1A	—	This anti-shimmy arm is shipped assembled for RIGHT side of the walking beam using one arm (1), bolt (A), and nut (B).	1
1B	—	This anti-shimmy arm is shipped assembled for LEFT side of the walking beam using one arm (1), bolt (A), and nut (B).	1

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Table 3.1 Parts Supplied in Tool Box (continued)

Ref	Part Number	Description	Quantity
1	202896	ARM – ANTI SHIMMY MACHINED	2
2	202898	DAMPENER – ANTI SHIMMY	4
3	135296	KEY	2
A	136455	BOLT – HEX HD M16 X 2 X 85 – 8.8 – AA3L	2
B	152520	NUT – HEX FLG TECH LK M16 X 2 – 10 – AA1J	2
C	136366	BOLT – HEX HD TFL M24 X 3 X 60 – 10.9 – AA1J	4
D	252533	BOLT – HEX HD TFL M16 X 2 X 90 – 10.9 – AA3L	4
E	181511	BOLT – HEX HD M16 X 2 X 75 – 10.9 – AA1J	2
F	136367	WASHER – FLAT REG M24 – 300HV – AA1J	4
G	120901	WASHER – HARD L9SPCL 5/8 – 82/85HR15N – ABOC	6
H	152520	NUT – HEX FLG TECH LK M16 X 2 – 10 – AA1J	1
J	136473	NUT – HEX THIN M16 X 2 – 05 – AA1J	2
K	136209	SCR – HEX WASHER HD M10 X 1.5 X 20 – SPCL – 450HV	3

3.5 Checking Shipped Cab Parts

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

1. Confirm that the cab contains all of the parts listed in Table 3.2, page 51.

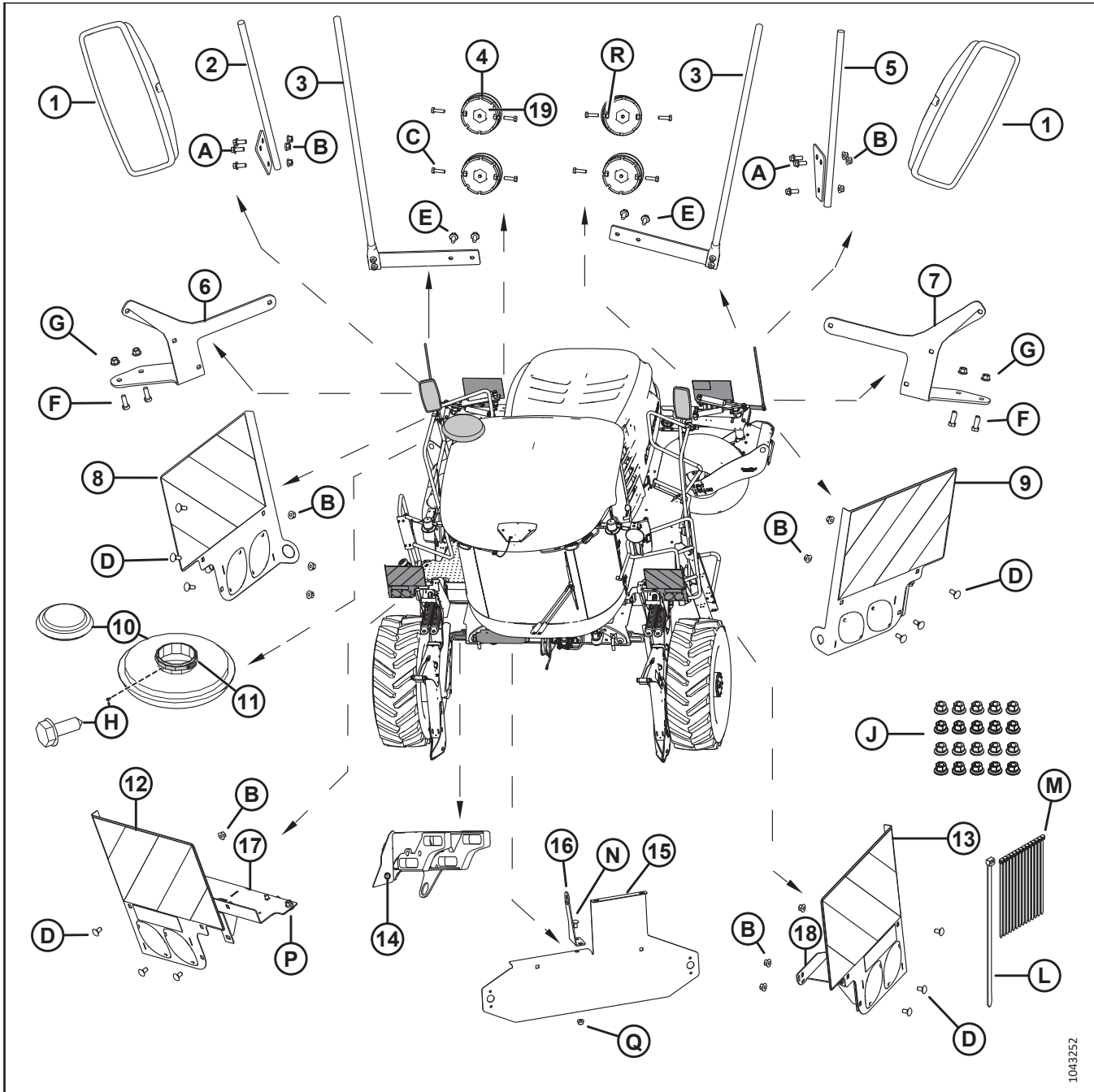


Figure 3.19: Parts Supplied in Cab

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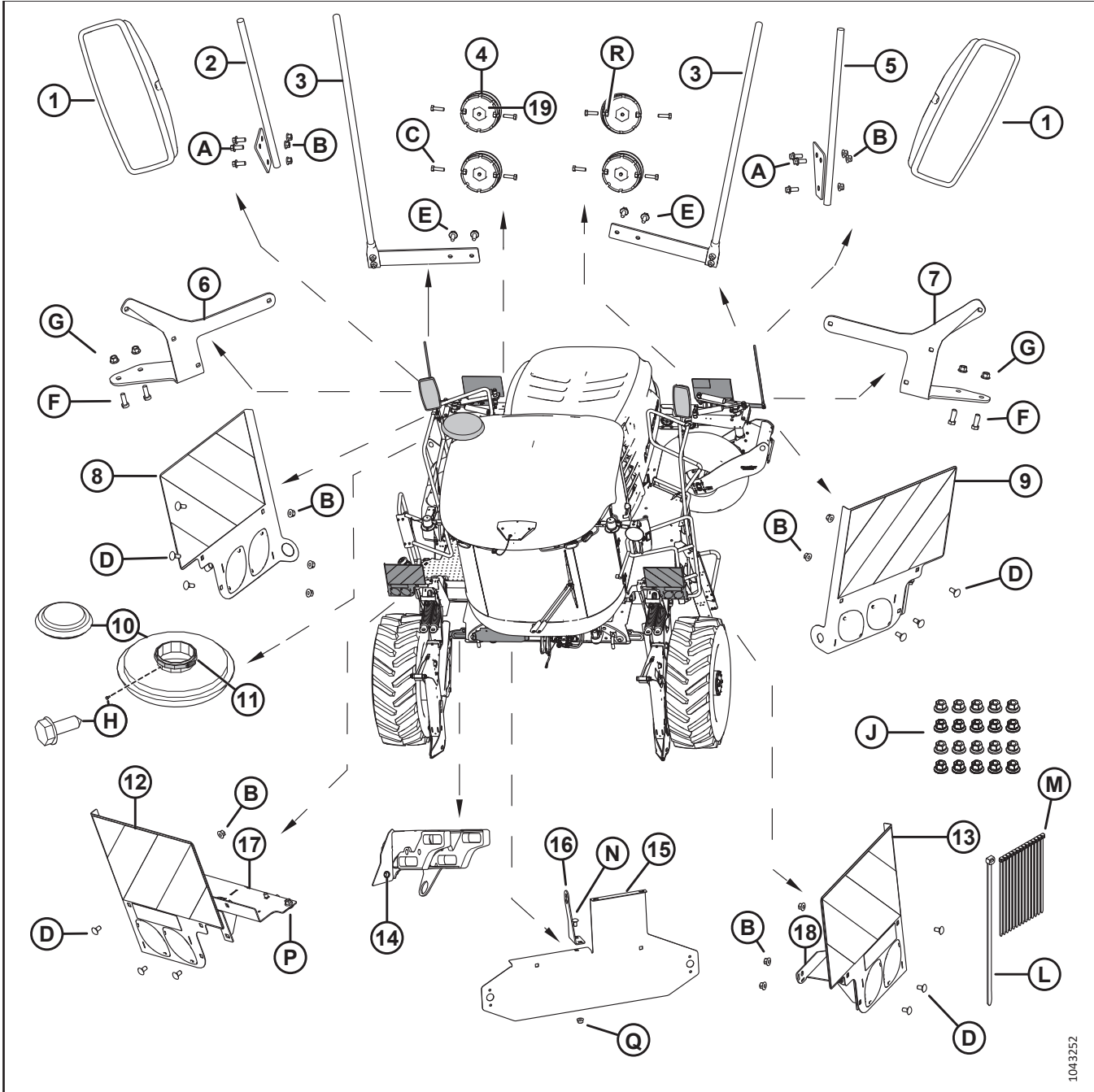
ASSEMBLING WINDROWER

Table 3.2 Parts Supplied in Cab

Ref	Part Number	Description	Quantity
BOX 'A'			
10	201838	DUCT – AIR INLTET ¹	1
11	NSS ²	CLAMP ³	1
12	310466	PLATE – REFLECTOR, A	1
13	310465	PLATE – REFLECTOR, B	1
15	346323	BRACKET – LICENSE PLATE MOUNT	1
16	310925	BRACKET – LICENSE PLATE MOUNT BRACE	1
17	346017	CHANNEL – LIGHT MOUNT, RH	1
18	346294	CHANNEL – LIGHT MOUNT, LH	1
BOX 'B'			
B	135799	NUT – HEX FLG CTR LOC M10X1.5-10	8
D	184657	BOLT – RHSSN M10X1.5X20-8.8-AA1J	6
H	NSS ²	SETSCREW ⁴	1
N	191489	BOLT – RHSSN TFL M8X1.25X16-8.8-AA1J	1
P	136178	BOLT – RHSSN M10X1.5X20-8.8-AA1J	2
Q	135337	NUT – HEX FLG CTR LK M8X1.25-8-AA1J	1
BOX 'B'			
3	346003	ROD – END MARKER	2
4	310728	PLUG – ADJUSTER	4
6	346308	BRACKET – LIGHT MOUNT, RH	1
7	346307	BRACKET – LIGHT MOUNT, LH	1
8	310465	PLATE – REFLECTOR, B	1
9	310466	PLATE – REFLECTOR, A	1
19	346037	PAD – WEAR, FRONT	4
BOX 'B'			
B	135799	NUT – HEX FLG CTR LOC M10X1.5-10	6
C	050140	BOLT – HEX HD M8X1.25X30-8.8-AA1J	8
D	184657	BOLT – RHSSN M10X1.5X20-8.8-AA1J	6
E	136209	SCR – HEX WASHER HD M10X1.5X20-SPCL-450HV	4
F	152730	BOLT – HEX HD TFL M12X1.75X35-10.9-AA1J	4
G	136431	NUT – HEX FLG CTR LOC M12X1.75-10	4
R	030856	NUT – HEX M8X1.25-9-AA1J	8
BOX 'C'			
1	306509	MIRROR – HAND OPERATED	2
2	346205	SUPPORT – MIRROR MOUNT, RH	1
5	346204	SUPPORT – MIRROR MOUNT, LH	1
14	141989	CHANNEL – WELDMENT, RH	1

1. The air inlet duct should come with clamp (11) and setscrew (H).
2. Not sold separately.
3. The clamp is shipped as part of air inlet duct.
4. The setscrew is shipped as part of air inlet duct.

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Table 3.2 Parts Supplied in Cab (continued)

Ref	Part Number	Description	Quantity
A	136312	BOLT – HEX FLG HD TFL M10X1.5X25-10.9-AA1J	6
B	135799	NUT – HEX FLG CTR LOC M10X1.5-10	6
Inside Cab but not in Boxes 'A', 'B', and 'C'			
J	205397	NUT – WHEEL M20 X 1.5 X GR 10.9	20 or 24
L	030753	FASTENER – CABLE TIE BLACK	1
M	021763	FASTENER – CABLE TIE BLACK	14

3.6 Installing Drive Wheels

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

⚠ DANGER

Ensure that all bystanders have cleared the area.

⚠ CAUTION

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

1. Retrieve the bag of M20 nuts (A) from the cab.

NOTE:

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

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

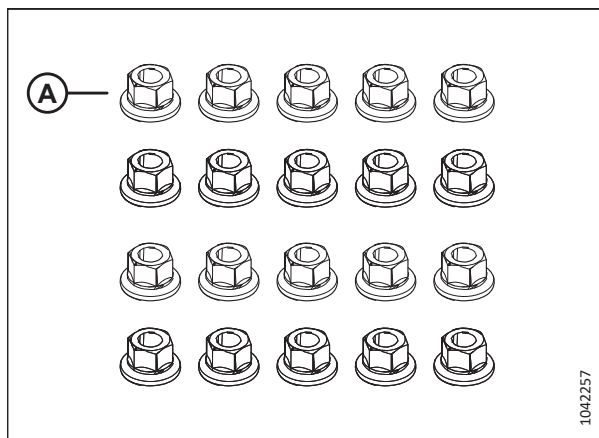


Figure 3.20: M20 Wheel Nuts (MD #205397)

3. **M2170NT Windrowers sold in Germany:** If replacing a rim on a windrower equipped with a secondary set of brakes, remove the spacer plate as follows:
 - a. Remove two nuts (A) and bolts (C) attaching spacer plate (B) to the inside of the wheel rim.
 - b. Discard nuts (A), spacer plate (B), and bolts (C).

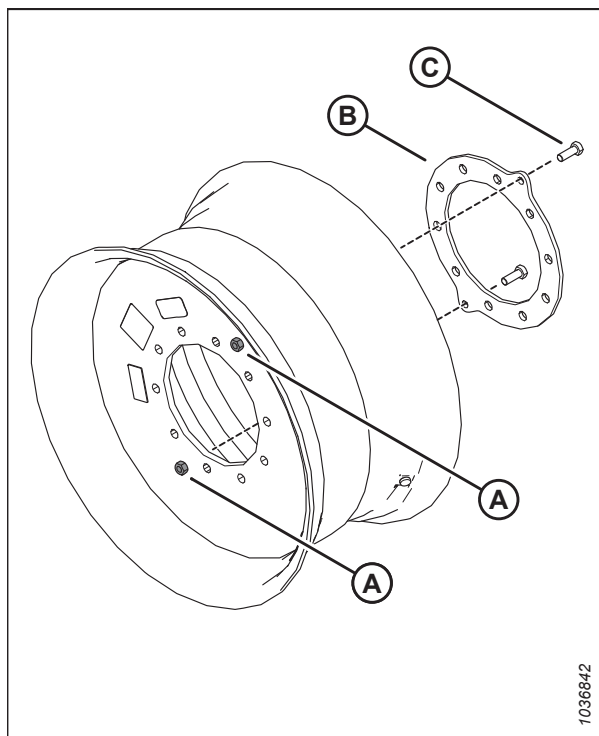


Figure 3.21: Drive Wheel

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4. Position lifting device (A) under the wheel as shown. Raise the wheel slightly.
5. Position the wheel against the wheel drive hub so that air valve (B) is on the outside and tread (C) points cab-forward.

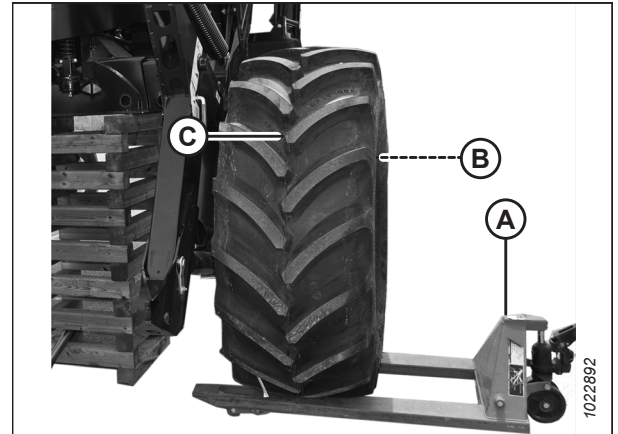


Figure 3.22: Drive Wheel Ready for Installation

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

IMPORTANT:

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

8. Torque the drive wheel nuts to 510 Nm (375 lbf-ft). Follow the tightening sequence shown in the illustration.
9. Repeat the tightening sequence two additional times. Ensure that the specified torque is achieved each time.
10. Repeat Step 2, page 54 to Step 9, page 55 in order to install the other drive wheel.
11. Use the forklift to raise the windrower. Remove the stand.
12. Lower the windrower.
13. Repeat the wheel nut torquing procedure every hour of operation until two consecutive checks confirm that there is no movement of the nuts.

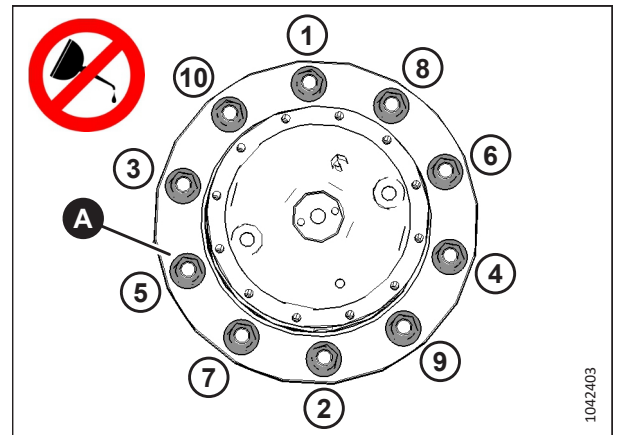


Figure 3.23: Tightening Sequence – 10-Bolt Wheel

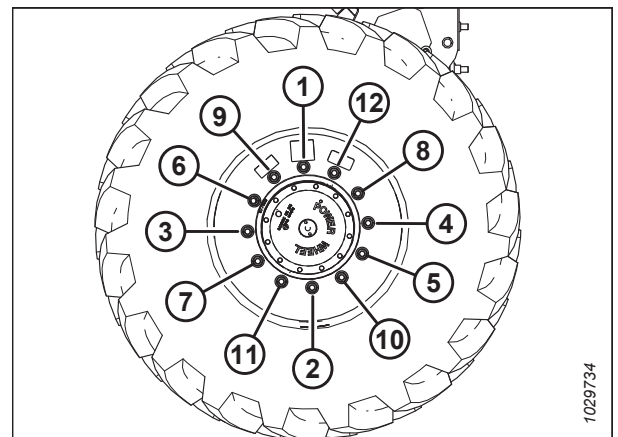


Figure 3.24: Tightening Sequence – 12-Bolt Wheel

3.7 Installing Caster Wheels

Caster wheels are non-driven wheels mounted at the end of the windrower near the engine.

1. Remove two bolts and nuts (A), and two rear wearplates (B) from the center support.

NOTE:

The hardware bag for mounting the rear wearplates to the walking beam is secured to the rear wearplates, which are not shown in the illustration.

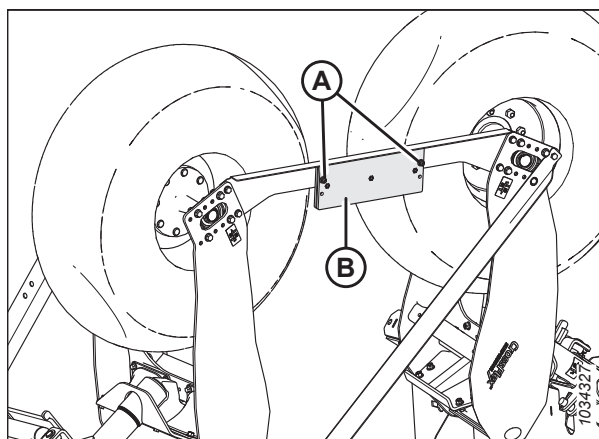


Figure 3.25: Caster Wheels Shipping Assembly

2. Position rear wearplate (A) inside wearplate mount (B) of walking beam (C) with the grease groove facing away from the wearplate mount. Secure the wearplate with bolts (D), and torque the bolts to 43 Nm (32 lbf-ft).

NOTE:

Wearplate mount (B) is transparent in the illustration so the rear wearplate is visible.

3. Loosely install bolt with zerk (E) into the inboard hole. Do **NOT** torque the bolt until the p-clip is installed when installing the hydraulics.
4. Repeat Step 2, page 56 to Step 3, page 56 at the opposite side.

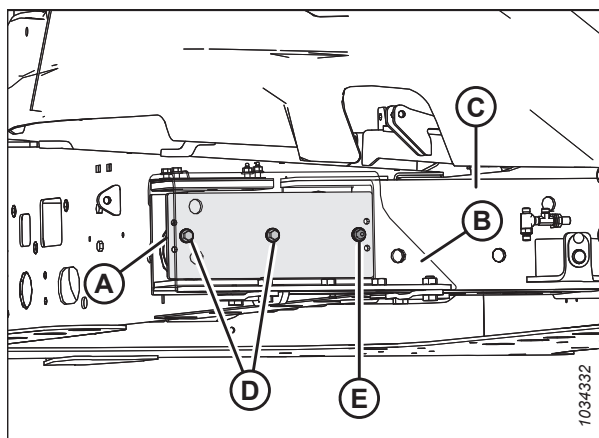


Figure 3.26: Rear Wearplate in Walking Beam — Left Side Shown

5. Keep the left and right shimmy shock mounts (B) and caster wheel extensions (C) separate for reinstallation.
6. Remove bolts and nuts (A) and shimmy shock mounts (B) from the shipping stand. Retain the parts for installation later.

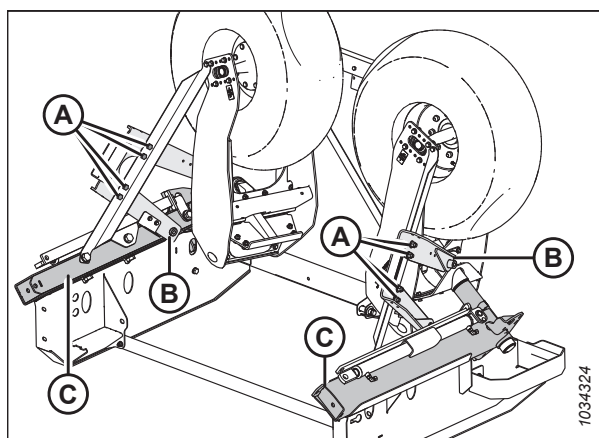


Figure 3.27: Anti-Shimmy Dampener Bracket

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7. Remove the shipping wire and foam attaching narrow transport stop (A) to hydraulic cylinder (B). Place the narrow transport stop with the shimmy shock mounts removed from the same side of the shipping stand in Step 6, page 56.

NOTE:

The shipping wire and foam are not shown in the illustration.

8. Remove and discard bolt (C) and shipping bracket (D) from caster wheel extension (E).
9. Remove and retain bolt and washers (F) securing the hydraulic cylinder pin to shipping bracket (G). Place the parts with the shimmy shock mounts previously removed from the same side of the shipping stand.
10. Remove hydraulic cylinder (B) and shipping bracket (A) from the caster wheel extension.
11. Remove cylinder pin (A), bolt (B), nut (C), pin strap (D), and shipping bracket (E). Retain the hardware and discard the shipping bracket.
12. Place the cylinder pin, bolt, nut, and pin strap next to the previously removed shimmy shock mounts from the same side of the shipping stand.
13. Repeat Step 7, page 57 to Step 12, page 57 for the opposite side.

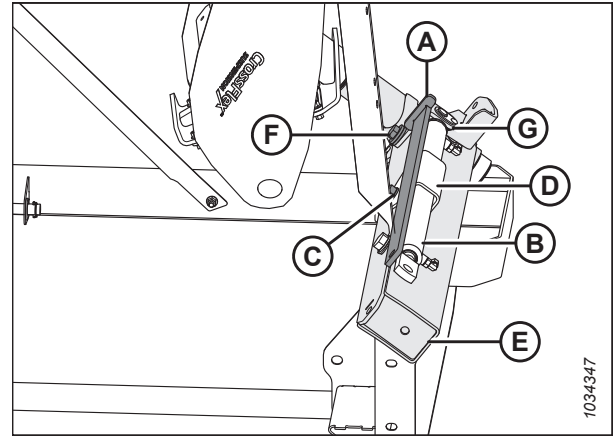


Figure 3.28: Right Narrow Transport Stop and Hydraulic Cylinder

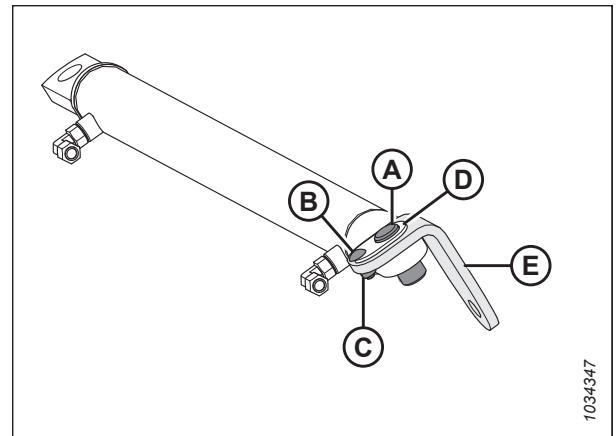


Figure 3.29: Pins and Shipping Bracket on Cylinder

Installing right caster wheel

14. Using a suitable lifting device, support right caster wheel (A). Do **NOT** remove angled support (B).

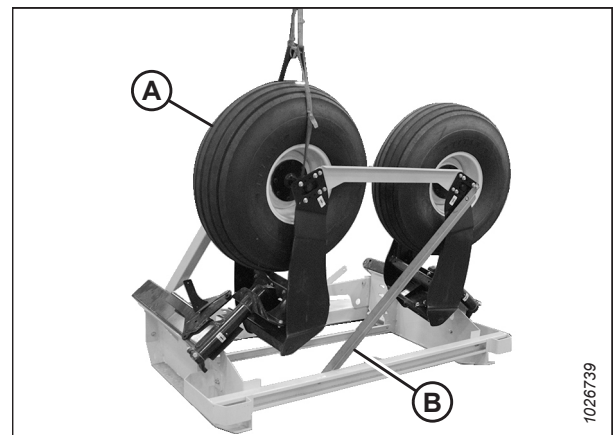


Figure 3.30: Caster Wheels Shipping Assembly

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15. Remove and discard four bolts, washers, nuts (A), and center support (B).

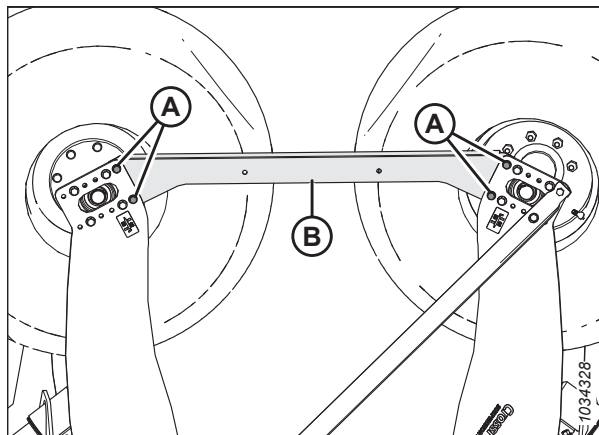


Figure 3.31: Caster Wheels Shipping Assembly

16. Remove and discard four M24 bolts and washers (A) securing caster wheel extension (B) to the shipping stand.
17. Lift the right caster wheel away from the shipping assembly and set it down on a smooth surface.

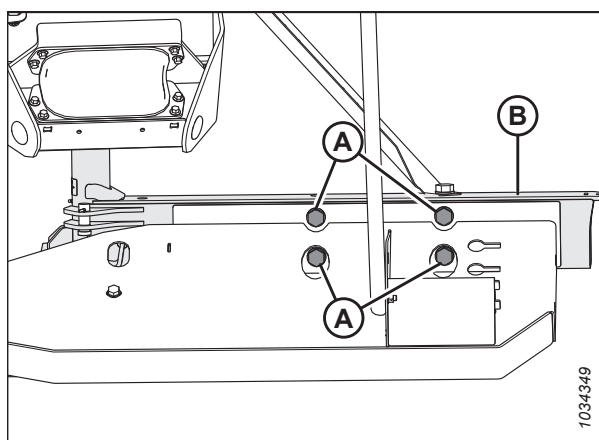


Figure 3.32: Caster Wheel Extension on Shipping Stand – View from Under the Right Stand, Inboard

18. Reposition lifting straps (A) around the caster wheel beam and shipping bracket (B), and then lift the wheel into position beside the walking beam.
19. Apply grease to the bottom of the caster wheel extension (that is, from the end of the extension to the shipping bracket).
20. Insert the caster wheel extension approximately 305 mm (12 in.) into the walking beam, up to shipping bracket (B).

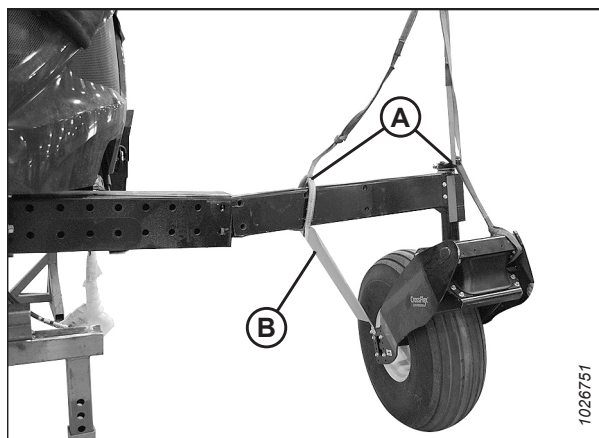


Figure 3.33: Inserting Caster Wheel

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21. Remove and discard bolt, nut, and washer (A) securing shipping bracket (C) to the caster wheel.
22. Remove bolt and washer (B) and the shipping bracket from the caster wheel extension. Retain the hardware.

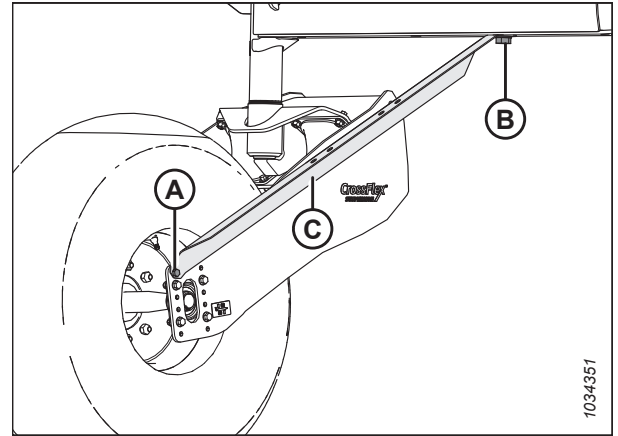


Figure 3.34: Caster Wheel Bracket

23. Insert narrow transport stop (A) through guide slot (B) as shown.
24. Secure narrow transport stop (A) to caster wheel extension (C) with bolt (D) and two washers (E) as shown. Keep the guide centered on the caster wheel extension as the bolts are torqued to 330 Nm (243 lbf-ft).

NOTE:

Reuse the bolt and washers retained from Step 9, page 57.

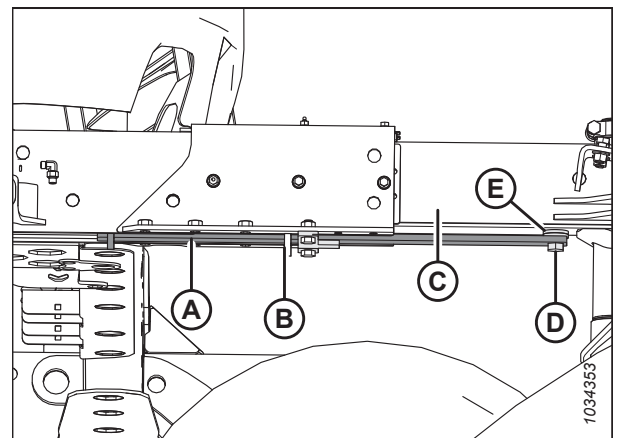


Figure 3.35: Narrow Transport Stop

25. Apply more grease to the bottom of the caster wheel extension and then insert caster wheel extension far enough to be able to move stop bracket (A) from the storage position into the field position as shown.

NOTE:

For reference, the stop plate on the narrow transport stop should be approximately 340 mm (13 in.) (B) from the walking beam stop plate. This position will allow for optimal wear pad installation.

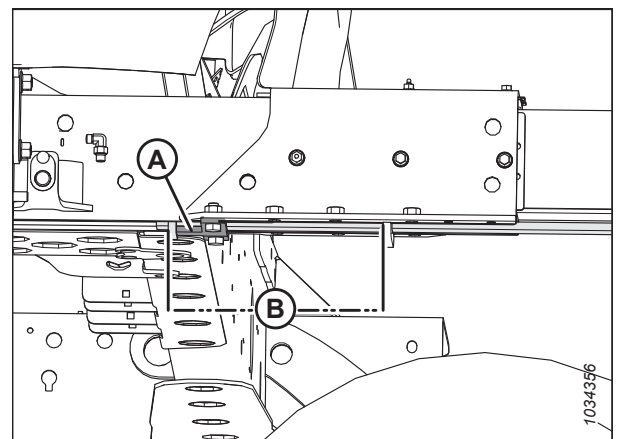


Figure 3.36: Narrow Transport Stop

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26. Retrieve adjuster plugs (A) with preinstalled wear pads from the cab. Thread the adjuster plugs into the walking beam until the wear pads are tight against caster wheel extension (B).
27. Tighten and torque the adjuster plugs to 340 Nm (250 lbf-ft).
28. Back off the adjuster plugs by 1/4 of a turn and align the slot in the adjuster plugs with the anti-rotation holes. Secure them with bolts (C) and nuts (D) as shown.

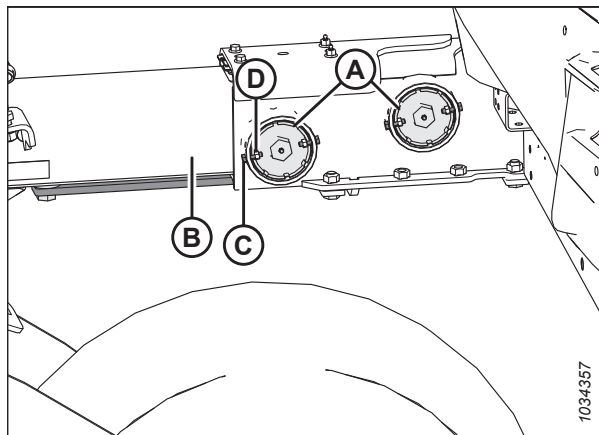


Figure 3.37: Walking Beam Adjuster Plugs

29. Install cylinder (A) as follows:
 - a. At the barrel end, secure the cylinder using pin strap (B), bolt and nut (C), and cylinder pin (D) retained in Step 11, page 57.
 - b. At the rod end, secure the cylinder with clevis pin (E) and cotter pin (F) that are preinstalled on the caster wheel extension.
30. Move stop bracket (G) back to the storage position.

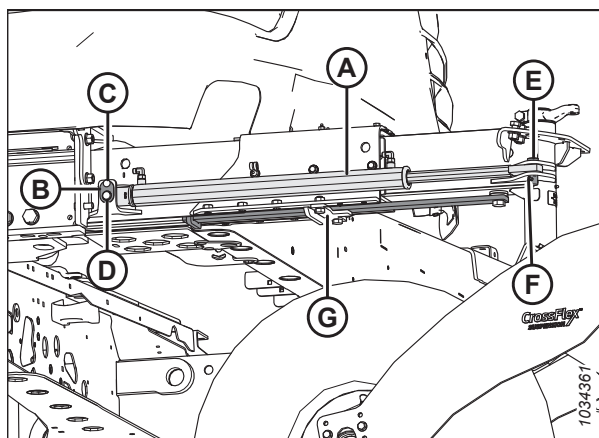


Figure 3.38: Cylinder Installed

Installing left caster wheel

31. Using a suitable lifting device to support left caster wheel (A), remove angle brace (B).

NOTE:

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

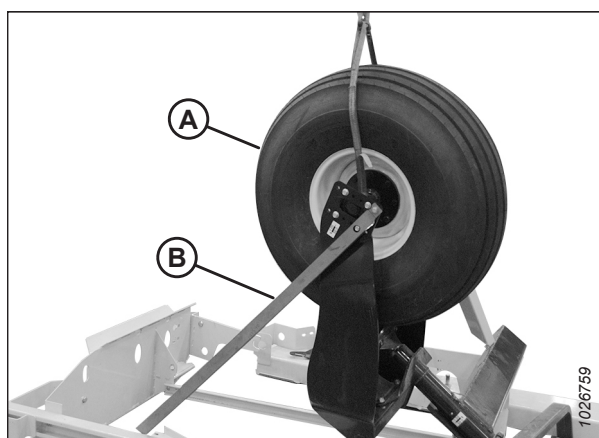


Figure 3.39: Caster Wheels Shipping Assembly

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32. Remove four M24 bolts and washers (A) securing left caster wheel extension (B) to the shipping stand.
33. Lift the left caster wheel away from the shipping assembly and set it down on a smooth surface.

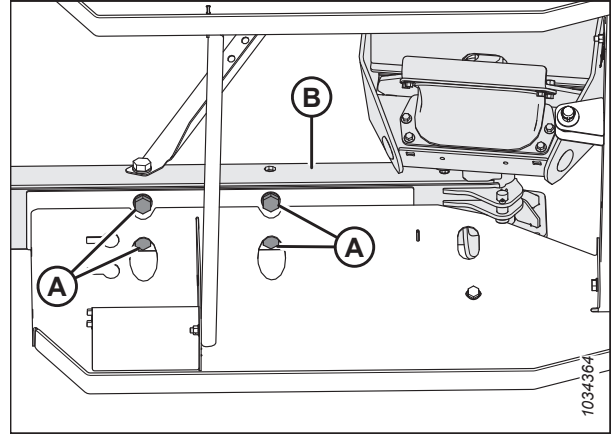


Figure 3.40: Caster Wheels Shipping Assembly – View from Under the Left Stand, Inboard

34. Repeat Step 18, page 58 to Step 30, page 60 to install the left caster wheel.

NOTE:

Left cylinder (A) has one fitting (B) which is different from the right cylinder.

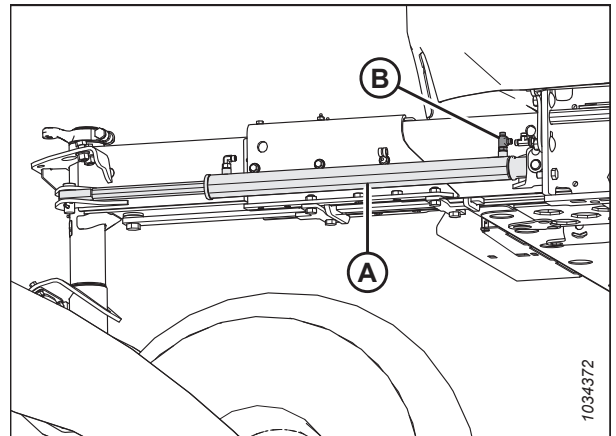


Figure 3.41: Left Cylinder with Tee Fitting

35. Ensure the left and right caster wheel widths are equal.

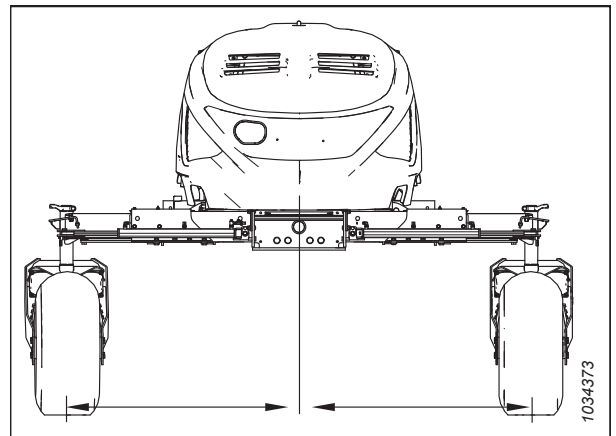


Figure 3.42: Walking Beam Adjustment

3.8 Installing Anti-Shimmy Dampeners

The anti-shimmy dampeners stabilize the caster wheels.

1. Remove and retain retaining ring (A).
2. Remove and discard yellow spacer (B).

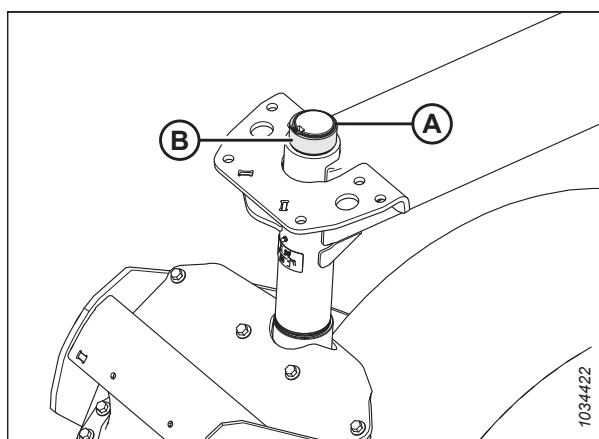


Figure 3.43: Caster Wheel – Left Cab-Forward

3. Retrieve the anti-shimmy dampener shocks, caster arms, and hardware from the toolbox in the left platform.

NOTE:

Use the ignition key to unlock the toolbox.

4. Install flat washer (A) and key (B) onto the caster shaft.

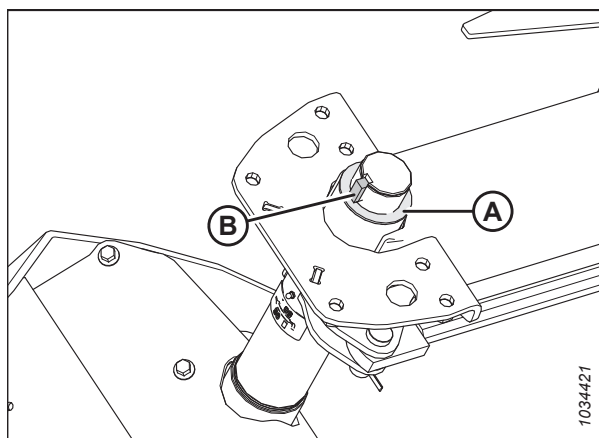


Figure 3.44: Caster Wheel Extension – Left Cab-Forward

5. Install caster arm (A) onto the caster shaft, and secure it with one M16 X 85 bolt (B) and nut (C).
6. Install retaining ring (D).
7. Torque nut (C) to 190–200 Nm (140–147 lbf·ft).

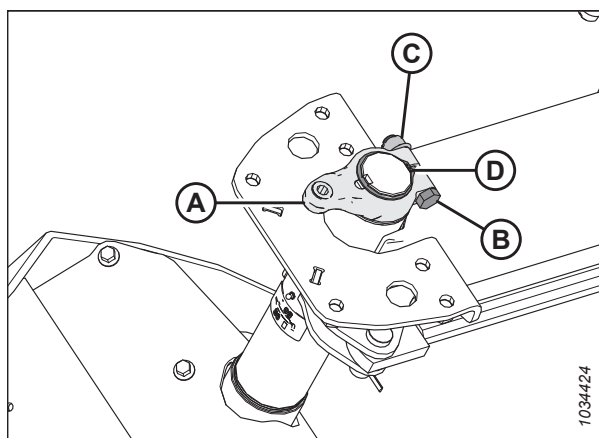


Figure 3.45: Caster Arm – Left Cab-Forward

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- Retrieve left shimmy shock mount (A).
- Remove and retain bolts and nuts (B), and reflector bracket (C) from shimmy shock mount (A).

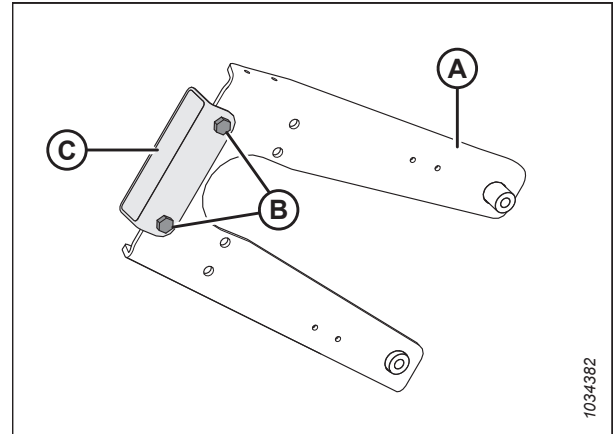


Figure 3.46: Left Shimmy Shock Mount

- Position shimmy shock mount (A) on the left caster wheel extension and secure it with four bolts and nuts (B) retained in Step 6, page 56.
- Install reflector bracket (C) using two bolts (D) and a nut on shimmy shock mount (A) and the shimmy base support.

NOTE:

To keep the dampeners aligned, ensure that the outboard edge of the dampener bracket is as close to flush as possible with the shimmy base support on the extension.

- Torque the nuts on bolts (B) and (D) to 170 Nm (125 lbf-ft).

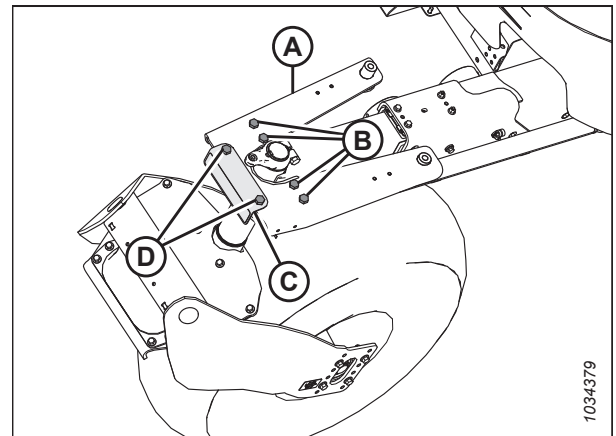


Figure 3.47: Shimmy Shock Mount – Left Cab-Forward

- Attach the barrel end of anti-shimmy dampener (A) to the forward spacer hole location (B) in the shimmy shock mount with one M16 x 150 flange head bolt (C) and one M16 tech lock nut (D). Do **NOT** fully tighten the nut.

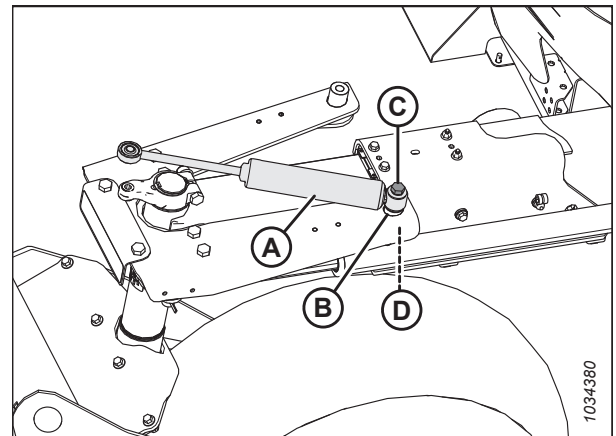


Figure 3.48: Shimmy Shock Dampener – Left Cab-Forward

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- Attach the barrel end of second anti-shimmy dampener (A) to the aft spacer hole location (B) in the shimmy shock mount with one M16 x 150 flange head bolt (C) and one M16 tech lock nut (D). Do **NOT** fully tighten the nut.
- Rotate the caster arm so that arm (E) is aligned with the walking beam.

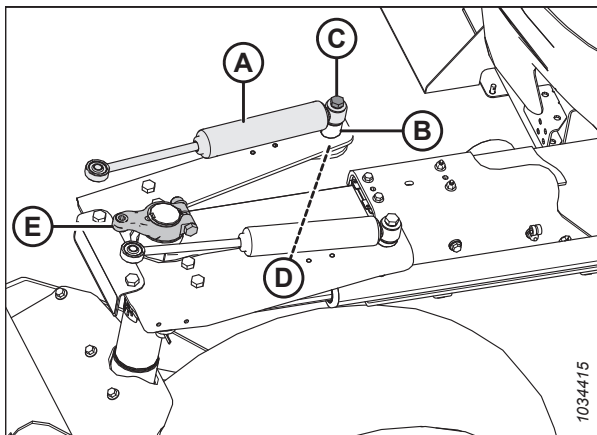


Figure 3.49: Shimmy Shock Dampener – Left Cab-Forward

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

NOTE:

Washers (D) are stamped with L9 for identification.

- Torque bolt (C) to 244 Nm (180 lbf-ft).
- Install jam nut (E) and torque it to 136–140 Nm (100–103 lbf-ft).
- Tighten bolts (F) at the barrel end of the anti-shimmy dampeners. Torque the bolts to 136–140 Nm (100–103 lbf-ft).

IMPORTANT:

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

- Repeat Step 1, page 62 to Step 19, page 64 at the opposite end of the walking beam.

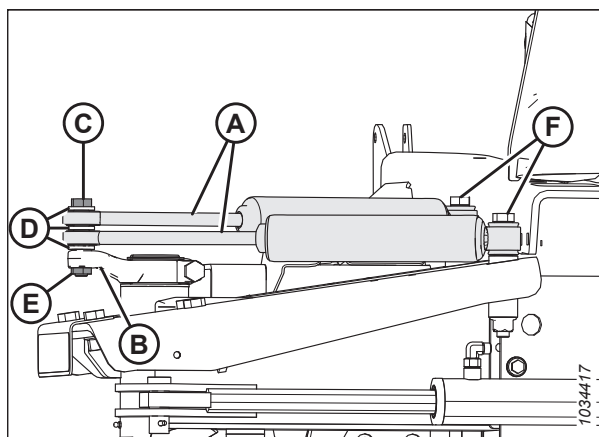


Figure 3.50: Anti-Shimmy System – Left Cab-Forward

3.9 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 one large cable tie (MD #30753) is shipped inside the windrower cab. This procedure requires medium cable ties.

Junction manifold hydraulic connections

1. Connect the hoses from the left wheel leg to the junction manifold as follows:
 - a. Connect 3/8 in. internal diameter (ID) lift hose (A) without a cable tie to port HL.
 - b. Connect 1/4 in. ID float hose (B) marked with a yellow cable tie to port FL.
 - c. Connect 3/8 in. ID lift hose (C) marked with a yellow cable tie to port CL.
 - d. Connect 1/2 in. ID case drain hose (D) marked with a red cable tie to port MDL.

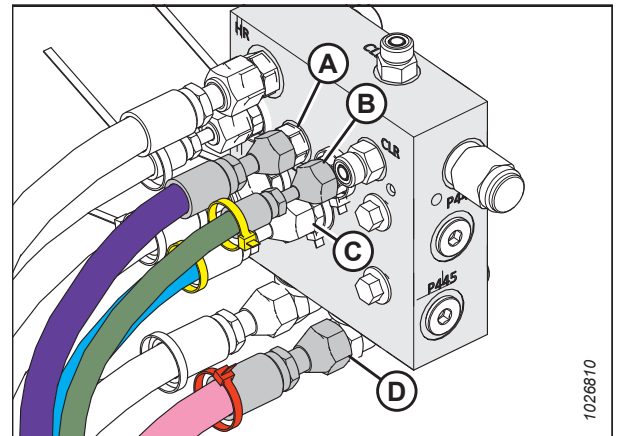


Figure 3.51: Junction Manifold Left Leg Hoses

2. Connect the hoses from the right wheel leg to the junction manifold as follows:
 - a. Connect 1/2 in. ID lift hose (A) without a cable tie to port HR.
 - b. Connect 1/4 in. ID float hose (B) marked with a black cable tie to port FR.
 - c. Connect 3/8 in. ID lift hose (C) marked with a black cable tie to port CR.
 - d. Connect 1/2 in. ID case drain hose (D) marked with a blue cable tie to port MDR.

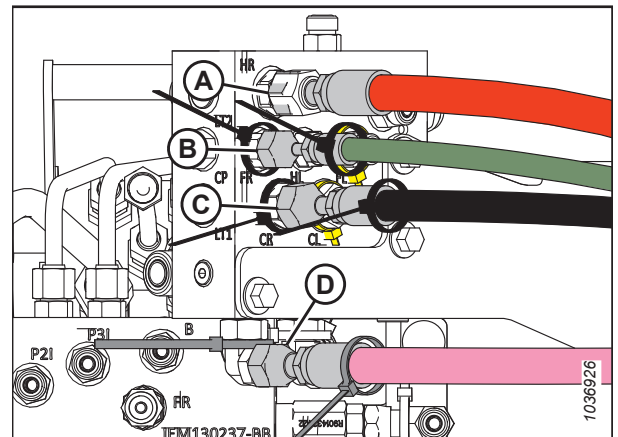


Figure 3.52: Junction Manifold Right Leg Hoses

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Float selector manifold hydraulic connections

3. Connect the hoses from the right wheel leg to the float selector manifold as follows:
 - a. Connect 1/4 in. ID brake hose (A) without a cable tie to port BR.
 - b. Connect 1/4 in. ID float hose (B) without a cable tie to the extension installed in port FR.
4. Connect the hoses from the left wheel leg to the float selector manifold as follows:
 - a. Connect 1/4 in. ID brake hose (C) marked with a black cable tie to port BL.
 - b. Connect 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.

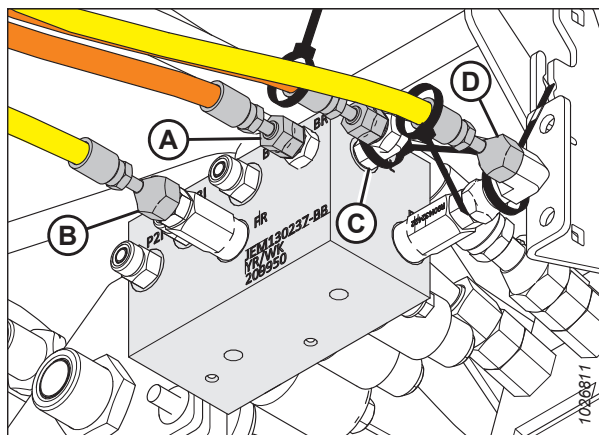


Figure 3.53: Float Selector Manifold

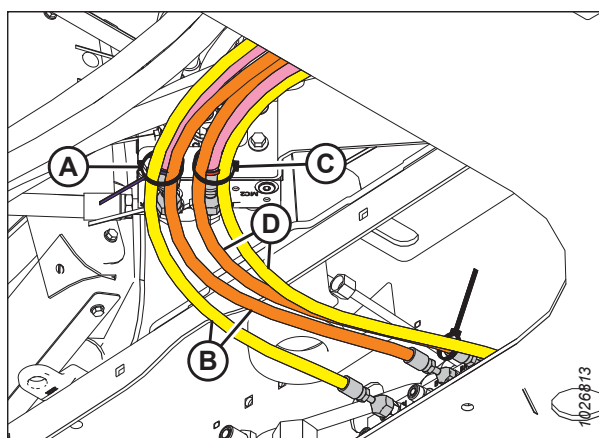


Figure 3.54: Securing Hoses

Traction drive pump hydraulic connections

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

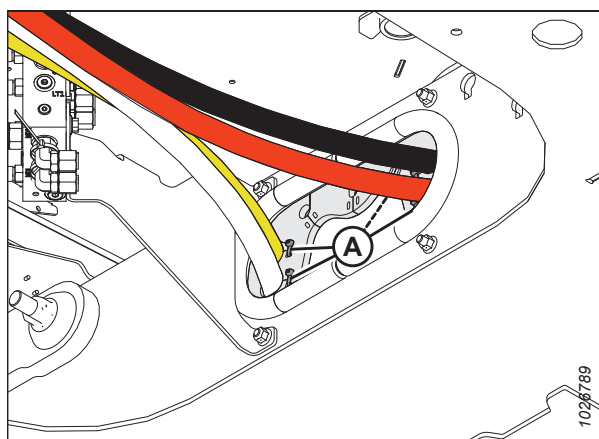


Figure 3.55: Hose Support at Cross Member

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

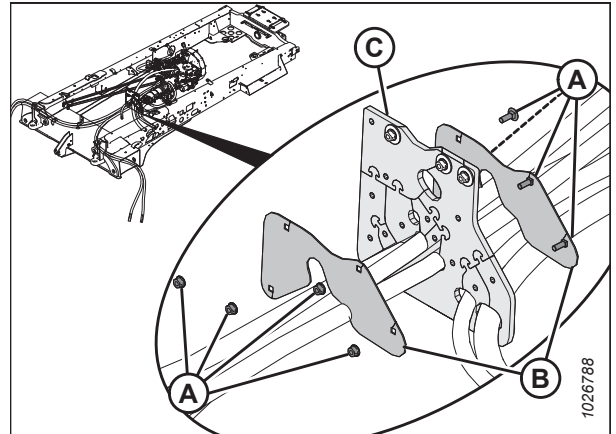


Figure 3.56: Hose Support at Pump Stack

11. 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 the 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 the 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 without a cable tie).

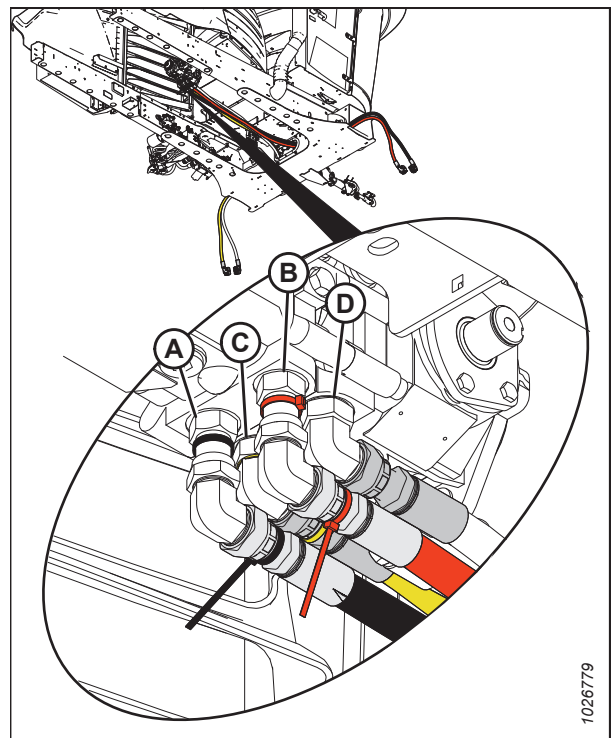


Figure 3.57: Traction Drive Pump

ASSEMBLING WINDROWER

Electrical Connections

12. 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).

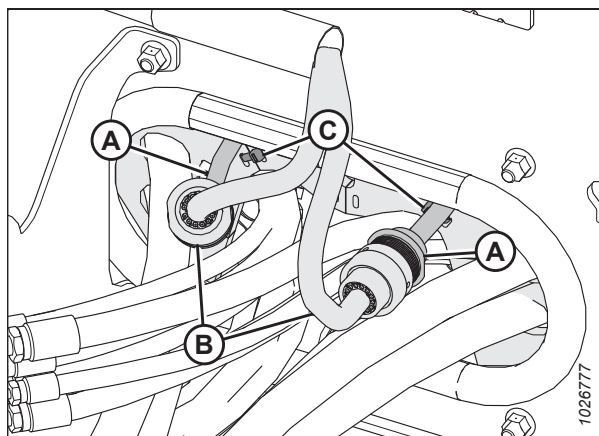


Figure 3.58: Electrical Connections

13. Connect the front end sliding leg hoses from the cylinders to the valve block as follows:

- a. Route right base end hose (A) from the frame opening to the right side of tee (E). Route the hose on the right side of pressure relief block (G).
- b. Route right rod end hose (B) from the frame opening to the right side of tee (F). Route the hose on the left of pressure relief block (G).
- c. Route the left base end hose (C) from the frame opening to the left side of tee (E). Route the hose on the left of pressure relief block (G).
- d. Route left rod end hose (D) from the frame opening to the left side of tee (F). Route the hose on the left side of pressure relief block (G).

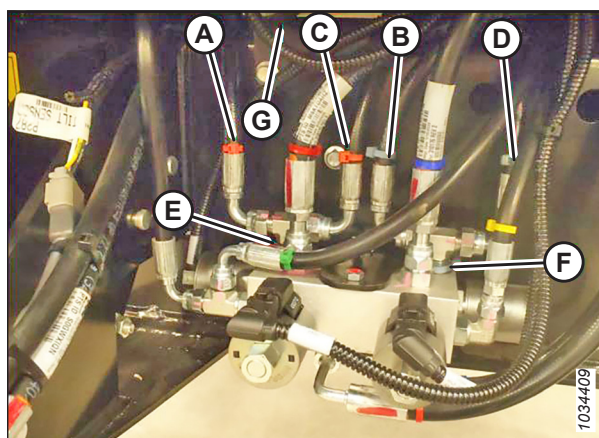


Figure 3.59: Front Sliding Hydraulics Connection

ASSEMBLING WINDROWER

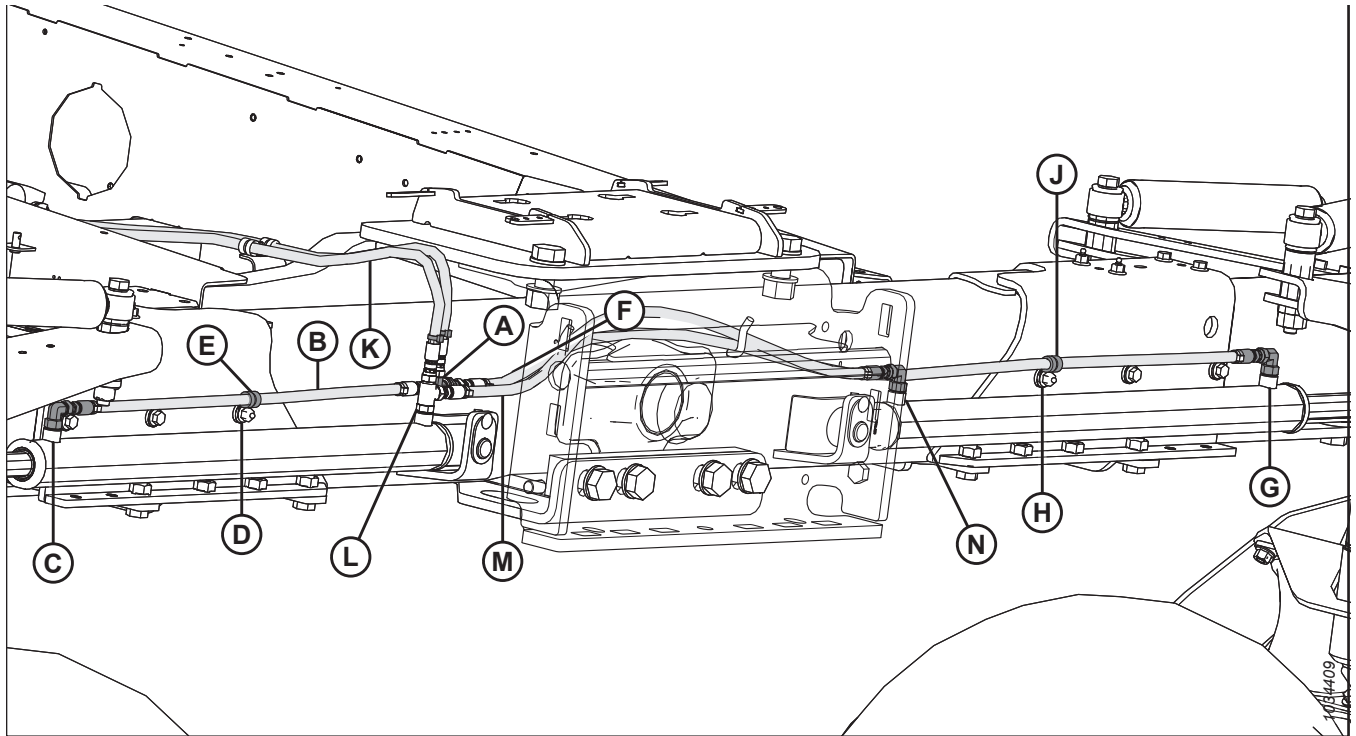


Figure 3.60: Rear Sliding Hydraulics Connection

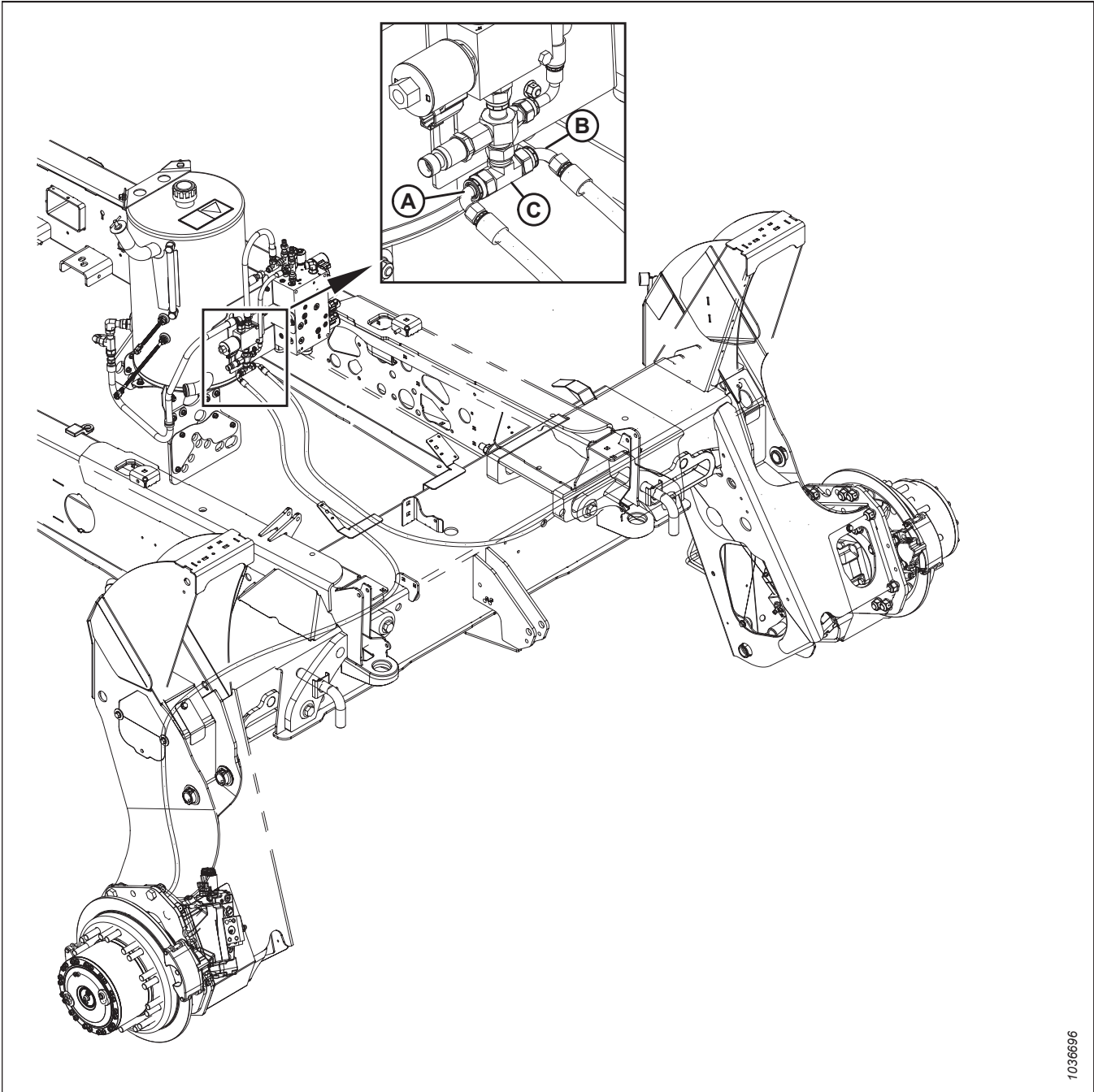
NOTE:

The walking beam pivot bracket is transparent in the illustration above to show the barrel end of the right cylinder.

14. Connect the rear end sliding leg hoses from the valve block to the hydraulic cylinders as follows:
 - a. Connect the hose from port P8 on the valve block marked with a yellow cable tie to the top of tee (A), which is attached to the walking beam.
 - b. Connect loose hose (B) from the left of tee (A) to the rod end of left cylinder (C).
 - c. Install p-clip (E) onto the hose.
 - d. Remove bolt (D) and install p-clip (E) onto it. Reinstall the bolt, and torque it to 40 Nm (32 lbf-ft).
 - e. Connect hose (F) from right of tee fitting (A) to the rod end of right cylinder (G).
 - f. Install p-clip (J) onto the hose.
 - g. Remove bolt (H) and install p-clip (J) onto it. Reinstall the bolt, and torque it to 40 Nm (32 lbf-ft).
 - h. Connect hose (K) from port P7 on the valve block (marked with a green cable tie) to top of tee (L).
 - i. Connect short hose (M) draped across the walking beam pivot at tee (L) to barrel end (N) of the right cylinder.

3.10 Connecting Brake Hydraulics – Windrowers Sold In Germany Only

Reconnect the brake hydraulic connections that were disconnected for shipping purposes.



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Figure 3.61: Brake Hydraulic Connection

1. Connect right brake hose (A) and left brake hose (B) from the drive wheel legs to tee fitting (C).

3.11 Installing Left Platform Assembly

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

IMPORTANT:

To avoid accidental damage, raise the windrower hood.

1. Install platform linkage (A) onto the frame with the two bolts and nuts. Nuts (B) should face outward.

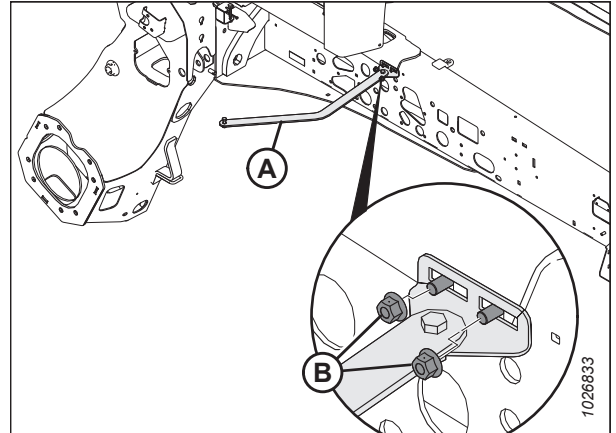


Figure 3.62: Platform Linkage

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

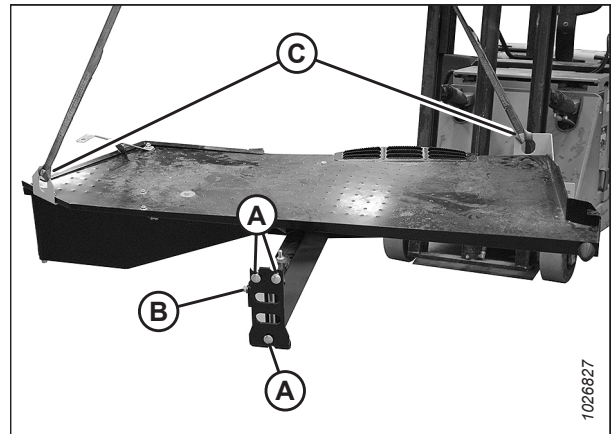


Figure 3.63: Left Platform

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

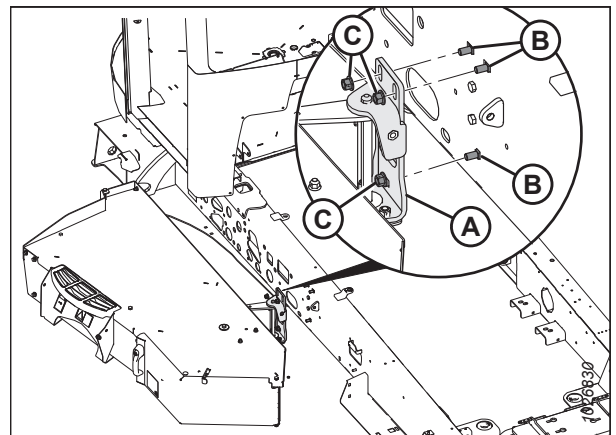


Figure 3.64: Left Platform Bracket

ASSEMBLING WINDROWER

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

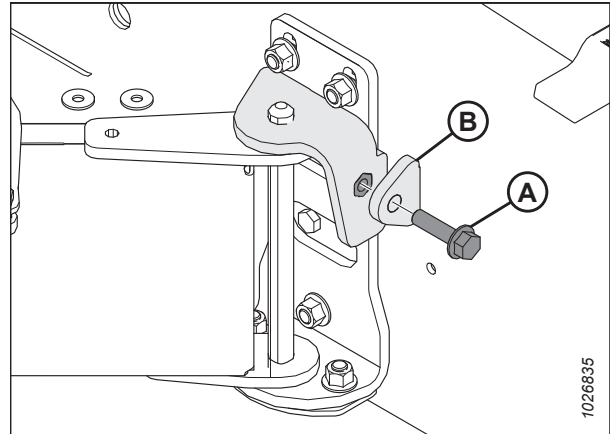


Figure 3.65: Left Platform Bracket

6. Use the existing hardware to connect platform linkage (A) to the hole in the platform. Ensure bushing (B) remains in the linkage hole; nut (C) is installed below the platform. Torque the nut to 14.5 Nm (11 lbf·ft [128 lbf·in]).

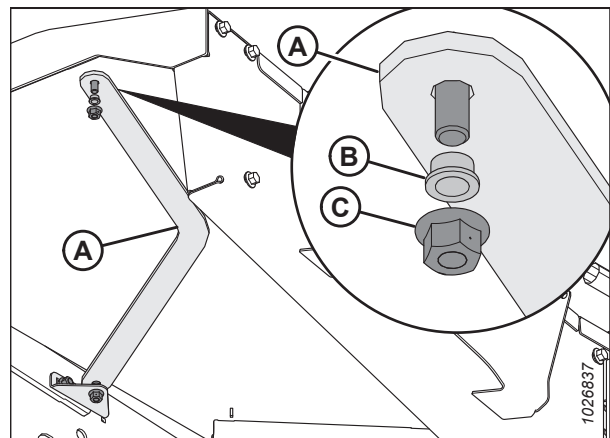


Figure 3.66: Linkage Below Platform

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- Adjust the platform angle using bolt (A) until the platform just touches front support (B) when closing the platform.
- 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).

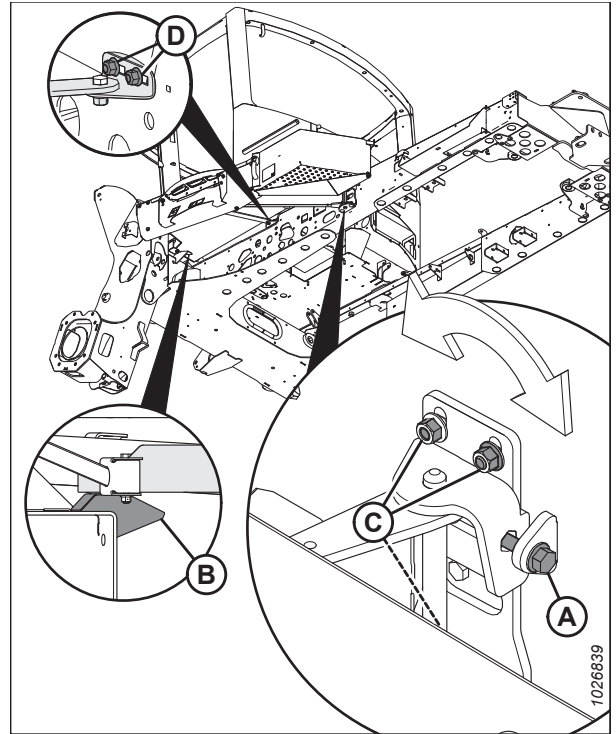


Figure 3.67: Left Platform Angle Adjust

Installing left platform handrails

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

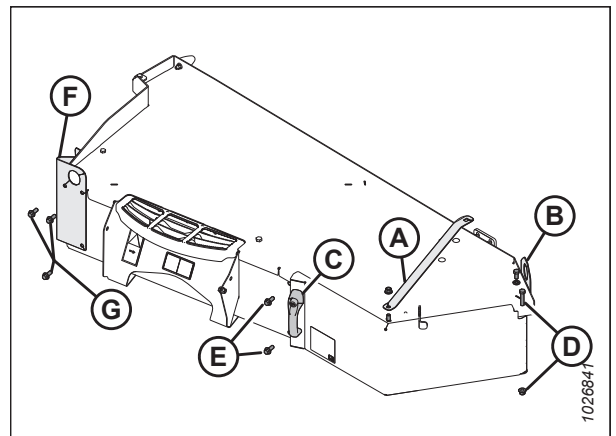


Figure 3.68: Left Platform Assembly

ASSEMBLING WINDROWER

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

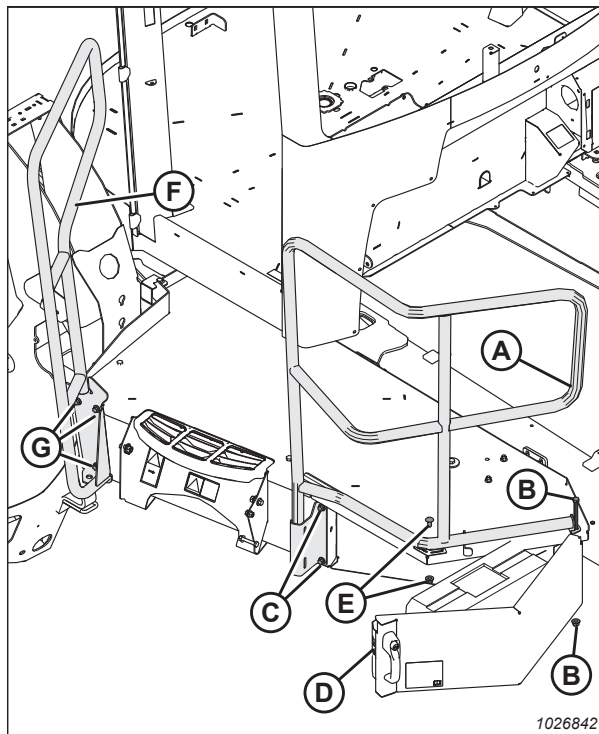


Figure 3.69: Installing Handrails

Installing left platform steps

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

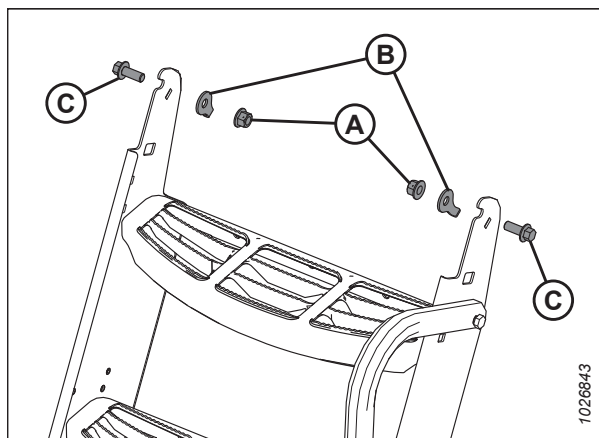


Figure 3.70: Left Platform Steps

ASSEMBLING WINDROWER

17. Insert two bolts (A) into the platform and hook steps (B) onto the bolts.
18. Install lock clips (C) so the tabs are in the slots and secure them with nuts (D). Torque the bolts to 95 Nm (70 lbf-ft).

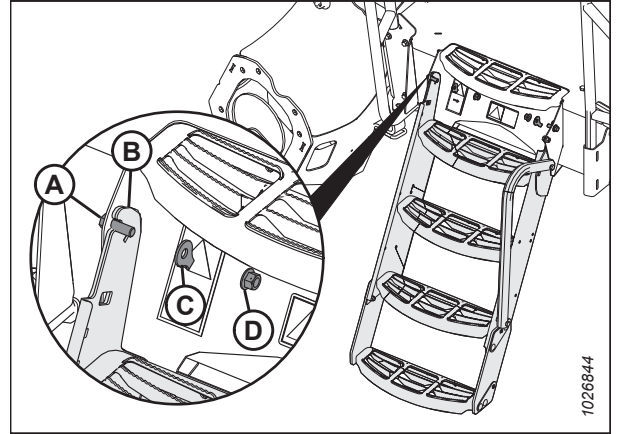


Figure 3.71: Left Platform Steps

3.12 Installing Right Platform (Fuel Tank), DEF Tank, Steps, Handrails, and A/C Hoses

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

⚠ DANGER

Ensure that all bystanders have cleared the area.

⚠ DANGER

The equipment used for loading or unloading a machine 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:

Use proper lifting equipment capable of lifting 3221 kg (7100 lb.).

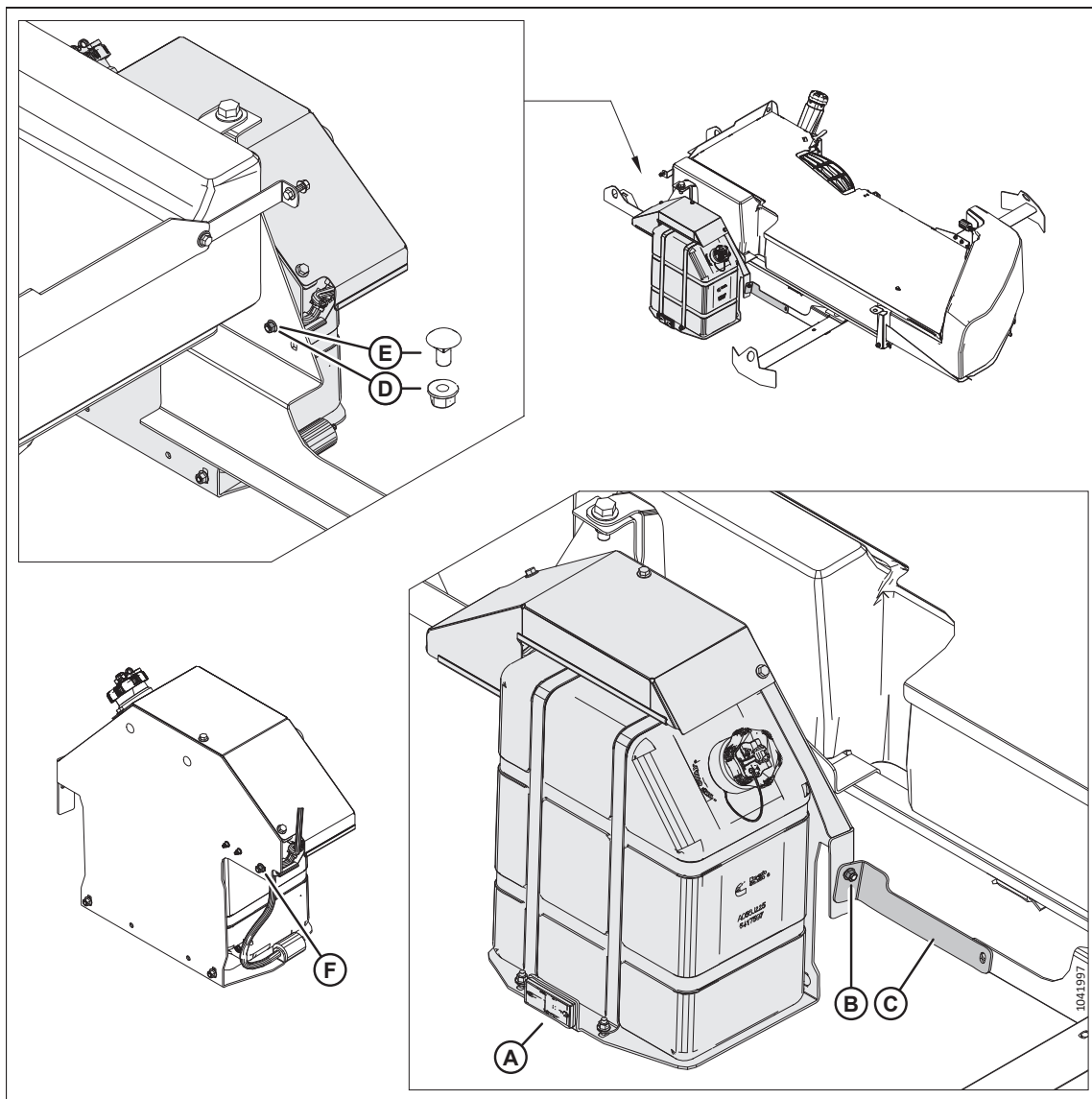


Figure 3.72: Right Platform

ASSEMBLING WINDROWER

1. Set the right platform on a stand to allow access to the hardware below. Support DEF tank (A).
2. Remove and discard hardware (B) and bracket (C).
3. Remove and retain M10 nut (D) (MD #135799) and M10 x 20 bolt (E) (MD #184657). Remove the DEF tank, then temporarily reinstall the M10 nut and bolt at location (F).
4. Remove two nuts and bolts (A) and (B), then remove shipping bracket (C).
 - Retain bolt (A) (MD #136662), but discard the nut.
 - Retain bolt (MD #135903) and nut (B) (MD #136431).
 - Discard shipping bracket (C).
5. Remove and retain bolt (MD #184665) and nut (D) (MD #135799).

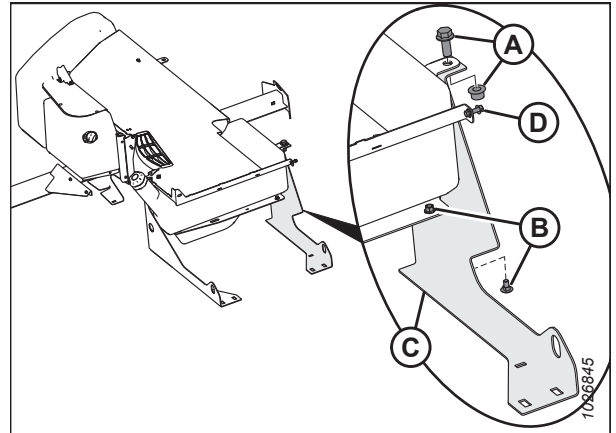


Figure 3.73: Right Platform Shipping Brackets

6. Remove two nuts and bolts (A), and remove shipping spacer tube (B) from the handrail channel. Discard all these parts.
7. Remove nut (C) from the stud next to the steps. Discard shipping bracket (D). Reinstall nut (C) onto the stud.

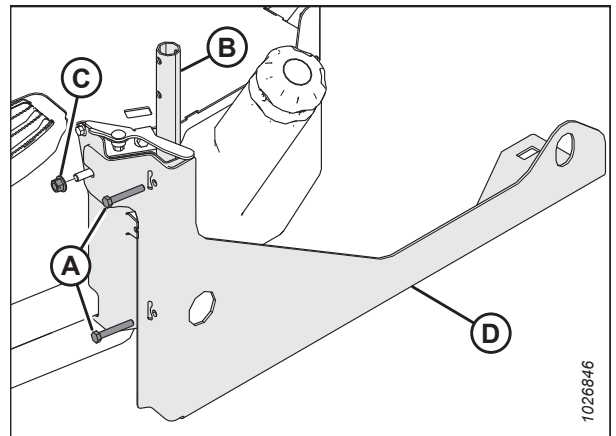


Figure 3.74: Right Platform Shipping Brackets

8. From below the right platform assembly, remove and discard three bolts and nuts (A) and (B). Remove the horizontal shipping channel.
9. Remove and retain bolt (MD #135903) nut (C) (MD #136431).
10. Raise the windrower hood.

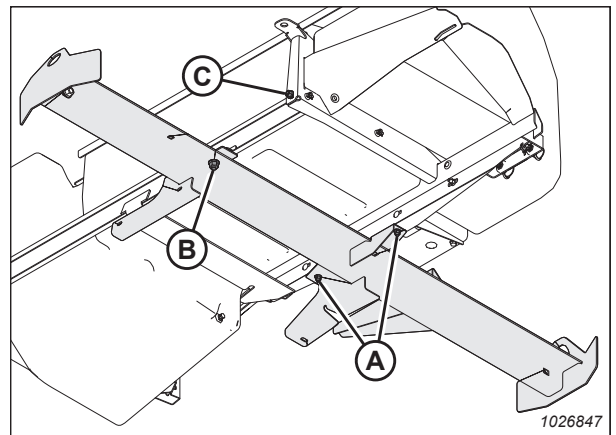


Figure 3.75: Right Platform Shipping Brackets

ASSEMBLING WINDROWER

11. Remove and retain two bolts (A) and hose cover (B).

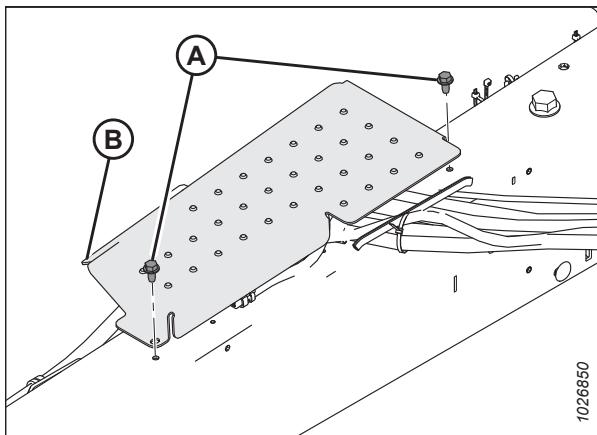


Figure 3.76: DEF Hose Cover

12. Loosen two bolts (A) securing the hose brackets and move the hose bundle away from platform mounting bolt (B).
13. Remove and retain platform mounting bolt (B) (MD #136662).

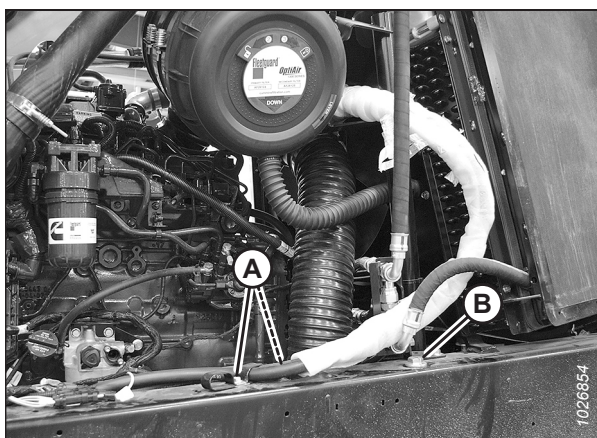


Figure 3.77: Hose Clamps on Right Frame

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

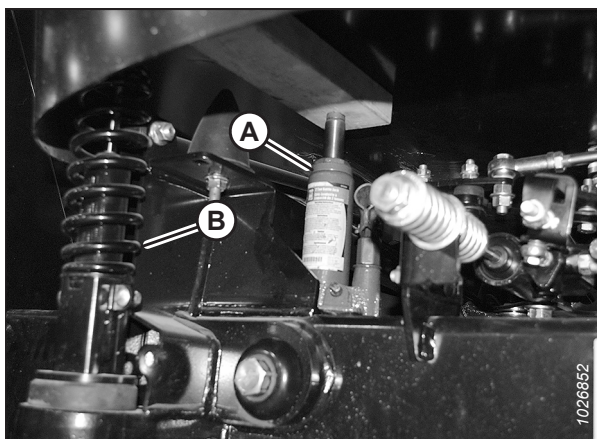


Figure 3.78: Bottle Jack Lifting Cab

ASSEMBLING WINDROWER

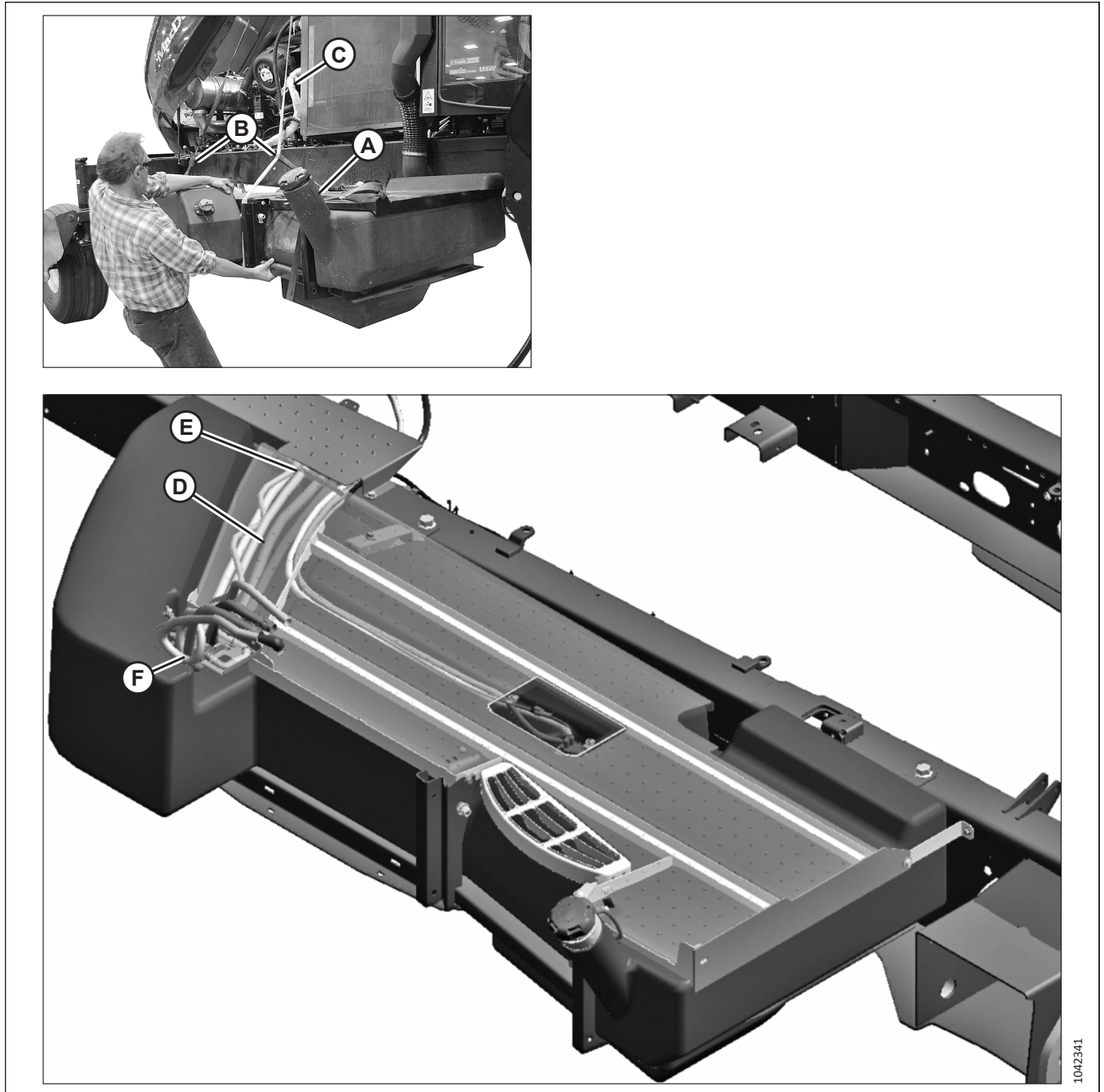


Figure 3.79: Attaching Right Platform Assembly

15. Move hose bundle (C) to prevent it being pinched.
16. 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 close to the right side of the windrower.
17. Route DEF hose bundle (F) through opening (G) and out of opening (H) of the platform
18. Move the platform into place on the right side of the windrower.

ASSEMBLING WINDROWER

19. Retrieve the following hardware for mounting the platform in the next step:

- (A) Two M20 x 50 hex flange bolts (MD #136662)
- (B) Two M12 x 25 carriage head bolts (MD #135903)
- (C) Two M12 hex flange nuts (MD #136431)
- (D) One M10 x 30 hex flange bolt (MD #136431)
- (E) One M10 hex flange nut (MD #135799)

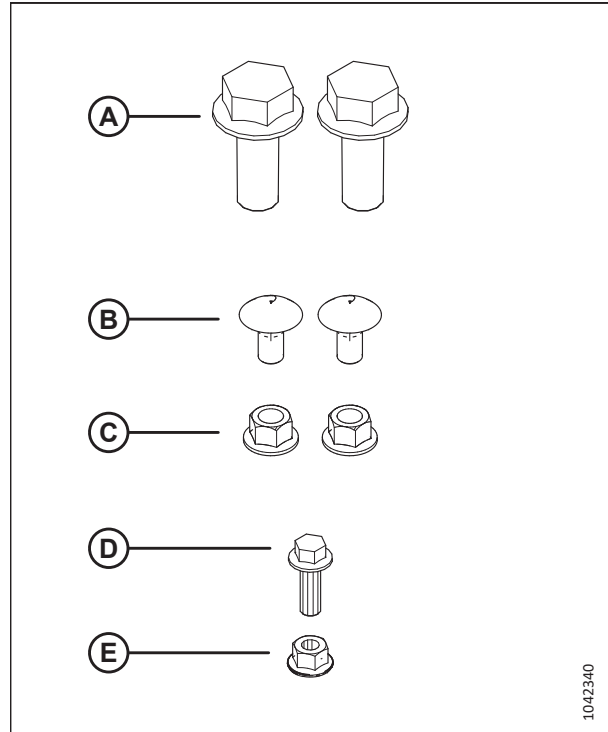


Figure 3.80: Hardware for Attaching Platform

ASSEMBLING WINDROWER

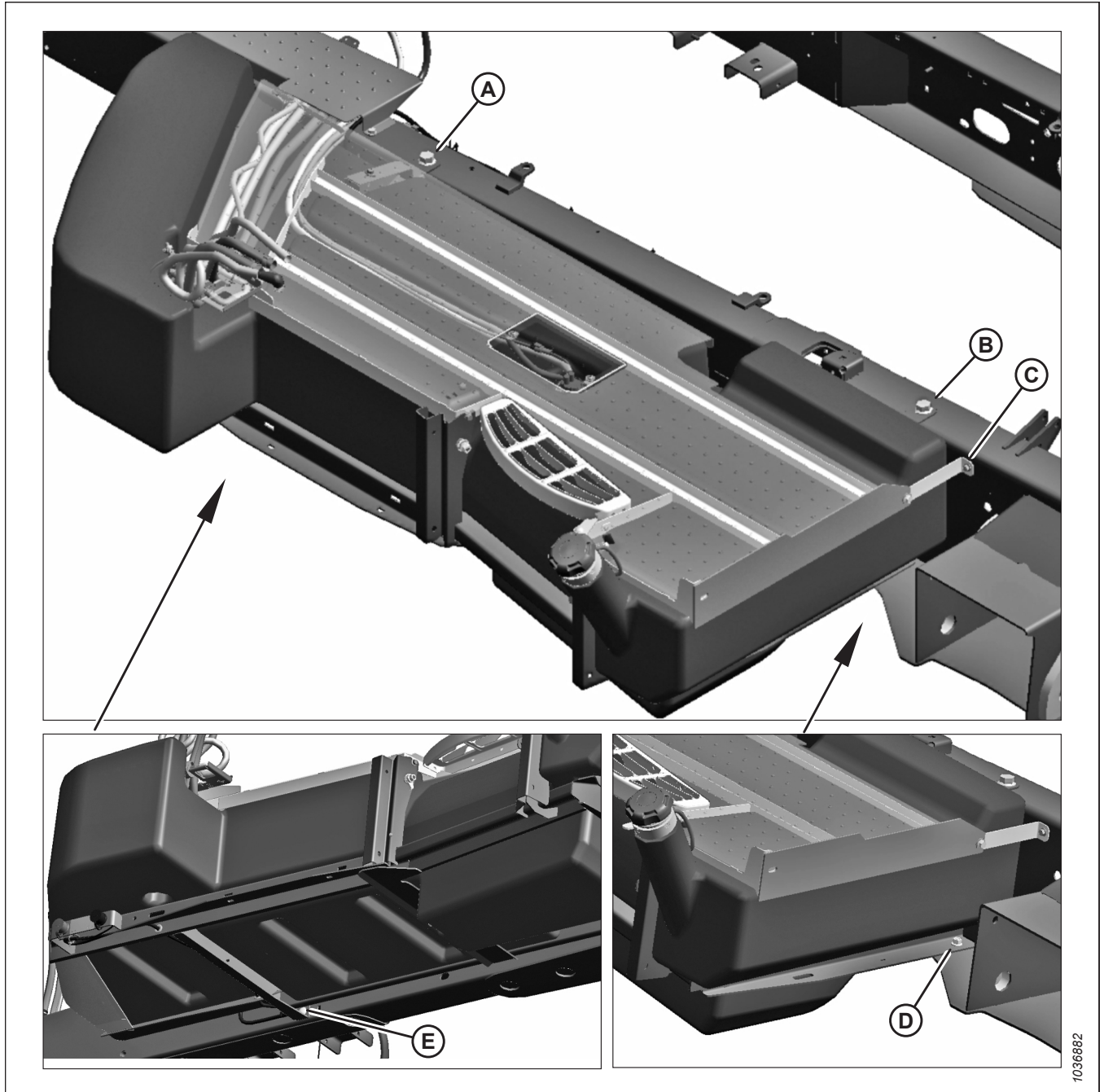


Figure 3.81: Attaching Right Platform Assembly

20. Secure the platform to the frame using the following hardware:

- (A) M20 x 50 hex flange bolt (MD #136662)
- (B) M20 x 50 hex flange bolt (MD #136662)
- (C) M10 x 30 hex flange bolt (MD #184665) and M10 nut (MD #136431). Place the nut inside the frame.
- (D) M12 bolt (MD #135903) and M12 nut (MD #136431) Place the nut on top.
- (E) M12 bolt (MD #135903) and M12 nut (MD #136431) Place the nut is inside the frame.

ASSEMBLING WINDROWER

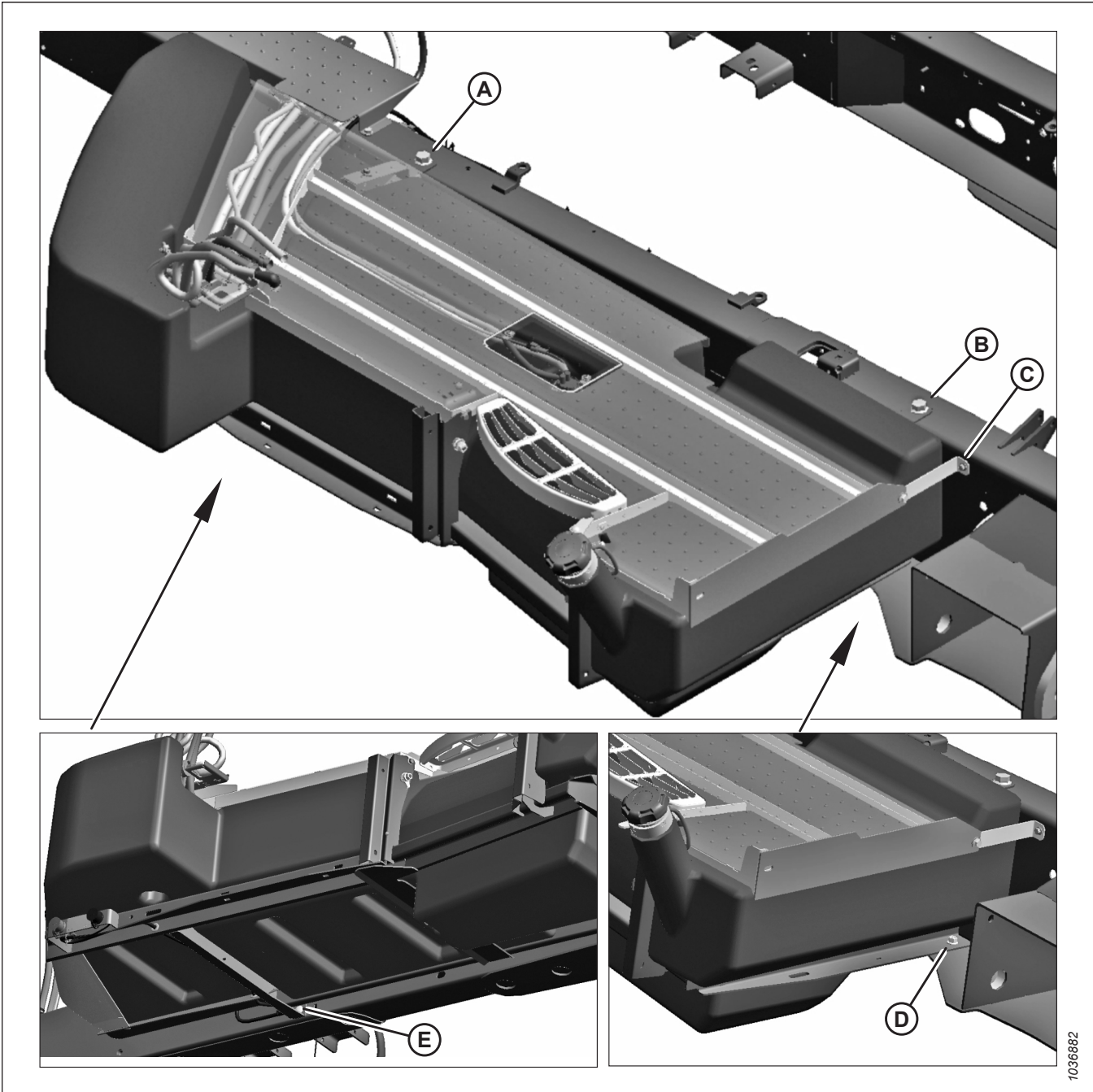


Figure 3.82: Attaching Right Platform Assembly

21. Tighten the hardware according to the torque values listed in Table 3.3, page 82.

Table 3.3 Right Platform Bolt Torque

Bolt Location (Callout)	Torque Value
Rear support, top frame (A)	499 Nm (368 lbf·ft)
Front support, top frame (B)	499 Nm (368 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)

ASSEMBLING WINDROWER

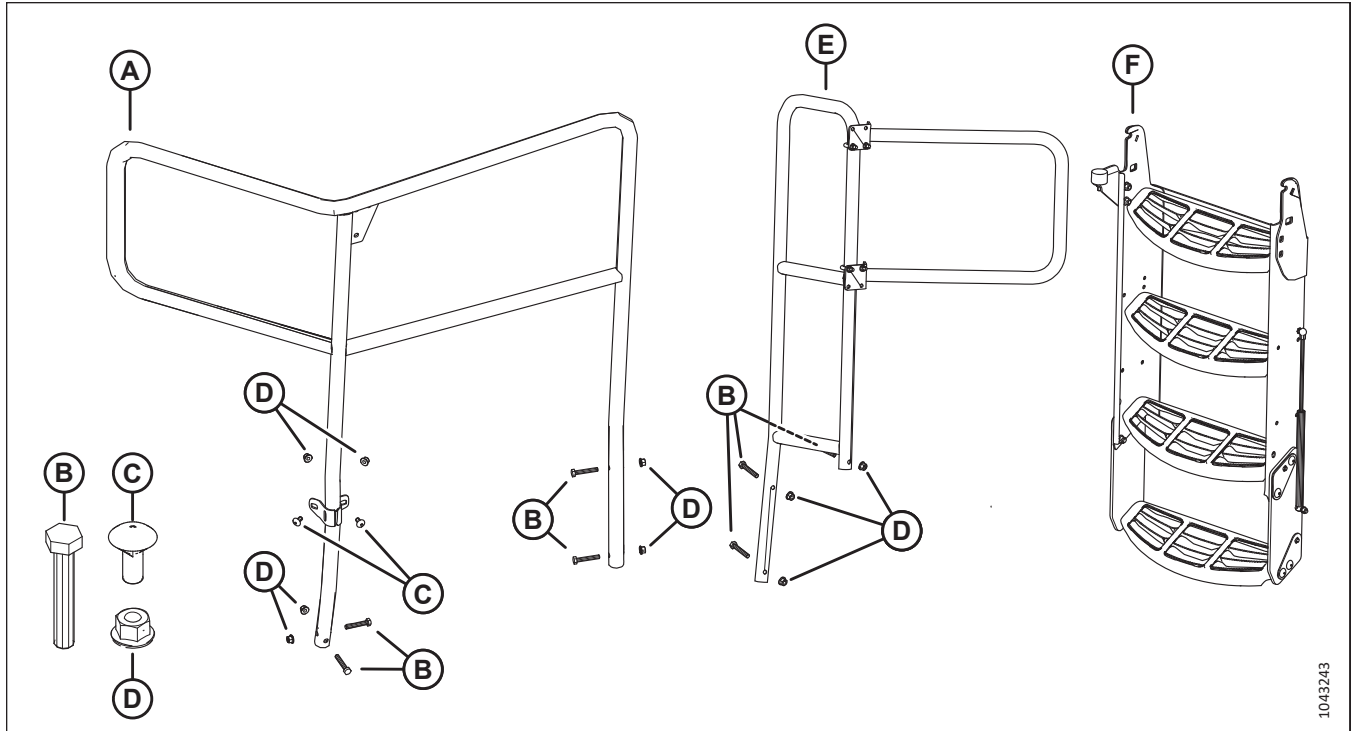


Figure 3.83: Right Platform Handrails and Stairs

22. Retrieve the following parts:

- (A) Rear handrail with the following hardware left installed in it:
 - (B) Four M10 x 60 hex bolts
 - (C) Two M10 x 25 carriage head bolts
 - (D) Six M10 hex flange nuts
- (E) Front handrail with three bolts and nuts left installed in it
 - (B) Three M10 x 60 hex bolts
 - (D) Three M10 hex flange nuts
- (F) Right stairs

23. Remove the hardware shipped on the steps mounting-studs, then install the hardware and steps in the following order:

NOTE:

The left stud on the steps is shown; repeat the installation order for the right stud.

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

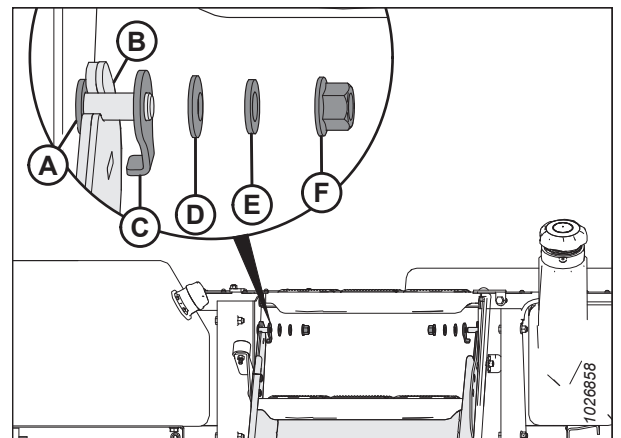


Figure 3.84: Platform Steps Hardware

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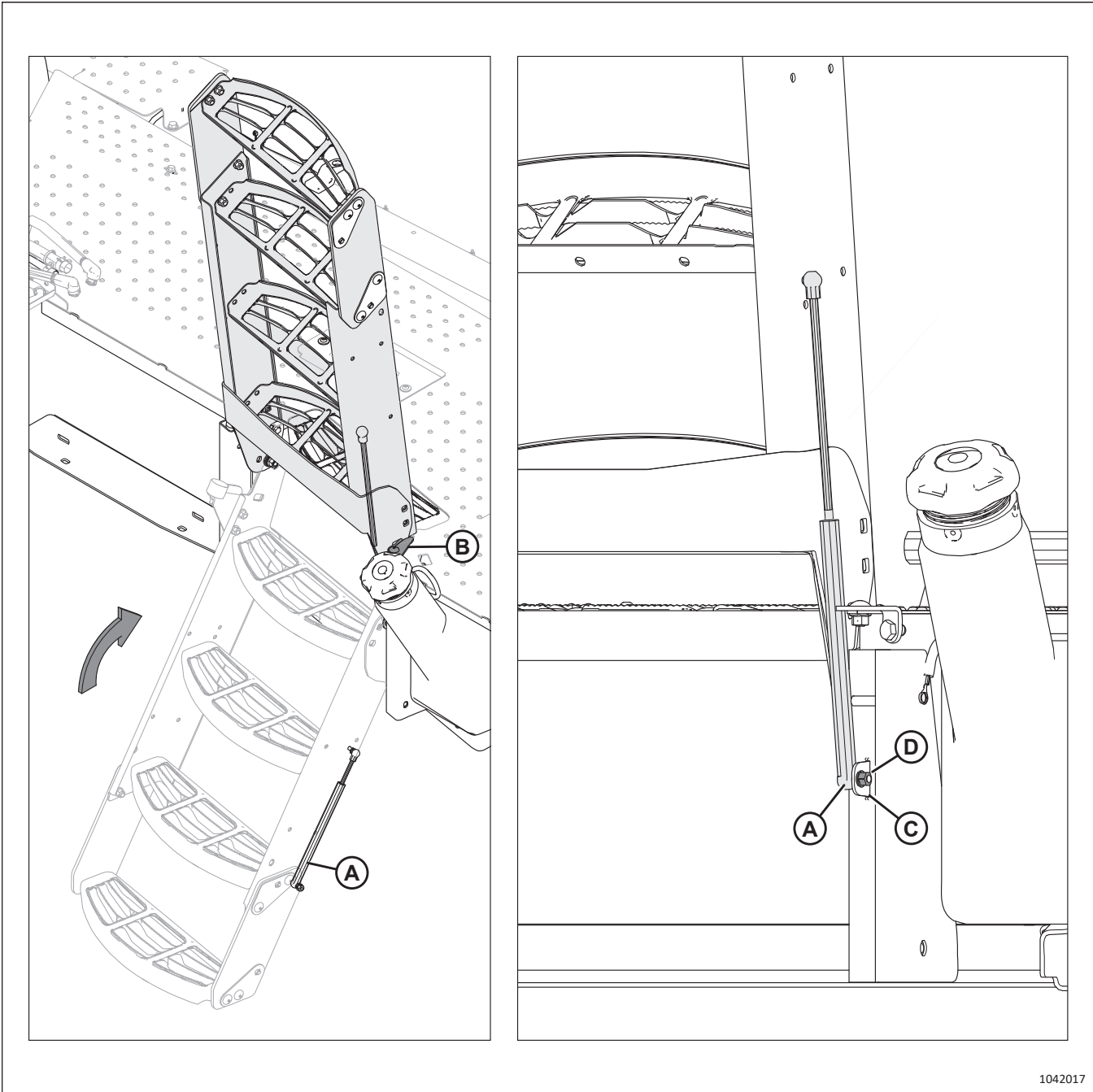


Figure 3.85: Right Platform Steps

24. Remove the shipping wire from shock (A).
25. Rotate the steps up. Ensure that latch (B) engages to lock the steps in place.
26. Attach shock (A) to bracket (C) using M8 nut (D) that was shipped attached to the shock.

ASSEMBLING WINDROWER

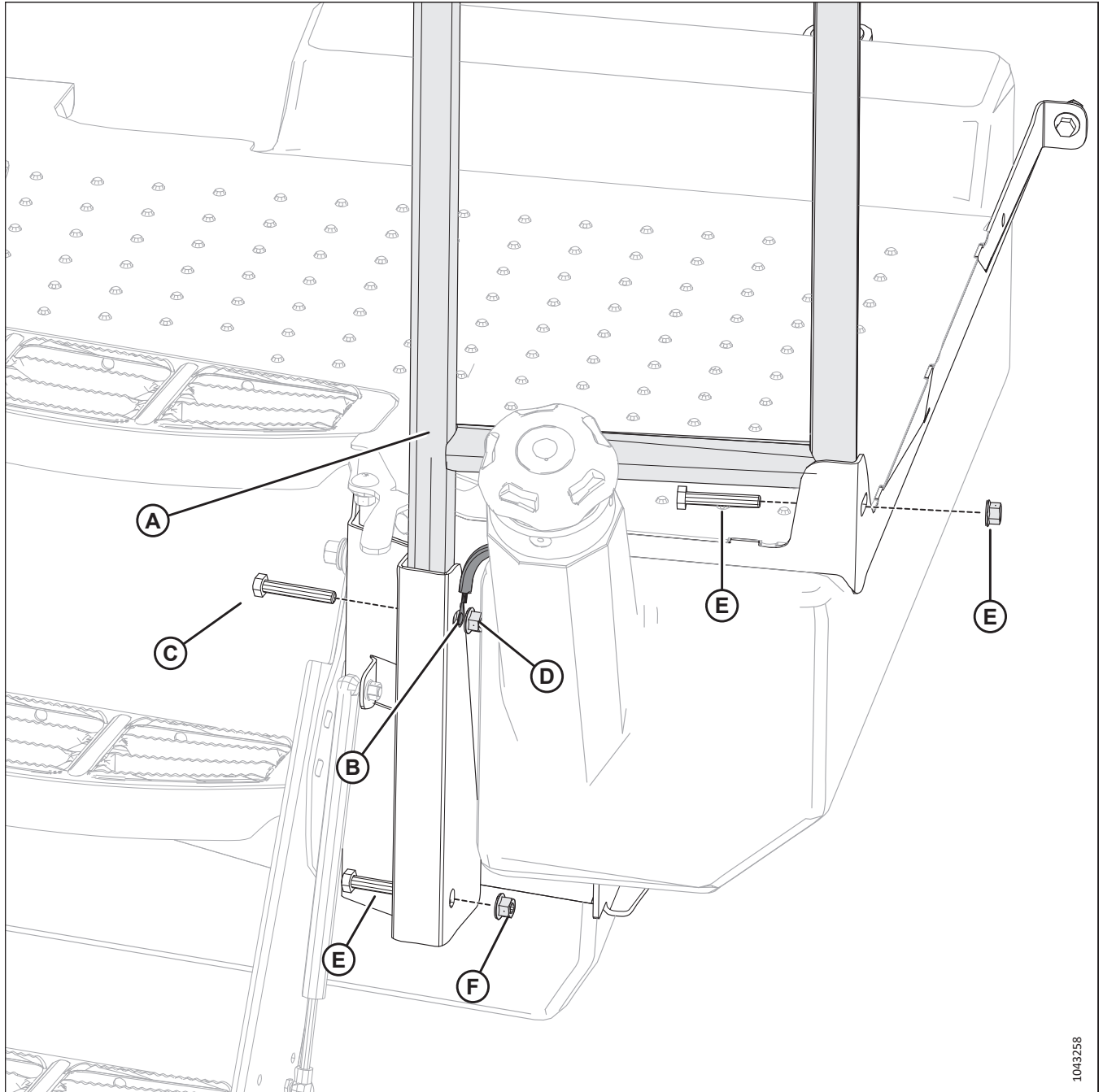


Figure 3.86: Front Handrail – Right Platform

27. Retrieve handrail (A) and remove all M10 bolts and nuts attached to it. Insert the handrail into the right platform as shown.
28. Apply dielectric grease (MD #45529 or equivalent) to the filler neck ground cable terminal (B).
29. Secure the handrail and terminal (B) to the platform using M10 bolt (C) and nut (D).
30. Secure the rest of the handrail to the platform using two M10 bolts (E) and nuts (F).
31. Torque nuts (D) and (F) to 34 Nm (25 lbf-ft).

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32. Loosen clamps (B) and rotate handrail (A) until the hinge support is angled 35° (D) from fixed handrail (E).
33. Torque clamps (B) to 34 Nm (24 lbf-ft).

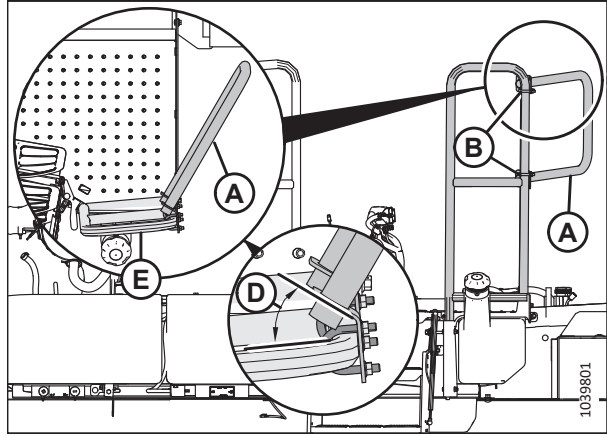


Figure 3.87: Front Handrail – Right Platform

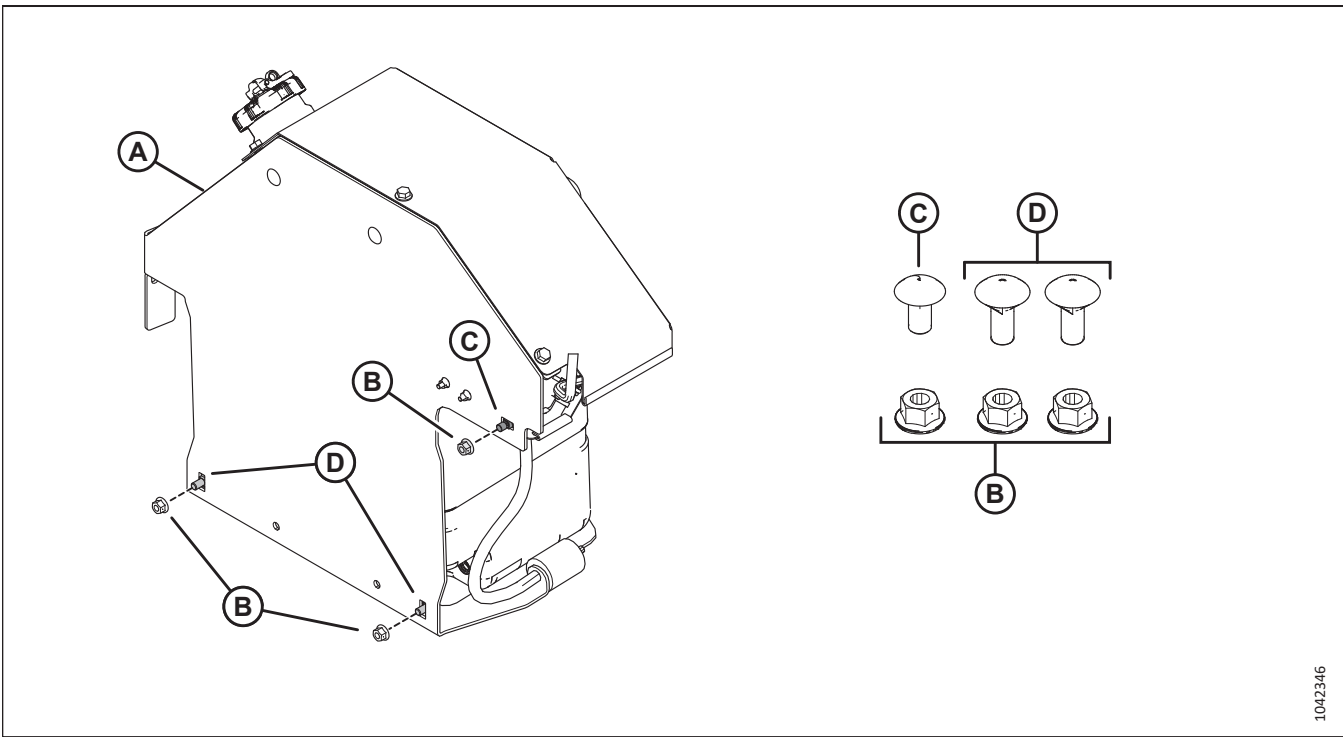


Figure 3.88: DEF Tank

34. Retrieve DEF tank (A).
35. Remove and retain the following hardware for mounting the DEF tank:
 - (B) Three M10 hex flange nuts (MD #135799)
 - (C) One M10 x 20 carriage head bolt (MD #184657)
 - (D) Two M10 x 25 carriage head bolts (MD #135785)

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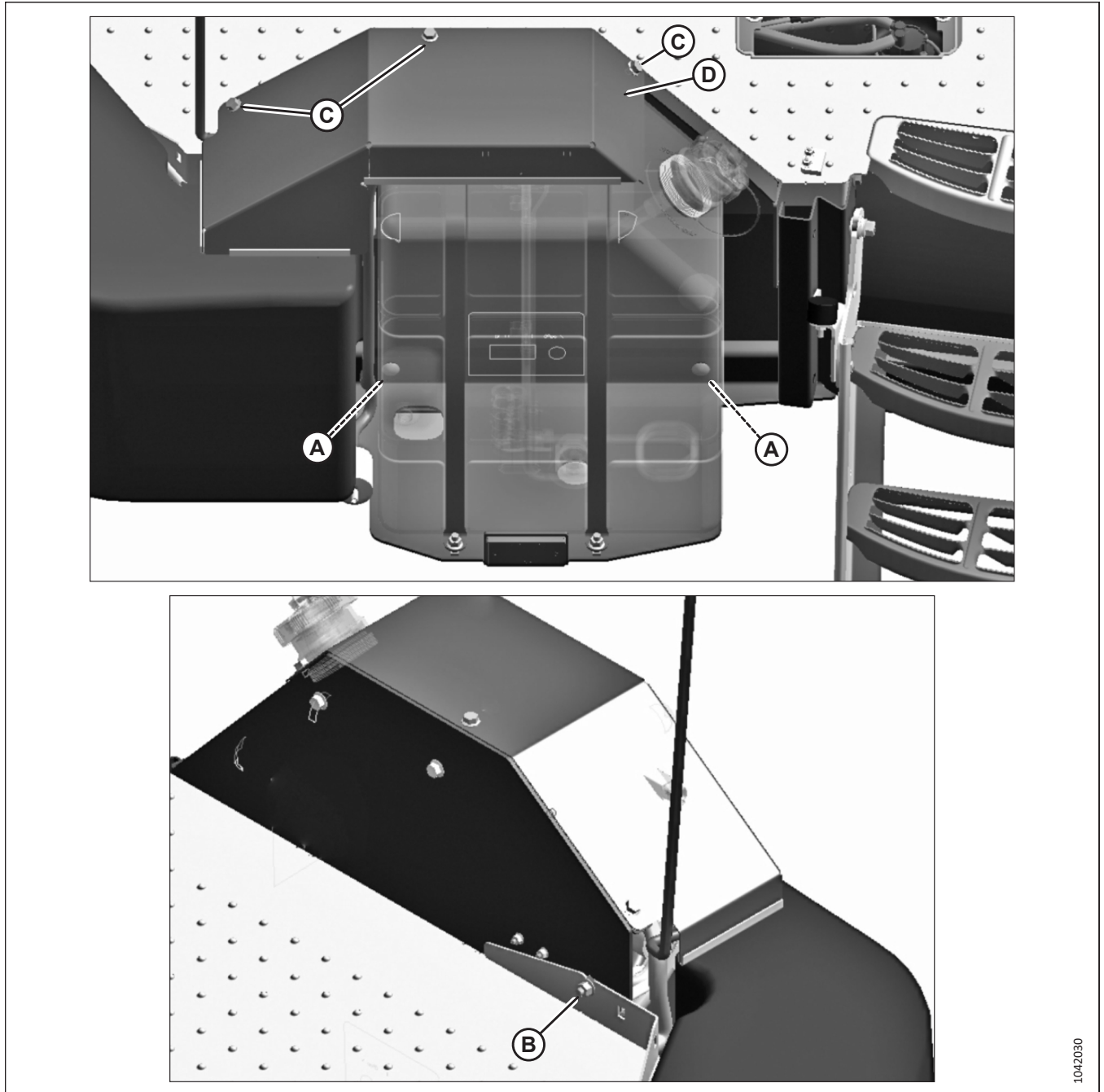


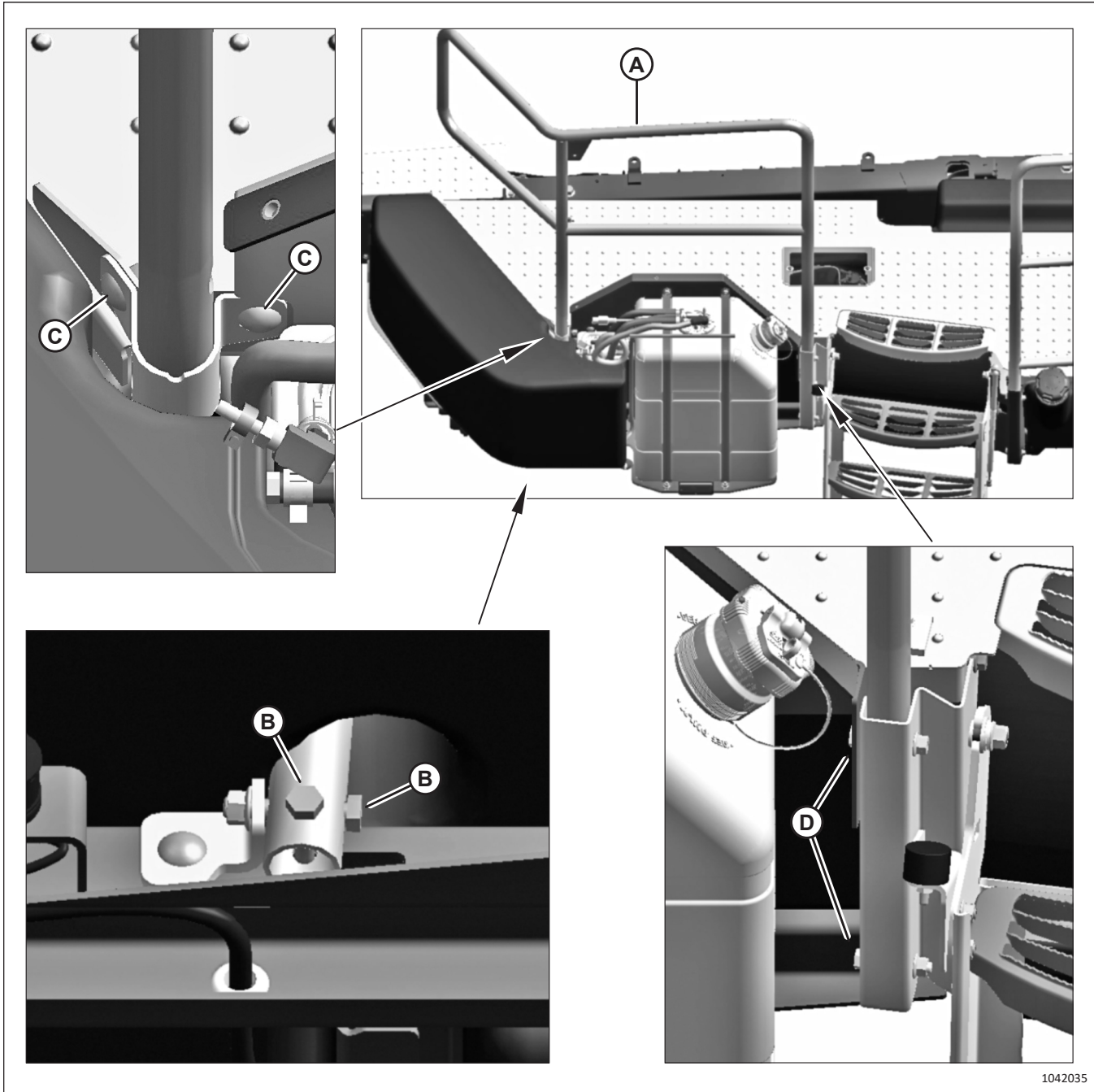
Figure 3.89: DEF Tank Installation

36. Attach the DEF tank to the platform using the following hardware retained in Step [35, page 86](#):

- (A) Two M10 x 25 carriage head bolts (MD #135785) and two M10 hex flange nuts (MD #135799)
- (B) One M10 x 25 carriage head bolts (MD #184657) and one M10 hex flange nut (MD #135799)
- Do **NOT** tighten the hardware.

37. Remove and retain three M10 x 16 hex head bolts (D) and DEF tank cover (E). Retain the bolts with the cover for reinstallation later.

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Figure 3.90: DEF Tank Installation

38. Retrieve rear handrail (A). Remove and retain the hardware (six nuts and bolts).
39. Insert the handrail into the channels next to the DEF tank as shown. Secure the handrail with the following hardware:
 - Two M10 x 60 hex bolts and nuts at locations (B) and (D)
 - Two M10 x 20 carriage head bolts and nuts at locations (C)
40. Tighten hardware (C). Torque hardware (B) and (D) to 34 Nm (25 lbf-ft).

ASSEMBLING WINDROWER

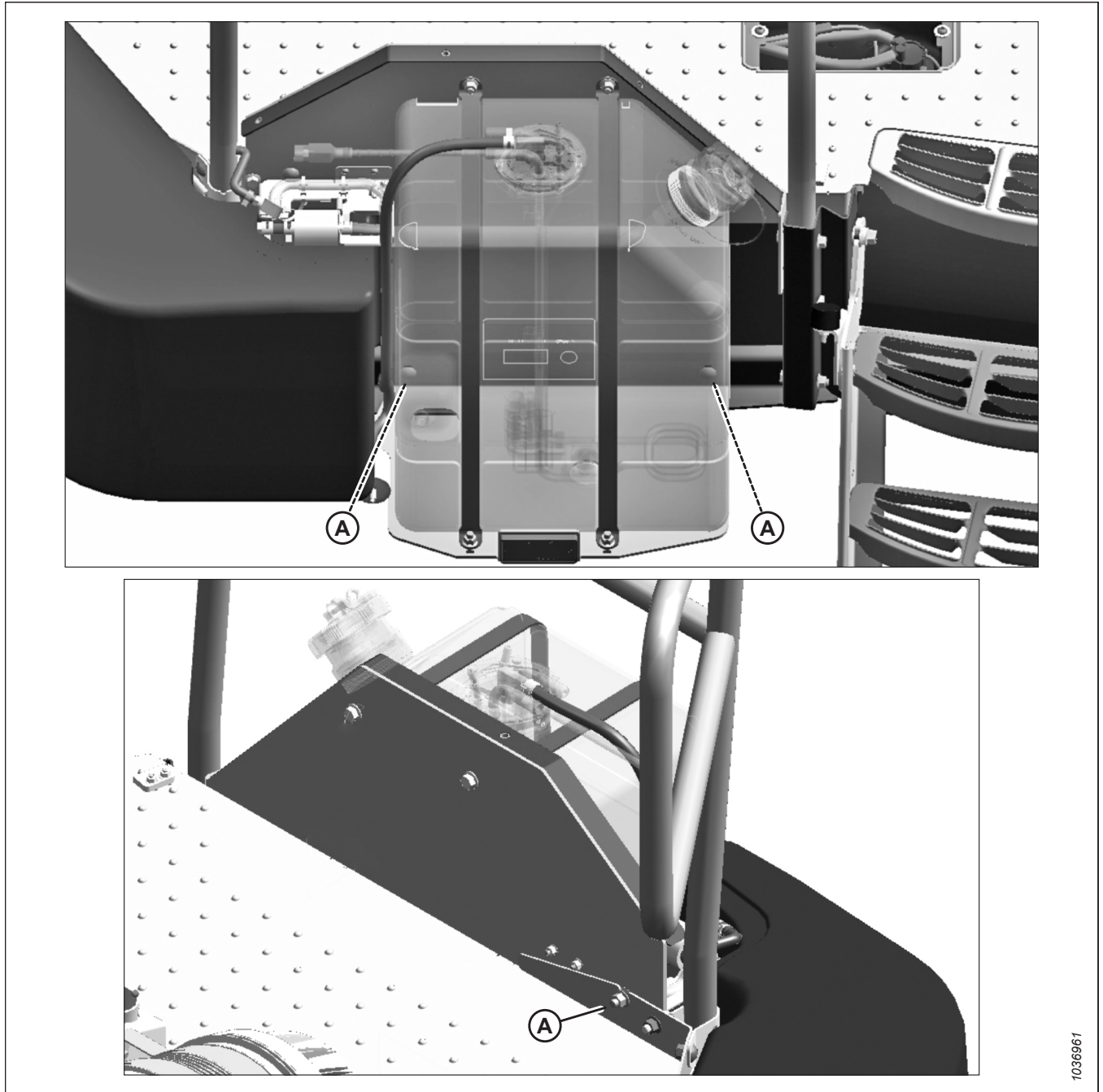


Figure 3.91: DEF Tank Installation

41. Tighten DEF tank mounting hardware at locations (A).

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Positioning the air conditioning drain hoses

42. Route drain hoses (A) from the air conditioning (A/C) unit through hole (B) in the frame and into the space between the front platform support and the DEF tank.
43. Make a loop in the drain hoses and secure it with cable ties. Maximum loop height (C) should be 189 mm (7 7/16 in.). Remaining hose length (D) should hang 120 mm (4 3/4 in.) below the bottom of the platform support.
44. Fasten the loop to slot (E) in the platform support with a cable tie.
45. Pull the hose ends through hole (F) in the bottom of the platform support.

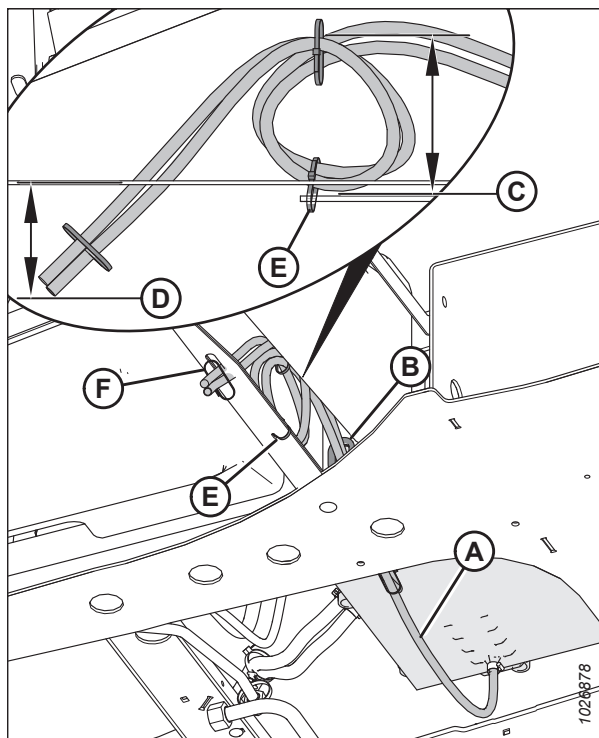


Figure 3.92: A/C Drain Hoses

3.13 Connecting Fuel and Diesel Exhaust Fluid Tanks

The fuel and diesel exhaust fluid (DEF) components were disconnected for shipping purposes.

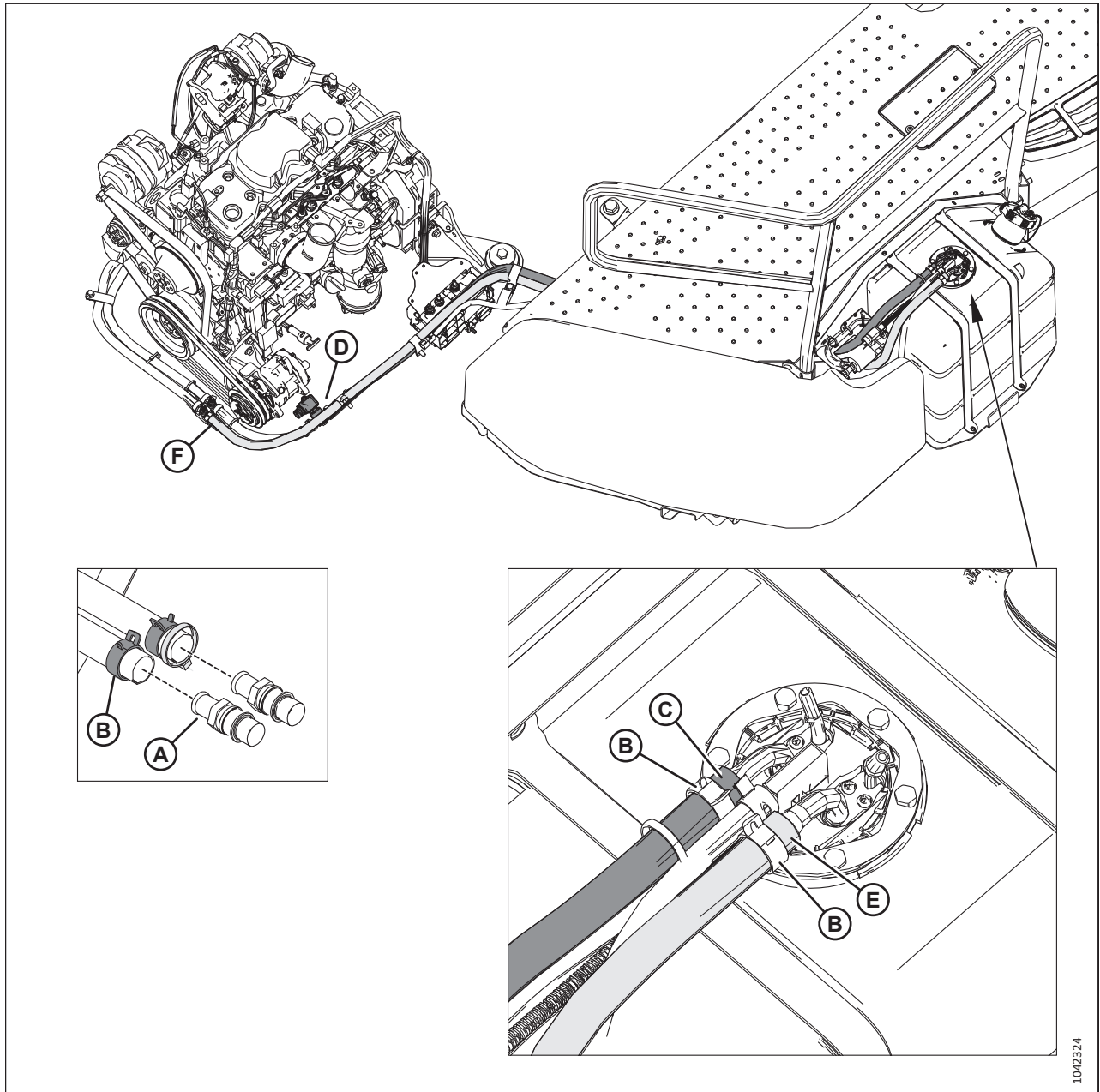


Figure 3.93: DEF Heater Connections

1. Clamp the hoses to prevent coolant spillage, then remove and discard fittings and plugs (A). Retain clamps (B).
2. Connect DEF pressure line (C) (red cable tie) to the DEF tank port (red cable tie) using retained clamp (B).

NOTE:

The opposite end of the pressure line is shipped connected at location (D).

3. Connect DEF return line (E) to the DEF tank port using retained clamp (B).

NOTE:

The opposite end of the return line is shipped connected at location (F).

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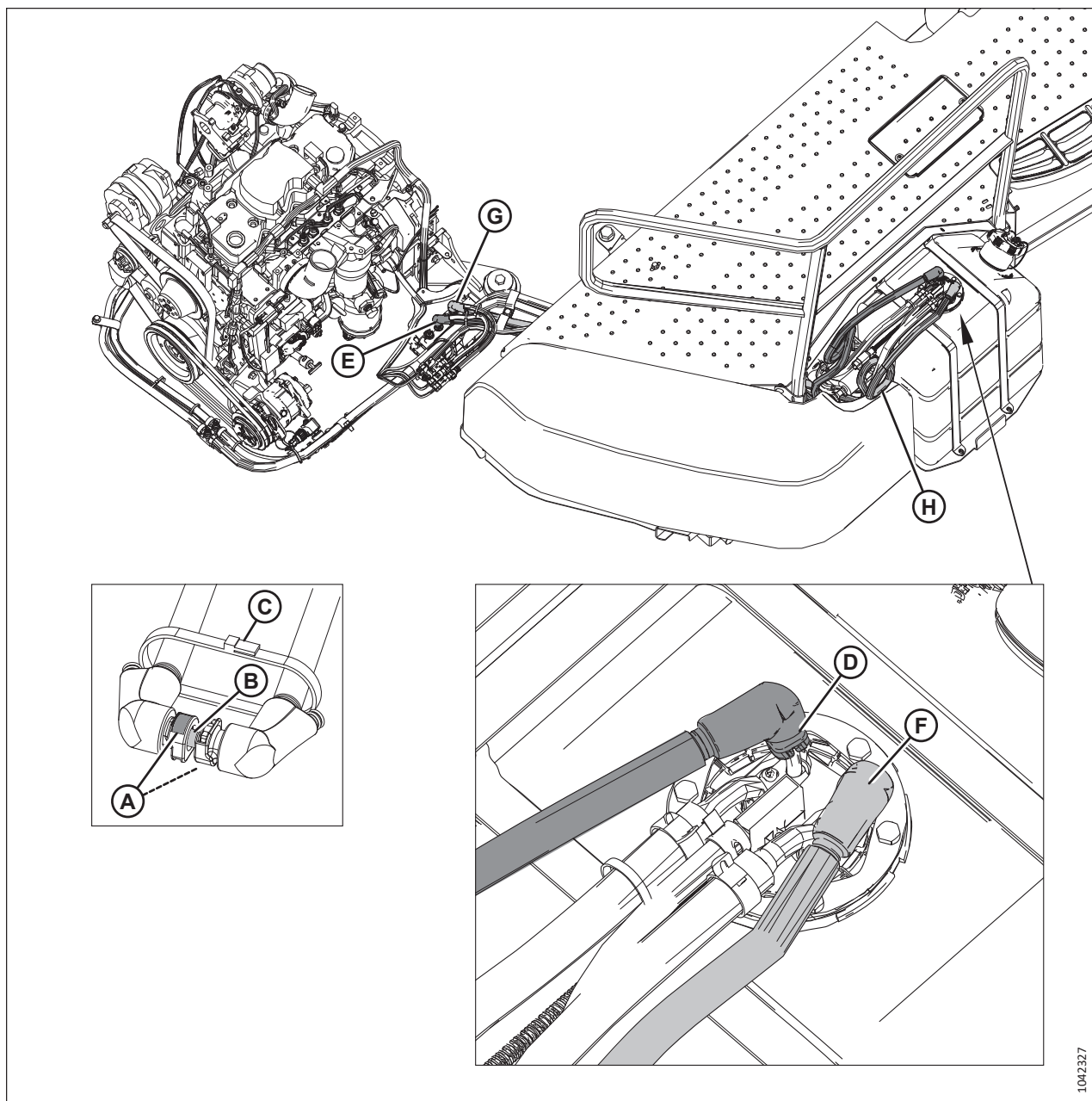


Figure 3.94: DEF Supply Connections

4. Press tabs (A) on the DEF supply hoses and pull the hoses off pin (B). Discard pin (B) and cable tie (C).

5. Connect the DEF **RETURN** hose (D) to the 3/8 in. DEF tank port.

NOTE:

The opposite end of the return hose is shipped connected at location (E)

6. Connect the DEF **SUCTION** hose (F) to the 5/16 in. DEF tank port.

NOTE:

The opposite end of the suction hose is shipped connected at location (G).

7. Coil extra slack in the DEF hoses at location (H). Proceed to Step 8, [page 93](#).

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

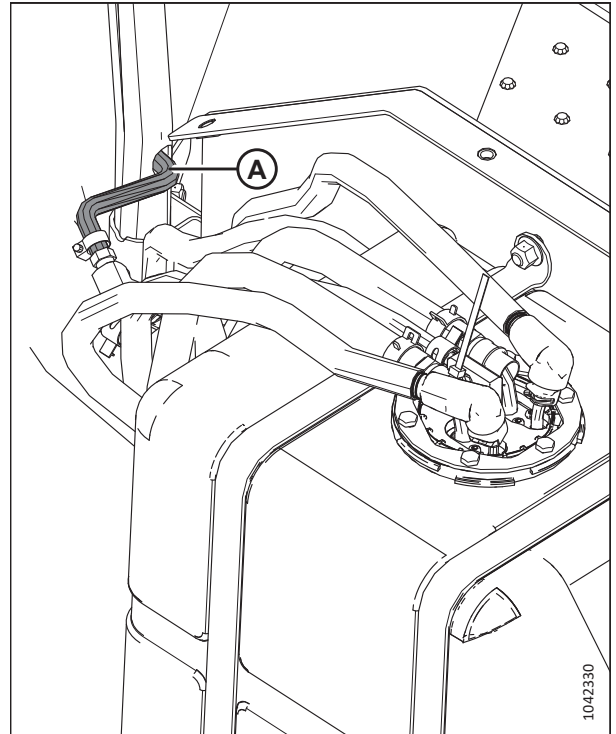


Figure 3.95: Vent Hose

Connecting fuel hoses

- Remove and discard shipping connectors (A) from the fuel hoses. Retain hose clamps (B).
- Using the existing hose clamps, connect the supply hose marked with the red cable tie to fuel filter (C), and the return hose to fuel pump port (D).

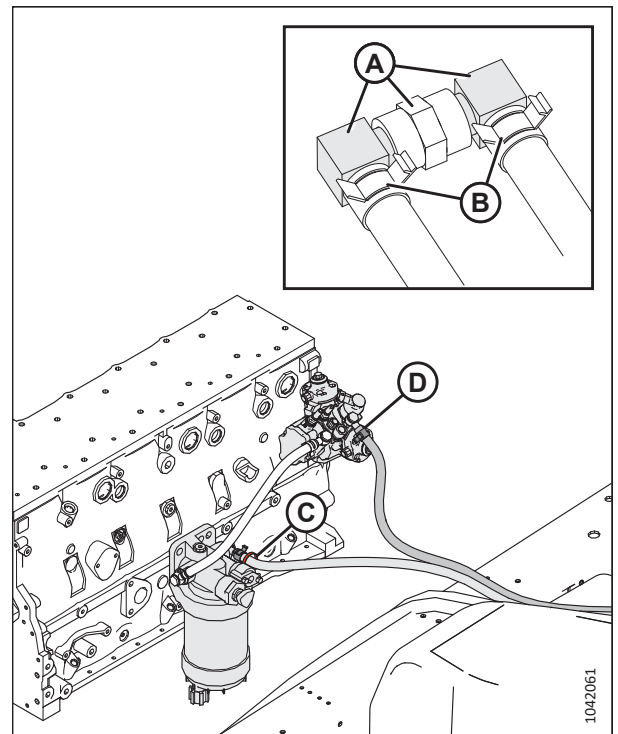


Figure 3.96: Fuel Hose Connections

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- 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 [195 lbf·in]).

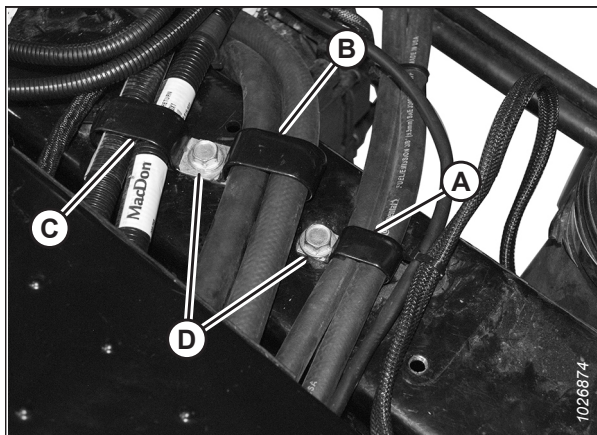


Figure 3.97: Securing Hoses to Frame with P-Clips

Electrical connections

- 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

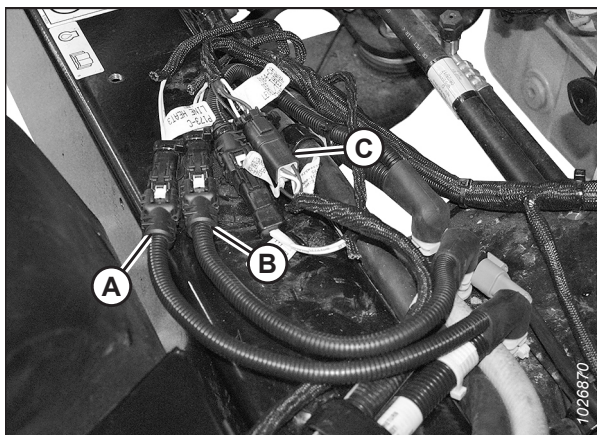


Figure 3.98: Electrical Connections

- Connect harness (A) to the DEF tank connector.

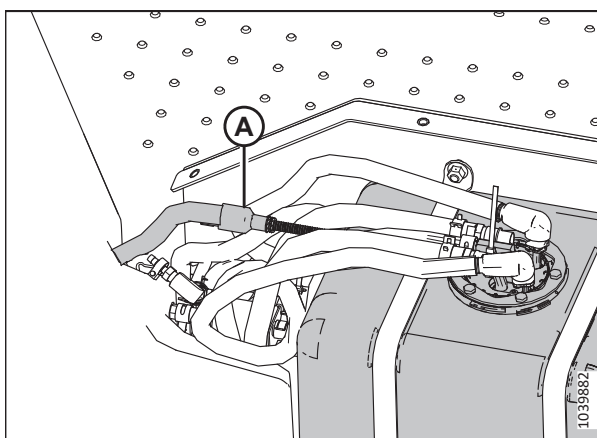


Figure 3.99: Electrical Connections

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14. Route round auxiliary power connector (B) (C40B) from the right platform to the bracket on the frame and secure it with washer and nut. Tighten the nut to 5.6 Nm (4 lbf·ft [50 lbf·in]).
15. Connect C40B (B) to C40A (A), and secure the harness to the air cleaner support pipe (not shown) with large cable tie (C).
16. Remove the protective cap from fuel level sender connector (D) and plug it into the chassis harness P220 (not shown).
17. Secure the fuel level sender harness to the auxiliary power harness with cable tie (E).
18. Reinstall hose cover (B) using two bolts (A).

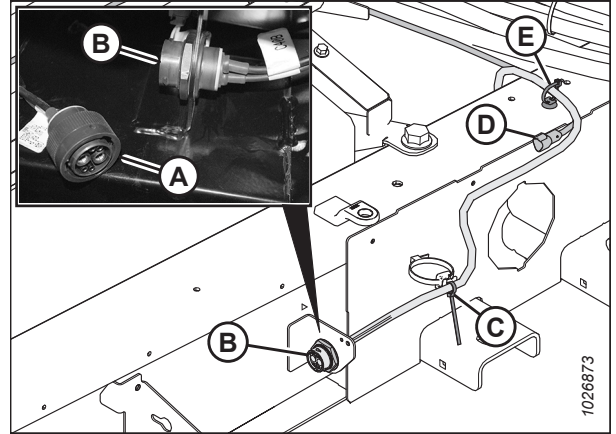


Figure 3.100: Electrical Connections

18. Reinstall hose cover (B) using two bolts (A).

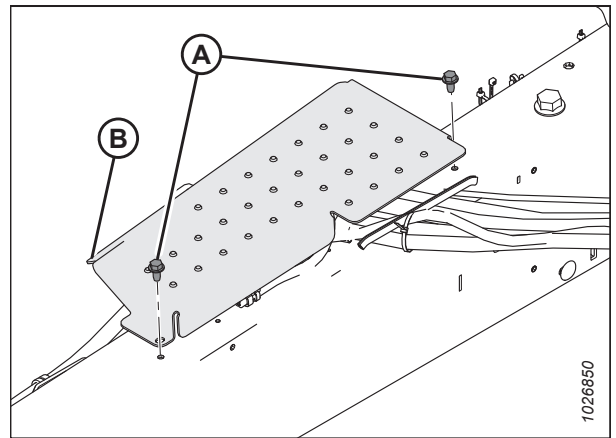


Figure 3.101: DEF Hose Cover

19. Reinstall DEF head cover (A) using three bolts (B).

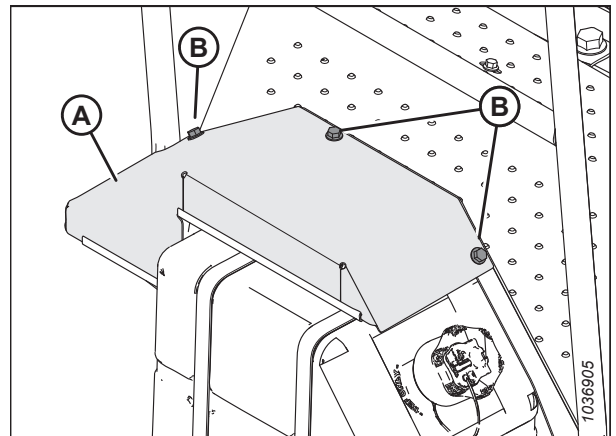


Figure 3.102: DEF Head Cover

3.14 Positioning Mirror Arms

The mirror arms must be moved to the field position.

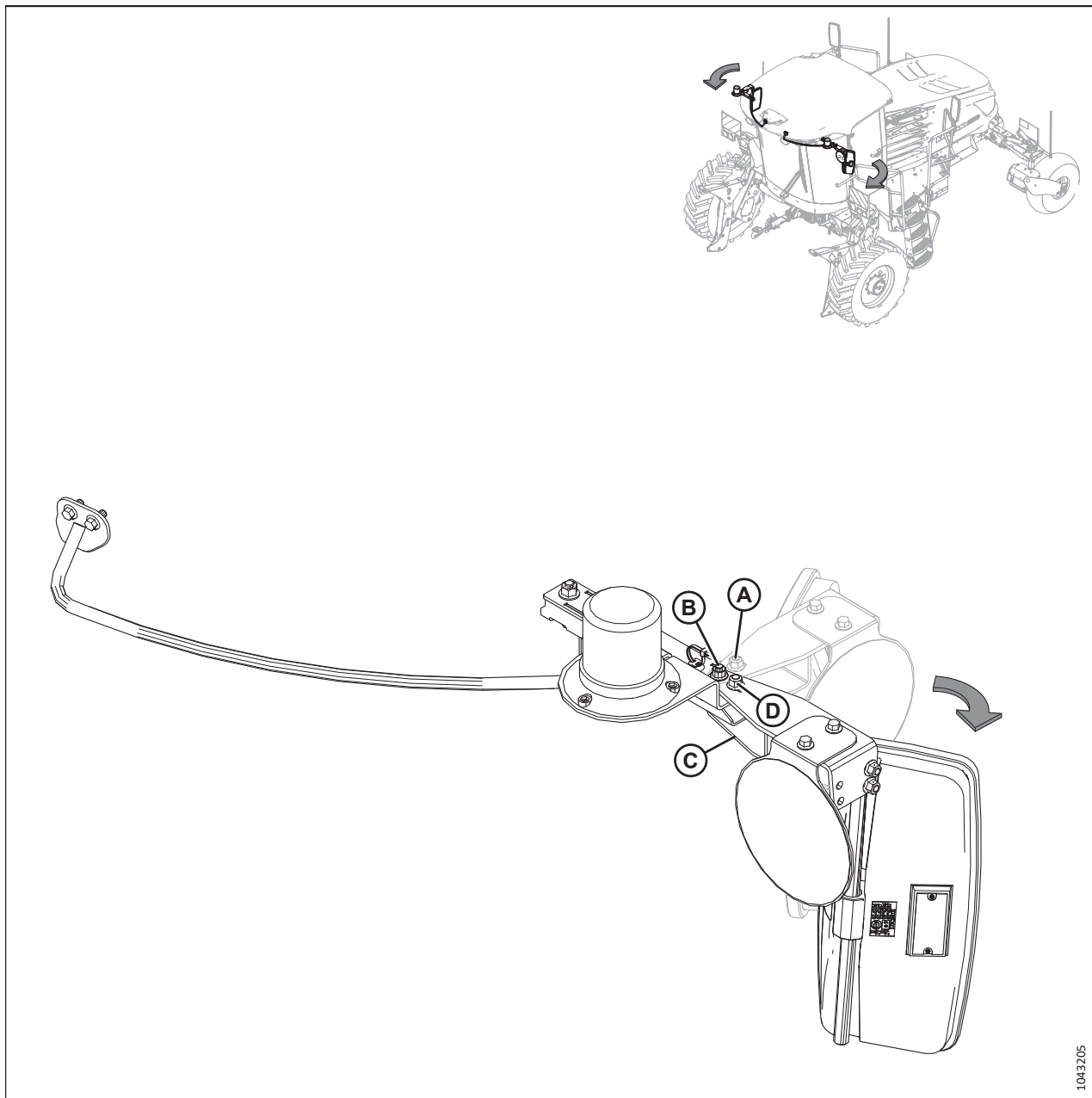


Figure 3.103: Mirror Arm Swiveled into Field Position

1. Loosen retaining nut (A) and pivot nut (B) on support arm (C). Swivel the support arm cab-forward by 90°, as shown.
2. Torque retaining nut (D) to 48 Nm (35 lbf·ft).
3. Torque pivot nut (B) to 26 Nm (19 lbf·ft [230 lbf-in]).
4. Repeat this procedure for the other mirror arm.

3.15 Replacing or Removing Speed Indicator Sign Decal

A 25 km/h speed identification sign (SIS) decal is already installed on the windrower from the factory, however, different countries may require a different SIS decal or may not require an SIS decal at all.

1. Identify the required SIS decal according to your local jurisdiction or the jurisdiction where the windrower will operate.
 - To replace the decal, proceed to Step 2, page 97.
 - To remove the decal/SIS bracket, proceed to Step 6, page 98.

Replacing the SIS decal

2. Retrieve the appropriate SIS decal from the information package in the cab.
3. Locate existing SIS decal (A) on the left mirror arm.
4. Wipe the existing decal with a clean cloth to remove dirt and grease.

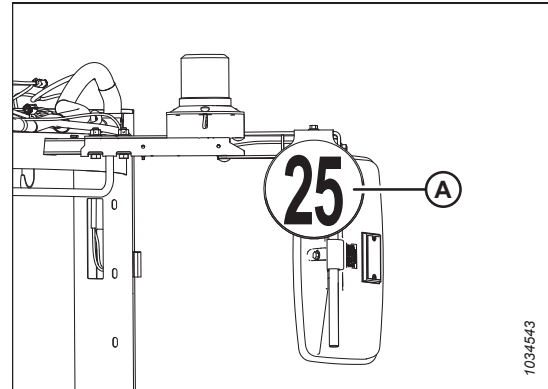


Figure 3.104: Existing Decal on Windrower

5. Apply decal (A), according to the local jurisdiction, over the existing 25 km/h decal.

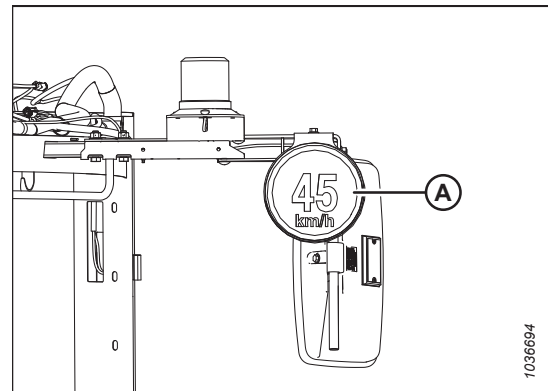


Figure 3.105: SIS Decal for UK

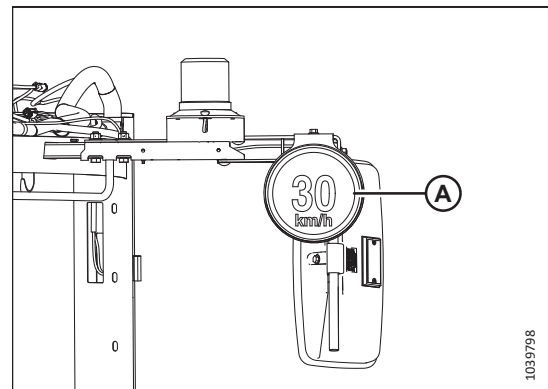


Figure 3.106: SIS Decal for Germany

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Removing the SIS decal/bracket

6. Remove two bolts (A) and SIS bracket (B) from the left mirror arm.

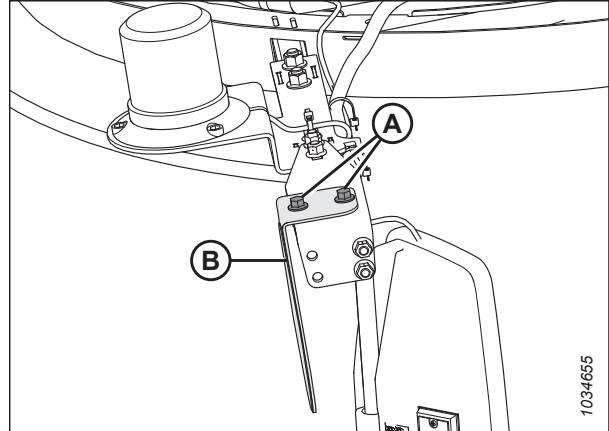


Figure 3.107: Existing SIS Bracket on Windrower

3.16 Installing Air Inlet Duct

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

1. Retrieve air inlet duct (A) from inside the cab. The inlet duct consists of:
 - Cap (A)
 - Clamp (B)
 - Setscrew (C)
2. Ensure that there are no parts or debris inside the inlet duct.
3. Remove the plastic cover from the breather tube.

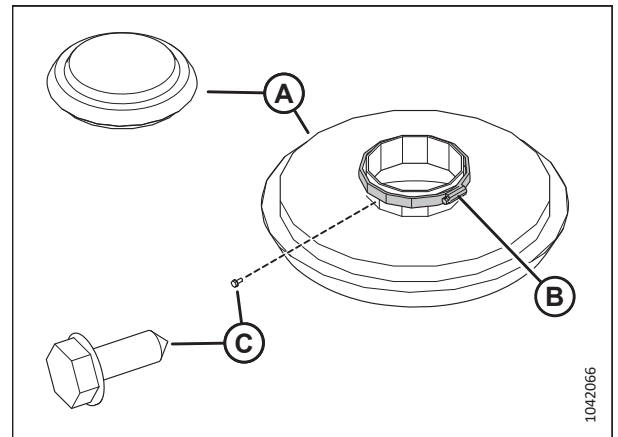


Figure 3.108: Air Inlet Duct

4. At the rear right corner of the cab roof, set air inlet duct (A) over the breather tube, and rotate it to align the predrilled holes for setscrew (B).
5. Tighten setscrew (B).
6. Ensure that there is 0–4 mm (0–5/32 in.) of space (C) between setscrew (B) and clamp (D).
7. Ensure that there is 5 mm (13/64 in.) of space (E) between the clamp and the bottom of the duct.
8. Tighten clamp (D) to 6.2 Nm (5 lbf·ft [55 lbf·in]).

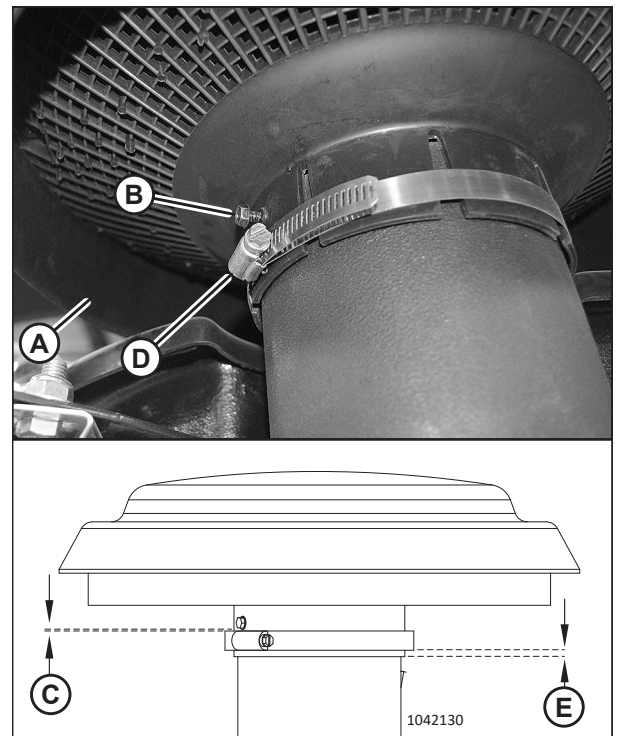


Figure 3.109: Air Inlet Duct

3.17 Installing Signal Light Placards, Markers, and Registration Plate Mount

Follow these steps to install the signal light placards, markers, and registration plate mount.

Two signal light placards (A) are located on the cab side, and two signal light placards (B) are located on the walking beam side. There are also two end markers (C) located on the walking beam. Registration plate mount (D) is located just below the cab on the frame.

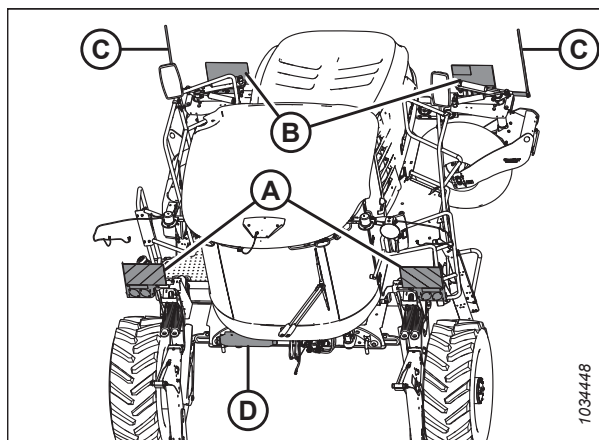


Figure 3.110: Signal Light Placards, Markers, and Registration Plate Mount Locations

1. Retrieve the four signal light placards, two markers, registration plate mount and bracket, and hardware from the cab.

Cab-side signal light placard

2. Position left signal light placard (A) on left cab-forward drive leg (B), and loosely secure it with two M10 x 30 bolts and lock nuts (C).

NOTE:

The bolts are installed from under the bracket.

3. Adjust left signal light placard (A) so that there is a distance of 58 mm (2 1/4 in.) (D) from the edge of the signal light placard bracket to the inner edge of drive leg tower, and 37 mm (1 1/2 in.) (E) from the rear of the plate to rear edge of the drive leg tower, as shown.
4. Tighten hardware (C) to secure signal light placard (A) to the drive leg tower.

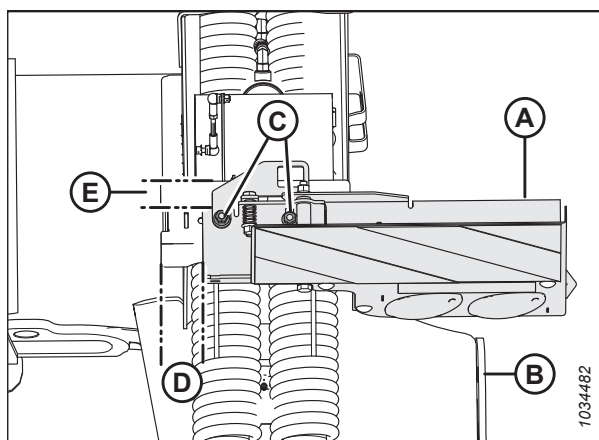


Figure 3.111: Cab-Side Signal Light Placard – Left Cab-Forward, Top View

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5. Position right signal light placard (A) on right cab-forward drive leg (B), and loosely secure it with two M10 x 30 bolts (C) and lock nuts (D).

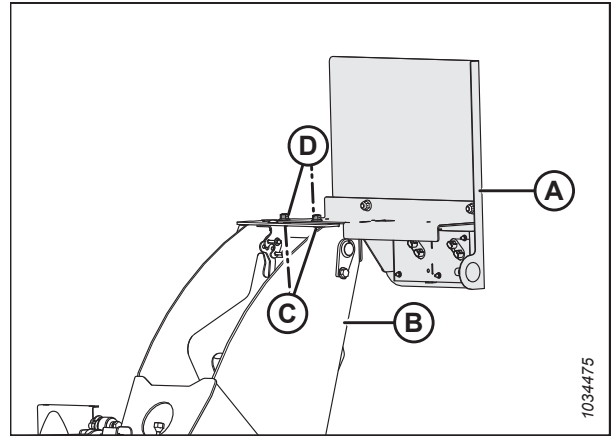


Figure 3.112: Cab-Side Signal Light Placard – Right Cab-Forward

6. Adjust right signal light placard (A) so that there is a distance of 58 mm (2 1/4 in.) (B) from the edge of the signal light placard bracket to the edge of drive leg tower.
7. Tighten hardware (C) and (D) to secure signal light placard (A) to the drive leg tower.

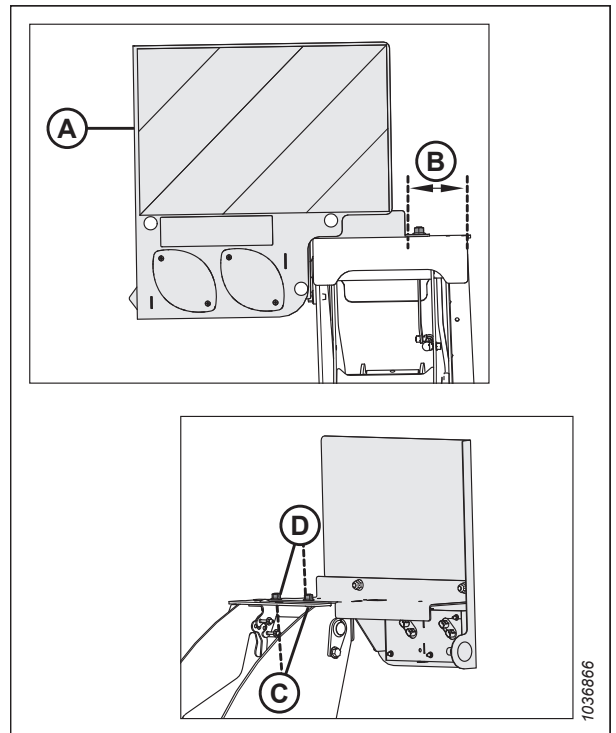


Figure 3.113: Cab-Side Signal Light Placard – Right Cab-Forward

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Walking beam signal light placard

8. Install mount (A) to walking beam (B) using bolts and nuts (C). Ensure the mount face is parallel to the walking beam and is positioned as far away from the walking beam as possible to ensure clearance between the shimmy shock mounts and the walking beam.

NOTE:

Make sure the heads of bolts (C) are on the bottom side of mount (A).

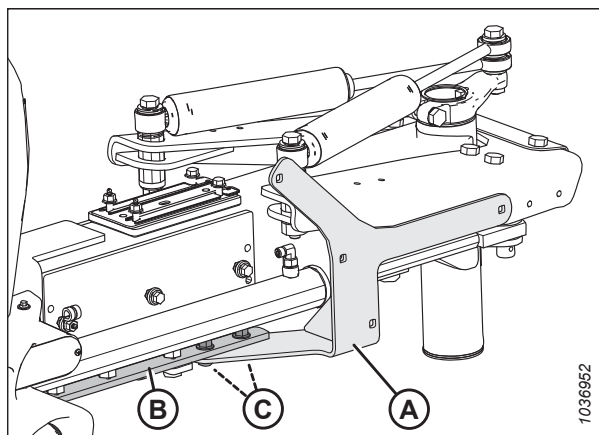


Figure 3.114: Walking Beam Signal Light Placard in – Right Cab-Forward

9. Install placard (A) onto mount (B) using three M10 X 25 carriage head bolts and nuts (C). Leave the inboard nut loose for the wiring harness p-clip later.
10. Repeat Step 8, [page 102](#) to Step 9, [page 102](#) at the opposite side.

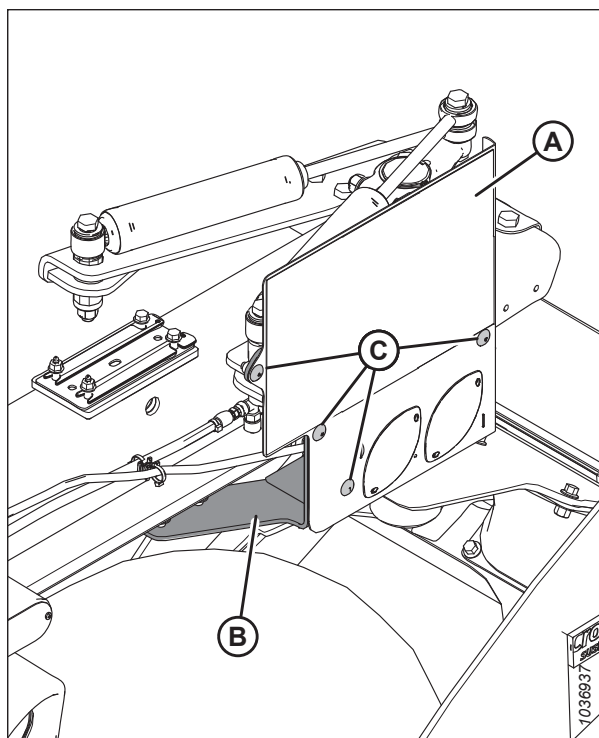


Figure 3.115: Walking Beam Signal Light Placard – Right Cab-Forward

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End markers

11. Position right end marker (A) on the outboard of shock mount plate (B) as shown, and secure it with two M10 X 20 screws (C).
12. Repeat the end marker installation at the opposite side.

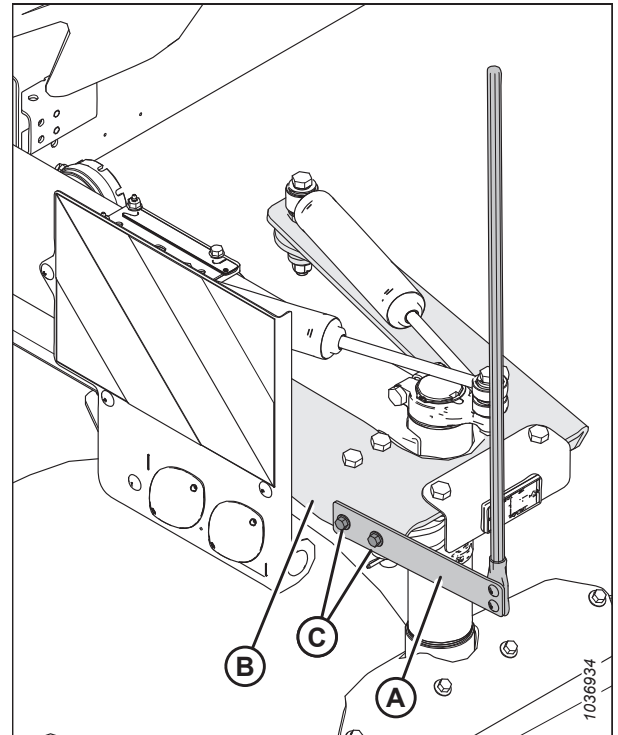


Figure 3.116: End Marker – Right Cab-Forward

Registration plate mount

13. Remove two bolts (A) from the underside of the cab. Position registration mount (B) on the underside of the cab using two previously removed bolts (A).

NOTE:

The mounting position may differ if autosteer has been preinstalled.

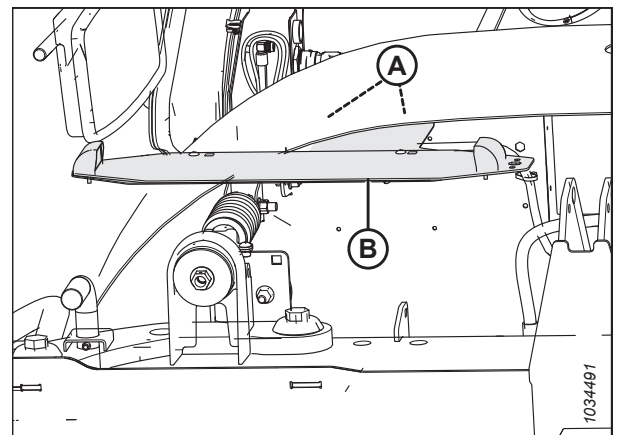


Figure 3.117: Registration Plate Mount, View from under Cab

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14. Attach bracket (A) to tab (B) on the underside of the cab using M12 hardware (C) (supplied with the mount).
15. Attach bracket (A) to registration mount (D) using two carriage head bolts and nuts (E) removed in Step 3, page 42.

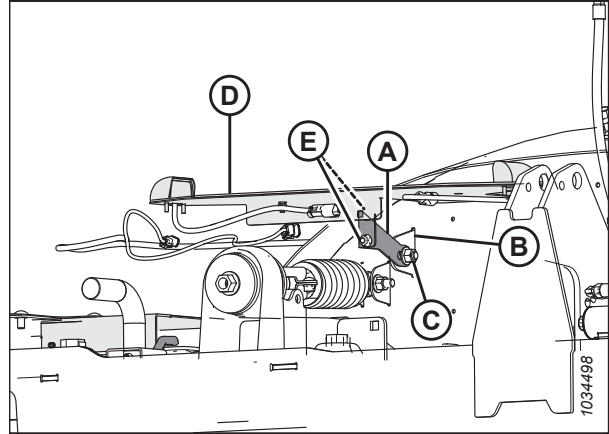


Figure 3.118: Registration Plate Mount, View from under Cab

3.18 Connecting Signal Light Placards and Registration Plate Electrical Harness

Follow these steps to connect the signal light placards and registration plate mount electrical harness.

Narrow transport lighting leg harness (A) is routed next to the wheel legs and connects to signal light placards (B) on the cab side and to narrow transport main harness (C). Narrow transport main harness (C) connects to registration plate mount (E) just below the cab, and is routed to the walking beam to connect to signal light placards (D).

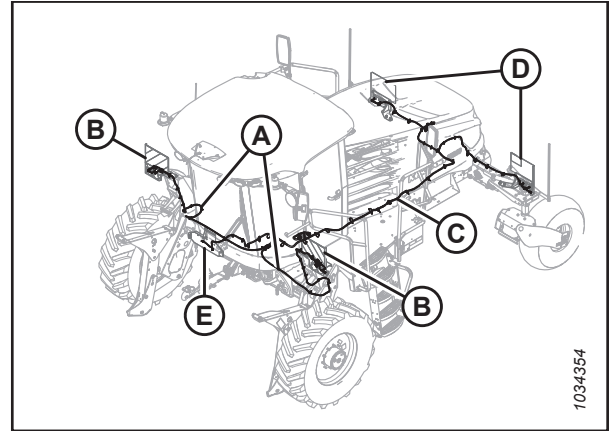


Figure 3.119: Electrical Harness Routing

Cab-forward signal light placards harness

1. Route left lighting leg harness (A) behind left signal light placard support (B) as shown.
2. Loosely secure the harness to the placard lighting support with cable tie (C).

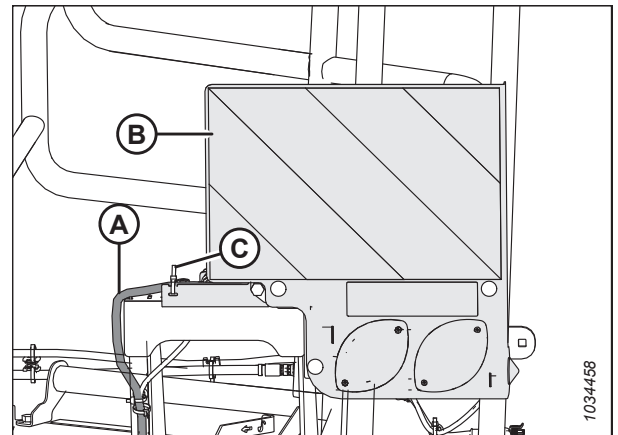


Figure 3.120: Left Cab-Forward Signal Light Placard

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3. Insert the harness into the plate hole.
4. Connect the lighting leg harness to the left signal light placard as follows:
 - a. Plug P295S (A) into the side turn signal receptacle.
 - b. Plug P295 (B) into the A side receptacle.
 - c. Plug P267B (C) into the B side receptacle.
 - d. Plug P267A (D) into the A side receptacle.
5. Secure the harness with fir tree fasteners (E), and tighten cable tie (F).

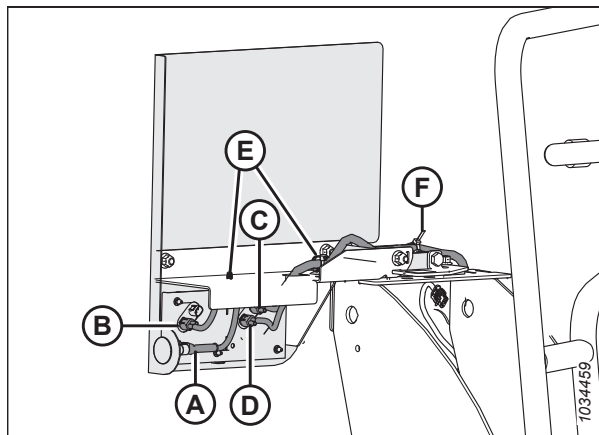


Figure 3.121: Left Cab-Forward Signal Light Placard

6. Route right lighting leg harness (A) behind right signal light placard support (B).

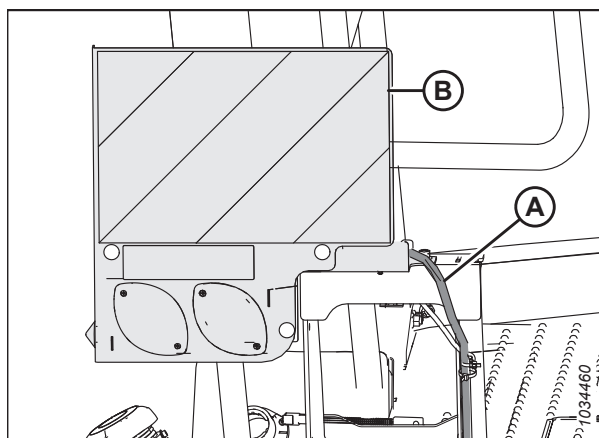


Figure 3.122: Right Cab-Forward Signal Light Placard

7. Loosely secure the harness to the signal light placard support with fir tree fasteners (A).
8. Insert the harness into the plate hole.
9. Connect the lighting leg harness to the right signal light placard receptacles as follows:
 - a. Plug P295S (B) into the side turn signal receptacle.
 - b. Plug P295 (C) into the A side receptacle.
 - c. Plug P267B (D) into the B side receptacle.
 - d. Plug P267A (E) into the A side receptacle.
10. Secure plug P295 harness (C) to the bracket with fir tree fastener (F).
11. Tighten fir tree fasteners (A).

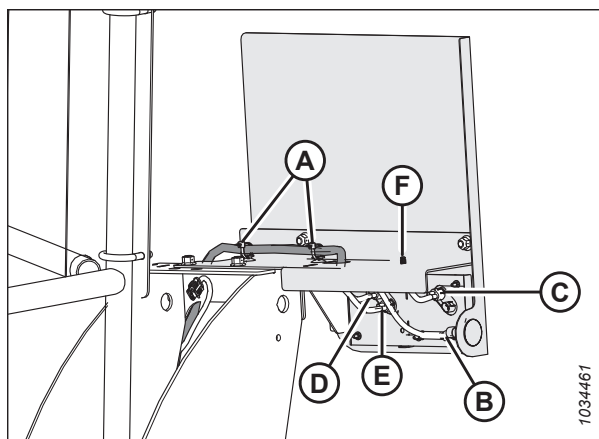


Figure 3.123: Right Cab-Forward Signal Light Placard

ASSEMBLING WINDROWER

Registration plate mount

12. Connect main harness (A) to the registration plate mount harness as follows:
 - a. Plug P298 (B) into the right LED receptacle.
 - b. Plug P297 (C) into the left LED receptacle.
13. Secure the harness to the registration plate mount using p-clips (D) as shown.

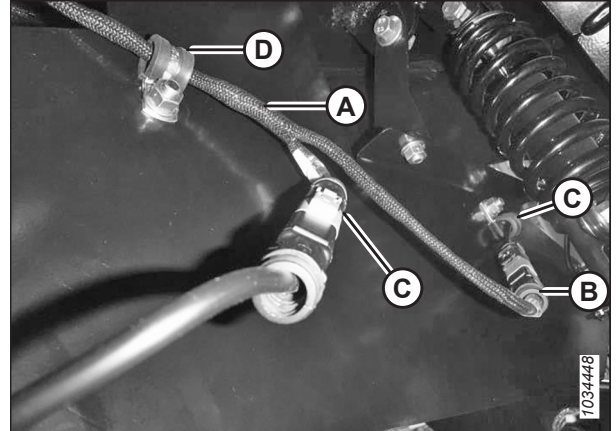


Figure 3.124: Harness Connection, Registration Plate Mount — View from below the Cab

Walking beam signal light placards harness

14. Plug the main harness into the right signal light placard receptacles as follows:

NOTE:
Some parts have been removed from the illustration for clarity.

 - a. Plug P293S (A) into the side turn signal receptacle.
 - b. Plug P293 (B) into the A side receptacle.
 - c. Plug P265 (C) into the A side receptacle.
15. Secure the main harness on the signal light placard support using p-clip (E).
16. Install fig tree fastener (D) onto the light mount, and secure plugs P293S (A) and P293 (B) together.
17. Repeat Step 14, page 107 to Step 16, page 107 at the opposite side.

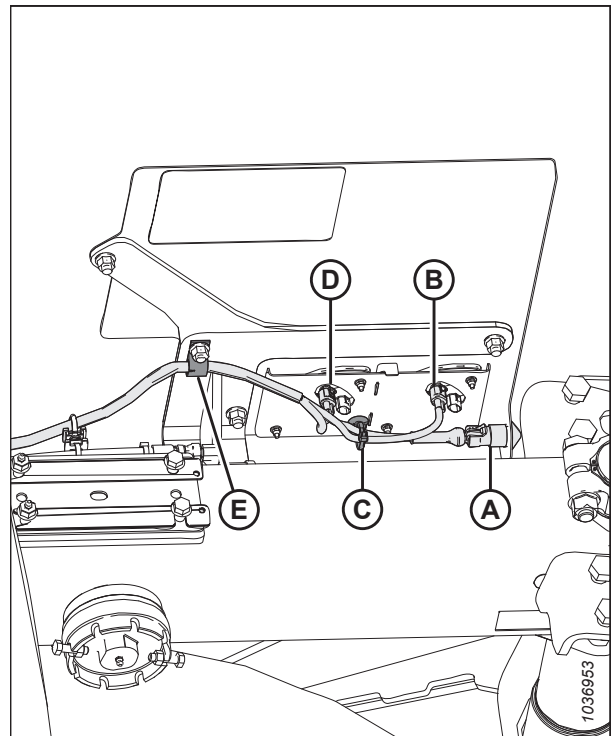


Figure 3.125: Walking Beam Signal Light Placard — Right Engine-Forward

3.19 Installing Engine-Forward Mirrors

Follow these steps to install the engine-forward mirrors.

1. Retrieve left and right mirror mounts (A) from the cab.

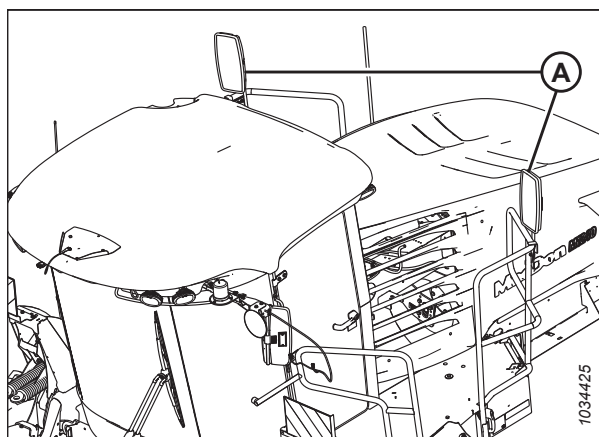


Figure 3.126: Engine-Forward Mirror Locations

2. Position left mirror so that convex mirror (A) is on top. Secure the mirror to plate (B) using three M10 X 25 bolts and nuts (C). Adjust mirror angle to personal preference.

NOTE:

Ensure offset of the mirror is pointed outboard.

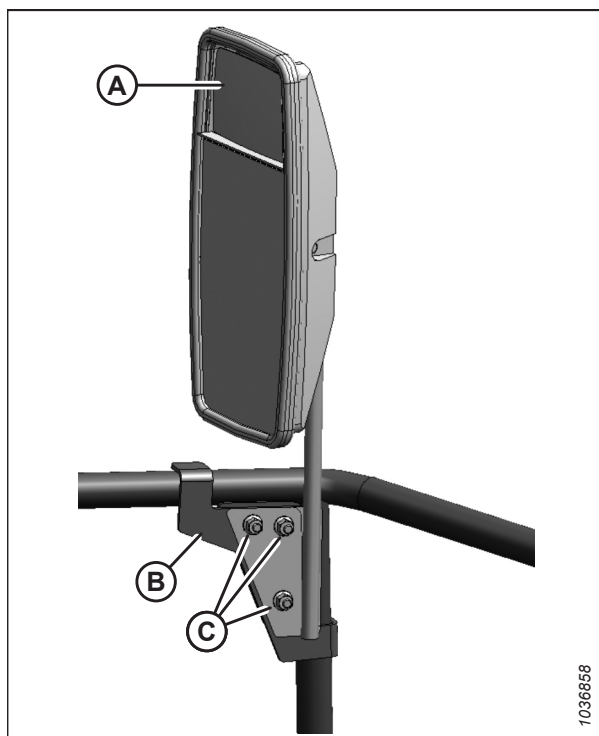


Figure 3.127: Left Engine-Forward Mirror

ASSEMBLING WINDROWER

3. Position right mirror so that convex mirror (A) is on top. Secure the mirror to plate (B) using three M10 X 25 bolts and nuts (C). Adjust mirror angle to personal preference.

NOTE:

Ensure offset of the mirror is pointed outboard.

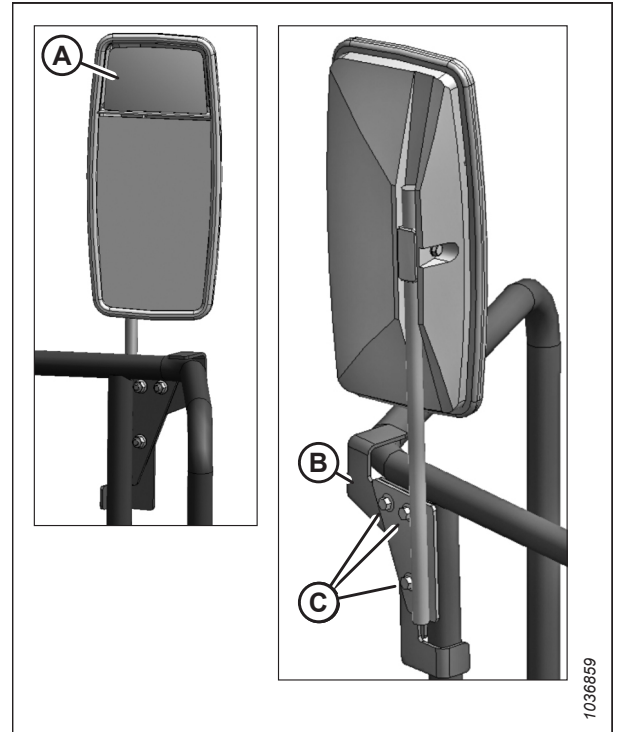


Figure 3.128: Right Engine-Forward Mirror

3.20 Installing Rear Light Assembly and Optional Ballast Package

Ballast kits are for draper headers only. When operating the windrower with a heavy draper header, ballast needs to be added to the aft end. Use the following table to determine the amount of ballast required. Depending on the ballast requirements, follow the instructions to install rear light assembly with or without the optional ballast package.

Refer to *4.1.14 Checking Tire Pressure, page 146* for proper tire pressures when operating with the applicable header.

NOTE:

A base kit (MD #B6053) contains eight 20.4 kg (45 lb.) weights for a total weight of 163 kg (360 lb.).

Table 3.4 Ballast

Header Type	Description	Installed Options	Base Kit	Additional Kits	Additional Float Springs
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	Transport	1	0	0
D130XL	9.1 m (30 ft.) single reel, double knife, timed	Transport + upper cross auger + vertical knives	1	0	MD #B6047
D135XL	10.7 m (35 ft.) single reel, double knife, untimed	Base	1	0	0
D135XL	10.7 m (35 ft.) single reel, double knife, untimed	Transport	1	0	MD #B6047
D135XL	10.7 m (35 ft.) single reel, double knife, untimed	Transport + upper cross auger + vertical knives	1	0	MD #B6047
D135XL	10.7 m (35 ft.) double reel, double knife, untimed	Base	1	0	0
D135XL	10.7 m (35 ft.) double reel, double knife, untimed	Transport	1	0	MD #B6047
D135XL	10.7 m (35 ft.) double reel, double knife, untimed	Transport + upper cross auger + vertical knives	1	0	MD #B6047

Installing rear light assembly – no ballast package required

1. Remove eight bolts and washers (A) from the rear light assembly, and remove bezel (B).

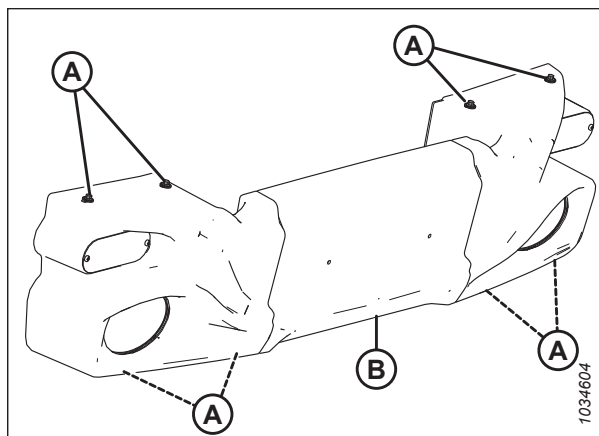


Figure 3.129: Rear Light Bezel Assembly

ASSEMBLING WINDROWER

2. Remove and retain nut (A), anti-rotation bolt (B), two bolts (C), and cover (D) behind each light support.

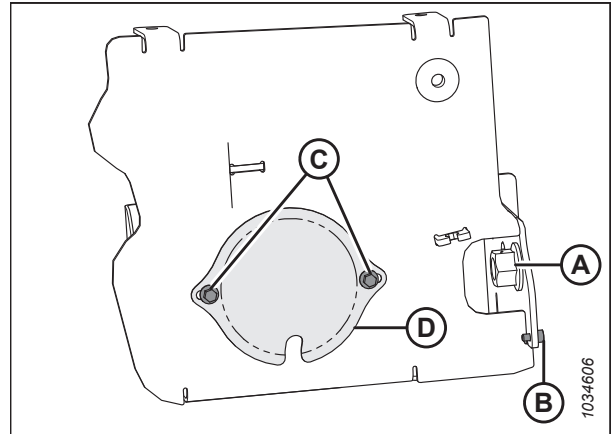


Figure 3.130: Left Engine-Forward Rear Light Support

3. Align connector (A) and the plug engine–forward headlight harness into headlight (B):
 - Plug P214 to the right engine-forward headlight
 - Plug P213 to the left engine-forward headlight

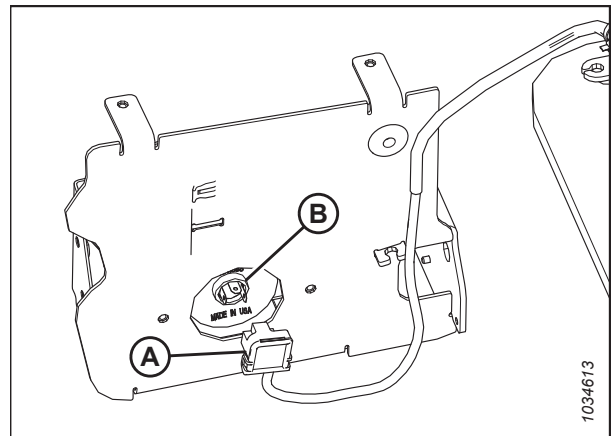


Figure 3.131: Left Engine-Forward Rear Light Support

4. Reinstall cover (A) using two bolts (B).
5. Press headlight harness (C) into clip (D) on the light support.

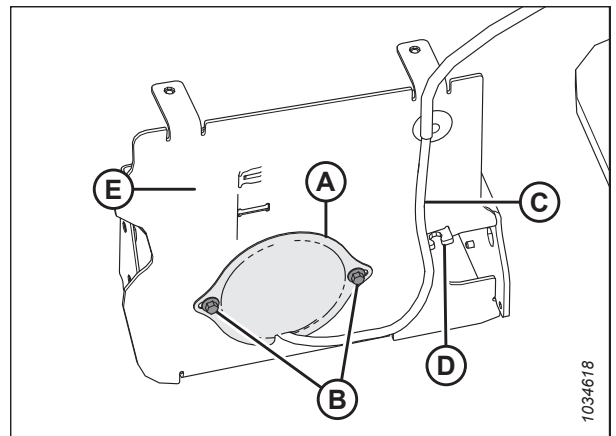


Figure 3.132: Left Engine-Forward Rear Light Support

ASSEMBLING WINDROWER

6. Mount light support (A) to stud (B) on the rear pivot support with existing nut (C).
7. Reinstall the anti-rotation bolt removed in Step 2, [page 111](#).
8. Repeat Step 2, [page 111](#) to Step 7, [page 112](#) at the opposite side.

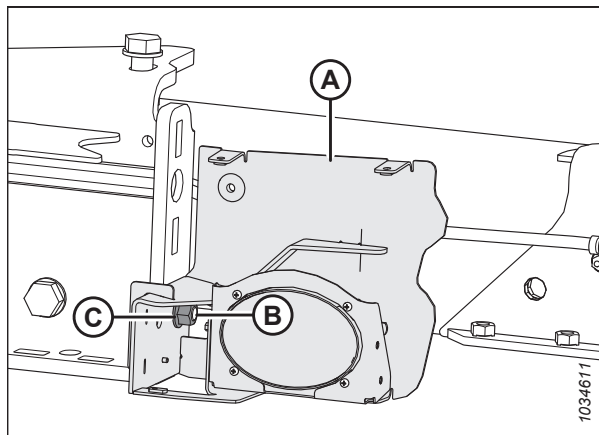


Figure 3.133: Left Engine-Forward Rear Light

9. Using eight bolts and washers (A), attach rear light bezel (B) to the light supports.

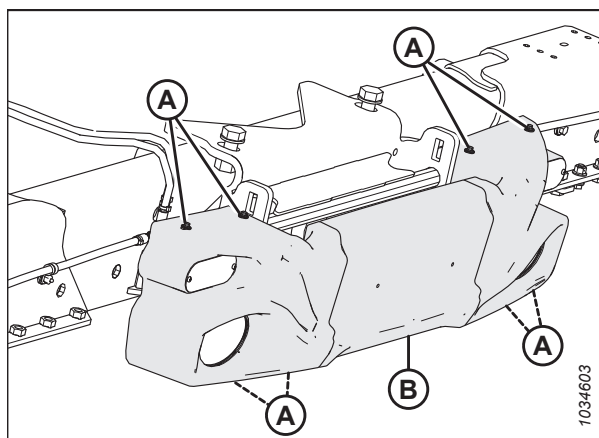


Figure 3.134: Rear Light Bezel Assembly

Installing rear light assembly – ballast required

1. Refer to Table 3.4, [page 110](#) to determine ballast to add to the windrower.
2. Separate light bezel assembly (A) by removing six hex screws (B).

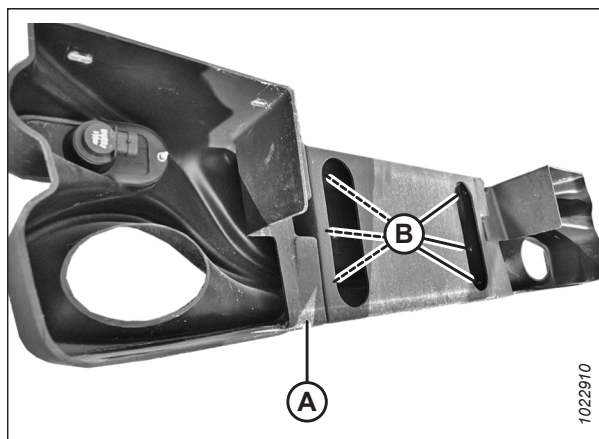


Figure 3.135: Bezel Assembly

ASSEMBLING WINDROWER

NOTE:

- Retain center portion (A) of light bezel assembly for reinstallation when the ballast is removed.
- Install six hex screws (B) on the side bezels for safekeeping. These hex screws will be used when reinstalling the center portion of the light bezel.

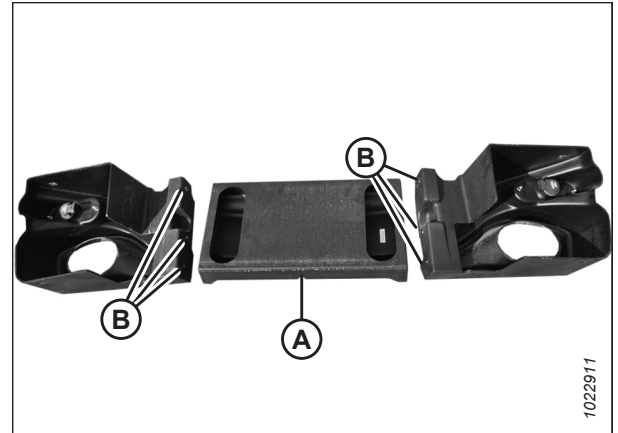


Figure 3.136: Bezel Assembly

CAUTION

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

3. Install weights (A) from the outboard side and slide them to the middle of the bracket on the walking beam.
4. Install retaining bracket (B) on each side of the weight bundle.

IMPORTANT:

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

5. Install rod (D) through the retaining bracket and weights with spacers (E) as required.
6. Secure the weights with nuts (F), then tighten them.

IMPORTANT:

Ensure nuts (F) are flush with the rod.

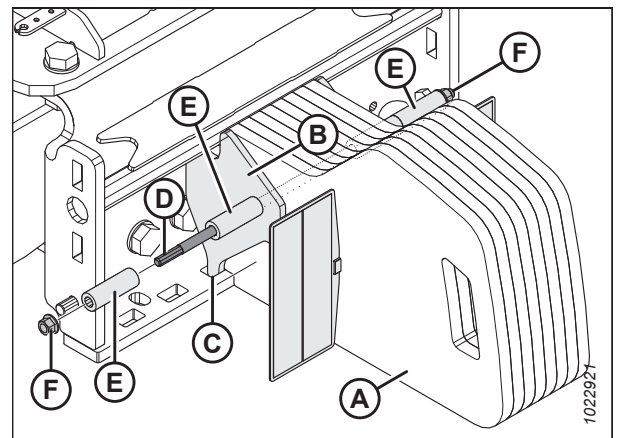


Figure 3.137: Weights Installed

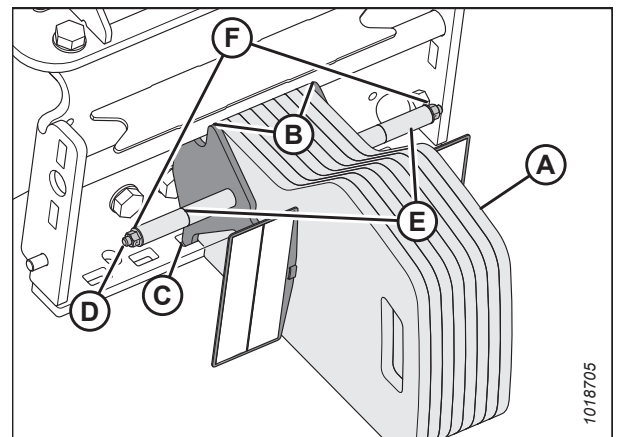


Figure 3.138: Base Kit – 163 kg (360 lb.)

ASSEMBLING WINDROWER

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

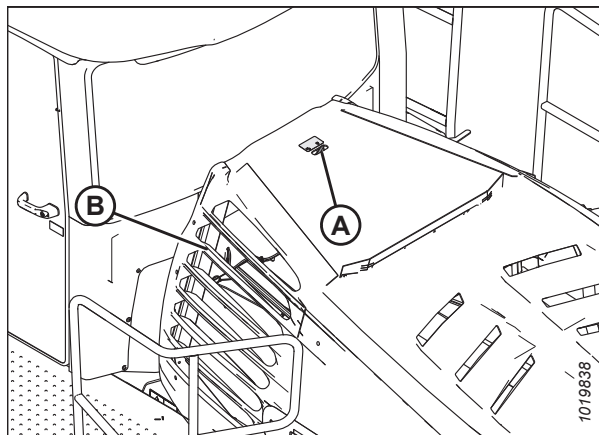


Figure 3.139: Engine Compartment Hood

9. Bring left side bezel (A) close to the frame and connect plug P215 to the back of red tail/brake light (E).
10. Loosely attach left side bezel (A) to the frame with four hex flange bolts (B).
11. Repeat Step 8, page 114 and Step 9, page 114, attaching plug P210 at right side bezel (C).
12. Turn the ignition key to the RUN position, and ensure that rear swath lights (D) and red tail/brake lights (E) are working.
13. If the lights are working, tighten hex flange bolts (B) to secure the left and right light bezels.

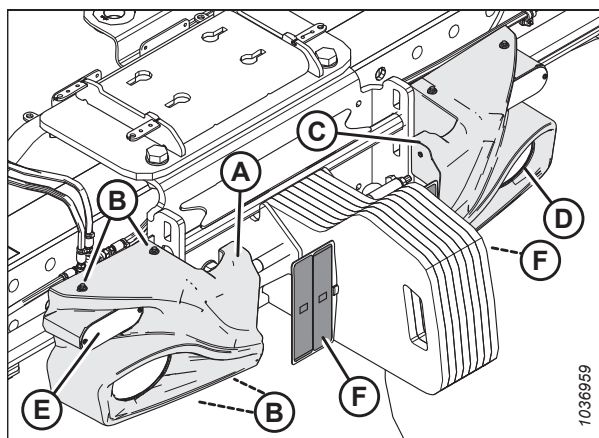


Figure 3.140: Rear Light Bezel with Ballast

IMPORTANT:

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

14. Remove reflectors (F).

3.21 Lubrication

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

For information on the type of lubricants to use, refer to the inside back cover of this book for quick reference.

3.21.1 Greasing Procedure

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

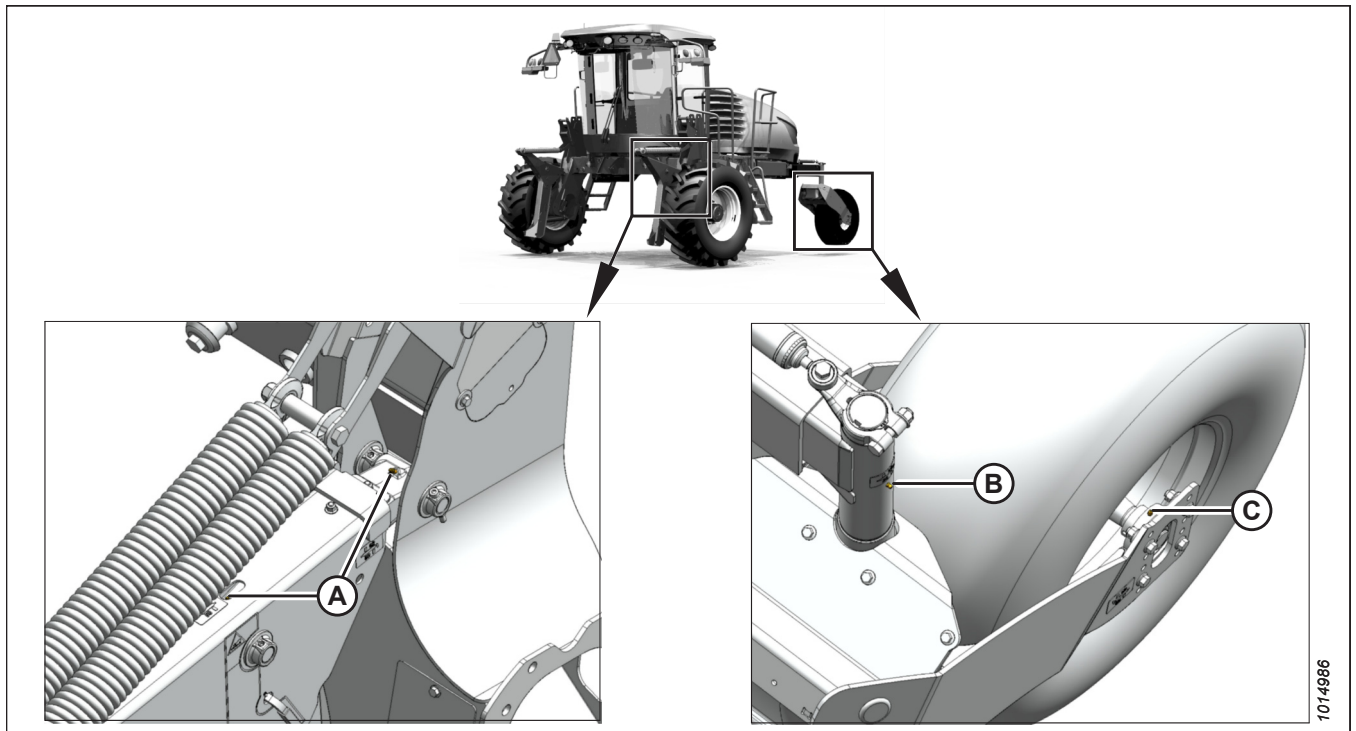
DANGER

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. To avoid injecting dirt and grit, wipe each grease fitting with a clean cloth before greasing.
2. Inject grease through the fitting with a grease gun until the grease overflows the fitting, except where noted. For specifications, refer to the inside back cover.
3. Leave excess grease on the fitting to keep out dirt.
4. Replace any loose or broken fittings immediately.
5. If a fitting will **NOT** take grease, remove and clean it thoroughly. Also clean the grease passageway. Replace the fitting if necessary.

3.21.2 Grease Points

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



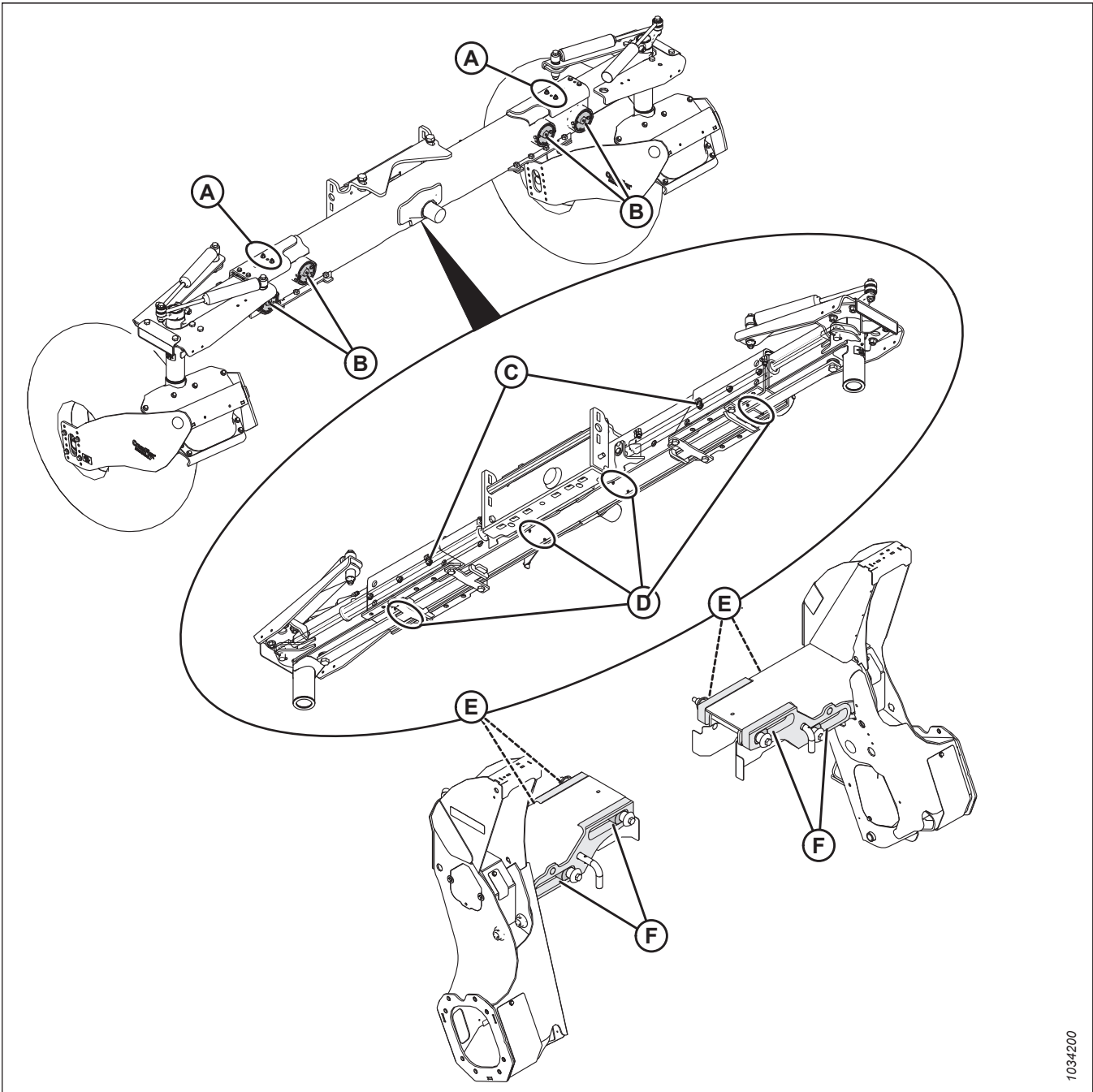
ASSEMBLING WINDROWER

Figure 3.141: Grease Points

A - Top-Link (2 Places) (Both Sides)

B - Caster Pivot (Both Sides)

C - Caster Wheel Hub (Both Sides)⁵



1034200

Figure 3.142: Walking Beam and Drive Wheel Leg Extensions Grease Points

A - Walking Beam – Top Side (2 Places) (Both Sides)

C - Walking Beam – Outward Facing (2 Places)

E - Drive Wheel Legs – Inboard Bushings, Top Surfaces (2 Places) (Both Sides)

B - Walking Beam – Inward Facing (2 Places) (Both Sides)

D - Walking Beam – Underside (8 places)

F - Outboard Front Bushings, Bottom Surfaces – Drive Wheel Legs (2 Places) (Both Sides)

5. Do **NOT** overgrease. Use 1 pump of grease.

3.22 Connecting Batteries

The windrower is shipped with the batteries disconnected. They will need to be connected to the windrower's electrical system.

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

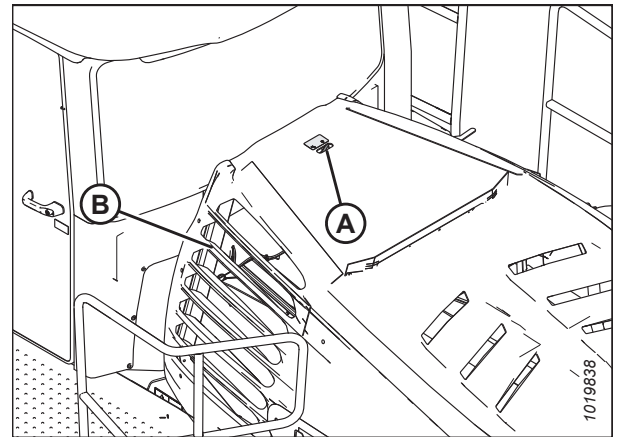


Figure 3.143: Engine Compartment Hood

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. Remove the plastic caps from the battery posts, if these are present.

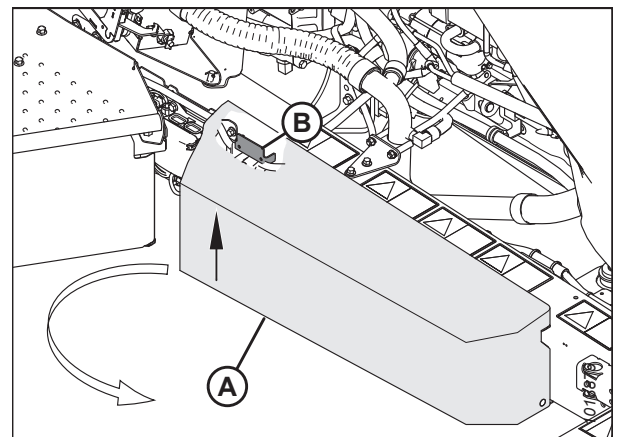


Figure 3.144: Battery Location

5. Attach the red positive (+) cable terminals to positive posts (B) on the batteries. Tighten the terminal clamps. Place the plastic covers over the clamps.

IMPORTANT:

The batteries are negative-grounded. Ensure that the starter cable is connected to the positive (+) terminal of the battery and the battery ground cable is connected to the negative (-) terminal of the battery. Connecting a cable to the wrong post can result in permanent damage to the electrical system.

NOTE:

Ensure that the batteries are oriented in the battery tray so that the positive (+) posts are on the right when facing them.

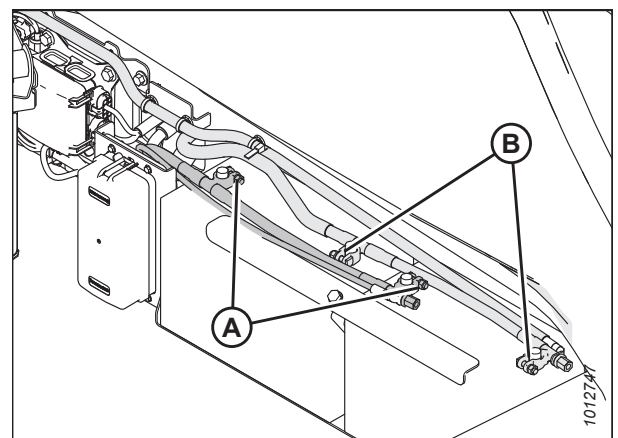


Figure 3.145: Battery Cables Installed

ASSEMBLING WINDROWER

6. Attach the black negative (-) cable terminals to negative posts (A) on the batteries. Tighten the terminal clamps. Place the plastic covers over the clamps.
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, ensure that the latch lever is not tilted.

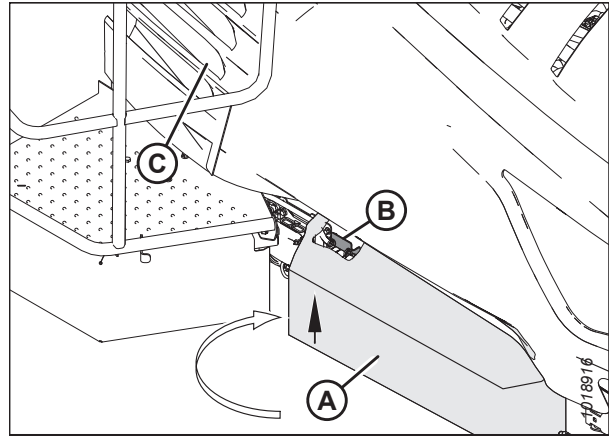


Figure 3.146: Battery Cover Secured

3.23 Removing Windrower from Assembly Stand

Remove the windrower from the lift stands before performing predelivery checks.

 **DANGER**

Ensure that all bystanders have cleared the area.

 **DANGER**

The equipment used for loading or unloading a machine 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. Position a jack under the jack point of each drive wheel leg and under the rear hitch.
2. Raise the jacks to take the weight off the stands, and remove the stands.
3. Lower the windrower slowly to the ground, and remove the jacks.

Chapter 4: Performing Predelivery Checks

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

1. Perform the predelivery checks listed in the *Predelivery Checklist, page 253*. Make adjustments to the windrower only if absolutely necessary and only in accordance with the instructions in this manual.
2. Perform the operational checks listed on the *Predelivery Checklist, page 253*.

4.1 Completing Predelivery Checklist

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

Perform the final checks and adjustments listed on the *Predelivery Checklist, page 253* (the yellow sheet attached to this instruction) to ensure that the machine is field-ready. Ensure that the Operator or the Dealer retains the completed Predelivery Checklist.

4.1.1 Recording Serial Numbers

Serial numbers identify the specific windrower and engine.

Record the windrower and engine serial numbers on the *Predelivery Checklist*, and confirm the serial number with the manifest or work order.

1. Insert a screwdriver into the hole on latch (A). Use the screwdriver to move the latch toward the right cab-forward side of the windrower.
2. Grasp louver (B), and lift the hood to open it.

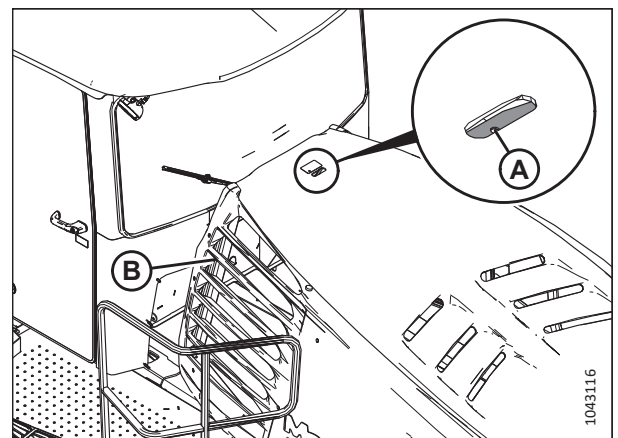


Figure 4.1: Hood

PERFORMING PREDELIVERY CHECKS

3. **Windrowers sold in all countries except France:** Refer to the windrower serial number plate (A) on the **LEFT** side of the main frame near the walking beam as shown.

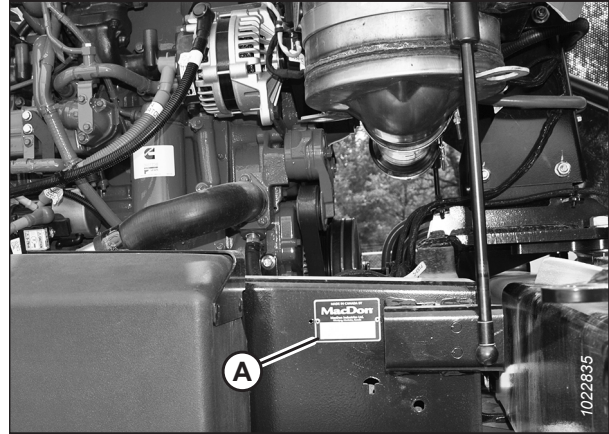


Figure 4.2: Windrower Serial Number Location – Plate Used By All Countries Except France

4. **Windrowers sold in France:** Refer to the windrower serial number plate (A) on the **RIGHT** side of the main frame near the walking beam as shown.

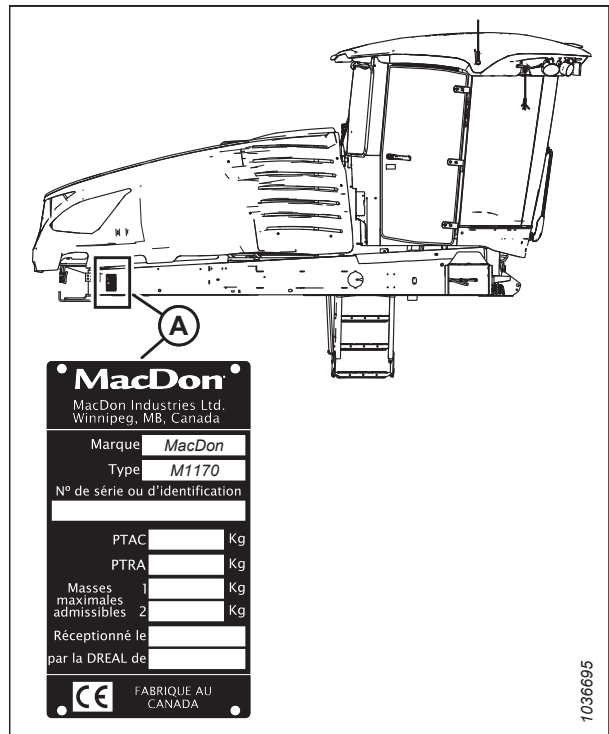


Figure 4.3: Windrower Serial Number Location – Plate Used By France Only

PERFORMING PREDELIVERY CHECKS

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

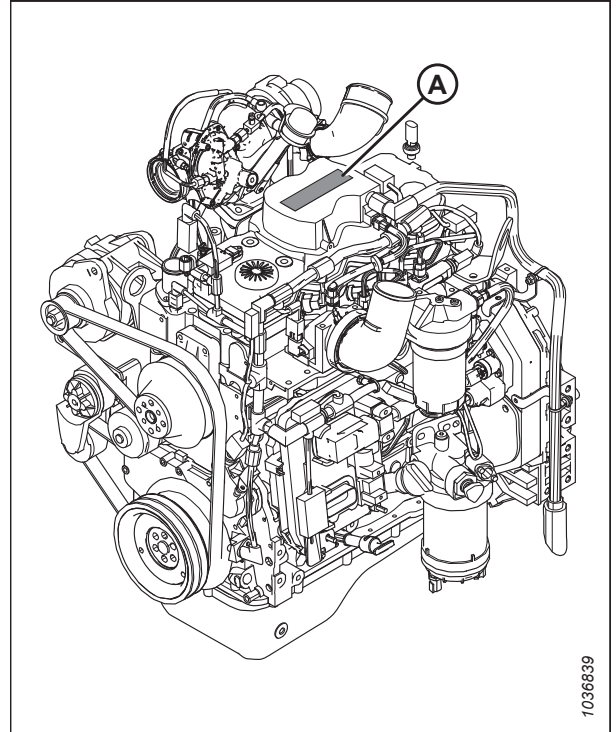


Figure 4.4: Engine Serial Number Location

4.1.2 Advising Customer where to Install Registration Plates

Before delivering the windrower to the customer, advise the customer where to mount the registration plate(s) (not supplied by MacDon). One registration plate must be mounted on the cab-end of the windrower. Depending on local regulations, an additional registration plate might have to be mounted onto the engine-end of the windrower.

- **Cab-end of the windrower:** Mount the registration plate onto bracket (A).
- **Engine-end of the windrower:** Center and mount the registration plate onto flat surface (B) of the hood.

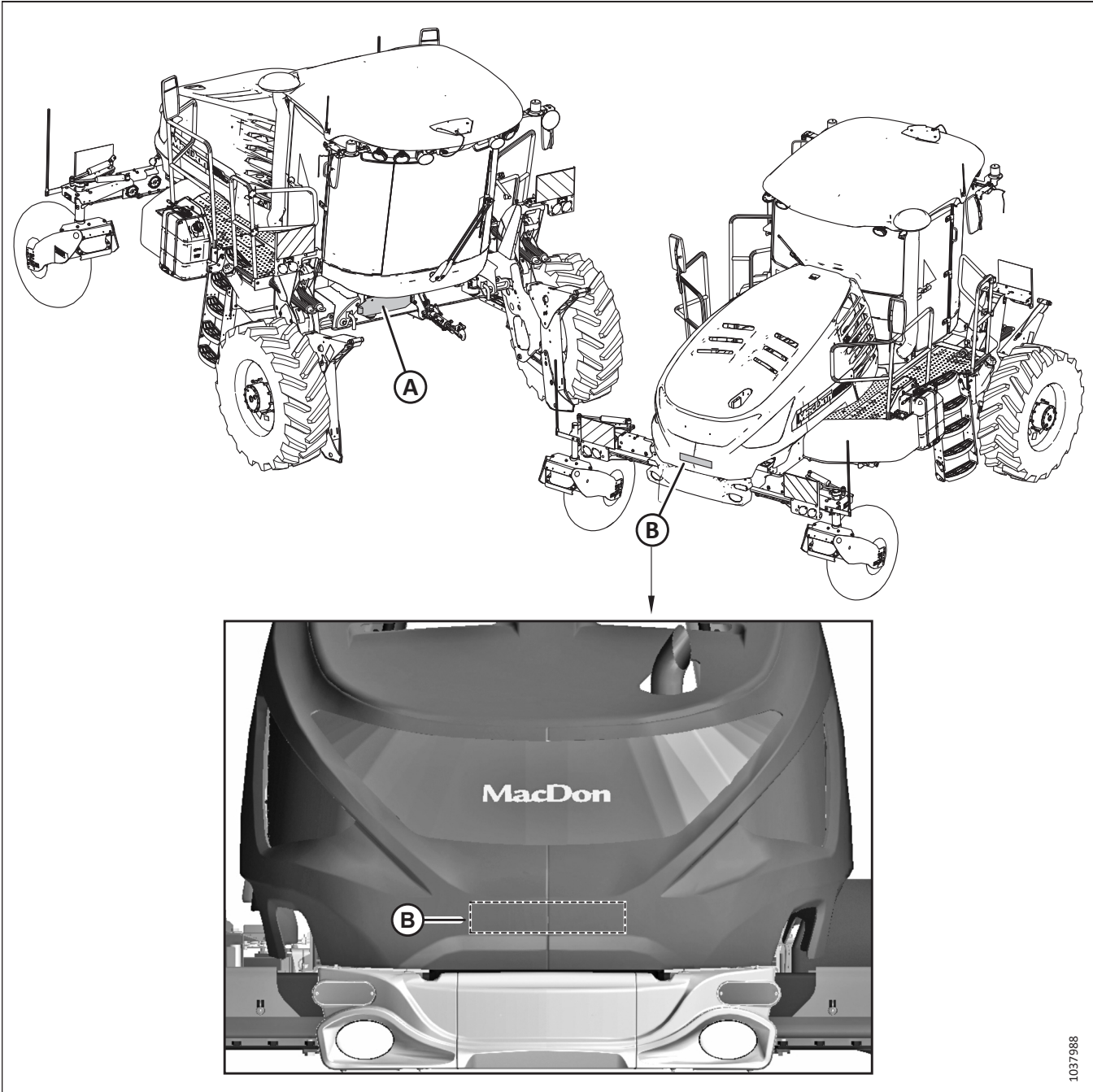


Figure 4.5: Registration Plate Installation Locations

4.1.3 Checking Engine Air Intake

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

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

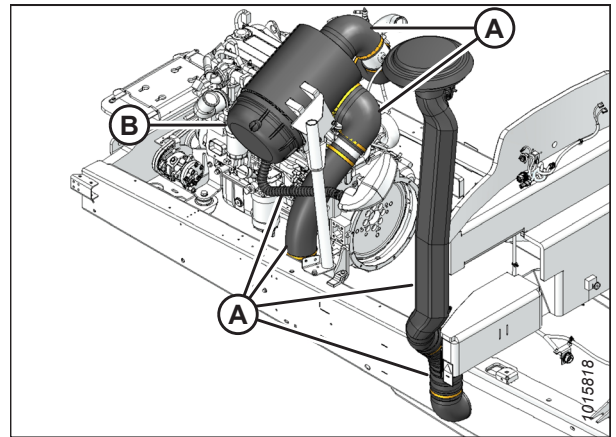


Figure 4.6: Engine Air Intake

3. Ensure that clamps (A) and clamp (B) on the turbocharger intake duct are secure. Clamp (B) is secure when screw tip (C) extends beyond the housing and Belleville washers (D) are almost flat.

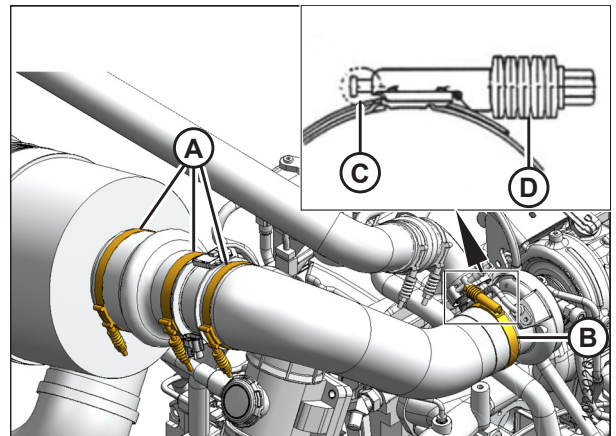


Figure 4.7: Constant Torque Clamps – M2170

4.1.4 Checking and Adding Engine Oil

The engine oil level will need to be inspected before the engine can be operated. It may be necessary to add oil to the crankcase.

Checking engine oil level

PERFORMING PREDELIVERY CHECKS

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

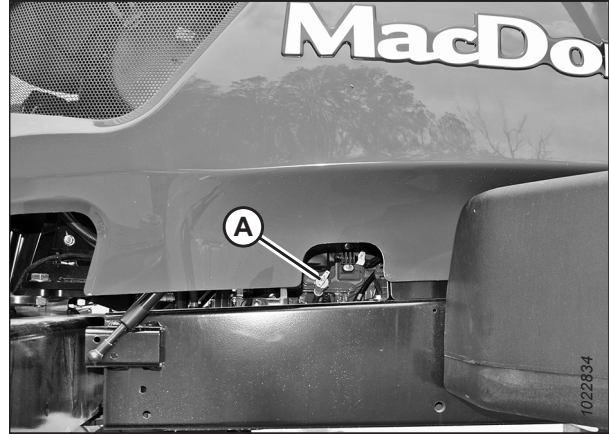


Figure 4.8: Engine Oil Dipstick Location

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

NOTE:

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

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

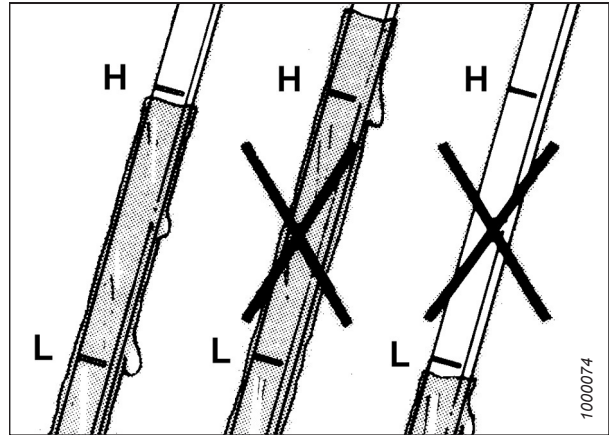


Figure 4.9: Engine Oil Level on Dipstick

Adding engine oil

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

IMPORTANT:

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

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

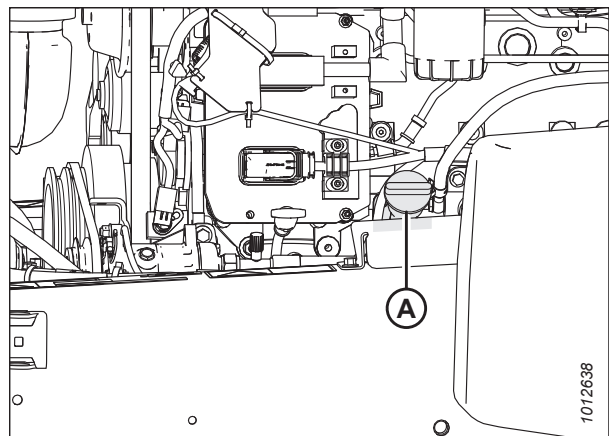


Figure 4.10: Oil Filler Cap

4.1.5 Checking and Adding Hydraulic Oil

The hydraulic oil level will need to be inspected before the windrower is operated. It may be necessary to add hydraulic oil to the reservoir.

WARNING

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

Checking hydraulic oil level

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

NOTE:

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

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

IMPORTANT:

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

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

Adding hydraulic oil

4. To add hydraulic oil to the hydraulic oil reservoir, do the following:
 - a. Refer to to determine what type of hydraulic fluid is needed.
 - b. Clean the area around the filler plug to prevent debris from entering the tank.
 - c. Turn plug handle (B) counterclockwise until it is loose. Pull the plug out.
 - d. Open breather cap (A).
 - e. Add hydraulic oil through the filler plug until the level in the tank is at the FULL indicator mark.
 - f. Reinstall breather cap (A) and filler plug (B). Turn the filler plug handle clockwise until it is secure.

NOTE:

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

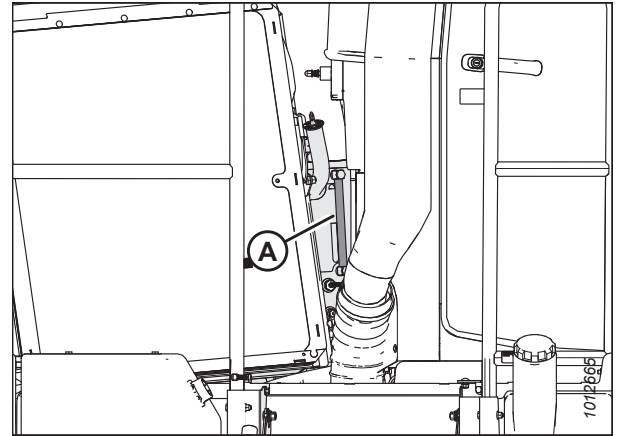


Figure 4.11: Hydraulic Oil Sight Glass

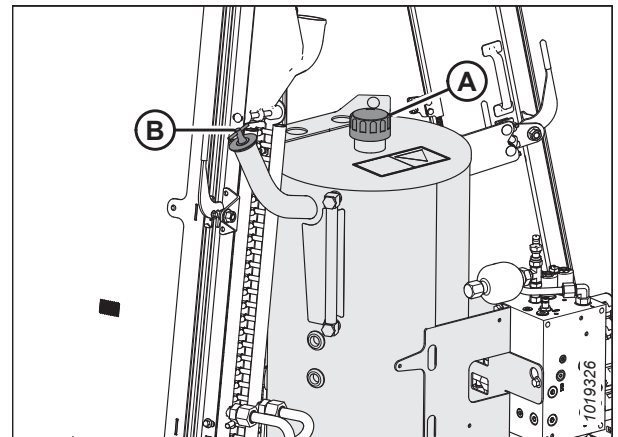


Figure 4.12: Hydraulic Oil Filler Neck and Breather Tube

4.1.6 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 it is tight.
5. Dispose of the fuel in a safe manner.

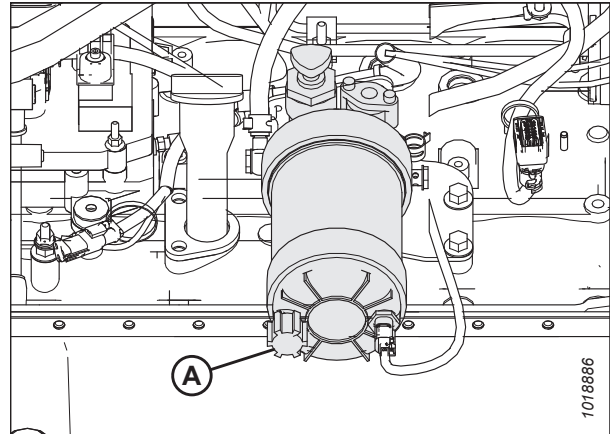


Figure 4.13: Fuel Filter

4.1.7 Checking And Adding Engine Coolant

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.

Checking engine coolant level

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

NOTE:

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

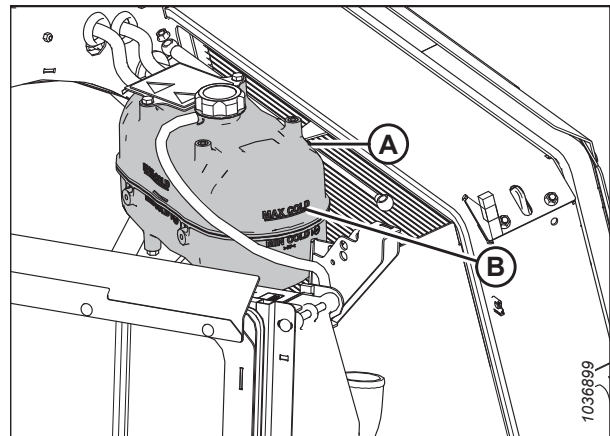


Figure 4.14: Coolant Recovery Tank

PERFORMING PREDELIVERY CHECKS

Adding engine coolant

3. Add coolant to the recovery tank as follows:
 - a. Remove pressurized cap (A) from the coolant recovery tank.
 - b. Add coolant to the recovery tank at a rate not exceeding 11 L/min (3 gpm) until the recovery tank is half-full and the coolant level is at MAX COLD line (B).
 - c. Replace cap (A).

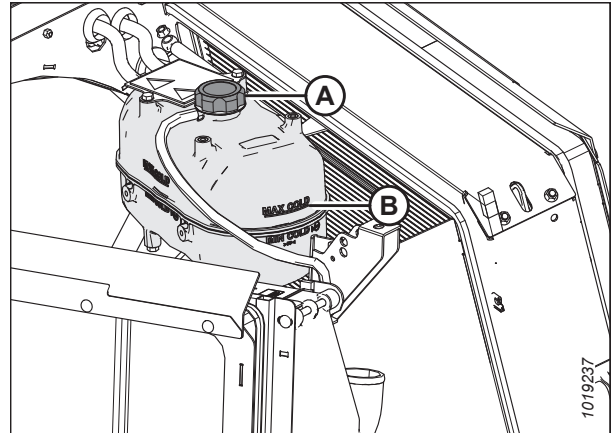


Figure 4.15: Coolant Recovery Tank Cap and MAX COLD Fill Line

4.1.8 Checking Engine Gearbox Lubricant Level and Adding Lubricant

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

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

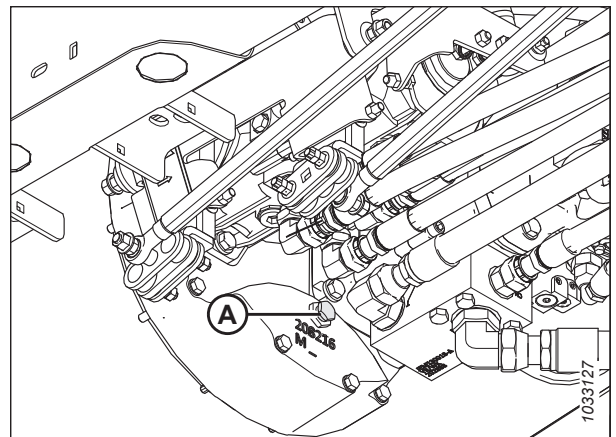


Figure 4.16: Gearbox Lubricant Check Plug

PERFORMING PREDELIVERY CHECKS

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

NOTE:

For oil requirements, refer to the inside back cover.

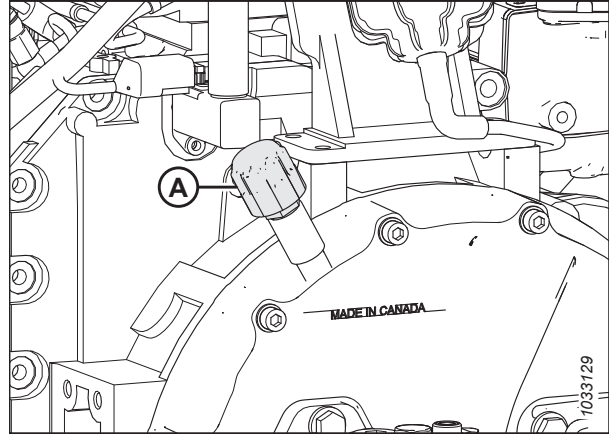


Figure 4.17: Gearbox Lubricant Filler

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

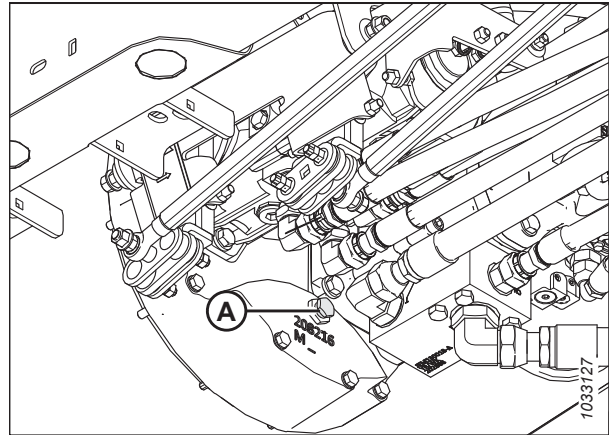


Figure 4.18: Gearbox Lubricant Check Plug

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) applied to the midspan of each belt deflects it by 5 mm (3/16 in.).

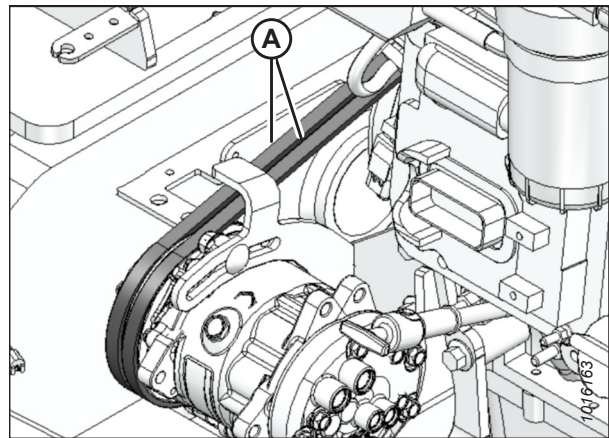


Figure 4.19: A/C Compressor Belts

PERFORMING PREDELIVERY CHECKS

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

NOTE:

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

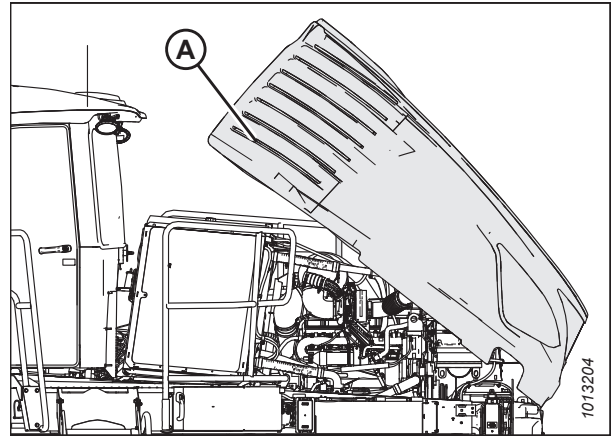


Figure 4.20: Engine Compartment

4.1.10 Bleeding Brakes – Windrowers Sold In Germany Only

If the windrower is equipped with the secondary brakes package, you must bleed the brakes once before using them for the first time.

NOTE:

This procedure requires two people. Have one person operate the HarvestTouch™ Display, and another person at the drive wheels.

1. Place the windrower in **ENGINE-FORWARD** mode. For instructions, refer to the windrower operator's manual.
2. Using a forklift, lift the cab end of the windrower approximately 1.3 m (51 in.) (B) off of the ground, or high enough so that left cab-forward drive wheel assembly (A) can be removed. Place stand (C) under the windrower frame. Repeat this step for the other drive wheel.

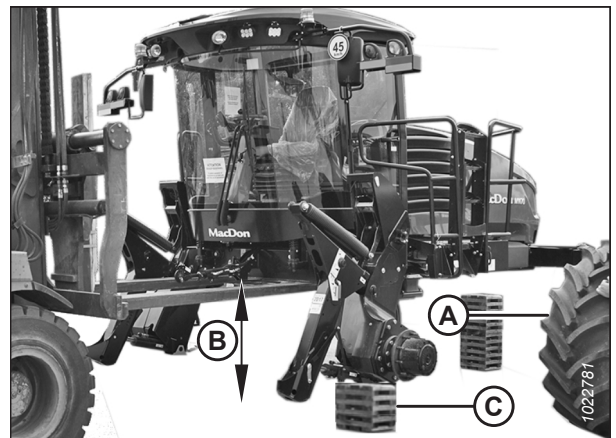


Figure 4.21: Supporting Windrower

PERFORMING PREDELIVERY CHECKS

3. Remove two bolts (A) at the center of the drive wheel.
4. Remove cap (B) and flip it over so that the convex side faces in. The cap presses a pin that disengages the gearbox.
5. Reinstall bolts (A) to secure cap (B).
6. Repeat Step 3, page 132 to Step 5, page 132 on the other drive wheel.
7. Start the engine at low idle (1110 rpm).
8. Leave the GSL in NEUTRAL.
9. Do **NOT** engage the brakes.

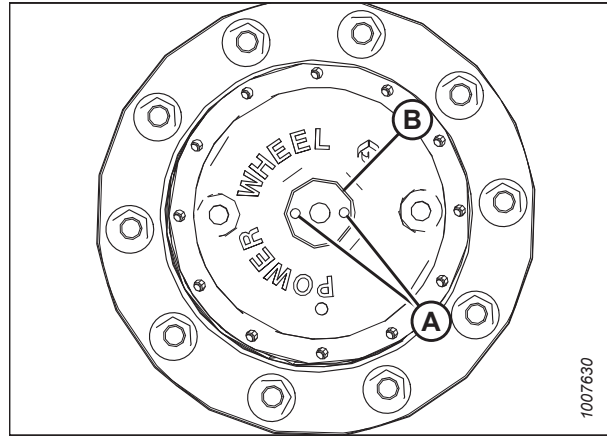


Figure 4.22: Final Drives – 10 Bolt

10. Make sure secondary brake icon (A) appears on the HarvestTouch™ Display. The icon should be grey, which means that the secondary brake system is disabled.

IMPORTANT:

If icon (A) does **NOT** appear at all, then the windrower cannot detect the secondary brake system. Contact MacDon for assistance.



Figure 4.23: HarvestTouch™ Display

PERFORMING PREDELIVERY CHECKS

- Each drive wheel has two brake calipers (A), for a total of four brake calipers on the windrower. Locate bleed screw (B) on each caliper.

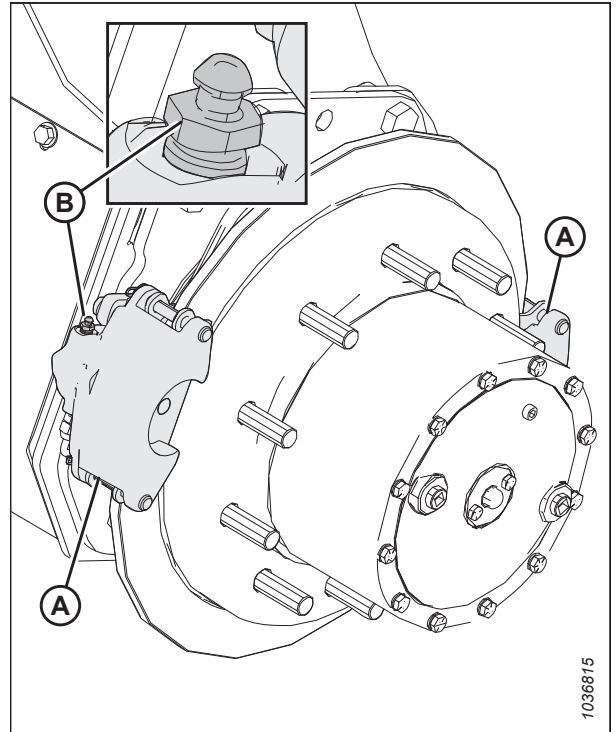


Figure 4.24: Bleed Screw

- Attach drain hose (A) (preferably transparent) onto the bleed screw nipple. Allow the hose to drain into catch pan (B).

NOTE:

Use a drain hose that has an inner diameter of 6 mm (1/4 in.) and is approximately 1200 mm (47 1/4 in.) long.

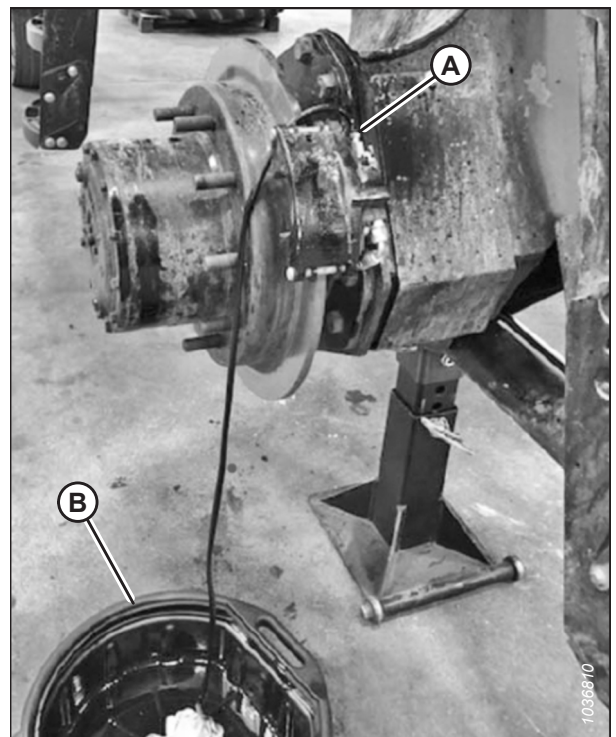


Figure 4.25: Drain Hose Attached to Caliper

PERFORMING PREDELIVERY CHECKS

IMPORTANT:

Do **NOT** press "C" button (A) or pull the GSL out of NEUTRAL during the brake bleed process.

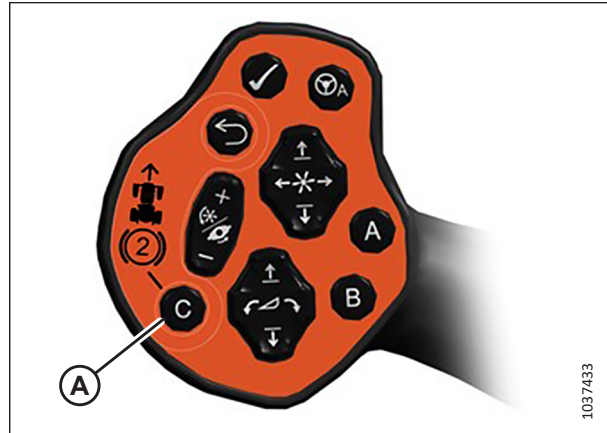


Figure 4.26: GSL

13. On the HarvestTouch™ Display, select MENU icon (A).

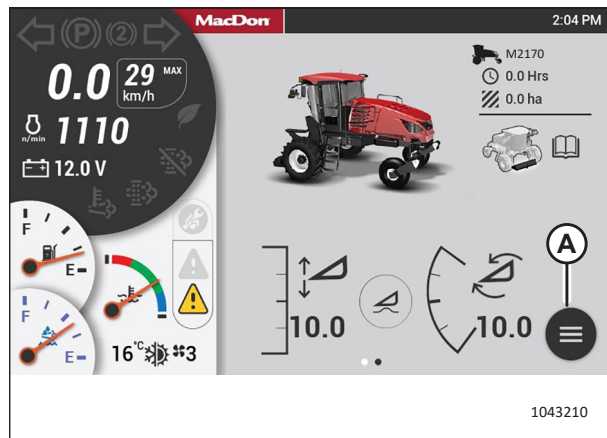


Figure 4.27: HarvestTouch™ Display

14. Select DIAGNOSTICS (A) from the menu page.

15. Select INPUT/OUTPUT (B) from the sub menu.

16. Select SYSTEM. The SYSTEM page displays.

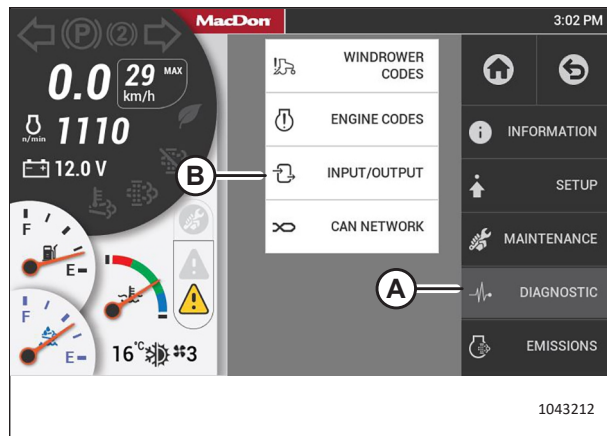


Figure 4.28: HarvestTouch™ Display Menu Page

PERFORMING PREDELIVERY CHECKS

17. Select SECONDARY BRAKE (A).
18. On the SECONDARY BRAKE page, ensure that the BRAKE PRESSURE shows 67–138 kPa (10–20 psi) while the engine is idling.

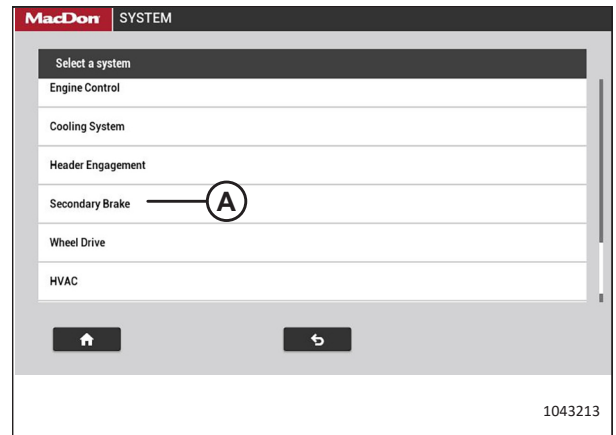


Figure 4.29: SYSTEM Page

19. Press GSL buttons "A" (A) and SHIFT (B) **SIMULTANEOUSLY** to activate the brake bleed pressure. The pressure will increase to 276–414 kPa 40–60 psi (brake bleed pressure).

NOTE:

Once you activate the brake bleed pressure, the pressure will increase to, and remain at 276–414 kPa (40–60 psi) until you deactivate the pressure. You can deactivate the pressure by one of the following methods:

- Pressing GSL buttons "A" (A) and SHIFT (B) simultaneously
- Shutting the engine off

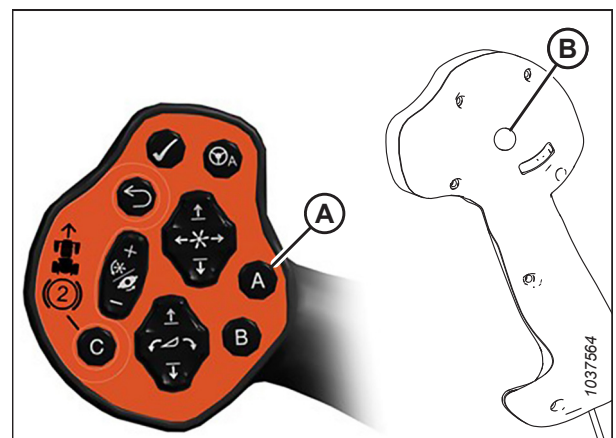


Figure 4.30: GSL

PERFORMING PREDELIVERY CHECKS

20. With the bleed pressure activated 276–414 kPa (40–60 psi), loosen bleed screw (A) slowly by approximately 1/4 turn, until oil and air start escaping through the drain tube and into the catch pan.
21. Once the air is dispersed, and oil flows smoothly, tighten bleed screw (A) until it is finger-tight, and then tighten the screw an additional 1/4 turn.

IMPORTANT:

Do **NOT** use an impact tool to tighten the bleed screws. Over-tightening might damage the bleed screw.

22. While the bleed pressure is still active 276–414 kPa (40–60 psi), install the drain hose onto the bleed screw of the next caliper.
23. Repeat Step 20, page 136 to Step 22, page 136 for the remaining calipers.

NOTE:

There are four calipers in total (two calipers per drive wheel).



Figure 4.31: Drain Hose Attached to Bleed Screw

24. Once all four calipers are bled, press GSL buttons “A” (A) and SHIFT (B) simultaneously to deactivate the brake bleed pressure.
25. Shut down the engine, and remove the key from the ignition.

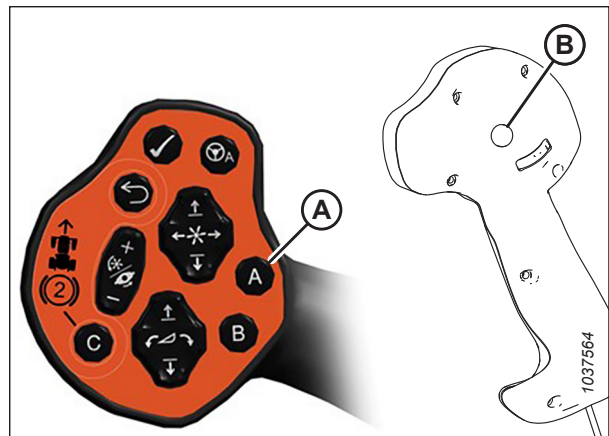


Figure 4.32: GSL

PERFORMING PREDELIVERY CHECKS

26. Confirm all four bleed screws (A) are tightened properly (finger-tightened, plus an additional 1/4 turn).

IMPORTANT:

Do **NOT** use an impact tool to tighten the bleed screws. Over-tightening might damage the bleed screw.

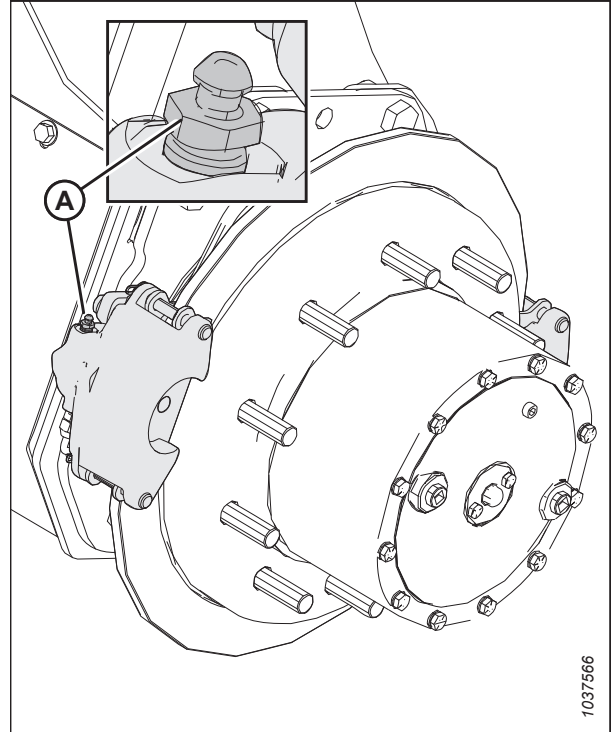


Figure 4.33: Bleed Screw

27. Remove two bolts (A) and reverse cap (B) to engage the final drives. Be sure the pin at the center of the wheel pops out to engage the drive. Reinstall bolts (A).

NOTE:

Engaging the final drives may require rocking the wheels slightly.

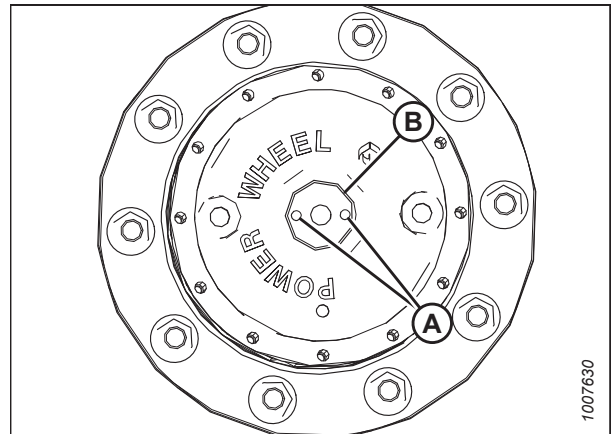


Figure 4.34: Final Drives – 10 Bolt

PERFORMING PREDELIVERY CHECKS

Testing the secondary brake system

28. Start the engine, and increase the throttle to 1800 rpm (B).
29. Ensure that the GSL is in PARK. Confirm that park brake light (A) is illuminated on the HarvestTouch™ Display.

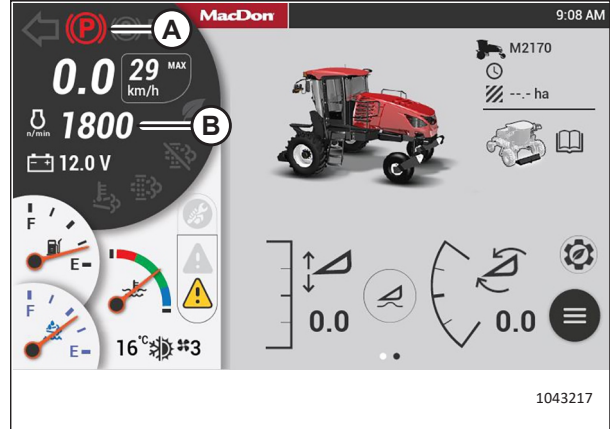


Figure 4.35: HarvestTouch™ Display

30. Press “C” button (A) on the GSL to enable the secondary brake system.

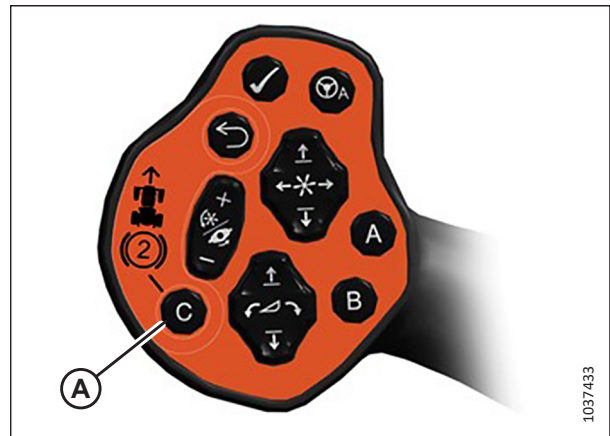


Figure 4.36: GSL

31. Once the secondary brake engages:
 - Engine speed should drop to 1500 rpm (A)
 - Secondary brakes light illuminates green (B)
 - Red parking light stays illuminated (C)
32. Pull the GSL out of PARK and move the GSL into FORWARD.
NOTE:
You should be able to hear the engine working but the drive wheels should **NOT** be able to move.
33. Hold the GSL in FORWARD for **NO MORE** than 2 seconds.
34. Place the GSL into PARK.



Figure 4.37: HarvestTouch™ Display

PERFORMING PREDELIVERY CHECKS

35. Press “C” button (A) on the GSL to disable the secondary brake system. The engine speed should increase to 1800 rpm.
36. Lower the engine speed to 1100 rpm.
37. Shut down the engine, and remove the key from the ignition.
38. Inspect the brake system for leaks.

NOTE:

Repair the system as required. Once the system is repaired, re-test the system (follow Step 28, page 138 to Step 37, page 139).

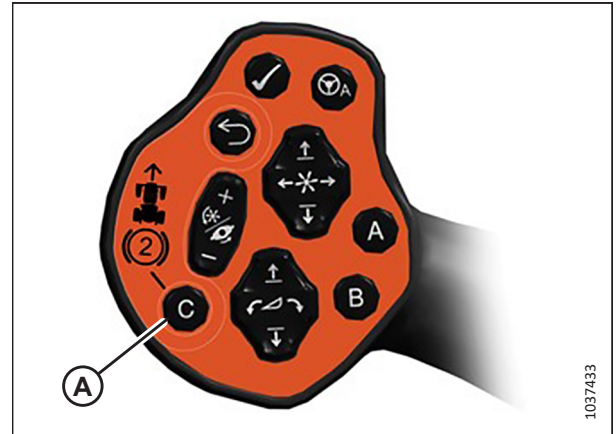


Figure 4.38: GSL

Reinstalling the drive wheels

39. Clean the mounting surface on the wheel drive and the rim.
40. Position lifting device (A) under the tire and raise it slightly.
41. Position the wheel against the wheel drive hub so that air valve (B) is on the outside while tread (C) points forward.

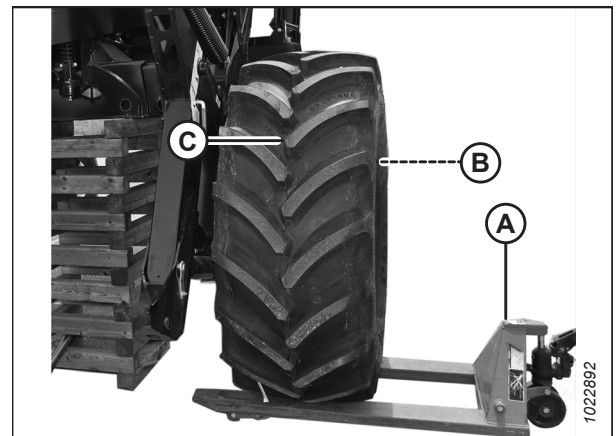


Figure 4.39: Drive Wheel

42. Align the wheel rim with the studs on the hub. Push the wheel onto the hub.
43. 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.

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

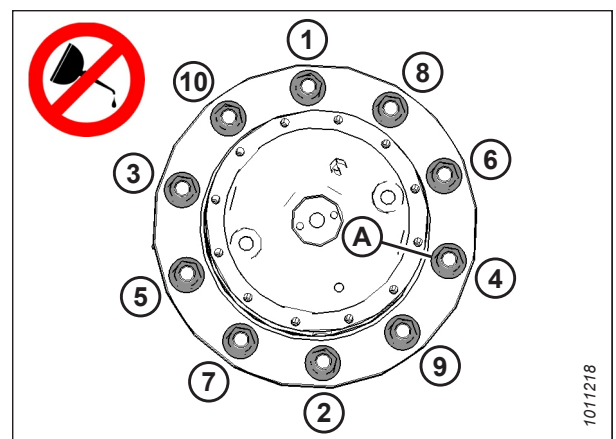


Figure 4.40: Tightening Sequence – Ten-Bolt Wheel

4.1.11 Starting Engine

The windrower's computer will allow the engine to be started only when certain safety conditions have been met.

DANGER

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

IMPORTANT:

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

NOTE:

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

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

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

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



Figure 4.41: Engine Exhaust

PERFORMING PREDELIVERY CHECKS

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

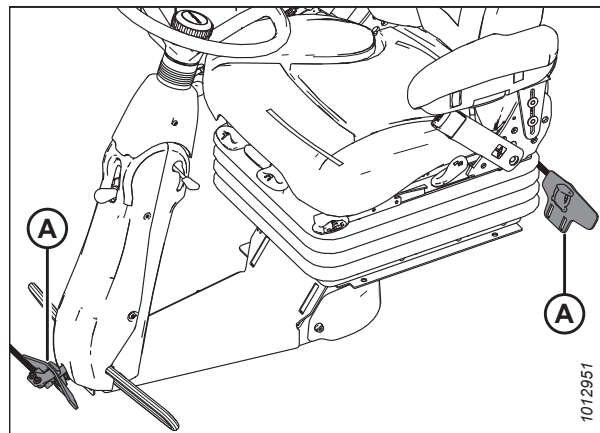


Figure 4.42: Direction Locks

3. Move ground speed lever GSL (A) into PARK (C).
4. Turn the steering wheel until it locks.

IMPORTANT:

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

NOTE:

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

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

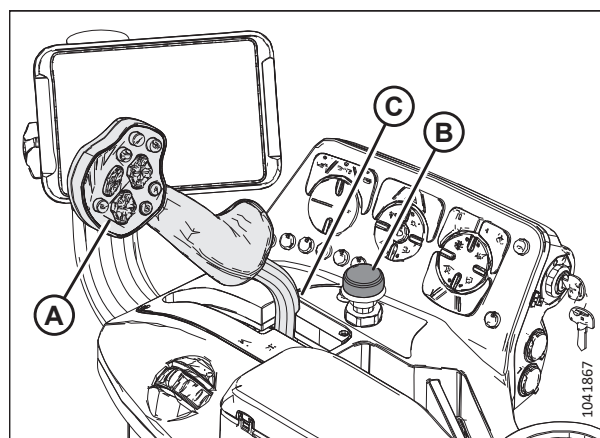


Figure 4.43: Operator Controls – M2 Series Windrower

PERFORMING PREDELIVERY CHECKS

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

IMPORTANT:

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

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

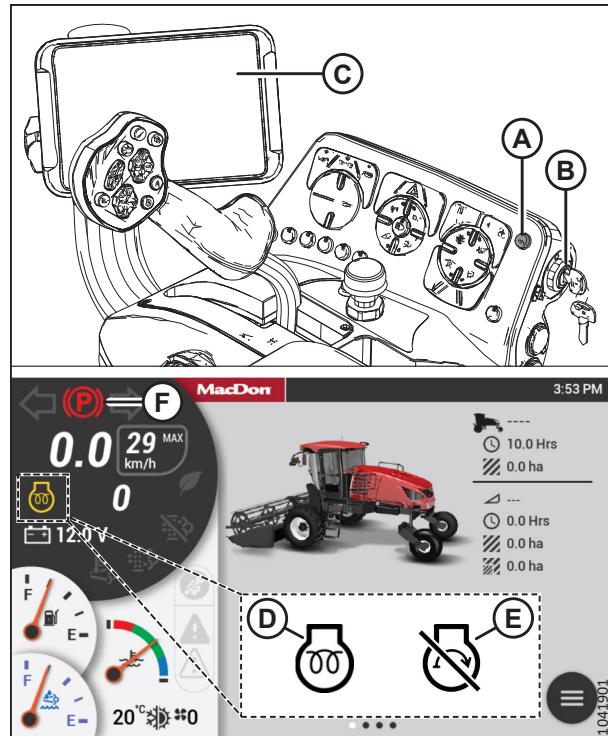


Figure 4.44: Console and HarvestTouch™ Display

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

IMPORTANT:

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

IMPORTANT:

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

NOTE:

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

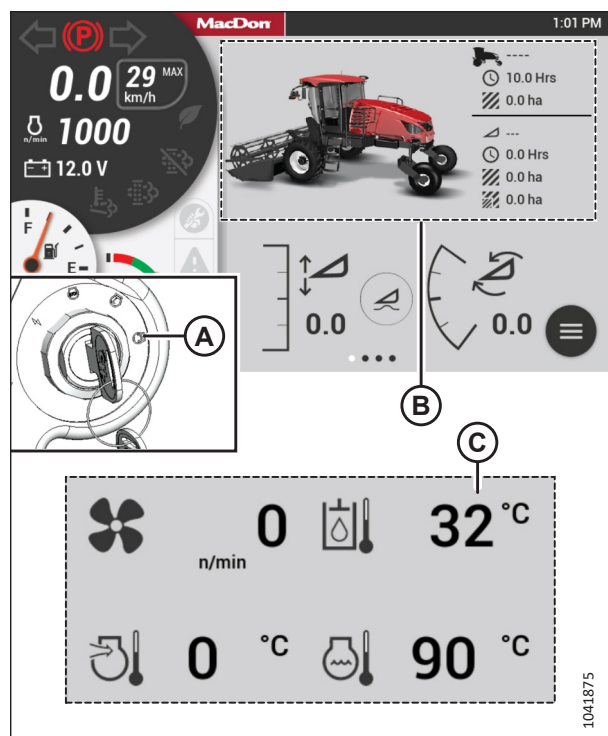


Figure 4.45: HarvestTouch™ Display

PERFORMING PREDELIVERY CHECKS

NOTE:

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

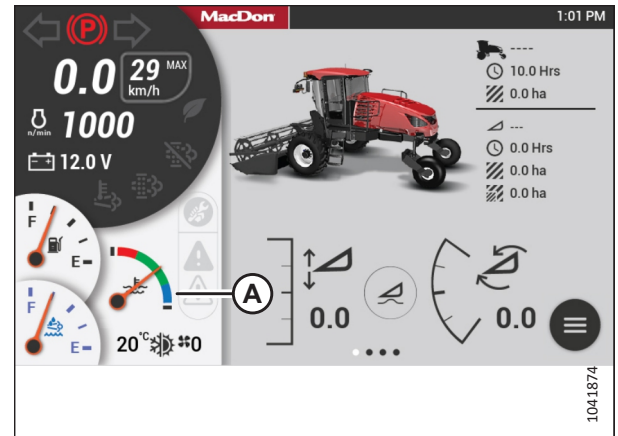


Figure 4.46: HarvestTouch™ Display

PERFORMING PREDELIVERY CHECKS

Troubleshooting Engine Starting Problems

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

IMPORTANT:

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

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

Table 4.1 Engine Start Troubleshooting

Problem	Solution
Controls are not in the NEUTRAL position	<ul style="list-style-type: none"> • Move the GSL to NEUTRAL • Move the steering wheel to the locked (centered) position • Disengage the HEADER switch
Neutral interlock is out of adjustment	<ul style="list-style-type: none"> • Refer to the windrower's technical manual
Fuel not reaching the engine	<ul style="list-style-type: none"> • Fill the fuel tank • Replace the fuel filter
Old fuel in the fuel tank	<ul style="list-style-type: none"> • Drain the fuel tank • Refill the fuel tank with fresh fuel
Water, dirt, or air in the fuel system	<ul style="list-style-type: none"> • Drain, flush, fill, and prime the fuel system
Improper type of fuel in the fuel tank	<ul style="list-style-type: none"> • Drain the fuel tank • Refill the fuel tank with the correct type of fuel
Crankcase oil too heavy	<ul style="list-style-type: none"> • Replace with recommended oil
Low voltage output from the battery	<ul style="list-style-type: none"> • Test the battery • Check the battery's electrolyte levels
Poor battery connection	<ul style="list-style-type: none"> • Clean and tighten loose battery connections
Faulty starter	<ul style="list-style-type: none"> • Refer to the windrower's technical manual
Wiring is shorted or the circuit breaker is open	<ul style="list-style-type: none"> • Check the continuity of the wiring and the breaker; manually reset the circuit breaker
Faulty fuel injectors	<ul style="list-style-type: none"> • Contact a MacDon Dealer or MacDon Product Support
Aftertreatment error on start up	<ul style="list-style-type: none"> • Check diesel exhaust fluid (DEF) coolant hose routing, ensure the coolant pressure lines, marked with red cable ties, are connected together, and not crossed with the return line.

4.1.12 Checking and Adding Wheel Drive Lubricant

The lubricant level in the windrower's wheel drives can be inspected through the lubricant ports.

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

1. Park the windrower on level ground.
2. Rotate the wheel drive so that the imaginary line running through plugs (A) and (B) and hub center (C) is parallel with the ground, as shown.
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 the inside back cover.

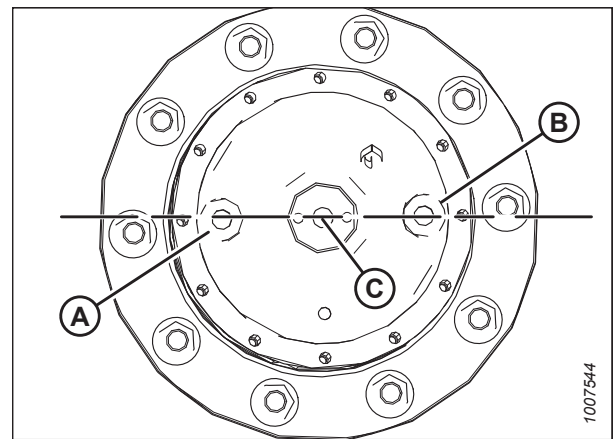


Figure 4.47: Drive Wheel Hub

IMPORTANT:

The lubricant used for the first wheel drive lubricant change differs from the type of lubricant used at the factory. For lubricant specifications, refer to the inside back cover.

6. Reinstall the plug and tighten it to 24 Nm (18 lbf-ft [216 lbf-in]).

4.1.13 Checking Wheel Drive Lubricant – 12 Bolt (Optional)

The lubricant level in the wheel drives of windrowers equipped with 12 bolt wheels can be inspected through the lubricant check port.

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.

PERFORMING PREDELIVERY CHECKS

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

WARNING

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

4. Remove check plug (B). The lubricant should be visible through the port. Some lubricant may leak from the port.
5. Reinstall check plug (B). Torque the plug to 7.5 Nm (6 lbf-ft [72 lbf-in]).
6. If removed, reinstall fill/drain plug (A). Torque the plug to 24 Nm (18 lbf-ft [216 lbf-in]).

4.1.14 Checking Tire Pressure

The windrower's drive and caster tires must be inflated to the proper pressure level.

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

Drive wheel tires: The maximum inflation pressure for drive tires (A) is 241 kPa (35 psi).

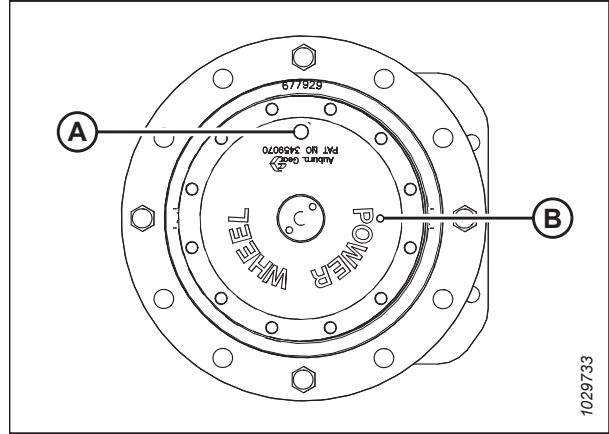


Figure 4.48: Wheel Drive – 12 Bolt

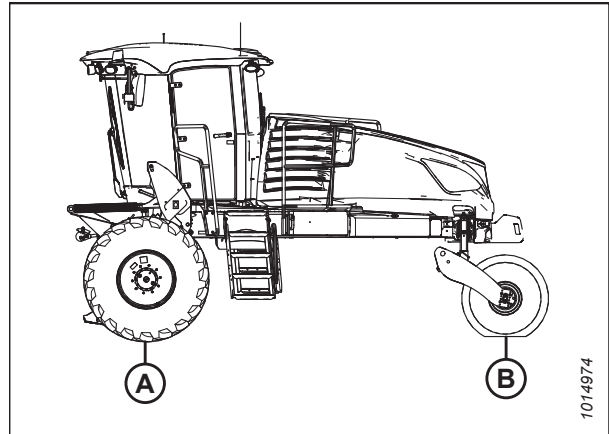


Figure 4.49: Windrower Tires

4.2 Performing Operational Checks

Once the predelivery checklist has been completed, the operating characteristics of the windrower will need to be inspected.

1. Perform the operational check procedures provided in this chapter and fill out the relevant items in the *Predelivery Checklist, page 253*.
2. Ensure that the Operator or the Dealer retains the completed Predelivery Checklist.

For information on navigating the windrower's HarvestTouch™ Display, refer to *6.1 Navigating HarvestTouch™ Display, page 237*.

4.2.1 Checking Operating Safety System

The operating safety system protects the Operator from injury and the windrower from damage. The functionality of the operating safety system will need to be verified.

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 HarvestTouch™ Display displays LOCK SEAT BASE IN CAB-FORWARD.
2. With the engine running and the seat base in cab-forward mode, stand up and engage the HEADER DRIVE switch. The header drive should **NOT** engage and the HarvestTouch™ Display should display OPERATOR MUST BE SEATED.
3. With the engine running and the seat base unlocked, move the ground speed lever (GSL) out of PARK. Confirm that the engine immediately shuts down and that the HarvestTouch™ Display displays LOCK SEAT BASE and sounds a tone.
4. Shut down the engine and press the HEADER ENGAGE switch. Try starting the engine to confirm that the HarvestTouch™ Display displays DISENGAGE HEADER. If the engine turns over, the safety system requires adjustment. Refer to the windrower's technical manual for the adjustment procedures.
5. Shut down the engine and open the cooler box door. Try starting the engine to confirm that the HarvestTouch™ Display displays CLOSE COOLER BOX DOOR. If the engine turns over, the safety system requires adjustment. Refer to the windrower's technical manual for the adjustment procedures.

PERFORMING PREDELIVERY CHECKS

6. Shut down the engine and perform the following safety system checks:
 - a. Open the hood.
 - b. Pry the steering interlock away from pintle arms (A) by inserting a wedge or a pry bar between one of interlock channels (B) and the pintle arm.
 - c. Insert a wooden block approximately 19 mm (3/4 in.) thick between the opposite channel and the pintle arm so that the interlock channel is clear of the pintle arm.
 - d. Turn the steering wheel off-center and move the GSL to PARK.
 - e. Try starting the engine to confirm that the HarvestTouch™ Display displays LOCK STEERING WHEEL IN CENTER POSITION. The engine should **NOT** turn over. If the engine turns over, the safety system requires adjustment. Refer to the windrower's technical manual for the adjustment procedures.
 - f. Remove the key from the ignition.
 - g. Remove the wooden block and close the hood.

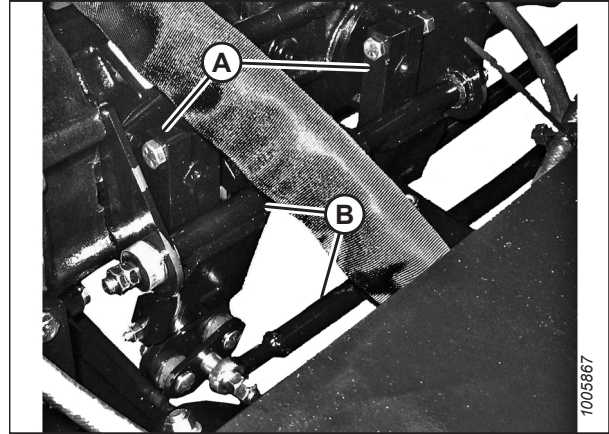


Figure 4.50: Pintle Arms

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

4.2.2 Checking HarvestTouch™ Display Status Screen and Auto Lights

The windrower's HarvestTouch™ Display should be able to automatically detect the type of header attached to the windrower and to turn the cab lights off automatically when the Operator leaves the cab. The functionality of these features will need to be verified.

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.

PERFORMING PREDELIVERY CHECKS

1. Open the cab door, turn the IGNITION switch to the ON position, and confirm that the HarvestTouch™ Display boots up and shows the MacDon logo.
2. Start the engine. For instructions, refer to [4.1.11 Starting Engine, page 140](#).



Figure 4.51: HarvestTouch™ Display – Boot-Up

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

NOTE:

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

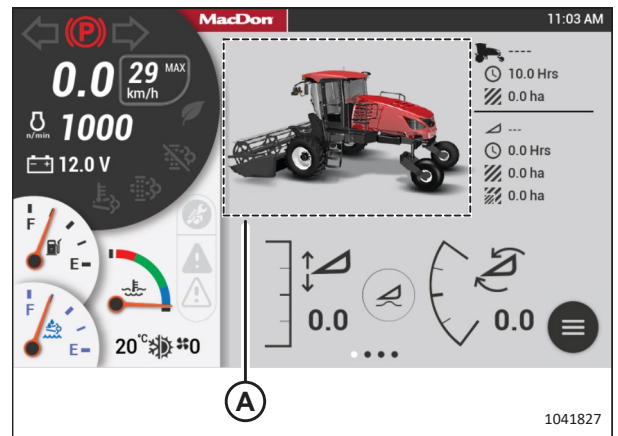


Figure 4.52: HarvestTouch™ Display – Header Disengaged

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

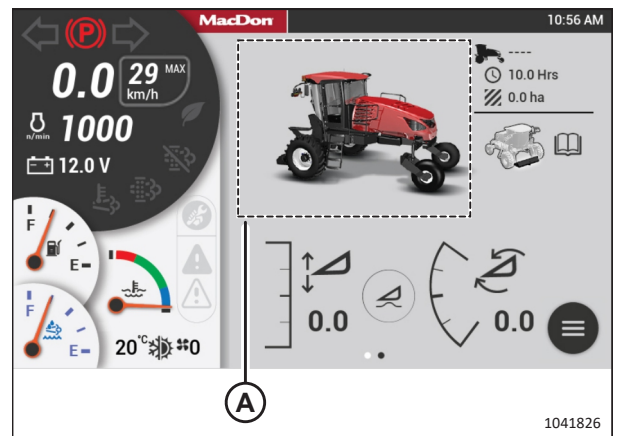


Figure 4.53: HarvestTouch™ Display – No Header

PERFORMING PREDELIVERY CHECKS

5. Press LIGHT switch (A) to turn on the headlights.
6. Shut down the engine. Leave the cab, but do **NOT** turn off the headlights. Confirm that the HarvestTouch™ Display, the headlights, and the egress light shut off after 3 minutes.

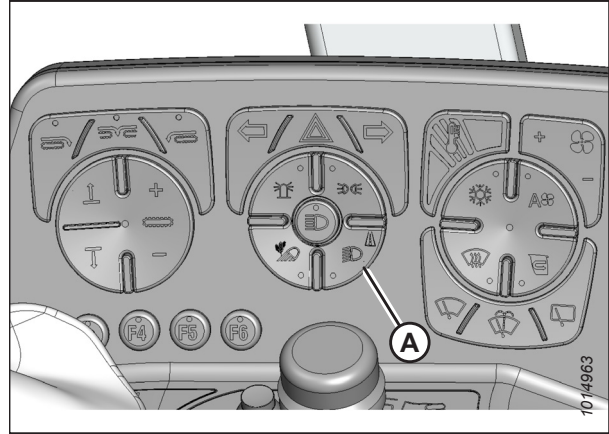


Figure 4.54: Headlight Switch

4.2.3 Checking HarvestTouch™ Display Gauges

The HarvestTouch™ Display shows the windrower's performance gauges. The functionality of this feature will need to be verified.

DANGER

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

DANGER

Ensure that all bystanders have cleared the area.

1. If the windrower engine is not already running, start it. For instructions, refer to [4.1.11 Starting Engine, page 140](#).
2. If a header is not attached to the windrower, confirm that the HarvestTouch™ Display displays no-header page (A).

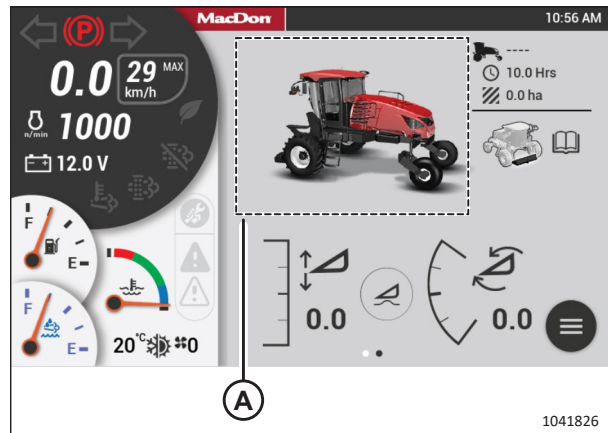


Figure 4.55: HarvestTouch™ Display – No Header

PERFORMING PREDELIVERY CHECKS

3. If a header is attached to the windrower, confirm that header page (A) appears.
4. Confirm red park symbol (B) is lit.
5. Confirm the following gauges appear:
 - Engine rpm (C)
 - Fuel gauge (D)
 - Temperature gauge (E)
 - DEF gauge (F)
6. Shut down the engine, and remove the key from the ignition.

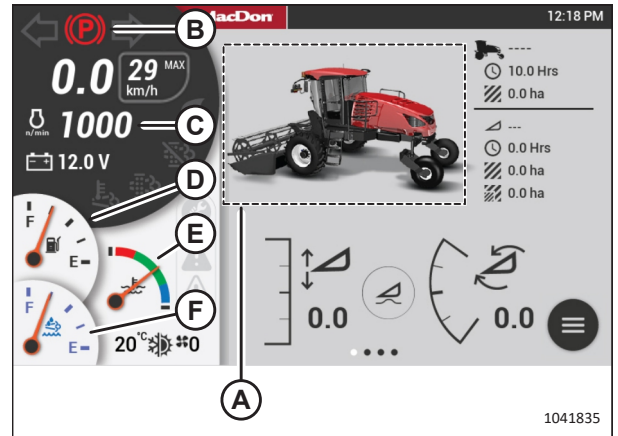


Figure 4.56: HarvestTouch™ Display – Header Attached

4.2.4 Setting Language

The language can be set in the HarvestTouch™ Display SETUP menu.

1. Turn the key to the ON or ACC position.
2. Select MENU icon (A).

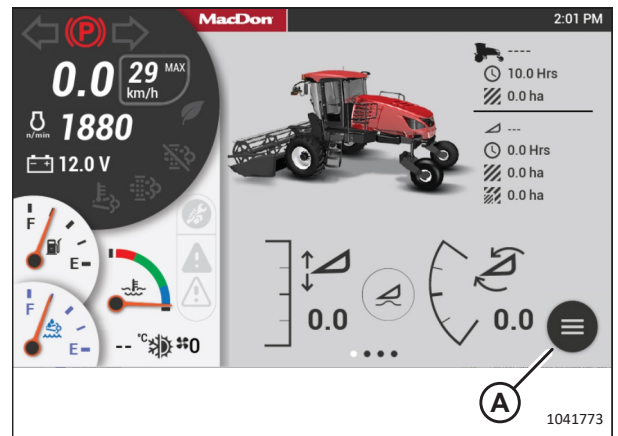


Figure 4.57: HarvestTouch™ Display

3. Select SETUP (A).

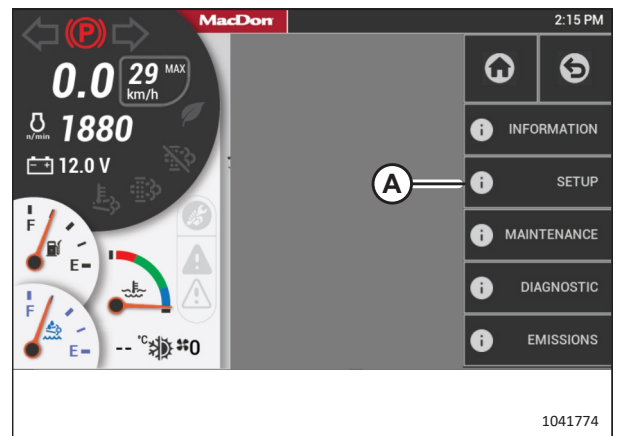


Figure 4.58: HarvestTouch™ Display Menu

PERFORMING PREDELIVERY CHECKS

4. Select DISPLAY (A).

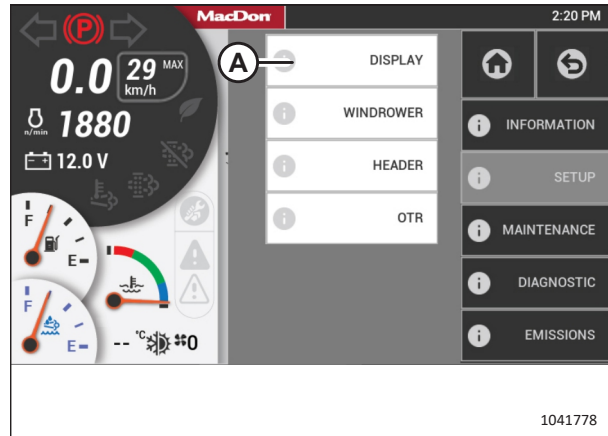


Figure 4.59: HarvestTouch™ Display Setup Menu

5. Select LANGUAGE (A).

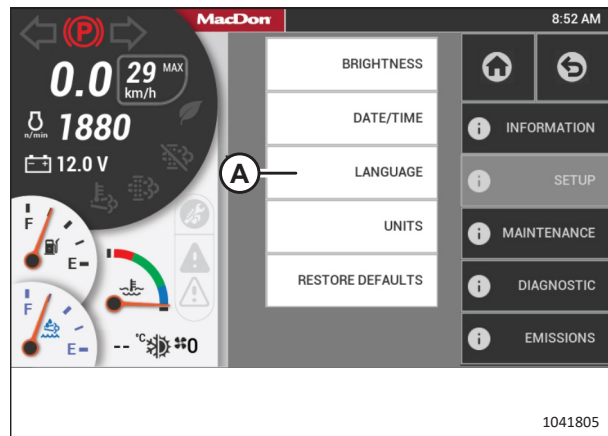


Figure 4.60: HarvestTouch™ Display Setup Menu

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

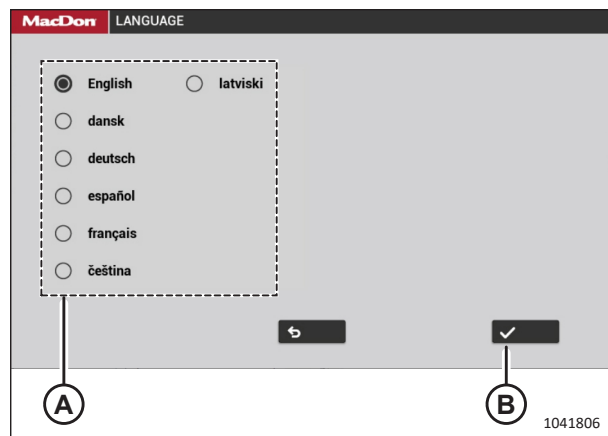


Figure 4.61: HarvestTouch™ Display Language Page

4.2.5 Setting Units of Measurement

The units of measurement can be set in the HarvestTouch™ Display SETUP menu.

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

PERFORMING PREDELIVERY CHECKS

2. Select MENU icon (A).

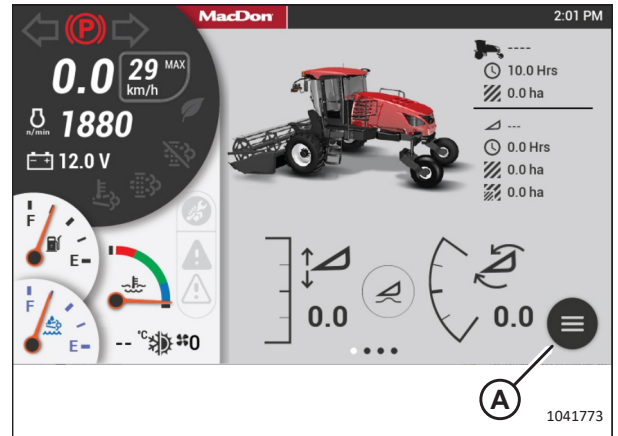


Figure 4.62: HarvestTouch™ Display

3. Select SETUP (A).

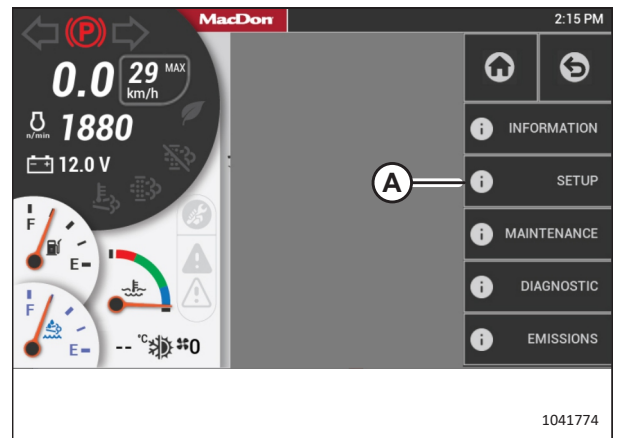


Figure 4.63: HarvestTouch™ Display Menu

4. Select DISPLAY (A).

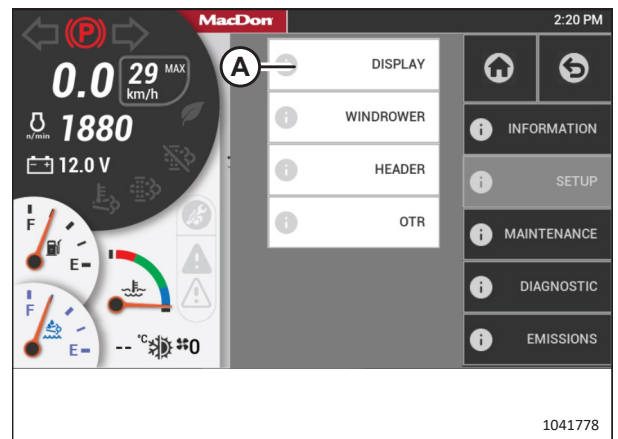


Figure 4.64: HarvestTouch™ Display Setup Menu

PERFORMING PREDELIVERY CHECKS

5. Select UNITS (A).

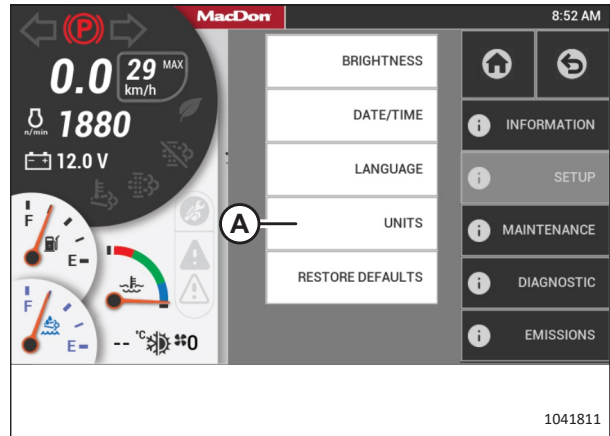


Figure 4.65: Display Menu

6. Select a unit of measurement (A).

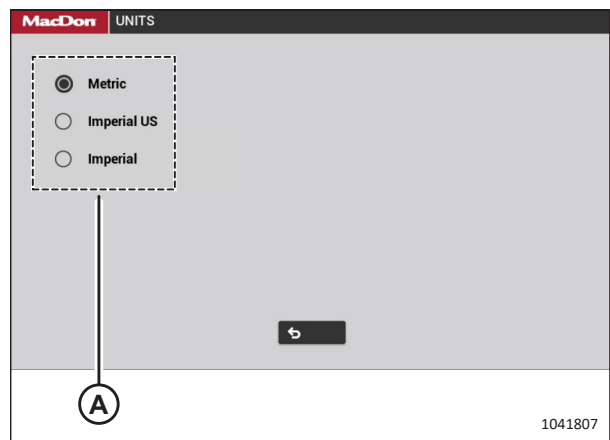


Figure 4.66: Units Page

4.2.6 Setting Time and Date

The time and date can be set in the HarvestTouch™ Display SETUP menu.

1. Turn the key to the ON or ACC position.
2. Select MENU icon (A).

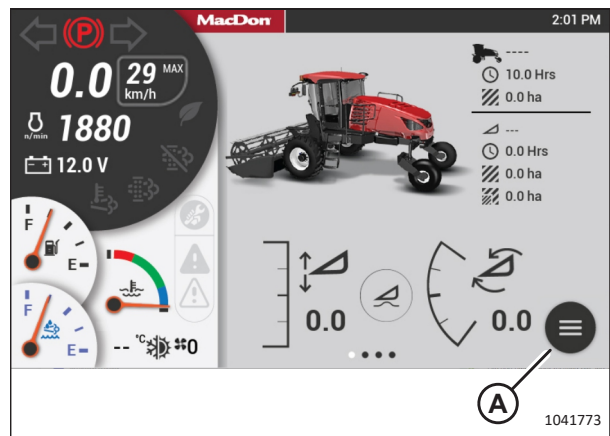


Figure 4.67: HarvestTouch™ Display

PERFORMING PREDELIVERY CHECKS

3. Select SETUP (A).

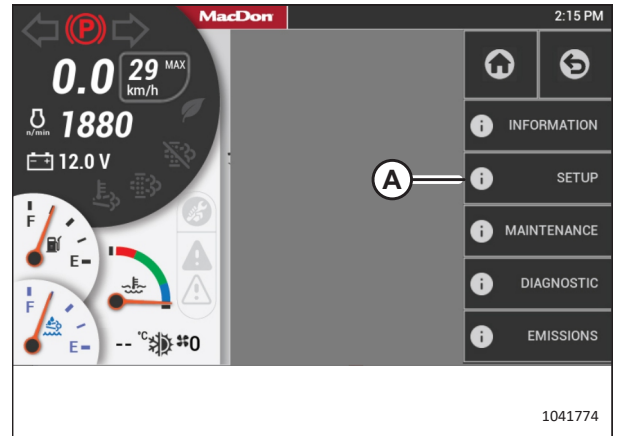


Figure 4.68: HarvestTouch™ Display Menu

4. Select DISPLAY (A).

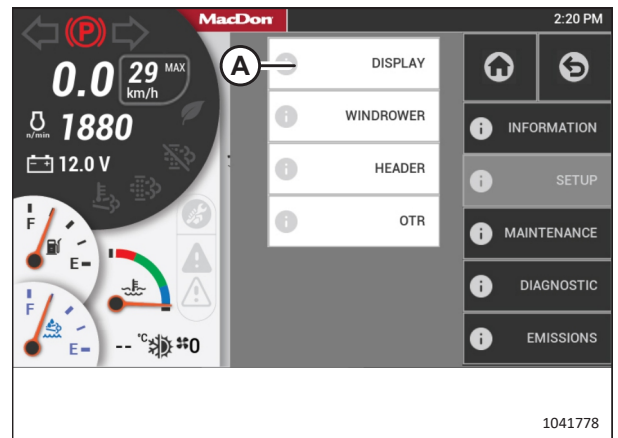


Figure 4.69: HarvestTouch™ Display Setup Menu

5. Select DATE/TIME (A).

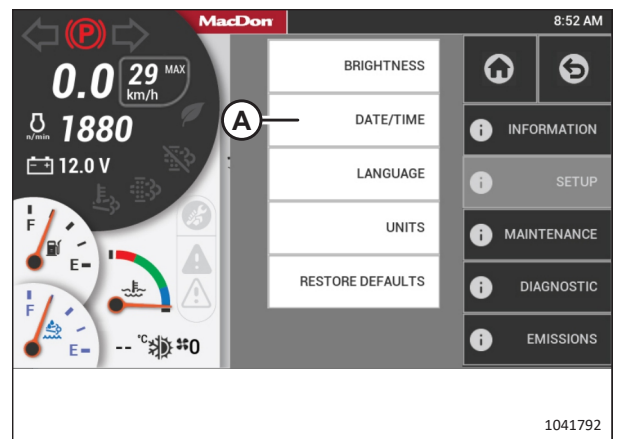


Figure 4.70: HarvestTouch™ Display Menu

PERFORMING PREDELIVERY CHECKS

6. Select one of the following:
 - To change the time, select time field (A). Proceed to Step 7, [page 156](#).
 - To change the date, select date field (B). Proceed to Step 9, [page 156](#).

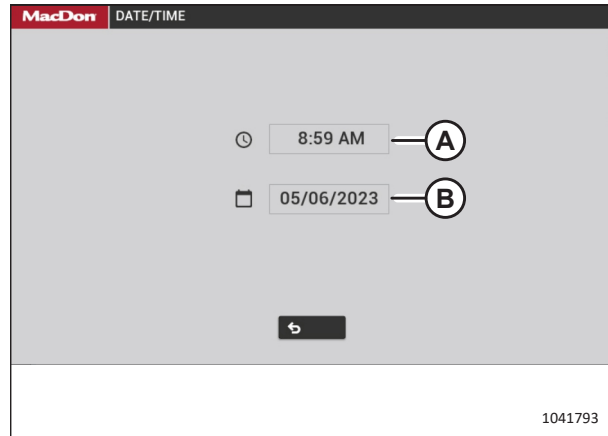


Figure 4.71: Date/Time Page

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

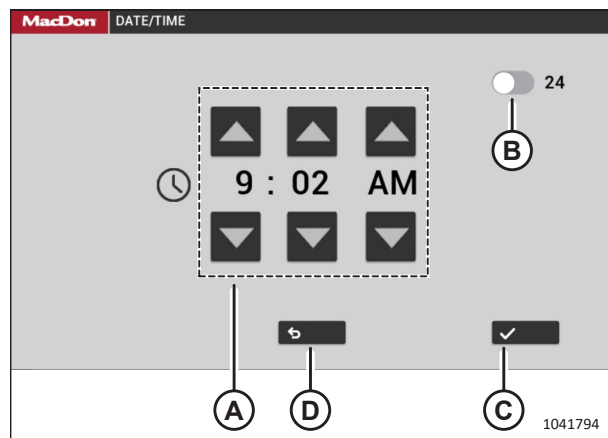


Figure 4.72: Date/Time Page

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

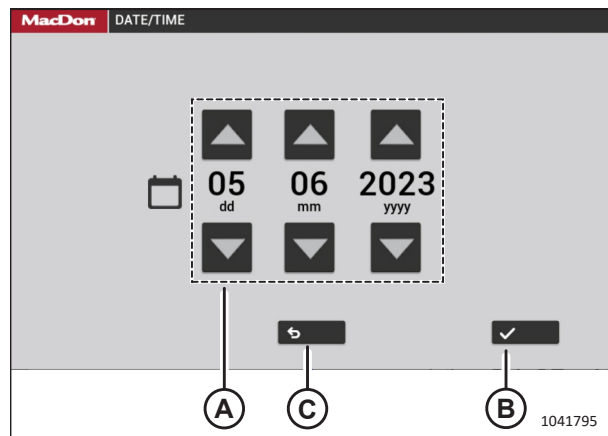


Figure 4.73: Date/Time Page

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

The windrower tire size and wheel type can be set in the HarvestTouch™ Display SETUP menu.

1. Select MENU icon (A).

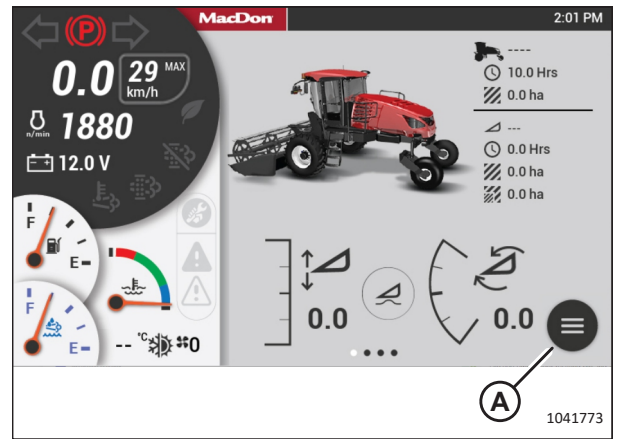


Figure 4.74: HarvestTouch™ Display

2. Select SETUP (A).

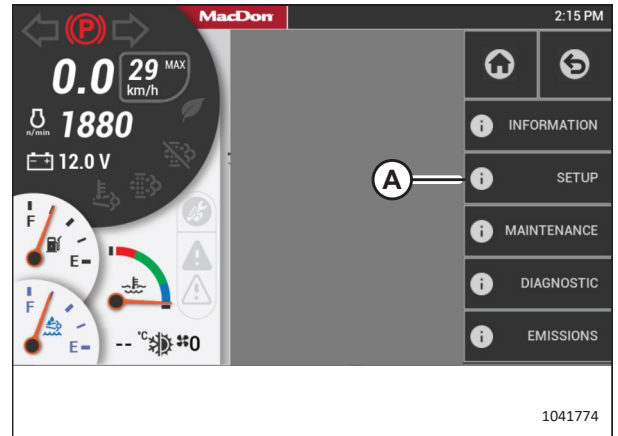


Figure 4.75: HarvestTouch™ Display Menu

3. Select WINDROWER (A).

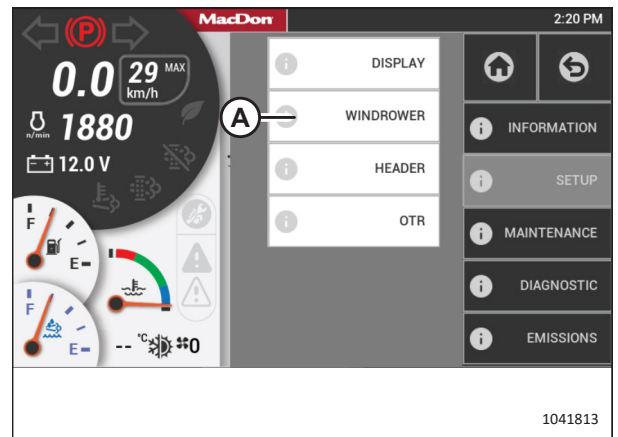


Figure 4.76: HarvestTouch™ Display Setup Menu

PERFORMING PREDELIVERY CHECKS

4. Select WHEEL DRIVE (A).

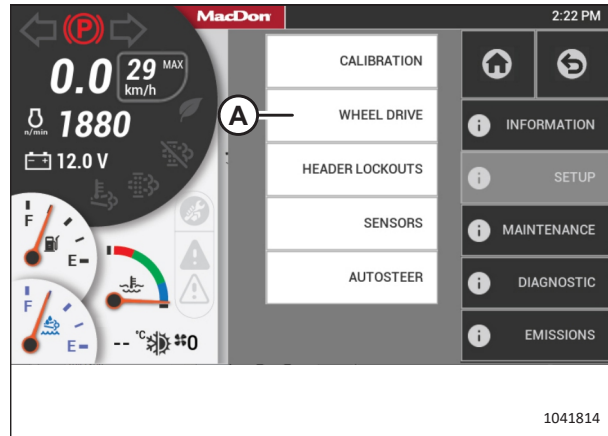


Figure 4.77: Windrower Menu

5. Select the drive tires from SELECT DRIVE TIRES list (A) that are already installed on the windrower.
6. Ensure that the HIGH TORQUE FINAL DRIVES is set to disabled.
7. Ensure that NARROW TRANSPORT OPTION (B) is set to enabled.
8. Select HOME icon (C) to return to the main menu page.

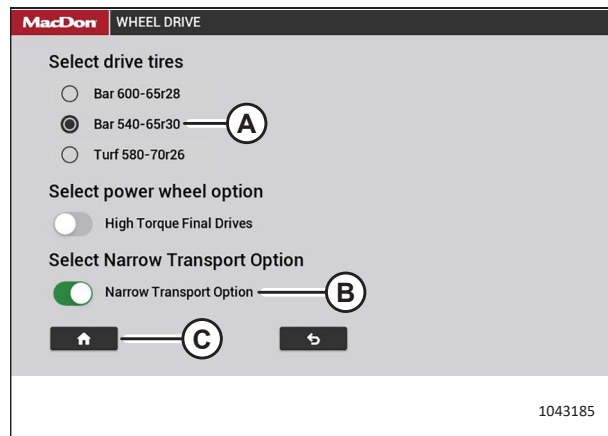


Figure 4.78: Wheel Drive Page

4.2.8 Checking Engine Speed

The windrower's engine idle and maximum speeds must be verified.

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.

PERFORMING PREDELIVERY CHECKS

3. Check engine speed (A) on the HarvestTouch™ Display. Compare the current engine speed to the value in the table below.
4. Move the throttle to its highest possible setting.
5. Check engine speed (A) on the HarvestTouch™ Display. Compare the current engine speed to the value in Table 4.2, page 159.

NOTE:

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

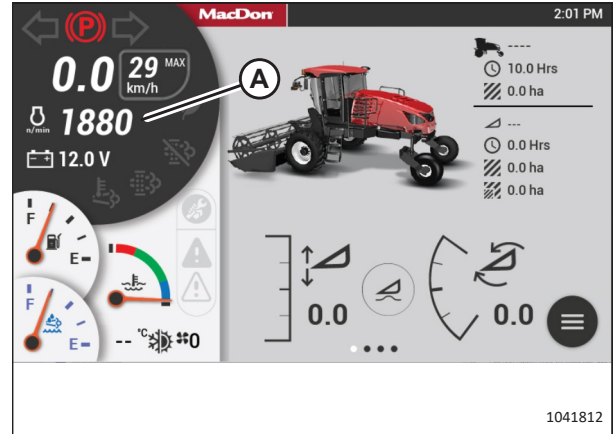


Figure 4.79: HarvestTouch™ Display

Table 4.2 Engine Speed

Idle	Maximum (No Load)
1000 rpm	2300 rpm

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

4.2.9 Checking Retract and Extend Functions of the Narrow Transport System

The narrow transport feature needs to be checked if the drive wheel legs and walking beam extensions fully extend and retract.

DANGER

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

1. Ensure that the narrow transport function is enabled on the HarvestTouch™ Display. For instructions, refer to 4.2.7 *Setting Wheel Drive Options – Narrow Transport, Tire Size, and Wheel Type*, page 157.
2. Shut down the engine, and remove the key from the ignition.
3. Retrieve the transport harness from holder (A), located behind the left platform, and connect it to electrical receptacle (B).

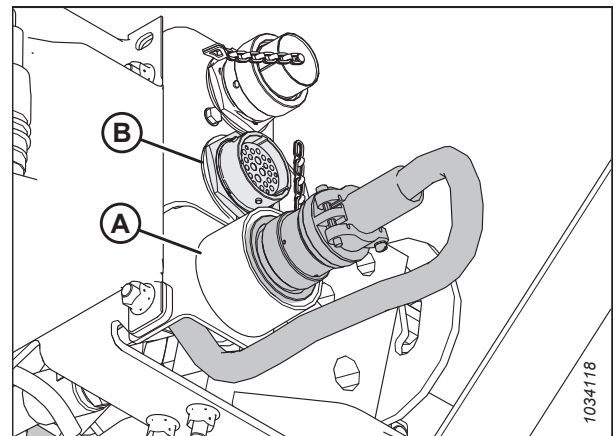


Figure 4.80: Transport Electrical Connector

PERFORMING PREDELIVERY CHECKS

4. Rotate left signal light placard (A) to the down (horizontal) position before driving in narrow transport mode.

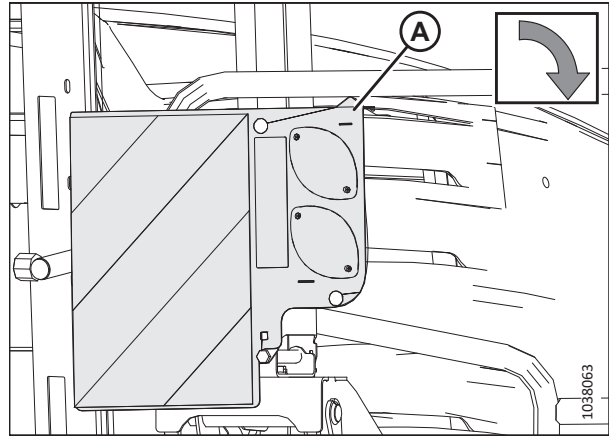


Figure 4.81: Left Signal Light Placard

5. At the front of the windrower, rotate walking beam lockout valve handle (A) to the open position (in line with the valve).
6. Remove lockout pins (B) from the sliding drive wheel legs and place them on top of the frame.

WARNING

Ensure that all bystanders have cleared the area.

7. Start the windrower, and set the idle to low.

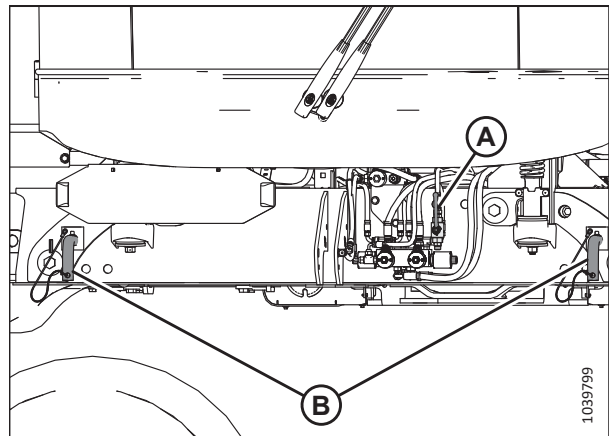


Figure 4.82: Transport Locks

PERFORMING PREDELIVERY CHECKS

- Press F5 (activate drive leg) or F6 (activate walking beam) button (A) on the operator's console to activate the narrow transport controls. The HarvestTouch™ Display will display IMPORTANT message (B) and produce an alarm.
- Press the F5 button on the operator's console to activate the drive wheel leg controls.

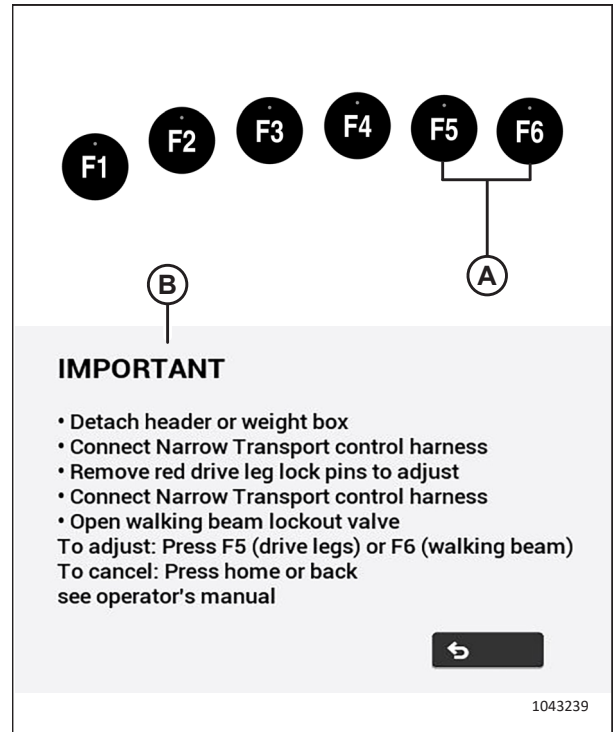


Figure 4.83: Narrow Transport Important Message

- Move the ground speed lever (GSL) out of PARK and slowly accelerate to 5–8 km/h (3–5 mph).
- To retract the drive wheel legs, press and hold REEL AFT button (B) on the GSL while the windrower is moving.
- To extend the drive wheel legs, press and hold REEL FORE button (A) on the GSL while the windrower is moving.
- Bring the windrower to a complete stop, and place the GSL in PARK.

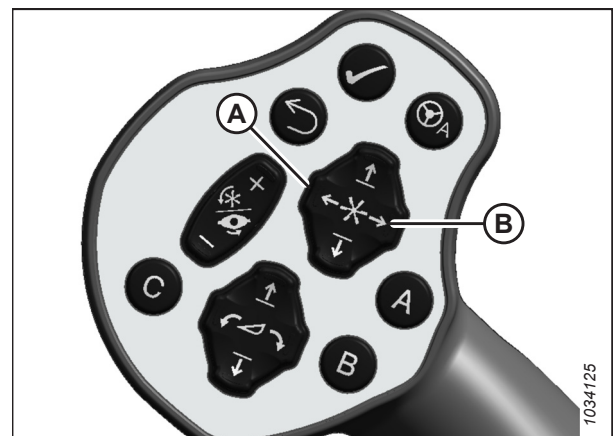


Figure 4.84: Transport Control Buttons

- Press F6 button on the operator's console to activate the walking beam controls.
- Pivot the windrower to turn the caster wheels sideways.

PERFORMING PREDELIVERY CHECKS

16. To retract the walking beam, press and hold REEL AFT button (A) on the GSL.
17. To extend the walking beam, press and hold REEL FORE button (B) on the GSL.

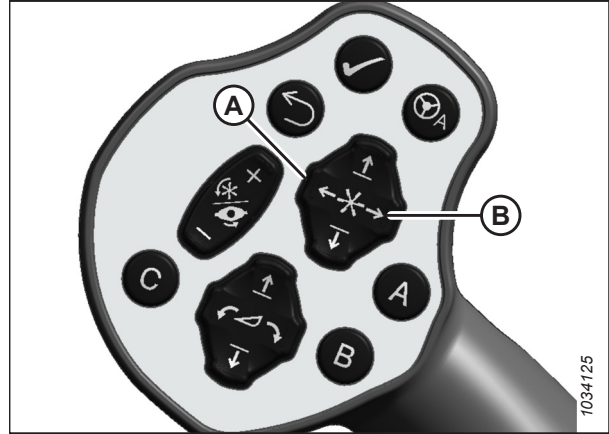


Figure 4.85: Transport Control Buttons

18. Repeat Step 8, page 161 to Step 17, page 162 five times to ensure it is working properly.
19. Exit the narrow transport control page by pressing the F5 or F6 button again (whichever is active). The exit transport operation warning will display on the HarvestTouch™ Display.

NOTE:

To cancel the transport operation, select RETURN icon (A).

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

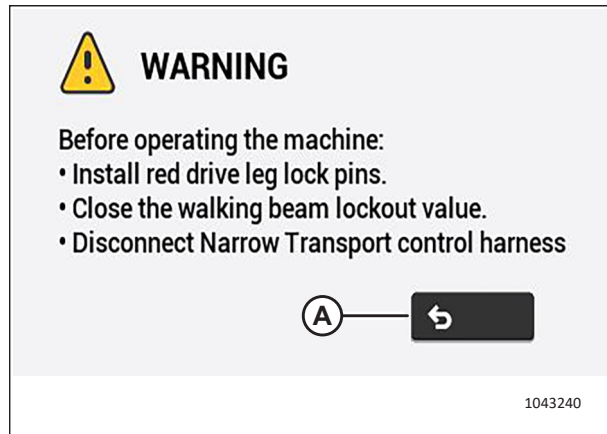


Figure 4.86: Exit Transport Operation Warning

21. Reinstall lock pins (B) into the drive wheel legs.
22. Turn the walking beam lockout valve (A) to the closed position (90° from the valve).

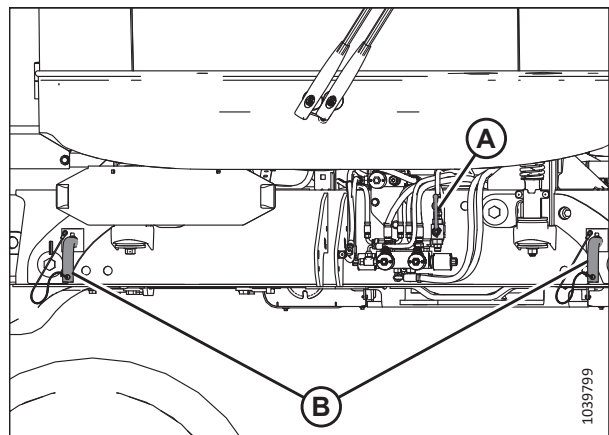


Figure 4.87: Transport Locks

PERFORMING PREDELIVERY CHECKS

23. Disconnect the narrow transport electrical harness from connector (B) and return it to holder (A).

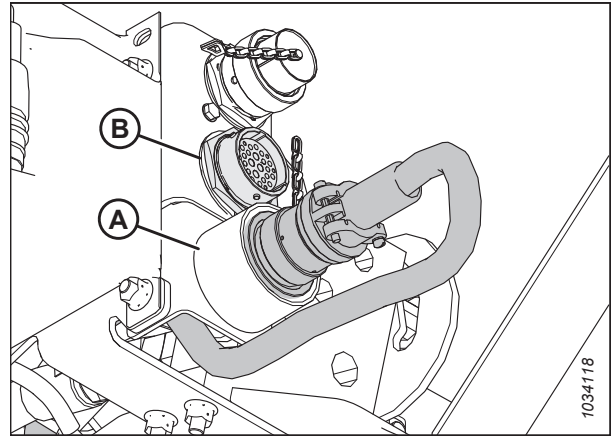


Figure 4.88: Transport Electrical Connector

4.2.10 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. The functionality of the INHIBIT SCR CONDITIONING feature will need to be verified.

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

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

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

NOTE:

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

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

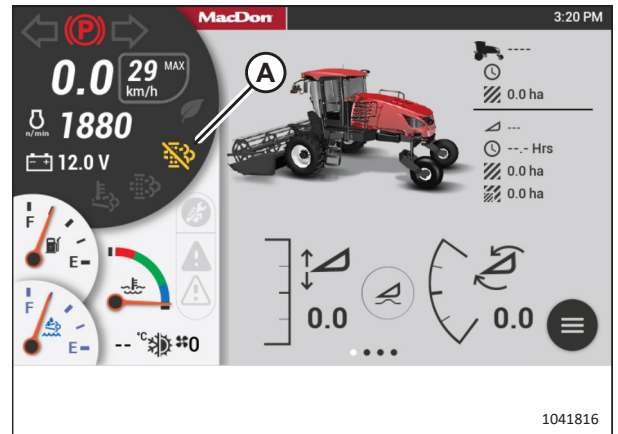


Figure 4.89: HarvestTouch™ Display

PERFORMING PREDELIVERY CHECKS

2. Select MENU icon (A).

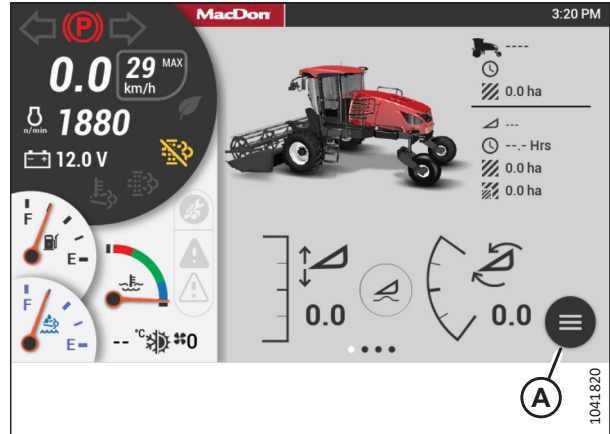


Figure 4.90: HarvestTouch™ Display

3. Select EMISSIONS (A).

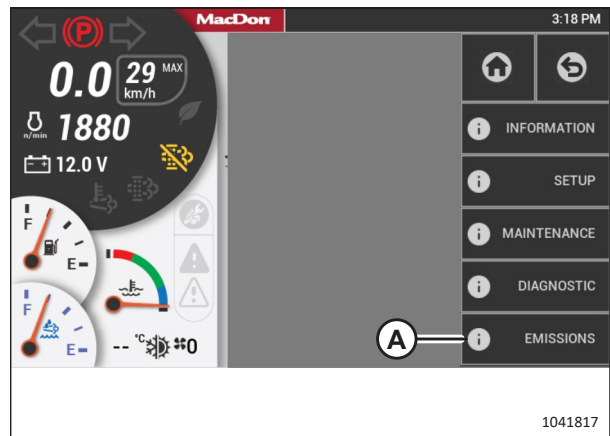


Figure 4.91: HarvestTouch™ Display

4. To turn off SCR conditioning inhibit mode, select and hold INHIBIT icon (A) for 3 seconds. Highlighted SCR CONDITIONING INHIBIT icon (B) will turn off.
5. To return to the home page, press back arrow (C).

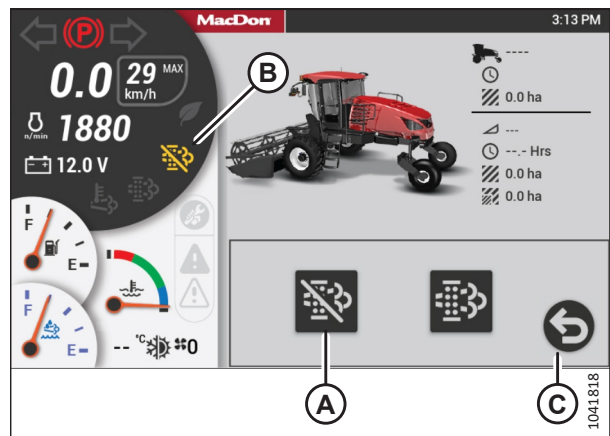


Figure 4.92: HarvestTouch™ Display

4.2.11 Checking Exterior Lights

Visibility is important when driving on the road or working on the field. Ensure all exterior lights are functioning properly.



DANGER

Ensure that all bystanders have cleared the area.

1. Start the engine.

PERFORMING PREDELIVERY CHECKS

2. Remove the plastic film from the LED lighting.
3. Rotate the operator's seat to cab-forward mode.
4. Press FIELD LIGHT switch (A).
5. Check that front field lights (B), rear field lights (C), and rear swath lights (D) are functioning.
6. Check that white clearance lights (E) are on.

NOTE:

These lights are automatically activated and will stay on when the engine is running.

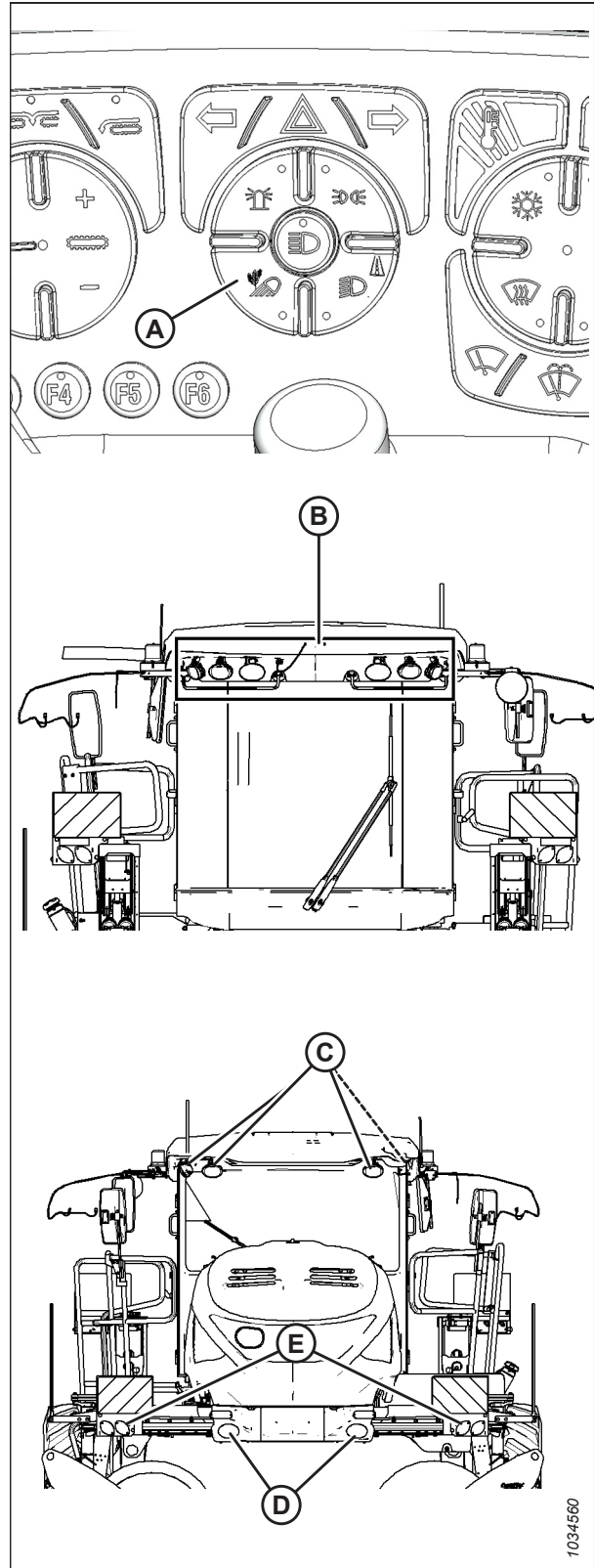


Figure 4.93: Field Lights

PERFORMING PREDELIVERY CHECKS

7. Rotate the operator's seat to engine-forward mode.
8. Press ROAD LIGHT switch (A), and check that front road lights (B) and rear red tail/brake lights (C) are functioning.
9. Press HIGH/LOW switch (D) and check lights (B).
10. Press TURN SIGNAL switches (E) on the console and check amber lights (F) and turn signal repeater lights (J).
11. Press HAZARD LIGHT switch (G) and check flashing hazard lights (F).
12. Check that white clearance lights (H) are on.

NOTE:

These lights are automatically activated and will stay on when the engine is running.

13. Press the switches again to shut off the lights.

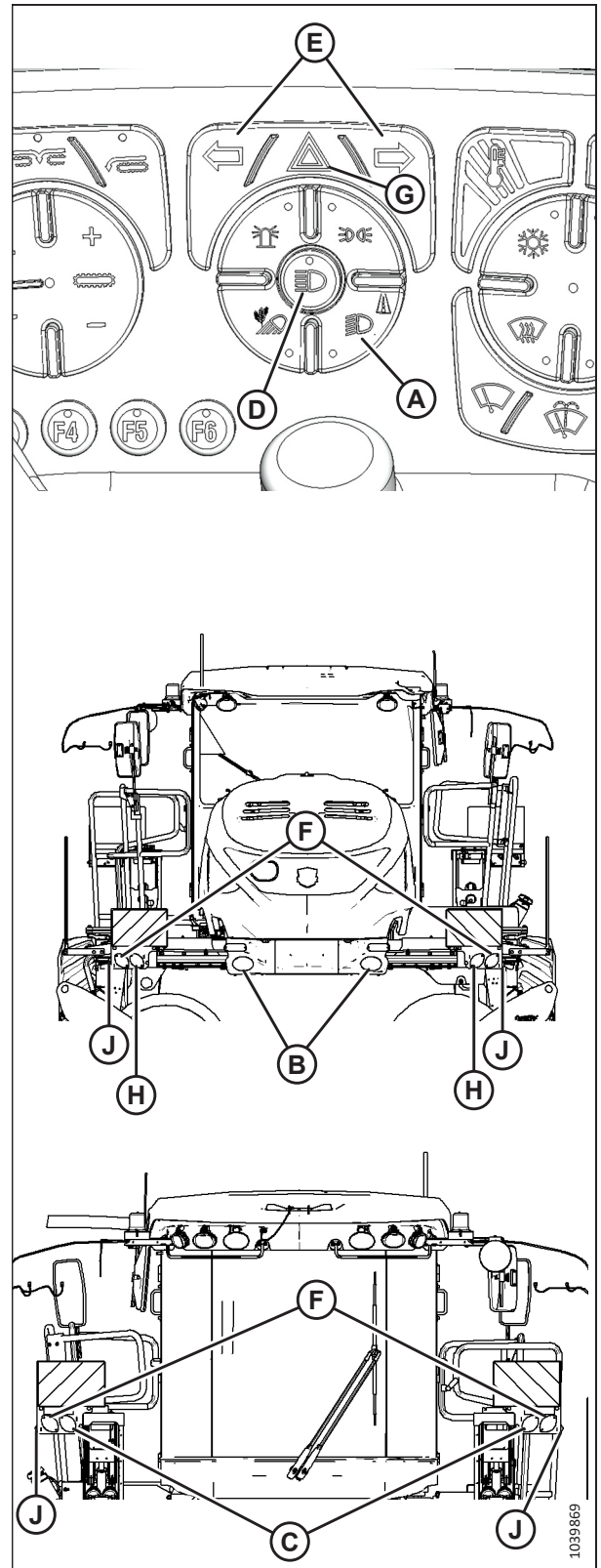


Figure 4.94: Road Lights – Engine-Forward

PERFORMING PREDELIVERY CHECKS

14. Push BEACON SWITCH (A), and check that amber beacons (B) are functioning.
15. Press the switch again to shut off the beacons.

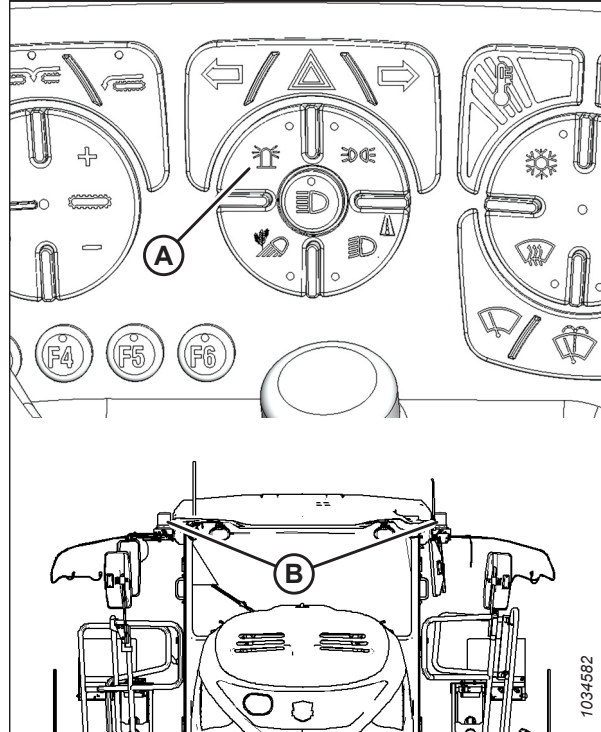


Figure 4.95: Beacons

4.2.12 Checking Horn

The horn is a safety device for notifying other people of the windrower's presence. The functionality of the horn will need to be verified.

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

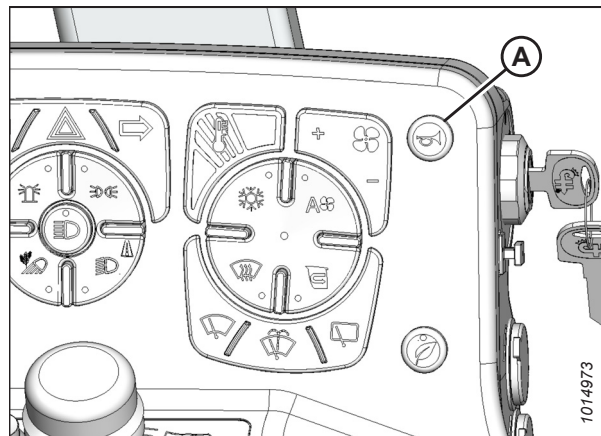


Figure 4.96: Horn Button

4.2.13 Checking Interior Lights

Interior lights provide visibility within the cab. The functionality of the interior lights will need to be verified.

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.

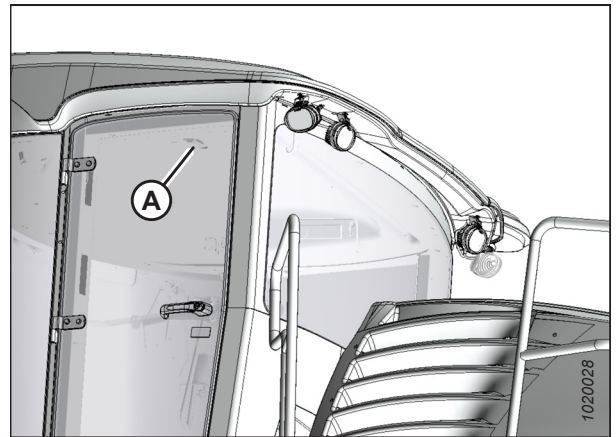


Figure 4.97: Interior Light

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.

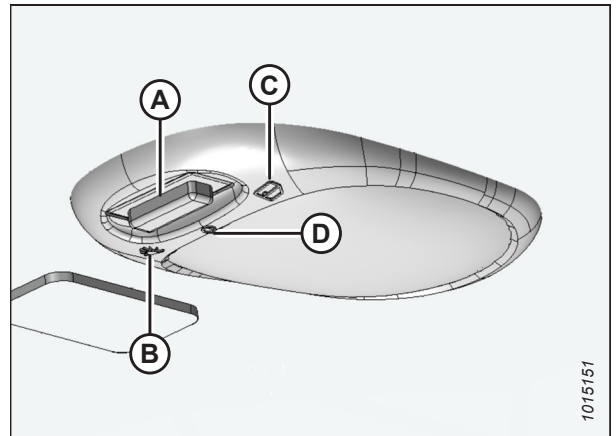


Figure 4.98: Interior Light

4.2.14 Checking Climate Controls

The cab climate system consists of the air conditioner (A/C), fans, vents, and the defroster. The functionality of these features will need to be verified.

⚠ 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.

PERFORMING PREDELIVERY CHECKS

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

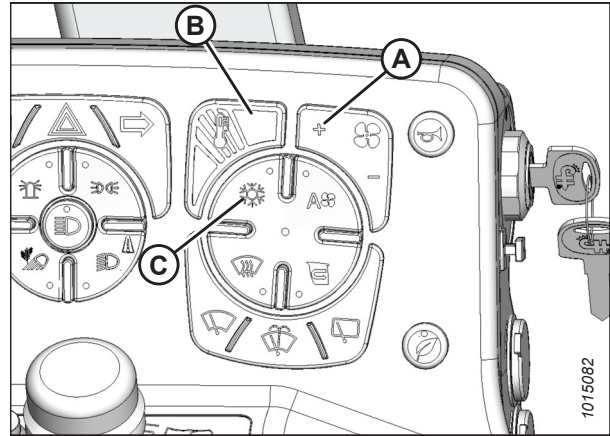


Figure 4.99: A/C Controls

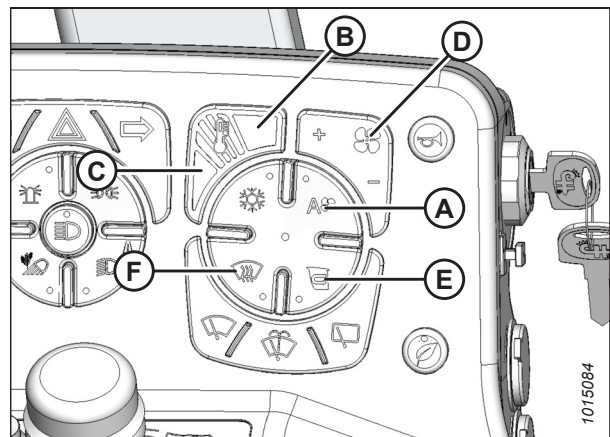


Figure 4.100: Climate Controls

4.2.15 Checking Radio and Activating Bluetooth® Feature

The windrower is factory-equipped with a Bluetooth®-enabled radio and CD/DVD player. The functionality of the radio's features will need to be verified.

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.

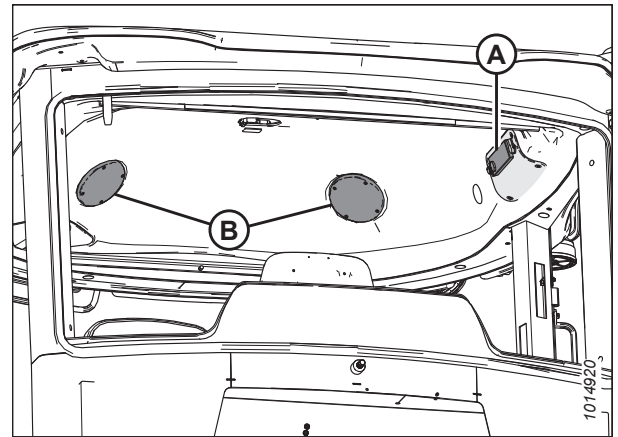


Figure 4.101: Radio and Speakers

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

NOTE:

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

- c. Press BAND/BACK button (B) to change radio bands as follows:
 - FM1
 - FM2
 - FM3
 - AM1
 - AM2
- d. Rotate VOLUME/SELECT knob (C) to change the volume level.
- e. Insert a CD or DVD into disc slot (D), or connect a USB storage device to the unit. The radio will automatically switch modes and begin playback after the media is successfully loaded.

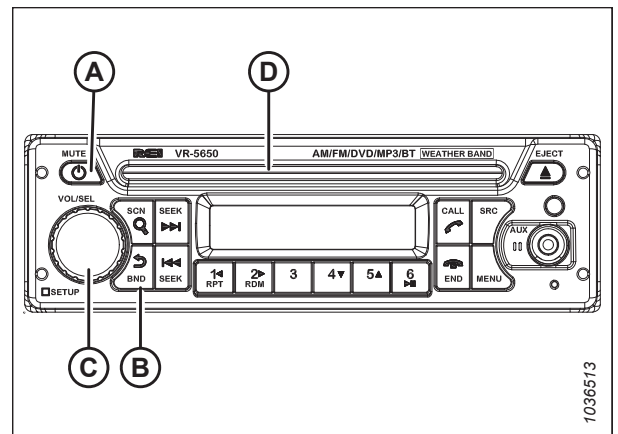


Figure 4.102: Radio

PERFORMING PREDELIVERY CHECKS

2. To activate the Bluetooth® feature:
 - a. Press POWER button (A) to turn the radio on.
 - b. Press and hold VOL/SEL knob (B) for 2 seconds. The menu will appear on screen (C).
 - c. Rotate VOL/SEL knob (B) to highlight the BT SET menu and press the VOL/SEL knob to select it. BLUETOOTH ON/OFF will appear on screen (C).
 - d. Press the VOL/SEL knob to select BLUETOOTH.
 - e. Rotate the VOL/SEL knob until ON appears. Press the VOL/SEL knob.
 - f. Rotate the VOL/SEL knob and select DISCOVER.
 - g. Rotate the VOL/SEL knob until ON appears, and then press the VOL/SEL knob.

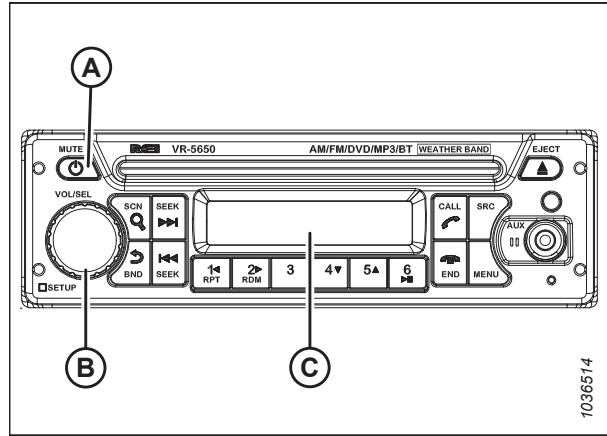


Figure 4.103: Bluetooth® Radio

4.2.16 Testing Secondary Brakes – Windrowers Sold In Germany Only

If the windrower is equipped with the secondary brakes package, you must test the brakes once before using them for the first time.

CAUTION

In case the driver needs help with the procedure while driving, have a second person be able to communicate this procedure to the driver, such as through the speakerphone on a cellular phone.

1. Attach concrete-filled weight box (A) (B6974) to the windrower.
2. Park the windrower on a flat, level surface. Make sure there is enough distance [150 m (500 ft.)] to drive the windrower while testing the brakes.
3. Shut down the engine, and remove the key from the ignition.
4. Place the windrower in **ENGINE-FORWARD** mode. For instructions, refer to the windrower operator's manual.
5. Start the engine.

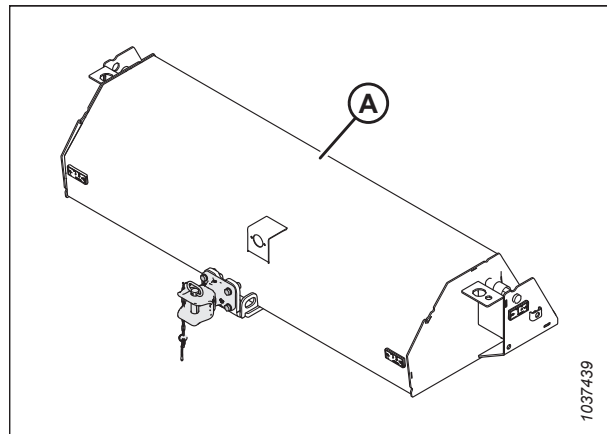


Figure 4.104: Weight Box

PERFORMING PREDELIVERY CHECKS

- On the HarvestTouch™ display, secondary brakes icon (A) should be grey (the system is disabled).

IMPORTANT:

If secondary brakes icon (A) does **NOT** appear at all, then the windrower cannot detect the secondary brake system. Contact MacDon for assistance.

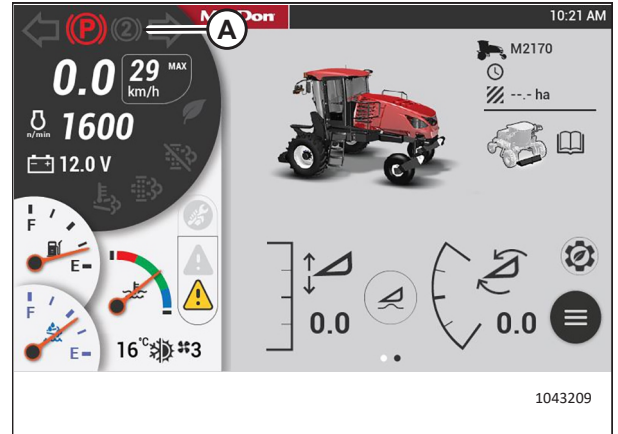


Figure 4.105: HarvestTouch™ Display

- Set throttle (A) to 1600 rpm or higher.
- Move the ground speed lever (GSL) completely into FORWARD. The windrower should move forward.



Figure 4.106: HarvestTouch™ Display

PERFORMING PREDELIVERY CHECKS

9. Enable the secondary brake system by pressing “C” button (A) on the GSL. Secondary brake icon (B) illuminates green on the HarvestTouch™ display.

NOTE:

The green icon indicates that the secondary brake system is enabled, but it does **NOT** mean that the brakes are engaged.

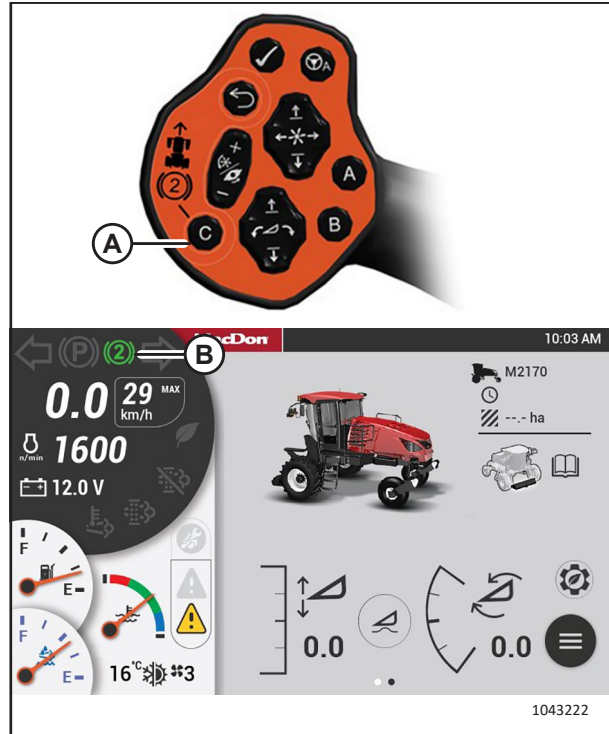


Figure 4.107: GSL and HarvestTouch™ Display

PERFORMING PREDELIVERY CHECKS

NOTE:

Secondary brakes – operation information: Refer to Table 4.3, page 175 and Figure 4.108, page 175. Once the secondary brake system is enabled, you can engage the secondary brakes by moving the GSL into NEUTRAL. The brakes will begin to engage once the GSL is halfway (50%) into NEUTRAL, and will apply full braking pressure once the GSL is close to neutral (within 15% or closer).

Table 4.3 Secondary Brake Output and HarvestTouch™ Display Brake Indicator according to Ground Speed Lever (GSL) Position

GSL Position	Brake Output	Brake Indicator
100%	0%	Green “(2)”
75%	0%	Green “(2)”
50%	40%	Green “(2)”
25%	62%	Green “(2)”
20%	75%	Green “(2)”
15%	100%	Green “(2)”
10%	100%	Red “(P)” + Green “(2)”
0% (NEUTRAL)	100%	Red “(P)” + Green “(2)”
-10%	100%	Red “(P)” + Green “(2)”
-15%	100%	Green “(2)”
-20%	75%	Green “(2)”
-25%	62%	Green “(2)”
-50%	40%	Green “(2)”
-75% (see NOTE below)	0%	Green “(2)”
-100% (see NOTE below)	0%	Green “(2)”

NOTE:

The GSL is mechanically limited to 60% in the reverse direction as shown in Figure 4.108, page 175, however windrower software interprets the 60% mechanical limit as “100% in reverse”.

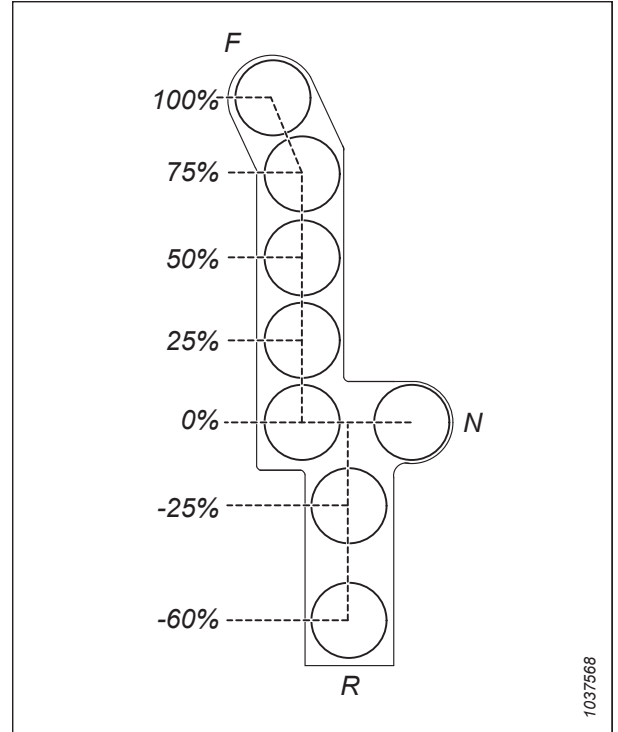


Figure 4.108: GSL Position

PERFORMING PREDELIVERY CHECKS

- Slowly move the GSL toward NEUTRAL. Once the GSL is halfway to NEUTRAL, the secondary brakes should engage and the engine rpm should drop to 1500 rpm (A).

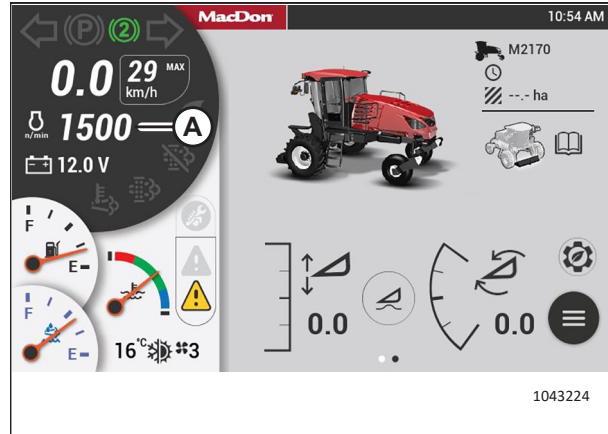


Figure 4.109: HarvestTouch™ Display

- Move the GSL into NEUTRAL. Park brake icon (A) illuminates red. Allow the windrower to come to a complete stop.



Figure 4.110: HarvestTouch™ Display

- Retest the secondary brakes by nudging the GSL slowly toward FORWARD then back into NEUTRAL. If the brake system is working properly:

- The engine should labor while you move the GSL toward FORWARD, but the windrower should **NOT** move.
- Parking brake icon (A) and secondary brake icon (B) should both remain illuminated.

- Move the GSL into PARK.

NOTE:

If park brake icon (A) does **NOT** illuminate red when you move the GSL into PARK, then center the steering wheel. If the icon continues to not illuminate, contact MacDon for assistance.

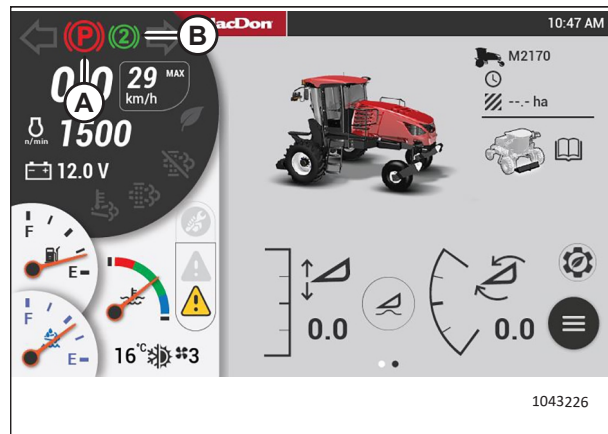


Figure 4.111: HarvestTouch™ Display

PERFORMING PREDELIVERY CHECKS

14. Press the “C” button on the GSL to disable the secondary brake.
 - Engine speed should increase to the speed set (A) prior to the brake test.
 - Secondary brake icon (B) should turn grey.
 - Park brake light (C) should remain illuminated.
15. Shut down the engine, and remove the key from the ignition.

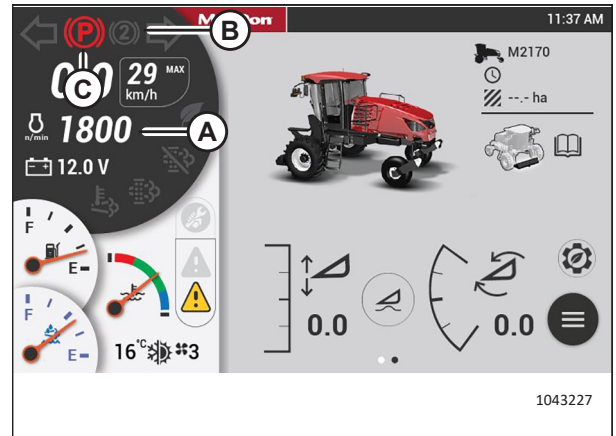


Figure 4.112: HarvestTouch™ Display

4.2.17 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 RADIO mode.
2. To enter SERVICE mode, follow the steps below:
 - a. Press and hold button 1 (A) for 3 seconds, wait for the display to flash, and then release.
 - b. Press and hold button 3 (B) for 3 seconds, wait for the display to flash, and then release.
 - c. Press and hold VOL/SEL knob (C) for 3 seconds, and then release.
3. Rotate VOL/SEL knob (C) to select the region (USA or EUR).
4. Press VOL/SEL knob (C) to save the selection.

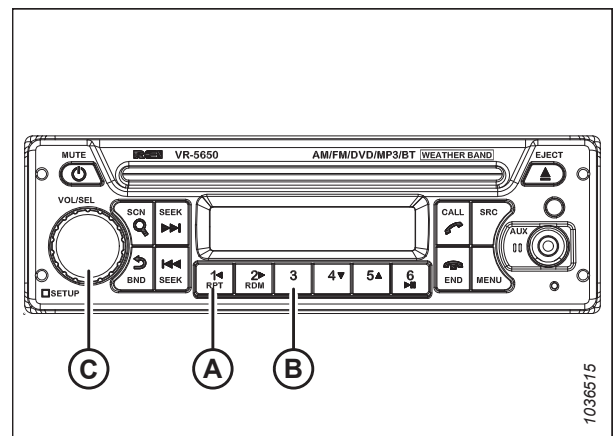


Figure 4.113: Radio Service Mode – Radio Model VR-5650

4.2.18 Setting Speed Limit

The speed limit for a specific country can be set in the HarvestTouch™ Display SETUP menu.

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

PERFORMING PREDELIVERY CHECKS

2. Select MENU icon (A).

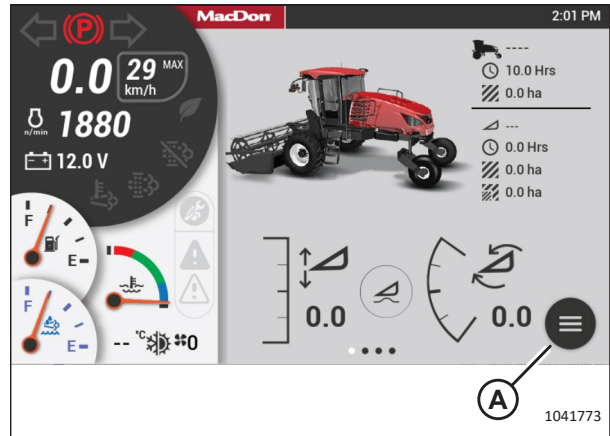


Figure 4.114: HarvestTouch™ Display

3. Select SETUP (A).

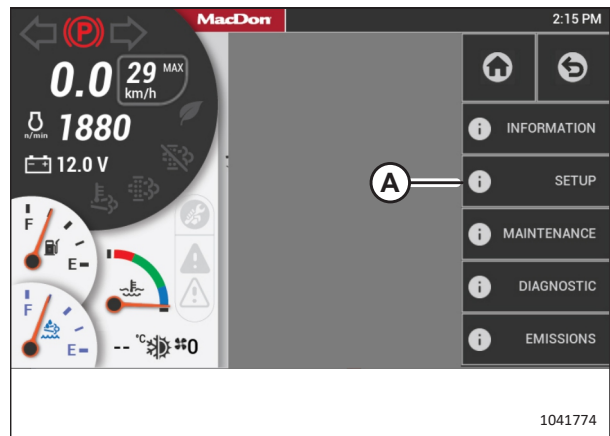


Figure 4.115: HarvestTouch™ Display Menu

4. Locate header reverse button (A) and Eco Engine Control (EEC) button (B) on the operator's console.
5. Press and hold header reverse button (A) and EEC button (B) simultaneously for 5 seconds until a hidden setup menu displays.
6. Select HIDDEN SETUP, and then select REGION. The region page displays.

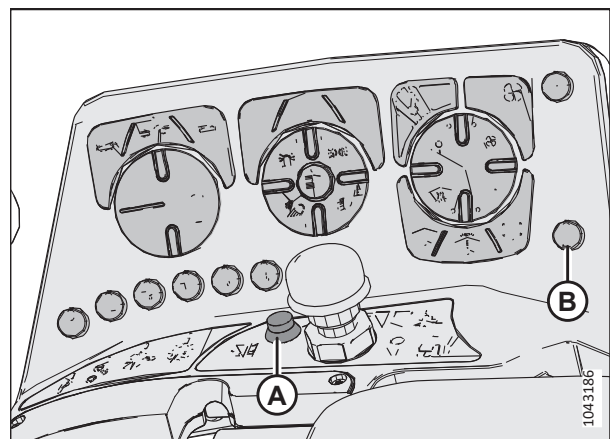


Figure 4.116: Operator's Console

PERFORMING PREDELIVERY CHECKS

7. Select the country from options (A) that matches the default SIS decals on your unit. For more information, refer to [3.15 Replacing or Removing Speed Indicator Sign Decal](#), page 97.
8. Confirm the selection by selecting icon (B). Return to the HOME page.

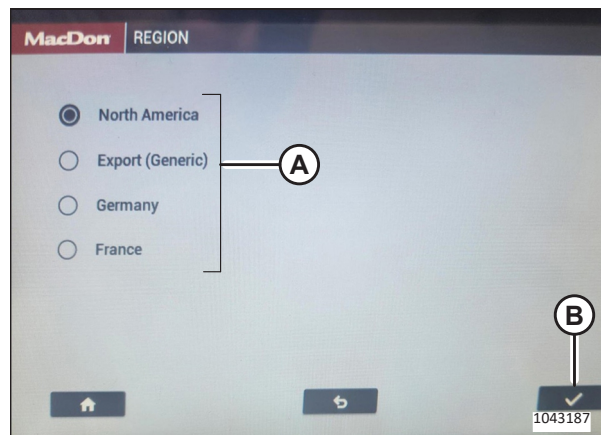


Figure 4.117: Region Page

9. From the HOME page of the HarvestTouch™ Display, select outlined MAX WHEEL SPEED value (A) located right of the wheel speed display. The MAX WHEEL SPEED adjustment page opens.
10. Select the desired maximum wheel speed in engine-forward mode.

NOTE:

In engine-forward mode, the default setting is 44 km/h. The maximum engine-forward (road) speed varies by region based on local regulation. The limited regions are: Germany (30 km/h), France (25 km/h).

11. To save your selection, select the checkmark icon.

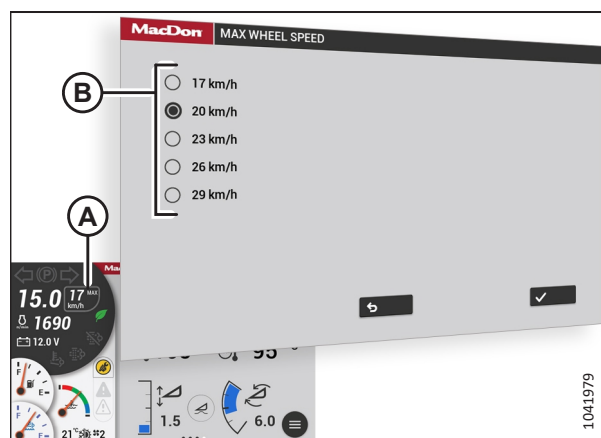


Figure 4.118: HarvestTouch™ Display

4.3 Checking Manuals

MacDon includes manuals with every windrower to provide information on the windrower’s safe operation and maintenance. The presence of the manuals in the windrower’s manual storage case will need to be verified.

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

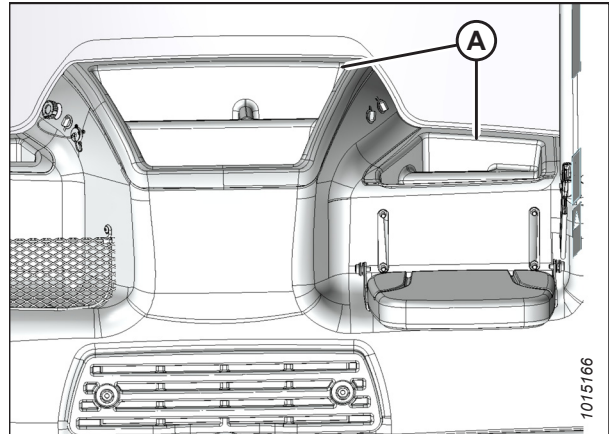


Figure 4.119: Manual Storage Case

Ensure that the following manuals are included with the windrower:

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



Figure 4.120: Manuals and Quick Card

4.4 Performing Final Steps

Once the Predelivery Checklist and the operational checks have been completed, the windrower cab will need to be prepared for its Operator, and any remaining kits will need to be installed.

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

IMPORTANT:

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

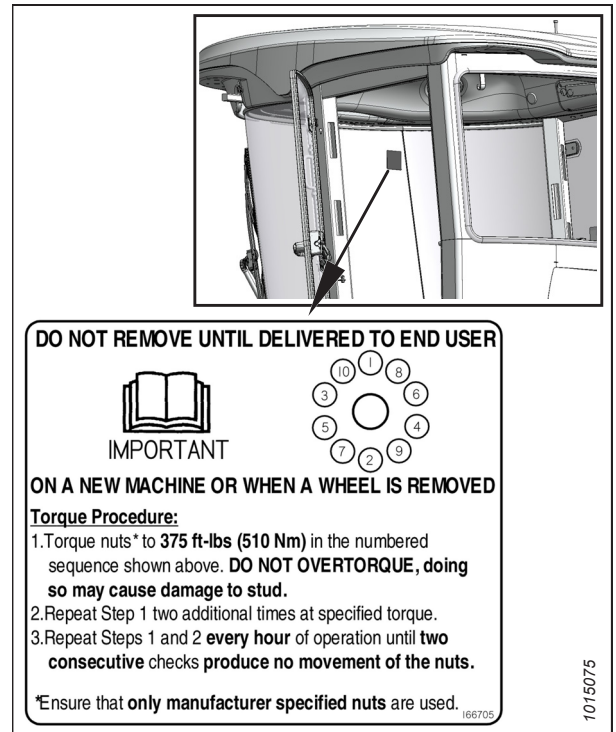


Figure 4.121: Windshield Decal

Chapter 5: Attaching Headers to Windrower

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

5.1 D2 Series Draper Headers

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

5.1.1 Attaching Draper Header Supports

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

DANGER

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

IMPORTANT:

Ensure that the correct header supports are used:

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

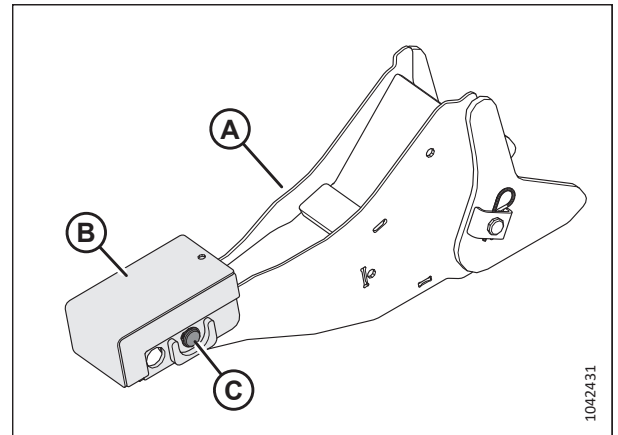


Figure 5.1: Draper Header Supports

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

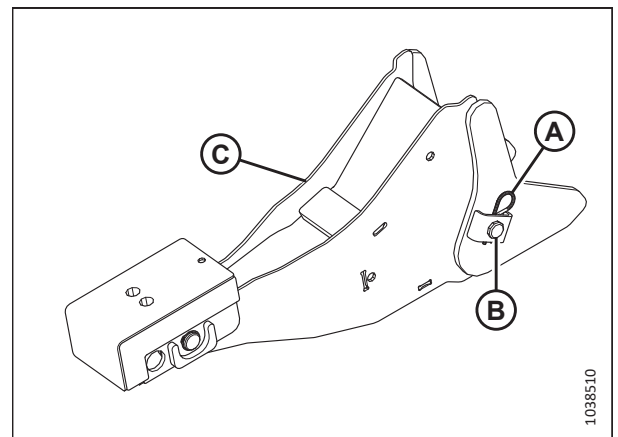


Figure 5.2: Draper Header Support

ATTACHING HEADERS TO WINDROWER

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 183](#) to Step 4, [page 184](#) to install the remaining draper header support.

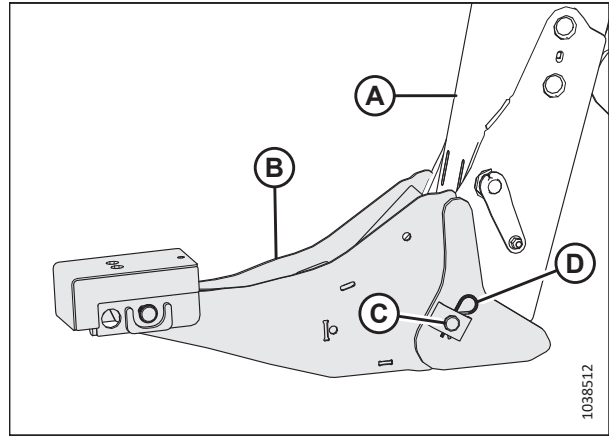


Figure 5.3: Draper Header Support

5.1.2 Attaching D2 Series Draper Header

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

DANGER

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

DANGER

Ensure that all bystanders have cleared the area.

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

ATTACHING HEADERS TO WINDROWER

2. Before beginning this procedure, ensure draper header supports (A) are either:

- (B) Installed on the windrower lift linkages, or
- (C) Installed in the header legs

For instructions on installing the header supports onto the windrower, refer to [5.1.1 Attaching Draper Header Supports](#), page 183. Header supports are typically left installed in the header legs when the header is detached from the windrower.

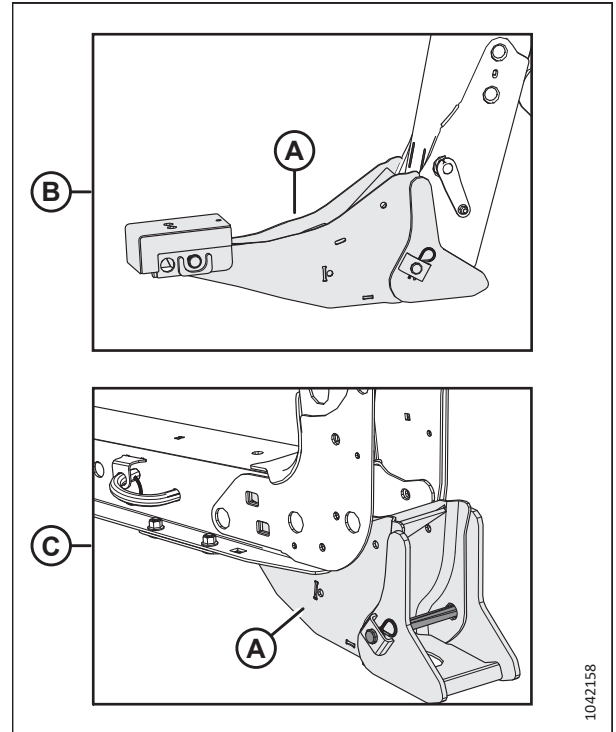


Figure 5.4: Header Supports Installed

3. **M2170NT:** Extend the windrower wheels from narrow transport into field mode. For instructions, refer to [4.2.9 Checking Retract and Extend Functions of the Narrow Transport System](#), page 159.
4. **M2170NT:** Rotate left signal light placard (A) to the up (vertical) position before connecting the windrower to the header.

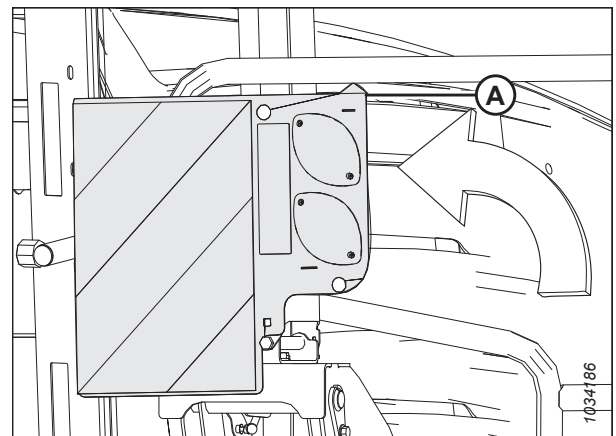


Figure 5.5: Left Signal Light Placard

ATTACHING HEADERS TO WINDROWER

5. Prepare the header as follows:

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

Repeat this step on the other header leg.

6. Start the engine.

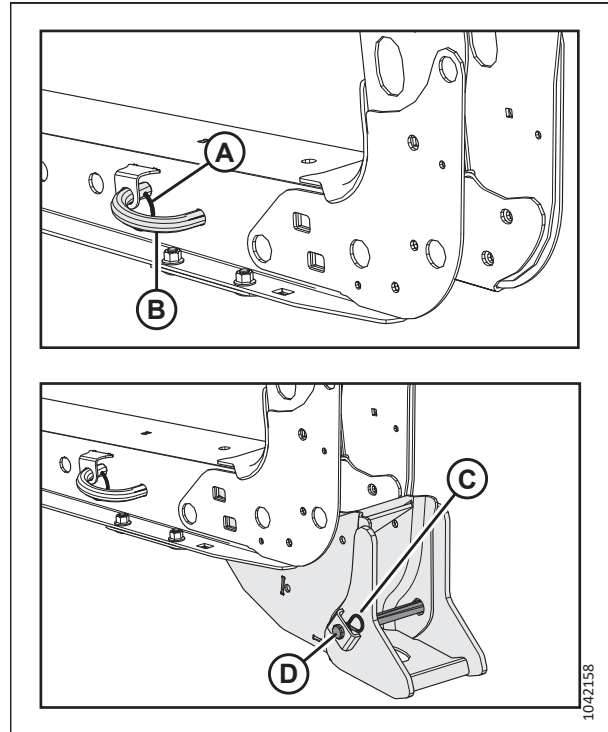


Figure 5.6: Header Leg — Left Side Shown

ATTACHING HEADERS TO WINDROWER

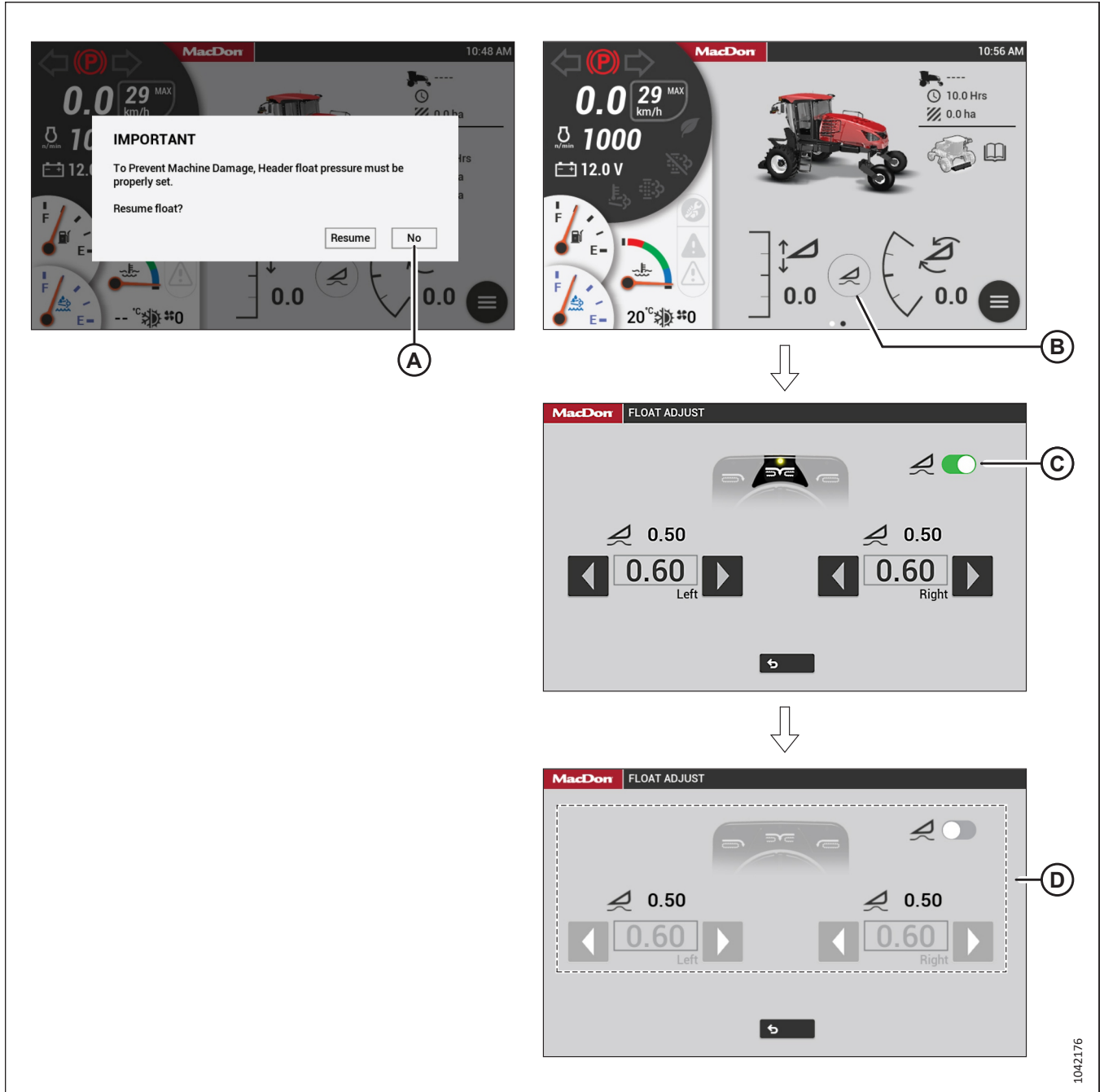


Figure 5.7: Float Removal

7. Remove the float as follows:

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

IMPORTANT:

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

ATTACHING HEADERS TO WINDROWER

8. Prepare the center-link as follows:

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

IMPORTANT:

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

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

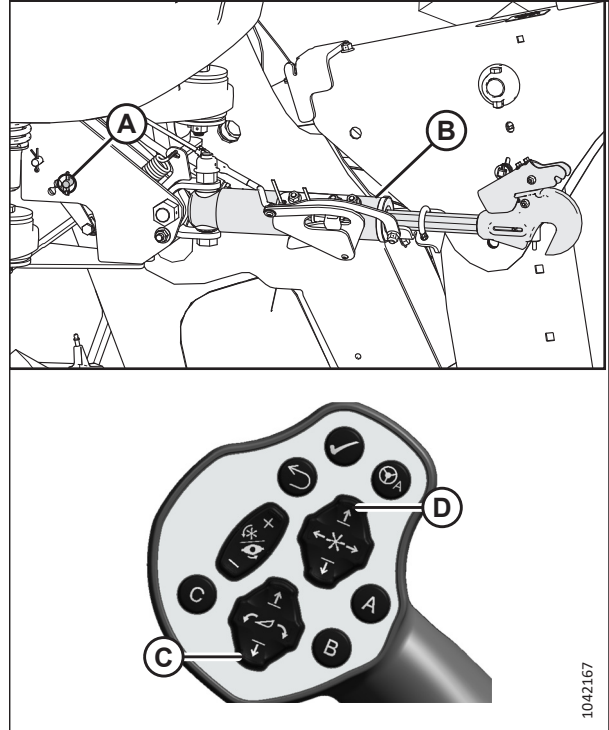


Figure 5.8: Center-Link without Self-Alignment

10. Proceed as follows:

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

Continue driving slowly forward until the header is nudged forward.

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

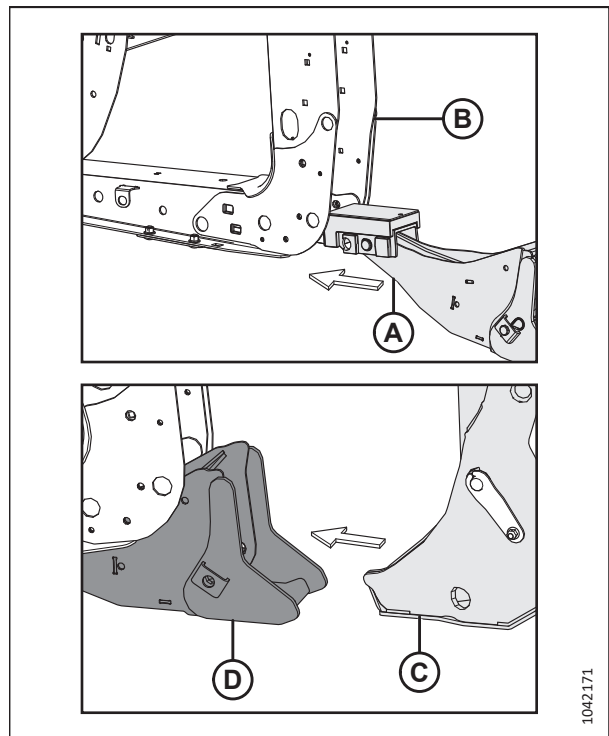


Figure 5.9: Header Leg and Support

ATTACHING HEADERS TO WINDROWER

12. Windrowers equipped with the Center-Link Alignment kit:

- Press HEADER TILT UP (A) or HEADER TILT DOWN (B) switches on the GSL to extend or retract the center-link cylinder until hook (C) is aligned with the header attachment pin.
- Lower the center-link onto the header with REEL DOWN (D) switch on the GSL until the center-link locks into position and hook release (E) is down.

IMPORTANT:

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

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

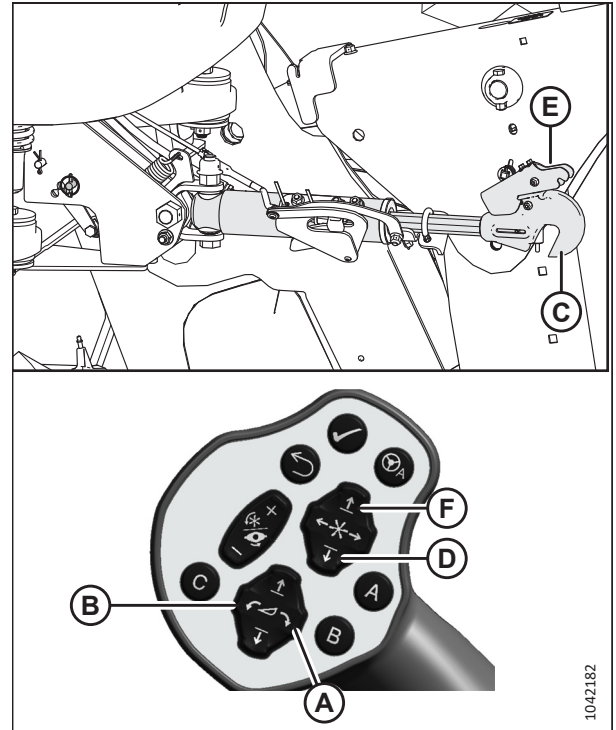


Figure 5.10: Hydraulic Center-Link

13. Windrowers without the Center-Link Alignment kit:

- Press HEADER TILT UP (A) or HEADER TILT DOWN (B) switches on the GSL to extend or retract the center-link cylinder until the hook is aligned with the header attachment pin.
- Shut down the engine, and remove the key from the ignition.
- Push down on rod end (C) of the link cylinder until hook (D) engages and locks onto the header pin.

IMPORTANT:

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

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

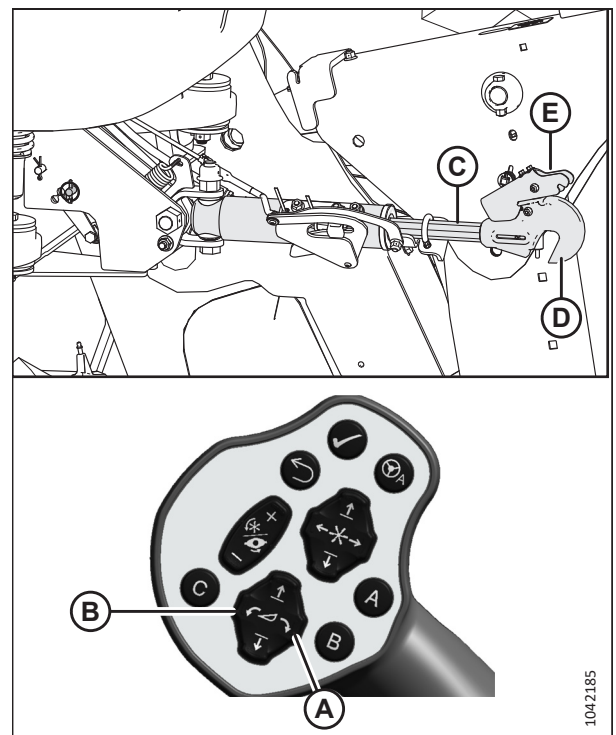


Figure 5.11: Hydraulic Center-Link

ATTACHING HEADERS TO WINDROWER

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

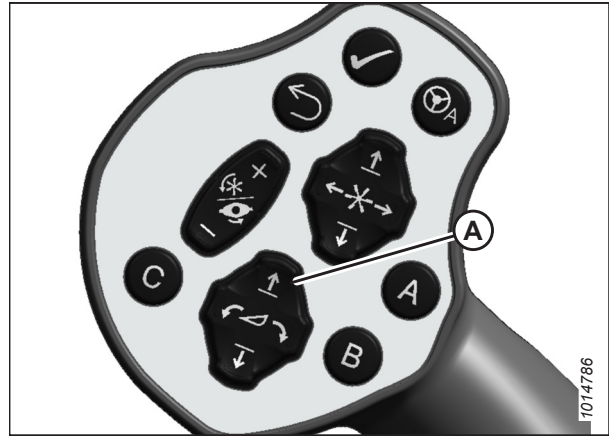


Figure 5.12: Ground Speed Lever (GSL)

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

IMPORTANT:

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

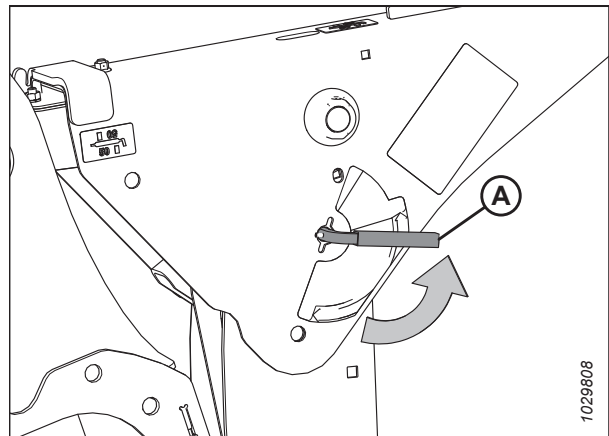


Figure 5.13: Safety Prop Lever

ATTACHING HEADERS TO WINDROWER

17. Proceed as follows:

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

NOTE:

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

Repeat this step on the other header leg.

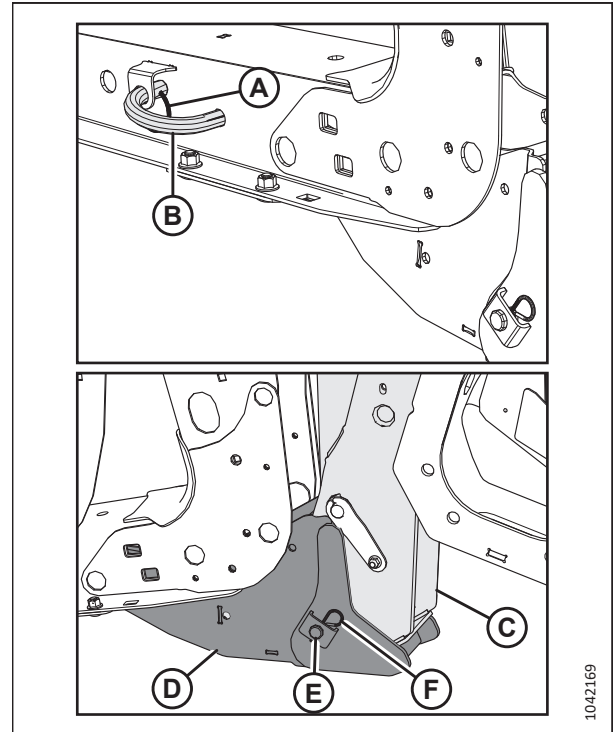


Figure 5.14: Windrower Lift Linkage and Header Leg

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

- a. Turn lever (A) away from the header to raise the safety prop until the lever locks into the vertical position.
- b. Repeat the previous step for the opposite cylinder.

NOTE:

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

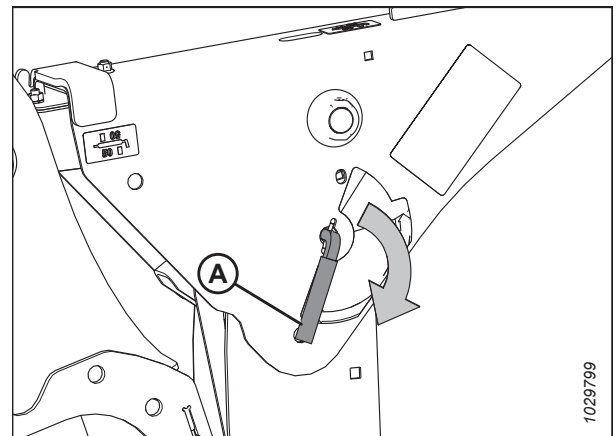


Figure 5.15: Safety Prop Lever

ATTACHING HEADERS TO WINDROWER

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

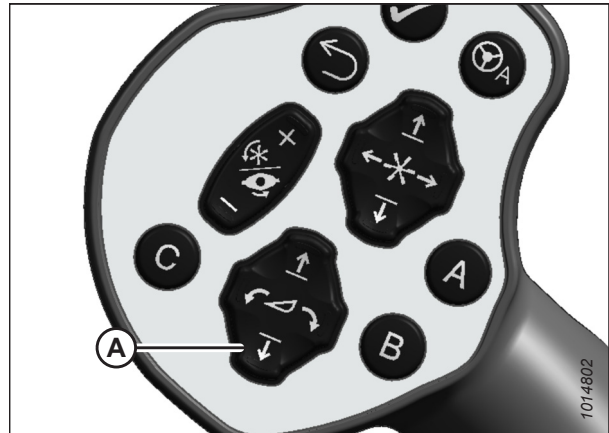


Figure 5.16: Ground Speed Lever (GSL)

21. Select FLOAT ADJUST (A).

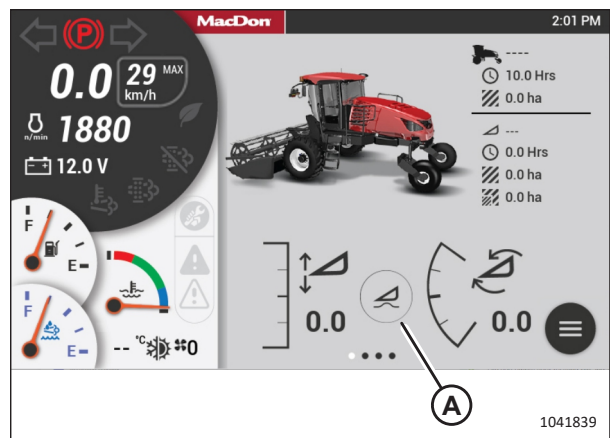


Figure 5.17: HarvestTouch™ Display

ATTACHING HEADERS TO WINDROWER

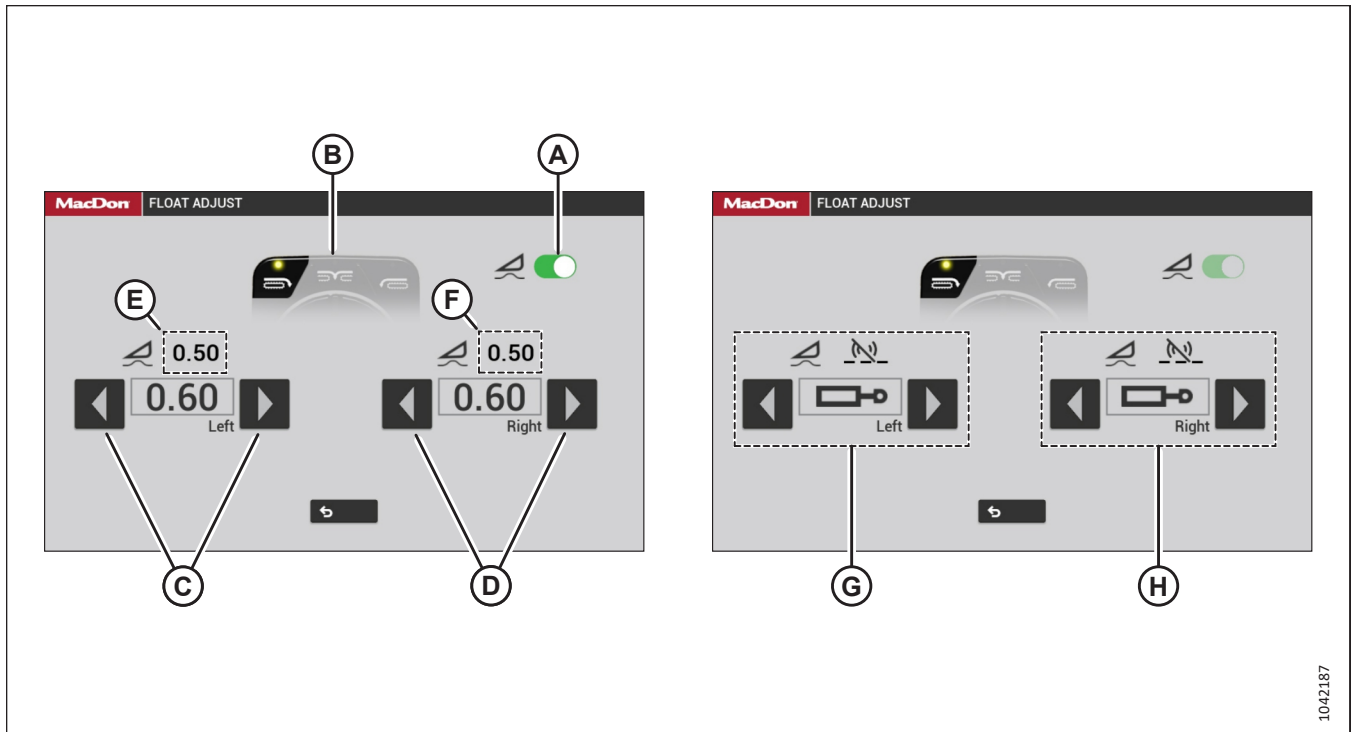


Figure 5.18: Float Adjustment

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

NOTE:

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

NOTE:

Symbols (G) and (H) mean the left and right float sensors are not working. You can still manually set the float, but you should first check if the sensors were disabled through the HarvestTouch™ Display (refer to MENU > SETUP > HEADER > SENSORS), or if another problem is causing the sensors to fail.

24. Shut down the engine, and remove the key from the ignition.
25. Check the float as follows:
 - a. Grasp one end of the draper header and lift it. The lifting force should be 335–380 N (75–85 lbf) (with stabilizer/transport wheels raised, if they are equipped).
 - b. Repeat this step on the other side of the header.
26. Proceed to [5.1.3 Connecting Header Hydraulic and Electrical Systems to M2 Series Windrower](#), page 194.

5.1.3 Connecting Header Hydraulic and Electrical Systems to M2 Series Windrower

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

⚠ DANGER

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

⚠ CAUTION

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

IMPORTANT:

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

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

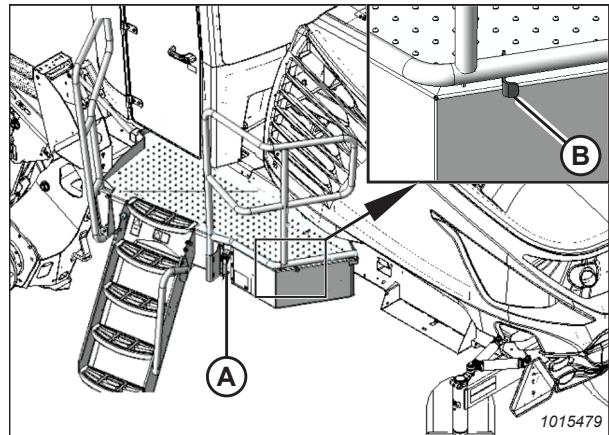


Figure 5.19: Left Platform

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

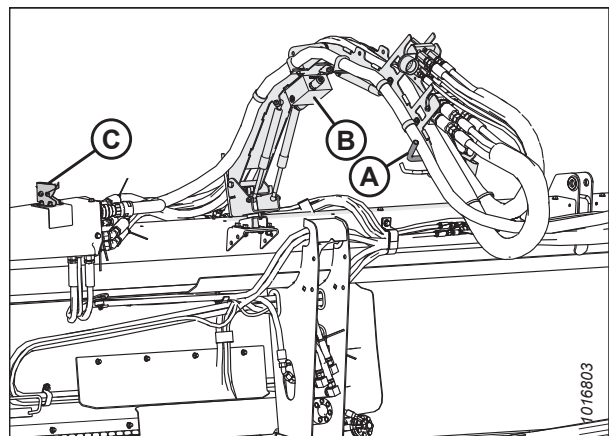


Figure 5.20: Hydraulic Hose Management System

ATTACHING HEADERS TO WINDROWER

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

NOTE:

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

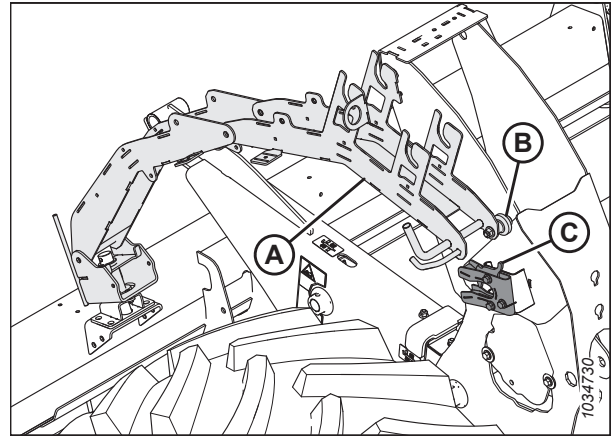


Figure 5.21: Windrower Left Outer Leg

7. Rotate left signal light placard (A) to the up (vertical) position.

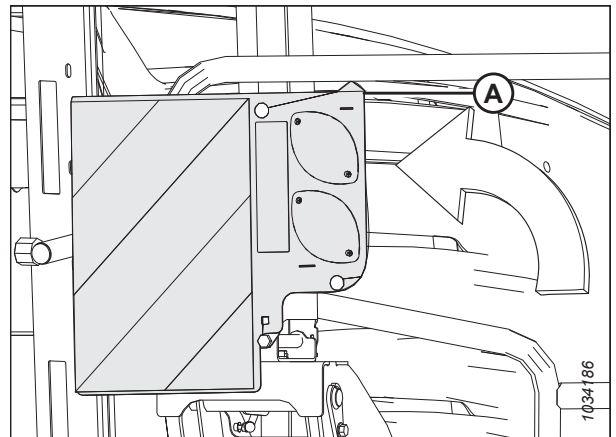


Figure 5.22: Left Signal Light Placard

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

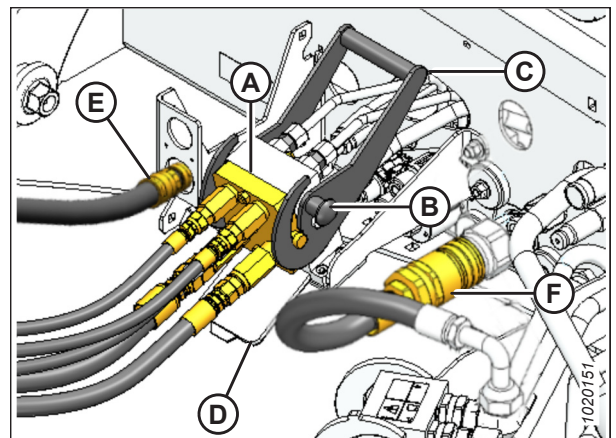


Figure 5.23: Draper/Reel Multicoupler

ATTACHING HEADERS TO WINDROWER

14. Retrieve knife and reel drive multicoupler (A) from the hydraulic hose management system.
15. Push knob (B) on the hydraulic receptacle and pull handle (C) fully away from the windrower.
16. Open cover (D) and position the coupler onto the receptacle.
17. 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.

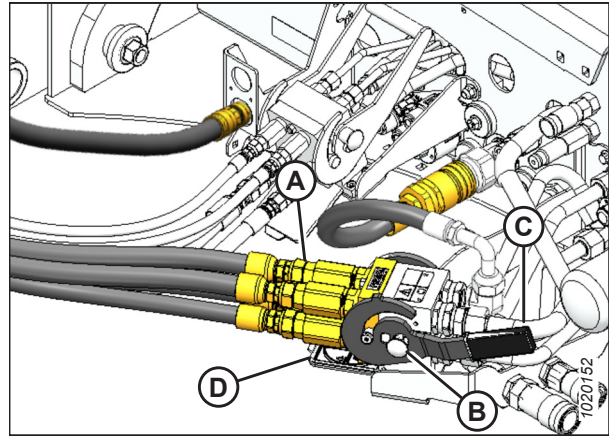


Figure 5.24: Knife/Reel Drive Multicoupler

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

IMPORTANT:

Straight routing will prevent abrasion damage to the hydraulic hoses.

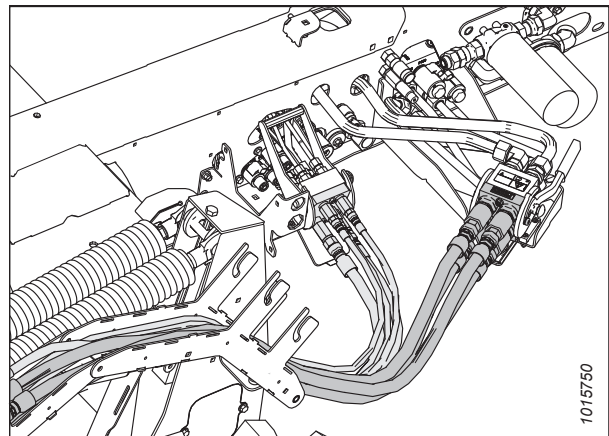


Figure 5.25: Hydraulic Multicouplers and Hose Routing

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

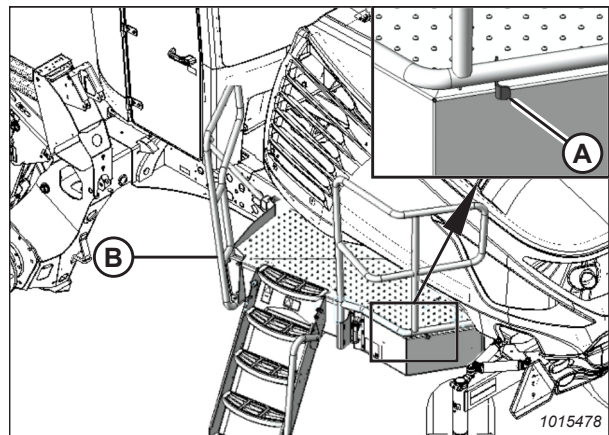


Figure 5.26: Left Platform

ATTACHING HEADERS TO WINDROWER

20. Pull platform (A) toward the cab until it stops and the latch is engaged.
21. If this is the first time the header is connected to the windrower, calibrate the header. For instructions, refer to [5.3 Calibrating Header on HarvestTouch™ Display, page 225](#).

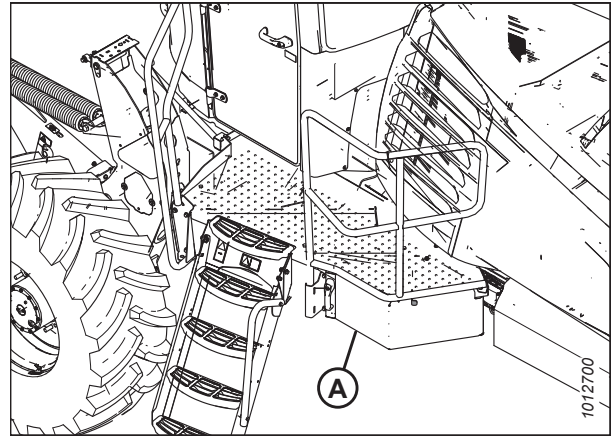


Figure 5.27: Left Platform

5.1.4 Detaching D2 Series Draper Header

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

DANGER

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

DANGER

Ensure that all bystanders have cleared the area.

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



Figure 5.28: Ground Speed Lever (GSL)

ATTACHING HEADERS TO WINDROWER

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

IMPORTANT:

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

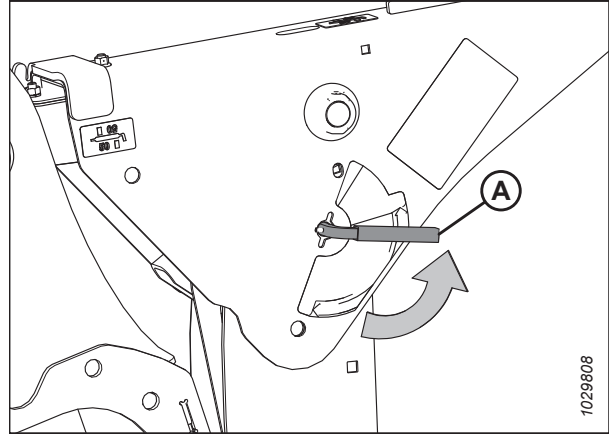


Figure 5.29: Safety Prop Lever

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

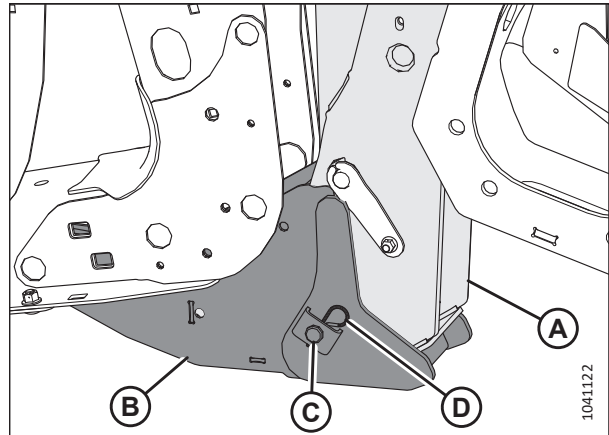


Figure 5.30: Header Leg and Windrower Lift Linkage Connected by Header Support

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

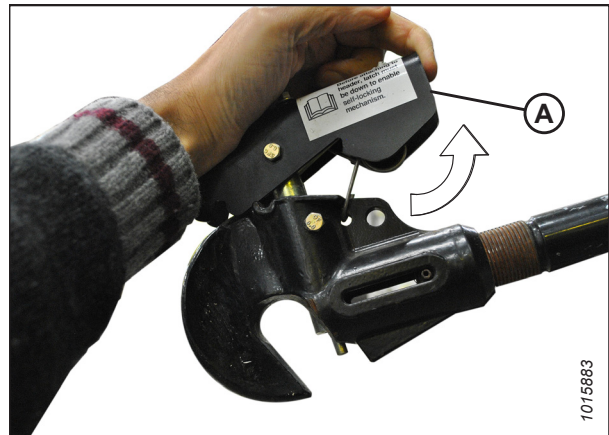


Figure 5.31: Center-Link

ATTACHING HEADERS TO WINDROWER

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.

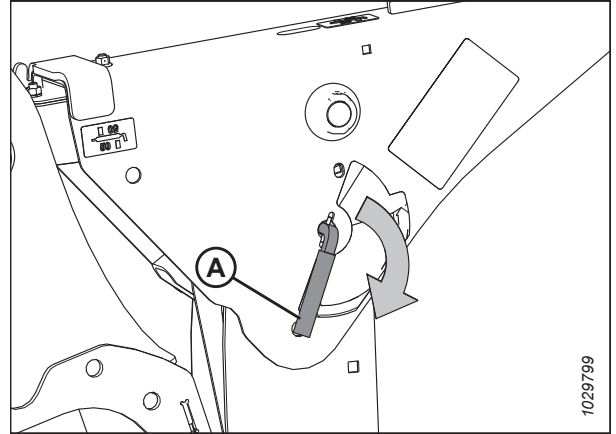


Figure 5.32: Safety Prop Lever

9. Start the engine.

ATTACHING HEADERS TO WINDROWER

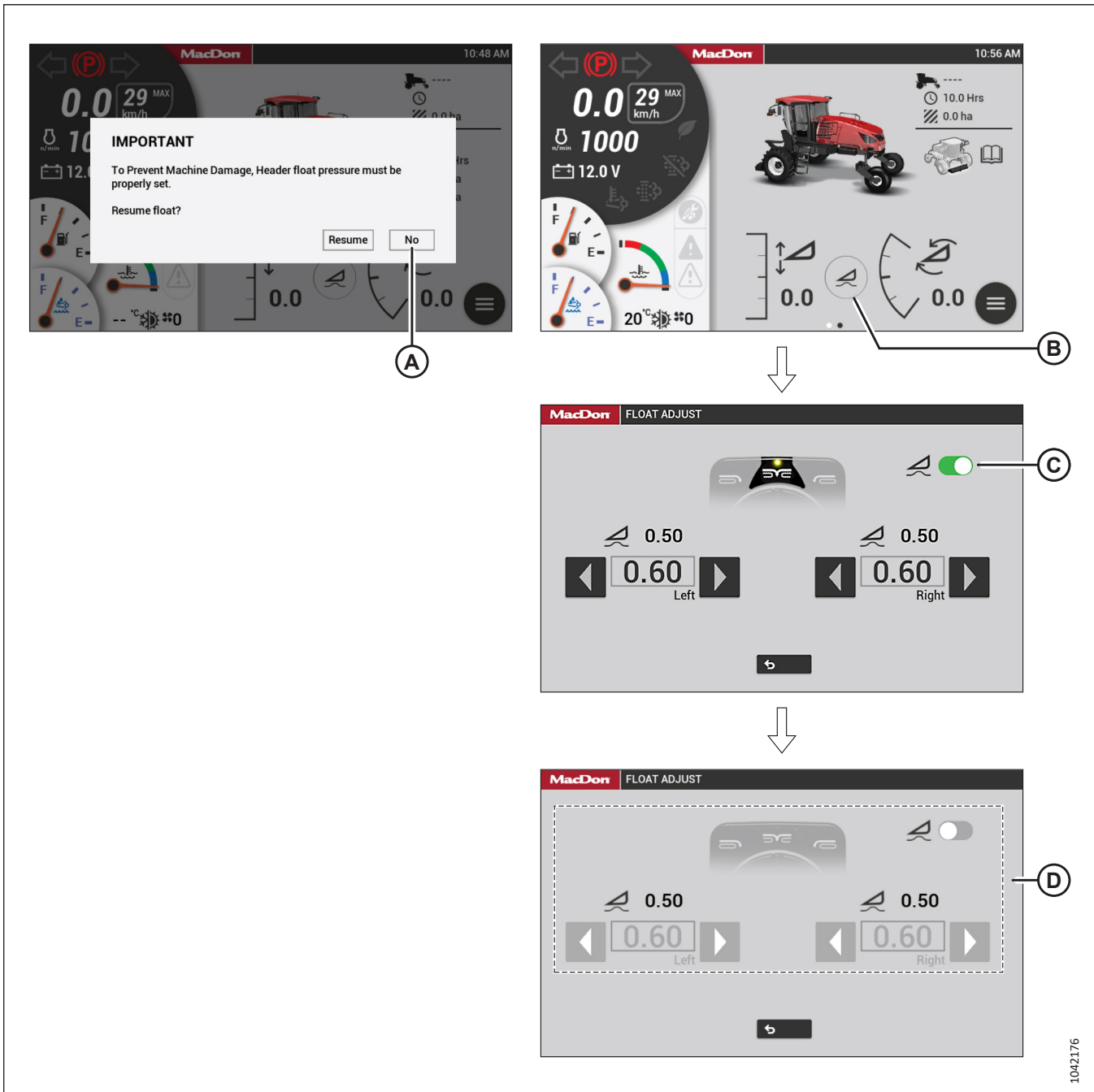


Figure 5.33: Float Removal

10. Remove the float as follows:

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

IMPORTANT:

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

ATTACHING HEADERS TO WINDROWER

11. Lower the header fully using HEADER DOWN switch (A).
12. Press HEADER TILT switches (B), as needed, on the GSL to release the load on center-link.

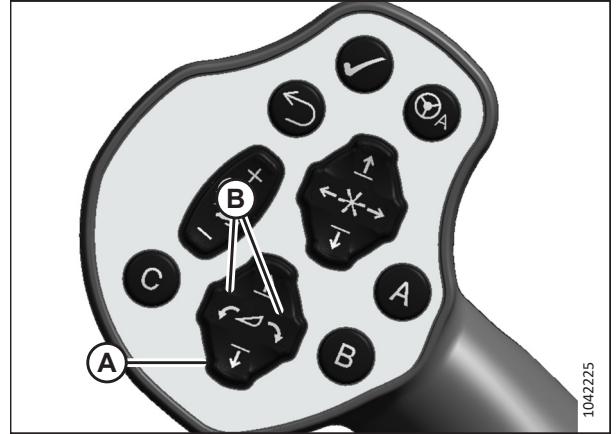


Figure 5.34: GSL

13. Windrowers with self-aligning center-link:

- a. Press REEL UP switch (A) to disengage the center-link from the header.
- b. Shut down the engine, and remove the key from the ignition.



Figure 5.35: GSL

14. Windrowers without self-aligning center-link:

- a. Shut down the engine, and remove the key from the ignition.
- b. Disconnect the center-link by lifting release (A) and lift hook (B) off the header.

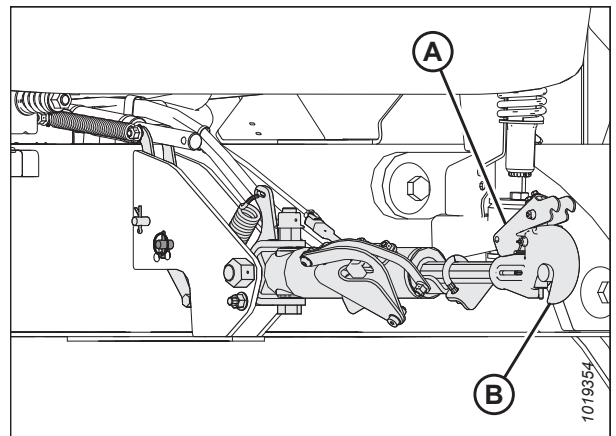


Figure 5.36: Hydraulic Center-Link

ATTACHING HEADERS TO WINDROWER

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

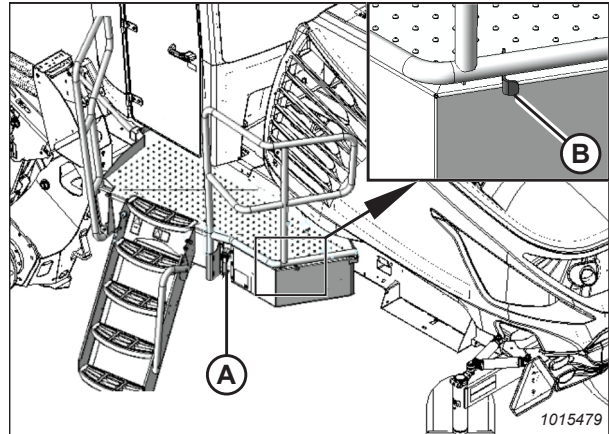


Figure 5.37: Left Platform

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

NOTE:

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

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

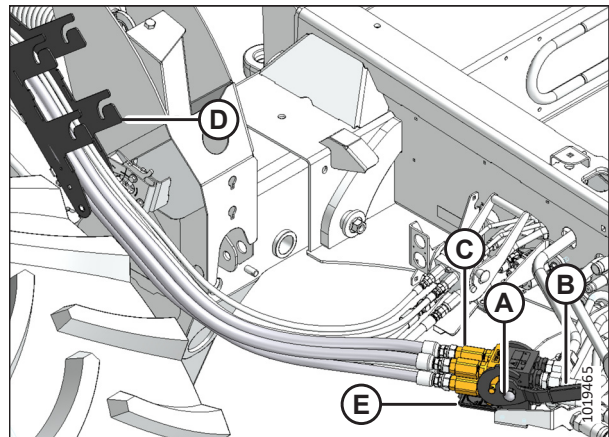


Figure 5.38: Knife/Reel Drive Multicoupler

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

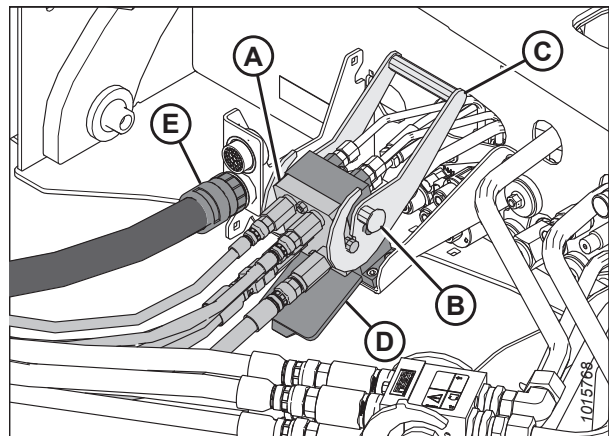


Figure 5.39: Draper/Reel Multicoupler

ATTACHING HEADERS TO WINDROWER

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

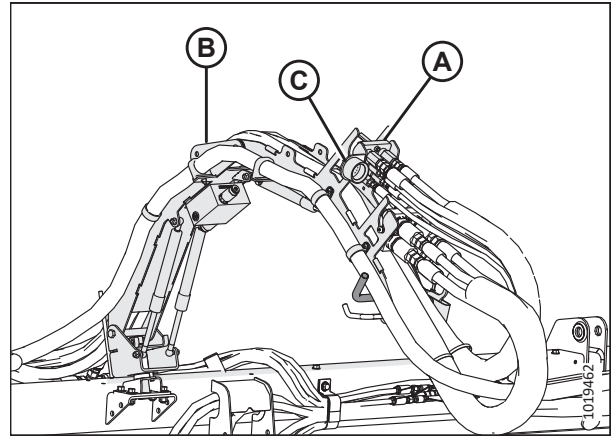


Figure 5.40: Hydraulic Hose Management System

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

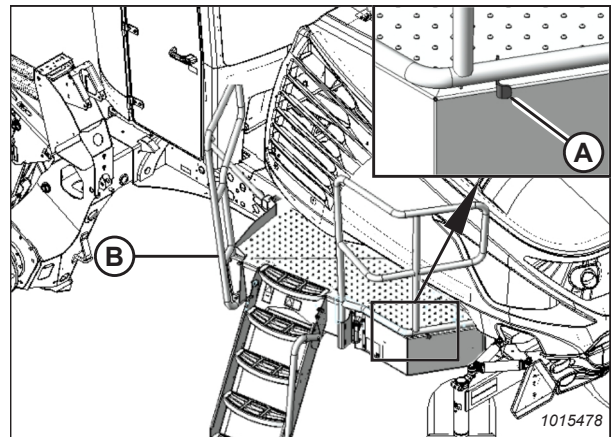


Figure 5.41: Left Platform

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

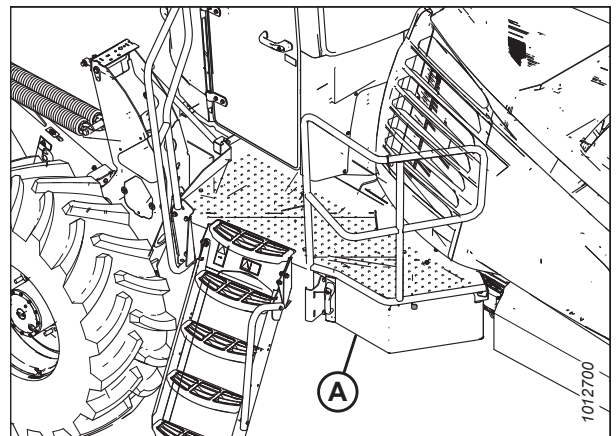


Figure 5.42: Left Platform

ATTACHING HEADERS TO WINDROWER

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

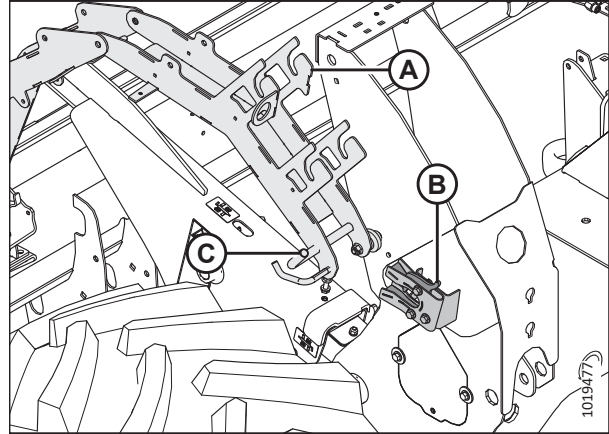


Figure 5.43: Hydraulic Hose Management System

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

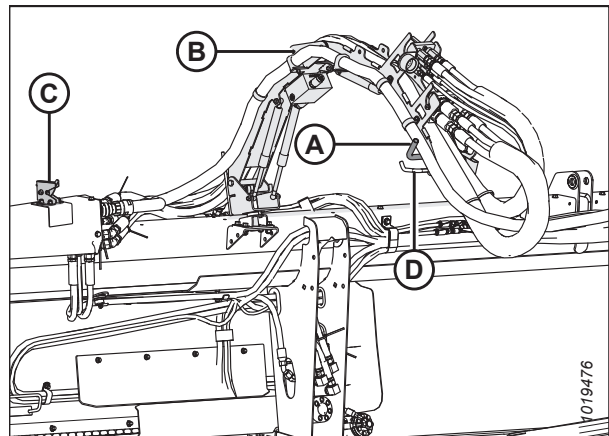


Figure 5.44: Hydraulic Hose Management System

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

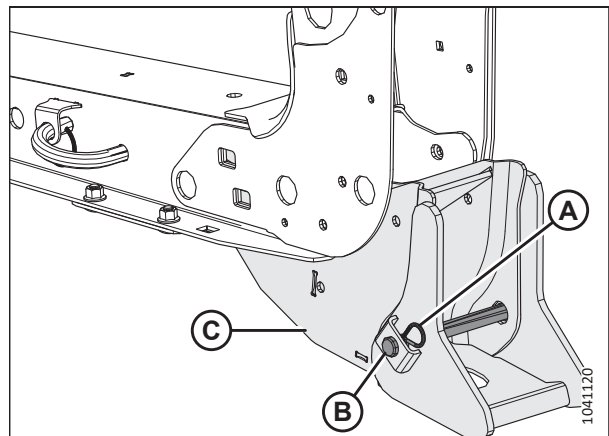


Figure 5.45: Header Stand

5.2 D1X and D1XL Series Draper Headers

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

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 start-up of the machine, always stop the engine and remove the key from the ignition before making adjustments to the machine.

IMPORTANT:

Ensure that the correct header supports are used:

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

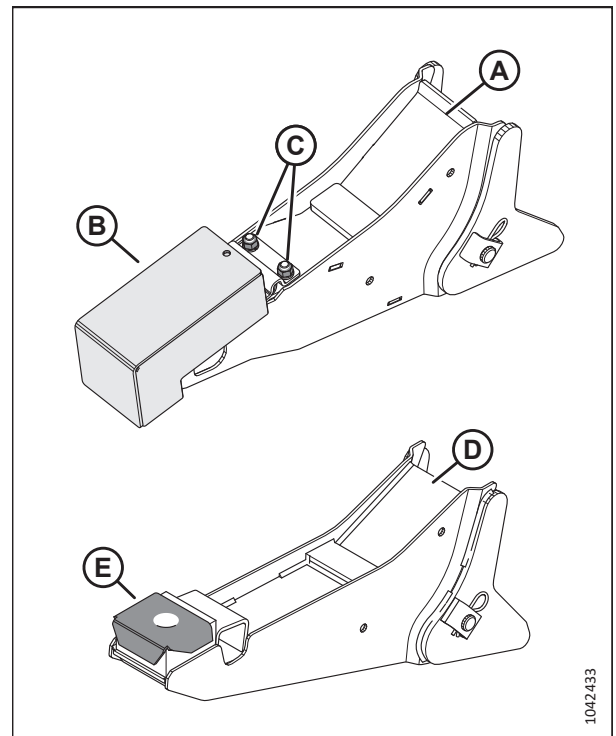


Figure 5.46: Draper Header Supports

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

ATTACHING HEADERS TO WINDROWER

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

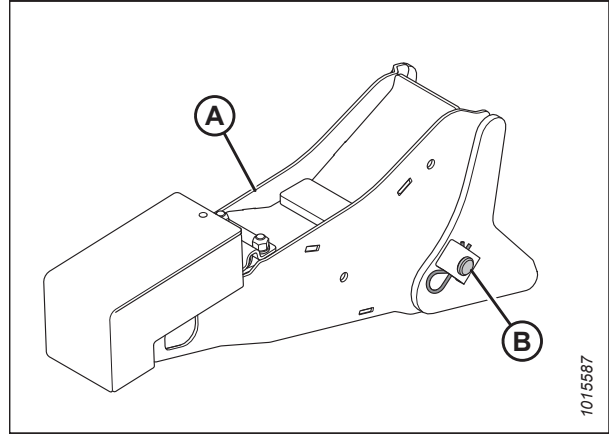


Figure 5.47: Draper Header Support

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 206](#) to Step 4, [page 206](#) to install the remaining draper header support.

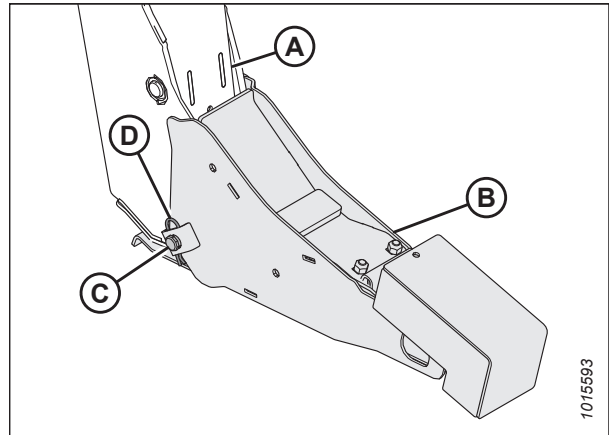


Figure 5.48: Draper Header Support

5.2.2 Attaching D1X and D1XL Series Draper Headers

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

⚠ DANGER

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

⚠ DANGER

Ensure that all bystanders have cleared the area.

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

ATTACHING HEADERS TO WINDROWER

2. Before beginning this procedure, make sure draper header supports (A) are installed on both windrower lift linkages. For instructions on installing the header supports onto the windrower, refer to [5.2.1 Attaching Draper Header Supports](#), page 205.

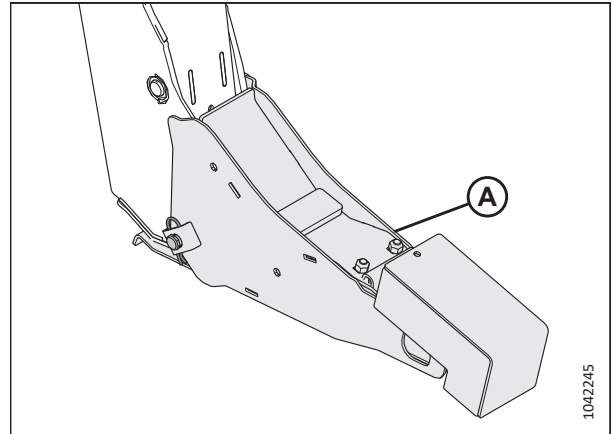


Figure 5.49: Header Supports Installed

3. Extend the windrower wheels from narrow transport into field mode. For instructions, refer to [4.2.9 Checking Retract and Extend Functions of the Narrow Transport System](#), page 159.
4. **M2170NT:** Rotate left signal light placard (A) to the up (vertical) position before connecting the windrower to the header.

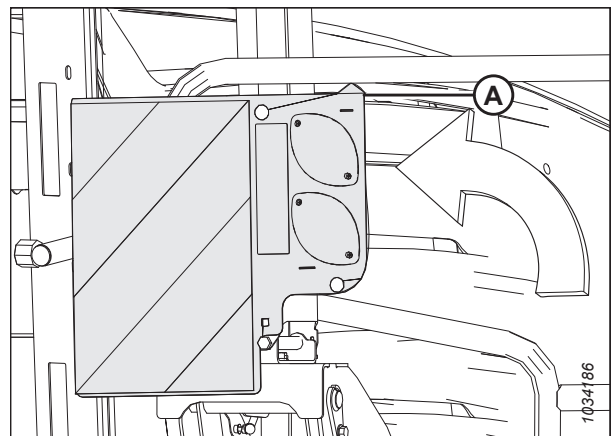


Figure 5.50: Left Signal Light Placard

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

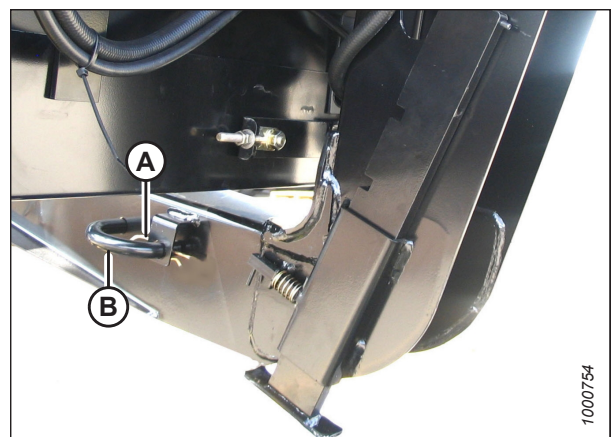


Figure 5.51: Header Leg

ATTACHING HEADERS TO WINDROWER

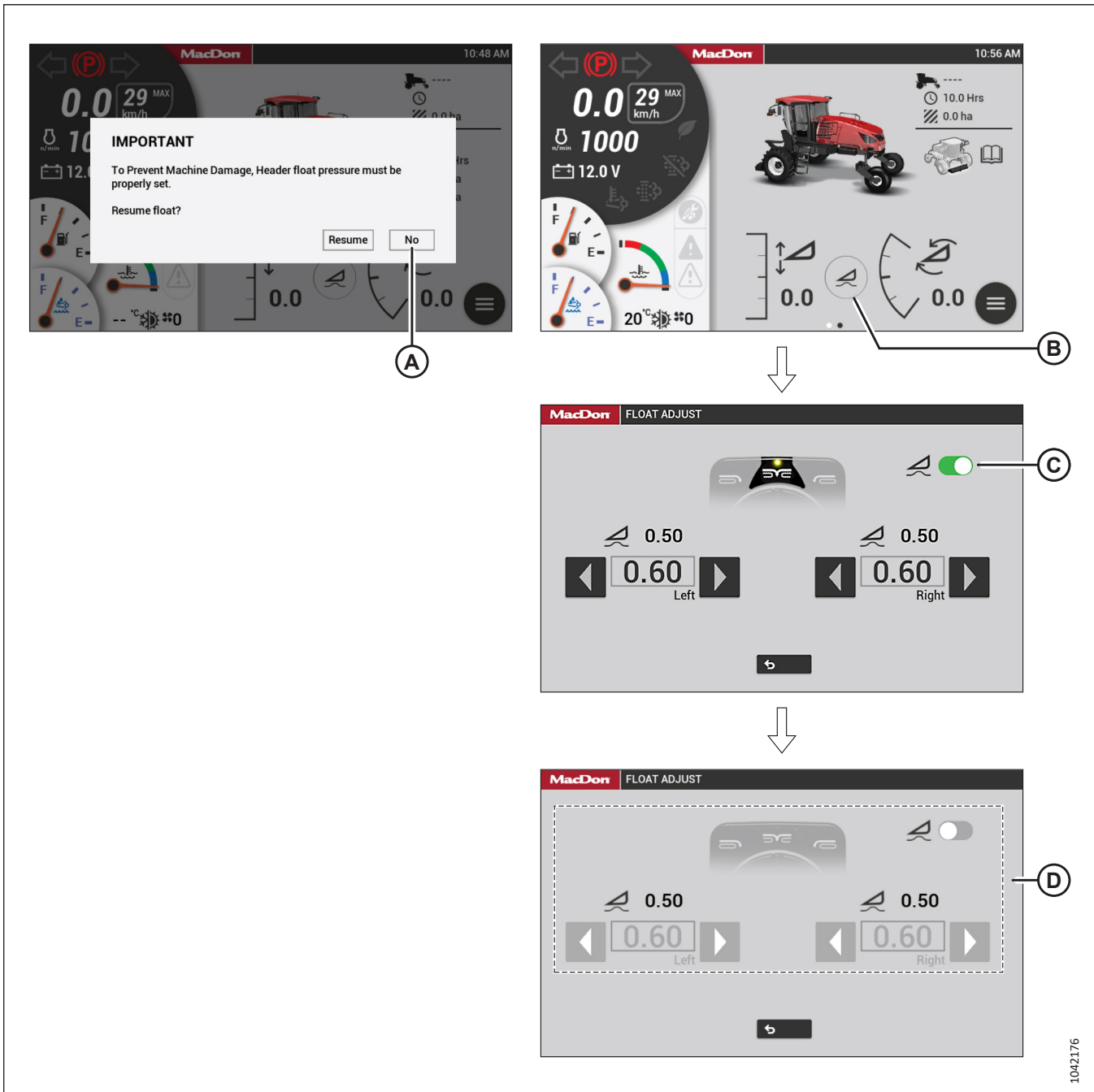


Figure 5.52: Float Removal

7. Remove the float as follows:

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

IMPORTANT:

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

ATTACHING HEADERS TO WINDROWER

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

IMPORTANT:

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

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

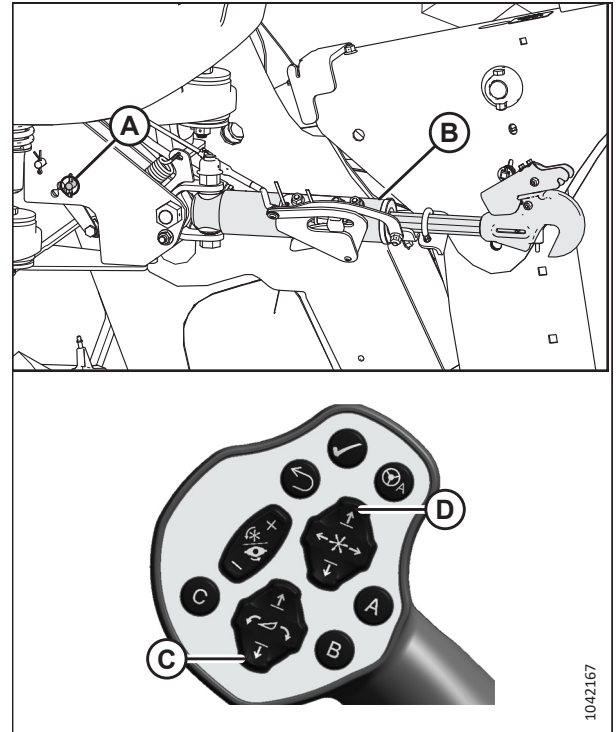


Figure 5.53: Center-Link without Self-Alignment

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

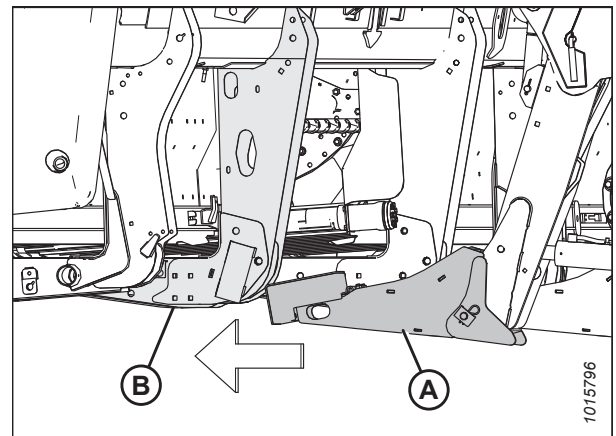


Figure 5.54: Header Leg and Draper Header Support

ATTACHING HEADERS TO WINDROWER

12. Windrowers equipped with the Center-Link Alignment kit:

- Press HEADER TILT UP (A) or HEADER TILT DOWN (B) switches on the GSL to extend or retract the center-link cylinder until hook (C) is aligned with the header attachment pin.
- Lower the center-link onto the header with REEL DOWN (D) switch on the GSL until the center-link locks into position and hook release (E) is down.

IMPORTANT:

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

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

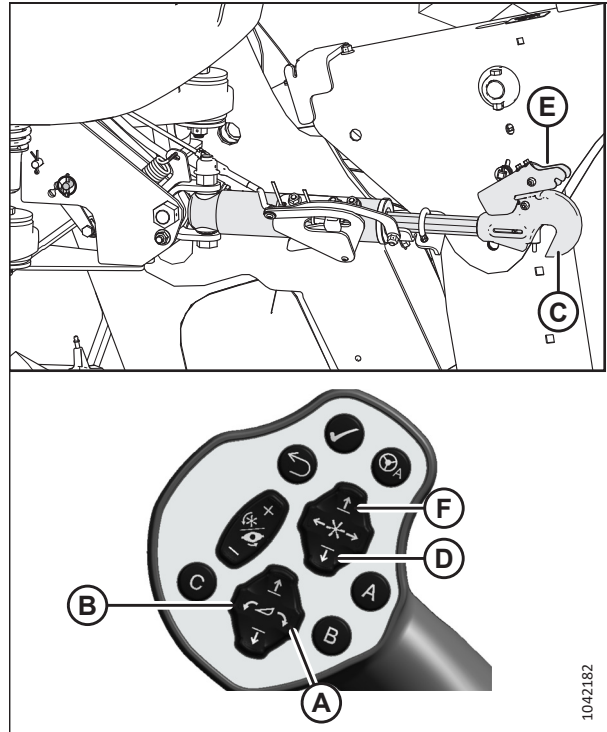


Figure 5.55: Hydraulic Center-Link

13. Windrowers without the Center-Link Alignment kit:

- Press HEADER TILT UP (A) or HEADER TILT DOWN (B) switches on the GSL to extend or retract the center-link cylinder until the hook is aligned with the header attachment pin.
- Shut down the engine, and remove the key from the ignition.
- Push down on rod end (C) of the link cylinder until hook (D) engages and locks onto the header pin.

IMPORTANT:

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

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

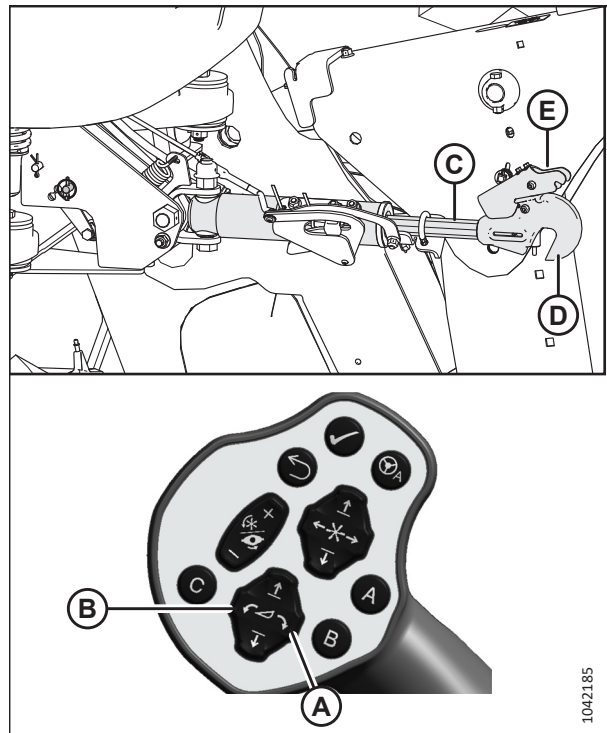


Figure 5.56: Hydraulic Center-Link

ATTACHING HEADERS TO WINDROWER

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

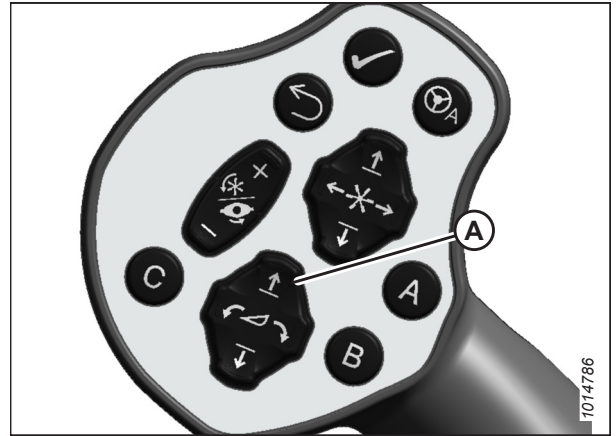


Figure 5.57: Ground Speed Lever (GSL)

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

- a. Pull lever (A) toward you to release it, then rotate it toward the header to lower the safety prop onto the cylinder.
- b. Repeat the previous step for the opposite lift cylinder.

IMPORTANT:

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

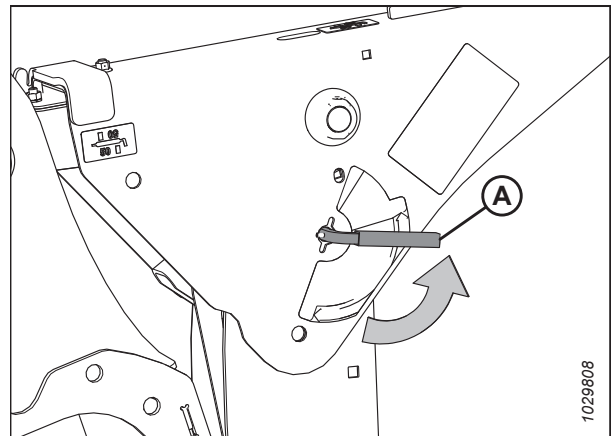


Figure 5.58: Safety Prop Lever

17. Install pin (B) through the header leg. Ensure that the pin engages the U-bracket in the draper header support. Secure the pin with hairpin (A). Repeat this step on the other side of the header.
18. 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.

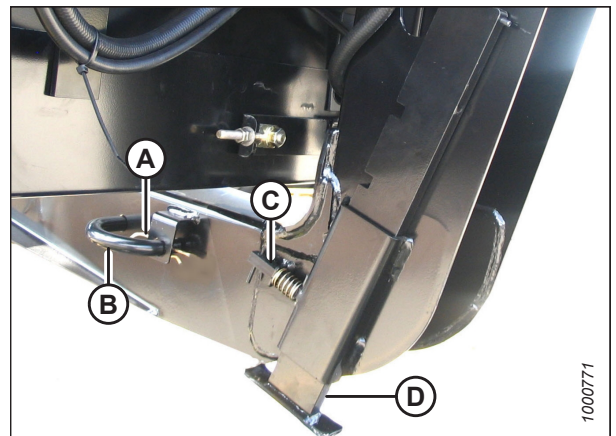


Figure 5.59: Header Leg

ATTACHING HEADERS TO WINDROWER

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

- a. Turn lever (A) away from the header to raise the safety prop until the lever locks into the vertical position.
- b. Repeat the previous step for the opposite cylinder.

NOTE:

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

20. Start the engine.

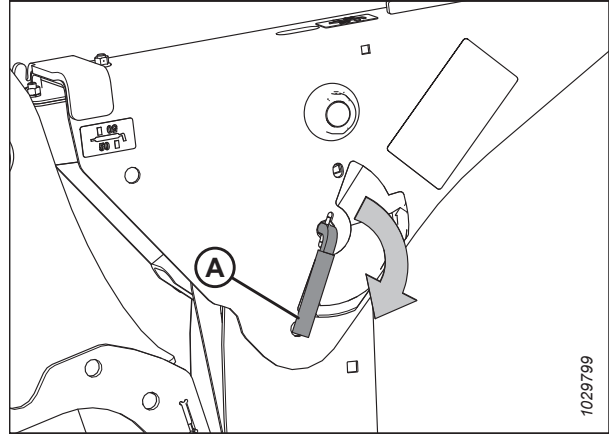


Figure 5.60: Safety Prop Lever

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

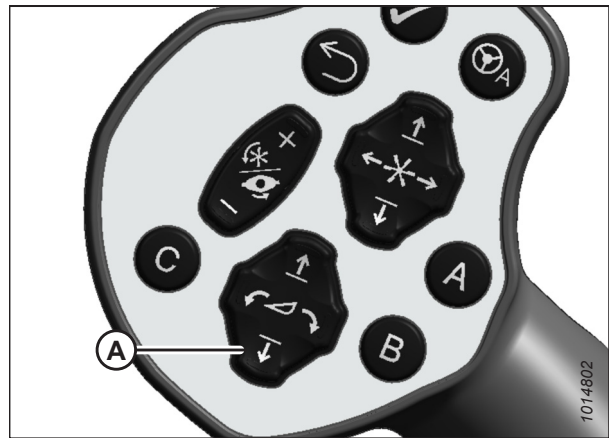


Figure 5.61: Ground Speed Lever (GSL)

22. Select FLOAT ADJUST (A).

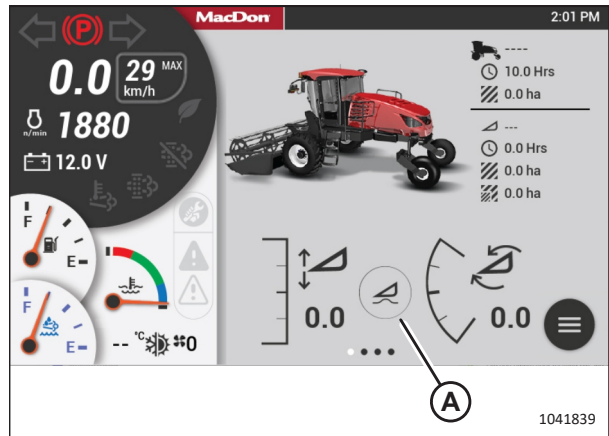


Figure 5.62: HarvestTouch™ Display

ATTACHING HEADERS TO WINDROWER

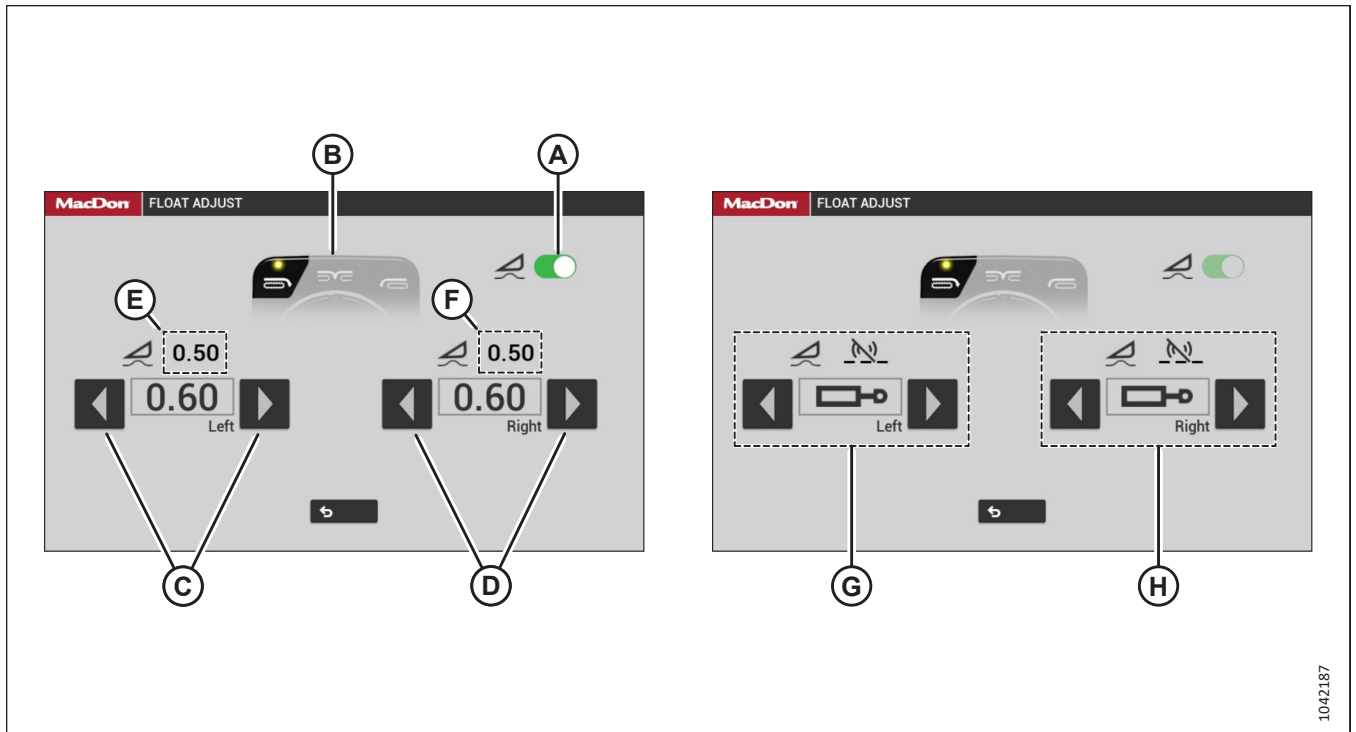


Figure 5.63: Float Adjustment

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

NOTE:

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

NOTE:

Symbols (G) and (H) mean the left and right float sensors are not working. You can still manually set the float, but you should first check if the sensors were disabled through the HarvestTouch™ Display (refer to MENU > SETUP > HEADER > SENSORS), or if another problem is causing the sensors to fail.

25. Shut down the engine, and remove the key from the ignition.
26. Check the float as follows:
 - a. Grasp one end of the draper header and lift it. The lifting force should be 335–380 N (75–85 lbf) (with stabilizer/transport wheels raised, if they are equipped).
 - b. Repeat this step on the other side of the header.
27. Proceed to [5.2.3 Connecting Header Hydraulic and Electrical Systems, page 214](#).

5.2.3 Connecting Header Hydraulic and Electrical Systems

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

DANGER

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

CAUTION

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

IMPORTANT:

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

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

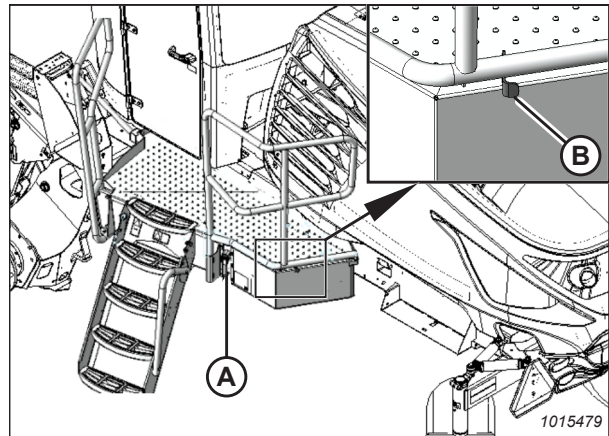


Figure 5.64: Left Platform

4. Push lever (A) up and pull arm (B) to get pin (C) out of latch (D).

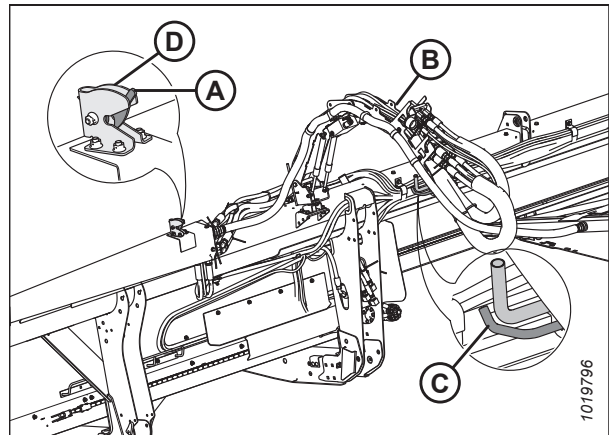


Figure 5.65: Hydraulic Hose Management System

ATTACHING HEADERS TO WINDROWER

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

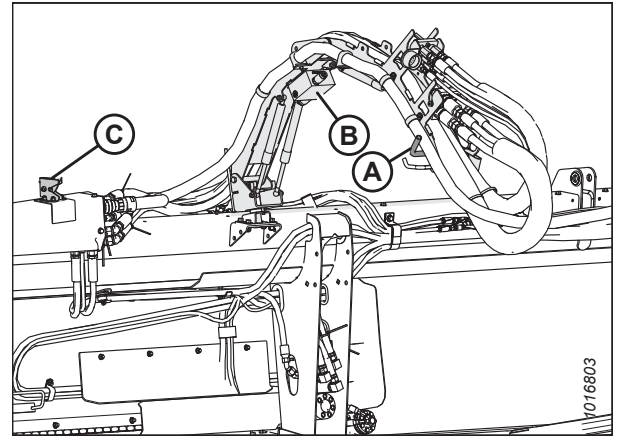


Figure 5.66: Hydraulic Hose Management System

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

NOTE:

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

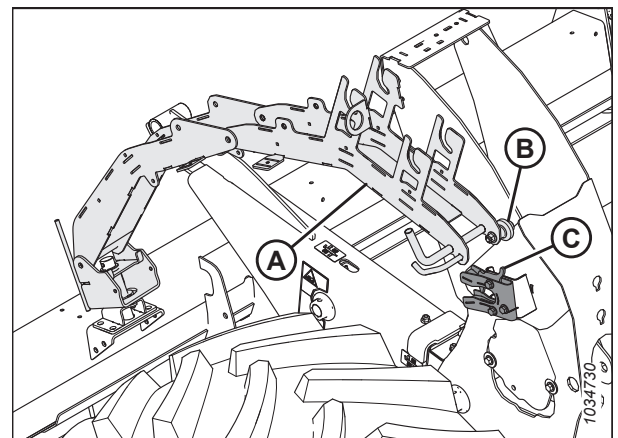


Figure 5.67: Windrower Left Outer Leg

8. Rotate left signal light placard (A) to the up (vertical) position.

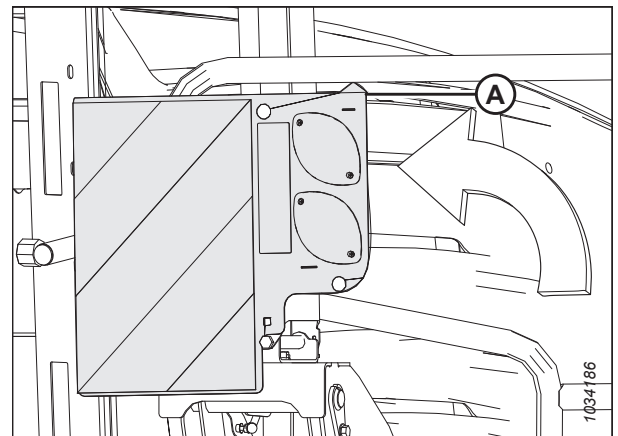


Figure 5.68: Left Signal Light Placard

ATTACHING HEADERS TO WINDROWER

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

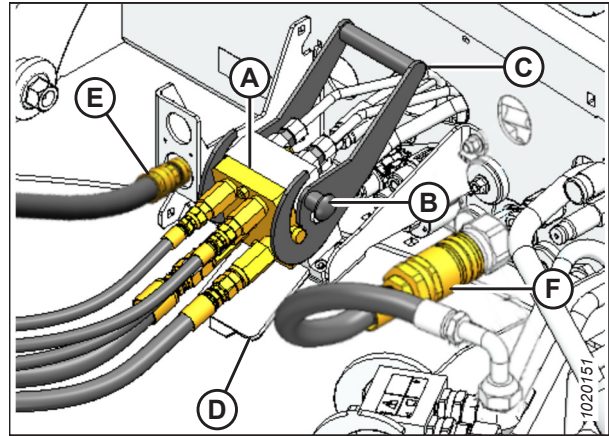


Figure 5.69: Draper/Reel Multicoupler

13. Retrieve knife and reel drive multicoupler (A) from the hydraulic hose management system.
14. Push knob (B) on the hydraulic receptacle and pull handle (C) fully away from the windrower.
15. 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.

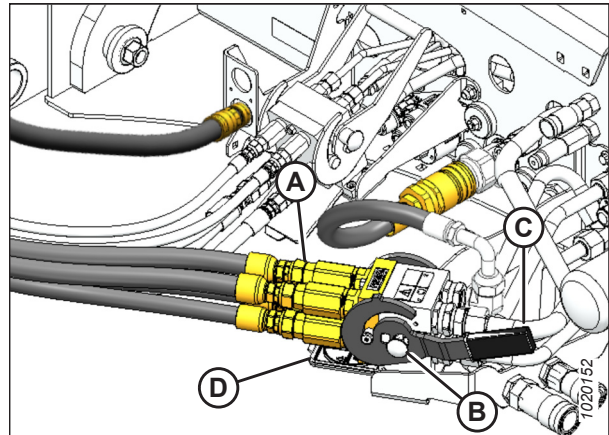


Figure 5.70: Knife/Reel Drive Multicoupler

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

IMPORTANT:

Straight routing will prevent abrasion damage to the hydraulic hoses.

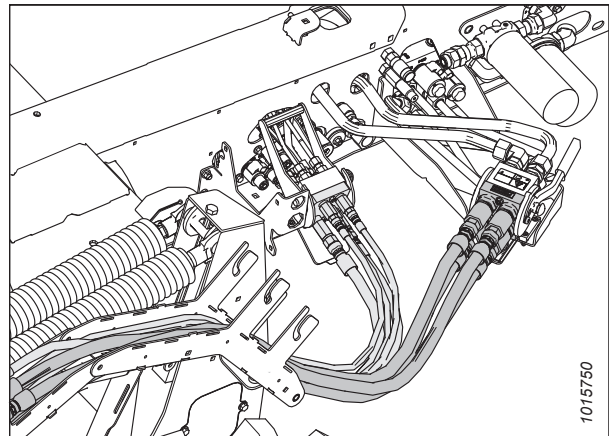


Figure 5.71: Hydraulic Multicouplers and Hose Routing

ATTACHING HEADERS TO WINDROWER

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

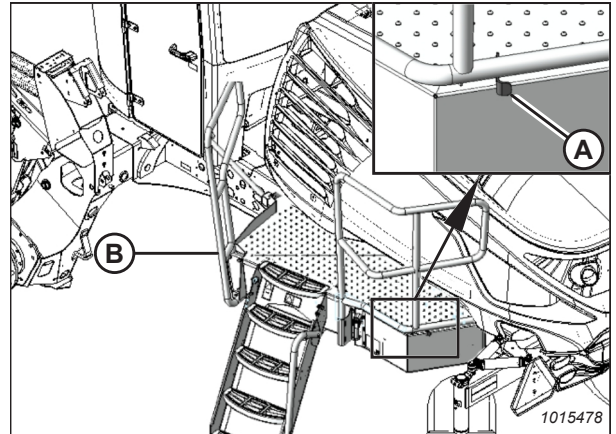


Figure 5.72: Left Platform

18. Pull platform (A) toward the cab until it stops and the latch is engaged.
19. If this is the first time the header is connected to the windrower, calibrate the header. For instructions, refer to [5.3 Calibrating Header on HarvestTouch™ Display, page 225](#).

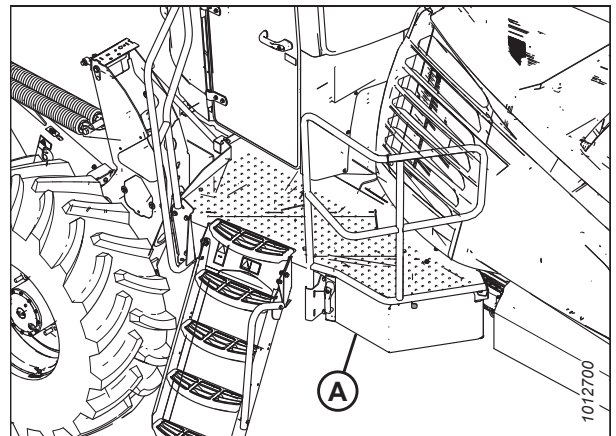


Figure 5.73: Left Platform

5.2.4 Detaching D1X and D1XL Series Draper Headers

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

DANGER

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

DANGER

Ensure that all bystanders have cleared the area.

ATTACHING HEADERS TO WINDROWER

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

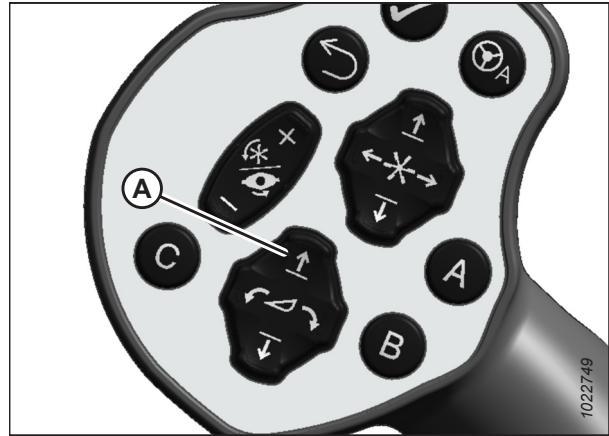


Figure 5.74: Ground Speed Lever (GSL)

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

IMPORTANT:

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

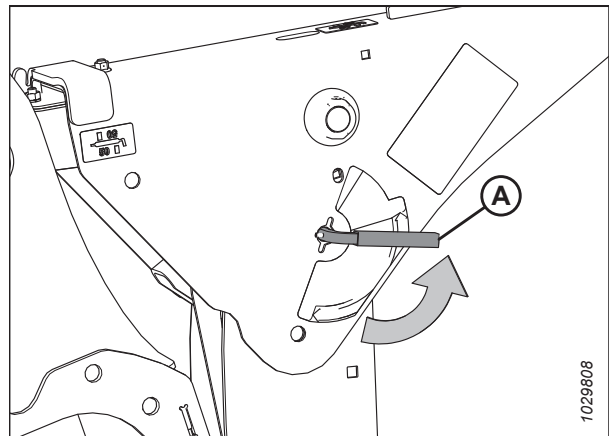


Figure 5.75: Safety Prop Lever

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

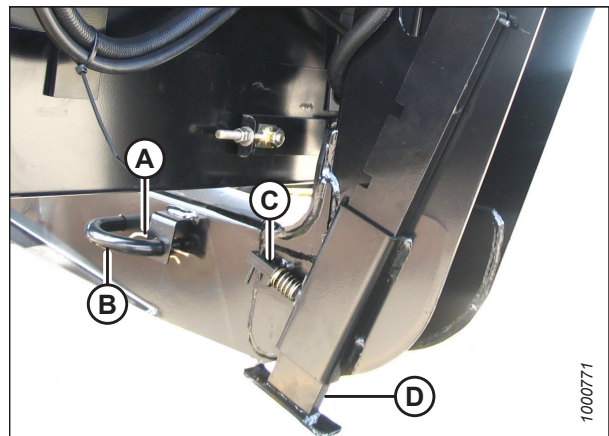


Figure 5.76: Header Leg and Header Stand

ATTACHING HEADERS TO WINDROWER

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

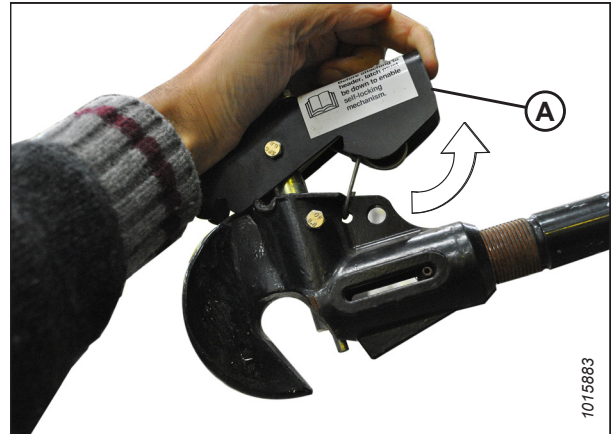


Figure 5.77: Center-Link

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

NOTE:

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

9. Start the engine.

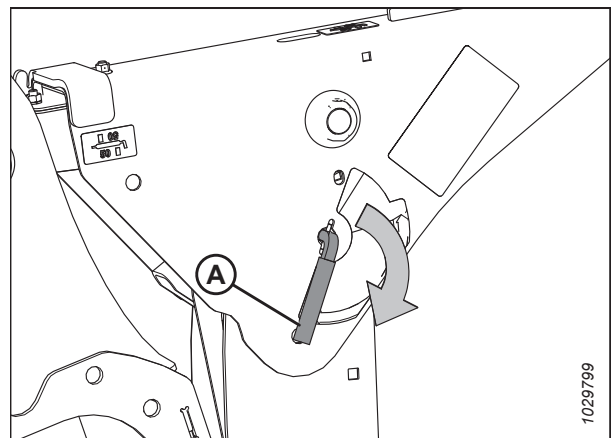


Figure 5.78: Safety Prop Lever

ATTACHING HEADERS TO WINDROWER

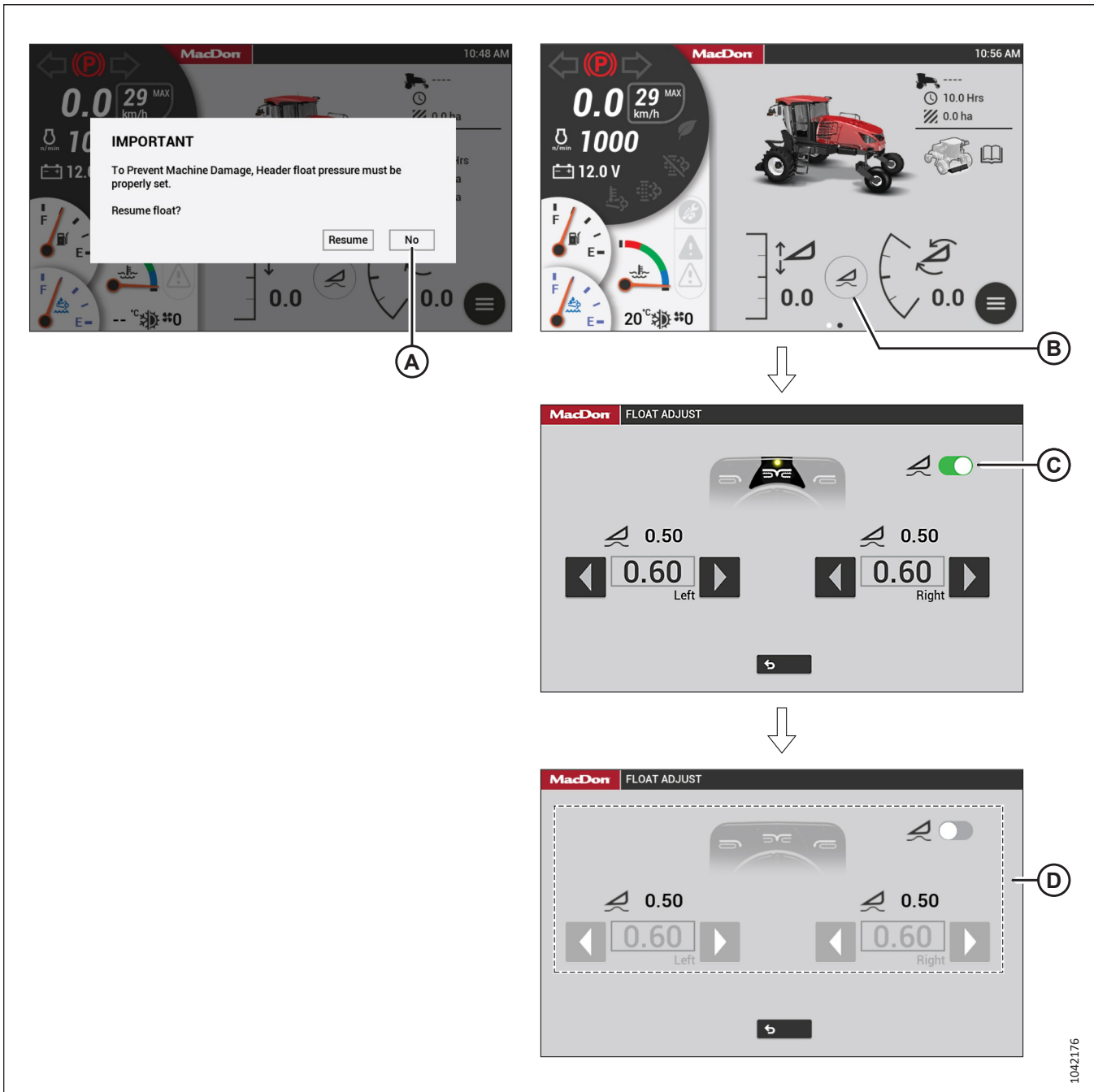


Figure 5.79: Float Removal

10. Remove the float as follows:

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

IMPORTANT:

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

ATTACHING HEADERS TO WINDROWER

11. Lower the header fully using HEADER DOWN switch (A).
12. Press HEADER TILT switches (B), as needed, on the GSL to release the load on center-link.

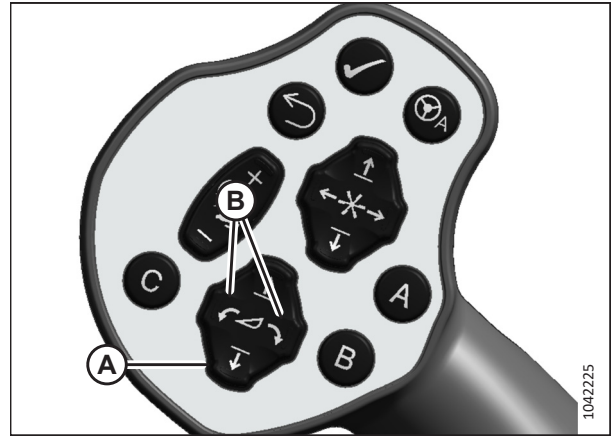


Figure 5.80: GSL

13. Windrowers with self-aligning center-link:

- a. Press REEL UP switch (A) to disengage the center-link from the header.
- b. Shut down the engine, and remove the key from the ignition.



Figure 5.81: GSL

14. Windrowers without self-aligning center-link:

- a. Shut down the engine, and remove the key from the ignition.
- b. Disconnect the center-link by lifting release (A) and lift hook (B) off the header.

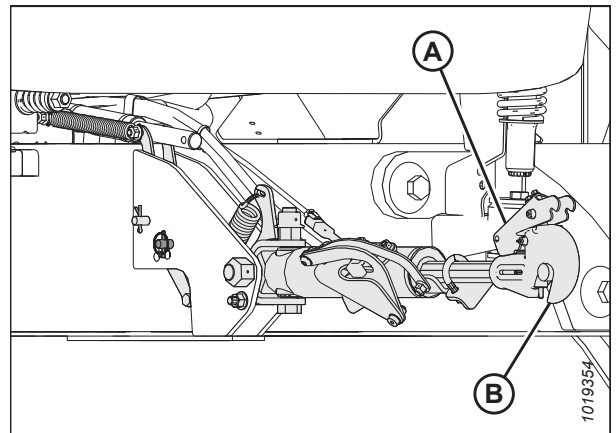


Figure 5.82: Hydraulic Center-Link

ATTACHING HEADERS TO WINDROWER

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

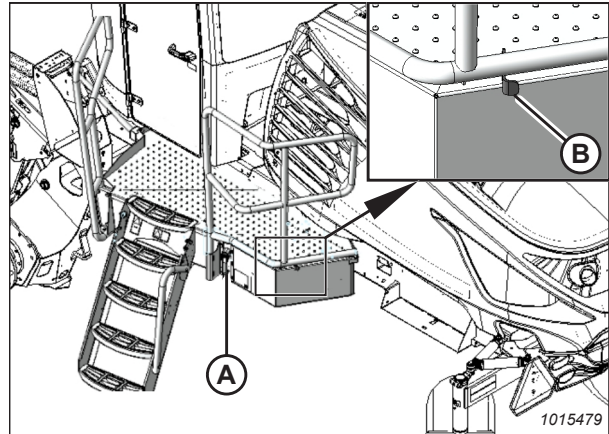


Figure 5.83: Left Platform

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

NOTE:

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

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

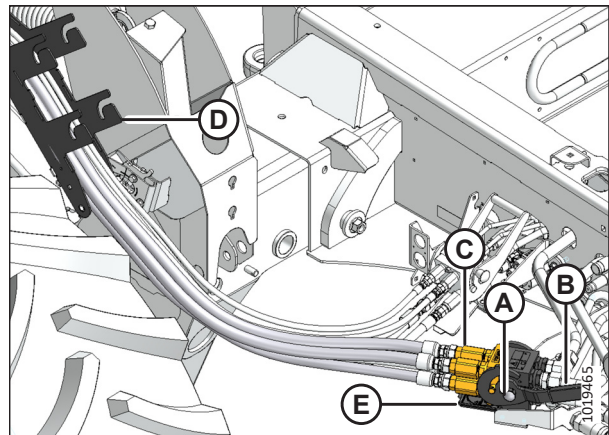


Figure 5.84: Knife/Reel Drive Multicoupler

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

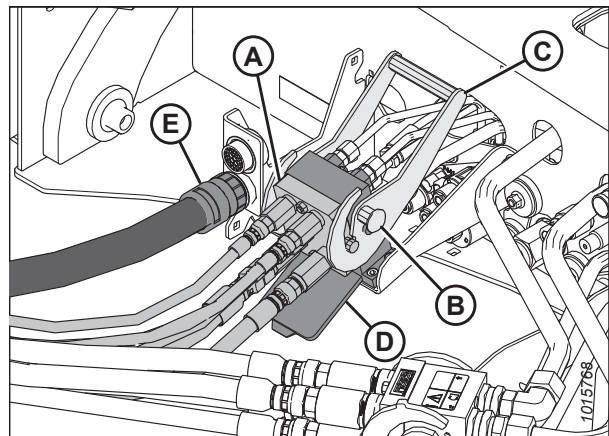


Figure 5.85: Draper/Reel Multicoupler

ATTACHING HEADERS TO WINDROWER

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

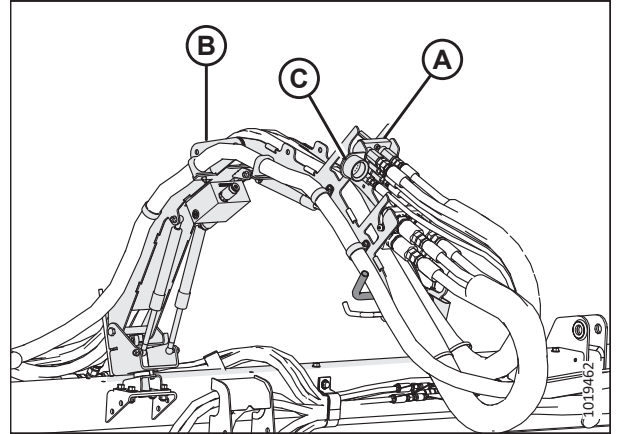


Figure 5.86: Hydraulic Hose Management System

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

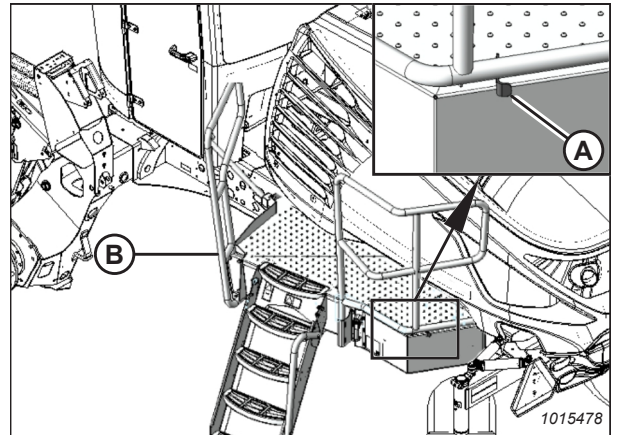


Figure 5.87: Left Platform

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

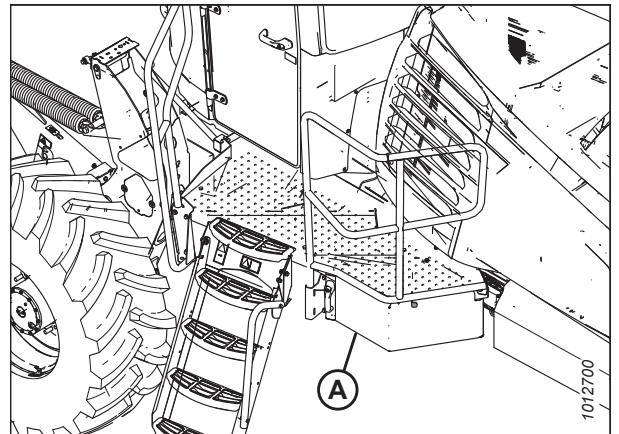


Figure 5.88: Left Platform

ATTACHING HEADERS TO WINDROWER

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

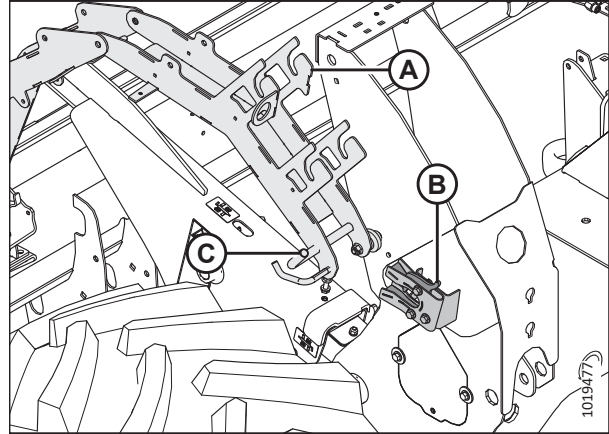


Figure 5.89: Hydraulic Hose Management System

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

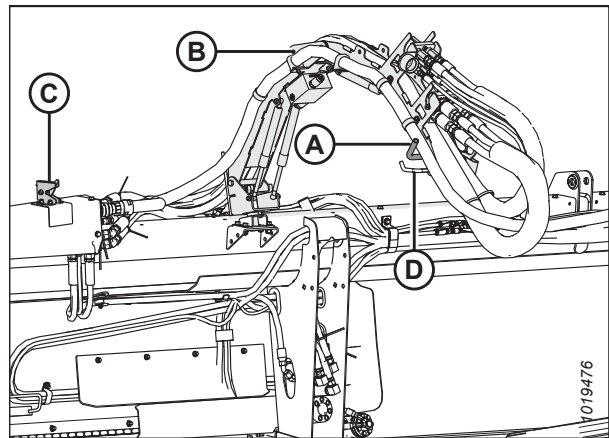


Figure 5.90: Hydraulic Hose Management System

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

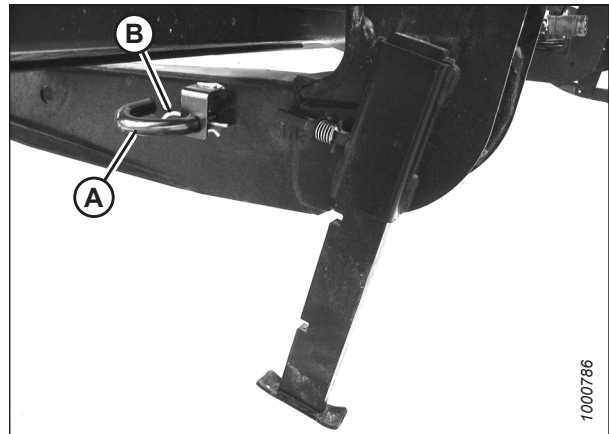


Figure 5.91: Header Stand

5.3 Calibrating Header on HarvestTouch™ Display

The HarvestTouch™ Display recognizes when a header is attached to the windrower and determines which systems will require calibration.

The following sensors may require calibration, depending on the type of header attached to the windrower:

- Header height
- Header angle
- Header float left
- Header float right
- Reel height
- Reel fore-aft
- Swath compressor
- Knife drive

Recalibration is required in the following circumstances:

- The HarvestTouch™ Display is replaced
- A position sensor is replaced
- Sensor readouts are erratic
- A pump has been replaced
- A new header type or attachment is connected to the windrower

Refer to the following topics for information on calibrating header systems:

- [5.3.1 Calibrating Knife Drive on HarvestTouch™ Display, page 225](#)
- [5.3.2 Calibrating Header Position Sensors on HarvestTouch™ Display, page 229](#)

5.3.1 Calibrating Knife Drive on HarvestTouch™ Display

When a header is attached to the windrower, the windrower's HarvestTouch™ Display will recognize the header ID and choose the appropriate settings for that header. Before it can be operated, however, the header's knife drive must be calibrated to ensure that the knife drive pump output is accurate.



DANGER

Ensure that all bystanders have cleared the area.

NOTE:

This calibration **MUST** be performed with the engine running and the header engaged.

ATTACHING HEADERS TO WINDROWER

1. Start the engine.
2. Engage the header.

NOTE:

Once the header is engaged, header gauges (A) will appear on the HarvestTouch™ Display home page.

3. Select MENU icon (B).

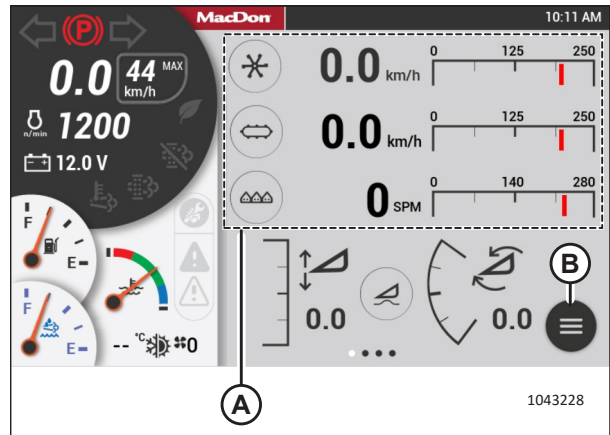


Figure 5.92: HarvestTouch™ Display

4. Select SETUP (A).

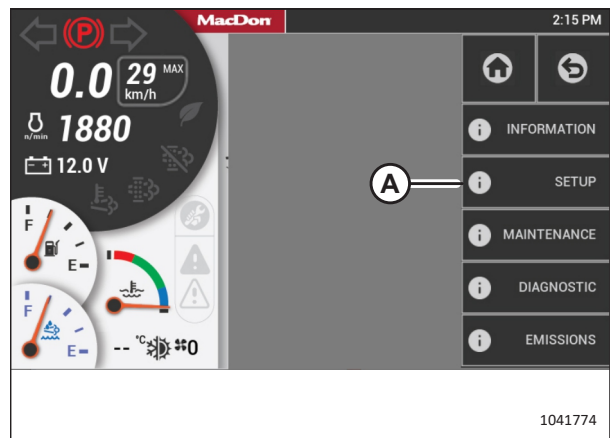


Figure 5.93: Main Menu

5. Select WINDROWER (A).

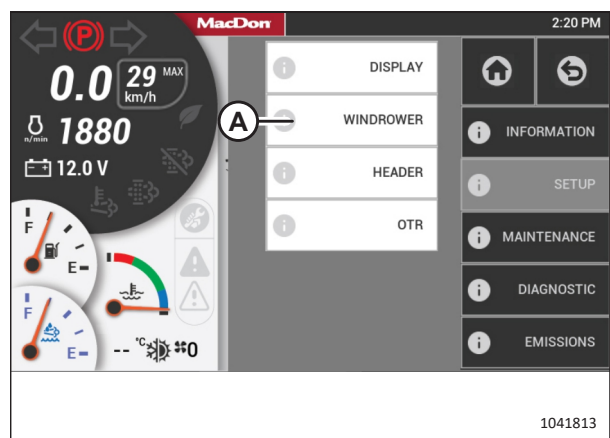


Figure 5.94: Setup Menu

ATTACHING HEADERS TO WINDROWER

6. Select CALIBRATION (A).

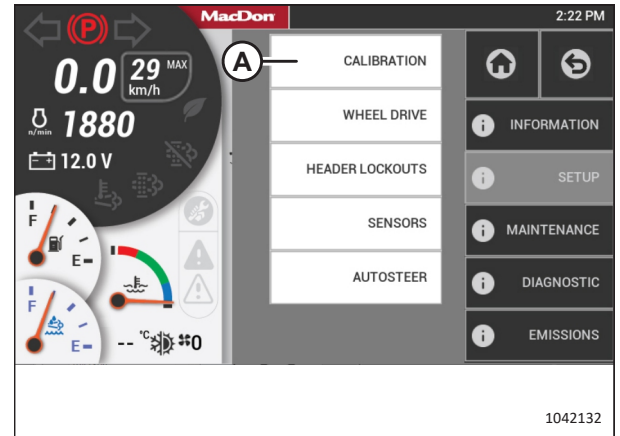


Figure 5.95: Setup Menu

7. Select KNIFE DRIVE (A).

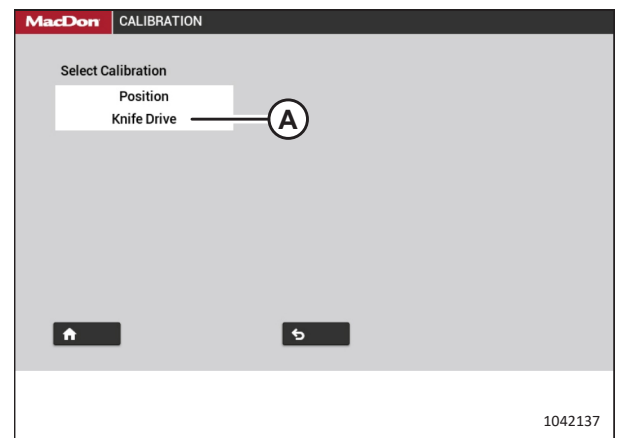


Figure 5.96: Calibration Selection Page

8. Select PLAY icon (A).

NOTE:

The PLAY icon will only appear if the header is engaged.

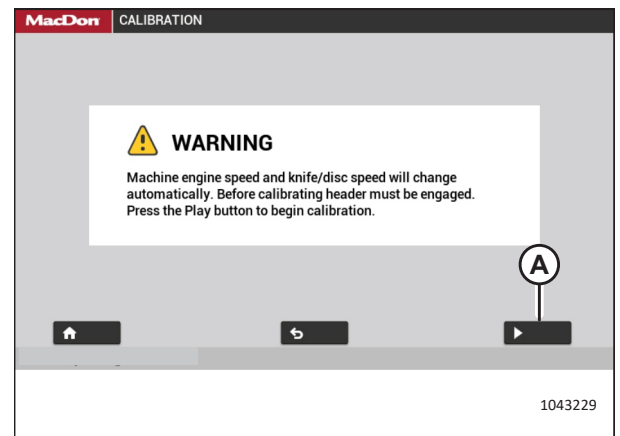


Figure 5.97: Engage Header Warning

ATTACHING HEADERS TO WINDROWER

9. The display changes to show that calibration has started. The process should automatically proceed through all nine stages.

NOTE:

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

NOTE:

During the calibration process, the speed of the header and the engine will fluctuate.

NOTE:

Select X icon (A) on the screen or use the HEADER DISENGAGE switch at any time during the calibration process to exit the procedure without saving your progress. The engine will resume the speed at which it was operating before the calibration process began.

NOTE:

If error message (A) appears during the calibration process, follow the instructions in the message to fix the error. Select X icon (B) to exit the message. If the knife calibration process fails:

- Confirm that the engine and the hydraulics are at operating temperature.
- Confirm that the hydraulic system is free of any restrictions and is in working order.
- Confirm that the throttle is working:
 - Check the engine codes to confirm that the engine is not derated or throttle-inhibited.
 - The throttle is controlled via the powertrain’s CAN network 1. Check the network’s wiring and connectors for an open or intermittent connection.
- Confirm that the sensor mounting is secured properly and that the sensor’s gap is set correctly.
- Check the sensor wiring and connectors for an intermittent connection.
- Replace the sensor.

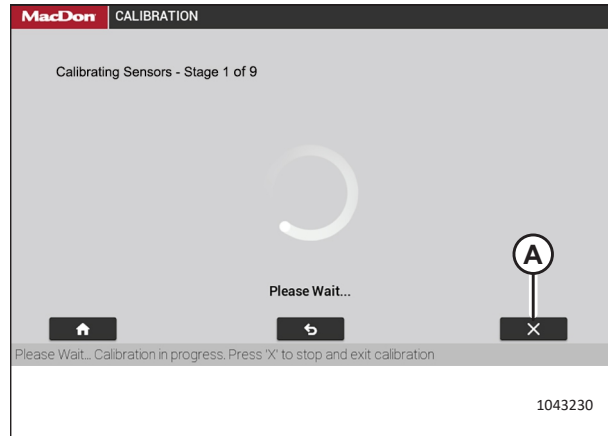


Figure 5.98: Calibration Page

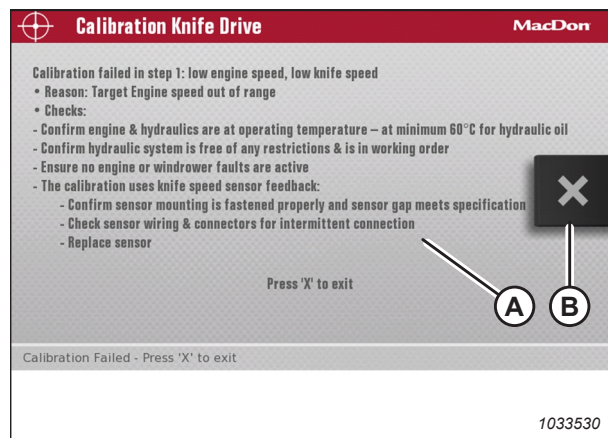


Figure 5.99: Calibration Page

ATTACHING HEADERS TO WINDROWER

- Once the calibration process completes all nine stages, the message CALIBRATING COMPLETED appears. Select X icon (A) to exit the page.

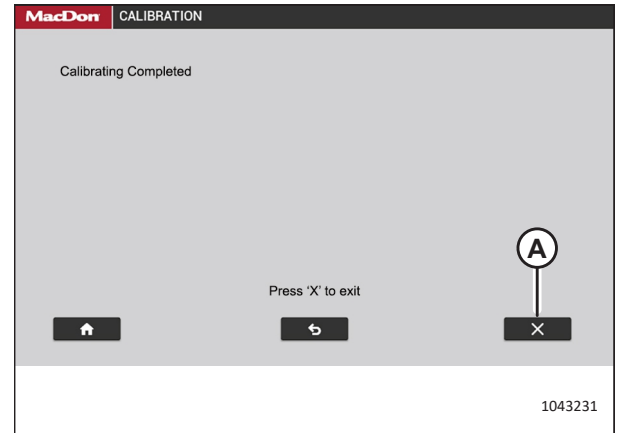


Figure 5.100: Calibration Page

5.3.2 Calibrating Header Position Sensors on HarvestTouch™ Display

The header position sensors need to be recalibrated whenever the HarvestTouch™ Display is replaced, a position sensor is replaced, sensor readouts are erratic, a pump has been replaced, or when a new header type or attachment is connected to the windrower.

DANGER

Ensure that all bystanders have cleared the area.

NOTE:

This calibration **MUST** be performed with the engine running and the header engaged.

- Start the engine.
- Engage the header.

NOTE:

Once the header is engaged, header gauges (A) will appear on the HarvestTouch™ Display home page.

- Select MENU icon (B).

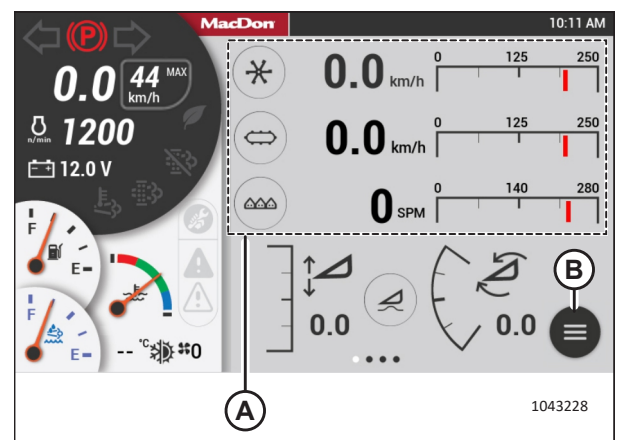


Figure 5.101: HarvestTouch™ Display

ATTACHING HEADERS TO WINDROWER

4. Select SETUP (A).

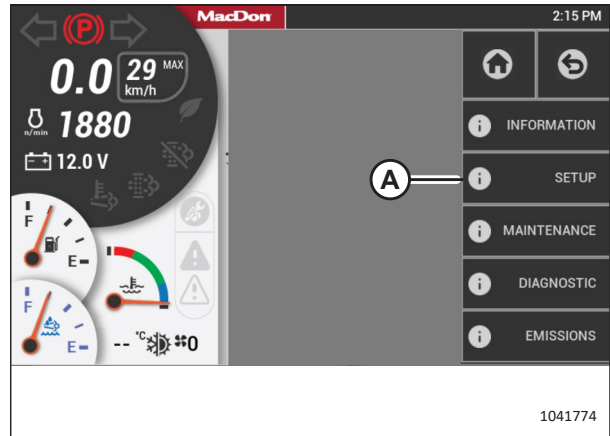


Figure 5.102: Main Menu

5. Select CALIBRATION (A).

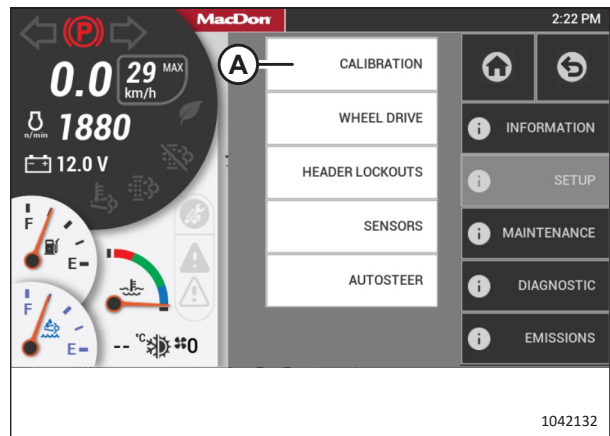


Figure 5.103: Setup Menu

6. Select POSITION (A).

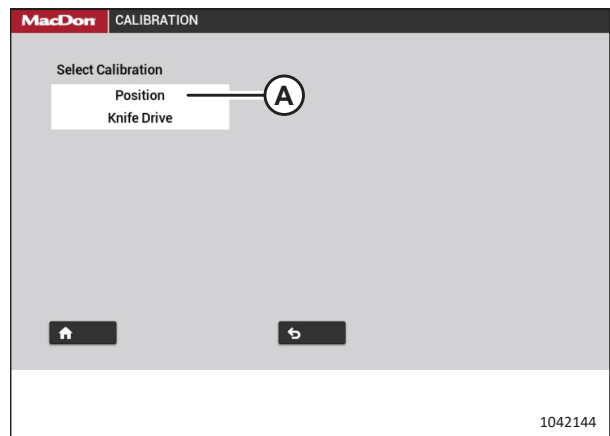


Figure 5.104: Calibration Selection Page

ATTACHING HEADERS TO WINDROWER

7. Select PLAY icon (A).

NOTE:

The PLAY icon will only appear if the header is engaged.

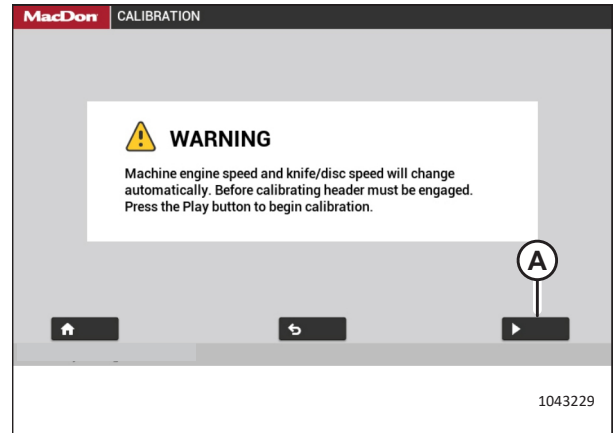


Figure 5.105: Engage Header Warning

8. The calibration will attempt the first calibration stage.

NOTE:

Selecting X icon (A), HOME, or BACK, or pressing any of the ground speed lever (GSL) buttons at any time during calibration will EXIT the calibration process without saving your progress. The engine speed will return to the original rpm before starting the calibration process.

NOTE:

If a sensor goes out of its normal operating range during the calibration process, calibration will stop and a message will appear on the screen indicating that a sensor is out of range.

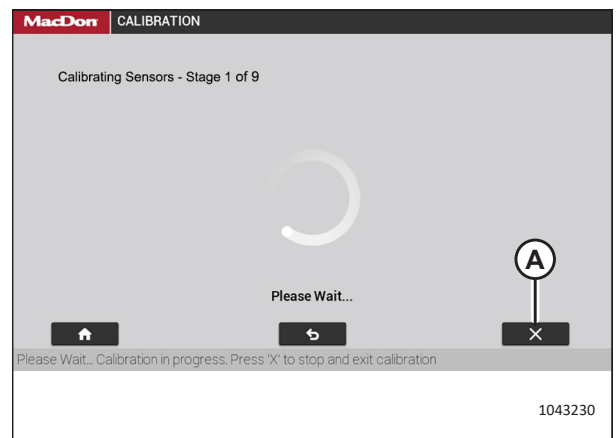


Figure 5.106: Calibration Page

9. When the first stage of the calibration is complete, select PLAY icon (A) on the screen to continue with the second stage of the calibration process.

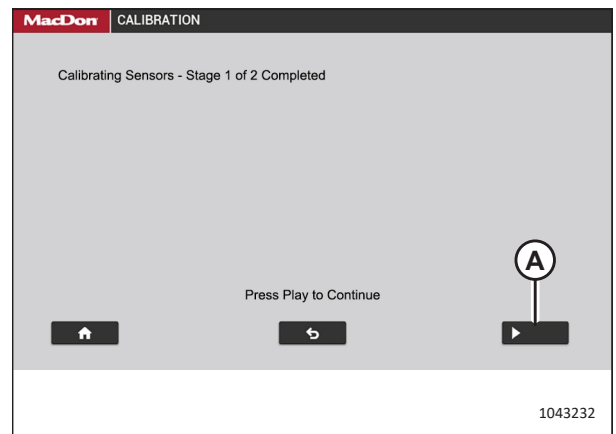


Figure 5.107: Calibration Page

ATTACHING HEADERS TO WINDROWER

NOTE:

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

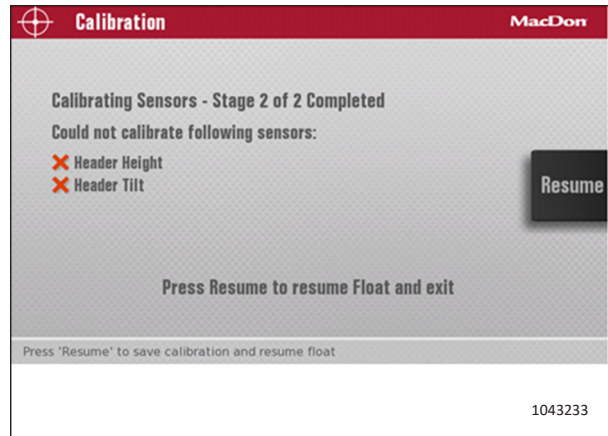


Figure 5.108: Sample of Failed Calibration Display Message

- When the second stage of calibration is complete, calibration is complete. Select RESUME icon (A) on the screen to configure the HEADER FLOAT setting, or select the HOME or BACK icons to exit the screen.

NOTE:

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

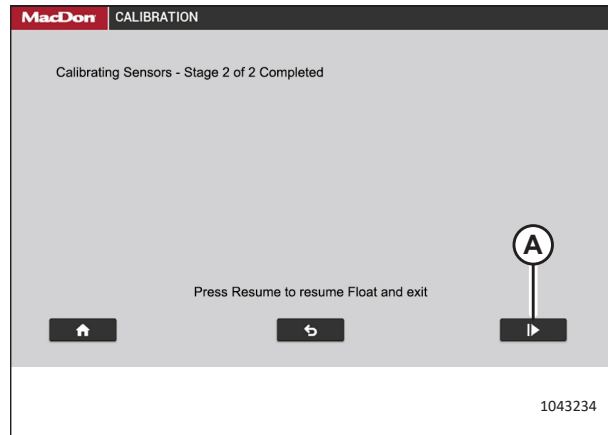


Figure 5.109: Calibration Page

5.4 Adjusting Header Settings on HarvestTouch™ Display

Some settings for the attached header can be changed using the windrower's HarvestTouch™ Display.

1. Turn the key to the ON or ACC position.
2. Select MENU icon (A).

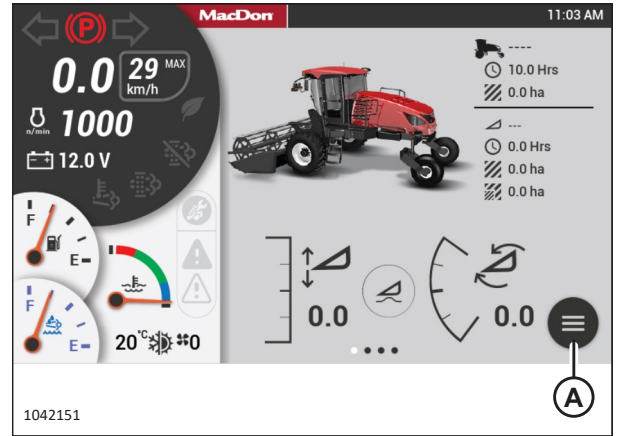


Figure 5.110: HarvestTouch™ Display – Header Disengaged

3. Select SETUP (A).

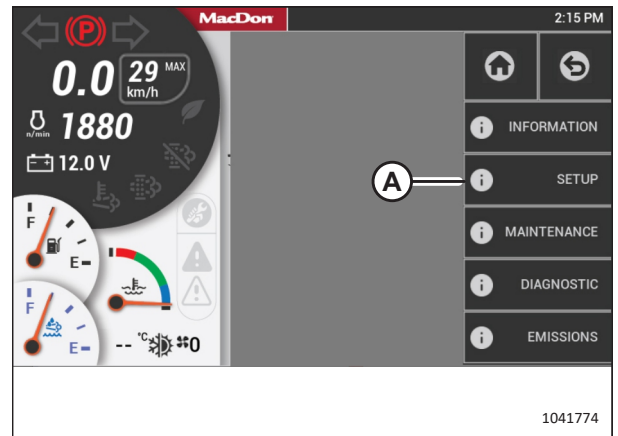


Figure 5.111: HarvestTouch™ Display

4. Select HEADER (A).

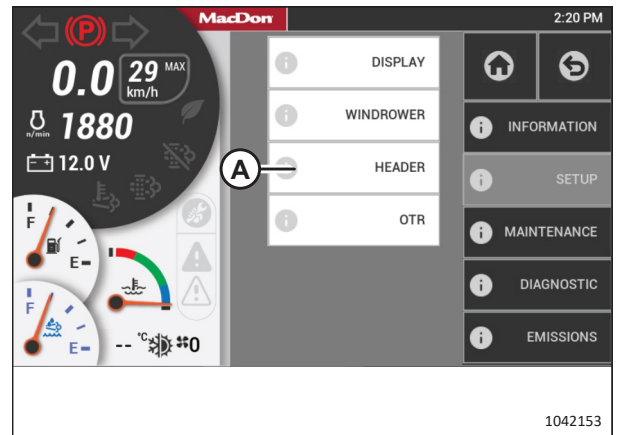


Figure 5.112: HarvestTouch™ Display

ATTACHING HEADERS TO WINDROWER

5. Select the model and configuration of header (A) that is attached to the windrower.

NOTE:

For example, “D230DK” means “D230 Double-knife header”.

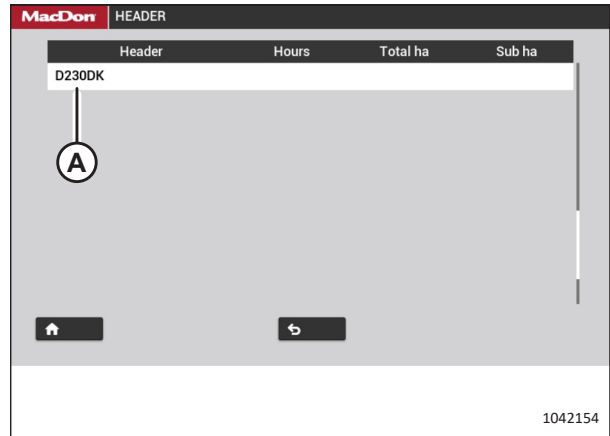


Figure 5.113: Header Settings

ATTACHING HEADERS TO WINDROWER

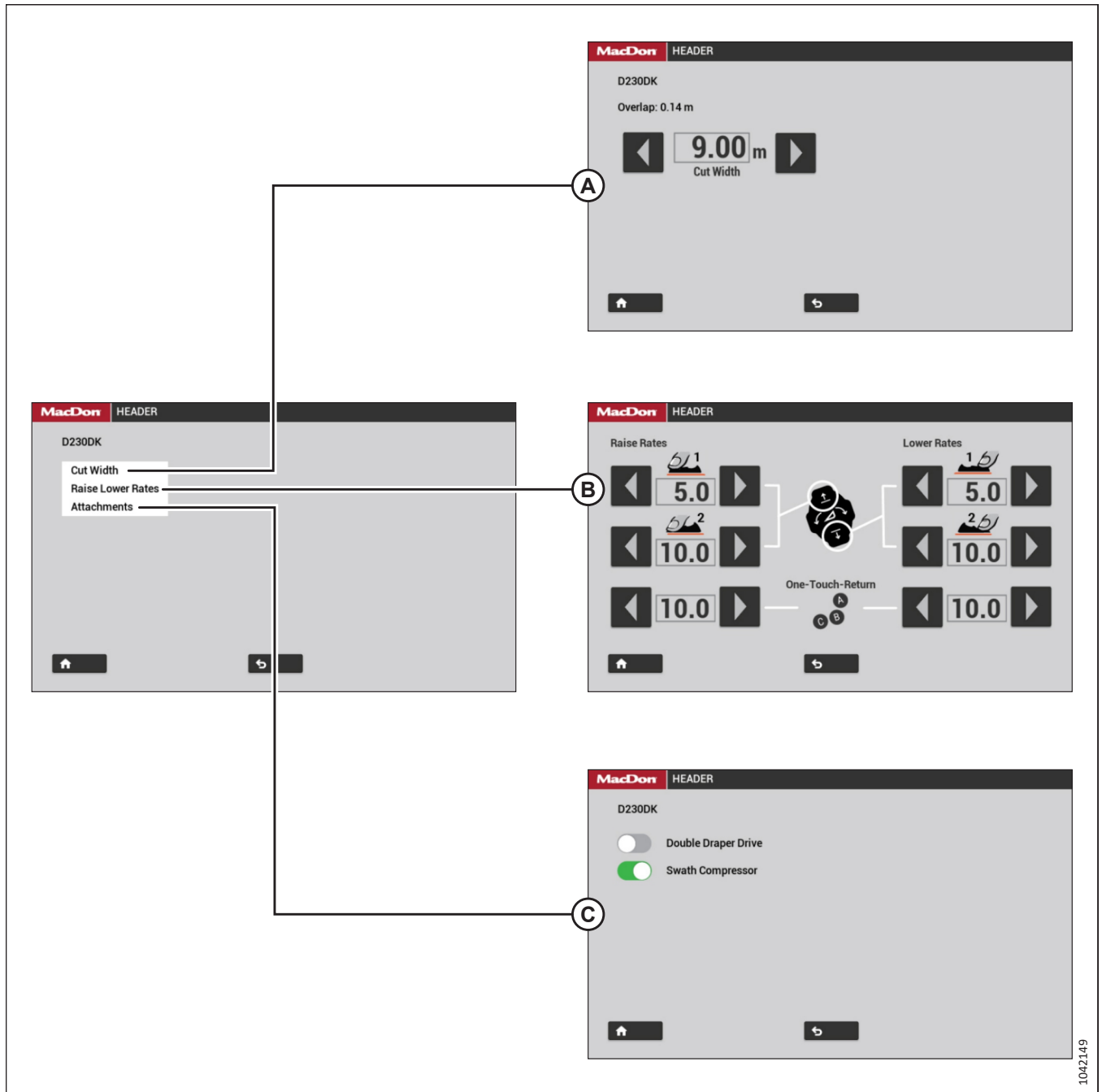


Figure 5.114: Header Settings

- The list of settings will vary according to the type of header attached to the windrower. The illustration shows the settings available to a D2 Series Draper Header. Select and adjust the following settings as required:
 - (A) CUT WIDTH
 - (B) RAISE LOWER RATES
 - (C) ATTACHMENTS – Use this page to enable (or disable) attachments such as the double draper drive and swath compressor.
- Calibrate the header if you are attaching it to the windrower for the first time, or if there is another reason to calibrate the header. For instructions, refer to [5.3 Calibrating Header on HarvestTouch™ Display, page 225](#).

Chapter 6: Reference

The reference chapter provides additional information such as the torque specification and a unit conversion chart.

6.1 Navigating HarvestTouch™ Display

The Operator can navigate the HarvestTouch™ Display by pressing or swiping the screen directly, or by using the ground speed lever (GSL) controls.

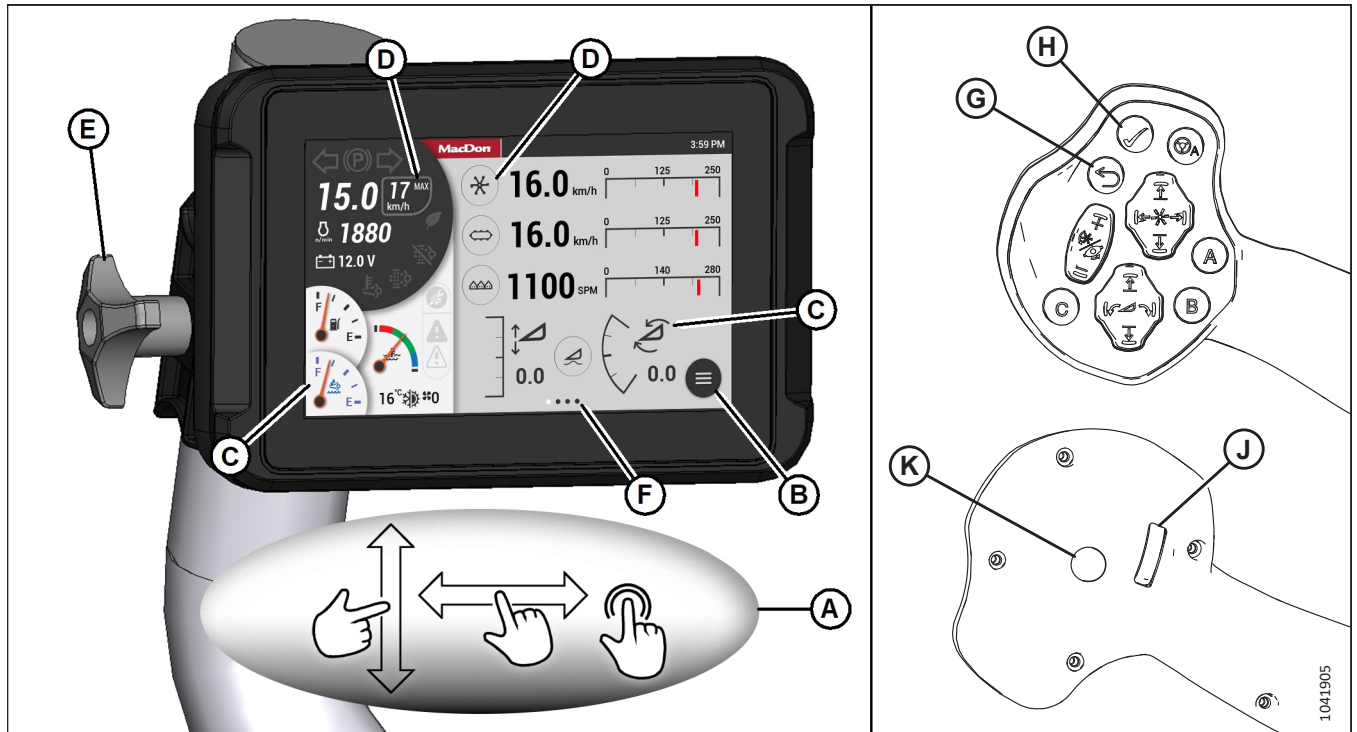


Figure 6.1: HarvestTouch™ Display and Ground Speed Lever (GSL)

Table 6.1 HarvestTouch™ Display Navigation

Callout	Function
A	Touchscreen gestures: press icons and swipe pages to access features.
B	Main menu icon: press to access windrower and header settings.
C	Icons with no border highlight information but have no press functions.
D	Bordered icons can be pressed for additional information or functions.
E	Display mount knob: loosen the knob to adjust the position of the display.
F	Multi-page dots (F) and scroll bars (not shown) indicate that you can swipe the touchscreen to access additional pages or information.
G	GSL back switch – controls display functions
H	GSL select switch – controls display functions
J	GSL scroll wheel – controls display functions
K	GSL shift switch. When the shift switch is used with a another button it performs the following functions: <ul style="list-style-type: none"> • SHIFT (K) + BACK (G) – Home page • SHIFT (K) + SELECT (H) – Main menu access • SHIFT (K) + SCROLL (J) – Adjust maximum ground speed

REFERENCE

Pressing HOME icon (A) from any page will display either the windrower home page (if the header is disengaged) or the header run screen (if the header is engaged).

Pressing PREVIOUS/BACK icon (B) from any page will display the previous page.

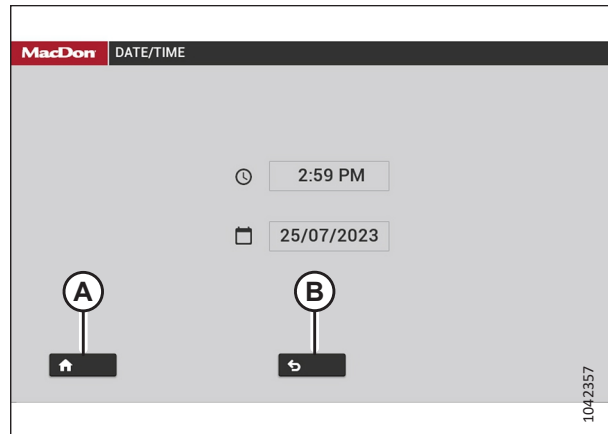


Figure 6.2: HarvestTouch™ Display Navigation

6.2 Coolant Specifications

Follow the specifications for coolant and water quality to optimize system performance and prevent damage to system components.

Recommended coolants: ASTM D-6210 and CES-14603, Peak Final Charge Global™, or Fleetguard ES Compleat™ OAT.

NOTE:

M2 Series Windrowers have Peak Final Charge Global™ coolant installed at the factory.

Mix equal parts of concentrated coolant to high quality, soft, deionized or distilled water as recommended by the supplier.

If Peak Final Charge Global™ or Fleetguard ES Compleat™ OAT is unavailable, use a coolant concentrate or prediluted coolant intended for use with heavy duty diesel engines with the following chemical and physical properties:

- Provides cylinder cavitation protection according to a fleet study run at or above 60% load capacity
- Protects the cooling system metals (cast iron, aluminum alloys, and copper alloys such as brass) from corrosion
- Coolant **MUST** be nitrite-free and **MUST** be free of 2-Ethylhexanoic (2-EH) acid

The additive package must be part of one of the following coolant mixtures:

- Ethylene glycol or propylene glycol base prediluted (40–60%) heavy duty coolant
- Ethylene glycol or propylene glycol base heavy-duty coolant concentrate in a 40–60% mixture of concentrate with quality water

Water quality is important for the performance of the cooling system. Distilled, deionized, or demineralized water is recommended for mixing with ethylene glycol and propylene glycol base engine coolant concentrate.

IMPORTANT:

Do **NOT** use cooling system sealing additives or antifreeze that contains sealing additives.

6.3 Fuel Specifications

Follow the specifications for fuel quality to optimize system performance and prevent damage to the engine or fuel components.

Use only ultra low sulphur diesel (ULSD) from a reputable supplier. For most year-round service, No. 2 ULSD fuel meeting ASTM specification D975 Grade S15 will provide good performance.

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

Table 6.2 Fuel Specifications

Fuel	Specification	Sulphur (by weight)	Water and Sediment (by volume)	Cetane No. °C (°F)	Lubricity
ULSD Grade No. 2	ASTM D975	0.5% maximum	0.05% maximum	40 (104) minimum	520 Microns
ULSD Grade No. 1 and 2 mix 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 240.

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

6.4 Torque Specifications

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

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

Jam nuts

Jam nuts require less torque than nuts used for other purposes. When applying torque to finished jam nuts, multiply the torque applied to regular nuts by 0.65 to obtain the modified torque value.

Self-tapping screws

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

6.4.1 Metric Bolt Specifications

Specifications are provided for the appropriate final torque values to secure various sizes of metric bolts.

NOTE:

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

Table 6.3 Metric Class 8.8 Bolts and Class 9 Free Spinning Nut

Nominal Size (A)	Torque (Nm)		Torque (lbf-ft) (*lbf-in)	
	Min.	Max.	Min.	Max.
3-0.5	1.4	1.6	*13	*14
3.5-0.6	2.2	2.5	*20	*22
4-0.7	3.3	3.7	*29	*32
5-0.8	6.7	7.4	*59	*66
6-1.0	11.4	12.6	*101	*112
8-1.25	28	30	20	23
10-1.5	55	60	40	45
12-1.75	95	105	70	78
14-2.0	152	168	113	124
16-2.0	236	261	175	193
20-2.5	460	509	341	377
24-3.0	796	879	589	651

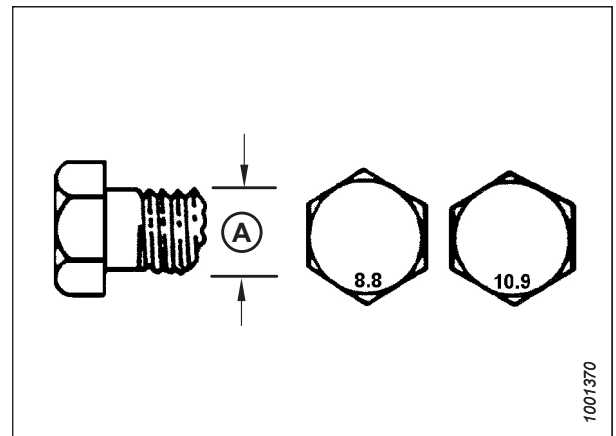


Figure 6.3: Bolt Grades

REFERENCE

Table 6.4 Metric Class 8.8 Bolts and Class 9 Distorted Thread Nut

Nominal Size (A)	Torque (Nm)		Torque (lbf-ft) (*lbf-in)	
	Min.	Max.	Min.	Max.
3-0.5	1	1.1	*9	*10
3.5-0.6	1.5	1.7	*14	*15
4-0.7	2.3	2.5	*20	*22
5-0.8	4.5	5	*40	*45
6-1.0	7.7	8.6	*69	*76
8-1.25	18.8	20.8	*167	*185
10-1.5	37	41	28	30
12-1.75	65	72	48	53
14-2.0	104	115	77	85
16-2.0	161	178	119	132
20-2.5	314	347	233	257
24-3.0	543	600	402	444

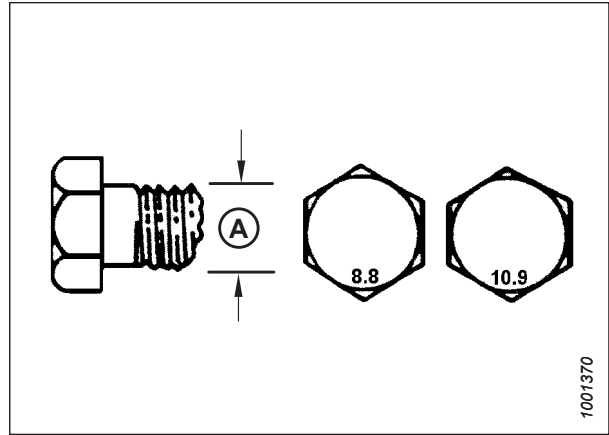


Figure 6.4: Bolt Grades

Table 6.5 Metric Class 10.9 Bolts and Class 10 Free Spinning Nut

Nominal Size (A)	Torque (Nm)		Torque (lbf-ft) (*lbf-in)	
	Min.	Max.	Min.	Max.
3-0.5	1.8	2	*18	*19
3.5-0.6	2.8	3.1	*27	*30
4-0.7	4.2	4.6	*41	*45
5-0.8	8.4	9.3	*82	*91
6-1.0	14.3	15.8	*140	*154
8-1.25	38	42	28	31
10-1.5	75	83	56	62
12-1.75	132	145	97	108
14-2.0	210	232	156	172
16-2.0	326	360	242	267
20-2.5	637	704	472	521
24-3.0	1101	1217	815	901

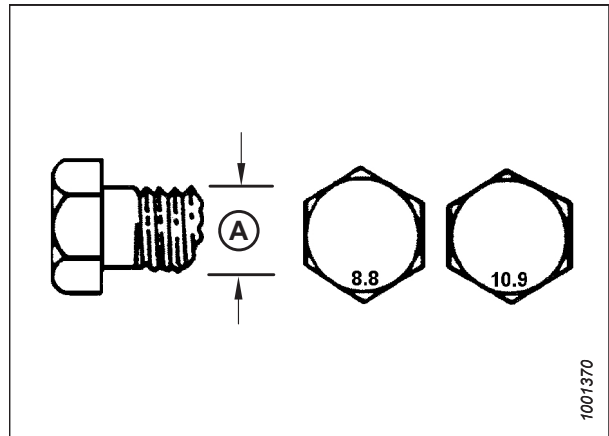


Figure 6.5: Bolt Grades

REFERENCE

Table 6.6 Metric Class 10.9 Bolts and Class 10 Distorted Thread Nut

Nominal Size (A)	Torque (Nm)		Torque (lbf-ft) (*lbf-in)	
	Min.	Max.	Min.	Max.
3-0.5	1.3	1.5	*12	*13
3.5-0.6	2.1	2.3	*19	*21
4-0.7	3.1	3.4	*28	*31
5-0.8	6.3	7	*56	*62
6-1.0	10.7	11.8	*95	*105
8-1.25	26	29	19	21
10-1.5	51	57	38	42
12-1.75	90	99	66	73
14-2.0	143	158	106	117
16-2.0	222	246	165	182
20-2.5	434	480	322	356
24-3.0	750	829	556	614

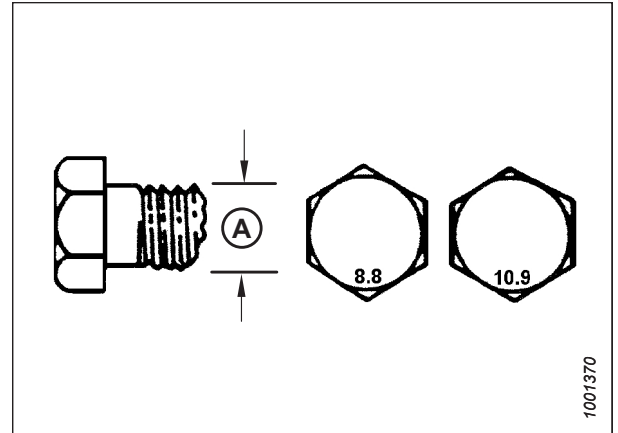


Figure 6.6: Bolt Grades

6.4.2 Metric Bolt Specifications – Cast Aluminum

Specifications are provided for the appropriate final torque values for various sizes of metric bolts in cast aluminum.

NOTE:

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

Table 6.7 Metric Bolt Bolting into Cast Aluminum

Nominal Size (A)	Bolt Torque			
	8.8 (Cast Aluminum)		10.9 (Cast Aluminum)	
	Nm	lbf-ft	Nm	lbf-ft
M3	–	–	–	1
M4	–	–	4	2.6
M5	–	–	8	5.5
M6	9	6	12	9
M8	20	14	28	20
M10	40	28	55	40
M12	70	52	100	73
M14	–	–	–	–
M16	–	–	–	–

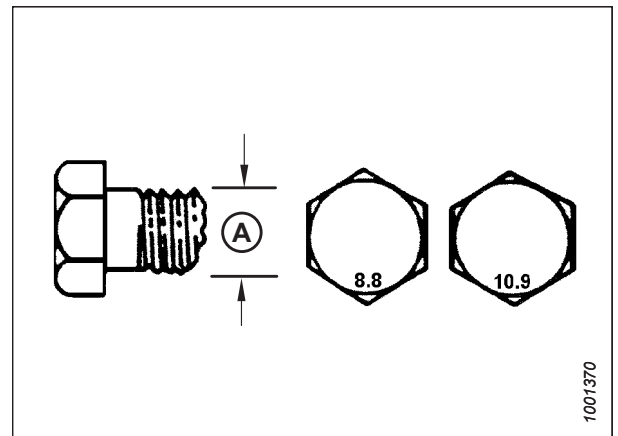


Figure 6.7: Bolt Grades

6.4.3 O-Ring Boss Hydraulic Fittings – Adjustable

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

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

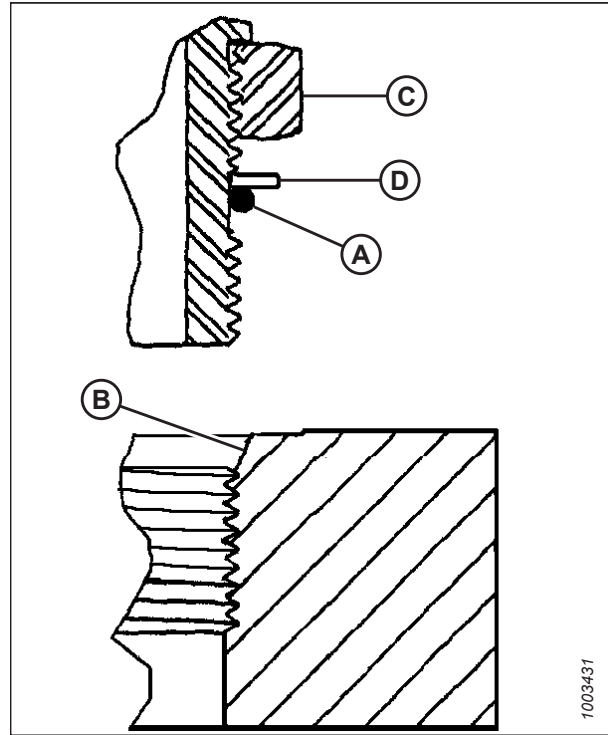


Figure 6.8: Hydraulic Fitting

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

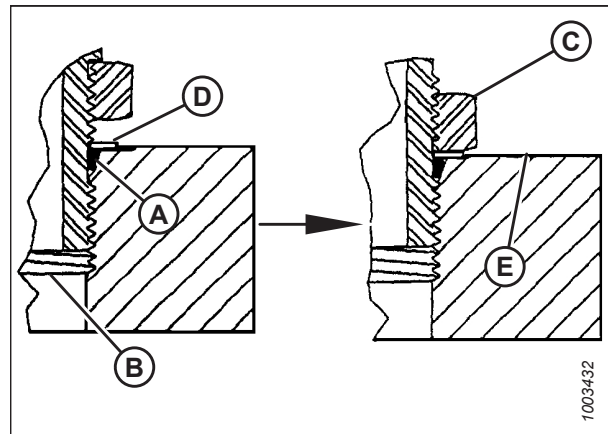


Figure 6.9: Hydraulic Fitting

REFERENCE

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

SAE Dash Size	Thread Size (in.)	Torque Value ⁷	
		Nm	lbf-ft (*lbf-in)
-2	5/16–24	10–11	*89–97
-3	3/8–24	18–20	*159–177
-4	7/16–20	29–32	21–24
-5	1/2–20	32–35	24–26
-6	9/16–18	40–44	30–32
-8	3/4–16	70–77	52–57
-10	7/8–14	115–127	85–94
-12	1 1/16–12	183–201	135–148
-14	1 3/16–12	237–261	175–193
-16	1 5/16–12	271–298	200–220
-20	1 5/8–12	339–373	250–275
-24	1 7/8–12	414–455	305–336
-32	2 1/2–12	509–560	375–413

6.4.4 O-Ring Boss Hydraulic Fittings – Non-Adjustable

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

1. Inspect O-ring (A) and seat (B) for dirt or defects.
2. Ensure that O-ring (A) is **NOT** on the threads. Adjust O-ring (A) if necessary.
3. Apply hydraulic system oil to the O-ring.
4. Install fitting (C) into the port until the fitting is hand-tight.
5. Torque fitting (C) according to values in Table 6.9, page 245.
6. Verify the final condition of the fitting.

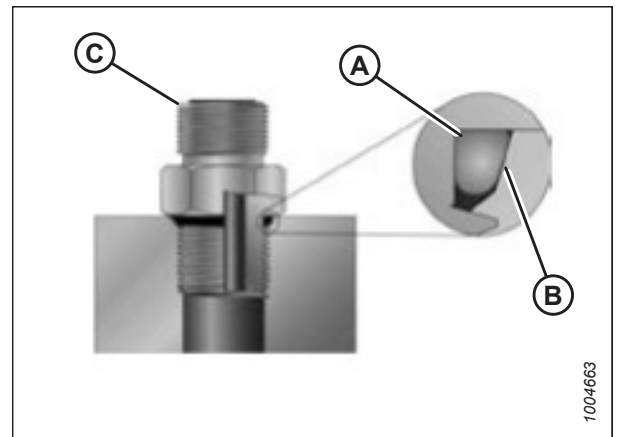


Figure 6.10: Hydraulic Fitting

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

SAE Dash Size	Thread Size (in.)	Torque Value ⁷	
		Nm	lbf-ft (*lbf-in)
-2	5/16–24	10–11	*89–97
-3	3/8–24	18–20	*159–177
-4	7/16–20	29–32	21–24
-5	1/2–20	32–35	24–26

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

REFERENCE

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

SAE Dash Size	Thread Size (in.)	Torque Value ⁸	
		Nm	lbf-ft (*lbf-in)
-6	9/16-18	40-44	30-32
-8	3/4-16	70-77	52-57
-10	7/8-14	115-127	85-94
-12	1 1/16-12	183-201	135-148
-14	1 3/16-12	237-261	175-193
-16	1 5/16-12	271-298	200-220
-20	1 5/8-12	339-373	250-275
-24	1 7/8-12	414-455	305-336
-32	2 1/2-12	509-560	375-413

6.4.5 O-Ring Face Seal Hydraulic Fittings

The standard torque values are provided for O-ring face seal hydraulic fittings. If a procedure specifies a different torque value for the same type and size of fitting found in this topic, refer to the value specified in the procedure instead.

Torque values are shown in the Table 6.10, page 247.

1. Ensure that the sealing surfaces and the fitting threads are free of burrs, nicks, scratches, and any foreign material.



Figure 6.11: Hydraulic Fitting

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

REFERENCE

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 247.

NOTE:

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

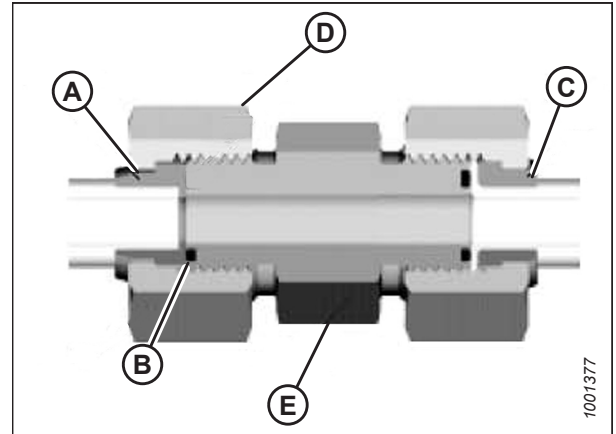


Figure 6.12: Hydraulic Fitting

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

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

SAE Dash Size	Thread Size (in.)	Tube O.D. (in.)	Torque Value 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	30–32
-8	13/16	1/2	55–61	41–45
-10	1	5/8	80–88	59–65
-12	1 3/16	3/4	115–127	85–94
-14	Note ¹⁰	7/8	–	–
-16	1 7/16	1	150–165	111–122
-20	1 11/16	1 1/4	205–226	151–167
-24	2	1 1/2	315–347	232–256
-32	2 1/2	2	510–561	376–414

6.4.6 Tapered Pipe Thread Fittings

The standard torque values are provided for tapered pipe thread fittings. If a procedure specifies a different torque value for the same type and size of fitting found in this topic, refer to the value specified in the procedure instead.

Assemble pipe fittings as follows:

1. Ensure that the fitting and the port threads are free of burrs, nicks, scratches, and any other form of contamination.
2. Apply paste-type pipe thread sealant to the external pipe threads.
3. Thread the fitting into the port until it is hand-tight.

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.

REFERENCE

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 248. Ensure that the tube end of a shaped connector (typically a 45° or 90° elbow) is aligned to receive the incoming tube or hose assembly. Always finish the alignment of the fitting in the direction of tightening. Never loosen the threaded connectors to achieve alignment.
5. Clean all residue and any excess thread conditioner with an appropriate cleaner.
6. Inspect the final condition of the fitting. Pay special attention to the possibility of cracks in the port opening.
7. Mark the final position of the fitting. If a fitting leaks, disassemble the fitting and check it for damage.

NOTE:

The failure of fittings due to over-torquing may not be evident until the fittings are disassembled and inspected.

Table 6.11 Hydraulic Fitting Pipe Thread

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

REFERENCE

6.5 Conversion Chart

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

Table 6.12 Conversion Chart

Quantity	SI Units (Metric)		Factor	US Customary Units (Standard)	
	Unit Name	Abbreviation		Unit Name	Abbreviation
Area	hectare	ha	x 2.4710 =	acre	acres
Flow	liters per minute	L/min	x 0.2642 =	US gallons per minute	gpm
Force	Newton	N	x 0.2248 =	pound force	lbf
Length	millimeter	mm	x 0.0394 =	inch	in.
Length	meter	m	x 3.2808 =	foot	ft.
Power	kilowatt	kW	x 1.341 =	horsepower	hp
Pressure	kilopascal	kPa	x 0.145 =	pounds per square inch	psi
Pressure	megapascal	MPa	x 145.038 =	pounds per square inch	psi
Pressure	bar (Non-SI)	bar	x 14.5038 =	pounds per square inch	psi
Torque	Newton meter	Nm	x 0.7376 =	pound feet or foot pounds	lbf·ft
Torque	Newton meter	Nm	x 8.8507 =	pound inches or inch pounds	lbf·in
Temperature	degrees Celsius	°C	(°C x 1.8) + 32 =	degrees Fahrenheit	°F
Velocity	meters per minute	m/min	x 3.2808 =	feet per minute	ft/min
Velocity	meters per second	m/s	x 3.2808 =	feet per second	ft/s
Velocity	kilometers per hour	km/h	x 0.6214 =	miles per hour	mph
Volume	liter	L	x 0.2642 =	US gallon	US gal
Volume	milliliter	mL	x 0.0338 =	ounce	oz.
Volume	cubic centimeter	cm ³ or cc	x 0.061 =	cubic inch	in. ³
Weight	kilogram	kg	x 2.2046 =	pound	lb.

6.6 Definitions

The following terms, abbreviations, and acronyms are used in this instruction manual.

Table 6.13 Definitions

Term	Definition
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
D1X Series Header	MacDon D115X, D120X, and D125X rigid draper headers for M1 and M2 Series Windrowers
D1XL Series Header	MacDon D130XL, D135XL, D140XL, and D145XL rigid draper headers for M1 and M2 Series Windrowers
D2 SP Series Draper Header	MacDon D215, D220, D225, D230, D235, and D241 Draper Headers for Windrowers
DEF	Diesel exhaust fluid; also known as AdBlue in Europe, and AUS 32 in Australia
DEF supply module	A pump that supplies diesel exhaust fluid through the exhaust aftertreatment system
DOC	Diesel oxidation catalyst
EEC	Eco engine control
Engine-forward	Windrower operation with Operator and engine facing in direction of travel
FFFT	Flats from finger tight
Finger tight	A reference position in which the given sealing surfaces or components are making contact with each other. The fitting has been tightened by hand to a point where the fitting is no longer loose and cannot be tightened further by hand
GSL	Ground speed lever
HarvestTouch™ Display	The touch screen display in an M2 Series Windrower
Header	A machine that cuts and lays crop into a windrow when attached to a windrower
Hex key	A tool of hexagonal cross-section used to drive bolts and screws that have a hexagonal socket in the head (internal-wrenching hexagon drive); also known as an Allen key
JIC	Joint Industrial Council: A standards body that developed standard sizing and shape for the original 37° flared fitting
Knife	A cutting device found on a header's cutterbar which uses a reciprocating cutter (also called a sickle) to cut crop so that it can be fed into the header
n/a	Not applicable
NPT	National Pipe Thread: A style of fitting used for low-pressure port openings. Threads on NPT fittings are uniquely tapered for an interference fit
Nut	An internally threaded fastener designed to be paired with a bolt
ORB	O-ring boss: A style of fitting commonly used in port openings on manifolds, pumps, and motors
ORFS	O-ring face seal: A style of fitting commonly used for connecting hoses and tubes. This style of fitting is also commonly called ORS, which stands for O-Ring Seal
PARK	The slot opposite the NEUTRAL position on operator's console of M1 and M2 Series Windrowers
rpm	Revolutions per minute
SAE	Society of Automotive Engineers
SCR	Selective catalytic reduction

REFERENCE

Table 6.13 Definitions (continued)

Term	Definition
Screw	A headed and externally threaded fastener that threads into preformed threads or forms its own thread when it is inserted into a mating part.
Tension	An axial load placed on a bolt or screw, usually measured in Newtons (N) or pounds (lb.). This term can also be used to describe the force a belt exerts on a pulley or sprocket
TFFT	Turns from finger tight
Timed (knife drive)	Synchronized motion applied at cutterbar to two separately driven knives from a single hydraulic motor
Torque	The product of a force * the length of a lever arm, usually measured in Newton-meters (Nm), foot-pounds (lb·ft), or inch-pounds (lb·in)
Torque angle	A tightening procedure in which a fitting is assembled to a specified tightness (usually finger tight) and then the nut is turned farther by a specified number of degrees until it achieves its final position
Torque-tension	The relationship between the assembly torque applied to a piece of hardware and the axial load it induces in a bolt or screw
ULSD	Ultra-low sulphur diesel
Untimed (knife drive)	Unsynchronized motion applied at the cutterbar to two separately driven knives from a single hydraulic motor or from two hydraulic motors
Washer	A thin cylinder with a hole or a slot located in the center, used as a spacer, a load distribution element, or a locking mechanism
Windrower	The power unit for a header

Predelivery Checklist

Perform these checks and adjustments prior to delivery to your Customer. Complete this checklist and provide it to the Dealer or the Operator.

CAUTION

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

Windrower Serial Number:

Engine Serial Number:

M2170NT Windrower Predelivery Checklist

✓	Item	Reference
	Check for shipping damage or missing parts. Ensure that all shipping material has been removed.	—
	Check for loose hardware. Tighten any loose hardware to the specified torque value.	6.4 Torque Specifications, page 241
	Check the pressure level of the drive and caster tires. Ensure that the pressures matches the specified values.	4.1.14 Checking Tire Pressure, page 146
	Check the lubricant level in the wheel drive hubs.	4.1.12 Checking and Adding Wheel Drive Lubricant, page 145 or 4.1.13 Checking Wheel Drive Lubricant – 12 Bolt (Optional), page 145
	Check the level of the engine coolant.	4.1.7 Checking And Adding Engine Coolant, page 128
	Check the engine air intake.	4.1.3 Checking Engine Air Intake, page 125
	Check the level of engine oil. Ensure that there are no engine oil leaks.	4.1.4 Checking and Adding Engine Oil, page 125
	Check the level of hydraulic oil. Ensure that there are no hydraulic fluid leaks.	4.1.5 Checking and Adding Hydraulic Oil, page 127
	Check the fuel separator for water and foreign material. Drain and clean the fuel separator as needed.	4.1.6 Checking Fuel Separator, page 128
	Check level of lubricant in the gearbox.	4.1.8 Checking Engine Gearbox Lubricant Level and Adding Lubricant, page 129 or
	Ensure that the air conditioning compressor belt is properly tensioned.	4.1.9 Checking Air Conditioning Compressor Belts, page 130
	Ensure that the operator presence system is working properly.	4.2.1 Checking Operating Safety System, page 147
	Ensure that the horn is working properly.	4.2.12 Checking Horn, page 168
	Start the engine. Allow the engine to reach operating temperature. Perform the Operational Checks listed below.	4.1.11 Starting Engine, page 140
	Ensure that the fuel and diesel exhaust fluid (DEF) gauges on the HarvestTouch™ Display work properly.	4.2.3 Checking HarvestTouch™ Display Gauges, page 150
	Ensure that the engine speed is displayed correctly on the HarvestTouch™ Display.	4.2.8 Checking Engine Speed, page 158
	Ensure that selective catalytic reduction (SCR) conditioning inhibit is turned off.	4.2.10 Checking Selective Catalytic Regeneration Conditioning Mode, page 163
	Ensure that the air conditioning and heater are functioning properly.	4.2.14 Checking Climate Controls, page 169

REFERENCE

✓	Item	Reference
	Ensure that the interior lights are functioning properly.	<i>4.2.13 Checking Interior Lights, page 169</i>
	Ensure that the exterior lights are functioning properly.	<i>4.2.11 Checking Exterior Lights, page 165</i>
	Ensure that the hazard and the signal lights are functioning properly.	<i>4.2.11 Checking Exterior Lights, page 165</i>
	Ensure that the beacons are functioning properly (if these are installed).	<i>4.2.11 Checking Exterior Lights, page 165</i>
	Complete the header's Predelivery Checklist (if applicable).	—
	Ensure that the manuals are in the windrower's manual case.	<i>4.3 Checking Manuals, page 180</i>
	Remove the plastic coverings and windshield decal from the cab.	<i>4.4 Performing Final Steps, page 181</i>

Date Checked:

Checked by:

Lubricants, Fluids, and System Capacities

Use only the fluids and lubricants recommended by MacDon in your windrower.

Lubricant/Fluid	Location	Description	Capacity
Diesel exhaust fluid (DEF)	Diesel exhaust fluid tank	Must meet ISO 22241 requirements.	49 liters (13 U.S. gallons)
Grease	As needed unless otherwise specified	SAE multi-purpose high temperature extreme pressure (EP2) performance with 1% max. molybdenum disulphide (NLGI Grade 2) lithium base	As needed
Diesel fuel	Fuel tank	Ultra low sulphur diesel (ULSD) Grade No. 2, or ULSD Grade No. 1 and 2 mix ¹¹ ; refer to 6.3 Fuel Specifications, page 240 for more information	518 liters (137 U.S. gallons)
Hydraulic oil	Hydraulic reservoir	Single grade transmission/hydraulic fluid (THF) Viscosity at 60.1 cSt @ 40°C Viscosity at 9.5 cSt @ 100°C	60 liters (15.8 U.S. gallons) ¹²
Gearbox lubricant	Gearbox	SAE 75W-140 or 80W-140, API service class GL-5 fully synthetic gear lubricant (SAE J2360 preferred)	2.1 liters (2.2 U.S. quarts)
Gearbox lubricant	Standard wheel drive	SAE 75W-140 or 80W-140, API service class GL-5 fully synthetic gear lubricant (SAE J2360 preferred)	1.4 liters (1.5 U.S. quarts)
Engine coolant	Engine cooling system	ASTM D-6210 and CES-14603, Peak Final Charge Global™ or Fleetguard ES Compleat™ OAT. Refer to 6.2 Coolant Specifications, page 239 for more information	30 liters (7.92 U.S. gallons)
Engine oil	Engine oil pan	SAE 15W-40 compliant with SAE specs for API Class SJ and CJ-4 engine oil	11 liters (11.6 U.S. quarts)
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)

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

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

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