

M155

Self-Propelled Windrower

Unloading and Assembly Instructions (Container Shipments)

262320 Revision A

Original Instruction

M155 Self-Propelled Windrower, featuring Dual Direction® and Ultra Glide® suspension.



Published in August 2023

© 2023 MacDon Industries, Ltd.

The information in this publication is based on the information available and in effect at the time of printing. MacDon Industries, Ltd. makes no representation or warranty of any kind, whether expressed or implied, with respect to the information in this publication. MacDon Industries, Ltd. reserves the right to make changes at any time without notice.

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="text-align: center;">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="text-align: center;">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>Prohlášíme, 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="text-align: center;">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="text-align: center;">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="text-align: center;">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="text-align: center;">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>Seerianumberid: [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="text-align: center;">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="text-align: center;">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

<p style="text-align: center;">IT</p> <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): 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 style="text-align: center;">HU</p> <p>Mi, [1] Ezennel kijelentjűk, 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: 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 style="text-align: center;">LT</p> <p>Mes, [1] Pareiškiami, 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): EN ISO 4254-1:2013 EN ISO 4254-7:2009</p> <p>Deklaracijos vieta ir data: [5] Asmens tapatybės duomenys ir parašas asmens, įgalioto sudaryti šią deklaraciją: [6] Vardas ir pavardė asmens, kuris įgaliotas sudaryti šį techninį failą: Benedikt von Riedesel Generalinis direktorius, MacDon Europe GmbH Hagenauer Straße 59 65203 Wiesbaden (Vokietija) bvonriedesel@macdon.com</p>	<p style="text-align: center;">LV</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: 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 style="text-align: center;">NL</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): 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 style="text-align: center;">PO</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): 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 style="text-align: center;">PT</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): 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 style="text-align: center;">RO</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 armonizate conform articolului 7(2): 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 style="text-align: center;">SR</p> <p>Mi, [1] Izjavljujemo 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 članu 7(2): 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 style="text-align: center;">SV</p> <p>Mi, [1] Intygat 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): 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 style="text-align: center;">SL</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): 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 style="text-align: center;">SK</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>Použitie harmonizované normy, ktoré sa uvádzajú v článku č. 7(2): 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 Generálny riaditeľ MacDon Europe GmbH Hagenauer Straße 59 65203 Wiesbaden (Nemecko) bvonriedesel@macdon.com</p>



UK Declaration of Conformity

[1] **MacDon** [4] Not Applicable

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

[5] May 4, 2023

[2] Windrower Lift Sling

[6] _____

[3] Part 306489

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]

Introduction

This instruction manual describes the unloading, setup, and predelivery requirements for the MacDon M155 Self-Propelled Windrowers shipped in containers.

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

Retain this instruction for future reference.

Conventions

The following conventions are used in this document:

- The windrower is Dual Direction® and can be driven in cab-forward or engine-forward mode.
- Right and left designations are determined by the operator's position facing the direction of travel. This manual uses the terms right cab-forward, left cab-forward, right engine-forward, and left engine-forward when referencing specific locations on the machine.
- Unless otherwise noted, use the standard torque values provided in Chapter *8.1 Torque Specifications, page 273* of this document.

NOTE:

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

This instruction is available in English and Russian and can be downloaded from our Dealer-only site.

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

Summary of Changes

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

Section	Summary of Change	Internal Use Only
<i>Declaration of Conformity – Windrower Lift Sling (B9063), page i</i>	Updated the Declaration of Conformity.	Technical Publications
<i>2.3 Removing Wheel and Step Assembly, page 18</i>	The following illustrations and associated steps were revised to clarify which parts are retained or discarded: <ul style="list-style-type: none"> • 1042463 replaces 1005932 to clarify which parts are retained. • 1042462 replaces 1005933 to clarify which parts are discarded. • 1042464 replaces 1005937 to add callouts. • 1042465 replaces 1005943 to clarify which parts are retrieved. 	Technical Publications
<i>2.5 Removing Platforms, page 24</i>	Added step about laying cardboard onto the ground. Moved the associated NOTE to this location as well.	Technical Publications
<i>3.3 Installing Drive Wheels, page 41</i>	Added step to remove and discard the shipping plate under each drive leg. Accordingly, 1042494 replaces 1005590 to add callouts for the bottom shipping plate.	Technical Publications
<i>3.15.1 Lubrication Procedure, page 73</i>	Removed the DANGER only because the engine is considered to be off at this point in the unloading and assembly process.	Technical Publications
<i>4.2.2 Adding Tire Ballast, page 83</i>	Changed the tire ballast information as follows: <ul style="list-style-type: none"> • The information is now consistent with the operator’s manual, specifically: <ul style="list-style-type: none"> – Removed the table previously titled “Maximum Fluid per Tire”. – The recommended ballast for D/D1 SP Series Headers, 9.1 m (30 ft.) and 10.7 m was corrected to match the capacities of the recommended tire sizes. • Added D2 SP Series Draper Header specifications. 	Technical Publications
<i>3.16 Installing AM/FM Radio, page 75</i>	Removed the step for shutting the engine off only because the engine is considered to be off at this point in the unloading and assembly process.	Technical Publications
<i>3.17 Removing Windrower from Assembly Stands, page 80</i>	Moved topic to before the pre-delivery checks begin.	Technical Publications
<i>4.8 Checking Engine Coolant, page 90</i>	Revised the procedure so that the temperature rating of the coolant is checked before coolant is added to the recovery tank.	Technical Publications
<i>4.11 Priming Hydraulic System, page 95</i>	Illustration 1042495 replaced 1006065 to show the correct engine.	Technical Publications

Section	Summary of Change	Internal Use Only
<i>6 Attaching Headers, page 123</i>	Reordered attaching topics alphabetically.	Technical Publications
<i>6.1.1 Attaching A Series Auger Header – Hydraulic Center-Link with Self-Alignment, page 123</i>	Revised DANGER to mention safety props.	Technical Publications
<i>6.1.2 Attaching A Series Auger Header – Hydraulic Center-Link without Self-Alignment, page 129</i>	Revised DANGER to mention safety props.	Technical Publications
<i>6.1.3 Attaching A Series Auger Header – Mechanical Center-Link, page 135</i>	<ul style="list-style-type: none"> • Revised DANGER to mention safety props. • Added two steps (lower the header, and shut the engine off) near the end of the procedure. 	Technical Publications
<i>6.2.1 Attaching Draper Header Supports, page 141</i>	<ul style="list-style-type: none"> • Added DANGER. • Added "Shut engine off..." step. • Added illustration 1042433 and associated IMPORTANT. • Moved the step (removing float) associated with illustration 1029714 to the attaching header procedures. 	Product Support Technical Publications
<i>6.2.2 Attaching D or D1 SP Series Draper Header – Hydraulic Center-Link with Self-Alignment, page 142</i>	<ul style="list-style-type: none"> • Revised DANGER to mention safety props. • Replaced the NOTE (concerning header supports) with illustration 1042469 and the associated step. • Added illustration 1036885 and associated step (removing forming shield bracket). • Added illustration 1029714 and associated step. 	Technical Publications
<i>6.2.3 Attaching D or D1 SP Series Draper Header – Hydraulic Center-Link without Self-Alignment, page 149</i>	<ul style="list-style-type: none"> • Revised DANGER to mention safety props. • Replaced the NOTE (concerning header supports) with illustration 1042469 and the associated step. • Added illustration 1036885 and associated step (removing forming shield bracket). • Added illustration 1029714 and associated step. 	Technical Publications
<i>6.2.4 Attaching D or D1 SP Series Draper Header – Mechanical Center-Link, page 155</i>	<ul style="list-style-type: none"> • Revised DANGER to mention safety props. • Replaced the NOTE (concerning header supports) with illustration 1042469 and the associated step. • Added illustration 1036885 and associated step (removing forming shield bracket). • Added illustration 1029714 and associated step. 	Technical Publications

Section	Summary of Change	Internal Use Only
<i>6.3 Attaching D2 SP Series Draper Header, page 161</i>	Added topic.	Technical Publications
<i>6.3.1 Attaching Draper Header Supports, page 161</i>	Added topic.	Technical Publications
<i>6.3.2 Attaching D2 SP Series Draper Header – Hydraulic Center-Link with Self-Alignment, page 162</i>	Added topic.	Technical Publications
<i>6.3.3 Attaching D2 SP Series Draper Header – Hydraulic Center-Link without Self-Alignment, page 169</i>	Added topic.	Technical Publications
<i>6.3.4 Attaching D2 SP Series Draper Header – Mechanical Center-Link, page 177</i>	Added topic.	Technical Publications
<i>6.4.1 Attaching R or R1 Series Rotary Disc Header – Hydraulic Center-Link with Self-Alignment, page 185</i>	Revised DANGER to mention safety props.	Technical Publications
<i>6.4.2 Attaching R or R1 Series Rotary Disc Header – Hydraulic Center-Link without Self-Alignment, page 191</i>	Revised DANGER to mention safety props.	Technical Publications
<i>6.4.3 Attaching R or R1 Series Rotary Disc Header – Mechanical Center-Link, page 198</i>	Revised DANGER to mention safety props.	Technical Publications
<i>7 Cab Display Module, page 203</i>	Moved this chapter.	
<i>8.1.6 O-Ring Boss Hydraulic Fittings – Non-Adjustable, page 280</i>	Updated torque values in the table.	ECN 64539
<i>8.1.5 O-Ring Boss Hydraulic Fittings – Adjustable, page 278</i>	Updated torque values in the table.	ECN 64539
<i>8.1.7 O-Ring Face Seal Hydraulic Fittings, page 280</i>	Minor corrections in the table of torque values: <ul style="list-style-type: none"> • Size -6: rounded lbf-ft from 29 up to 30. • Size -24: corrected "Thread Size" from 1-2 to 2 	Technical Publications
<i>8.4 Lubricants, Fluids, and System Capacities, page 286</i>	Corrected the metric fuel tank capacity to 367 L (was 378 L).	Technical Publications

TABLE OF CONTENTS

Declaration of Conformity – Windrower Lift Sling (B9063)	i
Introduction	iv
Summary of Changes.....	v
Chapter 1: Safety	1
1.1 Safety Alert Symbols	1
1.2 Signal Words	2
1.3 General Safety	3
1.4 Hydraulic Safety	5
1.5 Tire Safety.....	6
1.6 Battery Safety	7
1.7 Welding Precautions	8
1.8 Engine Safety.....	9
1.8.1 High-Pressure Rail	9
1.8.2 Engine Electronics	10
1.9 Safety Signs	11
Chapter 2: Unloading Windrower.....	13
2.1 Unloading Container	13
2.2 Moving Windrower to Assembly Area	14
2.2.1 Moving Windrower to Assembly Area – Crane Method.....	14
2.2.2 Moving Windrower to Assembly Area – Forklift Method	16
2.3 Removing Wheel and Step Assembly.....	18
2.4 Removing Drive Wheels.....	22
2.5 Removing Platforms.....	24
2.6 Removing Hand Rails and Exhaust Stack	26
2.7 Removing Leg Assemblies	29
2.8 Removing Wheel and Platform Support.....	32
Chapter 3: Assembling Windrower.....	35
3.1 Lifting Windrower onto Assembly Stand (B9064).....	35
3.2 Installing Legs	38
3.3 Installing Drive Wheels	41
3.4 Installing Caster Wheels.....	43
3.5 Installing Hydraulics	50
3.6 Removing Battery Shipping Shield	58
3.7 Unpacking Ignition Keys.....	59
3.8 Installing Platforms	61
3.9 Installing Steps.....	65
3.10 Installing Exhaust Stack.....	66
3.11 Positioning Light and Mirror Assemblies	68

TABLE OF CONTENTS

3.12	Installing Beacons	69
3.13	Installing Slow Moving Vehicle Sign	71
3.14	Connecting Batteries	72
3.15	Lubrication	73
3.15.1	Lubrication Procedure	73
3.15.2	Lubrication Points	74
3.16	Installing AM/FM Radio	75
3.17	Removing Windrower from Assembly Stands	80
Chapter 4:	Predelivery Checks	81
4.1	Recording Serial Numbers	81
4.2	Checking Tire Pressures and Adding Tire Ballast	83
4.2.1	Checking Tire Pressure	83
4.2.2	Adding Tire Ballast	83
4.3	Checking Engine Air Intake	85
4.4	Checking Hydraulic Oil Level	86
4.5	Checking Fuel Separator	87
4.6	Checking Engine Oil Level	88
4.7	Checking Gearbox Lubricant Level	89
4.8	Checking Engine Coolant	90
4.9	Checking Air Conditioning Compressor Belt	91
4.10	Starting Engine	92
4.11	Priming Hydraulic System	95
4.12	Checking and Adding Wheel Drive Lubricant	100
4.13	Checking Traction Drive	101
Chapter 5:	Performing Operational Checks	103
5.1	Checking Safety System	103
5.2	Checking Engine Warning Lights	106
5.3	Checking Windrower Startup	107
5.4	Checking Engine Speed	108
5.5	Checking Gauges and Cab Display Module Display	109
5.6	Checking Electrical System	110
5.7	Checking Operator Presence System	111
5.8	Checking Exterior Lights	113
5.9	Checking Horn	117
5.10	Checking Interior Lights	118
5.11	Checking Air Conditioning and Heater	119
5.12	Checking Manuals	120
5.13	Performing Final Steps	121

Chapter 6: Attaching Headers	123
6.1 Attaching A Series Auger Header	123
6.1.1 Attaching A Series Auger Header – Hydraulic Center-Link with Self-Alignment	123
6.1.2 Attaching A Series Auger Header – Hydraulic Center-Link without Self-Alignment.....	129
6.1.3 Attaching A Series Auger Header – Mechanical Center-Link	135
6.2 Attaching D or D1 SP Series Draper Header	141
6.2.1 Attaching Draper Header Supports.....	141
6.2.2 Attaching D or D1 SP Series Draper Header – Hydraulic Center-Link with Self-Alignment	142
6.2.3 Attaching D or D1 SP Series Draper Header – Hydraulic Center-Link without Self-Alignment.....	149
6.2.4 Attaching D or D1 SP Series Draper Header – Mechanical Center-Link	155
6.3 Attaching D2 SP Series Draper Header.....	161
6.3.1 Attaching Draper Header Supports.....	161
6.3.2 Attaching D2 SP Series Draper Header – Hydraulic Center-Link with Self-Alignment	162
6.3.3 Attaching D2 SP Series Draper Header – Hydraulic Center-Link without Self-Alignment	169
6.3.4 Attaching D2 SP Series Draper Header – Mechanical Center-Link.....	177
6.4 Attaching R Series or R1 Series Rotary Disc Header.....	185
6.4.1 Attaching R or R1 Series Rotary Disc Header – Hydraulic Center-Link with Self-Alignment	185
6.4.2 Attaching R or R1 Series Rotary Disc Header – Hydraulic Center-Link without Self-Alignment	191
6.4.3 Attaching R or R1 Series Rotary Disc Header – Mechanical Center-Link.....	198
 Chapter 7: Cab Display Module	 203
7.1 Cab Display Module – Configuration Functions	203
7.2 Cab Display Options	205
7.2.1 Setting Cab Display Language	205
7.2.2 Changing Windrower Display Units	206
7.2.3 Adjusting Cab Display Buzzer Volume	207
7.2.4 Adjusting Cab Display Backlighting	208
7.2.5 Adjusting Cab Display Contrast	209
7.3 Configuring Windrower	211
7.3.1 Setting Header Knife Speed.....	211
7.3.2 Setting Knife Overload Speed	212
7.3.3 Setting Rotary Disc Overload Speed.....	213
7.3.4 Setting Hydraulic Overload Pressure.....	214
7.3.5 Setting Header Index Mode	215
7.3.6 Setting Return to Cut Mode	215
7.3.7 Setting Auto Raise Height	216
7.3.8 Configuring Double Windrow Attachment Controls	217
7.3.9 Activating Hydraulic Center-Link	219
7.3.10 Activating Rotary Disc Header Drive Hydraulics.....	220
7.3.11 Setting Header Cut Width	221
7.3.12 Activating Swath Compressor	222
7.3.13 Activating Hay Conditioner.....	224
7.3.14 Setting Reel Speed Display Units	225

TABLE OF CONTENTS

7.3.15 Setting Tire Size	226
7.3.16 Setting Engine Intermediate Speed Control	227
7.3.17 Clearing Sub-Acres.....	228
7.4 Activating Cab Display Lockouts	229
7.4.1 Activating Header Tilt Control Lockout.....	229
7.4.2 Activating Header Float Control Lockout	230
7.4.3 Activating Reel Fore-Aft Control Lockout	231
7.4.4 Activating Draper Speed Control Lockout	233
7.4.5 Activating Auger Speed Control Lockout.....	234
7.4.6 Activating Knife Speed Control Lockout.....	235
7.4.7 Activating Rotary Disc Speed Control Lockout	237
7.4.8 Activating Reel Speed Control Lockout.....	238
7.5 Displaying Active Cab Display Lockouts.....	240
7.6 Calibrating Header Sensors.....	242
7.6.1 Calibrating Header Height Sensor.....	242
7.6.2 Calibrating Header Tilt Sensor	244
7.6.3 Calibrating Header Float Sensors	246
7.7 Calibrating Swath Compressor Sensor	248
7.8 Troubleshooting Windrower Problems	250
7.8.1 Displaying Windrower and Engine Error Codes	250
7.8.2 Enabling or Disabling Header Sensors	251
7.8.3 Displaying Header Sensor Input Signals	253
7.8.4 Forcing Header Identification	254
7.9 Troubleshooting Header Problems.....	256
7.9.1 Testing Header Up/Down Activate Function Using Cab Display Module	256
7.9.2 Testing Reel Up/Down Activate Function Using Cab Display Module	257
7.9.3 Testing Header Tilt Activate Function Using Cab Display Module	259
7.9.4 Testing Knife Drive Circuit Using Cab Display Module	261
7.9.5 Testing Draper Drive Circuit Activate Function Using Cab Display Module	262
7.9.6 Testing Reel Drive Circuit Activate Function Using Cab Display Module.....	264
7.9.7 Testing Rotary Disc Drive Circuit Activate Function Using Cab Display Module	266
7.9.8 Testing Double Windrow Attachment Drive Activate Function Using Cab Display Module	267
7.9.9 Testing Reel Fore-Aft Activate Function Using Cab Display Module	269
7.9.10 Activating Hydraulic Purge Using Cab Display Module.....	271
Chapter 8: Reference	273
8.1 Torque Specifications	273
8.1.1 SAE Bolt Torque Specifications	273
8.1.2 Metric Bolt Specifications	275
8.1.3 Metric Bolt Specifications – Cast Aluminum	276
8.1.4 Flare-Type Hydraulic Fittings	277
8.1.5 O-Ring Boss Hydraulic Fittings – Adjustable	278
8.1.6 O-Ring Boss Hydraulic Fittings – Non-Adjustable.....	280

TABLE OF CONTENTS

8.1.7 O-Ring Face Seal Hydraulic Fittings..... 280

8.1.8 Tapered Pipe Thread Fittings..... 282

8.2 Conversion Chart..... 283

8.3 Definitions 284

8.4 Lubricants, Fluids, and System Capacities..... 286

8.5 Fuel Specifications 288

Predelivery Checklist 289

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.

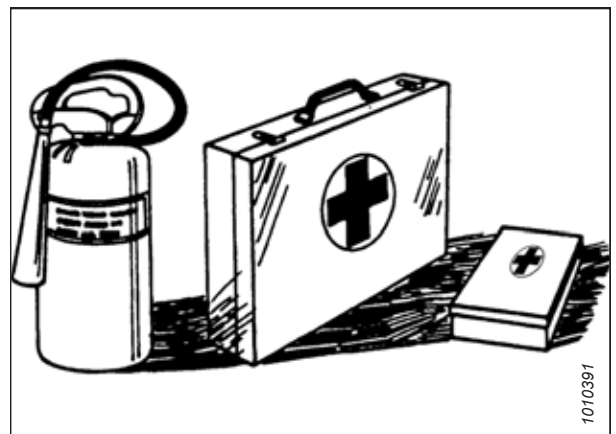


Figure 1.4: Safety Equipment

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.

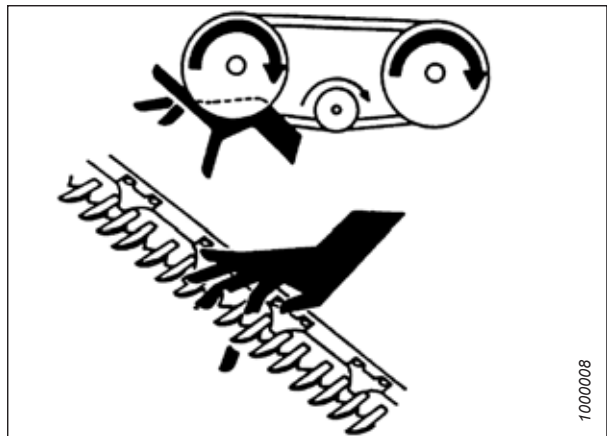


Figure 1.6: Safety around Equipment

- 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.

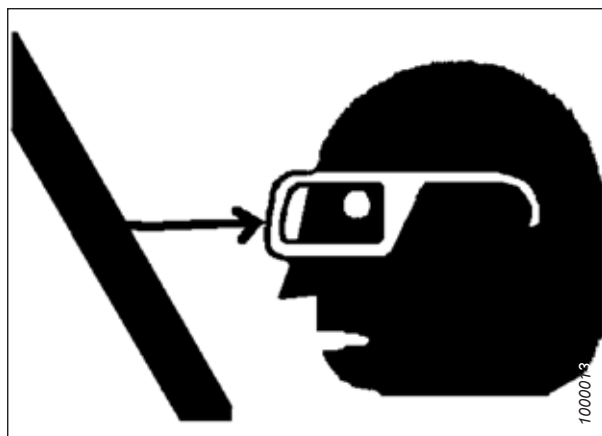


Figure 1.10: Safety around Equipment

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.

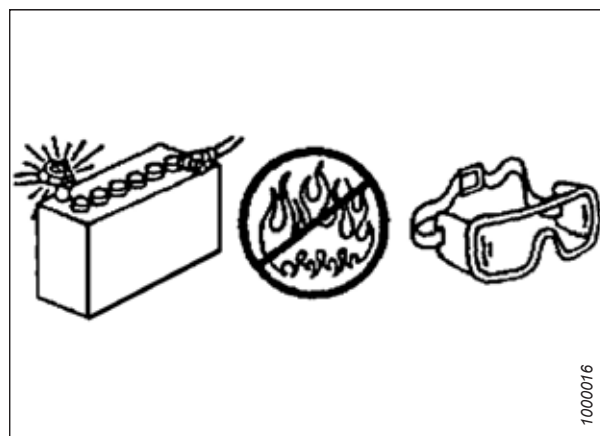


Figure 1.14: Safety around Batteries

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.

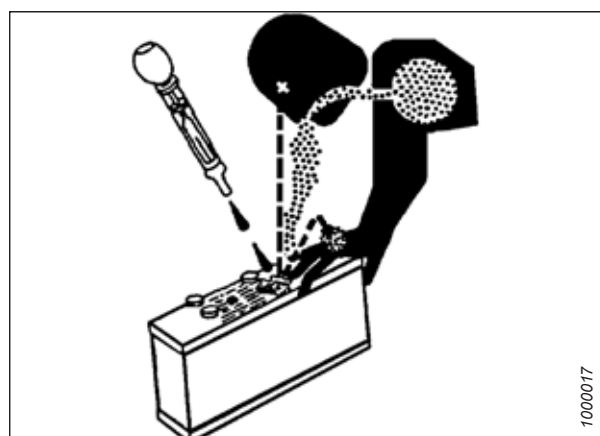


Figure 1.15: Safety around Batteries

1.7 Welding Precautions

The high current and voltage spikes associated with welding can cause damage to the electronic components on the windrower. Before attempting to weld any part of the windrower or an attached header, disconnect all of the electronic module harness connections as well as the battery cables. For instructions, refer to the windrower's technical manual.

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 engine control module (ECM) sends this voltage to the electronic unit injectors. Do NOT touch the harness connector for the electronic unit injectors while the engine is operating. Failure to follow this instruction could result in 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

While the engine monitoring package can vary for different engine models and different engine applications, the engine monitoring system and control will be similar for all engines. Together, two controls provide engine monitoring functions for specific engine applications.

1.9 Safety Signs

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

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

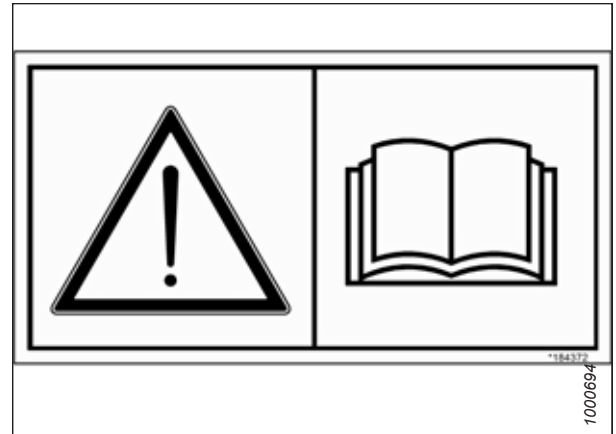


Figure 1.16: Operator's Manual Decal

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 14.*
- To move the windrower using a forklift, refer to *2.2.2 Moving Windrower to Assembly Area – Forklift Method, page 16.*

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.)

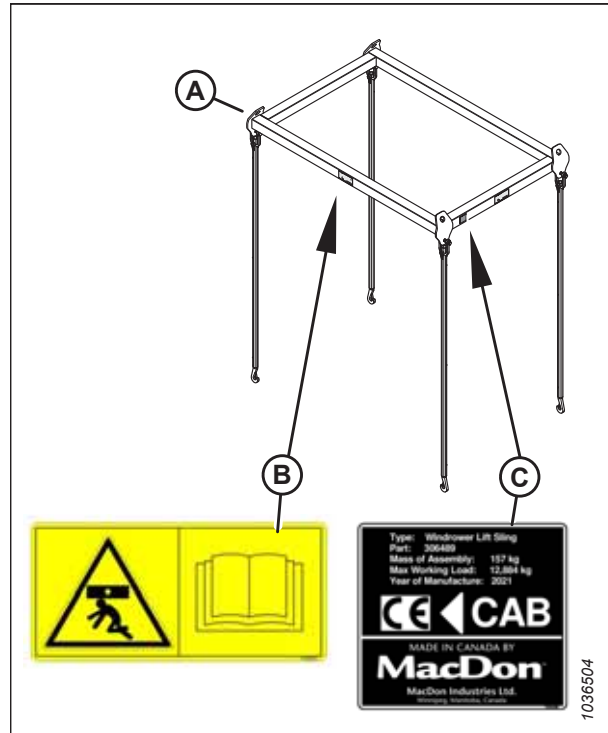


Figure 2.2: Lift Sling

- 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.).

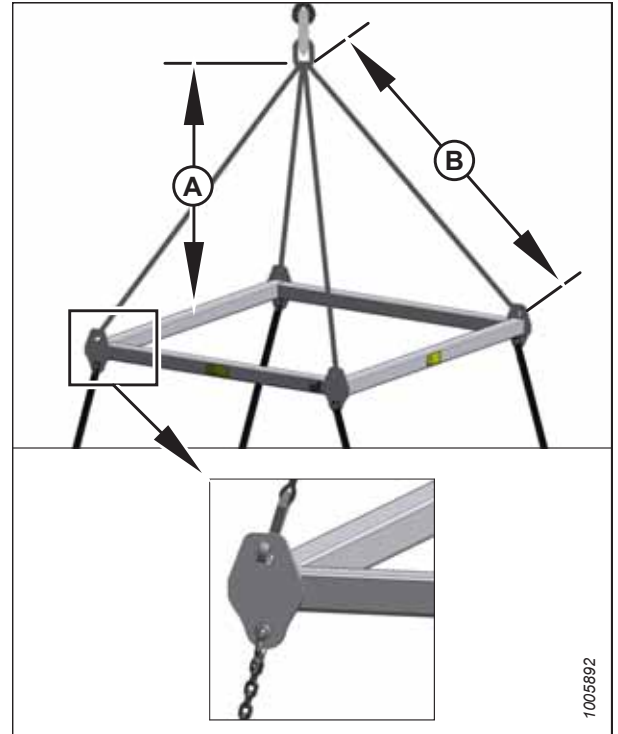


Figure 2.3: Lift Sling

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.
7. Proceed to [2.3 Removing Wheel and Step Assembly, page 18](#).

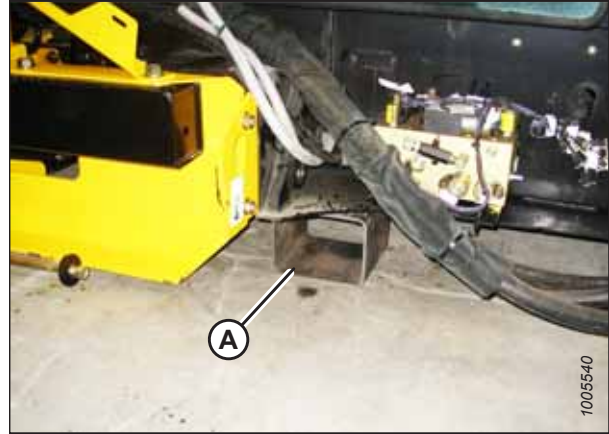


Figure 2.5: Windrower Shipping Assembly on Blocks

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.

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

IMPORTANT:

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

DANGER

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

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

UNLOADING WINDROWER

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 2.6: 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.

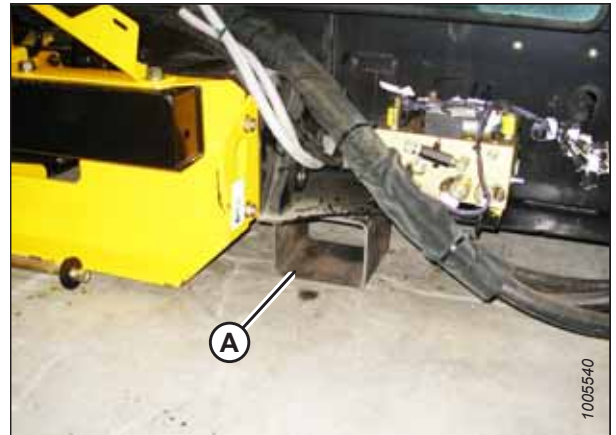


Figure 2.7: Windrower Shipping Assembly on Blocks

2.3 Removing Wheel and Step Assembly

Remove the wheel and step assembly from their shipping position.

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



Figure 2.8: Shipping Frame

3. Remove and retain the following parts from both sides of the front frame beam:
 - One 3/4 x 16.5 in. bolt (A) (for a total of two)
 - Two washers (B) (for a total of four)
 - One 3/4 in. nut (C) (for a total of two)

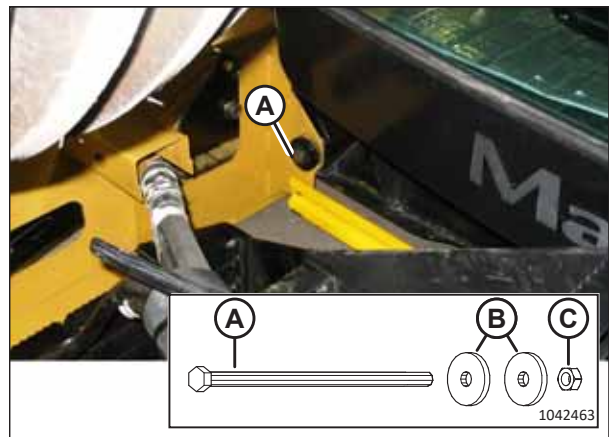


Figure 2.9: Front Frame Beam

UNLOADING WINDROWER

4. Remove and discard the following parts from the center-link:
 - Lynch pin (A)
 - Both washers (B)
 - Clevis pin (C)



Figure 2.10: Center-Link

5. Remove and discard two carriage head bolts and nuts (A) from both sides of the rear of the wheel/step assembly.



Figure 2.11: Rear of Wheel/Step Assembly

UNLOADING WINDROWER

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



Figure 2.12: Hose Bundles on Frame



Figure 2.13: Hose Bundles on Frame

UNLOADING WINDROWER

- Using a chain and a lifting device, pull wheel/step assembly (A) away from the shipping assembly.



Figure 2.14: Wheel/Step Shipping Assembly

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



Figure 2.15: Wheel/Step Assembly Frame

- Retrieve the leg bolts, washers, and nuts retained in Step 3, [page 18](#).
- Install leg bolts (A), washers (B), and nuts (C) to secure the lifting plate (D) onto the windrower frame.

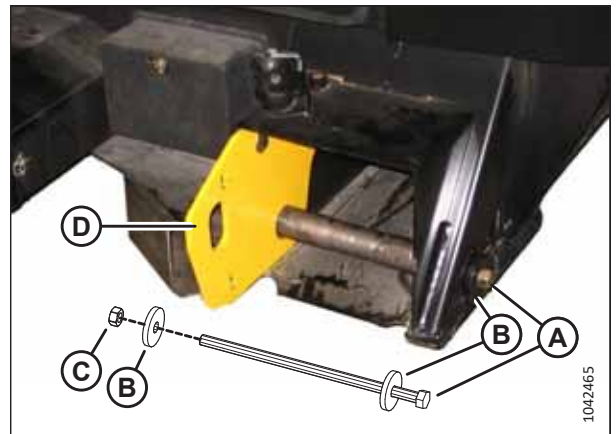


Figure 2.16: Lifting Plate

2.4 Removing Drive Wheels

Remove the drive wheels from their shipping position.

IMPORTANT:

To prevent damage to the hood/cab, remove the drive wheels as a pair from above the hood.

1. Remove and discard two bolts and nuts (A) from the front cross member over the hood.



Figure 2.17: Front Cross Member on Hood

2. Remove and discard two bolts and nuts (A) from the rear of the hood directly under the center of the drive wheel.

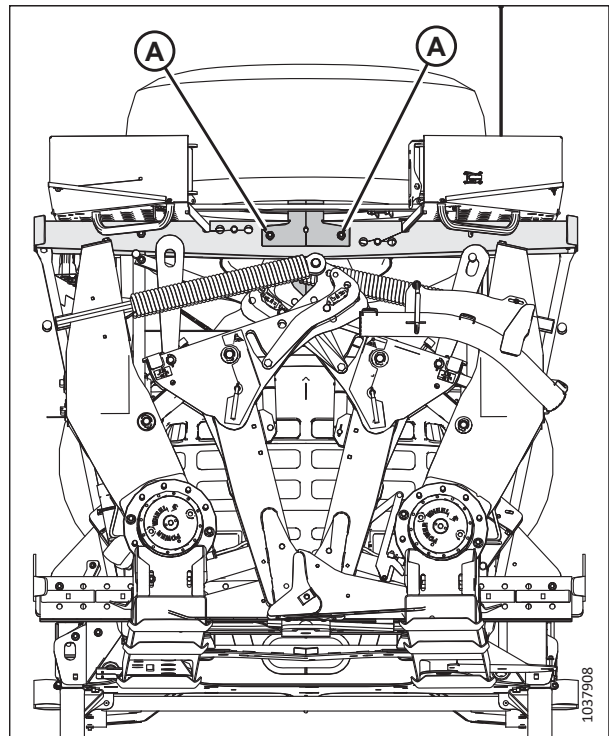


Figure 2.18: Rear of Hood

UNLOADING WINDROWER

3. Attach a lifting device to lift hooks (A) located in the center of each drive wheel.

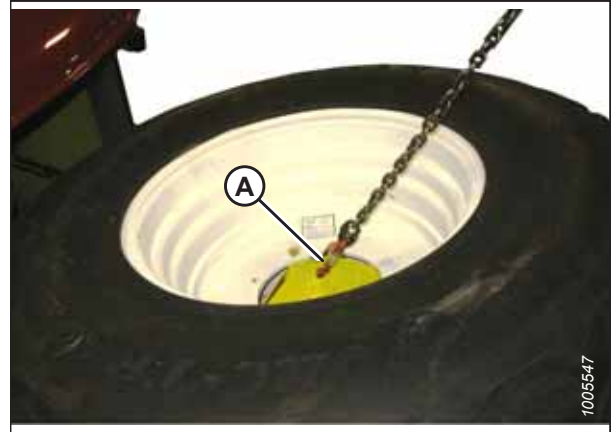


Figure 2.19: Drive Wheel

4. Carefully lift the wheels off the frame.

IMPORTANT:

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

5. Set the wheels aside for later installation.



Figure 2.20: Wheels on Frame

2.5 Removing Platforms

Remove the left and right platforms from their shipping position.

1. Lay cardboard onto the ground where the platforms will be lowered onto.

NOTE:

The cardboard will protect the paint on the platform assembly.

2. Remove support tube (A) on each side of the hood.

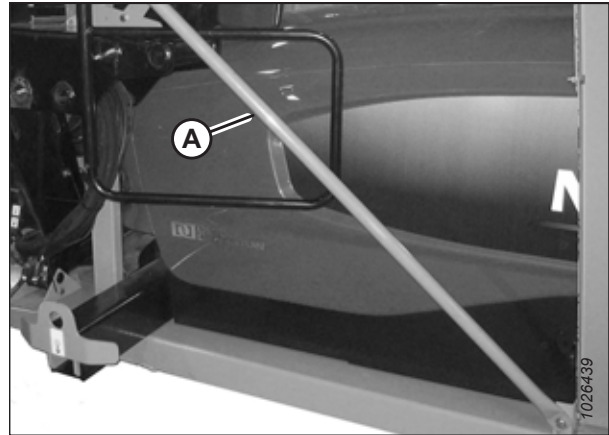


Figure 2.21: Shipping Supports

3. Attach two slings (A) and a chain (B) to the platform at the locations shown to prevent damage to the paint.
4. Attach each end of the slings and chain to a lifting device with a minimum lifting capacity of 2268 kg (5000 lb.) and a lift height of at least 4 m (13 ft.).

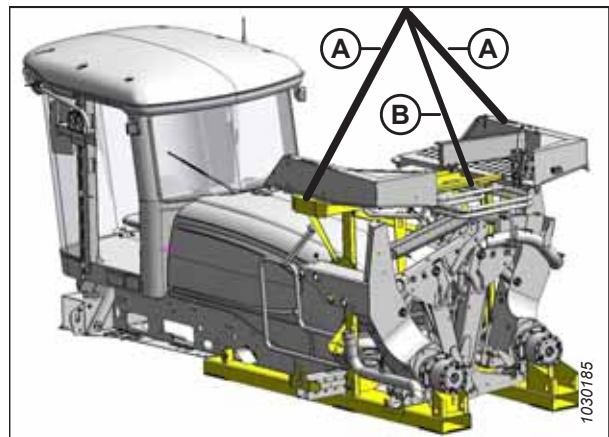


Figure 2.22: Platforms on Hood

UNLOADING WINDROWER

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

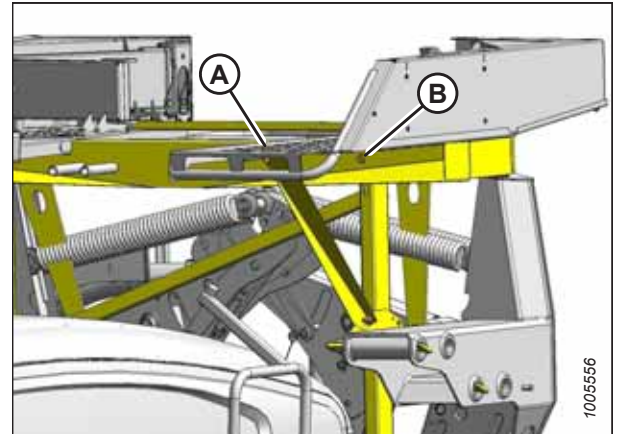


Figure 2.23: Platforms on Hood

- Back away from the windrower. Set the platform assembly on level ground that is covered with cardboard.
- Unhook one sling and chain.
- Lift one end of the platform assembly so it can be inverted and laid down with the base on the floor.

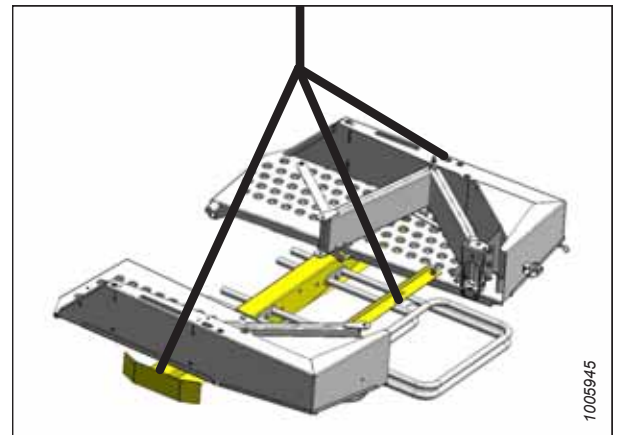


Figure 2.24: Platforms

- Unhook the remaining sling.

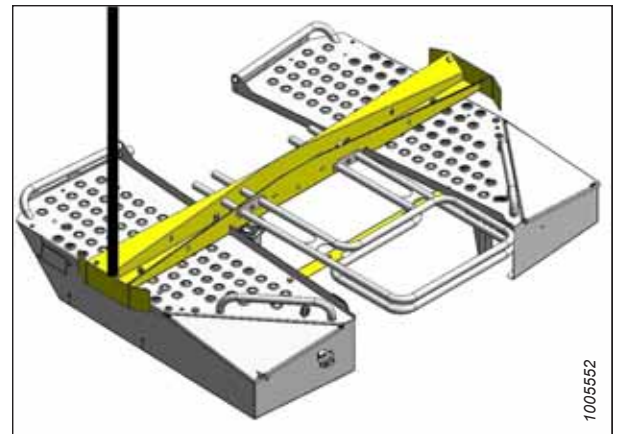


Figure 2.25: Platforms

2.6 Removing Hand Rails and Exhaust Stack

Remove the hand rails and exhaust stack from their shipping position.

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



Figure 2.26: Hand Rails and Exhaust Stack Shipping Assembly

UNLOADING WINDROWER

2. Remove the shipping wire and foam from exhaust stack (A).
3. Remove nuts (B) from clamp (C), and remove exhaust stack (A) and the clamp from the shipping frame.

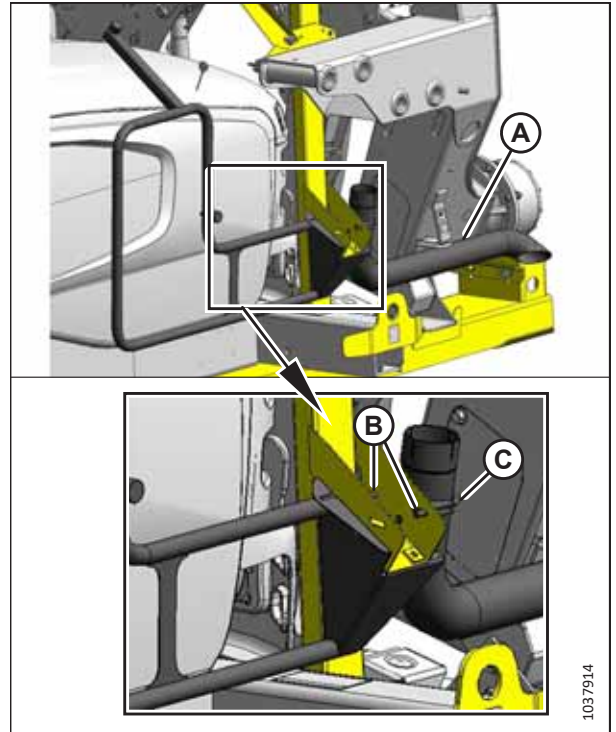


Figure 2.27: Hand Rails and Exhaust Stack Shipping Position

4. Reinstall nuts (B) onto clamp (C) and set exhaust stack (A) aside for later installation.

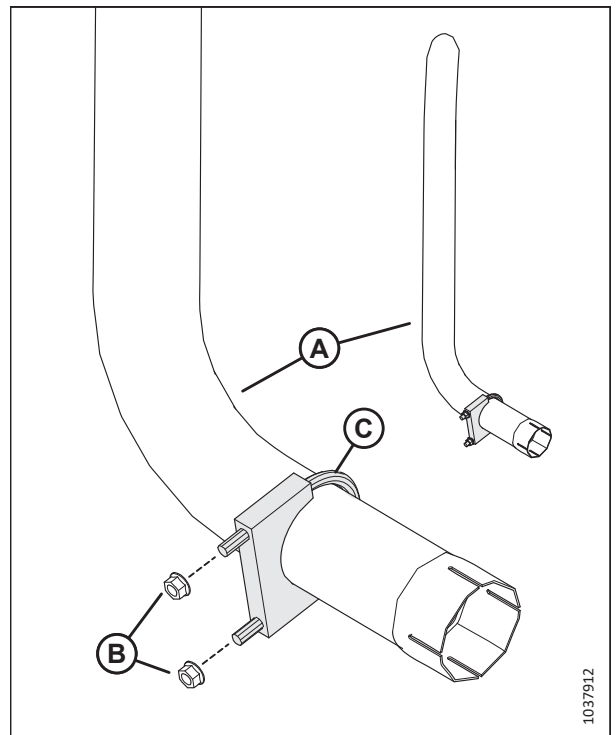


Figure 2.28: Exhaust Stack, Clamp, and Nuts Retained from Shipping

UNLOADING WINDROWER

5. Remove two bolts and nuts (A) securing hand rail (B) to the shipping frame, and remove the hand rail. Retain the two bolts but discard the nuts.
6. Repeat Step 5, [page 28](#) for the hand rail on the opposite side.

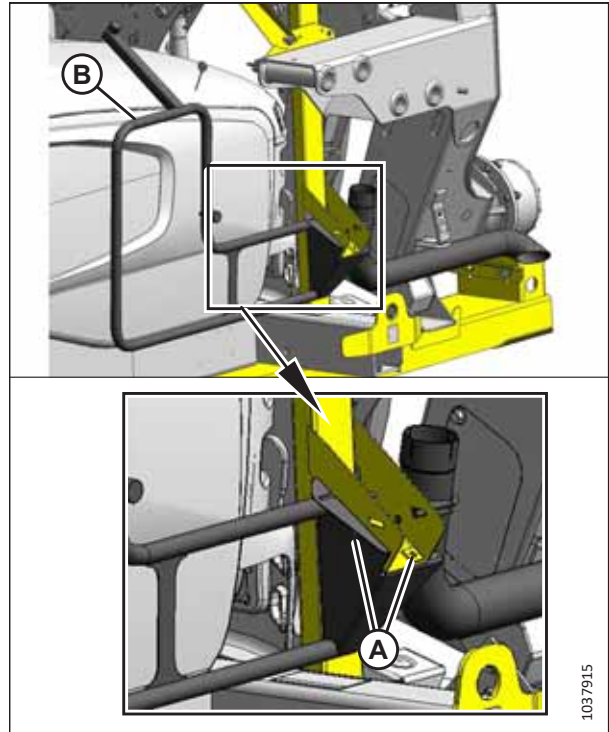


Figure 2.29: Hand Rails and Exhaust Stack Shipping Position

7. Set the following hand rail parts aside for later installation:
 - Left hand rail (A)
 - Right hand rail (B)
 - Four 1/2 x 3/4 in. bolts (C)

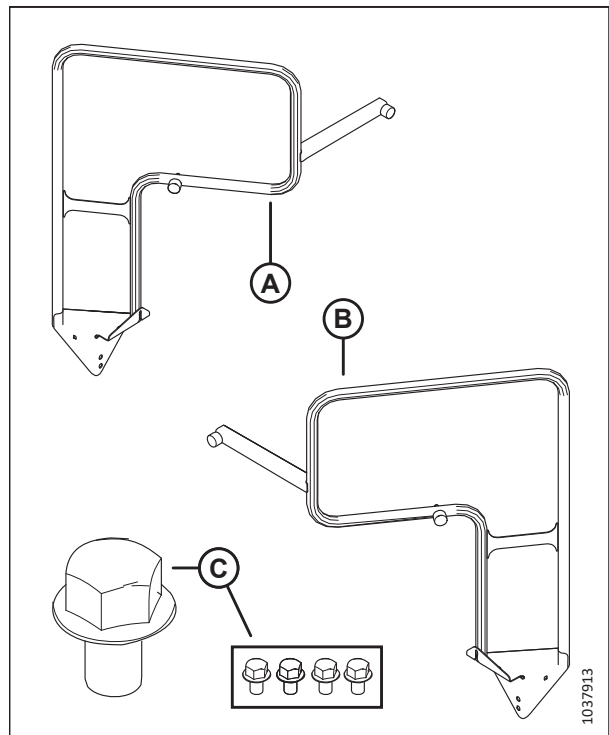


Figure 2.30: Hand Rails and Bolts Retained from Shipping

2.7 Removing Leg Assemblies

Remove the left and right leg assemblies from their shipping position.

DANGER

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

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

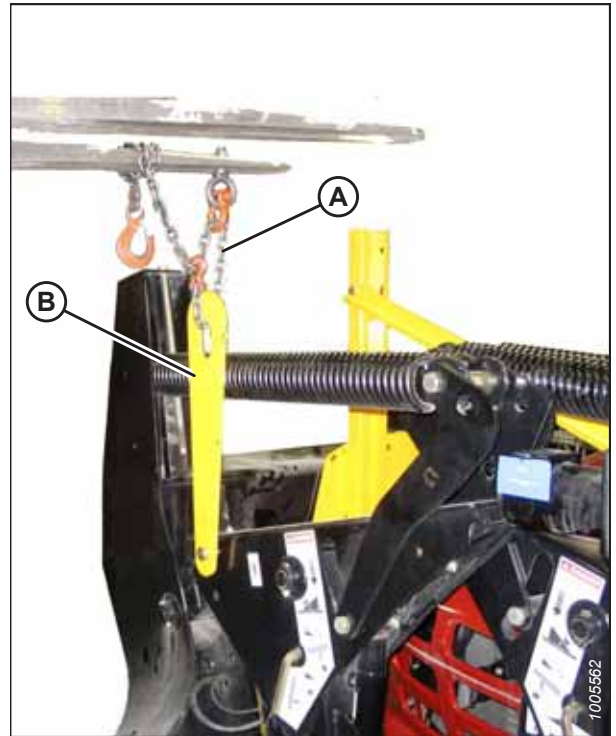


Figure 2.31: Leg Shipping Assembly

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

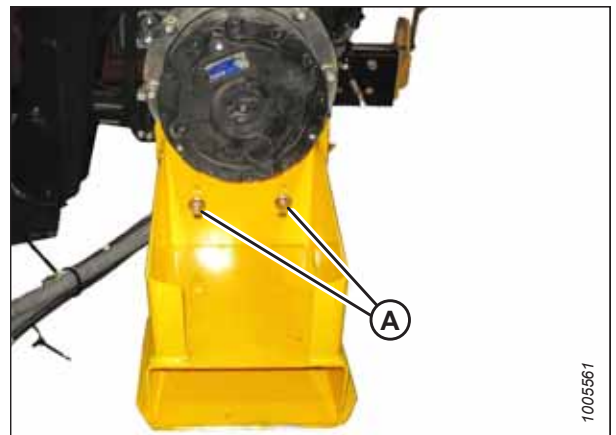


Figure 2.32: Lower Support Channel

UNLOADING WINDROWER

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

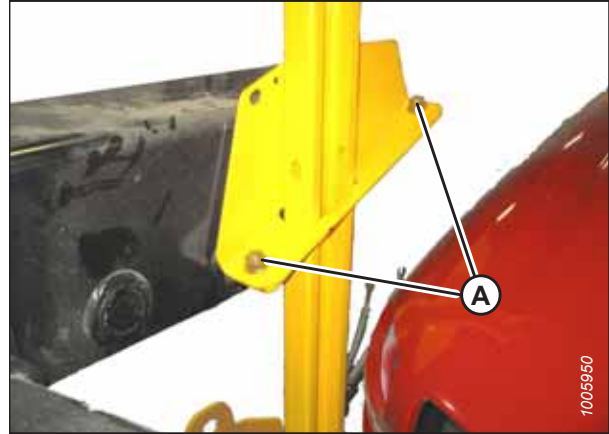


Figure 2.33: Shipping Channel on Leg

5. Remove bars (A) from the leg. Discard the bars.
6. Insert cardboard or foam between the leg assembly and the hood to avoid damage.

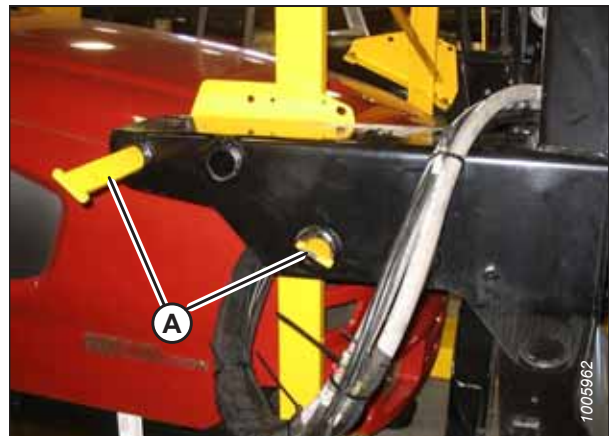


Figure 2.34: Leg Shipping Assembly

UNLOADING WINDROWER

7. Lift leg assembly (A), and set it on level ground in position (B) as shown.
8. Repeat Step 1, page 29 to Step 7, page 31 for the second leg assembly.

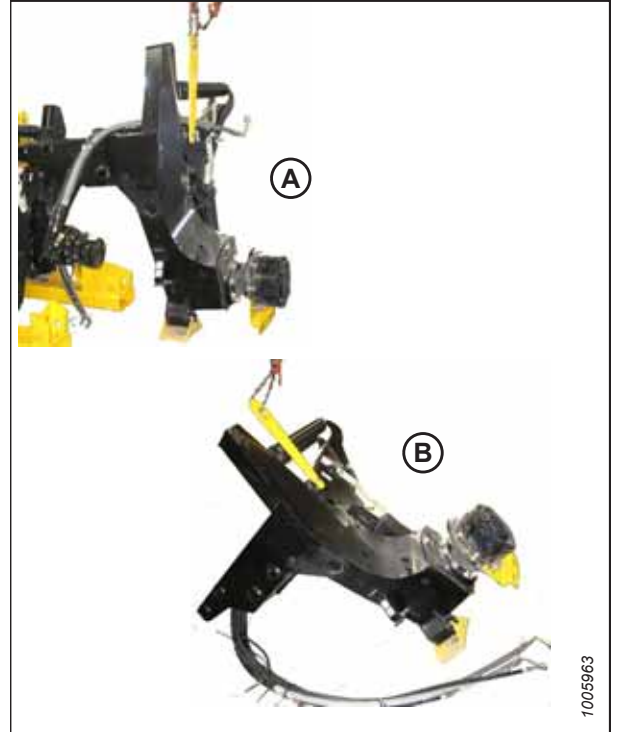


Figure 2.35: Leg Assembly Positioning

2.8 Removing Wheel and Platform Support

The wheel and platform support were installed for shipping purposes only.

1. Remove cross brace (A) and upright supports (B) and (C) from the frame. Discard the cross brace, upright supports, and the hardware that was used to install them.



Figure 2.36: Wheel and Platform Support

2. Remove cross member (A) from above the hood. Discard the cross member and the hardware that was used to install it.

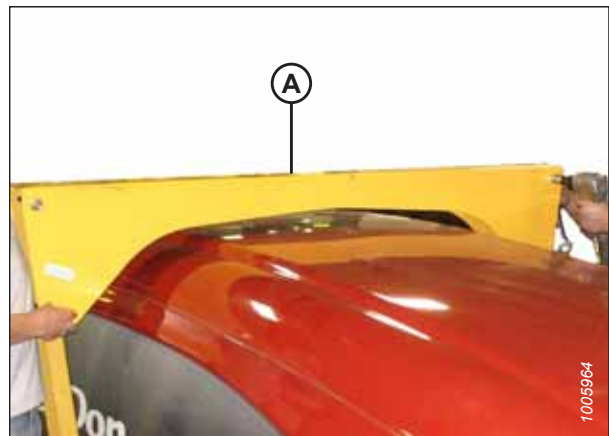


Figure 2.37: Wheel and Platform Support

UNLOADING WINDROWER

3. Remove and uprights (A) on both sides of the hood. Discard the uprights and the hardware that was used to install them.



Figure 2.38: Wheel and Platform Support

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 Lift Stand (B9064).



DANGER

Do NOT allow bystanders in the unloading area.

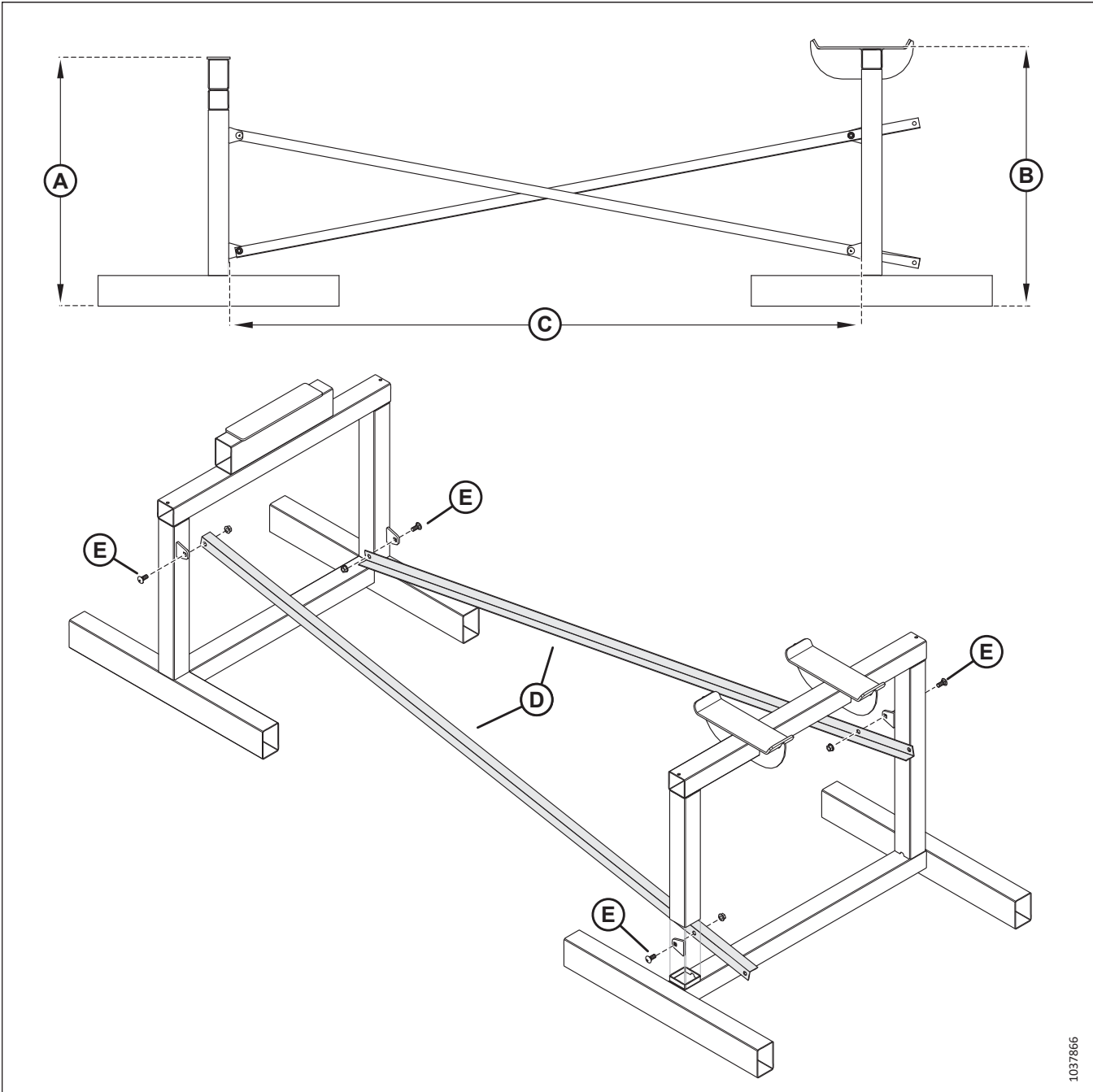


DANGER

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.

1. Before lifting the windrower onto an assembly stand, make sure that the lifting device meets or exceeds the specified requirements. For lifting requirements, refer to the following topics:
 - If lifting with a forklift, refer to [2.2.2 Moving Windrower to Assembly Area – Forklift Method, page 16](#)
 - If lifting with a crane, refer to [2.2.1 Moving Windrower to Assembly Area – Crane Method, page 14](#)

ASSEMBLING WINDROWER



1037866

Figure 3.1: Assembly Stand Setup

2. Set the assembly stands on level ground to maintain the difference in height between the assembly stands:
 - Rear assembly stand height (A) is 1240 mm (48 13/16 in.).
 - Front assembly stand height (B) is 1291 mm (50 13/16 in.)
3. Space the stands out so that dimension (C) is 3145 mm (123 13/16 in.).
4. Attach diagonal angles (D) to the stands using 5/8 x 1.5 in. bolts and nuts at locations (E).
5. Torque the nuts to 153 Nm (113 lbf·ft).

ASSEMBLING WINDROWER

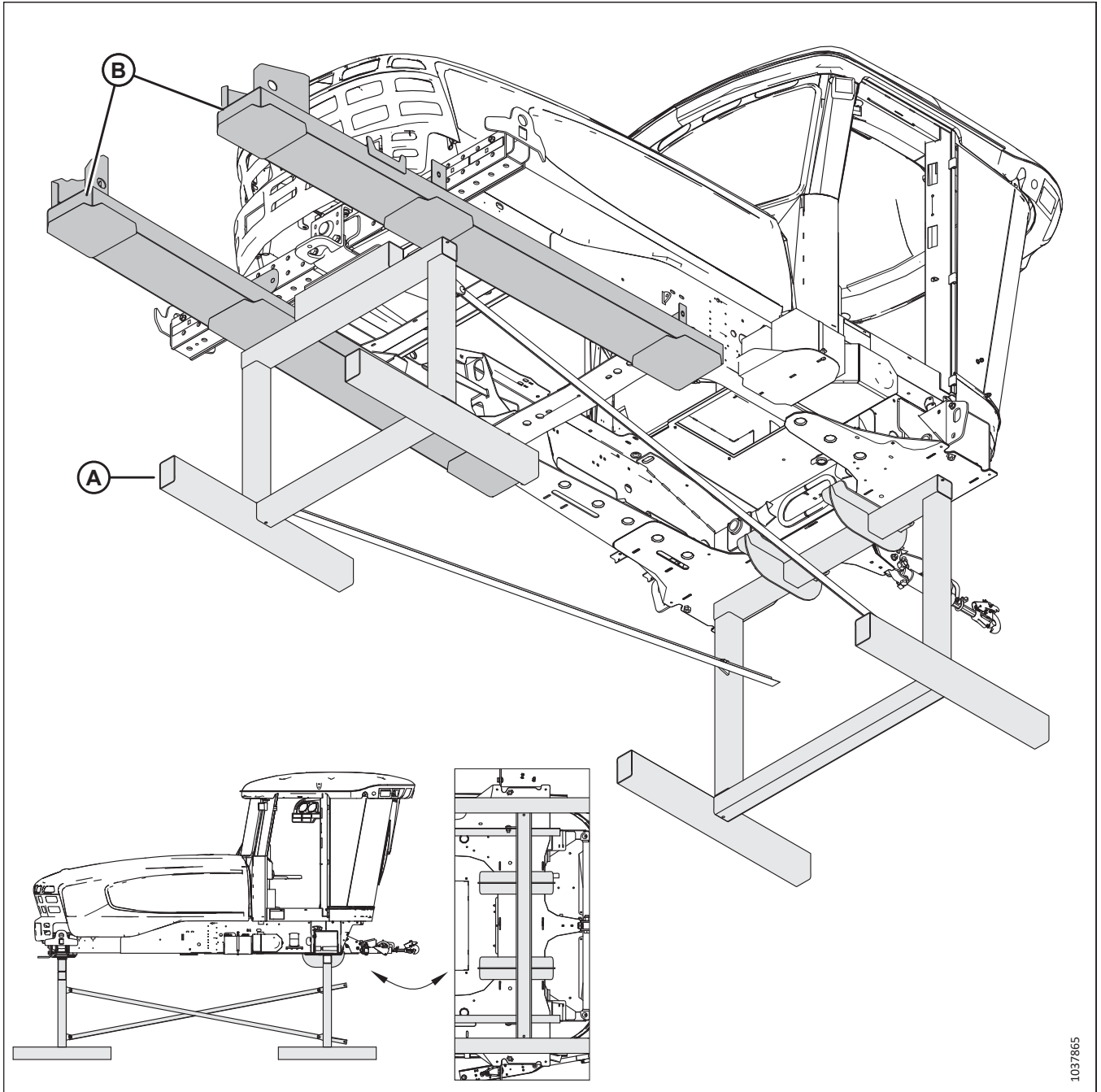


Figure 3.2: Windrower on Assembly Stands

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

3.2 Installing Legs

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

1. Remove and retain the following:

- Front leg bolt (A)
- Two washers (B)
- Pin (C)
- Nut (D)

Repeat this step for the second front leg pin (E).

2. Remove carriage bolt (F) and remove lifting plate (G).
Discard the carriage bolt and plate.

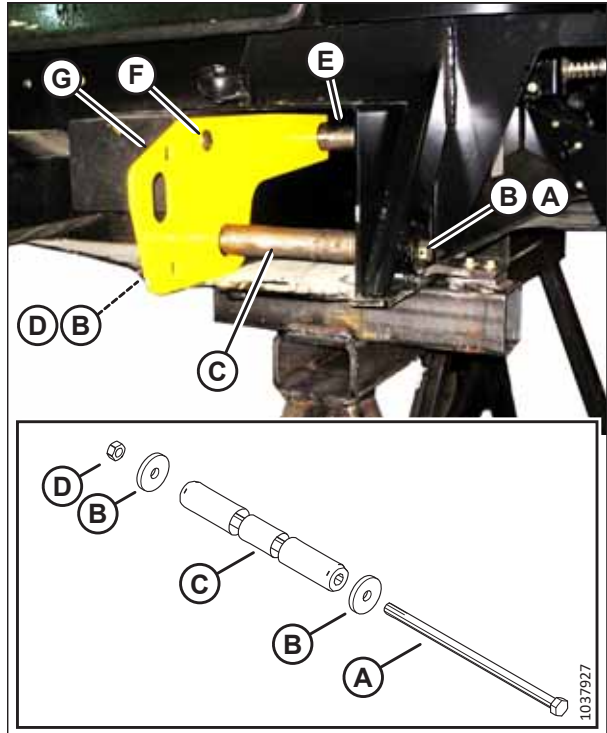


Figure 3.3: Lifting Plate

3. Attach the front leg to a lifting device using lifting bar (A).

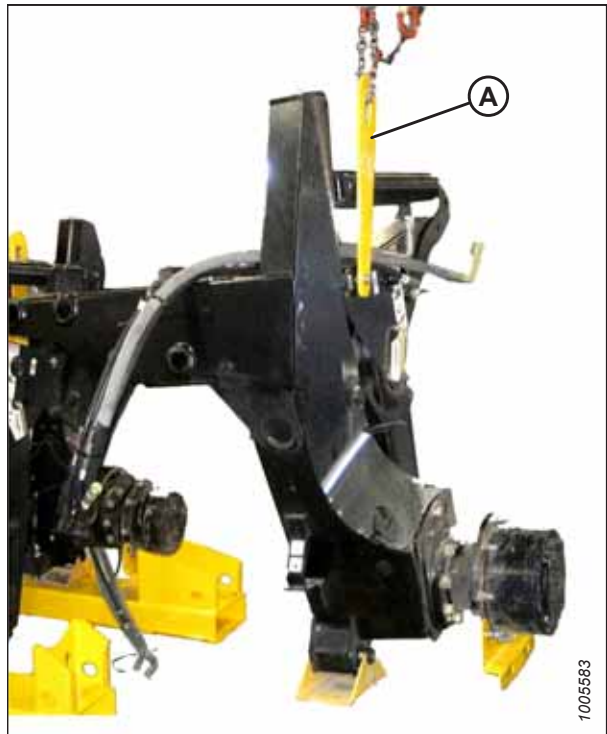


Figure 3.4: Leg Position

ASSEMBLING WINDROWER

4. Position leg (A) close to frame channel (B).

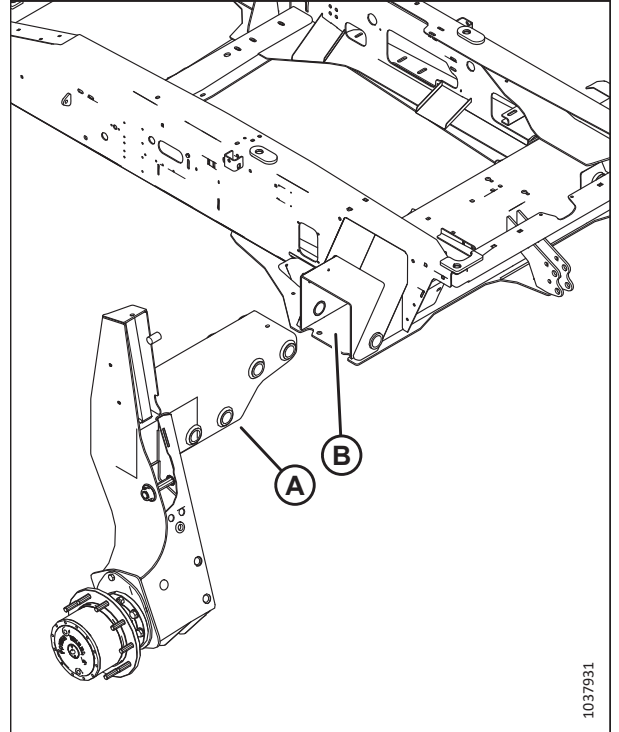


Figure 3.5: Leg Position

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

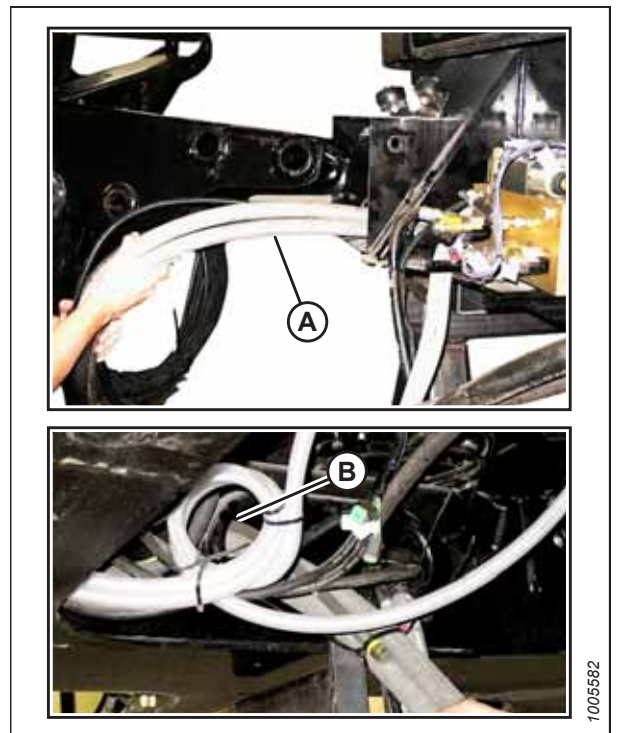


Figure 3.6: Hydraulic Hoses

ASSEMBLING WINDROWER

6. Insert the leg into the frame and line up the holes in the frame and the leg at the first position (widest tread with one exposed hole [A]).
7. Insert pins (B) and secure the with the following hardware (retained from Step 1, page 38):
 - Washers (C)
 - 3/4 x 16 1/2 in. long bolts (D)
 - Nuts (E)
8. Torque nuts (E) to 142 Nm (105 lbf-ft).
9. Repeat Step 1, page 38 to Step 8, page 40 for the opposite leg.

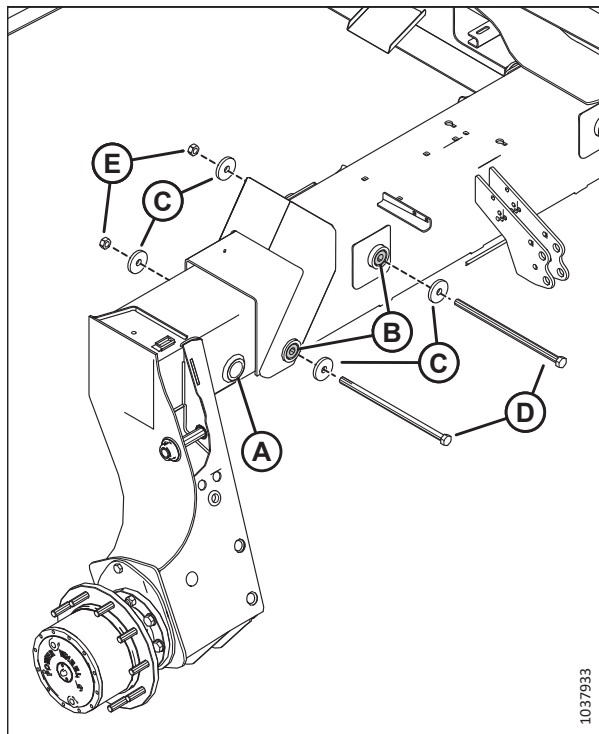


Figure 3.7: Leg Position on Frame

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

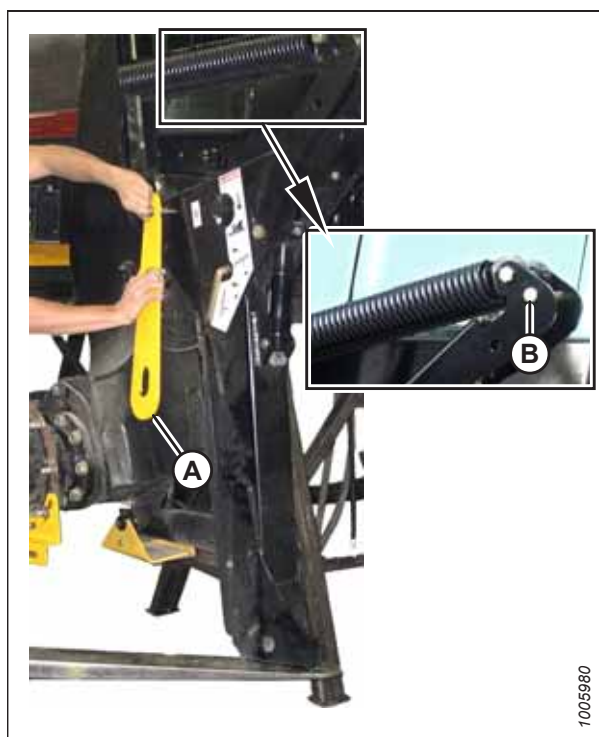


Figure 3.8: Header Lift

3.3 Installing Drive Wheels

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

1. Remove shipping support (A) from the drive wheel hub, and remove the wheel lug nuts (B). Discard shipping support (A). Retain lug nuts (B).
2. Remove and discard bolt and nut (C) and shipping plate (D) under each drive leg.

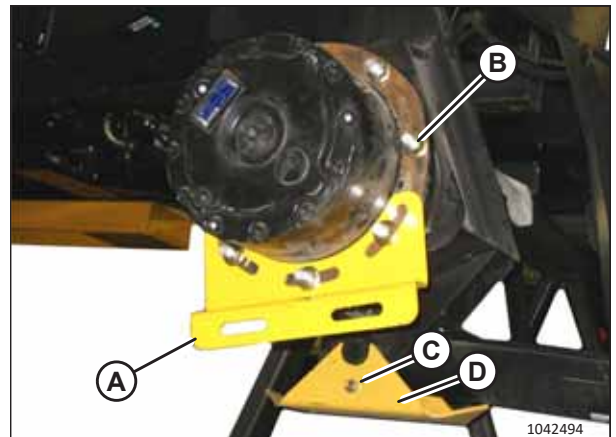


Figure 3.9: Drive Wheel Shipping Support

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

NOTE:

For turf tires (diamond tread), make sure the arrow on the sidewall points in the cab-forward direction.

4. Lift the wheel onto the hub using a lifting device.
5. Lower the lifting device.



Figure 3.10: Wheel Position

ASSEMBLING WINDROWER

6. Install and hand-tighten wheel nuts (A).

IMPORTANT:

To prevent damage to the wheel rim, tighten the nuts by hand. Do **NOT** use an impact wrench to tighten the wheel nuts. Do **NOT** apply lubricant or anti-seize compound to the threads of the wheel studs. Do **NOT** overtighten the wheel nuts.

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

IMPORTANT:

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

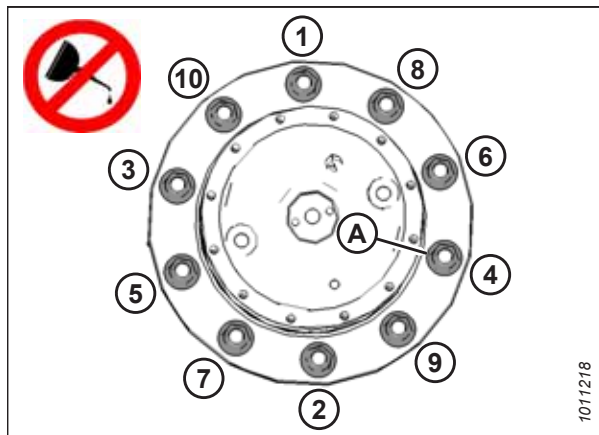


Figure 3.11: Drive Wheel Nuts

8. Repeat the torque procedure every operating hour until two consecutive checks confirm that the nuts have not moved.

3.4 Installing Caster Wheels

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

1. Remove two guide plates (A) from the ends of the walking beam. Discard the guide plates and the hardware that was used to install them.

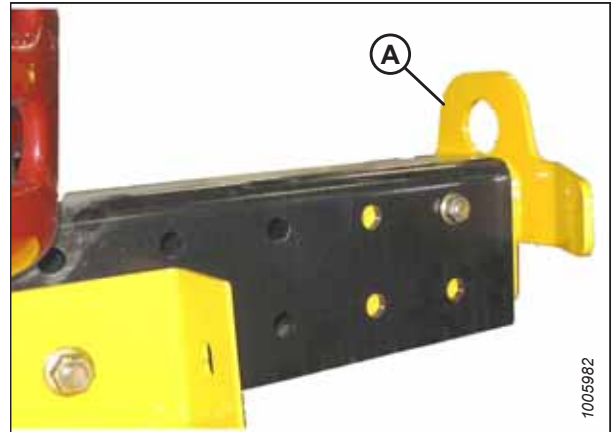


Figure 3.12: Guide Plate on Walking Beam

2. Support the shipping frame channel and remove the bolts attaching the shipping frame to the walking beam and mainframe side rail. Remove the shipping frame. Discard the shipping frame and the hardware that was used to install it. Repeat this step for the opposite shipping frame channel.

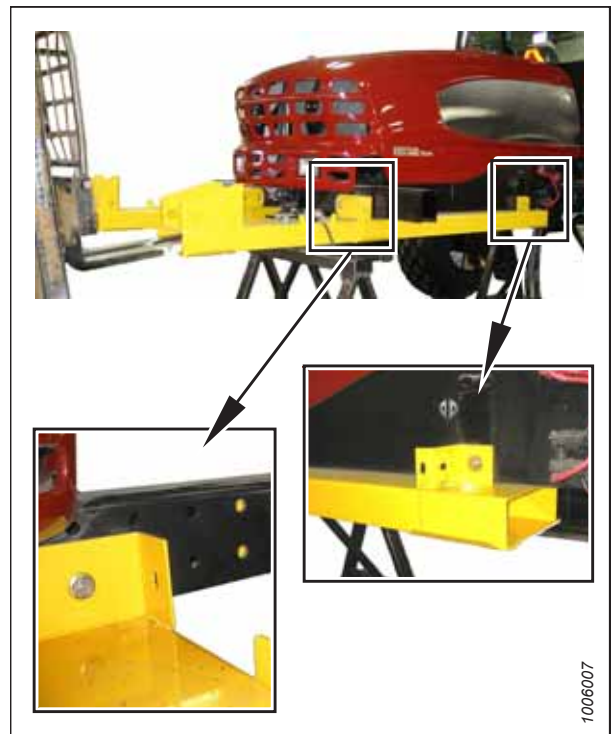


Figure 3.13: Shipping Frame

ASSEMBLING WINDROWER

3. Remove tie bar (A) from between the caster wheels. Discard tie bar (A) and the hardware that was used to install it.



Figure 3.14: Caster Wheel Shipping Assembly

4. Remove and discard the bolts and nuts from locations (A).
5. Remove and retain the following hardware for the installation of the walking beam starting in Step 11, page 47:
 - Two 3/4 x 2 1/4 in. bolts (B)
 - Two washers (C)
6. Discard supports (D).

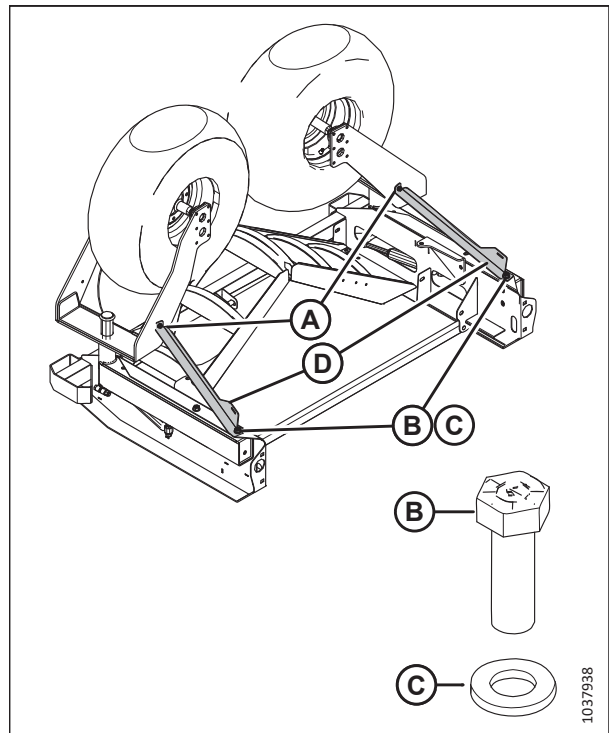


Figure 3.15: Caster Supports

ASSEMBLING WINDROWER

- Attach a chain to the right caster and support the caster with a lifting device that has a minimum lifting capacity of 2268 kg (5000 lb.). Make sure both bearing lock collars (A) are locked before lifting the caster.

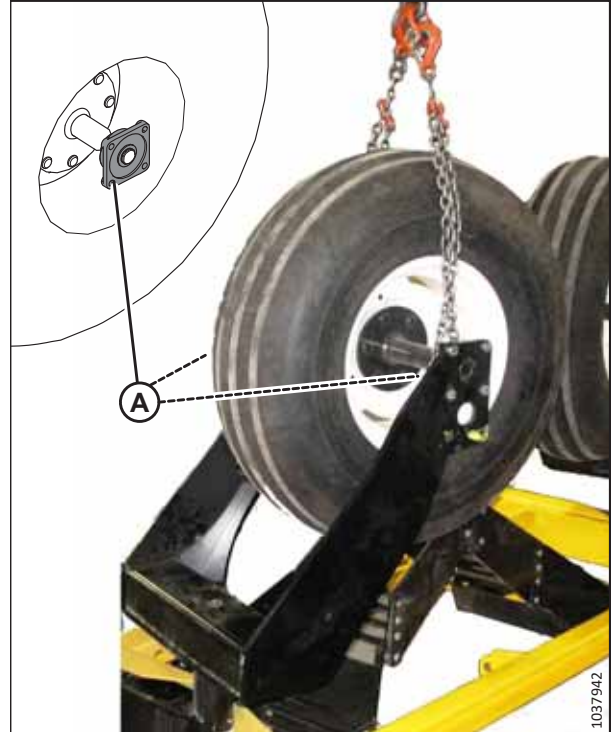


Figure 3.16: Lifting Device on Caster

- Remove and retain the remaining parts from the shipping frame:
 - Two 3/4 x 2 3/4 in. bolts (A)
 - Three 3/4 x 2 1/4 in. bolts (D)
 - Five washers (B)
 - Right anti-shimmy bracket (C) (when removing the right caster)

NOTE:

When removing the left caster from the shipping frame, remove and retain the same quantity of hardware, and retain left anti-shimmy bracket (E).

Retain the hardware for the installation of the walking beam starting in Step 11, page 47.

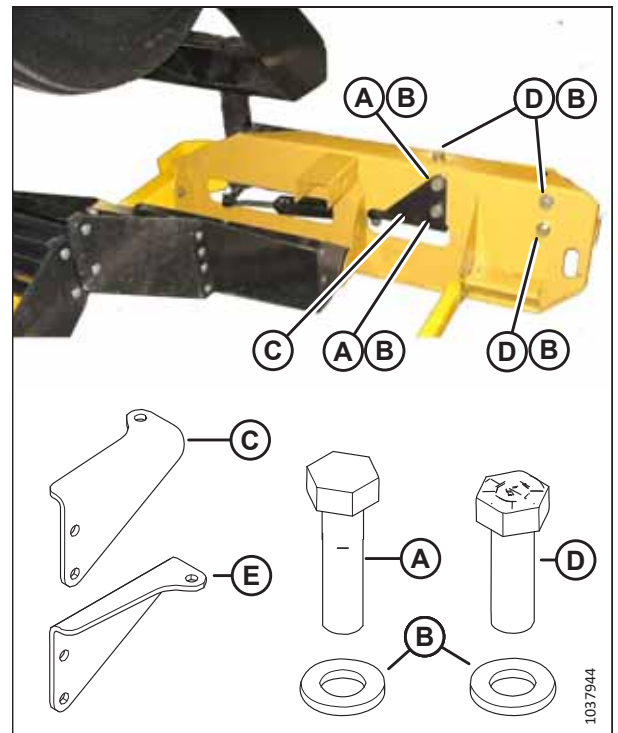


Figure 3.17: Shipping Frame on Caster

CAUTION

Stand clear when lifting, as caster may swing.

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



Figure 3.18: Walking Beam

ASSEMBLING WINDROWER

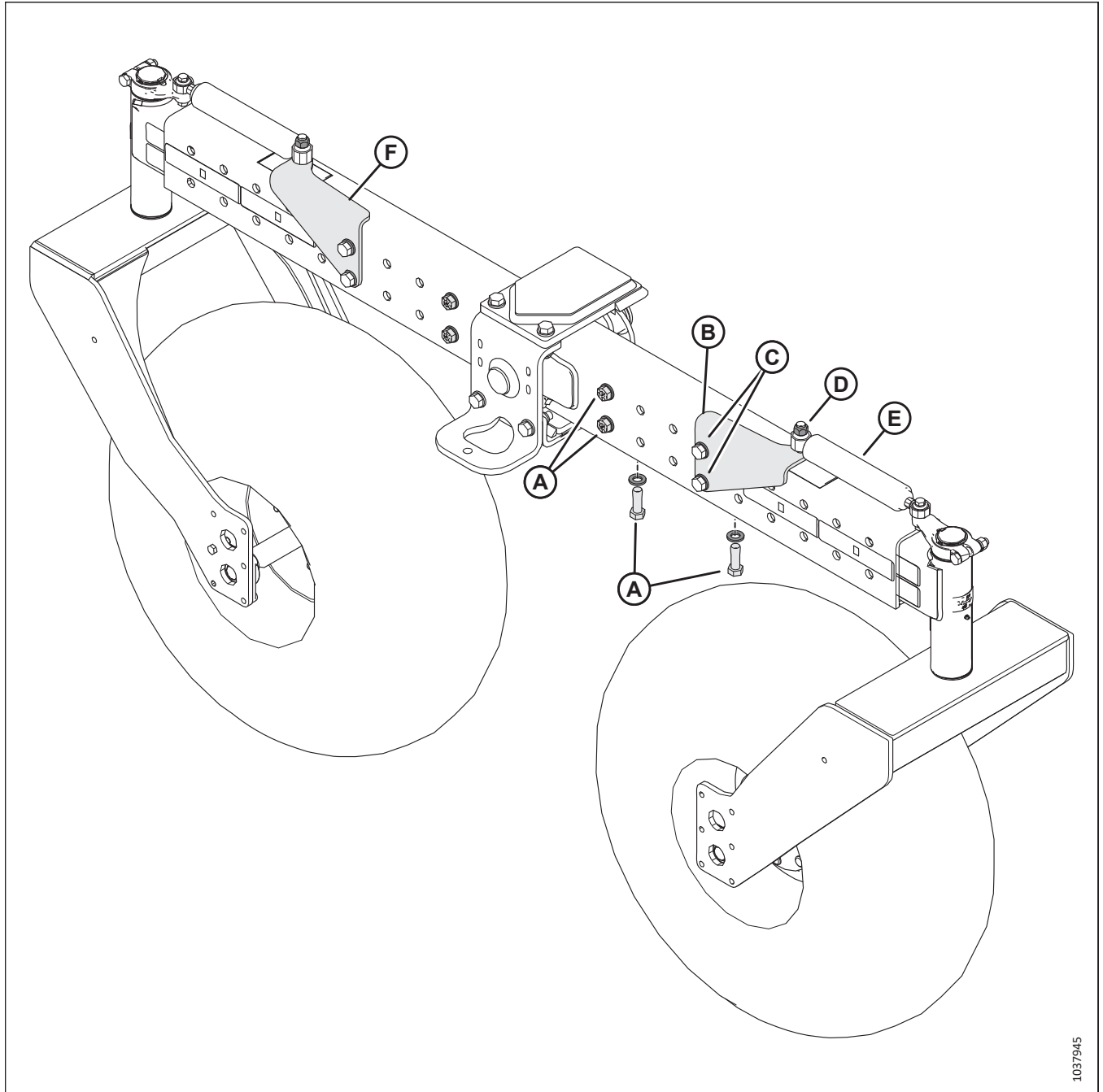


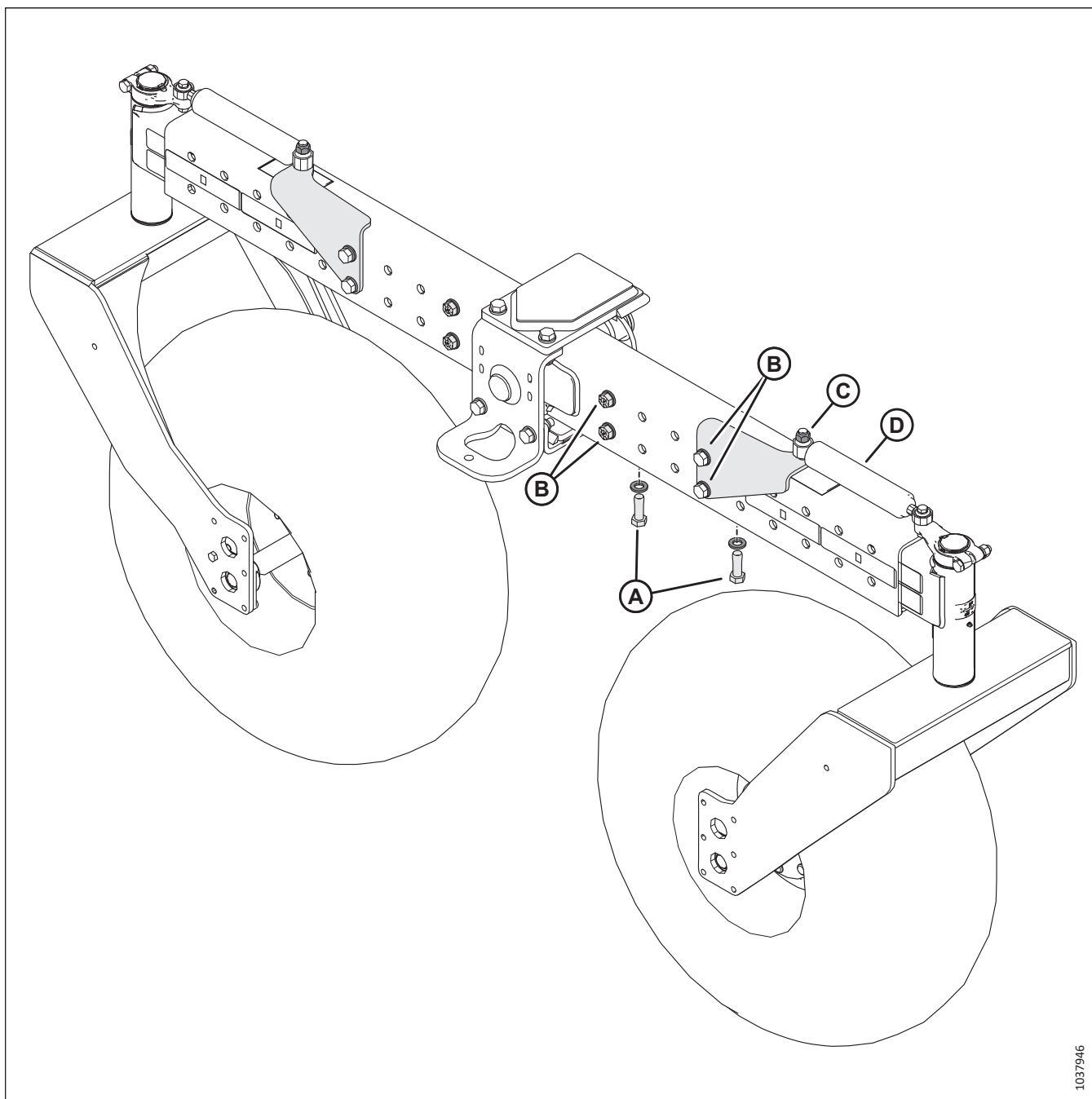
Figure 3.19: Walking Beam Installation

11. Install four 3/4 x 2 1/4 in. bolts (A) and washers into the walking beam.
12. Connect anti-shimmy dampener (E) to anti-shimmy bracket (B) using the bolt and nut (D) what was shipped attached to the dampener. Do **NOT** tighten the nut yet.
13. Install anti-shimmy bracket (B) onto the walking beam using two 3/4 x 2 3/4 in. bolts (A).

NOTE:

Anti-shimmy bracket (B) is for the right caster. Anti-shimmy bracket (F) is for the left caster.

ASSEMBLING WINDROWER



1037946

Figure 3.20: Walking Beam Installation

14. Snug up two bolts (A) underneath the beam.
15. Tighten four back bolts (B) to 447 Nm (330 lbf-ft).
16. Tighten bolts (A) underneath beam to 447 Nm (330 lbf-ft).
17. Tighten nut (C) to 136 Nm (100 lbf-ft). Make sure anti-shimmer dampener (D) is parallel to the walking beam while you tighten nut (D).
18. Repeat Step 7, [page 45](#) to Step 17, [page 48](#) for the left caster.
19. Retighten the bolts (that are installed in the walking beam) after 5 and 10 hours of operation.

ASSEMBLING WINDROWER

20. Remove and retain four 1/2 x 1 in. bolts (A) and two step assemblies (B) from the shipping frame. These parts will be used in [3.9 Installing Steps, page 65](#). Discard the remaining shipping frame components and hardware.

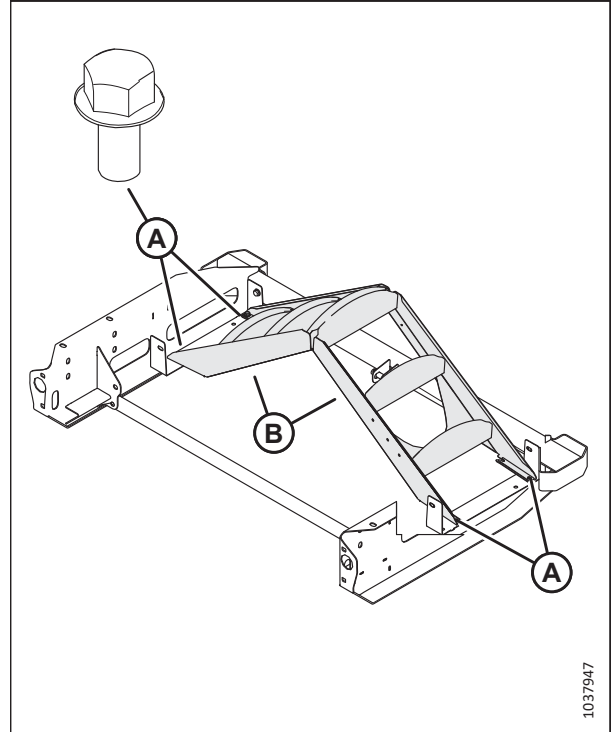


Figure 3.21: Shipping Frame and Steps

3.5 Installing Hydraulics

Reconnect the hydraulic hoses that were disconnected for shipping purposes.

1. Retrieve all capped hoses from inside the frame.
2. Locate the three hoses with capped tees extending from the valve block.
3. Remove the caps from the fittings with similar colored cable ties, and connect hoses (A) to tees. Do **NOT** connect the large case drain hoses from the wheel motors at this time.

NOTE:

Remove the caps on the tee last to minimize oil loss.

4. Position the hoses into the frame.
5. Locate the two hoses with capped ends and matching colored ties. A union is connected to one of the hoses.
6. Remove the caps and connect the two hoses together. Position the hoses in the frame.
7. Retrieve the four remaining capped hoses coming out of the frame.

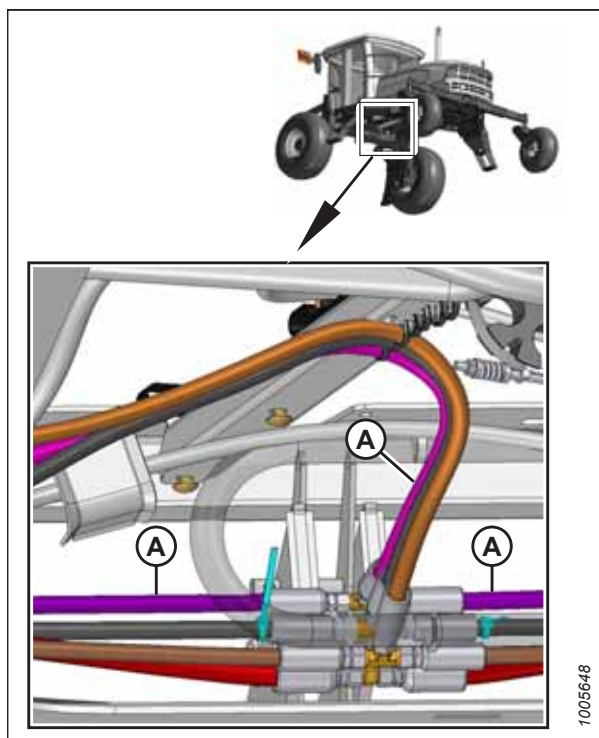


Figure 3.22: Hydraulic Hoses

8. Loosen bolts (A) and move the valve block to improve access through the hole in the frame.
9. Remove the caps from the hoses and matching valve block fittings (B).

NOTE:

Some hoses are hidden for clarity.

10. Make connections using colored plastic cable ties as a guide. Tighten the fittings.
11. Reposition the valve block and retighten the bolts.

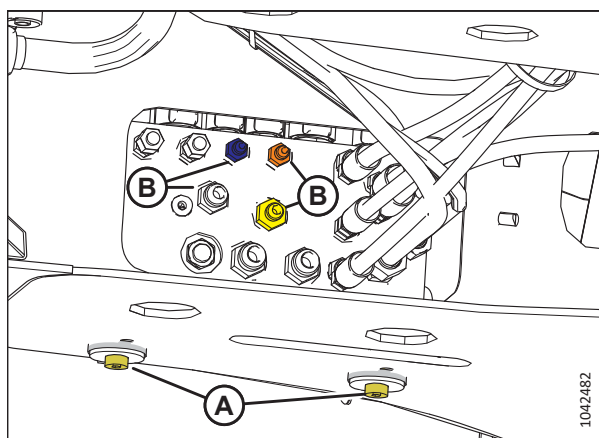


Figure 3.23: Hydraulic Valve and Hoses

ASSEMBLING WINDROWER

12. Position four hoses (A), (B), (C), and (D) against the support as shown and secure the hoses with plastic ties.

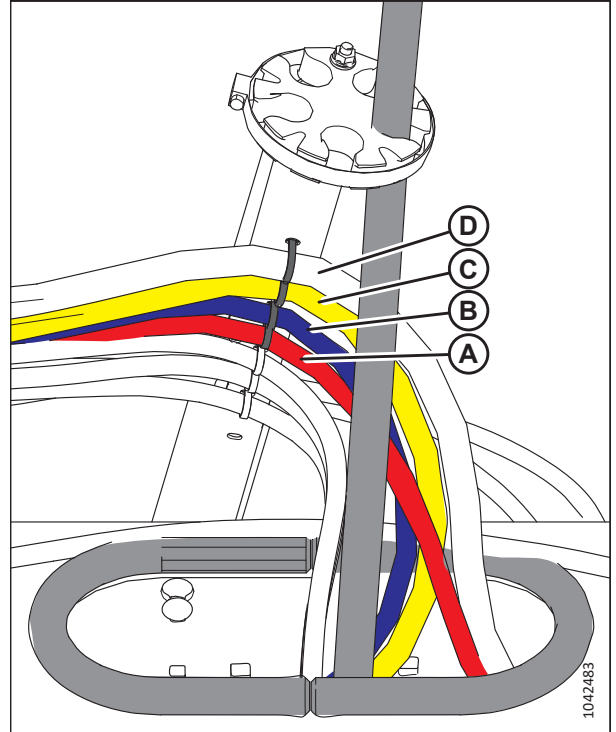


Figure 3.24: Hydraulic Hose Routing

- A - Hose (MD #111323) Connected To Valve Block Port B — Orange Tie
- B - Hose (MD #111323) Connected To Valve Block Port A — Blue Tie
- C - Hose (MD #111557) Connected To Valve Block Port E — Yellow Tie
- D - Hose (MD #111328) Connected To Valve Block Port F — White Tie

13. Remove clamp (A) from the round plastic hose block.

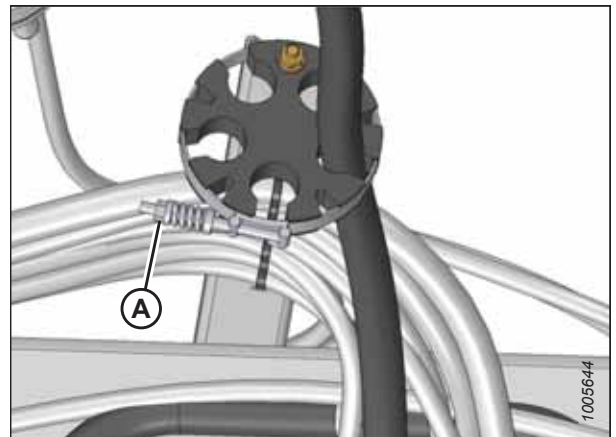


Figure 3.25: Hose Block

ASSEMBLING WINDROWER

14. Insert two left traction drive hoses (A) into the hose block as shown. Case drain hose (B) is preinstalled in the block.
15. Insert two right traction drive hoses (C) into the hose block as shown.

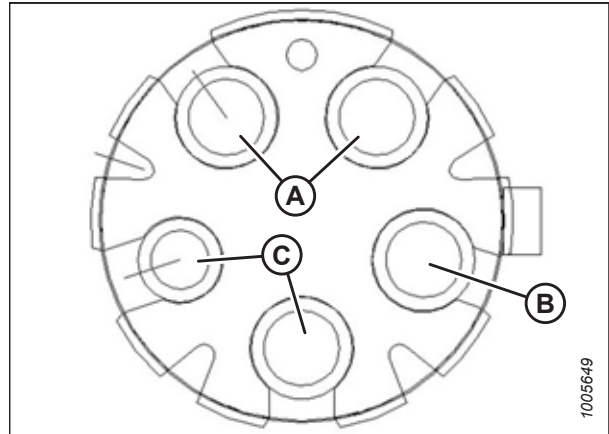


Figure 3.26: Hose Block – View Looking Forward

16. Reinstall clamp (A).

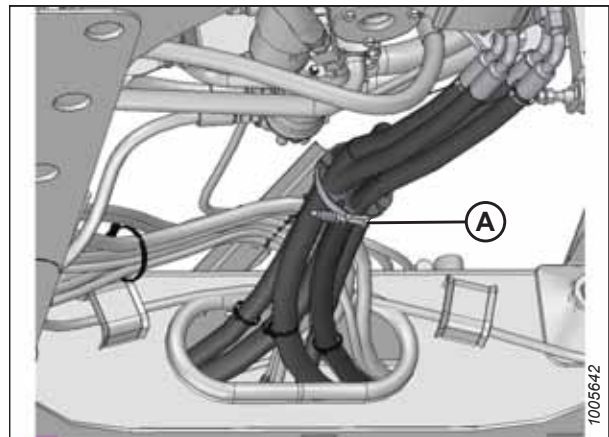


Figure 3.27: Hose Routing

17. Remove four caps (A) from traction drive pump (B).

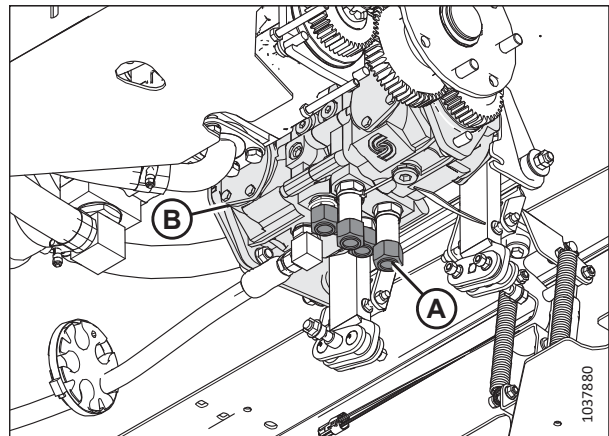


Figure 3.28: Traction Drive Pump — Bottom Left Side

ASSEMBLING WINDROWER

NOTE:

The front two traction drive pump ports are for the wheel motor on the **LEFT** side of the windrower.

18. Attach hose (A) (no tie) to pump port D (no tie). Tighten the fittings.
19. Attach hose (B) (yellow tie) to pump port C (C) (yellow tie). Tighten the fittings.

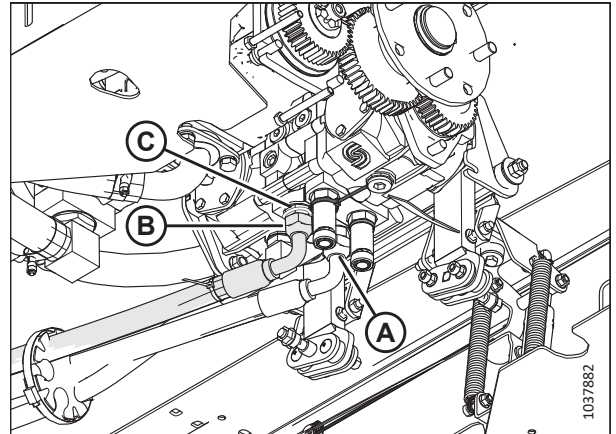


Figure 3.29: Traction Drive Pump — Bottom Left Side

NOTE:

The rear two traction drive pump ports are for the wheel motor on the **RIGHT** side of the windrower.

20. Attach hose (A) (red tie) to pump port B (B) (red tie). Tighten the fittings.
21. Attach hose (C) (black tie) to pump port A (D) (black tie). Tighten the fittings.

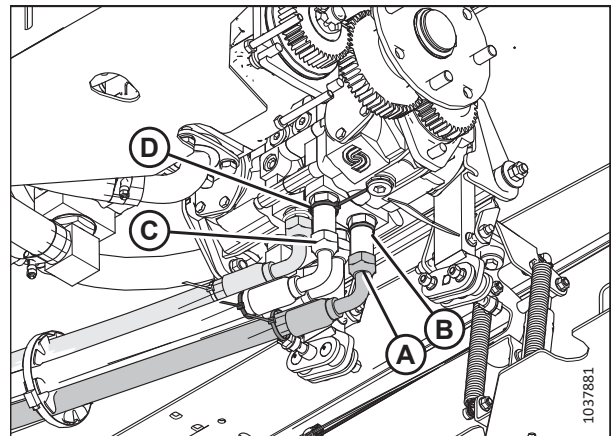


Figure 3.30: Traction Drive Pump — Bottom Left Side

22. Retrieve the two motor case drain hoses (MD #111312) from the front frame and the 22 mm (7/8 in.) tee fitting on hose (C) from the pump.

NOTE:

The hoses are labeled with the part numbers.

23. Remove caps from the hoses (B) only.
24. Remove one cap from tee fitting (A), and quickly attach hose (B) to minimize oil spillage.
25. Remove the second cap from tee fitting (A), and quickly connect other hose (B).
26. Tighten the fittings.
27. Position the hoses into the frame.

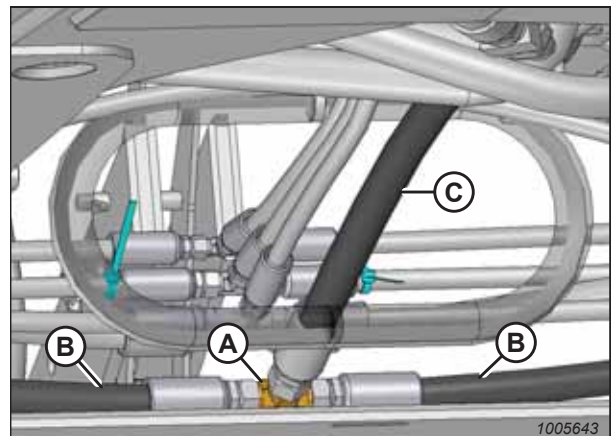


Figure 3.31: Hose Routing

ASSEMBLING WINDROWER

28. Secure the hoses with cable ties (A) as needed.

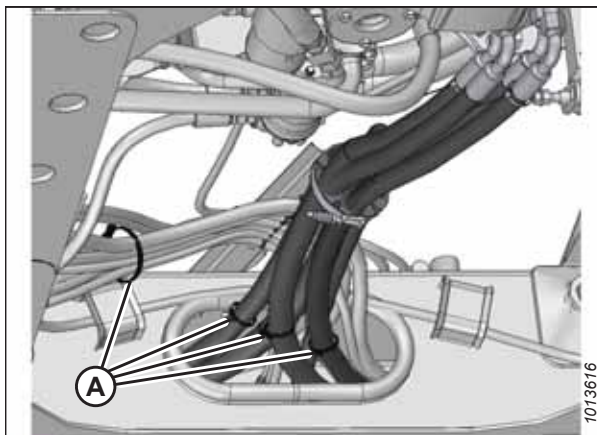


Figure 3.32: Hose Routing

29. Retrieve wheel leg harness connectors C7B (A) and C6B (C) from inside the frame.

NOTE:

C7B (A) is attached to the harness labeled as MD #109755.
C6B (C) is attached to the harness labeled as MD #109545.

30. Connect connector C7B (A) to connector C7A (B).

31. Connect connector C6B (C) to connector C6A (D).



Figure 3.33: Wheel Leg Harness Connections

ASSEMBLING WINDROWER

32. Remove any straps that secure electrical harness (D) to hydraulic hose bundle (A).
33. Route hose bundle (A) and hose (B) through hose support (C) and lay the hoses on the tire.
34. Route electrical harness (D) along the right side of hose support (C) as shown.
35. Secure electrical harness (D) to hose support (C) using tie (E).
36. Secure electrical harness (D) and hose (B) using ties (F).

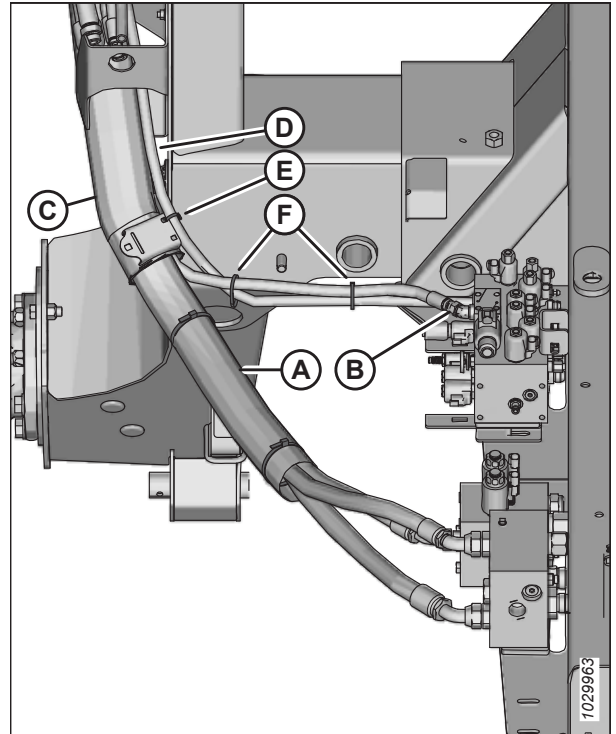


Figure 3.34: Hose Routing

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

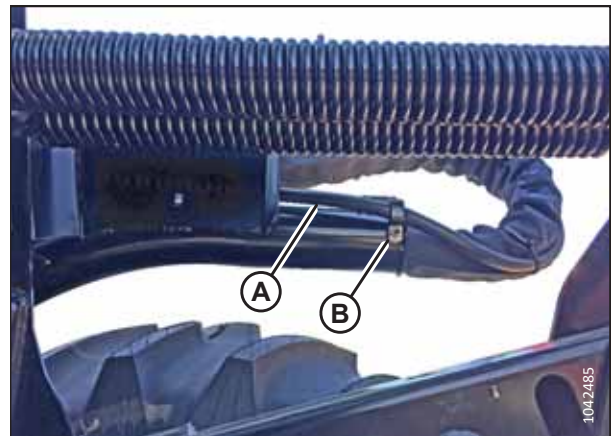


Figure 3.35: Harness Routing — Right Side of Hose Support

ASSEMBLING WINDROWER

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

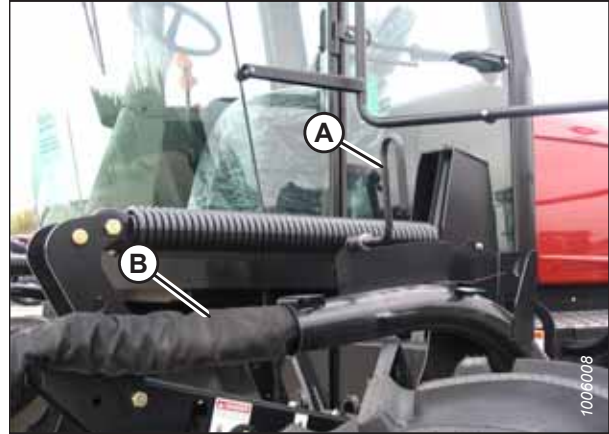


Figure 3.36: Hook Positioning

40. Route electrical harness (A) along the topside of hose bundle (B) as shown to prevent chafing of the electrical wires when the windrower is operating with a header.
41. Secure electrical harness (A) to hose bundle (B) using strap (C).



Figure 3.37: Harness Routing — Front Side of Hose Support

ASSEMBLING WINDROWER

42. Lower hook (A) and engage it in bracket (B) in the down position.
43. Secure the electrical harness to the hose bundle using fabric strap (C).
44. Attach electrical harness coupler (D) to the hose support.

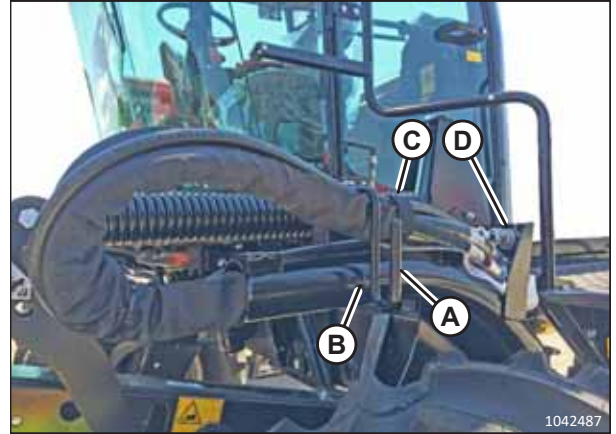


Figure 3.38: Hook Positioning and Harness Routing

45. Attach the reel hose support tube to the right leg with two 3/8 x 1 in. carriage bolts (A) and nuts.

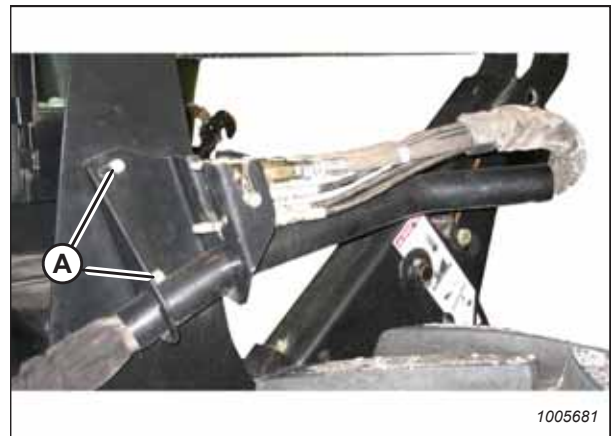


Figure 3.39: Reel Hose Support

3.6 Removing Battery Shipping Shield

Remove and discard the shield that protects the battery during shipping.

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

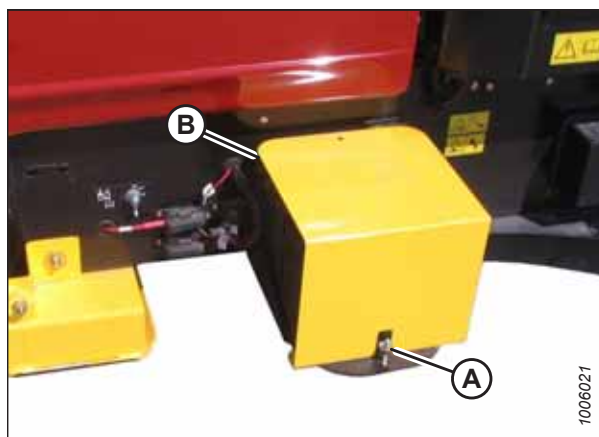


Figure 3.40: Battery Shipping Shield

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

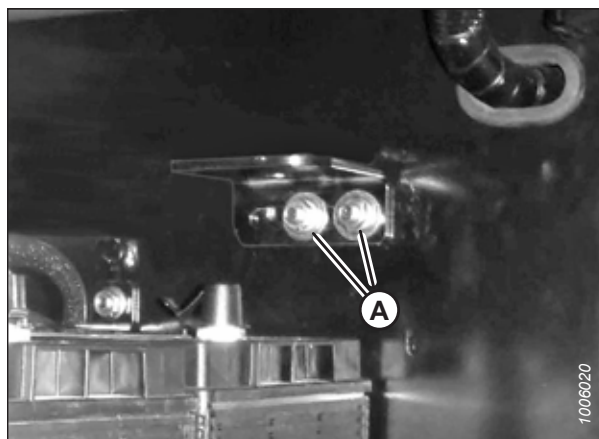


Figure 3.41: Bracket Shipping Position

5. Rotate bracket (A) by 180°, align the holes in the bracket with the holes in the frame, and reinstall bolt and nut (B). Do **NOT** tighten the hardware.

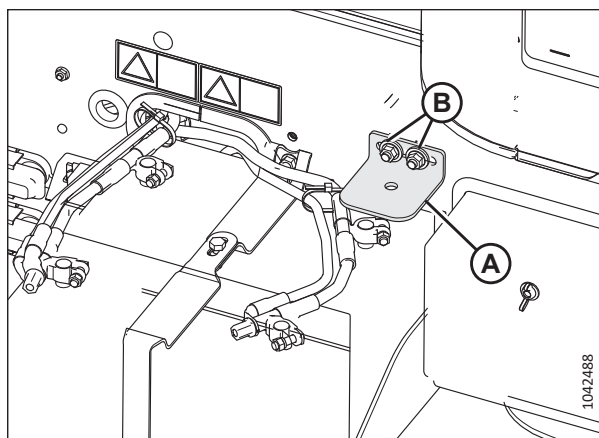


Figure 3.42: Bracket Repositioned

3.7 Unpacking Ignition Keys

The ignition keys are shipped attached to the fuse box cover.

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

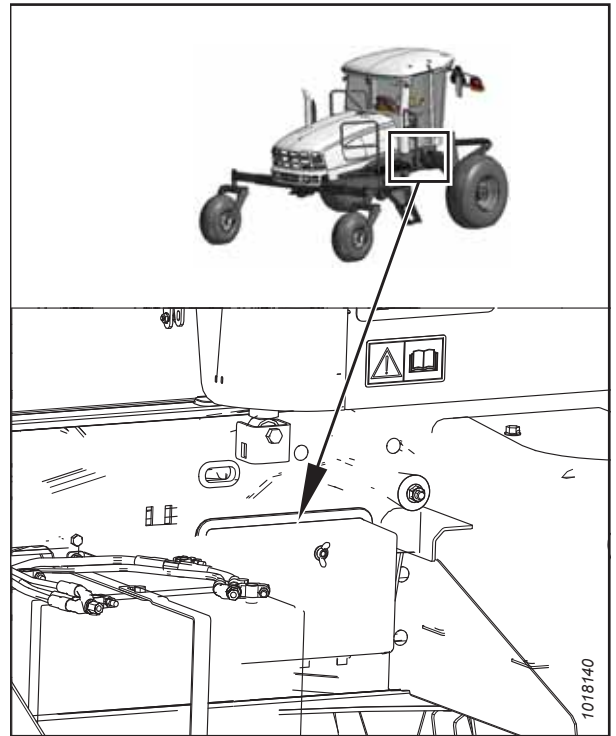


Figure 3.43: Fuse Box Location

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

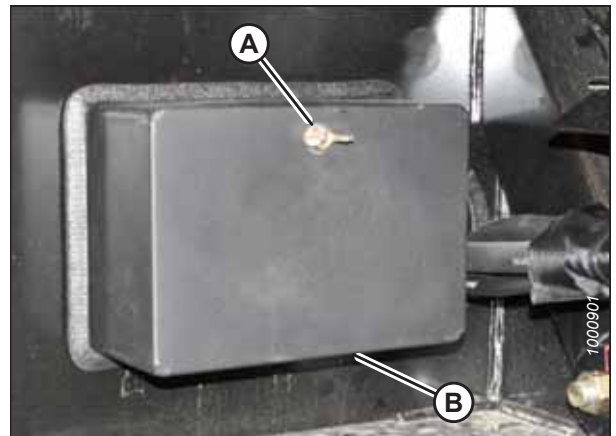


Figure 3.44: Fuse Box

ASSEMBLING WINDROWER

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

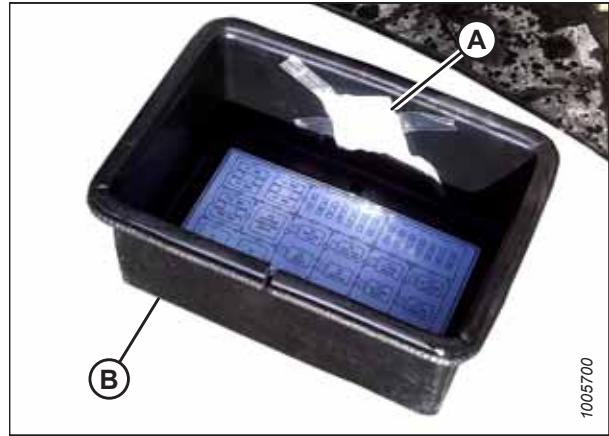


Figure 3.45: Fuse Cover

3.8 Installing Platforms

Install the platforms and railings on the both sides of the windrower.

NOTE:

The procedure for the left side installation is shown. The procedure for the right side is similar.

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

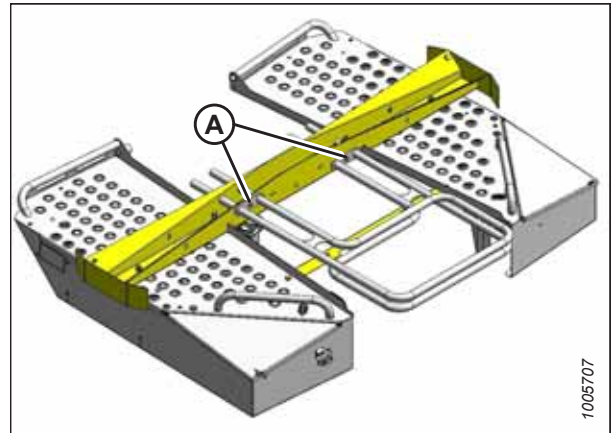


Figure 3.46: Platform Shipping Assembly

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

⚠ DANGER

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

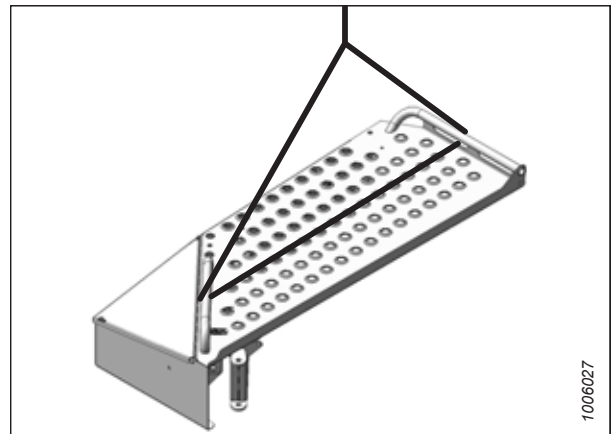


Figure 3.47: Left Platform

4. Position the platform against the windrower frame.

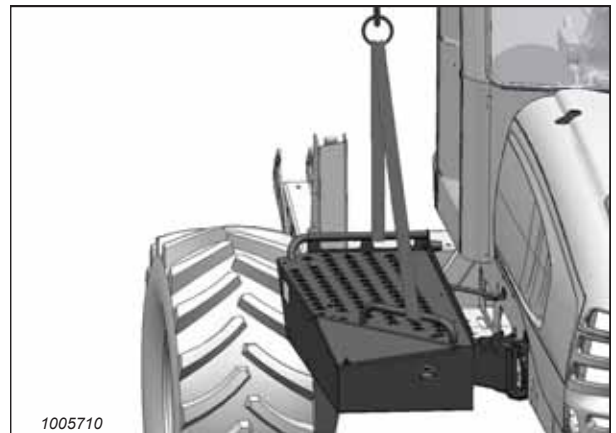


Figure 3.48: Left Platform

ASSEMBLING WINDROWER

5. Attach the main beam of the platform to the side frame using three $1/2 \times 1 1/4$ in. long carriage bolts (A). Ensure the bolt heads face inboard, and tighten them just enough to allow you to reposition the platform while installing it.

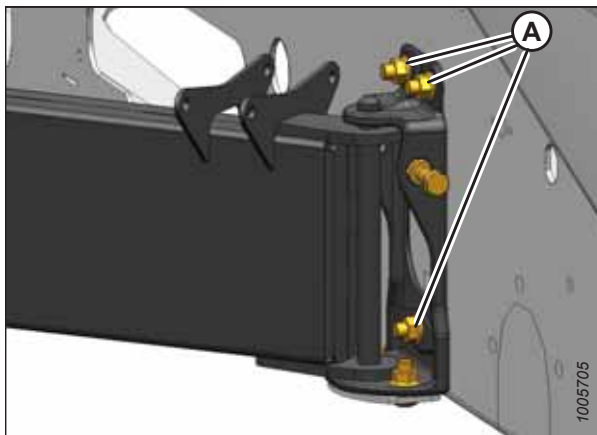


Figure 3.49: Left Platform – Main Beam

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

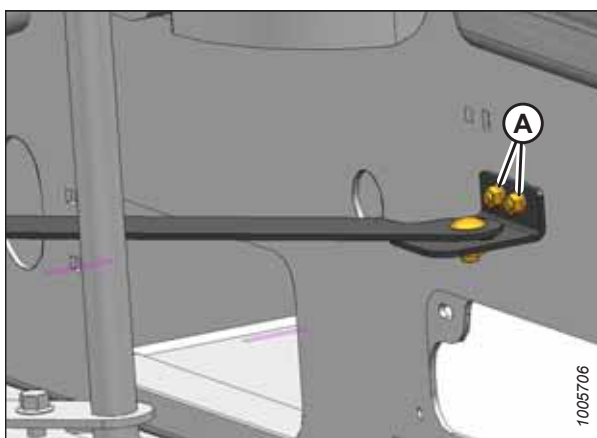


Figure 3.50: Left Platform – Steering Arm

8. Attach the railings to the platform with $1/2 \times 3/4$ in. locking bolts (A). Torque the bolts to 102 Nm (75 lbf-ft).

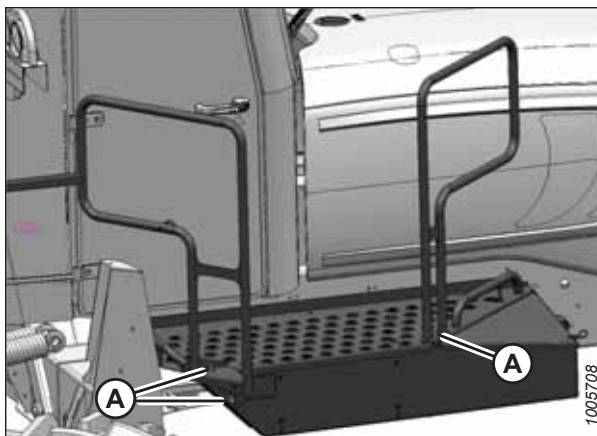


Figure 3.51: Left Platform – Railings

ASSEMBLING WINDROWER

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

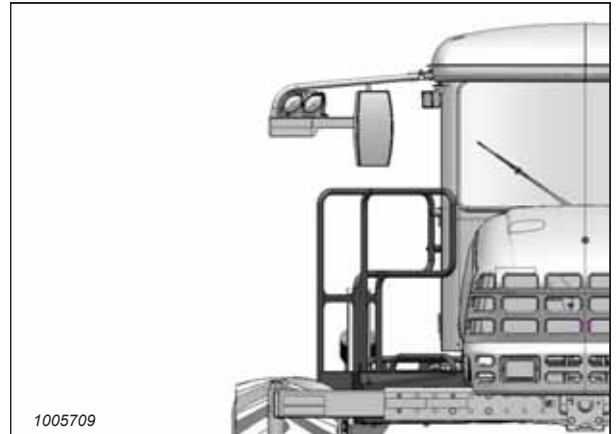


Figure 3.52: Left Platform

10. Laterally adjust king pin mounting (A) as needed.

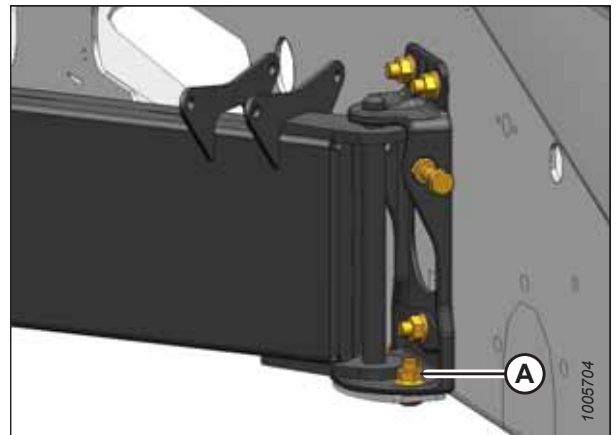


Figure 3.53: Left Platform – Main Beam

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

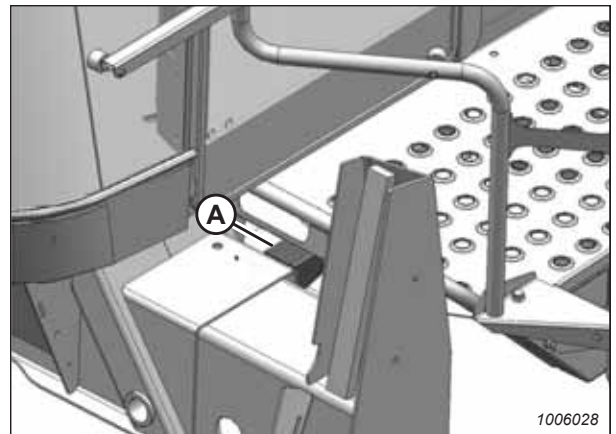


Figure 3.54: Left Platform – Rubber Bumper

ASSEMBLING WINDROWER

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

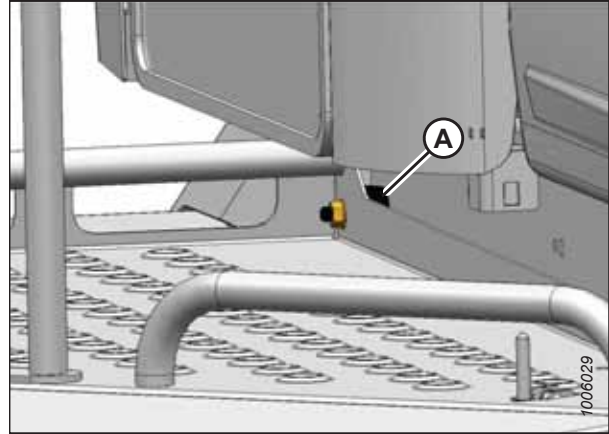


Figure 3.55: Left Platform – Guide

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



Figure 3.56: Left Platform – Main Beam

14. If major adjustment is required, relocate steering arm (A) into either of the other holes on bracket (B).
15. Tighten the three main beam attachment bolts to 108 Nm (80 lbf-ft).
16. Repeat this procedure to install the right side platform.

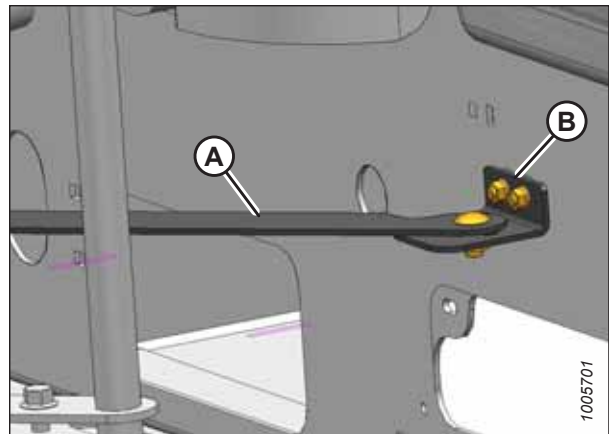


Figure 3.57: Left Platform – Steering Arm

3.9 Installing Steps

The windrower steps must be moved from their shipping position and installed.

NOTE:

The procedure for installing the left steps is shown—installation of the right steps is similar.

1. Remove two existing upper bolts (A).
2. Ensure two lower bolts (B) are not threaded in fully so that you will be able to hang the step assembly on them.

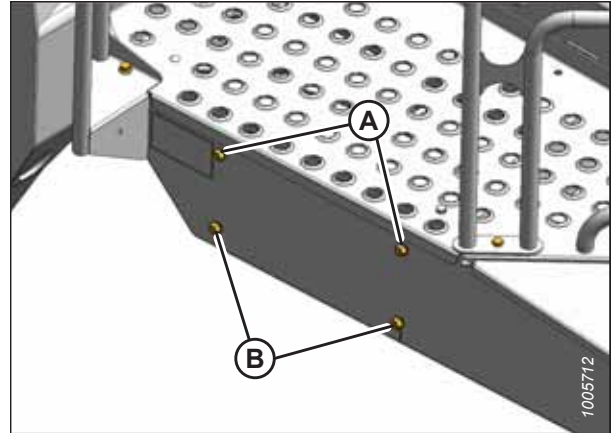


Figure 3.58: Left Platform

3. Hang the step assembly on lower bolts (B). Back off the bolts, if necessary.
4. Install two bolts (A) in the upper holes of the step and the platform.
5. Torque all bolts to 20 Nm (15 lbf·ft).
6. Repeat this procedure to install the opposite step assembly.

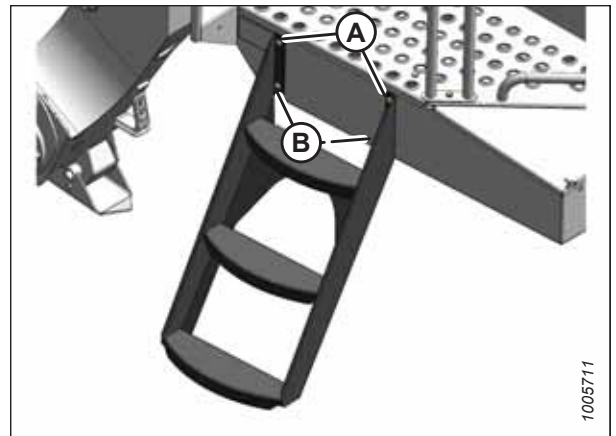


Figure 3.59: Left Steps Installed

3.10 Installing Exhaust Stack

Set up the exhaust assembly.

1. Open the engine compartment hood.
2. Retrieve exhaust stack (A) and clamp (B) (unpacked in [2.6 Removing Hand Rails and Exhaust Stack, page 26](#)).
3. Loosen clamp (B) on exhaust stack (A).

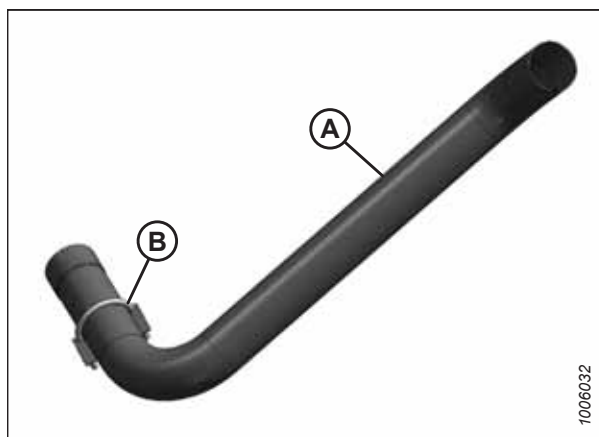


Figure 3.60: Exhaust Stack

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

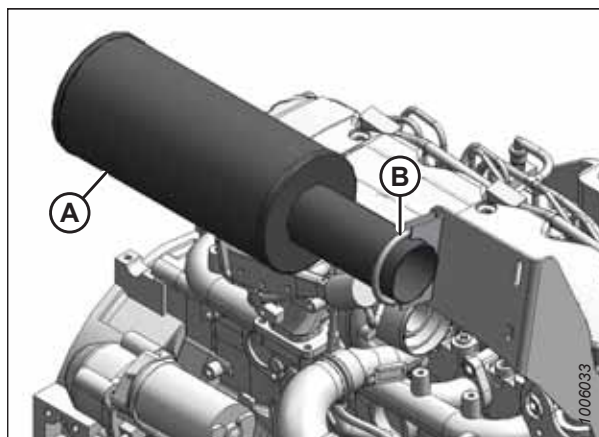


Figure 3.61: Muffler

5. Position stack (A) into the slot in exhaust shroud (B), and connect the stack to the muffler.

NOTE:

If shroud (B) interferes with stack (A), loosen wing nut (C) on the shroud and move the shroud so the stack can be installed.

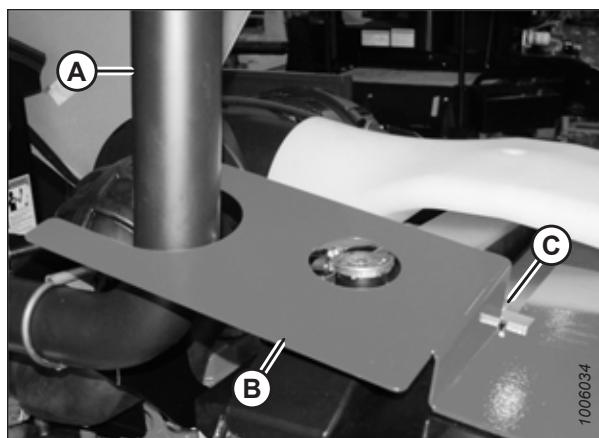


Figure 3.62: Exhaust Shroud

ASSEMBLING WINDROWER

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

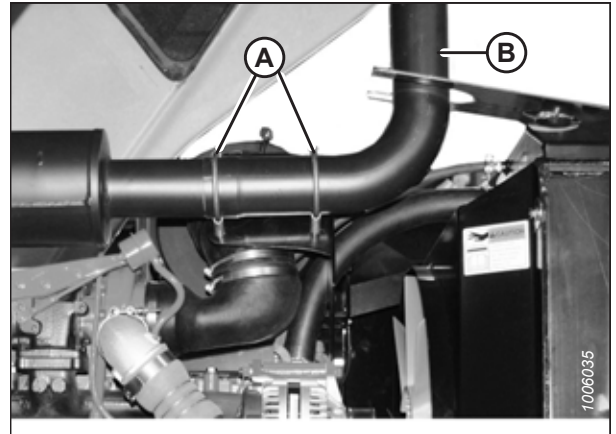


Figure 3.63: Exhaust Stack under Hood

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

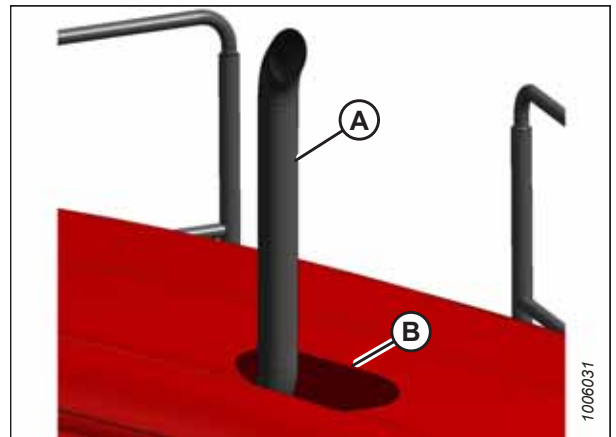


Figure 3.64: Exhaust Stack Installed

8. Raise the hood.
9. Tighten clamps (A).
10. Reposition shroud (B) and tighten the wing nut.

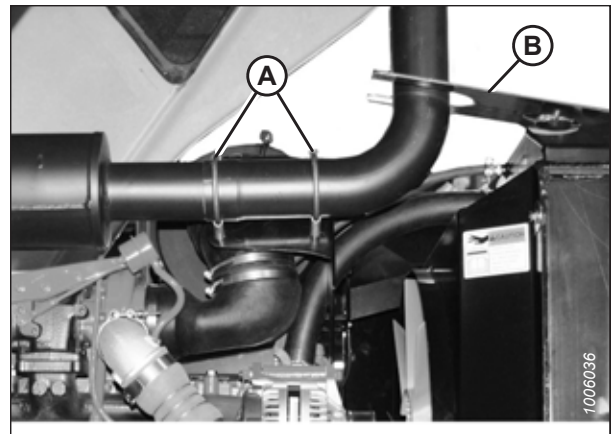


Figure 3.65: Exhaust Stack under Hood

3.11 Positioning Light and Mirror Assemblies

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

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

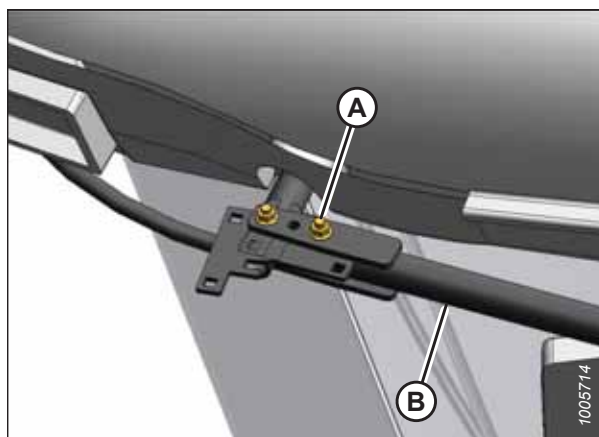


Figure 3.66: Light and Mirror Assembly in Shipping Position

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

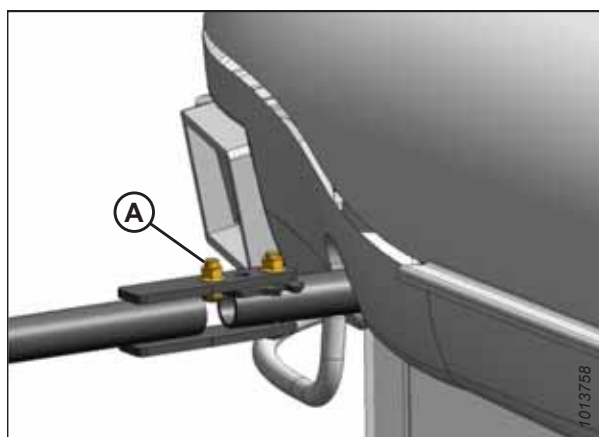


Figure 3.67: Light and Mirror Assembly in Working Position

3.12 Installing Beacons

Install the beacons onto the mounting plates located near the cab-forward mirror arms.

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



Figure 3.68: Beacon Light

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



Figure 3.69: Rubber Beacon Base on Mounting Bracket

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

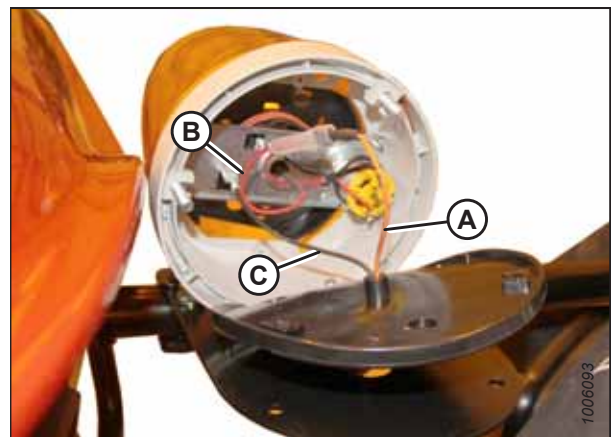


Figure 3.70: Beacon Light Wire Routing

ASSEMBLING WINDROWER

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



Figure 3.71: Beacon Light Orientation

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



Figure 3.72: Beacon Light

3.13 Installing Slow Moving Vehicle Sign

The slow moving vehicle (SMV) sign is placed inside the cab for shipping. It must be installed on the windrower in a location where it will be visible during road travel.

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

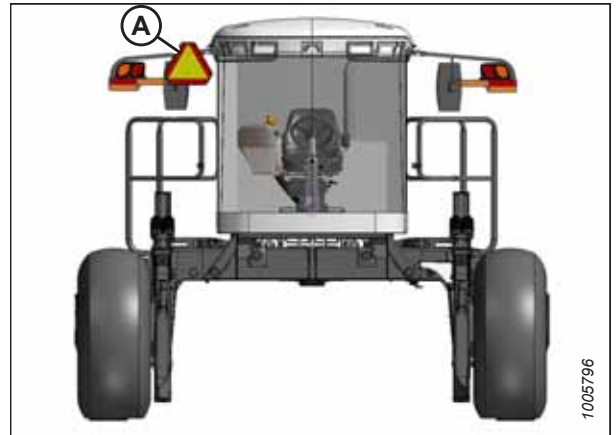


Figure 3.73: Engine-Forward Location

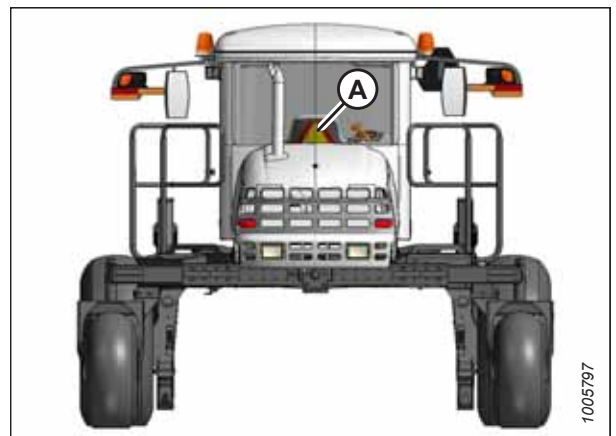


Figure 3.74: Cab-Forward Location

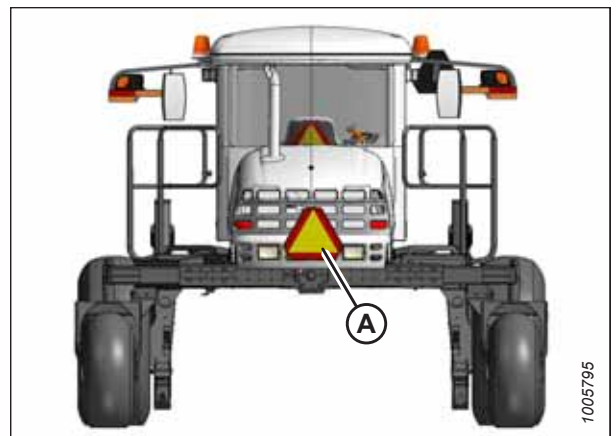


Figure 3.75: Alternate Location — Cab-Forward

3.14 Connecting Batteries

Connecting the batteries provides electrical power to the windrower.

1. Open the right maintenance platform.
2. Ensure battery main disconnect switch (A) is turned to the POWER OFF position.

NOTE:

The battery main disconnect switch is located on the right frame rail beside the batteries.

3. Remove the cable ties securing the battery cables to the battery clamps.

IMPORTANT:

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

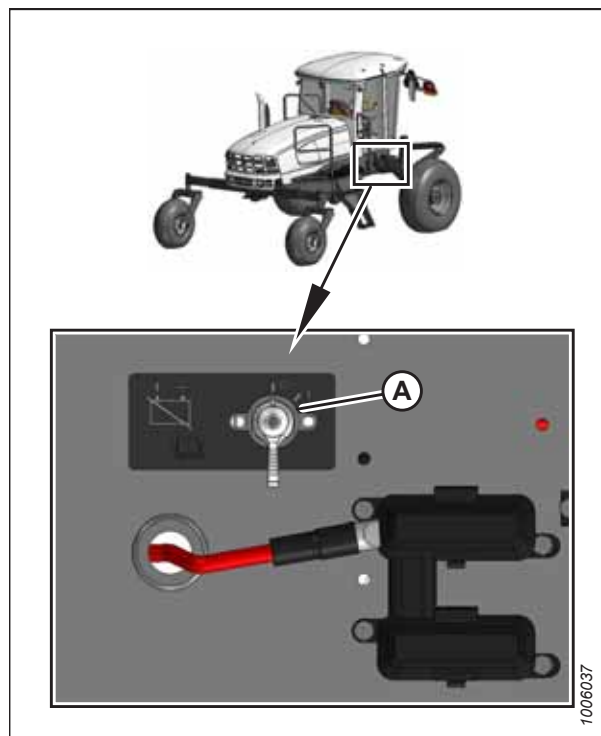


Figure 3.76: Battery Main Disconnect Switch

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

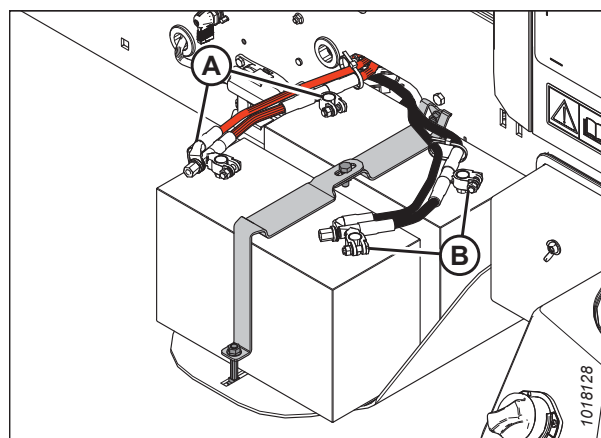


Figure 3.77: Batteries

3.15 Lubrication

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

For information on the type of lubricants to use, refer to *8.4 Lubricants, Fluids, and System Capacities, page 286*.

3.15.1 Lubrication Procedure

This procedure should be followed when you are adding grease to each fitting.

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

3.15.2 Lubrication Points

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

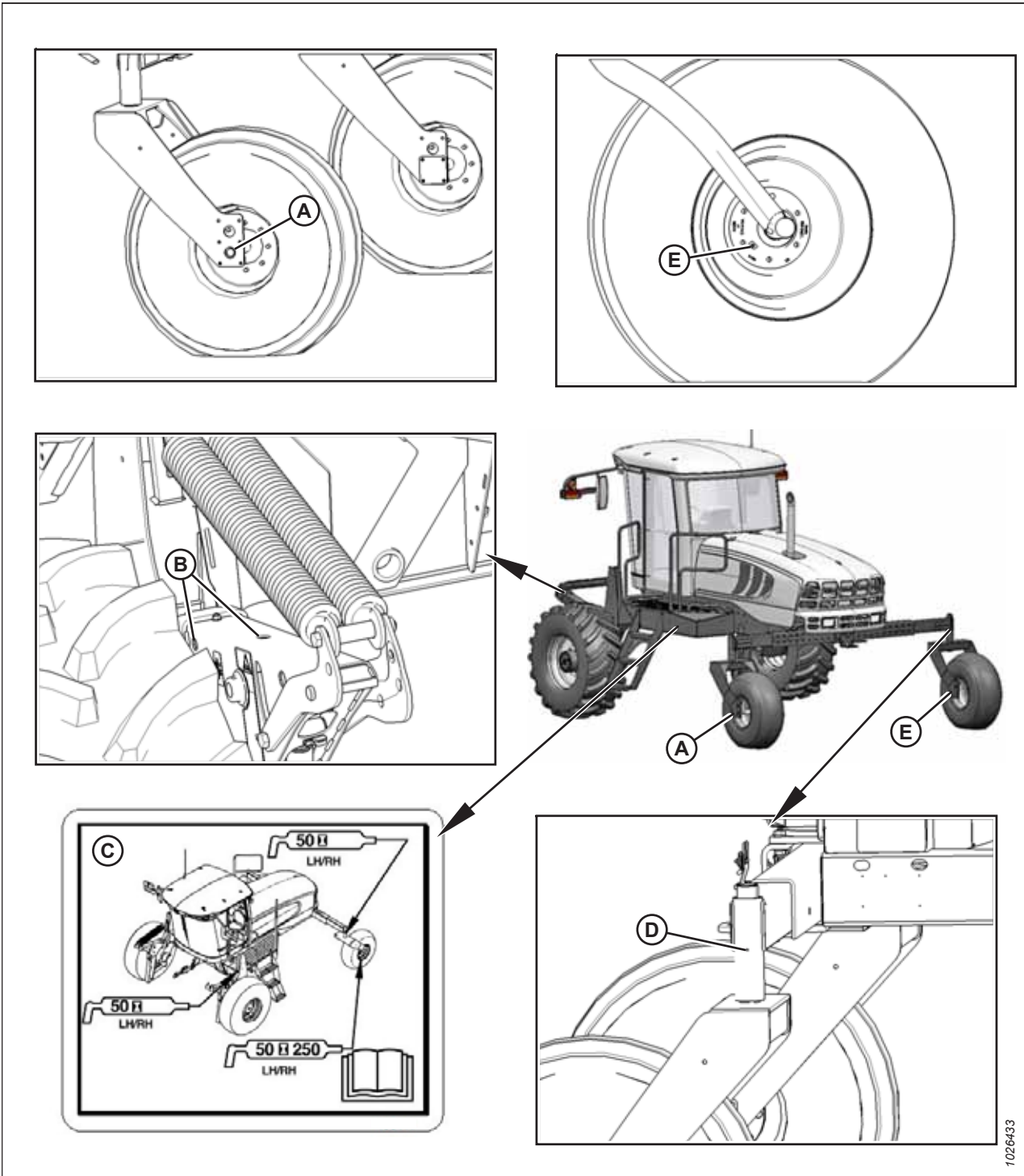


Figure 3.78: Lubrication Points

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

3.16 Installing AM/FM Radio

The windrower is designed to accommodate an AM/FM radio of a specific size and type.

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

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

NOTE:

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

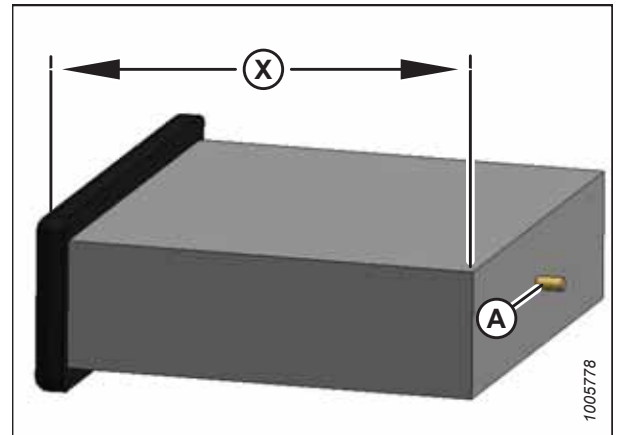


Figure 3.79: Mounting Dimension

To install the radio, follow these procedures:

1. Ensure battery switch (A) is turned to the OFF position.

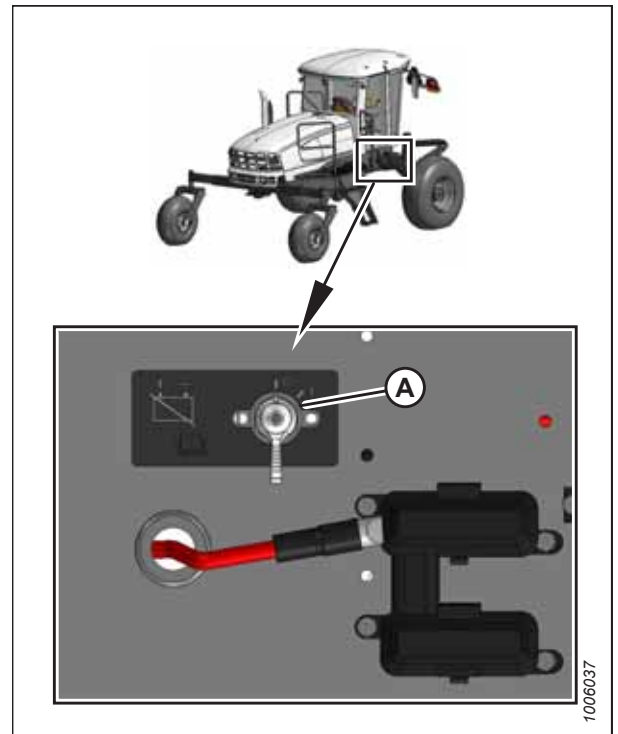


Figure 3.80: Battery Main Disconnect Switch

ASSEMBLING WINDROWER

2. Remove the radio panel by removing four screws (A).

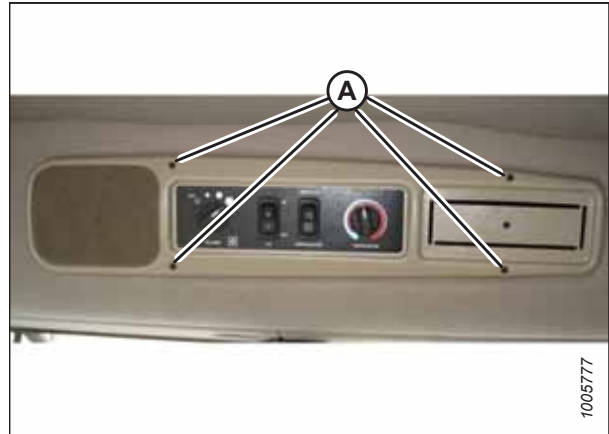


Figure 3.81: Radio Panel

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

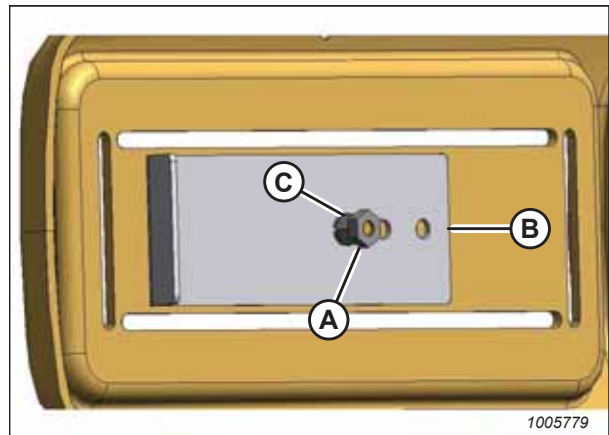


Figure 3.82: Panel Support

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

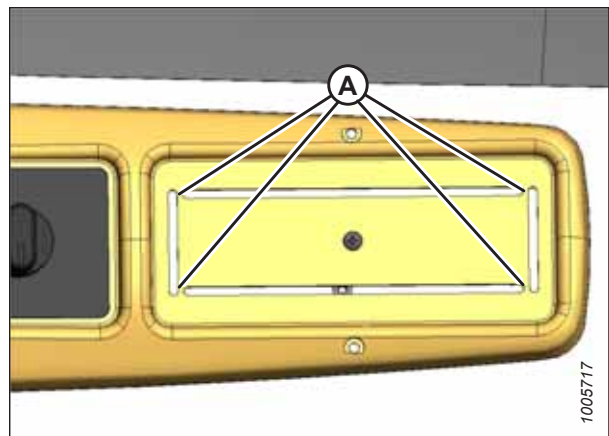


Figure 3.83: Radio Panel

ASSEMBLING WINDROWER

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

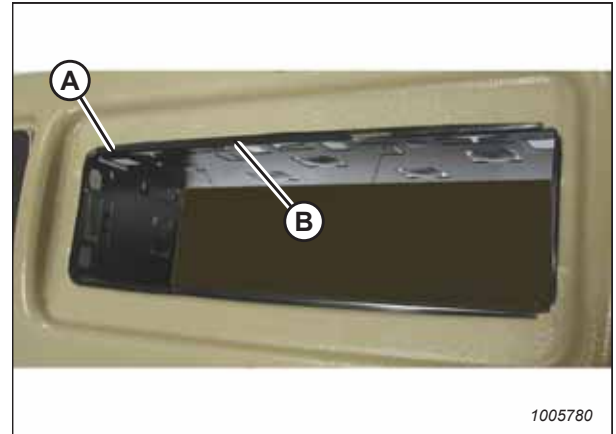


Figure 3.84: Radio Receptacle

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



Figure 3.85: Radio Installed

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

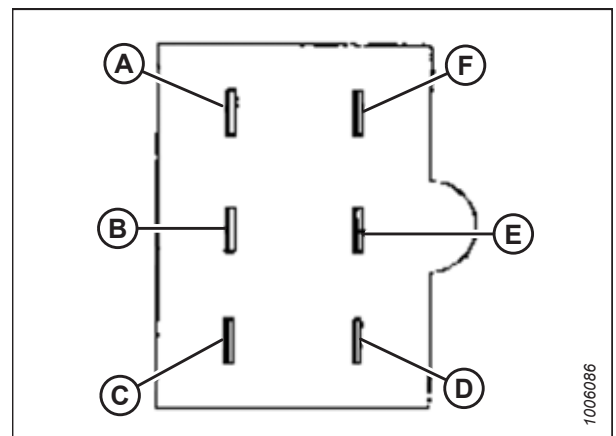


Figure 3.86: Six-Pin Connector Terminal Arrangement

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

ASSEMBLING WINDROWER

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

NOTE:

The support can be attached to the radio in multiple locations to allow for proper radio mounting.

12. Install the radio panel using the original screws.

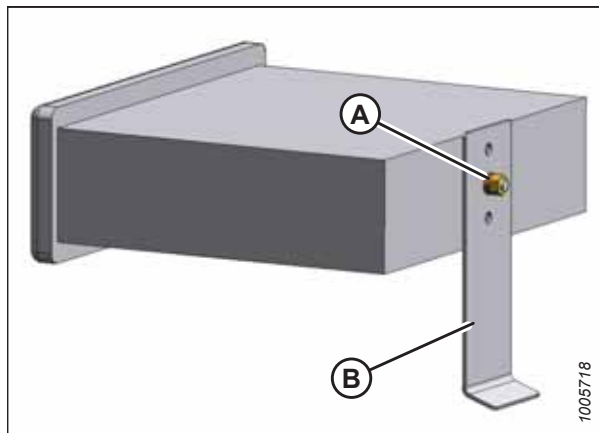


Figure 3.87: Radio and Support

13. Adjust bracket (A) (if necessary) by loosening nuts (B) to allow the radio to slide into the opening and securely capture support (C).

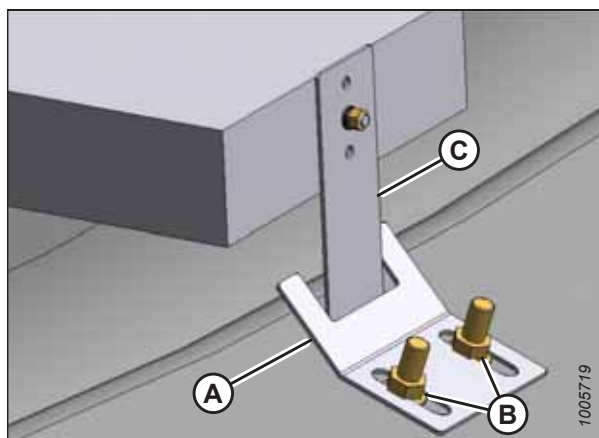


Figure 3.88: Radio and Support

14. Retrieve the antenna from inside the cab and remove the protective cover from the base.
15. Remove protective cover (A) from the antenna mount on the cab roof and thread the antenna onto the base until it is hand-tight.

NOTE:

Store the protective cover in the cab and reinstall it to protect the antenna mount in the event that the antenna needs to be removed.

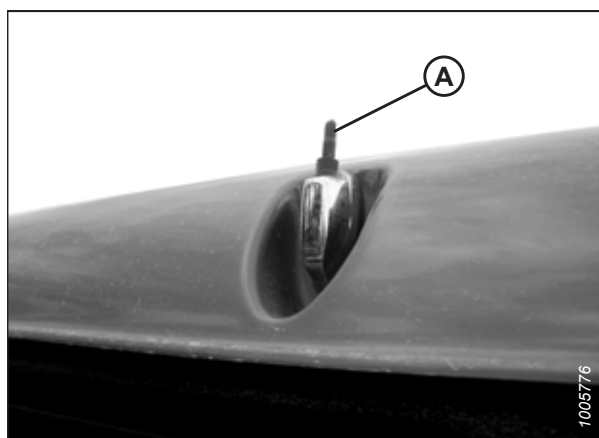


Figure 3.89: Antenna Mount on Cab Roof

ASSEMBLING WINDROWER

16. Turn battery switch (A) to the ON position.
17. Turn the ignition key to ACC, switch the radio ON, and check the operation in accordance with the instructions supplied with the radio.
18. Turn the ignition key to the OFF position, and remove the key.

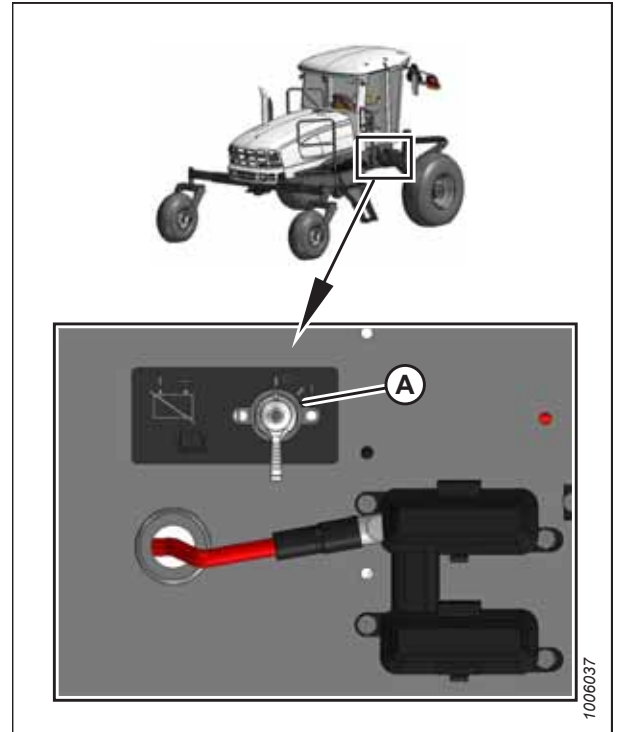


Figure 3.90: Battery Main Disconnect Switch

3.17 Removing Windrower from Assembly Stands

Once the windrower is assembled, remove it from the assembly stands so that pre-delivery and operational checks can be performed.

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: Predelivery Checks

The predelivery checklist included with this manual and several operational checks will need to be completed before the windrower can be delivered to the customer.

1. Perform the predelivery checks listed in the *Predelivery Checklist, page 289*. Make adjustments to the windrower only if absolutely necessary and only in accordance with the instructions in this manual. Ensure that the predelivery checklist is retained by the Operator or the Dealer.
2. Perform the operational checks listed on the *Predelivery Checklist, page 289*.

4.1 Recording Serial Numbers

Serial numbers identify the specific windrower, its engine, and its factory configuration. The serial number will need to be recorded on the Predelivery Checklist.

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

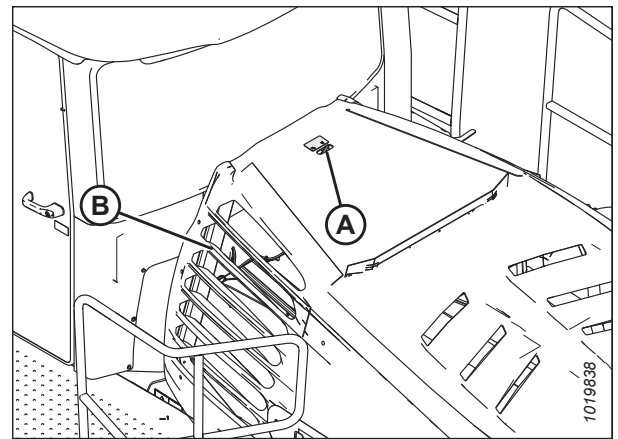


Figure 4.1: Hood

3. Record the windrower and engine serial numbers on the *Predelivery Checklist, page 289*. Confirm that the serial number recorded matches the one found on the shipping manifest or work order.

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

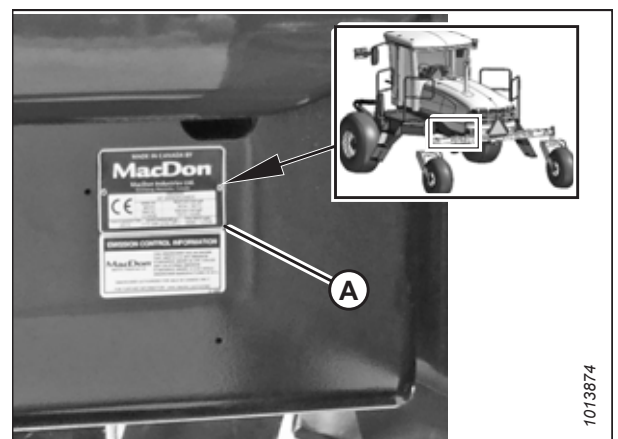


Figure 4.2: Serial Number Location

PREDELIVERY CHECKS

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



Figure 4.3: Engine Serial Number Location

4.2 Checking Tire Pressures and Adding Tire Ballast

Checking the tire pressure and possibly adding tire ballast will help ensure the proper operation of the windrower.

4.2.1 Checking Tire Pressure

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

To inspect a tire’s air pressure level:

1. Determine the type and size of tire installed on the windrower.
2. Check the tire pressure. Refer to the following table to determine the appropriate air pressure:

Table 4.1 Tire Pressures

Tire Type	Size	Pressure
Bar	18.4–26	317 kPa (46 psi)
	600/65R28	241 kPa (35 psi)
Turf	18.4–26	317 kPa (46 psi)
	23.1–26	234 kPa (34 psi)
Rear Caster	All	69 kPa (10 psi)

3. Adjust the tire pressure as needed.

NOTE:

Check the maximum inflation rating on the tire’s sidewall. Do **NOT** inflate the tire beyond the maximum pressure specification.

4.2.2 Adding Tire Ballast

Adding fluid ballast to the windrower’s caster tires will improve the windrower’s stability when it is paired with a heavy header. Tire ballast may only be needed for certain header-windrower combinations in certain types of terrain.

With respect to ballast capacity, a tire is considered to be full of ballast fluid when 75% of the inner volume of the tire is occupied by ballast fluid, or else when the ballast fluid is level with the wheel’s valve stem when the stem is at the 12 o’clock position while the windrower is on level ground. When adding ballast fluid to the caster wheels, always add an identical amount to each wheel. The caster wheels can safely hold any volume of ballast fluid up to and including their maximum capacity, as specified in the table below.

Table 4.2 Recommended Ballast Weight

Header Description	Recommended Ballast				Recommended Tire Size
	Level Terrain		Sloped Terrain		
	Per Tire	Both Tires	Per Tire	Both Tires	
Size	liters (US gal)	kg (lb.)	liters (US gal)	kg (lb.)	
A Series					
All	0				7.5 x 16 10 x 16 16.5 x 16.1
R Series					
All	0				7.5 x 16 10 x 16 16.5 x 16.1
D Series and D1 Series					

PREDELIVERY CHECKS

Table 4.2 Recommended Ballast Weight (continued)

7.6 m (25 ft.) and smaller	0				7.5 x 16 10 x 16 16.5 x 16.1
9.1 m (30 ft.) single or double reel without conditioner 10.7 m (35-ft.) single reel	0	0	38 (10)	91 (200)	7.5 x 16 10 x 16 16.5 x 16.1
9.1 m (30 ft.) double reel steel fingers and conditioner 10.7 m (35 ft.) double reel (5 or 6-bat)	69 (18)	170 (380)	115 (30)	288 (630)	Level ground: 10 x 16 Level ground: 16.5 x 16.1 Hills: 16.5 x 16.1
12.1 m (40 ft.)	115 (30)	288 (630)	158 (41)	377 (830)	16.5 x 16.1
D2 Series					
D215	0	0	38 (10)	91 (200)	7.5 x 16 10 x 16 16.5 x 16.1
D220, D225	69 (18)	170 (380)	115 (30)	288 (630)	Level ground: 10 x 16 Level ground: 16.5 x 16.1 Hills: 16.5 x 16.1
D230, D235, D241 ²	115 (30)	288 (630)	158 (41)	377 (830)	16.5 x 16.1

2. When paired with an M Series Self-Propelled Windrower, the D241 SP header **CANNOT** be equipped with any options.

4.3 Checking Engine Air Intake

The air intake system must be inspected to ensure air intake components have been installed and tightened correctly.

1. Ensure air cleaner cap is firmly attached and latches (A) and clamps (B) are secure.

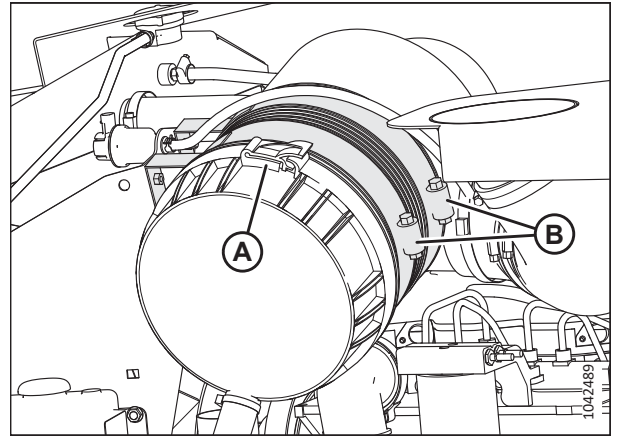


Figure 4.4: M155 Air Intake System

2. Check the constant torque spring clamp (A) at the back of the air cleaner. Hold a 0.46 mm (0.018 in.) gauge between the middle coils, tighten the clamp until the gauge is snug, and remove the gauge.

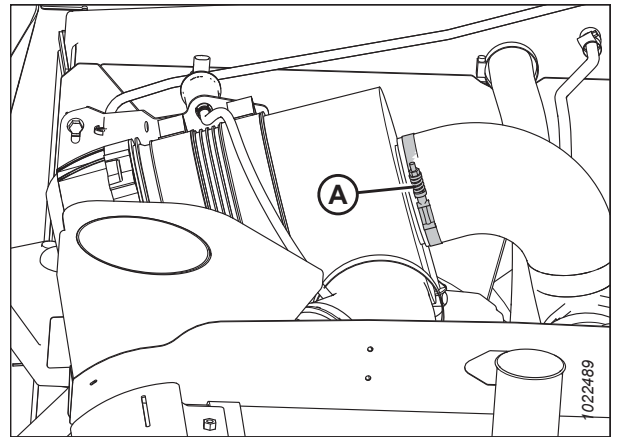


Figure 4.5: M155 Air Intake System

4.4 Checking Hydraulic Oil Level

The hydraulic oil reservoir can be found in the engine bay. The hydraulic oil level can be inspected using the sight glass on the side of the reservoir, or by using the dipstick.

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

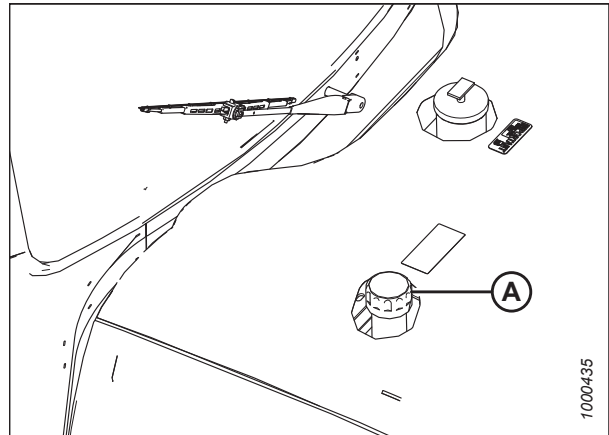


Figure 4.6: Engine Hood

3. Inspect the dipstick. The hydraulic oil level should be between the low (L) and high (H) marks on the dipstick.
4. If necessary, add hydraulic oil. Do not overfill the reservoir. Refer to Table 8.17, page 286 for specifications.
5. Reinstall the dipstick and filler cap, and turn it clockwise to tighten and lock it.

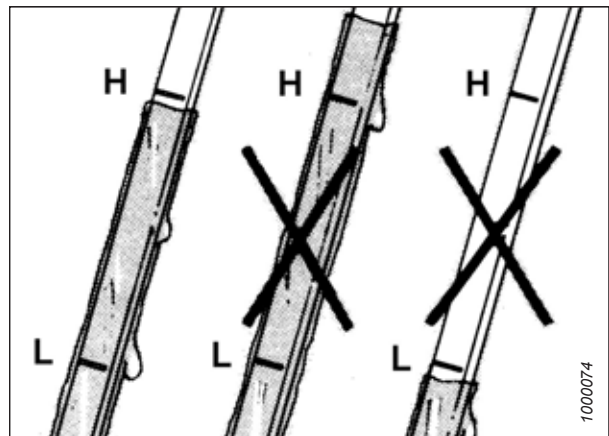


Figure 4.7: Hydraulic Oil Levels

4.5 Checking Fuel Separator

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

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

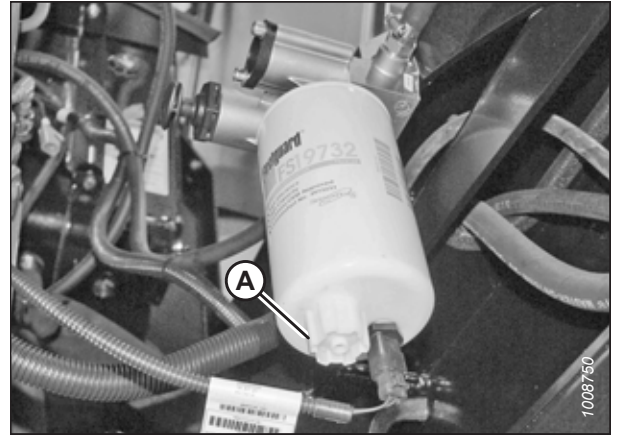


Figure 4.8: Fuel Filter

4.6 Checking Engine Oil Level

Ensure the engine oil is filled to the correct level.

1. Remove dipstick (A) by turning it counterclockwise to unlock it.
2. Wipe the dipstick clean and reinsert it into the engine.
3. Remove the dipstick again and check the oil level.

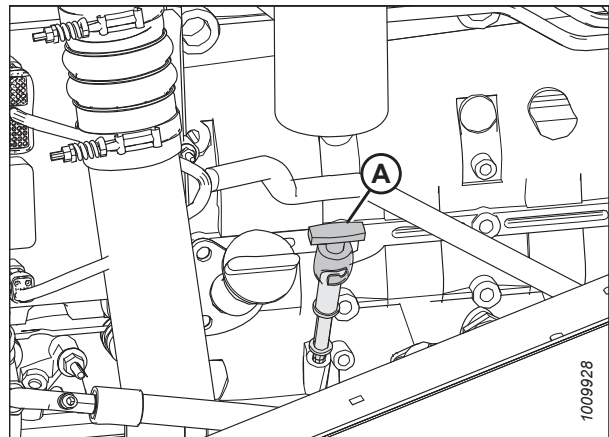


Figure 4.9: Engine Oil Dipstick

4. Add oil if the level is below the low (L) mark.

IMPORTANT:

Keep the oil level between the low (L) and high (H) marks on the dipstick.

NOTE:

For information on the oil specifications, refer to [8.17, page 286](#).

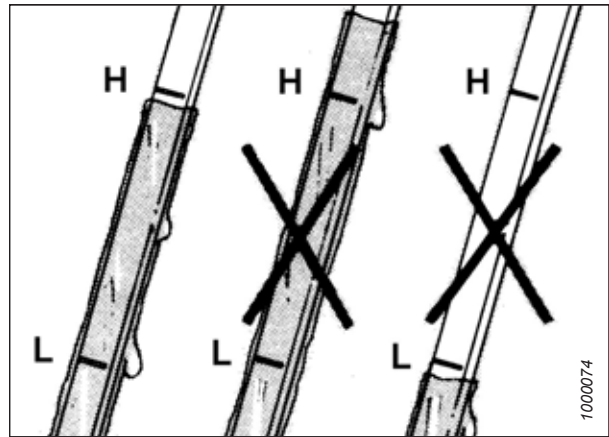


Figure 4.10: Engine Oil Level

5. Replace dipstick (A) and turn it clockwise to lock it.

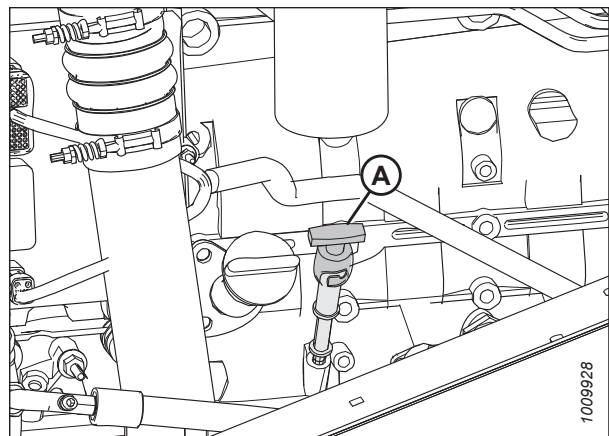


Figure 4.11: Engine Oil Dipstick

4.7 Checking Gearbox Lubricant Level

Ensure the gearbox lubricant is filled to the correct level.

1. Locate gearbox oil level check plug (A) under the machine. Remove plug (A) and ensure lubricant is visible or slightly running out.
2. If lubricant is required, add gearbox oil. Refer to Table 8.17, page 286 for specifications.
3. Ensure there is thread sealant on the threads of plug (A). Replace plug (A) and tighten it.

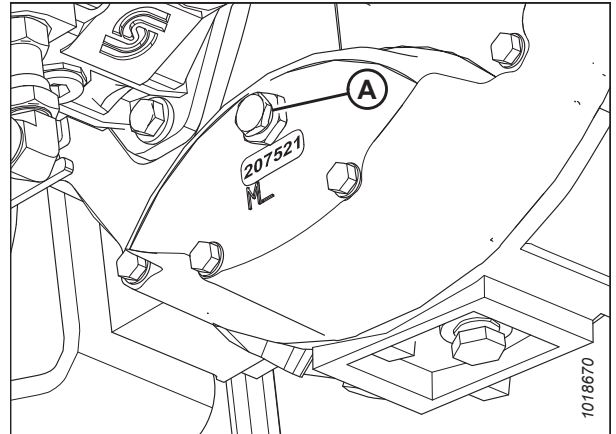


Figure 4.12: Gearbox

4.8 Checking Engine Coolant

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

1. Visually inspect the coolant level in the coolant recovery tank (A). Tank should be at least half full.
2. Ensure the coolant in the coolant recovery tank is rated for -34°C (-30°F).
3. If necessary, add coolant. Refer to Table [8.17, page 286](#) for specifications.

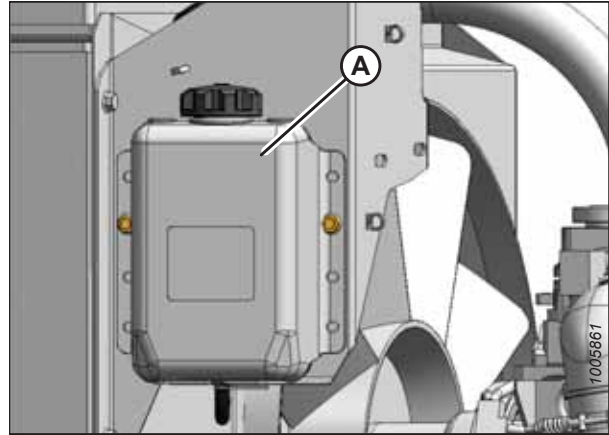


Figure 4.13: Coolant Recovery Tank

4.9 Checking Air Conditioning Compressor Belt

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



Figure 4.14: A/C Compressor Belt

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.

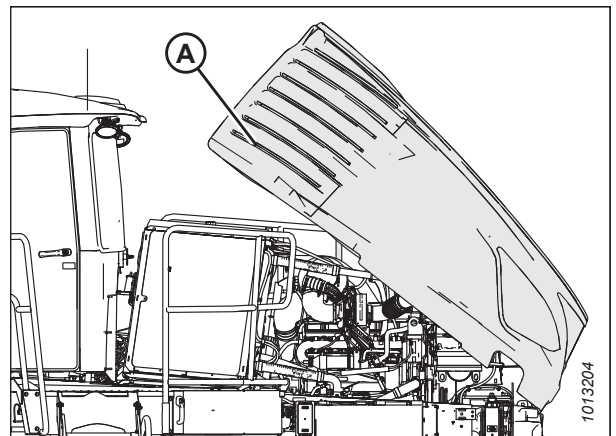


Figure 4.15: Engine Compartment

4.10 Starting Engine

The procedure for starting the windrower's engine varies depending on the ambient temperature. In cold weather, the engine must go through a warm-up cycle before the engine speed can be increased.

CAUTION

Park on a level surface with the ground speed lever (GSL) in the N-DETENT position and the steering wheel in the locked (centered) position. Wait for the cab display module (CDM) to beep and display an "In Park" message to confirm that the parking brake is engaged.

1. Ensure that there is sufficient fuel in the fuel tank for the windrower's engine to run for at least 15 minutes.
2. Ensure that lock (A) is engaged at the cab-forward or engine-forward position.



Figure 4.16: Operator Console

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

DANGER

Ensure that all bystanders have cleared the area.



Figure 4.17: Operator Console

PREDELIVERY CHECKS

Normal start:

6. Follow these steps when starting the engine when the ambient temperature is above 16°C (60°F):
 - a. Move the throttle fully back to START position (A).
 - b. Sound the horn three times.

NOTE:

The horn is located on the headliner.

- c. Turn ignition key (B) to the RUN position.

NOTE:

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

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



Figure 4.18: Operator Console



WARNING

If the starter is able to engage when the steering wheel is unlocked, when the ground speed lever (GSL) is out of the NEUTRAL position, or when the header clutch is engaged, do NOT start the engine. Refer to the windrower's technical manual for further details.

NOTE:

When starting the engine when the ambient temperature is below 5°C (40°F), the engine will cycle through a period during which it will sound as though it is struggling to stay running. This is the engine's warm-up mode. The throttle will be nonresponsive while the engine is in warm-up mode. Warm-up mode lasts between 30 seconds and 3 minutes depending on the temperature. The throttle will become active after the engine has stabilized and is idling normally.

IMPORTANT:

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

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 attempting to start the engine again.
- After the third 15-second crank attempt, allow the starter motor to cool for 10 minutes before attempting to start the engine again.
- If the engine still does NOT start, refer to Table 4.3, page 94.

Cold start:

NOTE:

The windrower's engine is equipped with a cold-start assist system.

PREDELIVERY CHECKS

7. When the engine temperature is below 5°C (40°F), follow the procedure for a normal start. Refer to Step 6, page 93, but adhere to the following *NOTE* and *IMPORTANT* statements while starting the engine.

NOTE:

When starting the engine when the ambient temperature is below 5°C (40°F), the engine will cycle through a period during which it will sound as though it is struggling to stay running. This is the engine's warm-up mode. The throttle will be nonresponsive while the engine is in warm-up mode. Warm-up mode lasts between 30 seconds and 3 minutes depending on the temperature. The throttle will become active after the engine has stabilized and is idling normally.

IMPORTANT:

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

Table 4.3 Engine Start Troubleshooting

Problem	Solution
Controls are not in the NEUTRAL position	<ul style="list-style-type: none"> • Move the GSL to NEUTRAL • Move the steering wheel to the locked (centered) position • Disengage the HEADER switch
Operator's station is not locked	<ul style="list-style-type: none"> • Adjust the position of the operator's station • Ensure that the lock is engaged
Neutral interlock is out of adjustment	<ul style="list-style-type: none"> • Refer to the windrower's technical manual
Fuel not reaching the engine	<ul style="list-style-type: none"> • Fill the fuel tank • Replace the fuel filter • Ensure that the fuel shut off valve is in the open position
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.

4.11 Priming Hydraulic System

In order for the windrower's hydraulic system to perform properly, the hydraulic fluid must be completely free of air. Priming the hydraulic system will purge any trapped air. The hydraulic system may require priming when one of its components (for example, a hydraulic pump) is replaced.

DANGER

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

1. Remove hydraulic oil reservoir filler cap / dipstick (A).
2. Open the engine compartment hood to the highest position.

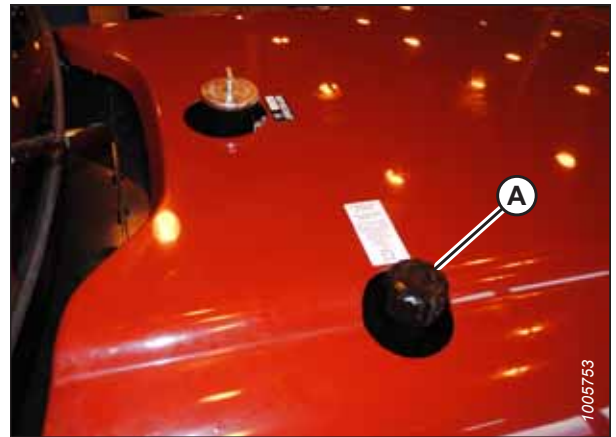


Figure 4.19: Filler Cap

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

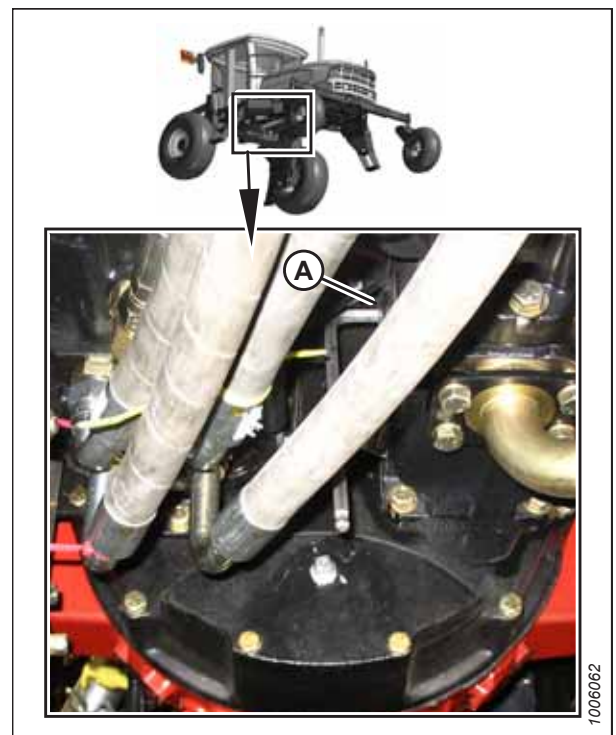


Figure 4.20: Header Drive Pump Housing

PREDELIVERY CHECKS

5. Locate plug (A) on the top of the header drive pump housing.
6. Loosen plug (A) to bleed the pump housing. Retighten the plug once oil starts to run out.

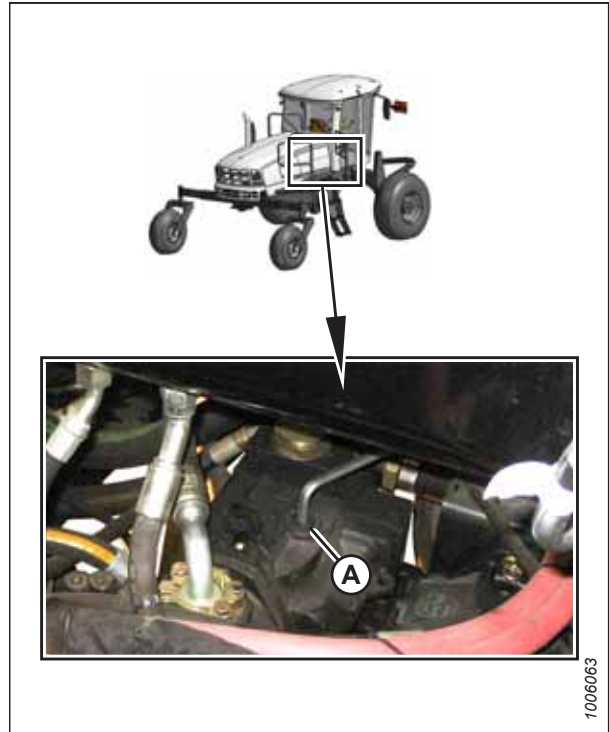


Figure 4.21: Header Drive Pump Housing

7. Locate plug (A) on the top of the traction drive pump housing.
8. Loosen plug (A) to bleed the pump housing. Retighten the plug once oil starts to run out.
9. Replace the hydraulic oil reservoir filler cap.



Figure 4.22: Traction Drive Pump Housing

PREDELIVERY CHECKS

10. Open the left platform.
11. Disconnect brake engage solenoid plug (P44) (A) from the multifunction block on the left side of the windrower.

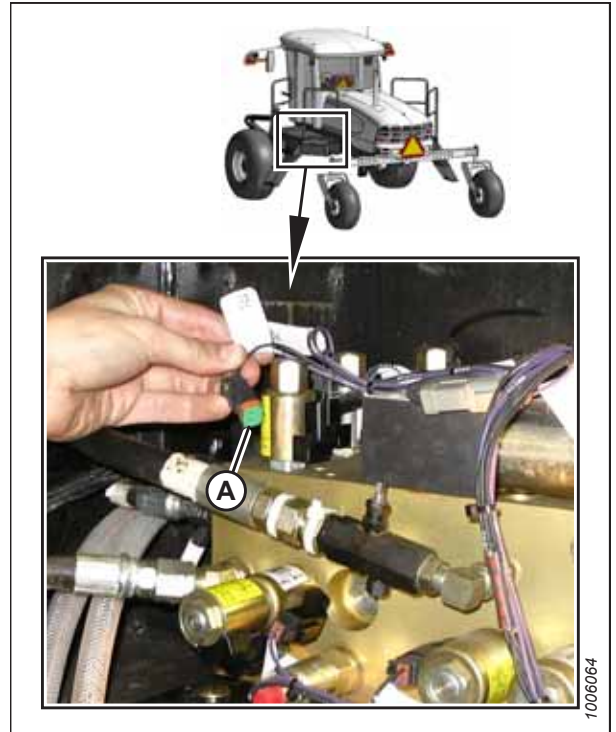


Figure 4.23: Multifunction Control Manifold

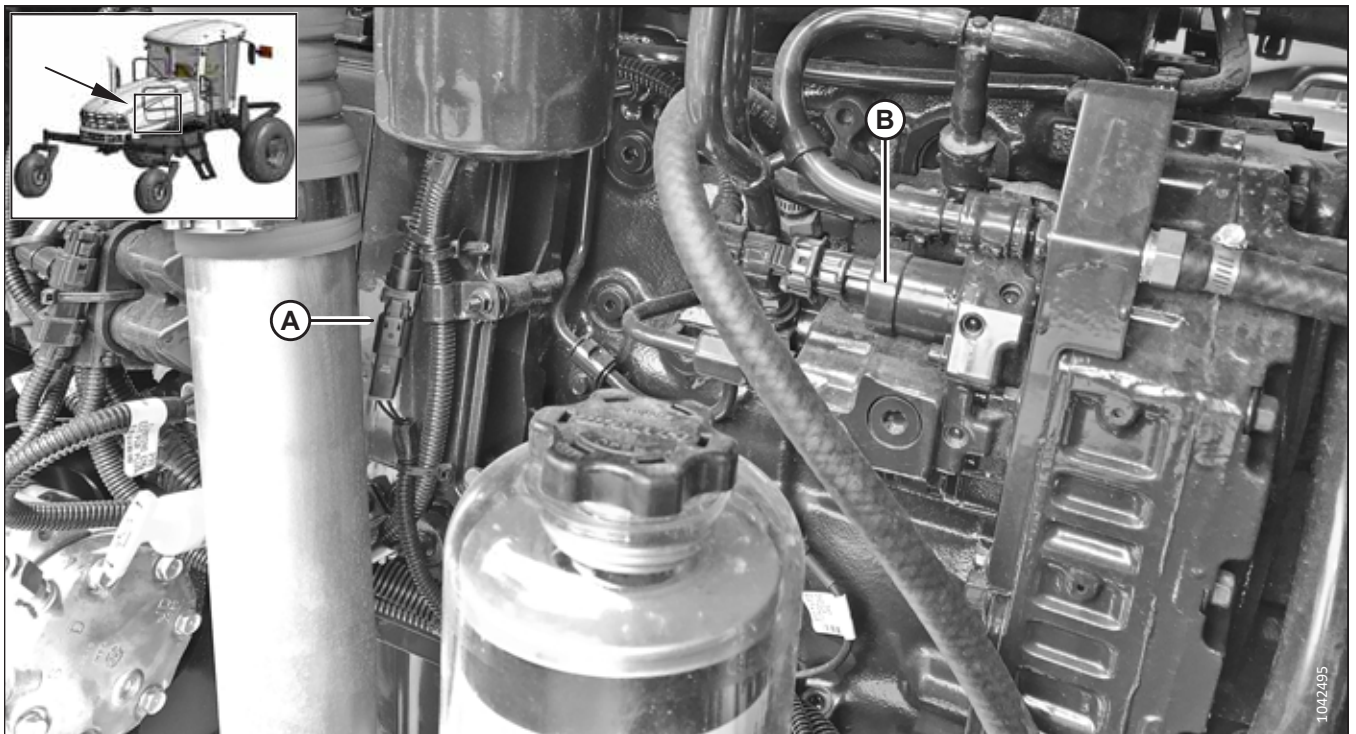


Figure 4.24: Fuel Pump Location

12. Disconnect 2-pin electrical connection (A) near fuel pump (B) on the right side of the engine.

PREDELIVERY CHECKS

13. Open the maintenance platform on the right (cab-forward) side.
14. Open fuse cover (A).

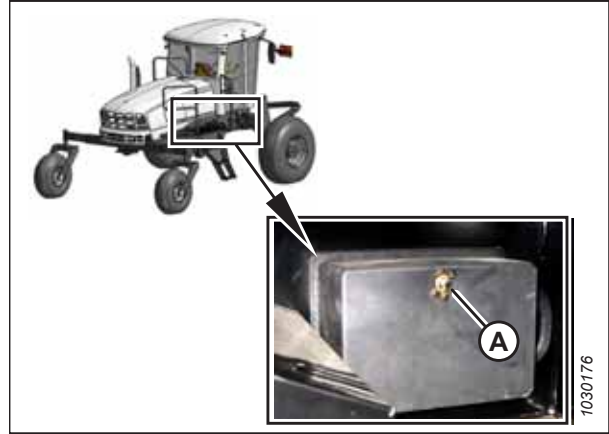


Figure 4.25: Fuse Cover

15. Remove ignition power fuse (15A) (A).

DANGER

Ensure that all bystanders have cleared the area.

16. Prime the system by cranking the engine with the ignition key for 15 seconds.
17. Reconnect the electrical connection at the fuel pump and at the brake engage solenoid.
18. Reinstall ignition power fuse (15A) (A) and the fuse cover.
19. Close the engine compartment hood.

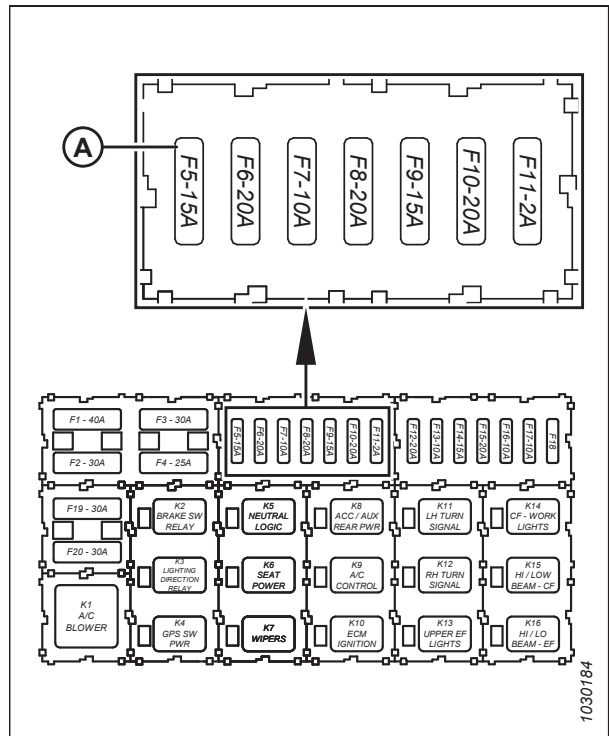


Figure 4.26: Fuse Panel

PREDELIVERY CHECKS

20. Check the hydraulic oil level in the reservoir (remove filler cap / dipstick (A) and add SAE 15W-40 oil if necessary). For instructions, refer to [4.4 Checking Hydraulic Oil Level, page 86](#).
21. Close the platforms.



Figure 4.27: Filler Cap

4.12 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 N-DETENT position and the steering wheel in the locked (centered) position. Wait for the cab display module (CDM) to beep and display an "In Park" message 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). The lubricant should be visible through the port.
5. If lubricant needs to be added, remove plug (B), and add lubricant until lubricant runs out from port (A) or (B). For the lubricant specifications, refer to [8.4 Lubricants, Fluids, and System Capacities, page 286](#).
6. Reinstall the plugs and tighten them.

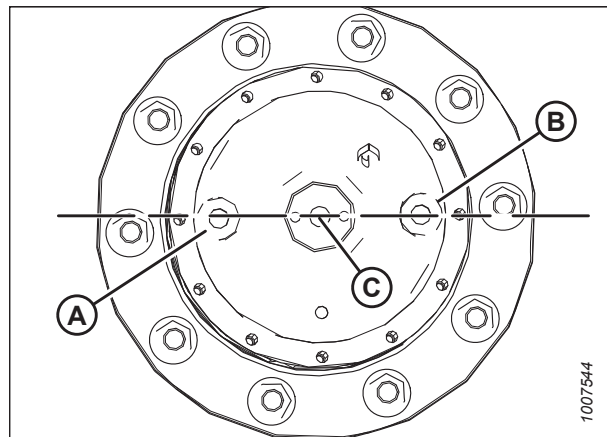


Figure 4.28: Drive Wheel Hub

4.13 Checking Traction Drive

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

DANGER

Ensure that all bystanders have cleared the area.

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



Figure 4.29: Operator Console

Chapter 5: Performing Operational Checks

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

5.1 Checking Safety System

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

DANGER

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

DANGER

Ensure that all bystanders have cleared the area.

A properly functioning safety system should operate as follows. If the system does not function as described, refer to the windrower technical manual for adjustment procedures.

- With the ground speed lever (GSL) in N-DETENT position and the steering wheel locked (centered), the park brakes should engage and the cab display module (CDM) should display IN PARK accompanied by an audible beep.
 - The starter should engage **ONLY** when the GSL is in N-DETENT, the steering wheel is locked (centered), and the header drive switch is in the OFF position.
 - The brake should engage and the machine should **NOT** move after engine start-up.
 - The steering wheel should **NOT** lock with the engine running and the GSL out of N-DETENT.
1. Ensure the battery disconnect switch is in the POWER ON position.

NOTE:

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

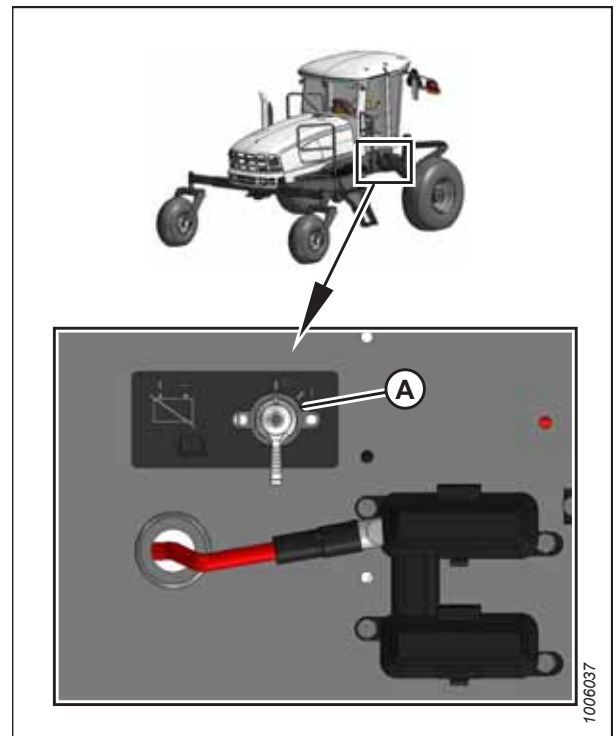


Figure 5.1: Battery Switch

PERFORMING OPERATIONAL CHECKS

Header drive engaged safety check:

2. Shut down the engine, and pull up on collar (B) while pressing down on switch (A) to engage the header drive.
3. Try starting the engine and confirm the cab display module (CDM) displays HEADER ENGAGED on the upper line and DISENGAGE HEADER on the lower line.
4. If the engine turns over, the safety system requires adjustment or repair. Refer to the windrower technical manual for adjustment procedures.

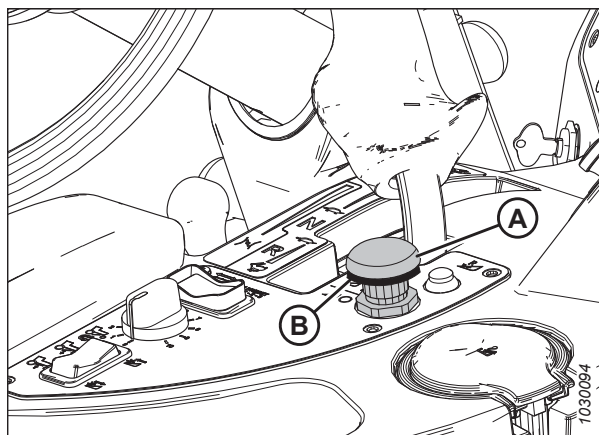


Figure 5.2: Header Drive Switch

Pintle switch safety check:

5. Shut down the engine, and remove the key.
6. Open the engine compartment hood.
7. Pry the steering interlock away from pintle arms (A) by inserting a wedge or pry bar between one of the interlock channels (B) and the pintle arm.
8. Insert a wooden block approximately 19 mm (3/4 in.) thick between the opposite channel and the pintle arm so the interlock channel is clear of the pintle arm.
9. Turn the steering wheel off-center, and move the GSL to N-DETENT.
10. Try starting the engine and confirm the CDM flashes CENTER STEERING accompanied by a short beep with each flash. The engine should **NOT** turn over.
11. If the engine turns over, the safety system requires adjustment or repair. Refer to the windrower technical manual for adjustment procedures.
12. Remove the key from the ignition.
13. Remove the wooden block and close the hood.

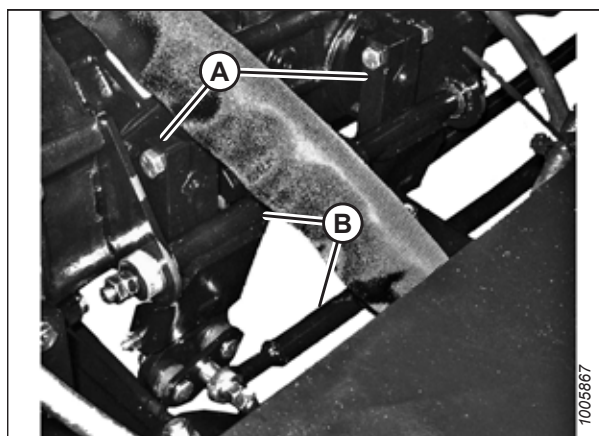


Figure 5.3: Pintle Arms

PERFORMING OPERATIONAL CHECKS

Steering and neutral safety check:

14. Shut down the engine and center the steering wheel. Place the GSL (A) in NEUTRAL, but not in N-DETENT.
15. Try starting the engine and confirm the CDM flashes CENTER STEERING on the upper line and PLACE GSL INTO N on the lower line accompanied by a short beep with each flash. The engine should **NOT** turn over.
16. If the engine turns over, the safety system requires adjustment. Refer to the windrower technical manual for adjustment procedures.



Figure 5.4: Operator's Station

Seat base lock safety check:

17. Ensure the operator's station is **NOT** locked. To unlock the operator's station, pull up and hold knob (B) to release latch (C), and turn the steering wheel to unlock the operator's station.
18. Center the steering wheel and place GSL (A) in N-DETENT. Try starting the engine and confirm that the engine cranks but does **NOT** start, and the CDM displays SEAT BASE NOT LOCKED.
19. If the engine starts, the safety system requires adjustment. Refer to the windrower technical manual for adjustment procedures.



Figure 5.5: Operator's Station

5.2 Checking Engine Warning Lights

Upon engine startup, a single loud tone sounds, and engine warning lights illuminate as a self-test.

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



Figure 5.6: Operator Console

5.3 Checking Windrower Startup

Ensure that the windrower functions as expected after startup.

DANGER

Ensure that all bystanders have cleared the area.

1. Start the engine.

NOTE:

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

2. Ensure the steering wheel is centered. Move ground speed lever (GSL) (A) straight out of N-DETENT (neither forward nor reverse). The machine should not move.
3. Check that the steering wheel is free to move.
4. If the machine does not function as described, the system requires adjustment. Refer to the windrower technical manual.



Figure 5.7: Operator Console

5.4 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.
3. Check the engine speed on the cab display module (CDM) (A) and compare it to the value in the table below.
4. Move the throttle to its highest possible setting.
5. Check the engine speed on CDM (A) and compare it to the value in the table below.

Table 5.1 Engine Speed

Model	Idle	Maximum rpm (No Load)
M155	1100	2320–2350

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



Figure 5.8: Cab Display Module (CDM)

5.5 Checking Gauges and Cab Display Module Display

All gauges in the cab must function as expected.

1. Ensure engine temperature gauge (A) and fuel gauge (B) are working.



Figure 5.9: Temperature and Fuel Gauges

2. Ensure cab display module (CDM) display (A) is working by pushing SELECT button (B) on the CDM or SELECT button (C) on the ground speed lever (GSL).
3. If the system does not function as described, refer to the windrower technical manual.

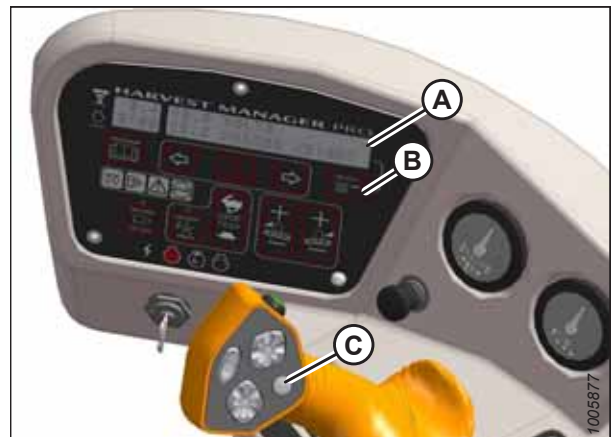


Figure 5.10: CDM

5.6 Checking Electrical System

The electrical system can be checked using the cab display module (CDM).

1. Push SELECT button (C) on the ground speed lever (GSL) or SELECT button (B) on the cab display module (CDM) until CDM display (A) shows VOLTS. The display indicates the condition of the battery and alternator. To evaluate the reading, refer to Table 5.2, page 110.



Figure 5.11: Cab Display Module (CDM)

Table 5.2 Battery and Alternator Condition

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

NOTE:

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

5.7 Checking Operator Presence System

The operator presence system is a safety feature that requires someone to sit in the operator's seat in order for the windrower to be operational.

DANGER

Ensure that all bystanders have cleared the area.

NOTE:

A header must be installed on the windrower before this operational check can be performed.

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

NOTE:

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

5. Position the GSL (A) in NEUTRAL and in N-DETENT.
 - a. Swivel the operator's station but do **NOT** lock it into position.
 - b. Move the GSL out of N-DETENT. The engine should shut down and the lower display will flash LOCK SEAT BASE → CENTER STEERING WHEEL → NOT IN NEUTRAL.
 - c. Swivel and lock the operator's station and the display should return to normal.
 - d. If the engine does not shut down, the seat position switches require adjustment. Refer to the technical manual.
6. Start the engine and drive the windrower at a speed **LESS THAN** 8 km/h (5 mph):
 - a. Stand up from the operator's seat.
 - b. Ensure the CDM flashes NO OPERATOR on the upper line and ENGINE SHUTDOWN 5...4...3...2...1...0 on the lower line accompanied by a steady tone. When the CDM display reaches 0, the engine will shut down.
 - c. If the engine does not shut down, the operator presence system requires adjustment. Refer to the windrower technical manual.



Figure 5.12: Operator Console

PERFORMING OPERATIONAL CHECKS

7. Start the engine and drive the windrower at a speed **MORE THAN** 8 km/h (5 mph):
 - a. Stand up from the operator's seat.
 - b. The CDM beeps once and displays NO OPERATOR on the lower line.
 - c. If the CDM does not beep and display this message, the operator presence system requires adjustment. Refer to the windrower technical manual.

5.8 Checking Exterior Lights

Remove any plastic film (if present) from the exterior lights. Check all parts of the exterior lighting system for functionality.

NOTE:

Rotate the operator's seat to cab-forward mode before checking the exterior lights. If the operator's seat is already in cab-forward mode, skip to Step 5, [page 114](#).

1. Turn the ignition key to RUN, or start the engine.
2. Move GSL (A) to the N-DETENT position.

IMPORTANT:

If the GSL is NOT in the N-DETENT position, the GSL cable may be damaged when you swivel the operator's station.

3. Pull up and hold knob (B) to release latch (C) at the base of the steering column.
4. Turn the steering wheel counterclockwise to pivot the operator's station clockwise 180°. When the operator's station has turned fully, the pin will engage the latch, securing the operator's station in its position.



Figure 5.13: Operator Console

PERFORMING OPERATIONAL CHECKS

- 5. Turn field light switch (A) to the ON position and ensure front field lights (B), rear flood lights (C), and rear swath lights (D) are functioning.

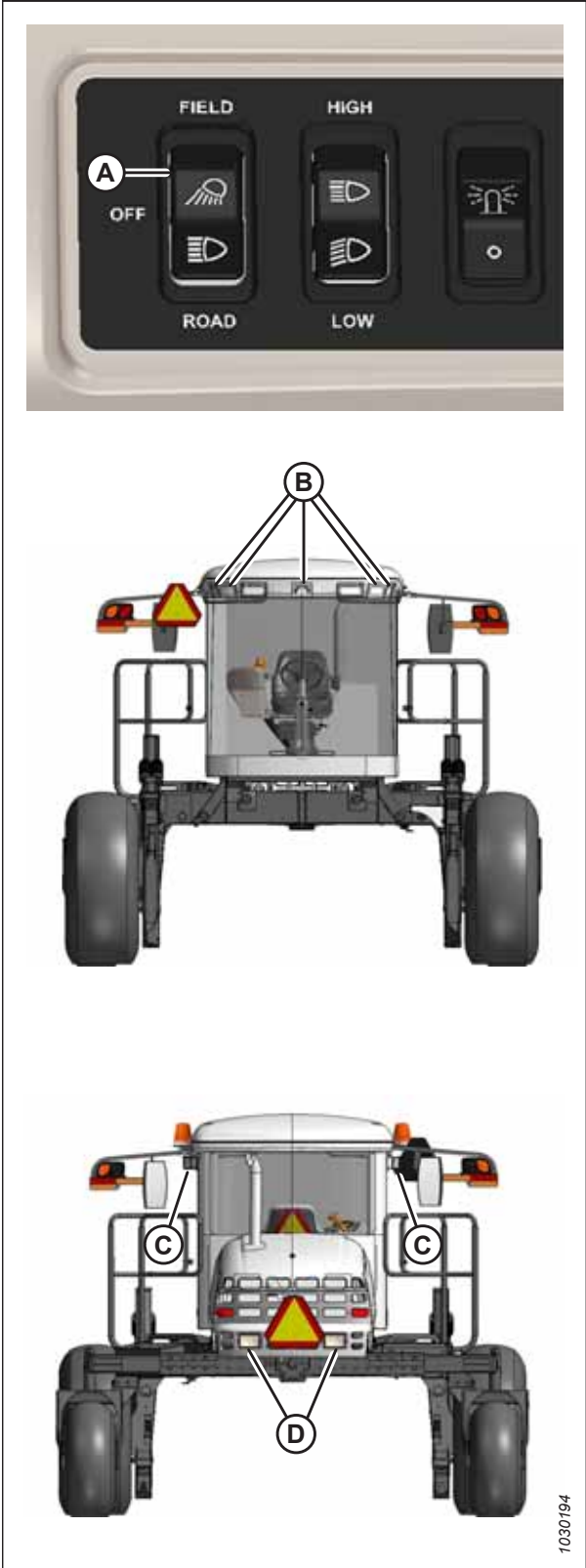


Figure 5.14: Exterior Lights – Cab Forward

PERFORMING OPERATIONAL CHECKS

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

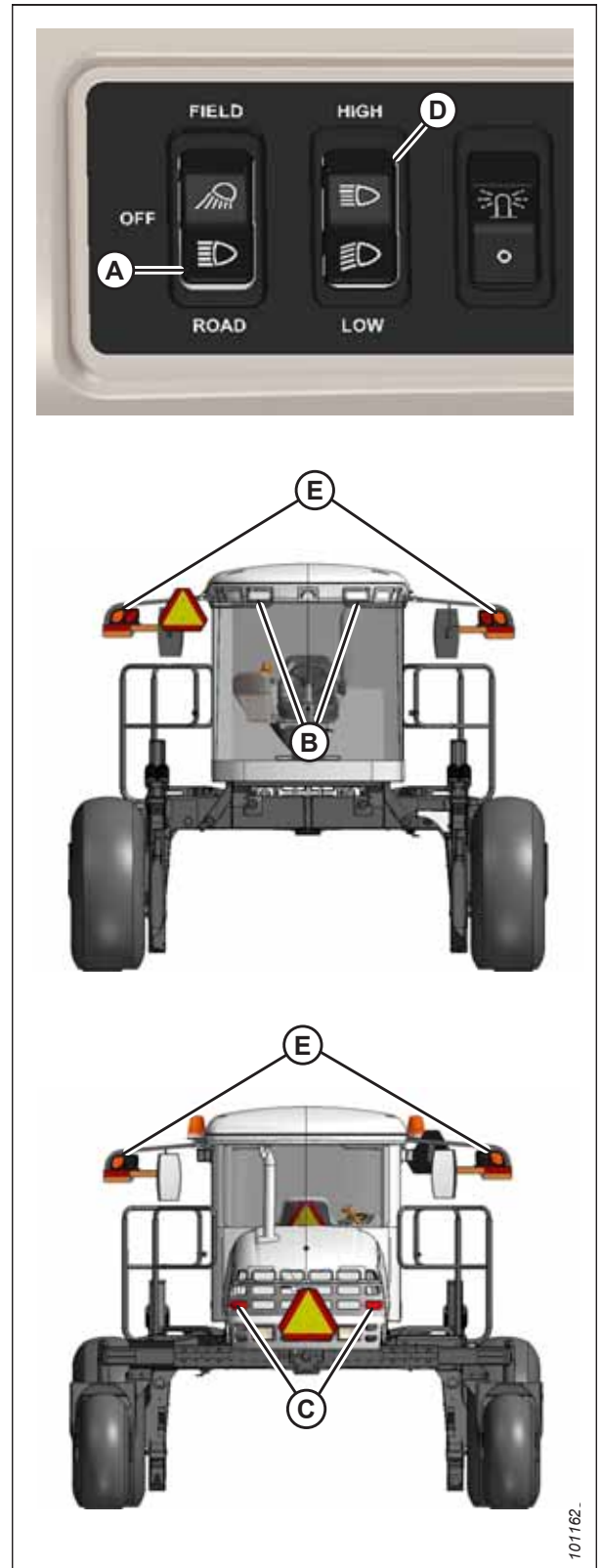


Figure 5.15: Exterior Lights – Cab Forward

PERFORMING OPERATIONAL CHECKS

10. Turn beacon switch (A) to the ON position and ensure amber beacons (B) are functioning.
11. If an exterior light is not functioning, refer to the windrower technical manual.

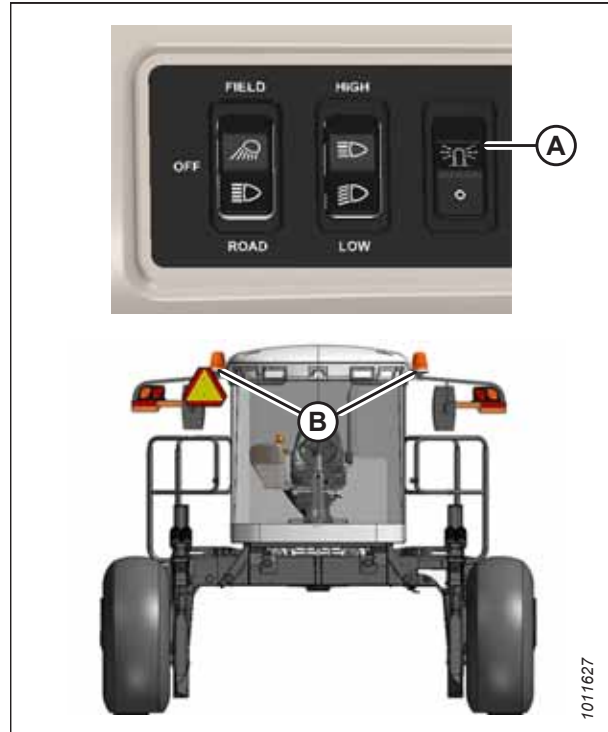


Figure 5.16: Exterior Lights – Beacons

5.9 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.

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

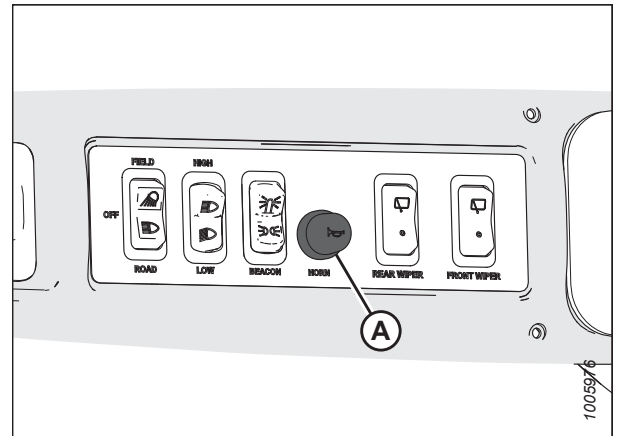


Figure 5.17: Horn Button

5.10 Checking Interior Lights

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

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

NOTE:

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

2. If interior lights do not function properly, refer to windrower technical manual.

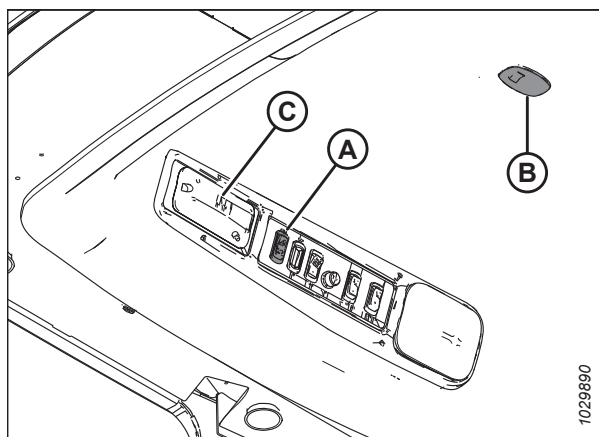


Figure 5.18: Interior Lights

5.11 Checking Air Conditioning and Heater

The windrower's cab is equipped with a heating, ventilation, and air conditioning system. Ensure that this system and its controls are functioning properly.

Figure 5.19: Air Conditioning (A/C) and Heater Controls



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

To distribute oil throughout the A/C system, perform the following steps:

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

5.12 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 the manual storage case (A) behind the operator's seat.

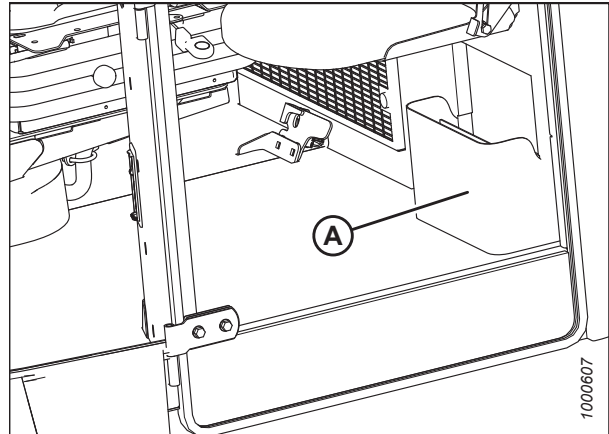


Figure 5.20: Manual Storage Case

Ensure that the following manuals are included with the windrower:

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



Figure 5.21: Manuals and Quick Card

5.13 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 the cab display module (CDM) and the seats.
2. Locate the bag inside the cab containing the GPS mount kit. If you wish to install the kit, do so in accordance with the instructions provided in the kit. If you choose not to install the kit, label the bag "GPS Completion kit" and place it in a toolbox for safekeeping.

IMPORTANT:

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



Figure 5.22: Windshield Decal

Chapter 6: Attaching Headers

There are specific procedures for safely attaching each model of header to the windrower.

6.1 Attaching A Series Auger Header

Attaching a header to the windrower involves physically connecting the header to the header and completing the hydraulic and electrical connections.

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

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

- [6.1.1 Attaching A Series Auger Header – Hydraulic Center-Link with Self-Alignment, page 123](#)
- [6.1.2 Attaching A Series Auger Header – Hydraulic Center-Link without Self-Alignment, page 129](#)
- [6.1.3 Attaching A Series Auger Header – Mechanical Center-Link, page 135](#)



Figure 6.1: M155 and A40D Auger Header

6.1.1 Attaching A Series Auger Header – Hydraulic Center-Link with Self-Alignment

The header will need to be physically attached to the windrower, and the hydraulic and electrical connections completed. The windrower may be equipped with an optional self-aligning hydraulic center-link, which allows the Operator to control the vertical position of the center-link from the cab.

DANGER

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

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

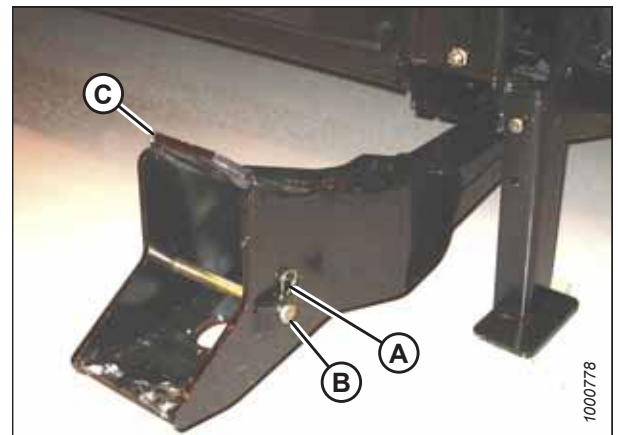


Figure 6.2: Header Boot

ATTACHING HEADERS

3. Check that the float engagement pin is installed in storage position (B) and **NOT** in engaged position (A).

IMPORTANT:

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

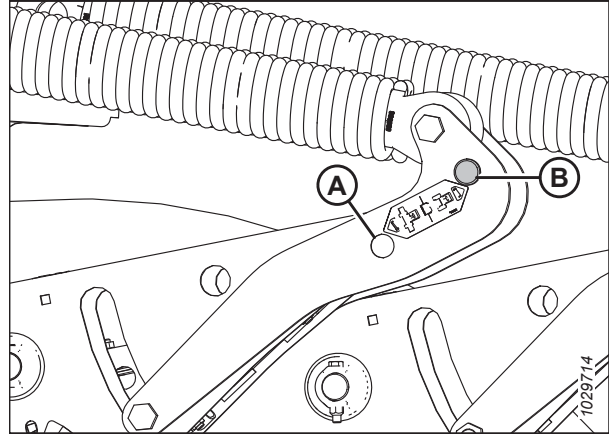


Figure 6.3: Header Float Linkage

DANGER

Ensure that all bystanders have cleared the area.

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

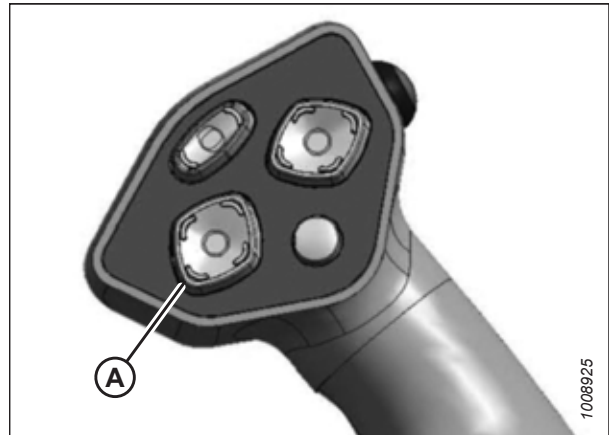


Figure 6.4: Ground Speed Lever

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

IMPORTANT:

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



Figure 6.5: Ground Speed Lever

ATTACHING HEADERS

6. Drive the windrower slowly forward until windrower feet (A) enter header supports (B). Continue driving slowly forward until the feet engage the supports and the header is nudged forward.

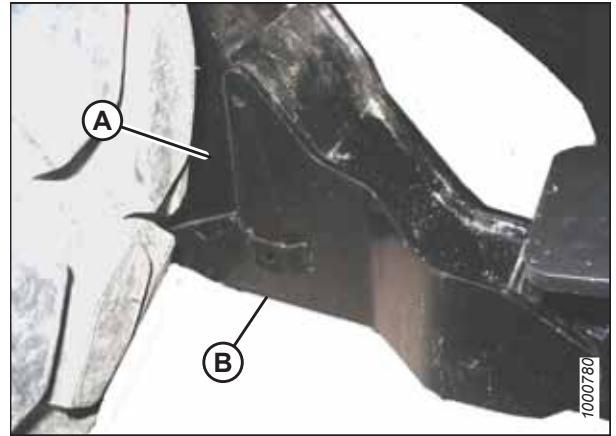


Figure 6.6: Header Support

7. Use the following GSL functions to position the center-link hook above the header attachment pin:
 - REEL UP (A) to raise the center-link
 - REEL DOWN (B) to lower the center-link
 - HEADER TILT UP (C) to retract the center-link
 - HEADER TILT DOWN (D) to extend the center-link

IMPORTANT:

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

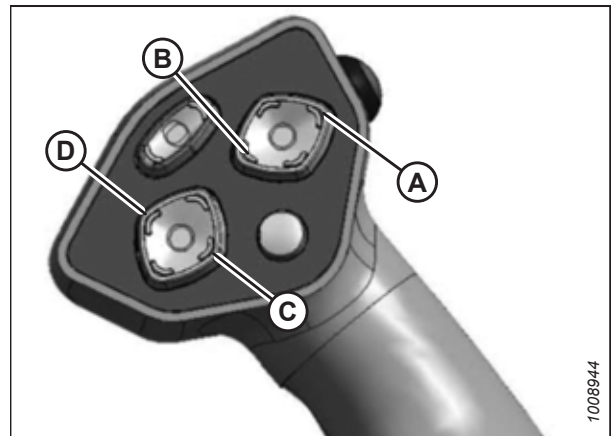


Figure 6.7: Ground Speed Lever

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

IMPORTANT:

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

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

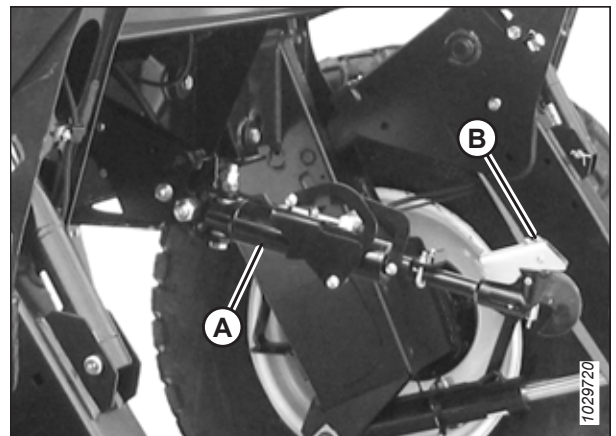


Figure 6.8: Hydraulic Center-Link

ATTACHING HEADERS

11. Press HEADER UP switch (A) to raise the header to its maximum height.
12. If one end of the header does **NOT** fully rise, rephase the lift cylinders as follows:
 - a. Press and hold the HEADER UP switch until both cylinders stop moving.
 - b. Continue to hold the switch for 3–4 seconds to fully phase the cylinders.

NOTE:

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



Figure 6.9: Ground Speed Lever

13. Engage the safety props on both lift cylinders:
 - a. Shut down the engine, and remove the key from the ignition.
 - b. Pull lever (A) and rotate it towards the header to release and lower safety prop (B) onto the lift cylinder.
 - c. Repeat the previous steps for the opposite lift cylinder.

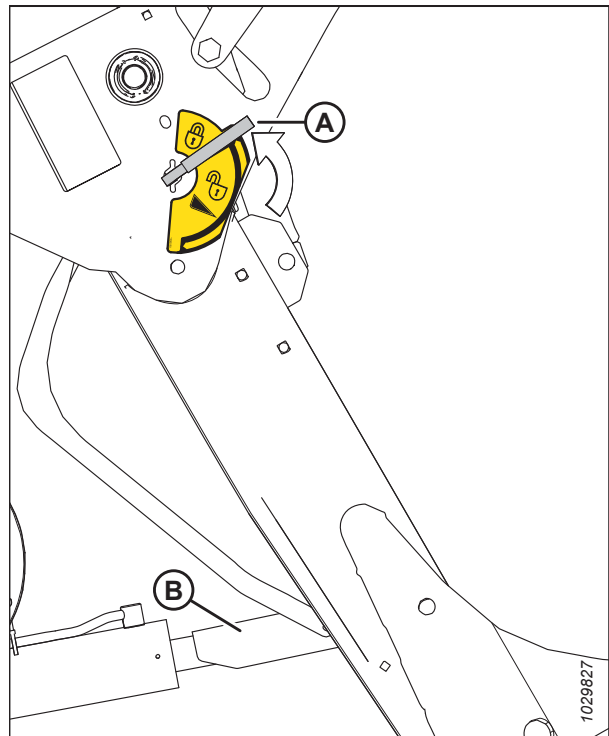


Figure 6.10: Safety Prop

ATTACHING HEADERS

14. Install clevis pin (A) through the support and the foot and secure it with the hairpin.

IMPORTANT:

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

15. Repeat the previous step to secure the support on the other side of the header.

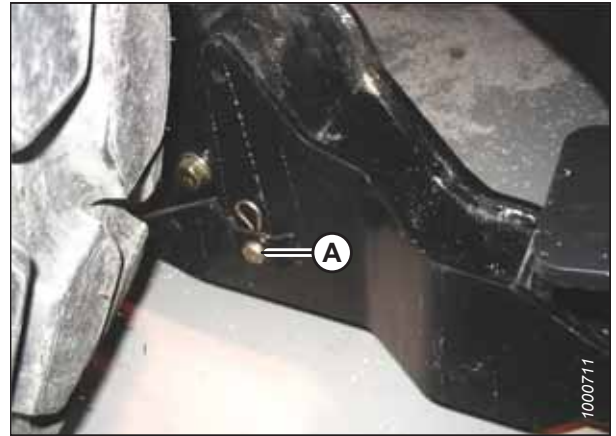


Figure 6.11: Header Support

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

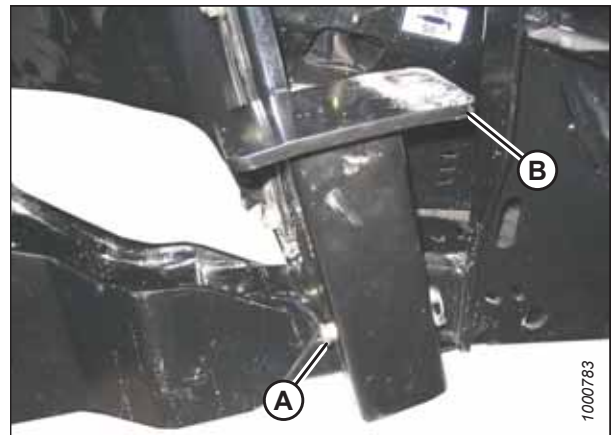


Figure 6.12: Header Stand

19. Remove the clevis pin from storage position (B) in the linkage and insert it into hole (A) to engage the float springs. Secure it with the hairpin. Repeat this step on the opposite float linkage.

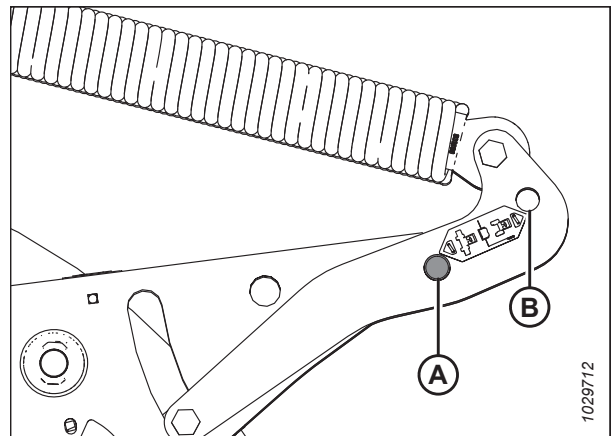


Figure 6.13: Header Float Linkage

ATTACHING HEADERS

20. Disengage the safety prop by turning lever (A) downwards until the lever locks into the vertical position.
21. Repeat the previous step to disengage the other safety prop.

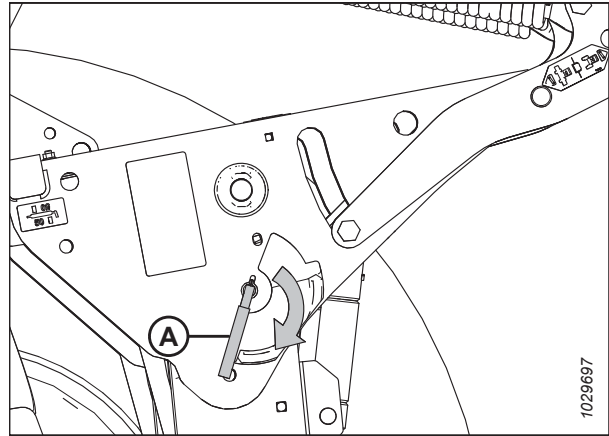


Figure 6.14: Safety Prop Lever

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

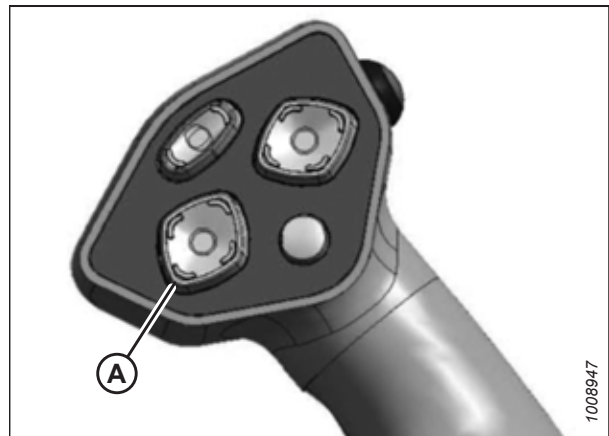


Figure 6.15: Ground Speed Lever

24. Connect header drive hoses (A) and electrical harness (B) to the header. For instructions, refer to the header operator's manual.

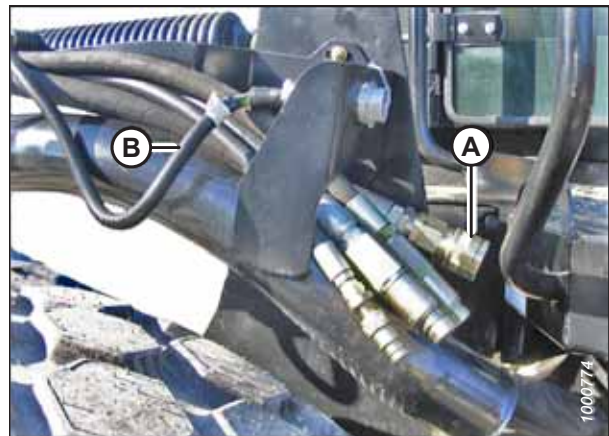


Figure 6.16: Header Drive Hoses and Harness

6.1.2 Attaching A Series Auger Header – Hydraulic Center-Link without Self-Alignment

The header will need to be physically attached to the windrower, and the hydraulic and electrical connections completed. If the windrower is equipped with a hydraulic center-link that lacks the self-alignment capability, the Operator will have to manually attach the hydraulic center-link's hook to the header's center pin.

DANGER

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

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

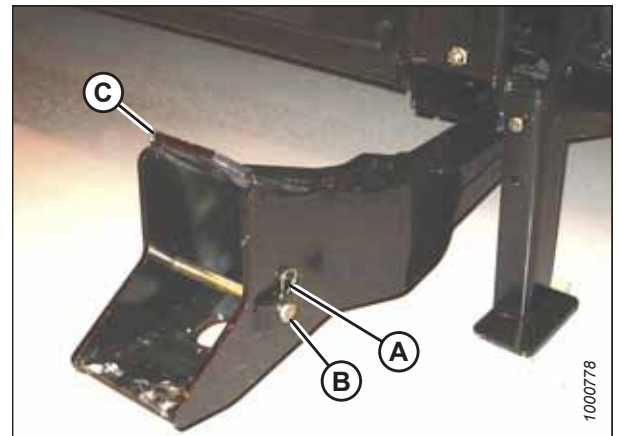


Figure 6.17: Header Boot

3. Check that the float engagement pin is installed in storage position (B) and **NOT** in engaged position (A).

IMPORTANT:

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

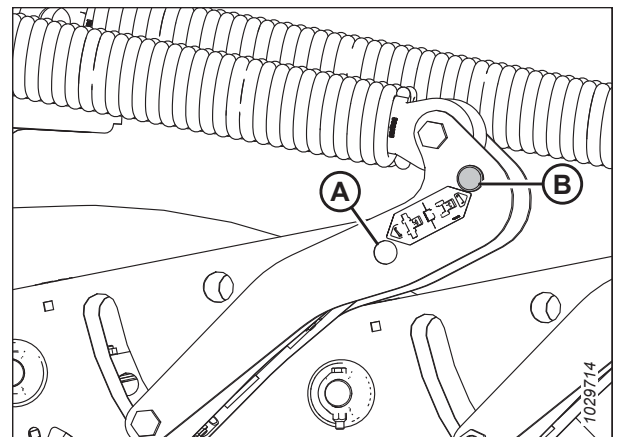


Figure 6.18: Header Float Linkage

ATTACHING HEADERS

DANGER

Ensure that all bystanders have cleared the area.

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

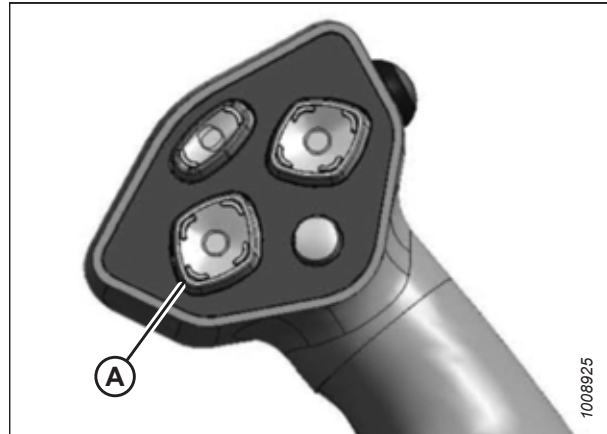


Figure 6.19: Ground Speed Lever

5. Remove pin (A) from the frame linkage and raise center-link (B) until the hook is above the attachment pin on the header. Replace pin (A) to hold the center-link in place.

IMPORTANT:

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

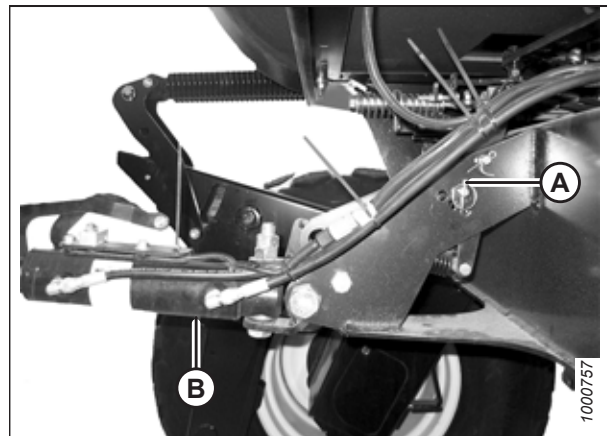


Figure 6.20: Hydraulic Center-Link without Self-Alignment Kit

6. Drive the windrower slowly forward until windrower feet (A) enter header supports (B). Continue driving slowly forward until the feet engage the supports and the header is nudged forward.

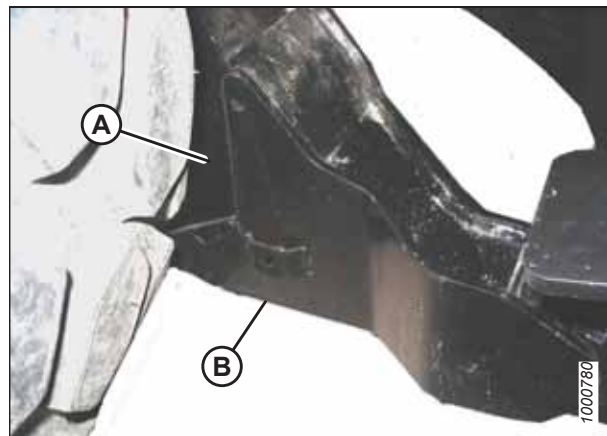


Figure 6.21: Header Support

ATTACHING HEADERS

7. Use the following ground speed lever functions to position the center-link hook above the header attachment pin:
 - HEADER TILT UP (A) to retract the center-link
 - HEADER TILT DOWN (B) to extend the center-link
8. Shut down the engine, and remove the key from the ignition.

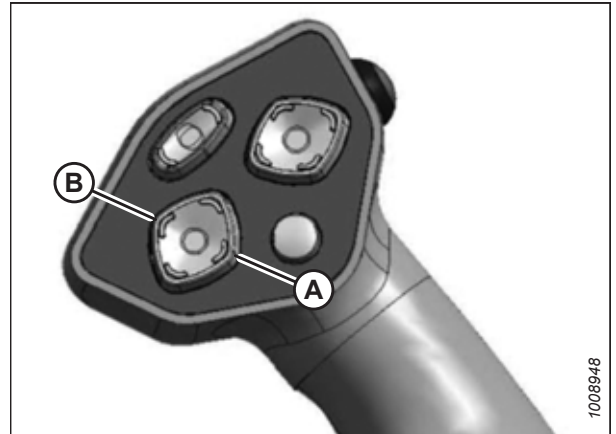


Figure 6.22: Ground Speed Lever

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

IMPORTANT:

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

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

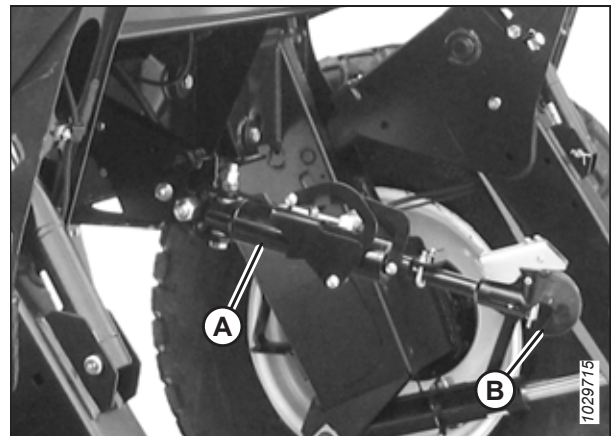


Figure 6.23: Hydraulic Center-Link

DANGER

Ensure that all bystanders have cleared the area.

11. Start the engine.
12. Press HEADER UP switch (A) to raise the header to its maximum height.
13. If one end of the header does **NOT** fully rise, rephase the lift cylinders as follows:
 - a. Press and hold the HEADER UP switch until both cylinders stop moving.
 - b. Continue to hold the switch for 3–4 seconds. The cylinders are now phased.

NOTE:

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



Figure 6.24: Ground Speed Lever

ATTACHING HEADERS

14. Engage the safety props on both lift cylinders:
 - a. Shut down the engine, and remove the key from the ignition.
 - b. Pull lever (A) and rotate it towards the header to release and lower safety prop (B) onto the lift cylinder.
 - c. Repeat the previous steps for the opposite lift cylinder.

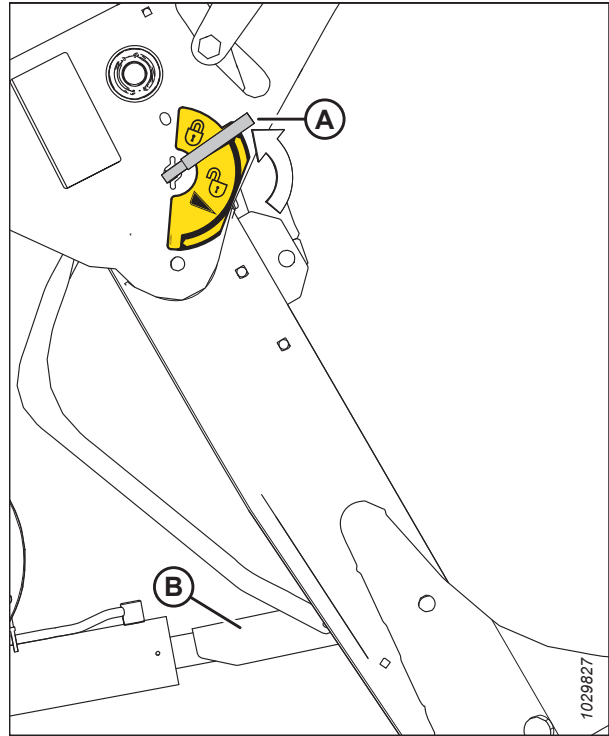


Figure 6.25: Safety Prop

15. Install clevis pin (A) through the support and the foot and secure it with the hairpin.

IMPORTANT:

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



Figure 6.26: Header Support

ATTACHING HEADERS

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

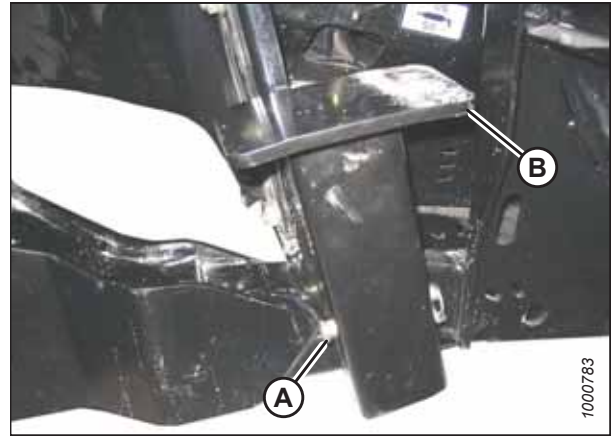


Figure 6.27: Header Stand

19. Remove the clevis pin from storage position (B) in the linkage and insert it into hole (A) to engage the float springs. Secure it with the hairpin. Repeat this step on the opposite float linkage.

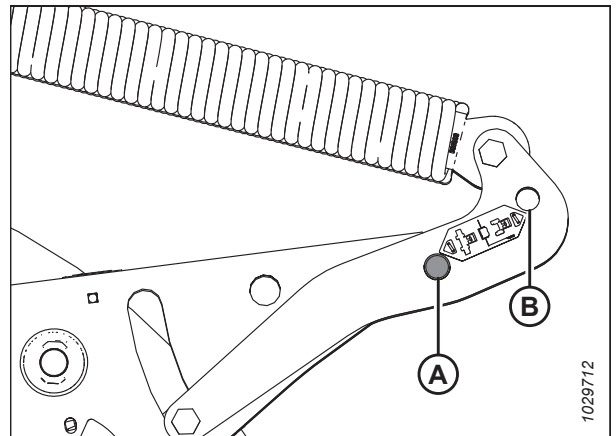


Figure 6.28: Header Float Linkage

20. Disengage the safety prop by turning lever (A) downwards until the lever locks into the vertical position.
21. Repeat the previous step to disengage the other safety prop.

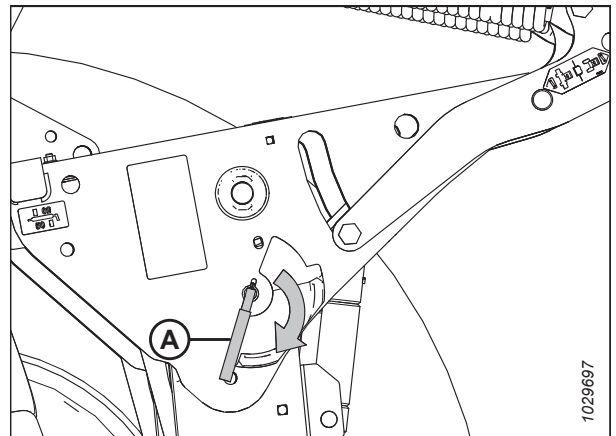


Figure 6.29: Safety Prop Lever

ATTACHING HEADERS

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



Figure 6.30: Ground Speed Lever

24. Connect header drive hoses (A) and electrical harness (B) to the header. For instructions, refer to the header operator's manual.

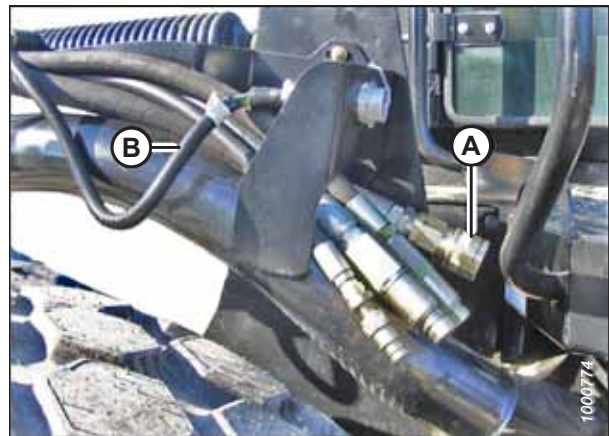


Figure 6.31: Header Drive Hoses and Harness

6.1.3 Attaching A Series Auger Header – Mechanical Center-Link

The header will need to be physically attached to the windrower, and the hydraulic and electrical connections completed. On windrowers with a mechanical center-link, the center-link will need to be manually connected to the header's center pin.

DANGER

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

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

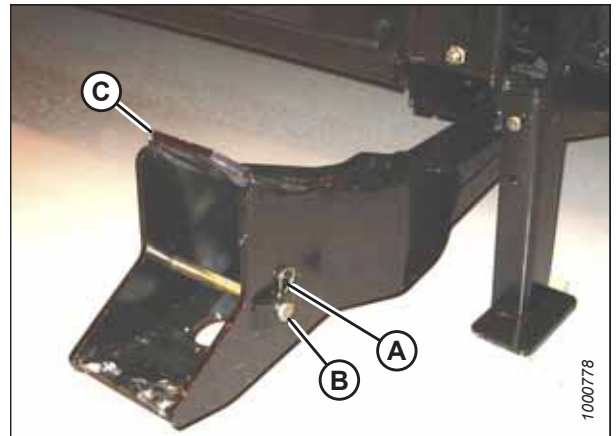


Figure 6.32: Header Boot

3. Check that the float engagement pin is installed in storage position (B) and **NOT** in engaged position (A).

IMPORTANT:

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

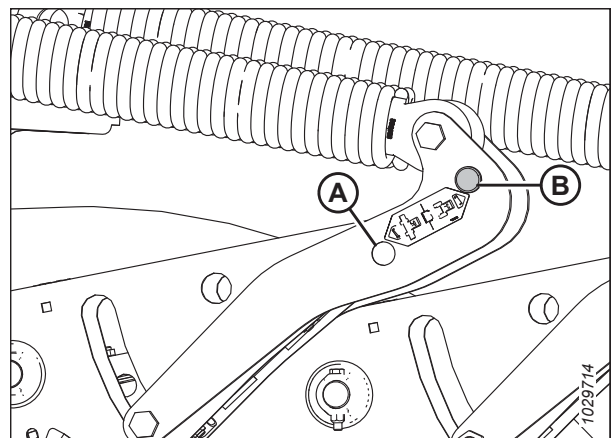


Figure 6.33: Header Float Linkage

ATTACHING HEADERS

DANGER

Ensure that all bystanders have cleared the area.

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

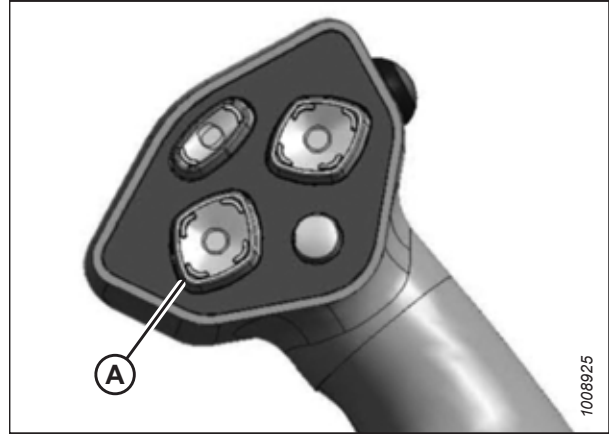


Figure 6.34: Ground Speed Lever

5. Drive the windrower slowly forward until boots (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.
6. Ensure that the lift linkages are properly engaged in the header legs and are contacting the support plates.

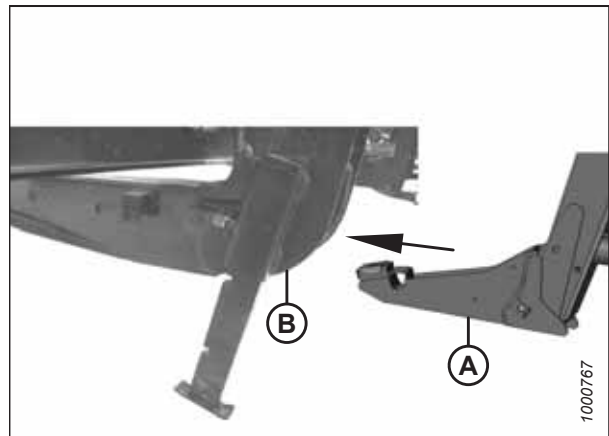


Figure 6.35: Header Leg and Boot

7. Shut down the engine, and remove the key from the ignition.
8. Loosen nut (A) and rotate barrel (B) to adjust the barrel's length until the link is aligned with the header bracket.
9. Install clevis pin (C) and secure it with cotter pin (D).
10. Adjust the length of the link to achieve the proper header angle by rotating barrel (B). Tighten nut (A) against the barrel (a slight tap with a hammer is sufficient).

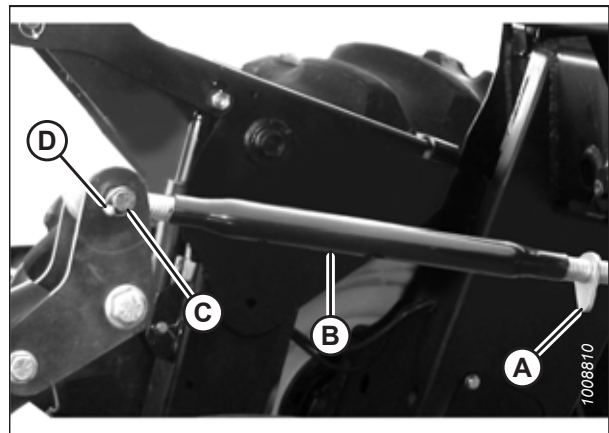


Figure 6.36: Mechanical Center Link

ATTACHING HEADERS

11. Start the engine.
12. Press HEADER UP switch (A) to raise the header to its maximum height.
13. If one end of the header does **NOT** fully raise, rephase the lift cylinders as follows:
 - a. Press and hold the HEADER UP switch until both cylinders stop moving.
 - b. Continue to hold the switch for 3–4 seconds. The cylinders are now phased.

NOTE:

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

14. Engage the safety props on both lift cylinders:
 - a. Shut down the engine, and remove the key from the ignition.
 - b. Pull lever (A) and rotate it towards the header to release and lower safety prop (B) onto the lift cylinder.
 - c. Repeat the previous steps for the opposite lift cylinder.

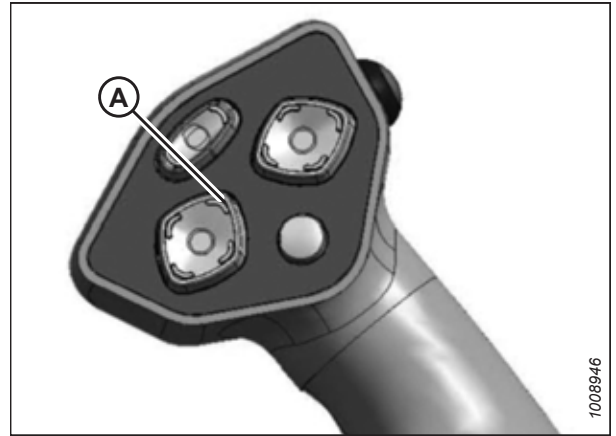


Figure 6.37: Ground Speed Lever

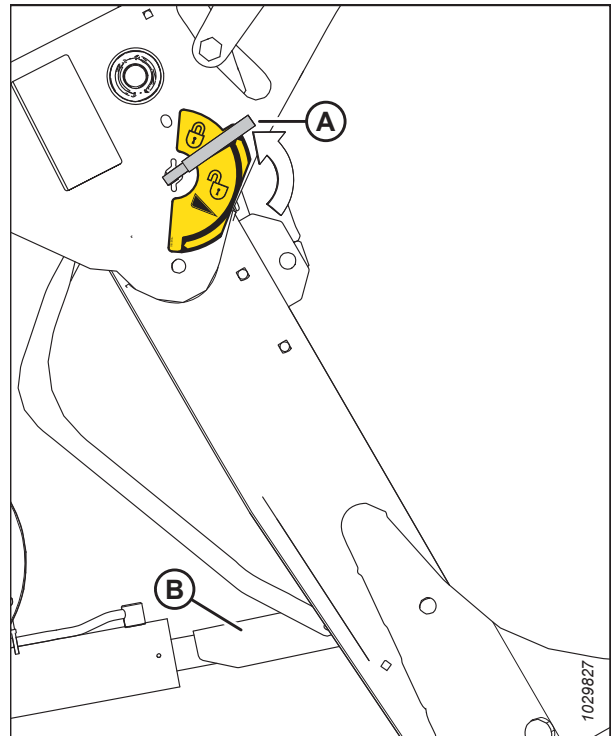


Figure 6.38: Safety Prop

ATTACHING HEADERS

15. Install clevis pin (A) through the support and the foot and secure it with the hairpin.

IMPORTANT:

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



Figure 6.39: Header Support

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

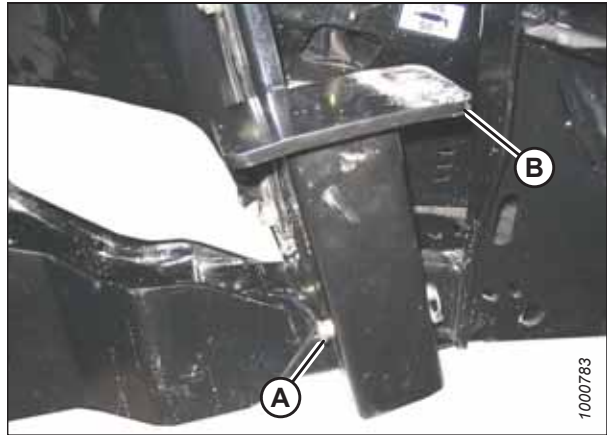


Figure 6.40: Header Stand

19. Remove the clevis pin from storage position (B) in the linkage and insert it into hole (A) to engage the float springs. Secure it with the hairpin. Repeat this step on the opposite float linkage.

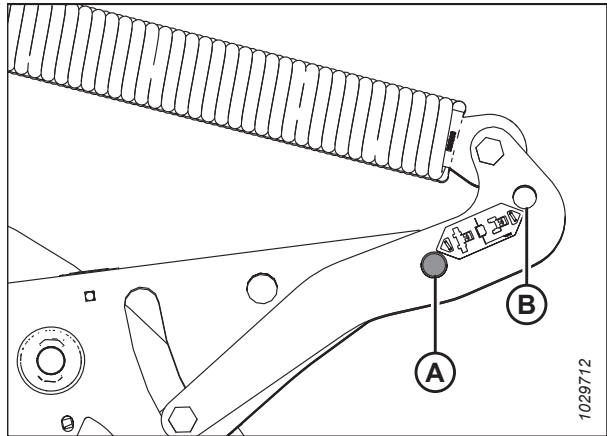


Figure 6.41: Header Float Linkage

ATTACHING HEADERS

20. Disengage the safety prop by turning lever (A) downwards until the lever locks into the vertical position.
21. Repeat the previous step to disengage the other safety prop.

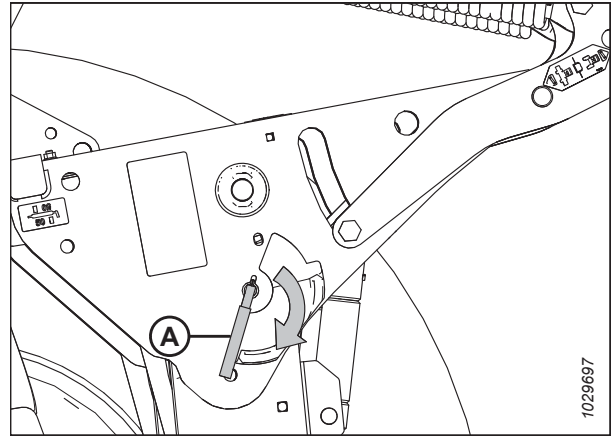


Figure 6.42: Safety Prop Lever

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

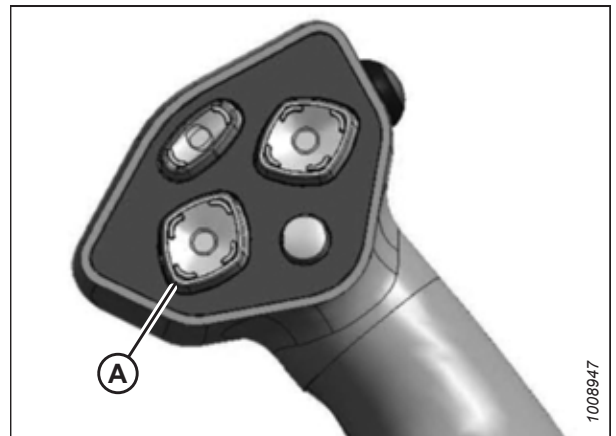


Figure 6.43: Ground Speed Lever

24. Connect header drive hoses (A) and electrical harness (B) to the header. For instructions, refer to the header operator's manual.

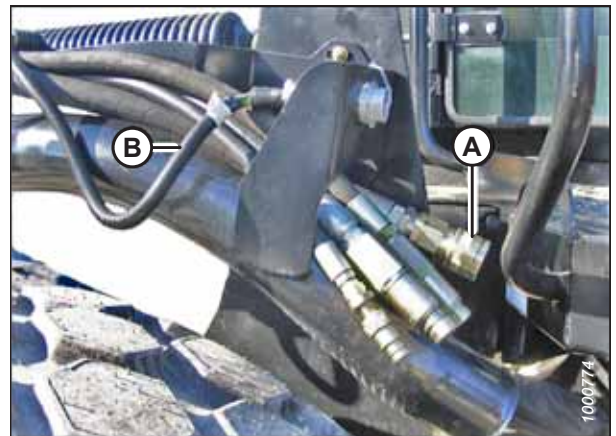


Figure 6.44: Header Drive Hoses and Harness

ATTACHING HEADERS

25. Connect reel hydraulics (A) to the corresponding connections at the right cab-forward side of the windrower. For instructions, refer to the header operator's manual.

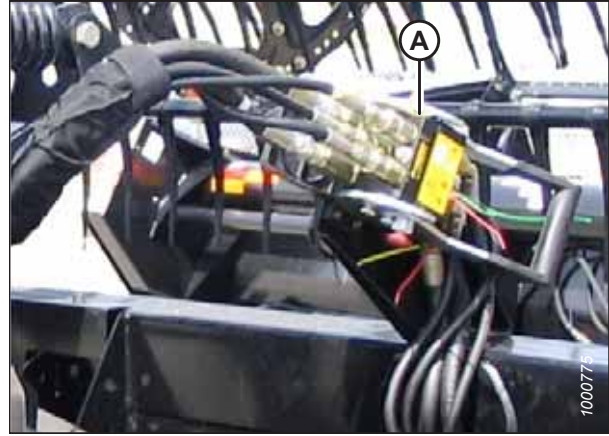


Figure 6.45: Reel Hydraulics

6.2 Attaching D or D1 SP Series Draper Header

Attaching a header to the windrower involves physically connecting the header to the header and completing the hydraulic and electrical connections.

If installing an HC10 Hay Conditioner, Reverser kit (B4656) is recommended. If necessary, obtain the recommended kit and install it in accordance with the instructions supplied with the kit.

The procedure for attaching a D or D1 SP Series Draper Header to the windrower differs slightly depending on the configuration of the windrower. Proceed to the relevant topic:

- [6.2.2 Attaching D or D1 SP Series Draper Header – Hydraulic Center-Link with Self-Alignment, page 142](#)
- [6.2.3 Attaching D or D1 SP Series Draper Header – Hydraulic Center-Link without Self-Alignment, page 149](#)
- [6.2.4 Attaching D or D1 SP Series Draper Header – Mechanical Center-Link, page 155](#)

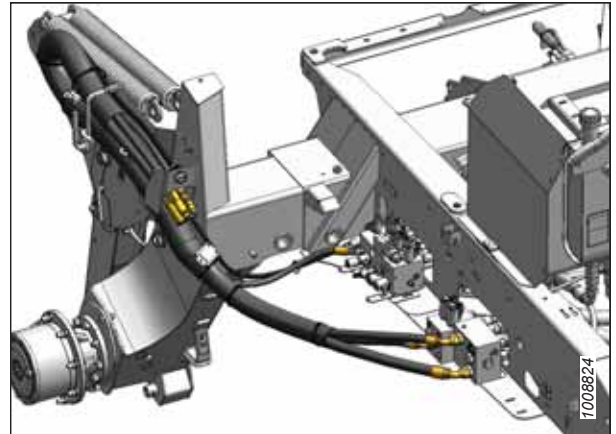


Figure 6.46: M155 Draper Header Hydraulics

6.2.1 Attaching Draper Header Supports

Header supports are required to attach a D Series or D1 SP Series Draper Header to the windrower. Attach header supports to the windrower's lift linkage if they are not already installed. Header supports are supplied with the header.

DANGER

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

IMPORTANT:

Ensure that the correct header supports are used:

- D1 SP Series Draper Headers can use header supports (A) or (D).
- D Series Draper Headers must use header supports (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.

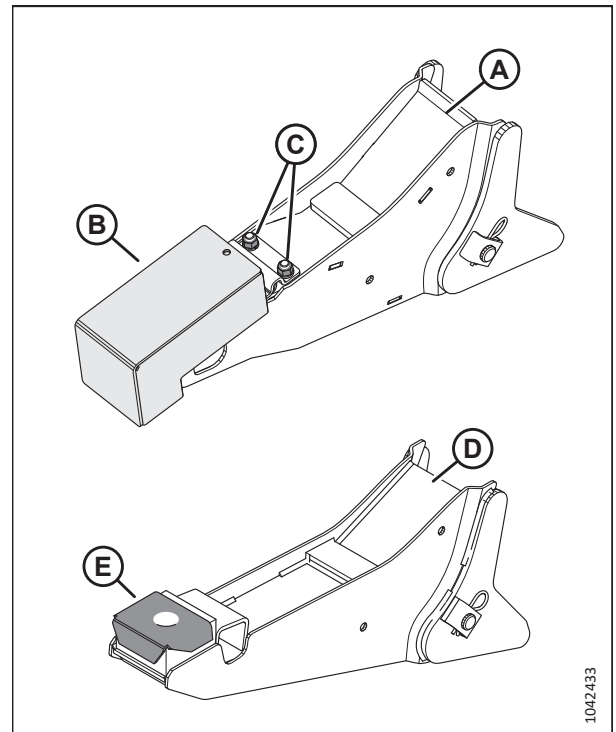


Figure 6.47: Draper Header Supports

ATTACHING HEADERS

1. Shut down the engine, and remove the key from the ignition.
2. Remove pin (B) from support (A).

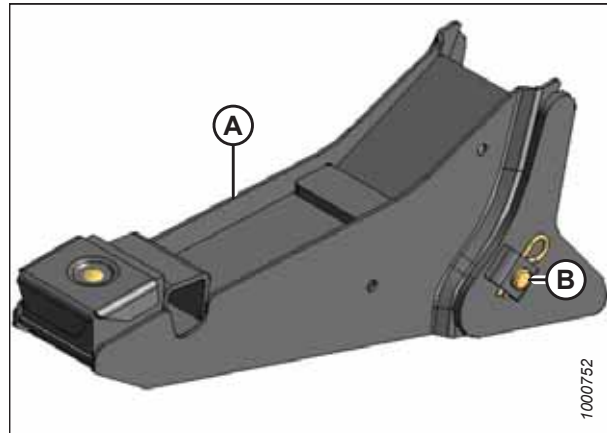


Figure 6.48: Header Support

3. Position support (B) onto lift linkage (A) and reinstall pin (C). The pin may be installed from either side of the support.
4. Secure pin (C) with hairpin (D).
5. Repeat Step 2, [page 142](#) to Step 4, [page 142](#) to install the support on the opposite side of the windrower.

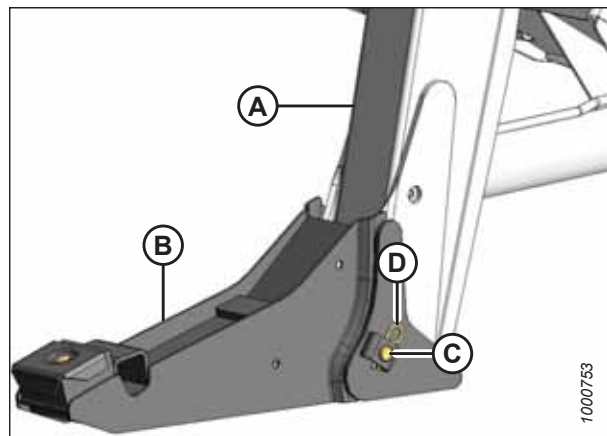


Figure 6.49: Header Support

6.2.2 Attaching D or D1 SP Series Draper Header – Hydraulic Center-Link with Self-Alignment

The header will need to be physically attached to the windrower, and the hydraulic connections completed. The windrower may be equipped with an optional self-aligning hydraulic center-link, which allows the Operator to control the vertical position of the center-link from the cab.

DANGER

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

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

ATTACHING HEADERS

2. If the windrower was previously attached to an R Series Rotary Disc Header, make sure to remove the forming shield (not shown), including forming shield support brackets (A) and hardware (B) from both legs. You can store the brackets and hardware in the windrower tool box.
 - For more information about the forming shield, refer to the header operator's manual.

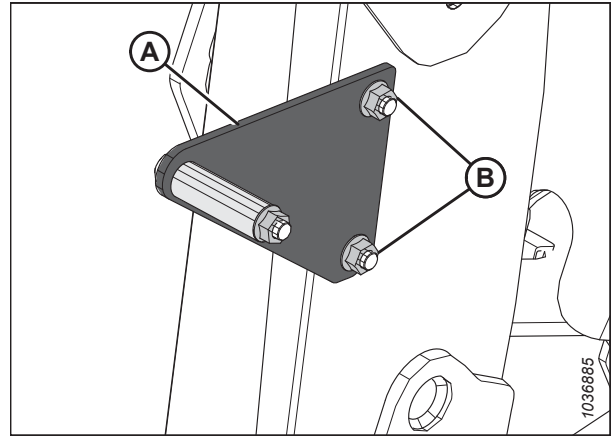


Figure 6.50: Forming Shield bracket – R Series

3. Before beginning this procedure, ensure that both draper header supports (A) are installed onto the windrower's lift linkage, and that the supports are compatible with the header. For instructions on installing the header supports onto the windrower, refer to [6.2.1 Attaching Draper Header Supports](#), page 141.

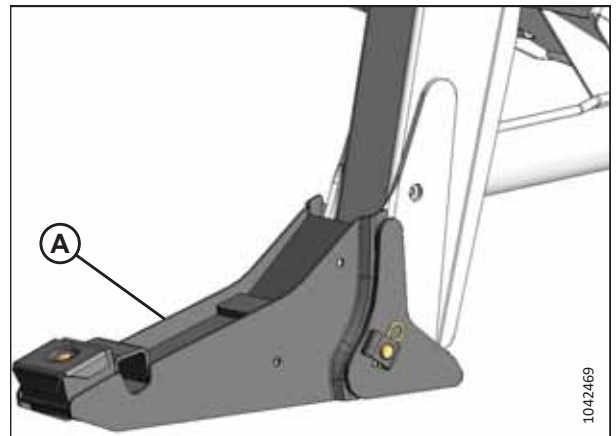


Figure 6.51: Header Supports Installed

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

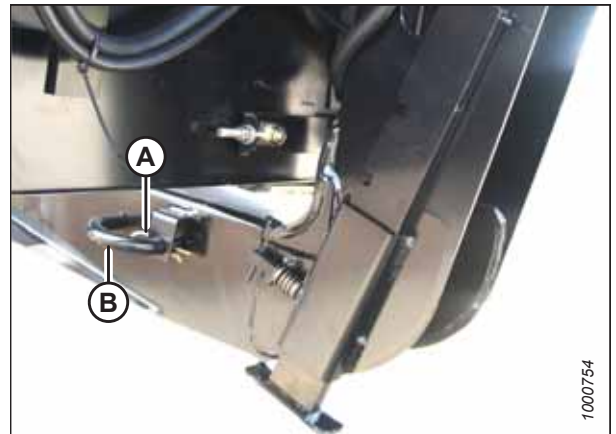


Figure 6.52: Header Leg

ATTACHING HEADERS

5. Ensure that the float engagement pin is installed in storage position (B) and **NOT** in engaged position (A).

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.

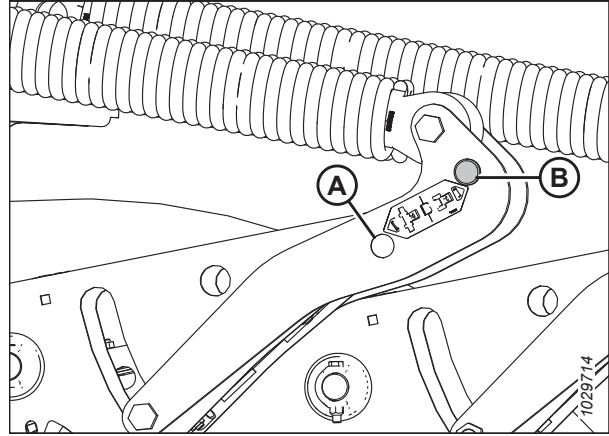


Figure 6.53: Header Float Linkage

DANGER

Ensure that all bystanders have cleared the area.

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

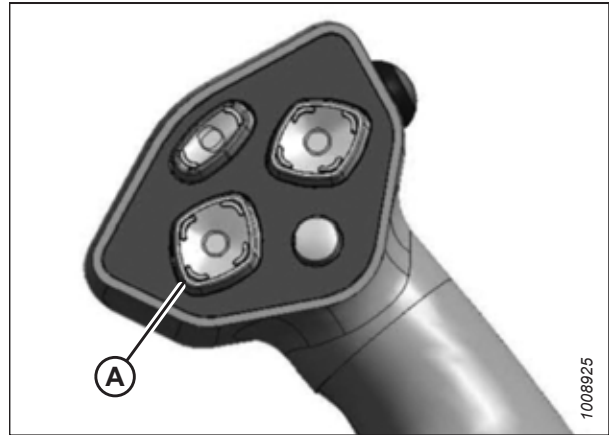


Figure 6.54: Ground Speed Lever

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

IMPORTANT:

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



Figure 6.55: Ground Speed Lever

ATTACHING HEADERS

8. Drive the windrower slowly forward until boots (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.
9. Ensure that the lift linkages are properly engaged in the header legs and are contacting the support plates.

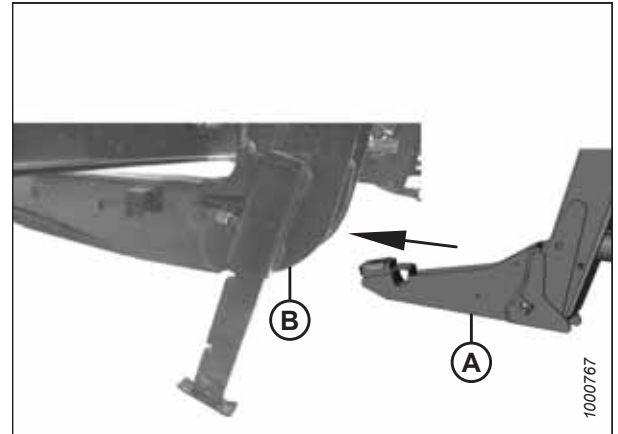


Figure 6.56: Header Leg and Boot

10. Use the following GSL functions to position the center-link hook above the header attachment pin:
 - REEL UP (A) to raise the center-link
 - REEL DOWN (B) to lower the center-link
 - HEADER TILT UP (C) to retract the center-link
 - HEADER TILT DOWN (D) to extend the center-link

IMPORTANT:

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

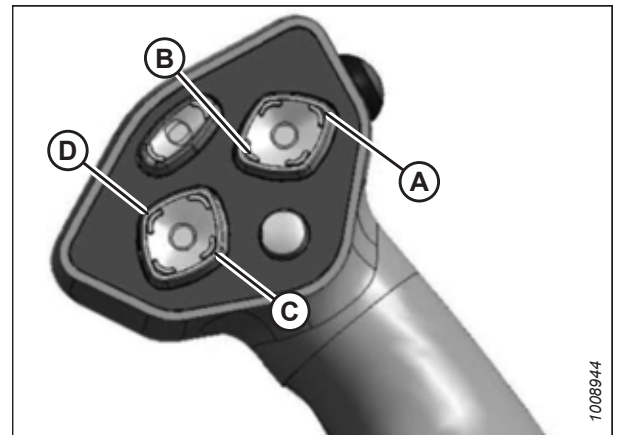


Figure 6.57: Ground Speed Lever

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



DANGER

Ensure that all bystanders have cleared the area.

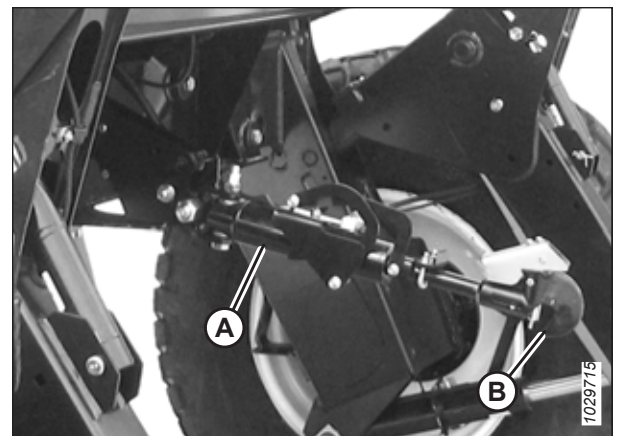


Figure 6.58: Hydraulic Center-Link

ATTACHING HEADERS

13. Press HEADER UP switch (A) to raise the header to its maximum height.
14. If one end of the header does **NOT** fully rise, rephase the lift cylinders as follows:
 - a. Press and hold the HEADER UP switch until both cylinders stop moving.
 - b. Continue to hold the switch for 3–4 seconds to fully phase the cylinders.

NOTE:

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

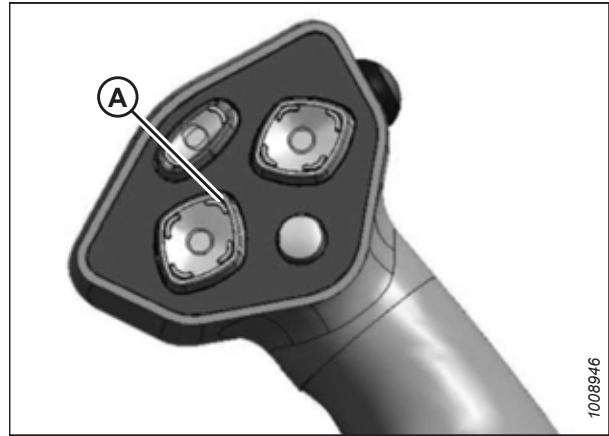


Figure 6.59: Ground Speed Lever

15. Engage the safety props on both lift cylinders:
 - a. Shut down the engine, and remove the key from the ignition.
 - b. Pull lever (A) and rotate it towards the header to release and lower safety prop (B) onto the lift cylinder.
 - c. Repeat the previous steps for the opposite lift cylinder.

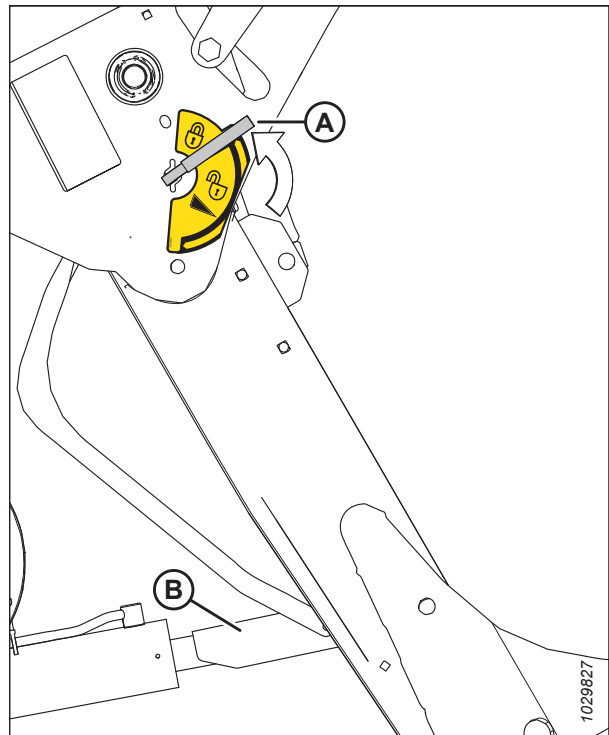


Figure 6.60: Safety Prop

ATTACHING HEADERS

16. Install pin (B) through the header leg, engaging the U-bracket in the lift linkage. Secure the pin with hairpin (A).
17. Repeat the previous 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 into the uppermost position. Release the spring pin.

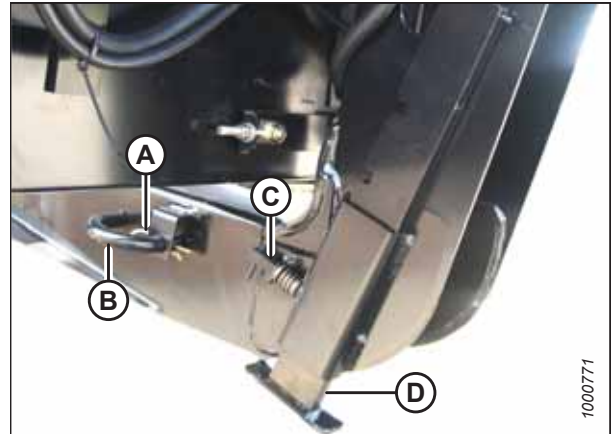


Figure 6.61: Header Leg

19. Remove the clevis pin from storage position (B) in the linkage and insert it into hole (A) to engage the float springs. Secure it with the hairpin. Repeat this step on the opposite float linkage.

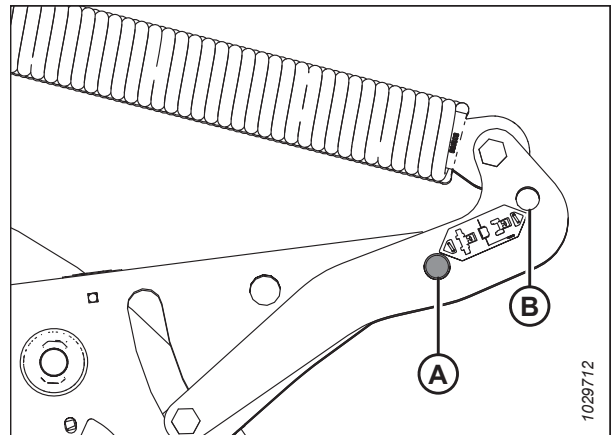


Figure 6.62: Header Float Linkage

20. Disengage the safety prop by turning lever (A) downwards until the lever locks into the vertical position.
21. Repeat the previous step to disengage the other safety prop.

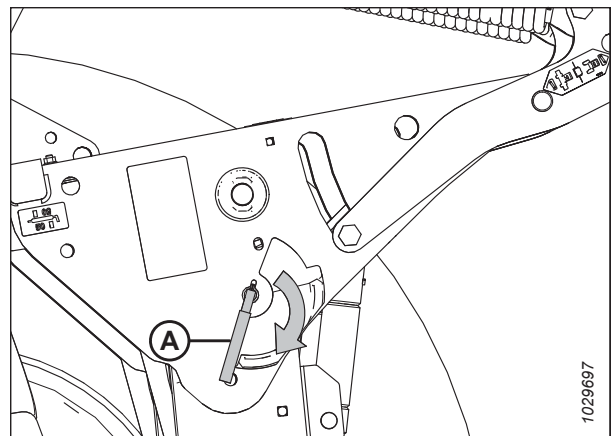


Figure 6.63: Safety Prop Lever

ATTACHING HEADERS

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



Figure 6.64: Ground Speed Lever

24. Connect header drive hoses (A) and electrical harness (B) to the header. For instructions, refer to the header operator's manual.

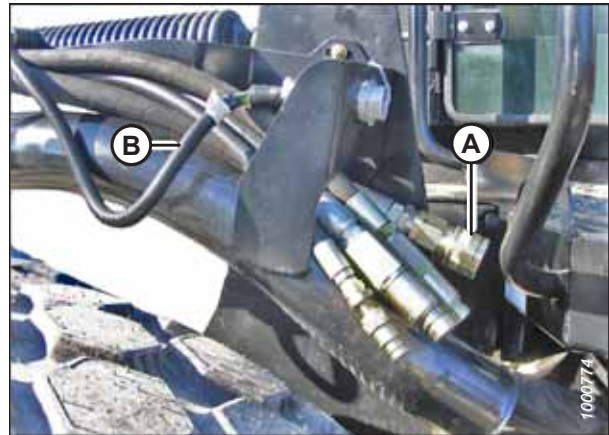


Figure 6.65: Header Drive Hoses and Harness

25. Connect reel hydraulics (A) to the corresponding connections at the right cab-forward side of the windrower. For instructions, refer to the header operator's manual.
26. Start the engine. Raise and lower the header and the reel a few times to remove any trapped air from the hydraulic system.

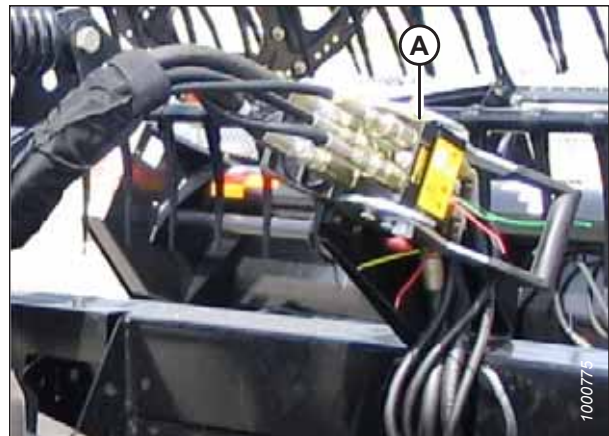


Figure 6.66: Reel Hydraulics

6.2.3 Attaching D or D1 SP Series Draper Header – Hydraulic Center-Link without Self-Alignment

The header will need to be physically attached to the windrower, and the hydraulic connections completed. If the windrower is equipped with a hydraulic center-link that lacks the self-alignment capability, the Operator will have to manually attach the hydraulic center-link's hook to the header's center pin.

DANGER

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

1. Shut down the engine, and remove the key from the ignition.
2. If the windrower was previously attached to an R Series Rotary Disc Header, make sure to remove the forming shield (not shown), including forming shield support brackets (A) and hardware (B) from both legs. You can store the brackets and hardware in the windrower tool box.
 - For more information about the forming shield, refer to the header operator's manual.

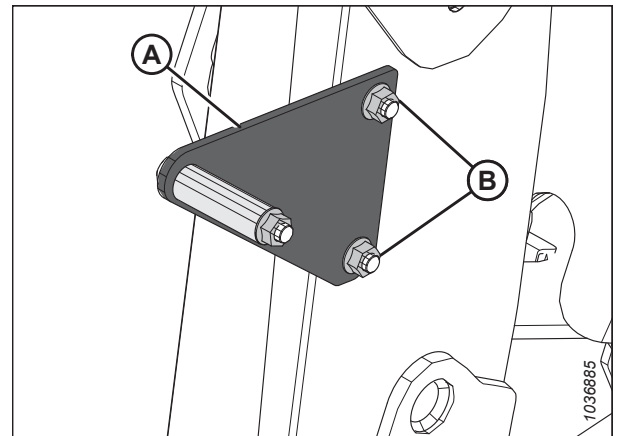


Figure 6.67: Forming Shield bracket – R Series

3. Before beginning this procedure, ensure that both draper header supports (A) are installed onto the windrower's lift linkage, and that the supports are compatible with the header. For instructions on installing the header supports onto the windrower, refer to [6.2.1 Attaching Draper Header Supports, page 141](#).

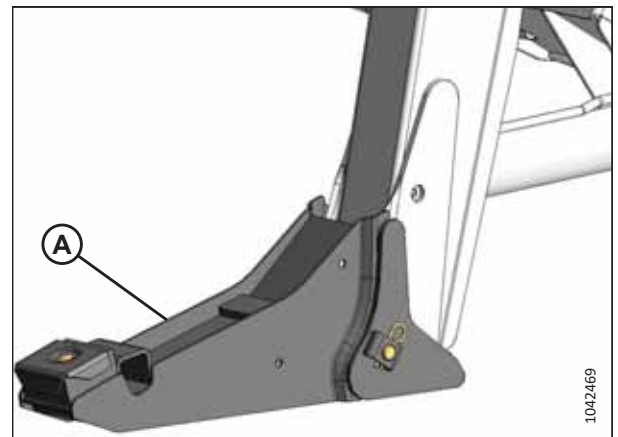


Figure 6.68: Header Supports Installed

ATTACHING HEADERS

4. Ensure that the float engagement pin is installed in storage position (B) and **NOT** in engaged position (A).

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.

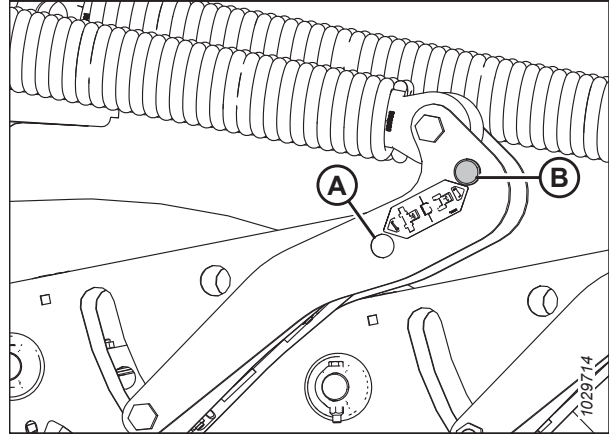


Figure 6.69: Header Float Linkage

DANGER

Ensure that all bystanders have cleared the area.

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

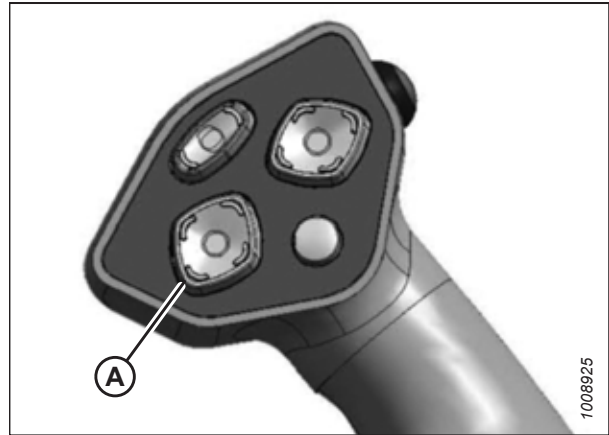


Figure 6.70: Ground Speed Lever

6. Remove pin (A) from the frame linkage and raise center-link (B) until the hook is above the attachment pin on the header. Replace pin (A) to hold the center-link in place.

IMPORTANT:

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

7. Ensure that the lift linkages are properly engaged in the header legs and are contacting the support plates.

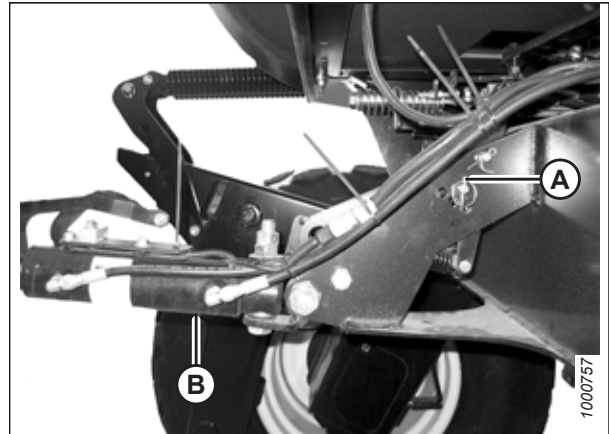


Figure 6.71: Hydraulic Center-Link without Self-Alignment Kit

ATTACHING HEADERS

8. Use the following GSL functions to position the center-link hook above the header attachment pin:
 - HEADER TILT UP (A) to retract the center-link
 - HEADER TILT DOWN (B) to extend the center-link
9. Shut down the engine, and remove the key from the ignition.

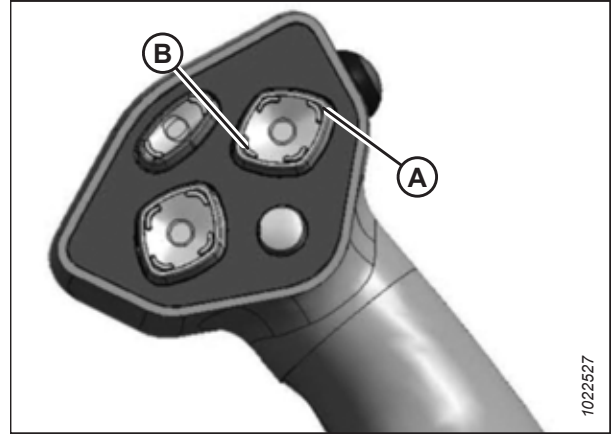


Figure 6.72: Ground Speed Lever

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

IMPORTANT:

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

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

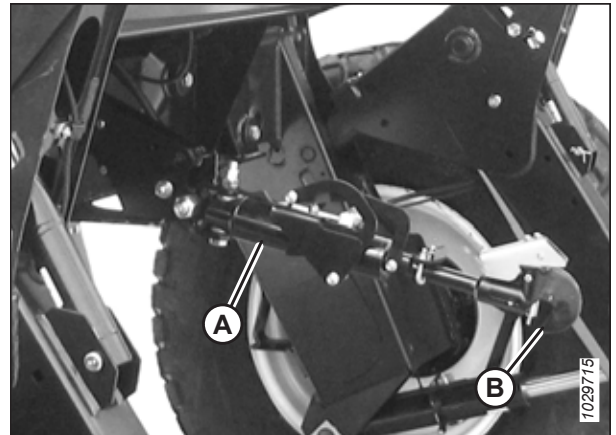


Figure 6.73: Hydraulic Center-Link

DANGER

Ensure that all bystanders have cleared the area.

12. Start the engine.
13. Press HEADER UP switch (A) to raise the header to its maximum height.
14. If one end of the header does **NOT** fully rise, rephase the lift cylinders as follows:
 - a. Press and hold the HEADER UP switch until both cylinders stop moving.
 - b. Continue to hold the switch for 3–4 seconds. The cylinders are now phased.

NOTE:

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



Figure 6.74: Ground Speed Lever

ATTACHING HEADERS

15. Engage the safety props on both lift cylinders:
 - a. Shut down the engine, and remove the key from the ignition.
 - b. Pull lever (A) and rotate it towards the header to release and lower safety prop (B) onto the lift cylinder.
 - c. Repeat the previous steps for the opposite lift cylinder.

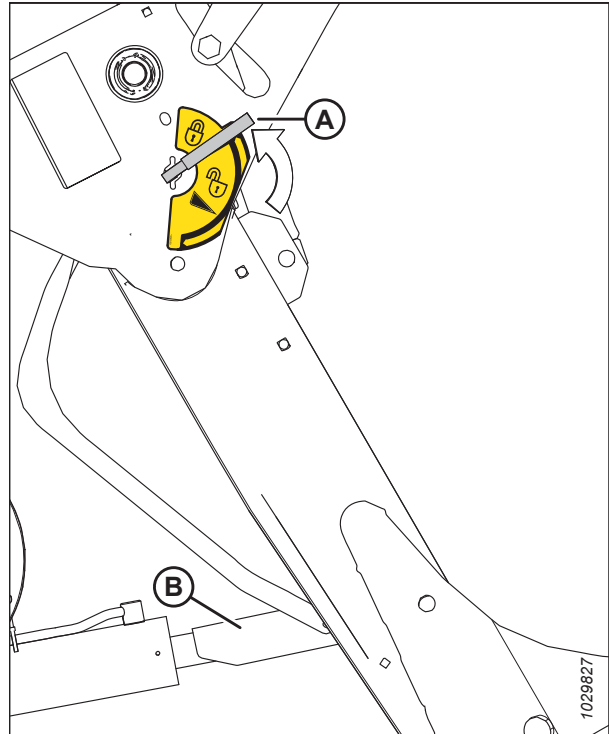


Figure 6.75: Safety Prop

16. Remove the clevis pin from storage position (B) in the linkage and insert it into hole (A) to engage the float springs. Secure it with the hairpin. Repeat this step on the opposite float linkage.

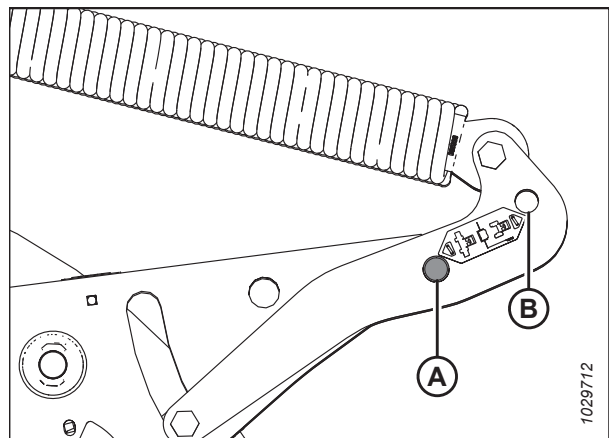


Figure 6.76: Header Float Linkage

ATTACHING HEADERS

17. Disengage the safety prop by turning lever (A) downwards until the lever locks into the vertical position.
18. Repeat the previous step to disengage the other safety prop.

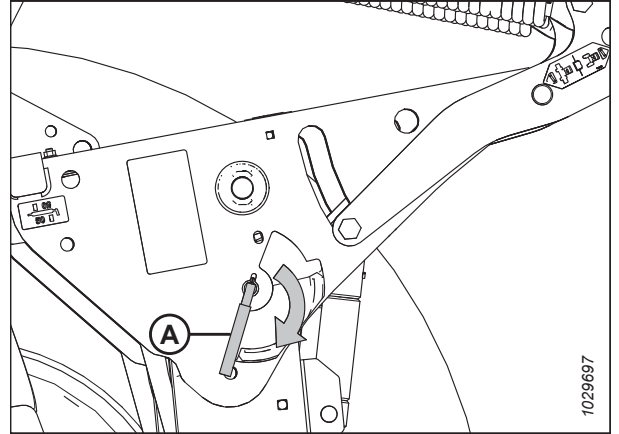


Figure 6.77: Safety Prop Lever

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

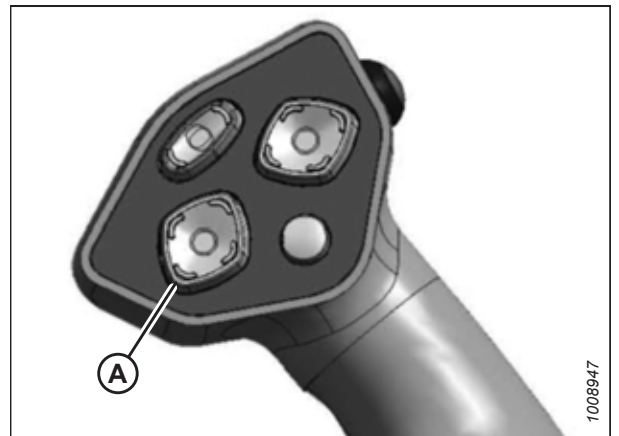


Figure 6.78: Ground Speed Lever

21. Connect header drive hoses (A) and electrical harness (B) to the header. For instructions, refer to the header operator's manual.

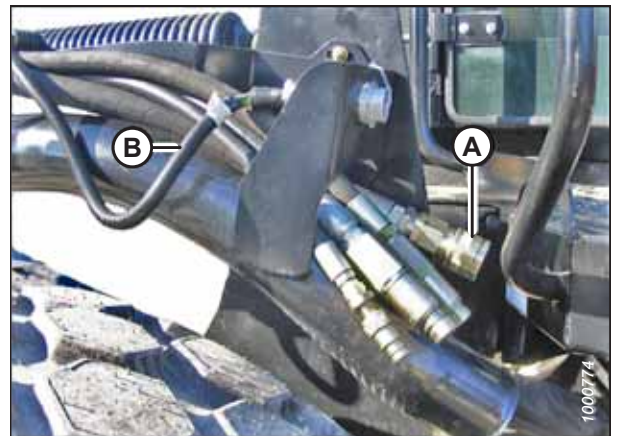


Figure 6.79: Header Drive Hoses and Harness

ATTACHING HEADERS

22. Connect reel hydraulics (A) to the corresponding connections at the right cab-forward side of the windrower. For instructions, refer to the header operator's manual.
23. Start the engine. Raise and lower the header and the reel a few times to remove any trapped air from the hydraulic system.

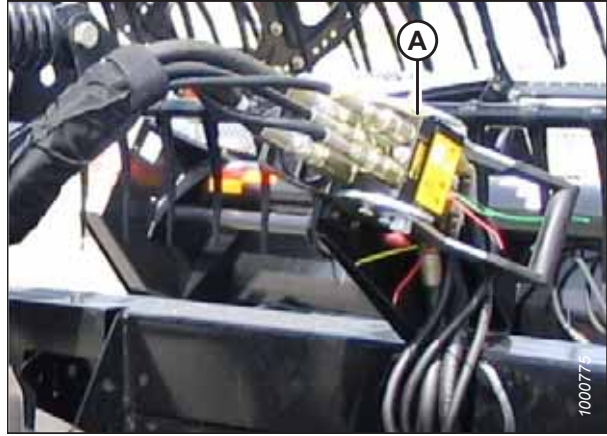


Figure 6.80: Reel Hydraulics

6.2.4 Attaching D or D1 SP Series Draper Header – Mechanical Center-Link

The header will need to be physically attached to the windrower, and the hydraulic and electrical connections completed. To attach a D or D1 SP Series header to an M Series windrower equipped with a mechanical center-link, the center-link will need to be manually connected to the header's center pin.

DANGER

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

1. Shut down the engine, and remove the key from the ignition.
2. If the windrower was previously attached to an R Series Rotary Disc Header, make sure to remove the forming shield (not shown), including forming shield support brackets (A) and hardware (B) from both legs. You can store the brackets and hardware in the windrower tool box.
 - For more information about the forming shield, refer to the header operator's manual.

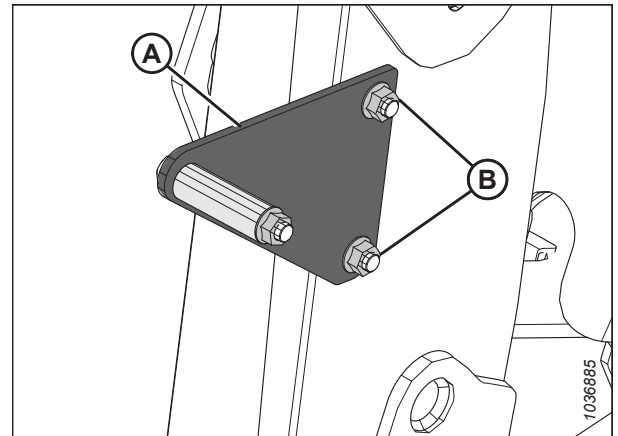


Figure 6.81: Forming Shield bracket – R Series

3. Before beginning this procedure, ensure that both draper header supports (A) are installed onto the windrower's lift linkage, and that the supports are compatible with the header. For instructions on installing the header supports onto the windrower, refer to [6.2.1 Attaching Draper Header Supports](#), page 141.

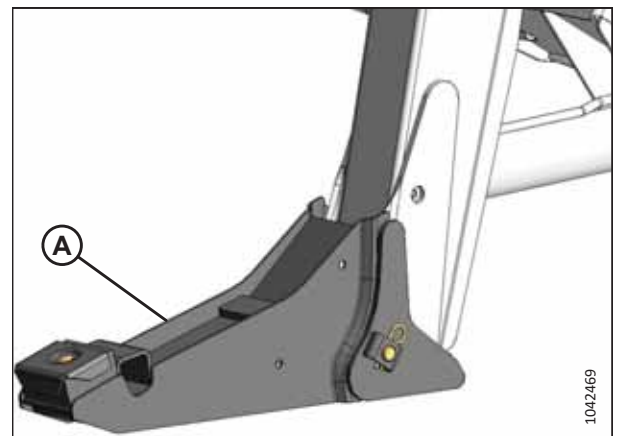


Figure 6.82: Header Supports Installed

ATTACHING HEADERS

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

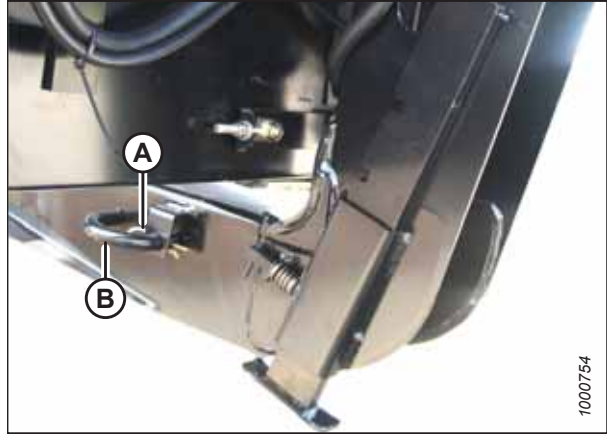


Figure 6.83: Header Leg

5. Ensure that the float engagement pin is installed in storage position (B) and **NOT** in engaged position (A).

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.

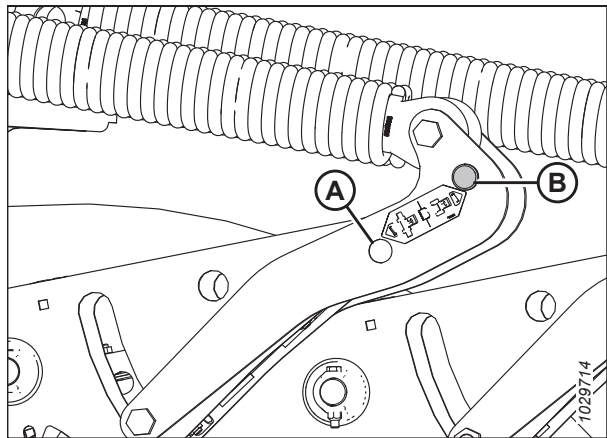


Figure 6.84: Header Float Linkage

DANGER

Ensure that all bystanders have cleared the area.

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

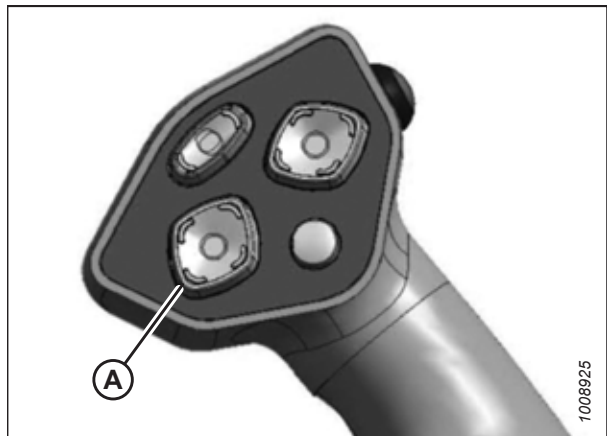


Figure 6.85: Ground Speed Lever

ATTACHING HEADERS

7. Drive the windrower slowly forward until boots (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.
8. Ensure that the lift linkages are properly engaged in the header legs and are contacting the support plates.

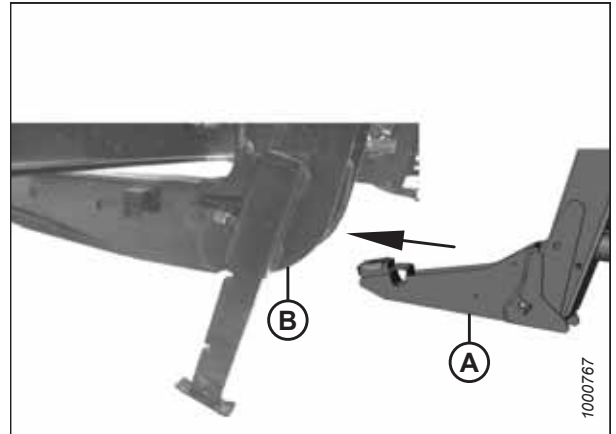


Figure 6.86: Header Leg and Boot

9. Shut down the engine, and remove the key from the ignition.
10. Loosen nut (A) and rotate barrel (B) to adjust length until the link is aligned with the header bracket.
11. Install clevis pin (C) and secure it with cotter pin (D).
12. Adjust the length of the link to achieve the proper header angle by rotating barrel (B). Tighten nut (A) against the barrel (a slight tap with a hammer is sufficient).

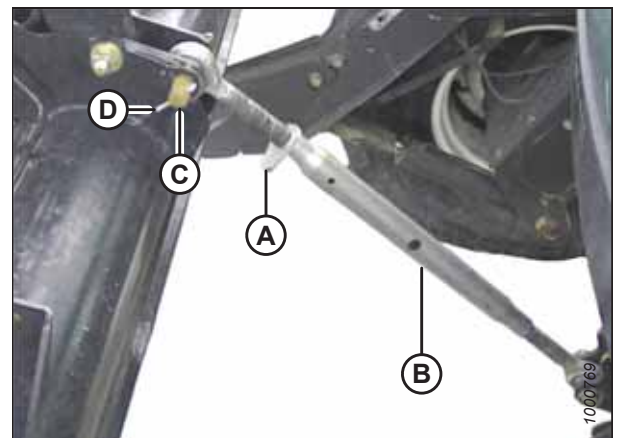


Figure 6.87: Mechanical Center-Link

DANGER

Ensure that all bystanders have cleared the area.

13. Start the engine.
14. Press HEADER UP switch (A) to raise the header to its maximum height.
15. If one end of the header does **NOT** fully raise, rephase the lift cylinders as follows:
 - a. Press and hold the HEADER UP switch until both cylinders stop moving.
 - b. Continue to hold the switch for 3–4 seconds. The cylinders are now phased.

NOTE:

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



Figure 6.88: Ground Speed Lever

ATTACHING HEADERS

16. Engage the safety props on both lift cylinders:
 - a. Shut down the engine, and remove the key from the ignition.
 - b. Pull lever (A) and rotate it towards the header to release and lower safety prop (B) onto the lift cylinder.
 - c. Repeat the previous steps for the opposite lift cylinder.

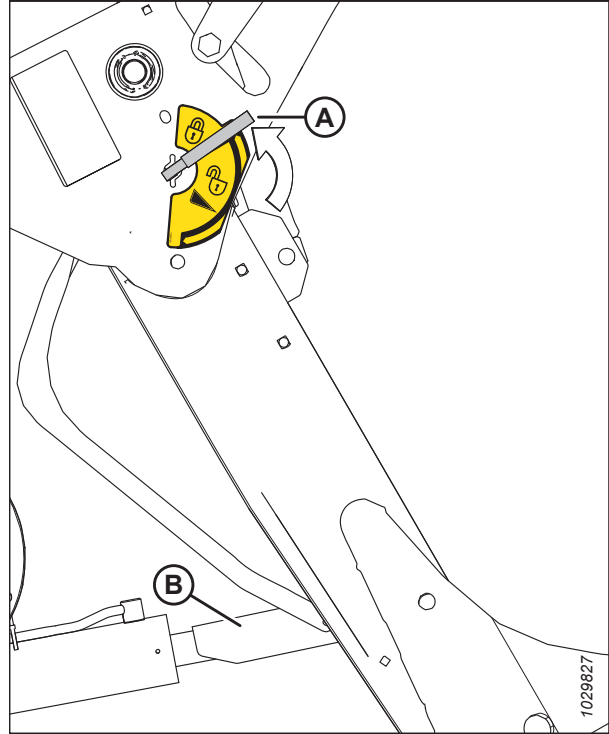


Figure 6.89: Safety Prop

17. Install pin (B) through the header leg, engaging the U-bracket in the lift linkage. Secure the pin with hairpin (A).

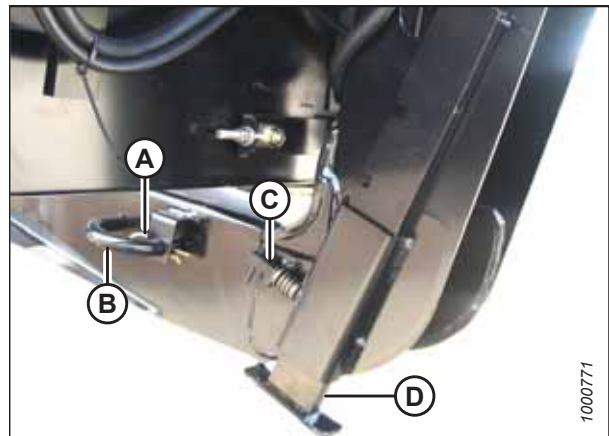


Figure 6.90: Header Leg

ATTACHING HEADERS

18. Remove the clevis pin from storage position (B) in the linkage and insert it into hole (A) to engage the float springs. Secure it with the hairpin. Repeat this step on the opposite float linkage.

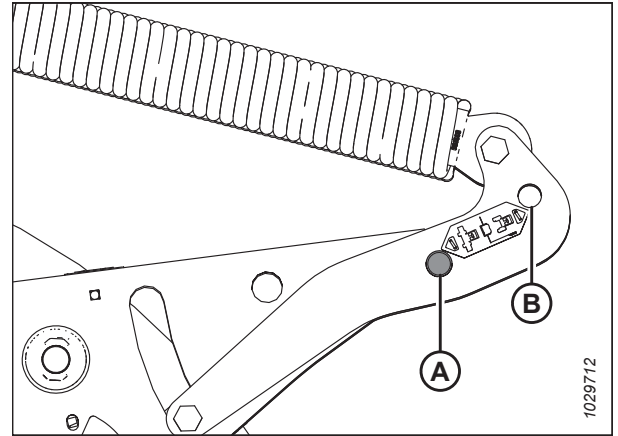


Figure 6.91: Header Float Linkage

19. Disengage the safety prop by turning lever (A) downwards until the lever locks into the vertical position.
20. Repeat the previous step to disengage the other safety prop.

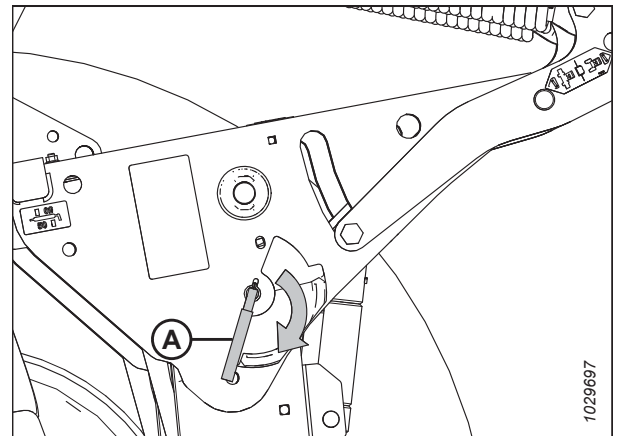


Figure 6.92: Safety Prop Lever

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

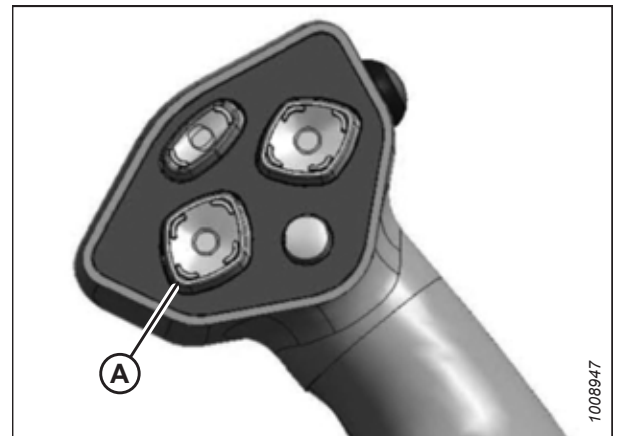


Figure 6.93: Ground Speed Lever

ATTACHING HEADERS

23. Connect header drive hoses (A) and electrical harness (B) to the header. For instructions, refer to the header operator's manual.

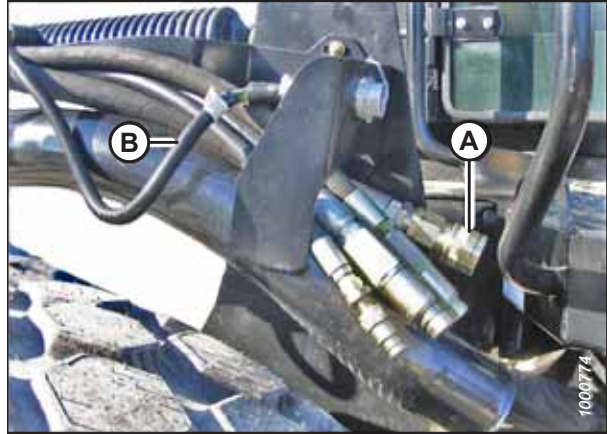


Figure 6.94: Header Drive Hoses and Harness

24. Connect reel hydraulics (A) to the corresponding connections at the right cab-forward side of the windrower. For instructions, refer to the header operator's manual.

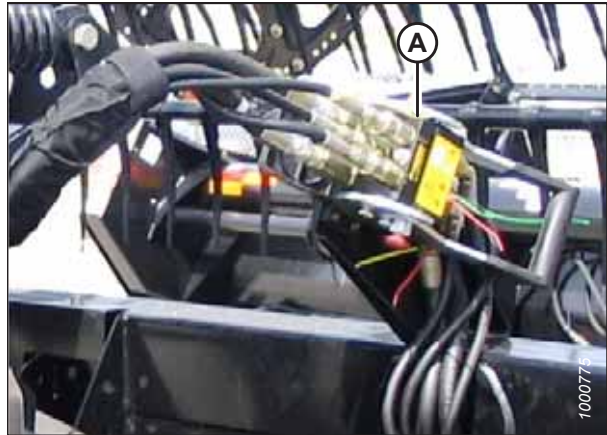


Figure 6.95: Reel Hydraulics

6.3 Attaching D2 SP Series Draper Header

This section details the procedures necessary to physically attach a D2 SP Series Draper Header to an M155 Windrower and to attach its hydraulic and electrical connections.

6.3.1 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 SP 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.

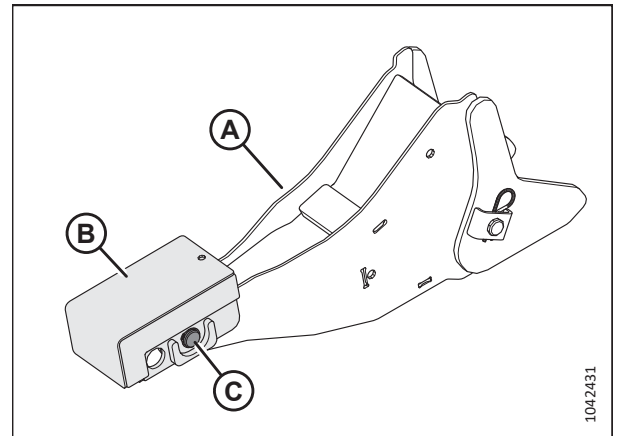


Figure 6.96: Draper Header Supports

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).

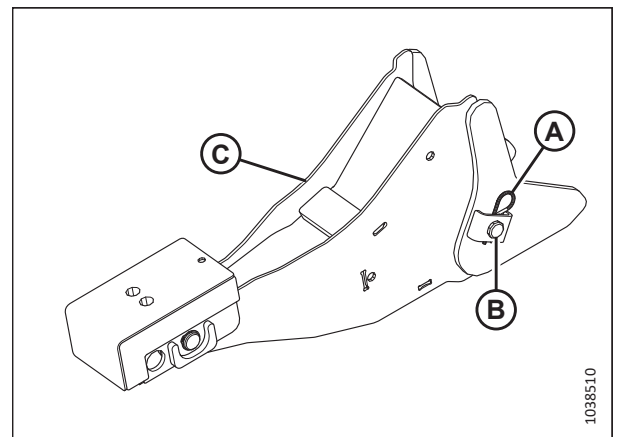


Figure 6.97: Draper Header Support

ATTACHING HEADERS

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 161](#) to Step 4, [page 162](#) to install the remaining draper header support.

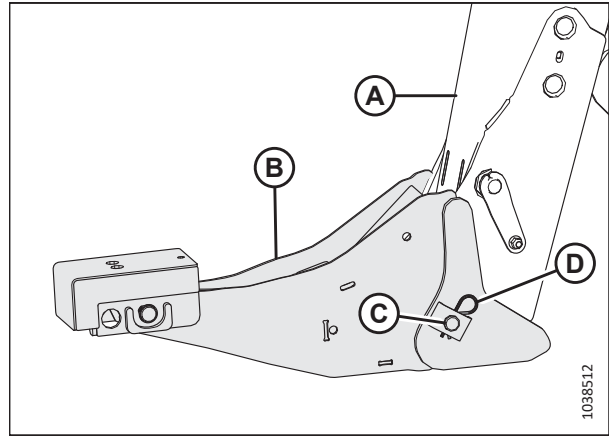


Figure 6.98: Draper Header Support

6.3.2 Attaching D2 SP Series Draper Header – Hydraulic Center-Link with Self-Alignment

The header will need to be physically attached to the windrower, and the hydraulic connections completed.

DANGER

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

DANGER

Ensure that all bystanders have cleared the area.

1. Shut down the engine, and remove the key from the ignition.
2. If the windrower was previously attached to an R Series Rotary Disc Header, make sure to remove the forming shield (not shown), including forming shield support brackets (A) and hardware (B) from both legs. You can store the brackets and hardware in the windrower tool box.
 - For more information about the forming shield, refer to the header operator's manual.

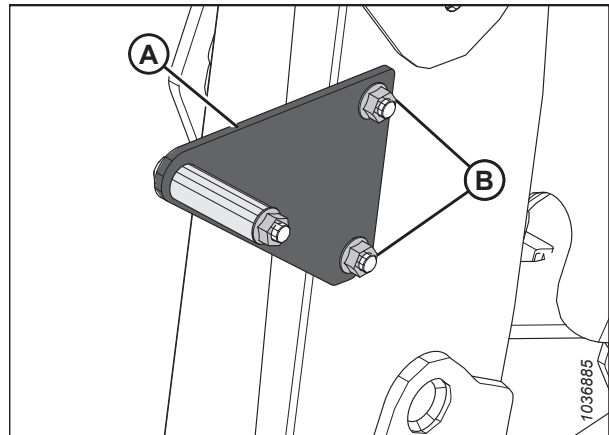


Figure 6.99: Forming Shield bracket – R Series

ATTACHING HEADERS

3. Before beginning this procedure, make sure both 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 [6.3.1 Attaching Draper Header Supports](#), page 161. Header supports are typically left installed in the header legs when the header is detached from the windrower.

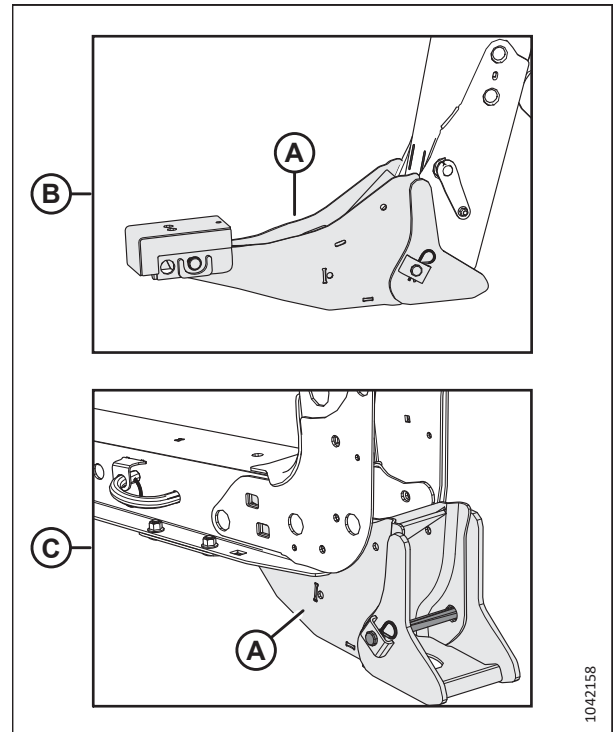


Figure 6.100: Header Supports Installed

4. Prepare the header as follows:

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

Repeat this step on the other header leg.

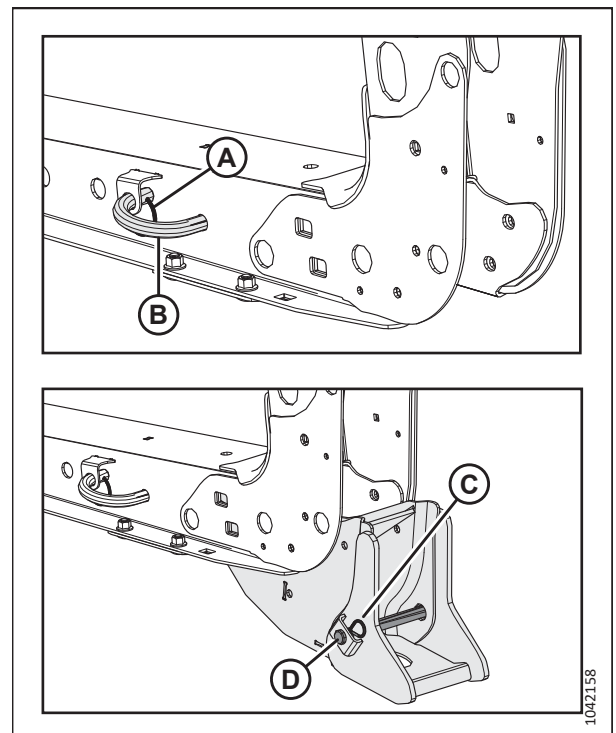


Figure 6.101: Header Leg — Left Side Shown

ATTACHING HEADERS

5. Ensure that the float engagement pin is installed in storage position (B) and **NOT** in engaged position (A).

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.

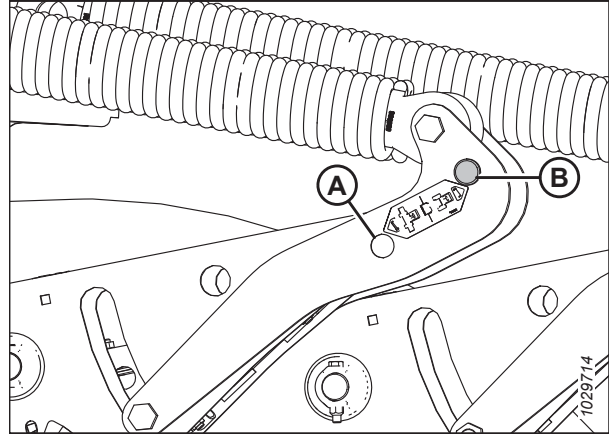


Figure 6.102: Header Float Linkage

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

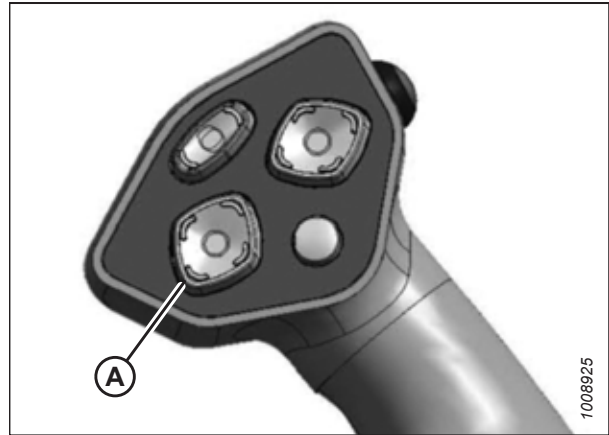


Figure 6.103: Ground Speed Lever

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

IMPORTANT:

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



Figure 6.104: Ground Speed Lever

ATTACHING HEADERS

8. 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.

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

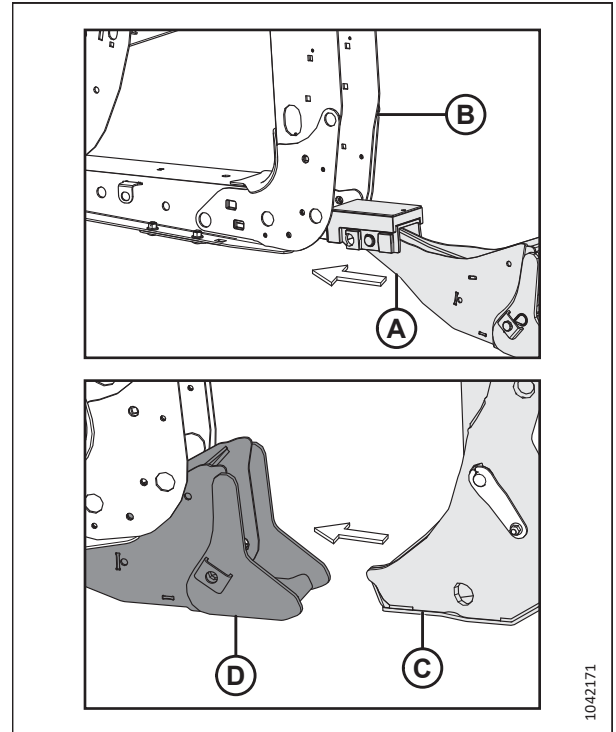


Figure 6.105: Header Leg and Support

10. Use the following GSL functions to position the center-link hook above the header attachment pin:

- REEL UP (A) to raise the center-link
- REEL DOWN (B) to lower the center-link
- HEADER TILT UP (C) to retract the center-link
- HEADER TILT DOWN (D) to extend the center-link

IMPORTANT:

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

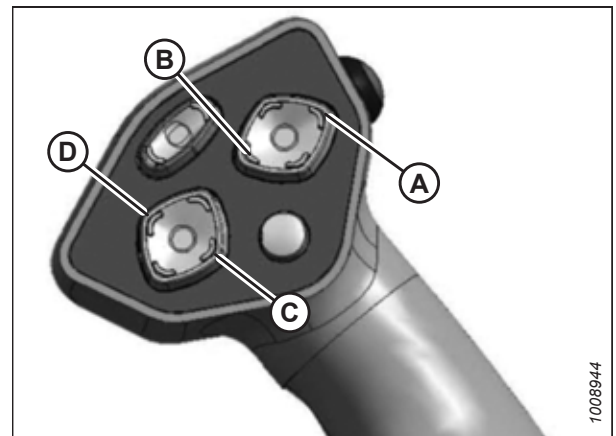


Figure 6.106: Ground Speed Lever

ATTACHING HEADERS

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

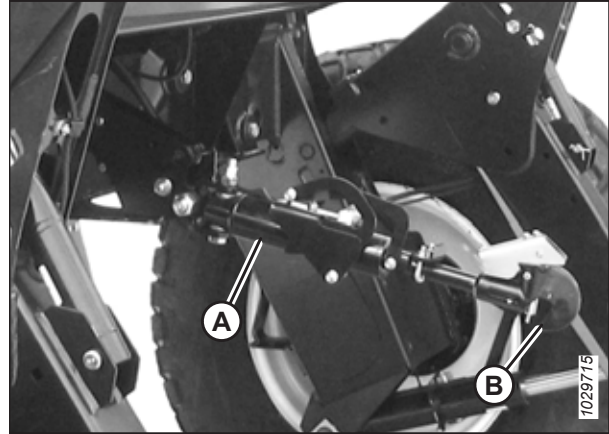


Figure 6.107: Hydraulic Center-Link

13. Press HEADER UP switch (A) to raise the header to its maximum height.
14. If one end of the header does **NOT** fully rise, rephase the lift cylinders as follows:
 - a. Press and hold the HEADER UP switch until both cylinders stop moving.
 - b. Continue to hold the switch for 3–4 seconds to fully phase the cylinders.

NOTE:

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



Figure 6.108: Ground Speed Lever

ATTACHING HEADERS

15. Engage the safety props on both lift cylinders:
 - a. Shut down the engine, and remove the key from the ignition.
 - b. Pull lever (A) and rotate it towards the header to release and lower safety prop (B) onto the lift cylinder.
 - c. Repeat the previous steps for the opposite lift cylinder.

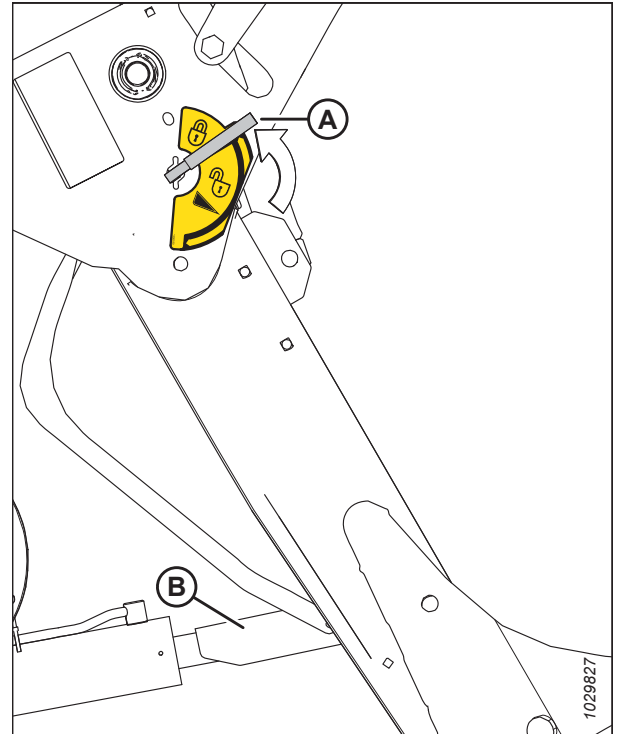


Figure 6.109: Safety Prop

16. Proceed as follows:

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

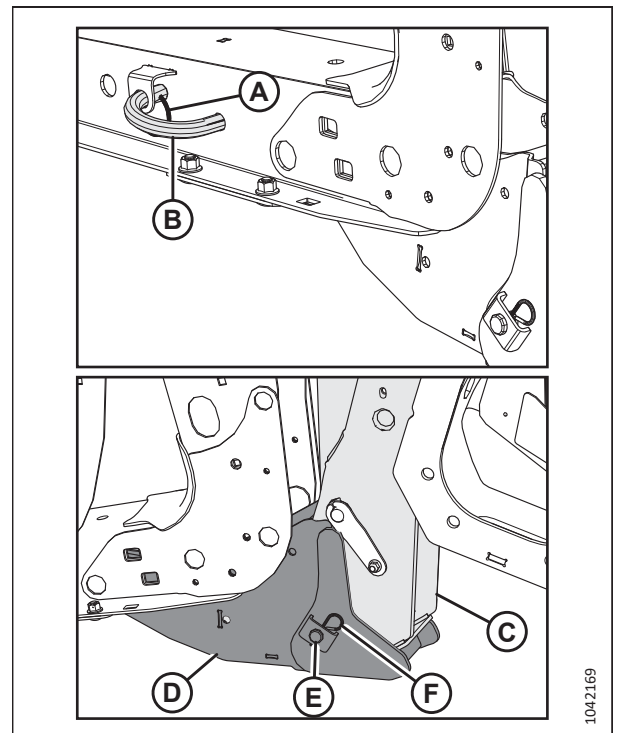


Figure 6.110: Windrower Lift Linkage and Header Leg

ATTACHING HEADERS

17. Remove the clevis pin from storage position (B) in the linkage and insert it into hole (A) to engage the float springs. Secure it with the hairpin. Repeat this step on the opposite float linkage.

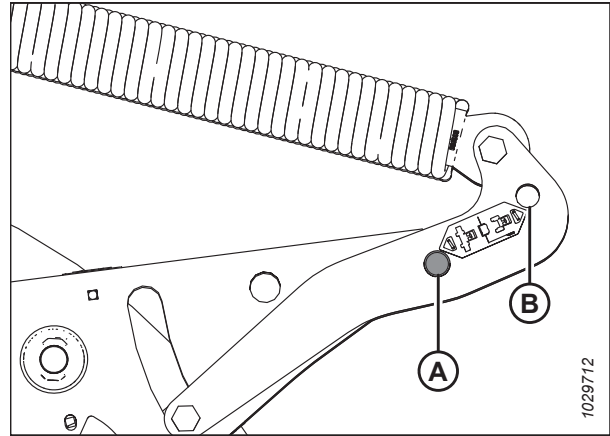


Figure 6.111: Header Float Linkage

18. Disengage the safety prop by turning lever (A) downwards until the lever locks into the vertical position.
19. Repeat the previous step to disengage the other safety prop.

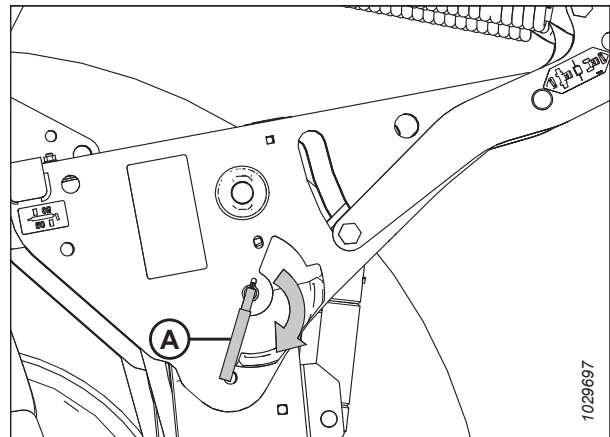


Figure 6.112: Safety Prop Lever

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

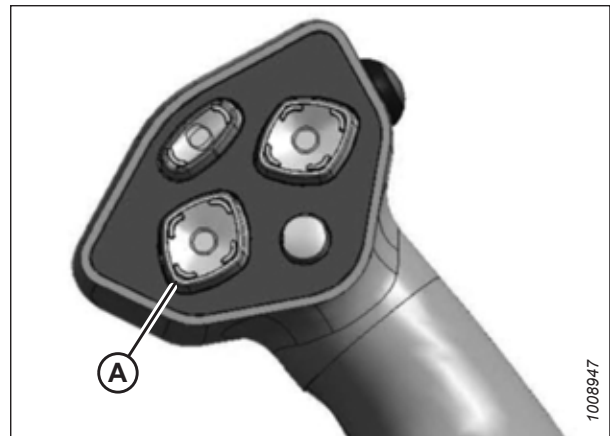


Figure 6.113: Ground Speed Lever

ATTACHING HEADERS

22. Connect header drive hoses (A) and electrical harness (B) to the header. For instructions, refer to the header operator's manual.

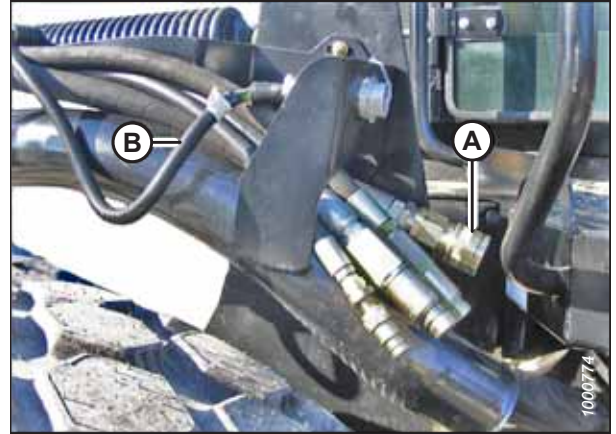


Figure 6.114: Header Drive Hoses and Harness

23. Connect reel hydraulics (A) to the corresponding connections at the right cab-forward side of the windrower. For instructions, refer to the header operator's manual.
24. Start the engine. Raise and lower the header and the reel a few times to remove any trapped air from the hydraulic system.

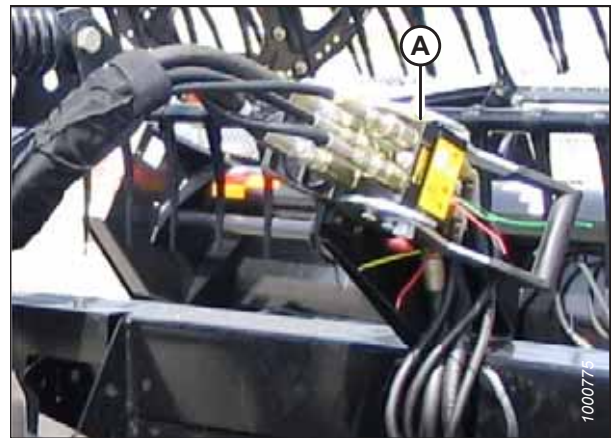


Figure 6.115: Reel Hydraulics

6.3.3 Attaching D2 SP Series Draper Header – Hydraulic Center-Link without Self-Alignment

The header will need to be physically attached to the windrower, and the hydraulic connections completed.

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

2. If the windrower was previously attached to an R Series Rotary Disc Header, make sure to remove the forming shield (not shown), including forming shield support brackets (A) and hardware (B) from both legs. You can store the brackets and hardware in the windrower tool box.
 - For more information about the forming shield, refer to the header operator's manual.

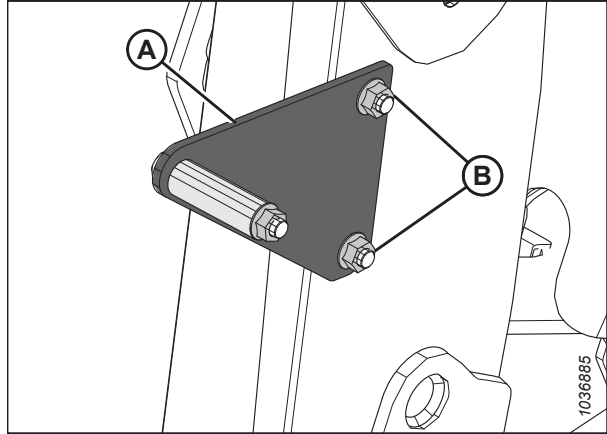


Figure 6.116: Forming Shield bracket – R Series

3. Before beginning this procedure, make sure both 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 [6.3.1 Attaching Draper Header Supports](#), page 161. Header supports are typically left installed in the header legs when the header is detached from the windrower.

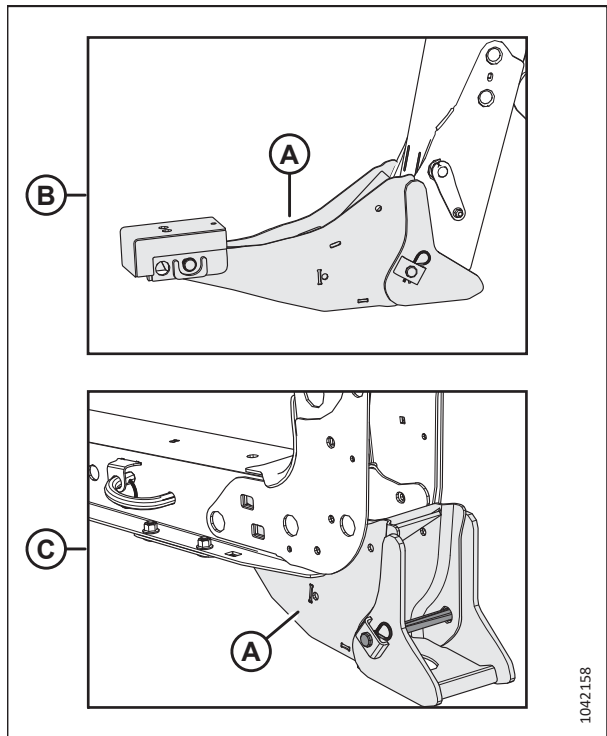


Figure 6.117: Header Supports Installed

ATTACHING HEADERS

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

Repeat this step on the other header leg.

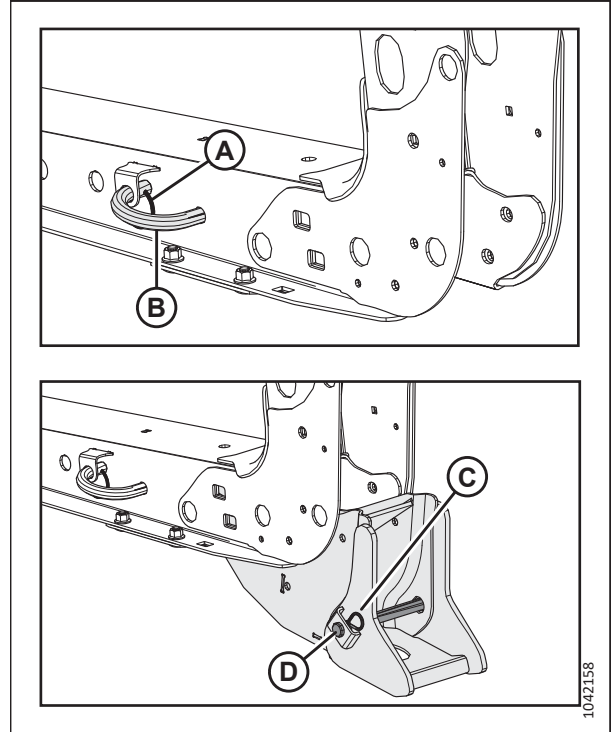


Figure 6.118: Header Leg — Left Side Shown

5. Ensure that the float engagement pin is installed in storage position (B) and **NOT** in engaged position (A).

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.

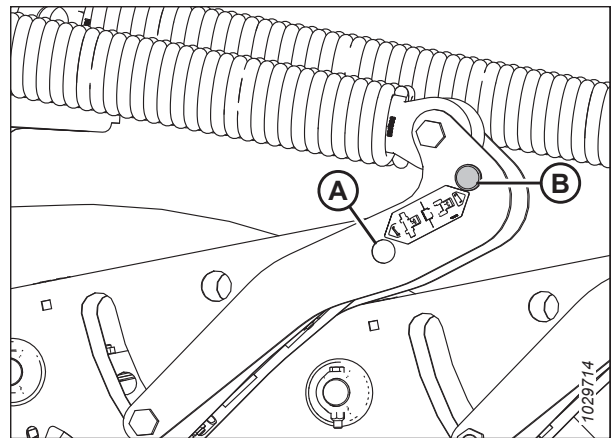


Figure 6.119: Header Float Linkage

ATTACHING HEADERS

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

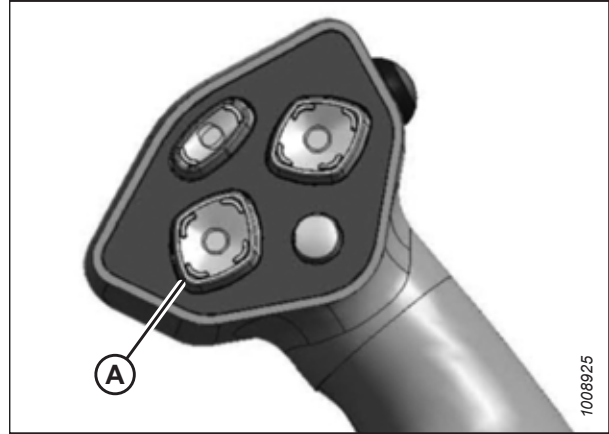


Figure 6.120: Ground Speed Lever

7. Remove pin (A) from the frame linkage and raise center-link (B) until the hook is above the attachment pin on the header. Reinstall pin (A) to hold the center-link in place.

IMPORTANT:

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

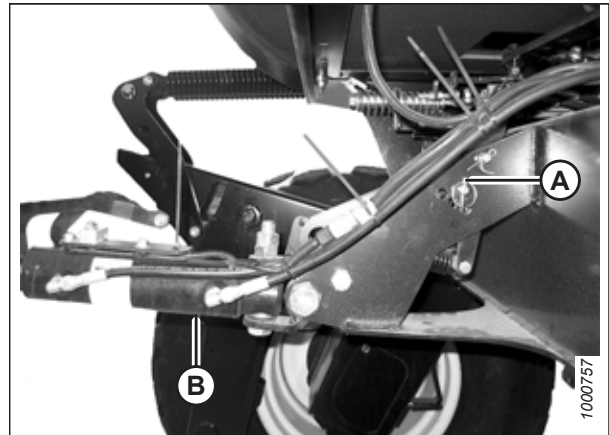


Figure 6.121: Hydraulic Center-Link without Self-Alignment Kit

ATTACHING HEADERS

8. 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.

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

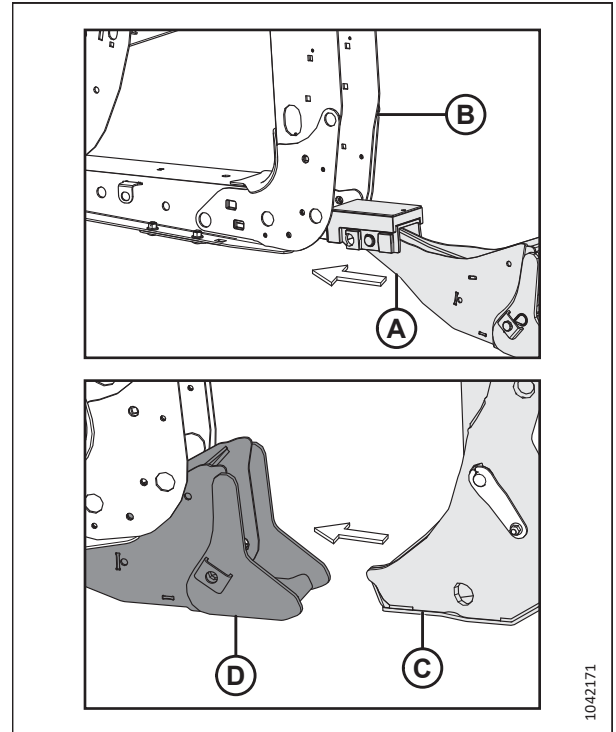


Figure 6.122: Header Leg and Support

10. Use the following GSL functions to position the center-link hook above the header attachment pin:

- HEADER TILT UP (A) to retract the center-link
- HEADER TILT DOWN (B) to extend the center-link

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

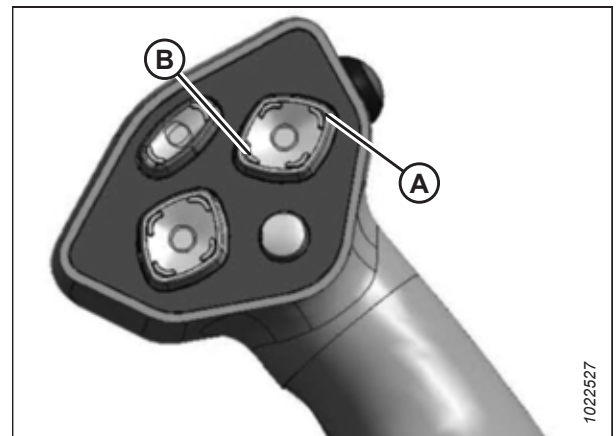


Figure 6.123: Ground Speed Lever

ATTACHING HEADERS

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

IMPORTANT:

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

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

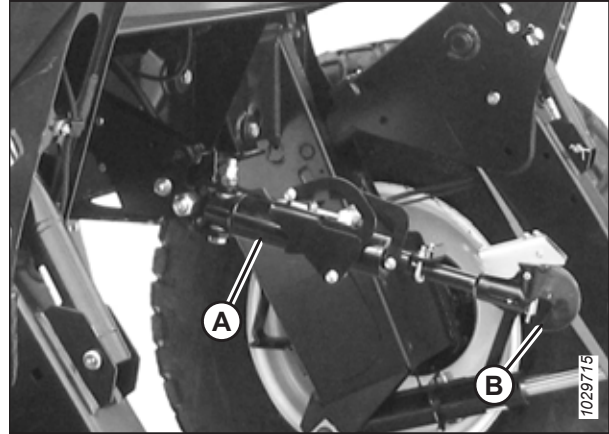


Figure 6.124: Hydraulic Center-Link

14. Start the engine.
15. Press HEADER UP switch (A) to raise the header to its maximum height.
16. If one end of the header does **NOT** fully rise, rephase the lift cylinders as follows:
 - a. Press and hold the HEADER UP switch until both cylinders stop moving.
 - b. Continue to hold the switch for 3–4 seconds to fully phase the cylinders.

NOTE:

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



Figure 6.125: Ground Speed Lever

ATTACHING HEADERS

17. Engage the safety props on both lift cylinders:
 - a. Shut down the engine, and remove the key from the ignition.
 - b. Pull lever (A) and rotate it towards the header to release and lower safety prop (B) onto the lift cylinder.
 - c. Repeat the previous steps for the opposite lift cylinder.

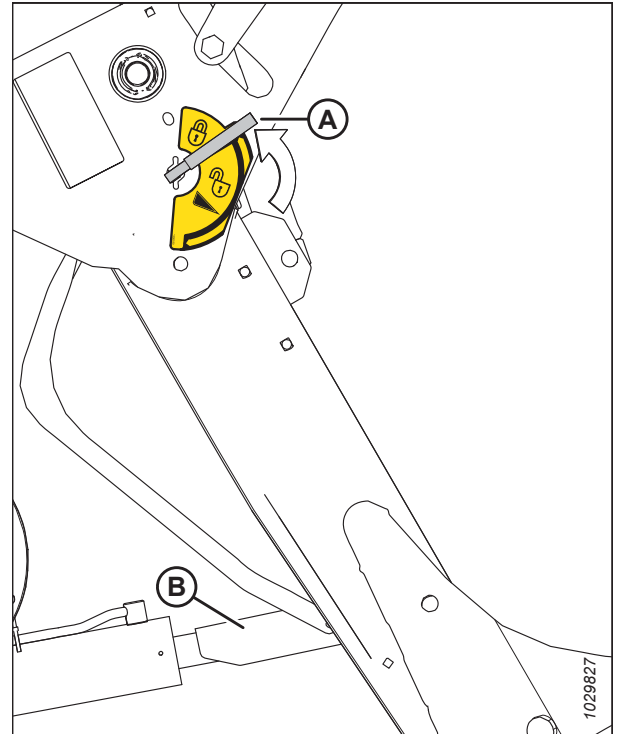


Figure 6.126: Safety Prop

18. 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 boots (D) using clevis pin (E) and hair pin (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.

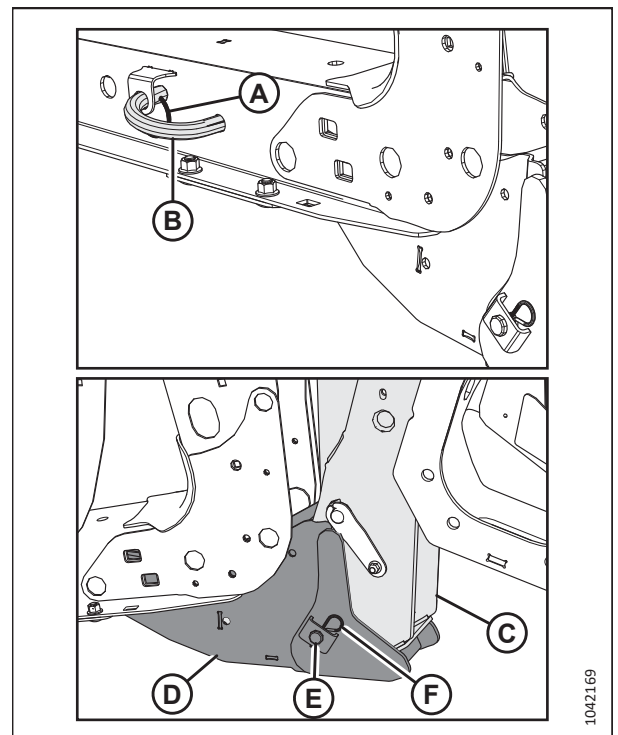


Figure 6.127: Windrower Lift Linkage and Header Leg

ATTACHING HEADERS

19. Remove the clevis pin from storage position (B) in the linkage and insert it into hole (A) to engage the float springs. Secure it with the hairpin. Repeat this step on the opposite float linkage.

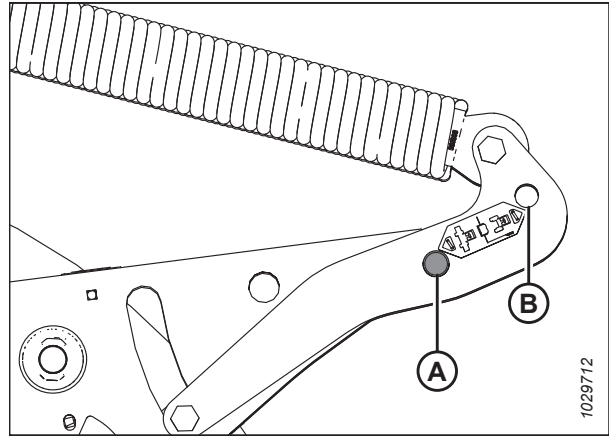


Figure 6.128: Header Float Linkage

20. Disengage the safety prop by turning lever (A) downwards until the lever locks into the vertical position.
21. Repeat the previous step to disengage the other safety prop.

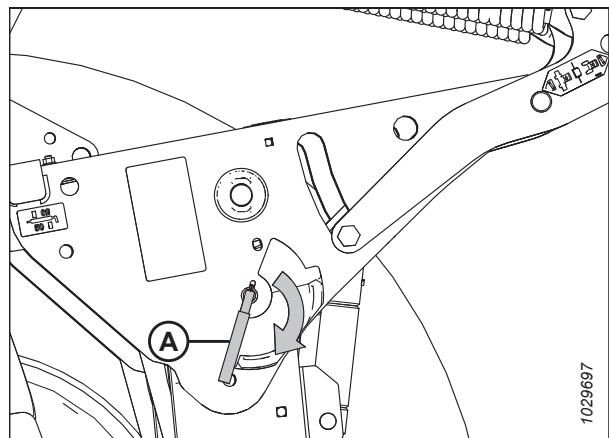


Figure 6.129: Safety Prop Lever

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

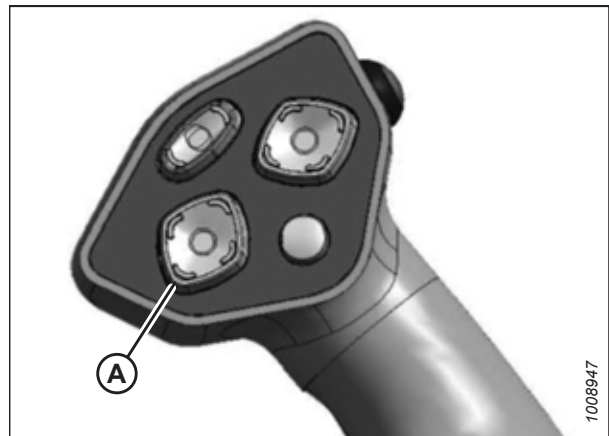


Figure 6.130: Ground Speed Lever

ATTACHING HEADERS

24. Connect header drive hoses (A) and electrical harness (B) to the header. For instructions, refer to the header operator's manual.

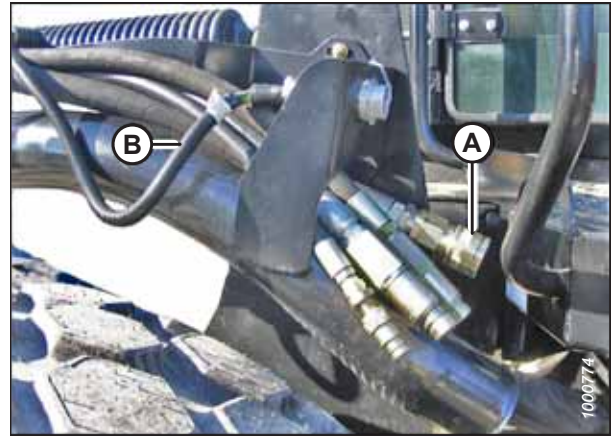


Figure 6.131: Header Drive Hoses and Harness

25. Connect reel hydraulics (A) to the corresponding connections at the right cab-forward side of the windrower. For instructions, refer to the header operator's manual.
26. Start the engine. Raise and lower the header and the reel a few times to remove any trapped air from the hydraulic system.

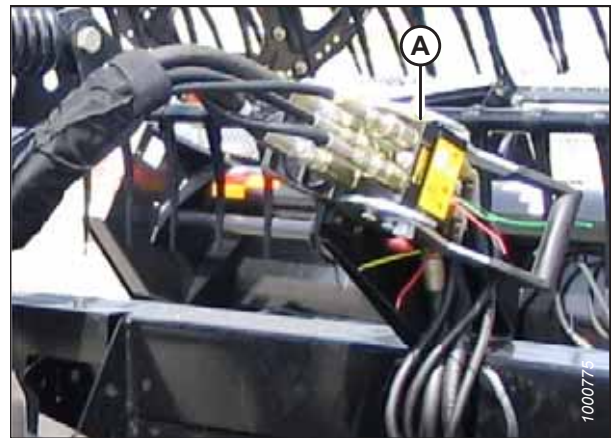


Figure 6.132: Reel Hydraulics

6.3.4 Attaching D2 SP Series Draper Header – Mechanical Center-Link

The header will need to be physically attached to the windrower, and the hydraulic and electrical connections completed.

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

2. If the windrower was previously attached to an R Series Rotary Disc Header, make sure to remove the forming shield (not shown), including forming shield support brackets (A) and hardware (B) from both legs. You can store the brackets and hardware in the windrower tool box.
 - For more information about the forming shield, refer to the header operator's manual.

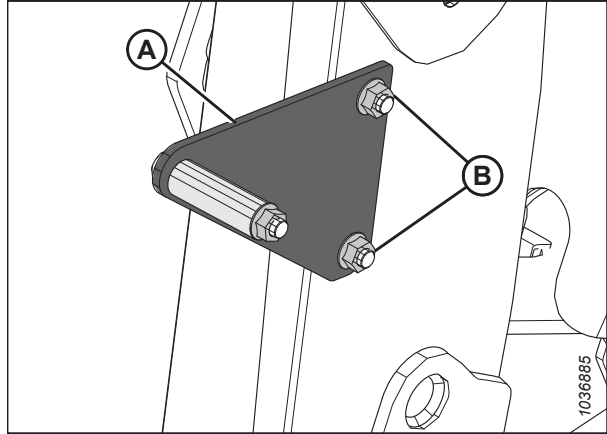


Figure 6.133: Forming Shield bracket – R Series

3. Before beginning this procedure, make sure both 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 [6.3.1 Attaching Draper Header Supports](#), page 161. Header supports are typically left installed in the header legs when the header is detached from the windrower.

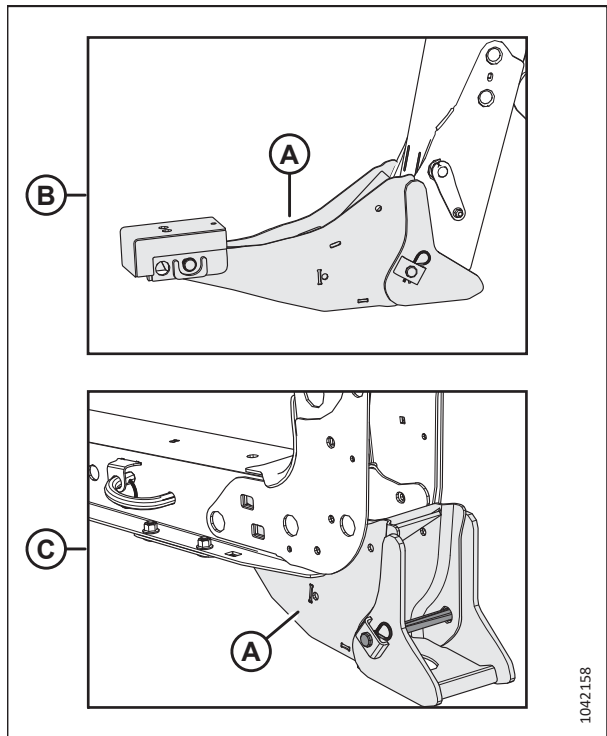


Figure 6.134: Header Supports Installed

ATTACHING HEADERS

4. Prepare the header as follows:
 - **If the header supports are installed on the windrower:**
Remove ring (A) and pin (B) from the header leg.
 - **If the header supports are installed in the header:**
Remove hair pin (C) and clevis pin (D) from the header support.Repeat this step on the other header leg.

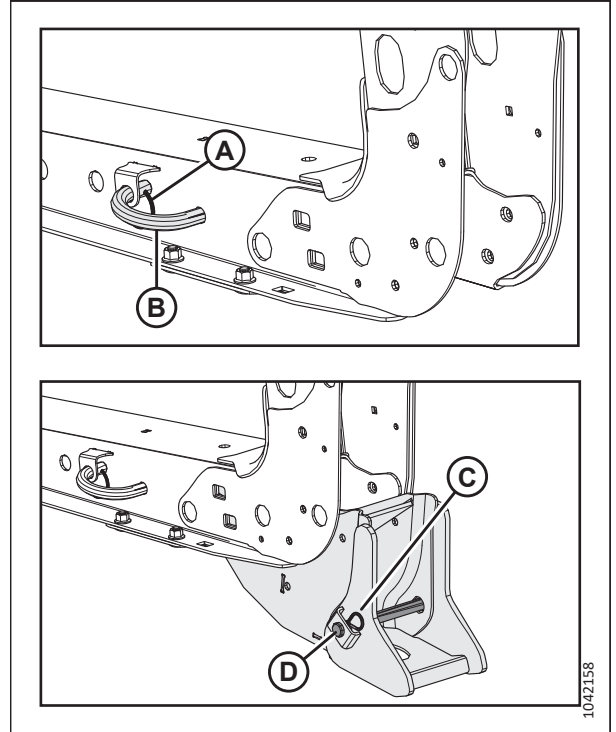


Figure 6.135: Header Leg — Left Side Shown

5. Ensure that the float engagement pin is installed in storage position (B) and **NOT** in engaged position (A).

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.

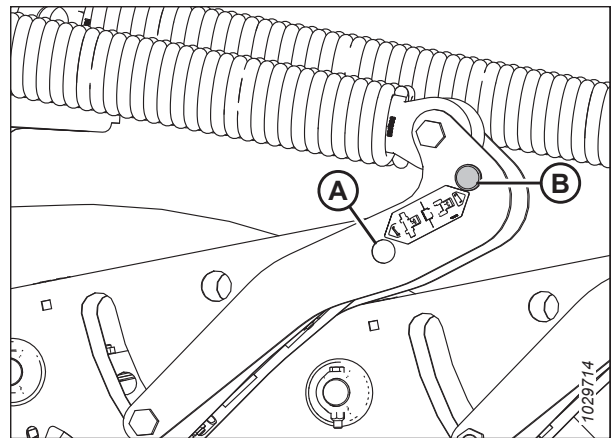


Figure 6.136: Header Float Linkage

ATTACHING HEADERS

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

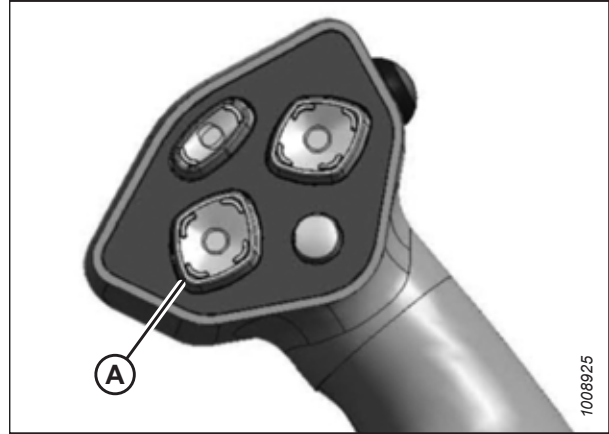


Figure 6.137: Ground Speed Lever

7. 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.

8. Ensure that the lift linkages are properly engaged in the header legs and are in contact with the support plates.
9. Shut down the engine, and remove the key from the ignition.

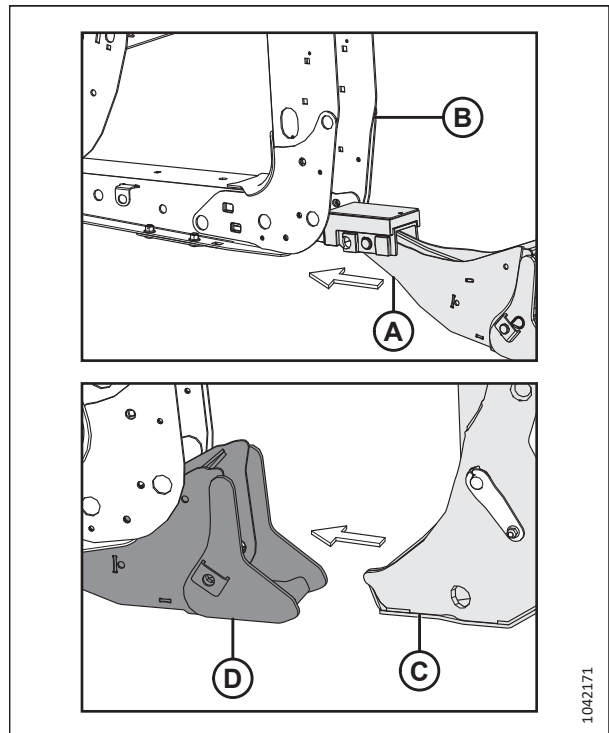


Figure 6.138: Header Leg and Support

ATTACHING HEADERS

10. Loosen nut (A) and rotate barrel (B) to adjust length until the link is aligned with the header bracket.
11. Install clevis pin (C) and secure it with cotter pin (D).
12. Adjust the length of the link to achieve the proper header angle by rotating barrel (B). Tighten nut (A) against the barrel (a slight tap with a hammer is sufficient).
13. Start the engine.

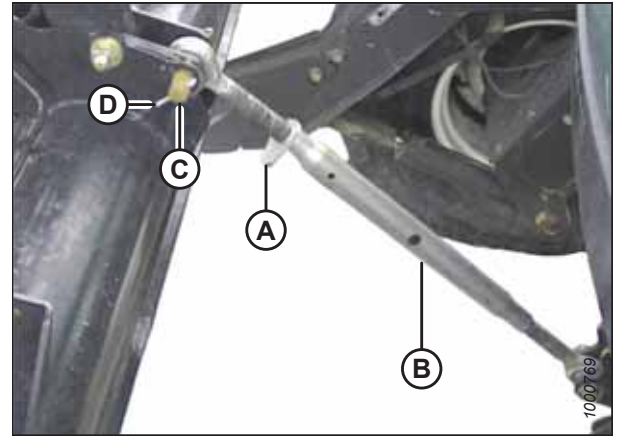


Figure 6.139: Mechanical Center-Link

14. Press HEADER UP switch (A) to raise the header to its maximum height.
15. If one end of the header does **NOT** fully rise, rephase the lift cylinders as follows:
 - a. Press and hold the HEADER UP switch until both cylinders stop moving.
 - b. Continue to hold the switch for 3–4 seconds to fully phase the cylinders.

NOTE:

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



Figure 6.140: Ground Speed Lever

ATTACHING HEADERS

16. Engage the safety props on both lift cylinders:
 - a. Shut down the engine, and remove the key from the ignition.
 - b. Pull lever (A) and rotate it towards the header to release and lower safety prop (B) onto the lift cylinder.
 - c. Repeat the previous steps for the opposite lift cylinder.

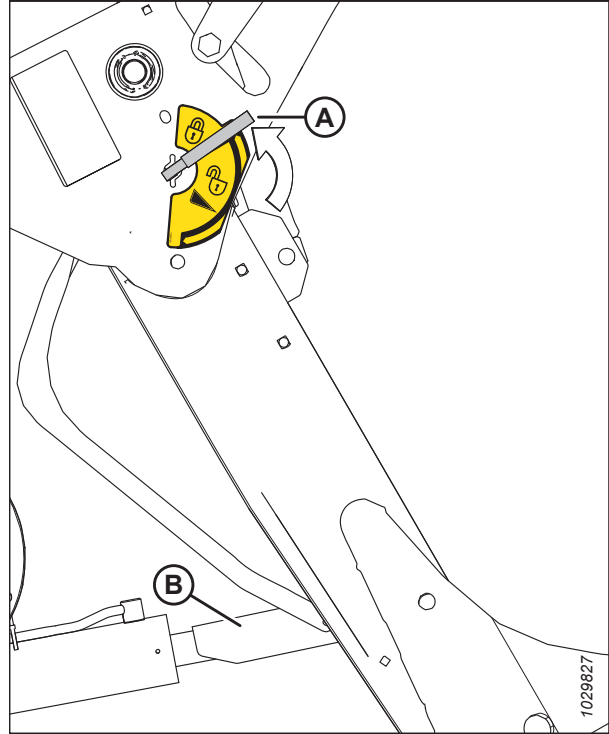


Figure 6.141: Safety Prop

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 boots (D) using clevis pin (E) and hair pin (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.

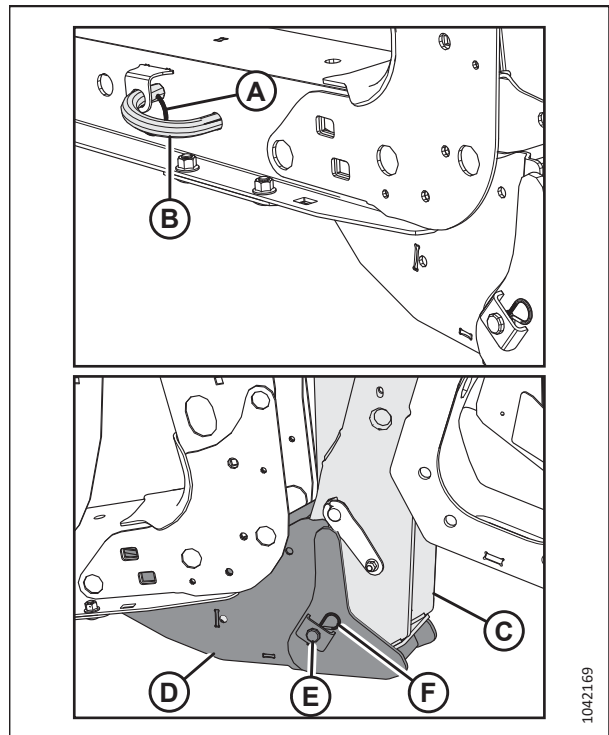


Figure 6.142: Windrower Lift Linkage and Header Leg

ATTACHING HEADERS

18. Remove the clevis pin from storage position (B) in the linkage and insert it into hole (A) to engage the float springs. Secure it with the hairpin. Repeat this step on the opposite float linkage.

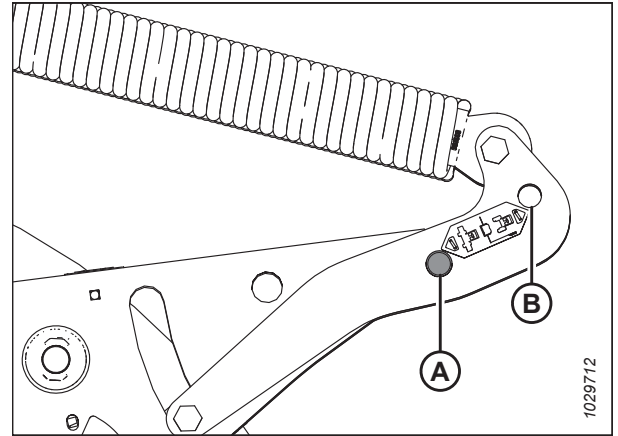


Figure 6.143: Header Float Linkage

19. Disengage the safety prop by turning lever (A) downwards until the lever locks into the vertical position.
20. Repeat the previous step to disengage the other safety prop.

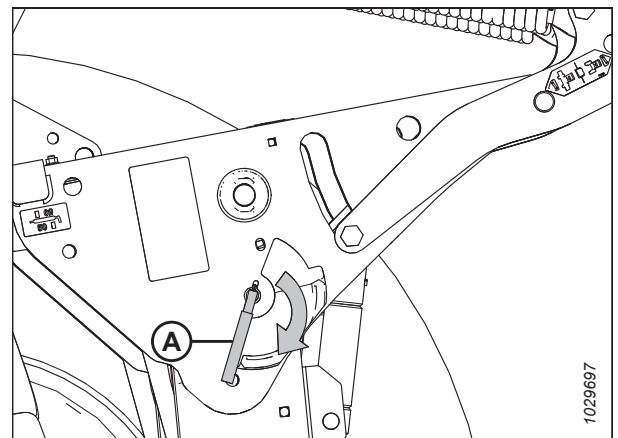


Figure 6.144: Safety Prop Lever

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

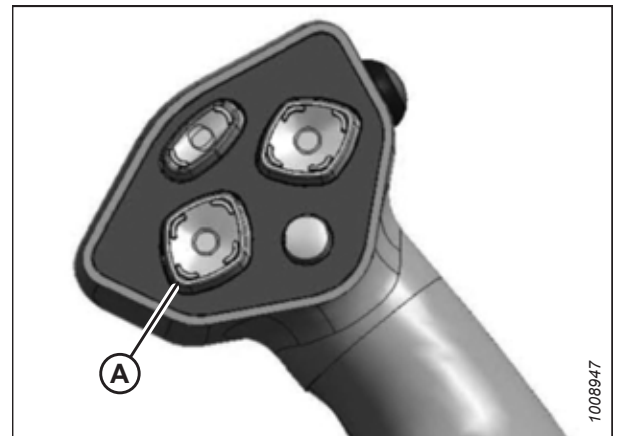


Figure 6.145: Ground Speed Lever

ATTACHING HEADERS

23. Connect header drive hoses (A) and electrical harness (B) to the header. For instructions, refer to the header operator's manual.

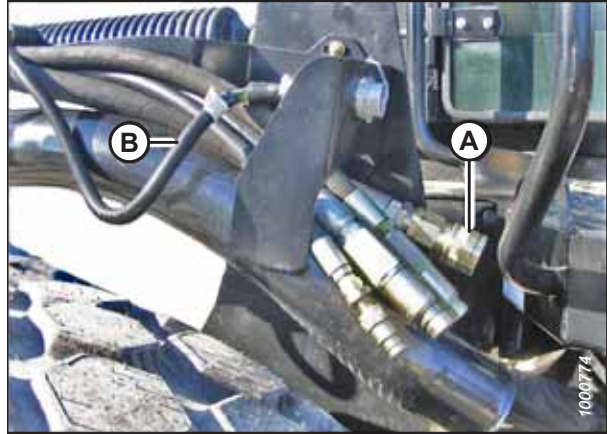


Figure 6.146: Header Drive Hoses and Harness

24. Connect reel hydraulics (A) to the corresponding connections at the right cab-forward side of the windrower. For instructions, refer to the header operator's manual.
25. Start the engine. Raise and lower the header and the reel a few times to remove any trapped air from the hydraulic system.

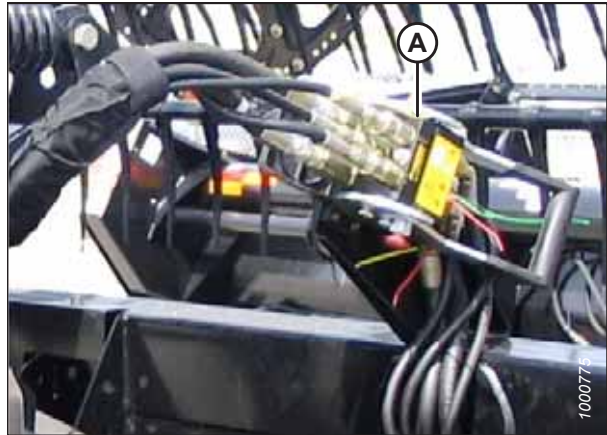


Figure 6.147: Reel Hydraulics

6.4 Attaching R Series or R1 Series Rotary Disc Header

Attaching a header to the windrower involves physically connecting the header to the header and completing the hydraulic and electrical connections.

NOTE:

Install 18.4 x 26 tires on the drive wheels when operating an M155 Self-Propelled Windrower with an attached 4 m (13 ft.) R or R1 Series Rotary Disc Header. These drive tires are reversible and should be mounted inset at 3792 mm (149.3 in.) to provide the greatest amount of clearance to uncut crop. Mounting these tires outset or mounting any other drive tire option will result in the drive tires being slightly wider than the header. This may cause some uncut crop to be trampled by the tires when turning the windrower, and may leave some uncut strips of crop in the windrower's next pass.

The M155 Self-Propelled Windrower can operate the following rotary disc headers:

- 4 m (13 ft.) R Series
- R1 Series

These headers are shipped without the motor or hoses installed, so a separate motor, hose bundle, and hydraulic valve kit is required to operate the header.

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

Table 6.1 Rotary Disc Header Bundles – R Series

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

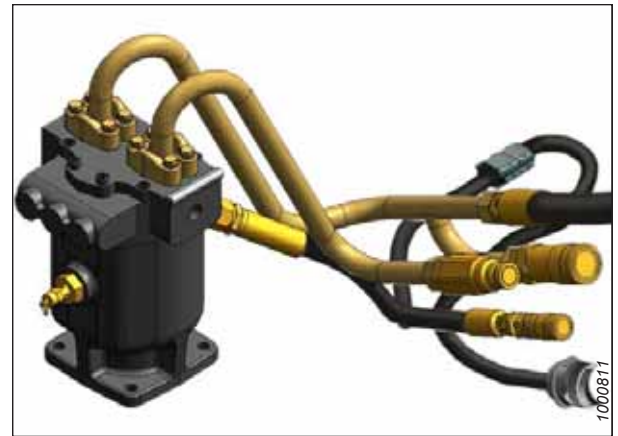


Figure 6.148: M155 Hydraulic Drive Kit (MD #B5510)

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

- [6.4.1 Attaching R or R1 Series Rotary Disc Header – Hydraulic Center-Link with Self-Alignment, page 185](#)
- [6.4.2 Attaching R or R1 Series Rotary Disc Header – Hydraulic Center-Link without Self-Alignment, page 191](#)
- [6.4.3 Attaching R or R1 Series Rotary Disc Header – Mechanical Center-Link, page 198](#)

6.4.1 Attaching R or R1 Series Rotary Disc Header – Hydraulic Center-Link with Self-Alignment

The header will need to be physically attached to the windrower, and the hydraulic and electrical connections completed. The windrower may be equipped with an optional self-aligning hydraulic center-link, which allows the Operator to control the vertical position of the center-link from the cab.

DANGER

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

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

ATTACHING HEADERS

2. Locate header supports (A) on the rear of the header.

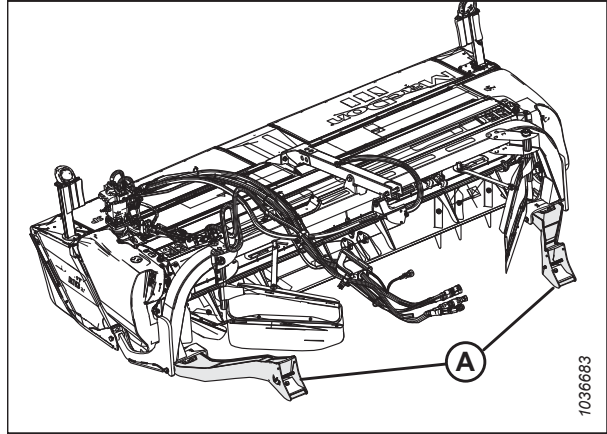


Figure 6.149: Header Supports

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

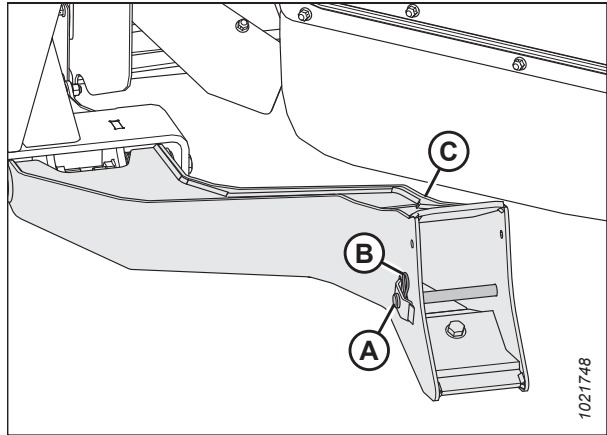


Figure 6.150: Header Support

4. Remove the float engagement pin from hole (A) to disengage the float springs, and insert the float engagement pin into storage hole (B). Secure the pin with the lynch pin. Repeat this step for the opposite linkage.

IMPORTANT:

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

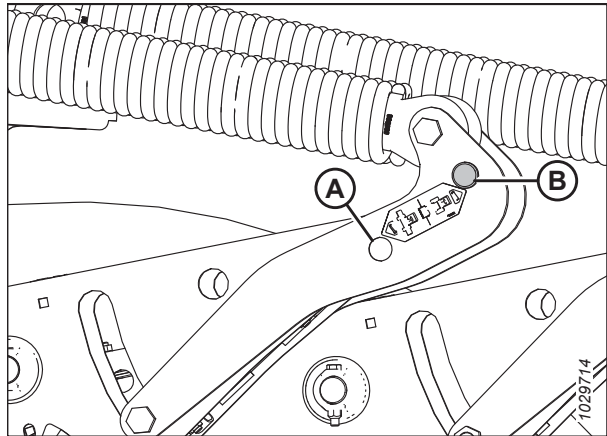


Figure 6.151: Float Linkage

ATTACHING HEADERS

DANGER

Ensure that all bystanders have cleared the area.

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

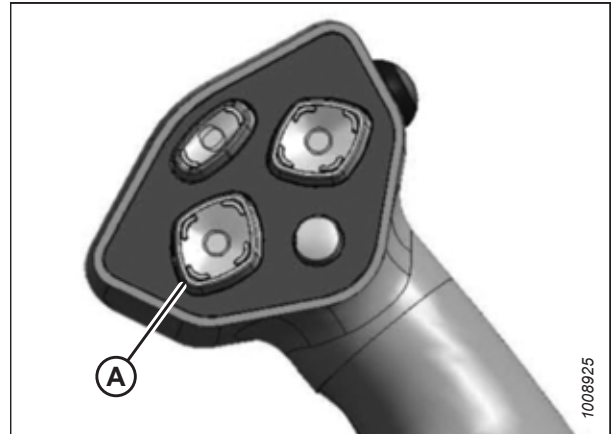


Figure 6.152: Ground Speed Lever

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

IMPORTANT:

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

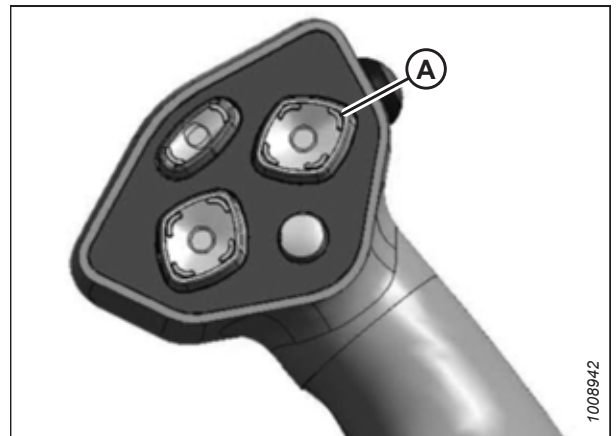


Figure 6.153: Ground Speed Lever

7. Slowly drive the windrower forward until windrower feet (A) enter header supports (B). Continue driving slowly forward until the feet engage the supports and the header is nudged forward.

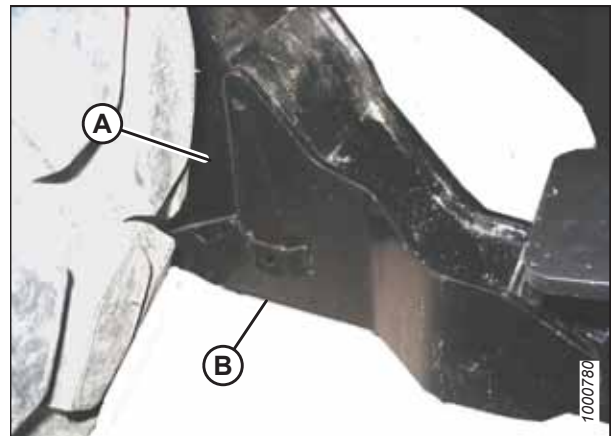


Figure 6.154: Header Support

ATTACHING HEADERS

8. Use the following GSL functions to position the center-link hook above the header attachment pin:

- REEL UP (A) to raise the center-link
- REEL DOWN (B) to lower the center-link
- HEADER TILT UP (C) to retract the center-link
- HEADER TILT DOWN (D) to extend the center-link

IMPORTANT:

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

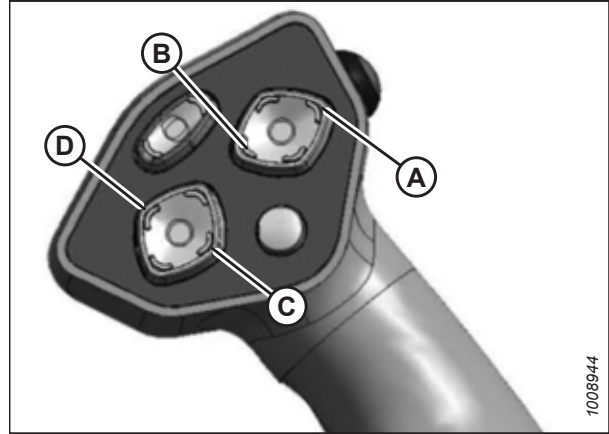


Figure 6.155: Ground Speed Lever

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

IMPORTANT:

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

10. Lower center-link (A) onto the header using the REEL DOWN switch on the GSL until the center-link locks into position and hook release (B) is down.
11. Check that the center-link is locked onto the header by pressing the REEL UP switch on the GSL.

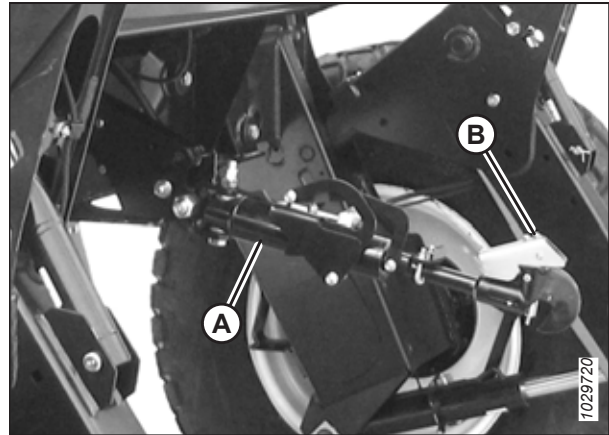


Figure 6.156: Hydraulic Center-Link

12. Press HEADER UP switch (A) to raise the header to its maximum height.
13. If one end of the header does **NOT** fully rise, rephase the lift cylinders as follows:
- a. Press and hold the HEADER UP switch until both cylinders stop moving.
 - b. Continue to hold the switch for 3–4 seconds to fully phase the cylinders.

NOTE:

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



Figure 6.157: Ground Speed Lever

ATTACHING HEADERS

14. Engage the safety props on both lift cylinders:
 - a. Shut down the engine, and remove the key from the ignition.
 - b. Pull lever (A) and rotate it towards the header to release and lower safety prop (B) onto the lift cylinder.
 - c. Repeat the previous steps for the opposite lift cylinder.

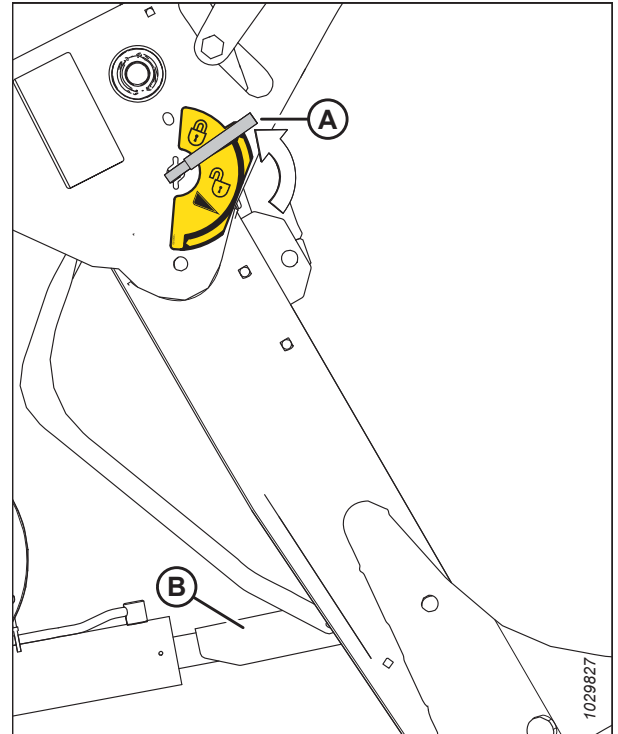


Figure 6.158: Safety Prop

15. Install clevis pin (A) through the support and the windrower lift member, and secure it with hairpin (B). Repeat this step for the opposite side of the machine.

IMPORTANT:

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

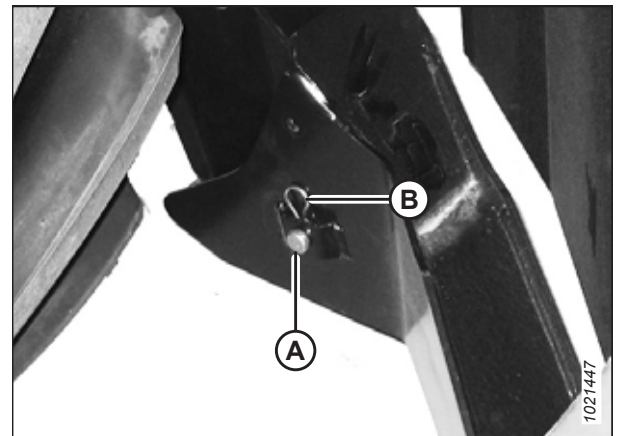


Figure 6.159: Header Support

ATTACHING HEADERS

16. Remove the clevis pin from storage position (B) in the linkage and insert it into hole (A) to engage the float springs. Secure it with the hairpin. Repeat this step on the opposite float linkage.

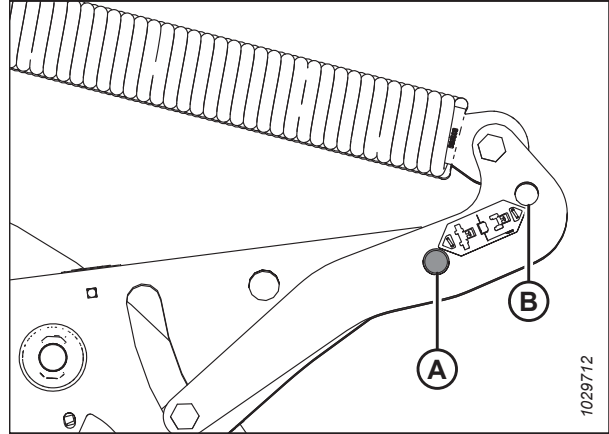


Figure 6.160: Header Float Linkage

17. Disengage the safety prop by turning lever (A) downwards until the lever locks into the vertical position.
18. Repeat the previous step to disengage the other safety prop.

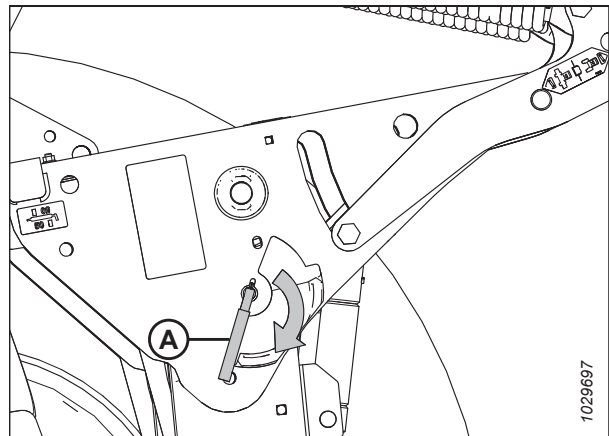


Figure 6.161: Safety Prop Lever

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

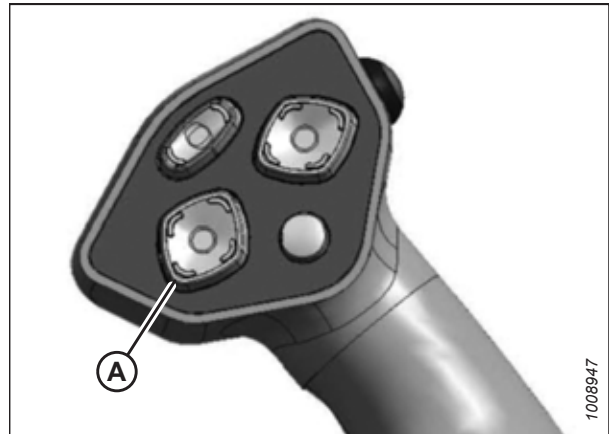


Figure 6.162: Ground Speed Lever

ATTACHING HEADERS

21. Connect header drive hoses (A) and electrical harness (B) to the header. For instructions, refer to the header operator's manual.

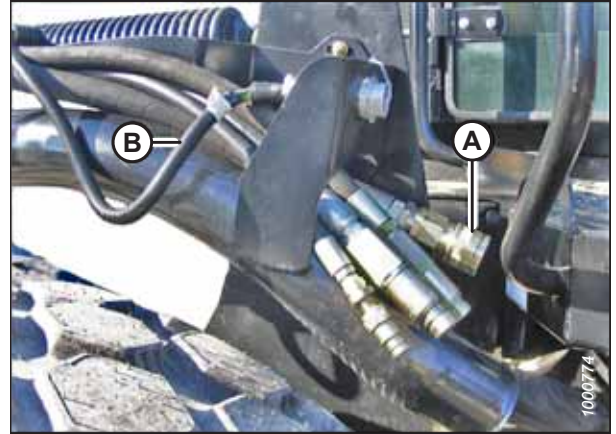


Figure 6.163: Header Drive Hoses and Harness

6.4.2 Attaching R or R1 Series Rotary Disc Header – Hydraulic Center-Link without Self-Alignment

The header will need to be physically attached to the windrower, and the hydraulic and electrical connections completed. If the windrower is equipped with a hydraulic center-link that lacks the self-alignment capability, the Operator will have to manually attach the hydraulic center-link's hook to the header's center pin.

DANGER

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

1. Shut down the engine, and remove the key from the ignition.
2. Locate header supports (A) on the rear of the header.

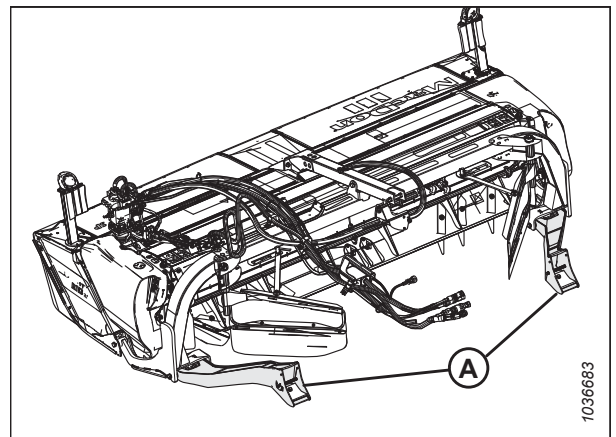


Figure 6.164: Header Supports

ATTACHING HEADERS

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

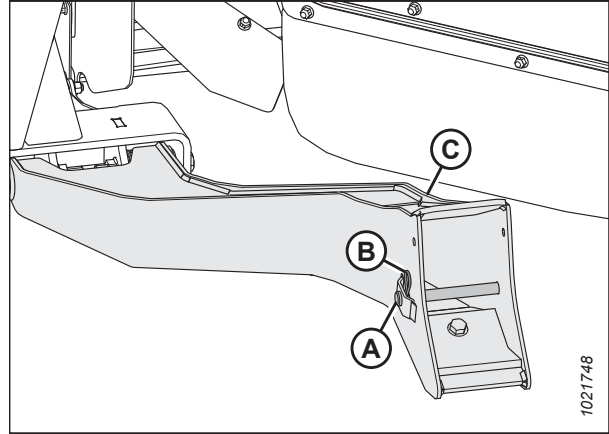


Figure 6.165: Header Support

4. To disengage the float springs, move the float engagement pin from engaged position (A) and insert the pin into storage hole (B). Secure the float engagement pin with a lynch pin. Repeat this step for the opposite linkage.

IMPORTANT:

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

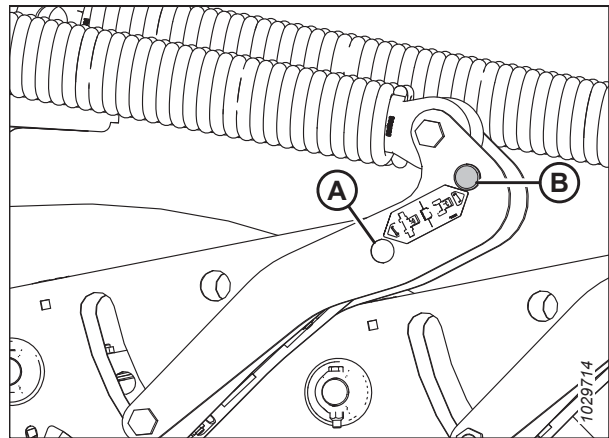


Figure 6.166: Header Float Linkage

DANGER

Ensure that all bystanders have cleared the area.

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

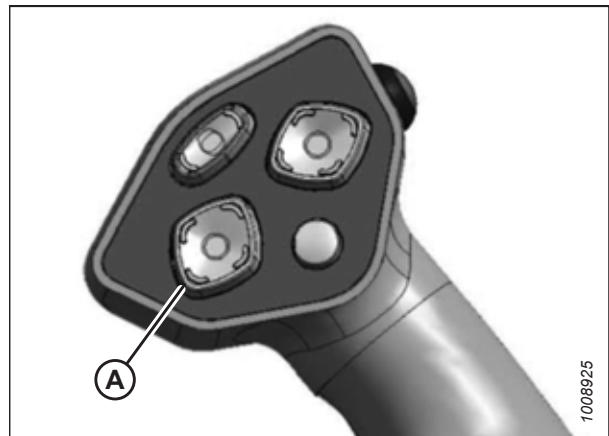


Figure 6.167: Ground Speed Lever

ATTACHING HEADERS

- Remove pin (A) from the frame linkage and raise center-link (B) until the hook is above the attachment pin on the header. Replace pin (A) to hold the center-link in place.

IMPORTANT:

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

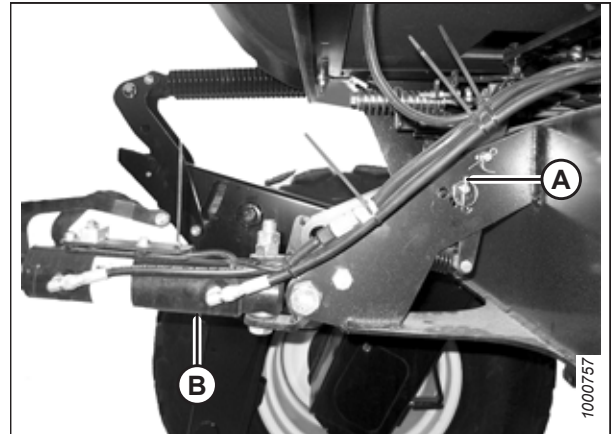


Figure 6.168: Hydraulic Center-Link without Self-Alignment Kit

- Slowly drive the windrower forward until windrower feet (A) enter header supports (B). Continue driving slowly forward until the feet engage the supports and the header nudges forward.

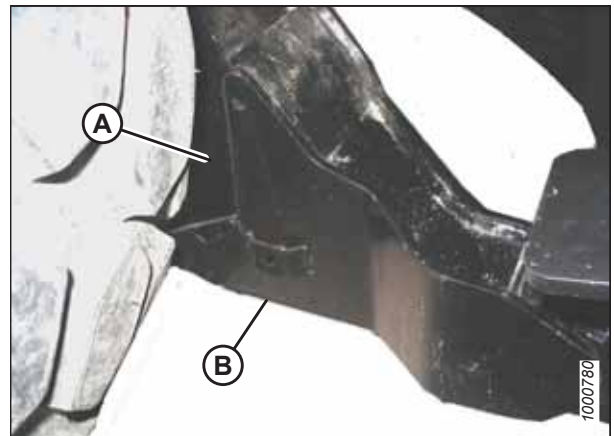


Figure 6.169: Header Support

- Use the following GSL functions to position the center-link hook above the header attachment pin:
 - HEADER TILT UP (A) to retract the center-link
 - HEADER TILT DOWN (B) to extend the center-link
- Stop the engine, and remove the key from the ignition.

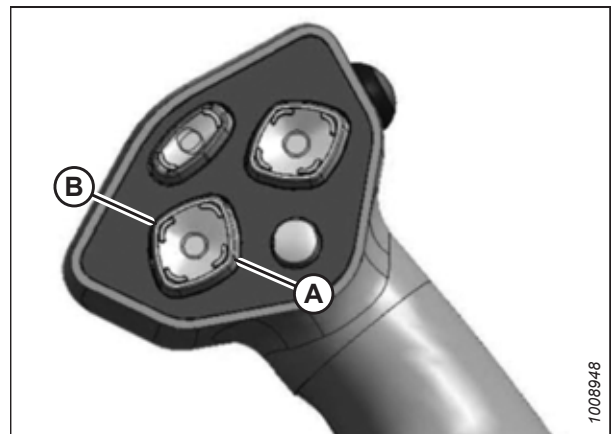


Figure 6.170: Ground Speed Lever

ATTACHING HEADERS

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

IMPORTANT:

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

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

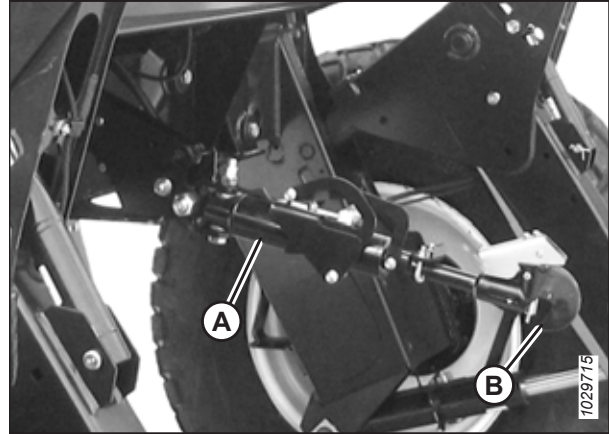


Figure 6.171: Hydraulic Center-Link

DANGER

Ensure that all bystanders have cleared the area.

12. Start the engine.
13. Press HEADER UP switch (A) to raise the header to its maximum height.
14. If one end of the header does **NOT** fully raise, rephase the lift cylinders as follows:
 - a. Press and hold the HEADER UP switch until both cylinders stop moving.
 - b. Continue to hold the switch for 3–4 seconds. The cylinders are now phased.

NOTE:

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



Figure 6.172: Ground Speed Lever

ATTACHING HEADERS

15. Engage the safety props on both lift cylinders:
 - a. Shut down the engine, and remove the key from the ignition.
 - b. Pull lever (A) and rotate it towards the header to release and lower safety prop (B) onto the lift cylinder.
 - c. Repeat the previous steps for the opposite lift cylinder.

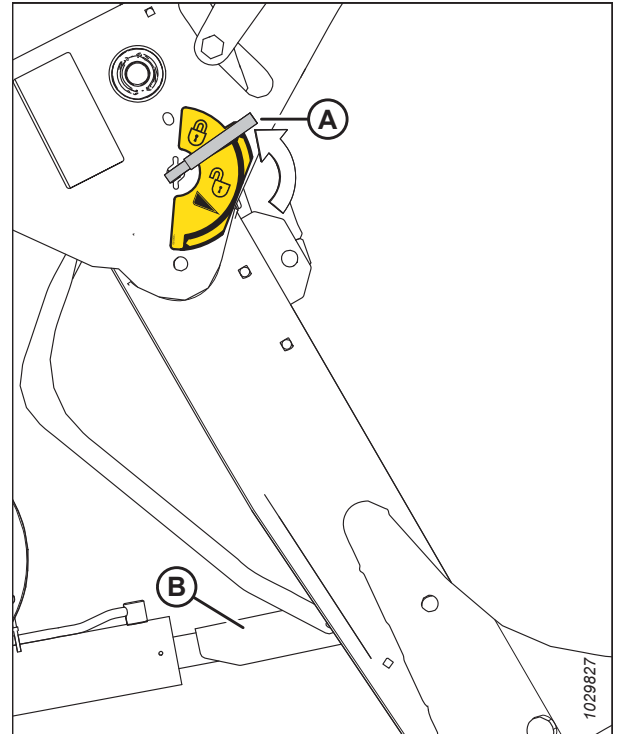


Figure 6.173: Safety Prop

16. Install clevis pin (A) through the support and the windrower lift member, and secure it with hairpin (B). Repeat this step for the opposite side of the machine.

IMPORTANT:

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

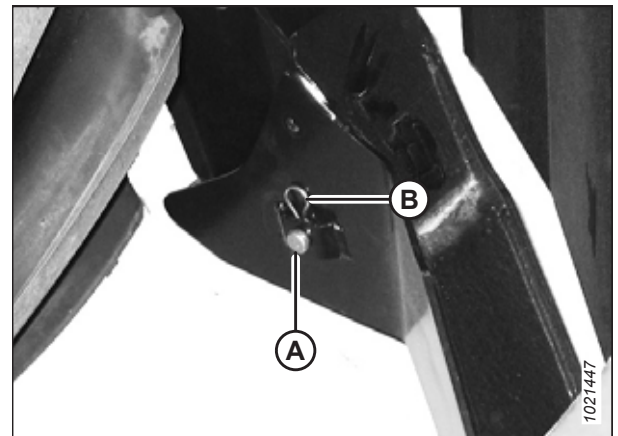


Figure 6.174: Header Support

ATTACHING HEADERS

17. Remove the clevis pin from storage position (B) in the linkage and insert it into hole (A) to engage the float springs. Secure it with the hairpin. Repeat this step on the opposite float linkage.

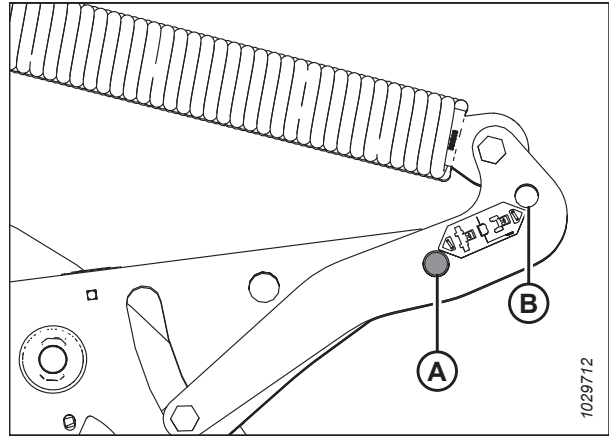


Figure 6.175: Header Float Linkage

18. Disengage the safety prop by turning lever (A) downwards until the lever locks into the vertical position.
19. Repeat the previous step to disengage the other safety prop.

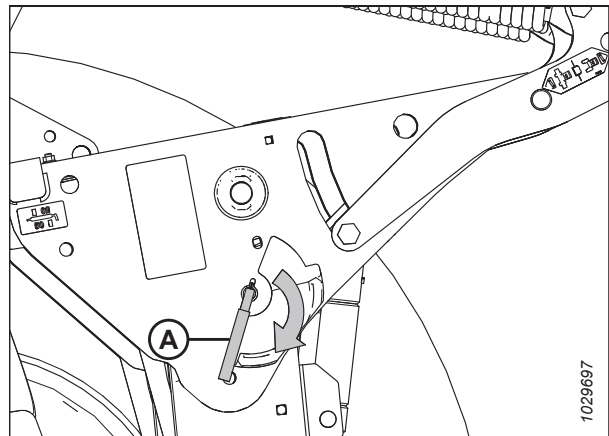


Figure 6.176: Safety Prop Lever

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

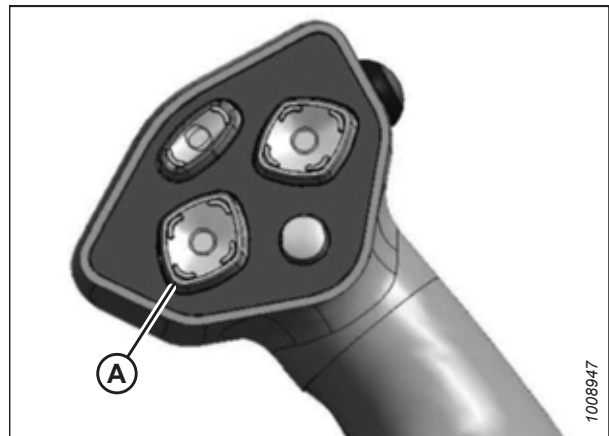


Figure 6.177: Ground Speed Lever

ATTACHING HEADERS

22. Connect header drive hoses (A) and electrical harness (B) to the header. For instructions, refer to the header operator's manual.

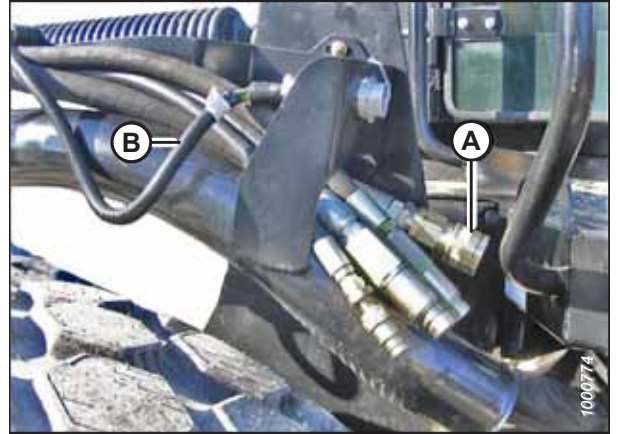


Figure 6.178: Header Drive Hoses and Harness

6.4.3 Attaching R or R1 Series Rotary Disc Header – Mechanical Center-Link

The header will need to be physically attached to the windrower, and the hydraulic and electrical connections completed. On windrowers with a mechanical center-link, the center-link will need to be manually connected to the header's center pin.

⚠ DANGER

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

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

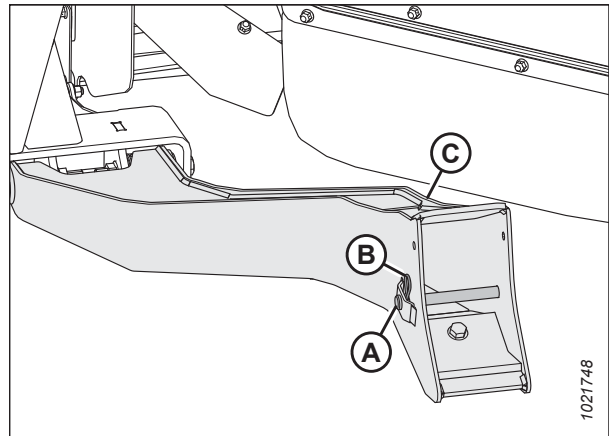


Figure 6.179: Header Support

3. Check that the float engagement pin is installed in storage position (B) and **NOT** in engaged position (A).

IMPORTANT:

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

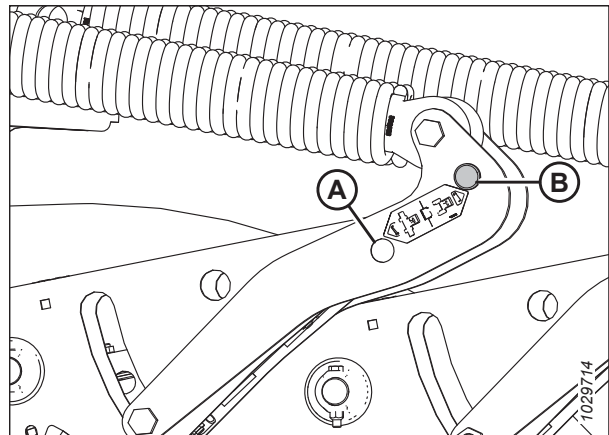


Figure 6.180: Header Float Linkage

ATTACHING HEADERS

DANGER

Ensure that all bystanders have cleared the area.

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

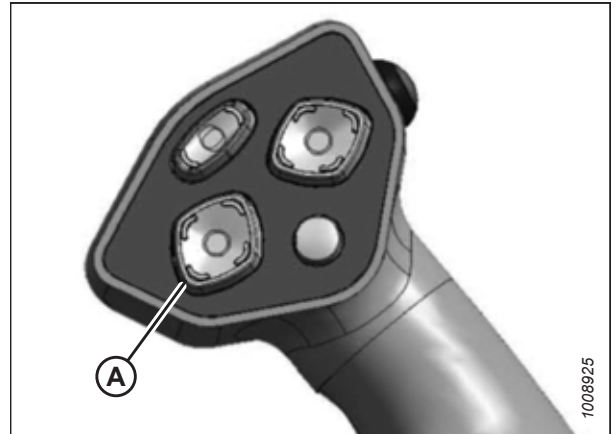


Figure 6.181: Ground Speed Lever

5. Drive the windrower slowly forward until windrower feet (A) enter header supports (B). Continue driving slowly forward until the feet engage the supports and the header is nudged forward.

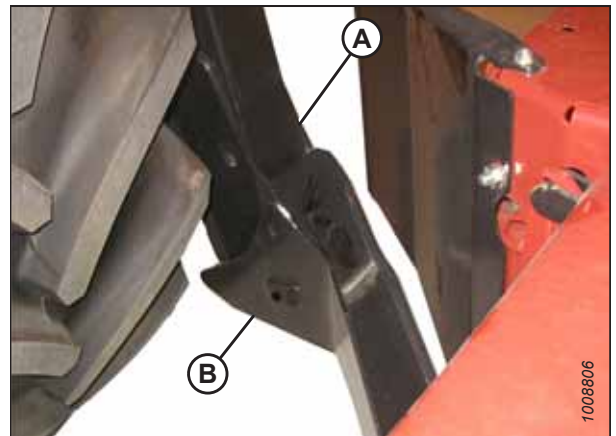


Figure 6.182: Header Support

6. Shut down the engine, and remove the key from the ignition.
7. Loosen nut (A) and rotate barrel (B) to adjust its length until the link is aligned with the header bracket.
8. Install clevis pin (C) and secure it with cotter pin (D).
9. Adjust the length of the link to achieve the proper header angle by rotating barrel (B). Tighten nut (A) against the barrel (a slight tap with a hammer is sufficient).

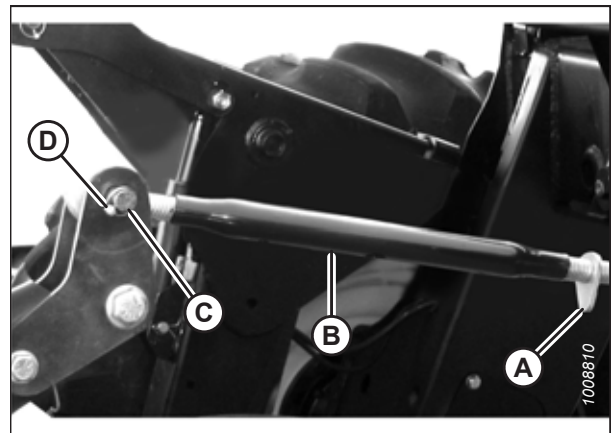


Figure 6.183: Mechanical Center-Link

ATTACHING HEADERS

DANGER

Ensure that all bystanders have cleared the area.

10. Start the engine.
11. Press HEADER UP switch (A) to raise the header to its maximum height.
12. If one end of the header does **NOT** fully rise, rephase the lift cylinders as follows:
 - a. Press and hold the HEADER UP switch until both cylinders stop moving.
 - b. Continue to hold the switch for 3–4 seconds. The cylinders are now phased.

NOTE:

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

13. Engage the safety props on both lift cylinders:
 - a. Shut down the engine, and remove the key from the ignition.
 - b. Pull lever (A) and rotate it towards the header to release and lower safety prop (B) onto the lift cylinder.
 - c. Repeat the previous steps for the opposite lift cylinder.

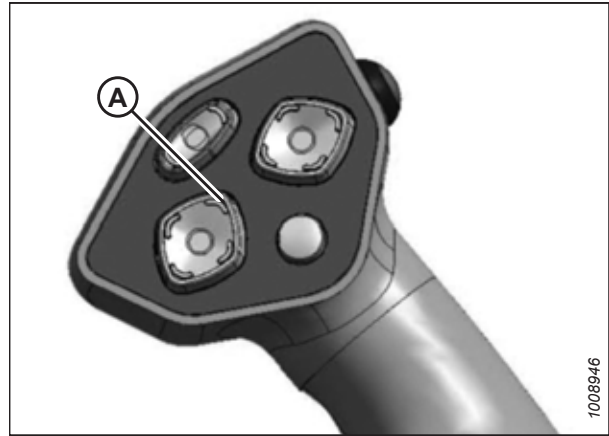


Figure 6.184: Ground Speed Lever

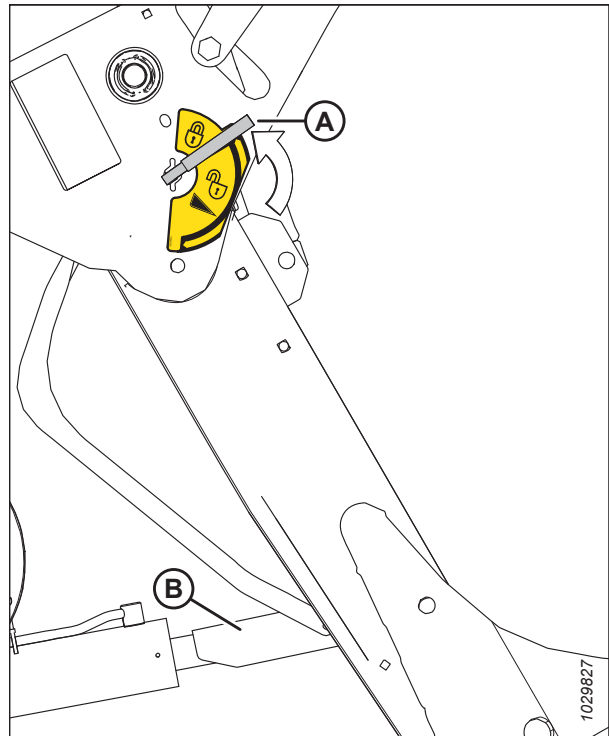


Figure 6.185: Safety Prop

ATTACHING HEADERS

14. Install clevis pin (A) through the support and the windrower lift member, and secure it with hairpin (B). Repeat this step on the opposite side of the header.

IMPORTANT:

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

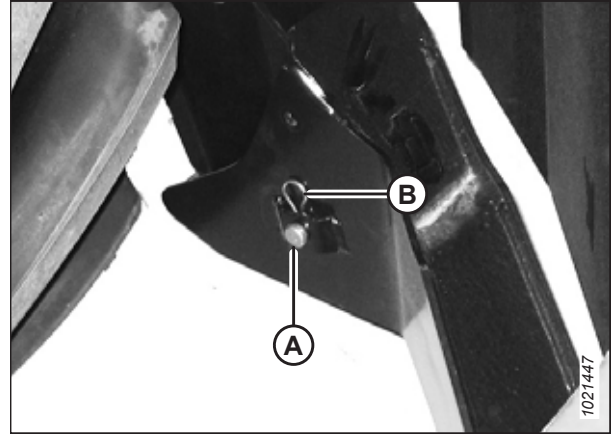


Figure 6.186: Header Support

15. Remove the clevis pin from storage position (B) in the linkage and insert it into hole (A) to engage the float springs. Secure it with the hairpin. Repeat this step on the opposite float linkage.

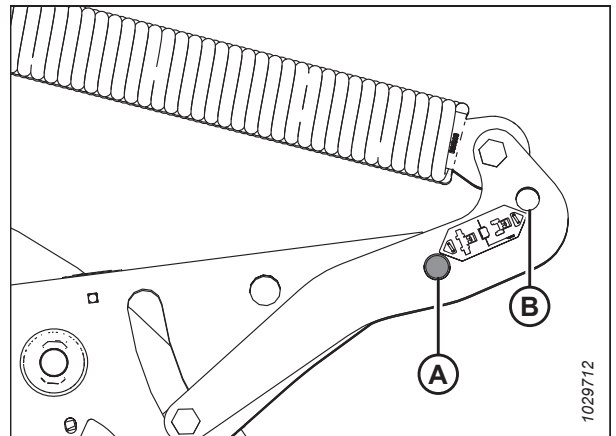


Figure 6.187: Header Float Linkage

16. Disengage the safety prop by turning lever (A) downwards until the lever locks into the vertical position.
17. Repeat the previous step to disengage the other safety prop.

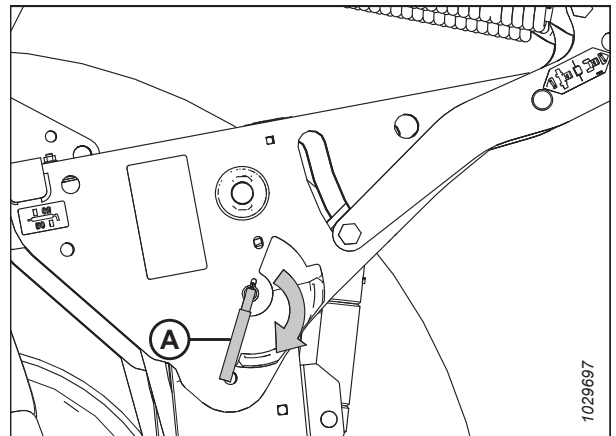


Figure 6.188: Safety Prop Lever

ATTACHING HEADERS

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



Figure 6.189: Ground Speed Lever

20. Connect header drive hoses (A) and electrical harness (B) to the header. For instructions, refer to the header operator's manual.

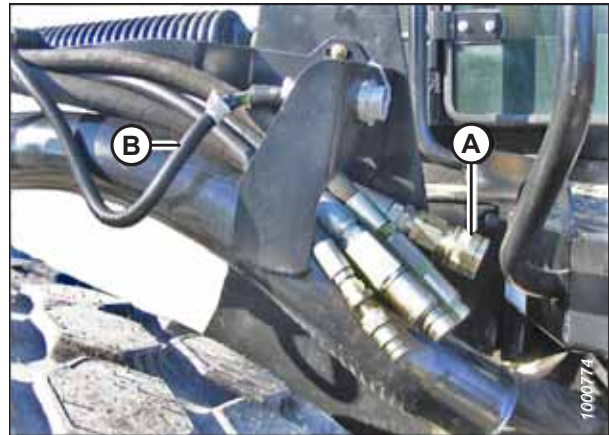


Figure 6.190: Header Drive Hoses and Harness

Chapter 7: Cab Display Module

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

7.1 Cab Display Module – Configuration Functions

Use the cab display module's (CDM) configuration functions to set up the windrower, to change the appearance of the CDM itself, to enter diagnostic mode, and to calibrate the header sensors.



Figure 7.1: CDM

A - Side Display

B - Main Display

C - Select Switch

D - Menu Item Scroll Forward

E - Menu Item Scroll Backward

F - Program Switch

Side display: Displays the current revision level of the windrower's operating software.

- Upper line – C### (CDM software revision level)
- Lower line – M### (Windrower control module [WCM] software revision level)

Main display: Displays potential menu items and the current selection.

NOTE:

The current selection will flash.

- Upper line – Menu item
- Lower line – Current selection

Select switch: Pressing this switch along with the PROGRAM switch puts the CDM into programming mode. Press SELECT to accept the highlighted menu item and to advance the selection to the next item.

CAB DISPLAY MODULE

Menu item scroll forward: Displays the value of the currently selected menu item.

- Push the MENU ITEM SCROLL FORWARD button to scroll forward
- Hold the MENU ITEM SCROLL FORWARD button down to scroll rapidly

NOTE:

Fast scroll is available only when the Operator is changing the KNIFE SPEED, OVERLOAD PRESSURE, or TIRE SIZE settings.

Menu item scroll backward: Displays the value of the currently selected menu item.

- Push the MENU ITEM SCROLL BACKWARD button to scroll backward
- Hold down the MENU ITEM SCROLL BACKWARD button to scroll rapidly

NOTE:

Fast scroll is available only when the Operator is changing the KNIFE SPEED, OVERLOAD PRESSURE, or TIRE SIZE settings.

Program Switch: Pressing this switch along with the SELECT switch puts the CDM into programming mode.

NOTE:

The following menus are available when the ignition key is in the RUN position:

- WINDROWER SETUP
- CAB DISPLAY SETUP
- DIAGNOSTIC MODE

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

7.2 Cab Display Options

The cab display module's (CDM) display settings, including the units of measurement, buzzer volume, and lighting options, can be changed by accessing the CDM's CAB DISPLAY SETUP menu.

NOTE:

The following procedures are current for CDM software version C512 and windrower control module (WCM) M236. The WCM is supplied with the latest released version of the operating software already installed. Any subsequent updates will be made available on the MacDon Dealer Portal (<https://portal.macdon.com>).

NOTE:

The menus in the CDM in your windrower may differ from those depicted in the illustrations in this manual if your CDM or WCM have different software versions installed. In addition, not all features are available on every machine.

7.2.1 Setting Cab Display Language

The cab display module's (CDM) language settings can be changed by accessing the CDM's DISPLAY LANGUAGE sub-menu in the CAB DISPLAY SETUP menu.

1. Turn the ignition key to the RUN position, or start the engine.
2. Press PROGRAM (A) and SELECT (B) simultaneously on the cab display module (CDM) to enter programming mode.
 - WINDROWER SETUP? will appear on the upper line.
 - NO/YES will appear on the lower line.



Figure 7.2: Windrower Setup Display

3. Press SELECT (A) until CAB DISPLAY SETUP? appears on the upper line.
 - NO/YES will appear on the lower line.



Figure 7.3: Cab Setup Display

CAB DISPLAY MODULE

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

NOTE:

The available languages are English, Russian, and Spanish.

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



Figure 7.4: Language Display

7.2.2 Changing Windrower Display Units

The cab display module (CDM) can be configured so that units of measurement are displayed in metric or in standard (imperial) format.

- Turn the ignition key to the RUN position, or start the engine.
- Press PROGRAM (A) and SELECT (B) simultaneously on the CDM to enter programming mode.
 - WINDROWER SETUP? will appear on the upper line.
 - NO/YES will appear on the lower line.



Figure 7.5: CDM Programming Buttons

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



Figure 7.6: Cab Display Setup

CAB DISPLAY MODULE

5. Press SELECT (D) until DISPLAY UNITS? appears on the upper line.
 - The current setting will appear on the lower line.
6. Press left arrow (B) or right arrow (C) to select either METRIC or IMPERIAL.
7. Press PROGRAM (A) to exit programming mode or press SELECT (D) to proceed to the next CAB DISPLAY SETUP? option.



Figure 7.7: Display Units

7.2.3 Adjusting Cab Display Buzzer Volume

The volume level of the alert tones generated by the cab display module (CDM) can be changed by accessing the BUZZER VOLUME sub-menu in the CAB DISPLAY SETUP menu.

1. Turn the ignition key to the RUN position, or start the engine.
2. Press PROGRAM (A) and SELECT (B) simultaneously on the cab display module (CDM) to enter programming mode.
 - WINDROWER SETUP? will appear on the upper line.
 - NO/YES will appear on the lower line.



Figure 7.8: CDM Programming Buttons

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



Figure 7.9: Cab Display Setup

CAB DISPLAY MODULE

5. Press SELECT (D) until BUZZER VOLUME appears on the upper line.
 - The current setting will appear on the lower line.
6. Press left (B) or right (C) arrows to adjust the buzzer volume to the preferred level.
7. Press PROGRAM (A) to exit programming mode or press SELECT (D) to proceed to the next CAB DISPLAY SETUP? option.



Figure 7.10: Buzzer Volume

7.2.4 Adjusting Cab Display Backlighting

The cab display module (CDM) is equipped with a backlight, which makes it easier to read the display in low-light situations. The degree of backlighting can be changed by accessing the BACKLIGHTING sub-menu in the CAB DISPLAY SETUP menu.

1. Turn the ignition key to the RUN position, or start the engine.
2. Press PROGRAM (A) and SELECT (B) simultaneously on the cab display module (CDM) to enter programming mode.
 - WINDROWER SETUP? will appear on the upper line.
 - NO/YES will appear on the lower line.



Figure 7.11: CDM Programming Buttons

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



Figure 7.12: Cab Display Setup

CAB DISPLAY MODULE

5. Press SELECT (D) until BACKLIGHTING appears on the upper line.
 - The current setting will appear on the lower line.
6. Press left arrow (B) or right arrow (C) to adjust the degree of backlighting.
7. Press PROGRAM (A) to exit programming mode or press SELECT (D) to proceed to the next CAB DISPLAY SETUP? option.



Figure 7.13: Backlighting

7.2.5 Adjusting Cab Display Contrast

Contrast is the degree of difference between the lightest and darkest colours a display can produce. The contrast of the cab display module's (CDM) display screen can be adjusted by accessing the DISPLAY CONTRAST sub-menu in the CAB DISPLAY SETUP menu.

1. Turn the ignition key to the RUN position, or start the engine.
2. Press PROGRAM (A) and SELECT (B) on the cab display module (CDM) to enter programming mode.
 - WINDROWER SETUP? will appear on the upper line.
 - NO/YES will appear on the lower line.



Figure 7.14: CDM Programming Buttons

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



Figure 7.15: Cab Display Setup

CAB DISPLAY MODULE

5. Press SELECT (D) until DISPLAY CONTRAST appears on the upper line.
 - The current setting will appear on the lower line.
6. Press the left (B) or the right (C) arrow to adjust the CDM's contrast setting.
7. Press PROGRAM (A) to exit programming mode or press SELECT (D) to proceed to the next CAB DISPLAY SETUP? option.



Figure 7.16: Display Contrast

7.3 Configuring Windrower

The Operator can configure several windrower, header, and other attachment performance options using the cab display module (CDM).

7.3.1 Setting Header Knife Speed

The speed of the knife on non-rotary headers can be set by accessing the cab display module's (CDM) SET KNIFE SPEED sub-menu, in the WINDROWER SETUP menu.

NOTE:

The header **MUST** be physically attached and hydraulically and electrically connected to the windrower before the Operator can perform this procedure. The CDM automatically selects the header profile based on the type of attached header.

1. Turn the ignition key to the RUN position or start the engine.
2. Press PROGRAM (A) and SELECT (C) simultaneously on the CDM to enter programming mode.
 - WINDROWER SETUP? will appear on the upper line.
 - NO/YES will appear on the lower line.
3. Press right arrow (B) to select YES. Press SELECT (C).
 - SET KNIFE SPEED? will appear.
 - The current knife speed will appear on the lower line.
4. Press left arrow (B) or right arrow (C) to select knife speed. Press SELECT (D).
5. Press PROGRAM (A) to exit programming mode or press SELECT (D) to proceed to the next WINDROWER SETUP action.



Figure 7.17: CDM Programming Buttons

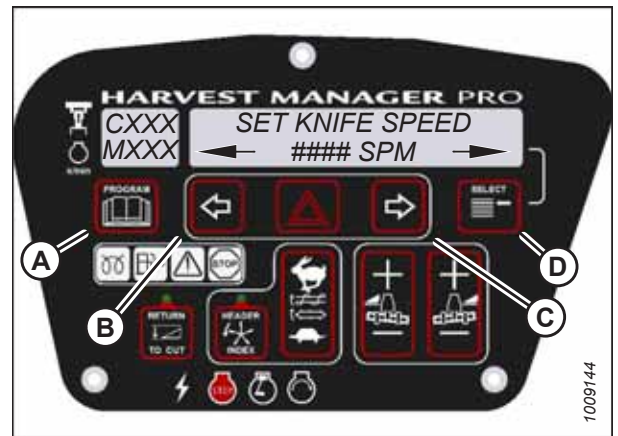


Figure 7.18: Knife Speed

7.3.2 Setting Knife Overload Speed

The knife overload speed setting determines the reported header knife speed at which a knife overload speed warning will appear on the cab display module (CDM). By default, this is 75% of the configured header knife speed, but this setting can be changed by accessing the KNIFE OVERLOAD SPD sub-menu in the WINDROWER SETUP menu.

NOTE:

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

To set the knife overload speed:

1. Turn the ignition key to the RUN position or start the engine.
2. Press PROGRAM (A) and SELECT (C) simultaneously on the CDM to enter programming mode.
 - WINDROWER SETUP? will appear on the upper line.
 - NO/YES will appear on the lower line.
3. Press right arrow (B) to select YES. Press SELECT (C).
 - SET KNIFE SPEED? will appear.



Figure 7.19: CDM Programming Buttons

4. Press SELECT (D) until KNIFE OVERLOAD SPD? appears on the upper line.
 - The currently configured knife overload speed will appear on the lower line.

NOTE:

The default knife overload speed setting is -300 strokes per minute (spm). The possible input range is -500 to -100 spm.

5. Press left arrow (B) or right arrow (C) to set the knife overload speed. Press SELECT (D).
6. Press PROGRAM (A) to exit programming mode or press SELECT (D) to proceed to the next WINDROWER SETUP option.



Figure 7.20: Knife Overload Speed

7.3.3 Setting Rotary Disc Overload Speed

The rotary disc overload speed setting determines the reported rotary disc speed at which a disc overload speed warning will appear on the cab display module (CDM). By default, this is 75% of the configured rotary disc speed, but this setting can be changed by accessing the DISC OVERLOAD SPD sub-menu in the WINDROWER SETUP menu.

NOTE:

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

To set the rotary disc overload speed:

1. Turn the ignition key to the RUN position or start the engine.
2. Press PROGRAM (A) and SELECT (C) on the CDM to enter programming mode.
 - WINDROWER SETUP? will appear on the upper line. NO/YES will appear on the lower line.
3. Press right arrow (B) to select YES. Press SELECT (C).
 - SET KNIFE SPEED? will appear.



Figure 7.21: CDM Programming Buttons

4. Press SELECT (D) until DISC OVERLOAD SPD? appears on the upper line.
 - The current rotary disc overload speed will appear on the lower line.

NOTE:

The default setting is -300 rpm. The range of possible disc overload speeds is -500 to -100 rpm.

5. Press left (B) or right (C) arrows to set the disc overload speed. Press SELECT (D).
6. Press PROGRAM (A) to exit programming mode or press SELECT (D) to proceed to the next WINDROWER SETUP option.



Figure 7.22: Disc Overload Speed

7.3.4 Setting Hydraulic Overload Pressure

The hydraulic overload pressure setting determines the reported hydraulic pressure at which an overload pressure warning will appear on the cab display module (CDM). This setting can be changed by accessing the OVERLOAD PRESSURE sub-menu in the WINDROWER SETUP menu.

NOTE:

- This procedure requires the installation of the optional hydraulic pressure sensor kit (MD #B5574). For the appropriate overload pressure value, refer to the pressure sensor installation instructions supplied with the kit.
- To enable the hydraulic pressure sensor, refer to [7.8.2 Enabling or Disabling Header Sensors, page 251](#).

To set the hydraulic overload pressure setting:

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



Figure 7.23: CDM Programming Buttons

4. Press SELECT (D) until OVERLOAD PRESSURE? appears on the upper line.
 - The current overload pressure will appear on lower line.

NOTE:

The range of possible pressure settings is 17,237–34,474 kPa (2500–5000 psi).

5. Press left arrow (B) or right arrow (C) to configure the hydraulic overload pressure setting. Press SELECT (D).
6. Press PROGRAM (A) to exit programming mode or press SELECT (D) to proceed to the next WINDROWER SETUP option.



Figure 7.24: Hydraulic Overload Pressure

7.3.5 Setting Header Index Mode

Enabling header index mode in the cab display module (CDM) links the speed of the reel and the draper on draper headers to the windrower's ground speed. It can be configured in the CDM by accessing the HEADER INDEX MODE sub-menu in the WINDROWER SETUP menu.

NOTE:

The header **MUST** be attached to the windrower to perform this procedure. The CDM automatically selects the header profile based on the type of attached header.

1. Turn the ignition key to the RUN position or start the engine.
2. Press PROGRAM (A) and SELECT (C) simultaneously on the CDM to enter programming mode.
 - WINDROWER SETUP? will appear on the upper line.
 - NO/YES will appear on the lower line.
3. Press right arrow (B) to select YES. Press SELECT (C).
 - SET KNIFE SPEED? will appear on the upper line.



Figure 7.25: M155 CDM Programming Buttons Shown

4. Press SELECT (D) until HEADER INDEX MODE? appears on the upper line.
 - REEL & CONVEYOR or REEL ONLY will appear on the lower line.
5. Press left arrow (B) or right arrow (C) to set HEADER INDEX mode. Press SELECT (D).
6. Press PROGRAM (A) to exit programming mode or press SELECT (D) to proceed to the next WINDROWER SETUP option.



Figure 7.26: M155 Header Index Mode Shown

7.3.6 Setting Return to Cut Mode

Enabling the return to cut feature in the cab display module (CDM) allows the Operator to make use of height and (optionally) tilt position presets. The return to cut feature can be configured by accessing the RETURN TO CUT MODE sub-menu in the WINDROWER SETUP menu.

NOTE:

The header **MUST** be attached to the windrower to perform this procedure. The CDM automatically selects the header profile based on the type of attached header.

1. Turn the ignition key to the RUN position or start the engine.

CAB DISPLAY MODULE

2. Press PROGRAM (A) and SELECT (C) simultaneously on the CDM to enter programming mode.
 - WINDROWER SETUP? will appear on the upper line.
 - NO/YES will appear on the lower line.
3. Press right arrow (B) to select YES. Press SELECT (C).
 - SET KNIFE SPEED? will appear.



Figure 7.27: M155 CDM Programming Buttons Shown

4. Press SELECT (D) until RETURN TO CUT MODE? appears on the upper line.
 - HEIGHT & TILT or HEIGHT ONLY will appear on the lower line.
5. Press left arrow (B) or right arrow (C) to select RETURN TO CUT MODE. Press SELECT (D).
6. Press PROGRAM (A) to exit programming mode or press SELECT (D) to proceed to the next WINDROWER SETUP option.



Figure 7.28: M155 Return to Cut Mode Shown

7.3.7 Setting Auto Raise Height

Enabling the auto raise height feature in the cab display module (CDM) allows the Operator to raise the header to a preset height by quickly pressing the HEADER UP switch on the ground speed lever (GSL) twice. It can be enabled by accessing the AUTO RAISE HEIGHT sub-menu in the WINDROWER SETUP MENU in the CDM.

NOTE:

The header **MUST** be attached to the windrower to perform this procedure. The CDM automatically selects the header profile based on the type of attached header.

CAB DISPLAY MODULE

1. Turn the ignition key to the RUN position or start the engine.
2. Press PROGRAM (A) and SELECT (C) on the CDM to enter programming mode.
 - WINDROWER SETUP? will appear on the upper line.
 - NO/YES will appear on the lower line.
3. Press right arrow (B) to select YES. Press SELECT (C).
 - SET KNIFE SPEED? will appear on the upper line.



Figure 7.29: CDM Programming Buttons

4. Press SELECT (D) until AUTO RAISE HEIGHT? appears on the upper line.
 - The current auto raise height setting will appear on the lower line.

NOTE:

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

5. Press left arrow (B) or right arrow (C) to change the auto raise height.
6. Press PROGRAM (A) to exit programming mode or press SELECT (D) to proceed to the next WINDROWER SETUP option.



Figure 7.30: M155 Auto Raise Height Shown

7.3.8 Configuring Double Windrow Attachment Controls

An optional Double Windrow Attachment (DWA) is available. If it is installed on the windrower, it must be configured to work with the windrower's controls. The DWA can be configured in the cab display module's (CDM) WINDROWER SETUP menu.

NOTE:

- The DWA cannot be activated if the swath compressor is enabled.
- This procedure is also applicable to the installation of a drive manifold kit (MD #139508) onto the windrower.

CAB DISPLAY MODULE

To configure the DWA, follow these steps:

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



Figure 7.31: CDM Programming Buttons

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



Figure 7.32: DWA Programming Display

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

NOTE:

This step is necessary to enable the ground speed lever's (GSL) reel fore-aft buttons to control the DWA.



Figure 7.33: DWA Programming Display

CAB DISPLAY MODULE

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

NOTE:

If YES is selected, the DWA Auto-Up function will be activated by the GSL reel fore-aft button.

8. Press right arrow (C) to select YES. Press SELECT (D).
9. Press PROGRAM (A) to exit programming mode or press SELECT (D) to proceed to the next windrower setup option.



Figure 7.34: DWA Programming Display

7.3.9 Activating Hydraulic Center-Link

Once the hydraulic center-link has been installed on the windrower, it must be activated in the cab display module's (CDM) WINDROWER SETUP menu.

To activate the hydraulic center-link, follow these steps:

NOTE:

This procedure is provided on the assumption that the Hydraulic Center-Link kit (B4650) has been installed.

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



Figure 7.35: CDM Programming Buttons

CAB DISPLAY MODULE

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



Figure 7.36: CDM Programming Buttons

7.3.10 Activating Rotary Disc Header Drive Hydraulics

To operate a rotary disc header with the windrower, the header drive hydraulics option on the windrower's cab display module (CDM) must be activated.

NOTE:

This procedure assumes that the Disc Drive kit (MD #B4657) has been installed. For more information, refer to the rotary disc header operator's manual.

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



Figure 7.37: CDM Programming Buttons

CAB DISPLAY MODULE

- Press SELECT (C) until DISC BLK INSTALLED? appears on the upper line.
 - NO/YES appears on the lower line.
- Press right arrow (B) to select YES. Press SELECT (C).

NOTE:

When the disc drive kit (MD #B4657) is installed on the windrower, this setting must be YES even if a rotary header is not attached to the windrower.

- Press PROGRAM (A) to exit programming mode, or press SELECT (C) to proceed to the next WINDROWER SETUP option.



Figure 7.38: Rotary Disc Hydraulics

7.3.11 Setting Header Cut Width

When a header is attached to the windrower, the windrower's computer automatically detects the type of header. However, the windrower is unable to determine the exact size of the header attached, only its type, and therefore defaults to the smallest available cut width for a given model. For example, A Series Auger Headers come in 4.3, 4.9, and 5.5 m (14, 16, and 18 ft.) sizes; if a 4.9 m (16 ft.) header is attached to the windrower, the windrower's computer will set the cut width to 4.3 m (14 ft.). The cut width setting must be manually adjusted in the cab display module (CDM).

NOTE:

- The header **MUST** be attached to the windrower to perform this procedure. The CDM automatically selects the header profile based on the type of attached header.
- The header cut width setting corresponds to the actual cutting width of the header, not the total width of the header.

To set the header cut width:

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



Figure 7.39: CDM Programming Buttons

CAB DISPLAY MODULE

- Press SELECT (D) until HDR CUT WIDTH? #### is displayed on the upper line.
 - Previous cutting width is displayed on the lower line.
- Press left arrow (B) or right arrow (C) to change the header cut width. Press SELECT (D).
- Press PROGRAM (A) to exit programming mode or press SELECT (D) to proceed to next WINDROWER SETUP action.



Figure 7.40: Header Cut Width

7.3.12 Activating Swath Compressor

An optional swath compressor is available. Before the swath compressor can be used, it must be activated in the cab display module (CDM).

NOTE:

- CDM5 (version 512 or later) and WCM2 (version 237 or later), or WCM3 (version 116 or later), are required to operate the swath compressor.
- The Double Windrow Attachment (DWA) system must be disabled in the CDM when setting up the swath compressor.
- Users can activate and set up the swath compressor via in-cab controls without a header attached to the windrower.

To activate the swath compressor, do the following:

DANGER

Check to be sure all bystanders have cleared the area.

- Turn the ignition key to the RUN position or start the engine.
- Press PROGRAM (A) and SELECT (C) simultaneously on the CDM to enter programming mode.
 - WINDROWER SETUP? appears on the upper line.
 - NO/YES appears on the lower line.
- Press right arrow (B) to select YES. Press SELECT (C).
 - SET KNIFE SPEED? appears on the upper line.



Figure 7.41: Programming Buttons

CAB DISPLAY MODULE

4. Press SELECT (B) until SWATH COMPR INSTALL? appears on the upper line.
 - NO/YES appears on the lower line.
5. Press right arrow (A) to select YES. Press SELECT (B).
6. Press SELECT (B) until CALIBRATE SENSORS appears on the upper line. NO/YES appears on the lower line.
7. Press right arrow (A) to select YES. Press SELECT (B).
 - TO CALIBRATE SELECT appears on the upper line.
 - HEADER HEIGHT appears on the lower line.
8. Press right arrow (A) to scroll through choices until SWATH COMPR HT appears. Press SELECT (B).
 - SWATH SENSOR CAL appears on the upper line.
 - SWATH UP TO START appears on the lower line.
9. Press switch (A) on the console to raise the swath compressor.
 - CALIBRATING SWATH appears on the upper line.
 - The messages FORM UP and HOLD (HOLD will be flashing) appear, and will remain on the lower line until the system has received a signal from the fully-raised swath compressor.
 - The messages SWATH FORM UP and DONE (accompanied by a buzzer tone) will appear on the lower line when the calibration procedure is complete.
 - SWATH SENSOR CAL appears on the upper line.
 - PRESS SWATH DOWN appears on the lower line.
10. Press switch (B) on the console to lower the swath compressor.
 - CALIBRATING SWATH appears on the upper line.
 - The messages FORM DOWN and HOLD appear on the lower line.
 - SWATH FORM COMPLETE flashes for two seconds on the lower line (accompanied by a buzzer tone) when the calibration procedure is complete.



Figure 7.42: Swath Compressor Controls

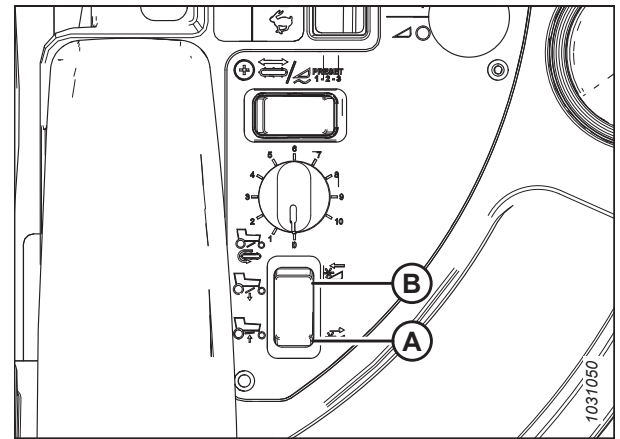


Figure 7.43: Swath Compressor Switch

CAB DISPLAY MODULE

11. Press PROGRAM (A) to exit programming mode or press SELECT (B) to proceed to the next windrower setup option.



Figure 7.44: CDM Programming Buttons

7.3.13 Activating Hay Conditioner

An optional hay conditioner is available for installation on the header. To use the hay conditioner, it must be activated in the windrower's cab display module (CDM). The HAY CONDITIONER sub-menu can be accessed from the CDM's WINDROWER SETUP menu.

NOTE:

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

1. Turn the ignition key to the RUN position or start the engine.
2. Press PROGRAM (A) and SELECT (C) on the CDM to enter programming mode.
 - WINDROWER SETUP? will appear on the upper line.
 - NO/YES will appear on the lower line.
3. Press right arrow (B) to select YES. Press SELECT (C).
 - SET KNIFE SPEED? will appear on the upper line.



Figure 7.45: Cab Display Module

CAB DISPLAY MODULE

- Press SELECT (C) until HAY CONDITIONER? appears on the upper line.
 - NO/YES will appear on the lower line.
- Press right arrow (B) to select YES. Press SELECT (C).
- Press PROGRAM (A) to exit programming mode or press SELECT (C) to proceed to the next WINDROWER SETUP option.



Figure 7.46: Cab Display Module

7.3.14 Setting Reel Speed Display Units

The preferred unit for header reel speed can be displayed by accessing the HEADER REEL SPEED sub-menu in the WINDROWER SETUP menu in the windrower's cab display module (CDM).

NOTE:

- This procedure applies to windrowers with an attached draper or auger header only.
- The header **MUST** be attached to the windrower to perform this procedure. The CDM automatically selects the header profile based on the type of attached header.

To display the header's reel speed:

- Turn the ignition key to the RUN position, or start the engine.
- Press PROGRAM (A) and SELECT (C) on the CDM to enter programming mode.
 - WINDROWER SETUP? will appear on the upper line.
 - NO/YES will appear on the lower line.
- Press right arrow (B) to select YES. Press SELECT (C).
 - SET KNIFE SPEED? will appear on the upper line.



Figure 7.47: CDM Programming Buttons

CAB DISPLAY MODULE

4. Press SELECT (D) until HEADER REEL SPEED? appears on the upper line.
 - RPM/MPH or RPM/KPH will appear on the lower line.
5. Press left arrow (B) or right arrow (C) to select either IMPERIAL or METRIC units. Press SELECT (D).
6. Press PROGRAM (A) to exit programming mode or press SELECT (D) to proceed to the next WINDROWER SETUP option.



Figure 7.48: Reel Speed Display

7.3.15 Setting Tire Size

The windrower's tire size must be correctly configured in the cab display module (CDM) for the windrower's ground speed to be reported accurately. This setting can be configured by accessing the SET TIRE SIZE sub-menu in the WINDROWER SETUP menu.

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



Figure 7.49: CDM Programming Buttons

4. Press SELECT (D) until SET TIRE SIZE? appears on the upper line.
 - The current tire size setting will appear on the lower line.

NOTE:

The following tire size options are available:

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

5. Press left arrow (B) or right arrow (C) and select the desired tire size. Press SELECT (D).

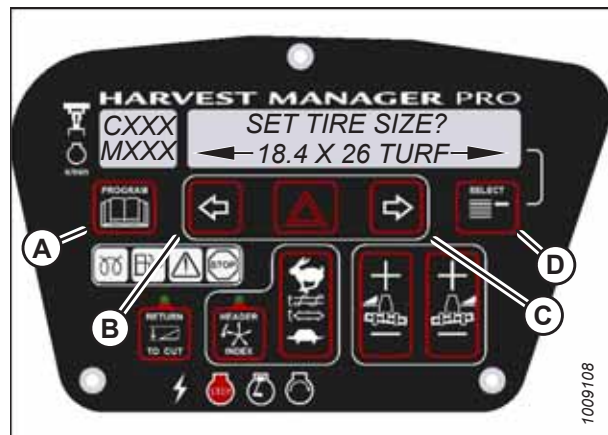


Figure 7.50: Tire Size

- Press PROGRAM (A) to exit programming mode or press SELECT (D) to proceed to the next WINDROWER SETUP option.

7.3.16 Setting Engine Intermediate Speed Control

The engine’s Intermediate Speed Control (ISC) feature provides three selectable engine speeds (1900, 2050, or 2200 rpm) for reduced load conditions. This setting can be configured in the windrower’s cab display module (CDM) by accessing the WINDROWER SETUP menu.

NOTE:

The engine **MUST** be running for this procedure to be performed.

- Start the engine.
- Press PROGRAM (A) and SELECT (C) on the CDM to enter programming mode.
 - WINDROWER SETUP? will appear on the upper line.
 - NO/YES will appear on the lower line.
- Press right arrow (B) to select YES. Press SELECT (C).
 - SET KNIFE SPEED? will appear on the upper line.



Figure 7.51: CDM Programming Buttons

- Press SELECT (B) until SET ENGINE ISC RPM? appears on the upper line.
 - NO/YES will appear on the lower line.
- Press right arrow (A) to select YES. Press SELECT (B).
 - PRESS HAZARD TO SET will appear on the upper line.
 - ISC RPM #### will appear on the lower line.



Figure 7.52: Engine ISC RPM

Table 7.1 ISC Settings

ISC and rpm			
Off ³	1	2	3
High Idle (M155) ⁴	2200 ⁵	2000	1800

NOTE:

The previously selected ISC setting will flash.

- Off is always used when the header is not engaged.
- Off does not appear as a menu selection, but is used when the header is not engaged.
- Default setting.

CAB DISPLAY MODULE

6. Press right arrow (C) to cycle between the setting options.
Press HAZARD (B) to confirm the desired setting.
7. Press SELECT (D).
 - EXIT ENGINE ISC? will appear on the upper line.
 - NO/YES will appear on the lower line.
8. Press right arrow (C) to select YES. Press SELECT (D).
9. Press PROGRAM (A) to exit programming mode.



Figure 7.53: ISC RPM

7.3.17 Clearing Sub-Acres

The windrower has two counters for acres: one counter tracks the total number of acres harvested during the machine's lifetime, while the other counter tracks the acres harvested during individual harvesting instances. The sub-acre counter can be reset to zero as needed by accessing the SUB-ACRES menu in the windrower's cab display module (CDM).

1. With the key in the ON position and the operator's station in cab-forward mode, press SELECT until SUB-ACRES appears on the bottom line.
2. Press and hold PROGRAM button (A) until the counter is reset to zero.



Figure 7.54: Cab Display Module (CDM)

7.4 Activating Cab Display Lockouts

Some header configuration settings in the windrower’s cab display module (CDM) can be locked, so that Operators lacking the proper authorization will be unable to change these settings. Use this feature to keep header settings constant when there are multiple Operators operating the windrower.

NOTE:

FUNCTION LOCKED will appear on the CDM when a header function switch which has been locked out is pressed.

7.4.1 Activating Header Tilt Control Lockout

Activating the header tilt control lockout in the windrower’s cab display module (CDM) prevents unauthorized Operators from changing the angle of the attached header.

NOTE:

- The header **MUST** be attached to the windrower to perform this procedure. The CDM automatically selects the header profile based on the type of attached header.
- This procedure requires installation of the optional Hydraulic Center-Link (MD #B4650).

To activate the header tilt control lockout:

1. Turn the ignition key to the RUN position or start the engine.
2. Press PROGRAM (A) and SELECT (C) on the CDM to enter programming mode.
 - WINDROWER SETUP? will appear on the upper line.
 - NO/YES will appear on the lower line.
3. Press right arrow (B) to select YES. Press SELECT (C).
 - SET KNIFE SPEED? will appear on the upper line.
4. Press SELECT (B) until SET CONTROL LOCKS? appears on the upper line.
 - NO/YES will appear on the lower line.
5. Press right arrow (A) to select YES. Press SELECT (B).

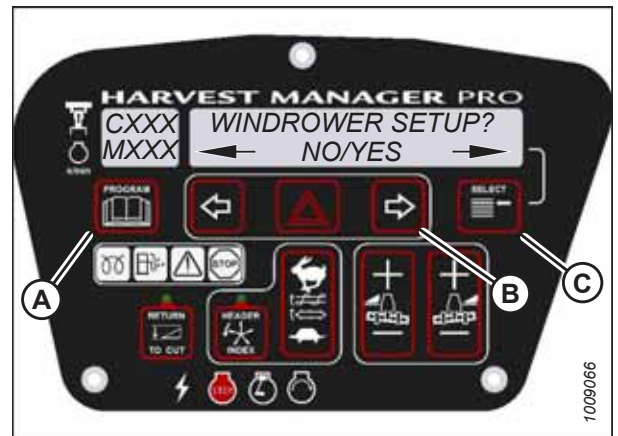


Figure 7.55: CDM Programming Buttons



Figure 7.56: Control Locks

CAB DISPLAY MODULE

6. Press SELECT (D) until HEADER TILT appears on the upper line.
 - ENABLED/LOCKED will appear on the lower line.
7. Press left arrow (B) to enable the use of the HEADER TILT control switch.

Press right arrow (C) to lock the HEADER TILT control switch.
8. Press PROGRAM (A) to exit programming mode, or press SELECT (D) to proceed to the next WINDROWER SETUP option.



Figure 7.57: Header Tilt Control Lock

7.4.2 Activating Header Float Control Lockout

Activating the header float control lockout in the windrower's cab display module (CDM) prevents unauthorized Operators from changing the float setting of the attached header.

NOTE:

The header **MUST** be attached to the windrower to perform this procedure. The CDM automatically selects the header profile based on the type of attached header.

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



Figure 7.58: CDM Programming Buttons

CAB DISPLAY MODULE

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



Figure 7.59: Control Locks

- Press SELECT (D) until HEADER FLOAT appears on the upper line.
 - ENABLED/LOCKED will appear on the lower line.
- Press left arrow (B) to enable the HEADER FLOAT control switch, or press right arrow (C) to lock the HEADER FLOAT control switch.
- Press PROGRAM (A) to exit programming mode or press SELECT (D) to proceed to the next WINDROWER SETUP option.

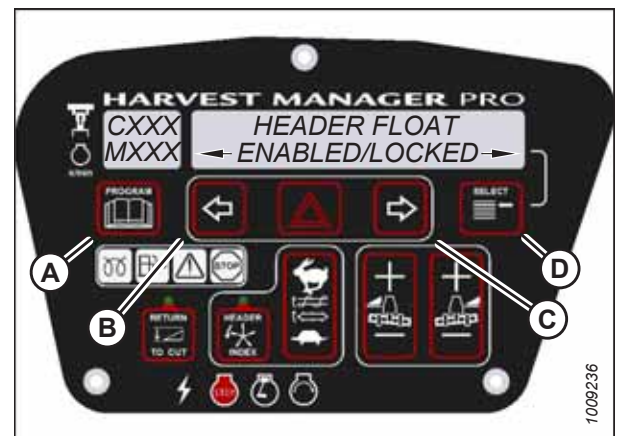


Figure 7.60: Header Float Control Lock

7.4.3 Activating Reel Fore-Aft Control Lockout

Activating the header reel fore-aft control lockout in the windrower's cab display module (CDM) prevents unauthorized Operators from changing the reel fore-aft setting of the attached header.

NOTE:

- This procedure applies to windrowers with attached draper headers only.
- The header **MUST** be attached to the windrower to perform this procedure. The CDM automatically selects the header profile based on the type of attached header.

CAB DISPLAY MODULE

To activate the reel fore-aft control lockout:

1. Turn the ignition key to the RUN position or start the engine.
2. Press PROGRAM (A) and SELECT (C) simultaneously on the CDM to enter programming mode.
 - WINDROWER SETUP? will appear on the upper line.
 - NO/YES will appear on the lower line.
3. Press right arrow (B) to select YES. Press SELECT (C).
 - SET KNIFE SPEED? will appear on the upper line.



Figure 7.61: CDM Programming Buttons

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



Figure 7.62: Control Locks

6. Press SELECT (D) until REEL FORE/AFT appears on the upper line.
 - ENABLED/LOCKED will appear on the lower line.
7. Press left arrow (B) to enable the REEL FORE/AFT control switch.
Press right arrow (C) to lock the REEL FORE/AFT control switch.
8. Press PROGRAM (A) to exit programming mode, or press SELECT (D) to proceed to the next WINDROWER SETUP option.



Figure 7.63: Reel Fore-Aft Control Lock

7.4.4 Activating Draper Speed Control Lockout

Activating the header draper speed control lockout in the windrower's cab display module (CDM) prevents unauthorized Operators from changing the draper speed setting of the attached header.

NOTE:

- This procedure applies to windrowers with attached draper headers only.
- The header **MUST** be attached to the windrower to perform this procedure. The CDM automatically selects the header profile based on the type of attached header.

To activate the draper speed control lockout:

1. Turn the ignition key to the RUN position, or start the engine.
2. Press PROGRAM (A) and SELECT (C) on the CDM to enter programming mode.
 - WINDROWER SETUP? will appear on the upper line.
 - NO/YES will appear on the lower line.
3. Press right arrow (B) to select YES. Press SELECT (C).
 - SET KNIFE SPEED? will appear on the upper line.
4. Press SELECT (B) until SET CONTROL LOCKS? appears on the upper line.
 - NO/YES will appear on the lower line.
5. Press right arrow (A) to select YES. Press SELECT (B).

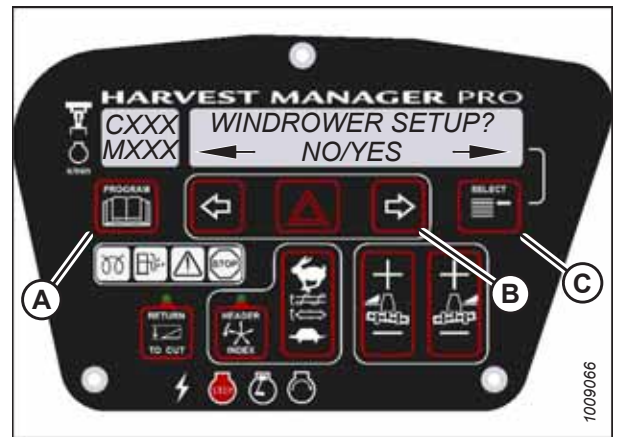


Figure 7.64: CDM Programming Buttons



Figure 7.65: Control Locks

CAB DISPLAY MODULE

- Press SELECT (D) until DRAPER SPEED appears on the upper line.
 - ENABLED/LOCKED will appear on the lower line.
- Press left arrow (B) to enable the DRAPER SPEED control switch, or press right arrow (C) to lock the DRAPER SPEED control switch.
- Press PROGRAM (A) to exit programming mode or press SELECT (D) to proceed to the next WINDROWER SETUP option.



Figure 7.66: Draper Control Lock

7.4.5 Activating Auger Speed Control Lockout

Activating the auger speed control lockout in the windrower's cab display module (CDM) prevents unauthorized Operators from changing the auger speed of the attached header.

NOTE:

- This procedure applies to windrowers with attached A40D Auger Headers only.
- An auger header **MUST** be attached to the windrower to perform this procedure. The CDM automatically selects the header profile based on the type of attached header.

To activate the auger speed control lockout:

- Turn the ignition key to the RUN position or start the engine.
- Press PROGRAM (A) and SELECT (C) on the CDM to enter programming mode.
 - WINDROWER SETUP? will appear on the upper line.
 - NO/YES will appear on the lower line.
- Press right arrow (B) to select YES. Press SELECT (C).
 - SET KNIFE SPEED? will appear on the upper line.



Figure 7.67: CDM Programming Buttons

CAB DISPLAY MODULE

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



Figure 7.68: Control Locks

6. Press SELECT (D) until AUGER SPEED appears on the upper line.
 - ENABLED/LOCKED will appear on the lower line.
7. Press left arrow (B) to enable the AUGER SPEED control switch.

Press right arrow (C) to lock the AUGER SPEED control switch.
8. Press PROGRAM (A) to exit programming mode, or press SELECT (D) to proceed to the next WINDROWER SETUP option.



Figure 7.69: Auger Control Lock

7.4.6 Activating Knife Speed Control Lockout

Activating the header knife speed control lockout in the windrower's cab display module (CDM) prevents unauthorized Operators from changing the knife speed of the attached header.

NOTE:

The header **MUST** be attached to the windrower to perform this procedure. The CDM automatically selects the header profile based on the type of attached header.

CAB DISPLAY MODULE

1. Turn the ignition key to the RUN position, or start the engine.
2. Press PROGRAM (A) and SELECT (C) simultaneously on the CDM to enter programming mode.
 - WINDROWER SETUP? will appear on the upper line.
 - NO/YES will appear on the lower line.
3. Press right arrow (B) to select YES. Press SELECT (C).
 - SET KNIFE SPEED? will appear on the upper line.



Figure 7.70: CDM Programming Buttons

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



Figure 7.71: Control Locks

6. Press SELECT (D) until KNIFE SPEED appears on the upper line.
 - ENABLED/LOCKED will appear on the lower line.
7. Press left arrow (B) to enable the KNIFE SPEED control switch, or press right arrow (C) to lock the KNIFE SPEED control switch.
8. Press PROGRAM (A) to exit programming mode or press SELECT (D) to proceed to the next WINDROWER SETUP option.



Figure 7.72: Knife Speed Control Lock

7.4.7 Activating Rotary Disc Speed Control Lockout

Activating the rotary disc speed control lockout in the windrower's cab display module (CDM) prevents unauthorized Operators from changing the disc speed of the attached rotary disc header.

NOTE:

- This procedure applies to windrowers with attached rotary disc headers only.
- The header **MUST** be attached to the windrower to perform this procedure. The CDM automatically selects the header profile based on the type of attached header.

To activate the rotary disc speed control lockout:

1. Turn the ignition key to the RUN position or start the engine.
2. Press PROGRAM (A) and SELECT (C) simultaneously on the CDM to enter programming mode.
 - WINDROWER SETUP? will appear on the upper line.
 - NO/YES will appear on the lower line.
3. Press right arrow (B) to select YES. Press SELECT (C).
 - SET KNIFE SPEED? will appear on the upper line.



Figure 7.73: CDM Programming Buttons

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



Figure 7.74: Control Locks

CAB DISPLAY MODULE

- Press SELECT (D) until DISK SPEED appears on the upper line.
 - ENABLED/LOCKED will appear on the lower line.
- Press left arrow (B) to enable the DISK SPEED control switch, or press right arrow (C) to lock the DISK SPEED control switch.
- Press PROGRAM (A) to exit programming mode or press SELECT (D) to proceed to the next WINDROWER SETUP option.



Figure 7.75: Disc Speed Control Lock

7.4.8 Activating Reel Speed Control Lockout

Activating the reel speed control lockout in the windrower's cab display module (CDM) prevents unauthorized Operators from changing the reel speed of the attached rotary disc header.

NOTE:

This procedure applies to windrowers with attached draper headers only.

NOTE:

The header **MUST** be attached to the windrower to perform this procedure. The CDM automatically selects the header profile based on the type of attached header.

- Turn the ignition key to the RUN position, or start the engine.
- Press PROGRAM (A) and SELECT (C) simultaneously on the CDM to enter programming mode.
 - WINDROWER SETUP? will appear on the upper line.
 - NO/YES will appear on the lower line.
- Press right arrow (B) to select YES. Press SELECT (C).
 - SET KNIFE SPEED? will appear on the upper line.



Figure 7.76: CDM Programming Buttons

CAB DISPLAY MODULE

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



Figure 7.77: Control Locks

6. Press SELECT (D) until REEL SPEED appears on the upper line.
 - ENABLED/LOCKED will appear on the lower line.
7. Press left arrow (B) to enable the REEL SPEED control switch.
Press right arrow (C) to lock the REEL SPEED control switch.
8. Press PROGRAM (A) to exit programming mode, or press SELECT (D) to proceed to the next WINDROWER SETUP option.

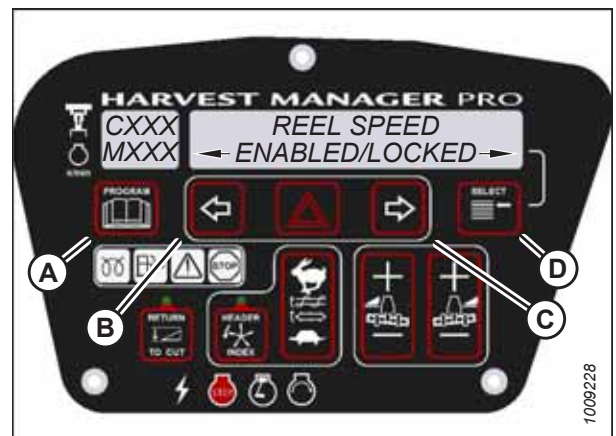


Figure 7.78: Reel Speed Control Lock

7.5 Displaying Active Cab Display Lockouts

The Operator can generate a list of all windrower features which have been locked out by accessing the cab display module's (CDM) VIEW CONTROL LOCKS sub-menu.

NOTE:

To display the header tilt control lock, the Hydraulic Center-Link kit (MD #B4650) must be installed.

1. Turn the ignition key to the RUN position or start the engine.
2. Press PROGRAM (A) and SELECT (C) simultaneously on the CDM to enter programming mode.
 - WINDROWER SETUP? will appear on the upper line.
 - NO/YES will appear on the lower line.
3. Press right arrow (B) to select YES. Press SELECT (C).
 - SET KNIFE SPEED? will appear on the upper line.

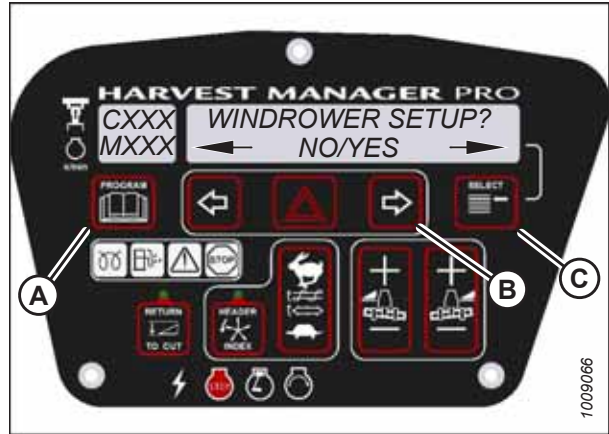


Figure 7.79: CDM Programming Buttons

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



Figure 7.80: Control Locks

CAB DISPLAY MODULE

- Press left arrow (B) or right arrow (C) to cycle between control switch lockouts. The displayed control switches are as follows:

- HEADER TILT
- HEADER FLOAT
- REEL FORE/AFT
- DRAPER SPEED
- AUGER SPEED
- KNIFE SPEED
- DISK SPEED
- REEL SPEED

NOTE:

Not all control lock options apply to every type of header.

- Press SELECT (D).
 - EXIT VIEW LOCKOUTS? will appear on the upper line.
 - NO/YES will appear on the lower line.
- Press right (C) to select YES.
- Press PROGRAM (A) to exit programming mode or press SELECT (D) to proceed to the next WINDROWER SETUP option.



Figure 7.81: Control Locks



Figure 7.82: Control Locks

7.6 Calibrating Header Sensors

When a new header is attached to the windrower, the header's sensors must be calibrated using the cab display module (CDM) so that their output can be correctly interpreted by the windrower control module (WCM).

7.6.1 Calibrating Header Height Sensor

The header height sensor can be calibrated by accessing the cab display module's (CDM) WINDROWER SETUP menu. The calibration procedure must be completed for the sensor to be correctly calibrated.

NOTE:

- The header must be attached to the windrower to perform this procedure. The CDM automatically selects the header profile based on the type of attached header.
- The engine must be running to perform this procedure.

⚠ DANGER

Ensure that all bystanders have cleared the area.

To calibrate the header height sensor:

1. Start the engine.
2. Press PROGRAM (A) and SELECT (B) on the CDM to enter programming mode.
 - WINDROWER SETUP? will appear on the upper line.
3. Press SELECT (B) until CALIBRATE SENSORS? appears on the upper line.
 - NO/YES will appear on the lower line.



Figure 7.83: CDM Programming Buttons

4. Press right arrow (B) to select YES. Press SELECT (C).
5. Press left arrow (A) or right arrow (B) until HEADER HEIGHT appears on the lower line. Press SELECT (C).
 - CALIBRATING HEIGHT will appear on the upper line.
 - RAISE HEADER HOLD will appear on the lower line.



Figure 7.84: Header Height Calibration

CAB DISPLAY MODULE

6. Press and hold HEADER UP button (A) on the ground speed lever (GSL).

- CALIBRATING HEIGHT will appear on the upper line.
- RAISE HEADER HOLD will appear on the lower line.

NOTE:

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

7. Release HEADER UP button (A).

- HEIGHT SENSOR CAL will appear on the upper line.
- PRESS LOWER HEADER will appear on the lower line.

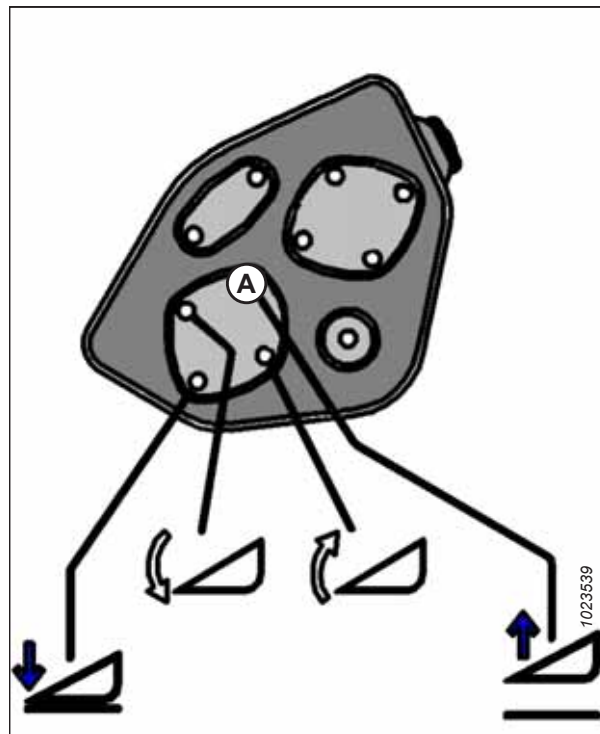


Figure 7.85: Header Height Controls on GSL

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

NOTE:

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

9. Release HEADER DOWN button (A).

- TO CALIBRATE SELECT will appear on the upper line.
- HEADER HEIGHT will appear on the lower line.

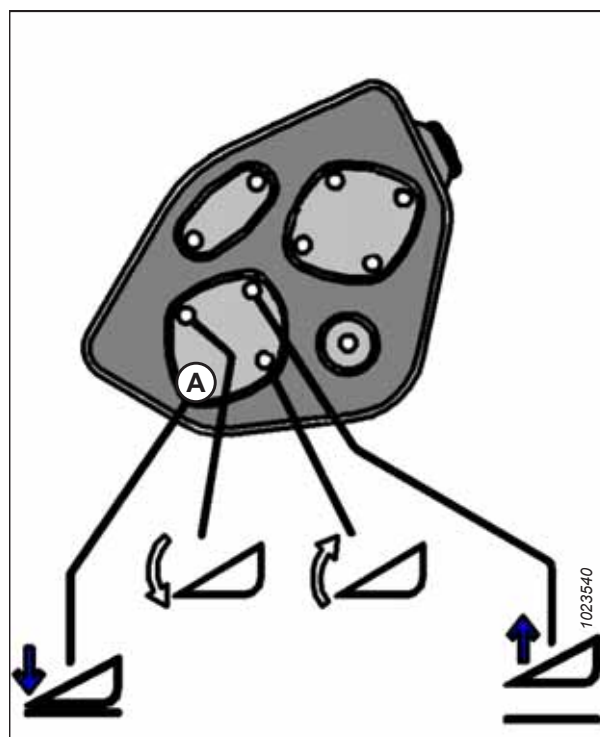


Figure 7.86: Header Height Controls on GSL

10. Press the right arrow to select the next header sensor calibration or select STOP & EXIT. Press SELECT.

11. Press PROGRAM to exit programming mode.

7.6.2 Calibrating Header Tilt Sensor

The header tilt sensor can be calibrated by accessing the cab display module's (CDM) WINDROWER SETUP menu. The calibration procedure must be completed for the sensor to report the angle of the header correctly.

NOTE:

- The header must be attached to the windrower to perform this procedure. The CDM automatically selects the header profile based on the type of attached header.
- This procedure is provided on the assumption that the Hydraulic Center-Link kit (MD #B4650) have been installed.
- The engine must be running to perform this procedure.

⚠ DANGER

Ensure that all bystanders have cleared the area.

1. Start the engine.
2. Press PROGRAM (A) and SELECT (B) simultaneously on the CDM to enter programming mode.
 - WINDROWER SETUP? will appear on the upper line.
3. Press SELECT (B) until CALIBRATE SENSORS? appears on the upper line.
 - NO/YES will appear on the lower line.



Figure 7.87: CDM Programming Buttons

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



Figure 7.88: Header Tilt Calibration

CAB DISPLAY MODULE

6. Press and hold HEADER TILT EXTEND button (A) on the ground speed lever (GSL).

- CALIBRATING TILT will appear on the upper line.
- EXTEND TILT HOLD will appear on the lower line.

NOTE:

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

7. Release HEADER TILT EXTEND button (A).
- HEADER TILT SENSOR CAL will appear on the upper line.
 - PRESS RETRACT TILT will appear on the lower line.

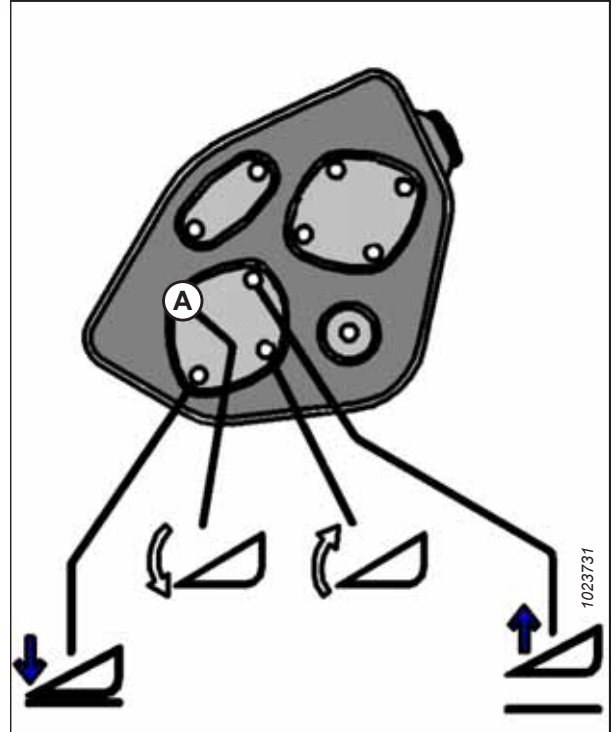


Figure 7.89: Header Tilt Controls on GSL

8. Press and hold HEADER TILT RETRACT button (A) on the GSL.

- CALIBRATING TILT will appear on the upper line.
- RETRACT TILT HOLD will appear on the lower line.

NOTE:

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

9. Release HEADER TILT RETRACT button (A).
- TO CALIBRATE SELECT will appear on the upper line.
 - HEADER TILT will appear on the lower line.

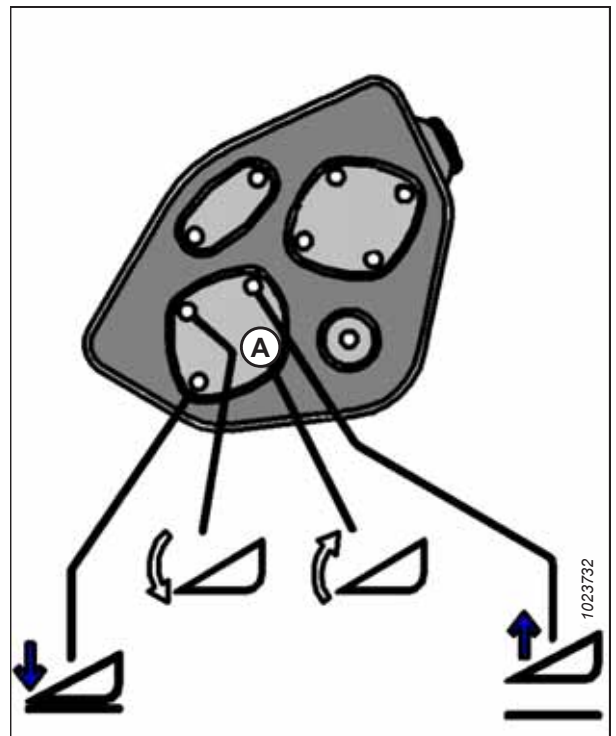


Figure 7.90: Header Tilt Controls on GSL

10. Press the right arrow to select the next header sensor calibration or select STOP & EXIT. Press SELECT.
11. Press PROGRAM to exit programming mode.

7.6.3 Calibrating Header Float Sensors

The header float sensors can be calibrated by accessing the cab display module's (CDM) WINDROWER SETUP menu. The calibration procedure must be completed for the sensors to be correctly calibrated.

NOTE:

- The header must be attached to the windrower to perform this procedure. The CDM automatically selects the header profile based on the type of attached header.
- Use the left or right FLOAT buttons on the CDM to perform this procedure.

⚠ DANGER

Ensure that all bystanders have cleared the area.

IMPORTANT:

Ensure that float pins (A) are installed in the working position.

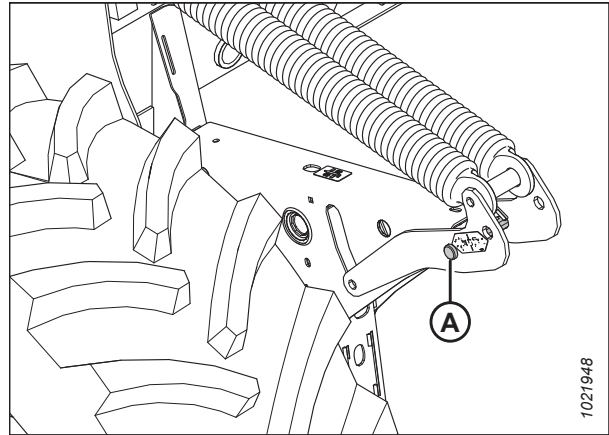


Figure 7.91: Float Pin – Right Side

1. Start the engine.
2. Press PROGRAM (A) and SELECT (B) simultaneously on the CDM to enter programming mode.
 - WINDROWER SETUP? will appear on the upper line.
3. Press SELECT (B) until CALIBRATE SENSORS? appears on the upper line.
 - NO/YES will appear on the lower line.



Figure 7.92: CDM Programming Buttons

CAB DISPLAY MODULE

4. Press right arrow (B) to select YES. Press SELECT (C).
 - TO CALIBRATE SELECT will appear on the upper line.
5. Press left arrow (A) or right arrow (B) until HEADER FLOAT appears on the lower line. Press SELECT (C).
 - CALIBRATING FLOAT will appear on the upper line.
 - PRESS FLOAT + TO START will appear on the lower line.



Figure 7.93: Header Float Display

6. Press and hold FLOAT + button (A) on the CDM.
 - CALIBRATING FLOAT will appear on the upper line.
 - FLOAT (+) HOLD will appear on the lower line.

NOTE:

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

7. Release FLOAT + button (A).
 - CALIBRATING FLOAT will appear on the upper line.
 - FLOAT (-) HOLD will appear on the lower line.



Figure 7.94: Positive Header Float Display

8. Press and hold FLOAT – button (A) on the CDM.
 - CALIBRATING FLOAT will appear on the upper line.
 - FLOAT (-) HOLD will appear on the lower line.

NOTE:

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

9. Release FLOAT – button (A).
 - TO CALIBRATE SELECT will appear on the upper line.
 - HEADER FLOAT will appear on the lower line.



Figure 7.95: Negative Header Float Display

10. Press the right arrow to select the next header sensor calibration or select STOP & EXIT. Press SELECT.
11. Press PROGRAM to exit programming mode.

7.7 Calibrating Swath Compressor Sensor

The swath compressor's sensor can be calibrated by accessing the cab display module's (CDM) WINDROWER SETUP menu. The calibration procedure must be completed for the sensor to be correctly calibrated. This procedure applies only to windrowers equipped with a swath compressor.

DANGER

Ensure that all bystanders have cleared the area.

1. Turn the ignition key to the RUN position or start the engine.
2. Press PROGRAM (A) and SELECT (B) simultaneously on the cab display module (CDM) to enter programming mode.
 - WINDROWER SETUP? will appear on the upper line.
3. Press SELECT (B) until CALIBRATE SENSORS? appears on the upper line.
 - NO/YES will appear on the lower line.



Figure 7.96: CDM Programming Buttons

4. Press right arrow (A) to select YES. Press SELECT (B).
 - TO CALIBRATE SELECT will appear on the upper line.
5. Press right arrow (A) to scroll through the choices until SWATH COMPR HT appears on the lower line. Press SELECT (B).
 - SWATH SENSOR CAL will appear on the upper line.
 - SWATH UP TO START will appear on the lower line.



Figure 7.97: Swath Compressor Sensor Calibration

CAB DISPLAY MODULE

6. Press and hold button (B) to raise the swath compressor.
 - CALIBRATING SWATH will appear on the upper line.
 - The messages FORM UP and HOLD (this message will flash) will appear on the lower line and will remain until the system has received a signal from the swath compressor indicating that it has risen fully.
 - SWATH FORM UP DONE (accompanied by a buzzer tone) will appear on the lower line when the process is complete.

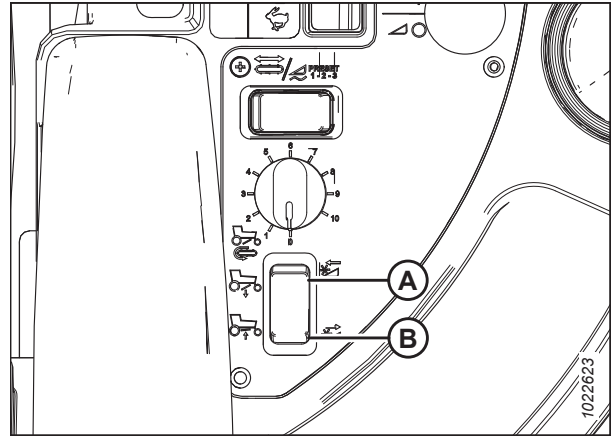


Figure 7.98: Swath Compressor Controls

A - Lower Swath Compressor
B - Raise Swath Compressor

- SWATH SENSOR CAL will appear on the upper line.
- PRESS SWATH DOWN will appear on the lower line.



Figure 7.99: Swath Compressor Sensor Calibration

7. Press and hold button (A) to lower the swath compressor.
 - CALIBRATING SWATH will appear on the upper line.
 - The messages FORM DOWN and HOLD (this message will flash) will appear on the lower line.
 - SWATH FORM COMPLETE will appear for two seconds on the lower line (accompanied by a buzzer tone) when the calibration procedure is complete.
8. Press PROGRAM to exit programming mode.

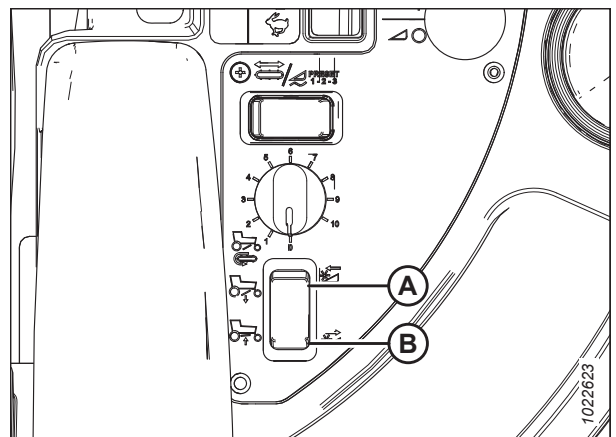


Figure 7.100: Swath Compressor Controls

A - Lower Swath Compressor
B - Raise Swath Compressor

7.8 Troubleshooting Windrower Problems

The cab display module (CDM) can be used as a troubleshooting tool, since it can provide information about the status of various sensors and display error codes.

7.8.1 Displaying Windrower and Engine Error Codes

The cab display module (CDM) stores any error codes that occur during operation.

1. Turn the ignition key to the RUN position or start the engine.
2. Press PROGRAM (A) and SELECT (B) simultaneously on the CDM to enter programming mode. Press SELECT (B).
 - WINDROWER SETUP? will appear on the upper line.
3. Press SELECT (B) until DIAGNOSTIC MODE? appears on the upper line.
 - NO/YES will appear on the lower line.



Figure 7.101: CDM Programming Buttons

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



Figure 7.102: Diagnostic Functions

CAB DISPLAY MODULE

7. Press right arrow (A) to select YES. Press SELECT (C).
 - The most recent error code will appear.
8. Press right arrow (A) or left arrow (B) to cycle through the last ten recorded windrower error codes until EXIT WINDROWER CODES appears.
9. Press right arrow (A) to select YES. Press SELECT (C).
 - VIEW ENGINE CODES will appear on the upper line.
 - NO/YES will appear on the lower line.



Figure 7.103: Windrower Codes

10. Press right arrow (C) to select YES. Press SELECT (D).
11. Press left arrow (B) or right arrow (C) to cycle through the last ten recorded engine error codes until EXIT ENGINE CODES appears.
12. Press right arrow (C) to select YES. Press SELECT (D).
13. Press PROGRAM (A) to exit programming mode or press SELECT (D) to proceed to the next diagnostic option.



Figure 7.104: Engine Codes

7.8.2 Enabling or Disabling Header Sensors

Each header sensor can be enabled or disabled using the windrower's cab display module (CDM).

NOTE:

- The header must be attached to the windrower to perform this procedure. The CDM automatically selects the header profile based on the type of attached header.
- Disabled sensors generate the flashing message SENSOR on the CDM when the header is operating. This message indicates that the output from this sensor has been disabled.

CAB DISPLAY MODULE

To enable or disable certain header sensors:

1. Turn the ignition key to the RUN position or start the engine.
2. Press PROGRAM (A) and SELECT (C) on the CDM to enter programming mode.
 - WINDROWER SETUP? will appear on the upper line.
 - NO/YES will appear on the lower line.
3. Press SELECT (C) until DIAGNOSTIC MODE? will appear on the upper line.
 - NO/YES will appear on the lower line.
4. Press right arrow (B) to select YES. Press SELECT (C).
 - VIEW ERROR CODES? will appear on the upper line.
5. Press SELECT (B) until ENTER SENSOR SETUP? appears on the upper line.
 - NO/YES will appear on the lower line.
6. Press right arrow (A) to select YES. Press SELECT (B).
 - KNIFE SPEED SENSOR will appear on the lower line.
 - ENABLE/DISABLE will appear on the lower line.



Figure 7.105: CDM Programming Buttons



Figure 7.106: Diagnostic Functions

7. Press left arrow (B) to enable the selected sensor. Press right arrow (C) to disable the selected sensor. Press SELECT (D) to confirm your selection and to proceed to the next sensor.

These sensors can be enabled or disabled:

- HEADER HT SENSOR
- HEADER TILT SENSOR
- KNIFE SPEED SENSOR
- REEL SPEED SENSOR
- HEADER FLOAT SENSOR
- OVERLOAD PRESSURE SENSOR⁶
- HYD OIL TEMP SENSOR

Press SELECT (D) to display the EXIT SENSOR SETUP? selection.



Figure 7.107: Header Sensor Setup

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

8. Press right arrow (C) to select YES. Press SELECT.
9. Press PROGRAM (A) to exit programming mode or press SELECT to proceed to the next diagnostic option.

7.8.3 Displaying Header Sensor Input Signals

Review the output voltage from individual header sensors by accessing the DIAGNOSTIC MODE submenu in the WINDROWER SETUP menu in the windrower's cab display module (CDM).

NOTE:

The header must be attached to the windrower to perform this procedure. The CDM automatically selects the header profile based on the type of attached header.

1. Turn the ignition key to the RUN position or start the engine.
2. Press PROGRAM (A) and SELECT (B) simultaneously on the CDM to enter programming mode.
 - WINDROWER SETUP? will appear on the upper line.
 - NO/YES will appear on the lower line.



Figure 7.108: CDM Programming Buttons

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



Figure 7.109: Diagnostic Functions

CAB DISPLAY MODULE

- Press right arrow (C) to select YES. Press SELECT (D).
 - SENSOR INPUT will appear on the upper line.
 - HDR HEIGHT 1.23 V will appear on the lower line.
- Press left arrow (B) or right arrow (C) to review the outputs from different sensors.
- Press SELECT (D) to skip to EXIT READ SENSORS? selection.
- Press right arrow (C) to select YES. Press SELECT.
- Press PROGRAM (A) to exit programming mode or press SELECT (D) to proceed to the next diagnostic option.



Figure 7.110: Header Sensors

7.8.4 Forcing Header Identification

The windrower's cab display module (CDM) must recognize the header model in order to proceed with troubleshooting. If the header wiring has been damaged, or if no header is available, you can force the windrower control module (WCM) to behave as if a header is attached to the windrower by manually inputting a header identification code.

IMPORTANT:

Forcing a header ID that is different from that of the attached header can damage the windrower and/or the header. Doing so can cause the header to run too fast, which can cause excessive vibration and component failure.

NOTE:

The WCM will revert to reading NO HEADER each time the engine ignition is cycled.

- Turn the ignition key to the RUN position or start the engine.
- Press PROGRAM (A) and SELECT (B) simultaneously on the CDM to enter programming mode.
 - WINDROWER SETUP? will appear on the upper line.



Figure 7.111: CDM Programming Buttons

CAB DISPLAY MODULE

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



Figure 7.112: Diagnostic Functions

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



Figure 7.113: Header Type

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



Figure 7.114: Header Type

7.9 Troubleshooting Header Problems

A guide for resolving difficulties encountered while configuring header features in the cab display module (CDM) is provided.

7.9.1 Testing Header Up/Down Activate Function Using Cab Display Module

The cab display module (CDM) can be used to change the height of the attached header, rather than using the height controls on the ground speed lever (GSL). This procedure is used to test the functionality of this feature.

NOTE:

- The header must be attached to the windrower to perform this procedure. The CDM automatically selects the header profile based on the type of attached header.
- The engine must be running to perform this procedure.

⚠ DANGER

Ensure that all bystanders have cleared the area.

1. Start the engine.
2. Press PROGRAM (A) and SELECT (B) simultaneously on the CDM to enter programming mode. Press SELECT (B).
 - WINDROWER SETUP? will appear on the upper line.



Figure 7.115: CDM Programming Buttons

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



Figure 7.116: Diagnostic Functions

CAB DISPLAY MODULE

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



Figure 7.117: Functions

7. Press SELECT (D) until ACTIVATE HEADER HT appears on the upper line.
 - DOWN/UP will appear on the lower line.
8. Press and hold left arrow (B) to lower the header, or press and hold right arrow (C) to raise the header. Ensure that the header is working properly.
9. Press PROGRAM (A) to exit programming mode or press SELECT (D) to proceed to the next header function option.



Figure 7.118: Header Height

7.9.2 Testing Reel Up/Down Activate Function Using Cab Display Module

The cab display module (CDM) can be used to change the height of the attached header's reel, rather than using the reel height controls on the ground speed lever (GSL). This procedure is used to test the functionality of this feature.

NOTE:

- This procedure applies to windrowers with attached draper headers only.
- The header must be attached to the windrower to perform this procedure. The CDM automatically adjusts its programming for each header.

DANGER

Ensure that all bystanders have cleared the area.

CAB DISPLAY MODULE

1. Start the engine.
2. Press PROGRAM (A) and SELECT (B) simultaneously on the CDM to enter programming mode. Press SELECT (B).
 - WINDROWER SETUP? will appear on the upper line.



Figure 7.119: CDM Programming Buttons

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



Figure 7.120: Diagnostic Functions

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



Figure 7.121: Functions

CAB DISPLAY MODULE

- Press SELECT (D) until ACTIVATE REEL HT appears on the upper line.
 - DOWN/UP will appear on the lower line.
- Press and hold left arrow (B) to lower the reel. Press and hold right arrow (C) to raise the reel. Ensure that the reel is working properly.
- Press PROGRAM (A) to exit programming mode or press SELECT (D) to proceed to next ACTIVATE FUNCTION.



Figure 7.122: Reel Height

7.9.3 Testing Header Tilt Activate Function Using Cab Display Module

It may be necessary to use the cab display module (CDM) to change the angle of the attached header, rather than using the header tilt controls on the ground speed lever (GSL). This procedure is used to test the functionality of this feature.

NOTE:

- The header must be attached to the windrower to perform this procedure. The CDM automatically adjusts its programming for each header.
- This procedure requires installation of the optional Hydraulic Center-Link (MD #B4650).
- The engine must be running to perform this procedure.

DANGER

Ensure that all bystanders have cleared the area.

- Start the engine.
- Press PROGRAM (A) and SELECT (B) simultaneously on the CDM to enter programming mode.
 - WINDROWER SETUP? will appear on the upper line.



Figure 7.123: CDM Programming Buttons

CAB DISPLAY MODULE

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



Figure 7.124: Diagnostic Functions

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



Figure 7.125: Functions

7. Press SELECT (D) until ACTIVATE HDR TILT appears on the upper line.
 - IN/OUT will appear on the lower line.
8. Press and hold left arrow (B) to tilt the header toward the ground. Press and hold right arrow (C) to tilt the header away from the ground. Ensure that the tilt functions are working correctly.
9. Press PROGRAM (A) to exit programming mode or press SELECT (D) to proceed to the next header function option.



Figure 7.126: Header Tilt Angle

7.9.4 Testing Knife Drive Circuit Using Cab Display Module

It may be necessary to use the cab display module (CDM) to test the knife drive circuit, rather than using the controls on the operator's station.

IMPORTANT:

Do **NOT** overspeed the header's knife drive. Overspeeding can lead to vibration, belt failures, or other problems.

NOTE:

The header must be attached to windrower to perform this procedure.

⚠ DANGER

Ensure that all bystanders have cleared the area.

1. Start the engine.
2. Press PROGRAM (A) and SELECT (B) simultaneously on the CDM to enter programming mode. Press SELECT (B).
 - WINDROWER SETUP? will appear on the upper line.



Figure 7.127: CDM Programming Buttons

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



Figure 7.128: Diagnostic Functions

CAB DISPLAY MODULE

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



Figure 7.129: Functions

7. Press SELECT (E) until KNIFE DRIVE SPD XXXX appears on the upper line.
8. Press and hold HAZARD (C) button.
 - Press left arrow (B) to decrease the knife speed.
 - Press right arrow (D) to increase the knife speed.

IMPORTANT:

Do **NOT** overspeed the knife drive.

IMPORTANT:

Ensure that the knife drive is working properly.

9. Release HAZARD button (C). The knife will stop.
10. Press PROGRAM (A) to exit programming mode or press SELECT (E) to proceed to the next header function option.



Figure 7.130: Knife Drive

7.9.5 Testing Draper Drive Circuit Activate Function Using Cab Display Module

The cab display module (CDM) can be used to test the draper drive circuit, rather than using the controls on the operator's station.

IMPORTANT:

Do **NOT** overspeed the draper drive. Overspeeding can lead to vibration, belt failures, or other overspeeding-related problems.

NOTE:

- A draper header must be attached to windrower to perform this procedure.
- The engine must be running to perform this procedure.

DANGER

Ensure that all bystanders have cleared the area.

CAB DISPLAY MODULE

1. Start the engine.
2. Press PROGRAM (A) and SELECT (B) simultaneously on the CDM to enter programming mode.
 - WINDROWER SETUP? will appear on the upper line.



Figure 7.131: CDM Programming Buttons

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



Figure 7.132: Diagnostic Functions

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



Figure 7.133: Functions

CAB DISPLAY MODULE

7. Press SELECT (E) until DRAPER DRV SPD XXXX appears on the upper line.
8. Press and hold HAZARD button (C).
 - Press left arrow (B) to decrease the draper speed.
 - Press right arrow (D) to increase the draper speed.

IMPORTANT:

Do **NOT** overspeed the drapers.

NOTE:

Ensure that the draper drive is working properly.

9. Release the HAZARD (C) button. The drapers will stop.
10. Press PROGRAM (A) to exit programming mode or press SELECT (E) to proceed to the next header function option.



Figure 7.134: Draper Drive

7.9.6 Testing Reel Drive Circuit Activate Function Using Cab Display Module

The cab display module (CDM) can be used to test the reel drive circuit, rather than using the controls on the operator's station.

IMPORTANT:

Do **NOT** overspeed the reel drive. Overspeeding can lead to vibration, belt failures, or other problems.

NOTE:

- The header must be attached to the windrower to follow this procedure.
- This procedure does not apply to windrowers with attached rotary disc headers.
- The engine must be running to perform this procedure.

DANGER

Ensure that all bystanders have cleared the area.

1. Start the engine.
2. Press PROGRAM (A) and SELECT (B) simultaneously on the CDM to enter programming mode.
 - WINDROWER SETUP? will appear on the upper line.



Figure 7.135: CDM Programming Buttons

CAB DISPLAY MODULE

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



Figure 7.136: Diagnostic Functions

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



Figure 7.137: Functions

7. Press SELECT (E) until REEL DRV SPD XXXX appears on the upper line.
8. Press and hold HAZARD (C) button.
 - Press left arrow (B) to decrease the reel speed.
 - Press right arrow (D) to increase the reel speed.

IMPORTANT:

Do **NOT** overspeed the reel.

NOTE:

Ensure that the reel drive is working properly.

9. Release HAZARD (C) button. The reel will stop.
10. Press PROGRAM (A) to exit programming mode or press SELECT (E) to proceed to the next header function option.



Figure 7.138: Reel Drive

7.9.7 Testing Rotary Disc Drive Circuit Activate Function Using Cab Display Module

The cab display module (CDM) can be used to test the rotary drive circuit, rather than using the controls on the operator's station.

IMPORTANT:

Do **NOT** overspeed the rotary drive. Overspeeding can lead to vibration, belt failures, or other problems.

NOTE:

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

! DANGER

Ensure that all bystanders have cleared the area.

1. Start the engine.
2. Press PROGRAM (A) and SELECT (B) simultaneously on the CDM to enter programming mode.
 - WINDROWER SETUP? will appear on the upper line.



Figure 7.139: CDM Programming Buttons

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



Figure 7.140: Diagnostic Functions

CAB DISPLAY MODULE

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



Figure 7.141: Functions

7. Press SELECT (E) until DISC DRV SPD XXXX appears on the upper line.
8. Press and hold HAZARD button (C).
 - Press left arrow (B) to decrease the disc speed.
 - Press right arrow (D) to increase the disc speed.

IMPORTANT:

Do **NOT** overspeed the disc drive.

NOTE:

Ensure that the disc drive is working properly.

9. Release HAZARD button (C). The disc drive will stop.
10. Press PROGRAM (A) to exit programming mode or press SELECT to proceed to the next header function option.



Figure 7.142: Disc Drive

7.9.8 Testing Double Windrow Attachment Drive Activate Function Using Cab Display Module

The cab display module (CDM) can be used to test the Double Windrower Attachment (DWA) drive circuit, rather than using the controls on the operator's station.

IMPORTANT:

Do **NOT** overspeed the DWA drive. Overspeeding can lead to vibration, belt failures, or other problems.

NOTE:

- The DWA must be attached to the windrower and must have been activated under the WINDROWER SETUP menu. For more information, refer to [7.3.8 Configuring Double Windrow Attachment Controls, page 217](#).
- The engine must be running to perform this procedure.



DANGER

Ensure that all bystanders have cleared the area.

CAB DISPLAY MODULE

1. Start the engine.
2. Press PROGRAM (A) and SELECT (B) simultaneously on the CDM to enter programming mode. Press SELECT (B).
 - WINDROWER SETUP? will appear on the upper line.



Figure 7.143: CDM Programming Buttons

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



Figure 7.144: Diagnostic Functions

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



Figure 7.145: Functions

CAB DISPLAY MODULE

- Press SELECT (E) until ACTIVATE DWA DRV appears on the upper line.
- Press and hold HAZARD button (C).
 - Press left arrow (B) to decrease the DWA drive speed.
 - Press right arrow (D) to increase the DWA drive speed.

IMPORTANT:

Do **NOT** overspeed the DWA drive.

NOTE:

Ensure that the DWA drive is working properly.

- Release HAZARD button (C). The DWA drive will stop.
- Press PROGRAM (A) to exit programming mode or press SELECT (E) to proceed to the next header function option.

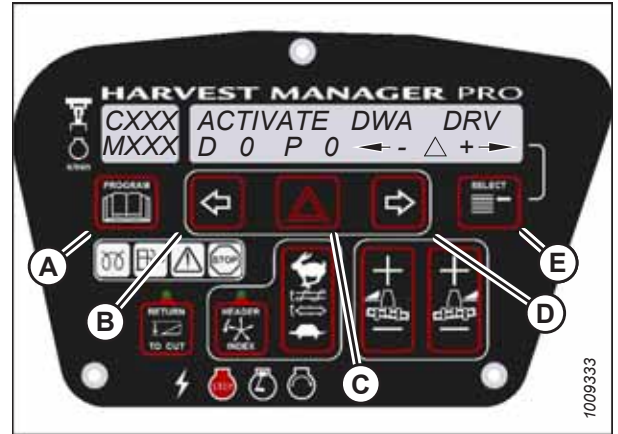


Figure 7.146: DWA Drive

7.9.9 Testing Reel Fore-Aft Activate Function Using Cab Display Module

The cab display module (CDM) can be used to test the reel fore-aft circuit, rather than using the controls on the operator's station.

NOTE:

- The windrower must be attached to a header to perform this procedure.
- The engine must be running to perform this procedure.



DANGER

Ensure that all bystanders have cleared the area.

- Start the engine.
- Press PROGRAM (A) and SELECT (B) simultaneously on the CDM to enter programming mode.
 - WINDROWER SETUP? will appear on the upper line.



Figure 7.147: CDM Programming Buttons

CAB DISPLAY MODULE

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



Figure 7.148: Diagnostic Functions

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



Figure 7.149: Functions

7. Press SELECT (D) until ACTIVATE REEL F/A appears on the upper line.
 - FORE/AFT will appear on the lower line.
8. Ensure that the reel fore-aft function is working properly.
 - a. Press and hold left arrow (B) to move the reel forward. Press and hold right arrow (C) to move the reel aftward.
 - b. Press PROGRAM (A) to exit programming mode or press SELECT (D) to proceed to the next header function option.



Figure 7.150: Reel Fore-Aft

7.9.10 Activating Hydraulic Purge Using Cab Display Module

The hydraulic purge removes air from the hydraulic pump system after it has been repaired or changed. A purge can be initiated by accessing the WINDROWER SETUP menu in the windrower's cab display module (CDM).

NOTE:

The engine must be running to perform this procedure.

⚠ DANGER

Ensure that all bystanders have cleared the area.

1. Start the engine.
2. Press PROGRAM (A) and SELECT (B) simultaneously on the cab display module (CDM) to enter programming mode.
 - WINDROWER SETUP? will appear on the upper line.



Figure 7.151: CDM Programming Buttons

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



Figure 7.152: Diagnostic Functions

CAB DISPLAY MODULE

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



Figure 7.153: Functions

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

NOTE:

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



Figure 7.154: Hydraulic Purge

9. Press and hold right arrow (A) to begin the purge cycle.
 - PURGE CYCLE STARTED will appear on the upper line.
10. When the message PURGE CYCLE ENDED appears, release right arrow (A).
 - NO EXIT YES will appear on the lower line.
11. Press the right arrow to select YES. Press SELECT.
12. Press PROGRAM to exit programming mode or press SELECT to proceed to the next header function option.



Figure 7.155: Hydraulic Purge Cycle

Chapter 8: Reference

The topics provided in this chapter can be consulted as needed.

8.1 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.

8.1.1 SAE Bolt Torque Specifications

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

Table 8.1 SAE Grade 5 Bolt and Grade 5 Free Spinning Nut

Nominal Size (A)	Torque (Nm)		Torque (lbf·ft) (*lbf·in)	
	Min.	Max.	Min.	Max.
1/4-20	11.9	13.2	*106	*117
5/16-18	24.6	27.1	*218	*241
3/8-16	44	48	32	36
7/16-14	70	77	52	57
1/2-13	106	118	79	87
9/16-12	153	170	114	126
5/8-11	212	234	157	173
3/4-10	380	420	281	311
7/8-9	606	669	449	496
1-8	825	912	611	676

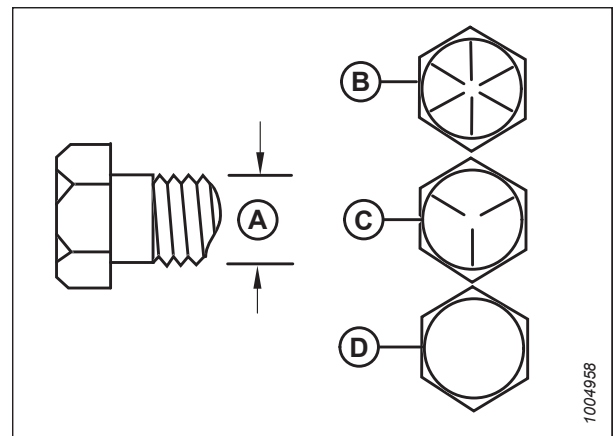


Figure 8.1: Bolt Grades

A - Nominal Size
C - SAE-5

B - SAE-8
D - SAE-2

REFERENCE

Table 8.2 SAE Grade 5 Bolt and Grade F Distorted Thread Nut

Nominal Size (A)	Torque (Nm)		Torque (lbf-ft) (*lbf-in)	
	Min.	Max.	Min.	Max.
1/4-20	8.1	9	*72	*80
5/16-18	16.7	18.5	*149	*164
3/8-16	30	33	22	24
7/16-14	48	53	35	39
1/2-13	73	80	54	59
9/16-12	105	116	77	86
5/8-11	144	160	107	118
3/4-10	259	286	192	212
7/8-9	413	456	306	338
1-8	619	684	459	507

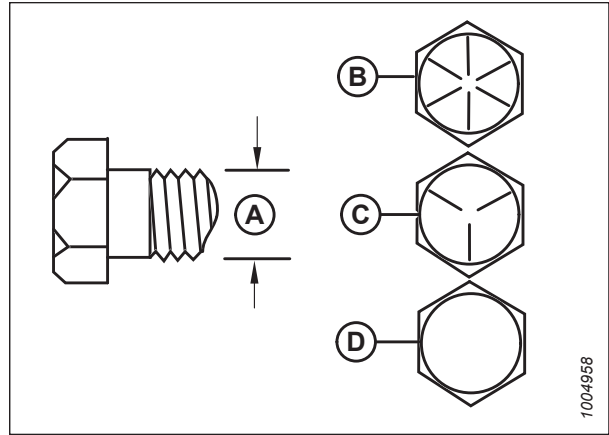


Figure 8.2: Bolt Grades

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

Table 8.3 SAE Grade 8 Bolt and Grade G Distorted Thread Nut

Nominal Size (A)	Torque (Nm)		Torque (lbf-ft) (*lbf-in)	
	Min.	Max.	Min.	Max.
1/4-20	16.8	18.6	*150	*165
5/16-18	24	26	18	19
3/8-16	42	46	31	34
7/16-14	67	74	50	55
1/2-13	102	113	76	84
9/16-12	148	163	109	121
5/8-11	204	225	151	167
3/4-10	362	400	268	296
7/8-9	583	644	432	477
1-8	874	966	647	716

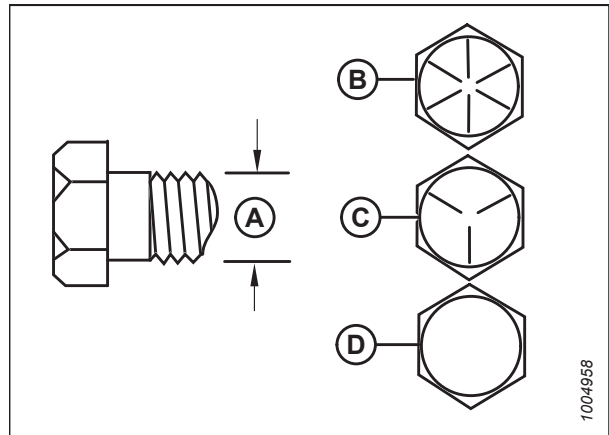


Figure 8.3: Bolt Grades

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

Table 8.4 SAE Grade 8 Bolt and Grade 8 Free Spinning Nut

Nominal Size (A)	Torque (Nm)		Torque (lbf-ft) (*lbf-in)	
	Min.	Max.	Min.	Max.
1/4-20	16.8	18.6	*150	*165
5/16-18	35	38	26	28
3/8-16	61	68	46	50
7/16-14	98	109	73	81
1/2-13	150	166	111	123
9/16-12	217	239	160	177
5/8-11	299	330	221	345
3/4-10	531	587	393	435
7/8-9	855	945	633	700
1-8	1165	1288	863	954

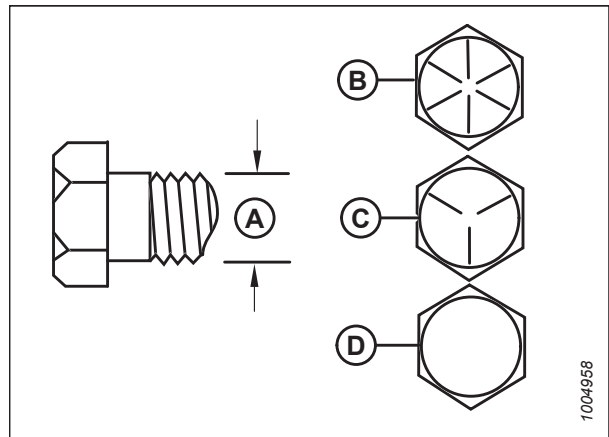


Figure 8.4: Bolt Grades

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

8.1.2 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 8.5 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

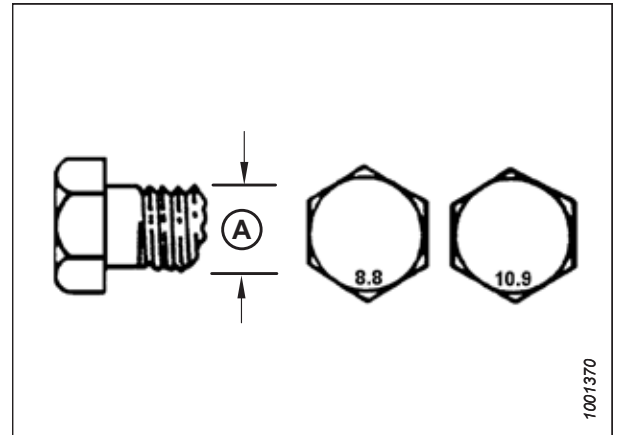


Figure 8.5: Bolt Grades

Table 8.6 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

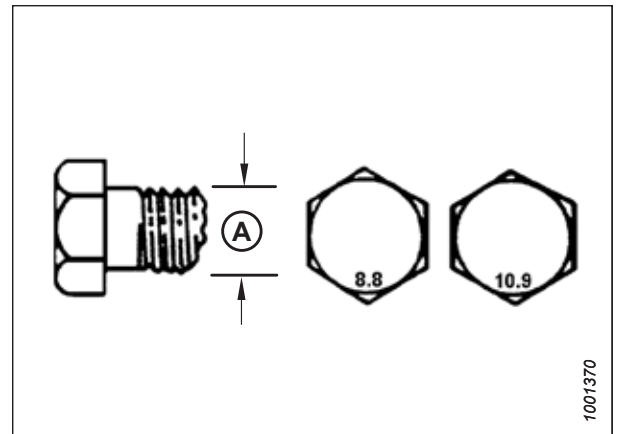


Figure 8.6: Bolt Grades

REFERENCE

Table 8.7 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

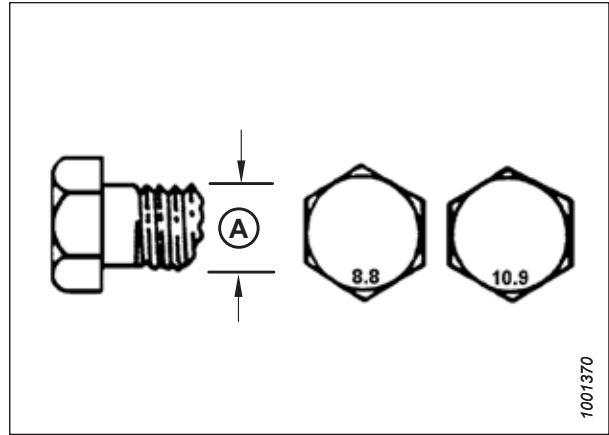


Figure 8.7: Bolt Grades

Table 8.8 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

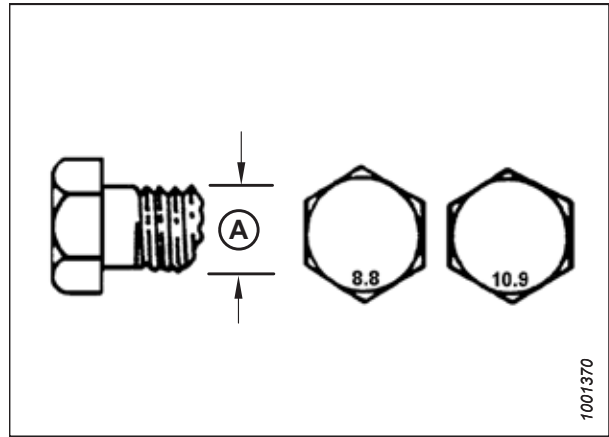


Figure 8.8: Bolt Grades

8.1.3 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.

REFERENCE

Table 8.9 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	–	–	–	–

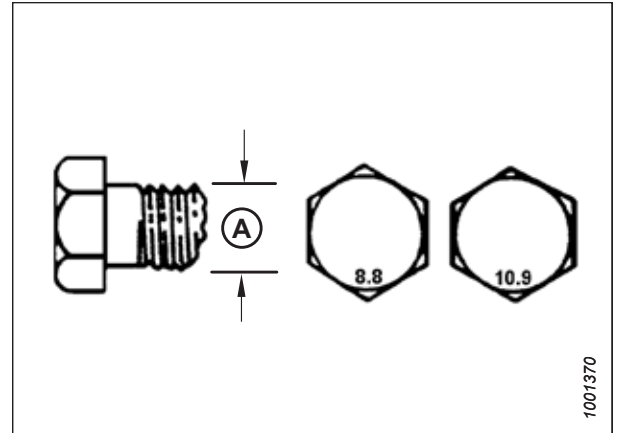


Figure 8.9: Bolt Grades

8.1.4 Flare-Type Hydraulic Fittings

The standard torque values are provided for flare-type 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 flare (A) and flare seat (B) for defects that might cause leakage.
2. Align tube (C) with fitting (D) and thread nut (E) onto the fitting without lubrication until contact is made between the flared surfaces.
3. Torque fitting nut (E) to the specified number of flats from finger tight (FFFT) or to a given torque value in Table 8.10, page 277.
4. Secure fitting (D) with two wrenches. Place one wrench on fitting body (D), and tighten nut (E) with the other wrench to the torque value shown in Table 8.10, page 277.
5. Verify the final condition of connection.

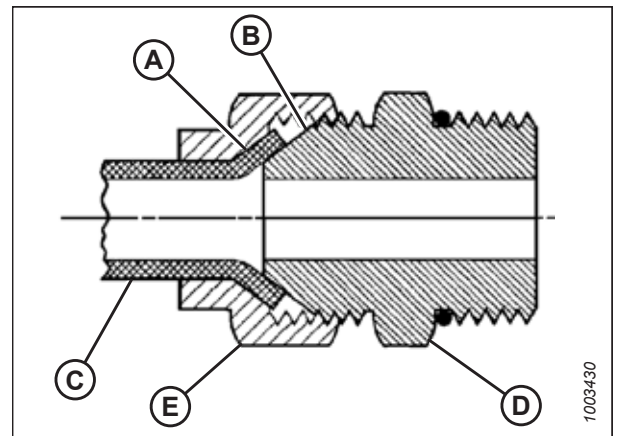


Figure 8.10: Hydraulic Fitting

Table 8.10 Flare-Type Hydraulic Tube Fittings

SAE Dash Size	Thread Size (in.)	Torque Value ⁷		Flats from Finger Tight (FFFT)	
		Nm	lbf-ft	Tube	Swivel Nut or Hose
-2	5/16–24	4–5	3–4	–	–
-3	3/8–24	7–8	5–6	–	–
-4	7/16–20	18–19	13–14	2 1/2	2
-5	1/2–20	19–21	14–15	2	2
-6	9/16–18	30–33	22–24	2	1 1/2
-8	3/4–16	57–63	42–46	2	1 1/2
-10	7/8–14	81–89	60–66	1 1/2	1 1/2

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

REFERENCE

Table 8.10 Flare-Type Hydraulic Tube Fittings (continued)

SAE Dash Size	Thread Size (in.)	Torque Value ⁸		Flats from Finger Tight (FFFT)	
		Nm	lbf-ft	Tube	Swivel Nut or Hose
-12	1 1/16-12	113-124	83-91	1 1/2	1 1/4
-14	1 3/16-12	136-149	100-110	1 1/2	1 1/4
-16	1 5/16-12	160-176	118-130	1 1/2	1
-20	1 5/8-12	228-250	168-184	1	1
-24	1 7/8-12	264-291	195-215	1	1
-32	2 1/2-12	359-395	265-291	1	1
-40	3-12	—	—	1	1

8.1.5 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 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).

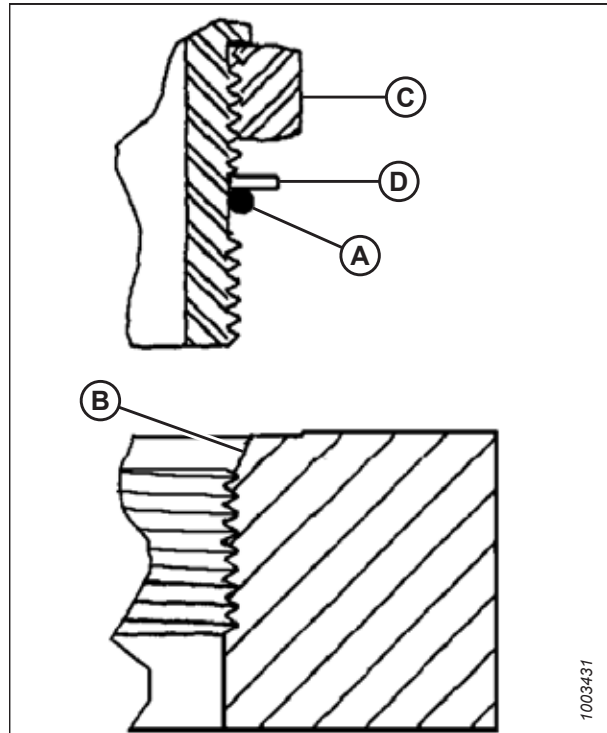


Figure 8.11: Hydraulic Fitting

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

REFERENCE

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.

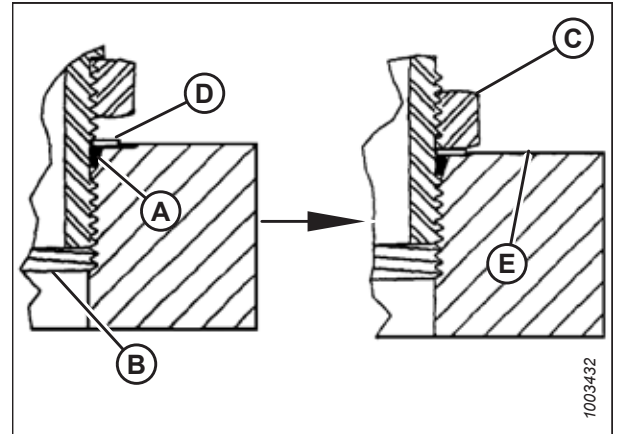


Figure 8.12: Hydraulic Fitting

Table 8.11 O-Ring Boss (ORB) Hydraulic Fittings – Adjustable and Non-Adjustable

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

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

8.1.6 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 8.12, page 280.
6. Verify the final condition of the fitting.

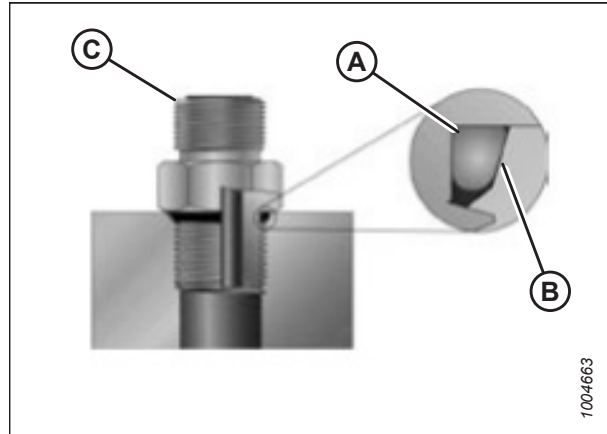


Figure 8.13: Hydraulic Fitting

Table 8.12 O-Ring Boss (ORB) Hydraulic Fittings – Adjustable and Non-Adjustable

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

8.1.7 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 8.13, page 281.

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

REFERENCE

1. Ensure that the sealing surfaces and the fitting threads are free of burrs, nicks, scratches, and any foreign material.



Figure 8.14: Hydraulic Fitting

2. Apply hydraulic system oil to O-ring (B).
3. Align the tube or hose assembly so that the flat face of sleeve (A) or (C) comes 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 8.13, page 281.

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).

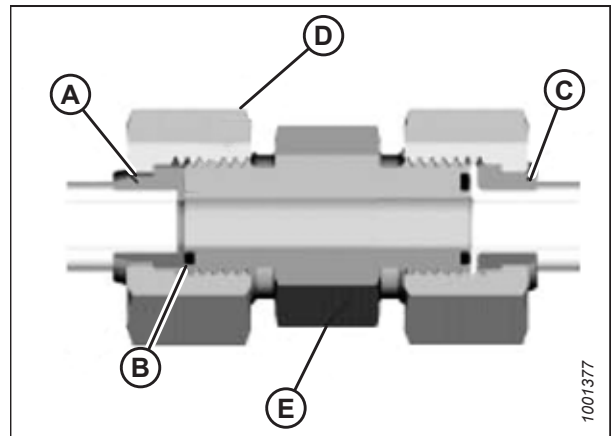


Figure 8.15: Hydraulic Fitting

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

Table 8.13 O-Ring Face Seal (ORFS) Hydraulic Fittings

SAE Dash Size	Thread Size (in.)	Tube O.D. (in.)	Torque Value ¹¹	
			Nm	lbf-ft
-3	Note ¹²	3/16	–	–
-4	9/16	1/4	25–28	18–21
-5	Note ¹²	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 ¹²	7/8	–	–
-16	1 7/16	1	150–165	111–122

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

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

REFERENCE

Table 8.13 O-Ring Face Seal (ORFS) Hydraulic Fittings (continued)

SAE Dash Size	Thread Size (in.)	Tube O.D. (in.)	Torque Value ¹³	
			Nm	lbf-ft
-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

8.1.8 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.
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 8.14, page 282. 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 8.14 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

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

8.2 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 8.15 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.

8.3 Definitions

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

Table 8.16 Definitions

Term	Definition
A Series Header	MacDon A30S, A30D, A40D, A40DX, and Grass Seed auger headers
API	American Petroleum Institute
ASTM	American Society of Testing and Materials
Bolt	A headed and externally threaded fastener designed to be paired with a nut
Cab-forward	Windrower operation mode in which the Operator's seat faces the header
CDM	Cab display module on an M Series Windrower
Center-link	A hydraulic cylinder or manually adjustable turnbuckle type connection between the header and the vehicle, which is used to change the angle of the header relative to the vehicle
CGVW	Combined gross vehicle weight
D Series Header	MacDon D50, D60, and D65 rigid draper headers
D1 SP Series Header	MacDon D115, D120, D125, D130, D135, and D140 rigid draper headers for windrowers
D2 SP Series Header	MacDon D215, D220, D225, D230, D235, and D241 draper headers for windrowers
DWA	Double Windrow Attachment
ECM	Engine control module
Engine-forward	Windrower operation with Operator and engine facing in direction of travel
FFFT	Flats from finger tight
Finger tight	Finger tight is a reference position in which the given sealing surfaces or components are making contact with each other and the fitting has been tightened by hand to a point where the fitting is no longer loose and cannot be tightened further by hand
GSL	Ground speed lever
GVW	Gross vehicle weight
Hard joint	A joint made with use of a fastener where joining materials are highly incompressible
Header	A machine that cuts and lays crop into a windrow when attached to a windrower
Hex key	A tool of hexagonal cross-section used to drive bolts and screws that have a hexagonal socket in the head (internal-wrenching hexagon drive); also known as an Allen key
ISC	Intermediate Speed Control
JIC	Joint Industrial Council: A standards body that developed standard sizing and shape for original 37° flared fitting
Knife	A cutting device 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
M Series Windrowers	MacDon M100, M105, M150, M155, M155E4, M200, and M205 Windrowers
n/a	Not applicable
N-DETENT	The slot opposite the NEUTRAL position on the operator's console of M Series SP Windrowers
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

REFERENCE

Table 8.16 Definitions (continued)

Term	Definition
ORFS	O-ring face seal: A style of fitting commonly used for connecting hoses and tubes. This style of fitting is also commonly called ORS, which stands for O-Ring Seal
R Series Header	MacDon R80 and R85 Rotary Disc Headers
R1 SP Series Header	MacDon R113 and R116 Rotary Disc Headers for windrowers
rpm	Revolutions per minute
SAE	Society of Automotive Engineers
Screw	A headed and externally threaded fastener that threads into preformed threads or forms its own thread when inserted into a mating part
Self Propelled (SP) Windrower	Self-propelled machine consisting of a power unit and a header. It is designed to cut and lay crops into windrows for later harvest
spm	Strokes per minute
SST	Slow speed transport
Tension	An axial load placed on a bolt or screw, usually measured in Newtons (N) or pounds (lb.). This term can also be used to describe the force a belt exerts on a pulley or sprocket
TFFT	Turns from finger tight
Torque	The product of a force * the length of a lever arm, usually measured in Newton-meters (Nm) or foot-pounds (lbf-ft)
Torque angle	A tightening procedure in which a fitting is assembled to a specified tightness (usually finger tight) and then the nut is turned farther by a specified number of degrees until it achieves its final position
Torque-tension	The relationship between the assembly torque applied to a piece of hardware and the axial load it induces in a bolt or screw
UCA	Upper cross auger
ULSD	Ultra-low sulphur diesel
Washer	A thin cylinder with a hole or a slot located in the center, used as a spacer, a load distribution element, or a locking mechanism
WCM	Windrower control module
Windrower	The power unit for a header

8.4 Lubricants, Fluids, and System Capacities

Refer to the table below for information on the appropriate lubricants and fluids for the windrower, and for the capacity of each system. Follow the procedures for filling each system provided in this manual.

WARNING

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

Table 8.17 Windrower System Capacities

Lubricant/Fluid	Location	Description	Capacity
Grease	As required unless otherwise specified	SAE multi-purpose high temperature extreme pressure (EP2) performance with 1% maximum molybdenum disulphide (NLGI Grade 2); lithium base	—
Diesel fuel	Fuel tank	Diesel Grade No. 2, or Diesel Grade No. 1 and 2 mix ¹⁴ ; refer to 8.5 Fuel Specifications, page 288 for more information	367 L (97 U.S. gal)
Hydraulic oil	Hydraulic reservoir	SAE 15W-40 compliant with SAE specs for API class SJ and CH-4 engine oil.	65 L (17.2 U.S. gal)
Gear lubricant	Gearbox	SAE 80W-140 ¹⁵ , API service class GL-5 fully synthetic gear lubricant (SAE J2360 preferred)	2.1 L (2.2 U.S. qt.)
Gear lubricant	Wheel drive ¹⁶	SAE 75W-90, API service class GL-5 fully synthetic gear lubricant (SAE J2360 preferred)	1.4 L (1.5 U.S. qt.)
Coolant	Engine cooling system	ASTM D-6210 and CES-14603, Peak Final Charge Global™, Fleetguard® ES Compleat™ OAT; refer to notes following this table	24 L (6.3 U.S. gal) ¹⁷
Engine oil	Engine oil pan	SAE 15W-40 compliant with SAE specs for API class SJ and CH-4 engine oil	11 L (11.6 U.S. qt.)
Air conditioning refrigerant ¹⁸	Air conditioning system	R134A	2.27 kg (5 lb.)
Air conditioning refrigerant oil ¹⁹	Air conditioning system total capacity	PAG SP-15	240 cc (8.1 fl. oz.)

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

15. SAE 75W-140 may be substituted for SAE 80W-140 if necessary.

16. SAE 85W-140 API Service Class GL-5. Extreme Pressure Gear Lubricant is used before initial change.

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

18. For prior models that have not upgraded to 2.27 kg (5 lb.) of refrigerant order Kit MD #183180, which includes decal to advise of systems 2.27 kg (5 lb.) charge requirement, refer to Service Bulletin 1254.

19. New compressor (MD #183515) comes filled. If installing on 2014 and prior models, refer to Service Bulletin 1254.

REFERENCE

NOTE:

If Peak Final Charge Global™ or Fleetguard ES Compleat™ OAT are unavailable, use a coolant concentrate or prediluted coolant intended for use with heavy-duty diesel engines. Ensure that the coolant meets the following minimum standards:

- Provides cylinder cavitation protection according to fleet study run at or above 60% load capacity.
- Protects the cooling system metals (cast iron, aluminum alloys, and copper alloys such as brass) from corrosion.
- Coolant **MUST** be nitrite-free and **MUST** be free of 2-Ethylhexanoic (2-EH) acid.

NOTE:

Windrowers have Peak Final Charge Global™ coolant installed at the factory.

An additive package should contain one of the following coolant mixtures:

- Ethylene glycol or propylene glycol base prediluted (40–60%) heavy duty coolant.
- Ethylene glycol or propylene glycol base heavy duty coolant concentrate in a 40–60% mixture of concentrate with quality water.

Water quality is important to the performance of the cooling system. Distilled, deionized, or demineralized water is recommended for mixing with ethylene glycol and propylene glycol base engine coolant concentrate.

IMPORTANT:

Do **NOT** use cooling system sealing additives or antifreeze that contains sealing additives. Ethylene glycol and propylene glycol may alter the freeze temperature. Verify that the mixture meets the freeze protection criteria of its intended use.

8.5 Fuel Specifications

Table 8.18 Fuel Specification

Fuel	Specification	Sulphur (by weight)	Water and Sediment (by volume)	Cetane No.	Lubricity
No.2 ULSD	ASTM D975	0.5% maximum	0.05% maximum	40°C (104°F) minimum	520 microns
No.1 and No.2 mix ²⁰ ULSD	n/a	0.5% maximum preferred (1% maximum)	0.1% maximum	45–55°C (113–131°F) cold weather / high altitude	460 microns

In extreme situations, when available fuels are of poor quality or problems exist which are specific to certain operations, additives can be used; however, the engine manufacturer recommends consulting 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 improve 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.
- A lubricity enhancer can be used to increase the lubricity of fuels so that they meet the requirements given in Table 8.18, page 288.

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

Predelivery Checklist

Perform these checks and adjustments prior to delivery to your Customer. Complete this checklist and provide it to the Dealer or the Operator.



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

Windrower Serial Number:

Engine Serial Number:

Table .19 Self-Propelled Windrower Predelivery Checklist – Container Shipments

✓	Item	Reference
	Check for shipping damage or missing parts. Be sure all shipping dunnage is removed.	—
	Check for loose hardware. Tighten to required torque.	<i>8 Reference, page 273</i>
	Check tire air pressures and adjust as required.	<i>4.2.1 Checking Tire Pressure, page 83</i>
	Check final drive hub lubricant level.	<i>4.12 Checking and Adding Wheel Drive Lubricant, page 100</i>
	Check engine coolant level and strength at reserve tank.	<i>4.8 Checking Engine Coolant, page 90</i>
	Check air cleaner and clamps.	<i>4.3 Checking Engine Air Intake, page 85</i>
	Check hydraulic oil level and check for leaks along lines.	<i>4.4 Checking Hydraulic Oil Level, page 86</i>
	Check fuel separator for water and foreign material. Drain and clean as necessary. Add fuel.	<i>4.5 Checking Fuel Separator, page 87</i>
	Check engine oil level.	<i>4.6 Checking Engine Oil Level, page 88</i>
	Check gearbox lubricant level.	<i>4.7 Checking Gearbox Lubricant Level, page 89</i>
	Check tension of air conditioning compressor belt.	<i>4.9 Checking Air Conditioning Compressor Belt, page 91</i>
	Check that machine is completely lubricated.	<i>3.15 Lubrication, page 73</i>
	Check neutral interlock system.	<i>5.1 Checking Safety System, page 103</i>
	Start engine and run to operating temperature.	<i>5.3 Checking Windrower Startup, page 107</i>
	Check CDM for operation.	<i>5.5 Checking Gauges and Cab Display Module Display, page 109</i>
	Check Operator’s Presence System.	<i>5.7 Checking Operator Presence System, page 111</i>
	Check alternator charge rate on CDM.	<i>5.6 Checking Electrical System, page 110</i>
	Check fuel gauge / indicator for operation.	<i>5.5 Checking Gauges and Cab Display Module Display, page 109</i>
	Check that air conditioning is functioning properly.	<i>5.11 Checking Air Conditioning and Heater, page 119</i>
	Check that heater is functioning properly.	<i>5.11 Checking Air Conditioning and Heater, page 119</i>
	Check instrument console gauge lights.	<i>5.5 Checking Gauges and Cab Display Module Display, page 109</i>
	Check maximum (no load) engine speed at CDM.	<i>5.4 Checking Engine Speed, page 108</i>
	Check that exterior lights are functioning properly.	<i>5.8 Checking Exterior Lights, page 113</i>
	Check that interior lights are functioning properly.	<i>5.10 Checking Interior Lights, page 118</i>

REFERENCE

Table .19 Self-Propelled Windrower Predelivery Checklist – Container Shipments (continued)

✓	Item	Reference
	Complete the header's Predelivery Checklist.	—
	Check that manuals are in the windrower manual case.	<i>5.12 Checking Manuals, page 120</i>
	Remove plastic coverings from cab interior.	<i>5.13 Performing Final Steps, page 121</i>

Date Checked:

Checked by:

MacDon®

CUSTOMERS
MacDon.com

DEALERS
Portal.MacDon.com

Trademarks of products are the marks of their
respective manufacturers and/or distributors.

Printed in Canada