

PW8 Pick-Up Header

Operator's Manual

147726 Revision A

2016 Model Year

Original Instruction


PW8 Pick-Up Header



1006866

Published in June, 2015

Declaration of Conformity

|  <h2 style="text-align: center;">EC Declaration of Conformity</h2> | | | |
|---|--|---|--|
| <p>[1] MacDon</p> <p>MacDon Industries Ltd. 680 Moray Street, Winnipeg, Manitoba, Canada R3J 3S3</p> | | <p>[4] As Per Shipping Document</p> <p>[5] July 31, 2014</p> | |
| <p>[2] Combine Pick-Up Header</p> <p>[3] MacDon PW8</p> | | <p>[6] _____</p> <p style="text-align: right;">Natalia Pedersen 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>Hartmut Hartmann Wersener Holz 2a D-49504 Lotte (Germany) hartmut.hartmann@prodoku.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>Хартмут Хартман Wersener Holz 2a D-49504 Lotte (Германия) hartmut.hartmann@prodoku.com</p> | <p>My, [1]</p> <p>Prohláším, že produkt:</p> <p>Typ zařízení: [2]</p> <p>Název a model: [3]</p> <p>Sériové(a) 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>Hartmut Hartmann Wersener Holz 2a D-49504 Lotte (Německo) hartmut.hartmann@prodoku.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>Hartmut Hartmann Wersener Holz 2a D-49504 Lotte (Tyskland) hartmut.hartmann@prodoku.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>Hartmut Hartmann Wersener Holz 2a D-49504 Lotte (Deutschland) hartmut.hartmann@prodoku.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>Hartmut Hartmann Wersener Holz 2a D-49504 Lotte (Germany) hartmut.hartmann@prodoku.com</p> | <p>Meie, [1]</p> <p>deklareerime, et toode:</p> <p>Seadme tüüp: [2]</p> <p>Nimi ja mudel: [3]</p> <p>Seerianumbrid: [4]</p> <p>vastab kõigile direktiivi 2006/42/EÜ asjakohastele sätetele.</p> <p>Kasutatud on järgnevald 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>Hartmut Hartmann Wersener Holz 2a D-49504 Lotte (Saksamaa) hartmut.hartmann@prodoku.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>Hartmut Hartmann Wersener Holz 2a D-49504 Lotte (Allemagne) hartmut.hartmann@prodoku.com</p> |


| | |
|--|---|
| <p><i>The Harvesting Specialists</i></p> |  |
|--|---|

Figure 1: EC Declaration of Conformity

EC Declaration of Conformity

| IT | HU | LT | LV |
|--|--|--|---|
| <p>Noi, [1] Dichiaro che il prodotto: Tipo di macchina: [2] Nome e modello: [3] Numero(i) di serie: [4] soddisfa tutte le disposizioni rilevanti della direttiva 2006/42/CE.</p> <p>Utilizzo degli standard armonizzati, come indicato nell'Articolo 7(2):</p> <p style="text-align: center;">EN ISO 4254-1:2013 EN ISO 4254-7:2009</p> <p>Luogo e data della dichiarazione: [5] Nome e firma della persona autorizzata a redigere la dichiarazione: [6] Nome e persona autorizzata a compilare il file tecnico: Hartmut Hartmann Wersener Holz 2a D-49504 Lotte (Germania) hartmut.hartmann@prodoku.com</p> | <p>Mi, [1] Ezennel kijelentjük, hogy a következő termék: Gép típusa: [2] Név és modell: [3] Számszám(ok): [4] teljesíti a következő irányelv összes vonatkozó előírásait: 2006/42/EK.</p> <p>Az alábbi harmonizált szabványok kerültek alkalmazásra a 7(2) cikkely szerint:</p> <p style="text-align: center;">EN ISO 4254-1:2013 EN ISO 4254-7:2009</p> <p>A nyilatkozattétel ideje és helye: [5] Azon személy kiléte és aláírása, aki jogosult a nyilatkozat elkészítésére: [6] Azon személy neve és aláírása, aki felhatalmazott a műszaki dokumentáció összeállítására: Hartmut Hartmann Wersener Holz 2a D-49504 Lotte (Németország) hartmut.hartmann@prodoku.com</p> | <p>Mes, [1] Pareikšame, kad šis produktas: Mašinos tipas: [2] Pavadinimas ir modelis: [3] Serijos numeris (-iai): [4] atitinka taikomus reikalavimus pagal Direktyvą 2006/42/EB.</p> <p>Naudojami harmonizuoti standartai, kai nurodoma straipsnyje 7(2):</p> <p style="text-align: center;">EN ISO 4254-1:2013 EN ISO 4254-7:2009</p> <p>Deklaracijos vieta ir data: [5] Asmens tapatybės duomenys ir parašas asmens, įgaliojato sudaryti šią deklaraciją: [6] Vardas ir pavardė asmens, kuris įgaliojotas sudaryti šį techninį failą: Hartmut Hartmann Wersener Holz 2a D-49504 Lotte (Vokietija) hartmut.hartmann@prodoku.com</p> | <p>Mēs, [1] Deklarēju, ka produkts: Mašīnas tips: [2] Nosaukums un modelis: [3] Sērijas numurs(-i): [4] Atbilst visām būtiskajām Direktīvas 2006/42/EK prasībām.</p> <p>Piemēroti šādi saskaņotie standarti, kā minēts 7. pantā 2. punktā:</p> <p style="text-align: center;">EN ISO 4254-1:2013 EN ISO 4254-7:2009</p> <p>Deklarācijas parakstīšanas vieta un datums: [5] Tās personas vārds, uzvārds un paraksts, kas ir pilnvarota sagatavot šo deklarāciju: [6] Tās personas vārds, uzvārds un adrese, kas ir pilnvarota sastādīt tehnisko dokumentāciju: Hartmut Hartmann Wersener Holz 2a D-49504 Lotte (Vācija) hartmut.hartmann@prodoku.com</p> |
| <p>Wij, [1] Verklaren dat het product: Machinetype: [2] Naam en model: [3] Serienummer(s): [4] voldoet aan alle relevante bepalingen van de Richtlijn 2006/42/EC.</p> <p>Geharmoniseerde normen toegepast, zoals vermeld in Artikel 7(2):</p> <p style="text-align: center;">EN ISO 4254-1:2013 EN ISO 4254-7:2009</p> <p>Plaats en datum van verklaring: [5] Naam en handtekening van de bevoegde persoon om de verklaring op te stellen: [6] Naam en adres van de geautoriseerde persoon om het technisch dossier samen te stellen: Hartmut Hartmann Wersener Holz 2a D-49504 Lotte (Duitsland) hartmut.hartmann@prodoku.com</p> | <p>My nilej podpisan, [1] Oświadczamy, że produkt: Typ urządzenia: [2] Nazwa i model: [3] Numer seryjny/numery seryjne: [4] spełnia wszystkie odpowiednie przepisy dyrektywy 2006/42/WE.</p> <p>Zastosowaliśmy następujące (zharmonizowane) normy zgodnie z artykułem 7(2):</p> <p style="text-align: center;">EN ISO 4254-1:2013 EN ISO 4254-7:2009</p> <p>Data i miejsce oświadczenia: [5] Imię i nazwisko oraz podpis osoby upoważnionej do przygotowania deklaracji: [6] Imię i nazwisko oraz adres osoby upoważnionej do przygotowania dokumentacji technicznej: Hartmut Hartmann Wersener Holz 2a D-49504 Lotte (Niemcy) hartmut.hartmann@prodoku.com</p> | <p>Nós, [1] Declaramos, que o produto: Tipo de máquina: [2] Nome e Modelo: [3] Número(s) de Série: [4] cumpre todas as disposições relevantes da Directiva 2006/42/CE.</p> <p>Normas harmonizadas aplicadas, conforme referido no Artigo 7(2):</p> <p style="text-align: center;">EN ISO 4254-1:2013 EN ISO 4254-7:2009</p> <p>Local e data da declaração: [5] Identidade e assinatura da pessoa autorizada a elaborar a declaração: [6] Nome e endereço da pessoa autorizada a compilar o ficheiro técnico: Hartmut Hartmann Wersener Holz 2a D-49504 Lotte (Alemanha) hartmut.hartmann@prodoku.com</p> | <p>Noi, [1] Declarăm, că următorul produs: Tipul mașinii: [2] Denumirea și modelul: [3] Număr (numere) serie: [4] corespunde tuturor dispozițiilor esențiale ale directivei 2006/42/EC.</p> <p>Au fost aplicate următoarele standarde armonizate conform articolului 7(2):</p> <p style="text-align: center;">EN ISO 4254-1:2013 EN ISO 4254-7:2009</p> <p>Data și locul declarației: [5] Identitatea și semnătura persoanei împuternicite pentru întocmirea declarației: [6] Numele și semnătura persoanei autorizate pentru întocmirea cărții tehnice: Hartmut Hartmann Wersener Holz 2a D-49504 Lotte (Germania) hartmut.hartmann@prodoku.com</p> |
| <p>Mi, [1] Izjavljujem da proizvod Tip mašine: [2] Naziv i model: [3] Serijski broj(ovi): [4] Ispunjava sve relevantne odredbe direktive 2006/42/EC.</p> <p>Korišćen su usklađeni standardi kao što je navedeno u članu 7(2):</p> <p style="text-align: center;">EN ISO 4254-1:2013 EN ISO 4254-7:2009</p> <p>Datum i mesto izdavanja deklaracije: [5] Identitet i potpis lica ovlašćenog za sastavljanje deklaracije: [6] Ime i adresa osobe ovlašćene za sastavljanje tehničke datoteke: Hartmut Hartmann Wersener Holz 2a D-49504 Lotte (Nemačka) hartmut.hartmann@prodoku.com</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>Harmoniserade standarder används, såsom anges i artikel 7(2):</p> <p style="text-align: center;">EN ISO 4254-1:2013 EN ISO 4254-7:2009</p> <p>Plats och datum för intyget: [5] Identitet och signatur för person med befogenhet att upprätta intyget: [6] Namn och adress för person behörig att upprätta den tekniska dokumentationen: Hartmut Hartmann Wersener Holz 2a D-49504 Lotte (Tyskland) hartmut.hartmann@prodoku.com</p> | <p>Mi, [1] izjavljamo, da izdelek: Vrsta stroja: [2] Ime in model: [3] Serijska/-e številka/-e: [4] ustreza vsem zadevnim določbam Direktive 2006/42/ES.</p> <p>Uporabljeni usklajeni standardi, kot je navedeno v členu 7(2):</p> <p style="text-align: center;">EN ISO 4254-1:2013 EN ISO 4254-7:2009</p> <p>Kraj in datum izjave: [5] Istovetnost in podpis osebe, pooblaščenega za pripravo izjave: [6] Ime in naslov osebe, pooblaščenega za pripravo tehnične datoteke: Hartmut Hartmann Wersener Holz 2a D-49504 Lotte (Nemčija) hartmut.hartmann@prodoku.com</p> | <p>My, [1] týmto prehlasujem, že tento výrobok: Typ zariadenia: [2] Názov a model: [3] Výrobné číslo: [4] splňa príslušné ustanovenia a základné požiadavky smernice č. 2006/42/ES.</p> <p>Použitá harmonizované normy, ktoré sa uvádzajú v článku č. 7(2):</p> <p style="text-align: center;">EN ISO 4254-1:2013 EN ISO 4254-7:2009</p> <p>Miesto a dátum prehlásenia: [5] Meno a podpis osoby oprávnenej vypracovať toto prehlásenie: [6] Meno a adresa osoby oprávnenej zostaviť technický súbor: Hartmut Hartmann Wersener Holz 2a D-49504 Lotte (Nemecko) hartmut.hartmann@prodoku.com</p> |

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Figure 2: EC Declaration of Conformity

Introduction

This manual contains operating and maintenance procedures for the MacDon PW8 Pick-Up Header for the following combines:

Table 1 Combine Models

| Combine | Model |
|-------------|---|
| Case IH | 50/60/7088, 51/61/7130, 51/61/7140, 70/8010, 71/81/9120, 72/82/9230, and 72/82/9240 |
| John Deere | 96/97/9860STS, 96/97/9870, S650/660/670/680/690, 9660WTS, and T670 |
| New Holland | All CR/CX Series |
| Versatile | RT490 |

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

Keep this manual handy for frequent reference and to pass on to new Operators or Owners. The PW8 Pick-Up Header Parts Catalog also is supplied with your new header. Call your Dealer if you need assistance, information, or additional copies of the manuals.

Store the operator's manual and the parts catalog in the manual case (A) attached to the back of the header.

NOTE:

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

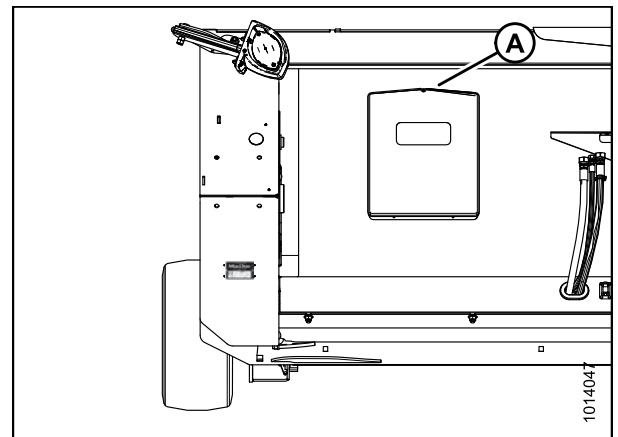


Figure 3: Manual Case

Serial Number

Record the serial number of the PW8 Combine Pick-Up Header here:

The serial number plate is located on the left endsheet (A).

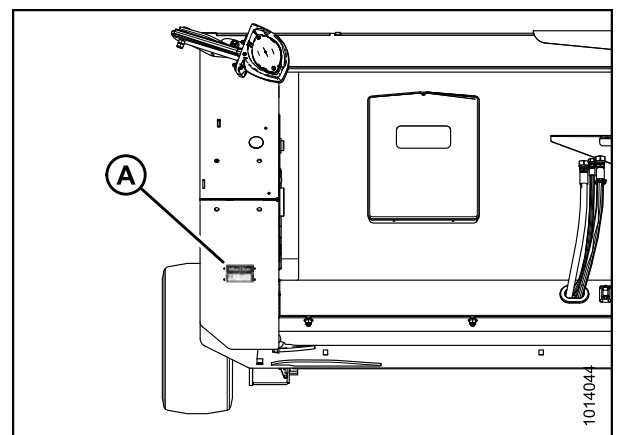


Figure 4: Serial Number Plate

List of Revisions

Table 2 List of Revisions

| Summary of Change | Location |
|--|--|
| Revised EC Declaration of Conformity. | <i>Declaration of Conformity, page i</i> |
| Added Versatile information to Introduction. | <i>Introduction, page iii</i> |
| Added Versatile feeder house size information. | <i>3.9 Changing Header Opening, page 35</i> |
| Added attaching and detaching procedures for Versatile combines. | <i>3.10.4 Versatile, page 54</i> |
| Revised auger position measurements. | <i>Checking Auger Position, page 64</i> |
| Revised stripper plate clearance measurements. | <i>Adjusting Stripper Plate Clearance, page 69</i> |
| Revised illustration to clarify measurement between front and rear drive roller. | <i>Aligning Rear Draper Deck Rollers, page 193</i> |
| Added Versatile combine completion package kit information. | <i>6.2 Combine Completion Package Kits, page 228</i> |

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1 Safety

1.1 Safety Alert Symbols

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

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. The appropriate signal word for each situation has been selected using the following guidelines:

DANGER

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

WARNING

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

CAUTION

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

1.3 General Safety

CAUTION

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

Protect yourself.

- When assembling, operating, and servicing machinery, wear all the protective clothing and personal safety devices that **could** be necessary for the job at hand. Don't 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
- Be aware that exposure to loud noises can cause hearing impairment or loss. Wear suitable hearing protection devices such as ear muffs or ear plugs to help protect against objectionable or loud noises.



Figure 1.2: Safety Equipment

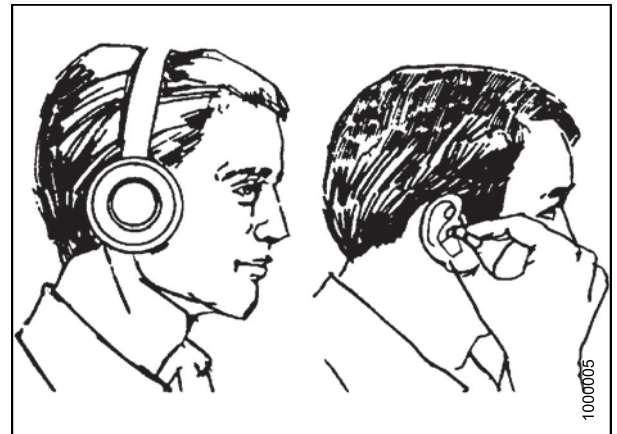


Figure 1.3: Safety Equipment

- Provide a first aid kit for use in case of emergencies.
- Keep a fire extinguisher on the machine. Be sure the fire extinguisher is properly maintained. Be familiar with its proper use.
- Keep young children away from the machinery at all times.
- Be aware that accidents often happen when the Operator is tired or in a hurry. Take the time to consider the safest way. Never ignore the warning signs of fatigue.

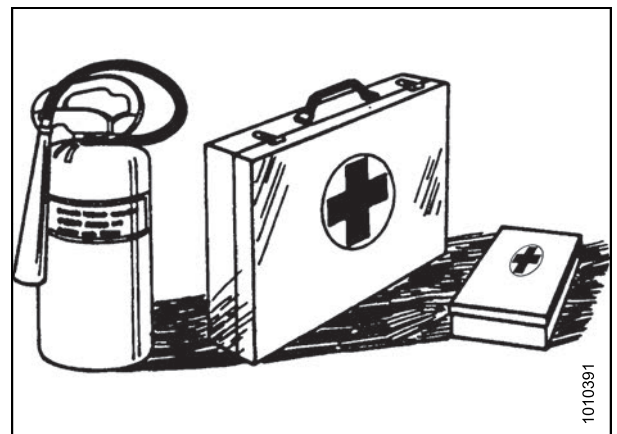


Figure 1.4: Safety Equipment

SAFETY

- Wear close-fitting clothing and cover long hair. Never wear dangling items such as scarves or bracelets.
- Keep all shields in place. Never alter or remove safety equipment. Make sure driveline guards can rotate independently of the shaft and can telescope freely.
- Use only service and repair parts made or approved by the equipment manufacturer. Substituted parts may not meet 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. Non-authorized modifications may impair machine function and/or safety. It may also shorten the machine's life.
- To avoid bodily injury or death from unexpected startup of machine, always stop engine and remove key from ignition before leaving operator's seat for any reason.

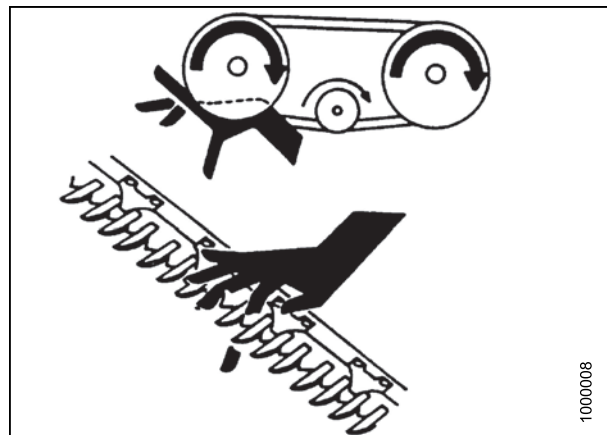


Figure 1.6: Safety Around Equipment

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



Figure 1.7: Safety Around Equipment

1.4 Maintenance Safety

To ensure your safety while maintaining the machine:

- Review the operator's manual and all safety items before operation and/or maintenance of the machine.
- Place all controls in Neutral, stop the engine, set the park brake, remove the ignition key, and wait for all moving parts to stop before servicing, adjusting, and/or repairing.
- Follow good shop practices:
 - Keep service areas clean and dry
 - Be sure electrical outlets and tools are properly grounded
 - Use adequate lighting for the job at hand
- Relieve pressure from hydraulic circuits before servicing and/or disconnecting the machine.
- Make sure all components are tight and that steel lines, hoses, and couplings are in good condition before applying pressure to hydraulic systems.
- Keep hands, feet, clothing, and hair away from all moving and/or rotating parts.
- Clear the area of bystanders, especially children, when carrying out any maintenance, repairs or, adjustments.
- Install transport lock or place safety stands under the frame before working under the .
- If more than one person is servicing the machine at the same time, be aware that rotating a driveline or other mechanically-driven component by hand (for example, accessing a lube fitting) will cause drive components in other areas (belts, pulleys, and knives) to move. Stay clear of driven components at all times.
- Wear protective gear when working on the machine.
- Wear heavy gloves when working on knife components.



Figure 1.8: Safety Around Equipment

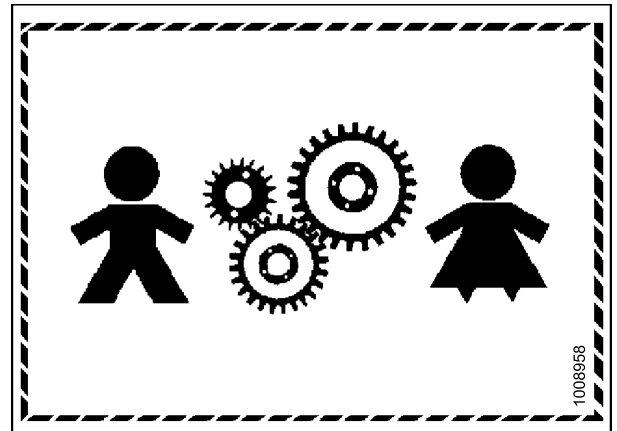


Figure 1.9: Equipment NOT Safe for Children

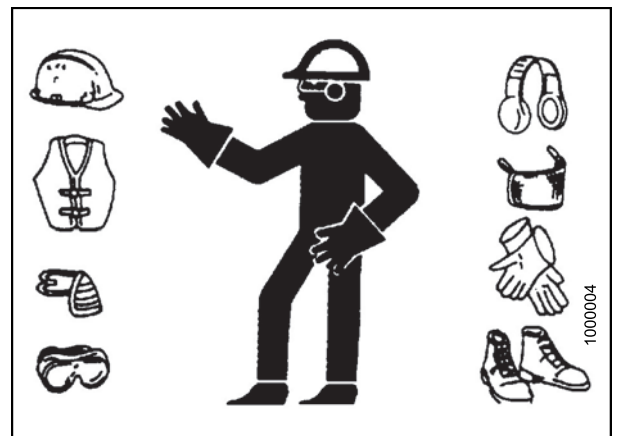


Figure 1.10: Safety Equipment

1.5 Hydraulic Safety

- Always place all hydraulic controls in Neutral before dismounting.
- Make sure that all 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 the hydraulic lines, fittings, or hoses by using tapes, clamps, cements, or welding. The hydraulic system operates under extremely high pressure. Makeshift repairs will fail suddenly and create hazardous and unsafe conditions.

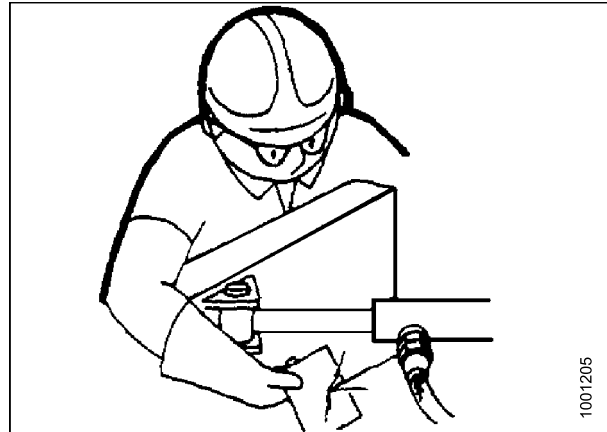


Figure 1.11: Testing for Hydraulic Leaks

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



Figure 1.12: Hydraulic Pressure Hazard

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

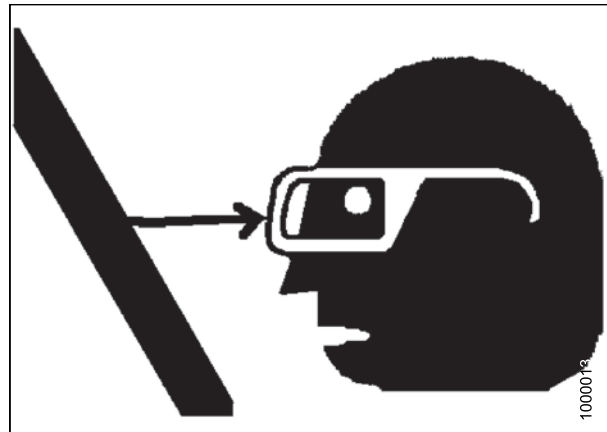


Figure 1.13: Safety Around Equipment

1.6 Safety Signs

- Keep safety signs clean and legible at all times.
- Replace safety signs that are missing or become illegible.
- If original parts on which a safety sign was installed are replaced, be sure the repair part also bears the current safety sign.
- Safety signs are available from your Dealer Parts Department.

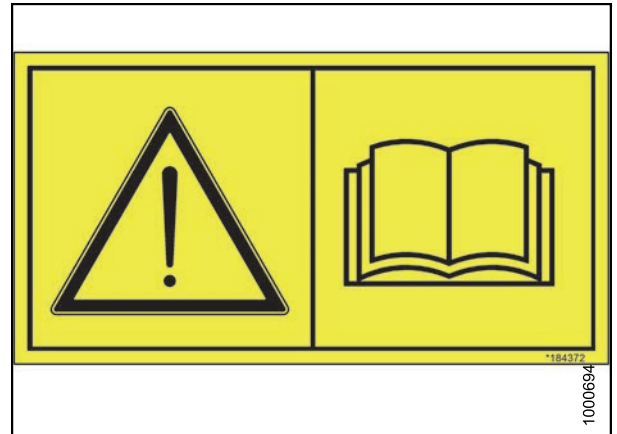
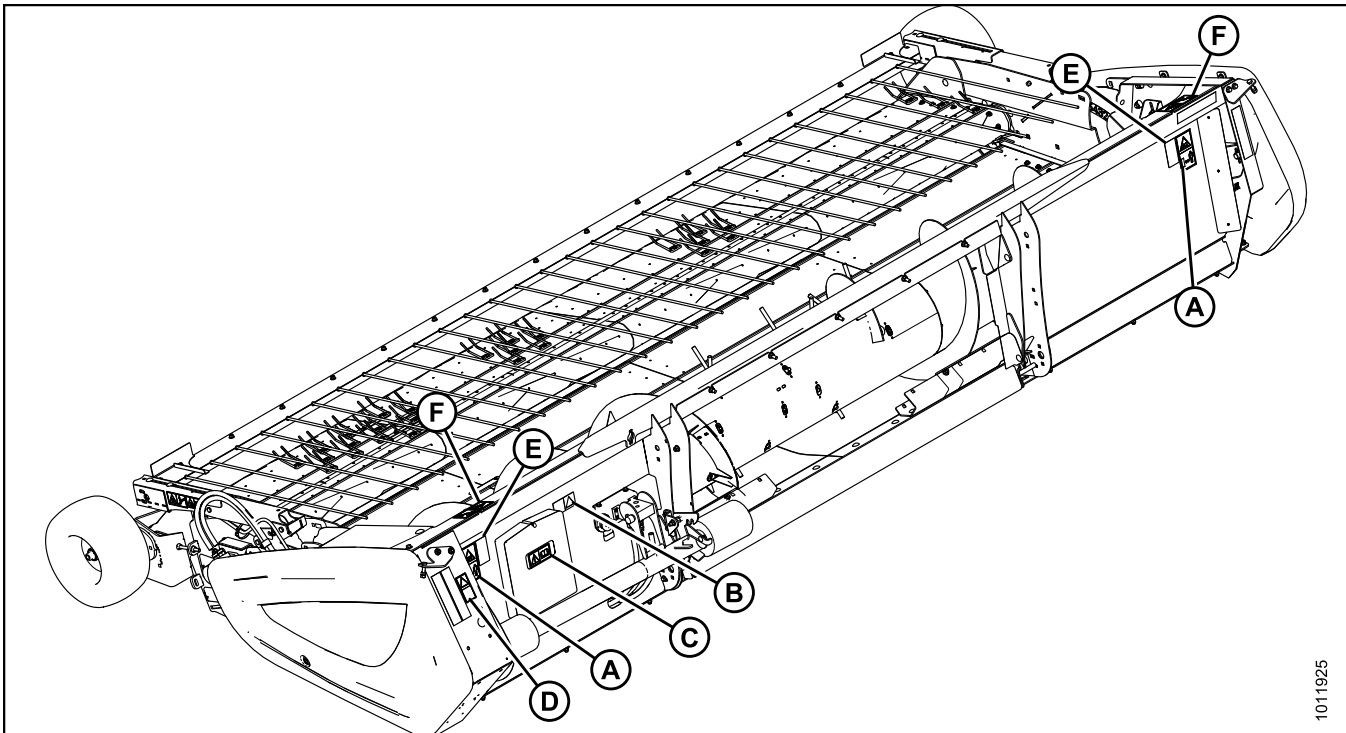


Figure 1.14: Operator's Manual Decal

1.6.1 Installing Safety Decals

1. Clean and dry the installation area.
2. Decide on the exact location before you remove the decal backing paper.
3. Remove the smaller portion of the split backing paper.
4. Place the sign in position and slowly peel back the remaining paper, smoothing the sign as it is applied.
5. Prick small air pockets with a pin and smooth out.

1.7 Safety Sign Locations



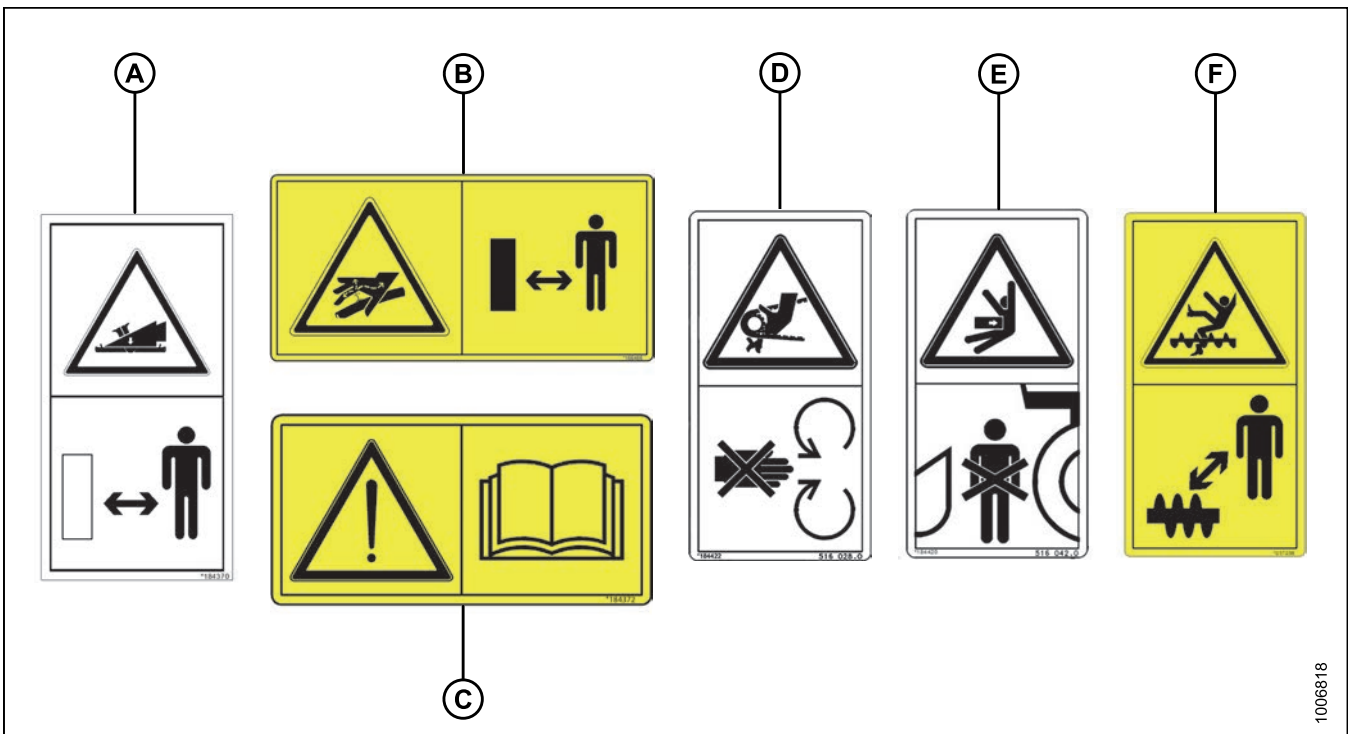
1011925

Figure 1.15: Header Decals – Case IH

A - MD #184370
D - MD #184422

B - MD #166466
E - MD #184420

C - MD #184372
F - MD #237298



1006818

Figure 1.16: Header Decals

SAFETY

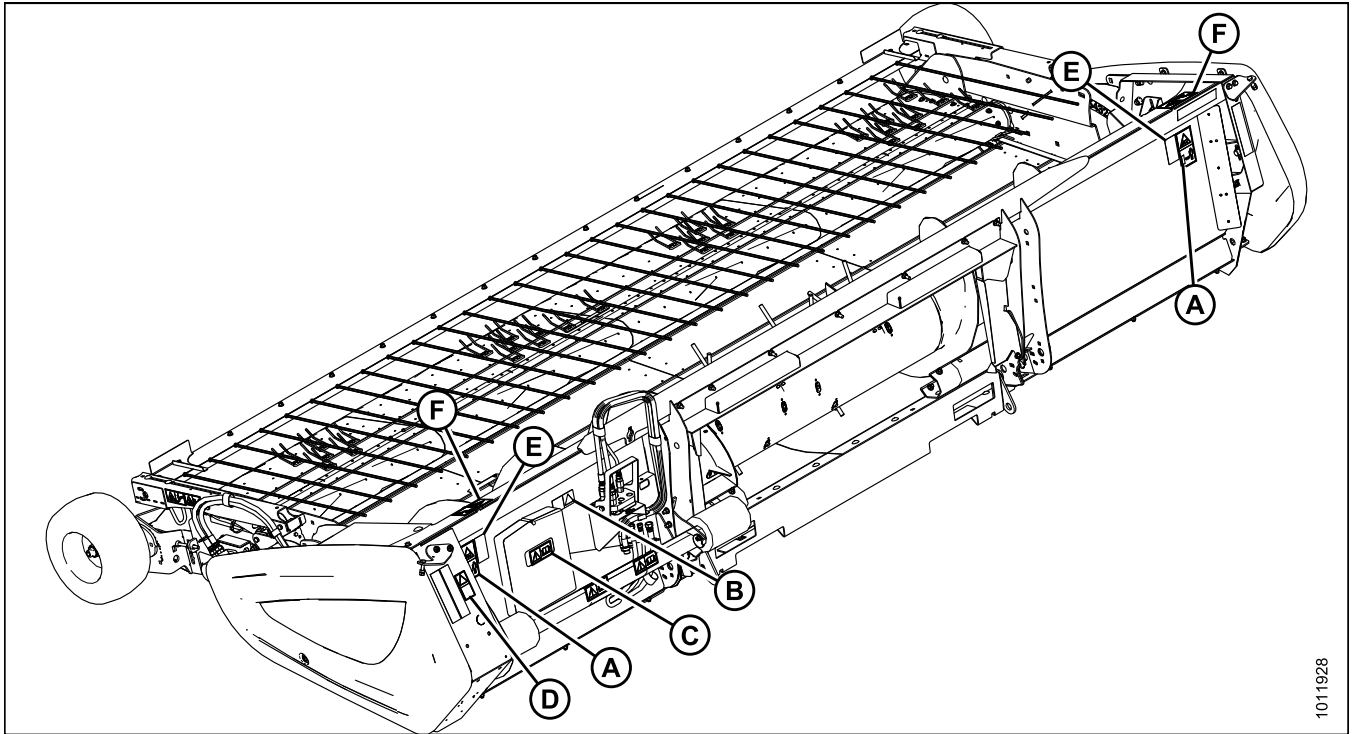


Figure 1.17: Header Decals – John Deere

A - MD #184370
D - MD #184422

B - MD #166466
E - MD #184420

C - MD #184372
F - MD #237298

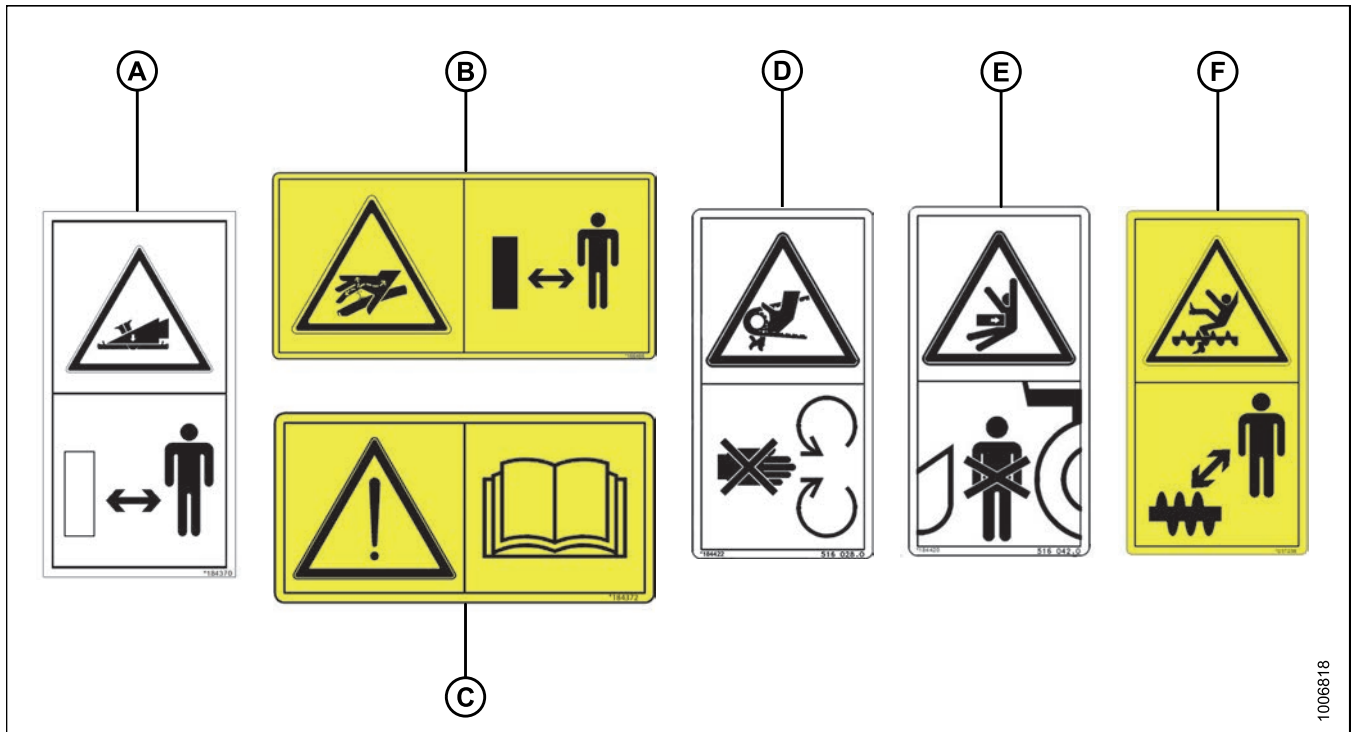


Figure 1.18: Header Decals

SAFETY

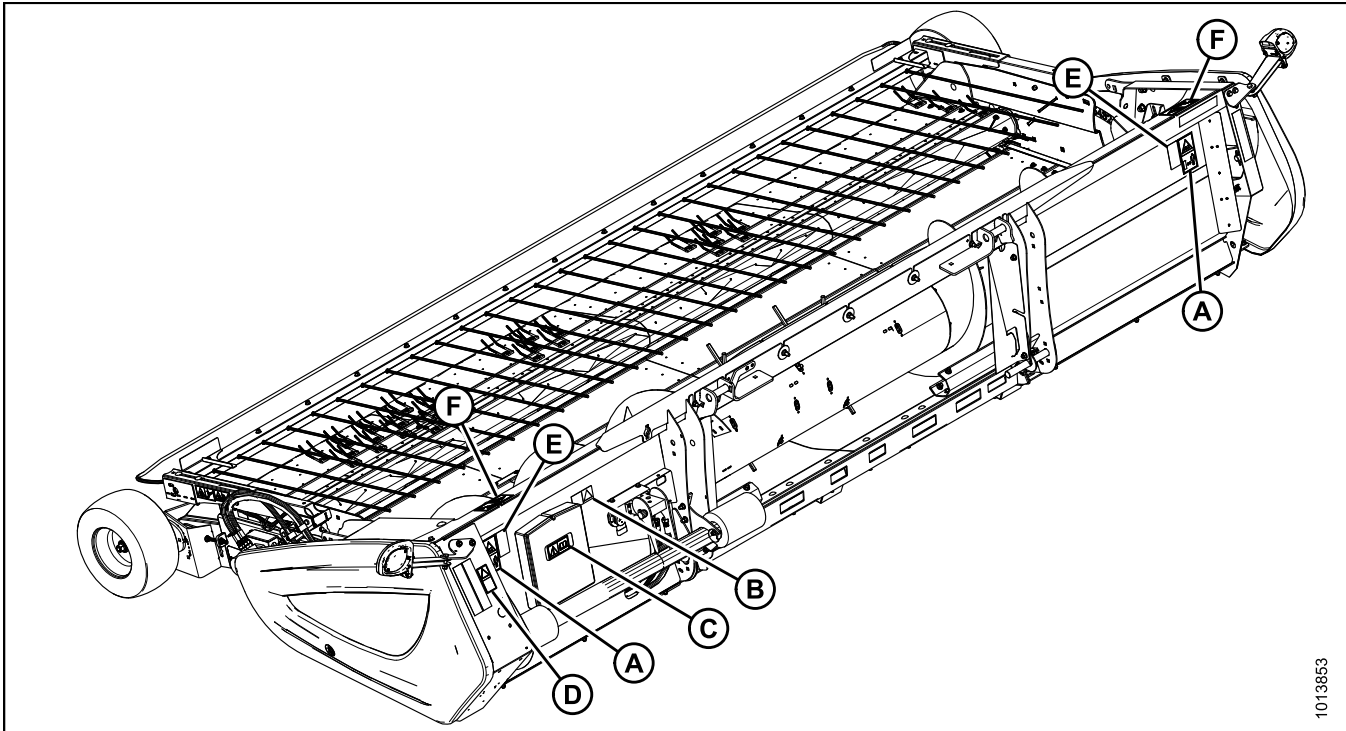


Figure 1.19: Header Decals – Versatile

A - MD #184370
D - MD #184422

B - MD #166466
E - MD #184420

C - MD #184372
F - MD #237298

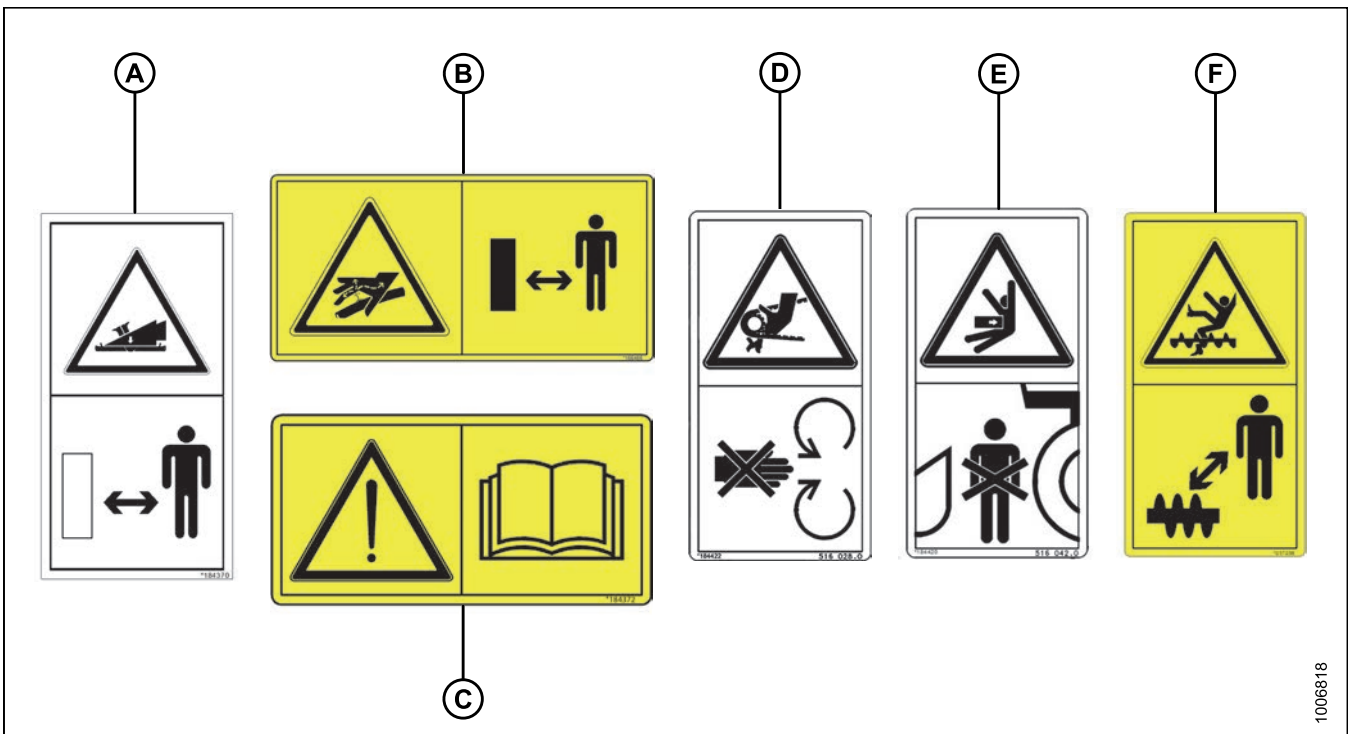


Figure 1.20: Header Decals

SAFETY

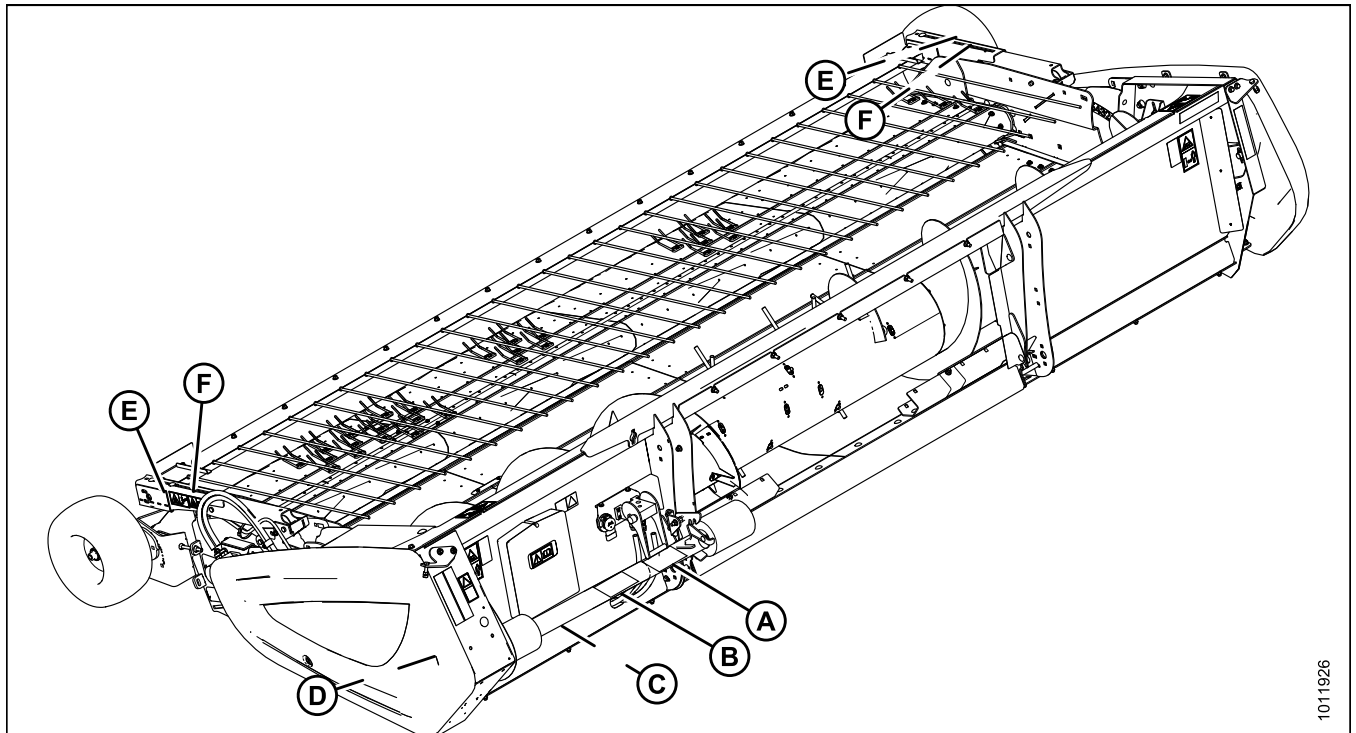


Figure 1.21: Driveline and Hold-Down Decals – Case IH

A - MD #30316

B - MD #191099

C - MD #36651

D - MD #184422 (Behind Endshield)

E - MD #237229

F - MD #237254

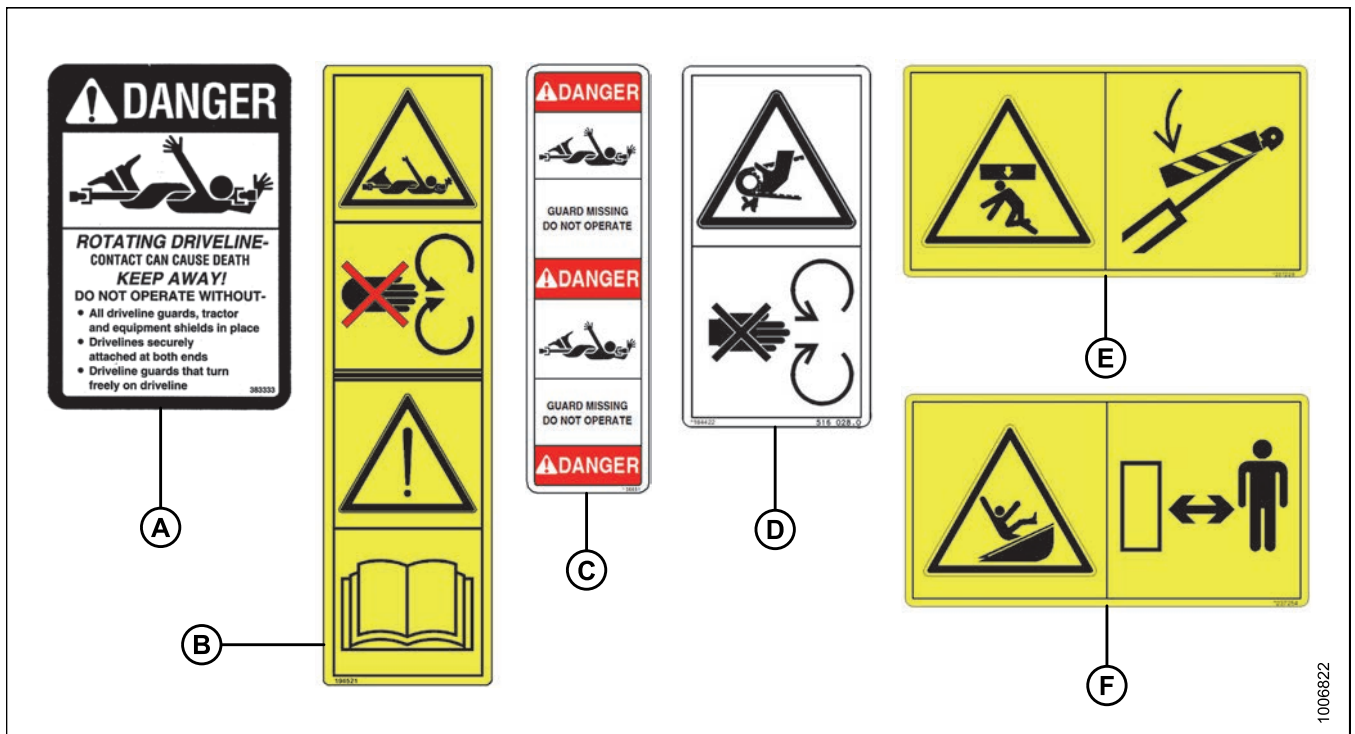
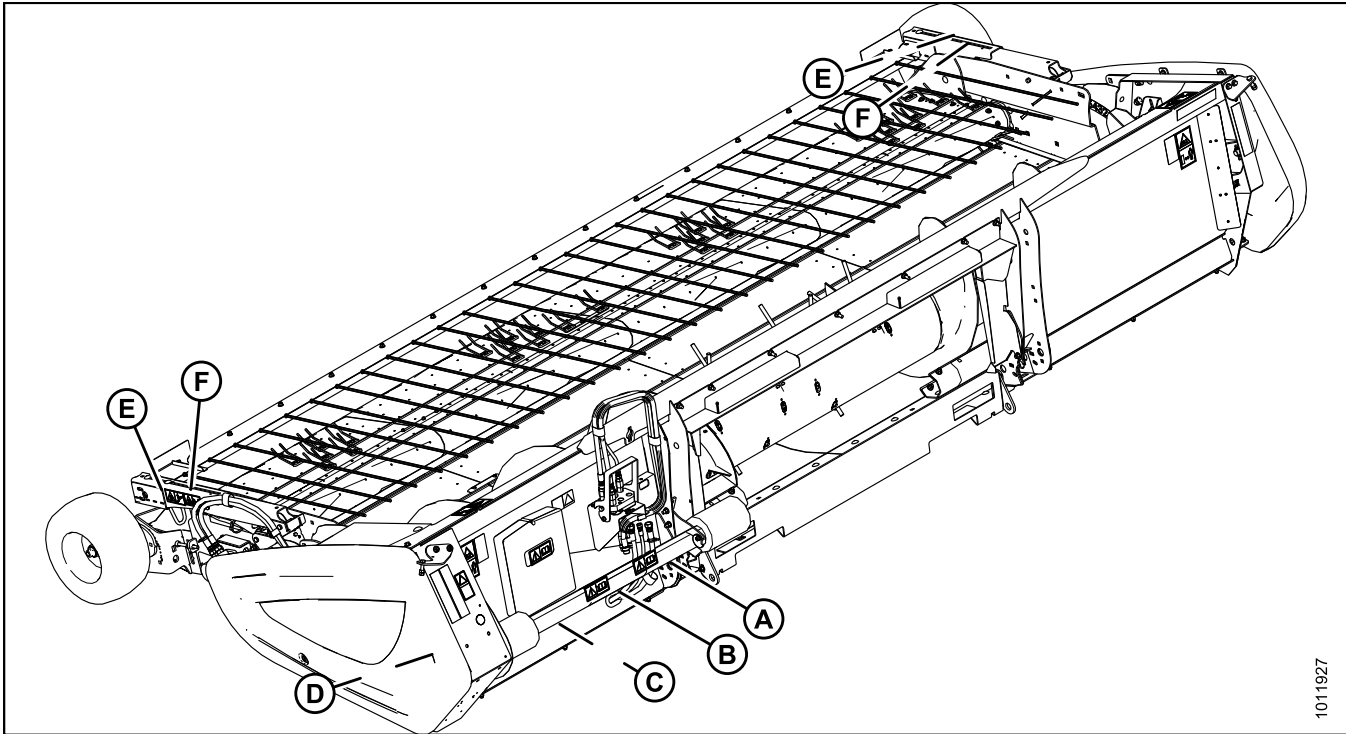


Figure 1.22: Driveline and Hold-Down Decals

SAFETY



1011927

Figure 1.23: Driveline and Hold-Down Decals – John Deere

A - MD #30316

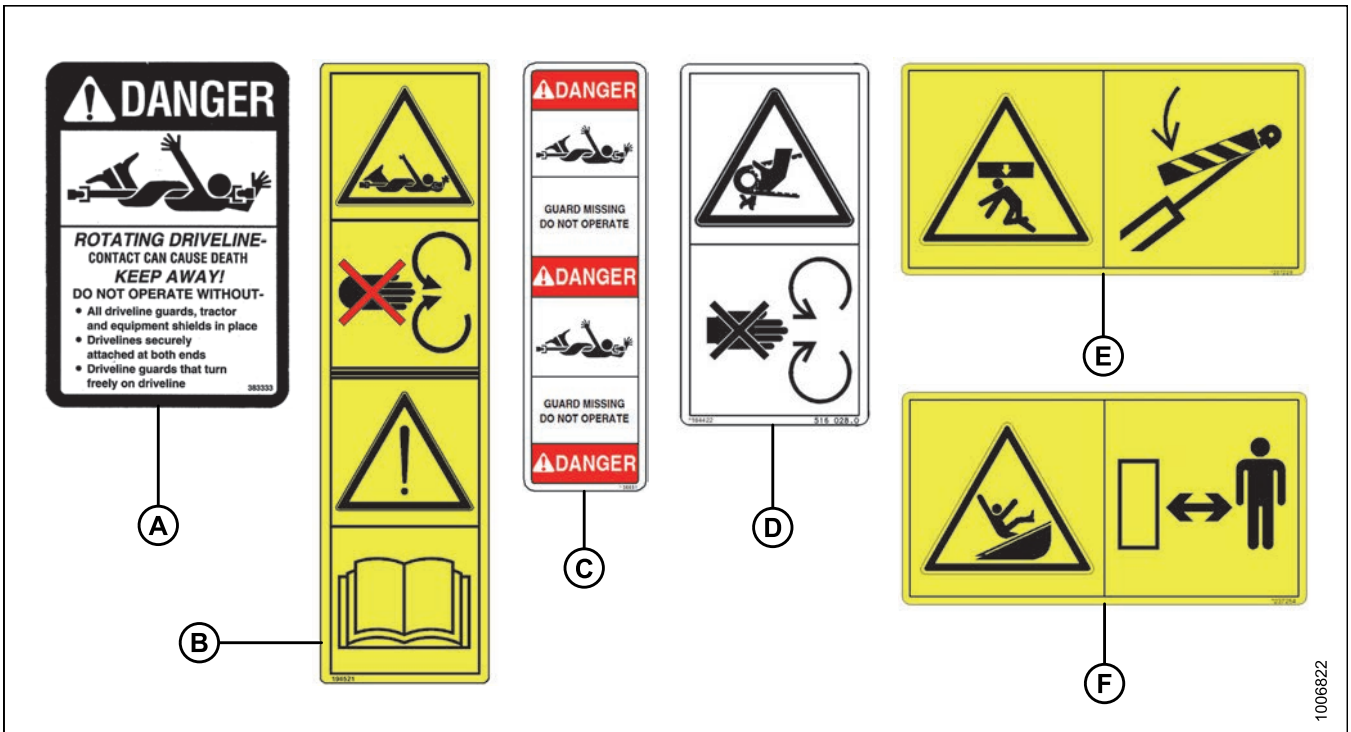
B - MD #191099

C - MD #36651

D - MD #184422 (Behind Endshield)

E - MD #237229

F - MD #237254



1006822

Figure 1.24: Driveline and Hold-Down Decals

SAFETY

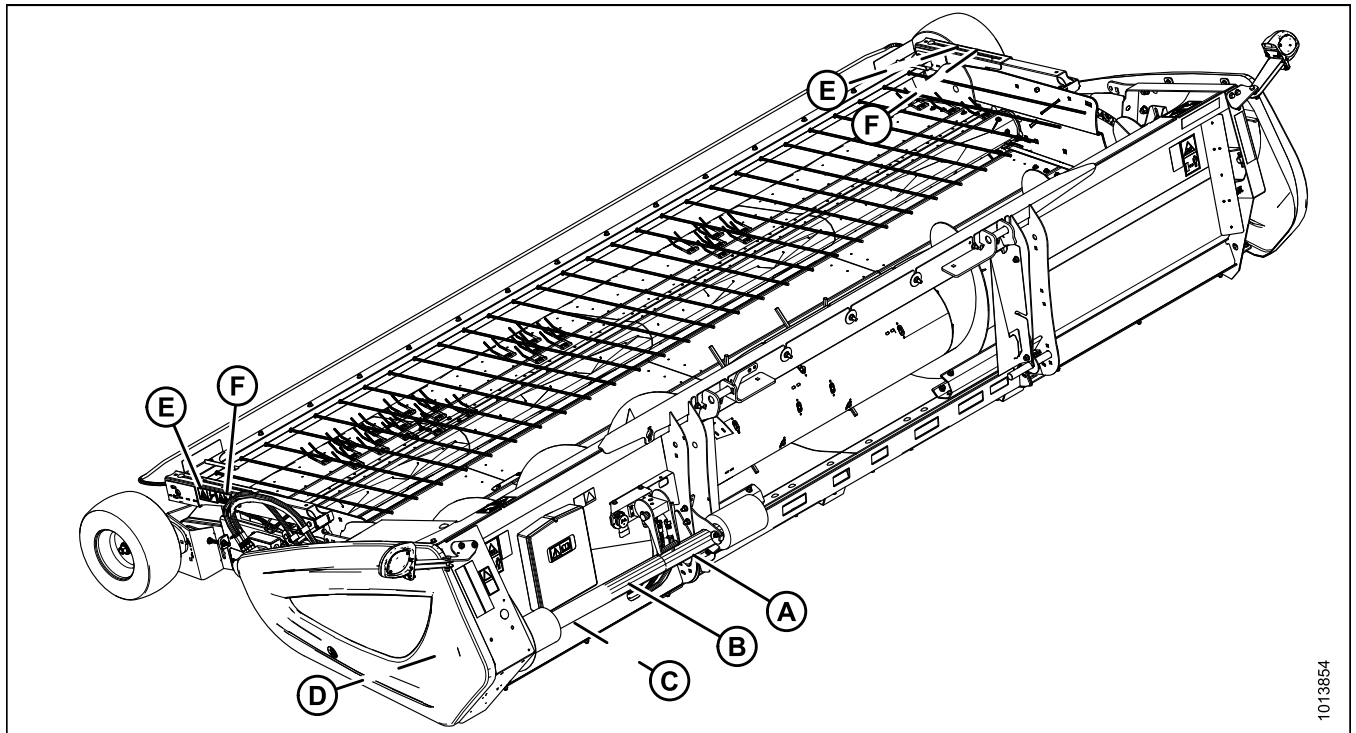


Figure 1.25: Driveline and Hold-Down Decals – Versatile

A - MD #30316

B - MD #191099

C - MD #36651

D - MD #184422 (Behind Endshield)

E - MD #237229

F - MD #237254

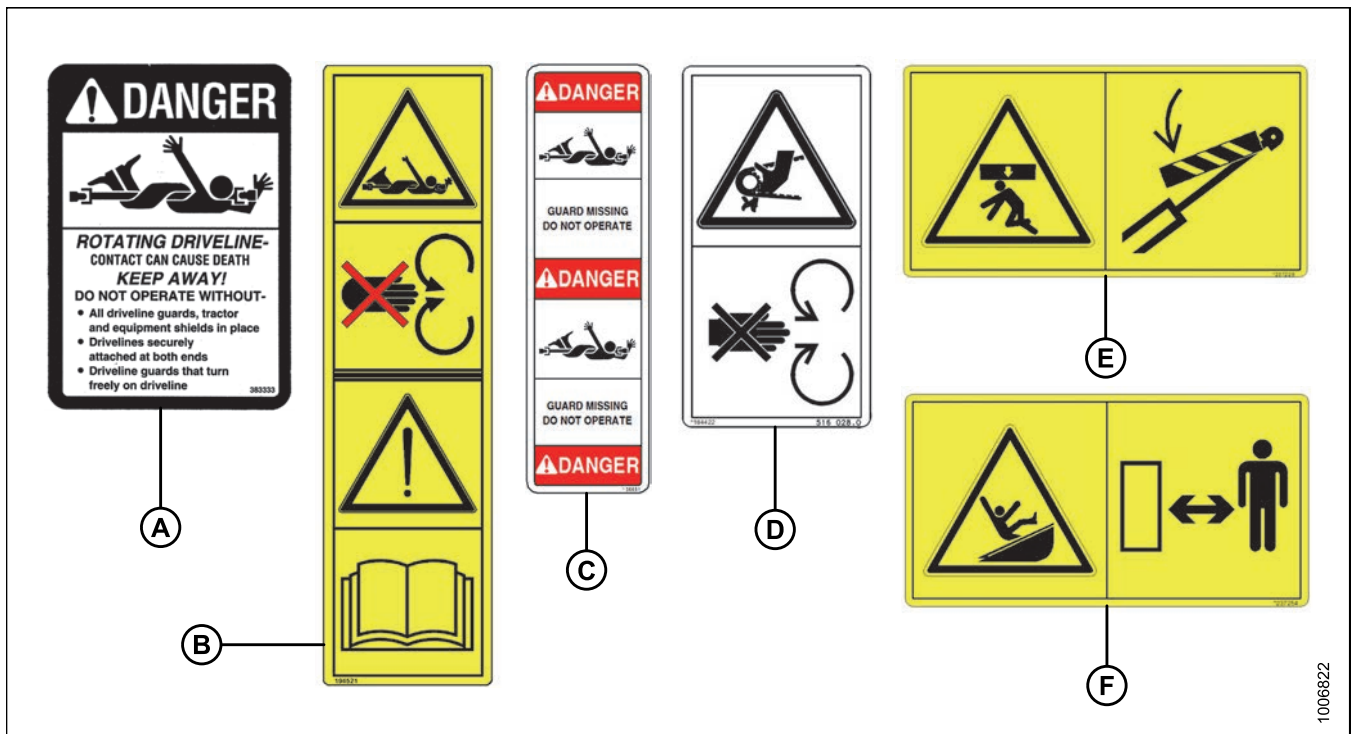


Figure 1.26: Driveline and Hold-Down Decals

1.8 Understanding Safety Signs

MD #30316

Rotating driveline

DANGER

- Rotating driveline contact can cause death—**keep away!**

Do not operate without:

- All driveline guards, tractor, and equipment shields in place.
- Drivelines securely attached at both ends.
- Driveline guards that turn freely on driveline.



Figure 1.27: MD #30316

MD #36651

Rotating driveline

DANGER

- Rotating driveline contact can cause death—**keep away!**

Do not operate without:

- Stopping the engine and removing the key before opening shield.
- All driveline guards, tractor, and equipment shields in place.



Figure 1.28: MD #36651

MD #166466

High pressure oil hazard

WARNING

- Do not go near leaks.
- High pressure oil easily punctures skin causing serious injury, gangrene, or death.
- If injured, seek emergency medical help. Immediate surgery is required to remove oil.
- Do not use finger or skin to check for leaks.
- Lower load or relieve hydraulic pressure before loosening fittings.



Figure 1.29: MD #166466

SAFETY

MD #166833

Run-over hazard

WARNING

- Remove key from ignition.
- Read tractor and mower manufacturer's manuals for inspection and maintenance instructions.
- Read the windrower and header manuals for inspection and maintenance instructions.



Figure 1.30: MD #166425

MD #184370

Crushing hazard

CAUTION

- Rest header on ground or engage cylinder safety props before going under unit.
- Failure to comply could result in death or serious injury.



Figure 1.31: MD #184370

MD #184371

Open drive hazard

WARNING

- Guard missing. Do not operate.
- Keep all shields in place.



Figure 1.32: MD #184371

SAFETY

MD #184372

General hazard pertaining to machine operation and servicing

CAUTION

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

- Read the operator's manual and follow all safety instructions. If you do not have a manual, obtain one from your Dealer.
- Do not allow untrained persons to operate the machine.
- Review safety instructions with all Operators annually.
- Ensure that all safety signs are installed and legible.
- Make certain everyone is clear of machine before starting engine and during operation.
- Keep riders off the machine.
- Keep all shields in place and stay clear of moving parts.
- Disengage header drive, put transmission in Neutral, and wait for all movement to stop before leaving operator's position.
- Shut off the engine and remove the key from ignition before servicing, adjusting, lubricating, cleaning, or unplugging machine.
- Engage safety props to prevent lowering of raised unit before servicing in the raised position.
- Use slow moving vehicle emblem and flashing warning lights when operating on roadways unless prohibited by law.

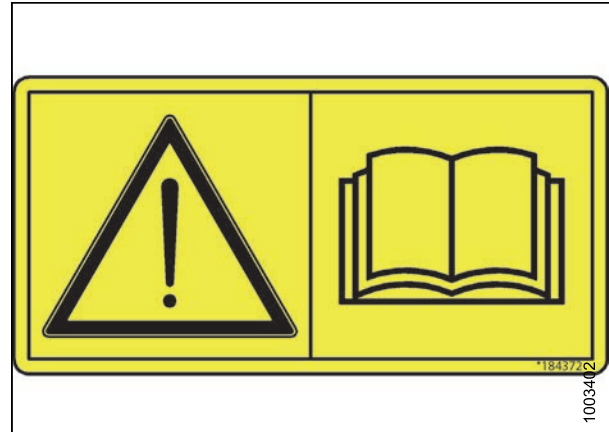


Figure 1.33: MD #184372

MD #184420

Crushing hazard

WARNING

- To avoid injury from being pinned or crushed, stay clear of header while machine is operating or in motion. Failure to comply could result in death or serious injury.



Figure 1.34: MD #184420

SAFETY

MD #184422

Keep shields in place hazard

WARNING

- Do not place hand.
- To avoid injury, stop the engine and remove the key before opening power drive system shield.
- Keep all shields in place.



Figure 1.35: MD #184422

MD #191099

Auger entanglement hazard

CAUTION

- To avoid injury from entanglement with rotating auger, stand clear of header while machine is running.

General hazard pertaining to machine operation and servicing

CAUTION

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

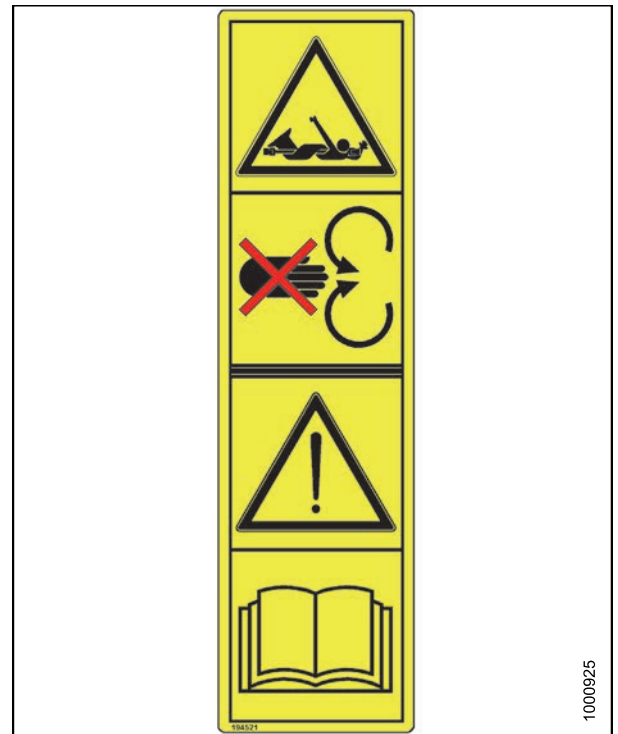


Figure 1.36: MD #191099

SAFETY

MD #237229

Header crushing hazard

WARNING

- Rest header on ground or engage cylinder safety props before going under unit.



Figure 1.37: MD #237229

MD #237254

Header entanglement hazard

CAUTION

- To avoid injury from entanglement with crop gathering elements, stand clear of header while machine is running.



Figure 1.38: MD #237254

MD #237298

Auger entanglement hazard

CAUTION

- To avoid injury from rotating auger, stand clear of auger while machine is running.



Figure 1.39: MD #237298

2 Product Overview

2.1 PW8 Header Specifications

Table 2.1 Header Specifications

| Components | Specifications |
|--|--|
| Frame and Structure | |
| Width to edge of tires | Refer to 2.2 PW8 Header Dimensions, page 20 |
| Width (transport lights extended) | |
| Depth | |
| Height (transport lights extended) | |
| Weight (not including completion packages) | 3006 lb (1366 kg) |
| Carrier | AGCO, CLAAS, Case IH, New Holland, John Deere, Lexion, Versatile |
| Lighting | Two amber transport |
| Manual storage | Header mounted manual storage case |
| Pick-up | |
| Actual picking width | Refer to 2.2 PW8 Header Dimensions, page 20 |
| Draper width | |
| Quantity of pick-up fingers | 392 |
| Draper drives | Two 5.9 cu. in. (97 cc) hydraulic motors |
| Auger | |
| Diameter (including flighting) | 24 in. (615 mm) |
| Tube diameter | 16 in. (410 mm) |
| Quantity of fingers | 13–22 |
| Finger diameter | 5/8 in. (16 mm) diameter induction hardened |
| Speed (combine dependent) | 141–204 rpm |
| Driveline | |
| Type | Heavy duty PTO type, fully shielded with built-in clutch |
| Connections | Locking collar |
| Tires | |
| Size | 18-1/2 / 8-1/2 x 8 |
| Pressure | 35–45 psi (240–310 kPa) |

NOTE:

Specifications and design are subject to change without notice or obligation to revise previously sold units.

2.2 PW8 Header Dimensions

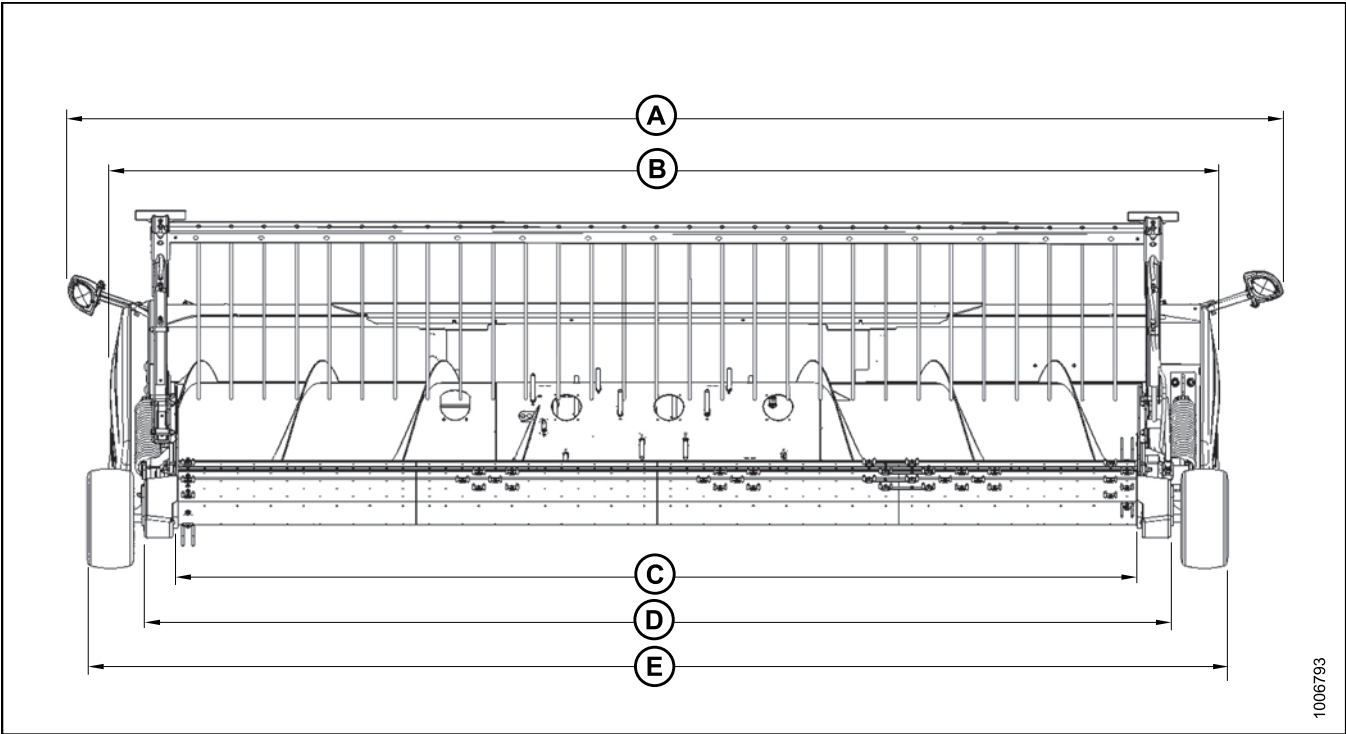


Figure 2.1: Header Dimensions

- A - 222-3/4 in. (565.8 cm) B - 203-1/2 in. (517 cm) C - 178-1/8 in. (452.3 cm)
D - 187-5/8 in. (476.6 cm) E - 209-3/8 in. (531.8 cm)

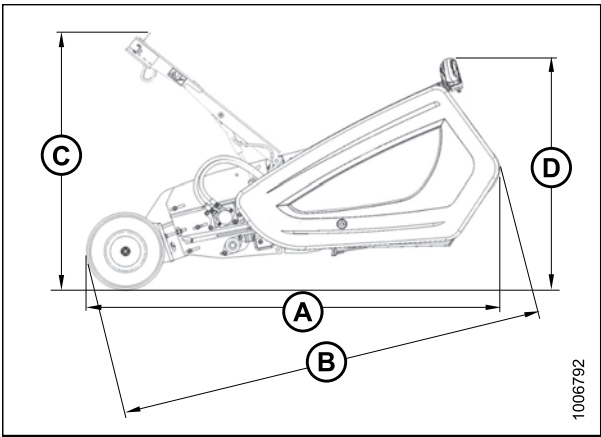


Figure 2.2: Header Dimensions

- A - 96-7/8 in. (246 cm) B - 98-7/8 in. (251.3 cm) C - 60-3/4 in. (154.4 cm) D - 54-3/8 in. (138 cm)

2.3 PW8 Component Identification

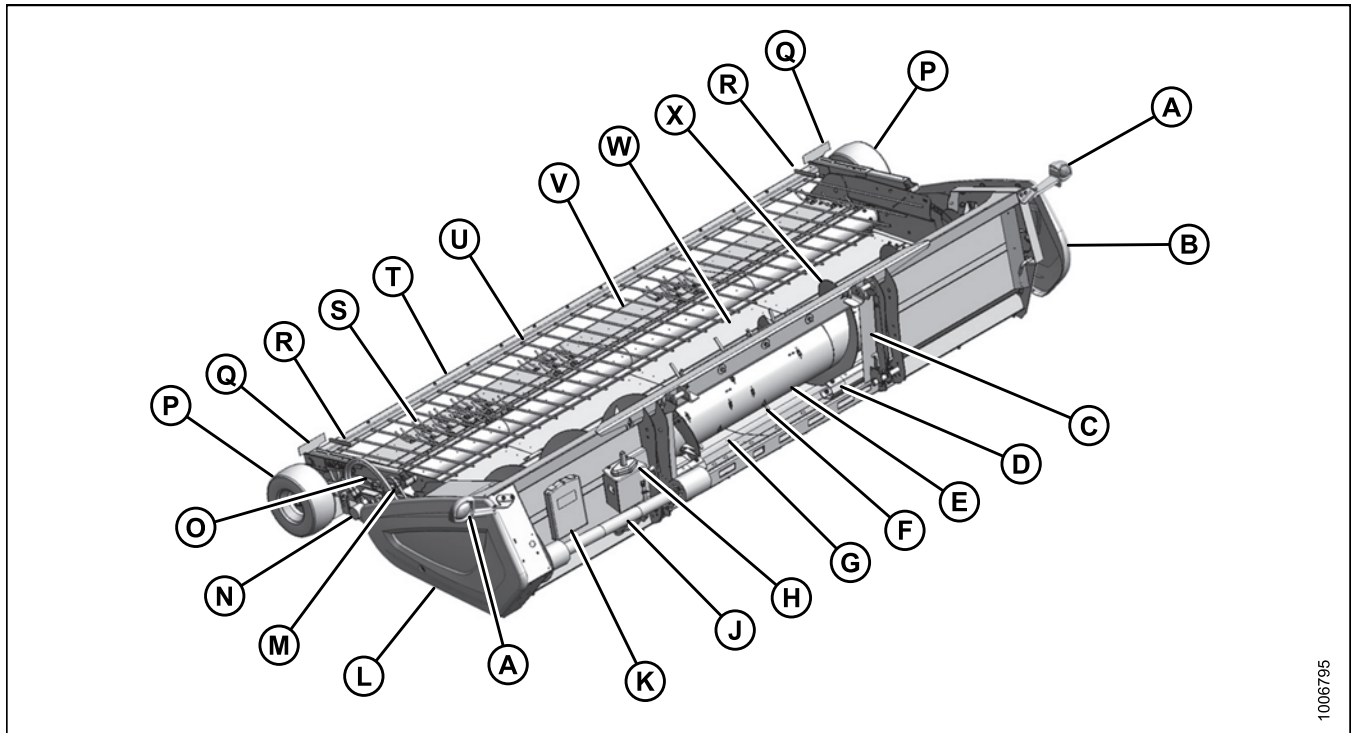


Figure 2.3: PW8 Header

- | | | |
|------------------------------------|------------------------------|------------------------------|
| A - Transport Light | B - Endshield - Fixed | C - Window Frame |
| D - Stripper Plate | E - Auger | F - Auger Finger |
| G - Auger Pan | H - Multi-Coupler Receptacle | I - Not Used |
| J - Driveline | K - Manual Case | L - Endshield - Latched |
| M - Hold-Down Cylinder Safety Prop | N - Draper Drive Motor | O - Hold-Down Lift Cylinder |
| P - Gauge Wheel | Q - Reflector | R - Handle |
| S - Draper Finger | T - Hold-Down | U - Hold-Down Fiberglass Rod |
| V - Forward Draper Deck | W - Rear Draper Deck | X - Auger Flighting |

PRODUCT OVERVIEW

2.4 Definitions

The following definitions and acronyms may be used in this manual:

| Term | Definition |
|--|--|
| API | American Petroleum Institute. |
| ASTM | American Society of Testing and Materials. |
| Bolt | A headed and externally threaded fastener that is designed to be paired with a nut. |
| CGVW | Combined Vehicle Gross Weight. |
| Finger tight | Finger tight is a reference position where sealing surfaces or components are making contact with each other and the fitting has been tightened to a point where the fitting is no longer loose. |
| F.F.F.T. | Flats from finger tight. |
| GVW | Gross Vehicle Weight. |
| hp | Horsepower |
| JIC | Joint Industrial Council: A standards body that developed the standard sizing and shape for original 37° flared fitting. |
| n/a | Not applicable |
| Nut | An internally threaded fastener that is designed to be paired with a bolt. |
| 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. |
| ORB | O-ring Boss: a style of fitting commonly used in port opening on manifolds, pumps and motors. |
| ORFS | O-ring face seal: A style of fitting commonly used for connecting hoses and tubes. This style of fitting is also commonly called ORS, which stands for O-ring Seal. |
| Pick-Up Header | A machine that picks up grain that has been cut and laid in windrows, and is attached to a combine. |
| PTO | Power take-off. |
| RoHS (Reduction of Hazardous Substances) | A directive by the European Union to restrict the use of certain hazardous substances (such as hexavalent chromium used in some yellow zinc platings). |
| SAE | Society of Automotive Engineers. |
| Screw | A headed and externally threaded fastener that threads into preformed threads or forms its own thread in one of the mating parts. |
| Soft joint | A joint made with the use of a fastener where the joining materials are compressible or experience relaxation over a period of time. |
| spm | Strokes per minute. |
| Tension | Axial load placed on a bolt or screw, usually measured in pounds (lb) or Newtons (N). |
| T.F.F.T. | Turns from finger tight. |
| Torque | The product of a force X lever arm length, usually measured in foot-pounds (ft·lbf) or Newton-meters (N·m). |

PRODUCT OVERVIEW

| Term | Definition |
|----------------|---|
| Torque angle | A tightening procedure where the fitting is assembled to a precondition (finger tight) and then the nut is turned further a number of degrees or a number of flats to achieve its final position. |
| Torque-tension | The relationship between the assembly torque applied to a piece of hardware and the axial load it induces in the bolt or screw. |
| Tractor | Agricultural-type tractor. |
| Truck | A four-wheel highway/road vehicle weighing no less than 7500 lb (3400 kg). |
| Washer | A thin cylinder with a hole or slot located in the center and is to be used as a spacer, load distribution element or a locking mechanism. |

3 Operation

3.1 Owner/Operator Responsibilities

CAUTION

- It is your responsibility to read and understand this manual completely before operating the header. Contact your Dealer if an instruction is not clear to you.
- Follow all safety messages in the manual and on safety decals applied to the machine.
- Remember that YOU are the key to safety. Good safety practices protect you and the people around you.
- Before allowing anyone to operate the header, for however short a time or distance, make sure they have been instructed in its safe and proper use.
- Review the manual and all safety related items with all Operators annually.
- Be alert for other Operators not using recommended procedures or not following safety precautions. Immediately correct mistakes to prevent accidents.
- Do NOT modify the machine. Unauthorized modifications may impair function and/or safety and affect machine life.
- The safety information given in this manual does not replace safety codes, insurance needs, or laws governing your area. Be sure your machine meets the standards set by these regulations.

3.2 Operational Safety

CAUTION

- Follow all safety and operational instructions given in your combine Operator's Manual. If you do not have a combine manual, get one from your Dealer and read it thoroughly.
- Never start or move the machine until you are sure all bystanders have cleared the area.
- To avoid bodily injury or death from unexpected startup of machine, always stop combine engine and remove key before adjusting or removing plugged material from the machine.
- Check for excessive vibration and unusual noises. If there is any indication of trouble, shut down and inspect the machine.

CAUTION

Follow proper shutdown procedure:

- Engage combine brake.
- Turn off engine and remove key.
- Wait for all movement to stop.
- Dismount and engage safety props before inspecting raised machine.
- Operate only in daylight or good artificial light.

3.3 Endshields

The endshields are molded polyethylene covers that are attached to the ends of the header. They provide shielding for the header drive components and also display the make of the combine. The left endshield is hinged to the endsheet and can be opened for routine maintenance or easily removed for major servicing. The right endshield is bolted directly to the header.

3.3.1 Opening Left-Hand Endshield

DANGER

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

1. Lower header to ground, shut down engine, and remove key from ignition.
2. Unlock endshield (B) by turning latch (A) counterclockwise using a slotted screwdriver until it stops (slightly more than one-half turn).

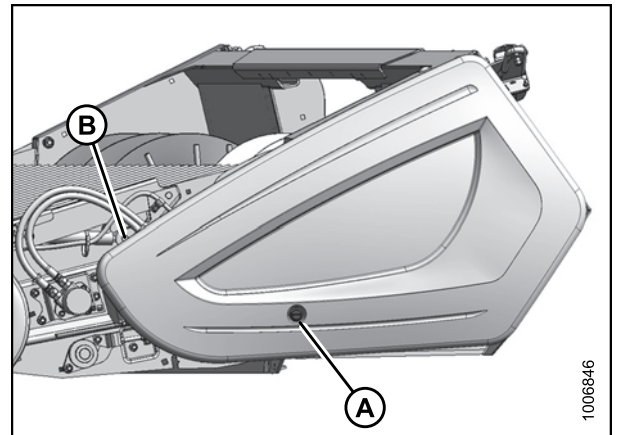


Figure 3.1: Endshield Closed

3. Grasp forward end of endshield (A) and pull open until support (B) engages and holds endshield in open position.

NOTE:

If additional access to the drive area is required, remove the endshield. Refer to [5.4.1 Removing Left-Hand Endshield, page 141](#).

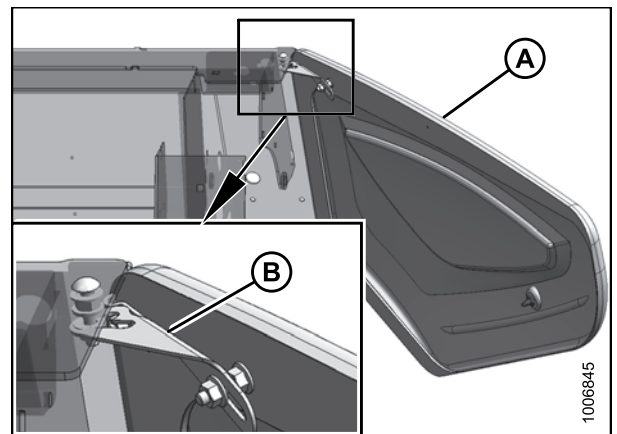


Figure 3.2: Endshield Open

3.3.2 Closing Left-Hand Endshield

1. Move endshield (A) slightly so support (B) can be moved out of the locked position.

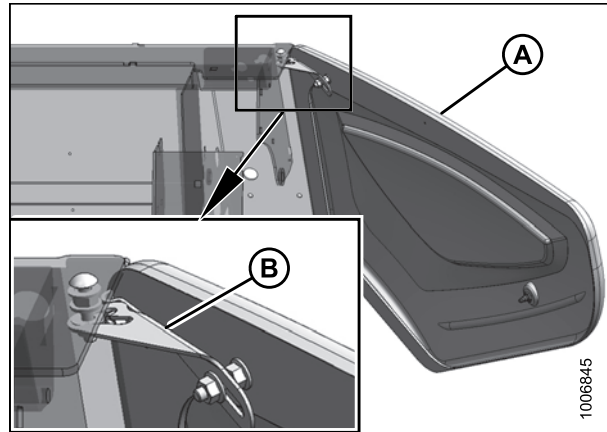


Figure 3.3: Endshield Support

2. Close shield (A) ensuring magnet (B) and stop (C) in header frame are aligned. This will ensure that latch (D) aligns with receptacle (E).

NOTE:

Latch (D) and magnet (B) positions are preset at the factory and should not require adjustment.

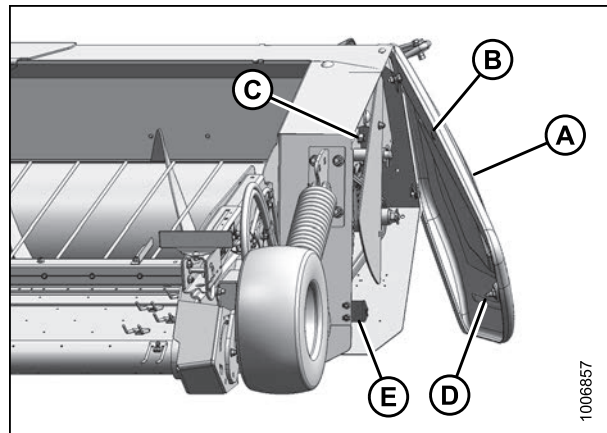


Figure 3.4: Endshield

3. If front of shield needs to be raised or lowered, loosen nuts (B) on clips (C) at the back of the shield (A) and reposition the shield. Tighten nuts (B) but do not overtighten to prevent damaging the shield.

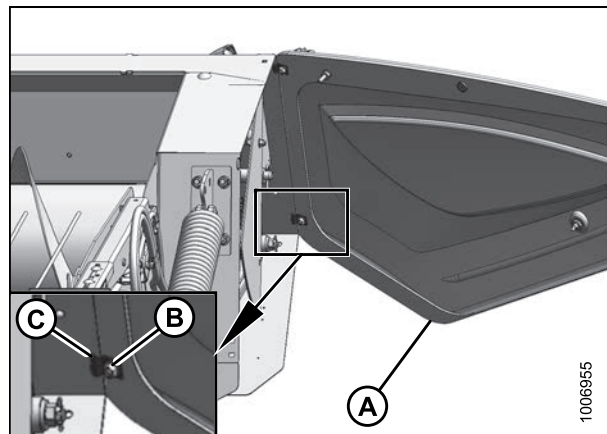


Figure 3.5: Endshield Adjustment

OPERATION

4. Close the shield (D) and turn latch (A) clockwise using a slotted screwdriver until it stops (slightly more than one-half turn).

NOTE:

When latch is fully engaged, the slot will align with notch (C), and the endshield will draw tightly against the header.

5. Ensure magnet (B) on endshield is aligned with the cut out in the frame.

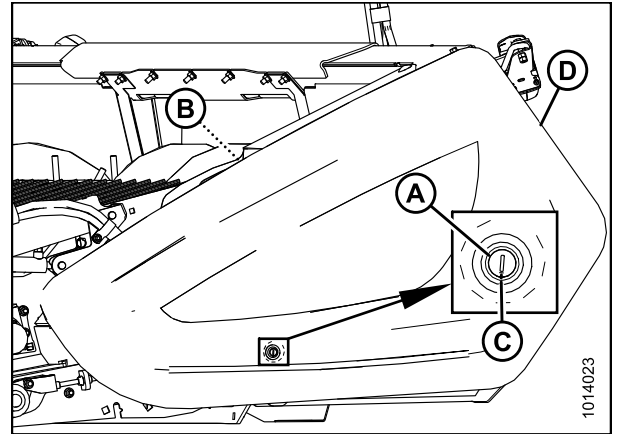


Figure 3.6: Endshield Closed

3.4 Header Lift Cylinder Safety Props

Refer to your combine operator's manual.

IMPORTANT:

Always engage combine safety props before working on header in elevated position.

3.5 Engaging Hold-Down Lift Cylinder Safety Props

NOTE:

John Deere combines use the fore/aft circuit to control the hold-down cylinders.

! WARNING

To avoid bodily injury from fall of raised hold-down, always engage cylinder safety props before going under raised hold-down for any reason.

IMPORTANT:

To prevent damage to hold-down support arms, do not transport header with cylinder safety props engaged.

1. Raise hold-down (A) to maximum height.

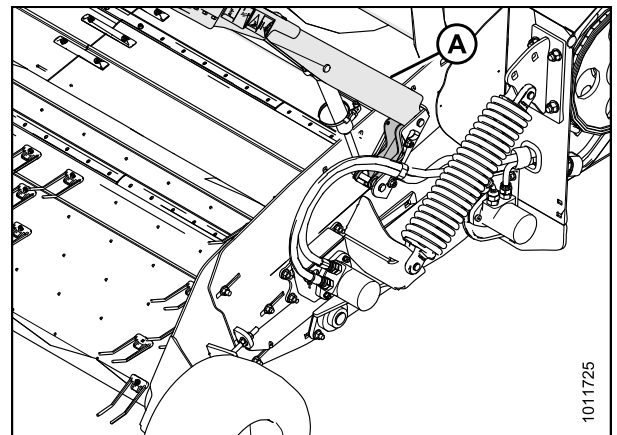


Figure 3.7: Safety Props Engaged

2. Remove retaining pin (A) from safety prop.
3. Raise safety prop (B) to engaged position.
4. Install retaining pin (A) onto safety prop.
5. Lower hold-down onto safety props.

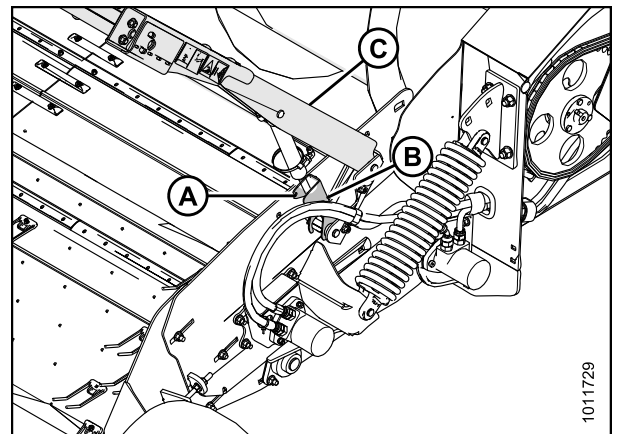


Figure 3.8: Safety Props Engaged

3.6 Daily Start-up Check

CAUTION

- Ensure combine and header are properly attached, all controls are in neutral and combine brake is engaged.
- Clear the area of other persons, pets, etc. Keep children away from machinery. Walk around the machine to make sure no one is under, on, or close to it.
- Wear close-fitting clothing and protective shoes with slip-resistant soles.
- Remove foreign objects from the machine and surrounding area.



Figure 3.9: Safety Equipment

- Carry with you any protective clothing and personal safety devices that could be necessary through the day. Don't take chances. You may need a hard hat, protective glasses or goggles, heavy gloves, a respirator or filter mask, or wet weather gear.
- Protect against noise. Wear suitable hearing protection devices such as ear muffs or ear plugs to help protect against objectionable or loud noises.

Perform the following checks each day before startup:

1. Check the machine for leaks or any parts that are missing, broken, or not working correctly.

NOTE:

Use proper procedure when searching for pressurized fluid leaks. Refer to [5.9.5 Hydraulic Hoses and Lines, page 214](#).

2. Clean all lights and reflective surfaces on the machine, and check lights for proper operation.
3. Perform all daily maintenance. Refer to [5.2.1 Maintenance Schedule/Record, page 135](#).

3.7 Shutting Down the Machine

CAUTION

Before leaving the combine seat for any reason, follow the entire procedure:

- Park on level ground if possible.
- Lower the header fully.
- Place all controls in Neutral, and engage combine brake.
- Stop engine and remove key from ignition.
- Wait for all movement to stop.

3.8 Break-In Period

CAUTION

Before investigating an unusual sound or attempting to correct a problem, shut off engine, engage parking brake and remove key.

1. After attaching header to combine for the first time, operate the machine at low speed for five minutes while carefully watching and listening **from the operator's seat** for binding or interfering parts.
2. Refer to [5.2.1 Maintenance Schedule/Record, page 135](#) and perform items listed under heading **"10 HOURS."**

NOTE:

Until you become familiar with the sound and feel of your new header, be extra alert and attentive.

3.9 Changing Header Opening

To minimize the set up at the dealership, PW8 Pick-Up Headers are shipped from the factory in a configuration to suit a particular combine make, model, and feeder house size. Each header includes the necessary parts and hardware to modify it, if required, to accommodate another model of combine with a different size feeder house.

The conversion procedure is included in the Unloading and Assembly Instruction that is provided with the header.

Table 3.1 Combine Configurations

| Factory Header Configuration | | | Modified Header Configuration | |
|------------------------------|---|-------------------|---|-----------------------|
| Combine Make | Combine Model(s) | Feeder House Size | Combine Model(s) | Feeder House Size |
| Case IH | 7010, 8010, 7120, 8120, 9120, 7230, 8230, 9230, 7240, 8240, and 9240 | 54 in. (137.2 cm) | 5088, 6088, 7088, 5130, 6130, 7130, 5140, 6140, and 7140 | 45-1/2 in. (115.6 cm) |
| John Deere | 9660 STS, 9760 STS, 9860 STS, 9670 STS, 9770 STS, 9870 STS, S650, S660, S670, S680, and S690 | 55 in. (139.7 cm) | 9660 WTS and T670 | 65-1/2 in. (166.4 cm) |
| New Holland | CR970, CR980, CR9070, CR9080, CR8090, CR9090, CR9090 Elevation, CR8.90, CR9.90, CR9.90 Elevation, and CR10.90 Elevation | 50 in. (127.0 cm) | CX840, CX860, CX880, CX8070, CX8080, CX8080 Elevation, CX8090, and CX8090 Elevation | 62 in. (157.5 cm) |
| | | | CR920, CR940, CR960, CR9020, CR9040, CR9060, CR9065, CR6090, CR7090, CR8080, CR6.90, and CR7.90 | 40 in. (101.6 cm) |
| Versatile | RT490 | 44 in. (111.8 cm) | n/a | n/a |

3.10 Header Attachment and Detachment

This section provides instructions for attaching the PW8 Pick-Up Header to, and detaching from, the combines listed in Table 3.2 *Attaching PW8 Header to Combine*, page 36.

Table 3.2 Attaching PW8 Header to Combine

| Combine | Refer to |
|---------------------------------|--|
| Case IH | 3.10.1 Case IH, page 36 |
| John Deere 60, 70, and S Series | 3.10.2 John Deere 60, 70, and S Series, page 42 |
| New Holland CR and CX | 3.10.3 New Holland CR/CX Series Combine, page 48 |
| Versatile | 3.10.4 Versatile, page 54 |

3.10.1 Case IH

This section provides instruction for attaching the PW8 Pick-Up Header to, and detaching from, Case IH 50/60/7088, 51/61/7130, 51/61/7140, 70/8010, 71/81/9120, 72/82/9230, and 72/82/9240 combines.

Attaching to Case IH Combine

DANGER

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

- 1.
2. Pull handle (A) on combine to raise hooks (B) on both sides of the feeder house.

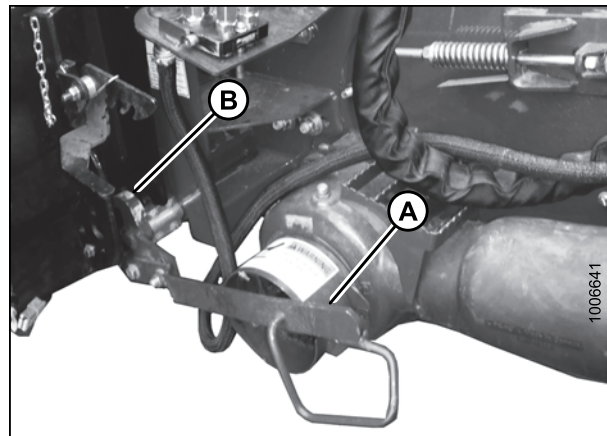


Figure 3.10: Feeder House Locks

OPERATION

3. Drive combine slowly up to header until feeder house saddle (A) is directly under the header top beam (B).
4. Raise feeder house slightly to lift header ensuring feeder house saddle (A) is properly engaged in header frame.
5. Stop engine, and remove key from ignition.

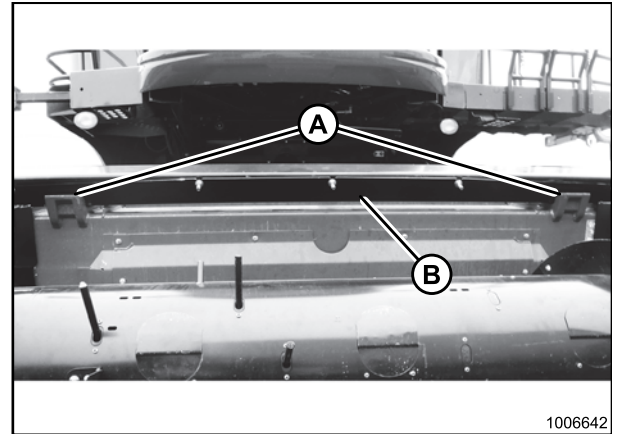


Figure 3.11: Header on Combine

6. Lift lever (A) on header at left side of feeder house and push handle (B) on combine to engage locks (C) on both sides of the feeder house.
7. Push down on lever (A) so that slot in lever engages handle (B) to lock handle in place.
8. Loosen nut (E) and adjust position of pin (D) as necessary (both sides) if locks (C) do not fully engage pins (D) on header. Tighten nut.
9. Loosen bolts (F) and adjust lock as required to obtain full lock on pin (D) when lift lever (A) and handle (B) are engaged. Retighten bolts.

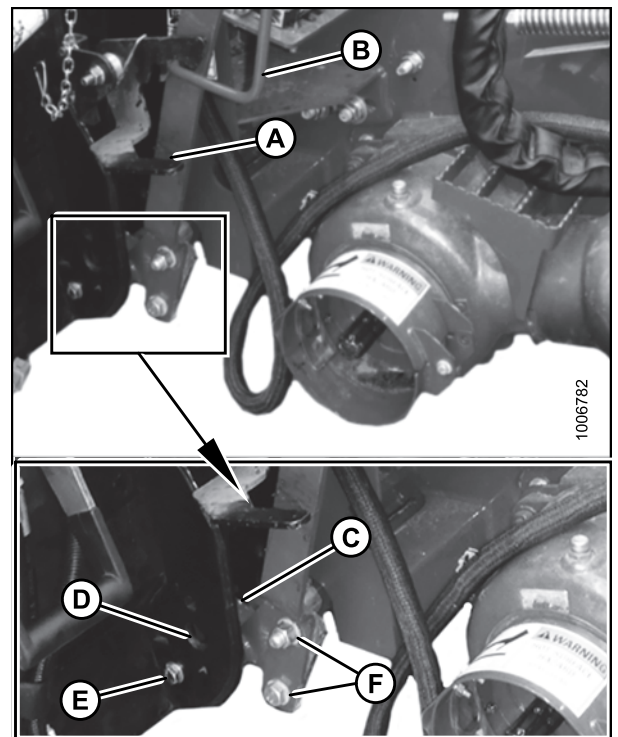


Figure 3.12: Engaging Locks

OPERATION

10. Rotate disc (B) on header driveline storage hook (A) and remove driveline from hook.

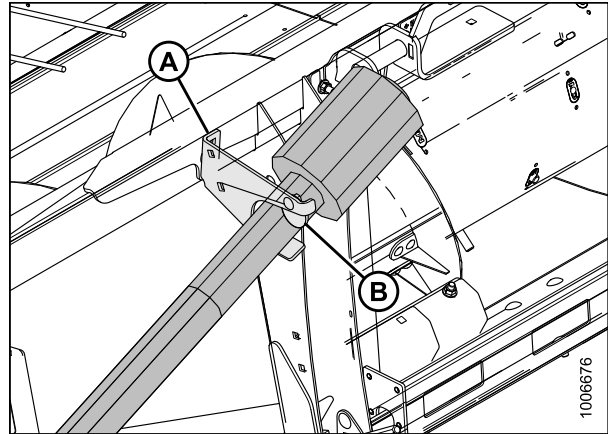


Figure 3.13: Driveline

11. Pull back collar (A) on end of driveline and push onto combine output shaft (B) until collar locks.

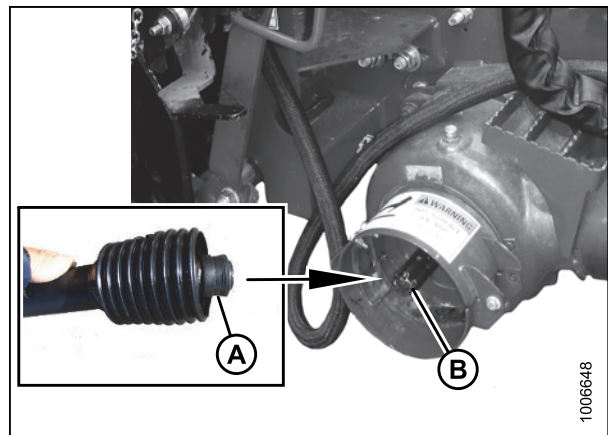


Figure 3.14: Attaching Driveline

12. Open cover (A) on header receptacle.
13. Push in lock button (B) and pull handle (C) upward to fully open position.
14. Remove coupler (D) from combine and clean mating surfaces.

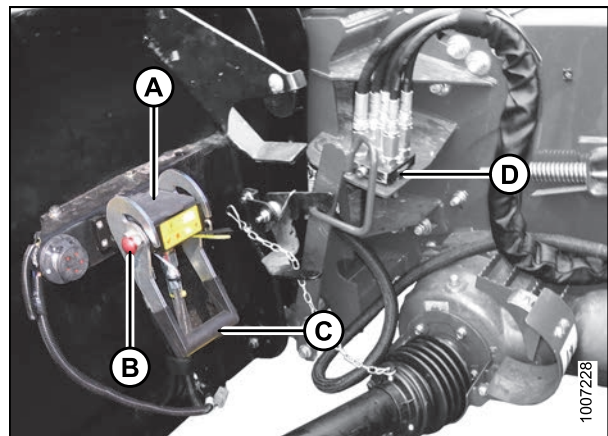


Figure 3.15: Coupler Lock

OPERATION

15. Position coupler (A) onto header receptacle and push handle (B) downward to engage coupler pins into receptacle.
16. Push handle to closed position until lock button (C) snaps out.
17. Open cover (D) on header electrical receptacle.
18. Remove electrical connector (E) from storage cup on combine.
19. Align lugs on electrical connector (E) with slots in receptacle, push connector onto receptacle, and turn collar on connector to lock it in place.

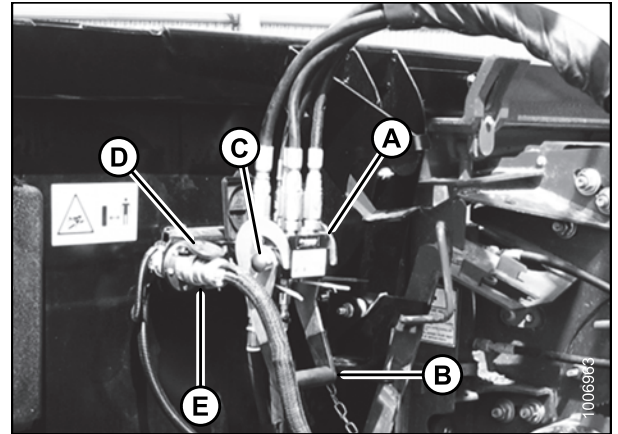


Figure 3.16: Attaching Coupler

Detaching from Case IH Combine

DANGER

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

1. Choose a level area, position header slightly off the ground, stop engine and remove key.
2. Push in lock button (C), and pull handle (B) upward to release coupler (A).

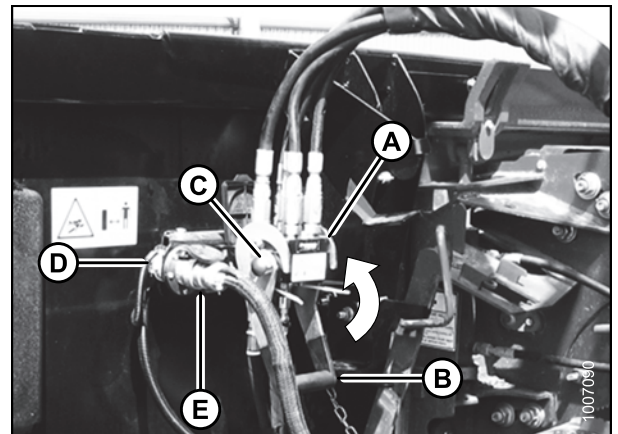


Figure 3.17: Releasing Coupler

3. Position coupler (A) onto storage plate (B) on combine.

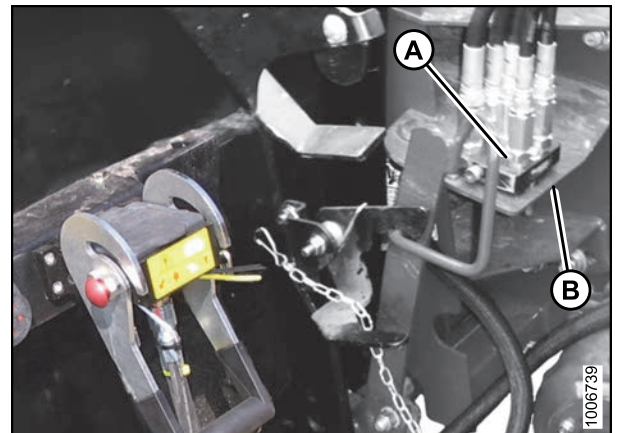


Figure 3.18: Coupler Storage Location

OPERATION

4. Disconnect electrical connector (A) from header.

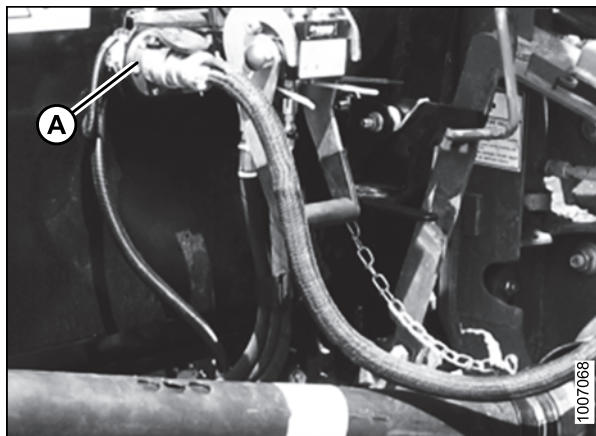


Figure 3.19: Electrical Connector

5. Place electrical connector (A) into storage cup (B) on combine.

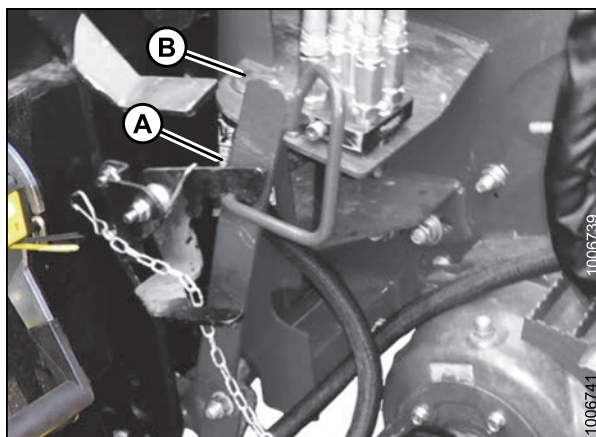


Figure 3.20: Electrical Connector Storage

6. Close cover on header electrical receptacle (A).
7. Push handle (B) on header down into storage position until lock button (C) snaps out.
8. Close cover (D).

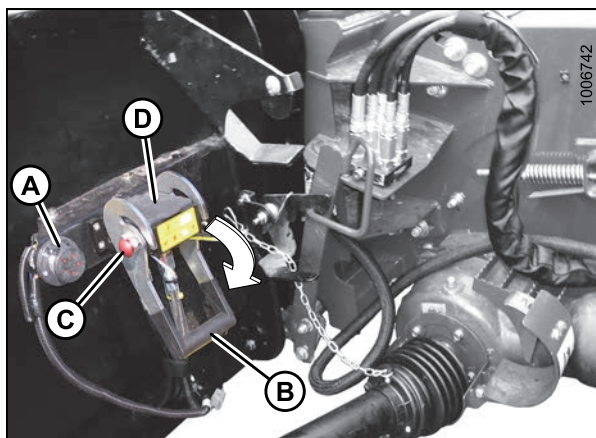


Figure 3.21: Locking Multi-Coupler

OPERATION

9. Open driveshield (A) on combine.
10. Pull back collar (B) on driveline (C) and remove driveline (C) from combine.

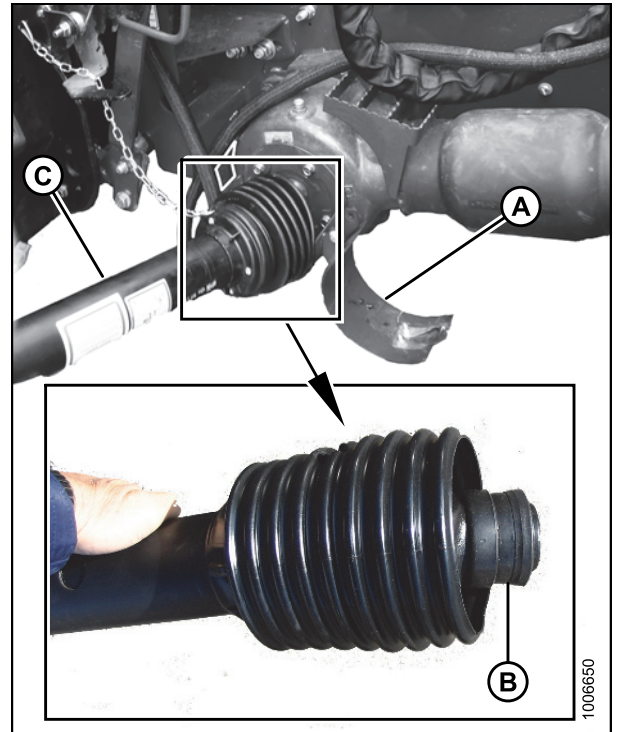


Figure 3.22: Detaching Driveline

11. Slide driveline into storage hook (A) on header and rotate disc (B) to secure driveline.

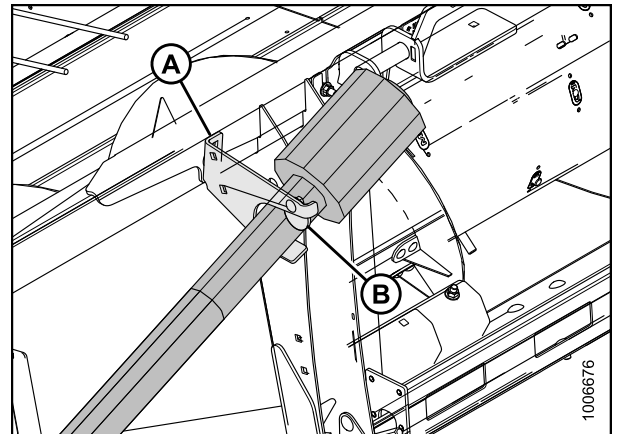


Figure 3.23: Driveline

OPERATION

12. Close driveshield (A) on combine.

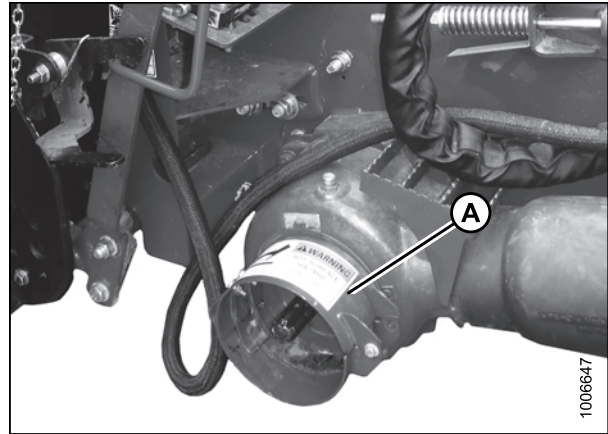


Figure 3.24: Driveshield

13. Lift lever (A) and pull and lower handle (B) to disengage feeder house/header lock (C).

14. Lower feeder house until it disengages from header support.

15. Slowly back combine away from header.

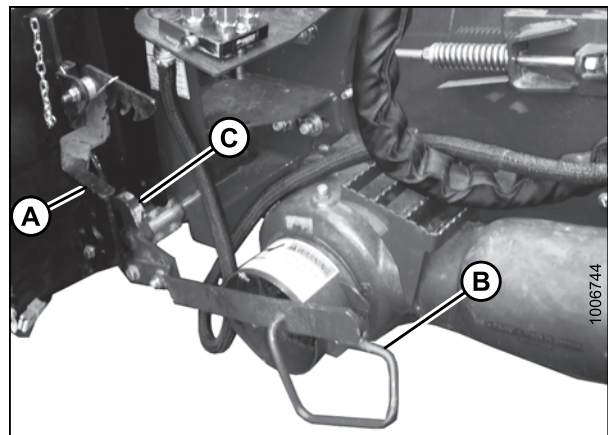


Figure 3.25: Disengaging Header

3.10.2 John Deere 60, 70, and S Series

This section provides instructions for attaching the PW8 Pick-Up Header to, and detaching from, 96/97/9860STS, 96/97/9870, S650/660/670/680/690, 9660WTS, and T670 combines.

Attaching to John Deere 60, 70, and S Series Combine



DANGER

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

OPERATION

1. Push handle (A) on combine coupler toward feeder house to retract pins (B) at bottom corners of feeder house.

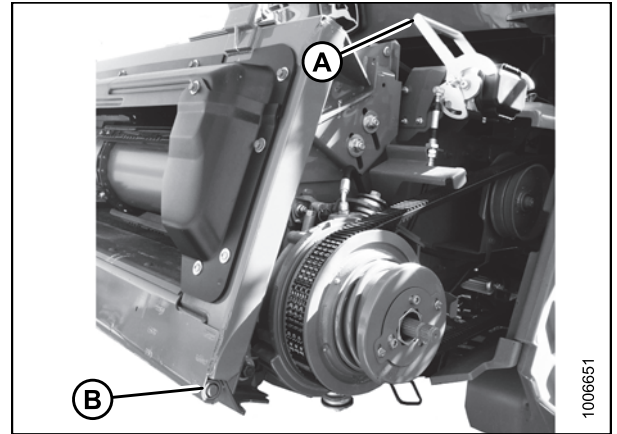


Figure 3.26: Feeder House Locks

2. Drive combine slowly up to header until feeder house saddles (A) are directly under the header top beam (B).
3. Raise feeder house to lift header ensuring feeder house saddles (A) are properly engaged in header frame.
4. Position header until slightly off the ground, stop engine, and remove key from ignition.

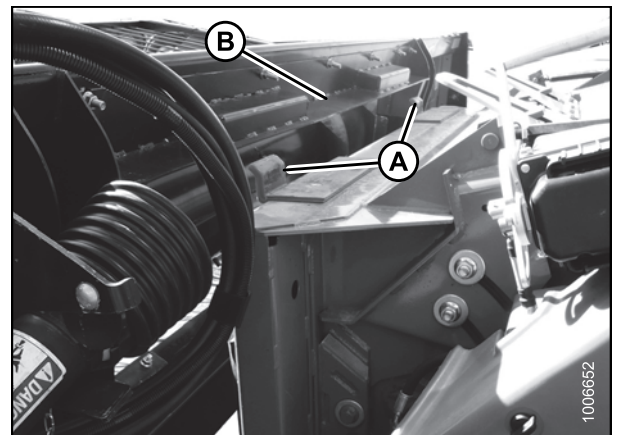


Figure 3.27: Header on Combine

5. Open driveshield (A) on combine feeder house.

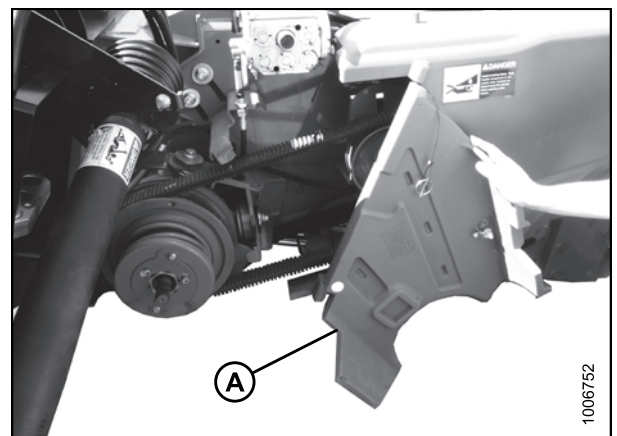


Figure 3.28: Combine Driveshield

OPERATION

6. Rotate disc (B) on header driveline storage hook (A) and remove driveline from hook.

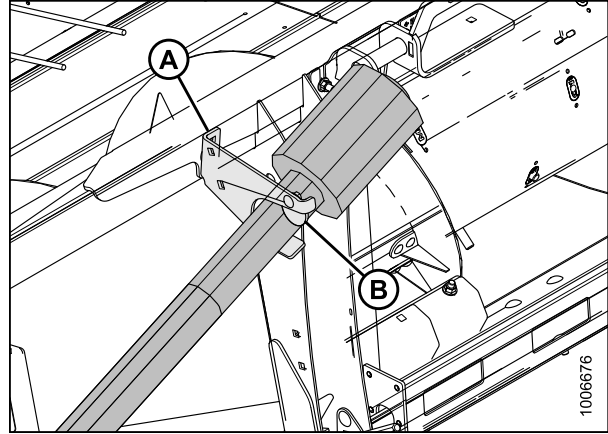


Figure 3.29: Driveline

7. Pull back collar (A) on end of driveline and slide driveline on feeder house driveshaft until the collar locks.
8. Close feeder house driveshield.

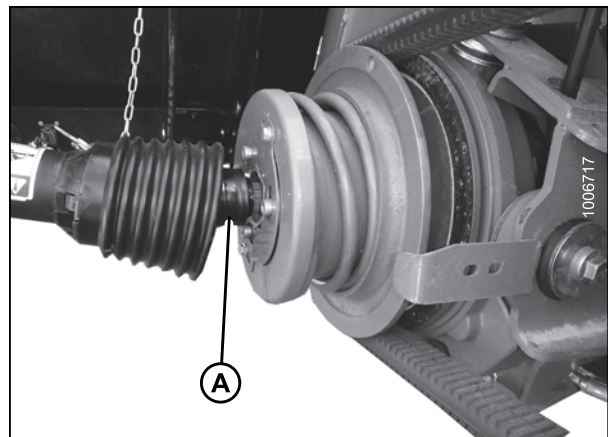


Figure 3.30: Attaching Driveline

9. Remove cover (A) from combine multi-coupler receptacle.

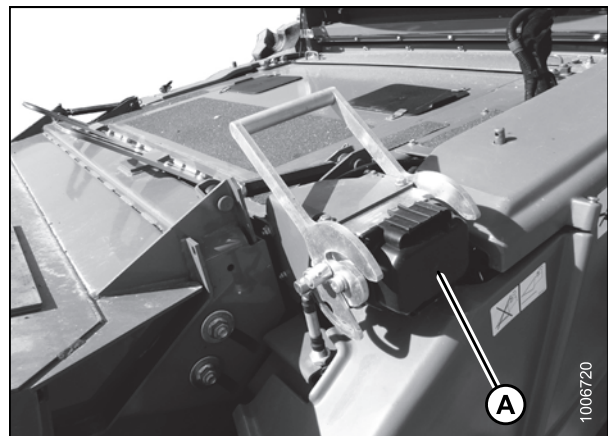


Figure 3.31: Combine Receptacle

OPERATION

10. Pull handle (A) on header to release multi-coupler (B) from storage position, remove coupler, and push handle back into header to store.

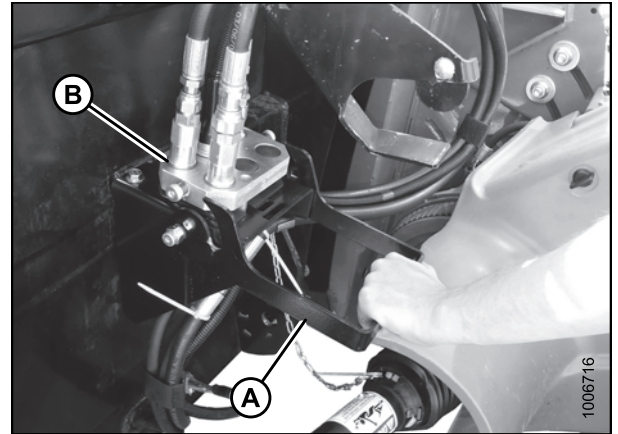


Figure 3.32: Releasing Coupler

11. Place coupler (A) onto combine receptacle.
12. Pull out knob (B) to release handle and pull handle (C) to engage pins in coupler.

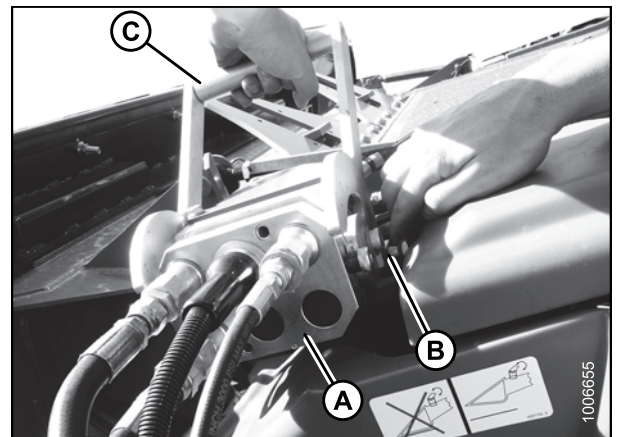


Figure 3.33: Engaging Coupler

OPERATION

13. Pull handle (A) from vertical to fully horizontal position to fully engage multi-coupler and to extend pins (B) at base of feeder house into the locking plates (C). Knob (D) will engage to lock handle.

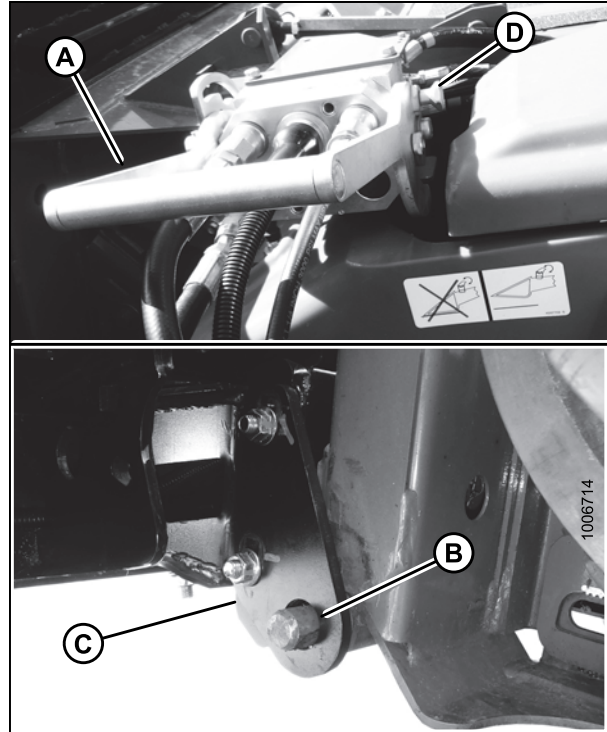


Figure 3.34: Locking Feeder House

NOTE:

If handle does not move to fully horizontal position, check alignment of locking plates (A) on the header with locking pins (B) on both sides of the feeder house. If necessary, loosen nuts (C) and adjust plates (A) to line up with pins (B). Retighten nuts.

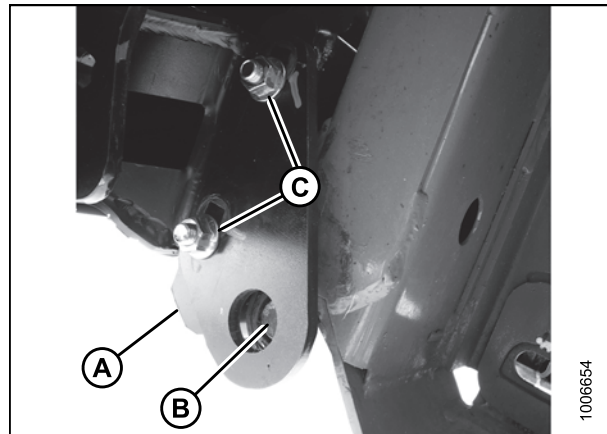


Figure 3.35: Aligning Locking Plates

Detaching from John Deere 60, 70, and S Series Combine

DANGER

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

OPERATION

1. Choose a level area, position header slightly above ground, stop engine, and remove key.
2. Pull out knob (A) on combine multi-coupler, and move handle (B) toward feeder house to release coupler (C) from combine and to retract locking pins at base of feeder house.

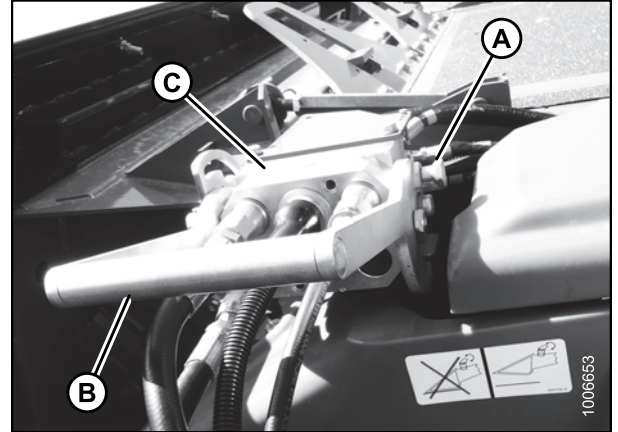


Figure 3.36: Releasing Multi-Coupler

3. Lower handle (A) on header, and position coupler (B) onto header as shown.

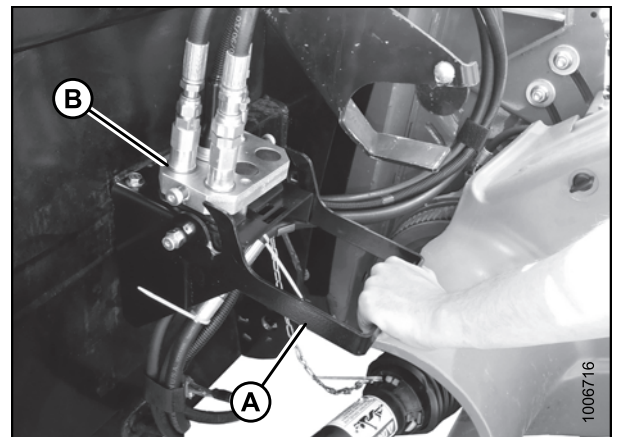


Figure 3.37: Replacing Coupler

4. Raise handle (A) to lock coupler.
5. Open feeder house driveshield (B).

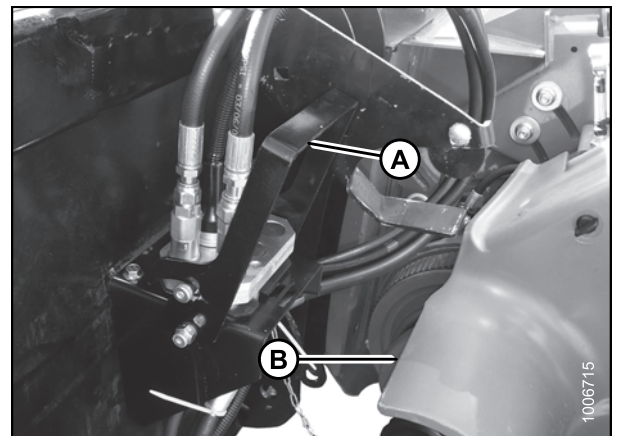


Figure 3.38: Locking Coupler

OPERATION

6. Pull back collar (A) on driveline, and remove driveline from combine output shaft.

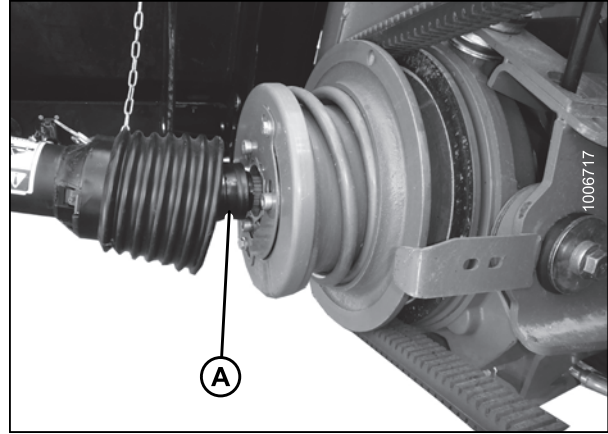


Figure 3.39: Detaching Driveline

7. Slide driveline into storage hook (A) on header and rotate disc (B) to secure driveline.

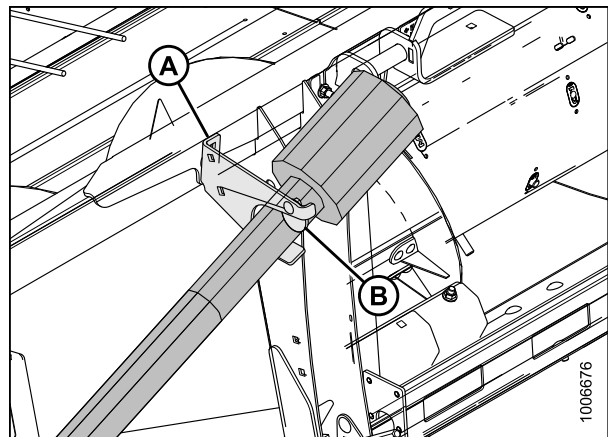


Figure 3.40: Driveline

8. Close combine driveshield (A).
9. Lower feeder house until saddle (B) disengages and clears header top beam (C).
10. Slowly back combine away from header.

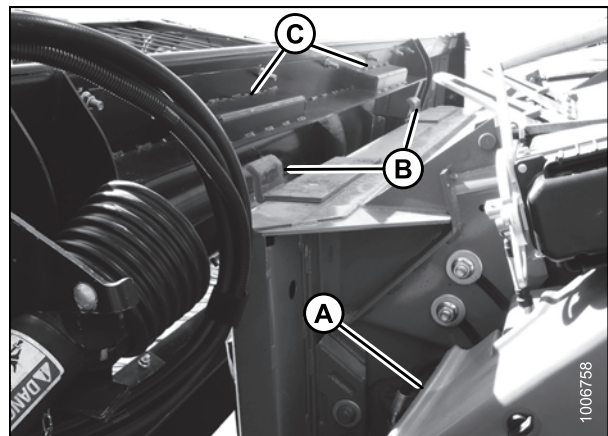


Figure 3.41: Disengaging Header

3.10.3 New Holland CR/CX Series Combine

This section provides instructions for attaching the PW8 Pick-Up Header to, and detaching from, all New Holland CR/CX Series combines.

OPERATION

Attaching to New Holland CR/CX Series Combine

DANGER

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

1. Pull handle (A) on combine to raise hooks (B) on both sides of the feeder house.

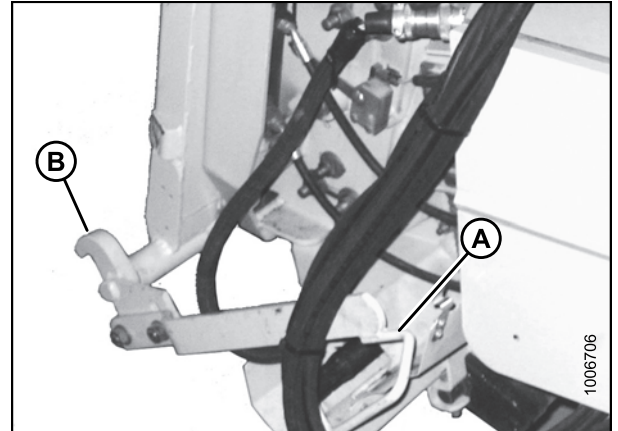


Figure 3.42: Feeder House Locks

2. Drive combine slowly up to header until feeder house saddle (A) is directly under the header top beam (B).
3. Raise feeder house to lift header ensuring feeder house saddle (A) is properly engaged in header frame.

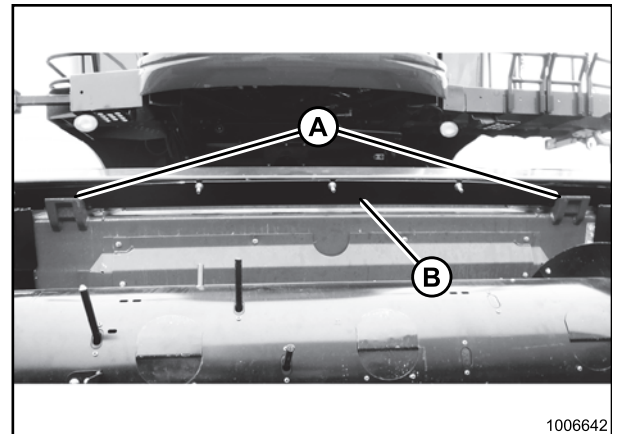


Figure 3.43: Header on Combine

OPERATION

4. Lift lever (A) on header at left side of feeder house and push handle (B) on combine so that hooks (C) engage pins (D) on both sides of the feeder house.
5. Push down on lever (A) so that slot in lever engages handle (B) to lock handle in place.
6. Loosen nut (E) and adjust position of pin (D) as necessary (both sides) if locks (C) do not fully engage pins (D) on header. Tighten nut.
7. Loosen bolts (F) and adjust lock as required to obtain full lock on pin (D) when lift lever (A) and handle (B) are engaged. Retighten bolts.

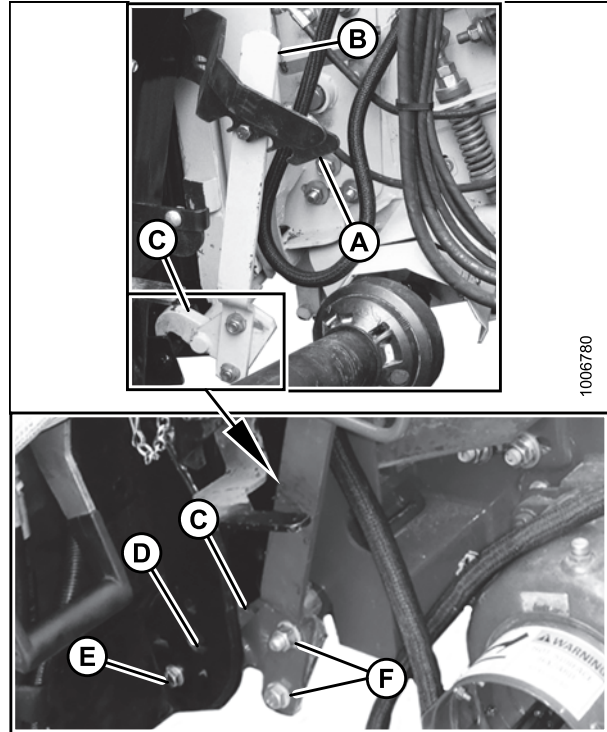


Figure 3.44: Engaging Locks

8. Rotate disc (B) on header driveline storage hook (A) and remove driveline from hook.

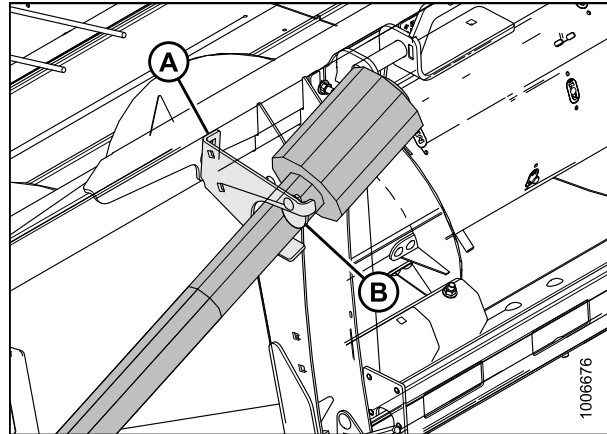


Figure 3.45: Driveline

OPERATION

9. Pull back collar (B) on end of driveline and push onto combine output shaft (A) until collar locks.

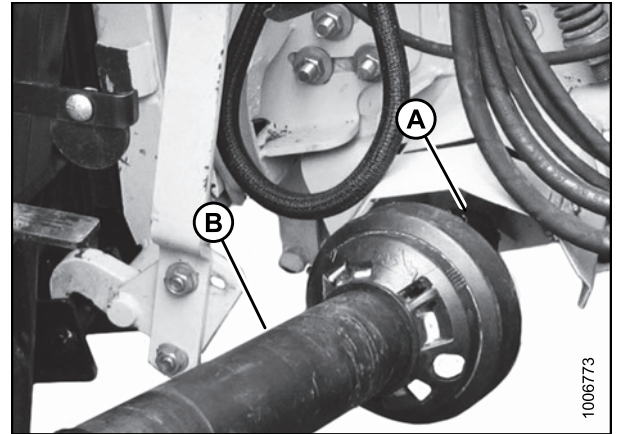


Figure 3.46: Attaching Driveline

10. Open cover (A).
11. Push in lock button (B) and pull handle (C) halfway up to open position.

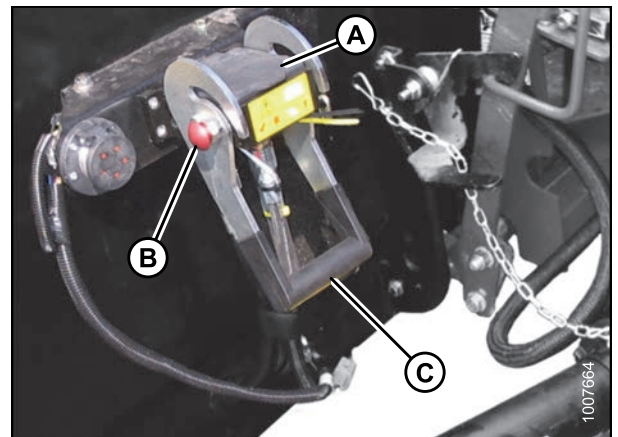


Figure 3.47: Header Receptacle

12. Remove coupler (A) from storage location on combine and clean mating surface of coupler.

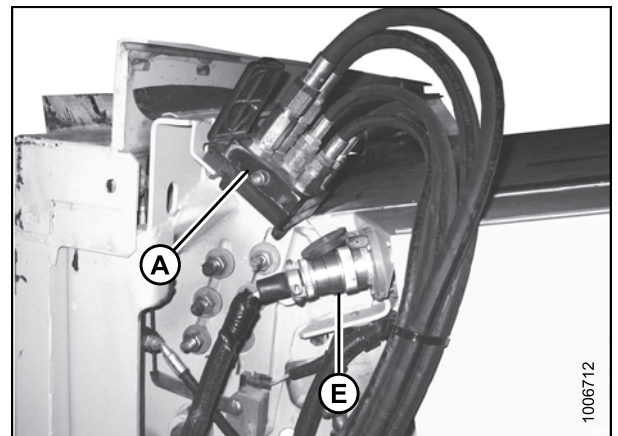


Figure 3.48: Combine Coupler/Connector

OPERATION

13. Position coupler onto header receptacle (A) and push handle (B) downward to engage pins into receptacle.
14. Push handle (B) to closed position until lock button (C) snaps out.
15. Open cover (D) on header electrical receptacle.
16. Remove electrical connector (E) from combine.
17. Align lugs on electrical connector (E) with slots in header receptacle, push connector onto receptacle and turn collar on connector to lock it in place.

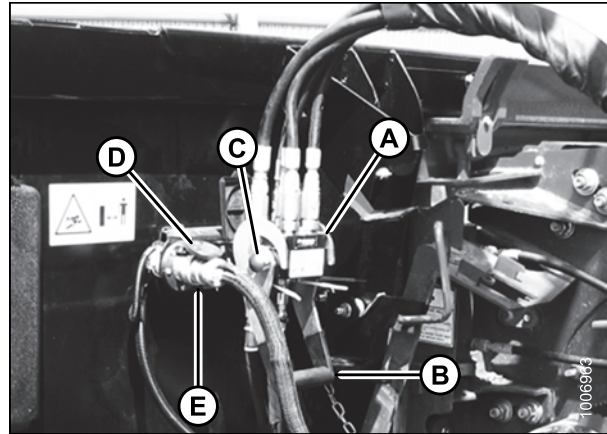


Figure 3.49: Attaching Coupler

Detaching from New Holland CR/CX Combine

⚠ DANGER

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

1. Choose a level area, position header slightly off the ground, stop engine, and remove key.
2. Push in lock button (C), and pull handle (B) upward to release coupler (A).
3. Remove coupler (A) from header receptacle.

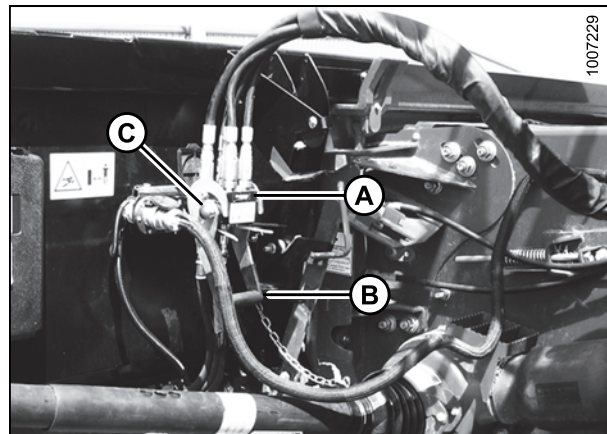


Figure 3.50: Releasing Coupler

4. Position coupler (A) onto storage plate (B) on combine.
5. Disconnect electrical connector from header, and place in storage cup (C) on combine.

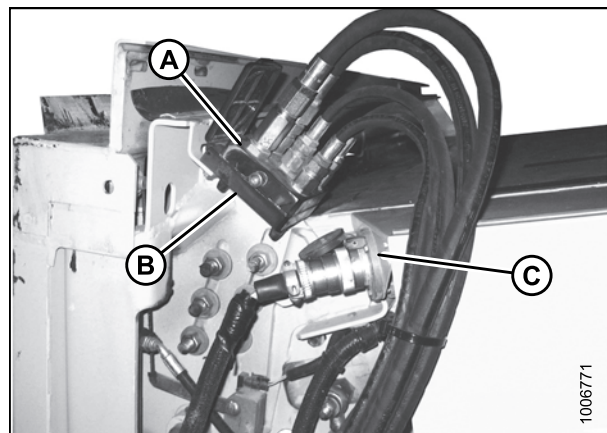


Figure 3.51: Coupler and Electrical Connector Storage Location

OPERATION

6. Close cover (A) on header hydraulic receptacle, and cover (B) on electrical receptacle.
7. Push handle (C) on header down into storage position until lock button (D) snaps out.

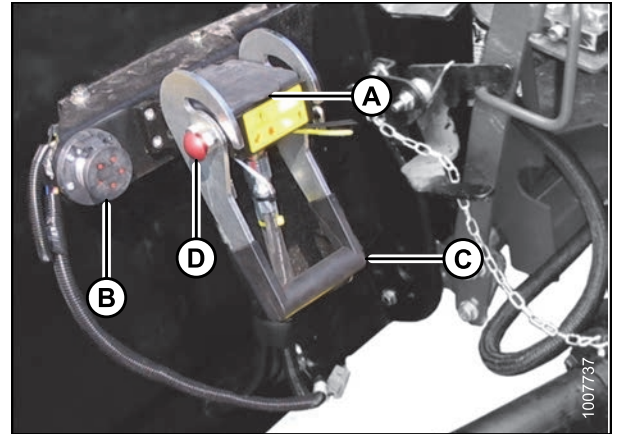


Figure 3.52: Locking Multi-Coupler

8. Pull back collar (A) on driveline (B) and remove driveline from combine.

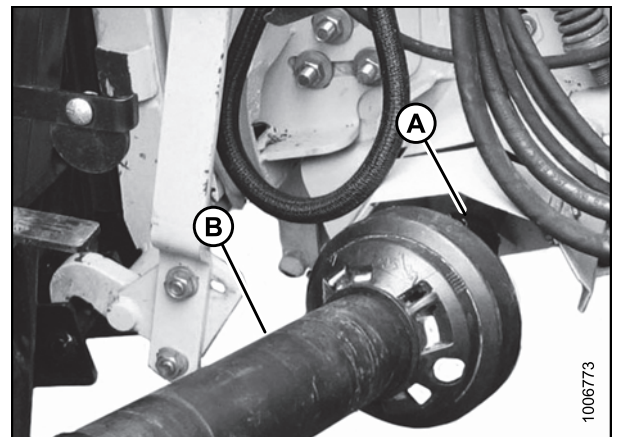


Figure 3.53: Detaching Driveline

9. Slide driveline into storage hook (A) on header and rotate disc (B) to secure driveline.

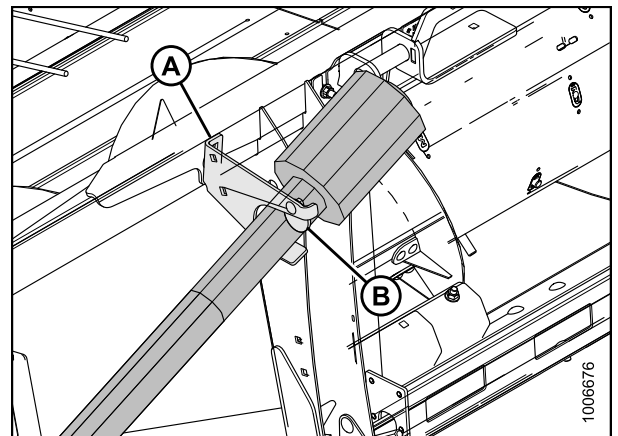


Figure 3.54: Driveline

OPERATION

10. Lift lever (A) and pull and lower handle (B) to disengage feeder house/header lock (C).
11. Lower feeder house until it disengages from header support.
12. Slowly back combine away from header.

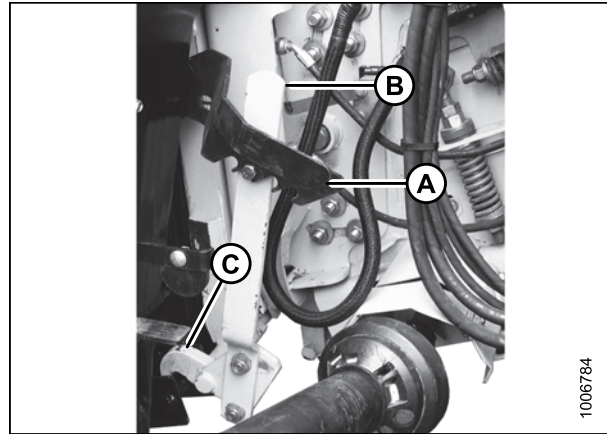


Figure 3.55: Disengaging Header

3.10.4 Versatile

This section provides instructions for attaching the PW8 Pick-Up Header to, and detaching from, Versatile RT490 combines.

Attaching to Versatile Combine

DANGER

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

1. Check that pins (A) at lower corners of header opening are retracted.

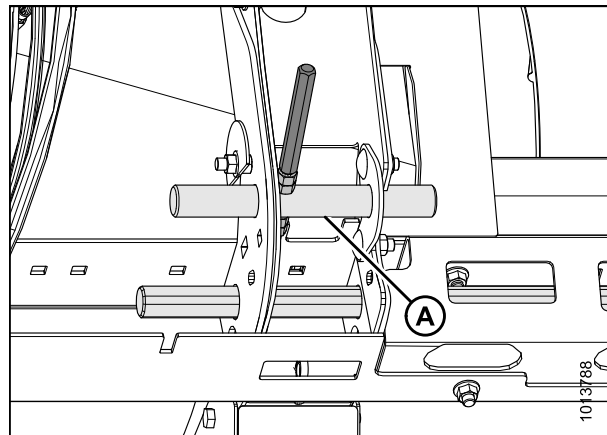


Figure 3.56: Locking Pins Retracted

OPERATION

2. Drive combine slowly up to header until feeder house posts (A) are directly under the header top brackets (B).
3. Raise feeder house to lift header ensuring posts (A) are properly engaged around the header frame (B).
4. Position header slightly off the ground, stop the engine, and remove key from ignition.

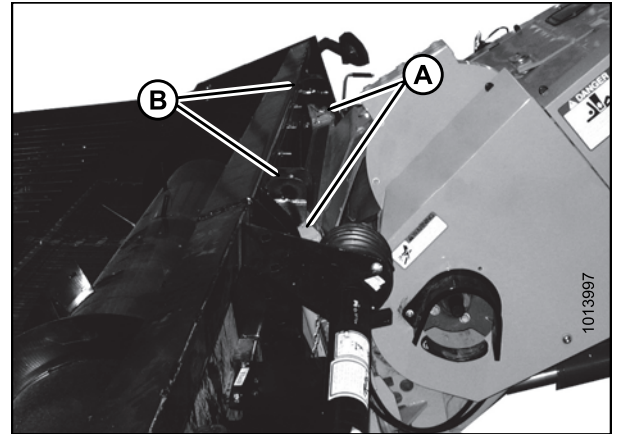


Figure 3.57: Picking Up Header

5. Grasp handle (A) and slide pin (B) into feeder house receptacle (C) until pin stop (D) drops down to lock the pin (see inset). Check that the pin on opposite side of feeder house also is engaged.
6. If pin (B) does not align with feeder house receptacle (C), or if alignment of the header pan and bottom of feeder house opening is unacceptable, reposition top beam by performing Steps 7., page 55 to Step 12., page 56.

NOTE:

If pin aligns with feeder house receptacle (C), proceed to Step 14., page 56.

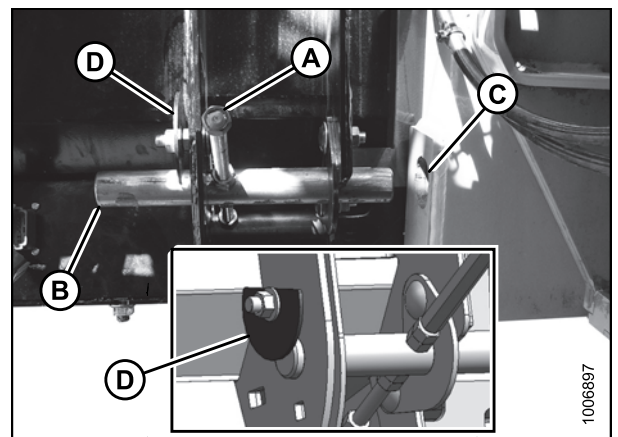


Figure 3.58: Feeder House Lock

7. Measure the misalignment between pin (B) and the feeder house receptacle (C).
8. Lower header to ground until the feeder house disengages the top beam.
9. Loosen the seven bolts (A) along the top beam (B) on the auger side of the header.

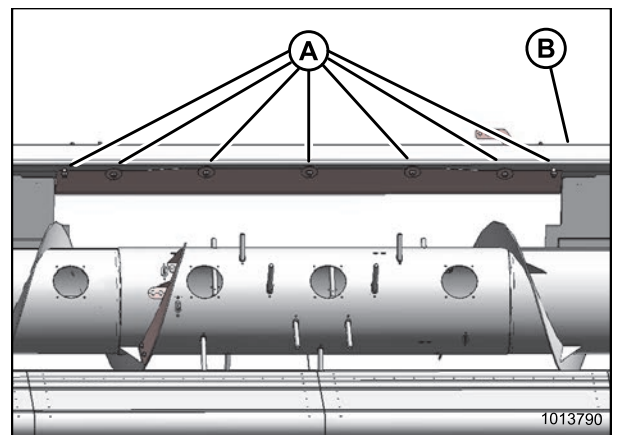


Figure 3.59: Top Beam (Front View)

OPERATION

10. Loosen the seven bolts (A) along the top beam (B) on the back side of the header.

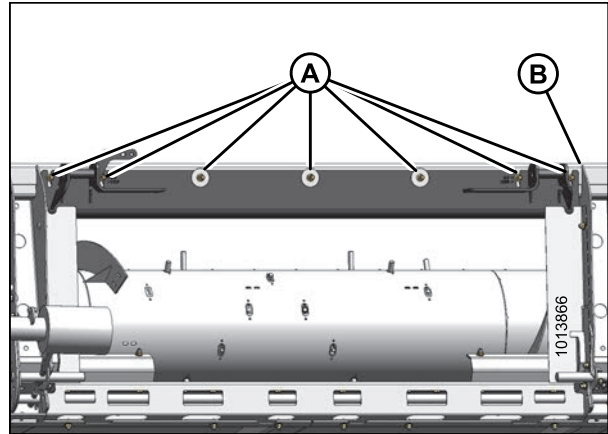


Figure 3.60: Top Beam (Rear View)

11. Move top beam (A) according to measurement in Step 7., page 55 to achieve proper alignment of locking pin and feeder house receptacle. Refer to Figure 3.58: Feeder House Lock, page 55.
12. Tighten all bolts.
13. Go back to Step 3., page 55.

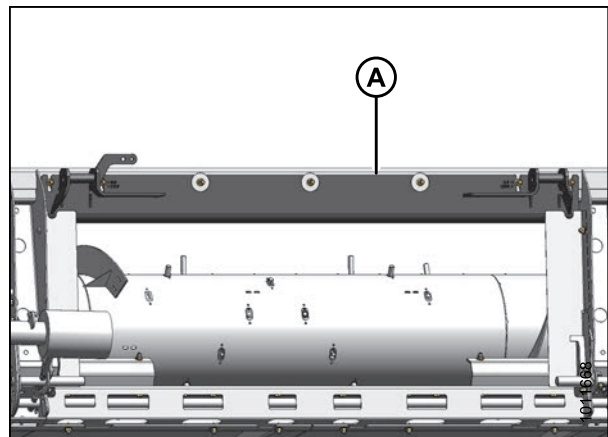


Figure 3.61: Top Beam (Rear View)

14. Rotate disc (B) on the header driveline storage hook (A), and remove driveline from the hook.

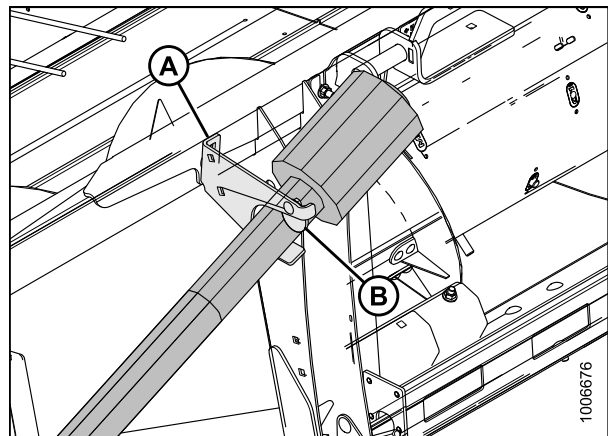


Figure 3.62: Driveline

OPERATION

15. Pull back collar (A) at the end of driveline and push onto the combine output shaft (B) until collar locks.

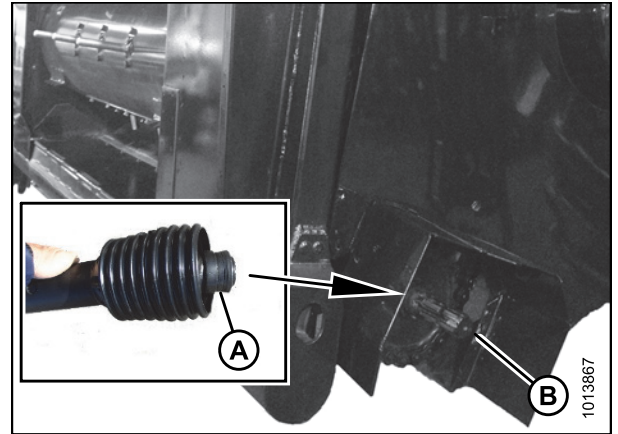


Figure 3.63: Driveline

16. Open cover (A) on header receptacle.
17. Push in lock button (B) and pull handle (C) upward to fully open position.

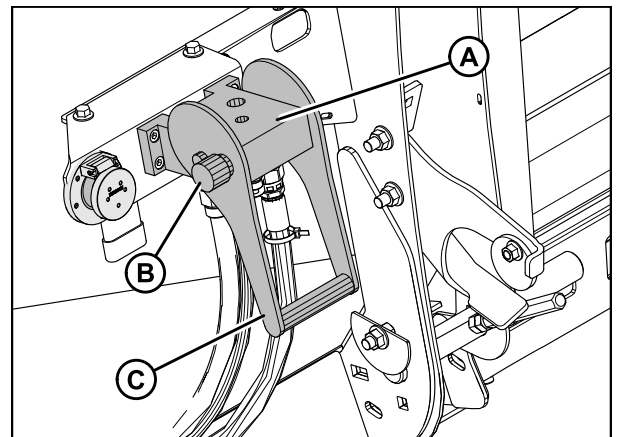


Figure 3.64: Coupler Lock

18. Remove coupler (A) from combine and clean mating surfaces.

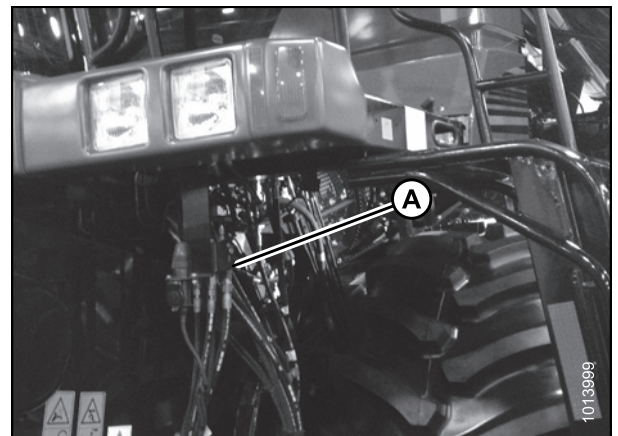


Figure 3.65: Versatile Coupler

OPERATION

19. Position coupler (A) onto header receptacle and push handle (B) downward to engage coupler pins into receptacle.
20. Push handle to closed position until lock button (C) snaps out.
21. Open cover (D) on header electrical receptacle.
22. Remove electrical connector (E) from storage cup on combine.
23. Align lugs on electrical connector (E) with slots in receptacle, push connector onto receptacle, and turn collar on connector to lock it in place.

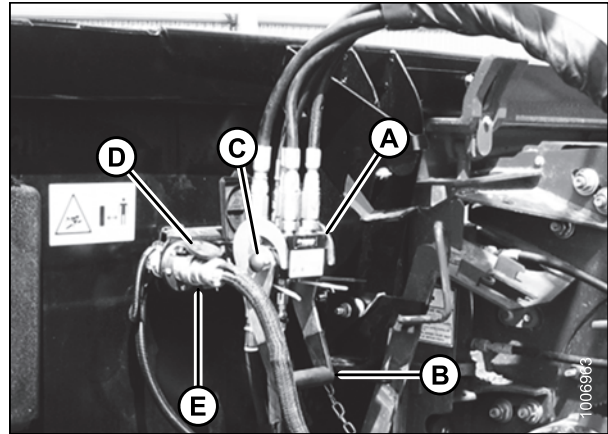


Figure 3.66: Attaching Coupler

Detaching from Versatile Combine

DANGER

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

1. Choose a level area, position header slightly above ground, stop engine, and remove key.
2. Push in lock button (C), and pull handle (B) upward to release coupler (A).
3. Remove coupler (A) from header receptacle.

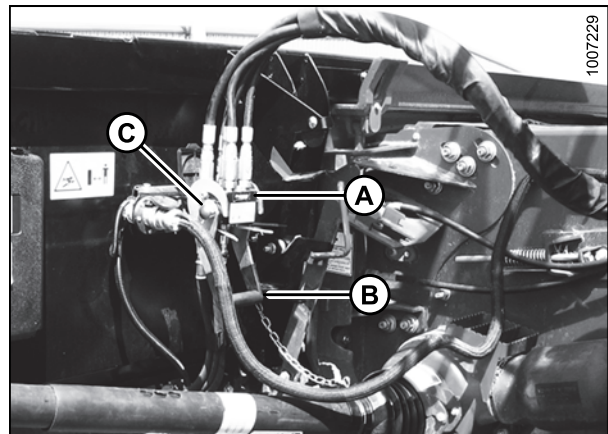


Figure 3.67: Releasing Coupler

4. Position coupler (A) onto storage plate (B) on combine.
5. Disconnect electrical connector from header, and place in storage cup (C) on combine.

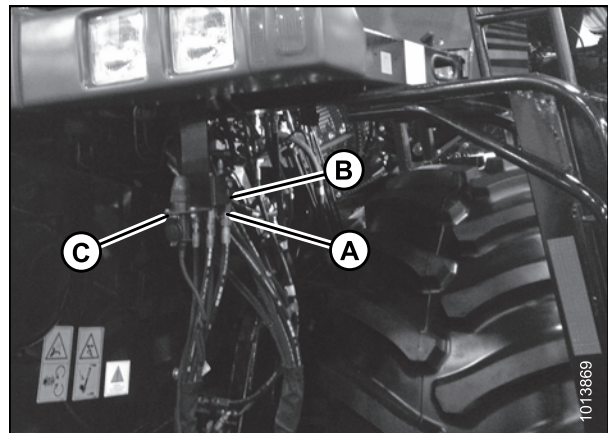


Figure 3.68: Coupler and Electrical Connector Storage Location

OPERATION

6. Close cover (A) on header hydraulic receptacle, and cover (B) on electrical receptacle.
7. Push handle (C) on header down into storage position until lock button (D) snaps out.

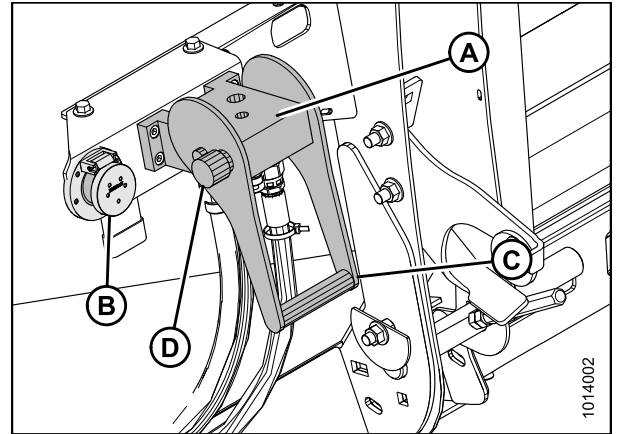


Figure 3.69: Locking Multi-Coupler

8. Pull back collar on driveline (A) and remove driveline from combine.

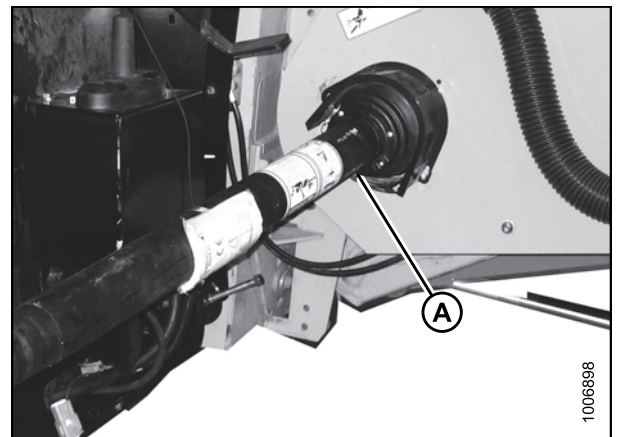


Figure 3.70: Detaching Driveline

9. Slide driveline into storage hook (A) on header and rotate disc (B) to secure driveline.

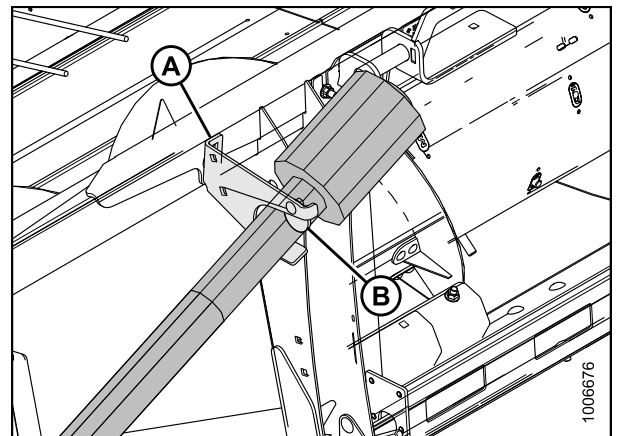


Figure 3.71: Driveline

OPERATION

10. Rotate pin stop (D) from lowered position (see inset), and disengage pin (B) from feeder house using handle (A).

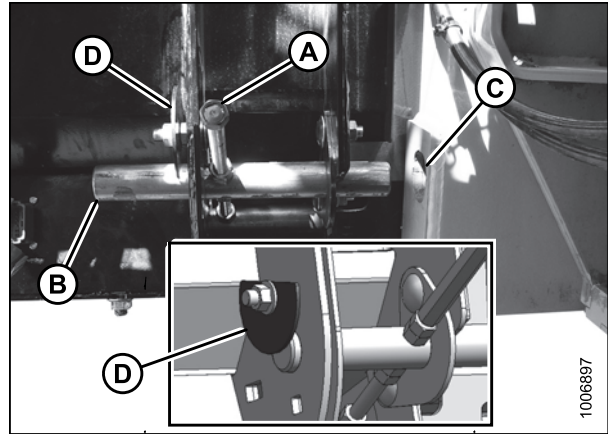


Figure 3.72: Feeder House Lock

11. Start combine and lower header to ground until feeder house posts (A) disengage from header.
12. Slowly back combine away from header.

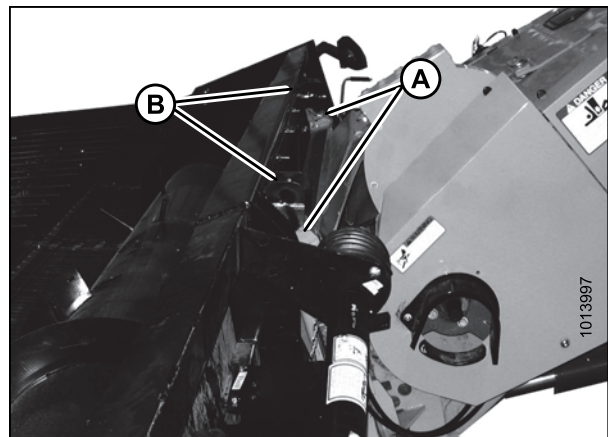


Figure 3.73: Disengaging Header

3.11 Header Transport

Refer to your combine operator's manual for transporting headers when attached to the combine.

3.11.1 Transport Lights

The transport lights, which are mounted on both ends of the header, are activated by switches inside the combine cab. They function as flashing amber hazard lights and turn signals, and should be positioned perpendicular to the endsheet.

Refer to your combine operator's manual for operating instructions.

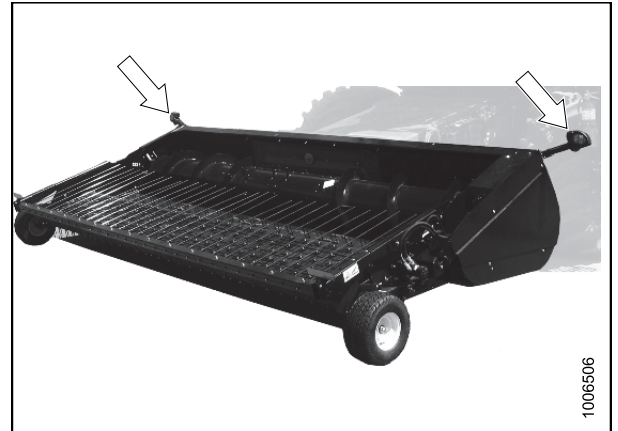


Figure 3.74: Transport Lights

3.12 Header Operation

Satisfactory operation of the header in all situations requires making proper adjustments to suit various crops and conditions.

Correct operation reduces crop loss and increases productivity. As well, proper adjustments and timely maintenance will increase the length of service you receive from your machine.

The variables listed in Table [3.3 PW8 Pick-Up Header Operating Variables, page 62](#) and detailed on the following pages will affect the performance of the header.

You will quickly become adept at adjusting the machine to achieve the results you desire. Most of the adjustments have been preset at the factory, but the settings can be changed to suit crop conditions.

Table 3.3 PW8 Pick-Up Header Operating Variables

| Variable | Refer to |
|-----------------------------|--|
| Operating speed | 3.12.1 Operating Speed, page 63 |
| Auger speed | Auger Speed, page 63 |
| Header height | Header Height, page 70 |
| Pick-up height | Pick-Up Height, page 71 |
| Hold-down position | Hold-Down Position, page 75 |
| Hold-down rod angle | Adjusting Hold-Down Rod Angle, page 76 |
| Auger position | Checking Auger Position, page 64 |
| Stripper plates | Stripper Plate Clearance, page 68 |
| Draper belt tension - front | Adjusting Front Draper Belt Tension, page 78 |
| Draper belt tension - rear | Adjusting Rear Draper Belt Tension, page 80 |
| Header flotation | 3.12.4 Adjusting Header Float, page 72 |

3.12.1 Operating Speed

Performance of the pick-up in various crop and field conditions largely depends upon the speed at which the drapers are turning and the forward speed of the combine.

- If the swath is pushed ahead, the draper speed is too low and some of the crop may remain unpicked.
- If the swath is torn apart and is pulled toward the combine header, the draper speed is too high and uneven combine feeding will occur.

Generally, optimum pick-up speed for most conditions results when the swath is always being pushed slightly ahead.

Draper speed is adjusted from the combine cab by regulating oil flow to the pick-up hydraulic motors, typically by using the reel speed controls for the combine. The ratio of pick-up speed to combine ground speed can be set using the combine header controls. Refer to your combine operator's manual.

IMPORTANT:

Do NOT over-speed pick-up. Over-speeding causes premature wear of drive components and adversely affects pick-up performance.

The following operating speeds are suggested:

Front and Rear Deck Aft Roller: 51 rpm per 1 mph (1.6 km/h) of combine ground speed.

Example: For combining at 5 mph (8 km/h), the rear roller shaft should run at $51 \times 5 \text{ mph} = 255 \text{ rpm}$ ($51 \times 8/1.6 = 255 \text{ rpm}$).

Adjusting Draper Speed

Draper speed is determined by measuring the rpm of the aft roller on the rear pick-up deck.

1. Check the roller rpm (A) with a handheld tachometer and adjust with the reel speed control in the combine.

NOTE:

Some combines are equipped with a speed sensor (B) that displays the roller rpm inside the combine cab.

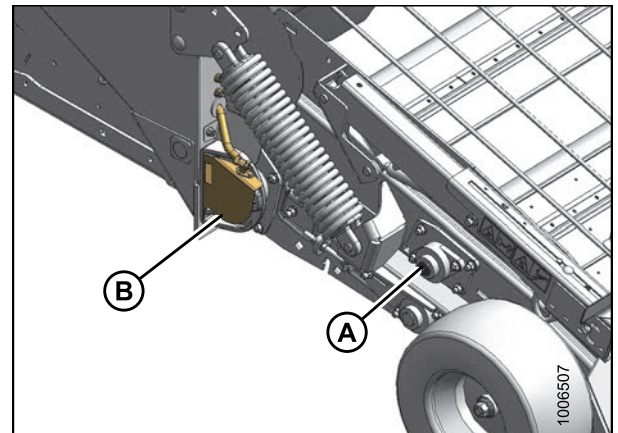


Figure 3.75: Draper Roller and Speed Sensor

3.12.2 Auger Operation

Auger Speed

The header is supplied with an auger drive sprocket to match the combine. The auger is chain driven by a direct connection to the feeder house, and auger speed depends on the feeder house speed. You can adjust auger speeds to suit crop conditions from the combine. Contact your Dealer for available sprocket options.

Refer to [Auger Drive Sprockets, page 162](#) for instructions on changing the sprocket.

OPERATION

Checking Auger Position

The auger position is critical for a smooth, high capacity flow of crop into the feeder house. It is factory set for normal crop conditions but may require adjustment for different crops and conditions. The auger must rotate freely without touching the auger pan or stripper bars, and the position should be checked prior to operating the pick-up.

1. Ensure clearance (A) between the auger flighting (B) and pan (C) is 3/16–7/16 in. (5–14 mm).

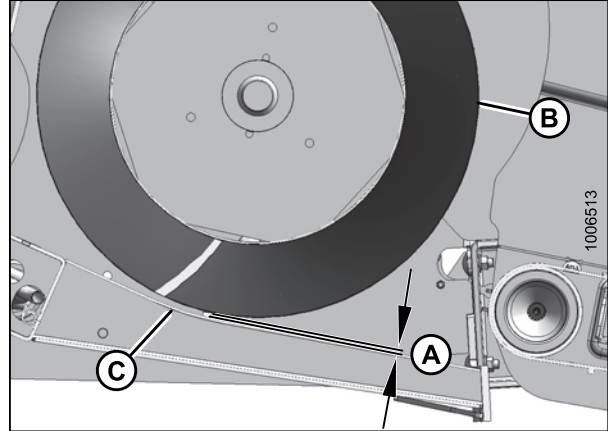


Figure 3.76: Auger to Pan Clearance

2. Ensure clearance (A) between the auger fingers (B) and pan (C) is 13/16–1 in. (20–25 mm).

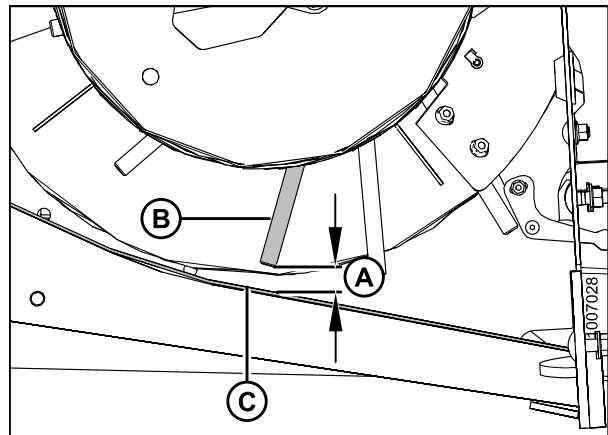


Figure 3.77: Finger to Pan Clearance

Adjusting Auger Position

The auger is adjustable on either end in order to maintain uniform clearance across the entire width of the header.

DANGER

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

OPERATION

NOTE:

Access the auger/pan area from the top of the header.

1. Lower header to the ground, shut down combine, and remove key from ignition.
2. Open left-hand endshield (A). Refer to [3.3.1 Opening Left-Hand Endshield, page 27](#).

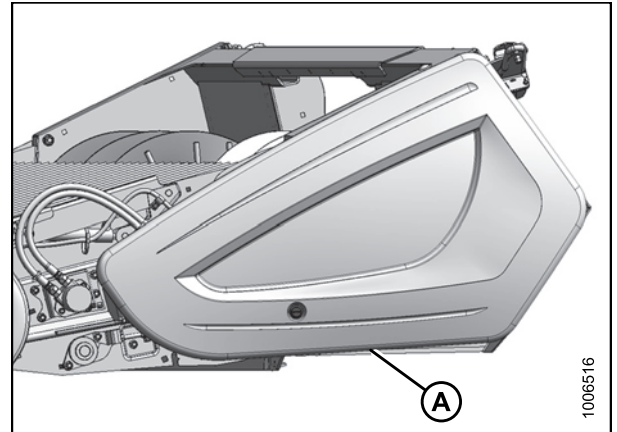


Figure 3.78: Left-Hand Endshield

3. Loosen two bolts (A) on auger stops at both ends of header.
4. Loosen jam nuts (B) on adjuster bolts (C).
5. Turn adjuster bolt (C) to raise or lower auger.
6. Manually rotate the auger to check for interference and to check clearance between the auger flighting and auger pan. Adjust if necessary.
7. Tighten jam nuts (B) and downstop nuts (A).
8. Check clearance between auger flighting and stripper plates and adjust if required. Refer to [Stripper Plate Clearance, page 68](#).

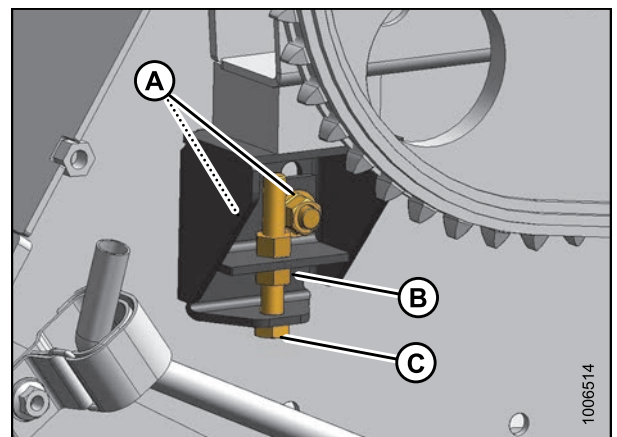


Figure 3.79: Left Side Auger Stop

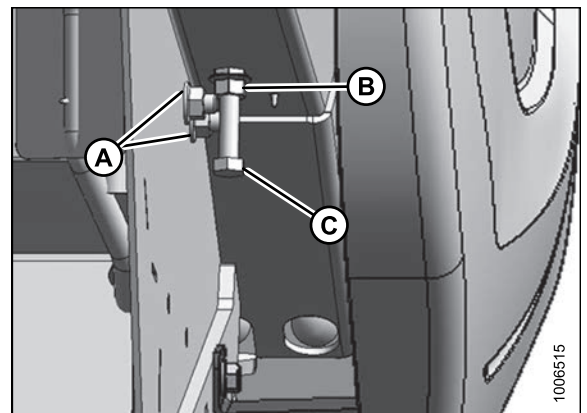


Figure 3.80: Right Side Auger Stop

Auger Float

The auger has an upward float range of 1-5/16 in. (34 mm), but it can be locked to operate in rigid-header mode.

Locking Auger Float

DANGER

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

1. Lower header to the ground, shut down combine, and remove key from ignition.
2. Open left-hand endshield (A). Refer to [3.3.1 Opening Left-Hand Endshield, page 27](#).
3. Loosen two bolts (A) on auger upstops (B) at both ends of header.
4. Slide the stops (B) downward until they contact the rubber blocks (C) on the auger arm.
5. Tighten bolts (A).

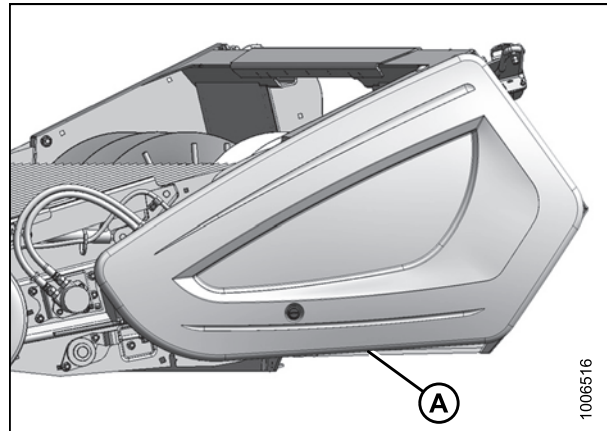


Figure 3.81: Left-Hand Endshield

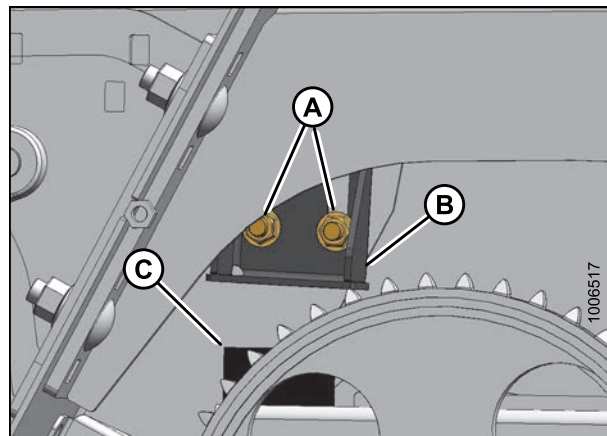


Figure 3.82: Left-Hand Stop

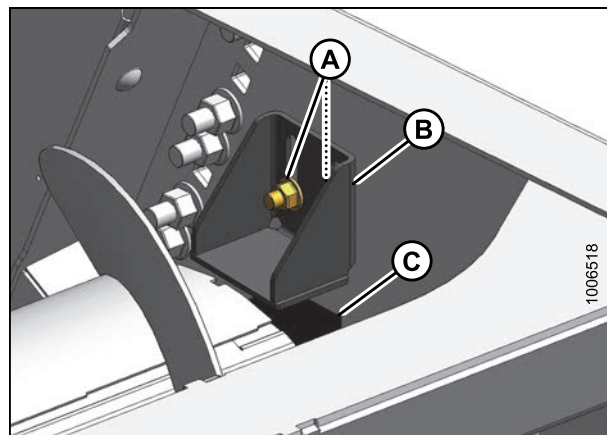


Figure 3.83: Right-Hand Stop

OPERATION

6. Close left-hand endshield (A). Refer to [3.3.2 Closing Left-Hand Endshield, page 28](#).

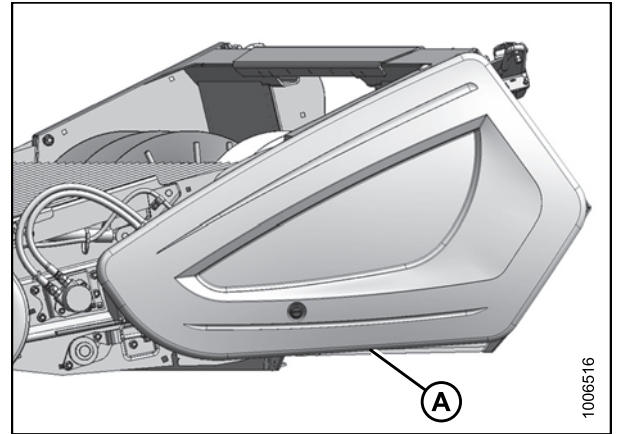


Figure 3.84: Left-Hand Endshield

Unlocking Auger Float

DANGER

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

1. Lower header to the ground, shut down combine, and remove key from ignition.
2. Open left-hand endshield (A) Refer to [3.3.1 Opening Left-Hand Endshield, page 27](#).
3. Loosen the two bolts (A) on auger upstops (B) at both ends of header.
4. Slide stops (C) upward to desired float range.
5. Tighten bolts (A).

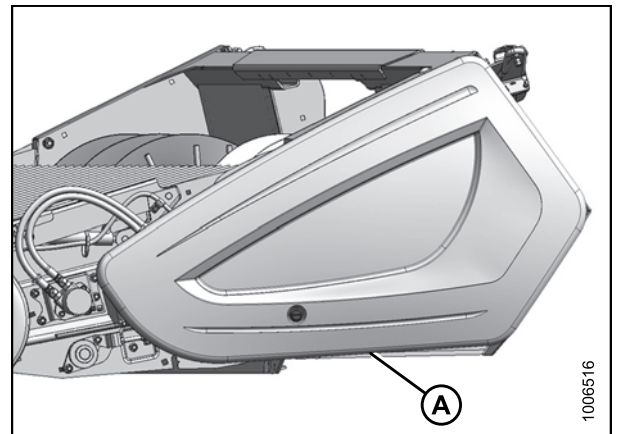


Figure 3.85: Left-Hand Endshield

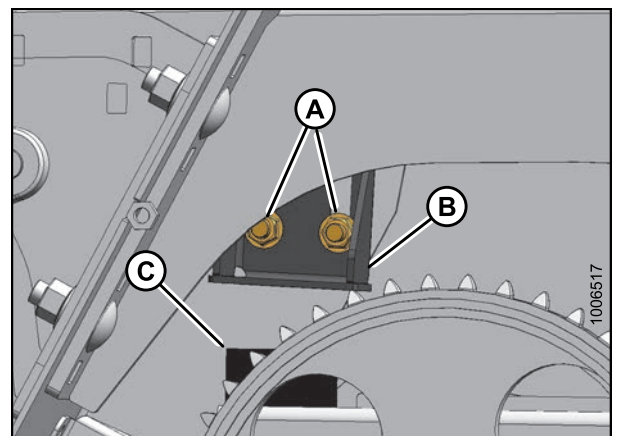


Figure 3.86: Left-Hand Stop

OPERATION

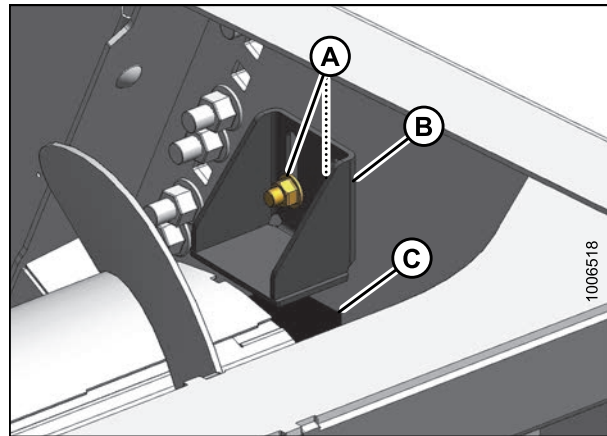


Figure 3.87: Right-Hand Stop

6. Close left-hand endshield (A). Refer to [3.3.2 Closing Left-Hand Endshield, page 28](#).

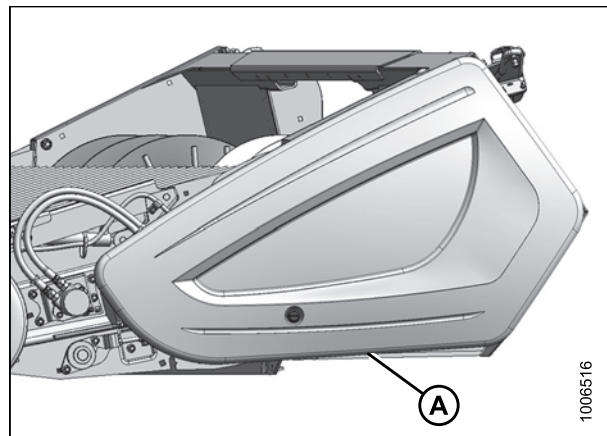


Figure 3.88: Left-Hand Endshield

Stripper Plate Clearance

The header is equipped with a pair of stripper plates (A) located on either side of the center opening. The stripper plates are designed to minimize crop carryover behind the auger when properly adjusted.

Stripper plate clearance is factory preset to 1/8–1/4 in. (3–6 mm).

NOTE:

- If the clearance between the flighting and stripper plate is too large, crop has a tendency to wrap around the auger and disrupt crop flow into the combine.
- If the clearance is too little, the auger flighting may contact the stripper plates and cause excessive wear to the flighting and stripper plates.

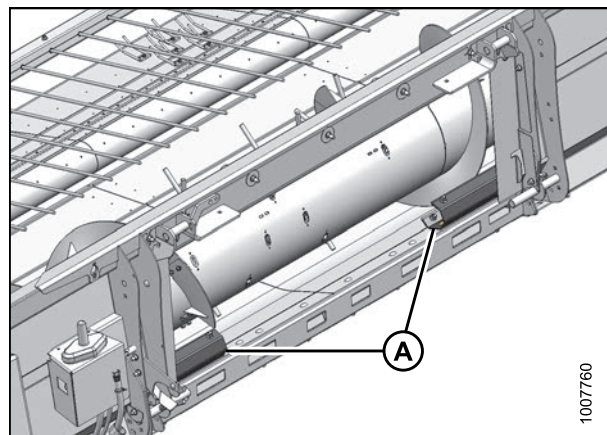


Figure 3.89: Stripper Plates

OPERATION

Checking Stripper Plate Clearance

Check the stripper plate clearance whenever the auger position is changed, and adjust if necessary.

DANGER

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

1. Lower header to the ground, shut down combine, and remove key from ignition.
2. Manually rotate the auger to check for interference and to check the clearance between the auger flighting and stripper plates.

NOTE:

Access the auger/stripper plate area from top of header.

3. Run header slowly, listening for contact between the auger flighting and the stripper plates. Gradually increase speed until you are at full speed. If there is contact, the stripper plate clearance will need to be adjusted. Refer to [Adjusting Stripper Plate Clearance, page 69](#).

Adjusting Stripper Plate Clearance

1. Loosen nuts (A) on the stripper plate (B) and adjust plate to achieve clearance (C) of 1/8–1/4 in. (3–11 mm).
2. Tighten nuts (A).
3. Recheck clearance.

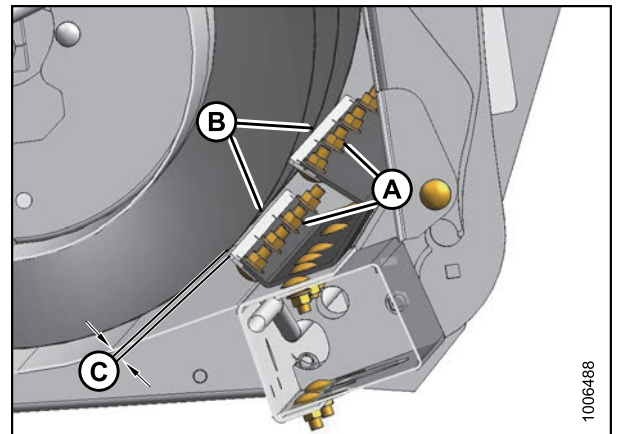


Figure 3.90: Stripper Plate Clearance

3.12.3 Operating Height

Header Height

Header height is the distance between the deck pivot and the ground. Recommended operating height (A) is between four and five on the end plate decal or 12 in. (305 mm) above the ground.

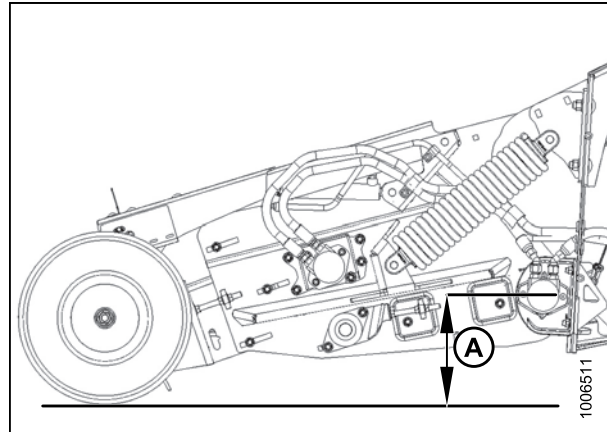


Figure 3.91: Operating Height

Header height adjustments are made using the combine header height control. The numbered decals (A) on both sides of the header indicate the header operating height if the combine is not equipped with an in-cab header height display.

The position of the end plate (B) on the decal represents the header height. Setting the end plate position between four and five will achieve the recommended operating height of 12 in. (305 mm).

NOTE:

Position one represents the lowest header height and position seven represents the highest.

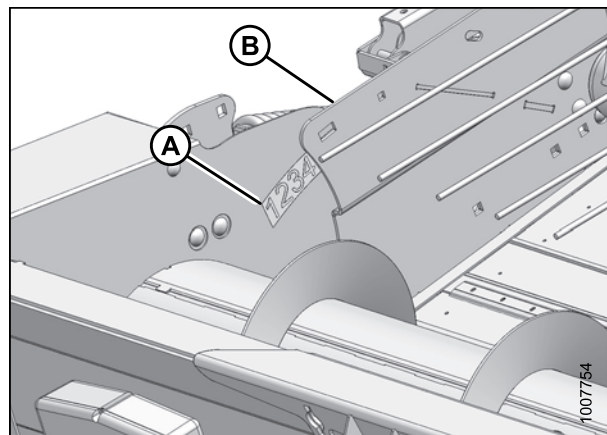


Figure 3.92: Height Gauge

If your combine is factory equipped with Auto Header Height Control (AHHC), refer to the following operating and adjustment information. If AHHC is not functioning properly, the sensor output voltage or header height range may require adjustment. For more information, refer to [4 Auto Header Height Control \(AHHC\), page 87](#)

1. Ensure the optimum pick-up height is 12 in. (305 mm) off the ground under normal conditions and with the AHHC set to the NEUTRAL position.
2. Use the AHHC to change the pick-up operating height to suit your specific crop condition. Refer to your combine operator manual for details.
3. Visit your Dealer if the AHHC sensor requires adjustment.

OPERATION

Pick-Up Height

Pick-up height (A) is the distance between the pick-up finger and the ground.

The recommended pick-up height is 1 in. (25 mm), but it may need to be adjusted to suit field conditions. The following symptoms indicate that an adjustment is required:

- If the pick-up leaves material in the swath, the pick-up height is too high.
- If the pick-up fingers are wearing quickly or are picking up dirt and stones, the pick-up height is too low.

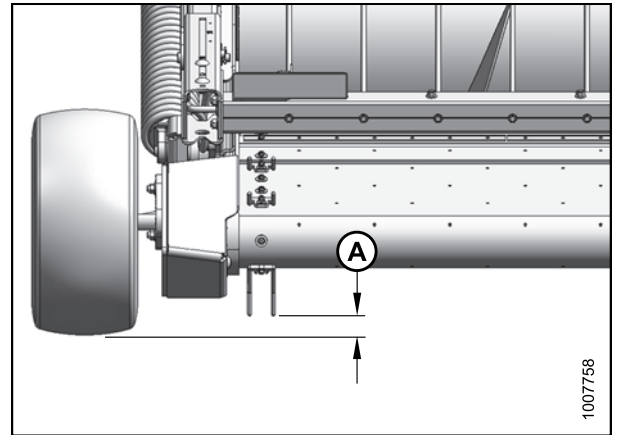


Figure 3.93: Pick-Up Height

Adjusting Pick-Up Height

1. Check that tire pressure is set to 35–45 psi (240–310 kPa).
2. Adjust the operating height (A) until the rear roller is 12 in. (300 mm) off the ground.

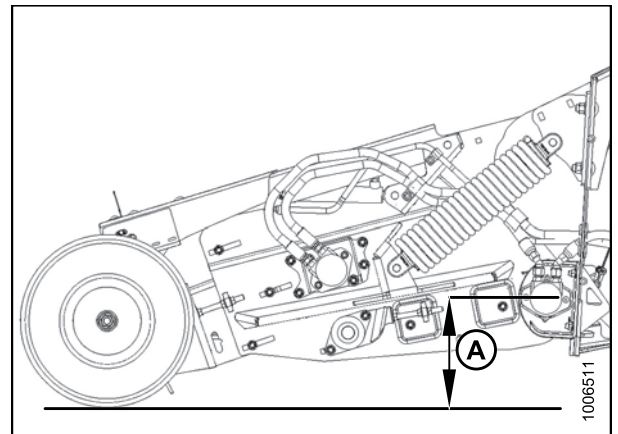


Figure 3.94: Operating Height

3. Check the pick-up height (A) and complete Step 4., [page 72](#) to Step 8., [page 72](#) if adjustment is necessary.

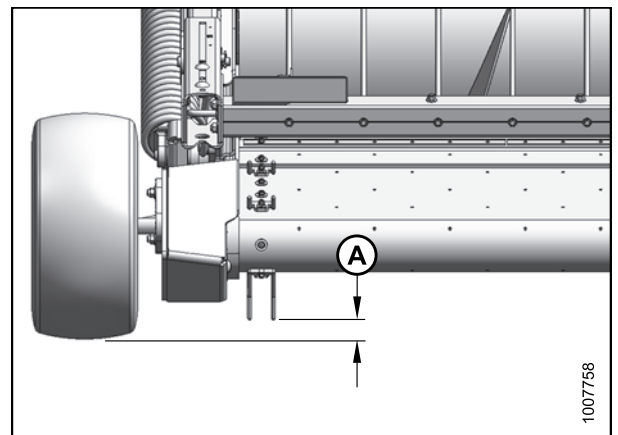


Figure 3.95: Pick-Up Height

OPERATION

4. Raise the header using the combine controls to take the load off the wheels.
5. Loosen two nuts (A) on wheel plate.
6. Position wheel plate cog to desired number on frame.

NOTE:

Position number two provides 1.0 in. (25 mm) clearance to the ground.

7. Tighten nuts (A).
8. Repeat Step 4., [page 72](#) to Step 7., [page 72](#) for the opposite side.
9. Adjust the Auto Header Height Control (AHHC) if necessary.

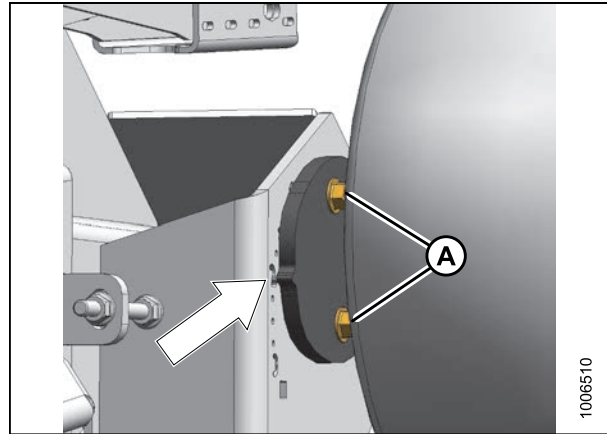


Figure 3.96: Pick-Up Height Adjustment

3.12.4 Adjusting Header Float

Header float is factory set, but it can be adjusted if the wheel ground pressure is higher than desired or if it is too light and the wheels don't follow ground terrain.



DANGER

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

1. Attach the header to the combine feeder house and ensure it is latched securely. It is not necessary to hook up the driveline or hydraulics. Refer to the relevant combine attaching procedure:
 - [Attaching to Case IH Combine, page 36](#)
 - [Attaching to John Deere 60, 70, and S Series Combine, page 42](#)
 - [Attaching to New Holland CR/CX Series Combine, page 49](#)
 - [Attaching to Versatile Combine, page 54](#)

OPERATION

2. Lower combine feeder house so the front draper deck is rotated upward to full floated-up position. Header frame will be close to the ground and coil spring will be fully collapsed.

NOTE:

From factory the spring tension is initially set to be in the second hole from the bottom on the float anchor.

3. Shut down combine and remove key from ignition.
4. Open the left-hand endshield (A). Refer to [3.3.1 Opening Left-Hand Endshield, page 27](#).

NOTE:

The right side spring float assembly can be removed or adjusted without removing the right-hand endshield. For improved accessibility, remove four M12 carriage bolts and hex flange nuts from endshield support (not shown), and remove right-hand endshield.

5. Ensure all spring tension is released from the spring float assembly (A), remove cotter pin (B), clevis pin (C), and three flat washers (D).

NOTE:

When spring tension is fully released, spring coils should be fully collapsed and the spring float assembly should rock from side to side when moved by hand. If pressure on the clevis pin persists, slightly raise or lower the header.

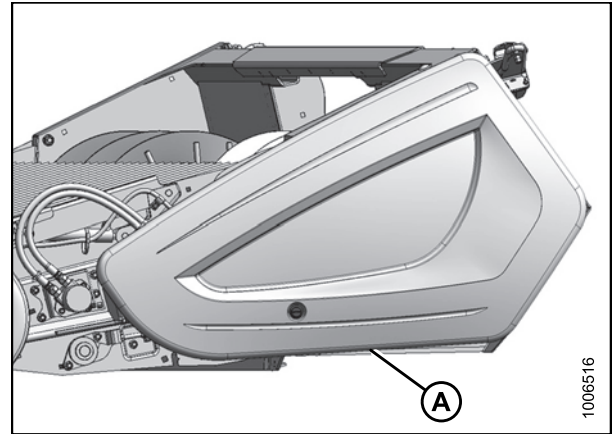


Figure 3.97: Left-Hand Endshield

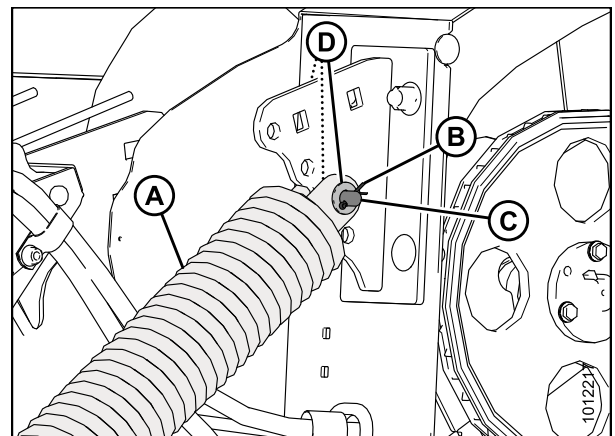


Figure 3.98: Left Side Spring Float Assembly Shown – Right Side Opposite

OPERATION

6. Move spring float assembly (A) to float anchor holes (B) to make wheel ground pressure lighter, or move spring float assembly to float anchor hole (C) to make wheel ground pressure heavier.

IMPORTANT:

The left and right spring float assemblies must be set to the same anchor hole position or draper deck damage could result.

NOTE:

If the spring float assembly (A) hole does not align with float anchor holes (B, C), raise or lower header as necessary.

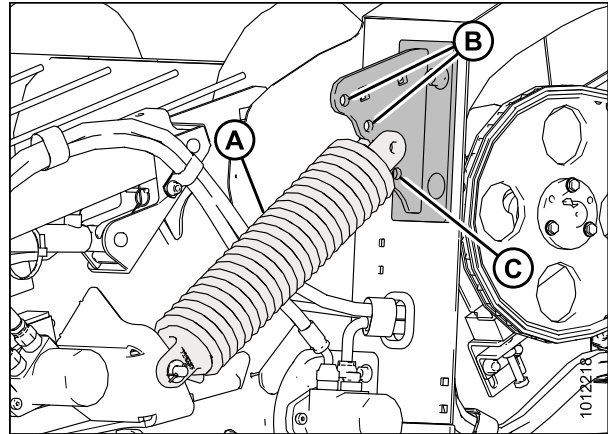


Figure 3.99: Left Side Anchor Shown – Right Side Opposite

7. Insert clevis pin (A) from the inboard side through rod end of spring float assembly (B), three flat washers (C), and anchor (D) as shown. Secure with cotter pin (E).
8. Repeat procedure for opposite side of header ensuring that left and right spring float assemblies are set to the same anchor hole position on header.
9. Close left-hand endshield, refer to [3.3.2 Closing Left-Hand Endshield, page 28](#), and replace right-hand endshield if previously removed.

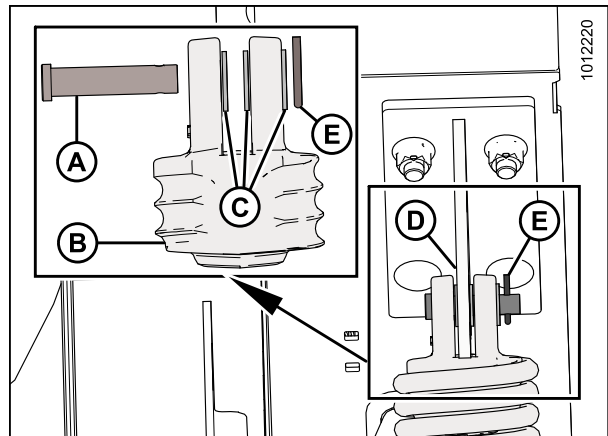


Figure 3.100: Left Side Spring Float Assembly Shown – Right Side Opposite

3.12.5 Hold-Downs

Hold-downs are important to the performance of the pickup and is adjusted according to crop conditions.

OPERATION

Hold-Down Position

Hold-down position refers to the position of the fiberglass rods (A) with respect to the swath and can be adjusted according to crop conditions.

The fiberglass rods (A) not only ensure that contact between the swath and pick-up belts is maintained, but they also guide the crop under the auger. Applying constant downward pressure to the crop assists with pick-up performance.

Adjust the hold-down position using the combine reel height control according to the following crop conditions:

- (1) Short crop
- (2) Average crop
- (3) Heavy crop

IMPORTANT:

Before reversing the combine feeder house to unplug the feeder, fully raise the hold-down.

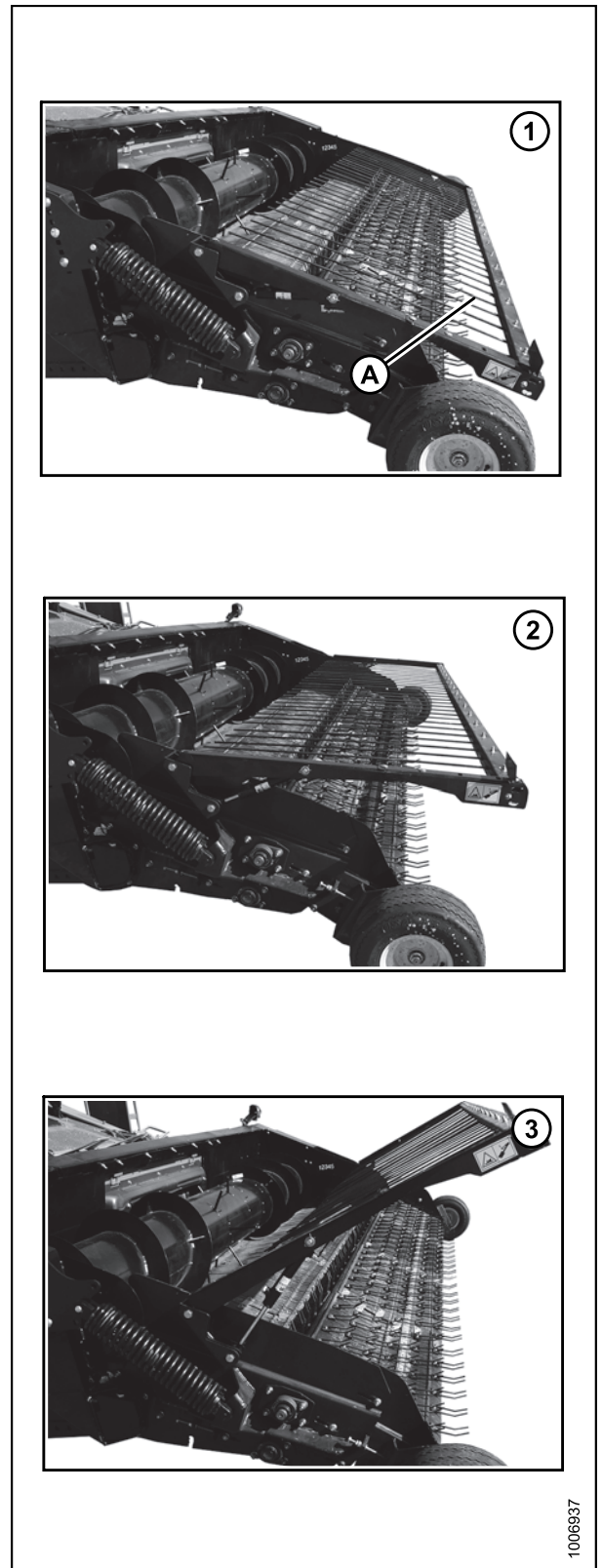


Figure 3.101: Hold-Down Positions

OPERATION

Adjusting Hold-Down Rod Angle

The angle between the fiberglass rods and the hold-down support arms is adjustable and is preset at the factory to optimize crop flow into the combine. The factory setting should be satisfactory for most crop conditions, but the rods can be adjusted if necessary.

1. Loosen two hex head M12 nuts (A) on both ends of the hold-down crossbar (B) until the crossbar rotates.
2. Rotate the crossbar (B) to the desired position using handle (D).
3. Tighten nuts (A).

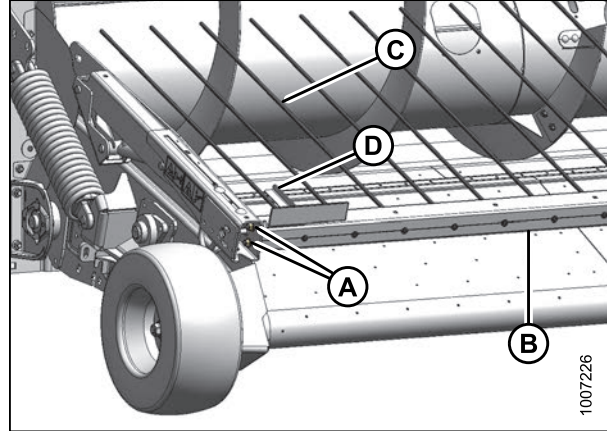


Figure 3.102: Hold-Down Rod Angle

3.12.6 Crop Deflectors

Crop deflectors can be installed where there is a tendency for stems to collect under the hold-down support arm pivot. They are bolted to the frame inside the left endsheet for shipment from the factory and should have been removed at the Dealership during setup and installed or retained by the Operator. Under no circumstances should the header be run until the crop deflectors are removed from inside the header drive compartment.

CAUTION

To avoid damage to the header drive, do not operate the header with the crop deflectors bolted in the shipping location inside the header drive compartment.

Removing Crop Deflectors

DANGER

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

1. Lower hold-down.
2. Lower header to the ground, shut down combine, and remove key from ignition.

OPERATION

3. Remove two M12 x 25 bolts (B) and nuts and remove crop deflector (A).
4. Repeat for opposite deflector.
5. Store deflectors and hardware in combine cab or an alternative safe location.

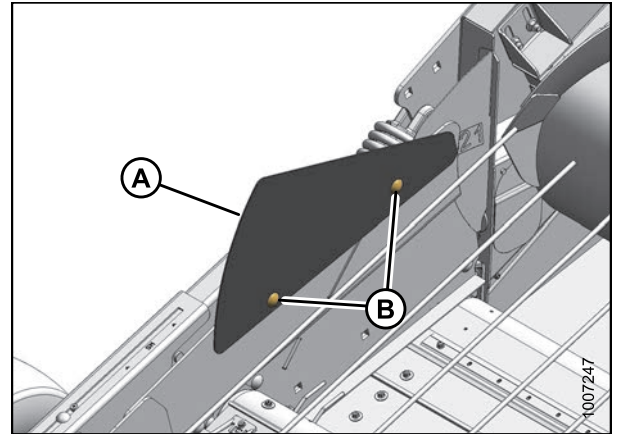


Figure 3.103: Removing Deflector

Installing Crop Deflectors

DANGER

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

1. Retrieve crop deflectors from combine cab or previously stored location.
2. Lower hold-down.
3. Lower header to the ground, shut down combine, and remove key from ignition.
4. Position crop deflector (A) onto header endsheet and secure with two M12 x 25 bolts (B) and nuts provided in bag.

NOTE:

Bolt heads must face inboard.

5. Repeat for the opposite deflector.

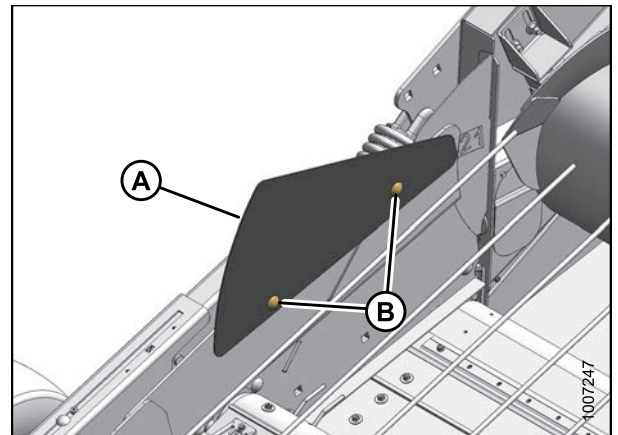


Figure 3.104: Crop Deflector

3.12.7 Draper Belt Tension

The pick-up draper belts are set at the factory, but the draper tension should be checked before operating.

NOTE:

- There should be visible sag in the underside of the draper.
- Draper tension needs to be set only to prevent slippage.
- Drapers may be sticky when new. Talcum or baby powder applied to the drapers should help reduce stickiness.

OPERATION

Checking Draper Belt Tension

DANGER

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

NOTE:

Drapers may be sticky when new. Talcum or baby powder applied to the drapers should help to reduce the stickiness.

1. Raise the header fully and engage the combine safety props.
2. Stop engine and remove key from ignition.
3. Ensure drapers are visible through slots (A). Proper tension is achieved when the draper aligns with indicator notch in slots (A).

IMPORTANT:

For proper draper tracking, ensure deck indicator (B) is in the same position on both sides of the header. If adjustment is required, refer to [Adjusting Front Draper Belt Tension, page 78](#) or [Adjusting Rear Draper Belt Tension, page 80](#).

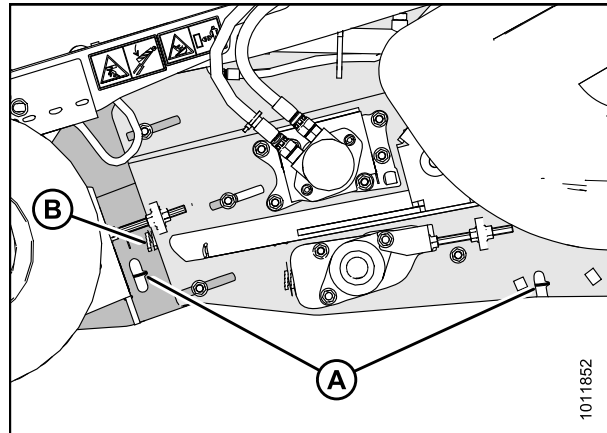


Figure 3.105: Draper Tension Indicator

Adjusting Front Draper Belt Tension

Draper tension is factory set but should be checked before operating.

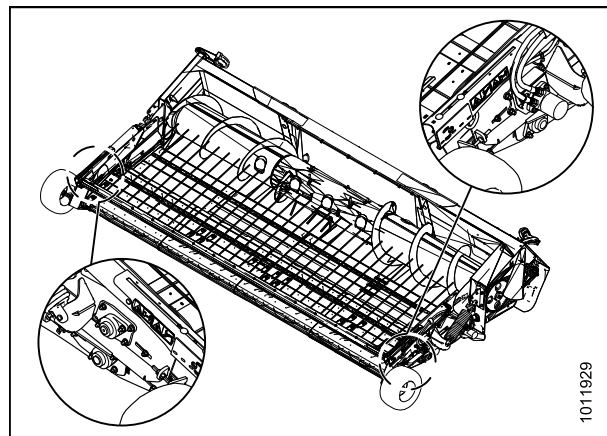


Figure 3.106: Front Deck Adjusting Bolts

OPERATION

The stepped position indicator gauges are used to precisely align each side of the front and rear decks. Each notch (A) represents an adjustment of 0.04 in. (1 mm).

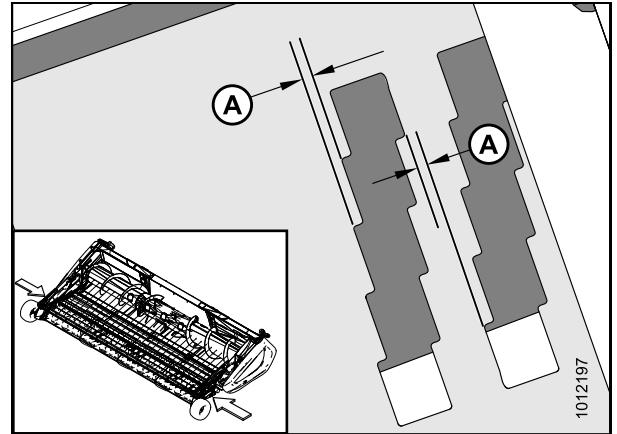


Figure 3.107: Stepped Position Indicators

1. Loosen three clamp bolts (A) on each side of the header.
2. Loosen jam nut (B) on the left side.
3. Turn adjuster nut (C) to set the draper tension. Proper tension is achieved when the draper lines up with indicator notch (D).

IMPORTANT:

Do **NOT** tighten draper above the indicator notch. Overtightening may result in the following:

- Joining bolts pulling out of draper
 - Damage to the rollers or bearings
 - Twisting and wrinkling of drapers
4. Note the position of the stepped position indicator gauge (E).
 5. Loosen jam nut (A) on the right side of the header, and turn adjuster nut (B) until the position of stepped position indicator gauge (C) is identical to the left side.

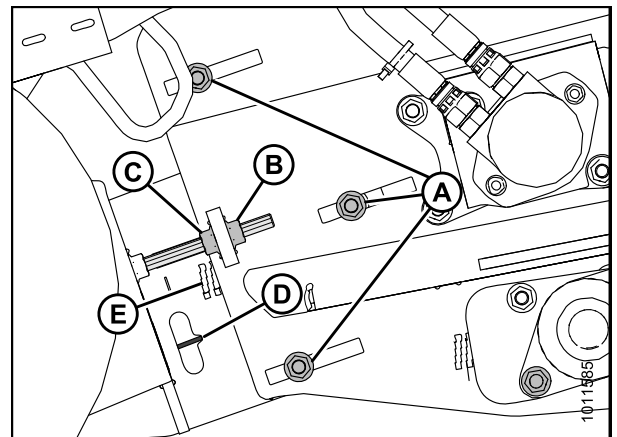


Figure 3.108: Left Side Front Deck Shown – Right Side Opposite

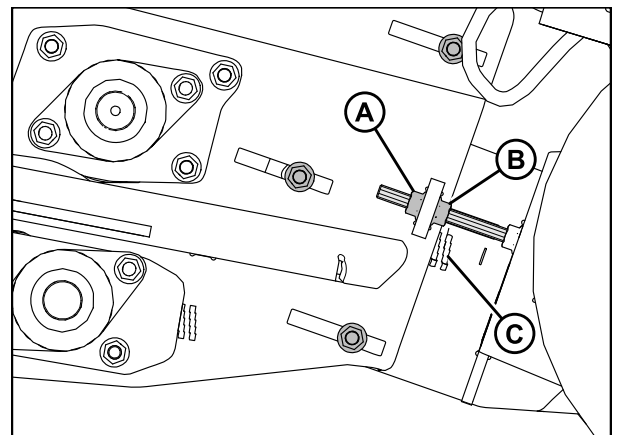


Figure 3.109: Right Side Stepped Position Indicator Gauge

OPERATION

6. Tighten three clamp bolts (A) and jam nut (B) on both sides of the header.

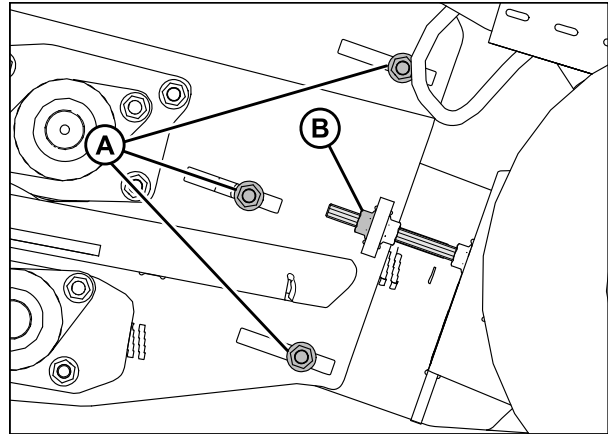


Figure 3.110: Front Deck Adjuster

Adjusting Rear Draper Belt Tension

IMPORTANT:

Do **NOT** tighten draper above the indicator notch. Drapers only need to be tight enough to prevent slippage. Overtightening may result in the following:

- Joining bolts pulling out of draper
- Damage to the rollers or bearings
- Twisting and wrinkling of drapers

The stepped position indicator gauges are used to precisely align each side of the front and rear decks. Each notch (A) represents an adjustment of 0.04 in. (1 mm).

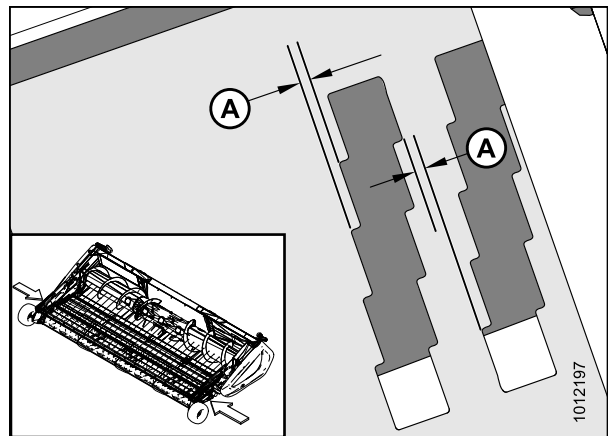


Figure 3.111: Stepped Position Indicators

OPERATION

Left Side

1. Loosen two clamp bolts (A).
2. Loosen jam nut (B).
3. Turn adjuster nut (C) to set draper tension. Proper tension is achieved when the draper lines up with indicator notch (D).
4. Tighten clamp bolts (A) and jam nut (B).
5. Note the position of indicator (E) and set the right side to the same position.

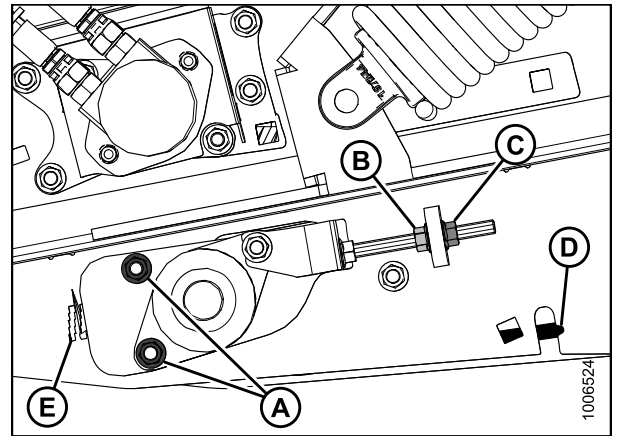


Figure 3.112: Left Side Rear Deck

Right Side

6. Loosen three clamp bolts (A).
7. Loosen jam nut (B).
8. Turn adjuster nut (C) until the position of the indicator notch (D) is exactly the same as the left side.
9. Tighten clamp bolts (A) and jam nut (B).

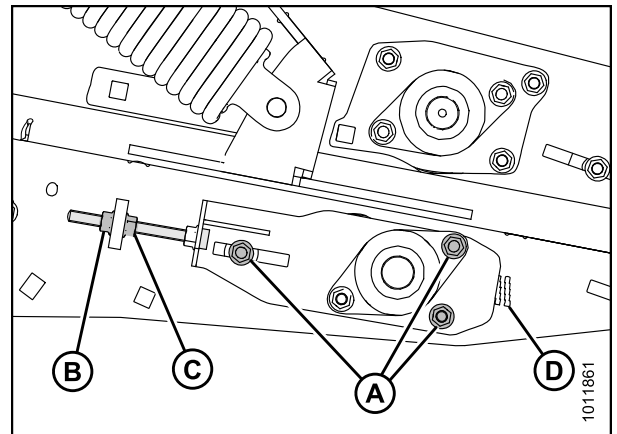


Figure 3.113: Right Side Rear Deck

3.12.8 Driveline

Clutch

The header-to-combine driveline contains a radial pin clutch (A) that provides protection against overload. When the auger encounters an obstruction, an overload occurs and the clutch slips while emitting a rattling sound and generating a pulsating action. Frequent slippage of more than two or three seconds may result in clutch damage.

IMPORTANT:

Prolonged operation of the header with the clutch slipping will cause damage to the header and/or clutch.

If the clutch becomes permanently damaged, it must be replaced. Refer to [Replacing Driveline Clutch, page 147](#).

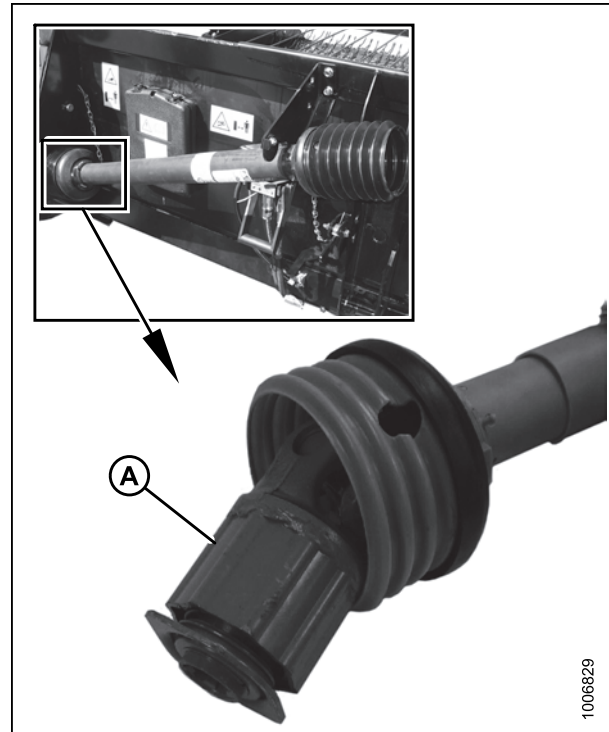


Figure 3.114: Radial Pin Clutch

Driveline Guard



DANGER

To avoid serious injury or death, do not operate machine if guard is missing or not in place.

The driveline guard (A) must always remain attached to the driveline. Tethers (light chains) (B) on either end of the driveline guard prevent the guard from rotating. Remove the guard for maintenance purposes only (refer to [Removing Driveline Guard, page 148](#)).

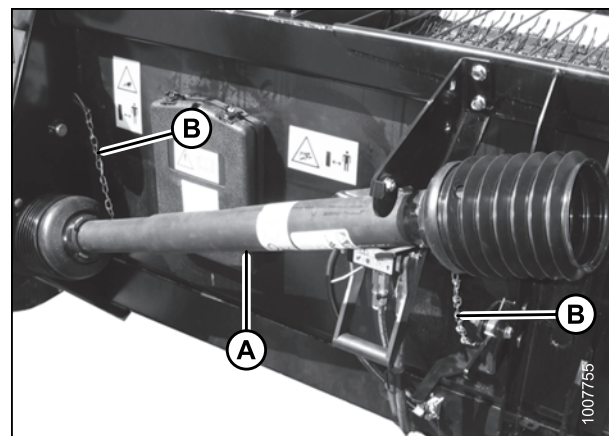


Figure 3.115: Driveline Guard

3.13 Unplugging the Header

DANGER

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

1. Stop forward movement of the combine and disengage the header.
2. Fully raise the hold-down.
3. Disengage the pick-up draper drive.
4. Run the feeder backwards using the reverse controls inside the combine cab to clear the plug.

IMPORTANT:

To prevent damage to the feeder motor, do **NOT** engage the feeder reverser for more than five seconds if the feeder and auger will not turn.

3.13.1 Adjusting Cutterbar Rubber Seal

The rubber flap on the cutterbar seal assembly for 2015 and newer models comes with upper and lower holes to enable adjustment of the rubber flap height.

DANGER

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

1. Raise the header fully and engage the combine safety props.
2. Stop engine and remove key from ignition.

OPERATION

To increase draper seal:

3. Remove eight M12 carriage bolts and hex flange nuts (A) from support (B) and cutterbar (C), and remove rubber flap (D).
4. Repositioning rubber flap (D) from upper hole (F) to lower hole (E).
5. Install eight M12 carriage bolts and hex flange nuts (A) through support (B), rubber flap, and cutterbar (C), and torque to 40–50 ft·lbf (54–68 N·m).

NOTE:

This raised flap position provides an improved seal to the rear draper, but the draper connection hardware will wear holes in rubber flap (D) over time.

To eliminate draper seal:

If continual plugging occurs between the rear draper and the cutterbar, it may be necessary to reposition or remove the rubber flap (D) in order to eliminate the cutterbar seal.

6. Remove eight M12 carriage bolts and hex flange nuts (A) from support (B) and cutterbar (C), and remove rubber flap (D).
7. Store rubber flap (D) for reinstallation, or flip rubber flap upside down, install eight M12 carriage bolts and hex flange nuts (A) through support (B), hole (E) in rubber flap, and cutterbar (C), and torque to 40–50 ft·lbf (54–68 N·m).

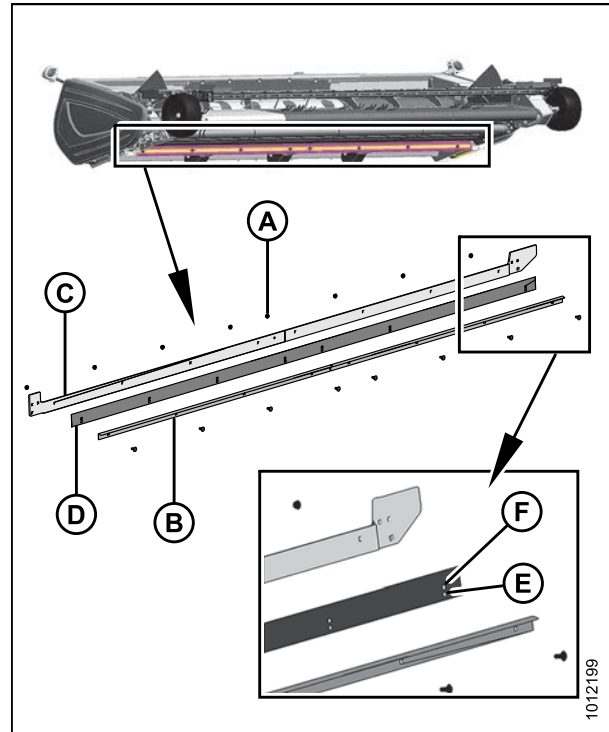


Figure 3.116: Cutterbar Rubber Seal

3.14 Storing the Header

Perform the following tasks before storing the header at the end of each operating season:

CAUTION

Never use gasoline, naphtha, or any volatile material for cleaning purposes. These materials may be toxic and/or flammable.

1. Clean the header thoroughly.
2. Store in a dry, protected place if possible. If stored outside, always cover header with a waterproof canvas or other protective material.
3. Raise header and engage header lift cylinder safety props on combine.
4. Block up the header (if possible) to take weight off tires.
5. Repaint all worn or chipped painted surfaces to prevent rust.
6. Lubricate the header thoroughly leaving excess grease on fittings to keep moisture out of bearings.
7. Apply grease to exposed threads, cylinder rods, and sliding surfaces of components.
8. Check for worn components and repair as necessary.
9. Check for broken components and order replacements from your Dealer. Immediate repair of these items will save time and effort at beginning of next season.
10. Replace or tighten any missing or loose hardware. Refer to [8.1 Torque Specifications, page 233](#).

4 Auto Header Height Control (AHHC)

MacDon's Auto Header Height Control (AHHC) feature works in conjunction with the AHHC option available on certain combine models.

A sensor is installed at each end of the PW8 Pick-Up Header. These sensors send a signal to the combine allowing it to maintain a consistent cutting height as the header follows ground contours.

PW8 Pick-Up Headers are factory-equipped for Auto Header Height Control; however, before using the Auto Header Height Control feature, you must do the following:

1. Ensure that the Auto Header Height Control sensor's output voltage range is appropriate for the combine. For more information, refer to [4.2 Height Sensor Output Voltage Range – Combine Requirements, page 95](#).
2. Prepare the combine to use the Auto Header Height Control feature.
3. Calibrate the Auto Header Height Control system so that the combine can correctly interpret data from the height sensors on the header.

NOTE:

Once calibration is complete, you are ready to use the Auto Header Height Control feature in the field. For each combine, certain operation settings can be used to improve the performance of the Auto Header Height Control feature.

NOTE:

If your PW8 Pick-Up Header is not equipped to work with a specific combine model, you will need to install the appropriate combine completion package. Completion packages come with instructions for installing the height sensors.

Refer to the following instructions for your specific combine model:

- [4.3 Case IH 5130/6130/7130, 7010/8010, 7120/8120/9120, and 7230/8230/9230 Combines, page 98](#)
- [4.4 John Deere 60 Series Combines, page 105](#)
- [4.5 John Deere 70 Series Combines, page 112](#)
- [4.6 John Deere S Series Combines, page 118](#)
- [4.7 New Holland Combines, page 124](#)

4.1 Height Controllers

The PW8 Pick-Up Header is equipped with two height controllers, one at each end of the header. The height controllers do not require maintenance, but they may need to be repaired or replaced due to normal wear and tear.

The controllers may require calibration if there are problems with pick-up height control—see your Dealer.

AUTO HEADER HEIGHT CONTROL (AHHC)

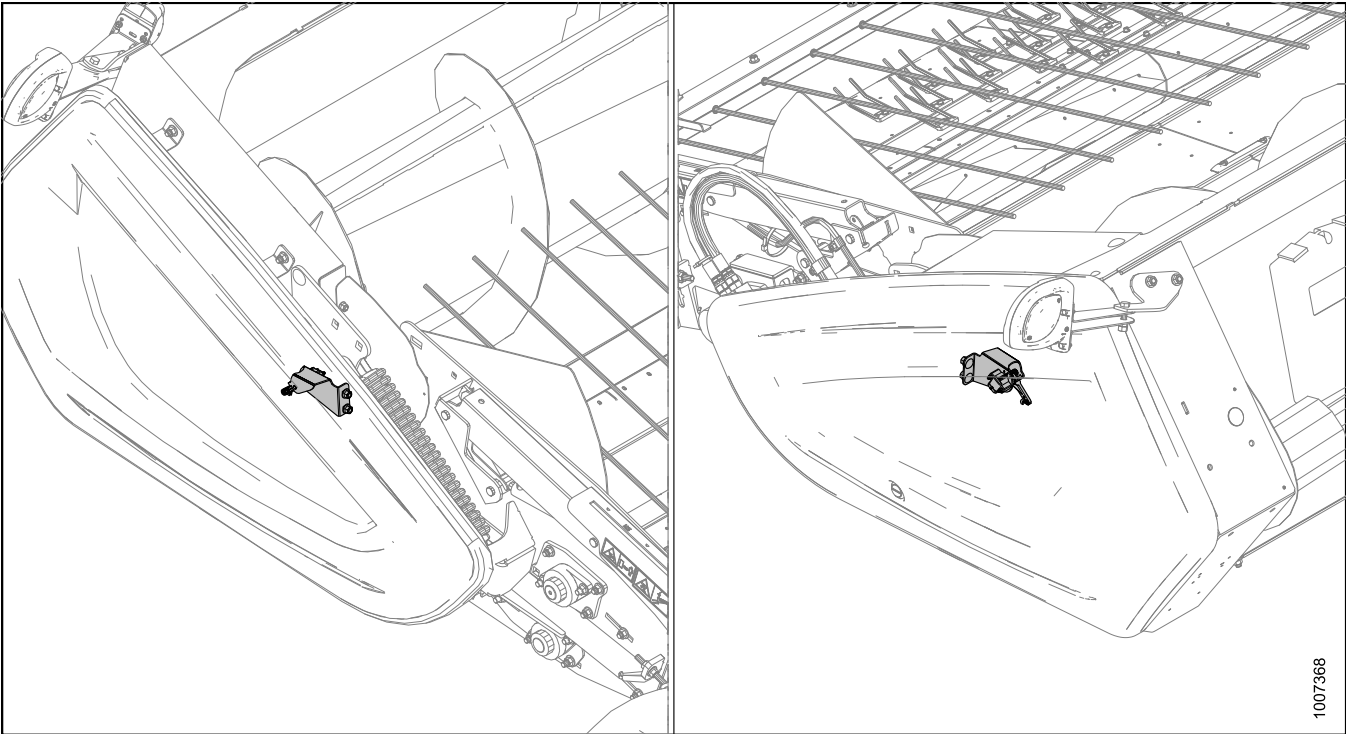


Figure 4.1: Height Controllers

4.1.1 Removing Header Height Control (Left-Hand Side)

DANGER

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

1. Lower header to the ground, shut down combine, and remove key from ignition.
2. Open the left-hand endshield. Refer to [3.3.1 Opening Left-Hand Endshield, page 27](#).
3. Disconnect the wire harness (A).
4. Push up on the rod end clip (B). Slide the linkage rod (C) out of rod end clip (B).

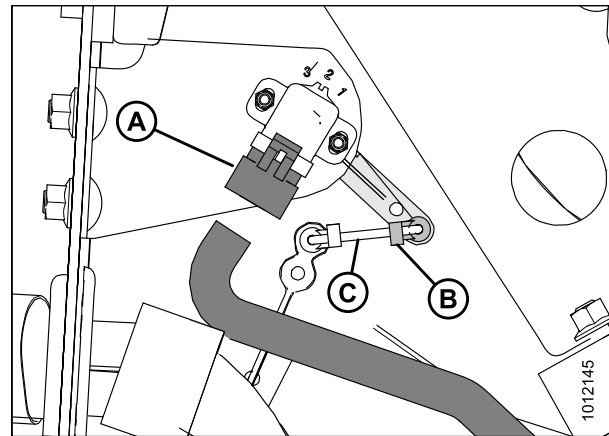


Figure 4.2: LH Header Height System

AUTO HEADER HEIGHT CONTROL (AHHC)

5. Remove nuts and bolts (A).
6. Remove control (B) and control arm (C).

NOTE:

Note the orientation of the control arm, this will be required for reassembly.

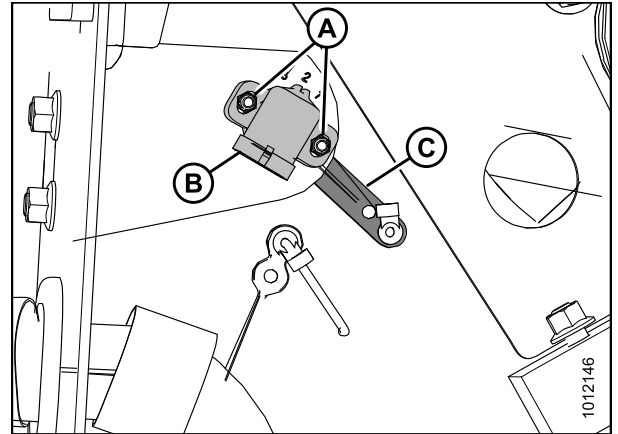


Figure 4.3: LH Header Height System

7. Remove nut (A), then remove the long control arm (B) complete with linkage rod and rod end clip.

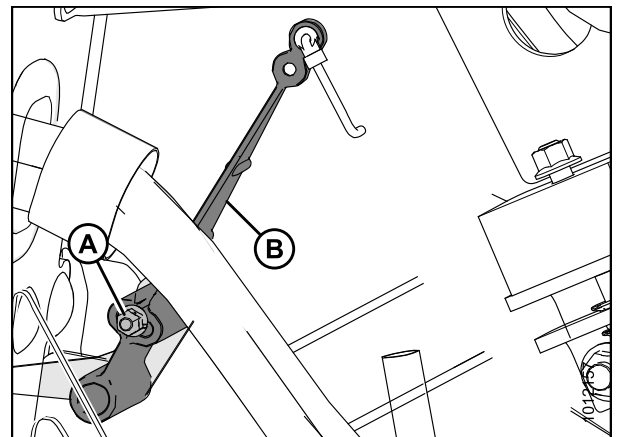


Figure 4.4: LH Header Height System

8. Remove hex socket screw (A), then remove control activation arm (B).

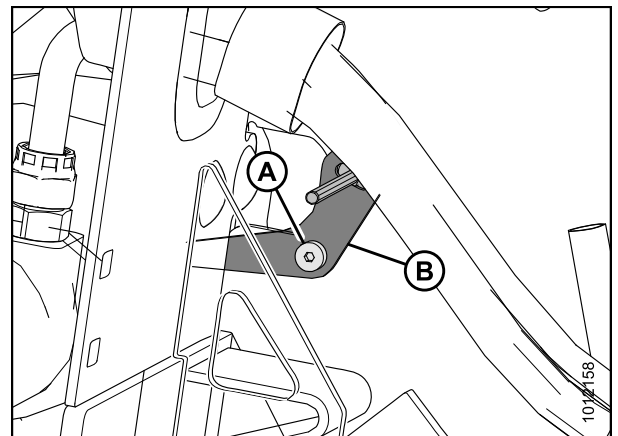


Figure 4.5: LH Header Height System

AUTO HEADER HEIGHT CONTROL (AHHC)

4.1.2 Installing Header Height Control (Left-Hand Side)

1. Install control activation arm (B) with bolt in upper location. Ensure the arm is positioned between the two tabs (C) welded to the frame. Install hex socket screw (A).

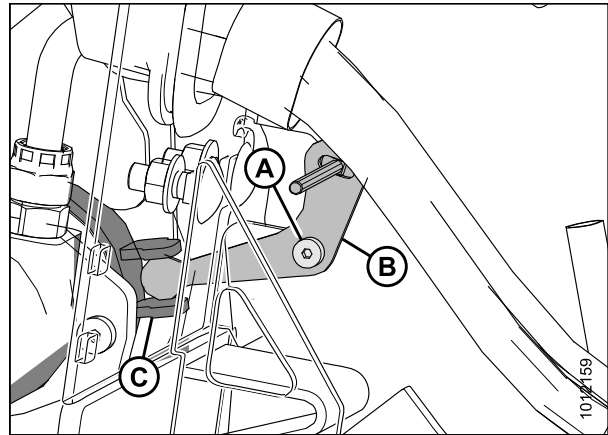


Figure 4.6: LH Header Height System

2. Install the long control arm (B) complete with linkage rod and rod end clip, secure with nut (A).

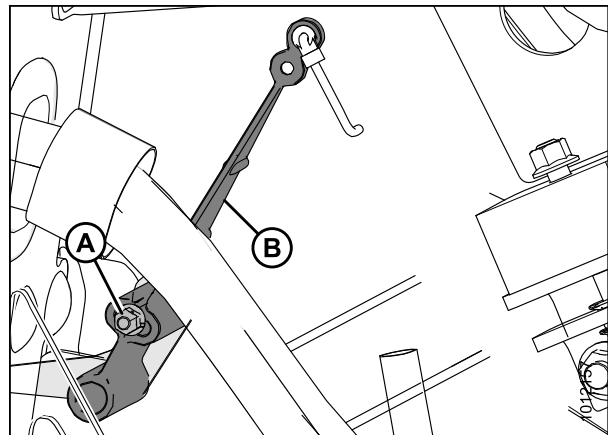


Figure 4.7: LH Header Height System

3. Install control arm (C). Ensure that the flat side is facing towards the header.
4. Install control (B), center the bolts in the slots and secure with nuts (A).

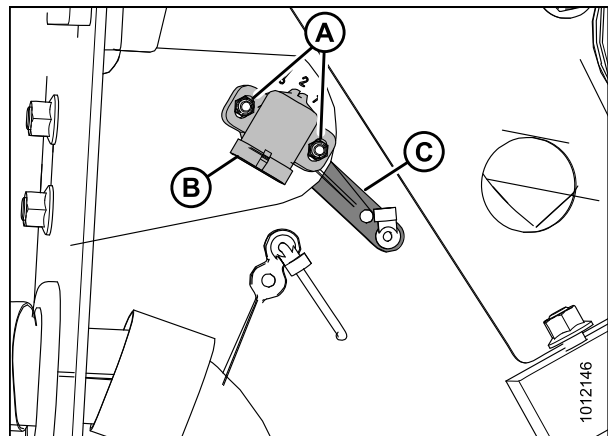


Figure 4.8: LH Header Height System

AUTO HEADER HEIGHT CONTROL (AHHC)

5. Slide the linkage rod (C) into the rod end clip (B). Secure the rod end clip by pressing it onto the linkage rod (C).
6. Connect the wire harness (A).
7. Close the left-hand endshield. Refer to [3.3.2 Closing Left-Hand Endshield, page 28](#)

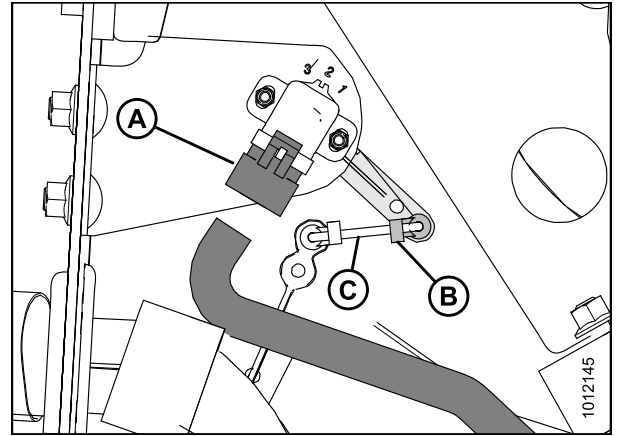


Figure 4.9: LH Header Height System

4.1.3 Removing Header Height Control (Right-Hand Side)

DANGER

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

1. Raise the hold-down and engage lift cylinder safety props.
2. Lower header to the ground, shut down combine, and remove key from ignition.
3. Locate the access panel on the inside of the right-hand end frame. Remove the two bolts (A) from access panel (B).
4. Remove access panel (B).

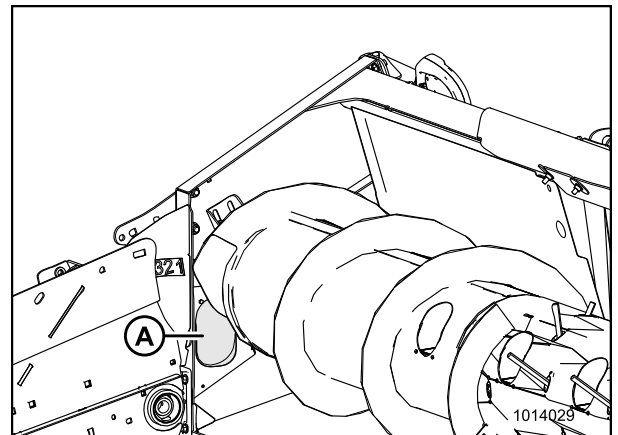


Figure 4.10: RH Header Height Sensor Access Panel (Auger Removed for Clarity)

AUTO HEADER HEIGHT CONTROL (AHHC)

5. Disconnect the wire harness (A).
6. Push up on the rod end clip (B). Slid the linkage rod (C) out of rod end clip (B).

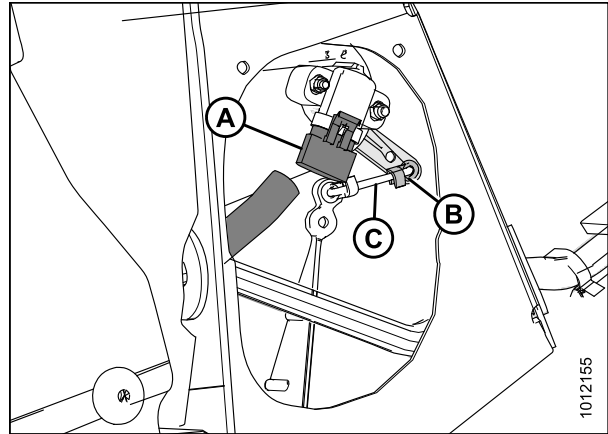


Figure 4.11: RH Header Height System Assembly

7. Remove nuts and bolts (A).
8. Remove control (B) and control arm (C).

NOTE:

Note the orientation of the control arm, this will be required for reassembly.

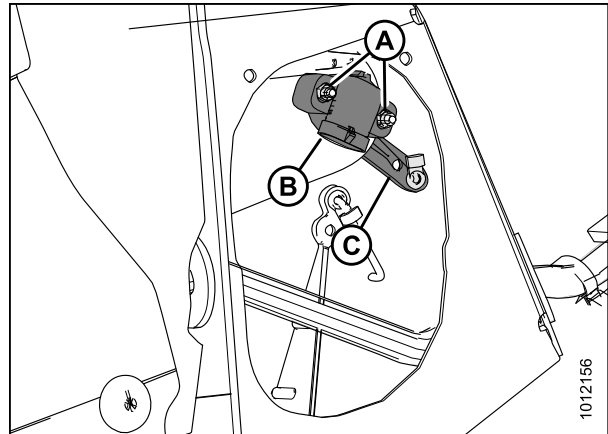


Figure 4.12: RH Header Height System Assembly

9. On the right-hand endpanel, outside of the header, remove the hole plug (A) to gain access to the nut that secures the long control arm to the header.
10. Remove nut (B).

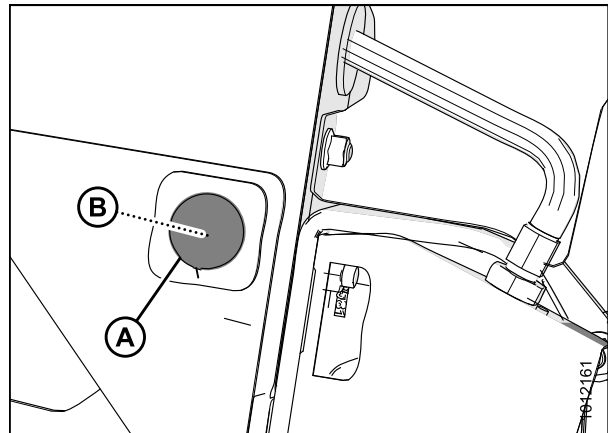


Figure 4.13: RH Endpanel

AUTO HEADER HEIGHT CONTROL (AHC)

11. Remove the long control arm (A) complete with linkage rod, rod end clip, and activator arm.

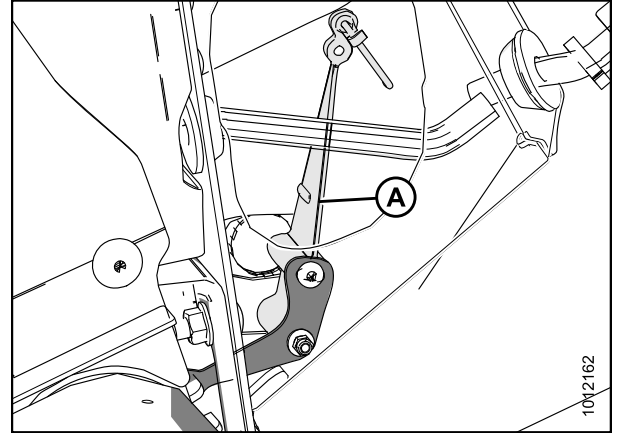


Figure 4.14: RH Header Height System

4.1.4 Installing Header Height Control (Right-Hand Side)

1. Install the long control arm (A) complete with linkage rod, rod end clip and activator arm.

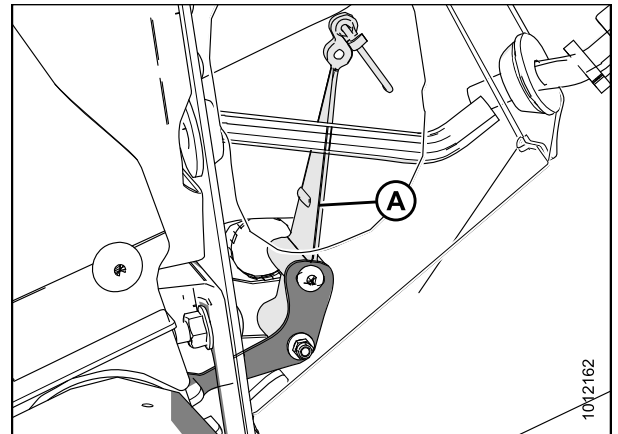


Figure 4.15: RH Header Height System

2. Install nut (B).
3. Install the hole plug (A).

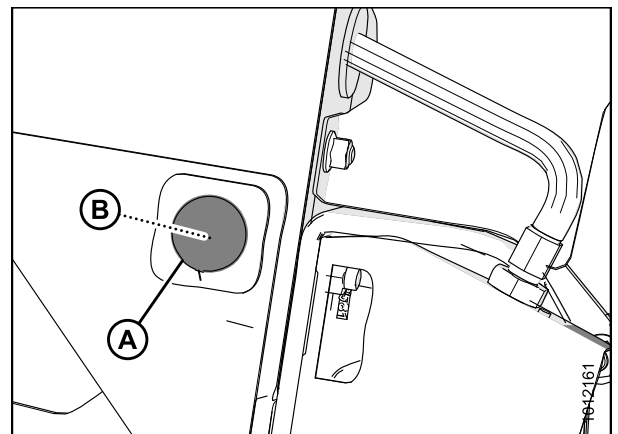


Figure 4.16: RH Endpanel

AUTO HEADER HEIGHT CONTROL (AHHC)

4. Install control arm (C). Ensure that the flat side is facing towards the header.
5. Install control (B), center the bolts in the slots and secure with nuts (A).

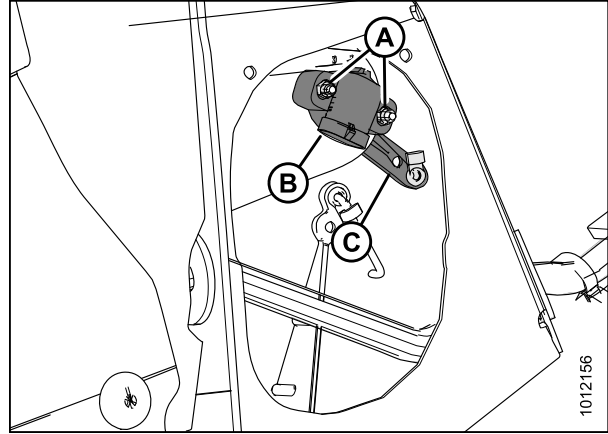


Figure 4.17: RH Header Height System

6. Slide the linkage rod (C) into the rod end clip (B). Secure the rod end clip by pressing it onto the linkage rod (C).
7. Connect the wire harness (A).

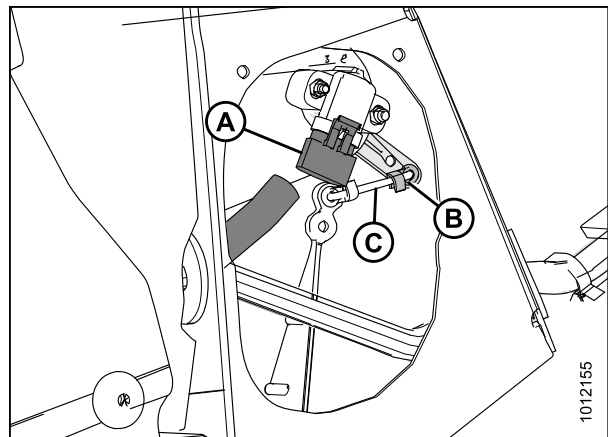


Figure 4.18: RH Header Height System

8. Install the access panel (B), secure it with bolts (A).

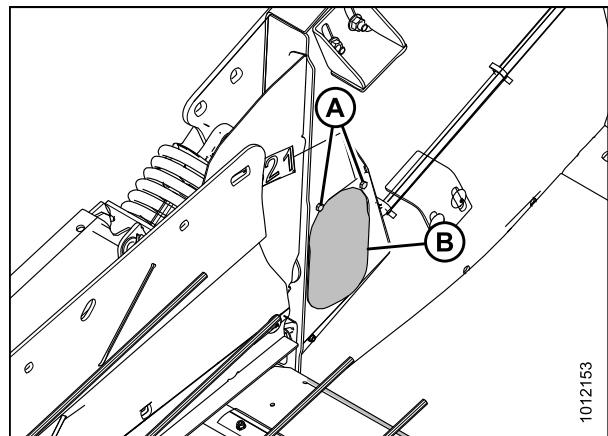


Figure 4.19: RH Header Height System Access Panel (Auger Removed for Clarity)

4.2 Height Sensor Output Voltage Range – Combine Requirements

The height sensor output must be within a specific voltage range for each combine or the Auto Header Height Control (AHHC) feature will not work properly.

Table 4.1 Combine Voltage Range

| Combine | Low Voltage Limit | High Voltage Limit | Range (Difference between High and Low Limits) |
|--|-------------------|--------------------|--|
| Case IH 7/8010, 5/6/7088, 7/8/9120, 5/6/7130, 5/6/7140, 7/8/9230, 7/8/9240 | 0.5 V | 4.5 V | 2.5 V |
| John Deere 60/70/S/T Series | 0.5 V | 4.5 V | 2.5 V |
| New Holland CR/CX - 5 V system | 0.5 V | 4.5 V | 2.5 V |
| New Holland CR/CX - 10 V system | 2.8 V | 7.2 V | 4.1–4.4 V |

NOTE:

For instructions on manually checking the voltage range, refer to [4.2.1 Manually Checking Voltage Range, page 95](#).

4.2.1 Manually Checking Voltage Range

You can manually check the output voltage range of the Auto Header Height Control (AHHC) sensors. Some combines will allow you to check the voltage range from the cab. For instructions, refer to your combine operator's manual or the AHHC instructions for your combine model later in this document.

1. Raise the header until the header wheels are 6 in. (150 mm) above the ground.

NOTE:

Ensure float spring is fully extended, refer to [3.12.4 Adjusting Header Float, page 72](#). If not, during the next step, the voltage may go out of range during operation, causing a malfunction of the AHHC system. Refer to [4.2 Height Sensor Output Voltage Range – Combine Requirements, page 95](#).

2. Using a voltmeter at the left-hand height sensor, measure the voltage between the ground and signal wires. Measure the high voltage limit.
3. Fully lower the combine feeder house. Hold down for a few seconds to make sure the feeder house is fully lowered and the header dampener assembly is fully compressed.
4. Using a voltmeter at the left-hand height sensor, measure the voltage between the ground and signal wires. Measure the low voltage limit.
5. Repeat previous steps to check the voltage range at the right-hand height sensor.
6. If the sensor voltage is not within the low and high limits, or if the range between the low and high limits is less than the range specified, you need to make adjustments. For instructions, refer to [4.2.2 Adjusting Header Height Control Voltage Range \(Left-Hand Side\), page 96](#) or [4.2.3 Adjusting Header Height Control Voltage Range \(Right-Hand Side\), page 96](#).

4.2.2 Adjusting Header Height Control Voltage Range (Left-Hand Side)

DANGER

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

1. Lower header to the ground, shut down combine, and remove key from ignition.
2. Open the left-hand endshield. Refer to [3.3.1 Opening Left-Hand Endshield](#), page 27.
3. Loosen nuts (A).
4. Rotate control (B) until desired voltage range is achieved. Refer to [4.2 Height Sensor Output Voltage Range – Combine Requirements](#), page 95.

NOTE:

If the voltage range is too large or too small, you may need to relocate the linkage rod (C) to a different hole in sensor control arm (D). If that doesn't work, relocate the linkage rod (C) to a different hole in sensor control arm (E).

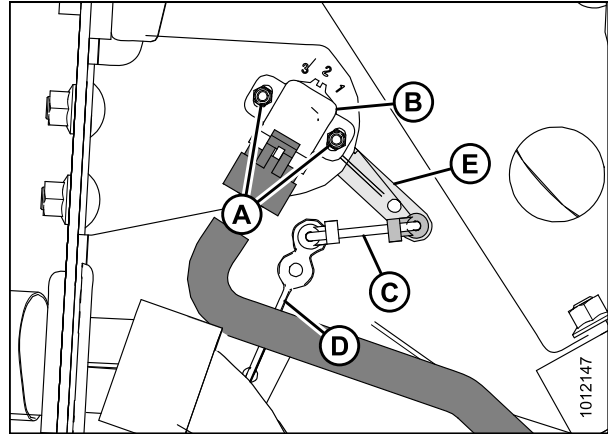


Figure 4.20: LH Header Height System

4.2.3 Adjusting Header Height Control Voltage Range (Right-Hand Side)

DANGER

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

1. Raise the hold-down and engage lift cylinder safety props.
2. Lower header to the ground, shut down combine, and remove key from ignition.
3. Locate the access panel (A) on the inside of the right-hand end frame.

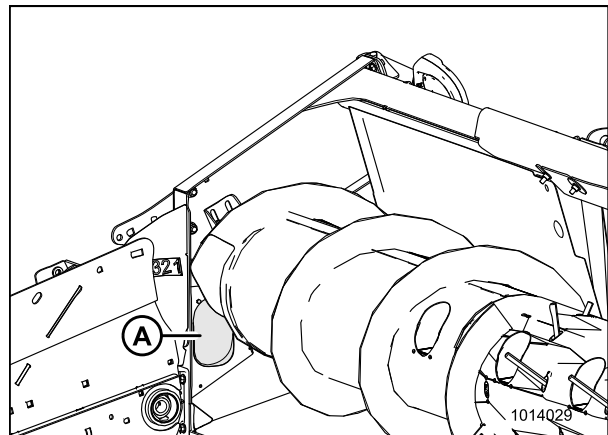


Figure 4.21: RH Access Panel

AUTO HEADER HEIGHT CONTROL (AHHC)

4. Remove the two bolts (A) from access panel (B).
5. Remove access panel (B).

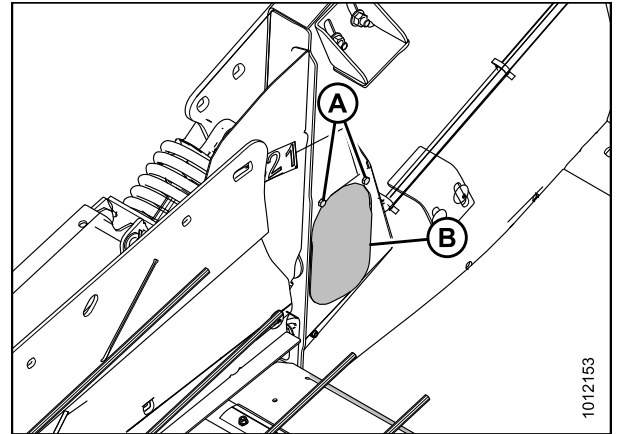


Figure 4.22: RH Access Panel

6. Loosen nuts (A).
7. Rotate control (B) until desired voltage range is achieved. Refer to [4.2 Height Sensor Output Voltage Range – Combine Requirements, page 95](#).

NOTE:

If the voltage range is too large or too small, you may need to relocate the linkage rod (C) to a different hole in sensor control arm (D). If that doesn't work, relocate the linkage rod (C) to a different hole in sensor control arm (E).

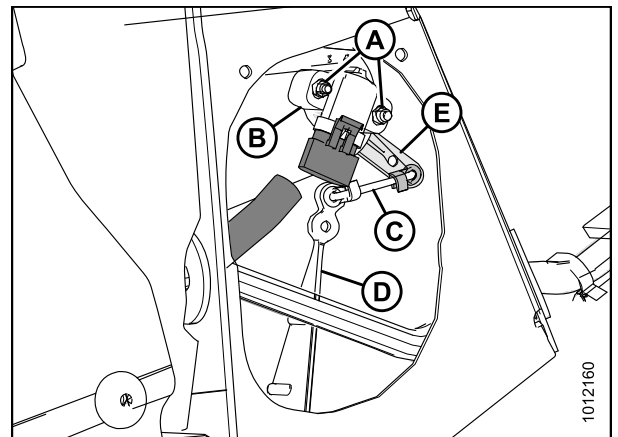


Figure 4.23: RH Header Height System

8. Once complete Install the access panel (B), secure it with bolts (A).

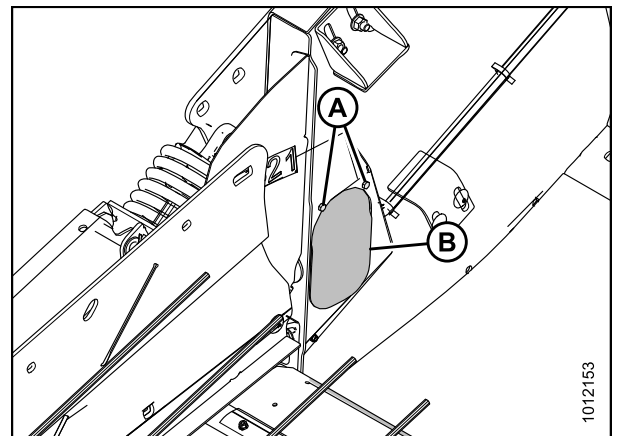


Figure 4.24: Header Height System (Auger Removed for Clarity)

4.3 Case IH 5130/6130/7130, 7010/8010, 7120/8120/9120, and 7230/8230/9230 Combines

4.3.1 Checking Voltage Range from the Combine Cab (Case 8010)

NOTE:

Changes may have been made to the combine controls or display since this document was published. Refer to the combine operator's manual for updates.

CAUTION

Check to be sure all bystanders have cleared the area.

To check the sensor output voltage range from the combine cab for Universal Display, follow these steps:

1. Raise the header until the header wheels are 6 inches (150 mm) above the ground.
2. Select DIAG (A) on the Universal display MAIN screen. The DIAG screen opens.

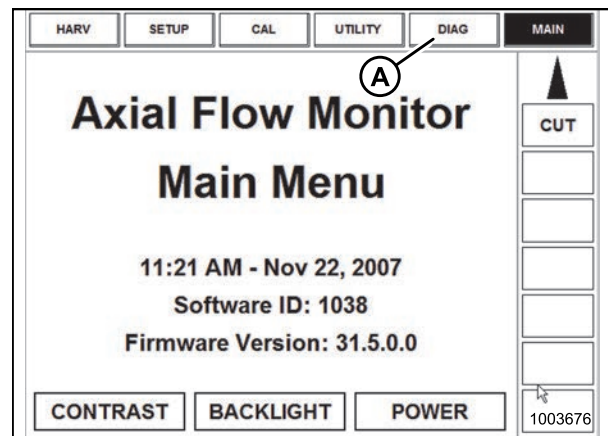


Figure 4.25: Case 8010 Combine Display

3. Select SUB SYSTEM (A). The SUB SYSTEM window opens.

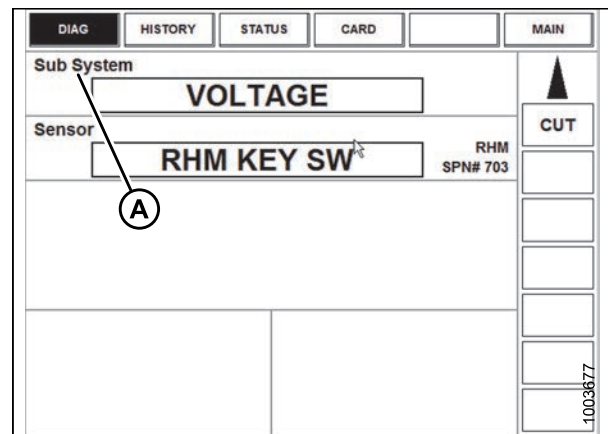


Figure 4.26: Case 8010 Combine Display

AUTO HEADER HEIGHT CONTROL (AHHC)

4. Select HDR HEIGHT/TILT (A). The SENSOR window opens.

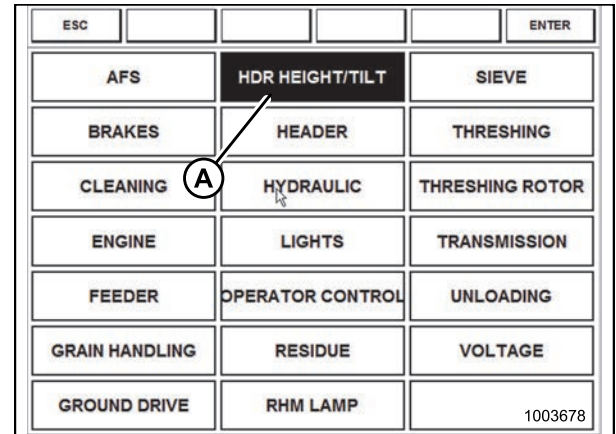


Figure 4.27: Case 8010 Combine Display

5. Select LEFT SEN (A). The exact voltage is displayed. Raise and lower the header to see the full range of voltage readings.

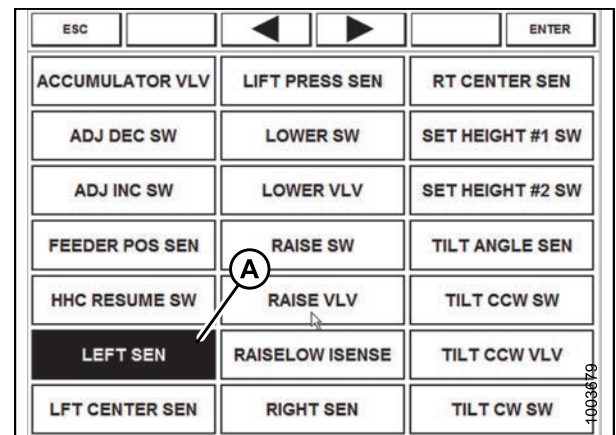


Figure 4.28: Case 8010 Combine Display

6. If the sensor voltage is not within the low and high limits shown in [4.2 Height Sensor Output Voltage Range – Combine Requirements, page 95](#), or if the range between the low and high limits is insufficient, you need to make adjustments. For instructions, refer to [4.2.2 Adjusting Header Height Control Voltage Range \(Left-Hand Side\), page 96](#) and [4.2.3 Adjusting Header Height Control Voltage Range \(Right-Hand Side\), page 96](#).

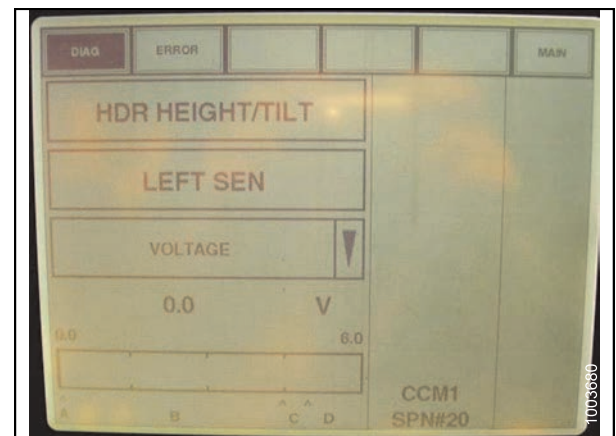


Figure 4.29: Case 8010 Combine Display

4.3.2 Checking Voltage Range from the Combine Cab (Case IH 5130/6130/7130, 7010/8010; 7120/8120/9120; 7230/8230/9230)

NOTE:

Changes may have been made to the combine controls or display since this document was published. Refer to the combine operator's manual for updates.

CAUTION

Check to be sure all bystanders have cleared the area.

To check the sensor output voltage range from the combine cab for Pro 600 Display, follow these steps:

1. Raise the header until the header wheels are 6 inches (150 mm) above the ground.
2. Select DIAGNOSTICS (A) on the MAIN screen. The DIAGNOSTICS screen opens.
3. Select SETTINGS. The SETTINGS screen displays.

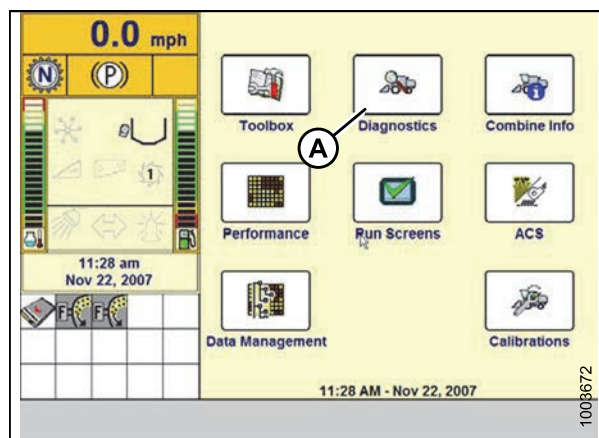


Figure 4.30: Case IH Combine Display

4. Select the GROUP arrow (A). The GROUP window opens.

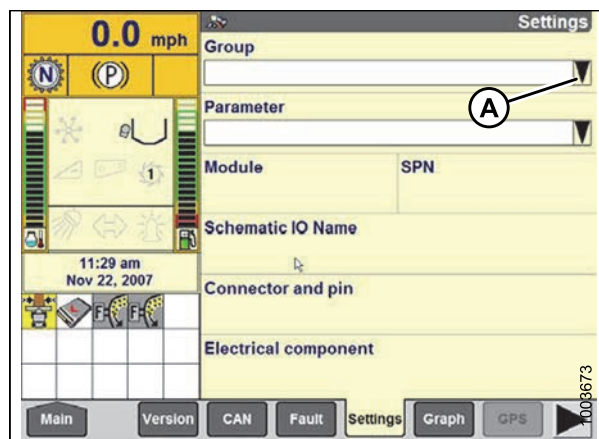


Figure 4.31: Case IH Combine Display

AUTO HEADER HEIGHT CONTROL (AHHC)

5. Select HEADER HEIGHT/TILT (A). The PARAMETER window opens.

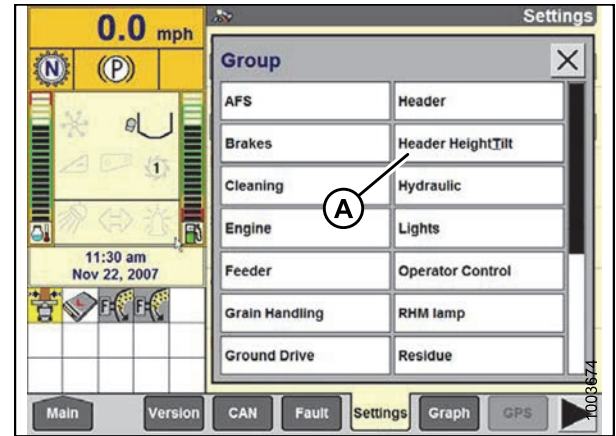


Figure 4.32: Case IH Combine Display

6. Select LEFT HEADER HEIGHT SEN (A), and then select the GRAPH button (B). The exact voltage is displayed at top of screen. Raise and lower the header to see the full range of voltage readings.
7. If the sensor voltage is not within the low and high limits shown in [4.2 Height Sensor Output Voltage Range – Combine Requirements, page 95](#), or if the range between the low and high limits is insufficient, you need to make adjustments. For instructions, refer to [4.2.2 Adjusting Header Height Control Voltage Range \(Left-Hand Side\), page 96](#) and [4.2.3 Adjusting Header Height Control Voltage Range \(Right-Hand Side\), page 96](#).

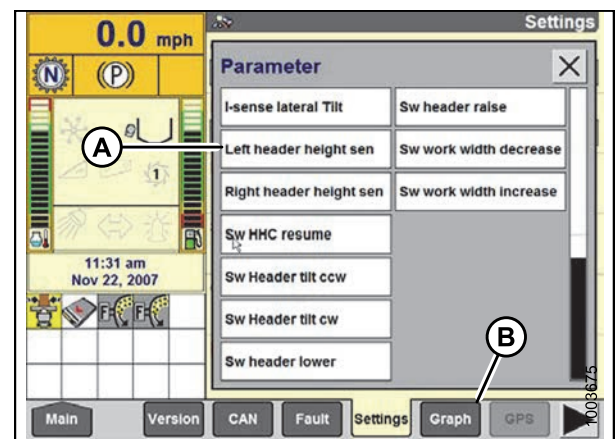


Figure 4.33: Case IH Combine Display

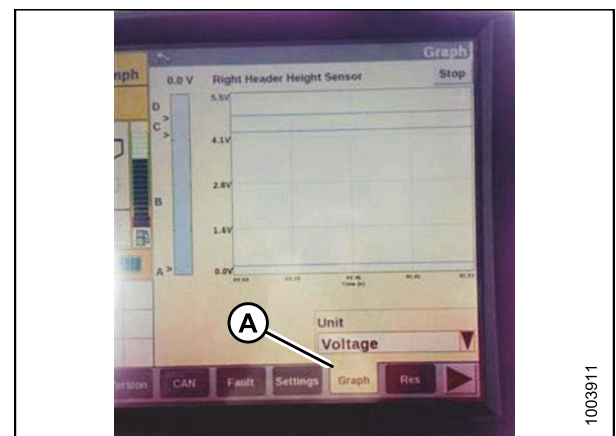


Figure 4.34: Case IH Combine Display

AUTO HEADER HEIGHT CONTROL (AHHC)

4.3.3 Calibrating the Auto Header Height Control (Case IH 5130/6130/7130, 7010/8010; 7120/8120/9120; 7230/8230/9230)

NOTE:

This procedure applies to combines with a software version below 28.00. For instructions on calibrating the AHHC for combines with software version 28.00 or above, refer to [4.3.4 Calibrating the Auto Header Height Control System \(Case Combines with Version 28.00 Software\)](#), page 103.

NOTE:

Changes may have been made to the combine controls or display since this document was published. Refer to the combine operator's manual for updates.

To calibrate the AHHC, follow these steps:

1. Ensure all header electrical and hydraulic connections are made.
2. Select TOOLBOX on the MAIN screen, and then select HEADER.
3. Set appropriate HEADER STYLE.

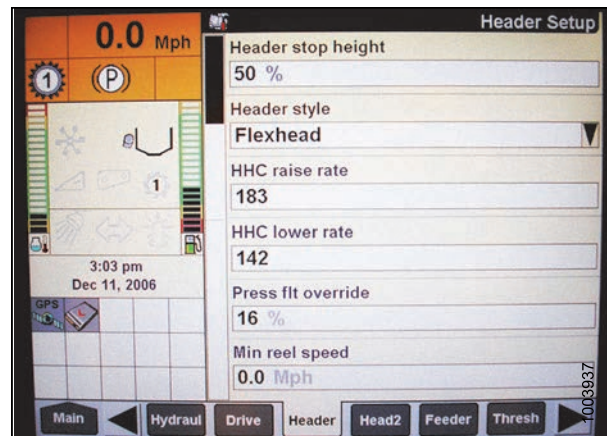


Figure 4.35: Case IH Combine Display

4. Set AUTO REEL SPEED SLOPE.
5. Set HEADER PRESSURE FLOAT to YES if equipped, and ensure REEL DRIVE is HYDRAULIC.

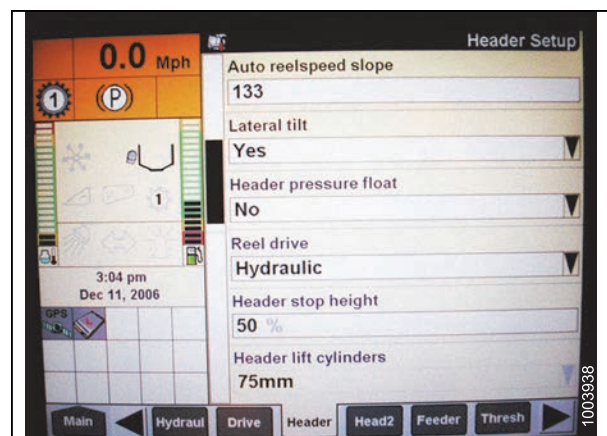


Figure 4.36: Case IH Combine Display

AUTO HEADER HEIGHT CONTROL (AHHC)

6. Install REEL FORE-BACK (if applicable).
7. Set HEIGHT SENSITIVITY to desired value. The recommended starting point is 180.

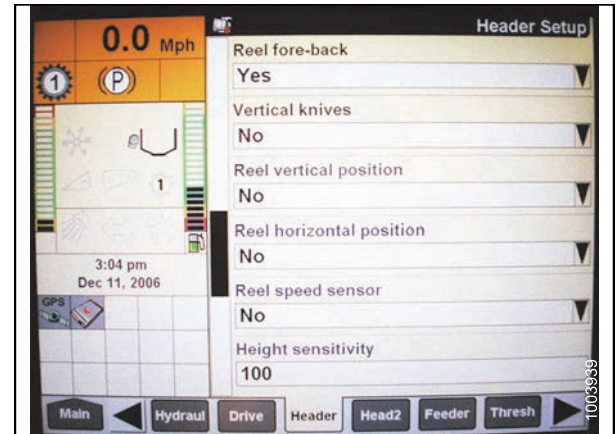


Figure 4.37: Case IH Combine Display

8. Install FORE-AFT CONTROL, and HDR FORE-AFT TILT (if applicable).

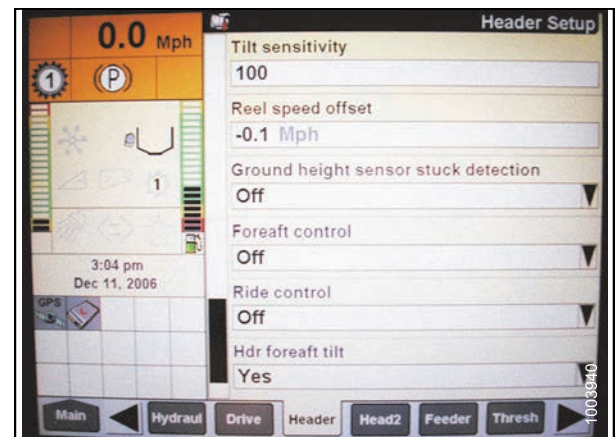


Figure 4.38: Case IH Combine Display

9. Press HEAD2 at bottom of screen.
10. Ensure HEADER TYPE is PICK-UP.

NOTE:

If recognition resistor is plugged in to header harness, you will not be able to change this.

11. Set cutting type to PLATFORM.
12. Set appropriate HEADER WIDTH and HEADER USAGE.

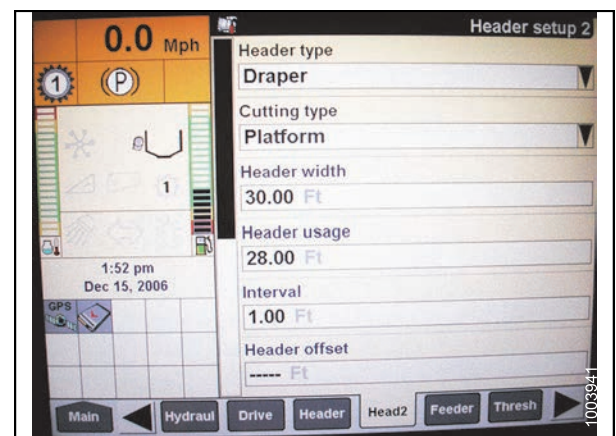


Figure 4.39: Case IH Combine Display

4.3.4 Calibrating the Auto Header Height Control System (Case Combines with Version 28.00 Software)

NOTE:

Changes may have been made to the combine controls or display since this document was published. Refer to the combine operator's manual for updates.

AUTO HEADER HEIGHT CONTROL (AHHC)

1. Select TOOLBOX on the MAIN screen, and then select HEADER SETUP.
2. Locate the HEADER SUB TYPE field. It will be located on either the HEAD 1 or the HEAD 2 tab.
3. Select 2000 (A).

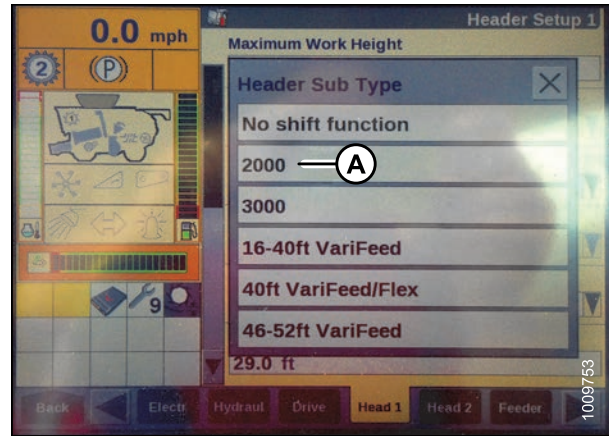


Figure 4.40: Combine Display

4. Locate the HEADER SENSORS and HEADER PRESSURE FLAT fields. They will be located on either the HEAD 1 or the HEAD 2 tab.
5. Select ENABLE (A) in the HEADER SENSORS field.
6. Select NO (B) in the HEADER PRESSURE FLAT field.

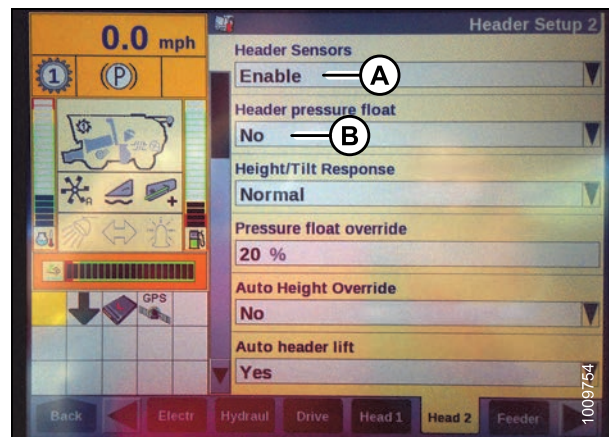


Figure 4.41: Combine Display

7. Ensure AUTO HEIGHT icon (A) appears on the monitor and is displayed as shown at (B). When the header is set for cutting on the ground, this verifies that the combine is correctly using the potentiometers on the header to sense ground pressure.

NOTE:

AUTO HEIGHT field (B) may appear on any of the RUN tabs and not necessarily on the RUN 1 tab.

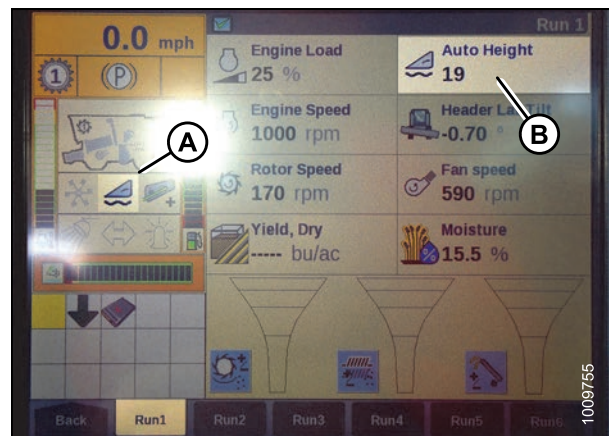


Figure 4.42: Combine Display

4.4 John Deere 60 Series Combines

4.4.1 Checking Voltage Range from the Combine Cab (John Deere 60 Series)

NOTE:

Changes may have been made to the combine controls or display since this document was published. Refer to the combine operator's manual for updates.

⚠ CAUTION

Check to be sure all bystanders have cleared the area.

To check the sensor output voltage range from the combine cab, follow these steps:

1. Raise the header until the header wheels are 6 inches (150 mm) above the ground.

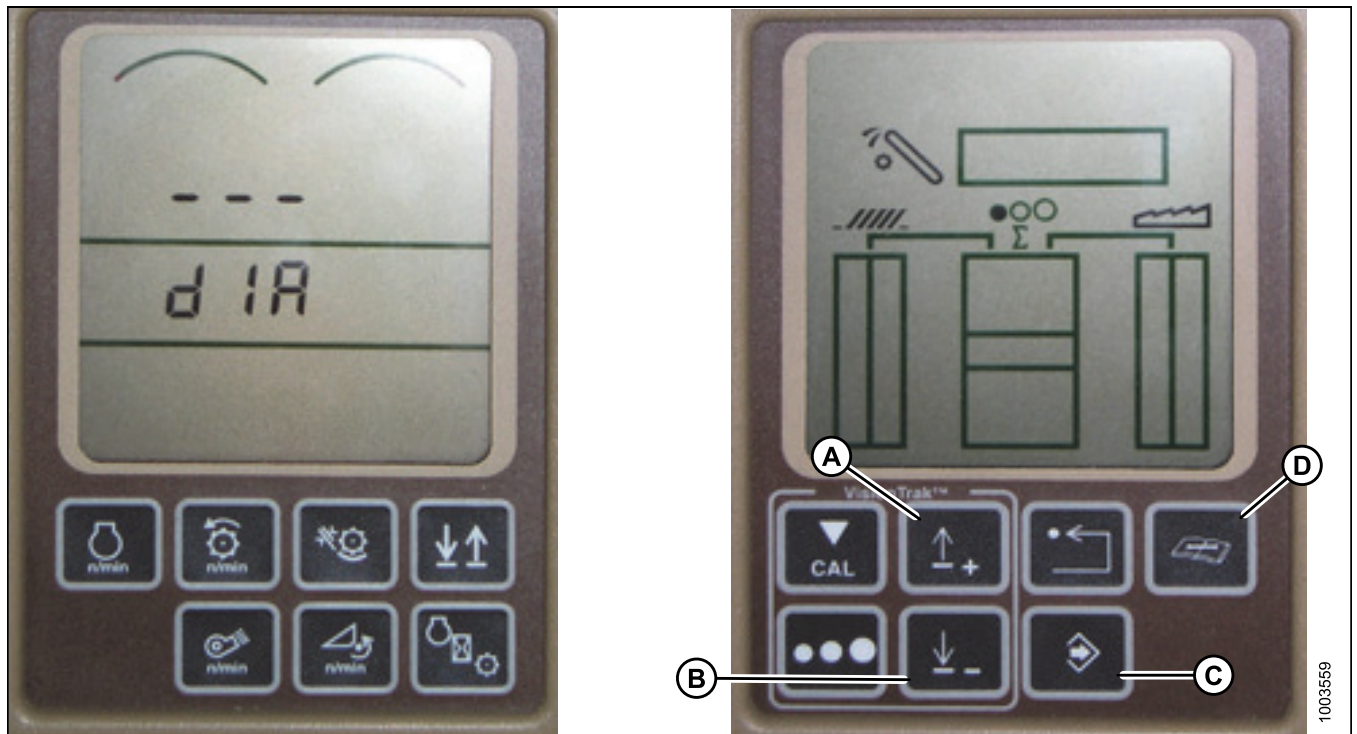


Figure 4.43: Combine HHS Monitor

2. Press the diagnostic button (D) on the HHS monitor (the button with the open book with the wrench on top of it) dIA appears on the monitor.
3. Press the up button (A) until EO1 appears on the monitor (these are the header adjustments).
4. Press the enter button (C).
5. Press up (A) or down (B) until 24 is displayed on the top portion of the monitor. This is the voltage reading of the sensor.
6. Start the combine and lower the feeder house to the ground until the feeder house stops moving.

AUTO HEADER HEIGHT CONTROL (AHHC)

NOTE:

You may need to hold the header down switch for a few seconds to ensure the feeder house is entirely down.

7. Check the sensor reading on the monitor.
8. Raise the header so it is just off the ground and check the sensor reading again.
9. If the sensor voltage is not within the low and high limits shown in [4.2 Height Sensor Output Voltage Range – Combine Requirements, page 95](#), or if the range between the low and high limits is insufficient, you need to make adjustments. For instructions, refer to [4.2.2 Adjusting Header Height Control Voltage Range \(Left-Hand Side\), page 96](#) and [4.2.3 Adjusting Header Height Control Voltage Range \(Right-Hand Side\), page 96](#).

4.4.2 Calibrating the Auto Header Height Control (John Deere 60 Series)

NOTE:

Changes may have been made to the combine controls or display since this document was published. Refer to the combine operator's manual for updates.

CAUTION

Check to be sure all bystanders have cleared the area.

1. Start the combine.
2. Press the DIAGNOSTIC button (A) on the monitor. DIA appears on the monitor.
3. Press the CAL button (B). DIA-CAL appears on the monitor.

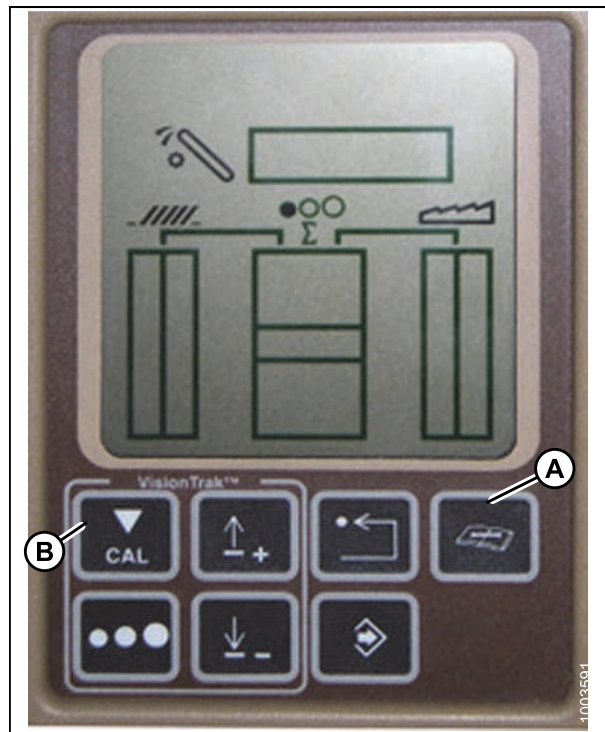


Figure 4.44: Combine Display

AUTO HEADER HEIGHT CONTROL (AHHC)

- Press the UP or DOWN buttons until HDR appears on the monitor.
- Press the enter button. HDR H-DN appears on the monitor.

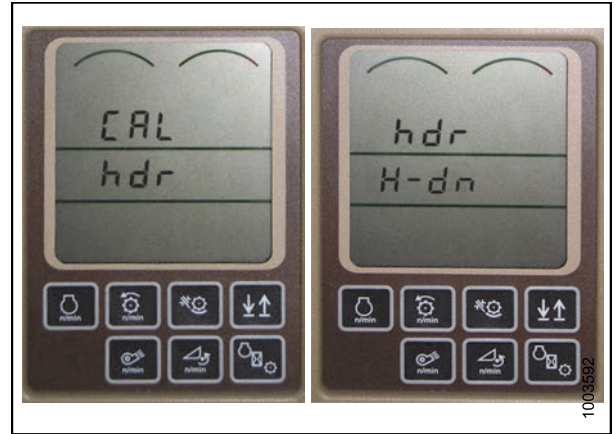


Figure 4.45: Combine Display

- Fully lower feeder house to the ground.

NOTE:

You may need to hold the header down switch for a few seconds to ensure the feeder house is fully lowered.

- Press the CAL button (A) to save the calibration of the header. HDR H-UP appears on the monitor.
- Raise the header three feet off the ground and press the CAL (A) button. EOC appears on the monitor.
- Press the enter button (B) to save the calibration of the header. Your AHHC is now calibrated.

NOTE:

If an error code appears during calibration, the sensor is out of voltage range and will require adjustment. Refer to [4.4.1 Checking Voltage Range from the Combine Cab \(John Deere 60 Series\)](#), page 105.

NOTE:

After the calibration is complete, adjust combine operation settings to ensure proper field operation.

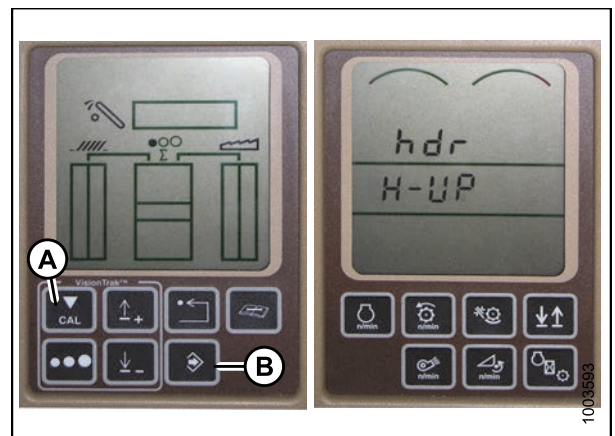


Figure 4.46: Combine Display

4.4.3 Turning the Accumulator Off (John Deere 60 Series)

NOTE:

Changes may have been made to the combine controls or display since this document was published. Refer to the combine operator's manual for updates.

AUTO HEADER HEIGHT CONTROL (AHHC)

1. Press the DIAGNOSTIC button (A) on the monitor. DIA appears on the monitor.
2. Press the UP button (B) until EO1 appears on the monitor, and press ENTER (D). This is the header adjustment.
3. Press the UP (B) or DOWN (C) button until 132 is displayed on the top portion of the monitor. This is the reading for the accumulator.
4. Press ENTER (D) to select 132 as the accumulator reading (this will allow you to change the display to a three-digit number so it has a 0 in it, for example, x0x).
5. Press the UP (B) or DOWN (C) button until the desired number is displayed, and press the CAL (E) button.
6. Press ENTER (D) to save the changes. The accumulator is now deactivated.

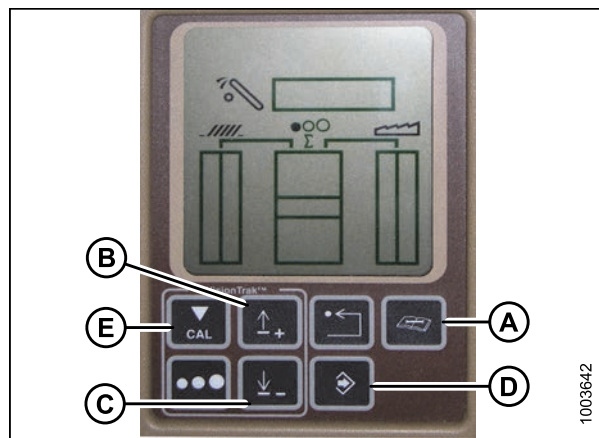


Figure 4.47: Combine Display

4.4.4 Setting the Sensing Grain Header Height to 50 (John Deere 60 Series)

NOTE:

Changes may have been made to the combine controls or display since this document was published. Refer to the combine operator's manual for updates.

To set the sensing grain header height, follow these steps:

1. Press the DIAGNOSTIC button (A) on the monitor. DIA appears on the monitor.
2. Press the UP button (B) until EO1 appears on the monitor, and press ENTER (D). This is the header adjustment.
3. Press the UP (B) or DOWN (C) button until 128 is displayed on the top portion of the monitor. This is the reading for the sensor.
4. Press ENTER (D) to select 128 as the sensor reading (this will allow you to change the display to a three-digit number so it has a 50 in it).
5. Press the UP (B) or DOWN (C) button until the desired number is displayed, and press the CAL (E) button.
6. Press ENTER (D) to save the changes. The height is now set.

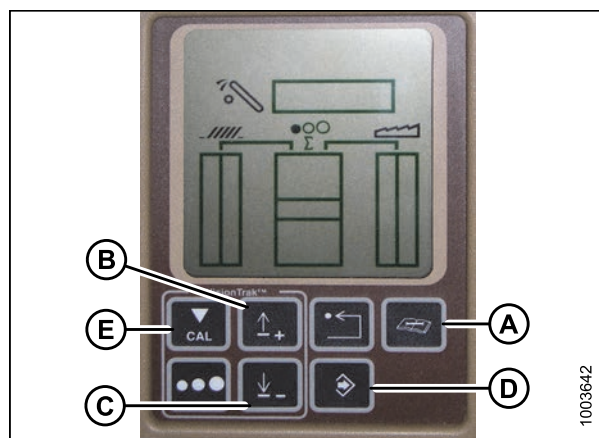


Figure 4.48: Combine Display

AUTO HEADER HEIGHT CONTROL (AHHC)

NOTE:

Do **NOT** use the active header float function (A) in combination with the MacDon Auto Header Height Control (AHHC)—the two systems will counteract one another. The header symbol (B) on the display should NOT have a wavy line under it and should appear exactly as shown on the Active Header Control Display in Figure 4.49: *Combine Display*, page 109.

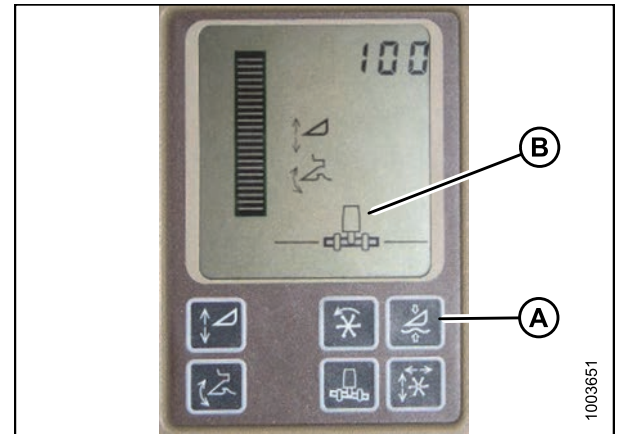


Figure 4.49: Combine Display

4.4.5 Setting the Sensitivity of the Auto Header Height Control (John Deere 60 Series)

This is also known as dead band adjustment.

NOTE:

Changes may have been made to the combine controls or display since this document was published. Refer to the combine operator's manual for updates.

AUTO HEADER HEIGHT CONTROL (AHHC)

1. Press the DIAGNOSTIC button (A) on the monitor. DIA appears on the monitor.
2. Press the UP button (B) until EO1 appears on the monitor, and press ENTER (D). This is the header adjustment.
3. Press the UP (B) or DOWN (C) button until 112 is displayed on the monitor. This is your sensitivity setting.

NOTE:

The lower the reading, the higher the sensitivity. Ideal operating range is typically between 50 and 80.

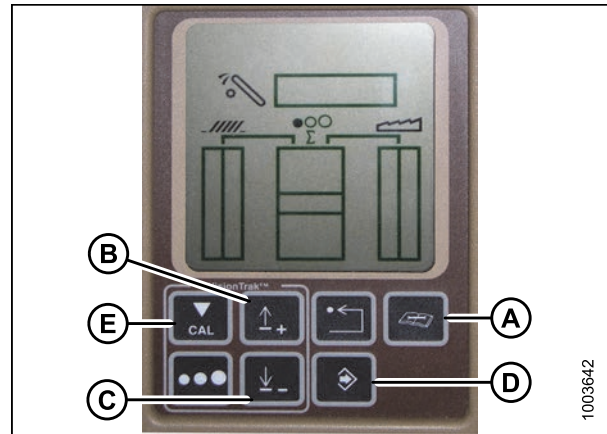


Figure 4.50: Combine Display

4. Press ENTER (D) to select 112 as the sensitivity setting (this will allow you to change the first digit of the number sequence).
5. Press UP (B) or DOWN (C) until the desired number is displayed, then press the CAL (E) button. This will bring you to the second digit. Repeat this procedure until the desired setting is achieved.
6. Press ENTER (D) to save changes.

NOTE:

The numbers depicted on the displays in these illustrations are for reference purposes only; they are not intended to represent the specific settings for your equipment.

4.4.6 Adjusting the Threshold for the Drop Rate Valve (John Deere 60 Series)

This adjusts the point at which the restrictor valve opens allowing full flow to the lift cylinders.

NOTE:

Changes may have been made to the combine controls or display since this document was published. Refer to the combine operator's manual for updates.

AUTO HEADER HEIGHT CONTROL (AHHC)

1. Press the DIAGNOSTIC button (A) on the monitor. DIA appears on the monitor.
2. Press the UP button (B) until EO1 appears on the monitor and press ENTER (C). This is the header adjustment.
3. Press the UP (B) or DOWN button until 114 is displayed on the top portion of the monitor. This is the setting that adjusts when the fast drop rate starts with respect to the dead band.

NOTE:

The default setting is 100. Ideal operating range is typically between 60 and 85.

4. Press ENTER (C) to select 114 as the fast drop rate (this will allow you to change the first digit of the number sequence).
5. Press UP (B) or DOWN (E) until the desired number is displayed, then press the CAL button (D). This will bring you to the second digit. Repeat this procedure until the desired setting is achieved.
6. Press ENTER (C) to save changes.

NOTE:

The numbers depicted on the displays in these illustrations are for reference purposes only; they are not intended to represent the specific settings for your equipment.

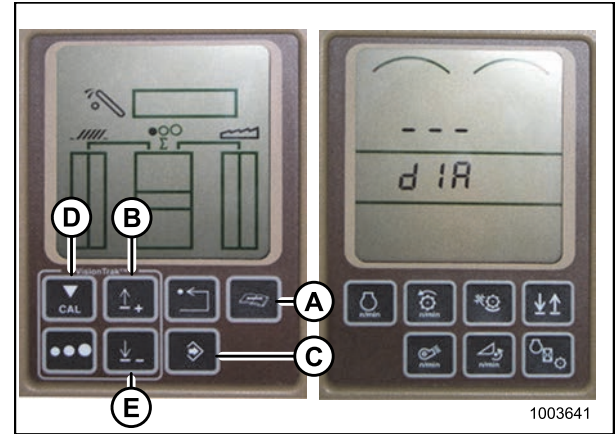


Figure 4.51: Combine Display

4.5 John Deere 70 Series Combines

4.5.1 Checking Voltage Range from the Combine Cab (John Deere 70 Series)

NOTE:

Changes may have been made to the combine controls or display since this document was published. Refer to the combine operator's manual for updates.

CAUTION

Check to be sure all bystanders have cleared the area.

To check the sensor output voltage range from the combine cab, follow these steps:

1. Raise the header until the header wheels are 6 inches (150 mm) above the ground.
2. Press the HOME PAGE button (A) on the main page of the monitor.



Figure 4.52: Combine Display

3. Ensure the three icons (A) depicted in the illustration at right appear on the monitor.



Figure 4.53: Combine Display

AUTO HEADER HEIGHT CONTROL (AHHC)

4. Use scroll knob (A) to highlight the middle icon (the green i) and press the check mark button (B) to select it. This will bring up the Message Center.

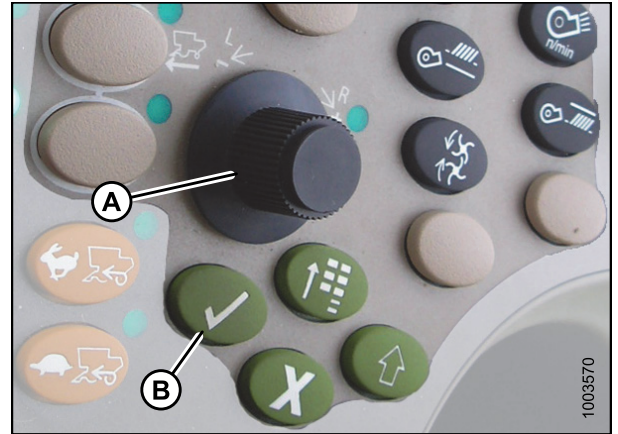


Figure 4.54: Combine Controls

5. Use the scroll knob to highlight DIAGNOSTIC ADDRESSES (A) from the right-hand column and select it by pressing the check mark button.
6. Use the scroll knob to highlight drop down box (B) and press the check mark button to select it.

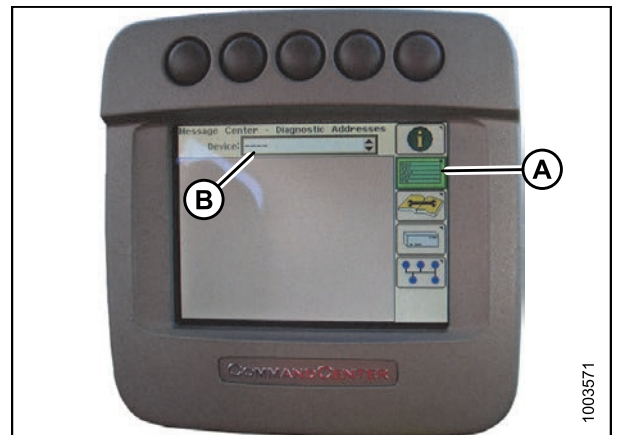


Figure 4.55: Combine Display

7. Use the scroll knob to highlight LC 1.001 VEHICLE (A) is highlighted and press the check mark button to select it.



Figure 4.56: Combine Display

AUTO HEADER HEIGHT CONTROL (AHHC)

- Use the scroll knob to highlight the DOWN ARROW (A) and press the check mark button to scroll through the list until 029 DATA (B) is displayed and voltage reading (C) appears on the monitor.

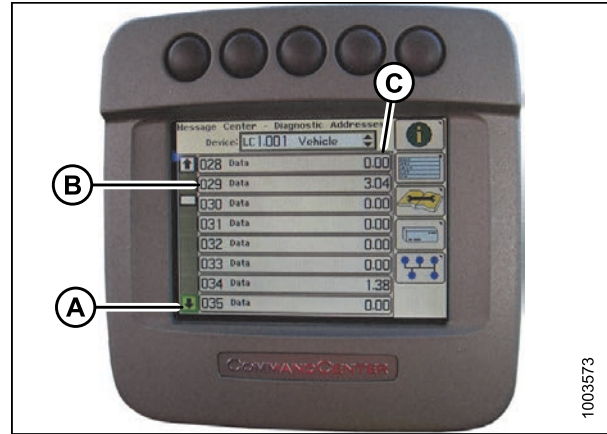


Figure 4.57: Combine Display

- Start the combine and fully lower feeder house to the ground.

NOTE:

You may need to hold the header down switch for a few seconds to ensure the feeder house is fully lowered.

- Check the sensor reading on the monitor.
- Raise the header so it is just off the ground and recheck the sensor reading.
- If the sensor voltage is not within the low and high limits shown in [4.2 Height Sensor Output Voltage Range – Combine Requirements, page 95](#), or if the range between the low and high limits is insufficient, you need to make adjustments. For instructions, Refer to [4.2.2 Adjusting Header Height Control Voltage Range \(Left-Hand Side\), page 96](#) and [4.2.3 Adjusting Header Height Control Voltage Range \(Right-Hand Side\), page 96](#).

4.5.2 Calibrating Feeder House Speed (John Deere 70 Series)

The feeder house speed must be calibrated before you calibrate the Auto Header Height Control (AHHC) system. Refer to the combine operator's manual for instructions.

4.5.3 Calibrating the Auto Header Height Control (John Deere 70 Series)

NOTE:

Changes may have been made to the combine controls or display since this document was published. Refer to the combine operator's manual for updates.

CAUTION

Check to be sure all bystanders have cleared the area.

- Start the combine.

AUTO HEADER HEIGHT CONTROL (AHHC)

2. Press the button located fourth from the left along the top of the monitor (A) to select the icon that resembles an open book with a wrench on it (B).
3. Press the top button (A) a second time to enter diagnostics and calibration mode.

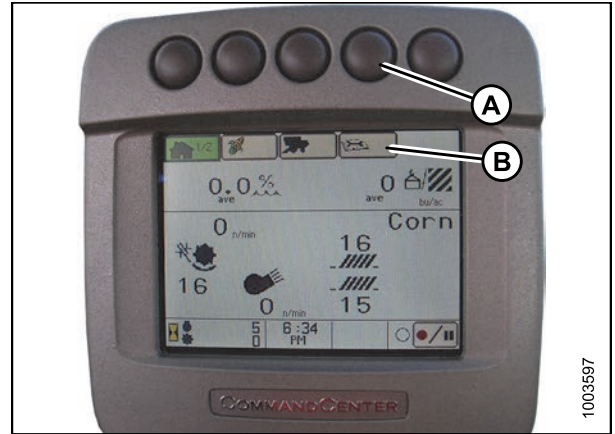


Figure 4.58: Combine Display

4. Use scroll knob (A) to highlight the HEADER option and press the check mark button (B) to select it.
5. Use the scroll knob (A) to highlight the lower right-hand icon that resembles an arrow in a diamond and press the check mark button (B) to select it.
6. Follow the steps listed on the monitor to perform the calibration.

NOTE:

If an error code appears on screen, the sensor is not in the correct working range. Refer to [4.5.1 Checking Voltage Range from the Combine Cab \(John Deere 70 Series\)](#), page 112 to check and adjust the range.

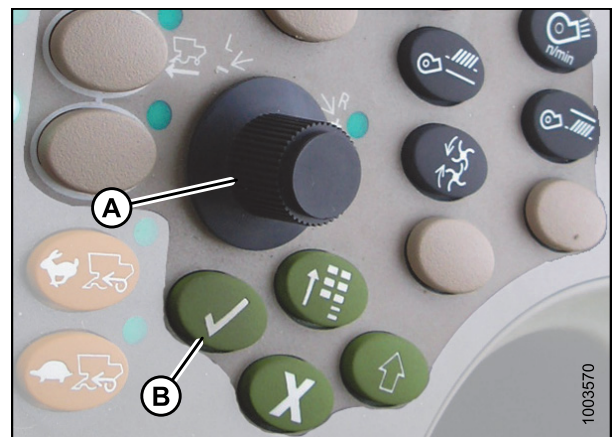


Figure 4.59: Combine Control Console

4.5.4 Setting the Sensitivity of the Auto Header Height Control (John Deere 70 Series)

NOTE:

Changes may have been made to the combine controls or display since this document was published. Refer to the combine operator's manual for updates.

AUTO HEADER HEIGHT CONTROL (AHHC)

1. Press button (A) twice and the current sensitivity setting will appear on the monitor (the lower the reading, the lower the sensitivity).
2. Use scroll knob (B) to adjust the sensitivity setting. The adjustment will be saved automatically.

NOTE:

If the page remains idle for a short period of time, it will automatically return to the previous page. Pressing the check mark button (C) also will return the monitor to the previous page.

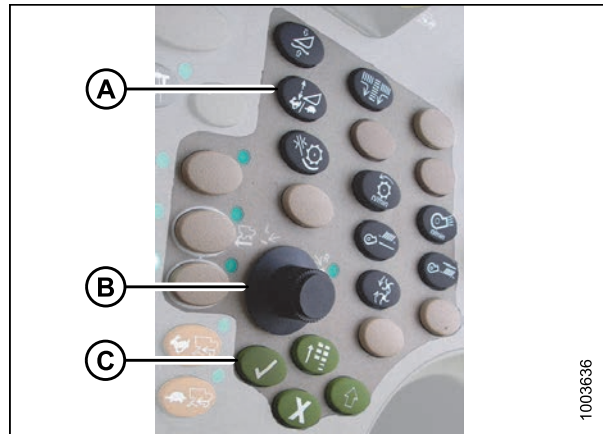


Figure 4.60: Combine Control Console

NOTE:

The numbers depicted on the displays in these illustrations are for reference purposes only; they are not intended to represent the specific settings for your equipment.



Figure 4.61: Combine Display

4.5.5 Adjusting the Manual Header Raise/Lower Rate (John Deere 70 Series)

NOTE:

Changes may have been made to the combine controls or display since this document was published. Refer to the combine operator's manual for updates.

1. Press button (A) and the current raise/lower rate setting will appear on the monitor (the lower the reading, the slower the rate).
2. Use scroll knob (B) to adjust the rate. The adjustment will be saved automatically.

NOTE:

If the page remains idle for a short period of time, it will automatically return to the previous page. Pressing the check mark button (C) will also return the monitor to the previous page.

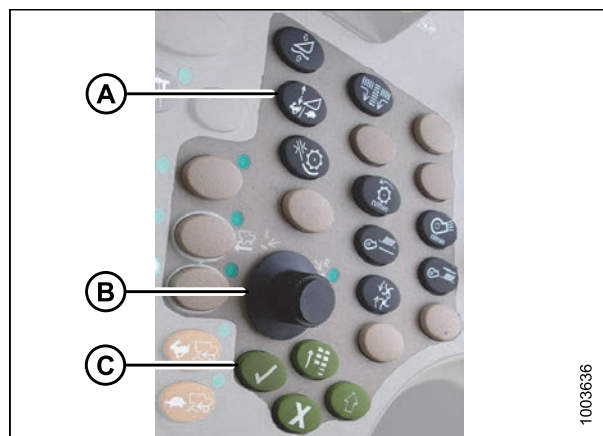


Figure 4.62: Combine Control Console

AUTO HEADER HEIGHT CONTROL (AHHC)

NOTE:

The numbers depicted on the displays in these illustrations are for reference purposes only; they are not intended to represent the specific settings for your equipment.



Figure 4.63: Combine Display

4.6 John Deere S Series Combines

4.6.1 Checking Voltage Range from the Combine Cab (John Deere S Series)

NOTE:

Changes may have been made to the combine controls or display since this document was published. Refer to the combine operator's manual for updates.

CAUTION

Check to be sure all bystanders have cleared the area.

To check the sensor output voltage range from the combine cab, follow these steps:

1. Raise the header until the header wheels are 6 inches (150 mm) above the ground.
2. Press the CALIBRATION icon (A) on the main page of the monitor. The CALIBRATION page appears.

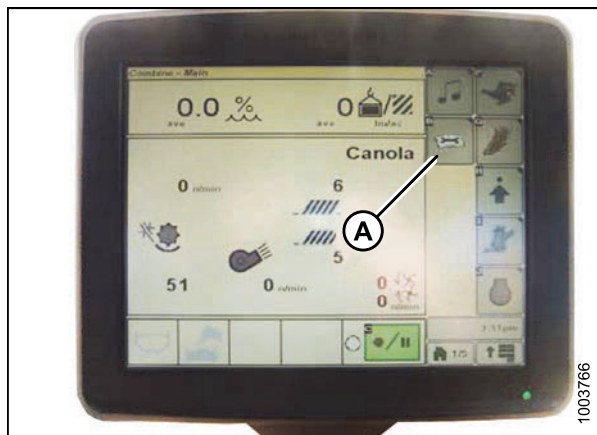


Figure 4.64: Combine Display

3. Press the DIAGNOSTIC READINGS icon (A) on the CALIBRATION page. The DIAGNOSTIC READINGS page appears. This page provides access to calibrations, header options, and diagnostic information.

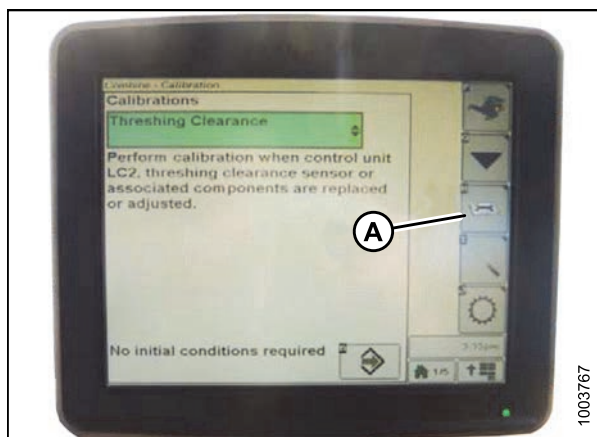


Figure 4.65: Combine Display

AUTO HEADER HEIGHT CONTROL (AHHC)

4. Select AHHC RESUME (A) and a list of calibration options appears.

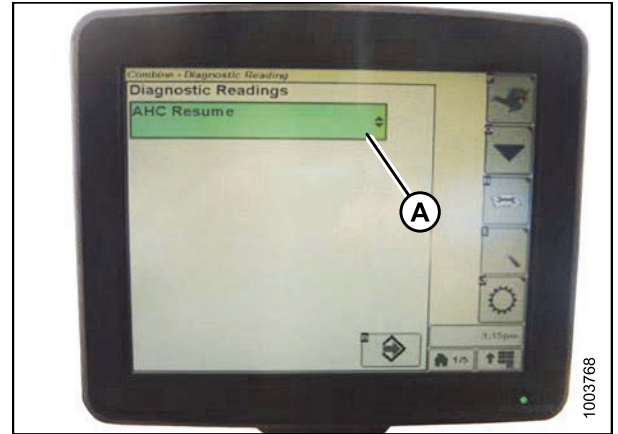


Figure 4.66: Combine Display

5. Select the AHHC SENSING option.
6. Press the icon that resembles an arrow in a box (A). The AHHC SENSING menu appears and five pages of information are displayed.



Figure 4.67: Combine Display

7. Press icon (A) until it reads Page 5 near the top of the page and the following sensor readings appear:
 - LEFT HEADER HEIGHT
 - CENTER HEADER HEIGHT
 - RIGHT HEADER HEIGHT

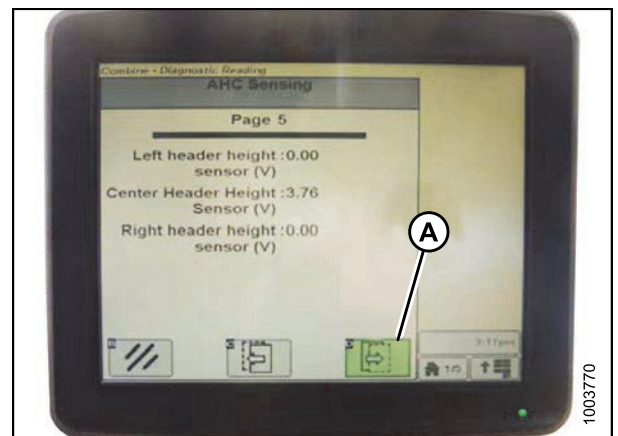


Figure 4.68: Combine Display

AUTO HEADER HEIGHT CONTROL (AHHC)

8. Start the combine and fully lower feeder house to the ground.

NOTE:

You may need to hold the header down switch for a few seconds to ensure the feeder house is fully lowered.

9. Check the sensor reading on the monitor.
10. If the sensor voltage is not within the low and high limits shown in [4.2 Height Sensor Output Voltage Range – Combine Requirements, page 95](#), or if the range between the low and high limits is insufficient, you need to make adjustments. For instructions, refer to [4.2.2 Adjusting Header Height Control Voltage Range \(Left-Hand Side\), page 96](#) and [4.2.3 Adjusting Header Height Control Voltage Range \(Right-Hand Side\), page 96](#).

4.6.2 Calibrating the Auto Header Height Control (John Deere S Series)

NOTE:

Changes may have been made to the combine controls or display since this document was published. Refer to the combine operator's manual for updates.

To calibrate the AHHC, follow these steps:

1. Press the DIAGNOSTIC icon (A) on the main page of the monitor. The CALIBRATION page appears.

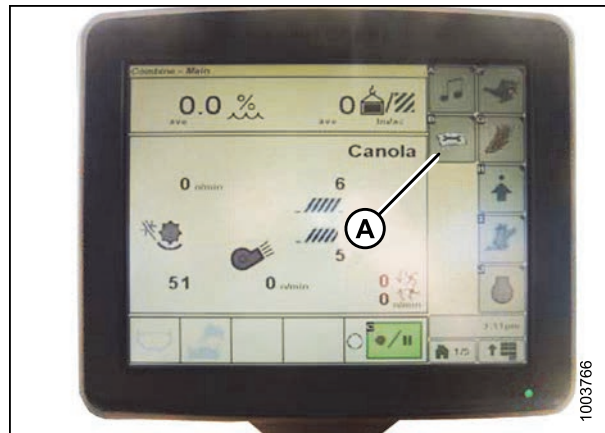


Figure 4.69: Combine Display

AUTO HEADER HEIGHT CONTROL (AHC)

2. Select THRESHING CLEARANCE (A) and a list of calibration options appears.

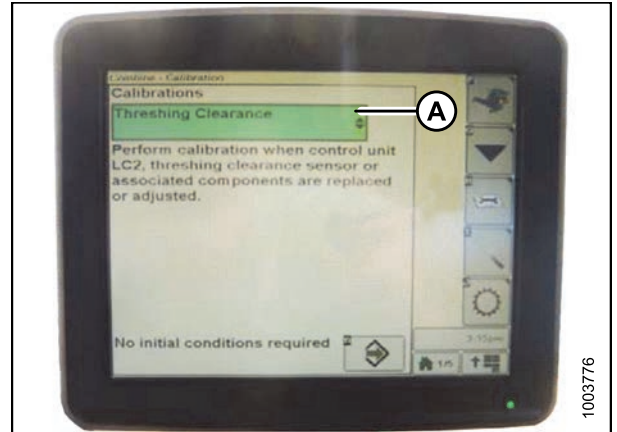


Figure 4.70: Combine Display

3. Select FEEDER HOUSE SPEED (A) and calibrate.
4. Select HEADER (B) and calibrate.

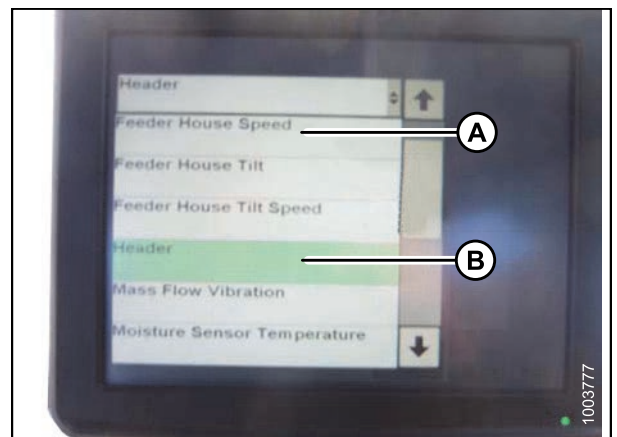


Figure 4.71: Combine Display

5. Press icon (A) with either FEEDER HOUSE SPEED or HEADER selected and the icon will turn green.

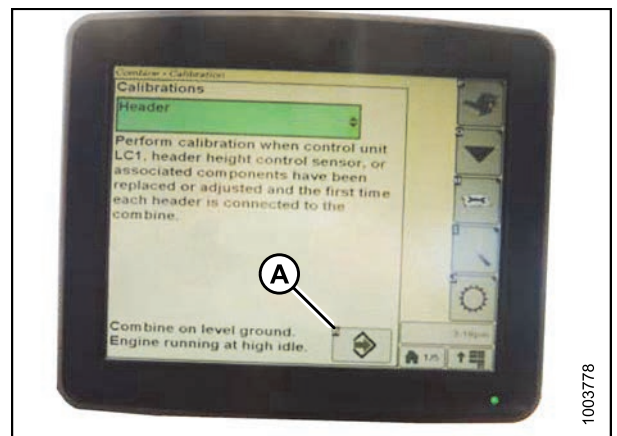


Figure 4.72: Combine Display

AUTO HEADER HEIGHT CONTROL (AHC)

- Click button (A) and instructions will appear on screen to guide you through the remaining calibration steps.

NOTE:

If an error code appears during calibration, the sensor is out of voltage range and will require adjustment. Refer to [4.6.1 Checking Voltage Range from the Combine Cab \(John Deere S Series\)](#), page 118.

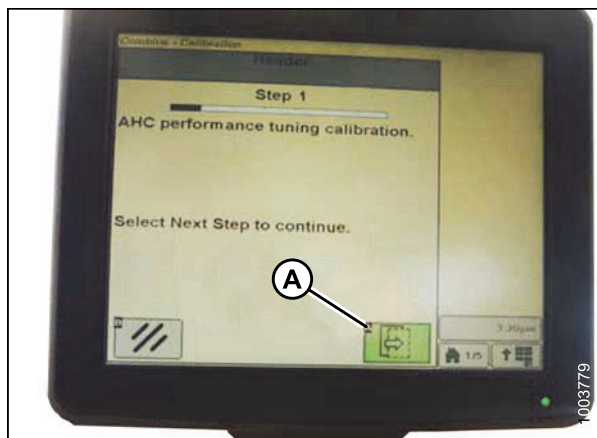


Figure 4.73: Combine Display

4.6.3 Setting the Sensitivity of the Auto Header Height Control (John Deere S Series)

NOTE:

Changes may have been made to the combine controls or display since this document was published. Refer to the combine operator's manual for updates.

- Press button (A) twice and the current sensitivity setting will appear on the monitor.



Figure 4.74: Combine Command Center

- Press the - or + icon (A) to adjust rates.

NOTE:

The numbers depicted on the displays in these illustrations are for reference purposes only; they are not intended to represent the specific settings for your equipment.

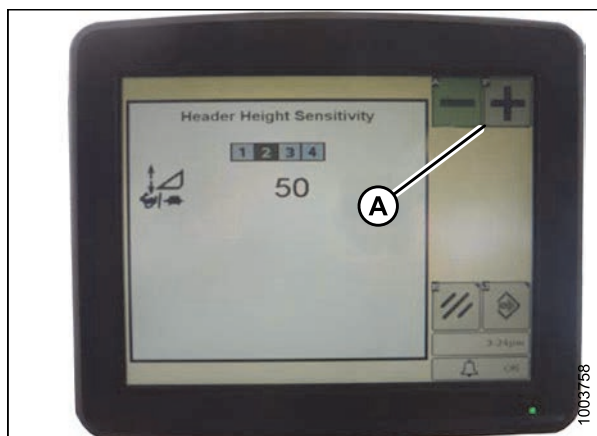


Figure 4.75: Combine Display

4.6.4 Adjusting the Manual Header Raise/Lower Rate (John Deere S Series)

NOTE:

Changes may have been made to the combine controls or display since this document was published. Refer to the combine operator's manual for updates.

1. Press button (A) and the current sensitivity setting will appear on the monitor.



Figure 4.76: Combine Command Center

2. Press the - or + icon (A) to adjust rates.

NOTE:

The numbers depicted on the displays in these illustrations are for reference purposes only; they are not intended to represent the specific settings for your equipment.

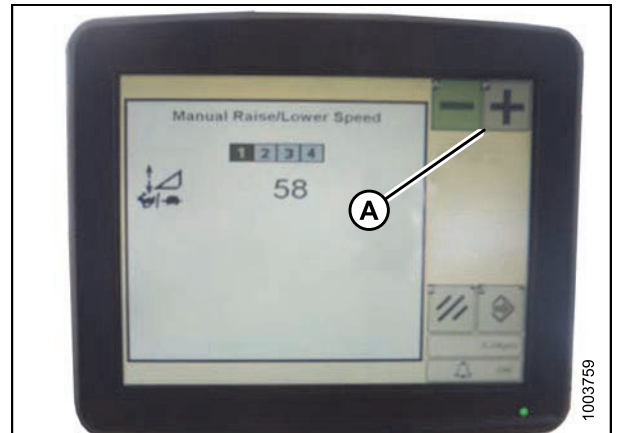


Figure 4.77: Combine Display

4.7 New Holland Combines

4.7.1 Checking Voltage Range from the Combine Cab (New Holland)

NOTE:

Changes may have been made to the combine controls or display since this document was published. Refer to the combine operator's manual for updates.

CAUTION

Check to be sure all bystanders have cleared the area.

To check the sensor output voltage range from the combine cab, follow these steps:

1. Raise the header until the header wheels are 6 inches (150 mm) above the ground.
2. Select DIAGNOSTICS (A) on the main screen. The DIAGNOSTICS screen displays.
3. Select SETTINGS. The SETTINGS screen displays.

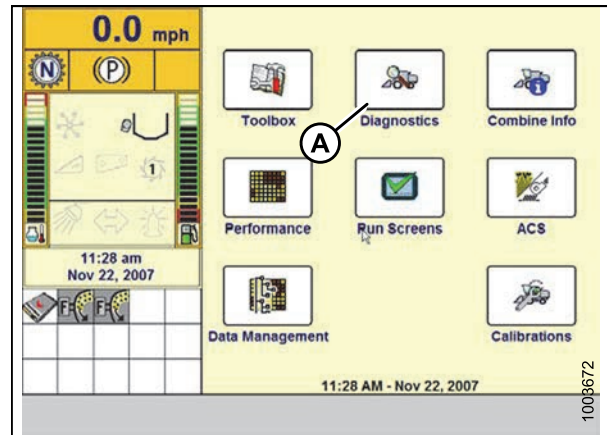


Figure 4.78: Combine Display

4. Select the GROUP drop-down arrow (A). The GROUP window opens.

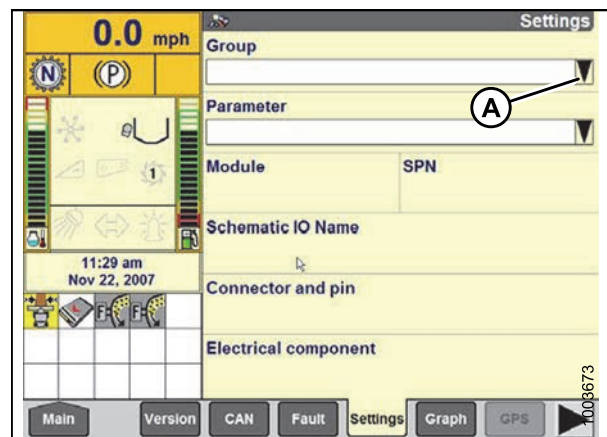


Figure 4.79: Combine Display

AUTO HEADER HEIGHT CONTROL (AHC)

5. Select HEADER HEIGHT/TILT(A). The PARAMETER window opens.

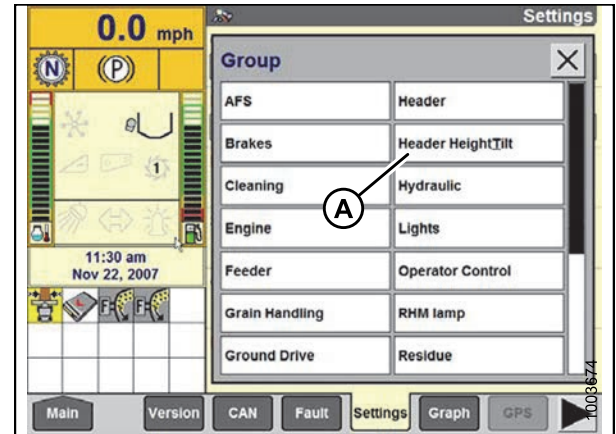


Figure 4.80: Combine Display

6. Select LEFT HEADER HEIGHT SEN (A), and then select GRAPH button (B). The exact voltage is displayed at top of screen.
7. Raise and lower the header to see the full range of voltage readings.
8. If the sensor voltage is not within the low and high limits shown in [4.2 Height Sensor Output Voltage Range – Combine Requirements, page 95](#), or if the range between the low and high limits is insufficient, you need to make adjustments. For instructions, refer to [4.2.2 Adjusting Header Height Control Voltage Range \(Left-Hand Side\), page 96](#) and [4.2.3 Adjusting Header Height Control Voltage Range \(Right-Hand Side\), page 96](#).

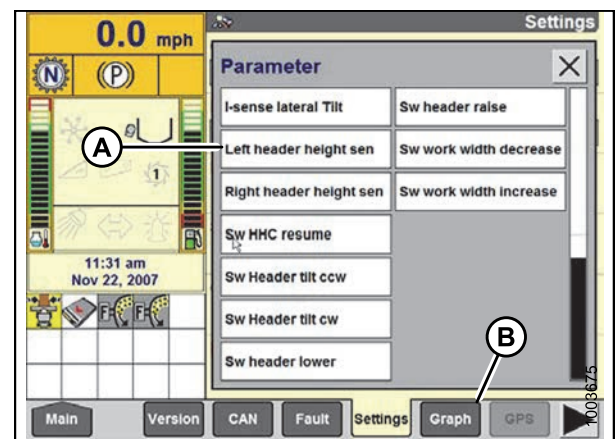


Figure 4.81: Combine Display

4.7.2 Engaging the Auto Header Height Control (New Holland CR/CX Series)

NOTE:

Changes may have been made to the combine controls or display since this document was published. Refer to the combine operator's manual for updates.

1. Select HEADER LATERAL FLOAT on the combine display screen, and press ENTER.
2. Use the up and down navigation keys to move between options, and select INSTALLED from the open window.



Figure 4.82: Combine Display

AUTO HEADER HEIGHT CONTROL (AHHC)

3. Select HEADER AUTOFLOAT on the combine display screen, and press ENTER.
4. Use the up and down navigation keys to move between options, and select INSTALLED from the open window.

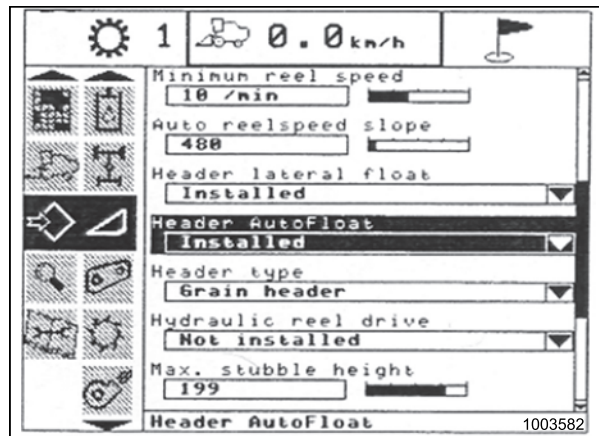


Figure 4.83: Combine Display

4.7.3 Calibrating the Auto Header Height Control (New Holland CR/CX Series)

NOTE:

Changes may have been made to the combine controls or display since this document was published. Refer to the combine operator's manual for updates.

CAUTION

Check to be sure all bystanders have cleared the area.

Check the following conditions before starting the header calibration procedure:

- The header is attached to the combine.
- The combine is on level ground, with the header level to the ground.
- The engine is running.
- The combine is not moving.
- No faults have been received from the Header Height Controller (HHC) module.
- Header/feeder is disengaged.
- Lateral flotation buttons are NOT pressed.
- ESC key is NOT pressed.

To calibrate the Auto Header Height Control, follow these steps:

1. Select CALIBRATION on the combine display, and press the right arrow navigation key to enter the information box.

AUTO HEADER HEIGHT CONTROL (AHHC)

2. Select HEADER (A), and press ENTER. The CALIBRATION window opens.

NOTE:

You can use the up and down navigation keys to move between options.

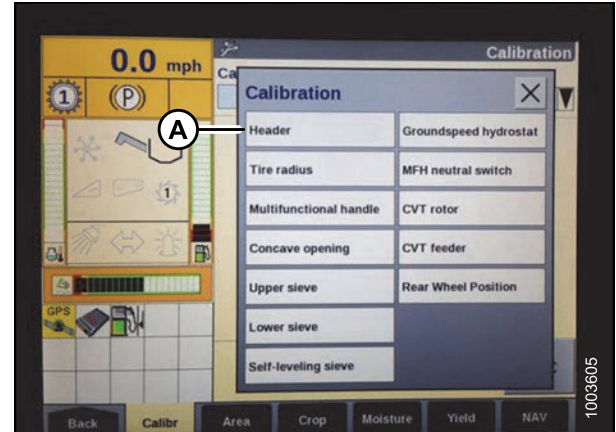


Figure 4.84: Combine Display

3. Follow the calibration steps in the order in which they appear in the window. As you proceed through the calibration process, the display will automatically update to show the next step.

NOTE:

Pressing the ESC key during any of the steps or letting the system sit idle for more than three minutes will cause the calibration procedure to stop.

NOTE:

Refer to your combine operator's manual for an explanation of any error codes.

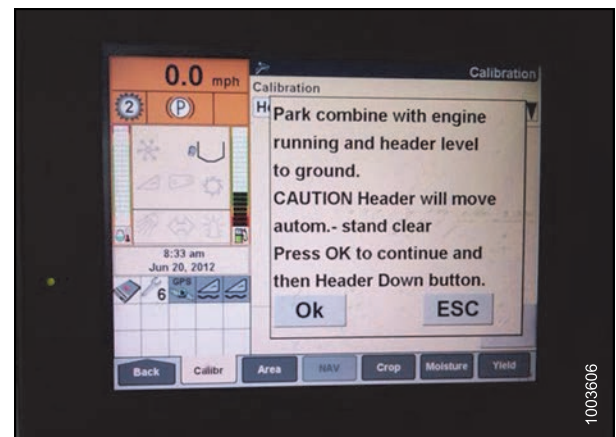


Figure 4.85: Combine Display

4. Ensure that CALIBRATION SUCCESSFUL message is displayed on the screen when all steps have been completed, and exit the CALIBRATION menu by pressing the ENTER or ESC key.

NOTE:

If float was set heavier to complete ground calibration procedure, adjust to recommended operating float after the calibration is complete.

5. Conduct the maximum stubble height calibration if unit does not function properly.

Calibrating Maximum Stubble Height

This procedure describes how to calibrate the area counter to know from which height it should stop or start counting. When the header is raised above this level, the area counter assumes you are not cutting crop; therefore, you must raise the header to a specific height that you will always exceed when not cutting, and lower the header to a specific height you will always stay below when cutting.

Select the height of the header that corresponds to the description above.

AUTO HEADER HEIGHT CONTROL (AHHC)

IMPORTANT:

- If the value is set too low, area may NOT be counted since the header is sometimes raised above this threshold although the combine is still cutting.
- If the value is set too high, the area counter will keep counting even when the header is raised (but below this threshold) and the combine is no longer cutting crop.

CAUTION

Check to be sure all bystanders have cleared the area.

1. Select the MAXIMUM STUBBLE HEIGHT calibration window.
Message: "Set header to desired maximum stubble height"
Message: "Then press ENTER".

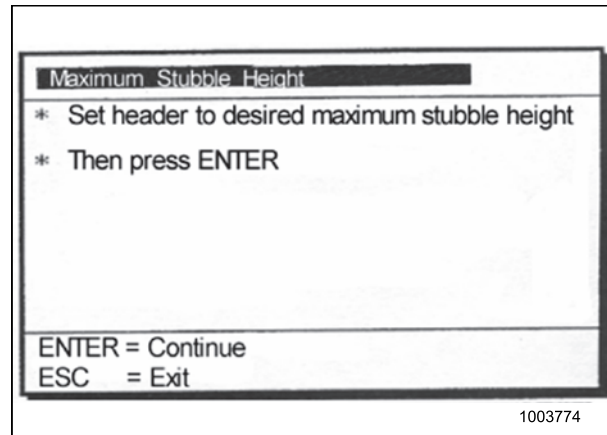


Figure 4.86: Calibration Window

2. Move header to the correct position using the header up or down control switch on the multifunction handle.
3. Press ENTER to continue.
Message: "Calibration successful".
4. Press ENTER or ESC to close the calibration window.
The calibration is now complete.

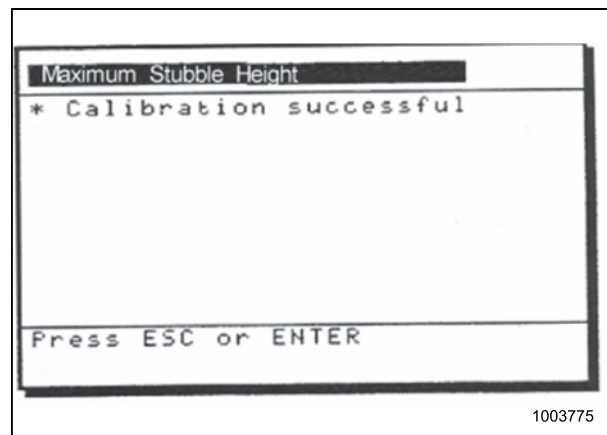


Figure 4.87: Calibration Window

4.7.4 Adjusting Header Raise Rate (New Holland CR/CX Series)

If necessary, the header raise rate (the first speed on the header height rocker switch of the multifunctional handle) can be adjusted.

NOTE:

Changes may have been made to the combine controls or display since this document was published. Refer to the combine operator's manual for updates.

AUTO HEADER HEIGHT CONTROL (AHHC)

1. Select HEADER RAISE RATE on the combine display screen.
2. Use the '+' or '-' buttons to change the setting.
3. Press ENTER to save the new setting.

NOTE:

The raise rate can be changed from 32–236 in steps of 34. The factory setting is 100.

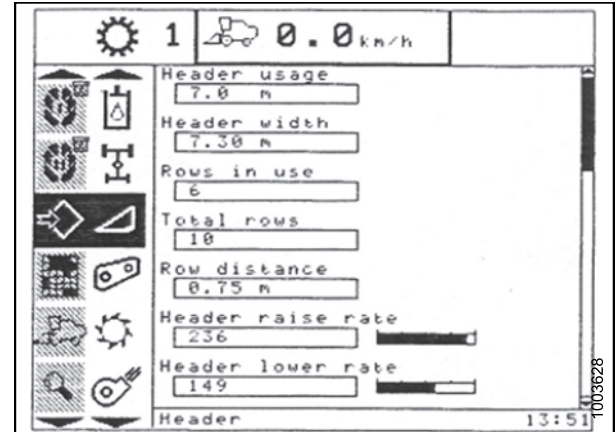


Figure 4.88: Combine Display

4.7.5 Setting the Header Lower Rate to 50 (New Holland CR/CX Series)

If necessary, the header lower rate (the automatic header height control button or second speed on the header height rocker switch of the multi-function handle) can be adjusted.

NOTE:

Changes may have been made to the combine controls or display since this document was published. Refer to the combine operator's manual for updates.

1. Select HEADER LOWER RATE on the combine display screen.
2. Use the '+' or '-' buttons to change the setting to 50.
3. Press ENTER to save the new setting.

NOTE:

The lower rate can be changed from 2–247 in steps of 7. It is factory set to 100.

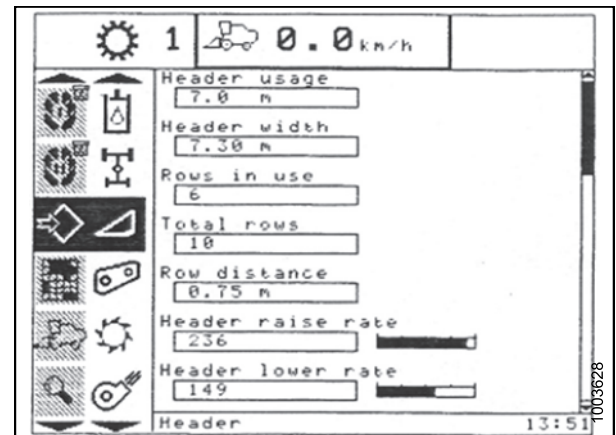


Figure 4.89: Combine Display

4.7.6 Setting the Sensitivity of the Auto Header Height Control to 200 (New Holland CR/CX Series)

NOTE:

Changes may have been made to the combine controls or display since this document was published. Refer to the combine operator's manual for updates.

To set the Auto Header Height Control sensitivity, follow these steps:



CAUTION

Check to be sure all bystanders have cleared the area.

AUTO HEADER HEIGHT CONTROL (AHHC)

1. Engage threshing and feeder house.
2. Select HEIGHT SENSITIVITY on the combine display screen.
3. Use the '+' or '-' buttons to change the setting to 200.
4. Press ENTER to save the new setting.

NOTE:

The sensitivity can be changed from 10–250 in steps of 10. It is factory set to 100.

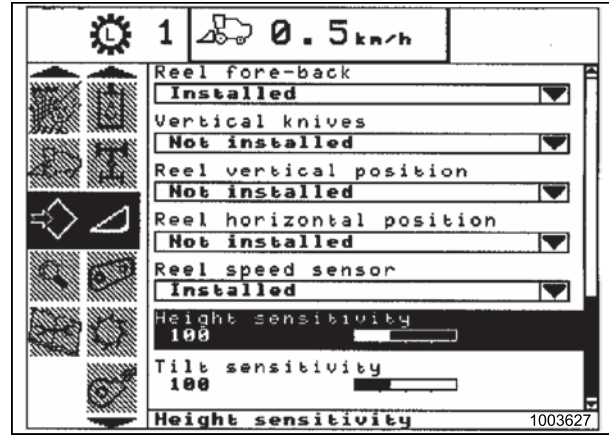


Figure 4.90: Combine Display

4.8 Sensor Operation

The position sensors supplied with the Auto Header Height Control (AHHC) system are (1K) 1000 ohm industrial series sensors containing sealed connectors. Normal operating signal voltages for the sensors fall between 10% (0.5VDC) and 90% (4.5VDC).

A sensor operating with a signal voltage below 5% is considered to be shorted, and a sensor with a signal voltage above 95% is considered to be open. An increase in sensor voltage correlates to an increase in header height.

Each sensor is constructed with a power wire and a ground wire. Inside the sensor, these two wires are connected by a high resistance filament band (C). The resistance measured across the power (A) and ground (B) wires should read a constant value between 800 and 1200 ohms (0.8–1.2 k) with the nominal reading being 1000 ohms (1 k).

In addition to the power (A) and ground (B) wires, a signal wire (C) is connected internally to a movable wiper that is attached to an external arm and sweeps the high resistance filament band. As the external arm is rotated and the wiper is moved toward or away from the power wire connection, the measured resistance at the signal wire (C) changes.

The resistance measured across the signal and ground wires should increase uniformly from a low (80–100 ohms) to a high (800–1200 ohms). This can be observed if an ohmmeter is connected across the signal and power wires and the sensor shaft rotated. When an input voltage is applied to the high resistance filament band through the power wire (A), the output (or measured) voltage in the signal wire (C) is changed by this variable resistance.

NOTE:

Ground and power wires may differ depending on combine.

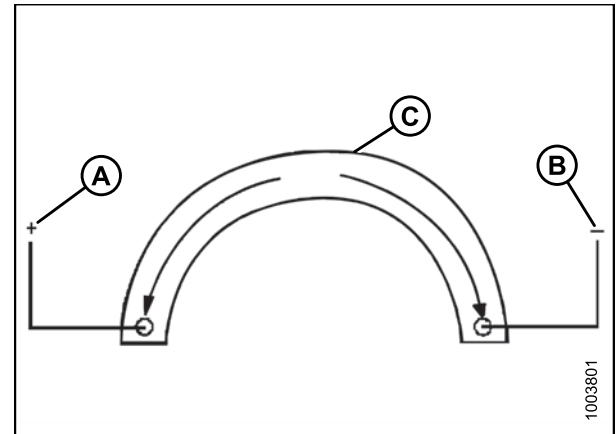


Figure 4.91: Power, Ground, and Signal Wires

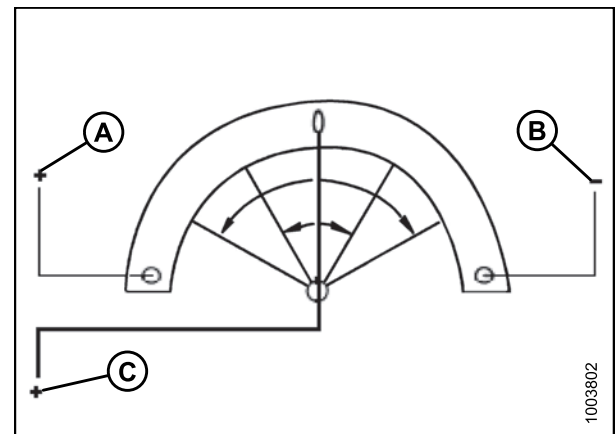


Figure 4.92: Power, Ground, and Signal Wires

5 Maintenance and Servicing

The following instructions provide information about routine maintenance and servicing of the PW8 Pick-Up Header. Detailed maintenance and service information is contained in the technical service manual that is available from your Dealer. A parts catalog is located in the manual case at the left end of the header.

Log hours of operation and use the Maintenance Schedule/Record provided to keep a record of scheduled maintenance. Refer to [5.2.1 Maintenance Schedule/Record, page 135](#).

5.1 Preparing Header for Servicing



CAUTION

To avoid personal injury, before servicing header or opening drive covers, perform the following procedures:

- Lower the header fully. If necessary to service in the raised position, always engage header lift cylinder safety props on combine.
- Stop engine and remove key.
- Engage park brake.
- Wait for all moving parts to stop.

5.2 Maintenance Requirements

Periodic maintenance requirements are organized according to service intervals.

Regular maintenance is the best insurance against early wear and untimely breakdowns. Following the maintenance schedule will increase your machine's life.

When servicing the machine, refer to the specific headings in this section and use only fluids and lubricants specified in *8.3 Recommended Fluids and Lubricants, page 244*.

If a service interval specifies more than one timeframe, e.g., "100 hours or annually", service the machine at whichever interval is reached first.

IMPORTANT:

Recommended intervals are for average conditions. Service the machine more often if operated under adverse conditions (severe dust, extra heavy loads, etc.).






CAUTION

Carefully follow all safety messages, refer to *1 Safety, page 1*.

5.2.1 Maintenance Schedule/Record

Table 5.1 Maintenance Schedule/Record

| ACTION: | | ✓ - Check | | | | ◆ - Lubricate | | | | ▲ - Change | | | |
|---|--|-----------|--|--|--|---------------|--|--|--|------------|--|--|--|
|  | Hour meter reading | | | | | | | | | | | | |
|  | Service date | | | | | | | | | | | | |
|  | Serviced by | | | | | | | | | | | | |
| 10 HOURS | | | | | | | | | | | | | |
| ◆ | Lubricate auger drive chain – refer to Lubricating Auger Drive Chain, page 159 . | | | | | | | | | | | | |
| ✓ | Auger drive chain tension – refer to Adjusting Auger Drive Chain Tension, page 161 . | | | | | | | | | | | | |
| ✓ | Hydraulic hoses for leaks – refer to 5.9.5 Hydraulic Hoses and Lines, page 214 . | | | | | | | | | | | | |
| ✓ | Draper belt tension – refer to 3.12.7 Draper Belt Tension, page 77 . | | | | | | | | | | | | |
| 50 HOURS | | | | | | | | | | | | | |
| ✓ | Auger drive chain tension – refer to Adjusting Auger Drive Chain Tension, page 161 . | | | | | | | | | | | | |
| ✓ | Hydraulic hoses for leaks – refer to 5.9.5 Hydraulic Hoses and Lines, page 214 . | | | | | | | | | | | | |
| ✓ | Draper belt tension – refer to 3.12.7 Draper Belt Tension, page 77 . | | | | | | | | | | | | |
| ✓ | Draper belt condition – refer to 5.7.1 Draper Belts, page 177 . | | | | | | | | | | | | |
| ✓ | Draper plastic guides for wear – refer to 5.7.1 Draper Belts, page 177 . | | | | | | | | | | | | |

MAINTENANCE AND SERVICING

Table 5.2 Maintenance Schedule/Record

| 100 HOURS | | | | | | | | | | | | | | | | | | |
|---------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| ◆ | Clean and grease driveshaft splines – refer to <i>Driveline Splined Shaft, page 151.</i> | | | | | | | | | | | | | | | | | |
| ◆ | Driveline slip-joint and clutch – refer to <i>5.3 Lubrication, page 138.</i> | | | | | | | | | | | | | | | | | |
| ◆ | Auger drive chain and bearing – refer to <i>5.3 Lubrication, page 138.</i> | | | | | | | | | | | | | | | | | |
| ✓ | Tire pressure – refer to <i>5.11.2 Inflating Tire, page 222.</i> | | | | | | | | | | | | | | | | | |
| ✓ | Wheel bolt torque – refer to <i>5.11.3 Installing Wheel, page 223.</i> | | | | | | | | | | | | | | | | | |
| ✓ | Loose fasteners – refer to <i>8.1 Torque Specifications, page 233.</i> | | | | | | | | | | | | | | | | | |
| ✓ | Bearings and seals – refer to <i>5.7.3 Draper Deck Roller Bearings, page 184.</i> | | | | | | | | | | | | | | | | | |
| ✓ | Pick-up fingers for wear – refer to <i>5.7.2 Draper Fingers/Draper Guides, page 182.</i> | | | | | | | | | | | | | | | | | |
| ✓ | Height control sensor pivot points – refer to <i>4.1 Height Controllers, page 87.</i> | | | | | | | | | | | | | | | | | |
| End of Season | | | | | | | | | | | | | | | | | | |
| | Clean and touch-up worn paint spots | | | | | | | | | | | | | | | | | |
| | Clean header | | | | | | | | | | | | | | | | | |
| ✓ | Check header for wear | | | | | | | | | | | | | | | | | |

5.2.2 Preseason/Annual Service

CAUTION

- Review the operator's manual to refresh your memory on safety and operating recommendations.
- Review all safety signs and other decals on the header and note hazard areas.
- Ensure all shields and guards are properly installed and secured. Never alter or remove safety equipment.
- Make certain you understand and have practiced safe use of all controls. Know the capacity and operating characteristics of the machine.

Perform the following at the beginning of each operating season:

1. Lubricate machine completely. Refer to [5.3 Lubrication, page 138](#).
2. Perform all annual maintenance. Refer to [5.2.1 Maintenance Schedule/Record, page 135](#).

5.2.3 End-of-Season Service

Refer to [3.14 Storing the Header, page 85](#) for end of season servicing information.

5.3 Lubrication

WARNING

To avoid personal injury, before servicing header or opening drive covers, refer to [5.1 Preparing Header for Servicing, page 133](#).

Lubricate the machine after every 100 hours of operation.

The greasing points are marked on the machine by decals showing a grease gun (A) and grease interval in hours of operation (B).

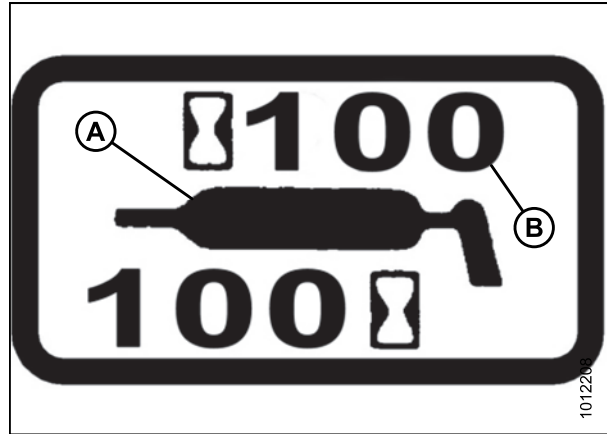


Figure 5.1: Lubrication Decal

Log hours of operation and use the maintenance schedule provided to keep a record of scheduled maintenance. Refer to [5.2.1 Maintenance Schedule/Record, page 135](#).

5.3.1 Greasing Procedure

WARNING

Stop combine engine and remove key before making adjustments to machine. A child or even a pet could engage the drive.

1. Use the recommended lubricants specified in this manual. Refer to [8.3 Recommended Fluids and Lubricants, page 244](#).
2. Wipe grease fitting with a clean cloth before greasing to avoid injecting dirt and grit.
3. Inject grease through fitting with grease gun until grease overflows fitting, except where noted.
4. Leave excess grease on fitting to keep out dirt.
5. Replace any loose or broken fittings immediately.
6. If fitting will not take grease, remove and clean thoroughly. Also clean lubricant passageway. Replace fitting if necessary.

5.3.2 Greasing Points

Every 100 Hours

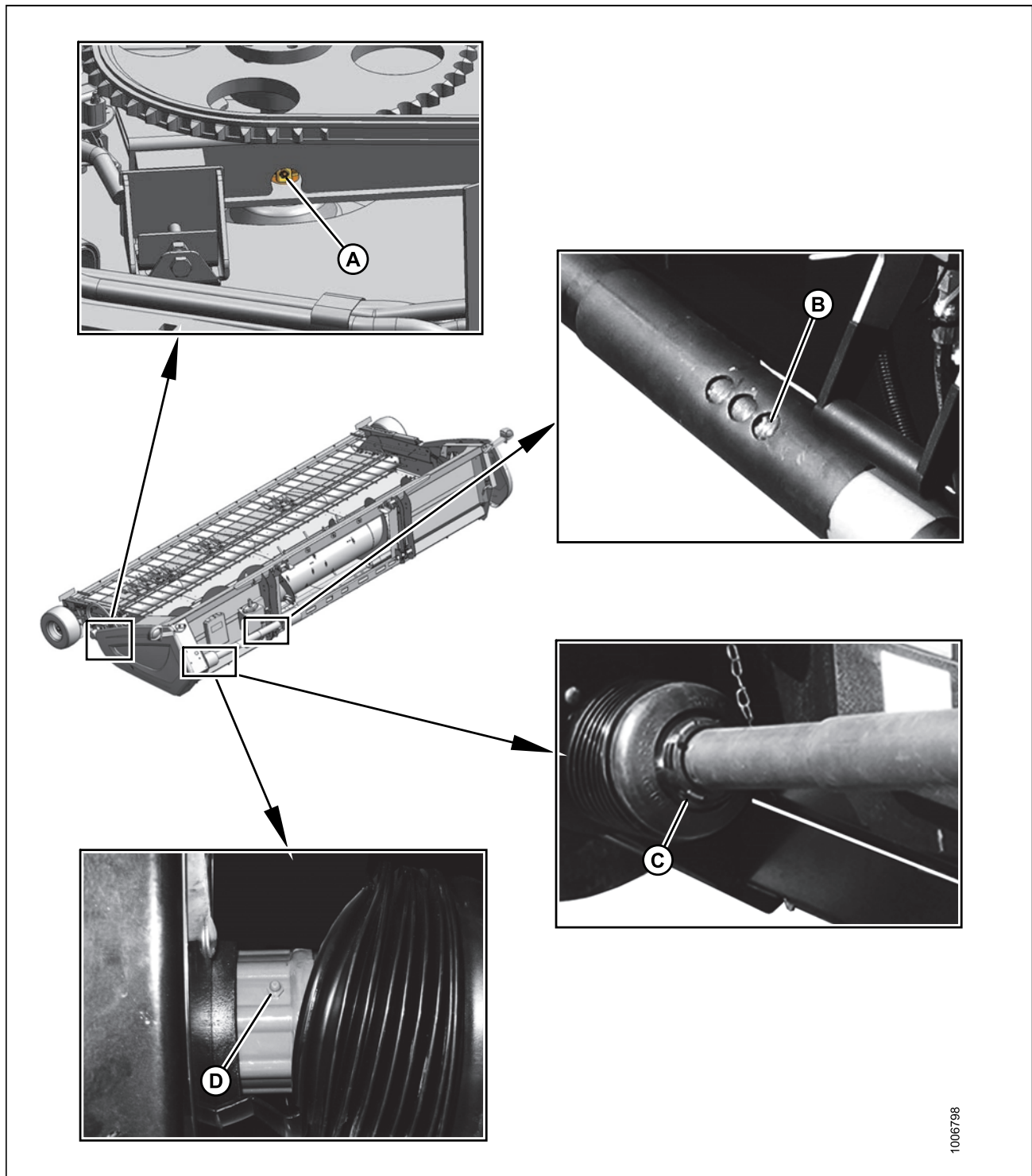


Figure 5.2: Greasing Points

A - Auger Bearing
C - Driveline Guard (Both Ends)

B - Driveline Slip-Joint
D - Driveline Clutch

5.3.3 Installing Sealed Bearing

1. Clean shaft and apply rust preventive coating.
2. Install flangette (A), bearing (B), second flangette (C), and lock collar (D).

NOTE:

The locking cam is on only one side of the bearing.

3. Install (but do not tighten) the flangette bolts (E).
4. Lock the lock collar with a punch once the shaft is correctly positioned.

NOTE:

Lock the collar in the same direction the shaft rotates, and tighten the setscrew in the collar.

5. Tighten the flangette bolts (E).
6. Loosen the flangette bolts on the mating bearing one turn, and retighten. This will enable the bearing to properly line up.

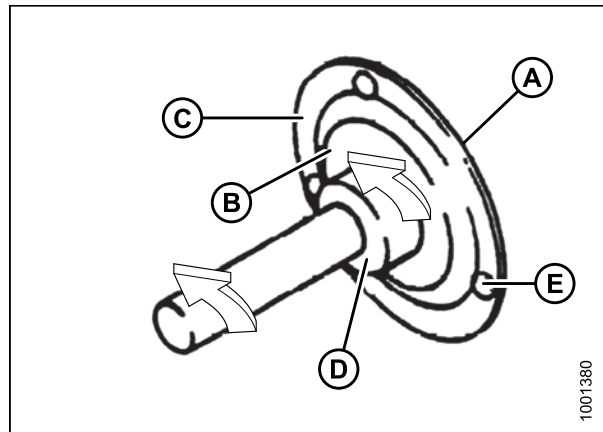


Figure 5.3: Sealed Bearing

5.4 Endshields

The endshields are molded polyethylene covers that are attached to the ends of the header. They provide shielding for the header drive components and also display the make of the combine. The left endshield is hinged to the endsheet and can be opened for routine maintenance or easily removed for major servicing. The right endshield is bolted directly to the header.

5.4.1 Removing Left-Hand Endshield

DANGER

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

1. Lower header to ground, shut down engine, and remove key from ignition.
2. Unlock endshield (B) by turning latch (A) counterclockwise using a slotted screwdriver until it stops (slightly more than one-half turn).

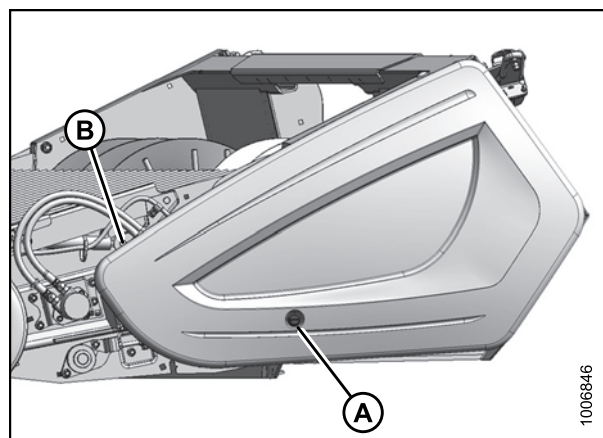


Figure 5.4: Endshield Closed

3. Grasp forward end of endshield (A) and pull open until support (B) engages and holds endshield in open position.

NOTE:

If additional access to the drive area is required, remove the endshield. Refer to [5.4.1 Removing Left-Hand Endshield, page 141](#).

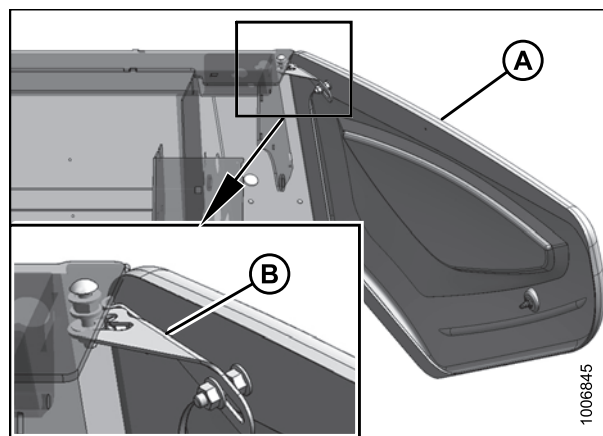


Figure 5.5: Endshield Open

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4. Remove nut (A) securing support (B) to endshield (C), and move support (B) off the bolt.

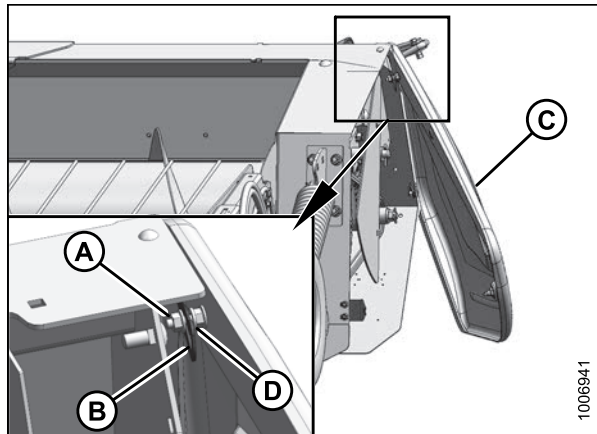


Figure 5.6: Removing Endshield

5. Swing endshield (A) fully back and loosen nuts (B) on clips (C) at back of endshield so clips disengage slots in header frame.
6. Move endshield (A) away from header.

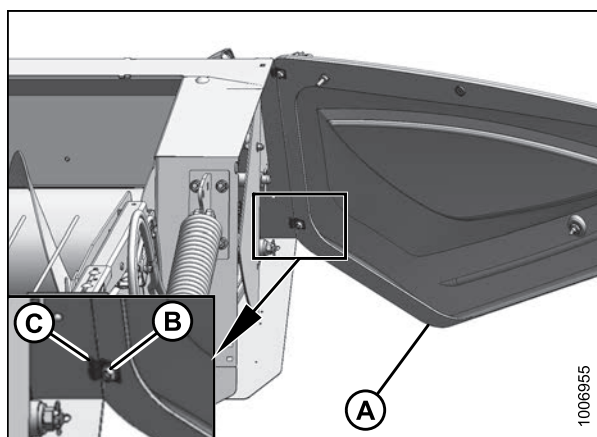


Figure 5.7: Removing Endshield

5.4.2 Installing Left-Hand Endshield

1. Hold endshield (A) up to frame and insert clips (C) into slots in header frame.
2. Tighten nuts (B) on clips (C) just enough to hold endshield in place.

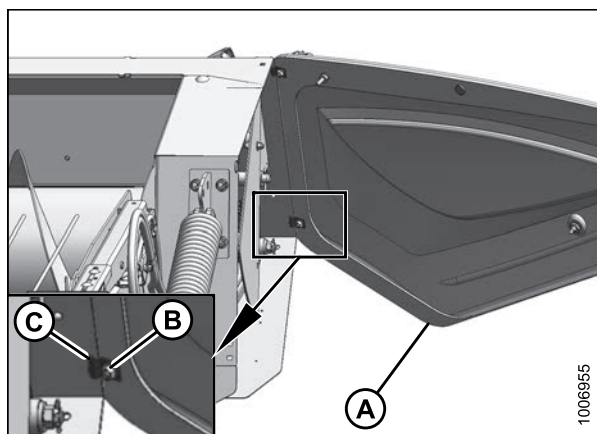


Figure 5.8: Attaching Endshield

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3. Close endshield (A) ensuring that magnet (B) and stop (C) in header frame are aligned (this ensures that latch [D] lines up with receptacle [E]).

NOTE:

Latch (D) and magnet (B) positions are preset at the factory and do not require adjustment.

4. Loosen nuts on clips installed in Step 1., page 142 and reposition the endshield (A) if necessary. Tighten nuts but do not overtighten to prevent damaging the endshield.

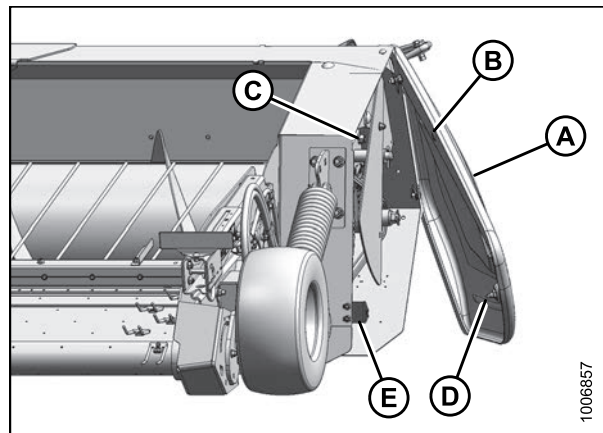


Figure 5.9: Aligning Endshield

5. Open endshield (C) slightly so support (B) can be installed onto endshield. Check that washer (D) is between the support and the endshield.
6. Install nut (A) leaving a gap of 5/16–3/8 in. (8–10 mm) between the nut and washer (D) which allows support (B) to move.

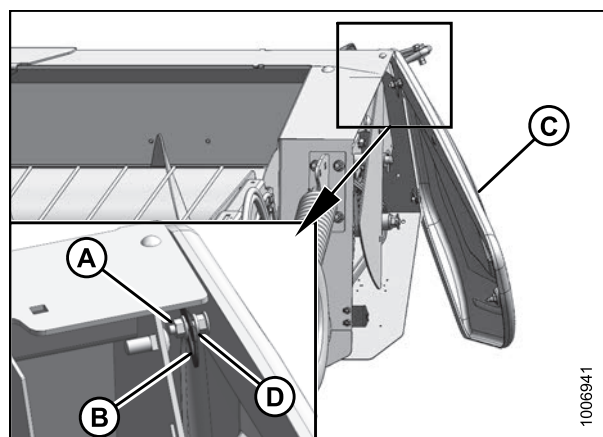


Figure 5.10: Attaching Support

7. Close the endshield and turn latch (A) clockwise using a slotted screwdriver until it stops (slightly more than one-half turn).

NOTE:

When latch is fully engaged, the notch on the latch will align with the notch on the endsheet (not shown), and the endshield will draw tightly against the header and slightly compress.

8. Check that magnet (B) on endshield is against the header endsheet and that latch (A) is engaged.

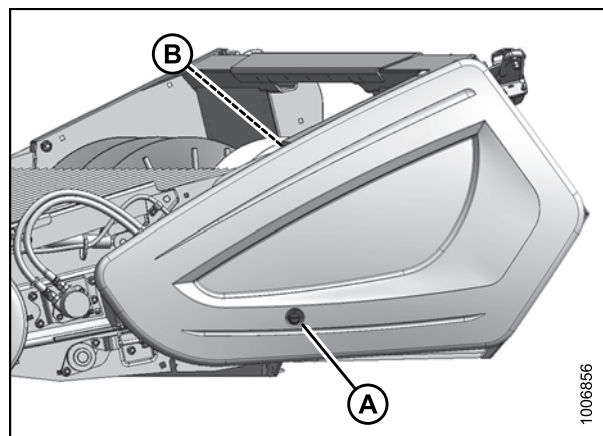


Figure 5.11: Endshield Closed

5.5 Drives

5.5.1 Header Driveshaft

Clean and grease header driveshaft splines annually to prevent excessive corrosion and wear.

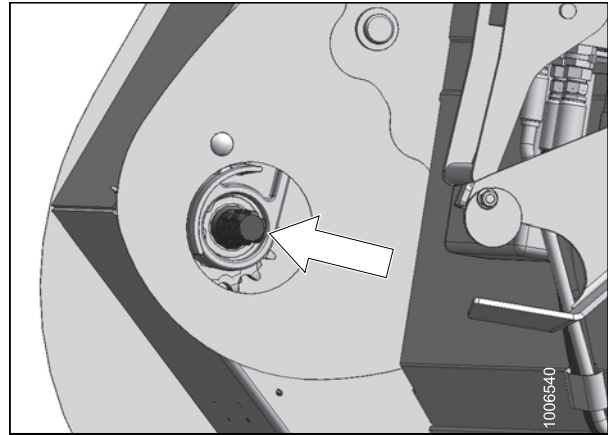


Figure 5.12: Header Driveshaft

5.5.2 Header Driveline

Removing Header Driveline

⚠ DANGER

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

1. Lower header to ground, shut down combine, and remove key from ignition.
2. Disconnect tethers (A) securing driveline guard to header.
3. Pull back guard (B) to expose collar (C) at the combine end of the driveline.

⚠ CAUTION

To prevent injury, or damage to the driveline, hold the driveline so that it doesn't fall to the floor.

4. Pull back collar (C) and pull driveline (D) off feeder house shaft while supporting end of driveline.

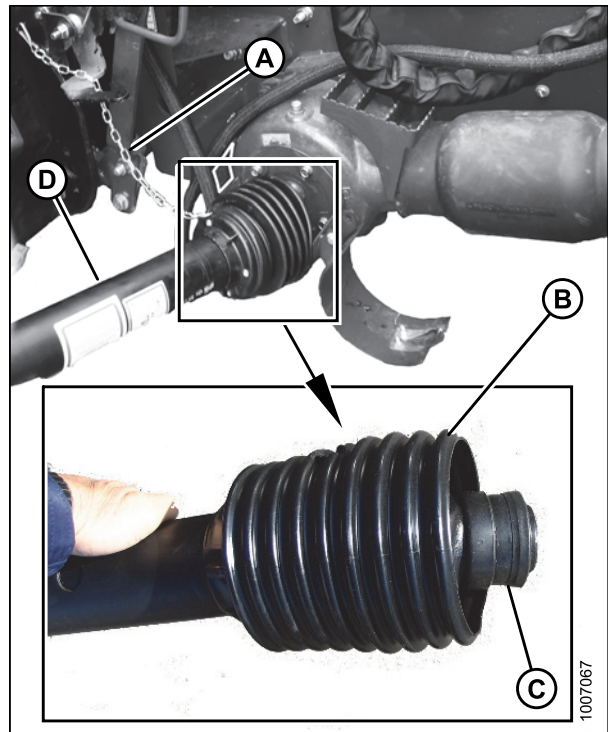


Figure 5.13: Combine End of Driveline

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5. Pull back guard (A) to expose collar (B) at the header end of driveline. If necessary, loosen bolt (C) and move plate (D) to release guard.
6. Pull back collar (B), and pull driveline off header driveshaft.

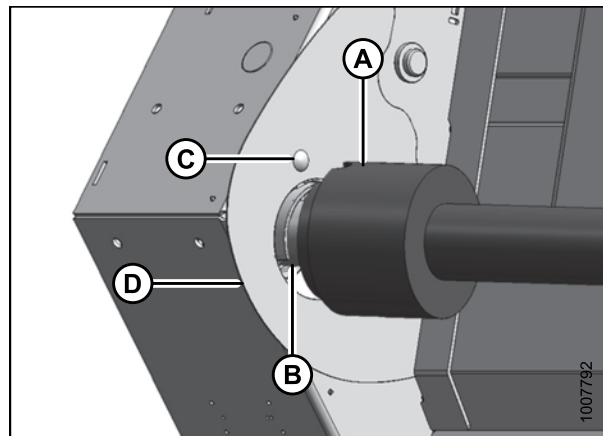


Figure 5.14: Header End of Driveline

Installing Header Driveline

DANGER

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

CAUTION

To prevent injury, or damage to the driveline, hold the driveline so that it doesn't fall to the floor.

1. Lower header to ground, shut down combine, and remove key from ignition.
2. Pull back guard (A) to expose collar (B) at the header (notched) end of the driveline.

NOTE:

The driveline may separate if not supported at both ends.

3. Pull back collar (B), and slide coupler onto splined input shaft (C) until it locks. Release collar (B).
4. Loosen bolt (D) and move plate (E) (if necessary) to provide sufficient clearance for driveline guard.

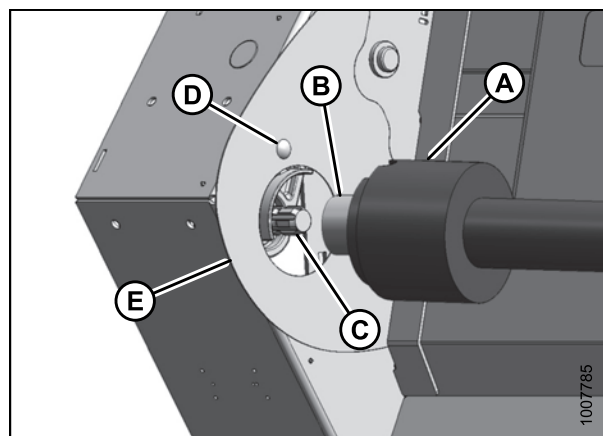


Figure 5.15: Driveline

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5. Line up notch (A) in the driveline's rubber bellows with bolt (B) so the notch fits around casting (C) inside the auger drive compartment.

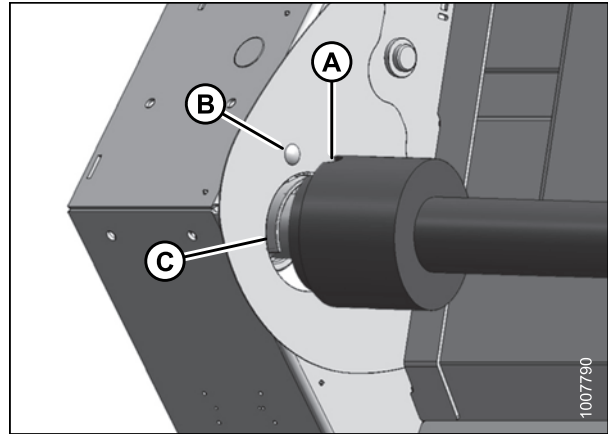


Figure 5.16: Driveline

6. Sandwich the lip (A) on the driveline bellows between the hole in the endsheet and the casting (B).
7. Tighten bolt (C).

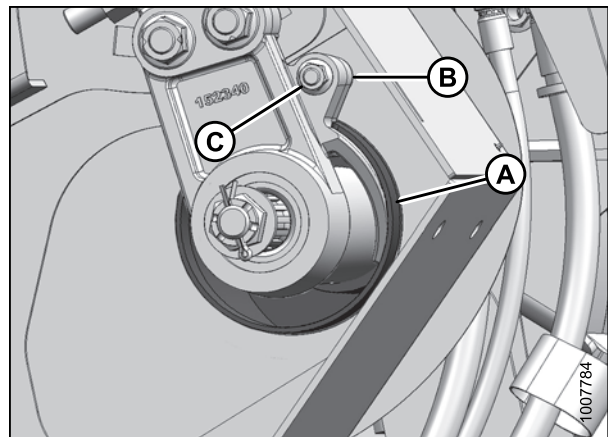


Figure 5.17: Driveline Shield

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8. Pull back guard (B) to expose collar (C) at the combine end of the driveline (D).
9. Pull back collar (C), and push driveline (D) onto feeder house shaft until collar locks.
10. Attach tethers (A) to secure driveline guard to header.

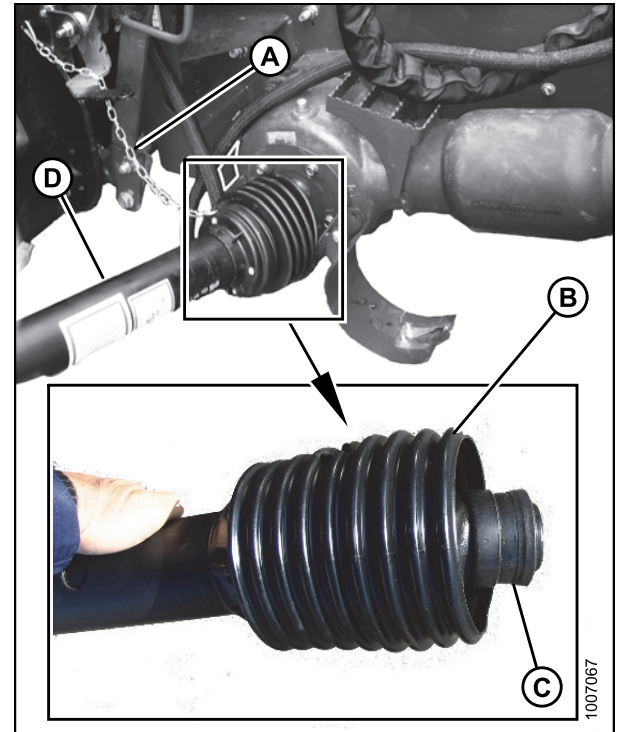


Figure 5.18: Driveline

Replacing Driveline Clutch

Repair or replace the driveline clutch if it can no longer generate the necessary torque to operate the header. Refer to your PW8 Pick-Up Header Parts Catalog for available replacement part numbers..

1. Remove the driveline from the header. Refer to [Removing Header Driveline, page 144](#).
2. Remove the driveline guard. Refer to [Removing Driveline Guard, page 148](#).
3. Remove cross and bearings (A) connecting clutch (B) to driveline yoke (C).
4. Install new cross and bearings (A) and new clutch (B) onto existing driveline yoke (C).
5. Reinstall driveline guard. Refer to [Installing Driveline Guard, page 149](#).
6. Reinstall driveline. Refer to [Installing Header Driveline, page 145](#).

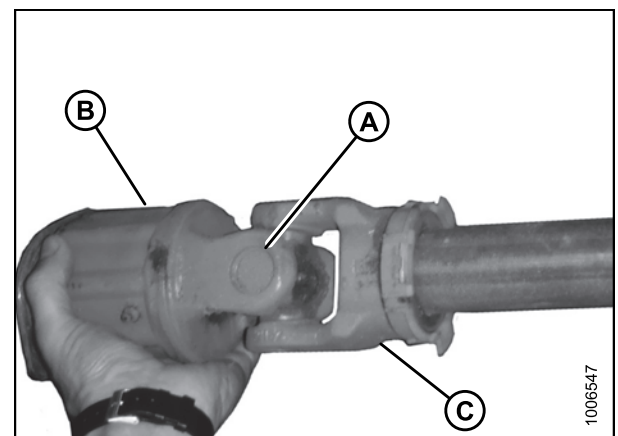


Figure 5.19: Driveline Clutch

Removing Driveline Guard

The driveline guard must remain attached to the driveline, but can be removed for maintenance purposes only.

⚠ DANGER

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

NOTE:

The driveline does **NOT** need to be removed from the header in order to remove the driveline guard.

1. Disconnect tethers (not shown) at ends of driveline.
2. Rotate disc (B) on driveline storage hook (A), and remove driveline from hook.
3. Extend driveline (A) until it separates. Hold end of driveline to prevent it from dropping and hitting the ground.

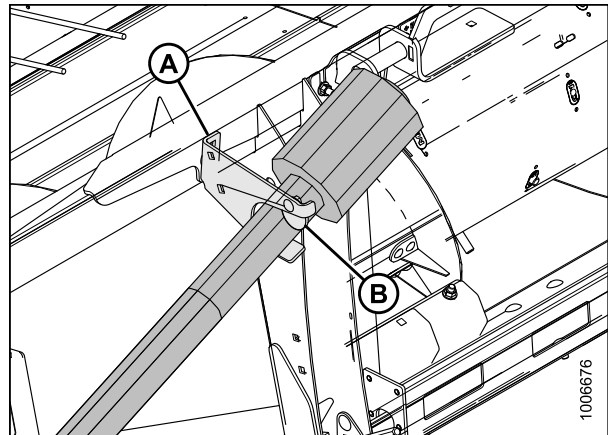


Figure 5.20: Driveline



Figure 5.21: Driveline Separated

4. Use a slotted screwdriver to release grease zerk/lock (A).

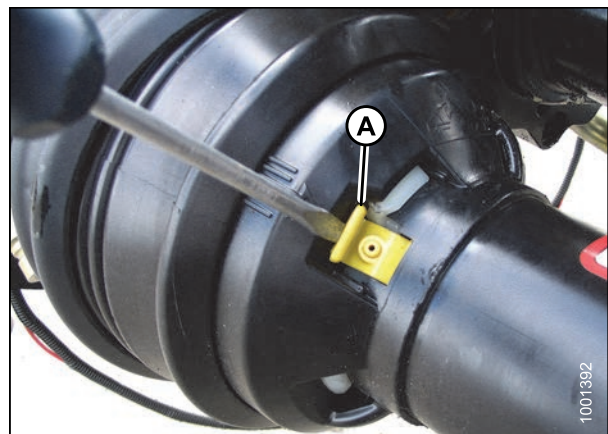


Figure 5.22: Grease Zerk/Lock

MAINTENANCE AND SERVICING

5. Rotate driveline guard locking ring (A) counterclockwise using a slotted screwdriver until lugs (B) line up with slots in guard.
6. Pull driveline guard off driveline.

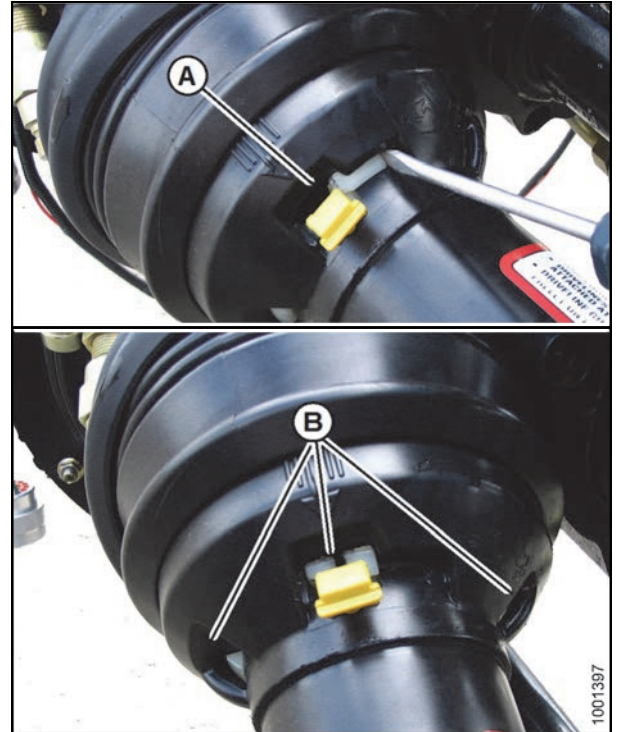


Figure 5.23: Driveline Guard

Installing Driveline Guard

1. Slide driveline guard onto driveline, and line up slotted lug on locking ring (A) with arrow (B) on guard.

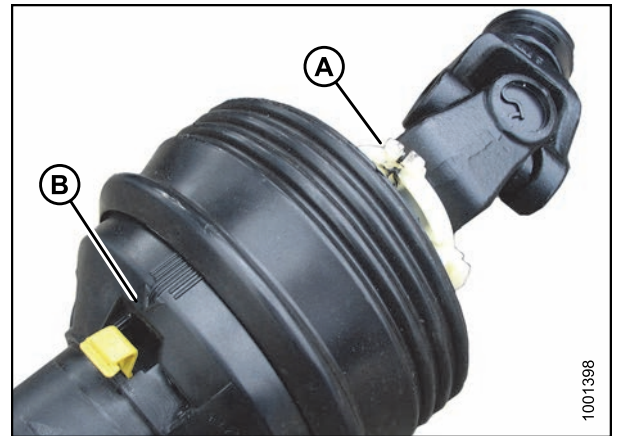


Figure 5.24: Driveline Guard

MAINTENANCE AND SERVICING

2. Push driveline guard onto ring until locking ring is visible in slots (A).

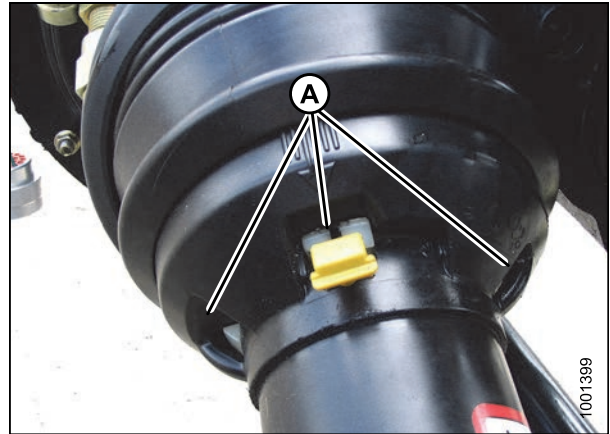


Figure 5.25: Driveline Guard

3. Use a slotted screwdriver to rotate ring (A) clockwise and lock ring in guard.

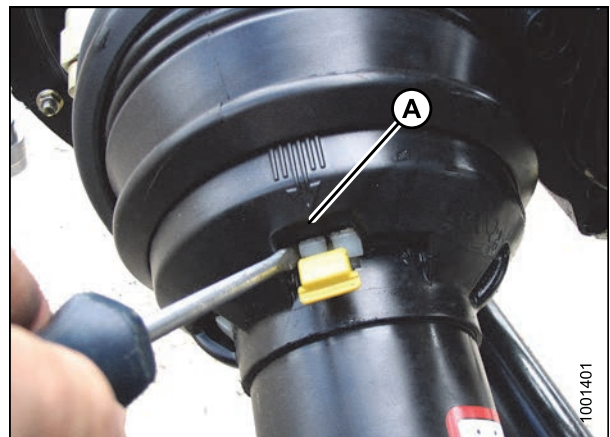


Figure 5.26: Driveline Guard

4. Push grease zerk (A) back into guard.

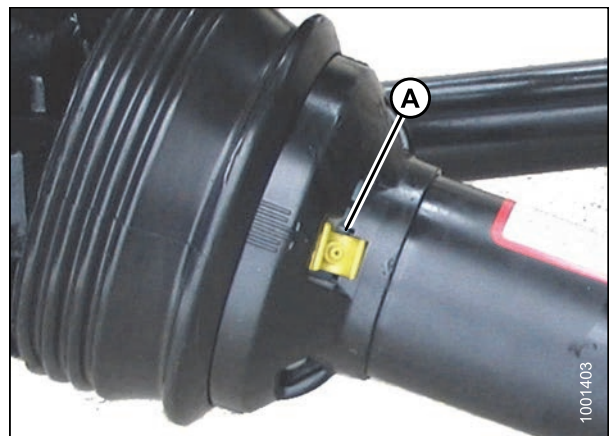


Figure 5.27: Grease Zerk

MAINTENANCE AND SERVICING

5. Reassemble driveline.
6. Align weld (A) with missing spline (B) when reassembling.

NOTE:

The splines are keyed to ensure proper alignment of the universals.

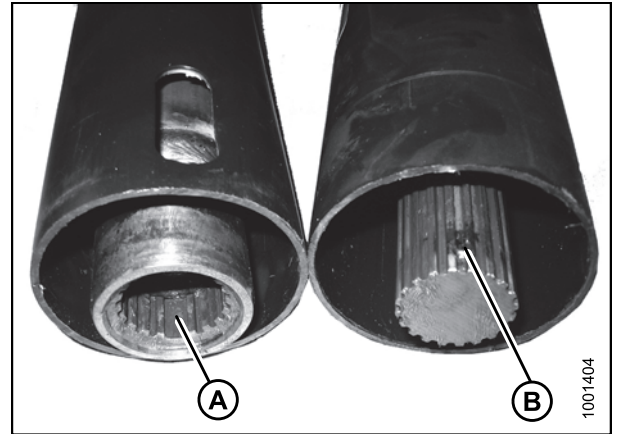


Figure 5.28: Driveline Splines

7. Slide driveline into hook (A) on header and rotate disc (B) to secure driveline (or connect driveline to combine).
8. Attach tethers (not shown) to header.

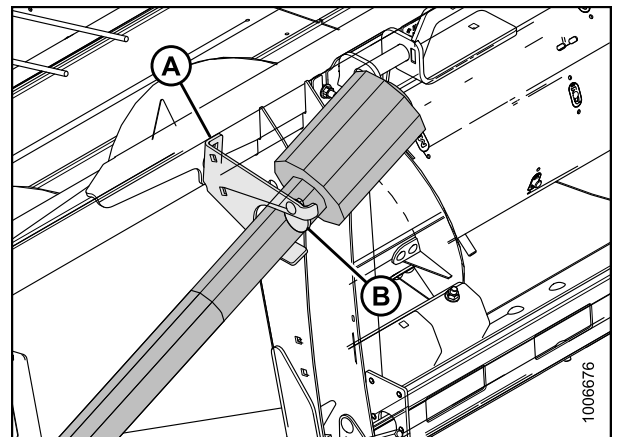


Figure 5.29: Driveline

Driveline Splined Shaft

1. Remove the driveline guard. Refer to [Removing Driveline Guard, page 148](#).
2. Clean internal and external splines.
3. Install driveline guard. Refer to [Installing Driveline Guard, page 149](#).

5.5.3 Draper Drives

The two hydraulic drive motors do not require any maintenance. If repairs, other than motor seal kits, are required, the motors should be removed and serviced at your dealership.

Removing Front Hydraulic Motor

⚠ DANGER

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

1. Lower header to the ground, shut down combine, and remove key from ignition.
2. Disconnect hydraulic hoses (A) from front motor on left-hand side of header. Install caps onto hose ends, or wrap with plastic and move hoses away from work area.

IMPORTANT:

Keep hydraulic coupler tips and connectors clean. Allowing dust, dirt, water, or foreign material to enter the system is the major cause of hydraulic system damage. Do NOT attempt to service hydraulic systems in the field. Precision fits require a perfectly clean connection during overhaul.

3. Remove two M8 hex flange nuts (B) using a 13 mm socket wrench.
4. Pull hydraulic motor (A) from roller shaft.

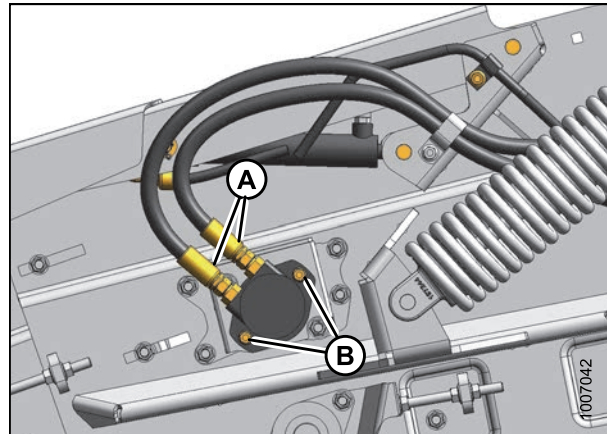


Figure 5.30: Front Hydraulic Motor: LH Side

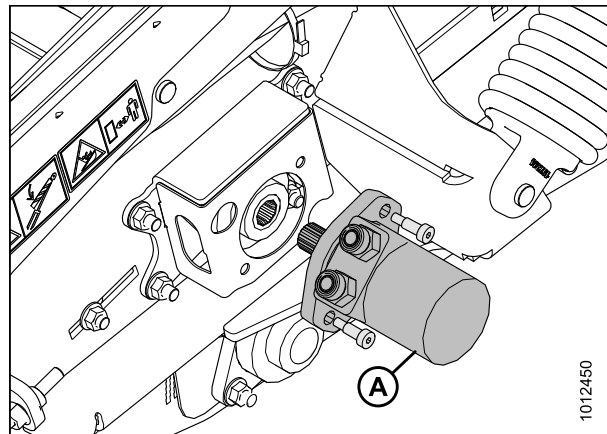


Figure 5.31: Front Hydraulic Motor

Installing Front Hydraulic Motor

1. Apply grease to splines of front hydraulic motor (A) shaft.
2. Install hydraulic motor (A) onto roller shaft (B) and shoulder bolts (C).

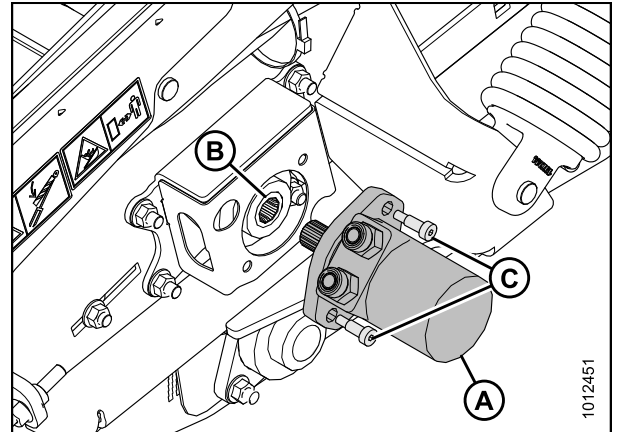


Figure 5.32: Front Hydraulic Motor

3. Secure hydraulic motor with two M8 hex flange nuts (A) and torque to 37 lbf·ft (50 N·m) using a 13 mm socket wrench.

IMPORTANT:

Hydraulic motor must be able to move slightly during operation. Tighten to required torque only, and do NOT use washers or shims. It is normal for the motor to feel somewhat loose after torquing.

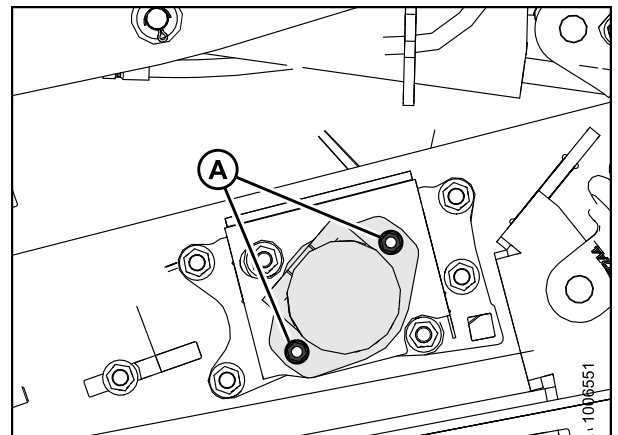


Figure 5.33: Front Hydraulic Motor

4. If installing a new motor reuse hydraulic fittings (A) from original motor.

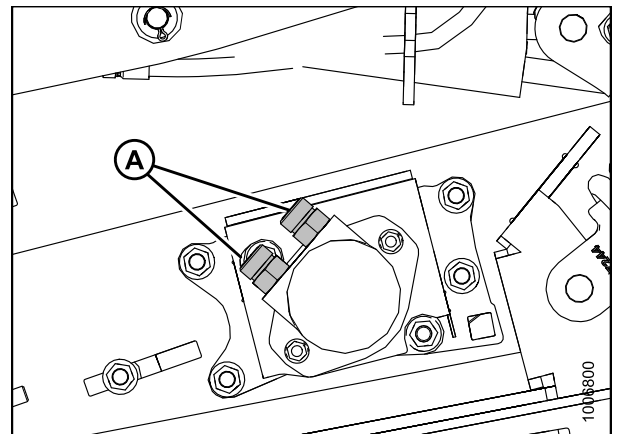


Figure 5.34: Hydraulic Fittings

5. Reconnect hydraulic hoses (A) to motor.

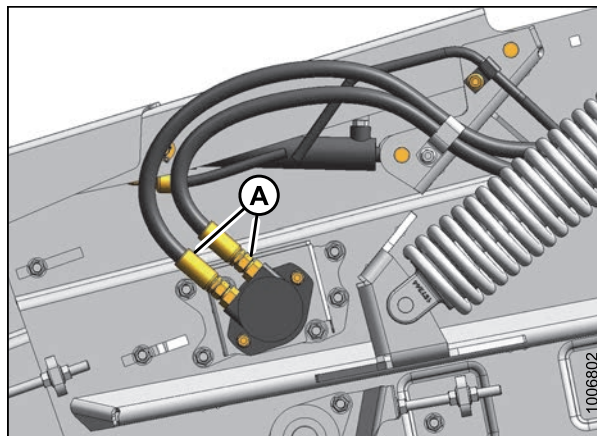


Figure 5.35: Hydraulic Hoses

Removing Rear Hydraulic Motor

DANGER

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

1. Lower header to the ground, shut down combine, and remove key from ignition.
2. Open left-hand endshield (A). Refer to [3.3.1 Opening Left-Hand Endshield](#), page 27.

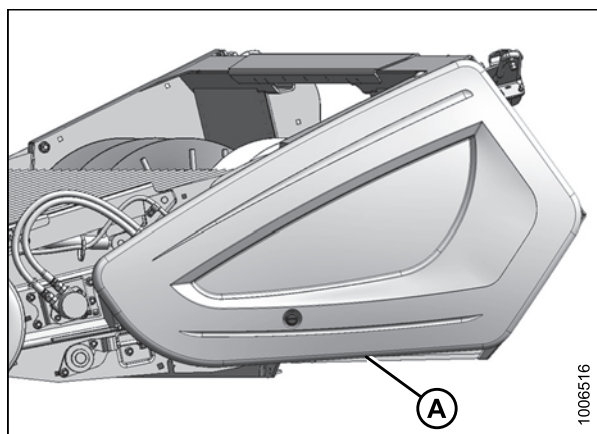


Figure 5.36: Left-Hand Endshield

3. Disconnect hydraulic hoses (A) from motor. Install plugs onto hose ends, or wrap with plastic and move hoses away from work area. Loosen or remove adjacent cinch straps if necessary.

IMPORTANT:

Keep hydraulic coupler tips and connectors clean. Allowing dust, dirt, water, or foreign material to enter the system is the major cause of hydraulic system damage. Do NOT attempt to service hydraulic systems in the field. Precision fits require a perfectly clean connection during overhaul.

4. Remove two 10 mm shoulder bolts (B) using an 8 mm hex key.
5. Pull hydraulic motor (C) from roller shaft.

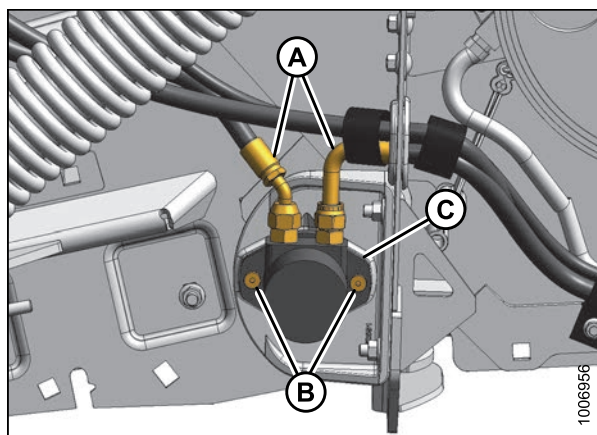


Figure 5.37: Rear Hydraulic Motor

Installing Rear Hydraulic Motor

1. Apply grease (extreme pressure [EP] performance with 1.5–5% molybdenum disulphide, NLGI grade 2), to splines of hydraulic motor shaft (A).
2. Install hydraulic motor (B) onto roller shaft, and secure with two 10 mm shoulder bolts (C).
3. Torque bolts to 37 lbf·ft (50 N·m) using an 8 mm hex key.

IMPORTANT:

Hydraulic motor must be able to move slightly during operation. Tighten to required torque only, and do NOT use washers or shims. It is normal for the motor and the hardware to feel somewhat loose after torquing.

4. Install hydraulic fittings (D) from original motor (if installing new motor).
5. Reconnect hydraulic hoses (A) to motor.
6. Install previously removed cinch straps.
7. Close endshield. Refer to [3.3.2 Closing Left-Hand Endshield, page 28](#).

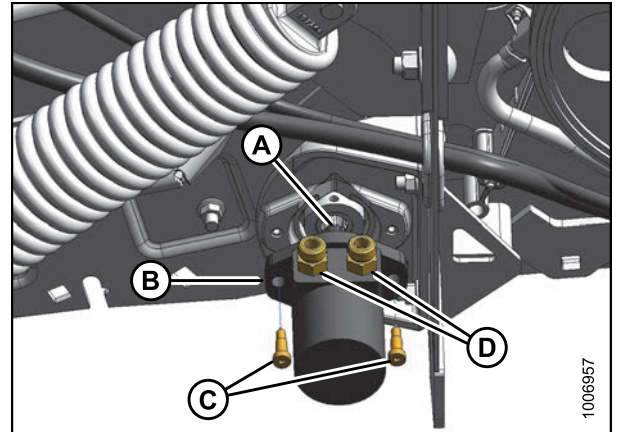


Figure 5.38: Rear Hydraulic Motor

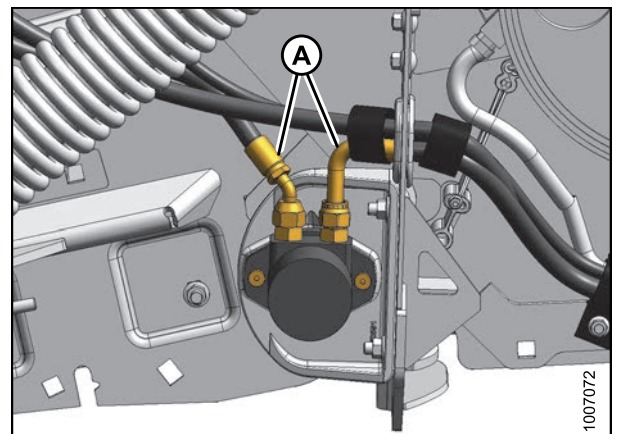


Figure 5.39: Rear Hydraulic Motor

Removing Hydraulic Motor Hoses

1. Lower header to the ground, and lower the hold-down completely.



DANGER

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

2. Shut down combine and remove key from ignition.
3. Open left-hand endshield (A). Refer to [3.3.1 Opening Left-Hand Endshield, page 27](#).

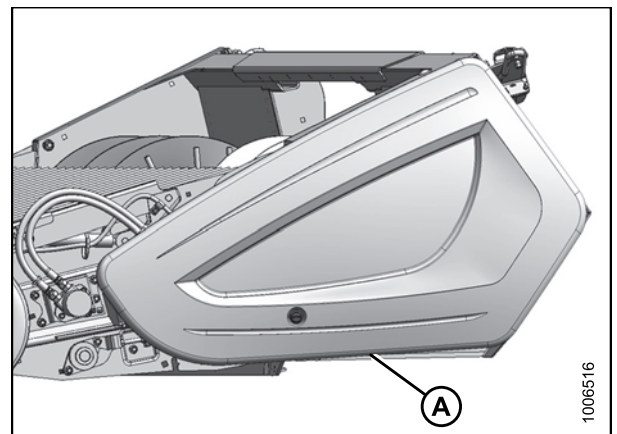


Figure 5.40: Left-Hand Endshield

MAINTENANCE AND SERVICING

4. Remove hose clips (A) and cinch straps (B).

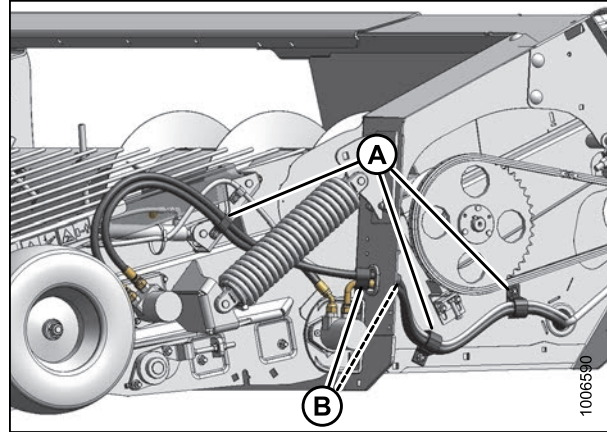


Figure 5.41: Left Side of Header

5. Disconnect and remove hydraulic hoses (A), (B), and (C) from drive motors (D) and (E). Install caps onto hose ends or wrap with plastic.

IMPORTANT:

Keep hydraulic coupler tips and connectors clean. Allowing dust, dirt, water, or foreign material to enter the system is the major cause of hydraulic system damage. Do NOT attempt to service hydraulic systems in the field. Precision fits require a perfectly clean connection during overhaul.

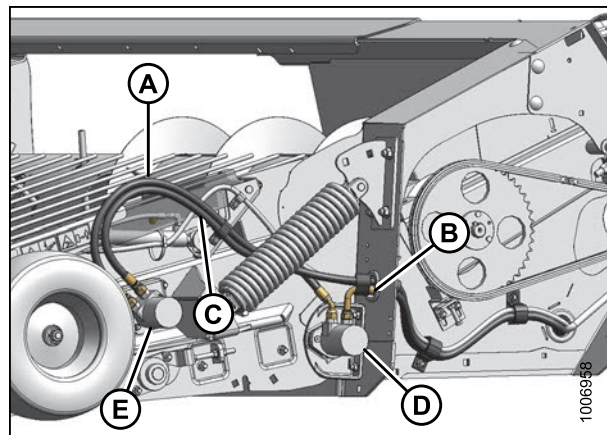


Figure 5.42: Left Side of Header

6. Remove cinch strap (A).
7. Disconnect hoses (B) and (C) from multi-coupler (D).

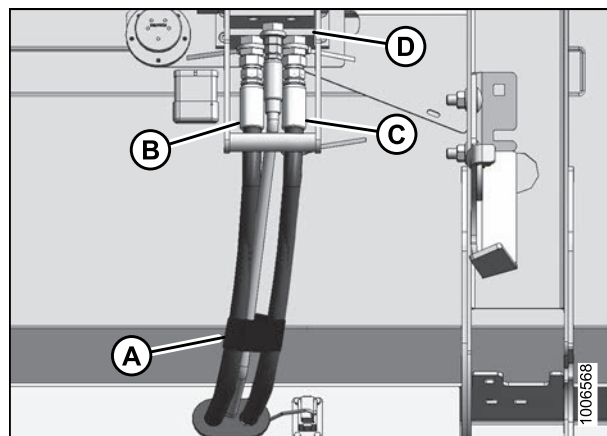


Figure 5.43: Multi-Coupler on Rear of Header

MAINTENANCE AND SERVICING

- Loosen three M12 hex flange nuts (A), and remove bottom beam cover (B).
- Pull hoses out of bottom beam cover (B).

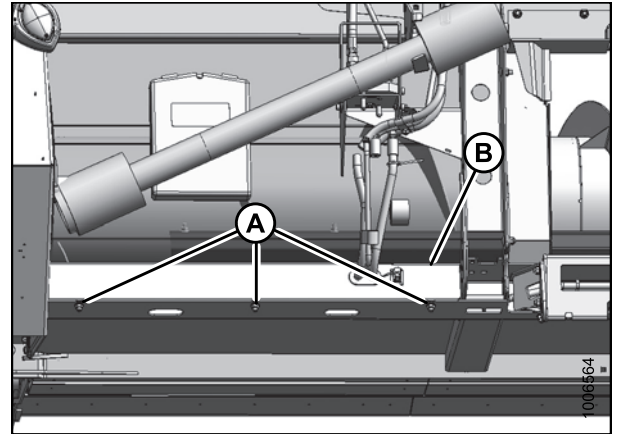


Figure 5.44: Bottom Beam Cover

- Pull hoses through hole (B) in endsheet and through hole (A) in frame.

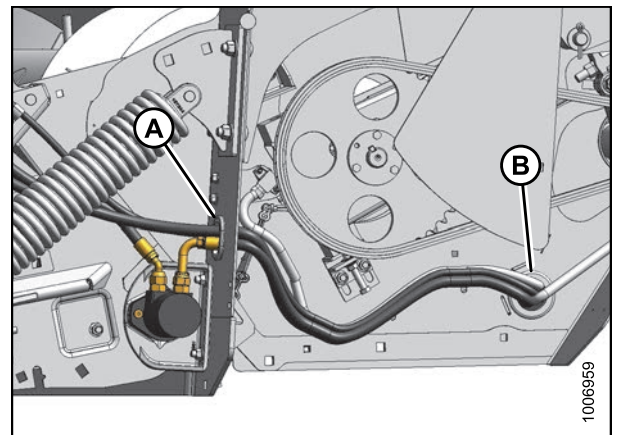


Figure 5.45: Left Side of Header

Installing Hydraulic Motor Hoses

- Route the two longer hoses (A) and (B) through hole (C) in endsheet and hole (D) in frame.

NOTE:

Angled fitting on hose (B) attaches to the pick-up rear drive motor. Hose (A) with yellow cable ties has identical fittings at both ends and attaches to the forward drive motor fitting that has a matching yellow cable tie.

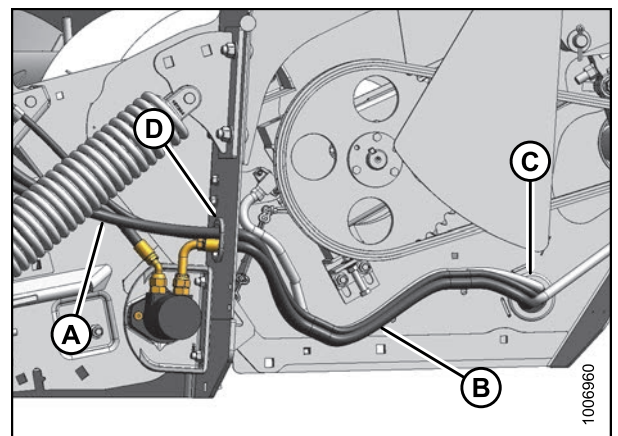


Figure 5.46: Left Side of Header

MAINTENANCE AND SERVICING

2. Route hoses (A) and (B) through grommet (C) in bottom beam cover. Match colored cable ties and attach hoses (A) and (B) to multi-coupler. If colored cable ties are missing, attach as follows:
 - a. Attach longer hose (A) to forward port on forward drive motor and to connector (E) on multi-coupler.
 - b. Attach shorter hose (B) to aft port on rear drive motor and to connector (F) on multi-coupler.
 - c. Secure hoses with cinch strap (D).

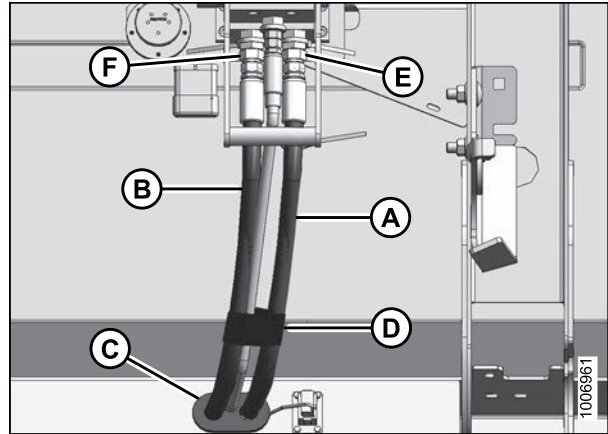


Figure 5.47: Multi-Coupler on Rear of Header

3. Connect the shorter hose (A) to the hydraulic motors.

NOTE:

Angled fitting attaches to rear motor (B).

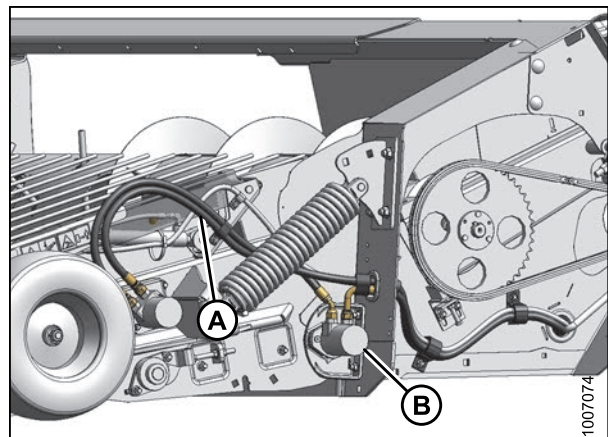


Figure 5.48: Hydraulic System

4. Secure hoses with clips (A) and cinch straps (B).

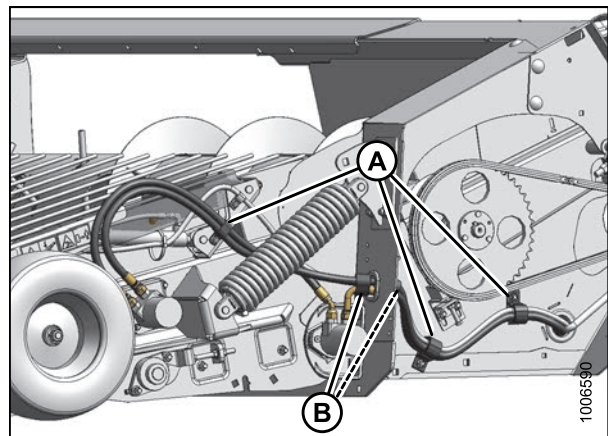


Figure 5.49: Hydraulic System

5. Install bottom beam cover (B), and tighten three M12 hex flange nuts (A) along lower edge of cover.
6. Close left-hand endshield. Refer to [3.3.2 Closing Left-Hand Endshield, page 28](#).

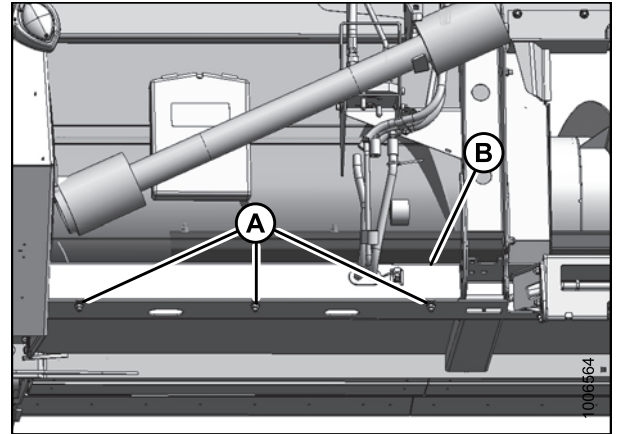


Figure 5.50: Bottom Beam Cover

5.5.4 Auger Drive

The auger is chain driven by a direct connection to the feeder house, and auger speed depends on the feeder house speed. You can adjust auger speeds from the combine to suit crop conditions. Contact your Dealer for available sprocket options. Refer to [Auger Drive Sprockets, page 162](#) for procedure for changing sprockets.

Auger Drive Chain

Lubricating Auger Drive Chain

DANGER

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

1. Lower header to the ground, shut down combine, and remove key from ignition.
2. Open left-hand endshield (A). Refer to [3.3.1 Opening Left-Hand Endshield, page 27](#).

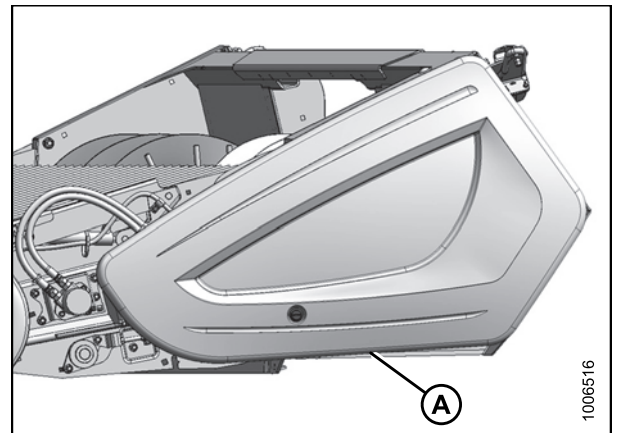


Figure 5.51: Left-Hand Endshield

MAINTENANCE AND SERVICING

3. Liberally apply SAE 30 engine oil to the chain every ten hours.
4. Close left-hand endshield. Refer to [3.3.2 Closing Left-Hand Endshield, page 28](#).

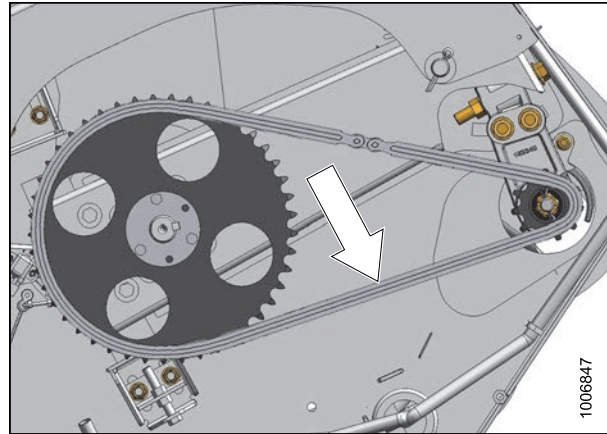


Figure 5.52: Auger Drive Chain

Removing Auger Drive Chain

DANGER

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

1. Lower header to the ground, shut down combine, and remove key from ignition.
2. Open left-hand endshield (A). Refer to [3.3.1 Opening Left-Hand Endshield, page 27](#).
3. Release tension on chain (A) until chain can be removed from small sprocket (B). Refer to [Adjusting Auger Drive Chain Tension, page 161](#).
4. Remove chain from large sprocket (C).

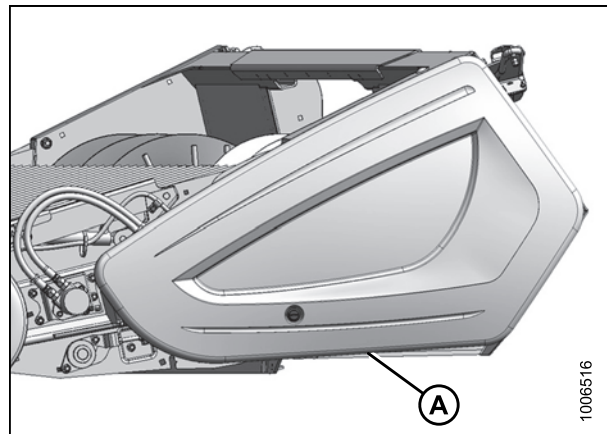


Figure 5.53: Left-Hand Endshield

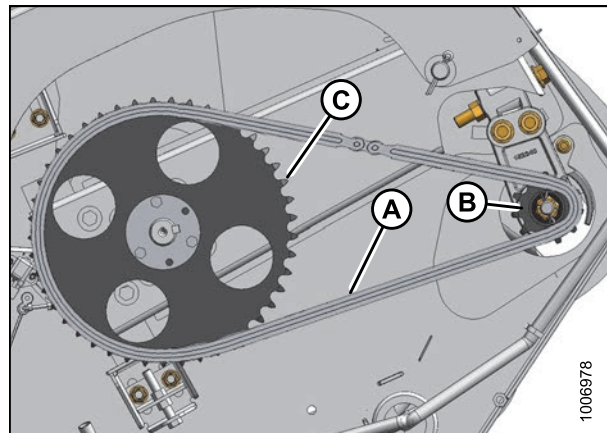


Figure 5.54: Auger Drive Chain

Installing Auger Drive Chain

1. Install chain (A) onto large sprocket (C) and then onto small sprocket (B).
2. Tighten chain. Refer to [Adjusting Auger Drive Chain Tension, page 161](#).
3. Apply a liberal amount of SAE multi-purpose grease to chain.
4. Close left-hand endshield. Refer to [3.3.2 Closing Left-Hand Endshield, page 28](#).

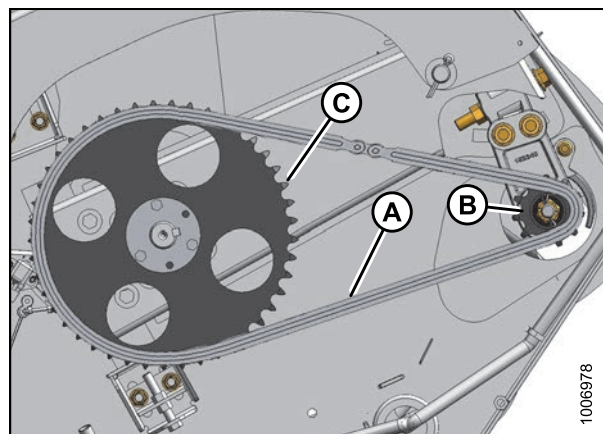


Figure 5.55: Auger Drive Chain

Adjusting Auger Drive Chain Tension

The drive chain tension is set at the factory and should be checked after the first three hours of operation and at regular intervals thereafter.



DANGER

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

1. Lower header to the ground, shut down combine, and remove key from ignition.
2. Open left-hand endshield (A). Refer to [3.3.1 Opening Left-Hand Endshield, page 27](#).
3. Loosen two M16 hex flange nuts (A) using a 24 mm wrench.
4. Loosen jam nut (B) on adjuster bolt.
5. Turn adjuster bolt (C) to adjust chain tension.

NOTE:

Remove the plug from access hole in endsheet for better access to adjuster bolt (C).

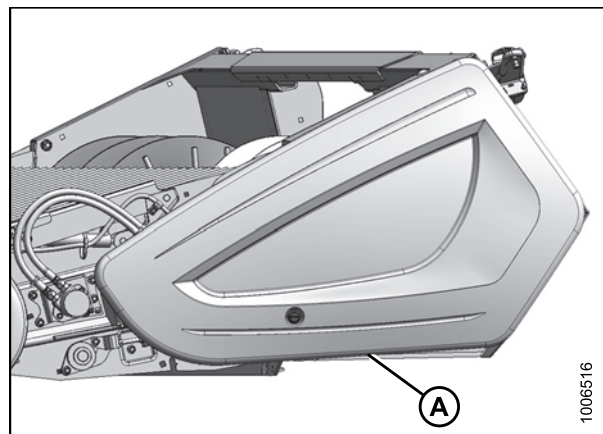


Figure 5.56: Left-Hand Endshield

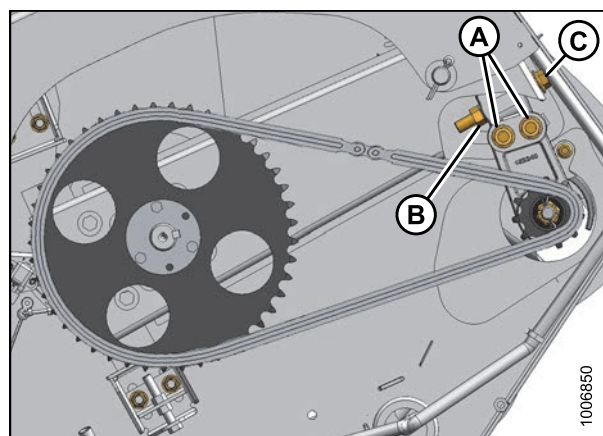


Figure 5.57: Auger Drive Chain

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6. Rotate chain until the tightest point is at the mid-span, and ensure there is 1/2–3/4 in. (13–19 mm) of deflection (A) when 10 lbf (44.5 N) force is applied at the mid-span.

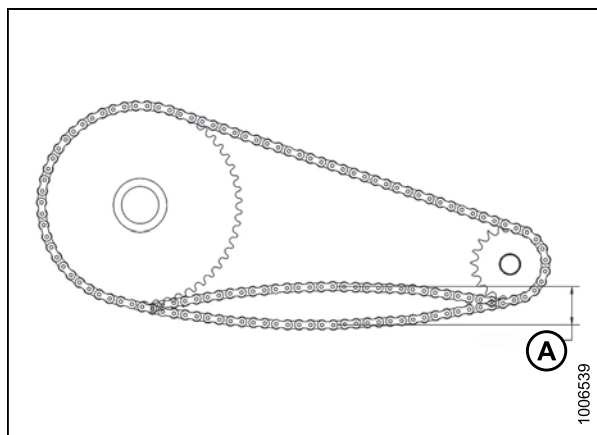


Figure 5.58: Chain Deflection

7. Tighten jam nut (B), and torque two M16 hex flange nuts (A) to 155 ft·lbf (210 N·m).

IMPORTANT:

Ensure the two M16 hex flange nuts (A) are correctly torqued to 155 ft·lbf (210 N·m).

8. Close left-hand endshield. Refer to [3.3.2 Closing Left-Hand Endshield, page 28](#).

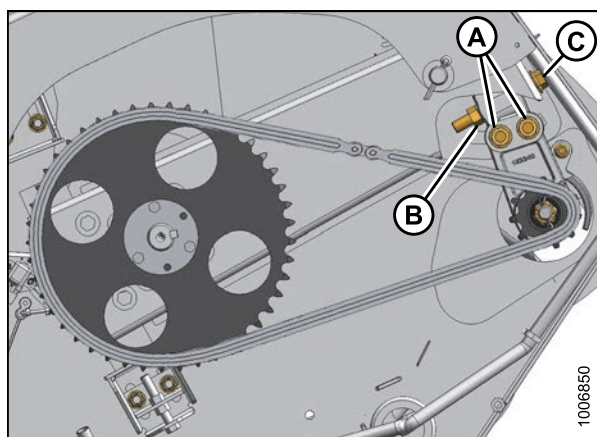


Figure 5.59: Auger Drive Chain

Auger Drive Sprockets

Removing Driven Sprocket



DANGER

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

1. Lower header to the ground, shut down combine, and remove key from ignition.
2. Open left-hand endshield (A). Refer to [3.3.1 Opening Left-Hand Endshield, page 27](#). If more access is required, remove endshield. Refer to [5.4.1 Removing Left-Hand Endshield, page 141](#).
3. Remove drive chain. Refer to [Removing Auger Drive Chain, page 160](#).

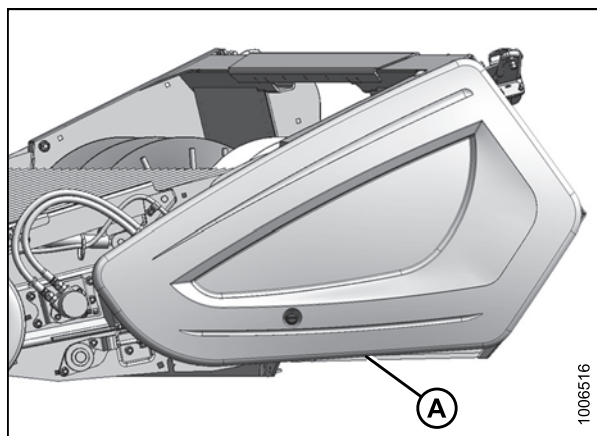


Figure 5.60: Left-Hand Endshield

MAINTENANCE AND SERVICING

4. Remove three M10 hex bolts (A) from tapered bushing (D) in sprocket (C) using a 16 mm wrench.
5. Reinstall two of the M10 hex bolts (A) into the threaded holes (B) in the tapered bushing (D).
6. Turn bolts into tapered bushing equal amounts in half-turn increments until the tapered bushing (D) becomes loose.
7. Remove tapered bushing (D) and sprocket (C) from shaft.
8. Retain keys from driveshaft and tapered bushing.
9. Clean and inspect components. Replace worn or damaged parts.

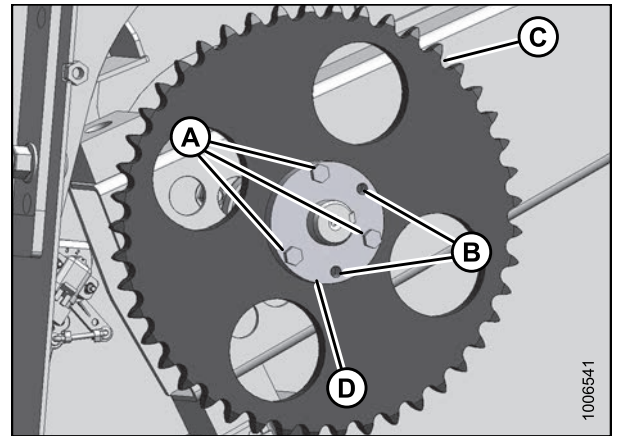


Figure 5.61: Driven Sprocket

Installing Driven Sprocket

1. Apply anti-seize compound to the mating surfaces of driveshaft (A), tapered bushing (B), and sprocket (C).
 2. Install keys into driveshaft (A) and tapered bushing (B).
 3. Insert tapered bushing (B) into sprocket (C) while aligning key with keyway in sprocket.
 4. Align key in shaft (A) with keyway in tapered bushing (B), and slide bushing and sprocket (C) onto shaft.
-
5. Remove two M10 hex bolts from threaded holes (B) in tapered bushing (D).
 6. Reinstall three M10 hex bolts (A) through tapered bushing (D) and into sprocket (C). Do not tighten.

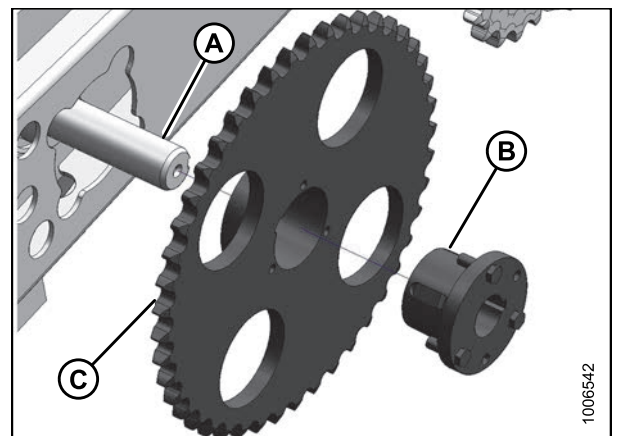


Figure 5.62: Driven Sprocket

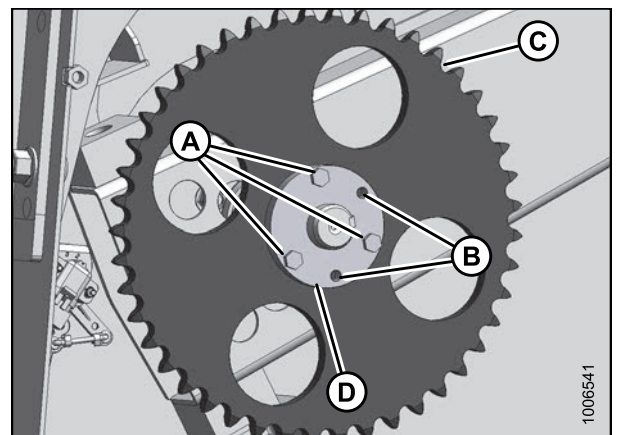


Figure 5.63: Driven Sprocket

MAINTENANCE AND SERVICING

7. Align sprocket (A) with sprocket (B) using a straight edge. The sprockets are aligned when the two faces are within 0.04 in. (1 mm) of each other.

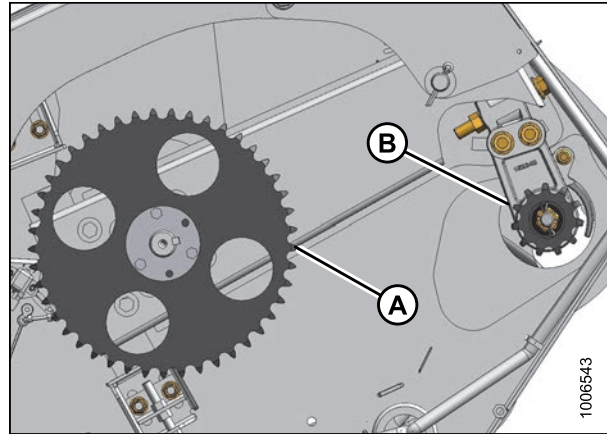


Figure 5.64: Sprockets

8. Torque three M10 hex bolts (A) in equal increments to 32 ft·lbf (44 N·m) while maintaining sprocket alignment.
9. Tap bushing (B) with a hammer and retorque. Repeat three times or until bolts no longer turn at 32 ft·lbf (44 N·m).

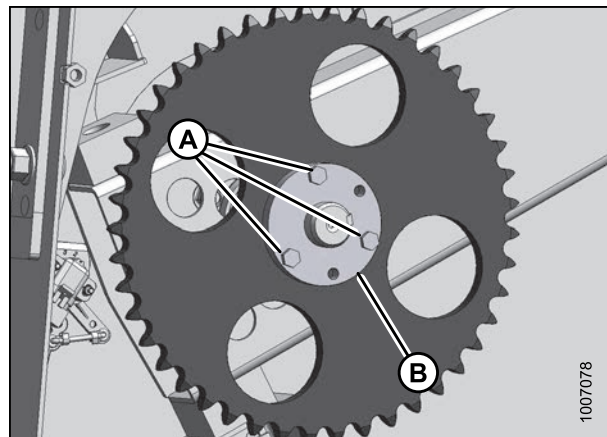


Figure 5.65: Driven Sprocket

10. Check alignment of sprockets. If misaligned more than 0.04 in. (1 mm), proceed as follows:
 - a. Measure and record the position of the tapered bushing relative to the driveshaft.
 - b. Remove the three M10 hex bolts (A) from tapered bushing (D).
 - c. Reinstall two of the M10 hex bolts (A) into the threaded holes (B) in tapered bushing (D).
 - d. Turn bolts into tapered bushing equal amounts in half-turn increments until the tapered bushing (D) and sprocket (C) can be moved.
 - e. Reposition the tapered bushing to account for the misalignment.
 - f. Repeat Step 5., page 163 to Step 10., page 165.
 - g. Check alignment of sprockets.
 - h. Repeat Step 10., page 165 until specified alignment is achieved.
11. Install and tension chain. Refer to *Installing Auger Drive Chain*, page 161.
12. Close left-hand endshield. Refer to *3.3.2 Closing Left-Hand Endshield*, page 28.

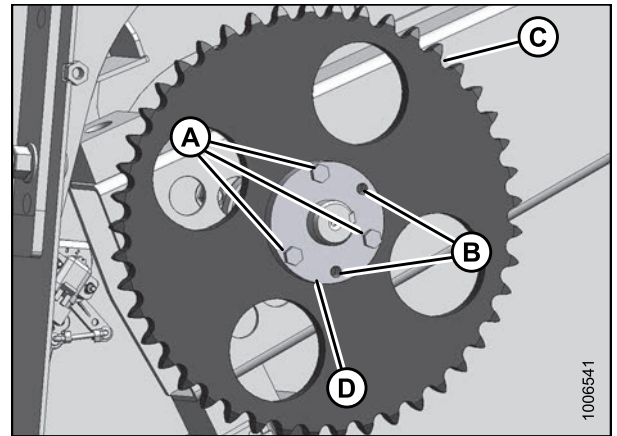


Figure 5.66: Driven Sprocket

Removing Drive Sprocket

⚠ DANGER

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

1. Lower header to the ground, shut down combine, and remove key from ignition.
2. Open left-hand endshield (A). Refer to *3.3.1 Opening Left-Hand Endshield*, page 27.

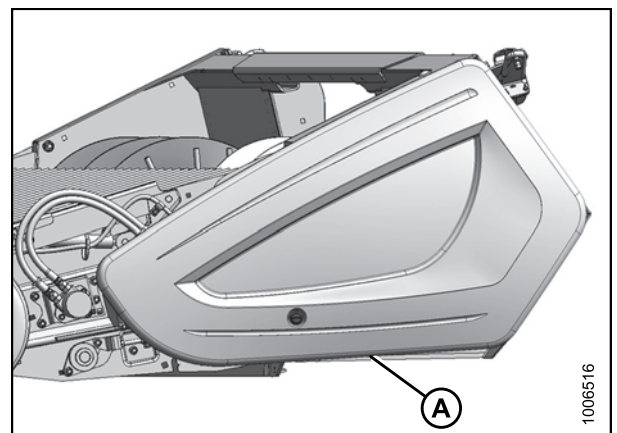


Figure 5.67: Left-Hand Endshield

MAINTENANCE AND SERVICING

3. Place a pry bar or equivalent through a hole in the large sprocket and against the frame to stop the driveshaft from rotating (if header is not attached to combine).

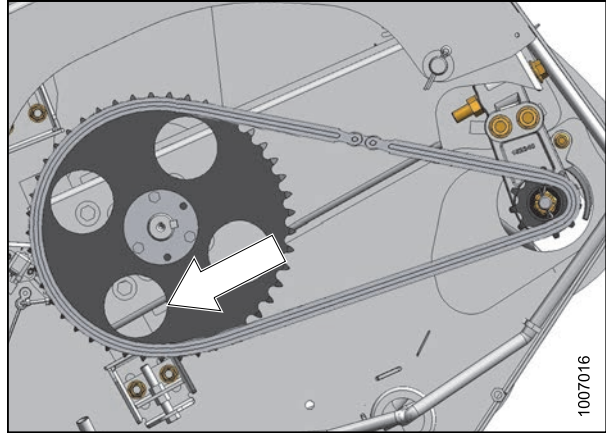


Figure 5.68: Driven Sprocket

4. Remove cotter pin (B).
5. Remove M20 castle nut (C) and washer (D) from driveshaft.
6. Remove chain (A). Refer to [Removing Auger Drive Chain, page 160](#).

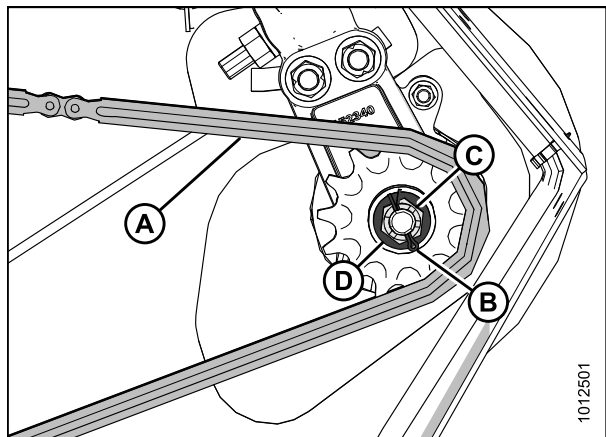


Figure 5.69: Drive Sprocket

7. Remove sprocket (A) using a puller if necessary.
8. Clean and inspect components. Replace worn or damaged parts.

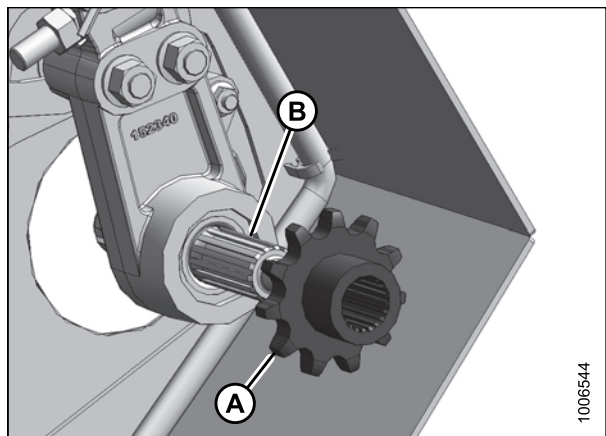


Figure 5.70: Drive Sprocket

Installing Drive Sprocket

1. Apply anti-seize compound to driveshaft (B) and sprocket (A) splines.

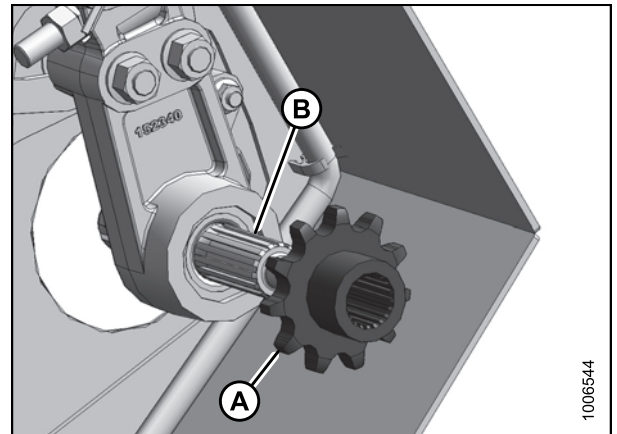


Figure 5.71: Drive Sprocket

2. Install sprocket (A), washer (B), and castle nut (C) onto driveshaft.
3. Reinstall drive chain, but do not fully tension. Refer to [Installing Auger Drive Chain, page 161](#).

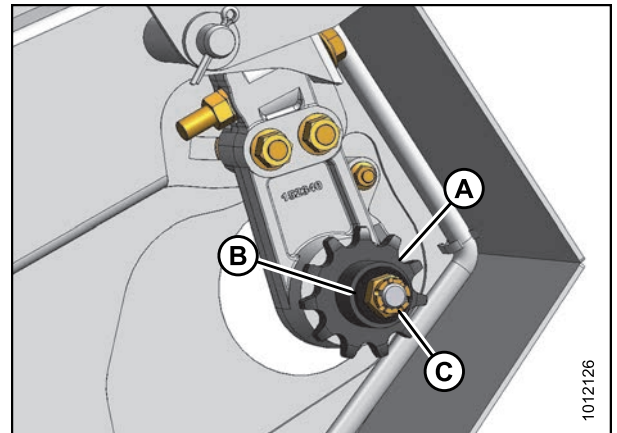


Figure 5.72: Drive Sprocket

4. Place a pry bar or equivalent through a hole in the large sprocket and against the frame to stop the driveshaft from rotating (if header is not attached to combine).

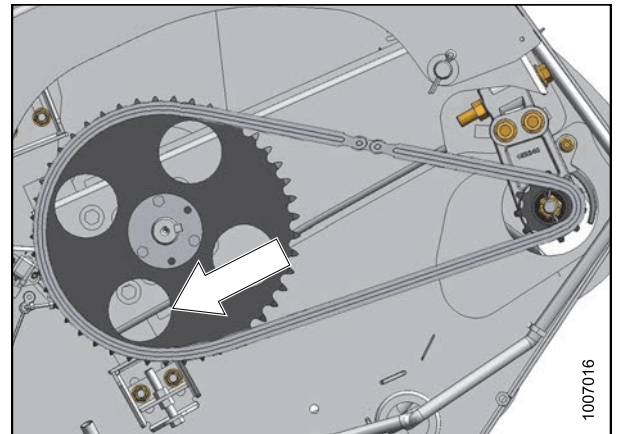


Figure 5.73: Driven Sprocket

MAINTENANCE AND SERVICING

5. Torque castle nut (B) to 50 ft·lbf (68 N·m). If slot in castle nut (B) and hole in driveshaft are not aligned, continue to tighten castle nut (B) to 60 ft·lbf (81 N·m). If alignment is still not achieved, back nut off until cotter pin can be installed.
6. Install cotter pin (A) into driveshaft.
7. Bend cotter pin (A) around castle nut (B).
8. Set drive chain (D) tension. Refer to [Adjusting Auger Drive Chain Tension, page 161](#).

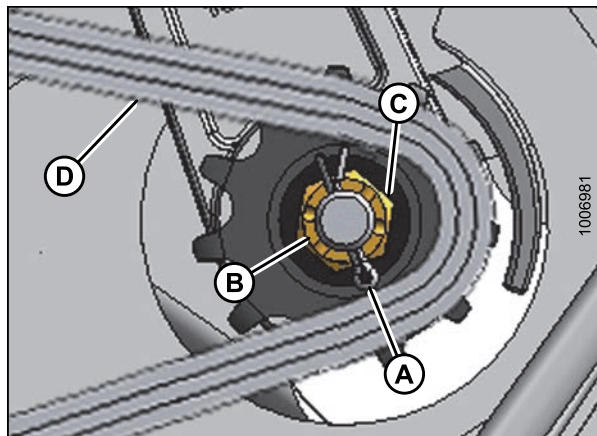


Figure 5.74: Drive Sprocket

9. Close left-hand endshield. Refer to [3.3.2 Closing Left-Hand Endshield, page 28](#).

5.6 Auger Maintenance

5.6.1 Replacing Auger Fingers

Periodically check auger for missing, bent, or severely worn fingers and replace if necessary.

1. Raise the hold-down fully, and engage lift cylinder safety props.

DANGER

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

2. Remove two screws (A) from access cover (B) closest to the finger (C) being serviced, and remove access cover.

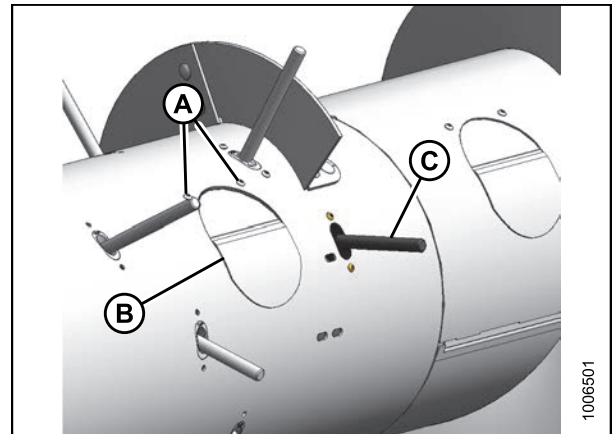


Figure 5.75: Access Cover on Auger

3. Reach inside the auger, remove hairpin (A) and pull finger (B) out of bushing (C).
4. Reach inside the auger, swivel finger away from bushing, pull from plastic guide (D), and remove from auger.
5. Insert new finger (B) through plastic guide (D) from inside the auger.
6. Insert finger into bushing (C), and secure finger in bushing with hairpin (A). Install hairpin with closed end leading with respect to auger forward rotation.

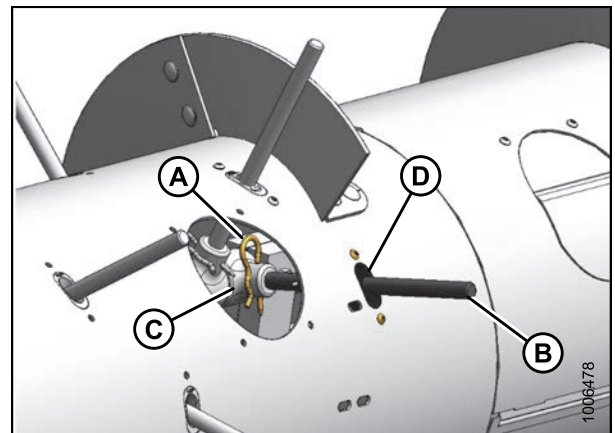


Figure 5.76: Auger Fingers

7. Install access cover (B) using two screws (A) coated with Loctite®. Torque screws to 75 in·lbf (8.5 N·m).

NOTE:

If reusing hardware, add new medium strength thread locker.

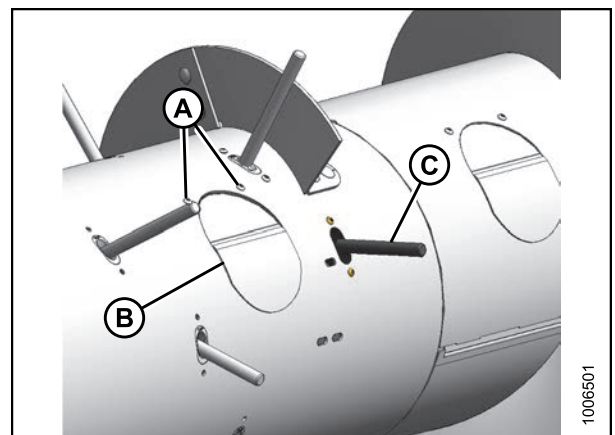


Figure 5.77: Access Cover on Auger

5.6.2 Replacing Auger Finger Guides

Finger guides should be replaced, if the hole in the guide has elongated to maximum of length of 0.94 in. (24 mm).

1. Raise the hold-down fully, and engage lift cylinder safety props.

DANGER

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

2. Remove two screws (A) from access cover (B) closest to the guide being replaced, and remove access cover.
3. Remove finger. Refer to [5.6.1 Replacing Auger Fingers, page 169](#).

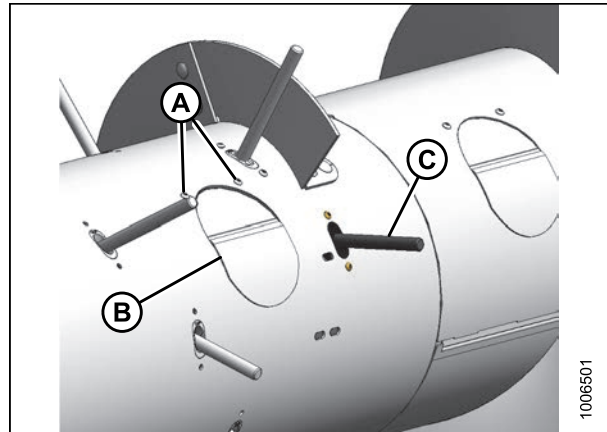


Figure 5.78: Access Cover on Auger

4. Remove two screws (A) from guide (B) and remove guide.

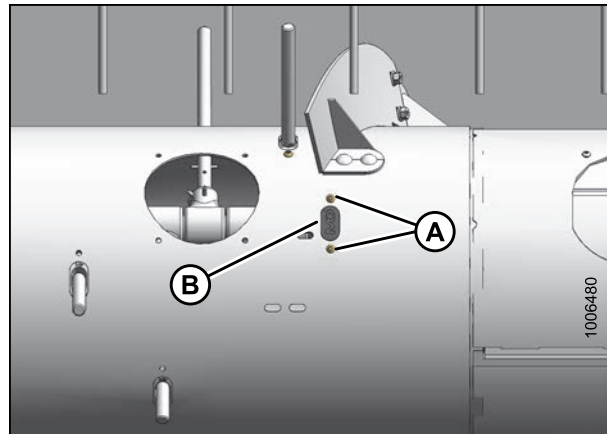


Figure 5.79: Auger Finger Guide

5. Install new guides (A) from inside auger using existing screws (B) and tee nuts (C) as shown. Torque screws to 75 in·lbf. (8.5 N·m).
6. Reinstall finger. Refer to [5.6.1 Replacing Auger Fingers](#), page 169.

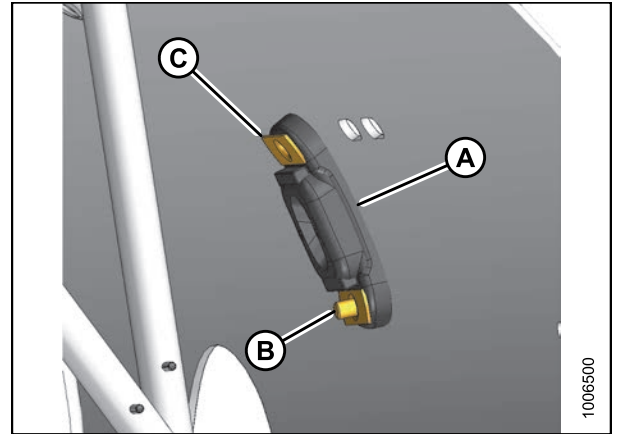


Figure 5.80: Auger Finger Guide

7. Install access cover (B) using two screws (A) coated with Loctite®. Torque screws to 75 in·lbf (8.5 N·m).

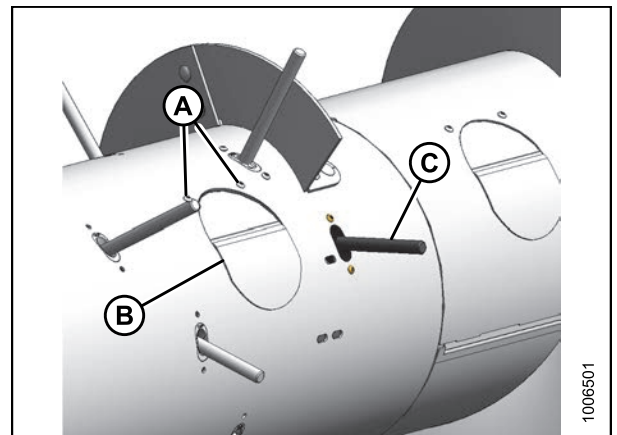


Figure 5.81: Access Cover on Auger

5.6.3 Replacing Auger Finger Bushings

Periodically check auger for damaged or severely worn finger bushings and replace if necessary.

1. Raise the hold-down fully, and engage lift cylinder safety props.

⚠ DANGER

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

2. Remove two screws (A) and remove center access cover (B).

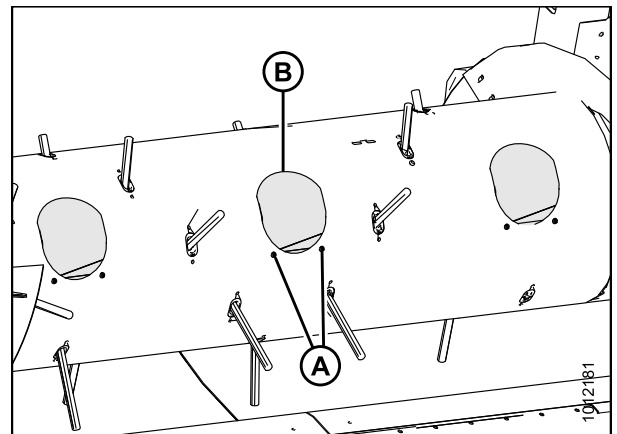


Figure 5.82: Center Access Cover

MAINTENANCE AND SERVICING

3. Remove two screws (A) and remove right access cover (B) if the finger bushing requiring replacement is located on the right side of the auger, or remove two screws (C) and remove the left access cover (D) if the finger bushing is located on the left side.

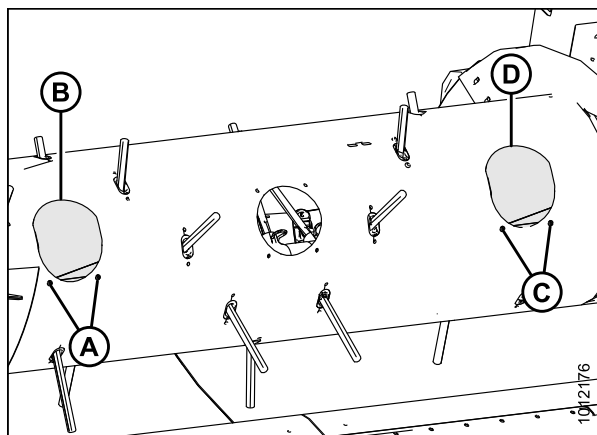


Figure 5.83: Access Covers

4. Reach inside the auger, remove hairpin (A) from the finger (B) requiring bushing replacement, and pull finger out of bushing (C).
5. Reach inside the auger, swivel finger away from bushing, pull from plastic guide (D), and remove from auger.

NOTE:

Depending on the number of fingers installed in the auger, there may be spare bushings already on the shaft. Look inside the drum and see if there are any spare bushings. If there are spare bushing already installed, completely remove the damaged bushing. To access the spare bushing, you will need to remove fingers accordingly.

IMPORTANT:

There must always be 24 bushing on the shaft, if not the bushings may slide over and cause the fingers to fall into the drum while operating.

6. Reach inside the auger and remove all the fingers between the damaged bushing (A) and the right finger support clamp (B) if the finger removed in Step 4., [page 172](#) is on the right side of the auger, or remove all the fingers between the damaged bushing (C) and the left finger support clamp (D) if the finger removed is on the left side of the auger.

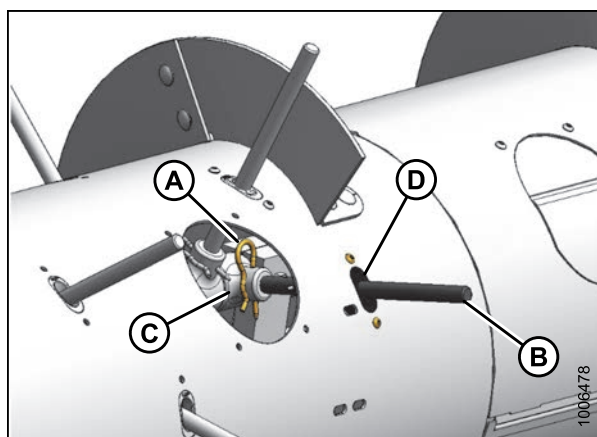


Figure 5.84: Auger Fingers

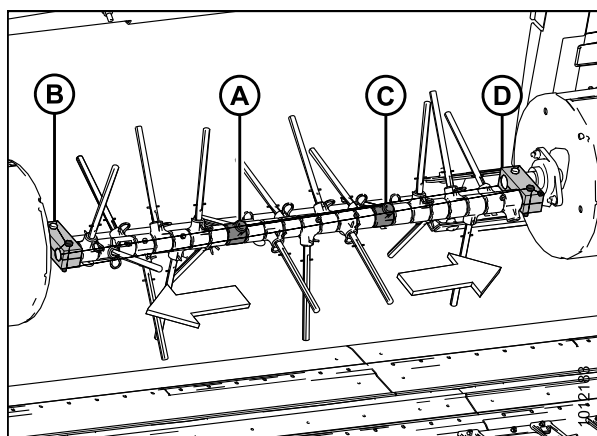


Figure 5.85: Auger Fingers (Middle Auger Sheet Removed for Clarity)

MAINTENANCE AND SERVICING

7. Reach inside the auger; remove two M10 hex head bolts, nuts, and washers (A), and; remove finger support clamp (B) from the shaft.

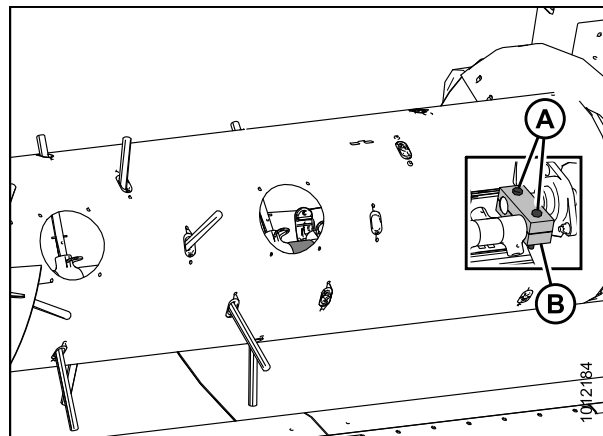


Figure 5.86: Left Side Finger Support Clamp (Cutaway View Shown)

8. Reach inside the auger and slide the auger finger bushings (A) off the end of the shaft (B).

NOTE:

Middle auger sheet removed from image for improved clarity.

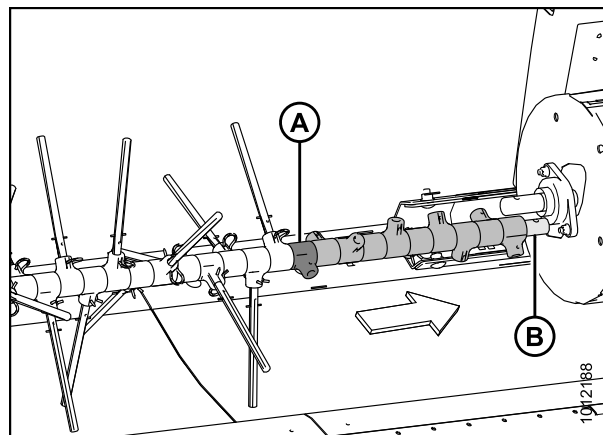


Figure 5.87: Left Side Auger Finger Bushings (Middle Auger Sheet Removed for Clarity)

9. Reach inside the auger and slide new auger finger bushings (A) onto the shaft (B).

NOTE:

Middle auger sheet removed from image for improved clarity.

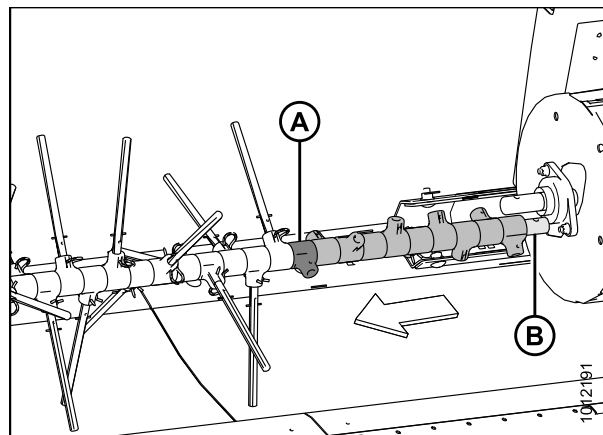


Figure 5.88: Left Side Auger Finger Bushings (Middle Auger Sheet Removed for Clarity)

MAINTENANCE AND SERVICING

10. Reach inside the auger; place finger support clamp (B) onto shafts, and; secure with two M10 hex head bolts, nuts, and washers (A). Torque bolts to 40–45 in·lbf (4.5–5.1 N·m).

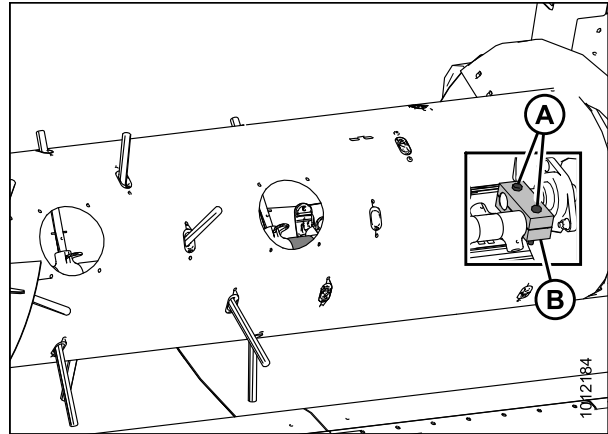


Figure 5.89: Left Side Finger Support Clamp (Cutaway View Shown)

11. Reach inside the auger and reinstall fingers (B) through plastic guides (D) from the inside.

NOTE:

If fingers are worn or damaged, replace with new.

12. Insert fingers into bushings (C), and secure fingers in bushing with hairpins (A). Install hairpins with closed end leading with respect to auger forward rotation.

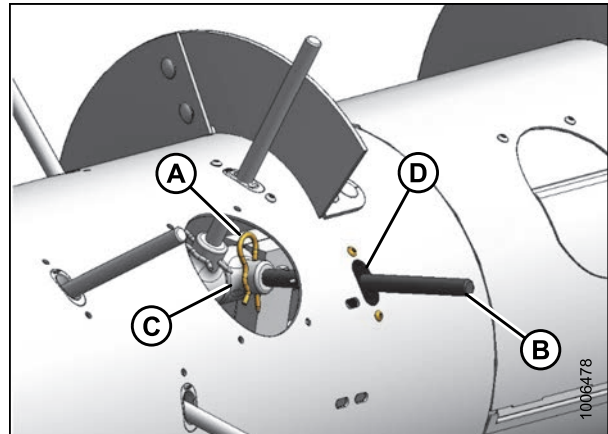


Figure 5.90: Auger Fingers

13. Install access covers (A) using two screws (B) coated with Loctite®. Torque screws to 75 in·lbf (8.5 N·m).

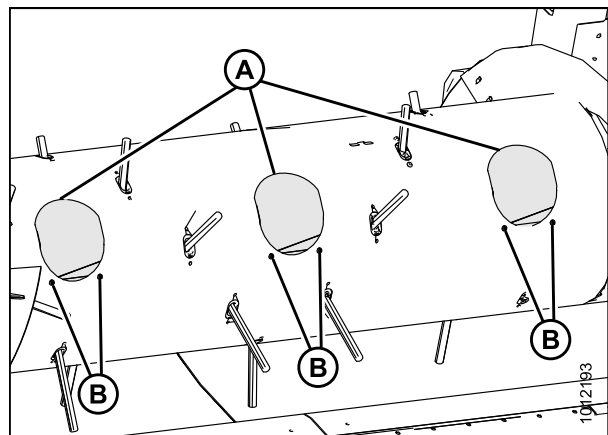


Figure 5.91: Access Covers

5.6.4 Replacing Stripper Plates

Replace stripper plates and missing or damaged fasteners if specified clearance cannot be maintained.

DANGER

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

1. Lower header to the ground, shut down combine, and remove key from ignition.

NOTE:

Access the auger/stripper plate area from top of header.

2. Remove four bolts and nuts (A) from stripper plate (B).
3. Replace stripper plate (B), and secure with four bolts and nuts (A), but do not fully tighten.
4. Adjust stripper plate to achieve 1/8–1/4 in. (3–6 mm) clearance (C) to auger flighting.
5. Tighten nuts (A).
6. Recheck the clearance.

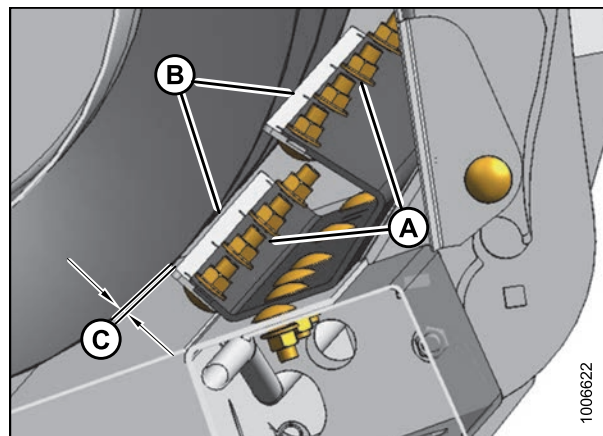


Figure 5.92: Stripper Plate Clearance

5.6.5 Replacing Flighting Extensions

With header removed from combine, proceed as follows:

1. Remove two access covers on either side of the center of the auger.

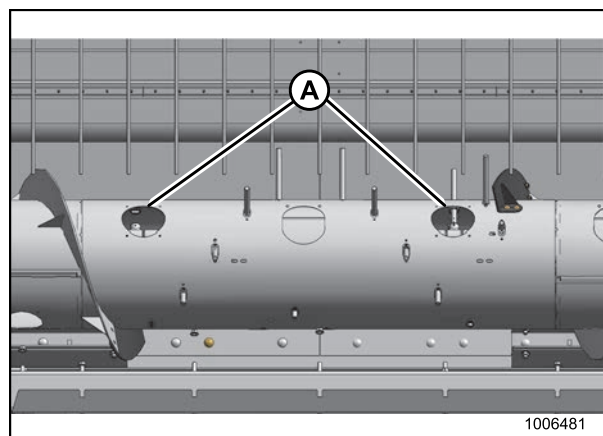


Figure 5.93: Auger Access Covers

MAINTENANCE AND SERVICING

2. Remove hardware (A) securing existing auger flighting extensions (B) and remove extensions. Retain hardware.

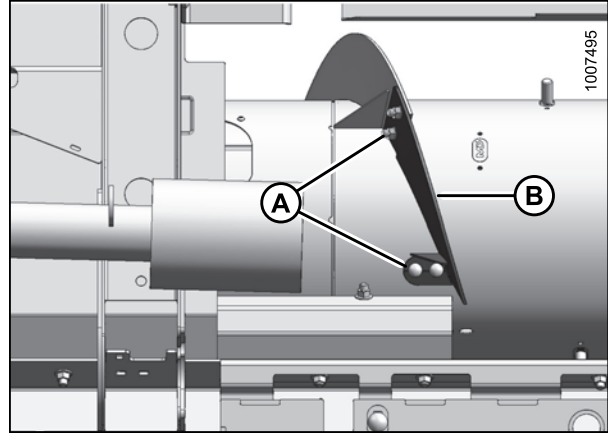


Figure 5.94: Flighting Extension

3. Place the new flighting extension (A) on auger and ensure that new flighting is positioned on the outboard side of the existing flighting (B).
4. Secure flighting extension (A) to auger using existing hardware (C).

NOTE:

Bolts (C) must be installed with heads facing inboard and nuts facing outboard.

5. Repeat for opposite side.

NOTE:

To replace original flighting, see your Dealer.

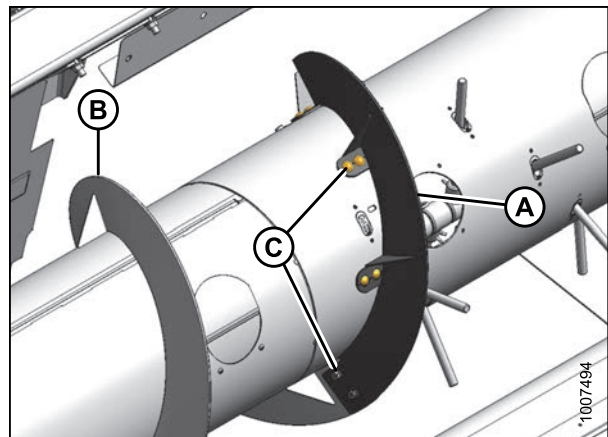


Figure 5.95: Flighting Extension

5.7 Decks

5.7.1 Draper Belts

Periodically check the draper belts for signs of wear and damage. Replace drapers that have stretched, have cuts or tears, or have worn slats. Replace missing or damaged fasteners, damaged connector bars, and damaged straps.

Removing Front Draper Belt

WARNING

To avoid bodily injury from fall of raised hold-down, always engage reel props before going under raised reel for any reason.

DANGER

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

1. Raise the hold-down fully and engage lift cylinder safety props. Refer to [3.5 Engaging Hold-Down Lift Cylinder Safety Props, page 31](#).
2. Raise the header fully, and engage the combine lift cylinder safety props.
3. Stop engine and remove key from ignition.
4. Release draper belt tension fully. Refer to [Adjusting Front Draper Belt Tension, page 78](#).
5. Remove seven M6 flange nuts (A), belt edge protector (B), and pronged elevator bolts (C) from belt (D) (if removing end belt).

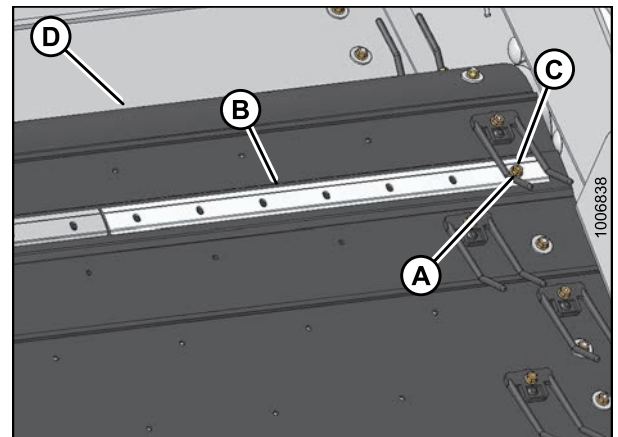


Figure 5.96: End Draper Belt

MAINTENANCE AND SERVICING

- Remove M6 flange nuts (A), connector bar (B), and pronged elevator bolts (C) from belt (D.)

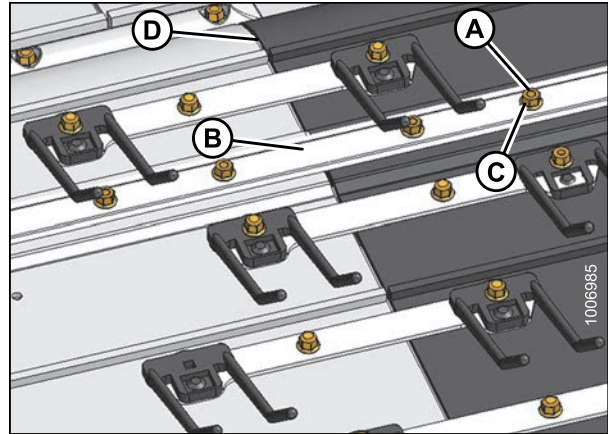


Figure 5.97: Front Draper Belt

- Remove M6 flange nuts (A), fingers (B), and straps (C) connecting adjacent belts.
- Remove draper belt (D).

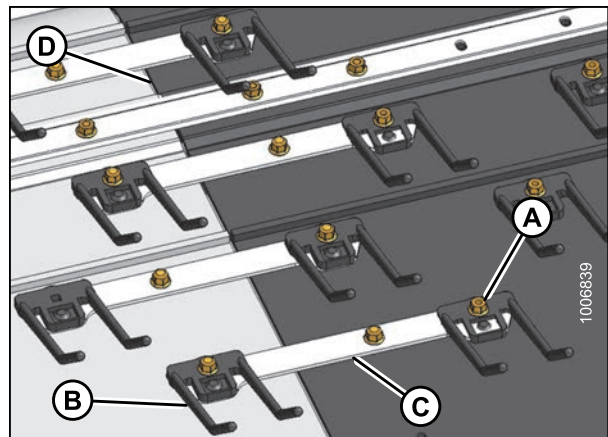


Figure 5.98: Front Draper Belt

Installing Front Draper Belt

NOTE:

If replacing more than one belt, it may be easier to remove all the belts and assemble them on the ground.

- Wrap new draper belt (A) around the rollers with slats facing outwards.

IMPORTANT:

Arrow on belt must point in direction of rotation.

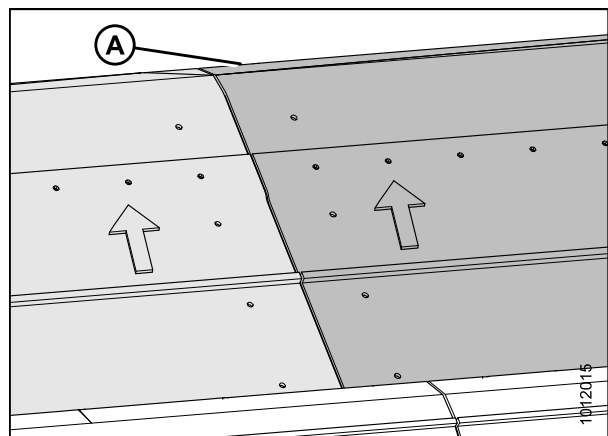


Figure 5.99: Front Draper Belt

MAINTENANCE AND SERVICING

2. Connect draper belt (D) using M6 x 15.5 pronged elevator bolts (A) (MD #197261).
3. Attach edge protector (B) to pronged elevator bolts (A), and secure with M6 flange nuts (C) (if installing end belt). Do not tighten.
4. Torque M6 flange nuts (C) to 37–45 in·lbf (4–5 N·m).

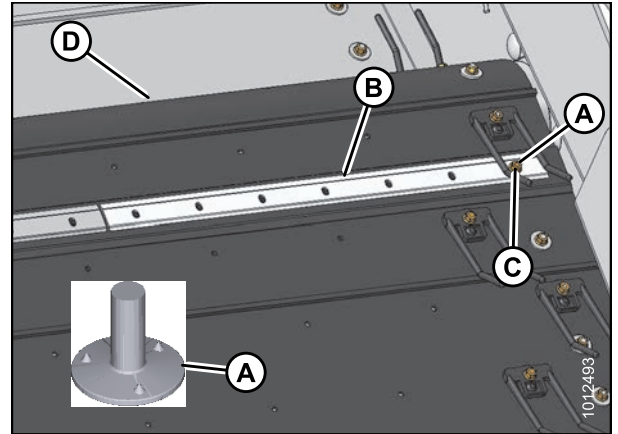


Figure 5.100: End Draper Belt

5. Install connector bars (A) onto bolts, and secure with M6 flange nuts (B).
6. Torque M6 flange nuts (B) to 37–45 in·lbf (4–5 N·m).

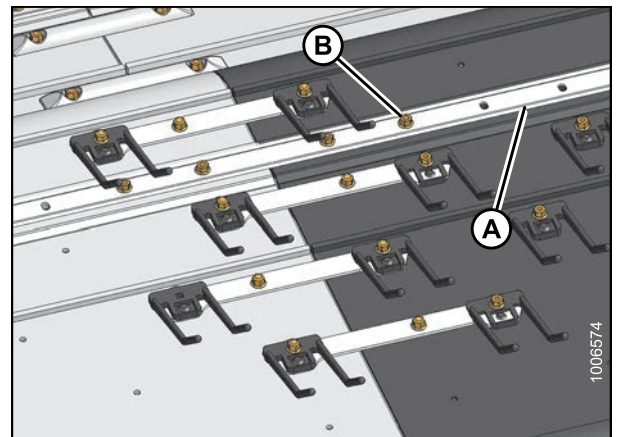


Figure 5.101: Front Draper Belt

7. Connect draper belt using M6 x 16 (A) and M6 x 23 square neck elevator bolts (B).
8. Install M6 x 16 square neck elevator bolt (A) (MD #136841) at center location, and install M6 x 23 square neck elevator bolt (B) (MD #252176) at finger locations.
9. Install straps (C) and fingers (D) onto bolts, and secure with M6 flange nuts (E).
10. Torque M6 flange nuts (E) to 37–45 in·lbf (4–5 N·m).
11. Tension draper belts. Refer to [Adjusting Front Draper Belt Tension, page 78](#).

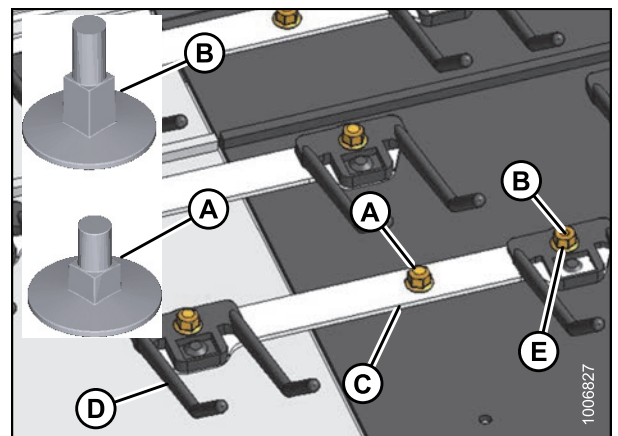


Figure 5.102: Front Draper Belt

Removing Rear Draper Belt

WARNING

To avoid bodily injury from fall of raised hold-down, always engage hold-down props before going under raised reel for any reason.

DANGER

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

1. Raise the hold-down fully and engage lift cylinder safety props. Refer to [3.5 Engaging Hold-Down Lift Cylinder Safety Props, page 31](#).
2. Raise the header fully, and engage the combine lift cylinder safety props.
3. Stop engine and remove key from ignition.
4. Release draper belt tension fully. Refer to [Adjusting Front Draper Belt Tension, page 78](#).
5. Remove seven M6 flange nuts (A), belt edge protector (B), and pronged elevator bolts (C) from belt (D) (if removing end belt).

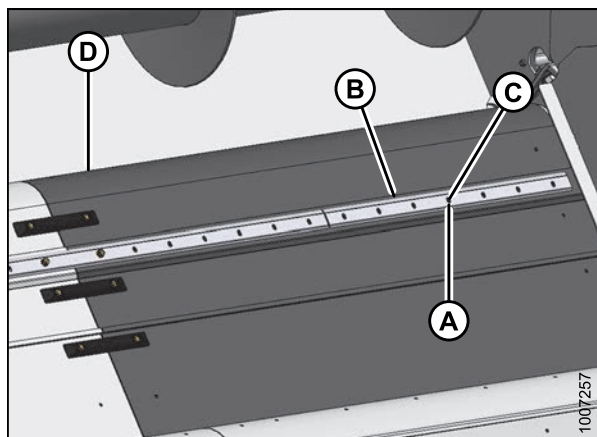


Figure 5.103: End Draper Belt

6. Remove M6 flange nuts (A), connector bar (B), and pronged elevator bolts (C) from belt (D).

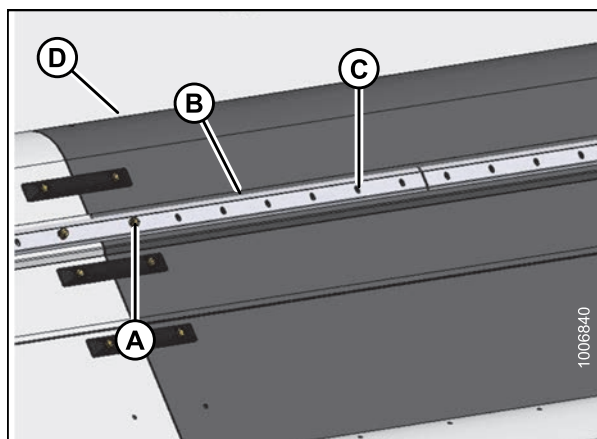


Figure 5.104: Front Draper Belt

MAINTENANCE AND SERVICING

7. Remove M6 flange nuts (A) and straps (B) connecting adjacent belts.
8. Remove elevator bolts (C).
9. Remove draper belt (D).

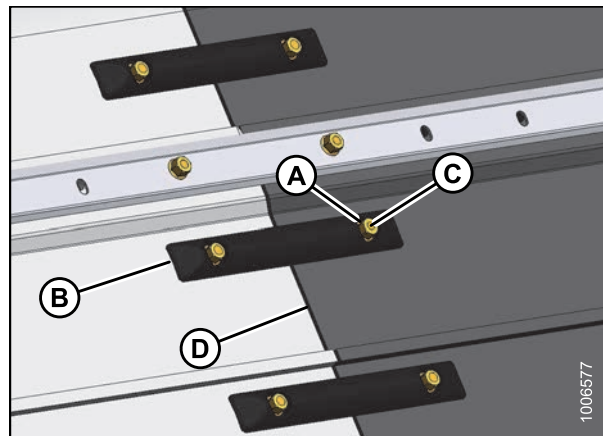


Figure 5.105: Front Draper Belt

Installing Rear Draper Belt

NOTE:

If replacing more than one belt, it may be easier to remove all the belts and assemble them on the ground.

1. Wrap new draper belt (A) around the rollers with slats facing outwards.

IMPORTANT:

Arrow on belt must point in direction of rotation.

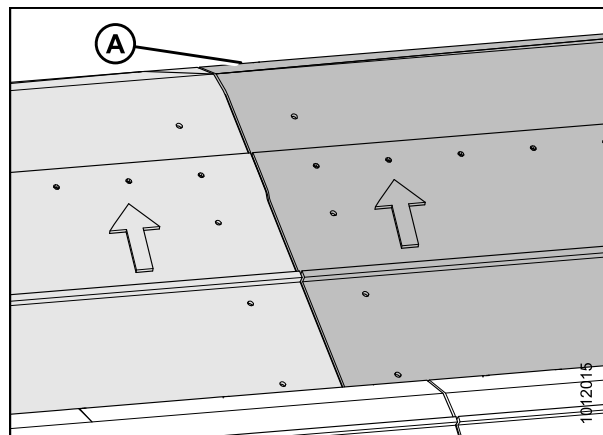


Figure 5.106: End Draper Belt

2. Connect draper belt (D) using M6 x 15.5 pronged elevator bolts (A) (MD #197261).
3. Attach edge protector (B) to pronged elevator bolts (A), and secure with M6 flange nuts (C) (if installing end belt). Do not tighten.
4. Torque M6 flange nuts (C) to 37–45 in·lbf (4–5 N·m).

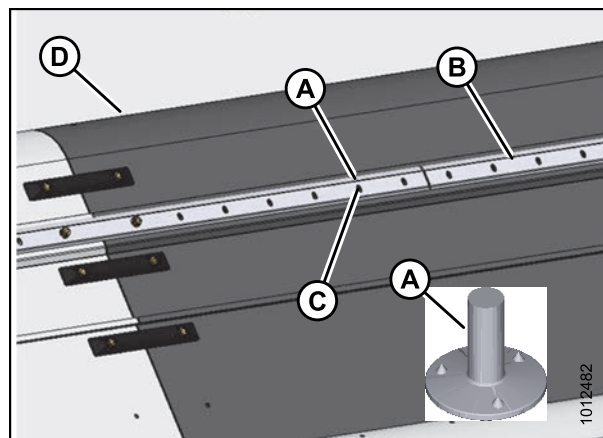


Figure 5.107: End Draper Belt

MAINTENANCE AND SERVICING

5. Install connector bars (A) onto bolts, and secure with M6 flange nuts (B).
6. Torque M6 flange nuts (B) to 37–45 in·lbf (4–5 N·m).
7. Install two square neck elevator bolts (C) (MD #252176) at each strap location.

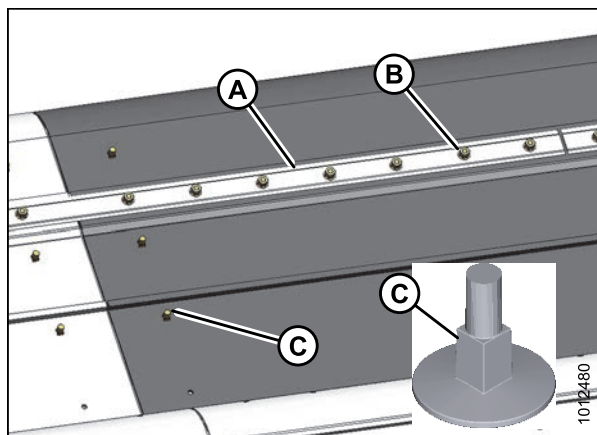


Figure 5.108: Front Draper Belt

8. Install straps (B) onto bolts, and secure with M6 flange nuts (A).
9. Torque M6 flange nuts (A) to 37–45 in·lbf (4–5 N·m).
10. Tension draper belts. Refer to [Adjusting Rear Draper Belt Tension, page 80](#).

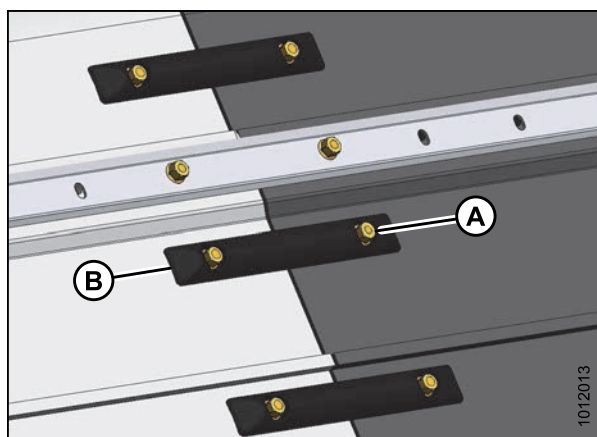


Figure 5.109: Front Draper Belt

5.7.2 Draper Fingers/Draper Guides

Replace any broken or worn fingers to maintain machine performance. Excessively worn fingers will reduce picking efficiency resulting in losses that far exceed the cost of new fingers.

The guides, which maintain draper tracking, are located along the outboard edge on the inside of the right draper belt on both decks. If any guide is worn enough to cause large amounts of draper tracking/shifting, replace the guide. Check to make sure the guides are aligned perpendicular to the direction of draper travel. Excessively worn or misaligned guides can cause the drapers to shift and ride up on the frame causing premature draper edge wear and draper tearing.

NOTE:

It may be necessary to remove the draper belt when replacing the fingers/guides. Refer to [Removing Front Draper Belt, page 177](#) or [Removing Rear Draper Belt, page 179](#).

Replacing Draper Fingers

1. Raise the hold-down fully, and engage lift cylinder safety props.
2. Raise the header fully, and engage the combine lift cylinder safety props.

DANGER

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

3. Stop engine and remove key from ignition.
4. Remove M6 flange nut (A) attaching finger (B) to the draper belt.
5. Remove finger (B) and replace with new finger.
6. Secure with M6 flange nut (A).
7. Torque flange nut (A) to 37–45 in·lbf (4–5 N·m).

NOTE:

Hold finger to prevent turning while tightening nut.

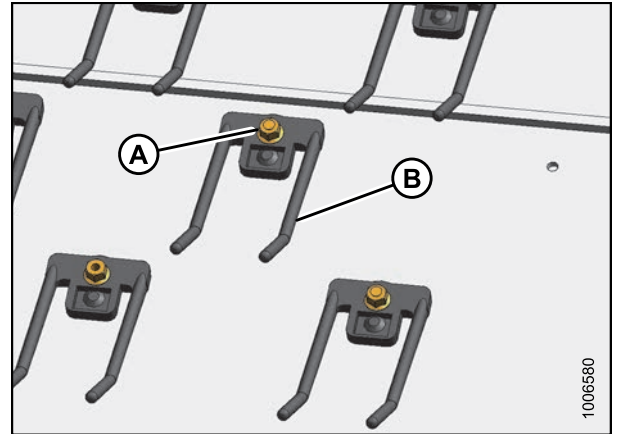


Figure 5.110: Draper Fingers

Replacing Draper Guide

1. Raise the hold-down fully, and engage lift cylinder safety props.
2. Raise the header fully, and engage the combine lift cylinder props.

DANGER

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

3. Stop engine and remove key from ignition.
4. Remove the M6 flange nut (A) and washer (B) attaching guide (C) to the draper belt (D). If guide is under a finger (E), remove the finger.
5. Loosen draper belt as much as possible.
6. Pull the draper belt away from the frame from under the deck to expose guide (C).
7. Remove guide (C) and elevator bolt (F). Discard the old guide.
8. Place a new guide (C) onto the M6 x 26 elevator bolt (F), and install onto the draper belt (D).
9. Install M6 washer (B) and flange nut (A).

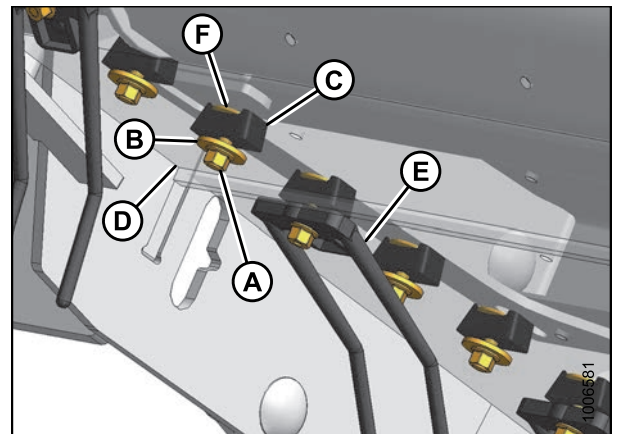


Figure 5.111: Draper Guide

10. Use an M6 x 30 elevator bolt (A) if guide is in a finger location, and install the finger (B) **before** installing the flange nut (C).
11. Torque flange nut (C) to 37–45 in·lbf (4–5 N·m). Hold the finger or guide to prevent turning while tightening nut.

IMPORTANT:

Ensure guides (D) are perpendicular to the direction of draper travel.

12. Rotate draper belt manually to access all the guides.
13. Tighten the draper belt. Refer to [Adjusting Rear Draper Belt Tension, page 80](#) or [Adjusting Front Draper Belt Tension, page 78](#).

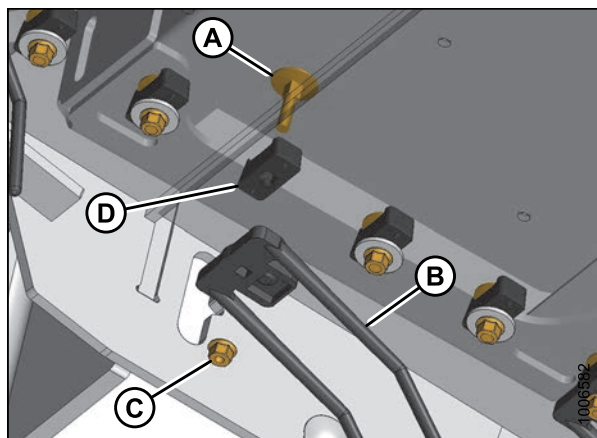


Figure 5.112: Draper Guide

5.7.3 Draper Deck Roller Bearings

Each draper deck roller is supported by two self-aligning, non-greasable roller bearings (A). Replace the roller bearings if they are worn or damaged.

1. Lower the hold-down fully.
2. Lower header to the ground until the two float springs are loose.



DANGER

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

3. Stop engine, and remove key from ignition.

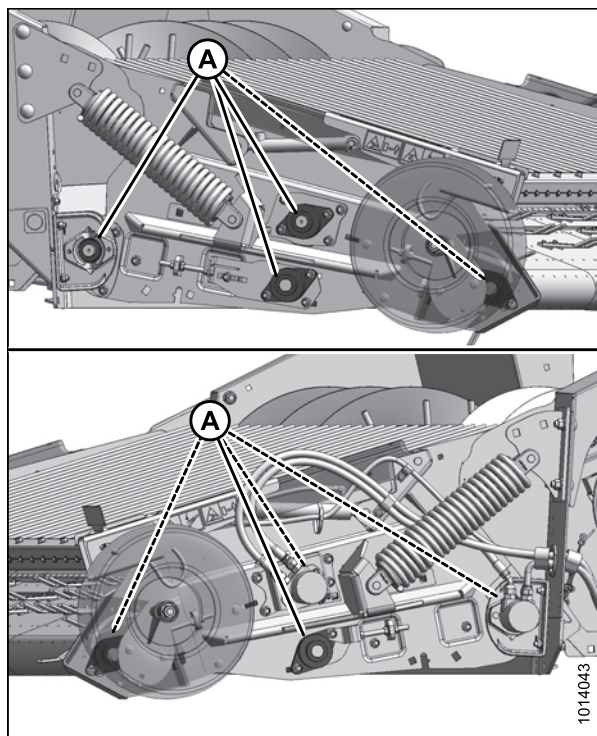


Figure 5.113: Draper Roll Bearings

Rear Deck

Replacing Rear Deck Left Side Drive Roller Bearing

1. Release draper belt tension fully. Refer to [Adjusting Rear Draper Belt Tension, page 80](#).
2. Support the deck at both ends by placing a wooden block (A) under the frame close to the bearing.

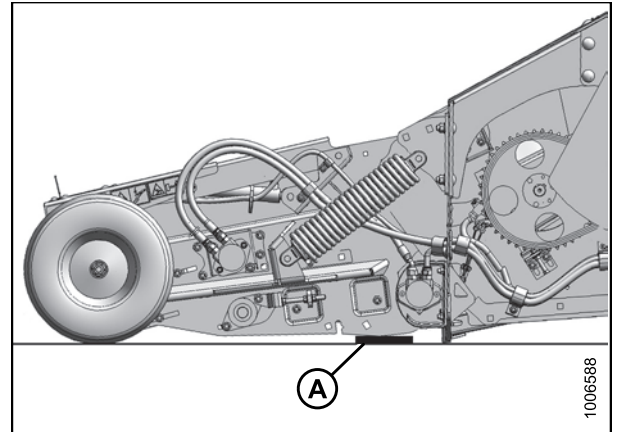


Figure 5.114: Wooden Block

3. Open left-hand endshield (A). Refer to [3.3.1 Opening Left-Hand Endshield, page 27](#).

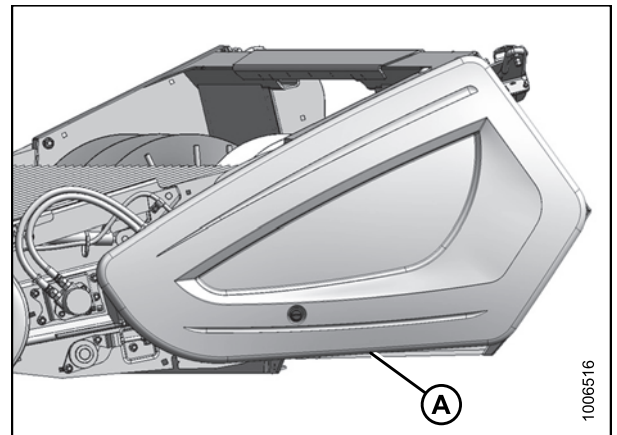


Figure 5.115: Left-Hand Endshield

4. Remove rear hydraulic motor (A). Refer to [Removing Rear Hydraulic Motor, page 154](#).

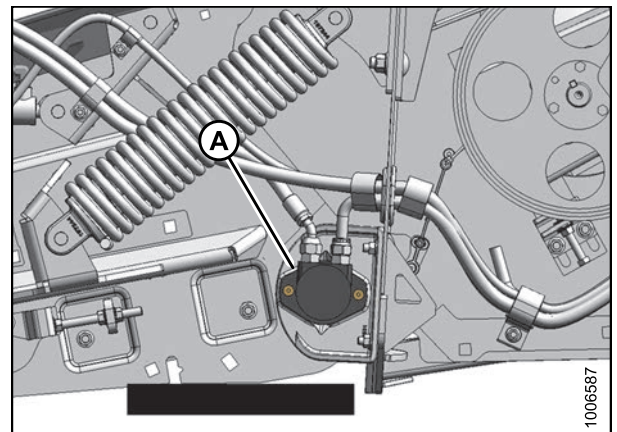


Figure 5.116: Rear Hydraulic Motor

MAINTENANCE AND SERVICING

5. Turn the roller manually until setscrew (A) in lock collar (B) lines up with the recess in bearing support (C).
6. Loosen setscrew (A) in lock collar (B) using a 6 mm hex key. Rotate collar counterclockwise to loosen and remove collar.

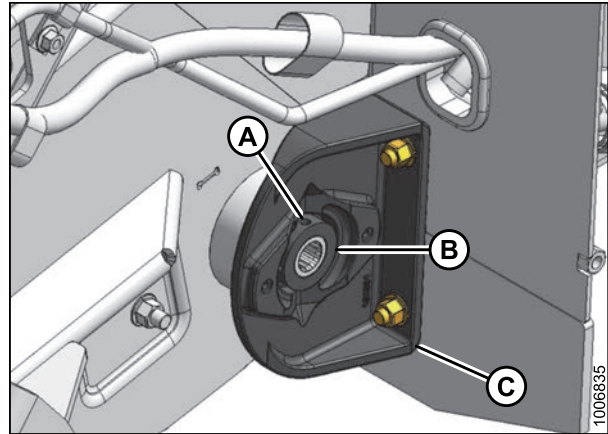


Figure 5.117: Left Side Rear Deck

7. Ensure deck is fully supported, and check that the float spring assembly is loose. You may need to raise the deck slightly to loosen the assembly.
8. Remove the four nuts (A) attaching bearing support (B) to frame.

NOTE:

Ensure that height controller is not damaged when removing bolts.

9. Pull bearing support (B) off roller shaft.

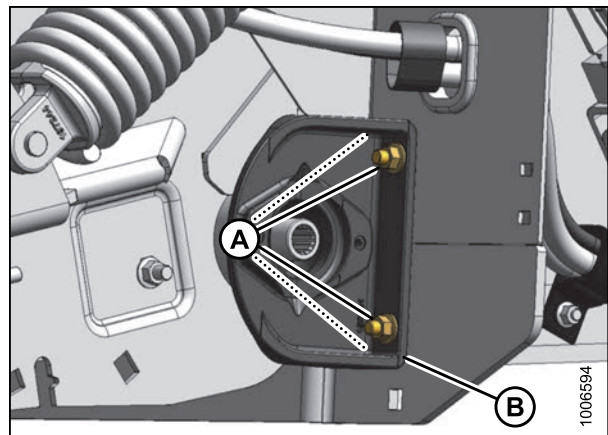


Figure 5.118: Left Side Rear Deck

10. Swivel bearing (A) 90 degrees in support until outer race lines up with slots in bearing support.
11. Push out the bearing (A).

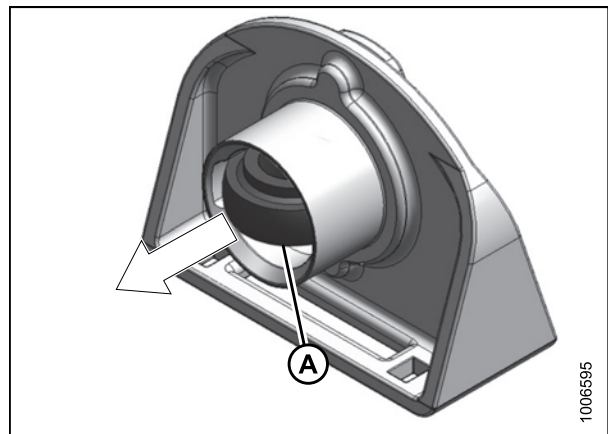


Figure 5.119: Left Side Rear Deck

MAINTENANCE AND SERVICING

12. Line up new bearing (A) with slots in bearing support, and push bearing into bearing support.
13. Swivel bearing 90 degrees and slide it into groove inside bearing support.

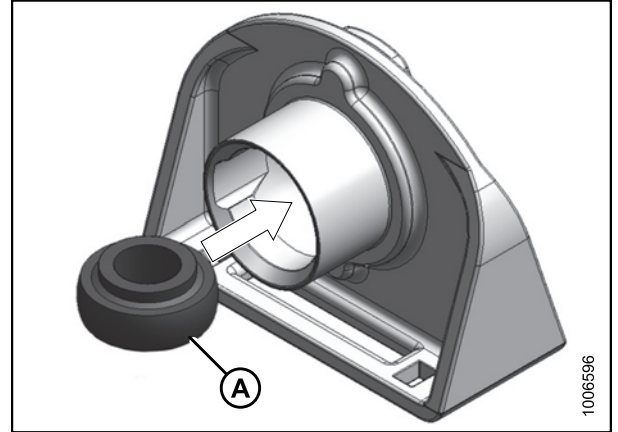


Figure 5.120: Left Side Rear Deck

14. Remove and install new bushing (A) (if necessary).

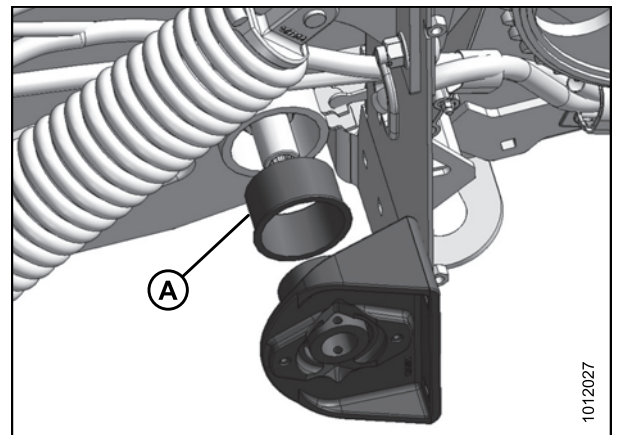


Figure 5.121: Left Side Rear Deck

15. Place bearing support (B) on roller shaft (A).
16. Position base of bearing assembly against frame, and align mounting holes.

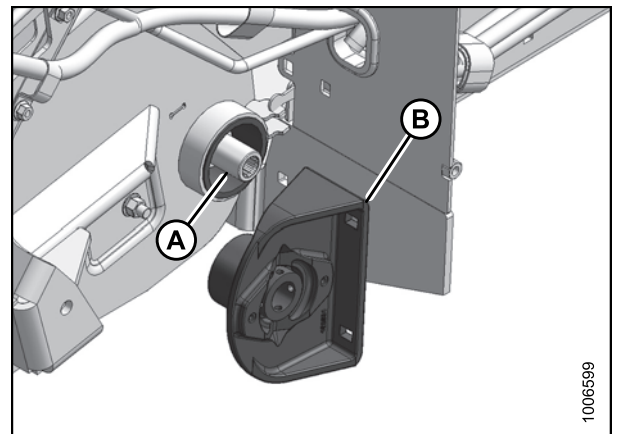


Figure 5.122: Left Side Rear Deck

MAINTENANCE AND SERVICING

17. Install two M12 x 30 carriage bolts (A) in the upper holes and two M12 x 40 carriage bolts (B) in the lower holes. Bolt heads must face aft. Secure with lock nuts.

NOTE:

Ensure height controller is not damaged when installing bolts.

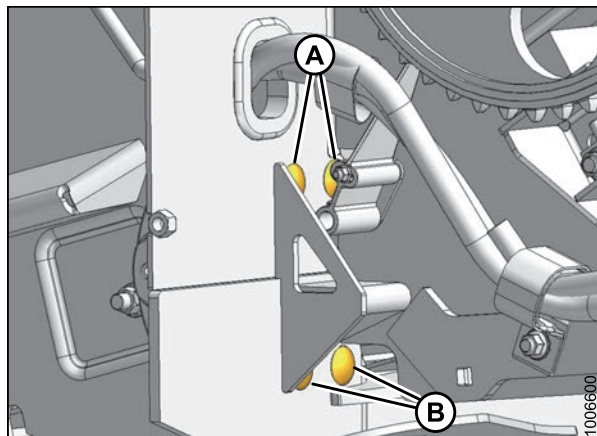


Figure 5.123: Left Side Rear Deck

18. Install lock collar (B) onto bearing, and rotate clockwise until tight.
19. Turn the roller manually until setscrew (A) in lock collar (B) lines up with the recess in bearing support (C).
20. Tighten setscrew (A) using a 6 mm hex key.
21. Align the draper deck rollers. Refer to [Aligning Rear Draper Deck Rollers, page 193](#).
22. Install the hydraulic motor. Refer to [Installing Rear Hydraulic Motor, page 155](#).
23. Tighten the draper belt. Refer to [Adjusting Rear Draper Belt Tension, page 80](#).

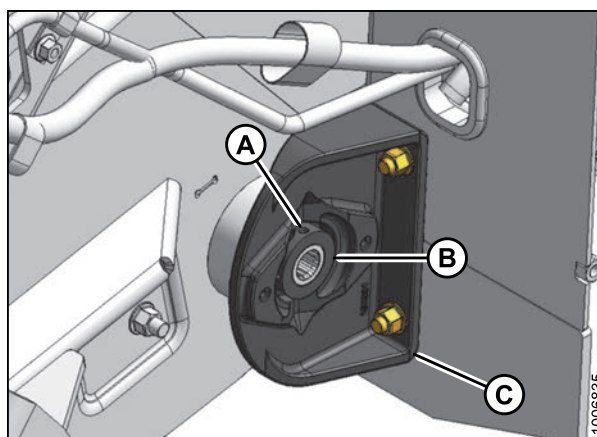


Figure 5.124: Left Side Rear Deck

Replacing Rear Deck Right Side Drive Roller Bearing

1. Release draper belt tension fully. Refer to [Adjusting Rear Draper Belt Tension, page 80](#).
2. Support the deck at both ends by placing a wooden block under the frame close to the bearing.
3. Check that the float springs are loose.

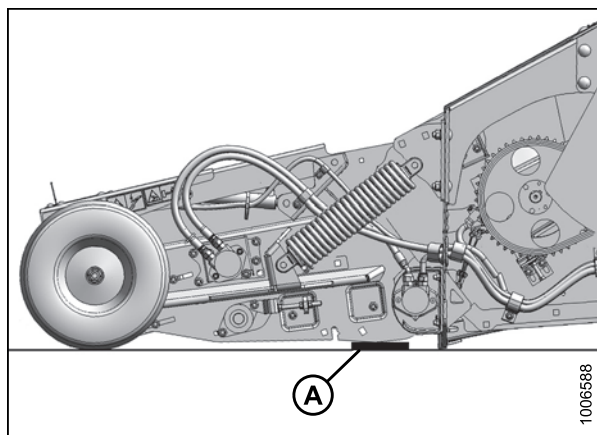


Figure 5.125: Wooden Block

MAINTENANCE AND SERVICING

4. Loosen nuts (A) on bearing support (B), remove draper speed sensor assembly, and move it clear of work area.

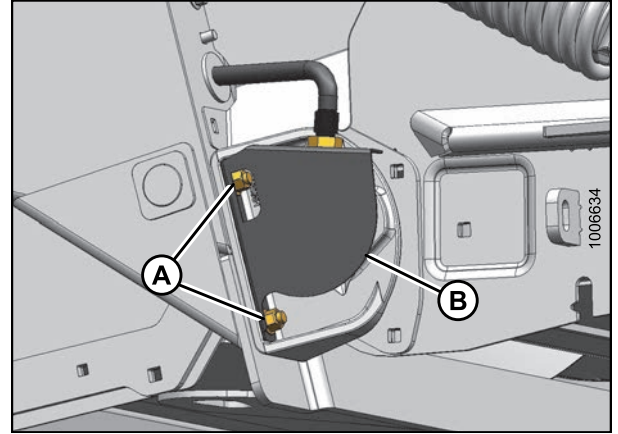


Figure 5.126: Right Side Rear Deck

5. Remove screws (A), and remove cover (B) on inboard side of endsheet to access the bearing mounting bolts.

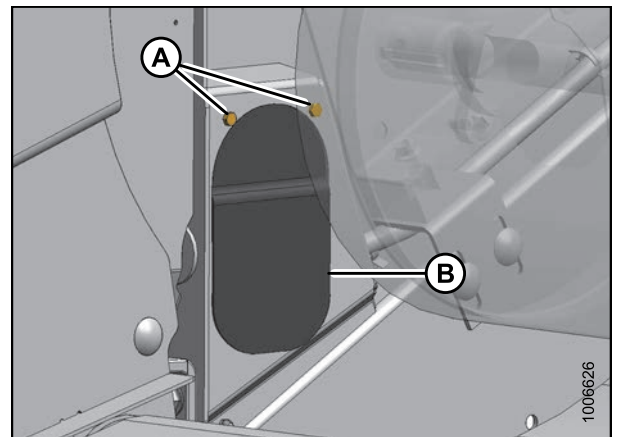


Figure 5.127: Right Side Rear Deck

6. Remove bolt (A), and remove speed sensor disk (B).

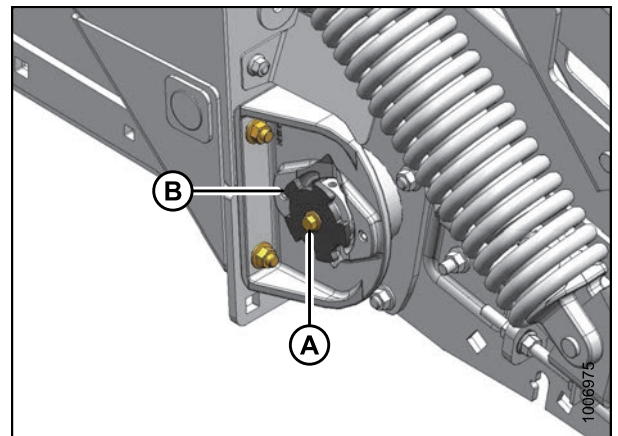


Figure 5.128: Right Side Rear Deck

MAINTENANCE AND SERVICING

7. Turn the roller manually until setscrew (A) in lock collar (B) lines up with the recess in bearing support (C).
8. Loosen setscrew (A) in lock collar (B) using a 6 mm hex key. Rotate collar clockwise to loosen and remove collar.

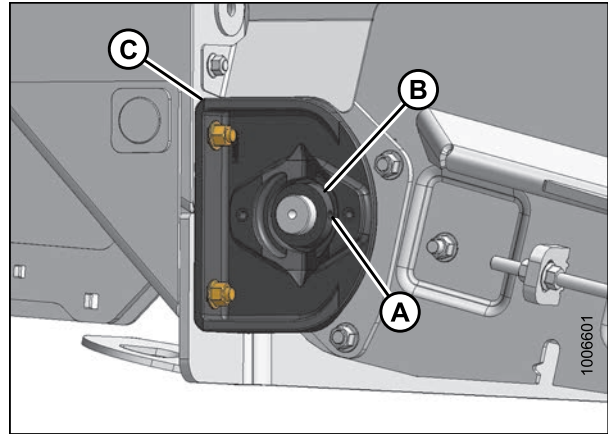


Figure 5.129: Right Side Rear Deck

9. Ensure deck is fully supported, and check that the float spring assembly is loose. You may need to raise the deck slightly to loosen the assembly.
10. Remove the four nuts (A) attaching bearing support (B) to frame.

NOTE:

Ensure that height controller is not damaged when removing bolts.

11. Pull bearing support (B) off roller shaft.

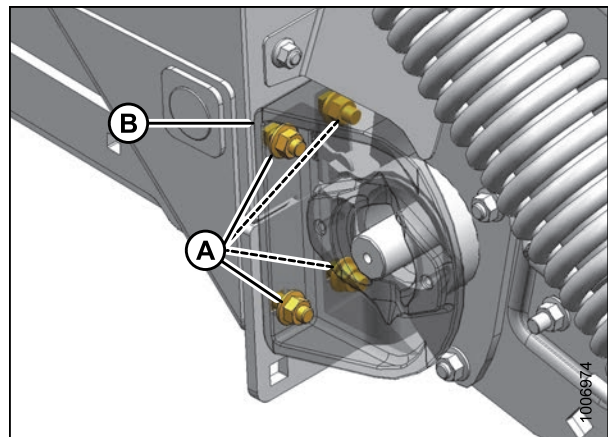


Figure 5.130: Right Side Rear Deck

12. Swivel bearing (A) 90 degrees in support until outer race lines up with slots in bearing support.
13. Push out the bearing (A).

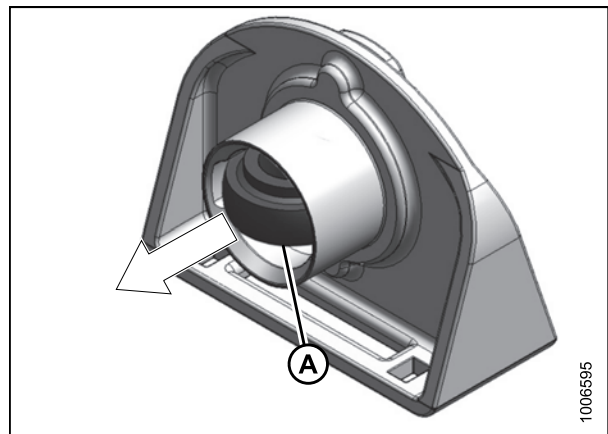


Figure 5.131: Right Side Rear Deck

MAINTENANCE AND SERVICING

14. Line up new bearing (A) with slots in bearing support, and push bearing into bearing support.
15. Swivel bearing 90 degrees and slide it into groove inside bearing support.

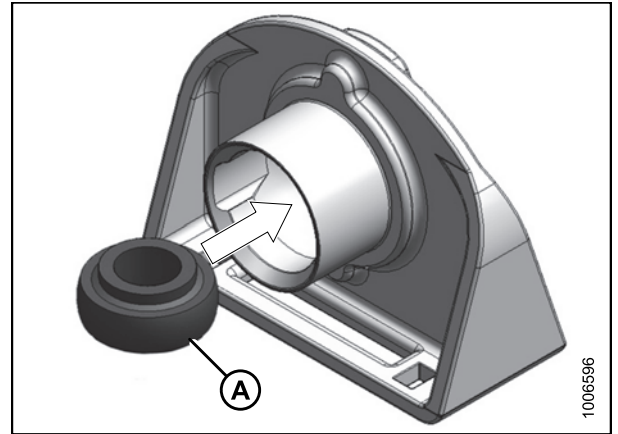


Figure 5.132: Right Side Rear Deck

16. Remove and install new bushing (A) (if necessary).

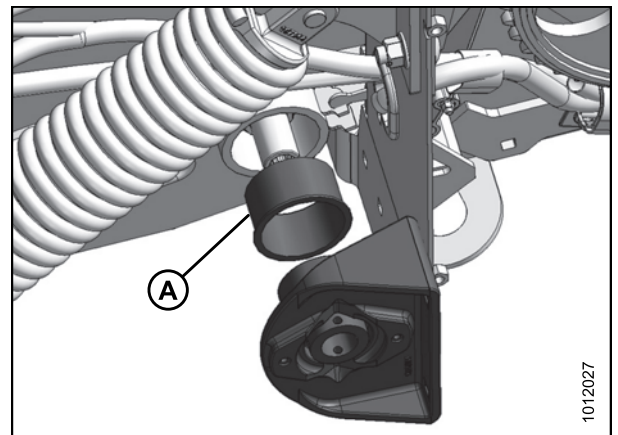


Figure 5.133: Left Side Shown—Right Side Opposite

17. Place bearing support (B) on roller shaft (A).
18. Position base of bearing support against frame, and align mounting holes.
19. Install two M12 x 30 carriage bolts (C) in the upper holes and two M12 x 40 carriage bolts (D) in the lower holes. Secure with lock nuts.

NOTE:

Ensure height controller is not damaged when installing bolts.

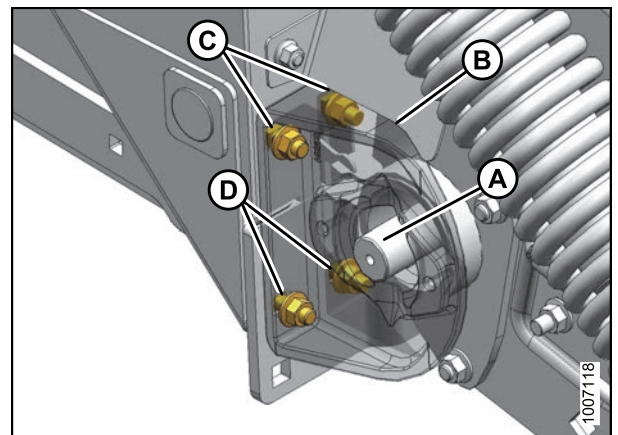


Figure 5.134: Right Side Rear Deck

MAINTENANCE AND SERVICING

20. Install lock collar (A) onto the bearing. Lock the collar in direction of shaft rotation, and tighten setscrew (B).
21. Start combine, and raise header fully. Shut down combine, and remove key from ignition.
22. Remove wooden support.
23. Engage combine header lift cylinder safety props.
24. Align the draper deck rollers. Refer to [Aligning Rear Draper Deck Rollers, page 193](#).
25. Tension the drapers. Refer to [Adjusting Rear Draper Belt Tension, page 80](#).

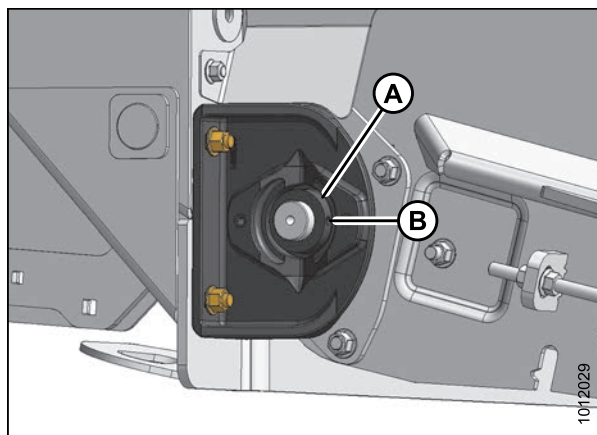


Figure 5.135: Right Side Rear Deck

Replacing Rear Deck Left Side Idler Roller Bearing

1. Open left-hand endshield. Refer to [3.3.1 Opening Left-Hand Endshield, page 27](#).
2. Fully release draper belt tension. Refer to [Adjusting Rear Draper Belt Tension, page 80](#).
3. Loosen setscrew in lock collar (A) using a 6 mm hex key.
4. Loosen collar (A) by rotating collar counterclockwise.
5. Support the roller with a wooden block, and loosen bolts (B) and (C) securing bearing to frame.
6. Remove nuts on bolts (B) and (C).
7. Pull bearing off roller shaft.
8. Place new bearing on roller shaft, and align mounting holes.
9. Install the M12 x 45 carriage bolt (B) in the forward hole and the M12 x 40 carriage bolt (C) in the aft hole. Ensure bolt heads face inboard, secure with lock nuts, but do not fully tighten.
10. Install lock collar (A) onto bearing. Lock the collar in direction of shaft rotation.
11. Tighten the setscrew using a 6 mm hex key.
12. Tension the drapers. Refer to [Adjusting Rear Draper Belt Tension, page 80](#).
13. Close the endshield. Refer to [3.3.2 Closing Left-Hand Endshield, page 28](#).
14. Align the draper deck rollers. Refer to [Aligning Rear Draper Deck Rollers, page 193](#).

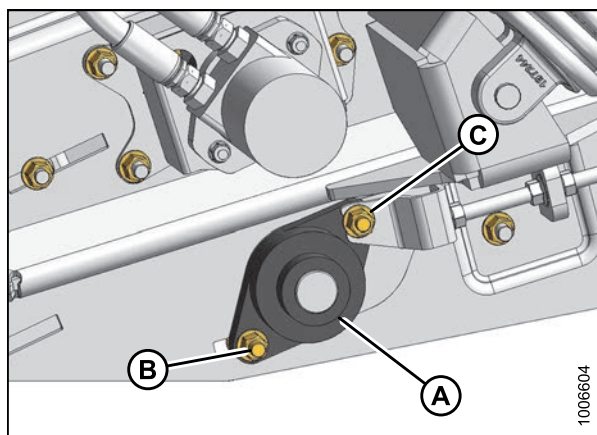


Figure 5.136: Left Side Idler Bearing

Replacing Rear Deck Right Side Idler Roller Bearing

1. Open left endshield. Refer to [3.3.1 Opening Left-Hand Endshield, page 27](#).
2. Fully release the draper belt tension. Refer to [Adjusting Rear Draper Belt Tension, page 80](#).
3. Loosen setscrew in lock collar (A) using a 6 mm hex key.
4. Rotate collar (A) clockwise to loosen and remove collar.
5. Support the roller with a wooden block, and loosen bolts (B) and (C) securing bearing to frame.
6. Remove nuts on bolts (B) and (C).
7. Pull bearing off roller shaft.
8. Place new bearing on roller shaft and align mounting holes.
9. Install the M12 x 45 carriage bolt (B) in the forward hole and the M12 x 40 carriage bolt (C) in the aft hole. Ensure bolt heads face inboard, secure with lock nuts, but do not fully tighten.
10. Install lock collar (A) onto the bearing, and rotate lock collar counterclockwise until tight.
11. Tighten the setscrew using a 6 mm hex key.
12. Align the draper deck rollers. Refer to [Aligning Rear Draper Deck Rollers, page 193](#).
13. Tension the drapers. Refer to [Adjusting Rear Draper Belt Tension, page 80](#).
14. Close the endshield, refer to [3.3.2 Closing Left-Hand Endshield, page 28](#).

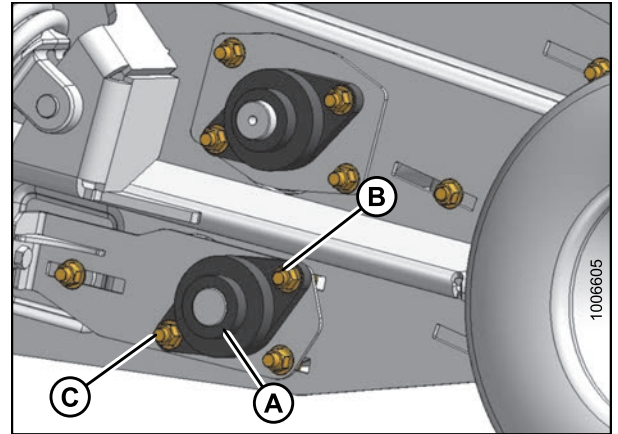


Figure 5.137: Right Side Idler Bearing

Aligning Rear Draper Deck Rollers

Draper roller alignment is necessary for proper draper tracking. Perform this procedure after replacing a roller bearing.

1. Lower the header to the ground, shut down the combine, and remove key from ignition.
2. Open the left-hand endshield (A). Refer to [3.3.1 Opening Left-Hand Endshield, page 27](#).
3. Remove the hydraulic motor from the rear roller on the front deck. Refer to [Removing Front Hydraulic Motor, page 152](#).
4. Release the draper belt tension. Refer to [Adjusting Front Draper Belt Tension, page 78](#).

MAINTENANCE AND SERVICING

5. Loosen the locking collar (A) and the three nuts (B) attaching the bearing flange to the frame on the left side of the header.

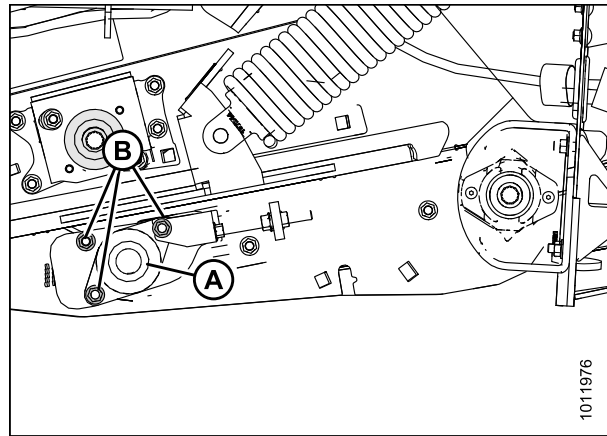


Figure 5.138: Left Side Rear Deck Idler Roller

6. Loosen the locking collar (A) and the three nuts (B) attaching the bearing flange to the frame on the right side of the header.
7. Loosen locking bolt (C).

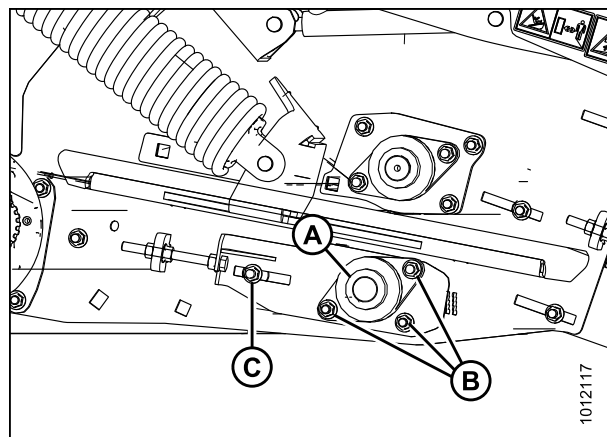


Figure 5.139: Right Side Rear Deck Idler Roller

8. Turn adjuster nut (A) and draw the rear draper deck roller assembly into the header until the leading edge of the bearing support plate (B) lines up with the middle of the single cutout (C) on each side of the header.

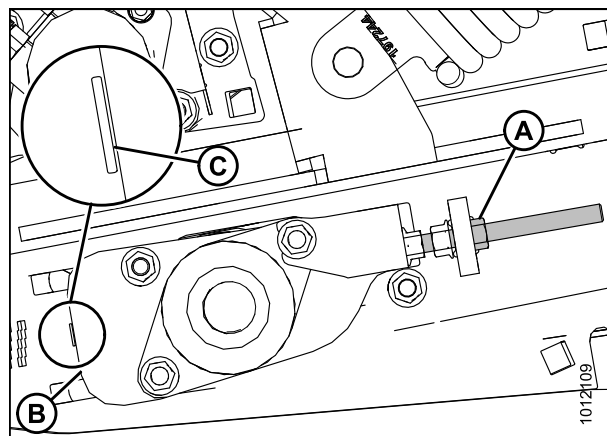


Figure 5.140: Left Side Rear Deck Shown—Right Side Opposite

MAINTENANCE AND SERVICING

9. Measure from the center of the rear drive roller to the center of the front driven roller. Set dimension (A) to 19.29 in. (490 mm) on each side of the header.

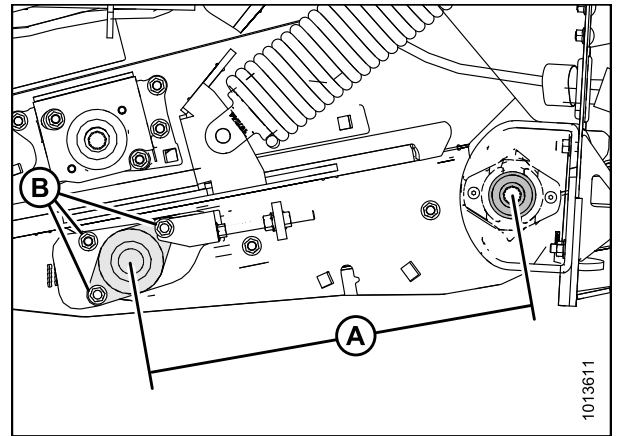


Figure 5.141: Left Side Rear Deck Shown—Right Side Opposite

10. Tighten the locking collar (A) and the three nuts (B) attaching the bearing flange to the frame on the left side of the header.

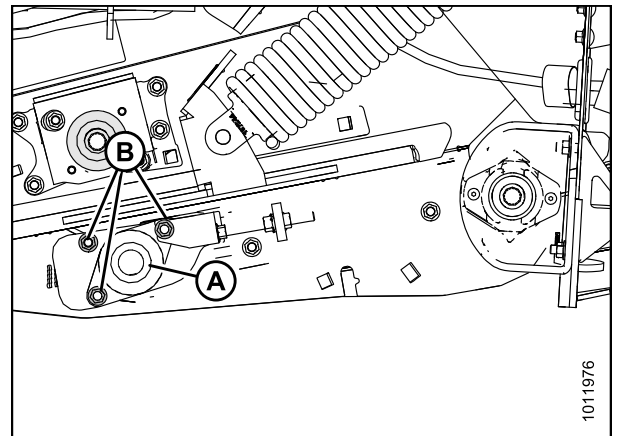


Figure 5.142: Left Side Rear Deck Idler Roller

11. Tighten the locking collar (A) and the three nuts (B) attaching the bearing flange to the frame on the right side of the header.
12. Tighten locking bolt (C).
13. Recheck measurement in Step 9., [page 195](#) to ensure nothing has moved while tightening the nuts on each side of the header.
14. Tension the draper belt. Refer to [Adjusting Front Draper Belt Tension, page 78](#).
15. Install the hydraulic motor from the rear roller on the front deck. Refer to [Installing Rear Hydraulic Motor, page 155](#).
16. Close the left-hand endshield (A). Refer to [3.3.2 Closing Left-Hand Endshield, page 28](#).

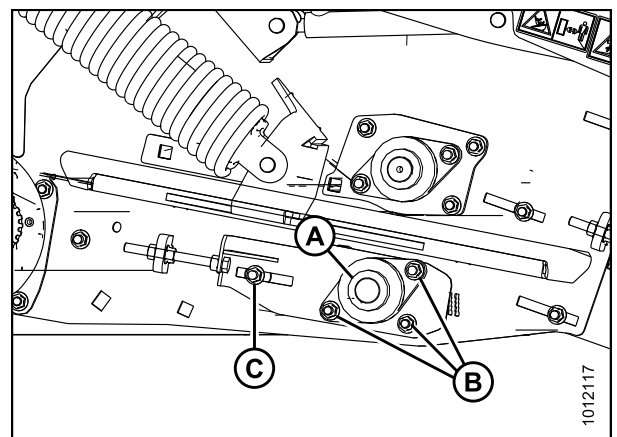


Figure 5.143: Right Side Rear Deck Idler Roller

Front Deck

Replacing Front Deck Left Side Drive Roller Bearing

1. Open the left-hand endshield. Refer to [3.3.1 Opening Left-Hand Endshield, page 27](#).
2. Release the draper belt tension fully. Refer to [Adjusting Front Draper Belt Tension, page 78](#).
3. Remove the front hydraulic motor (A). Refer to [Removing Front Hydraulic Motor, page 152](#).

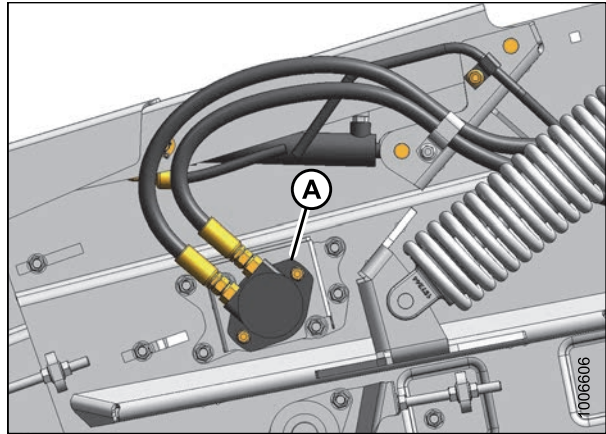


Figure 5.144: Front Hydraulic Motor

4. Turn roller manually until setscrew on collar (A) is accessible.
5. Loosen setscrew using a 6 mm hex key, and turn collar (A) counterclockwise to loosen and remove collar.
6. Support drive roller, and remove four M12 nuts from bolts (B) securing bearing housing (C) to frame using an 18 mm socket.

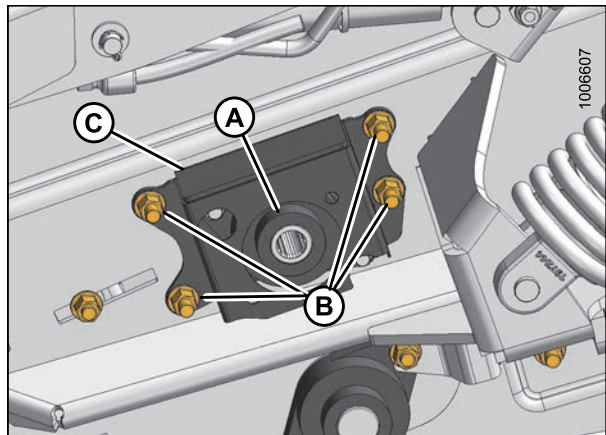


Figure 5.145: Left Side Front Deck

7. Pull bearing and housing (A) off the roller shaft.

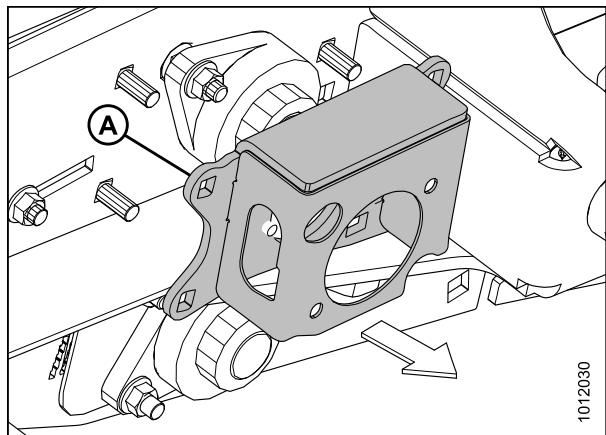


Figure 5.146: Left Side Front Deck

MAINTENANCE AND SERVICING

8. Remove two M12 bolts (A) securing bearing (B) to housing (C), and remove bearing.
9. Install new bearing (B) into housing (C) using two M12 x 40 carriage bolts (A) and lock nuts (D).

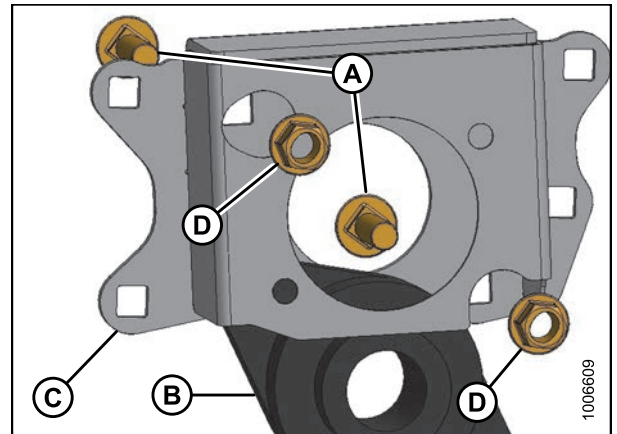


Figure 5.147: Left Side Front Deck

10. Place bearing housing (A) onto roller shaft (B), and secure using four M12 x 35 bolts (C) (with bolt heads facing inboard) and lock nuts (D). Tighten lock nuts.

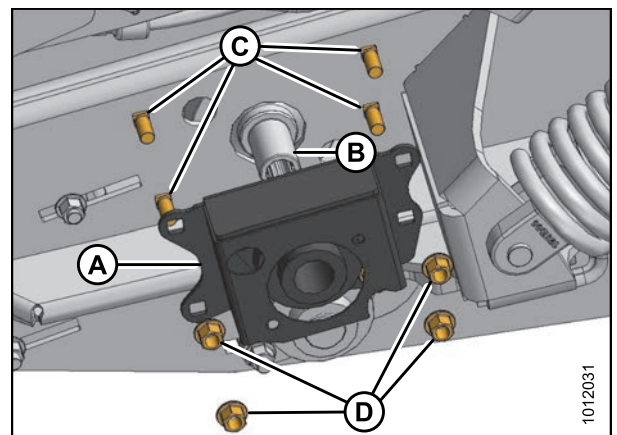


Figure 5.148: Left Side Front Deck

11. Install lock collar (A) onto roller shaft, and turn clockwise until tight.
12. Remove support under drive roller.
13. Turn roller manually until setscrew in lock collar (A) is accessible.
14. Tighten setscrew using a 6 mm hex key.
15. Reinstall the hydraulic motor (A). Refer to [Installing Front Hydraulic Motor, page 153](#).
16. Align the rollers. Refer to [Aligning Front Draper Deck Rollers, page 200](#).
17. Tension the drapers. Refer to [Adjusting Front Draper Belt Tension, page 78](#).
18. Close the left-hand endshield. Refer to [3.3.2 Closing Left-Hand Endshield, page 28](#).

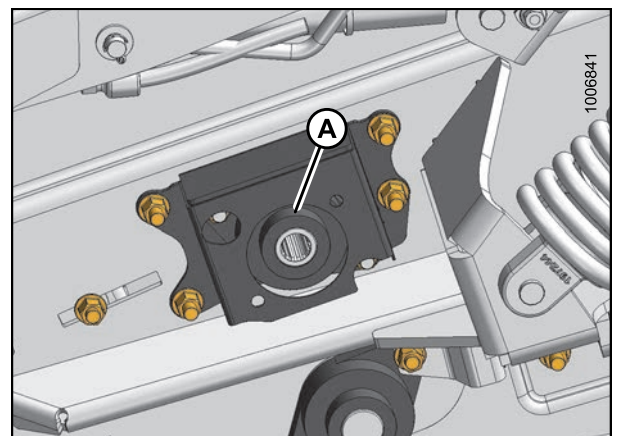


Figure 5.149: Left Side Front Deck

Replacing Front Deck Right Side Drive Roller Bearing

1. Release draper belt tension fully. Refer to [3.12.7 Draper Belt Tension, page 77](#).
2. Loosen setscrew in lock collar (A) using a 6 mm hex key.
3. Rotate lock collar (A) clockwise to loosen and remove collar.
4. Support the roller with a wooden block, and loosen two bolts (B) securing bearing (C) to frame.
5. Remove existing bearing (C) from roller shaft.
6. Place new bearing on roller shaft and align mounting holes.
7. Install M12 x 40 mounting bolts (B) (if previously removed) with heads facing inboard, and secure with lock nuts.
8. Install lock collar (A) onto the bearing (C), and rotate lock collar counterclockwise until tight.
9. Tighten the setscrew using a 6 mm hex key.
10. Align the rollers. Refer to [Aligning Front Draper Deck Rollers, page 200](#).
11. Tension the drapers. Refer to [3.12.7 Draper Belt Tension, page 77](#).

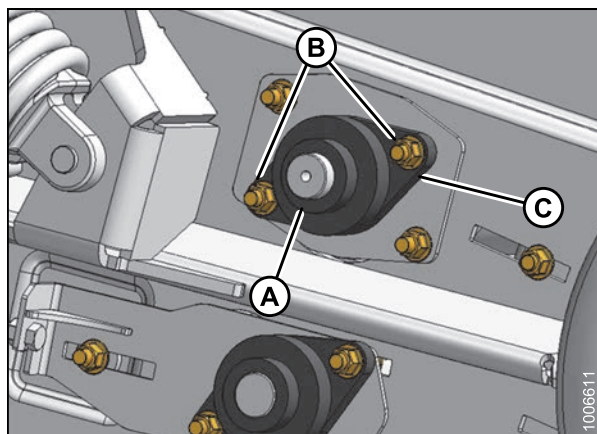


Figure 5.150: Right Side Front Deck

Replacing Front Deck Idler Roller Bearings

NOTE:

The following describes the bearing replacement procedure for the **left side**—the procedure for the **right side** is identical.

1. Release draper belt tension fully. Refer to [Adjusting Front Draper Belt Tension, page 78](#).
2. Remove setscrew in lock collar (A) using a 6 mm hex key. Rotate lock collar (A) counterclockwise (clockwise for right side) to loosen and remove collar.
3. Support the roller with a wooden block, and loosen two nuts on bolts (B) attaching bearing to frame.

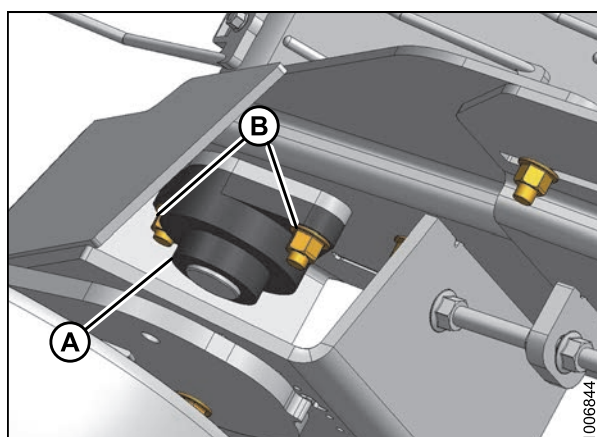


Figure 5.151: Left Side Front Deck – Right Side Opposite

MAINTENANCE AND SERVICING

4. Pull bearing assembly (A) off roller shaft and remove from frame.
5. Place new bearing assembly (A) onto roller shaft and bolts (B).
6. Position bearing against frame.

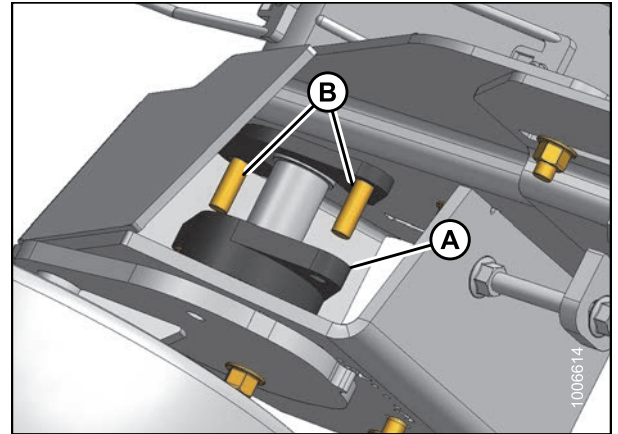


Figure 5.152: Left Side Front Deck – Right Side Opposite

7. Install bolt (A) (if previously removed), and ensure shield (B) is in place.

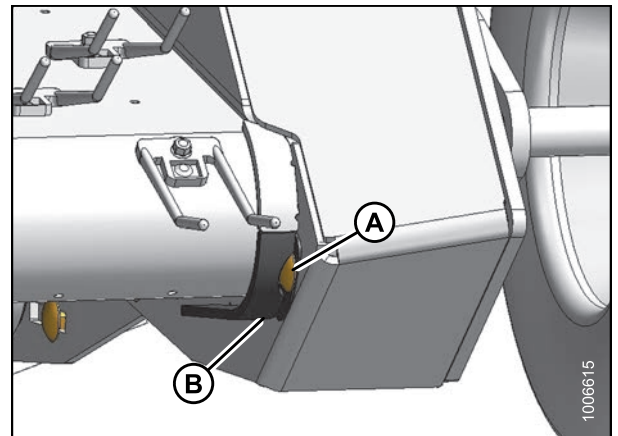


Figure 5.153: Left Side Front Deck – Right Side Opposite

8. Secure bearing (A) with lock nuts (B).
9. Install lock collar (C) onto bearing, and rotate lock collar clockwise (counterclockwise for right side) until tight.
10. Tighten the setscrew using a 6 mm hex key.
11. Remove support from under the roller.
12. Align the rollers. Refer to [Aligning Front Draper Deck Rollers, page 200](#).
13. Tension the drapers. Refer to [Adjusting Front Draper Belt Tension, page 78](#).

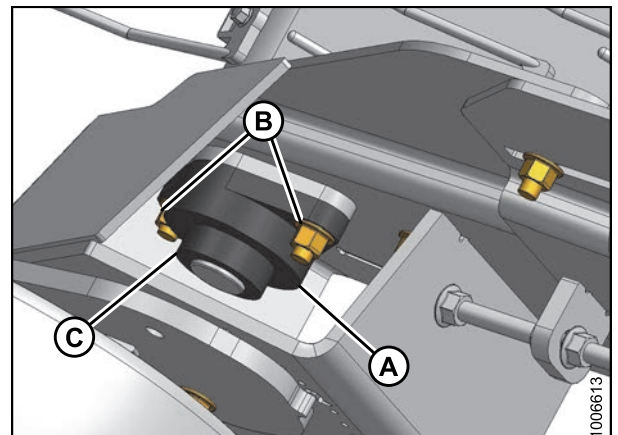


Figure 5.154: Left Side Front Deck – Right Side Opposite

Aligning Front Draper Deck Rollers

Draper roller alignment is necessary for proper draper tracking. Perform this procedure after replacing a roller bearing.

DANGER

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

1. Lower the header to the ground, shut down the combine, and remove key from ignition.
2. Open the left-hand endshield. Refer to [3.3.1 Opening Left-Hand Endshield, page 27](#).
3. Remove the hydraulic motor from the rear roller on the front deck. Refer to [Removing Front Hydraulic Motor, page 152](#).
4. Release draper belt tension fully. Refer to [Adjusting Front Draper Belt Tension, page 78](#).
5. Loosen the locking collar (A) and the two nuts (B) attaching the bearing flange to the frame on the driven roller on each side of the header.

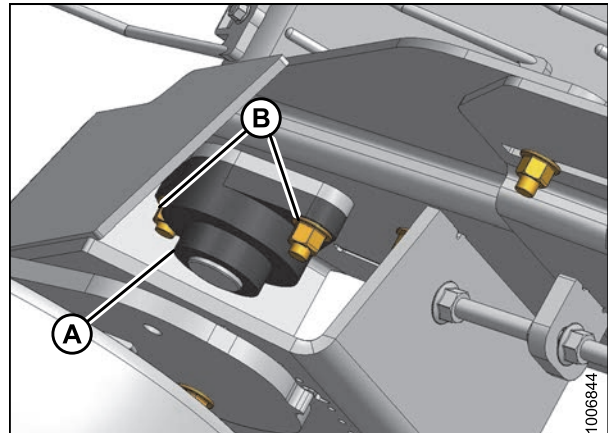


Figure 5.155: Front Deck Idler Roller

6. Loosen the locking collar (A) and the two nuts (B) attaching the bearing flange to the frame.

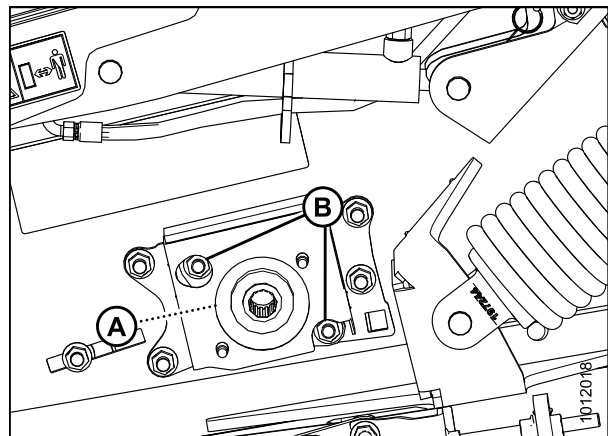


Figure 5.156: Left Side Front Deck Drive Roller

MAINTENANCE AND SERVICING

7. Loosen the locking collar (A) and the two nuts (B) attaching the bearing flange to the frame.

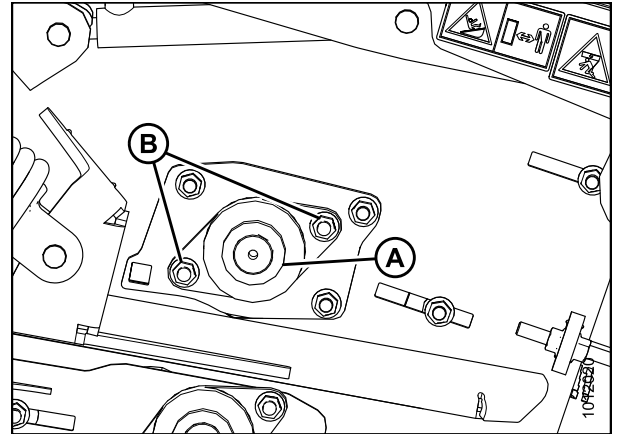


Figure 5.157: Right Side Front Deck Drive Roller

8. Turn adjuster nut (A) and draw the front draper deck roller assembly into the header until the edge of the header frame lines up with the middle of the single cutout (C) above the draper tension indicator cutout.
9. Tighten the three clamp bolts (B) on each side of the header.

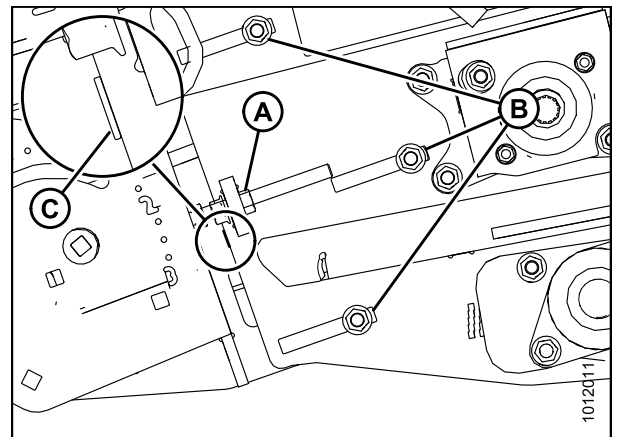


Figure 5.158: Left Side Front Deck – Right Side Opposite

10. Measure from the center of the rear drive roller to the center of the front driven roller. Set dimension (A) to 19.29 in (490 mm) on each side of the header.

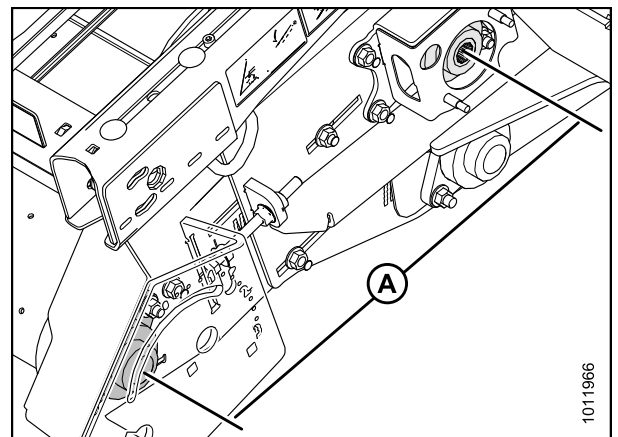


Figure 5.159: Left Side Front Deck – Right Side Opposite

MAINTENANCE AND SERVICING

11. Tighten the locking collar (A) and the two nuts (B) attaching the bearing flange to the frame on the driven roller on each side of the header.

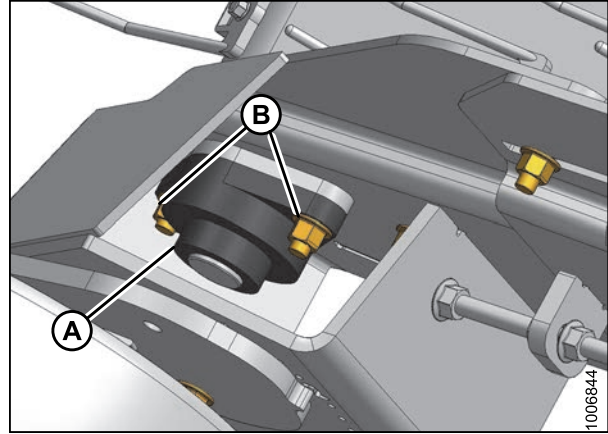


Figure 5.160: Front Deck Idler Roller

12. Tighten the locking collar (A) and the two nuts (B) attaching the bearing flange to the frame.

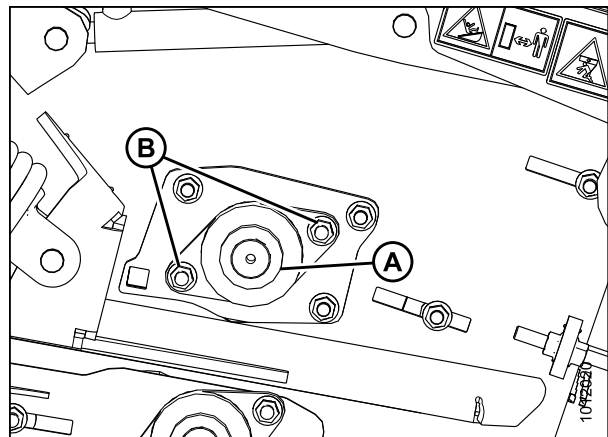


Figure 5.161: Right Side Front Deck Drive Roller

13. Tighten the locking collar (A) and the two nuts (B) attaching the bearing flange to the frame.
14. Recheck measurement in Step 10., [page 201](#) to ensure nothing moved while tightening the nuts on each side of the header.
15. Tension the draper belt. Refer to [Adjusting Front Draper Belt Tension, page 78](#).
16. Install the hydraulic motor from the rear roller on the front deck. Refer to [Installing Front Hydraulic Motor, page 153](#).
17. Close the left-hand endshield (A). Refer to [3.3.2 Closing Left-Hand Endshield, page 28](#).

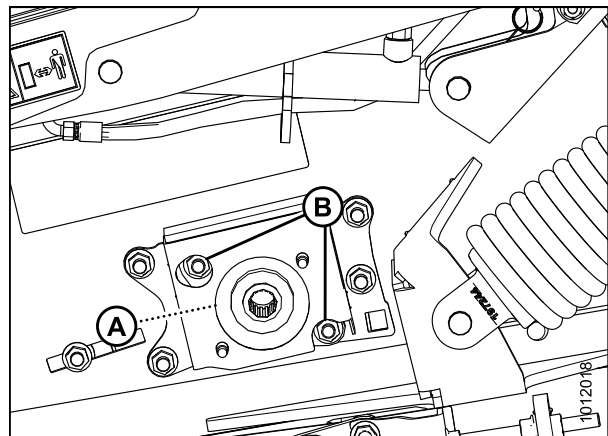


Figure 5.162: Left Side Front Deck Drive Roller

5.8 Header Spring Float Assembly

5.8.1 Removing Header Spring Float Assembly

DANGER

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

1. Attach the header to the combine feeder house and ensure it is latched securely. It is not necessary to hook up the driveline or hydraulics. Refer to the relevant combine attaching procedure:

- [Attaching to Case IH Combine, page 36](#)
- [Attaching to John Deere 60, 70, and S Series Combine, page 42](#)
- [Attaching to New Holland CR/CX Series Combine, page 49](#)
- [Attaching to Versatile Combine, page 54](#)

2. Lower combine feeder house so the front draper deck is rotated upward to full floated-up position. Header frame will be close to the ground and coil spring will be fully collapsed.

NOTE:

From factory the spring tension is initially set to be in the second hole from the bottom on the float anchor.

3. Shut down combine and remove key from ignition.
4. Open the left-hand endshield (A). Refer to [3.3.1 Opening Left-Hand Endshield, page 27](#).

NOTE:

The right side spring float assembly can be removed or adjusted without removing the right-hand endshield. For improved accessibility, remove four M12 carriage bolts and hex flange nuts from endshield support (not shown), and remove right-hand endshield.

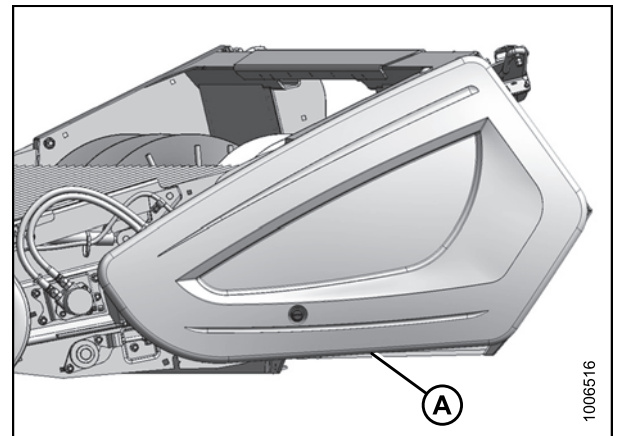


Figure 5.163: Left-Hand Endshield

MAINTENANCE AND SERVICING

5. Ensure all spring tension is released from the spring float assembly (A), remove cotter pin (B), clevis pin (C), and three flat washers (D).

NOTE:

When spring tension is fully released, spring coils should be fully collapsed and the spring float assembly should rock from side to side when moved by hand. If pressure on the clevis pin persists, slightly raise or lower the header.

IMPORTANT:

Note the spring float assembly position on the anchor, and ensure the left and right assemblies are set to the same anchor hole position during installation or draper deck damage could result.

6. Remove cotter pin (B), clevis pin (C), and three flat washers (D) from spring float assembly (A) at front anchor.
7. Remove spring float assembly (A).

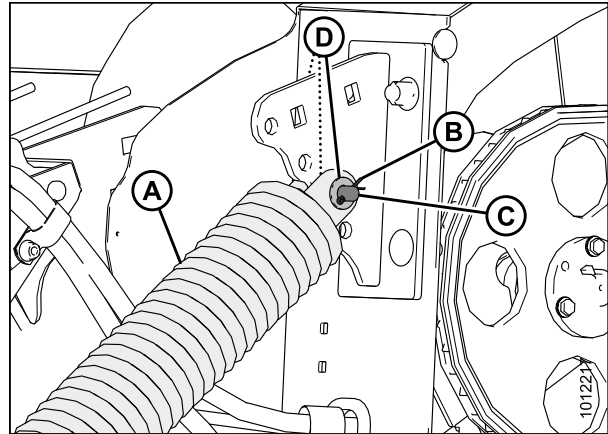


Figure 5.164: Left Side Spring Float Assembly Shown – Right Side Opposite

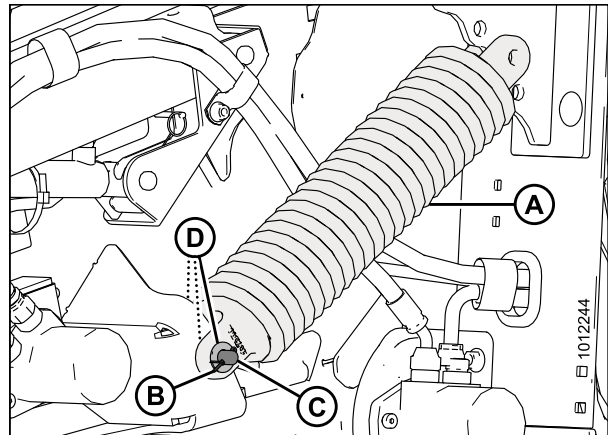


Figure 5.165: Left Side Front Anchor Shown – Right Side Opposite

5.8.2 Installing Header Spring Float Assembly

NOTE:

From factory the spring tension is initially set to be in the second hole from the bottom on the anchor.

1. Position rod end (D) of spring float assembly (A) onto anchor (B), and position opposite end of assembly onto front anchor (C).

IMPORTANT:

The word **ROD** (D) is stamped onto the casting to indicate which side of the spring float assembly (A) contains the rod end of the shock. Ensure the rod end of the shock is installed onto anchor (B) as shown.

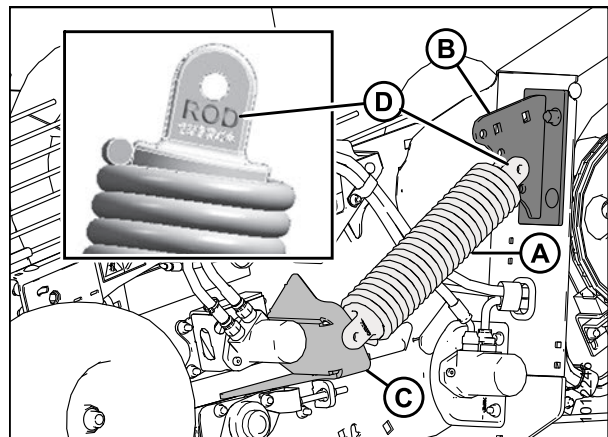


Figure 5.166: Left Side Anchors Shown – Right Side Opposite

MAINTENANCE AND SERVICING

2. Insert clevis pin (A) from the inboard side through spring float assembly (B), three flat washers (C), and front anchor (D) as shown. Secure with cotter pin (E).

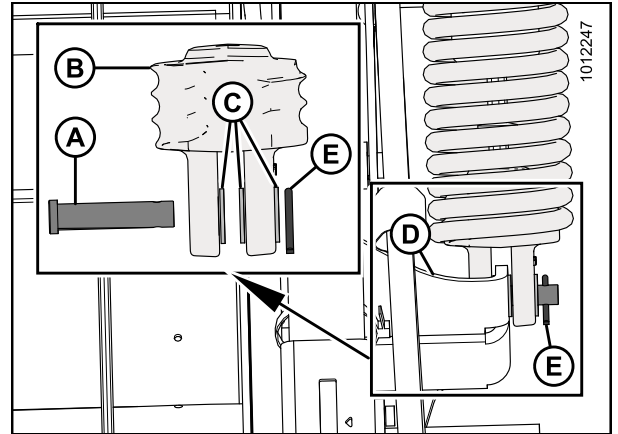


Figure 5.167: Left Side Spring Float Assembly Shown – Right Side Opposite

3. Align spring float assembly (A) with float anchor hole (B). If you require more or less float, refer to [3.12.4 Adjusting Header Float, page 72](#) to change the header float setting.

IMPORTANT:

The left and right spring float assemblies must be set to the same anchor hole position or draper deck damage could result.

NOTE:

If the spring float assembly (A) hole does not align with anchor hole (B), raise or lower header as necessary.

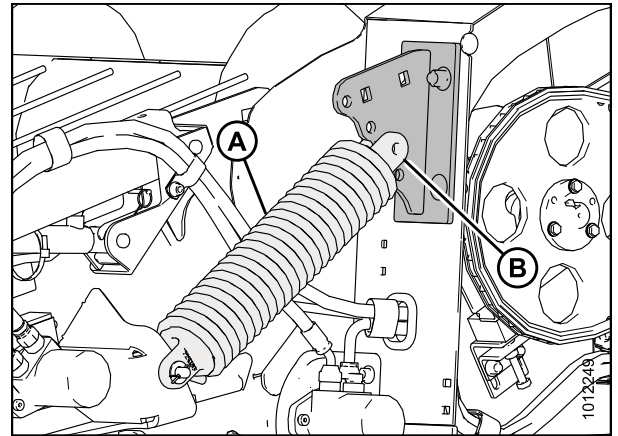


Figure 5.168: Left Side Anchor Shown – Right Side Opposite

4. Insert clevis pin (A) from the inboard side through rod end of spring float assembly (B), three flat washers (C), and anchor (D) as shown. Secure with cotter pin (E).
5. Repeat procedure for opposite side of header ensuring that left and right spring float assemblies are set to the same anchor hole position on header.
6. Close left-hand endshield, refer to [3.3.2 Closing Left-Hand Endshield, page 28](#), and replace right-hand endshield if previously removed.

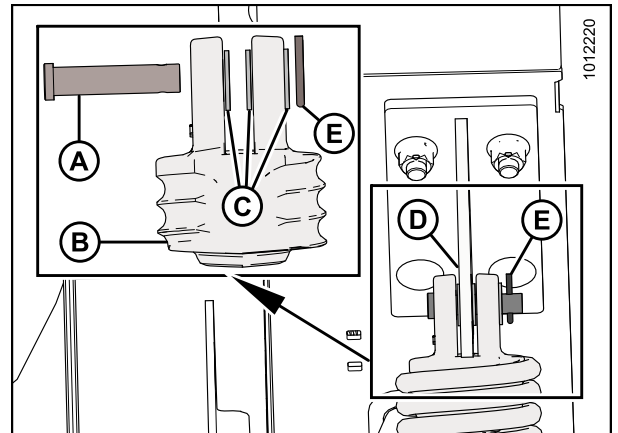


Figure 5.169: Left Side Spring Float Assembly Shown – Right Side Opposite

MAINTENANCE AND SERVICING

7. Close the left-hand endshield. Refer to [3.3.2 Closing Left-Hand Endshield, page 28](#), and replace right-hand endshield if previously removed.

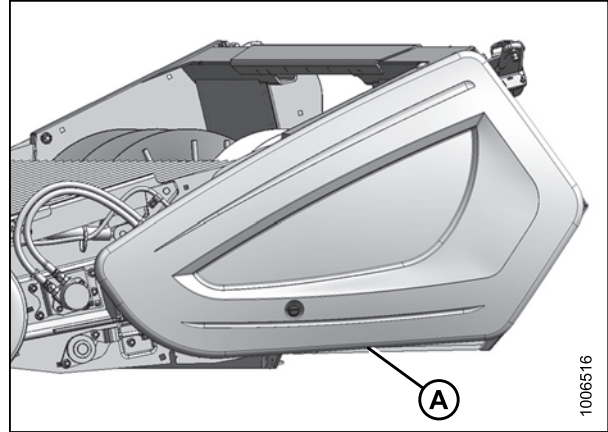


Figure 5.170: Left-Hand Endshield

5.9 Hold-Downs

Hold-downs are important to the performance of the pickup and is adjusted according to crop conditions.

5.9.1 Replacing Fiberglass Rods

1. Lower hold-down, and lower header to the ground.

DANGER

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

2. Shut down combine, and remove key from ignition.
3. Loosen flange nuts (B) securing hold-down bar to hold-down arms on outer rods (A), and loosen nut (C) next to rod.
4. Slide out existing rod (A), and replace with new rod. Ensure rod extends 3/8 in. (10 mm) (B) beyond plastic sleeve (C).

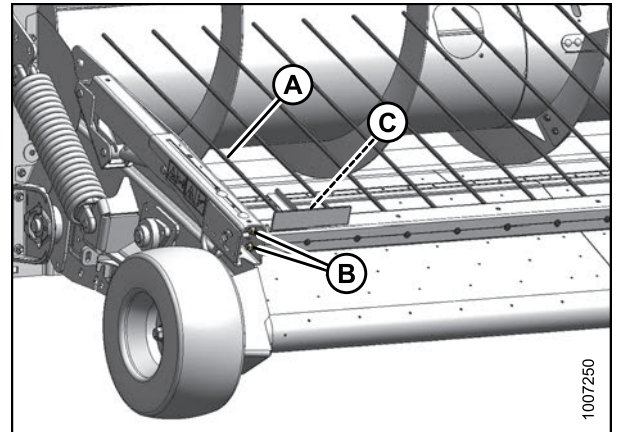


Figure 5.171: Outer Fiberglass Rod

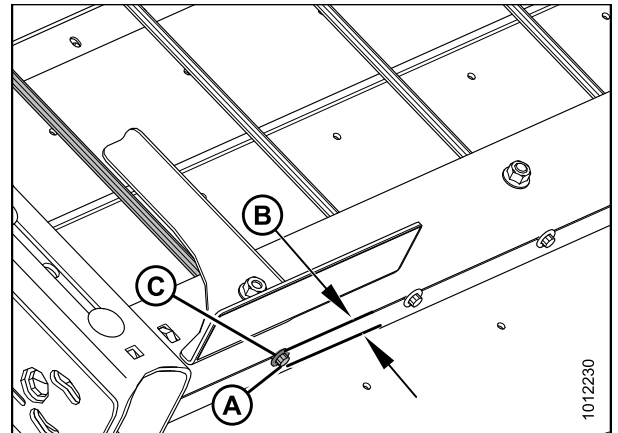


Figure 5.172: Outer Fiberglass Rod

5. Tighten nuts (B) and (C).

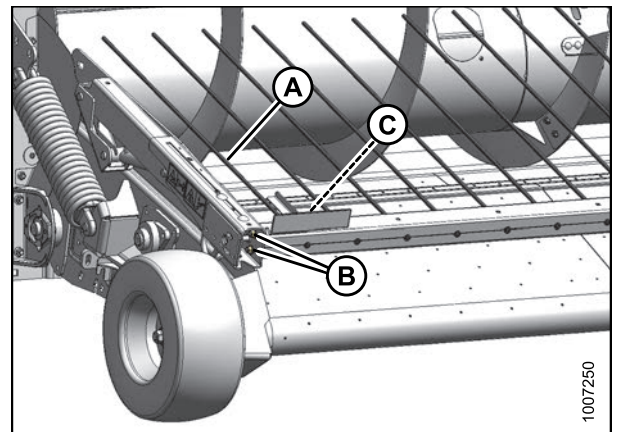


Figure 5.173: Outer Fiberglass Rod

6. Loosen adjacent nuts (B) on remaining rods (A), and repeat Step 4., [page 207](#).
7. Tighten nuts (B).

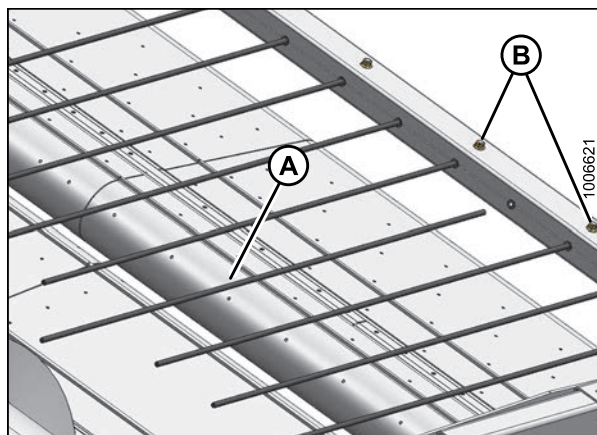


Figure 5.174: Fiberglass Rods

5.9.2 Replacing Master Hold-Down Cylinder

The hold-down is raised and lowered by a master and slave single-acting hydraulic cylinder. The master cylinder is located at the left end of the hold-down.

Cylinder operation is adversely affected by air in the system or cylinder seal failure. Remove, repair, or replace cylinders if either of these issues arise.

Removing Master Cylinder

1. Lower the header and hold-down completely. Continue pressing the hold-down lower switch for 5–10 seconds to remove any pressure in the system.

DANGER

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

2. Stop engine and remove key.
3. Open the left-hand endshield. Refer to [3.3.1 Opening Left-Hand Endshield, page 27](#).
4. Remove cotter pins (A) and washers (B) from clevis pins (C) and (D).
5. Raise hold-down (E) by hand, use a prop device to support hold-down and take the weight off of cylinder (F), and remove clevis pin (C) at barrel end of cylinder. Cylinder should drop free from hold-down arm.

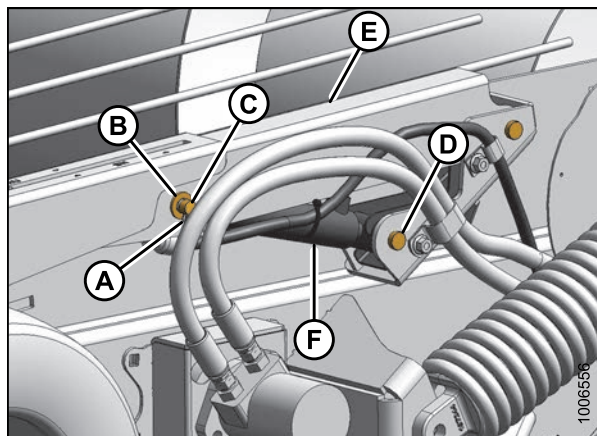


Figure 5.175: Left-Side Master Cylinder

MAINTENANCE AND SERVICING

6. Insert a block of wood between the hold-down arm (A) and the pick-up (B) to keep the hold-down elevated and clear of the work area.

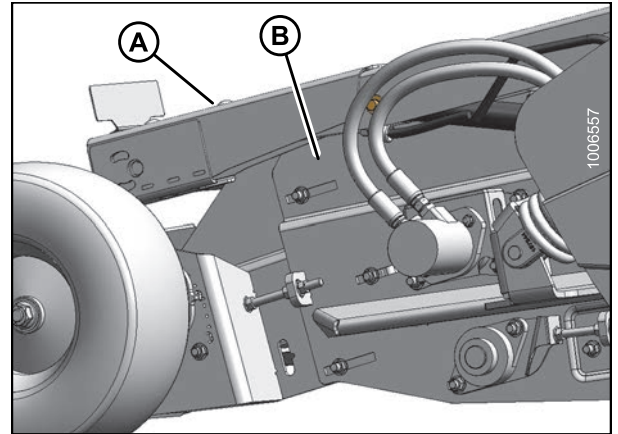


Figure 5.176: Block Location

7. Remove clevis pin (A) at rod end of cylinder, and remove cylinder and safety prop (B).

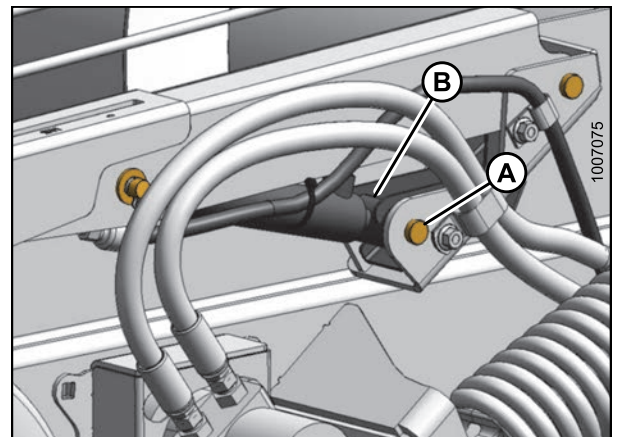


Figure 5.177: Left-Side Master Cylinder

8. Cut cable ties on hoses (A) and (B), and disconnect hoses from cylinder. Install caps onto hose ends or wrap with plastic.

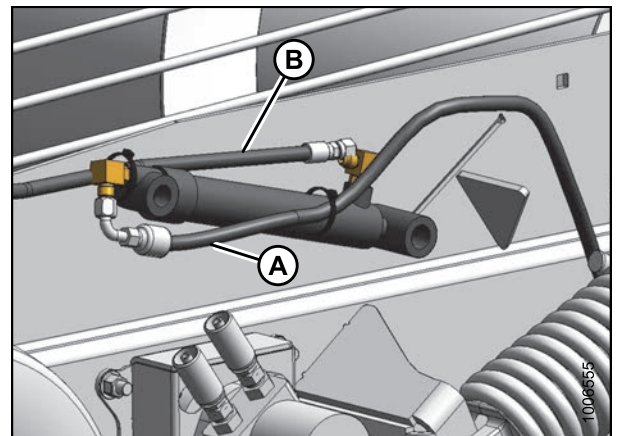


Figure 5.178: Left-Side Master Cylinder

Installing Master Cylinder

1. Remove the two 90 degree elbows (A) and (B) from existing master cylinder.
2. Remove plugs from new master cylinder ports.
3. Install elbows (A) and (B) onto new master cylinder as shown (C). Tighten jam nuts on elbows.

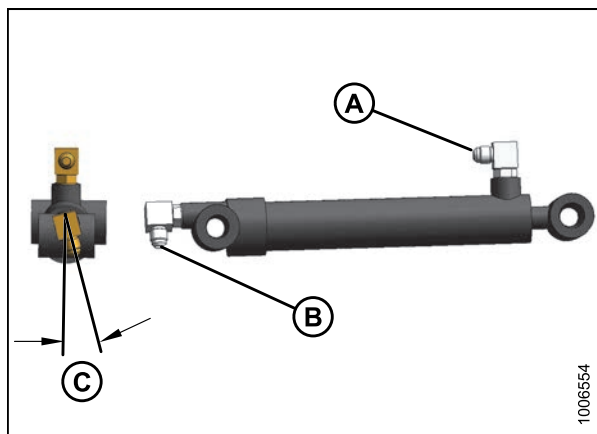


Figure 5.179: Left-Side Master Cylinder

4. Connect hose (A) from slave cylinder to elbow (C) at rod (aft) end, and hose (B) from header to elbow (D) at barrel (forward) end. Tighten fittings ensuring hose (B) is routed parallel to the cylinder.

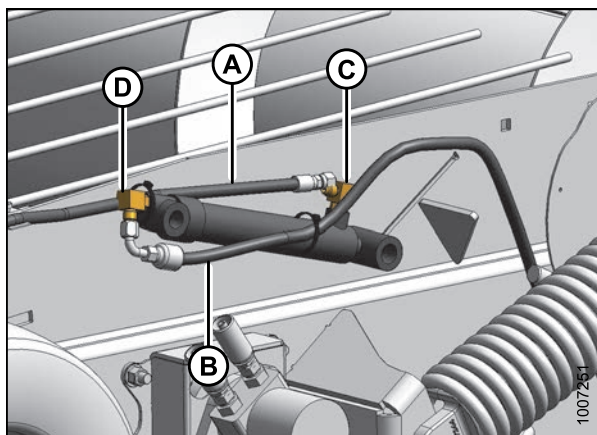


Figure 5.180: Left-Side Master Cylinder

5. Position rod end of cylinder (F) and safety prop into cylinder support bracket, and secure with the shorter clevis pin (D). Ensure clevis pin head faces outboard.
6. Secure clevis pin (D) with washer and cotter pin (not shown).
7. Lift hold-down arm (E) until clevis pin (C) can be installed through lift arm and barrel end of cylinder. Ensure clevis pin head faces outboard.
8. Secure with washer (B) and cotter pin (A).
9. Secure hoses with cable ties.
10. Remove previously inserted block of wood.
11. Bleed cylinders and lines. Refer to [5.9.4 Bleeding Cylinders and Lines, page 213](#).
12. Close the left-hand endshield. Refer to [3.3.2 Closing Left-Hand Endshield, page 28](#).

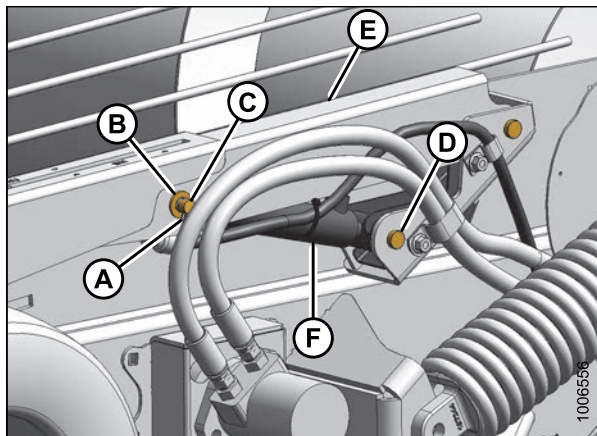


Figure 5.181: Left-Side Master Cylinder

5.9.3 Replacing Slave Hold-Down Cylinder

The hold-down is raised and lowered by a master and slave single-acting hydraulic cylinder. The slave cylinder is located at the right end of the hold-down and is connected to the master cylinder by a hose that passes through the hold-down beam.

Cylinder operation is adversely affected by air in the system or cylinder seal failure. Remove, repair, or replace cylinders if either of these issues arise.

Removing Slave Cylinder

1. Lower the header and hold-down completely. Continue pressing the hold-down lower switch for 5–10 seconds to remove any pressure in the system.

DANGER

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

2. Stop engine and remove key.
3. Remove cotter pins (A) and washers (B) from clevis pins (C) and (D).
4. Support hold-down (E) to take the weight off of cylinder (F), and remove clevis pin (C) at barrel end of cylinder. Cylinder should drop free from hold-down arm.

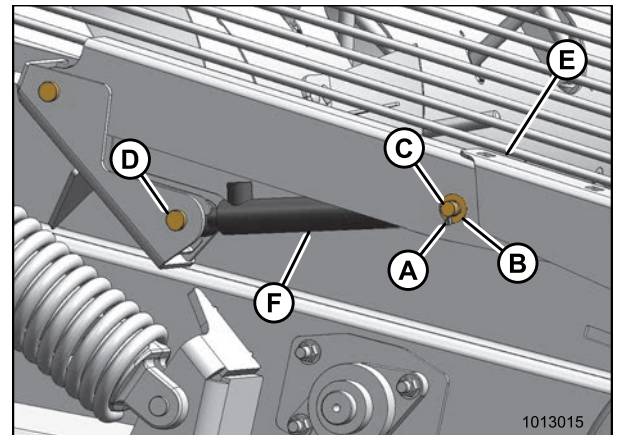


Figure 5.182: Right-Side Slave Cylinder

5. Lift up and support the hold-down arm (A) with a lifting device to allow removal of the cylinder.

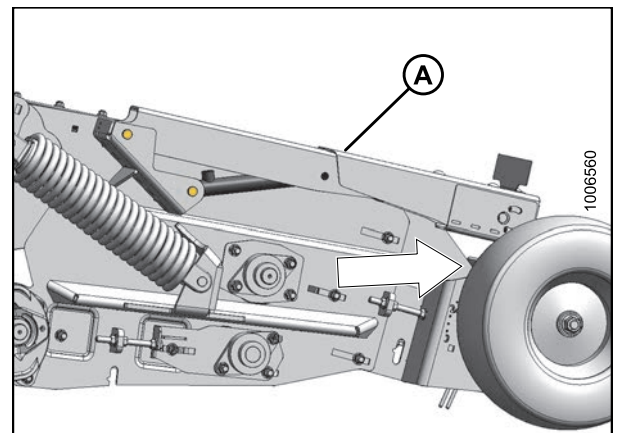


Figure 5.183: Block Location

MAINTENANCE AND SERVICING

6. Remove clevis pin (A) at rod end of cylinder, and remove cylinder and safety prop (B).

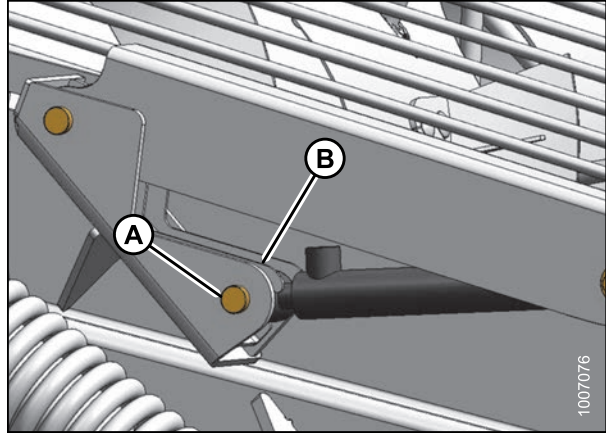


Figure 5.184: Right-Side Slave Cylinder

7. Disconnect hydraulic hose (A) from cylinder. Install cap onto hose end, or wrap with plastic.

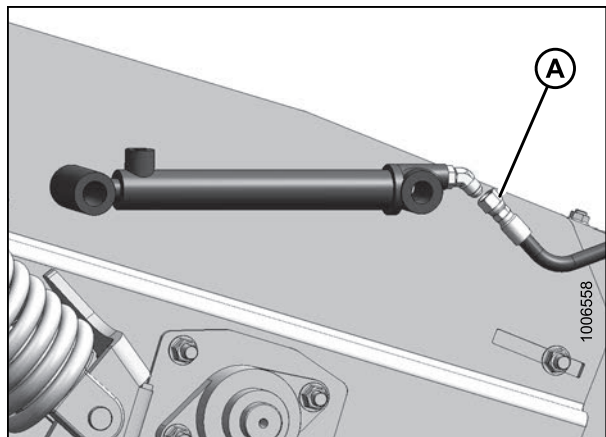


Figure 5.185: Right-Side Slave Cylinder

Installing Slave Cylinder

1. Remove the 45 degree elbow (A) from existing slave cylinder.
2. Remove plug from new slave cylinder port.
3. Install elbow (A) onto new slave cylinder as shown. Ensure fitting is in line with cylinder, and tighten jam nut on elbow.

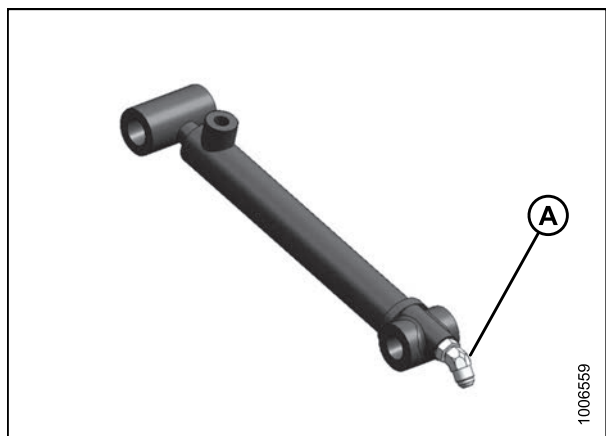


Figure 5.186: Right-Side Slave Cylinder

4. Connect hose (A) from master cylinder to elbow (B), and tighten fitting.

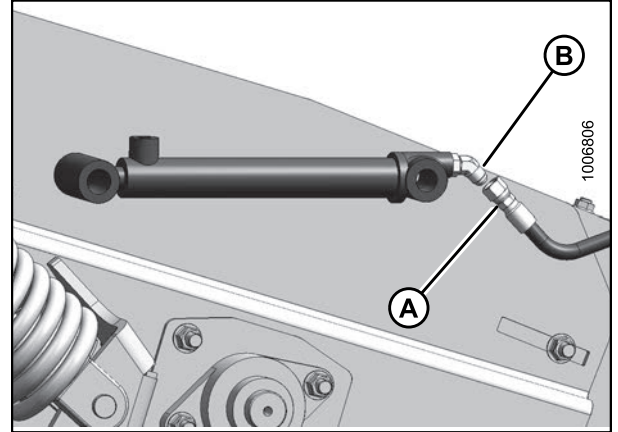


Figure 5.187: Right-Side Slave Cylinder

5. Position rod end of cylinder (F) and safety prop (G) into cylinder support bracket on pick-up, and secure with the longer clevis pin (D). Ensure clevis pin head faces outboard.
6. Secure clevis pin (D) with washer and cotter pin (not shown).
7. Lift hold-down arm until clevis pin (C) can be installed through lift arm and barrel end of cylinder. Ensure clevis pin head faces outboard.
8. Secure with washer (B) and cotter pin (A).
9. Remove previously inserted block of wood.
10. Bleed cylinders and lines. Refer to [5.9.4 Bleeding Cylinders and Lines](#), page 213.

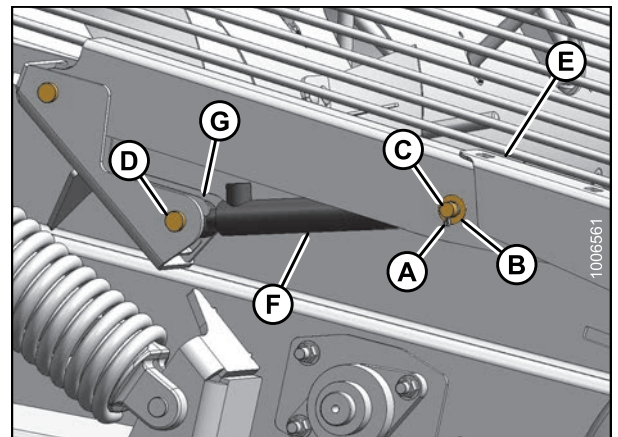


Figure 5.188: Right-Side Slave Cylinder

5.9.4 Bleeding Cylinders and Lines

In order for the hydraulics to perform properly, all or most of the air must be removed from the system. The following procedure is the simplest method for bleeding the hydraulics. The hydraulics should be bled after initial installation, if the unit has been idle for a significant period of time, or if the hydraulic system requires adjustment.

CAUTION

High-pressure hydraulic oil can cause serious injuries such as burns, cuts, and tissue damage. Always take precautions when working with hydraulic oil. Wear safety goggles, gloves, and thick clothing. Seek immediate medical attention if cut or burned.

MAINTENANCE AND SERVICING

1. Raise the hold-down fully using the combine reel lift control.
2. Engage the hold-down safety props. Ensure safety prop is fully rotated over center so it remains engaged.
3. Lower the hold-down onto the safety props to relieve the hydraulic pressure in the lines.

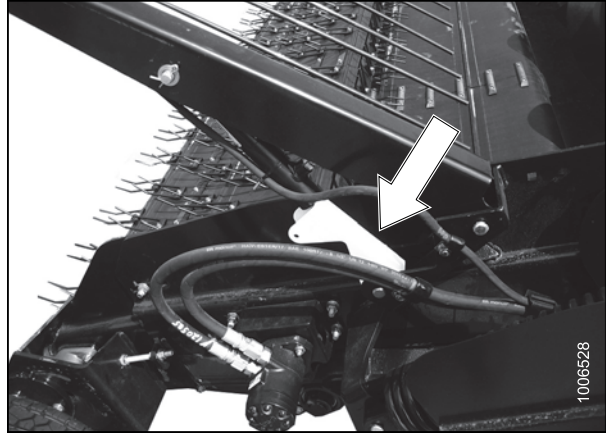


Figure 5.189: Hold-Down Safety Props

4. Hold a plastic container up to the bleed plug.
5. Loosen the bleed screw using a 1/4 in. wrench.
6. Activate the lift control. The hold-down may lift slightly, and a stream of oil will flow from the bleed screw.
7. Bleed oil until it is a steady clear stream. Release lift control, and tighten the 1/4 in. bleed screw.
8. Raise the hold-down fully.
9. Disengage the safety props.
10. Lower the hold-down.



Figure 5.190: Bleed Cylinders

5.9.5 Hydraulic Hoses and Lines

Check hydraulic hoses and lines daily for signs of leaks. Replace any leaking or damaged hoses.

For hold-down systems, refer to [Removing Master Cylinder Hose, page 215](#) and [Installing Master Cylinder Hose, page 218](#).

For draper drive systems, refer to [Removing Hydraulic Motor Hoses, page 155](#) and [Installing Hydraulic Motor Hoses, page 157](#).

WARNING

- Avoid high-pressure fluids. Escaping fluid can penetrate the skin causing serious injury.
- Relieve pressure before disconnecting hydraulic lines.
- Tighten all connections before applying pressure. Keep hands and body away from pin holes and nozzles which eject fluids under high pressure.
- If any fluid is injected into the skin, it must be surgically removed within a few hours by a doctor familiar with this type of injury or gangrene may result.

WARNING

- Use a piece of cardboard or paper to search for leaks.

IMPORTANT:

Keep hydraulic coupler tips and connectors clean. Allowing dust, dirt, water, or foreign material to enter the system is the major cause of hydraulic system damage. Do NOT attempt to service hydraulic systems in the field. Precision fits require a perfectly clean connection during overhaul.



Figure 5.191: Hydraulic Pressure Hazard

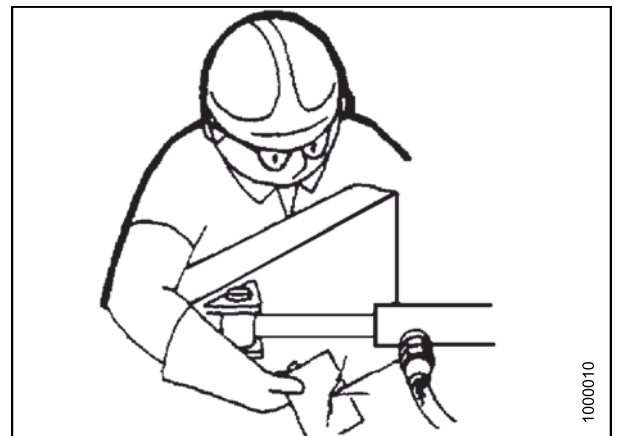


Figure 5.192: Testing for Hydraulic Leaks

Removing Master Cylinder Hose

1. Lower header to the ground, and lower the hold-down completely.

DANGER

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

2. Stop engine and remove key.
3. Ensure hold-down is lowered completely to release all hydraulic pressure in the system.

MAINTENANCE AND SERVICING

4. Open the left-hand endshield (A). Refer to [3.3.1 Opening Left-Hand Endshield, page 27](#).

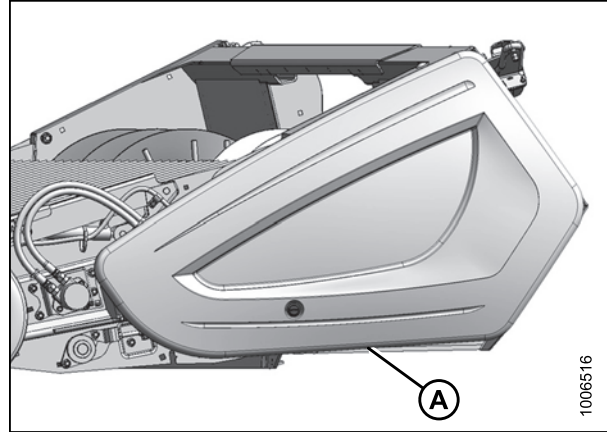


Figure 5.193: Left-Hand Endshield

5. Disconnect hydraulic hose (A) from master lift cylinder (B). Install caps onto hose ends or wrap with plastic.

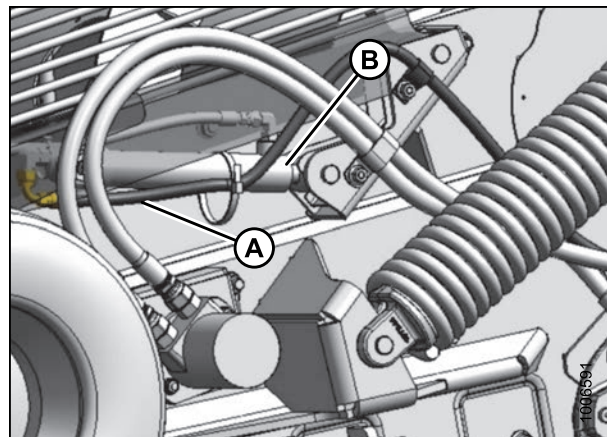


Figure 5.194: Left-Side Master Cylinder

6. Loosen or remove hose clips (A), and undo cinch strap(s) (B).
7. Pull hose through grommet (C).

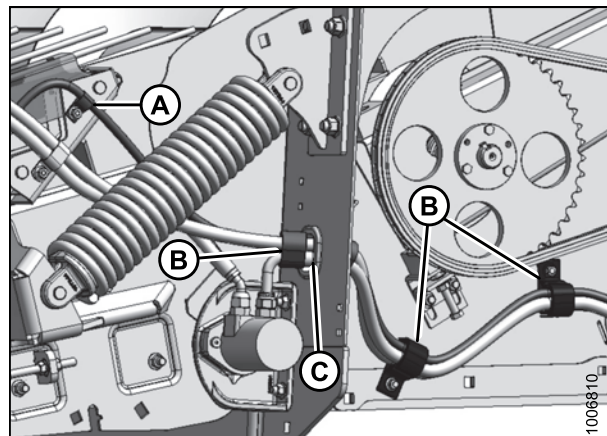


Figure 5.195: Left Side of Header

MAINTENANCE AND SERVICING

8. Disconnect hydraulic hose (A) from multi-coupler.

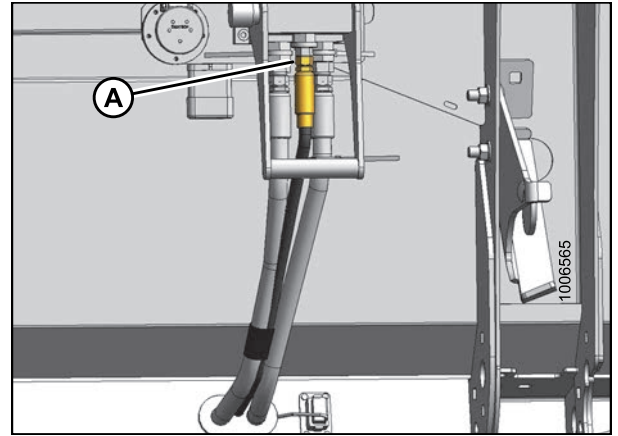


Figure 5.196: Left-Hand Backsheet

9. Loosen three bolts (A) and remove cover (B).
10. Pull hose out of cover (B).

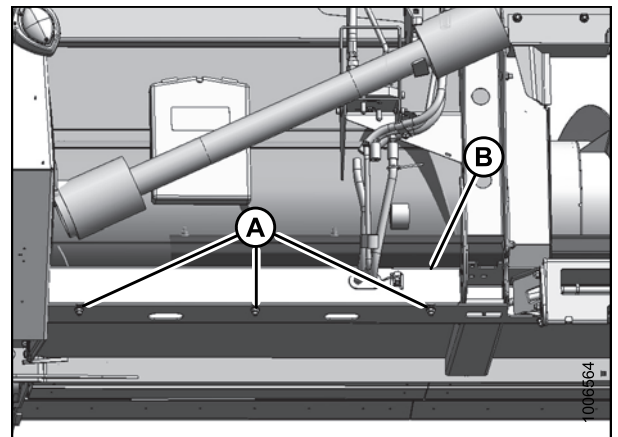


Figure 5.197: Bottom Beam Cover

11. Remove grommet (A) to remove hydraulic hose (if necessary).

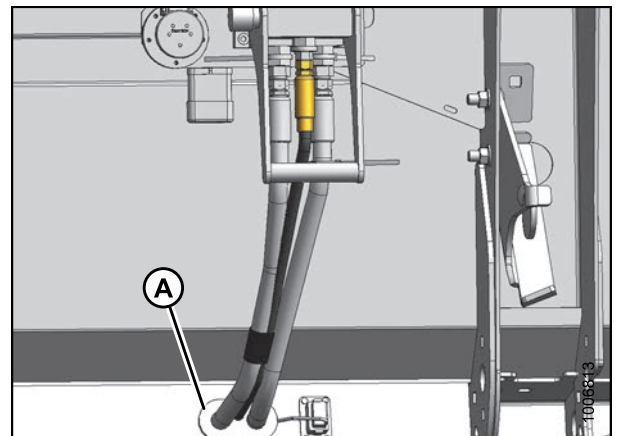


Figure 5.198: Left-Hand Backsheet

MAINTENANCE AND SERVICING

12. Pull hose through grommet (A) in endsheet.

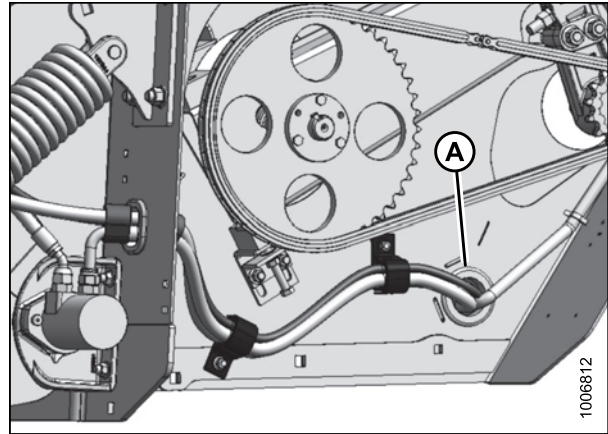


Figure 5.199: Left Endsheat

Installing Master Cylinder Hose

1. Feed hose (A) through grommet (B) in endsheet.
2. Feed hose through clips (C) and grommet (D) to master cylinder.

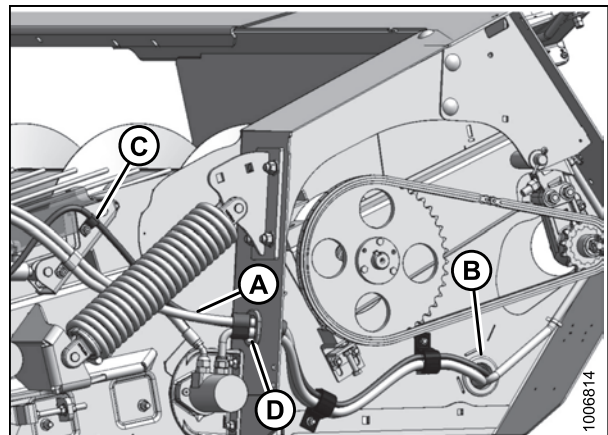


Figure 5.200: Left Endsheat

3. Feed hose (A) through grommet (B).
4. Connect hose (A) to multi-coupler.

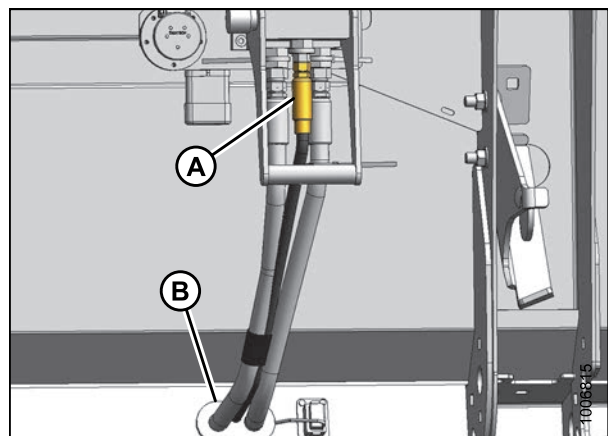


Figure 5.201: Left-Hand Backsheet

MAINTENANCE AND SERVICING

5. Connect hose (A) to master cylinder (B), and secure hose to master cylinder with cable tie (C).

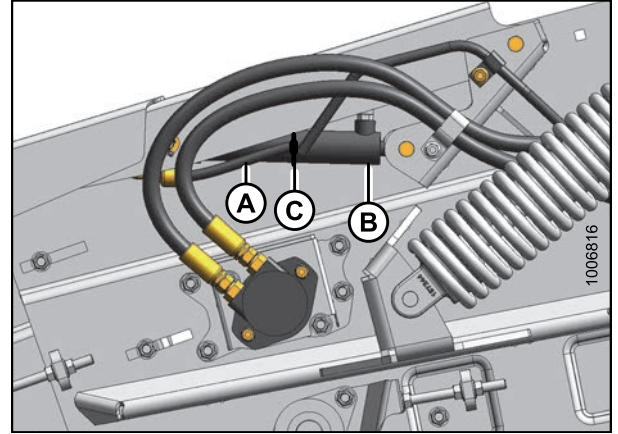


Figure 5.202: Left Side of Header

6. Secure hose with clips (A) and cinch straps (B).

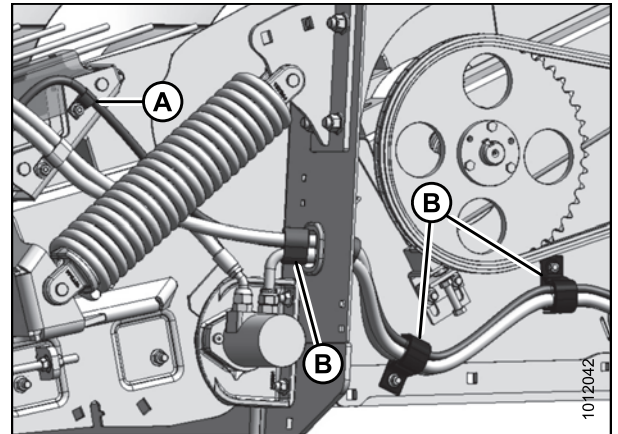


Figure 5.203: Left Side of Header

7. Install bottom beam cover (B) and tighten bolts (A).
8. Close endshield. Refer to [3.3.2 Closing Left-Hand Endshield, page 28](#).
9. Bleed cylinders and lines. Refer to [5.9.4 Bleeding Cylinders and Lines, page 213](#).

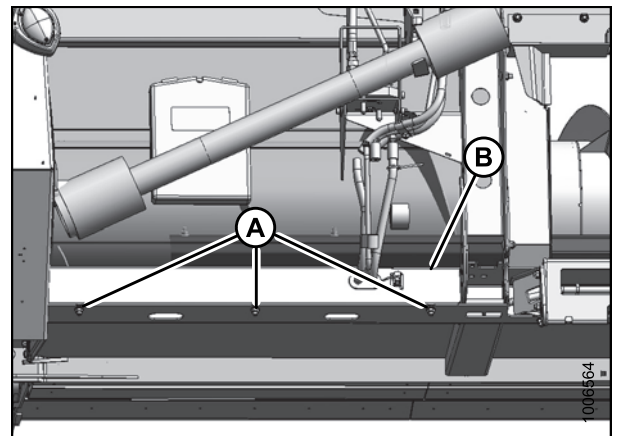


Figure 5.204: Bottom Beam Cover

5.10 Draper Speed Sensor

This section does **not** apply to Case IH and New Holland combines. Refer to your combine operator's manual for further information.

5.10.1 Checking Draper Speed Sensor Position

1. Check clearance (A) between speed sensor and disc. The recommended clearance is 1/8 in. (3 mm).
2. If clearance requires adjustment, refer to [5.10.2 Adjusting Draper Speed Sensor, page 220](#).

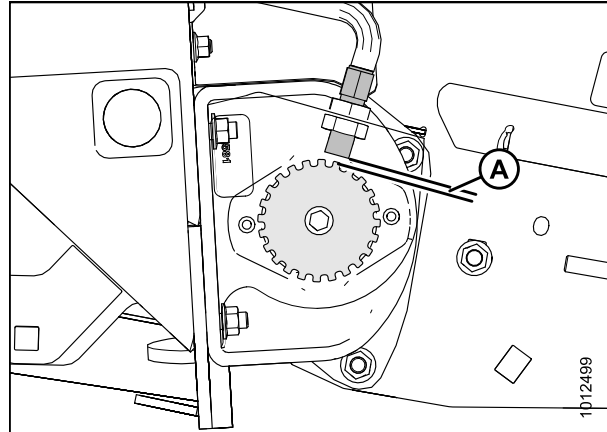


Figure 5.205: Clearance

3. Check vertical alignment (A) of sensor (B) and sensor disc (C). If required, adjust support (D) inboard or outboard to adjust vertical alignment.

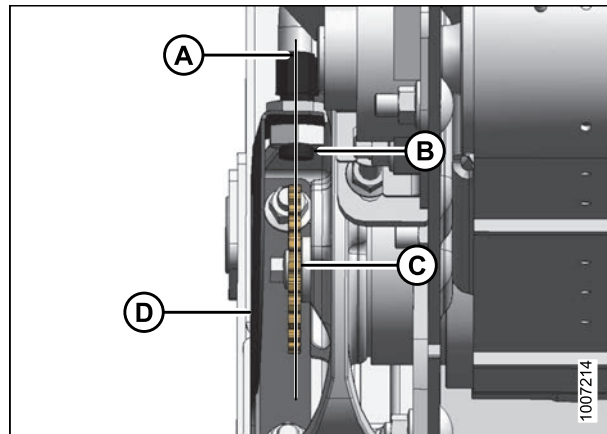


Figure 5.206: Alignment

5.10.2 Adjusting Draper Speed Sensor

The draper speed sensor position is set at the factory, but it may require adjustment if problems occur with the draper speed system or when replacing sensor components. Check the draper speed sensor position prior to making any adjustments. Refer to [5.10.1 Checking Draper Speed Sensor Position, page 220](#).

DANGER

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

1. Lower header to the ground, and lower the hold-down completely.

2. Hold sensor (B) with a wrench and loosen jam nut (C).
3. Turn jam nuts (C) and (A) to achieve the required sensor to disc clearance.
4. Tighten jam nuts (C) and (A).

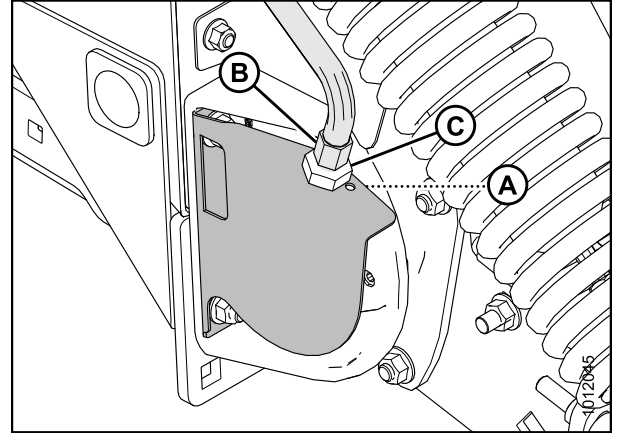


Figure 5.207: Draper Speed Sensor

5.10.3 Replacing Draper Speed Sensor

The speed sensor may require replacement if it is malfunctioning or if service is being performed to adjacent components.



DANGER

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

1. Lower header to the ground, and lower the hold-down completely.
2. Remove lower jam nut (A), and pull sensor (B) from support (C).
3. Disconnect sensor (B) from harness, and remove top jam nut (D).
4. Attach new sensor (B) to harness, and install top jam nut (D) onto sensor.
5. Position sensor (B) in support (C), and secure with lower jam nut (A).
6. Adjust clearance between sensor and sensor disc. Refer to [5.10.2 Adjusting Draper Speed Sensor, page 220](#).

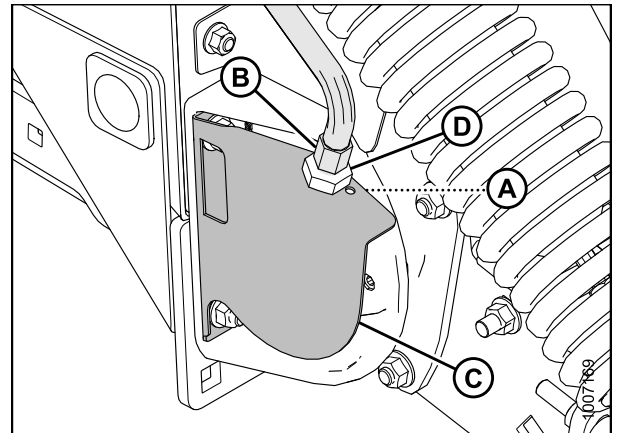


Figure 5.208: Draper Speed Sensor

5.11 Wheels and Tires

There are two wheels and tires on the PW8 Pick-Up Header, one on each side of the header.

DANGER

- Never install a tube in a cracked wheel rim.
- Never weld a wheel rim.
- Make sure all the air is removed from the tire before removing the tire from the rim.
- Never use force on an inflated or partially inflated tire. Make sure the tire is correctly seated before inflating to operating pressure.
- Do NOT remove, install, or repair a tire on a rim unless you have the proper equipment and experience to perform the job. Take the tire and rim to a qualified tire repair shop.
- If the tire is overinflated or is incorrectly position on the rim, 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 propel the tire in any direction and endanger anyone in the area.
- Do NOT exceed the maximum inflation pressure indicated on the tire label.

5.11.1 Removing Wheel

Replace the tire if it is worn or damaged beyond repair.

1. Position header with wheels (A) raised slightly off the ground.

DANGER

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

2. Remove wheel nut (B) using a 30 mm socket wrench.
3. Pull wheel (A) off spindle.

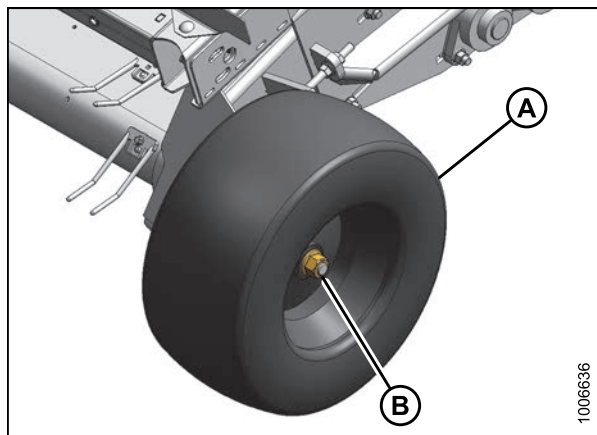


Figure 5.209: Left Side Wheel

5.11.2 Inflating Tire

Maintain correct tire pressure to achieve desired cutting height. Check tire pressure daily.

Table 5.3 Tire (MD #152724)

| Tire | Pressure |
|----------------|--------------------------------------|
| 18.50 x 8.50-8 | 35–45 psi (240–310 kPa) ¹ |

1. Use the lower end of this range if operating on rough terrain.

5.11.3 Installing Wheel

1. Ensure lock washer (A) is installed onto spindle.

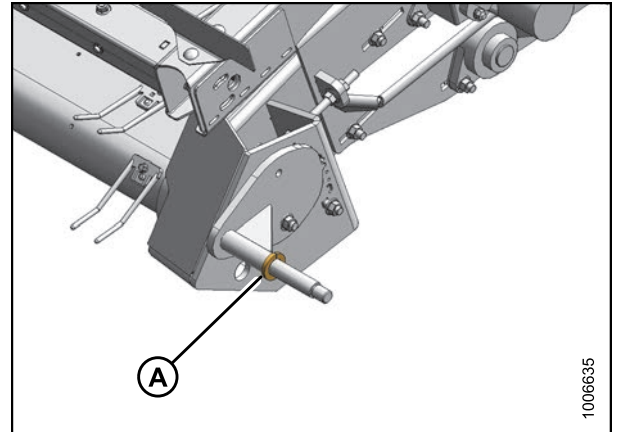


Figure 5.210: Left Side Spindle

2. Install wheel (A) onto spindle and secure with wheel nut (B). Torque to 80 lbf·ft (108 N·m).

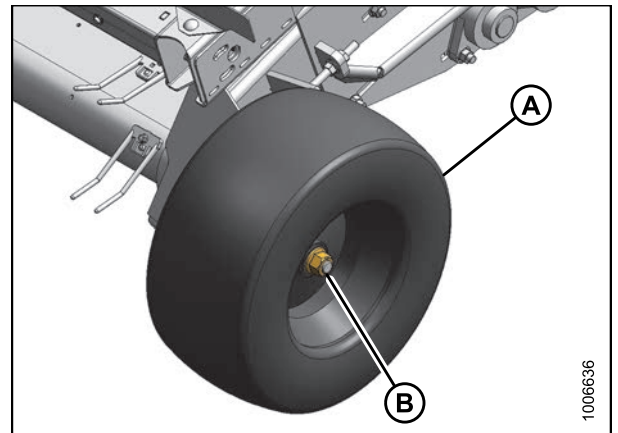


Figure 5.211: Left Side Wheel

5.12 Lights

The transport lights, located at each end of the header, are used when driving the combine on the road with the header attached.

- Use electrical tape and wire clips to prevent wires from dragging or rubbing.
- Keep lights clean, and replace defective bulbs.
- Replace the light housing if it is cracked or broken.

5.12.1 Adjusting Transport Lights

The transport lights should be positioned perpendicular to the endsheet.

DANGER

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

1. Lower header to the ground, shut off combine, and remove key from ignition.
2. If repositioning is required, swivel the lights with hand force.
3. If the swivel is too loose or too tight, loosen jam nut (A) and turn nut (B) so the light maintains its position and can be moved with hand force. Do not overtighten.
4. Tighten jam nut (A).

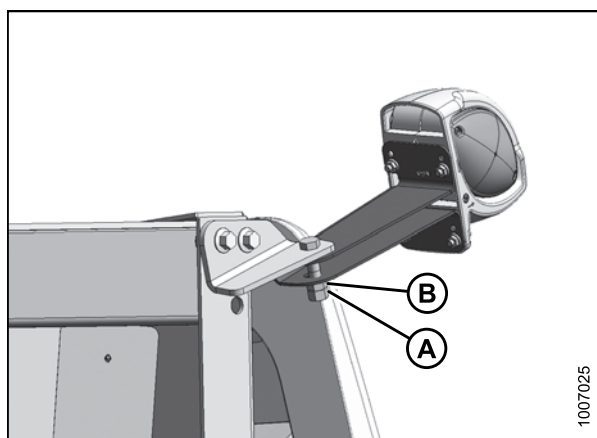


Figure 5.212: Transport Light

5.12.2 Replacing Transport Light Bulb

Transport lights are an important safety feature. Keep lights clean, and replace defective bulbs.

DANGER

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

MAINTENANCE AND SERVICING

1. Lower header to the ground, shut off combine, and remove key from ignition.
2. Remove two screws (A) using a Phillips screwdriver.
3. Pry off the lens (B).
4. Push in and slightly turn bulb counterclockwise. Remove the bulb.
5. Place the new bulb in the socket, push in, and turn clockwise until bulb stops.
6. Replace lens (B) and secure with two screws (A).

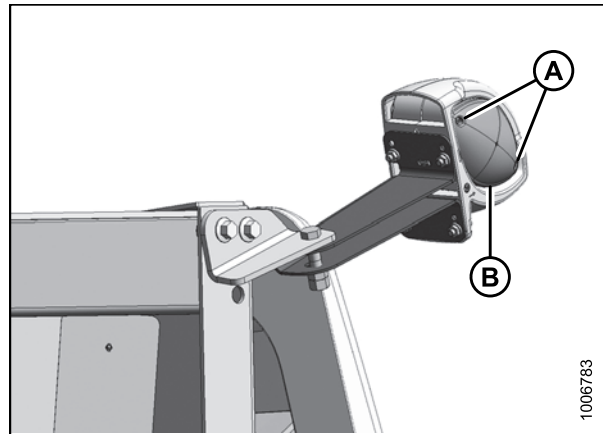


Figure 5.213: Transport Light

5.12.3 Replacing Lens

Transport lights are an important safety feature. Keep lenses clean, and replace if cracked or broken.

DANGER

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

1. Lower header to the ground, shut off combine, and remove key from ignition.
2. Remove two screws (A) using a Phillips screwdriver.
3. Pry off the lens (B).
4. Install new lens (B), and secure with two screws (A).

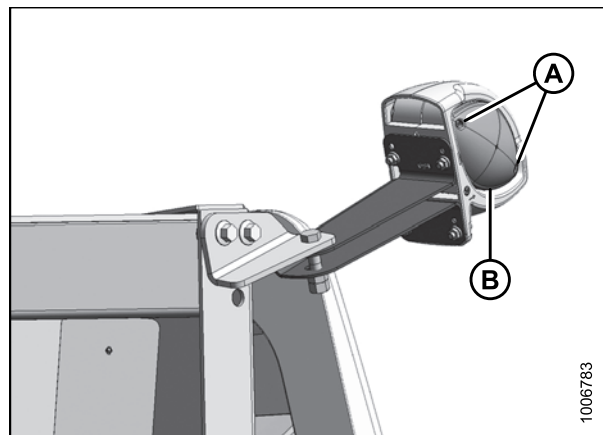


Figure 5.214: Transport Light

5.12.4 Replacing Lamp Housing

Transport lights are an important safety feature. Replace housing if cracked or broken.

DANGER

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

1. Lower header to the ground, shut off combine, and remove key from ignition.
2. Pull wiring harness (A) out of lamp bracket, and locate connectors inside the wiring harness.
3. Disconnect light wiring from harness.
4. Remove four nuts (B), and remove lamp (C) from bracket.
5. Install new lamp (C) on bracket, and secure with four nuts (B).
6. Connect lamp wiring to harness (A), and route wires inside plastic covering. Seal with black tape.
7. Ensure that wiring harness is not damaged, and secure harness inside lamp bracket.
8. Check operation of new lamp.

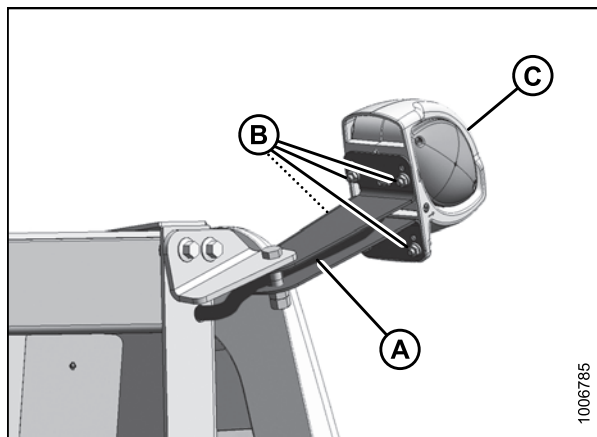


Figure 5.215: Transport Light

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6 Options and Attachments

6.1 Hold-Down Performance Kit

The Hold-Down Performance kit assists with the delivery of light crop onto the pick-up, especially when the fingers have difficulty picking up the crop and have a tendency to throw the crop forward.

The kit attaches to the hold-down bar and consists of a series of spring wires that rotate or lock by moving the centre nut and project forward and downward into the crop.

Attachment hardware and installation instructions are included with the kit.

MD #B5475

Instruction MD #169464

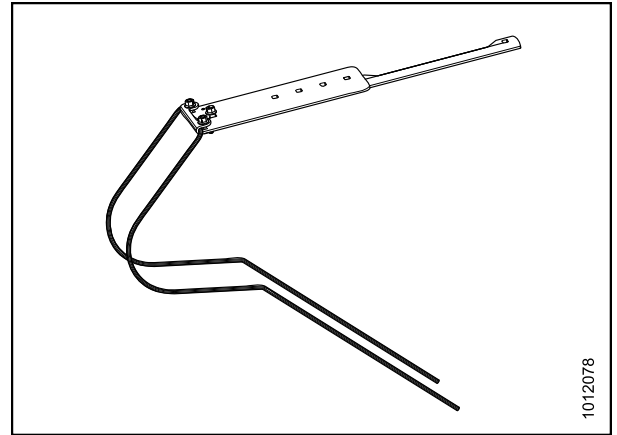


Figure 6.1: Hold-Down Performance Kit

6.2 Combine Completion Package Kits

PW8 Combine Pick-Up Headers are factory configured for particular combine makes, models, and feeder house sizes; however, combine completion packages provide the necessary parts and hardware to modify headers to accommodate other combine models with different feeder house sizes. Refer to [3.9 Changing Header Opening, page 35](#) for a detailed list of supported combine models and feeder house sizes.

Attachment hardware and installation instructions are included with the kits.

| Combine Make | Bundle # |
|----------------------|-----------|
| Case IH, New Holland | MD #B5469 |
| John Deere | MD #B5471 |
| Versatile | MD #B6027 |

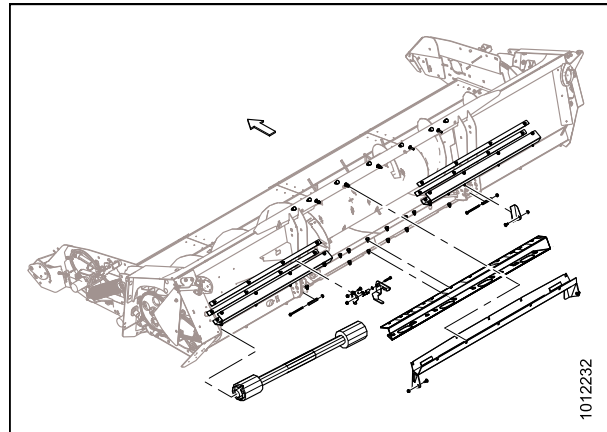


Figure 6.2: Combine Completion Package Kit – Case IH and New Holland

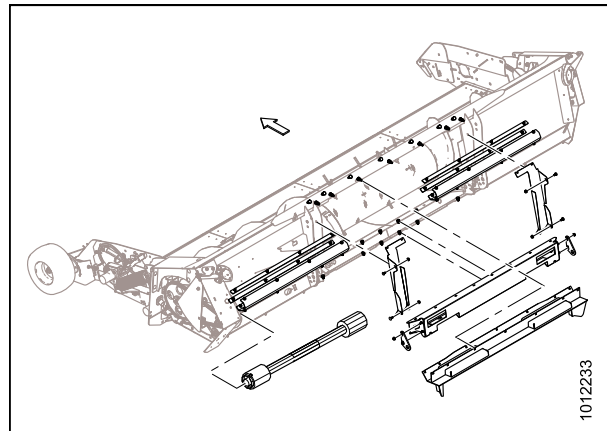


Figure 6.3: Combine Completion Package Kit – John Deere

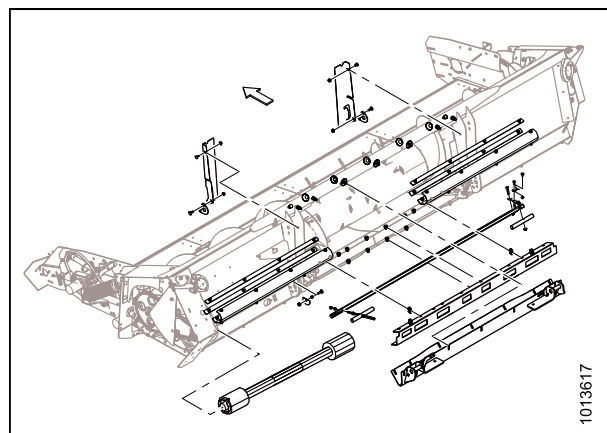


Figure 6.4: Combine Completion Package Kit – Versatile

7 Troubleshooting

| Symptom | Problem | Solution | Refer to Section |
|--|--|--|---|
| Material overshoots the table auger | Draper speed too high | Reduce draper speed until pickup is just pushing the swath. | Adjusting Draper Speed, page 63 |
| | Incorrect header height | Measure and adjust header height to 12 in. (300 mm) from the center of the rear draper roller to the ground. | Header Height, page 70 |
| | Improperly adjusted hold-down rods | Adjust the rod tube so the tips of the rods are close enough to the draper belts to prevent overshoot. | Adjusting Hold-Down Rod Angle, page 76 |
| Swath forms a ball and rolls to the right or left where it is eventually lost off the end of the pick-up | Draper speed too high | Reduce draper speed until pickup is just pushing the swath. | Adjusting Draper Speed, page 63 |
| | Light crop flowing forward and fingers unable to move swath rearward | Add optional hold-down performance kit MD #B5475. | See your Dealer. 6.1 Hold-Down Performance Kit, page 227 |
| Shelling in delicate crops | Draper speed too high | Reduce draper speed until pickup is just pushing the swath. | Adjusting Draper Speed, page 63 |
| | Improperly adjusted hold-down | Raise the hold-down assembly high enough to clear the swath. | Hold-Down Position, page 75 |
| Header leaves material in the field | Pick-up teeth are set too high | Raise wheels to lower the pick-up height. | Pick-Up Height, page 71 |
| | Draper speed too low | Increase draper speed. | Adjusting Draper Speed, page 63 |
| | Pick-up is running too fast (pulling swath apart) | Slow down the pick-up until it is just pushing the swath. | Adjusting Draper Speed, page 63 |
| The header is picking a large amount of dirt and stones | Draper speed too high | Reduce draper speed until pickup is just pushing the swath. | Adjusting Draper Speed, page 63 |
| | Pick-up height too low | Lower wheels to raise the pick-up height. | Pick-Up Height, page 71 |

TROUBLESHOOTING

| Symptom | Problem | Solution | Refer to Section |
|---|--|---|---|
| Material stalls on the header before the auger can pull it into the feeder house | Rough header pan surface | Polish the header pan with emery cloth or buffing wheel. | — |
| | Incorrect header height | Adjust header height. | Header Height, page 70 |
| | Incorrect face plate angle | Header face plate can be adjusted on some combine headers. Adjust combine header tilt so when header is at operating height, the header floor pan and ground are parallel. (Note: Adjust header tilt to Corn Setting from Grain Setting.) | Refer to your combine operator's manual. |
| Draper belts incorrectly tracking | Incorrect tension | Tension draper belts | Adjusting Front Draper Belt Tension, page 78 or Adjusting Rear Draper Belt Tension, page 80 |
| | Dirt/crop buildup on rollers | Remove draper belts and remove dirt/crop buildup from roller surface and roller groove. | 5.7.1 Draper Belts, page 177 |
| | Belts are sometimes tacky when new | Apply talcum or baby powder onto belts to reduce tackiness. Belts may also need to be run loose for the first few hours of break-in. | — |
| Stalling of belts when loaded with crop material | Draper belts are too loose | Increase belt tension. | Adjusting Front Draper Belt Tension, page 78 or Adjusting Rear Draper Belt Tension, page 80 |
| Hold-down slave cylinder lags behind master on lift | Air in system | Bleed cylinders. | 5.9.4 Bleeding Cylinders and Lines, page 213 |
| Hold-down master cylinder lags behind slave on descent and ahead of slave on lift | Obstruction preventing cylinder movement | Check lift cylinder and lift arm attachments. | — |
| | Air in system | Bleed cylinders. | 5.9.4 Bleeding Cylinders and Lines, page 213 |
| | Flow is too restricted | Check hoses and lines. | 5.9.5 Hydraulic Hoses and Lines, page 214 |
| Slave cylinder remains extended more than 1/2 in. (13 mm) when hold-down is fully lowered | Air in system | Bleed cylinders. | 5.9.4 Bleeding Cylinders and Lines, page 213 |

TROUBLESHOOTING

| Symptom | Problem | Solution | Refer to Section |
|---|-----------------------------------|---|--|
| Hold-down remains raised and will not lower | Safety prop is engaged | Disengage safety prop. | 3.5 Engaging Hold-Down Lift Cylinder Safety Props, page 31 |
| | Hydraulics not connected properly | Ensure hydraulic lines are connected properly and not damaged. | 5.9.5 Hydraulic Hoses and Lines, page 214 |
| Driveline clutch is slipping | Clutch is worn | Replace clutch. | Replacing Driveline Clutch, page 147 |
| | Obstruction in auger | Shut off combine, remove key, and remove obstruction. | 3.13 Unplugging the Header, page 83 |
| Pick-up wheels bounce over bumps | Header height is too high | Lower header until rear pick-up roller is 12 in. (305 mm) above the ground. | Header Height, page 70 3.12.4 Adjusting Header Float, page 72 |

8 Reference

8.1 Torque Specifications

The following tables provide the correct torque values for various bolts, cap screws, and hydraulic fittings.

- Tighten all bolts to the torque values specified in the charts (unless otherwise noted throughout this manual).
- Replace hardware with the same strength and grade of bolt.
- Use the torque value tables as a guide and periodically check tightness of bolts.
- Understand torque categories for bolts and cap screws by using their identifying head markings.

8.1.1 Metric Bolt Specifications

Table 8.1 Metric Class 8.8 Bolts and Class 9 Free Spinning Nut

| Nominal Size (A) | Torque (ft·lbf) (*in·lbf) | | Torque (N·m) | |
|------------------|------------------------------|------|--------------|------|
| | Min. | Max. | Min. | Max. |
| 3-0.5 | *13 | *14 | 1.4 | 1.6 |
| 3.5-0.6 | *20 | *22 | 2.2 | 2.5 |
| 4-0.7 | *29 | *32 | 3.3 | 3.7 |
| 5-0.8 | *59 | *66 | 6.7 | 7.4 |
| 6-1.0 | *101 | *112 | 11.4 | 12.6 |
| 8-1.25 | 20 | 23 | 28 | 30 |
| 10-1.5 | 40 | 45 | 55 | 60 |
| 12-1.75 | 70 | 78 | 95 | 105 |
| 14-2.0 | 113 | 124 | 152 | 168 |
| 16-2.0 | 175 | 193 | 236 | 261 |
| 20-2.5 | 341 | 377 | 460 | 509 |
| 24-3.0 | 589 | 651 | 796 | 879 |

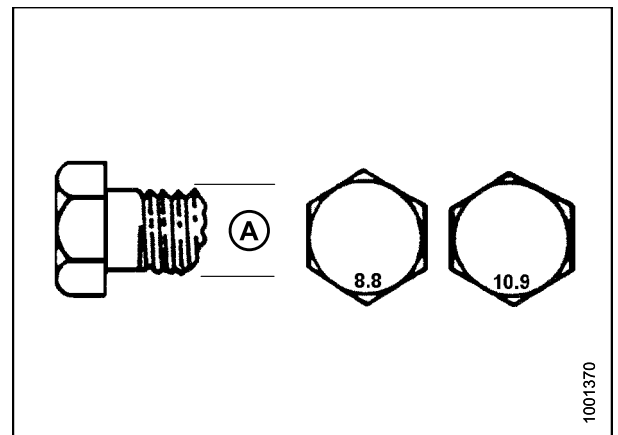


Figure 8.1: Bolt Grades

REFERENCE

Table 8.2 Metric Class 8.8 Bolts and Class 9 Distorted Thread Nut

| Nominal Size (A) | Torque (ft·lbf) (*in·lbf) | | Torque (N·m) | |
|------------------|------------------------------|------|--------------|------|
| | Min. | Max. | Min. | Max. |
| 3-0.5 | *9 | *10 | 1 | 1.1 |
| 3.5-0.6 | *14 | *15 | 1.5 | 1.7 |
| 4-0.7 | *20 | *22 | 2.3 | 2.5 |
| 5-0.8 | *40 | *45 | 4.5 | 5 |
| 6-1.0 | *69 | *76 | 7.7 | 8.6 |
| 8-1.25 | *167 | *185 | 18.8 | 20.8 |
| 10-1.5 | 28 | 30 | 37 | 41 |
| 12-1.75 | 48 | 53 | 65 | 72 |
| 14-2.0 | 77 | 85 | 104 | 115 |
| 16-2.0 | 119 | 132 | 161 | 178 |
| 20-2.5 | 233 | 257 | 314 | 347 |
| 24-3.0 | 402 | 444 | 543 | 600 |

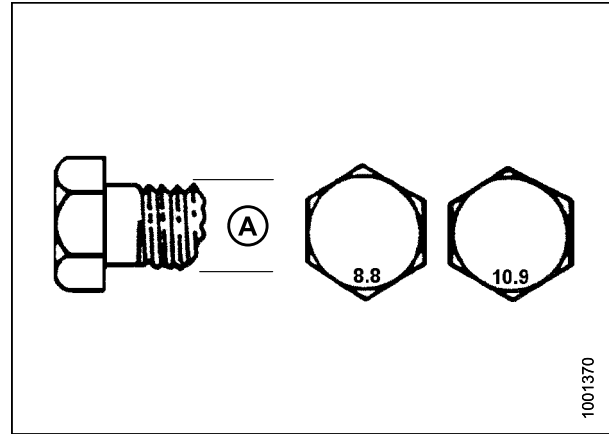


Figure 8.2: Bolt Grades

Table 8.3 Metric Class 10.9 Bolts and Class 10 Free Spinning Nut

| Nominal Size (A) | Torque (ft·lbf) (*in·lbf) | | Torque (N·m) | |
|------------------|------------------------------|------|--------------|------|
| | Min. | Max. | Min. | Max. |
| 3-0.5 | *18 | *19 | 1.8 | 2 |
| 3.5-0.6 | *27 | *30 | 2.8 | 3.1 |
| 4-0.7 | *41 | *45 | 4.2 | 4.6 |
| 5-0.8 | *82 | *91 | 8.4 | 9.3 |
| 6-1.0 | *140 | *154 | 14.3 | 15.8 |
| 8-1.25 | 28 | 31 | 38 | 42 |
| 10-1.5 | 56 | 62 | 75 | 83 |
| 12-1.75 | 97 | 108 | 132 | 145 |
| 14-2.0 | 156 | 172 | 210 | 232 |
| 16-2.0 | 242 | 267 | 326 | 360 |
| 20-2.5 | 472 | 521 | 637 | 704 |
| 24-3.0 | 815 | 901 | 1101 | 1217 |

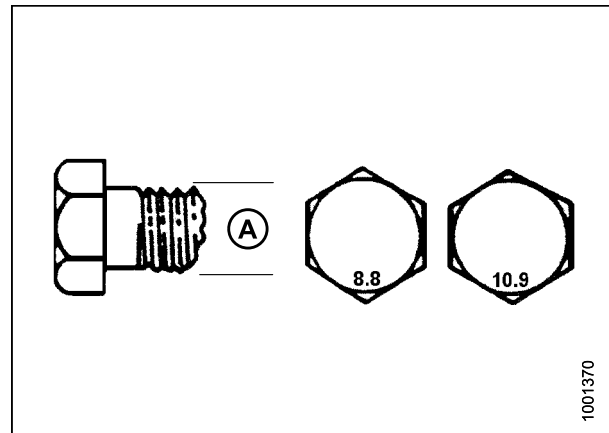


Figure 8.3: Bolt Grades

REFERENCE

Table 8.4 Metric Class 10.9 Bolts and Class 10 Distorted Thread Nut

| Nominal Size (A) | Torque (ft·lbf) (*in·lbf) | | Torque (N·m) | |
|------------------|------------------------------|------|--------------|------|
| | Min. | Max. | Min. | Max. |
| 3-0.5 | *12 | *13 | 1.3 | 1.5 |
| 3.5-0.6 | *19 | *21 | 2.1 | 2.3 |
| 4-0.7 | *28 | *31 | 3.1 | 3.4 |
| 5-0.8 | *56 | *62 | 6.3 | 7 |
| 6-1.0 | *95 | *105 | 10.7 | 11.8 |
| 8-1.25 | 19 | 21 | 26 | 29 |
| 10-1.5 | 38 | 42 | 51 | 57 |
| 12-1.75 | 66 | 73 | 90 | 99 |
| 14-2.0 | 106 | 117 | 143 | 158 |
| 16-2.0 | 165 | 182 | 222 | 246 |
| 20-2.5 | 322 | 356 | 434 | 480 |
| 24-3.0 | 556 | 614 | 750 | 829 |

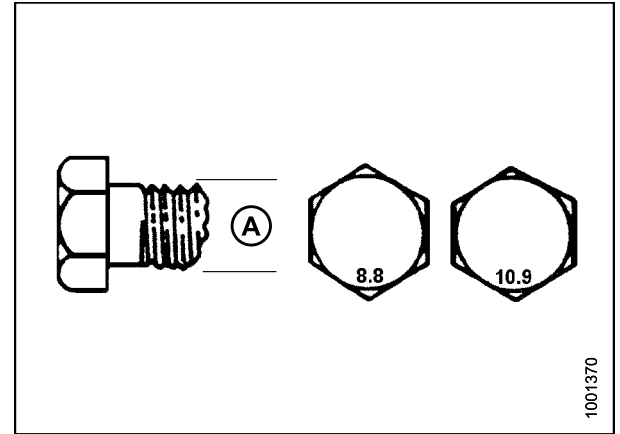


Figure 8.4: Bolt Grades

8.1.2 Metric Bolt Specifications Bolting into Cast Aluminum

Table 8.5 Metric Bolt Bolting into Cast Aluminum

| Nominal Size (A) | Bolt Torque | | | |
|------------------|------------------------|-----|-------------------------|-----|
| | 8.8 (Cast Aluminum) | | 10.9 (Cast Aluminum) | |
| | ft-lbf | N-m | ft-lbf | N-m |
| M3 | – | – | 1 | – |
| M4 | – | – | 2.6 | 4 |
| M5 | – | – | 5.5 | 8 |
| M6 | 6 | 9 | 9 | 12 |
| M8 | 14 | 20 | 20 | 28 |
| M10 | 28 | 40 | 40 | 55 |
| M12 | 52 | 70 | 73 | 100 |
| M14 | – | – | – | – |
| M16 | – | – | – | – |

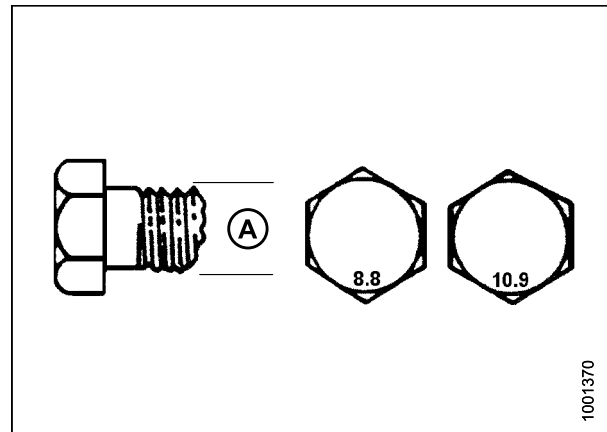


Figure 8.5: Bolt Grades

8.1.3 Flare-Type Hydraulic Fittings

1. Check flare (A) and flare seat (B) for defects that might cause leakage.
2. Align tube (C) with fitting (D) and thread nut (E) onto fitting without lubrication until contact has been made between the flared surfaces.
3. Torque the fitting nut (E) to the specified number of flats from finger tight (FFFT) or to a given torque value in [Table 8.6 Flare-Type Hydraulic Tube Fittings, page 237](#).
4. Use two wrenches to prevent fitting (D) from rotating. Place one wrench on the fitting body (D) and tighten nut (E) with the other wrench to the torque shown.
5. Assess the final condition of the connection.

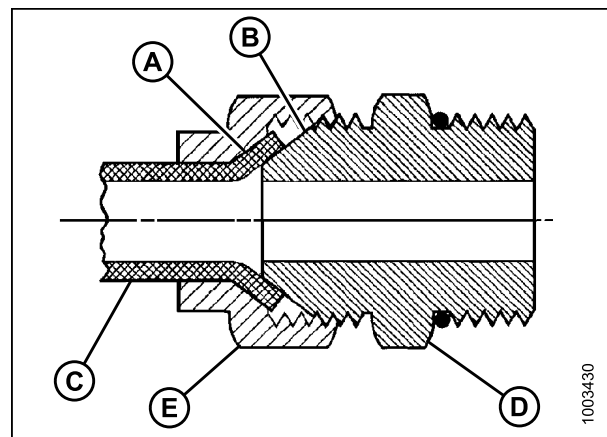


Figure 8.6: Hydraulic Fitting

REFERENCE

Table 8.6 Flare-Type Hydraulic Tube Fittings

| SAE Dash Size | Thread Size (in.) | Torque Value ² | | Flats from Finger Tight (FFFT) | |
|---------------|-------------------|---------------------------|---------|--------------------------------|--------------------|
| | | ft·lbf | N·m | Tube | Swivel Nut or Hose |
| -2 | 5/16–24 | 3–4 | 4–5 | — | — |
| -3 | 3/8–24 | 5–6 | 7–8 | — | — |
| -4 | 7/16–20 | 13–14 | 18–19 | 2-1/2 | 2 |
| -5 | 1/2–20 | 14–15 | 19–21 | 2 | 2 |
| -6 | 9/16–18 | 22–24 | 30–33 | 2 | 1-1/2 |
| -8 | 3/4–16 | 42–46 | 57–63 | 2 | 1-1/2 |
| -10 | 7/8–14 | 60–66 | 81–89 | 1-1/2 | 1-1/2 |
| -12 | 1-1/16–12 | 83–91 | 113–124 | 1-1/2 | 1-1/4 |
| -14 | 1-3/16–12 | 100–110 | 136–149 | 1-1/2 | 1-1/4 |
| -16 | 1-5/16–12 | 118–130 | 160–176 | 1-1/2 | 1 |
| -20 | 1-5/8–12 | 168–184 | 228–250 | 1 | 1 |
| -24 | 1-7/8–12 | 195–215 | 264–291 | 1 | 1 |
| -32 | 2-1/2–12 | 265–291 | 359–395 | 1 | 1 |
| -40 | 3–12 | — | — | 1 | 1 |

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

8.1.4 O-Ring Boss (ORB) Hydraulic Fittings (Adjustable)

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

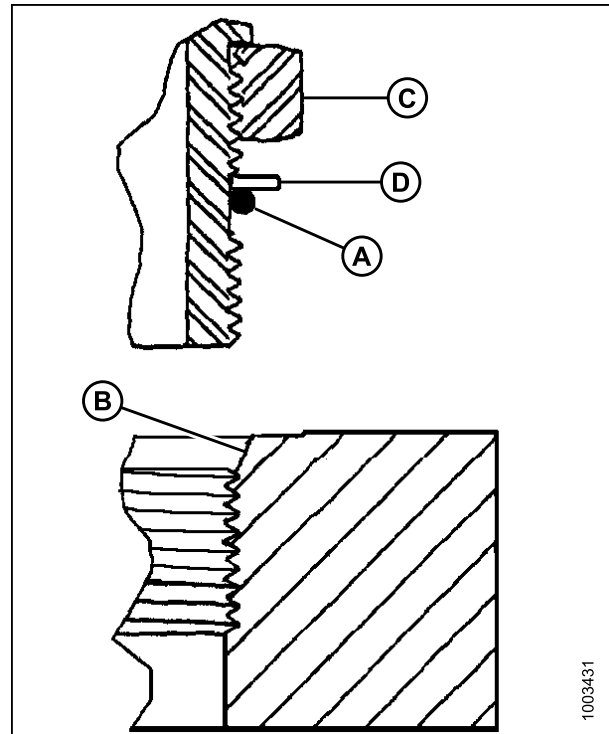


Figure 8.7: Hydraulic Fitting

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

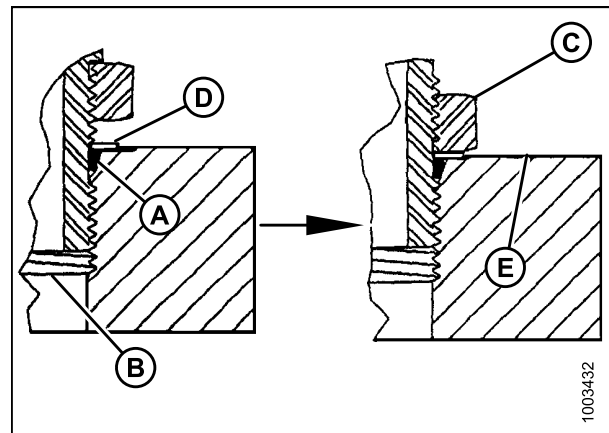


Figure 8.8: Hydraulic Fitting

REFERENCE

Table 8.7 O-Ring Boss (ORB) Hydraulic Fittings (Adjustable)

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

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

REFERENCE

8.1.5 O-Ring Boss (ORB) Hydraulic Fittings (Non-Adjustable)

1. Inspect O-ring (A) and seat (B) for dirt or obvious defects.
2. Check that O-ring (A) is **NOT** on the threads and adjust if necessary.
3. Apply hydraulic system oil to the O-ring.
4. Install fitting (C) into port until fitting is hand tight.
5. Torque fitting (C) according to the values in Table 8.8 *O-Ring Boss (ORB) Hydraulic Fittings (Non-Adjustable)*, page 240.
6. Check the final condition of the fitting.

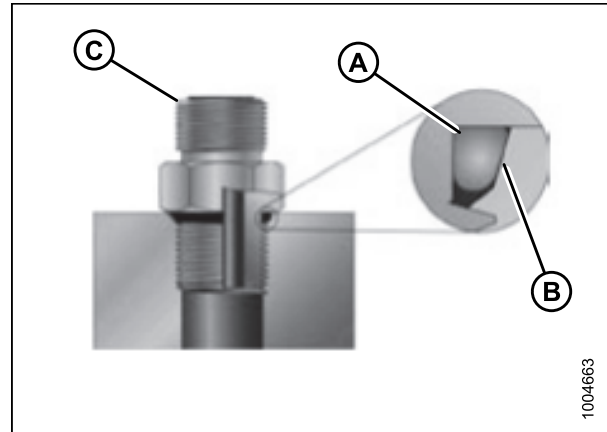


Figure 8.9: Hydraulic Fitting

Table 8.8 O-Ring Boss (ORB) Hydraulic Fittings (Non-Adjustable)

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

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

8.1.6 O-Ring Face Seal (ORFS) Hydraulic Fittings

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

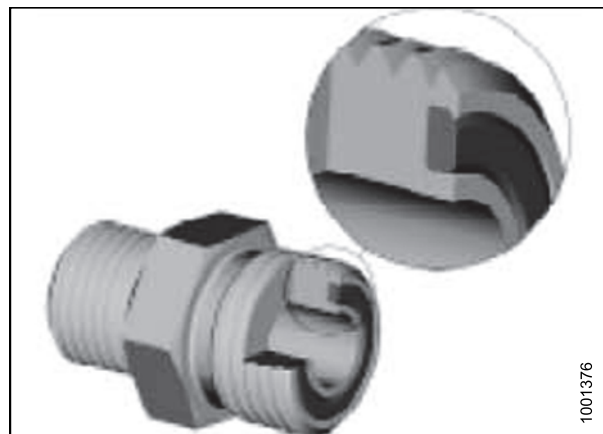


Figure 8.10: Hydraulic Fitting

2. Apply hydraulic system oil to the O-ring (B).
3. Align the tube or hose assembly so that the flat face of the sleeve (A) or (C) comes in full contact with O-ring (B).
4. Thread tube or hose nut (D) until hand-tight. The nut should turn freely until it is bottomed out.
5. Torque fittings according to the values in Table [8.9 O-Ring Face Seal \(ORFS\) Hydraulic Fittings, page 242](#).

NOTE:

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

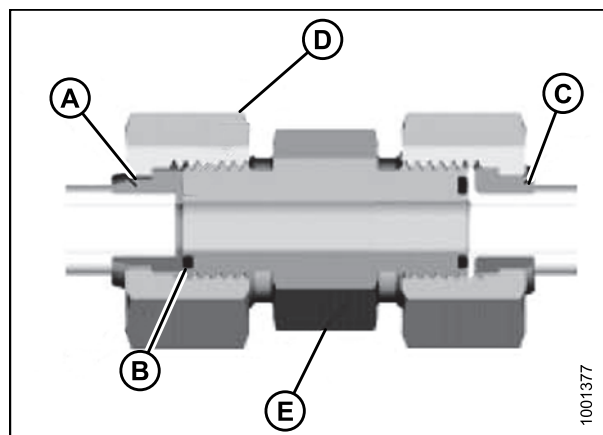


Figure 8.11: Hydraulic Fitting

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

REFERENCE

Table 8.9 O-Ring Face Seal (ORFS) Hydraulic Fittings

| SAE Dash Size | Thread Size (in.) | Tube O.D. (in.) | Torque Value ⁵ | |
|---------------|-------------------|-----------------|---------------------------|---------|
| | | | ft·lbf | N·m |
| -3 | Note ⁶ | 3/16 | — | — |
| -4 | 9/16 | 1/4 | 18–21 | 25–28 |
| -5 | Note ⁶ | 5/16 | — | — |
| -6 | 11/16 | 3/8 | 29–32 | 40–44 |
| -8 | 13/16 | 1/2 | 41–45 | 55–61 |
| -10 | 1 | 5/8 | 59–65 | 80–88 |
| -12 | 1-3/16 | 3/4 | 85–94 | 115–127 |
| -14 | Note ⁶ | 7/8 | — | — |
| -16 | 1-7/16 | 1 | 111–122 | 150–165 |
| -20 | 1-11/16 | 1-1/4 | 151–167 | 205–226 |
| -24 | 1–2 | 1-1/2 | 232–256 | 315–347 |
| -32 | 2-1/2 | 2 | 376–414 | 510–561 |

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

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

8.2 Conversion Chart

Table 8.10 Conversion Chart

| Quantity | Inch-Pound Units | | Factor | SI Units (Metric) | |
|-------------|-----------------------------|------------------|---------------------------------------|---------------------|-----------------------|
| | Unit Name | Abbreviation | | Unit Name | Abbreviation |
| Area | Acres | acres | $\times 0.4047 =$ | Hectares | ha |
| Flow | US gallons per minute | gpm | $\times 3.7854 =$ | Liters per minute | L/min |
| Force | Pounds force | lbf | $\times 4.4482 =$ | Newtons | N |
| Length | Inch | in. | $\times 25.4 =$ | Millimeters | mm |
| | Foot | ft. | $\times 0.305 =$ | Meters | m |
| Power | Horsepower | hp | $\times 0.7457 =$ | Kilowatts | kW |
| Pressure | Pounds per square inch | psi | $\times 6.8948 =$ | Kilopascals | kPa |
| | | | $\times .00689 =$ | Megapascals | MPa |
| | | | $\div 14.5038 =$ | Bar (Non-SI) | bar |
| Torque | Pound feet or foot pounds | ft-lbf | $\times 1.3558 =$ | Newton meters | N·m |
| | Pound inches or inch pounds | in-lbf | $\times 0.1129 =$ | Newton meters | N·m |
| Temperature | Degrees Fahrenheit | °F | $(^{\circ}\text{F}-32) \times 0.56 =$ | Celsius | °C |
| Velocity | Feet per minute | ft/min | $\times 0.3048 =$ | Meters per minute | m/min |
| | Feet per second | ft/s | $\times 0.3048 =$ | Meters per second | m/s |
| | Miles per hour | mph | $\times 1.6063 =$ | Kilometres per hour | km/h |
| Volume | US gallons | US gal | $\times 3.7854 =$ | Liters | L |
| | Ounces | oz. | $\times 29.5735 =$ | Milliliters | ml |
| | Cubic inches | in. ³ | $\times 16.3871 =$ | Cubic centimeters | cm ³ or cc |
| Weight | Pounds | lbs | $\times 0.4536 =$ | Kilograms | kg |

8.3 Recommended Fluids and Lubricants

Keep your machine operating at top efficiency by using only clean lubricants and by ensuring the following:

- Use clean containers to handle all lubricants.
- Store lubricants in an area protected from dust, moisture, and other contaminants.

Table 8.11 Recommended Lubricants

| Lubricant | Specification | Description | Use |
|-----------|-------------------|---|--|
| Grease | SAE multi-purpose | High temperature extreme pressure (EP2) performance with 1% max molybdenum disulphide (NLGI Grade 2) lithium base | As required unless otherwise specified |
| | | Extreme pressure (EP) performance with 1.5–5% molybdenum disulphide (NLGI Grade 2) lithium base | Drive motor shaft |
| Oil | SAE 30 | — | Auger drive chain |

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