

# **PW8 Pick-Up Header**

**Operator's Manual**

169489 Revision A

Original Instruction


This manual contains instructions for safety, operation, and maintenance/service for the MacDon® PW8 Pick-Up Header.



1006866

Published in March, 2014

# Declaration of Conformity

		
<h2>EC Declaration of Conformity</h2>		
<p><b>MacDon Industries Ltd</b> 680 Moray Street Winnipeg, Manitoba, Canada R3J 3S3</p>		
<p><i>The undersigned hereby declares that:</i></p>		
<b>Machine Type:</b>	<i>Combine Pick-Up Header</i>	
<b>Model:</b>	<i>Series PW8</i>	
<b>Serial Number(s):</b>	<i><u>As per Shipping Document</u></i>	
<p><i>fulfills all relevant provisions and essential requirements of the following directives:</i></p>		
<b>Directive</b>	<b>Number</b>	<b>Certification Method</b>
Machinery Directive	2006/42/EC	Self-Certification
<p><i>Name and address of the person in the European Community authorized to compile the technical construction file:</i></p>		
<p><b>Johannes Molitor</b> Schwarzwald Strasse 67 66482 Zweibrücken / Germany HRB 31002, Amtsgericht Zweibrücken</p>		
<b>Place of Declaration:</b>	<u>Winnipeg, Manitoba, Canada</u>	<b>Name:</b> <u>Ibrahim Saleh</u>
<b>Date of Declaration:</b>	<u>17 December 2013</u>	<b>Title:</b> <u>Director, Product Integrity</u>

1006936

Figure 1: EC Declaration of Conformity

# 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).

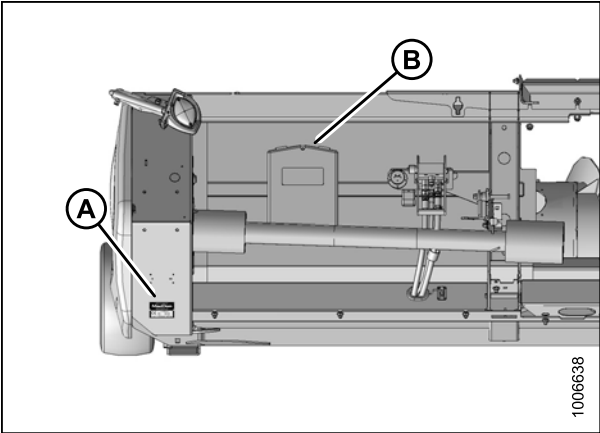


Figure 2

# Introduction

This manual describes operating and maintenance procedures for the MacDon Swathmaster™ Combine Pick-Up Headers for the following combines:

Combine	Model
Case IH	5088, 6088, 7088, 7010, 8010, 7120, 8120, 9120, 5130, 6130, 7130, 7230, 8230, 9230, 5140, 6140, 7140
John Deere	60, 70, and S Series
New Holland	All CR/CX Series

CAREFULLY READ ALL THE MATERIAL PROVIDED BEFORE ATTEMPTING TO UNLOAD, ASSEMBLE, OR USE THE MACHINE. Store this operator’s manual and the parts catalog in the manual case (B) attached to the back of the header.

Use this manual as your first source of information about the machine. If you follow the instructions given in this manual, the pick-up header will work well for many years. Use the Table of Contents and the Index to guide you to specific areas. Study the Table of Contents to familiarize yourself with how the material is organized.

The PW8 Pick-Up Header Parts Catalog (MD #169497) is also supplied with your new header.

Keep this manual handy for frequent reference, and to pass on to new Operators or Owners. Call your MacDon Dealer if you need assistance, information, or additional copies of this manual.



# TABLE OF CONTENTS

Declaration of Conformity .....	i
Serial Number .....	ii
Introduction .....	ii
<b>1 Safety .....</b>	<b>1</b>
1.1 Safety Alert Symbols .....	1
1.2 Signal Words .....	2
1.3 General Safety .....	3
1.4 Maintenance Safety .....	5
1.5 Hydraulic Safety .....	6
1.6 Tire Safety .....	7
1.7 Safety Signs .....	8
1.7.1 Installing Safety Decals .....	8
1.8 Safety Sign Locations .....	9
1.9 Interpreting Safety Signs .....	11
<b>2 Description .....</b>	<b>17</b>
2.1 Definitions .....	17
2.2 PW8 Header Specifications .....	19
2.3 PW8 Header Dimensions .....	20
2.4 PW8 Component Identification .....	21
<b>3 Operation .....</b>	<b>23</b>
3.1 Owner/Operator Responsibilities .....	23
3.2 Operational Safety .....	24
3.3 Endshields .....	25
3.3.1 Opening LH Endshield .....	25
3.3.2 Closing LH Endshield .....	26
3.4 Header Lift Cylinder Safety Props .....	28
3.5 Hold-Down Lift Cylinder Safety Props .....	29
3.6 Daily Start-up Check .....	30
3.7 Shutdown Procedure .....	31
3.8 Break-In Period .....	32
3.9 Changing Header Opening .....	33
3.10 Header Attachment and Detachment .....	34
3.10.1 Case IH .....	34
Attaching to Case IH Combine .....	34
Detaching from Case IH Combine .....	37
3.10.2 John Deere 60, 70, and S Series .....	41
Attaching to John Deere 60, 70 and S Series Combine .....	41
Detaching from John Deere 60, 70, and S Series Combine .....	45
3.10.3 New Holland CR/CX Series Combine .....	47
Attaching to New Holland CR/CX Series Combine .....	47
Detaching from New Holland CR/CX Combine .....	51
3.11 Header Transport .....	54
3.11.1 Transport Lights .....	54
3.12 Header Operation .....	55
3.12.1 Operating Speed .....	55
Adjusting Draper Speed .....	56
3.12.2 Auger .....	56
Auger Speed .....	56
Auger Position .....	56
Auger Float .....	58
Stripper Plate Clearance .....	61
3.12.3 Operating Height .....	62
Header Height .....	62

## TABLE OF CONTENTS

	Pick-Up Height .....	63
3.12.4	Hold-Down.....	65
	Hold-Down Position .....	65
	Hold-Down Rod Angle.....	66
3.12.5	Crop Deflectors .....	66
	Installing Crop Deflectors .....	66
	Removing Crop Deflectors.....	67
3.12.6	Draper Belt Tension .....	68
	Checking Draper Belt Tension.....	68
	Adjusting Draper Belt Tension on Front Deck.....	69
	Adjusting Draper Belt Tension on Rear Deck .....	69
3.12.7	Driveline .....	71
	Clutch .....	71
	Guard .....	71
3.13	Unplugging the Header .....	72
3.14	Storing the Header.....	73
<b>4</b>	<b>Maintenance and Servicing .....</b>	<b>75</b>
4.1	Prepare Header for Servicing .....	75
4.2	Maintenance Specifications .....	76
4.2.1	Torque Specifications .....	76
	Metric Bolt Specifications .....	76
	Metric Bolt Specifications Bolting into Cast Aluminum .....	79
	Flare-Type Hydraulic Fittings .....	79
	O-Ring Boss (ORB) Hydraulic Fittings (Adjustable) .....	81
	O-Ring Boss (ORB) Hydraulic Fittings (Non-Adjustable) .....	83
	O-Ring Face Seal (ORFS) Hydraulic Fittings .....	84
4.2.2	Recommended Fluids and Lubricants .....	85
4.2.3	Conversion Chart .....	86
4.3	Maintenance Requirements .....	87
4.3.1	Maintenance Schedule .....	87
	Maintenance Schedule/Record .....	88
4.3.2	Pre-Season/Annual Service .....	89
4.3.3	End of Season Service .....	89
4.4	Lubrication .....	90
4.4.1	Greasing Procedure .....	90
4.4.2	Greasing Points .....	91
4.4.3	Sealed Bearing .....	92
4.5	Endshields .....	93
4.5.1	Removing LH Endshield .....	93
4.5.2	Installing LH Endshield .....	94
4.5.3	Replacing Endshield Brackets.....	95
4.6	Drives .....	97
4.6.1	Header Driveshaft .....	97
4.6.2	Header Driveline .....	97
	Removing Header Driveline.....	97
	Installing Header Driveline.....	99
	Replacing Driveline Clutch.....	100
	Driveline Guard .....	101
	Driveline Splined Shaft.....	105
4.6.3	Draper Drives.....	105
	Removing Front Hydraulic Motor.....	105
	Installing Front Hydraulic Motor.....	106
	Removing Rear Hydraulic Motor .....	107
	Installing Rear Hydraulic Motor .....	108

## TABLE OF CONTENTS

	Removing Hydraulic Motor Hoses .....	109
	Installing Hydraulic Motor Hoses .....	111
4.6.4	Auger Drive .....	113
	Auger Drive Chain .....	113
	Auger Drive Sprockets .....	117
4.7	Auger .....	123
4.7.1	Replacing Auger Fingers .....	123
4.7.2	Replacing Auger Finger Guides .....	124
4.7.3	Replacing Stripper Plates .....	126
4.7.4	Replacing Flighting Extensions .....	127
4.8	Decks .....	128
4.8.1	Draper Belts .....	128
	Removing Front Draper Belt .....	128
	Installing Front Draper Belt .....	129
	Removing Rear Draper Belt .....	131
	Installing Rear Draper Belt .....	132
4.8.2	Draper Fingers/Draper Guides .....	133
	Replacing Draper Fingers .....	134
	Replacing Draper Guide .....	134
4.8.3	Draper Roll Bearings .....	136
	Rear Deck - Drive Roller Bearings .....	136
	Rear Deck - Idler Roller Bearings .....	144
	Front Deck - Drive Roller .....	146
	Front Deck - Idler Roller .....	149
4.9	Hold-Down .....	151
4.9.1	Replacing Fiberglass Rods .....	151
4.9.2	Replacing Hold-Down Hydraulic Cylinders .....	152
	Master Cylinder .....	153
	Slave Cylinder .....	155
	Bleeding Cylinders and Lines .....	159
4.9.3	Hydraulic Hoses and Lines .....	160
	Removing Master Cylinder Hose .....	160
	Installing Master Cylinder Hose .....	163
4.10	Height Controllers .....	165
4.11	Draper Speed Sensor .....	166
4.11.1	Checking Draper Speed Sensor Position .....	166
4.11.2	Adjusting Draper Speed Sensor .....	166
4.11.3	Replacing Draper Speed Sensor .....	167
4.12	Wheels and Tires .....	169
4.13	Lights .....	171
4.13.1	Adjusting Transport Lights .....	171
4.13.2	Replacing Transport Light Bulb .....	172
4.13.3	Replacing Lens .....	172
4.13.4	Replacing Lamp Housing .....	173
<b>5</b>	<b>Troubleshooting .....</b>	<b>175</b>
<b>6</b>	<b>Options and Attachments .....</b>	<b>179</b>
6.1	Hold-Down Performance Kit .....	179
<b>7</b>	<b>Unloading and Assembly .....</b>	<b>181</b>
	<b>Index .....</b>	<b>183</b>



# 1 Safety

## 1.1 Safety Alert Symbols

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

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: Read Operator's Manual Before Operating**

## SAFETY

### 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.

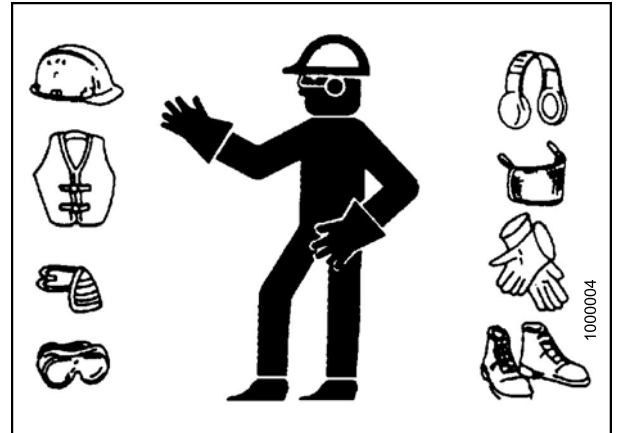


Figure 1.2

- You may need:

- A hard hat
- Protective footwear with slip resistant soles
- Protective glasses or goggles
- Heavy gloves
- Wet weather gear
- A respirator or filter mask
- Hearing protection

Be aware that exposure to loud noise can cause impairment or loss of hearing. Wearing suitable hearing protection devices such as ear muffs or ear plugs. These will help protect against objectionable or loud noises.

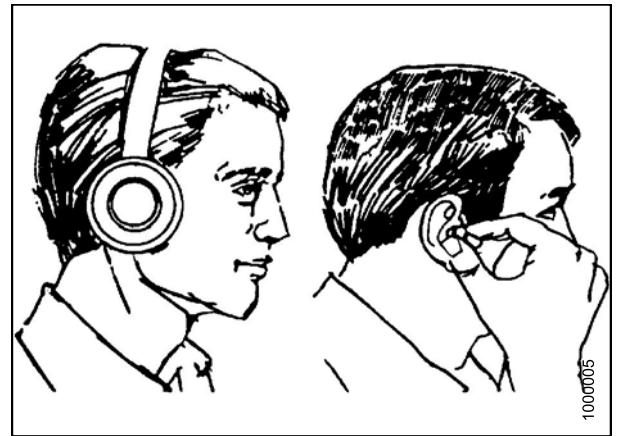


Figure 1.3

- 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 to get finished. Take the time to consider the safest way. Never ignore warning signs of fatigue.

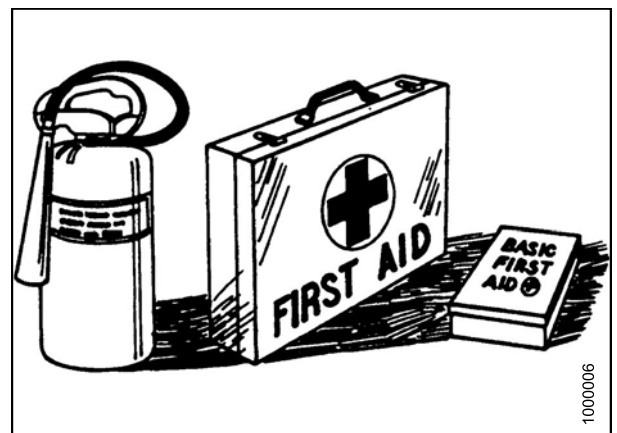


Figure 1.4

## 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

- 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.
- Stop engine and remove key from ignition before leaving operator's seat for any reason. A child or even a pet could engage an idling machine.

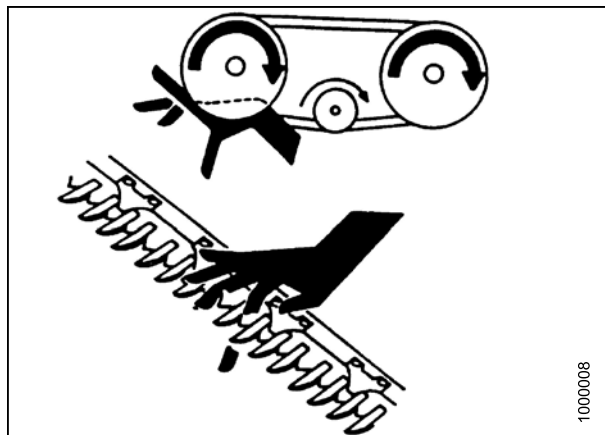


Figure 1.6

- Keep the area used for servicing machinery 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, are 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



## 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 area clean and dry.
  - Be sure electrical outlets and tools are properly grounded.
  - Use adequate light for the job at hand.
- Relieve pressure from hydraulic circuits before servicing and/or disconnecting the machine.
- Before applying pressure to a hydraulic system, make sure all components are tight and that steel lines, hoses, and couplings are in good condition.
- 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 and repairs or when making any adjustments.
- Install transport lock or place safety stands under the frame before working under the header.
- 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 knife) 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: Slip on Puddle



Figure 1.9: Keep Away

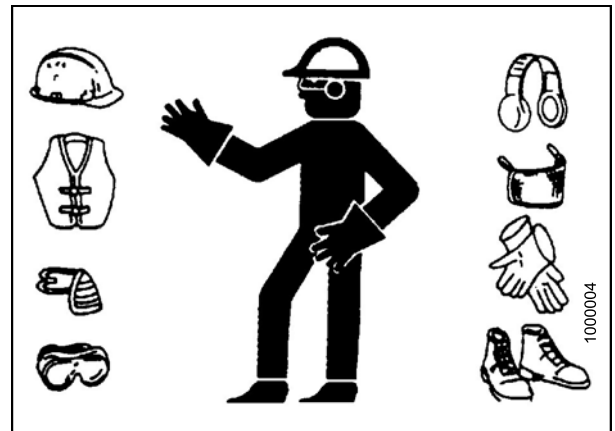


Figure 1.10: Safety Gear

## 1.5 Hydraulic Safety

- Always place all hydraulic controls in Neutral before dismounting.
- Make sure that all components in the hydraulic system are kept in good condition and clean.
- 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. Such makeshift repairs will fail suddenly and create a hazardous and unsafe condition.

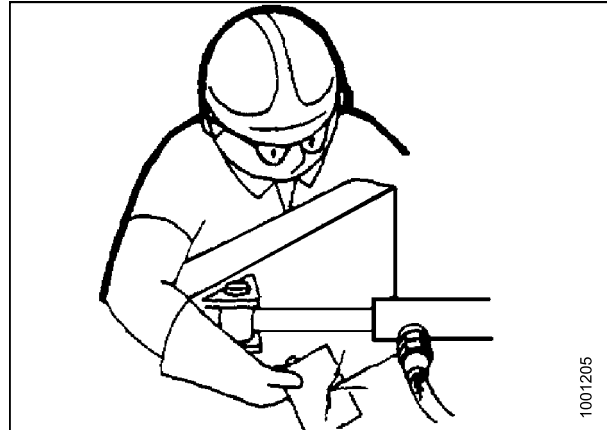


Figure 1.11: Checking Hydraulic Leaks

- Wear proper hand and eye protection when searching for a high-pressure hydraulic leak. 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

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

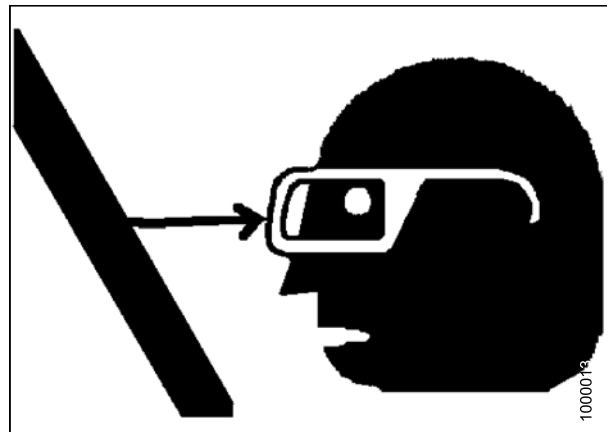


Figure 1.13: Wear Safety Glasses

## SAFETY

### 1.6 Tire Safety

- Failure to follow proper procedures when mounting a tire on a wheel or rim can produce an explosion that may result in serious injury or death.

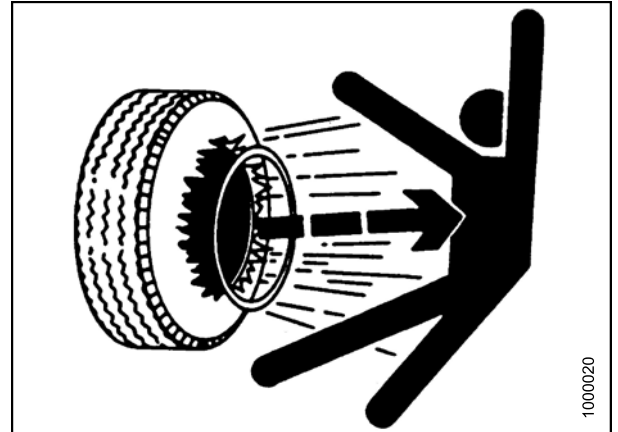


Figure 1.14: Over-Inflating a Tire

- Do **NOT** attempt to mount a tire unless you have the proper training and equipment.

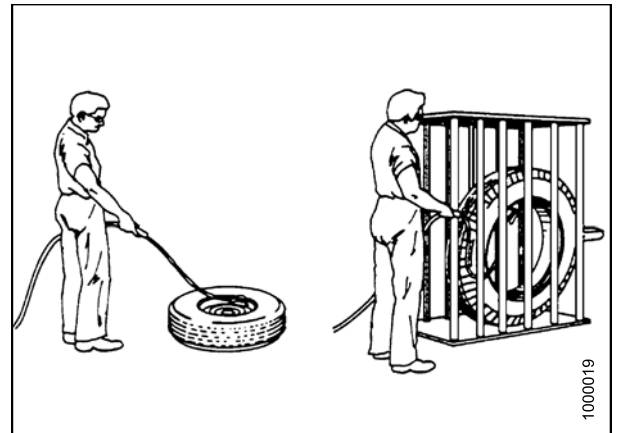


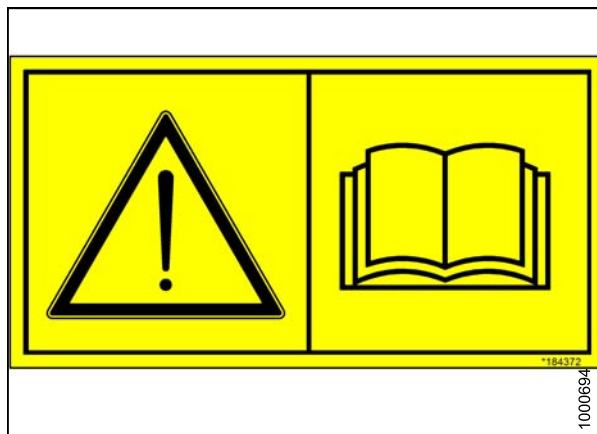
Figure 1.15: Safely Filling a Tire with Air

- Have a qualified tire dealer or repair service perform required tire maintenance.

## SAFETY

### 1.7 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 1.16: Read Operator's Manual before Operating**

#### 1.7.1 Installing Safety Decals

To install a safety decal, follow these steps:

1. Be sure the installation area is clean and dry.
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. Small air pockets can be smoothed out or pricked with a pin.

# SAFETY

## 1.8 Safety Sign Locations

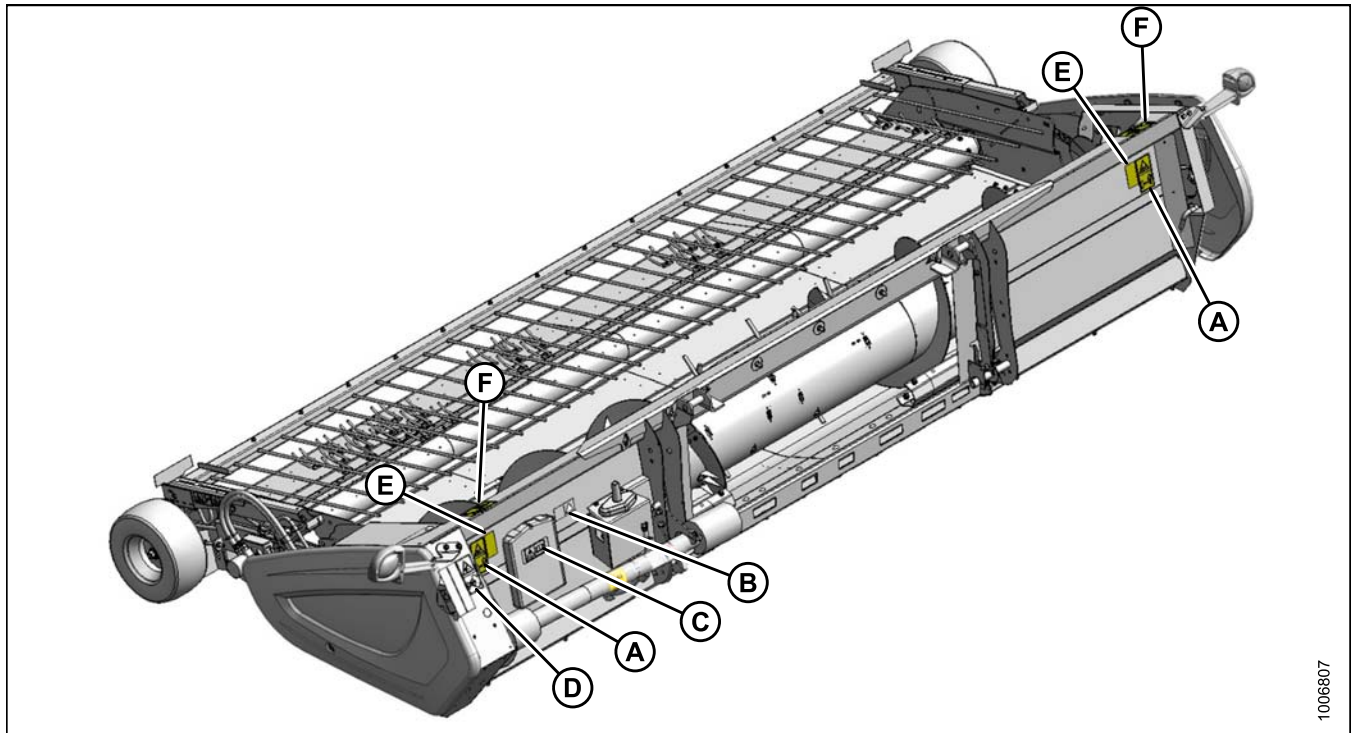


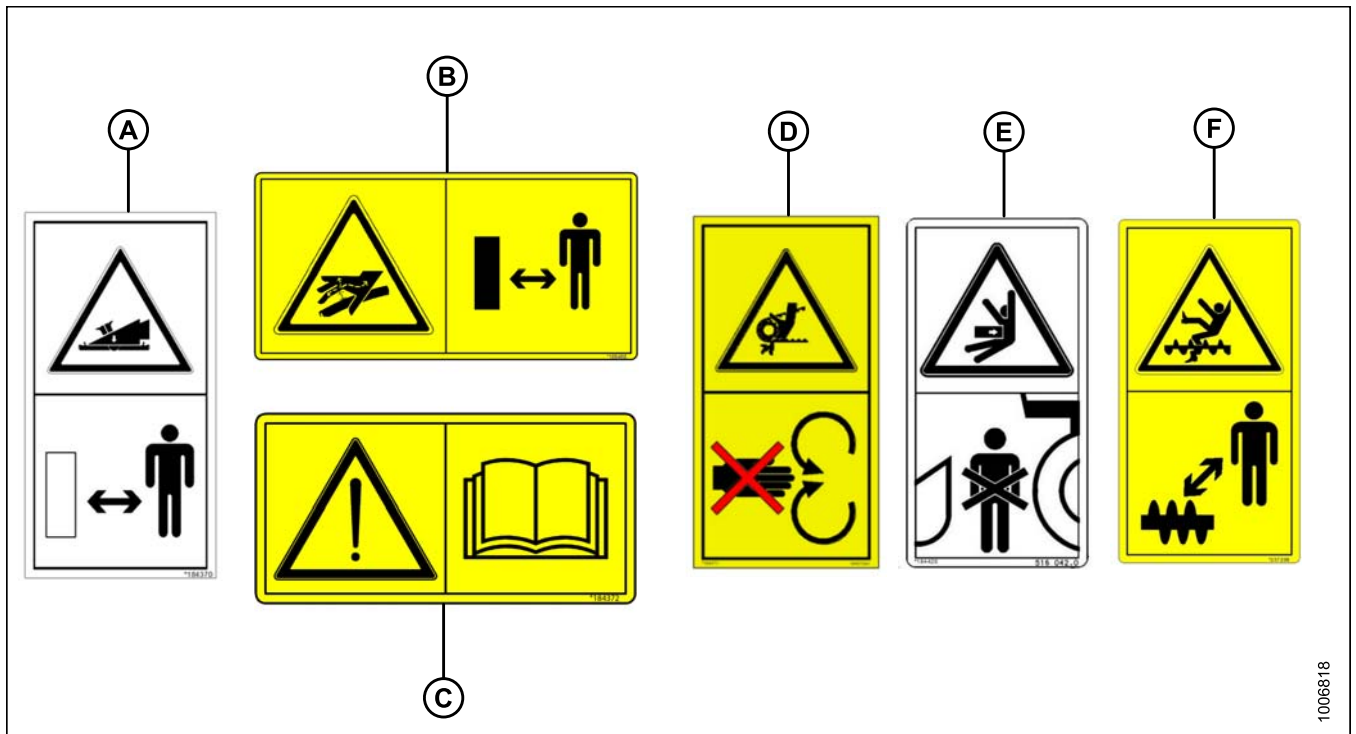
Figure 1.17: Header Decals

A - MD #184370  
E - MD #184420

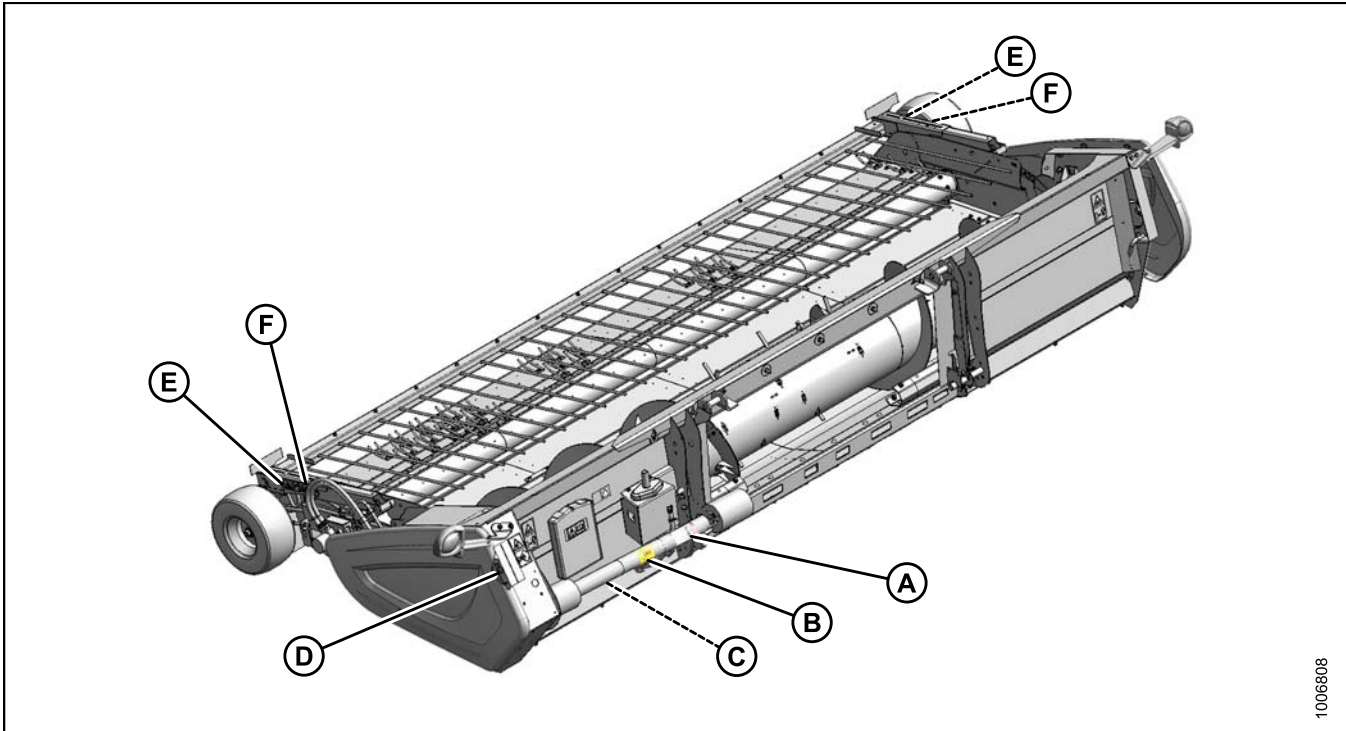
B - MD #166466  
F - MD #237298

C - MD #184372

D - MD #184371



## SAFETY



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**Figure 1.18: Driveline and Hold-Down Decals**

A - MD #30316

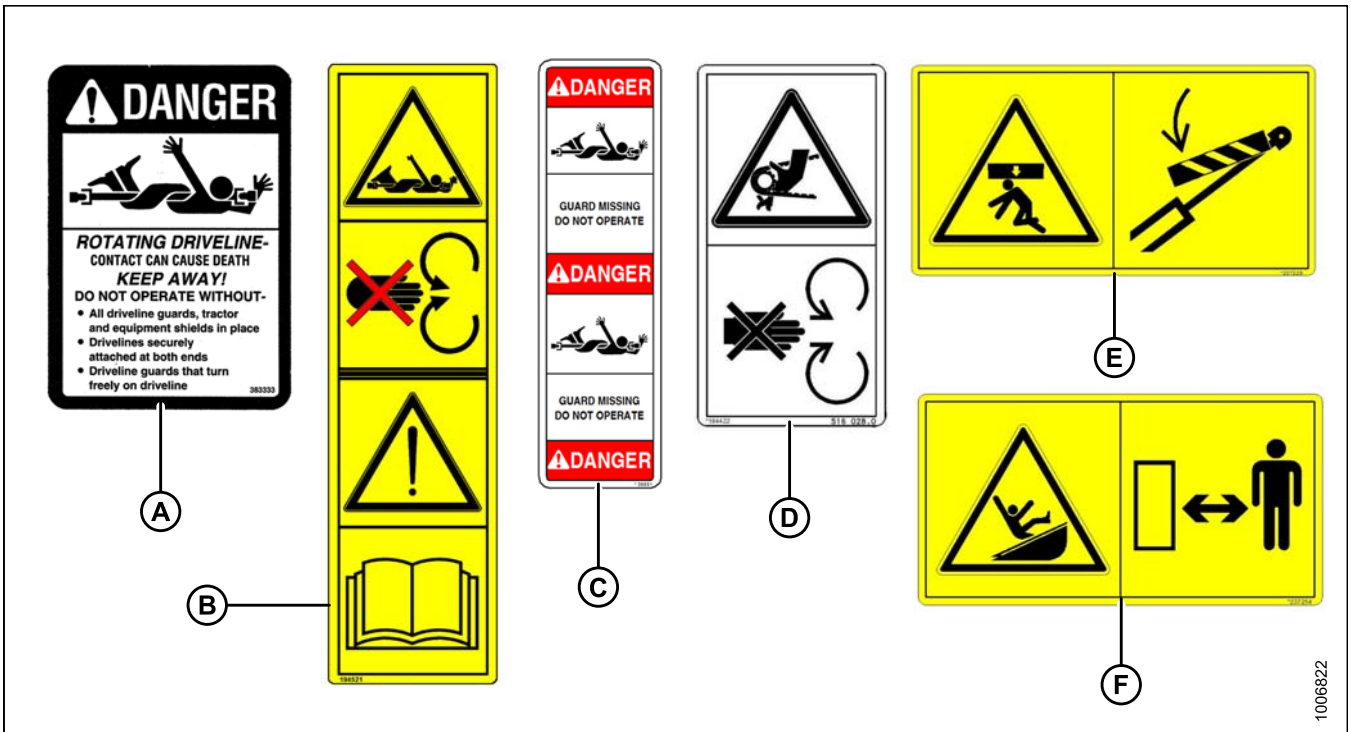
B - MD #191099

C - MD #36651

D - MD #184422 (Behind Endshield)

E - MD #237229

F - MD #237254



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## 1.9 Interpreting Safety Signs

In the safety sign explanations below, (a) refers to the top or left position panel, (b) refers to the bottom or right position of the safety decal depending on decal orientation.

**NOTE:** If there are more than two panels in a decal, the lettering will continue downward or to the right, depending on decal orientation.

### 1. MD #30316

- a. Rotating driveline
- b. **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 1.19: MD #30316

### 2. MD #36651

- a. Rotating driveline
- b. **DANGER**
  - Stop engine and remove key before opening shield.
  - Do not operate if guard is missing or shields not in place.
  - Failure to comply will result in death or serious injury.

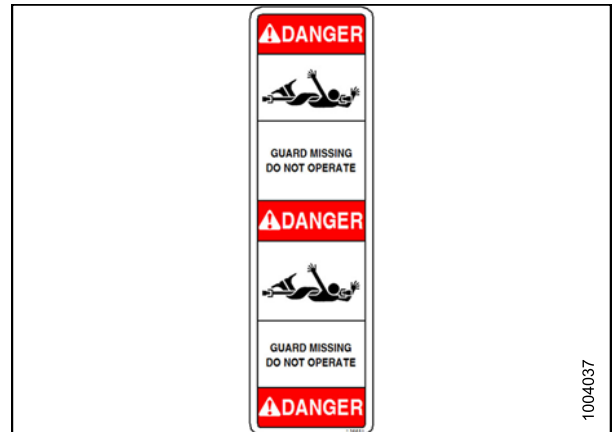


Figure 1.20: MD #36651

## SAFETY

### 3. MD #166466

a. High pressure oil hazard.

b. **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 1.21: MD #166466

### 4. MD #184370

a. Crushing hazard.

b. **CAUTION**

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

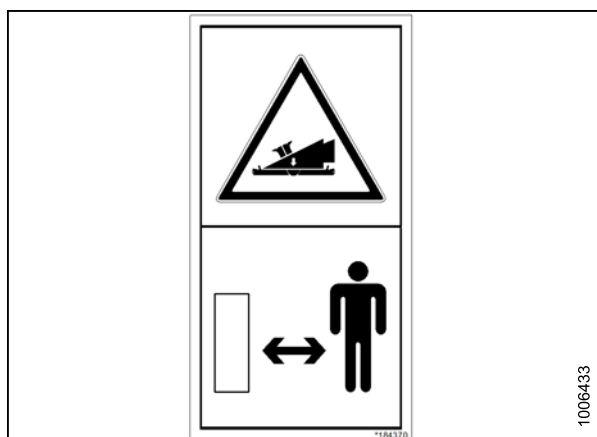


Figure 1.22: MD #184370

### 5. MD #184371

a. Open drive hazard.

b. **WARNING**

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



Figure 1.23: MD #184371



## SAFETY

### 6. MD #184372

- a. General hazard pertaining to machine operation and servicing.

b. **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.

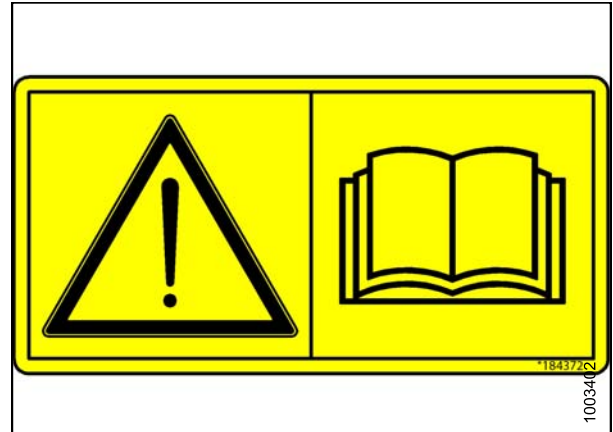


Figure 1.24: MD #184372

### 7. MD #184420

- a. 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 1.25: MD #184420

## SAFETY

### 8. MD #184422

a. Keep shields in place hazard.

#### b. **WARNING**

- To avoid injury, stop engine before opening power drive system shield.
- Keep all shields in place.



Figure 1.26: MD #184422

## SAFETY

### 9. MD #191099

a. Auger entanglement hazard.

b. **CAUTION**

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

c. General hazard pertaining to machine operation and servicing.

d. **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 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.
- 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.

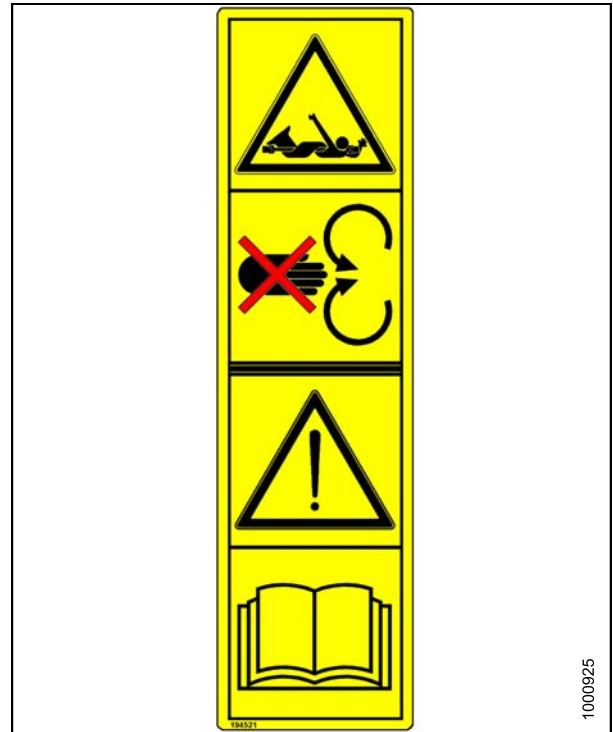


Figure 1.27: MD #191099

## SAFETY

### 10. MD #237229

- a. Header crushing hazard
- b. **WARNING**
  - Rest header on ground or engage cylinder safety props before going under unit.

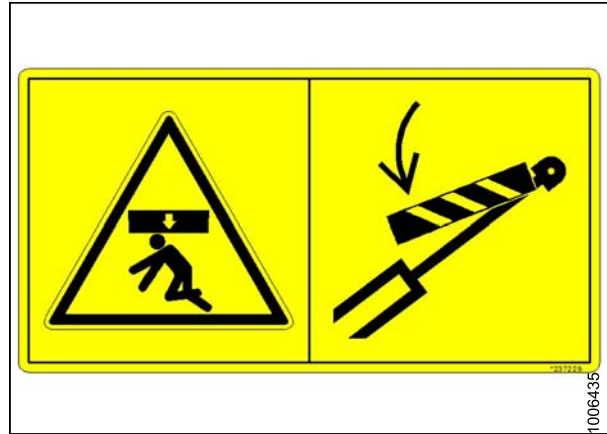


Figure 1.28: MD #237229

### 11. MD #237254

- a. Header entanglement hazard
- b. **CAUTION**
  - To avoid injury from entanglement with crop gathering elements, stand clear of header while machine is running.



Figure 1.29: MD #237254

### 12. MD #237298

- a. Auger entanglement hazard
- b. **CAUTION**
  - To avoid injury from rotating auger, stand clear of auger while machine is running.



Figure 1.30: MD #237298

## 2 Description

### 2.1 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.

## DESCRIPTION

Term	Definition
Torque	The product of a force X lever arm length, usually measured in foot-pounds (ft·lbf) or Newton-meters (N·m).
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.

## DESCRIPTION

### 2.2 PW8 Header Specifications

PW8 Header Model	SWATHMASTER™
<b>Frame and Structure</b>	
Width To Edge of Tires	Refer to Section <a href="#">2.3 PW8 Header Dimensions, page 20</a>
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
Lighting	Two Amber Transport
Manual Storage	Header Mounted Manual Storage Case
<b>PICK-UP</b>	
Finger Bat Width	N/A
Actual Picking Width	Refer to Section <a href="#">2.3 PW8 Header Dimensions, page 20</a>
Draper Width	
Quantity of Pick-Up Fingers	392
Draper Drives	Two 5.9 cu. in. (97 cc) Hydraulic Motors
<b>AUGER</b>	
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
<b>DRIVELINE</b>	
Type	Heavy Duty PTO Type, Fully Shielded With Built-In Clutch.
Connections	Locking Collar
<b>TIRES</b>	
Size	18.5 / 8.5 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.

DESCRIPTION

2.3 PW8 Header Dimensions

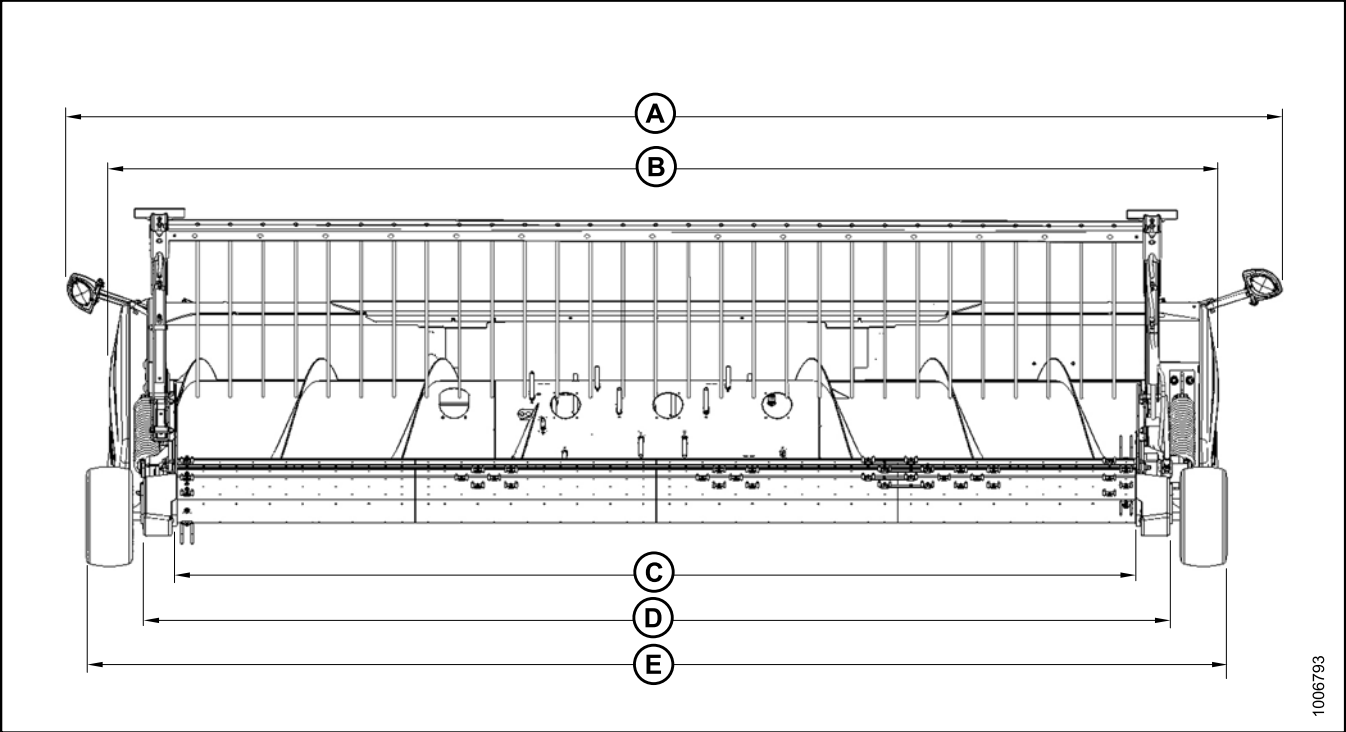


Figure 2.1: Header Dimensions

- A - 222-3/4 in. (5658 mm)
- B - 203-1/2 in. (5170 mm)
- C - 178-1/8 in. (4523 mm)
- D - 187-5/8 in. (4766 mm)
- E - 209-3/8 in. (5318 mm)

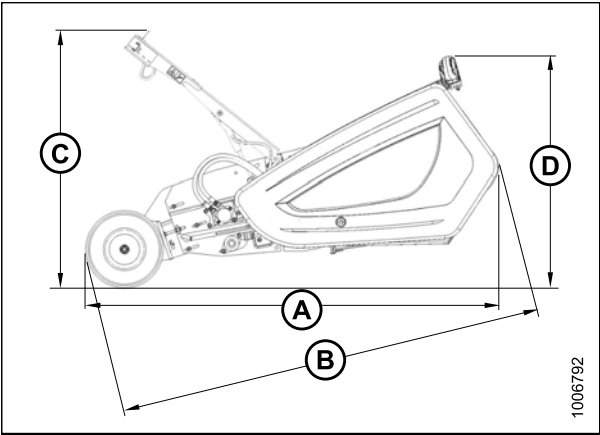


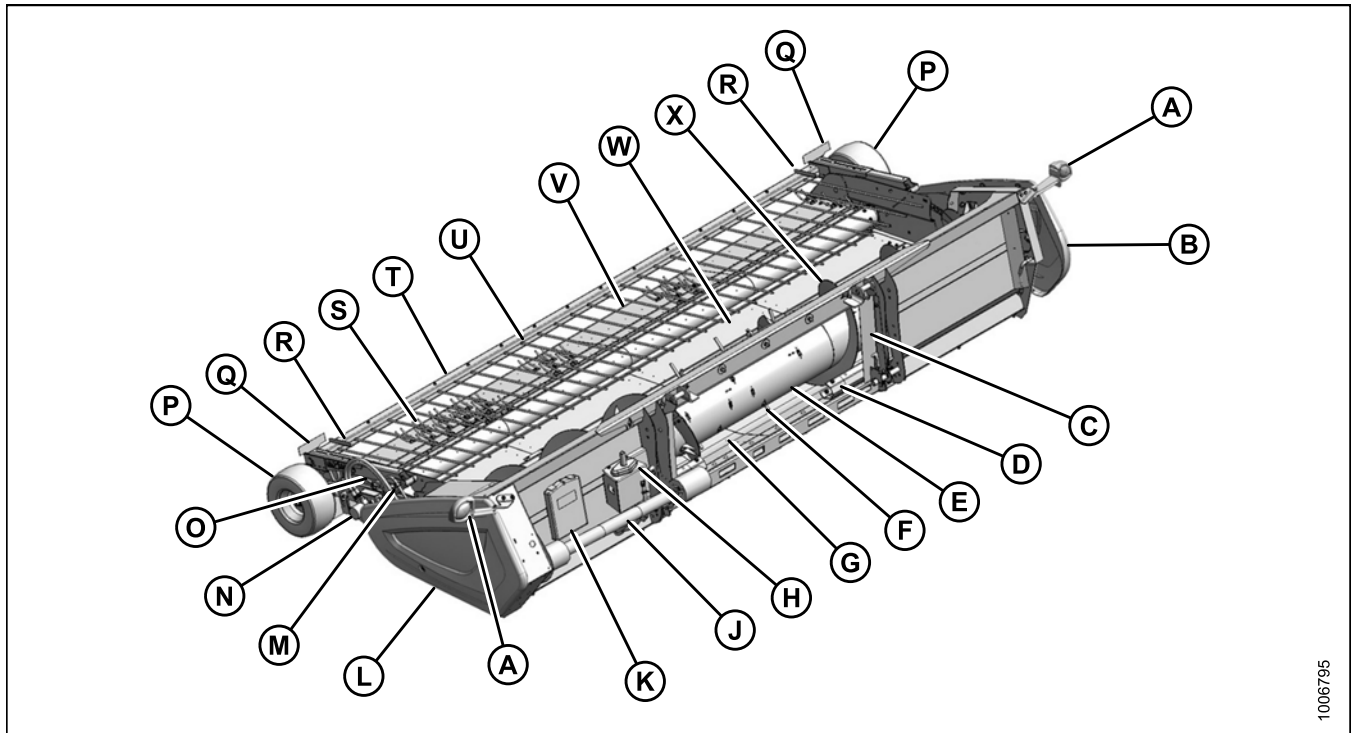
Figure 2.2: Header Dimensions

- A - 96-7/8 in. (2460 mm)
- B - 98-7/8 in. (2513 mm)
- C - 60-3/4 in. (1544 mm)
- D - 54-3/8 in. (1380 mm)



## DESCRIPTION

### 2.4 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          |



## 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 MacDon Dealer if an instruction is not clear to you.
- Follow all safety messages in the manual and on safety decals on 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. Correct these mistakes immediately, before an accident occurs.
- Do NOT modify the machine. Unauthorized modifications may impair the 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

Follow these safety precautions:



#### **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.
- Stop combine engine and remove key before adjusting or removing plugged material from the machine. A child or even a pet could engage the drive.
- 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

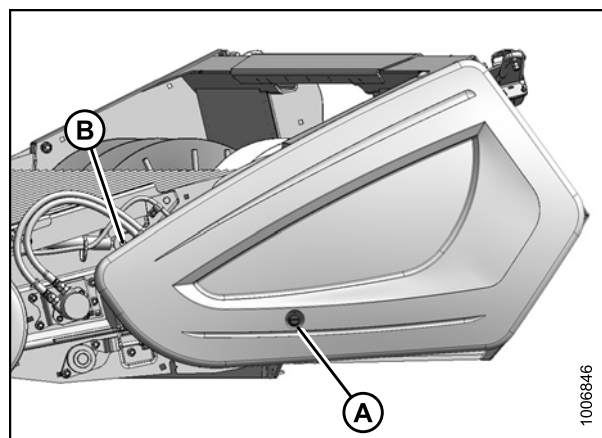
The endshields are molded polyethylene covers that are attached to the ends of the header. They mainly provide shielding for the header drive components and also display the make of the combine. The left endshield is hinged to the endsheet, and can be opened for routine maintenance or easily removed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

### 3.3.1 Opening LH Endshield

#### DANGER

**Stop engine and remove key from ignition before leaving operator's seat for any reason. A child or even a pet could engage an idling machine.**

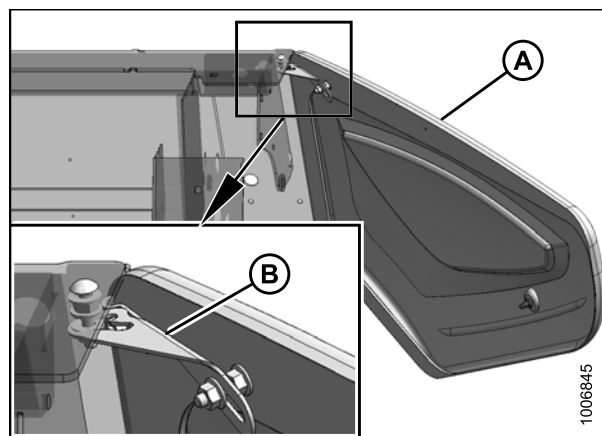
1. Lower header to ground, shut down engine, and remove key from ignition.
2. Unlock endshield (B) by turning latch (A) counterclockwise until it stops (slightly more than one-half turn) using a standard end screwdriver.



**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 Section: [4.5.1 Removing LH Endshield, page 93](#).



**Figure 3.2: Endshield Open**

## OPERATION

### 3.3.2 Closing LH Endshield

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

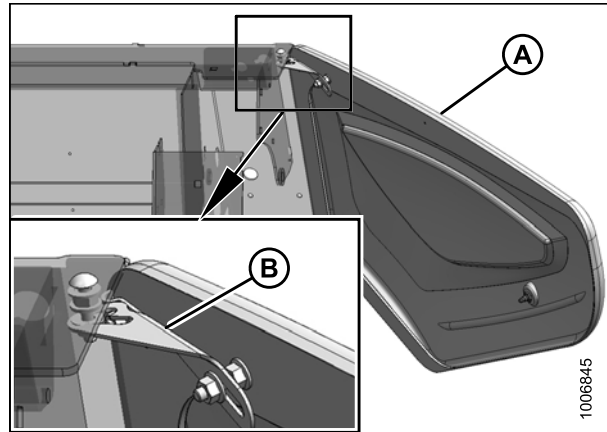


Figure 3.3: Disengaging Support

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

**NOTE:** Latch (D) and magnet (B) positions are properly adjusted at the factory.

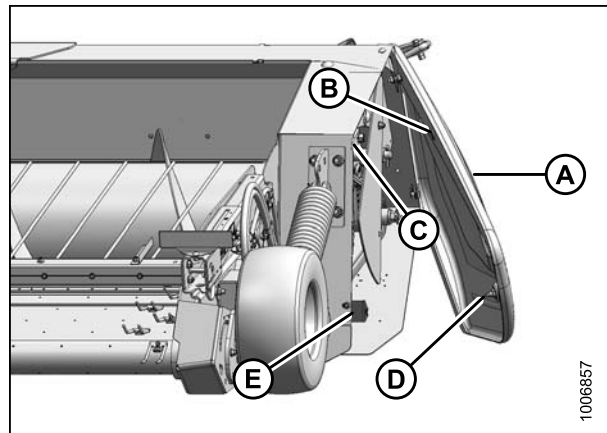


Figure 3.4: Closing Endshield

3. If required, loosen nuts (B) on clips (C) at the back of the shield (A) and reposition the shield. Tighten the nuts (B) but do not overtighten to prevent damage to the shield.

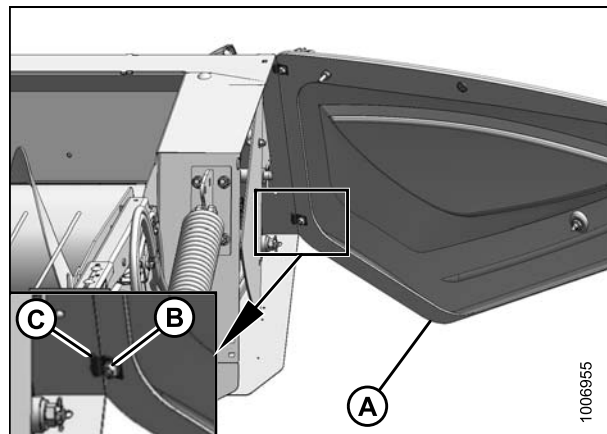
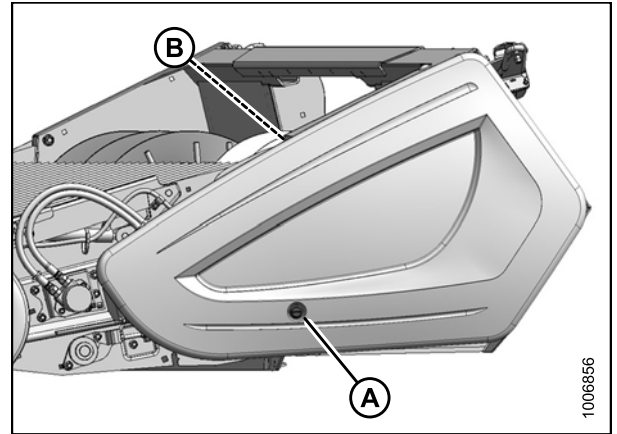


Figure 3.5: Adjusting Endshield

## OPERATION

4. Close the shield and turn latch (A) clockwise until it stops (slightly more than one-half turn) using a standard end screwdriver.
5. Check that magnet (B) on endshield is against the stop on endsheet and that latch is engaged.



**Figure 3.6: Endshield Closed**

## **3.4 Header Lift Cylinder Safety Props**

Refer to your Combine Operator's Manual.



### 3.5 Hold-Down Lift Cylinder Safety Props

#### **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.

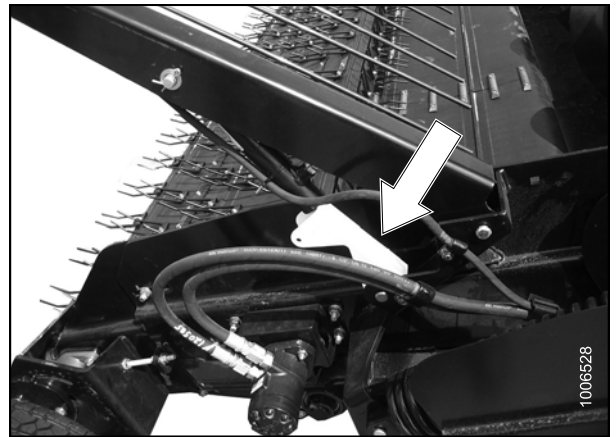
#### **IMPORTANT:**

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

Lift cylinder safety props are located at each hold-down support arm.

#### **To engage lift cylinder safety props:**

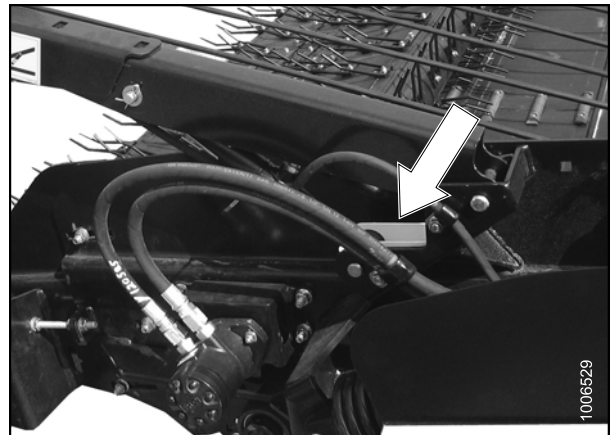
1. Raise hold-down to maximum height.
2. Move safety props to engaged position.
3. Lower hold-down onto safety props.



**Figure 3.7: Engaged**

#### **To disengage lift cylinder safety props:**

4. Raise hold-down to maximum height.
5. Move safety props to disengaged position.



**Figure 3.8: Disengaged**

## 3.6 Daily Start-up Check

### CAUTION

- Be sure 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 be 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.
- As well, 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 a suitable hearing protective device such as ear muffs or ear plugs to protect against objectionable or uncomfortable loud noises.

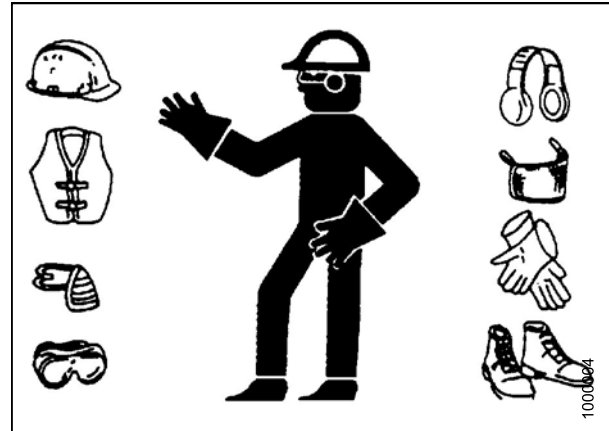


Figure 3.9: Use protective clothing and personal safety devices

Complete the following tasks each day before start-up:

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 [4.9.3 Hydraulic Hoses and Lines, page 160](#).

2. Clean all lights and reflective surfaces on the machine.
3. Perform all daily maintenance. Refer to [Section Maintenance Schedule/Record, page 88](#).

### 3.7 Shutdown Procedure

#### CAUTION

Before leaving the combine seat for any reason:

- 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 slowly for 5 minutes, watching and listening carefully FROM THE COMBINE SEAT for binding or interfering parts.
2. Perform the items specified in [Maintenance Schedule/Record, page 88](#), under **AFTER FIRST 10 HOURS**.

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

## OPERATION

### 3.9 Changing Header Opening

To minimize the set up at the dealer, PW8 combine 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.

Factory Header Configuration			Modified Header Configuration	
Combine Make	Combine Model(s)	Feeder House Size	Combine Model(s)	Feeder House Size
John Deere	9550, 9650, 9750, 9660, 9760, 9860	55 in. (1397 mm)	9610	65 in. (1651 mm)
New Holland	CR970, CR980	50 in. (1270 mm)	CX	60 in. (1524 mm)
			CR920, CR940, CR960	40 in. (1016 mm)

## OPERATION

### 3.10 Header Attachment and Detachment

This section includes instructions on attaching and detaching PW8 Pick-Up Headers to the combines listed below. PW8 headers are configured for each particular combine model.

Combine	Refer to Section
Case IH	<a href="#">3.10.1 Case IH, page 34</a>
John Deere 60, 70 and S Series	<a href="#">3.10.2 John Deere 60, 70, and S Series, page 41</a>
New Holland CR, CX	<a href="#">3.10.3 New Holland CR/CX Series Combine, page 47</a>

#### 3.10.1 Case IH

This section provides instruction for attaching the MacDon PW8 pick-up to and detaching from Case IH combines, including 5088, 6088, 7088, 7010, 8010, 7120, 8120, 9120, 5130, 6130, 7130, 7230, 8230, 9230, 5140, 6140, 7140.



Figure 3.10: Case IH Combine

#### *Attaching to Case IH Combine*

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

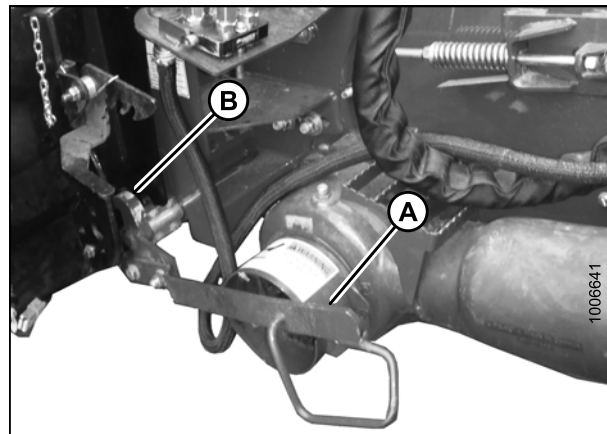


Figure 3.11: Feederhouse Locks

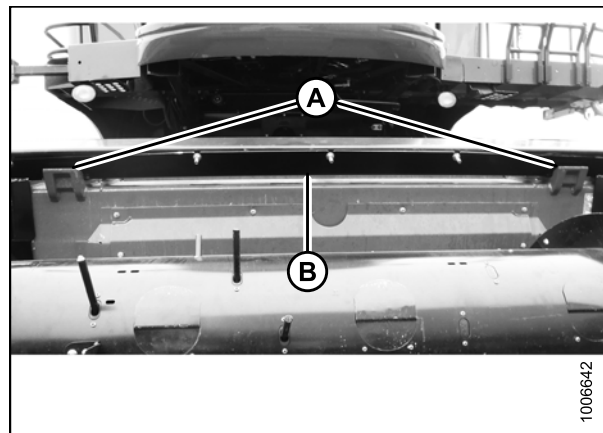
## OPERATION

2. Slowly drive combine up to header until feeder house saddle (A) is directly under the header top cross member.
3. Raise feeder house slightly to lift header, ensuring feeder saddle is properly engaged in header frame.

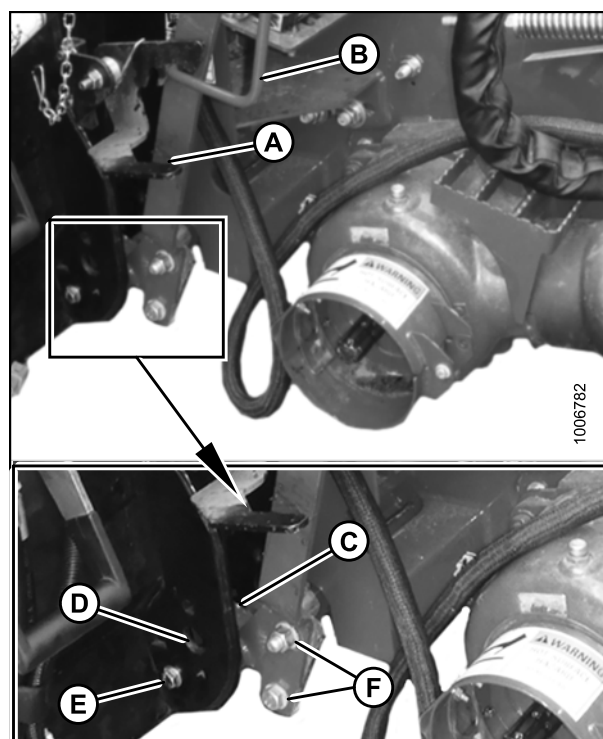
### **WARNING**

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

4. Stop engine, and remove key from ignition.
5. 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.
6. Push down on lever (A) so that slot in lever engages handle (B) to lock handle in place.
7. If locks (C) do not fully engage pins (D) on header, loosen nut (E), and adjust position of pin (D) as necessary (both sides). Tighten nut.
8. To obtain full lock on pin (D) when (A) and (B) are engaged, loosen bolts (F), and adjust lock as required. Retighten bolts.



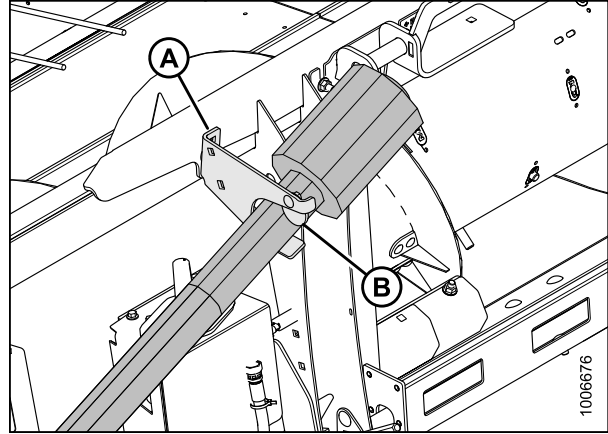
**Figure 3.12: Header on Combine**



**Figure 3.13: Engaging Locks**

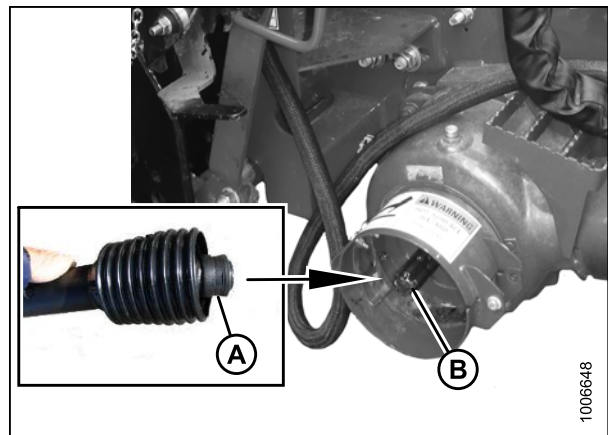
## OPERATION

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



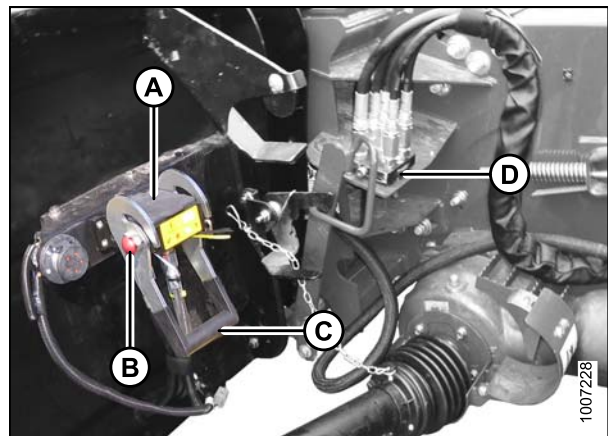
**Figure 3.14: Driveline**

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



**Figure 3.15: Attaching Driveline**

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



**Figure 3.16: Coupler Lock**



## OPERATION

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

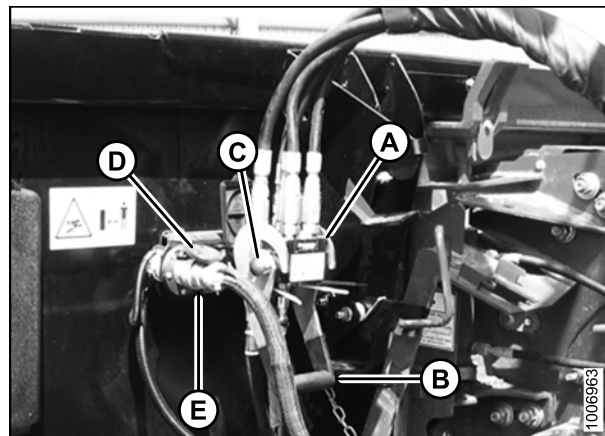


Figure 3.17: Attaching Coupler

### *Detaching from Case IH Combine*

#### **DANGER**

**Stop engine and remove key from ignition before leaving operator's seat for any reason. A child or even a pet could engage an idling machine.**

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).

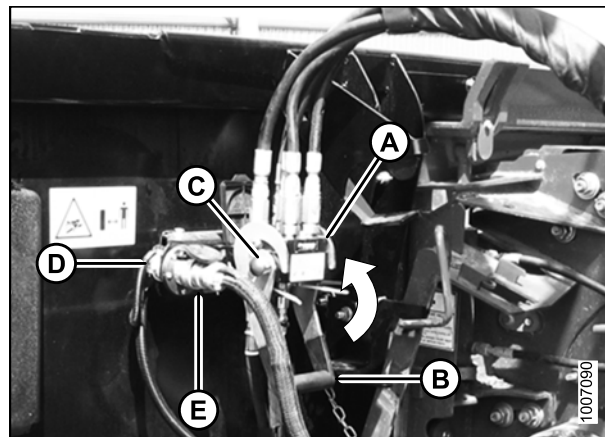
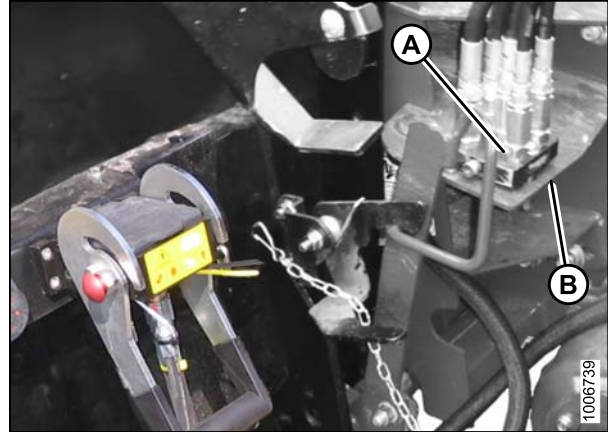


Figure 3.18

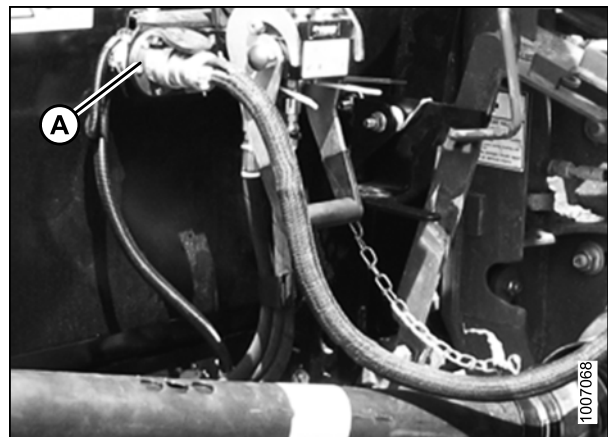
## OPERATION

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



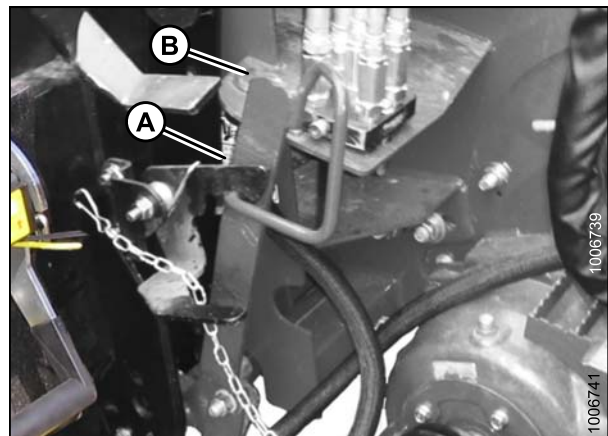
**Figure 3.19**

4. Disconnect electrical connector (A) from header.



**Figure 3.20**

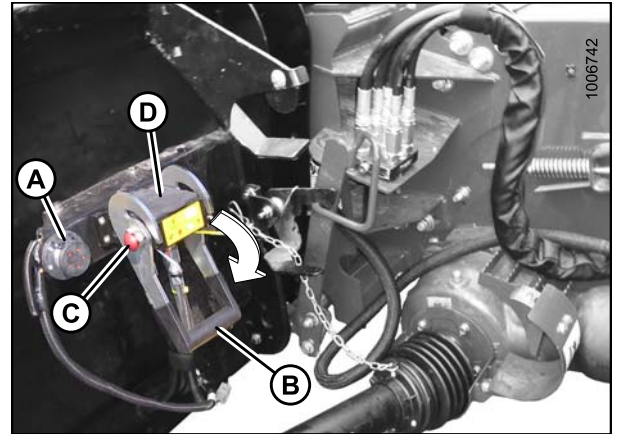
5. Place electrical connector (A) into storage cup (B) on combine.



**Figure 3.21**

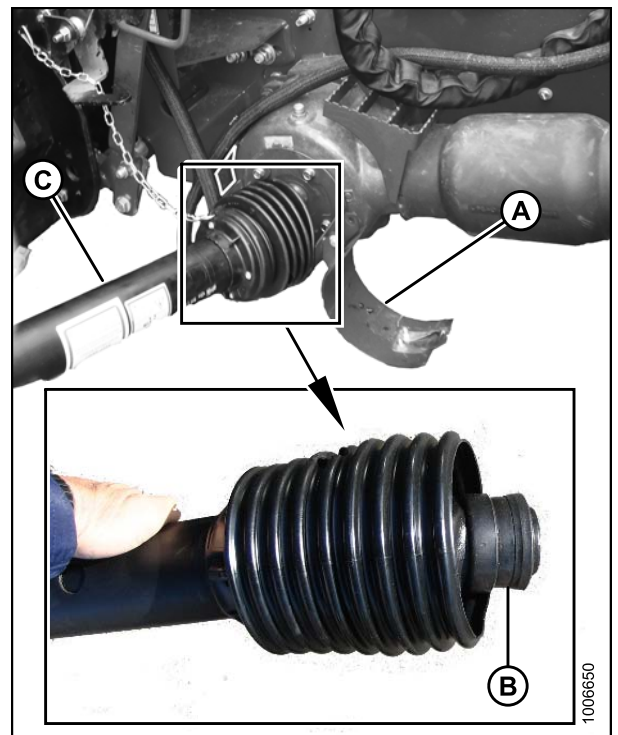
## OPERATION

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



**Figure 3.22**

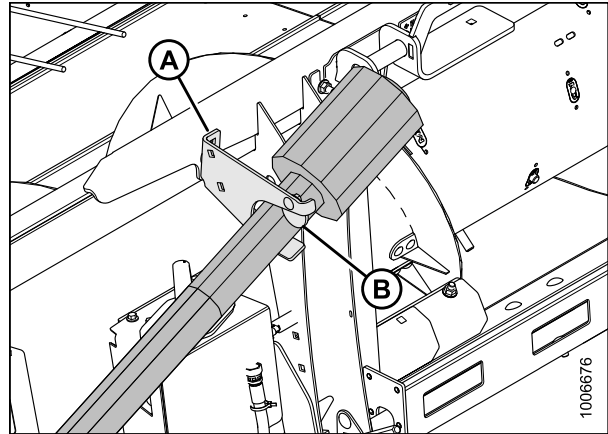
9. Open driveshield (A) on combine.
10. Pull back collar (B) on driveline (C), and pull driveline (C) from combine.



**Figure 3.23**

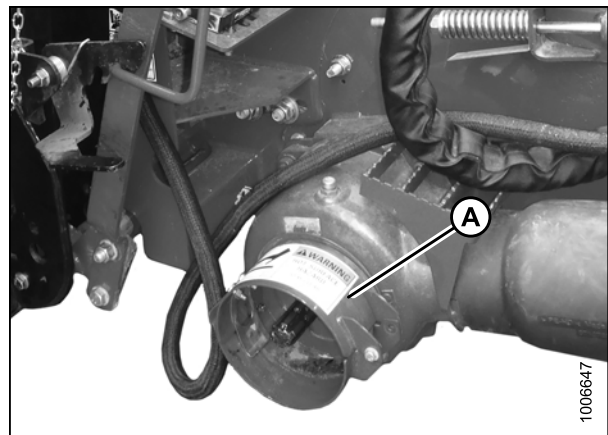
## OPERATION

11. Slide driveline into storage hook (A) on header so that disc (B) drops to secure driveline.



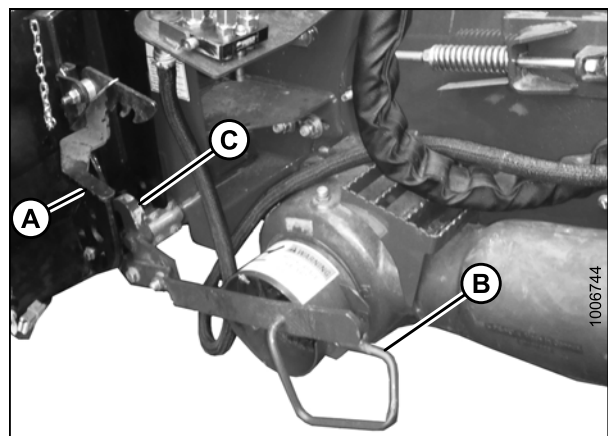
**Figure 3.24**

12. Close driveshield (A) on combine.



**Figure 3.25**

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



**Figure 3.26**

## OPERATION

### 3.10.2 John Deere 60, 70, and S Series

This section provides instruction for attaching the MacDon PW8 Pick-Up Header to and detaching from John Deere combines including: 9660, 9760, 9860, 9670, 9770, 9870 and S Series - Contour Master and Level Land.

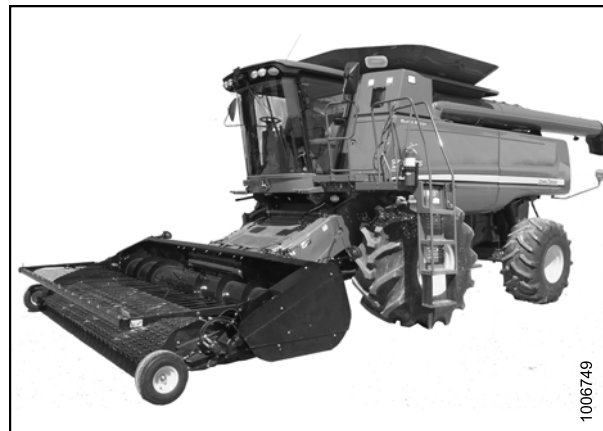


Figure 3.27: John Deere Combine

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

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

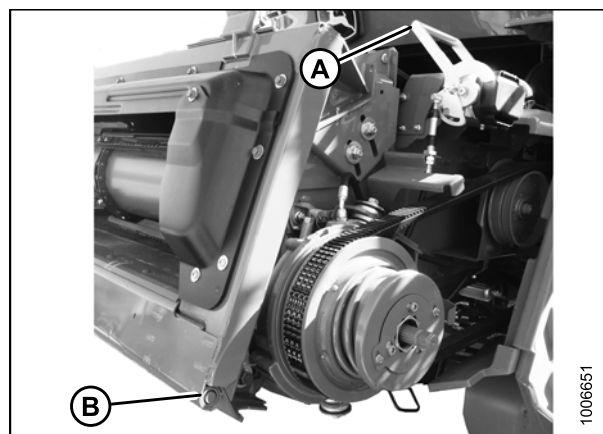


Figure 3.28: Feederhouse Locks

2. Slowly drive combine 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 saddles are properly engaged in header frame.
4. Position header until slightly off the ground, stop engine and remove key from ignition.



#### **WARNING**

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

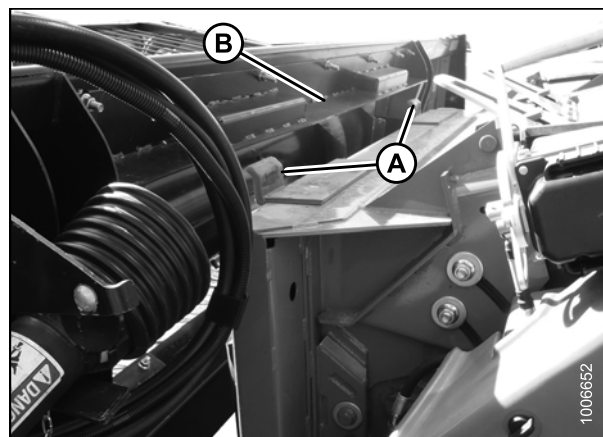
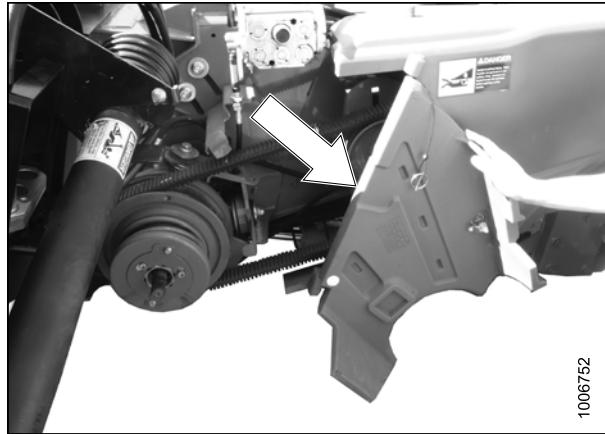


Figure 3.29: Header on Combine

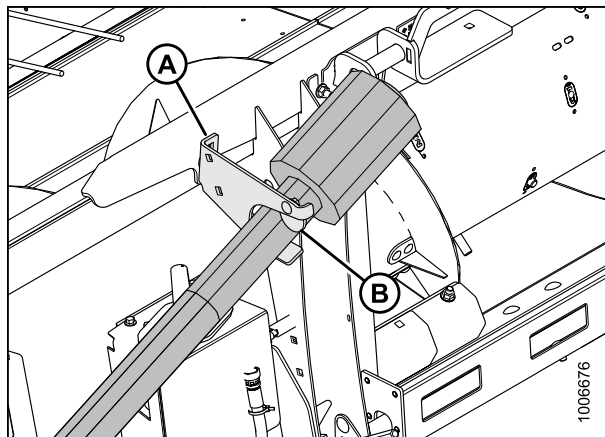
## OPERATION

5. Open driveshield on combine feeder house.



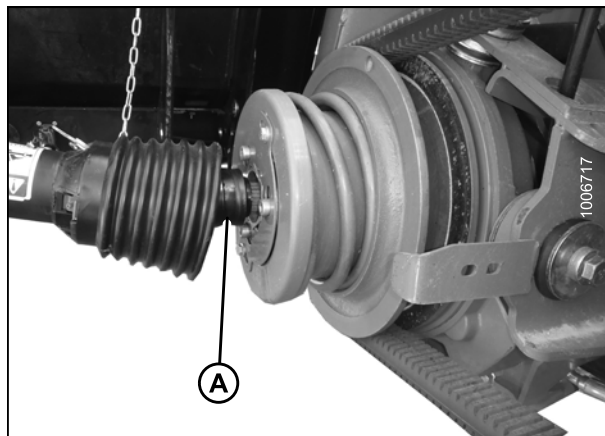
**Figure 3.30: Combine Driveshield**

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



**Figure 3.31: Driveline**

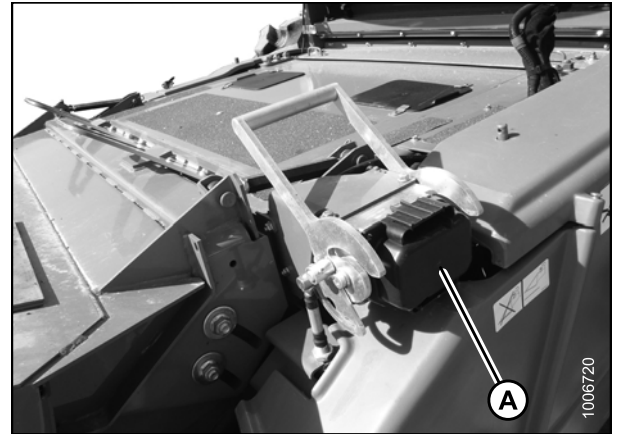
7. Pull back collar (A) on end of driveline and slide driveline on feeder house driveshaft until the collar locks.
8. Close feeder house driveshield.



**Figure 3.32: Attaching Driveline**

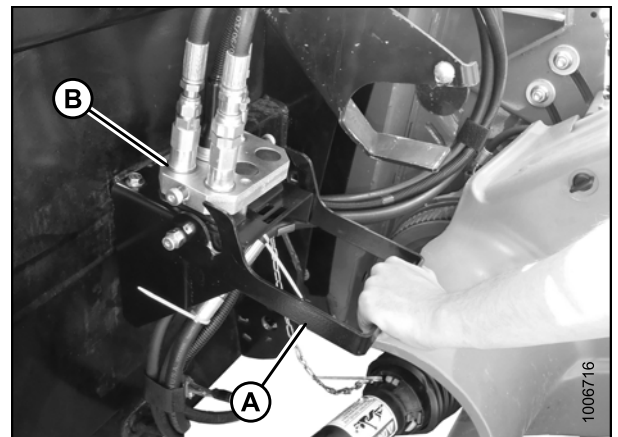
## OPERATION

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



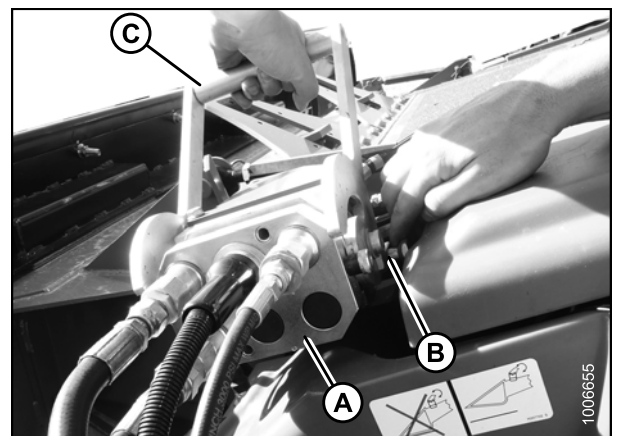
**Figure 3.33: Combine Receptacle**

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 3.34: 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 3.35: Engaging Coupler**

## OPERATION

13. Pull handle (A) to full horizontal position as shown to fully engage coupler, and to extend pins (B) at base of feeder house into the locking plates (C). Knob (D) will engage handle to lock handle.

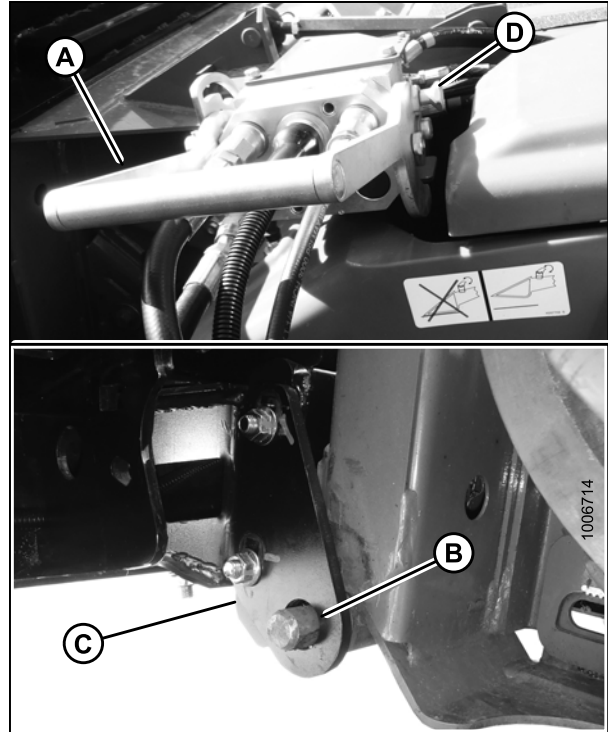


Figure 3.36: Locking Feederhouse

**NOTE:** If handle does not move to full 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.

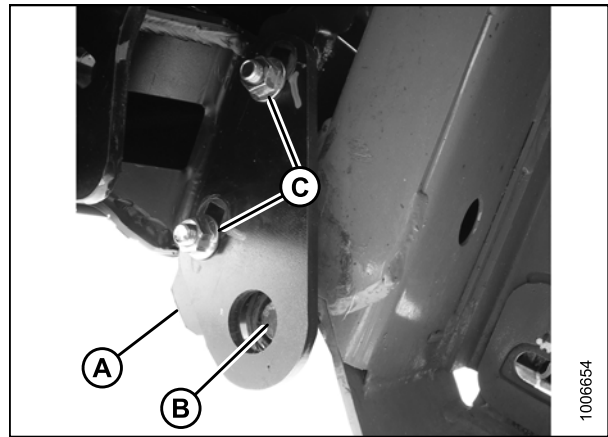


Figure 3.37: Aligning Locking Plates



## OPERATION

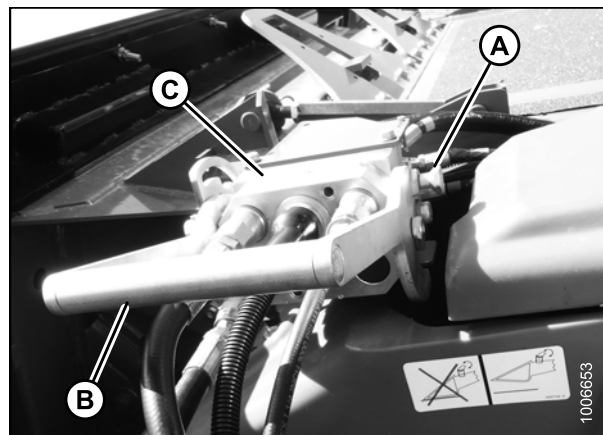
### *Detaching from John Deere 60, 70, and S Series Combine*

1. Choose a level area. Position header slightly above ground. Stop engine and remove key.

#### **WARNING**

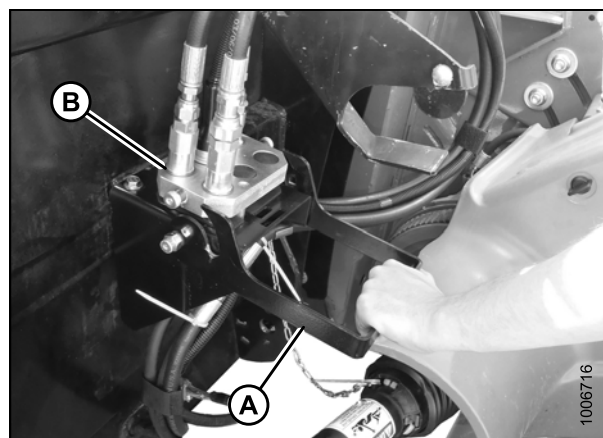
**Stop combine engine and remove key before making adjustments to machine. A child or even a pet could engage the drive.**

2. Pull out knob (A) on combine 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 3.38**

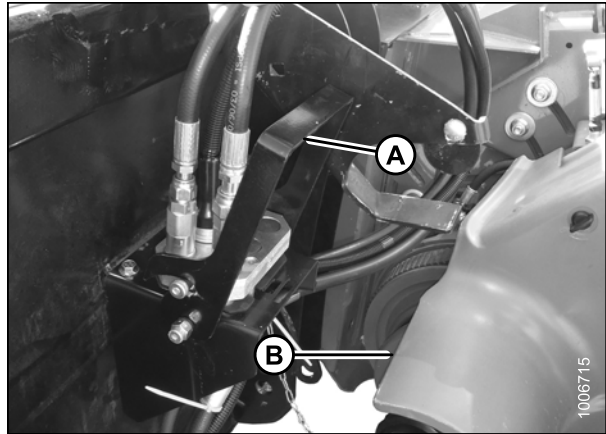
3. Lower handle (A) on header, and position coupler (B) in header as shown.



**Figure 3.39**

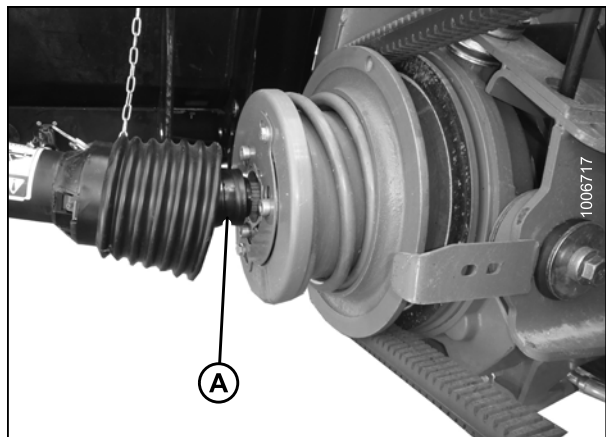
## OPERATION

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



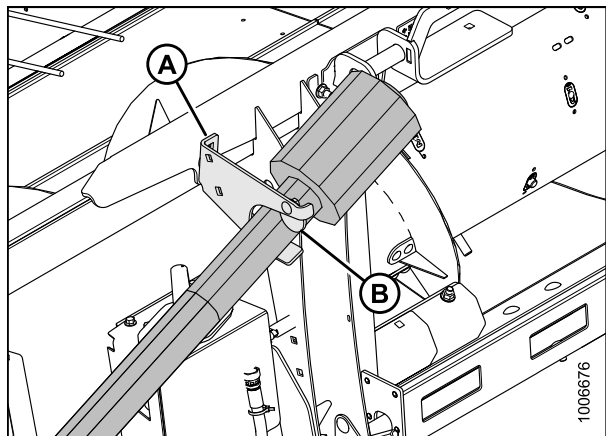
**Figure 3.40**

6. Pull back collar (A) on driveline, and pull driveline off combine output shaft.



**Figure 3.41**

7. Slide driveline in storage hook (A) on header so that disc (B) drops to secure driveshaft.



**Figure 3.42**

## OPERATION

8. Close combine driveshield (A).
9. Start engine, and lower feeder house until saddle (B) disengages and clears header support (C).
10. Slowly back combine away from header.

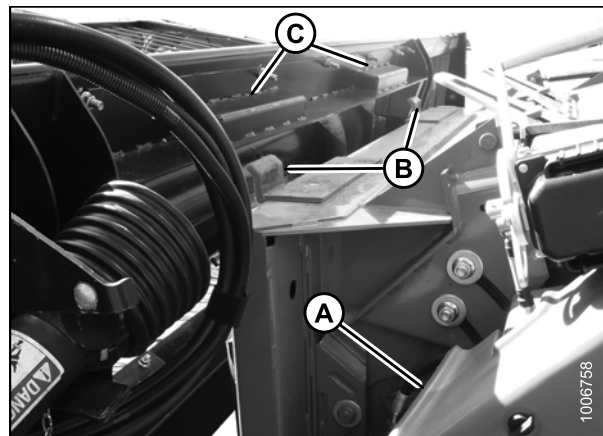


Figure 3.43

### 3.10.3 New Holland CR/CX Series Combine

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



Figure 3.44: New Holland Combine

#### *Attaching to New Holland CR/CX Series Combine*

#### **⚠ WARNING**

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

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

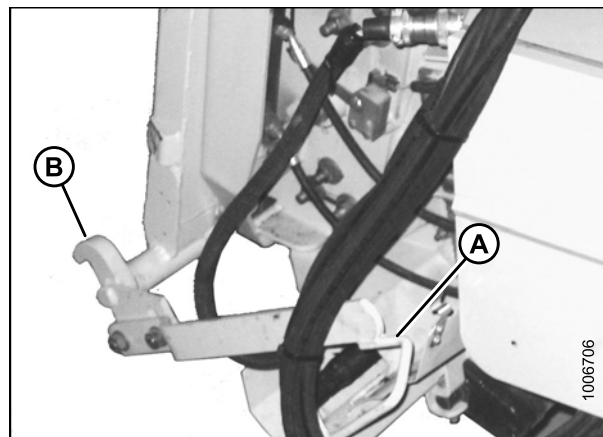


Figure 3.45: Feeder House Locks

## OPERATION

2. Slowly drive combine 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 saddle (A) is properly engaged in header frame.

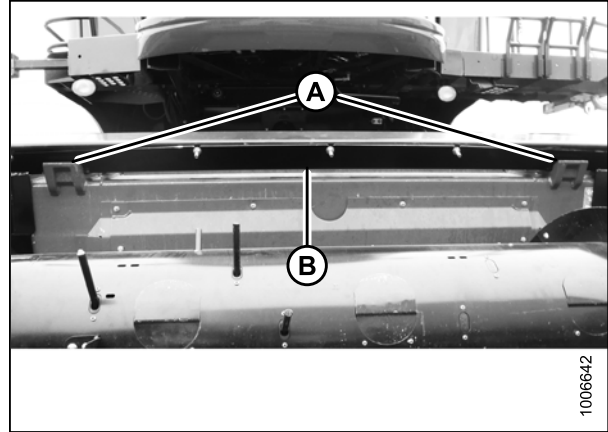


Figure 3.46: Header on Combine

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 to lock handle in place.
6. If locks (C) do not fully engage pins (D) on header, loosen nut (E) and adjust position of pin (D) as necessary (both sides). Tighten nut.
7. To obtain full lock on pin (D) when (B) and (A) are engaged, loosen bolts (F), and adjust lock as required. Retighten bolts.

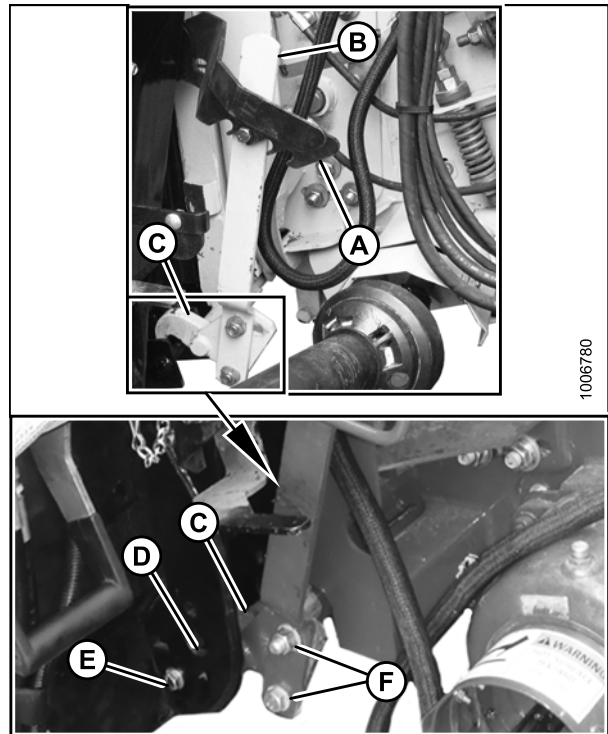
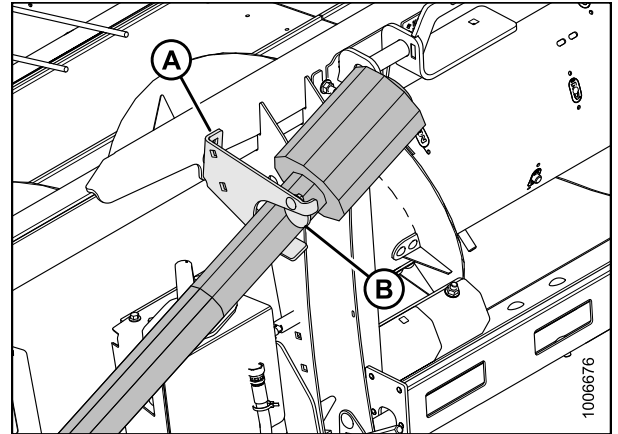


Figure 3.47: Engaging Locks

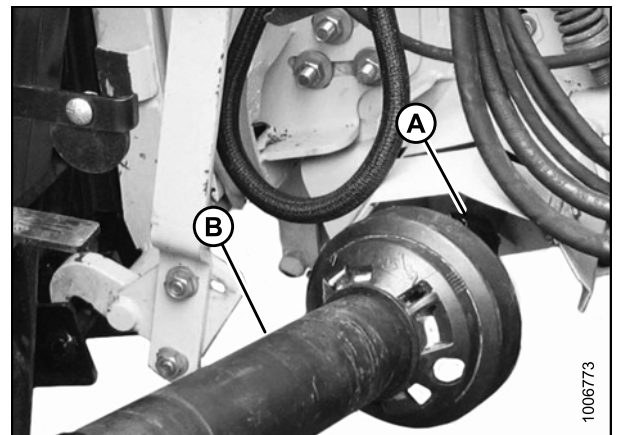
## OPERATION

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



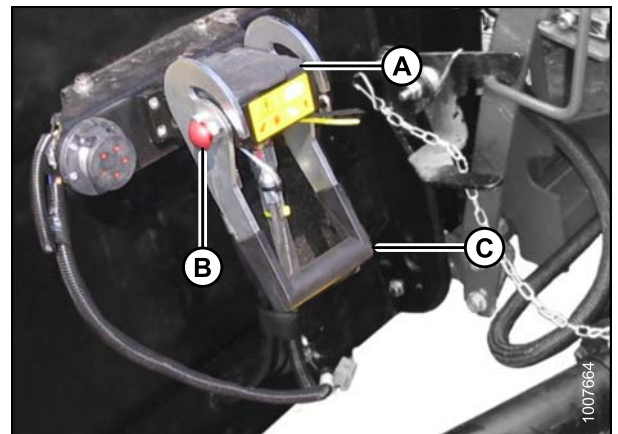
**Figure 3.48: Driveline**

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



**Figure 3.49: Attaching Driveline**

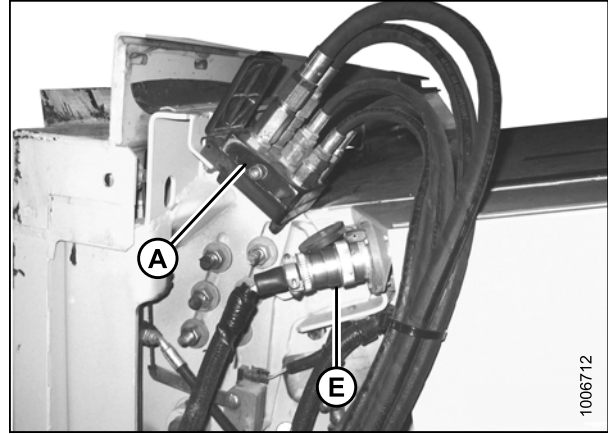
10. Open cover (A).
11. Push in lock button (B), and pull handle (C) halfway up to open position.



**Figure 3.50: Header Receptacle**

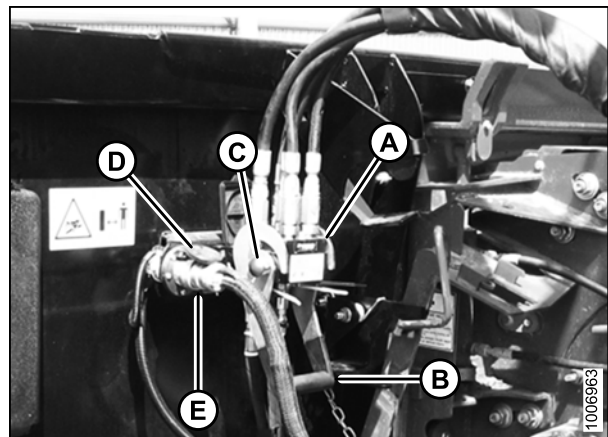
## OPERATION

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



**Figure 3.51: Combine Coupler/Connector**

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, and push connector onto receptacle. Turn collar on connector to lock it in place.



**Figure 3.52: Attaching Coupler**

## OPERATION

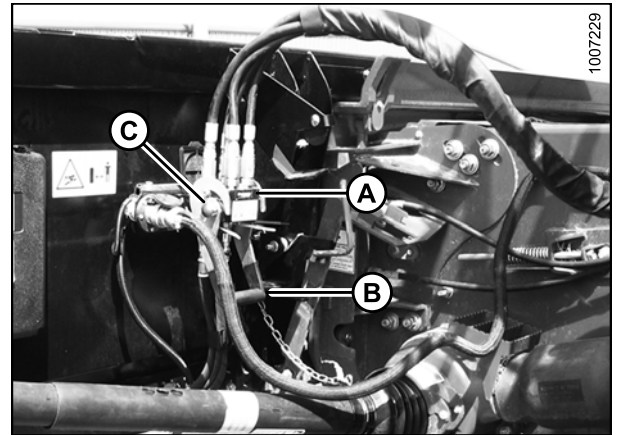
### *Detaching from New Holland CR/CX Combine*

1. Choose a level area. Position header slightly off the ground. Stop engine and remove key.

#### **WARNING**

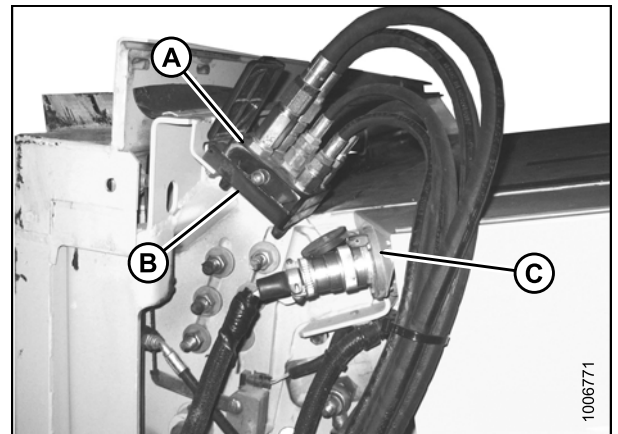
**Stop combine engine and remove key before making adjustments to machine. A child or even a pet could engage the drive.**

2. Push in lock button (C), and pull handle (B) upward to release coupler (A).
3. Remove coupler (A) from header receptacle.



**Figure 3.53**

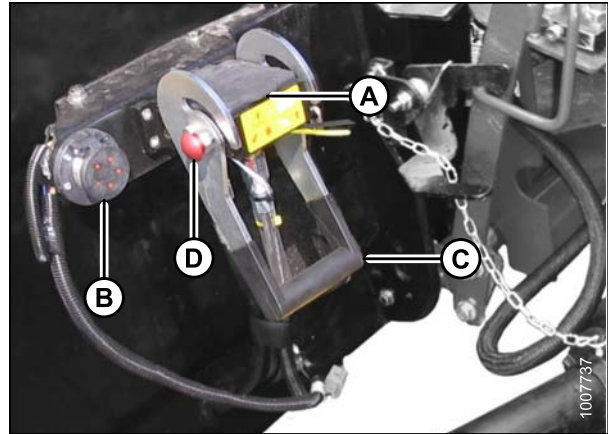
4. Position coupler (A) onto storage plate (B) on combine.
5. Disconnect electrical connector from header, and place in storage cup (C) on combine.



**Figure 3.54**

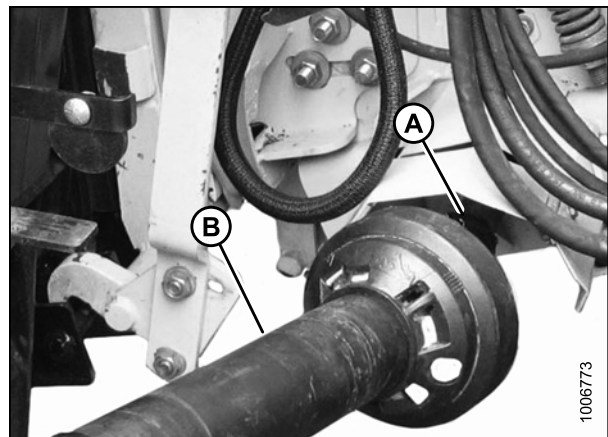
## OPERATION

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



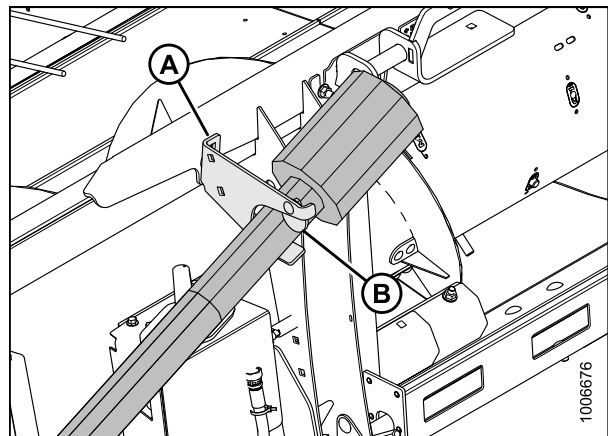
**Figure 3.55**

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



**Figure 3.56**

9. Slide driveline into storage hook (A) on header so that disc (B) drops to secure driveline.

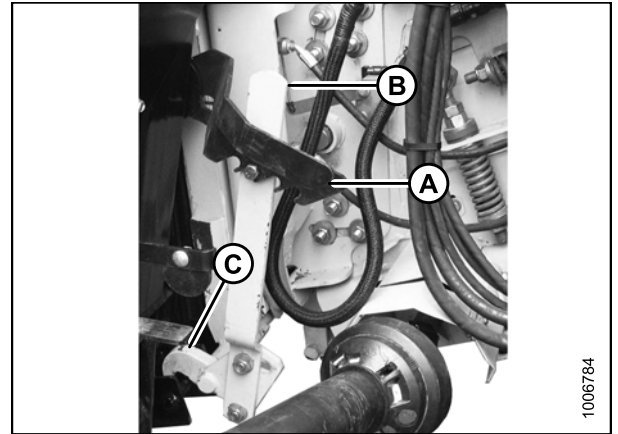


**Figure 3.57**



## OPERATION

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



**Figure 3.58**

11. Lower feeder house until it disengages header support.
12. Slowly back combine away from header.

## OPERATION

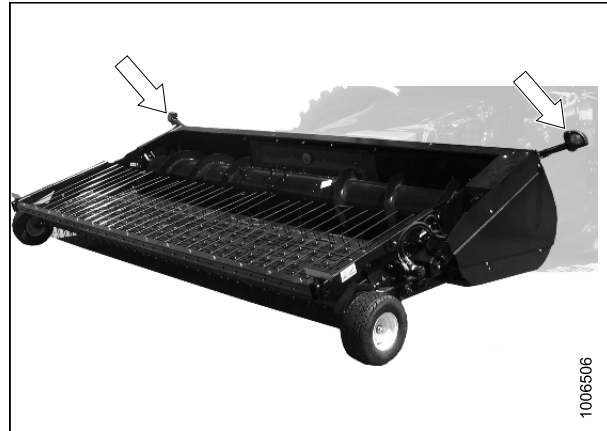
### 3.11 Header Transport

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 in the combine cab. They function as flashing hazard lights and turn signals, and should be positioned perpendicular to the endsheet.

See your combine operator's manual for operating instructions.



**Figure 3.59: Transport Lights**

## OPERATION

### 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 the machine.

The variables listed below and detailed on the following pages, will affect the performance of the header.

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

Variable	Section
Pick-Up Speed	<a href="#">3.12.1 Operating Speed, page 55</a>
Auger Speed	<a href="#">Auger Speed, page 56</a>
Header Height	<a href="#">Header Height, page 62</a>
Pick-Up Height	<a href="#">Pick-Up Height, page 63</a>
Hold-Down Position	<a href="#">Hold-Down Position, page 65</a>
Hold-Down Rod Angle	<a href="#">Hold-Down Rod Angle, page 66</a>
Auger Position	<a href="#">Auger Position, page 56</a>
Stripper Plates	<a href="#">Stripper Plate Clearance, page 61</a>
Draper Belt Tension	<a href="#">Checking Draper Belt Tension, page 68</a>

#### 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 shall be selected so that the swath is always pushed slightly ahead.

Draper speed is adjusted from the combine cab by regulating oil flow to the pick-up hydraulic motors, typically 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. See your combine operator's manual.

**IMPORTANT:**

Do NOT over-speed pick-up. Over-speeding the pick-up 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  $51 \times 5 \text{ mph} = 255 \text{ rpm}$  ( $51 \times 8/1.6 = 255 \text{ rpm}$ ).

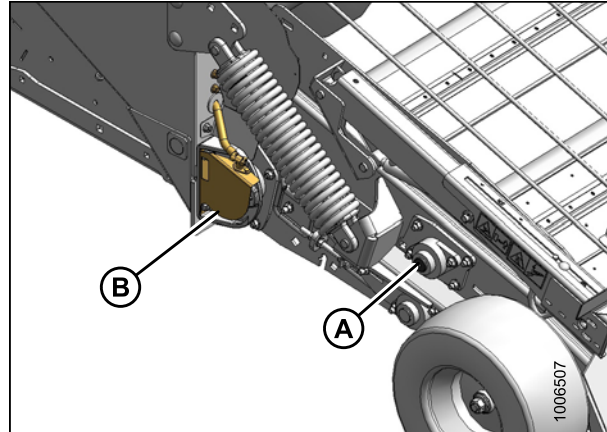
## OPERATION

### *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 indicates the roller rpm in the combine cab.



**Figure 3.60**

### **3.12.2 Auger**

#### *Auger Speed*

The header is supplied with an auger drive sprocket to match your combine. The auger is driven by a direct connection to the feeder house, and auger speed depends on the feeder house speed. In certain crops, a higher or slower auger speed may be desired. Contact your Dealer for available sprocket options.

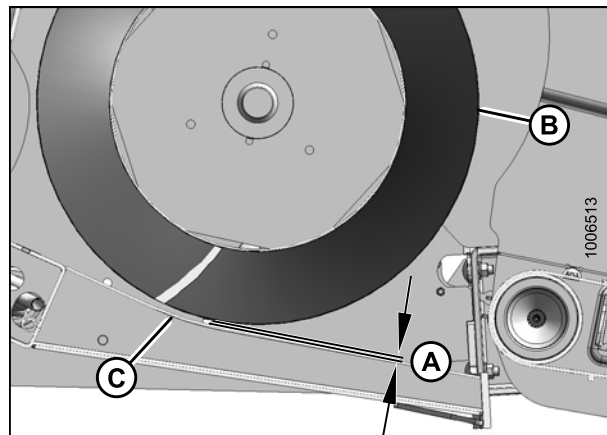
Refer to Section: [Auger Drive Sprockets, page 117](#) for instructions on changing the sprocket.

#### *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.

The clearance (A) between the auger flighting (B) and pan (C) should be 3/16–7/16 in. (5–11 mm).



**Figure 3.61: Auger to Pan Clearance**

## OPERATION

The clearance (A) between the auger fingers (B) and pan (C) should be  $13/16$ –1 in. (20–25 mm).

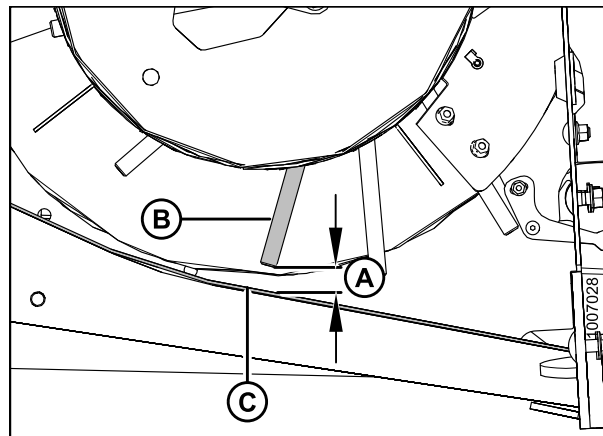


Figure 3.62: Finger to Pan Clearance

### Adjusting Auger Position

If adjustments are required, proceed as follows:

**NOTE:** Both ends of the auger are adjustable to maintain a uniform clearance across the width of the header.

**NOTE:** Access the auger/pan area from top of header.

### DANGER

**Stop engine and remove key from ignition before leaving operator's seat for any reason. A child or even a pet could engage an idling machine.**

1. Lower header to the ground, shut down combine and remove key from ignition.
2. Open endshield (A) on left end of header. Refer to Section: [3.3.1 Opening LH Endshield, page 25](#).

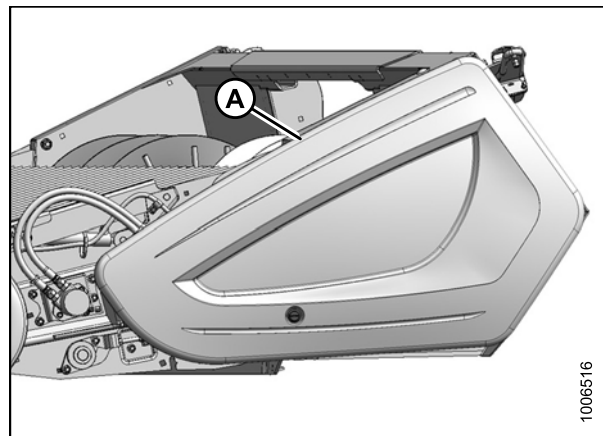


Figure 3.63

## OPERATION

3. Loosen the two bolts (A) on auger stops on both ends of header.
4. Loosen jam nuts (B) on adjuster bolts (C).
5. Turn adjuster bolt (C) to lower or raise the auger.
6. Manually rotate the auger to check for interference, and to check clearances between the auger flighting and auger pan, and adjust as necessary.
7. Tighten jam nuts (B), and downstop nuts (A).
8. Check clearances between auger flighting and stripper plates, and adjust as required. Refer to Section: [Stripper Plate Clearance, page 61](#).

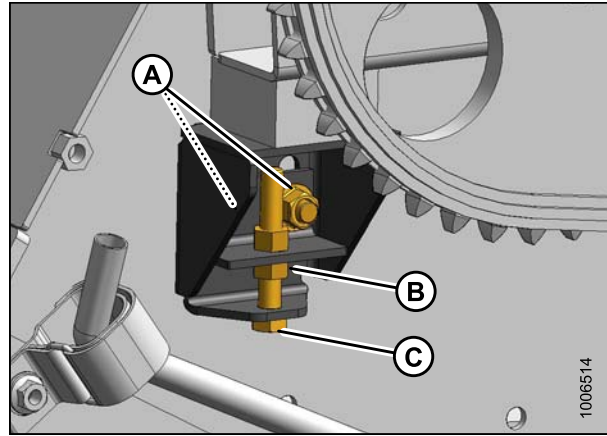


Figure 3.64: Left End

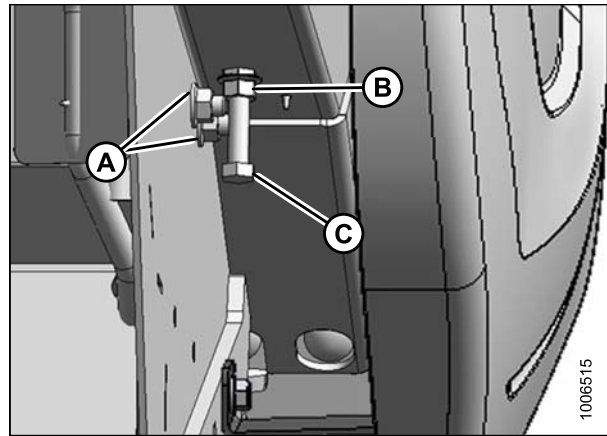


Figure 3.65: Right End

### *Auger Float*

The auger has an upward float range of 1-5/16 in. (34 mm), but can be locked so that it does not float, which may be desirable in certain crop conditions.

## OPERATION

### Locking Auger Float

Lock auger as follows:

#### **DANGER**

**Stop engine and remove key from ignition before leaving operator's seat for any reason. A child or even a pet could engage an idling machine.**

1. Lower header to the ground, shut down combine and remove key from ignition.
2. Open left endshield (A). Refer to Section: [3.3.1 Opening LH Endshield, page 25](#).
3. Loosen the two bolts (A) on auger upstops (B) on 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).

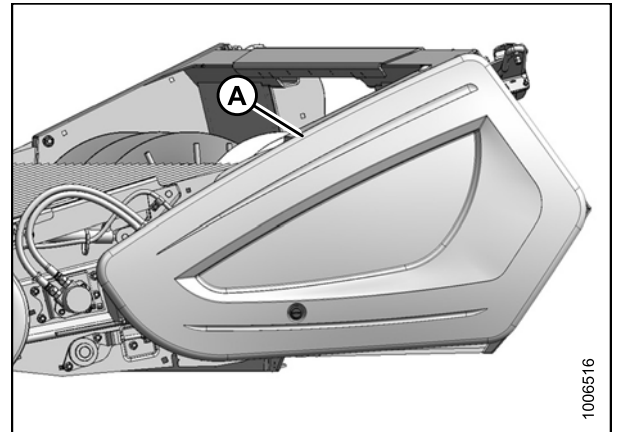


Figure 3.66

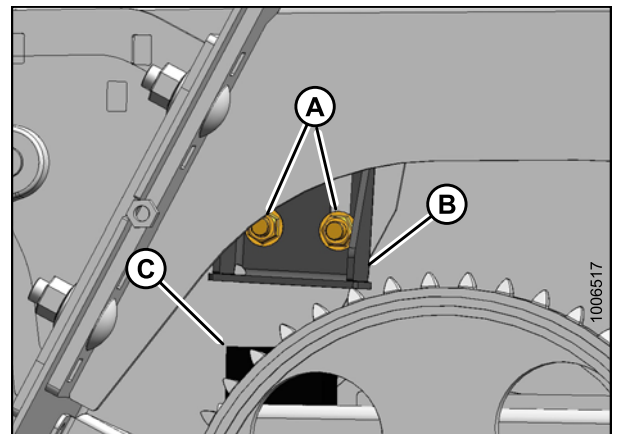


Figure 3.67: Left End

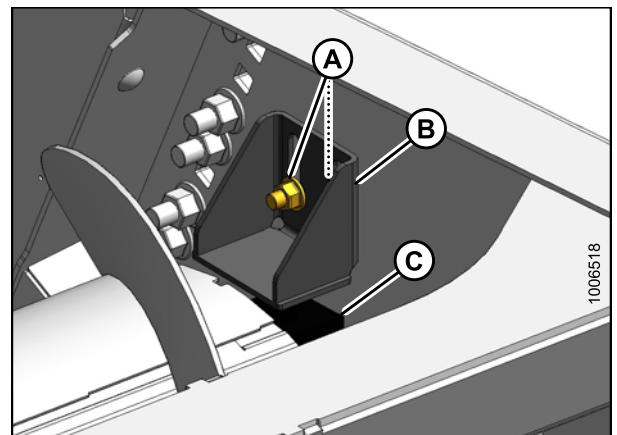


Figure 3.68: Right End

## OPERATION

6. Close endshield (A). Refer to Section: [3.3.2 Closing LH Endshield, page 26](#).

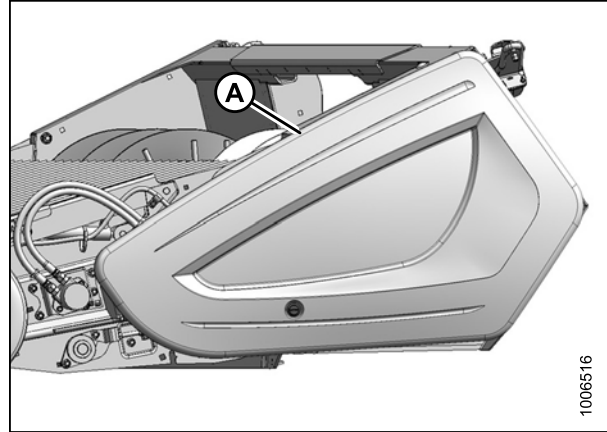


Figure 3.69

### Unlocking Auger Float

Unlock auger float as follows:

#### DANGER

Stop engine and remove key from ignition before leaving operator's seat for any reason. A child or even a pet could engage an idling machine.

1. Lower header to the ground, shut down combine and remove key from ignition.
2. Open left endshield (A). Refer to Section: [3.3.1 Opening LH Endshield, page 25](#).
3. Loosen the two bolts (A) on auger upstops (B) on both ends of header.
4. Slide stops (C) upward to desired float range.
5. Tighten bolts (A).
6. Close left endshield. Refer to section: [3.3.2 Closing LH Endshield, page 26](#).

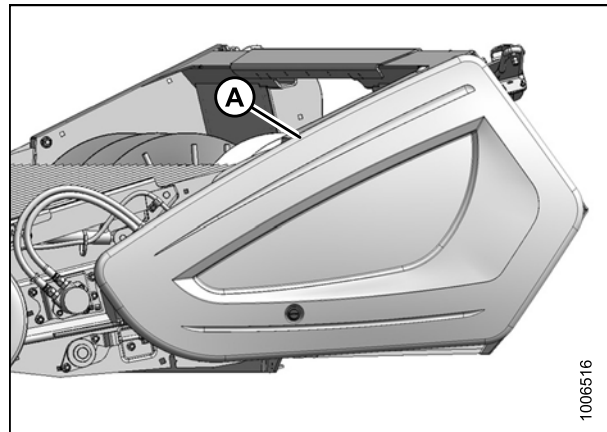


Figure 3.70

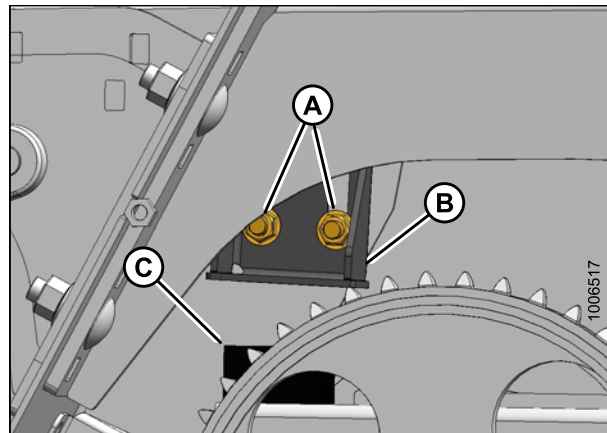


Figure 3.71: Left End



## OPERATION

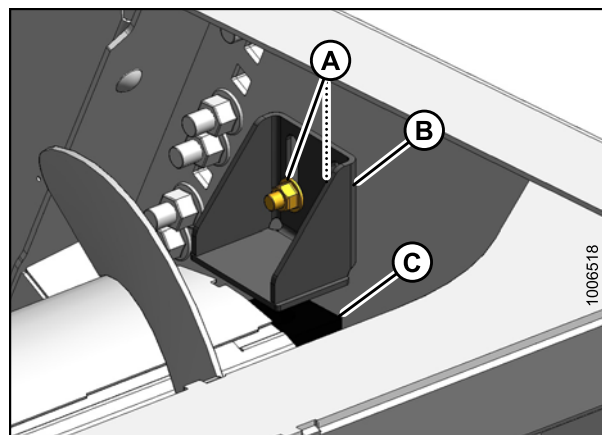


Figure 3.72: Right End

### *Stripper Plate Clearance*

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

- If the clearance between the flighting and stripper plate is too large, crop will tend 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.

Stripper plate clearance has been set to 1/8–1/4 in. (3–6 mm) at the factory.

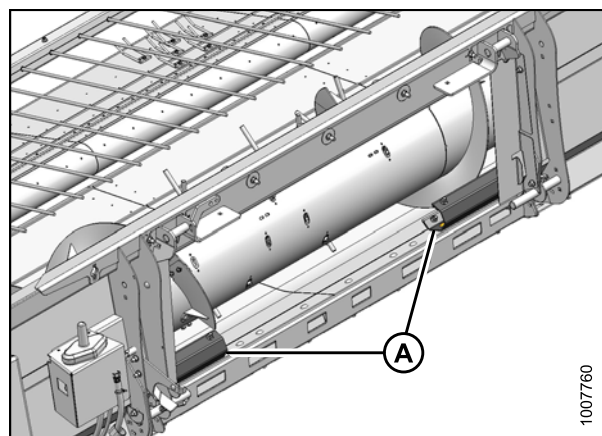


Figure 3.73: Stripper Plates

### Checking Stripper Plate Clearance

Check and adjust the clearance if necessary whenever the auger position is changed:

To check stripper plate clearance:



### **DANGER**

**Stop engine and remove key from ignition before leaving operator's seat for any reason. A child or even a pet could engage an idling machine.**

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 clearances between the auger flighting and stripper plates.

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

## OPERATION

### Adjusting Stripper Plate Clearance

1. If necessary, adjust clearance as follows:
  - a. Loosen nuts (A) on the stripper plate (B) to adjust and move plate to achieve clearance (C) of 1/8–1/4 in. (3–6 mm).
  - b. Tighten nuts (A).
  - c. Recheck the clearance.

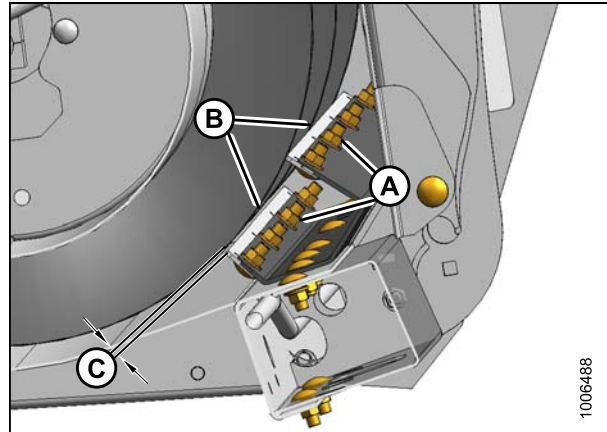


Figure 3.74: Stripper Plate Clearance

### 3.12.3 Operating Height

#### Header Height

Header height is the distance between the deck pivot and the ground. Recommended operating height (A) is 12 in. (305 mm).

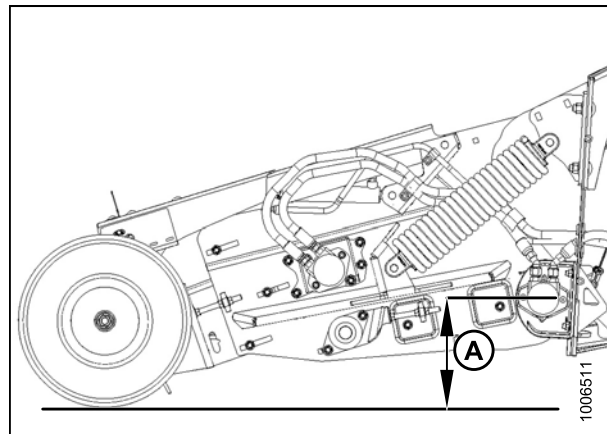


Figure 3.75: Operating Height

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

The location of end plate (B) on the decal represents the header height. The position between 4 and 5 indicates the recommended operating height of 12 in. (305 mm).

Position 1 indicates the lowest height, and 7 is the highest.

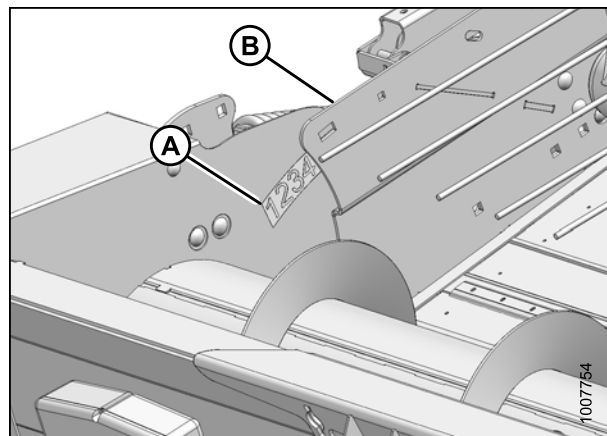


Figure 3.76: Height Gauge

## OPERATION

If your combine is factory equipped with Auto Header Height Control (AHHC), refer to the following for operating and adjustment information.

1. The optimum pick-up height is 12 in. (305 mm) off the ground under normal conditions, and the AHHC should be 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. If the AHHC sensor requires adjustment, refer to the PW8 Pick-Up Header Technical Manual MD #169841, or your MacDon Dealer.

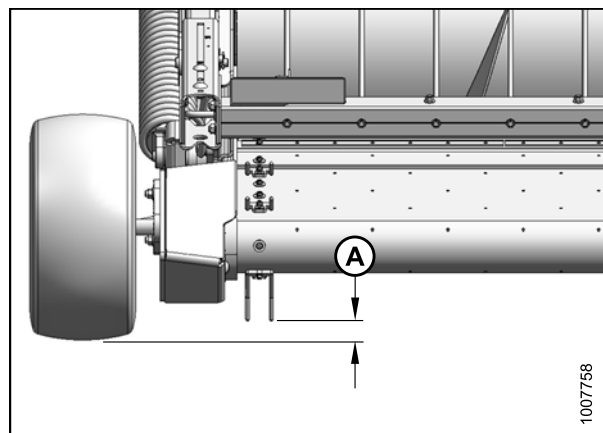
### *Pick-Up Height*

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), and may need to be changed to suit field conditions.

Two general symptoms will 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.

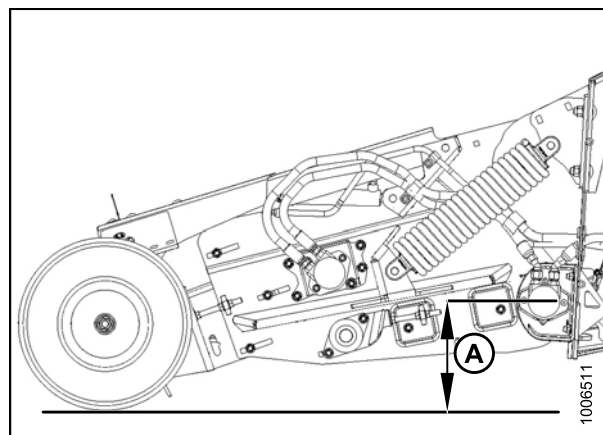


**Figure 3.77: Pick-Up Height**

### **Adjusting Pick-Up Height**

Adjust the pick-up height as follows:

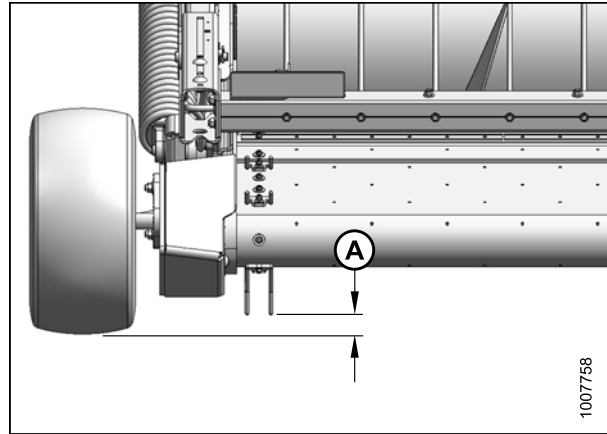
1. Check that tire pressure is 35–45 psi (240–310 kPa).
2. Adjust the operating height (A) so that the rear roller is 12 in. (300 mm) off the ground.



**Figure 3.78: Operating Height**

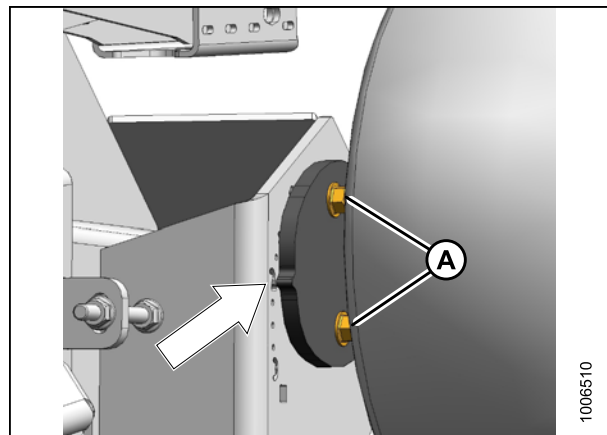
## OPERATION

3. Check the pick-up height (A). If adjustment is required, or if another distance is desired, proceed to next step.
4. Raise the header with the combine control to take the load off the wheels.



**Figure 3.79: Pick-Up Height**

5. Loosen the two nuts (A) on wheel plate.
6. Position wheel plate cog to desired number on frame. Number 2 position should provide 1.0 in. (25 mm) clearance to ground.
7. Tighten nuts (A).
8. Repeat steps 5.–7. for the opposite side.
9. Adjust the AHC if necessary.



**Figure 3.80: Pick-Up Height Adjustment**

## OPERATION

### 3.12.4 Hold-Down

#### *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.

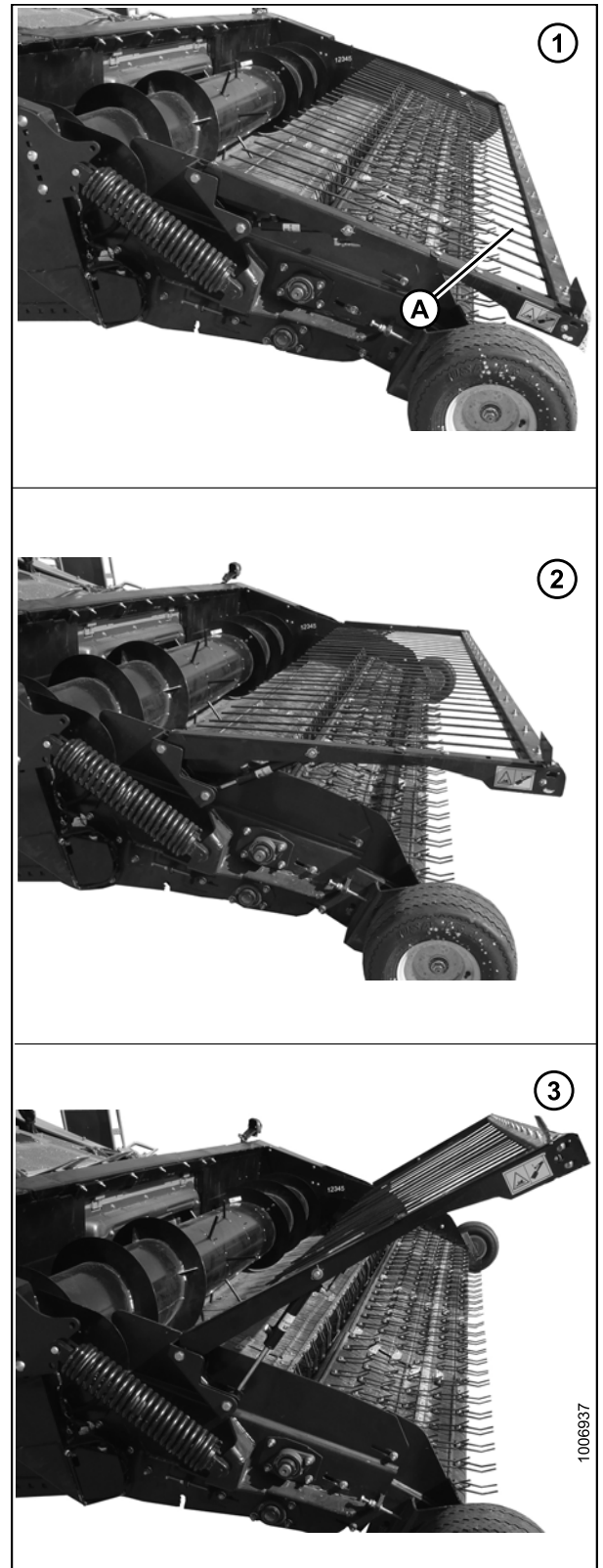
The fiberglass rods (A) hold the swath in contact with the pick-up belts, and guide the crop under the auger. Ideally, constant down pressure on the crop will assist in pick-up performance.

Adjust the hold-down position with the combine reel height control to suit 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 3.81: Hold-Down Positions**

## OPERATION

### *Hold-Down Rod Angle*

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

1. Loosen the two hex head M12 nuts (A) on both ends of the hold-down cross member (B) to allow the cross member to rotate.
2. Rotate the crossbar to the desired position with the handle (D).
3. Tighten nuts (A).

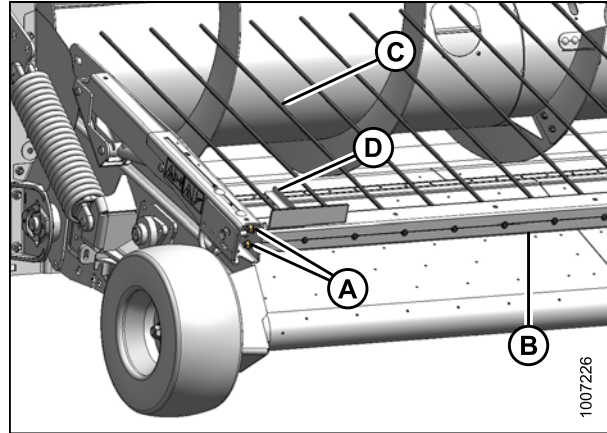


Figure 3.82: Hold-Down Rod Angle

### 3.12.5 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 dealer during set up, 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 in the as shipped location inside the header drive compartment.**

#### *Installing Crop Deflectors*

#### DANGER

**Stop engine and remove key from ignition before leaving operator's seat for any reason. A child or even a pet could engage an idling machine.**

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.

## OPERATION

4. Position crop deflector (A) onto header endsheet as shown and install with two M12x25 bolts (B) and nuts provided in bag. Bolt heads must face inboard.
5. Repeat above step for opposite deflector.

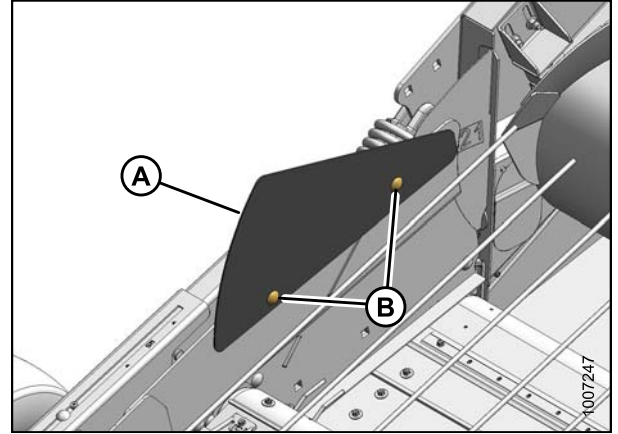


Figure 3.83: Installing Deflector

### *Removing Crop Deflectors*

#### **DANGER**

**Stop engine and remove key from ignition before leaving operator's seat for any reason. A child or even a pet could engage an idling machine.**

1. Lower the hold-down.
2. Lower header to the ground, shut down combine and remove key from ignition.
3. Remove crop deflectors (A) by removing bolts (B).
4. Store deflectors and hardware in combine cab or an alternate safe location.

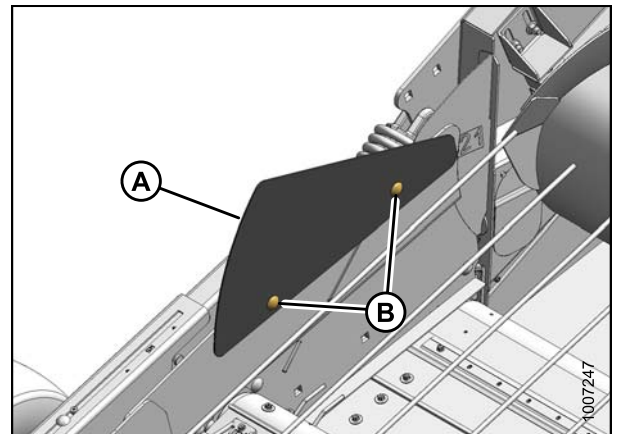


Figure 3.84

## OPERATION

### 3.12.6 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.

**NOTE:** Draper tension only needs to be set to prevent slippage.

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

**NOTE:** Drapers may need to be looser than normal for the first few hours during break-in.

#### *Checking Draper Belt Tension*

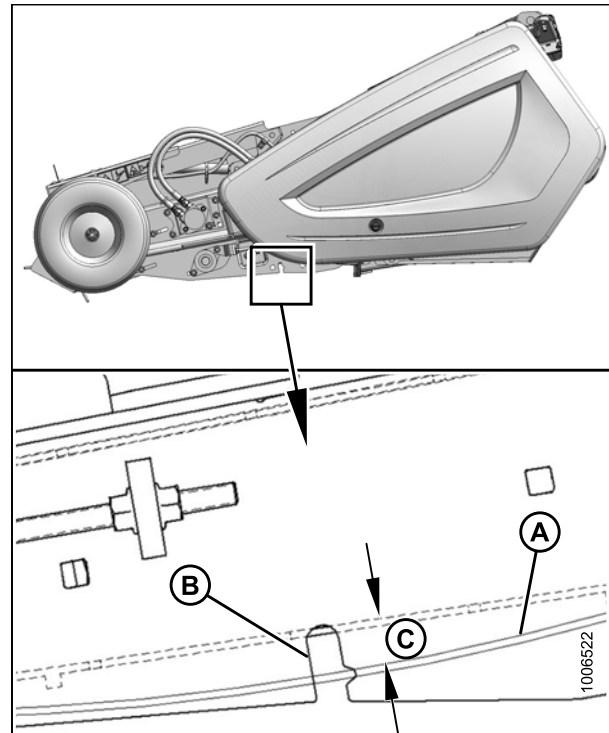
#### **DANGER**

**Stop engine and remove key from ignition before leaving operator's seat for any reason. A child or even a pet could engage an idling machine.**

1. Raise the header fully, and engage the combine lift cylinder stops.
2. Stop engine and remove key from ignition.
3. There should be 1.0 in. (25 mm) of sag (C). When the draper is properly tensioned, it should be visible in the slot (B) in the deck frame, and lined up with the notch as shown.

**NOTE:** Ensure draper tension is the same for left and right side for optimum draper tracking.

4. If the tension requires adjusting, refer to Section [Adjusting Draper Belt Tension on Front Deck, page 69](#) or Section [Adjusting Draper Belt Tension on Rear Deck, page 69](#)



**Figure 3.85: Draper Tension**

A - Draper Belt B - Slot in Deck Frame C - Sag



## OPERATION

### *Adjusting Draper Belt Tension on Front Deck*

If the tension needs adjusting, proceed as follows:

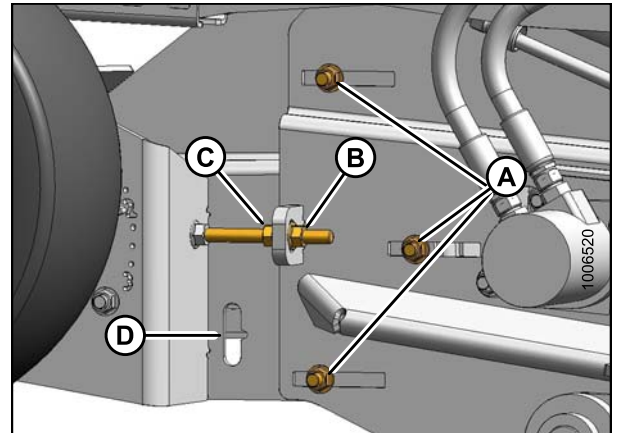
#### **IMPORTANT:**

Draper tension only needs to be set to prevent slippage. Do **NOT** tighten draper above the indicator notch. Over-tightening may cause:

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

#### **1. Front Deck – Both Sides**

- a. Loosen three clamp bolts (A) on each side.
- b. Loosen jam nut (B).
- c. Turn adjuster nut (C) to set draper tension. Proper tension is achieved when the draper lines up with the indicator notch (D).
- d. Tighten clamp bolts (A) and jam nut (B).



**Figure 3.86: Front Deck – Left Side, Right Side Opposite**

### *Adjusting Draper Belt Tension on Rear Deck*

If the tension needs adjusting, proceed as follows:

#### **IMPORTANT:**

Draper tension only needs to be set to prevent slippage. Do **NOT** tighten draper above the indicator notch. Over-tightening may cause:

- Joining bolts to pull out of draper.
- Damage to the rollers or bearings.
- Twisting and Wrinkling of drapers.

## OPERATION

### 1. Rear Deck – Right Side

- a. Loosen three clamp bolts (A).
- b. Loosen jam nut (B).
- c. Turn adjuster nut (C) to set draper tension. Proper tension is achieved when the draper lines up with the indicator notch (D).
- d. Tighten clamp bolts (A) and jam nut (B).

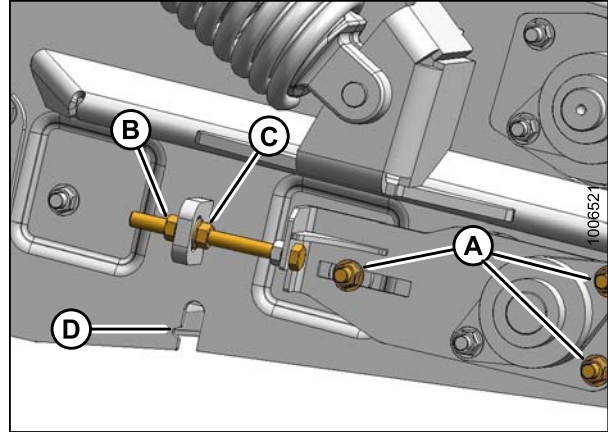


Figure 3.87: Rear Deck – Right Side

### 2. Rear Deck – Left Side

- a. Loosen two clamp bolts (A).
- b. Loosen jam nut (B).
- c. Turn adjuster nut (C) to set draper tension. Proper tension is achieved when the draper lines up with the indicator notch (D).
- d. Tighten clamp bolts (A) and nut (B).

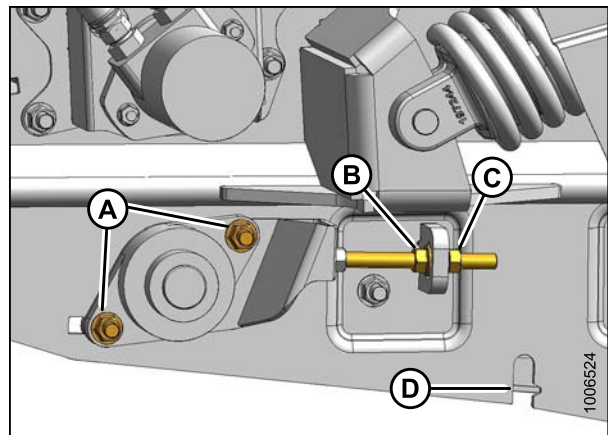


Figure 3.88: Rear Deck – Left Side

## OPERATION

### 3.12.7 Driveline

#### *Clutch*

The header to combine driveline contains a radial pin clutch (A) to provide protection against overload. When an obstruction encounters the auger and creates an overload, the clutch will slip and emit a rattling sound and pulsating motion when slippage occurs.

Frequent slippage for 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, refer to [Replacing Driveline Clutch, page 100](#).

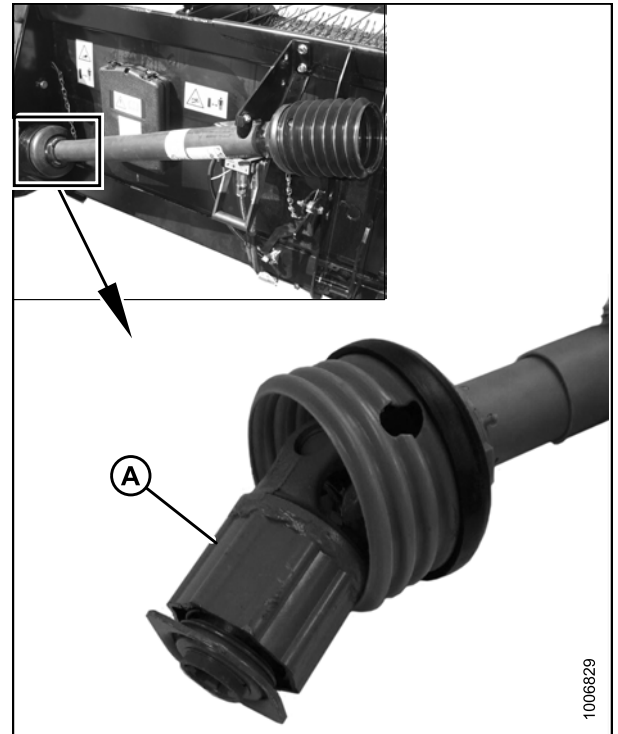


Figure 3.89: Radial Pin Clutch

#### *Guard*

#### **DANGER**

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

The driveline guard (A) normally remains attached to the driveline. Tethers (light chains) (B) on either end of the driveline guard prevent rotation of the guard. The guard can be removed from the driveline for maintenance purposes. See Section [Removing Driveline Guard, page 101](#)

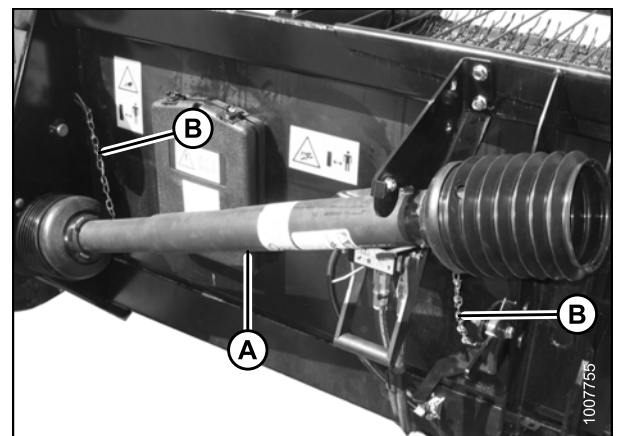


Figure 3.90

### 3.13 Unplugging the Header

#### CAUTION

Stop combine engine and remove key before removing plugged material from header. A child or even a pet could engage the drive.

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 with the reverse controls in 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.

#### **IMPORTANT:**

Pick-up drapers cannot run in reverse. ANY attempt to run the pick-up in reverse will seriously damage the drapers and/or draper drive motors.

### 3.14 Storing the Header

Do the following 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 combine with a waterproof canvas or other protective material.
3. Raise header and engage header lift cylinder safety props on combine.
4. If possible, block up the header to take weight off tires.
5. Repaint all worn or chipped painted surfaces to prevent rust.
6. Loosen draper belts.
7. Lubricate the header thoroughly, leaving excess grease on fittings to keep moisture out of bearings. 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 MacDon Dealer. Attention to these items right away will save time and effort at beginning of next season.
10. Replace or tighten any missing or loose hardware. Refer to Section: [4.2.1 Torque Specifications, page 76](#).



## 4 Maintenance and Servicing

The following instructions are provided to assist the Operator in the maintenance and servicing of the PW8 Pick-Up header. Detailed maintenance, service, and parts information are contained in the PW8 Pick-Up Header Technical Manual MD #169841 that is available from your MacDon Dealer, and in the PW8 Parts Catalog MD #169497.

Log hours of operation, and use the Maintenance Schedule/Record provided to keep a record of scheduled maintenance. Refer to [Maintenance Schedule/Record, page 88](#).

### 4.1 Prepare Header for Servicing



#### **CAUTION**

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

- **Fully lower the header. 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.**

## 4.2 Maintenance Specifications

### 4.2.1 Torque Specifications

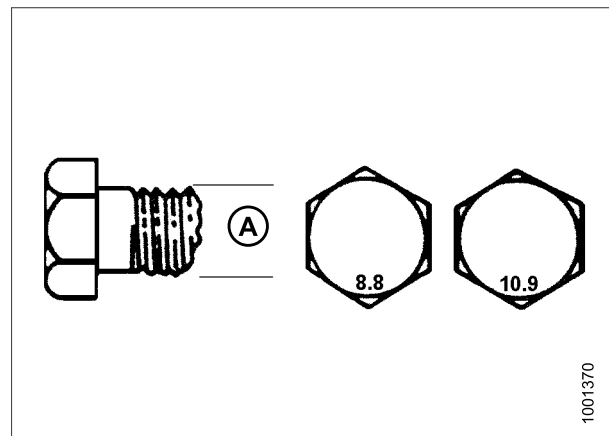
The following tables give correct torque values for various bolts, cap screws, and hydraulic fittings.

- Tighten all bolts to the torques specified in chart (unless otherwise noted throughout this manual).
- Replace hardware with the same strength and grade bolt.
- Check tightness of bolts periodically, using the tables below as a guide.
- Torque categories for bolts and cap screws are identified by their head markings.

#### *Metric Bolt Specifications*

**Table 4.1 Metric Class 8.8 Bolts and Class 9 Free Spinning Nut**

Nominal Size	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 4.1**

A - Nominal Size



## MAINTENANCE AND SERVICING

**Table 4.2 Metric Class 8.8 Bolts and Class 9 Distorted Thread Nut**

Nominal Size	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

**Table 4.3 Metric Class 10.9 Bolts and Class 10 Free Spinning Nut**

Nominal Size	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

## MAINTENANCE AND SERVICING

**Table 4.4 Metric Class 10.9 Bolts and Class 10 Distorted Thread Nut**

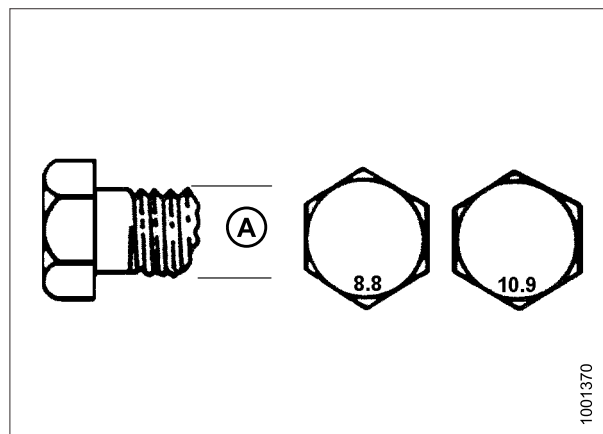
Nominal Size	Torque (ft-lbf)(*in-lbf)		Torque (N·m)	
	Min.	Max.	Min.	Max.
3-0.5	*12	*13	1.3	1.5
3.5-0.6	*19	*21	2.1	2.3
4-0.7	*28	*31	3.1	3.4
5-0.8	*56	*62	6.3	7
6-1.0	*95	*105	10.7	11.8
8-1.25	19	21	26	29
10-1.5	38	42	51	57
12-1.75	66	73	90	99
14-2.0	106	117	143	158
16-2.0	165	182	222	246
20-2.5	322	356	434	480
24-3.0	556	614	750	829

## MAINTENANCE AND SERVICING

### Metric Bolt Specifications Bolting into Cast Aluminum

**Table 4.5 Metric Bolt Bolting into Cast Aluminum**

Nominal Size	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				

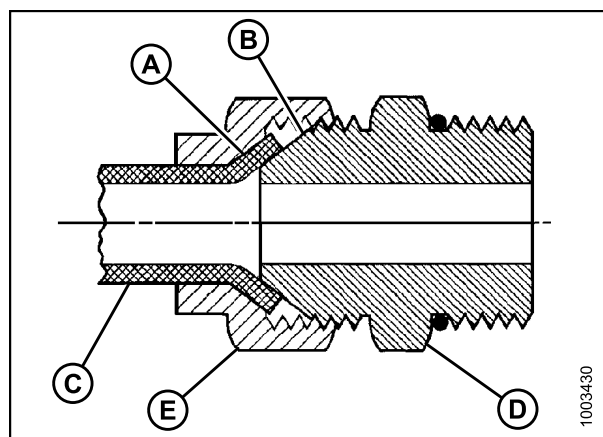


**Figure 4.2**

A - Nominal Size

### 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 FFFT or to a given torque value shown in the following table.
4. To prevent the fitting (D) from rotating, use two wrenches. Place one wrench on the fitting body (D) and tighten the nut (E) with the other wrench to the torque shown.
5. Assess the final condition of the connection.



**Figure 4.3**

A - Flare

C - Tube

E - Nut

B - Flare Seat

D - Body

## MAINTENANCE AND SERVICING

**Table 4.6 Flare-Type Hydraulic Tube Fittings**

SAE No.	Tube Size O.D. (in.)	Thread Size (in.)	Nut Size Across Flats (in.)	Torque Value <sup>1</sup>		Flats From Finger Tight (FFFT)	
				ft-lbf	N-m	Flats	Turns
3	3/16	3/8	7/16	6	8	1	1/6
4	1/4	7/16	9/16	9	12	1	1/6
5	5/16	1/2	5/8	12	16	1	1/6
6	3/8	9/16	11/16	18	24	1	1/6
8	1/2	3/4	7/8	34	46	1	1/6
10	5/8	7/8	1	46	62	1	1/6
12	3/4	1-1/16	1-1/4	75	102	3/4	1/8
14	7/8	1-3/8	1-3/8	90	122	3/4	1/8
16	1	1-5/16	1-1/2	105	142	3/4	1/8

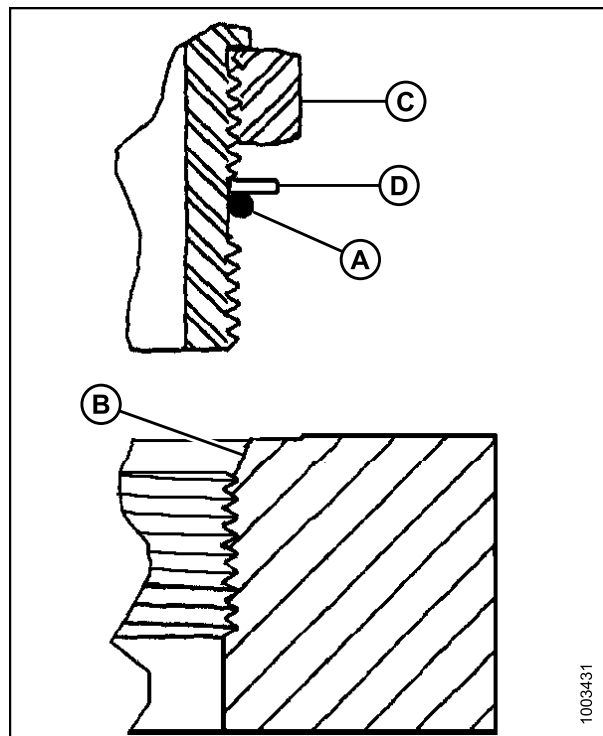
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1. Torque values shown are based on lubricated connections as in reassembly.

## MAINTENANCE AND SERVICING

### *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 not loose and is pushed toward the lock nut (C) as far as possible.
3. Check that O-ring (A) is not on the threads, adjust if necessary.
4. Apply hydraulic system oil to the O-ring (A).



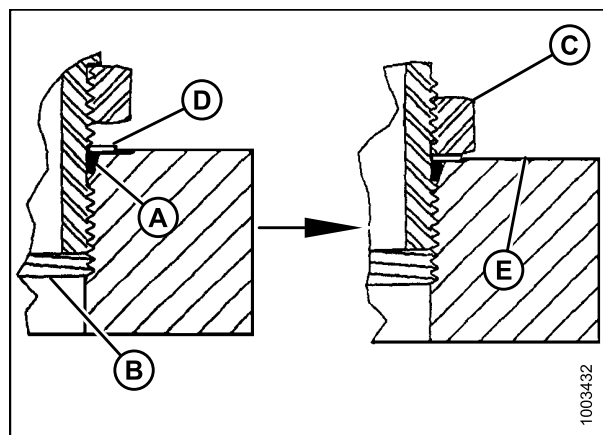
**Figure 4.4**

A - O-Ring  
D - Washer

B - Seat

C - Nut

5. Install fitting (B) into port until back up washer (D) and O-ring (A) contacts on 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 the fitting (B) and the other on the lock nut (C).
8. Check the final condition of the fitting.



**Figure 4.5**

A - O-Ring  
D - Washer

B - Fitting  
E - Part Face

C - Nut

## MAINTENANCE AND SERVICING

**Table 4.7 O-Ring Boss (ORB) Hydraulic Fittings (Adjustable)**

SAE Dash Size	Thread Size (in.)	Torque Value <sup>2</sup>	
		ft·lbf (*in·lbf)	N·m
-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

---

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

## MAINTENANCE AND SERVICING

### *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, 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) per value in chart. See table 4.8 O-Ring Boss (ORB) Hydraulic Fittings (Non-Adjustable), page 83.
6. Check the final condition of the fitting.

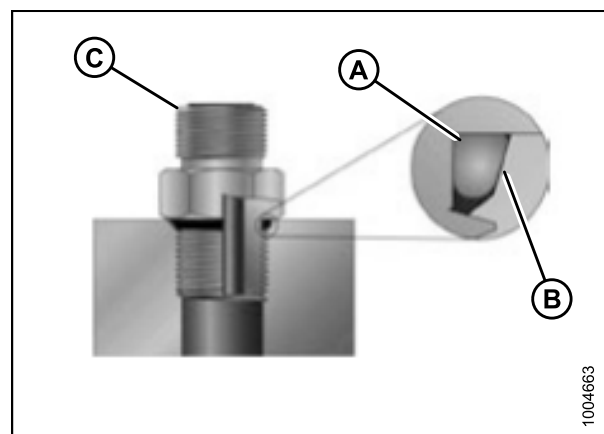


Figure 4.6

Table 4.8 O-Ring Boss (ORB) Hydraulic Fittings (Non-Adjustable)

SAE Dash Size	Thread Size (in.)	Torque Value <sup>3</sup>	
		ft·lbf (*in·lbf)	N·m
-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

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

## MAINTENANCE AND SERVICING

### *O-Ring Face Seal (ORFS) Hydraulic Fittings*

To tighten O-ring face seal (ORFS) hydraulic fittings, follow these steps:

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

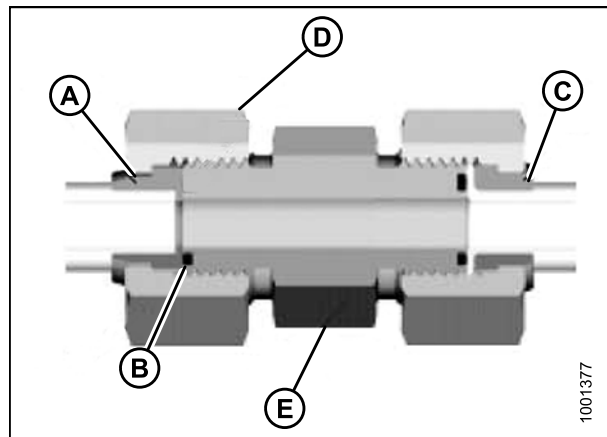


**Figure 4.7**

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 fitting further to the torque value in the table shown in the opposite column.

**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).

6. When assembling unions or two hoses together, three wrenches will be required.
7. Check the final condition of the fitting.



**Figure 4.8**

A - Brazed Sleeve  
C - Two Piece Sleeve  
E - Fitting Body

B - O-ring  
D - Nut



## MAINTENANCE AND SERVICING

**Table 4.9 O-Ring Face Seal (ORFS) Hydraulic Fittings**

SAE Dash Size	Thread Size (in.)	Torque Value <sup>4</sup>	
		ft·lbf (*in·lbf)	N·m
-3	Note <sup>5</sup>	—	—
-4	9/16–18	18–21	25–28
-5	Note <sup>5</sup>	—	—
-6	11/16–16	29–32	40–44
-8	13/16–16	41–45	55–61
-10	1–14	59–65	80–88
-12	1-3/16–12	85–94	115–127
-14	Note <sup>5</sup>	—	—
-16	1-7/16–12	111–122	150–165
-20	1-11/16–12	151–167	205–226
-24	2–12	232–256	315–347
-32	2-1/2–12	376–414	510–561

### 4.2.2 Recommended Fluids and 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

- Your machine can operate at top efficiency only if clean lubricants are used.
- Use clean containers to handle all lubricants.
- Store in an area protected from dust, moisture, and other contaminants.

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

## MAINTENANCE AND SERVICING

### 4.2.3 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. <sup>3</sup>	$\times 16.3871 =$	cubic centimetres	cm <sup>3</sup> or cc
Weight	pounds	lbs	$\times 0.4536 =$	kilograms	kg

### 4.3 Maintenance Requirements

#### 4.3.1 Maintenance Schedule

The following maintenance schedule lists the periodic maintenance procedures, organized by service intervals. Regular maintenance is the best insurance against early wear and untimely breakdowns. Following this schedule will increase machine life.

For detailed instructions, refer to the specific headings in this chapter. Use the fluids and lubricants specified in Section [4.2.2 Recommended Fluids and Lubricants, page 85](#).

Service Intervals: The recommended service intervals are in hours of operation. Where a service interval is given in more than one time frame, 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 safety messages given in [1 Safety, page 1](#).

## MAINTENANCE AND SERVICING

### *Maintenance Schedule/Record*

Action:	✓ - Check	⬮ - Lubricate	▲ - Change
Hour meter reading			
Service date			
Serviced by			
<b>FIRST 10 HOURS</b>			
✓ Auger drive chain tension			
✓ Hydraulic hoses for leaks			
✓ Draper belt tension			
<b>50 HOURS</b>			
✓ Auger drive chain tension			
✓ Hydraulic hoses for leaks			
✓ Draper belt tension			
✓ Draper belt condition			
✓ Draper plastic guides for wear			
<b>100 HOURS</b>			
⬮ Clean and grease driveshaft splines			
⬮ Driveline slip-joint and clutch			
⬮ Auger drive chain and bearing			
✓ Tire pressure			
✓ Wheel bolt torque			
✓ Loose fasteners			
✓ Bearings and seals			
✓ Pick-up fingers for wear			
✓ Height control sensor pivot points			
<b>END OF SEASON</b>			
Clean and touch-up worn paint spots			
Clean header			
✓ Check header for wear			

### 4.3.2 Pre-Season/Annual Service

Perform the following at the beginning of each operating season:



#### **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.
  - Be sure all shields and guards are properly installed and secured. Never alter or remove safety equipment.
  - Be sure you understand and have practiced safe use of all controls. Know the capacity and operating characteristics of the machine.
1. Lubricate machine completely. Refer to Section [4.4 Lubrication, page 90](#).
  2. Perform all annual maintenance. See [Maintenance Schedule/Record, page 88](#).

### 4.3.3 End of Season Service

Refer to [3.14 Storing the Header, page 73](#) for end of season servicing information.

### 4.4 Lubrication

#### WARNING

To avoid personal injury, before servicing header or opening drive covers, follow procedures in [4.1 Prepare Header for Servicing, page 75](#).

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).

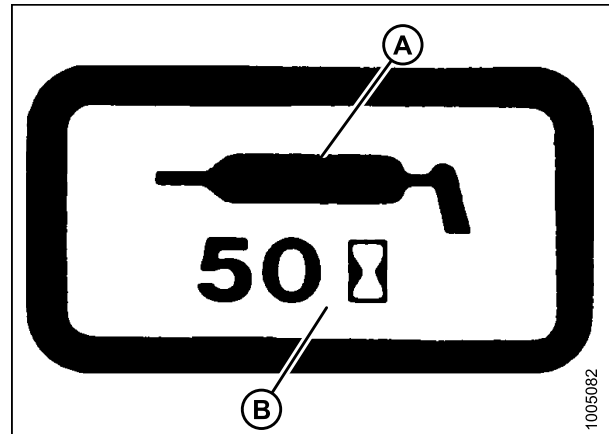


Figure 4.9

Log hours of operation and use the Maintenance Record provided to keep a record of scheduled maintenance. Refer to [Maintenance Schedule/Record, page 88](#).

#### 4.4.1 Greasing Procedure

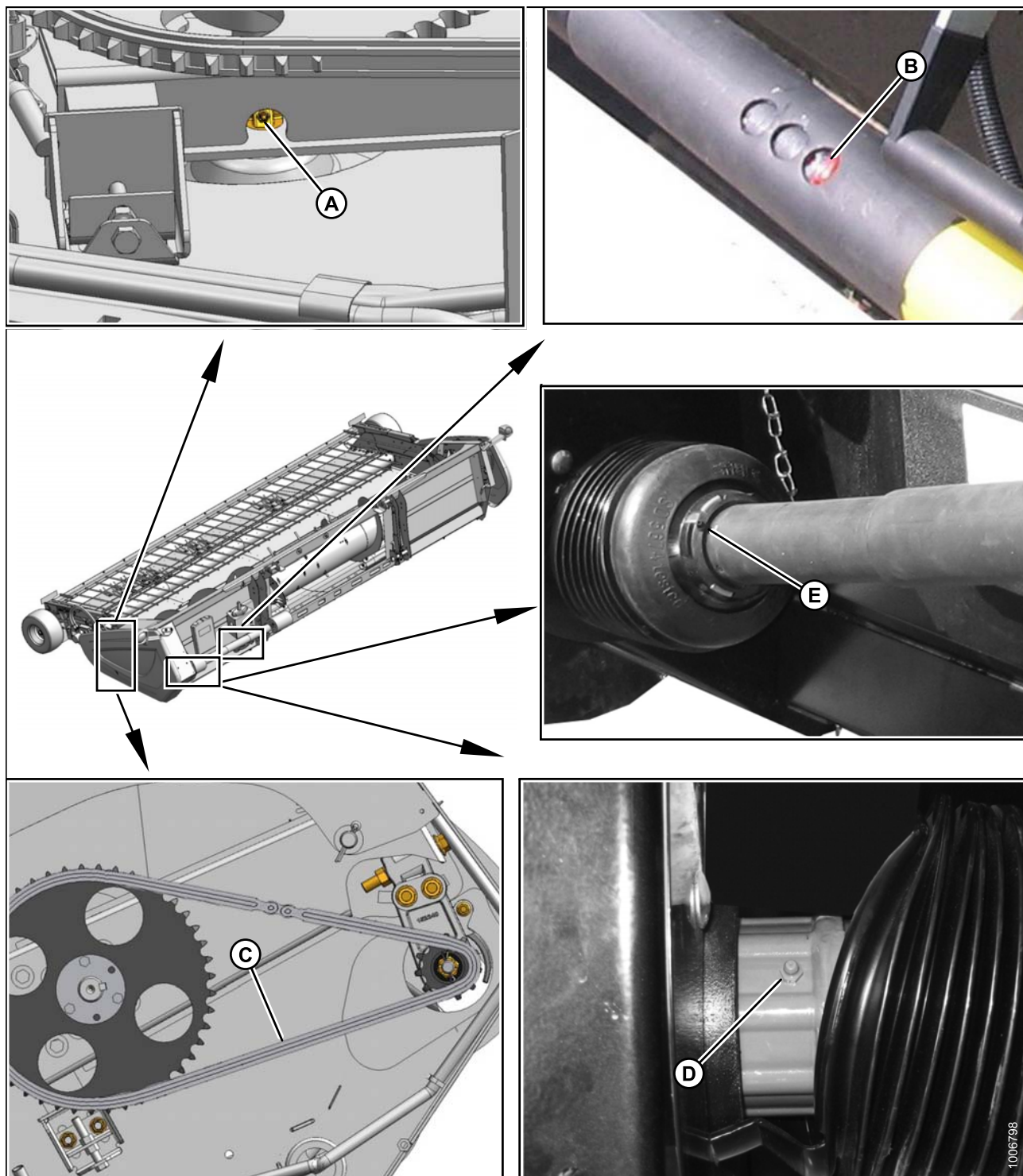
#### WARNING

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. See [4.2.2 Recommended Fluids and Lubricants, page 85](#).
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.

## 4.4.2 Greasing Points

Every 100 Hours



**Figure 4.10: Lubricating Header**

A - Auger Bearing

C - Auger Chain (see [Lubricating Auger Drive Chain, page 113](#))

E - Driveline Guard (both ends)

B - Driveline Slip-Joint

D - Driveline Clutch

## MAINTENANCE AND SERVICING

### 4.4.3 Sealed Bearing

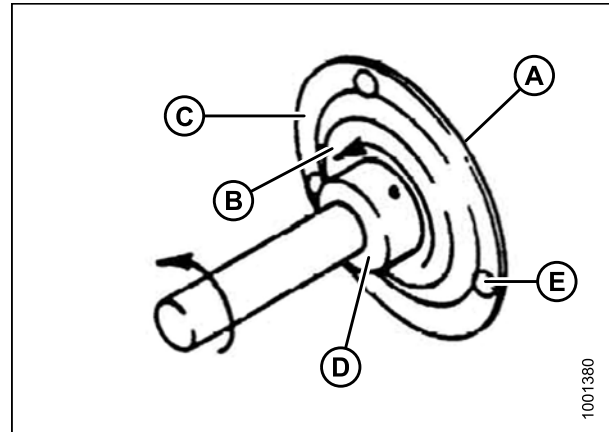
1. Clean shaft and coat with rust preventative.
2. Install flangette (A), bearing (B), second flangette (C) and lock collar (D).

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

3. Install (but do not tighten) the flangette bolts (E).
4. When the shaft is correctly located, lock the lock collar with a punch.

**NOTE:** The collar should be locked in the same direction the shaft rotates. Tighten the setscrew in the collar.

5. Tighten the flangette bolts.
6. Loosen the flangette bolts on the mating bearing one turn, and retighten. This will allow the bearing to line up.



**Figure 4.11**



## 4.5 Endshields

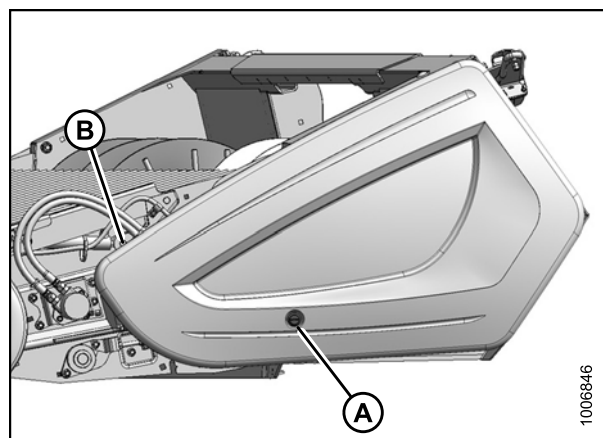
The endshields are molded polyethylene covers that are attached to the ends of the header. They mainly provide shielding for the header drive components and also display the make of the combine. The left endshield is hinged to the endsheet, and can be opened for routine maintenance or easily removed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

### 4.5.1 Removing LH Endshield

#### DANGER

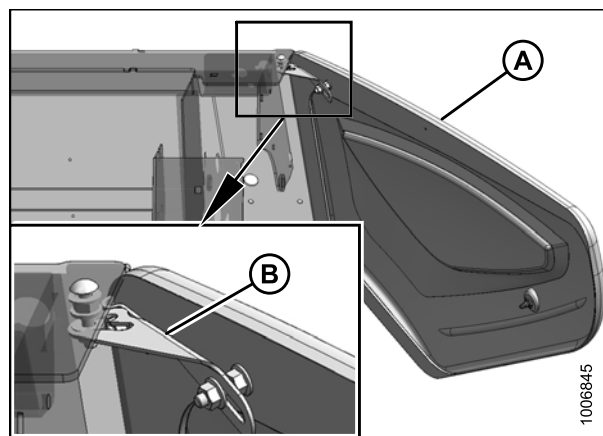
**Stop engine and remove key from ignition before leaving operator's seat for any reason. A child or even a pet could engage an idling machine.**

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



**Figure 4.12: Endshield Closed**

3. Open endshield (A) until support (B) can be moved into lock position.



**Figure 4.13: Endshield Open**

## MAINTENANCE AND SERVICING

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

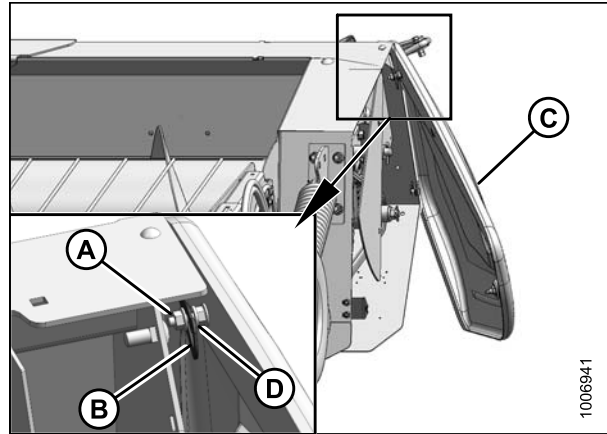


Figure 4.14

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

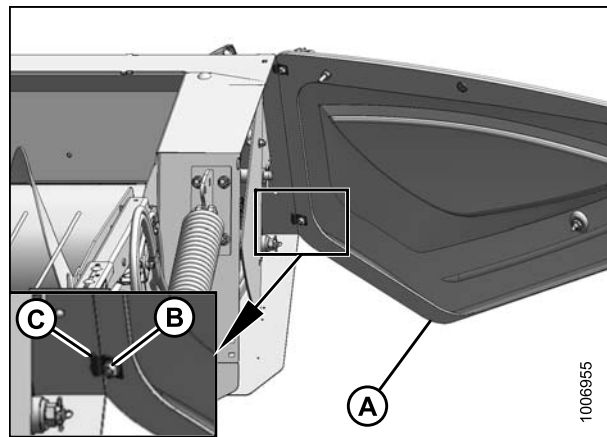


Figure 4.15

### 4.5.2 Installing LH 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 .

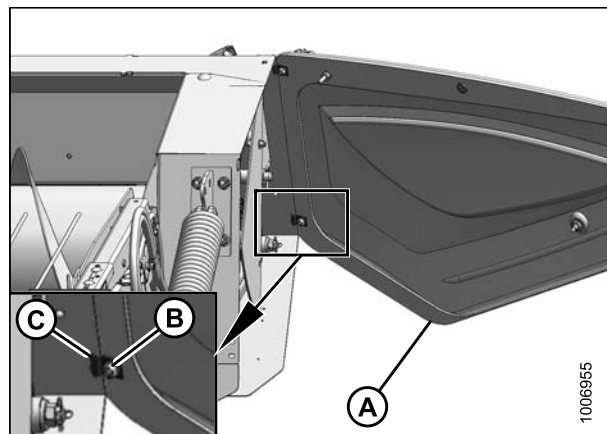


Figure 4.16: Attaching Endshield

## MAINTENANCE AND SERVICING

3. Close shield (A), ensuring that magnet (B) and stop (C) in header frame are aligned. This will ensure that the latch (D) will line up with the receptacle (E).

**NOTE:** Latch (D) and magnet (B) positions are properly adjusted at the factory.

4. If required, loosen nuts on clips at the back of the shield (A) and reposition the shield. Tighten the nuts but do not overtighten to prevent damage to the shield.

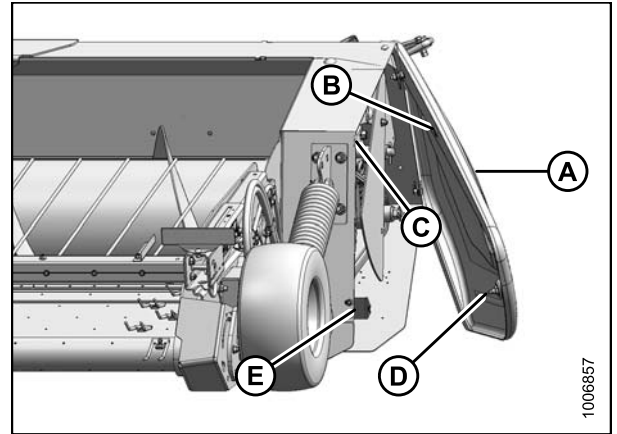


Figure 4.17: Aligning Shield

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

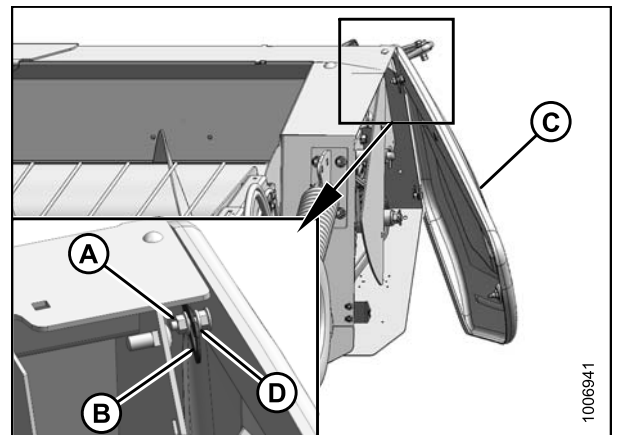


Figure 4.18: Attaching Support

7. Close the shield and turn latch (A) clockwise until it stops (slightly more than one-half turn) using a standard end screwdriver.
8. Check that magnet (B) on endshield is against the header endsheet and that latch (A) is engaged.

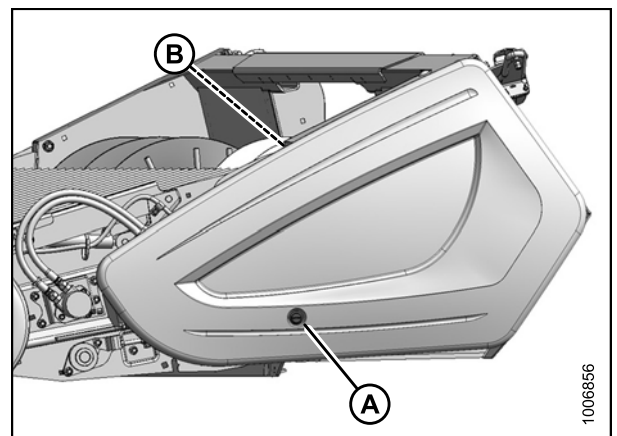


Figure 4.19: Endshield Closed

### 4.5.3 Replacing Endshield Brackets

#### DANGER

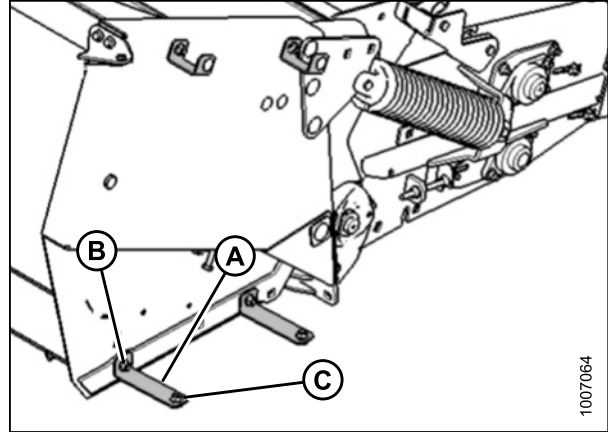
Stop engine and remove key from ignition before leaving operator's seat for any reason. A child or even a pet could engage an idling machine.

## MAINTENANCE AND SERVICING

Replace bracket as follows if damaged or broken.

**NOTE:** Endshield does not have to be removed to replace bracket.

1. Locate broken bracket (A).
2. Remove bolts (B) and (C) securing bracket (A) to header frame and endshield, and remove bracket.
3. Position bracket (A), and secure to header frame with bolt (B) and nut. Do not tighten.
4. Attach bracket to endshield with bolt (C) and nut. Do not overtighten bolt so that plastic endshield is severely deformed.
5. Tighten other bolt.



**Figure 4.20: Endshield and Light Removed for Clarity**

## 4.6 Drives

### 4.6.1 Header Driveshaft

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

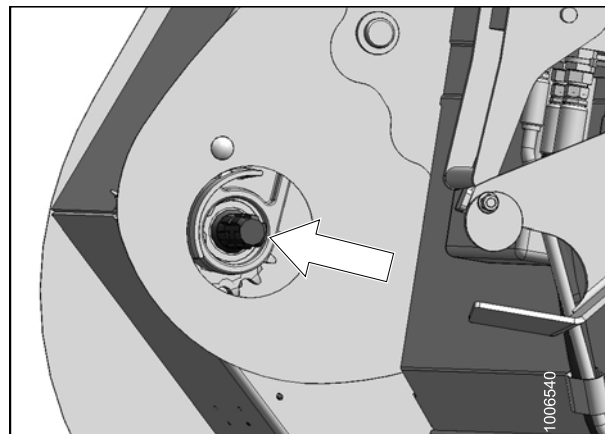


Figure 4.21

### 4.6.2 Header Driveline

#### *Removing Header Driveline*

#### **⚠ DANGER**

Stop engine and remove key from ignition before leaving operator's seat for any reason. A child or even a pet could engage an idling machine.

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

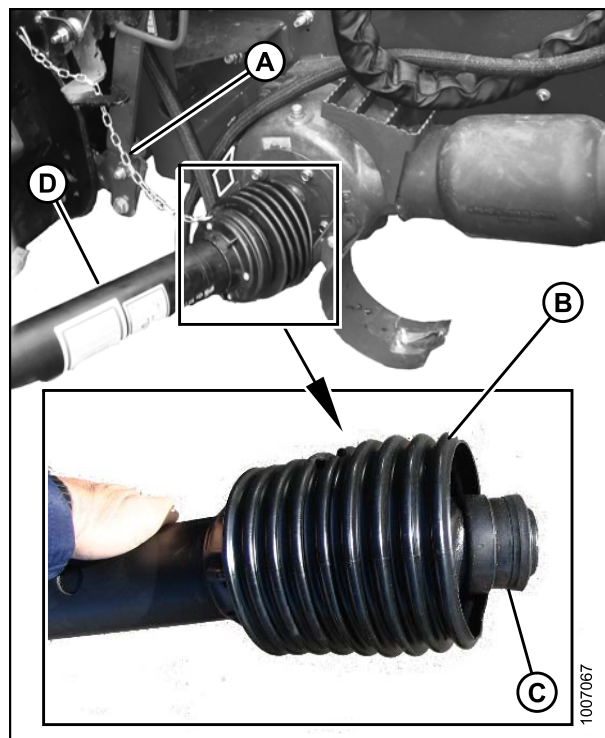
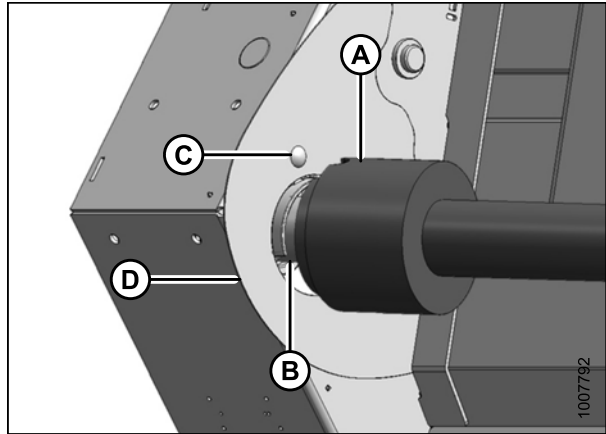


Figure 4.22: Combine End

## MAINTENANCE AND SERVICING

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



**Figure 4.23: Header End**

## MAINTENANCE AND SERVICING

### Installing Header Driveline

#### **DANGER**

Stop engine and remove key from ignition before leaving operator's seat for any reason. A child or even a pet could engage an idling machine.

#### **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 the guard (A) to expose the 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 the collar (B).
4. If necessary, loosen bolt (D) so that plate (E) can be moved to provide sufficient clearance for driveline guard.
5. Line up the notch (A) in the driveline rubber bellows with bolt (B) so that the notch fits around the casting (C) inside the auger drive compartment.

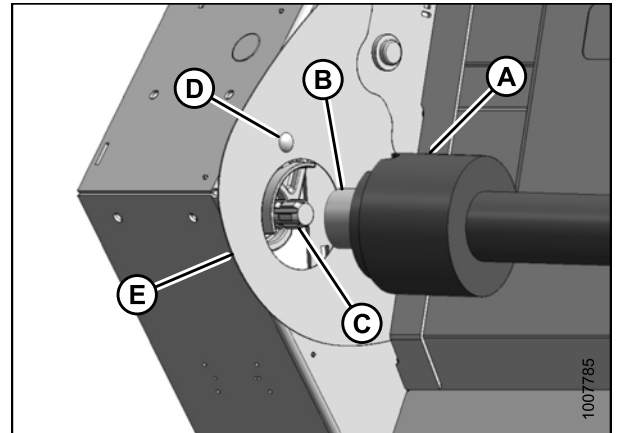


Figure 4.24: Header End

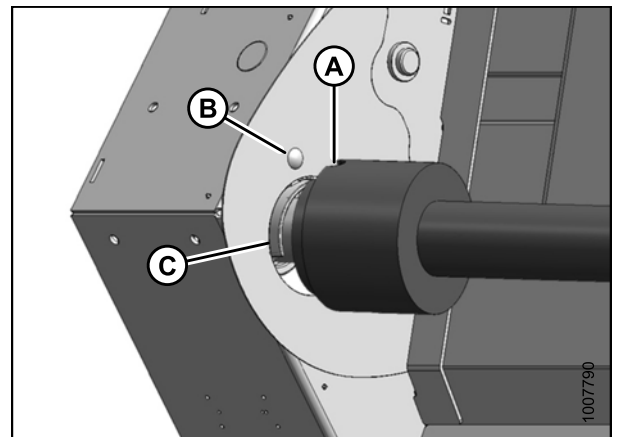


Figure 4.25

## MAINTENANCE AND SERVICING

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

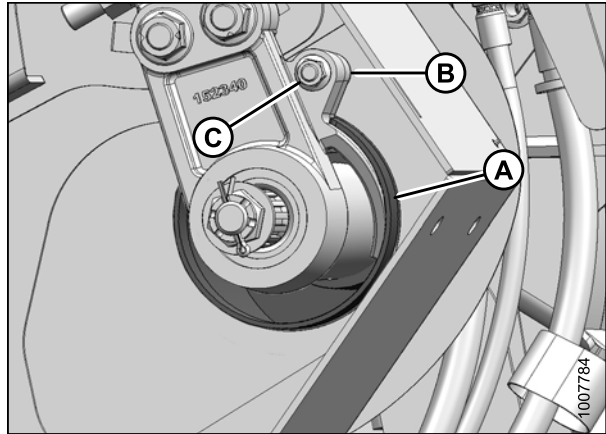


Figure 4.26

8. Pull back the guard (B) to expose the 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) that secure driveline guard to header.

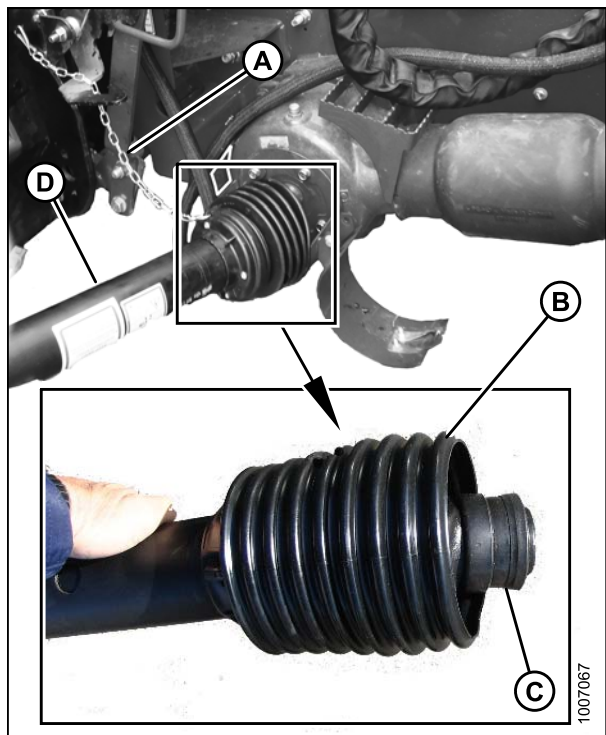


Figure 4.27: Combine End

### *Replacing Driveline Clutch*

If the driveline clutch cannot maintain the required torque to operate the header, it must either be repaired or replaced. Refer to your PW8 Pick-Up Header Parts Catalog (MD #169497) for available replacement parts.

It is recommended that repairs be performed by your MacDon Dealer.

Replace the clutch as follows:

1. Remove driveline from header. See Section [Removing Header Driveline, page 97](#).
2. Remove the driveline guard (A). Refer to [Removing Driveline Guard, page 101](#).



## MAINTENANCE AND SERVICING

3. Remove the cross and bearings (A) connecting the clutch (B) to the driveline yoke (C).
4. Install new bearings and cross (A), and clutch (B) onto existing driveline yoke (C).

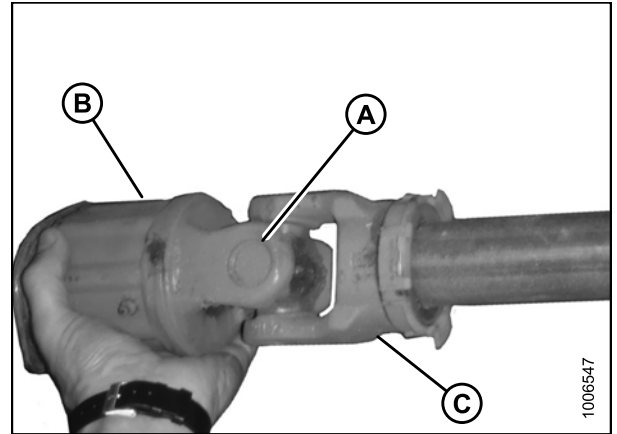


Figure 4.28

5. Re-install the guard (A). Refer to [Installing Driveline Guard, page 103](#).
6. Re-install driveline. See Section [Installing Header Driveline, page 99](#).

### *Driveline Guard*

#### Removing Driveline Guard

The main driveline guard normally remains attached to the driveline, but can be removed for maintenance.

#### **DANGER**

**Stop engine and remove key from ignition before leaving operator's seat for any reason. A child or even a pet could engage an idling machine.**

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

To remove a main driveline guard, follow these steps:

1. Disconnect tethers (not shown) at ends of driveline.
2. Rotate disc (B) on driveline storage hook (A), and remove driveline from hook.

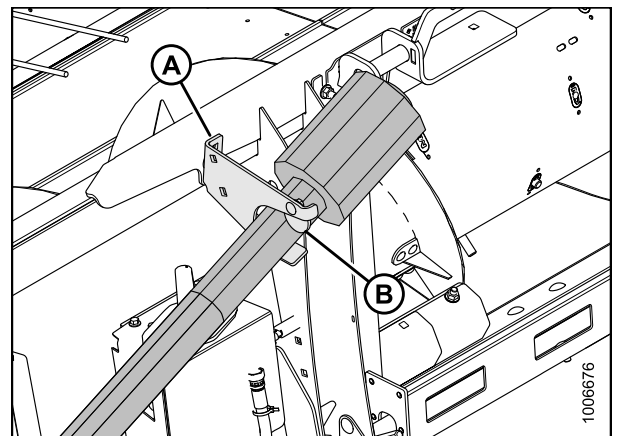


Figure 4.29

## MAINTENANCE AND SERVICING

3. Extend driveline (A) until it separates. Hold end of driveline to prevent it from dropping and hitting the ground.



**Figure 4.30**

4. Release grease zerk/lock (A) with a screwdriver.



**Figure 4.31**

## MAINTENANCE AND SERVICING

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

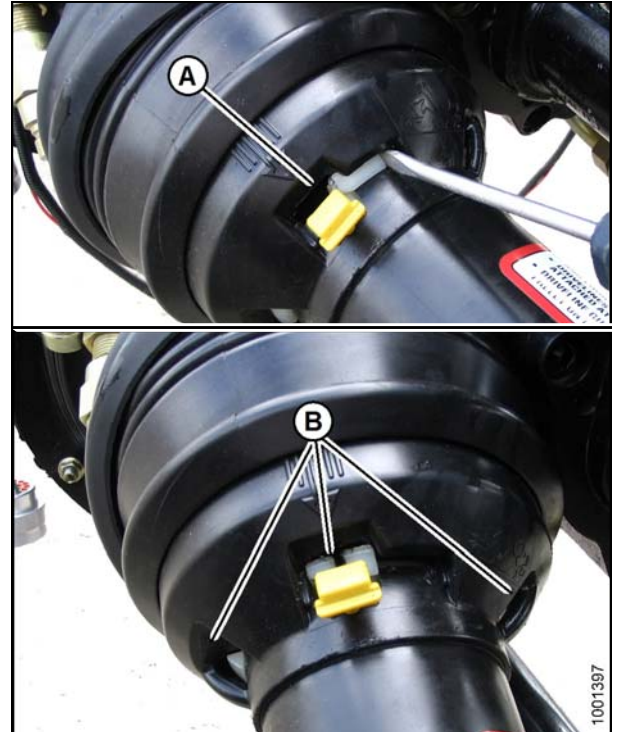


Figure 4.32

### Installing Driveline Guard

To install the main driveline guards, follow these steps.

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



Figure 4.33

## MAINTENANCE AND SERVICING

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

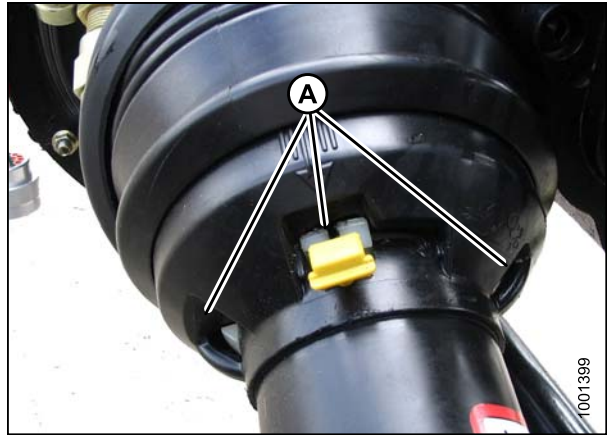


Figure 4.34

3. Rotate ring (A) clockwise with a screwdriver to lock ring in guard.



Figure 4.35

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



Figure 4.36

## MAINTENANCE AND SERVICING

5. Reassemble driveline.

**NOTE:** The splines are keyed so that universals are aligned. Align weld (A) with missing spline (B) when assembling.

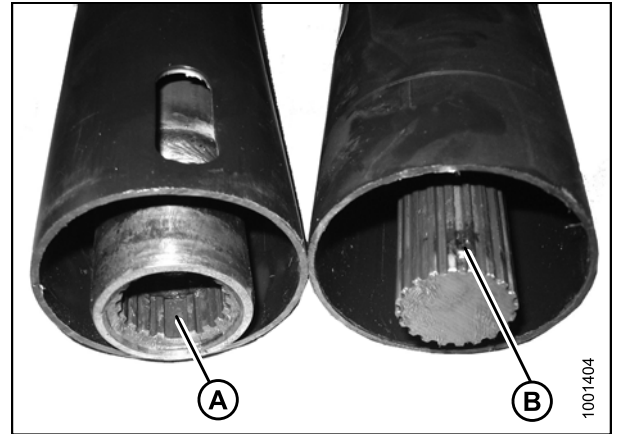


Figure 4.37

6. Slide driveline in hook (A) so that disc (B) drops to secure driveshaft, or connect to combine.
7. Attach tethers (not shown) to header.

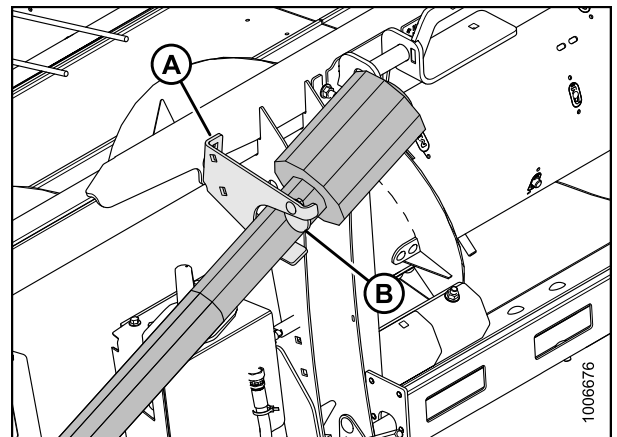


Figure 4.38

### Driveline Splined Shaft

1. Remove the driveline guard (A). Refer to [Removing Driveline Guard, page 101](#).
2. Clean internal and external splines.
3. Install driveline guard. Refer to [Installing Driveline Guard, page 103](#).

### 4.6.3 Draper Drives

The two hydraulic drive motors do not require any maintenance.

If repairs other than motor seal kits are required, they should be removed and serviced at your MacDon Dealer.

#### Removing Front Hydraulic Motor



### DANGER

Stop engine and remove key from ignition before leaving operator's seat for any reason. A child or even a pet could engage an idling machine.

## MAINTENANCE AND SERVICING

1. Lower pick-up to ground, shut down combine, and remove key from ignition.
2. Disconnect hydraulic hoses (A) from motor. Install caps onto hose ends, or wrap with plastic and move hoses away from work area.
3. Remove two nuts (B) with a 16 mm socket.

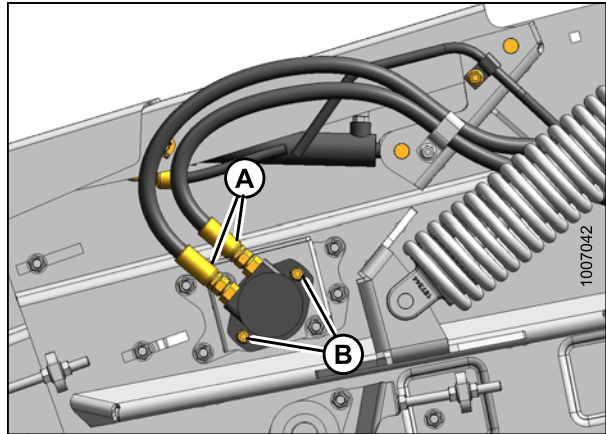


Figure 4.39

4. Pull hydraulic motor (A) from roller shaft.

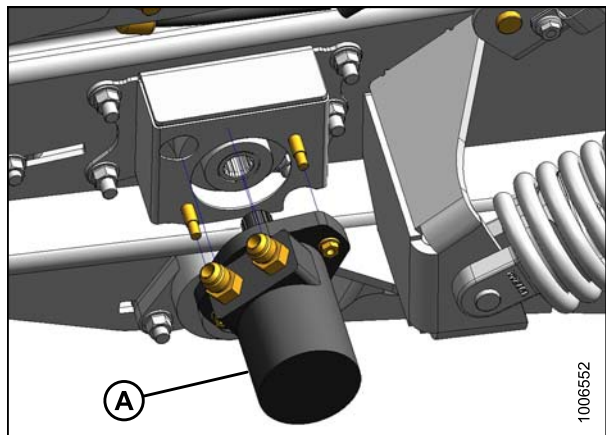


Figure 4.40

### *Installing Front Hydraulic Motor*

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

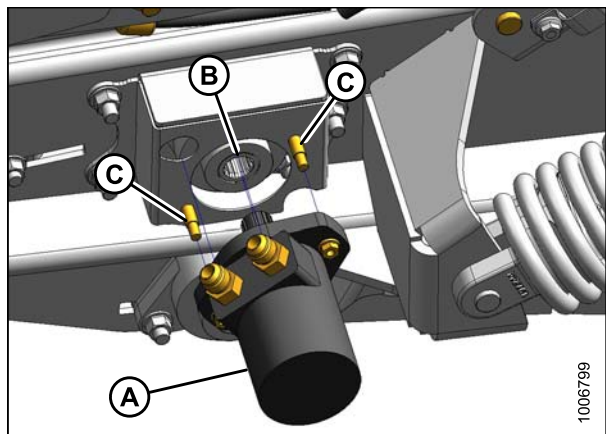


Figure 4.41



## MAINTENANCE AND SERVICING

- Secure motor with lock nuts (A), and torque nuts (A) to 37 lbf-ft (50 N·m) with a 16 mm socket.

**IMPORTANT:**

Hydraulic motor must be able to move slightly during operation. Tighten to required torque, and DO NOT use washers or shims.

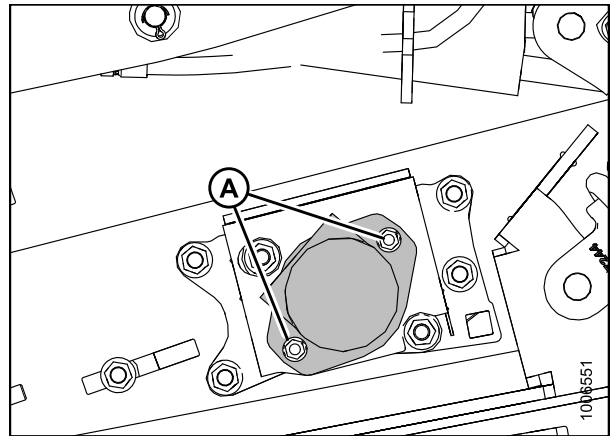


Figure 4.42

- If installing new motor, install hydraulic fittings (A) from original motor.

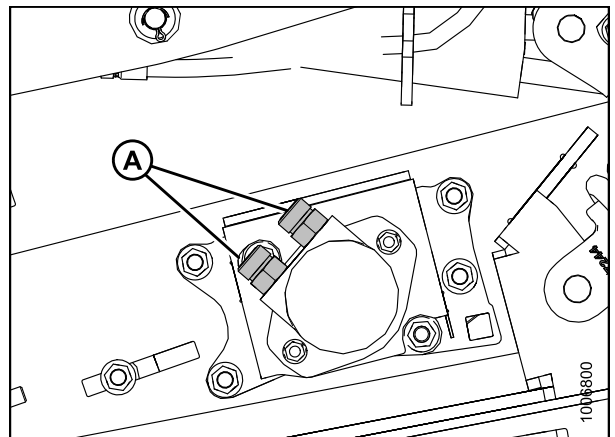


Figure 4.43

- Reattach hydraulic hoses (A) to motor.

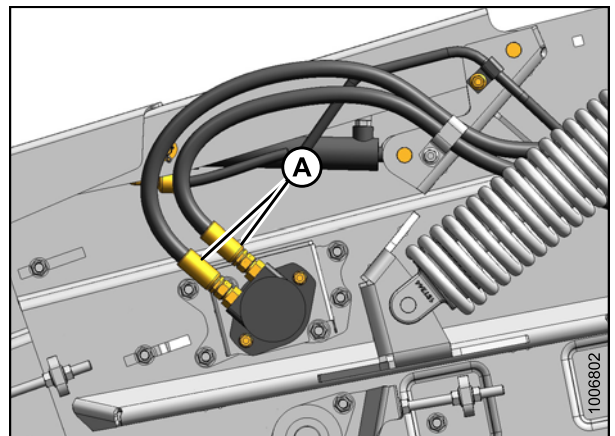


Figure 4.44

### *Removing Rear Hydraulic Motor*



## DANGER

Stop engine and remove key from ignition before leaving operator's seat for any reason. A child or even a pet could engage an idling machine.

## MAINTENANCE AND SERVICING

1. Lower pick-up to ground, shut down combine, and remove key from ignition.
2. Open left endshield (A). Refer to [3.3.1 Opening LH Endshield, page 25](#)

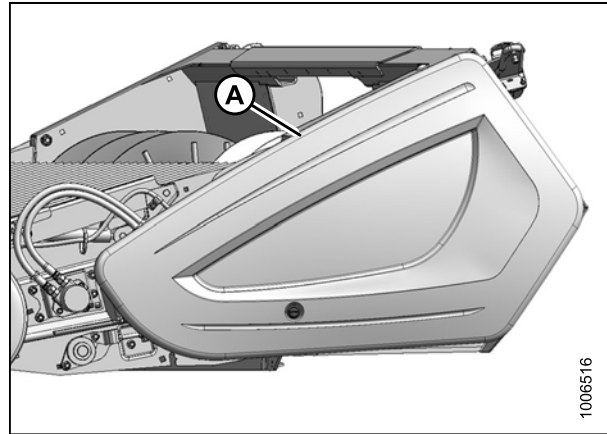


Figure 4.45

3. Disconnect hydraulic hoses (A) from motor. Install plugs onto hose ends, or wrap with plastic and move hoses away from work area. If necessary, loosen or remove adjacent cinch straps.
4. Remove two shoulder bolts (B) with an 8 mm Allen key.
5. Pull hydraulic motor (C) from roller shaft.

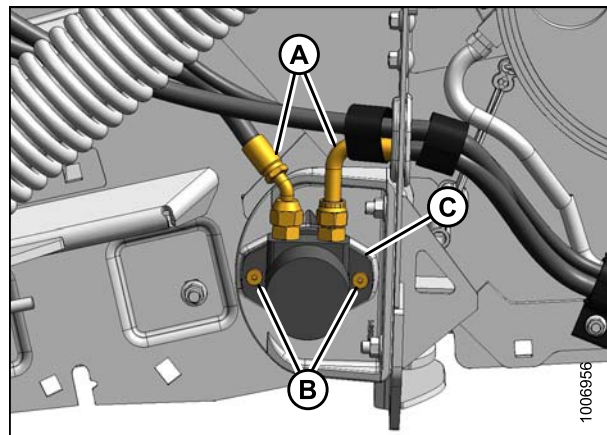


Figure 4.46

### *Installing Rear Hydraulic Motor*

1. Apply grease (Extreme Pressure (EP) Performance With 1.5–5% Molybdenum Disulphide, NLGI Grade 2), to hydraulic motor shaft splines (A).
2. Install motor (B) onto roller shaft, and secure with two 10 mm shoulder bolts (C).
3. Torque bolts to 37 lbf·ft (50 N·m) with an 8 mm Allen key.
4. If installing new motor, install fittings (D) from original motor.

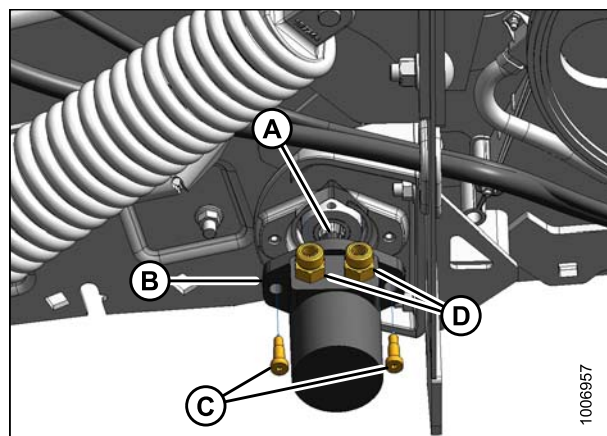


Figure 4.47



## MAINTENANCE AND SERVICING

5. Reconnect hoses (A) to motor.
6. Install previously removed cinch straps.
7. Close endshield. Refer to [3.3.2 Closing LH Endshield, page 26](#)

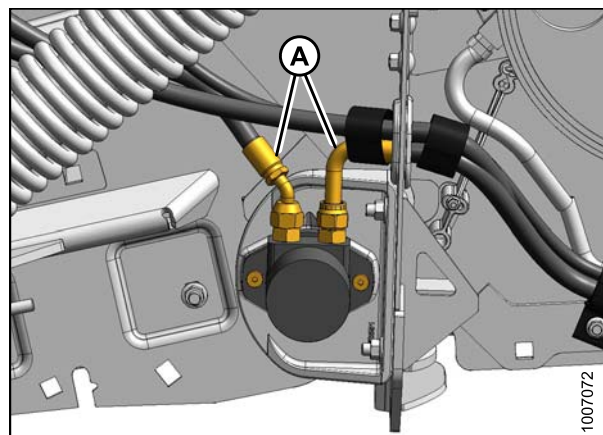


Figure 4.48

### *Removing Hydraulic Motor Hoses*

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

#### **DANGER**

Stop engine and remove key from ignition before leaving operator's seat for any reason. A child or even a pet could engage an idling machine.

2. Shut down combine, and remove key from ignition.
3. Open left endshield (A). Refer to [3.3.1 Opening LH Endshield, page 25](#)

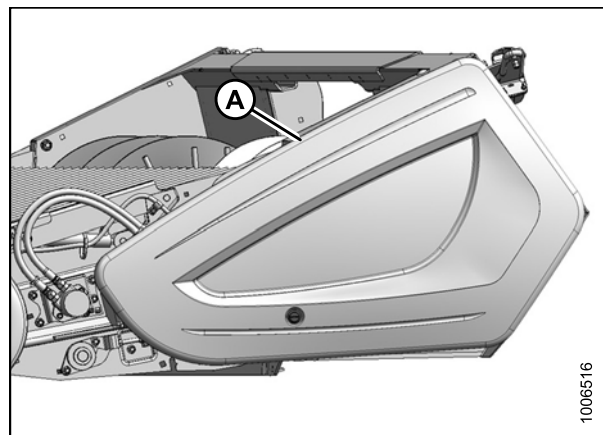


Figure 4.49

## MAINTENANCE AND SERVICING

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

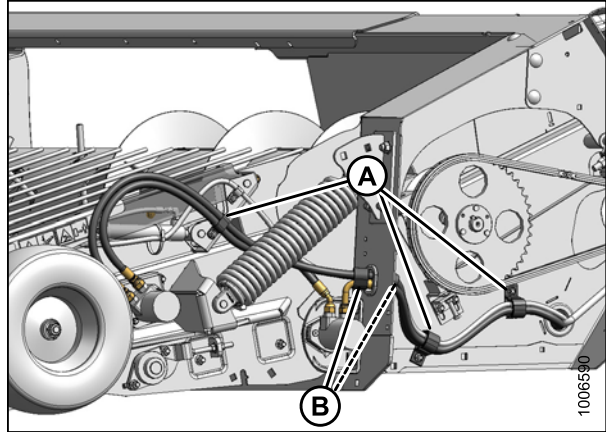


Figure 4.50

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.

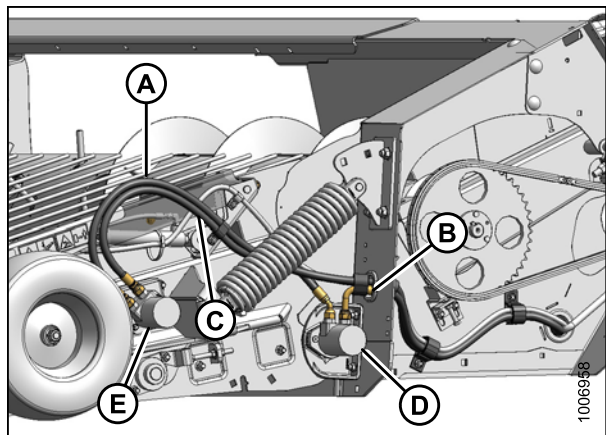


Figure 4.51

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

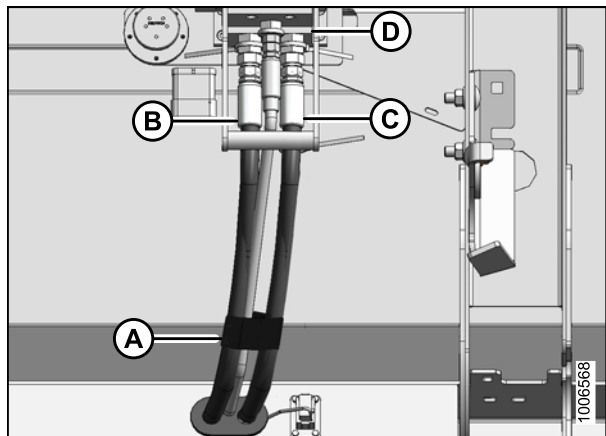


Figure 4.52

## MAINTENANCE AND SERVICING

8. Loosen three bolts (A), and remove cover (B).
9. Pull hoses out of cover (B).

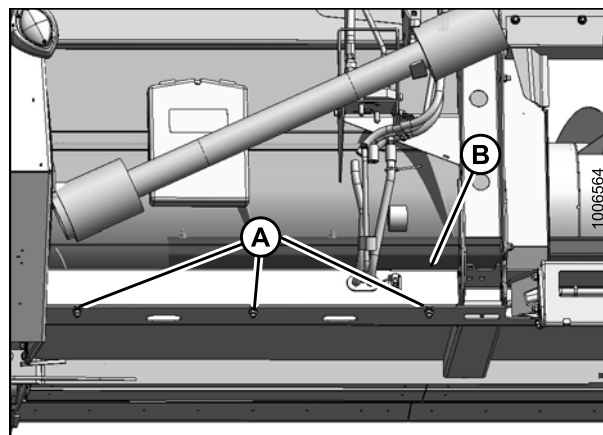


Figure 4.53

10. Pull hoses through hole (B) in endsheet, and from hole in frame (A).

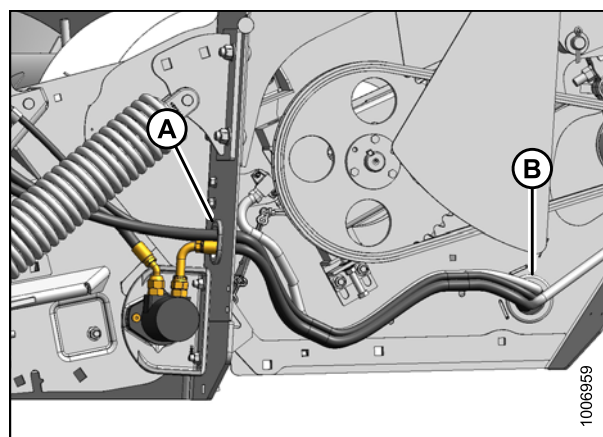


Figure 4.54

### *Installing Hydraulic Motor Hoses*

1. Route the two longer hoses (A) and (B) through hole (C) in endsheet and hole (D) in frame. Angled fitting on hose (B) goes to the pick-up rear drive motor. Hose (A) with yellow cable ties has identical fittings at both ends, and attaches to forward drive motor at fitting with yellow cable tie.

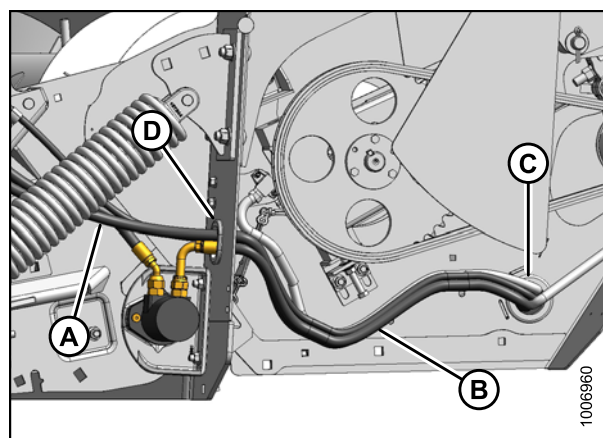


Figure 4.55

## MAINTENANCE AND SERVICING

2. Route hoses (A) and (B) through grommet (C) in cover. Attach hoses (A) and (B) to multi-coupler, matching colored cable ties. If colored ties are missing attach as follows:
  - a. Attach longer hose (A) to forward port on forward drive motor (E), and to connector (1) on multi-coupler.
  - b. Attach shorter hose (B) to aft port on rear drive motor, and to connector (2) on multi-coupler.
  - c. Secure hoses with cinch strap (D).

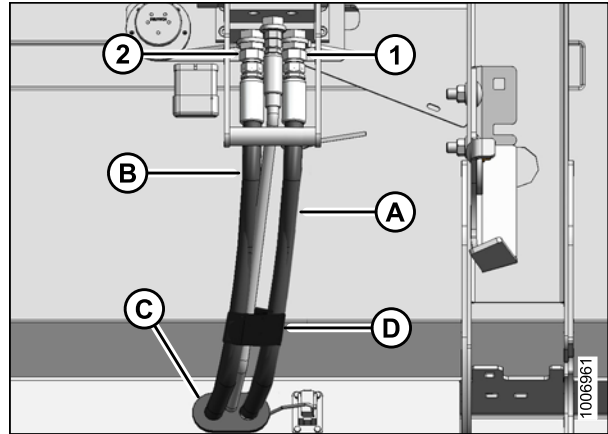


Figure 4.56

3. Connect the shortest hose (A) to motors. Angled fitting attaches to rear motor (B).

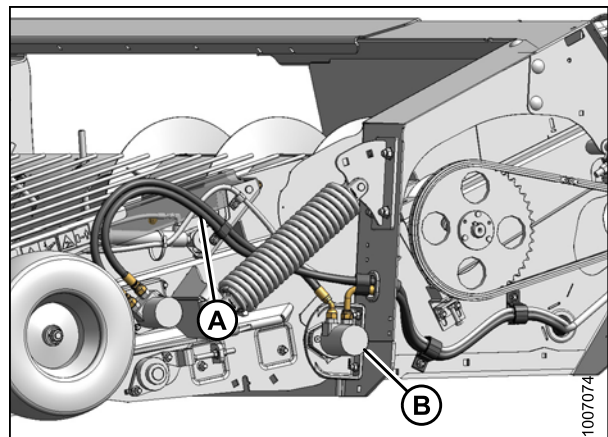


Figure 4.57

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

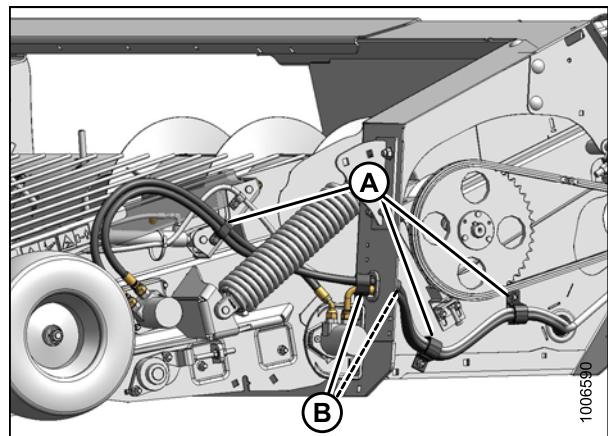


Figure 4.58

## MAINTENANCE AND SERVICING

5. Reinstall cover (B), and tighten the three bolts (A) along lower edge of cover.

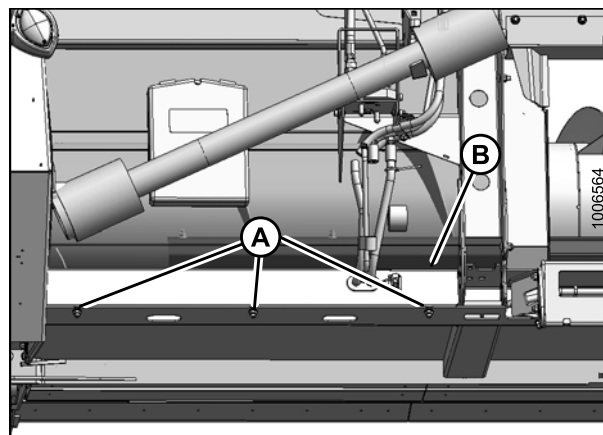


Figure 4.59

6. Close left endshield. Refer to Section: [3.3.2 Closing LH Endshield, page 26](#).

### 4.6.4 Auger Drive

The auger is chain driven through a driveline that is connected to the combine feeder house shaft, and depends on the operating speed of the combine.

The auger speed range can be changed by changing the auger drive sprocket. Refer to [Installing Drive Sprocket, page 121](#).

Access the auger drive by opening the left endshield.

#### *Auger Drive Chain*

#### **Lubricating Auger Drive Chain**



### **DANGER**

**Stop engine and remove key from ignition before leaving operator's seat for any reason. A child or even a pet could engage an idling machine.**

1. Lower header to ground, shut down combine, and remove key from ignition.
2. Open left endshield (A). Refer to Section [3.3.1 Opening LH Endshield, page 25](#).

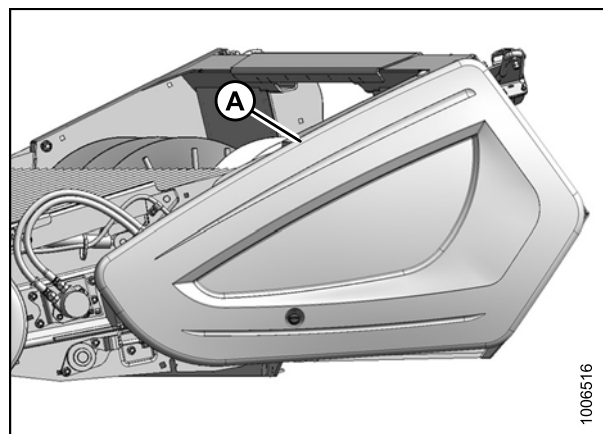


Figure 4.60: Endshield

## MAINTENANCE AND SERVICING

3. Liberally apply SAE Multi-Purpose Grease to chain.

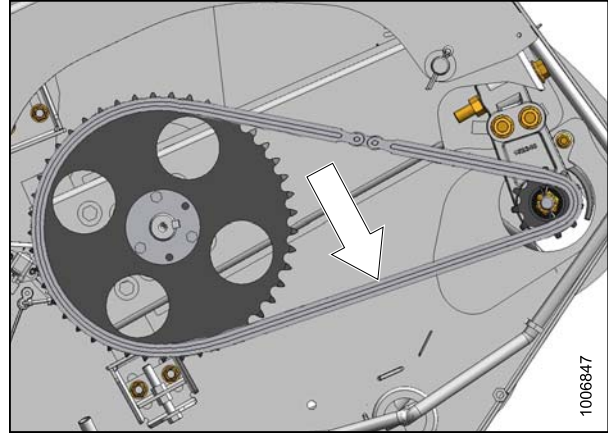


Figure 4.61: Lubricating Chain

4. Close endshield. Refer to Section [3.3.2 Closing LH Endshield, page 26](#).

### Removing Auger Drive Chain

#### DANGER

Stop engine and remove key from ignition before leaving operator's seat for any reason. A child or even a pet could engage an idling machine.

1. Lower header to ground, shut down combine, and remove key from ignition.
2. Open left endshield (A). Refer to Section: [3.3.1 Opening LH Endshield, page 25](#).

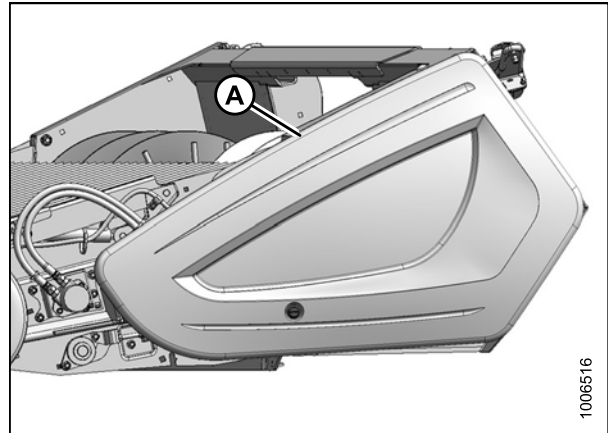


Figure 4.62



## MAINTENANCE AND SERVICING

3. Release tension on chain (A) until chain can be removed from small sprocket (B). Refer to [Adjusting Auger Drive Chain Tension, page 115](#).
4. Remove chain from large sprocket (C).

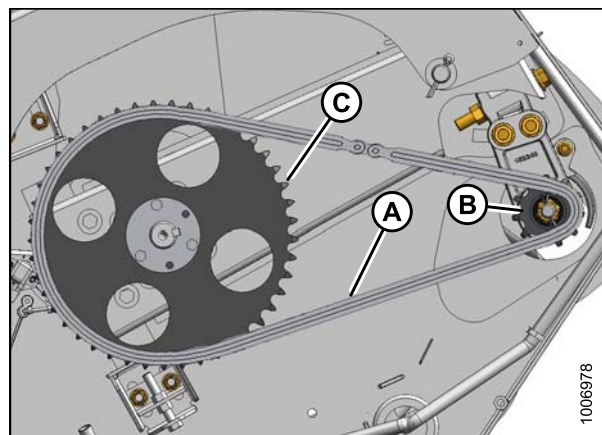


Figure 4.63

### 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 115](#).
3. Liberally apply SAE Multi-Purpose Grease to chain.
4. Close endshield. Refer to Section: [3.3.2 Closing LH Endshield, page 26](#).

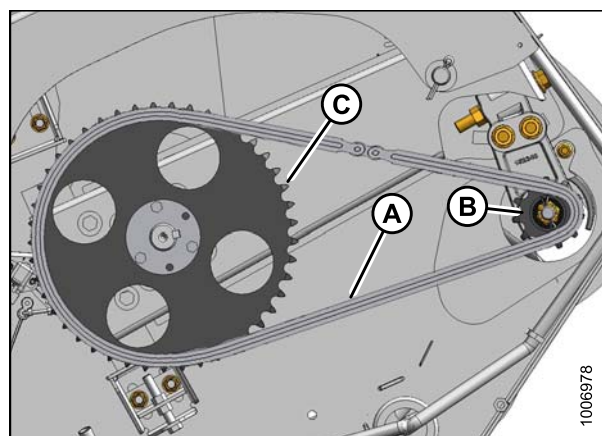


Figure 4.64

### Adjusting Auger Drive Chain Tension

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

There should be 1/2–3/4 in. (13–19 mm) of deflection (A) with 10 lbf (44.5 N) force applied at mid-span.



### DANGER

**Stop engine and remove key from ignition before leaving operator's seat for any reason. A child or even a pet could engage an idling machine.**

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

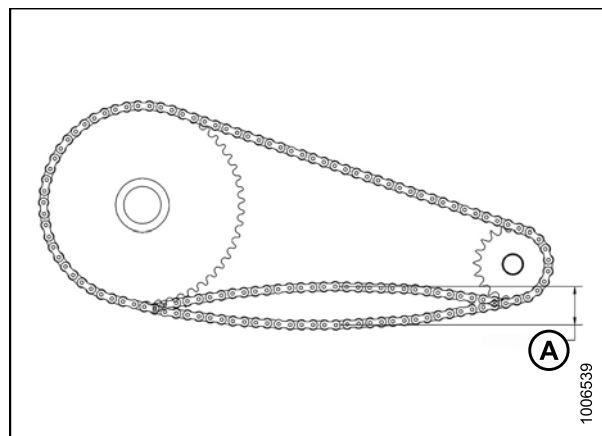


Figure 4.65: Chain Deflection

## MAINTENANCE AND SERVICING

2. Open left endshield (A). Refer to Section: [3.3.1 Opening LH Endshield, page 25](#).

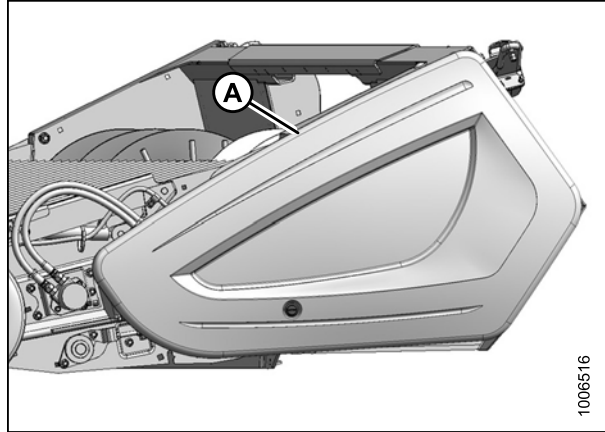


Figure 4.66

3. Loosen the two clamp nuts (A) with a 24 mm wrench, so that arm can move.
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).

6. Tighten jam nut (B) and clamp nuts (A). Torque clamp nuts (A) to 155 lbf-ft (210 N·m).
7. Close endshield. Refer to Section: [3.3.2 Closing LH Endshield, page 26](#).

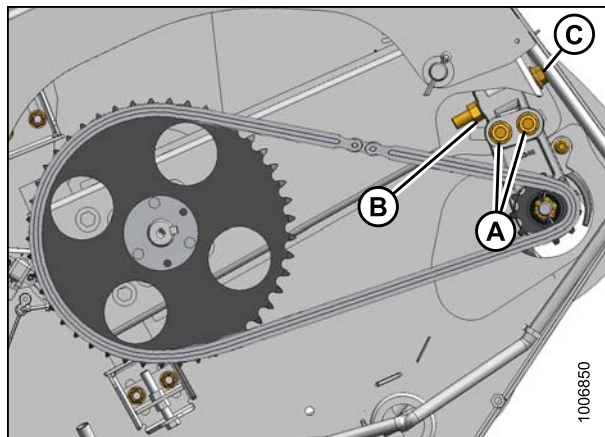


Figure 4.67



## MAINTENANCE AND SERVICING

### Auger Drive Sprockets

#### Removing Driven Sprocket

#### DANGER

Stop engine and remove key from ignition before leaving operator's seat for any reason. A child or even a pet could engage an idling machine.

1. Lower header to ground, shut down combine, and remove key from ignition.
2. Open left endshield (A). Refer to Section: [3.3.1 Opening LH Endshield, page 25](#). If more access is required, remove endshield. Refer to Section: [4.5.1 Removing LH Endshield, page 93](#).

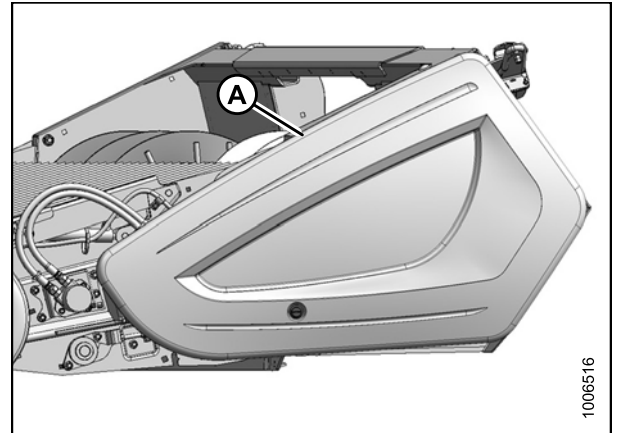


Figure 4.68

3. Remove drive chain. Refer to [Removing Auger Drive Chain, page 114](#).
4. Remove the three hex bolts (A) from tapered bushing (D) in sprocket (C) with a 16 mm wrench.
5. Reinstall two of the 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) is 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.

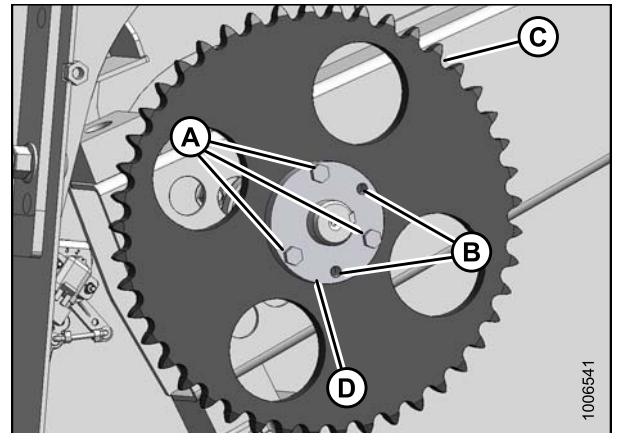
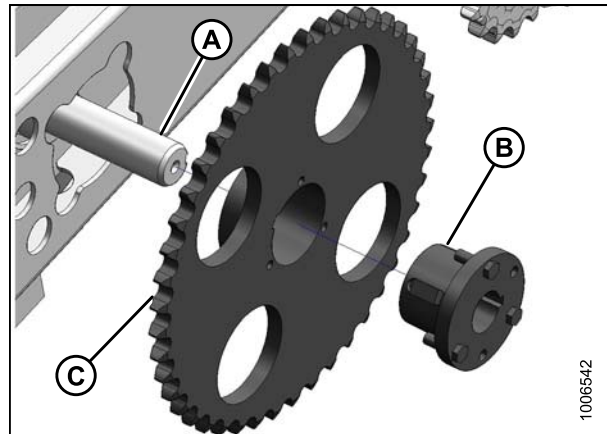


Figure 4.69

## MAINTENANCE AND SERVICING

## Installing Driven Sprocket

1. Apply a coating of anti-seize compound to mating surfaces of driveshaft (A), tapered bushing (B) and sprocket (C).
2. Install keys in driveshaft (A), and in tapered bushing (B).
3. Insert tapered bushing (B) into sprocket (C), aligning key with keyway in sprocket.
4. Align key in shaft (A) with keyway in tapered bushing (B), and slide bushing and sprocket onto shaft.



**Figure 4.70**

- Remove the two bolts from the tapered bushing, and reinstall all three hex bolts (A) through the tapered bushing (D), and into the sprocket (C). Do not tighten.

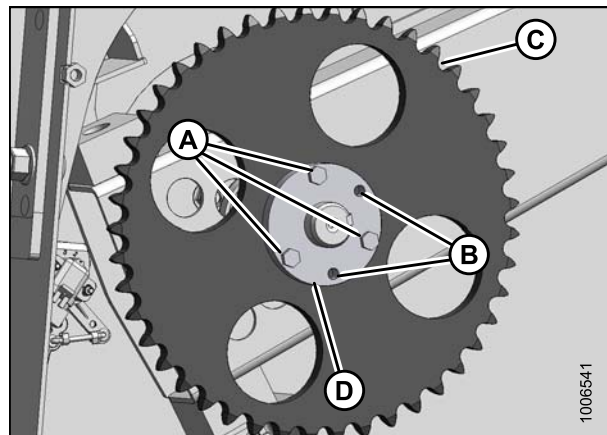


Figure 4.71

- 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.

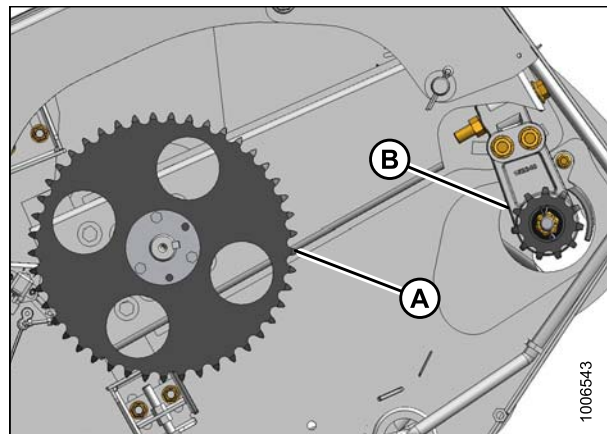


Figure 4.72

## MAINTENANCE AND SERVICING

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

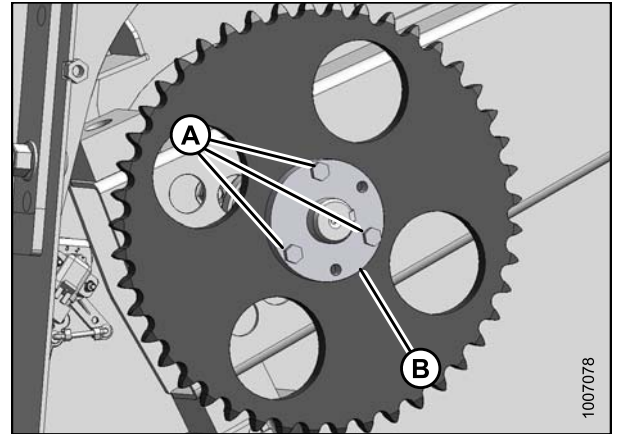


Figure 4.73

9. Check alignment of sprockets. If misalignment is more than 0.04 in. (1 mm), measure, record amount and proceed as follows:
  - a. Measure and record the position of the tapered bushing relative to the driveshaft.
  - b. Remove the three hex bolts (A) from tapered bushing.
  - c. Reinstall two of the bolts (A) into the threaded holes (B) in the 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, accounting for the misalignment.
  - f. Repeat Steps: [5., Installing Driven Sprocket, page 118](#) to [9., Installing Driven Sprocket, page 119](#) above.
  - g. Check alignment of sprockets.
  - h. Repeat substeps a. to g. until specified alignment is achieved.
10. Install and tension chain. Refer to [Installing Auger Drive Chain, page 115](#).
11. Close endshield. Refer to [3.3.2 Closing LH Endshield, page 26](#)

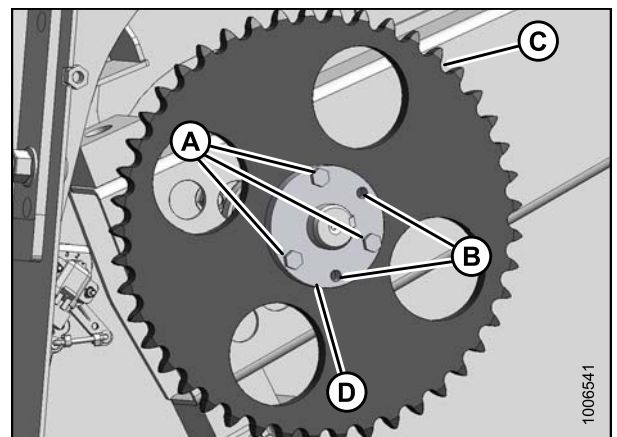


Figure 4.74

### Removing Drive Sprocket

#### DANGER

Stop engine and remove key from ignition before leaving operator's seat for any reason. A child or even a pet could engage an idling machine.

## MAINTENANCE AND SERVICING

1. Lower header to ground, shut down combine, and remove key from ignition.
2. Open endshield. Refer to [Section 3.3.1 Opening LH Endshield, page 25](#).
3. Remove chain (D). Refer to [Removing Auger Drive Chain, page 114](#).
4. Remove cotter pin (A).

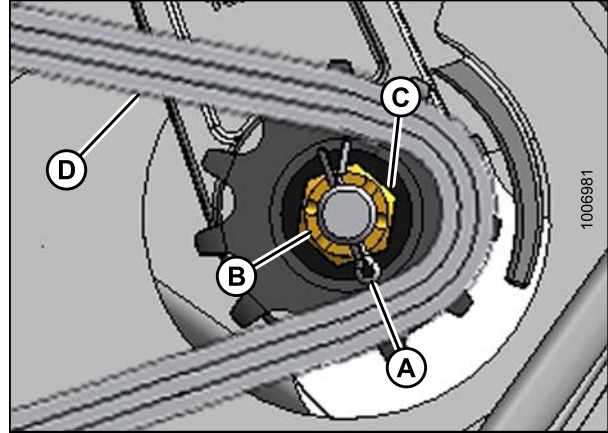


Figure 4.75

5. If header is not attached to combine, place a pry bar or equivalent through a hole in the large sprocket and against the frame to stop the driveshaft from rotating.

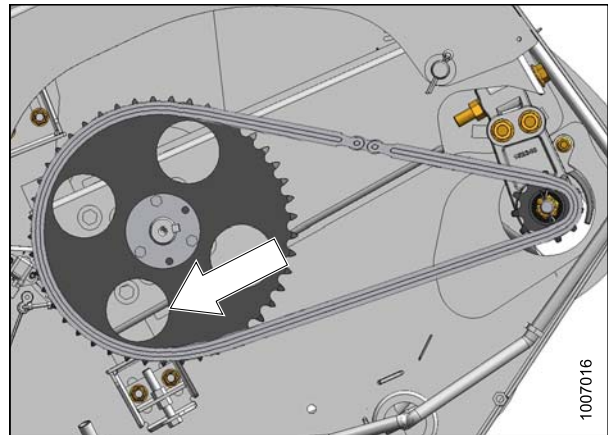


Figure 4.76

6. Remove M20 castle nut (B), and washer (C) from driveshaft.

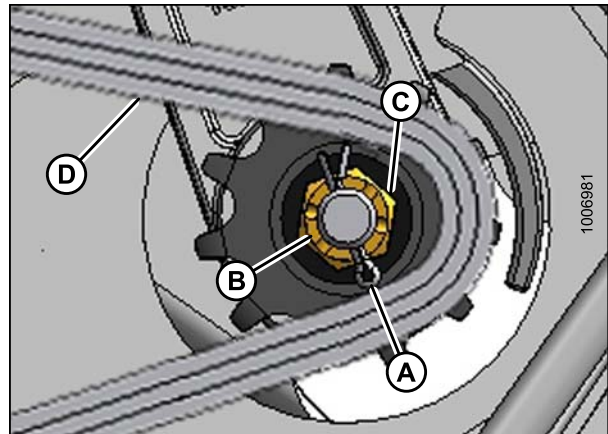


Figure 4.77

## MAINTENANCE AND SERVICING

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

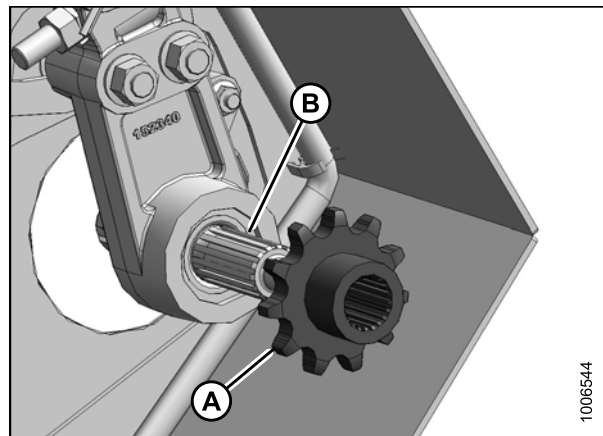


Figure 4.78

### Installing Drive Sprocket

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

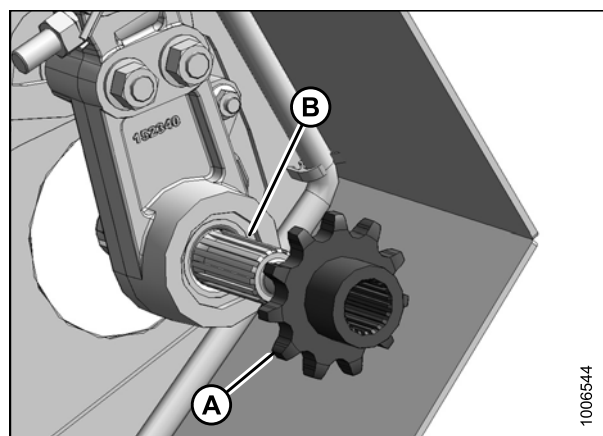


Figure 4.79

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 115](#).

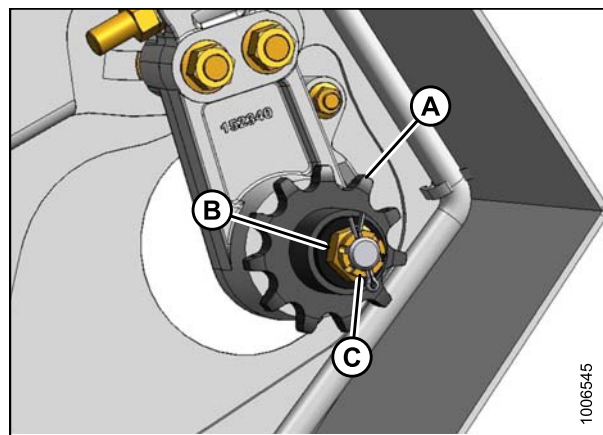


Figure 4.80



## MAINTENANCE AND SERVICING

4. If header is not attached to combine, place a pry bar or equivalent through a hole in the large sprocket and against the frame to stop the driveshaft from rotating.

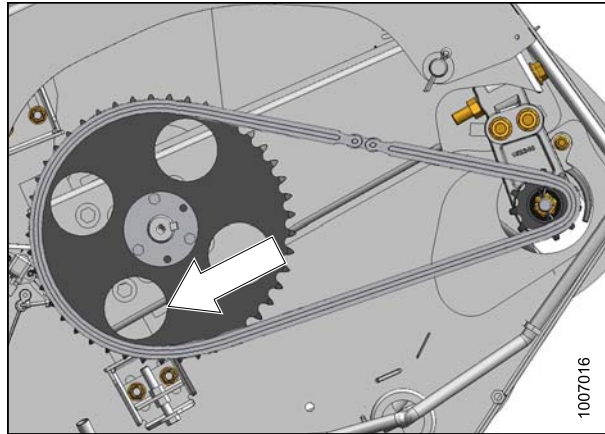


Figure 4.81

5. Torque castle nut (B) to 50 lbf·ft (68 N·m).
6. Install cotter pin (A) into driveshaft. If slot in castle nut (B) and hole in driveshaft are not aligned, tighten castle nut (B) until cotter pin can be installed. Do NOT loosen castle nut.
7. Bend cotter pin (A) around castle nut (B).
8. Set drive chain (D) tension. Refer to [Adjusting Auger Drive Chain Tension, page 115](#).

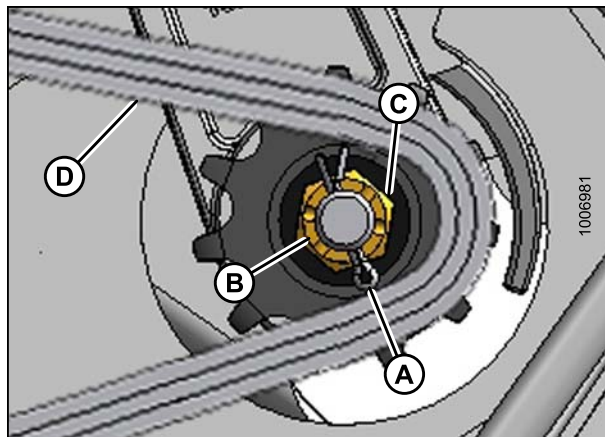


Figure 4.82

9. Close endshield. Refer to [3.3.2 Closing LH Endshield, page 26](#).

## 4.7 Auger

### 4.7.1 Replacing Auger Fingers

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

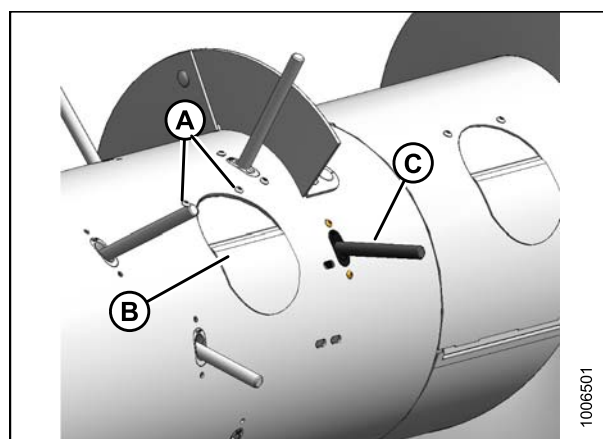
1. Raise the hold-down fully, and engage lift cylinder safety props.



#### **DANGER**

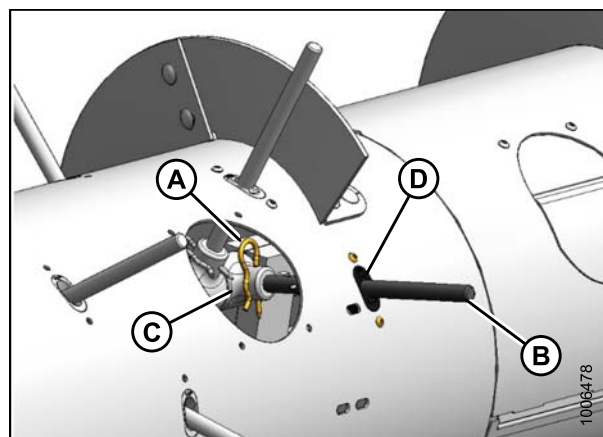
**Stop engine and remove key from ignition before leaving operator's seat for any reason. A child or even a pet could engage an idling machine.**

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



**Figure 4.83**

4. From inside the auger, remove hairpin (A), and pull finger (B) out of bushing (C).
5. From inside the auger, swivel finger away from bushing, pull from plastic guide (D), and remove from auger.
6. Insert new finger (B) through plastic guide (D) from inside the auger.
7. 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 4.84**

## MAINTENANCE AND SERVICING

8. Install access cover (B) with screws coated with Loctite®. Torque screws to 75 lbf-in (8.5 N·m).

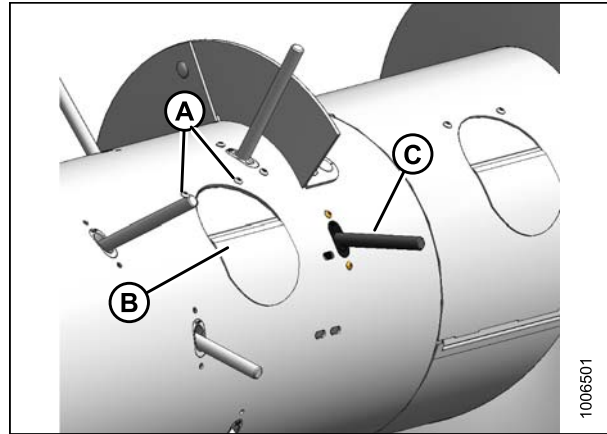


Figure 4.85

### 4.7.2 Replacing Auger Finger Guides

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



#### **DANGER**

**Stop engine and remove key from ignition before leaving operator's seat for any reason. A child or even a pet could engage an idling machine.**

2. Stop engine, and remove key from ignition.
3. Remove two screws (A) from access cover (B) closest to the guide being replaced, and remove access cover.
4. Remove finger. Refer to Section: [4.7.1 Replacing Auger Fingers](#), page 123.

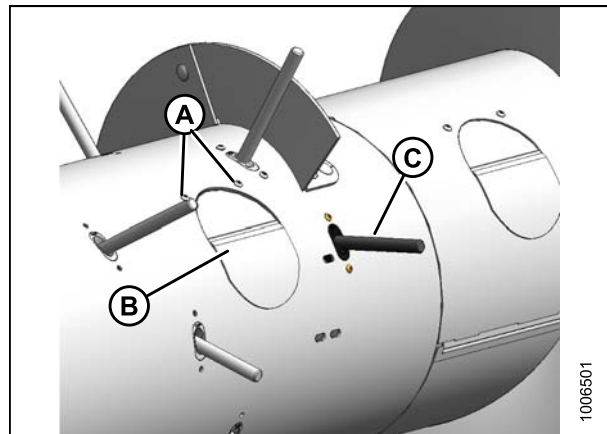


Figure 4.86



## MAINTENANCE AND SERVICING

5. Remove screws (A) from guide (B), and remove guide (B).

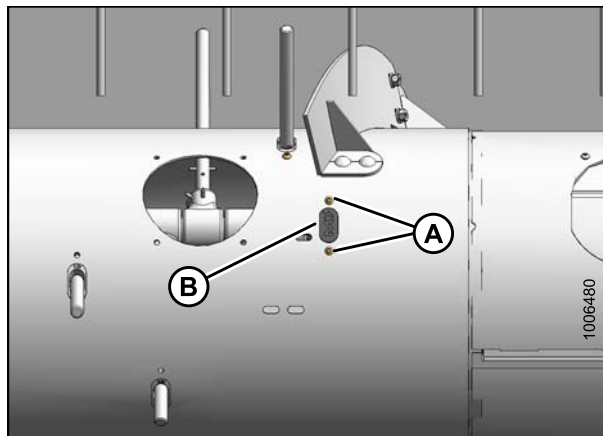


Figure 4.87

6. Install new guides (A) from inside auger with existing screws (B) and tee nuts (C) as shown. Torque screws to 75 lbf·in. (85 N·m).
7. Reinstall finger. Refer to Section: [4.7.1 Replacing Auger Fingers](#), page 123.

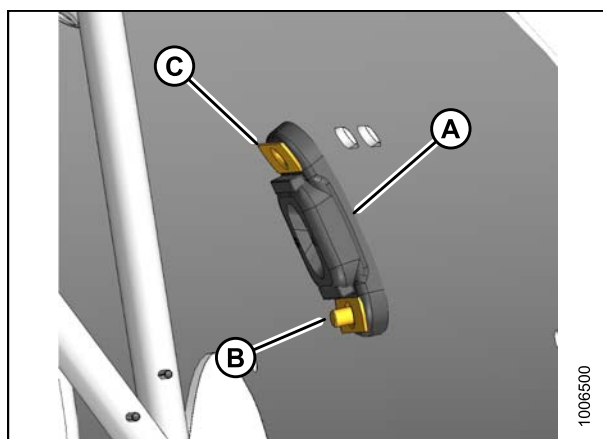


Figure 4.88

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

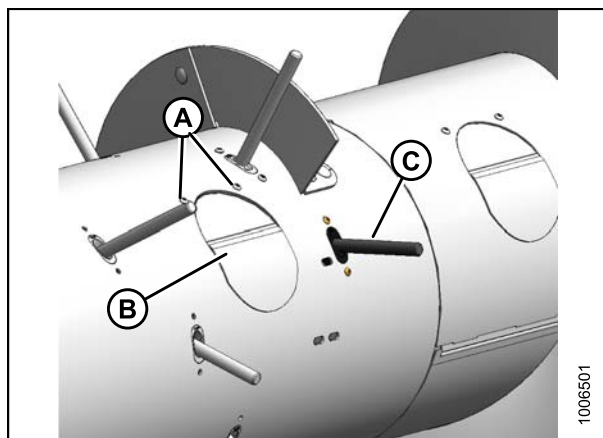


Figure 4.89

### 4.7.3 Replacing Stripper Plates

The stripper plates should be replaced if they are worn to the point where the specified clearance cannot be maintained. Replace missing or damaged fasteners as well.

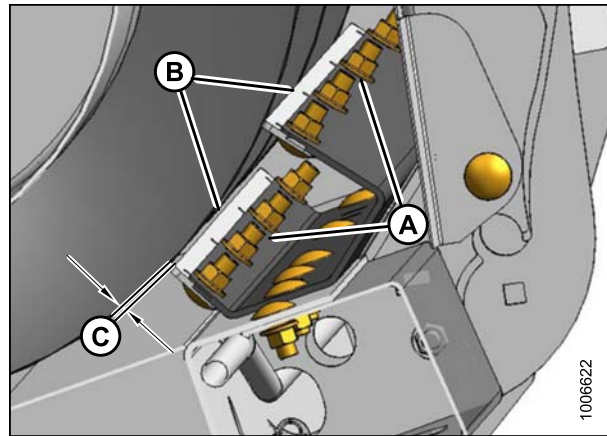
#### **DANGER**

**Stop engine and remove key from ignition before leaving operator's seat for any reason. A child or even a pet could engage an idling machine.**

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 bolts (A) on the stripper plate (B) to be replaced.
3. Replace plate (B), and secure with bolts (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.
6. Recheck the clearance.



**Figure 4.90: Stripper Plate Clearance**

### 4.7.4 Replacing Flighting Extensions

With header removed from combine, proceed as follows:

1. Remove the auger hand hole cover on either side of the center cover.
2. Remove hardware (B) and (C) securing existing auger flighting extension (A) to auger, and remove extension.
3. Place new flighting (A) on auger, ensuring new flighting locates on the outboard side of the existing flighting.
4. Use the existing hardware (B) and (C) to secure flighting to auger. Bolts (B) must be installed with nuts facing outboard as shown.

**NOTE:** To replace original flighting, refer to the PW8 Pick-Up Header Technical Manual MD #169841, or see your MacDon Dealer.

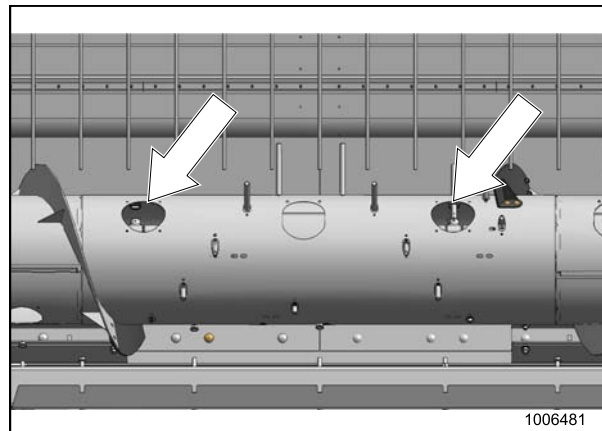


Figure 4.91: View From Top

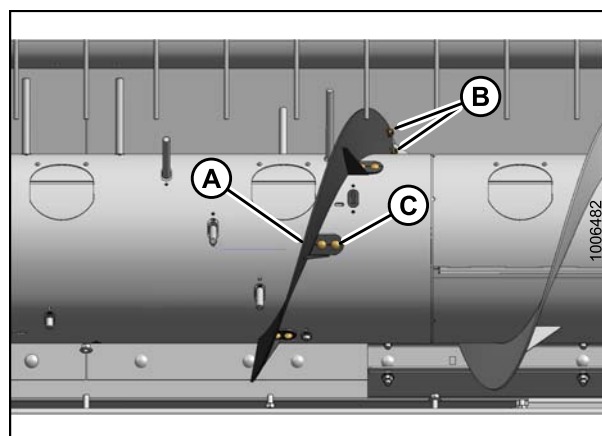


Figure 4.92: Right Extension Shown

## 4.8 Decks

### 4.8.1 Draper Belts

Check the draper belts periodically for wear and damage. Replace drapers that are stretched, that have cuts or tears, or worn down slats. Replace missing or damaged fasteners, damaged connector bars and straps.

#### **WARNING**

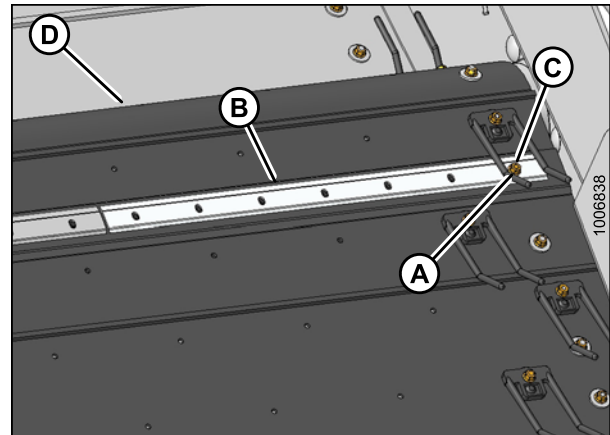
To avoid bodily injury from fall of raised hold-down, always engage reel props before going under raised reel for any reason.

#### **DANGER**

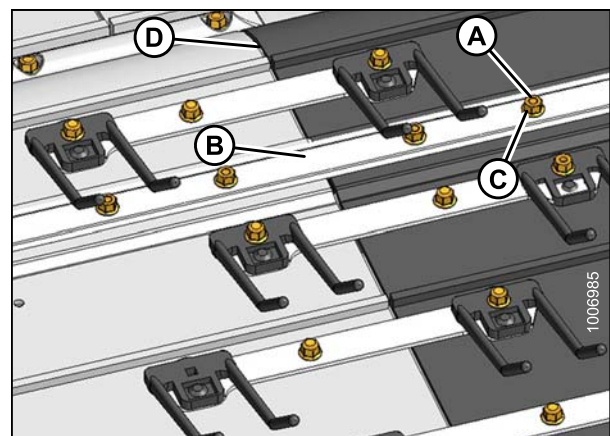
Stop engine and remove key from ignition before leaving operator's seat for any reason. A child or even a pet could engage an idling machine.

#### *Removing Front Draper Belt*

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.
3. Stop engine, and remove key from ignition.
4. Fully release draper belt tension. Refer to Section: [Adjusting Draper Belt Tension on Front Deck, page 69](#)
5. If removing end belt, remove seven M6 flange nuts (A), belt edge protector (B) and associated pronged elevator bolts (C) in belt (D) to be removed.
6. Remove M6 flange nuts (A), connector bar (B) and pronged elevator bolts (C) in the belt (D) to be removed.



**Figure 4.93**



**Figure 4.94**

## MAINTENANCE AND SERVICING

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

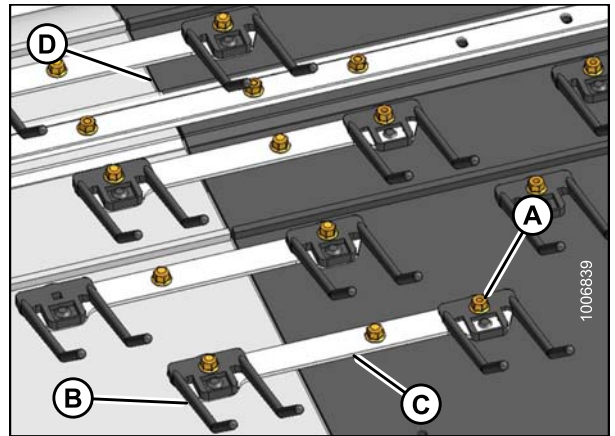


Figure 4.95

### *Installing Front Draper Belt*

1. Wrap new draper belt (A) slats outward, around the rollers. Arrow on belt should point in direction of rotation.

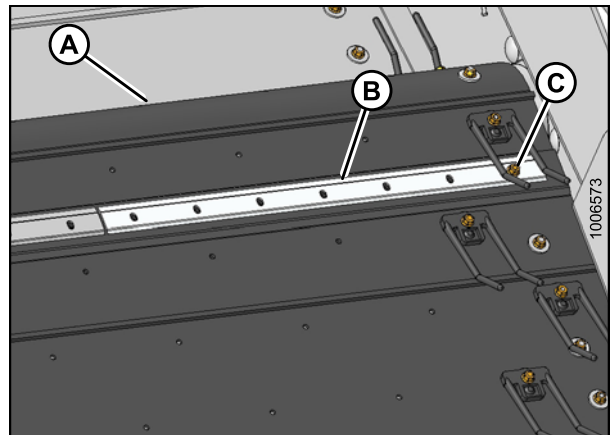


Figure 4.96

2. Connect draper belt with M6x15.5 pronged elevator bolts (1).

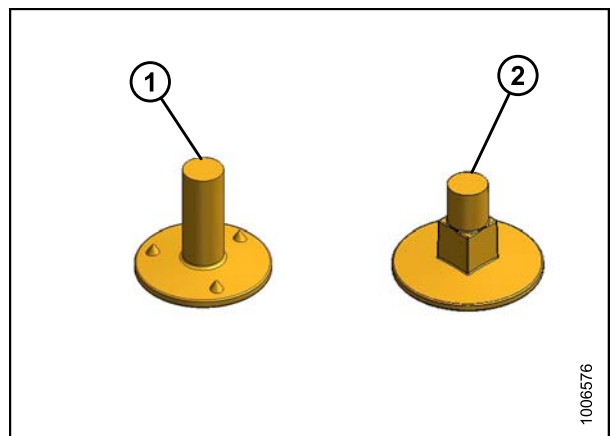


Figure 4.97: Elevator Bolts

1. Pronged Elevator Bolt

2. Square Neck Elevator Bolt

## MAINTENANCE AND SERVICING

3. If installing end belt (A), attach edge protector (B), and secure with M6 flange nuts (C). Do not tighten.
4. Tighten M6 flange nuts to 35–45 lbf·in (4–5 N·m).

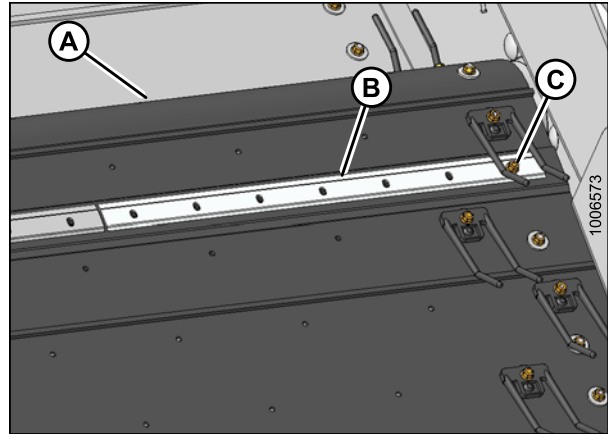


Figure 4.98

5. Install connector bar(s) (A) onto bolts, and secure with M6 flange nuts (B).
6. Tighten M6 flange nuts (B) to 35–45 lbf·in (4–5 N·m).

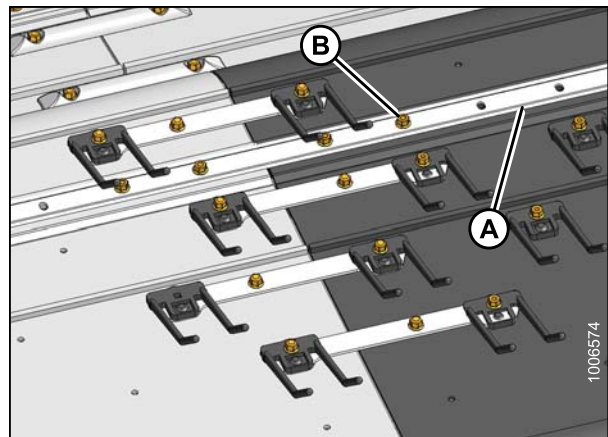


Figure 4.99

7. Install square neck elevator bolts at strap locations. Use M6x16 bolt (A) at center location, and M6x23 bolt (B) at finger locations.
8. Install straps (C) and fingers (D) onto bolts, and secure with M6 flange nuts (E).
9. Torque nuts to 45–60 lbf·in (5.0–6.8 N·m).
10. Tension draper belts. Refer to Section [Adjusting Draper Belt Tension on Front Deck, page 69](#).

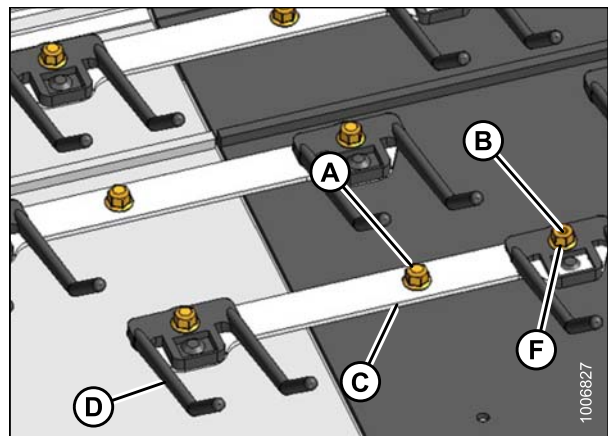


Figure 4.100

## MAINTENANCE AND SERVICING

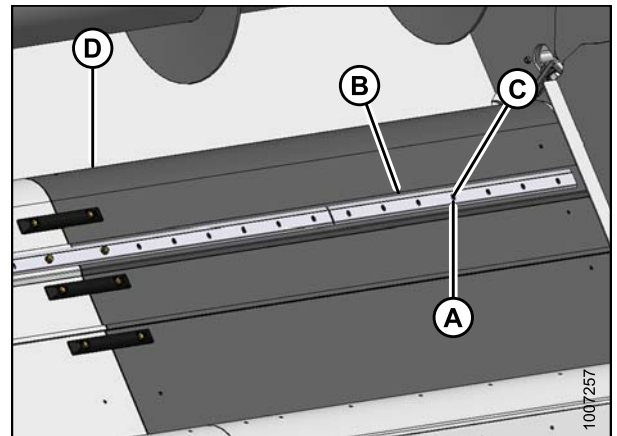
### *Removing Rear Draper Belt*

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

### **DANGER**

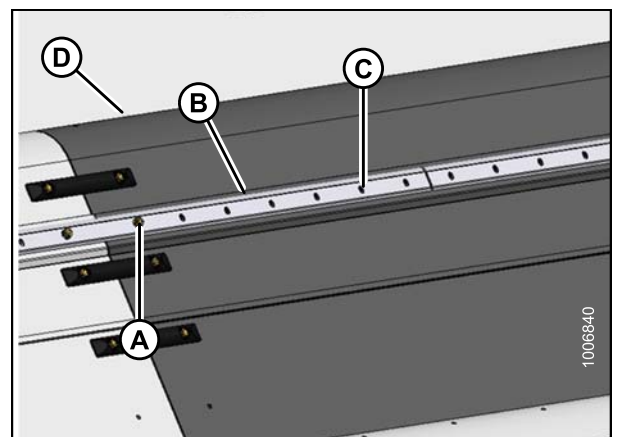
**Stop engine and remove key from ignition before leaving operator's seat for any reason. A child or even a pet could engage an idling machine.**

3. Stop engine, and remove key from ignition.
4. Fully release draper belt tension. Refer to [Section Adjusting Draper Belt Tension on Rear Deck, page 69](#).
5. If removing end belt, remove seven M6 flange nuts (A), belt edge protector (B), and associated pronged elevator bolts (C) in the belt (D) to be removed.



**Figure 4.101**

6. Remove M6 flange nuts (A), connector bar (B), and pronged elevator bolts (C) in the belt (D) to be removed.



**Figure 4.102**



## MAINTENANCE AND SERVICING

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

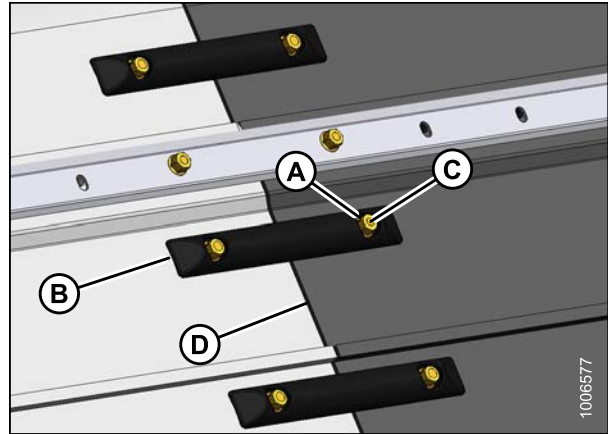


Figure 4.103

### *Installing Rear Draper Belt*

1. Wrap new draper belt (D), slats outward, around the rollers. Arrow on belt should point in direction of rotation.
2. Connect draper belt (D) with M6x15.5 pronged elevator bolts (C).
3. If installing end belt, attach edge protector (B), and secure with M6 flange nuts (A). Do not tighten.

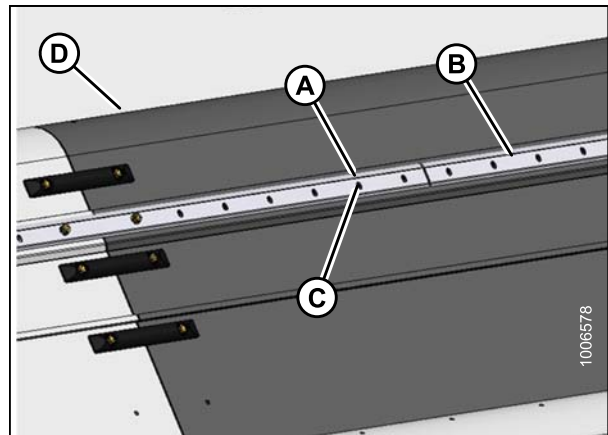


Figure 4.104

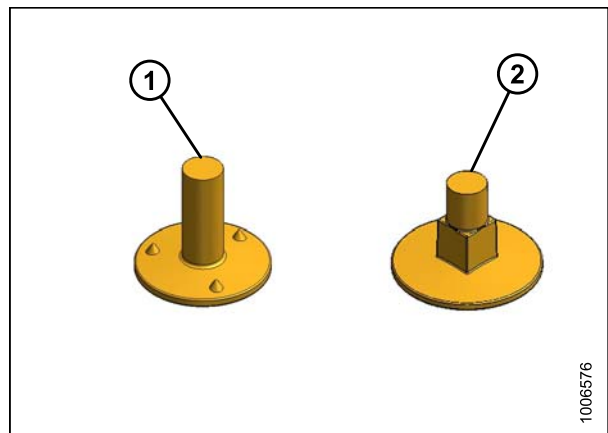


Figure 4.105: Elevator Bolts

1. Pronged Elevator Bolt

2. Square Neck Elevator Bolt



## MAINTENANCE AND SERVICING

4. Install connector bar(s) (A) onto bolts, and secure with M6 flange nuts (B).
5. Tighten M6 flange nuts (B) to 35–45 lbf·in (4–5 N·m).
6. Install two square neck elevator bolts (C) at each strap location.

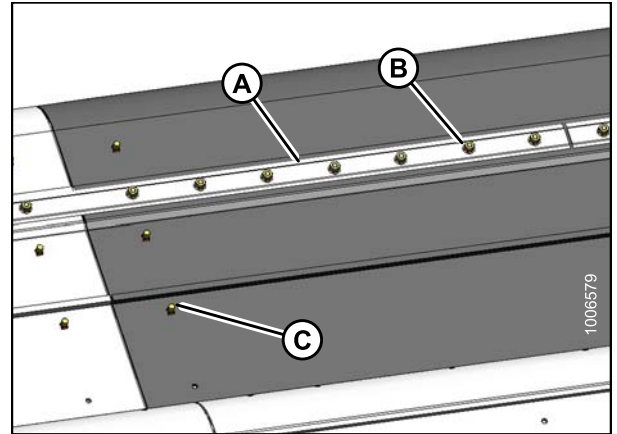


Figure 4.106

7. Install straps (B) onto bolts, and secure with M6 flange nuts (A).
8. Torque nuts (A) to 45–60 lbf·in (5.0–6.8 N·m).
9. Tension draper belts. Refer to Section [Adjusting Draper Belt Tension on Rear Deck](#), page 69.

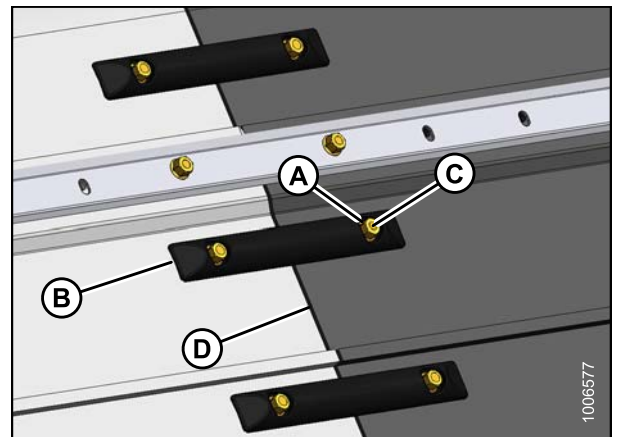


Figure 4.107

### 4.8.2 Draper Fingers/Draper Guides

If any of the fingers break or wear down enough to affect the performance of the machine, the finger should be replaced. Excessively worn fingers will reduce picking efficiency resulting in losses far exceeding 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 of the guides wear down enough to cause large amounts of draper tracking / shifting, the guide should be replaced. Also 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 even draper tearing.

**NOTE:** It may be necessary to remove the draper belt when replacing the fingers / guides. Refer to Section: [Removing Front Draper Belt](#), page 128.

## MAINTENANCE AND SERVICING

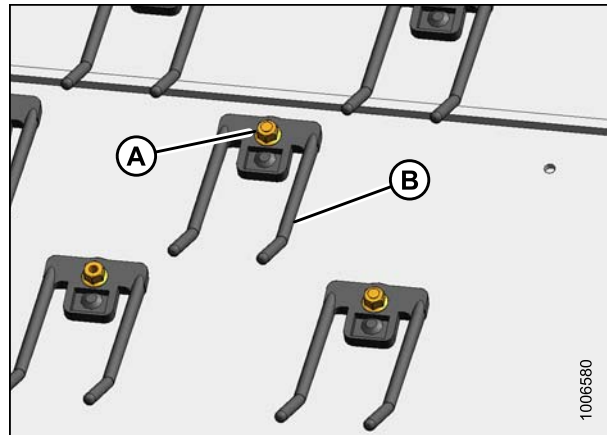
### *Replacing Draper Fingers*

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**

**Stop engine and remove key from ignition before leaving operator's seat for any reason. A child or even a pet could engage an idling machine.**

3. Stop engine and remove key from ignition.
4. Remove the M6 flange nut (A) attaching the finger (B) to the draper belt.
5. Remove the finger (B), and replace with new finger.
6. Install the M6 flange nut (A).
7. Torque flange nut (A) to 45–60 lbf·in (5–6.5 N·m). Hold finger from turning while tightening nut.



**Figure 4.108**

### *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**

**Stop engine and remove key from ignition before leaving operator's seat for any reason. A child or even a pet could engage an idling machine.**

3. Stop engine and remove key from ignition.

## MAINTENANCE AND SERVICING

4. Remove the M6 flange nut (A) and washer (B) attaching the 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. From under the deck, pull the draper belt away from the frame to expose the guide (C).
  7. Remove the guide (C) and elevator bolt (F). Discard the old guide.
  8. Place a new guide (C) onto the M6x26 elevator bolt (F), and install onto the draper belt (D).
  9. Install M6 washer (B) and flange nut (A).
10. If guide is in a finger location, use an M6x30 elevator bolt (A), and install the finger (B) **BEFORE** installing the flange nut (C).
  11. Torque nut (C). Hold the finger or guide from turning while tightening nut.
    - a. **For guide only location**, torque nut (C) to 35–45 lbf·in (4–5 N·m).
    - b. **For guide and finger location**, torque nut to 45–60 lbf·in (5–6.5 N·m).

### IMPORTANT:

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

12. Manually rotate draper belt to access all the guides.
13. Retighten draper belt.

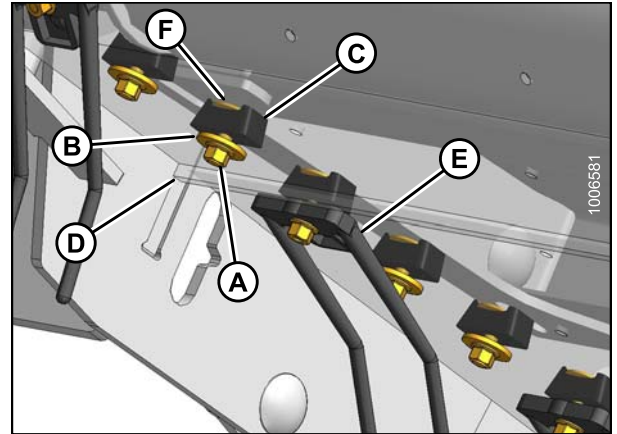


Figure 4.109

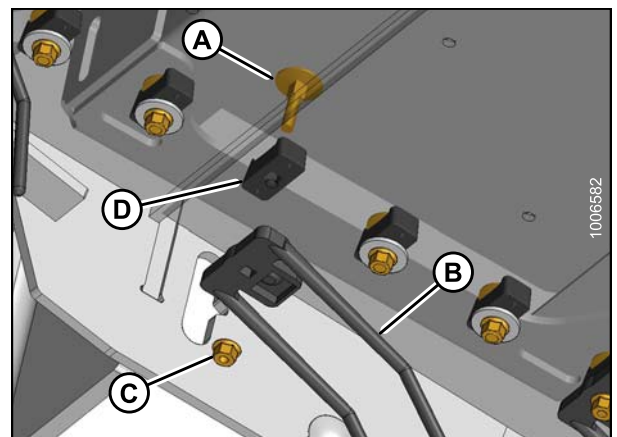


Figure 4.110

### 4.8.3 Draper Roll Bearings

Each draper roller is supported by two self-aligning, non-greasable roller bearings.

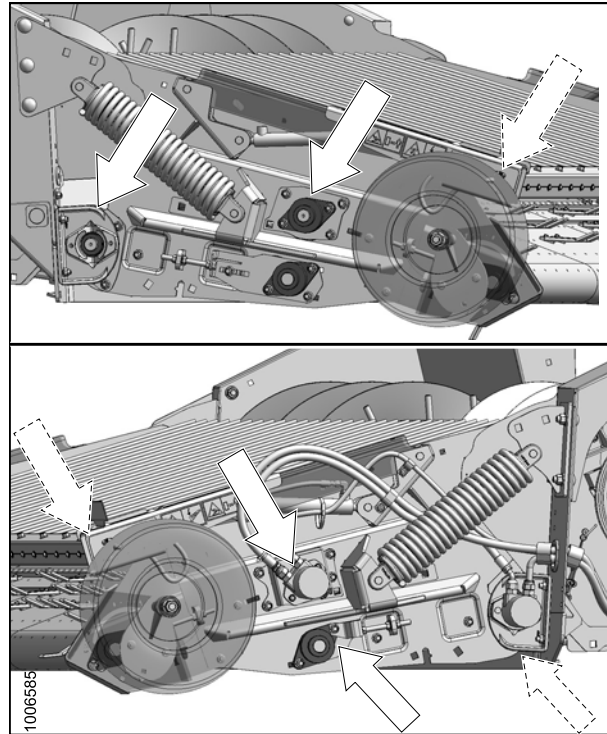
Replace the roll bearings if they are worn or damaged.

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

#### **DANGER**

**Stop engine and remove key from ignition before leaving operator's seat for any reason. A child or even a pet could engage an idling machine.**

3. Stop engine, and remove key from ignition.

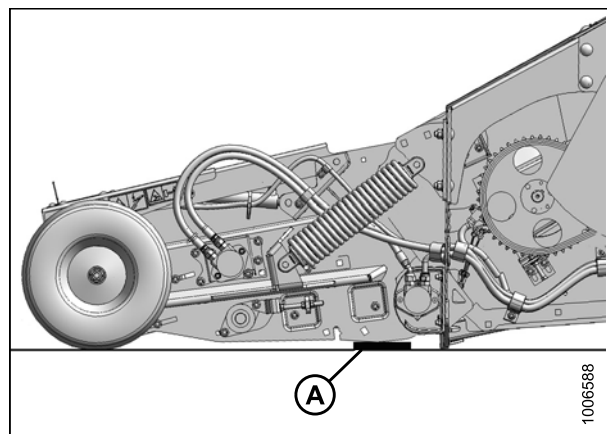


**Figure 4.111: Draper Roll Bearings**

### *Rear Deck - Drive Roller Bearings*

#### **Replacing Left Side Bearing**

1. Fully release draper belt tension. Refer to [Section Adjusting Draper Belt Tension on Rear Deck, page 69](#).
2. Support the deck at both ends by placing a wooden block (A) under the frame close to the bearing.



**Figure 4.112: Wooden Block**

## MAINTENANCE AND SERVICING

3. Open left endshield (A). Refer to Section [3.3.1 Opening LH Endshield](#), page 25.

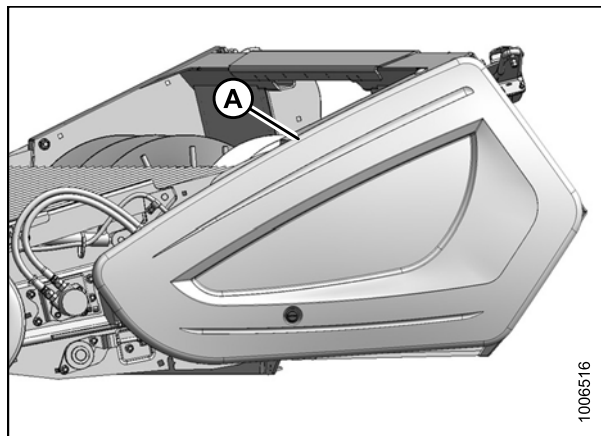


Figure 4.113

4. Remove drive hydraulic motor (A). Refer to Section [Removing Rear Hydraulic Motor](#), page 107.

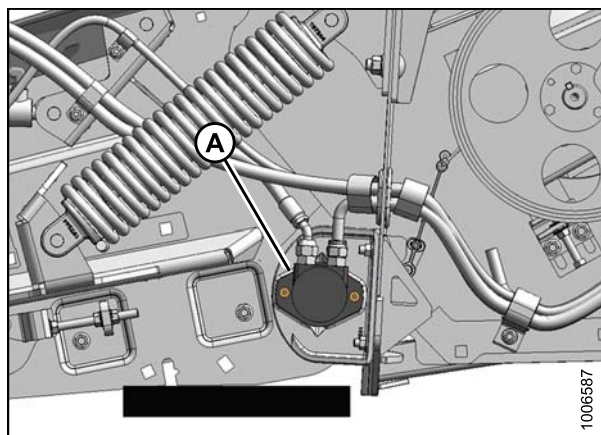


Figure 4.114

5. Manually turn the roller until the setscrew (A) in the lock collar (B) lines up with the recess in the bearing support (C).
6. Loosen setscrew (A) in lock collar (B) with a 6 mm Allen key. Rotate collar counterclockwise to loosen, and remove collar.

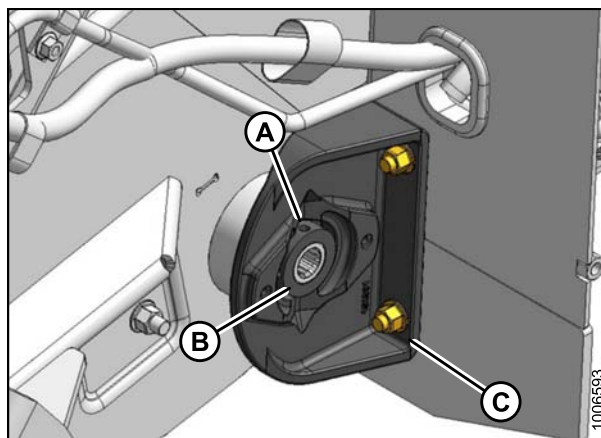


Figure 4.115

## MAINTENANCE AND SERVICING

7. Ensure deck is fully supported, and loosen float springs.
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.

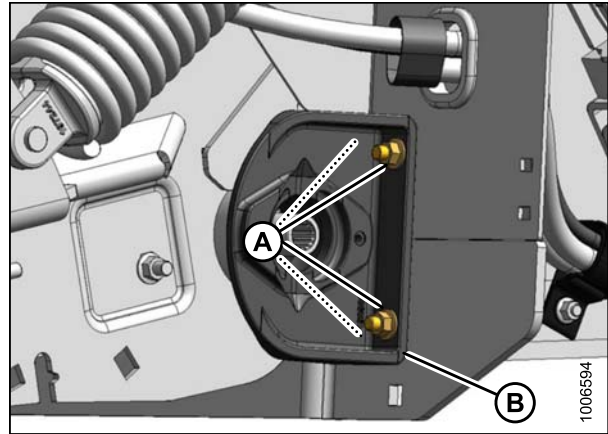


Figure 4.116

Replace bearing as follows:

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

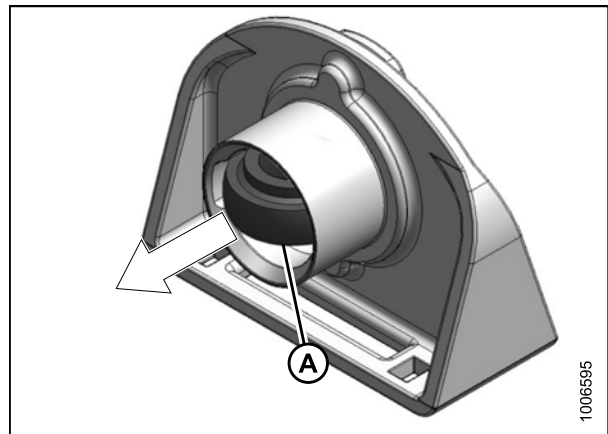


Figure 4.117

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

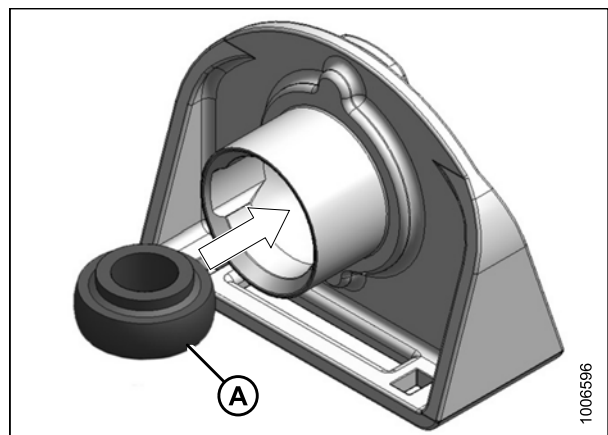


Figure 4.118



## MAINTENANCE AND SERVICING

14. If replacing bushing (A), remove it and install new bushing (A).

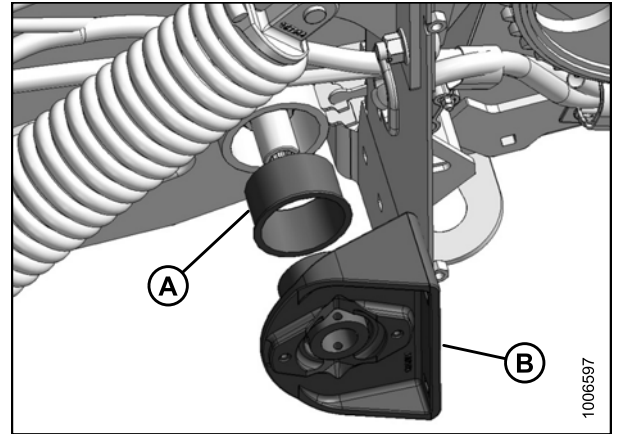


Figure 4.119

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

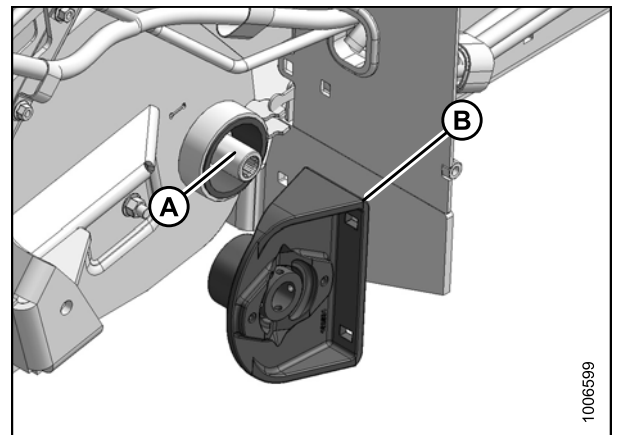


Figure 4.120

17. Install two M12x30 carriage bolts (A) in the upper holes, and two M12x40 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.

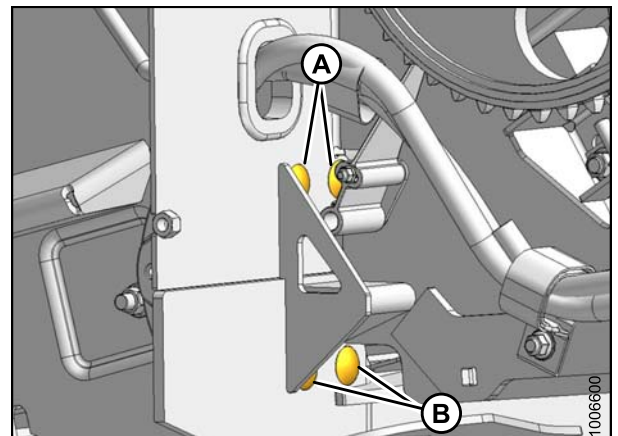


Figure 4.121

## MAINTENANCE AND SERVICING

18. Install the lock collar (B) onto the bearing, and rotate it clockwise until tight.
19. Manually turn the roller until the setscrew (A) in the lock collar lines up with the recess in the bearing support (C).
20. Tighten the setscrew (A) with a 6 mm Allen key.

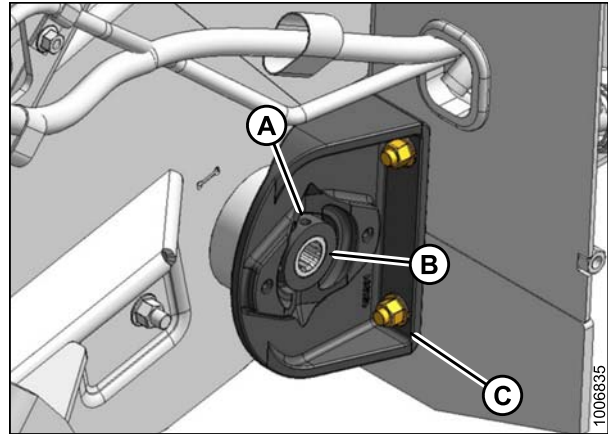


Figure 4.122

21. Install the hydraulic motor. Refer to Section [Installing Rear Hydraulic Motor](#), page 108.

### Replacing Right Side Bearing

Replacing the rear deck drive roller bearing on the right end of the deck is similar to replacing the bearing on the left end except the bearing collar is rotated clockwise to loosen and counterclockwise to tighten.

1. Fully release draper belt tension. Refer to Section [Adjusting Draper Belt Tension on Rear Deck](#), page 69.
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.

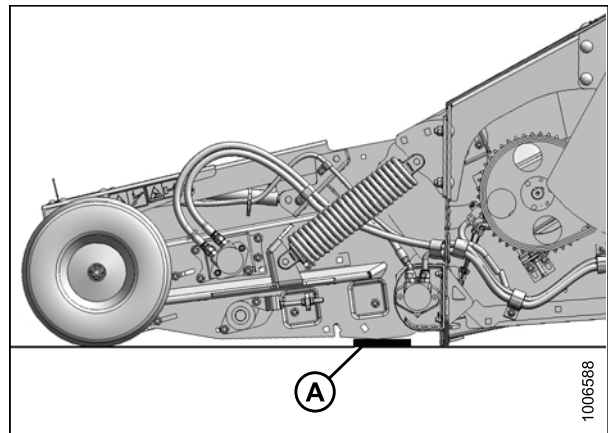
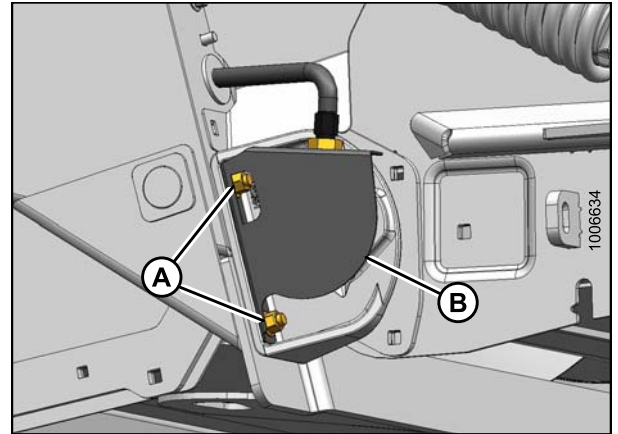


Figure 4.123: Wooden Block



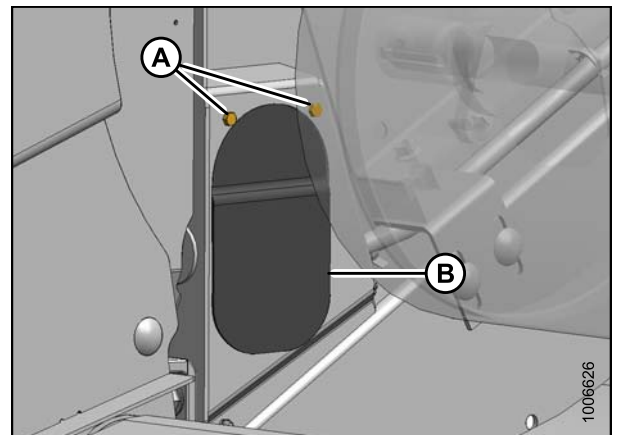
## MAINTENANCE AND SERVICING

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



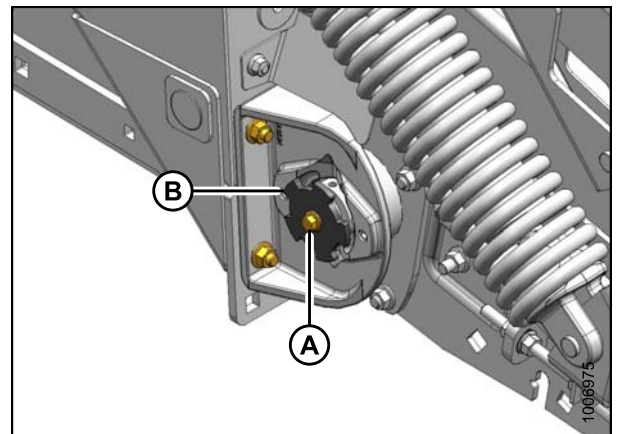
**Figure 4.124**

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



**Figure 4.125**

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



**Figure 4.126**

## MAINTENANCE AND SERVICING

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

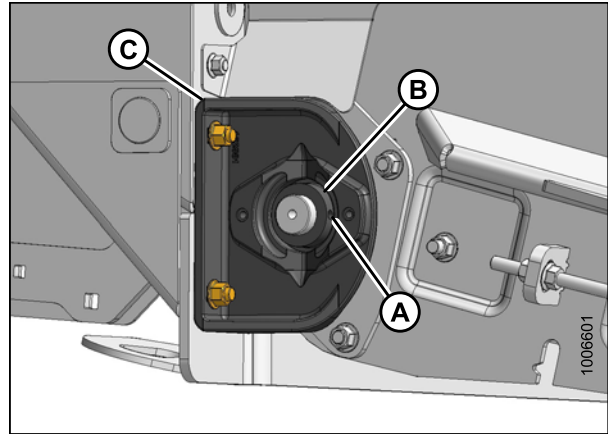


Figure 4.127

9. Remove the four nuts (A) attaching bearing support (B) to frame. Ensure deck is fully supported, and that float springs are loose before removing the bolts.

**NOTE:** Ensure that height controller is not damaged when removing bolts.

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

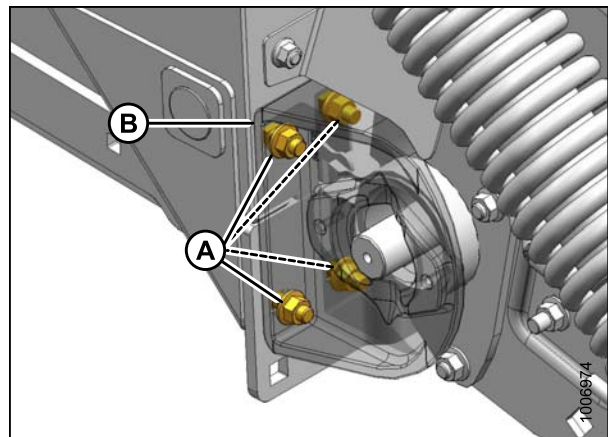


Figure 4.128

Replace bearing as follows:

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

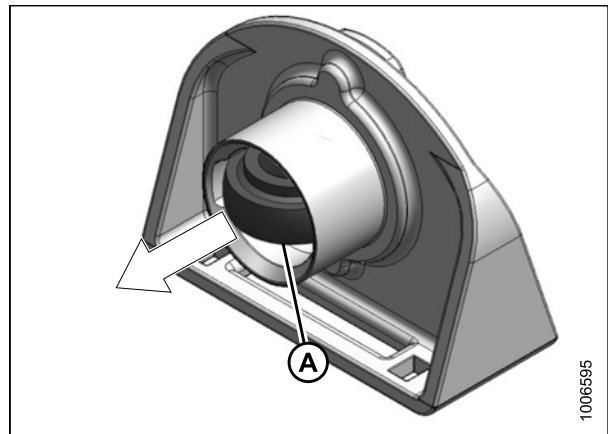


Figure 4.129

## MAINTENANCE AND SERVICING

13. Line up new bearing (A) with slots in bearing support, and push bearing into bearing support.
14. Swivel bearing 90 degrees so that it slides into groove inside bearing support.

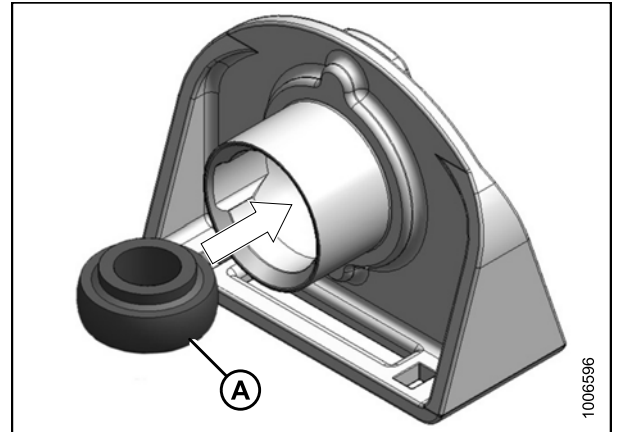


Figure 4.130

15. If replacing bushing (A), remove bushing and install new bushing (A).

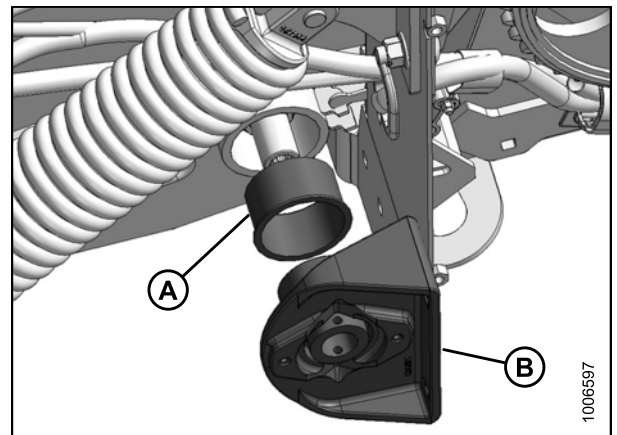


Figure 4.131: Left Side Shown - Right Side Opposite

16. Place bearing support (B) on roller shaft (A).
17. Locate base of bearing support against frame, and align mounting holes.
18. Install two M12x30 carriage bolts (C) in the upper holes and two M12x40 carriage bolts (D) in the lower holes. Secure with lock nuts.

**NOTE:** Ensure height controller is not damaged when installing bolts.

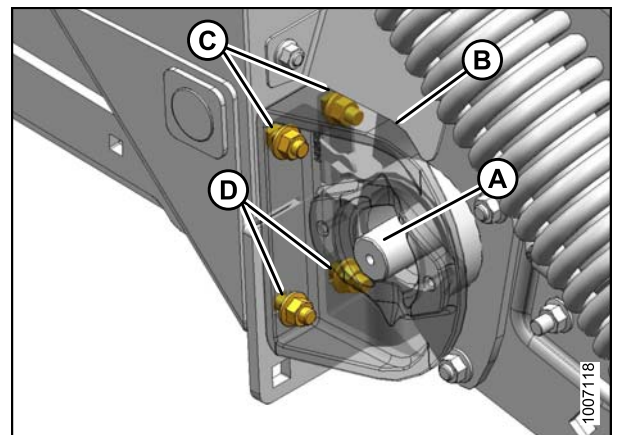
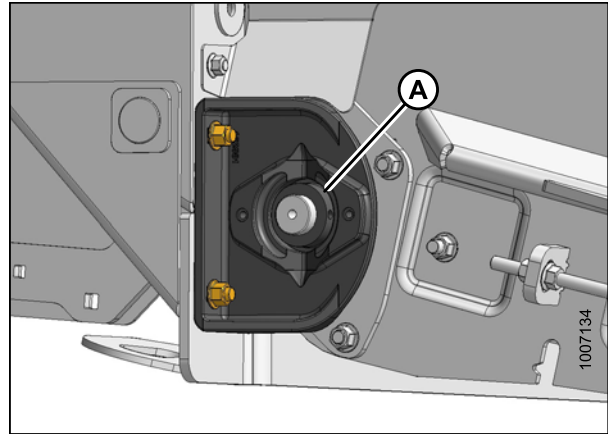


Figure 4.132

## MAINTENANCE AND SERVICING

19. Install the lock collar (A) onto the bearing, and rotate it counterclockwise until tight.



20. Start combine, and raise header fully. Shut down combine, and remove key from ignition.
21. Remove wooden support.
22. Engage combine header lift cylinder safety props.
23. Tension the drapers. Refer to Section [Adjusting Draper Belt Tension on Rear Deck, page 69](#).

### *Rear Deck - Idler Roller Bearings*

#### **Replacing Rear Deck Idler Roller Bearings**

1. Open left endshield. Refer to [3.3.1 Opening LH Endshield, page 25](#)
2. Fully release draper belt tension. Refer to Section [Adjusting Draper Belt Tension on Rear Deck, page 69](#).

## MAINTENANCE AND SERVICING

3. Replacing **LEFT SIDE** bearing:
  - a. Loosen setscrew in lock collar (A) with a 6 mm Allen key.
  - b. Loosen collar (A) by rotating collar counterclockwise.
  - c. Loosen the two bolts (B) and (C) attaching bearing to frame. Support the roller with a wooden block so that the bolts are loose.
  - d. Remove nuts on bolts (B) and (C).
  - e. Pull bearing off roller shaft.
  - f. Place new bearing on roller shaft, and align mounting holes.
  - g. Install the M12x45 carriage bolt (B) in the forward hole, and a M12x40 carriage bolt (C) in the aft hole. Bolt head faces inboard. Secure with lock nuts, but do not fully tighten.
  - h. Install the lock collar (A) onto the bearing, and rotate collar clockwise until tight.
  - i. Tighten the setscrew with a 6 mm Allen key.

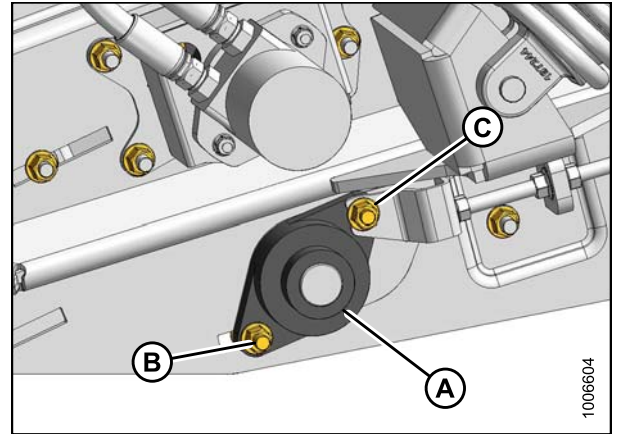


Figure 4.133: Left Side Idler Bearing

4. Replacing **RIGHT SIDE** bearing:
  - a. Loosen setscrew in lock collar (A) with a 6 mm Allen key.
  - b. Rotate collar (A) clockwise to loosen, and remove collar.
  - c. Loosen the two bolts (B) and (C) attaching bearing to frame. Support the roller with a wooden block so that the bolts are loose.
  - d. Remove nuts on bolts (B) and (C).
  - e. Pull bearing off roller shaft.
  - f. Place new bearing on roller shaft, and align mounting holes.
  - g. Install the M12x45 carriage bolt (B) in the forward hole, and a M12x40 carriage bolt (C) in the aft hole. Bolt head faces inboard. Secure with lock nuts, but do not fully tighten.
  - h. Install the lock collar (A) onto the bearing.
  - i. Rotate collar counterclockwise until tight.
  - j. Tighten the setscrew with a 6 mm Allen key.

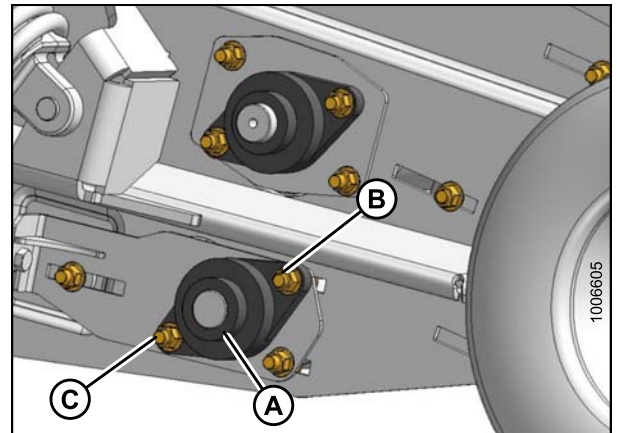


Figure 4.134: Right Side Idler Bearing

5. Tension the drapers. Refer to Section [Adjusting Draper Belt Tension on Rear Deck, page 69](#).
6. Close the endshield. Refer to [3.3.2 Closing LH Endshield, page 26](#)



## MAINTENANCE AND SERVICING

### Front Deck - Drive Roller

#### Replacing Front Deck Left Side Bearing

1. Open left endshield. Refer to [3.3.1 Opening LH Endshield, page 25](#).
2. Fully release draper belt tension. Refer to Section [Adjusting Draper Belt Tension on Front Deck, page 69](#).
3. Remove drive hydraulic motor (A). Refer to Section: [Removing Front Hydraulic Motor, page 105](#).

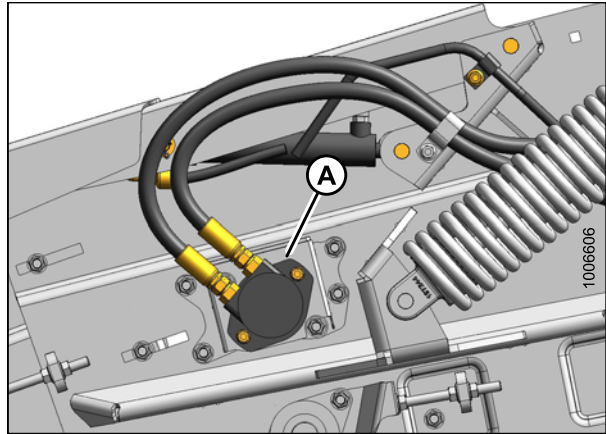


Figure 4.135

4. Manually turn roller until setscrew on collar (A) is accessible.
5. Loosen setscrew with a 6 mm Allen key, and turn collar (A) counterclockwise to loosen.
6. Remove collar (A).
7. Remove four M12 nuts from bolts (B) securing bearing housing (C) to frame, with a 18 mm socket.
8. Support drive roller so that bolts are loose.

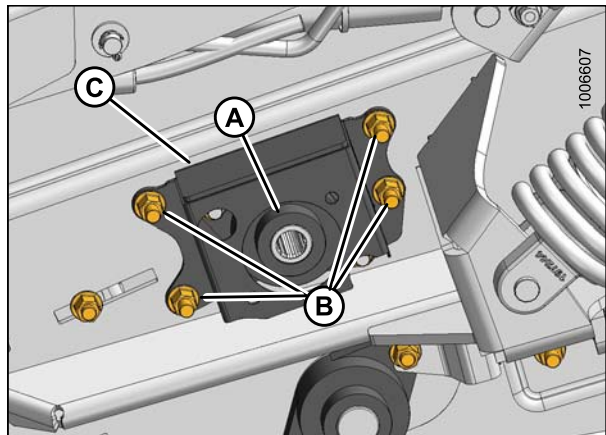


Figure 4.136

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

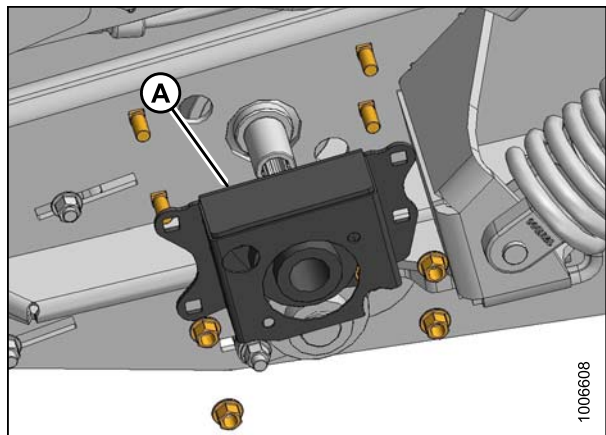


Figure 4.137

## MAINTENANCE AND SERVICING

10. Remove the two M12 bolts (A) securing bearing (B) to housing (C), and remove bearing (B).
11. Install new bearing (B) into housing (C) with two M12x40 carriage bolts (A) and lock nuts (D).

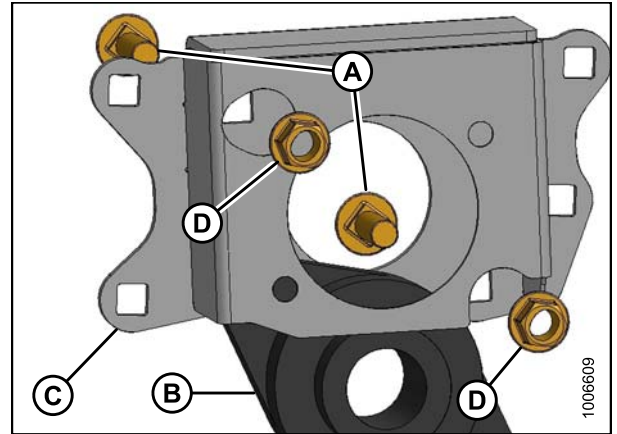


Figure 4.138

12. Place bearing housing (A) onto roller shaft (B), and secure with four M12x35 bolts (C) (bolt heads facing inboard) and lock nuts. Tighten nuts.

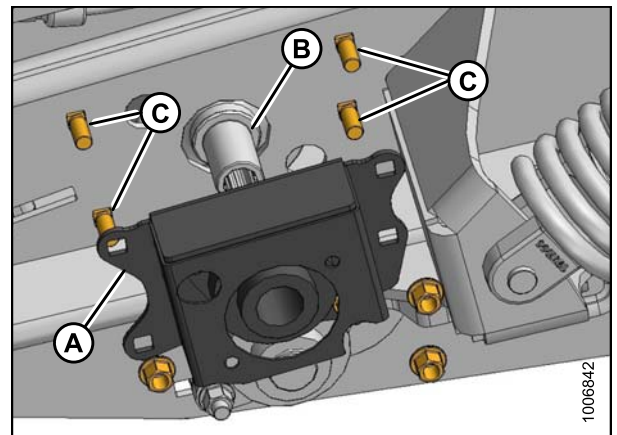


Figure 4.139

13. Install lock collar (A) onto roller shaft, and turn clockwise until tight.
14. Remove support under drive roller.
15. Manually turn roller until setscrew in collar (A) is accessible.
16. Tighten setscrew with a 6 mm Allen key.

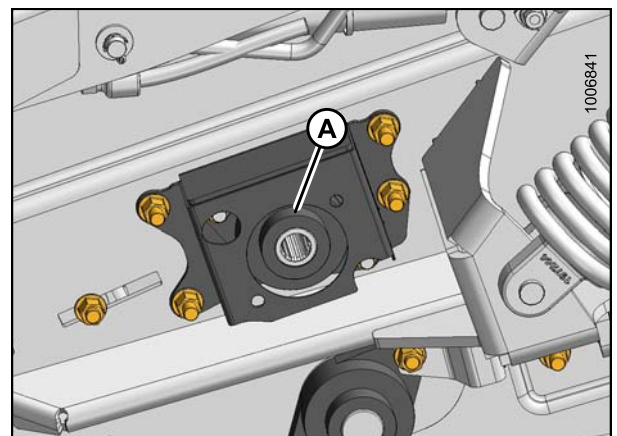


Figure 4.140

## MAINTENANCE AND SERVICING

17. Reinstall the hydraulic motor (A). Refer to Section: [Installing Front Hydraulic Motor, page 106](#).
18. Tension the drapers. Refer to Section [Adjusting Draper Belt Tension on Front Deck, page 69](#).
19. Close endshield. Refer to [3.3.2 Closing LH Endshield, page 26](#).

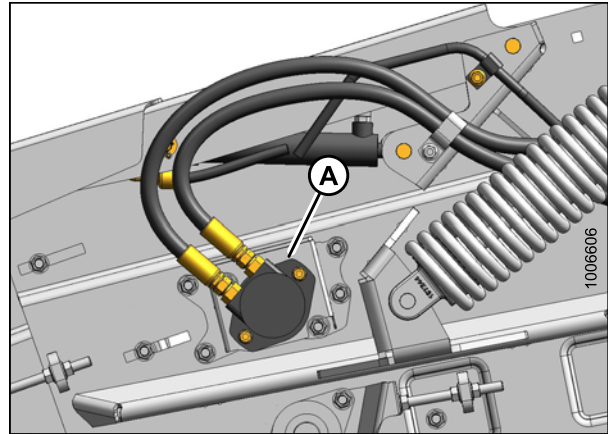


Figure 4.141

### Replacing Front Deck Right Side Bearing

1. Fully release draper belt tension. Refer to Section: [3.12.6 Draper Belt Tension, page 68](#).
2. Loosen setscrew in lock collar (A) with a 6 mm Allen key.
3. Rotate collar (A) clockwise to loosen, and remove collar.
4. Loosen the two bolts (B) attaching bearing (C) to frame. Support the roller with a wooden block so that the bolts (B) can be removed.
5. Pull bearing (C) off roller shaft.
6. Place new bearing (C) on roller shaft.
7. Locate bearing (C) against frame, and align mounting holes.
8. If the M12x40 mounting bolts (B) were removed, reinstall them (heads facing inboard). Secure with lock nuts.
9. Install the lock collar (A) onto the bearing (C), and rotate it counterclockwise until tight.
10. Tighten the setscrew with a 6 mm Allen key.
11. Tension the drapers. Refer to Section: [3.12.6 Draper Belt Tension, page 68](#).

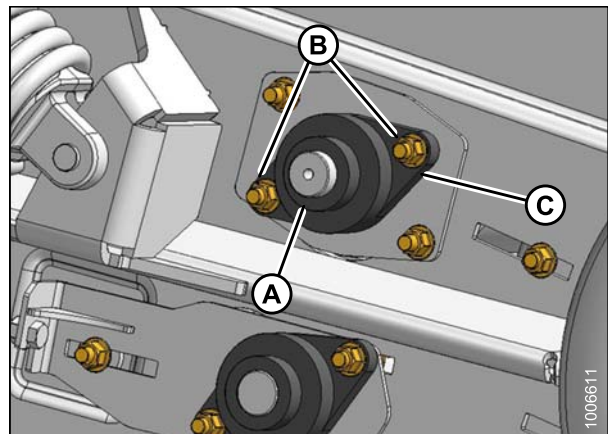


Figure 4.142



## MAINTENANCE AND SERVICING

### Front Deck - Idler Roller

#### Replacing Front Deck Idler Roller Bearings

**NOTE:** The following procedure describes the **LEFT SIDE** bearing replacement. The **RIGHT SIDE** is identical.

1. Fully release draper belt tension. Refer to Section [Adjusting Draper Belt Tension on Front Deck, page 69](#).
2. Remove setscrew in lock collar (A) with a 6 mm Allen key. Rotate collar (A) counterclockwise (clockwise for right side) to loosen, and remove collar.
3. Loosen the two nuts on bolts (B) attaching bearing to frame.
4. Support the roller with a wooden block so that the bearing can be removed.
5. Pull bearing assembly (A) off roller shaft, and remove from frame.
6. Place new bearing assembly (A) on roller shaft and bolts (B).
7. Locate bearing against frame.
8. If bolt (A) was removed and reinstalled, ensure shield (B) is in place.

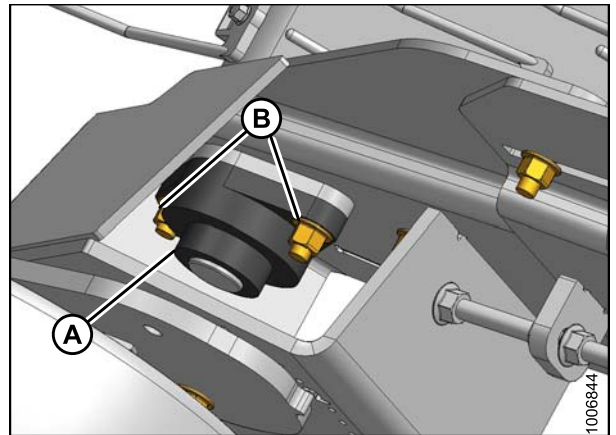


Figure 4.143: Left Side – Right Side Opposite

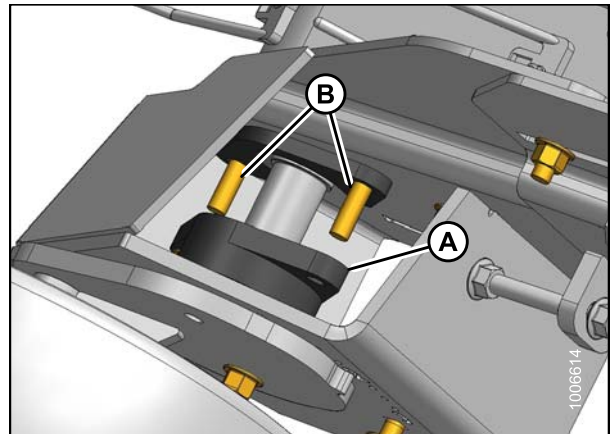


Figure 4.144: Left Side – Right Side Opposite

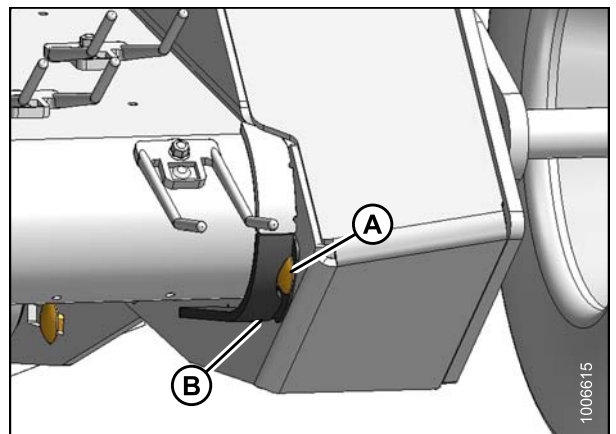
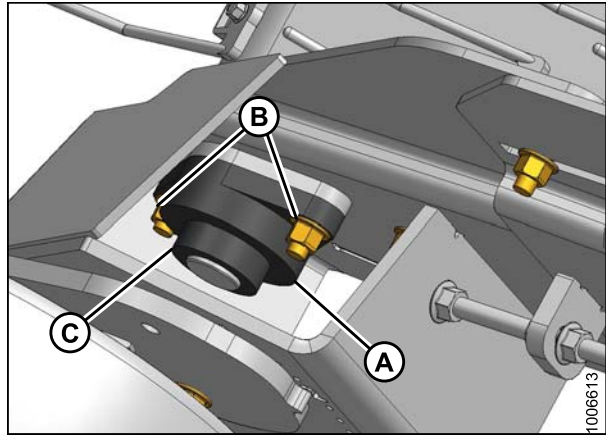


Figure 4.145: Left Side – Right Side Opposite

## MAINTENANCE AND SERVICING

9. Secure bearing (A) with lock nuts (B).
10. Install the lock collar (C) onto the bearing, and rotate it clockwise (counterclockwise for right side) until tight.
11. Tighten the setscrew with a 6 mm Allen key.
12. Remove support from under the roller.
13. Tension the drapers. Refer to Section [Adjusting Draper Belt Tension on Front Deck](#), page 69.



**Figure 4.146: Left Side – Right Side Opposite**

## 4.9 Hold-Down

### 4.9.1 Replacing Fiberglass Rods

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



#### **DANGER**

**Stop engine and remove key from ignition before leaving operator's seat for any reason. A child or even a pet could engage an idling machine.**

2. Shut down combine, and remove key from ignition.
3. For outer rods (A), loosen flange nuts (B) securing hold-down bar to hold-down arms, and loosen nut (C) next to rod.

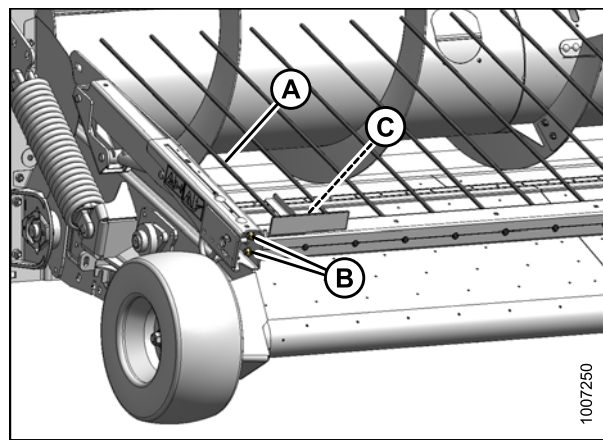


Figure 4.147

4. Slide out rod (A), and replace with new one. Ensure rod (A) extends 3/8 in. (10 mm) beyond plastic sleeve (C).

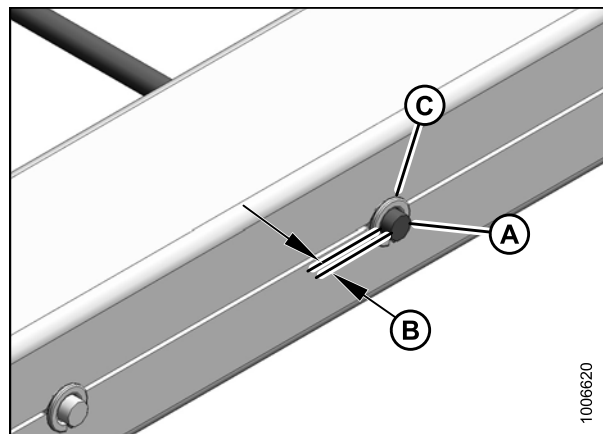


Figure 4.148

## MAINTENANCE AND SERVICING

5. Tighten nuts (B) and (C).

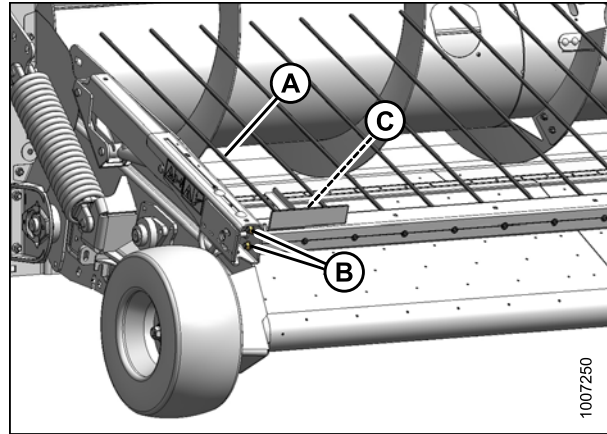


Figure 4.149

6. For remaining rods (A), loosen adjacent nuts (B), and repeat Step 4., [Replacing Fiberglass Rods, page 151](#).
7. Tighten nuts (B).

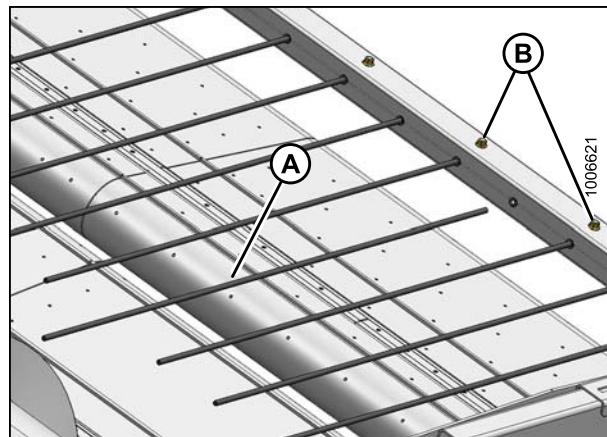


Figure 4.150

### 4.9.2 Replacing Hold-Down Hydraulic Cylinders

The hold-down is raised and lowered by two single acting hydraulic cylinders.

The operation of the cylinders can be adversely affected by air in the system or failure of the seals in the cylinders, in which case the cylinders need to be removed and repaired, or replaced.

## MAINTENANCE AND SERVICING

### Master Cylinder

The master cylinder is located at the left end of the hold-down.

#### Removing Master Cylinder

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



#### **DANGER**

**Stop engine and remove key from ignition before leaving operator's seat for any reason. A child or even a pet could engage an idling machine.**

2. Shut down combine, and remove key from ignition.
3. Release all hydraulic pressure in the system.
4. Open left endshield. Refer to [3.3.1 Opening LH Endshield, page 25](#).
5. Remove cotter pins (A) and washers (B) from clevis pins (C) and (D).
6. Support the hold-down (E) to take the weight off the cylinder (F), and remove clevis pin (C) at barrel end of cylinder. Cylinder should drop free of hold-down arm.

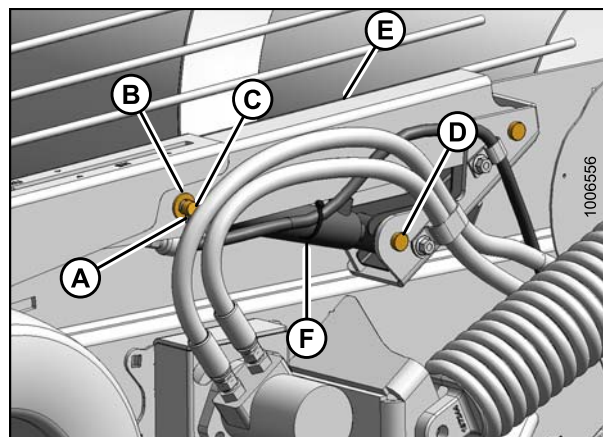


Figure 4.151

7. Insert a block of wood between the hold-down arm (A) and the pick-up to keep the hold-down up and free of work area.

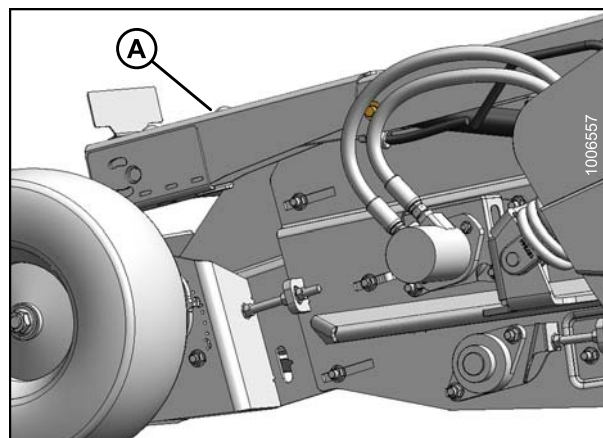


Figure 4.152

## MAINTENANCE AND SERVICING

8. Remove clevis pin (A) at rod end of cylinder, and remove cylinder and safety prop (B).

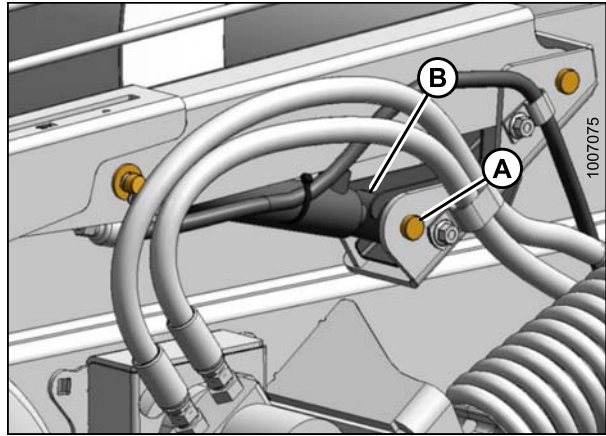


Figure 4.153

9. Cut cable ties on hoses (A) and (B), and disconnect hoses from cylinder. Install caps onto hose ends, or wrap with plastic.

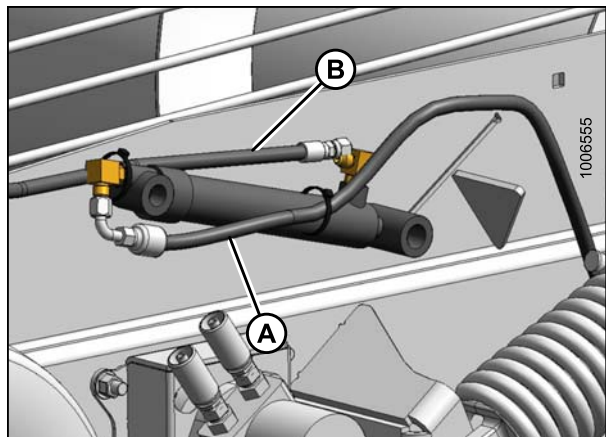


Figure 4.154

### Installing Master Cylinder

1. If installing new master cylinder:
  - a. Remove the two 90 degree elbows (A) and (B) from the old cylinder.
  - b. Remove plugs from new cylinder ports.
  - c. Install elbows (A) and (B) onto new cylinder as shown (C). Tighten jam nuts on elbows.

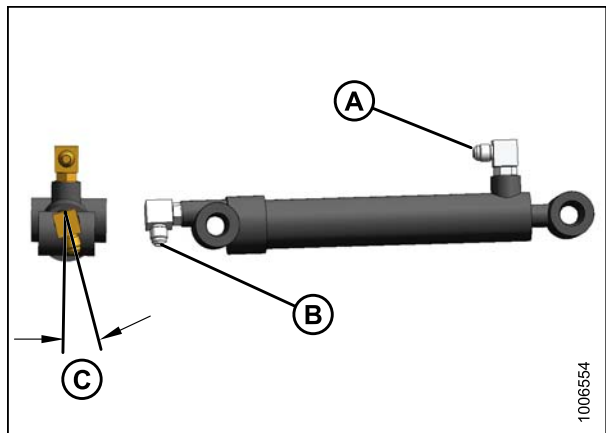


Figure 4.155



## MAINTENANCE AND SERVICING

2. 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 that hose (B) is routed parallel to the cylinder.

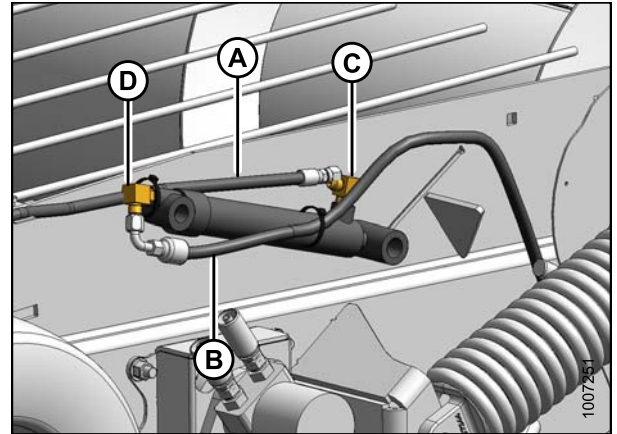


Figure 4.156

3. Position rod end of cylinder (F), and safety prop (G) into cylinder support bracket and secure with the shorter clevis pin (D). Head faces outboard.
4. Install washer (B) and cotter pin (A).
5. Lift hold-down arm (E) so that clevis pin (C) can be installed through lift arm and barrel end of cylinder. Head faces inboard.
6. Secure with washer (B) and cotter pin (A).
7. Secure hoses with cable ties.
8. Remove previously inserted block of wood.
9. Bleed cylinders and lines. Refer to Section: [Bleeding Cylinders and Lines](#), page 159.
10. Close endshield. Refer to [3.3.2 Closing LH Endshield](#), page 26.

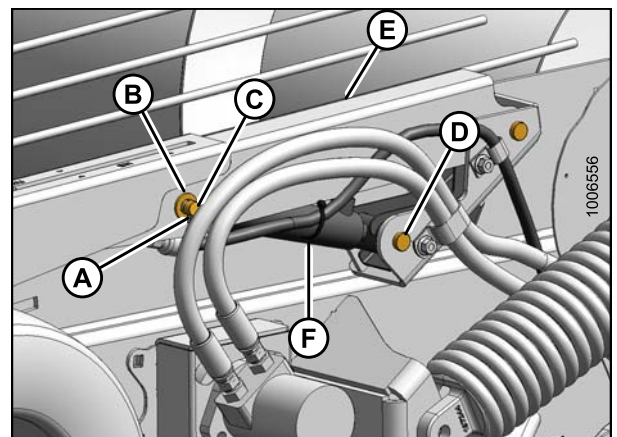


Figure 4.157

### *Slave Cylinder*

The slave cylinder is located at the right end of the hold-down and is connected to the master cylinder with a hose inside the hold-down beam.

### **Removing Slave Cylinder**

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



### **DANGER**

**Stop engine and remove key from ignition before leaving operator's seat for any reason. A child or even a pet could engage an idling machine.**

2. Shut down combine, and remove key from ignition.
3. Release all hydraulic pressure in the system.

## MAINTENANCE AND SERVICING

4. Remove cotter pins (A), and washers (B) from clevis pins (C) and (D).
5. Support the hold-down (E) to take the weight off the cylinder (F), and remove clevis pin (C) at barrel end of cylinder. Cylinder should drop free of hold-down arm.

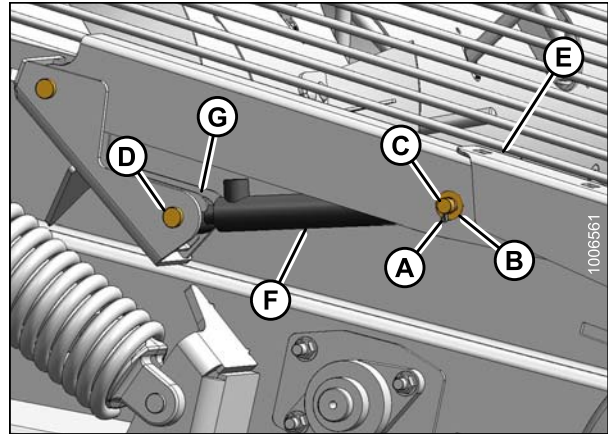


Figure 4.158

6. Insert a block of wood between the hold-down arm (A) and the pick-up to keep the hold-down up and free of work area.

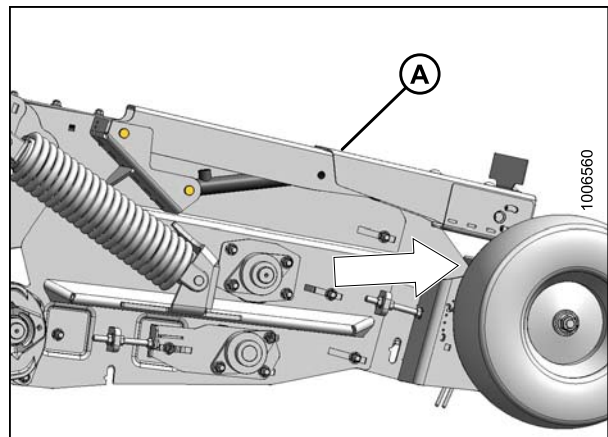


Figure 4.159

7. Remove clevis pin (A) at rod end of cylinder, and remove cylinder and safety prop (B).

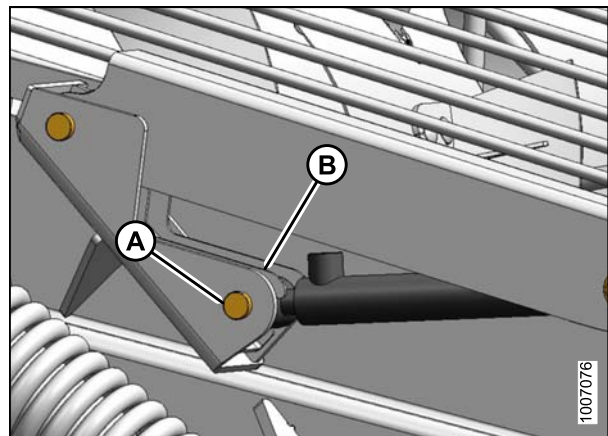


Figure 4.160



## MAINTENANCE AND SERVICING

8. Disconnect hydraulic hose (A) from cylinder. Install cap onto hose end, or wrap with plastic.

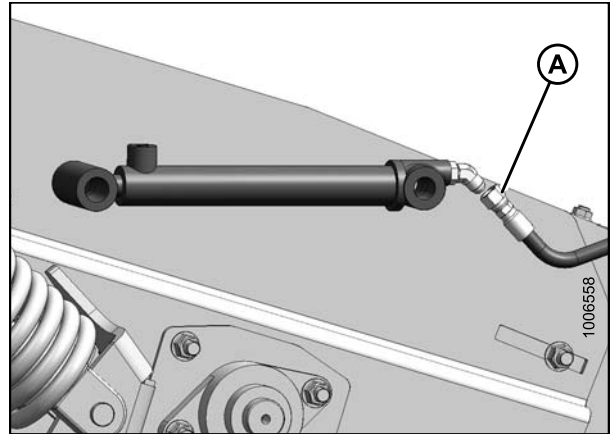


Figure 4.161

### Installing Slave Cylinder

1. If installing new slave cylinder:
  - a. Remove the 45 degree elbow (A) from old cylinder.
  - b. Remove plug from new cylinder port.
  - c. Install elbow (A) onto new cylinder as shown. Ensure fitting is in line with cylinder, and tighten jam nut on elbow.

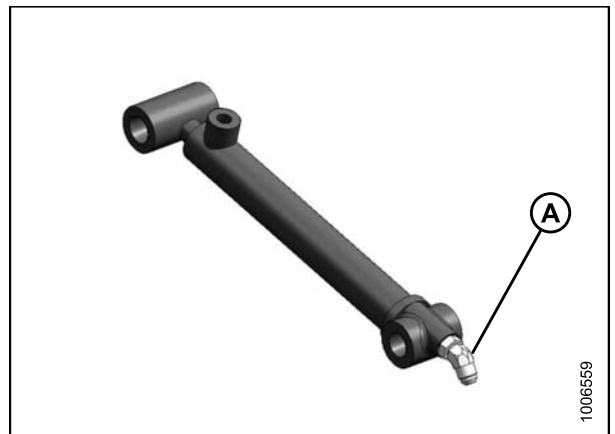


Figure 4.162

2. Connect hose (A) from master cylinder to elbow (B). Tighten fitting.

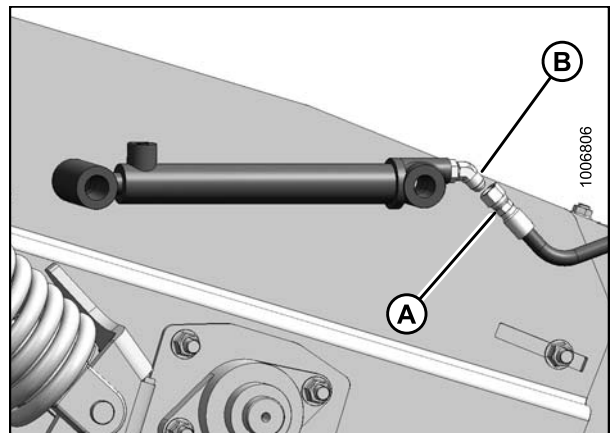


Figure 4.163

## MAINTENANCE AND SERVICING

3. Position rod end of cylinder (F) and safety prop (G) into cylinder support bracket on pick-up. Secure with the shorter clevis pin (D), head faces outboard. Install washer (B) and cotter pin (A).
4. Lift hold-down arm so that clevis pin (C) can be installed through lift arm and barrel end of cylinder. Head faces inboard. Secure with washer (B) and cotter pin (A).
5. Remove previously inserted block of wood.
6. Bleed cylinders and lines. Refer to Section: [Bleeding Cylinders and Lines, page 159](#)

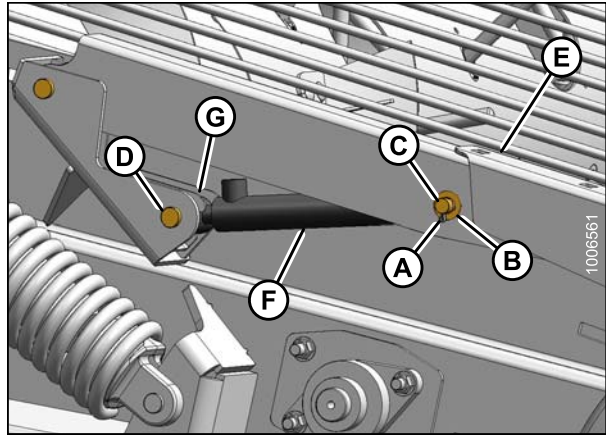


Figure 4.164

## MAINTENANCE AND SERVICING

### *Bleeding Cylinders and Lines*

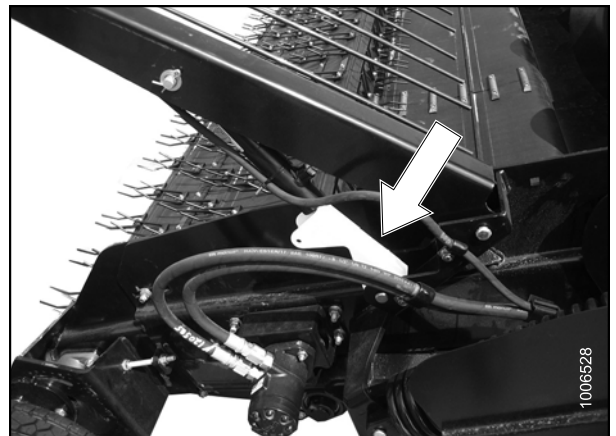
In order for the hydraulics to perform properly, all or most of the air must be removed from the system. The following procedure is the simplest method for bleeding the hydraulics.

The hydraulics should be bled after initial installation, if the unit has been idle for a significant period of time, or if adjustments are needed to the hydraulics.

#### **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.**

1. Fully raise the hold-down with the combine reel lift control.
2. Engage the hold-down safety props. Ensure that the prop is fully rotated over-center so that it remains engaged.
3. Lower the hold-down onto the safety props. (This relieves the hydraulic pressure in the lines).



**Figure 4.165: Hold-Down Safety Props**

4. Hold a plastic container up to the bleed plug.
5. Loosen the bleed screw with a 1/4 inch wrench.
6. Activate the lift control. The hold-down may lift slightly, and a stream of oil will come from the bleed screw.
7. Bleed oil until it is a steady clear stream. Release lift control, and tighten the 1/4 inch bleed screw.
8. Fully raise the hold-down.
9. Disengage the safety props.
10. Lower the hold-down.



**Figure 4.166: Bleed Cylinders**

## 4.9.3 Hydraulic Hoses and Lines

Check hydraulic hoses and lines daily for signs of leaks. Replace leaking hoses. Refer to Section [Removing Master Cylinder Hose, page 160](#) and Section [Replace Master Cylinder Hose from Multi-Coupler](#) for hold-down lift system. Refer to Section [Removing Hydraulic Motor Hoses, page 109](#) and Section [Installing Hydraulic Motor Hoses, page 111](#) for draper drive systems.

**NOTE:** To replace the hold-down slave lift cylinder hose, refer to the Technical Manual.

### 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 who is familiar with this type of injury or gangrene may result.



Figure 4.167

### WARNING

- Use a piece of cardboard or paper to search for leaks.

#### IMPORTANT:

- Keep hydraulic coupler tips and connectors clean. Dust, dirt, water and foreign material are the major causes of hydraulic system damage.
- DO NOT attempt to service hydraulic system in the field. Precision fits require WHITE ROOM CARE during overhaul.

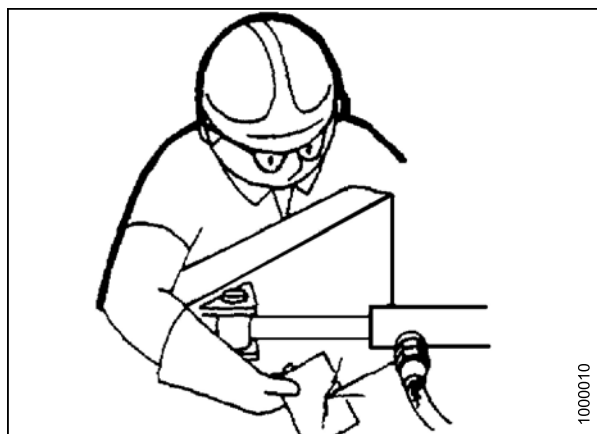


Figure 4.168

### *Removing Master Cylinder Hose*

1. Lower pick-up to the ground, and lower the hold-down completely.
2. Shut down combine, and remove key from ignition.
3. Release all hydraulic pressure in the system.

## MAINTENANCE AND SERVICING

4. Open the left endshield (A). Refer to Section: [3.3.1 Opening LH Endshield, page 25](#).

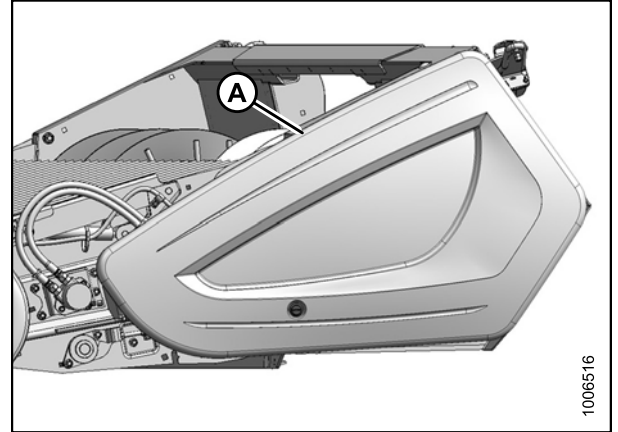


Figure 4.169

5. Disconnect hydraulic hose (A) from master lift cylinder (B). Install caps onto hose ends or wrap with plastic.

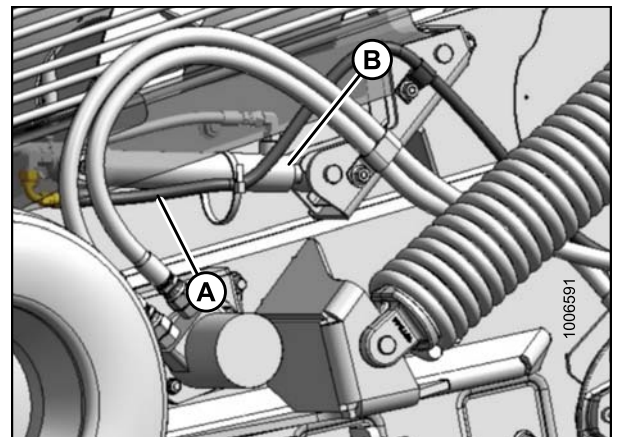


Figure 4.170

6. Loosen or remove hose clips (A), and undo cinch strap(s) (B).
7. Pull hose through opening in frame (C).

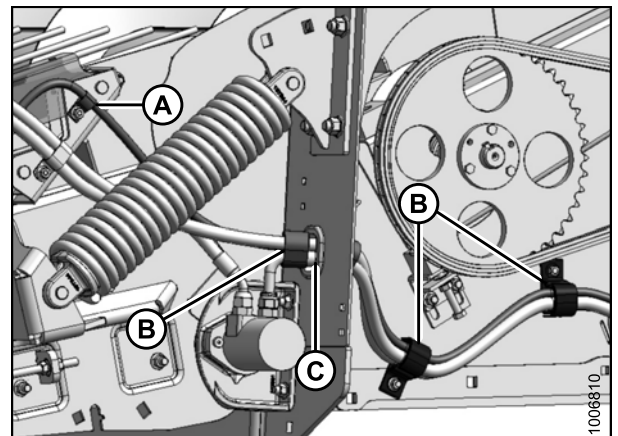


Figure 4.171

## MAINTENANCE AND SERVICING

8. Disconnect hydraulic hose (A) from multi-coupler.

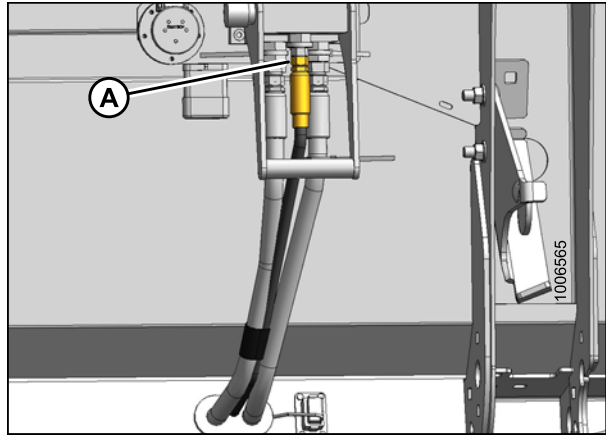


Figure 4.172

9. Loosen three bolts (A), and remove cover (B).
10. Pull hose out of cover (B).

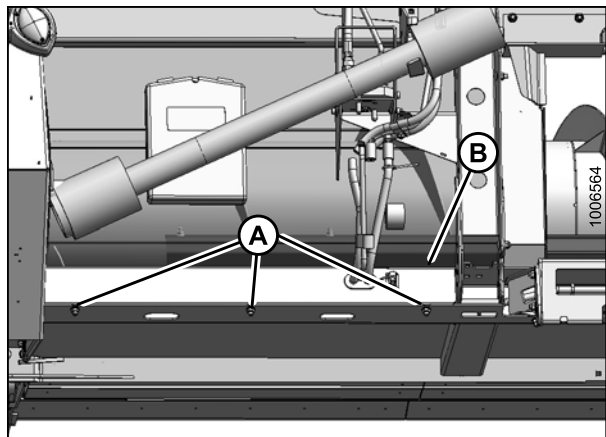


Figure 4.173

11. If necessary to pull the hose out of the cover, remove grommet (A).

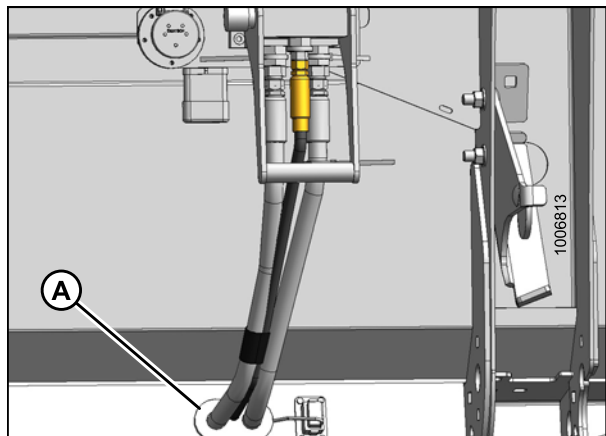


Figure 4.174

## MAINTENANCE AND SERVICING

12. Pull hose through hole (A) in endsheet.

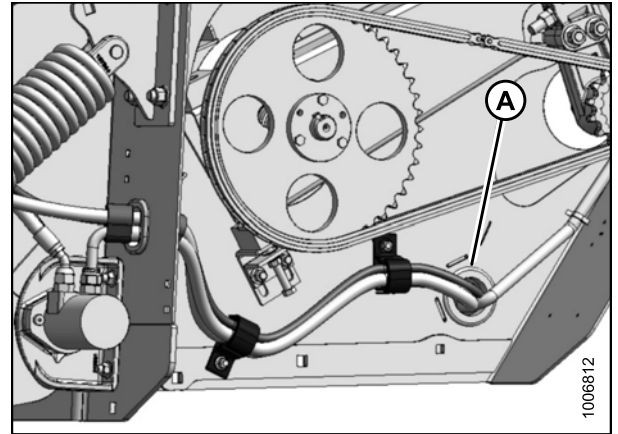


Figure 4.175

### *Installing Master Cylinder Hose*

1. Feed hose (A) through grommet (B) in endsheet.
2. Feed hose through clips (C) and frame (D) to cylinder.

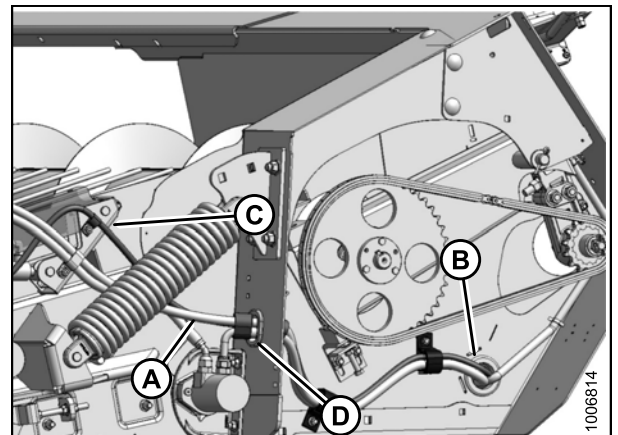


Figure 4.176

3. Feed hose (A) through cover at (B).
4. Connect hose (A) to multi-coupler.

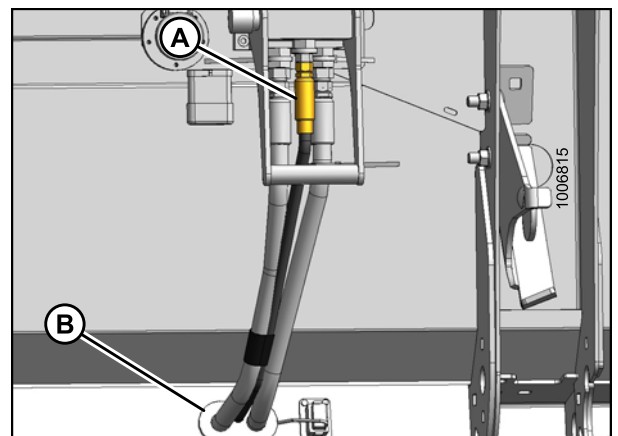
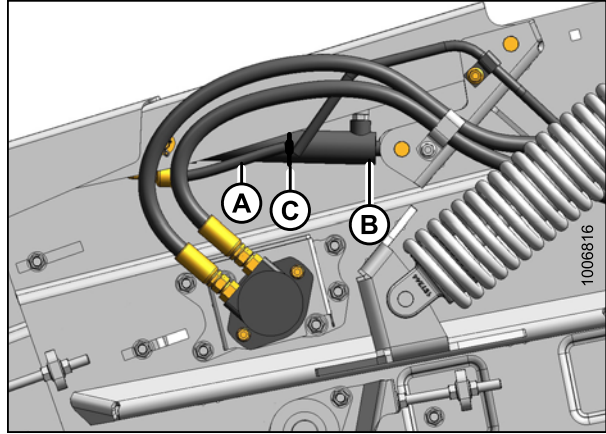


Figure 4.177



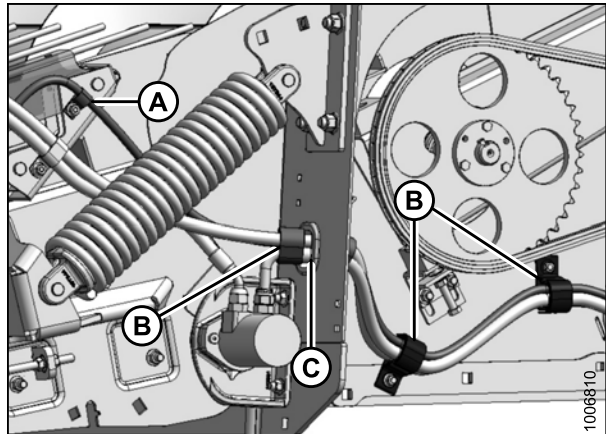
## MAINTENANCE AND SERVICING

5. Connect hose (A) to master cylinder (B).
6. Secure hose to cylinder with cable tie (C).



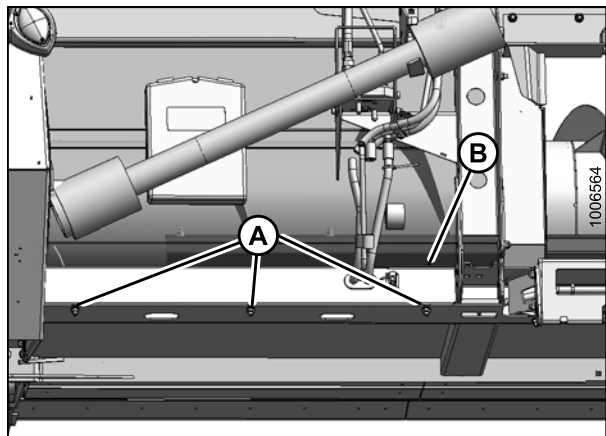
**Figure 4.178**

7. Secure hose with clips (A) and cinch straps (B).



**Figure 4.179**

8. Install cover (B) and tighten bolts (A).



**Figure 4.180**

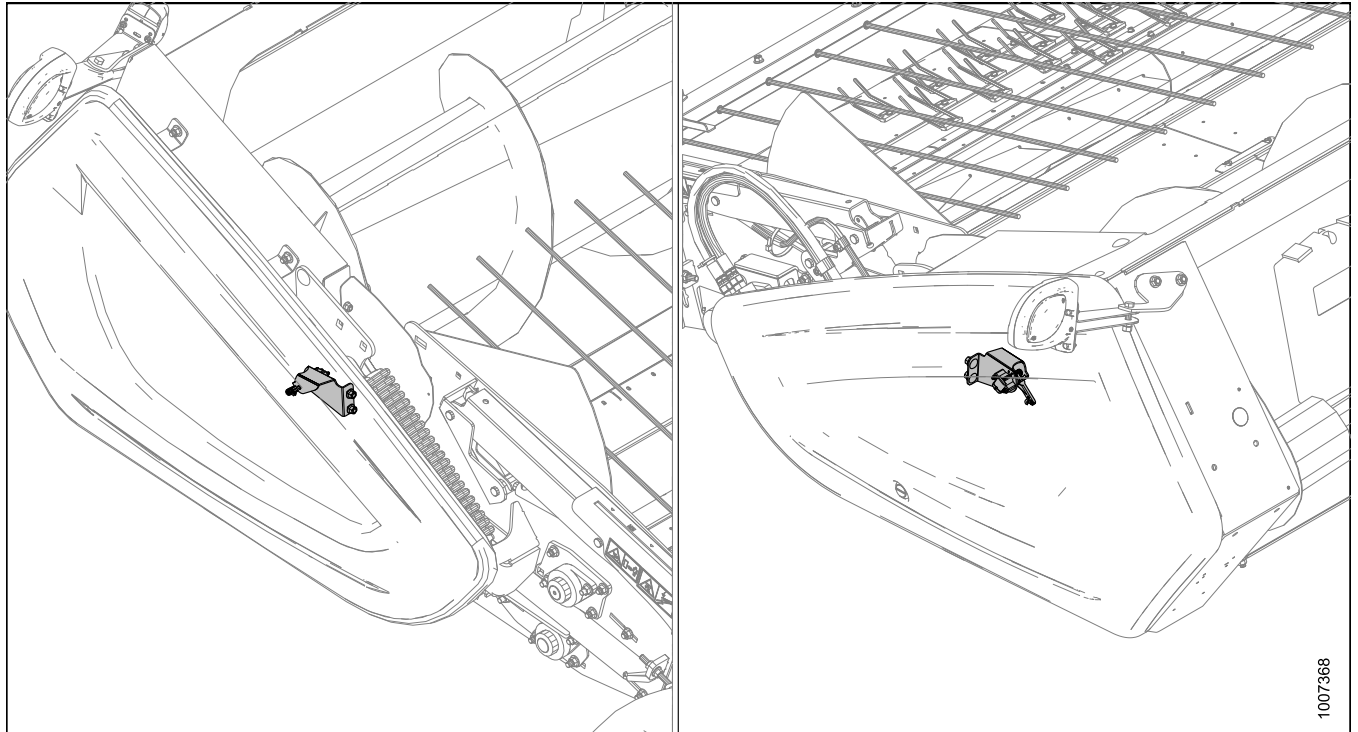
9. Close endshield. Refer to Section: [3.3.2 Closing LH Endshield, page 26](#).
10. Bleed cylinders and lines. Refer to Section: [Bleeding Cylinders and Lines, page 159](#)



### 4.10 Height Controllers

The PW8 pick-ups are equipped with two height controllers, one at each end of the header. They do not require maintenance, but may need to be repaired or replaced due to normal wear and tear.

Calibration of the sensors may also be required if there are problems with pick-up height control. Refer to the PW8 Pick-Up Header Technical Manual MD #169841, or see your MacDon Dealer.



**Figure 4.181**

## 4.11 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.

### 4.11.1 Checking Draper Speed Sensor Position

1. Check clearance (A) between sensor and disc. The recommended clearance is 1/8 in. (3 mm).
2. If clearance requires adjusting, refer to Section [4.11.2 Adjusting Draper Speed Sensor](#), page 166.

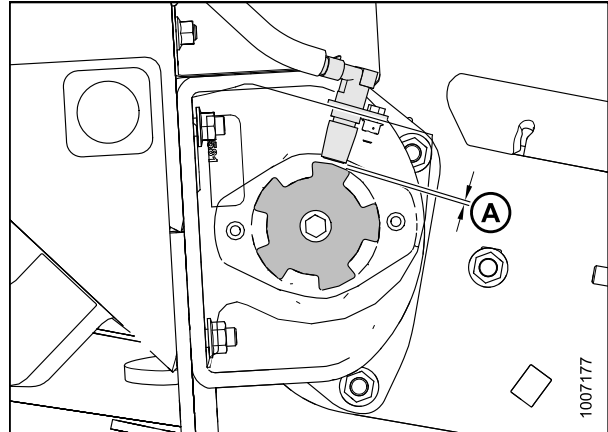


Figure 4.182: Clearance

3. Check vertical alignment (A) of sensor (B) and sensor disc (C). If required, bend support (D) inboard or outboard to adjust vertical alignment.

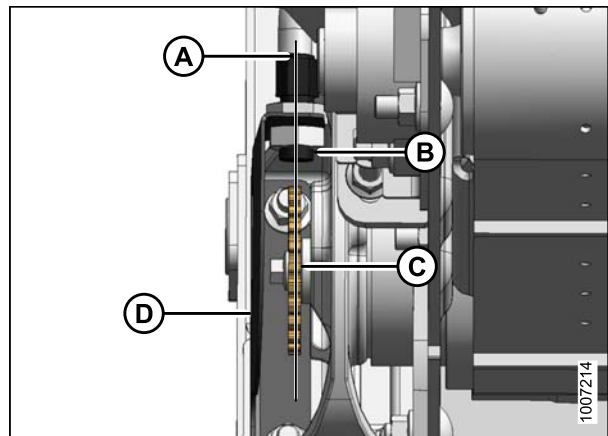


Figure 4.183: Alignment

### 4.11.2 Adjusting Draper Speed Sensor

The draper speed sensor position is set at the factory, but may require adjusting if problems occur with the draper speed system or when replacing sensor components. Check the position prior to making any adjustments. Refer to Section: [4.11.1 Checking Draper Speed Sensor Position](#), page 166.

#### **DANGER**

Stop engine and remove key from ignition before leaving operator's seat for any reason. A child or even a pet could engage an idling machine.

## MAINTENANCE AND SERVICING

1. Lower pick-up to the ground, and lower the hold-down completely.
2. Shut down combine, and remove key from ignition.

3. Adjust speed sensor clearance as follows:
  - a. Hold sensor (B) with a wrench and loosen jam nut (D).
  - b. Turn jam nuts (D) and (A) to achieve the required sensor to disc clearance.
  - c. Tighten jam nuts (D) and (A).

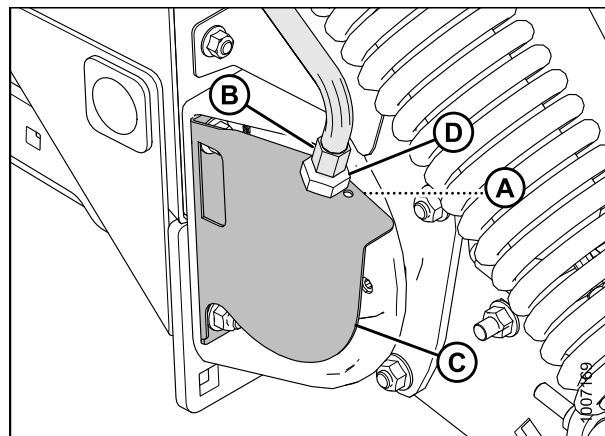


Figure 4.184

### 4.11.3 Replacing Draper Speed Sensor

The speed sensor may require replacing if it is malfunctioning, or to perform servicing of adjacent components.



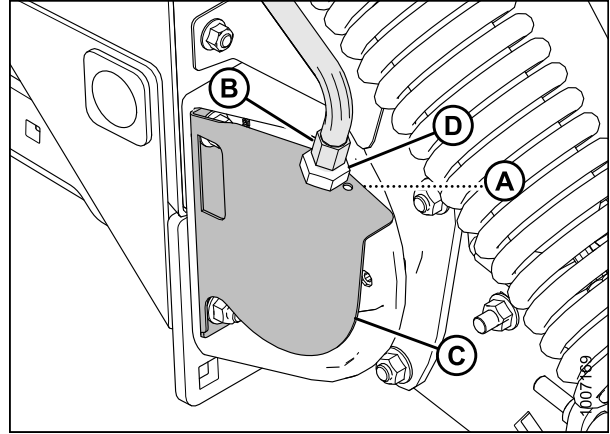
#### **DANGER**

**Stop engine and remove key from ignition before leaving operator's seat for any reason. A child or even a pet could engage an idling machine.**

1. Lower pick-up to the ground, and lower the hold-down completely.
2. Shut down combine, and remove key from ignition.

## MAINTENANCE AND SERVICING

3. Replace draper speed sensor as follows:
  - a. Remove lower jam nut (A), and pull sensor (B) from support (C).
  - b. Disconnect sensor (B) from harness, and remove top jam nut (D).
  - c. Attach new sensor (B) to harness, and install top jam nut (D) onto sensor.
  - d. Locate sensor (B) in support (C), and secure with lower jam nut (A).
  - e. Adjust clearance between sensor and sensor disc. Refer to Section: [4.11.2 Adjusting Draper Speed Sensor](#), page 166.



**Figure 4.185**

## 4.12 Wheels and Tires

The correct tire pressure is important in maintaining desired cutting height. Pressure should be 35–45 psi (240–310 kPa). Use the lower end of this range for rough ground.

### DANGER

- **Never install a tube in a cracked wheel rim.**
- **Never weld a wheel rim.**
- **Make sure all the air is removed from a 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 make repairs to 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 not in correct position on the rim, or if too full of air, the tire bead can loosen on one side, causing air to leak at high speed and with great force. An air leak of this nature can thrust the tire in any direction, endangering anyone in the area.**
- **Do NOT exceed maximum inflation pressure as per label on the tire.**

The tire should be replaced when worn or if it gets damaged beyond repair.

1. Position header so that wheels (A) are just off the ground.

### DANGER

**Stop engine and remove key from ignition before leaving operator's seat for any reason. A child or even a pet could engage an idling machine.**

2. Shut down combine, and remove key from ignition.
3. Remove wheel nut (B) with a 30 mm socket wrench.
4. Pull wheel off axle.
5. Replace or repair the tire.
6. Ensure lockwasher (A) is installed.

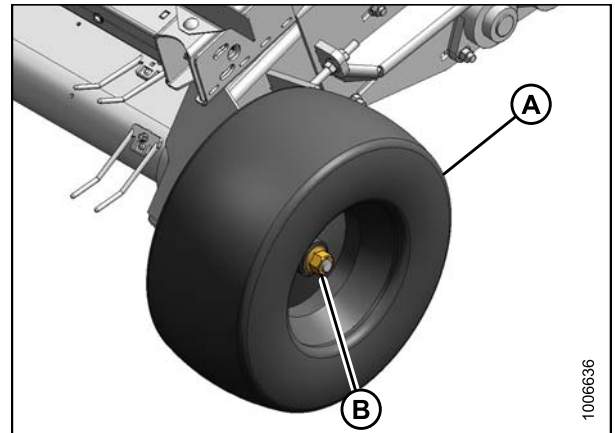


Figure 4.186

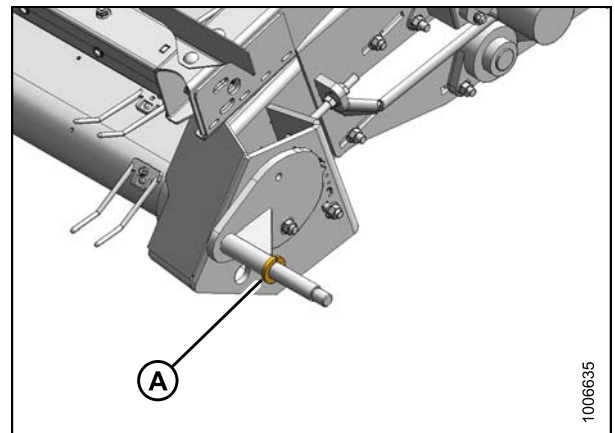


Figure 4.187

## MAINTENANCE AND SERVICING

7. Install wheel (A) and secure with wheel nut (B). Torque to 80 lbf·ft (108 N·m).

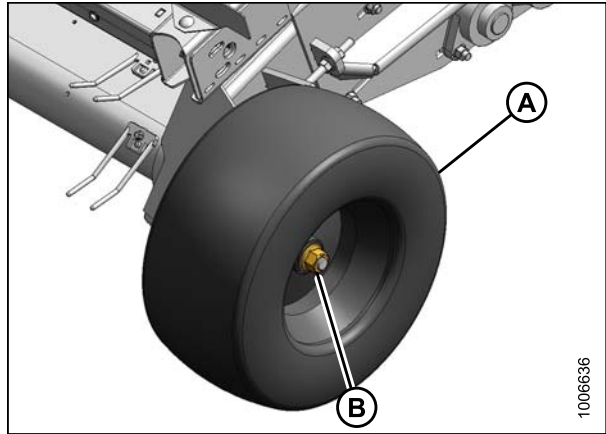


Figure 4.188

### 4.13 Lights

#### DANGER

**Stop engine and remove key from ignition before leaving operator's seat for any reason. A child or even a pet could engage an idling machine.**

Use electrical tape and wire clips as required to prevent wires from dragging or rubbing.

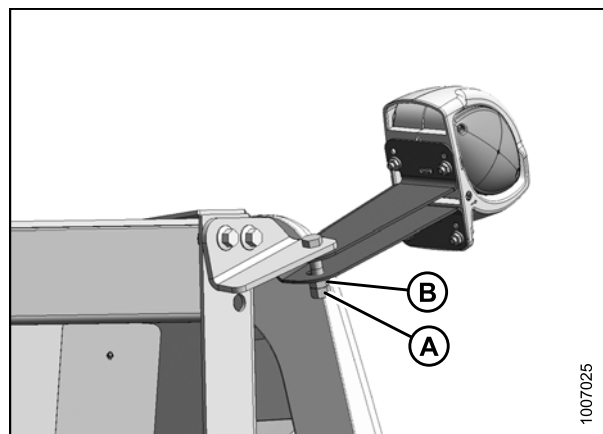
Keep lights clean, and replace defective bulbs.

If light housing is cracked or broken, it should be replaced.

#### 4.13.1 Adjusting Transport Lights

The transport lights are located at each end of the header, and are used when driving the combine on the road with the header attached. They should be positioned perpendicular to the endsheet. If they require repositioning, swivel the lights to the correct position with hand force.

1. If the swivel is too loose or too tight, loosen jam nut (A), and turn nut (B) so that the light maintains its position and can be moved with hand force. Do not over-tighten.
2. Tighten jam nut (A).



**Figure 4.189: Transport Light**

## MAINTENANCE AND SERVICING

### 4.13.2 Replacing Transport Light Bulb

The transport lights are an important safety feature. Keep lights clean, and replace defective bulbs.

1. Lower header to the ground, shut off combine and remove key from ignition.
2. Remove two screws (A) with a Phillips screwdriver.
3. Pry off the lens (B).
4. Push in and turn bulb counterclockwise slightly. Remove the bulb.
5. Place the new bulb in the socket, push in and turn clockwise until it stops.
6. Replace lens (B) and secure with two screws (A).

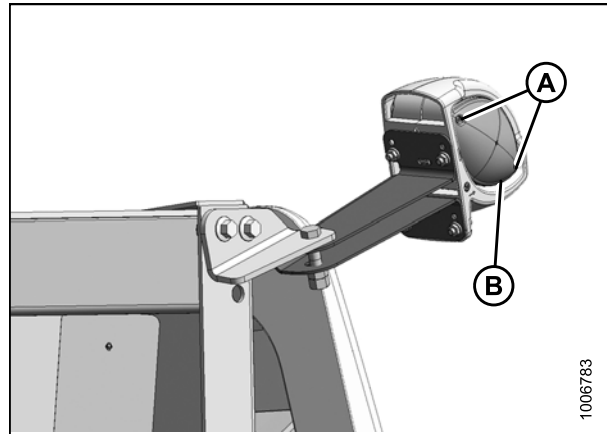


Figure 4.190

### 4.13.3 Replacing Lens

1. Lower header to the ground, shut off combine, and remove key from ignition.
2. Remove two screws (A) with a Phillips screwdriver.
3. Pry off the lens (B).
4. Install new lens (B), and secure with two screws (A).

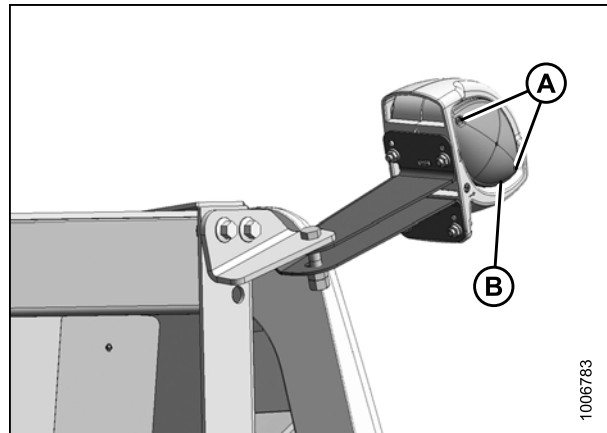


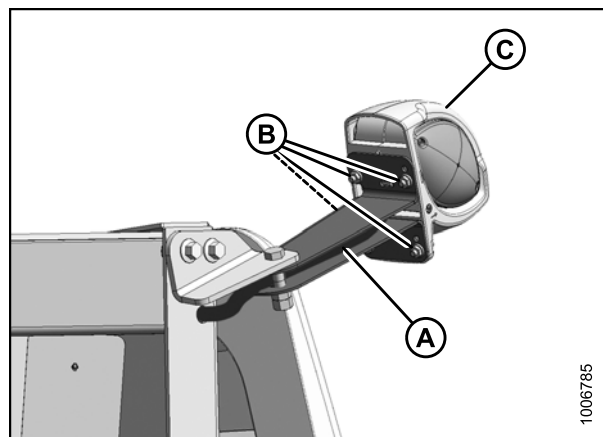
Figure 4.191



### 4.13.4 Replacing Lamp Housing

If light housing is cracked or broken, it should be replaced.

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. Check wiring harness is not damaged, and secure harness inside lamp bracket.
8. Check operation of new lamp.



**Figure 4.192**



## 5 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.	<a href="#">Adjusting Draper Speed, page 56</a>
	Incorrect header height.	Adjust header height to 12 in. (300 mm) as measured from the center of the rear draper roller to the ground.	<a href="#">Header Height, page 62</a>
	Improperly adjusted hold-down rods.	Adjust the rod tube so that the tips of the rods are close enough to the draper belts to prevent overshoot.	<a href="#">Hold-Down Rod Angle, page 66</a>
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.	<a href="#">Adjusting Draper Speed, page 56</a>
	Light crop flowing forward and fingers unable to move swath rearward.	Add optional hold-down performance kit MD #B5475.	See your MacDon Dealer. <a href="#">6.1 Hold-Down Performance Kit, page 179</a>
Shelling in delicate crops.	Draper speed too high.	Reduce draper speed until pickup is just pushing the swath.	<a href="#">Adjusting Draper Speed, page 56</a>
	Improperly adjusted hold-down.	Raise the hold-down assembly high enough to clear the swath.	<a href="#">Hold-Down Position, page 65</a>
Pick-up leaves material in the field.	Pick-up teeth are set too high.	Raise wheels to lower the pick-up height.	<a href="#">Pick-Up Height, page 63</a>
	Draper speed too low.	Increase draper speed.	<a href="#">Adjusting Draper Speed, page 56</a>
	Header height is too low.	Adjust header height to 12 in. (300 mm) as measured from the center of the rear draper roller to the ground.	<a href="#">Header Height, page 62</a>
	Pick-up is running too fast (pulling swath apart).	Slow the pick-up down until it is just pushing the swath.	<a href="#">Adjusting Draper Speed, page 56</a>

## TROUBLESHOOTING

Symptom	Problem	Solution	Refer to Section
The pick-up is picking a large amount of dirt and stones.	Draper speed too high.	Reduce draper speed until pickup is just pushing the swath.	<a href="#">Adjusting Draper Speed, page 56</a>
	Pick-up height too low.	Lower wheels so that teeth are 1 in. (25 mm) off ground.	<a href="#">Pick-Up Height, page 63</a>
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.	<a href="#">Header Height, page 62</a>
	Incorrect header lateral tilt.	On some combine headers header lateral tilt can be adjusted. Adjust combine header tilt so that when the header is at the operating height, the header floor pan and ground are parallel. (Note: Adjust header tilt to Corn Setting from Grain Setting)	See your combine operator's manual.
Draper belts roll up side frame.	Belts are too tight.	Loosen draper belt tension.	<a href="#">Adjusting Draper Belt Tension on Front Deck, page 69</a> or <a href="#">Adjusting Draper Belt Tension on Rear Deck, page 69</a>
	Belts are tightened unevenly.	Adjust draper belt tension evenly on both ends of the pick-up.	
	Dirt/crop buildup on rollers.	Remove draper belts and remove dirt/crop buildup from roller surface, and roller groove.	<a href="#">4.8.1 Draper Belts, page 128</a>
	Belts are sometimes tacky when new.	Rub talcum or baby powder onto belts to reduce tackiness. Also, belts may need to be run loose for first few hours of break-in.	- - -
Stalling of belts when loaded with crop material.	Draper belts are too loose.	Increase belt tension.	<a href="#">Adjusting Draper Belt Tension on Front Deck, page 69</a> or <a href="#">Adjusting Draper Belt Tension on Rear Deck, page 69</a>
Slave lags behind master on lift.	Air in system.	Bleed cylinders.	<a href="#">Bleeding Cylinders and Lines, page 159</a>

## TROUBLESHOOTING

Symptom	Problem	Solution	Refer to Section
Master 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.	<a href="#">Bleeding Cylinders and Lines, page 159</a>
	Flow is too restricted.	Check hoses and lines.	<a href="#">4.9.3 Hydraulic Hoses and Lines, page 160</a>
Slave cylinder remains extended more than 1/2 in. (13 mm) when hold-down is fully lowered.	Air in system.	Bleed cylinders.	<a href="#">Bleeding Cylinders and Lines, page 159</a>
Hold-down remains raised and will not lower.	Safety prop is engaged.	Disengage safety prop.	<a href="#">3.5 Hold-Down Lift Cylinder Safety Props, page 29</a>
	Hydraulics not connected properly.	Ensure hydraulic lines are connected properly and not damaged.	<a href="#">4.9.3 Hydraulic Hoses and Lines, page 160</a>
Driveline clutch is slipping.	Clutch is worn.	Rebuild/replace clutch.	<a href="#">Replacing Driveline Clutch, page 100</a>
	Obstruction in auger.	Shut off combine, remove key and remove obstruction.	<a href="#">3.13 Unplugging the Header, page 72</a>
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.	<a href="#">Header Height, page 62</a>
Draper speed sensor not working properly.	Sensor positioned incorrectly.	Reposition sensor.	<a href="#">4.11.2 Adjusting Draper Speed Sensor, page 166</a>



## **6 Options and Attachments**

### **6.1 Hold-Down Performance Kit**

This kit assists in light crop delivery onto the pick-up, especially when the fingers have difficulty picking up the crop and tend to throw the crop forward. It consists of a series of spring wires that attach to the hold-down bar and project forward and downward into the crop.

Attachment hardware and installation instructions are included in the kit.





## 7 Unloading and Assembly

Refer to PW8 Pick-Up Header Unloading and Assembly Instructions and the Pre-Delivery Checklist that are included with your shipment.



# Index

## A

attaching to	
Case IH combine.....	34
John Deere 60/70 and S series combine.....	41
New Holland combine.....	47
auger	
auger finger guides	
replacing auger finger guides.....	124
auger fingers	
replacing auger fingers.....	123
auger float.....	58
locking auger float.....	59
unlocking auger float.....	60
auger position.....	56
adjusting auger position.....	57
auger speed.....	56
flighting extensions	
replacing flighting extensions.....	127
stripper plate	
replacing stripper plate.....	126
stripper plate clearance.....	61
adjusting stripper plate clearance.....	62
checking stripper plate clearance.....	61
auger drive.....	113
auger drive chain	
adjusting auger drive chain tension.....	115
installing auger drive chain.....	115
lubricating auger drive chain.....	113
removing auger drive chain.....	114
sprocket	
installing drive sprocket.....	121
installing driven sprocket.....	118
removing drive sprocket.....	119
removing driven (large) sprocket.....	117

## B

break-in period.....	32
----------------------	----

## C

Case IH combine	
attaching to.....	34
detaching from.....	37
clutch.....	71
component identification.....	21
conversion chart.....	86

## D

detaching from	
----------------	--

Case IH combine.....	37
John Deere 60/70 and S series combine.....	45
New Holland combine.....	51
draper	
draper belt.....	128
installing front draper belt.....	129
installing rear draper belt.....	132
removing front draper belt.....	128
removing rear draper belt.....	131
draper fingers and guides.....	133
replacing draper fingers.....	134
replacing draper guide.....	134
draper roll bearings.....	136
drive roller	
front deck left side.....	146
front deck right side.....	148
rear deck left side.....	136
rear deck right side.....	140
idler roller	
front deck.....	149
rear deck.....	144
draper speed sensor	
adjusting.....	166
checking.....	166
replacing.....	167
draper belt	
draper belt tension.....	68
adjusting belt tension front deck.....	69
adjusting belt tension rear deck.....	69
checking draper belt tension.....	68
draper speed sensor.....	166
drive	
driveline	
driveline splined shaft.....	105
driveline clutch	
replacing driveline clutch.....	100
driveline guard	
installing driveline guard.....	103
removing driveline guard.....	101
header driveline	
installing header driveline.....	99
removing header driveline.....	97
header driveshaft.....	97
driveline	
driveline clutch	
replacing driveline clutch.....	100
driveline guard	
installing driveline guard.....	103
removing driveline guard.....	101
driveline guard.....	71

# INDEX

## E

electrical, <i>See</i> lighting	
lights .....	171
endshield	
closing endshield .....	26
installing LH endshield .....	94
opening endshield .....	25
removing LH endshield .....	93
replacing endshield brackets .....	95

## F

flighting extensions	
replacing flighting extensions .....	127
fluids and lubricants .....	85

## G

greasing	
fluids and lubricants .....	85
maintenance schedule/record .....	88

## H

header	
attaching/detaching .....	34
maintenance and servicing .....	75
operation .....	55
height controller .....	165
hold-down	
hold-down position .....	65, 67
hold-down rod angle .....	66
hydraulic cylinders .....	152
lift cylinder safety prop	
engaging/disengaging safety props .....	29
optional hold-down performance kit .....	179
replacing fiberglass rods .....	151
hydraulic fitting	
flare-type .....	79
O-ring boss (ORB) adjustable .....	81
O-ring boss fitting	
non-adjustable .....	83
O-ring face seal .....	84
hydraulics	
hydraulic cylinders .....	152
bleeding cylinders .....	159
master cylinder	
installing master cylinder .....	154
removing master cylinder .....	153
slave cylinder	
installing slave cylinder .....	157
removing slave cylinder .....	155
hydraulic hoses and lines .....	160
drive motor hoses	

installing drive motor hoses .....	111
removing drive motor hoses .....	109
master cylinder	
installing master cylinder hose .....	163
removing master cylinder hose .....	160
hydraulic motors	
installing front hydraulic motor .....	106
installing rear hydraulic motor .....	108
removing front hydraulic motor .....	105
removing rear hydraulic motor .....	107
safety .....	6

## J

John Deere combine	
attaching to 60/70 and S series combine .....	41
detaching from 60/70 and S series combine .....	45

## L

lift cylinder safety prop	
hold-down .....	29
lift cylinder safety props	
header .....	28
lights	
transport lights .....	54
adjusting lights .....	171
replacing lamp housing .....	173
replacing lens .....	172
replacing light bulb .....	172
lubrication .....	90
greasing points .....	91
greasing procedure .....	90
installing sealed bearing .....	92
recommended fluids and lubricants .....	85

## M

maintenance and servicing .....	75
conversion chart .....	86
end of season service .....	89
lights .....	171
maintenance record .....	88
maintenance schedule .....	87
maintenance specifications .....	76
pre-season/annual service .....	89
preparing header for servicing .....	75
recommended fluids and lubricants .....	85
safety .....	5
schedule .....	88
master cylinder	
installing master cylinder .....	154
removing master cylinder .....	153
removing master cylinder hose .....	160

## INDEX

metric bolt	
torque.....	76
torque when bolting onto cast aluminum .....	79

## N

New Holland combine	
attaching to .....	47
detaching from .....	51

## O

operating height	
header height.....	62
pick-up height .....	63
adjusting pick-up height.....	63
operating speed.....	55
adjusting operating speed .....	56
operator responsibilities .....	23
options	
hold-down performance kit.....	179
owner responsibilities.....	23

## R

rod (fiberglass) .....	151
------------------------	-----

## S

safety	
alert symbols.....	1
break-in period .....	32
daily start-up check .....	30
general safety .....	3
hydraulic safety .....	6
maintenance and servicing.....	5
safety sign decals.....	8
installing .....	8
interpreting .....	11
location .....	9
shutdown procedure .....	31
signal words.....	2
tire safety.....	7
safety props, See lift cylinder safety prop	
sensor	
draper speed sensor	
adjusting .....	166
checking.....	166
replacing .....	167
serial number	
locating.....	ii
shutdown procedure .....	31
slave cylinder	
installing slave cylinder .....	157

removing slave cylinder .....	155
specifications	
component identification .....	21
header dimensions .....	20
header specifications .....	19
maintenance specifications .....	76
recommended fluids and lubricants .....	85
torque specifications.....	76
sprocket.....	117
drive sprocket	
installing.....	121
removing .....	119
driven (large) sprocket	
removing .....	117
driven sprocket	
installing.....	118
start-up	
daily start-up check .....	30
storing the header.....	73
stripper plate	
replacing stripper plates.....	126
stripper plate clearance.....	61
adjusting stripper plate clearance .....	62
checking stripper plate clearance .....	61

## T

torque specification.....	76
flare-type hydraulic fittings .....	79
metric bolt.....	76
metric bolt bolting into cast aluminum .....	79
O-ring boss (ORB) adjustable hydraulic fittings.....	81
O-ring boss hydraulic fitting	
adjustable.....	81
non-adjustable .....	83
O-ring face seal hydraulic fitting .....	84
transporting.....	54
transport lights .....	54
adjusting lights.....	171
replacing lamp housing.....	173
replacing lens .....	172
replacing light bulb .....	172
troubleshooting.....	175

## U

unloading and assembly instructions.....	181
unplugging the header .....	72

## W

wheel and tire	
replacing tire .....	169

## INDEX

safety ..... 7

tire pressure..... 169



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