

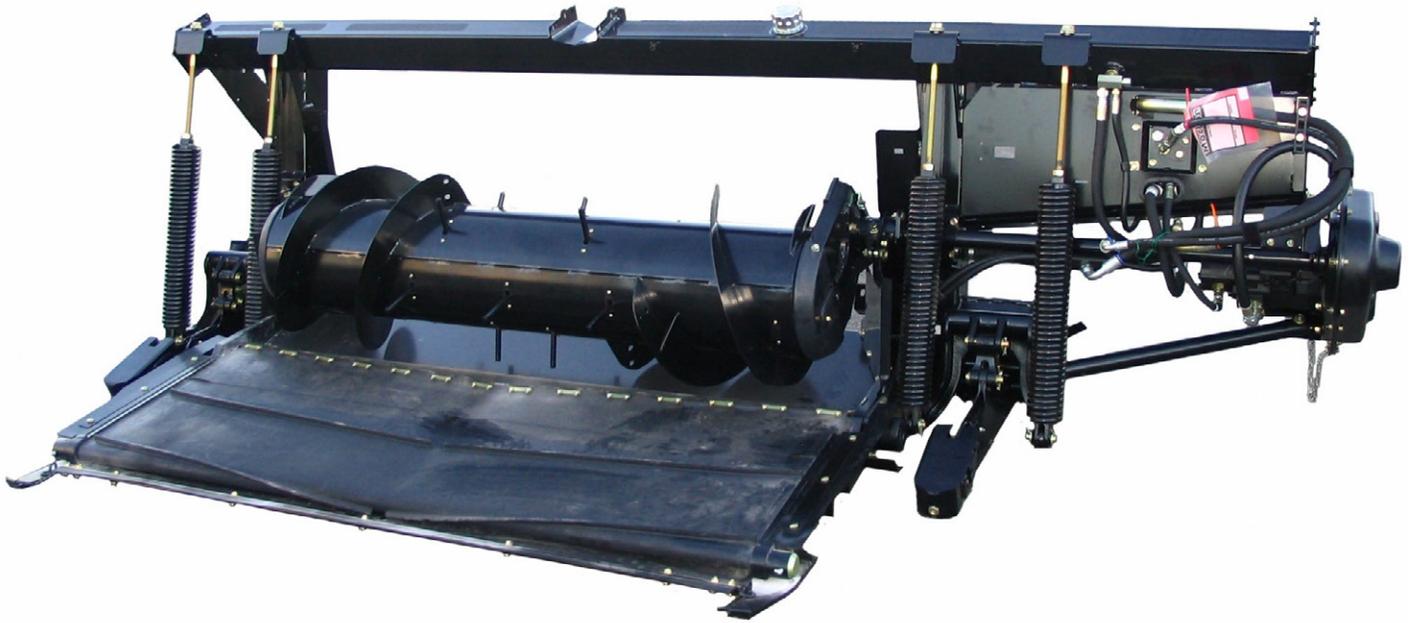
# **CA20**

# **Combine Adapter**

**OPERATOR'S MANUAL**

Model Year - 2009

Part #169009 \$15



**MacDon Model CA20 Combine Adapter**

# 1 INTRODUCTION

This manual contains information on the MacDon Model CA20 Combine Adapter that allows attachment of the MacDon Model D50 and D60 Harvest Header and the Model FD70 FlexDraper headers to various makes and models of combines. This manual must be used in conjunction with your Header and Combine Operator's Manual.

CAREFULLY READ ALL THE MATERIAL PROVIDED BEFORE ATTEMPTING TO UNLOAD, ASSEMBLE, OR USE THE MACHINE.

Use this manual as your first source of information about the machine. If you follow the instructions given in this manual, your CA20 Combine Adapter will work well for many years. If you require more detailed service information, a Service Manual is available from your dealer.

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.

Keep this manual handy for frequent reference and to pass on to new operators or owners. Call your dealer if you need assistance, information, or additional copies of this manual.

**NOTE:** Right-hand (R/H) and left-hand (L/H) designations are determined from the operator's position, facing forward.

RECORD THE SERIAL NUMBER IN THE SPACE BELOW.

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Serial Number plate is located on the frame above the main drive gearbox.



# TABLE OF CONTENTS

Section/Title	Page
<b>1 INTRODUCTION .....</b>	<b>1</b>
<b>2 SAFETY .....</b>	<b>4</b>
2.1 SAFETY ALERT SYMBOL.....	4
2.2 SIGNAL WORDS .....	4
2.3 SAFETY SIGNS.....	4
2.3.1 SAFETY SIGN INSTALLATION .....	4
2.4 GENERAL SAFETY .....	5
2.5 HEADER LIFT CYLINDER LOCK-OUTS - COMBINE .....	6
<b>3 ACRONYMS AND ABBREVIATIONS .....</b>	<b>7</b>
3.1 DEFINITIONS.....	7
3.2 ENGLISH/METRIC EQUIVALENTS .....	7
<b>4 SPECIFICATIONS .....</b>	<b>8</b>
<b>5 ADAPTER ATTACHMENT/ DETACHMENT ON COMBINE.....</b>	<b>9</b>
5.1 CASE IH 7010, 8010.....	9
5.1.1 ATTACHMENT.....	9
5.1.2 DETACHMENT .....	11
5.2 CASE IH 2300, 2500 SERIES.....	13
5.2.1 ATTACHMENT.....	13
5.2.2 DETACHMENT .....	16
5.3 JOHN DEERE 60, 70 SERIES.....	19
5.3.1 ATTACHMENT.....	19
5.3.2 DETACHMENT .....	21
5.4 JOHN DEERE 50 SERIES.....	23
5.4.1 ATTACHMENT.....	23
5.4.2 DETACHMENT .....	25
5.5 LEXION 400, 500 SERIES.....	27
5.5.1 ATTACHMENT.....	27
5.5.2 DETACHMENT .....	30
5.6 NEW HOLLAND CR, CX.....	33
5.6.1 ATTACHMENT.....	33
5.6.2 DETACHMENT .....	35
5.7 AGCO.....	37
5.7.1 ATTACHMENT.....	37
5.7.2 DETACHMENT .....	40
<b>6 HEADER/ADAPTER DISASSEMBLY AND ASSEMBLY .....</b>	<b>42</b>
6.1 D50 AND D60 HARVEST HEADER/ADAPTER.....	42
6.1.1 DISASSEMBLY .....	42
6.1.2 ASSEMBLY.....	45
6.2 FD70 FLEXDRAPER/ADAPTER .....	49
6.2.1 DISASSEMBLY.....	49
6.2.2 ASSEMBLY.....	53
<b>7 OPERATION.....</b>	<b>57</b>
7.1 OWNER/OPERATOR RESPONSIBILITIES .....	57
7.2 BREAK-IN PERIOD .....	57
7.3 OPERATING PROCEDURES.....	58
7.3.1 PRE-SEASON CHECK .....	58
7.3.2 DAILY CHECK .....	58
7.3.3 PROPER OPERATION .....	58
7.3.4 OPERATING GUIDELINES.....	59
7.3.5 HEADER FLOAT.....	59
7.3.6 HEADER LEVELLING .....	63
7.3.7 HEADER DRAPER SPEED .....	64
7.3.8 HEADER SICKLE SPEED.....	64
7.3.9 ADAPTER FEED DRAPER.....	64
7.3.10 AUGER SPEED .....	64
7.3.11 AUGER PAN CLEARANCE .....	64
7.4 STORAGE.....	65

# TABLE OF CONTENTS

<b>8</b>	<b>MAINTENANCE AND SERVICE</b> .....	<b>66</b>
8.1	PREPARATION FOR SERVICING .....	66
8.2	RECOMMENDED SAFETY PROCEDURES .....	66
8.3	RECOMMENDED TORQUES .....	67
8.3.1	BOLTS .....	67
8.3.2	HYDRAULIC FITTINGS .....	68
8.4	RECOMMENDED FLUIDS AND LUBRICANTS .....	69
8.4.1	LUBRICANTS .....	69
8.4.2	CAPACITIES .....	69
8.4.3	STORAGE .....	69
8.5	ROLLER CHAIN INSTALLATION .....	69
8.6	SEALED BEARING INSTALLATION .....	70
8.7	LUBRICATING THE ADAPTER .....	70
8.7.1	GREASING REQUIREMENTS .....	70
8.7.2	AUGER DRIVE CHAIN LUBRICATION .....	74
8.7.3	MAIN DRIVE GEARBOX LUBRICATION .....	74
8.8	HYDRAULICS .....	76
8.8.1	RESERVOIR .....	76
8.8.2	HYDRAULIC OIL FILTER .....	78
8.8.3	HYDRAULIC SCHEMATIC .....	79
8.8.4	HOSES AND LINES .....	80
8.9	MAIN DRIVE .....	80
8.9.1	DRIVE-LINE REMOVAL .....	80
8.9.2	DRIVE-LINE INSTALLATION .....	81
8.9.3	GUARD REMOVAL .....	81
8.9.4	GUARD INSTALLATION .....	82
8.9.5	DRIVE CHAIN ADJUSTMENT .....	83
8.10	AUGER .....	84
8.10.1	AUGER TINE REPLACEMENT .....	84
8.10.2	AUGER DRIVE CHAIN ADJUSTMENT .....	86
8.10.3	AUGER DRIVE CHAIN REPLACEMENT .....	87
8.11	VIBRATION DAMPERS .....	89
8.11.1	RUBBER PAD REPLACEMENT .....	89
8.12	FEED DRAPER .....	90
8.12.1	DRAPER TENSION ADJUSTMENT .....	90
8.12.2	REPLACING DRAPER .....	90
8.13	MAINTENANCE SCHEDULE .....	92
<b>9</b>	<b>TROUBLESHOOTING</b> .....	<b>94</b>
9.1	HYDRAULICS .....	94
9.2	FEEDING .....	94
9.3	VIBRATION .....	95
<b>10</b>	<b>OPTIONS AND ATTACHMENTS</b> .....	<b>96</b>
10.1	AUGER FLIGHTING EXTENSIONS .....	96
10.2	AUGER STRIPPER BARS .....	96
10.3	POLY SKIDS .....	96
10.4	QUICK-DISCONNECT COUPLERS .....	96
	INDEX .....	97

## SAFETY

## 2 SAFETY

### 2.1 SAFETY ALERT SYMBOL



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

This symbol means:

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

Carefully read and follow the safety message accompanying this symbol.

WHY IS SAFETY IMPORTANT TO YOU?

- ACCIDENTS DISABLE AND KILL
- ACCIDENTS COST
- ACCIDENTS CAN BE AVOIDED

### 2.2 SIGNAL WORDS

Note the use of the signal words DANGER, WARNING, and CAUTION with safety messages. The appropriate signal word for each message 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 is also used to alert against unsafe practices.



#### CAUTION

Indicates a potentially hazardous situation that, if not avoided, may result in minor or moderate injury. It is also used as a reminder of good safety practices.

### 2.3 SAFETY SIGNS

- The safety signs appear on the machine at the locations shown in the header operator's manual.
- 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.

#### 2.3.1 SAFETY SIGN INSTALLATION

- a. Be sure the installation area is clean and dry.
- b. Decide on the exact location before you remove the decal backing paper.
- c. Remove the smaller portion of the split backing paper.
- d. Place the sign in position and slowly peel back the remaining paper, smoothing the sign as it is applied.
- e. Small air pockets can be smoothed out or pricked with a pin.

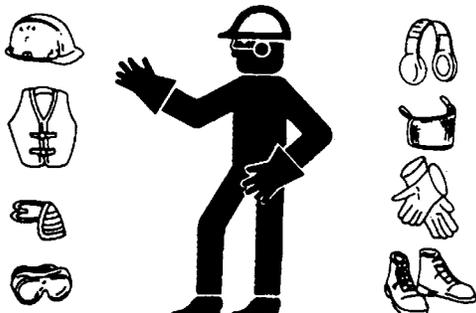
# SAFETY

## 2.4 GENERAL SAFETY



### CAUTION

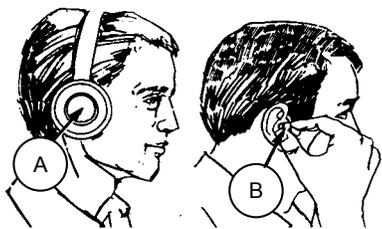
- The following are general farm safety precautions that should be part of your operating procedure for all types of machinery.
- Protect yourself.



When assembling, operating and servicing machinery, wear all the protective clothing and personal safety devices that COULD be necessary for the job at hand. Don't take chances.

You may need:

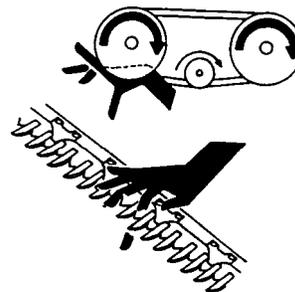
- a hard hat.
- protective shoes with slip resistant soles.
- protective glasses or goggles.
- heavy gloves.
- wet weather gear.
- respirator or filter mask.
- hearing protection. Be aware that prolonged exposure to loud noise can cause impairment or loss of hearing. Wearing a suitable hearing protective device such as ear muffs (A) or ear plugs (B) protects against objectionable or loud noises.



- Provide a first-aid kit for use in case of emergencies.



- Keep a fire extinguisher on the machine. Be sure the extinguisher is properly maintained and be familiar with its proper use.
- Keep young children away from 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.
- Wear close-fitting clothing and cover long hair. Never wear dangling items such as scarves or bracelets.
- 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.



- 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.
- Do not modify the machine. Unauthorized modifications may impair the function and/or safety and affect machine life.

*(continued next page)*

## SAFETY

- 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.



- 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.
- Use adequate light for the job at hand.
- 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.

### 2.5 HEADER LIFT CYLINDER LOCK-OUTS - COMBINE



#### DANGER

To avoid bodily injury or death from fall of raised machine, always engage lift cylinder stops before going under header for any reason. See your Combine Operator's Manual for instructions for use and storage of header lift cylinder stops.

## DEFINITIONS

### 3 ACRONYMS AND ABBREVIATIONS

#### 3.1 DEFINITIONS

TERM	DEFINITION
API	American Petroleum Institute
ASTM	American Society Of Testing And Materials
C	Centigrade
DK	Double Knife
F	Fahrenheit
ft	feet
ft/min	feet per minute
ft/s	feet per second
gpm	U.S. gallons per minute
hp	horsepower
in.	inch
in. <sup>3</sup>	cubic inches
lb	pounds mass
lbf	pounds force
lbf·ft or ft·lbf	pound feet or foot pounds
lbf·in. or in·lbf	pound inches or inch pounds
mph	miles per hour
n/a	not applicable
oz.	ounces
psi	pounds per square inch
rpm	revolutions per minute
spm	strokes per minute
SAE	Society Of Automotive Engineers
SK	Single Knife

#### 3.2 ENGLISH/METRIC EQUIVALENTS

ENGLISH	FACTOR	SI UNITS (METRIC)
acres	x 0.4047	= hectares (ha)
ft	x 0.3048	= meters (m)
ft/min	x 0.3048	= meters/min (m/min)
ft/s	x 0.3048	= meters/sec (m/s)
°F	(F-32)/1.8	= °C
US gal	x 3.7854	= liters (L)
US gal/min (gpm)	x 3.7854	= liters/min (L/min)
hp	x 0.7457	= kilowatts (kW)
in.	x 25.4	= millimeters (mm)
in. <sup>3</sup>	x 16.3871	= cubic centimeters (cm <sup>3</sup> or cc)
lb	x 0.45359	= kilograms (kg)
lbf	x 4.4482	= newtons (N)
lbf·ft or ft·lbf	x 1.3558	= newton meters (N·m)
lbf·in or in·lbf	x 0.1129	= newton meters (N·m)
mph	x 1.6063	= kilometers/hour (km/h)
oz.	x 29.5735	= milliliters (ml)
psi	x 6.8948	= kilopascals (kPa)
psi	x 0.00689	= megapascals (MPa).

## SPECIFICATIONS

### 4 SPECIFICATIONS

OVERALL	SPECIFICATION
Width	151 inches (3835 mm)
Length	70 inches (1778 mm)
Height	50 inches (1270 mm)
Weight	2000 lb (907 kg)
<b>MAIN DRIVE</b>	
Combine Driven	1.8-2.7 in. <sup>3</sup> (29.5-44.2 cc) Piston Pump 1.01 in. <sup>3</sup> (16.5 cc) Gear Pump
Gearbox Capacity	5 Pints (2.5 liters)
<b>AUGER</b>	
Drive	Chain
Type	Auger – 14 inches (356 mm) with 4 inch (102 mm) Flighting
Speed	150 rpm (Combine Dependent)
<b>FEED DRAPER</b>	
Drive	Hydraulic Motor from Combine Driven Pump
Type	Self-Tracking Rubber Coated Polyester Fabric With Rubber Slats.
Width	78.7 inches (2000 mm)
Speed	350-400 ft/min (107-122 meters/min)
<b>HYDRAULICS</b>	
Reservoir Capacity	16 U.S. gal (60 liters)
Max Operating Pressure	3000 psi (20684 kPa) Piston Pump 3700 psi (25510 kPa) Gear Pump
Filter	10 micron #151975
<b>HEADER DRIVES</b>	
Drapers	Hydraulic from Adapter Gear Pump
Reel	Hydraulic from Combine Oil Supply
Sickle	Hydraulic from Adapter Piston Pump
<b>HEADER FLOTATION</b>	
	7-8 Inches (178-203 mm) Vertical 4 Degrees Rotation
<b>HEADER ANGLE CONTROL</b>	
Center Link	Mechanical or Hydraulic From Combine Oil Supply, With Solenoid Valve To Toggle To Reel Fore-Aft/Header Tilt.
<b>COMBINE REQUIREMENTS</b>	
Class	5 or Higher

- NOTES: 1. Specifications and design are subject to change without notice or obligation to revise previously sold units.  
2. Weights do not include options.

## ADAPTER AND CASE IH 7010, 8010

### 5 ADAPTER ATTACHMENT/ DETACHMENT ON COMBINE

The adapter is configured to each particular model of combine at the factory. These combines are:

COMBINE	SECTION
Case IH 7010, 8010	5.1
Case IH 2300, 2500 Series	5.2
John Deere 60, 70 Series	5.3
John Deere 50 Series	5.4
Cat Lexion 400, 500(R)	5.5
New Holland CR, CX	5.6
AGCO Gleaner R, A Series	5.7
Challenger 660, 670, 680B	
Massey 9690, 9790, 9895	

This section includes instructions on attaching and detaching the Model CA20 Combine Adapter with a header to the combines listed above.

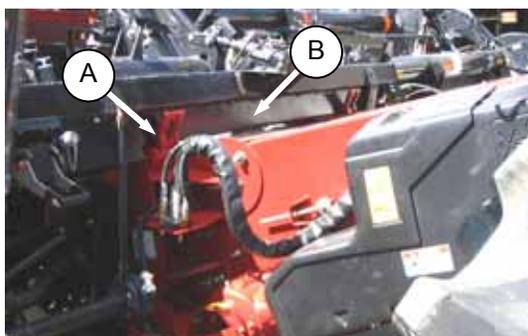
#### IMPORTANT

Ensure applicable functions (AHHC, Draper Header Option, Hydraulic Center Link Option, Hydraulic Reel Drive, etc.) are enabled on the combine and combine computer. Failure to do so may result in improper header operation.

#### 5.1 CASE IH 7010, 8010



##### 5.1.1 ATTACHMENT



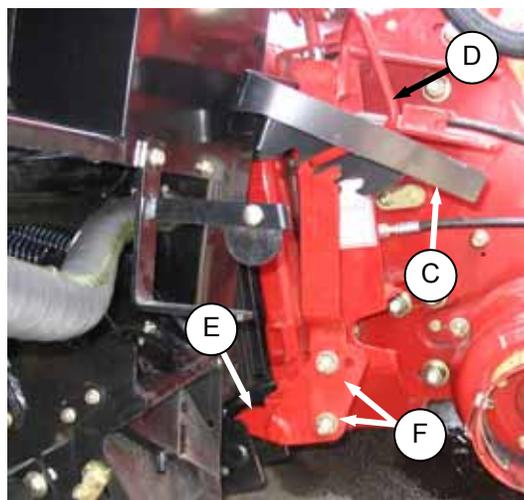
- Slowly drive combine up to adapter until feeder house saddle (A) is directly under the adapter top cross member (B).

- Raise feeder house slightly to lift adapter, ensuring feeder saddle is properly engaged in adapter frame.

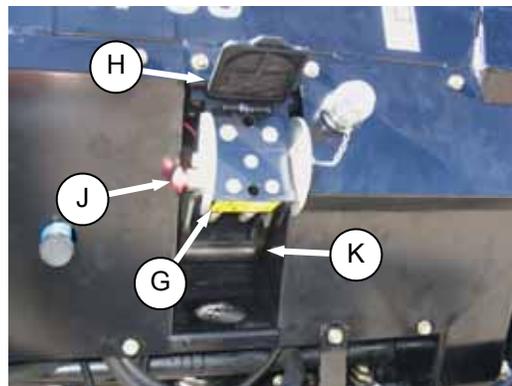


#### CAUTION

**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.**



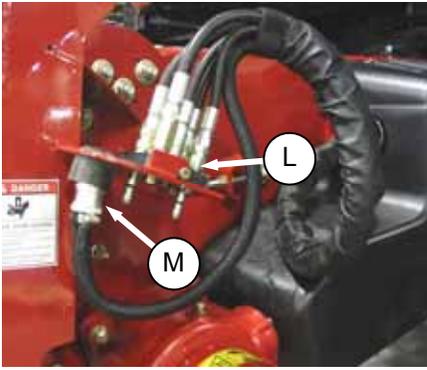
- Lift lever (C) on adapter at left side of feeder house and push handle (D) on combine to engage locks (E) on both sides of the feeder house.
- Push down on lever (C) so that slot in lever engages handle to lock handle in place.
- If lock (E) does not fully engage pin on adapter when (C) and (D) are engaged, loosen bolts (F) and adjust lock as required. Re-tighten bolts.
- Connect combine hydraulic quick coupler to receptacle (G) on adapter as follows:



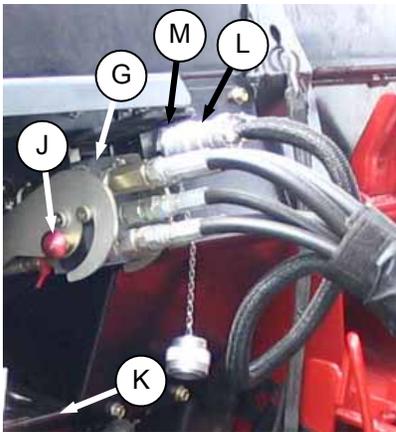
- Open cover (H).
- Push in lock button (J) and pull handle (K) to full open position.

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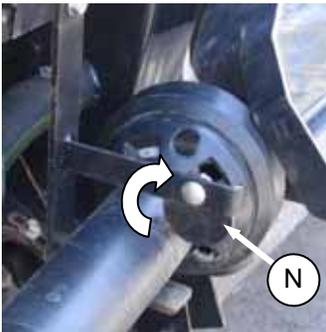
## ADAPTER AND CASE IH 7010, 8010



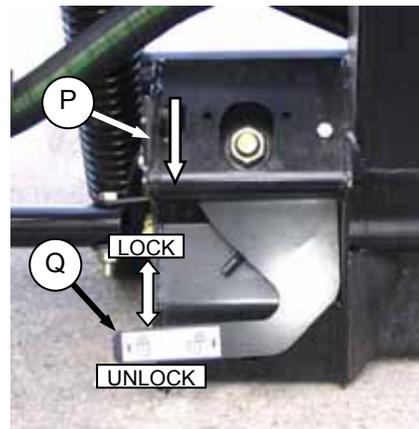
3. Remove coupler (L) from combine and clean mating surfaces. Position onto adapter receptacle (G) and push handle (K) to engage coupler pins into receptacle.



4. Push handle to closed position until lock button (J) snaps out.
- g. Connect combine electrical cable (L) to adapter as follows:
1. Open cover on adapter electrical receptacle (M).
  2. Remove electrical connector (L) from storage cup on combine. Align lugs on connector with slots in receptacle, push connector onto receptacle and turn collar on connector to lock it in place.



- h. Rotate disc (N) on adapter drive-line storage hook and remove drive-line from hook.



- i. Pull back collar on end of drive line and push onto combine output shaft (O) until collar locks.
- j. Disengage both adapter float locks by moving latch (P) away from adapter and moving lever (Q) at each lock to lowest position.

## ADAPTER AND CASE IH 7010, 8010



### IMPORTANT

If stabilizer wheels are installed, set wheels to storage or uppermost working position. Otherwise header may tilt forward so that re-attachment will be difficult. Refer to D50 and D60 Harvest Header / FD70 FlexDraper Operators Manual.

### 5.1.2 DETACHMENT

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



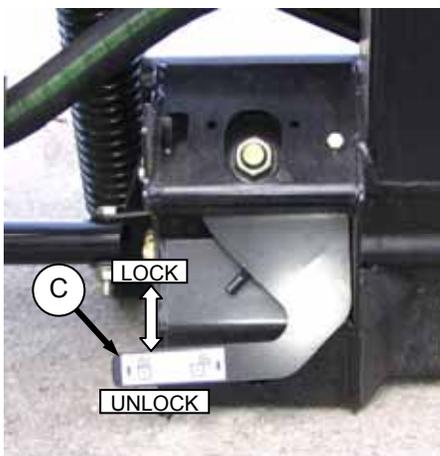
### DANGER

To avoid bodily injury or death from fall of raised machine, always engage lift cylinder stops before going under header for any reason. See your Combine Operator's Manual for instructions for use and storage of header lift cylinder stops.



### CAUTION

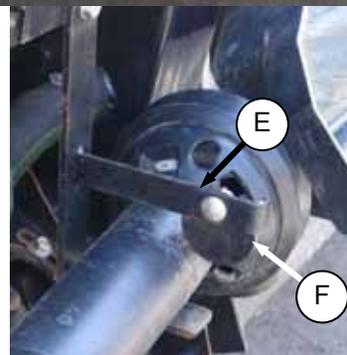
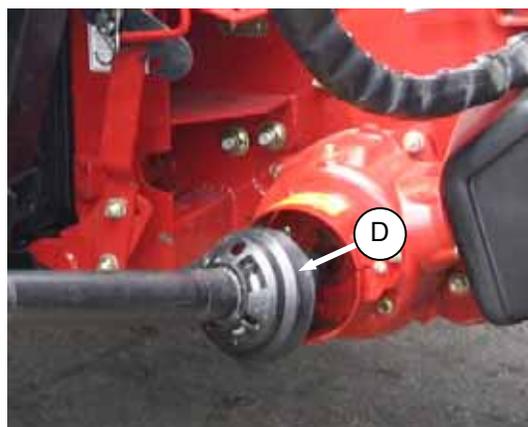
Stop engine and remove key from ignition before leaving operator's seat for any reason. A child or even a pet could engage an idling machine.



- Engage both adapter float locks by lifting lever (C) at each lock until it latches into the lock position.

### IMPORTANT

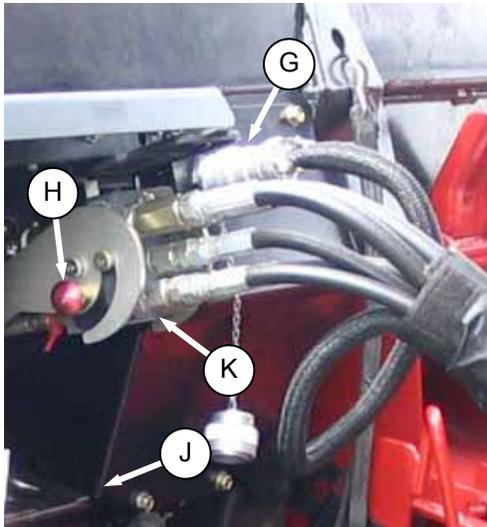
If slow speed transport wheels are installed, header may be detached in either transport or field mode. If detaching with wheel in field mode, set wheels to storage or uppermost working position.



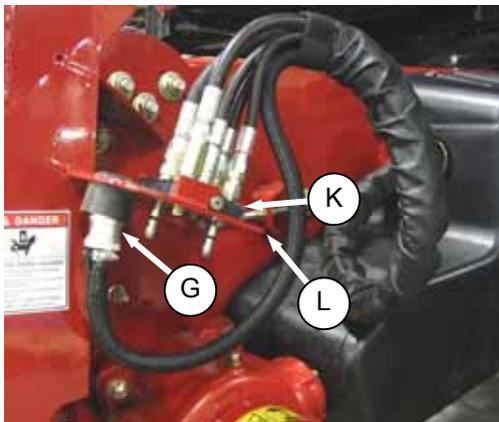
- Disconnect driveshaft (D) from combine and slide driveshaft in hook (E) so that disc (F) drops to secure driveshaft.

*(continued next page).*

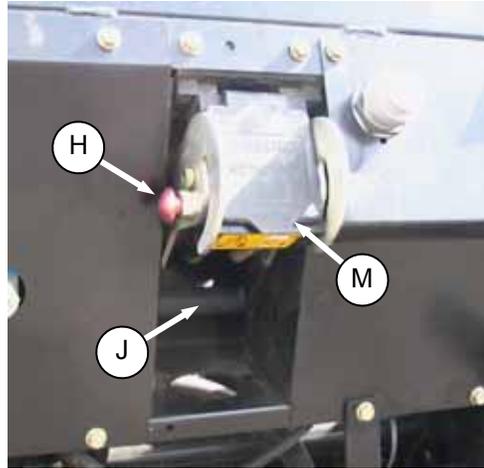
## ADAPTER AND CASE IH 7010, 8010



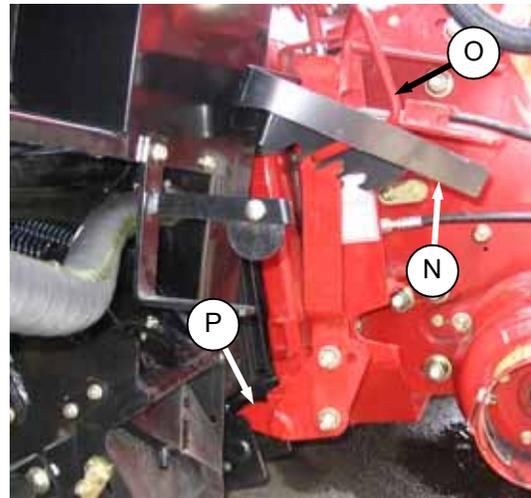
- d. Remove electrical connector (G) and close cover.
- e. Push in lock button (H) and pull handle (J) to release coupler (K).



- f. Position coupler (K) onto storage plate (L) on combine. Place electrical connector (G) in storage cup on plate (L).



- g. Push handle (J) to closed position until lock button (H) snaps out. Close cover (M).



- h. Lift lever (N), pull and lower handle (O) to disengage feeder house/adapter lock (P).
- i. Lower feeder house until it disengages adapter support.
- j. Slowly back combine away from adapter.

## ADAPTER AND CASE 2300, 2500 SERIES

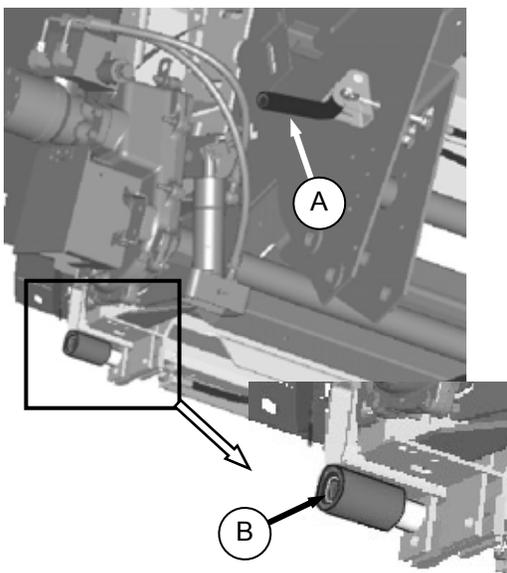
### 5.2 CASE IH 2300, 2500 SERIES



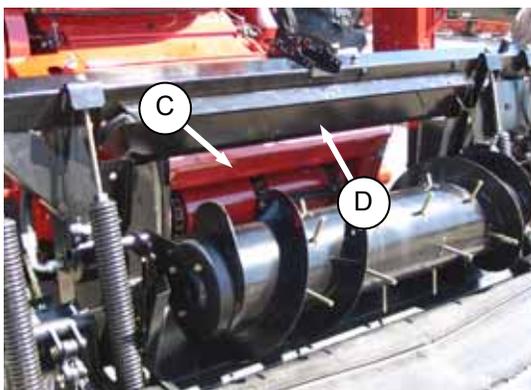
#### 5.2.1 ATTACHMENT

##### Sliding Pin System

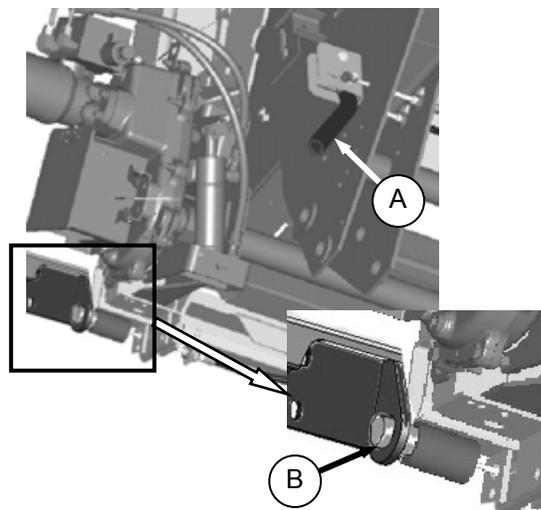
a. Attach adapter to combine as follows:



1. Move handle (A) on left side of feeder house to up position to retract both pins (B) at lower corners of feeder house.



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



4. Lower handle (A) to engage pins (B) into adapter.
5. Proceed to step c.

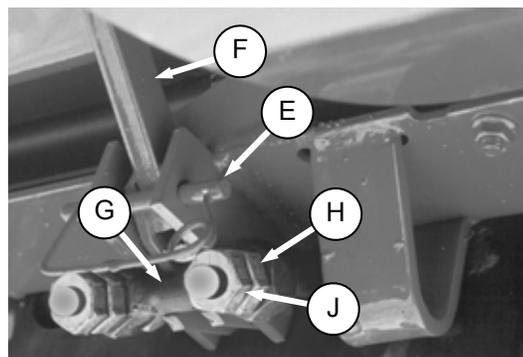
##### Latch System



### WARNING

To avoid bodily injury or death from unexpected start-up or fall of raised attachment; stop engine, remove key and engage lift cylinder stop before proceeding with hook-up.

1. Slowly drive combine up to adapter until feeder house saddle (C) is directly under the adapter top cross member (D). See illustration opposite.
2. Raise feeder house fully and engage combine lift cylinder locks.

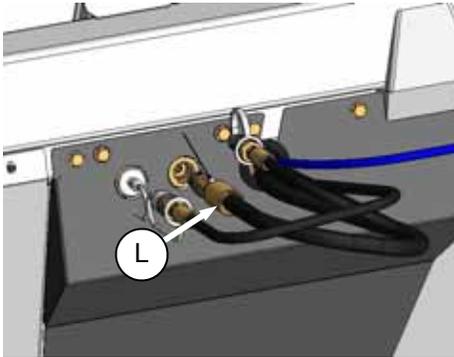
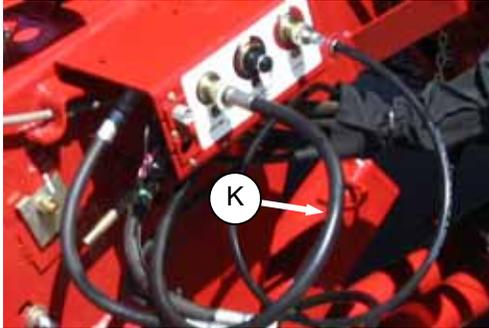


3. Remove pin (E) and lower latch handle (F) (one on each side of feeder house underside) to hook latch (G).
4. Lift handle to overcenter position to lock. Requires 40-50 lbf (180-220 N) to move handle overcenter. Adjust nuts (H) on U-bolts to vary force required on handle.

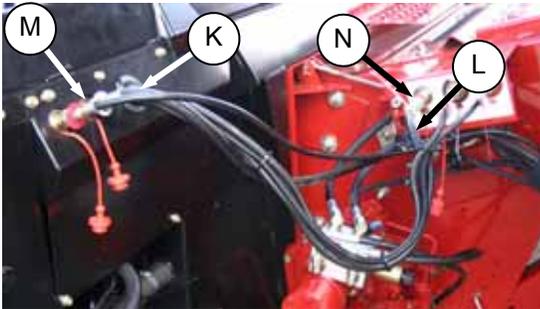
(continued next page)

## ADAPTER AND CASE 2300, 2500 SERIES

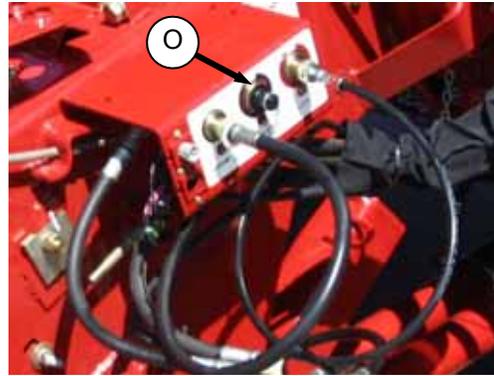
5. Tighten jam-nuts (J) when force is correct.
  6. Install pin (E) as shown to secure latch handle in locked position.
- b. Remove combine lift cylinder locks and lower header to ground.
- c. Connect combine hydraulics to adapter as follows:



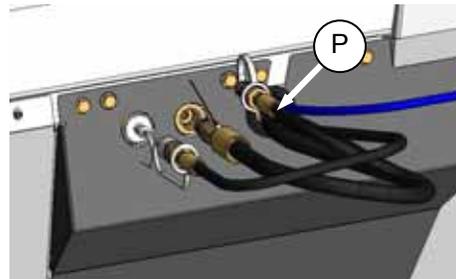
1. Disconnect reel drive hoses (K) and (L) (white discs) from combine and adapter receptacles.



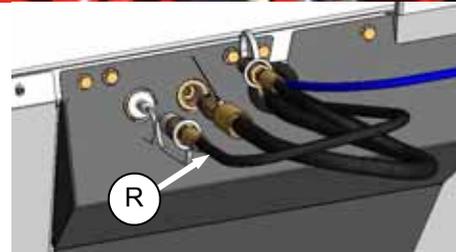
2. Connect hose (K) from combine to adapter coupler (M).
3. Connect hose (L) from the adapter to the combine coupler (N).



4. Remove plug from reel lift coupler (O) (black disc) on combine.



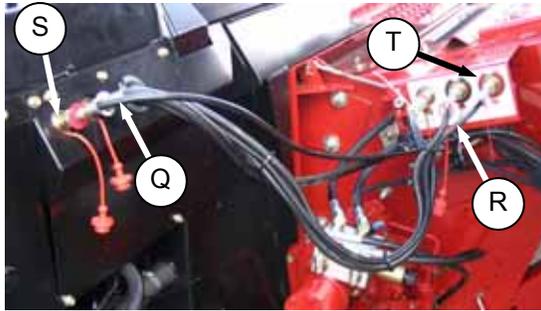
5. Remove red dust cap from reel lift hose (P) on adapter and connect hose to combine coupler (O).



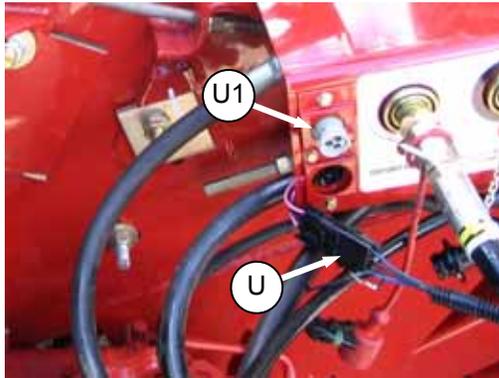
6. Disconnect reel fore/aft hoses (Q) and (R) (red discs) from combine and adapter receptacles

*(continued next page).*

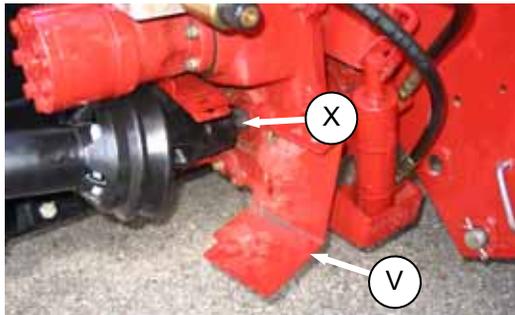
## ADAPTER AND CASE 2300, 2500 SERIES



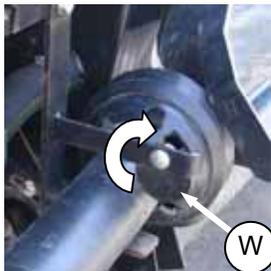
7. Connect hose (Q) from combine to adapter coupler (S).
8. Connect hose (R) from the adapter to the combine coupler (T).



- d. Connect adapter electrical harness (U) to combine electrical connector, and if applicable connect AHHC wire harness at U1.

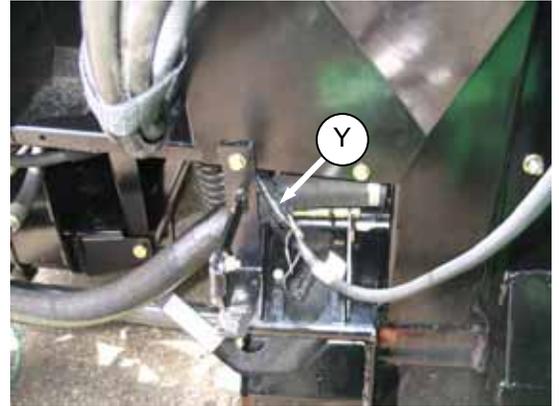


- e. Open guard (V) at combine output shaft.

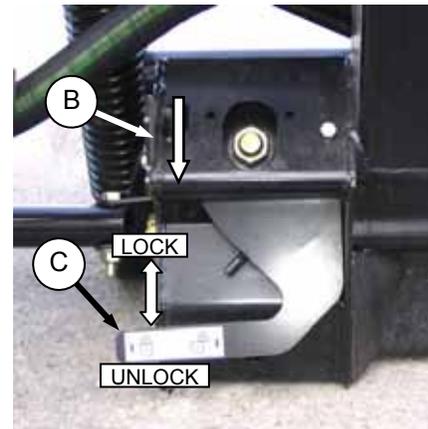


- f. Rotate disc (W) on adapter drive-line storage hook and remove drive-line from hook.

- g. Pull back collar on end of drive line and push onto combine output shaft (X) until collar locks. Close guard (V).



- h. If adapter is equipped with reel fore-aft/header tilt selector, connect harness (Y) to combine.



- i. Disengage both adapter float locks by moving latch (B) away from adapter and moving lever (C) at each lock to lowest position.

## ADAPTER AND CASE 2300, 2500 SERIES



### IMPORTANT

If stabilizer wheels are installed, set wheels to storage or uppermost working position. Otherwise header may tilt forward so that re-attachment will be difficult. Refer to D50 and D60 Harvest Header / FD70 FlexDraper Operators Manual.

### 5.2.2 DETACHMENT

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



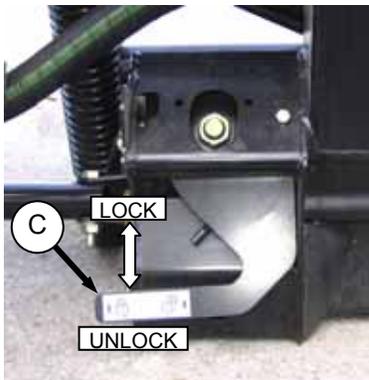
### DANGER

To avoid bodily injury or death from fall of raised machine, always engage lift cylinder stops before going under header for any reason. See your Combine Operator's Manual for instructions for use and storage of header lift cylinder stops.



### CAUTION

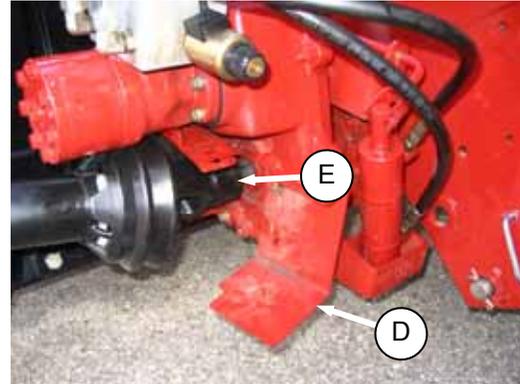
Stop engine and remove key from ignition before leaving operator's seat for any reason. A child or even a pet could engage an idling machine.



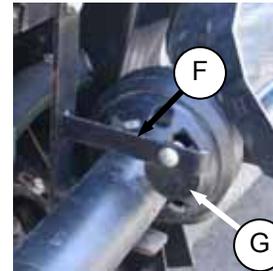
- Engage both adapter float locks by lifting lever (C) at each lock until it latches into the lock position.

### IMPORTANT

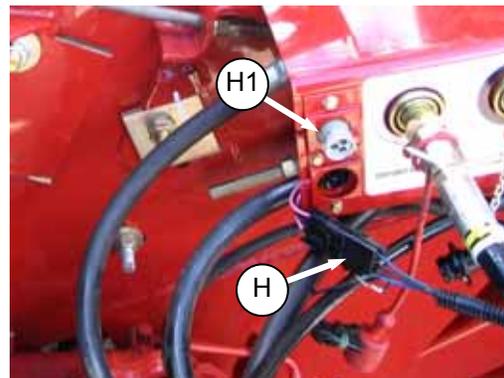
If slow speed transport wheels are installed, header may be detached in either transport or field mode. If detaching with wheel in field mode, set wheels to storage or uppermost working position. Otherwise header may tilt forward so that re-attachment will be difficult. Refer to D50 and D60 Harvest Header / FD70 FlexDraper Operators Manual.



- Open cover (D).
- Pull back collar (E) on drive-line and pull driveline off combine shaft. Close guard (D).



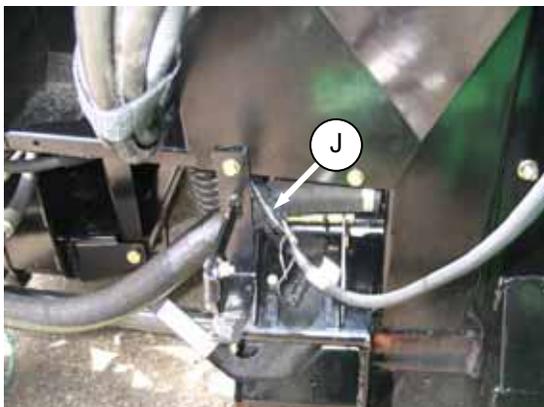
- Slide driveline in hook (F) so that disc (G) drops to secure driveshaft.



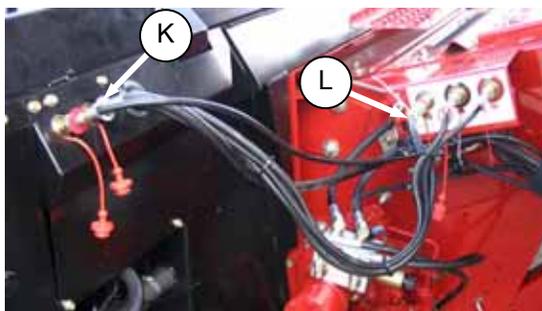
- Disconnect wiring harness (H) and attach covers on each plug.
- If applicable, unplug AHHC wiring harness from connector (H1).

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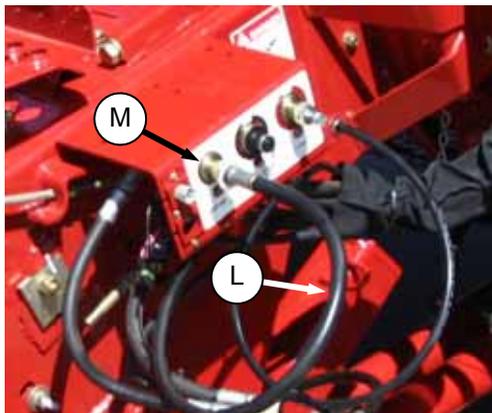
## ADAPTER AND CASE 2300, 2500 SERIES



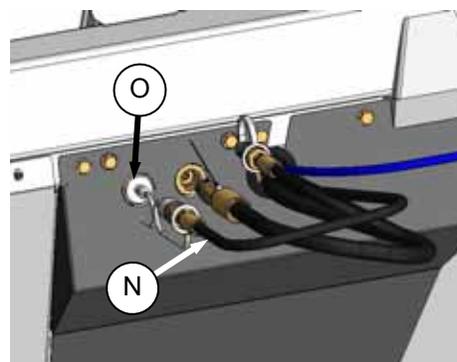
- h. If adapter is equipped with reel fore-aft/header tilt selector, disconnect harness (J) and store on combine.
- i. Disconnect hydraulics as follows:



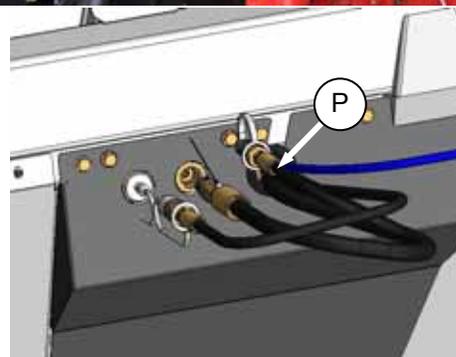
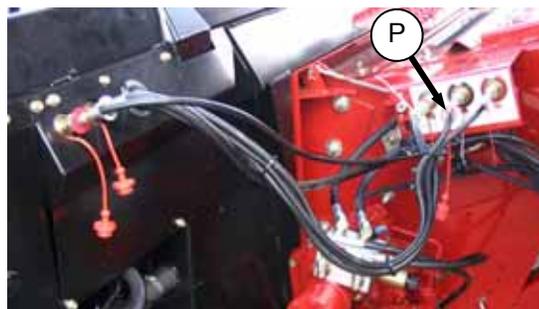
1. Disconnect reel drive hoses (K) and (L) (white discs) from adapter and combine receptacles.



2. Connect hose (L) from combine to combine coupler (M).



3. Connect hose (N) from the adapter to the adapter coupler (O).



4. Disconnect reel lift hose (P) (black disc) on combine and attach red dust cap. Store hose on adapter.

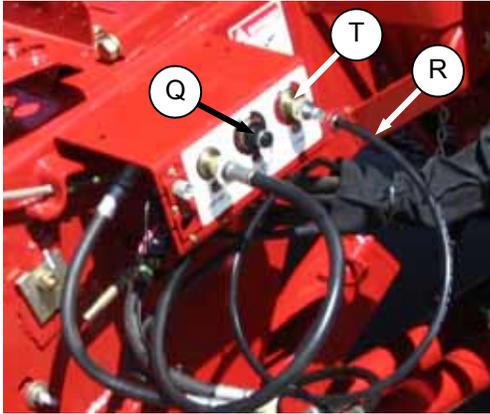


### CAUTION

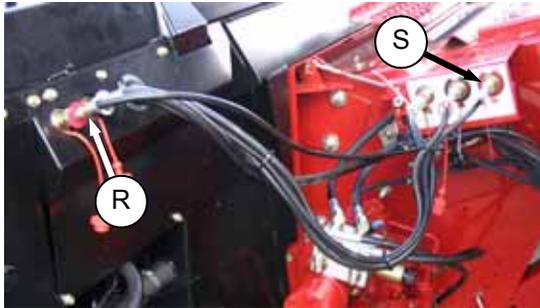
Do not connect reel lift hose and reel fore-aft hose to couplers on adapter. Doing so may cause reel to inadvertently shift during transport.

*(continued next page)*

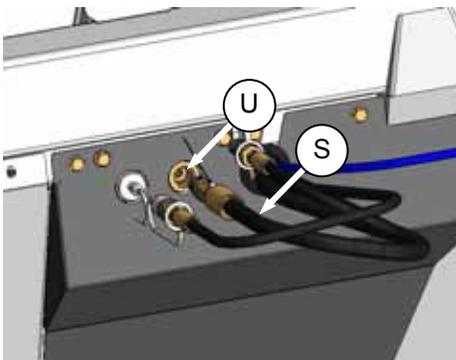
## ADAPTER AND CASE 2300, 2500 SERIES



5. Re-install plug on combine coupler (Q).



6. Disconnect reel fore/aft hoses (R) and (S) (red discs) from adapter and combine receptacles.
7. Connect hose (R) from combine to combine coupler (T).



8. Connect hose (S) from the adapter to the adapter coupler (U).



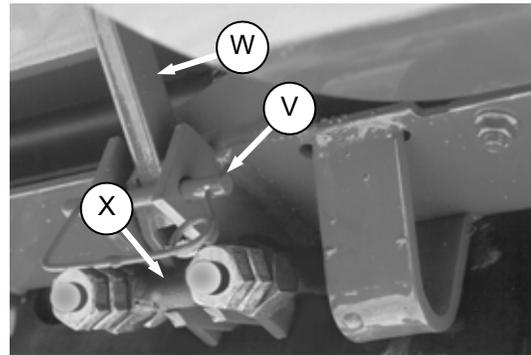
### WARNING

To avoid bodily injury or death from unexpected start-up or fall of raised attachment; stop engine, remove key and engage lift cylinder stop before proceeding with hook-up.

- j. Disengage adapter from combine with one of the following two methods depending on combine model.

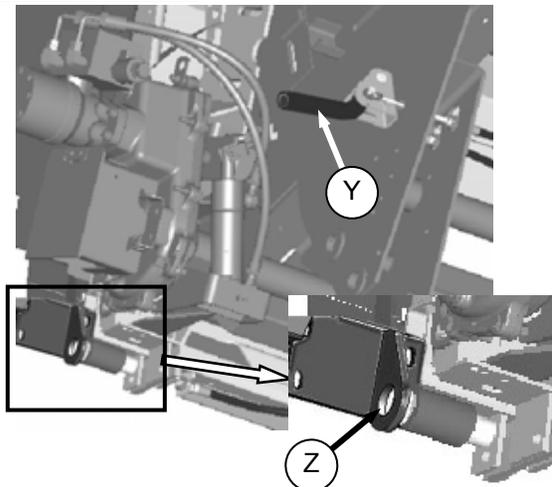
#### Latch System

1. Raise feeder house fully and engage combine lift cylinder locks.



2. Remove pin (V) and lower latch handle (W) (one on each side of feeder house) to disengage latch (X).
3. Raise latch handle to storage position and secure with pin (V).
4. Proceed to step I.

#### Sliding Pin System



1. Raise handle (Y) on left side of feeder house to retract pins (Z).
- k. Lower feeder house until it disengages adapter support.
  - l. Slowly back combine away from adapter.

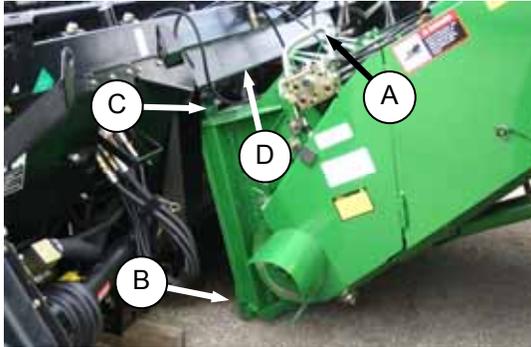
## ADAPTER AND JOHN DEERE 60, 70 SERIES

### 5.3 JOHN DEERE 60, 70 SERIES

Contour Master, Level Land



#### 5.3.1 ATTACHMENT

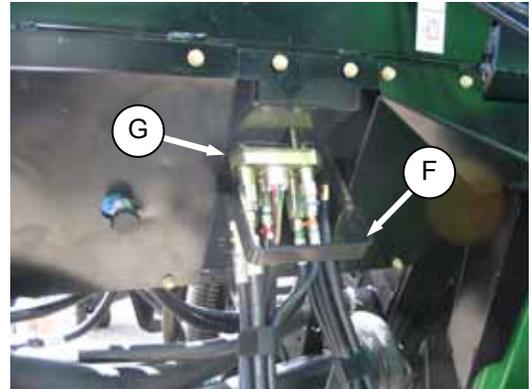


- Push handle (A) on combine coupler toward feeder house to retract pins (B) at bottom corners of feeder house.
- Slowly drive combine up to adapter until feeder house saddle (C) is directly under the adapter top cross member (D).
- Raise feeder house to lift adapter, ensuring feeder saddle is properly engaged in adapter frame.
- Raise or lower header until slightly off the ground.

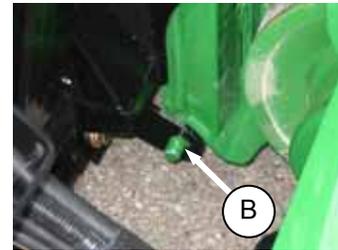


#### CAUTION

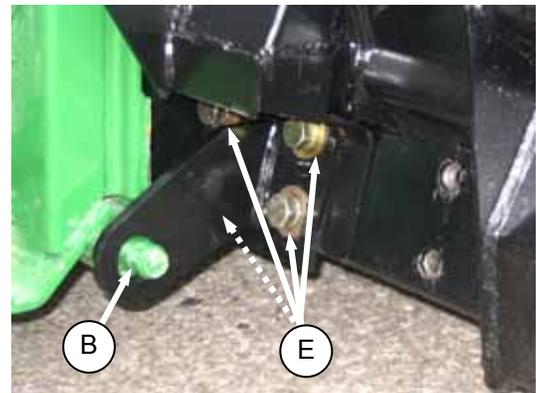
Stop engine and remove key from ignition before leaving operator's seat for any reason. A child or even a pet could engage an idling machine.



- Pull handle (F) on adapter to release coupler (G) from storage position. Remove coupler and push handle back into adapter to store.



- Pull handle (A) to horizontal position to engage pins (B) in adapter. Check that bolts (E) on adapter brackets are tight.

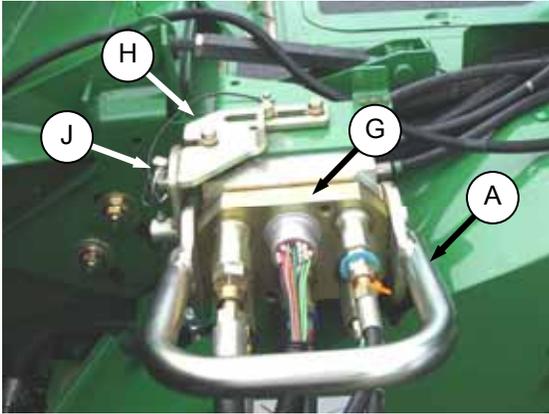


- If pins (B) do not fully engage adapter brackets, loosen bolts (E) and adjust bracket as required. Re-tighten bolts.

*(continued next page)*

## ADAPTER AND JOHN DEERE 60, 70 SERIES

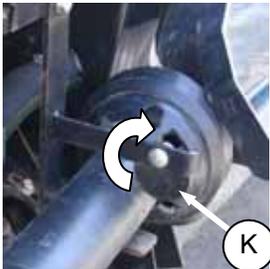
h. Attach coupler (G) to combine as follows:



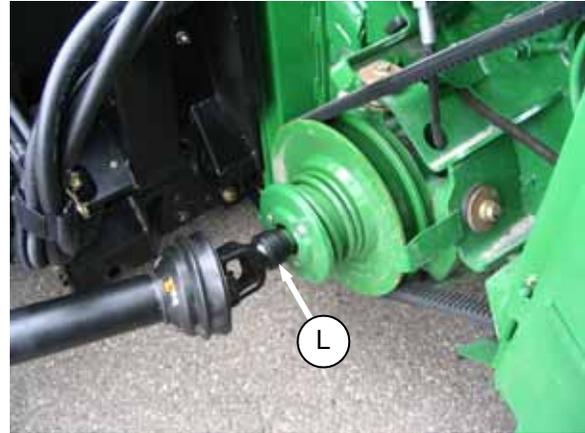
1. Handle (A) should be in the up position.
2. Clean mating surface of coupler and position coupler (G) onto receptacle.
3. Pull handle (A) so that lugs on coupler are engaged into handle and pull to full horizontal position as shown.
4. Slide latch (H) to lock handle in position and secure with lynch pin (J).



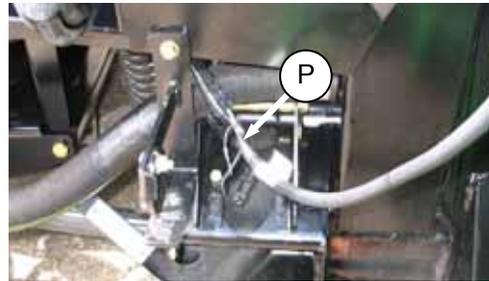
i. Open drive shield (M).



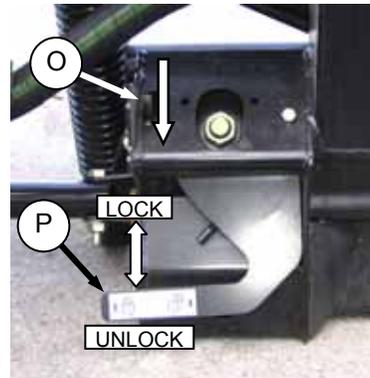
j. Rotate disc (K) on adapter drive-line storage hook and remove drive-line from hook.



k. Attach shaft to combine output shaft (L) and close drive shield.



l. If adapter is equipped with reel fore-aft header tilt selector, connect harness (P) to combine.



m. Disengage both adapter float locks by moving latch (O) away from adapter and moving lever (P) at each lock to lowest position.

## ADAPTER AND JOHN DEERE 60, 70 SERIES



### 5.3.2 DETACHMENT

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



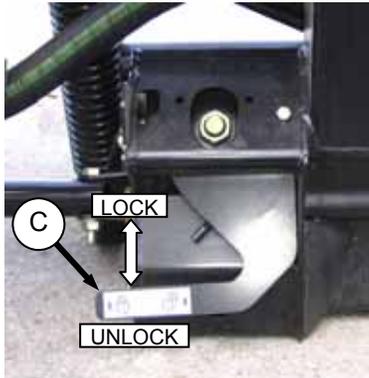
#### DANGER

To avoid bodily injury or death from fall of raised machine, always engage lift cylinder stops before going under header for any reason. See your Combine Operator's Manual for instructions for use and storage of header lift cylinder stops.



#### CAUTION

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.



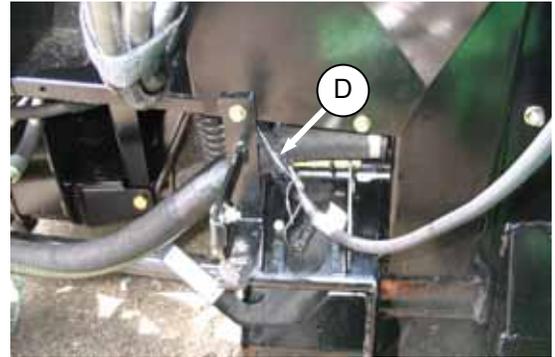
- b. Engage both adapter float locks by lifting lever (C) at each lock until it latches into the lock position.

#### IMPORTANT

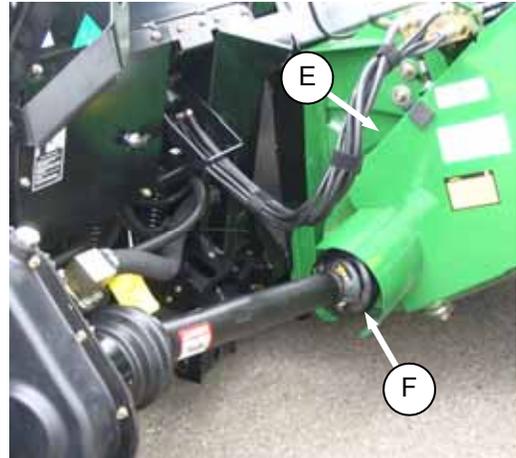
If slow speed transport wheels are installed, header may be detached in either transport or field mode. If detaching with wheel in field mode, set wheels to storage or uppermost working position. Otherwise header may tilt forward so that re-attachment will be difficult. Refer to D50 and D60 Harvest Header / FD70 FlexDraper Operators Manual.

#### IMPORTANT

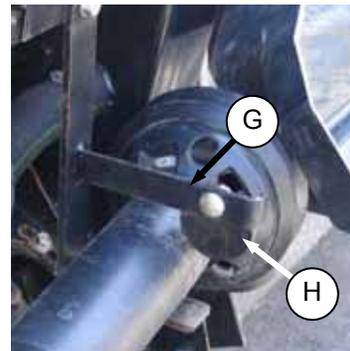
If stabilizer wheels are installed, set wheels to storage or uppermost working position. Otherwise header may tilt forward so that re-attachment will be difficult. Refer to D50 and D60 Harvest Header / FD70 FlexDraper Operators Manual.



- c. If adapter is equipped with reel fore-aft/header tilt selector, disconnect harness (D) and store on combine.



- d. Open shield (E) on combine. Pull back collar on drive line and pull drive line (F) off combine output shaft.

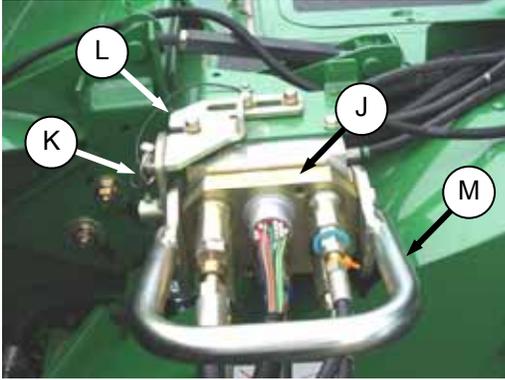


- e. Slide driveshaft in hook (G) so that disc (H) drops to secure driveshaft.

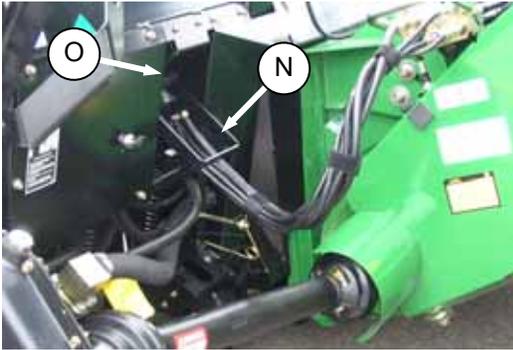
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## ADAPTER AND JOHN DEERE 60, 70 SERIES

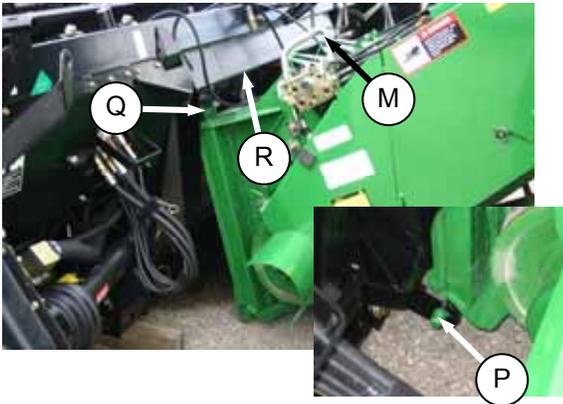
- f. Disconnect hydraulic/electrical coupler (J) from combine as follows:



1. Remove lynch pin (K) and slide lock (L) to release handle (M).
2. Lift handle (M) to full vertical position to release coupler (J) from combine.



3. Lift handle (N) on adapter, position coupler in adapter at (O), and lower handle (N) to lock coupler.



- g. Push handle (M) toward feeder house to disengage feeder house pin (P) from adapter.
- h. Lower feeder house until saddle (Q) disengages and clears adapter support (R).
- i. Slowly back combine away from adapter.

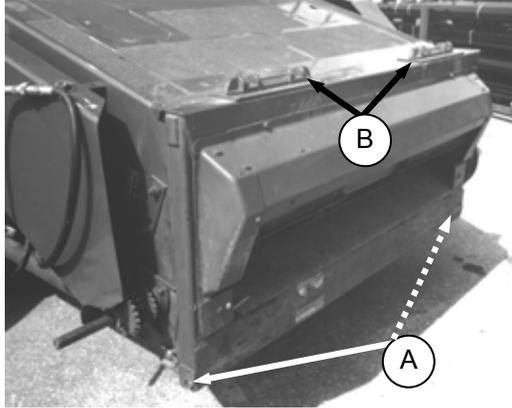
# ADAPTER AND JOHN DEERE 50 SERIES

## 5.4 JOHN DEERE 50 SERIES

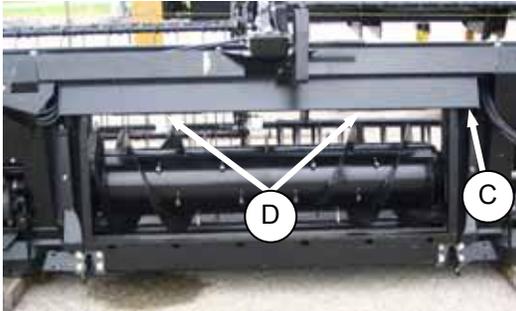
Contour Master, Level Land



### 5.4.1 ATTACHMENT



- a. Retract pins (A) at bottom corners of feeder house.

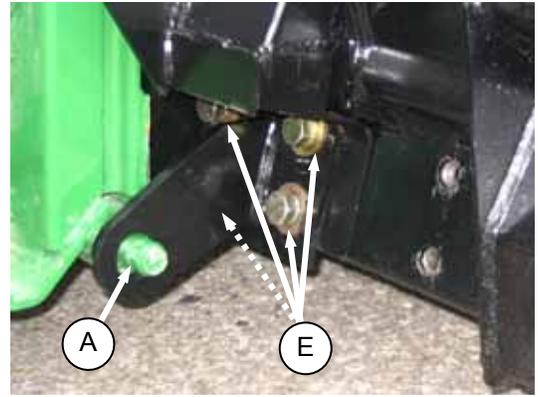


- b. Slowly drive combine up to adapter until feeder house lift lugs (B) are directly under the adapter top cross member (C).
- c. Raise feeder house slightly to lift adapter, ensuring lift lugs (B) are properly engaged in adapter frame sockets (D).

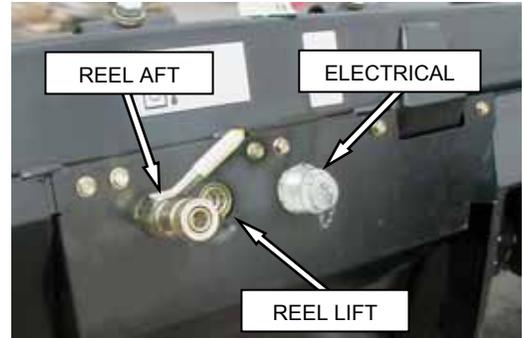


### CAUTION

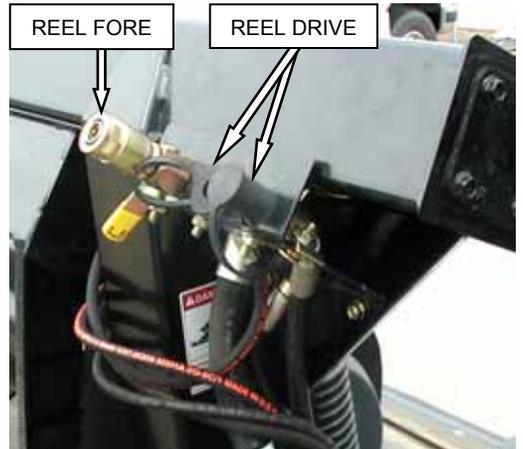
Stop engine and remove key from ignition before leaving operator's seat for any reason. A child or even a pet could engage an idling machine.



- d. Engage pins (A) in adapter.
- e. Check that bolts (E) on adapter brackets are tight.
- f. If pins (A) do not fully engage adapter brackets, loosen bolts (E) and adjust bracket as required. Re-tighten bolts.
- g. At left side of combine feeder house, retrieve reel aft hose, reel lift hose and electrical harness.

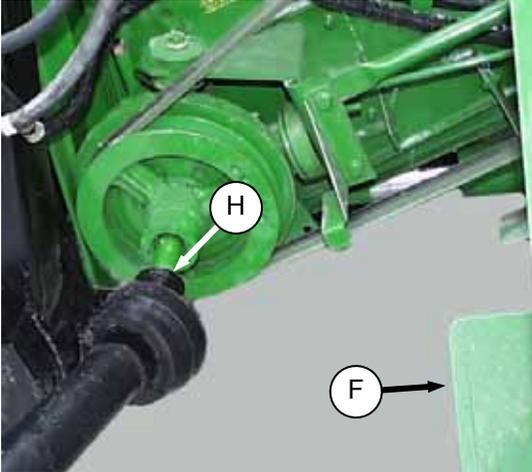


- h. Clean couplers and attach as shown above.
- i. At right side of feeder house, disconnect reel drive hoses and retrieve reel fore hose.

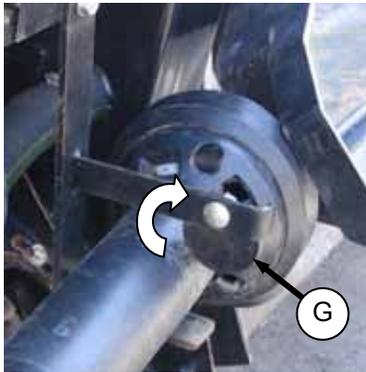


- j. Clean couplers and attach as shown above.  
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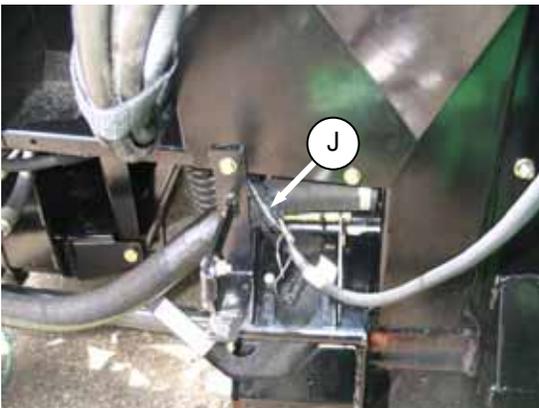
## ADAPTER AND JOHN DEERE 50 SERIES



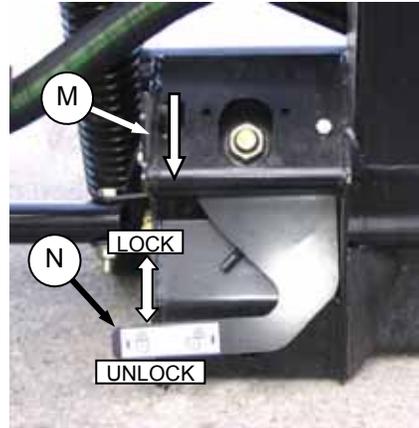
- k. Open shield (F) on LH side of combine.



- l. Rotate disc (G) on adapter drive-line storage hook and remove drive-line from hook.
- m. Pull back collar on end of drive line and push onto combine output shaft (H) until collar locks.
- n. Close drive shield (F) on combine.



- o. If adapter is equipped with reel fore-aft/header tilt selector, connect harness (J) to combine.



- p. Disengage both adapter float locks by moving latch (M) away from adapter and moving lever (N) at each lock to lowest position.

## ADAPTER AND JOHN DEERE 50 SERIES



### 5.4.2 DETACHMENT

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



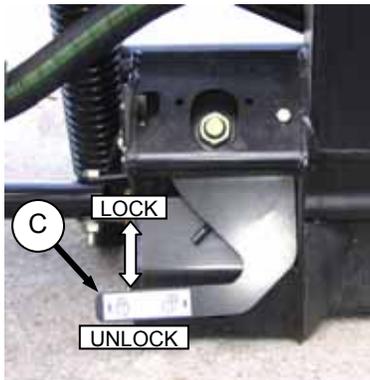
#### DANGER

To avoid bodily injury or death from fall of raised machine, always engage lift cylinder stops before going under header for any reason. See your Combine Operator's Manual for instructions for use and storage of header lift cylinder stops.



#### CAUTION

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.



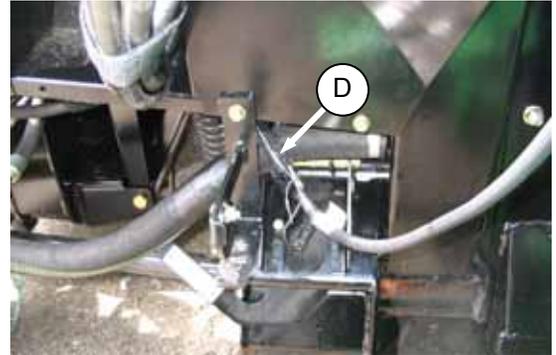
- Engage both adapter float locks by lifting lever (C) at each lock until it latches into the lock position.

#### IMPORTANT

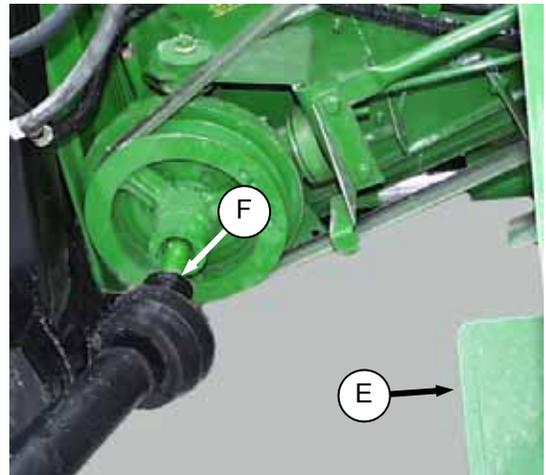
If slow speed transport wheels are installed, header may be detached in either transport or field mode. If detaching with wheel in field mode, set wheels to storage or uppermost working position. Otherwise header may tilt forward so that re-attachment will be difficult. Refer to D50 and D60 Harvest Header / FD70 FlexDraper Operators Manual.

#### IMPORTANT

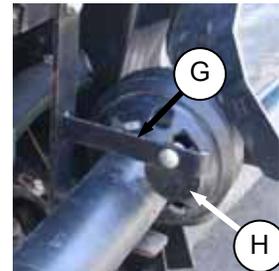
If stabilizer wheels are installed, set wheels to storage or uppermost working position. Otherwise header may tilt forward so that re-attachment will be difficult. Refer to D50 and D60 Harvest Header / FD70 FlexDraper Operators Manual.



- If adapter is equipped with reel fore-aft/header tilt selector, disconnect harness (D) and store on combine.



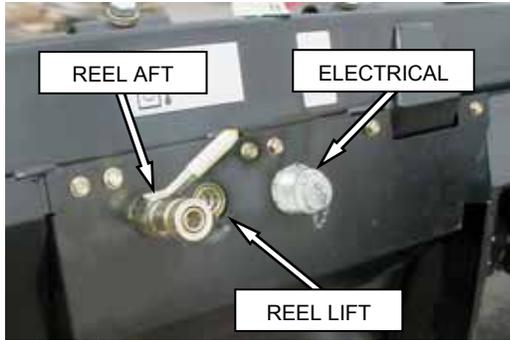
- Open shield (E) on combine. Pull back collar on drive line and pull drive line (F) off combine output shaft.



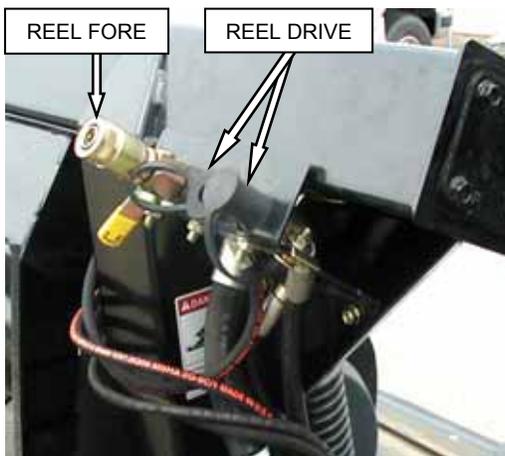
- Slide driveshaft in hook (G) so that disc (H) drops to secure driveshaft.

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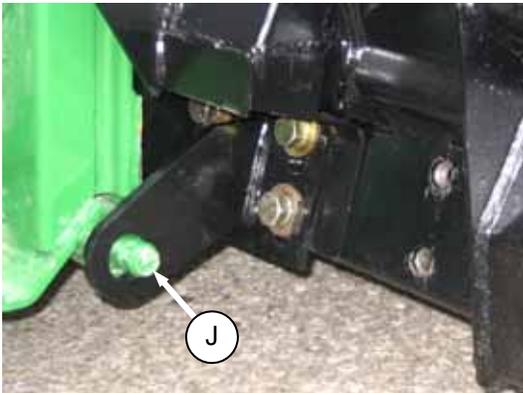
## ADAPTER AND JOHN DEERE 50 SERIES



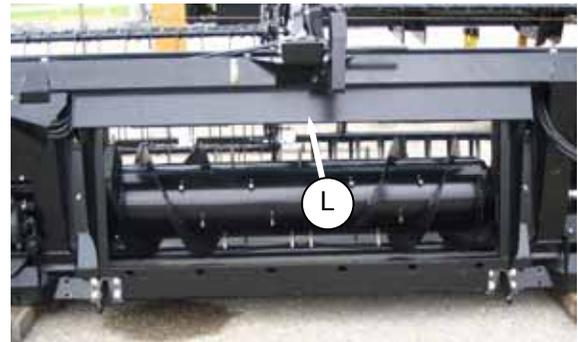
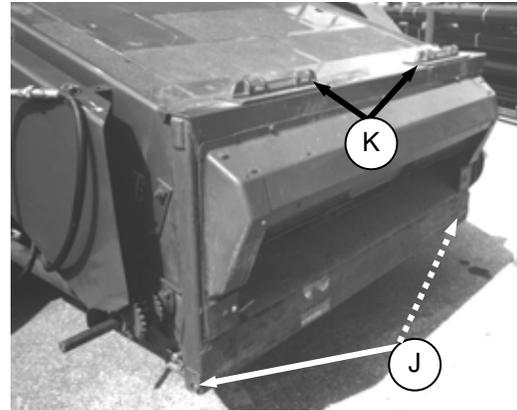
- f. At left side of adapter, close valve on reel aft line. Disconnect both hydraulic lines and electrical cable. Attach caps and plugs and store on combine.



- g. At right side of adapter disconnect the three hydraulic lines. Attach caps and plugs and store hoses on combine.



- h. Retract header attachment pins (J) to disengage adapter brackets.



- i. Lower feeder house until saddle (K) disengages and clears adapter support (L).  
j. Slowly back combine away from adapter.

## ADAPTER AND LEXION

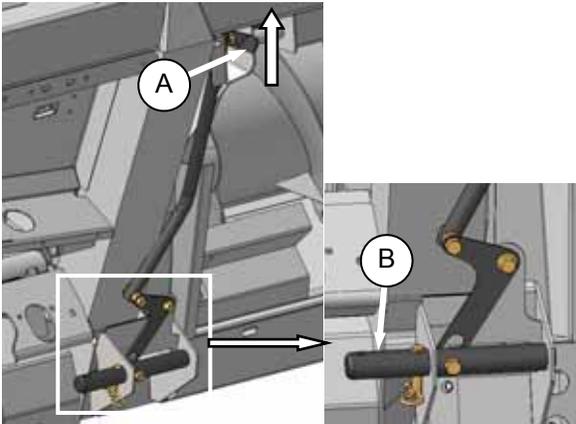
### 5.5 LEXION 400, 500 SERIES



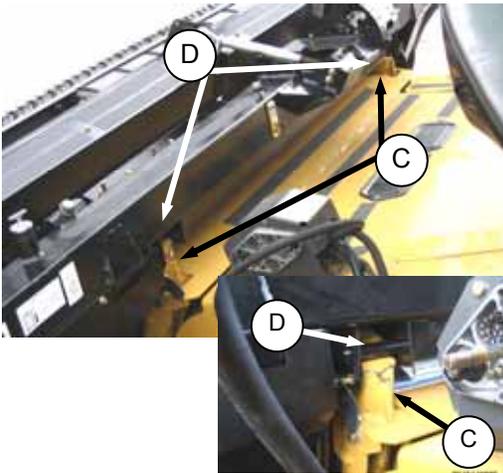
### CAUTION

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.

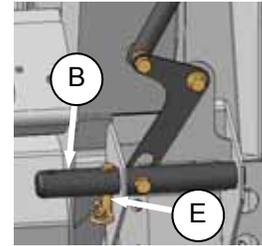
#### 5.5.1 ATTACHMENT



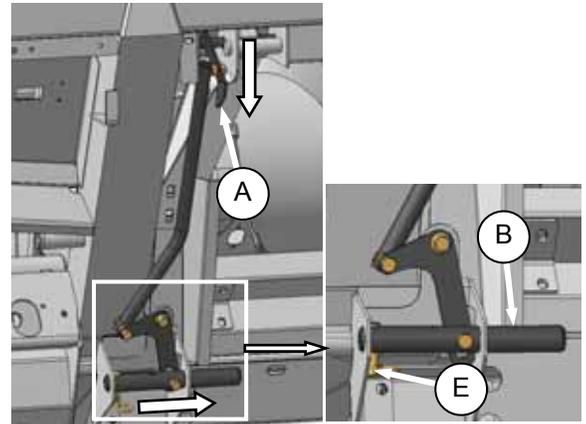
- Handle (A) on the CA20 adapter should be in raised position and pins (B) at bottom corners of adapter retracted.
- Slowly drive combine up to adapter until feeder house is directly under the adapter top cross member.



- Raise feeder house to lift adapter, ensuring feeder house posts (C) are properly engaged in adapter frame (D).
- Position header slightly off the ground.

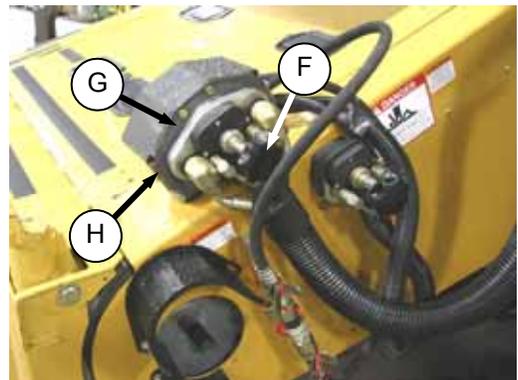


- Remove locking pin (E) from adapter pin (B).



- Lower handle (A) to engage adapter pins into feeder house. Re-insert locking pin (E) and secure with hairpin.
- Connect hydraulic hoses as follows:

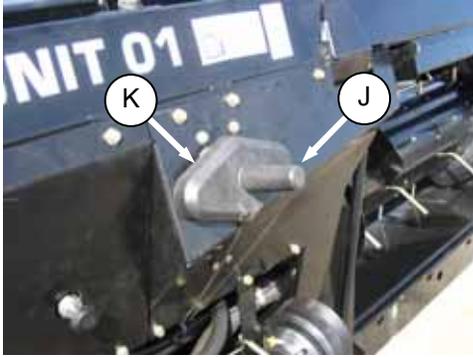
#### Lexion 500 Attachment



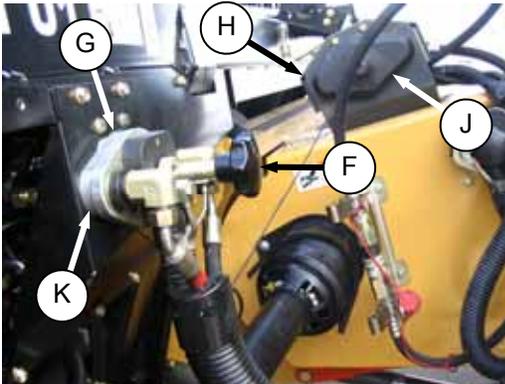
- Unscrew knob (F) on combine coupler (G) to release coupler from combine receptacle (H).

*(continued next page)*

## ADAPTER AND LEXION

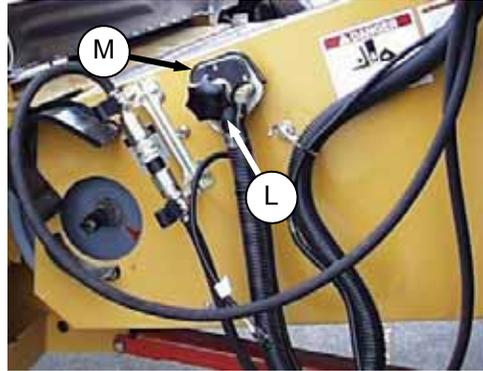


2. Remove cover (J) from adapter receptacle (K).

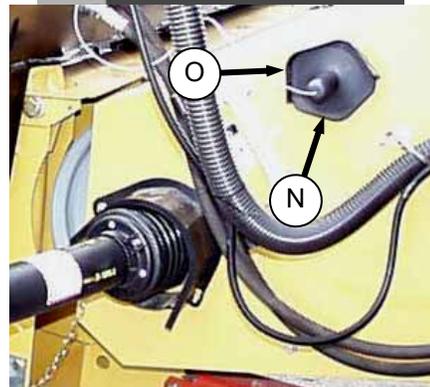
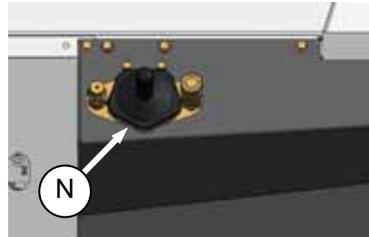


3. Clean mating surface of coupler (G) and locate onto adapter receptacle (K). Turn knob (F) to secure coupler to receptacle.
4. Place cover (J) on combine receptacle (H).
5. Proceed to step h.

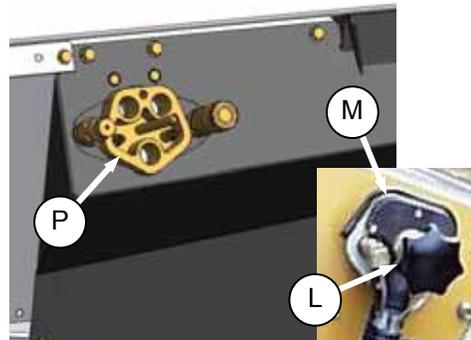
### Lexion 400 Attachment



1. Unscrew knob (L) on combine coupler (M) to release coupler from combine receptacle.



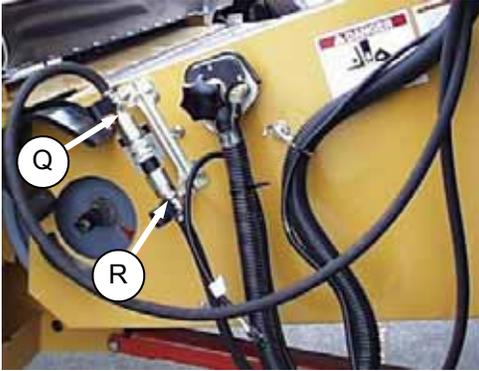
2. Remove cover (N) from adapter receptacle and place on combine receptacle (O).



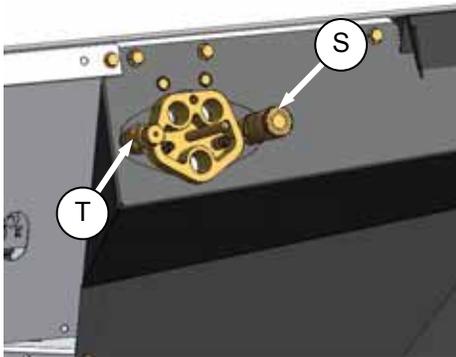
3. Locate combine coupler (M) onto adapter receptacle (P) and turn knob (F) to secure coupler to receptacle.

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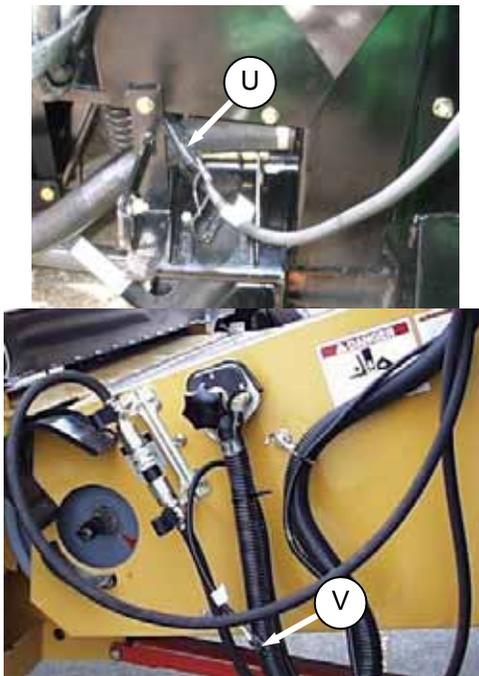
## ADAPTER AND LEXION



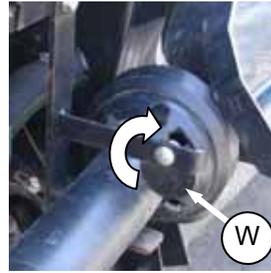
4. Disconnect hoses (Q) and (R) on combine at couplers.
5. Clean couplers (S) and (T) on adapter.



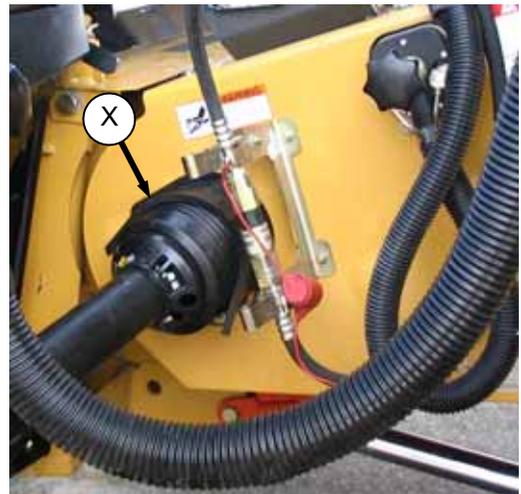
6. Connect hose (R) to coupler (S) on adapter.
7. Connect hose (Q) to coupler (T) on adapter.



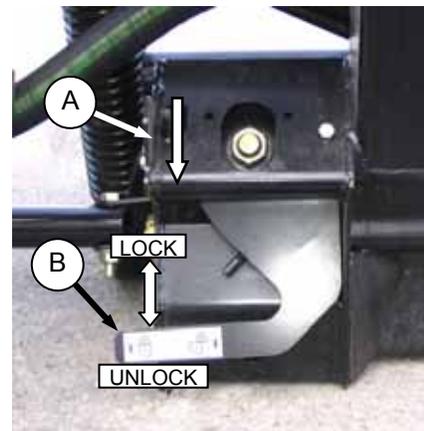
- h. If adapter is equipped with reel fore-aft/header tilt selector, connect harness (U) to combine harness (V).



- i. Rotate disc (W) on adapter drive-line storage hook and remove drive-line from hook.



- j. Attach drive-line to combine output shaft (X).



- k. Disengage both adapter float locks by moving latch (A) away from adapter and moving lever (B) at each lock to lowest position.

## ADAPTER AND LEXION



### IMPORTANT

If stabilizer wheels are installed, set wheels to storage or uppermost working position. Otherwise header may tilt forward so that re-attachment will be difficult. Refer to D50 and D60 Harvest Header / FD70 FlexDraper Operators Manual.

### 5.5.2 DETACHMENT

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



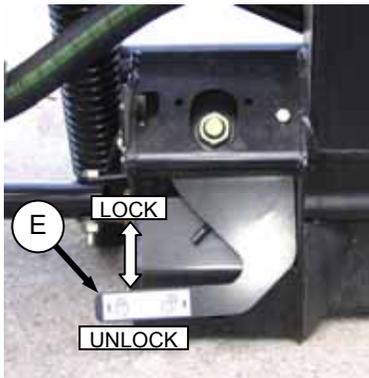
### DANGER

To avoid bodily injury or death from fall of raised machine, always engage lift cylinder stops before going under header for any reason. See your Combine Operator's Manual for instructions for use and storage of header lift cylinder stops.



### CAUTION

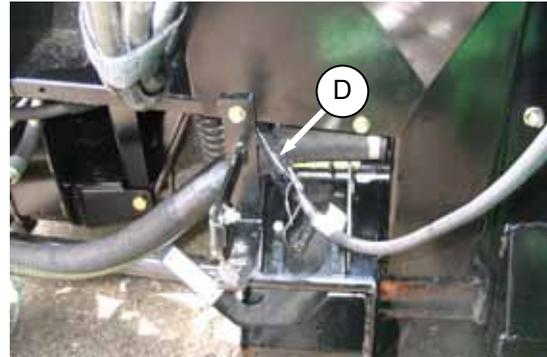
Stop engine and remove key from ignition before leaving operator's seat for any reason. A child or even a pet could engage an idling machine.



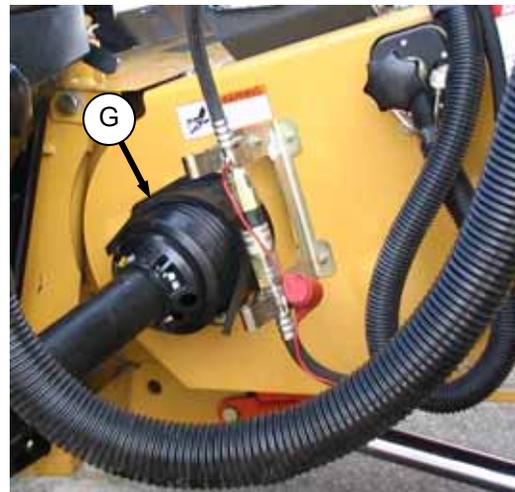
- Engage the adapter float locks by lifting lever (E) at both locks until it latches into the lock position.

### IMPORTANT

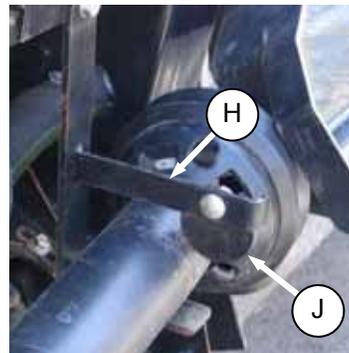
If slow speed transport wheels are installed, header may be detached in either transport or field mode. If detaching with wheel in field mode, set wheels to storage or uppermost working position. Otherwise header may tilt forward so that re-attachment will be difficult. Refer to D50 and D60 Harvest Header / FD70 FlexDraper Operators Manual.



- If adapter is equipped with reel fore-aft/header tilt selector, disconnect harness (F) and store on combine.



- Disconnect driveshaft (G) from combine.



- Slide driveshaft in hook (H) so that disc (J) drops to secure driveshaft.

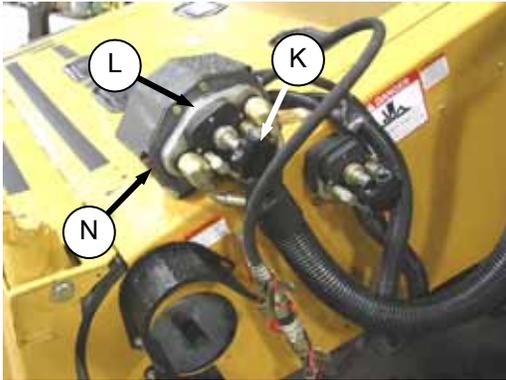
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## ADAPTER AND LEXION

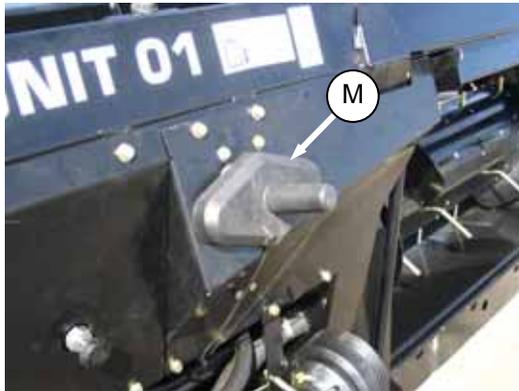
- f. Disconnect hydraulics/electrical from adapter as follows:

### Lexion 500 Detachment

1. Unscrew knob (K) on coupler (L) to release coupler from adapter.
2. Remove cover (M) from combine receptacle.



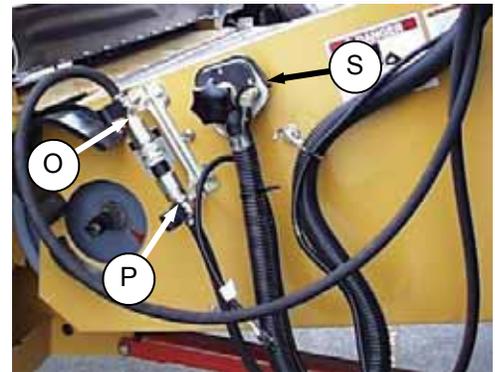
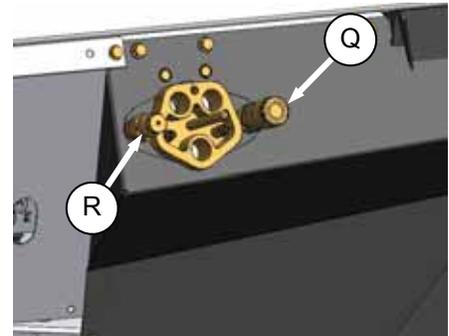
3. Locate coupler (L) onto combine receptacle (N) and turn knob (K) to secure coupler to receptacle.



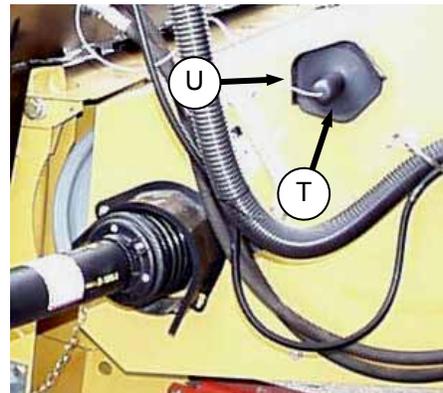
4. Place cover (M) on adapter receptacle.
5. Proceed to step h.

### Lexion 400 Detachment

1. Disconnect electrical harness from adapter.



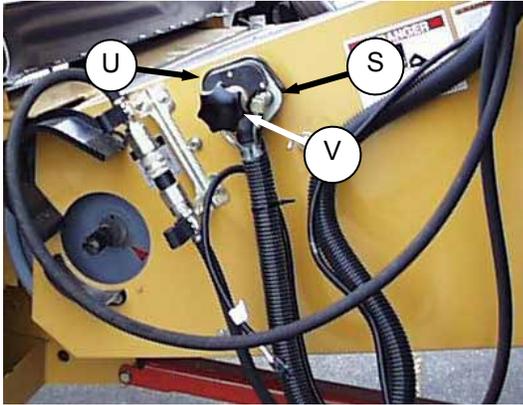
2. Disconnect hydraulic hoses (O) and (P) from adapter connectors (Q) and (R).
3. Locate hoses (O) and (P) on combine as shown and reconnect.
4. Unscrew knob on coupler (S) to release coupler from adapter receptacle.



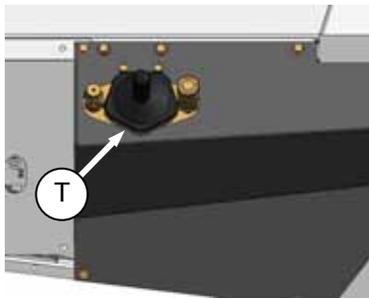
5. Remove cover (T) from combine receptacle (U).

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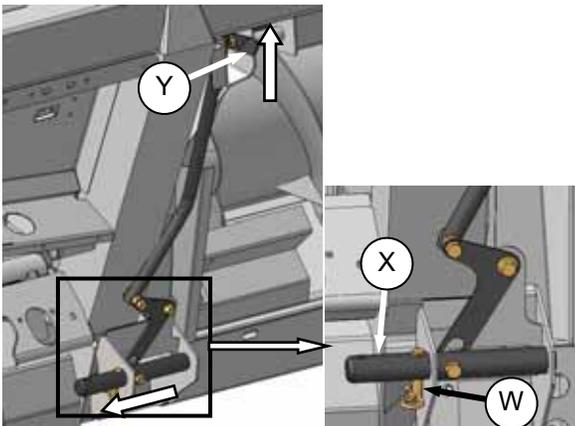
## ADAPTER AND LEXION



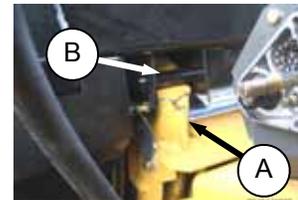
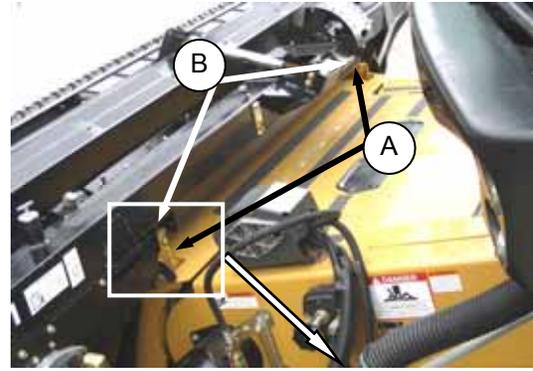
6. Locate coupler (S) onto combine receptacle (U) and turn knob (V) to secure coupler to receptacle.



7. Place cover (T) on adapter receptacle.



- g. Remove locking pin (W) from adapter pin (X).
- h. Raise handle (Y) to disengage adapter pins (X) from feeder house. Replace locking pin (W) in adapter pin and secure with hairpin.



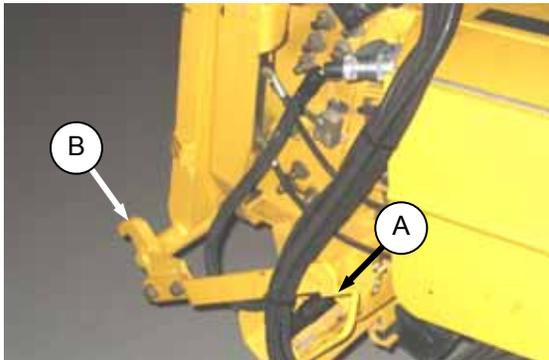
- i. Lower feeder house to ground until feeder house posts (A) disengage adapter supports (B).
- j. Slowly back combine away from adapter.

## ADAPTER AND NEW HOLLAND

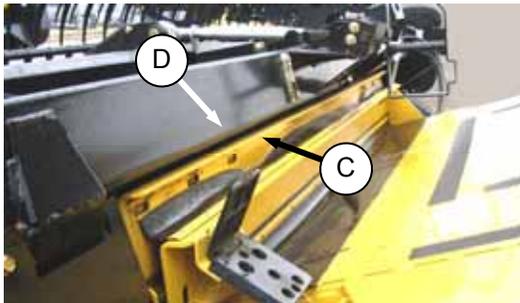
### 5.6 NEW HOLLAND CR, CX



#### 5.6.1 ATTACHMENT



- a. Ensure handle (A) is positioned so that hooks (B) can engage adapter.

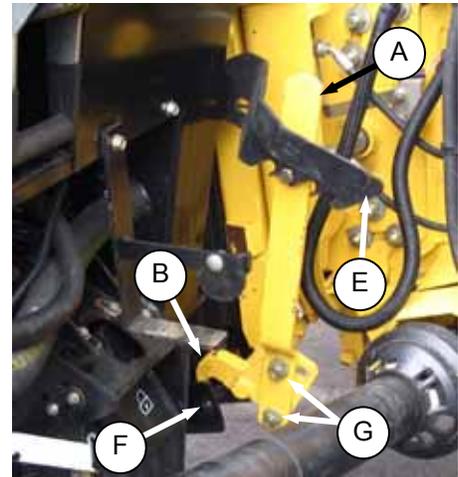


- b. Slowly drive combine up to adapter until feeder house saddle (C) is directly under the adapter top cross member (D).  
c. Raise feeder house to lift adapter, ensuring feeder saddle is properly engaged in adapter frame.

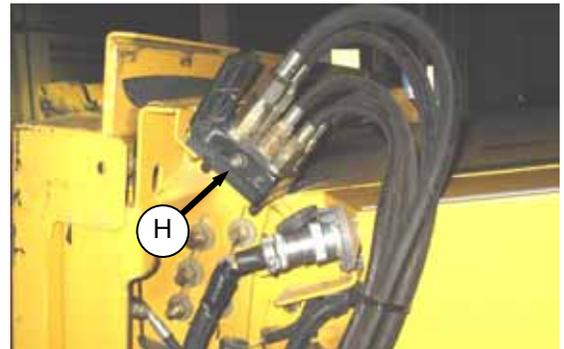


### CAUTION

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.



- d. Lift lever (E) on adapter at left side of feeder house and push handle (A) on combine so that hooks (B) engage pins (F) on both sides of the feeder house.  
e. Push down on lever (E) so that slot in lever engages handle to lock handle in place.  
f. If hook (B) does not fully engage pin on adapter when (A) and (E) are engaged, loosen bolts (G) and adjust lock as required. Re-tighten bolts.

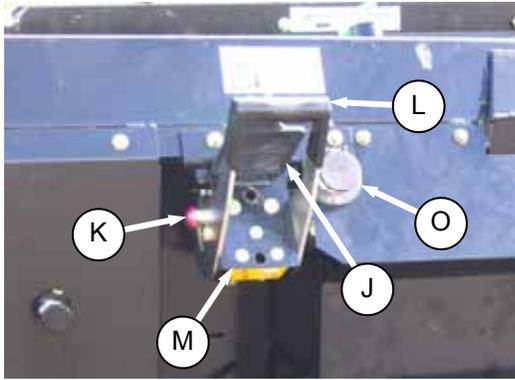


- g. Remove hydraulic quick coupler (H) from storage plate on combine.

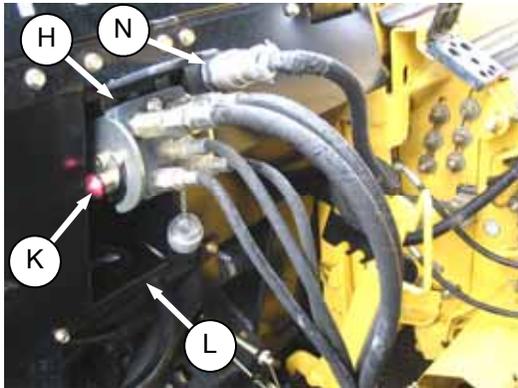
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## ADAPTER AND NEW HOLLAND

h. Connect to receptacle on adapter as follows:



1. Open cover (J).
2. Push in lock button (K) and pull handle (L) halfway up to open position.



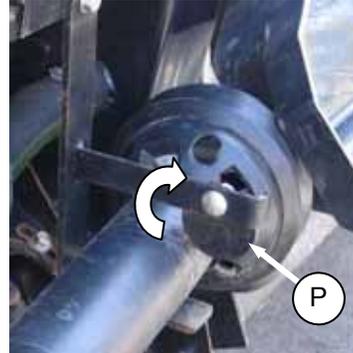
3. Remove coupler (H) from storage location on combine and clean mating surface of coupler.
4. Position coupler onto adapter receptacle (M) and push handle (L) to engage pins into receptacle.
5. Push handle (L) to closed position until lock button (K) snaps out.



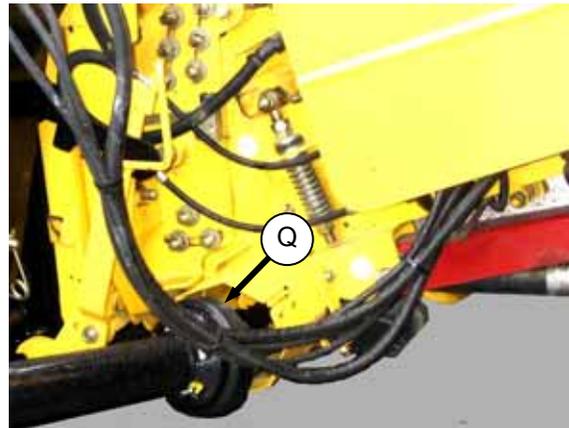
i. Attach combine electrical connector (N) to adapter as follows:

1. Remove cover on adapter electrical receptacle (O).

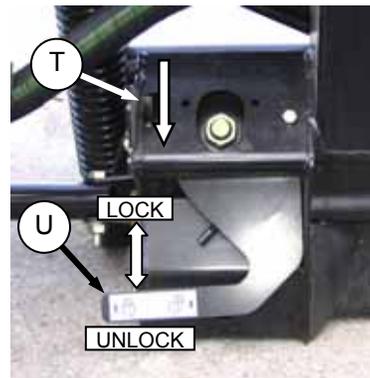
2. Remove connector (N) from combine.
3. Align lugs on connector (N) with slots in adapter receptacle (O) and push connector onto receptacle. Turn collar on connector to lock it in place.



j. Rotate disc (P) on adapter drive-line storage hook and remove drive-line from hook.



k. Pull back collar on end of drive line and push onto combine output shaft (Q) until collar locks.



l. Disengage both adapter float locks by moving latch (T) away from adapter and moving lever (U) at each lock to lowest position.

## ADAPTER AND NEW HOLLAND



### 5.6.2 DETACHMENT

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



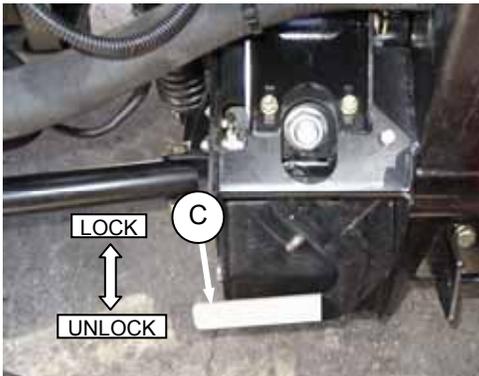
#### DANGER

To avoid bodily injury or death from fall of raised machine, always engage lift cylinder stops before going under header for any reason. See your Combine Operator's Manual for instructions for use and storage of header lift cylinder stops.



#### CAUTION

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.



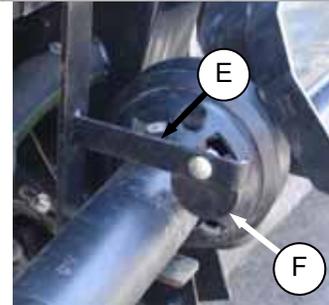
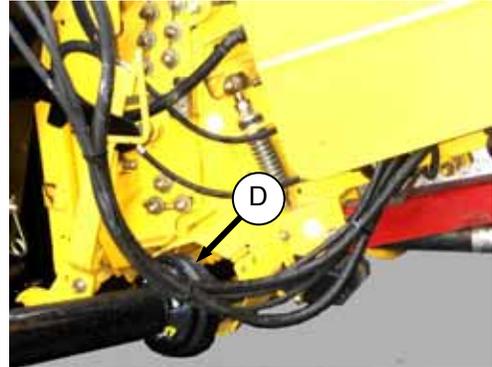
- b. Engage the adapter float locks by lifting lever (C) at each lock until it latches into the lock position.

#### IMPORTANT

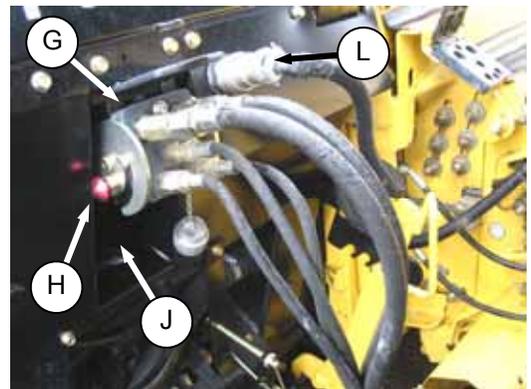
If slow speed transport wheels are installed, header may be detached in either transport or field mode. If detaching with wheel in field mode, set wheels to storage or uppermost working position. Otherwise header may tilt forward so that re-attachment will be difficult. Refer to D50 and D60 Harvest Header / FD70 FlexDraper Operators Manual.

#### IMPORTANT

If stabilizer wheels are installed, set wheels to storage or uppermost working position. Otherwise header may tilt forward so that re-attachment will be difficult. Refer to D50 and D60 Harvest Header / FD70 FlexDraper Operators Manual.



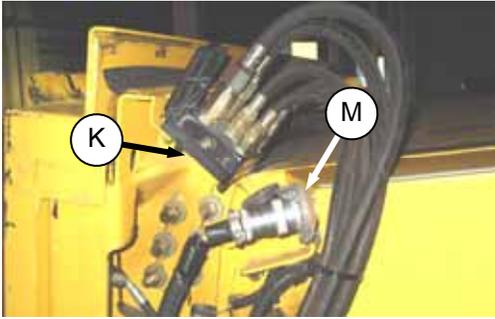
- c. Disconnect driveshaft (D) from combine and slide driveshaft in hook (E) so that disc (F) drops to secure driveshaft.
- d. Remove hydraulic quick coupler (G) from receptacle on adapter as follows:



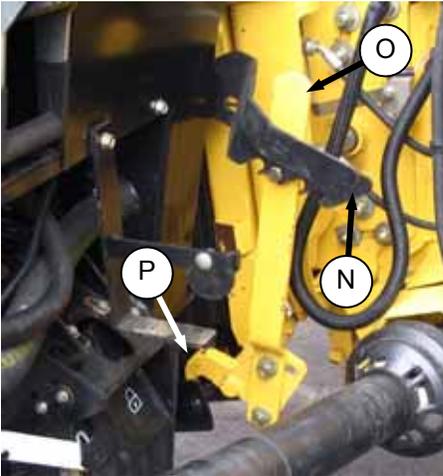
1. Push in lock button (H) and pull handle (J) to release coupler (G).
2. Push handle (J) to closed position until lock button (H) snaps out. Close cover.
3. Position coupler (G) onto storage plate (K) on combine.

*(continued next page)*

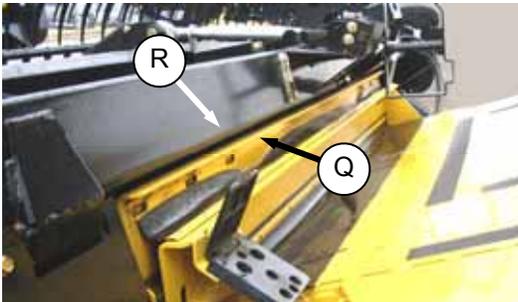
## ADAPTER AND NEW HOLLAND



4. Remove electrical connector (L) from adapter and close cover. Connect to combine at (M).



- e. Lift lever (N), and pull and lower handle (O) to disengage feeder house/adapter lock (P).



- f. Lower feeder house until feeder house (Q) disengages adapter support (R).
- g. Slowly back combine away from adapter.

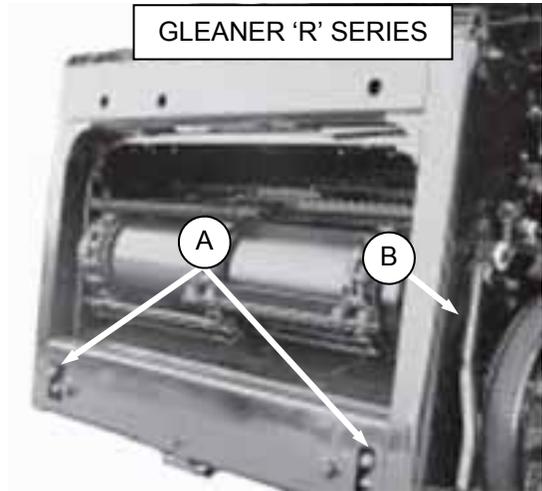
# ADAPTER AND AGCO

## 5.7 AGCO

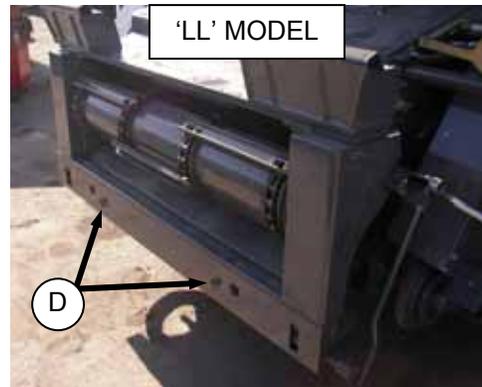
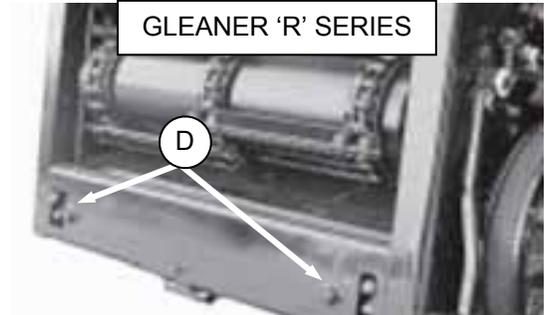
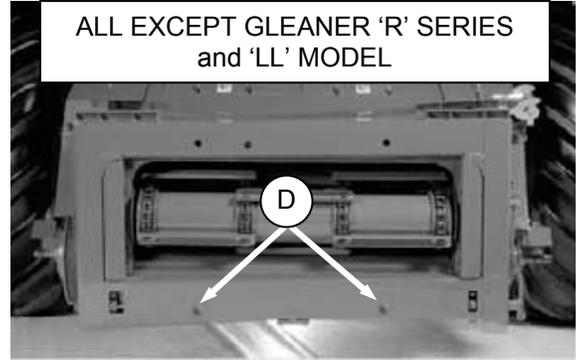
Gleaner R Series, A Series  
Challenger 660, 670, 680B  
Massey 9690, 9790, 9895



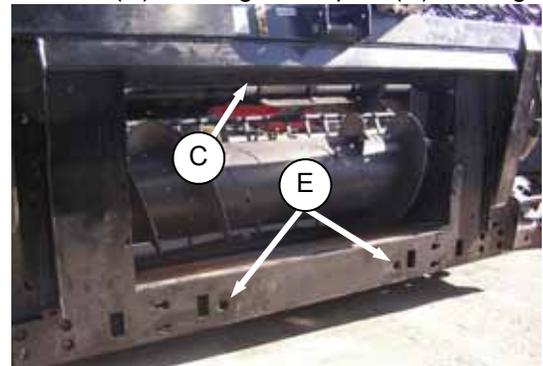
### 5.7.1 ATTACHMENT



- a. Retract lugs (A) at base of feeder-house with lock handle (B).



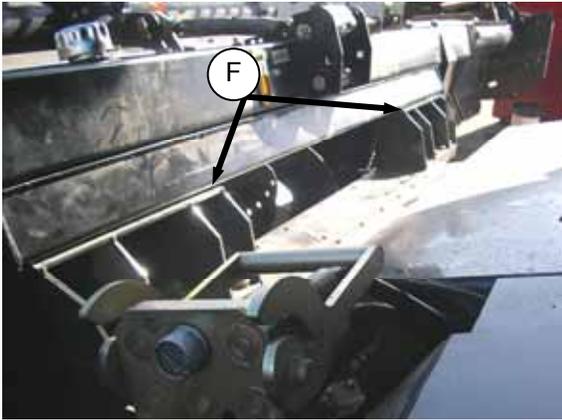
- b. Slowly drive combine up to adapter until feeder house is directly under the adapter top cross member (C) and alignment pins (D) are aligned



with holes (E) in adapter frame.

*(continued next page)*

## ADAPTER AND AGCO



- c. Raise feeder house to lift adapter, ensuring feeder house saddle (F) and alignment pins are properly engaged in adapter frame.
- d. Raise header slightly off the ground.



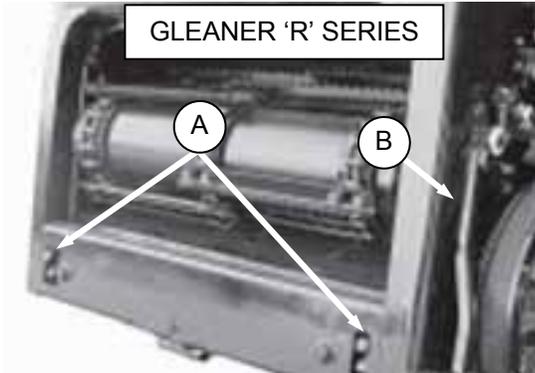
### CAUTION

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.

ALL EXCEPT GLEANER 'R' SERIES

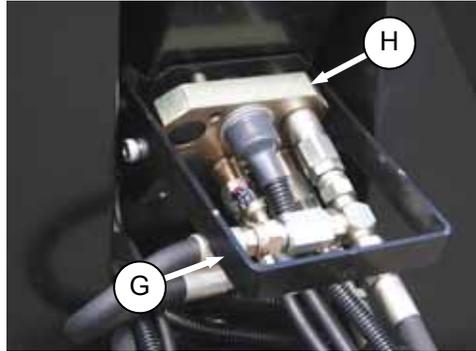


GLEANER 'R' SERIES

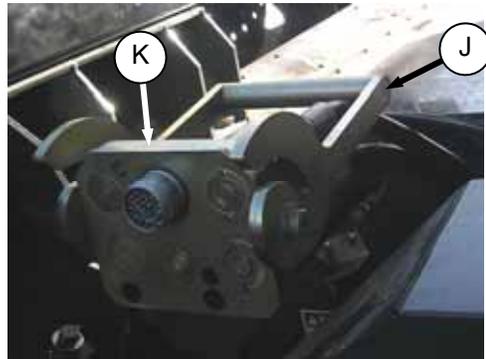


- e. Engage lugs (A) with adapter using lock handle (B).

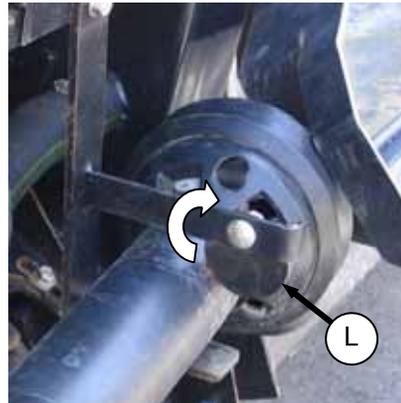
- f. Connect adapter hydraulic quick coupler to combine receptacle as follows:



- 1. Pull handle (G) to release coupler (H) from adapter.



- 2. Push handle (J) on combine to full open position.
- 3. Clean mating surfaces of coupler and receptacle if necessary.
- 4. Position coupler (H) onto combine receptacle (K) and pull handle (J) to fully engage coupler into receptacle.



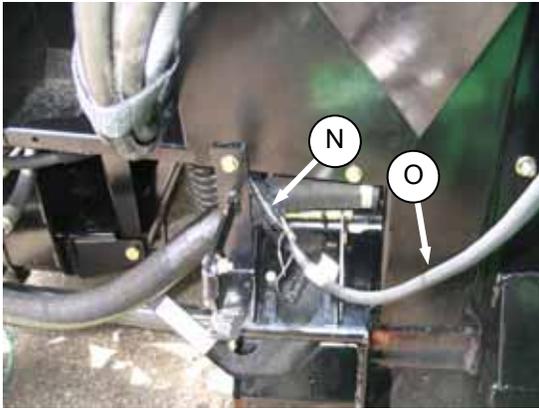
- 5. Rotate disc (L) on adapter drive-line storage hook and remove drive-line from hook.

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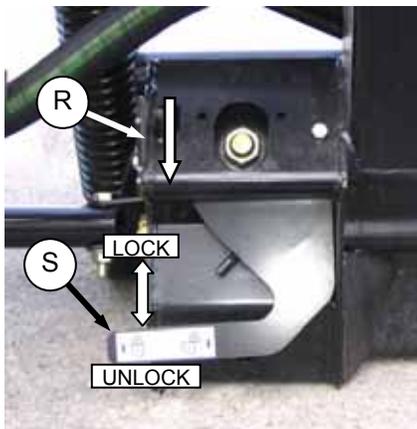
## ADAPTER AND AGCO



- g. Pull back collar on end of drive line and push onto combine output shaft (M) until collar locks.



- h. Connect selector valve wire harness (N) to combine harness (O).



- i. Disengage both adapter float locks by moving latch (R) away from adapter and moving lever (S) at each lock to lowest position.

## ADAPTER AND AGCO



### IMPORTANT

If stabilizer wheels are installed, set wheels to storage or uppermost working position. Otherwise header may tilt forward so that re-attachment will be difficult. Refer to D50 and D60 Harvest Header / FD70 FlexDraper Operators Manual.

### 5.7.2 DETACHMENT

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



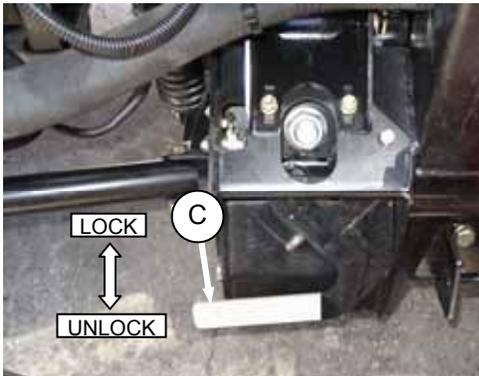
### DANGER

To avoid bodily injury or death from fall of raised machine, always engage lift cylinder stops before going under header for any reason. See your Combine Operator's Manual for instructions for use and storage of header lift cylinder stops.



### CAUTION

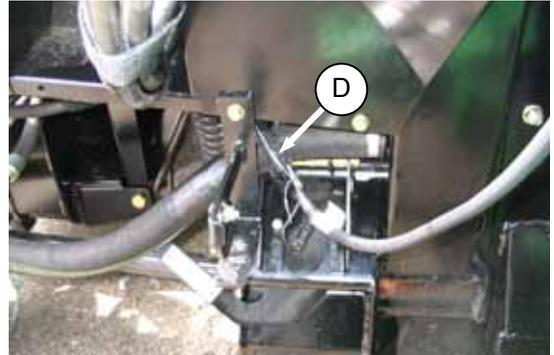
Stop engine and remove key from ignition before leaving operator's seat for any reason. A child or even a pet could engage an idling machine.



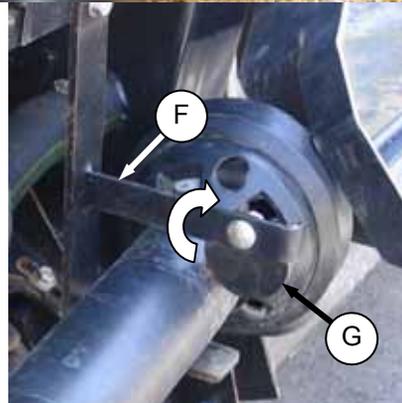
- Engage the adapter float locks by lifting lever (C) at each lock until it latches into the lock position.

### IMPORTANT

If slow speed transport wheels are installed, header may be detached in either transport or field mode. If detaching with wheel in field mode, set wheels to storage or uppermost working position. Otherwise header may tilt forward so that re-attachment will be difficult. Refer to D50 and D60 Harvest Header / FD70 FlexDraper Operators Manual.



- If adapter is equipped with reel fore-aft/header tilt selector, disconnect harness (D) and store on combine.

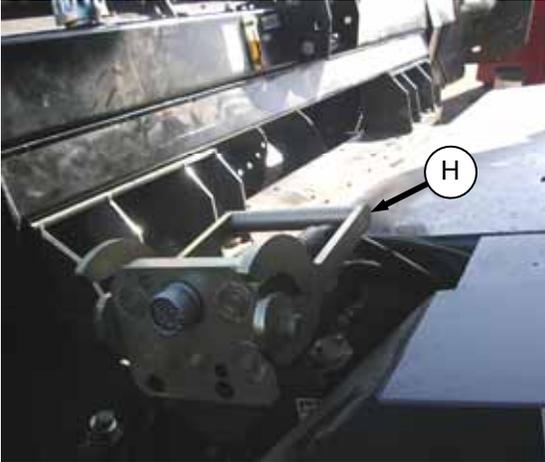


- Disconnect driveshaft (E) from combine and slide driveshaft in hook (F) so that disc (G) drops to secure driveshaft.

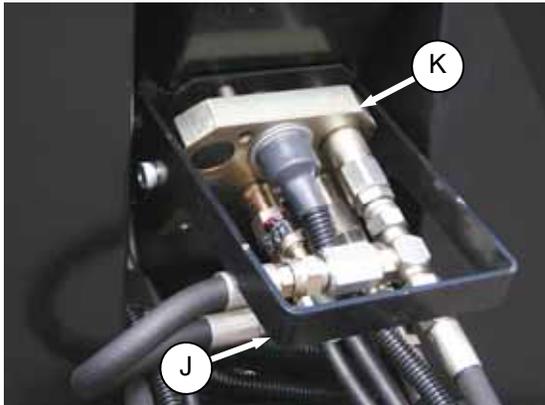
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## ADAPTER AND AGCO

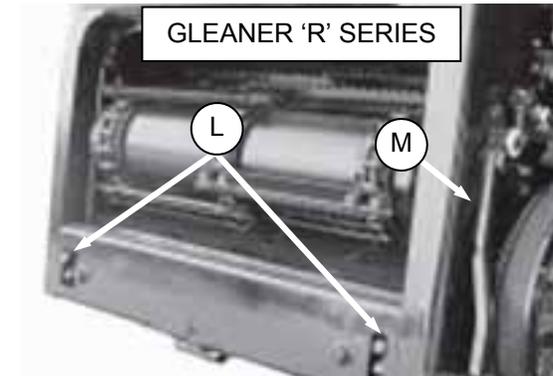
- e. Disconnect hydraulic/electrical coupler from combine as follows:



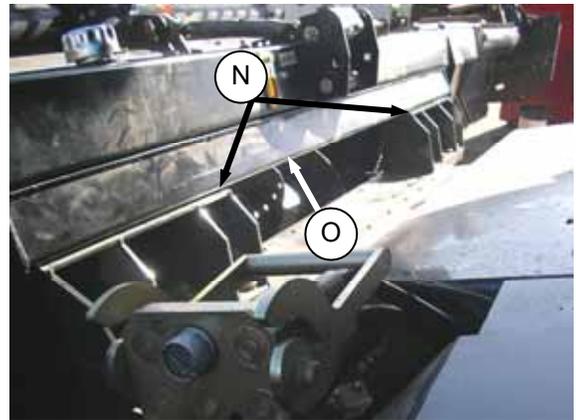
1. Move handle (H) to full open position to release coupler from combine.



2. Lift handle (J) on adapter, position coupler (K) in adapter and lower handle (J) to lock coupler.



- f. Retract lugs (L) at base of feeder-house with lock handle (M).



- g. Lower feeder house until saddle (N) disengages and clears adapter support (O).  
h. Slowly back combine away from adapter.

## D50 & D60 HEADER/ADAPTER

### 6 HEADER/ADAPTER DISASSEMBLY AND ASSEMBLY

Using this procedure, the adapter remains attached to the combine and is appropriate when detaching the D50 or D60 Harvest Header for use on a windrower or when changing headers. The procedure is the same for all makes and models of combines.

The D50 and D60 Harvest Header can be attached to the adapter from either field configuration or transport configuration.

#### 6.1 D50 AND D60 HARVEST HEADER/ADAPTER



##### 6.1.1 DISASSEMBLY

- Choose a level area, lower header to ground, and raise reel fully. Set header tilt to almost full forward to increase clearance under adapter feed draper.



#### CAUTION

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.

- Stop engine, remove key, and engage reel props. Refer to D50 and D60 Harvest Header/FD70 FlexDraper Operators Manual.
- Disconnect adapter deck from cutterbar as follows:



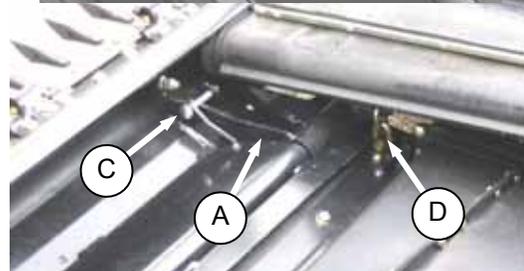
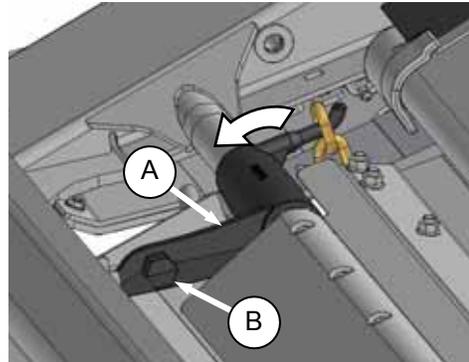
#### WARNING

Keep hands clear of the area between guards and sickle at all times.

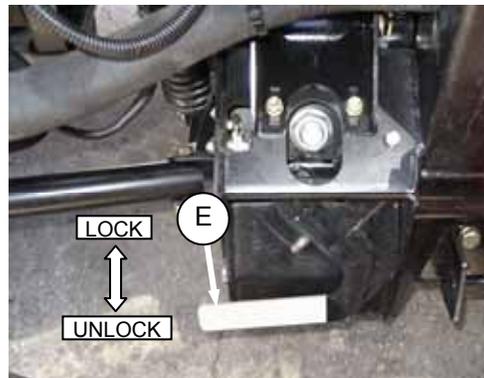


#### CAUTION

Wear heavy gloves when working around or handling sickles.



- Rotate latch (A) with a 15/16 wrench (or equivalent) on hex (B) to raise feed deck so that bolt (C) can be removed. Repeat for other side of feed draper.
- Rotate latches to lower adapter deck.
- Remove chain (D) from hook. Rotate latch back to original position and reinstall bolts (C).



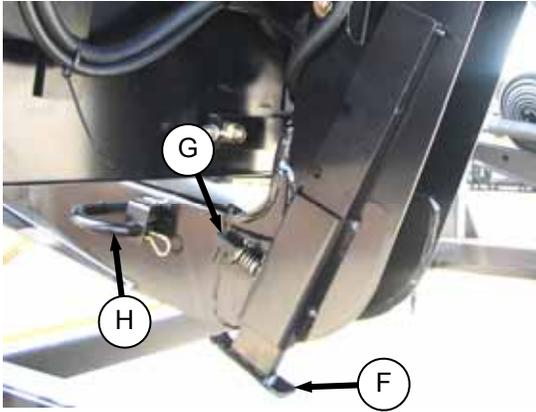
- Engage the adapter float locks by lifting lever (E) until it latches into the lock position.

#### NOTE

Stabilizer/Transport wheels can be used in combination with the stand to support header.

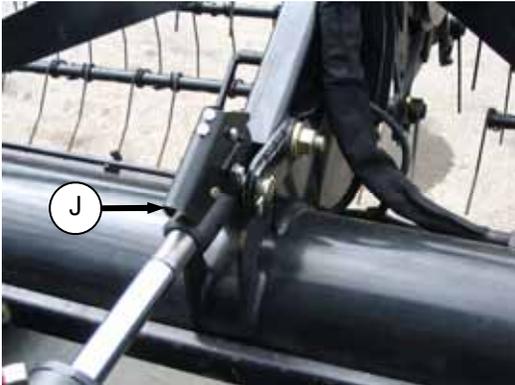
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## D50 & D60 HEADER/ADAPTER

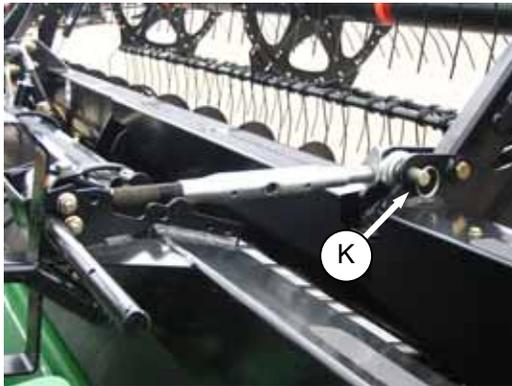


- e. Lower stand (F) by pulling spring loaded pin (G). Release pin when stand at desired height.
- f. Remove pin (H) from leg on both sides of adapter.

- g. Disconnect center link as follows:



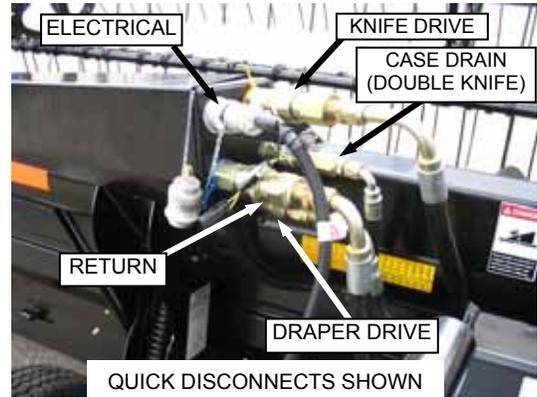
1. For hydraulic adjuster, lift release (J) and latch it in up position.
2. Extend center link cylinder to disengage hook from header.
3. Prop up center link with a pin or equivalent tool.



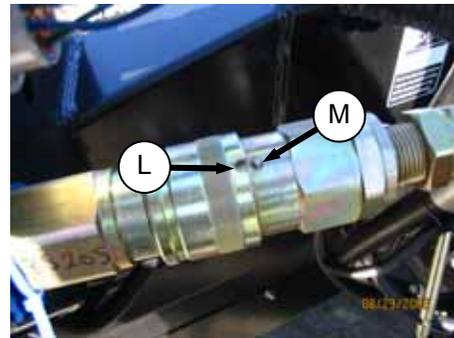
4. For mechanical link, remove pin (K) to release link. Replace pin.

### NOTE

Feeder house may need to be raised or lowered, or length of link adjusted, to relieve load on link.



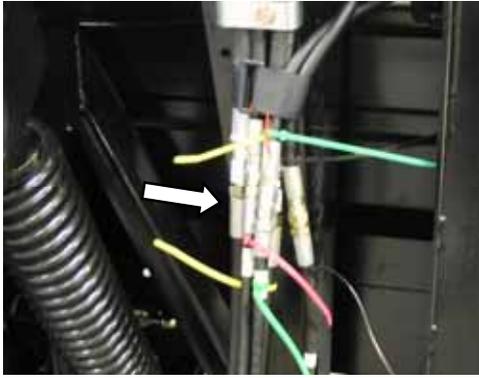
- h. Disconnect sickle and draper drive hydraulic hoses. Install caps and plugs on fittings.
- i. If quick disconnects are installed, disconnect as follows:



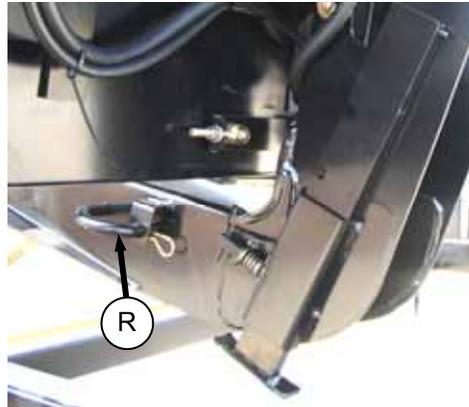
1. Line up slot (L) in collar with pin (M) on connector.
  2. Push collar toward pin and pull connector to disengage.
  3. Install plugs or caps on hose ends (if equipped).
- j. Disconnect electrical connector by turning collar counterclockwise and pulling connector to disengage.
  - k. Store and secure hoses on adapter.

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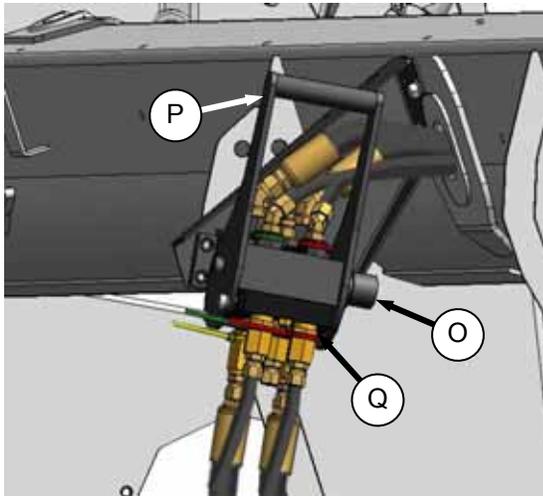
## D50 & D60 HEADER/ADAPTER



- l. Disconnect reel hydraulics at right side of adapter. Install caps and plugs on fittings.
- m. If multi-coupler is installed, disconnect as follows:



- p. Reinsert pins (R) in legs of header.



1. Push in lock button (O) and pull handle (P) to release coupler (Q).
2. Push handle down until button (O) snaps out.



3. Store hoses over adapter frame.
- n. Ensure header is on ground or supported by wheels in transport mode or jack stand.
  - o. Slowly back combine away from header.

## D50 & D60 HEADER/ADAPTER

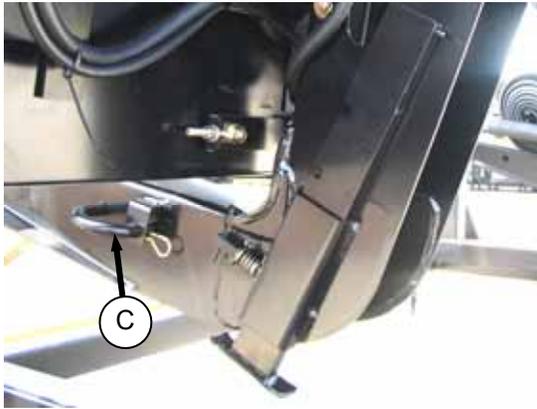


### 6.1.2 ASSEMBLY

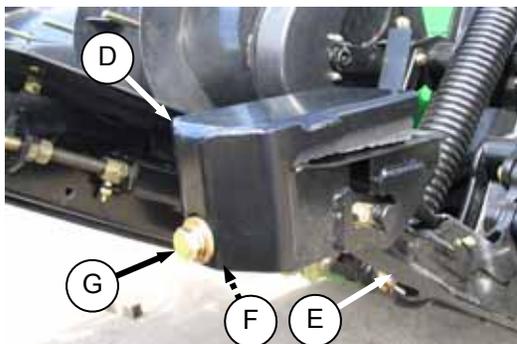
The D50 and D60 Harvest Header can be attached to the adapter from either field configuration or transport configuration.

#### NOTE

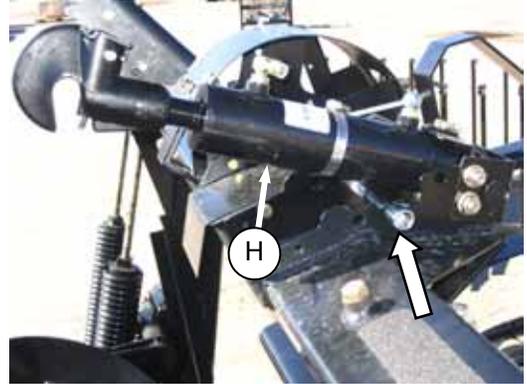
*Stabilizer/Transport wheels can be used in combination with the stand to support header.*



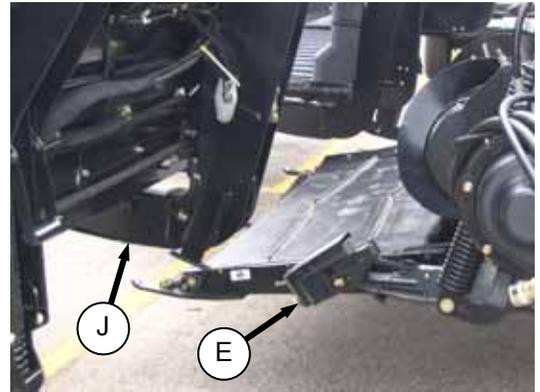
- Remove lynch pin and remove pin (C) from each header leg. Temporarily store in safe place for reinstallation.
- If not installed, install vibration dampers on ends of adapter arms as follows:



- Locate damper (D) onto adapter arm (E).
- Secure with spacer (F), bolt (G), washer, and lock-washer.



- Prop up center link (H) (hydraulic shown) with pin or equivalent tool.



- Lower combine feeder house so that adapter arms (E) are aligned with header legs (J).
- Slowly drive forward, again aligning adapter arms and header legs.
- Keep adapter arm (E) height just under the header leg (J) to ensure adapter leg seats properly in the header linkage supports.

#### IMPORTANT

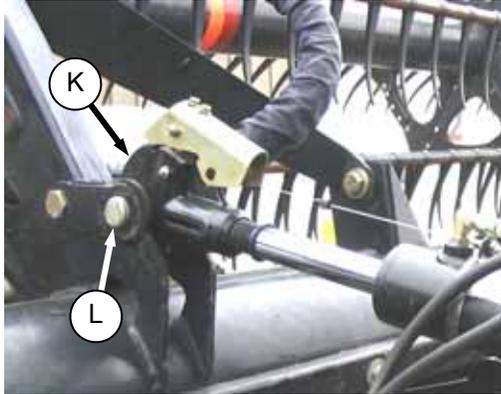
Keep hydraulic hoses clear to prevent damage when driving into header.

- Continue forward until adapter arm contacts stop in header leg. Raise adapter slightly.

*(continued next page)*

## D50 & D60 HEADER/ADAPTER

h. Connect hydraulic center link as follows:



1. For hydraulic center link (option), extend hook (K) and remove prop under link so that base of hook rests on pin (L).
2. Operate header angle hydraulics to retract hook until it engages pin and self-latches.

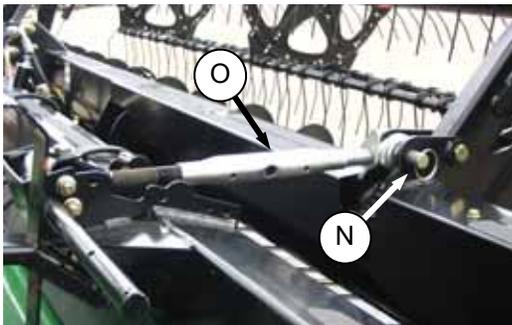


### CAUTION

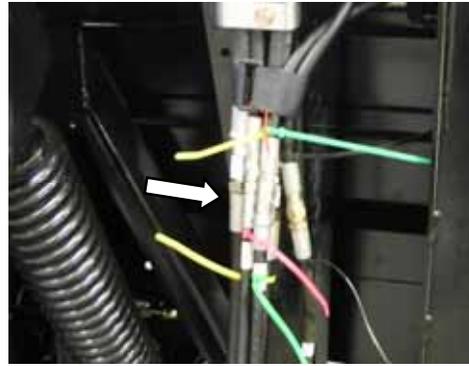
**Stop engine and remove key from ignition before leaving operator's seat for any reason. A child or even a pet could engage an idling machine.**

3. Shutdown engine and remove key.
4. Ensure hook (K) is securely attached.
5. Proceed to step m.

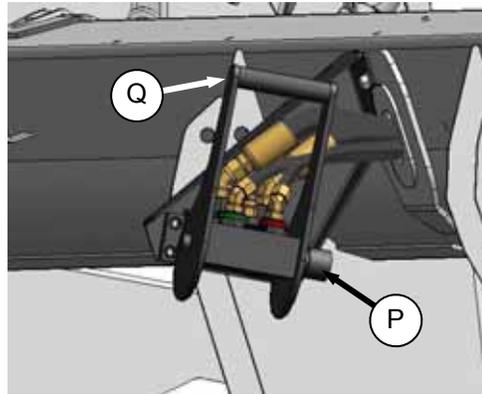
i. Connect mechanical center link as follows:



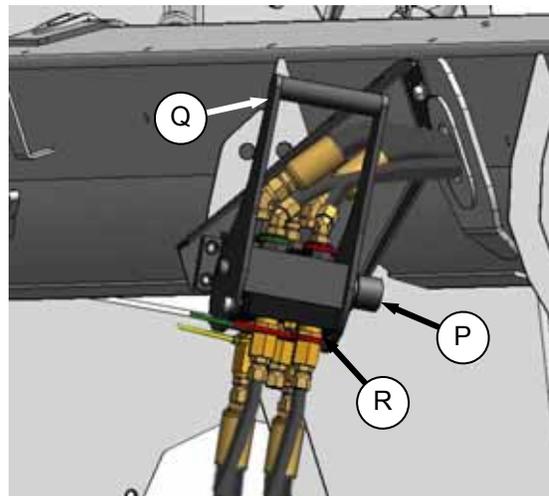
1. Shutdown engine and remove key.
2. Remove pin (N) and the prop under link.
3. Adjust length of link by turning barrel (O) to align with header bracket.
4. Insert pin (N) and secure with lynch pin.



- j. Connect reel hydraulics matching coloured plastic ties.
- k. If multi-coupler is installed, connect as follows:



1. Push in lock button (P) and pull handle (Q) to full open position.
2. Clean couplers.

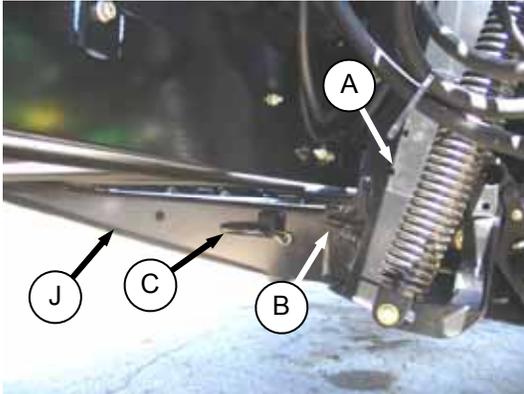


3. Position coupler (R) from combine onto receptacle and push handle (Q) to engage pins on coupler.
4. Push handle to closed position until lock button (P) snaps out.

*(continued next page)*

## D50 & D60 HEADER/ADAPTER

I. Secure header to adapter as follows:



1. Ensure adapter arm is properly located in header leg (J). Reinstall pin (C) in each leg to lock header to adapter and secure with lynch pin.
2. Return stand (A) to storage position and secure with pin (B).

m. Lower header to ground.

n. Tilt header to almost full forward position to increase clearance under adapter feed draper.



### CAUTION

**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.**

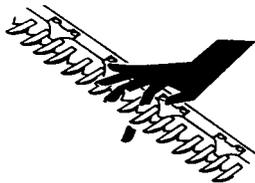
o. Raise reel, shut off engine, and remove key. Engage reel props.

p. Attach adapter deck to header cutterbar as follows:



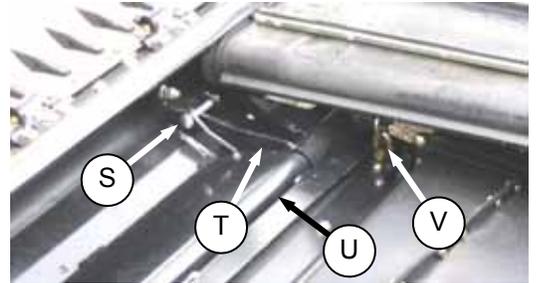
### WARNING

**Keep hands clear of the area between guards and sickle at all times.**

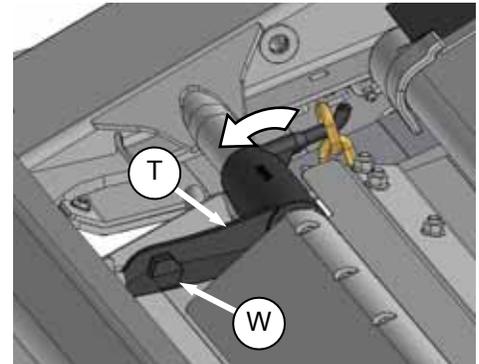


### CAUTION

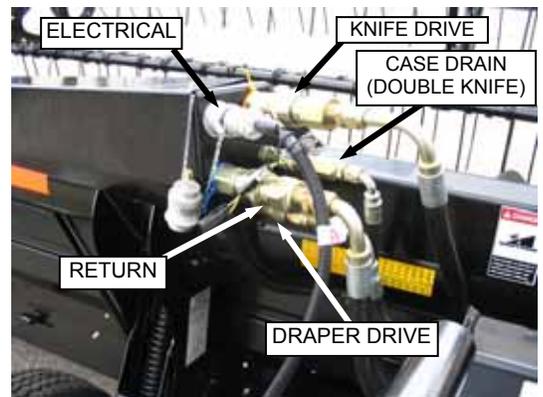
**Wear heavy gloves when working around or handling sickles.**



1. If installed, remove bolts (S) at either side of opening to allow attachment of adapter deck.



2. Position latches (T) on transition pan (U) so that chain (V) can be attached to the latch hook.
3. Rotate latch (T) with a 15/16 wrench (or equivalent) on hex (W) to raise feed deck so that bolt (S) can be reinstalled. Repeat for other side of feed draper.



- q. Connect knife and draper drive hydraulics as shown above using coloured plastic ties as a guide.

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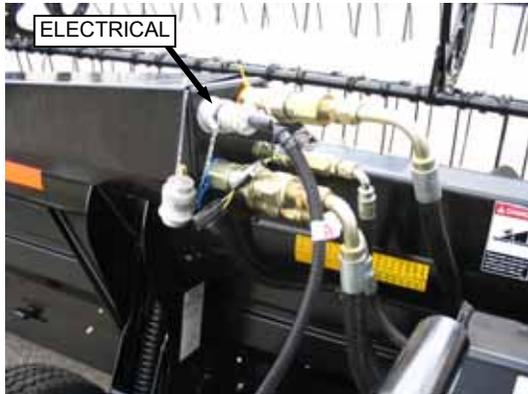
## D50 & D60 HEADER/ADAPTER

- r. If quick disconnects are installed, proceed as follows:
1. Check connectors and clean if required.
  2. Push hose connector onto mating receptacle until collar on receptacle snaps into lock position.

### NOTE

*Ensure hoses are clear of driveline and adjacent structure.*

- s. Attach electrical connector as follows:



1. Remove cover on receptacle.
  2. Align lugs on connector with slots in receptacle, push connector onto receptacle and turn collar on connector to lock it in place.
  3. Attach cover to mating cover on combine wiring harness.
- t. Raise and lower header and reel a few times to allow trapped air to pass back to the reservoir.

### NOTE

*It is not necessary to bleed the system by loosening fittings.*

- u. Check float and if the header is level. If adjustments are required, refer to Section 7.3.5 Header Float, and Section 7.3.6 Header Levelling.

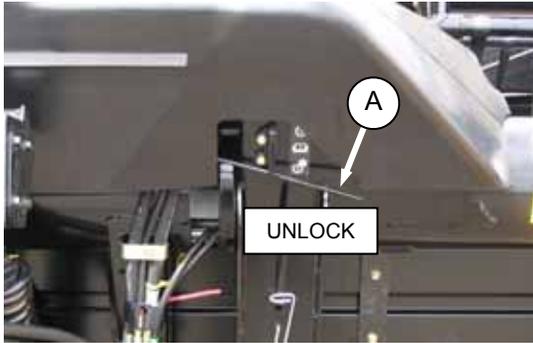
## FD70 HEADER/ADAPTER

### 6.2 FD70 FLEXDRAPER/ADAPTER

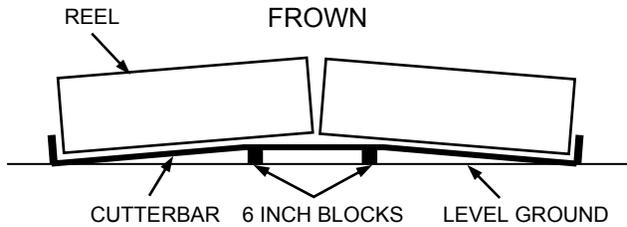


#### 6.2.1 DISASSEMBLY

- Choose a level area, lower header to ground, and raise reel fully.
- Fully retract tilt cylinder.



- Place spring handles (A) in the lower slot to UNLOCK.



- Place 6 inch (150 mm) blocks under hinge area of cutterbar and lower header onto blocks so that header goes into a full frown.

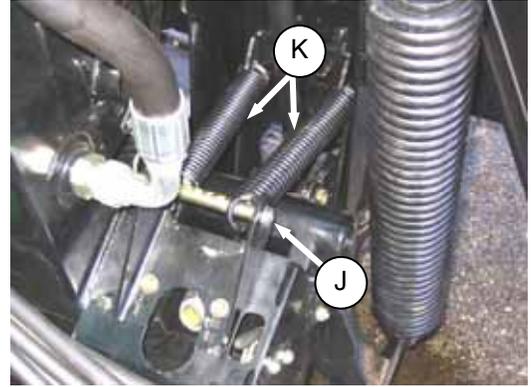


#### CAUTION

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.

- Stop engine, remove key, and engage reel props. Refer to D50 and D60 Harvest Header/FD70 FlexDraper Operators Manual.

- Remove the wing float linkage springs from the adapter as follows:

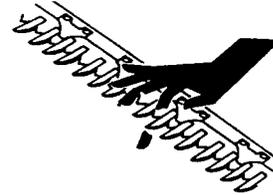


- Remove pin (J) from bracket so that springs (K) drop free.
  - Reinstall pin in bracket and secure pin with hairpin.
- Disconnect adapter deck from cutterbar as follows:
    - Start engine and tilt header to almost full forward position to increase clearance under adapter feed draper.
    - Stop engine and remove key.



#### WARNING

Keep hands clear of the area between guards and sickle at all times.

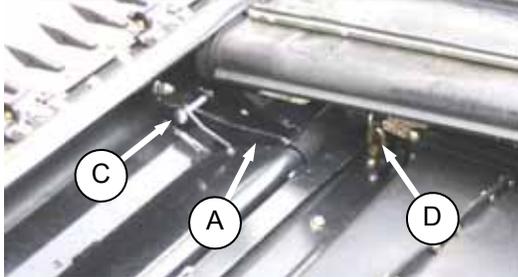
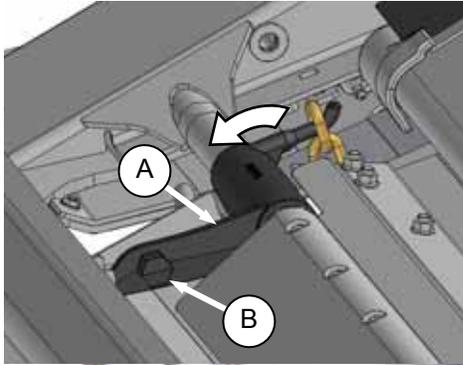


#### CAUTION

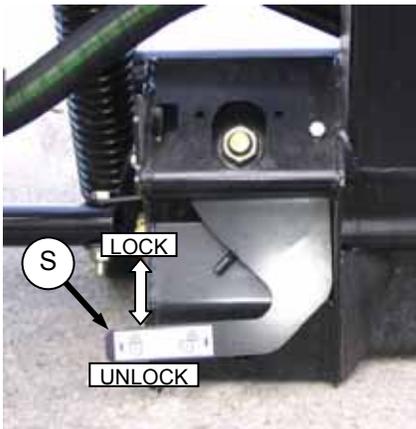
Wear heavy gloves when working around or handling sickles.

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## FD70 HEADER/ADAPTER



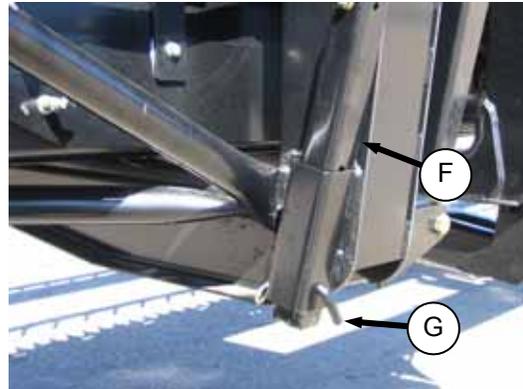
3. Rotate latch (A) with a 15/16 wrench on hex (B) to raise feed deck so that bolt (C) can be removed. Repeat for other side of feed draper.
4. Rotate latches to lower adapter deck.
5. Remove chain (D) from hook. Rotate latch back to original position and reinstall bolts (C).



- h. Engage the adapter float locks by lifting lever (E) until it latches into the lock position.

### NOTE

*Stabilizer/Transport wheels can be used in combination with the stand to support header.*



- i. Lower stand (F) by removing pin (G). Reinstall pin when stand at desired height.



### DANGER

**To avoid bodily injury or death from fall of raised machine, always engage lift cylinder stops before going under header for any reason. See your Combine Operator's Manual for instructions for use and storage of header lift cylinder stops.**

- j. Disengage reel props, lower reel and raise header fully. Stop engine, remove key, and engage combine lift cylinder locks.



- k. Remove bolt (H), washer, and spacer from leg on both sides of adapter. Retain for later re-installation.
- l. Disengage lift cylinder locks and lower header to blocks and allow the header wings to go into full frown mode. Stop engine and remove key.



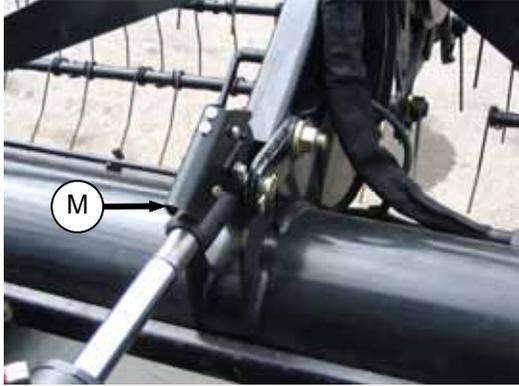
### CAUTION

**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.**

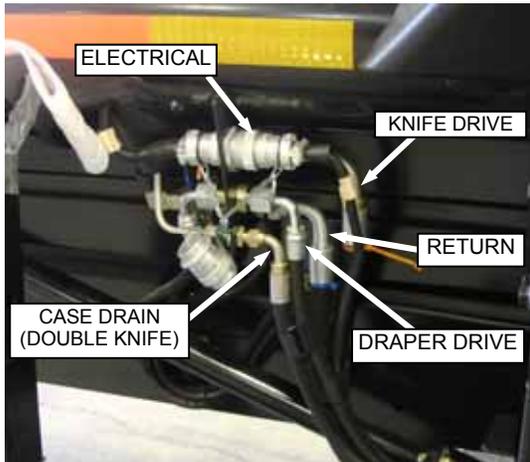
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## FD70 HEADER/ADAPTER

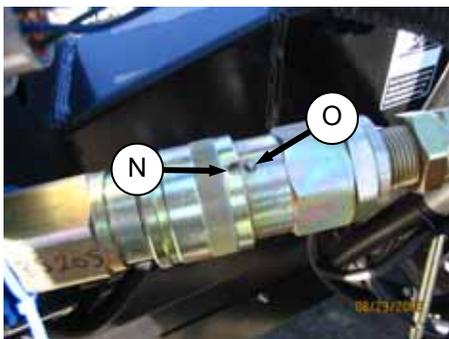
m. Disconnect center link as follows:



1. For hydraulic adjuster, lift release (M) and latch it in up position.
2. Extend center link cylinder to disengage hook from header.
3. Prop up center link with a pin or equivalent tool.



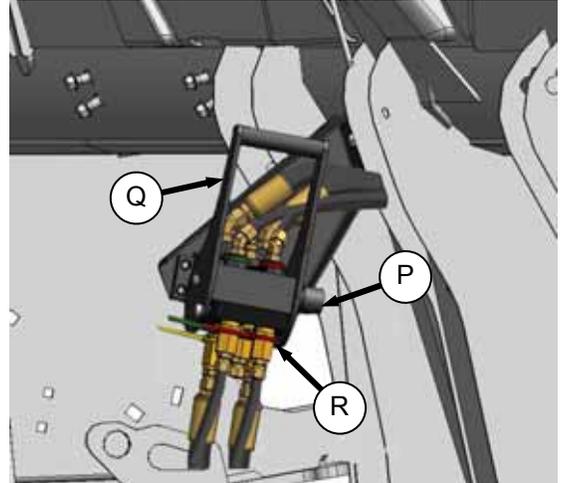
- n. Disconnect knife and draper drive hydraulic hoses.
- o. If quick disconnects are installed, disconnect as follows:



1. Line up slot (N) in collar with pin (O) on connector.
2. Push collar toward pin and pull connector to disengage.

3. Install plugs or caps on hose ends (if equipped).

- p. Disconnect electrical connector by turning collar counterclockwise and pulling connector to disengage.
- q. Store and secure hoses on adapter.
- r. Disconnect reel hydraulics as follows:



1. Push in lock button (P) and pull handle (Q) to release coupler (R).
2. Push handle down until button (P) snaps out.

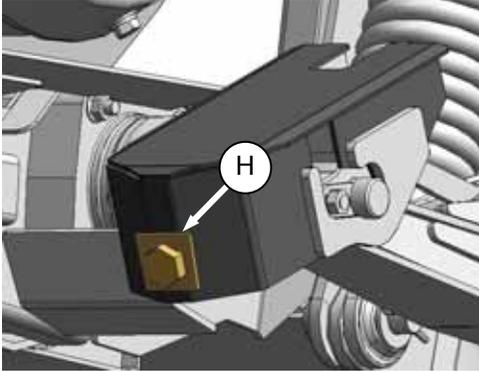


3. Store hoses over adapter frame.
- s. Ensure header is on ground or supported by wheels in transport mode.

*(continued next page)*

## FD70 HEADER/ADAPTER

- t. Slowly back combine away from header.



- u. Reinstall bolts (H), washers, and spacers removed in step g. into adapter legs.

## FD70 HEADER/ADAPTER



### 6.2.2 ASSEMBLY

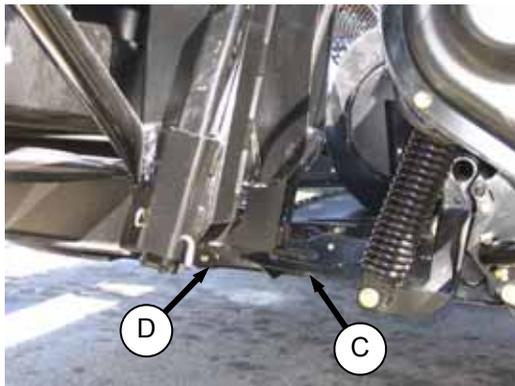
The FD70 FlexDraper can be attached to the adapter from either field configuration or transport configuration.

#### NOTE

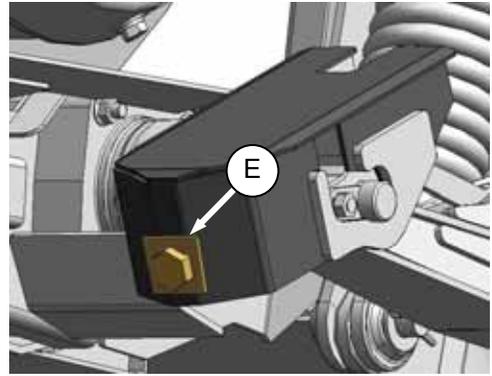
*Stabilizer/Transport wheels can to be used in combination with the stand to support header.*



- Prop up hydraulic center link with pin or equivalent tool.



- Lower combine feeder house so that adapter arms (C) are aligned with header balance channel (D).

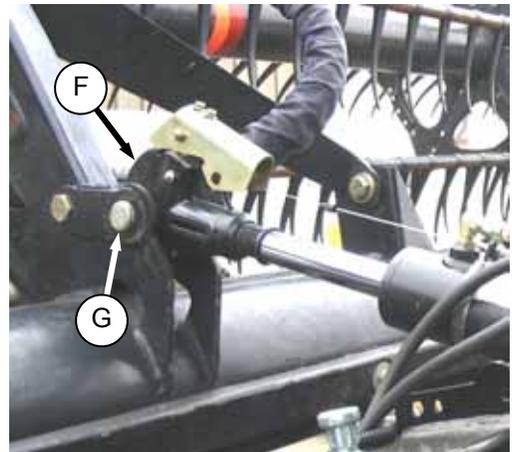


- Remove bolts (E), washers, and spacers from adapter legs.
- Slowly drive forward, again aligning adapter arms and header balance channel.
- Keep adapter arm height just under the header balance channel to ensure adapter leg seats properly in the header linkage supports.

#### IMPORTANT

Keep hydraulic hoses clear to prevent damage when driving into header.

- Continue forward until adapter arm contacts stop in balance channel.
- Connect hydraulic center link as follows:



- Extend hook (F) and remove prop under link so that base of hook rests on pin (G).
- Operate header angle hydraulics to retract hook until it engages pin and self-latches.



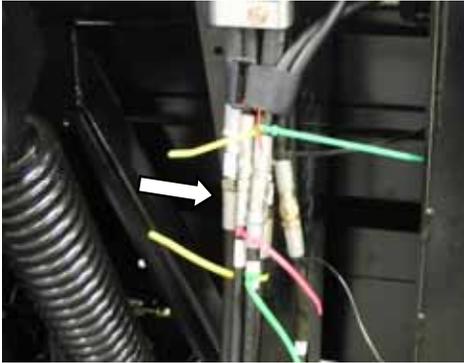
#### CAUTION

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.

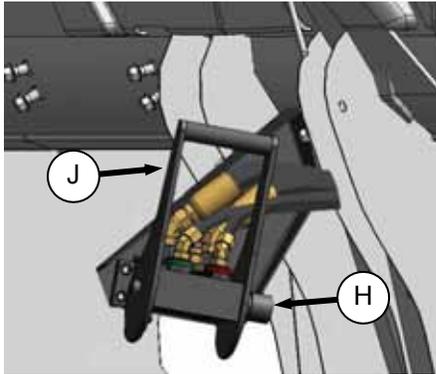
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## FD70 HEADER/ADAPTER

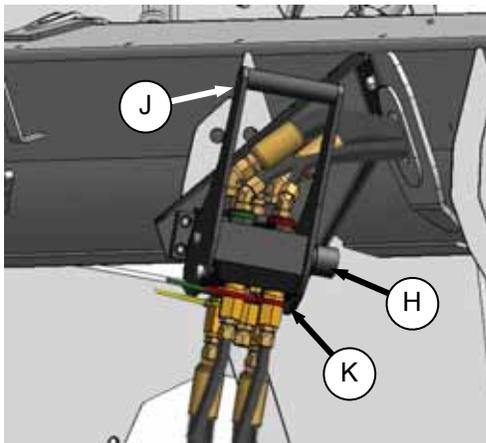
3. Shutdown engine and remove key.
4. Ensure hook (F) is securely attached.



- h. Connect reel hydraulics matching coloured plastic ties.
- i. If multi-coupler is installed, connect reel hydraulics as follows:



1. Push in lock button (H) and pull handle (J) up to half open position.
2. Clean couplers.



3. Position coupler (K) from combine onto receptacle and push handle (J) to engage pins on coupler.
4. Push handle to closed position until lock button (H) snaps out.

- j. Secure header to adapter as follows:



### CAUTION

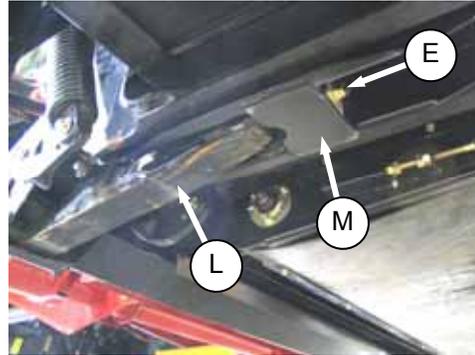
Always connect top link before fully raising header.

1. Raise adapter slowly, making sure adapter legs engage in header legs. Raise header fully, stop engine, and remove key.



### DANGER

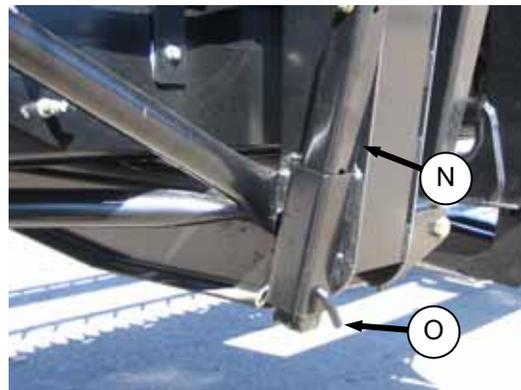
To avoid bodily injury or death from fall of raised machine, always engage lift cylinder stops before going under header for any reason. See your Combine Operator's Manual for instructions for use and storage of header lift cylinder stops.



2. Install bolts (E), spacers and lock washers removed at step e. to secure adapter arms (L) to header legs (M).

### IMPORTANT

Do not install bolt longer than 1½ inches (38 mm).



3. Return stand (N) to storage position and secure with pin (O).

*(continued next page)*

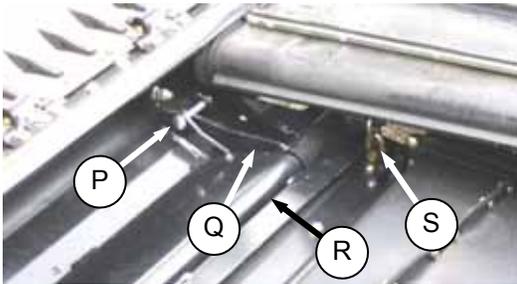
## FD70 HEADER/ADAPTER

- k. Place blocks under center section of header to keep it about 6 inches off the ground.
- l. Adjust header angle to shallowest setting (shortest centre link).
- m. Remove lift cylinder locks and lower header to blocks and allow the header wings to go into full frown mode.
- n. Attach adapter deck to header cutterbar as follows:

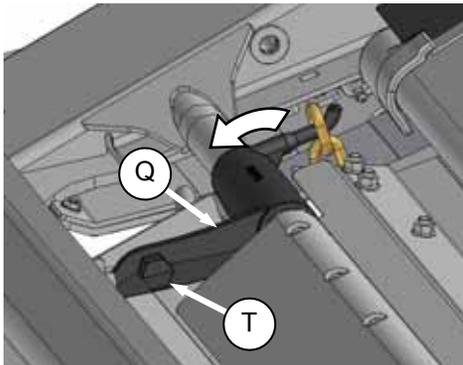


### WARNING

Keep hands clear of the area between guards and sickle at all times.

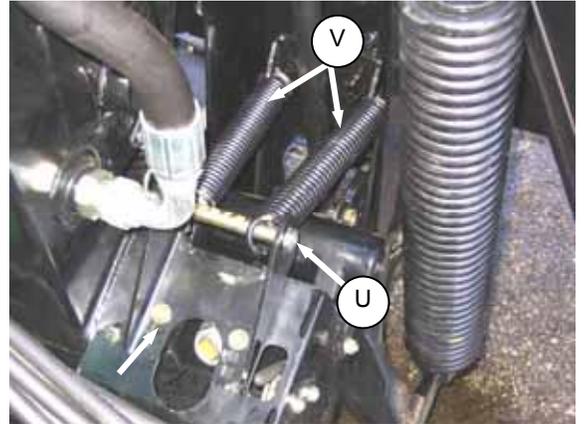


1. If installed, remove bolts (P) at either side of opening to allow attachment of adapter deck.
2. Position latches (Q) on transition pan (R) so that chain (S) can be attached to the latch hook.

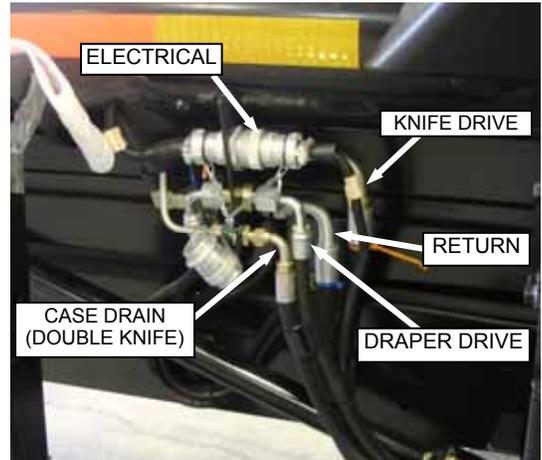


3. Rotate latch (Q) with a 15/16 wrench (or equivalent) on hex (T) to raise feed deck so that bolt (P) can be reinstalled. Repeat for other side of feed draper.

- o. Attach the wing float linkage to the adapter as follows:



1. Remove pin (U) from bracket if installed.
2. Reinstall pin with springs (V) and secure with hairpin.



- p. Connect knife and draper drive hydraulics as shown above, matching plastic cable ties.
- q. If quick disconnects are installed, connect as follows:
  1. Remove covers if installed from receptacles and hose ends.
  2. Check connectors and clean if required.
  3. Push hose connector onto mating receptacle until collar on receptacle snaps into lock position.

### NOTE

Ensure hoses are clear of driveline and adjacent structure.

(continued next page)

## FD70 HEADER/ADAPTER

- r. Attach electrical connector as follows:
  - 1. Remove cover on receptacle.
  - 2. Align lugs on connector with slots in receptacle, push connector onto receptacle and turn collar on connector to lock it in place.
  - 3. Attach cover to mating cover on combine wiring harness.
- s. Raise and lower header and reel a few times to allow trapped air to pass back to the reservoir.

### **NOTE**

*It is not necessary to bleed the system by loosening fittings.*

- t. Check float and if the header is level. If adjustments are required, refer to Section 7.3.5 Header Float, and Section 7.3.6 Header Levelling.

## OPERATION

### 7 OPERATION

#### 7.1 OWNER/OPERATOR RESPONSIBILITIES



#### CAUTION

- It is your responsibility to read and understand this manual completely before operating the windrower. Contact your dealer if an instruction is not clear to you.
- Follow all safety messages in the manual and on safety signs 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 windrower, 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.

#### 7.2 BREAK-IN PERIOD

After attaching adapter to combine for the first time, operate the machine slowly for 5 minutes, watching and listening FROM THE OPERATOR'S SEAT for binding or interfering parts.



#### CAUTION

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

#### NOTE

*Reel and side drapers will not operate until oil flow fills the lines.*

- a. Check oil level on sight gauge after 5 minutes. The lower sight should be full, and the upper sight should be empty with cutterbar just off ground. Refer to Section 8.8.1.1, Oil Level.
- b. Change hydraulic oil filter on adapter after 50 hours of operation. Refer to Section 8.8.2, Hydraulic Oil Filter.
- c. Change hydraulic oil filter on combine as recommended in combine Operator's Manual.
- d. Tighten any loose hardware after the first **5 hours** operation. Refer to Section 8.3, Recommended Torques.
- e. Change gearbox oil after 50 hours operation. Refer to Section 8.7.3.3, Changing Gearbox Lubricant.

## OPERATION

### 7.3 OPERATING PROCEDURES

#### 7.3.1 PRE-SEASON CHECK

Perform annual maintenance. See Section 8.13, Maintenance Schedule, and perform the following 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 windrower 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.

#### 7.3.2 DAILY CHECK

- a. 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 Section 8.8.4, Hose and Lines.*

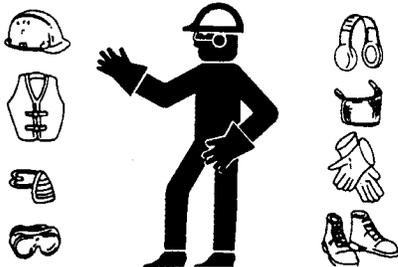
#### 7.3.3 PROPER OPERATION

Follow these safety precautions:



#### CAUTION

- 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
  - respirator or filter mask
  - 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. 
- Follow all safety and operational instructions given in your Operator's Manuals. If you do not have a combine manual, get one from your dealer and read it thoroughly.
- Never attempt to start the engine or operate the machine except from the combine seat.
- Check the operation of all controls in a safe clear area before starting work.
- 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.
- Operate only in daylight or good artificial light.

# OPERATION

## 7.3.4 OPERATING GUIDELINES

The following tables outline recommended adapter set-up guidelines, depending on your combine and crop. The recommendations cannot cover all conditions and if feeding problems develop with adapter operation, refer to Section 9, Troubleshooting for detailed information.

APPLICABLE COMBINES: All except New Holland CR, 960, 9060, 940, 9040.

CROP	FLIGHTING EXTENSIONS	STRIPPER BARS
Rice	Yes	Yes
Cereals	No	No

APPLICABLE COMBINES: New Holland CR, 960, 9060, 940, 9040.

CROP	FLIGHTING EXTENSIONS	STRIPPER BARS
All	Yes	Yes

### NOTE

*For special conditions, 20T, 22T, and 26T sprockets are available to change adapter feed auger speed. Consult your dealer.*

The following functions are adjusted through the adapter and are described in the following sections:

- Header Float
- Header Leveling
- Header Draper Speed
- Header Sickle Speed
- Feed Draper
- Auger

Refer to the D50 and D60 Harvest Header/FD70 FlexDraper Operator's Manual for the following adapter/header operating procedures:

- Header Angle
- Cutting Height

## 7.3.5 HEADER FLOAT

The machine will perform best with minimum extra weight on the header. Under normal conditions, approximately 75 lbf (337 N) force is required to lift the header at the diagonal brace. See Section 7.3.5.2 Checking Header Float.

### IMPORTANT

To avoid frequent breakage of sickle components, scooping soil, or soil build-up at cutterbar in wet conditions, header float should be set as light as possible without causing excessive bouncing. When float setting is light, it may be necessary to use a slower ground speed to avoid excessive bouncing and leaving a ragged cut.

### IMPORTANT

The stabilizer wheels may be used in conjunction with main float to minimize bouncing at the header ends and control cut height. Refer to the D50 and D60 Harvest Header / FD70 FlexDraper Operator's Manual for details.

### 7.3.5.1 Float Locks

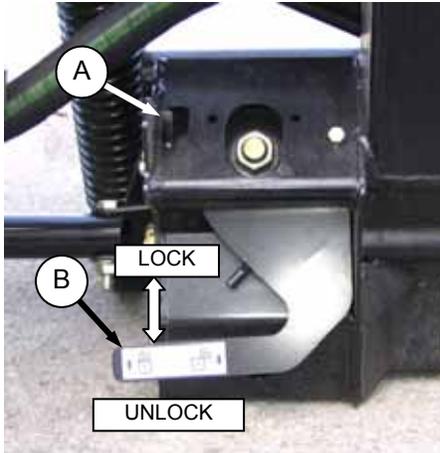
The header main float locks, lock and unlock the header float system.



The main float locks must be engaged when the header is being transported with the adapter attached so there is no relative movement between the adapter and header during transport. The float locks must also be locked during detachment from the combine to allow the feeder house to release the adapter. There are two locks, one on each side of the adapter.

*(continued next page)*

## OPERATION



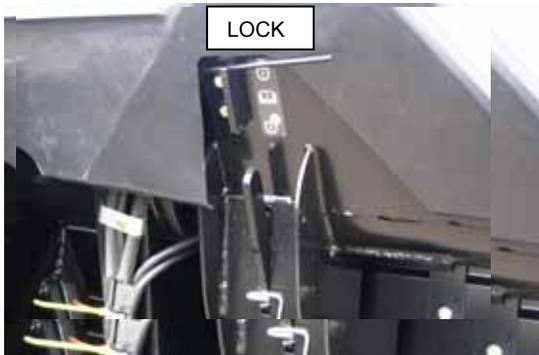
- Disengage main float locks by moving latch (A) away from adapter and moving lever (B) at each lock to lowest position. In this position, the header is unlocked and can float with respect to the adapter.
- Engage the main float locks by moving lever (B) up to its highest position. In this position, the header cannot move with respect to the adapter.

### 7.3.5.2 Checking Header Float

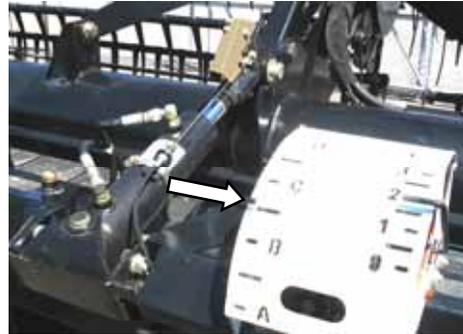


## CAUTION

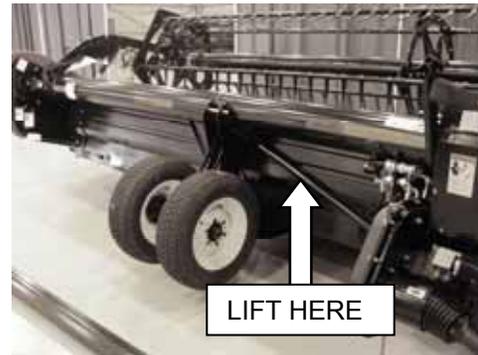
Stop engine and remove key from ignition before leaving operator's seat for any reason. A child or even a pet could engage an idling machine.



- If adjusting FD70 FlexDraper header float, ensure both wing float locks are engaged.
- Ensure both header float lock levers are down (UNLOCK).



- Set center link to mid-range (B to C on float/angle indicator if installed). Adjust cutterbar to 6 to 10 inches (150-250 mm) above the ground.
- If header is equipped with stabilizer wheels or slow speed transport wheels, raise them off the ground so they are supported by the header. Refer to D50 and D60 Harvest Header/FD70 FlexDraper Operator's Manual.



- Lift the header at the rear diagonal brace, or on the back-tube. The header should move up with approximately 75 lbf (334 N) force and then return to its original position.

## NOTE

Check movement of bellcranks at base of adapter. They should move forward when the header is lifted and then return to the original position.



(continued next page)

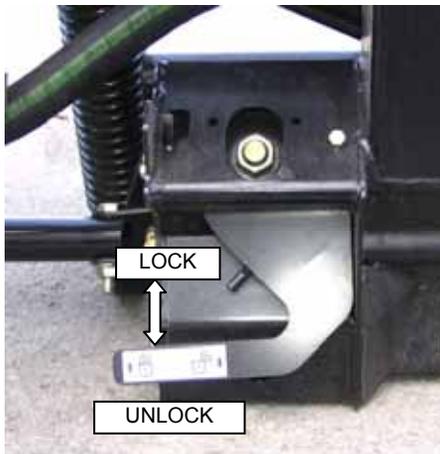
## OPERATION

- f. If excessive force is required, or the header does not return to its original position, the float requires adjusting. Refer to following Section 7.3.5.3, Adjusting Header Float – Normal, or 7.3.5.4, Adjusting Header Float – Cutterbar On Ground.

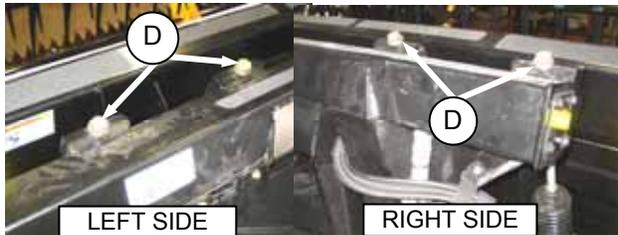
### 7.3.5.3 Adjusting Header Float - Normal



- a. If adjusting FD70 FlexDraper header float, ensure both wing float locks are engaged.



- b. Ensure both header float lock levers are down (UNLOCK).



- c. Tighten bolts (D) at both sides of adapter to increase float (lightens the header).  
d. Loosen bolts to decrease float (increases header weight).

### IMPORTANT

Turn each bolt pair equal amounts.

- e. The float is properly adjusted when:

- for **30, 35, and 40 ft single knife**; both sides of the header are adjusted to the same weight (approx. 75 lbf (334 N)).
- for **40 ft double knife**; RH side is slightly heavier (loosen RH side adjuster bolts (D) by 2 turns).

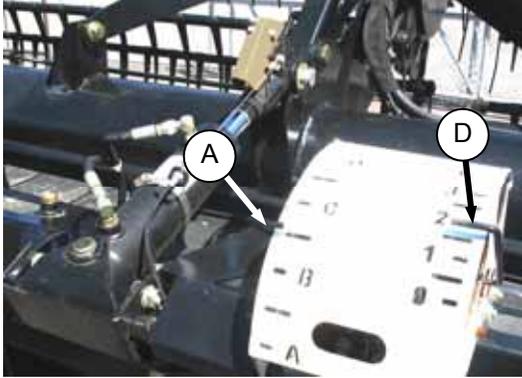
### IMPORTANT

Proper float adjustment in accordance with the above is critical for maintaining proper wing balance when cutting on the ground.

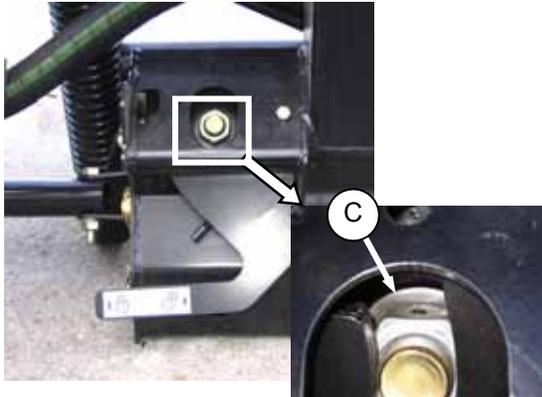
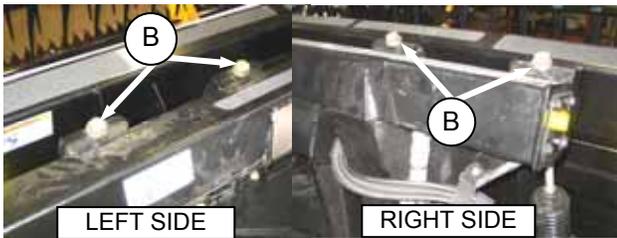
## OPERATION

### 7.3.5.4 Adjusting Header Float – Cutterbar On Ground

Set the header float as follows when working with the cutterbar on the ground.



- a. Set center link to mid-range position (B to C on float/angle indicator (A) if installed).



- b. Adjust float with the adjuster bolts (B) so that the washer (C) behind the down-stop nut is loose, then back off the adjuster bolts (B) two turns.
- c. Adjust feeder house height while watching float indicator (D) to set cutterbar down force (normally 2 on indicator). Lower feeder house height to increase ground pressure (decrease float). Indicator reading will increase.

#### NOTE

*Installation of the auto header height controller attachment is recommended for cutting on the ground if the combine is equipped to interface with it.*

- d. When cutting on ground, adjust header angle to achieve desired stubble height. AHHC indicates A for shallowest angle/higher stubble, D for steepest angle/lower stubble.
- e. In rocky fields, adjust skid shoes down to raise guards when operating at flattest header angle to minimize scooping rocks.
- f. Increase header height or decrease header angle to minimize pushing soil.

#### NOTE

*Header angle and reel fore-aft position changes do not significantly affect header flotation (down force).*

## OPERATION

### 7.3.6 HEADER LEVELLING

The adapter is factory set to provide the proper level for the header and should not normally require adjustment. If the header is not level, perform the following checks prior to adjusting the leveling linkages.

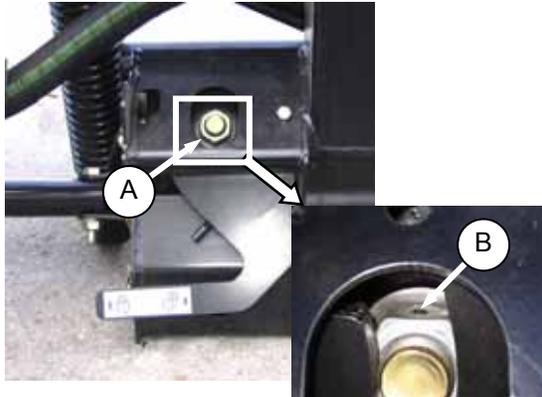
#### IMPORTANT

The adapter float springs are not used to level the header.

- Check combine tire pressures.
- Check that combine feeder house is level. Refer to combine Operator's Manual.
- Check that top of adapter is level with combine axle.

Make fine adjustments to header leveling as follows:

- a. Park combine on level ground.
- b. Check float lock is disengaged (header can float).
- c. Check and set float adjustment. Refer to previous section.
- d. Set header approximately 6 inches (150 mm) off ground and check that float linkage is against down stops. Note high and low end of header.

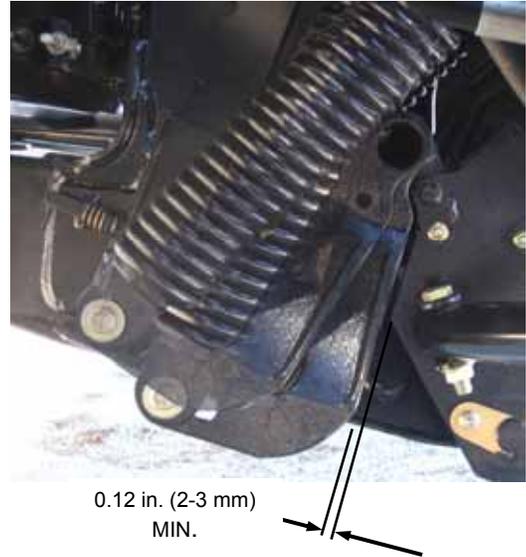


- e. Adjust level with nut (A) at each float lock as follows. Use small adjustments (1/4 - 1/2 turn) and adjust each side equally but in opposite directions:

#### NOTE

Set screw (B) does not require loosening for adjustments up to 1/2 turn of nut (A).

1. Turn low-side nut clockwise to raise header.
2. Turn high-side nut counter-clockwise to lower header.



#### NOTE

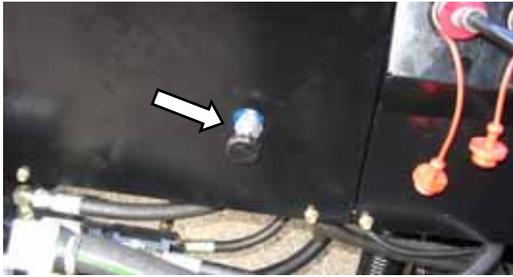
Adjustment of more than two turns in either direction may adversely affect header float. Always be sure there is a minimum 2 to 3 mm (1/8") clearance between frame and back of bellcrank lever as shown.

#### NOTE

Float does not require adjustment after levelling header.

## OPERATION

### 7.3.7 HEADER DRAPER SPEED



Speed of the header or side drapers is adjusted at the flow control on the combine adapter. Turn knob four turns from closed to begin and then adjust draper speed to achieve good feeding of crop onto adapter draper. Excessive draper speed will reduce draper life.

#### NOTE

*If sufficient draper speed cannot be achieved, a possible cause is low relief pressure. Refer to Technical Service Manual for checking and adjusting relief pressure.*

### 7.3.8 HEADER SICKLE SPEED

The header sickle drive is driven by the adapter mounted hydraulic pump. The sickle drive speed is factory set to match the nominal speed of your combine feeder house.

#### IMPORTANT

For variable speed feeder houses, this will be the **minimum** speed setting. If desired to operate variable speed feeder house at greater than minimum speed, flow to the sickle drive motor must be reduced to prevent excessive speeds which could result in premature sickle failure. If adjustment is required, contact your MacDon dealer or refer to the CA20 Combine Adapter Technical Manual.

Refer to the D50 and D60 Harvest Header/FD70 FlexDraper Operator's Manual for detailed procedures on sickle operation.

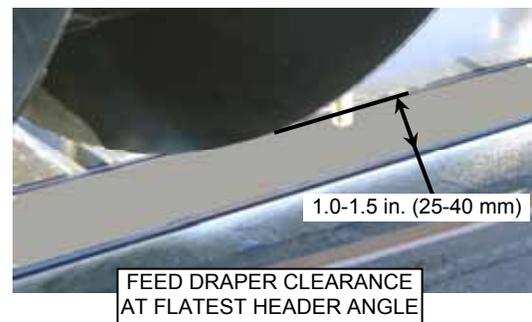
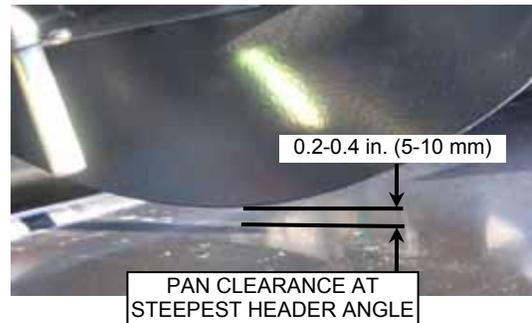
### 7.3.9 ADAPTER FEED DRAPER

The adapter feed draper is driven by the adapter mounted hydraulic pump. The speed is factory set and cannot be adjusted.

### 7.3.10 AUGER SPEED

The adapter auger is chain driven from a sprocket that is mounted on the input shaft from the combine, and which is enclosed in the drive gearbox. The speed is determined by the combine input shaft and is matched to each particular combine, so no adjustment is necessary. However, optional drive sprockets are available to change the auger speed to optimize auger performance.

### 7.3.11 AUGER PAN CLEARANCE



Adapters are factory set to the proper auger clearances to the pan and feed draper. See illustration.

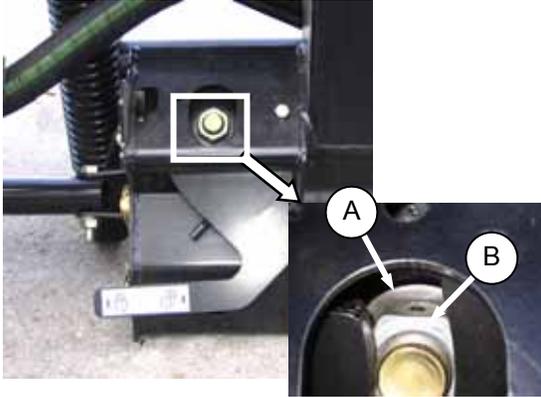
It is important that these clearances are maintained. Too little clearance may result in the tines or flights contacting and damaging the draper or feed pan under certain orientations of the header. Look for evidence of contact when greasing the adapter.

Should adjustment to the auger be necessary, proceed as follows:

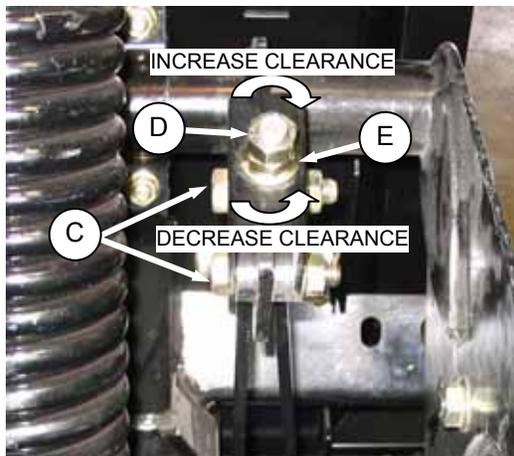
- a. Extend center link to maximum for steepest header angle and fully lower the header.

*(continued next page)*

## OPERATION



- b. Check that adapter float linkage is on downstops (washer (A) and nut (B) cannot be moved).



- c. Loosen two bolts (C) and jam nut (D).  
d. Turn nut (E) clockwise to raise auger and increase pan/drafter clearance.  
e. Repeat for other end of auger.  
f. Check clearances and re-adjust as required.  
g. Tighten bolts (C) and jam nut (D) on both ends of auger.

## 7.4 STORAGE

Do the following at the end of each operating season:

- a. Clean the adapter thoroughly.



### CAUTION

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

- b. Store the machine in a dry, protected place if possible. If stored outside, always cover with a waterproof canvas or other protective material.  
c. If machine is stored outside, remove draper and store in a dark, dry place.  
d. Lower adapter onto blocks to keep off the ground.  
e. Repaint all worn or chipped painted surfaces to prevent rust.  
f. Lubricate the adapter thoroughly, leaving excess grease on fittings to keep moisture out of bearings. Apply grease to exposed threads, cylinder rods and sliding surfaces of components. Oil sickle components to prevent rust.  
g. Check for worn or broken components and repair or order replacement from your dealer. Attention to these items right away will save time and effort at beginning of next season.  
h. Replace or tighten any missing or loose hardware. Refer to Section 8.3, Recommended Torques.

## MAINTENANCE AND SERVICE

### 8 MAINTENANCE AND SERVICE

The following instructions are provided to assist the operator in the maintenance of the CA20 Combine Adapter. Detailed maintenance, service, and parts information are contained in the Service Instruction Manual and Parts Catalogue that are available from your dealer.

#### 8.1 PREPARATION FOR SERVICING



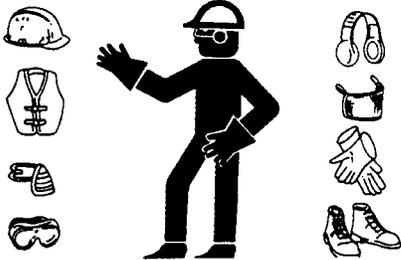
#### CAUTION

To avoid personal injury, before servicing adapter/header or opening drive covers:

- Fully lower the header. If necessary to service in the raised position, always engage lift cylinder stops.
- Disengage drives.
- Stop engine and remove key.
- Engage park brake.
- Wait for all moving parts to stop.

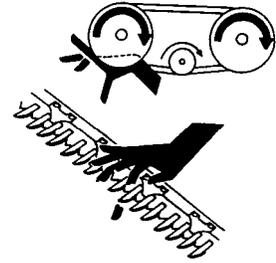
#### 8.2 RECOMMENDED SAFETY PROCEDURES

- Follow all recommendations in your Adapter and Combine Operator's Manuals.
- Wear close-fitting clothing and cover long hair. Never wear dangling items such as scarves or bracelets.



- Wear protective shoes with slip-resistant soles, a hard hat, protective glasses or goggles and heavy gloves.

- 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 sickle) to move. Stay clear of driven components at all times.



- Be prepared if an accident should occur. Know where the first aid kit and fire extinguishers are located and how to use them.
- Keep the service area clean and dry. Wet or oily floors are slippery. Wet spots can be dangerous when working with electrical equipment.
- Be sure all electrical outlets and tools are properly grounded.
- Use adequate light for the job at hand.
- Replace all shields removed or opened for service.
- Use only service and repair parts made or approved by the equipment manufacturer. Substituted parts may not meet strength, design or safety requirements.
- Keep the machine clean. Never use gasoline, naphtha or any volatile material for cleaning purposes. These materials may be toxic and/or flammable.



# MAINTENANCE AND SERVICE

## 8.3 RECOMMENDED TORQUES

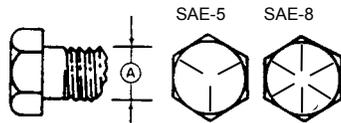
### 8.3.1 BOLTS

- Tighten all bolts to the torques specified in chart unless otherwise noted throughout this manual
- Check tightness of bolts periodically, using bolt torque chart as a guide.
- Replace hardware with the same strength bolt.
- Torque figures are valid for non-greased or non-oiled threads and heads unless otherwise specified. Do not grease or oil bolts or capscrews unless specified in this manual. When using locking elements, increase torque values by 5%.

#### 8.3.1.1 SAE Bolts

BOLT DIA. "A"	NC BOLT TORQUE*			
	SAE 5		SAE 8	
	lbf-ft	N-m	lbf-ft	N-m
1/4"	9	12	11	15
5/16"	18	24	25	34
3/8"	32	43	41	56
7/16"	50	68	70	95
1/2"	75	102	105	142
9/16"	110	149	149	202
5/8"	150	203	200	271
3/4"	265	359	365	495
7/8"	420	569	600	813
1"	640	867	890	1205

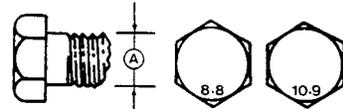
\* Torque categories for bolts and capscrews are identified by their head markings.



#### 8.3.1.2 Metric Bolts

BOLT DIA. "A"	NC BOLT TORQUE*			
	8.8		10.9	
	lbf-ft	N-m	lbf-ft	N-m
M3	0.4	0.5	1.3	1.8
M4	2.2	3	3.3	4.5
M5	4	6	7	9
M6	7	10	11	15
M8	18	25	26	35
M10	37	50	52	70
M12	66	90	92	125
M14	103	140	148	200
M16	166	225	229	310
M20	321	435	450	610
M24	553	750	774	1050
M30	1103	1495	1550	2100
M36	1917	2600	2710	3675

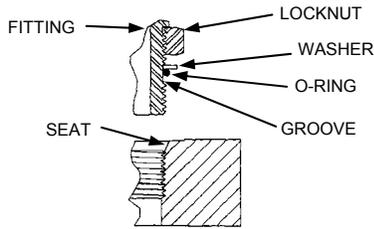
\* Torque categories for bolts and capscrews are identified by their head markings.



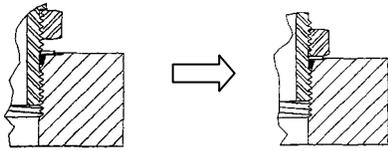
## MAINTENANCE AND SERVICE

### 8.3.2 HYDRAULIC FITTINGS

#### 8.3.2.1 O-ring Type



- a. Inspect O-ring and seat for dirt or obvious defects.
- b. On angle fittings, back off the lock nut until washer bottoms out at top of groove.

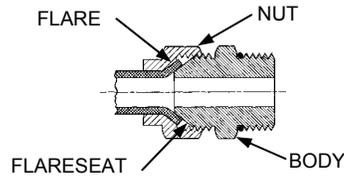


- c. Hand tighten fitting until back up washer or washer face (if straight fitting) bottoms on face and O-ring is seated.
- d. Position angle fittings by unscrewing no more than one turn.
- e. Tighten straight fittings to torque shown.
- f. Tighten angle fittings to torque shown in the following table while holding body of fitting with a wrench.

THD SIZE (in.)	NUT SIZE ACROSS FLATS (in.)	TORQUE VALUE*		RECOMMENDED TURNS TO TIGHTEN (AFTER FINGER TIGHTENING)	
		lbf-ft	N-m	Flats	Turns
3/8	1/2	6	8	2	1/3
7/16	9/16	9	12	2	1/3
1/2	5/8	12	16	2	1/3
9/16	11/16	18	24	2	1/3
3/4	7/8	34	46	2	1/3
7/8	1	46	62	1-1/2	1/4
1-1/16	1-1/4	75	102	1	1/6
1-3/16	1-3/8	90	122	1	1/6
1-5/16	1-1/2	105	142	3/4	1/8
1-5/8	1-7/8	140	190	3/4	1/8
1-7/8	2-1/8	160	217	1/2	1/12

\* The torque values shown are based on lubricated connections as in reassembly.

#### 8.3.2.2 Flare Type



- a. Check flare and flare seat for defects that might cause leakage.
- b. Align tube with fitting before tightening.
- c. Lubricate connection and hand tighten swivel nut until snug.
- d. To prevent twisting the tube(s), use two wrenches. Place one wrench on the connector body and with the second tighten the swivel nut to the torque shown.

TUBE SIZE O.D. (in.)	NUT SIZE ACROSS FLATS (in.)	TORQUE VALUE*		RECOMMENDED TURNS TO TIGHTEN (AFTER FINGER TIGHTENING)	
		lbf-ft	N-m	Flats	Turns
3/16	7/16	6	8	1	1/6
1/4	9/16	9	12	1	1/6
5/16	5/8	12	16	1	1/6
3/8	11/16	18	24	1	1/6
1/2	7/8	34	46	1	1/6
5/8	1	46	62	1	1/6
3/4	1-1/4	75	102	3/4	1/8
7/8	1-3/8	90	122	3/4	1/8

\* The torque values shown are based on lubricated connections as in reassembly.

## MAINTENANCE AND SERVICE

### 8.4 RECOMMENDED FLUIDS AND LUBRICANTS

#### 8.4.1 LUBRICANTS

LUBRICANT	SPEC	DESCRIPTION	USE
Grease	SAE Multi-Purpose.	High Temp. Extreme Pressure (EP2) Performance With 1% Max Molybdenum Disulphide (NLGI Grade 2). Lithium Base	As Required Unless Otherwise Specified
		High Temp. Extreme Pressure (EP) Performance With 10% Max Molybdenum Disulphide (NLGI Grade 2). Lithium Base	Driveline Slip-Joints
Hydraulic Oil	SAE 15W40	Compliant With SAE Specs For API Class SJ And CH-4 Engine Oil	Adapter Drive Systems
Gear Lubricant	SAE 85W-140	API Service Class GL-5	Main Drive Gear Box

#### 8.4.2 CAPACITIES

ITEM	CAPACITY
Main Gearbox	5 Pints (2.5 liters)
Hydraulic Reservoir	16 Gallons U.S. (60 liters)

#### 8.4.3 STORAGE

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

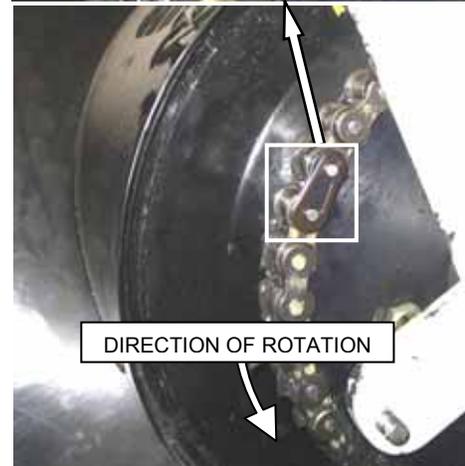
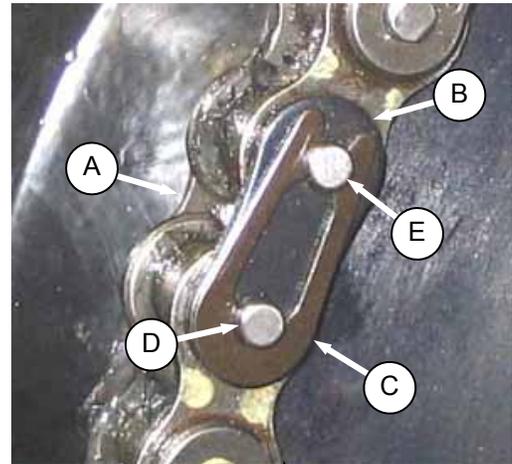
### 8.5 ROLLER CHAIN INSTALLATION



#### CAUTION

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.

- Locate ends of chain on sprocket.



- Install pin connector (A) into chain, preferably from the sprocket backside.
- Install connector (B) onto pins.
- Install spring clip (C) onto front pin (D) with closed end of clip in direction of sprocket rotation.
- Locate one leg of clip in groove of aft pin (E).
- Press other leg of spring clip over face of aft pin (E) until it slips into groove. Do not press clip lengthwise from closed end.
- Ensure clip is seated in grooves of pins.

## MAINTENANCE AND SERVICE

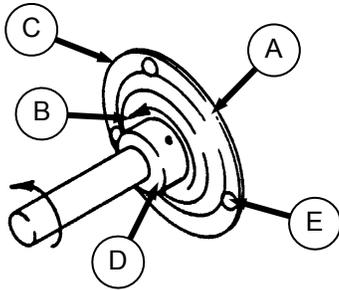
### 8.6 SEALED BEARING INSTALLATION



#### CAUTION

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.

- a. Clean shaft and coat with rust preventative.



- b. Install flangette (A), bearing (B), second flangette (C) and lock collar (D).

#### NOTE

*The locking collar is only on one side of the bearing.*

- c. Install (but do not tighten) the flangette bolts (E).
- d. 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 set screw in the collar.*

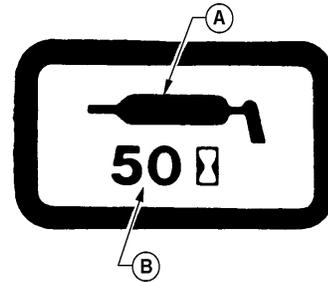
- e. Tighten the flangette bolts.
- f. Loosen the flangette bolts on the mating bearing one turn and re-tighten. This will allow the bearing to line up.

### 8.7 LUBRICATING THE ADAPTER



#### CAUTION

To avoid personal injury, before servicing adapter or opening drive covers, follow procedures in Section 8.1, Preparation for Servicing.



SAMPLE GREASE DECAL

Refer to Section 8.4, Recommended Lubricants for recommended lubricants.

#### 8.7.1 GREASING REQUIREMENTS

##### 8.7.1.1 Procedure

- a. Wipe grease fitting with a clean cloth before greasing, to avoid injecting dirt and grit.
- b. Inject grease through fitting with grease gun until grease overflows fitting, except where noted.
- c. Leave excess grease on fitting to keep out dirt.
- d. Replace any loose or broken fittings immediately.
- e. If fitting will not take grease, remove and clean thoroughly. Also clean lubricant passageway. Replace fitting if necessary.

##### 8.7.1.2 Lubrication Points

Greasing points that have greasing intervals of 50 hours or less are marked on the machine by decals showing a grease gun (A), and grease interval (B) in hours of operation. Greasing points that have greasing intervals greater than 50 hours are not marked.

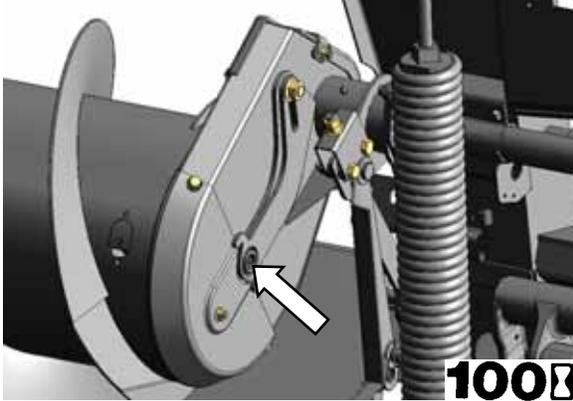
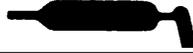
Log hours of operation and use the "Maintenance Checklist" provided to keep a record of scheduled maintenance. Refer to Section 8.13, Maintenance Schedule.

Refer to the illustrations on the following pages for identifying the various locations that require lubrication.

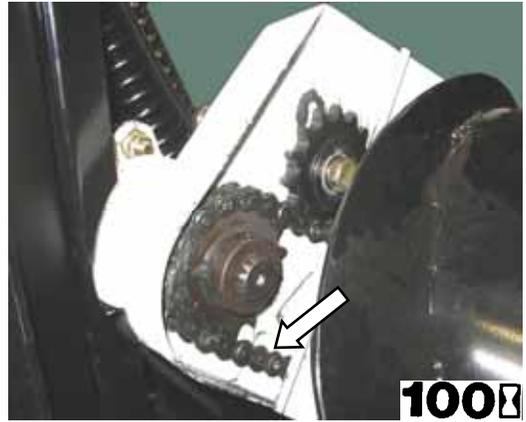
# MAINTENANCE AND SERVICE

## 8.7.1 GREASING (Cont'd)

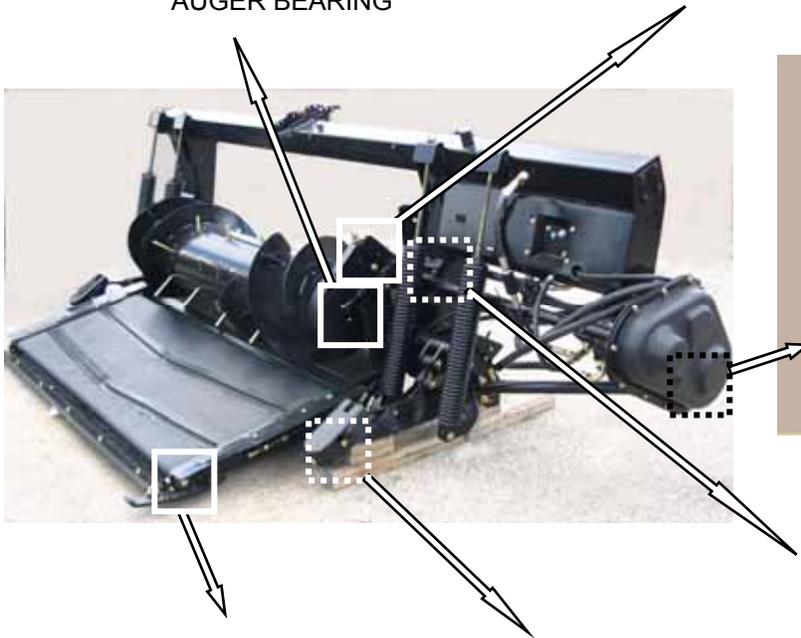
High Temp. Extreme Pressure (EP2) Performance With 1% Max Molybdenum Disulphide (NLGI Grade 2).Lithium Base



AUGER BEARING



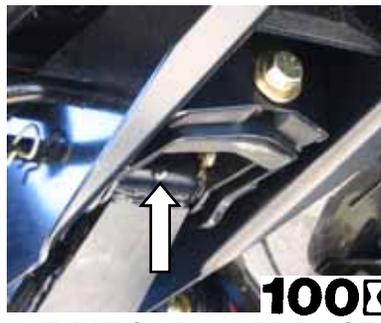
AUGER DRIVE CHAIN  
SEE SECTION 8.7.2



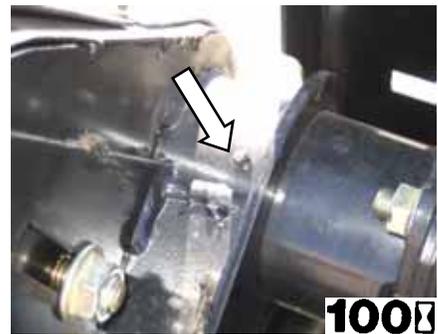
MAIN DRIVE GEARBOX  
SEE SECTION 8.7.3



IDLER ROLLER



VIBRATION DAMPER PIVOT  
BOTH SIDES

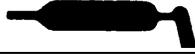


AUGER DRIVE-SHAFT

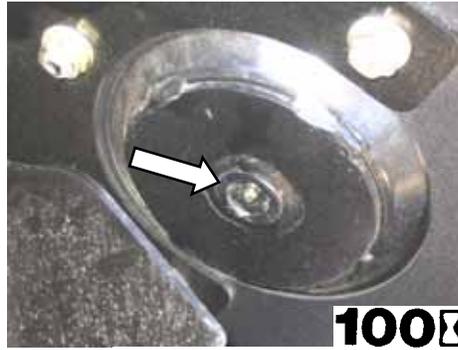
# MAINTENANCE AND SERVICE

## 8.7.1 GREASING (Cont'd)

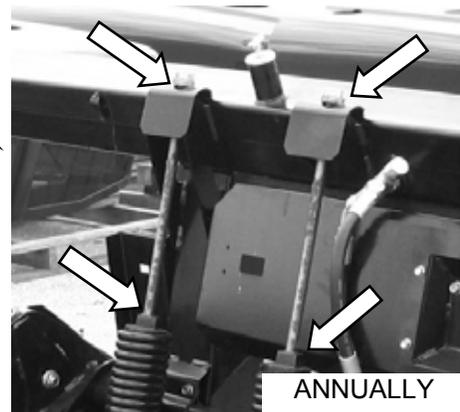
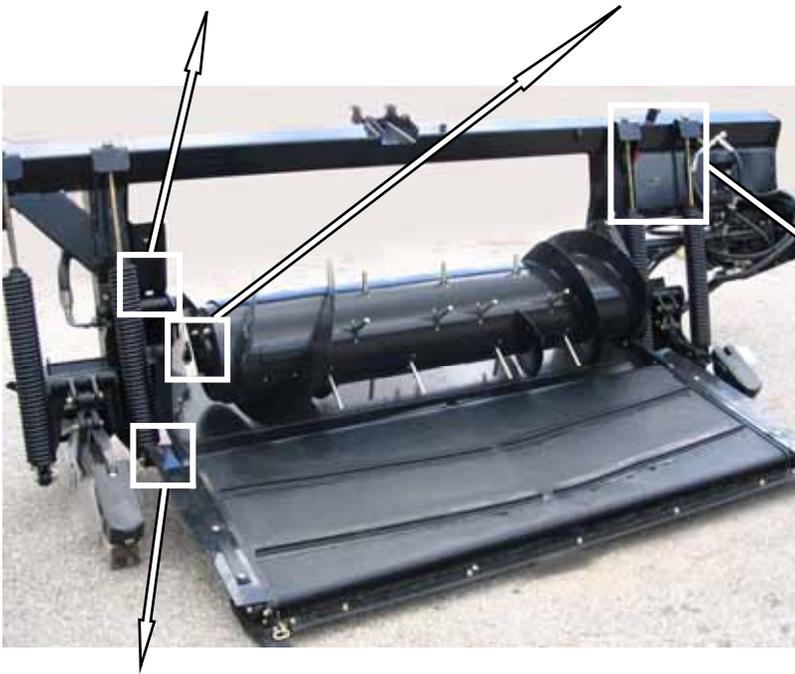
High Temp. Extreme Pressure (EP2) Performance With 1% Max Molybdenum Disulphide (NLGI Grade 2).Lithium Base



AUGER PIVOT – BOTH SIDES



AUGER BEARING



FLOAT ADJUSTERS  
2 PLCS, BOTH SIDES



DRIVE ROLLER BEARING

# MAINTENANCE AND SERVICE

## 8.7.1 GREASING (Cont'd)

High Temp. Extreme Pressure (EP2) Performance With 1% Max Molybdenum Disulphide (NLGI Grade 2).Lithium Base



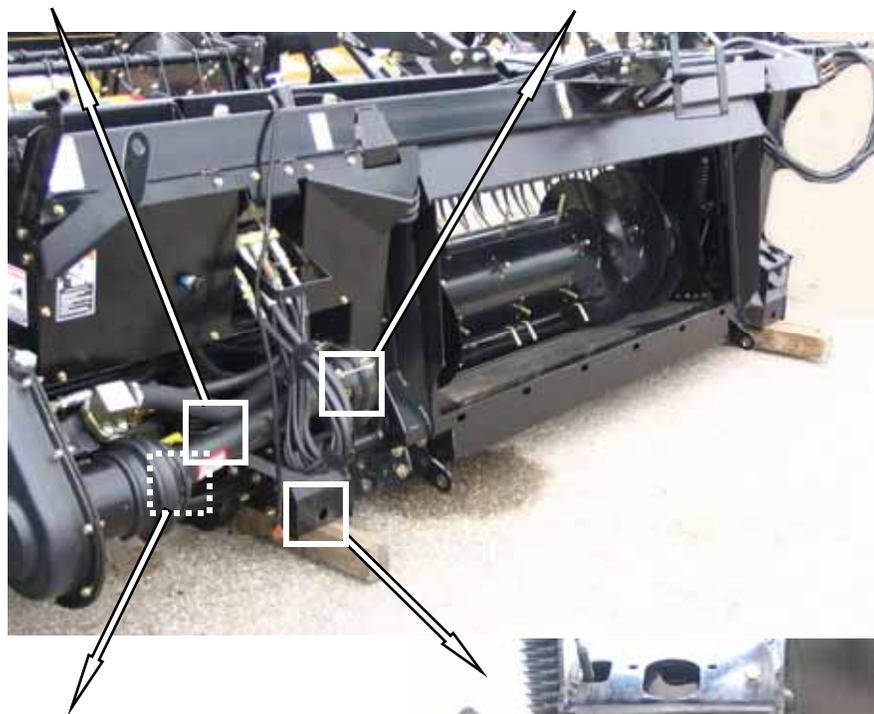
10% MOLY GREASE IS RECOMMENDED FOR DRIVELINE SHAFT SLIP JOINT ONLY



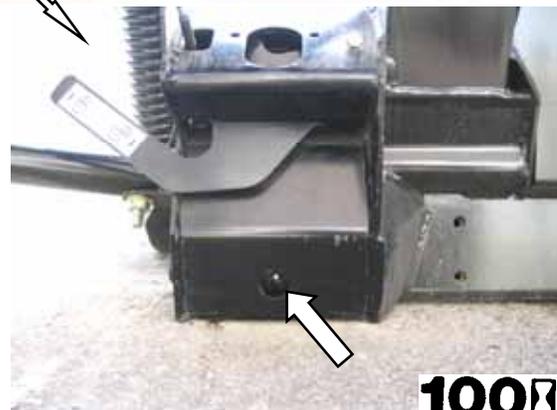
DRIVE-LINE SLIP JOINT



DRIVE UNIVERSAL – (2 PLCS.)



GUARD – (2 PLCS.)

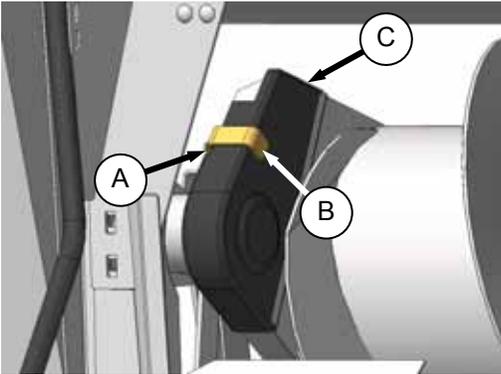


FLOAT PIVOT – (2

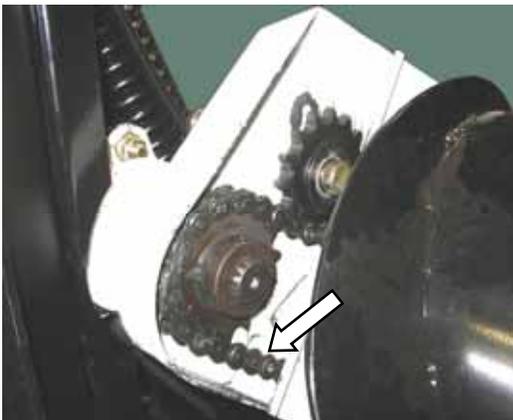
## MAINTENANCE AND SERVICE

### 8.7.2 AUGER DRIVE CHAIN LUBRICATION

Lubricate auger drive chain every 100 hours. This can be done with the adapter attached to the combine, but it is easier if the adapter is detached. Refer to following illustration and proceed as follows:



- a. Loosen nut (A) and remove clip (B) and cover (C).



- b. Liberally apply grease to chain.
- c. Reinstall cover (B) with clip (C) and tighten nut (A).

### 8.7.3 MAIN DRIVE GEARBOX LUBRICATION

#### 8.7.3.1 Oil Level

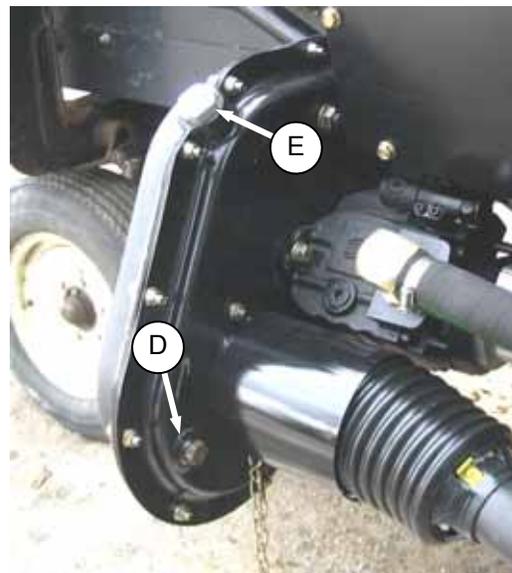
Check oil level every 100 hours as follows:



#### CAUTION

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.

- a. Set cutterbar to working position.



- b. Remove drain plug (D). Level should be to bottom of drain hole.
- c. Check plug for accumulation of filings, and clean if necessary.
- d. Replace drain plug and add oil if required. See next section.

#### 8.7.3.2 Adding Oil

- a. Lower cutterbar to ground. Gearbox must be in working position.
- b. Remove drain plug (D) and filler plug (E).
- c. Add SAE 85W-140 oil at (E) until it runs out of drain hole.
- d. Replace drain plug and filler plug.

## MAINTENANCE/SERVICE

### 8.7.3.3 Changing Gearbox Lubricant

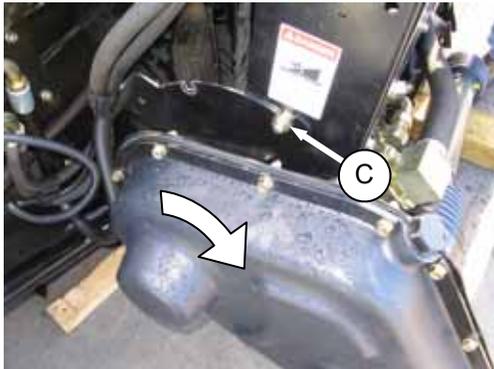
#### NOTE

Change main drive gearbox lubricant after the first 50 hours of operation and every 1000 hours (or 3 years) thereafter.

- a. Lower cutterbar to ground.
- b. Position gearbox drain to lowest point as follows:



1. Remove bolt (A) securing brace (B) to gearbox and lower brace away from gearbox.



2. Loosen nut (C) and move bolt out of working position slot. Rotate gearbox into header until drain (D) is at lowest point.
- c. Place a suitable container (approx. 1 US gallon (4 liters)) under gearbox drain to collect oil.



- d. Remove drain plug (D) and filler plug (E) and allow oil to drain.
- e. Reposition gearbox to working position, tighten bolt (C) and reinstall brace (B).
- f. Add SAE 85W-140 oil at (E) until it runs out of drain hole (D). Gearbox holds approximately 5 pints U.S. (2.5 liters).
- g. Replace drain plug and filler plug.

## MAINTENANCE/SERVICE

### 8.8 HYDRAULICS

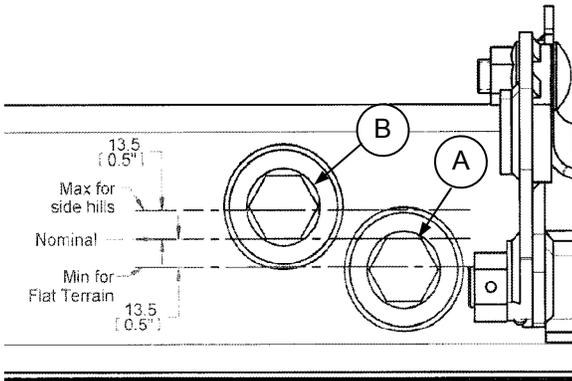
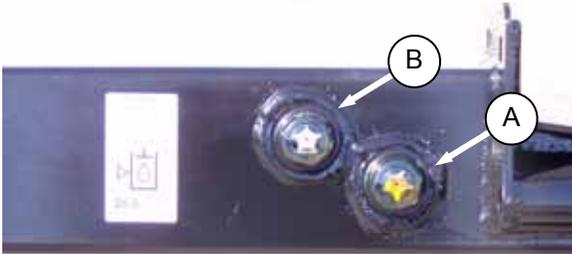
The CA20 Combine Adapter's hydraulic system provides oil for the header draper and knife drives as well as the adapter feed draper. Reel hydraulics are provided by the combine.

#### 8.8.1 RESERVOIR

The adapter frame is used as a reservoir. Refer to Section 8.4, Recommended Fluids and Lubricants for proper oil.

##### 8.8.1.1 Oil Level

Check oil level every 25 hours at sights (A) and (B) with cutterbar just touching ground. Check when oil is cold and with center link retracted.



**Nominal – Normal Terrain:** Maintain level so lower sight (A) is full and upper sight (B) is empty.

**Maximum – Hilly Terrain:** Maintain level so sight (A) is full and sight (B) is up to 1/2 filled.

**Minimum – Level Ground:** For slopes of 6° or less, oil level may be kept slightly lower if desired. Maintain level so sight (A) is ½ filled or higher.

#### NOTE

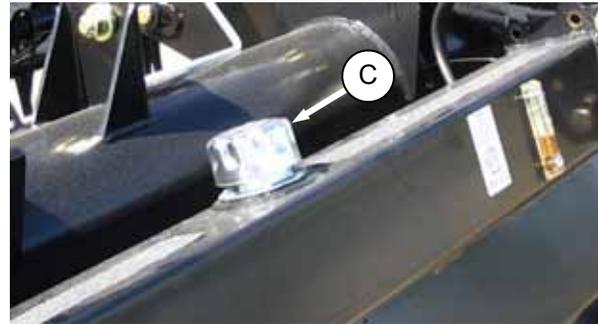
When ambient temperatures are above 35° C (95° F), to prevent overflow at breather under operating temperatures, it may be necessary to lower oil level slightly.

##### 8.8.1.2 Adding Hydraulic Oil



#### CAUTION

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.



- Turn filler cap (C) counterclockwise until loose and remove cap.
- Add warm (room temperature) SAE 15W-40 oil to required level. Refer to Section 8.4, Recommended Fluids and Lubricants for proper oil.

#### IMPORTANT

Warm (room temperature) oil will flow through the screen better than cold oil. **DO NOT REMOVE THE SCREEN.**

- Reinstall filler cap. Hand tighten.

## MAINTENANCE/SERVICE

### 8.8.1.3 Changing Hydraulic Oil Reservoir

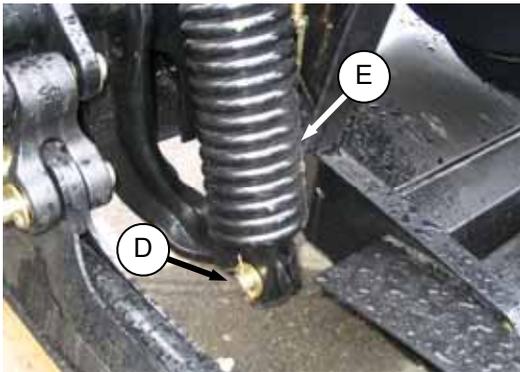
#### NOTE

Change hydraulic oil every 1000 hours or 3 years.



There is a drain plug at the bottom of each side frame.

- Detach header from adapter. Refer to Section 6 Header/Adapter Disassembly and Assembly.
- Detach adapter from combine. Support adapter on blocks. Refer to Section 5 Adapter Attachment/Detachment On Combine.
- Place a suitable container (at least 16 gal. US) under adapter drain to collect oil.
- For access to the drain plugs, remove pin (D) from lower end of float spring (E) and move float spring away from work area.



#### NOTE

If float spring is tensioned, turn adjuster bolts as required. Section 7.3.5 Header Float.



- Using a 1½" hex socket with extension, remove drain plug (F).
- Replace drain plugs (qty 2) when reservoir is empty and fill with 16 gallons U.S. (60 liters) of clean SAE 15W-40 oil. Refer to previous section for filling procedures.
- Reposition float springs (E) and secure with pins (D).
- Readjust float spring tension if released as per above note.

## MAINTENANCE/SERVICE

### 8.8.2 HYDRAULIC OIL FILTER

#### NOTE

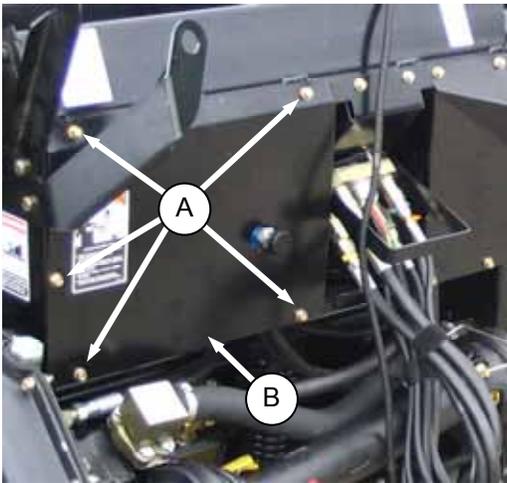
Change hydraulic oil filter after the first 50 hours of operation and every 250 hours thereafter. Part #151975 can be obtained from your dealer.

To change the hydraulic oil filter, refer to following illustrations and proceed as follows:

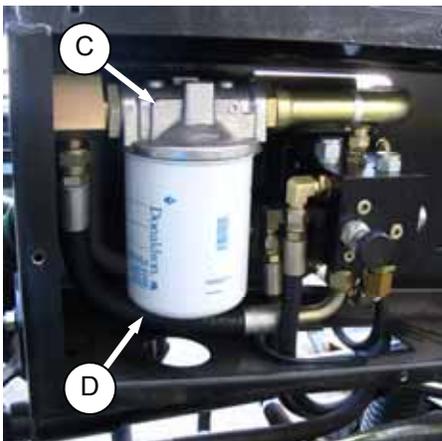


#### CAUTION

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.



- a. Remove five screws (A) and remove panel (B).



- b. Clean around filter head (C).  
c. Remove spin-off filter (D) and clean gasket surface of filter head.  
d. Apply a thin film of clean oil to the gasket on new filter.

- e. Turn the filter onto the mount until gasket contacts filter head. Tighten filter an additional  $\frac{1}{2}$  to  $\frac{3}{4}$  turn by hand.

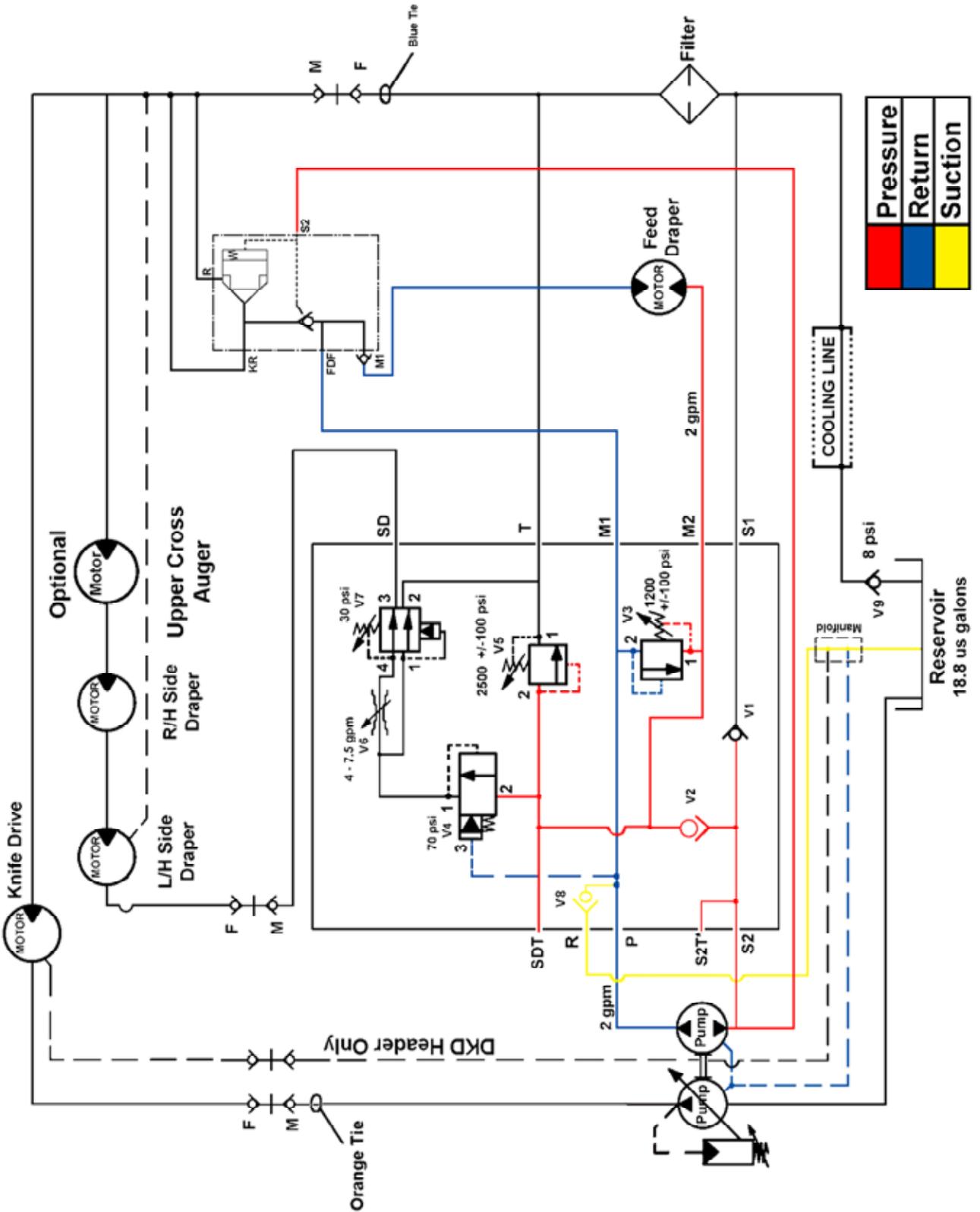
#### IMPORTANT

Do not use a filter wrench to install the filter. Over-tightening can damage gasket and filter.

- f. Reinstall panel (B) with screws (A).

# MAINTENANCE/SERVICE

## 8.8.3 HYDRAULIC SCHEMATIC



Pressure
Return
Suction

## MAINTENANCE/SERVICE

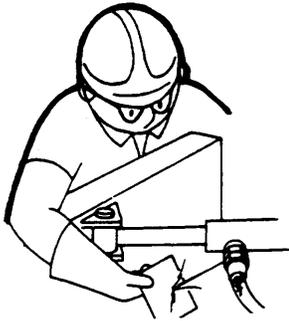
### 8.8.4 HOSES AND LINES

Check hydraulic hoses and lines daily for signs of leaks.



#### WARNING

- Avoid high-pressure fluids. Escaping fluid can penetrate the skin causing serious injury. Relieve pressure before disconnecting hydraulic lines. Tighten all connections before applying pressure. Keep hands and body away from pin-holes and nozzles which eject fluids under high pressure.



- If ANY fluid is injected into the skin, it must be surgically removed within a few hours by a doctor familiar with this type of injury or gangrene may result. 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.

### 8.9 MAIN DRIVE

#### 8.9.1 DRIVE-LINE REMOVAL

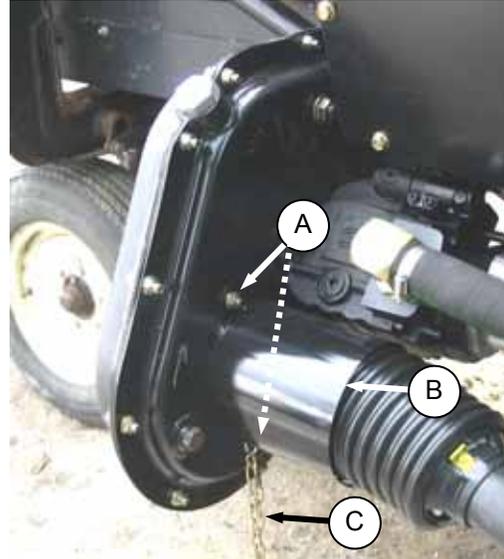
The main drive-line normally remains attached to the adapter and stored on the hook provided when not in use.



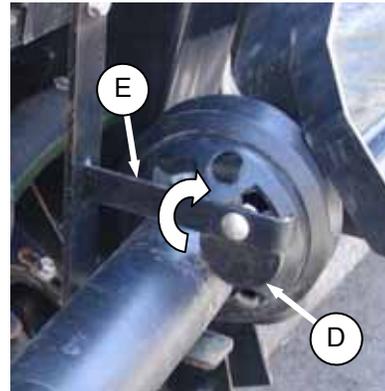
#### CAUTION

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.

- a. If adapter is attached to the combine, remove the drive-line from the combine by pulling quick disconnect collar to release driveline yoke at combine shaft.



- b. Remove two nuts (A) attaching shield (B) to gearbox.
- c. Slide shield over poly drive-line shield to expose quick disconnect on gearbox. Do not disconnect tether (C).
- d. Pull quick disconnect collar to release drive-line yoke and pull drive-line off shaft.
- e. Slide shield (B) off the drive-line.



- f. Rotate disc (D) on adapter drive-line storage hook (E) and remove drive-line from hook.

## MAINTENANCE/SERVICE

### 8.9.2 DRIVE-LINE INSTALLATION

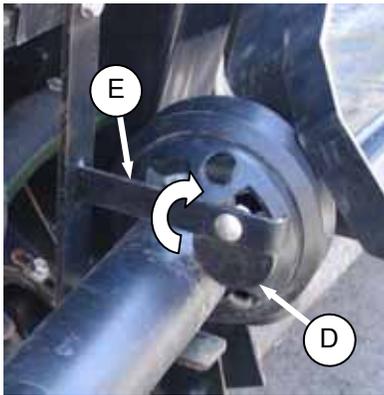
#### IMPORTANT

If combine output shaft splines match adapter input shaft splines, ensure drive-line is installed with longer guard at adapter gearbox end.

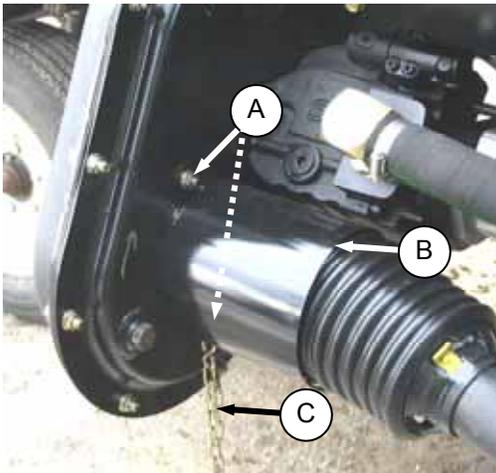


#### CAUTION

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.



- Slide driveshaft in hook (E) so that disc (D) drops to secure driveshaft.



- Slide shield (B) over drive-line.
- Locate drive-line quick disconnect onto adapter gearbox shaft, pull back collar and slide onto shaft until yoke locks onto shaft. Release the collar.
- Position shield (B) on gearbox and secure with nuts (A).
- Reconnect other end to combine if necessary.

### 8.9.3 GUARD REMOVAL

The main drive-line guard normally remains attached to the drive-line. If removal is required for maintenance, refer to illustration and proceed as follows:

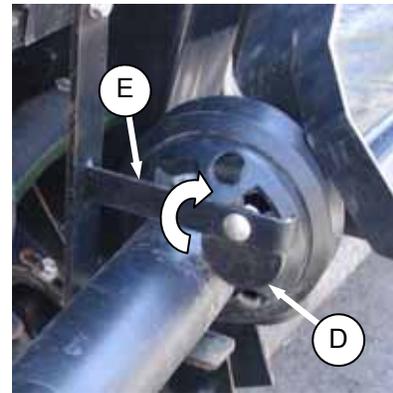


#### CAUTION

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 drive-line does not need to be removed from the adapter in order to remove the drive-line guard.



- Rotate disc (D) on adapter drive-line storage hook (E) and remove drive-line from hook.



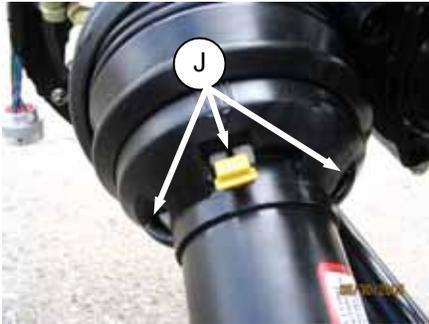
- Lift combine end of drive-line (F) from hook and extend drive-line until it separates. Hold adapter end of drive-line to prevent it from dropping and hitting the ground.

*(continued next page)*

## MAINTENANCE/SERVICE

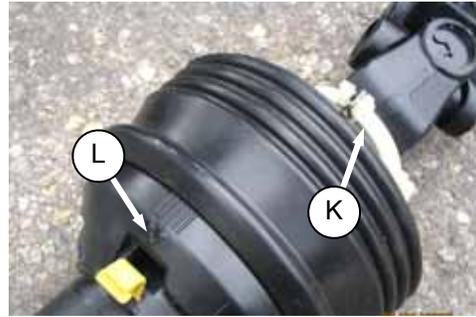


- c. Release grease zerk/lock (G) with a screwdriver.

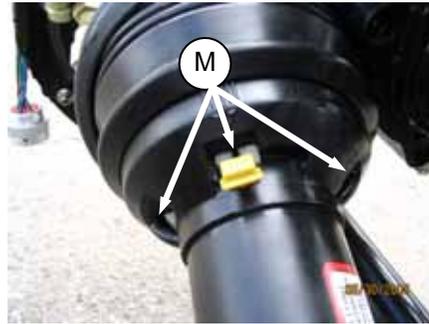


- d. Rotate guard locking ring (H) counterclockwise with a screwdriver until lugs (J) line up with slots in guard.  
e. Pull guard off drive-line.  
f. Repeat above steps c. to e. for other drive-line guard.

### 8.9.4 GUARD INSTALLATION



- a. Slide guard onto drive-line and line up slotted lug on locking ring (K) with arrow (L) on guard.



- b. Push guard onto ring until locking ring is visible in slots (M).



- c. Rotate ring (K) clockwise with a screwdriver to lock ring in guard.

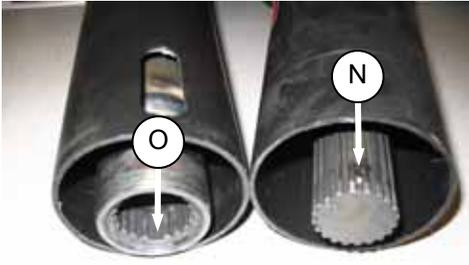


- d. Push grease zerk (G) back into guard.  
e. Repeat steps a. to d. for other guard.

*(continued next page)*

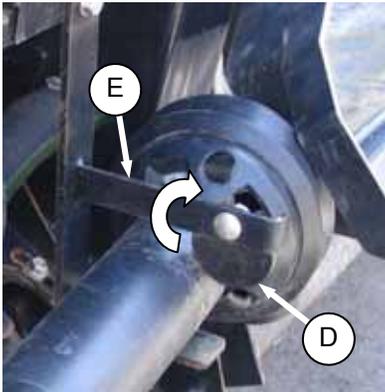
## MAINTENANCE/SERVICE

- f. Reassemble drive-line.



### NOTE

The splines are keyed so that universals are aligned. Align weld (N) with missing spline (O) when assembling.



- g. Slide driveshaft in hook (E) so that disc (D) drops to secure driveshaft or connect to combine.

### 8.9.5 DRIVE CHAIN ADJUSTMENT

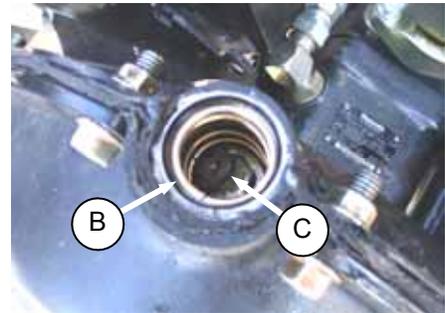
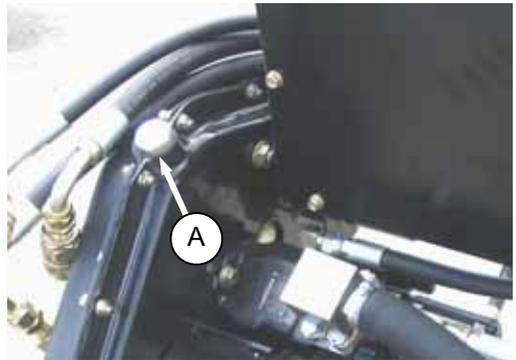
A sprocket on the main drive input shaft from the combine drives another shaft to the auger. To adjust tension on the chain in the main gearbox, refer to illustration and proceed as follows:



### CAUTION

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.

- a. Lower header, stop engine and remove key.



- b. Remove filler plug (A).  
c. Remove spring (B) and keeper (C) inside filler port.  
d. Using a  $\frac{3}{4}$  inch (19 mm) socket, torque bolt inside filler hole to 20 in-lbf, then back off bolt  $1\frac{1}{4}$  turns.  
e. Replace keeper (C), spring (B), and filler plug (A).

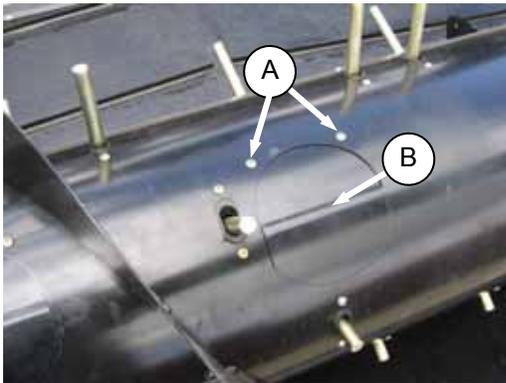
## MAINTENANCE/SERVICE

### 8.10 AUGER

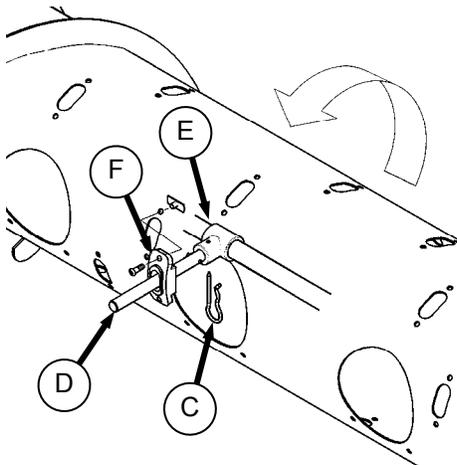
#### 8.10.1 AUGER TINE REPLACEMENT

The CA20 Combine Adapters are fitted with tines to accommodate a wide variety and sizes of combines. Some conditions may require the removal or addition of tines for optimal feeding of the crop. In addition, tines that become worn or damaged should be replaced. To simplify the procedure, detach combine from adapter. Refer to Section 5 Adapter Attachment/Detachment On Combine.

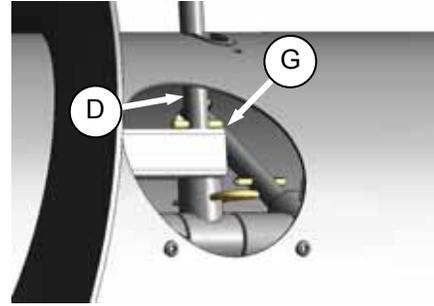
##### 8.10.1.1 Tine Removal



- a. Remove screws (A) and remove access cover (B).

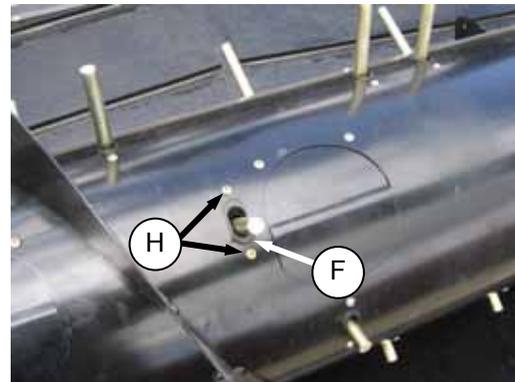


- b. From inside the auger, remove hairpin (C) and pull tine (D) out of bushing (E).  
c. From inside the auger, swivel tine away from bushing, pull from plastic guide (F) and remove from auger.

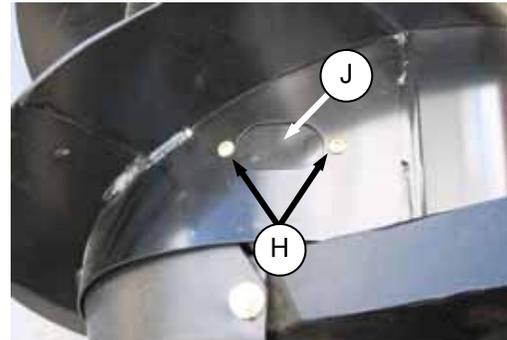


#### NOTE

*If the sixth tine (D) opposite drive side is being replaced, it also must be slipped off drive tube (G). This particular tine cannot be removed for normal operation.*



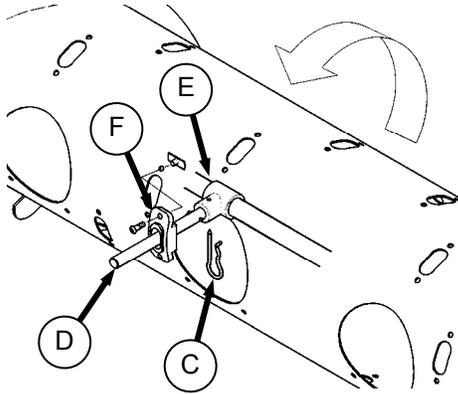
- d. Remove screws (H) securing plastic guide (F) to auger and remove guide from inside auger.



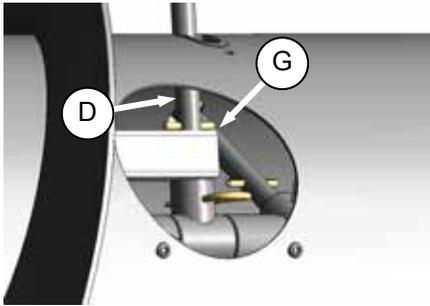
- e. Position cover (J) from inside auger over hole and secure with screws (H). Coat screws with loctite and torque to 75 in-lbf (8.5 N·m).

## MAINTENANCE/SERVICE

### 8.10.1.2 Tine Installation



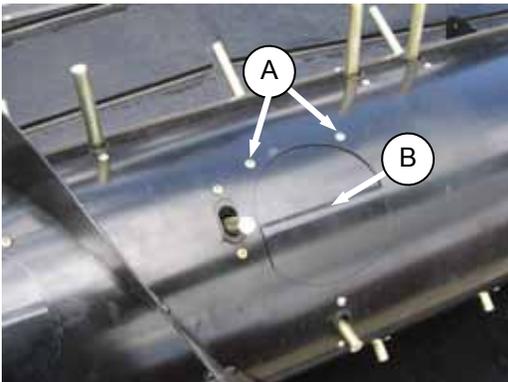
- a. Insert tine (D) through plastic guide (F) from inside the auger.
- b. Insert tine into bushing (E).



#### NOTE

*The #6 tine (D) must also be inserted through the square tube (G).*

- c. Secure tine in bushing with hairpin (C). Install hairpin with closed end leading with respect to auger forward rotation.



- d. Replace access cover (B) and secure with screws (A). Coat screws with loctite and torque to 75 in-lbf (8.5 N·m).

## MAINTENANCE/SERVICE

### 8.10.2 AUGER DRIVE CHAIN ADJUSTMENT

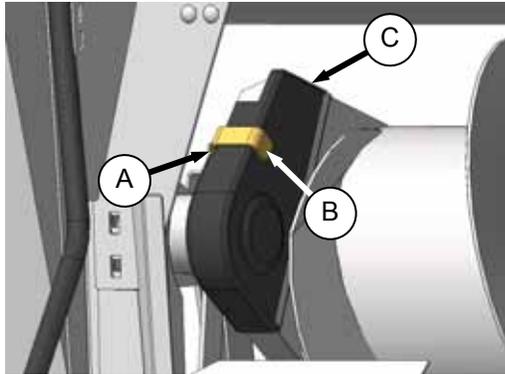
The auger is driven from the adapter drive system by a sprocket that is attached to the side of the auger. To adjust the chain tension, refer to illustration below and proceed as follows:



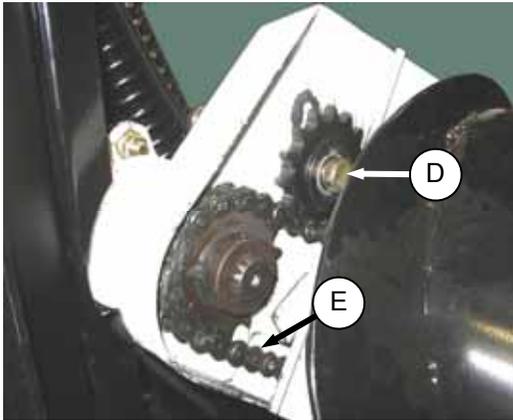
#### CAUTION

**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.**

- a. Detach combine from adapter. Refer to Section 5, Adapter Attachment/Detachment On Combine.



- a. Loosen nut (A) and remove clip (B) and cover (C).

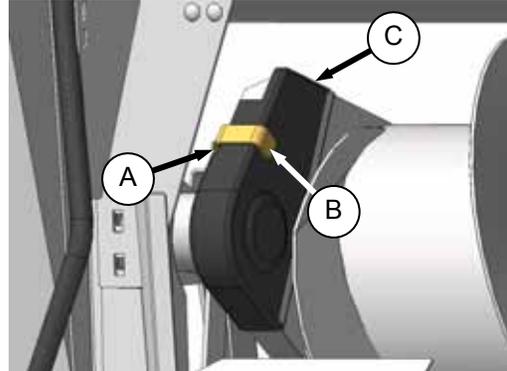


- b. Loosen bolt (D) on idler sprocket.
- c. Rotate auger in reverse to take up slack in lower strand of chain (E).
- d. Push idler sprocket down to eliminate remaining slack in upper strands.
- e. Rotate auger back and forth to check slack and repeat above step if necessary. A slight amount of slack is acceptable.

#### NOTE

*Do not use excessive force on idler to tighten chain.*

- f. Tighten idler bolt (D) and torque to 150 ft-lbf (203 N·m).



- g. Reinstall cover (C) with clip (B) and tighten nut (A).

## MAINTENANCE/SERVICE

### 8.10.3 AUGER DRIVE CHAIN REPLACEMENT

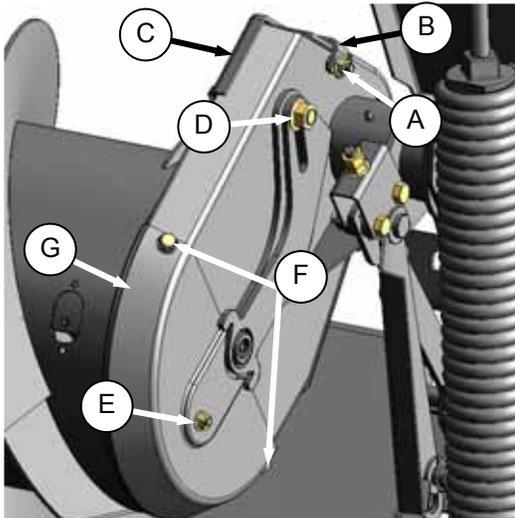
The chain tensioner can only take up slack for a single pitch. When the chain has worn or stretched beyond the limits of the tensioner, the chain should be replaced, or removed to replace the connector link with an offset (1/2) link.



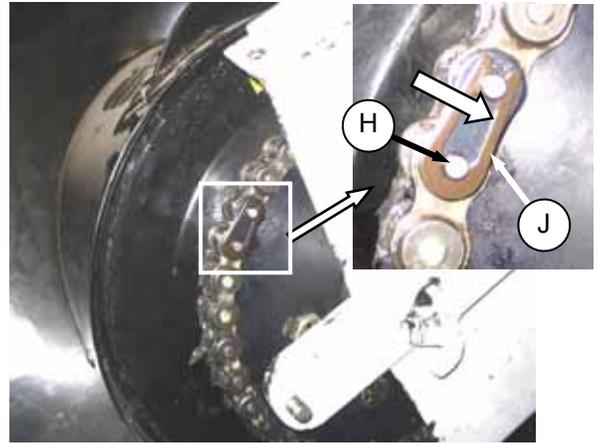
#### CAUTION

**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.**

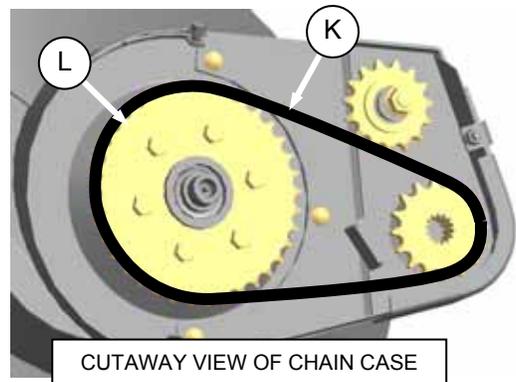
- a. Detach combine from adapter. Refer to Section 5, Adapter Attachment/Detachment On Combine.



- b. Loosen nut (A) and remove clip (B) and cover (C).
- c. Remove chain as follows:
  1. Loosen idler sprocket bolt (D) and raise to uppermost position to release tension on chain. Snug up bolt (D) to hold sprocket.
  2. Remove nut (E) and bolts (F) and remove cover (G).



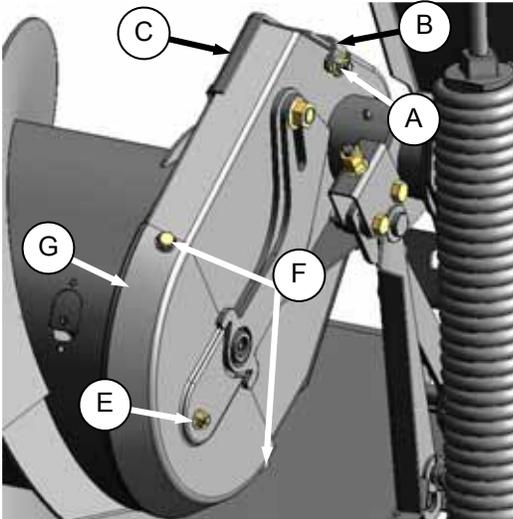
3. Rotate auger to expose connector link (H).
  4. Push on one leg of clip (J) to remove it from link.
  5. Remove link and remove chain.
  6. Replace one link with an offset link and reinstall, or install a new chain.
- d. Install chain as follows:



1. Feed chain (K) around sprockets as shown and position so that connection can be made on driven sprocket (L).
  2. Install connector link (H). Refer to Section 8.5, Roller Chain Installation.
- e. Tighten chain. Refer to Section 8.10.3, Auger Drive Chain Adjustment.
  - f. Lubricate the chain with SAE Multi-Purpose High Temp. Extreme Pressure (EP2) Performance With 1% Max Molybdenum Disulphide (NLGI Grade 2).

*(continued next page)*

## MAINTENANCE/SERVICE

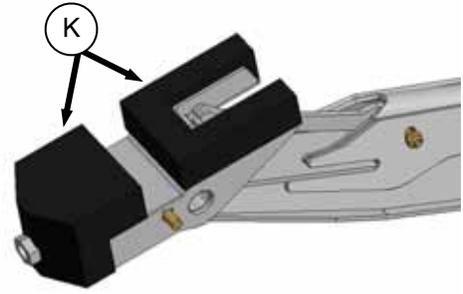


- g. Position cover (G) on case and secure with nut (E) and bolts (F).
- h. Position cover (C) on case and secure with clip (B). Tighten nut (A).

## MAINTENANCE/SERVICE

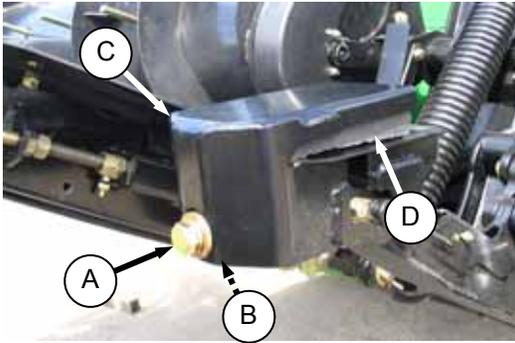
### 8.11 VIBRATION DAMPERS

Worn or damaged vibration dampers will cause excessive noise and vibration and it is recommended they be replaced. The header and adapter must be detached to replace the dampers. Refer to Section 5 Adapter Attachment/Detachment On Combine.



#### 8.11.1 RUBBER PAD REPLACEMENT

##### Secondary Vibration Damper (D50 and D60 Harvest Header only):

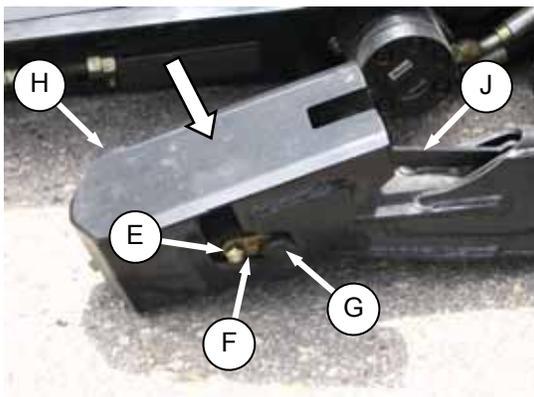


- Position new rubber pads (K) in lower half and position upper half (H). Ensure link (J) is engaged in damper.
- Slightly compress the two halves so that pin (G) can be installed.
- Attach keeper (F) and secure with nut (E).
- Re-attach secondary damper (if applicable). See opposite.

- Remove bolt (A), washer and spacer (B) and remove secondary vibration damper (C) from adapter arm.
- Remove rubber pad (D) from shoe.
- Place new pad (D) in shoe, and position damper (C) on primary damper.
- Secure with bolt (A), spacer (B) and washer.

##### Primary Vibration Damper (D50 and D60 Harvest Header and FD70 FlexDraper):

- Remove secondary damper (if applicable). See above.



- Remove nut (E) and keeper (F) from primary damper.
- Slightly compress damper as shown and remove pin (G). Remove top half (H). Link (J) will hold bottom half of damper.
- Remove worn or damaged rubber pads (K).

## MAINTENANCE/SERVICE

### 8.12 FEED DRAPER

#### 8.12.1 DRAPER TENSION ADJUSTMENT

Draper tension should be just enough to prevent slipping and keep draper from sagging below cutterbar. Set draper tension as follows:



#### DANGER

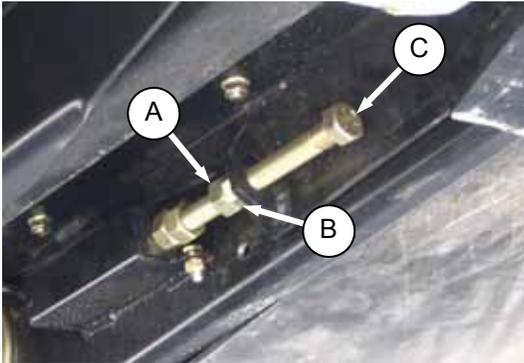
To avoid bodily injury or death from fall of raised machine, always engage lift cylinder stops before going under header for any reason. See your Combine Operator's Manual for instructions for use and storage of header lift cylinder stops.



#### CAUTION

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.

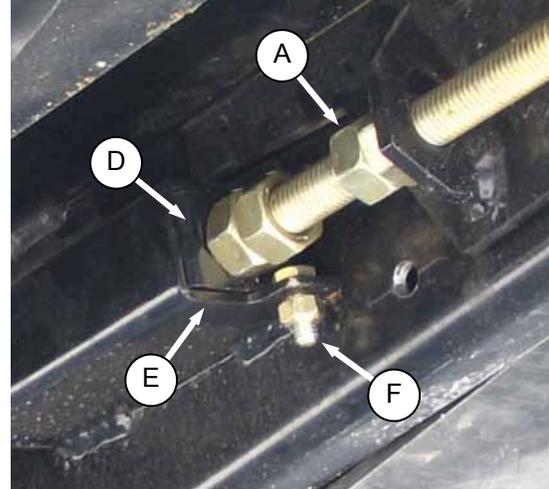
- Raise header fully, stop engine, and remove key. Engage header lift cylinder stops.
- Check that draper guide (rubber track on underside of draper) is properly engaged in groove of drive roller and that idler roller is between the guides.
- Loosen jam nut (A).



- Hold nut (B) with a wrench and turn bolt (C) clockwise to increase tension.

#### IMPORTANT

Adjust both sides equal amounts.



- Correct tension is when retainer (D) is flush with bracket (E), and bolt (F) is free.
- Tighten jam nut (A).

#### 8.12.2 REPLACING DRAPER

The draper should be replaced or repaired if they are torn, missing slats, or cracked.

- If adapter is attached to combine and header, disconnect header. Refer to Section 6 Header/Adapter Disassembly and Assembly.
- Raise header fully, stop engine, and remove key. Engage header lift cylinder stops.



#### CAUTION

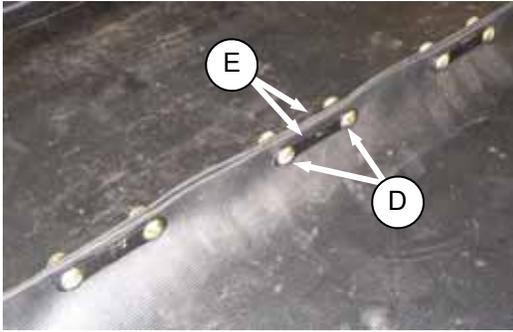
Stop engine and remove key from ignition before leaving operator's seat for any reason. A child or even a pet could engage an idling machine.

- Loosen draper as follows:
  - Loosen jam nut (A).
  - Hold nut (B) with a wrench and turn bolt (C) counter-clockwise to release tension.
- Repeat on opposite side of adapter.
- Disengage header lift cylinder stops, and lower feeder house and adapter onto blocks to keep adapter slightly off the ground.

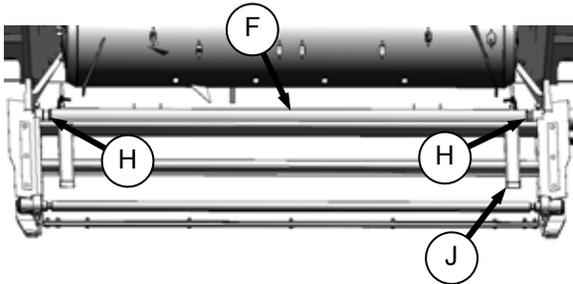
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## MAINTENANCE/SERVICE

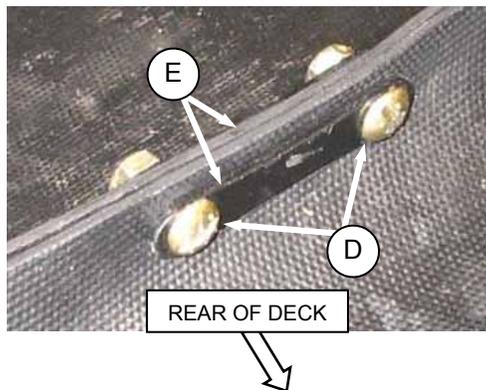
- k. Adjust draper tension. Refer to Section 8.12.1, Draper Tension Adjustment.



- f. Remove nuts, screws (D), and straps (E) along draper joint.
- g. Pull draper from deck.



- h. Install new draper over drive roller (F) with chevron cleat (G) pointing to front of adapter, and ensuring draper guides fit in drive roller grooves (H).
- i. Pull draper along bottom of adapter deck and over draper supports (J).



- j. Connect draper with straps (E), screws (D) and nuts with screw heads facing rear of deck. Tighten nuts so that end of screw is approximately flush with nut.

## MAINTENANCE/SERVICE

### 8.13 MAINTENANCE SCHEDULE

The following maintenance schedule is a listing of 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 Section 8, Maintenance/Service. Use the fluids and lubricants specified in Section 8.4, Fluids and Lubricants.

**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 Section 8.2 Recommended Safety Procedures.

<i><b>INTERVAL</b></i>	<i><b>SERVICE</b></i>	
<b>FIRST USE</b>	Refer To Section 7.2, BREAK-IN PERIOD.	
<b>10 HOURS OR DAILY</b>	1. Check Hydraulic Hoses And Lines For Leaks.	
<b>25 HOURS</b>	1. Check Hydraulic Oil Level at Reservoir.	
<b>50 HOURS</b>	1. Grease Drive-line and Drive-line Universals. 2. Grease Draper Roller Bearings.	
<b>100 HOURS OR ANNUALLY *</b>	1. Grease Auger Bearing. 2. Grease Auger Drive Chain. 3. Grease Auger Drive-shaft Bearings. 4. Grease Anti-Vibration Pivots. 5. Grease Float Pivots.	6. Check Auger to Pan and Feed Draper Clearance. 7. Check Gearbox Lubricant Level. 8. Grease Float Adjust Spring Tensioners. 9. Lubricate Hydraulic Couplers.
<b>250 HOURS</b>	1. Change Hydraulic Oil Filter. 2. Grease Auger Pivots.	
<b>END OF SEASON</b>	Refer To Section 7.5, STORAGE.	
<b>1500 HOURS OR 3 YEARS</b>	1. Change Hydraulic Oil 2. Change Gearbox Lubricant.	
	* IT IS RECOMMENDED THAT ANNUAL MAINTENANCE BE DONE PRIOR TO START OF OPERATING SEASON.	



## TROUBLESHOOTING

### 9 TROUBLESHOOTING

#### 9.1 HYDRAULICS

SYMPTOM	PROBLEM	SOLUTION	SECTION
<b>Insufficient Side Draper Speed</b>	Speed control set too low.	Increase control setting.	7.3.7
	Relief pressure too low.	Increase relief pressure to recommended setting.	***
	Combine header drive too slow	Adjust to correct speed for combine model	**
	Worn out gear pump.	Replace pump.	*
	Pressure compensator (V7) set too low.	Adjust to increase setting.	***

#### 9.2 FEEDING

SYMPTOM	PROBLEM	SOLUTION	SECTION
<b>Adapter Auger Back-Feeds.</b>	Auger set too high.	Check reversing mechanism inside auger.	*
	John Deere: Feeder chain running too slow.	Lower auger.	8.10.1
	John Deere: Equipped with feeder chain with 4 pitches per bar.	Run feeder chain at high speed.	**
	Case: Stone retarding drum installed, or smooth feeder chain bars installed.	Replace with 6 pitch per bar feeder chain, or remove every other bar.	**
		Install standard drum or fill slots in stone retarding drum, or install serrated feed chain bars.	**
<b>Hesitation In Flow Of Bulky Crop.</b>	Header angle too flat.	Steepen header angle.	**
	Material overload on drapers.	Increase side draper speed.	7.3.7
		Install upper cross auger.	*
		Add fighting extensions.	*
	Material accumulation at auger ends.	Install stripper bars.	*
	Case: Stone retarder blocks interfering with crop flow.	Adjust blocks to minimum height.	**
<b>Adapter Auger Wraps Crop.</b>	Side drapers running too fast, piling material in center of feeder draper.	Reduce header side draper speed.	7.3.7
	Feed chain drum too low.	Move drum to corn position.	**
	Crop susceptible to wrapping (flax).	Add fighting extensions or stripper bars.	*
<b>Combine Feeder Drum Wraps Crop.</b>	Auger speed too fast.	Install slow down kit.	*
	Crop susceptible to wrapping (flax).	Add stripper bars.	*
<b>Crop Backs Up Or Hesitates On Feed Draper.</b>	Feed draper stalling.	Clean debris from poly pan.	--
		Check feed draper tension.	8.12.1
		Replace roller bearing(s).	***
		Check feed draper motor.	*

\* See your MacDon dealer

\*\* Refer to Combine Operator's Manual

\*\*\* Refer to Adapter Technical Manual

\*\*\*\* Refer to D60 Harvest Header/FD70 FlexDraper Operator's Manual

## TROUBLESHOOTING

<b>Crop Backs Up Or Hesitates On Feed Draper.</b>	Heavy crop plugging between adapter auger and feed draper.	Check auger height.  See also "Adapter Auger Back-Feeds", previous page	8.10
	Auger speed too low.	Install auger speed up kit.	*
<b>Crop Back Feeds On Center Feed Draper</b>	Excessive clearance from auger to drive roller.	Move auger closer to drive roller	8.10.1
	Auger speed too slow.	Install auger speed-up kit.	*
<b>Side Drapers Back-Feed.</b>	Side drapers running too slow in heavy crop.	Increase side draper speed.	7.3.7
<b>Crop Is Thrown Across Opening And Under Opposite Side Draper.</b>	Side drapers running too fast in light crop.	Reduce side draper speed.	7.3.7
	Excessive overlap of feeder draper.	Center side draper drive rollers over feed draper side deflectors.	****
<b>Crop Feeding Into Feeder House At Sides More Than At Center</b>	Auger not delivering crop properly.	Add fighting extensions.	*
		Add stripper bars.	*
		Remove auger outer tines.	8.10.2
		Install auger speed-up kit.	*
<b>Crop Feeding Into Feeder House At Center More Than At Sides</b>	Auger not delivering crop properly.	Add auger outer tines.	8.10.2
		Remove fighting extensions.	*
		Remove auger stripper bars.	*

### 9.3 VIBRATION

SYMPTOM	PROBLEM	SOLUTION	SECTION
<b>Excessive Vibration Of Adapter And Header.</b>	Vibration dampers not installed (D50 and D60 Harvest Header).	Install vibration dampers.	8.11
	Vibration dampers worn.	Replace rubber in dampers.	8.11.1
	Incorrect knife speed.	Adjust knife speed.	**
	Drive-line U-joints worn.	Replace U-joints.	***
	Bent cutterbar	Straighten cutterbar.	*

\* See your MacDon dealer

\*\* Refer to Combine Operator's Manual

\*\*\* Refer to Adapter Technical Manual

\*\*\*\* Refer to D60 Harvest Header/FD70 FlexDraper Operator's Manual

## OPTIONS AND ATTACHMENTS

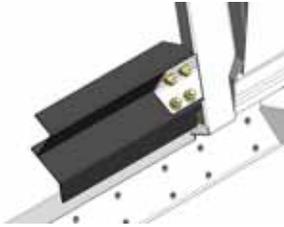
### 10 OPTIONS AND ATTACHMENTS

#### 10.1 AUGER FLIGHTING EXTENSIONS



Allows the CA20 Adapter to be used with combines having narrower feeder house openings and improves the feeding into the combine in certain crops. Mounting hardware and installation instructions are included.

#### 10.2 AUGER STRIPPER BARS



Available as attachments to the adapter opening to optimize the flow of material into the combine feeder house. They are particularly useful in rice or flax. Mounting hardware, and installation instructions are included.

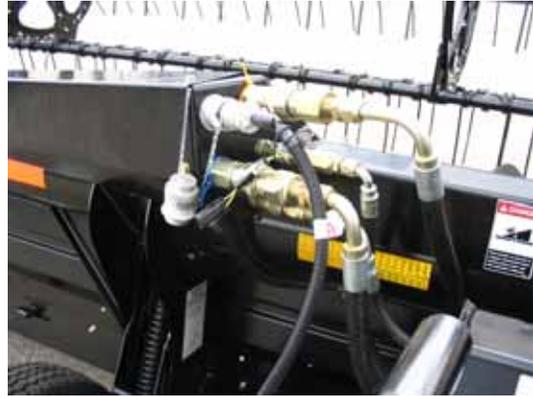
#### 10.3 POLY SKIDS



Available as an attachment to the cutterbar transition pan on D50 and D60 Harvest Headers, and standard equipment on FD70 FlexDraper headers. They are recommended for cutting on the ground where the soil adheres to steel.

Installation and adjustment instructions are included with the kit.

#### 10.4 QUICK-DISCONNECT COUPLERS



Allows quick disconnect of hydraulic hoses between adapter and header for easier disassembly of adapter from header.

# INDEX

Abbreviations .....	7	Fluids .....	69
Adapter		Gearbox	
mounting .....	9	drive chain adjust .....	83
Adapter/Header		main drive .....	74
D50, D60 assembly .....	45	oil changing .....	74
D50, D60 disassembly .....	42	oil level .....	74
FD70 assembly .....	53	Greasing .....	70, 71, 72, 73
FD70 disassembly .....	49	Header	
Attaching		cylinder lockouts .....	6
adapter .....	9	float .....	59
Attachment		float lock .....	59
AGCO .....	37	levelling .....	63
Case 2300, 2500 .....	13	Header Float	
Case IH 7010, 8010 .....	9	checking .....	60
JD 50 .....	23	normal .....	61
JD 60 .....	19	on ground .....	62
Lexion .....	27	Header/Adapter	
NH CR/CX .....	33	detach/attach .....	42
Attachments .....	96	Hydraulics	
Auger .....	64	fitting torque .....	68
drive chain adjust .....	86	hoses and lines .....	80
drive chain lubrication .....	71	knife and draper .....	48
flighting extensions .....	96	leaks .....	80
lubrication .....	71, 72	oil changing .....	77
pan clearance .....	64, 84	oil filter .....	78
speed .....	64	oil level .....	76
stripper bars .....	96	reservoir .....	76
tine replacement .....	84	schematic .....	79
Auger Drive Chain		Lift Cylinder lockouts .....	6
lubrication .....	74	Lubricants .....	69
Bearing, sealed		Lubrication .....	70
installation .....	70	Main Drive Gearbox .....	74
Bolts		Maintenance Schedule .....	92
torque .....	67	Maintenance/Service .....	66
Break-In Period .....	57	Metric Equivalents .....	7
Capacities .....	69	Operating	
Center Link		guidelines .....	59
disconnect .....	43, 51	Operating Procedures .....	58
Daily check .....	58	Operation .....	57
Detachment		Options .....	96
AGCO .....	40	Owner/Operator Responsibilities .....	57
Case 2300, 2500 .....	16	Poly Skids .....	96
Case IH 7010, 8010 .....	11	Pre-Season Check .....	58
JD 50 .....	25	Quick Disconnect Couplers .....	96
JD 60 .....	21	Roller Chain .....	69
Lexion .....	30	Safety	
NH CR/CX .....	35	general .....	5
Dimensions .....	8	operation .....	58
Draper		procedures .....	66
replacing .....	90	signal words .....	4
Draper Rollers		signs .....	4
lubrication .....	72	symbols .....	4
Draper Speed .....	64	Serial Number .....	1
Drapers		Servicing	
tension .....	90	preparation .....	66
Drive Chain		Sickle Drive .....	64
replacement .....	87	Specifications .....	8
Drive-Line		Storage .....	65
guard .....	81	Stripper Bars .....	96
installation .....	81	Torques .....	67
removal .....	80	Troubleshooting .....	94
Feed Draper .....	64, 90	Vibration Dampers	
Float		installation .....	45
lock .....	59	pad replacement .....	89

## NOTES