

**Model 973  
COMBINE HEADER**

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**Model 974  
FLEX DRAPER  
COMBINE HEADER**

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**OPERATOR'S MANUAL**

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Inside Front Cover  
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## INTRODUCTION

Your new 973/974 Header is specially designed as a "straight cut" header, to be attached to your combine using a model 873 Adapter. These headers are equipped to work well in all straight cut conditions, whether cutting on or above the ground. When weather is not a critical factor, straight cutting eliminates the windrowing operation.

**NOTE:** This manual contains information on the Header only. It must be used in conjunction with your Adapter and Combine Operator's Manual.

CAREFULLY READ ALL MANUALS TO BECOME FAMILIAR WITH RECOMMENDED PROCEDURES BEFORE ATTEMPTING TO UNLOAD, ASSEMBLE OR USE THE MACHINE.

Use this manual as your first source of information about the header. If you follow the instructions given in this manual your Header will work well for many years.

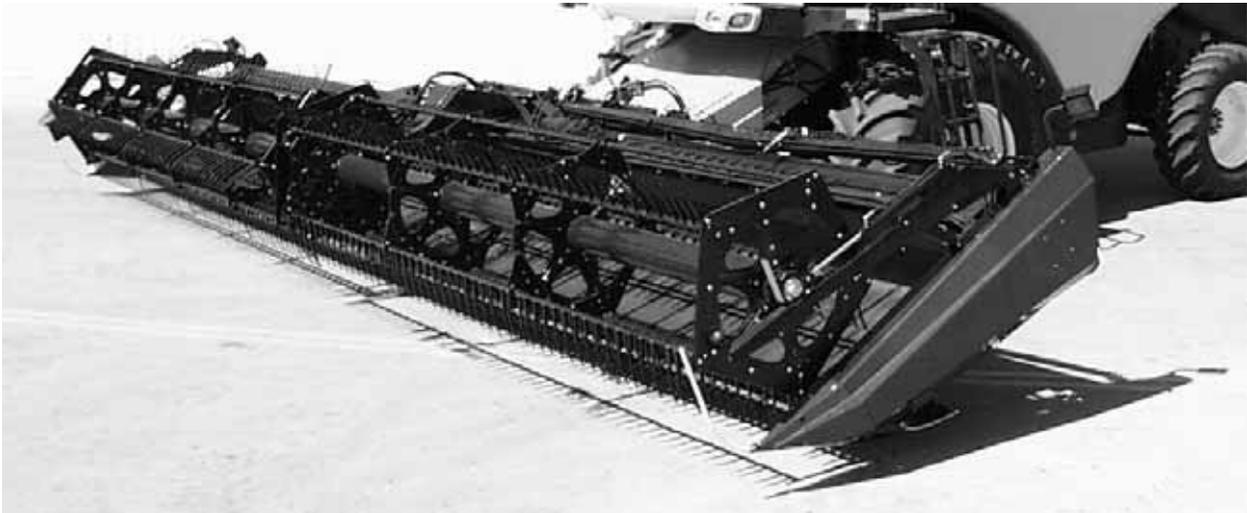
This manual contains information on "Safety", "Operation" and "Maintenance/Service". In addition, "Unloading and Assembly" instruction is given towards the back of this book.

Use the Table of Contents and the Index to guide you to specific areas. Study the Table of Contents to familiarise yourself with how the material is organised.

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 the manual.

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

**NOTE:** A storage case for this manual is located under the left endsheet.



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## SERIAL NUMBER LOCATION

Record the serial number in the space provided.

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Plate (A) is located on gusset at left hand end sheet, near main tube.



HEADER SERIAL PLATE

**NOTE:** When ordering parts and service, be sure to give your dealer the complete and proper serial number.

# SAFETY

## SAFETY ALERT SYMBOL



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

This symbol means:  
ATTENTION !  
BECOME ALERT !  
YOUR SAFETY IS INVOLVED !

Carefully read and follow the safety message accompanying this symbol.

Why is SAFETY important to you?

- 3 BIG REASONS
- ACCIDENTS DISABLE AND KILL
  - ACCIDENTS COST
  - ACCIDENTS CAN BE AVOIDED

## 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.

## SAFETY SIGNS

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

To install safety signs:

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

# SAFETY

## SAFETY SIGNS

**CAUTION**

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

1. Read the Operator's Manual, and follow all safety instructions. If you do not have a manual, obtain one from your dealer.
2. Do not allow untrained persons to operate the machine.
3. Review safety instructions with all operators annually.
4. Ensure that all safety signs are installed and legible.
5. Make certain everyone is clear of machine before starting engine and during operation.
6. Keep riders off the machine.
7. Keep all shields in place, and stay clear of moving parts.
8. Disengage header drive, put transmission in neutral, apply park brake and wait for all movement to stop before leaving operator's position.
9. Do not service, adjust, lubricate, clean or unplug machine with engine running or key in ignition.
10. Engage mechanical locks before servicing header or reel in the raised position.
11. Use slow moving vehicle emblem and flashing warning lights when operating on roadways unless prohibited by law.

\* 32009

**BACK TUBE**  
Order # 32009.

**DANGER**



**ROTATING DRIVELINE**

Keep all shields and guards serviced and in place. Failure to comply will result in death or serious injury.

\* 158977

**DRIVELINE**  
Order # 158977

**DANGER**

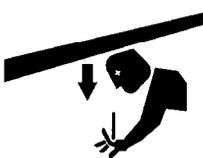


Rest header on ground or engage mechanical locks before going under unit. See Operator's Manual.

\* 44611

**BACK TUBE**  
Order # 44611.

**WARNING**



To avoid injury from fall of raised reel; fully raise reel, stop engine, remove key, and engage mechanical lock on each reel support arm before working on or under reel. See Operator's Manual.

\* 42122

**BACK TUBE**  
Order # 42122.

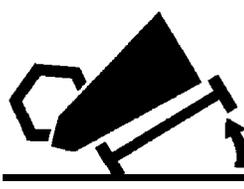


**ROTATING DRIVELINE**  
Contact can cause death. Keep away. Do not operate without:

- All driveline, power unit, and attachment shields in place.
- Driveline securely attached at both ends.
- Driveline shields that turn freely on driveline.

Order # 158289

**WARNING**



To avoid injury caused by machine tip-over, position reel fore-aft on support arms to stabilize load on rear axle wheels before transporting. Do not move reel while in transport. Read Operator's Manual for transport operating instructions.

\* 129260

**R/H WHEEL**  
(TRANSPORT OPTION)  
Order # 129260.

**WARNING**



To avoid injury from entanglement with auger, keep hands clear of rotating auger at all times. Stop engine, remove key and wait for all movement to stop before approaching auger.

\* 158621

**UPPER CROSS AUGER (OPTION)**  
Order # 158621

**CAUTION**

To avoid injury and/or machine damage caused by loss of control:

1. Read Operator's Manual before transporting.
2. Do not tow with a vehicle weighing less than 5000 lbs. (2300 kg).
3. Move reel fore-aft on support arms to increase header stability.
4. Secure all pins and hitch chain in transport position.
5. Do not tow at speeds greater than 20 m.p.h. (30 km/h).
6. Reduce speed for corners and slippery or rough conditions.
7. Obey all highway traffic regulations in your area when transporting on public roads.
8. Use slow moving vehicle emblem and flashing warning lights unless prohibited by law.

\* 129261

**HITCH**  
(TRANSPORT OPTION)  
Order # 129261.

# SAFETY

## GENERAL SAFETY



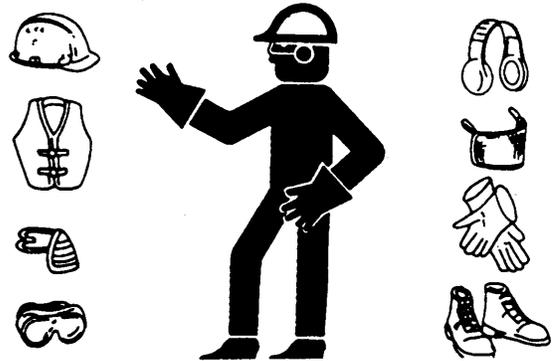
The following are general farm safety precautions that should be part of your operating procedure for all types of machinery.

### 1. Protect yourself.

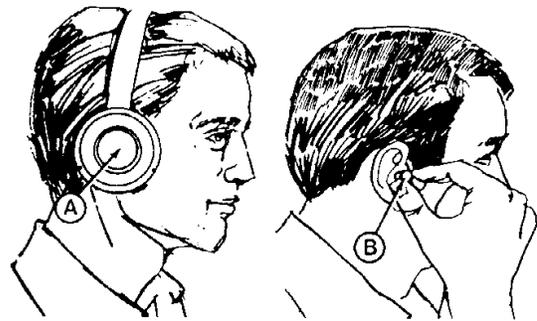
When assembling, operating and servicing machinery wear all the protective clothing and personal safety devices that COULD be necessary for the job at hand. Don't take chances.

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 earmuffs (A) or earplugs (B) protects against objectionable or loud noises.



PROTECT YOURSELF



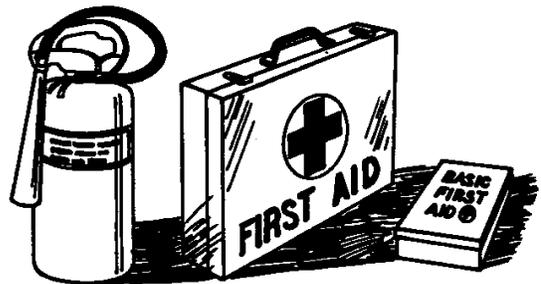
PROTECT AGAINST NOISE

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

### 3. Keep a fire extinguisher on the machine. Be sure the extinguisher is properly maintained and be familiar with its proper use.

### 4. Keep young children away from machinery at all times.

### 5. 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.



BE PREPARED FOR EMERGENCIES

## SAFETY

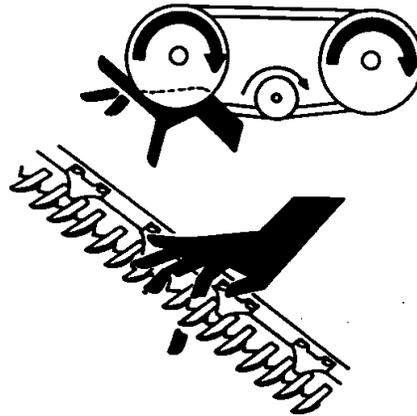


### GENERAL SAFETY (continued)

6. Wear close-fitting clothing and cover long hair. Never wear dangling items such as scarves or bracelets.
7. 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.
8. 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.
9. Use only service and repair parts made or approved by the equipment manufacturer. Substituted parts may not meet strength, design, or safety requirements.
10. Do not modify the machine. Unauthorised modifications may impair the function and/or safety and affect machine life.
11. 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.
12. 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.
13. Use adequate light for the job at hand.
14. 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.
15. Never use gasoline, naphtha or any volatile material for cleaning purposes. These materials may be toxic and/or flammable.
16. When storing machinery, cover sharp or extending components to prevent injury from accidental contact.



NEVER WEAR LOOSE  
OR DANGLING CLOTHES



KEEP AWAY FROM MOVING PARTS



KEEP SERVICE AREA CLEAN AND DRY

## SPECIFICATIONS

### 973/974 Header

HEADER WIDTH	Nominal cut width plus 10.5" (267 mm)
SICKLE DRIVE	"C" belt to enclosed oil bath wobble box – 3" (76 mm) stroke
SICKLE SPEED	1240 to 1345 spm - varies depending on combine
SICKLE TYPE	Over-serrated, bolted sections (973 - 14 serrations per inch) (974 – 9 serrations per inch)
GUARD TYPE	Double heat-treated Stub or Pointed for 21' & 25', Pointed for 30', 36' & 39'
GUARD ANGLE:	3.5° to 9.1° (cutterbar on ground)
DRAPER TYPE	Self-tracking rubber coated polyester with rubber slats
DRAPER WIDTH	41.5" (1054 mm)
DRAPER ANGLE	14° to 19.6° (cutterbar on ground)
DRAPER DRIVE	Hydraulic
DRAPER SPEED	170 to 580 ft. per minute (50 to 175 m/min)
DELIVERY OPENING HEIGHT	32.3" to 36.2" (820 to 920 mm) at 8" (200 mm) cutting height
DELIVERY OPENING WIDTH	Distance between draper rollers:
21, 25, 30, 36 & 39 ft.: 7" deflectors by shortening drapers:	35.2" to 45.4" (895 mm to 1153 mm) 54.1" to 64.5" (1375 mm to 1640 mm)
REEL TYPE	MacDon 2100 cam action pick-up reel
FINGER TIP RADIUS	31.5" (800 mm)
NUMBER OF BATS	6 Bat for 21' & 25', 5 Bat for 30', 36' & 39'
REEL FINGER MATERIAL	Steel for 21' & 25' (Plastic Option) Plastic for 30', 36' & 39'
REEL DRIVE	Hydraulic
REEL SPEED	20 to 60 RPM – varies depending on combine, adjustable from cab
REEL LIFT	Hydraulic

**WEIGHTS:** Weights shown are base header plus standard reel (see above). (See below for weights for common options.)

21' Model 973	2955 lbs. (1340 kg)
25' Model 973	3355 lbs. (1522 kg)
30' Model 973	3845 lbs. (1744 kg)
36' Model 973	4325 lbs. (1962 kg)
39' Model 973	4611 lbs. (2096 kg)
30' Model 974	4077 lbs. (1849 kg)
36' Model 974	4470 lbs. (2028 kg)

**Outer Adjustable Skid Shoes** – add 40 lbs. (18 kg)

**Inner Adjustable Skid Shoes** – add 38 lbs. (17 kg)

**Gauge Wheels** – add 200 lbs. (91 kg)

### Upper Cross Auger

DRIVE	Hydraulic
SPEED	140 to 390 rpm (varies with drapers)
TYPE	9" (229 mm) diameter, center feed
WEIGHT	136 lbs. (62 kg)

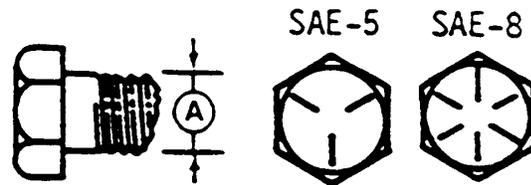
# TORQUE SPECIFICATIONS

## CHECKING BOLT TORQUE

The tables shown below give correct torque values for various bolts and capscrews. 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.

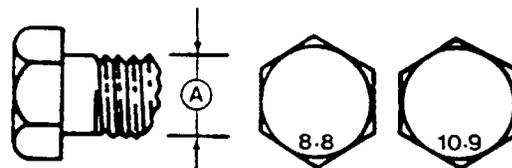
## ENGLISH TORQUE SPECIFICATION

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



## METRIC TORQUE SPECIFICATIONS

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



Torque figures indicated above 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%.

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

## TORQUE SPECIFICATIONS

### TIGHTENING O-RING FITTINGS\*

1. Inspect O-ring and seat for dirt or obvious defects.
  2. On angle fittings, back the lock nut off until washer bottoms out at top of groove.
  3. Hand tighten fitting until back-up washer or washer face (if straight fitting) bottoms on face and O-ring is seated.
  4. Position angle fittings by unscrewing no more than one turn.
  5. Tighten straight fittings to torque shown.
  6. Tighten angle fittings to torque shown while holding body of fitting with a wrench.
- \* The torque values shown are based on lubricated connections as in reassembly.

Thread Size (in.)	Nut Size Across Flats (in.)	Torque Value*		Recommended Turns to Tighten (after finger tightening)	
		N·m	[lb-ft]	Flats	Turns
3/8	1/2	8	[6]	2	1/3
7/16	9/16	12	[9]	2	1/3
1/2	5/8	16	[12]	2	1/3
9/16	11/16	24	[18]	2	1/3
3/4	7/8	46	[34]	2	1/3
7/8	1	62	[46]	1-1/2	1/4
1-1/16	1-1/4	102	[75]	1	1/6
1-3/16	1-3/8	122	[90]	1	1/6
1-5/16	1-1/2	142	[105]	3/4	1/8
1-5/8	1-7/8	190	[140]	3/4	1/8
1-7/8	2-1/8	217	[160]	1/2	1/12

### TIGHTENING FLARE TYPE TUBE FITTINGS\*

1. Check flare and flare seat for defects that might cause leakage.
  2. Align tube with fitting before tightening.
  3. Lubricate connection and hand tighten swivel nut until snug.
  4. 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.
- \* The torque values shown are based on lubricated connections as in reassembly.

Tube Size O.D. (in.)	Nut Size Across Flats (in.)	Torque Value*		Recommended Turns to Tighten (after finger tightening)	
		N·m	[lb-ft]	Flats	Turns
3/16	7/16	8	[6]	1	1/6
1/4	9/16	12	[9]	1	1/6
5/16	5/8	16	[12]	1	1/6
3/8	11/16	24	[18]	1	1/6
1/2	7/8	46	[34]	1	1/6
5/8	1	62	[46]	1	1/6
3/4	1-1/4	102	[75]	3/4	1/8
7/8	1-3/8	122	[90]	3/4	1/8

# OPERATION

## YOUR RESPONSIBILITIES AS AN OWNER/OPERATOR

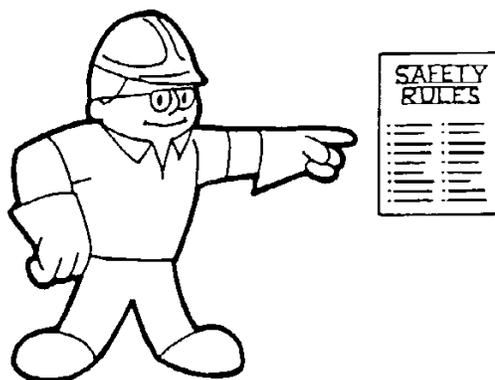


### CAUTION:

1. It is your responsibility to read and understand this manual plus the Adapter and Combine Operator's Manual completely before operating the header. Contact your dealer if an instruction is not clear to you.
2. Follow all safety messages in the manuals and on safety signs on the machine.
3. Remember that **YOU** are the key to safety. Good safety practices protect you and the people around you.
4. Before allowing anyone to operate the machine, for however short a time or distance, make sure they have been instructed in its safe and proper use.
5. Review the manual and all safety related items with all operators annually.
6. Be alert for other operators not using recommended procedures or not following safety precautions. Correct these mistakes immediately, before an accident occurs.
7. Do not modify the machine. Unauthorized modifications may impair the function and/or safety and affect machine life.
8. 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.



READ THE OPERATOR'S MANUAL



FOLLOW SAFETY RULES

## TO THE NEW OPERATOR

It's natural for an operator to be anxious to get started with a new machine. Please take the time to familiarize yourself with the header by reading the Operator's Manuals and safety signs before attempting operation.

# OPERATION

## BREAK-IN PERIOD

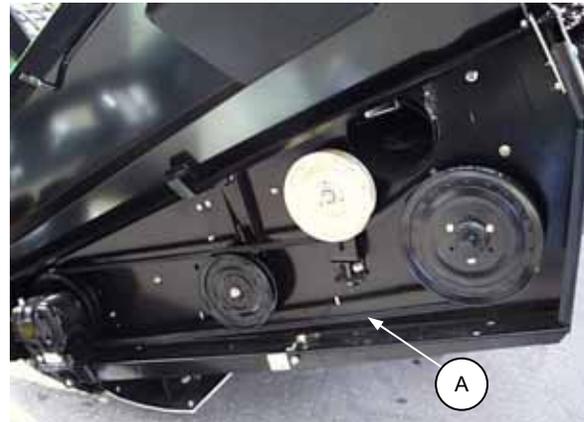
1. After attaching header to combine or wind-rower tractor for the first time, operate the machine with reel drapers and sickle running slowly for 5 minutes, watching and listening FROM THE OPERATOR'S SEAT for binding or interfering parts.



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

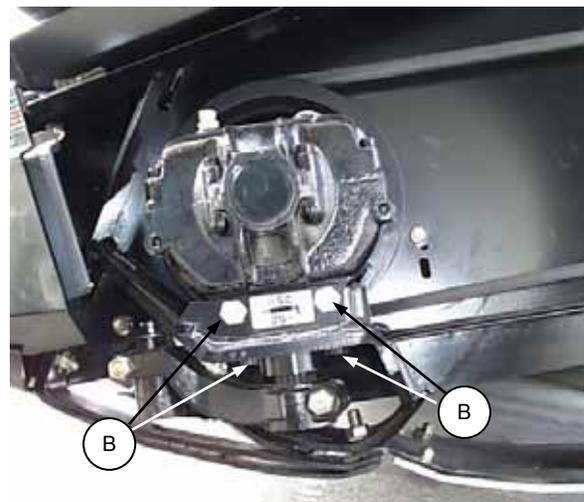
**NOTE:** Reel and side drapers will not operate until oil flow fills the lines.

2. Change hydraulic oil filter as recommended in combine adapter Operator's Manual.
3. Adjust the tension of sickle drive belt (A) after a **5 hour** run-in period. (See Maintenance/Service section.) Continue to check the belt tension periodically for the first 50 hours.
4. Tighten any loose hardware after the first **5 hours** operation. See Specifications section for recommended torques.



CHECK SICKLE DRIVE BELT TENSION

5. Tighten the four wobble box mounting bolts (B) after the first **10 hours** operation and every 100 hours thereafter. Torque to 200 ft.lbs. (270 N·m), starting with the side mounting bolts.
6. Change wobble box lubricant after the first **50 hours** operation and every 1000 hours (or 3 years) thereafter. See Maintenance/Service section.



TIGHTEN FOUR WOBBLE BOX MOUNTING BOLTS

# OPERATION

## PRE-STARTING CHECKS: ANNUAL

Do the following at the start of each operating season.



### CAUTION:

1. Review the Operator's Manuals to refresh your memory on safety and operating recommendations.
2. Review all safety signs and other decals on the machine and note hazard areas.
3. Be sure all shields and guards are properly installed and secured. Never alter or remove safety equipment.
4. Be sure you understand and have practiced safe use of all controls. Know the capacity and operating characteristics of the machine.
5. Check the first aid kit and fire extinguisher. Know where they are and how to use them.

Also:

6. Install drapers. See "Drapers" in Maintenance /Service section.
7. Adjust belt, draper and chain tension. See Maintenance/Service section.
8. Perform all Annual Maintenance. See Maintenance/Service section.

## PRE-STARTING CHECKS: DAILY

Do the following each day before start-up:



### CAUTION:

1. Clear the area of other persons, pets etc. Keep children away from machinery. Walk around the header to be sure no one is under, on or close to it.
2. Remove foreign objects from the machine and surrounding area.
3. Wear close fitting clothing and protective shoes with slip resistant soles. 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:

- hard hat
- protective glasses
- heavy gloves
- respirator or filter mask
- wet weather gear.



4. Protect against noise. Wear a suitable hearing protective device such as earmuffs or earplugs to protect against objectionable or uncomfortably loud noises.
5. 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. See "Hydraulic System" in Maintenance/Service section.

6. Clean all lights and reflective surfaces on the machine.
7. Perform all Daily maintenance. See Maintenance/Service section.

# OPERATION

## OPERATE CORRECTLY

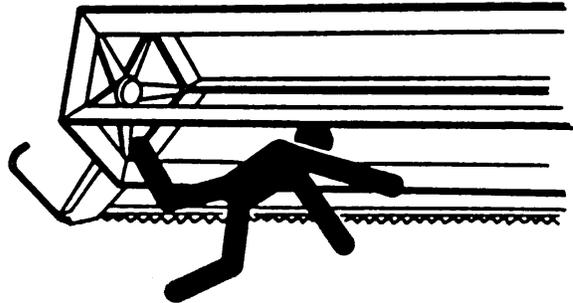


### CAUTION:

1. 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.
2. Never attempt to start the engine or operate the machine except from the operator's seat.
3. Check the operation of all controls in a safe clear area before starting work.
4. Do not allow riders on combine.
5. Never start or move the machine until you are sure all bystanders have cleared the area.
6. Avoid travelling over loose fill, rocks, ditches or holes.
7. Drive slowly through gates and doorways.
8. When working on inclines, travel uphill or downhill when possible. Be sure to keep transmission in gear when travelling downhill.
9. Never attempt to get on or off a moving machine.
10. Do not leave the operator's station while the engine is running.
11. Stop engine and remove key before adjusting or removing plugged material from the machine. A child or even a pet could engage the drive.
12. Check for excessive vibration and unusual noises. If there is any indication of trouble, shut-down and inspect the machine. Follow proper shutdown procedure:
  - engage brake
  - disengage header drive
  - turn off engine and remove key
  - wait for all movement to stop
  - dismount and engage cylinder stops before inspecting raised machine.
13. Operate only in daylight or good artificial light.



DO NOT ALLOW RIDERS



CLEAR THE AREA BEFORE OPERATING

# OPERATION

## HEADER CONTROLS



**CAUTION:** Be sure all bystanders are clear of machine before starting engine or engaging any header drives.

See your Combine Operator's Manual for identification of in-cab controls for:

- Header Drive Clutch
- Header Height
- Ground Speed
- Reel Speed
- Reel Height
- Reel Fore Aft / Header Tilt

## HEADER LIFT CYLINDER STOPS



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

## REEL PROPS



**WARNING:** To avoid bodily injury from fall of raised reel, always engage reel props before going under raised reel for any reason.

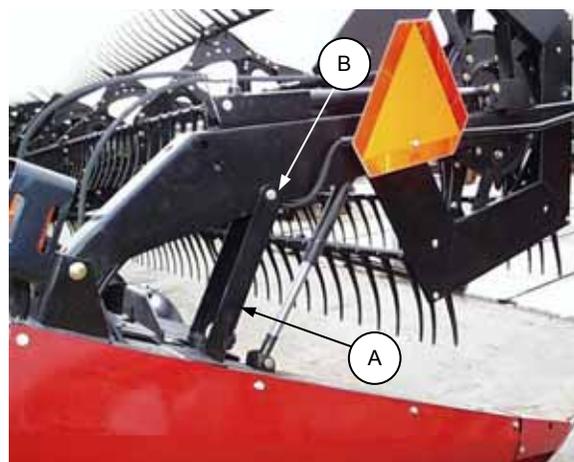
**IMPORTANT:** To prevent damage to reel support arms, do not transport header with reel props engaged.

Reel props are located at each reel support arm.

To engage reel props:

1. Raise reel to maximum height.
2. Move props (A) to engaged position.
3. Lower reel until props contact end frames.

**NOTE:** Keep pivot bolt (B) properly tightened so prop remains in stored position when not in use, yet can be engaged with hand force.



REEL PROP - ENGAGED

# OPERATION

## OPERATING VARIABLES

Satisfactory function of the header (and hay conditioner) in all situations requires making proper adjustments to suit various crops and conditions.

Correct operation reduces crop loss and allows cutting of more acres. As well, proper adjustments and timely maintenance will increase the length of service you receive from the machine.

The variables listed here and detailed on the following pages will affect the performance of the header and conditioner. You will quickly become adept at adjusting the machine to give you the desired results.

### OPERATING VARIABLES

**HEADER**

1. Cutting Height
2. Divider Rod Length
3. Ground Speed
4. Header Flotation
5. Header Angle
6. Draper Speed
7. Delivery Opening Width
8. Reel Speed
9. Reel Height
10. Reel Fore-Aft Position
11. Reel Pick-Up Finger Pitch
12. Upper Cross Auger (Optional)

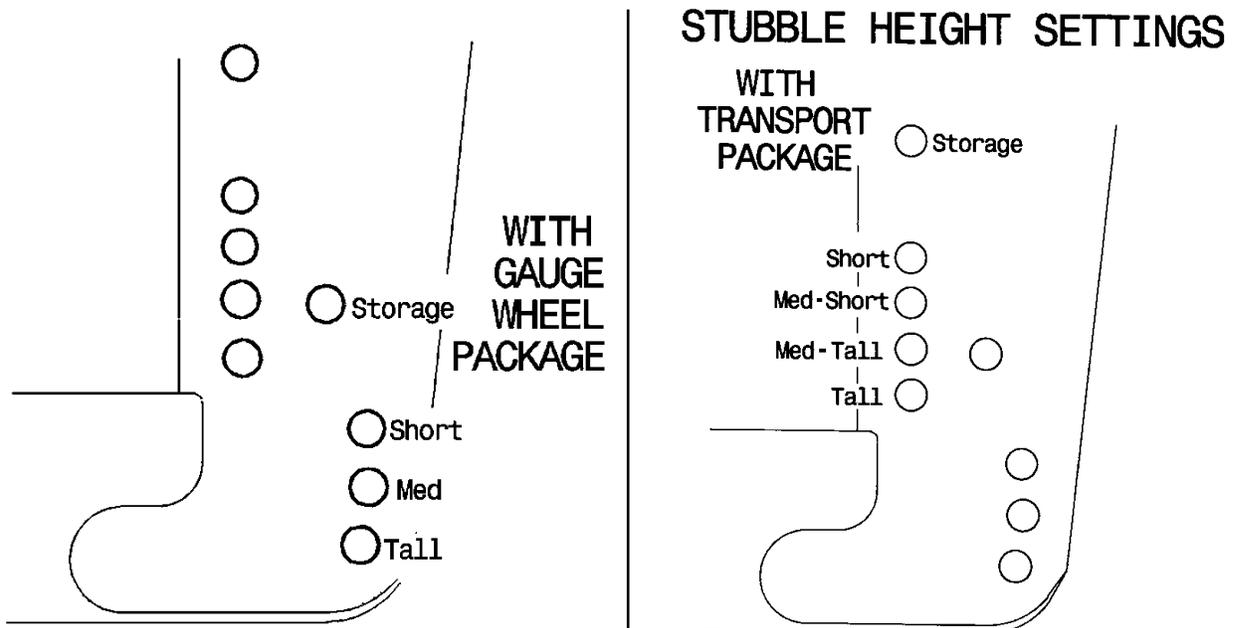
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## CUTTING HEIGHT

Desired cutting height will vary depending on type of crop and other factors.

### Gauge Wheels / Transport Option

For headers with gauge wheels or transport option choose appropriate pin position for stubble height.



# OPERATION

## **CUTTING HEIGHT** (continued)

### **Skid Shoes**

In crops and conditions where it is desirable to cut close to the ground, use skid shoes to vary cutting height. The operator can then lower the header to the ground, allowing the shoes to provide a consistent cutting height.

**NOTE:** Lowering the skid shoes raises the cutting height. This may be desirable in stony conditions, to reduce damage to cutting components. Other benefits include reduced plugging due to mud or dirt build-up and longer stubble for faster drying.



**DANGER:** To avoid bodily injury or death from unexpected start-up or fall of raised header; stop engine, remove key and engage header lift cylinder stops before going under header to adjust skid shoes (or for any reason).

Outer skid shoes have four settings to provide a coarse adjustment for cutting height. Height can then be fine-tuned with header angle adjustment.

**Tip:** With header angle in the steeper part of the range (center link more extended), lower skid shoes until cutterbar and shoes contact the ground at the same time when lowering header. Then when operating, flattening the header angle (retracting center link) will raise the cutterbar (guards) while the skid shoes stay on the ground. This may be useful to clear trash build-up on cutterbar, or in rocky conditions. See "Header Angle" in this section.

### **To change end skid shoe position:**

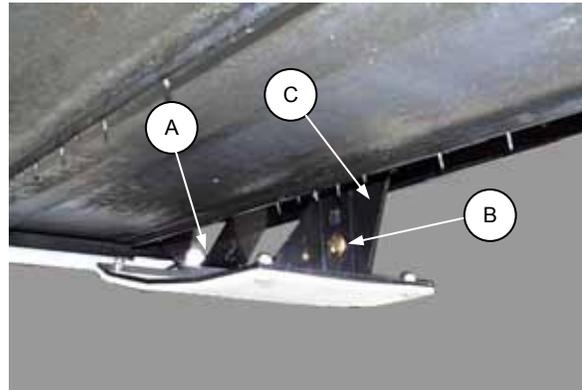
1. Loosen front bolt, securing skid shoes at (A).
2. Remove hardware at shoe (B), both ends of header.
3. Position shoe at the desired setting, and install hardware (B).
4. Retighten front bolt.

**NOTE:** When end skid shoes are not required, shoes and bolt-on brackets (C) may be removed.

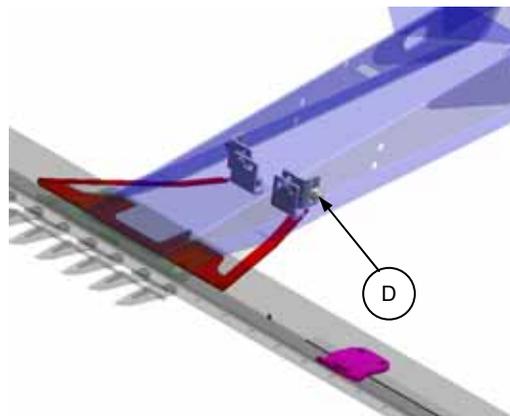
### **To change inner skid shoe position:**

1. Remove hardware at (D) both sides of header leg.
2. Position shoe at desired height and install hardware (D).
3. Tighten hardware (D).

**NOTE:** Adjust all shoes to the same height to provide an even cutting height.



END SKID SHOES



INNER SKID SHOES

# OPERATION

## DIVIDER ROD LENGTH

Divider rods are removable and two lengths are provided as standard equipment. The longer rods (A) are suitable when crop requires running down, while the shorter pointed rods (B) are better in standing crops. See the chart below for recommended rod length for various crops.

LONG DIVIDER RODS (A)	SHORT DIVIDER RODS (B)
Lodged Cereal Peas Lentils Canola Flax Alfalfa	Standing Cereal Edible Beans Soybeans Rice Milo

**NOTE:** A floating divider kit is available to extend the separation of crop to a point in front of the reel. This can be beneficial in short (up to 75 cm [30 in.]) lodged or standing crop. The floating dividers are also effective in tall standing crop. This attachment is not recommended for tall lodged crops. See Options and Attachments section.



LONG DIVIDER RODS



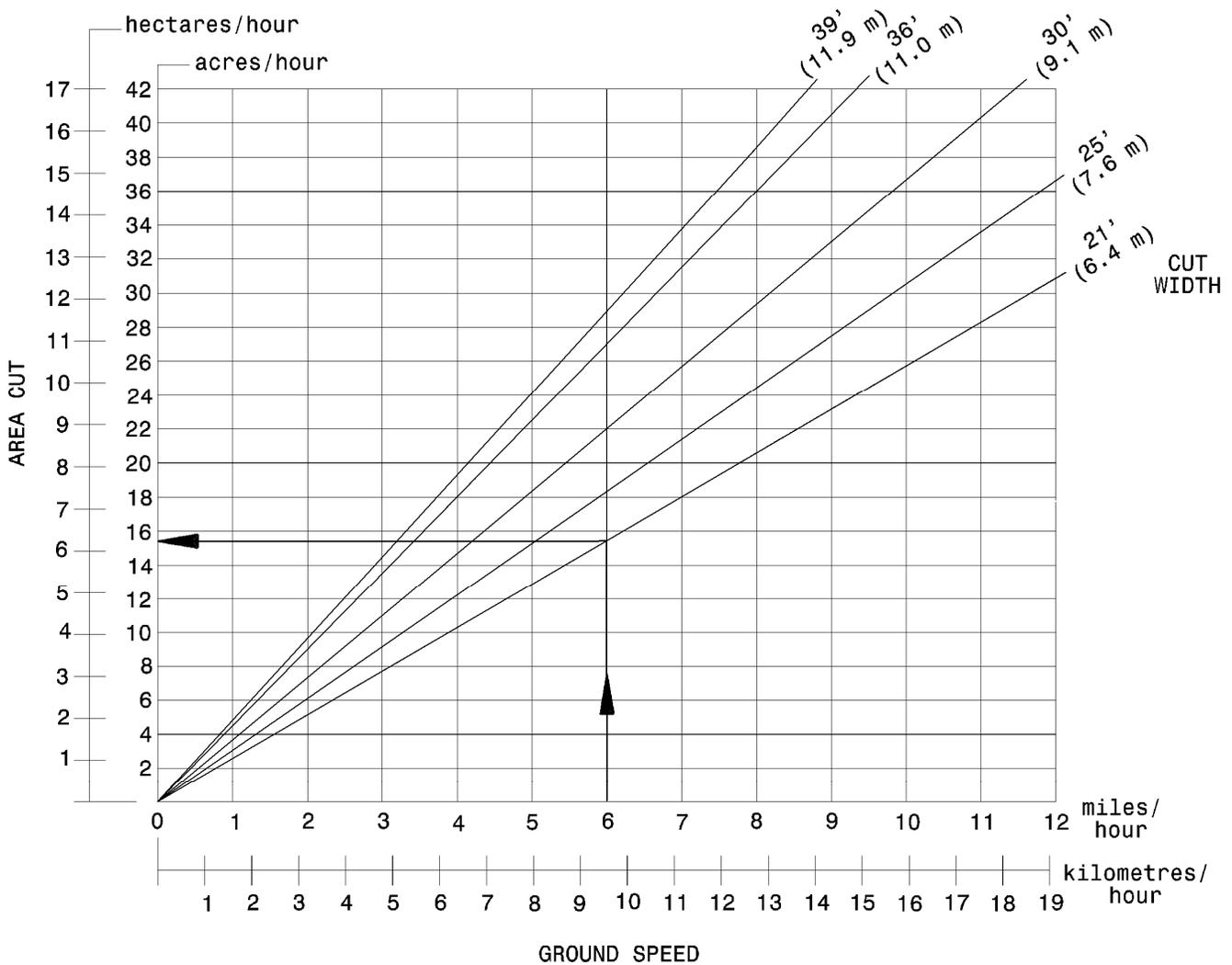
SHORT RODS IN STORAGE POSITION

# OPERATION

## GROUND SPEED

- Ground speed should be such that the sickle can cut crop smoothly and cleanly, while giving the desired delivery of material to the opening. Excessive ground speed results in "ragged" cutting.
- In tough-to-cut crops like flax, reduce ground speed to reduce loads on cutting components and drives.
- Higher ground speeds require heavier float settings to prevent excessive bouncing. This will result in increased cutting component damage.
- As ground speed is increased, draper and reel speed should be increased to handle the extra material.

The chart below indicates the relationship between ground speed and area cut for the four header sizes.  
Example shown: At a ground speed of 6 miles per hour (10 km/h) with a 21 ft. header, the area cut in one hour would be approximately 15-½ acres (6 hectares).



# OPERATION

## HEADER FLOTATION

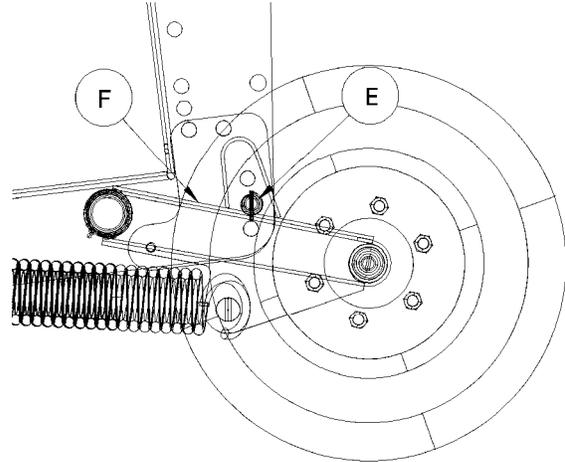
**IMPORTANT:** To avoid frequent breakage of sickle components, scooping soil, or soil build-up at cutterbar in wet conditions, header float should be set as light as possible without causing excessive bouncing.

Under normal conditions, when cutting above the ground, adjust float spring tension so 50 - 70 lbs. force (225 - 315 N) is required to lift divider at either end. Cutting on the ground requires lighter float, approximately 30 lbs. (135 N) at each divider point.

### Setting float on headers with gauge wheels

Headers with gauge wheels use the springs in the gauge wheel package to assist in header flotation. As such, the float adjustment for these headers must be set to take advantage of the extra flotation. Proceed as follows:

1. Set gauge wheels to medium stubble height position (E).
2. Set center link to approximately 21-1/2 in. (545 mm) pin to pin.
3. Adjust adapter float spring drawbolts such that gauge wheel arm (F) contacts pin (E) when the header is lowered. If header floats away from the pin, reduce float. If arm (F) contacts pin but float is heavy, increase float.



USE GAUGE WHEEL SPRINGS  
TO ASSIST FLOTATION

*For 973 Headers, see "Header Flotation" in Combine Adapter Operator's Manual for adjustment details.*

## **FLOTATION ADJUSTMENT – 974 FLEX HEADERS**

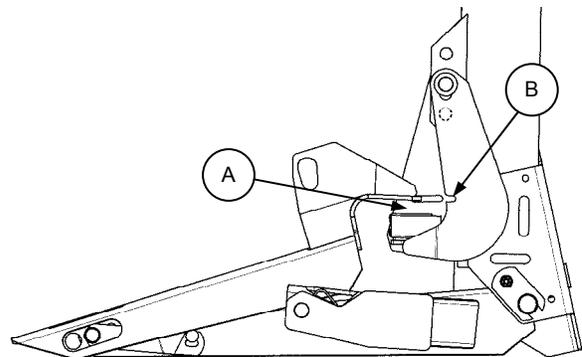
Initial setting of the wing float and adapter spring float is done at machine Set-Up. See "Assembly" section at back of this book. The following covers field adjustments that may be required from time to time.

### Cutting on the Ground

For cutting on the ground, best operation will occur with minimum extra weight on the header. Consider removing gauge wheels or transport attachment, if equipped. If weight is added or removed from the header, both wing float and adapter spring float may require readjustment.

#### **Operating tips:**

1. Set top link between adapter and header to mid-range position (19-1/4") (490 mm).
2. Ensure adapter float lockout is disengaged. Adjust adapter float springs as described in Combine Adapter Operator's Manual so that gap at (A) between float arm and down stop is 1/2" (13 mm) when cutterbar is 6" (150 mm) above ground. Notch (B) is provided as an alignment mark for this setting. This will result in about 2" (50 mm) gap under normal "ground hugging" conditions and float optimizer function. *Header can flex to "full frown" only when gap at (A) is around 2".*



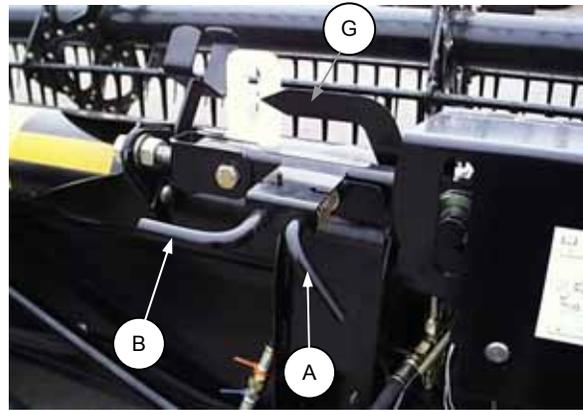
1/2" (13 mm) GAP WITH HEADER 6" OFF  
GROUND RESULTS IN 2" (50 mm) GAP WHEN  
CUTTING ON GROUND FOR FULL FLEX  
CAPABILITY

## OPERATION

### HEADER FLOTATION ADJUSTMENT – 974 FLEX HEADERS

#### Cutting on the Ground (Operating Tips continued)

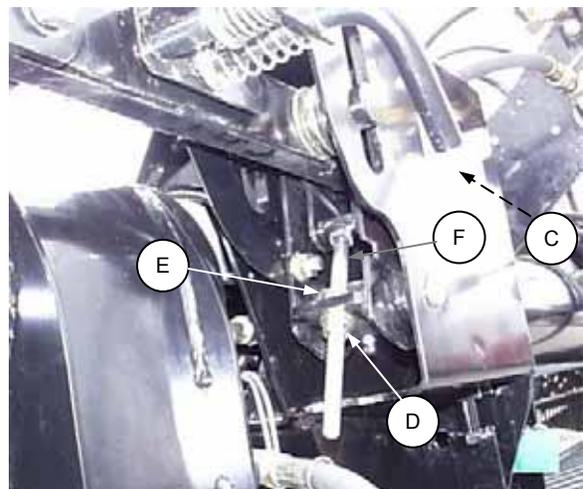
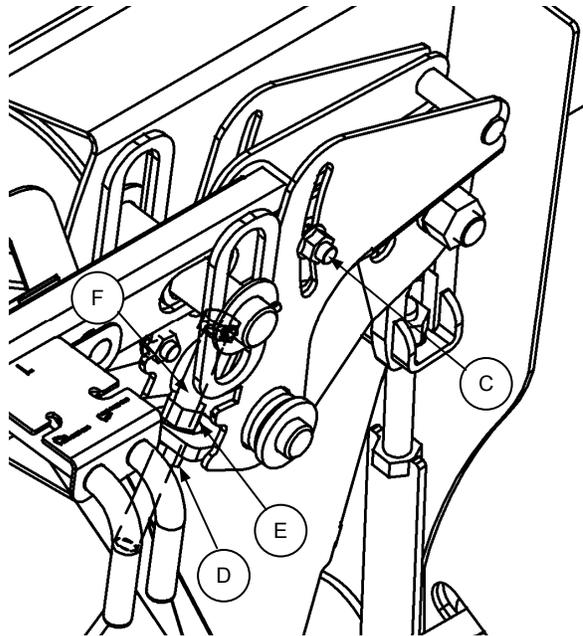
3. Disengage wing float lock pins (Position (B), two per side) to allow wings to float.
4. Adjust float optimizer while watching float indicator to set desired cutterbar down force (flotation).
5. Adjust header angle to achieve desired stubble height. **NOTE:** Use steps 4 and 5 to fine tune the header to achieve the shortest stubble height without pushing dirt
6. In rocky fields, adjust skid shoes down. This raises guards when operating at the flattest header angle to minimize scooping rocks.
7. If cutterbar begins to push dirt during operation, adjust header height (with optimizer or feeder house height control) to minimize pushing.
8. Header angle and reel fore-aft position can be changed without significantly effecting header flotation.



WING FLOAT LOCKOUT:  
(A) – ENGAGED / (B) – DISENGAGED

#### **Adjust Wing Downforce To Correct Uneven Float:**

1. If stubble at dividers is longer than at center, or if cutterbar pushes dirt in the center section of the header, adjust to transfer weight from the center section to the wings as follows:
  - Loosen bell crank clamp bolt (C), located inside bell crank housing.
  - Loosen nut (D) and turn nut (E) to **raise** bell crank bolt (F).
  - Tighten clamp bolt (C).
  - **NOTE:** Make small adjustments in position of tee bolt (one or two turns) followed by field test. If the tee bolt is adjusted more than 10 turns in total, perform the entire “Wing Float Set-Up” procedure detailed on page 87.
2. If stubble at center of header is longer than at dividers, or if cutterbar pushes dirt near the ends of the header, proceed as in Step 1, but **lower** the tee bolt to transfer weight from the wings to the center section.
3. When properly adjusted, the wing float indicators (G) will be moving continuously, indicating header wings are flexing between “smile” and “frown”. If not, re-adjust as required per steps 1 & 2.



ADJUST BELL CRANK BOLT –  
UP FOR HEAVIER WING / DOWN FOR  
LIGHTER WING

**NOTE: Functions of inner and outer wing float lock pins** – Each wing of the Flex Header has an inner and outer float lock-out pin as shown in top photo above. These pins can be engaged (as at (A) above) or disengaged (as at (B) above) with the following results:

- Both pins engaged – Wing float is fully locked out.
- Inner pin engaged, Outer pin disengaged – Wing can smile, not frown.
- Outer pin engaged, Inner pin disengaged – Wing can frown, not smile
- Both pins disengaged – Wing is free to flex to smile and frown positions.

# OPERATION

## HEADER FLOTATION ADJUSTMENT – 974 FLEX HEADERS

### Cutting above the Ground

When cutting above ground, for example in cereal grains, note the following:

1. The header can be operated with the wing float lock pins engaged or disengaged.
  - Engaging the wing float lock pins will keep cutterbar straight at all times.
  - Operating with wing float lock disengaged will reduce the force on guards in rocky conditions, and allows the wings to flex when the header contacts the ground.
2. Gauge wheels can be used to stabilize the header.

# OPERATION

## **HEADER ANGLE**

The header angle can be varied within these ranges:

Measured at Guards: 3.5° to 9.1° (cutterbar on ground).

Measured at Drapers: 14° to 19.6° (cutterbar on ground).

Achievable angles may vary depending on combine face plate angle.

**IMPORTANT:** The flattest header angles are recommended for normal conditions. A flatter header angle reduces sickle section breakage and reduces soil scooping or build-up at the cutterbar in wet conditions. Use a steeper angle to cut very close to the ground, or in down crop for better lifting action.

Header angle is varied by adjusting the length of the top link (mechanical or hydraulic) between adapter and header. See "Header Angle" in Combine Adapter Operator's Manual for adjustment details.

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## **DRAPER SPEED**

Draper speed affects the orientation of stalks in the delivered crop. See Combine Adapter Operator's Manual for adjustment details.

# OPERATION

## DELIVERY OPENING WIDTH

### Adjust delivery opening width:

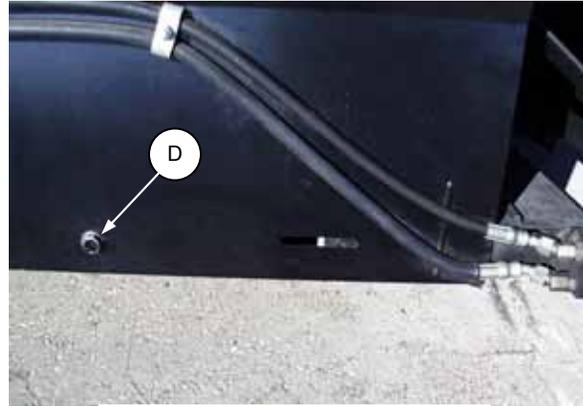
Decks can be slid inwards to adjust opening size without cutting or extending the drapers. All headers are supplied with a long draper which may be cut to provide a wider opening. By cutting both drapers, opening can be increased by 19" (480 mm). If reducing the opening size after it has been enlarged, a short section of draper (available from your dealer) can be added to increase draper length.

**NOTE:** To avoid damage to draper and/or draper tension mechanism, do not use drapers that are different in length from those specified.

**For adjusting opening size without cutting drapers, go to step 8:**

### To cut or extend draper:

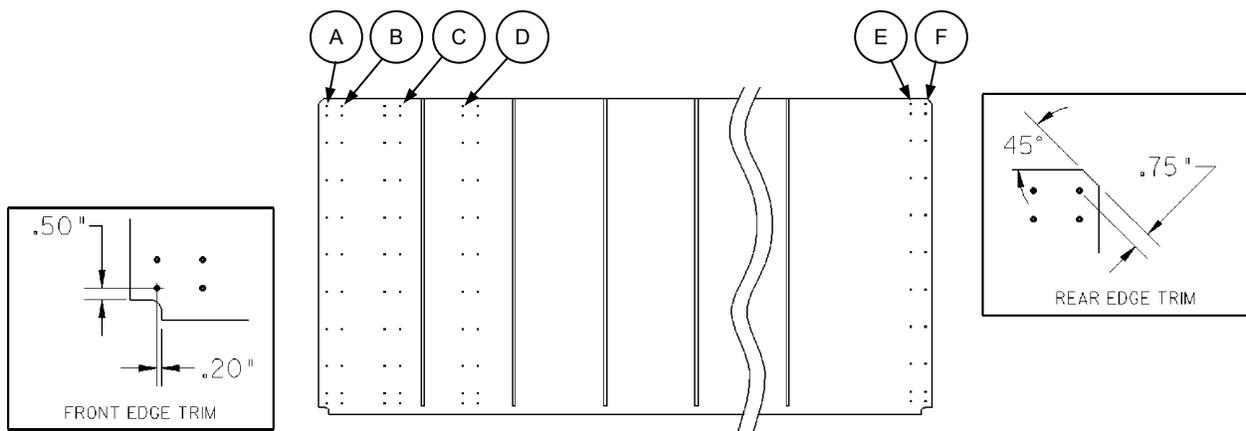
1. Release draper tension by turning bolt (D) counter-clockwise until bolt begins to turn out of backsheet.
2. Remove screws from draper connector slat.
3. Use the following chart to determine which opening size and row of holes are required for the desired application.



RELEASE DRAPER TENSION

**NOTE:** Recommended starting point is with decks shifted in, column (Y) for rows I and III.  
For row II start at 45.4" (1155 mm) for specialty crops and 42.1" (1070 mm) or less for cereal crops.

HEADER AND COMBINE MODELS		CONNECTION (both drapers)	CENTER DELIVERY OPENING WIDTH (between rollers)		LEG TO IDLER ROLLER EDGE (DIM. X) (decks in)	ENDPANEL DEFLECTORS (Shown on next page)
			With decks shifted out (W)	With decks shifted in (Y)		
I	John Deere, New Holland CX, Lexion (Wide Decks)	Row D to Row F	63.7" (1620 mm)	53.5" (1360 mm)	11" (280 mm)	Standard (G)
		Row B to Row E	49.8" (1265 mm)	45.9" (1165 mm)	16.8" (427 mm)	Narrow (H)
II	Case 77, 80 & 88 Case AFX, New Holland CR 970/980, Lexion (Mid Size Decks)	Row B to Row E	49.8" (1265 mm)	39.6" (1005 mm)	20" (507 mm)	Standard (G)
		Row A to Row F	45.9" (1165 mm)	42" (1065 mm)	18.8" (477 mm)	Narrow (H)
III	Case 60 & 66, Agco, New Holland CR 920/940/960	Row A to Row F	45.9" (1165 mm)	35.6" (905 mm)	20" (508 mm)	Standard (G)

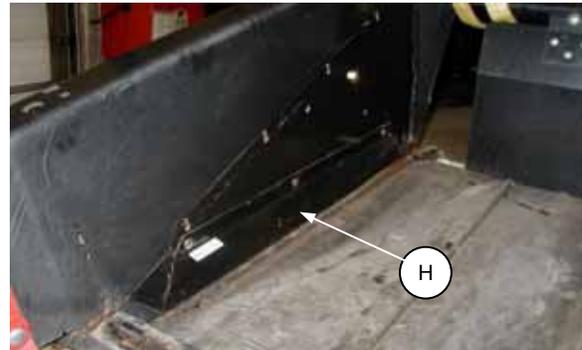


# OPERATION

## To adjust delivery opening width: (continued)



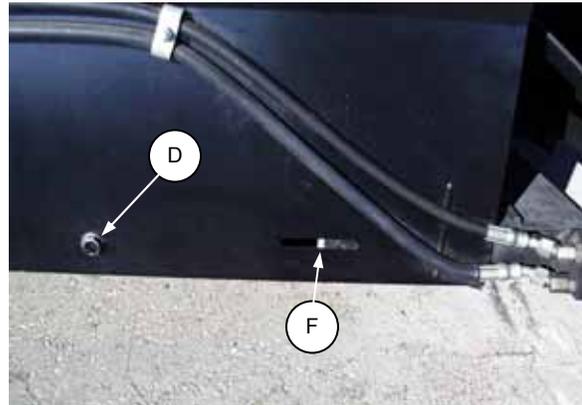
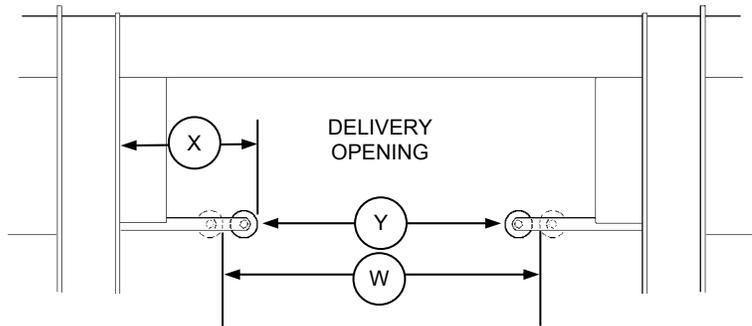
STANDARD DEFLECTOR



NARROW DEFLECTOR

4. Verify that the idler roller assembly is bolted into the deck in the correct position for the selected opening size. See "Idler Roller Positioning" in Maintenance/ Service section.
5. If increasing delivery opening width: Cut excessive flap off of draper, leaving 3/8" (10 mm) extending above the connector. Trim the new ends at the front and rear corners as shown on previous page. This allows draper to fit properly under draper seals to prevent tearing of edges. Use the cut-offs as a guide for trimming. Keep the cut-offs for use as a splice.
6. **NOTE:** Place connector tube so holes closest to end of tube are at cutterbar. Connect draper with screw heads facing center opening.
7. Apply draper tension as follows:
  - Check that draper V-guide is properly engaged in grooves at rear of both rollers.
  - Tighten bolt (D) until white indicator bar is partially hidden behind the roller support arm at (F).

**IMPORTANT:** To avoid premature failure of draper, draper rolls and/or tightener components, do not operate with tension set so that white bar is fully hidden.
8. Slide decks to desired opening width:
  - Loosen clamp (E) at top of deck. (For 36' & 39' Headers, there are two clamps.)
  - Slide deck to achieve desired header opening (see chart on previous page). The recommended starting position is with decks shifted in.
  - Tighten nut at clamp (E).



APPLY DRAPER TENSION



LOOSEN CLAMP TO POSITION DECK

## OPERATION

### END DELIVERY: WINDROWING WITH THE COMBINE

The left or right deck of the header can be moved to close off the center opening and deliver crop to either end of the header. This provides the capability of windrowing with the combine.

**NOTE:** For 36' & 39' Headers, a kit is available to split the R/H deck to deliver crop next to the combine tire. See Options and Attachments section.

#### **To shift deck:**

1. Install bar (C) onto lugs across center opening at cutterbar. This prevents draper damage when end delivering. (Bar is stored on right deck backsheet.)

**NOTE:** Insert the flange nuts into slots in cutterbar lugs (engage from underside.)

2. Reverse draper travel on the deck being moved by disconnecting hydraulic hoses at draper motor (A) and install in opposite ports.
3. For Model 873 Adapters, re-route hydraulic hoses from pump to stop hydraulic flow to the feed draper and drum. See "Windrowing with the Combine" in the 873 Adapter Op. Manual
4. Lower the header to the ground and continue until adapter lowers to clear deck shift lug.
5. Lengthen center link between header and adapter to steepest header angle to clear hose clamps on header back sheet
6. Loosen nut at clamp (B) and slide deck across center opening until there is approximately 2 inches (50 mm) clearance between the rollers of the two decks.

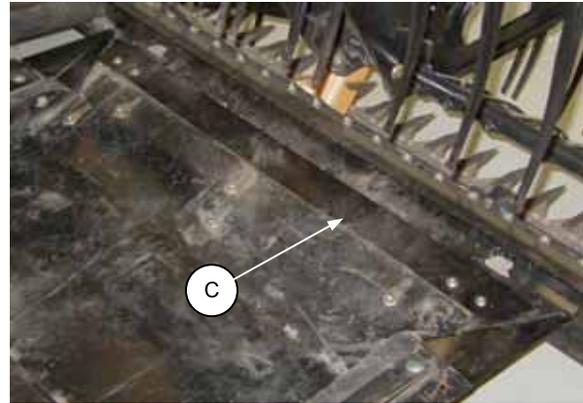
**IMPORTANT:** This clearance is required to prevent contact between draper connectors or slats as they pass between decks.

**NOTE:** If there is interference between deck backsheet and combine adapter retracting tine drum, move drum back to provide clearance (if clearance to combine feed drum allows). See "Drum Fore-Aft Adjustment" in 873 Adapter Operator's Manual.

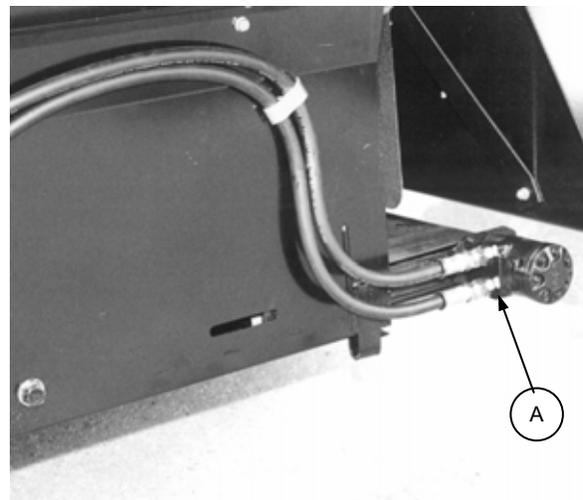
**NOTE:** For 974 Headers, disassembly of inboard front deck support will be necessary to allow deck to slide past cutterbar hinge.

7. Tighten nut at clamp (B).
8. Readjust center link to achieve desired header operating angle.
9. With header and combine feed chain drum floated up, check clearances: There should be 1 to 2 inches (25 to 50 mm) clearance between adapter drum and combine feed chain drum, while still providing adequate clearance to header backsheet. If repositioning adapter drum does not provide enough clearance both fore and aft, remove one row of tines from drum.

Continued next page.



INSTALL GUIDE BAR FOR END DELIVERY



REVERSE HOSES AT DRAPER MOTOR



LOOSEN CLAMP TO SLIDE DECK

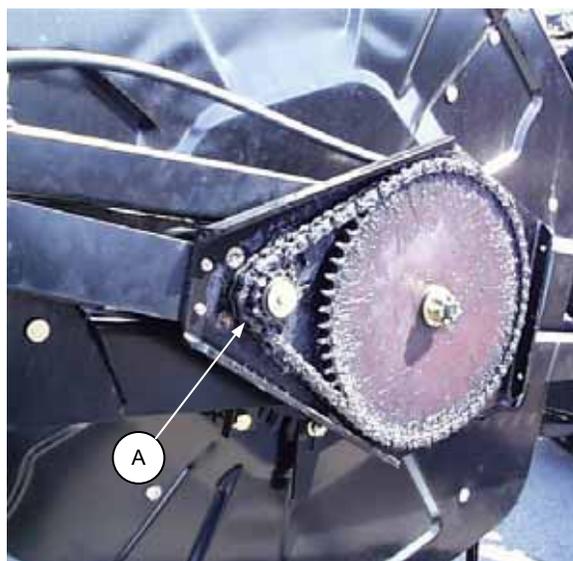
# OPERATION

## END DELIVERY: WINDROWING WITH THE COMBINE (continued)

10. Adjust header flotation to compensate for the shift in weight. See "Header Flotation".
11. **NOTE:** For 974 Headers, engage the wing float lock out pins to avoid interference at cutterbar hinge when end delivering. See page 23.
12. For rotary combines with narrow feeder opening, increase delivery opening width to be suitable for windrowing. See "Delivery Opening Width", beginning on page 26.
13. If header drapers catch on feed draper deck or deflectors, adjust feed pan spacer plate. See "Feed Pan Clearance Adjustment" in 873 Adapter Operator's Manual.

## REEL SPEED

- Reel speed affects feeding of crop into the sickle and onto the drapers, as well as the smoothness and evenness of the delivered crop. Operating the reel too fast or too slow relative to ground speed will cause bunching.
- In standing crop, reel speed should be just faster than ground speed, sweeping crop across the sickle.
- The more "down" the crop, the faster the reel speed should be in relation to ground speed. This can be achieved by increasing reel speed, decreasing ground speed, or both.
- Excessive shattering of grain heads or crop loss over the header back tube may be indications that reel speed is too fast. Excessive reel speed causes undue wear of reel components and unnecessary load on reel drive, resulting in uneven reel motion.
- A high torque reel drive sprocket (11 teeth) (A) is standard on the Header. The high torque is required for many conditions such as rice and other heavy crops. An optional high speed reel drive sprocket (17 teeth) is recommended when operating at speeds over 6 mph (10 km/h). Two links of chain need to be added when converting from high torque to high speed. See your Dealer Parts Department to order the optional sprocket and chain.



REEL DRIVE SPROCKET – HIGH TORQUE  
STANDARD, HIGH SPEED OPTIONAL

## REEL HEIGHT

- Depending on crop height, adjust reel height to carry material through the sickle onto the drapers.
- Down crop will require a lower reel height to wipe crop off the sickle.
- Bushy crop may require raising the reel to prevent unevenness in delivery.
- Indications that reel may be too low are crop loss over the header back tube, or disturbance of crop on the drapers by the reel fingers.

# OPERATION

## REEL POSITION

**IMPORTANT:** When difficulty is encountered picking up down crop, start by adjusting header angle to a steeper position. This tilts the entire reel/sickle/drafter combination and is often all that is required. See "Header Angle" in Combine Adapter Operator's Manual for adjustment details. Adjust reel position only if header angle adjustments are not satisfactory.

Reel fore-aft position can be adjusted mechanically (973) or hydraulically (974) to suit various crop conditions. A gauge decal is provided on the left reel support arm for identifying a preferred position. The back edge of the reel end shield is the gauge indicator (A). For units with hydraulic header tilt as well as hydraulic reel fore-aft, use the selector switch in the cab to choose the desired function.

- For straight standing crop, center the reel over the cutterbar (4 or 5 on gauge).
- For crops that are down, tangled, or leaning, it may be required to move reel ahead of cutterbar (to a higher number on the gauge).

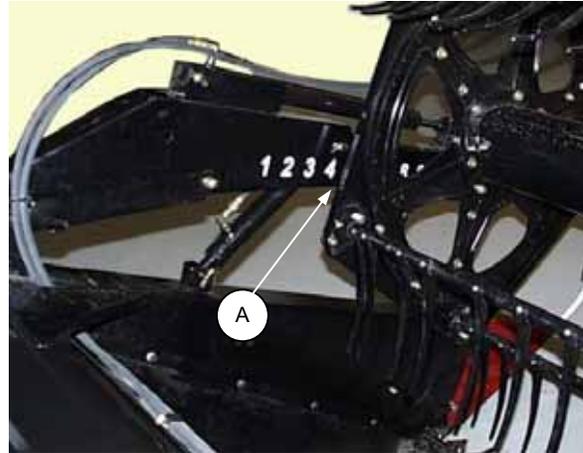
After adjusting reel fore-aft position, check reel clearance to cutterbar. Minimum finger to guard/cutterbar clearance is as follows:

For 973 Headers: 5/8 inch (15 mm).

For 30' 974 Headers: 1-3/4" (45mm) at each end and 2-1/4" (58mm) at center.

For 36' 974 Headers: 1-3/4" (45mm) at left end, 1" (25mm) at right end and 2-3/8" (60mm) at center.

**NOTE:** Reel clearance to cutterbar is factory set as above. Adjustment should not normally be required. If required, refer to Maintenance/Service section for adjustment procedure.

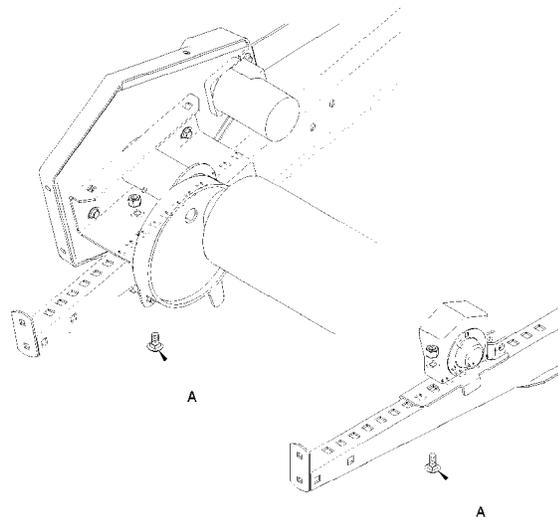


REEL FORE AFT POSITION INDICATOR

### To adjust reel fore-aft position (mechanical):

1. Lower reel so support arms are horizontal.
2. Remove bolt (A) at each support arm.
3. Using a 15/16" wrench on sprocket inside reel arm, slide reel to the desired position. If reel binds on arms from misalignment, move in smaller increments (two holes at a time).
4. Install and tighten bolt (A). Be sure the same hole is used at each arm.
5. Check reel clearance to cutterbar. See measurements above.

**NOTE:** For 973 Headers, a kit is available to provide hydraulic reel fore-aft adjustment. See Options and Attachments section.



REEL FORE-AFT POSITION: MANUAL ADJUSTMENT

# OPERATION

## REEL POSITION (continued)

### To adjust pick-up reel finger pitch:

If adjusting the reel fore-aft position does not provide proper feeding, the finger pitch can be adjusted by repositioning bolt (B).

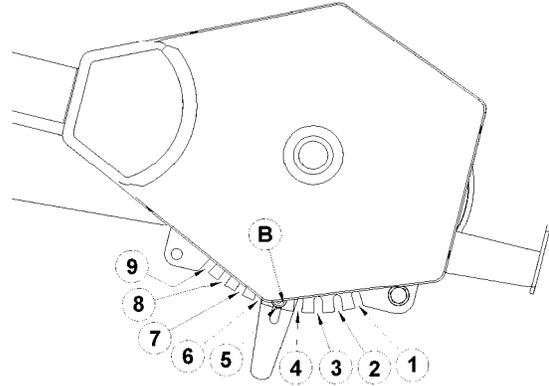
**Slot 1: least aggressive (standing crop)**

**Slot 5: recommended starting position**

**Slot 9: most aggressive (down, tangled crop)**

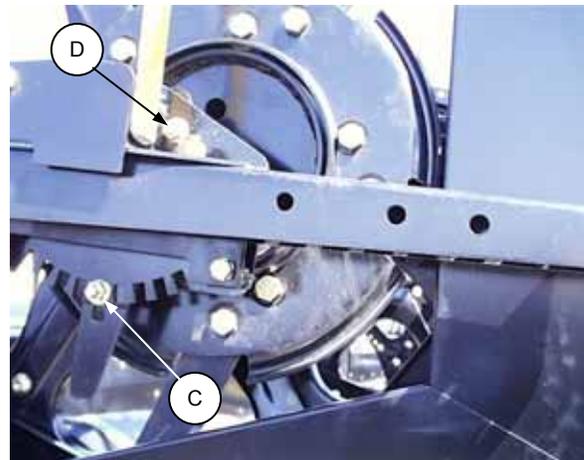
**TIP:** In bushy crop that sits high on drapers, try a more aggressive finger pitch to reduce carryover. The Trouble Shooting section includes other tips to improve performance.

1. Loosen bolt (B) and disengage from current position.
2. Install and tighten bolt (B) in desired position in arm.
3. For split reels, repeat adjustment at R/H arm by loosening bolts (C) and (D), moving bolt (C) to same position as center arm and tightening (C) and (D).



FINGER PITCH ADJUSTMENT

4. Check clearance to cutterbar:  
When operating reel with an aggressive finger pitch, be sure that fingers will not contact sickle when flexed back by crop, as at (R). Check all possible points of contact between points (X). Depending on reel fore-aft position, minimum clearance can occur at guard tine, hold-down or cutterbar.

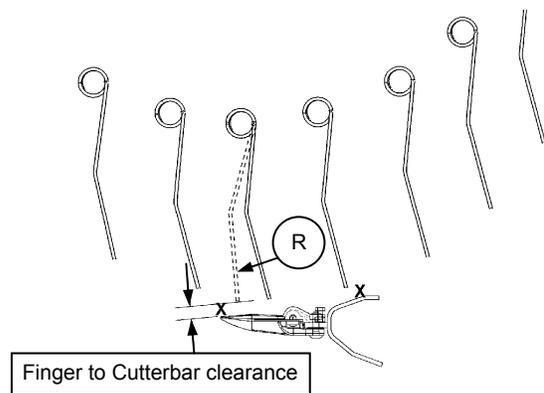


FINGER PITCH ADJUSTMENT –  
SPLIT REELS R/H SIDE

Minimum finger to guard/cutterbar clearance is as follows:

- For 973 Headers: 5/8 inch (15 mm).
- For 30' 974 Headers: 1-3/4" (45mm) at each end and 2-1/4" (58mm) at center.
- For 36' 974 Headers: 1-3/4" (45mm) at left end, 1" (25mm) at right end and 2-3/8" (60mm) at center.

**NOTE:** Reel clearance to cutterbar is factory set as above. Adjustment should not normally be required. If required, refer to Maintenance/Service section for adjustment procedure.



CHECK CLEARANCE TO SICKLE

## OPERATION

### UPPER CROSS AUGER (Optional)

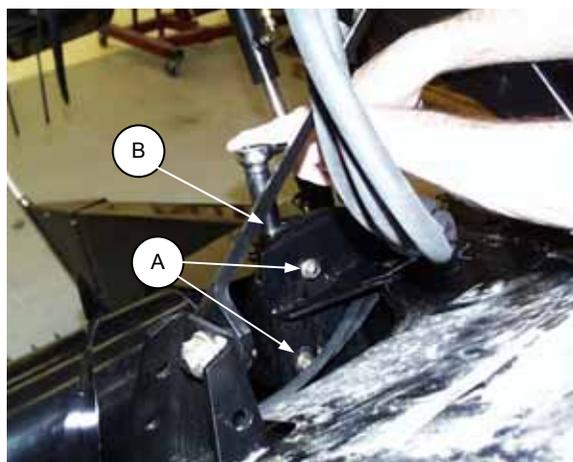
For tall or bulky crops, the optional upper cross auger will aid crop flow across the header and through the delivery opening.

The vertical position of the upper cross auger is adjustable for best feeding of the crop. Extremely tall crops will require a higher setting.

#### **To adjust vertical position:**

##### 21' & 25' Headers

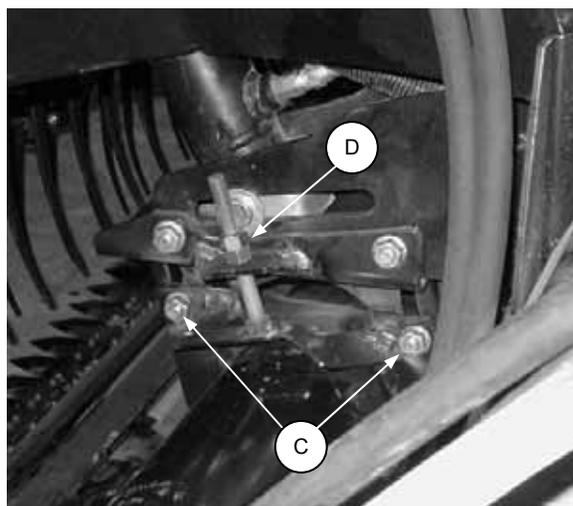
- Loosen two bolts (A) both sides.
- Adjust vertical position with drawbolt (B).
- Exposed thread on bolts (B) should be the same both sides.
- Check that height is consistent across the header and adjust as necessary.
- Tighten all hardware.



ADJUST AUGER VERTICAL POSITION  
L/H & R/H – ALL HEADER SIZES

##### 30', 36' & 39' Headers

- Loosen two bolts (A) both sides.
- Adjust vertical position with drawbolt (B).
- Exposed thread on bolts (B) should be equal.
- Loosen two bolts (C) at center bearing support.
- Loosen jam nut on drawbolt (D) and adjust vertical position of center support to align left and right augers.
- Check that height is consistent across the header and adjust as necessary.
- Tighten all hardware.



ADJUST CENTER BEARING SUPPORT –  
30', 36' & 39'

**NOTE:** If experiencing crop wrapping on beater bars at center of upper cross auger, remove beater bars and mounting clamps.

# OPERATION

## SHUT DOWN PROCEDURE



**CAUTION:** Before leaving operator's seat for any reason:

1. Park on level ground if possible.
2. Lower the header and reel fully.
3. Place all controls in **NEUTRAL** or **PARK**.
4. Disengage header drive.
5. Engage the park brake.
6. Stop engine and remove key from ignition.
7. Wait for all movement to stop.

## UNPLUGGING THE HEADER



**WARNING:** Stop engine and remove key from ignition before removing plugged material from header.

If the sickle plugs:

1. Stop forward movement of the combine and disengage header drives.
2. With header on ground, back up several feet and engage header drives.
3. If plug does not clear, disengage header drives and raise header fully.
4. Shut off engine, remove key and engage park brake.
5. Engage header lift cylinder stops.



**WARNING:** Wear heavy gloves when working around sickle.

6. Clean off cutterbar.

If sickle plugging persists, see Trouble Shooting section.

# OPERATION

## TRANSPORTING THE HEADER ON COMBINE



**WARNING:** Do not drive combine with header attached on a road or highway at night, or in conditions which reduce visibility, such as fog or rain. The width of the header may not be apparent under these conditions.



**CAUTION:**

1. Check local laws for width regulations and lighting or marking requirements before transporting on roads.
2. Follow all recommended procedures in your Combine Operator's Manual for transporting, towing etc.
3. Disengage header drive clutch when travelling to and from the field.
4. Before driving combine on a roadway, be sure flashing amber lamps, red tail lamps and head lamps are clean and working properly. Pivot amber lamps for best visibility by approaching traffic. Always use these lamps on roads to provide adequate warning to other vehicles.
5. Do not use field lamps on roads, they may confuse other drivers.
6. Before driving on a roadway, clean slow moving vehicle emblem and reflectors. Adjust rear view mirror and clean windows.
7. Lower the reel fully and raise header unless transporting in hills. (See point #8.) Maintain adequate visibility and be alert for roadside obstructions, oncoming traffic and bridges.
8. When travelling down hill, reduce speed and keep header at a minimum height. This provides maximum stability if forward motion is stopped for any reason. Raise header completely at bottom of grade to avoid contacting ground.
9. Travel speed should be such that complete control and machine stability are maintained at all times.
10. Engage adapter spring float lockout and wing float lockout pins (974 Headers) to reduce bouncing.

**NOTE:** If transporting the header in field position on a flat bed trailer, take care when positioning tie down straps to avoid damage to safety decals and reflectors on main tube.

# OPERATION

## STORAGE PROCEDURE

Do the following at the end of each operating season:

1. Clean the header thoroughly.



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

2. Cover cutterbar and sickle guards to prevent injury from accidental contact.

Also:

3. Store machine in a dry protected place if possible. If machine is stored outside, cover with a waterproof canvas or other protective material.
4. If machine is stored outside, remove drapers and store in a dark, dry place.  
**NOTE:** If drapers are not removed, store header with cutterbar lowered so water/snow will not accumulate on drapers. This accumulation of weight puts excessive stress on drapers and header.
5. Lower header onto blocks to keep cutterbar off the ground.
6. Lower reel completely. If stored outside, tie reel to frame to prevent rotation caused by wind.
7. Repaint all worn or chipped painted surfaces to prevent rust.
8. Lubricate the machine thoroughly, leaving excess grease on fittings to keep moisture out of bearings. Oil cutterbar and apply grease to exposed threads and sliding surfaces of components.
9. Check for worn or broken components and repair or order replacements from your dealer. Attention to these items right away will save time and effort at beginning of next season.
10. Replace or tighten any missing or loose hardware. See Specifications section for torque charts.

# MAINTENANCE/SERVICE

## SERVICE PROCEDURES



**CAUTION:** To avoid personal injury, before servicing machine or opening drive covers:

1. Fully lower header and reel. If it is necessary to service in the raised position, first engage header lift cylinder stops and reel props.
2. Disengage header drive clutch.
3. Stop engine and remove key.
4. Engage park brake.
5. Wait for all moving parts to stop.

Park on level surface when possible. Block wheels securely. Follow all recommendations in your Combine Operator's Manual.

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 the driveline by hand (for example to access a lube fitting) will cause other drive components (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 extinguisher 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 header clean. Never use gasoline, naphtha or any volatile material for cleaning purposes. These materials may be toxic and/or flammable.

# MAINTENANCE/SERVICE

## RECOMMENDED LUBRICANTS

### **GREASE**

Use an SAE Multi-Purpose High Temperature Grease with Extreme Pressure (EP2) Performance and containing a maximum of 1% moly (molybdenum disulphide).

**For driveline slip-joints only**, increased moly content (up to 10%) is recommended. **IMPORTANT:** Do not use this higher moly content grease on bearings, as it may cause excessive wear in high speed applications.

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### **WOBBLE BOX LUBRICANT**

In sickle drive wobble box, use SAE 85W-140 gear lubricant. (API Service Classification GL-5)

**Capacity:** 2.2 litres (2.3 U.S. quarts)

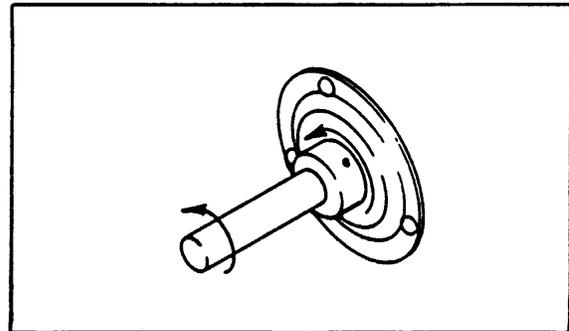
### **STORING AND HANDLING LUBRICANTS**

Your machine can operate at top efficiency only if clean lubricants are used. Contaminant in lubricants is the most likely cause of bearing and hydraulic system failure. Use clean containers to handle all lubricants. Store lubricants in an area protected from dust, moisture and other contaminants. Keep hydraulic couplers and connectors clean.

---

## SEALED BEARING INSTALLATION

1. Clean shaft and coat with rust preventative.
2. Install flangette, bearing, flangette and lock collar. The locking cam is only on one side of the bearing.
3. Install and tighten the flangette bolts.
4. When the shaft is located correctly, lock the lock collar with a punch. The collar should be locked in the same direction the shaft rotates. Tighten the setscrew in the collar.
5. Loosen the flangette bolts on the mating bearing one turn and re-tighten. This will allow the bearing to line up.



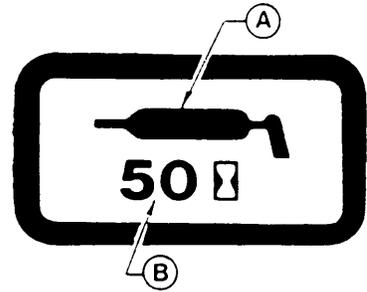
TIGHTEN COLLAR IN DIRECTION  
SHAFT ROTATES

# MAINTENANCE/SERVICE

## GREASING THE HEADER

See "Recommended Lubricants" in this section for recommended greases.

The following greasing points are marked on the header by decals showing a grease gun (A), and grease interval (B) in hours of operation. Use the hour meter in the combine cab and the "Maintenance Checklist" provided to keep a record of scheduled maintenance.



SAMPLE GREASE DECAL

Procedure:

1. Wipe grease fitting with a clean cloth before greasing, to avoid injecting dirt and grit.
2. Inject grease through fitting with grease gun until grease overflows fitting.
3. Leave excess grease on fitting to keep out dirt.
4. Replace any loose or broken fittings immediately.
5. If fitting will not take grease, remove and clean thoroughly. Also clean lubricant passageway. Replace fitting if necessary.



**DANGER:** Stay clear of driveline until all movement has stopped. Entanglement with rotating driveline will cause serious personal injury or death. Avoid loose fitting or dangling clothing.

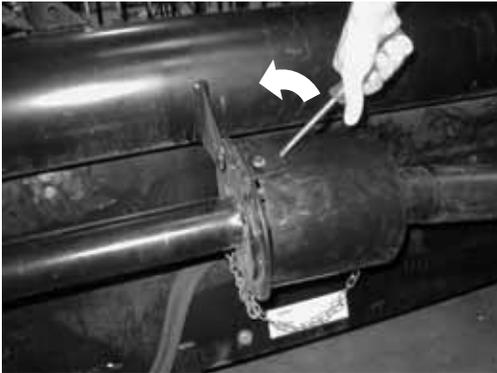


STAY CLEAR OF ROTATING DRIVELINE

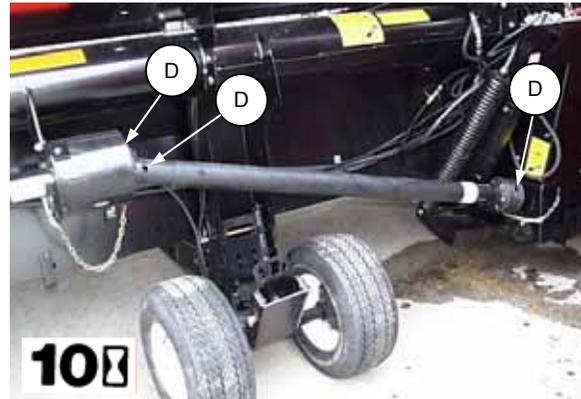
## 10 Hours or Daily

1. Driveline (D) - three fittings

**NOTE:** To open driveline shield at header, pry up with screwdriver as shown to release bolt head from welded tab.



REMOVING DRIVELINE SHIELD



DRIVELINE

## 25 Hours

1. Sickle Head (E) - one fitting

**NOTE:** If more than 6 to 8 pumps of the grease gun are required to fill the cavity, replace the seal in the sickle head. When changing seal, check pin and needle bearing for wear. Replace if necessary. See page 46.



SICKLE HEAD

## MAINTENANCE/SERVICE

### GREASING THE HEADER (continued)

#### 50 Hours

1. Reel Support Bushings (B) – one fitting at R/H end of split pick-up reel header.



REEL SUPPORT BUSHINGS – R/H  
SPLIT PICK-UP REEL HEADER

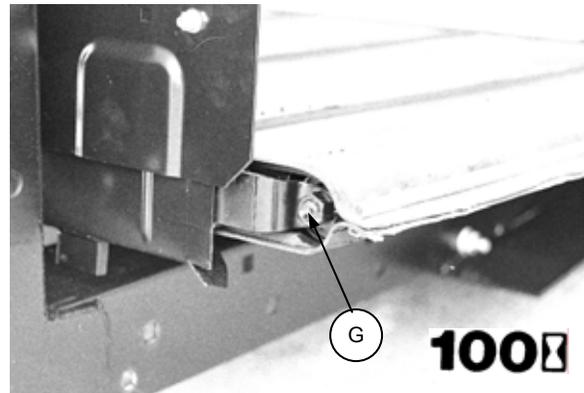
#### 100 Hours or Annually

1. Draper Roller Bearings – 6 fittings  
Idler rollers have grease fittings at both cutterbar and backsheet ends. Drive rollers (with motor) have a grease fitting at the cutterbar only.

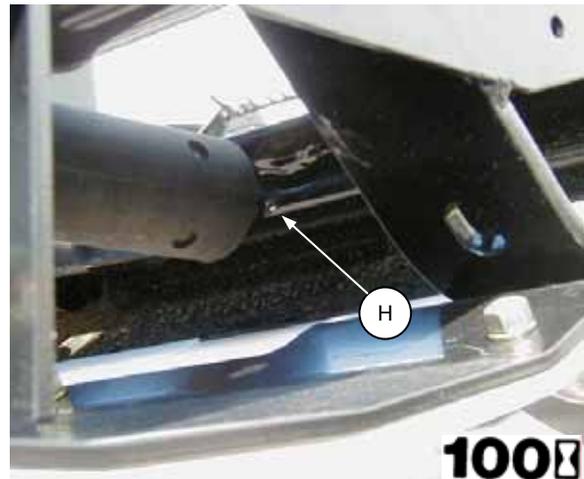
**NOTE: To access drive roller fittings, loosen draper tensioner or shift deck inboard.**

At Backsheet – 2 fittings (G)

At Cutterbar – 4 fittings (H)



DRAPER ROLLER BEARINGS -  
AT BACKSHEET



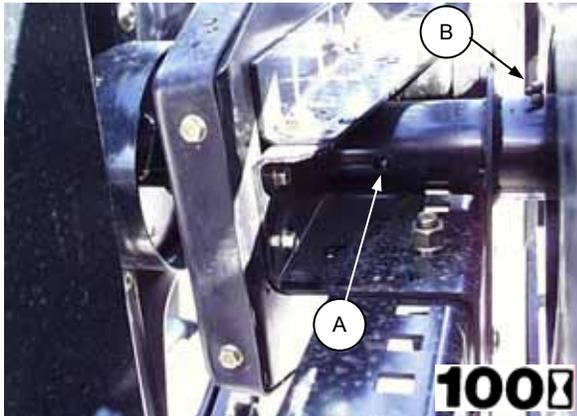
DRAPER ROLLER BEARINGS -  
AT CUTTERBAR

# MAINTENANCE/SERVICE

## GREASING THE HEADER

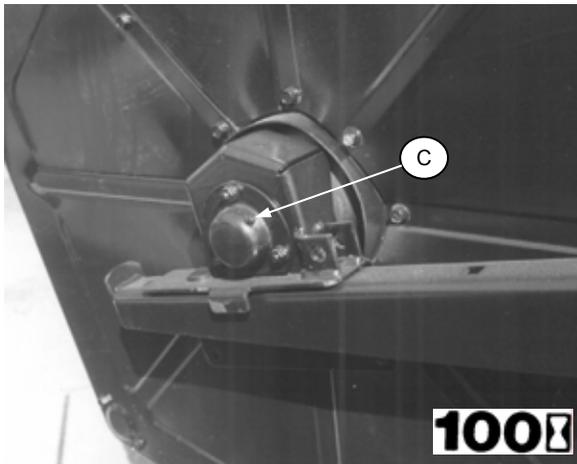
### 100 Hours or Annually (continued)

2. Reel Drive Support Bearings (A) – one fitting
3. Pick-Up Reel Drive Cam (B) – one fitting (two on split pick-up reel headers)



REEL DRIVE SUPPORT & PICK-UP REEL CAM

4. Reel Tail Support Bearing (C) – one fitting (two fittings on bat reels)



REEL TAIL SUPPORT BEARING

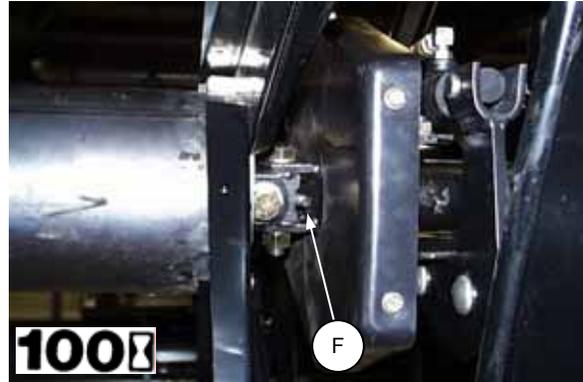
5. Sickle Drive Shaft Support Bearings (D) & (E) - two fittings



SICKLE DRIVE SHAFT SUPPORT BEARINGS

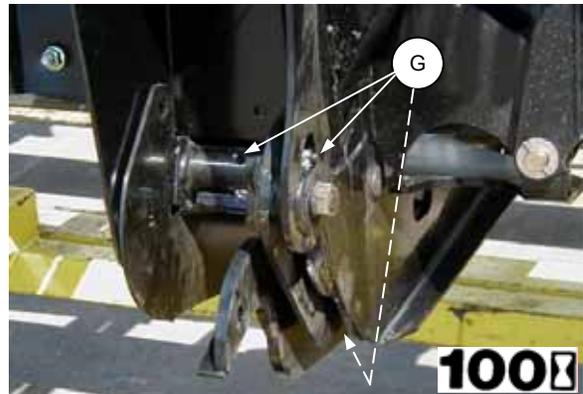
Form # 147083

6. Split Reel Connector Block (F) - one fitting on split reel headers



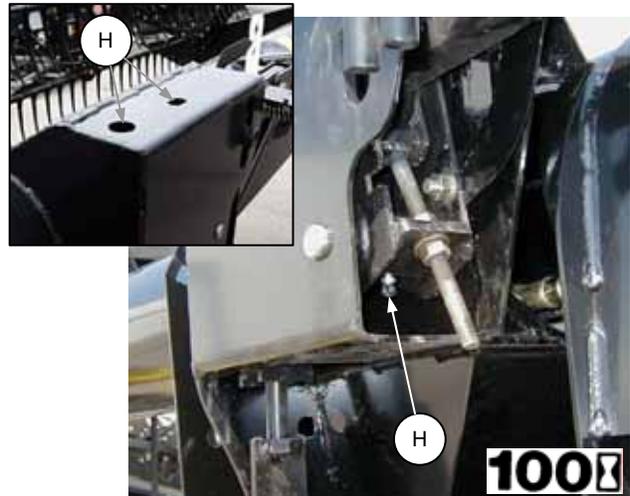
SPLIT REEL CONNECTOR BLOCK

7. 974 Flex Header Lower Linkage (G) – six fittings (three per side). **NOTE:** One fitting under leg (see dotted arrow G).



FLEX HEADER LOWER LINKAGE

8. 974 Flex Header Bellcrank Linkage (H) – six fittings (three per side)

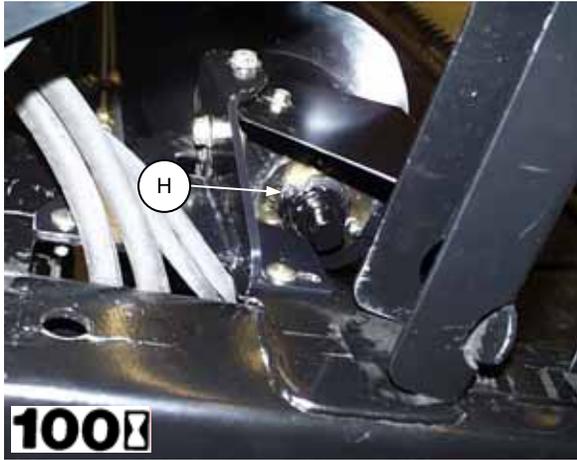


FLEX HEADER BELLCRANK LINKAGE

# MAINTENANCE/SERVICE

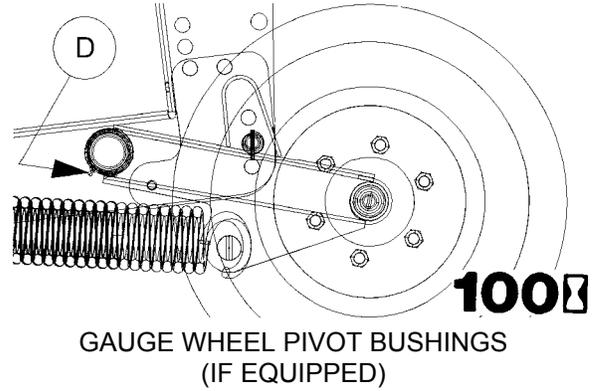
## GREASING THE HEADER – 100 Hours (cont'd.)

- 9 Upper Cross Auger Support Bearing (if equipped) (H) - one fitting at right end

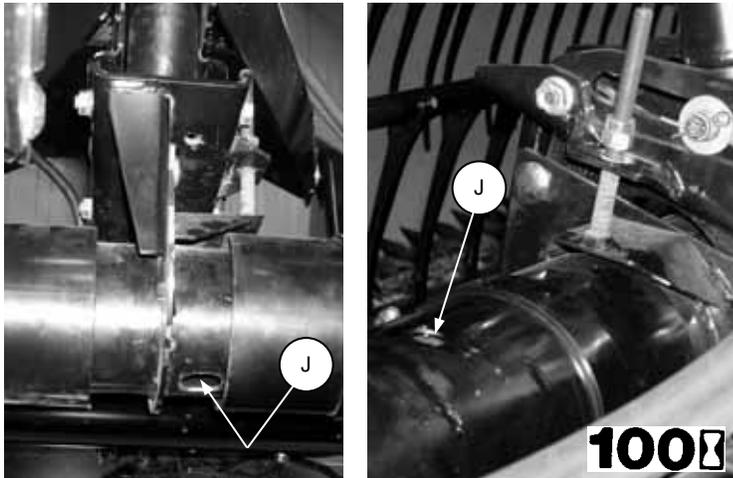


UPPER CROSS AUGER SUPPORT BEARING (IF EQUIPPED)

- 11. Gauge Wheel Pivot Bushings (if equipped) (D) – two fittings



- 10. Upper Cross Auger Center Connection (if equipped) (J) – two fittings on 30', 36', & 39'



UPPER CROSS AUGER CENTER CONNECTION – 30', 36', 39' (IF EQUIPPED)

## 500 Hours or Annually

- 1. Gauge Wheel Hub Bearings (if equipped) (A) – two fittings



GAUGE WHEEL HUB BEARINGS

# MAINTENANCE/SERVICE

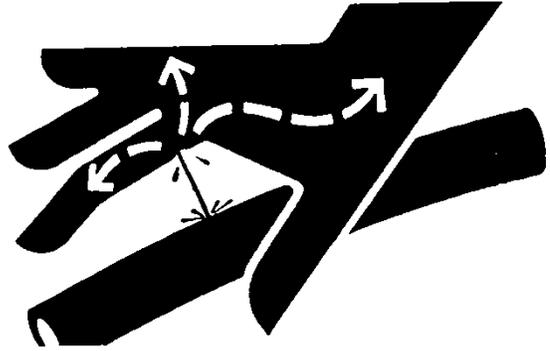
## HYDRAULIC SYSTEM

### Hydraulic Hoses and Lines

Check hydraulic hoses and lines **daily** for signs of leaks.



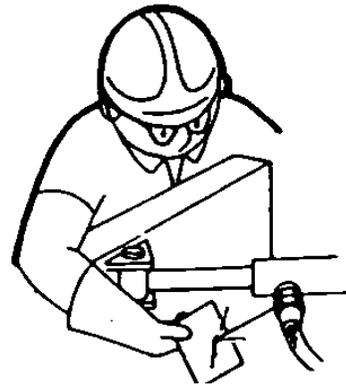
**WARNING:** Avoid high-pressure fluids. Escaping fluid can penetrate the skin causing serious injury. Relieve pressure before disconnecting hydraulic lines. Tighten all connections before applying pressure. Keep hands and body away from pinholes and nozzles, which eject fluids under high pressure. Use a piece of cardboard or paper to search for leaks. 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.



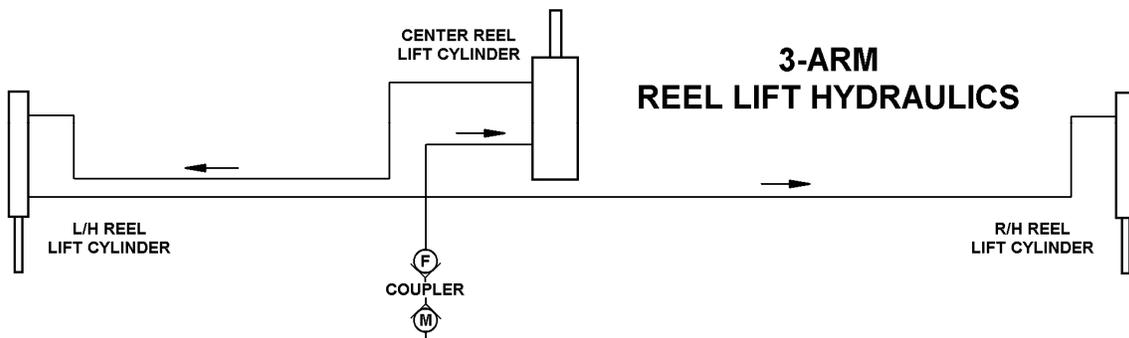
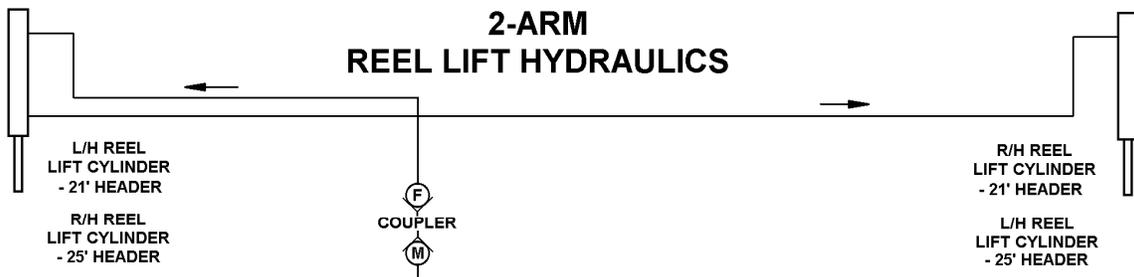
AVOID HIGH PRESSURE FLUIDS

### IMPORTANT:

- Ensure all hydraulic couplings are fully engaged before operating header.
- Keep hydraulic coupler tips and connectors clean. Dust, dirt, water and foreign material are the major causes of damage to the hydraulic system.



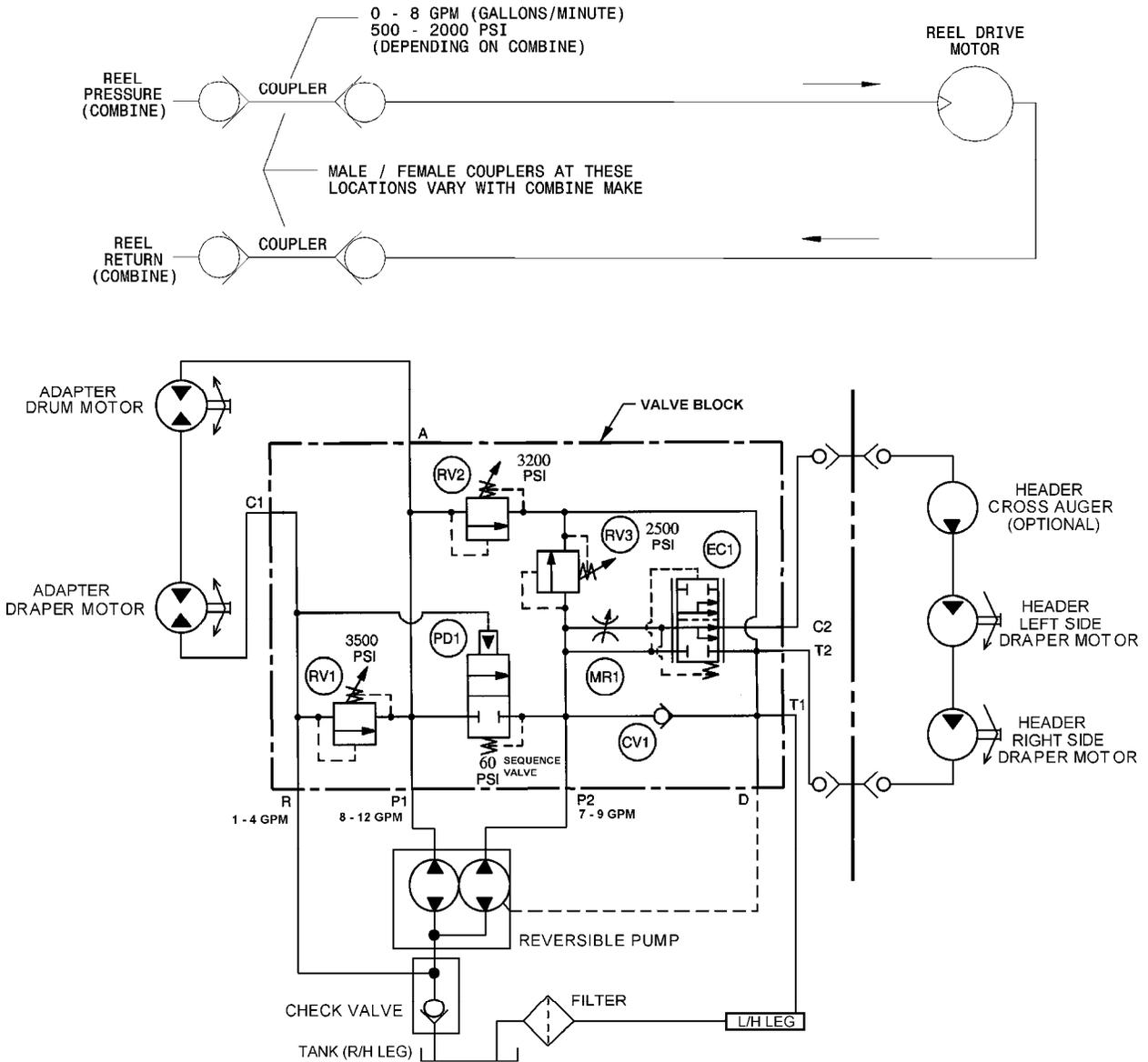
CHECK PROPERLY FOR LEAKS



# MAINTENANCE/SERVICE

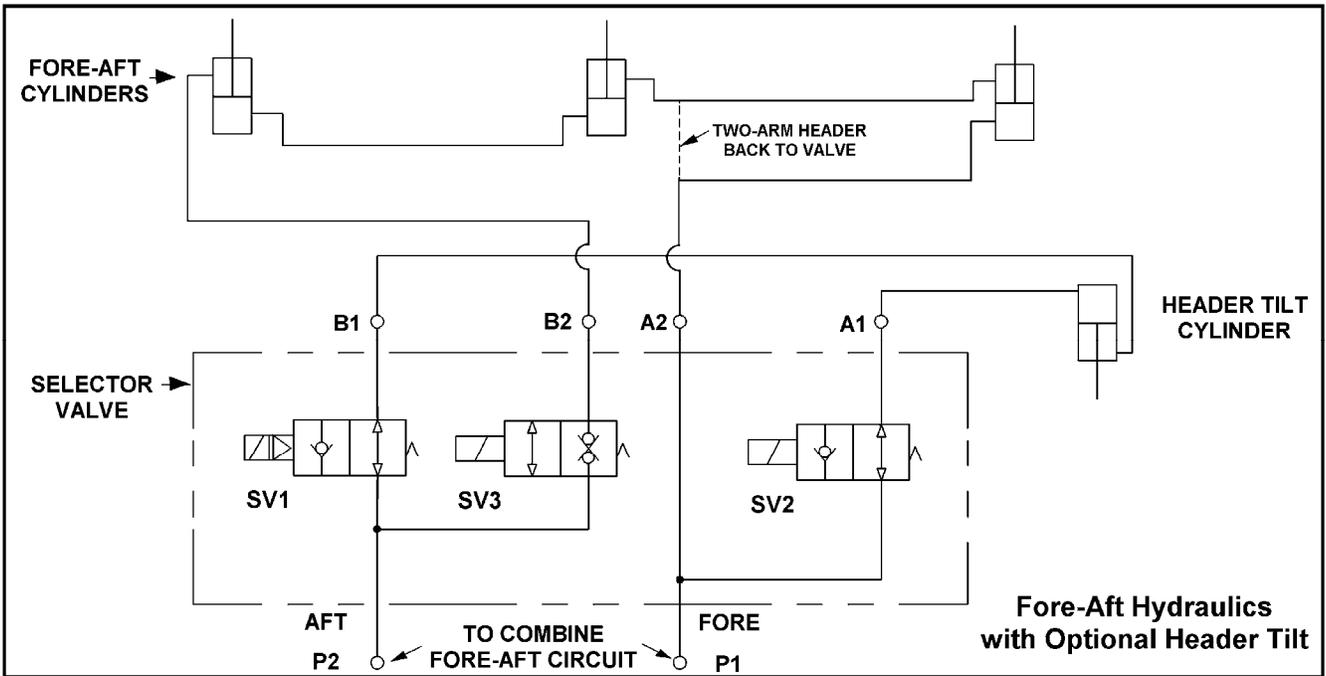
## HYDRAULIC SYSTEM (continued)

### REEL & CONVEYOR DRIVES ON COMBINE WITH 873 ADAPTER

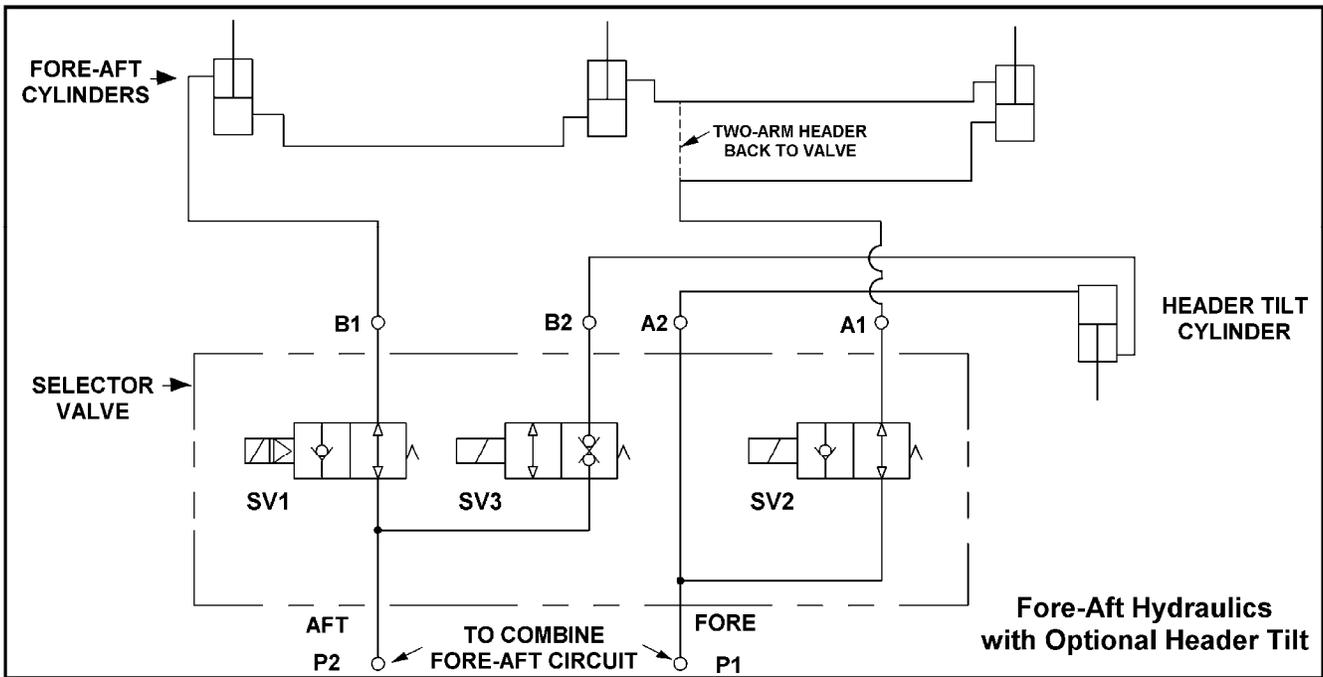


# MAINTENANCE/SERVICE

## HYDRAULIC SYSTEM (continued)



**SELECTOR VALVE HYDRUALIC SCHEMATIC  
ALL COMBINES MODELS EXCEPT CASE AFX & NEW HOLLAND CR/CX**



**SELECTOR VALVE HYDRUALIC SCHEMATIC  
CASE AFX & NEW HOLLAND CR/CX MODELS ONLY**

## MAINTENANCE/SERVICE

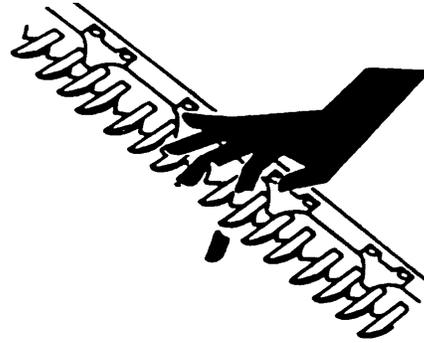
### SICKLE AND SICKLE DRIVE



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



**CAUTION:** Wear heavy gloves when working around or handling sharp knives.



KEEP HANDS AWAY FROM SICKLE

### Sickle Lubrication

Apply SAE 10 or equivalent light weight oil **daily** (one or two drops per section) along entire length of sickle.

**NOTE:** Do not oil sickle if operating in sandy conditions. Oil will cause sand to adhere to sickle components, resulting in excessive wear.

In some crops, like flax, it may be necessary to wash off the gum that adheres to the sickle with diesel fuel or water.



OIL SICKLE DAILY EXCEPT  
IN SANDY SOIL

### Sickle Sections

Check **daily** that sections are firmly bolted to the sickle back and are not worn or broken. Replace as required.

To replace sickle section:

1. Grasp the sickle drive belt and turn the sickle drive until sections (A) are centered in the guard as shown.
2. Remove the guard (and hold-down if present) at the section to be replaced.
3. Remove lock nuts securing the section and lift section off of bolts.

**IMPORTANT:** Do not mix heavy and light sickle sections on same sickle.

4. Clean any dirt off of sickle back and position new sickle section on bolts. Secure with lock nuts.
5. Reinstall any guards and hold-downs removed. Adjust sickle hold-downs as required. See "Sickle Hold-Downs in this section"



BOLT-ON SECTIONS

## MAINTENANCE/SERVICE

### SICKLE AND SICKLE DRIVE (continued)

#### To Remove Sickle



**WARNING:** Always stand to rear and grasp rear edge of sickle during removal to reduce risk of injury from cutting edges. Wear heavy gloves when handling sickle.

1. Clean area around sickle head. Stroke sickle to its outer limit and remove bolt (A).
2. Insert screwdriver in slot (B) and pry up on sickle head pin to free sickle.  
**NOTE:** For ease of disassembly, remove grease fitting from pin to release vacuum.
3. Stroke pitman arm to clear bearing in sickle head. Insert sickle head pin in sickle head to shield bearing from dirt and replace grease fitting if removed.
4. Wrap a chain around sickle head and pull sickle out.

**NOTE:** For single drive sickles with splice plate, remove bolts from splice plate and pull sickle out from both ends.



REMOVING SICKLE

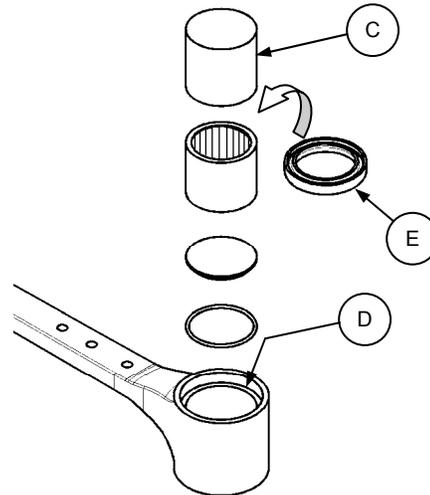
#### Sickle Head Needle Bearing Installation

Using a flat-ended tool (C) with approximately the same diameter as the bearing, push the bearing into the sickle head until the top of the bearing is flush with the step (D) in sickle head.

**IMPORTANT:** O-ring and plug must be in place in sickle head before installing bearing. Assemble the bearing with the stamped end (the end with identification markings) against the tool.

Install seal (E) in top of sickle head *with lip facing outwards*.

**IMPORTANT:** To avoid premature sickle head or wobble box failure, be sure there is no looseness in:  
a) Fit of sickle head pin and needle bearing.  
b) Fit of sickle head pin and pitman arm.



NEEDLE BEARING INSTALLATION

## MAINTENANCE/SERVICE

### SICKLE AND SICKLE DRIVE (continued)

#### To Install Sickle



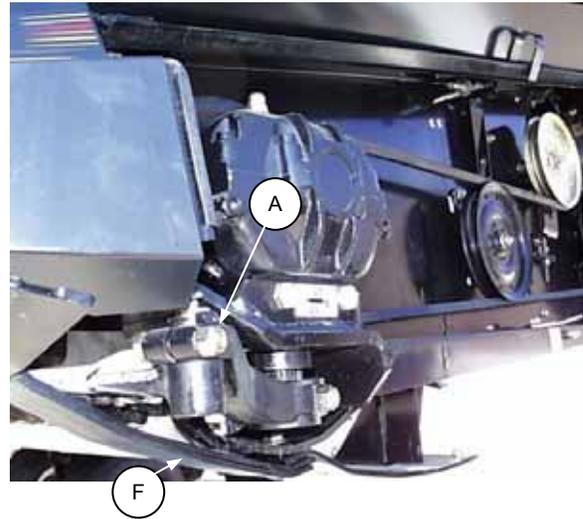
**WARNING:** Always stand to rear and grasp rear edge of sickle during installation to reduce risk of injury from cutting edges. Wear heavy gloves when handling sickle.

**IMPORTANT:** Always align guards and re-set sickle hold-downs while replacing sickle. See "Guards" and "Sickle Hold-Downs" in this section.

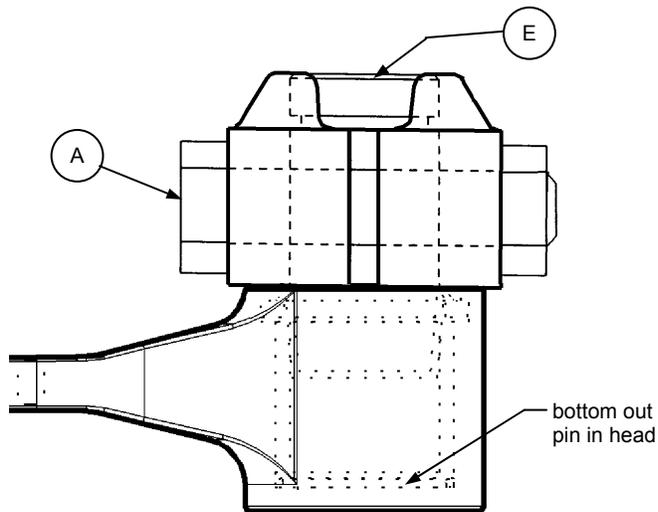
1. Slide sickle into place and replace bolt (A).  
**NOTE:** When installing sickle head pin (E), bottom out the pin in sickle head, then hammer sickle head back up to pitman arm.

2. Tighten bolt (A) to 160 ft.lbs. (220 N-m)

**NOTE:** To prevent wobble box failure: In wet conditions a build-up of mud may occur on inboard side of sickle head, causing plugging. In these conditions, remove skid shoe (F).



INSTALLING SICKLE



INSTALLING SICKLE – FRONT VIEW

## MAINTENANCE/SERVICE

### SICKLE AND SICKLE DRIVE (continued)

#### Spare Sickle Storage

Provision has been made for storage of a spare sickle in the header main tube, with access from the R/H side.

1. From R/H end of header, insert sickle c/w head into plastic sheath in header main tube. Sickle sections point rearward as shown.
2. Push sickle into sheath until head contacts stop. Tighten hardware as shown to secure the sickle.



SPARE SICKLE STORAGE

#### Guards



**CAUTION:** Always engage reel props before working under reel.

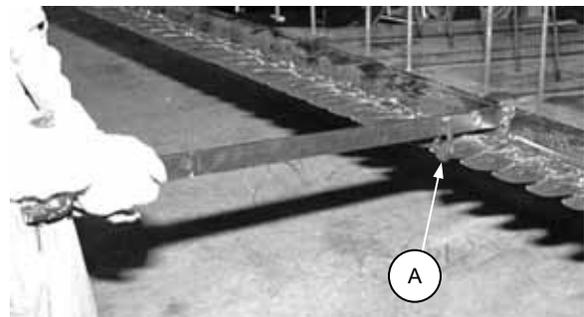
Check **daily** that guards are aligned to obtain proper shear cut between sickle section and guard. Sickle sections should contact shear surface of each guard.

Align guards with guard straightening tool (available from your Dealer Parts Department) as shown:

To bend guard tips up, position tool as shown at (A) and pull up.

To bend tips down, position tool as at (B) and push down.

**TIP:** If trouble is encountered cutting tangled, but easy to cut material (canola, peas, grain) replace guards with stub guards and install a sickle hold-down on every guard.



BENDING GUARD TIPS UP



BENDING GUARD TIPS DOWN

# MAINTENANCE/SERVICE

## SICKLE AND SICKLE DRIVE (continued)

### Sickle Hold-Downs

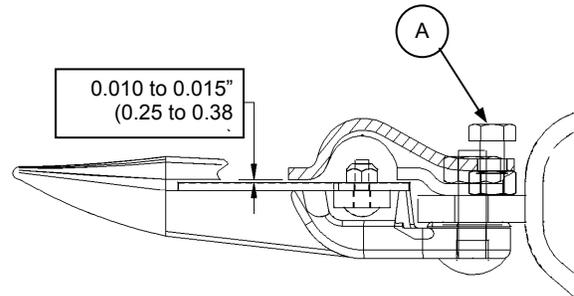


**CAUTION:** Always engage reel props before working under reel.

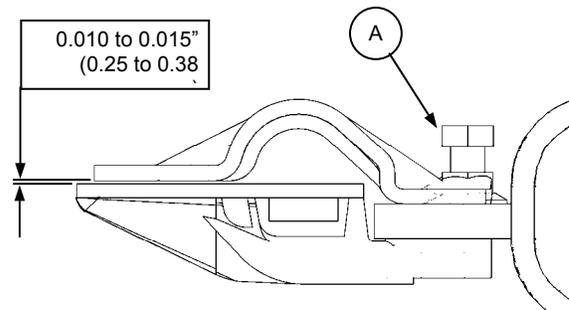
Check **daily** that sickle hold-downs are set to prevent sickle sections from lifting off guards but still permit sickle to slide without binding. Set hold-downs after guards are aligned.

To adjust hold-downs:

1. Using a feeler gauge between hold-down and sickle section, turn bolt (A) to obtain 0.010 to 0.015 inch (0.25 to 0.38 mm) clearance.
2. After adjusting hold-downs, run header at a low engine speed and listen for noise due to insufficient clearance. Re-adjust as necessary.



SETTING SICKLE HOLD-DOWNS -  
POINTED GUARDS



SETTING SICKLE HOLD-DOWNS -  
STUB GUARDS

## MAINTENANCE/SERVICE

### SICKLE AND SICKLE DRIVE (continued)

#### Wobble Box Mounting Bolts

Tighten the four wobble box mounting bolts (A) after the **first 10 hours** operation and **every 100 hours** thereafter. Torque to 200 ft.lbs. (270 N·m), starting with the side mounting bolts.

#### Wobble Box Lubricant

Check wobble box lubricant level **before first operation** and **every 100 hours** thereafter.

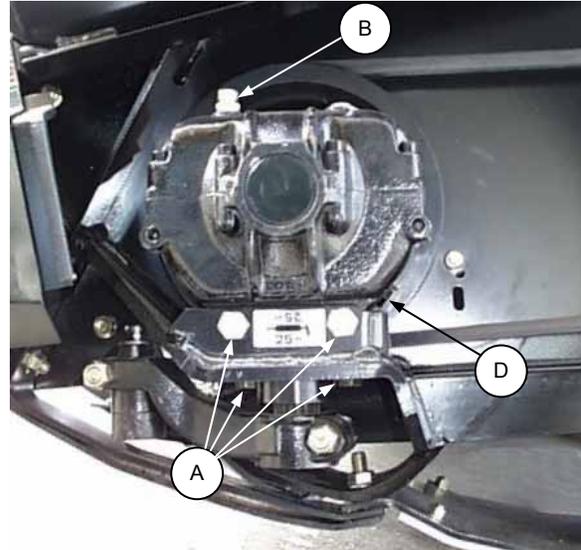
To check:

1. Raise header to a point where the wobble box base is approximately level.
2. Remove breather/dipstick (B). Oil level must be between end of dipstick and bottom hole (or groove) in dipstick.
3. Add as required.

Change wobble box lubricant after **first 50 hours** operation and every **1000 hours** or **3 years** thereafter.

To drain wobble box, raise header fully and engage header lift cylinder stops. Remove breather/dipstick (B) and drain plug (D).

Use SAE 85W-140 gear lubricant (API Service Classification GL-5). Capacity of box is 2.2 litres (2.3 U.S. quarts)

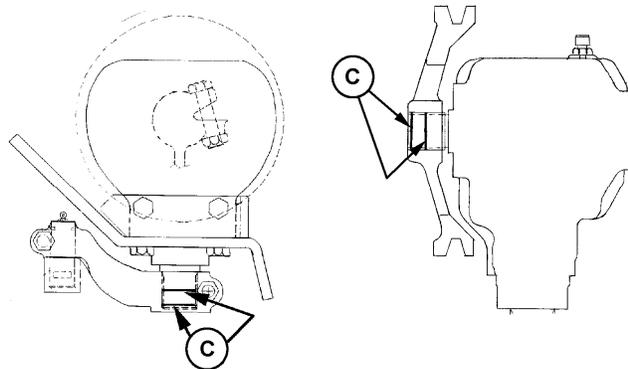


WOBBLE BOX

#### Wobble Box Assembly/Disassembly

When reinstalling drive arm or pulley:

1. Remove any rust or paint from inner spline. For replacement parts, remove oil/grease with degreasing agent.
2. Before assembly, apply Loctite® #243 adhesive (or equivalent) to spline. Apply in two bands (C) as shown, with one band at end of spline and one band approximately mid-way.



## MAINTENANCE/SERVICE

### SICKLE AND SICKLE DRIVE (continued)

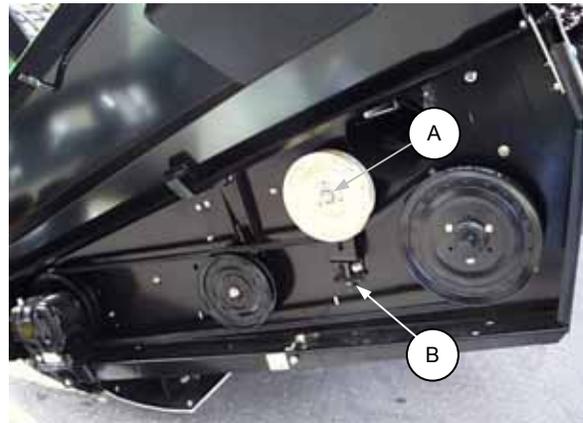
#### Sickle Drive Belt Tension

Check sickle drive belt tension after a **5 hour** run-in period and **every 100 hours** thereafter.

**IMPORTANT:** To prolong belt and drive life, do not over-tighten belt. Operate at minimum tension required to prevent slipping or excessive belt whip. When installing a new belt, never pry belt over pulley. Loosen adjusting device sufficiently to allow easy installation.

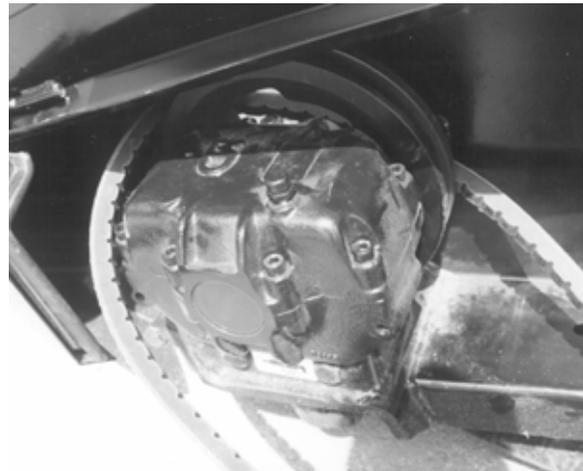
To adjust:

1. Loosen nut (A).
2. Turn nut (B) to move idler pulley up or down (depending on drive configuration) to tighten belt until a force of 18 lbs. (80 N) deflects belt 3/4 inch (20 mm) at mid-span.
3. Tighten nut (A).
4. Re-adjust tension of a new belt after a short run-in period, (about 5 hours).



SICKLE DRIVE BELT TENSION ADJUSTMENT  
COMBINE CONFIGURATION SHOWN

**NOTE:** To remove belt, back off idler pulley and remove bolt-on panel in left end sheet at wobble box. Turn belt on edge and work it up and over pulley hub as shown.



REMOVING SICKLE DRIVE BELT

# MAINTENANCE/SERVICE

## DRAPERS

### Draper Tension Adjustment

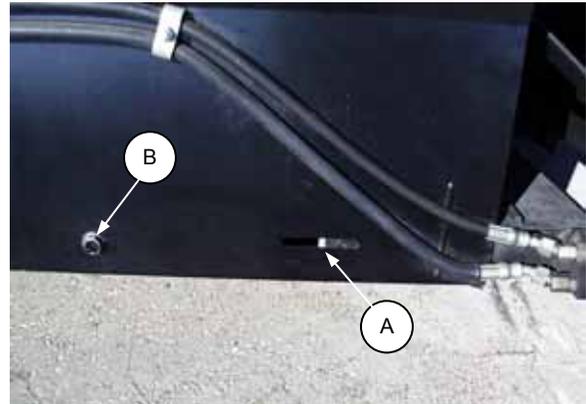
Draper tension should be just enough to prevent slipping and keep draper from sagging below cutterbar.

Set draper tension as follows:

1. Check that draper guide (rubber track on underside of draper) is properly engaged in grooves of both drive and idler rollers.
2. Tighten bolt (B) until white indicator bar is partially hidden behind the roller support arm at (A).

**IMPORTANT:** To avoid premature failure of draper, draper rollers and/or tightener components, do not operate with tension set so that white bar is fully hidden.

To prevent the draper from scooping dirt, ensure draper is tight enough that it does not sag below point where cutterbar contacts the ground.

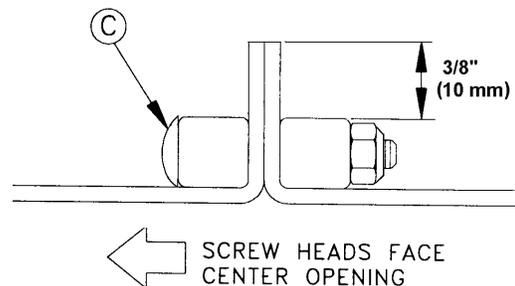


DRAPER TENSION ADJUSTMENT

### Replacing Drapers

When installing drapers:

1. Ensure you have the proper length draper.
2. Adjust draper opening. See page 26.
3. Install screws (C) with heads facing center opening.



INSTALL DRAPERS CORRECTLY

# MAINTENANCE/SERVICE

## DRAPERS (continued)

### Idler Roller Positioning

Position the idler roller bars at center opening as follows:

- wider opening sizes: hardware at (A) - used for John Deere\*, New Holland TX/CX and Lexion 460, 465, 480 & 485 Combines.
- mid-range opening sizes: hardware at (C) - used for Case 80 & 88 Series, Case AFX, New Holland CR 970/980 and Lexion 450, 470 & 475 Combines
- narrower opening sizes: hardware at (B) - used for Case 60 & 66 Series, New Holland TR and CR 920/940/960 Combines.

**NOTE:** To achieve narrowest opening sizes, move complete deck assemblies inboard. Ensure outboard ends of draper are still at least partially covered by wide crop deflectors.

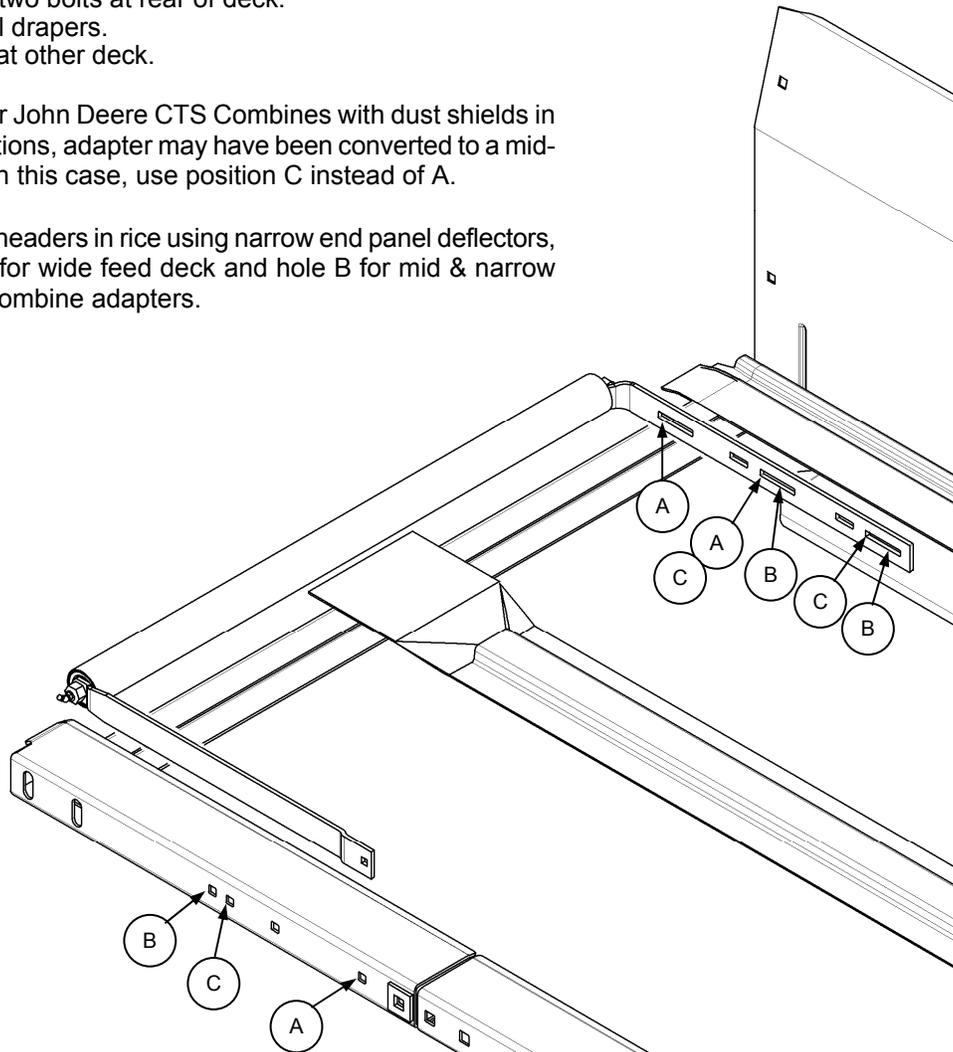
The decks are factory assembled in the "mid-range" opening position with hardware at (C).

To change idler roller bars to wide or narrow position:

1. Loosen draper completely, and remove connector slats.
2. Remove hardware from positions (C) at front idler bar and at rear idler bar.
3. Move idler roller in or out as required and install bolts at holes (A) or (B).
4. Tighten bolt at **front** of deck only.
5. For proper draper tracking, check roller alignment as described on next page.
6. Tighten two bolts at rear of deck.
7. Reinstall drapers.
8. Repeat at other deck.

\* **NOTE:** For John Deere CTS Combines with dust shields in rice applications, adapter may have been converted to a mid-size deck. In this case, use position C instead of A.

**NOTE:** For headers in rice using narrow end panel deflectors, use hole C for wide feed deck and hole B for mid & narrow feed deck combine adapters.



POSITIONING IDLER ROLLER BARS

# MAINTENANCE/SERVICE

## DRAPERS (continued)

**Draper Tracking Adjustment:** Each draper deck has one fixed roller and one spring-loaded roller. The spring-loaded roller is located at the same end of the deck as the draper tensioner, and is self-aligning. Adjustments are not required to this roller. The fixed roller is aligned by re-positioning hardware in the slotted holes in the rear support arm.

**NOTE:** For combine headers, the idler roller is always the fixed roller and the drive roller is always the spring-loaded roller.

To ensure square alignment for proper draper tracking, measure dimensions (A) and (B) from roller to channel at front and rear as shown. Align roller by loosening two bolts in rear support (C) and adjusting in slots until dimensions (A) and (B) are:

21' & 25' Headers – equal.

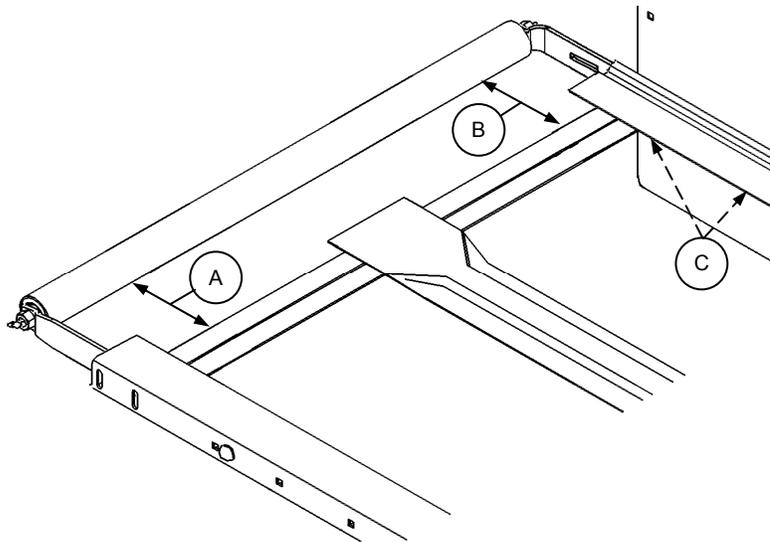
30', 36' & 39' Headers – Dimension (B) 3 mm (1/8") less than Dimension (A).

If drapers still do not track properly with the settings above, it may be necessary to bias the fixed roller alignment to correct the problem:

**NOTE:** When adjusting the fixed roller, move in 2 to 3 mm increments. Before loosening hardware, scribe a mark on the rear arm and the backsheet to measure the amount the roller moves.

- If the draper is tracking back (towards backsheet) at the end of the deck with the fixed roller, increase dimension (B).
- If the draper is tracking ahead (towards cutterbar) at the end of the deck with the fixed roller, decrease dimension (B).
- If the draper is tracking back (towards backsheet) at the end of the deck with the spring-loaded roller, decrease dimension (B).
- If the draper is tracking ahead (towards cutterbar) at the end of the deck with the spring-loaded roller, increase dimension (B).

**NOTE:** If the fixed roller is positioned too far off of square in an attempt to correct a tracking problem on the spring-loaded roller, tracking at the fixed roller will be adversely affected. In this case, check the draper for squareness and re-punch draper connecting holes if necessary.

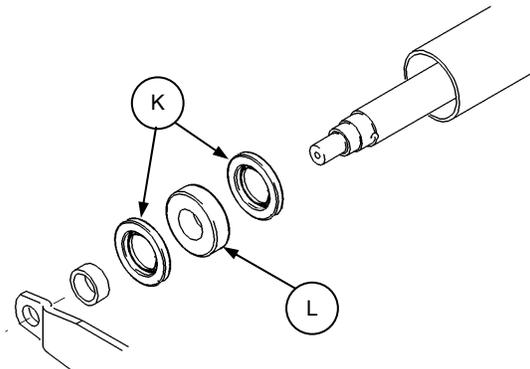


FIXED ROLLER ALIGNMENT

## Idler Roller Maintenance

**NOTE:** When tightening nuts at ends of idler roller, torque to 30 - 45 ft.lbs. (40 - 60 N·m). Over-tightening may cause thread to fail.

When reassembling idler roller, install both seals (K) with flat face (with writing) out and install bearing (L) with shielded side facing out.



INSTALL SEALS WITH FLAT FACE OUT  
INSTALL BEARING WITH SHIELDED SIDE OUT

## MAINTENANCE/SERVICE

### Drive Roller Maintenance

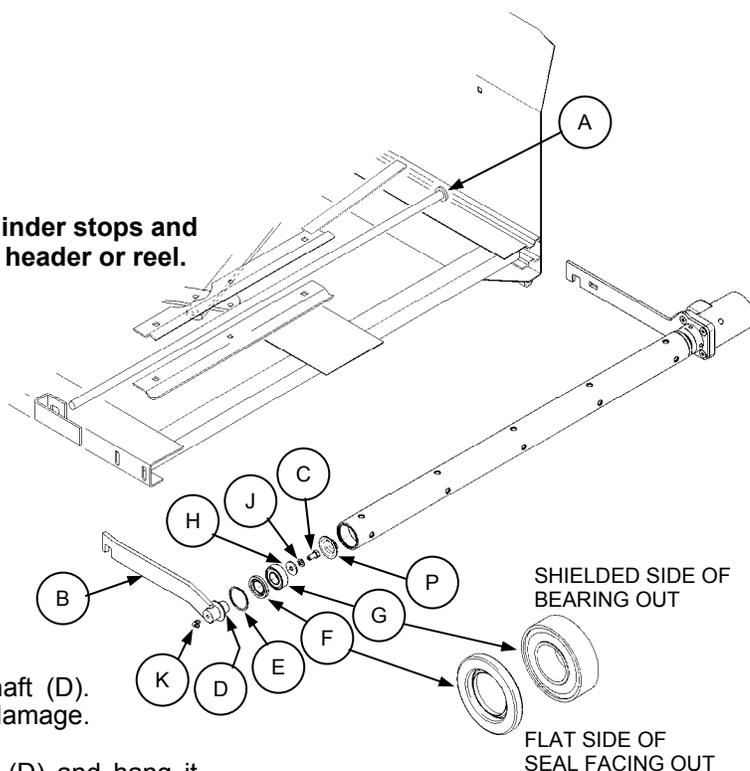
To replace drive roller bearings:

1. Raise header and reel.



**CAUTION: Engage header lift cylinder stops and reel props before working under header or reel.**

2. Position deck so drive roller is easily accessible.
3. Loosen and uncouple draper.
4. Remove drive roller assembly by sliding spring rod (A) through hole in backsheet and pulling roller out. (Loosen hose clamps to allow slack in hydraulic hoses.)
5. Remove bearing assembly from roller tube by tapping on arm at (B) while holding roller. Disassemble by removing bolt (C). **NOTE:** Retaining disk (P) remains inside roller tube.
6. Clean inside of roller tube and stub shaft (D). Check tube and stub shaft for wear or damage. Replace if necessary.
7. Place retaining ring (E) onto stub shaft (D) and hang it loosely over stub shaft mounting face.  
**IMPORTANT:** Retaining ring must be in position on stub shaft before installing bearing into tube.
8. Sub-assemble seal (F), bearing (G) and washer (H) onto stub shaft and secure with lockwasher (J) and bolt (C).  
**IMPORTANT:** Install seal (F) with flat face (with writing) out, and install bearing (G) with shielded side out.
9. Remove grease fitting (K) and press on end of stub shaft to install bearing sub-assembly into roller tube. Press in until retaining ring (E) can be installed in groove inside tube. To prevent damage to bearing, do not press the assembly deeper than necessary.
10. Reinstall fitting (K) into stub shaft and grease until grease appears past seal.
11. Reassemble drive roller into deck, re-couple and tighten draper.



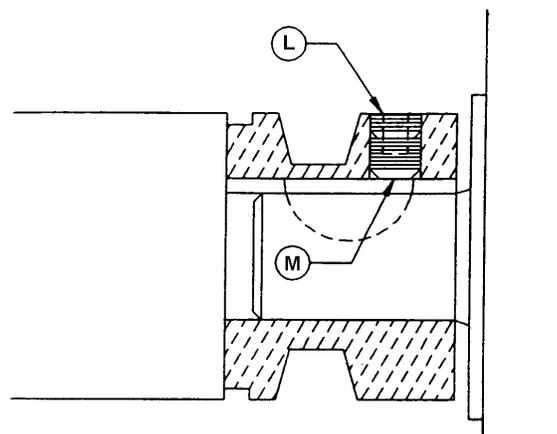
**NOTE:** At drive roller to motor connection, there is a short "through-bore" setscrew (L) on top of setscrew (M). When removing, be sure to engage Allan wrench only far enough to remove setscrew (L) first, then setscrew (M).

### Deck Height

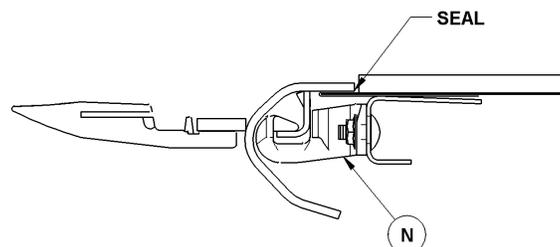
To prevent material from entering drapers and cutterbar, maintain deck height so that draper runs just below cutterbar with maximum 1/32" (1 mm) gap, or with draper deflected down slightly [up to 1/16" (1.5 mm)] to create a seal.

Adjust as follows:

1. Loosen tension on drapers.
2. Lift draper up at front edge and loosen two nuts on deck support (N), two or three per deck, depending on header size.
3. Tap deck up or down relative to supports to achieve setting recommended above.
4. Tighten deck support hardware and tension drapers.



DRIVE ROLLER TO MOTOR CONNECTION



DECK HEIGHT ADJUSTMENT

# MAINTENANCE/SERVICE

## REEL AND REEL DRIVE

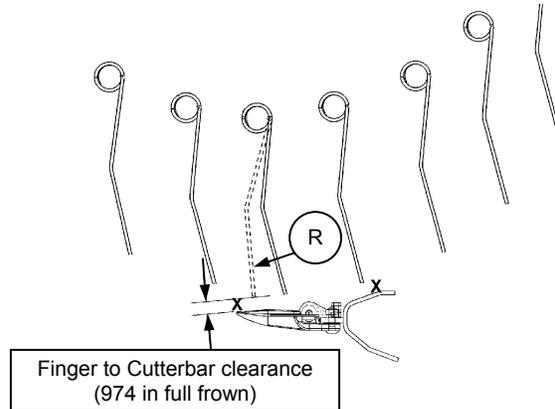
### Reel Clearance To Cutterbar

Minimum finger to guard/cutterbar clearance is as follows:

- For 973 Headers: 5/8 inch (15 mm) at both ends of cutterbar.
- For 30' 974 Headers: 1-3/4" (45mm) at each end and 2-1/4" (58mm) at center.
- For 36' 974 Headers: 1-3/4" (45mm) at left end, 1" (25mm) at right end and 2-3/8" (60mm) at center.

**NOTE:** Reel clearance to cutterbar is factory set as above. Adjustment should not normally be required.

**NOTE:** For 974 Flex Header, place cutterbar in full frown position to take measurements: Lower cutterbar onto two 6" (150 mm) blocks placed just inboard of wing flex points. Minimum clearance will occur at the hinge areas.



CHECK CLEARANCE TO SICKLE

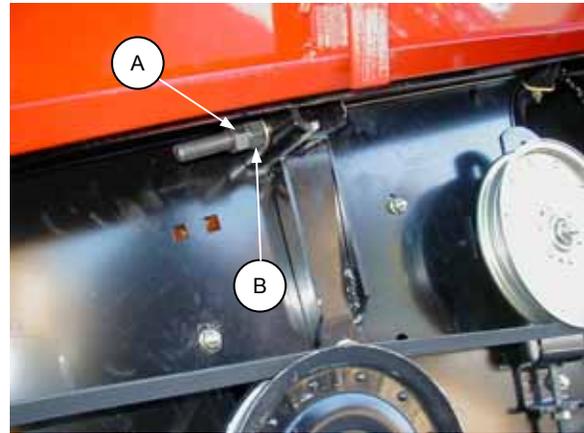
Check all possible points of contact between points (X). Depending on reel fore-aft position, minimum clearance can occur at guard tine, hold-down or cutterbar.

Check reel clearance whenever the reel fore-aft position or finger pitch is changed.

When operating reel with an aggressive finger pitch, be sure that fingers will not contact sickle when flexed back by crop, as at (R).

To adjust reel clearance to cutterbar:

1. Raise header and engage header lift cylinder stops. Lower header onto stops. Lower the reel fully.
2. Loosen and back off nut (A).
3. Turn nut (B) clockwise to increase clearance to cutterbar, or counter-clockwise to decrease.
4. Tighten nut (A) against nut (B) to secure the position.
5. Repeat at opposite side.



REEL CLEARANCE ADJUSTMENT

### Reel "Frown" Adjustment

The reel has been factory adjusted to give more clearance at the center of the cutterbar than at the ends. This compensates for flexing of the reel and header over rough ground. For 974 Flex Header, use the adjustment to provide adequate reel clearance at dividers

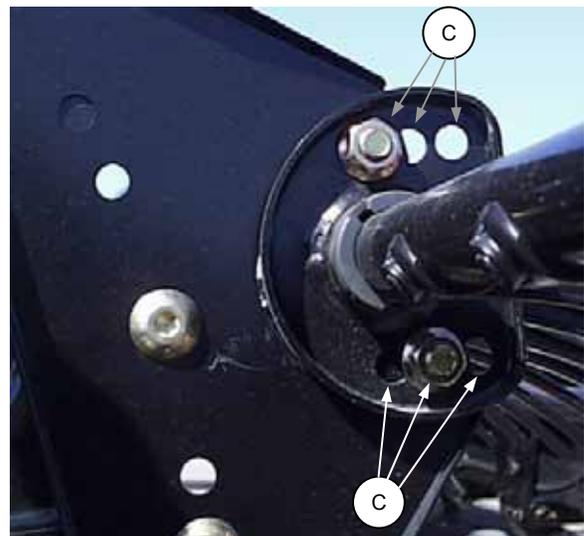
The "frown" is adjusted by repositioning the hardware connecting reel finger tube arms to reel discs.

If reel is disassembled for service, adjust positioning of hardware in holes (C) to maintain the proper profile.

**NOTE:** Take these measurements with the reel centered over the cutterbar (see "Reel Position" in Operation section). This will provide adequate clearance at all reel fore-aft positions.

**NOTE:** This adjustment can also be used to compensate for reel tube and cutterbar tolerances.

When adjusting, start with the reel arm set closest to the center of the header, and work your way out to the ends, allowing the reel arms to find a natural curve, and positioning the hardware appropriately.



REEL "FROWN" ADJUSTMENT

**NOTE:** In some locations, top and bottom bolts in the same reel arm may not be in the same hole position. (See photo.)

## MAINTENANCE/SERVICE

### REEL AND REEL DRIVE

#### Plastic Finger Installation and Removal



**WARNING:** To avoid eye injury caused by broken pieces, wear eye protection when installing or removing plastic fingers.

To install finger:

1. Finger saddle has two pins that snap into holes in finger tube. Install by positioning finger as shown and pushing straight up.

**NOTE:** Applying loads to finger before tightening hardware may cause finger to break. To avoid shearing off the pins, do not flex finger back and forth after the pins are engaged.

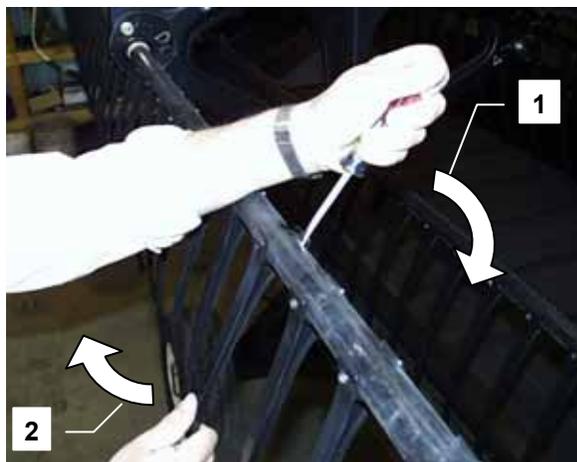
2. Insert nut into recessed pocket (A) in finger. Install screw and tighten to 25 to 30 in.lbs. (2.8 to 3.4 N·m).

**NOTE:** Tighten screw to specified torque. Under tightening will allow finger to move at mount when flexed sideways. Over tightening will strip hardware and may cause finger to crack.



To remove finger:

1. Insert screwdriver at back of finger saddle and pry back until rear pin clears finger tube.
2. Rotate finger tip forward to remove finger.



INSTALLING PLASTIC FINGERS

REMOVING PLASTIC FINGERS

## MAINTENANCE/SERVICE

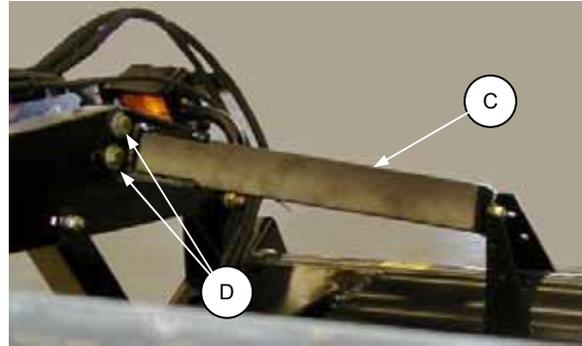
### REEL AND REEL DRIVE (continued)

#### Centering the Reel – 21' & 25' Headers

Center the reel between the header end sheets by adjusting the reel support arm brace (C).

To adjust:

1. Loosen two bolts (D) at front of brace.
2. Position brace (C) as required to center reel.
3. Tighten bolts (D) to 160 ft.lbs. (215 N·m).



REEL CENTERING ADJUSTMENT – 21' & 25'

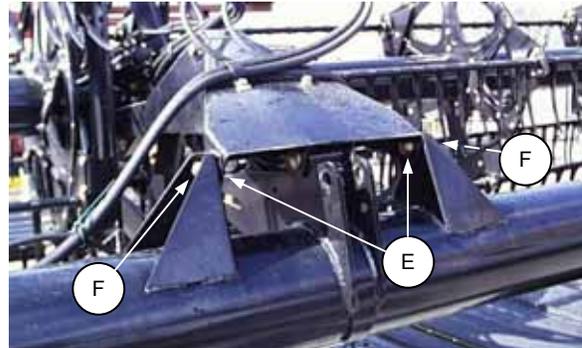
#### Centering the Reels – 30', 36' & 39' Headers

Center the reels between the header end sheets by adjusting the center reel support arm.

To adjust:

1. Holding bolt head (E) with a wrench, loosen two nuts at (F), both sides of center arm.
2. Move center support arm laterally as required to center reels.
3. Tighten nuts (F).

**NOTE:** For 974 Flex Headers, proper centering of the reel is critical. Check the horizontal position of the reel in the header with cutterbar in full smile position: Lower cutterbar onto two 6" (150 mm) blocks placed at each divider.



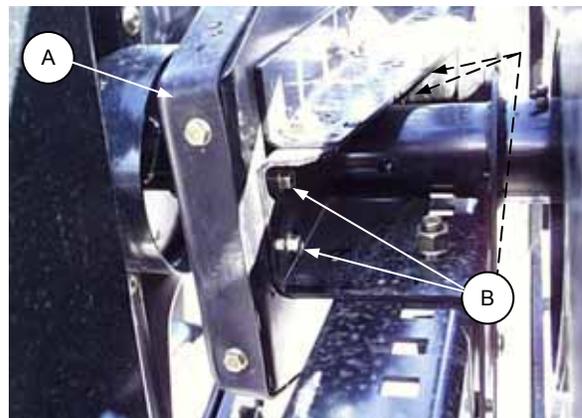
REEL CENTERING ADJUSTMENT – 30', 36' & 39'

#### Reel Drive Chain Tension

Check the reel drive chain tension **every 100 hours or annually**. In extreme crop conditions like heavy forage or rice, check tension more often.

To adjust:

1. Remove drive cover (A).
2. Loosen four bolts (B).
3. Slide motor away from reel shaft until a force of 11 lbs. (50 N) deflects chain 1/8 inch (3 mm) at mid-span.
4. Tighten bolts (B).



REEL DRIVE CHAIN TENSION

#### Reel Drive Chain Lubrication

Lubricate full length of chain **every 100 hours or annually** with Multi-Purpose Grease.

#### Removal of Reel Drive Shaft

Tapped holes are provided in reel drive shaft mounting flange for pulling shaft out of reel tube.



REEL DRIVE CHAIN

## MAINTENANCE/SERVICE

### GAUGE WHEELS – 30', 36' & 39' OPTION

#### Wheel Bolts

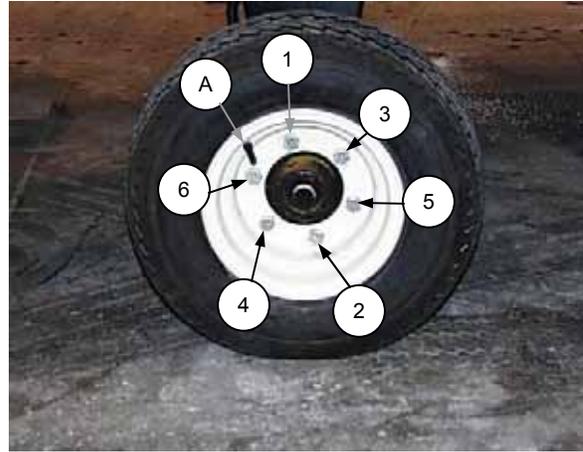
Check and tighten wheel bolts after the first 10 hours of operation and every 100 hours thereafter.

Whenever a wheel is removed and re-installed, check torque after one hour of operation.

Maintain torque at 80 to 90 ft.lbs. (110 to 120 N·m)

Follow the proper bolt tightening sequence shown.

**NOTE:** When installing wheel, be sure valve stem (A) points away from wheel support.



BOLT TIGHTENING SEQUENCE

#### Tire Inflation

Check tire pressure daily. Maintain 100 psi (690 kPa) for gauge wheels with Transport option. Maintain 60 psi (414 kPa) for non-transport gauge wheels.

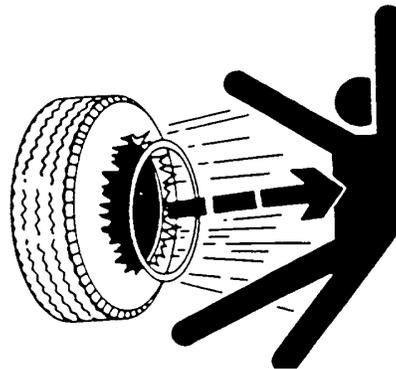


**WARNING: Service tires safely. A tire can explode during inflation and cause serious injury or death. Never increase air pressure beyond 35 psi (241 kPa) to seat the bead on the rim. Replace the tire if it has a defect. Replace a wheel rim which has cracks, wear or severe rust. Never weld a wheel rim. Make sure all the air is removed from a tire before removing the tire from a rim. Never use force on an inflated or partially inflated tire. Make sure the tire is correctly seated before inflating to operating pressure.**

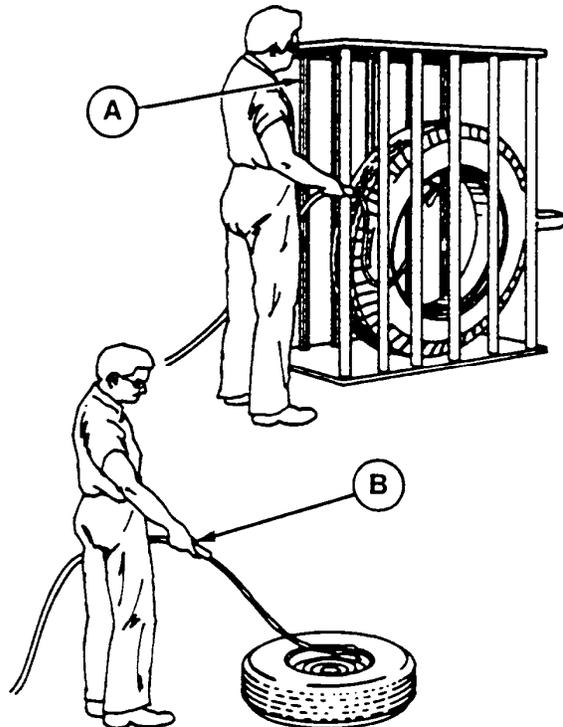
Do not remove, install or make repairs to a tire on a rim unless you have the proper equipment and experience to perform the job. Take the tire and rim to a qualified tire repair shop. If the tire is not in correct position on the rim, or is too full of air, the tire bead can loosen on one side, causing air to leak at high speed and with great force. An air leak of this nature can thrust the tire in any direction, endangering anyone in the area.

(A) - Use a safety cage if available.

(B) - Do not stand over tire. Use a clip-on chuck and extension hose.



SERVICE TIRES SAFELY



# MAINTENANCE/SERVICE

## MAINTENANCE SCHEDULE

The following maintenance schedule is a listing of periodic maintenance procedures, organized by service intervals. For detailed instruction, see the specific headings in Maintenance/Service section. Use "Recommended Lubricants" as specified under that heading.

### **SERVICE INTERVALS**

The recommended service intervals are in **hours of operation**. Use the hour meter in the combine cab to indicate when the next service interval has been reached.

**IMPORTANT:** Recommended intervals are for average conditions. Service header more often if operated under adverse conditions (severe dust, extra heavy loads, etc.)

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

Where a service interval is given in more than one time frame, e.g. "100 Hours or Annually", service the header at whichever interval is reached first.



**CAUTION: Carefully follow safety messages given under "Service Procedures".**

AT FIRST USE: See "Break-In Period" in Operation section.

---

### **10 HOURS OR DAILY**

- |  |   |
|--|---|
| 1. Grease driveline                                      | 3. Oil sickle (except in sandy conditions)      |
| 2. Check hydraulic hoses, lines and components for leaks | 4. Check sickle sections, guards and hold-downs |
|  | 5. Check gauge wheel tire pressure (option).    |
- 

### **25 HOURS**

1. Grease sickle head
- 

### **50 HOURS**

1. Grease reel support bushings (R/H end of split pick-up reel header)
- 

### **100 HOURS OR ANNUALLY \***

- |   |  |
|---|--|
| 1. Grease draper roller bearings                    | 10. Grease upper cross auger support bearing and center connection fittings (option) |
| 2. Grease stripper roller bearings & chain (option) | 11. Grease gauge wheel pivot bushings (option)                                       |
| 3. Grease reel drive support bearings               | 12. Check sickle drive belt tension  |
| 4. Grease pick-up reel drive cam                    | 13. Check wobble box mounting bolts  |
| 5. Grease reel tail support bearing                 | 14. Check wobble box lubricant level   |
| 6. Grease split reel connector block                | 15. Check reel drive chain tension   |
| 7. Grease sickle drive shaft support bearings       | 16. Grease reel drive chain  |
| 8. Grease flex header lower linkage                 | 17. Check gauge wheel bolt torque (option).  |
| 9. Grease flex header bellcrank linkage             |  |
- 

### **500 HOURS OR ANNUALLY \***

1. Grease gauge wheel hub bearings (option)
- 

END OF SEASON: See "Storage Procedure" in Operation section.

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### **1000 HOURS OR 3 YEARS**

1. Change wobble box lubricant.

\* It is recommended that Annual Maintenance be done prior to start of operating season.

# MAINTENANCE RECORD

Header Serial No. \_\_\_\_\_

Combine this record with Combine and Adapter Maintenance Record for "complete unit" service.  
See Maintenance/Service section for details on each procedure. Copy this page to continue record.

**(O) – Optional Equipment**

ACTION:	✓ - Check	⬇ - Lubricate	▲ - Change																	
Hour Meter Reading:																				
Serviced By:																				
Maintenance Procedure																				
BREAK-IN	See "Break-In Period" in Operation section for checklist.																			
<b>10 HOURS OR DAILY</b>																				
⬇	Driveline																			
✓	Sections, Guards, Hold-downs																			
⬇	Sickle Assembly																			
✓	Hydraulic Hoses and Lines																			
✓	Tire Pressure (O)																			
<b>25 HOURS</b>																				
⬇	Sickle Head																			
<b>50 HOURS</b>																				
⬇	P.U. Reel Support (30&36')																			
<b>100 HOURS OR ANNUALLY</b>																				
⬇	Draper Roller Bearings																			
⬇	Stripper Roller Bearings (O)																			
⬇	Stripper Roller Chain (O)																			
⬇	Reel Drive Support Bearings																			
⬇	Pick-Up Reel Drive Cam																			
⬇	Reel Tail Support Bearing																			
⬇	Split Reel Connector Block																			
⬇	Sickle Drive Shaft Bearings																			
✓	Sickle Drive Belt Tension																			
✓	Wobble Box Bolts & Lube																			
✓	Reel Drive Chain Tension																			
⬇	Reel Drive Chain																			
⬇	Flex Head Lower Linkage																			
⬇	Flex Head Bellcrank Linkage																			
⬇	Upper Cross Auger Fittings (O)																			
✓	Gauge Wheel Bolt Torque (O)																			
⬇	Gauge Wheel Pivot Bush. (O)																			
<b>500 HOURS OR ANNUALLY</b>																				
⬇	Gauge Wheel Hub Brgs. (O)																			
<b>1000 HOURS OR 3 YEARS</b>																				
▲	Wobble Box Lubricant																			

## TROUBLESHOOTING

<u>SYMPTOM</u>	<u>PROBLEM</u>	<u>SOLUTION</u>	<u>REF.</u>
<b>CROP LOSS AT CUTTERBAR</b>			
Does not pick-up down crop.	Cutterbar too high.	Lower cutterbar.	19
	Header angle too flat.	Steepen header angle.	25
	Reel too high.	Lower reel.	29
	Reel too far back.	Move reel forward.	30
	Ground speed too fast for reel speed.	Reduce ground speed or increase reel speed.	21 29
	Reel fingers not lifting crop sufficiently.	Increase finger pitch aggressiveness.	31
		Install lifter guards.	*
Heads shattering or breaking off.	Reel speed too fast.	Reduce reel speed.	29
	Reel too low.	Raise reel.	29
	Ground speed too fast.	Reduce ground speed.	21
	Crop too ripe.	Operate at night when humidity is higher.	---
Cut grain falling ahead of cutterbar.	Ground speed too slow.	Increase ground speed.	21
	Reel speed too slow	Increase reel speed.	29
	Reel too high.	Lower reel.	29
	Cutterbar too high.	Lower cutterbar.	19
	Reel too far forward.	Move reel back on arms.	30
	Cutting at speeds over 6 mph (10 km/h) with high-torque (11 tooth) reel drive sprocket.	Replace with high speed (17 tooth) reel drive sprocket.	29
	Worn or broken sickle components.	Replace.	45
Strips of uncut material.	Crowding uncut crop.	Allow enough room for crop to be fed to cutterbar.	---
	Broken sickle sections.	Replace.	44
Excessive bouncing at normal field speed.	Float set too light.	Adjust float.	22
Divider rod running down standing crop.	Divider rods too long.	Install shorter rods.	20

\* See your MacDon dealer.

## TROUBLESHOOTING

<u>SYMPTOM</u>	<u>PROBLEM</u>	<u>SOLUTION</u>	<u>REF.</u>
<b>CROP LOSS AT CUTTERBAR (continued)</b>			
Crop flows over divider rod, builds up on endsheets.	Divider rods providing insufficient separation.	Install long divider rods or floating dividers.	20
Crop not being cut at ends.	Reel not "frowning" or not centered in header.	Adjust reel "frown" or reel horizontal position.	55 57
	Sickle hold-downs not adjusted properly.	Adjust hold-downs so sickle works freely, but still keep sections from lifting off guards.	48
	Sickle sections or guards are worn or broken.	Check and replace all worn and broken cutting parts.	44
	Header is not level.	Level header.	***
	Reel fingers not lifting crop properly ahead of sickle.	Adjust reel position / finger pitch.	30
	Divider runs down thick crop at ends, preventing proper feeding.	Replace 3 or 4 end guards with stub guards.	**
<b>CUTTING ACTION &amp; SICKLE COMPONENTS</b>			
Ragged or uneven cutting of crop.	Sickle hold-downs not adjusted properly.	Adjust hold-downs so sickle works freely, but still keep sections from lifting off guards.	48
	Sickle sections or guards are worn or broken.	Check and replace all worn and broken cutting parts.	44
	Sickle is not operating at recommended speed.	Check engine speed of combine.	*
	Ground speed too fast for reel speed.	Reduce ground speed or increase reel speed.	21 29
	Reel fingers not lifting crop properly ahead of sickle.	Adjust reel position / finger pitch.	30
	Cutterbar too high.	Lower cutting height.	19
	Header angle too flat.	Steepen header angle.	25
	Bent sickle, causing binding of cutting parts.	Straighten a bent sickle. Align guards.	44 47

\* See your Combine Operator's Manual.

\*\* See your MacDon dealer.

\*\*\* See your Combine Adapter Operator's Manual

## TROUBLESHOOTING

<u>SYMPTOM</u>	<u>PROBLEM</u>	<u>SOLUTION</u>	<u>REF.</u>
<b>CUTTING ACTION &amp; SICKLE COMPONENTS</b>			
Ragged or uneven cutting of crop. (continued)	Cutting edge of guards not close enough or parallel to sickle sections.	Align guards.	47
	Tangled/tough to cut crop.	Install stub guards.	**
Sickle plugging.	Reel too far back.	Move reel forward.	30
	Loose sickle drive belt.	Adjust drive belt tension.	50
	Reel too high or too far forward.	Lower reel or move reel rearward.	29 30
	Ground speed too slow.	Increase ground speed.	21
	Loose sickle drive belt.	Adjust drive belt tension.	50
	Improper sickle hold-down adjustment.	Adjust hold-down so sickle is held against guard cutting surface.	48
	Dull or broken sickle sections.	Replace.	44
	Bent or broken guards.	Align or replace.	47
	Reel fingers not lifting crop properly ahead of sickle.	Adjust reel position / finger pitch.	31
	Steel pick-up fingers contacting sickle.	Increase reel clearance to cutterbar, or adjust "frown".	55
Header float too heavy.	Adjust springs for lighter float.	22	
Mud or dirt build-up on cutterbar.	Raise cutterbar by lowering skid shoes.		19
		Flatten header angle.	25
Mud build-up on inboard side of sickle head	Remove skid shoe under sickle head to prevent build-up.		46
Sickle is not operating at recommended speed.	Check engine speed of combine.		*

\* See your Combine Operator's Manual.

\*\* See your MacDon Dealer

## TROUBLESHOOTING

<u>SYMPTOM</u>	<u>PROBLEM</u>	<u>SOLUTION</u>	<u>REF.</u>
<b>CUTTING ACTION &amp; SICKLE COMPONENTS (continued)</b>			
Excessive header vibration.	Sickle hold-downs not adjusted properly.	Adjust hold-downs so sickle works freely, but keeps sections from lifting off guards.	48
	Sickle not operating at recommended speed.	Check engine speed of combine.	*
	Excessive sickle wear.	Replace sickle.	45
	Loose or worn sickle head pin or drive arm.	Tighten or replace parts.	45
Excessive breakage of sickle sections or guards.	Sickle hold-downs not adjusted properly.	Adjust hold-downs so sickle works freely, but still keep sections from lifting off guards.	48
	Cutterbar operating too low in stony conditions.	Raise cutterbar, using skid shoes.	19
	Header float is set too heavy.	Adjust float springs for lighter float.	22
	Bent or broken guard.	Straighten or replace.	47
	Header angle too steep.	Flatten header angle.	25
	Sickle back breakage.	Bent or broken guard.	Straighten or replace.
Worn sickle head pin.		Replace.	45
Dull sickle.		Replace.	44
<b>REEL DELIVERY</b>			
Reel not releasing crop.	In heavy crop, fingers starting to flip over before releasing crop.	Move to a <u>more</u> aggressive finger pitch position.	31
	Reel speed too fast.	Reduce speed of reel to allow crop to fall onto drapers properly. Reel speed should be slightly faster than ground speed.	29
	Reel too low.	Raise reel.	29
	Reel too far back.	Move reel forward.	30
Wrapping on reel end.	Finger pitch too aggressive.	Decrease finger pitch aggressiveness.	31
	Reel too low.	Raise reel.	29
	Reel speed too fast.	Reduce reel speed.	29

\* See your Combine Operator's Manual.

## TROUBLESHOOTING

<u>SYMPTOM</u>	<u>PROBLEM</u>	<u>SOLUTION</u>	<u>REF.</u>
<b>REEL (continued)</b>			
Wrapping on reel end (continued)	Reel not centered in header.	Center reel in header.	57
Reel releases crop too quickly.	Finger pitch not aggressive enough.	Increase finger pitch aggressiveness.	31
	Reel too far forward.	Move reel back.	30
Reel will not lift.	Reel lift couplers are incompatible.	Change quick coupler.	---
Reel will not turn.	Control set at 0.	Activate reel speed control.	*
	Quick couplers not properly connected.	Connect couplers.	*
	Final drive chain disconnected.	Connect chain.	57
Reel motion is uneven or stalls in heavy crop.	Reel speed too fast.	Reduce reel speed.	29
	Reel fingers not aggressive enough.	Move to a more aggressive finger pitch notch.	31
	Reel too low.	Raise reel.	29
	Relief valve on combine (not on combine adapter) has low relief pressure setting.	Increase relief pressure to 2000 psi.	*
	Low oil reservoir level on windrower or combine. (NOTE: Sometimes more than one reservoir.)	Fill to proper level.	*
	Relief valve malfunction.	Replace relief valve.	-
	Cutting tough crops with high-speed (17 tooth) reel drive sprocket.	Replace with high torque (11 tooth) reel drive sprocket.	29
Premature failure of cam arm bearings.	Cam arms bent, causing bearing misalignment.	Straighten cam arms to set bearings parallel.	-
<b>HEADER</b>			
Header lift insufficient.	Low relief pressure.	Increase relief pressure.	*

\* See your Combine Operator's Manual.

## TROUBLESHOOTING

<u>SYMPTOM</u>	<u>PROBLEM</u>	<u>SOLUTION</u>	<u>REF.</u>
<b>DRAPERS &amp; DECKS</b>			
Draper will not drive.	Drapers are loose.	Tighten drapers.	51
	Drive or idler roller wrapped with material.	Loosen draper and clean rollers.	51
	Slat or connector bar jammed by frame or material.	Loosen draper and clear obstruction.	51
	Roller bearing seized.	Replace.	54
	Low hydraulic oil.	Fill reservoir to full level.	*
	Incorrect relief setting at flow control valve.	Adjust relief setting.	*
Draper stalling.	Material not feeding evenly off sickle.	Lower reel.	29
		Install stub guards.	**
Draper backfeeds or plugs.	Material not feeding onto adapter draper.	Narrow delivery opening by 3 to 4" (1-1/2 to 2" per side).	26
Material accumulates inside or under front edge of draper.	Deck height improperly adjusted.	Adjust deck height.	54
<b>TRANSPORT OPTION</b>			
Header floatation difficult to set.	Transport wheel support springs affecting float.	If transport wheels will not be used in field mode, remove springs from wheel supports.	***

\* See your Combine Operator's Manual.

\*\* See your MacDon Dealer.

\*\*\* See Transport Manual 46581.

## TROUBLESHOOTING

<u>SYMPTOM</u>	<u>PROBLEM</u>	<u>SOLUTION</u>	<u>REF.</u>
<b>FLEX HEADER TROUBLESHOOTING</b>			
Cutterbar pushes dirt across entire length	Header height too low.	Raise header height with float optimizer control.	*
	Header angle too steep.	Adjust header to optimum angle	25
Stubble longer at center than at dividers, or cutterbar pushes dirt at dividers, not at center.	Too much weight on wings.	Adjust bellcrank to lower tee bolt & top link, transferring weight to center section.	23
Stubble longer at dividers than at center, or cutterbar pushes dirt at center, not at ends.	Too much weight on center of header.	Adjust bellcrank to raise tee bolt & top link, transferring weight to wings.	23
Pushing dirt at combine adapter lower beam.	Adapter down stop in upper holes.	Move down stop to lowest hole.	**
	Adapter float too light, header legs do not rest on stops.	Adjust to heavier float.	**
Wings will not frown without excessive downforce.	Adapter float set too heavy.	Adjust adapter springs to lighter float.	**
Wing float assembly binding.	Adapter float locked out	Disengage adapter float lockout	**
	Adapter float set too heavy.	Adjust adapter springs to lighter float.	**
	Adapter feed pan too far forward at cutterbar.	Adjust feed pan engagement at cutterbar.	**
Reel contacts endsheet, especially in smile condition.	Reel not centered in header.	Center reel in header	57
Reel fingers being cut at ends of header in frown condition.	Reel clearance inadequate.	Adjust reel clearance to cutterbar.	55
		Adjust reel frown at finger tubes.	55

\* See your Combine Operator's Manual.

\*\* See your Combine Adapter Operator's Manual.

## CUTTING EDIBLE BEANS: TROUBLESHOOTING

<u>SYMPTOM</u>	<u>PROBLEM</u>	<u>SOLUTION</u>
<b>CUTTING EDIBLE BEANS</b>		
Header stripping plants- Complete or partial plants left behind	Header being carried off ground	Lower header to ground and run on skid shoes and/or cutterbar
	Float set too light - rides on high spots and does not get back down soon enough	Set float for: 100-150 lbs. - dry ground 50-100 lbs. - wet ground Float should be lighter for light soils and heavier for hard heavy soil areas
	Reel being operated too high	Fully retract reel cylinders Operate reel at max. down position in all conditions unless excessive wrapping occurs in a green matted viney crop.
	Reel too high with cylinders fully retracted	Adjust reel height with cylinders fully retracted to obtain minimum clearance to knife. <b>Important</b> - maintain adequate clearance to prevent finger from getting in knife.
	Finger pitch not aggressive enough	Adjust finger pitch: Start with 1-2 notches more aggressive than mid-position -readjust reel fore and aft if necessary -readjust reel clearance with cylinders fully retracted
	Reel too far back on reel support arms	Move reel forward until the fingertips skim the soil surface with header on ground and center link properly adjusted. Start in hole #6 to #8 from front of support arm Re-adjust reel height with cylinders retracted if necessary Check finger clearance to ground - Adjusting reel forward gets reel closer to ground and back will move reel away from ground
	Header angle too shallow	Lengthen center link to max. length to start with. Decrease center link length if header pushes too much dirt. <b>Tip:</b> Use variable header angle feature at bottom end of header lift stroke to vary header angle on the go. -Once header touches the ground the header angle will be increased if the header lift cylinders are further retracted. -With header on the ground the header will get shallower as the lift function is actuated until the header is lifted off ground. <b>- Header angle can be varied up to 4 degrees by fully retracting lift cylinders from when header touches the ground.</b>
<p><i>Note: If frequent adjustment of the center link is necessary, a hydraulic center link is available.</i></p>		

## CUTTING EDIBLE BEANS: TROUBLESHOOTING

<u>SYMPTOM</u>	<u>PROBLEM</u>	<u>SOLUTION</u>
Header stripping plants- Complete or partial plants left behind (continued)	Reel too slow	Adjust reel speed to be marginally faster than ground speed <b>Tip:</b> Look at perimeter of reel discs. they should appear to be being driven by the ground - If they look like they are skidding relative to ground, the reel is turning too slow - If they look like they are spinning excessively relative to ground, reel speed may be too fast and create shattering.
	Ground speed too fast	Lower ground speed Start at 3.0 - 3.5 mph and adjust as required. <b>Tips:</b> -When cutting very light crop ground speed may have to be reduced to allow reel to pull in small and short plants. -Reel speed may be increased if it does not create excessive shattering
	Header skid shoes adjusted too low	Raise skid shoes to max. up position
	Dirt packs on bottom of cutterbar and raises cutterbar off the ground	Install plastic wear strips on bottom of cutterbar and skid shoes
	Dirt still packing on bottom of cutterbar with poly wear strips on cutterbar and raises cutterbar off the ground.	Ground too wet. Wait until top of ground starts to turn grey or manually clean the bottom of cutterbar when accumulation gets unacceptable.
	Plastic wear strip for cutterbar has been installed over top of steel wear plates.	Remove steel cutterbar wear plates when installing the plastic wear strips for cutterbar.
	Header not level	Level Header – see Combine Adapter Operator’s Manual. Reduce spacing between clips.
	Dirt builds up between plastic cutterbar wear strips and causes header to cut higher off the ground	
	Knife sections worn out and have no serrations left causing plants to slip out of guards and sections.	Replace sections or complete knife. <b>Tip</b> -Coarse serrated sections last longer when operating in dirty conditions. -Fine serrated sections lose their serrations faster and will leave behind uncut plants.
	Knife sections have edges broken off.	Replace sections or complete knife if required.

## CUTTING EDIBLE BEANS: TROUBLESHOOTING

<u>SYMPTOM</u>	<u>PROBLEM</u>	<u>SOLUTION</u>
Header stripping plants- Complete or partial plants left behind (continued).	Parts of vines get caught in regular guard tip while reel is trying to lift the vines above the knife and end up getting cut off. (This is more prevalent when cutting row-cropped beans that have been hilled due to cultivating.	Install stub guard kit. Reel has a better chance of lifting the crop mat above the knife without any pods being cut by the knife.
Excessive losses at dividers	Divider rod running down crop and shattering pods.	Install short divider rod.
	Excessive amount of vines and plants run up divider and endsheet up to cylinder and either fall into or outside header in lumps.	Install long divider rod.
Excessive shattering of pods by the reel.	Reel running too fast.	Reduce reel speed.
	Bean pods are too dry.	Cut at night with heavy dew once pods have softened up
	Reel finger pitch not aggressive enough.	Make fingers more aggressive. -Check reel clearance to knife and cutterbar. -Check reel finger clearance to ground. -Reel too far forward of cutterbar C-section.
Crop accumulating at guards and not moving rearward onto drapers.	Reel finger pitch not aggressive enough.	Make fingers more aggressive. -Check reel clearance to knife and cutterbar. -Check reel finger clearance to ground. -Reel too far forward of cutterbar C-section.
	Reel too high relative to knife.	Re-adjust reel minimum height with cylinders fully retracted.
Cutterbar pushing too much trash and dirt.	Header too heavy.	Readjust float to make header lighter. -Check both ends of header.
	Header angle too steep.	Decrease header angle by adjusting header lift cylinders until they begin to lift header off the ground. If this is not enough, then shorten the center link to flatten the header angle range that the lift cylinders work through.
	Regular guards push dirt and plug up with trash or plug up with trash and then push dirt.	Install stub guard kit Stub guard will prevent plugging when in excessive trash. Stub guard bottom is ~15-20 mm higher than regular guard for the same header angle and knife section height.
	Improper support for header.	Install center skid shoes on header. This reduces ground pressure and reduces the possibility of pushing excessive amts. of dirt.

## CUTTING EDIBLE BEANS: TROUBLESHOOTING

<u>SYMPTOM</u>	<u>PROBLEM</u>	<u>SOLUTION</u>
Cutterbar pushing too much dirt in certain locations for length of field.	Tire tracks or row crop ridges caused by seeding or spraying operations.	Cut at angle to ridges or crop rows to allow knife and guards to clean out better. When cutting in line with tracks or ridges the same guards and sections have to cut in dirt for the whole length of the field. Cutting at an angle shifts these ridges through all guards and prevents pushing dirt.
	Rolling land along length of field due to cultivating.	Cut at 90° to undulations, provided knife floats across without digging in.
Cutterbar fills up with dirt.	Excessive gap between top of front of draper and cutterbar.	Adjust front deck hooks to obtain proper clearance between cutterbar and draper. If cutterbar still fills up with dirt, raise header to max. up position at each end of field or as required and shift decks back and forth to help clean out cutterbar. Most dirt will fall out without manually having to clean drapers.
Plant vines pinched between top of draper and cutterbar.	Cutterbar has filled up with trash in excessively dirty conditions with draper to cutterbar gap properly adjusted.	Raise header to max up position at each end of field or as required and shift decks back and forth to help clean out cutterbar. Most dirt will fall out without manually having to clean drapers.
	Shifting of decks with header raised up does not clean out cutterbar debris.	Dirt and trash is too wet to slide out of cutterbar cavity on its own. Manually remove debris from cutterbar cavity immediately when noticing material between draper and cutterbar or this will damage drapers.
Reel carries over odd plants in same location.	Reel fingers (steel) bent and hook plants out of the crop flow on drapers.	Straighten fingers (steel).
	Dirt accumulation on end of fingers do not let plants slide off fingers over drapers.	Reel too low relative to the ground. -Adjust reel fore and aft location to move fingers out of the ground.
Reel carries over excessive amounts of plants or wads.	Too much accumulation of crop on drapers (up to height of reel center tube)	Speed up drapers to thin out amount of material on drapers. This is aggravated when double swathing. Higher draper speeds have to be used when double swathing.
	Finger pitch too retarded.	Increase finger pitch to move finger flip-over point out of the crop flow. Reducing the finger pitch takes the fingers that are starting to flip over lower into crop flow.
Excessive guard breakage	Excessive amount of vines and plants or weeds cause reel to wrap up.	Raise reel a slight amount when getting into a patch of viney weeds or green viney crop.
	Header float too heavy. Excessive amount of rocks in field.	Adjust float to make header lighter. Try using stub guards if using regular guards. <b>Tip:</b> Experiment with a few guards on a section of cutterbar to compare the performance of the two different styles of guards.

## OPTIONS AND ATTACHMENTS

### ADJUSTABLE OUTBOARD SKID SHOES WITH POLY COVER

WholeGoods order number: B4389

Available as an attachment for use with 973 Headers, and standard equipment for 974 Flex Headers, these skid shoes are recommended for cutting on the ground.



### CUTTERBAR POLY WEAR STRIPS

WholeGoods order number:

21' 973 Header – B4778

25' 973 Header – B4779

30' 973 & 974 Headers – B4780

36' 973 & 974 Headers – B4781

39' 973 Header – B4782

Available as an attachment for use with 973 Headers, and standard equipment for 974 Flex Headers, this attachment is recommended for cutting on the ground in conditions where soil adheres to steel.



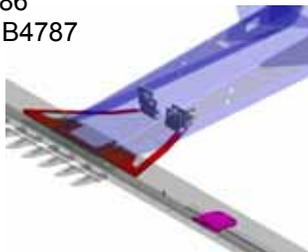
### ADJUSTABLE INBOARD SKID SHOES WITH POLY COVER

WholeGoods order number:

21' & 25' 973 Header – B4786

30', 36' & 39' 973 Header – B4787

Available as an attachment for use with 973 Headers, and standard equipment for 974 Flex Headers, these skid shoes are recommended for cutting on the ground.



### HYDRAULIC TOP CENTER LINK

WholeGoods order number - Headers with hydraulic reel fore-aft:

Case 2300 Series Combines: C1837

NH CR/CX & CNH AFX: B4399

Lexion: C1839

John Deere: C1840

Wholegoods order number - Headers without hydraulic reel fore-aft:

B4234 (for John Deere Combines except 60 series, also order B4577 hydraulic coupler completion package).



### FLOATING DIVIDER

WholeGoods order number:

Left Hand – B4367

Right Hand – B4368

Floating dividers, available separately for left or right hand end of header, extend the separation of crop to a point in front of the reel. This can be beneficial in short (up to 75 cm [30 in.]) lodged or standing crop. The dividers are also effective in tall standing crop. This attachment is not recommended for tall lodged crops. Installation instructions are provided with the kit.



## OPTIONS AND ATTACHMENTS

### UPPER CROSS AUGER

WholeGoods order number:	Rear Shielding:
21' Header – B4419	B4420
25' Header – B4421	B4422
30' Header – B4423	B4424
36' Header – B4425	B4426
39' Header – B4587	N/A

Available for 21' to 39' Headers, in tall or bulky crops the upper cross auger will aid crop flow across the header and through the delivery opening.

**NOTE:** A kit (B5109) is available to mount a 30' upper cross auger on 36' or 39' headers.

Installation instructions are included with the cross auger. Maintenance and operating instructions are included in this manual.

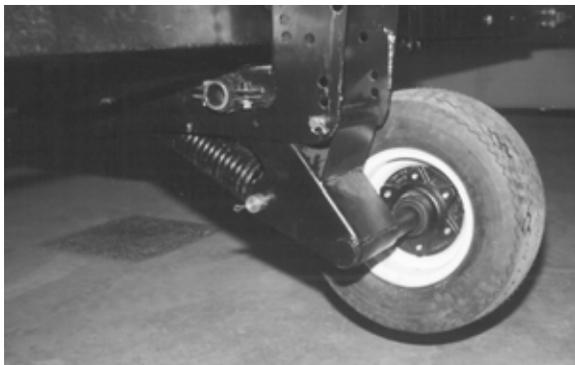


### GAUGE WHEELS

WholeGoods order number: B2749

Spring loaded gauge wheels are available for the 30', 36' & 39' 973 Headers and 30' & 36' 974 Flexdraper Header. Gauge wheels improve end-to-end float, allowing larger headers to better follow ground contours.

Installation instructions are included with the gauge wheels. Maintenance and operating instructions are included in this manual.



### GAUGE WHEELS / SLOW SPEED TRANSPORT

WholeGoods order number: C1681

Available for 30', 36' & 39' 973 Headers and 30' & 36' 974 Flexdraper Header as an alternative to the standard gauge wheel package described previously page. This option allows pivoting the gauge wheels 90° to allow towing the header from the left end. Installation and operating instructions are provided with the option package.



### CROP LIFTER STORAGE RACK

WholeGoods order number: B4401

For European applications where use of crop lifters is common, this rack attaches to header back tube for storage of lifters.



## OPTIONS AND ATTACHMENTS

### **36' & 39' HEADERS: R/H DECK SPLIT KIT – 973 Only (Not for use with 974 Flexdraper Header)**

WholeGoods order number: B4591

For users windrowing with combine, this kit splits the R/H deck to deliver crop next to the combine tire. Kit includes the necessary drapers, drive components and hydraulics. Installation and operating instructions for this configuration are provided with the kit.

### **HIGH SPEED REEL DRIVE SPROCKET**

A high torque reel drive sprocket (11 teeth) is standard on the Header. The high torque is required for many conditions such as rice and other heavy crops. An optional high speed reel drive sprocket (17 teeth) is recommended for combines with lower reel drive flow in order to bring up ground speed. Two pitches of chain need to be added when converting from high torque to high speed. See your Dealer Parts Department to order the optional sprocket and chain.

### **TOOL BOX**

WholeGoods order number: B4400

Includes mounting brackets and tool box. Mounting brackets attach to header back tube. Box and brackets have mating pockets to hold box securely.



### **BEAN SAVER**

WholeGoods order number:

21' 973: B4542	30' 974: B4546
25' 973: B4543	36' 974: B4547
30' 973: B4544	
36' 973: B4545	
39' 973: B4589	

Cutterbar ramps used to aid crop flow onto drapers.



### **ROCK RETARDER**

WholeGoods order number:

25' 973: B4761
30' 973/974: B4762
36' 973/974: B4763

Cutterbar deflectors used to prevent rocks from rolling onto drapers.



## OPTIONS AND ATTACHMENTS

### HYDRAULIC FORE-AFT REEL POSITIONER

#### (973 Headers Only)

WholeGoods order number:

21' & 25' 973: B4575

30', 36' & 39' 973: B4576

(For John Deere Combines except 60 series, also order B4577 coupler completion package).

Installation of this kit converts manual fore-aft units to provide in-cab adjustment of reel fore-aft position. This feature shortens header preparation time for truck transport, often used in mobile custom harvest operations. Installation instructions are provided with the kits.

### RAISED SICKLE CONVERSION KITS

Wholegoods order number:

21' & 25' 973: B4670

30' - 39' 973 & 30' - 36' 974: B4671

For applications where it is desired to position sickle guards above the cutterbar. Kit includes sickle head and drive arm, plus deflector plates and hardware. Installation instructions are included with the kit.

### WINDROWER HEADER CONVERSION KITS

#### (973 Headers Only)

For 973 headers this package is available to convert from combine sickle drive configuration to windrower. This package also includes linkage supports required for attachment to MacDon built windrowers.

Instruction # 147346 is provided with the kit.

#### WHOLEGOODS ORDER NUMBERS

21' 973 – B4672

25' 973 – B4673

30' 973 – B4674

36' 973 – B4675

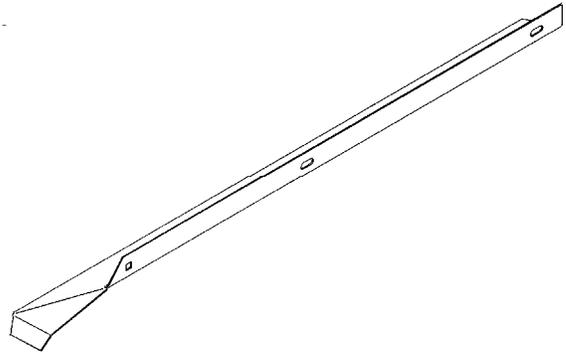
39' 973 – B4676

### NARROW END PANEL DEFLECTORS

Wholegoods order number:

21' – 39' 973 & 30' - 36' 974: B4723

In heavy, wet and/or green crops such as forage and canola, these special deflectors prevent crop build-up that can occur on wider deflectors. This build-up can cause sickle plugging and draper stalling.



# UNLOADING & ASSEMBLY

## PREPARE TO UNLOAD



**CAUTION:** To avoid injury to bystanders from being struck by machinery, do not allow persons to stand in unloading area.

1. Move trailer into position and block trailer wheels.
  2. Lower trailer storage stands.
- 

## UNLOADING EQUIPMENT



**CAUTION:** Unloading equipment must meet or exceed specified requirements. Using inadequate equipment may result in vehicle tipping, chain breakage, or machine damage.

## LIFTING VEHICLE REQUIREMENTS

Use a lifting vehicle with minimum 8000 lb. (3630 kg) lifting capacity and a minimum 15 ft. (4.5 m) lifting height.

## CHAIN REQUIREMENTS

Use overhead lifting quality chain (1/2 in.) with minimum 5000 lb. (2270 kg) working load limit.

## UNLOADING & ASSEMBLY

### UNLOAD HEADER



**WARNING:** Do not unload header by lifting at cutterbar. This will cause header to swing or tilt, as one side of the header is heavier than the other.



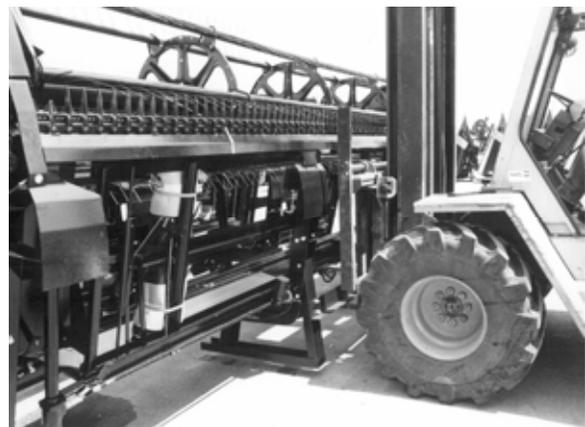
**WARNING:** Be sure forks are secure before moving away from load. Stand clear when lifting.

**NOTE:** Shipping damage or shortage must be noted on the trucking company's copy of the bill of lading. Once the bill of lading is signed, dealer is liable for any damage or shortage not noted.

1. Approach header from either its "topside" or "underside". Drive forward as far as possible, with the forks underneath the lifting framework. Take care not to bend parts on back tube.
2. Remove hauler's tie down straps and chains.
3. Raise header off deck, back up until unit clears trailer and slowly lower to 6 inches (150 mm) from ground.
4. Take to storage or set-up area.
5. Set machine down securely on level ground. Check for shipping damage and missing parts.



UNLOADING HEADER FROM TOPSIDE



UNLOADING HEADER FROM UNDERSIDE

## UNLOADING & ASSEMBLY

### PULL HEADER OVER TO FIELD POSITION

**NOTE:** Before lowering header, remove linkage pins from header legs. These will be required when attaching header to combine adapter.

1. Drive lifting vehicle to approach header from its "underside".

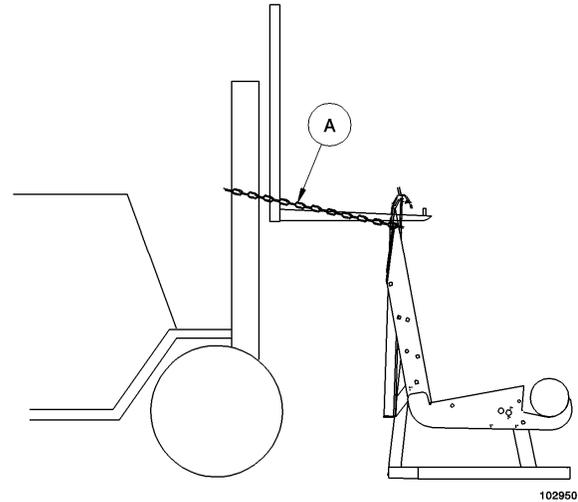
Engage forks under cutterbar as shown.

Attach a chain (A) from mast of lifting vehicle to header leg. Use overhead lifting quality chain (1/2 in.) with minimum 5000 lb. (2270 kg) working load limit.

2. Back up slowly while lowering forks until header tips onto forks.



**CAUTION:** Stand clear when lowering, as machine may swing.



ATTACH CHAIN

3. Place 6 inch (150 mm) blocks under each end of cutterbar and lower header onto blocks.

### SET HEADER SUPPORT STAND

1. Remove chain and move lifting vehicle to rear of header.

2. Attach chain to center link anchor on frame tube, raise rear of header and lower header stand into position (A).

3. Lower header onto stand. Remove shipping stands.

**NOTE:** In soft conditions, use a 2x4 block under header stand.



HEADER STAND – LOWERED

## UNLOADING & ASSEMBLY

### REEL SUPPORT ARMS – 21' to 25' Headers

1. Drive forklift to front of header, near center. Place a lifting strap around reel main tube and attach to forklift.

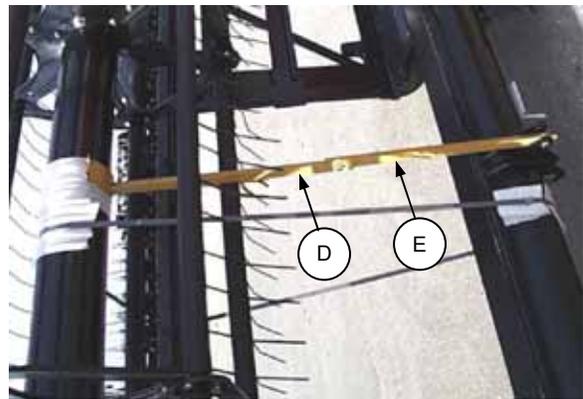
**NOTE:** To avoid damage to tube, do not lift with forks directly under reel tube.

2. Remove nuts (A) securing yellow shipping supports to reel support arms, both ends of header. For 25' headers only, remove yellow reel tube support (D) and angle (E) at center of header. Remove metal banding from reel.
3. Raise the forks slowly to raise reel. Engage reel props and lower forks until reel rests on props. Back the forklift away.

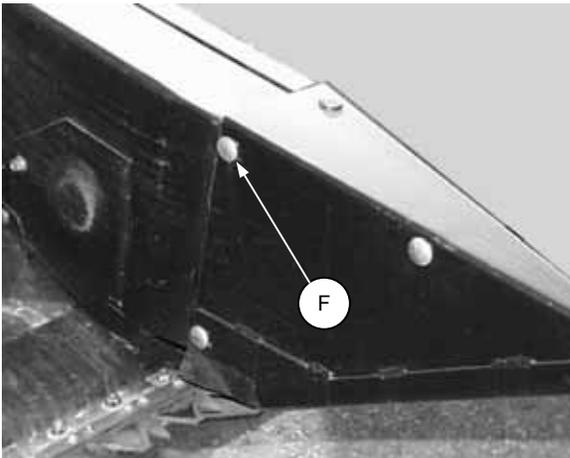


REEL SUPPORT ARMS SHIPPING POSITION

4. Cut shipping wire securing reel lift cylinders. Attach **rod end of reel lift cylinder to header** at (B) with pins provided.
5. Remove the bolts securing shipping supports to header frame. Discard straps and re-install hardware. Hardware at (F) is installed reversed for ease of access when removing shipping supports. To prevent damage to reel end shields and /or discs, always install carriage head bolts to the inside of header as shown for field use.



REMOVE CENTER REEL SUPPORT  
25' HEADERS



INSTALL HARDWARE WITH HEADS IN



REEL LIFT CYLINDERS WORKING POSITION

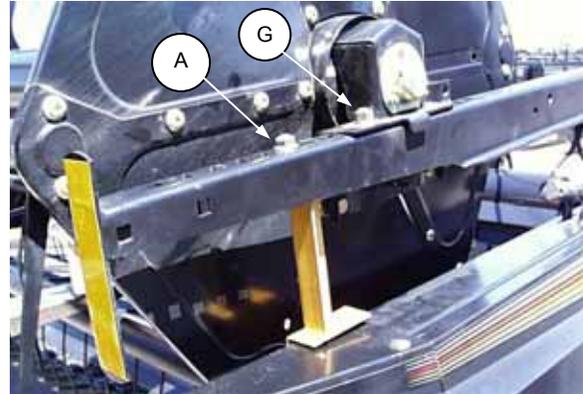
# UNLOADING & ASSEMBLY

## REEL SUPPORT ARMS – 30', 36' & 39' Split Reel Headers

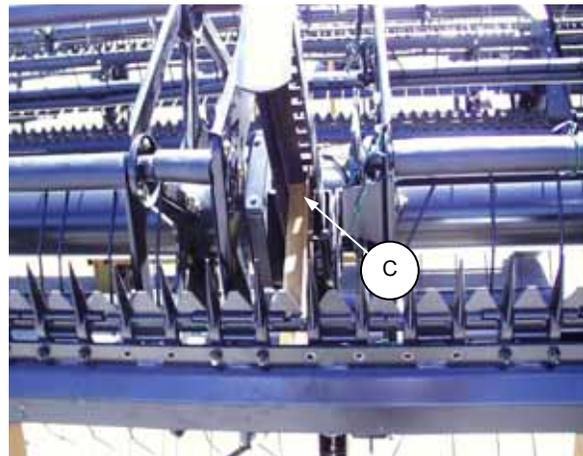
1. Drive forklift to front of header, centered on the R/H reel. Remember L/H and R/H designations are determined from the rear of the header, facing forward. Place a lifting strap around reel main tube and attach to forklift.

**NOTE:** To avoid damage to tube, do not lift with forks directly under reel tube.

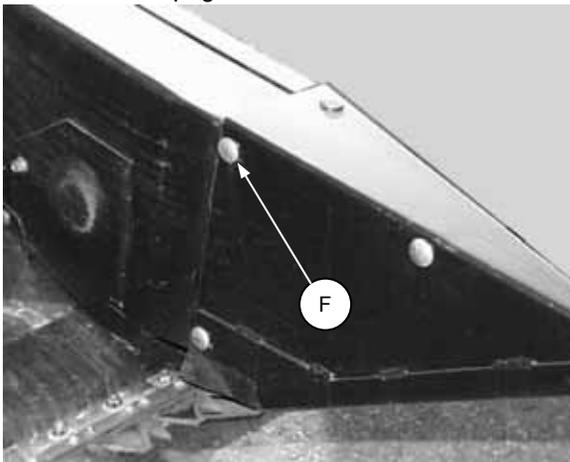
2. Remove nuts (A) securing yellow shipping supports to L/H & R/H reel support arms.
3. At center of header, remove nut securing yellow shipping support (C) to center reel support arm.
4. Raise the forks slowly to raise R/H reel. Engage reel props at R/H end and center support arms and lower forks until reel rests on props.
5. Disengage center reel arm shipping support from cutterbar and discard.
6. Drive the forklift to L/H end of left reel. Place lifting strap around reel main tube and attach to forklift. Raise the forks slowly to raise L/H reel. Engage reel prop at L/H end and lower forks until reel rests on prop. Back the forklift away.
7. Remove the bolts securing left and right end shipping supports to header frame. Discard straps and re-install hardware. Hardware at (F) is installed reversed for ease of access when removing shipping supports. To prevent damage to reel end shields and /or discs, always install carriage head bolts to the inside of header as shown for field use.
8. Cut shipping wire securing reel lift cylinders. At outer arms, attach **rod end of reel lift cylinder to header** at (B). At center arm, attach rod end of cylinder to reel support arm. Bleed air from cylinders per instructions on page 85.



REEL SUPPORT ARMS SHIPPING POSITION



CENTER REEL SUPPORT ARM



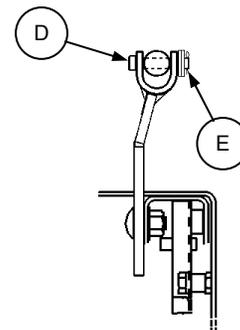
INSTALL HARDWARE WITH HEADS IN



REEL LIFT CYLINDERS WORKING POSITION

### 974 Reel Fore-Aft Cylinders:

1. Cut shipping wire securing reel fore-aft cylinders. **Prior to attaching fore-aft cylinders**, bleed air per instruction on page 85.
2. After bleeding, attach cylinders to fore-aft supports at end of reel arms. At center arm, install clevis pin with head at (D) as shown, and use 21/32 ID washer(s) as required to maximize clearance between pin head and reel end shield. Secure clevis pin with cotter pin (E). Move reel manually to line up pinholes
3. Remove bolt (G) (see photo top left) securing reel end supports to reel arms.



## UNLOADING & ASSEMBLY

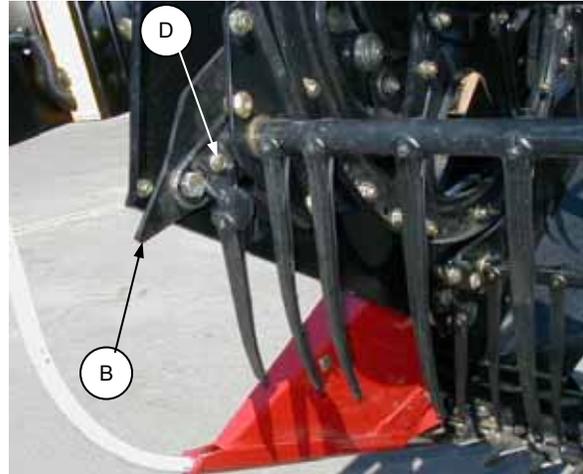
### REEL ASSEMBLY

The reel comes fully assembled except for the following:

Two of the reel cam arms (B) have been disassembled for shipping. Attach cam arms as shown. Install bolts with heads inboard and torque to 120 ft.lbs. (162 N·m).

**NOTE:** Hardware for the disassembled cam arms is taped to the reel.

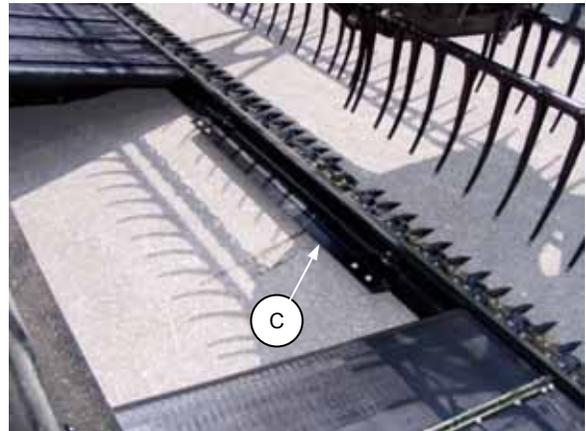
**NOTE:** Nut (D) may need to be loosened in order to install reel cam arm hardware.



ASSEMBLE REEL CAM ARMS

### END DELIVERY

For headers being set up for end delivery, install bar (C) onto lugs across center opening at cutterbar. Note that end tabs bend down and holes in bar are towards rear of header. This bar prevents draper damage when end delivering. (Bar is stored on right deck backsheet, or may be at right end panel on some headers.)



INSTALL GUIDE BAR FOR END DELIVERY



# UNLOADING & ASSEMBLY

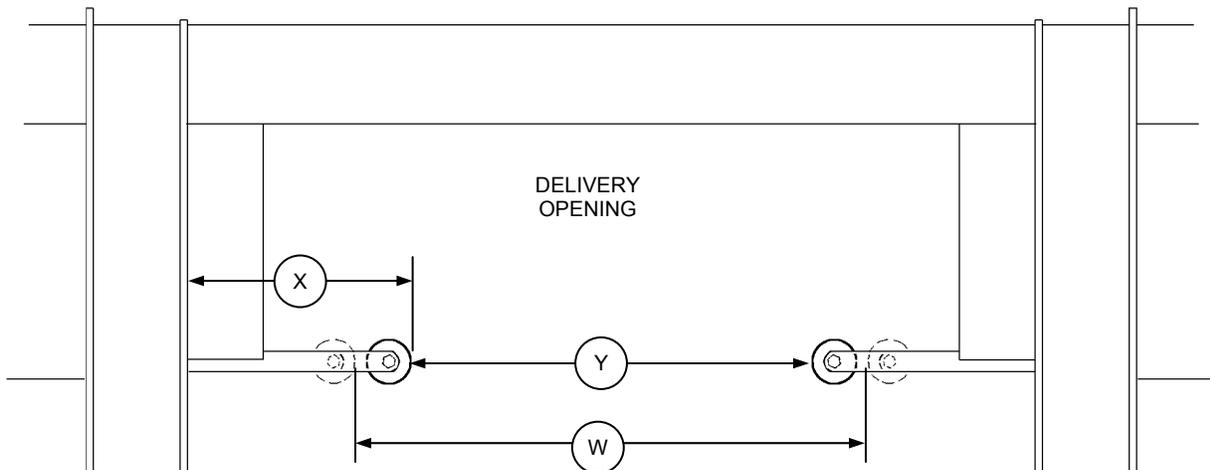
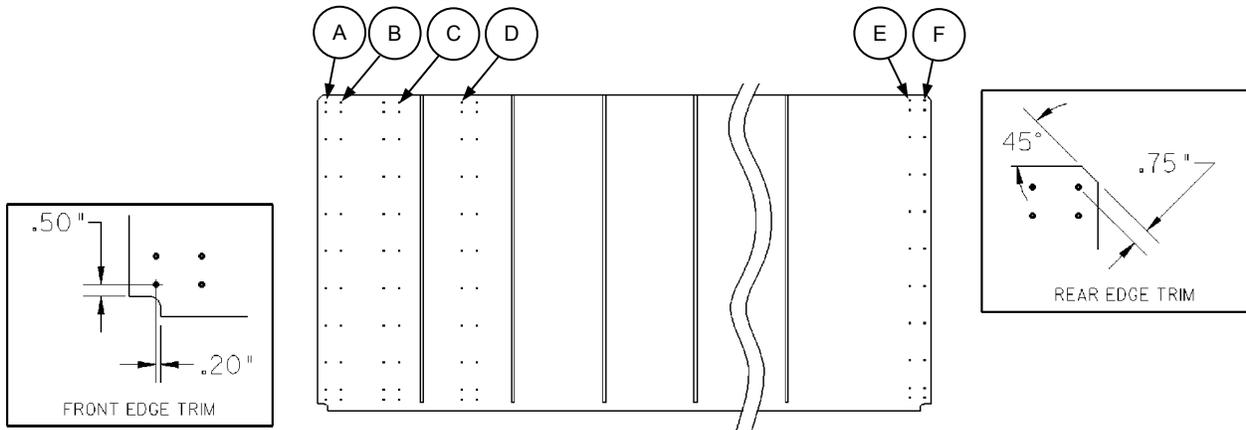
## INSTALL DRAPERS

To install:

1. Use this chart to position connector tubes at the appropriate rows of holes for desired opening size.

**NOTE: Recommended starting point is with decks shifted in, column (Y) for rows I and III.  
For row II start at 45.4" (1155 mm) for specialty crops and 42.1" (1070 mm) or less for cereal crops.**

HEADER AND COMBINE MODELS	CONNECTION (both drapers)	CENTER DELIVERY OPENING WIDTH (between rollers)		LEG TO IDLER ROLLER EDGE (DIM. X) (decks in)	ENDPANEL DEFLECTORS (shown on page 27)
		With decks shifted out (W)	With decks shifted in (Y)		
I John Deere, New Holland CX, Lexion (Wide Decks)	Row D to Row F	63.7" (1620 mm)	53.5" (1360 mm)	11" (280 mm)	Standard
	Row B to Row E	49.8" (1265 mm)	45.9" (1165 mm)	16.8" (427 mm)	Narrow
II Case 77, 80 & 88 Case AFX, New Holland CR 970/980, Lexion (Mid Size Decks)	Row B to Row E	49.8" (1265 mm)	39.6" (1005 mm)	20" (507 mm)	Standard
	Row A to Row F	45.9" (1165 mm)	42" (1065 mm)	18.8" (477 mm)	Narrow
III Case 60 & 66, Agco, New Holland CR 920/940/960	Row A to Row F	45.9" (1165 mm)	35.6" (905 mm)	20" (508 mm)	Standard



2. Idler rollers are shipped in the mid range opening position. If row of holes (A – narrow deck) or (D) – wide deck) is selected, the idler roller assembly must be repositioned in the decks. See "Idler Roller Positioning" in Maintenance/Service section of Operator's Manual.

## UNLOADING & ASSEMBLY

### INSTALL DRAPERS (continued)

3. Connect draper with screw heads (S) facing center opening.

**NOTE:** Place connector tube so holes closest to end of tube are at the cutterbar.

4. Ensure V-guide on underside of draper engages grooves at rear of both rollers.

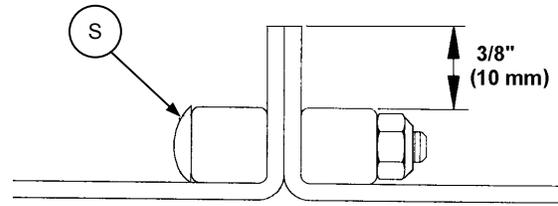
5. Check draper to cutterbar clearance. Maximum gap is 1 mm. If adjustment is required, see "Deck Height" on page 55.

6. Apply draper tension until white indicator bar is partially hidden behind roller support arm. See "Draper Tension Adjustment" in Maintenance /Service section of Operator's Manual.

7. Position decks to dimension (X) (see chart on previous page) for desired opening width. The recommended starting position is with decks shifted in. See "-Delivery Opening Width" in Operation section of Operator's Manual.

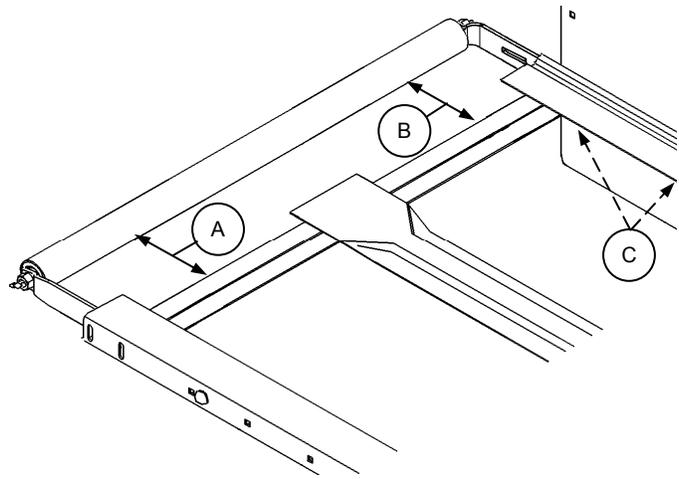
8. Align idler rollers for proper draper tracking. Align roller by loosening two bolts in rear support (C) and adjusting in slots until dimensions (A) and (B) are:  
 21' & 25' Headers – equal front and rear.  
 30', 36' & 39' Headers – Dimension (B) 3 mm (1/8") less than Dimension (A).  
 See page 54 for details.

9. Cut excessive flap off of draper, leaving 3/8" (10 mm) extending above the connector. Trim the new ends at the front corners as shown on page 82. This allows draper to fit properly under front draper seal to prevent tearing of front edge. Use the cut-offs as a guide for trimming. Keep the cut-offs for use as a splice.

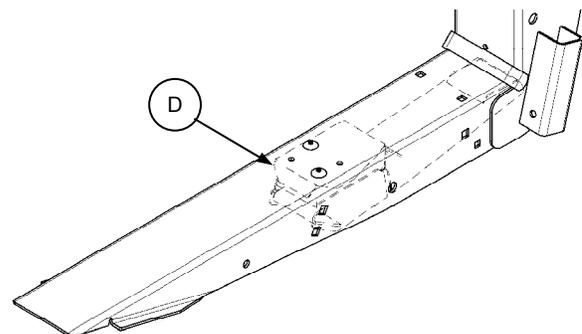


← SCREW HEADS FACE CENTER OPENING

CONNECTOR SCREW HEADS



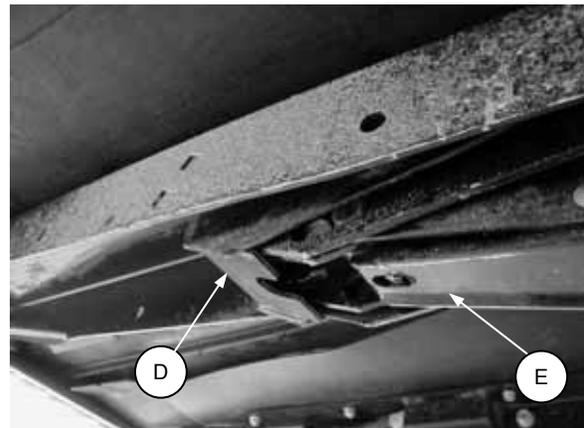
FIXED ROLLER ALIGNMENT



### INSTALL LINKAGE SUPPORTS (973 Only)

Attach linkage supports (D) to header lower legs, using two 3/8 x 3/4" Torx Head screws per side.

**IMPORTANT:** When attaching header to adapter, adapter leg (E) must engage header leg on top of support (D) as shown, both sides.



SUPPORTS IN LOWER LEGS: 973 ONLY

# UNLOADING & ASSEMBLY

## ATTACH HEADER



**CAUTION:** Read the Operator's Manuals carefully to familiarize yourself with procedures and controls before attaching header to combine. Attaching instructions are provided in the Combine Adapter Operator's Manual.

## BLEED HYDRAULIC SYSTEM

### Header Lift Cylinders

Raise and lower header a few times to allow trapped air to pass back to the reservoir.

### Reel Lift Cylinders



**CAUTION:** Take care during this procedure as air in the system can cause the reel to raise and lower erratically. Keep body and hands out from under reel and reel support arms.

1. Fully lower header and reel.



**CAUTION:** Bleed screw (A) may be forced from hole by hydraulic pressure. Do not loosen screw too quickly or too far.

2. SLOWLY loosen bleed screw (A) at **top** of slave reel lift cylinder.  
**NOTE:** For 21', 30', 36' & 39' headers, slave cylinder is at right end of header. For 25' Header, slave cylinder is at left end.
3. Start engine and activate reel lift. Left-hand cylinder will reach full extension first, then oil will pass to right hand cylinder.
4. Continue to activate reel lift until oil comes out around bleed screw.
5. Tighten bleed screw.



REEL LIFT CYLINDER BLEED SCREW

### Reel Fore-Aft Cylinders (if equipped):

To prevent damage to fore-aft components and/or reel, before moving reel with fore-aft kit:

1. Remove cylinder pins at rod ends and support cylinders to allow unobstructed movement of cylinder rods.
2. Activate hydraulics, extending and retracting cylinders several times to fill system with oil and ensure cylinders are in phase.
3. Reconnect cylinder rod ends.

## UNLOADING & ASSEMBLY

### REPOSITION WOBBLE BOX BREATHER

Unless header will be transported on a trailer that carries headers upright, swap position of breather (B) and plug (C) at wobble box to position breather in rear hole.



REPOSITION WOBBLE BOX BREATHER

### ADJUSTMENTS AND CHECKS

Perform the final checks and adjustments as listed on the "Pre-Delivery Checklist" (yellow insert) to ensure the machine is field-ready. Use the Operator's Manual for directions.

Place the Operator's Manual and Parts Catalog in storage case (A) located under the left end shield.



MANUAL STORAGE CASE

## UNLOADING & ASSEMBLY

### 974 FLEX HEADER: WING FLOAT SET-UP AND PRE-DELIVERY CHECK

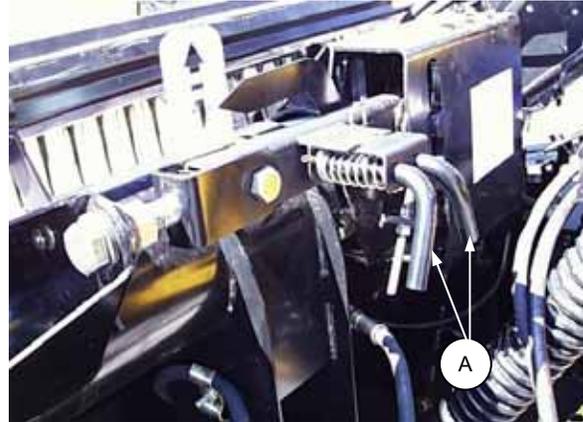
1. Set the combine adapter float components, skid plate and tine drum to suit the flex header and your combine model. See "Preparing the Adapter" in the Assembly section of the Adapter Operator's Manual.
2. Install adapter in header. Leave the adapter spring float lockout engaged. See Adapter Operator's Manual.

**IMPORTANT:** For units with gauge wheels, pin the gauge wheels up off the ground so their flotation effect does not interfere with the wing float setting.

3. Ensure wing float lock pins (2 per side) are in engaged position (A) as shown. Pins are spring loaded to the engaged position.

If pins are disengaged:

- Rotate pin handles to release the roll pins from the notch.
- Lower cutterbar onto two 6" (150 mm) blocks at dividers until inner pins snap into engaged position.
- Remove blocks and place them just inboard of cutterbar flex points
- Lower header onto blocks until outer pins snap into place.

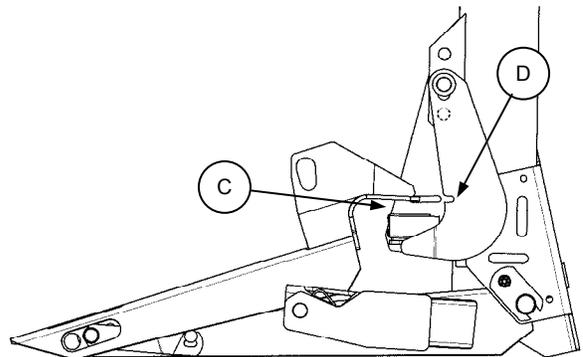


WING FLOAT LOCKOUT ENGAGED

4. Pick up header with combine and raise cutterbar approximately 6" (150 mm) off ground. (Remove blocks if they were required for Step 3.)
5. The smile/frown, fore-aft straightness and vertical alignment of the wing frames is controlled at the factory. Adjustment should not be required. Procedures for checking and adjustment are included in the Header Technical Manual.
6. Set top link to a mid-range header angle position (approximately 490 mm [19-1/4"] pin to pin).
7. Disengage adapter float spring lockout, both sides. Ensure gap at (C) is 1/2" (13 mm) with cutterbar 6" (150 mm) off ground.

**NOTE:** Notch (D) is provided as an alignment mark for this setting, as shown.

See Adapter Operator's Manual. Wing float lock pins remain engaged, as above.



1/2" (13 mm) GAP WITH HEADER  
6" OFF GROUND

Continued next page....

## UNLOADING & ASSEMBLY

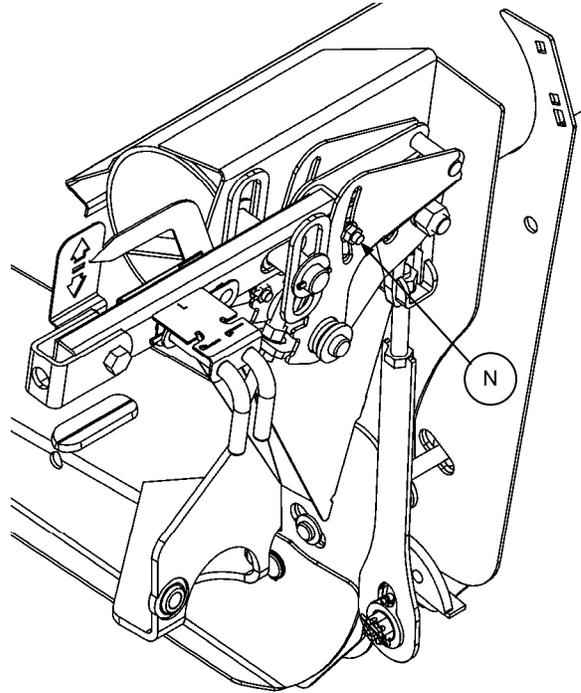
### 974 FLEX HEADER: WING FLOAT SET-UP AND PRE-DELIVERY CHECK

8. With adapter float spring lockout disengaged, wing float lock pins engaged, and cutterbar approximately 6" (150 mm) above ground, adjust wing bell crank linkage to balance wings, as follows:

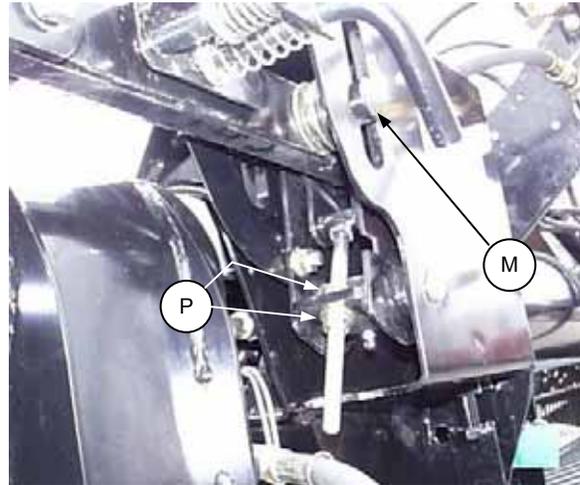
**NOTE:** Fine tuning adjustment of wing bell crank will be detailed in Step 9.

- a) Adjust left wing:
- One of the two pins in the left wing float lock will be tight and one will be loose.
  - Loosen nut (N) inside bell crank.
  - Adjust bell crank with nuts (P) until both wing float lock pins are loose.
  - Disengage pins in left wing float lock. Float for right wing remains locked.
  - To increase force on divider (making it harder to pull up), adjust nuts (P) to move top link pin (M) up. To decrease force on divider (making it easier to pull up), adjust nuts (P) to move top link pin (M) down.
  - If nuts (P) are difficult to turn, fully lower feeder house to reduce load on linkage. Return to 6" (150 mm) cutterbar height when complete.
  - Tighten nut (N).
- b) Adjust right wing:
- Engage float lock pins in left wing. Disengage pins in right wing float lock.
  - Repeat bell crank adjustment above for right wing.
- c) Disengage pins in left wing float lock and recheck float balance both sides. Readjust as necessary.

Continued next page....



LOOSEN NUT TO ALLOW BELL CRANK ADJUSTMENT



ADJUST BELL CRANK TO POSITION TOP LINK PIN

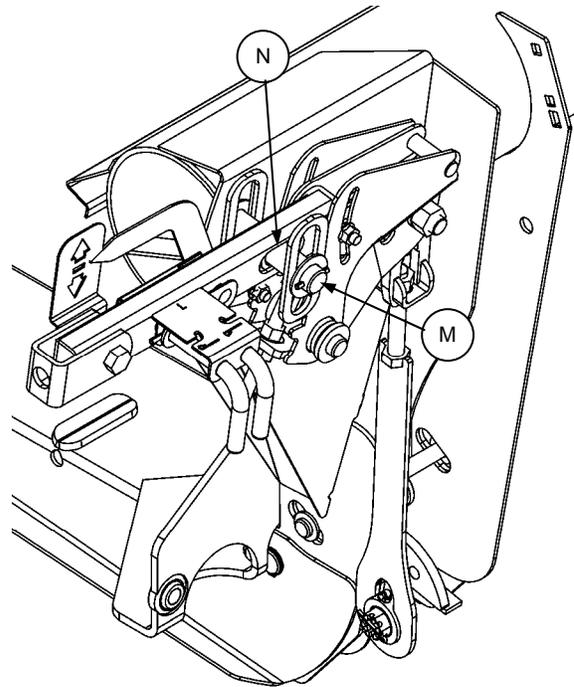
## UNLOADING & ASSEMBLY

### 974 FLEX HEADER: WING FLOAT SET-UP AND PRE-DELIVERY CHECK

9. Check overall balance of header. Adjust so that minimum pressure on cutterbar will float wings up or down. **NOTE:** Use the gauge on the adapter float optimizer to take note of changes in load on cutterbar.
- Ensure top link is in mid-range header angle position and float lockout is disengaged on both adapter springs and wing float.
  - Raise header to 12" (300 mm) cutterbar height. Place two 6" (150 mm) blocks under cutterbar, just inboard of hinge points.
  - Lower header until cutterbar just touches blocks. Observe and record gauge position on the float optimizer. This corresponds to approximately zero force on cutterbar. Movement from this position will be used to estimate changes to force on cutterbar.
  - With blocks positioned as above, lower header until dividers just move down to ground. Observe and record gauge position on the float optimizer when dividers move down.  
**NOTE:** Wings should start to move down before float optimizer gauge has moved one full number. Full frown should occur before gauge has moved two full numbers. If not, this is an indication that there is excessive friction and/or mis-adjustment in the flex linkage. Be sure the adapter front skid plate is not causing binding at cutterbar, and the flex linkage is moving freely.
  - Raise header 12" (300 mm) and remove blocks.
  - Lower header until wings float up to straight position and center section of cutterbar touches ground. Observe and record gauge position on the float optimizer when center section of cutterbar moves down.
  - Raise header 12" (300 mm) and put 6" (150 mm) blocks under dividers at ends of header.
  - Lower header until center section of cutterbar touches ground. Observe and record gauge position on the float optimizer when center section of cutterbar moves down. Cutterbar should begin going into smile before float optimizer gauge has moved one full number, and full smile should occur before gauge has moved two full numbers.
  - Raise header 12" (300 mm) and remove blocks.
  - Lower header until wings float down to straight. Observe and record gauge position on the float optimizer.
  - Adjust bell cranks as required to balance wings, For example, raise top link pin if it takes more force on cutterbar (as indicated by gauge position on the float optimizer) to move wings down than up. In cases where a frown bias is desired, if it takes one full number for the wings to start to smile, it should only take from 8/10<sup>th</sup> to one full number to start to frown.
10. Check to ensure full flex range is achieved by observing position of pin (M). If pin does not reach ends of horizontal slot (N) at full-smile and full-frown, see Header Technical Manual.



USE FLOAT OPTIMIZER GAUGE TO BALANCE WINGS



CHECK FOR FULL FLEX RANGE

Continued next page....

## UNLOADING & ASSEMBLY

### 974 FLEX HEADER: WING FLOAT SET-UP AND PRE-DELIVERY CHECK

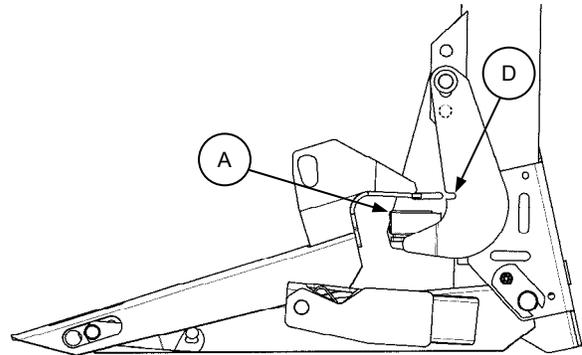
11. Reduce adapter float spring setting for field.

a) *For cutting on the ground:*

- Leave float gap at 1/2" (13 mm), aligning float arm with notch (D). This setting should require about 30 pounds (135 N) to raise right or left divider.
- Unlock wing float prior to operation.

b) *For cutting off the ground:*

- Lock wing float.
- Set header 6" (150 mm) above ground.
- Reduce float (loosen float spring adjusting bolts) until right and left float arms are in contact with down stops at (A).
- Check float at divider point. It should require about 50 pounds (225 N) to raise right or left divider. Readjust float springs as required. See Adapter Operator's Manual for adjustment procedure.



- 0 GAP FOR CUTTING ABOVE GROUND
- ALIGN FLOAT ARM WITH NOTCH FOR CUTTING ON GROUND (1/2 " GAP)

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## 973/974 Harvest Header Pre-Delivery Checklist

HEADER SERIAL NUMBER \_\_\_\_\_

Perform these checks and adjustments prior to delivery to your customer. See the Operator's Manual for adjustment details.



**CAUTION: Carefully follow the instructions given. Be alert for safety related messages which bring your attention to hazards and unsafe practices.**

- Check for shipping damage or missing parts. Be sure all shipping dunnage is removed.
- Adjust reel clearance at cutterbar:  
973 Headers: 5/8 inch (15 mm) at both ends of cutterbar.  
30' 974 Headers: 1-3/4" (45mm) at each end and 2-1/4" (58mm) at center.  
36' 974 Headers: 1-3/4" (45mm) at left end, 1" (25mm) at right end and 2-3/8" (60mm) at center.(P. 56)  
**NOTE:** For 974 Flex Header check measurements with cutterbar in full frown position.
- Check reel is centered between header end sheets (P. 58).  
**NOTE:** For 974 Flex Header check centering with cutterbar in full smile position.
- Check sickle drive belt tension (P. 51)
- Grease all bearings and drive lines (P. 38).
- Reposition wobble box breather to rear hole (unless transported upright on trailer) (P. 86).
- Check wobble box lube level (P. 50).
- Bleed reel lift cylinder (P. 85).
- Check skid shoes are evenly adjusted (P. 19).
- Check deck height (draper to cutterbar clearance – 1 mm gap to 1.5 mm draper deflection) (P. 55).
- Check draper tension (P. 52).
- Check hydraulic hose and wiring harness routing, ensuring adequate clearance with header up or down. Be sure colour coding on hydraulic hoses is matched and that all hydraulic connections are fully engaged.
- Check header flotation as follows:  
973 Header: 50-70 lbs. [225 -315 N] cutting above ground / 30 lbs [135 N] cutting on ground.  
(P. 22 & Adapter Operator's Manual).  
974 Flex Header: Perform wing and spring float set-up and checks (P. 87).
- Check that header is level. (See Adapter Operator's Manual for Adjustment).
- Run machine at operating speed for 15 minutes, STOP ENGINE and check for belt/idler alignment and heated bearings. Check sickle sections for discoloration caused by misalignment of components.
- Check lights are functional.
- Place Operator's Manual in storage case under left end shield.

Date Checked: \_\_\_\_\_

Checked by: \_\_\_\_\_