

**MacDon™**  
**Model D65**  
**Harvest Header®**  
**for Self-Propelled Windrowers**

**UNLOADING and**  
**ASSEMBLY INSTRUCTIONS**  
**for**  
**NORTH AMERICAN SHIPMENTS**

# INTRODUCTION

This instructional manual describes the unloading, set-up and pre-delivery requirements for the MacDon D65 Harvest Headers® for MacDon M Series Self-Propelled Windrowers.

Some sections apply to multiple header configurations and sizes. Carefully follow the instructions for your specific header. Use the Table of Contents to guide you to specific areas. Retain this manual for future reference.

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



**MACDON D65 HARVEST HEADER®**

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## GENERAL SAFETY

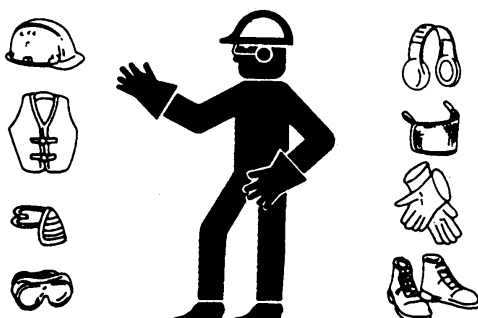


### CAUTION

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

Protect yourself:

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



- hard hat
- protective shoes with slip resistant soles
- protective glasses or goggles
- heavy gloves
- wet weather gear
- respirator or filter mask

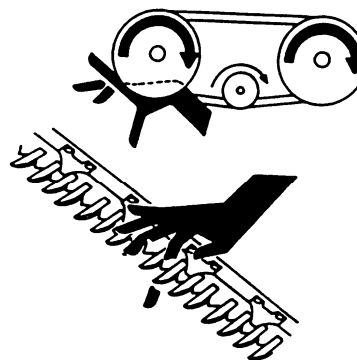


- hearing protection  
Be aware that prolonged exposure to loud noise can cause impairment or loss of hearing. Wearing a suitable hearing protective device such as ear muffs (A) or ear plugs (B) protects against objectionable or loud noises.

- 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.



- Provide a first-aid kit for use in case of emergencies.
- Keep a fire extinguisher on the machine. Be sure the extinguisher is properly maintained and be familiar with its proper use.
- Wear close-fitting clothing and cover long hair. Never wear dangling items such as scarves or bracelets.
- Keep hands, feet, clothing and hair away from moving parts. Never attempt to clear obstructions or objects from a machine while the engine is running.



- Keep all shields in place. Never alter or remove safety equipment. Make sure driveline guards can rotate independently of the shaft and can telescope freely.

*(continued next page)*

## SAFETY

- Use only service and repair parts made or approved by the equipment manufacturer. Substituted parts may not meet strength, design, or safety requirements.
- Do *not* modify the machine. Unauthorized modifications may impair the function and/or safety and affect machine life.
- Stop engine, and remove key from ignition before leaving Operator's seat for any reason. A child or even a pet could engage an idling machine.



- Keep the area used for servicing machinery clean and dry. Wet or oily floors are slippery.
- Wet spots can be dangerous when working with electrical equipment. Be sure all electrical outlets and tools are properly grounded.
- Use adequate light for the job at hand.
- Keep machinery clean. Do *not* allow oil or grease to accumulate on service platforms, ladders or controls. Clean machines before storage.
- Never use gasoline, naphtha or any volatile material for cleaning purposes. These materials may be toxic and/or flammable.
- When storing machinery, cover sharp or extending components to prevent injury from accidental contact.

## RECOMMENDED TORQUES

### RECOMMENDED TORQUES

#### A. GENERAL

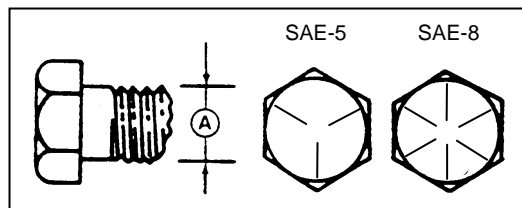
The tables shown below give correct torque values for various bolts and cap screws.

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

#### B. SAE BOLTS

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

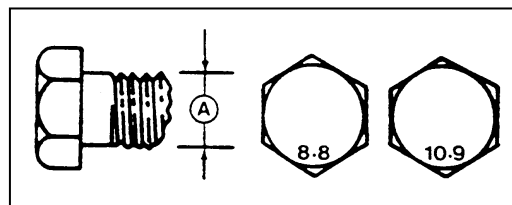
\* Torque categories for bolts and cap screws are identified by their head markings.



#### C. METRIC BOLTS

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

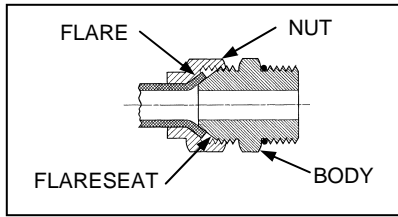
\* Torque categories for bolts and cap screws are identified by their head markings.



## RECOMMENDED TORQUES

### D. HYDRAULIC FITTINGS

#### FLARE TYPE

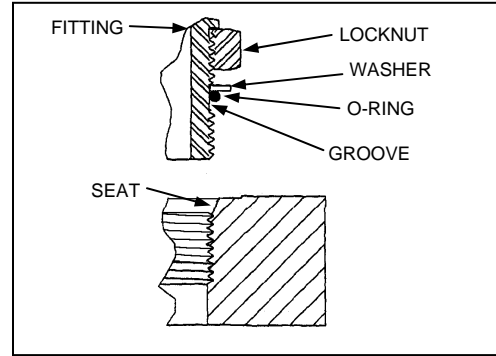


- Check flare and flare seat for defects that might cause leakage.
- Align tube with fitting before tightening.
- Lubricate connection, and hand-tighten swivel nut until snug.
- To prevent twisting the tube(s), use two wrenches. Place one wrench on the connector body, and with the second, tighten the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

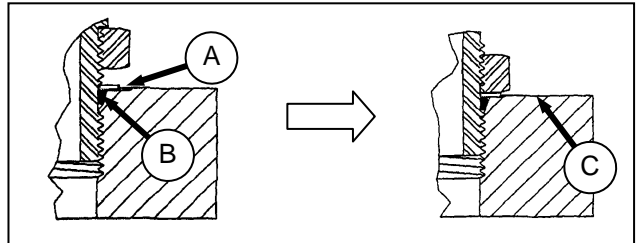
SAE NO.	TUBE SIZE O.D. (in.)	THD SIZE (in.)	NUT SIZE ACROSS FLATS (in.)	TORQUE VALUE*		RECOMMENDED TURNS TO TIGHTEN (AFTER FINGER TIGHTENING)	
				ft-lbf	N-m	Flats	Turns
3	3/16	3/8	7/16	6	8	1	1/6
4	1/4	7/16	9/16	9	12	1	1/6
5	5/16	1/2	5/8	12	16	1	1/6
6	3/8	9/16	11/16	18	24	1	1/6
8	1/2	3/4	7/8	34	46	1	1/6
10	5/8	7/8	1	46	62	1	1/6
12	3/4	1-1/16	1-1/4	75	102	3/4	1/8
14	7/8	1-3/8	1-3/8	90	122	3/4	1/8
16	1	1-5/16	1-1/2	105	142	3/4	1/8

\* Torque values shown are based on lubricated connections as in re-assembly.

#### O-RING TYPE



- Inspect O-ring and seat for dirt or obvious defects.



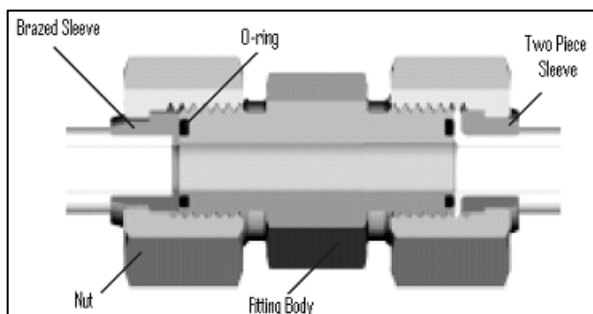
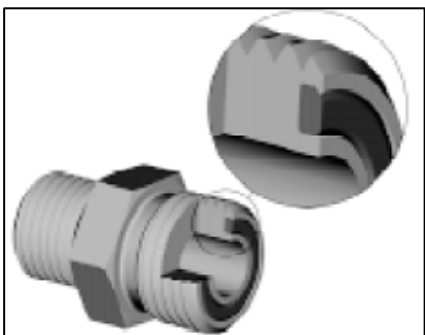
- On angle fittings, back off the lock nut until washer (A) bottoms out at top of groove (B) in fitting.
- Hand-tighten fitting until back-up washer (A) or washer face (if straight fitting) bottoms on part face (C), and O-ring is seated.
- Position angle fittings by unscrewing **no more than one turn**.
- Tighten straight fittings to torque shown.
- Tighten angle fittings to torque shown in the following table, while holding body of fitting with a wrench.

SAE NO.	THD SIZE (in.)	NUT SIZE ACROSS FLATS (in.)	TORQUE VALUE*		RECOMMENDED TURNS TO TIGHTEN (AFTER FINGER TIGHTENING)	
			ft-lbf	N-m	Flats	Turns
3	3/8	1/2	6	8	2	1/3
4	7/16	9/16	9	12	2	1/3
5	1/2	5/8	12	16	2	1/3
6	9/16	11/16	18	24	2	1/3
8	3/4	7/8	34	46	2	1/3
10	7/8	1	46	62	1-1/2	1/4
12	1-1/16	1-1/4	75	102	1	1/6
14	1-3/16	1-3/8	90	122	1	1/6
16	1-5/16	1-1/2	105	142	3/4	1/8
20	1-5/8	1-7/8	140	190	3/4	1/8
24	1-7/8	2-1/8	160	217	1/2	1/12

\* Torque values shown are based on lubricated connections as in re-assembly.

## RECOMMENDED TORQUES

### O-RING FACE SEAL (ORFS) HYDRAULIC FITTINGS



- Check components to ensure that the sealing surfaces and fitting threads are free of burrs, nicks, and scratches, or any foreign material.
- Apply lubricant (typically Petroleum Jelly) to O-ring and threads. If O-ring is not already installed, install O-ring. Align the tube or hose assembly.
- Ensure that flat face of the mating flange comes in full contact with O-ring.
- Thread tube or hose nut until hand-tight. The nut should turn freely until it is bottomed out. Torque fitting further to the specified number of F.F.F.T ("Flats From Finger Tight"), or to a given torque value in the table shown in the opposite column.

#### NOTE

*If available, always hold the hex on the fitting body to prevent unwanted rotation of fitting body and hose when tightening the fitting nut.*

- When assembling unions or two hoses together, three wrenches will be required.

SAE NO.	THD SIZE (in.)	TUBE O.D. (in.)	TORQUE VALUE*		RECOMMENDED TURNS TO TIGHTEN (AFTER FINGER TIGHTENING)**	
			ft-lbf	N-m	Tube Nuts	Swivel & Hose
3	***	3/16	---	---	---	---
4	9/16	1/4	11–12	14–16	1/4–1/2	1/2–3/4
5	***	5/16	---	---	---	---
6	11/16	3/8	18–20	24–27	1/4–1/2	1/2–3/4
8	13/16	1/2	32–35	43–47		
10	1	5/8	45–51	60–68		
12	1-3/16	3/4	67–71	90–95		1/3–1/2
14	1-3/16	7/8	67–71	90–95		
16	1-7/16	1	93–100	125–135		
20	1-11/16	1-1/4	126–141	170–190		
24	2	1-1/2	148–167	200–225	---	---
32	2-1/2	2	---	---	---	---

\* Torque values and angles shown are based on lubricated connection, as in re-assembly.

\*\* Always default to the torque value for evaluation of adequate torque.

\*\*\* O-ring face seal type end not defined for this tube size.



## CONVERSION CHART

### CONVERSION CHART

QUANTITY	INCH-POUND UNITS		FACTOR	SI UNITS (METRIC)	
	UNIT NAME	ABBR.		UNIT NAME	ABBR.
<b>Area</b>	acres	acres	$\times 0.4047 =$	hectares	ha
<b>Flow</b>	US gallons per minute	gpm	$\times 3.7854 =$	liters per minute	L/min
<b>Force</b>	pounds force	lbf	$\times 4.4482 =$	Newtons	N
<b>Length</b>	inch	in.	$\times 25.4 =$	millimeters	mm
	foot	ft	$\times 0.305 =$	meters	m
<b>Power</b>	horsepower	hp	$\times 0.7457 =$	kilowatts	kW
<b>Pressure</b>	pounds per square inch	psi	$\times 6.8948 =$	kilopascals	kPa
			$\times .00689 =$	megapascals	MPa
<b>Torque</b>	pound feet or foot pounds	lbf·ft or ft·lbf	$\times 1.3558 =$	newton meters	N·m
	pound inches or inch pounds	lbf·in. or in·lbf	$\times 0.1129 =$	newton meters	N·m
<b>Temperature</b>	degrees Fahrenheit	°F	$(^{\circ}\text{F} - 32) \times 0.56 =$	Celsius	°C
<b>Velocity</b>	feet per minute	ft/min	$\times 0.3048 =$	meters per minute	m/min
	feet per second	ft/s	$\times 0.3048 =$	meters per second	m/s
	miles per hour	mph	$\times 1.6063 =$	kilometers per hour	km/h
<b>Volume</b>	US gallons	US gal.	$\times 3.7854 =$	liters	L
	ounces	oz.	$\times 29.5735 =$	milliliters	ml
	cubic inches	in. <sup>3</sup>	$\times 16.3871 =$	cubic centimeters	cm <sup>3</sup> or cc
<b>Weight</b>	pounds	lb	$\times 0.4536 =$	kilograms	kg

## UNLOADING AND ASSEMBLY

### STEP 1. UNLOAD HEADER



#### CAUTION

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



#### CAUTION

Equipment used for unloading must meet or exceed the requirements specified below. Using inadequate equipment may result in chain breakage, vehicle tipping or machine damage.

LIFTING VEHICLE	HEADER SIZE	
	15–25 FT	30–45 FT
Minimum Capacity *	5,000 lb (2,270 kg)	7,000 lb (3,178 kg)
Minimum Fork Length	78 in. (1,981 mm)	

\* At 48 in. (1,220 mm) from back end of forks.

#### IMPORTANT

Forklifts are normally rated for a load located 24 inches (610 mm) from back end of the forks.

To obtain the forklift capacity at 48 inches (1,220 mm), check with your forklift distributor.

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



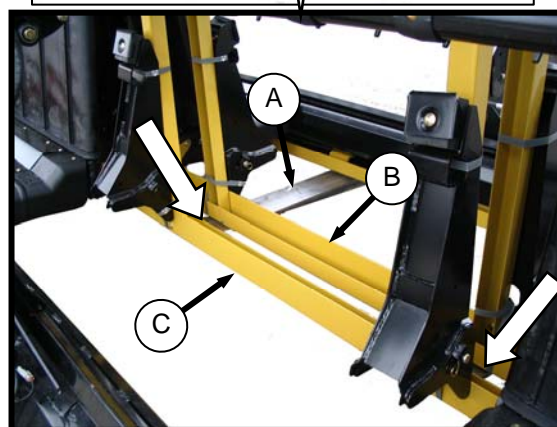
#### CAUTION

Ensure that forks extend beyond the inner support prior to lifting the header. If the forks do *not* lift at the supports, damage to the header may occur.



#### CAUTION

Avoid lifting the second header, and ensure the forks do *not* interfere with the shipping frame. If the forks contact the second header, damage to the headers may occur.



- Approach the header, and slide forks (A) underneath shipping support (B) of header as far as possible without contacting the shipping support (C) of opposite header.
- Remove hauler's tie down straps and chains.



#### WARNING

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

- Slowly raise windrower off deck.
- Back up until unit clears trailer, and slowly lower to 6 in. (150 mm) from ground.
- Take machine to storage or set-up area.
- Repeat above steps for second header.
- Check for shipping damage and missing parts.

## UNLOADING AND ASSEMBLY

### STEP 2. LOWER HEADER

Reposition header as follows in preparation for assembly and set-up:

#### A. SINGLE REEL HEADERS

- a. Choose an area with level ground.

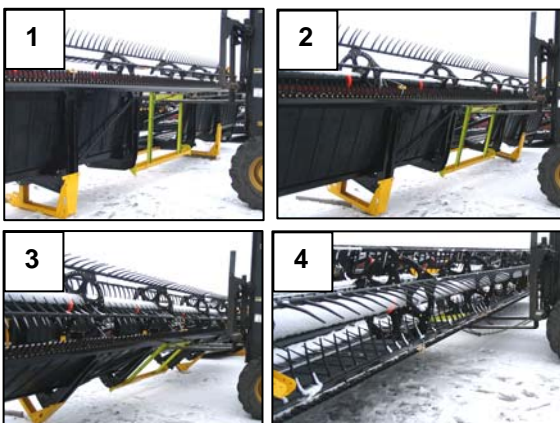


- b. Approach header from its underside, and place forks under top of shipping frame.  
c. Attach a chain at each end of frame, and secure other end to lifting vehicle.

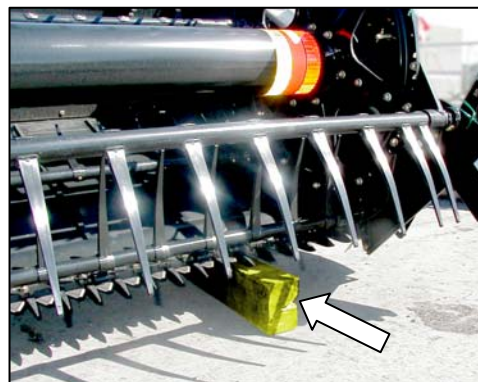


#### CAUTION

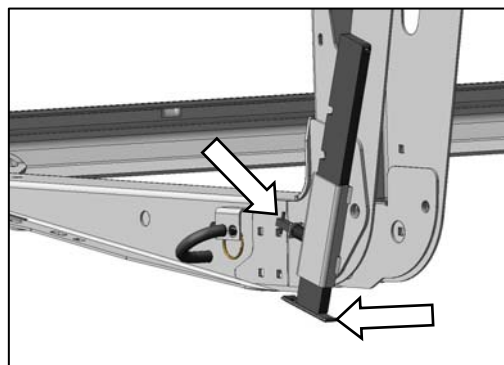
Stand clear when lowering, as machine may swing.



- d. Back up SLOWLY while lowering forks until header is just above the ground. See illustration.



- e. Place 6 in. (150 mm) blocks under each end and center of cutterbar, and lower header onto blocks.  
f. Remove chain, and move lifting vehicle to rear of header.  
g. Attach chain to center-link anchor on frame tube, and raise rear of header so that stand can be lowered.



- h. Lower header stand by pulling pin, lowering stand, and releasing pin to secure stand.  
i. Lower header onto stand.

#### NOTE

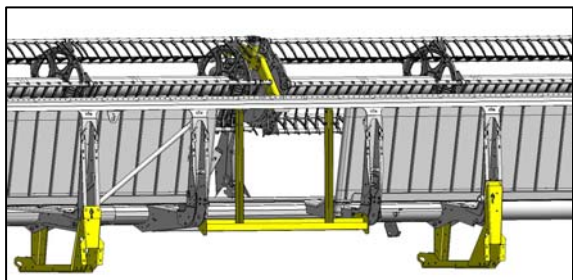
*If ground is soft, place a block under the stand.*

## UNLOADING AND ASSEMBLY

### B. DOUBLE REEL HEADERS

Reposition header as follows in preparation for assembly and set-up:

- a. Choose an area with level ground.

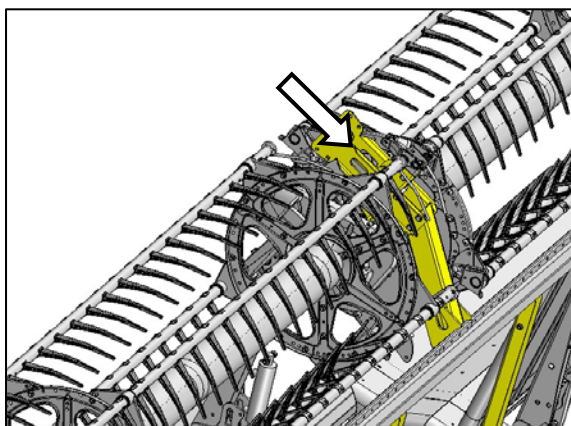


- b. Drive lifting vehicle to approach header from its underside.

#### IMPORTANT

**Do *not* lift header at this location.**

This procedure is only for laying the machine over into working position.



- c. Attach chain to shipping support at center reel arm.



#### CAUTION

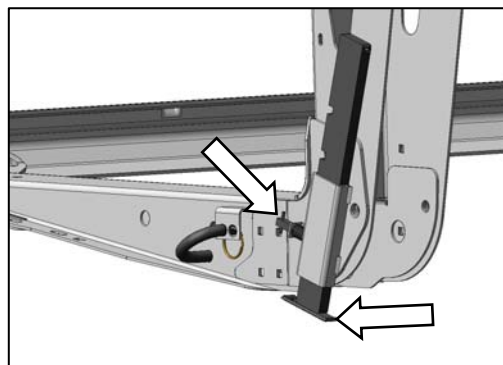
Stand clear when lowering, as machine may swing.



- d. Back up **SLOWLY** while lowering forks until header is just above the ground.



- e. Place 6 in. (150 mm) blocks under each end and center of cutterbar, and lower header onto blocks.
- f. Remove chain, and move lifting vehicle to rear of header.
- g. Attach chain to center-link anchor on frame tube, and raise rear of header so that stand can be lowered.



- h. Lower header stand by pulling pin, lowering stand, and releasing pin to secure stand.
- i. Lower header onto stand.

#### NOTE

*If ground is soft, place a block under the stand.*



## UNLOADING AND ASSEMBLY

### STEP 3. REMOVE SHIPPING SUPPORTS

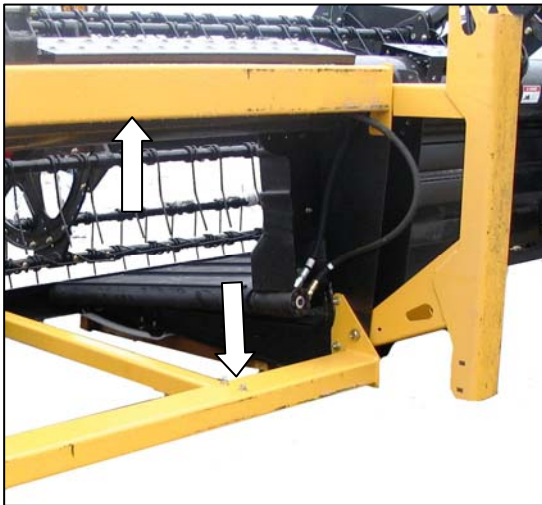
The removable supports are painted yellow.

#### NOTE

*Unless otherwise specified, discard supports, and all shipping material and hardware.*



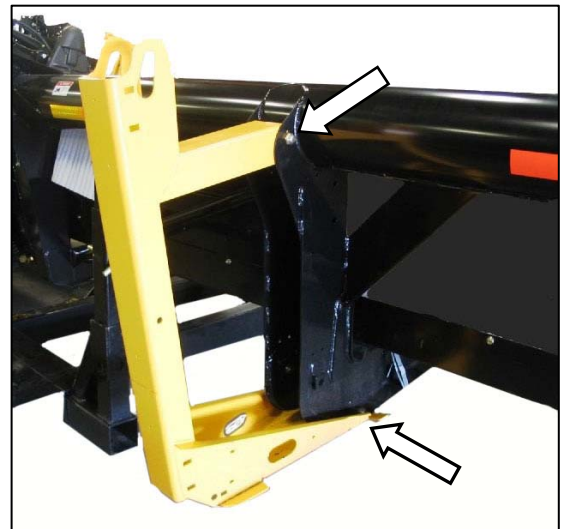
- a. Cut straps, and remove header boots from shipping support. Set boots aside for later installation.



- b. Remove six bolts securing lower support to header legs, and remove support.  
c. Remove four bolts securing upper support to header legs, and remove support.



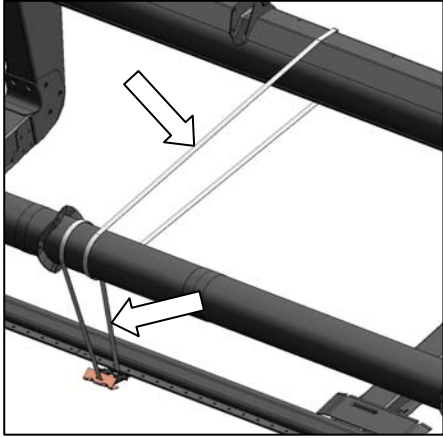
- d. Remove two bolts on each center leg shipping support, and remove stands.  
e. If outer leg shipping supports are installed, remove as follows:



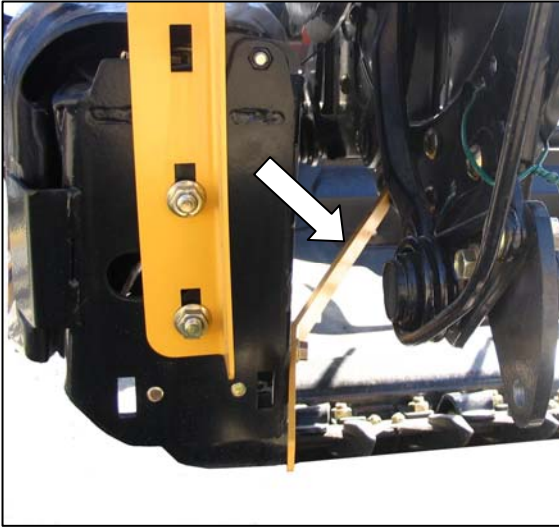
1. Remove two bolts attaching stand to the leg under the header.
2. Remove pin at top of stand, and remove stand.

*(continued next page)*

## UNLOADING AND ASSEMBLY



- f. Cut banding securing reel to cutterbar and backtube (SINGLE REEL ONLY).



- g. Remove reel anti-rotation brace between reel and endsheet.

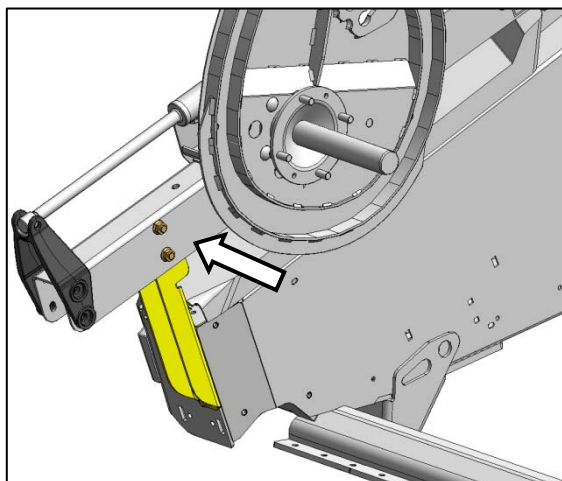
## UNLOADING AND ASSEMBLY

### STEP 4. INSTALL REEL LIFT CYLINDERS

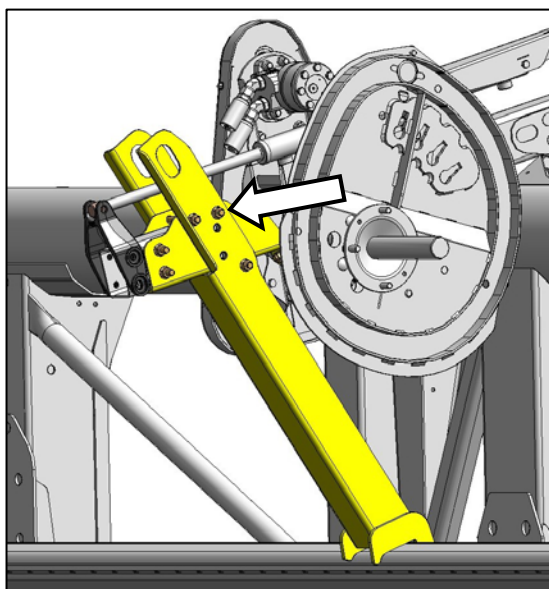


#### CAUTION

Braces On Reel Arms Keep Reel From Sliding Forward. Do *Not* Remove.

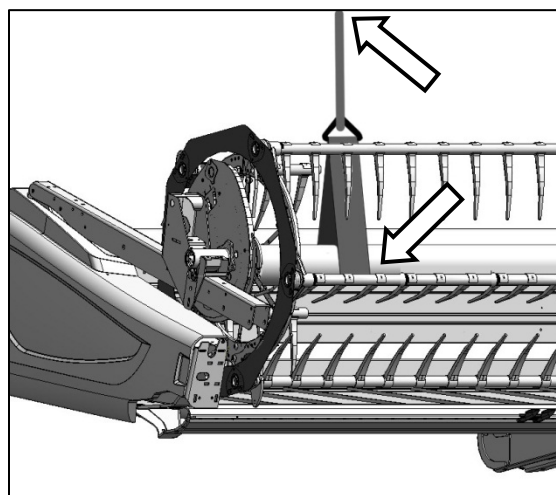


- a. Remove two top bolts on outboard reel arm support—both ends.

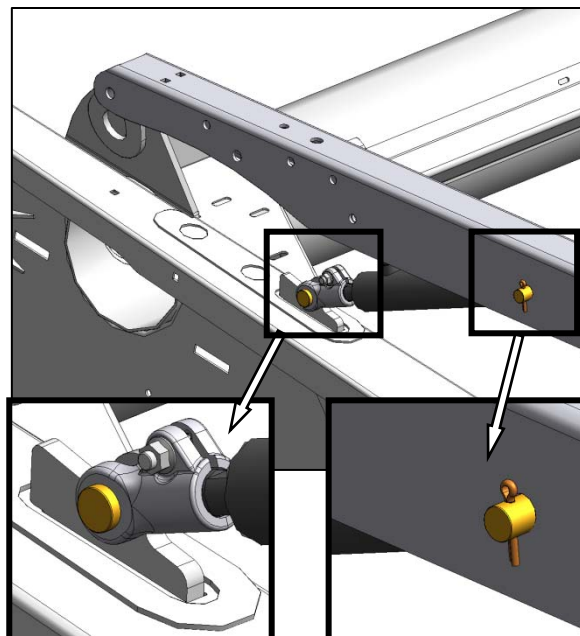


DOUBLE REEL ONLY

- b. Remove two top bolts on center reel arm support (DOUBLE REEL ONLY).



- c. Position sling around the reel tube close to outboard end of reel, and attach sling to a forklift (or equivalent).  
d. Remove shipping wire/banding from cylinder, and remove pins from lug and arm.  
e. Lift reel so that reel lift cylinder mounting holes line up with lug on endsheet and hole in reel arm.



RH SHOWN - LH OPPOSITE

- f. Secure cylinder to endsheet and reel arm with pins as shown. Note orientation of pins. Secure with cotter pins.

#### NOTE

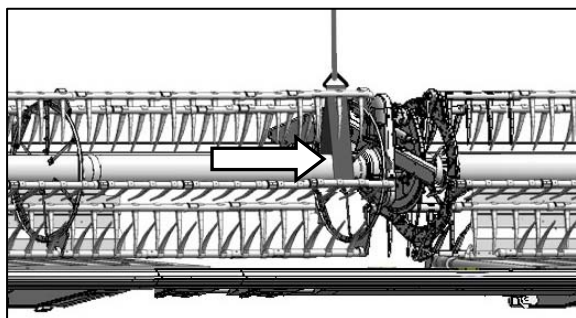
Cotter pin **outboard** at reel arm;  
cotter pin **inboard** at endsheet.

(continued next page)

## UNLOADING AND ASSEMBLY

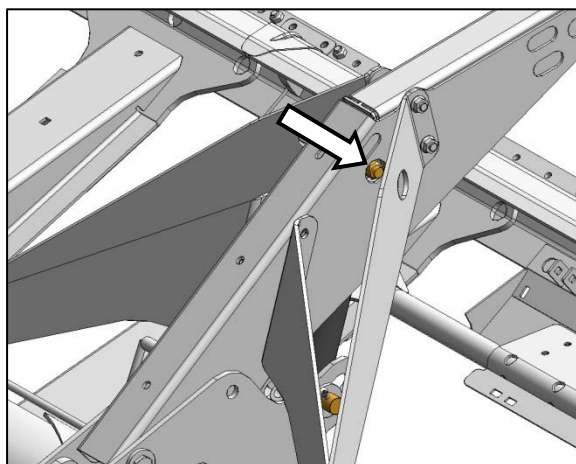
### NOTE

Steps g. to m. apply **only** to Double Reel headers.



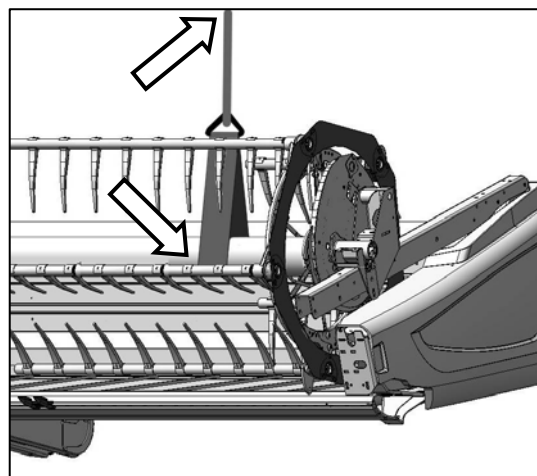
DOUBLE REEL

- g. Remove sling, and reposition around reel tube near reel center support arm.
- h. Lift reel to gain access to the center lift cylinder.
- i. Remove shipping wire/banding from center reel lift cylinder.

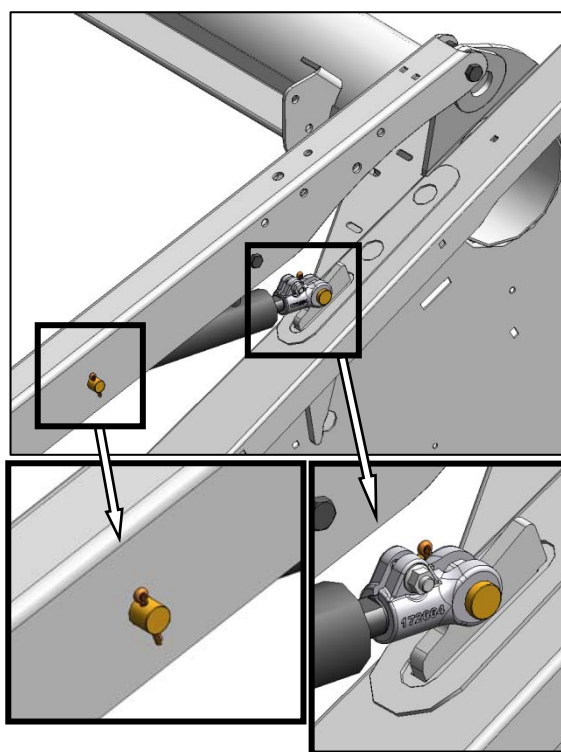


CENTER ARM - DOUBLE REEL ONLY

- j. Remove socket head bolt and nut from cylinder rod end.
- k. Attach rod end of cylinder to reel arm with socket head bolt and nut. Access hardware through holes in reel arm braces
- l. Remove pin at barrel end of cylinder.
- m. Adjust reel height so pin can be installed at barrel end of cylinder and mounting structure.



- n. Remove sling, and reposition around reel tube near opposite outboard reel arm.
- o. Remove shipping wire/banding from cylinder, and remove pins from lug and arm.



- p. Lift reel so that reel lift cylinder mounting holes line up with lug on endsheet and hole in reel arm.
- q. Secure cylinder to endsheet and reel arm with pins as shown.

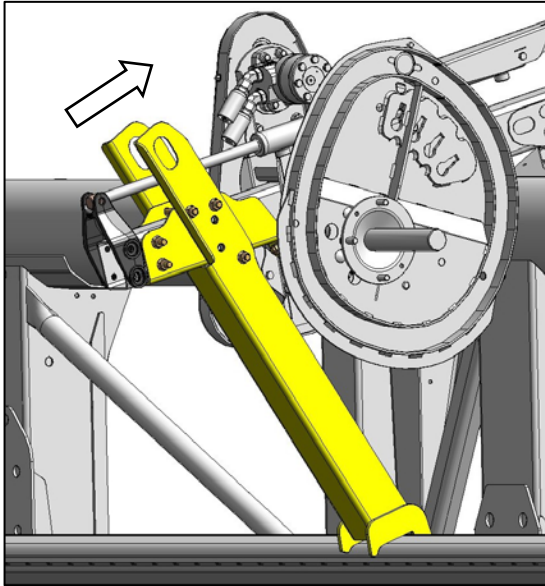
### NOTE

Cotter pin outboard at reel arm;  
Cotter pin inboard at endsheet.

(continued next page)

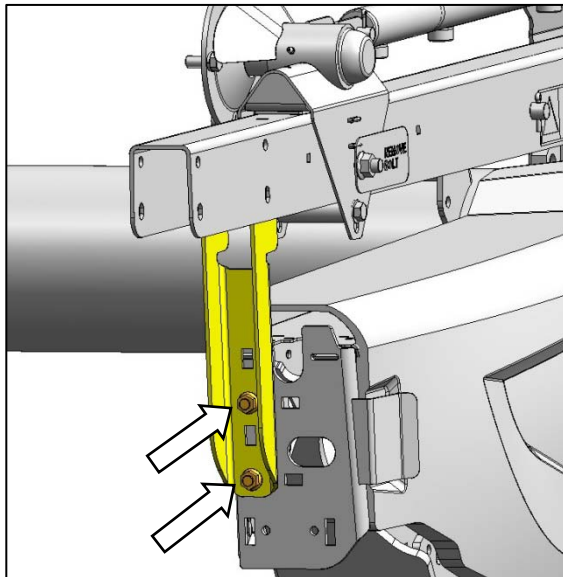


## UNLOADING AND ASSEMBLY

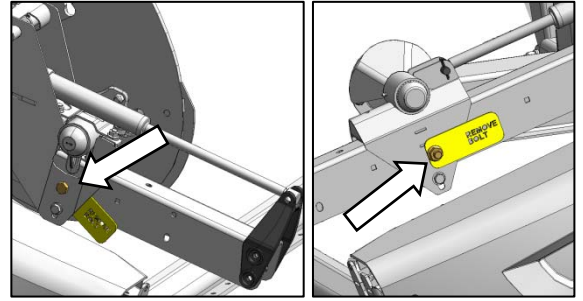


DOUBLE REEL ONLY

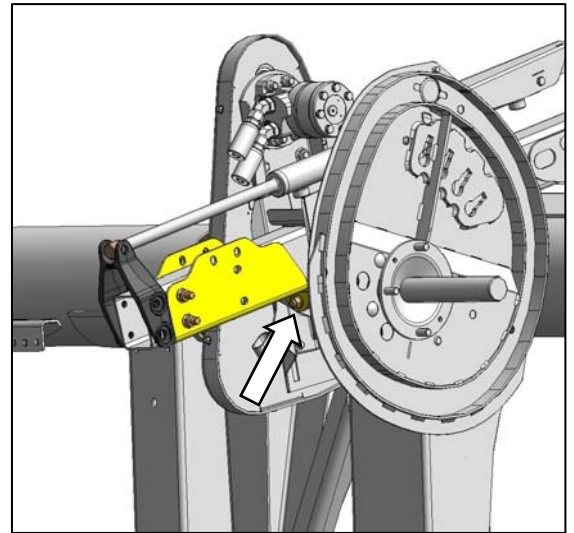
- r. Disengage center reel arm shipping support from cutterbar, and remove.



- s. Remove two bolts from reel arm supports at endsheet, and remove support. Repeat at other side.



- t. Remove bolts and tags locking reel fore-aft position at outer reel arms.

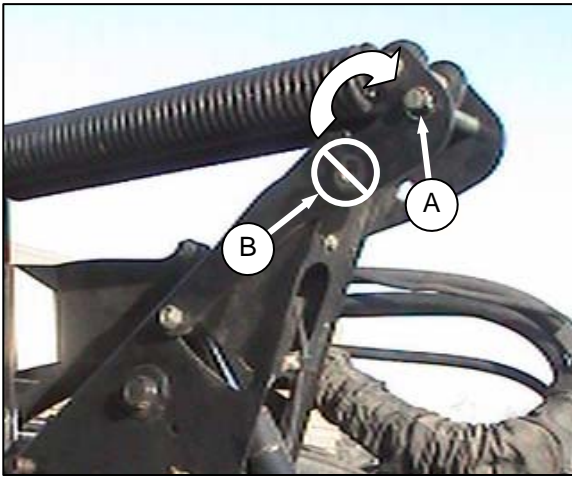


DOUBLE REEL ONLY

- u. Remove bolt locking reel fore-aft position at center reel arm, and remove center reel arm shipping channel.
- v. Remove bolt locking reel fore-aft position at center reel arm, and remove center reel arm shipping channel.

## UNLOADING AND ASSEMBLY

### STEP 5. ATTACH TO WINDROWER



#### IMPORTANT

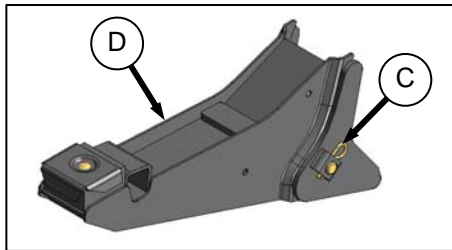
To prevent damage to the lift system when lowering header lift linkages without a header or weight box attached to windrower, ensure that float engagement pin is installed in storage location (A), and **not** installed at hole location (B).

- a. If not installed, attach draper header boots (supplied with header) to windrower lift linkage as follows:

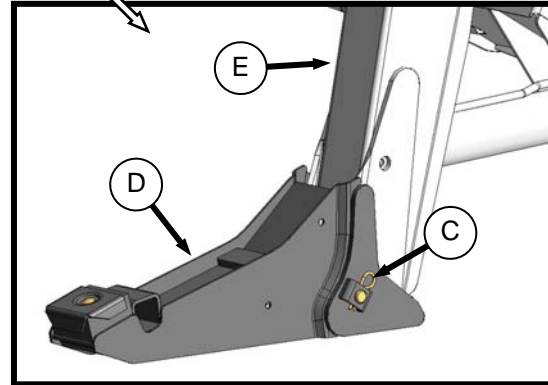


#### DANGER

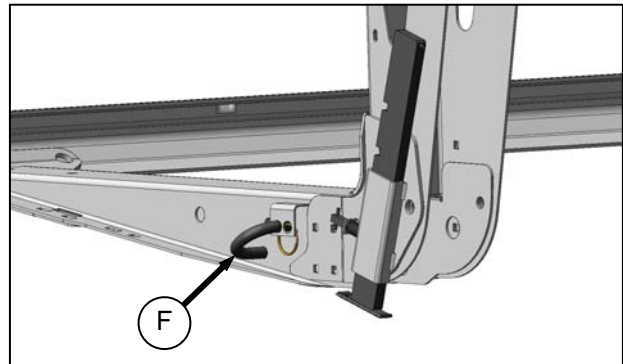
Stop engine, and remove key from ignition before leaving Operator's seat for any reason. A child or even a pet could engage an idling machine.



1. Remove pin (C) from boot (D).



2. Locate boot (D) on lift linkage (E), and re-install pin (C). Pin may be installed from either side of boot.  
3. Secure pin (C) with hairpin.  
4. Repeat for opposite lift linkage.



- b. Remove hairpin on pins (F), and remove pins from header legs.

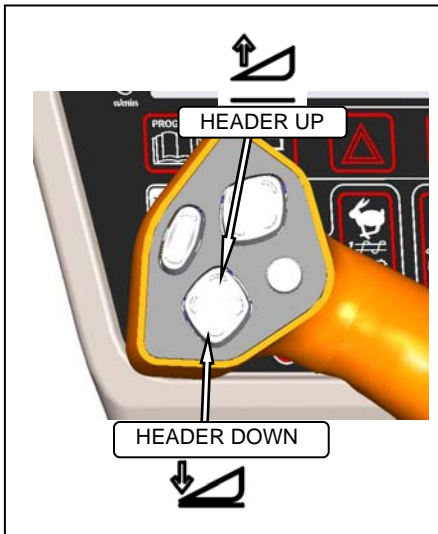
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## UNLOADING AND ASSEMBLY

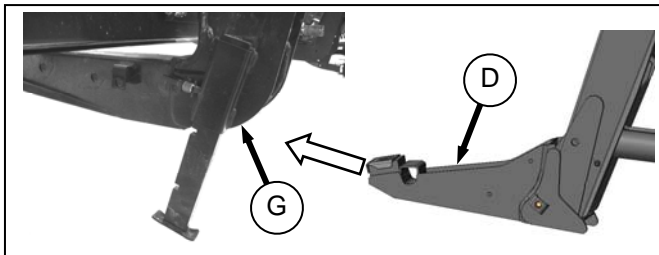


### CAUTION

Check to be sure all bystanders have cleared the area.



- c. Start engine, and activate HEADER DOWN switch on the ground speed lever (GSL) to fully retract header lift cylinders.



- d. Slowly drive windrower forward so that boots (D) enter header legs (G). Continue to drive slowly forward until linkages contact support plates in the lower header legs, and header nudges forward.
- e. Check that linkages are properly engaged in header legs, contacting support plates.

## UNLOADING AND ASSEMBLY

### STEP 6. CONNECT CENTER-LINK

- a. Proceed to appropriate section to connect the center-link.

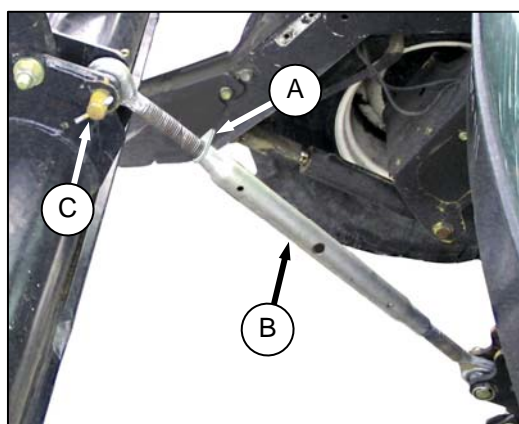
**MECHANICAL LINK: M100, M105, M150, M155**



#### DANGER

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

1. Stop engine, and remove key.



2. Loosen nut (A), and rotate barrel (B) to adjust length so that link lines up with header bracket.
3. Install pin (C), and secure with cotter pin.
4. Adjust link to required length for proper header angle by rotating barrel (B). Tighten nut (A) against barrel. A slight tap with a hammer is sufficient.



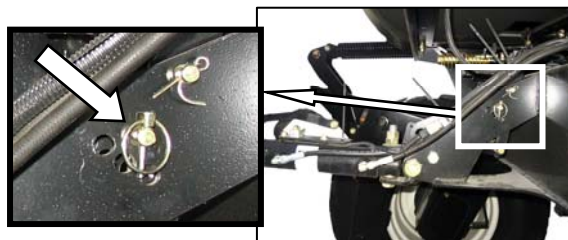
#### CAUTION

**Check to be sure all bystanders have cleared the area.**

5. Start engine and proceed to next page, step b.

**HYDRAULIC LINK WITHOUT SELF-ALIGNMENT KIT: STANDARD FOR M200, M205; OPTIONAL FOR M105, M150, M155**

1. Stop engine, and remove key.

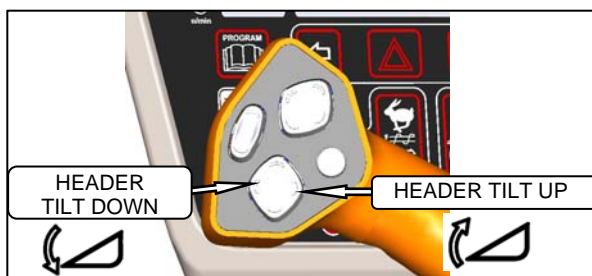


2. Relocate the pin at the frame linkage as required to position the hook over the header pin.



#### CAUTION

**Check to be sure all bystanders have cleared the area.**



3. Start engine, and activate HEADER TILT switches on GSL to extend or retract center-link cylinder, so that the hook lines-up with the header attachment pin.
4. Stop engine.



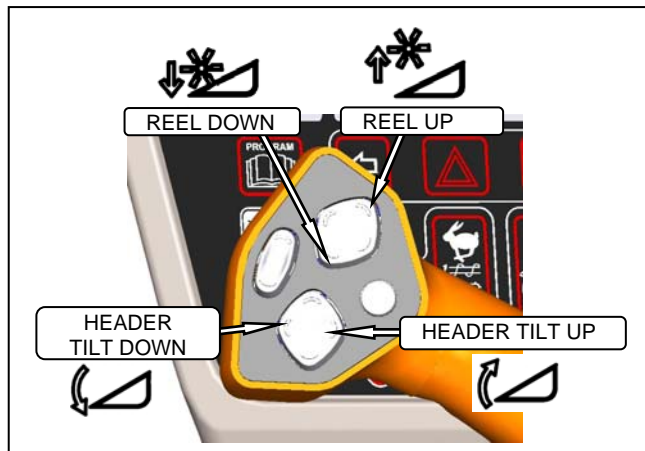
5. Push down on rod end of link cylinder until hook engages pin on header, and is locked.
6. Check that center-link is locked onto header by pulling upward on rod end of cylinder.
7. Start engine, and proceed to next page, step b.

*(continued next page)*



## UNLOADING AND ASSEMBLY

### HYDRAULIC LINK WITH OPTIONAL SELF-ALIGNMENT KIT: OPTIONAL FOR M150, M155, M200, M205



1. Adjust position of center-link cylinder with the REEL UP, REEL DOWN, and HEADER TILT switches on the GSL to position hook above the header attachment pin.



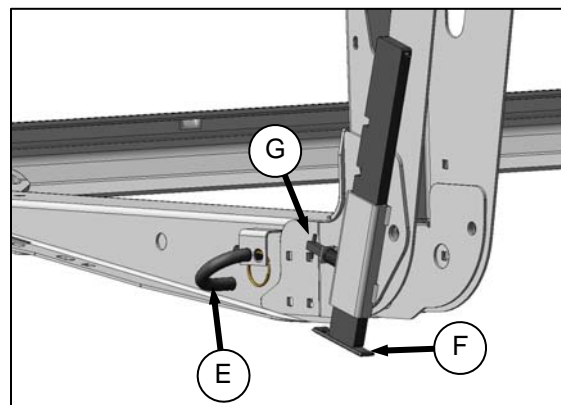
2. Lower center-link onto header with REEL DOWN switch until it locks into position (handle is down).
- b. Raise the header fully with HEADER UP switch on the GSL. Stop engine, and remove key.



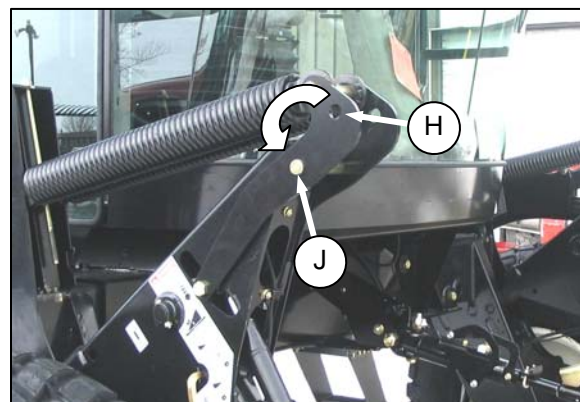
### DANGER

To avoid bodily injury from fall of raised header, always engage header lift cylinder stops when working on or around raised header.

- c. Engage lift cylinder stops on both lift cylinders.



- d. Install pin (E) through header leg, (engaging U-bracket in header leg) on both sides.
- e. Raise header stand (F) to storage position by pulling pin (G), and lifting stand into uppermost position. Release pin (G).



- f. Remove pin from storage position (H) in linkages on both sides, and insert in hole (J) to engage float springs. Secure with hairpin.
- g. Disengage lift cylinder stops.



### CAUTION

Check to be sure all bystanders have cleared the area.

- h. Start engine, and activate HEADER DOWN switch on GSL to lower header fully.



### DANGER

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

- i. Stop engine, and remove key.

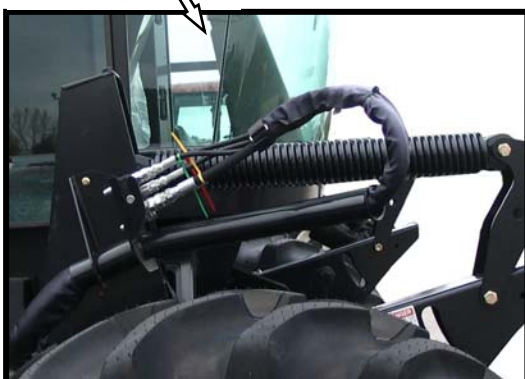
## UNLOADING AND ASSEMBLY

### STEP 7. CONNECT HYDRAULICS

M150, M200 and M205 Windrowers **may not** be factory equipped with D Series header and reel hydraulics as shown below. If **not**, proceed to step a. to install optional drive/lift kits. If already equipped, go to step b.



HEADER DRIVE



REEL HYDRAULICS

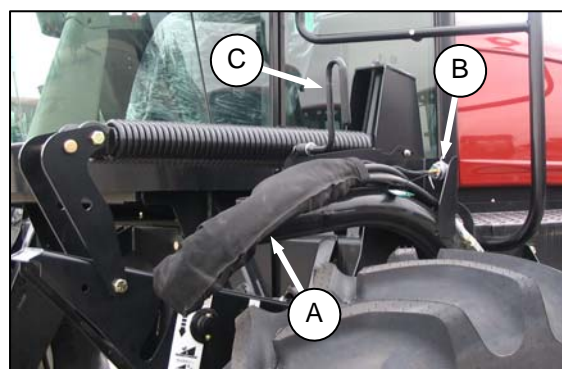
#### NOTE

Windrowers equipped with D-Series hydraulics have four header drive hoses on the LH side, and up to five reel drive hoses on the RH side.

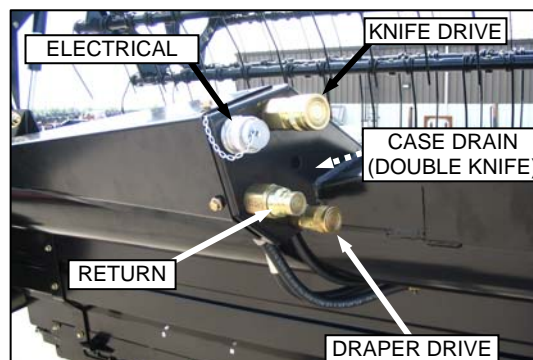
- a. If required, configure the M Series windrower to run a D-Series draper header by installing optional drive/lift kits. See table below for appropriate kit(s). Kits include all necessary hardware and installation instructions, and should have been provided with the windrower shipment.

TRACTOR	OPTIONAL KITS FOR DRAPER HEADER			
	REEL DRIVE/LIFT	REEL FORE- AFT	REVERSER	COUPLER
M100	B5426	B5194	--	--
M105	B5577		--	--
M150	B5426	B5194	B4656	--
M155	B5577			--
M200	B5426, B4651	B5194		--
M205	B5491	B5496	B5492	B5497

- b. Connect header drive hydraulics (A), and electrical harness (B) to header as follows:



1. Check connectors, and clean if required.
2. Disengage, and rotate lever (C) counter clockwise to fully up position.
3. Remove cap securing electrical connector (B) to frame.
4. Move hose bundle (A) from windrower around hose support on header.



5. Push hose connectors onto mating receptacle until collar on receptacle snaps into lock position.
6. Remove cover on electrical receptacle.

(continued next page)

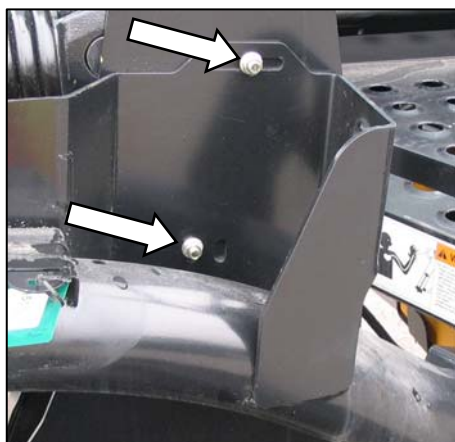


## UNLOADING AND ASSEMBLY

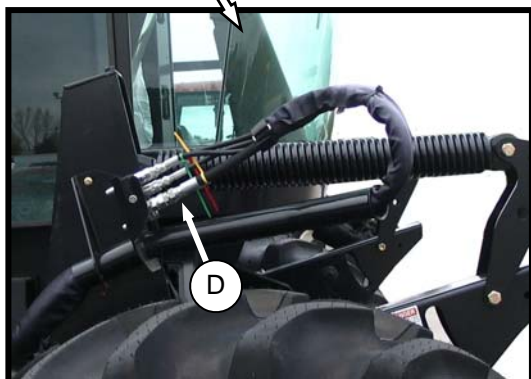
7. Push electrical connector onto receptacle, and turn collar on connector to lock it in place.
8. Attach cover to mating cover on windrower wiring harness.



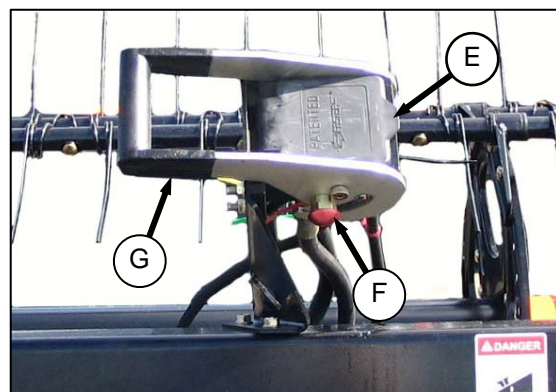
9. Lower lever (C), and engage in down position.



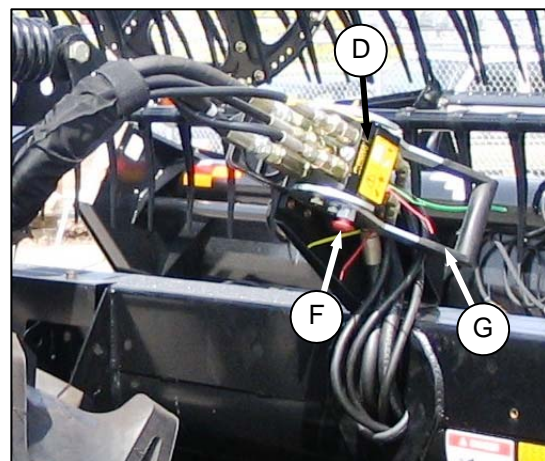
- c. Check that hose support is positioned so that top bolt is midway in slot, and lower bolt is in forward hole. Loosen bolts, and adjust as required.



- d. Connect reel hydraulics (D) as follows:
  1. Check connectors, and clean if required.



2. Open cover (E) on header receptacle.
3. Push in lock button (F), and pull handle (G) to half open position.



4. Remove hose bundle with multi-coupler (D) from windrower, position onto header receptacle.
5. Push handle (G) to engage pins on connector.
6. Push handle away from hoses until lock button (F) snaps out.



### CAUTION

**Check to be sure all bystanders have cleared the area.**

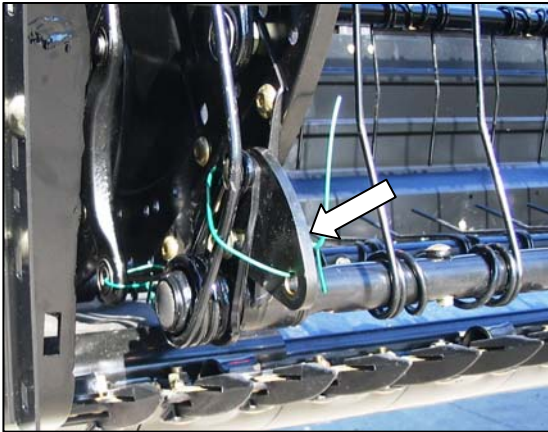
- e. Start engine, and raise and lower header and reel a few times to allow trapped air to pass back to the reservoir.
- f. Stop engine.

### NOTE

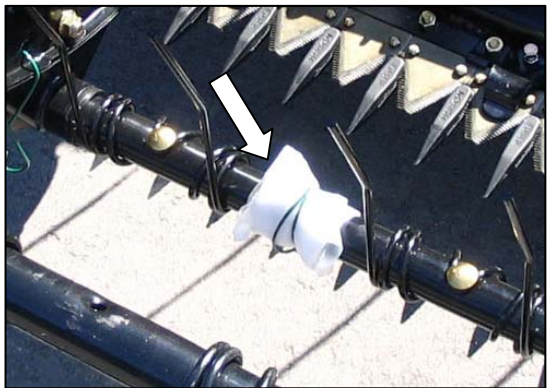
*It is not necessary to bleed the system by loosening fittings.*

## UNLOADING AND ASSEMBLY

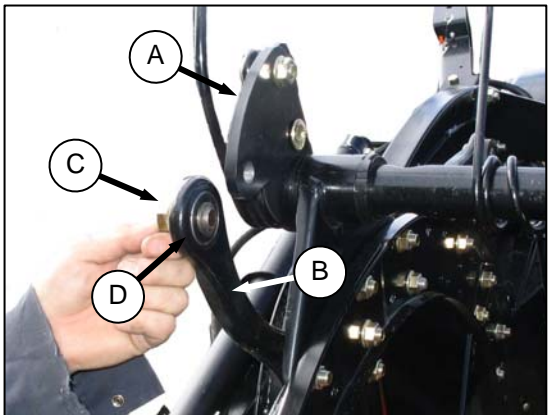
### STEP 8. ATTACH CAM ARMS



- a. Manually rotate reel until the tine bars with the disconnected cam links are accessible.
- b. Remove shipping wire (if not already removed).



- c. Remove bag of hardware from tine bar. It contains hardware for cam links and endshields.



- d. Rotate tine bar crank (A), and position link (B) until attachment holes in bar crank and link are approximately aligned.

- e. Install bolt (C) in link, and position shim (D) on bolt so that shim is between link and tine bar crank.

#### NOTE

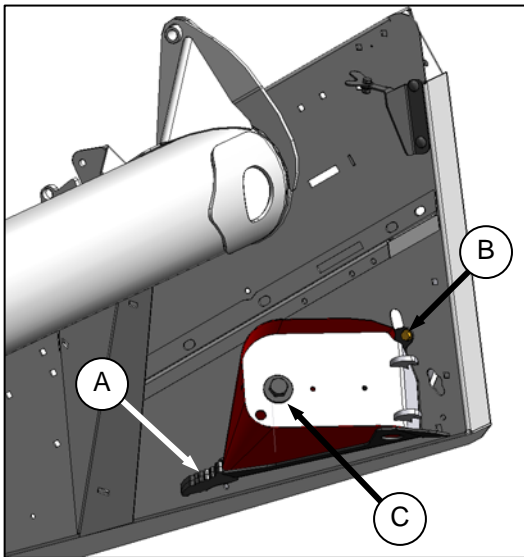
*Bolts are pre-coated with Loctite® so no further locking method is required.*

- f. Re-align link and tine bar crank, and thread in the bolt (C).
- g. Repeat for remaining tine bars, and torque bolts to 120 ft·lbf (165 N·m).

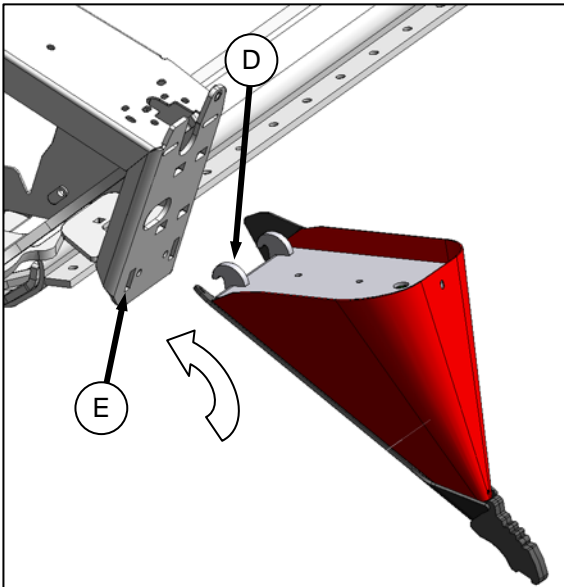


## UNLOADING AND ASSEMBLY

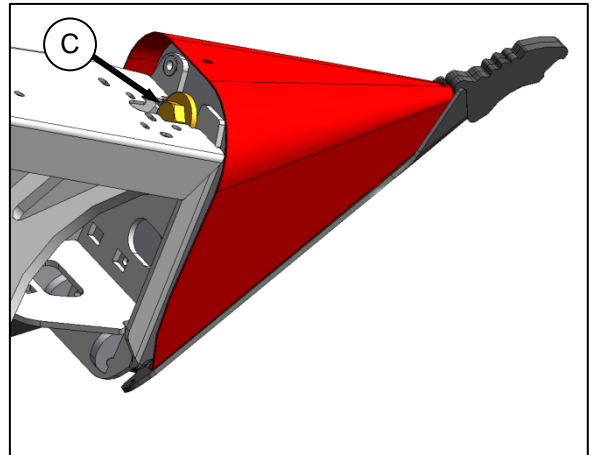
### STEP 9. INSTALL CROP DIVIDERS



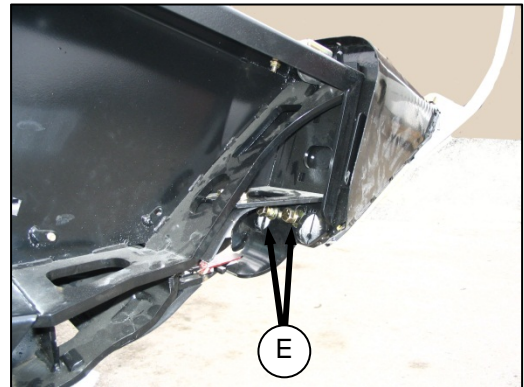
- a. Dividers are stored on inboard side of endsheets. To remove, support the divider and remove shipping wire at front end (A), and then remove bolt (B).
- b. Remove bolt and washer at (C).



- c. Position crop divider as shown by locating lugs (D) in slots (E) in endsheet.



- d. Lift forward end of divider up to endsheet, and install washer and bolt at (C).

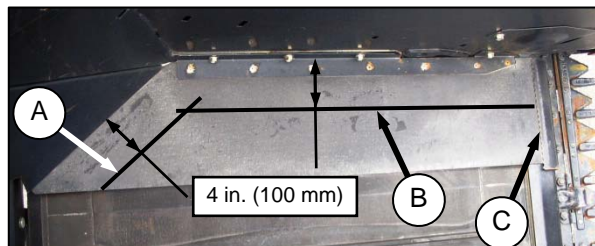


- e. Check that divider does not move laterally. Adjust bolts (E) as required to tighten divider, and remove lateral play when pulling at divider tip.

## UNLOADING AND ASSEMBLY

### STEP 10. TRIM DRAPER DEFLECTORS

- a. Trim existing deflectors as follows:



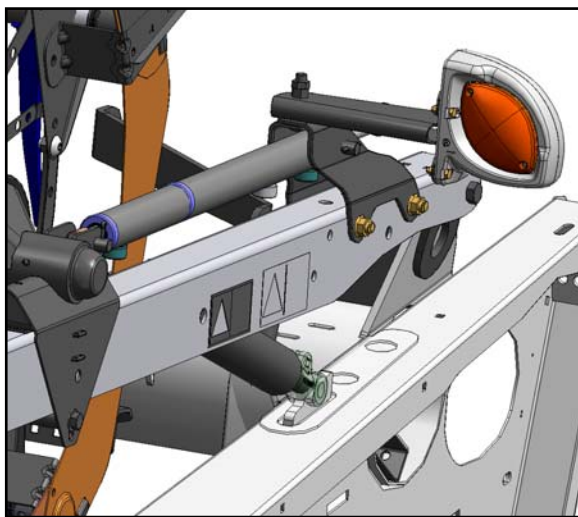
- b. Mark a straight line (A) on the deflector 4 in. (100 mm) from and parallel to the back edge of the deflector.
- c. Mark another line (B) on the deflector 4 in. (100 mm) from and parallel to the endsheet.
- d. Using a sharp knife, cut rubber deflector along the lines (A) and (B), taking care not to cut the draper underneath the deflector.
- e. Cut the rubber deflector along the steel retainer (C) from the inboard edge up to line (B), and remove the excess rubber.



DEFLECTOR AFTER TRIMMING

- f. Use the cut-off portion of deflector as a template to re-work the deflector on the opposite end.

### STEP 11. ADJUST TRANSPORT LIGHTS



- a. Position light perpendicular to header. Lights are located on each of the outboard reel arms.

### STEP 12. INSTALL OPTIONS

Optional attachments and kits may have been supplied with the header, and should be installed at this time.

They include all necessary hardware and installation instructions.

## UNLOADING AND ASSEMBLY

### STEP 13. ADD BALLAST

Fluid ballasting of rear caster tires on M Series Windrowers is recommended to provide adequate machine stability when using large headers on the windrower.

Also, the stability of machine varies with different attachments, windrower options, terrain and the Operator's driving technique.

Ballast capability per tire is at a maximum fill of 75%, or when fluid is level with valve stem when the stem is positioned at 12 o'clock.

Fluid can be added to any level up to maximum fill, and always add an equal amount of fluid on both sides.

TIRE SIZE	FLUID PER TIRE AT 75% FILL U.S. Gal. (Liters)	TOTAL WEIGHT OF <u>BOTH</u> TIRES lb (kg) *
7.5 X 16 (A)	10 (38)	200 (91)
10 X 16 (B)	18 (69)	380 (170)
16.5 X 16.1 (C)	41 (158)	830 (377)

\* Weights are given for typical calcium chloride and water mixtures. Weight is reduced by 20% if only water is used (for areas that do not require antifreeze protection).

HEADER SIZE	RECOMMENDED BALLAST				RECOMMENDED TIRE SIZE	APPLICABLE WINDROWER
	LEVEL GROUND		HILLS			
	<u>PER</u> TIRE	<u>BOTH</u> TIRES	<u>PER</u> TIRE	<u>BOTH</u> TIRES		
	U.S. Gal. (Liters)	lb (kg) *	U.S. Gal. (Liters)	lb (kg) *		
25 FT and Down.	0	0	0	0	A,B,C	ALL
30 FT Single or Split Reel without Conditioner.	0	0	10 (38)	200 (91)	A,B,C	ALL
35 FT Single Reel.						
30 FT Split Reel. Steel Fingers and Conditioner.	18 (69)	380 (170)	30 (115)	630 (288)	Level Ground: B, C  Hills: C	ALL
35 FT Split Reel (5- or 6-Bat).						
40/45 FT	30 (115)	630 (288)	41 (158)	830 (377)	C	M150, M200 M205

\* If only water is used, increase volume of water by 20% (up to maximum allowable fill per tire) to compensate.

## PRE-DELIVERY INSPECTION

### STEP 14. PRE-DELIVERY INSPECTION

#### IMPORTANT

To avoid machine damage, check that no shipping dunnage has fallen into machine.

Perform the final checks as listed on the "Pre-Delivery Checklist" (yellow sheet attached to this instruction) to ensure the machine is field-ready.

Refer to the following pages for detailed instructions as indicated on the checklist.

#### IMPORTANT

The machine has been set at the factory, and should require no further adjustments.

However, perform the following checks to ensure your machine will provide maximum performance. Adjustments should be made **only if absolutely necessary**, and in accordance with the instructions in this manual.

The completed checklist should be retained either by the Operator or the Dealer.

#### A. TIRE PRESSURE (TRANSPORT AND STABILIZER WHEEL OPTIONS)

Check tire inflation pressure.

If necessary, inflate as per following table.

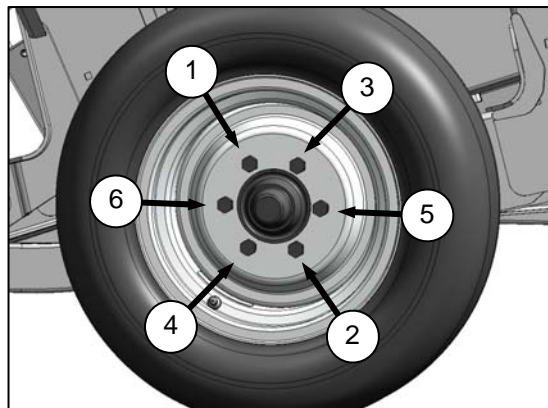
YEAR	TIRE	SIZE	PRESSURE
2006 and EARLIER	GOODYEAR WRANGLER RT/S	205-75 R15	40 psi (276 kPa)
2007 and LATER	CARLISLE and TITAN	ST205/75 R15	65 psi (448 kPa)

#### IMPORTANT

Do **not** exceed maximum pressure specified on tire side wall.

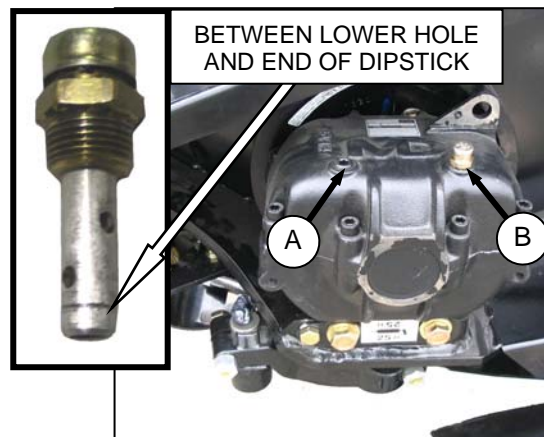
#### B. WHEEL BOLT TORQUE (TRANSPORT AND STABILIZER WHEEL OPTIONS)

Check wheel bolt torque is 80–90 ft-lbf (110-120 N·m).



Refer to bolt tightening sequence illustration above.

#### C. SICKLE DRIVE BOX



CHECK OIL LEVEL WITH TOP OF SICKLE DRIVE BOX HORIZONTAL

- Position of plug (A) and breather (B) at sickle drive box **must** be as shown.
- Check oil level.

(continued next page)

## PRE-DELIVERY INSPECTION

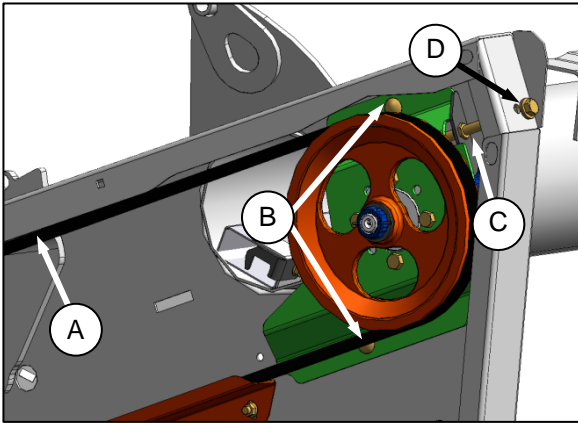
### D. SICKLE DRIVE BELT TENSION

#### IMPORTANT

To prolong belt and drive life, do **not** over-tighten belt.

#### I. NON-TIMED DRIVE: SK and DK

- a. Open endshield.
- b. A force of 20 lbf (80 N) should deflect belt (A) 3/4 in. (18 mm) at mid-span.
- c. Only if necessary, adjust tension as follows:



LH SHOWN - RH OPPOSITE

1. Loosen two bolts (B) on sickle drive mounting bracket, and jam-nut (C).
  2. Turn adjuster bolt (D) to move drive motor until tension is achieved.
  3. Tighten jam nut (C), and bolts (B) on drive mounting bracket.
- d. Close endshield.

#### II. TIMED DRIVE: DK

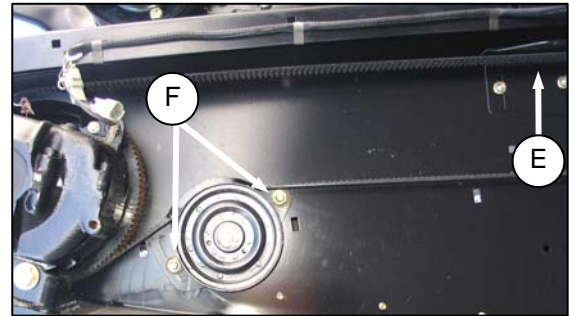
- a. Open endshield.

#### Timing Belts



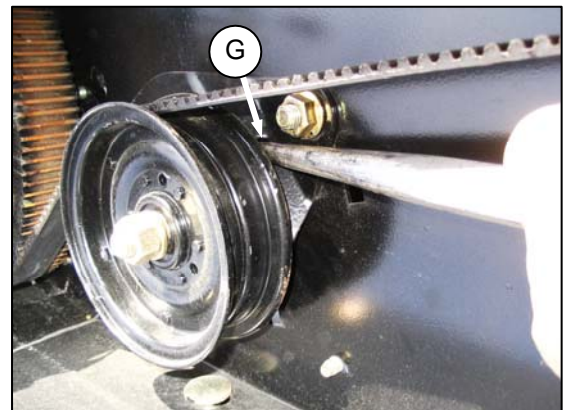
LH SHOWN - RH OPPOSITE

- a. A force of 6 lbf (27 N) should deflect timing belt (E) 1/2 in. (13 mm) at mid-span.
- b. Only if necessary, adjust tension as follows:



LH SHOWN - RH OPPOSITE

1. Loosen two nuts (F) on sickle drive belt idler bracket.



2. Insert a long punch (or equivalent) into hole (G) in idler bracket, and pry downward until a force of 6 lbf (27 N) deflects timing belt 1/2 in. (13 mm) at mid-span (E).
3. Tighten nuts (F) on idler mounting bracket.

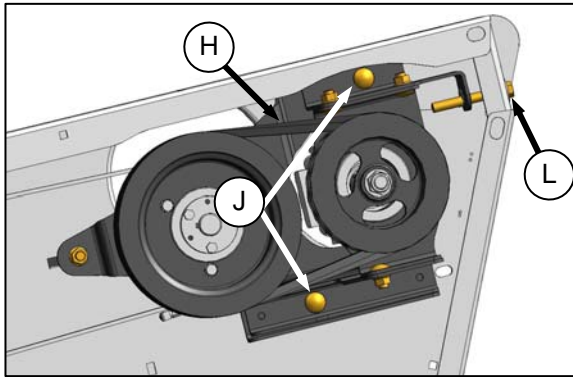
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## PRE-DELIVERY INSPECTION

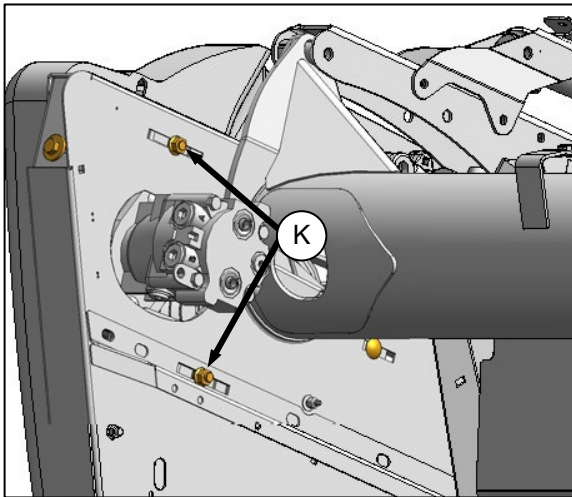
### Double V-Belts: LH Side Only

- A force of 12 lbf (53 N) should deflect V-belts (H) 1/8 in. (3 mm) at mid-span.
- Only if necessary, adjust tension as follows:



LH SIDE ONLY

- Loosen two bolts (J) on sickle drive mounting bracket.



- Loosen two bolts (K) on endsheet.
  - Turn adjuster bolt (L) to move drive motor until a force of 12 lbf (53 N) deflects V-belts (H) 1/8 in. (3 mm) at mid-span.
  - Tighten bolts (J) and (K).
- Close endshield.

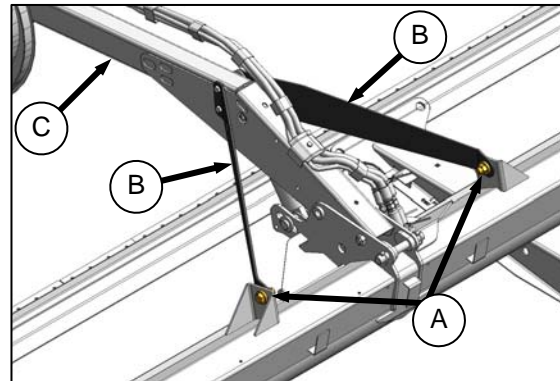
### E. REEL CENTERING



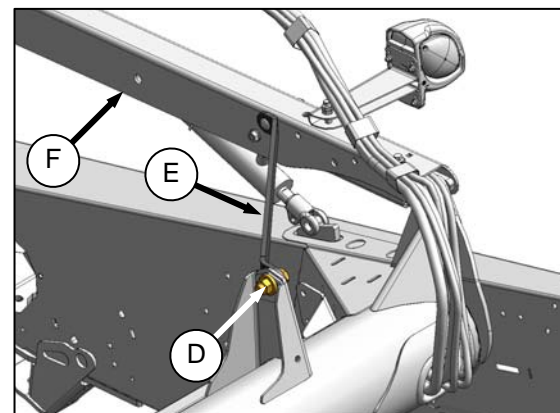
#### WARNING

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

- Measure clearance between reels and both endsheets. The clearances should be the same if the reels are centered.
- For Double Reel Headers:** If required, center reels as follows:



- Loosen bolt (A) on each brace (B) located at each end of the reel.
  - Move forward end of reel support arm (C) laterally as required to center reel.
  - Tighten bolts (A), and torque to 265 ft·lbf (359 N·m).
- For Single Reel Headers:** If required, center reels as follows:



- Loosen bolt (D) on brace (E) at both ends of reel.
- Move forward end of reel support arm (F) laterally as required to center reel.
- Tighten bolts (D), and torque to 265 ft·lbf (359 N·m).

## PRE-DELIVERY INSPECTION

### F. DRAPER TENSION

The drapers are tensioned after installation at the factory, so should **not** require adjustment.

Draper tension should be just enough to prevent slipping, and keep draper from sagging below cutterbar. The white bar (A) (shown in the next column) should be about halfway in the window.

- a. Raise header, and shut down engine. Engage header lift props.



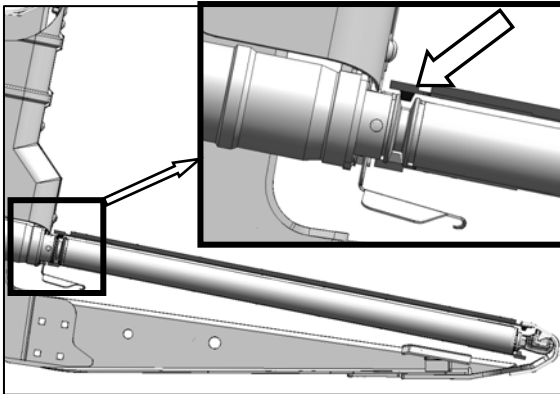
#### WARNING

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

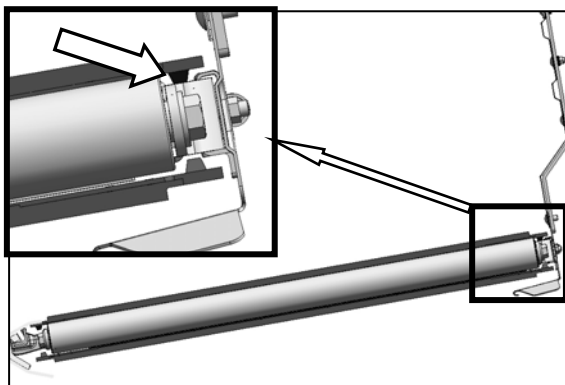


#### CAUTION

Engage header lift cylinder stops before working under header.



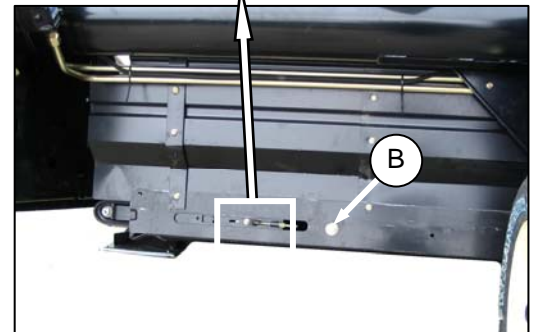
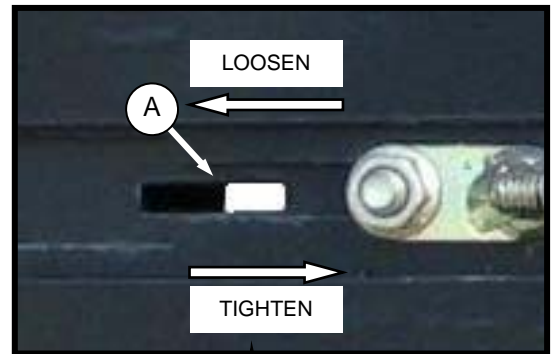
DRIVE ROLLER



IDLER ROLLER

- b. Check that draper guide (rubber track on under-side of draper) is properly engaged in groove of drive roller, and that idler roller is between the guides.

- c. If required, set draper tension as follows:



1. Turn bolt (B) clockwise (**tighten**), and white indicator bar (A) will move inboard in direction of arrow to indicate that draper is tightening.
2. Turn bolt (B) counter clockwise (**loosen**), and white indicator bar (A) will move outboard in direction of arrow to indicate that draper is loosening.
3. Adjust until bar is about halfway in window.

#### IMPORTANT

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

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

## PRE-DELIVERY INSPECTION

### G. SKID SHOE SETTINGS



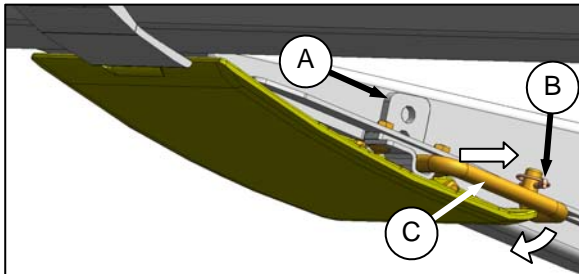
#### WARNING

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

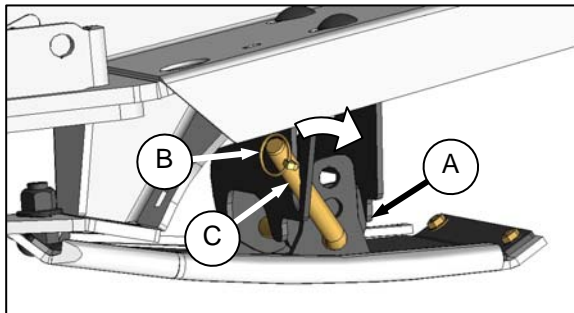


#### CAUTION

Engage header lift cylinder stops before working under header.



INNER SKID SHOE



OUTER SKID SHOE

- a. Note the hole positions on the adjuster legs (A) on each skid shoe. They should be the same.
- b. If necessary, adjust as follows:
  1. Remove lynch pin (B).
  2. Hold shoe, and remove pin (C) by disengaging frame, and then pulling away from shoe.
  3. Raise or lower skid shoe to desired position using holes in support as a guide.
  4. Re-insert pin (C), engage in frame, and secure with lynch pin (B).
  5. Check that skid shoes are adjusted to the same position.

### H. HEADER LEVELLING

The windrower linkages are factory-set to provide the proper level for the header, and should not normally require adjustment. The float springs are **not** used to level the header.

If the header is **not** level, check the tire pressures on the windrower ensuring they are properly inflated. Refer to your windrower's operator's manual.

If the header is still not level, then adjustment to the windrower linkages is required. Refer to the appropriate section in the windrower's operator's manual.

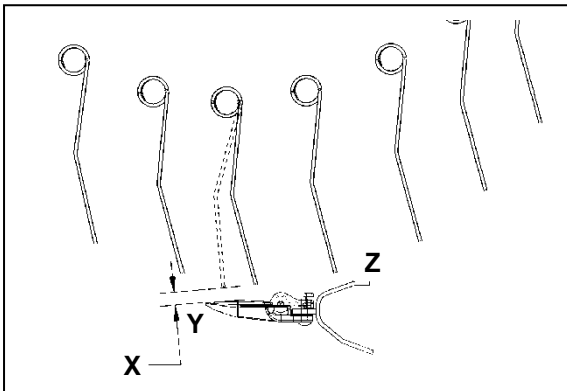


## PRE-DELIVERY INSPECTION

### I. REEL TINE TO CUTTERBAR CLEARANCE

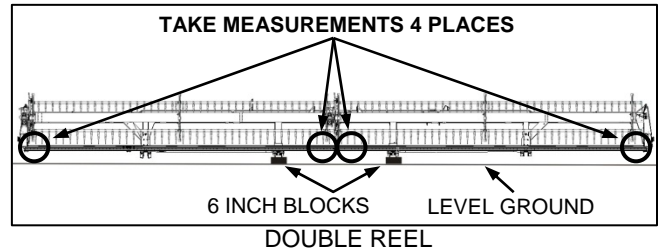
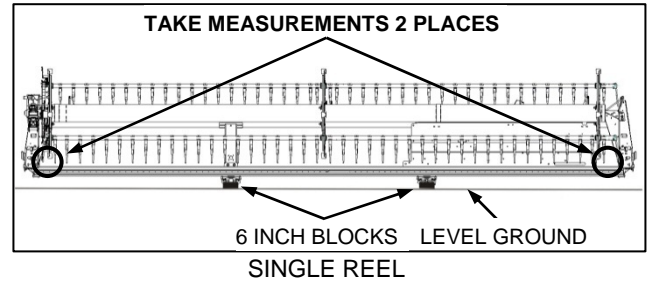
The finger to guard/cutterbar clearances with reel fully lowered varies with header width, and are as follows. See illustration opposite.

HEADER	'X' +/- .12 in. (3 mm) @ REEL ENDS	
	SINGLE REEL	DOUBLE REEL
15 FT	.78 in. (20mm)	---
20 FT		
25 FT	1.00 in. (25 mm)	
30 FT	1.77 in. (45 mm)	0.78 in. (20 mm)
35 FT	2.36 in. (60 mm)	
40 FT	---	
45 FT		

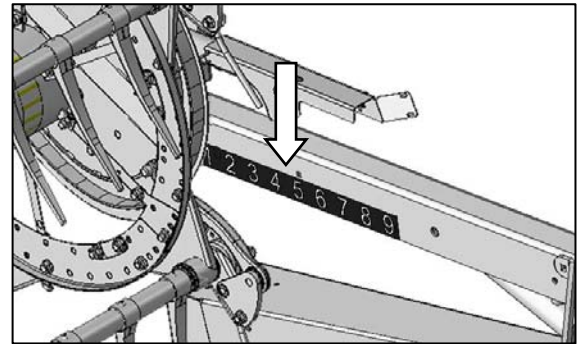


### CAUTION

Engage header lift cylinder stops before working under header.



- Raise header, and place a 6 in. (150 mm) block under each inboard header leg.
- Lower header onto blocks, and fully lower the reel.

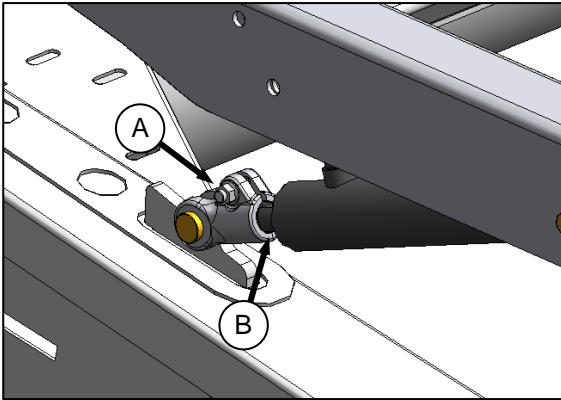


- Adjust fore-aft reel position so that back end of cam disc is approximately between 4 and 5 on the arm decal.

(continued next page)

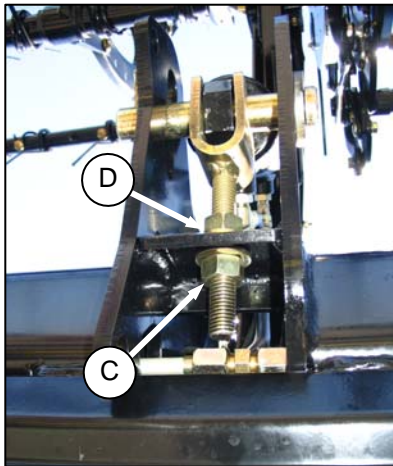
## PRE-DELIVERY INSPECTION

- d. If required, adjust outside reel arms as follows:



RH SHOWN - LH OPPOSITE

1. Loosen nut (A).
  2. Turn cylinder rod (B) counter clockwise to raise reel and increase clearance to cutterbar, or clockwise to decrease.
  3. Tighten nut (A).
  4. Repeat at opposite side.
- e. If applicable, adjust center arm as follows:

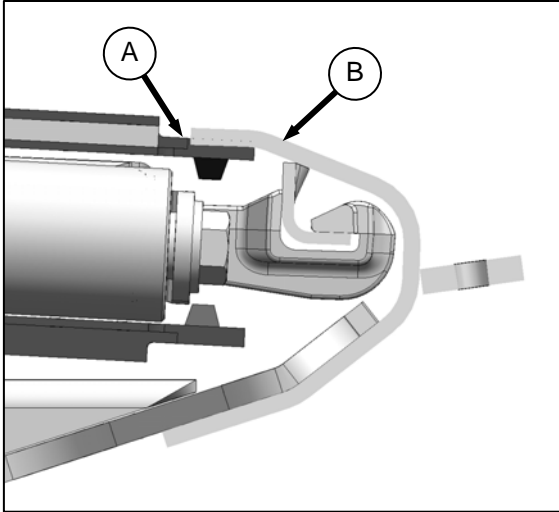


DOUBLE REEL - LOOKING UP  
AT ARM UNDERSIDE

1. Loosen nut (C).
2. Turn nut (D) clockwise to raise reel and increase clearance to cutterbar, or counter clockwise to decrease.
3. Tighten bolt (C).

## PRE-DELIVERY INSPECTION

### J. DRAPER SEAL

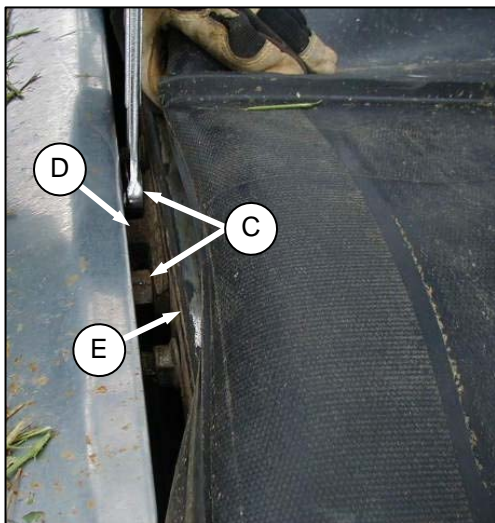


- a. Check deck height so that draper (A) runs just below cutterbar (B) with maximum 1/32 in. (1 mm) gap, or with draper deflected down slightly (up to 1/16 in. [1.5 mm]) to create a seal.

#### NOTE

Measurement is at supports with header in working position and decks slid fully ahead.

- b. Loosen tension on drapers. Refer to sub-step **F. DRAPER TENSION.**
- c. Lift draper up at front edge past cutterbar.



- d. Loosen two locknuts (C) one-half-turn only on deck support (D). There are two to four supports per deck, depending on header size.

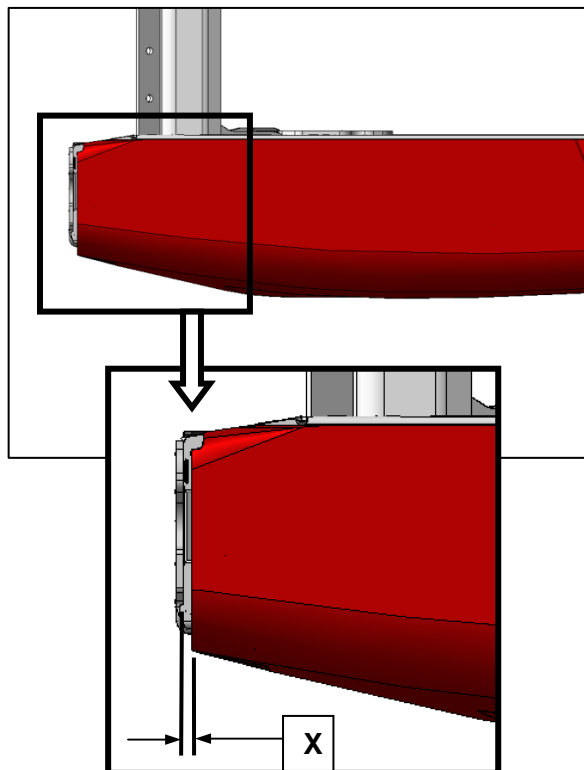
- e. Tap deck (E) to lower deck relative to supports to achieve setting recommended above. Tap support (D) using a punch to raise deck relative to support.
- f. Tighten deck support hardware (C).
- g. Tension drapers. Refer to sub-step **F. DRAPER TENSION.**

## PRE-DELIVERY INSPECTION

### K. ENDSHIELDS

#### NOTE

*Plastic endshields are subject to expansion or contraction depending on large temperature variations. Position of top pin and lower catch can be adjusted to compensate for dimensional changes.*

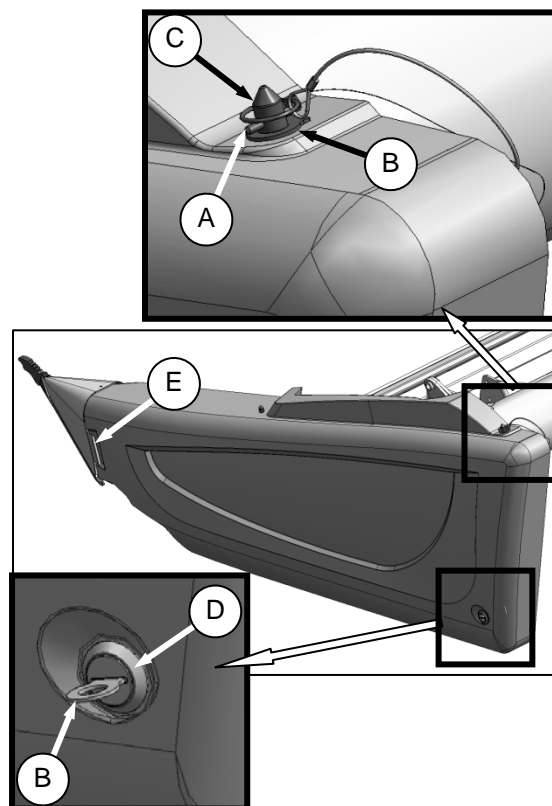


- a. Check gap 'X' between front end of shields and header frame, and compare against values in chart below.

TEMPERATURE Degrees °F (°C)	GAP 'X' Inches (mm)
25 (-4)	1.1 (28)
45 (7)	1.0 (24)
65 (18)	0.79 (20)
85 (29)	0.64 (16)
105 (41)	0.5 (12)
125 (52)	0.32 (8)
145 (63)	0.16 (4)
165 (89)	0

- b. If necessary, open endshield, and adjust the gap as follows:

1. Open endshield.

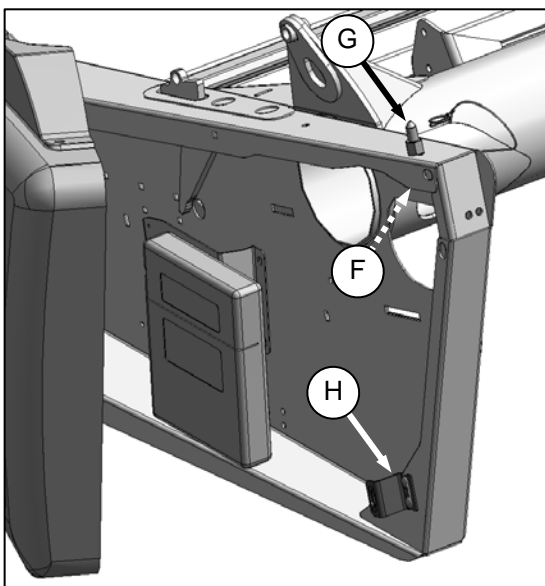


2. Remove lynch pin (A) and tool (B) from pin (C) at top rear of endshield.
3. Use tool (B) to unlock latch (D) at lower rear corner of endshield.
4. Lift shield at aft end to clear pin (C).
5. Swing shield out and away from header while maintaining forward pressure to prevent shield from slipping out of tab (E) at front of endsheet.

*(continued next page)*

## PRE-DELIVERY INSPECTION

### 6. Adjust gap:



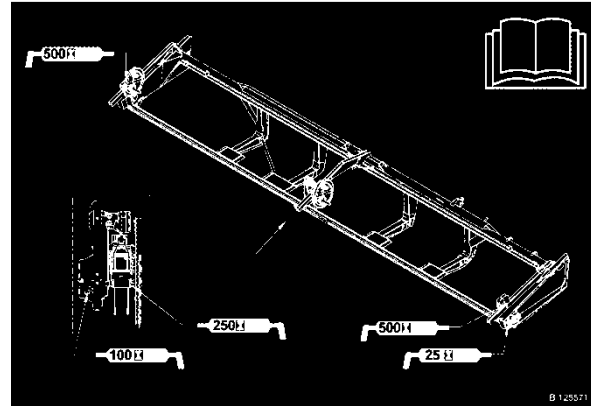
- i. From inside endsheet, loosen nut (F) on pin (G).
- ii. Close endshield, and adjust position to achieve the gap 'X' between the front end of shield and header frame in accordance with chart on previous page.
7. Open endshield, and tighten nut (F).
8. Check for a snug fit between top of shield and header frame, and full engagement of endshield on pin (G). If necessary, loosen bolts on catch (H), and adjust catch as required to reposition shield.
9. Tighten bolts on catch (H).
10. Close endshield.

## PRE-DELIVERY INSPECTION

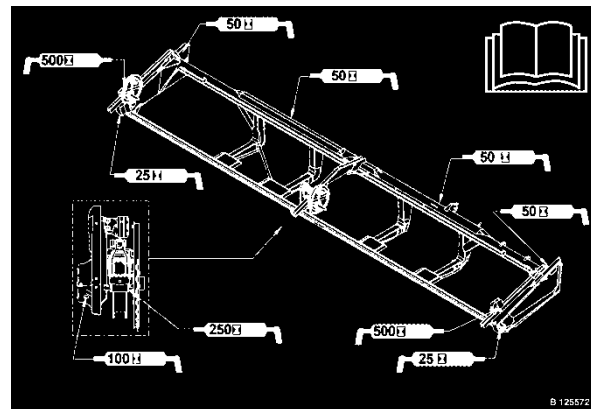
### L. LUBRICATE HEADER

Refer to the illustrations that follow for lubrication points.

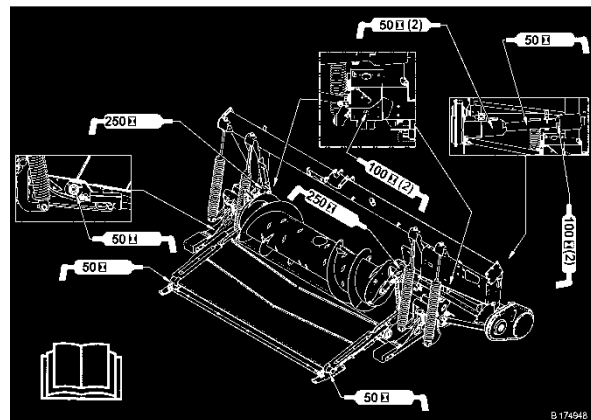
- Wipe grease fitting with a clean cloth before greasing, to avoid injecting dirt and grit.
- Inject grease through fitting with grease gun until grease overflows fitting, except where noted.
- Leave excess grease on fitting to keep out dirt.
- Replace any loose or broken fittings immediately.
- If fitting will **not** take grease, remove and clean thoroughly. Also clean lubricant passageway. Replace fitting if necessary.
- Use clean High Temperature Extreme Pressure grease.
- Master grease point location decals (shown opposite) are provided on the header and adapter back frames.



SINGLE KNIFE



DOUBLE KNIFE

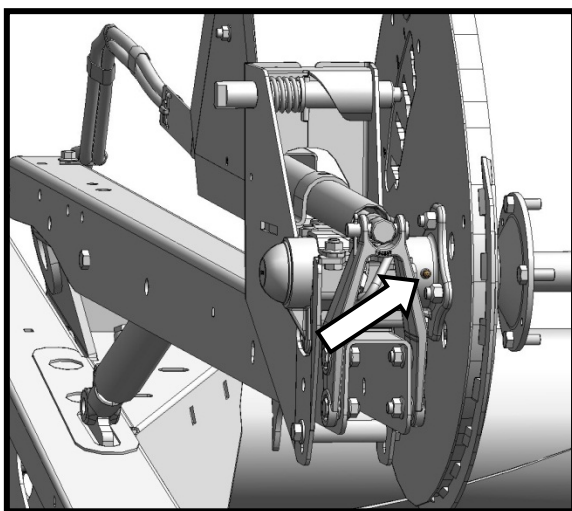


ADAPTER

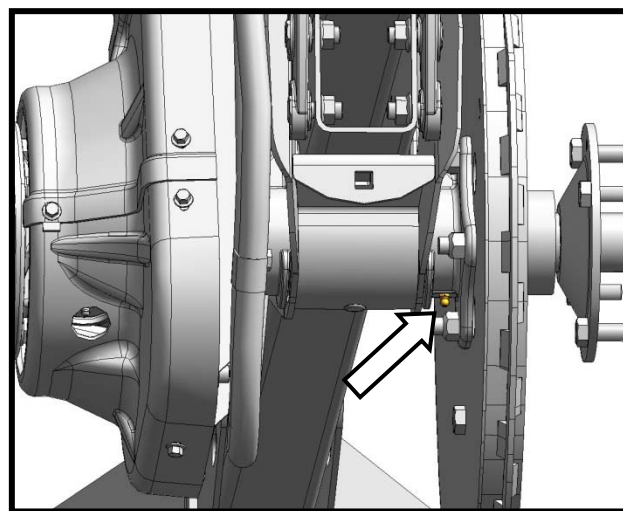
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# PRE-DELIVERY INSPECTION

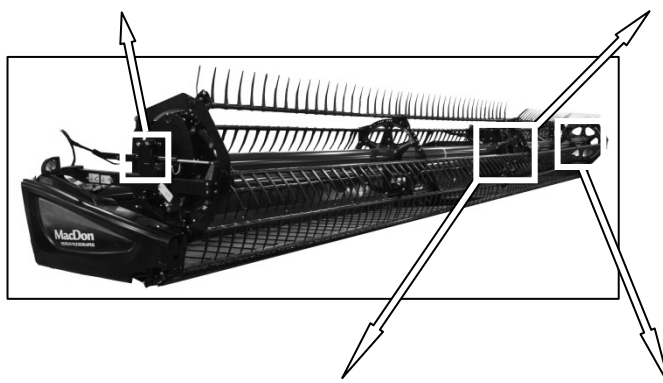
## Lubrication Points



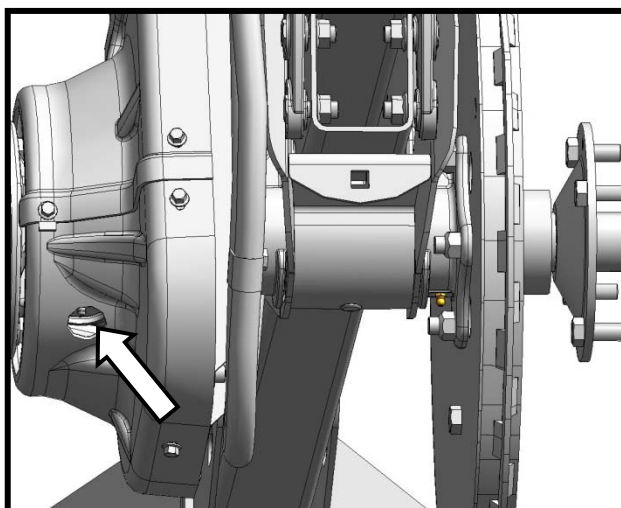
REEL SHAFT RH BEARING (1 PLC)



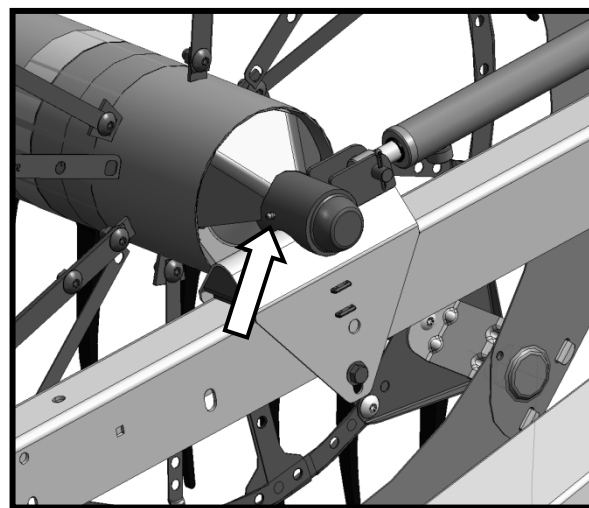
REEL CENTER BEARING (1 PLC) - DR ONLY



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



REEL UNIVERSAL (1 PLC) - DR ONLY



REEL SHAFT LH BEARING (1 PLC)

U-JOINT HAS AN EXTENDED LUBRICATION CROSS AND BEARING KIT. STOP GREASING WHEN GREASING BECOMES DIFFICULT OR IF U-JOINT STOPS TAKING GREASE. **OVERGREASING WILL DAMAGE U-JOINT.** 6-8 PUMPS IS SUFFICIENT AT FIRST GREASE (FACTORY). DECREASE GREASE INTERVAL AS U-JOINT WEARS AND REQUIRES MORE THAN 6 PUMPS.

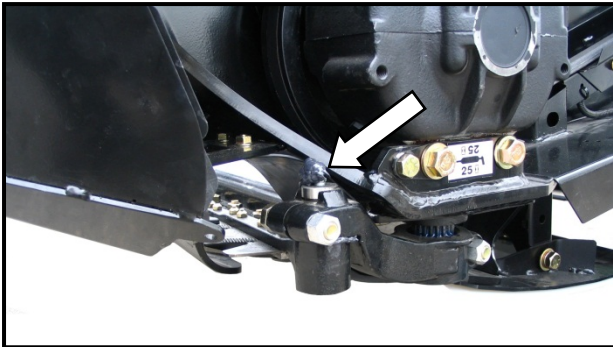
(continued next page)



## PRE-DELIVERY INSPECTION

### Lubrication Points (cont'd)

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



SICKLE HEAD  
(SINGLE KNIFE - 1 PLC)  
(DOUBLE KNIFE - 2 PLCS)



To prevent binding and/or excessive wear caused by sickle pressing on guards, do **not** over grease. If more than 6 to 8 pumps of the grease gun are required to fill the cavity, replace the seal in the sickle head.

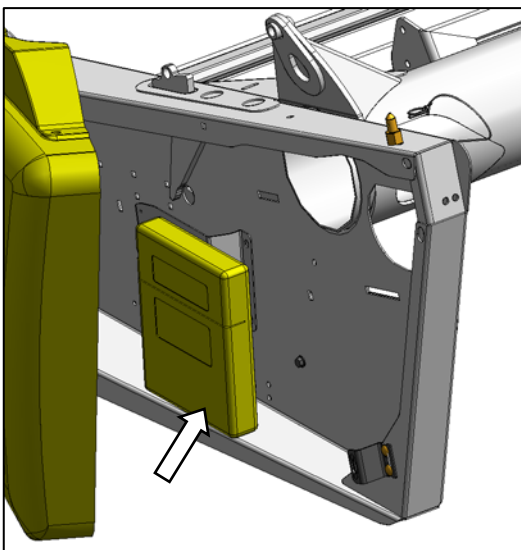
Check for signs of excessive heating on first few guards after greasing. If required, relieve pressure by depressing check-ball in grease fitting.



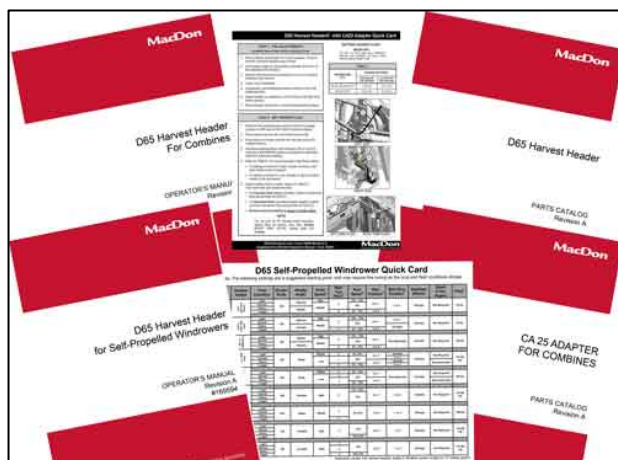
## PRE-DELIVERY INSPECTION

### M. MANUALS

c. Close case and endshield.



- Open left endshield, and remove plastic tie on manual case.
- Check that case contains the following manuals:



TYPE	DESCRIPTION	FORM
Operator's Manual	D65 Harvest Header® for Self-Propelled Windrowers	169594
	D65 Harvest Header® for Combines	169593
Parts Catalog	D65 Harvest Header®	169596
	CA25 Adapter for Combines	169598
Quick Card	MacDon D65 Harvest Header® with CA25 for Combines	169599
	MacDon D65 Harvest Header® for Self-Propelled Windrowers	169600

## RUN-UP ADJUSTMENTS AND CHECKS

### STEP 16. RUN-UP THE HEADER



#### CAUTION

Never start or move the machine until you are sure all bystanders have cleared the area.



#### CAUTION

Clear the area of other persons, pets etc. Keep children away from machinery. Walk around the machine to be sure no one is under, on or close to it.



#### CAUTION

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

- Open the LH endshield.
- Start windrower, and run header for 5 minutes, watching and listening FROM THE OPERATOR'S SEAT for binding or interfering parts.

#### NOTE

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

- Run header for an additional 10 minutes at operating speed, watching and listening FROM THE OPERATOR'S SEAT for binding or interfering parts.



- Have someone check the rpm of the sickle drive box pulley using a hand held tachometer.
- Shut down the windrower.

- Compare actual pulley rpm with values in the following chart:

Header Size	Recommended Knife Drive Speed Range (rpm)	
	Single Knife	Double Knife
15 FT	---	750–950
20 and 25 FT	600–750	700–850
30 FT	600–700	600–800
35 FT	550–650	600–750
40 FT	525–600	550–700
45 FT	---	

- If adjustment to the sickle drive box pulley rpm is necessary, refer to your windrower's operator's manual.
- Perform the run-up check as listed on the "Pre-Delivery Checklist" (yellow sheet attached to this instruction).

## RUN-UP ADJUSTMENTS AND CHECKS

### STEP 17. POST RUN-UP CHECKS



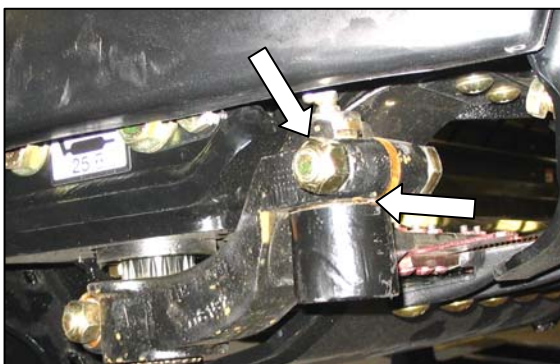
#### WARNING

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

- a. Perform the post run-up check as listed on the "Pre-Delivery Checklist" (yellow sheet attached to this instruction).

#### A. KNIFE

- a. Check guards for signs of heating during run-up due to insufficient clearance between guard and sickle.
- b. If heating is evident, proceed as follows:



1. Check gap between knife head and pitman arm. A business card should slide easily through the gap. If not, then adjust gap by loosening bolt, and tapping knife head with a hammer. Re-tighten bolt.
2. Adjust guard alignment as follows. The guard straightening tool (MacDon #140135) is available from your MacDon Dealer.



UPWARD ADJUSTMENT

- i. To adjust guard tips upward, position tool as shown, and pull up.



DOWNWARD ADJUSTMENT

- ii. To adjust tips downward, position tool as shown, and push down.



**MacDon Industries Ltd.**

680 Moray Street  
Winnipeg, Manitoba  
Canada R3J 3S3  
t. (204) 885-5590  
f. (204) 832-7749

**MacDon Inc.**

10708 N. Pomona Avenue  
Kansas City, Missouri  
United States 64153-1924  
t. (816) 891-7313  
f. (816) 891-7323

**MacDon Australia Pty. Ltd.**

A.C.N. 079 393 721  
P.O. Box 243  
Suite 3, 143 Main Street  
Greensborough, Victoria  
Australia 3088  
t. 03 9432 9982  
f. 03 9432 9972

**LLC MacDon Russia Ltd.**

123317 Moscow, Russia  
10 Presnenskaya nab. Block C,  
Floor 5, Office No. 534  
Regus Business Centre  
t. +7 495 775 6971 direct line  
f. +7 495 967 7600

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