

# **MacDon™**

## **R85 Rotary Disc 13 Foot Pull-Type Mower Conditioner Unloading and Assembly Instructions**

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Revision C

# INTRODUCTION

This instruction describes the unloading, set-up and pre-delivery requirements for the Model R85 13 Foot Pull-Type Rotary Disc Mower Conditioner. Use the Table of Contents to guide you to specific areas.

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



**R85 13 FOOT PULL-TYPE ROTARY DISC MOWER CONDITIONER**

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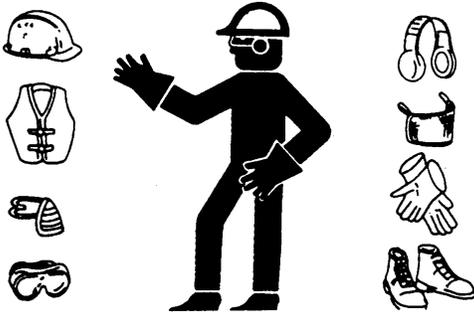
## GENERAL SAFETY



### 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:



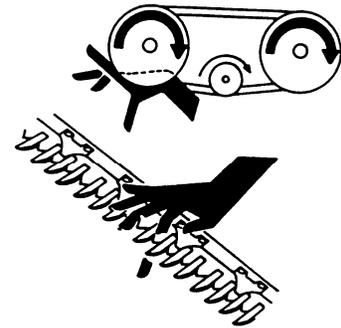
- a hard hat.
- protective shoes with slip resistant soles.
- protective glasses or goggles.
- heavy gloves.
- wet weather gear.
- respirator or filter mask.



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



- Provide a first-aid kit for use in case of emergencies.
- Keep a fire extinguisher on the machine. Be sure the extinguisher is properly maintained and be familiar with its proper use.
- Keep young children away from machinery at all times.
- Be aware that accidents often happen when the operator is tired or in a hurry to get finished. Take the time to consider the safest way. Never ignore warning signs of fatigue.
- Wear close-fitting clothing and cover long hair. Never wear dangling items such as scarves or bracelets.
- Keep hands, feet, clothing and hair away from moving parts. Never attempt to clear obstructions or objects from a machine while the engine is running.



- Keep all shields in place. Never alter or remove safety equipment. Make sure driveline guards can rotate independently of the shaft and can telescope freely.
- Use only service and repair parts made or approved by the equipment manufacturer. Substituted parts may not meet strength, design, or safety requirements.
- Do NOT modify the machine. Unauthorized modifications may impair the function and/or safety and affect machine life.

*(continued next page)*

## SAFETY

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



- **Keep the area used for servicing machinery clean and dry. Wet or oily floors are slippery. Wet spots can be dangerous when working with electrical equipment. Be sure all electrical outlets and tools are properly grounded.**
- **Use adequate light for the job at hand.**
- **Keep machinery clean. 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.**

## GENERAL

# RECOMMENDED TORQUES

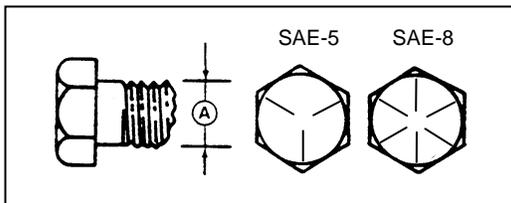
### A. GENERAL

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

### B. SAE BOLTS

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

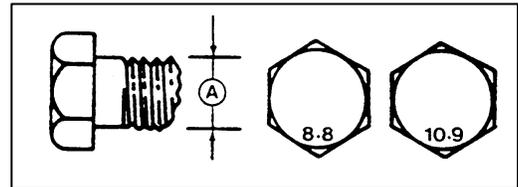
\* Torque categories for bolts and capscrews are identified by their head markings.



### C. METRIC BOLTS

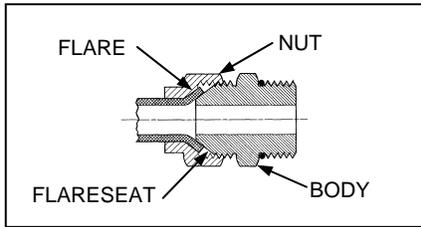
BOLT DIA. "A"	STD COARSE BOLT TORQUE*			
	8.8		10.9	
	lbf-ft	N-m	lbf-ft	N-m
M3	0.4	0.5	1.3	1.8
M4	2.2	3	3.3	4.5
M5	4	6	7	9
M6	7	10	11	15
M8	18	25	26	35
M10	37	50	52	70
M12	66	90	92	125
M14	103	140	148	200
M16	166	225	229	310
M20	321	435	450	610
M24	553	750	774	1050
M30	1103	1495	1550	2100
M36	1917	2600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

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



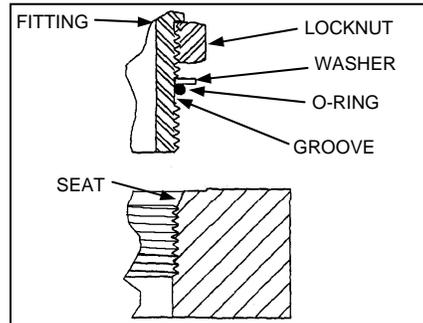
## GENERAL

### D. FLARE TYPE HYDRAULIC FITTINGS

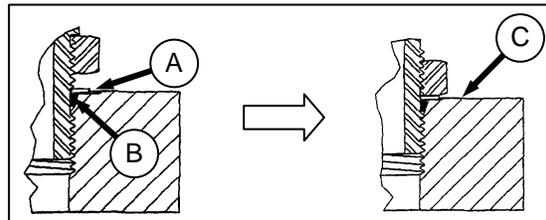


- a. Check flare and flare seat for defects that might cause leakage.
- b. Align tube with fitting before tightening.
- c. Lubricate connection and hand-tighten swivel nut until snug.
- d. To prevent twisting the tube(s), use two wrenches. Place one wrench on the connector body, and with the second,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

### E. O-RING BOSS (ORB) HYDRAULIC FITTINGS



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



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

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

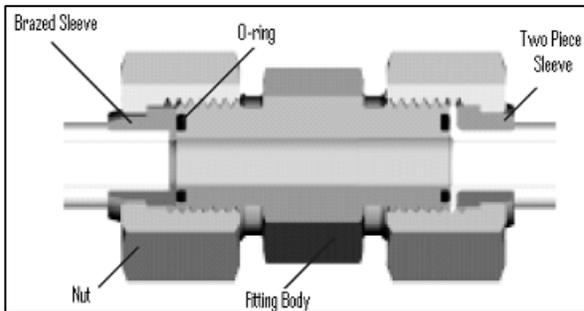
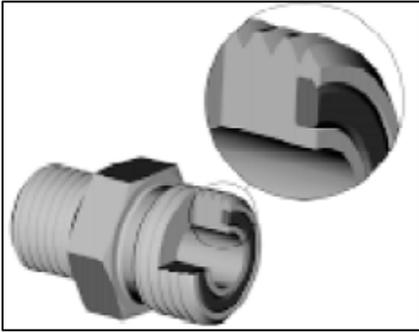
\* The torque values shown are based on lubricated connections as in re-assembly.

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

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

## GENERAL

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



- a. Check components to ensure that the sealing surfaces and fitting threads are free of burrs, nicks, and scratches, or any foreign material.
- b. Apply lubricant (typically Petroleum Jelly) to O-ring and threads. If O-ring is not already installed, install O-ring.
- c. Align the tube or hose assembly. Ensure that flat face of the mating flange comes in full contact with O-ring.
- d. 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.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.*

- e. 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		1/2-3/4
10	1	5/8	45-51	60-68		1/3 -1/2
12	1-3/16	3/4	67-71	90-95		1/3 -1/2
14	1-3/16	7/8	67-71	90-95		1/3 -1/2
16	1-7/16	1	93-100	125-135		1/3 -1/2
20	1-11/16	1-1/4	126-141	170-190		1/3 -1/2
24	2	1-1/2	148-167	200-225	1/3 -1/2	
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.

**GENERAL**

**CONVERSION CHART**

QUANTITY	INCH-POUND UNITS		FACTOR	SI UNITS (METRIC)	
	UNIT NAME	ABBR.		UNIT NAME	ABBR.
Area	acres	acres	x 0.4047 =	hectares	ha
Flow	gallons per minute (US) gallons per minute (Imp)	gpm (US) gpm	x 3.7854 = x 4.5460 =	liters per minute	L/min
Force	pounds force	lbf	x 4.4482 =	Newtons	N
Length	inch	in.	x 25.4 =	millimeters	mm
	foot	ft	x 0.305 =	meters	m
Power	horsepower	hp	x 0.7457 =	kilowatts	kW
Pressure	pounds per square inch	psi	x 6.8948 =	kilopascals	kPa
			x .00689 =	megapascals	MPa
Torque	pound feet or foot pounds	lbf-ft or ft-lbf	x 1.3558 =	newton meters	N·m
	pound inches or inch pounds	lbf-in. or in-lbf	x 0.1129 =		
Temperature	degrees Fahrenheit	°F	(°F - 32) x 0.56 =	Celsius	°C
Velocity	feet per minute	ft/min	x 0.3048 =	meters per minute	m/min
	feet per second	ft/s	x 0.3048 =	meters per second	m/s
	miles per hour	mph	x 1.6063 =	kilometers per hour	km/h
Volume	ounces	oz.	x 29.5735 =	milliliters	ml
	cubic inches	in. <sup>3</sup>	x 16.3871 =	cubic centimeters	cm <sup>3</sup> or cc
	quarts (US) quarts (Imperial)	US qt. qt.	x 0.96464 x 1.1365	liters	L
	gallons (US) gallons (Imperial)	US gal. gal.	x 3.7854 = x 4.5460 =		
Weight	pounds	lb	x 0.4536 =	kilograms	kg

## GENERAL

### DEFINITIONS

The following terms may be used in this manual:

<b>TERM</b>	<b>DEFINITION</b>
<b>API</b>	American Petroleum Institute
<b>APT</b>	Articulated Power Turn
<b>ASTM</b>	American Society Of Testing And Materials
<b>Center-link</b>	A hydraulic cylinder or turnbuckle type link between the header and the carrier frame that tilts the header.
<b>Header or Rotary Header</b>	The part of the mower-conditioner that cuts and conditions the crop.
<b>Mower Conditioner</b>	A machine that cuts and conditions hay, and is pulled by an agricultural tractor.
<b>PTO</b>	Power Take-Off
<b>rpm</b>	Revolutions Per Minute
<b>SAE</b>	Society Of Automotive Engineers
<b>Sickle or Knife</b>	A cutting device which uses a reciprocating cutter.
<b>Tractor</b>	Agricultural type tractor.
<b>Truck</b>	A four-wheel highway/road vehicle weighing no less than 7500 lb. (3400 kg).

## UNLOADING AND ASSEMBLY

### STEP 1. UNLOAD ARTICULATED POWER TURN (APT) HITCH



#### 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	
Minimum Capacity	8,000 lb. (3,630 kg)
Minimum Height	15 ft. (4.5 m)

CHAIN	
Overhead Lifting Quality (1/2 inch)	5,000 lb. (2,270 kg) Minimum Working Load

- a. Remove hauler's tie down straps and chains.



- b. Attach chain to two brackets on top of APT hitch as shown.
- c. Adjust chain lengths so hitch is lifted evenly.
- d. Raise hitch off deck, back up until unit clears trailer, and slowly lower to 6 inches (150 mm) from ground.

#### IMPORTANT

Take care not to contact the other machine if load is two-wide.

- e. Take to storage or set-up area, and set hitch down securely on level ground.
- f. Repeat for second hitch if required.
- g. Check for shipping damage and missing parts.

## UNLOADING AND ASSEMBLY

### STEP 2. 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	
Minimum Capacity	8,000 lb. (3,630 kg)
Minimum Height	15 ft. (4.5 m)

CHAIN	
Overhead Lifting Quality (1/2 inch)	5,000 lb. (2,270 kg) Minimum Working Load



#### WARNING

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

- a. Remove hauler's tie down straps and chains.



- b. Approach mower conditioner from either its underside or topside, and slide forks in underneath lifting framework as far as possible.

#### NOTE

*When possible, approach from the underside to minimize potential for scratching the unit.*

- c. Raise mower conditioner off deck.

#### IMPORTANT

Take care not to contact the other machine if load is two-wide.

- d. Back up until unit clears trailer, and slowly lower to 6 inches (150 mm) from ground.
- e. Take to storage or set-up area, and set machine down securely on level ground.
- f. Repeat for other mower conditioner if required.
- g. Check for shipping damage and missing parts.

## UNLOADING AND ASSEMBLY

### STEP 3. LOWER MOWER CONDITIONER

- a. Attach either a spreader bar or chain to forks.



#### CAUTION

Ensure spreader bar or chain is secured to the forks so that it cannot slide off the forks or towards the mast as the header is lowered to the ground.

CHAIN	
Overhead Lifting Quality (1/2 inch)	5,000 lb. (2,270 kg) Minimum Working Load

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



- c. Attach chain hooks to hooks on either side of header.



#### CAUTION

Stand clear when lowering the header.

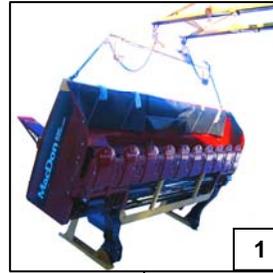
#### NOTE

*Do NOT lift at hooks when unloading from trailer. This procedure is only for laying the machine over into working position.*

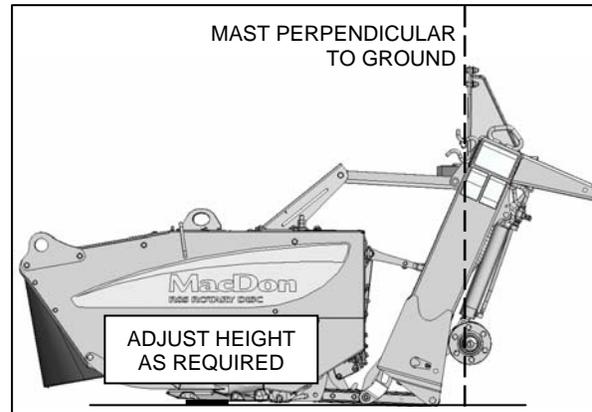
#### IMPORTANT

Chain length must be sufficient to provide a minimum 4 feet (1.2 m) vertical chain height.

- d. Raise forks until lift chains are fully tensioned.



- e. Back up SLOWLY, while simultaneously lowering machine until cutterbar rests on ground.  
f. Remove chain from header.

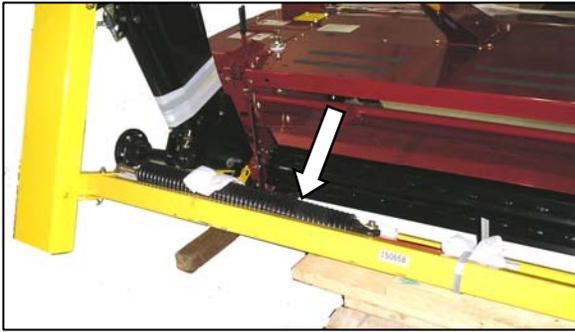


#### NOTE

*The front face of the carrier mast should be approximately vertical for easier assembly of the APT hitch.*

## UNLOADING AND ASSEMBLY

### STEP 4. REMOVE SHIPPING CHANNELS AND BLOCKING



- a. Cut the banding on the shipping beam at the rear of carrier frame, and remove components from inside the shipping beam.

**NOTE**

*Hardware bag is for STEP 21. INSTALL FORMING SHIELD.*

- b. Place LH spring assembly (heavy) near LH side of carrier. Place RH spring assembly (light) near RH side of carrier.

**NOTE**

*The following steps remove the stand as an assembly. These components may also be removed individually.*



- c. Place blocks under the shipping beam at the rear of the carrier frame.



- d. Loosen the shipping stand bolt at the lower end of each carrier frame leg.



- e. Remove the bolt that secures shipping stand at each float spring anchor.  
f. Remove the support blocks, and lower the shipping stand to the ground.



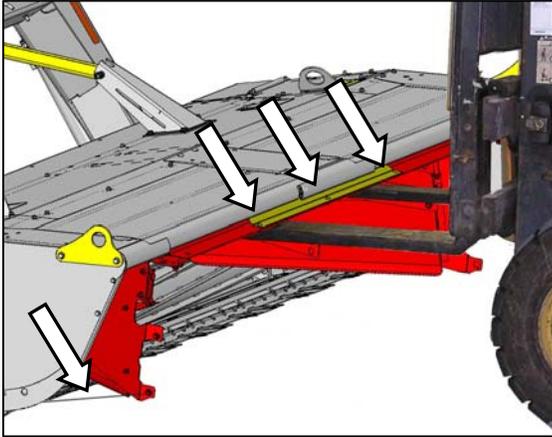
- g. Remove bolts at carrier frame legs, and remove shipping stand frame.



- h. Cut banding that secures angles to carrier frame tube, and remove angles.

## UNLOADING AND ASSEMBLY

### STEP 5. REMOVE FORMING SHIELD



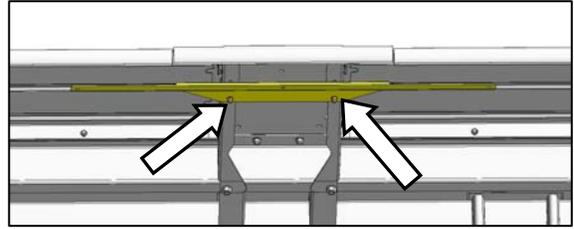
- Position lift forks with extensions under forming shield at front of header.
- Cut shipping wire securing forming shield side deflectors to cutterbar.
- Remove three bolts at front edge of forming shield.



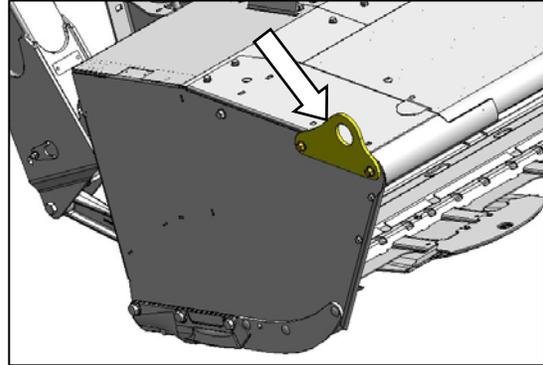
- Cut shipping wire (2 places) on aft end of forming shield at rear of header.



- Manually slide forming shield onto lift forks.



- Remove shipping support from inside cutterbar area by removing two bolts.



- Remove bolts and the two lift hooks. Retain bolts for re-installation.



### WARNING

Ensure cutterbar is completely clear of foreign objects. These objects can be ejected with considerable force when the machine is started and may result in serious injury or machine damage.

- Thoroughly check cutterbar area for wooden blocking, banding, and hardware that may have fallen between discs.



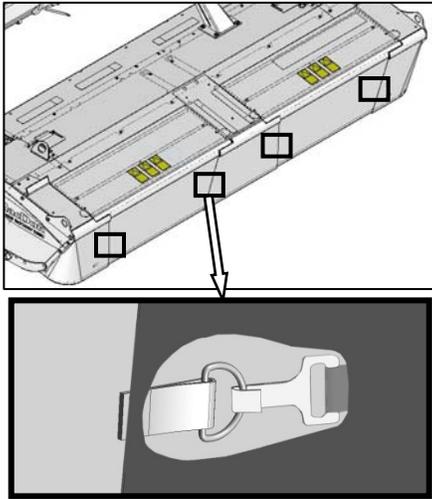
- Cut plastic ties at end curtains, and remove creases in curtains.

*(continued next page)*

## UNLOADING AND ASSEMBLY



- j. Ensure that curtains hang properly and completely enclose cutterbar area. Minor creases in curtains will eventually straighten out.



- k. Fasten latches.

## UNLOADING AND ASSEMBLY

### STEP 6. UNPACK APT HITCH



- a. Attach chain from lifting vehicle or hoist to APT hitch hooks, and raise it approximately 24 inches (610 mm) off ground.



- b. Cut banding securing hydraulic motor and hoses to underside of hitch.



### CAUTION

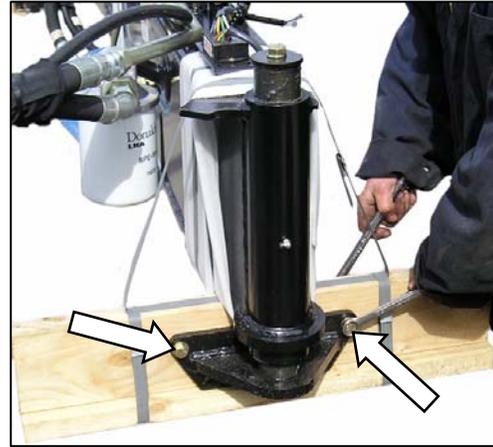
Hold motor to keep it from dropping to the ground when cutting band around motor.



- c. Route motor and hoses to the left side of the hitch.



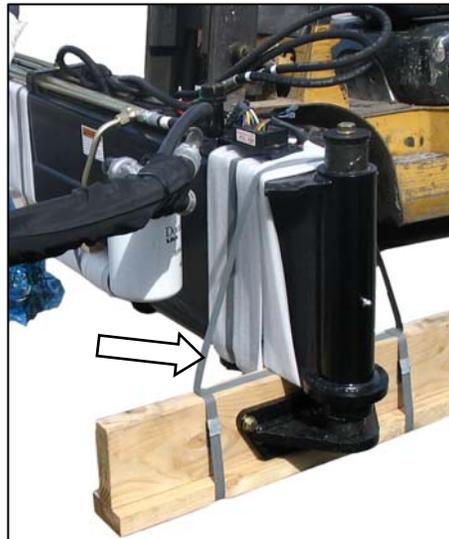
- d. Secure the motor to the steering cylinder with shipping wire.



- e. Remove the two bolts securing wooden stand to hitch pin.

### NOTE

*Bolt and washer at top of pin keeps pin in hitch when bolts are removed.*



- f. Cut banding securing wooden stand to hitch, and remove wooden stand.

*(continued next page)*

## UNLOADING AND ASSEMBLY



- g. Remove bolt and washer securing pin to hitch.

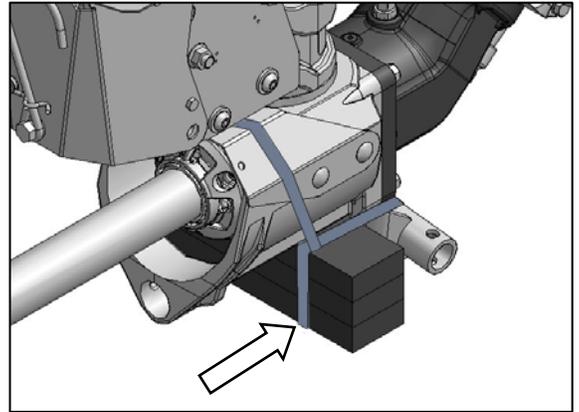


### CAUTION

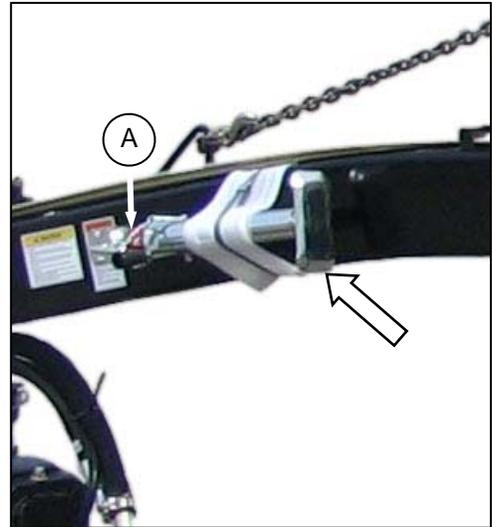
Hold pin from falling to the ground when bolt is removed.



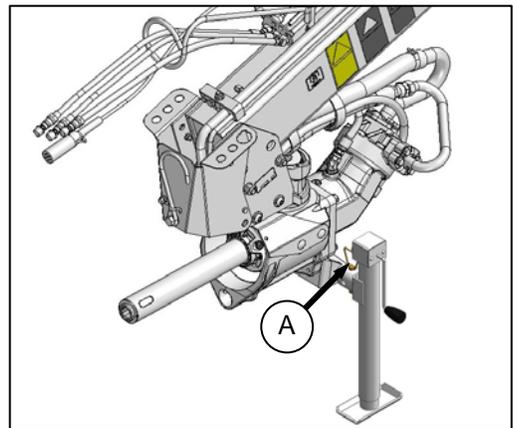
- h. Remove pin, and re-insert pin in hitch from top.



- i. Remove shipping wire or banding securing shipping blocks at front of hitch, and remove blocks.



- j. Remove banding from jack.  
k. Remove pin (A) securing jack to hitch, and remove jack from shipping position.



- l. Install at jack location at front of hitch, and secure with pin (A).

## UNLOADING AND ASSEMBLY

### STEP 7. ATTACH APT HITCH

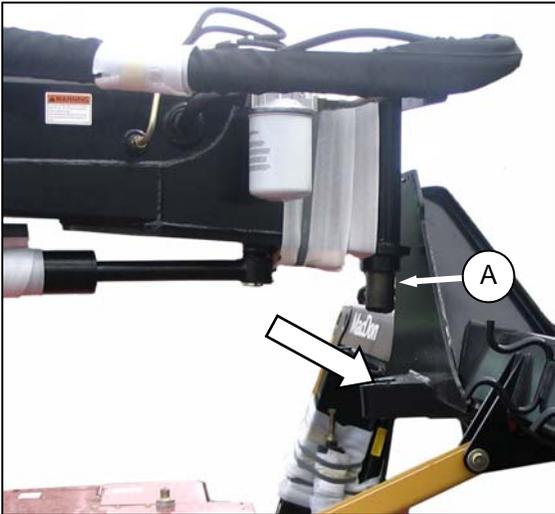


#### CAUTION

Keep hands clear when lowering APT hitch.



- a. Remove the six bolts and nuts from frame, and retain for re-installation.



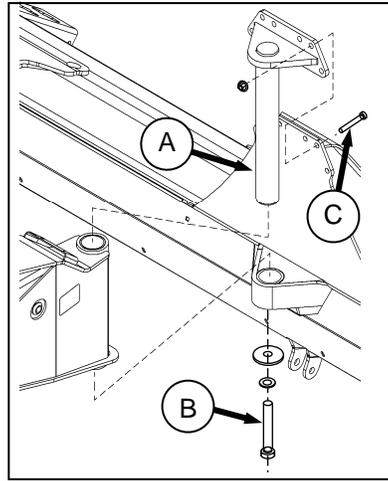
- b. Using a forklift (or equivalent), manoeuvre hitch into position, and install pivot pin (A) into mower conditioner frame.

#### NOTE

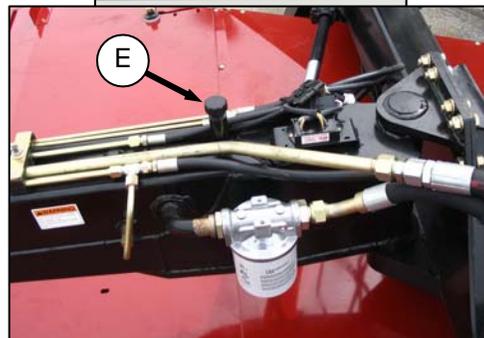
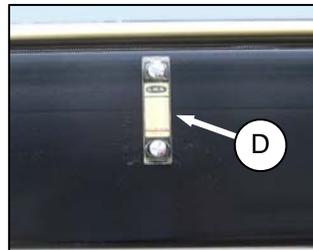
Use the jack to adjust the pitch of the APT hitch for proper alignment when installing pivot pin.

#### NOTE

Pin may need to be tapped into final position with a hammer due to the tight clearances.



- c. Secure pivot pin (A) to frame by installing six 5/8 x 1.75 long Gr. 8 bolts (C) with lock nuts removed at step a. Install bolts with heads facing aft.
- d. Torque to 200 ft-lbf (271 N-m).
- e. Install bolt (B), lock washer, and flatwasher removed at STEP 6 g. at lower end of pivot pin, and tighten bolt.
- f. Position APT hitch with jack so that rear span of hitch is approximately horizontal. Remove lifting chain from hitch.



- g. Check oil level in sight glass (D) on the left side of the hitch, is between ADD and FULL.
- h. If necessary add single grade trans-hydraulic oil at filler pipe (E).

#### RECOMMENDED OILS

Petro-Canada Duratran  
Case IH Hy-Tran Plus®  
New Holland Hydraul  
Shell Donax TD

Chevron 1000 THF  
Agco Power Fluid 821XL  
Esso/Exxon Hydraul 56  
John Deere Quatro® J20C

## UNLOADING AND ASSEMBLY

### STEP 8. CONNECT LIFT HOSE

#### IMPORTANT

Hoses should be routed so there are no twists or sharp bends, and no locations where contact with the frame is likely.

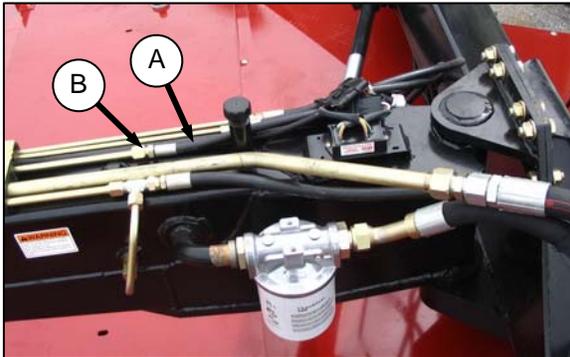
Ensure that there is sufficient length of hose and wiring in span to accommodate full swing of APT hitch in both directions.

Re-locate plastic ties if necessary to provide suitable slack in hoses and wiring.

#### IMPORTANT

To prevent contamination of the hydraulic system, extreme care must be taken to avoid dirt entering at connection points.

To minimize exposure to contamination, remove cap from one hose and its mating connection, and connect before removing other caps and plugs.



- a. Connect the lift cylinder hose (A) to the fitting (B) on the hitch.

### STEP 9. CONNECT WIRING HARNESS



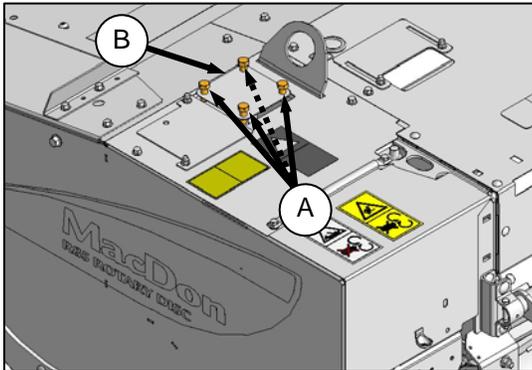
- a. Connect electrical wiring harness (C) at rear of APT hitch as shown.

## UNLOADING AND ASSEMBLY

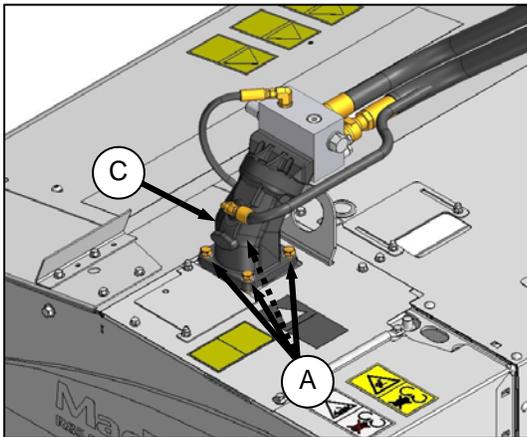
### STEP 10. INSTALL HYDRAULIC MOTOR



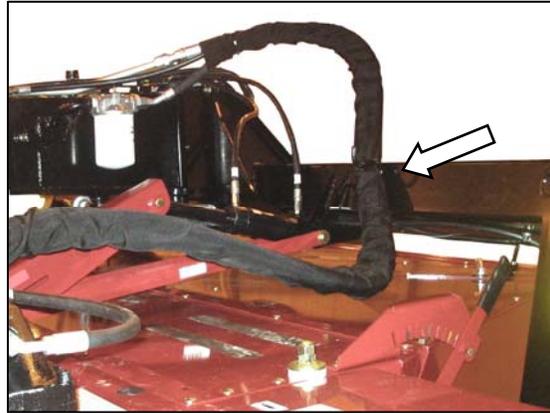
- a. Remove shipping wire that holds motor to steering cylinder.



- b. Remove four bolts (A) securing plate (B) to gearbox, and remove plate. Retain bolts.



- c. Position motor (C) on gearbox as shown, and re-install the four bolts (A). Torque to 103 ft·lbf (140 N·m).



- d. Route hoses through hose guides.

#### NOTE

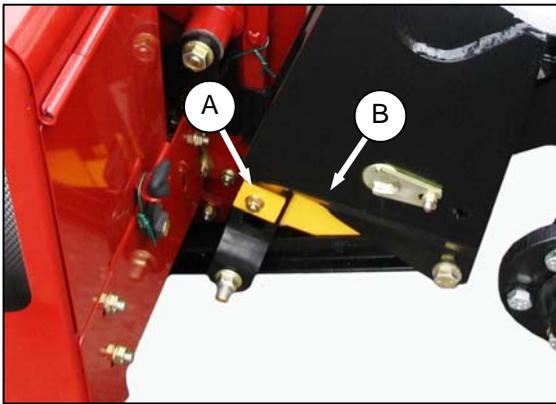
*If required, loosen the hose swivel fittings at the motor ports to remove any twist in the hose routing from the APT hitch. Do NOT loosen the clamp type fitting.*

## UNLOADING AND ASSEMBLY

### STEP 11. INSTALL WHEELS



- a. Attach a lifting chain to the hook at one end of the carrier frame, and to a forklift (or equivalent).
- b. Lift frame so that the cutterbar is slightly off the ground.



- c. Remove bolt (A) securing shipping wedge (B) at the lower lift link, and remove wedge.



### CAUTION

Do NOT drive out this bolt. If carrier frame is lifted high enough, bolt becomes free to remove.

- d. Remove wheel bolts from wheel hub.

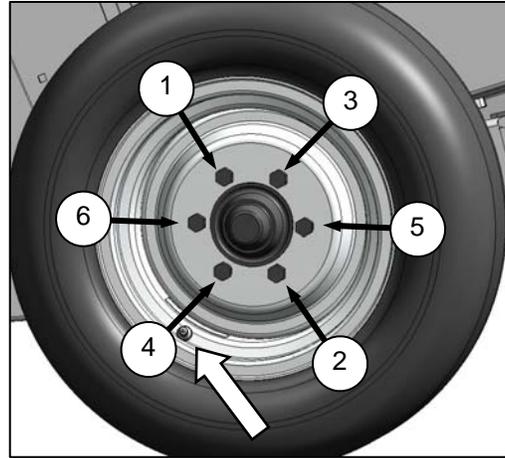


### CAUTION

When installing wheel be sure to use the holes that are countersunk to match bolt head profile. The un-countersunk holes do not seat the bolts correctly.

### IMPORTANT

Remove excess paint from tapered surface of bolt holes in wheel.



- e. Install wheel with existing bolts. Be sure valve stem points away from wheel support.
- f. Torque bolts to 120 ft·lbf (160 N·m) following tightening sequence shown above.

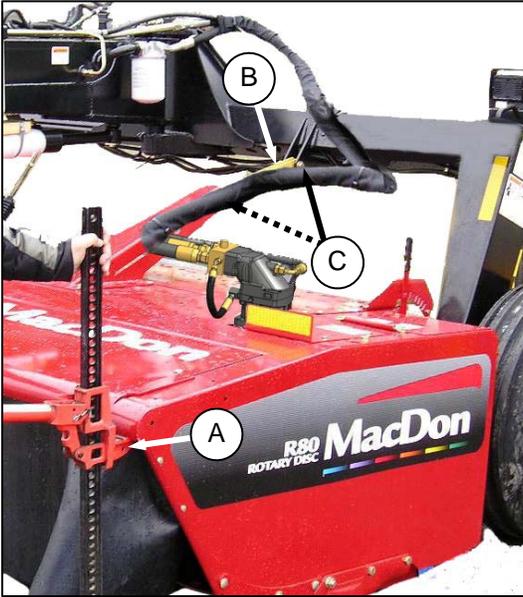
### IMPORTANT

Follow proper bolt tightening sequence shown above.

- g. Lower carrier frame, and repeat steps a. to f. to install the other wheel.
- h. Check tires inflated to 30 psi (207 kPa).

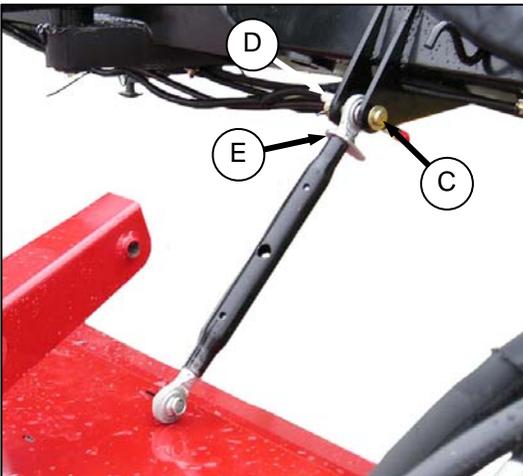
## UNLOADING AND ASSEMBLY

### STEP 12. INSTALL CENTER-LINK

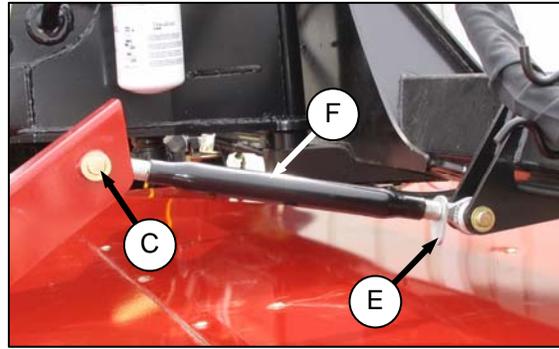


- Lift front corner of header using a lift jack (A) until the shipping brace (B) is loose.
- Remove clevis pins (C) securing brace to header and carrier frame, and remove brace (B). Retain pins for re-installation.
- Lower header to ground.
- Raise front of APT hitch with the jack to allow installation of the adjustable link mechanical center-link or optional hydraulic link.

#### A. MECHANICAL LINK



- Attach mechanical link (D) to carrier frame with clevis pin (C). Secure with cotter pin.
- Loosen nut (E).



- Rotate the turnbuckle sleeve (F) so that link can be connected to header. Insert clevis pin (C) when holes are aligned, and secure with cotter pin.
- Rotate sleeve (F) to approximately mid-position.
- Snug up nut (E), but do NOT over-tighten. A slight tap with a small hammer is sufficient.

#### B. HYDRAULIC LINK

- Refer to instructions provided with hydraulic center-link kit for installation procedures.

### STEP 13. REMOVE BANDING AT LIFT CYLINDERS



- Cut the banding that secures the LH and RH lift cylinders to the carrier frame.

## UNLOADING AND ASSEMBLY

### STEP 14. TRACTOR SETUP

MINIMUM POWER	MINIMUM DRAWBAR CAPACITY	MINIMUM HYDRAULICS
100 HP (75 kW)	As per ASAE	2,000 psi (13,789 kPa)

**NOTE**

*Tractor must be equipped with a seven terminal outlet to supply power to the mower conditioner's hazard lights.*

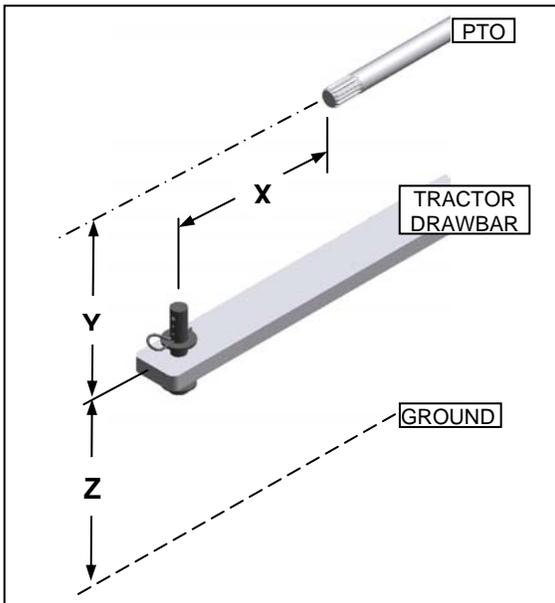
#### A. DRAWBAR ADJUSTMENT



### CAUTION

**Shut off tractor, engage parking brake, and remove key before working around hitch.**

Adjust tractor drawbar to meet ASAE Standard specifications as listed below.



DIMENSION	1000 RPM PTO	
	1.37 INCH DIA.	1.75 INCH DIA.
<b>X</b>	16 in. (406 mm)	20 in. (508 mm)
<b>Y</b>	6–12 in. (152–305 mm) 8 in. (203 mm) Recommended	
<b>Z</b>	13–17 in. (330–432 mm) 16 in. (406 mm) Recommended	

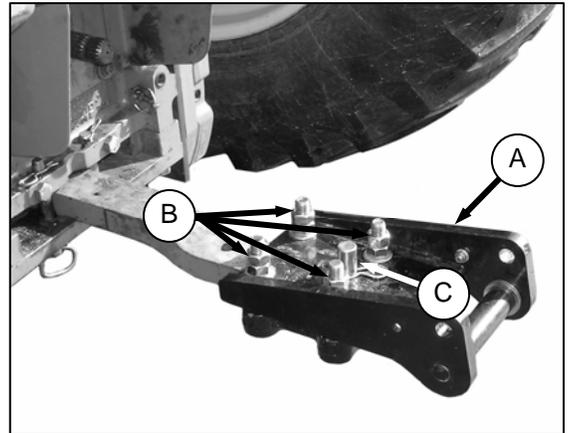
#### B. DRAWBAR HITCH SETUP



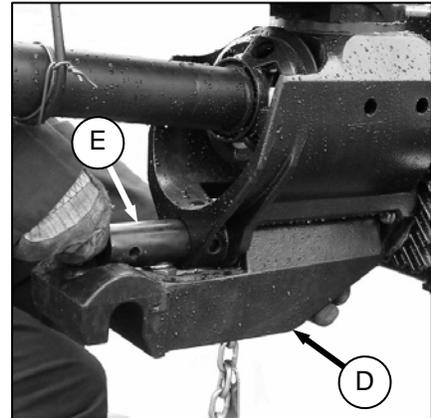
### CAUTION

**Shut off tractor, engage parking brake, and remove key before working around hitch.**

- a. Secure the tractor drawbar so the hitch-pin hole is directly below the driveline.



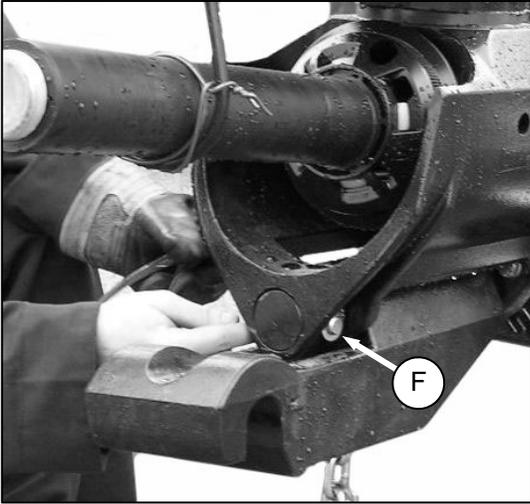
- b. Loosen bolts (B) on extension assembly (A), and slide onto drawbar.
- c. Install pin (C) through drawbar and extension from underside, and secure with hairpin.
- d. Gradually tighten the four bolts to 265 ft-lbf (359 N·m).



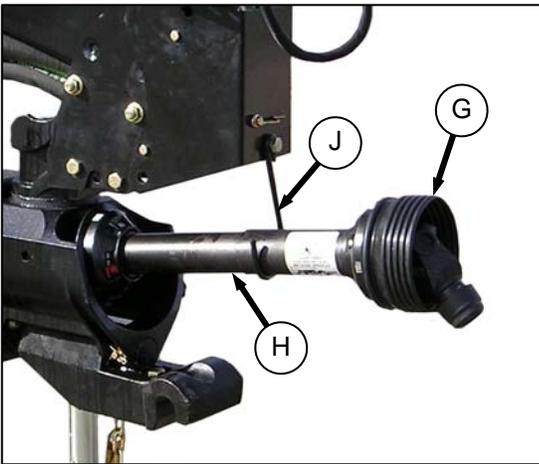
- e. Attach the APT hitch swivel member (D) with pin (E).

*(continued next page)*

## UNLOADING AND ASSEMBLY



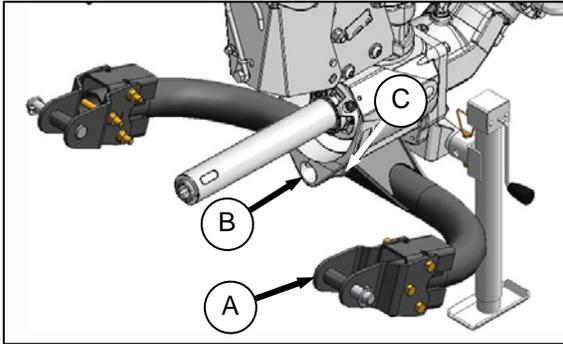
- f. Secure swivel pin with pin (F) and lynch pin.



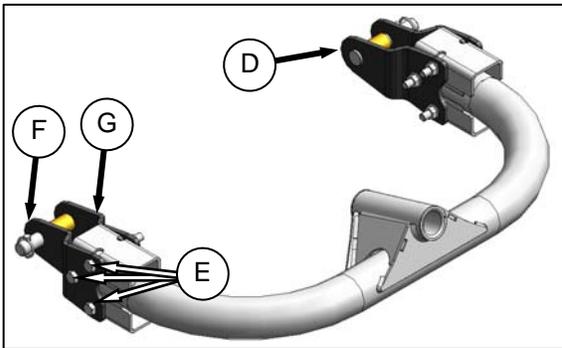
- g. Assemble PTO driveline male half (G) onto driveline (H) on APT hitch. Push male half so that driveline is at its fully compressed length.
- h. Locate driveline in hook (J).
- i. Proceed to STEP 15. MOWER CONDITIONER/TRACTOR HOOKUP.

## UNLOADING AND ASSEMBLY

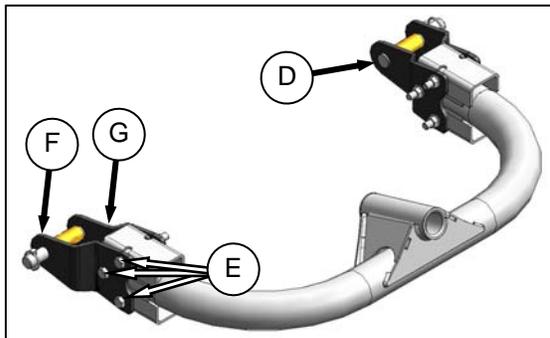
### C. 3-POINT HITCH SETUP



- Attach the 3 point hitch adapter (A) to the APT hitch with pin (B). The installation is similar to that described in the previous section.
- Secure pin (B) with clevis pin (C), washers, and cotter pin.
- The arms on the adapter (A) can be set up to suit Category II and IIIN, or Category III tractor hitch arms:



CATEGORY II or IIIN



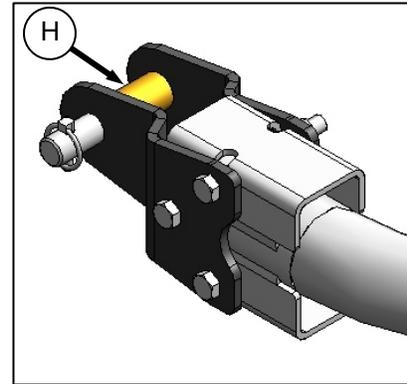
CATEGORY III

- Remove pins (D).
- Remove bolts (E) (3 per side).
- Flip outer plate (F), and inner plate (G) on each arm.

#### IMPORTANT

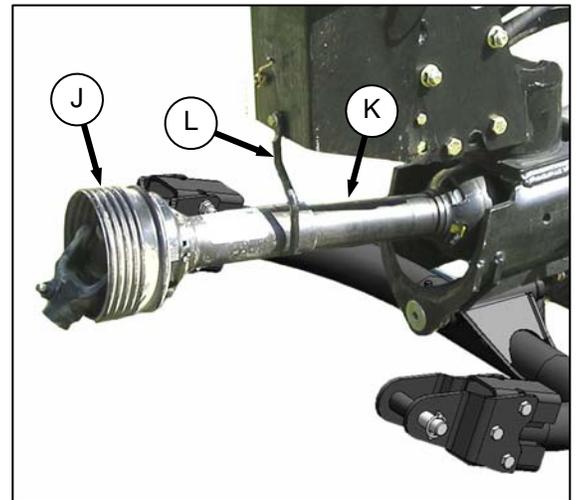
The inner plate (G) has a smaller joggle than the outer plate (F). Always maintain the proper locations.

- Re-install bolts (E).
- Replace pins (D).



#### NOTE

Bushings (H) on pins can be removed to suit hole size in tractor hitch arms.



- Assemble PTO driveline male half (J) onto driveline (K) on APT hitch. Push male half so that driveline is at its fully compressed length.
- Locate driveline in hook (L).

## UNLOADING AND ASSEMBLY

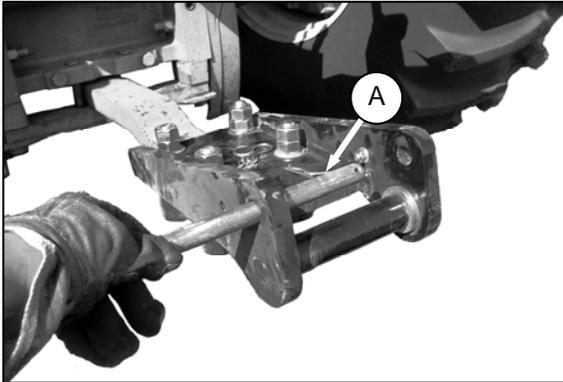
### STEP 15. MOWER CONDITIONER/ TRACTOR HOOKUP

#### A. DRAWBAR HOOKUP

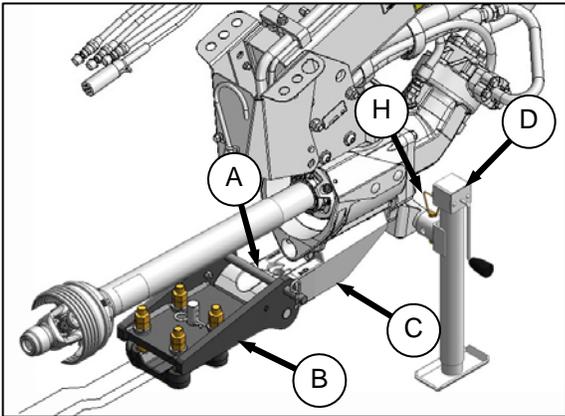


#### CAUTION

Shut off tractor, engage parking brake, and remove key before working around hitch.



- a. Remove pin (A).

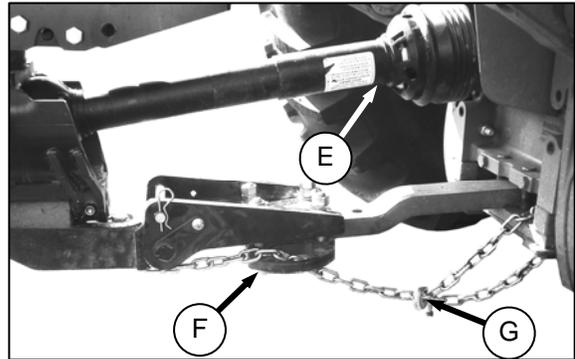


- b. Position tractor to align drawbar extension (B) with arm (C) on mower conditioner.  
c. Raise jack (D) to engage arm (C) on drawbar extension (B).  
d. Install hitch-pin (A), and secure with hairpin.

#### IMPORTANT

If the tractor has a three-point hitch, lower the lower links as low as possible to prevent damage to APT hitch.

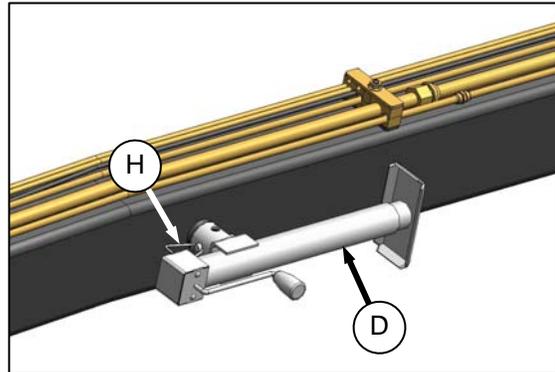
- e. Attach driveline (E) to tractor PTO shaft as follows:



1. Position driveline (E) onto tractor PTO shaft.
  2. Pull back collar on driveline, and push driveline until it locks. Release collar.
- f. Route safety chain from mower conditioner through chain support (F), around drawbar support, and lock the hook (G) on chain.

#### IMPORTANT

Adjust chain length to remove all slack except what is needed for turns.



- g. Raise jack (D), pull pin (H), and move jack to storage position on side of APT hitch.  
h. Secure jack with pin (H).  
i. Proceed to Step 16. ATTACH HYDRAULICS AND ELECTRICAL.

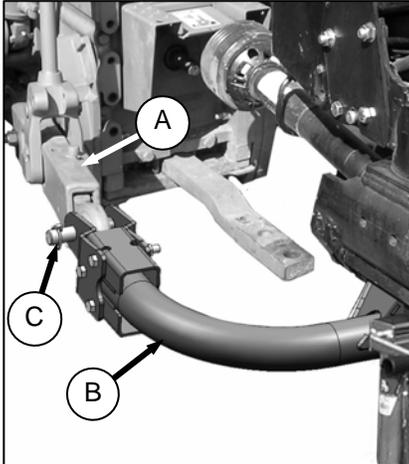
## UNLOADING AND ASSEMBLY

### B. 3-POINT HITCH HOOKUP



#### CAUTION

Shut off tractor, engage parking brake, and remove key before working around hitch.

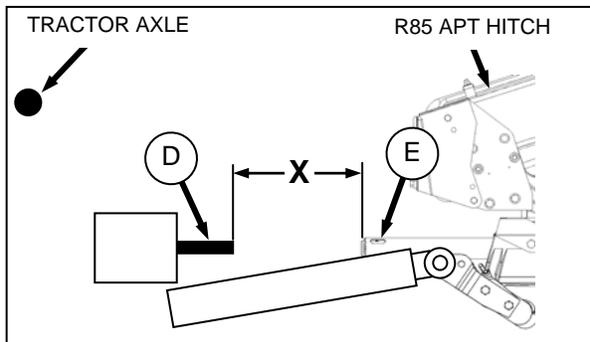


- Position tractor, and align tractor hitch arms (A) with hitch adapter (B). Shut off tractor, and remove key.
- Remove pins (C) from hitch adapter, and use the jack to adjust height of APT hitch so that pins (C) can be re-installed.

#### NOTE

*If tractor is equipped with a quick hitch system, pins (C) do not need to be removed.*

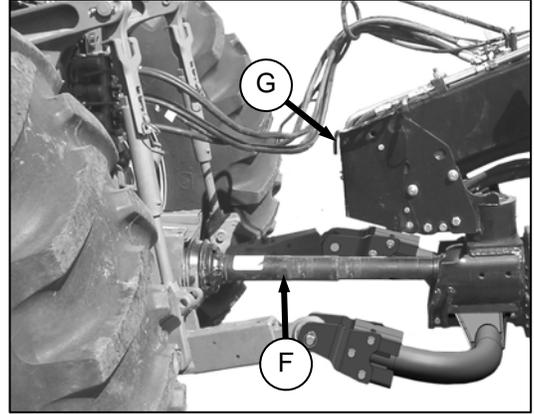
- Secure pins (C) with lynch pins.
- Install anti-sway bars on tractor hitch to stabilize lateral movement of hitch arms (A). Refer to your tractor operator's manual.



- Check distance 'X' between tractor PTO shaft (D) and implement input driveline (E) (without the front half of the driveline attached).

- The measurement must NOT exceed the dimensions listed.

DRIVELINE SHAFT SIZE	DISTANCE 'X'
1-3/8 in. (34 mm)	27 in. (685 mm)
1-3/4 in. (43 mm)	31 in. (790 mm)

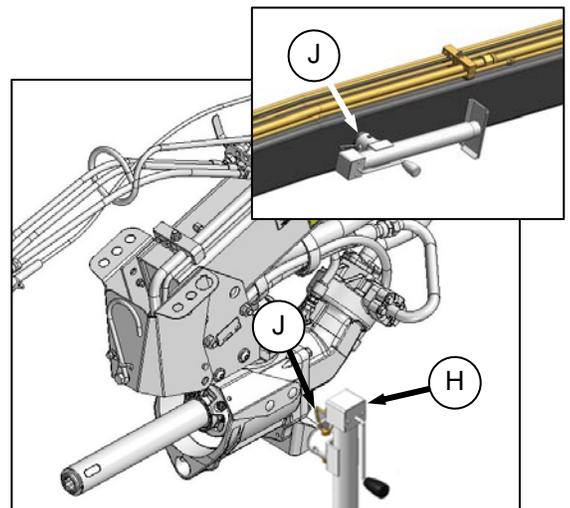


- Position driveline (F) onto tractor PTO shaft. Driveline should be approximately level.

#### IMPORTANT

Front half of driveline (F) for 3-point hitch is longer than the driveline for draw-bar hitch. Ensure proper length driveline is used.

- Pull back collar on driveline, and push driveline until it locks. Release collar.
- Rotate driveline storage hook (G) to upward position.



- Raise jack (H), pull pin (J), and move jack to storage position on side of APT hitch. Secure jack with pin (J).

## UNLOADING AND ASSEMBLY

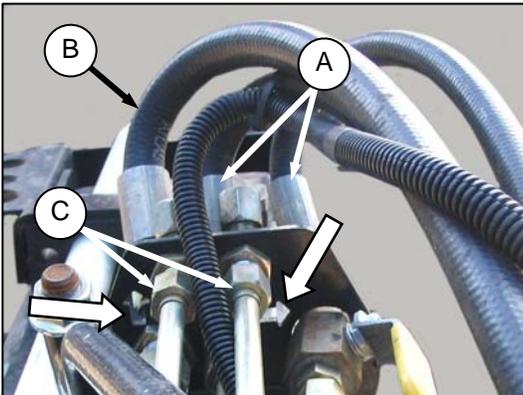
### STEP 16. ATTACH HYDRAULICS AND ELECTRICAL



#### WARNING

Do **NOT** use remote hydraulic system pressures over 3,000 psi (20,684 kPa). Check your tractor manual for remote system pressure.

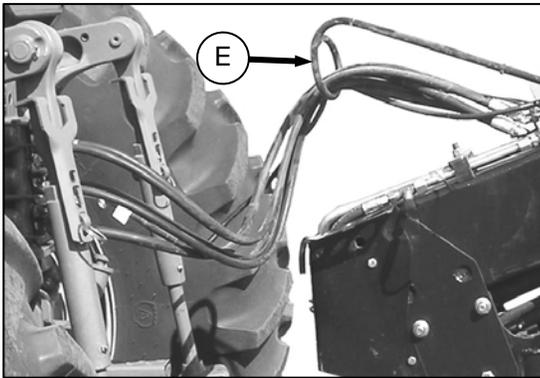
- a. Install quick disconnect couplers onto hydraulic hoses at front of APT hitch as per following table. Use #8 ORB (3/4 inch - 16 UNF Thread).



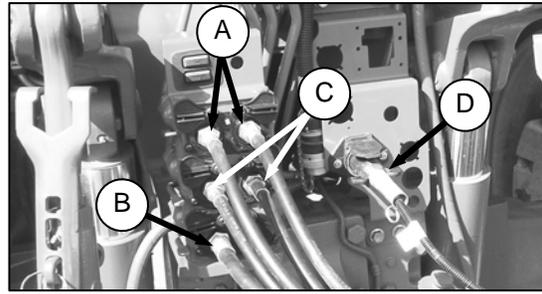
SYSTEM	HOSE	TRACTOR HYDRAULICS
Steering	A (2 Hoses)	Control 1
Lift	B (1 Hose)	Control 2
Header Tilt	C (2 Hoses)	Control 3

#### NOTE

Arrows cut into plate indicate system for hoses LIFT ↑ STEERING ↔.



- b. Ensure hoses are routed through guide (E) to provide proper hose arc as shown.



- c. Connect two STEERING cylinder hoses (A) as follows:

CONTROL LEVER POSITION	CYLINDER MOVEMENT	MOWER CONDITIONER DIRECTION
Forward	Extend	Right
Backward	Retract	Left

- d. Connect one LIFT cylinder hose (B) as follows:

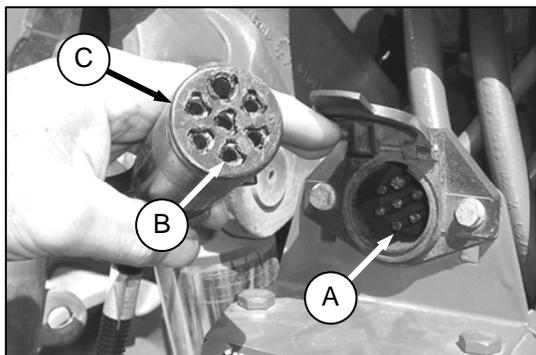
CONTROL LEVER POSITION	CYLINDER MOVEMENT	HEADER MOVEMENT
Forward	Retract	Lower
Backward	Extend	Raise

- e. Connect two HEADER TILT cylinder hoses (C) as follows: (Not required with mechanical center-link).

CONTROL LEVER POSITION	CYLINDER MOVEMENT	HEADER MOVEMENT
Forward	Retract	Lower
Backward	Extend	Raise

## UNLOADING AND ASSEMBLY

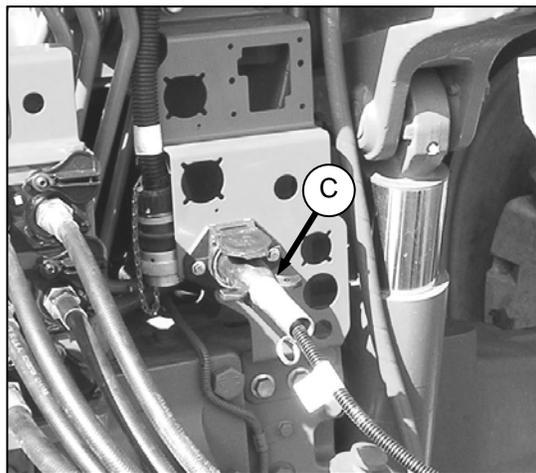
### STEP 17. ATTACH ELECTRICAL CONNECTOR



- a. Check that Pin #4 (A) in the tractor receptacle is not constantly energized - see your tractor operator's manual, and remove the appropriate fuse if required.

#### **IMPORTANT**

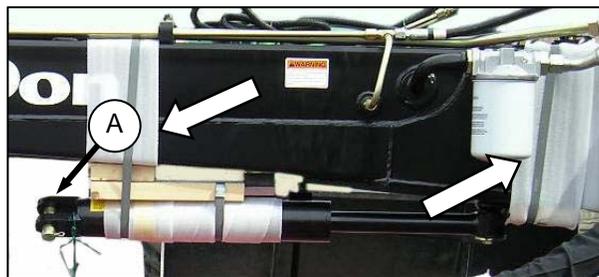
Older model tractors will have Pin #4 (A) energized as an accessory circuit. The R85 mower conditioner uses this pin position (B) for brake lights.



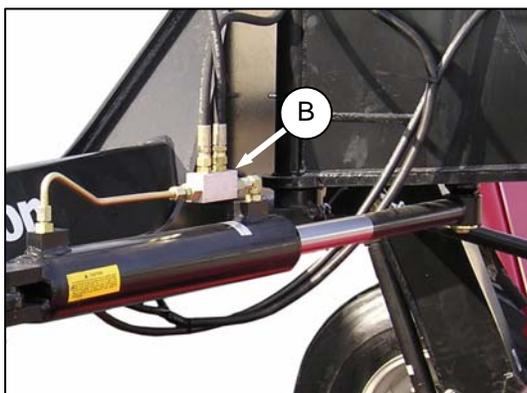
- b. Connect the mower conditioner wiring harness connector (C) to tractor. The connector is designed to fit tractors equipped with a round 7-pin receptacle (SAE J560).

## UNLOADING AND ASSEMBLY

### STEP 18. INSTALL STEERING CYLINDER



- Cut the banding that secures the cylinder to the APT hitch, and swing the cylinder out from under the hitch.
- Cut banding around cylinder, and remove shipping material from cylinder.
- Remove the pin (A) from barrel end of cylinder, and retain for re-installation.



- Manually rotate the cylinder barrel so that the check valve (B) is positioned directly above cylinder. Do NOT attach cylinder to frame at this time.



#### IMPORTANT

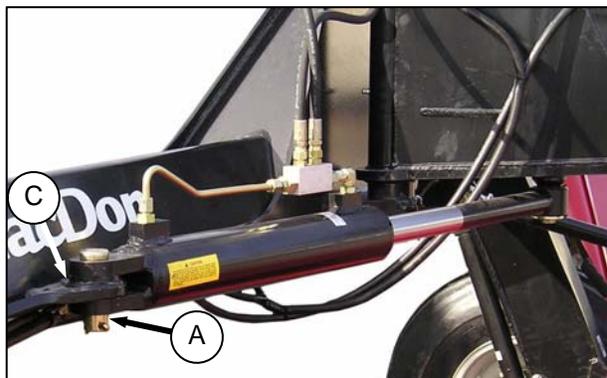
To allow APT hitch to swing, the valve must be in the working or open position (handle in line with hitch).



#### DANGER

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

- Start tractor.
- Stroke the cylinder to full extension and retraction 5 or 6 times to ensure that cylinder and hydraulic lines are fully charged with oil.



- Stroke the cylinder so that the cylinder can be slipped onto the bracket (C) on the frame.



#### CAUTION

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

- Stop engine, and remove key.
- Slip cylinder onto bracket (C), and install pin (A) if holes are aligned. If holes are not aligned, stroke cylinder or pivot header until pin can be installed. Secure pin (A) with cotter pin.

## UNLOADING AND ASSEMBLY

### STEP 19. FILL LIFT CYLINDERS



- a. Open lift cylinder lock-out valve on both lift cylinders.



#### **DANGER**

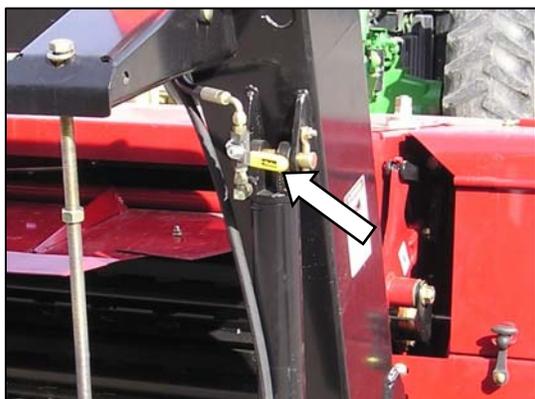
**Never start or move the machine until you are sure all bystanders have cleared the area.**

- b. Start tractor.
- c. Cycle the header lift cylinders five or six times to maximum lift to fully charge the cylinders and hydraulic lines.
- d. Raise header to full height, stop tractor, and remove key.



#### **CAUTION**

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

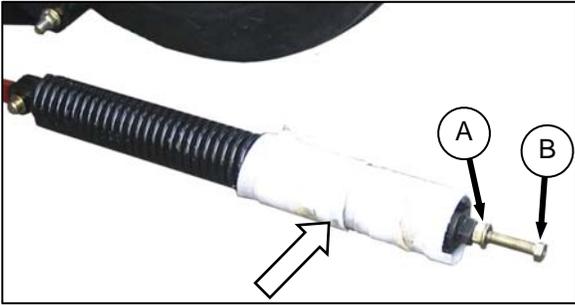


- e. Close lock-out valve on both lift cylinders.

## UNLOADING AND ASSEMBLY

### STEP 20. INSTALL FLOAT SPRINGS

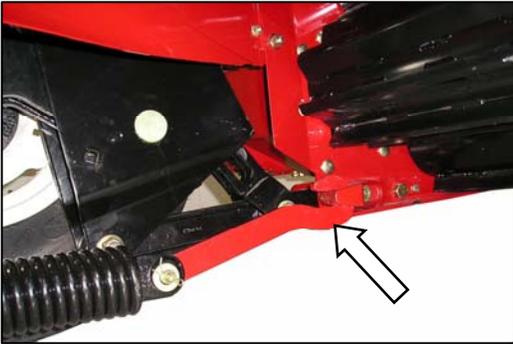
- a. Remove packing material from float spring.



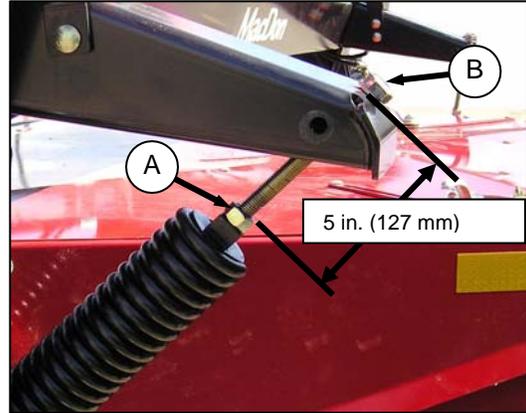
- b. Loosen jam nut (A), and remove drawbolt (B) from spring.

#### IMPORTANT

The float spring for the left side has an internal spring, and is heavier than the right side spring. Ensure that heavier spring is installed at left side.



- c. Insert hook into bracket on header frame.  
d. Install drawbolt (B) through anchor on carrier frame, and re-install into spring.



- e. Tighten spring drawbolt so that distance between spring anchor to lock nut is approximately 5 inches (127 mm).



#### CAUTION

To prevent damage to the float spring system, do **NOT** lower the header before tightening jam nuts (A) against the springs.

#### NOTE

*The float will be set during the Pre-Delivery Checks after all components are installed.*

## UNLOADING AND ASSEMBLY

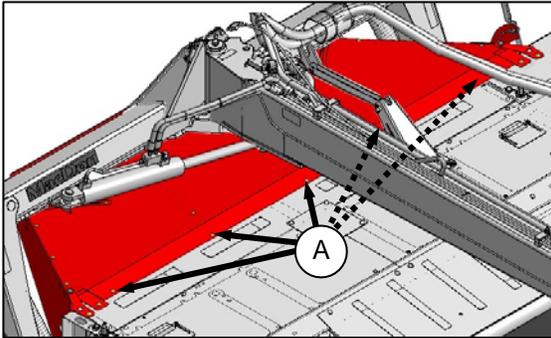
### STEP 21. INSTALL FORMING SHIELD

#### A. ATTACH FORMING SHIELD

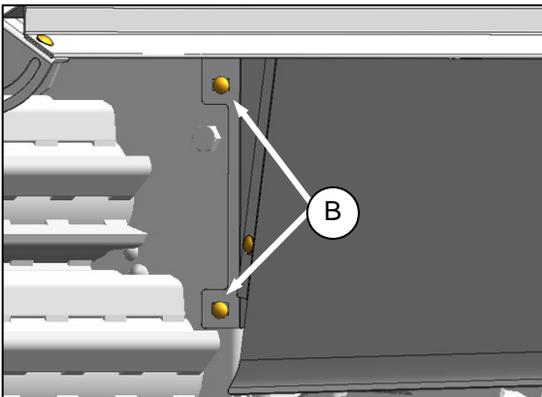
- a. Place forming shield on lift forks, and position forming shield up to header.



- b. Slide forming shield onto header.

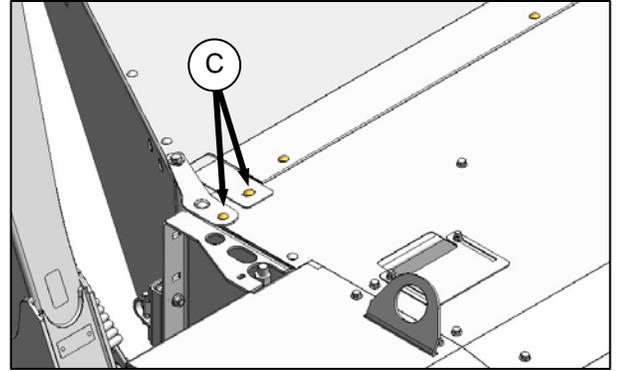


- c. Locate shield to align holes in forward row. Install five 3/8 in. x 0.75 long carriage bolts and nuts in forward row at locations (A) to hold shield. Nuts on inside. Do NOT tighten.
- d. Back forklift away from work area.



RIGHT SHOWN - LEFT OPPOSITE

- e. Install four 1/2 in. x 1.0 long carriage bolts and nuts (B) at sides of shield. Do NOT tighten.

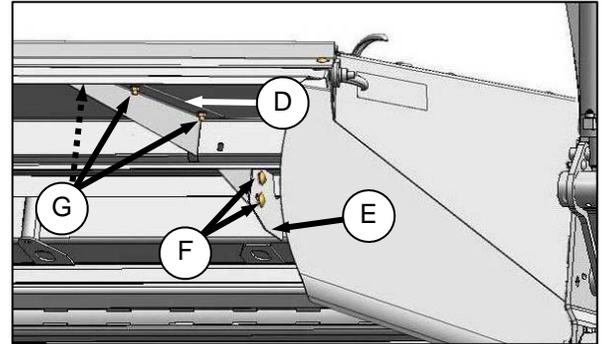


RIGHT SHOWN - LEFT OPPOSITE

- f. Install four 1/2 in. x 1.0 long carriage bolts (C) at forward corners. Do NOT tighten.

#### B. INSTALL SUPPORTS

- a. Retrieve supports and hardware bag that were removed from shipping locations in earlier steps.



RIGHT SIDE SHOWN - LEFT SIDE OPPOSITE.  
(CROP DEFLECTOR NOT SHOWN FOR CLARITY)

- b. Position support (D) through slot in frame, and on inboard (outboard optional) side of mounting plate (E).

#### NOTE

*If necessary, lower crop deflector to allow installation of supports.*

- c. Install two 1/2 in. x 1.0 long carriage bolts (F) and nuts through support and mounting plate (E). Do NOT fully tighten bolts.
- d. Attach support (D) to cover with three 3/8 in. x 0.75 long carriage bolts and nuts (G).
- e. Repeat for other support.

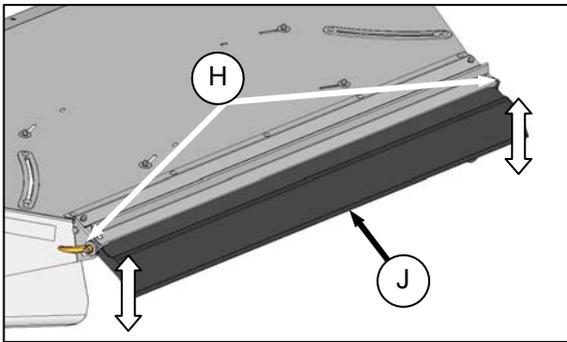
*(continued next page)*

## UNLOADING AND ASSEMBLY



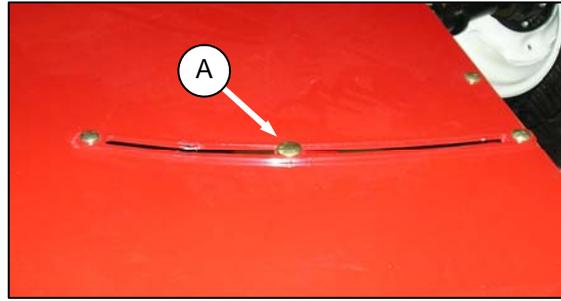
- f. Lift aft end of forming shield so that side deflectors clear float springs, and tighten all bolts.

### C. ADJUST REAR DEFLECTOR

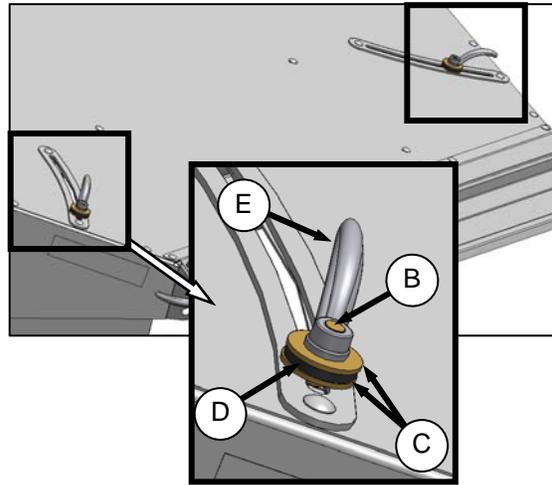


- a. Loosen handles (H) until rear deflector (J) can be moved up or down.  
b. Position deflector at mid-position, and tighten handles (H).

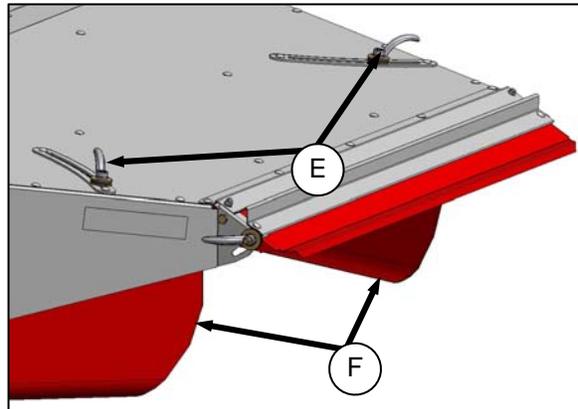
### D. ADJUST SIDE DEFLECTORS



- a. Remove bolt and nut (A), and discard. Repeat at opposite side of cover.



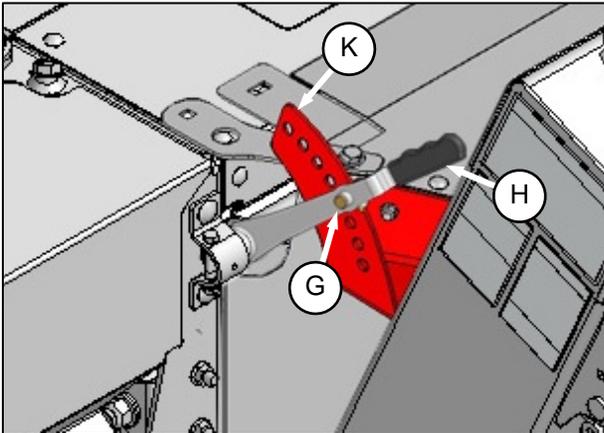
- b. Retrieve hardware as supplied, and install 1/2 in. x 1.75 long carriage bolt (B) from underneath, washers (C), rubber washer (D), and handle (E) as shown at two (2) places.



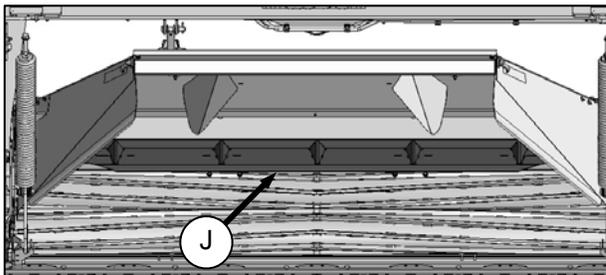
- c. Position side deflectors (F) at mid-point, and tighten handles (E).

## UNLOADING AND ASSEMBLY

### E. ADJUST SWATH BAFFLE



- a. Remove lynch pin from pin (G), and remove pin.



- b. Move lever (H) to mid-point on bracket (K) to position swath baffle (J) for normal operation.
- c. Re-install pin (G) through lever and bracket (K), and secure with lynch pin.

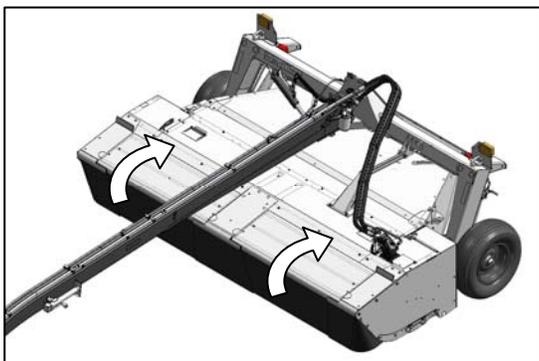
## UNLOADING AND ASSEMBLY

### STEP 22. INSTALL OPTIONS

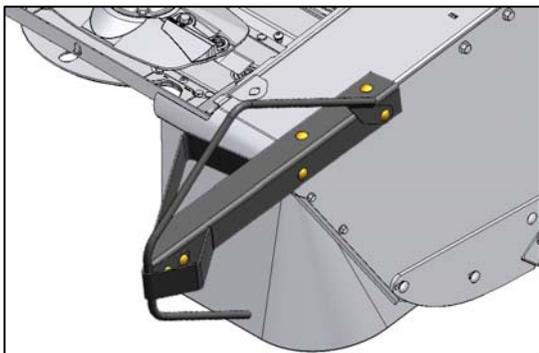
Install the following optional kits which may have been supplied with your header. Use the instructions supplied with the kit or as specified below:

#### A. TALL CROP DIVIDER KIT

- a. Lower header to the ground, shut off engine, and remove key from ignition.



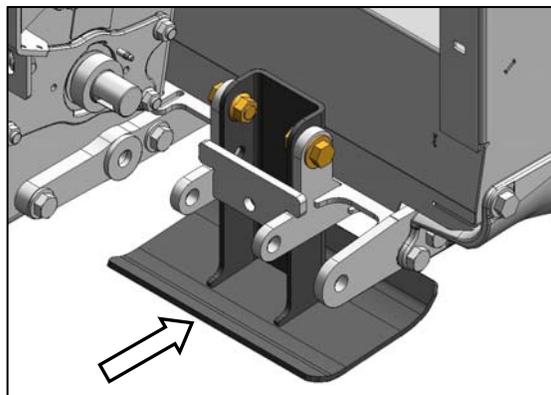
- b. Open cutterbar doors.



- c. Install tall crop dividers in accordance with instructions supplied with the kit.

#### B. SKID SHOES

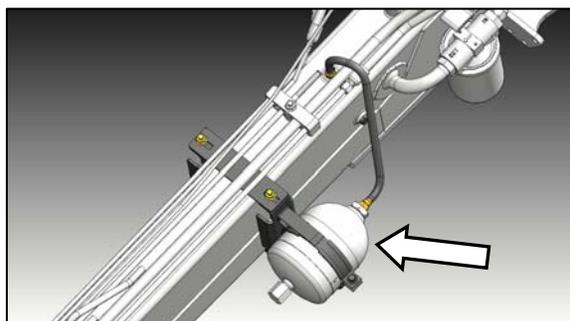
- a. Raise header fully, engage lift cylinder lock-out valves, and shut off engine. Remove key from ignition.



- b. Install skid shoes in accordance with instructions supplied with the kit.

#### C. HEADER DRIVE PERFORMANCE KIT

- a. Lower header to the ground, shut off engine, and remove key from ignition.

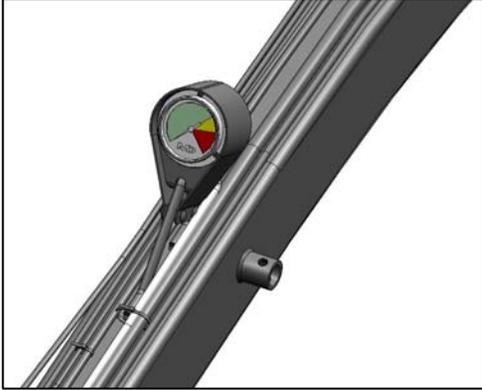


- b. Install performance kit in accordance with instructions supplied.

## UNLOADING AND ASSEMBLY

### *D. HYDRAULIC DRIVE PRESSURE GAUGE*

- a. Lower header to the ground, shut off engine, and remove key from ignition.



- b. Install pressure gauge in accordance with instructions supplied with the kit.

## UNLOADING AND ASSEMBLY

### STEP 23. LUBRICATE MOWER CONDITIONER



#### WARNING

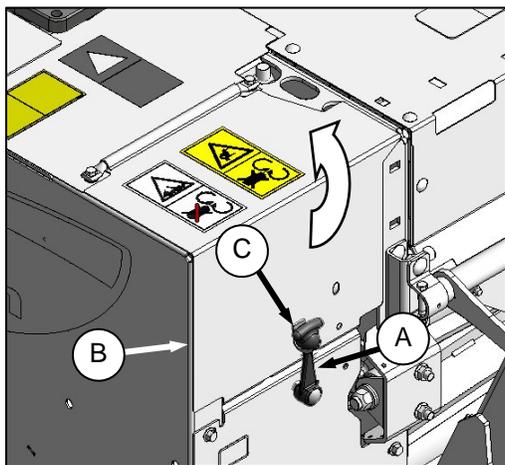
To avoid bodily injury or death from unexpected start-up or fall of raised machine, stop engine, remove key and engage lift cylinder stops before going under machine for any reason.

The mower conditioner has been lubricated at the factory. However, it is recommended to lubricate the mower conditioner prior to delivery to offset the effects of weather during outside storage and transport, and to familiarize the Dealer with the machine.

#### A. OPENING/CLOSING DRIVESHIELD

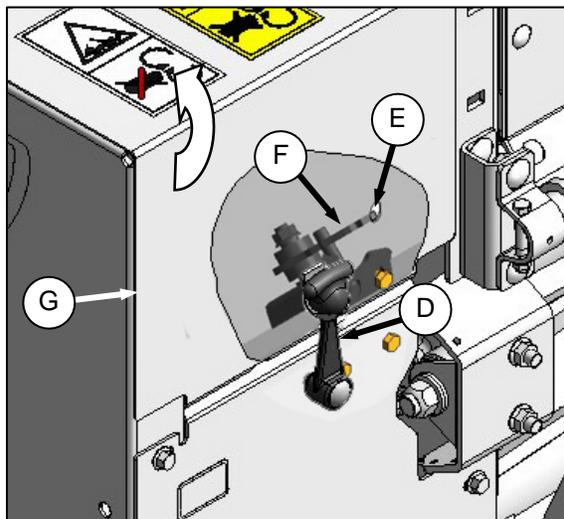
Access to the header drive systems requires opening the drive shield at the left end of the header as follows:

##### North America (N.A.) Headers



- To open drive shield, release rubber latch (A) from hook (C), and lift shield (B).
- To close drive shield, lower shield (B) so that pins at lower end of shield engage holes in lower panel.
- Engage rubber latch (A).

##### Export Headers



- To open drive shield:
  - Release rubber latch (D).
  - Insert a screwdriver (or equivalent) through hole (E) in shield into notch in latch (F), and disengage latch.
  - Open shield (G).
- To close drive shield:
  - Lower shield (G) so that pins at lower end of shield engage holes in lower panel, and latch (F) re-engages shield.
  - Engage rubber latch (D).

#### B. LUBRICATION PROCEDURE

Refer to the illustrations on the following pages for lubrication points.

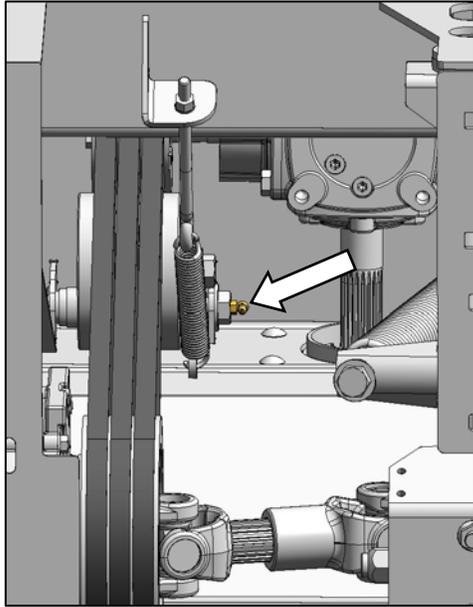
- Wipe grease fitting with a clean cloth before greasing, to avoid injecting dirt and grit.
- Inject grease through fitting with grease gun until grease overflows fitting, except where noted.
- Leave excess grease on fitting to keep out dirt.
- Replace any loose or broken fittings immediately.
- If fitting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

*(continued next page)*

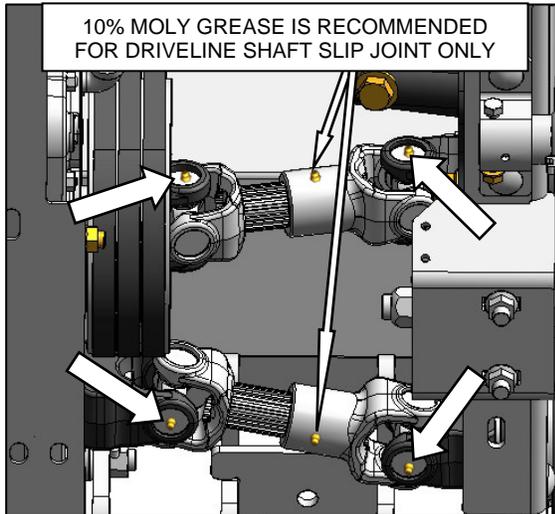
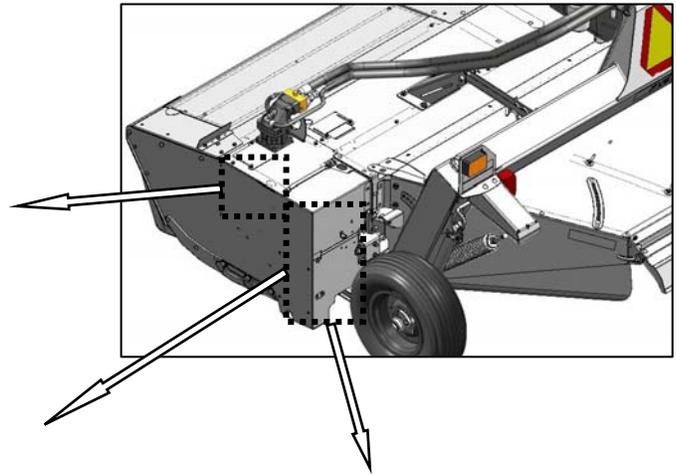
# UNLOADING AND ASSEMBLY

## Lubrication

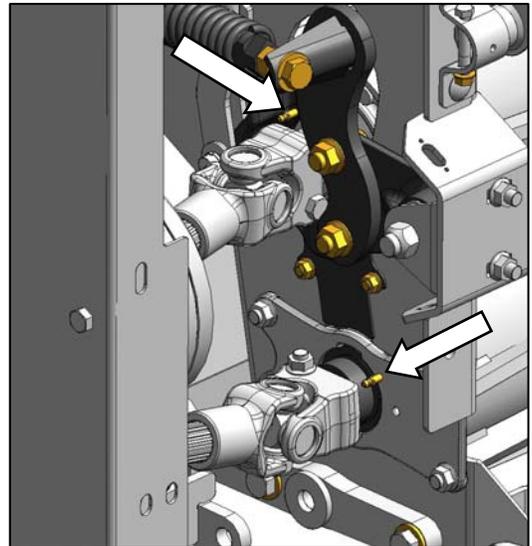
High Temperature Extreme Pressure (EP2) Performance With 1% Max Molybdenum Disulphide (NLGI Grade 2) Lithium Base



BELT TENSIONER PIVOT (1 PLC)



CONDITIONER DRIVELINE UNIVERSALS (4 PLCS)  
DRIVELINE SHAFT (2 PLCS)

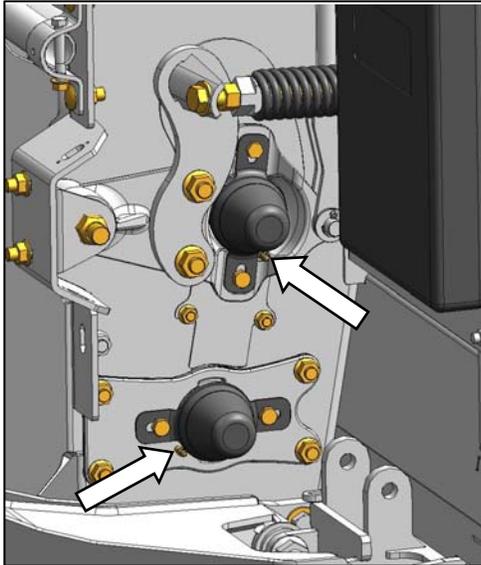


ROLL SHAFT BEARINGS (2 PLCS)

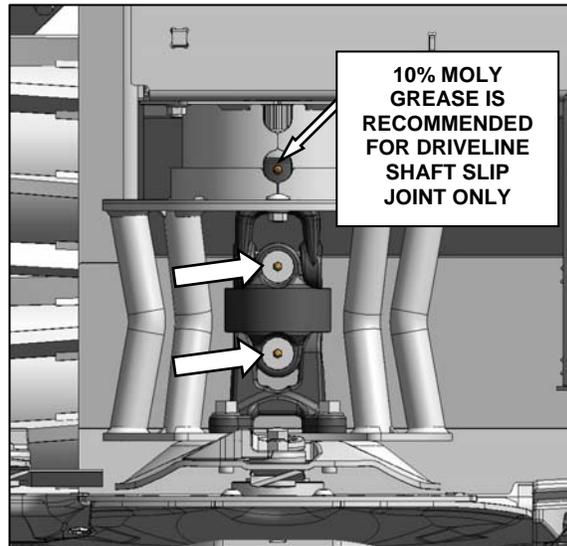
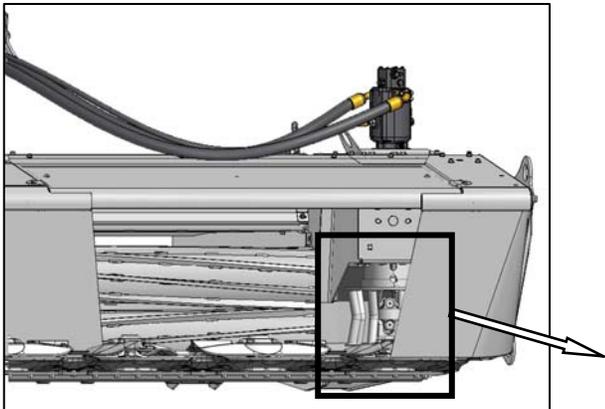
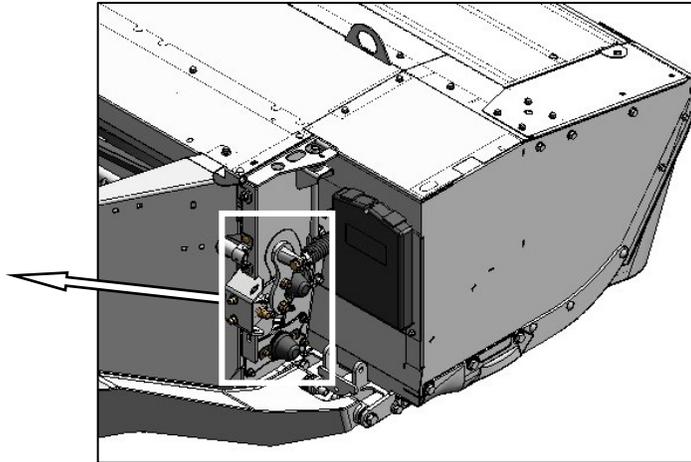
# UNLOADING AND ASSEMBLY

## Lubrication (cont'd)

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



ROLL SHAFT BEARINGS (2 PLCS)



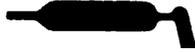
10% MOLY GREASE IS RECOMMENDED FOR DRIVELINE SHAFT SLIP JOINT ONLY

CUTTERBAR DRIVELINE UNIVERSALS (2 PLCS)  
DRIVELINE SHAFT (1 PLC)

## UNLOADING AND ASSEMBLY

### Lubrication - Carrier Frame

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



WHEEL BEARING (1 PLC) - BOTH SIDES



LEFT LIFT CYLINDER PIVOT (1 PLC)

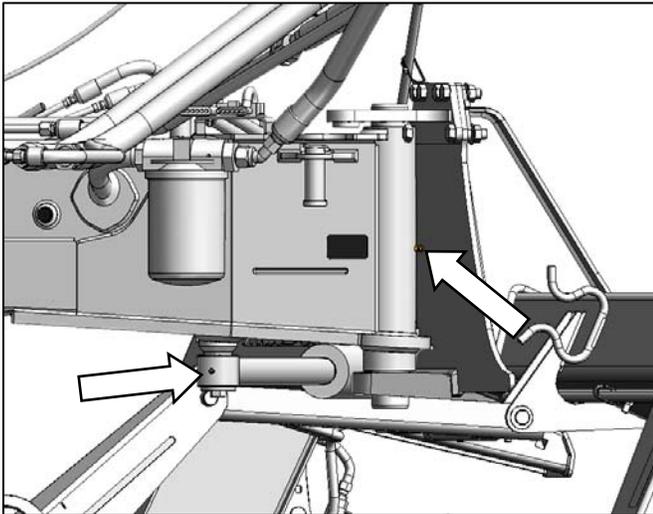


LIFT LINK (1 PLC) - BOTH SIDES

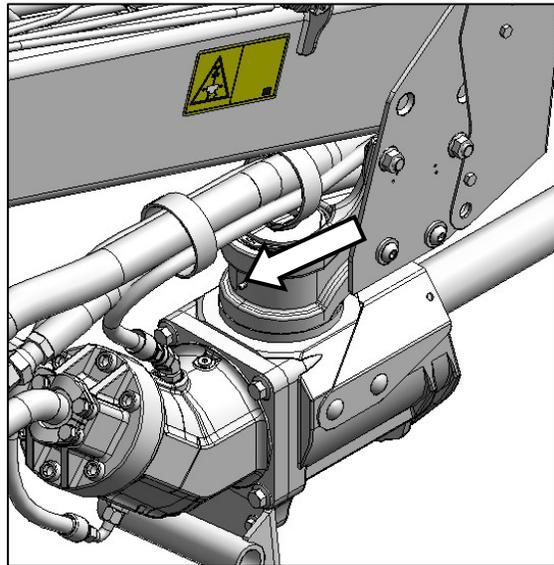
# UNLOADING AND ASSEMBLY

## Lubrication - APT Hitch

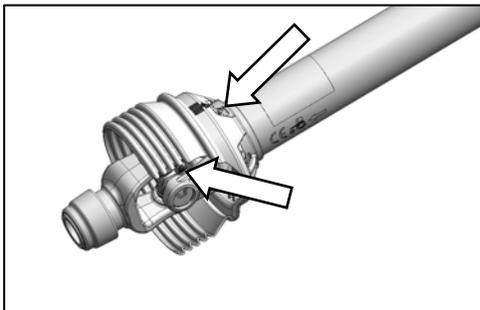
High Temperature Extreme Pressure  
(EP2) Performance With 1% Max  
Molybdenum Disulphide  
(NLGI Grade 2) Lithium Base



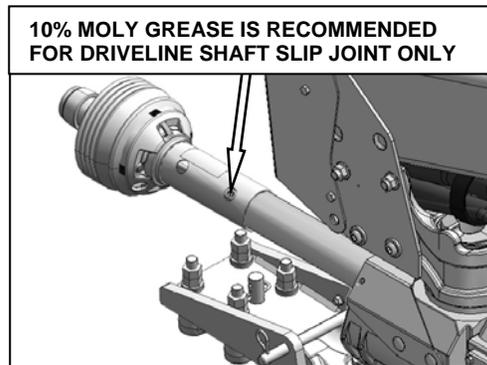
APT HITCH PIVOT AND STEERING CYLINDER  
(2 PLCS)



APT SWIVEL (1 PLC)



DRIVELINE - BOTH ENDS



DRIVELINE SHAFT

## PRE-DELIVERY CHECKS

### STEP 24. PERFORM PRE-DELIVERY CHECKS



#### WARNING

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

#### IMPORTANT

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

- Perform the final checks and adjustments as listed on the Pre-Delivery Checklist (yellow sheet attached to back of this instruction) to ensure the machine is field-ready. Refer to the pages for detailed instructions as indicated on the Checklist.
- The completed Checklist should be retained either by the Operator or the Dealer.

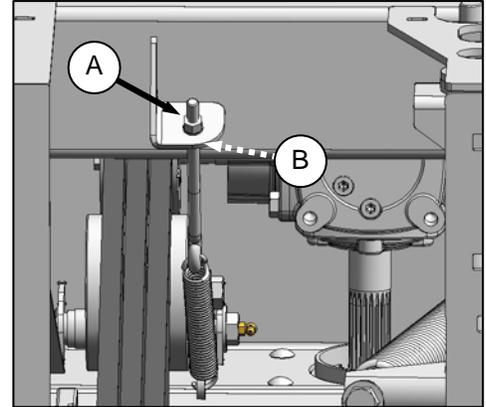
#### NOTE

The majority of checks and adjustments are performed during the set-up procedures. The following additional inspections should be performed after the set-up is complete.

#### A. DRIVE BELT

Drive belt tension has been properly set at the factory, and should not require any further adjustment. Check as follows:

- Open driveshield.

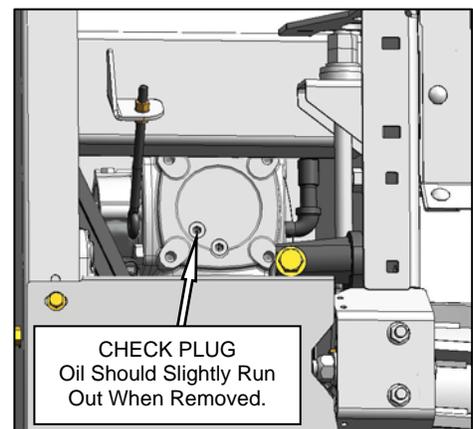


- Check that adjuster nuts (A) and (B) are tight.



- The tensioner spring should measure approximately 5-9/16 to 5-15/16 in. (141-151 mm) in length when properly tensioned.
- Close driveshield.

#### B. BEVEL GEARBOX OIL LEVEL



Check oil level with top of header horizontal.

## PRE-DELIVERY CHECKS

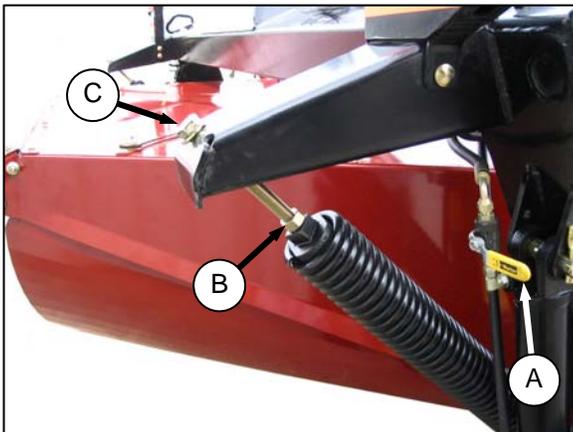
### C. HEADER FLOAT

- a. Check float by grasping the front corner of header and lifting. The force to lift should be 95–105 lbf (426–471 N), and should be approximately the same at both ends.
- b. Perform the following steps to adjust the float (if necessary):
  1. Center header directly behind the tractor.
  2. Raise header fully, shut off engine, and remove key.



### DANGER

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



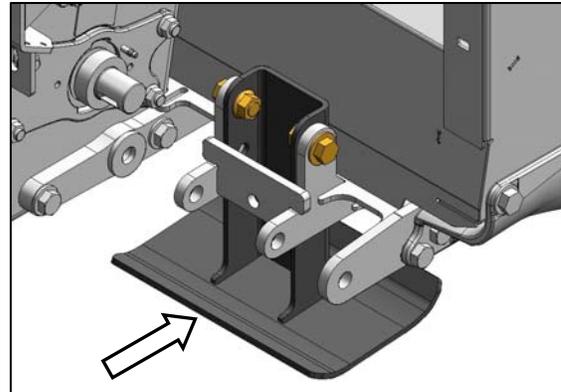
3. Engage lift cylinder lock-out valves (A).
4. Back jam nut (B) away from spring.
5. To INCREASE float, turn adjuster bolt (C) clockwise (further into spring).
6. To DECREASE float, turn adjuster bolt (C) counter clockwise (out of spring).
7. Tighten jam nut (B) against spring insert to secure the setting.
8. Open lock-out valve (A), lower header, and check header float at each end.

### D. SKID SHOES



### WARNING

To avoid bodily injury or death from unexpected start-up or fall of raised machine, stop engine, remove key and engage lift cylinder lock-out valves before going under machine to adjust skid shoes or for any reason.



Both skid shoes should be set at the same position.

## PRE-DELIVERY CHECKS

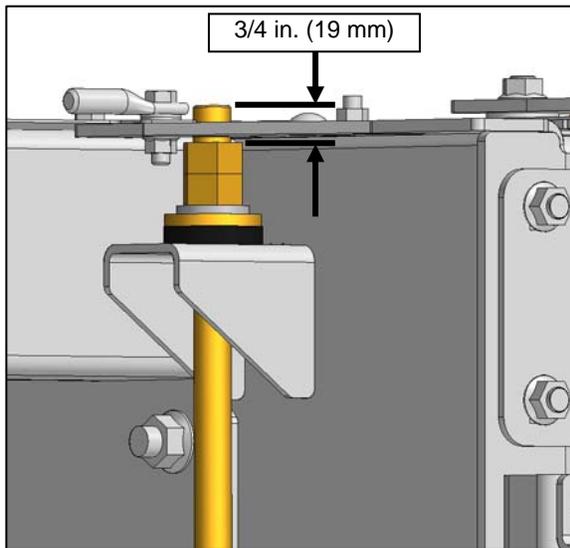
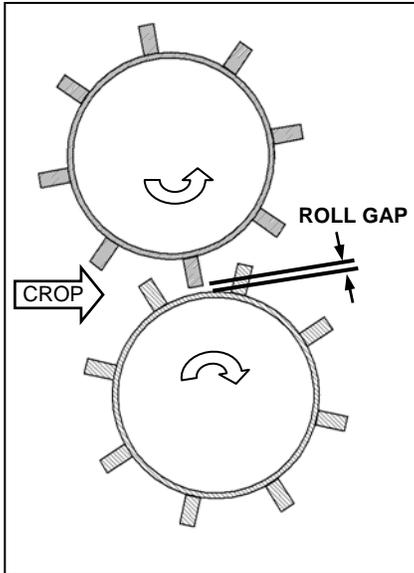
### E. CONDITIONER ROLLS

#### I. ROLL GAP



#### 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.



The amount of thread protruding through jam nut indicates roll gap. Factory setting is 3/4 in. (19 mm) which equates to 1/2 in. (13 mm) of roll gap.

## PRE-DELIVERY CHECKS

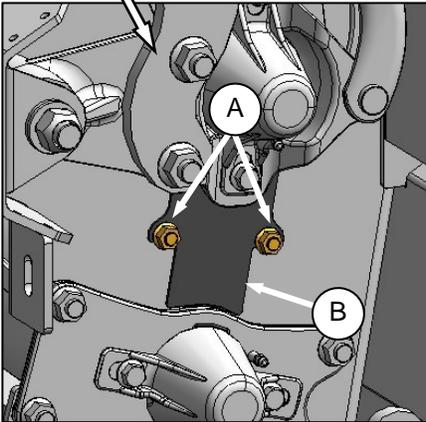
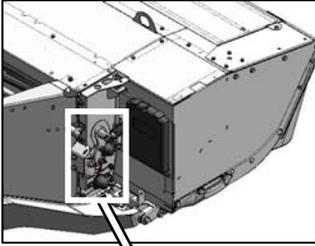
### II. ROLL TIMING



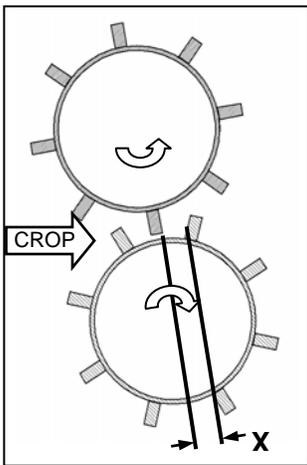
#### DANGER

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.

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

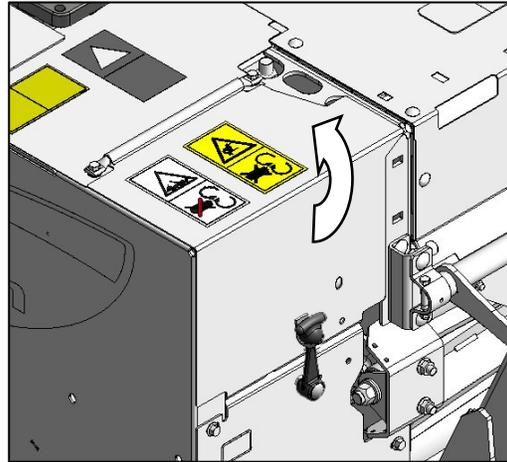


- b. At right end of conditioner, loosen nuts (A), and slide cover (B) upwards to expose observation hole.

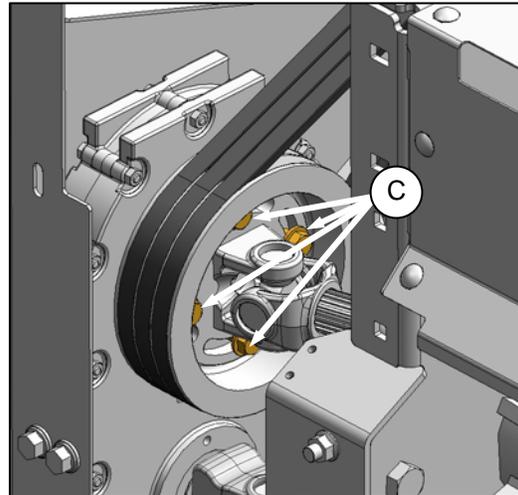


- c. Examine roll timing (distance 'X'). Each steel bar on one roll should be centered between two bars of the other roll so that distance 'X' is approximately equal on both sides of the bar.

- d. Replace cover (B), and tighten nuts (A).



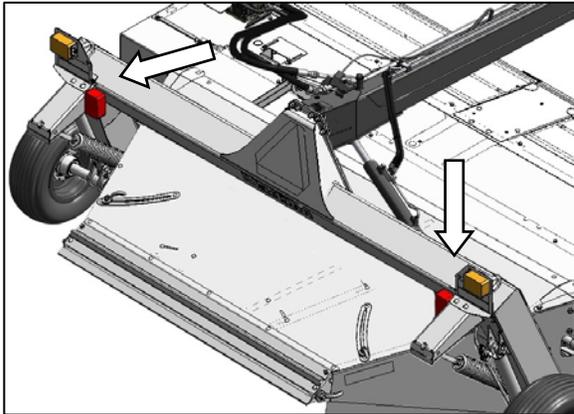
- e. Open driveshield.



- f. Check timing flange bolts (C) are tight.
- g. Close driveshield.

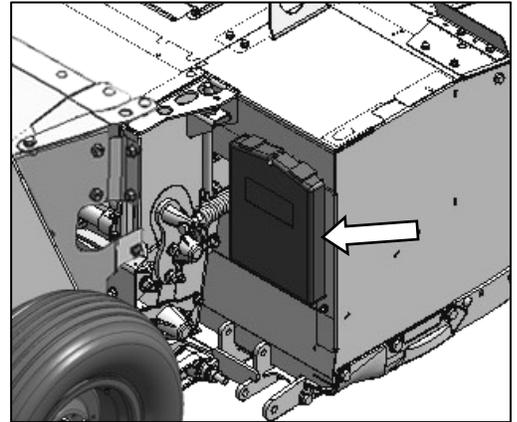
## PRE-DELIVERY CHECKS

### F. LIGHTS



- The amber hazard lights are mounted on the carrier frame, and are activated by switches in the tractor cab.
- The red running and brake lights are mounted on the carrier frame. They are activated by a switch in the tractor cab, and by applying the brakes on the tractor.
- Check light mountings for security. Check lights for damage and for proper operation during run-up.

### G. MANUALS



The following manuals should be stored in the manual storage case at the right end of the header:



- R85 Rotary Disc Header PARTS CATALOG - MD #169458.
- R85 13 Foot Rotary Disc Pull-Type Mower Conditioner OPERATOR'S MANUAL - MD #169454.

## PRE-DELIVERY CHECKS

### H. RUN-UP THE MOWER CONDITIONER



#### CAUTION

- Never start or move the machine until you are sure all bystanders have cleared the area.
- 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.
- Before investigating an unusual sound or attempting to correct a problem, shut off engine, engage parking brake and remove key.



#### DANGER

- Keep everyone several hundred feet away from your operation. Ensure bystanders are never in line with the front or rear of the machine. Stones or other foreign objects can be ejected from either end with force.



- Extreme care must be exercised to avoid injury from thrown objects. Do NOT, under any circumstances, operate the mower conditioner when other people are in the vicinity. Stones and other objects can be thrown great distances by the rotating cutting blades.
- The cutterbar curtains are very important to reduce the potential for thrown objects. Always keep these curtains down when operating the mower conditioner. Replace the curtains if they should become worn or damaged.

- a. Start tractor, and run the mower conditioner slowly for 5 minutes, watching and listening FROM THE TRACTOR for binding, interfering parts, or unusual noises.



#### CAUTION

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

- b. Run machine for 15 minutes at operating speed, and perform the run-up check as listed on the Pre-Delivery Checklist (yellow sheet attached to this instruction) to ensure the machine is field-ready.
- c. Retain the Checklist, and retain this instruction for future reference.

## PRE-DELIVERY CHECKS

### I. TRUCK TRANSPORT HITCH



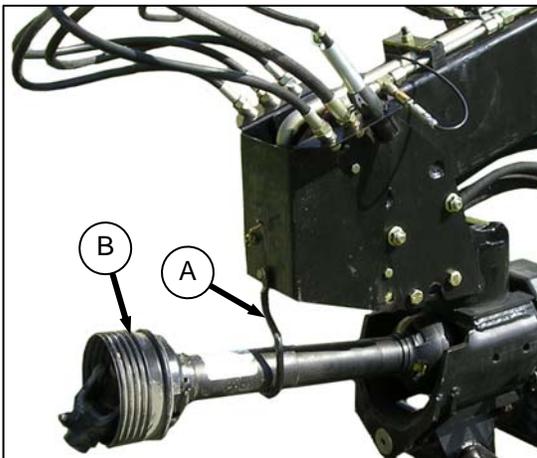
#### CAUTION

Do NOT tow with a vehicle weighing less than 7,500 lb. (3,400 kg). Ensure that the capacity of the towing vehicle is sufficient to maintain control. Refer to mower conditioner operator's manual before towing machine.

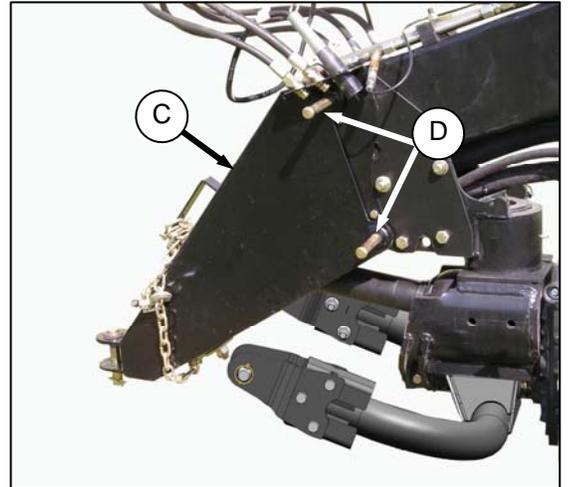
#### NOTE

*Only install this option if mower conditioner is to be transported with a truck.*

- a. Lower header to the ground, shut off engine, and remove key from ignition.
- b. Unhook mower conditioner from tractor.



- c. Store hydraulic hoses on the APT hitch as shown.
- d. Lower hook (A), and place driveline in hook.
- e. Remove the forward half (B) of driveline, and store in truck for transport.



- f. Position towing adapter (C) on APT hitch, and secure with pins (D).

## NOTES

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# R85 13 Foot Rotary Disc Pull-Type Mower Conditioner Pre-Delivery Checklist

Perform these checks and adjustments prior to delivery to your customer. See the Unloading and Assembly Instructions for details. The completed checklist should be retained either by the Operator or the Dealer.



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

**WARNING: Do not operate the machine with the drive shields open. High speed rotating components may throw debris and could result in death or serious injury.**

Header Serial Number: \_\_\_\_\_ APT Hitch Serial Number \_\_\_\_\_

✓	ITEM	PAGE
	Check for shipping damage or missing parts. Be sure all shipping dunnage is removed.	---
	Check for loose hardware. Tighten to required torque.	5
	Check main drive belt tension.	43
	Check bevel gearbox oil level.	43
	Check header angle to middle of adjustment range.	22
	Check header float. 95–105 lbf (426–471 N)	44
	Check tire pressure. 30 psi (207 kPa)	21
	Check wheel bolt torque. 120 ft·lbf (160 N·m)	21
	Check hydraulic oil level at sight glass on side of APT hitch.	18
	Check side deflectors evenly set to desired position. Ensure shields are at equal distance from center line of tongue pivot.	34
	Check rear deflector about half way down.	34
	Check swath baffle set about halfway.	35
	Grease all bearings and drivelines.	38 – 42
	Check conditioner roll gap and timing.	45 – 46
	Check roll intermesh hardware is securely tightened.	46
	Check cutterbar curtains are hanging properly and are latched.	14 -15
	Check hydraulic hose and wiring harness routing.	---
	Check cutterbar area carefully for loose parts and hardware on the cutterbar. <b>WARNING: These objects can be ejected with considerable force when the machine is started and may result in serious injury or machine damage.</b>	---
<b>RUN-UP PROCEDURE</b>		48
	Check hydraulic hose and wiring harness routing for clearance when raising or lowering header.	---
	Check tail lights and hazard lights are functional.	47
<b>POST RUN-UP CHECKS. STOP ENGINE.</b>		
	Check belt drive for idler alignment and heated bearings.	43
	Check for hydraulic leaks.	---
	Check header manuals in storage case.	47

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

Checked By: \_\_\_\_\_