

# **PULL TYPE WINDROWER**

## **UNLOADING & ASSEMBLY INSTRUCTIONS**

# INTRODUCTION

This booklet contains instructions for safely unloading, handling and assembling the windrower. A separate manual for the owner/ operator provides information on safely operating and servicing the machine.

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

When unloading and assembling the windrower, complete the instructions in the order they are given. Call your company service representative if you need assistance, information or additional copies of the instructions or manual.

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# SAFETY

## SAFETY ALERT SYMBOL



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

This symbol means:

ATTENTION!  
BECOME ALERT!  
YOUR SAFETY IS INVOLVED!

Carefully read and follow the safety message accompanying this symbol.

Why is SAFETY important to you?

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

## SIGNAL WORDS

Note the use of the signal words DANGER, WARNING, and CAUTION with safety messages. The appropriate signal word for each message has been selected using the following guidelines:



**DANGER** – Indicates an imminently hazardous situation that, if not avoided, will result in death or serious injury.



**WARNING** – Indicates a potentially hazardous situation that, if not avoided, could result in death or serious injury. It is also used to alert against unsafe practices.



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

# UNLOADING

## PREPARE TO UNLOAD



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

1. Move trailer into position on firm level ground and block trailer wheels.
2. Lower trailer storage stands.
3. Check that the load has not shifted or otherwise become unstable and check shipping stands for damage before removing hauler's tie-downs. If it appears load is unstable, take precautions to prevent machines falling when tie-downs are removed.



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## UNLOADING EQUIPMENT



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

**CHAIN REQUIREMENTS:** Use overhead lifting quality chain (1/2 inch) with minimum 5000 lb. (2270 kg) working load limit. Chain length must be sufficient to provide minimum 4 ft. (1.2 m) vertical chain height.

**LIFTING VEHICLE REQUIREMENTS:** Use a lifting vehicle with minimum 4600 lb. (2085 kg) lifting capacity and minimum 15 ft. (4.5 m) lifting height.

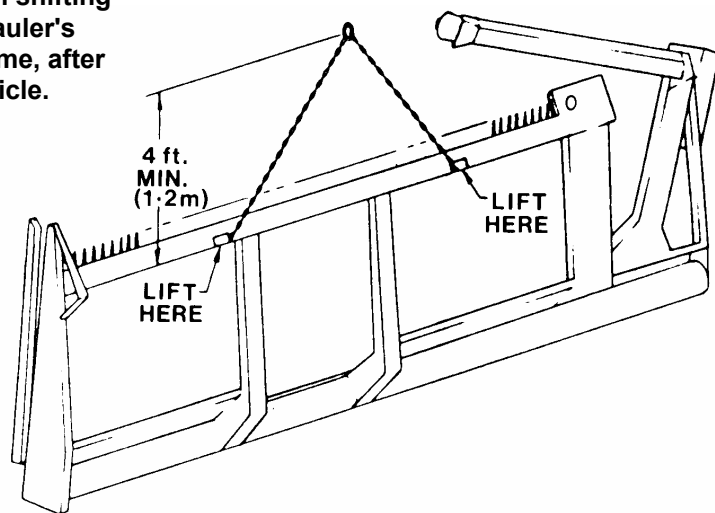
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## UNLOAD WINDROWER

1. Attach chain hooks at points marked "Lift Here".



**CAUTION:** To avoid injury from shifting or falling machines, remove hauler's tie-downs from one unit at a time, after it is secured to unloading vehicle.



# UNLOADING & ASSEMBLY

## UNLOAD WINDROWER (continued)

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



**CAUTION:** Be sure hooks are secure before moving away from load. Stand clear when lifting, machine may swing. Do not allow anyone to walk under or near the windrower as it is unloaded or moved.

3. Raise windrower 12 inches (300 mm), remove from trailer.
4. Take to storage or set-up area, and set machine down securely on level ground. Check for shipping stand damage and damaged or missing parts.
5. Remove chain hooks.



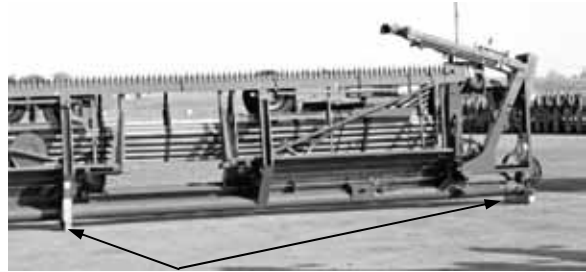
**WARNING:** Header shipping stands are designed for shipping economy. They do not provide a base broad enough for storage of units in an upright position. To avoid personal injury, death or machine damage from units falling or blowing over; if complete assembly cannot be done immediately, perform assembly steps 1-5 (install wheels, lower unit to ground) and store the machine in the lowered and blocked position. If it is necessary to store machines upright on shipping stands ensure that the ground is firm and level. Take factors such as exposure to wind, and the effects of snow melt and ground thaw into consideration. Tie units together and brace on both sides or place against a secure backstop and brace the unsupported side.

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## ASSEMBLY

**NOTE:** For assembly and parts description purposes, right (R/H) and left (L/H) are determined from the operator's position, facing forward.

1. ATTACH LOADER/FORKLIFT TO MAIN HITCH. With machine resting on shipping stands (see Figure 400), attach chain from loader/forklift to lug on main hitch, ensuring there is approximately 20 inches (500 mm) vertical distance as shown in Figure 401 to allow lowering unit.
2. DO NOT REMOVE WIRE AND STRAPPING SECURING REEL TO CUTTERBAR. Other wire-attached bundles, tires, etc. can be removed.



CHECK STANDS FOR DAMAGE 400



**CAUTION:** Wire and strapping are under pressure. Be careful when cutting. Remove wire and strapping from assembly area. Sort and lay out parts in groups.



401

## ASSEMBLY

### 3. INSTALL RIGHT CASTER, HYDRAULIC CYLINDER, WHEEL AND BRACKET:

- a) Remove collar from caster, insert caster in frame and re-install collar (A), securing with bolt and locknut. See Fig. 402.
- b) Install hydraulic cylinder (B) using clevis pins and cotter pins shipped with cylinder. See Fig.402.

**NOTE:** Do not remove washers from cylinder assembly. They are factory assembled for proper wheel alignment.

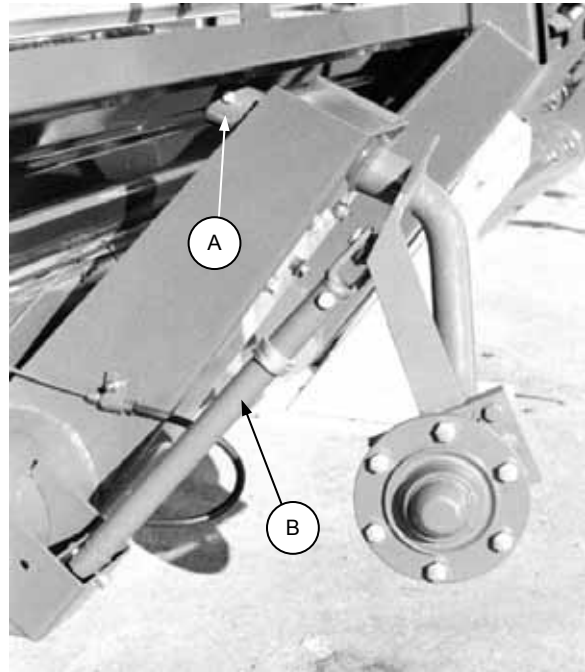
- c) Install wheel on hub with 1/2 NF x 3/4 wheel bolts. See Fig. 404.

**NOTE:** Valve stem points away from caster. Torque bolts to 80-90 ft.lbs. (110-120 N.m).



INSTALL R/H WHEEL 404

- d) Attach clevis bracket assembly to R/H leg using four 1/2 NC x 1.0 flange bolts. See Fig. 405.



402



ATTACH CLEVIS TO R/H WHEEL 405

## ASSEMBLY

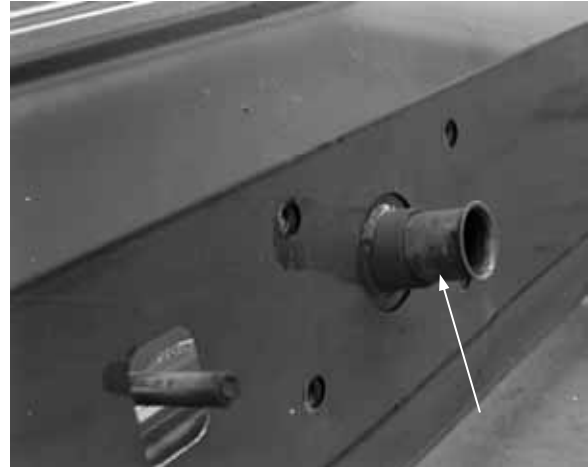
### 4. INSTALL LEFT WHEEL:

- a) Install bushing in top side of L/H caster socket. See Figure 406.
- b) Install L/H caster (A), secure with lock plate (B) and 3/4 x 3 1/8 (80 mm) long pin (C). Fig. 408.

**NOTE:** Ensure caster spindle and lock plate point in opposite directions as shown in Figure 409.

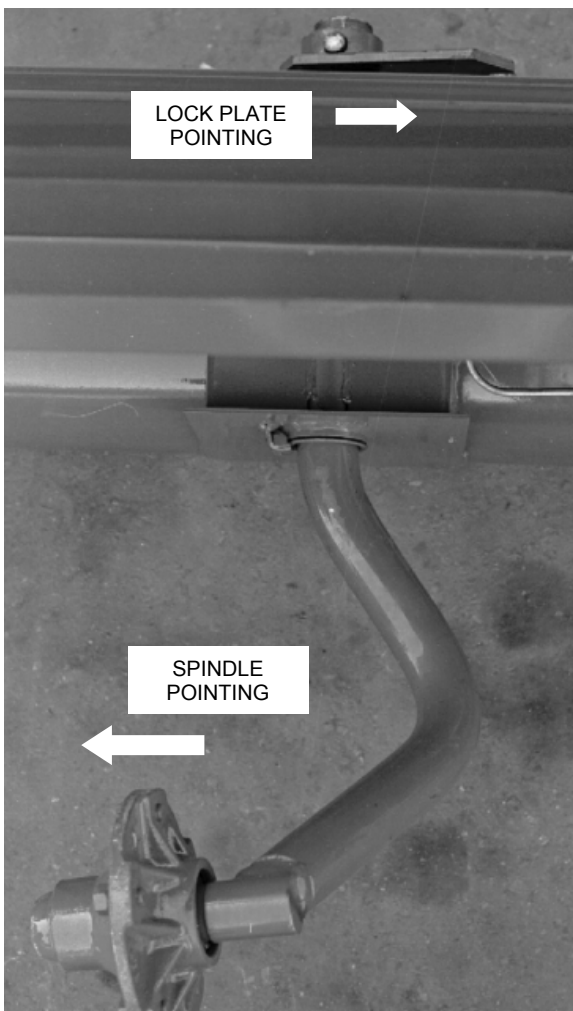


**CAUTION:** Pin is case hardened. Use a large ball-pean hammer and wear protective glasses to protect from steel chips.

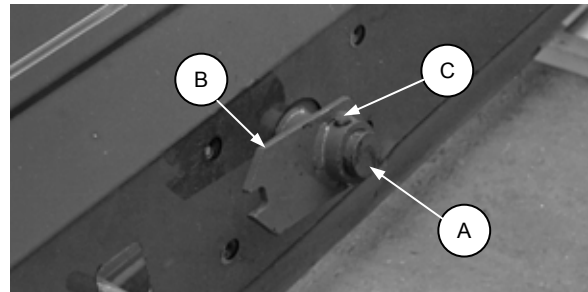


INSTALL BUSHING

406



409



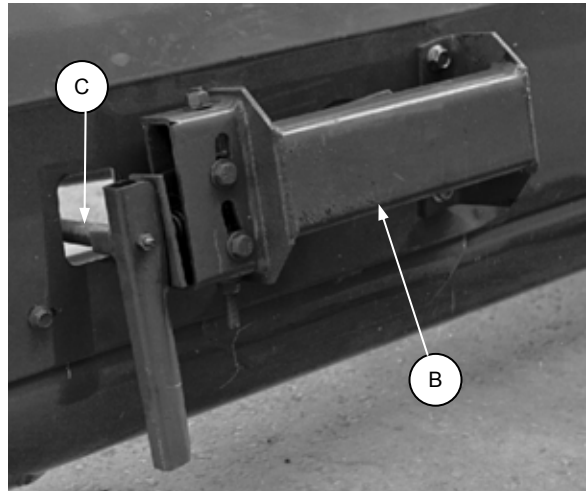
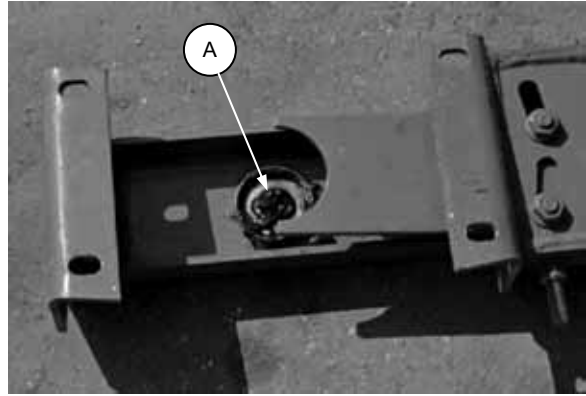
408

## ASSEMBLY

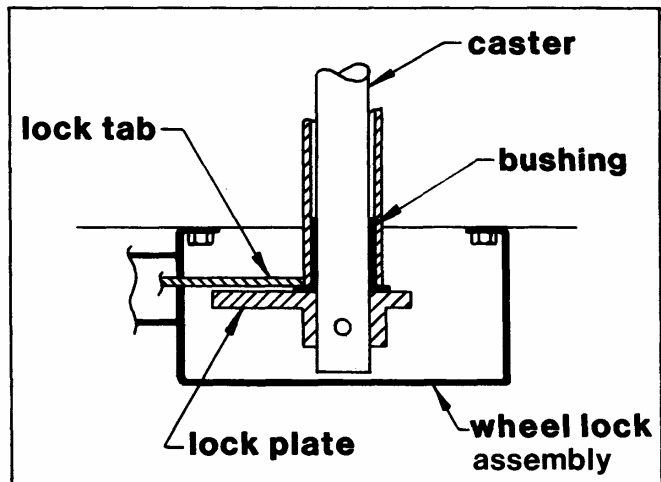
4.  
c) Apply grease to lock assembly thrust bearing (A). Bolt on lock housing (B) with four 1/2 NC x 1 flange bolts. See Figure 410.

**NOTE:** Ensure wheel lock assembly, especially lock tab, is properly positioned with respect to bushing and lock plate. See Figure 412.

- d) Insert one end of hose assembly (C), (9" hose with "D" shaped tube crimped on each end) onto the "D" shaped spool in the selector valve near L/H wheel. Insert the other end of hose assembly into the "D" shaped slot under L/H wheel lock handle. This hose operates the selector valve when the position of the handle is changed.



GREASE & INSTALL HOUSING 410  
AND ATTACH HOSE TO VALVE



412



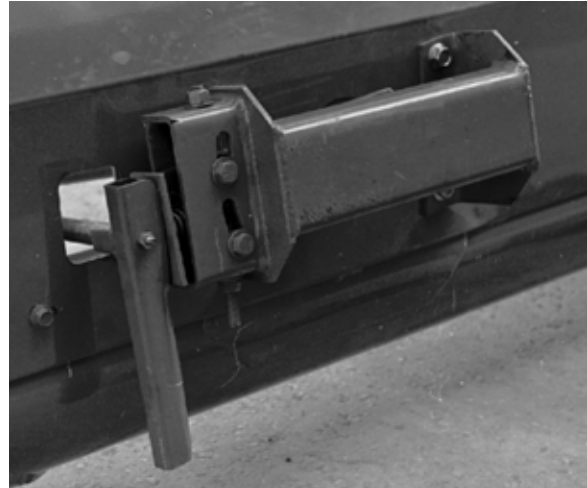
## ASSEMBLY

4.
  - e) Rotate caster one full turn to ensure it pivots freely, then position lock handle so caster is latched. See Figure 414.
  - f) Install wheel using 1/2 NF x 3/4 wheel bolts. Be sure valve stem points away from caster. Torque to 80-90 ft.lbs. (100-120 N.m).
5. CLEAR THE AREA AND LOWER MACHINE TO GROUND AS FOLLOWS:
  - a) Block wheels at (A) as shown in Figure 418.
  - b) With loader/forklift attached as described in Step 1 Figure 401, lift loader to take up slack in chain. Back up SLOWLY to lower machine. Place 14" (350 mm) blocks under cutterbar and lower onto blocks.

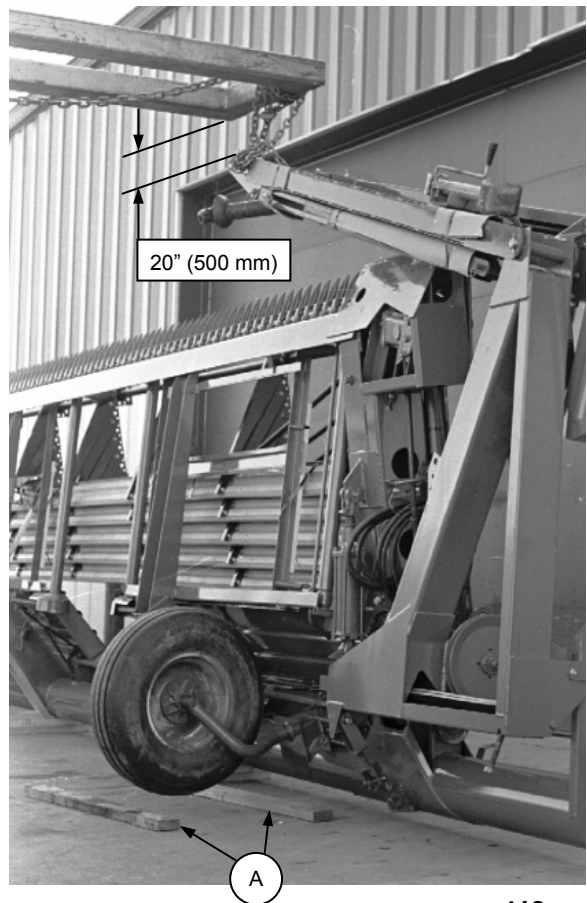


**CAUTION:** Stand clear when lowering, as machine may swing.

- c) Remove shipping stands.



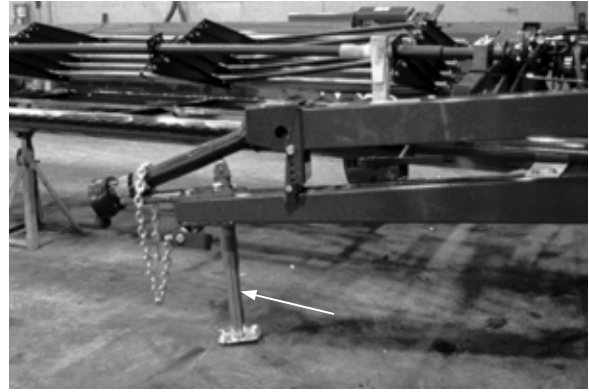
HANDLE IN WORKING POSITION (LOCKED) 414



418

## ASSEMBLY

6. INSTALL FRONT HITCH IN WORKING POSITION:
  - a) Cutter bar should be blocked 14 inches (350 mm) off ground at both ends.
  - b) Adjust height of jack to support weight of hitch. See Figure 420.
  - c) Remove shipping lug securing hitch to knife drive shoe. See Figure 422.

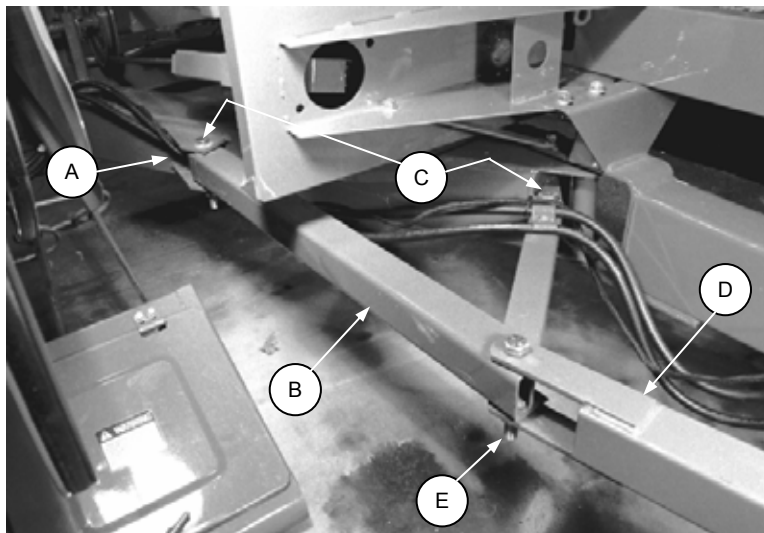


SUPPORT HITCH WITH JACK 420



REMOVE SHIPPING LUG 422

- d) Pivot front hitch to work position. Route hoses and electrical harness through at (A) as shown. Install rear hitch brace (B) with 3/4 capscrews at (C) front and rear (locknuts on bottom). Attach telescoping hitch member (D) to rear hitch brace with 3/4 capscrew at (E) (lock nut on bottom). See Figure 424.



ATTACH HITCH BRACE & TELESCOPING MEMBER 424

## ASSEMBLY

### 7. SET UP REEL ARMS AND CYLINDERS:

- a) Cut strapping and wire securing the reel arms to the cutter bar.



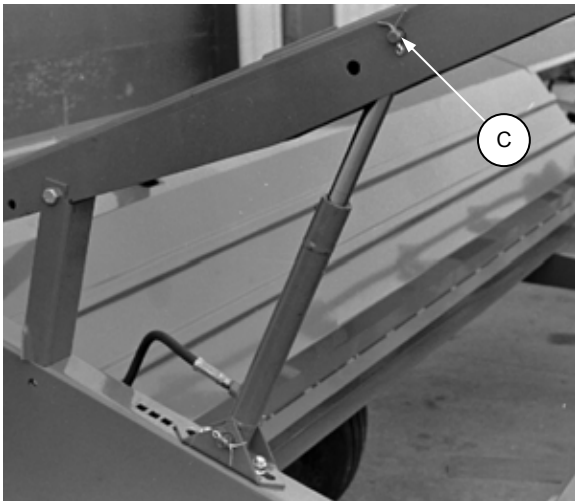
**CAUTION: Wire and strapping are under pressure. Be careful when cutting. Remove wire and strapping from assembly area.**

- b) Lift L/H and R/H reel arms and position props to support each arm as shown in Figure 426.

For 36 ft. units only:

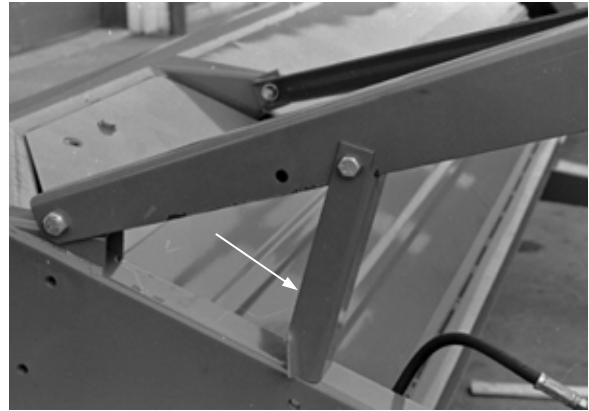
Also lift center reel support arm and engage lock pin (A). Attach bottom of center reel lift cylinder to frame with 3/4 pin and cotter pins at (B). See Figure 427.

- c) Attach R/H reel lift cylinder to reel support arm with 5/8 pin, **two spacers** (one each side of cylinder rod) and cotter pins at (C). Attach to R/H frame with carriage bolts and flange nuts. See Figure 428.

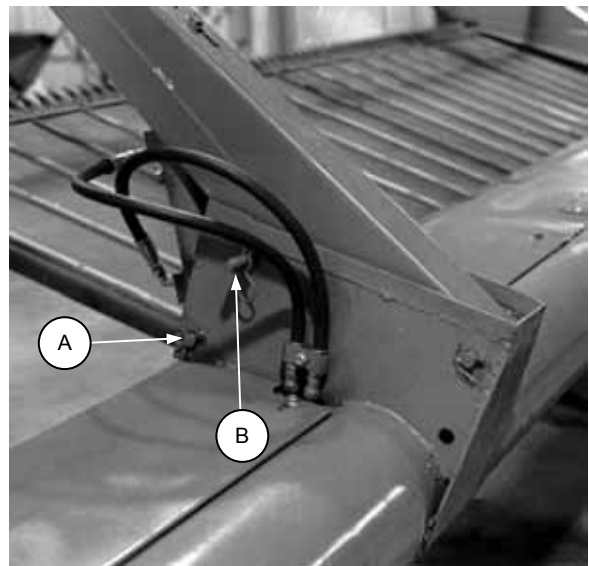


ATTACH R/H CYLINDER 428

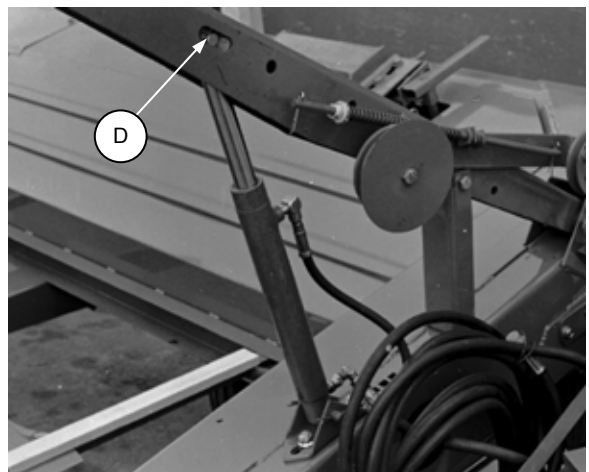
- d) Attach L/H reel lift cylinder to reel support arm with 5/8 clevis pin (D) and cotter pin. Attach to L/H frame with carriage bolts and flange nuts. See Figure 430.



ENGAGE REEL PROPS 426



36' – ENGAGE LOCK PIN & ATTACH CENTER CYLINDER 427



ATTACH L/H CYLINDER 430

## ASSEMBLY

### 8. ASSEMBLE BAT REEL

- a) Remove all reel strapping and shipping wire and discard away from assembly area.
- b) Loosen positioning screw under reel mounting channels (E) and (F). Move channels to desired position. See "Reel Position - Fore & Aft" in Operator's Manual. Be sure positioning screw is in the same hole at each reel arm.
- c) Attach main reel tube to reel mounting channels.

**NOTE:** For 36', clevis pin next to center mounting channels should be installed to join the L/H and R/H reels so that lugs on both reel tubes are aligned. This will ensure that reel bats are aligned, not staggered between left and right reels.

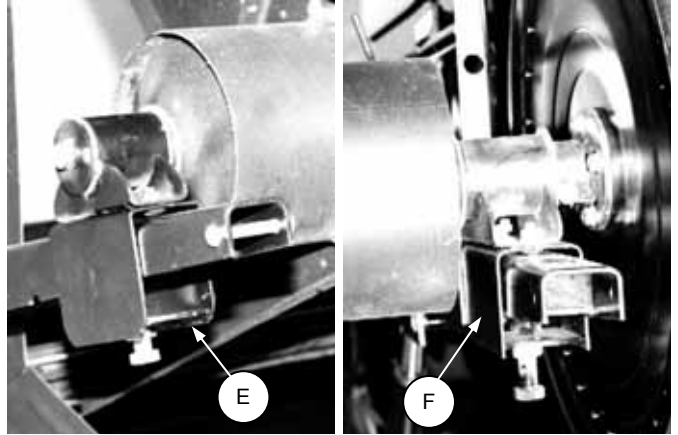
**NOTE:** Install hardware securing arms to tube only finger tight to allow straightening after assembly.

- d) Fasten reel arms to main reel tube using round (carriage) head bolts and flange nuts.
- e) Attach bats to reel arms using flange head bolts and flange nuts.

**IMPORTANT:** The end of the bat where the distance from the holes for the reel end shields to the next set of holes is 4 inches (100 mm) must be positioned as follows:

21', 25', & 30': At the reel drive end (left end).

36': Outboard end of left hand reel.  
Inboard end of right hand reel (at center support arm).



POSITION REEL MOUNTING CHANNELS AND ATTACH MAIN REEL TUBE



FASTEN REEL ARMS TO MAIN TUBE



ATTACH BATS TO REEL ARMS

## ASSEMBLY

8. f) Fasten the reel ends to the bats using flange head bolts and flange nuts (finger tight only) as shown at right.

g) Straighten the bats by sighting down the length of one bat, making adjustments to the reel arms until that bat is acceptably straight, then tightening the appropriate bolts at the reel tube to secure the position. Working clockwise (from the left end of the header) repeat the procedure at the next bat.

**NOTE:** In order to straighten the last bat, it may be necessary to loosen the bolts at the tube which are common to the first and last bat.

If, after this procedure, bats do not appear straight, loosen hardware as required to adjust.

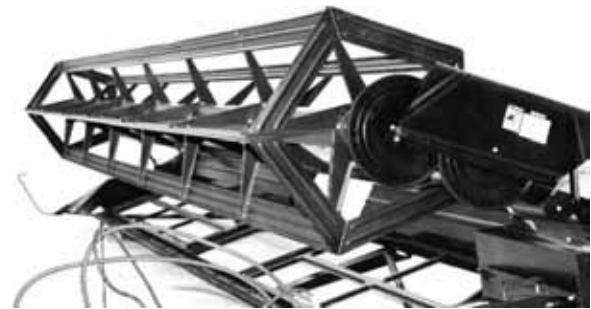
h) Tighten the hardware securing the reel ends to the bats.

i) Adjust reel clearance from cutterbar. See Operator's Manual.

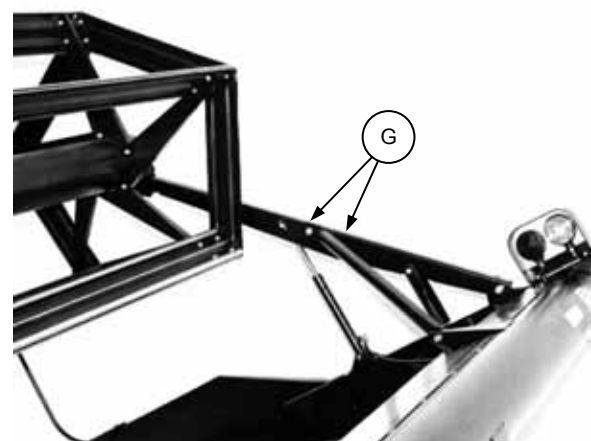
j) Loosen two nuts (G) and adjust reel brace position to center the reel between the left and right end sheets. Tighten nuts.



ATTACH REEL ENDS TO BATS



COMPLETED BAT REEL

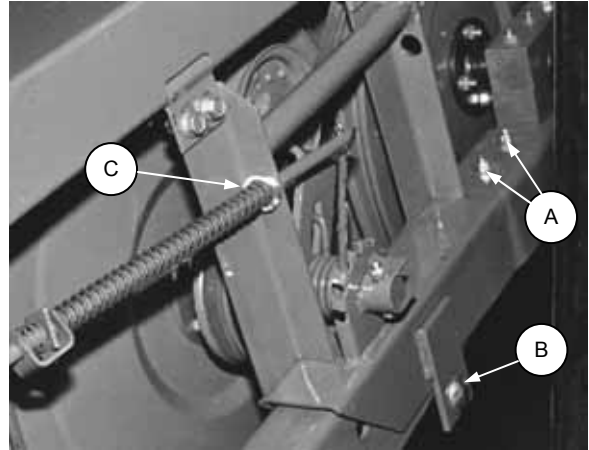


CENTER REEL WITH BRACE

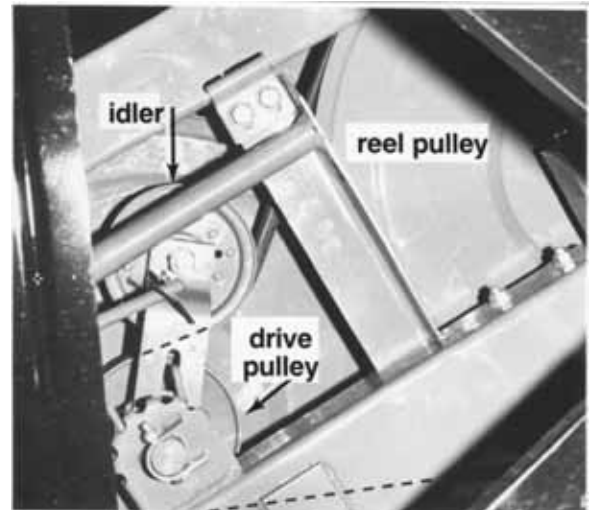
## ASSEMBLY

### 9. INSTALL REEL DRIVE

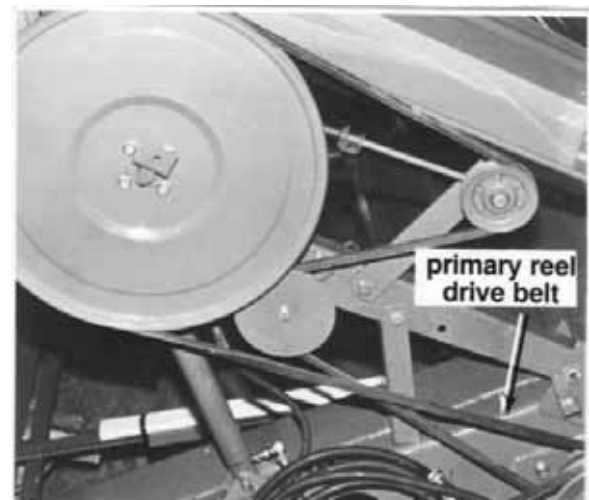
- a) Remove two 3/8 nuts (A) from L/H reel bearing mount.
- b) Install reel drive assembly on L/H reel arm and secure with the nuts (A) removed above as shown in Figure 464.
- c) Install 5/8 x 4 bolt (B) and locknut to compress channel sides, securing the assembly on the arm. See Figure 464.
- d) Remove cotter pin from forward end of adjusting rod, insert rod in reel drive assembly, with bushing (C) positioned as shown in Figure 464 and re-install cotter pin.
- e) Install 20 inch diameter pulley on reel shaft, using four 3/8 x 1 flange bolts and nuts.
- f) Install final reel drive belt as shown in Figure 468. (Release tension on idler pulley to ease installation).
- g) Install primary reel drive belt as shown in Figure 470. (Release tension on idler pulley to ease installation).
- h) Adjust primary and final reel drive belt tension as described in Operator's Manual. **NOTE:** Be sure primary reel drive belt is clear of hose going to reel lift cylinder.



464



468



470

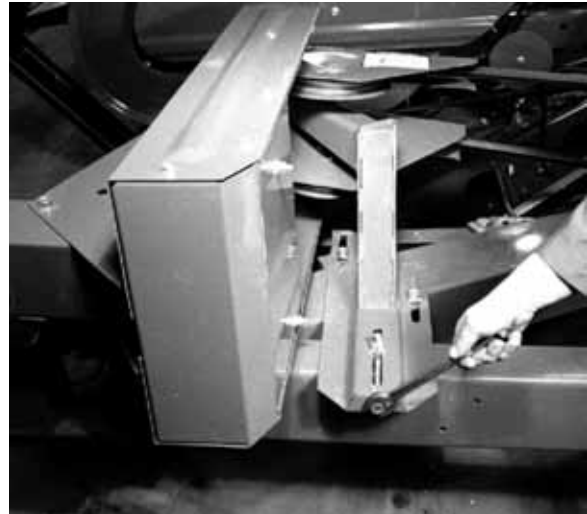
## ASSEMBLY

### 10. INSTALL MAIN DRIVE BELT AND IDLERS ASSEMBLY:

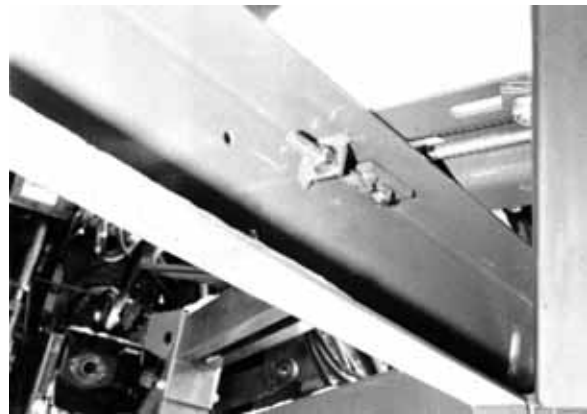
**NOTE:** The windrower can be operated with 540 or 1000 RPM PTO. IF THIS UNIT IS NOT EQUIPPED TO MATCH THE TRACTOR TO BE USED, IT WILL BE NECESSARY TO ORDER AN ADAPTER KIT.

Installation instructions will be supplied with this kit.

- a) Bolt idler mount assembly to hitch as shown in Figure 472. Leave bolts finger tight until alignment adjustment is made.
- b) Assemble eyebolt inside hitch section as shown in Figure 474. Leave bolts finger tight until alignment adjustment is made.



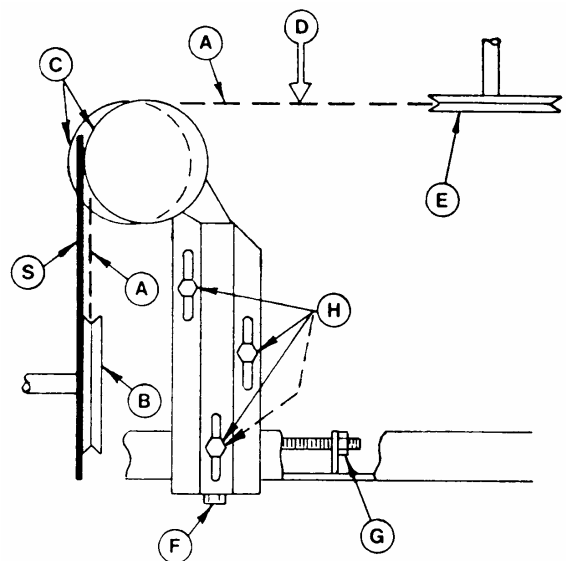
IDLER MOUNT ASSEMBLY 472



EYEBOLT ASSEMBLY 474

**IMPORTANT:** Proper alignment of main drive belt is critical to prevent belt failure. Follow these instructions carefully and completely:

- c) Install drive belt (A) onto drive pulley (B), idlers (C) and driven pulley (E).
- d) Adjust bolt (F) to take up slack in belt. Do not adjust to operating tension at this time.
- e) Adjust eyebolt (G) to line up outer edge of top idler (C) with drive pulley (B). Use a straight edge (S) as shown to aid alignment.
- f) Adjust belt tension with bolt (F) so that 20 lbs. (90 N) force at mid-span (D) produces 1 inch (25 mm) deflection.
- g) Tighten idler mount hardware (H) to secure mount to hitch.



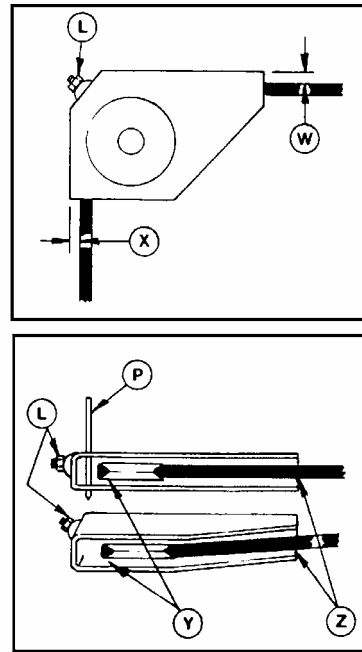
## ASSEMBLY

10.

- h) Before tightening locknuts (L), position idler pulley brackets so belt clearances are equal at (W) and (X). Also ensure belt strands are centered between the top and bottom of the shield at points (Y) and (Z).

When correctly positioned, tighten locknuts (L) to 80-90 ft.lbs. (110-120 N.m)

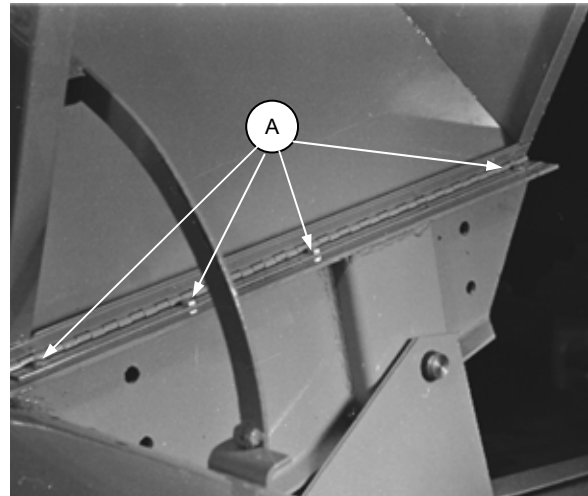
**NOTE:** Insert punch (P) when tightening locknuts to maintain alignment.



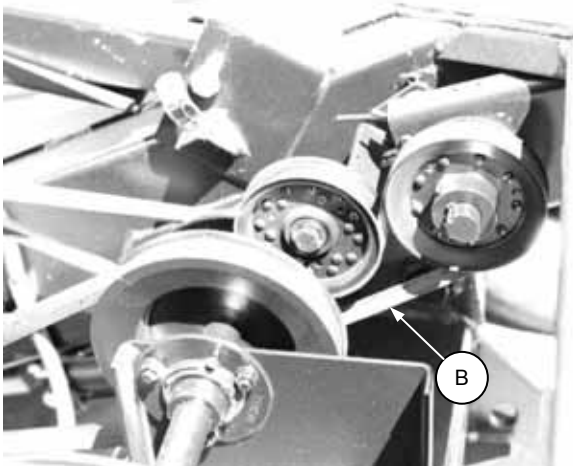
11. INSTALL MAIN DRIVE SHIELD TO L/H frame member using four 1/4 x 1/2 capscrews (A) and flange nuts, as shown in Figure 480. Adjust in slots to ensure proper operation of keeper.

12. INSTALL DRAPER COUNTERSHAFT DRIVE BELT (B) onto pulley as shown in Figure 481.

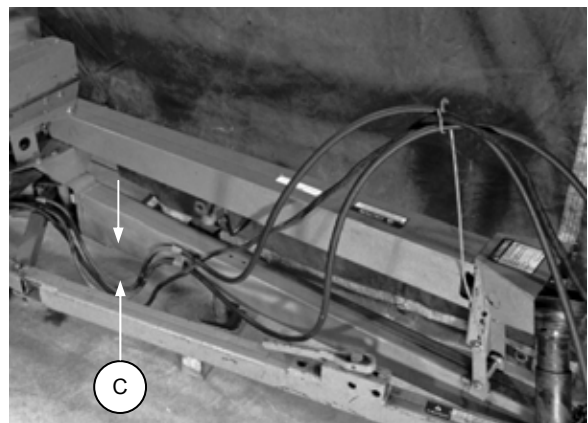
13. ROUTE HOSES AND WIRING HARNESS to tractor and clamp as shown in Figure 482. Leave a minimum 5" (125 mm) slack at (C) as shown.



INSTALL MAIN DRIVE SHIELD 480



INSTALL COUNTERSHAFT BELT 481



ROUTE HOSES & HARNESS 482



# ASSEMBLY

## 14. INSTALL SHOES AND DIVIDERS:

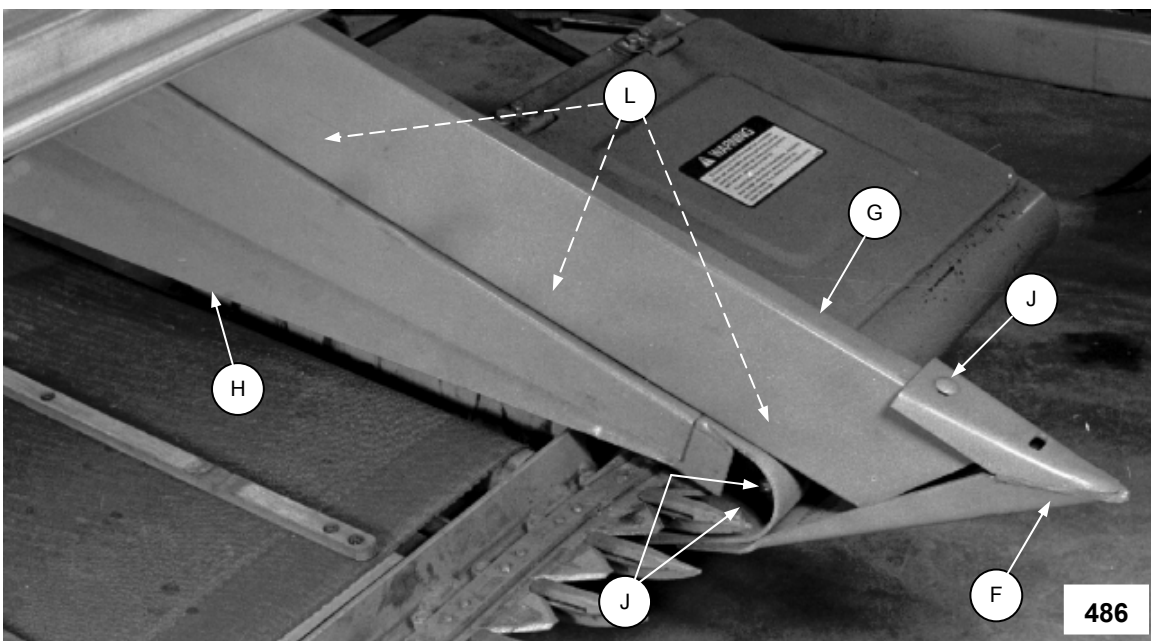
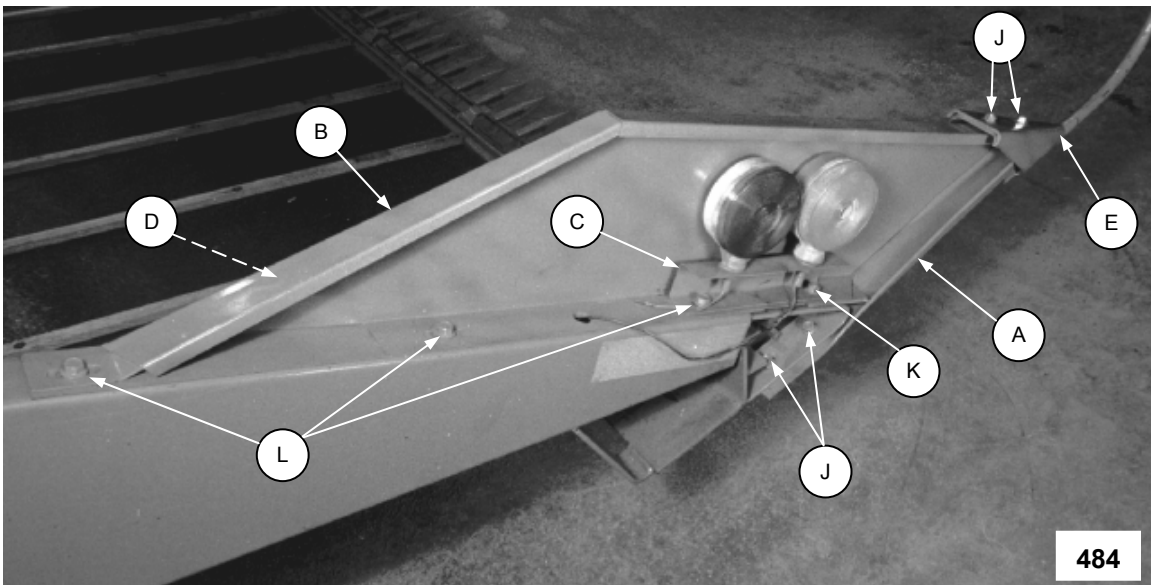
- a) Attach R/H shoe (A) to bottom of R/H end sheet support plate as shown in Figure 484.
- b) Assemble R/H divider (B), light channel (C) and R/H deflector (D – not shown) to R/H end sheet and R/H shoe (A) as shown in Figure 484. Connect lights to wiring harness.
- c) Attach divider rod (E) to R/H shoe and R/H divider as shown in Figure 484.
- d) Attach L/H shoe (F) to L/H end frame as shown in Figure 486.
- e) Assemble L/H divider (G) and L/H deflector (H) to L/H end frame and L/H shoe (F) as shown in Figure 486.

- c) Attach divider rod (E) to R/H shoe and R/H divider as shown in Figure 484.

**NOTE:** In some crops and conditions it may be necessary to install a divider rod on the L/H shoe as well.

### HARDWARE:

- (J) – 3/8 x 3/4 carriage bolt & flange nut
- (K) – 3/8 x 1 carriage bolt & flange nut
- (L) – 3/8 x 3/4 flange bolt



# ASSEMBLY

## 15. INSTALL DRAPERS:

**NOTE:** The machine has been factory assembled to provide a mid-range delivery opening. The opening can be made wider (or narrower with optional package) to suit crop conditions. See "Delivery Opening" in Operator's Manual.

**NOTE:** Right and left drapers are different lengths (except for 36 ft. unit). Be sure you have them properly positioned before cutting a draper you think is too long.

a) Drapers are marked with an identification number. Install as follows:

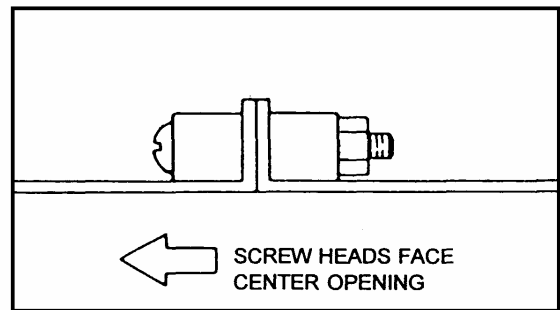
21': Right Side 32919  
Left Side 32922

25': Right Side 32919  
Left Side 32923

30': Right Side 32920  
Left Side 32919

36': Right Side 32921  
Left Side 32921

b) Install drapers with screw heads facing center opening. See Figure 488.



488

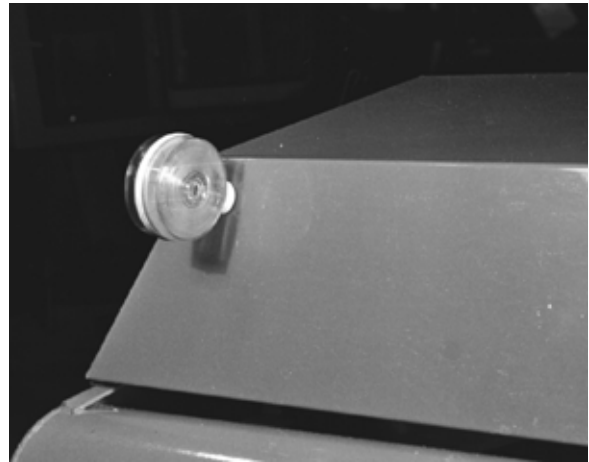
## ASSEMBLY

### 16. INSTALL LIGHTS:

Assemble lights to main frame as shown in Figures 492, 493, and 494. Connect lights to wiring harness.

### 17. SECURE ELECTRICAL WIRING:

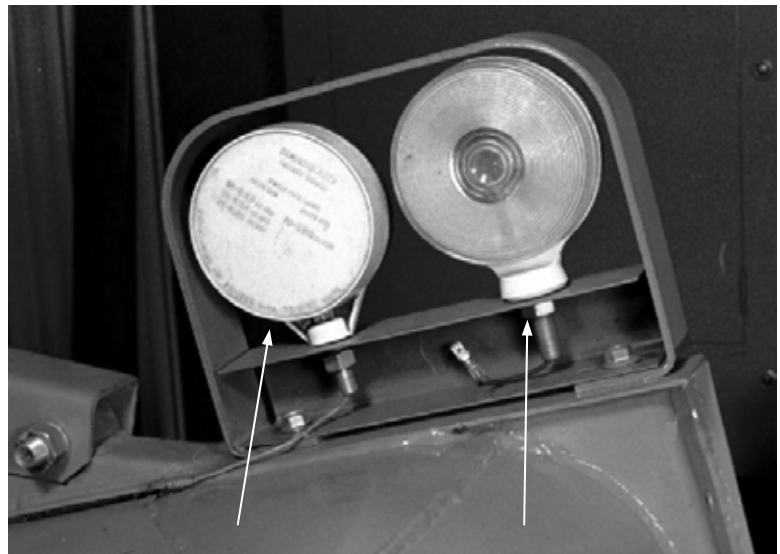
- a) Wrap all connections with electrical tape to prevent short circuits.
- b) Install wire clips to secure wire in protected locations and to prevent wire from rubbing on edges that could wear through insulation. Specifically:
  - Install one clip on each light bracket at R/H end.
  - Install one clip at R/H end to hold wire away from draper.
  - Install one clip at L/H wheel to hold work light wire.
  - Install two clips on wires to L/H amber light (one on rear channel of main hitch and one on main shield prop).
- c) Install nylon ties as required to hold wires away from draper drive shaft under backsheet.
- d) Use nylon ties to secure wiring harness to hydraulic hoses to tractor.



L/H AMBER – DRIVES COVER 492



WORK LIGHT – L/H WHEEL LOCK 493

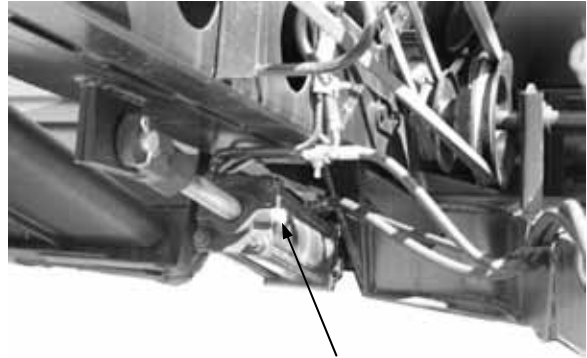


RED LIGHT                      AMBER LIGHT      494  
R/H END FRAME

## ASSEMBLY

### 18. INSTALL BREATHER IN HEADER LIFT CYLINDER.

Breather is shipped in jute sack. Remove shipping plug in cylinder and install breather.



INSTALL BREATHER

### 19. CHECKS AND ADJUSTMENTS:

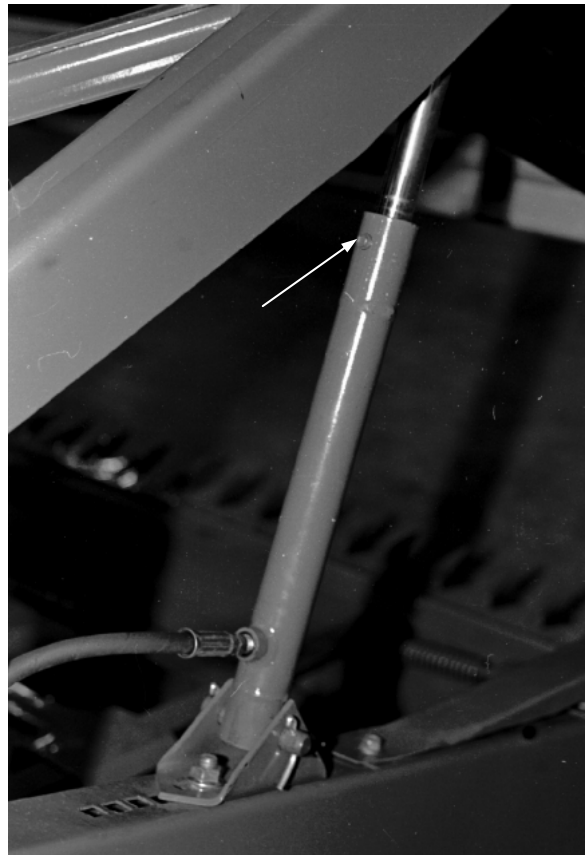
Attach hitch to tractor drawbar, couple hoses to tractor hydraulics and complete the following checks and adjustments before attaching PTO:

#### a) Bleed R/H reel lift cylinder:



**CAUTION:** Take care during this procedure as air in the system can cause the hydraulic components to operate erratically.

- i) Raise the reel fully. The L/H cylinder will move first. When it reaches full stroke, fluid will pass to R/H cylinder.
- ii) Leaving reel raised, slowly loosen the bleed screw in the R/H reel lift cylinder. See Figure 495.
- iii) When clear fluid (free of bubbles) flows from cylinder, re-tighten screw.
- iv) Lower reel, raise again and repeat bleeding procedure until reel lifts evenly.



BLEED R/H REEL LIFT CYLINDER 495

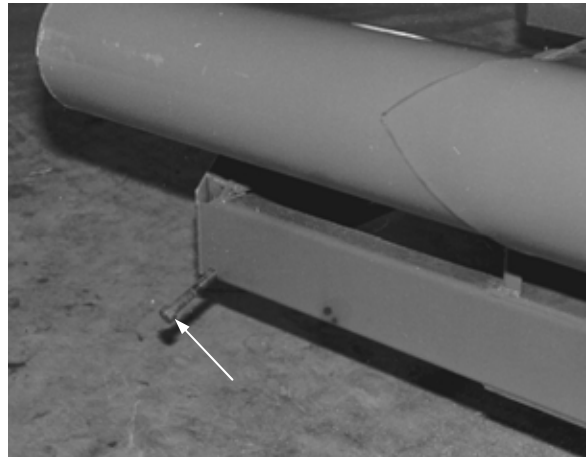
## ASSEMBLY

19.

- b) Adjust reel brace to center reel between end sheets. Loosen bolts shown in Figure 496 to adjust.
- c) Move reel forward from shipping position on reel arms. See Reel Position - Fore and Aft in Operator's Manual.
- d) Check that reel clears cutter bar by at least 2" (50 mm) at all horizontal positions. If adjustment is necessary, see "Reel Clearance from Cutterbar" in Operator's Manual.
- e) Grease float adjusting screw at L/H end. See Figure 497. Adjust float until header can be lifted with 100 to 150 lbs. (450-650 N) lifting force at the R/H divider rod. See "Header Flotation" in Operator's Manual for procedure.
- f) Grease L/H and R/H casters until grease is forced out top or bottom of caster bearing.
- g) Turn drives by hand to check for binding.
- h) Attach PTO to tractor and run machine slowly for about 10 seconds. Check draper tracking. Drapers should run parallel to cutterbar. If not, adjust DRIVE ROLLER as described in "Draper Tracking" in the Operator's Manual. If draper runs parallel to cutterbar, but rubs either at cutterbar or rear draper track, adjust IDLER ROLLER as described in "Draper Tension" in Operator's Manual. When properly adjusted, drapers should run parallel to and 0 to 3/4" (0-20 mm) from cutter bar with header on ground. Draper should shift back when header is raised.



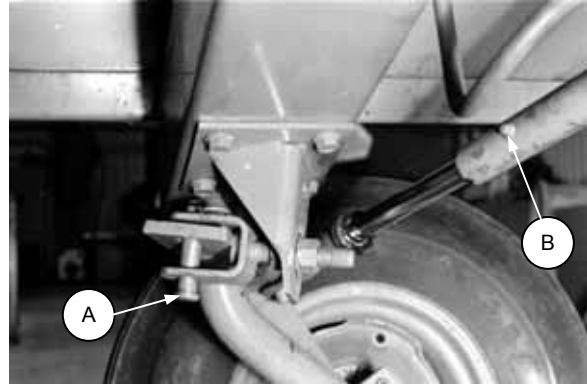
ADJUST BRACE TO CENTER REEL 496



GREASE FLOAT ADJUSTING SCREW 497

## ASSEMBLY

- 19.
- i) Level cutterbar. See Operator's Manual.
  - j) Run machine for 15 minutes, STOP MACHINE, and check alignment of all belts and idlers. Check for heated bearings and knife sections.
  - k) Convert machine to transport mode. See Operator's Manual. Be sure safety pin (A) is in place securing the R/H wheel in transport position. Open bleed screw (B) slowly to bleed air from the R/H wheel cylinder. Close the bleed screw and move hydraulics to raise header. See Figure 499.

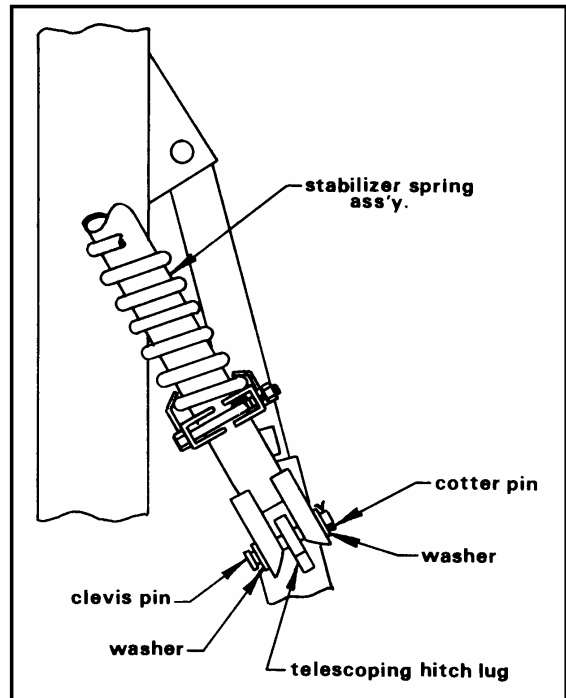


499

- l) 36 ft. units only:  
Attachment of Stabilizer Spring Assembly - With machine in transport position, attach stabilizer spring assembly to the lug on the telescoping hitch with 3/4 clevis pin, washers and cotter pin. See Figure 500.

### 20. DOUBLE CHECK THE FOLLOWING:

- a) Main drive belt idlers properly aligned and tightened. (See Assembly Step 10.)
- b) Breather installed in header lift cylinder.
- c) All safety signs on machine are properly installed and have not been damaged in shipping. See "Safety Signs" in Operator's Manual.



500

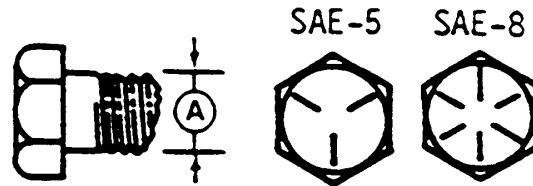
# TORQUE SPECIFICATIONS

## CHECKING BOLT TORQUE

The tables shown below give correct torque values for various bolts and capscrews. Tighten all bolts to the torques specified in chart unless otherwise noted throughout this manual. Check tightness of bolts periodically, using bolt torque chart as a guide. Replace hardware with the same strength bolt.

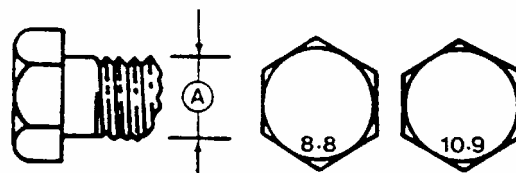
### ENGLISH TORQUE SPECIFICATION

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



### METRIC TORQUE SPECIFICATIONS

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



Torque figures indicated above are valid for non-greased or non-oiled threads and heads unless otherwise specified. Do not grease or oil bolts or capscrews unless specified in this manual. When using locking elements, increase torque values by 5%.

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

## TORQUE SPECIFICATIONS

### TIGHTENING O-RING FITTINGS\*

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

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

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

### TIGHTENING FLARE TYPE TUBE FITTINGS\*

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

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

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



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## PULL TYPE WINDROWER PRE-DELIVERY CHECKLIST

Windrower Model: \_\_\_\_\_ Serial No: \_\_\_\_\_

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



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

- Check for shipping damage or missing parts.
- Bleed right reel lift cylinder.
- Center reel between end sheets.
- Adjust reel fore-aft position.
- Check reel drive idler arm is properly located for reel fore-aft position.
- Adjust reel clearance from cutterbar. (2 in. [50 mm])
- Check main drive belt idler alignment.
- Check main drive idlers mounting bolt torque. (80 - 90 ft. lbs. [110 - 120 N·m])
- Grease float adjusting screw.
- Check header flotation (100 - 150 lbs. [450 - 650 N])
- Grease all bearings.
- Grease both wheel casters until grease is forced out top or bottom of caster bearing.
- Turn drives by hand to check for binding. AVOID PINCH POINTS.
- Check draper tracking and tension.
- Adjust cutterbar level.
- Run machine for 15 minutes, STOP MACHINE and check drives for belt/idler alignment and heated bearings. Check knife sections for discoloration caused by misalignment of components.
- Check hydraulic hose routing, ensuring adequate clearance with header and reel up or down.
- Convert machine to transport position:
  - Check telescoping hitch operation.
  - Check transport pins install easily.
  - Check wheels caster properly into position.
  - Check transport width.
- Bleed right wheel lift cylinder.
- Check routing of electrical wiring and hoses in transport.
- Check lights are functional.

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

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

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