

1480

# OWNER'S MANUAL

MacDon  
PULL TYPE  
SWATHER

15, 18, 21 AND 25 FOOT



MacDon Industries Ltd.  
680 Moray Street  
Winnipeg, Manitoba R3J 3S3  
Canada



WELCOME to our family of modern day farming equipment. We feel you have made a wise purchase. Your Swather is field proven in design, and has all the improvements that come with 20 years of experience. We ask that you operate this machine wisely. With correct adjustments, and reasonable care, we are confident that your new Swather will serve you well.







This manual is made available for you as a handy reference and contains instructions for assembling and operating.

"WRITTEN WORDS ARE WORTHLESS UNTIL THEY ARE READ"  
We recommend that you read this book carefully to become completely familiar with your machine.

Your local dealer and his staff are prepared to assist you in any way they can, to help you obtain the ultimate in service and satisfaction from your Swather.

It is the policy of the Company to make continuous improvements in its products, and the company reserves the right to implement changes at any time, without incurring obligation to add them to any product already sold.

## INDEX

	Page
 SPECIFICATIONS .....	2
 SAFETY PRECAUTIONS.....	3
 OPERATION & ADJUSTMENTS.....	4
 LUBRICATION.....	14
 TRANSPORTATION.....	15
 ASSEMBLY INSTRUCTIONS.....	18
ACCESSORIES & ATTACHMENTS.....	41

NOTE: Reference to left-hand (L/H) and right hand (R/H) used throughout this manual refers to the position standing behind the machine and facing toward the front.





# SPECIFICATIONS



## DIMENSIONS:

	<u>15 FT.</u>	<u>18 FT.</u>	<u>21 FT.</u>	<u>25 FT.</u>
Overall Width				
Cutting Position.....	19'5" (592cm)	22'5" (683cm)	25'5" (775cm)	28'5" (866cm)
Semi-Transport Position..	19'5" (592cm)	22'5" (683cm)	25'5" (775cm)	28'5" (866cm)
Full Transport Position..	11'4" (345.5)	11'4" (345.5)	11'4" (345.5)	11'4" (345.5)
Overall Length				
Cutting Position.....	12'8" (386cm)	12'8" (386cm)	12'8" (386cm)	12'8" (386cm)
Semi-Transport Position..	11'8" (355.5)	11'8" (355.5)	11'8" (355.5)	11'8" (355.5)
Full-Transport Position..	25'6" (777cm)	28'3" (861cm)	31'3" (952.5)	34'3" (1044cm)
Overall Height				
Header & Reel Down.....		56" (142 cm)		
<u>Weight:</u>				
In Pounds.....	2001	2180	2380	2600
In Kilograms.....	908	989	1080	1179
<u>Knife:</u>				
Cutting Platform				
Depth.....		46" (117 cm)		
Cutting Range.....		2" to 26 1/2" (5 to 67 cm)		
Delivery Opening.....	42" (107cm)	46" (117 cm)	46" (117 cm)	46" (117 cm)
Forged Steel Guards				
Main Frame Clearance....		34" (86 cm)		
Knife Stroke				
Length.....		3" (7.6 cm)		
Speed (S.P.M.).....		621		
Width of Cut.....	15ft. (457cm)	18ft. (549cm)	21ft. (640cm)	25ft. (762cm)
Header Lift:				
Hydraulic - from tractor seat				
<u>Reel:</u>				
Diameter.....		54-1/2" (138.4 cm)		
Speed...Minimum R.P.M...		37.5		
...Maximum R.P.M...		50.0		
Number of Reel Bats.....		5		
Lift Range...Above Knife		1" to 24-1/2" (2.5 to 62 cm)		
Reel Lift:				
Hydraulic - from tractor seat				
<u>Draper:</u>				
Width.....		42" (107 cm)		
Speed...Minimum Ft./Min.		360 (110 meters/min)		
...Maximum Ft./Min.		478 (146 meters/min)		
<u>P.T.O.</u>				
Shaft & Shield Combined.		540 R.P.M.		
<u>Tires:</u>				
Tire Size.....	6.70 X 15	6.70 X 15	6.70 X 15	8.5L14
Tire Pressure....Pounds per square inch			24 to 28 (1.7 to 2.0 kg/sq.cm)	

ACCESSORIES

3 Foot Extension, Weight: 203 lbs. (92 kg.)

Hydraulics - choose one of:

- Self-contained-lever controls: Pump Pressure 2300 P.S.I. (162 kg/sq.cm)
- Self-contained-cable controls:
- Remote Tractor

Hydraulic System - Capacity 2 IMP.QTS. (2 1/2 U.S.) (2.4 liters)

**SAFETY**

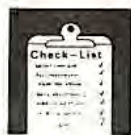
IMPORTANT: Whenever you are working on or around the Swather, be sure to follow these safety rules.

- BE SURE that the main frame and hitch frame are blocked securely before and during assembly.
- AVOID wearing loose clothing around the machine. It catches too easily in moving parts.
- ENSURE that all safety shields and covers are installed and kept in place when the machine is running.
- BE ESPECIALLY CAREFUL when close to a moving belt, pulley, or other moving part.
- INSIST that no one climb on the machine when the drive is engaged or the machine is in motion.
- ALWAYS check for people and animals before engaging the drive from the tractor.
- BE SURE the hitch is in semi-transport position, supporting the header, before going under the header for any reason.  
(see page 15 )
- CHECK the safety supports on both reel support arms for proper tension (see page 23 ), and be sure they are positioned before going under the reel or reel support arms.
- ALWAYS STOP THE MACHINE, DISENGAGE THE DRIVE, AND STOP THE TRACTOR ENGINE BEFORE DOING ANY CHECKS, REPAIRS, LUBRICATION OR ADJUSTMENTS.



WATCH FOR THIS SYMBOL THROUGHOUT THIS MANUAL. IT MEANS THE OPERATION BEING DESCRIBED COULD BE HAZARDOUS IF THE PROPER PRECAUTIONS ARE NOT TAKEN. BECOME ALERT: YOUR SAFETY IS INVOLVED.





## OPERATION & ADJUSTMENTS



### PRE-SEASON CHECK:

Install drapers and belts. Adjust tension on all belts and drapers. Inflate tires to 24 - 28 psi. (1.7 to 2.0 Kg./ sq. cm.) Make sure all shields are in place.

Lubricate the machine as outlined under heading "Lubrication". Check oil level of hydraulic pump reservoir.

Watch for belt interference while machine is running. Stop the machine and check for heated bearings.

### END OF SEASON CHECK:

Clean the draper. Remove it and all drive belts and store in a dark, dry place. Clean the swather with a stiff brush and store in a dry place. Grease all bearings well and cover the knife and guards with heavy oil. Repaint all parts where paint has worn off. Block up the machine but do not let air out of tires. Order new parts needed from your authorized dealer.

For 540 RPM P.T.O.'S: The hitch point must be 14" from the end of the power take-off shaft on the tractor and directly beneath the power drive line. The vertical distance "A" (Fig. 4) from the top of the drawbar to the center line of the power take-off shaft must be 6 to 15" (15 to 38 cm), 8" (20 cm) being recommended. The length of the hitch on the windrower is designed to meet these requirements when hitched to any tractor with a standardized hitch. On most tractors, the hitch is standardized by a hitch plate attached to the drawbar.

NOTE: When the tractor is equipped with a swinging drawbar, be sure to lock it directly beneath the power driveline.



CAUTION: When attaching the yoke of the universal to the power take-off shaft on the tractor, it is important that the yoke is secured to the power take-off shaft with the spring actuated locking pin.

NOTE: Be sure that this pin slides freely and is seated in the groove on the tractor power take-off shaft.

### P.T.O. & DRAWBAR ADJUSTMENT - Figs. 2 & 4

**IMPORTANT:** The telescoping shaft should slide under hand pressure. DO NOT let shaft pull loose from tractor or the windrower. The power take-off shaft must always be operated in as straight a line as possible and may be adjusted vertically at the P.T.O. hanger bearing (1) Fig. 2

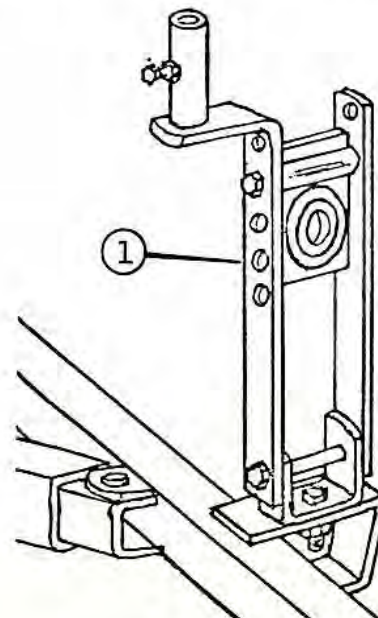


Figure 2



**HITCH PROPERLY**

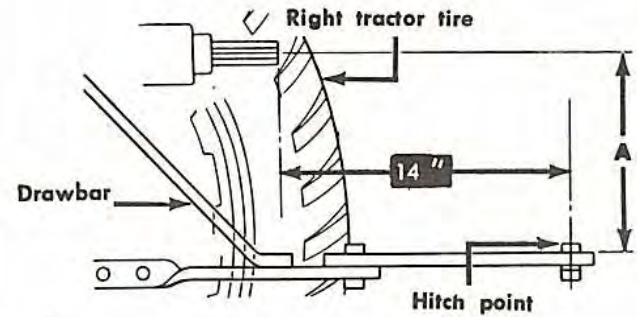
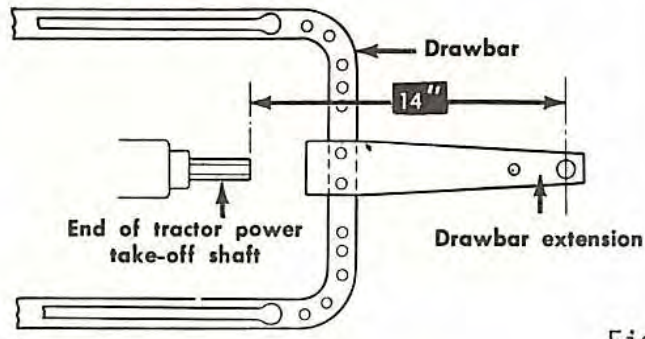


Figure 4

This diagram shows the standardized location of the hitch point from the top & side.

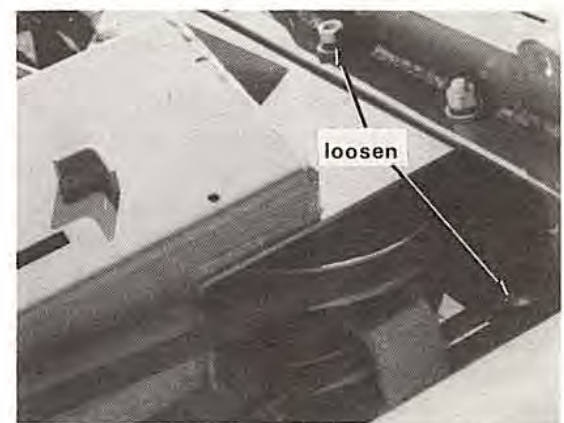
**BELT TENSION & ADJUSTMENTS**

**Knife Drive Belt - Adjustment**  
Fig. 5, 6, & 8

Loosen the two 1/2" NC X 1 1/2 long carriage bolts securing the idler pulley bracket.

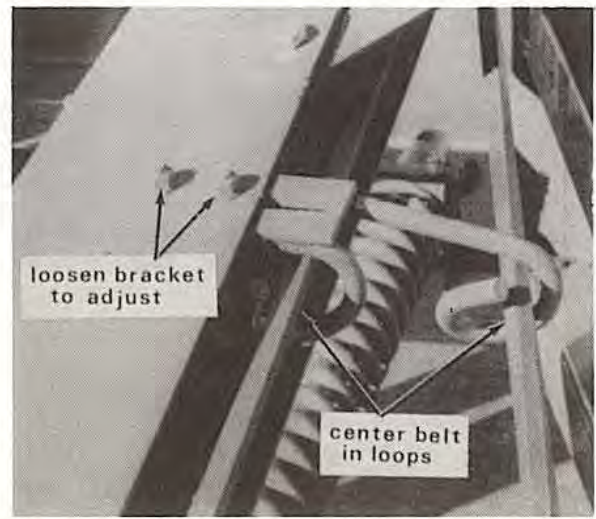
Loosen the belt guide bracket. Adjust tension by turning the nut on the threaded rod extending from the idler pulley bracket into the drives frame.

Tighten the two carriage bolts securing the idler pulley bracket. Adjust the belt guide bracket until the belt is centered in the loops. Tighten the bracket. See page 7 for proper tension.



LOOSEN IDLER BRACKET

5



KNIFE DRIVE BELT GUIDE

6



BELT ADJUSTMENT

8



## DRAPER DRIVE BELT ADJUSTMENT

Fig. 10

15 ft. only Adjust belt tension by moving the draper shield assembly to the left or right as required.

18,21,25 ft. only Adjust belt tension using the adjuster, as follows:

Secondary Draper Drive Belt - Tighten the nut on the forward end of the L/H pulley support bolt (extending from the front of the shield). Loosen the nut on the forward end of the R/H pulley support bolt. Loosen the L/H adjusting nut on the adjusting rod.

Tighten the R/H adjusting nut on the adjusting rod to move the relay pulleys, inside the shield, and thus increase tension on the Secondary Draper Drive Belt. Retighten the L/H adjusting nut, and the nut on the forward end of the R/H pulley support bolt.

Draper Drive Belt - Ensuring that the nut on the forward end of the R/H pulley support bolt is tight, now loosen the nut on the forward end of the L/H pulley support bolt. Loosen the R/H adjusting nut on the adjusting rod.

Tighten the L/H adjusting nut on the adjusting rod to move the relay pulleys, inside the shield, and thus increase tension on the Draper Drive Belt.

Retighten the R/H adjusting nut, and the nut on the forward end of the L/H pulley support bolt. See page 7 for proper belt tension.

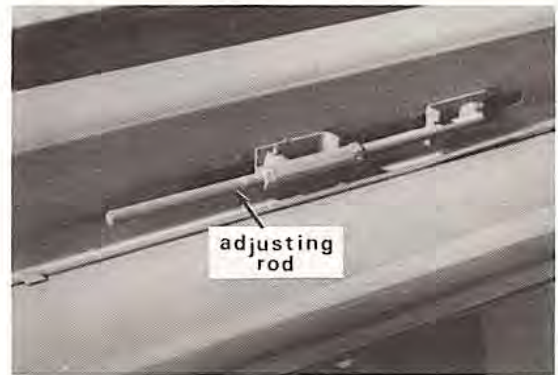
## REEL DRIVE BELT ADJUSTMENTS -

Figs 12 & 14

Primary Reel Drive Belt - Loosen the nut securing the relay pulley to the take up bracket. Adjust belt tension with the nut on the take-up bracket.

Retighten nut securing relay pulley. See page 7 for proper tension.

Reel Drive Belt - Compress spring adjustment on the take-up pulleys to 1". See page 7 for proper tension.



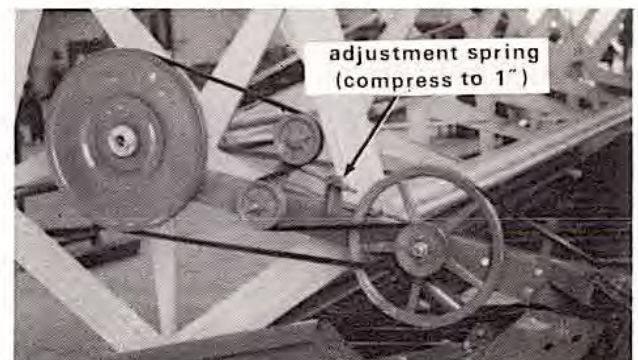
DRAPER DRIVE BELT ADJ.

10



PRIMARY REEL DRIVE BELT ADJ.

12



REEL DRIVE BELT ADJ.

14

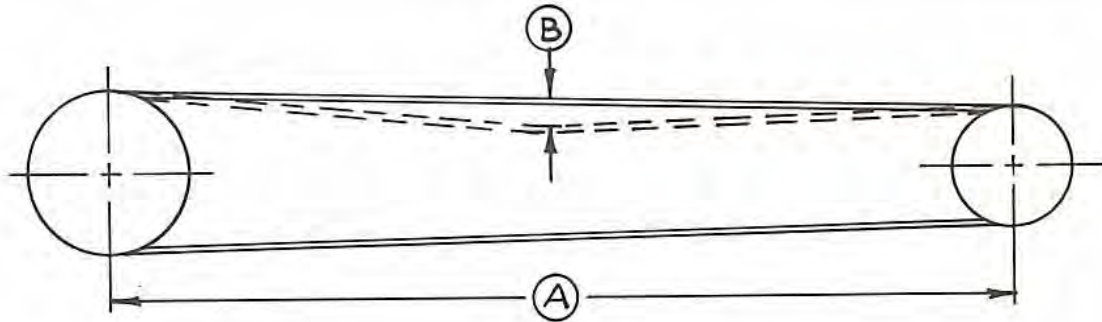
NOTE: Primary reel drive belt adjustment effects the reel drive belt adjustment. Adjust primary belt first. Reel drive belt must be adjusted everytime primary belt is adjusted.



Pump Drive Belt Adjustment -  
 If your swather is equipped with self contained hydraulics, the pump drive belt can be adjusted by moving the pump mounting plate. See below for proper tension.

BELT TENSION - Fig. 16

To prevent slippage and resultant belt & pulley wear the tension of the various belt drives on the machine should be checked periodically. Adjust tension as per the following chart and instructions.



Deflect B 1/64 inch (.4 mm) for every inch (2.54 cm) of A.

Example: A = 32 inches (81.28 cm)  
 B should be deflected 32/64" or 1/2 inch (1.27 cm) using the pressure specified below.

"A" section belt (pump driven) requires 2 to 2-1/2 lbs. (.9-1.13 kg.)

"B" section belt (except sickle drive) require 4 to 5-1/2 lbs. (1.81-2.49 kg.)

"B" section belt (sickle drive) requires 8-1/2 to 9-1/2 lbs. (3.86-4.31 kg.)

SICKLE REGISTER:

- (1) Turn the crank pulley until the sickle is at its stroke limit, this may be to the right or left.
- (2) Check the sickle sections approx. midway between dividers. If the sickle sections are not centered at the guard points, continue with step 3.
- (3) Loosen the six 1/2" x 1-1/4" Lg. carriage bolts securing the crank pulley, move the mount to the right or left as required to center the knife at the guards, re-tighten the carriage bolts.

CUTTER BAR:

The cutting mechanism should be checked periodically to be assured that all guards are in correct alignment, knife is sharp, ledger plates not worn etc. Since the cutting is done by a shearing action, it is important that the following points be checked.

1. All guards must be lined-up so that sickle will slide across the cutting surface of each guard giving a shearing action. Guards are made of heat treated forged steel and can be sprung to bring them back into proper alignment...To align the guards strike them with a hammer on the thick solid section, NEVER strike guard lip which covers the knife as this may bind the knife. NOTE: Always tighten the guard bolts BEFORE and AFTER aligning a guard.

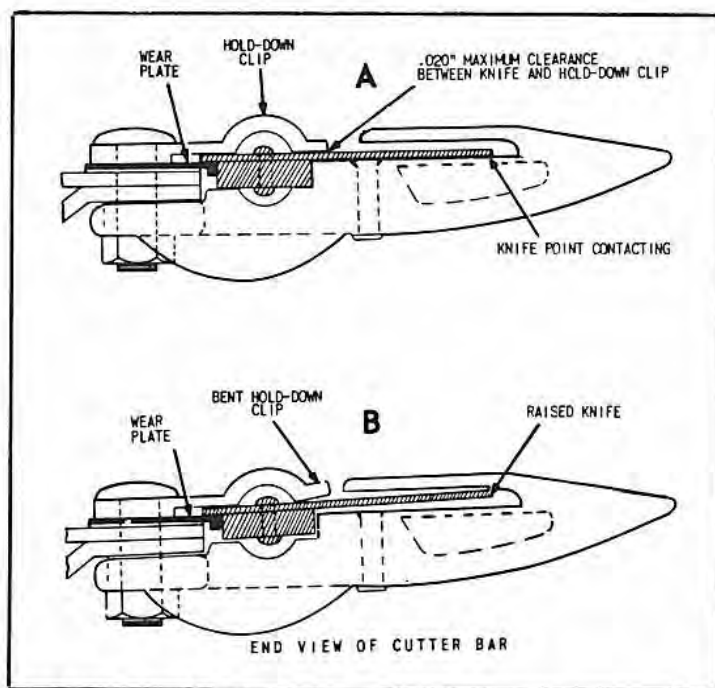


2. Wear plates are provided with slotted holes to permit forward or backward adjustment so that knife will be held against the cutter bar. Keep wear plates adjusted ahead as far as possible without binding the knife.
3. Hold down clips for sickle bar should be adjusted to hold sickle on the ledger plates, but at the same time allow the sickle to work freely. If there is too much clearance between hold down clip and sickle, place a round punch or rod under the rounded portion of clip and lightly tap down lip of hold down clip. After resetting hold down clips, try sickle by hand to make sure that it works freely for full length of stroke. Clearance should be approximately .020 inch.

4. View "A", Fig. 18, shows the correct knife position in relation to the guard. The knife section must rest on guards to give a clean shearing action. A maximum clearance of .020 inch (.5 mm) is allowed between hold down clips and knife sections.

View "B" shows the knife raised off the guard. In this position, the knife could not produce a clean cut, but would chew or tear the crop.

Make regular inspections of the knife sections and replace any that are damaged or badly worn. Keep the knife sections sharp and make sure that sections and knife head are firmly rivetted to knife bar.



KNIFE POSITION

18

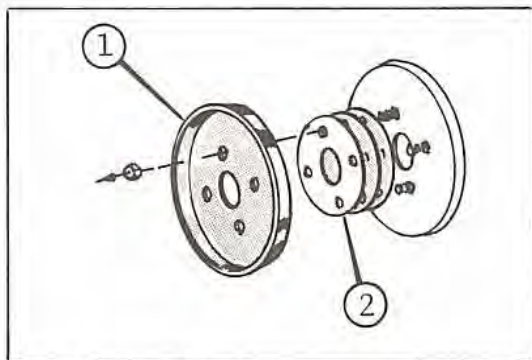
#### TWO METHODS OF CLEANING THE SICKLE:

1. Let the sickle run slowly. Pour water over the sickle.
2. Pour a mixture of oil and kerosene (1 part oil, 3 parts kerosene) over the slowly running sickle.

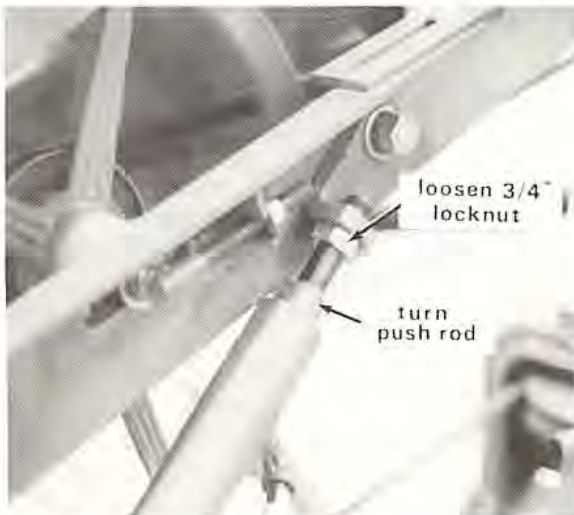


## REEL SPEED ADJUSTMENT - Fig. 20

To decrease the reel speed remove the four nuts holding the 5" pulley flange (1) and add shims (2) between flanges as required. One shim will change the speed approximately 2 RPM. It is recommended that no more than six shims be used. Speeds obtained with these adjustments will be satisfactory for the majority of operating conditions. If the reel is running too slow some of the cut crop may fall back on the ground; if running too fast, cut crop may be carried around and "over" by the reel. Either condition will cause excessive crop loss. Usually a slow ground speed calls for a slow reel speed.



REEL & DRAPER SPEED ADJ. 20



REEL LEVELLING 22

## REEL ADJUSTMENT - Fig. 22

The reel bats must not touch the draper or the guards. An initial setting of 2 inches of clearance from the lowest bat to the cutter bar is recommended. This may be accomplished by adjusting the left and right reel lift hydraulic cylinders as follows: Lower the reel to its lowest position, loosen the 3/4" locknut on the push rod and turn the push rod as required using a 7/8" open end wrench on the flat area provided. Re-tighten the 3/4" locknut after the desired clearance has been achieved.

To adjust the reel horizontally, lower the reel to its lowest position, the lowest bat should be directly above the guard point. Adjustment is made by loosening the belt then removing bearing bolts and positioning the bearings over the desired holes. Adjust both sides equally, re-install bolts.

NOTE: When positioning the reel on the reel arms it may be necessary to move the front brace on the reel drive shield to avoid interference between the bearing block and the brace.

To level the reel, make adjustments at the reel lift cylinders by loosening the 3/4" locknut and turning the hydraulic cylinder push rod as required using a 7/8" open end wrench on the flat surface provided. The reel can also be centered between the two reel support arms by adjusting the reel support arm brace at the point where it is attached to the arm. (On the L/H reel support arm, the brace is attached to the reel drive relay pulley assembly.)

## DRAPER SPEED ADJUSTMENT - Fig. 20

To increase the draper speed remove the four nuts and the pulley flange (1) from the draper drive pulley and add shims as required. One shim will change the speed approximately 19.5 F.P.M. (5.94 meters/min.) Shims not required should be assembled on the outside of the pulley for storage.



DRAPER ADJUSTMENT Fig. 24

The table draper should be just tight enough so that it does not slip on the rollers. Always loosen draper after each day's work by releasing tension at draper tightener as shown.

DRAPER ALIGNMENT

If the drapers have a tendency to run up or down on the draper guides, it indicates the rollers are NOT parallel and must be adjusted. All rollers MUST be 90 degrees to the cutter bar BEFORE making any running checks, then run drapers, check and adjust as follows:

Draper runs UP on the guides (towards the rear) loosen bearing bolts at drive roller and move drive roller AWAY from the idler roller.

Draper runs DOWN on the guides (towards the front) loosen bearing bolts at the drive roller and move drive roller towards the idler roller.

IDLER ROLLERS Fig. 24

Idler rollers may be aligned by adding 17/32 ID SAE washers to the front or rear tension chains as required.

DRIVE ROLLER PIN - Replacement

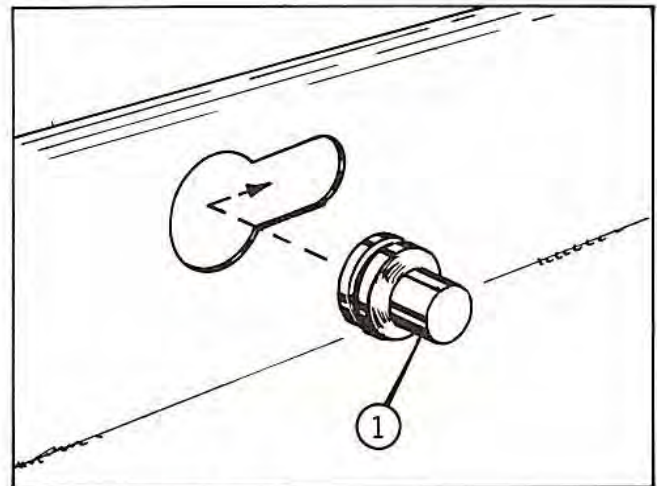
- Figure 26 & 28

If the drive roller pin (1) requires replacement it is only necessary to drive the old pin out, install the new pin and secure into position as shown using a 3/16" dia. round punch upsetting the plug and the slot. Strike the punch enough times to achieve good upset of material. Pin MUST NOT be able to rotate. NOTE: Secure the upper portion of the pin in the same manner as previously described.



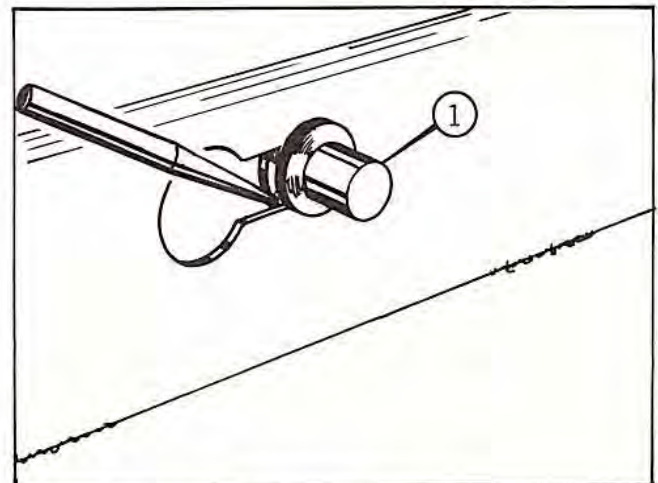
DRAPER ADJUSTMENTS

24



DRIVE ROLLER PIN (positioning)

26



DRIVE ROLLER PIN (installation)

28



## BLEEDING HYDRAULIC SYSTEM



CAUTION: During the bleeding procedure, take particular care when components are being actuated up and down. The Swather will be operating and the hydraulic components will, or may, operate erratically.

The hydraulic system is DRY and must be filled and the air bled from the system.

The capacity of the system is 2 Imp. qts. (2-1/2 U.S. qts. or 2.4 liters)

The type of fluid to be used in the system is Type "A" Automatic Transmission Fluid, or SAE 10 oil (non foaming).

BEFORE connecting the tractor to the Swather, fill the hydraulic reservoir to the full mark. Turn the reel in the direction of rotation a few turns to prime the hydraulic pump.

Connect the tractor to the Swather, and with the PTO shaft driving slowly, and hydraulic fluid being added to the reservoir:

## TABLE CYLINDER BLEEDING

Select the table UP, and hold the lever until the table has stopped moving. Select table down. Repeat this operation until the operation of the table is smooth and instantaneous.

IMPORTANT: It is important to keep the hydraulic reservoir full during this procedure.

## REEL CYLINDER BLEEDING



CAUTION: Do not attempt to loosen or tighten the bleed screw on the right-hand reel cylinder with the reel in motion.

Disengage the reel drive belt from the reel pulley to stop it from turning when the tractor drive is engaged.

Loosen the bleed screw at the right-hand reel cylinder.

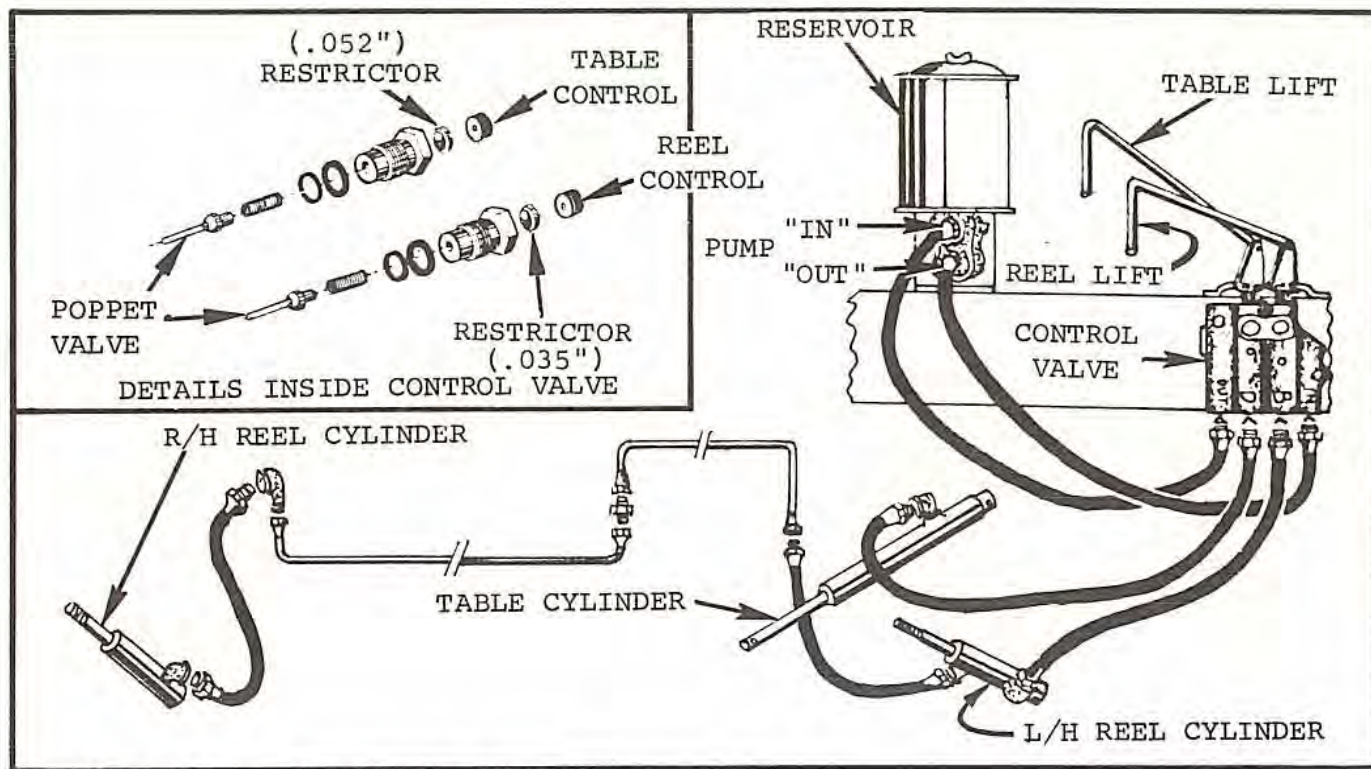
Start the tractor drive. Select the reel UP and hold the selector in this position.

The left-hand cylinder will move first, and when it has reached the end of its stroke, fluid will then pass to the right-hand reel cylinder.

Still holding the selector to UP, allow the air to escape from the bleed screw at the righthand cylinder. When fluid emerges (free of air) from the bleed screw, tighten the screw.

Select the reel down and then up again. Repeat this operation a few times until the function of the reel is smooth and instantaneous.





SELF-CONTAINED HYDRAULICS SYSTEM

30

Should the self-contained hydraulic system NOT operate correctly, check as follows:

1. Check oil level in reservoir with table and reel lowered. Add SAE 10 oil (non-foaming) or automatic type "A" transmission fluid to level mark on reservoir.
2. Check pump drive belt for slippage. Adjust to specifications under "Belt Tension" page 7.
3. Engage P.T.O. and push both control handles, check for leaks in hoses, lines and connections.
4. Check restrictors in valve for correct installation. Slot in plate MUST face towards the hose. Restrictors located in valve as follows: Header Control .052" hold at "D" symbol. Reel Control .035" hole at "B" symbol.

#### CONTROL VALVE

The rate of speed for lowering the table and reel is governed by the control valve restrictors. If you find it necessary to remove them be sure they are re-installed in their correct location.





SIDE DRAFT ADJ. &amp; SERIAL NO. PLATE 32

### WHEEL TOE-OUT ADJUSTMENT Fig. 32

An adjusting bracket is located at the R/H wheel pivot to allow an adjustment for side draft. Toeing the wheels out will reduce side draft and may be necessary in certain crop or soil conditions. To adjust, loosen the 5/8" NC x 1 1/2" long capscrew underneath the R/H wheel leg, and use the adjusting nut shown in Fig. 32 to move the inner plate. When desired position is reached, tighten the capscrew.

The L/H wheel position also effects side draft. By moving the L/H wheel to the front of the slot in the mounting lug, side draft is reduced.

### SERIAL NUMBER PLATE - Fig. 32

The serial number plate is located on the header support frame at the extreme right hand end of the swather and is positioned as shown.

Be sure to quote the serial number when ordering parts.

## **BE CAREFUL**

*Drive Shields have been provided for your protection.*

*Do NOT defeat their purpose by modifying or discarding them.*

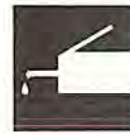
*Be sure header and reel are properly blocked when servicing or adjusting in raised position.*

**THINK SAFETY**





## LUBRICATION



CAUTION: Do not attempt to lubricate any part of the machine with the drive engaged.

10 Hours: Oil- the wood bearings on reel shaft.  
Use light-weight engine oil.

Oil - the knife and all rubbing surfaces with a light engine oil (except in sandy conditions apply a small amount of oil on wear plates only)

Check - the oil level in the hydraulic pump reservoir (if applicable). If necessary fill to level mark on the side.



CAUTION: Do not use a heavy duty type oil in the hydraulic pump. Use SAE 10 (non foaming) or automatic type "A" transmission fluid. Do not mix types.

50 Hours: Grease - the P.T.O. shaft (four fittings). It will be necessary to expand the front P.T.O. shaft until the holes line up exposing a grease fitting. The other three fittings are at the U-Joints on the shaft.

Yearly: Grease the wheel hubs, and repack the bearings with wheel bearing grease.





Your swather can be converted to either the semi-transport or full transport position.

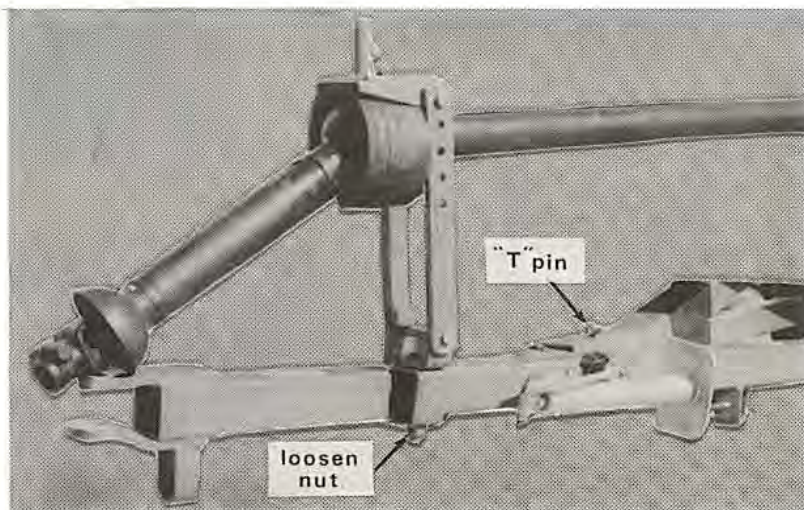
#### SEMI-TRANSPORT POSITION - Fig. 34

To transfer the machine from field position to semi-transport position:

Lower the reel and raise the table high enough to clear the hitch and P.T.O. shaft. Lower the control lever support (if applicable). Loosen the self-locking nut under the P.T.O. shaft support. Remove the T-pin from the R/H hitch member. Slowly back up the tractor to allow the R/H hitch member to telescope in. When holes in the R/H member align, re-insert the T-pin and lock with hairpin cotter. Lower the table onto the hitch.



**CAUTION:** ALWAYS place hitch in semi transport position when working under header.



HITCH POSITIONING



## FULL-TRANSPORT POSITION Fig.'s 35,36,37

To transfer the machine from field position to full-transport position, first complete the above steps to place the machine in semi-transport. Then proceed as follows:

**R/H WHEEL Fig. 35:** Remove L-pin and left wheel of dual wheel set. Remove the 5/8" NC X 1½" long capscrew from underneath the R/H wheel leg assembly and place in storage nut on wheel leg. Remove L-pin from transport tow bar, position bar in R/H wheel leg bracket and replace pin. Swing the tow bar out, turning the wheel through 90° to the position shown.

**L/H WHEEL Fig. 36:** Use a jack to raise the L/H end of the swather.

**CAUTION:**

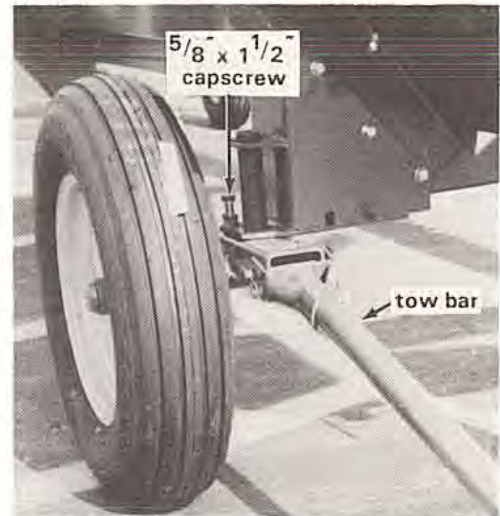
Be sure that the jack is secure and on firm ground.

Remove the cap screw closest to the wheel from the L/H wheel support. Turn the wheel through 90° so the hole in the axle aligns with the rear holes in the wheel support. Replace the capscrew. Lower the swather and remove the jack.

**NOTE:** To rotate the wheel, it may be necessary to loosen the second cap-screw in the L/H wheel support. If so, retighten when wheel is properly positioned.

**TRANSPORT WHEEL Fig. 37:** Insert the transport arm through the "U" brackets welded below the hitch frame and secure with a ½" x 3 5/8" long L-pin and a 5/32" hairpin cotter. Use the attached jack to raise the hitch enough to install the transport wheel (the one removed from the dual wheel set), using the existing L-pin and hairpin cotter.

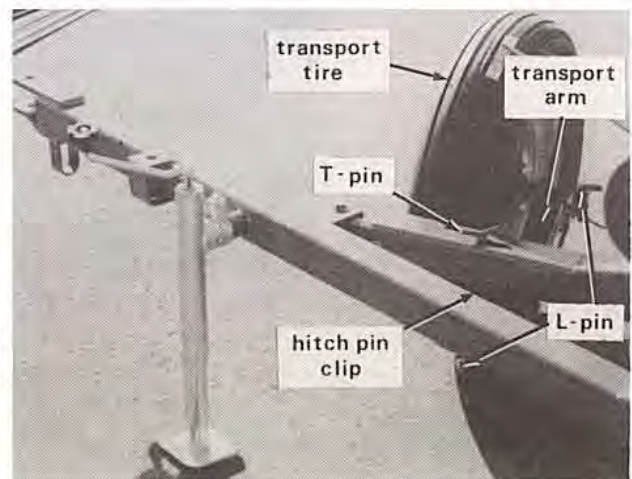
To transfer the machine from transport position to field position: Remove the T-pin and re-extend R/H hitch member. When holes line up in extended position, re-insert T-pin. Return L/H and R/H wheels to field position, by reversing the above procedures. Remove the transport wheel and install in the L/H side of the R/H wheel assembly, using the L-pin and hairpin cotter. Remove the transport arm and tow bar.



R/H WHEEL - transport position 35



L/H WHEEL - transport position 36



TRANSPORT WHEEL

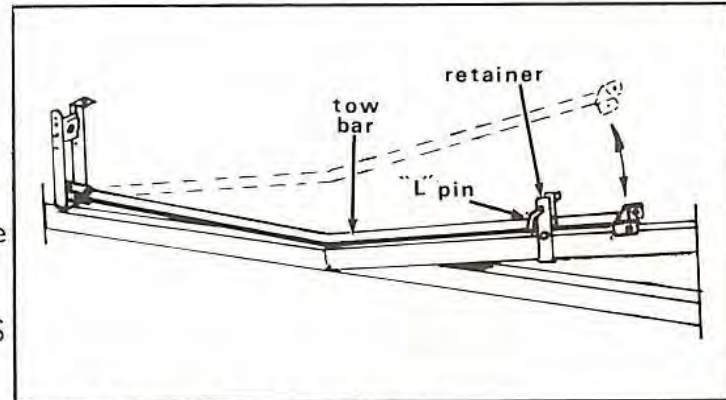


## Transport Equipment Storage

Transport Wheel Arm (less wheel) - is carried inside below the L/H upper hitch member, placed over the tow bar retainer and inserted into the channel (no pins are required)

15, 18, 21 ft. Fig. 38

Tow Bar - The tow bar will rest on top of the L/H upper hitch member, being retained at the front by the P.T.O. support pivot bolt and held down at the rear by the L pin in the transport retainer on the L/H hitch frame. (see Hitch Frame, ASSEMBLY INSTRUCTIONS SECTION, page 19 )

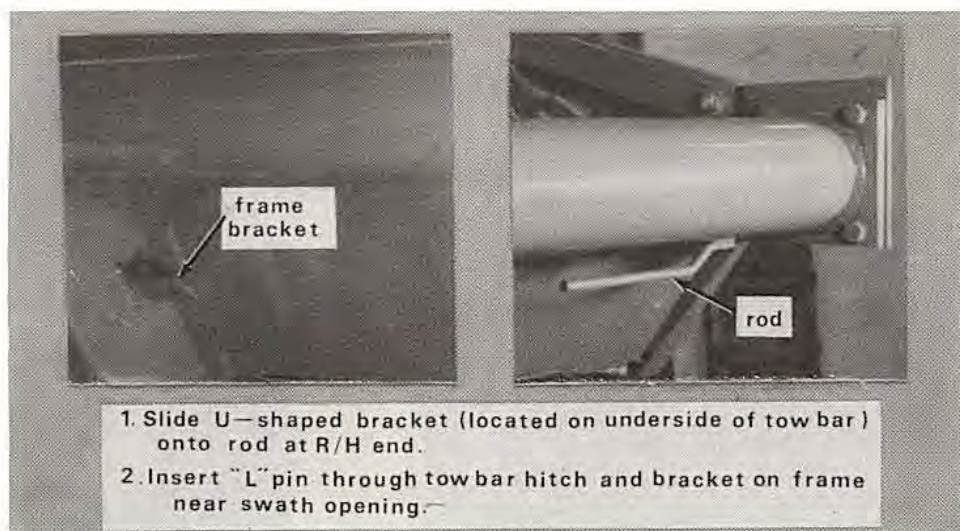


TOW BAR STORAGE - 15,18, 21 ft

38

25 ft. Fig. 40

Tow Bar- The tow bar is stored at the right hand end, below the main frame tube. Secure with "L" pin.



TOW BAR STORAGE - 25 ft.

40





# ASSEMBLY



## GENERAL:

Remove all wire-attached bundles, tires etc. from the header assembly.

Where possible, sort and lay out the parts in groups for easy identification.

Remove any excess paint from parts before assembly, particularly shafts.

Drive belts can be identified by a part number stamped into the surface, and these numbers will be used in the assembly instructions.

These instructions will result in the machine being assembled in transport position.

**NOTE:** Reference to left-hand (L/H) and right hand (R/H) used throughout this manual refers to the position standing behind the machine and facing toward the front.



**CAUTION:** Remove all wire and metal strapping from the work area once removed from the machine.

Hardware is located in a bag stored inside the Main Drives Frame Assembly.

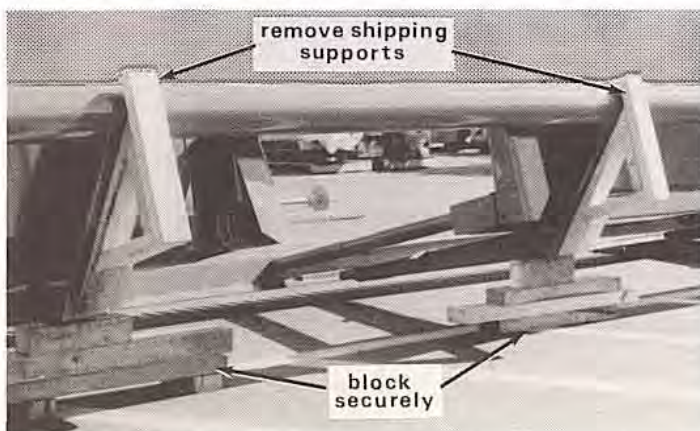
## HEADER FRAME - Fig. 42

With the cutter bar resting on the ground, raise the back of the header frame up approximately 35 inches (89 cm) and block securely.



**CAUTION:** Ensure the main frame is blocked securely and firmly. Do not allow anyone under the machine for any reason, until the wheels are installed.

Remove the wooden shipping supports.



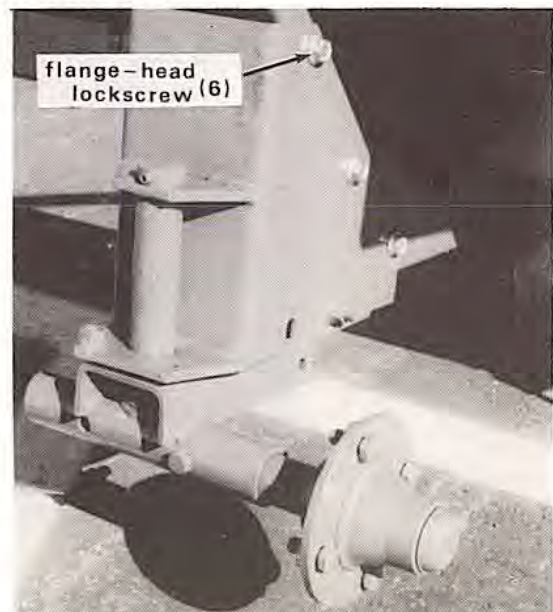
HEADER FRAME

42

## R/H WHEEL LEG & SPINDLE - Fig. 44

Attach the R/H wheel leg & spindle assembly to the main frame using six 1/2" NCX 1" long Flange Head Lockscrews. (install from the outside).

Remove the wheel bolts from the hub, install the tire, and replace the wheel bolts.



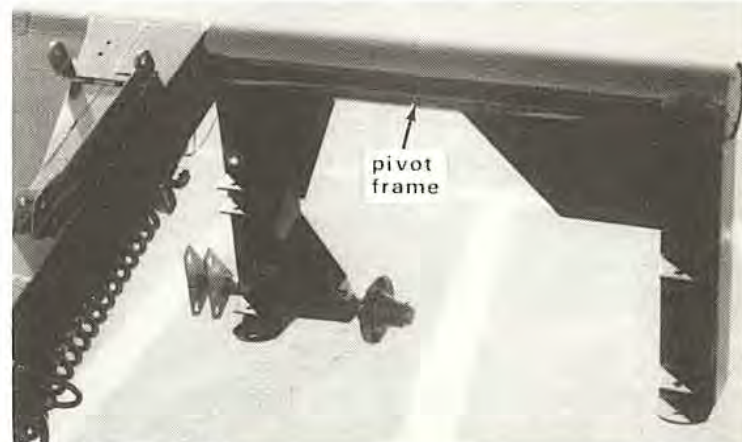
R/H WHEEL LEG

44



### PIVOT FRAME - Fig. 46

Untie the pivot frame from the main frame, swing down to the extended position, then block up to facilitate assembly.



PIVOT FRAME

46

### HITCH FRAME - Fig. 48 & 50

Place hitch frame in assembly position. Set up the attached jack to raise the front of the hitch frame approximately 14 inches (36 cm).

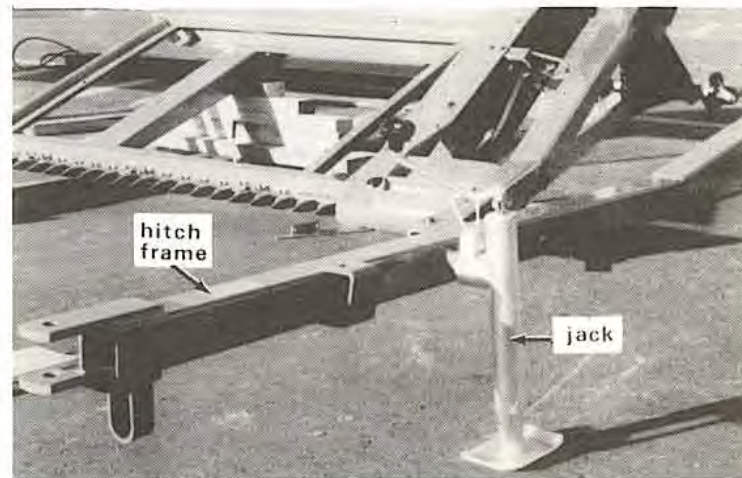


**CAUTION:** Be sure the jack is on firm ground and is operating properly.

Attach the rear of the hitch frames to the lugs on the left and right legs of the pivot frame; using two  $\frac{3}{4}$ " X  $3\text{-}\frac{5}{8}$ " eff. clevis pins in the bottom lugs, and two  $\frac{3}{4}$ " X  $3\frac{1}{4}$ " eff. clevis pins in the top lugs. Secure all with  $\frac{5}{32}$ " X  $1\frac{1}{2}$ " long cotter pins.

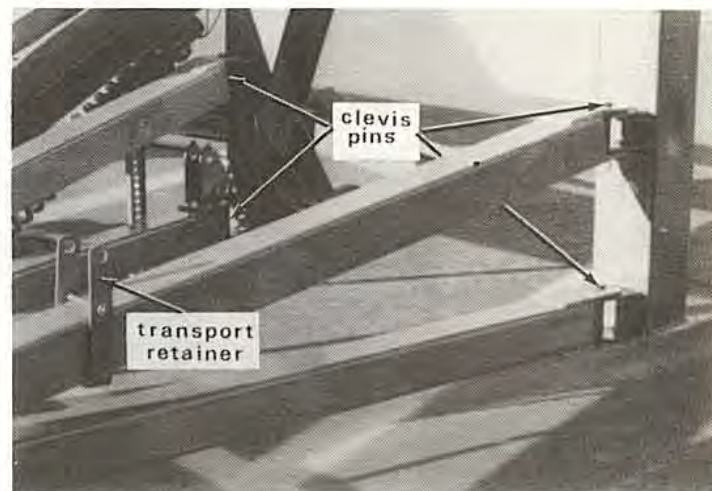
**NOTE:** Install clevis pins from the top, with the cotter pins underneath. Also, we suggest installing the bottom pins first.

Remove the transport retainer from the transport arm and attach to the upper L/H hitch member, approximately 33" (84 cm) from the end of the channel, using the  $\frac{5}{16}$ " NCX 4" long capscrew.



HITCH FRAME - positioning

48



HITCH FRAME attachment

50



## L/H TIRE - INSTALLATION - Fig. 52

Remove wheel bolts from the L/H hub, install tire, and replace bolts.

## DRIVES FRAME ASSEMBLY - KNIFE DRIVE BELT INSTALLATION - Figs. 54, 56, &amp; 58.

Remove all belts, hoses, etc. stored in the Drives Frame Assembly.

Remove the 1/2" NCX 1 1/2" long carriage bolt c/w flat washer, lockwasher, and nut, (Fig. 54, arrow 1) securing the knife drive belt idler pulley bracket to the drives frame.

Position drives frame, and place the partially pre-installed knife drive belt around the idler pulleys.

Attach the drives frame to the end of the pivot frame tube using four 1/2" NCX 1 1/4" long capscrews c/w lockwashers (Fig. 56, arrow 2).

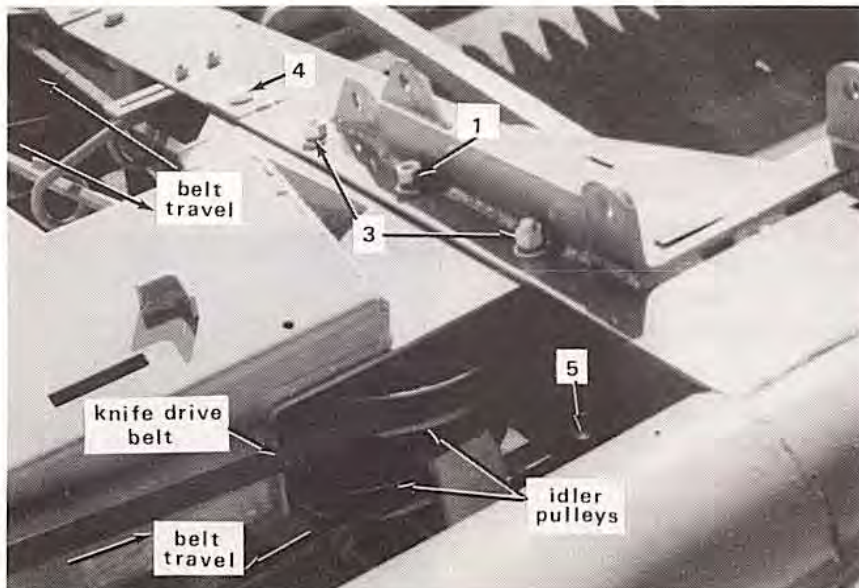


L/H TIRE

52

Attach the drives frame assembly to the header frame by replacing the hardware group (arrow 1) removed above. (Do not tighten until the knife drive belt has been adjusted for tension. See Operation and Adjustment Section, page 5).

NOTE: If the machine has self-contained hydraulics, install the pump drive belt (K-13662-1) on the front groove of the main drive pulley at this time.



DRIVES FRAME ASSEMBLY

54



Install the knife drive belt (K-13641) as shown onto the second groove from the front on the main drive pulley, giving the belt a 90° twist; and onto the driven pulley with a 180° twist to the L/H strand.

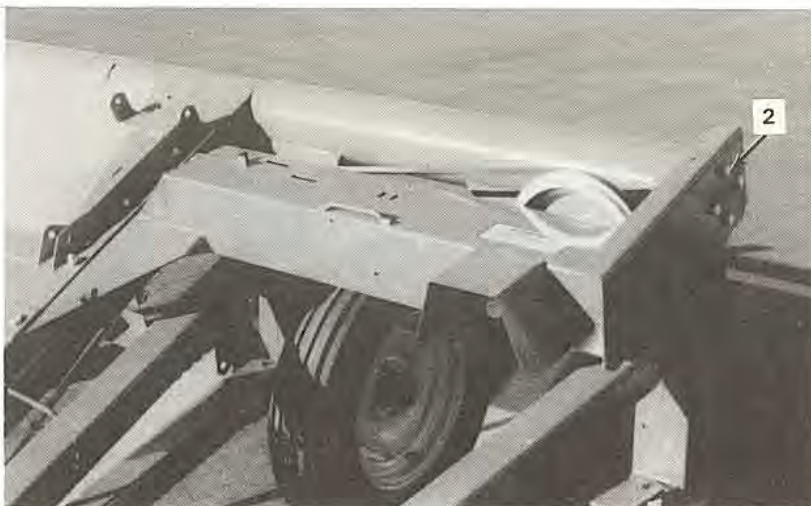
NOTE: The purpose of twisting the belt is to make it travel in the direction shown in Fig. 54. Once installed, check that the belt is moving correctly. For adjustment instructions, see Belt Adjustments, Operation and Adjustment Section, Page 5 .

Complete attachment of the drives frame assembly to the header frame, using two 1/2" NCX 1 1/4" long cap-screws c/w flatwashers, lockwashers, and nuts - Fig. 54, arrow 3; and one 5/8" NCX 1 1/2" long capscrew c/w flatwasher, lockwasher, and nut, as shown in Fig. 54, arrow 4.

Complete attachment of the idler pulley bracket to the main frame using one 1/2" NCX 1 1/2" long carriage bolt c/w flatwasher, lockwasher, and nut, in the lower bracket arm. See Fig. 54, arrow 5.

(Do not tighten until the knife drive belt has been adjusted for tension. See Operation and Adjustment Section, page 5).

NOTE: At this time, position the primary reel drive belt (K-15068-1) on the main drive pulley (third groove from the front).



DRIVES FRAME

56



KNIFE DRIVE BELT

58



## TRANSPORT WHEEL - ASSEMBLY Fig. 60

Raise the cutter bar approximately 24" (61 cm) and block securely.



## CAUTION:

1. Be sure your block is secure and firm.
2. The wire securing the table lift cylinder has been cut to facilitate installation of the drives frame. When jacking up the cutter bar, the cylinder will drop to the ground. Be sure the area is clear.

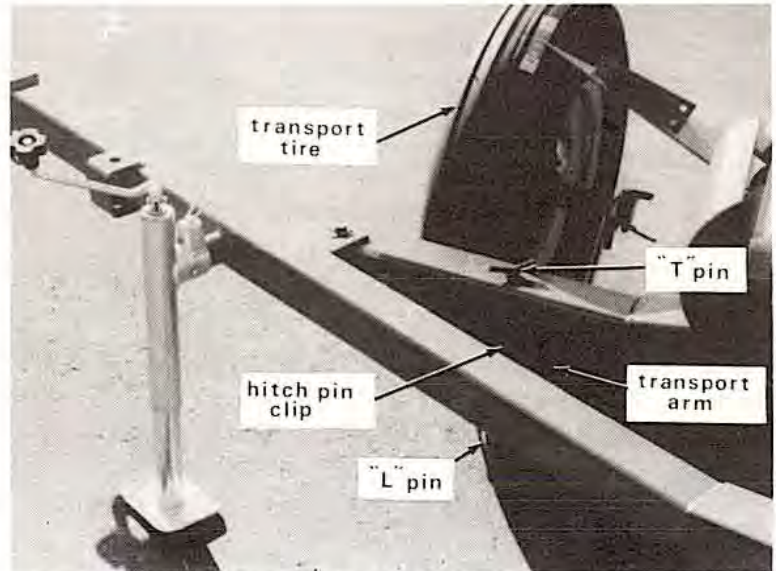
Place the hitch frame in transport position (R/H hitch frame fully retracted).

Install the T-pin, securing with the hitch pin clip.

Insert the transport arm through the "U" brackets welded below the hitchframe and secure with a 1/2" dia. X 3 5/8" long "L" pin and a 5/32" hairpin cotter. Use jack to raise hitchframe enough to install the transport tire (approx. 24" - 60 cm.)

Remove wheel bolts from transport assembly hub, install tire, and replace bolts.

NOTE: In field position, this wheel serves as the L/H dual on the R/H wheel assembly.



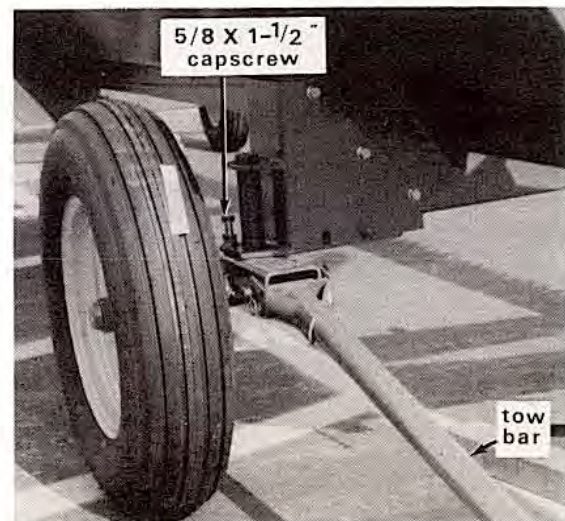
TRANSPORT WHEEL &amp; HITCH POSITION

60

## TRANSPORT POSITION - Fig. 62 &amp; 64

R/H WHEEL: Remove the 5/8" NCX 1 1/2" long capscrew from underneath the R/H wheel leg assembly and place in storage nut on wheel leg.

Remove "L" pin from transport tow bar, position bar in R/H wheel leg bracket and replace pin. Swing the tow bar out, turning the wheel thru 90° to position shown.



R/H WHEEL - transport position

62



L/H WHEEL: Jack up L/H wheel and remove the bolt closest to the wheel from the L/H wheel support. Turn the wheel through 90° and replace the bolt.

NOTE: To rotate the wheel, it may be necessary to loosen the second bolt on the L/H wheel support. If so, retighten when wheel is properly positioned.



CAUTION: Be sure that the jack is secure and on firm ground.

NOTE: For information on transporting the swather and transportation equipment storage see TRANSPORTATION SECTION.

NOTE: If 3 ft. extension is to be used, the extension frame and extension cutter bar must be installed before proceeding further. See ATTACHMENTS & OPTIONS SECTION, page 41



L/H WHEEL - transport position 64

## R/H REEL SUPPORT ARM - Fig. 66

Adjust the bolt securing the safety support on the arm.

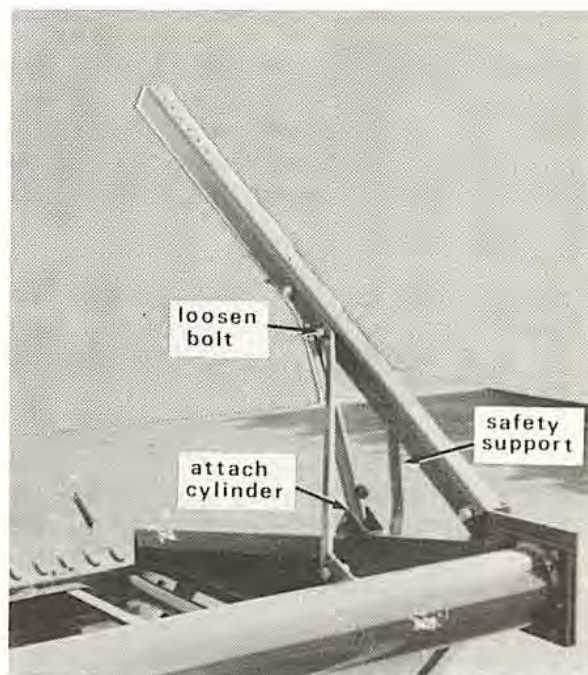


CAUTION: Ensure that the safety supports are secure and properly tightened so they can be FORCED into position by hand.

Loosen the bolt securing the brace on the R/H Reel Support Arm.

Lower the R/H Reel Lift Cylinder and attach to the mounting lugs on the R/H end frame (elbow to the back) using a 5/8" dia. X 2 1/4" eff. clevis pin and a 5/32" X 1 1/2" long cotter pin.

Do not tighten the brace bolt at this time.



R/H REEL ARM



## L/H REEL SUPPORT ARM - Fig. 68 &amp; 70

Adjust the bolt securing the safety support on the arm until it can be forced down by hand, into the support position.

Remove the 1/2" X 1 1/2" capscrew, the 3/4" O.D. X 9/32" long spacer bushing, flatwasher, lockwasher and nut from the end of the brace on the L/H reel support arm.

Remove the 5/8" NCX 2" long cap-screw, the 7/8" O.D. X 21/32" long spacer bushing, flatwasher, lockwasher, and nut, from the L/H reel support arm at the point where the arm fastens to the main frame.

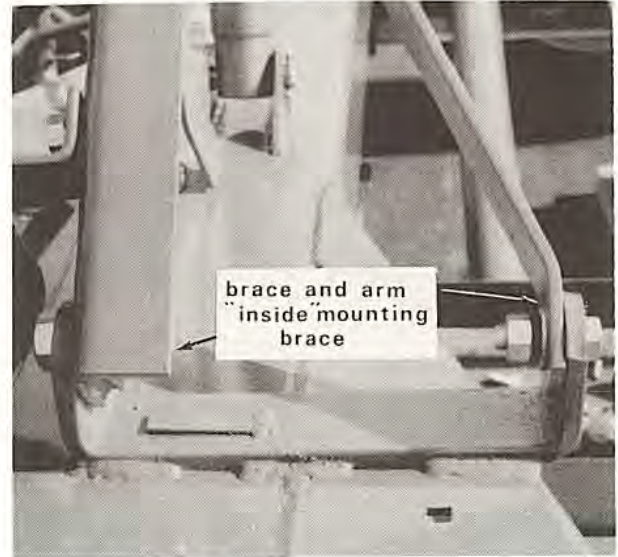
NOTE: To remove this hardware group, it is necessary to loosen the reel drive idler pulley bracket. This can be left loose until the reel drive shield is installed.

Loosen the nut on the large relay pulley on the L/H reel support arm. This allows positioning of the brace for fastening to the main frame. Leave this nut loose at this time.

Attach L/H reel support arm and brace to the main frame by replacing the two hardware groups removed above.

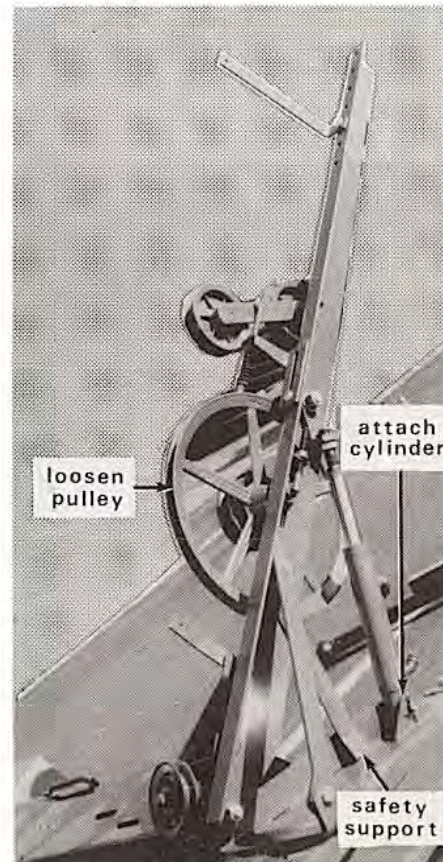
NOTE: Support arm and brace should both be "inside" the brace weld on the main frame as shown in Fig. 68.

Lower the L/H reel lift cylinder and attach to the mounting lugs on the main frame (elbows forward) using a 5/8" dia. X 2 1/4" long clevis pin and a 5/32" X 1 1/2" long cotter pin.



L/H SUPPORT ARM

68



L/H SUPPORT ARM

70

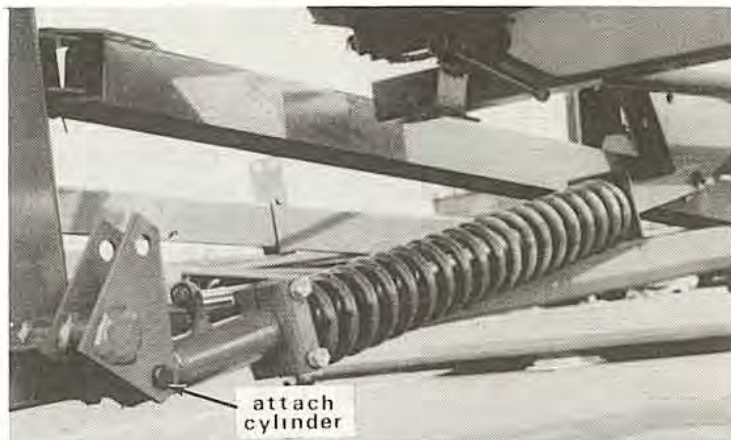


## HEADER LIFT CYLINDER - Fig. 72



**CAUTION:**  
Use caution when going under the header to install the hydraulic cylinder.

Attach the lower end of the cylinder to the bottom hole in the lug on the left wheel leg, using one  $3/4$ " X  $2\ 1/2$ " eff. clevis pin secured by a  $5/32$ " X  $1\ 1/2$ " long cotter pin. For instruction on bleeding the header lift cylinder, see OPERATION & ADJUSTMENTS SECTION, page 11.

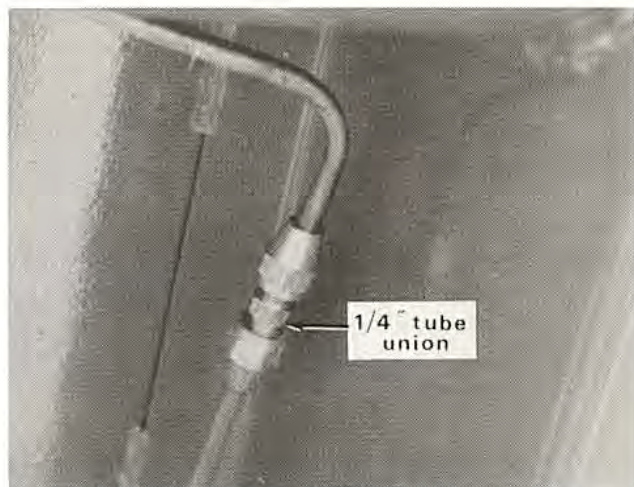


HEADER LIFT CYLINDER

72

## HYDRAULIC LINES - Fig. 74

The R/H hydraulic line is pre-installed on the header assembly, under the back tube. Connect the left end of this line to the L/H hydraulic line, using the  $1/4$ " tube union. Clamp the line under the tabs along the back tube.



HYDRAULIC LINES - connection

74

## HOSE - L/H REEL CYLINDER TO HYDRAULIC LINE - Fig. 76

Attach the  $7/16$ " fine-threaded end of the 21" (53.3 cm) hydraulic hose to the L/H end of the hydraulic line. Attach the other end ( $1/4$ " pipe-thread) to the top elbow of the L/H reel cylinder.

**NOTE:** The ends of the hydraulic hoses and the connections on components are capped for protection against dirt and moisture. These caps must be removed when the lines are being connected.



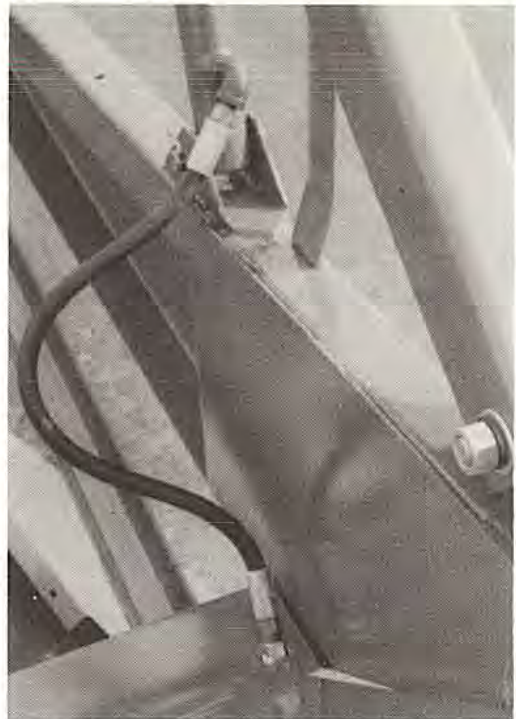
HYDRAULIC HOSE - L/H reel cylinder to hydraulic line

76



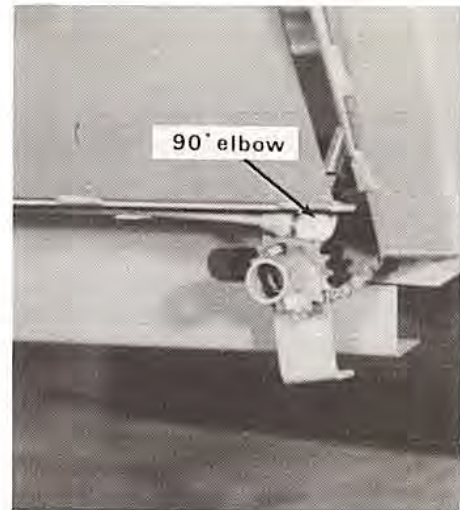
HOSE - R/H REEL CYLINDER TO HYDRAULIC LINE - Fig. 78 & 80

Connect the other 21" (53.3 cm) hydraulic hose (both ends alike) to the elbow on the R/H reel cylinder. Connect the 90° female elbow (from the hardware bag) to the other end of the 21" hydraulic hose. Insert the elbow through the hole in the frame and connect to the R/H end of the hydraulic line. For instruction on bleeding the R/H Reel Cylinder, see OPERATIONS & ADJUSTMENTS SECTION, page 11



HYDRAULIC HOSE-R/H reel cylinder to hydraulic line 78

NOTE: Your machine will be equipped with either a self-contained hydraulics system or remote tractor hydraulics. Instructions for installation of both of these systems follow. Choose the one that pertains to your machine and proceed.



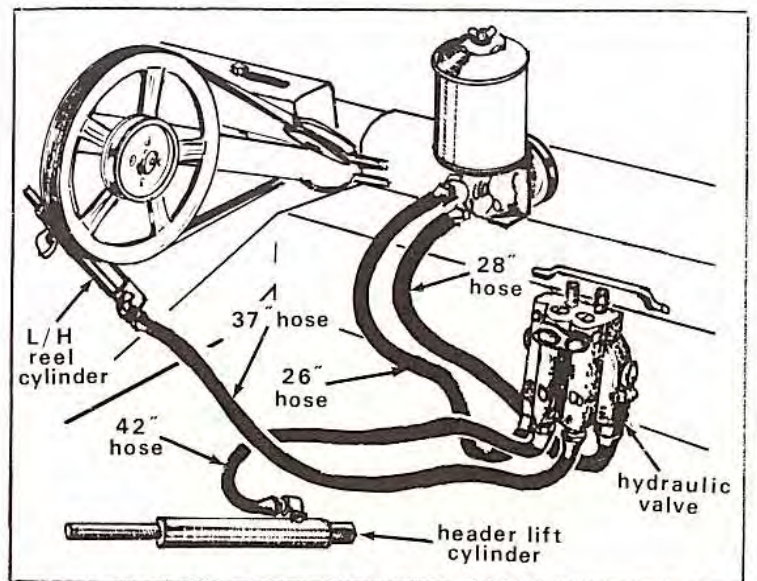
HOSE-LINE CONNECTION 80

SELF-CONTAINED HYDRAULICS

HYDRAULIC VALVE - Fig. 82

Attach the hydraulic valve to the front of the drives frame using two 1/4" X 2" long capscrews, c/w lockwashers and nuts.

NOTE: All hardware used in this section will be included in the self-contained hydraulics kit and should not be confused with the standard hardware bag contents.



SELF-CONTAINED HYDRAULICS SYSTEM



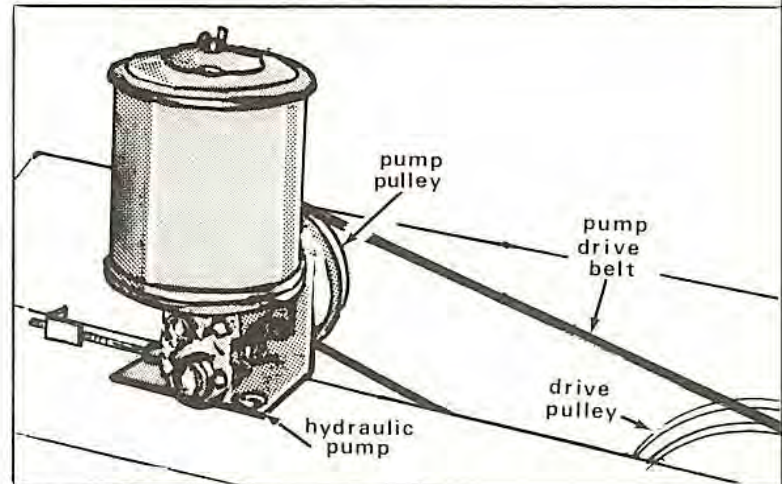
## HYDRAULIC PUMP ASSEMBLY - Fig. 84

Attach the hydraulic pump assembly to the drives frame using two 7/16" NC X 1" long carriage bolts c/w flatwashers, lockwashers and nuts. (Do not tighten).

Fill the reservoir to the limit line with #10 non-detergent, non-foaming oil or automatic type "A" transmission fluid. (See OPERATION & ADJUSTMENTS SECTION, page 11 for bleeding procedure.)

**CAUTION:**

Do not use heavy duty crank-case oil.



PUMP DRIVE

84

HOSE- VALVE TO L/H REEL CYLINDER  
Fig. 82

Install the 37" (94 cm) hydraulic hose from the L/H reel lift cylinder (bottom elbow) to the swivel adaptor in the "B" part of the hydraulic valve.

HOSE - VALVE TO HEADER LIFT CYLINDER  
Fig. 82

Install the 42" (106.7 cm) hydraulic hose from the header lift cylinder elbow to the swivel adaptor in the "D" part of the hydraulic valve.

## HOSE - VALVE TO PUMP - Fig. 82

Install the swivel end of the 26" (66 cm) hydraulic hose into the "IN" port of the hydraulic valve. Install the rigid end of this hose into the "OUT" port of the pump.

Install the swivel end of the 28" (71 cm) hydraulic hose into the "OUT" port of the hydraulic valve. Install the rigid end of this hose into the "IN" port of the pump.

PUMP DRIVE BELT - INSTALLATION  
Fig. 84

Install the pump drive belt from the most forward groove in the main drive pulley (where it should already be positioned) to the pump pulley. Move the pump mounting plate to adjust the belt tension, then tighten the two carriage bolts. (See Belt Adjustment and Tension in the Operation and Adjustments Section, page 7 .)

**NOTE:** The self contained hydraulic package can be ordered with either cable controls or lever controls. For installation instructions, see ATTACHMENTS & OPTIONS SECTION page 44-45.



## REMOTE - TRACTOR HYDRAULICS

Figs. 86 & 88

Attach the top header lift cylinder from the Remote Tractor Hydraulics Kit from the top holes in the header lug to the top holes in the L/H wheel leg lug, using 3/4" X 2 1/2" eff. clevis pins secured by 5/32" X 1 1/2" long cotter pins. The tee on the top cylinder should be up and pointing back at 45°.

NOTE: All hardware used in this section will be included in the remote-tractor hydraulics kit, and should not be confused with the standard hardware bag contents.

Install the 20" (50.8 cm) hydraulic hose from the R/H connector of the tee on the top cylinder to the elbow on the lower cylinder.

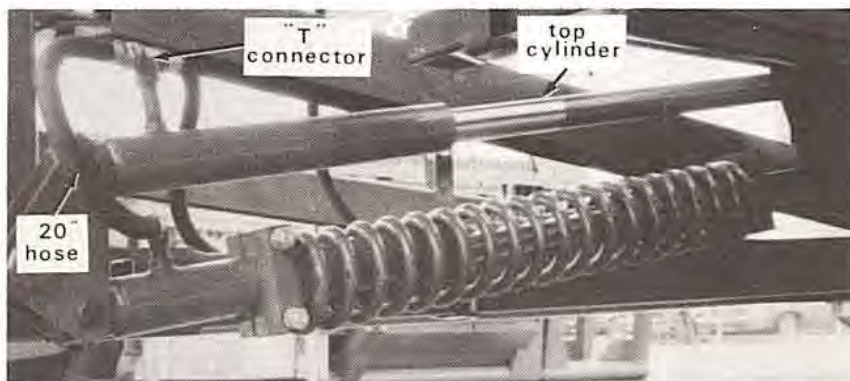
Install the 3/8" X 192" long hydraulic hose into the L/H connector of the tee on the top cylinder (rigid end to cylinder - swivelled end to tractor)

Install the 1/4" X 192" long hydraulic hose into the bottom elbow in the L/H reel lift cylinder (rigid end to cylinder - swivelled end to tractor).

Secure the 192" (488 cm.) hoses to the R/H hitch member using two C-clamps and 5/16" X 4" long cap-screws and nuts. Complete remainder of this installation after P.T.O. support is installed. (P. 33 )

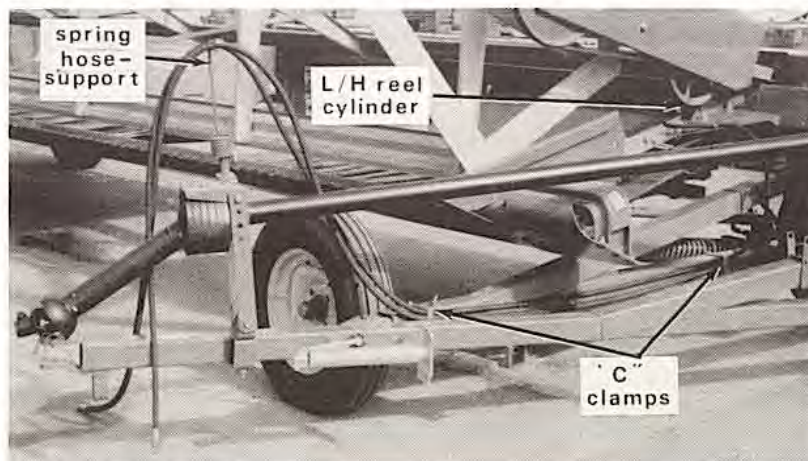
Secure the spring hose support to the P.T.O. support bracket using one 7/16" X 1" long capscrew, flatwasher, lock-washer and nut. Secure the hoses to the spring support using the clamp, base, and 5/16" X 1 1/4" long capscrew, flat-washer, and nut.

NOTE: The 192" hoses must have enough slack at the back of the hitch to allow the R/H hitch member to extend to field position.



TOP HEADER LIFT CYLINDER

86



REMOTE HOSES

88



## DRAPERS - Figs. 90, 92 & 94

Check rollers for squareness with frame to ensure true draper travel. Loosen the draper tightener. Install the drapers onto the rollers being certain the direction of travel arrows point toward the swath opening when located on top of the rollers.

Install the bolts, lockwashers, and nuts through the two connector slats. Leave these loose at this time.

NOTE: Draper hardware is in a bag stapled to the draper.

Pull the draper flaps up and through between the bolts in the connector slats. Then thread the flaps back down and under the connector slat as shown.

Leave approximately  $\frac{3}{8}$ " of folded draper above the connector slat. Adjust draper tension evenly, and tighten all bolts.

Check operation and tension of draper tightener, using a screwdriver in the outside hole as shown. Re-adjust draper as required. (See Operation and Adjustments Section, page 10).



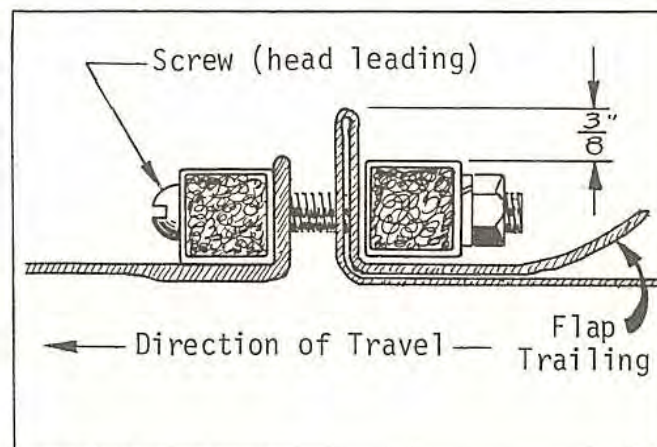
DRAPER INSTALLATION

92



DRAPER TIGHTENER

90



DRAPER HARDWARE

94



## DRAPER DRIVE BELTS & SHIELD

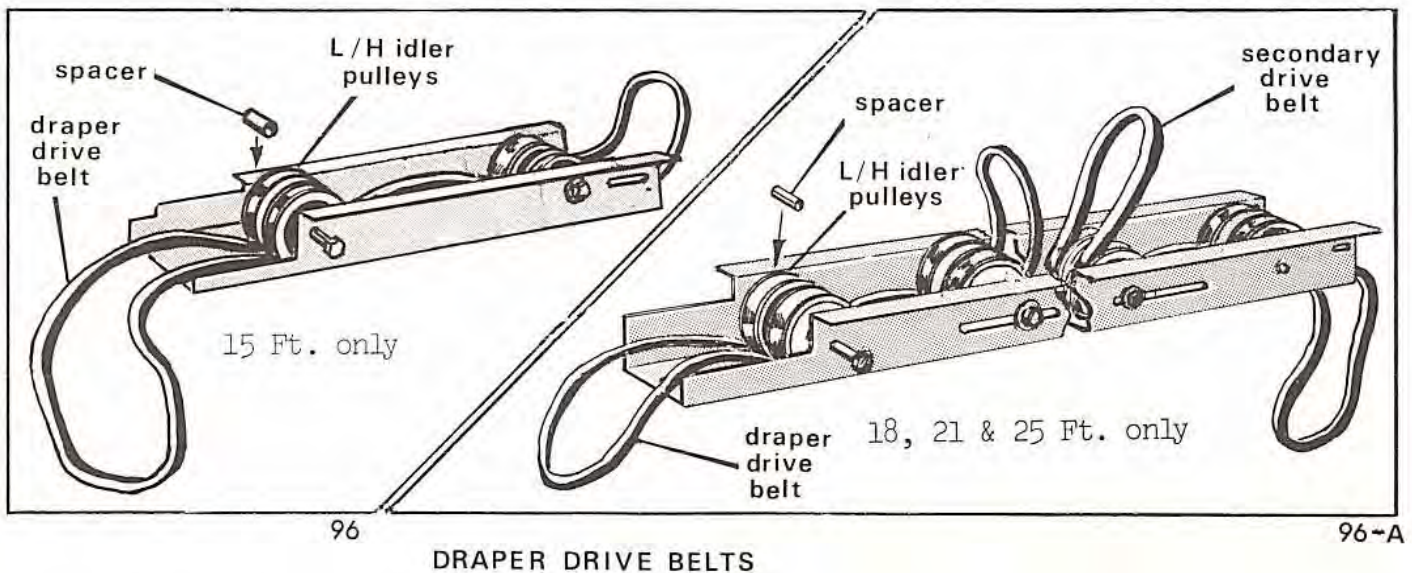
Figs. 96, 96-A, 98 & 100

Remove the top 5/16" NC x 5/8" long flange screw and flange nut that attaches the front shield to the header.

Position the Draper Drive Shield assembly upside down on the ground to facilitate assembly. Remove the nut and lockwasher securing the L/H idler pulleys. Remove the 3/4" O.D. X 1 1/16" long spacer.

15 ft only: Displace the pulleys slightly and install the draper drive belt (K-13712-1) under the four idler pulleys. Re-assemble the L/H idler pulley.

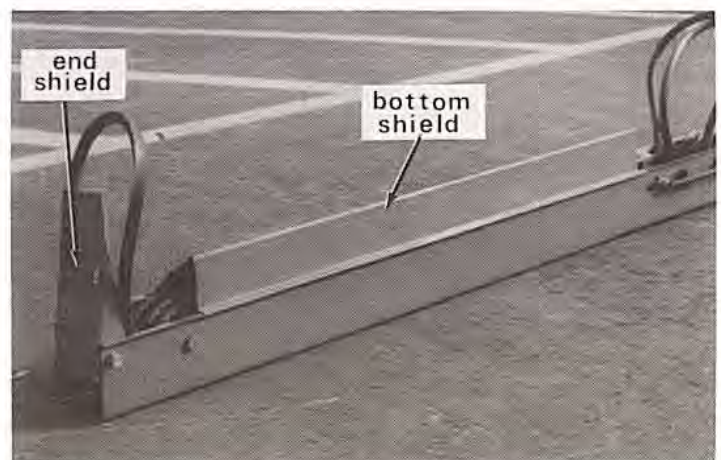
18, 21, & 25 ft. only: Displace the pulleys slightly and install the draper drive belt (K-13641-1: 18 ft; K-17838-1: 21 ft; K-18117-1: 25 ft.) under the four L/H idler pulleys. Reassemble the L/H idler pulley. Install the secondary draper drive belt (K-4227-1) under the four R/H idler pulleys.



Remove the end shield at the R/H end of the draper drive shield by removing the 3/8 NC X 5" long capscrew. Slide on the draper drive bottom shield from the R/H side, over the flanges on the upper shield.

NOTE: The vertical section of the bottom shield must be toward the back tube of the header.

Replace the R/H end shield.



BOTTOM SHIELD

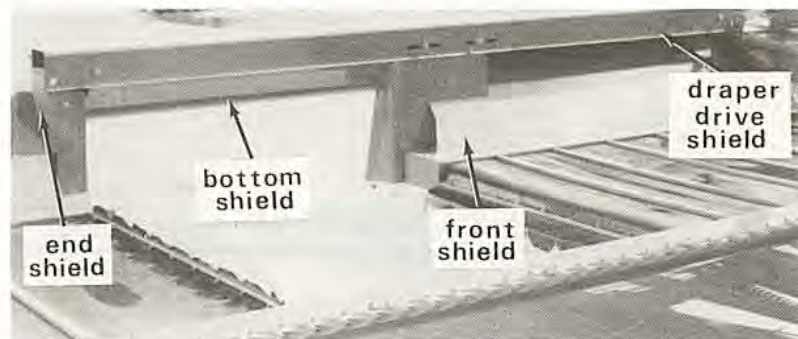


Install the R/H end of the draper drive shield assembly on the main frame using two 5/16" NC X 1" cap-screws c/w flatwashers (against the slot), lockwashers and nuts; and one 5/16" NC x 5/8" long flange head screw and flange nut.

Install the L/H end by fastening the shield mount bracket (pre-installed in the shield) to the main frame using two 3/8" NC X 1" long carriage bolts (heads down) c/w flatwashers, lockwashers, and nuts (do not tighten).

Replace the flange hardware removed from the front shield, and the 3/8" NC X 5" long capscrew removed from the R/H end shield.

Install a 5/16" NC x 5/8" long flange head screw and flange nut in the remaining slot in the front shield, connecting it to the drive shield.



DRAPER DRIVE SHIELD

100



— *Caution* —

*The key to safety*



## DRAPER DRIVE BELT INSTALLATION Fig. 102 & 102A

15 ft. only - Install the draper drive belt on the draper drive pulley, giving the belt a 180° twist. Install the other end over the main drive pulley (fourth groove from the front), giving it a 180° twist.

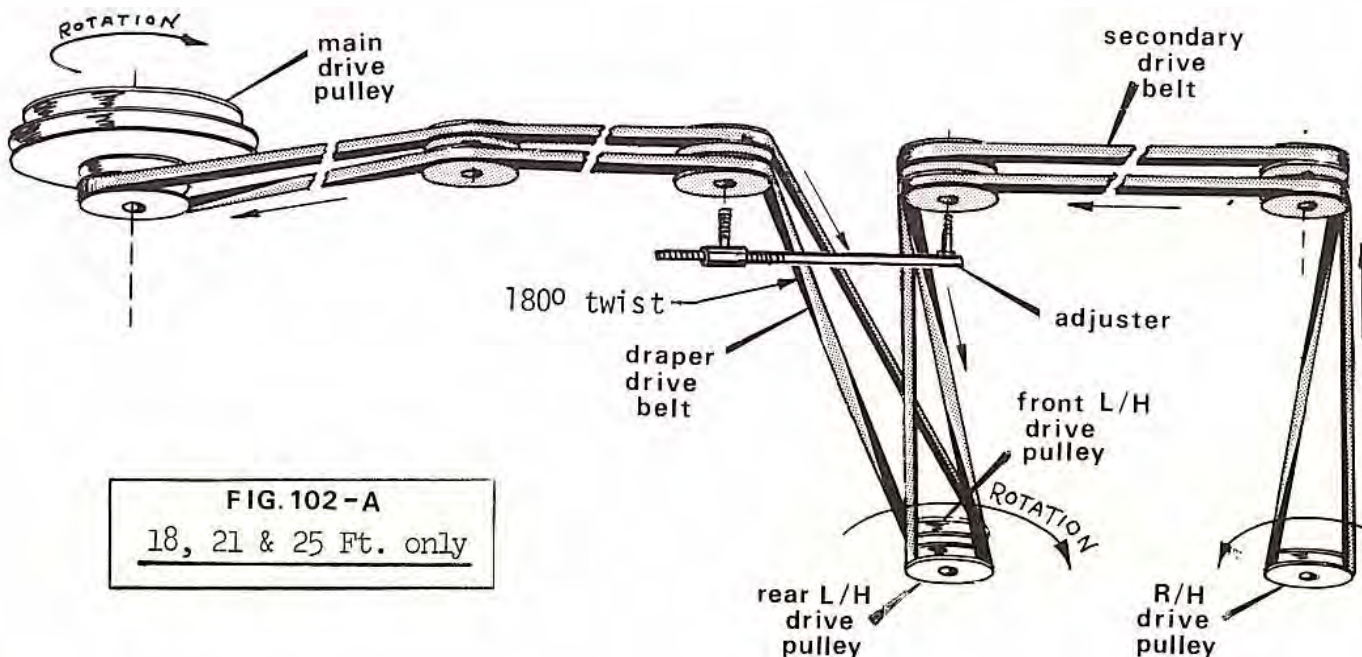
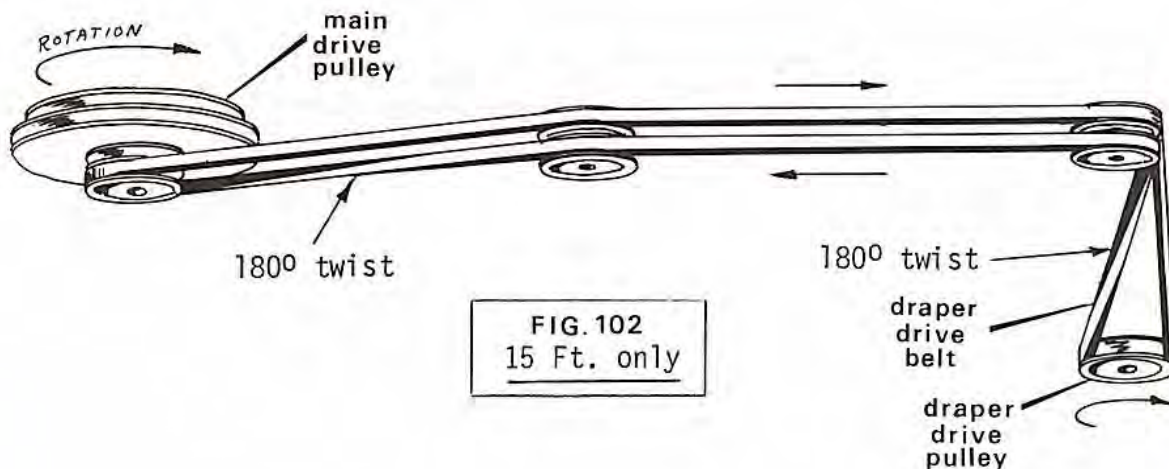
NOTE: For adjustment instructions, see Belt Adjustments, Operation and Adjustment Section, P. 6 .

Rollers must turn as indicated by rotation arrows. This is controlled by the twists put in the belt when installed.

18, 21 & 25 ft. only: Install the draper drive belt (extending below the shield) on the front L/H draper drive pulley; giving the belt a 180° twist.

Install the other end of the belt over the main drive pulley (fourth groove from the front) giving it a 180° twist. Check rotation of the roller, ensuring it moves in the direction indicated by the arrow in the illustration.

Install the secondary draper drive belt on the rear L/H draper-drive pulley, giving the belt a 180° twist. Install the other end of the belt over the R/H draper drive pulley, giving the belt a 180° twist.





P.T.O. SHAFT - ASSEMBLY - Fig,104,  
106 & 108

Insert the woodruff Key into the Keyway in the drive shaft extending from the main drive pulley.

Install the U-joint at the straight end of the long P.T.O. shaft on the the pulley drive shaft, ensuring that the woodruff key is properly aligned with the channel in the U-joint.

Align the hole through the drive shaft with the holes in the U-joint shaft and insert a 5/16" NC X 3" long capscrew. Fasten with a self-locking nut.

Remove the lock nut from the support at the other end of the long P.T.O. shaft. Insert into the hitch bracket and replace the locknut. Do not overtighten. Install the short P.T.O. assembly over that section of the P.T.O. assembly extending beyond the hitch bracket.



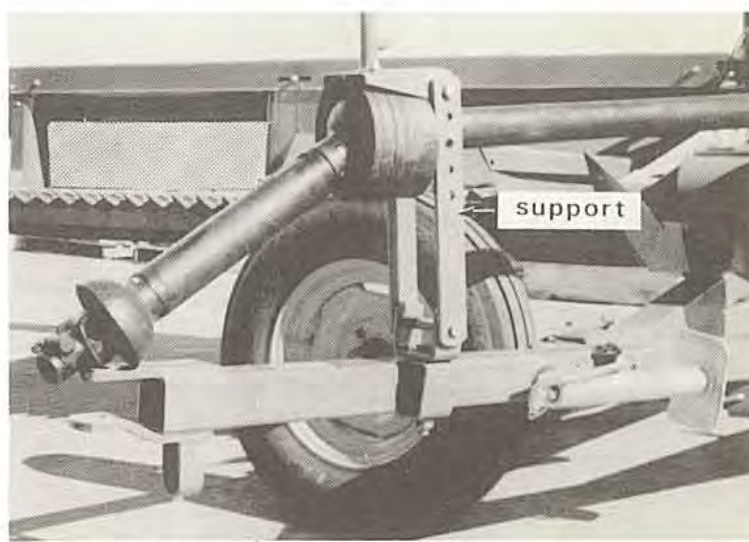
P.T.O. SHAFT- partially installed

104



P.T.O. SHAFT- installed

106



P.T.O. SHAFT SUPPORT

108

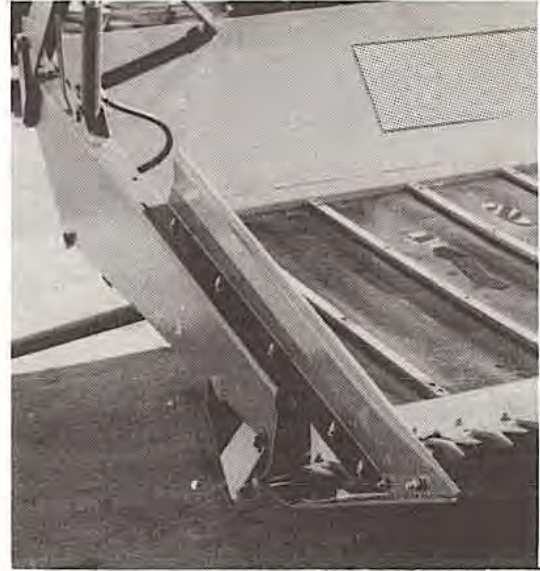


R/H DIVIDER & DEFLECTOR SHIELD  
Fig. 110 & 112

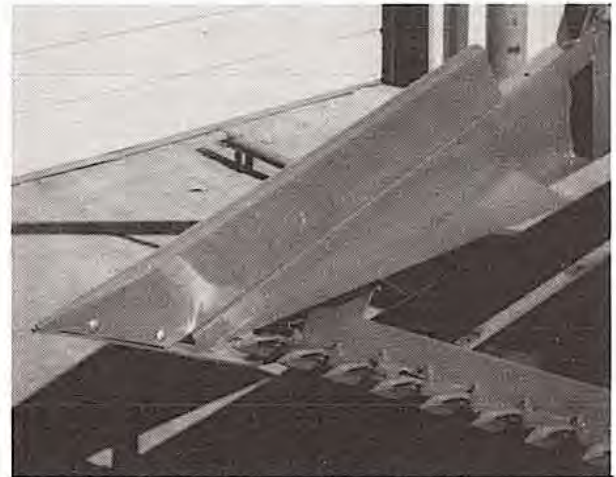
Attach the R/H divider to the R/H shoe using one 5/16" NC X 1" long carriage bolt (head to the reel side) c/w flatwasher, lockwasher, and nut in the most forward hole in the bar welded to the shoe. Also install one 1/4" NC X 3/4" long carriage bolt (head to the reel side), c/w flatwasher, lockwasher and nut in the second hole in the bar.

Attach the deflector shield and the divider to the end frame and to each other, using five 1/4" NC X 3/4" long carriage bolts (heads down) c/w flatwashers, lockwashers, and nuts.

NOTE: Do not attach divider rod at this time as it hampers reel positioning and adjustment.



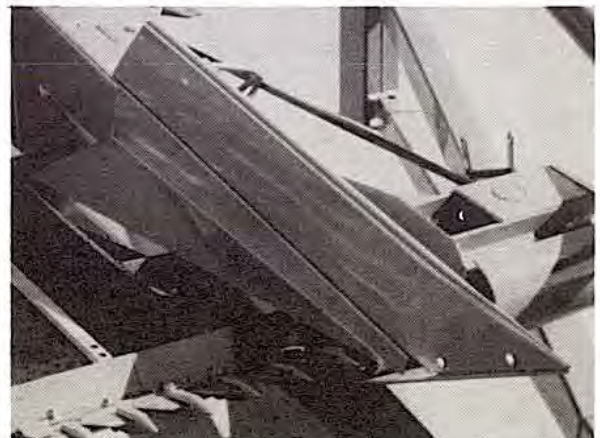
R/H DIVIDER & DEFLECTOR 110  
(outside view)



R/H DIVIDER & DEFLECTOR 112  
(inside view)

L/H DIVIDER & DEFLECTOR SHIELD  
Fig. 114

Attach the L/H divider and deflector shield to the L/H shoe and header frame exactly as the R/H divider and deflector shield were installed.



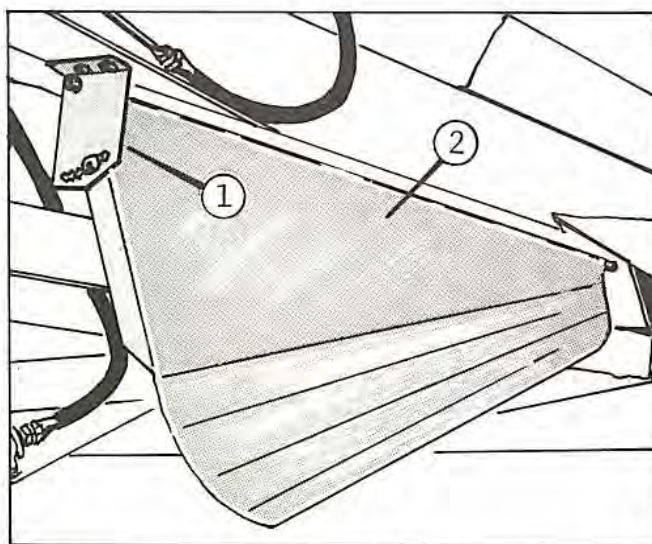
L/H DIVIDER & DEFLECTOR 114



USED ON 15 FT. WINDROWER ONLY

WINDROW DEFLECTOR SHIELD - Fig. 116

Install the adjusting bracket (1) on the wide end of the shield (2). Insert the tube at narrow end into the lug welded to the table. Bolt the adjusting bracket to the table frame using two 3/8" X 1" Lg. carriage bolts. Adjust the deflector (approx. center notch) and secure in position using 3/8" X 1" lg. carriage bolt. Shield may be adjusted as required in the field.



DEFLECTOR SHIELD (15 ft.)

116



## REEL ASSEMBLY - Fig. 118, 120 &amp; 122

NOTE: If facilities and equipment are available to place the assembled reel onto the machine, we suggest assembling the reel off of the machine. This makes adjustment of the reel bats easier. If the reel must be assembled on the machine, see REEL SHAFT ENDS, at this point, then return to REEL ASSEMBLY when the reel shaft is on the machine.

NOTE: All reel hardware is in a bag separate from the other hardware.

Attach the reel arms to the reel shaft discs as shown, using 5/16" NC X 5/8" long flange head capscrews and flange nuts. Do not tighten.

NOTE: Two reel arms are attached simultaneously to the reel shaft disc.

Attach the reel bats to the reel arms using 5/16" NC X 5/8" long flange head capscrews and flange nuts (c/w washers at bat joins -25'). Heads of capscrews should be against bats.

NOTE: If 3 ft. extension is to be used, the reel extension components must be installed before proceeding further. See ATTACHMENTS & OPTIONS SECTION, PAGE 41

Attach reel ends to the back of the bats using 5/16" NC X 5/8" long flange head capscrews and flange nuts.

NOTE: Two reel ends are installed simultaneously, one fitting under the other, and attaching to the back of the reel bat.



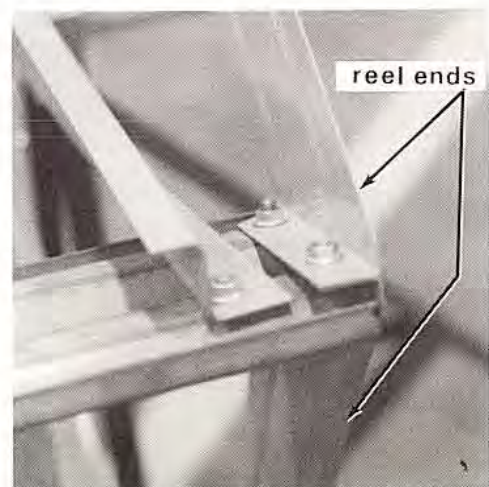
REEL ARMS to REEL SHAFT

118



REEL BATS to REEL ARMS

120



REEL ENDS to REEL BATS

122



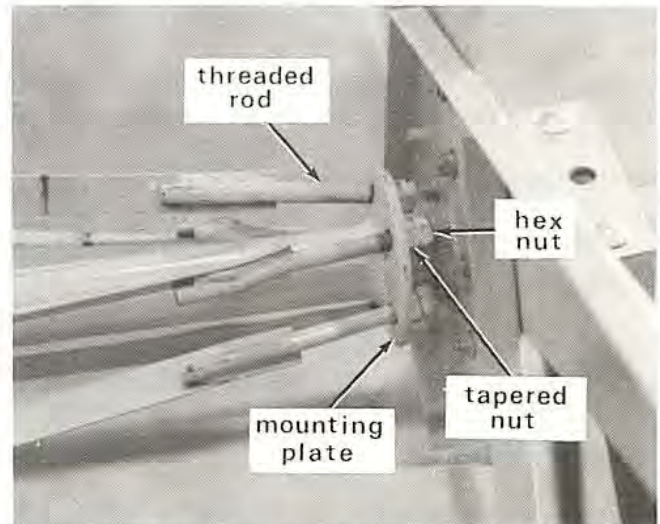
## TRUSS STRAPS - Fig. 124 &amp; 126

Install truss straps according to the following chart.

	18 FT.	21 FT.	25 FT.
REEL ARM SET	3rd from right (center)	3rd from right	4th from right (center)
STRAP POSITION BY SIZE	L/H & R/H same size	L/H - LONGER STRAP R/H - SHORTER STRAP	L/H & R/H same size
ATTACHMENT HOLES (NOTE: HOLE POSITIONS ARE FROM THE END OF THE STRAP)	L/H - 1st hole R/H - 2nd hole	L/H - 1st hole R/H - 3rd hole	L/H - 1st hole R/H - 1st hole

Remove the "Inner" bolts from the reel bats on the appropriate reel arm set (according to the above chart).

Attach the threaded rod end of the correct size truss strap (see chart) to the L/H & R/H dish-shaped mounting plates on the reel shaft by inserting the rod through the plate, and fastening with a .44 tapered nut (taper to the mounting plate) and hex nut. Do not tighten at this time.

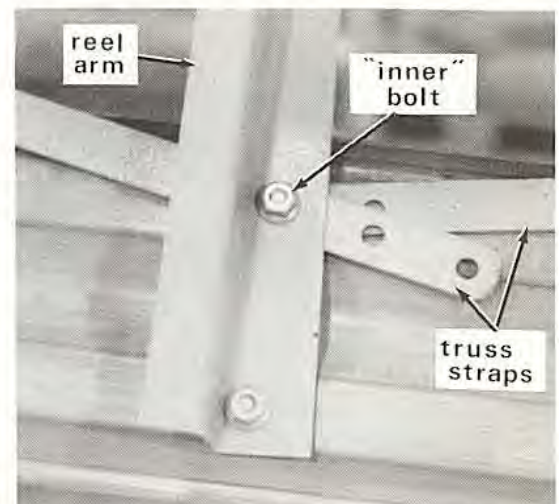


TRUSS STRAPS to MOUNTING PLATE 124

Position the straps between the reel arms and the reel bats, then re-install the 5/16" NC X 5/8" long flange head capscrews with flange nuts, fastening the truss straps in the appropriate holes (see chart).

## REEL ALIGNMENT

Examine each bat for straightness, and adjust by tightening the appropriate truss straps. As each bat becomes straight, tighten the hardware connecting the appropriate reel arms to the reel shaft discs. Continue until all bats are straight, and all hardware and truss straps are tight.

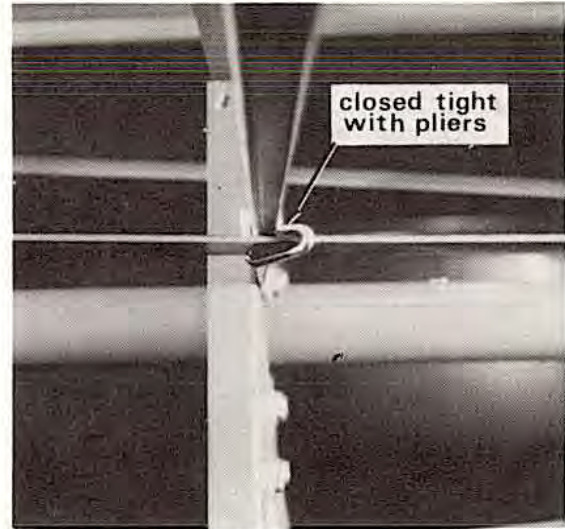


TRUSS STRAPS to REEL ARMS 126



ANTI-RATTLE CLIPS Fig. 127

Slip clip over the truss strap and reel arm as shown, and close clip tight with pliers.



ANTI-RATTLE CLIPS

127

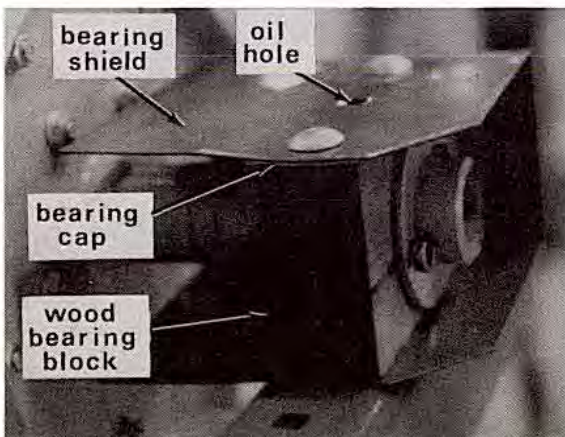
REEL SHAFT ENDS - Fig. 128, 130, & 132

Insert two 1/4" X 2 1/2" long cotter pins, one at each end of the reel shaft, in the holes nearest the reel shaft discs. Slide one 1 11/16" I.D. flatwasher on each end and up to the cotter pins.

Assemble the R/H end assembly by inserting a wood bearing block and bearing cap into the bearing shield (ensure the oil holes are aligned).

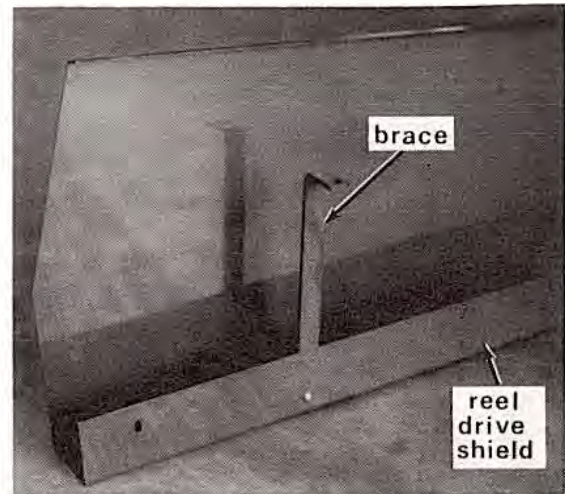
Place this assembly on the R/H end of the reel shaft (the R/H end being the shorter extending end of the reel shaft), with the oil-hole up.

Slide on a second 1 11/16" I.D. flatwasher up to the block assembly and secure the R/H end with a 1/4" dia. X 2 1/2" long cotter pin, (Fig. 128)



R/H SHAFT END

128



SHIELD BRACE

130

Install the second wood bearing block on the L/H end and up to the flatwasher (oil-hole up). Slide on a 1 11/16" I.D. flatwasher up to the block.

Remove the front reel drive shield brace from the L/H reel support arm and install in the reel drive shield in the second hole from the front, using a 5/16" NC x 5/8" long flange head screw and flange nut.

(See Fig. 130.)

Hoist or otherwise position the reel on the reel support arms.

NOTE: The longer extending end of the reel shaft being the L/H end.

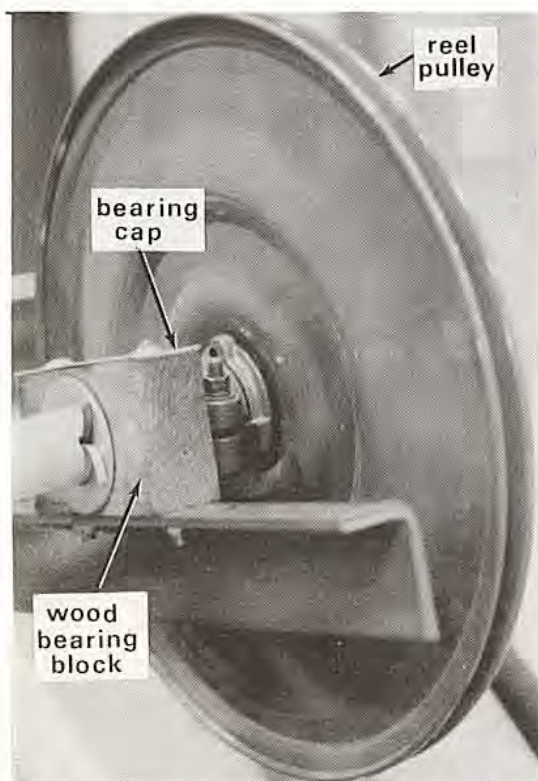


Install a bearing cap on the L/H wood bearing block and secure the block and cap (oil hole up) to the L/H reel support arm (in the 3rd and 5th holes from the front), using two 3/8" NC X 4" long carriage bolts (heads up), and hex nuts. (see Fig. 132).

Attach the R/H block, cap, and guard assembly (oil hole up) to the R/H reel support arm (also in the 3rd and 5th holes from the front) using two 3/8" NC X 4" long carriage bolts (heads up) and hex nuts.

Loosen the bolts in the clamp on the 18" (45.7 cm) dia. reel pulley, and install the pulley c/w hub and clamp onto the reel shaft at the L/H end.

Secure with a 1 11/16" I.D. flat-washer and a 1/4" dia. X 2 1/2" long cotter pin.



L/H SHAFT END

132

NOTE: For instructions on reel positioning, see Operation & Adjustments Section, Page 9.

## REEL DRIVE BELTS - INSTALLATION-FIG.134

Primary Reel Drive Belt - This belt (K-15068-1) had previously been installed on the main drive pulley (third groove from the front).

Install around the reel drive idler pulleys and the reel drive relay pulley (large groove).

To adjust:

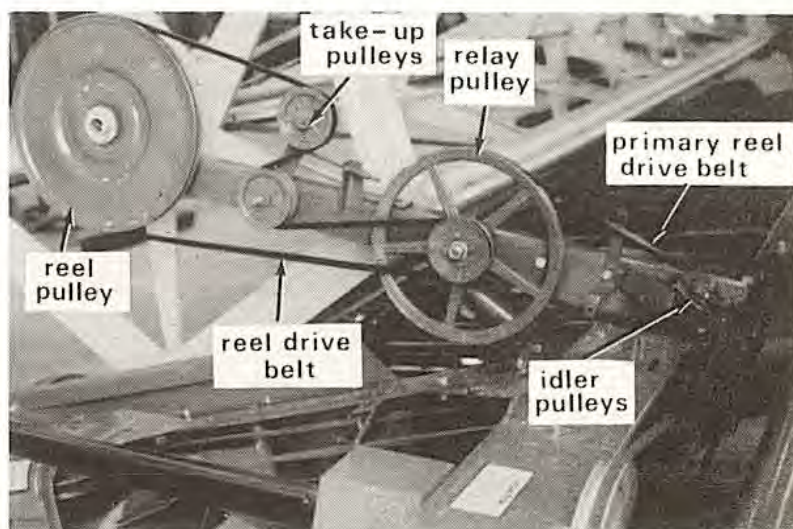
- loosen the nut securing the relay pulley to the take up bracket
- adjust with nut on take up bracket
- tighten all nuts

See OPERATION & ADJUSTMENT SECTION, page 6 for detailed adjustment instruction.

Reel Drive Belt - Install the reel drive belt (K-14661-1) onto the 18" (45.7 cm) dia. reel pulley on the reel shaft, and onto the reel drive relay pulley (small groove). Thread as shown onto the two reel drive take-up pulleys.

Tighten the reel drive belt by compressing the spring adjustment on the take-up pulleys to 1.0" long (2.54 cm).

(See Belt Adjustment and Tension in the Operation and Adjustments Section, page 6 for detailed adjustment inst.)



REEL DRIVE BELTS

134



REEL DRIVE SHIELD - Fig. 136

Position the shield so the bolt protrudes through the hole near the SMV deal, and secure with a 1/2" nut.

The front brace had previously been attached to the reel drive shield using a 5/16" NC x 5/8" long flange head screw and flange nut.

Using the 3/8" NC X 1" long carriage bolt, lockwasher, and nut removed from the L/H reel support arm when removing the brace, re-fasten the brace to the support arm in the last hole in the arm, as shown.

Attach the shield to the rear brace (attached to the reel drive idler pulley bracket) using two 5/16" NC x 5/8" long flange head screws and flange nuts.

Tighten the two 7/16" NC X 1" long carriage bolts securing the brace and the idler pulley bracket to the main frame.



REEL DRIVE SHIELD 136

R/H DIVIDER ROD - Fig. 138

Attach the R/H divider rod to the R/H shoe using two 5/16" NC X 1" long carriage bolts (heads down), lockwashers, and nuts.



R/H DIVIDER ROD 138

MAIN DRIVES SHIELD - Fig. 140

Remove the 3/8" NC X 1" long carriage bolt, flatwasher, lockwasher and nut fastening the draper drive shield mount bracket to the top of the draper drive shield.

Position the main drives shield and fasten to the draper drive shield and mounting bracket by replacing the above hardware group (bolt head down).

Adjust the shield and tighten the two 3/8" NC X 1" long carriage bolts left loose when installing the draper drive shield.

Complete installation of the shield using 5/16" NC x 5/8" long flange head screws and flange nuts.



MAIN DRIVES SHIELD 140

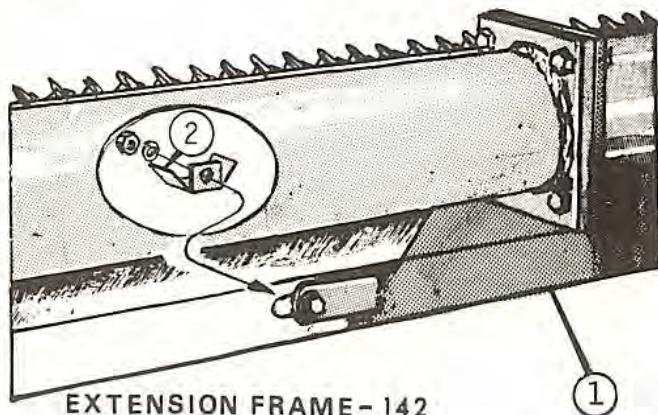


3 FOOT EXTENSIONPREPARATION:

- (1) Lower the reel then remove it from the swather complete with wood bearings.
- (2) Remove the R/H wooden bearing block only.
- (3) Disconnect the draper at the connector slat.
- (4) Disconnect the hose and elbow from the hydraulic line (to the R/H reel lift cylinder).
- (5) Remove the R/H end frame complete with reel support arm, hydraulic cylinder, hose, shoe & divider etc.
- (6) Remove the idler roller.
- (7) Remove the first five rivets from the sickle at the R/H end.
- (8) Remove five guard bolts and the guards from the R/H end of the cutter bar.

EXTENSION FRAME - to Main Frame - Fig. 142

Attach the 3 Ft. extension frame (1) to the main frame tube using four 5/8" X 1-3/4" lg. capscrews (do not tighten). Attach the extension header frame to the main header frame at the location previously occupied by the idler roller using two deflectors (2).....(see inset), 3/4" X 1-1/2" lg. capscrews, 13/16" ID. flatwashers and 3/4" lock-washers.

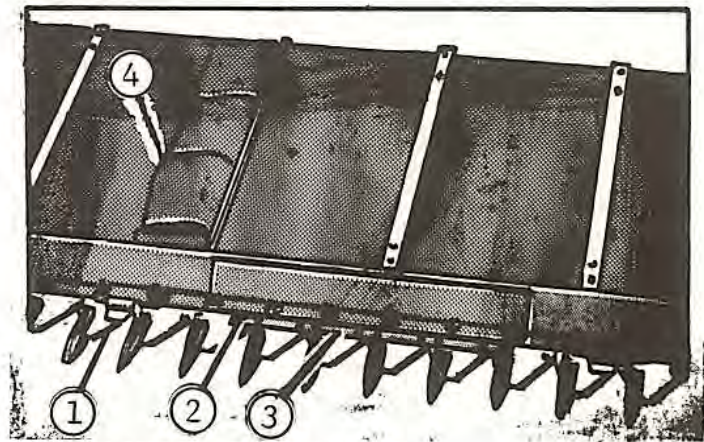


EXTENSION FRAME - 142

EXTENSION CUTTER BAR/TO MAIN CUTTER BAR - Fig. 144

Attach the extension cutter bar to the main cutter bar using 2-1/2" X 1" lg. carriage bolts (do not tighten). Attach the extension sickle (1) to the main sickle using five #6 X 7/8" lg. rivets (2).

Install the splice plate (3) and the guards previously removed. Position hold down clips as shown. Support the extension being certain that the cutter bar is aligned, tighten all bolts previously left loose. Remove the support and recheck alignment, shim if necessary at the main frame connection. Install the extension draper (4) and connect to the main draper at each connector slat as outlined under Figure 94.



EXTENSION CUTTER BAR

144

R/H End Frame Installation

Reinstall the idler roller and the R/H end frame using the existing hardware. Connect the hydraulic hose and elbow to the hydraulic line and install the draper tightener chains.

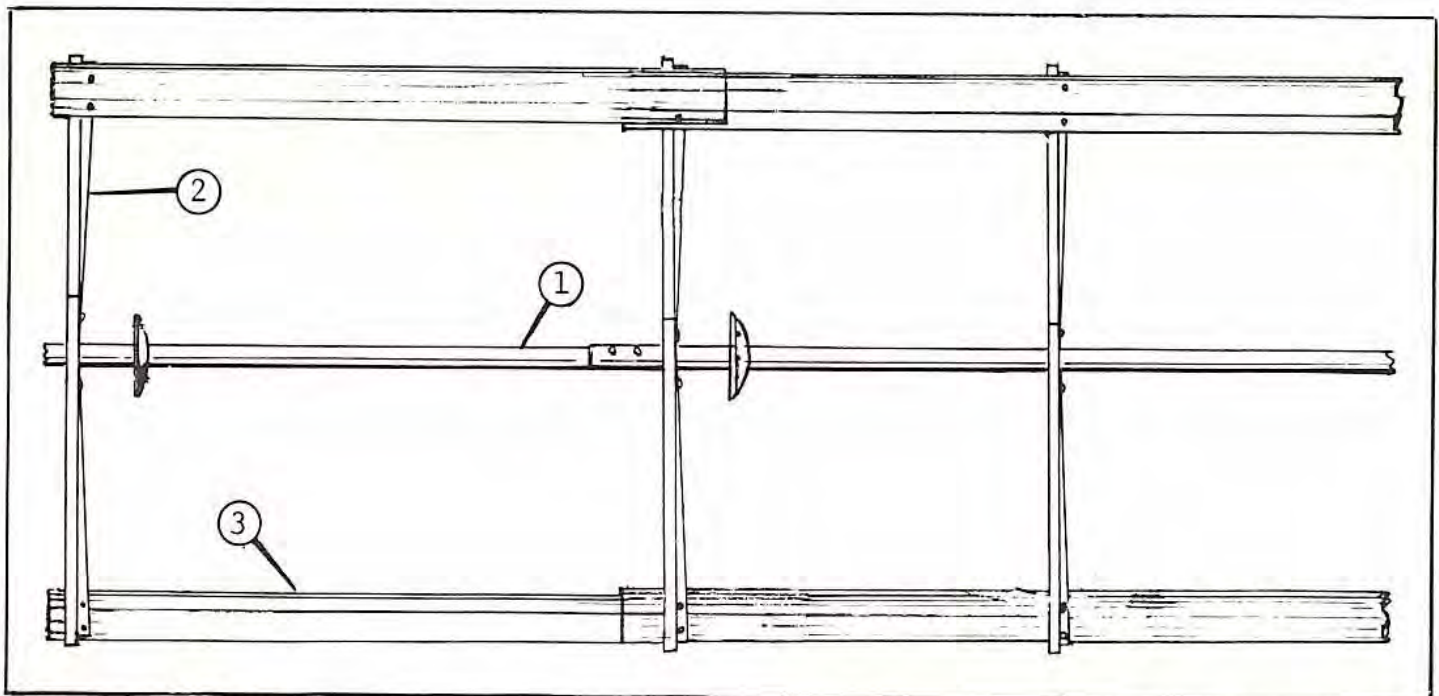


### Alignment of 3 Ft. Extension

Support the extension, being certain the cutter bars are in alignment, tighten all bolts previously left loose. Remove the support and re-check alignment.

### Reel Extension - To Main Reel - Fig. 146

Insert reel extension shaft (1) into the main reel shaft and secure with two 1/4 NC X 2 long capscrews. Install the reel arm (2) using 5/16 NC X 5/8 long flange head capscrews and flange nuts. Remove the 5/16 NC X 5/8 long flange head capscrews from the end of the main bats and slide the extension bats (3) against the front of the main bats and secure in position with 5/16 NC X 5/8 long flange head capscrews and washers. Reinstall the bearing block on the reel shaft.



REEL EXTENSION



TRUSS STRAP INSTALLATION - 3 FT.  
EXTENSION

Install the L/H truss straps to the L/H dish-shaped mounting plate as in instructions given in Assembly section, page 37.

Join the extension straps to the R/H truss straps; and fasten to the L/H straps at the reel arms according to the following chart.

NOTE: All hole positions are from the closest end of the strap.

	18&3 ft.	21&3 ft.	25&3 ft.
EXTENSION STRAP TO R/H STRAP: EXT. STRAP R/H STRAP	1st HOLE 1st HOLE	1st HOLE 1st HOLE	1st HOLE 1st HOLE
EXTENSION STRAP TO L/H STRAP: EXT. STRAP R/H STRAP	1st HOLE 1st HOLE	3rd HOLE 1st HOLE	2nd HOLE 1st HOLE

ATTACHMENT to reel is at the same reel arm set as given in Assembly Instructions, page 37.

ATTACH R/H threaded rod end as in assembly instructions, but mounted in the dish-shaped mounting plate on the extension shaft instead of on the main reel shaft.

ATTACH anti-rattle clips as in Assembly Instructions, page 38.



CABLE CONTROLS:

- for self-contained hydraulics

REMOTE CONTROL INSTALLATION

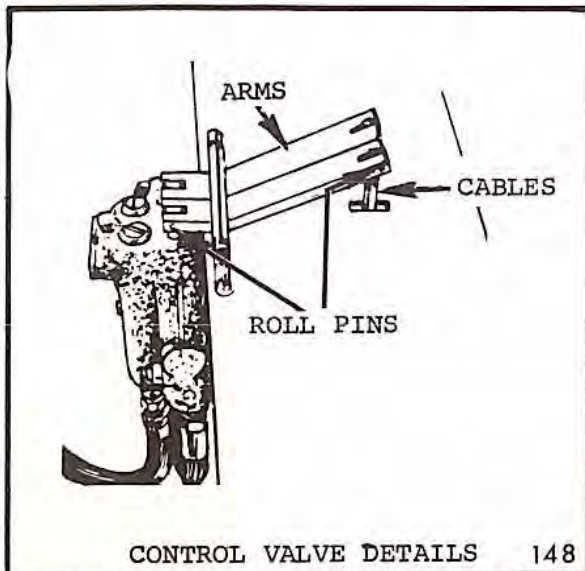
FIG. 148

Attach the arms to the hydraulic valve using 3/16 dia. spring pins, loosen the inner nut on each cable at the eye end. Insert the eye end of the cables up through the slots in the bottom and top panels of the drives frame behind the control valve. Secure the cables to bottom panel of drives frame using existing nuts and external-tooth lockwashers. Attach cables to the arms using 3/16 dia. X 1" long spring pins. Attach the cables to the hitch frame using the nylon tie straps as required. (Avoid making sharp bends in hitch adjusting areas.)

CONTROL PANEL ASSY. - Fig. 150

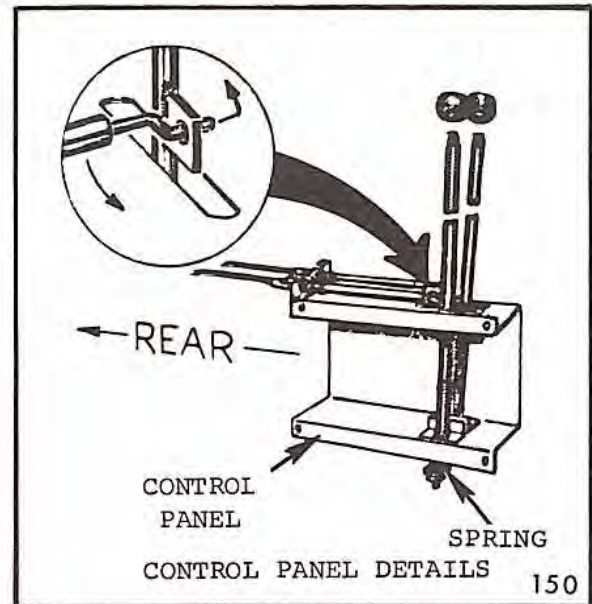
Insert the left and right control levers up through the slots in the control panel.

NOTE: The long lever is R/H (cable attaching lugs must be towards the rear of the panel). Install springs, 15/32 I.D. flat washers and 7/16 NC locknuts to the bottom of the levers. Install knobs. Control panel assy. may now be attached to the tractor.

CONTROL PANEL INSTALLATION

Locate a suitable position on the tractor for mounting the control panel, cable position must be kept in mind when making this decision. Mark the area accurately, then drill four 5/16" dia. holes and install the panel using 1/4 NC X 1" long Philips pan head machine screws c/w lockwashers and nuts.

NOTE: The control panel may be used as a drilling template.

REMOTE CONTROL CABLES - TO TRACTOR

Remove both nuts from the hook end of cables and install the rubber grommets (for use with tractor cab if applicable), re-install both nuts. Install the hook end of cables into the lugs on the control levers (installed at a 90° angle, then positioned parallel, see arrows).

Install the cables on panel and tighten nuts one on each side of flange. If a cab is being used it will be necessary to drill two 13/16 dia. holes in a relative position to the control panel, then install rubber grommets and cables in these holes. Hook cables to the control levers as described above.

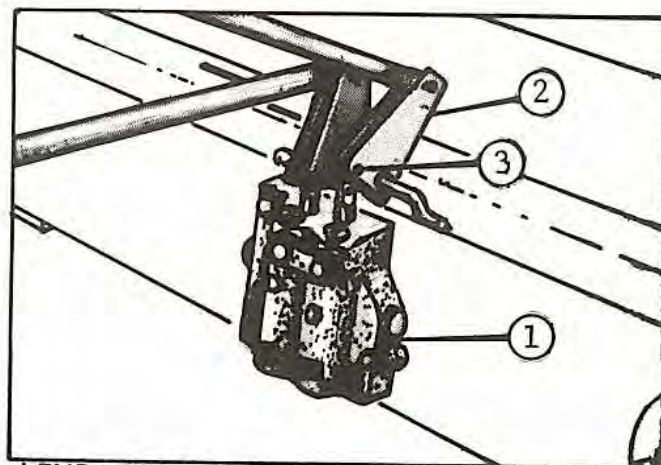


LEVER CONTROLS:

- for self-contained hydraulics

CONTROL LEVERS - Fig. 152

Engage the slot in the link (2) with the anchor rod as shown, then swing forward onto the valve plunger and attach with #10-24NC X 1" long machine screws (3).



LEVER to VALVE

152

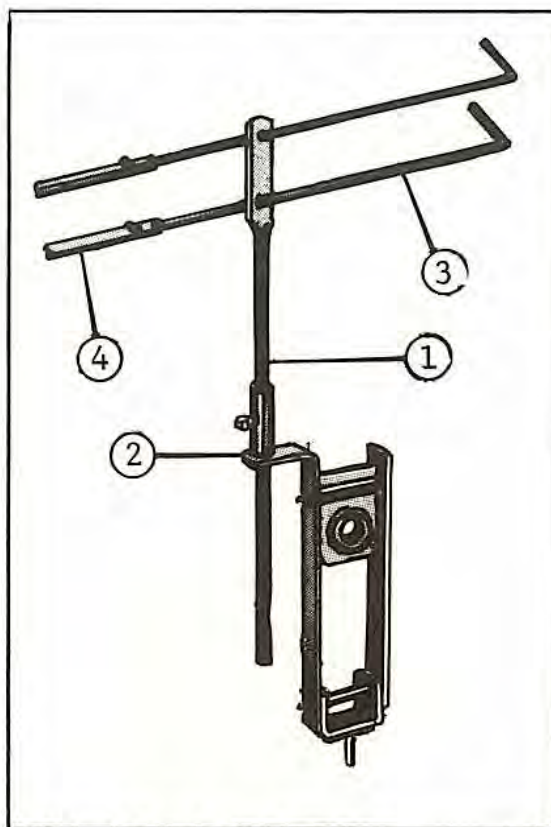
CONTROL HANDLE SUPPORT - Fig. 154

Insert the control lever support (1) into the P.T.O. support bracket (2) and lock into position (approx. 12" through bracket) using the locknut and setscrew provided. The height may be adjusted later as required.

CONTROL LEVER HANDLES - Fig. 154

Insert the control lever handles (3) through the support (1) and into the control levers (4). Lock into position using the setscrew and locknut provided.

**NOTE:** Upper or lower lever handles may be attached to either control lever (header or reel) depending on the operator's preference.



CONTROL LEVER HANDLES

154



SAFETY CHAIN INSTALLATION - Fig. 158.

Loop safety chain around tube (1) and pass entire hook assembly (4) through passing link (2) and through U-bracket (3).

**IMPORTANT:** Install safety chain so a minimum three inch clearance exists between the ground and the bottom of the hitch member when supported by the safety chain. Attach the hitch or tow-bar to the towing vehicle. Attach retaining clevis (5) to the towing vehicle using a 5/8 NC X 3-1/2 long hex. hd. GR. 5 capscrew and a 5/8 NC locknut.

Pass the hook assembly (4) through retaining clevis (5) and lock hook to the chain with the safety latch.

**NOTE:** If extra links of chain are present, wrap excess chain around hitch to take up slack. Make sure the safety chain has enough slack to permit towing vehicle to make turns.

