

# JOHN DEERE 2500 POWER-RESET SEMI-INTEGRAL MOLDBOARD PLOW



## OPERATORS MANUAL JOHN DEERE 2500 POWER-RESET SEMI-INTEGRAL MOLDBOARD PLOW

OMA32896 F6 English

**OMA32896 F6**


LITHO IN THE U.S.A.  
ENGLISH





## To the Purchaser

This new plow was carefully designed and manufactured to give years of dependable service. To keep it operating efficiently, read the instructions in this operator's manual. Each section is clearly identified so you can easily find the information you need — whether it is operation, lubrication, or maintenance. Read "Contents" to learn where each section is located.

 This safety alert symbol identifies important safety messages in this manual. When you see this symbol, be alert to the possibility of personal injury and carefully read the message that follows.

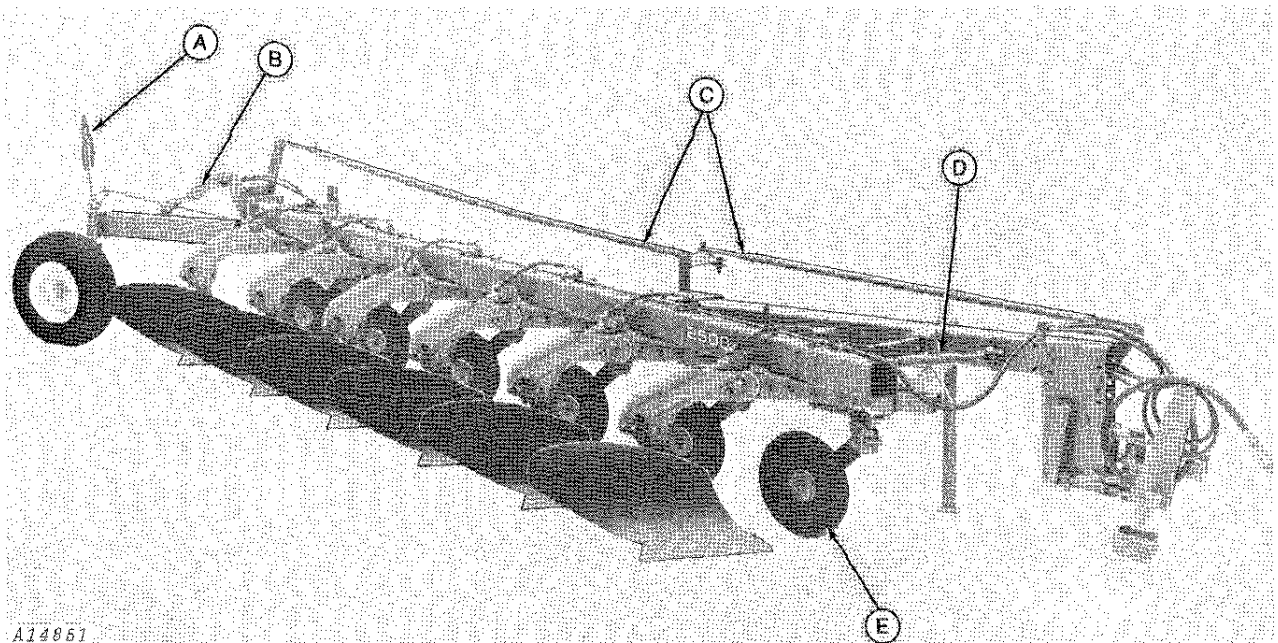
Because John Deere sells its products worldwide, U.S. units of measure are shown with their respective Metric equivalents throughout this operator's manual. These equivalents are the SI (International System) Units of Measure.

In addition to the equipment furnished with your plow, attachments are available to help you do a better job in special conditions. These are described in the attachment section of this manual and can be purchased from your John Deere dealer.

"Right-hand" and "left-hand" sides are determined by facing in the direction the plow will travel when in use.

Record your plow serial number in the space provided on page 41. Your dealer needs this information to give you prompt, efficient service when you order parts or attachments. If your plow requires replacement parts, go to your John Deere dealer where you can obtain Genuine John Deere parts — accept no substitutes.

The warranty on this plow appears on your copy of the purchase order which you should have received from your dealer when you purchased the plow.



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A - SMV Emblem  
B - Rear Wheel Hydraulic  
Cylinder

C - Steering Pipes  
D - Turnbuckle  
E - Rolling Coulters

*John Deere 2500 6-Bottom Power-Reset Semi-Integral Moldboard Plow*



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# Safety Suggestions

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## GENERAL

 The safety of the operator was one of the prime considerations in the minds of John Deere engineers when this plow was designed.

You can make your farm a safer place to live and work if you observe the safety suggestions given. Study these suggestions carefully and insist that they be followed by those working with you and for you.

## TRANSPORTING

While transporting the plow on a public road, follow safety instructions outlined under "Transporting."

## HYDRAULIC OIL

Escaping hydraulic oil under pressure can have sufficient force to penetrate the skin, causing serious personal injury. Before disconnecting lines, be sure to relieve all pressure. Before applying pressure to the system, be sure all connections are tight and that lines, pipes and hoses are not damaged. Hydraulic oil escaping from a very small hole can be almost invisible. Use a piece of cardboard or wood, rather than hands, to search for suspected leaks.

If injured by escaping hydraulic oil, see a doctor at once. Serious infection or reaction can develop if proper medical treatment is not administered immediately.

Always relieve pressure in the hydraulic system before working with hydraulic system components.

To relieve hydraulic pressure from either a John Deere hydraulic system or an accumulator hydraulic system, see "Detaching Plow From Tractor" on page 16.

## OPERATION

To avoid injury, always be careful while operating a tractor and plow.

Never ride or permit others to ride on the plow.

Never permit any person other than the operator on the tractor.

When servicing plow in raised position, always use mechanical transport lock (see page 17) supplied on front furrow wheel and depth stop on rear wheel. Be sure rockshaft operating lever is in the up position and parking stand is down.

Always lower the support stand to support the plow before unhitching from the tractor.

Lower plow to within 2 inches (50 mm) of ground before releasing Quik-Coupler latch handles.



# Preparing for Use

## GENERAL

On these plows, controlled hydraulic pressure holds the standards in plowing position, allows them to rise to clear an obstruction, and returns the standards to plowing position.

Two systems are available for providing the hydraulic pressure required to control the plow standards: John Deere Hydraulic System and Accumulator System.

### John Deere Hydraulic System

The John Deere Hydraulic System uses the 4030, 4230, 4430, 4630, 6030, 8430 or 8630 Tractor closed-center hydraulic system. With this tractor-controlled system, a special lever stop attached to the tractor lever quadrant holds the remote cylinder operating lever in operating position during plowing. This allows the tractor hydraulic system to maintain full pressure to the plow manifold, which holds the standards in working position.

An adjustable pressure valve is part of the plow hydraulic system. This valve starts opening when oil pressure reaches a predetermined level.

When a plow bottom strikes an obstruction, and the pressure in a standard cylinder and the manifold is increased above the pressure valve setting, the valve opens, allowing the oil to flow directly into the tractor reservoir. This allows the piston in the plow cylinder to retract, and the plow bottom to rise up and over the obstruction.

As soon as the bottom has cleared the obstruction, and the pressure in the cylinder drops below the standby pressure of the tractor hydraulic system, the pump goes back into stroke. This pumps

oil back into the cylinders and raises the manifold pressure back to normal, thus placing and holding the standard in plowing position.

### Accumulator System

The accumulator system is available for use with tractors which do not have a closed-center hydraulic system. The accumulator also can be used with John Deere Tractors with closed-center hydraulic systems if the customer desires a minimum of hydraulic connections between plow and tractor.

The 4-, and 5-bottom plows use a single 1-gallon (3.8 litre) accumulator. The 6-, 7- and 8-bottom plows use (two) 1-gallon (3.8 litre) accumulators.

This system uses a bladder-type accumulator which is charged with nitrogen gas to maintain pressure instead of using only the hydraulic pressure from the tractor hydraulic system. Since oil cannot be compressed, the compressible bladder of nitrogen in the accumulator maintains the desired pressure on the plow hydraulic manifold.

When using the accumulator system, a plow bottom striking an obstruction causes pressure in excess of the nitrogen pressure, which forces oil into the accumulator. The nitrogen is compressed as the bottom rides up and over the obstruction.

The accumulator has a one-way, spring-loaded orifice that allows a free flow of oil into the accumulator and a restricted flow back out. As the bottom clears the obstruction, the pressure drops, and the orifice meters the flow of oil out of the accumulator, into the manifold and cylinder, to return the plow bottom to working position at a controlled speed.

### IMPORTANCE OF PROPER ADJUSTMENT

A well-adjusted plow pulls lighter; its furrow slices are uniform in width and depth; it covers trash; it leaves the soil in proper condition to be worked down into the best-type seedbed.

Improper adjustments results in rapid wear and possible breakage of parts and inefficient operation.

### PREPARING THE PLOW

#### Plow Bottoms

The polished surfaces of the plow bottoms have been painted with protective black paint.

In most cases it is not necessary to remove the black paint because it will wear off quickly upon contact with the soil. In soils where the black paint will not wear off, remove with diesel fuel.

If the plow is not to be used immediately, protect the polished surfaces by applying a coat of cup or gun grease. If plow is to be put in storage for a considerable length of time, see page 35.

#### Bolts and Set Screws

Before starting to work with a new plow or one which has been stored, check to see that all bolts and set screws are tight and all cotter pins spread to keep them from falling out. Check the bolts that hold the plow bottoms to see that they are drawn up tight.

A good practice is to check for loose bolts, screws, or parts when lubricating the plow. Loose bolts are easily lost or cause excessive wear on parts, resulting in possible damage to the plow. See torque chart, page 35.

### Tire Inflation

Check tires on plow to be sure they are inflated to pressures shown below:

Wheel	Recommended New Implement or New or Used Auto Tires	Inflation Pressure
Front		
and Rear	7.60-15, 4 ply rating	36 psi (2.5 bar)
Furrow	9.5L-14, 6-ply rating	36 psi (2.5 bar)
Gauge	7.60-15, 4-ply rating	36 psi (2.5 bar)
	9.5L-14, 6-ply rating	36 psi (2.5 bar)

### Lubrication

Be sure plow has been properly lubricated. See Lubrication Charts on pages 32-34.

### PREPARING AND ADJUSTING THE TRACTOR

For complete tractor operating instructions, refer to your tractor operator's manual.

#### Tire Inflation

Inflate the tractor tires as recommended in the tractor operator's manual.

#### Tractor Drawbar

Set the tractor drawbar in the short high position.

#### Rear Wheel Setting

##### Tractor Wheel in Furrow

Adjust rear wheels of the tractor equidistant from the center line of the tractor to inside edge of tire. The wheels can be set at 28, 30, or 32 inches (710 mm, 760 mm or 815 mm) from the center line of the tractor to the inside of the tire.

##### Tractor Wheels on the Land

The rear wheels should be set equidistant from the center line of the tractor to insure maximum performance.

When operating the tractor with all wheels on the land, set the rear wheels (Depending on size of plow) to leave at least four inches (100 mm) between the furrow wall and the outside edge of the right tractor tire.

*NOTE: When tractor is equipped with dual rear wheels, set wheels in narrowest available setting. See your tractor operator's manual.*

### Front Wheel Setting

On wide-front-end tractors, to get proper field maneuverability when working with tractor wheel in furrow, set the front wheels to conform to rear-wheel setting, center-to-center of tread, or set at least 2 inches (50 mm) wider than rear tires, measured from center of tractor to inside edge of tire.

### Front End Weighting

Tractor front-end weighting is necessary for maximum field performance.

The amount of front weight required will have to be determined by field operating conditions and the gear in which the tractor is operated.

**CAUTION:** In this regard it is important to note that when the tractor is operated in lower gears, under 4 mph (6.5 km/h), maximum permissible front-end weighting is necessary to avoid front-end tip-up. If more front-end stability is required, see "Vertical Hitch Adjustments" on page 22.

### Rear Wheel Weighting

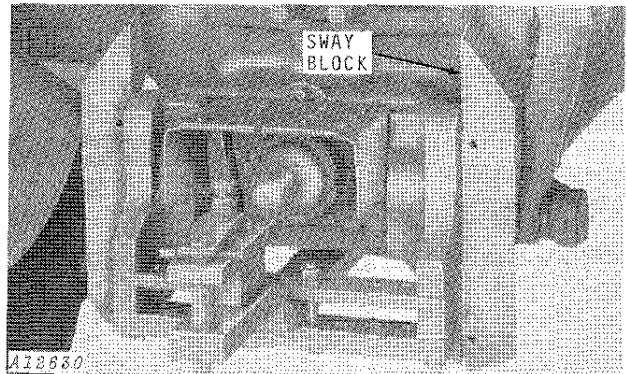
Rear wheel weights may be necessary to eliminate excessive wheel slippage or for stability in rough or hillside fields. However, weights should not be added to the point where all slippage is eliminated. To do so would hinder maximum performance of the tractor.

The ideal amount of added weight can be determined by observing the tracks of the rear wheels. When the tractor is pulling its rated load, the soil between the tire lugs should be broken or shifted. If too much weight has been added, the tread marks will be clear and distinct. If too little weight has been added, the tread marks will be entirely obliterated. See your tractor operator's manual.

### 3-Point Hitch and Hydraulic System

The depth or load is maintained by the tractor hydraulic system according to the setting of the rockshaft selector lever. See your tractor operator's manual for complete explanation of the hydraulic system.

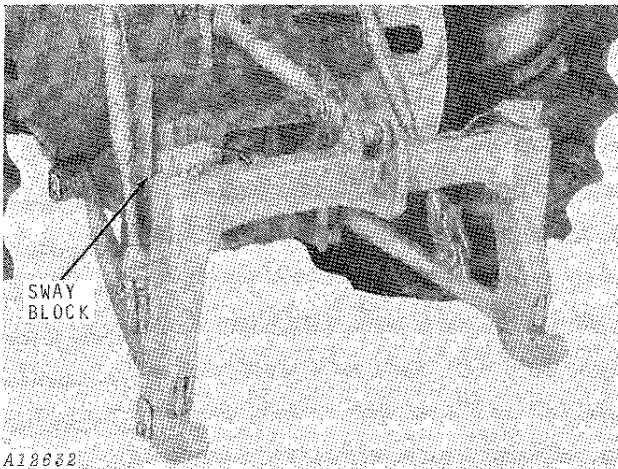
### Sway Blocks



*Sway Blocks in Down and Wide Position*

Set sway blocks in the down and wide position as shown above for 4030, 4230, 4430, 4630, and 6030 tractors for on land or in furrow plows in normal ground conditions.

### Sway Blocks – Continued

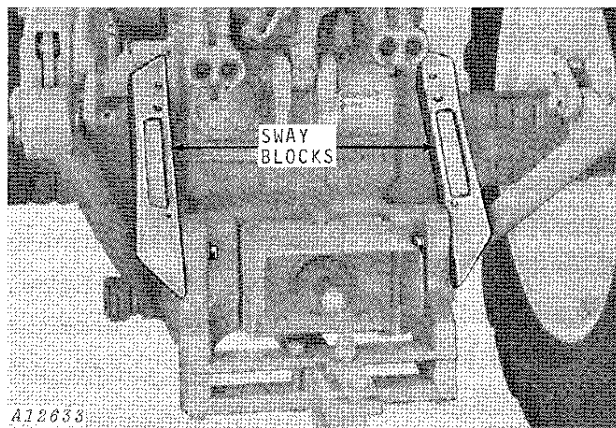


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*Sway Blocks in Down and Narrow Position  
Quik-Coupler (Category 3)*

The sway blocks should be set in the down and narrow position as shown above for 4030, 4230, 4430, 4630, and 6030 tractors for on-land or in-furrow plows in extreme rocky conditions.

The sway blocks should be set in the down and narrow position as shown above for 8430 and 8630 tractors for on-land plows.



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*Sway Blocks in Up and Wide Position*

The sway blocks should be set in the up and wide position as shown above for 8430 and 8630 tractors for in-furrow plows.

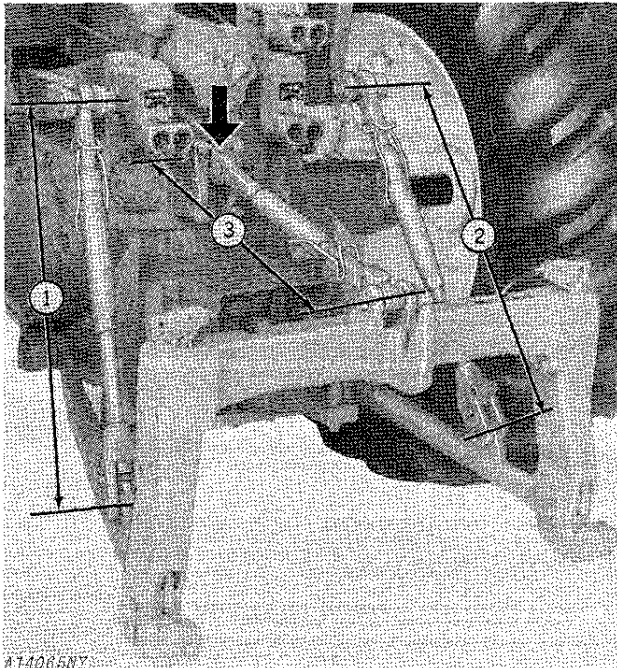
## SAFETY FIRST

THE COMPLETE OBSERVANCE of one simple rule would prevent many thousand serious injuries each year. THAT RULE IS: "NEVER ATTEMPT TO CLEAN, OIL, OR ADJUST A MACHINE WHILE IT IS IN MOTION."



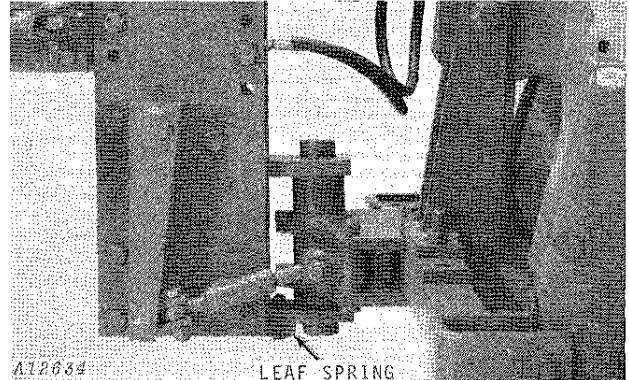
## Link Lengths

Set the lift links and center link as shown in the chart below. Measure from center of pins as shown.



Quik-Coupler 3-Point Hitch (Category 3)  
Center Link in Top Hole

**IMPORTANT:** The 3-Point Hitch or the Quik-Coupler use the same link dimensions.



**IMPORTANT:** Do not set the tractor center link in the shortest position, as this could damage the hitch leaf spring.

3-7

### DIMENSIONS

Tractor	IN FURROW			ON LAND		
	*Left Lift Link (Dimension "1")	*Right Lift Link (Dimension "2")	*Center Link (Dimension "3")	*Left Lift Link (Dimension "1")	*Right Lift Link (Dimension "2")	**Center Link (Dimension "3")
4030, 4230	30-in. (760 mm)	29-in. (735 mm)	26-1/2 in. (675 mm)	30-in. (760 mm)	30-in. (760 mm)	26-1/2 in. (675 mm)
4430	34-in. (865 mm)	33-in. (840 mm)	26-1/2 in. (675 mm)	34-in. (865 mm)	34-in. (865 mm)	26-1/2 in. (675 mm)
4630	36-in. (915 mm)	35-in. (890 mm)	31-1/2 in. (800 mm)	36-in. (915 mm)	36-in. (915 mm)	31-1/2 in. (800 mm)
8430, 8630	37-in. (940 mm)	36-in. (915 mm)	31-1/2 in. (800 mm)	37-in. (940 mm)	37-in. (940 mm)	31-1/2 in. (800 mm)
6030	40-in. (1 015 mm)	39-in. (990 mm)	31-1/2 in. (800 mm)	40-in. (1 015 mm)	40-in. (1 015 mm)	31-1/2 in. (800 mm)

\*For 4030, 4230, and 4430 tractors with long draft links add 1-1/2 inches (40 mm) to the left and right lift link dimensions and 2-1/2 inches (65 mm) to the center link dimensions.

\*\*When using Quik-Coupler for on land plows, the tractor center link should be turned in as far as possible.

NOTE: When using Quik-Coupler (Category 3) the center link must be in the top hole of the center link bracket.

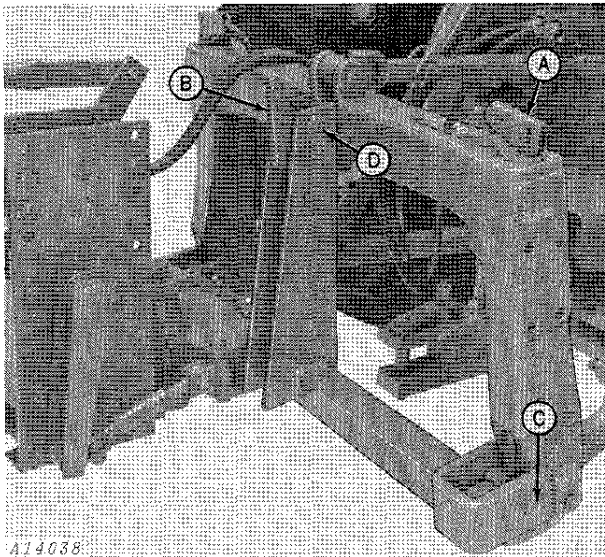


# Attaching and Detaching

## ATTACHING PLOW TO TRACTOR

### Quik-Coupler

#### In Furrow



A - Latch Handle  
B - Upper Coupler Hook

C - Hitch Crossbar Pin  
D - Hitch Mast Spacer

Before attaching the plow to the tractor Quik-Coupler, back the tractor next to the plow hitch.

When attaching Quik-Coupler to tractor 3-point hitch make sure center link is set according to the dimensions given in chart on page 7.

Place rockshaft selector lever in the "D", zero, or "min" position.

Back the tractor until the Quik-Coupler upper hook (B) passes under the mast spacer (D). Raise the coupler with the tractor rockshaft control lever until the hitch crossbar pins (C) are resting in the coupler lower hooks. Raise the plow approximately 2 inches (50 mm) off the ground and lock Quik-Coupler latch handles (A).

**CAUTION:** Never release Quik-Coupler latch handles (A) when plow is more than 2 inches (50 mm) above the ground to prevent plow from tipping.

To latch the Quik-Coupler with the latch handles, push down on the handles after the coupler receives the weight of the plow.

*NOTE: When the latches are properly locked, the latch handles will be horizontal and against the coupler frame.*

After hitching, return rockshaft lever to "LD" or middle position.

#### On Land

Before attaching the plow to the tractor Quik-Coupler, back the tractor next to the plow hitch.

When attaching Quik-Coupler to tractor 3-point hitch, be certain center link is shortened as far as possible.

Place rockshaft selector lever in the "D", zero, or "min" position.

Back the tractor until the Quik-Coupler lower hooks pass beneath the hitch crossbar pins. Raise the coupler with the tractor rockshaft control lever until the hitch crossbar pins are resting in the coupler lower hooks. Raise the plow approximately 2 inches (50 mm) off the ground and lock Quik-Coupler latch handles.

**CAUTION:** Never release Quik-Coupler latch handles (A) when plow is more than 2 inches (50 mm) above the ground to prevent plow from tipping.

To latch the Quik-Coupler with the latch handles, push down on the handles after the coupler receives the weight of the plow.

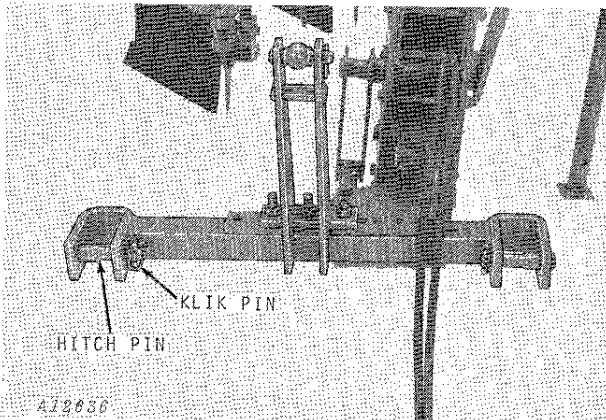
*NOTE: When the latches are properly locked, the latch handles will be horizontal and against the coupler frame.*

After hitching, return rockshaft lever to "LD" or middle position.

### 3-Point Hitch

#### In Furrow

#### 4030, 4230, And 4430 Tractors



For ease in attaching, lift draft link lock pin and pull out ball socket end of tractor draft link.

Place the rockshaft selector lever in the "D", zero, or "min" position.

Remove the Klik-Pin and hitch pin from the hitch crossbar.

*NOTE: To remove Klik-Pins squeeze wire fasteners and raise to release tension.*

Back tractor until draft link ball sockets are in line with holes in crossbar plates.

Slip hitch pins through crossbar plates and draft link ball sockets and secure with Klik-Pins.

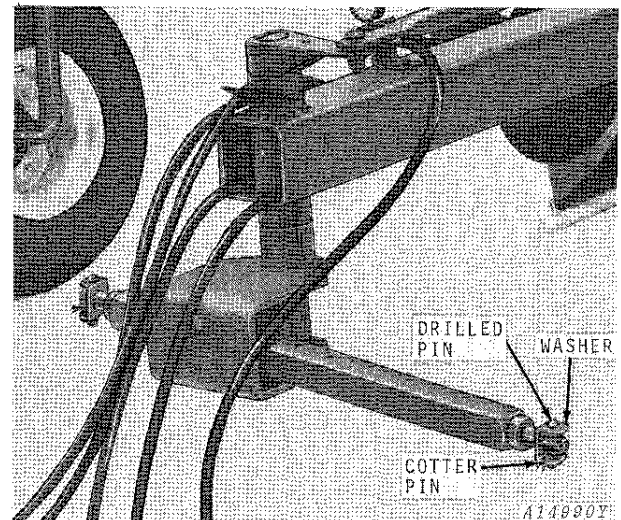
Close the telescoping draft links by slowly backing up the tractor.

**IMPORTANT: Do not raise plow before connecting center link.**

Be sure lock pins snap into place.

After hitching, return rockshaft lever to "LD" or middle position.

### On Land



For ease in attaching, lift draft link lock pin and pull out ball socket end of tractor draft link.

Place the rockshaft selector lever in the "D", zero, or "min" position.

Remove cotter pin, drilled pin and washer from ends of hitch crossbar.

Back tractor until draft link ball sockets are in line with hitch crossbar.

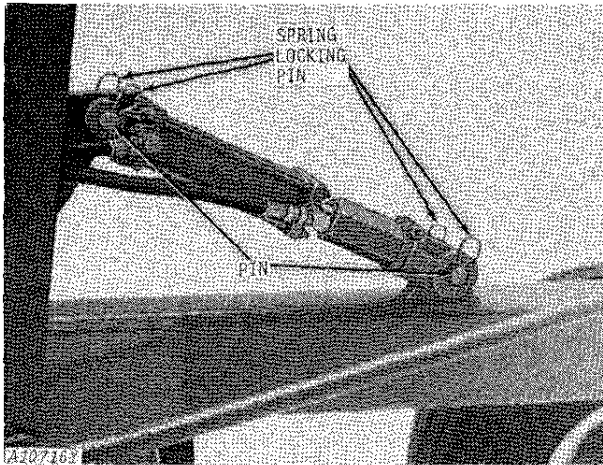
Slip hitch crossbar through draft link ball sockets and secure with washer, drilled pin and cotter pin.

Close the telescoping draft links by slowly backing up the tractor.

Be sure lock pins snap into place.

After hitching, return rockshaft lever to "LD" or middle position.

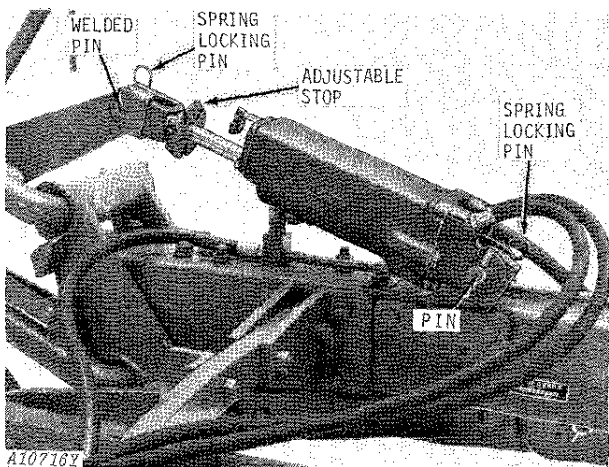
### Hydraulic Cylinder For Rear Wheel



The hydraulic cylinder controls the rear wheel of the plow.

Extending the hydraulic cylinder raises the rear of the plow to the transport position. Retracting the hydraulic cylinder lowers the plow to the working position.

### Front Furrow Wheel Remote Hydraulic Cylinder for On Land Plows



Install the tractor remote hydraulic cylinder to front wheel frame and main frame with welded pin, pin, and spring locking pin.

To provide ample hose length when making turns, the length of the remote hydraulic cylinder hose may have to be increased.

When using any of the John Deere Tractors, the remote hydraulic cylinder hose must be at least 155 inches (3 940 mm) long.

When using other tractors, the hose length may be determined as follows:

The hose length from the remote cylinder to the tractor drawbar must be at least 131 inches (3 325 mm). Add to this the length of hose required to reach from the tractor drawbar to the tractor remote cylinder outlets.

For example, if the length of hose necessary to reach from the tractor drawbar to the tractor remote cylinder outlets is 48 inches (1 220 mm), the total required length of hose is 131 inches (3 325 mm) plus 48 inches (1 220 mm) or 179 inches (4 545 mm).

To determine the additional hose required, attach the remote cylinder hoses to the tractor breakaway copulers. Lay the cylinder on the ground directly behind the drawbar with hoses stretched out full length. Pull hoses down to the tractor drawbar. Measure the distance from the end of the drawbar to the hose end of the cylinder. The difference between this measurement and 131 inches (3 325 mm) is the amount of additional hose required.

If the cylinder has not been used before, it may be necessary to bleed the cylinder as explained in the tractor operator's manual.

With all trapped air removed from cylinder, install the cylinder on the plow as shown in illustration at lower left.

Set adjustable stop so the full stroke of the cylinder may be used.

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