

# 350 AND 360 SERIES POWER-RESET SEMI-INTEGRAL MOLDBOARD PLOWS



JOHN DEERE

## OPERATORS MANUAL 350 AND 360 SERIES POWER-RESET SEMI-INTEGRAL MOLDBOARD PLOWS

OMA30844 I5 English

**OMA30844 I5**

LITHO IN THE U.S.A.  
ENGLISH






## To the Purchaser

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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.

Your operator's manual contains SI metric equivalents in parentheses which follow immediately after the U.S. customary units of measurement.

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 special equipment 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 67. 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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# Safety Suggestions

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

However, investigation of thousands of farm accidents show that careless use of farm machinery causes nearly 1/3 of all farm accidents. 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.

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

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

Never ride or permit others to ride on the plow.

While transporting the plow on a public road, follow safety suggestions outlined under "Transporting." See page 32.

Do not grease, oil, or adjust the plow while it is in motion.

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.

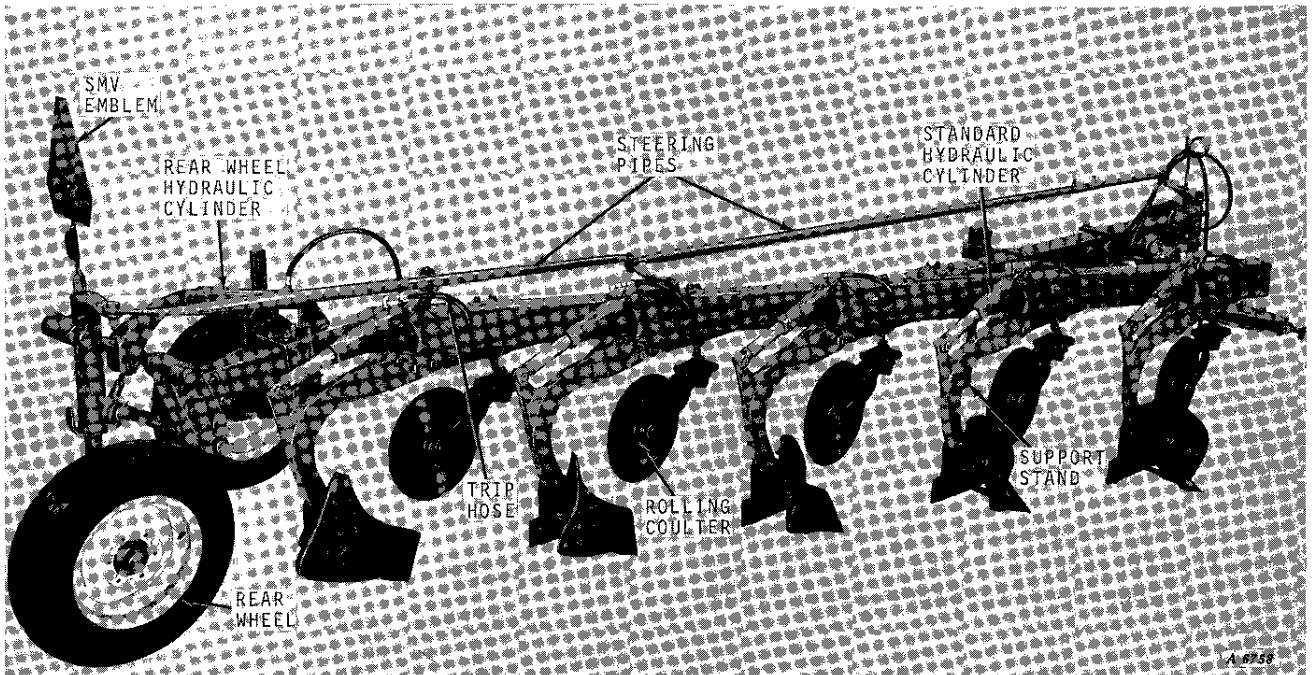
If injured by escaping hydraulic oil, see a doctor at once. Serious infection or reaction can develop if proper medical treatment is not administered immediately.

When the plow is in a raised position, be sure rockshaft and remote cylinder operating levers are not bumped or touched by anyone.

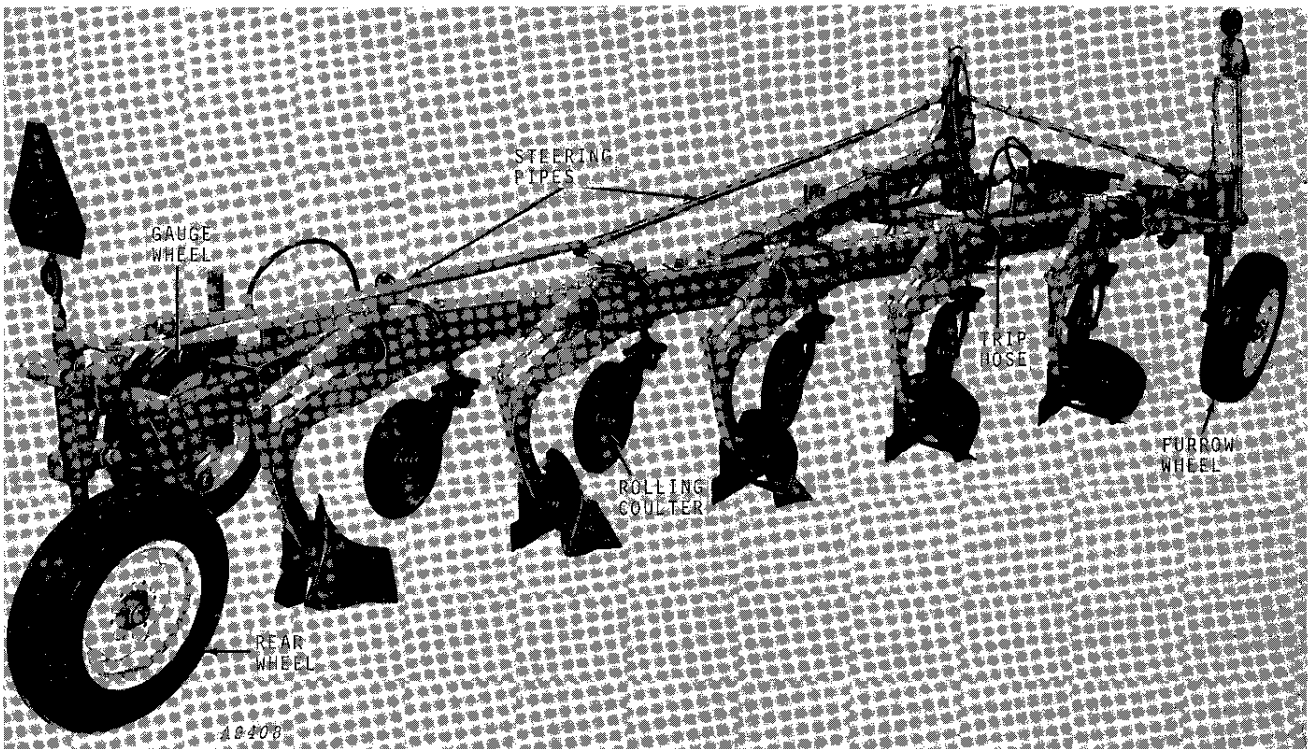
Always lower the support stand to help support the plow before unhitching from the tractor.

Lower plow to within 2 inches (5 cm) of ground before releasing Quik-Coupler latch handles.

Always relieve pressure in the hydraulic system before working with hydraulic system components. To relieve pressure on John Deere System, see "Pressure Valve Operation" on page 17. On accumulator system, attach charging hose as shown on page 19, open the accumulator valve and operate the remote hydraulic cylinder operating lever to relieve pressure.



**John Deere 350 Power-Reset Semi-Integral Moldboard Plow**  
(Accumulator Hydraulic System and Anti-Friction Bearing Rolling Coulters Optional Equipment;  
Gauge Wheel Special Equipment)



**John Deere 360 Power-Reset Semi-Integral Moldboard Plow**  
(Anti-Friction Bearing Rolling Coulters Optional Equipment, and Gauge Wheel Special Equipment)



# Operation

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## 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 2510, 2520, 3010, 3020, 4000, 4010, 4020, 4030, 4230, 4320, 4430, 4520, 4620, 4630, 5010, 5020, 6030, 7020, 7520, 8430, or 8630 Tractor closed-center hydraulic system rated at 2250 psi (155 bar). 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 as special equipment for use with tractors which do not have 2000 psi (138 bar) oil pressure available in a closed-center hydraulic system. The accumulator also can be used with John Deere Tractors with closed-center hydraulic systems if the tractor does not have enough remote cylinder breakaway couplers for the desired type of operation.

This system uses a bladder-type, 1-gallon (3.785 litre)-capacity 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

Your new plow is fully adjustable and, when properly adjusted to operate in the type of soil and field conditions on your farm, it will do a good job of plowing at a minimum of expense. 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 adjustment 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 37.

### 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 page 38 for proper torque specifications.

### 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 Furrow	6.70-15, 4-ply rated 7.60-15, 4-ply rated	35 psi. (2.4 bar) 35 psi. (2.4 bar)
Gauge	5.90-15, 4-ply rated	35 psi. (2.4 bar)

## Lubrication

Be sure plow has been properly lubricated. See Lubrication Charts on pages 34 through 36.

## 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

#### 350 Plows (Tractor Wheel in Furrow)

Adjust rear wheels of the tractor equidistant from the center line of the tractor to inside edge of tire. The distance between the center line of the tractor and the inside of the tire is determined by the size of the plow. Set according to the chart below.

Plow Size	Wheel Spacing
4-Bottom	30 in. (76 cm)
5-Bottom	30 in. (76 cm)
6-Bottom	30 in. (76 cm)

#### 360 Plow (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 (10 cm) 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 the furrow, set the front wheels to conform to rear-wheel setting, center-to-center of tread, or set at least 2 inches (5 cm) wider than rear tires, measured from center of tractor to inside edge of tire.

## 6 Operation

### Front Ballast

Tractor front ballast 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 operating the tractor in lower gears where maximum speed is four mph (6.4 km) or less, maximum permissible front end weight is recommended to avoid possible front-end tip-up. If more front-end stability is required, see "Vertical Hitch Adjustments" on page 24.

### Rear Wheel Weighting

For rear wheel weighting recommendations see your tractor operator's manual.

### Liquid Weights

Water and calcium chloride solution is an economical means of adding weight to rear wheels. Calcium chloride is recommended rather than water as it will not freeze. See your tractor operator's manual or your John Deere dealer.

### Cast-Iron Weights

Where weight in addition to or in place of liquid weight is required, cast-iron weights can be bolted to the rear wheels. This type of weight can be secured from your John Deere dealer.

For maximum ballast, refer to your tractor operator's manual.

### 3-Point Hitch and Hydraulic System

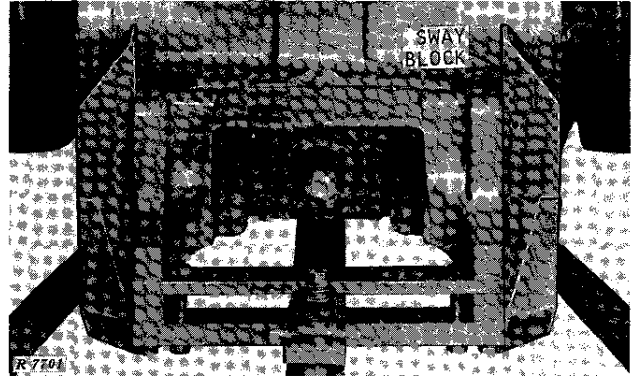
Once the plow is attached to the tractor 3-point hitch, the depth or load is maintained by the tractor hydraulic system according to the setting of the rock-shaft selector lever. See your tractor operator's manual for complete explanation of the hydraulic system.

The hydraulic system on John Deere 2510, 2520, 3010, 3020, 4000, 4010, 4020, 4030, 4230, 4320, 4430, 4520, 4620, 4630, 5010, 5020, 6030, 7020,\* 7520,\* 8430\* and 8630\* Tractors provides the necessary hydraulic pressure to operate these plows. An accumulator system is available as special equipment for the plow when used with other tractors that do not have sufficient hydraulic capacity.

References to "John Deere Hydraulic System" means plows used with the above John Deere Tractors.

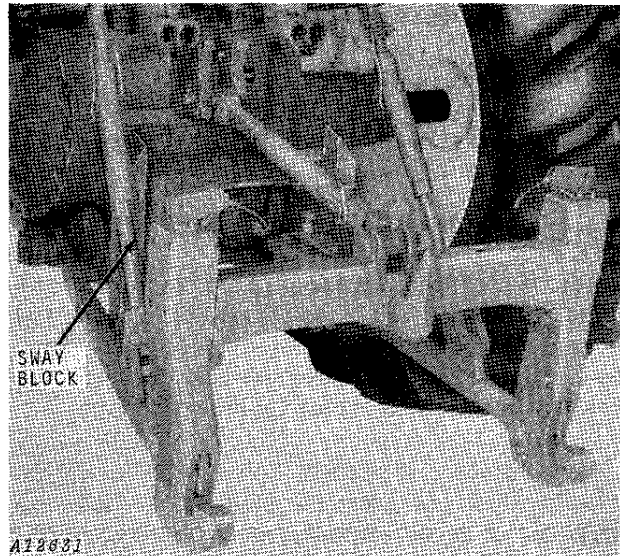
\*360 Plow only

### Sway Blocks



*Sway Blocks Installed to Eliminate Side Sway  
(5020 Tractor Illustrated)*

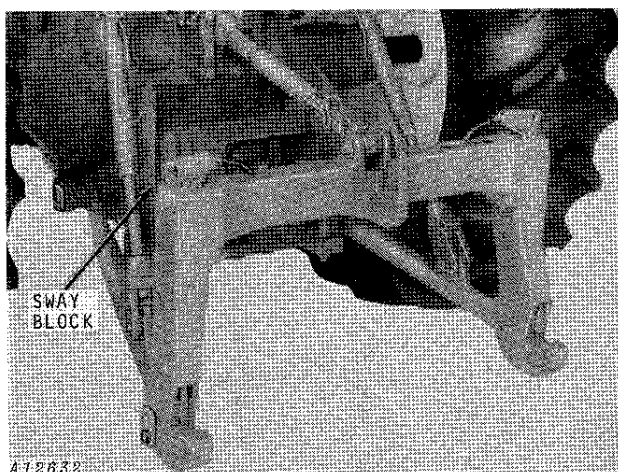
The sway blocks should be set in the down and wide position as shown above for 2510, 2520, 3010, 3020, 4000, 4010, 4020, 4030, 4230, 4320, 4430, 4520, 4620, 4630, 5010, 5020, and 6030 Tractors for 350 or 360 Plows in normal ground conditions.



*Sway Blocks in Down and Narrow Position  
Quik-Coupler (Category 2)*

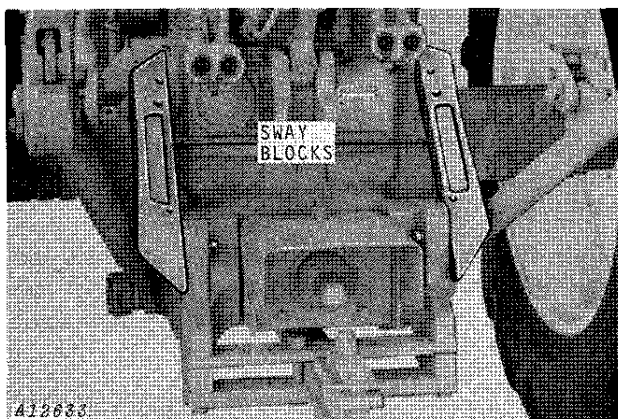
The sway blocks should be set in the down and narrow position as shown above for 2510, 2520, 3010, 3020, 4000, 4010, 4020, 4030, 4230, 4320, 4430, 4520, 4620, 4630, 5010, 5020, and 6030 Tractors for 350 or 360 Plows in extreme rocky conditions.





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 7020, 7520, 8430, and 8630 Tractors for 360 Plows.

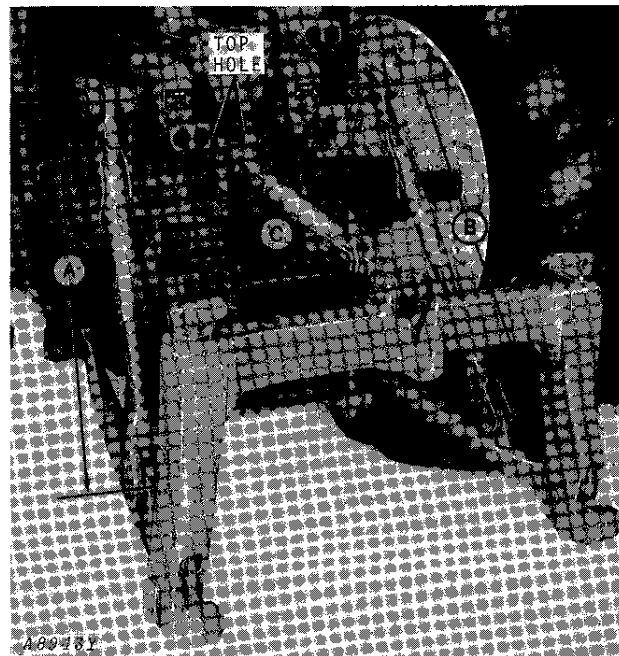


Sway Blocks in Up and Wide Position

The sway blocks should be set in the up and wide position as shown above for 7020, 7520, 8430 and 8630 Tractors for 350 Plows.

### Link Lengths

It is important that the length of the lift links and center link be adjusted properly. Measure from center to center of pins as indicated.



Lift Link Dimensions (4630 Tractor Illustrated)

### Lift Link Lengths for 2510, 2520, 3010, 3020, 4000, 4010, 4020, 4030, 4230, 4320 and 4430 Tractors

	Left Lift Link (Dimension "A")	Right Lift Link (Dimension "B")	*Center Link (Dimension "C")
350	31 in. (787 mm)	30 in. (762 mm)	Shortest setting
360	31 in. (787 mm)	31 in. (787 mm)	Shortest setting

\*Center Link is used only with a Quik-Coupler.

### Lift Link Lengths for 5010, 5020, 6030 Tractors

	Left Lift Link (Dimension "A")	Right Lift Link (Dimension "B")	Center Link (Dimension "C")
350	40-7/8 in. (1038 mm)	39-7/8 in. (1013 mm)	Shortest setting
360	40-7/8 in. (1038 mm)	40-7/8 in. (1038 mm)	Shortest setting

The center link must be in the top hole of the center link bracket.

## PREPARING AND ADJUSTING TRACTOR—Continued

**Lift Link Lengths for 4520, 4620, 4630, 7020\*, 7520,\* 8430\* and 8630\* Tractors**

	Left Lift Link (Dimension "A")	Right Lift Link (Dimension "B")	Center Link (Dimension "C")
350	36-3/8 in. (924 mm)	35-3/8 in. (899 mm)	Shortest setting
360	36-3/8 in. (924 mm)	36-3/8 in. (924 mm)	Shortest setting

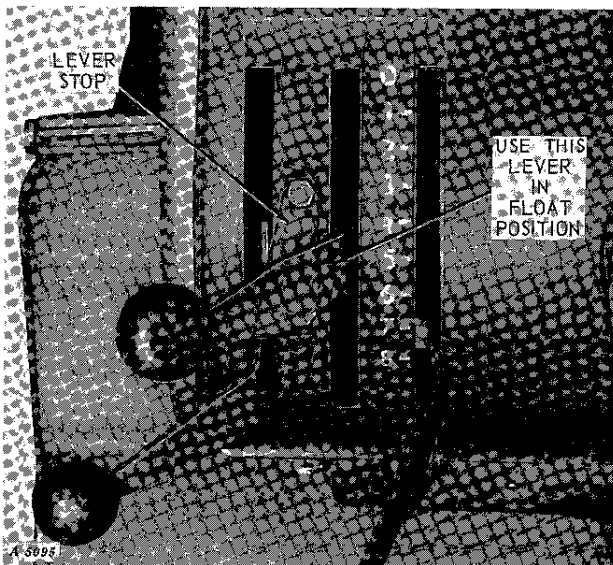
The center link must be in the top hole of the center link bracket.

*\*For 360 Plow only*

### Lever Stop (John Deere Hydraulic System)

To provide constant hydraulic pressure when using a plow with a John Deere Hydraulic System, it is necessary to keep the tractor remote cylinder operating lever in the operating position.

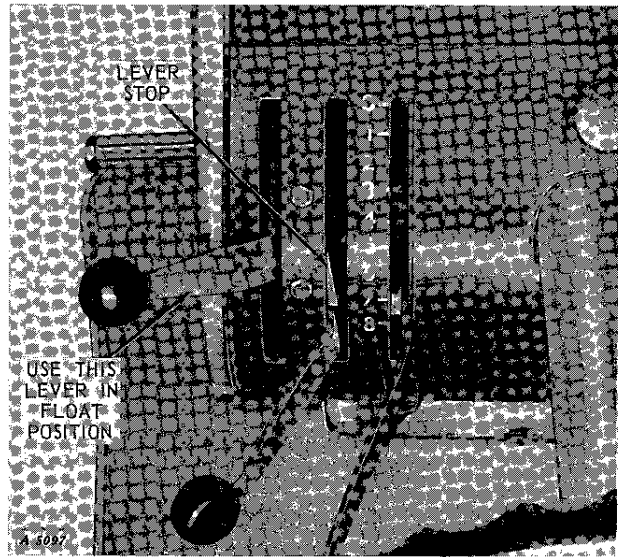
**2510, 3010, 3020 (Serial No. Below 123,000), 4010, 4020 (Serial No. Below 201,000), 5010, and 5020 Tractors.**



*Lever Stop on John Deere Tractors Equipped with Dual Remote Cylinder Breakaway Couplers for use with 350 Plows*

The lever stop is used on the outer lever when the 350 Plow is used with tractors equipped with dual remote hydraulic cylinder breakaway couplers.

The lever stop is used on the inner lever when the 350 or 360 Plows are used with tractors equipped with a single remote hydraulic cylinder breakaway coupler and when the 360 Plow is used with a tractor equipped with dual remote hydraulic cylinder breakaway couplers.



*Lever Stop on John Deere Tractors Equipped with Single Remote Cylinder Breakaway Coupler for use with 350 and 360 Plows, and John Deere Tractors Equipped with Dual Breakaway Couplers for use with 360 Plows*

To place lever in operating position, pull lever down.

To release lever to neutral position, push lever to the right and return lever past the stop to neutral.

#### Installing Lever Stop

Remove the tractor cowl to facilitate attaching the lever stop. Using the template on page 68, drill two 1/4-inch (6.4 mm) holes 1-3/4 inches (44 mm) apart in the tractor dash.

After the lever stop is secured, operate the lever to make sure the stop retains the lever in operating position, and that the lever can be moved past the stop when desired. Adjust the stop position if necessary and replace cowl.

**NOTE:** The lever stop must be removed when operating other implements which require regular detent action. To remove lever stop, remove tractor cowl and remove two bolts securing lever stop. Replace cowl.

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