

# **F345H AND F355H SERIES POWER-RESET SEMI-INTEGRAL MOLDBOARD PLOWS**

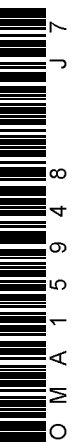


## **OPERATORS MANUAL F345H AND F355H SERIES POWER-RESET SEMI-INTEGRAL MOLDBOARD PLOWS**

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# TO THE PURCHASER

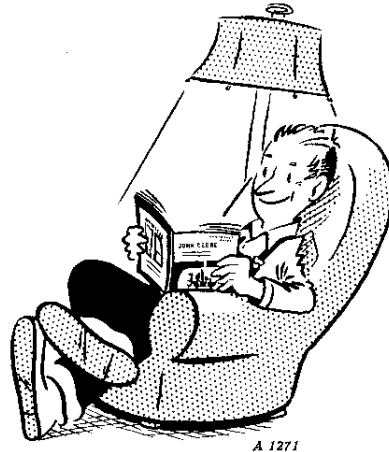
Behind your new plow is an organization that has specialized in designing and building plows for over 125 years. This plow was built in the world's largest plow factory by experienced men, many who have worked in this large plant for from 10 to 45 years, thus assuring the utmost in good design, high-grade workmanship and thorough inspection, so essential to the production of good plows.

High quality materials, precision production methods, and accurately controlled heat-treating assure maximum strength and long life for every part.

This manual has been carefully prepared and illustrated, so that you may make the necessary adjustments for adapting your plow to work properly in practically all types of soil and field conditions. These adjustments such as proper hitching and adjusting for width and depth of cut, are fully covered in this manual.

Study this manual carefully. Keep it handy, in a safe place, for future reference.

Occasionally your plow may need new parts, or require service not covered in this manual. If so, we suggest that you take advantage of the facilities offered by your John Deere dealer,



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which assure you of genuine JOHN DEERE parts and prompt "know-how" service in the field or shop.

If you will furnish your dealer with the information which should be recorded at the bottom of this page, when the plow is delivered, he can give you prompt and efficient service.

Right- and left-hand sides referred to in this manual are determined from a position at the rear of the plow facing in the direction of travel.

**JOHN DEERE F345H AND F355H SERIES POWER-RESET  
SEMI-INTEGRAL MOLDBOARD PLOWS**

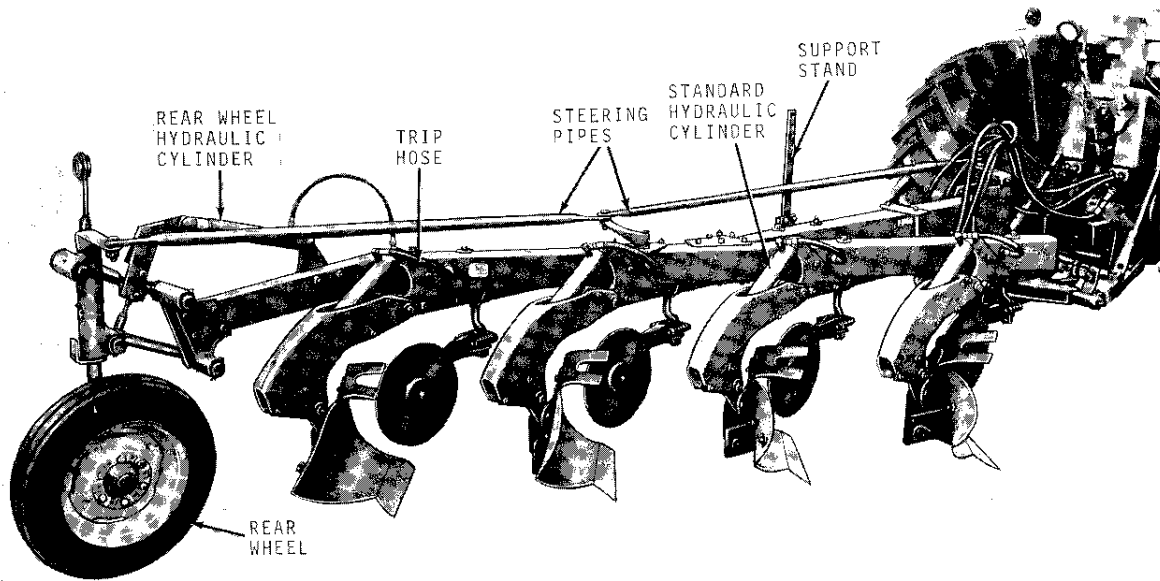
No. of Bottoms . . . . .

Date Purchased . . . . . 19 . . . .  
(To be filled in by Purchaser)



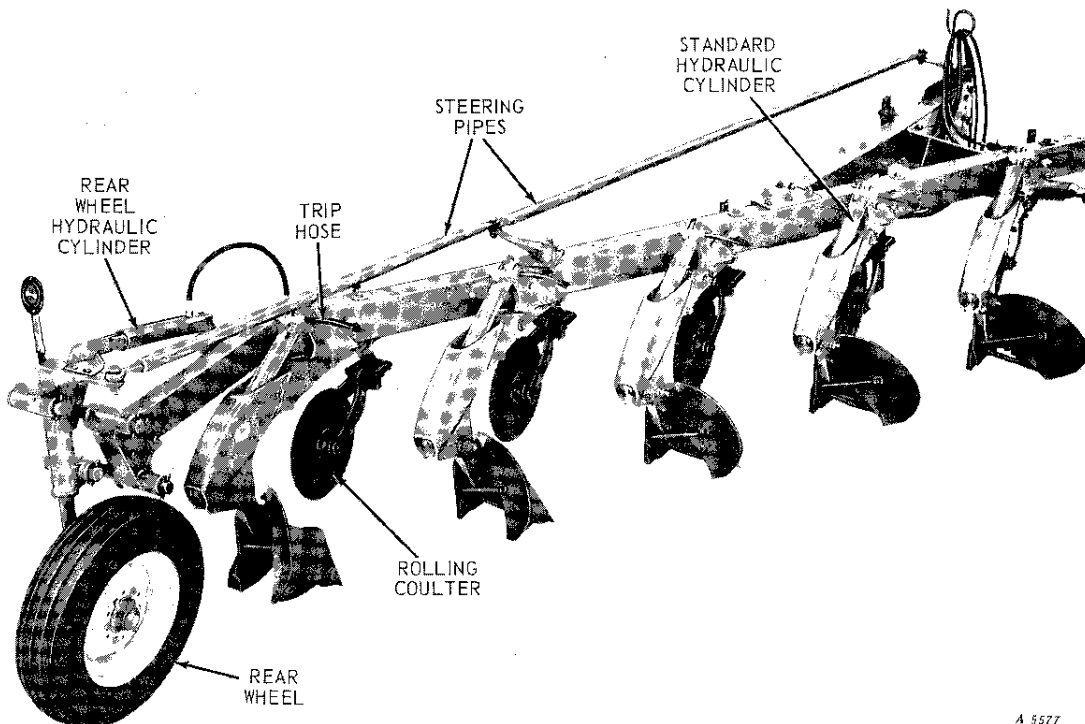
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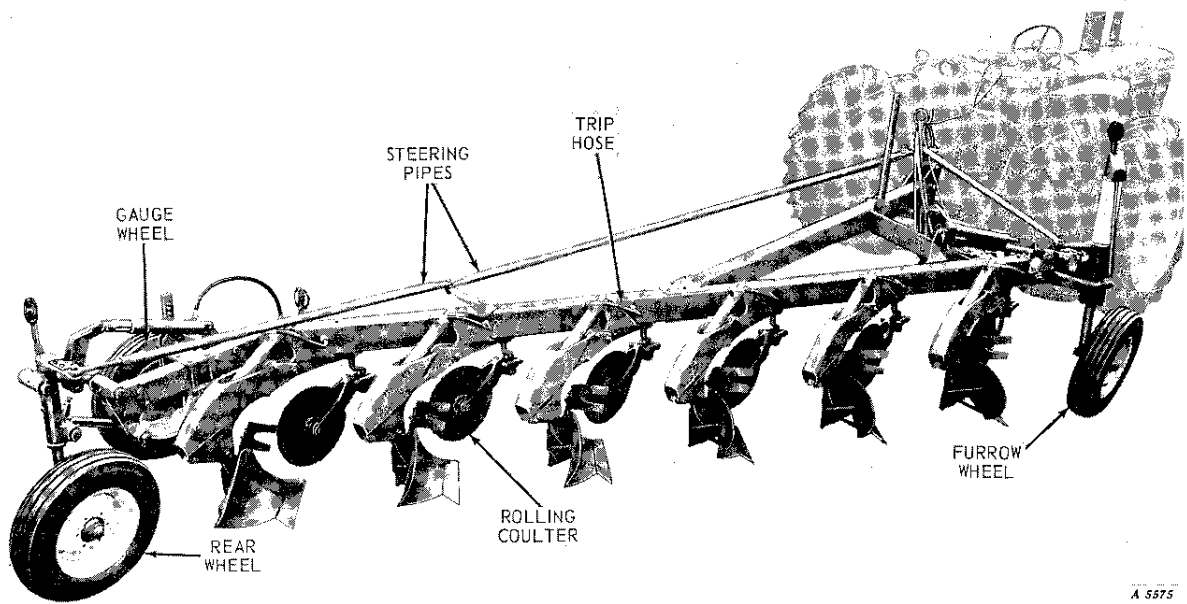
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**John Deere F345H 4-Bottom Power-Reset Semi-Integral Moldboard Plow**  
 (Hydraulic Landing Hitch, Cushion Rippled-Edge Anti-Friction Bearing Rolling Coulters, and Trashboards Optional Equipment)



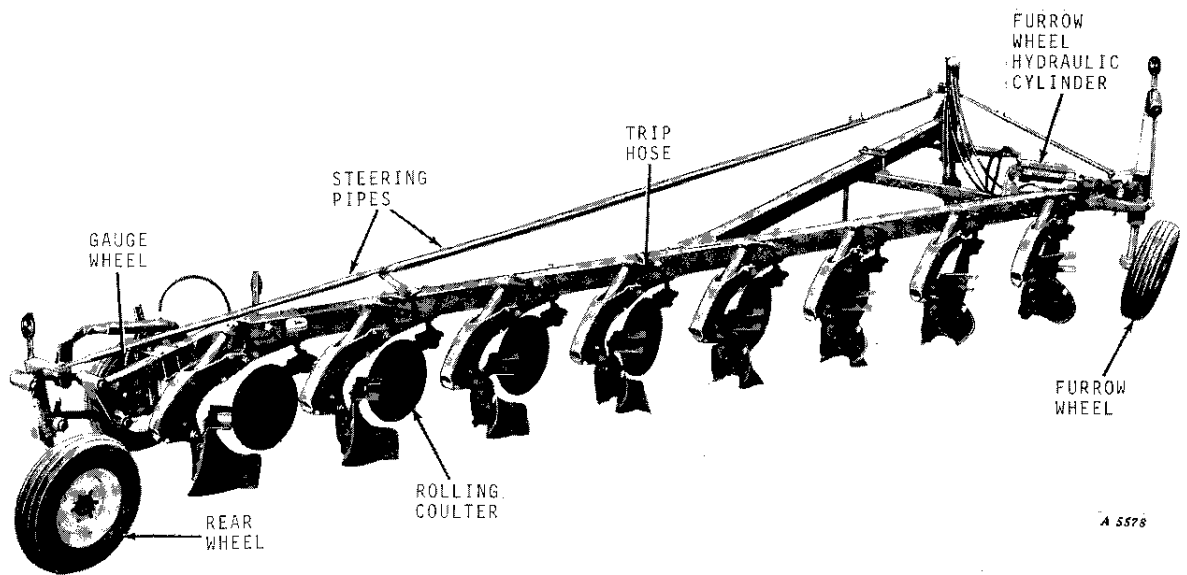
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**John Deere F345H 5-Bottom Power-Reset Semi-Integral Moldboard Plow**  
 (Rippled-Edge Rolling Coulters Optional Equipment)



A 5575

*John Deere F355H 6-Bottom Power-Reset Semi-Integral Moldboard Plow  
(Gauge Wheel and Trashboards Special Equipment)*



A 5578

*John Deere F355H 8-Bottom Power-Reset Semi-Integral Moldboard Plow  
(Gauge Wheel and Trashboards Special Equipment)*



# SPECIFICATIONS

Types. . . . .	F345H and F355H Series Power-Reset Semi-Integral Plows; F345H Series has a hitch for operating with tractor wheel in the furrow. F355H Series has a hitch for operating with all tractor wheels on the land. <b>F345H 4-Bottom</b> —16-inch frame for John Deere 2510, 3010, 3020, 4010, and 4020 Tractors. <b>F345H and F355H 5-Bottom</b> —16-inch frame for John Deere 3010, 3020, 4010, 4020, 5010, and 5020 Tractors. NOTE: The 5-Bottom Plow used with a 3010 or 3020 Tractor is recommended for light soil conditions only. <b>F345H and F355H 6-Bottom</b> —16-inch frame for John Deere 4010, 4020, 5010, and 5020 Tractors. <b>F345H and F355H 7-Bottom</b> —16-inch frame for John Deere 4020, 5010, and 5020 Tractors. <b>F355H 8-Bottom</b> —16-inch frame for John Deere 5010 and 5020 Tractors.
Depth Range . . . . .	Up to 12 inches depending on soil conditions and type and size of bottoms.
Clearance. . . . .	Fore-and-aft, 28 inches.
Hitch Crossbar . . . . .	Category 2 on 4-bottom plow. Category 2 or 3 on 5-, 6-, and 7-bottom plows. Category 3 on 8-bottom plow. Hydraulic Landing Hitch available as optional equipment for F345H 4-, 5-, and 6-bottom plows equipped with a category 2 hitch crossbar.
Standards . . . . .	Power-reset, double-pivot action.
Bottoms . . . . .	NU Series Bottoms, high-speed bottoms, high-speed slat bottoms, SDT446 slat bottoms, and SDT546FC semi-deep tillage bottoms.
Landsides. . . . .	No. 9 for all bottoms except rear bottom which requires a No. 11 adjustable rear landside.
Rear Furrow Wheel . .	F345H and F355H Series, steerable. Wheel for 6.70-15 or 7.60-15 tire, regular. Wheel with 6.70-15 tire, optional for 4- and 5-bottom plows. Wheel with 7.60-15 tire, optional for 6-, 7-, and 8-bottom plows. 14-inch wheel, less tire, optional.
Front Furrow Wheel. .	F355H Series; steerable. Wheel for 6.70-15 or 7.60-15 tire, regular. Wheel with 6.70-15 tire, optional for 4-, 5-, and 6-bottom plows. Wheel with 7.60-15 tire, optional for 7- and 8-bottom plows. 14-inch wheel, less tire, optional.
Hydraulic System. . . .	John Deere System for John Deere Tractors with closed-center constant-pressure system, regular. Accumulator System for other tractors that do not have adequate hydraulic capacity and closed-center hydraulic systems, optional.
Coulters. . . . .	Cushioned by two rows of cupped washers. 17-inch plain with chilled-cone bearing, regular. 17-inch rippled edge with chilled-cone bearing, optional. 17-inch or 20-inch, plain or rippled edge, with anti-friction bearing, optional.
Gauge Wheel . . . . .	Special Equipment. Wheel for 5.90-15 tire, with or without tire, or 14-inch wheel, less tire.
Moldboard Pads. . . . .	Available as special equipment for HS400 Series bottoms only.
Trashboards . . . . .	Available as special equipment for NU Series Bottoms, high-speed bottoms, high-speed slat bottoms, SDT446 slat bottoms, and SDT546FC semi-deep tillage bottoms.
Moldboard Extensions.	For NU Series and HS400 Series high-speed bottoms.

*(Specifications and design subject to change without notice.)*

## DESCRIPTION

### TYPES AND SIZES

The John Deere F345H and F355H Series Power-Reset Plows are designed for non-stop plowing in rocky or stumpy fields.

The F345H Series Plows are for operating with the right tractor wheels in the furrow and are available in 4-, 5-, 6-, and 7-bottom sizes with 16-inch frames. The F355H Series Plows are for operating with all tractor wheels on the land and are available in 5-, 6-, 7-, and 8-bottom sizes with 16-inch frames.

### HYDRAULIC SYSTEMS

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, 3010, 3020, 4010, 4020, 5010, or 5020 Tractor closed-center hydraulic system rated at 2000 psi. 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.

A cartridge-type, non-adjustable relief 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 relief valve setting, the relief 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 spe-

cial equipment and is for use with tractors which do not have 2000 psi 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 break-away couplers for the desired type of operation.

This system uses a bladder-type, 1-gallon-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 pressures 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.

### POWER-RESET STANDARDS

Each standard has two pivot points which permit the plow bottom to ride over obstructions and return to working position. If the share point hooks behind or under an obstruction, the dual pivots allow the standard to move rearward and up as much as 11 inches above the furrow bottom. Hydraulic pressure cushions the shock, returns the plow bottom to working position as soon as the point of the share clears the obstruction and holds the bottom in plowing position.

### OPERATING CONTROLS

The front of the plow is raised and lowered by the tractor rockshaft through the lower links of the tractor 3-point hitch.

The rear of the plow is raised and lowered independently by the rear wheel hydraulic cylinder.

On F355H Plows the front furrow wheel is raised and lowered by a remote hydraulic cylinder.

On the F345H Plow, linkage from the hitch crossbar steers the rear wheel automatically. On the F355H Plow, linkage from the hitch steers both the front and rear wheels.



# OPERATION

## 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 those soils where the black paint will not wear off, remove with gasoline, kerosene, or diesel fuel.

**CAUTION:** Be careful when using any of these fuels so they do not ignite. The plow should be in a well-ventilated area and away from any sparks or flames.

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 pages 29 and 30.

### 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.

## 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
Rear	6.70-15, 4-ply	30 psi.
	7.60-15, 4-ply	30 psi.
Front Furrow	6.70-15, 4-ply	30 psi.
	7.60-15, 4-ply	30 psi.
Gauge	5.90-15, 4-ply	28 psi.

## LUBRICATION

Be sure plow has been properly lubricated. See Lubrication Charts on pages 31 and 32.

## 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

### F345H 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 - Inches
4-Bottom 16-Inch	30
5-Bottom 16-Inch	30
6-Bottom 16-Inch	30
7-Bottom 16-Inch	32



### F355H Plows (Tractor Wheels on the Land)

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

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

### 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 third or lower gears, front-end weights up to the maximum permissible (2 side and 8 single front or 4 double front) are necessary to avoid possible front-end tip-up. If more front-end stability is required, see Vertical Hitch Adjustments on pages 17 and 18.

### 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.

### 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.

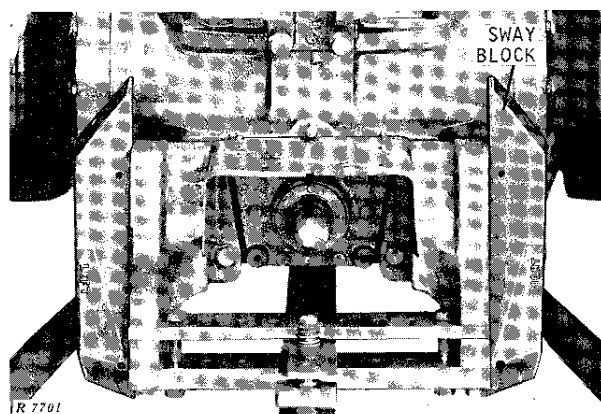
### 3-POINT HITCH AND HYDRAULIC SYSTEM

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 rockshaft selector lever. See your tractor operator's manual for complete explanation of the hydraulic system.

The hydraulic system on John Deere 2510, 3010, 3020, 4010, 4020, 5010, and 5020 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" mean plows used with the above John Deere Tractors.

### Sway Blocks



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

The sway blocks should be set in the *down* and *wide* position. This setting permits the plow to hold the proper width of cut and eliminates sway due to the action of the pivot assembly when working in the field. Since the plow rear wheel is steerable, the tractor draft links should be maintained rigidly behind the tractor for quick and positive maneuverability, both in the field and in transport.

*NOTE: In heavy rocks or stumps, position the sway blocks in the upper position to permit lateral movement.*

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