

# **RO 516 INTEGRAL TWO-WAY MOLDBOARD PLOW**



## **OPERATORS MANUAL RO 516 INTEGRAL TWO-WAY MOLDBOARD PLOW**

OMA17311 B0    English

**OMA17311 B0**

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.

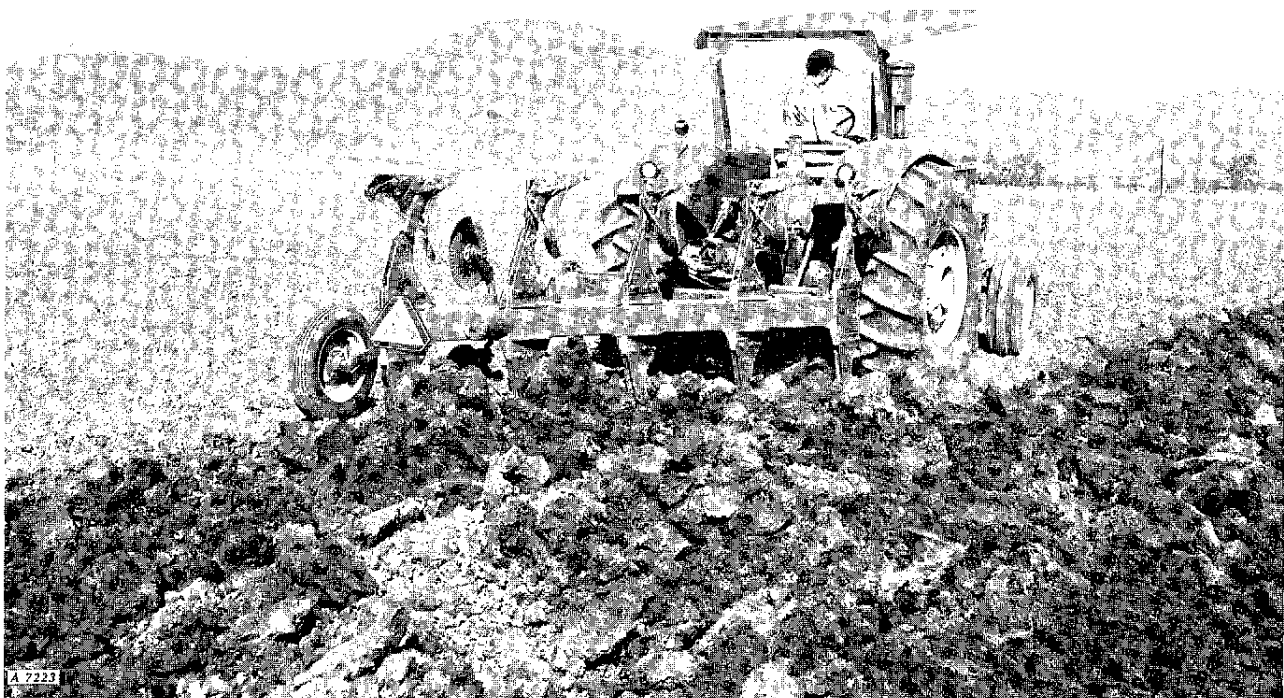
In addition to the equipment furnished with your plow, attachments are available to help you do a better job in special conditions. These are described in

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 37. 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.

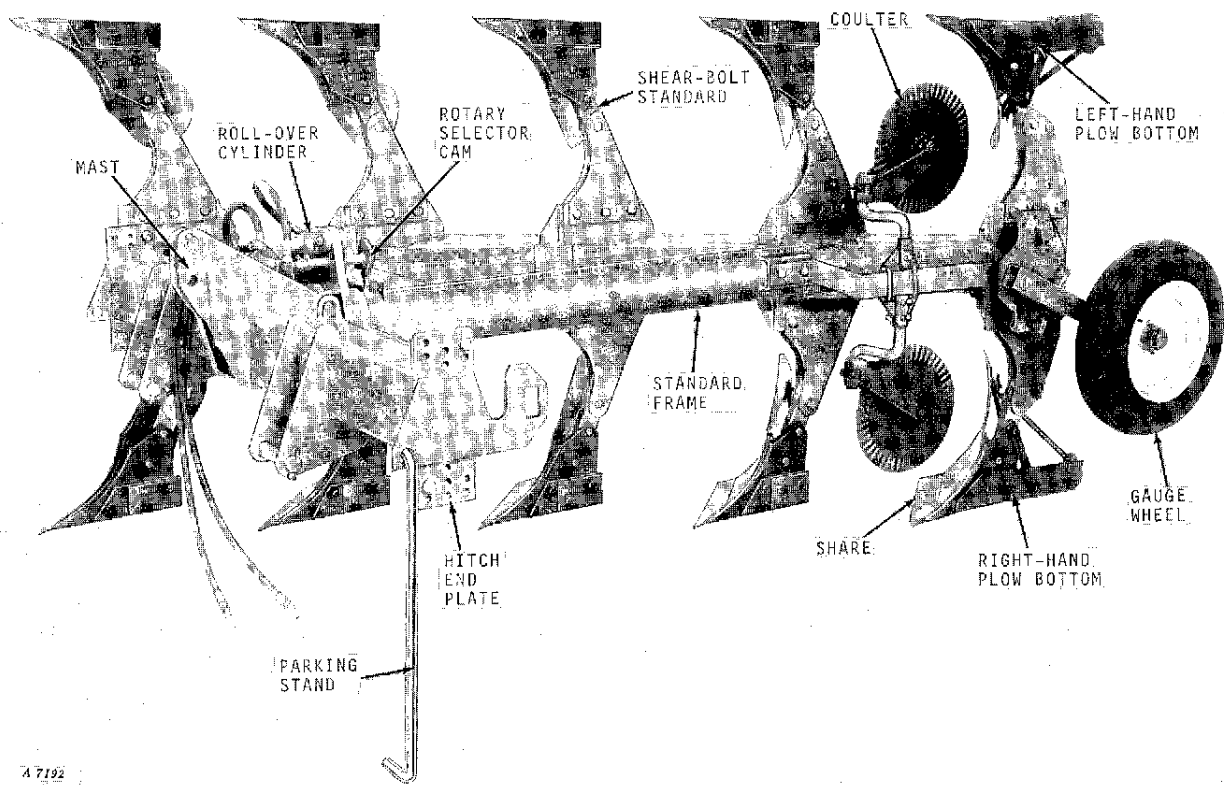




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*John Deere R0516 Integral Two-Way Moldboard Plow*



# Operation

## IMPORTANCE OF PROPER ADJUSTMENT

Your new plow is fully adjustable and, when properly adjusted to operate in the type 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; and it leaves the soil in proper condition to be worked down into the best-type seedbed.

Improper adjustments results in rapid wear, 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 the plow is to be put in storage for a considerable length of time, see pages 20 and 21.

### 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 very 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 serious damage to the plow.

## Tire Inflation

Check tire on gauge wheel to be sure it is inflated to 28 psi.

## Lubrication

Be sure plow has been properly lubricated. See Lubrication Charts on pages 18 and 19.

## PREPARING AND ADJUSTING THE TRACTOR

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

## Tractor Drawbar

Set the tractor drawbar in the short high position and pin it to the extreme left side of the support.

## Tire Inflation

Inflate the tractor tires as recommended in the tractor operator's manual for maximum ballast or heavy rear-mounted implement.

## Rear Wheel Setting

Set the rear wheels equidistant from the center line of the tractor to insure maximum performance and leave at least four inches between the furrow wall and the outside edge of the 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

To get proper field maneuverability, set the front wheels to conform to rear-wheel setting, center-to-center of tread.

## Front End Weighting

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

### Cast-Iron Weights

 **CAUTION: 4520 and 5020 tractors must be equipped with 1400 pounds of front-end weights to avoid possible front-end tip-up. See your tractor operator's manual.**

### Liquid Weights

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

## 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 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.

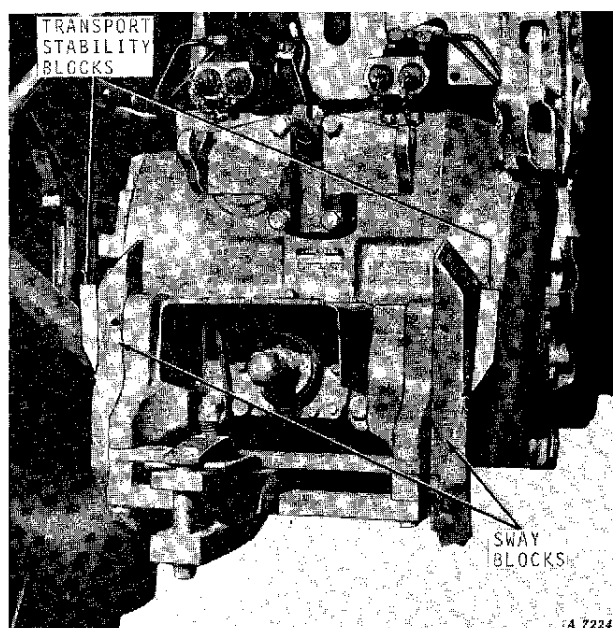
For maximum ballast, refer to your tractor operator's manual.



**be careful.....  
avoid accidents**

X 1275

## Sway Blocks and Transport Stability Blocks



Sway Blocks and Transport Stability Blocks  
on 5020 Tractor

Set sway blocks in the down position and in the Category 2 setting.

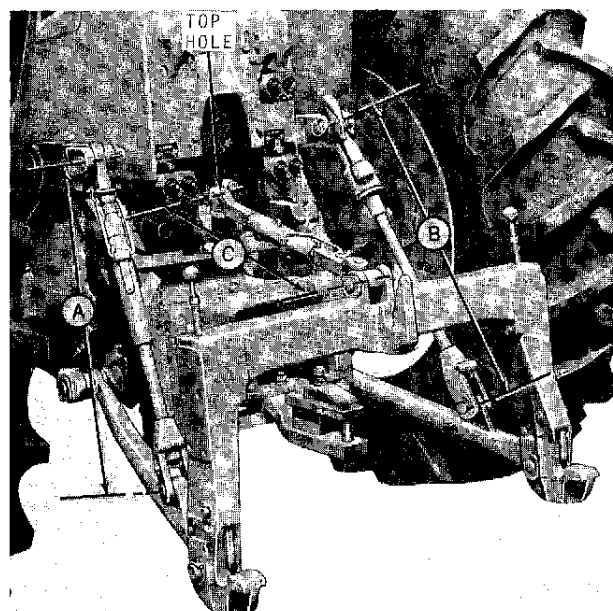
Attach transport stability blocks to the sway blocks. See illustration above and page 35.

The combination of sway blocks and transport stability blocks eliminates side sway when the plow is raised to the transport position, but permits lateral flexibility when the plow is working.

## 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.

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



4520 Tractor Illustrated

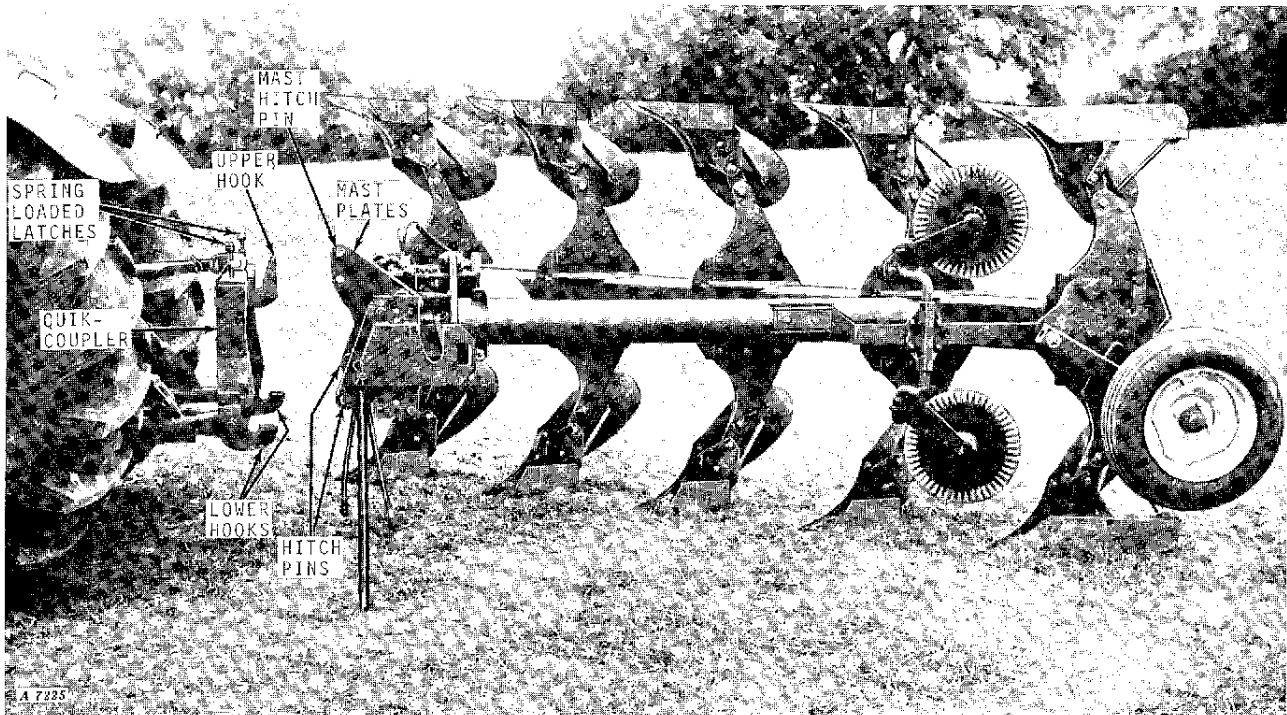
STARTING LINK LENGTHS			
Tractor	Left Lift Link Dimension "A"	Right Lift Link Dimension "B"	Center Link Dimension "C"
4520	39-1/2"	39-1/2"	29-1/2"
5020	35"	35"	28-1/2"

**NOTE:** A slight increase or decrease in the recommended length may be necessary in other than normal conditions and in very deep or very shallow plowing. Make final adjustments in the field.

## Adjusting Speed of Rockshaft Drop

Adjust the valve to give a smooth, slow drop of the plow. A drop time of 1-1/2 to 2-1/2 seconds is recommended to prevent damage to rear landside. See your tractor operator's manual for instructions on adjusting the valve.

## ATTACHING PLOW TO TRACTOR



### Attaching to Quik-Coupler Hitch

Place rockshaft selector lever in the "D" position.

Push both Quik-Coupler spring-loaded latches downward and to the rear to lock them in the released position.

Lower the Quik-Coupler hitch assembly until the upper hook is lower than the mast hitch pin.

Back the tractor until the upper hook is centered between mast plates and behind the mast hitch pin.

Raise the Quik-Coupler to raise the plow. Pull forward and upward on the latches to lock the plow to the coupler. See illustration above.

**NOTE:** When the latches are properly locked, the indicator rods will protrude through the slots in the coupler frame adjacent to the latch rods.

Place parking stand in transport position.

### Attaching Hydraulic Hoses

Before attaching hoses, move remote cylinder control lever back and forth several times with tractor engine stopped to relieve pressure in the tractor hydraulic system.

**IMPORTANT:** Wipe hose ends to remove any dirt before inserting in the breakaway couplers.

Position hoses under the Quik-Coupler hitch and insert into the breakaway couplers. The hoses may be inserted in either coupler. Reversing the hoses only reverses the control lever operation.

**NOTE:** If the hoses have been disconnected from the hydraulic cylinder or if the cylinder has not been used before, all trapped air must be removed from the cylinder.

To remove trapped air, remove cylinder attaching pins and lay the cylinder across the plow frame with the oil outlets up to allow the trapped air to escape. Start engine and operate the remote cylinder control lever back and forth seven or eight times, allowing the full stroke each time.

Reattach the hydraulic cylinder to the plow.



## Checking Plow and Tractor

Raise the plow slowly and watch for any interference. See "Raising and Lowering" in next column.

**IMPORTANT:** Before indexing plow, be sure the rotary selector cam is set properly. See instructions on page 8. Failure to set the rotary selector cam will result in damage to the cam on the first indexing sequence.

Index the plow with the tractor engine operating at idling speed. See "Rotating Bottoms" page 9. Be sure interference is not encountered between plow and tractor cab or Roll-Gard. Make certain that open rear windows on tractor cabs do not interfere with indexing.

Place rockshaft selector lever in the "LD" (middle) position before putting plow in the field.

**CAUTION:** As a safety precaution, and to avoid damage to the tractor hydraulic system, always lower the plow when not in use.

## DETACHING PLOW FROM TRACTOR

The plow can be detached with right-hand or left-hand bottoms down. When parking on cement or other hard surfaces, lower the plow slowly to avoid damaging bottoms.

When detaching plow from tractor, lower plow until the bottoms just touch ground with load still on tractor.

**CAUTION:** Do not unhitch plow until parking stand is attached and secured with spring locking pin.

Uncouple hydraulic hoses and unlock the spring loaded latches on the Quik-Coupler hitch.

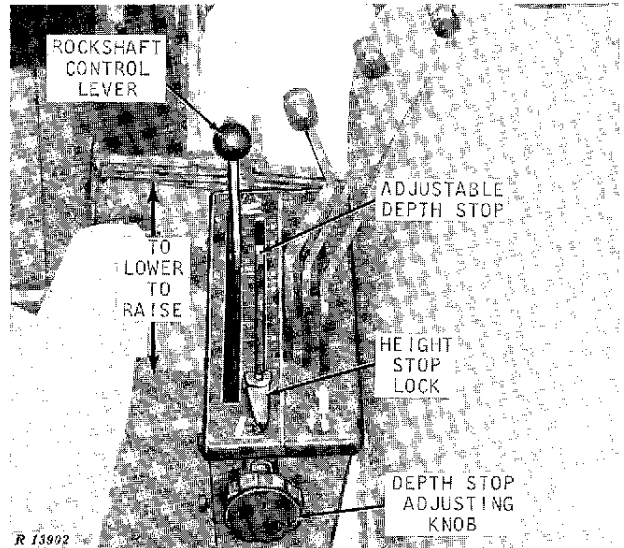
Lower the 3-point hitch slowly until the Quik-Coupler upper hook clears the plow mast and hitch pins. Drive the tractor forward away from the plow.

**NOTE:** If the hitch will not lower, lengthen or shorten the center link until the Quik-Coupler is free when the plow is lowered.

## RAISING AND LOWERING

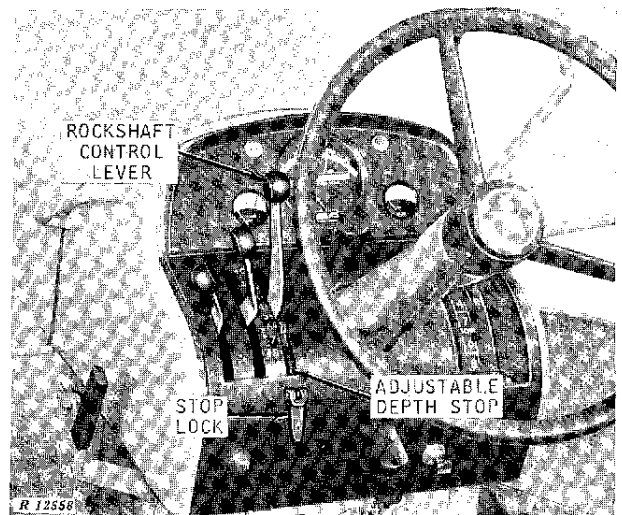
The plow is raised and lowered by the tractor hydraulic system.

### 4520 Tractor



The rockshaft control lever is located in the hydraulic control console at the right of the seat. Push the rockshaft control lever forward to lower the implement or pull it rearward to raise the implement.

### 5020 Tractor



The rockshaft control lever is located on the dash. Push the lever forward to raise the implement or pull it rearward to lower the implement.

## DEPTH OF PLOWING

The tractor rockshaft control lever and the plow gauge wheel controls the working depth of the plow.

An adjustable depth stop on the control lever quadrant is provided to enable the operator to lower the plow to a preset depth. This stop can easily be bypassed with the lever if additional working depth is desired.

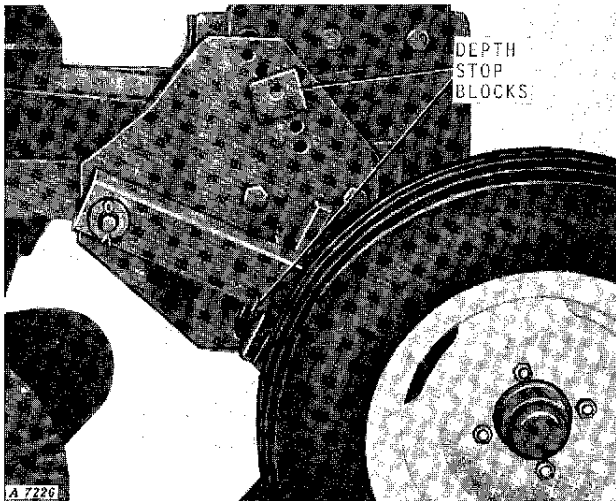
The Load-and-Depth Control of the hydraulic system tends to maintain the operating depth over uneven ground or in varying soil conditions but always keeps the working depth within the limits of good plowing.

In some light draft soils or extremely rolling land conditions it may be desirable to set the rockshaft selector lever in the "L" position.

**NOTE:** Be sure tractor hitch links are adjusted properly, as shown on page 5. If improperly adjusted, desired plowing depth may not be obtained.

If the tractor hitch links and the plow are adjusted properly the rockshaft control lever should generally never be more than three quarters of the distance down. If the lever is too far down, the efficiency of the Load-and-Depth Control is affected.

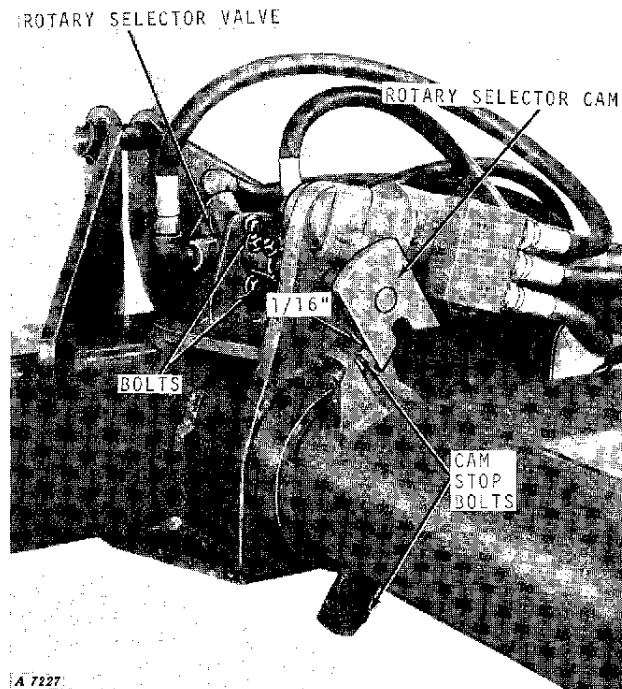
### Gauge Wheel



A gauge wheel is furnished as regular equipment to assist in maintaining the proper depth of the rear bottoms.

The gauge wheel may be adjusted to the desired depth by raising or lowering the depth stop blocks. The stop block attaching bolt is welded off center to give two settings for each hole. Set both blocks in the same respective hole and turn in the same direction to give the same depth on the right- and left-hand bottoms.

## ROTARY SELECTOR CAM



Position the rotary selector cam at a 45-degree angle toward the frame trip so it will receive the frame trip in the open side of the cam.

**IMPORTANT:** Failure to set the rotary selector cam will cause damage to the cam on the first indexing sequence.

If the indexing action, to right and to left, is not equal or balanced, loosen the two bolts holding the rotary selector valve on the mounting bracket and turn valve (holes are slotted) in one direction or the other until equal indexing action is obtained. Tighten bolts to hold the adjustment.

Leave 1/16-inch clearance between rotary selector cam and cam stop bolts after the plow bottoms have been rotated in both directions.

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