John Deere 2500 Power-Reset Semi-Integral Moldboard Plow

JOHN DEERE

OPERATORS MANUAL

John Deere 2500 Power-Reset
Semi-Integral Moldboard Plow

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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.

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

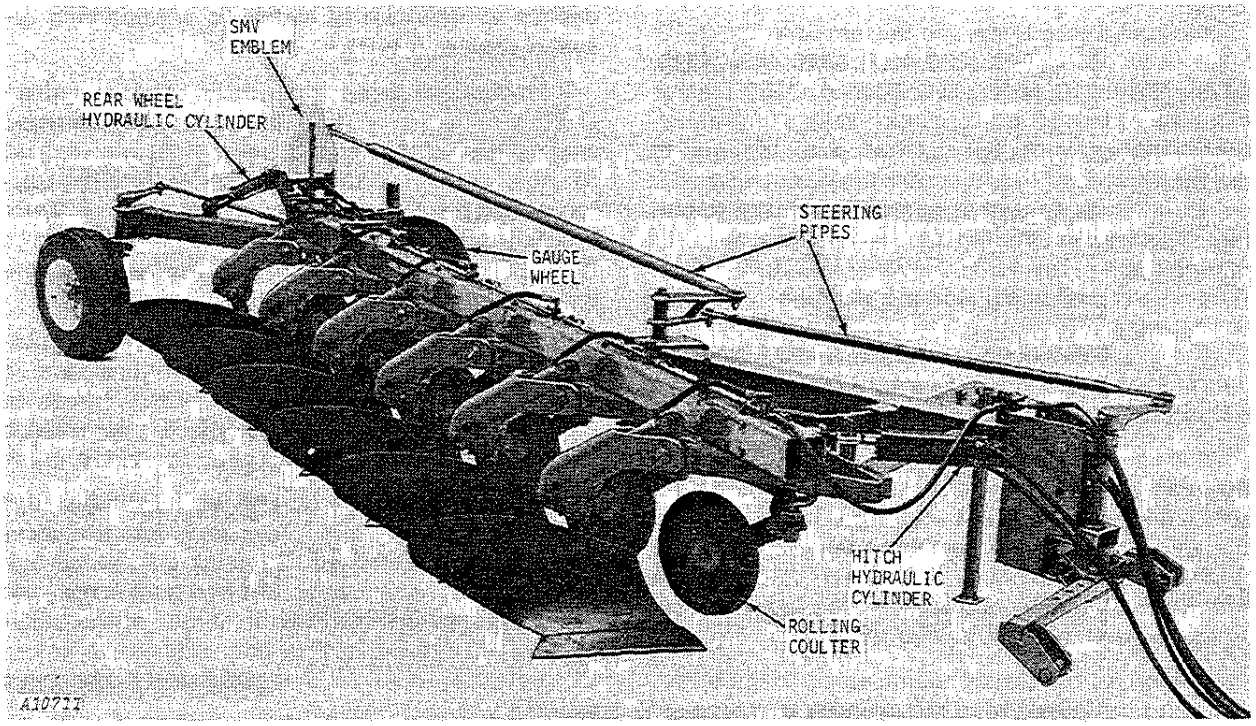
In addition to the equipment furnished with your plow, attachments are available to help you do a better job in special conditions. These are described in the special equipment section of this manual and can be purchased from your John Deere dealer.

"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 60. 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.

Contents



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

Operation

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 3010, 3020, 4000, 4010, 4020, 4030, 4230, 4320, 4430, 4520, 4620, 4630, 5010, 5020, 6030, 7020, or 7250 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 as special equipment 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.

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 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 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. See torque chart, page 30.

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 27-29.

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 (71.1 cm, 76.2 cm or 81.3 cm) from the center line of the tractor to the inside edge 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.

Tractor Wheels on the Land — Continued

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 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.

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 are necessary to avoid possible front-end tip-up. If more front-end stability is required, see "Vertical Hitch Adjustments" on page 19.

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

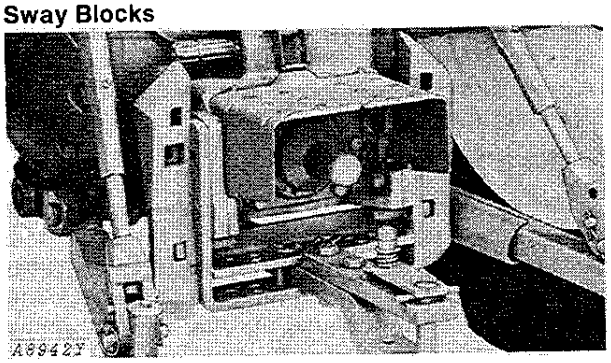
Where weight in addition to or in place of liquid weight is required, cast-iron weights can be bolted to the rear wheels. This type of weight can be secured from your John Deere dealer.

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.

Sway Blocks



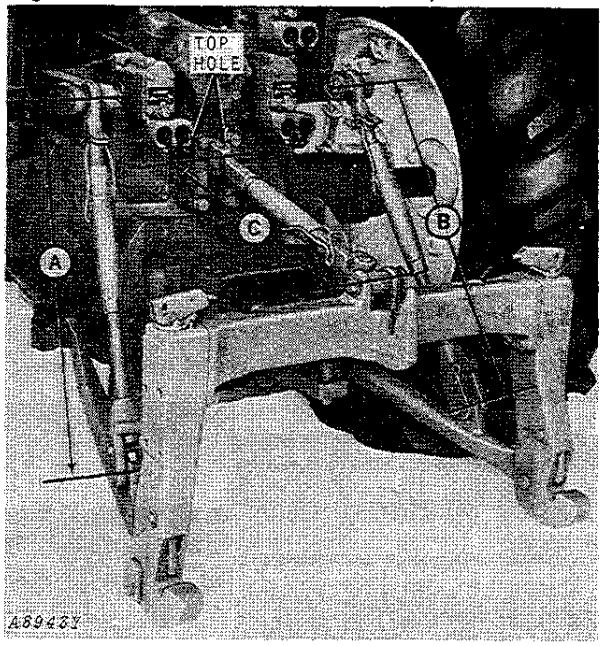
Sway Blocks Installed to Eliminate Side Sway

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 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.

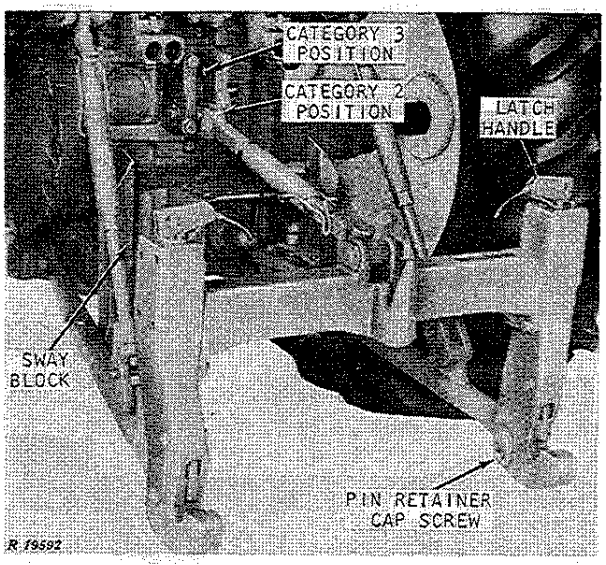
For 7020 and 7520 tractors, place the sway blocks in the down and narrow position. This will allow more freedom between plow and tractor when making steering corrections.

Link Lengths

It is important that the length of the lift links and center link be adjusted properly as shown in the following charts. Measure from center of pins as shown.



Quik-Coupler 3-Point Hitch (Category 3)



Quik-Coupler 3-Point Hitch (Category 2)

DIMENSIONS

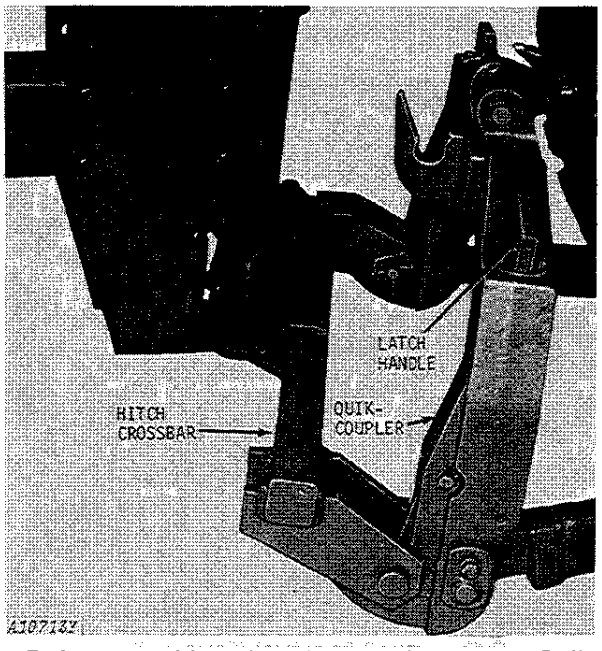
Tractor	In Furrow Left Lift Link (Dimension "A")	In Furrow Right Lift Link (Dimension "B")	In Furrow *Center Link (Dimension "C")	On Land Left Lift Link (Dimension "A")	On Land Right Lift Link (Dimension "B")	On Land *Center Link (Dimension "C")
2510, 2520, 3010, 3020, 4000, 4010, 4020, 4030, 4230, 4320	30-In. (76.2 cm)	29-In. (73.7 cm)	Shortest Setting	30-In. (76.2 cm)	30-In. (76.2 cm)	Shortest Setting
4430	34-In. (86.4 cm)	33-In. (83.8 cm)	Shortest Setting	34-In. (86.4 cm)	34-In. (86.4 cm)	Shortest Setting
4520, 4620, 4630	36-In. (91.4 cm)	35-In. (88.9 cm)	Shortest Setting	36-In. (91.4 cm)	36-In. (91.4 cm)	Shortest Setting
7020, 7520	- -	- -	- -	36-In. (91.4 cm)	36-In. (91.4 cm)	Shortest Setting
5010, 5020, 6030	40-In. (101.6 cm)	39-In. (99.1 cm)	Shortest Setting	40-In. (101.6 cm)	40-In. (101.6 cm)	Shortest Setting

**Center link is used only with a Quik-Coupler.*

The center link must be in the top hole of the center link bracket (Category 3). For 7020 and 7520 tractors, place center link in bottom hole of center link bracket and change Quik-Coupler to Category 2.

Quik-Coupler

ATTACHING PLOW TO TRACTOR



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

2510, 2520, 3010, 3020, 4000, 4010, 4020, 4030, 4230, 4320, and 4430 Tractors

NOTE: Latch lock pins must be used when using these plows with a welded steel Quik-Coupler with the straight rod spring-loaded latches. If the Quik-Coupler is not equipped with latch lock pins (Kit AR31984), see your John Deere dealer.

Latch lock pins are not used on the cast iron Quik-Coupler or the welded steel Quik-Coupler with the latch handles.

When attaching Quik-Coupler to tractor 3-point hitch make sure center link is set according to the dimensions given in chart on page 5.

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

Make sure spring-loaded latches are in the released position.

Raise the coupler with the tractor rockshaft control lever until plow hitch pins are resting in the coupler lower hooks.

The Quik-Coupler with the straight rod spring-loaded latches automatically latch the hitch pins in place by the spring-loaded latches as the coupler receives the weight of the plow.

NOTE: When the spring-loaded latches are properly locked, the indicator rod will protrude through the slot in the coupler frame adjacent to the latch rods.

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.

4520, 4620, 4630, 5010, 5020, 6030, 7020, and 7520 Tractors

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

Make sure spring-loaded latches are in the released position.

Lower the hitch assembly until the attaching hooks are lower than the plow hitch pins.

Back up the tractor until the plow hitch pins enter the lower hooks. Raise the Quik-Coupler to raise the plow.

On couplers with the straight rod spring-loaded latches, pull forward and upward on the latches to lock the plow to the coupler. See illustration at left.

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

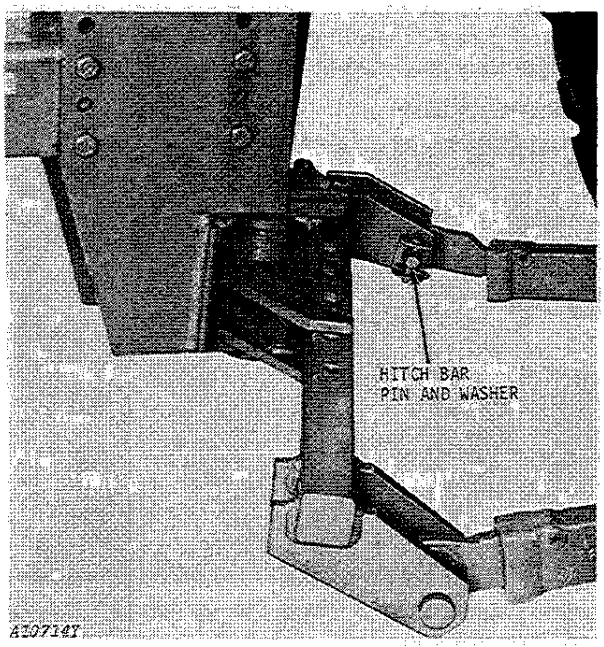
On couplers with the latch handles, push down on the handles to lock the plow to the coupler.

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

2510, 2520, 3010, 4000, 4010, 4020 4030, 4230, 4320 And 4430 Tractors



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

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

Slip hitch pins through crossbar plates and draft link ball sockets. Secure hitch pins using washers and pins provided.

Close the telescoping draft links either by raising and lowering the plow with the tractor rockshaft control lever or by backing up the tractor.

Be sure lock pins snap into place.

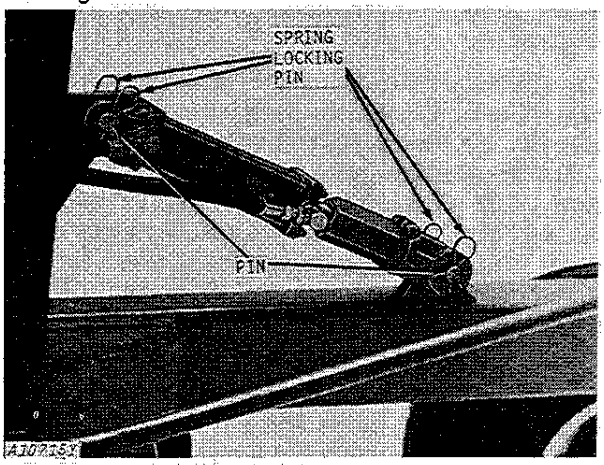
After hitching return rockshaft lever to "LD" or middle position.

NOTE: The center link is not used.

Installing Hydraulic Cylinder For Rear Wheel

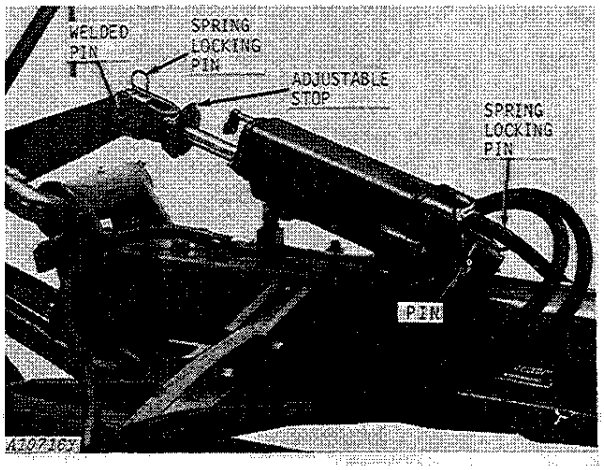
The hydraulic cylinder controls the rear wheel of the plow.

The installation of the rear cylinder hoses in the tractor breakaway coupler depends upon the tractor model used. See pages 10 and 11 for installing hoses.



Install the hydraulic cylinder on the rear wheel frame with pins and spring locking pins.

Installing Remote Hydraulic Cylinder 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 (3.94 m) long.

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

The plow requires hoses for a 131-inch (3.33 m) minimum spherical radius from the tractor drawbar to the hose end of the remote cylinder.

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