

650 SIDE-DELIVERY RAKE



OPERATORS MANUAL 650 SIDE-DELIVERY RAKE

OME57328 E4 English

JOHN DEERE OTTUMWA WORKS
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ENGLISH






To the Purchaser

Your new rake was carefully designed and manufactured to give years of dependable service. To keep it running 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 or lubrication. Read the "Table of Contents" to learn where each section is located. Use the alphabetical index for fast reference.

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

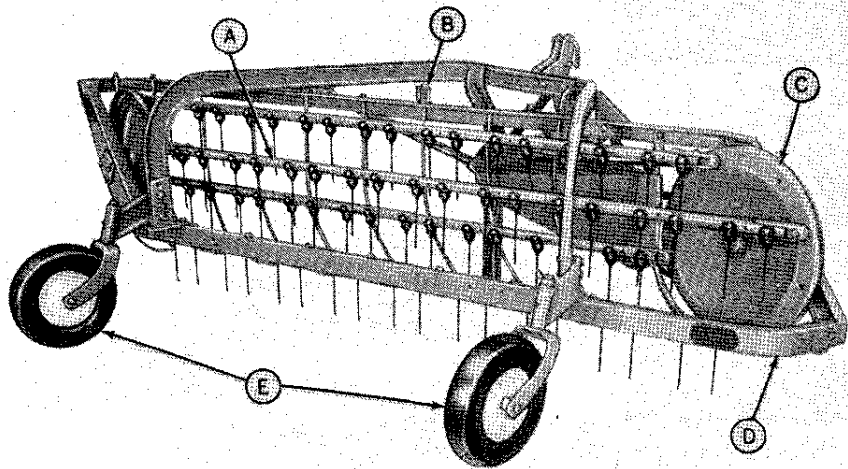
 This safety alert symbol identifies important safety messages in this manual. When you see this symbol, be alert to the possibility of personal injury and carefully read the message that follows.

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

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

Record your rake serial number in the space provided on page 15. Your dealer needs this information to give you prompt, efficient service when you order parts. If your rake requires replacement parts, go to your John Deere dealer where you can obtain Genuine John Deere parts—accept no substitutes.

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



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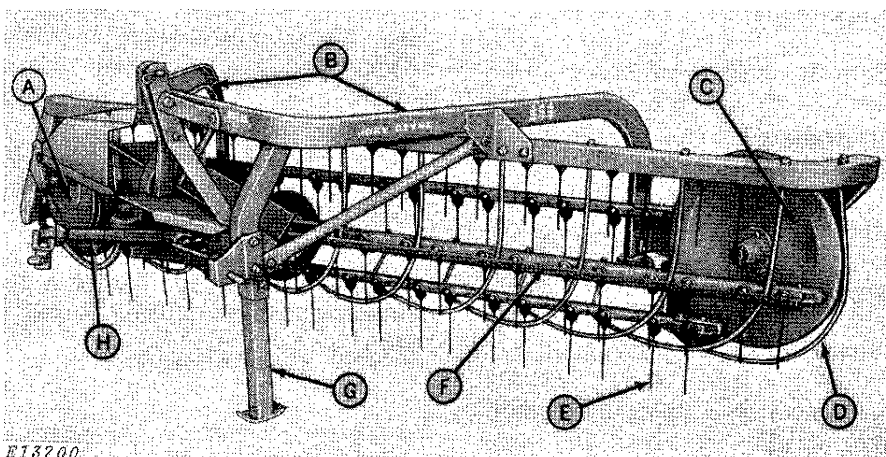
- | | |
|------------------------|------------------|
| A. Tooth Bar | D. Reel Frame |
| B. SMV Emblem Mounting | E. Caster Wheels |
| C. Front Reel End | |

Right-Hand Rear View of John Deere 650 Side-Delivery Rake



Contents

	Page
Safety	2
Operation	3
Lubrication	9
Attachments	10
Assembly	12
Specifications	15
Index	16



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|------------------------|---------------------------------|
| A—Drive Sheave | E—Tooth |
| B—Main Frame | F—Front Stripper Support |
| C—Rear Reel End | G—Stand |
| D—Reel Stripper | H—PTO Hookup |

Left-Hand Front View of John Deere 650 Side-Delivery Rake



Safety Suggestions

⚠ 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.

Entanglement in rotating driveline can cause serious injury or death. Keep all shields in place. Avoid contact with rotating parts.

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.

All machinery should be operated only by responsible persons who have been delegated to do so.

Always unhitch the rake on level ground.

Before servicing or adjusting the rake, or removing material from it, always:

1. disengage all power,
2. shut off engine, and then
3. wait until the reel has stopped rotating.

Only one person - the operator - should be permitted on the tractor platform while the tractor and rake are in operation.

Stand clear of the rake at all times when the machine is operating.

Do not attempt to pull hay from the teeth when machine is running.

Clothing worn by the rake operator should be fairly tight and belted. Loose jackets, shirts, or sleeves should never be worn because of the danger of getting into moving parts.

Never refuel the tractor when the engine is hot or running. Do not smoke or use fire, sparks or flames when working around flammable fuel, especially when refueling the tractor.

Inexperience and lack of "know-how" in repair and maintenance can result in personal injury as well as equipment damage. Know what to do and how to do it before attempting a job.

Never clean, lubricate, or adjust the rake until power is shut off.

When transporting the rake on a road or highway at night or during the day, use accessory lights and devices for adequate warning to the operators of other vehicles. In this regard check local governmental regulations. Various safety lights and devices are available from your John Deere dealer.

Be careful when operating on hillsides, because the tractor may tip sideways if it strikes a hole, ditch, or other irregularity.

Finally, remember this: An accident is usually caused by someone's carelessness, neglect, or oversight.



Operation

The John Deere 650 Side-Delivery Rake is a modern power take-off rake designed for today's high speed farming methods. It is a big-capacity rake with a right angle reel to give you maximum raking speed with minimum handling of your crop.

On the following pages you will find information on how to operate your John Deere Side-Delivery Rake to the best advantage. If you carefully read and use this information, your rake will give years of dependable and economical service.

PREPARING THE RAKE

Tire Inflation

Check tire inflation pressure. Inflate tires to 20 psi (138 kPa).

Lubrication

Lubricate as shown in lubrication section (page 9.)

Visual Inspection

Before starting the rake, make sure that all bolts are tight, cotter pins are spread, and machine has been properly assembled (pages 12 to 14). Check 3-point hitch rake through complete lifting range for binding, bottoming, or uncoupling of the universal joint.

Breakage of parts, which causes serious delay and additional expense, can be avoided by taking these precautions before entering the field.


HITCHING RAKE TO TRACTOR

The Side-Delivery Rake can be attached to John Deere Tractors having a power take-off and equipped with a 3-point hitch. The rake can also be attached to other makes of tractors equipped with a similar 3-point hitch and having a power take-off that conforms to ASAE-SAE standards.

The rake can be used with tractors that are geared internally for 540 rpm PTO. It cannot be used with tractors equipped with an external powershift speed changer.

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

Check the speed of the tractor powershaft to be sure it is running according to the manufacturer's recommendation.

 **CAUTION: On tractors with a category 1, 3-point hitch, attach a minimum of 150 pounds (68 kg) of front end weight for stable operation.**

Set the tractor on drawbar in the short position and remove any drawbar extension.

On a 2010 Tractor, adjust the length of the lift links to a mid-position. On all other tractors adjust the lift links to the recommended maximum length.

See your tractor operator's manual for tractor 3-point hitch category 1 or 2 adjusting instructions to match the category of the rake hitch.

John Deere engineers have developed a code to determine how much front ballast is needed.

The 650 Rake implement code is 36. Refer to tractor operator's manual to be sure tractor weight is compatible with implement codes.

If possible, lock out the load responsiveness from the load-and-depth control to obtain depth control or lever position responsive control.

NOTE: On John Deere 830, 1010, 1020, 1520, 1530, 2010, 2020, 2030, 2040, 2240, 2440, 2510, 2520, 2630, 2640, 3010, 3020, 4000, 4010, 4020, and 4520 Tractors, place the load and depth control lever in the "D" position.

NOTE: On the 4030, 4230, and 4430 tractors, place selector lever in the "min." position before attaching the rake, or when limiting rockshaft lift with a height stop.

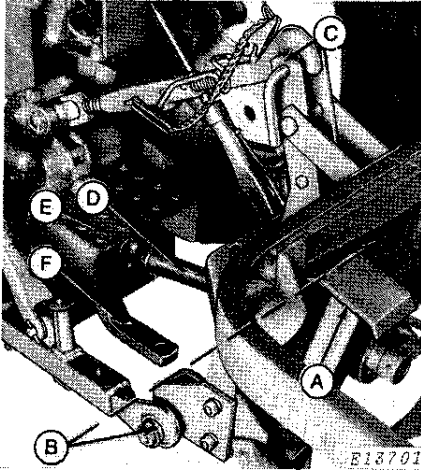
Adjust speed of the rockshaft for a slow drop.

Adjust lift links for "floating" action to permit either side of the rake to follow ground contours without affecting the other side of the rake.

4 Operation

HITCHING RAKE TO TRACTOR— Continued

A stand (A) is provided to support the rake when hitching or unhitching from the tractor.



A—Stand
B—Lower Hitch Points
C—Upper Hitch Point
D—Tractor Hookup
E—Master Shield
F—Drawbar

Back the tractor so the draft links are approximately in line with the hitch pins on the rake.

Attach the left-hand draft link to the rake left-hand hitch point (B), using the hydraulic control lever to obtain correct alignment. Attach the right-hand draft link to the right-hand hitch point (B). On some tractors, the adjusting lever may be used to align the link with the pin.

On tractors with more than one center link attaching hole; attach the center lift link to the tractor load control yoke in the lowest hole possible without interfering with the PTO and rake hookup parts. This permits better pivoting action between the tractor and the rake and minimizes digging or skipping when raking in rough conditions.

Attach center link to upper hitch point (C) on rake.

On tractors with dual rockshafts, adjust the hydraulic system so integral cylinders are parallel and the lift arms operate together.

On tractors equipped with sway chains, adjust the chains for a minimum amount of slack. All other tractors must be equipped with sway locks or sway blocks, adjusted to the least amount of sway.

Attach universal joint hookup (D) to tractor PTO shaft. On some tractors it may be necessary to raise the rake to permit connection of the universal joint.

NOTE: Check universal joint hookup (D) through complete lift range to be sure there is no binding, bottoming, or uncoupling of the joint. Also check for interference between rake and tractor. If interference occurs, readjust the tractor hitch.

Remove the guard from the end of the powershaft and install the master shield (E) for 3-point hitch operation.

Raise the rake, and place stand (A) in upper position.

Lower rake by moving rockshaft control lever to its lowest position, and adjust for raking tooth height.

OPERATING THE RAKE

Side-delivery rakes, once they are adjusted to suit field conditions, are easy to operate. The only adjustments required for satisfactory operation of this rake are the height and the pitch of the teeth in relation to the ground. A fifth tooth bar can be added for more gentle crop handling. See page 11.

CAUTION: Entanglement in rotating driveline can cause serious injury or death. Keep all shields in place. Avoid contact with rotating parts.

Before connecting the universal joint, turn the reel by hand to be sure it revolves freely and the teeth do not strike the strippers.

OPERATING ADJUSTMENTS

Tooth Height

The height of the teeth can be varied from one-inch (25 mm) below to two inches (51 mm) above the ground; however, some tractors or hitches will allow a greater range of adjustment. Set the teeth as far as possible from the ground, but low enough to allow the teeth to pick up cleanly.

The raking height of the teeth is controlled by lengthening or shortening the center link. Shortening the link lowers the teeth and lengthening the link raises the teeth.

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