

# 660, 670 and 671 Side-Delivery Rakes and Dual Hitch



## OPERATORS MANUAL

660, 670 and 671 Side-Delivery Rakes  
and Dual Hitch

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ENGLISH






## To the Purchaser

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Your new rakes and dual hitch were carefully designed and manufactured to give years of dependable service. To keep them 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 rakes, 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.

Because John Deere sells its products world-wide, U.S. units of measure are shown with their respective metric equivalents throughout this operator's manual. These equivalents are the SI (International System) Units of Measure.

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

Record your rake and dual hitch serial numbers in the spaces provided on page 23. Your dealer needs this information to give you prompt, efficient service when you order parts. If your rakes or dual hitch require replacement parts, go to your John Deere dealer where you can obtain Genuine John Deere parts—accept no substitutes.

The warranty on the rakes and dual hitch appears on your copy of the purchase order which you should have received from your dealer when you purchased them.



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# Safety Suggestions

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 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.

A safety chain will help control drawn equipment should it accidentally separate from the drawbar while transporting. Using the appropriate adapter parts, attach the chain to the tractor drawbar support or other specified anchor location. Provide only enough slack in the chain to permit turning. See your John Deere dealer for a chain with a strength rating greater than the gross weight of the towed machine.

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.

When unhitching the dual hitch from the tractor, make **sure** the jack stands have been lowered to the ground. The tongue can raise rapidly if unhitching without first lowering jack stands to ground.

Always unhitch the rakes on level ground.

Before servicing or adjusting the rakes, or removing material from them, always:

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

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

Stand clear of the rakes at all times when the machines are operating.

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

Never ride, or permit others to ride, on the drawbar of the tractor, on the rakes, or on the dual hitch.

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.

Be especially careful when operating on hillsides. The rakes could tip sideways if they strike a hole, ditch, or other irregularity.

Never clean, oil, or adjust the rakes when they are running.

Do not operate these machines without proper shielding over the universal joints.

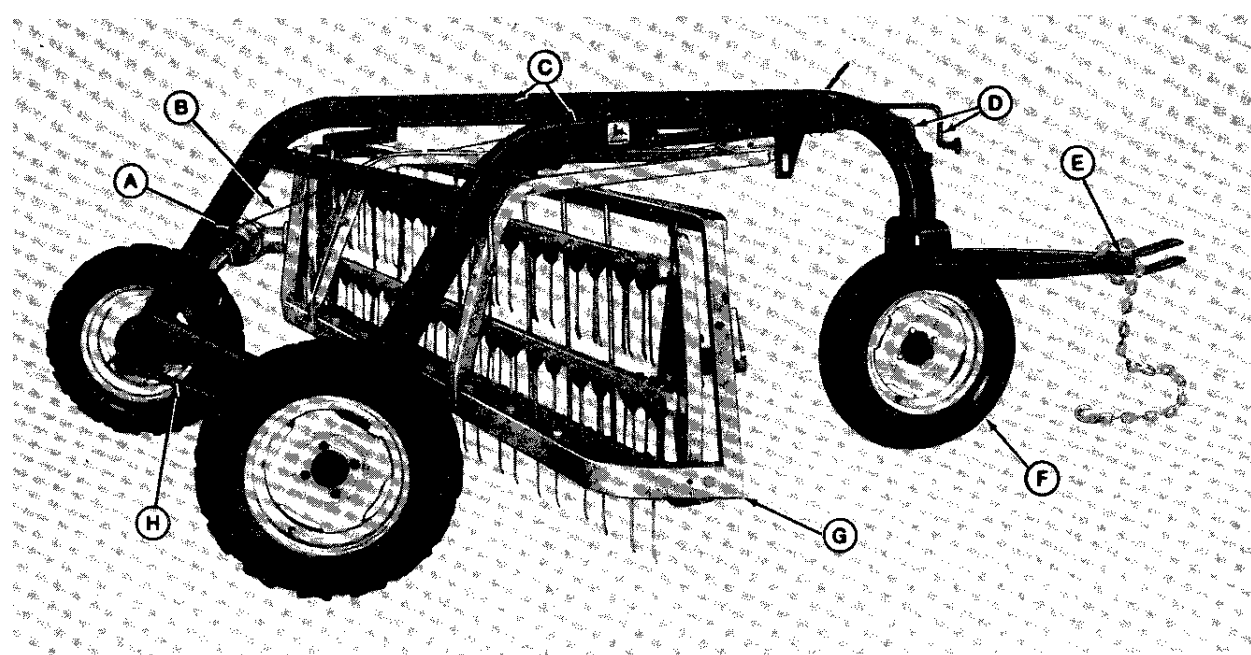
Inexperience and lack of "know-how" in repair and maintenance can result in personal injury as well as equipment damage. Know what to do and how to do it before attempting a job.

Make this manual your guide and do what it recommends, regardless of what may have been your practice with other makes of rakes, or the suggestions that may be made to you by well-meaning friends or neighbors.

When transporting the rakes 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.

When you are exposed to any noise which is objectionable or uncomfortable, it is recommended that you wear a suitable hearing protective device (such as ear muffs or plugs.)

Be alert, the life you save could be your own.

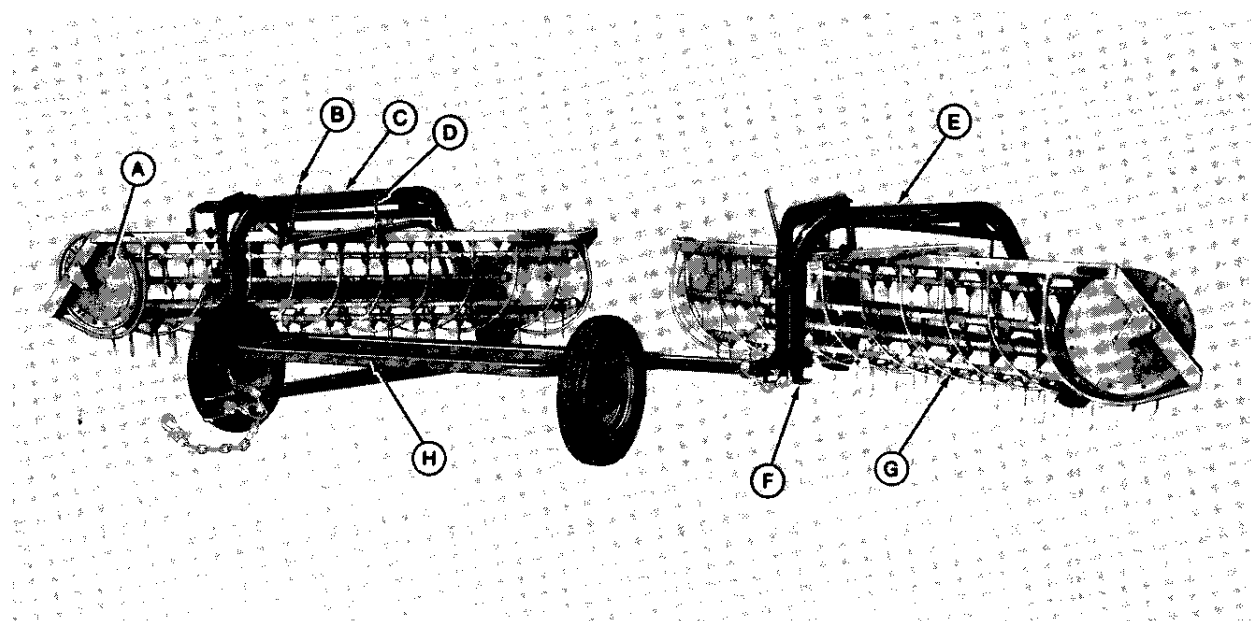


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- A—Gear Case  
B—Clutch Cable  
C—Main Frame  
D—Hand Lift Cranks

- E—Hitch  
F—Gauge Wheel  
G—Reel Frame  
H—Drive Shaft

*Right-Hand View of John Deere 660 Side-Delivery Rake with Front Gauge Wheel*



E23973

- A—Reel  
B—Pitch Control Lever  
C—670 Rake  
D—Clutch Control

- E—671 Rake  
F—Jackstand  
G—Stripper  
H—Dual Hitch

*Left-Hand View of John Deere 670, 671 Side-Delivery Rakes with Dual Hitch*



# Operation

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Your John Deere Side-Delivery Rakes are modern ground-driven rakes designed for today's high-speed farming methods. They are large capacity rakes with both right and left-angle reels 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 Rakes to the best advantage. If you read this manual carefully and follow the instructions, your rakes will give years of dependable and economical service.

## PREPARING THE RAKES

### Inflating Tires

Proper inflation is essential to the long life of a tire. Lack of air pressure allows the tire to slip on the rim and buckles the side walls, resulting in torn valve stems and uneven tread wear. Too much pressure causes undue strain on tire structure and may result in ruptures due to impact with stones, roots, or ruts. It also causes excessive tread wear and allows tires to cut in more on wet ground.

Keep valve caps screwed finger-tight onto valve stems. This will prevent dust, fine gravel, mud, and other foreign material from accumulating in the valve core and permitting the compressed air to escape.

Check tire pressure frequently and inflate or deflate tires to obtain proper air pressure of 8 to 15 psi (55 to 103 kPa). Keep wheel bolts tightened to 55 ft-lbs (75 Nm) (8 kgm) torque.

### Lubrication

Be sure that your rakes have been lubricated according to lubrication section, pages 11 and 12.

### Visual Inspection

Before starting to rake, make sure all bolts are tight, cotter pins are spread, and the machines have been properly assembled. Doing so will maintain the efficiency of your rakes and dual hitch.

## HITCHING TO TRACTOR

### Positioning Tractor Rear Wheels

The turning radius of the tractor and the dual hitch can be reduced by moving the tractor rear wheels to the narrow setting. This will make shorter turns possible and will prevent tractor tire damage resulting from the dual hitch striking the tires on extremely short turns.

### Positioning Tractor Drawbar

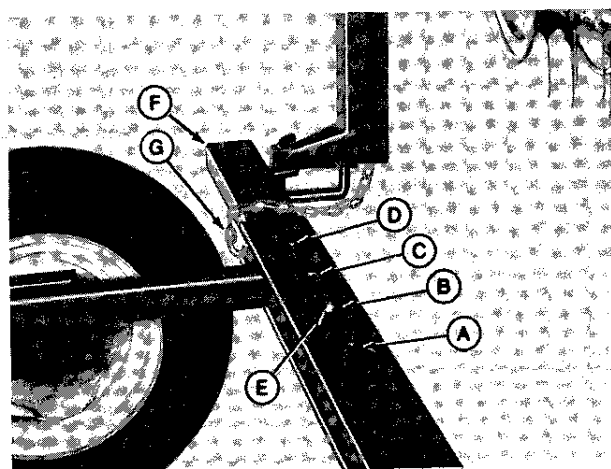
When attaching the dual hitch to the tractor, set the tractor drawbar to meet ASAE-SAE standards of 13 to 17 inches (33 to 43 cm) from the ground.

Extend drawbar to the outer position for better maneuverability when hooking up and operating in the field.

Adjust draft links to avoid possible damage to dual hitch when making short turns.

**IMPORTANT: Do not back up when the reels are lowered, tooth damage may result.**

## Hitching Rakes



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A, B, C, and D—Adjusting Holes  
E—Pin F—Extensions G—Safety Chain

Adjustments are provided in the dual hitch to meet various crop conditions.

The first position (A) is provided for light crop conditions or if one large windrow is needed.

The second position (B) is for normal size windrows.

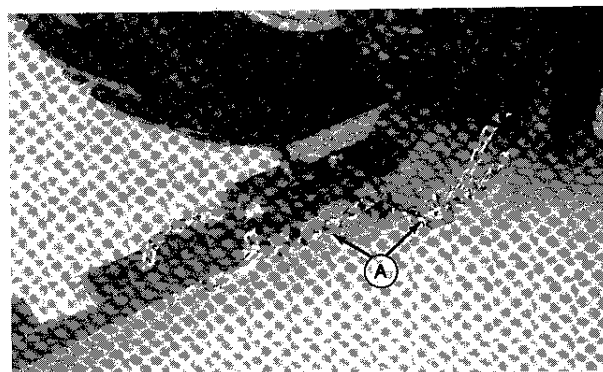
The third (C) and fourth (D) positions can be used to obtain two small windrows side by side.

**NOTE:** If windrows are widely spaced, the third and fourth positions can also be used.

Make adjustments before hitching rakes to dual hitch. Remove pin (E) and slide extension (F) to position needed. Insert pin.

Once the adjustments have been made, hitch the rakes to the dual hitch. Secure with safety chain (G) as shown.

**NOTE:** When attaching rakes to the dual hitch, the 670 Rake will be on the right side and the 671 Rake will be on the left.



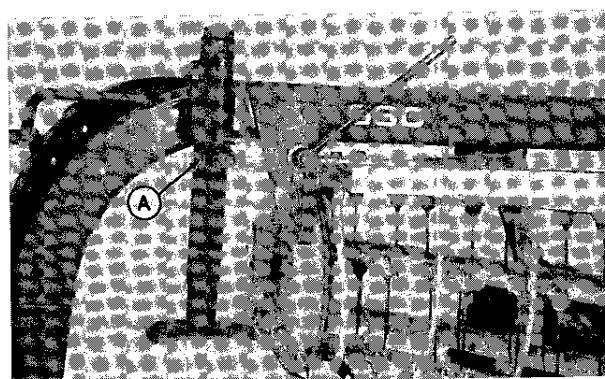
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Attach dual hitch to tractor and secure with safety chain (A) as shown.



**CAUTION:** Lower rake jackstands before unhooking dual hitch from tractor. Tongue can raise rapidly if unhitching without first lowering jackstands to ground.

## Positioning Jackstand



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During operation or transporting, place jack stand (A) in the vertical position on top mounting stud. Lock the jackstand in this position with the holding pin and spring-locking pin.

## OPERATING THE RAKES

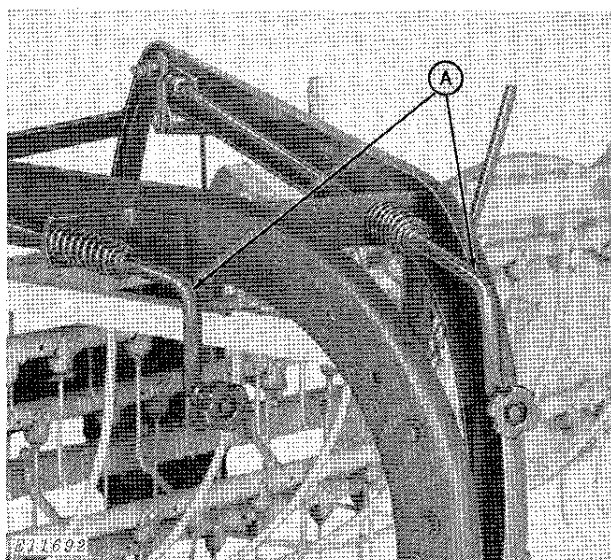
After hitching has been completed, the only adjustments required for satisfactory operation are the reel height and the pitch of the teeth in relation to the ground.

Before operating your new side-delivery rakes, disengage the reel clutch. Turn the reel by hand to be sure it revolves freely and the teeth do not strike the strippers. Then, engage the reel clutch.

Avoid excessive speeds while raking. Reasonable speeds result in more work being accomplished by the end of the day.

## OPERATING ADJUSTMENTS

### Adjusting Reel Height



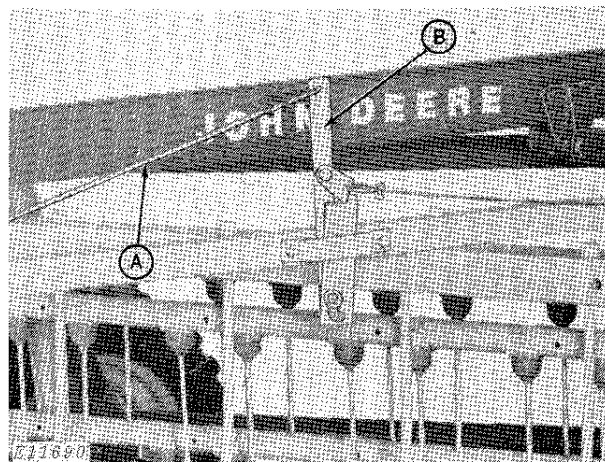
A—Hand Lift Cranks

The hand lift cranks (A) lower the reel into the operating position or raise the reel for transporting. Turn the cranks clockwise to raise the reel or counterclockwise to lower the reel.

When raking hay crops, set the teeth as far as possible from the ground, but low enough to allow the teeth to pick up the hay cleanly.

**NOTE:** Level reel with either crank after adjusting for raking height.

### Engaging Reel Clutch



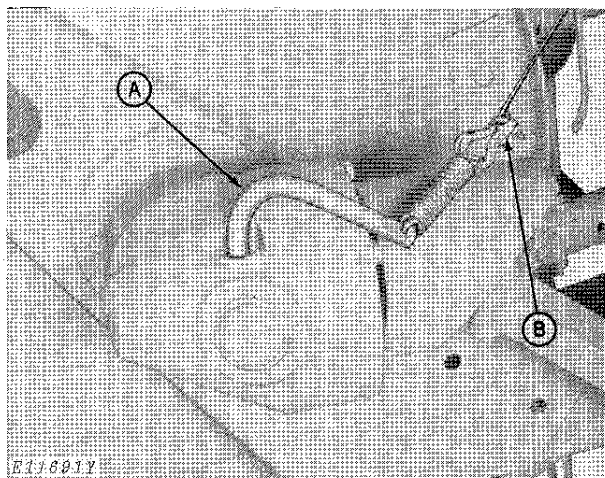
A—Rope Control

B—Clutch Lever

The reel clutch is rope-controlled from the tractor seat. The reel will engage when the rope is pulled and the lever is released. The reel is disengaged when the lever is locked as shown.

**IMPORTANT:** Do not engage the reel when the rake is in motion.

### Adjusting Reel Clutch



A—Gear Case Lever

B—Clutch Adjustment

Adjust the clutch by placing the lever in the locked position; then, loosen the cable clamp on the spring. Pull the cable tight enough to move the gear case lever all the way forward. Tighten the clamp.

Turn the reel by hand to make sure it is disengaged. Release the lever to make sure the reel will engage.



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