

# 200 AND 300 STACK WAGONS



JOHN DEERE

## TECHNICAL MANUAL 200 AND 300 STACK WAGONS

TM1110 (01FEB79) English

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ENGLISH



## 200 AND 300 STACK WAGONS

TECHNICAL MANUAL  
TM-1110 (FEB-79)

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The specifications and design information contained in this manual were correct at the time this machine was manufactured. It is John Deere's policy to continually improve and update our machines. Therefore, the specifications and design information are subject to change without notice. Wherever applicable, specifications and design information are in accordance with SAE and IEMC standards.

Because John Deere sells its products worldwide, metric units of measure are shown with their respective U.S. equivalents through this technical manual. The metric dimensions are the SI (International System) Units of Measure.

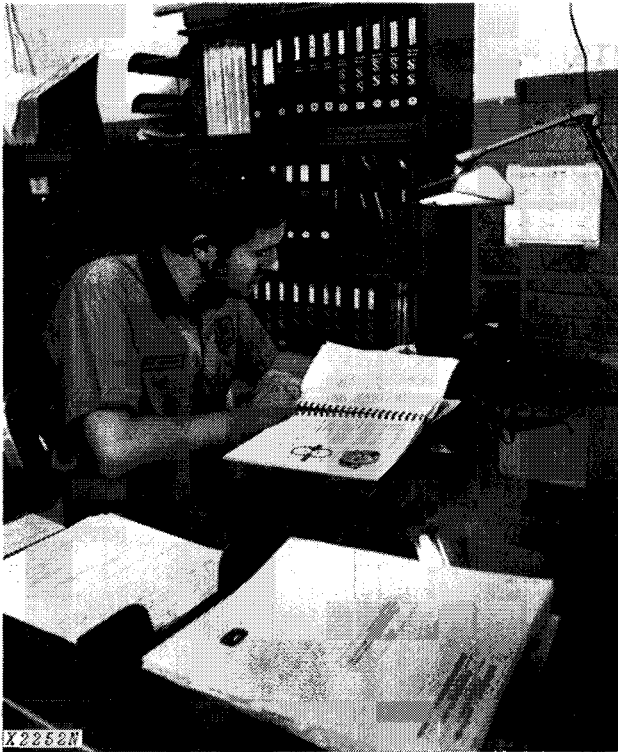
### FOR YOUR CONVENIENCE

Vertical lines appear in the margins of many of the pages. These lines identify new material and revised information that affects specifications, procedures, and other important instructions.

"Right-hand" and "left-hand" sides are determined by facing the direction the stack wagon will travel when in use.

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## INTRODUCTION



*Use FOS Manuals for Reference*

This technical manual is part of a twin concept of service:

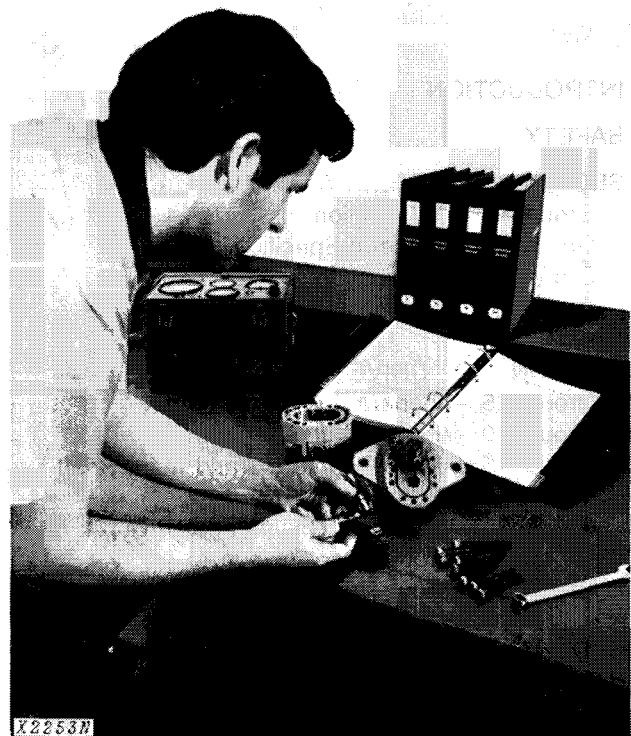
- **FOS Manuals—**for reference
- **Technical Manuals—**for actual service

The two kinds of manuals work as a team to give you both the general background and technical details of shop service.

*Fundamentals of Service (FOS) Manuals cover basic theory of operation fundamentals of trouble shooting, general maintenance, and basic types of failures and their causes. FOS Manuals are for training new people and for reference by experienced technicians.*

*Technical Manuals are concise service guides for a specific machine. Technical Manuals are on-the-job guides containing only the vital information needed by an experienced technician.*

*NOTE: Whenever the service technician should refer to a FOS Manual for more information, a specific reference is provided.*




*Use Technical Manuals for Actual Service*

Some features of this technical manual:

- *Table of contents at front of manual*
- *Exploded views showing parts relationship*
- *Photos showing service techniques*
- *Specifications grouped for easy reference*

This technical manual was planned and written for you—an experienced technician. Keep it in a permanent binder in the shop where it is handy. Refer to it whenever in doubt about correct service procedures or specifications.

Using the technical manual as a guide will reduce error and costly delay. It will also assure you the best in finished service work.


 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.

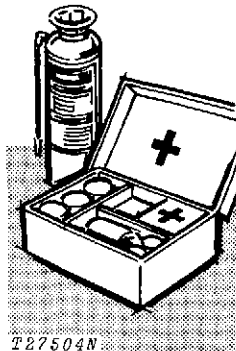
## SAFETY AND YOU



T27899N

### INTRODUCTION

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



T27504N

Be prepared if an accident or fire should occur. Know where the first aid kit and the fire extinguishers are located—know how to use them.

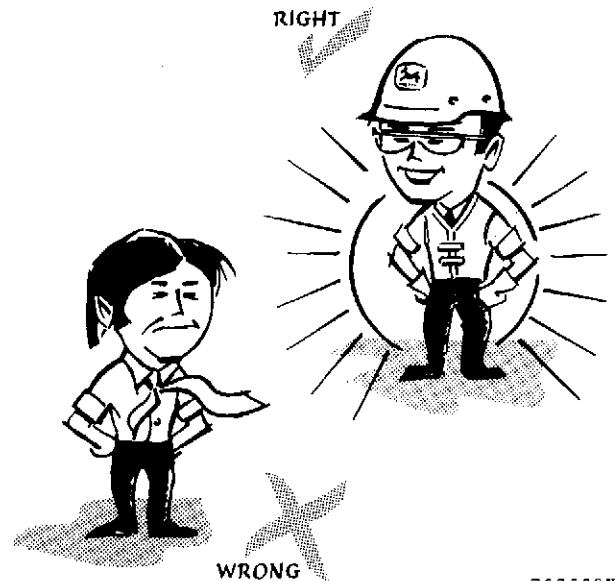
### PERSONAL SAFETY

Shut off tractor engine and remove switch key before working on the stack wagon, when it is attached to the tractor.

Avoid working on equipment with the tractor engine running. If it is necessary to make checks with the engine running, **ALWAYS USE TWO PEOPLE**—with the operator at the controls able to see the person checking the machine. **KEEP HANDS AWAY FROM MOVING PARTS.**

Don't attempt to check belt tension while the tractor engine is running.

*Litho in U.S.A.*



T27502N

Always avoid loose clothing or any accessory—flopping cuffs, dangling neckties and scarves—that can catch in moving parts and put you out of work.

Always wear your safety glasses while on the job.

### FLUIDS UNDER PRESSURE

Escaping fluid under pressure can have sufficient force to penetrate the skin, causing serious personal injury. Before disconnecting lines, be sure to relieve all pressure. Before applying pressure to the system, be sure all connections are tight and that lines, pipes and hoses are not damaged.

Fluid escaping from a very small hole can be almost invisible. Use a piece of cardboard or wood, rather than hands, to search for suspected leaks.

If injured by escaping fluid, see a doctor at once. Serious infection or reaction can develop if proper medical treatment is not administered immediately.

# Section 10 GENERAL

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## Group 5 DESCRIPTION

### GENERAL

The 200 & 300 Stack Wagons are medium size or large size stackers respectively for handling loose hay and corn stover. They will produce high-density stacks weighing approximately 2 724 kg (3 tons) or 5 448 kg (6 tons) respectively.

The basic components of the stack wagon include the main frame and wheels, drive train, hydraulic system, pickup rotor and air system, canopy-compression chamber and mechanism, unloading conveyor, and rear doors.

#### Main Frame and Wheels

The heavy gauge steel box frame of the stack wagon is supported at the front by the tractor drawbar when coupled. This transfers part of the operating load to the tractor rear wheels for increased flotation. Two wheels with high-flotation tires are regular equipment on the 200 Stack Wagon. For maximum buoyancy, tandem wheels and axles are standard equipment on the 300 and optional equipment on the 200 Stack Wagon.

When not coupled to the tractor, the stack wagon is supported at the front by a demountable screw-type jack. The jack may be stored on top of the hitch to prevent interference with the crop being harvested.

#### Drive Train

Operating power for the stack wagon drive train mechanisms is provided from the tractor 1000 rpm power take-off (PTO). A 540 rpm PTO may be used on the Model 200 by rotating the gear case and replacing the powershaft front section.

#### Hydraulic System

Two hydraulic cylinders, operating in series from the tractor hydraulic system, are used to raise and lower the canopy of the stack wagon. An 8-inch (203 mm) stroke, remote hydraulic cylinder is required to operate the pickup lift mechanism. The tractor hydraulic system must be capable of providing at least 45.4 Lpm (12 gpm) at 16 MPa (156 bar [2,250 psi]) to obtain a minimum compression cycle time of 15 seconds.

#### Pickup Rotor and Air System

The pickup is 1.98 m (78-in.) wide to adequately cover three 762 mm (30-in.) rows of corn. It allows for variations in windrows and minimizes hay loss when turning.

A high-speed rotor with specially constructed paddles rotating toward the direction of travel at the bottom, sweeps the material up into the duct at high velocity.

## **Pickup Rotor and Air System—Continued**

The discharge duct is tapered to concentrate the material received from the pickup paddles. The material enters the spout at the top of the duct at high velocity and is distributed evenly across the width of the variable-angle deflector at the rear of the spout.

A cable linkage from the left-hand front bell crank to the deflector provides synchronous positioning of the deflector angle with respect to the canopy position. The deflector is curved to direct the material into the compression chamber at the desired angle. The deflector position is indicated to the operator by a position indicator on the right-hand side of the discharge duct cap.

## **Canopy-Compression Chamber and Mechanism**

The canopy is rounded to shape the top of the stack for resistance to weather. It is connected to the hydraulic compression cylinders through the bell cranks to provide 76 N/m<sup>2</sup> (184 lbs/ft<sup>2</sup>) of compression pressure. With 45.4 Lpm (12 gpm) hydraulic oil flow, the minimum compression cycle time is 15 seconds.

An unloading conveyor, consisting of two log chains with connecting slats, is actuated by opening the rear doors to unload the stack.

## **Rear Doors**

A safety latch prevents accidental opening of the rear doors. The operator engages the safety latch by pulling the trip rope when the canopy is down. As the canopy is raised, it disengages the safety latch, allowing the lower door to swing down and the upper door to be pulled up. When the lower door is completely down, a cable linkage engages the clutch which drives the push-off chain.

If the lower door conveyor attachment is used, the conveyor chain on the lower door is actuated by engagement of two spur gears when the door is lowered.

## **MATERIAL FLOW**

The stack wagon uses tractor hydraulic power to raise and lower the pickup and canopy, tractor PTO power to rotate the paddles, forward motion of the tractor to gather the loose hay and stover area, and tractor PTO power to actuate the unloading conveyors.

The paddles, rotating against the direction of stack wagon travel, pick up the loose hay or stover and sweep it into a discharge duct where it is blown into the wagon. After several layers of material have been collected, the stack wagon forward motion is stopped.

The canopy is lowered by hydraulic cylinders to fully compress the collected material. The canopy is then raised, the paddles are started rotating, and more material is collected.

The filling and compressing cycles are repeated until the stack is formed. The wagon and pickup rotor are stopped. The canopy is then lowered as far as it will go, the rear door latch is operated, and the canopy is raised. Raising the canopy allows the lower rear door to open, which releases the upper rear door latches and opens the upper rear door.

The fully opened lower rear door operates a control to engage the unloader clutch. The PTO is again engaged, and the completed stack emerges from the wagon, conveyed by the floor-level unloader slats and chains.

As the trailing edge of the stack reaches the ground, the stack wagon is moved forward slowly until the stack is completely on the ground.

If a lower door conveyor is used, unloader slats and chains on the door are driven to move the stack to the ground.

Lowering the canopy closes both rear doors, releases the unloader clutch, and holds the upper rear door in the closed position.

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