

# 200 AND 300 STACK WAGONS

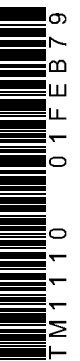


## TECHNICAL MANUAL 200 AND 300 STACK WAGONS

TM1110 (01FEB79) English

**DES MOINES WORKS  
TM1110 (01FEB79)**

LITHO IN THE U.S.A.  
ENGLISH





## 200 AND 300 STACK WAGONS

### TECHNICAL MANUAL TM-1110 (FEB-79)

## CONTENTS

### INTRODUCTION

### SAFETY

### SECTION 10 - GENERAL

- Group 5 - Description
- Group 10 - General Specifications
- Group 15 - Lubrication
- Group 20 - Diagnosing Malfunctions

### SECTION 20 - DRIVE TRAIN

- Group 5 - General Information
- Group 10 - Powershaft
- Group 15 - Main Gear Case and Input Shaft
- Group 20 - Rotor Drive
- Group 25 - Unloader Chains and Drive
- Group 30 - Lower Door Conveyor
- Group 35 - Specifications and Torque Values

### SECTION 30 - HYDRAULIC SYSTEM

- Group 5 - General Information
- Group 10 - Hydraulic Cylinders
- Group 15 - Specifications and Torque Values

### SECTION 40 - PICKUP ROTOR AND AIR SYSTEM

- Group 5 - General Information
- Group 10 - Pickup Rotor
- Group 15 - Specifications

### SECTION 50 - MISCELLANEOUS

- Group 5 - Rear Doors
- Group 10 - Canopy

### SECTION 60 - ALPHABETICAL INDEX

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.

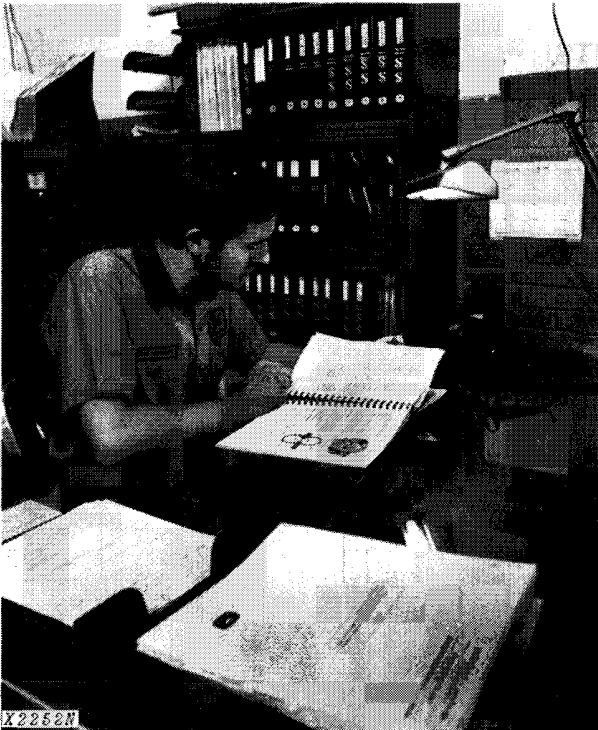
### FOR YOUR CONVENIENCE

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.

Copyright © 1979  
DEERE & COMPANY  
Moline, Illinois  
All rights reserved

## 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.

Litho in U.S.A.




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.

**Thanks very much for your reading,  
Want to get more information,  
Please click here, Then get the complete  
manual**

**JustClickHere** 

**NOTE:**

**If there is no response to click on the link above,  
please download the PDF document first, and then  
click on it.**


**Have any questions please write to me:  
[admin@servicemanualperfect.com](mailto:admin@servicemanualperfect.com)**

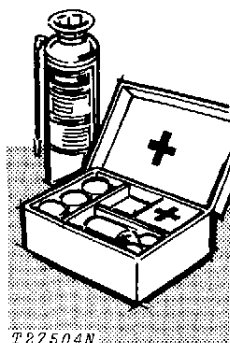
## SAFETY AND YOU



T27099N

### 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.

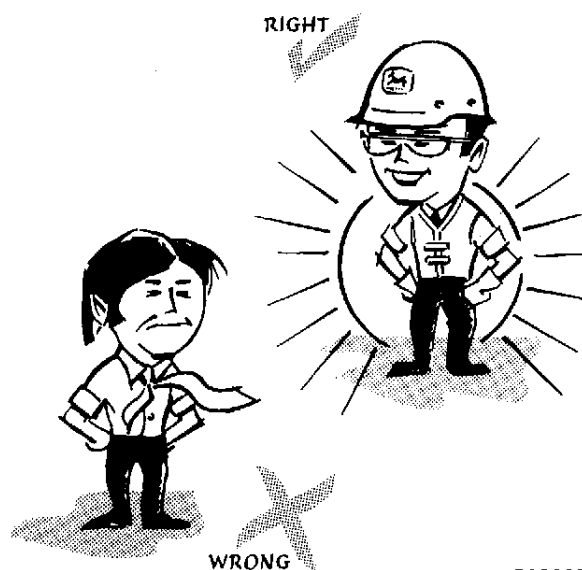
### PERSONAL SAFETY

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.*



T27503N

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

### CONTENTS OF THIS SECTION

	Page		Page
GROUP 5 - DESCRIPTION		GROUP 15 - LUBRICATION	
General .....	5-1	General Information .....	15-1
Material Flow .....	5-3	Lubrication .....	15-1
		Greases .....	15-1
GROUP 10 - GENERAL SPECIFICATIONS		Hydraulic Oil .....	15-1
General Specifications .....	10-1	Storing Lubricants .....	15-1
Serial Number .....	10-1		
Torque Value Chart .....	10-2	GROUP 20 - DIAGNOSING MALFUNCTIONS	
Outline Dimensions .....	10-2	Diagnosing Malfunctions .....	20-1

## 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.

## Group 10 SPECIFICATIONS

	200	300
Overall Length .....	6.9 m (22 ft. 9 in.)	9.0 m (29 ft. 6 in.)
Overall Width		
Single wheel .....	3.7 m (12 ft. 3 in.)	
Tandem wheel .....	4.1 m (13 ft. 4 in.)	4.0 m (13 ft. 1 in.)
Overall Height (Transport) .....	4.2 m (13 ft. 10 in.)	
To top of canopy (Raised) .....	4.6 m (15 ft.)	
To top of duct (Lowered) .....	3.9 m (13 ft.)	
Weight:		
Single wheels .....	3 833 kg (8450 lbs.)	
Tandem wheels .....	4 173 kg (9200 lbs.)	5 262 kg (11,600 lbs.)
Tires:		
Single wheels .....	(2) 16.5L x 16.1, 10 PR	Not Available
Tandem wheels .....	(4) 16.5L x 16.1, 6 PR	
Inflation pressure .....	220 kPa (2.2 bar [32 psi])	
Pickup:		
Type .....	Rotary flails	
Quantity of flails (Standard) .....	34	
Rotor velocity .....	1534 rpm, 1000 rpm PTO 1509 rpm, 540 rpm PTO	
Width .....	2.0 m (78 in.)	
<i>NOTE: Requires 8 in. (203 mm)-stroke remote hydraulic cylinder, with 220 in. (5.6 m) hoses.</i>		
Discharge Duct:		
Type .....	Stationary, tapered	
Deflector .....	Linked to bell crank	
Compression:		
Stroke length .....	1.2 m (4 ft.)	
Cycle time (See tractor requirements) .....	15 seconds	20 seconds
Pressure .....	76 N/m <sup>2</sup> (184 lbs/ft <sup>2</sup> )	
Tractor Requirements:		
	44.7 kW (60 hp) minimum	59.6 kW (80 hp) minimum
	681 kg (1500 lbs.)	772 kg (1700 lbs.)
	drawbar static weight	drawbar static weight
	capacity.	capacity (Requires
		drawbar support).
Two hydraulic outlets separately controlled .....	45.4 Lpm (12 gpm)	
	at 15 kPa (155 bar [2,250 psi])	
	for minimum cycle time	
	1000 or 540 rpm	
	(Attachment) PTO	

	200	300
Unloading Conveyor		
Type .....	Log chain and slats	
Drive .....	Spur gears, actuated by lowering rear door	
Lower Door Conveyor: (Attachment)		
Type .....	Roller chain and slats	
Drive .....	Spur gears and type 80 roller chain, actuated by lowering rear door	
Typical Stack Size:		
Length .....	4.3 m (14 ft.)	6.3 m (20 ft. 9 in.)
Width .....	2.6 m (8 ft. 6 in.)	
**Height .....	3.0 to 3.4 m (10 to 11 ft.)	
**Weight .....	approximately 2 724 kg (3 tons)	approximately 5 448 kg (6 tons)

\*\*Dependent upon stack material

### SERIAL NUMBER

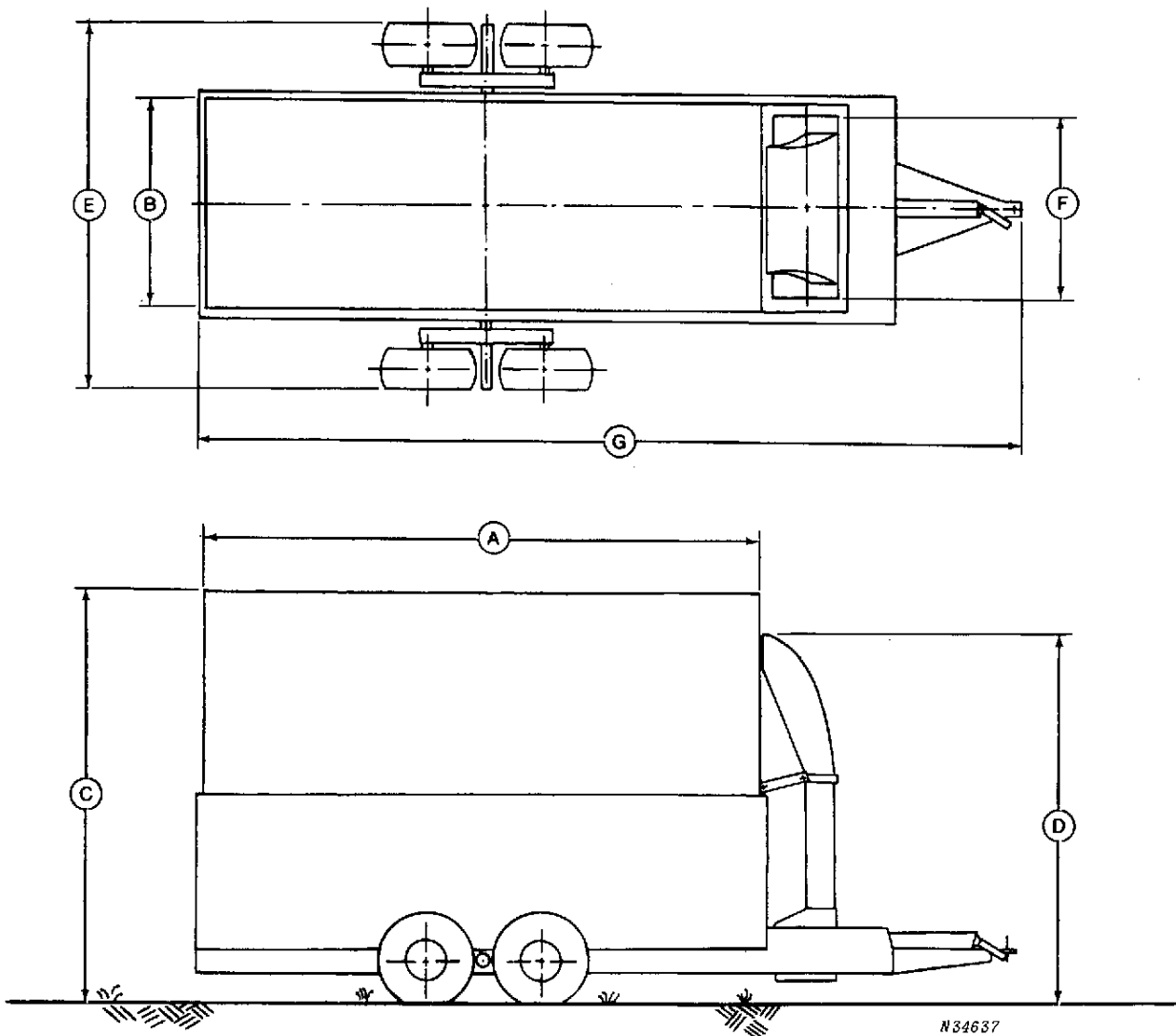
The stack wagon serial number plate is located on the left side of the main frame, at the front of the stack wagon.

### STANDARD TORQUE VALUES

**RECOMMENDED TORQUE VALUES IN Nm (kgm [ft-lbs])  
COARSE AND FINE THREADS**

Bolt Diameter (Inches)	Three	Six
	Radial Dashes	Radial Dashes
1/4	14 (1.4 [ 10])	19 (1.9 [ 14])
5/16	27 (2.8 [ 27])	41 (4.1 [ 41])
3/8	47 (4.8 [ 35])	68 (6.9 [ 50])
7/16	75 (7.6 [ 55])	108 (11 [ 80])
1/2	115 (12 [ 85])	163 (17 [ 120])
9/16	176 (18 [130])	237 (24 [ 175])
5/8	230 (23 [170])	325 (33 [ 240])
3/4	407 (41 [300])	576 (59 [ 425])
7/8	603 (61 [445])	928 (95 [ 685])
1	908 (92 [670])	1396 (142 [1030])

Tighten all bolts to the torque values specified in the chart. All bolts used in the stack wagon are "high-strength" bolts, and when replaced, bolts of equal or higher strength should be used. "High-strength" bolts are identified by three radial dashes on the bolt head.



N34637

ITEM	DIMENSIONS: 200	DIMENSIONS: 300
A	4 267 mm (14 ft.)	6 325 mm (20 ft. 9 in.)
B	2 591 mm (8 ft. 6 in.)	2 591 mm (8 ft. 6 in.)
C	4 572 mm (15 ft.)	4 572 mm (15 ft.)
D	4 166 mm (13 ft. 8 in.) (Raised) 3 962 mm (13 ft.) (Lowered)	4 166 mm (13 ft. 8 in.) (Raised) 3 962 mm (13 ft.) (Lowered)
E	3 734 mm (12 ft. 3 in.)	3 988 mm (13 ft. 1 in.)
F	4 064 mm (13 ft. 4 in.)*	
G	1 981 mm (6 ft. 6 in.)	1 981 mm (6 ft. 6 in.)
	7 671 mm (23 ft. 3 in.)	9 144 mm (30 ft.)

\*Tandem Wheels

Fig. 1-Stack Wagon Dimensions

## Group 15 LUBRICATION

### GENERAL INFORMATION

Carefully written and illustrated lubrication instructions are included in the operator's manual furnished with your customer's machine. Remind him to follow these instructions.

For your convenience, the following chart shows capacities and types of lubricants for the stack wagon. Check each area noted and lubricate as required.

Component	Capacity	Type of Lubricant
Roller chains	.....	John Deere PT 508 Special Lubricant  <i>NOTE: As an alternative method of lubrication, flush the chains with SAE 30 engine oil sufficient to wash away accumulated dust. Wipe away excess oil.</i>
Unloading cable control strap	Several drops	SAE 30 engine oil
Unloading clutch splines	A few drops	Same as above
Control cables and pulleys, door latch	A few drops	Same as above
Canopy, bell crank, and door linkages	A few drops	Same as above
Pickup pivot points	A few drops	Same as above
Pickup rotor bearings	1 or 2 strokes	John Deere Multi-Purpose Lubricant or an equivalent SAE multi-purpose-type grease
Powershaft	1 or 2 strokes	Same as above
Unloading chain bearings	1 or 2 strokes	Same as above
Bell crank pivot bearings	2 or 3 strokes	Same as above
Lower door conveyor fittings	1 or 2 strokes	Same as above
Canopy rails and guides	Brush	Same as above
Wheel bearings	Pack	Same as above
Walking beam pivot point (tandem wheels)	Pack	Same as above
Unloading drive gears	Pack	Same as above
Gear case	1.9 L (2 qts)	John Deere SAE 90 Gear Lubricant or equivalent

### **GREASES**

John Deere Multi-Purpose Lubricant or an equivalent SAE multipurpose-type grease is recommended for all grease fittings. Application of grease as instructed in the lubrication chart will provide proper lubrication and will prevent contamination of bearings.

### **HYDRAULIC OIL**

Use only John Deere HY-GARD® Transmission and Hydraulic Oil or its equivalent. Other types of oil will contaminate the hydraulic oil in the tractor system and will not give satisfactory service. Other oil may

result in eventual damage. Check tractor hydraulic system level every 100 hours.

*NOTE: John Deere HY-GARD Transmission and Hydraulic Oil may be added to or mixed with John Deere Type 303 Special Purpose Oil.*

### **STORING LUBRICANTS**

This stack wagon can operate efficiently only if clean lubricants are used. Use clean containers to handle all lubricants. Store them in an area protected from dust, moisture, and other contaminants.

## Group 20 DIAGNOSING MALFUNCTIONS

### Drive Train—Section 20

#### Powershaft—Group 10

##### *Powershaft Will Not Telescope Properly*

Tractor drawbar not correctly installed, see operator's manual.

Powershaft bent or twisted, page 20-10-1.

##### *Powershaft Vibrates Excessively*

Powershaft bent or twisted, page 20-10-1.

Tractor operating at an excessive angle, see operator's manual.

Powershaft cross bearings defective, page 20-10-4.

##### *Powershaft Won't Stay Engaged*

Splines on push button yoke worn, page 20-10-1.

### Main Gear Case and Input Shaft—Group 15

#### *Excessive Input Shaft Vibration*

Input shaft bearings, worn, page 20-15-3.

Gear case coupling worn, page 20-15-1.

#### *Noisy Gears*

Gears are misaligned with each other, page 20-15-4.

Lack of proper lubrication, page 10-15-1.

Main gear case not aligned with input or rotor shaft, page 20-15-1.

#### *Gears Wear Prematurely*

Lack of lubrication, page 10-15-1.

Incorrect gear alignment, page 20-15-4.

### Rotor Drive—Group 20

#### *Slip Clutch Slipping Excessively*

Slip clutch springs out of adjustment, page 20-20-6.

Frequent or prolonged slip clutch operation, page 20-20-6.

Worn slip clutch jaws, page 20-20-4.

#### *Excessive Drive Shaft Vibration*

Worn drive shaft bearing, page 20-20-3.

Drive shaft and slip clutch not aligned with gear case, page 20-20-2.

#### *Premature Rotor Belt Wear*

Belt too loose, adjust idler pulley spring, page 20-20-6.

Lack of bearing lubrication, page 10-15-1.

### Unloader Chains and Drive—Group 25

#### *Unloader Drive Chain Breakage*

Idler sprocket out of adjustment, page 20-25-5.

Drive gears out of alignment, page 20-25-5.

Drive gears out of alignment, page 20-25-5.

Lack of lubrication, page 10-15-1.

Unloader log chains stuck, page 20-25-5.

#### *Premature Bearing Wear*

Unloader drive chain too tight, page 20-25-5.

Unloader log chain too tight, page 20-25-5.

Lack of lubrication, page 10-15-1.

#### *Unloader Clutch Engaged with Canopy Lowered*

Rear door not latching, page 20-25-6.

### Lower Door Conveyor—Group 30

#### *Sluggish Operation of Door Chains*

Drive components worn, page 20-30-3.

Lack of lubrication, page 10-15-1.

Conveyor chains too tight, page 20-30-2.

### Hydraulic System—Section 30

#### General Information—Group 5

##### *Tractor Hydraulic Pressure Too Low*

Tractor pump defective or out of adjustment—See tractor Technical Manual.

Rear hydraulic outlets defective—See tractor Technical manual.

##### *Hydraulic Oil Volume Too Low*

Tractor pump defective or not adjusted for maximum flow—See tractor Technical Manual.

Breakaway couplers dirty or defective—See tractor Technical Manual.

##### *Canopy Lower on One Side*

Air in hydraulic system, page 30-10-1.

### Hydraulic Cylinders—Group 10

#### *Hydraulic fluid leaking from hoses or cylinders*

Defective hoses or worn cylinder parts, page 30-10-1.

### Pickup Rotor—Section 40

#### Pickup Rotor—Group 10

##### *Pickup Plugging*

Deflector not raising, see operator's manual

Belt slipping, page 20-20-6.

PTO speed incorrect.

##### *Excessive Vibration*

Flails worn unevenly, page 40-10-1.

Flails broken, page 40-10-1.

Bearing loose or worn, page 40-10-2.

Flails not assembled properly (out of balance), page 40-10-1.

##### *Speed Too Slow*

Lack of lubrication, page 10-15-1.

##### *Rotor Bearing Failed*

Main drive belt too tight, page 20-20-6.

No lubrication, page 10-15-1.

### Miscellaneous—Section 50

#### Rear Door—Group 5

##### *Door Not Latching*

Adjust door cables, page 50-5-3.

#### Canopy—Group 10

##### *Canopy Movement Uneven*

Lack of lubrication, page 10-15-1.

Air in hydraulic system, page 30-10-1.

Worn or damaged cylinders, page 30-10-1.

Defective hydraulic hoses, page 30-5-2.





## Section 20 DRIVE TRAIN

### CONTENTS OF THIS SECTION

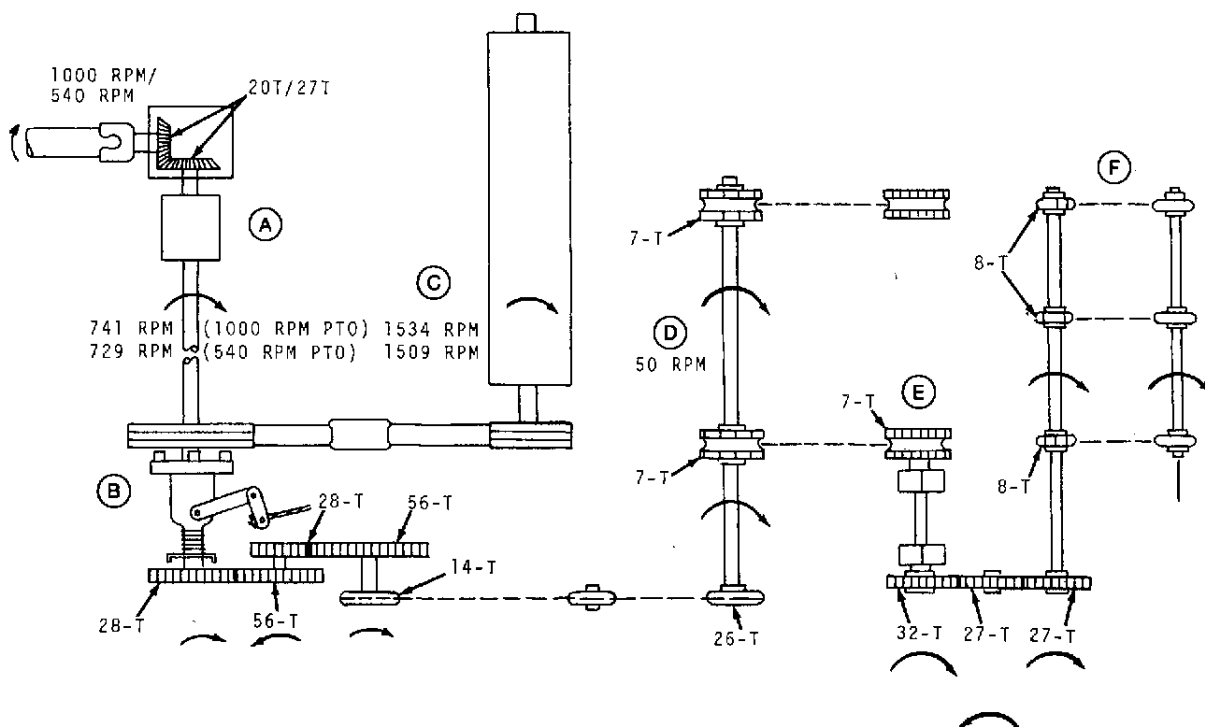
	Page		Page
<b>GROUP 5 - GENERAL INFORMATION</b>		<b>GROUP 25 - UNLOADER CHAINS AND DRIVE</b>	
Power Take-Off RPM .....	5-1	General Information .....	25-1
Drive Train Diagram .....	5-2	Removal and Installation .....	25-2
540 RPM PTO Conversion .....	5-3	Disassembly .....	25-2
<b>GROUP 10 - POWERSHAFT</b>		Inspection and Repair .....	25-2
General Information .....	10-1	Assembly .....	25-2
Removal and Installation .....	10-1	Adjustments .....	25-5
Disassembly .....	10-2	<b>GROUP 30 - LOWER DOOR CONVEYOR</b>	
Inspection and Repair .....	10-4	General Information .....	30-1
Assembly .....	10-4	Removal .....	30-2
<b>GROUP 15 - MAIN GEAR CASE AND INPUT SHAFT</b>		Disassembly .....	30-2
General Information .....	15-1	Inspection .....	30-3
Removal and Installation .....	15-1	Assembly .....	30-3
Disassembly .....	15-2	Adjustments .....	30-6
Inspection .....	15-3	<b>GROUP 35 - SPECIFICATIONS, TORQUE VALUES, AND SPECIAL TOOLS</b>	
Assembly and Adjustments .....	15-3	Specifications .....	35-1
<b>GROUP 20 - ROTOR DRIVE</b>		Torque Values .....	35-2
General Information .....	20-1	Special Tools .....	35-2
Removal and Installation .....	20-1		
Disassembly .....	20-4		
Inspection .....	20-4		
Assembly .....	20-4		
Adjustments .....	20-6		

## Group 5 GENERAL INFORMATION

### POWER TAKE-OFF RPM

All operating power for the stack wagon is supplied from a tractor hydraulic system and power take-off. The stack wagons are shipped from the factory equipped for 1000 rpm PTO operation. The 200 Stack Wagon only may be operated by a tractor with 540 rpm PTO by rotating the gear case and replacing the powershaft front shaft, yoke and shield assembly. (Refer to the conversion information on page 20-5-3.)

**DRIVE TRAIN DIAGRAM**



N32470

- A—Slip Clutch
  - B—Unloading Clutch
  - C—Pickup Rotor
  - D—Conveyor Drive Shaft  
 Speed (Tractor @ Half Throttle)
  - E—Idler Only, Without Conveyor
  - F—Lower Door Conveyor
  - T—Teeth
- RPM—Revolutions per Minute  
 PTO—Power Take-Off

Fig. 1-Drive Train Diagram

The drive train (mechanical power flow) diagram is shown in Fig. 1. The hydraulic system operation is given in section 30 of this manual.

*NOTE: Diagram shown is for later models. Earlier models will differ only as to details of some components.*

Power from the tractor PTO is transmitted by the powershaft through the input shaft to the gear case.

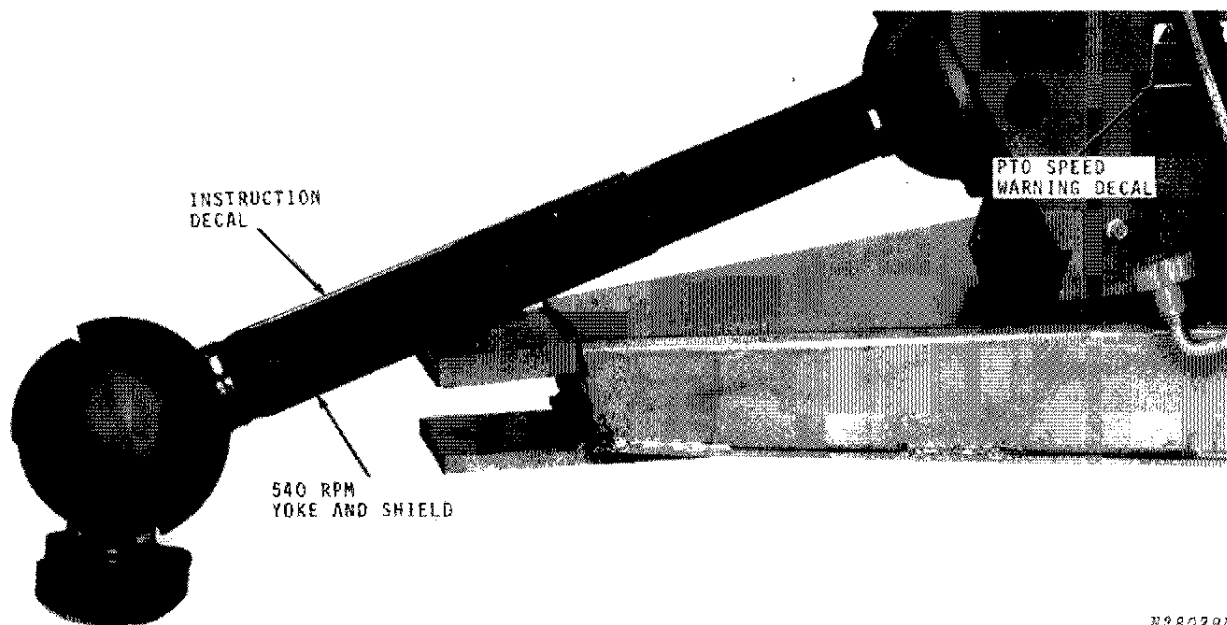
The gear case contains right-angle gears to reduce the 1000 rpm (or increase the 540 rpm) input to the indicated drive shaft speed. The gear case output is coupled to the pickup rotor and unloading drive through a slip clutch (A, Fig. 1) which prevents damage to drive train components.

The pickup rotor (C) is belt-driven from the rotor drive shaft pulley. An idler sheave keeps the drive belt under proper tension.

The paddles on the pickup rotor, rotating clockwise as observed from the left-hand side of the stack wagon, lift the loose hay or stover into the discharge duct and blow it upward and rearward into the compression chamber.

An unloading drive clutch (B) engages (by cable) the rotor drive shaft sheave when the lower rear door is fully opened during an unloading cycle. This clutch drives the conveyor drive shaft (D), through the unloading gears and chain, to convey the completed stack out of the stack wagon, sliding it off the lower rear door to the ground.

If the lower rear door is equipped with a conveyor (F), the left-hand rear conveyor chain sprocket (E) drives an additional gear train through a countershaft. The countershaft gear contacts a gear on the shaft of the lower door when the door is fully opened. The door lower shaft drives the door conveyor chains to help move the emerging stack off the door onto the ground.



N28079H

Fig. 2-Powershaft Details

### 540 RPM PTO CONVERSION (For Model 200 only)

To convert 1000 rpm PTO to 540 rpm PTO on Model 200 Stack Wagon, proceed as follows:

1. Remove 1000 rpm yoke and shield. Install 540 rpm yoke and shield.

2. Apply instruction decal to shield. Place top of decal toward front of shield, to provide convenient reference when attaching power shaft to tractor. (See Fig. 2)

3. Apply new PTO speed warning decal.

4. Remove stack wagon cross drive shield. Remove cap screws holding gear case to mounting plate and shield support to gear case (Fig. 3). Loosen couplers and remove gear case from stack wagon.

5. Place gear case with smooth side down. Switch vented plug with solid plug on OPPOSITE SIDE of case.

**⚠ CAUTION: Do not operate the stack wagon from a 1000 rpm PTO after it has been converted to 540 rpm PTO operation.**

6. Turn gear case to place vented plug on top. Place gear case on mounting plate, inserting input and output shafts into couplers as shown in Fig. 3.

7. Attach gear case to mounting plate with 1-1/4 inch cap screws. Tighten screws finger-tight only.

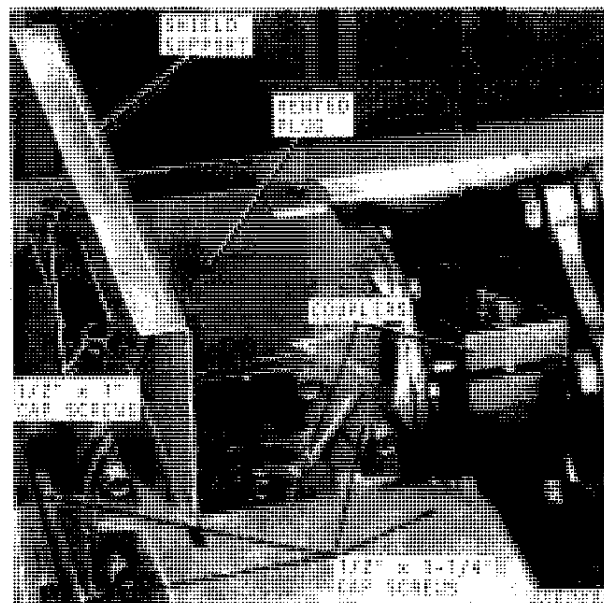


Fig. 3-Converting Gear Case for 540 RPM Operation

8. Tighten coupler screws; then tighten gear case mounting screws.

9. Install shield support with 1-inch cap screws as shown. Install cross drive shield.