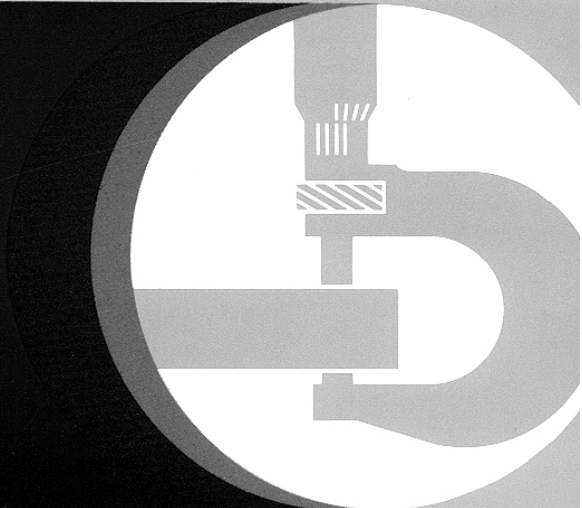


# 535 Log Loader



## SERVICE MANUAL



For complete service information also see:

<b>POWERTECH® 8.1 L (6081)</b>	
<b>Diesel Engines Repair .....</b>	<b>CTM86</b>
<b>POWERTECH® 8.1 L (6081) Diesel</b>	
<b>Engines Operation and Diagnostics .....</b>	<b>CTM134</b>
<b>Alternators and Starting Motors .....</b>	<b>CTM77</b>

**John Deere Dubuque Works**  
**TM1876 (01DEC00)**

LITHO IN U.S.A.  
ENGLISH

## **0010 How To Use This Book**

### **1. Component Numbers**

The manual is divided into a number of chapters. Each chapter is divided into a number of detail sections.

Chapter 1, for example, covers the power unit. Sections 1000 through 1800 detail the engine, engine mounting, fuel system, cooling system, coupling, exhaust and air intake systems.

Each detail section is identified with a unique number. For example, all parts used in the engine air intake system are found under section 1700.

An overview of the book is found in Section 0020.

## 2. Abbreviations

The abbreviations in the following list are used throughout John Deere publications. While we have endeavored to use “industry standard” abbreviations wherever possible, common practice mandates that historical usage be maintained.

A/C	Air Conditioner	F	Fahrenheit
ACC	accessory	FD	front drive
ADJ	adjust; adjuster	FH	flat head
ADPTR	adapter	FT	feet
ALT	alternator	FTG	fitting
ANG	angle	FWD	forward
ASSY	assembly	GP	group
AUX	auxiliary	GR	grapple
AWG	American Wire Gage	GRN	green
		GRY	gray
BATT	battery	HARN	harness
BLK	black; block	HD	heavy duty
BLU	blue	HDLNR	headliner
BRG	bearing	HH	hex head
BRK	brake	HP	high pressure
BS	bar saw	HSG	housing
BU	backup	HYD	hydraulic
BUSH	bushing		
C	Celsius; Centigrade	ID	inside diameter
CARR	carrier	IGN	ignition
CBL	cable	IN	inch; inches
CF	carrier frame	INCL	includes
CHK	check	INSTR	instrument
CM	centimeter	INT	internal
CMPRSR	compressor		
CONV	converter	JS	joystick
CRDL	cradle	kPa	Kilopascals
CS	capscrew		
CTR	circle saw center	LF	left front
CYL	cylinder	LG	long
D	diameter	LH	left hand
DEG	degree(s)	LK	lock
DL	delimber	LP	low pressure
		LR	left rear
EL	elbow	LS	left side
EMGCY	emergency	LWR	lower
ENG	engine		
EXT	extension		

### 2. Abbreviations

MACH	machine	SEC	section
MECH	mechanism	SH	socket head
MM	millimeter	SHT	sheet
MT	mount	SKT	socket
MTG	mounting; mating	SLTD	slotted
MTR	motor	SN	serial number
		SPCL	special
Nm	newton meter	SPD	speed
		SPRSN	suppression
OBS	obsolete	SQ	square
OD	outside diameter	STD	standard
OPR	operator		
OPT	optional	TEMP	temperature
ORN/ORG	orange	TS	topping saw
		TYP	typical
PC	piece		
PF	power frame	UPR	upper
PHIL	Phillips		
PIN	pinion	VIO	violet
PKG	package	VLV	valve
PLCS	places		
PNL	panel	W/	with
PO	part of...	W/G	with guard
PRESS	pressure	W/O	without
PSI	pounds/square inch	WHT	white
		WLDMT	weldment
REF	reference	WS	windshield
REINF	reinforce; reinforcing	WSHR	washer
REINFMT	reinforcement		
REV	reverse	YEL	yellow
RF	right front		
RH	right hand	5P	five port
RLF	relief	9P	nine port
RND	round	10P	ten port
RR	right rear		
RS	right side		

## 0020 Chapters and Table of Contents

### 1. Chapters

#### **0000      General**

0010	How to Use This Book
0020	Chapters and Table of Contents
0030	Foreword and Warranty
0040	Safety
0060	Component Locators
0070	Transporting the Log Loader
0080	Repairs

#### **1000      Power Unit**

1100	Engine
1300	Engine Mounting
1400	Fuel System
1500	Cooling System
1700	Air Intake System
1800	Exhaust System

#### **2000      Hydraulics**

2110	Main Pump
2130	Pilot Pump
2400	Valves
2410	Loader Control Valves
2700	Hydraulic Tank and Filters
2800	Cylinders
2850	Swing Motor
2910	Swivel Rotary Manifold
2940	Tilt Pump and Filler Pump
2950	Hydraulic Cooling

## 1. Chapters

### **3000      Electrical**

3200      Wiring Harness  
3910      Electrical Testing

### **5000      Cab**

5120      Cab Mounting  
5160      Windows  
5200      Seat  
5500      A/C and Heater Unit

### **6000      Frames**

6600      Swing Drive  
6610      Swing Gear Box  
6620      Swing Bearing  
6800      Stabilizers

### **7000      Loader**

### **9000      Indexes**

9500      Torque Values  
9600      Measurement Conversion Tables  
9800      General Machine Specifications

### **Appendix**

A          Model S240 and Models S260/261 Slashers  
B          Model D250 Delimber

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  - 1. Component Numbers
  - 2. Abbreviations
  
- 0020     Chapters and Table of Contents
  - 1. Chapters
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- 0030     Foreword and Warranty
  - 1. Foreword
  - 2. Model and Serial Numbers
  - 3. Emission Control Warranty Statement
  
- 0040     Safety
  - 1. General
  - 2. Safety Signs
  
- 0060     Component Locators
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  - 6. Hydraulic Component Locator

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0080	<u>Repairs</u>	1. General Troubleshooting Techniques 2. Welding Instructions 3. Hydraulic Hoses Inspection and Replacement 4. Inspection Check Lists 5. Extended Storage
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1100	<u>Engine</u>	1. Description and Operation 1.1 General 1.2 Gauges and Warning Indicators 1.3 Engine Enclosure Raising and Lowering 1.4 Engine Enclosure Hand Pump Operation 1.5 Engine Throttle 1.6 Operating the Engine 2. Engine Specifications 3. Engine Oil and Filters 3.1 Checking Engine Oil 3.2 Changing Engine Oil and Filters 4. Checking Belt Tensioner 5. Hub Vibration Dampener 6. Drive Adapter 7. Engine Troubleshooting
1300	<u>Engine Mounting</u>	1. Engine Mounts Replacement 2. Engine Removal and Installation 2.1 Engine Removal 2.2 Engine Installation



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- 1400      Fuel System
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## **0030 Foreword and Warranty**

### **1. Foreword**

To assist qualified personnel in the servicing and repair of the model 535 Log Loader, this manual supplies service instructions and detailed descriptions of the machines systems.

Throughout this manual reference is made to the front, rear, left and right sides of the machine. Consider this machine to be a two-part unit where the platform and stabilizers constitute the base, and the superstructure (including the booms) constitutes the turntable. On the base, the front is that end pointing toward the neck of the trailer (or the cab of the truck) upon which the machine is mounted. The left and right sides of the base are determined from a position behind the trailer (or truck) looking forward. On the turntable, the booms are at the front and the left and right sides are determined from a seated position in the Operator's seat facing the booms.

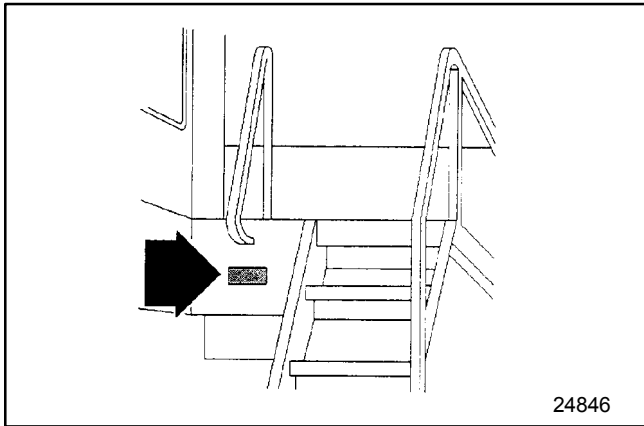
Where applicable throughout this text "Safety Alert" symbols have been used to indicate important safety measures. Read carefully, understand, and follow ALL safety instructions to prevent hazardous situations that could lead to the risk of personal injury or equipment damage.

The instructions in this manual cover the John Deere model 535 Log Loader as provided with the most commonly used options, therefore, pictorial presentation in some areas may vary slightly from your actual machine. This variation, however, has no impact on the accuracy of the written information.

Information contained in this manual is current at the time of publication, however, continuing product improvement may result in changes to the machine, which are not covered. Should information regarding such changes or any other information on the machine be required, please contact your John Deere Dealer.

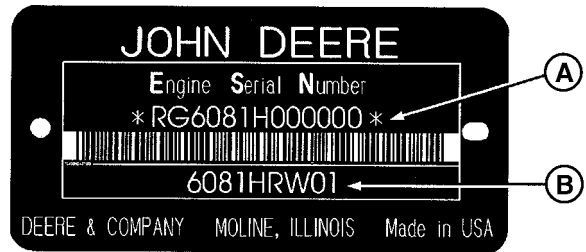
## **2. Model and Serial Numbers**

To properly identify your specific machine and its components when communicating with your John Deere dealer, please note the model and serial numbers below and refer to them when ordering service or replacement parts.



24846

Machine serial number plate

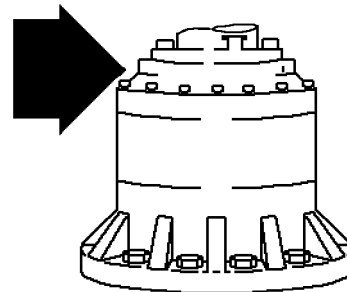


Engine serial number (A) and engine model (B) plate



24848

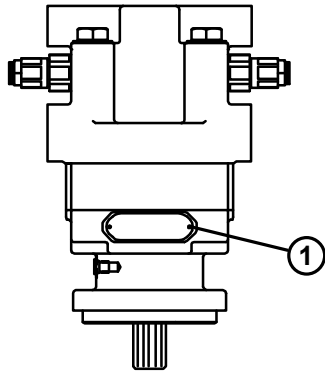
Grapple serial number plate



TJ148

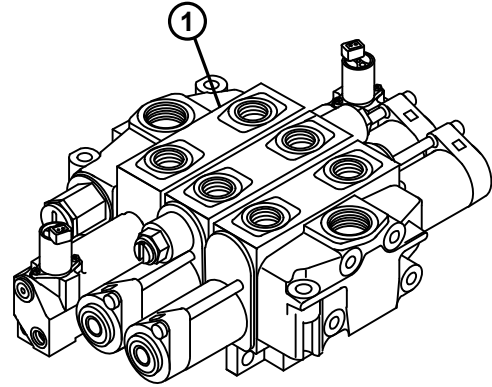
Swing Drive Gearbox serial number plate

## 2. Model and Serial Numbers



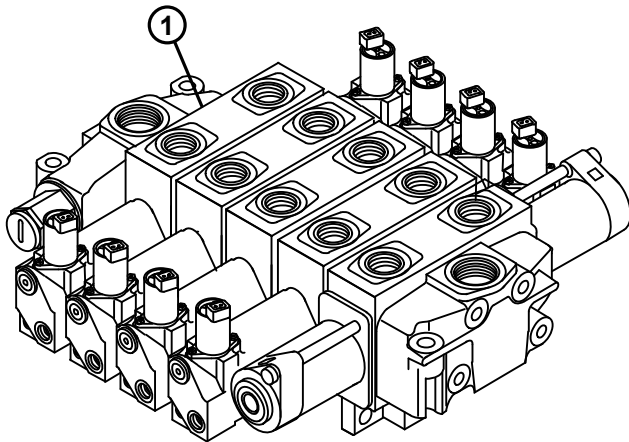
T134872

Swing motor serial number plate (1)



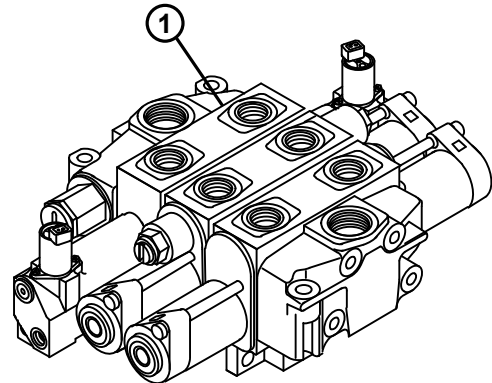
TJ300

Main boom control valve serial number plate (1)



TJ299

Swing control valve serial number plate (1)



TJ290

Jib boom control valve serial number plate (1)

## **EMISSIONS CONTROL WARRANTY STATEMENT FOR NEW JOHN DEERE CONSTRUCTION EQUIPMENT (U.S. AND CANADA)**

To determine if the engine in your machine qualifies for the additional warranties set forth below, look for the "Engine Information" label located on your engine. If you reside in the United States and the engine label states: "Engine conforms to US EPA regulations on heavy duty non road diesel cycle engines," you are entitled to the "U.S. Emission Control Warranty Statement." If you reside in California, and the engine label states: "Engine conforms to California regulations on heavy duty non road diesel cycle engines," you are entitled to the "California Emission Control Warranty Statement."

### **U.S. EPA EMISSIONS CONTROL WARRANTY STATEMENT**

Emissions control-related parts and components are warranted by John Deere for five years or 3000 hours of operation, whichever occurs first. John Deere further warrants that the engine covered by this warranty was designed, built, and equipped so as to conform at the time of sale with all U.S. emissions standards at the time of manufacture, and that it is free of defects in materials and workmanship which would cause it not to meet these standards within the period of five years or 3000 hours of operations, whichever occurs first.

Warranties stated on this certificate refer only to emissions-related parts and components of your engine. The complete machine warranty, less emissions-related parts and components, is provided separately as "John Deere "Secure Warranty" For New Construction Products."

### **CALIFORNIA EMISSION CONTROL WARRANTY STATEMENT YOUR WARRANTY RIGHTS AND OBLIGATIONS**

The California Air Resources Board (CARB) and John Deere are pleased to explain the emission control system on your new engine. In California, new heavy-duty engines must be designed, built and equipped to meet the State's stringent anti-smog standards. John Deere must warrant the emission control system on your engine for the periods of time listed below provided there has been no abuse, neglect, or improper maintenance of your machine.

Your emissions control system includes:

- Fuel Metering System
  - Fuel Injection System
- Air Induction System
  - Intake Manifold
  - Turbocharger System
  - Charge Air Cooling System
- Miscellaneous Items used in Above Systems

Where a warrantable condition exists, i.e. failure due to defect in John Deere-supplied material and/or workmanship, John Deere will repair your heavy-duty engine at no cost to you including diagnosis, parts and labor

### **JOHN DEERE'S WARRANTY COVERAGE:**

The emission control system of your heavy-duty engine is warranted for five years or 3000 hours of operation, whichever occurs first. If any emission-related part on your engine is defective, the part will be repaired or replaced by John Deere. Warranties stated on this certificate refer only to emissions-related parts and components of your engine. The complete machine warranty, less emissions-related parts and components, is provided separately as the "John Deere "Secure Warranty" For New Construction Products."

### **OWNER'S WARRANTY RESPONSIBILITIES:**

As the heavy-duty engine owner, you are responsible for the performance of the required maintenance as outlined in the

Operator's Manual. John Deere recommends that you retain all receipts covering maintenance on your heavy-duty engine, but John Deere cannot deny warranty solely for the lack of receipts or for your failure to ensure the performance of all scheduled maintenance.

However, as the heavy-duty engine owner, you should be aware that John Deere may deny you warranty coverage if your heavy-duty engine or a part has failed due to abuse, neglect, improper maintenance or unapproved modifications.

Your engine is designed to operate on diesel fuel only. Use of any other fuel may result in your engine no longer operating in compliance with California's emissions requirements.

You are responsible for initiating the warranty process. The CARB suggests that you present your machine to the nearest authorized John Deere dealer as soon as a problem is suspected. The warranty repairs should be completed by the service dealer as expeditiously as possible.

If you have any questions regarding your warranty rights and responsibilities, you should contact John Deere at 1-319-292-5400, or the State of California Air Resources Board, Mobile Source Operation Division, PO Box 8001, El Monte, CA 91731-2900

The warranty period begins on the date the machine is delivered to an ultimate purchaser, or when otherwise put into service. John Deere warrants to the ultimate purchaser and each subsequent purchaser that the engine is designed, built and equipped so as to conform with all applicable regulations adopted by the Air Resources Board, and that it is free from defects in materials and workmanship which would cause the failure of a warranted part.

Any warranted part which is scheduled for replacement as required maintenance by the operator's manual is warranted by John Deere for the period of time prior to the first scheduled replacement point for that part. If the part fails prior to the first scheduled replacement point, the part shall be repaired or replaced under warranty. Any such part repaired or replaced under warranty is warranted for the remainder of the period prior to the first scheduled replacement point for that part.

Any warranted part which is not scheduled for replacement as required maintenance, or which is scheduled only for regular inspection to the effect of repairing or replacing as necessary, is warranted for the warranty period.

Repair or replacement of a warranted part will be performed at no charge to you by an authorized John Deere dealer. You will not be charged for diagnostic labor which leads to the determination that a warranted part is defective, if the diagnostic work is performed by a John Deere dealer.

John Deere is liable for damages to other engine components caused by failure under warranty of any warranted part.

John Deere is NOT liable for travel or mileage on extended emissions warranty service calls.

Any replacement part may be used in the performance of any maintenance or repairs, and such use will not reduce the warranty obligations of John Deere. However, the use of add-on or modified parts are grounds for disallowing a warranty claim.



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