

# 848G / 660D GRAPPLE SKIDDER

(Serial No. WC848GX001029 -- )  
(Serial No. WC660DG001259 -- )  
(Serial No. WC660DC001259 -- )

**TECHNICAL MANUAL**  
**848G / 660D GRAPPLE SKIDDER**  
**TMF435521 25FEB03 (ENGLISH)**

For complete service information also see:

POWERTECH® 8.1L Diesel Engines . . . . . CTM86  
Alternators and Starting Motors . . . . . CTM77

**Worldwide Construction  
And Forestry Division**  
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# Introduction


## Foreword

This manual is written for an experienced technician. Essential tools required in performing certain service work are identified in this manual and are recommended for use.



Live with safety: Read the safety messages in the introduction of this manual and the cautions presented throughout the text of the manual.



 This is the safety-alert symbol. When you see this symbol on the machine or in this manual, be alert to the potential for personal injury.



The Service Manual is intended to provide technical information, component specifications, troubleshooting and removal, disassembly and reassembly procedures for most of the major components of the felling head. Use this manual in conjunction with the applicable Operator Manual and the applicable Carrier Service Manuals.



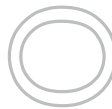
When practical, the Service Manual lists likely causes of malfunctions, offers test procedures to verify causes and then illustrates the steps for the adjustment or repair procedure(s).

Troubleshooting must always be a multi-step process. Use the following steps:

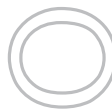
1. Know the operation of the attachment.
2. Ask the operator about symptoms and when they occur.
3. Operate the attachment yourself if practical.
4. List all possible causes.
5. Inspect for obvious causes.
6. Carry out diagnostic procedures like pressure and leakage testing to pinpoint the cause.



Component specifications provide performance and mode of operation information that can be very useful in troubleshooting.



Disassembly and reassembly procedures are given for many major components. When possible, clearance and torques are given. If a manufacturer's service manual is available, it should be given priority.



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

### **1. Serial Numbers**

This Manual covers the full range of 848G and 660D Skidder serial numbers: See front cover for serial number details.

### **2. Component Numbers**

The manual is divided into Chapters. Chapter 1, for example, details the engine system and includes the engine mounting, cooling system, coupling, exhaust and air intake systems. Each chapter starts with a Table of Contents giving details and page references.

Each Chapter is further divided into smaller sections. Each section is identified with a unique number that relates to the warranty system. For example, all parts used in the engine air intake system are found under section 1700.

### **3. Page Layout**

At the top of each page are two sets of numbers.

The 'page' number (A), at the outside corner, consists of the four digit section number followed by the page number in that section. Each section is numbered sequentially from one. For example, 1800 - 3, would be the third page of Section 1800, Exhaust System.

The 'Issue' number (B) also comprises two sets of numbers separated by a hyphen. The first numbers identify the issue date of that section of the manual. The numbers following the hyphen are the issue number of the section and are used to control updating in the field. For example, 06/2000 - 02, would indicate Revision 2, released June, 2000.

At the bottom of each page is a model identification and the type of manual (C). The model identification may identify a unique product or a range of products (848G / 660D Service Manual for example).

### 3. Page Layout

Issue  
12/2000-01

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**1100 Engine**

**1. Description and Operation**

**1.1 General**

The primary source of power for the skidder is a turbocharged, aftercooled, six cylinder John Deere engine.

Model	John Deere 6081AF
Cylinders	6
Displacement	8.1 Liters (496 cu. in.)
Rated Power (HP)	149 Kw (200 HP) @ 2200 RPM

The engine is mounted in front of the operator cab and provides power directly to the transmission via a flex-plate connector and hydrostatic torque converter system.

Power to the hydraulic pump and the transmission charge pump is mechanically transmitted around the torque converter. The air conditioning compressor is belt driven from the cooling fan hub.

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**848G Skidder Service Manual**

## 4. Abbreviations

The abbreviations in the following list are common. While we have endeavored to use 'industry standard' abbreviations wherever possible, common practice mandates that historical usage be maintained.

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



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## 4. 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
OBS	obsolete	SPD	speed
OD	outside diameter	SPI	single pump isolated
OPR	operator	SPRSN	suppression
OPT	optional	SQ	square
ORN	orange	STD	standard
PC	piece	TEMP	temperature
PF	power frame	TJ	Timberjack
PHIL	Phillips	TS	topping saw
PIN	pinion	TYP	typical
PKG	package		
PLCS	places	UPR	upper
PNL	panel		
PO	part of...	VIO	violet
PRESS	pressure	VLV	valve
PSI	pounds/square inch		
		W/	with
REF	reference	W/G	with guard
REINF	reinforce; reinforcing	W/O	without
REINFMT	reinforcement	WHT	white
REV	reverse	WLDMT	weldment
RF	right front	WS	windshield
RH	right hand	WSHR	washer
RLF	relief		
RND	round	5P	five port
RR	right rear	8P	eight port
		9P	nine port
		10P	ten port



## 0020 Chapters and Sections Contents

### Chapters:

- 0000 .. General
- 1000 .. Power Unit
- 2000 .. Hydraulics
- 3000 .. Electrical
- 4000 .. Power Train
- 5000 .. Cab
- 6000 .. Frames
- 7000 .. Crane/Tree Handling
- 8000 .. not used in this manual
- 9000 .. Indexes

## **1. Chapters and Sections Contents**

### **0000 General**

0010 How to Use This Book

1. Serial Numbers
2. Component Numbers
3. Page Layout
4. Abbreviations

0020 Chapters and Sections

0030 Foreword and Warranty

1. Foreword
2. Customer Feedback
3. Modifications or Repairs to Roll-over Protective Structures (ROPS)
4. Non-approved Field Product Changes
5. Sound Information
6. Registered Trademarks
7. Warranty

0040 Safety Information

1. General
2. Safety Symbol
3. Understanding Signal Words
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5. General Safety Precautions
6. Operating Safety Precautions
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8. Transporting on Public Roads
9. Fire Prevention
10. What to Do if the Machine Catches Fire
11. 848G/660D Skidder Safety Decals

0060 Component Locators

1. General
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          2. Releasing the Brakes  
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          5. Driving the Skidder on the Road
- 0080     Repairs  
          1. Troubleshooting Techniques  
          2. Welding  
          3. Hydraulics  
          4. Storage  
              4.1 Preparing the Machine for Storage  
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## **1. Chapters and Sections Contents**

### **1000 Power Unit**

1100

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  - 1.3 Cooling System
  - 1.4 Air Intake and Exhaust System
  - 1.5 Turbocharger
  - 1.6 Fuel System
  - 1.7 Start Aid
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  - 5.2 Changing Engine Oil and Filter
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9. Replacing Start Aid Can
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#### Engine Mounting

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    - 1.1 General
    - 1.2 Access to Engine/Transmission
    - 1.3 Wiring Harnesses
    - 1.4 Engine Hoses
    - 1.5 Engine Mechanical Connections
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    - 1.7 Transmission Mechanical Connections
    - 1.8 Engine and Transmission Mounts
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    - 1.1 General
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    - 1.6 Fuel Shut-off Solenoid
  - 2. Checking the Fuel level
  - 3. Draining Water from Fuel Tank
  - 4. Filters
    - 4.1 Checking the Primary Filter (Fuel/water Separator)
    - 4.2 Replacing the Primary Filter (Fuel/water Separator)
    - 4.3 Replacing the Final Fuel Filter
    - 4.4 Replacing the Final Fuel Filter Check Valve
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    - 6.1 Fuel Tank Removal
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- 1500     Cooling System
- 1. Description and Operation
  - 2. Cooling System Components
  - 3. Checking the Engine Coolant Level
  - 4. Checking the Engine Coolant Condition
  - 5. Replacing the Engine Coolant
  - 6. Flushing the Cooling System
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  - 8. Radiator Removal and Installation
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    - 9.5 Maintenance Records
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