

848G Skidder



Technical Manual



John Deere Dubuque Works
TM1898 (Dec00)

ENGLISH

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0010 How To Use This Book

1. Serial Numbers

This Manual covers the following range of 848G Skidder serial numbers:

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 Service Manual for example).

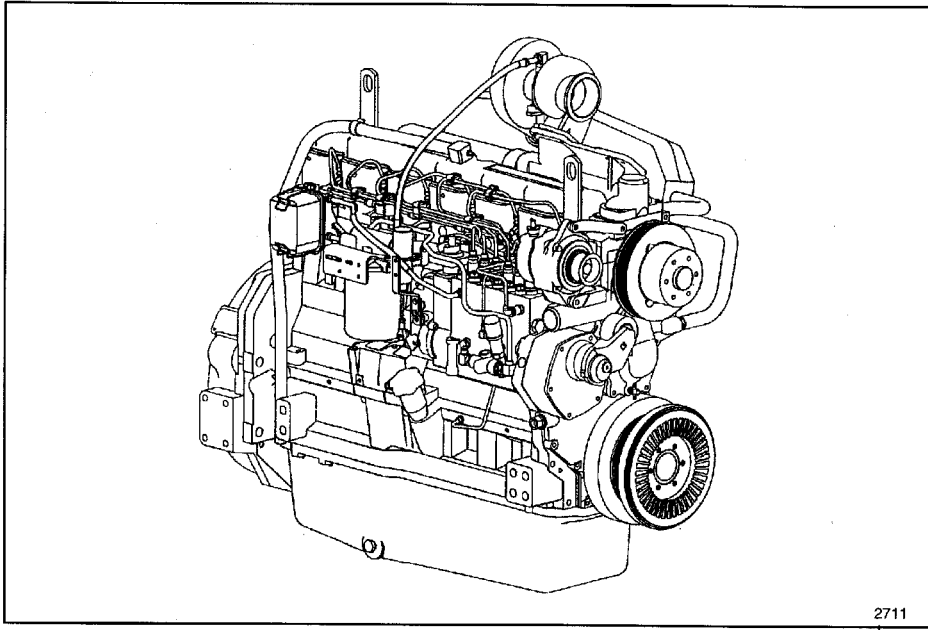
3. Page Layout

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1100 Engine

1. Description and Operation B A

1.1 General



2711

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.

848G Skidder Service Manual C

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		

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
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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
4. Skidder Safety Features
5. General Safety Precautions
6. Operating Safety Precautions
7. Servicing Safety Precautions
8. Transporting on Public Roads
9. Fire Prevention
10. What to Do if the Machine Catches Fire
11. 848D Skidder Safety Decals

0060 Component Locators

1. General
2. Component Locators
 - 2.1 Engine Component Locator
 - 2.2 Hydraulic Component Locator
 - 2.3 Electrical Component Locator
 - 2.4 Power Train Component Locator
 - 2.5 Cab Component Locator
 - 2.6 Frames Component Locator
 - 2.7 Tree Handling Component Locator

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- 0070 Towing/Transporting the Skidder
1. Towing Over a Short Distance
2. Releasing the Brakes
3. Towing Procedure
4. Transporting the Skidder
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
 4.2 Monthly Storage Procedure
5. Periodic Maintenance Checklist

1. Chapters and Sections Contents

1000 Power Unit

1100

Engine

1. Description and Operation
 - 1.1 General
 - 1.2 Lubrication System
 - 1.3 Cooling System
 - 1.4 Air Intake and Exhaust System
 - 1.5 Turbocharger
 - 1.6 Fuel System
 - 1.7 Start Aid
 - 1.8 Other technical Documents
2. Engine Specifications
3. Engine Operation
 - 3.1 Pre-Start Checks
 - 3.2 Before Starting the Engine
 - 3.3 Starting the Engine
 - 3.4 Stopping the Engine
 - 3.5 Reducing Engine Load
4. Engine Break-In Period
5. Engine Oil
 - 5.1 Checking Engine Oil
 - 5.2 Changing Engine Oil and Filter
6. Inspecting Alternator Belt
7. Checking and Replacing Hub Vibrational Damper
8. Checking Engine Valve Lash Clearance
9. Replacing Start Aid Can
9. Engine Tune-Up
 - 9.1 Preliminary Engine Testing Before Tune-Up
 - 9.2 General Tune-Up Recommendations
10. Engine Troubleshooting

1300

Engine Mounting

1. Engine/Transmission Removal and Installation
 - 1.1 General
 - 1.2 Access to Engine/Transmission
 - 1.3 Wiring Harnesses
 - 1.4 Engine Hoses
 - 1.5 Engine Mechanical Connections
 - 1.6 Transmission Hoses
 - 1.7 Transmission Mechanical Connections
 - 1.8 Engine and Transmission Mounts

1. Chapters and Sections Contents

- 1400 Fuel System
1. Description and Operation
 - 1.1 General
 - 1.2 Primary Filter (Fuel/water Separator)
 - 1.3 Final Fuel Filter
 - 1.4 Fuel Supply Pump
 - 1.5 Fuel Injection System
 - 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
 5. Bleeding the Fuel System
 6. Fuel Tank Removal and Instalation
 - 6.1 Fuel Tank Removal
 - 6.2 Fuel Tank Installation
-
- 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
 7. Cleaning the Oil Cooler and Radiator
 8. Radiator Removal and Installation
 - 8.1 Radiator Removal
 - 8.2 Radiator Installation
 9. Testing and Maintaining the Engine Coolant
 - 9.1 General
 - 9.2 Recommended Fluids
 - 9.3 Solder Bloom
 - 9.4 Cooling System Cleaners
 - 9.5 Maintenance Records
 10. Optional Sand Grill
 11. Cooling System Troubleshooting
-

1. Chapters and Sections Contents

- 1600 Coupling
1. Description and Operation
2. Engine Removal and Installation
 2.1 Removal of Engine from Transmission
 2.2 Installation of Engine on Transmission
- 1700 Air Intake System
1. Description and Operation
 1.1 Air Cleaner
2. Air Intake Assembly
 2.1 Air Intake Components
 2.2 Assembly
3. Precleaner
4. Air Filter Replacement
5. Extending Turbocharger Life
- 1800 Exhaust System
1. Description and Operation
2. Exhaust System Assembly
 2.1 Exhaust System Installation
 2.2 Seal Clamp Installation

1. Chapters and Sections Contents

2000 Hydraulics

2000 Hydraulics Systems

1. Machine Hydraulics
2. Main Hydraulic System
 - 2.1 Description and Operation
 - 2.2 Checking the Hydraulic Fluid Level
 - 2.3 Draining the Hydraulic System
 - 2.4 Filling the Hydraulic System
 - 2.5 De-aerating the Main Hydraulic System
3. Hydraulic System Cleaning
4. Transmission Charge System
 - 4.1 Description and Operation
5. Hydraulic Testing
 - 5.1 Hydraulic Test Tools
 - 5.2 Hydraulic Circuit Testing
 - 5.3 Controls
 - 5.4 Compensators and Pressure Relief Valves
6. Schematics
 - 6.1 Line Sizing and Routing
 - 6.2 Reservoir Locations
 - 6.3 Hydraulic Schematic - Grapple Skidder
 - 6.4 Transmission Schematic
7. Hydraulic Schematic Symbols
 - 7.1 Miscellaneous Units
 - 7.2 Pumps and Motors
 - 7.3 Cylinders
 - 7.4 Methods of Operation
8. Hydraulic System Troubleshooting

1. Chapters and Sections Contents

- 2110 Work Pump
- 1 Description and Operation
 - 1.1 General
 - 2. Work Pump Components
 - 3. Theory of Operation
 - 3.1 Variable Pumps
 - 3.2 Pressure Compensator
 - 3.3 Pump Unloading Solenoid
 - 4. Work Pump Specifications
 - 5. Work Pump Removal
 - 6. Work Pump Installation
 - 7. Work Pump Disassembly
 - 7.1 General
 - 7.2 Control Group
 - 7.3 Control Unit
 - 7.4 Control Unit Disassembly
 - 7.5 Control Unit Assembly
 - 7.6 Valve Plate Group
 - 7.7 Rotating Group
 - 7.8 Driveshaft Group
 - 7.9 Swashplate Group
 - 8. Work Pump Assembly
 - 8.1 Swashblock Group
 - 8.2 Driveshaft Group
 - 8.3 Rotating Group
 - 8.4 Valve Plate Group
 - 8.5 Control Group
 - 8.6 Shaft Torque Test
 - 9. Pump Delivery Tests
 - 9.1 General
 - 9.2 Pump Case Drain Flow Test
 - 9.3 Case Drain Flow Test Procedure
 - 10. Work Pump Troubleshooting
- 2120 Transfer Pump
- 1. Description and Operation
 - 2. Transfer Pump Troubleshooting
- 2400 Valves
- 1. Valves Locator
 - 2. Control Valves
 - 3. Auxilliary Valves
 - 4. Joystick Valve
-

1. Chapters and Sections Contents

- 2410 Control Valves
1. Description and Operation
 2. Control Valve Removal and Installation
 - 2.1 Decking Blade Control Valve Removal
 - 2.2 Decking Blade Control Valve Installation
 - 2.3 Grapple Control Valve Removal
 - 2.4 Grapple Control Valve Installation
 3. Control Valve Servicing
 - 3.1 Typical Control Valve Components
 - 3.2 Control Valve Disassembly
 - 3.3 Control Valve Assembly
 - 3.4 Link Operated Spool Section Components
 - 3.5 Link Operated Spool Section Disassembly
 - 3.6 Link Operated Spool Section Assembly
 - 3.7 Pilot Operated Spool Section Components
 - 3.8 Pilot Operated Spool Section Disassembly
 - 3.9 Pilot Operated Spool Section Assembly
 - 3.10 Solenoid Operated Spool Section Components
 - 3.11 Solenoid Operated Spool Section Disassembly
 - 3.12 Solenoid Operated Spool Section Assembly
 - 3.13 Relief Valves
 - 3.14 Relief Valve Disassembly
 - 3.15 Relief Valve Assembly
 4. Control Valve Internal Leakage Test
 5. Control Valve Hoses and Fittings
- 2420 Auxilliary Valves
1. General
 2. Priority Valve
 - 2.1 Description and Operation
 - 2.2 Priority Valve Removal
 - 2.3 Priority Valve Installation
 - 2.4 Priority Valve Servicing
 - 2.5 Priority Valve Testing
 3. Orbitrol Steering Control Valve
 - 3.1 Description and Operation
 4. Steering Control Unit Components
 5. Steering Control Unit Servicing Tools
 6. Steering control Unit Disassembly
 7. Steering Control Unit Assembly
- 2430 Joystick Valve
1. Description and Operation
 2. Joystick Components
 3. Joystick Removal and Installation
 4. Joystick Servicing