

# John Deere JD500-C Loader Backhoe



## TECHNICAL MANUAL

**TM-1038**

Litho in U.S.A. (T) Revised

# JD500-C Loader Backhoe TECHNICAL MANUAL

TM-1038 (Oct-79)

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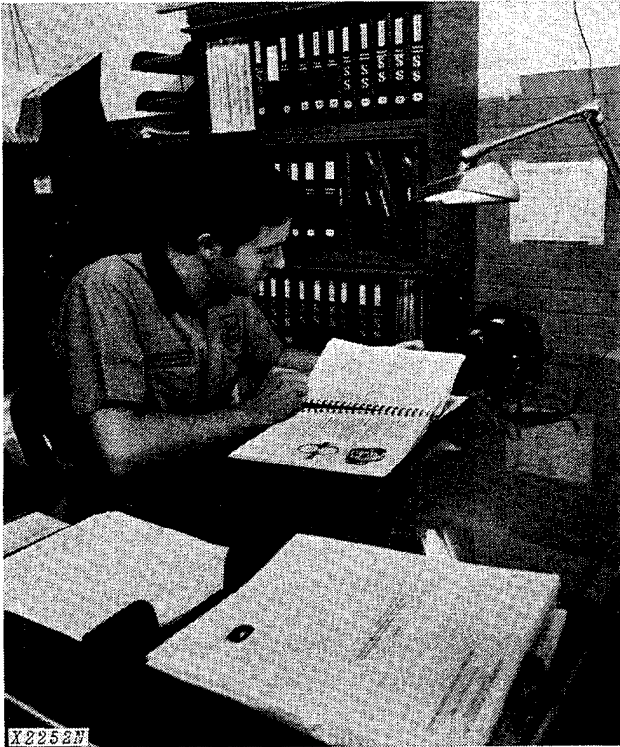
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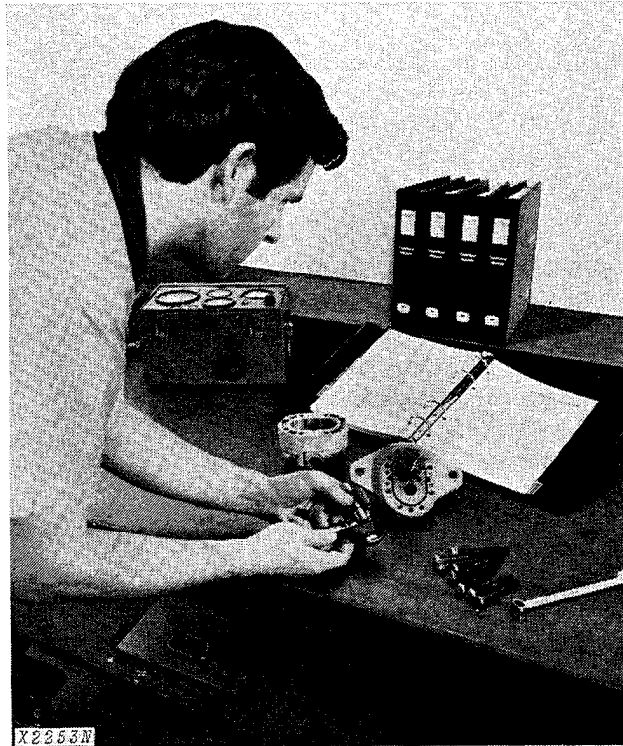
*The specifications and design information contained in this manual were correct at the time it was printed. It is John Deere's policy to continually improve and update our machines. Therefore, the specifications and design information are subject to change without notice. Wherever applicable, specifications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

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## INTRODUCTION



Use FOS Manuals for Reference



Use Technical Manuals for Actual Service

**!** 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.

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 service technicians and for reference by experienced service technicians.

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



When a service technician should refer to a FOS Manual for more information, a FOS symbol like the one at the left is used in the technical manual to identify the reference.

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 service technician. Keep it in a permanent binder in the shop where it is handy. Read it when you need to know correct service procedures or specifications.

# Section 10 GENERAL

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T43608

Fig. 1-JD500-C Backhoe Loader

# Group 5 SPECIFICATIONS

(Specifications and design subject to change without notice. Wherever applicable, specifications are in accordance with ICED and SAE Standards. Except where otherwise noted, these specifications are based on a unit equipped with 18.4-28, 8 ply rating rear tires; 14.5/75-16, 10 ply rating front tires; 1 cu. yd. (0.76 m<sup>3</sup>) loader bucket, 24 in. (610 mm) standard backhoe bucket and standard equipment.)

<b>Power (@ 2500 engine rpm):</b>	<b>SAE</b>	<b>DIN</b>
Gross .....	83 hp (61.9 kW*)	
Net .....	80 hp (59.7 kW)	85.0 PS

Net engine flywheel power is for an engine equipped with fan, air cleaner, water pump, lubricating oil pump, fuel pump, alternator and muffler. Gross engine power is without fan. Flywheel power ratings are under SAE standard conditions of 500 ft. altitude and 85°F temperature and DIN 70 020 standard conditions of 760 mm Hg barometer (sea level) and 20°C temperature.

\*In the International System of Units (SI), power is expressed in kilowatts (kW).

**Engine:** John Deere diesel, 4-cylinder, 4-stroke cycle  
 Bore and stroke ..... 4.25x4.75 in. (108x121 mm)  
 Piston displacement ..... 270 cu. in. (4425 cm<sup>3</sup>)  
 Compression ratio ..... 17.3 to 1  
 Maximum torque  
     @ 1300 rpm ..... 202 lb-ft (274 Nm) (27.9 kg-m)  
 NACC or AMA (U.S. Tax) horsepower ..... 28.9  
 Main bearings ..... 5  
 Lubrication ..... Pressure system w/full-flow filter  
 Cooling ..... Pressurized w/thermostat and fixed bypass  
 Fan ..... Suction  
 Air cleaner w/restriction indicator ..... Dry  
 Electrical system ..... 12 volt w/alternator  
 Batteries (two 6 volt) ..... Reserve capacity: 340 minutes each

**Transmission:**  
 Full Power Shift. 8 speeds forward, 4 reverse: Power Shift from forward to reverse in first 4 gears.

<b>Gear:</b>	<b>Travel Speeds:</b>	
	<b>mph</b>	<b>kmh</b>
Forward 1	1.7	2.7
2	2.4	3.9
3	3.8	6.1
4	4.9	7.9
5	6.3	10.1
6	8.1	13.0
7	10.8	17.4
8	18.0	29.0
Reverse 1	2.0	3.2
2	2.8	4.5
3	4.4	7.1
4	5.7	9.2

**Final Drives** ..... Inboard, planetary  
**Brakes** ...Hydraulically power actuated, full enclosed wet-disk. Self-equalizing. Foot-operated individually or simultaneously.

**Steering:** Power  
 Turning radius (brake applied) .. 11 ft. 2 in. (3.40 m)  
 Loader clearance (brake applied)... 33 ft. (10.06 m)  
 Number of turns, far left to far right ..... 5

**Hydraulic System:** Closed-center

Pressure ..... 2350 psi (16 203 kPa) (165.2 kg/cm<sup>2</sup>)  
 Loader control..... Single-lever  
 Backhoe control ..... Two-lever  
 Pump... Piston, constant pressure, variable-displacement, 38 gpm (144 L/min) @ 2500 engine rpm  
 Filter...25 micron steel-enclosed paper cartridge in return

<b>Hydraulic Cylinders:</b>	<b>Bore</b>	<b>Stroke</b>
Loader boom .....	3.25 in. (83 mm)	28.7 in. (729 mm)
Loader bucket.....	3.25 in. (83 mm)	16.7 in. (424 mm)
Backhoe boom .....	4.5 in. (114 mm)	36.7 in. (932 mm)
Backhoe crowd.....	4.5 in. (114 mm)	35.5 in. (902 mm)
Backhoe bucket .....	3.5 in. (89 mm)	27.37 in. (695 mm)
Backhoe swing .....	4 in. (102 mm)	9.31 in. (237 mm)
Stabilizer .....	3.5 in. (89 mm)	16.9 in. (429 mm)

Cylinder rods.. Ground, heat-treated, chrome-plated, polished  
 Loader boom, backhoe swing and stabilizer cylinder rods ..... 1.75 in. (44 mm) dia.  
 Loader bucket cylinder rods .. 1.50 in. (38 mm) dia.  
 Backhoe crowd, boom and bucket cylinder rods ..... 2.25 in. (57 mm) dia.

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