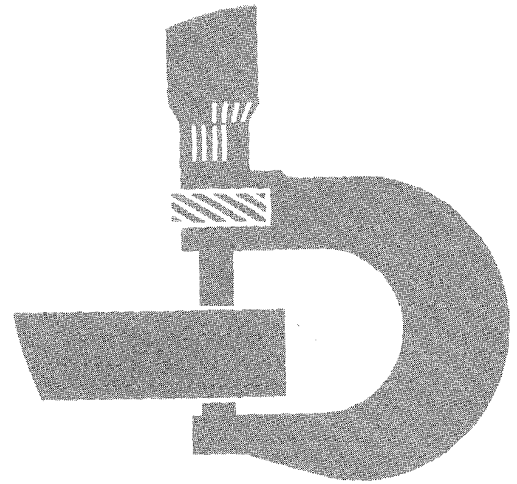


# **JD500 Series-B Loader Backhoe**



## **TECHNICAL MANUAL**

**TM-1024**

# JD500 SERIES-B LOADER BACKHOE

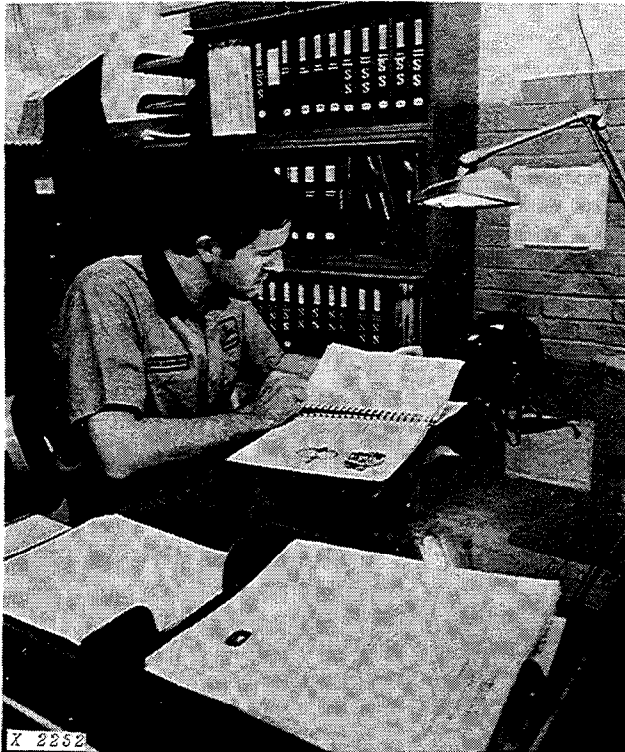
## Technical Manual TM-1024 (Jan-74)

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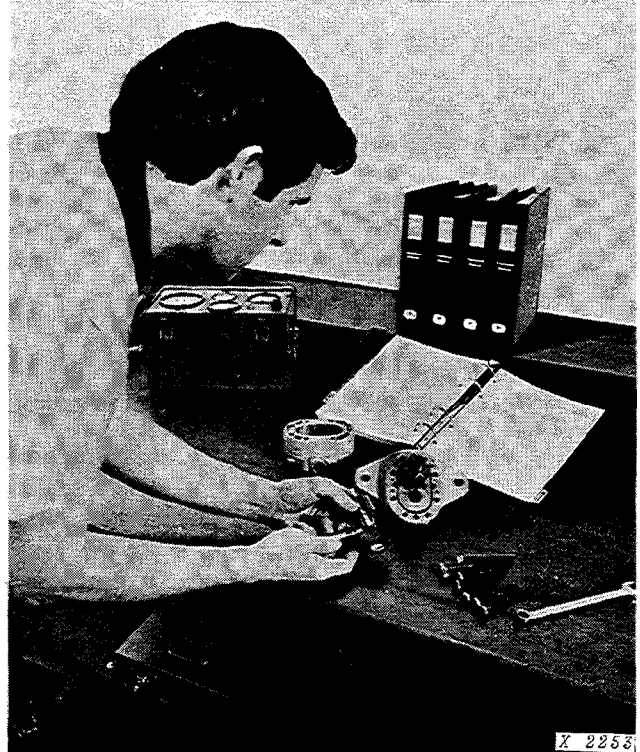
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*The specifications and design information contained in this manual were correct at the time it was printed. It is John Deere's policy to continually improve and update our machines. Therefore, the specifications and design information are subject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

## INTRODUCTION



Use FOS Manuals for Reference



Use Technical Manuals for Actual Service

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 men and for reference by experienced men.

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



When a serviceman should refer to a FOS Manual for more information, a FOS symbol like the one at the left is used in the TM 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—a journeyman mechanic. 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.

## Section 10 GENERAL

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## Group 5 GENERAL MACHINE SPECIFICATIONS

**HORSEPOWER (at 2500 engine rpm)**  
 Net engine flywheel (at 500 ft. altitude and 85° F. temperature); engine equipped with fan, air cleaner, water pump, lubricating oil pump, fuel pump, and alternator:

Gasoline . . . . . 77.7 hp.  
 Diesel . . . . . 80.0 hp.

**ENGINE**

Type . . . 4-stroke cycle, 4-cylinder-in-line, valve-in-head

**Bore and Stroke:**

Diesel . . . . . 4-1/4 x 4-3/4 in.  
 Gasoline . . . . . 4-1/4 x 4-1/4 in.

**Displacement:**

Diesel . . . . . 269 cu. in.  
 Gasoline . . . . . 241 cu. in.

**Compression ratio:**

Diesel . . . . . 16.5 to 1  
 Gasoline . . . . . 7.5 to 1

Firing order . . . . . 1-3-4-2

**Maximum torque:**

Diesel . . . . . 189 ft-lb  
 Gasoline . . . . . 186 ft-lb

**Rpm at maximum torque:**

Diesel . . . . . 1,400  
 Gasoline . . . . . 1,800

**Main bearings:**

Diesel . . . . . 5  
 Gasoline . . . . . 3

**Main bearing length and diameter:**

Diesel and gasoline . . . 1.385 in.-3.375 in.

**Valve clearance:**

**Diesel:**

Intake . . . . . 0.018 in.  
 Exhaust . . . . . 0.018 in.

**Gasoline:**

Intake . . . . . 0.015 in.  
 Exhaust . . . . . 0.031 in.  
 (cold)

**Governor:**

Diesel . . . . Integral with injection pump.

Engine (continued)

Injection pump timing . . . . . TDC  
Distributor timing:  
2200 rpm engine speed . 20 degrees BTDC  
Distributor point gap . . . . . 0.022 in.  
Spark plug gap . . . . . 0.025 in.  
Engine speeds:  
Normal slow idle . . . . . 800 rpm  
Working range . . . . . 1500 to 2500 rpm

LUBRICATION SYSTEM

Type . . . . Force-feed, pressurized with full-flow oil filter.

FUEL SYSTEM

Diesel . . . Direct injection, inlet metering, distributing-type.  
Diaphragm-type fuel pump.  
Gasoline . . Pressure system, diaphragm-type fuel pump, single barrel, updraft carburetor.

COOLING SYSTEM

Type . . . Pressurized system with centrifugal pump. Output of pump - 60 gpm.  
Engine temperature control . . . Heavy-duty thermostat

ELECTRICAL SYSTEM

Starter, alternator, lights, and accessory voltage . . . . . 12 volts  
Charging system capacity . . . . . 55 amps  
Battery:  
Gasoline . . . . One, 12-volt, 78-plate 75-ampere-hour  
Diesel . . . . . Two, 6-volt, 75-plate 172-ampere-hour

HYDRAULIC SYSTEM:

Type . . . Closed center, constant pressure. Includes power steering, power brakes and equipment control  
Standby pressure . . . . . 2350 psi

COLLAR-SHIFT TRANSMISSION

Transmission clutch Dry-disk, foot operated, spring loaded type. Single plate (12 in.) with 149 inches of facing area. Torque capacity of 4,490 in-lb at 2,500 engine rpm.

Transmission type . . Constant mesh manual transmission. Eight forward speeds and 2 reverse. Left-hand reverser lever.

Ground speed (at 2500 engine rpm with 18.4-28 tires):

1st. . . . .	1.8 mph
2nd . . . . .	2.9 mph
3rd . . . . .	3.8 mph
4th. . . . .	4.8 mph
5th. . . . .	5.9 mph
6th. . . . .	7.9 mph
7th. . . . .	9.9 mph
8th. . . . .	16.2 mph
1st Reverse. . . . .	3.6 mph
2nd Reverse . . . . .	5.7 mph

POWER SHIFT TRANSMISSION

Engine disconnect . . . . One dry-disk, lever operated clutch

Transmission type . . Planetary gears, clutches and brakes wet disk, hydraulically actuated, controlled by speed selector. Eight speeds forward and 4 reverse. Left-hand reverser lever.

Ground speed (at 2500 engine rpm with 18.4-28 tires):

1st. . . . .	1.7 mph
2nd . . . . .	2.4 mph
3rd . . . . .	3.8 mph
4th. . . . .	4.9 mph
5th. . . . .	6.3 mph
6th. . . . .	8.1 mph
7th. . . . .	10.8 mph
8th. . . . .	18.0 mph
1st Reverse. . . . .	2.0 mph
2nd Reverse . . . . .	2.8 mph
3rd Reverse . . . . .	4.4 mph
4th Reverse. . . . .	5.7 mph

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