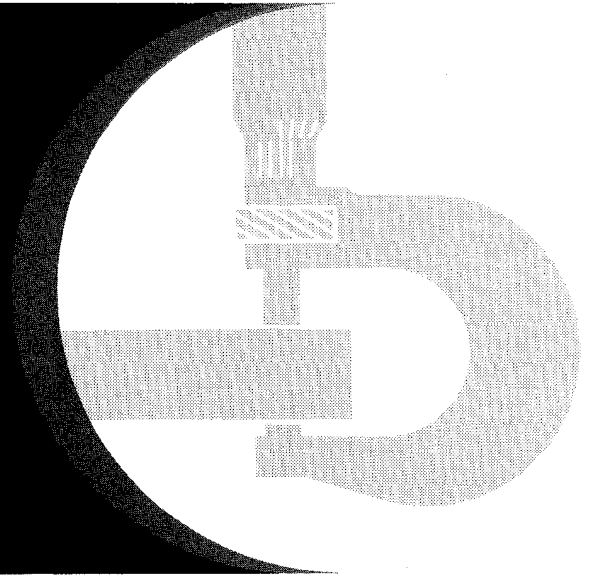


**JD500 Series-A
Loader
SN (123,000-)**



Technical Manual

JD500 Series-A LOADER
Serial No. (123,000-)
Technical Manual
TM-1025 (Feb-74)

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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, up-draft 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 16.9-28 tires):

1st 1.7 mph
2nd 2.7 mph
3rd 3.6 mph
4th 4.6 mph
5th 5.6 mph
6th 7.5 mph
7th 9.4 mph
8th 15.3 mph
1st Reverse 3.5 mph
2nd Reverse 5.4 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 16.9-28 tires):

1st 1.6 mph
2nd 2.3 mph
3rd 3.6 mph
4th 4.6 mph
5th 6.0 mph
6th 7.7 mph
7th 10.2 mph
8th 17.0 mph
1st Reverse 1.9 mph
2nd Reverse 2.7 mph
3rd Reverse 4.2 mph
4th Reverse 5.4 mph

FINAL DRIVE

Type Planetary
Power Shift gear
reduction in 1st gear--229 to 1
8th gear--21.8 to 1
Collar Shift gear
reduction in 1st gear--214 to 1
8th gear--24.2 to 1

POWER

TAKE-OFF . Special equipment. Hand lever control. Mid PTO-1000 rpm; Single speed rear - 1000 rpm; Dual speed rear - 540 or 1000 rpm.

STEERING. . Full power, hydrostatic type. Provision for manual operation
Number of turns (far left to far right) 4.67

BRAKES. . . Hydraulically power actuated, disk-type operating in oil
Provision for manual operation with brake accumulator to supply oil for an emergency application.

FRONT TIRES

Size 8.25-16, 10-ply
14.00-17.5, 10-ply

REAR TIRES

Size 16.9-28, 8-ply
18.4-28, 6-ply

WHEEL TREAD

Front . . 56 in. (8.25-16), 66 in. (14.00-17.5)
Rear . . 64 in. (16.9-28), 65.5 in. (18.4-28)

CAPACITIES

Cooling system 19 qt.
Fuel tank (diesel and gasoline) . . . 25 gal.
Engine lubrication (including filter) . 8 qt.
Hydraulic system (U.S. gals.)
Transmission reservoir:
Power Shift 11
Collar Shift 8
Loader reservoir 3
Backhoe reservoir. 7.5

LOADER

Breakout force 5,100 lb.
Lifting capacity at full height . . . 3,700 lb.
Raising time to full height 4.0 sec.
Bucket dumping time 1.5 sec.
Lowering time. 2.75 sec.
Boom
cylinders: Double-acting, 2-3/4-in. bore,
30-in. stroke, 1-1/2-in. dia.
piston rod.
Bucket
cylinders: Double-acting, 2-3/4-in. bore,
15-in. stroke, 1-1/2-in. dia.
piston rod.

BACKHOE

Swing arc 180 deg.
Digging force (24-in. standard bucket) 9,700 lb.
Reach from center of rear axle using 24-inch standard bucket . . 20 ft. 5 in.
Stabilizer spread 9 ft.
Boom
cylinder . . 4-1/2 in. bore, 32 in. stroke,
Piston rod dia. 2-1/4 in.
Crowd
cylinder . . 4-in. bore, 32-5/16-in stroke;
Piston rod dia. 2-1/4 in.
Bucket
cylinder . . 3-1/2-in. bore, 27-1/4-in. stroke;
Piston rod dia. 2-1/4 in.
Swing
cylinder. Piston and rod type
Stabilizer
cylinders . . 3-1/2-in. bore, 27-5/16-in. stroke;
Piston rod dia. 1-3/4 in.

LOADER BACKHOE DIMENSIONS

Wheelbase	82 in.
Overall length	274 in.
Overall height (to top of canopy)	103 in.
Transport height (to dipperstick)	11 ft. max.
Height to top of hood	63.9 in.
Overall width	81 in.
Ground clearance	13 in.
Turning radius (brakes released)	150 in.
Turning clearance circle (loader hinge pin 3 ft. above ground level, bucket rolled back, and brakes released)	30 ft. dia.
Vehicle clearance circle:	
With brakes	280 in.
Without brakes	310 in.

SHIPPING WEIGHT (Equipped with Power Shift transmission, less fuel and ballast. Deduct 255 lbs. if equipped with a Collar Shift transmission. If equipped with multiposition backhoe, add 800 lbs. Loader equipped with 7/8 cu. yd. bucket and backhoe equipped with 24 in. standard bucket, without Roll-Gard):

Diesel	12,980 lb.
Gasoline	12,840 lb.
Roll-Gard (includes canopy)	420 lb.
Loader bucket (7/8 cu. yd.)	591 lb.
Loader bucket (1 cu. yd.)	665 lb.
Loader bucket (1-1/4 cu. yd.)	669 lb.
Drott 4 in 1 bucket	1,045 lb.
Standard 24 in. backhoe bucket	239 lb.
Backhoe dipperstick extension	239 lb.

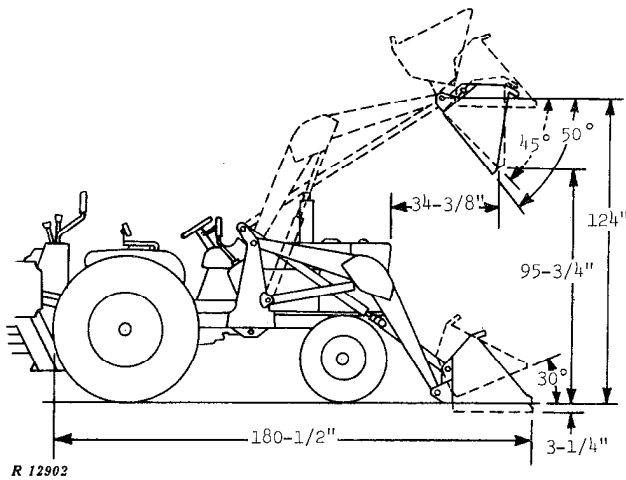


Fig. 1 - Loader Equipped with 7/8 Yard Bucket

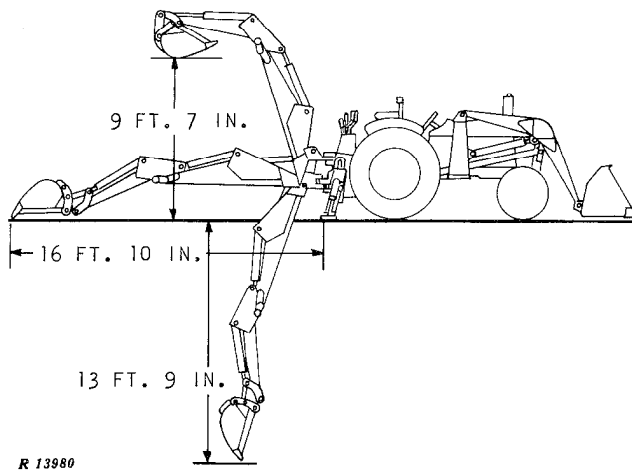


Fig. 2 - Backhoe Equipped with 24 In. Standard Bucket

(Specifications and design subject to change without notice. Whenever applicable, specifications are in accordance with IEMC and SAE standards.)

Group 10 PREDELIVERY, DELIVERY, AND AFTER SALE SERVICES

PREDELIVERY SERVICE

Because of the shipping factors involved, plus extra finishing touches that are necessary to promote customer satisfaction, proper predelivery service is of prime importance to the dealer.

Machines shipped from the factory with the alternator completely disconnected, require an AR47860 Auxiliary Ignition Battery Kit to supply power for the ignition system (gasoline models) and the fuel shutoff solenoid (all models). The adapter on the battery kit harness plugs into the cigar lighter. Be sure to read the instruc-

tions attached to the machine before starting the engine.

After completing the factory-recommended predelivery services listed on the predelivery tag, remove the tag from the machine and file it with the shop order for the job. The tag will then serve as a basis for certifying that the machine has received the proper predelivery service when that portion of the customer's John Deere Delivery Receipt is completed.

TEMPORARY MACHINE STORAGE

Service	Specifications	Reference
Check radiator for coolant loss and antifreeze protection.	1-1/2 inches above baffle.	. . . . .
Drain fuel system (gasoline).	. . . . .	Operator's manual
Remove and store battery electrolyte.	Store at room temperature.	. . . . .
Reduce shipping pressure of tires.	. . . . .	Operator's manual
Cover tractor and tires for protection and cleanliness.	. . . . .	. . . . .

BEFORE DELIVERING MACHINE

<u>Cooling System</u>		
Inspect radiator for coolant loss.	1-1/2 inches above baffle.	. . . . .
Check antifreeze protection.	. . . . .	. . . . .
<u>Electrical System</u>		
Install electrolyte and charge batteries.	. . . . .	FOS-20 Manual
Stamp date code on battery.	. . . . .	FOS-20 Manual
Connect alternator. Do not attempt to polarize. Remove resistor if present.	. . . . .	Section 40, Group 10
Install light switch knob.	. . . . .	. . . . .
Clean terminals and connect battery cables.	. . . . .	Section 40, Group 5

BEFORE DELIVERING MACHINE -Continued

Service	Specifications	Reference
<u>Tires and Wheels</u>		
Adjust pressure of tires.	. . . . .	Operator's manual
Check front wheel hub bolts, rear wheel rim retainer nuts, and rear wheel retainer cap screws for tightness.	Front hub bolts - 275 ft-lbs Rim retainer nuts - 275 ft-lbs Rear hub bolts - 170 ft-lbs	Operator's manual
<u>Lubrication</u>		
Check crankcase oil level.	To upper marks on dipstick.	Operator's manual
Check transmission-hydraulic system oil level.	To top of "SAFE" range on dipstick. Type 303 Special-Purpose Oil.	Operator's manual
Lubricate grease fittings.	SAE multipurpose-type grease	Operator's manual
Check distributor lubrication.	Distributor cam lubricant	Section 40, Group 20
<u>Engine</u>		
Check air cleaner.	. . . . .	Operator's manual
Fill fuel tank and start engine.	Capacity - 25 U.S. gallons	Operator's manual
Check operation of lights, gauges, and indicator lamps.	. . . . .	Operator's manual
Check governor linkage for free operation.	. . . . .	Section 15, Group 40
Check engine timing.	. . . . .	Section 40, Group 20
Check engine idle speeds.	. . . . .	Section 15, Group 40
<u>Operation</u>		
Shift transmission through all speeds.	. . . . .	Operator's manual
Check inching pedal for smooth engagement.	. . . . .	. . . . .
Check engine disconnect clutch.	No tendency for machine to creep when clutch is disengaged (2-1/4 inch average free travel)	Section 50, Group 5
Check power takeoff operation.	. . . . .	Operator's manual
Check differential lock operation.	. . . . .	Operator's manual

BEFORE DELIVERING MACHINE -Continued

Service	Specifications	Reference
Check operation of steering, brakes, and hydraulic systems.	Operator's manual
Check seat operation.	Operator's manual
<u>General</u>		
Tighten accessible nuts and cap screws.
Clean tractor and touch up paint.

DELIVERY SERVICE

A thorough discussion of the operation and service of a new machine at the time of delivery helps to assure complete customer satisfaction. Proper delivery should be an important phase of a dealer's program. A portion of the John Deere Delivery Receipt emphasizes the importance of proper delivery service.

It is a well-known fact that many complaints have arisen simply because the owner was not shown how to operate and service his new machine properly. Enough time should be devoted, at the customer's convenience, to introducing the owner to his new machine and explaining to him how to operate and service it.

The following procedure is recommended before the serviceman and owner complete the delivery acknowledgments portion of the delivery receipt.

Using the machine operator's manual as a guide, be sure that the owner understands these points thoroughly:

1. Controls and Instruments.
2. How to start and stop the engine.
3. The importance of the break-in period.
4. How to use liquid or cast-iron ballast.
5. All functions of the hydraulic system.
6. Using the power takeoff.
7. The importance of safety.
8. The importance of lubrication and periodic services.

After explaining and demonstrating the above features, have the owner sign the delivery receipt and give him the operator's manual.



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