



# JD310 BACKHOE LOADER



## FEATURES

50 SAE net hp, diesel or gasoline (53,2 PS)

Backhoe digging depth—15 ft. 1 in. (4,60 m)

Hydraulic direction reverser

Self-adjusting wet-disk brakes

Inboard planetary final drives

Roll-over protective structure (ROPS)

▲ Choice of 4 self-leveling loader buckets

Single-lever loader control

Single, swing-around seat

▲ Choice of 10 backhoe buckets

Two-lever backhoe control

Power steering

Vandal protection

## OPERATING INSTRUCTIONS

### LOADER:

Rollback at ground level	37 deg.
▲ Breakout force	7,100 lb. (3223 kg)
Digging depth below ground level (with bucket level)	4 in. (102 mm)
▲ Lifting capacity, full height	4,000 lb. (1814 kg)
Height to bucket hinge pin	10 ft. 2 in. (3,10 m)
Maximum dump angle	50 deg.
Clearance, bucket dumped at 45 degrees	8 ft. 3 in. (2,52 m)
Reach at maximum height, bucket dumped at 45 degrees	2 ft. 7.3 in. (795 mm)
Raising time to full height	3.7 sec.
Bucket dump time	1.3 sec.
Lowering time (power)	3.0 sec.

### BACKHOE:

Digging depth (maximum)	15 ft. 1 in. (4,60 m)
Digging depth (IEMC)	14 ft. 1 in. (4,29 m)
Swing arc	180 deg.
Lifting capacity:	
Boom at full reach and full height	1,500 lb. (680 kg)
Dipper lifting, boom holding, full height	3,100 lb. (1406 kg)
Digging force (bucket cylinder in power-dig position)	10,500 lb. (4763 kg)
Reach from center of swing mast	17 ft. 1 in. (5,21 m)
Reach from center of rear axle	20 ft. 5.5 in. (6,24 m)
Loading height (truck-loading position)	10 ft. 4 in. (3,15 m)
Transport height	11 ft. 3 in. (3,43 m)
Bucket rotation	Adjustable for 124, 128, or 157 deg.
Bucket positions	Adjustable for 23 or 15 deg. rollback and 2 deg. forward

### Stabilizer Width:

Transport position	7 ft. 3 in. (2,21 m)
Operating position (overall)	10 ft. 2 in. (3,10 m)
Operating position (IEMC)	9 ft. (2,74 m)

# SPECIFICATIONS—JD310 BACKHOE LOADER



(Specifications and design are subject to change without notice. Wherever applicable, specifications are in accordance with IEMC and SAE Standards. Except where otherwise noted, these specifications are based on a unit equipped with 16.9-24, 8-ply-rating, R4 rear tires; 11L-15, 6-ply-rating front tires; 3/4 cu. yd. (0.57 m<sup>3</sup>) loader bucket, 24 in. (610 mm) standard backhoe bucket and standard equipment.)

<b>Horsepower (@ 2,500 engine rpm):</b>	<b>Gasoline and Diesel</b>	
	<b>SAE</b>	<b>DIN</b>
Gross .....	52	
Net .....	50	53.2 PS

Net engine flywheel horsepower is for an engine equipped with fan, air cleaner, muffler, water pump, lubricating oil pump, fuel pump and alternator. The gross engine horsepower is without fan. Gross and net flywheel horsepower 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.

**Engine:** John Deere, 3-cylinder, valve-in-head, 4-stroke cycle

	<b>Gasoline</b>	<b>Diesel</b>
Bore and stroke .....	4.02x4.33 in. (102x110 mm)	
Piston displacement .....	164 cu. in. (2687 cm <sup>3</sup> )	
Compression ratio .....	7.5 to 1	16.2 to 1
Maximum torque @1,300 rpm .....	129 lb-ft (17.8 kg-m)	
NACC or AMA (U.S. Tax) horsepower .....	19.4	
Main bearings .....	4	
Lubrication .....	Pressure system w/full-flow filter	
Cooling .....	Pressurized w/thermostat and fixed bypass	
Fan .....	Suction	
Air cleaner .....	Dry	
Electrical system .....	12-volt w/alternator	
Batteries (2) .....	Reserve capacity: 170 minutes each	

**Engine Clutch** ..... Foot-operated automotive-type oil clutch with 10 in. (279 mm) plate

**Transmission:**

Constant mesh, 8 speeds forward, 4 reverse. Standard hydraulic direction reverser permits no-clutch reversing in first four gears.

**Travel Speeds:**

<b>Gear:</b>	<b>mph</b>	<b>km/h</b>
Forward 1	1.4	2.3
2	2.0	3.2
3	2.9	4.7
4	4.1	6.6
5	5.5	8.9
6	7.8	12.6
7	11.5	18.5
8	16.1	25.9
Rev. 1	1.6	2.6
2	2.3	3.7
3	3.4	5.5
4	4.8	7.7

**Final Drives** ..... Inboard, planetary

**Brakes** .Hydraulically power actuated, fully enclosed wet-disk. Self-equalizing. Foot-operated individually or simultaneously.

**Steering: Power**

Turning radius (brake applied) .....9 ft. 2 in. (2.79 m)  
 Loader clearance (brake applied) ..... 30 ft. (9.14 m)  
 Number of turns, far left to far right .....3.3

**Hydraulic System:** Closed-center

Pressure .....2,350 psi (165.2 kg/cm<sup>2</sup>)  
 Loader control ..... Single-lever  
 Backhoe control ..... Two-lever  
 Pump .....Piston, constant pressure, variable-displacement, 28 gpm (106 lpm) @ 2,500 engine rpm  
 Filter ..... 25-micron steel-enclosed paper cartridge in return

**Hydraulic Cylinders:**

	<b>Bore</b>	<b>Stroke</b>
▲ Loader boom .....	3.00-in. (76 mm)	28.7-in. (729 mm)
Loader bucket .....	3.00-in. (76 mm)	16.2-in. (411 mm)
Backhoe boom .....	4.50-in. (114 mm)	34.0-in. (864 mm)
Backhoe crowd .....	4.00-in. (102 mm)	33.0-in. (838 mm)
Backhoe bucket .....	3.50-in. (89 mm)	27.4-in. (695 mm)
Backhoe swing .....	4.00-in. (102 mm)	9.3 in. (236 mm)
Stabilizer .....	3.50-in. (89 mm)	16.9-in. (429 mm)

Cylinder rods . . . Ground, heat-treated, chrome-plated, polished  
 Loader, backhoe swing and stabilizer cylinder rods ..... 1.75-in. (44 mm) dia.  
 Backhoe boom and bucket cylinder rods . . .2.25-in. (57 mm) dia.  
 Backhoe crowd cylinder rod ..... 2-in. (51 mm) dia.

<b>Tires:</b>	<b>Front</b>	<b>Rear</b>
	7.50-16, 6-ply-rating, I1	16.9-24, 8-ply-rating, R4
	11L-15, 6-ply-rating, I1	

**Wheel Treads:**

Front .....	62 in. (1,57 m)
Rear .....	66 in. (1,63 m)

**Capacities:**

	<b>U.S.</b>	<b>Liters</b>
Cooling system .....	12 qt.	11.4
Fuel tank .....	19.5 gal.	73.8
Engine lubrication, including filter .....	7 qt.	6.6
Transmission-hydraulic system .....	20.5 gal.	77.6

**Additional Standard Equipment:**

- Key switch w/push-button safety start
- Rigid-mount platform
- Oil pressure indicator light
- Alternator charge indicator light
- Transistorized voltage regulator
- Lights
- Water temperature gauge
- Fuel gauge
- Electric hourmeter
- Fenders
- Differential lock
- Bucket level indicator
- Horn
- Deluxe swing-around seat
- Foot throttle
- Anti-freeze
- Vandal protection
- Rear reflector
- Horizontal muffler w/vertical exhaust
- Electrically operated destroke valve for hydraulic pump
- Cigaret lighter

**SAE Operating Weight:**

Gasoline .....	12,700 lb. (5761 kg)
Diesel .....	12,750 lb. (5784 kg)

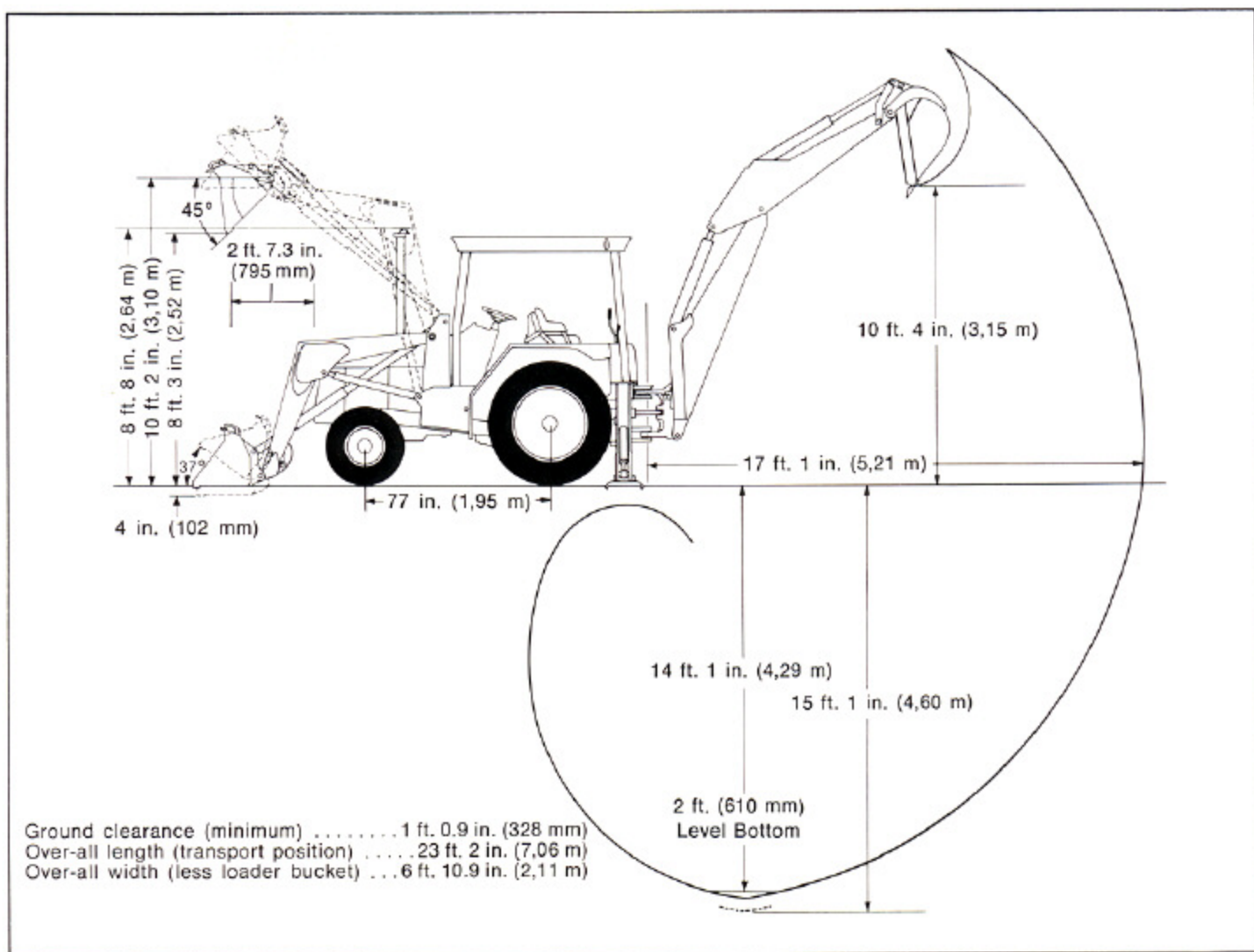
**Buckets:**

<b>LOADER</b>	<b>Nominal Heaped Capacity</b>	<b>Width</b>
	3/8 cu. yd. (0.48m <sup>3</sup> )	66.2 in. (1,68 m)
	3/4 cu. yd. (0.57 m <sup>3</sup> )	89.4 in. (2,27 m)
	1 cu. yd. (0.76 m <sup>3</sup> )	89.4 in. (2,27 m)
▲ Multipurpose	7/8 cu. yd. (0.67 m <sup>3</sup> )	84.4 in. (2,14 m)

**BACKHOE**

	<b>Struck Capacity</b>	<b>Width</b>
Standard	2.5 cu. ft. (0.071 m <sup>3</sup> )	12 in. (305 mm)
	3.6 cu. ft. (0.102 m <sup>3</sup> )	16 in. (406 mm)
	4.4 cu. ft. (0.125 m <sup>3</sup> )	18 in. (457 mm)
	6.0 cu. ft. (0.170 m <sup>3</sup> )	24 in. (610 mm)
	7.6 cu. ft. (0.215 m <sup>3</sup> )	30 in. (762 mm)
	7.2 cu. ft. (0.204 m <sup>3</sup> )	36 in. (914 mm)
Heavy-duty	4.4 cu. ft. (0.125 m <sup>3</sup> )	18 in. (457 mm)
	6.0 cu. ft. (0.170 m <sup>3</sup> )	24 in. (610 mm)
	7.6 cu. ft. (0.215 m <sup>3</sup> )	30 in. (762 mm)
Ejector	4.2 cu. ft. (0.119 m <sup>3</sup> )	24 in. (610 mm)

# JD310 BACKHOE LOADER DIMENSIONS:



## Special Equipment:

- Air-cleaner-restriction indicator
- Tachometer
- Front axle counterweight
- ROPS w/seat belt and canopy
- Cab w/front windshield wiper  
(includes ROPS)
- Cab heater
- Cab pressurizer
- Ripper tooth for backhoe
- Bolt-on stabilizer street pads
- Bulldozer blade
- Locking instrument panel cover
- Ether starting aid (diesel)
- Multiposition side-shift backhoe