

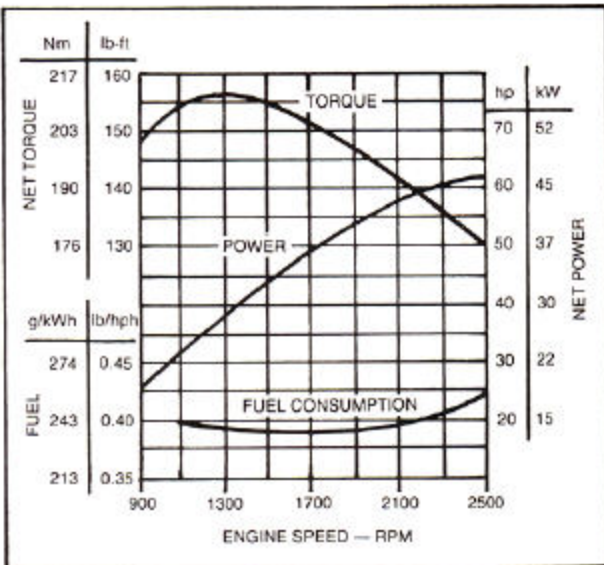


# 310B BACKHOE LOADER



Model shown may include options

## ENGINE PERFORMANCE



## FEATURES

- 62 SAE net hp (46 kW)
- Backhoe digging depth (SAE)  
14 ft. 5 in. (4.39 m)
- Hydraulic direction reverser
- Self-adjusting wet-disk brakes
- Inboard planetary final drives
- Rollover protective structure (ROPS)
- Choice of 2 self-leveling loader buckets
- Single-lever loader control
- Turn-around seat
- Two-lever backhoe control
- Choice of 10 backhoe buckets
- Hydrostatic power steering

## ADD VERSATILITY WITH:

Extendable dipperstick

# 310B BACKHOE LOADER SPECIFICATIONS

(Specifications and design are subject to change without notice. Wherever applicable, specifications are in accordance with SAE Standards. Except where otherwise noted, these specifications are based on a unit with 16.9-24, 8-PR rear tires; 11L-15, 8-PR, front tires; 34-cu.-yd. (0.57 m<sup>3</sup>) loader bucket, 24 in. (610 mm) standard backhoe bucket, diesel engine, full fuel tank, 175-lb. (79 kg) operator and standard equipment.)

<b>▲ Rated Power @ 2500 rpm:</b>	<b>SAE</b>	<b>DIN 70 020</b>
Net .....	62 hp (46.0 kW)	47.0 kW
Gross .....	65 hp (48.5 kW)	

Net engine power is with standard equipment including air cleaner, exhaust system, alternator, and cooling fan, at standard conditions per SAE J1349 and DIN 70 020, using No. 2-D fuel @ 35 API gravity. No derating is required up to 5000 feet (1500 m) altitude. Gross power is without cooling fan.

## ▲ Engine: John Deere 4-219D

Type .....	4-stroke cycle, naturally aspirated diesel
Bore and stroke .....	4.02 x 4.33 in. (102 x 110 mm)
No. of cylinders .....	4
Displacement .....	219 cu. in. (3,589 L)
Maximum net torque @ 1300 rpm .....	156 lb-ft (212 Nm) (21.6 kg-m)
Torque rise .....	20 percent
Cooling fan .....	Suction
Compression ratio .....	16.2 to 1
Lubrication .....	Pressure system w/full-flow filters
Main bearings .....	5
Air cleaner .....	Dry
Electrical system .....	12 volt w/alternator
Battery (12 volt) .....	Reserve capacity: 180 minutes

**Engine Clutch:** .....

Foot-operated automotive-type clutch with 10-in. (254 mm) plate

## Transmission:

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

<b>Gear:</b>	<b>Travel Speeds</b>			
	<b>mph</b>		<b>km/h</b>	
	<b>Fwd.</b>	<b>Rev.</b>	<b>Fwd.</b>	<b>Rev.</b>
1	1.4	1.6	2.3	2.8
2	2.0	2.3	3.2	3.7
3	3.0	3.5	4.8	5.6
4	4.2	4.8	6.8	7.7
5	5.5	6.3	8.9	10.1
6	7.8	9.0	12.7	14.5
7	11.7	13.5	18.8	21.7
8	16.4	18.7	26.4	30.1

**Final Drives:** .....

Inboard, planetary

## Steering: Hydrostatic power

Turning radius (brake applied) .....	10 ft. 2 in. (3.10 m)
Loader clearance (brake applied) .....	30 ft. (9.14 m)
Number of turns, far left to far right .....	2.8
Number of turns, far right to far left .....	2.3

**Brakes:** .....

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

## Hydraulic System: Closed-center

Max. pressure .....	2320 psi (16 000 kPa) (163 kg/cm <sup>2</sup> )
Loader control .....	Single-lever
Backhoe control .....	Two-lever
Pump .....	Piston, constant pressure, variable-displacement, 38 gpm (2.4 L/s) at 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 .....	4.50 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 boom, 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>
7.50/8.00-16, 10 PR, F3, standard	16.9-24, 6 PR, R4, standard	
11L-15, 8 PR, F3	16.9-24, 8 PR, R4	
	19.5L-24, 8 PR, R4	
	19.5L-24, 10 PR, R4	

<b>Wheel Treads:</b>	
Front .....	58 in. (1.47 m)
Rear .....	65 in. (1.65 m)

**Wheelbase** .....

82 in. (2083 mm)

<b>Capacities:</b>	<b>U.S.</b>	<b>Liters</b>
Cooling system .....	12 qt.	11.4
Fuel tank .....	19.5 gal.	73.8
Engine lubrication, including filter .....	9 qt.	8.5
Transmission and hydraulic system .....	20.5 gal.	77.6
Transmission only .....	8.5 gal.	32.2

## Additional Standard Equipment:

- Air cleaner restriction indicator
- Alternator charge indicator light
- Antifreeze
- Cigarette lighter
- Coolant temperature gauge
- Dry-type air cleaner
- Electric hourmeter
- Electrically operated hydraulic pump
- destroke solenoid
- Engine oil pressure indicator light
- Fenders
- Front/rear and warning lights
- Fuel level gauge
- Hand and foot operated engine speed control
- Horn
- Key switch w/pushbutton start switch
- No differential lock
- No parking brake
- Rear reflectors
- ROPS w/seat belt and canopy
- Suspension turn-around seat
- Tachometer
- Transistorized voltage regulator
- Under hood muffler w/vertical exhaust

**SAE Operating Weight w/ROPS** .....

13,200 lb. (5987 kg)



## OPERATING INFORMATION

**BACKHOE:**

<b>Digging depth (SAE):</b>	
Maximum	14 ft. 7 in. (4.45 m)
2-ft. (610 mm) flat bottom	14 ft. 5 in. (4.39 m)
8-ft. (2440 mm) flat bottom	13 ft. 5 in. (4.09 m)
<b>Swing arc</b> . . . . . 180 degrees	
<b>Lifting capacity:</b>	
To full height	
Boom	1500 lb. (680 kg)
Dipperstick (boom holding)	1900 lb. (862 kg)
To 10 ft. (3.05 m)	
Boom	1850 lb. (839 kg)
Dipperstick (boom holding)	3100 lb. (1406 kg)
<b>Digging force:</b>	
Bucket cylinder in power-dig position	
	9600 lb. (42.7 kN) (4355 kg)
Crowd cylinder	
	6000 lb. (26.7 kN) (2722 kg)
<b>Reach:</b>	
From center of swing mast	
	17 ft. 4 in. (5.28 m)
From center of rear axle	
	20 ft. 5.5 in. (6.24 m)
<b>Loading height, truck-loading position</b>	
	9 ft. 11 in. (3.02 m)
<b>Transport height</b> . . . . . 11 ft. 3 in. (3.43 m)	
<b>Bucket rotation</b> . . . . . Adjustable for 123, 126, or 154 degrees	
<b>Bucket positions</b> . . . . . Adjustable for 24 or 16 degrees rollback and 2 degrees forward	

**STABILIZER WIDTH:**

Transport position	7 ft. 3 in. (2.21 m)
Operating position (overall)	10 ft. 2 in. (3.10 m)
Operating position (SAE)	8 ft. 9 in. (2.67 m)

**▲ Optional/Special Equipment:**

Backup alarm
Bolt-on stabilizer street pads
Bucket level indicator
Cab w/front windshield wiper (includes ROPS) and interior sound treatment
Cab heater
Cold weather starting aid
Combination stop and tail lights
Differential lock
Extendable dipperstick
Front axle counterweight
Fuel and radiator filler vandal cover
Heavy-duty batteries, 510-minute reserve capacity
Instrument panel w/warning system
Parking brake
Rear wiper for cab
Reversible stabilizer pads
SMV emblem
3-in. (76 mm) seat belt
24-in. (610 mm) ripper tooth for backhoe
Turn signals

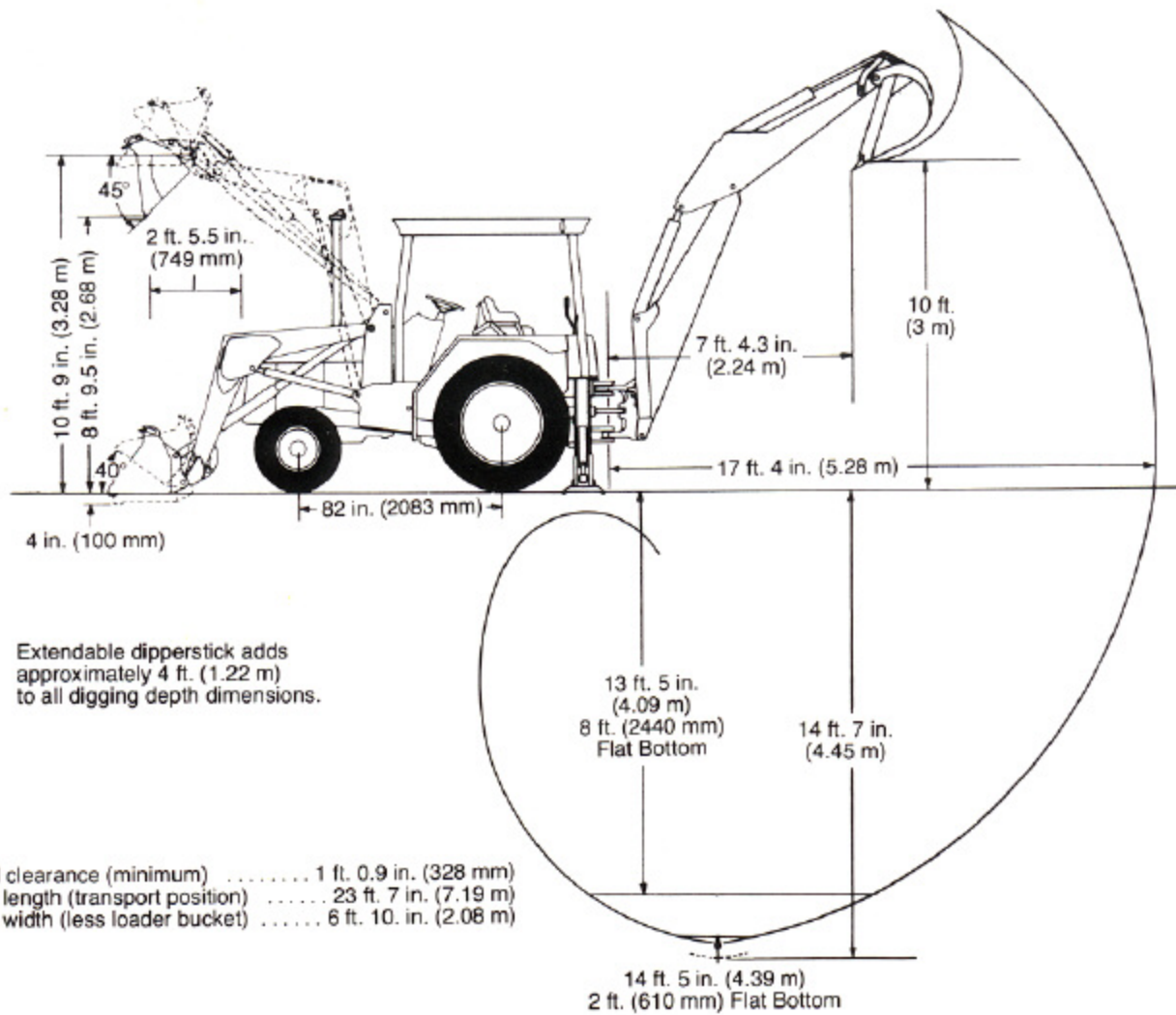
**LOADER:**

Rollback at ground level	40 degrees
Breakout force	7600 lb. (33.8 kN) (3450 kg)
<b>Digging depth below ground</b>	
bucket level	4 in. (102 mm)
<b>Lifting capacity, full height</b> . . . . . 5000 lb. (2270 kg)	
<b>Height to bucket hinge pin</b> . . . . . 10 ft. 9 in. (3.28 m)	
<b>Bucket dump angle, max.</b> . . . . . 50 degrees	
<b>Dump clearance, bucket @45 degrees</b> . . . . . 8 ft. 9.5 in. (2.68 m)	
<b>Reach at full height, bucket @45 degrees</b> . . . . . 2 ft. 5.5 in. (749 mm)	
<b>Raising time to full height</b> . . . . . 3.7 sec.	
<b>Bucket dump time</b> . . . . . 1.7 sec.	
<b>Bucket lowering time (power down)</b> . . . . . 2.8 sec.	

**BUCKETS**

Loader:	Width		Struck Capacity		Nominal Heaped Capacity	
	In.	(mm)	Cu. Ft.	(m <sup>3</sup> )	Cu. Yd.	(m <sup>3</sup> )
	89.4	(2270)			0.75	(0.57)
	89.4	(2270)			1.0	(0.76)
<b>Backhoe:</b>						
Standard-duty	12	(305)	2.5	(0.07)		
	16	(406)	3.6	(0.10)		
	18	(457)	4.4	(0.13)		
	24	(610)	6.0	(0.17)		
	30	(762)	7.6	(0.13)		
	36	(914)	7.2	(0.20)		
Heavy-duty	18	(457)	4.4	(0.13)		
	24	(610)	6.0	(0.17)		
	30	(762)	7.6	(0.13)		
Ejector	24	(610)	4.2	(0.12)		

# 310B BACKHOE LOADER DIMENSIONS



Extendable dipperstick adds approximately 4 ft. (1.22 m) to all digging depth dimensions.

- Ground clearance (minimum) ..... 1 ft. 0.9 in. (328 mm)
- Overall length (transport position) ..... 23 ft. 7 in. (7.19 m)
- Overall width (less loader bucket) ..... 6 ft. 10. in. (2.08 m)

