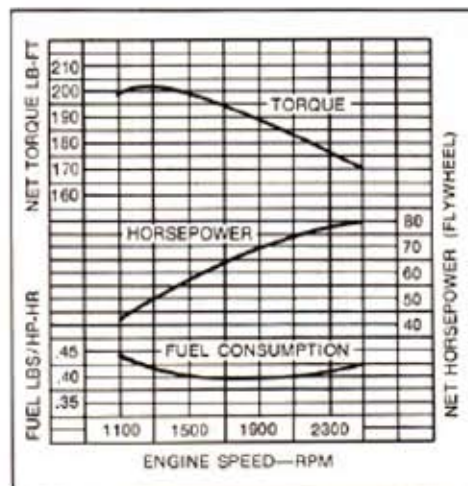




JD510 BACKHOE LOADER



ENGINE PERFORMANCE



FEATURES

- 80 SAE net hp (59.7 kW)
- Backhoe digging depth (ICED)—17 ft. 2 in. (5.23 m)
- Power Shift transmission
- Choice of 2 self-leveling loader buckets
- Single-lever loader control
- Single, swing-around seat
- Choice of 4 heavy-duty backhoe buckets
- Choice of 9 ADCO™ buckets specially designed for rock, frost and other tough digging conditions
- Two-lever backhoe control
- Extendable dipperstick available
- Power steering
- Self-adjusting wet-disk power brakes
- Inboard planetary final drives
- Roll-over protective structure (ROPS)

JD510 BACKHOE LOADER 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 1½ cu. yd. (0.86 m³) loader bucket, 24 in. (610 mm) backhoe bucket, diesel engine and standard equipment.)

Power (@ 2500 engine rpm):	SAE	DIN
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 65° F. temperature and DIN 70 020 standard conditions of 760 mm Hg barometer (sea level) and 20° C. temperature.

Engine: John Deere diesel, 4-cylinder, 4-stroke cycle

Bore and stroke	4.25 × 4.75 in. (108 × 121 mm)
Piston displacement	270 cu. in. (4.425 L)
Compression ratio	17.3 to 1
Maximum torque @ 1,300 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 (2 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.

Gear:	Travel Speeds:	
	mph	km/h
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
Rev. 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, fully 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)	31 ft. (9.45 m)
Number of turns, far left to far right	5

Hydraulic System: Closed-center

Max. pressure	2350 psi (16 203 kPa) (165.2 kg/cm²)
Loader control	Single-lever
Backhoe control	Two-lever
Pump	Piston, constant pressure, variable-displacement, 60 gpm (3.78 L/s) @ 2500 engine rpm
Filter	25-micron steel-enclosed paper cartridge in return

Hydraulic Cylinders:	Bore	Stroke
Loader boom	3.75 in. (95 mm)	28.7 in. (729 mm)
Loader bucket	3.5 in. (89 mm)	27.3 in. (693 mm)
Backhoe boom	5.5 in. (140 mm)	41.75 in. (1060 mm)
Backhoe crowd	5.5 in. (140 mm)	37.5 in. (953 mm)
Backhoe bucket	4 in. (102 mm)	37.5 in. (953 mm)
Backhoe swing	4.5 in. (114 mm)	9.9 in. (251 mm)
Stabilizer	4.5 in. (114 mm)	21.5 in. (546 mm)
Cylinder rods	Ground, heat-treated, chrome-plated, polished	
Loader cylinder rods	2 in. (51 mm) dia.	
Backhoe boom, crowd, bucket and stabilizer cylinder rods	2.5-in. (64 mm) dia.	
Backhoe swing cylinder rods	2 in. (51 mm) dia.	

Tires:

Front: 14.5/75-16.1, 10-ply-rating, F3
Rear: 18.4-28, 12-ply-rating, R4

Wheel Treads:

Front	70.34 in. (1.79 m)
Rear	65.5 in. (1.66 m)

Capacities:	U.S.	Imp.	Liters
Cooling system	4.75 gal.	4.0 gal.	18.0
Fuel tank	34 gal.	28.3 gal.	128.7
Engine lubrication, including filter	8 qt.	6.7 qt.	7.6
Transmission and hydraulic system	29.9 gal.	25.0 gal.	113.2

OPERATING INFORMATION

LOADER:

Rollback at ground level	40 deg.
Breakout force	10,000 lb. (44.82 kN) (4536 kg)
Digging depth below ground level (with bucket level)	4 in. (102 mm)
Lifting capacity, full height	6000 lb. (2722 kg)
Height to bucket hinge pin	10 ft. 7 in. (3.23 m)
Maximum dump angle	45 deg.
Clearance, bucket dumped at 45 degrees ..	8 ft. 6 in. (2.59 m)
Reach at maximum height, bucket dumped at 45 degrees	2 ft. 4 in. (711 mm)
Raising time to full height	5.6 sec.
Bucket dump time	3.0 sec.
Lowering time (power)	3.7 sec.

BACKHOE:

Digging depth (ICED):	
Maximum	17 ft. 3 in. (5.26 m)
2-ft. (610 mm) flat bottom	17 ft. 2 in. (5.23 m)
8 ft. (2.44 m) flat bottom	16 ft. 5 in. (5.0 m)
Swing arc	180 deg.
Lifting capacity:	
Boom at full reach and full height	2400 lb. (1089 kg)
Dipper lifting, boom holding, full height ..	4000 lb. (1814 kg)
Digging force (Bucket cylinder in power-dig position)	12,662 lb. (56.75 kN) (5743 kg)
▲ Digging force (Bucket cylinder in power-dig position)	12,662 lb. (56.75 kN) (5743 kg)
Digging force, crowd cylinder	8811 lb. (39.49 kN) (3997 kg)
Reach from center of swing mast	22 ft. 3 in. (6.78 m)
Reach from center of rear axle	25 ft. 11 in. (7.90 m)
Loading height (truck-loading position) ..	13 ft. 8 in. (4.17 m)
Transport height	13 ft. 3 in. (4.04 m)
Bucket rotation	Adjustable for 148 or 161 deg.
Bucket positions	Adjustable for 19 or 8 deg. rollback

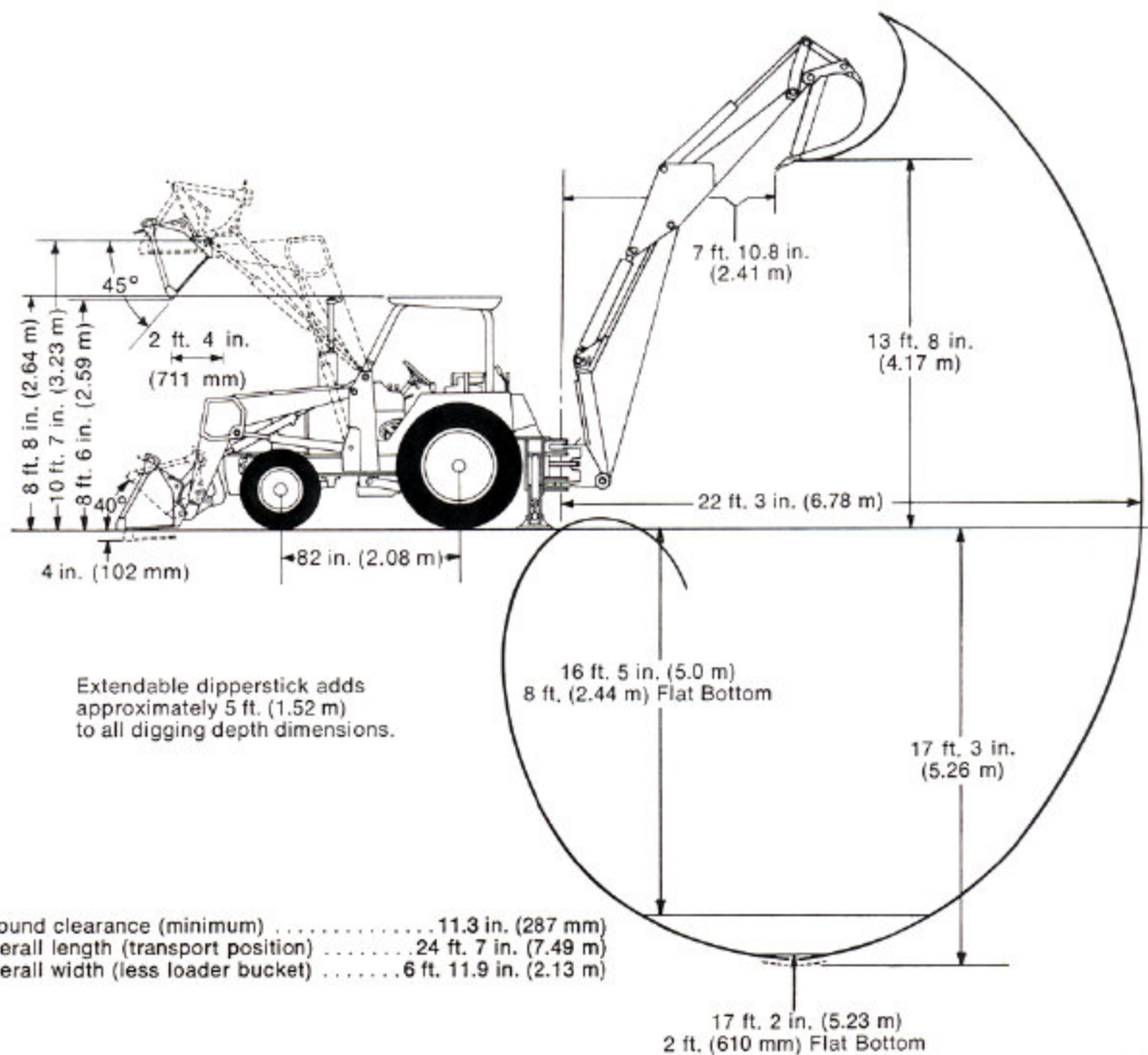
Stabilizer Width:

Transport position	7 ft. 8 in. (2.34 m)
Operating position (overall)	13 ft. 4 in. (4.06 m)
Operating position (ICED)	12 ft. (3.66 m)

Buckets:

LOADER	Nominal Heaped Capacity	Width
	1½ cu. yd. (0.86 m³)	90.5 in. (2.30 m)
	1½ cu. yd. (1.15 m³)	94 in. (2.39 m)
BACKHOE	Struck Capacity	Width
	8 cu. ft. (0.227 m³)	18 in. (457 mm)
	10 cu. ft. (0.283 m³)	24 in. (610 mm)
	12 cu. ft. (0.340 m³)	30 in. (762 mm)
	14 cu. ft. (0.396 m³)	36 in. (914 mm)

JD510 BACKHOE LOADER DIMENSIONS



Additional Standard Equipment:

Vertical muffler w/ rain cap
 Differential lock
 Fuel gauge
 Lights
 Oil pressure indicator light
 Alternator charge indicator light
 Water temperature gauge
 Transmission oil pressure indicator light
 Cigarette lighter
 Transmission oil temperature gauge
 Tachometer
 Key switch w/ push-button safety start
 Fenders
 Vandal protection
 Horn
 Hand throttle
 Foot throttle
 Electric hourmeter
 Deluxe swing-around seat
 Antifreeze
 Ether starting aid
 Bucket level indicator
 Rear reflector
 Transistorized voltage regulator
 Flat deck w/ skid-proof platform

SAE Operating Weight 20,560 lb. (9326 kg)

Special Equipment:

ROPS w/ canopy and seat belt
 Cab (includes ROPS and seat belt)
 Heater
 Defroster
 Pressurizer for cab
 Exhaust extension
 Bolt-on stabilizer street pads
 Extendable dipperstick
 Reversible stabilizer pads
 Parking brake
 ▲ Backup alarm