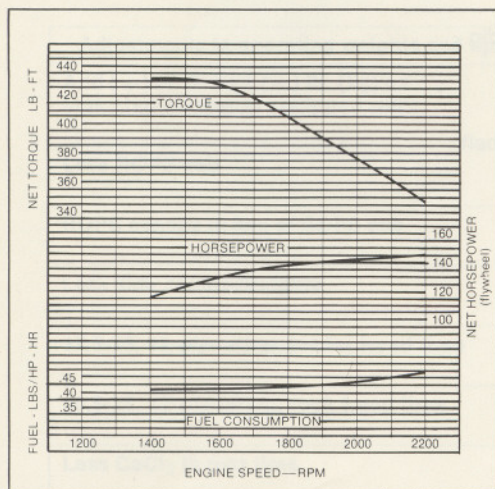




# JD644-B LOADER



## ENGINE PERFORMANCE



## FEATURES

- 145 SAE net hp (147.5 PS)
- 4-wheel drive
- 2½-, 3-, or 4½-cu. yd. bucket, or 2½-cu. yd. multipurpose bucket
- Twin-turbine torque converter with Power Shift transmission. 4 speeds forward, 2 reverse
- Power steering. Articulated frame
- 4-wheel power wet-disk brakes and parking brake
- Inboard planetary final drives
- Single-lever loader control w/ automatic return to dig
- Brake-actuated transmission disconnect
- No-Spin front axle differential
- Vandal protection
- Roll-over protective structure (ROPS) w/cab and tinted safety glass

## JD644-B 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, specifications are based on a machine equipped with all standard equipment, 20.5-25, 12-ply, loader-tread tires with 1820 lb. (826 kg) of CaCl<sub>2</sub> solution in rear tires, side counterweights, ROPS cab, full fuel tank, and 175 lb. (79.4 kg) operator.)

<b>Power (@ 2200 engine rpm):</b>	<b>SAE</b>	<b>DIN</b>
Gross .....	160 hp (119.3 kW*)	
Net .....	145 hp (108.1 kW)	147.5 PS

Net engine flywheel power is for an engine equipped with fan, air cleaner, water pump, lubricating oil pump, fuel pump, alternator, and muffler. The gross engine power is without fan. Flywheel power ratings are under SAE standard conditions of 500-ft. altitude and 85°F. temperature and DIN 70 020 conditions (non-corrected). No derating is required up to 10,000 ft. (3000 m) altitude.

\*In the International System of Units (SI), power is expressed in kilowatts (kW).

**Engine:** John Deere turbocharged diesel, vertical 6-cylinder, valve-in-head, 4-stroke cycle.

Bore and stroke .....	4.75x5 in. (120.5 mmx127 mm)
Piston displacement .....	531 cu. in. (8702 cm <sup>3</sup> )
Compression ratio .....	15.8 to 1
Maximum torque @ 1500 rpm .....	432 lb-ft (586 Nm) (59.7 kg-m)
NACC or AMA (U.S. Tax) horsepower .....	54.0
Lubrication .....	Pressure system w/full-flow filter
Cooling .....	Pressurized w/thermostat and controlled bypass
Fan .....	Blower
Air cleaner w/restriction indicator .....	Dry
Electrical system .....	12-volt w/alternator
Batteries (two 12 volt) .....	Reserve capacity: 310 minutes each

### Torque Converter:

Type .....	Twin-turbine
Torque multiplication .....	5.03 to 1

**Transmission** .....

<b>Forward Speeds</b>	<b>mph</b>	<b>km/h</b>
1 .....	0-3.3	0-5.3
2 .....	3.3-7	5.3-12.6
3 .....	0-12.5	0-20.1
4 .....	12.5-25.8	20.1-41.5

### Reverse Speeds

1 .....	0-4.5	0-7.2
2 .....	4.5-10.2	7.2-16.4

Note: Shift from 1st to 2nd and 3rd to 4th is automatic.

### Differentials:

Front .....	No-Spin
Rear .....	Standard

**Drive Axles** .....

### Brakes:

Service .. Power actuated, 4-wheel, inboard-mounted wet disk. Foot-operated by either right or left pedal.  
 Parking .. 10x1.5 inch (254 mmx38 mm) expanding shoe on transmission output shaft. Adjustable, hand-operated with warning light and buzzer.

**Steering** .. Full power steering. Frame articulated 80 degrees by two hydraulic cylinders. Turning radius of 15 feet 5 inches (4.70 m).

### Hydraulic Systems:

Loader functions .. Independent engine-driven gear pump delivers 58.2 gpm (220 l/min) at 600 psi (41.4 bar) (42.2 kg/cm<sup>2</sup>) and 2200 engine rpm.  
 2250 psi (155.1 bar) (158.2 kg/cm<sup>2</sup>) relief-valve pressure setting.  
 Control .. Single-lever, dual hydraulic valve. Optional triple hydraulic valve for fork or multipurpose bucket.  
 Steering and brakes .. Engine-driven, eight-piston, variable-displacement pump delivers 26 gpm (98.4 l/min) at 2200 engine rpm and 2000 psi (137.9 bar) (140.6 kg/cm<sup>2</sup>). Maximum system pressure is 2400 psi (165.5 bar) (168.7 kg/cm<sup>2</sup>).

<b>Hydraulic Cylinders:</b>	<b>Bore</b>	<b>Stroke</b>
Boom, two .....	6.25 in. (159 mm)	25.55 in. (649 mm)
Bucket, one .....	6.25 in. (159 mm)	31.57 in. (802 mm)
Cylinder rods ..	Ground, heat-treated, chrome-plated, polished	
Boom and bucket cylinder rods .....	2.75 in. (70 mm) dia.	

### Tires:

17.5-25, 12-ply-rating, loader tread, L-2  
 20.5-25, 12-ply-rating, rock tread, L-3  
 20.5-25, 12-ply-rating, loader tread, L-2  
 20.5-25, 16-ply-rating, rock tread, L-3

### Wheel Treads:

Front and rear .....	80 in. (2.03 m)
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### Capacities:

	<b>U.S.</b>	<b>Liters</b>
Cooling system .....	49 qt.	46.4
Fuel tank .....	56 gal.	211.9
Crankcase .....	20 qt.	18.9
Crankcase, including filter .....	22 qt.	20.8
Transmission case and filters .....	39 qt.	36.9
Front differential: No Spin .....	24 qt.	22.7
Rear differential .....	25 qt.	23.7
Loader hydraulic sump .....	70 qt.	66.2

### Additional Standard Equipment:

Adjustable cushioned seat  
 Engine side shields  
 Front fenders  
 Gauges:  
   Transmission oil temperature  
   Transmission oil pressure  
   Fuel  
   Coolant temperature  
   Engine oil pressure  
   Electric hourmeter  
   Voltmeter  
 Loader hydraulic system indicator  
 Key switch  
 Pushbutton safety start  
 Ether starting aid  
 Cigaret lighter  
 Parking brake warning light and buzzer  
 Transistorized voltage regulator  
 Vandal protection  
 Horn  
 Lights  
   Flashing and turning lights  
   Work lights  
   Fuel filter  
   Automatic return to dig  
   Fixed drawbar  
   Exhaust w/rain cap  
   Rear bottom guard  
   Hand grips  
   ROPS cab and seat belt  
   Heater  
   Antifreeze  
   Precleaner

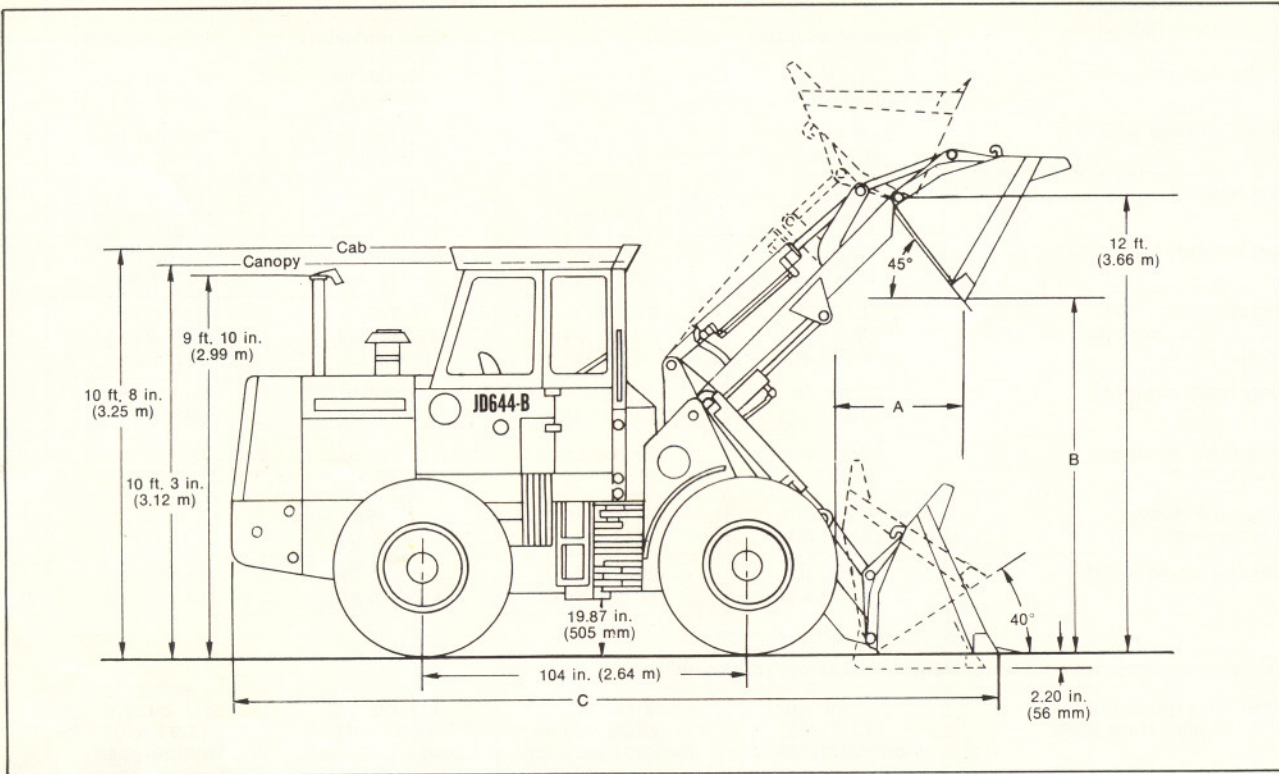
## JD644-B LOADER OPERATING INFORMATION

OPERATING INFORMATION	BUCKET			
	General purpose	General purpose	Loose materials	Multipurpose
Capacity, heaped, SAE	2½ cu. yd. (1.91 m³)	3 cu. yd. (2.29 m³)	4½ cu. yd. (3.44 m³)	2½ cu. yd. (1.91 m³)
Capacity, struck, SAE	2.05 cu. yd. (1.57 m³)	2.50 cu. yd. (1.80 m³)	3.73 cu. yd. (2.45 m³)	1.92 cu. yd. (1.47 m³)
Bucket width	104.75 in. (2.66 m)	104.75 in. (2.66 m)	110.75 in. (2.81 m)	104.75 in. (2.66 m)
Bucket weight	1930 lb. (875 kg)	2115 lb. (959 kg)	2530 lb. (1148 kg)	3260 lb. (1479 kg)
Breakout force, J732C SAE Standard using bucket hinge pin as pivot	24,120 lb. (108.11 kN) (10 940 kg)	21,080 lb. (94.48 kN) (9562 kg)	15,975 lb. (71.60 kN) (7246 kg)	20,270 lb. (90.85 kN) (9194 kg)
Tipping load, straight	22,905 lb. (10 390 kg)	22,420 lb. (10 170 kg)	21,480 lb. (9743 kg)	19,910 lb. (9031 kg)
Tipping load, 40-deg. Full Turn, SAE	19,610 lb. (8895 kg)	19,160 lb. (8691 kg)	18,280 lb. (8292 kg)	16,855 lb. (7645 kg)
Turning clearance, outside bucket	35 ft. 10 in. (10.92 m)	36 ft. 1 in. (11 m)	37 ft. (11.27 m)	36 ft. 5 in. (11.1 m)
Loader operating weight	28,100 lb. (12 746 kg)	28,280 lb. (12 828 kg)	28,695 lb. (13 016 kg)	29,425 lb. (13 347 kg)

Maximum recommended material weight, lb. per cu. yd. (kg/m³):				
All standard equipment with 20.5-25, 12-ply-rating tires	2½ cu. yd. (1.91 m³) General purpose	3 cu. yd. (2.29 m³) General purpose	4½ cu. yd. (3.44 m³) Loose materials	2½ cu. yd. (1.91 m³) Multipurpose
Loader less cab or canopy	2575 (1528)	2085 (1237)	1315 (780)	2152 (1276)
Loader with canopy	2660 (1578)	2160 (1282)	1360 (807)	2230 (1323)
Loader with cab	2715 (1610)	2205 (1308)	1390 (825)	2275 (1350)
Loader with cab and fluid	3090 (1833)	2515 (1492)	1590 (943)	2630 (1560)
Loader with cab, fluid, and first set of side counterweights	3450 (2047)	2810 (1667)	1785 (1059)	2965 (1759)
Loader with cab, fluid, first and second sets of side counterweights	3795 (2252)	3095 (1836)	1975 (1172)	3285 (1949)

Adjustments to operating weights and tipping loads:			
Add (+) or deduct (-) lb. (kg) as indicated for loader equipped with:	Loader Operating Weight	Tipping Load, Straight	Tipping Load, 40- deg. Full Turn, SAE
Less ROPS cab	-950 lb. (431 kg)	-830 lb. (377 kg)	-770 lb. (349 kg)
ROPS canopy in lieu of ROPS cab	-320 lb. (145 kg)	-305 lb. (138 kg)	-275 lb. (125 kg)
Less side counterweights	-1175 lb. (533 kg)	-2430 lb. (1102 kg)	-2025 lb. (919 kg)
17.5-25, 12-ply-rating, loader tread tires	-184 lb. (83 kg)	-250 lb. (113 kg)	-215 lb. (98 kg)
20.5-25, 12-ply-rating, rock tread tires	+174 lb. (79 kg)	+230 lb. (104 kg)	+200 lb. (91 kg)
Less CaCl <sub>2</sub> in rear tires	-1820 lb. (826 kg)	-2435 lb. (1105 kg)	-2115 lb. (959 kg)
Second set of side counterweights	+1294 lb. (587 kg)	+2300 lb. (1043 kg)	+1945 lb. (882 kg)
Bucket teeth	+230 lb. (104 kg)	-330 lb. (150 kg)	-330 lb. (150 kg)

## JD644-B LOADER DIMENSIONS



### Special Equipment:

- Rear axle disconnect
- ROPS canopy and seat belt
- Instrument panel cover w/lock
- ROPS quiet cab
- Reverse warning alarm
- Triple loader hydraulic valve
- Bucket teeth
- Engine coolant heater
- Side counterweights
- Auxiliary side weights
- Front bottom guard
- License plate bracket
- Defroster fan
- Automatic boom height control
- SMV emblem
- Auxiliary cutting edges
- Adjustable suspension seat
- Air conditioning

BUCKET CAPACITIES	DIMENSIONS		
	A	B	C
2½ cu. yd. bucket	34.6 in. (879 mm)	9 ft. 4 in. (2.84 m)	21 ft. 0.6 in. (6.42 m)
3 cu. yd. bucket	37.8 in. (960 mm)	9 ft. 0.9 in. (2.77 m)	21 ft. 5.1 in. (6.53 m)
4½ cu. yd. bucket	45 in. (1143 mm)	8 ft. 5.7 in. (2.58 m)	22 ft. 3.3 in. (6.79 m)
2½ cu. yd. multipurpose	36.3 in. (922 mm)	8 ft. 8.4 in. (2.65 m)	21 ft. 11.8 in. (6.70 m)