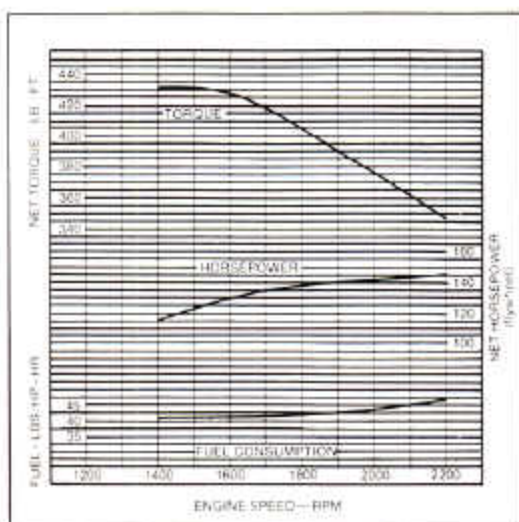




JD644-B LOADER



ENGINE PERFORMANCE



FEATURES

145 SAE net hp (108.1 kW)

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, L-2 tires with 1820 lb. (826 kg) of CaCl₂ solution in rear tires, side counterweights, ROPS cab, full fuel tank, and 175 lb. (79.4 kg) operator.)

Power (@2200 engine rpm):	SAE	DIN
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.

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. (8.703 L)
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	4.92 to 1

Transmission	Power Shift planetary
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Forward Speeds	mph	km/h
1	0-3.3	0-5.3
2	3.3-7.7	5.3-12.4
3	0-11.8	0-19.0
4	11.8-25.4	19.0-40.9

Reverse Speeds	mph	km/h
1	0-3.6	0-5.8
2	3.6-8.3	5.8-13.4

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

Differentials:	
Front	No-Spin
Rear	Standard

Drive Axles Inboard-mounted planetary gears to each wheel. Front axle fixed. Rear axle oscillates 22-degree total. 15.3 inches (389 mm) vertical travel at center of tire.

Brakes:
Service Power actuated, 4-wheel, inboard-mounted wet disk. Foot-operated by either right or left pedal.
Parking 10x3 inch (254 mmx76 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 (3.67 L/s) at 600 psi (4137 kPa) (42.2 kg/cm²) and 2200 engine rpm.
2250 psi (15 514 kPa) (158.2 kg/cm²) 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 (1.64 L/s) at 2200 engine rpm and 2000 psi (13 790 kPa) (140.6 kg/cm²). Maximum system pressure is 2400 psi (16 548 kPa) (168.7 kg/cm²). Loader hydraulic operating cycle times at full throttle.
Raise 6.6 sec.
Dump 1.8 sec.
Lowering: float 4.5 sec.
power 5.8 sec.

Hydraulic Cylinders:	Bore	Stroke
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)

Capacities:	U.S.	Imp.	Liters
Cooling system	49 qt.	40.8 qt.	46.4
Fuel tank	56 gal.	46.7 gal.	211.9
Crankcase	20 qt.	16.7 qt.	18.9
Crankcase, including filter	22 qt.	18.3 qt.	20.8
Transmission case and filters	39 qt.	32.5 qt.	36.9
Front differential: No Spin	24 qt.	20.0 qt.	22.7
Rear differential	25 qt.	20.8 qt.	23.7
Loader hydraulic sump	70 qt.	58.3 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
Cigarette 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
Rear axle disconnect

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)

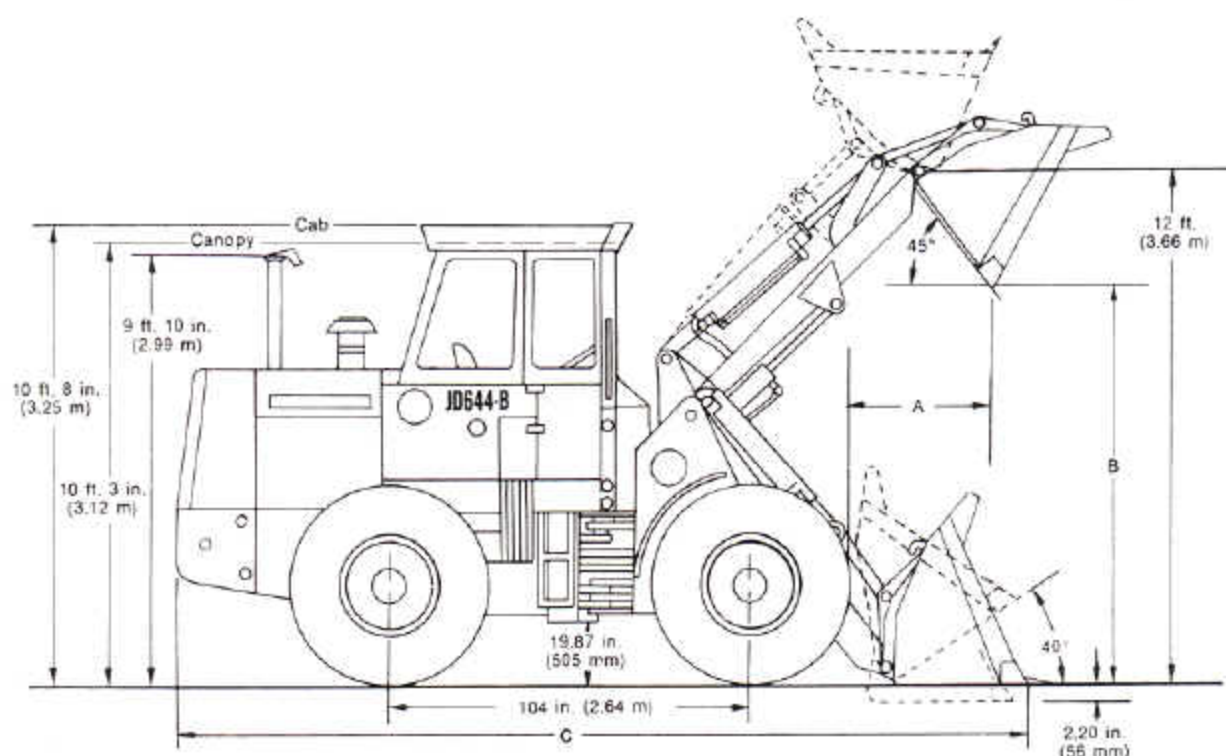
Maximum recommended material weight, lb. per cu. yd. (kg/m³):

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)
20.5-25, 16-ply-rating, rock tread tires, L-3	+ 296 lb. (134 kg)	+ 233 lb. (106 kg)	+ 200 lb. (92 kg)
Less CaCl ₂ 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)

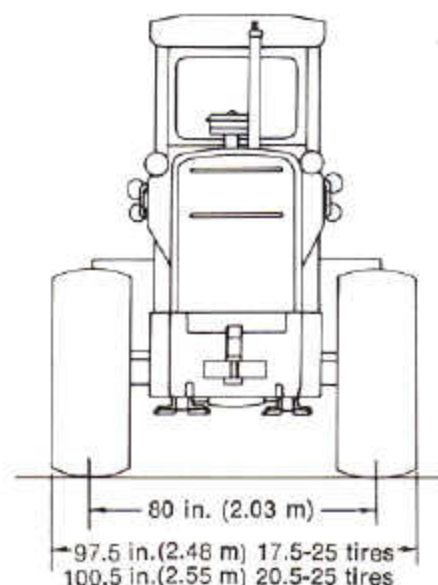
JD644-B LOADER DIMENSIONS



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)

Special Equipment:

- 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
- Center bottom guard
- License plate bracket
- Defroster fan
- Automatic boom height control
- SMV emblem
- Auxiliary cutting edges
- Adjustable suspension seat
- Air conditioning
- Auxiliary spill guard



4-644B-4

TED B. MILLER CO., INC
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