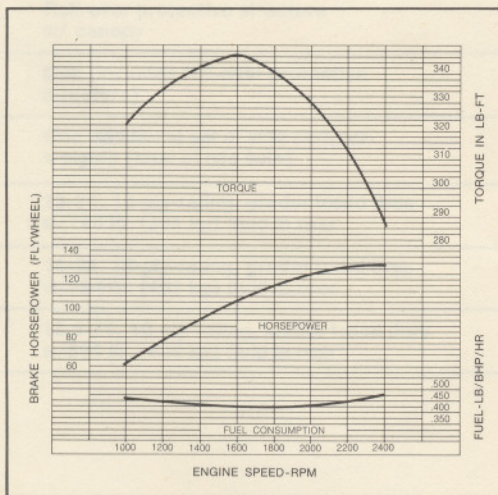




JD644-A LOADER



ENGINE PERFORMANCE



Curves shown are for an engine complete with fuel system, water pump, lubricating pump, air cleaner, alternator, fan and muffler.

Data shows performance observed at standard conditions of 29.38 in. of mercury barometric pressure (500 ft.) and 85° F. air temperature.

FEATURES

- 4-wheel drive
- Choice of 4 self-leveling loader buckets
- Twin-turbine torque converter w/ Power-Shift transmission
- 4 speeds forward, 2 reverse
- Power steering, articulated frame
- 4-wheel, disk-type brakes and parking brake
- Inboard planetary final drives
- Single-lever control w/ automatic return-to-dig
- Brake-actuated transmission disconnect
- "No-Spin" front axle differential
- Vandal protection

May be equipped with:

- Backhoe
- Sideboom

SPECIFICATIONS—JD644-A 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 20.5-25, 12-ply-rating, loader tread tires; 2-1/2 cu. yd. (1,91 m³) bucket, standard equipment, and 1,516 lb. (688 kg) of CaCl₂ solution in rear tires.)



Horsepower (at 2,400 engine rpm):	SAE	PS
Gross	141	143
Net	131	133

Net engine flywheel horsepower is for an engine equipped with fan, air cleaner, water pump, lubricating oil pump, fuel pump, alternator, and muffler. 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 (non-corrected). Engine maintains rated horsepower up to 10,000 feet (3,000 m) altitude.

Engine: John Deere Diesel, vertical 6-cylinder, valve-in-head, 4-stroke cycle—turbo-built with turbocharger
 Bore and stroke 4.25 x 4.75 in. (108 x 121 mm)
 Piston displacement 404 cu. in. (6620 cm³)
 Compression ratio 16.5 to 1
 Governed speed range 800-2,600 rpm
 Maximum torque @ 1,600 rpm 345 lb-ft (47,7 kg-m)
 N.A.C.C. or A.M.A. (U.S. Tax) horsepower 43.3
 Lubrication Pressure system with full-flow filter
 Cooling Pressurized with thermostat and fixed bypass
 Fan Blower-type
 Air cleaner Dry type, dual element with restriction indicator
 Electrical and starting system 12-volt with alternator

Transmission:
 Twin-turbine torque converter with Power-Shift transmission (4 speeds forward—2 reverse).

Torque Multiplication Ratio 4.8 to 1

Differentials:
 Front "No-Spin" type
 Rear Standard

Drive Axles:
 4-wheel drive with inboard-mounted planetary gears to each wheel. Front axle fixed. Rear axle oscillates 22-degree total. 15.3 in. (389 mm) vertical travel at center of tire.

Travel Speeds:	mph	km/h
Forward:		
Low range: 1st and 2nd turbine	0 - 3.3	0 - 5.3
2nd turbine	3.3 - 7	5.3 - 11.3
High range: 1st and 2nd turbine	0 - 12.6	0 - 20.2
2nd turbine	12.6 - 23	20.2 - 37
Reverse: 1st and 2nd turbine	0 - 4.5	0 - 7.2
2nd turbine	4.5 - 9.5	7.2 - 15.3

Shifting of turbines, within ranges, is automatic.

Standard Equipment:

Adjustable cushioned seat	Vandal protection
Engine side shields	Horn
Front fenders	Fuel filter
Gauges:	Automatic return-to-dig
Transmission oil temperature	Side counterweights (1 set)
Transmission oil pressure	Fixed drawbar
Fuel	Vertical exhaust w/rain cap
Coolant temperature	Rear bottom guard
Engine oil pressure	Hand grips
Ammeter	Electric hour meter
Key-switch safety start	Ether starting aid
Cigar lighter	Cab (includes roll-over protective structure and seat belt)
Parking brake warning light	
Head- and tail-lights	
Work lights (front and rear)	
Lights (flashing and turning)	
55-amp. alternator	
Two 95-amp. batteries	
Transistorized voltage regulator	

Brakes:

Service . . . Power actuated, 4-wheel, inboard-mounted wet disk. Foot-operated by either right or left pedal.
 Parking . . . 10 x 1.5-in. (254 x 38 mm) expanding shoe type on transmission output shaft. Adjustable, hand operated with warning light on dash.

Steering:

Full power steering. Frame articulated 80 degrees by two hydraulic cylinders. Turning radius of 15 ft. 5 in. (4,70 m). Vehicle clearance circle is 35 ft. 8 in. (10,87 m).

Hydraulic Systems:

Loader functions system . . . Live, transmission-driven, vane-type pump delivers 60 gpm (227 lpm) at 2,400 engine rpm and 2,250 psi (158,2 kg/cm²) relief-valve pressure setting.
 Control Single-lever, double hydraulic system
 Optional triple hydraulic system for fork or multi-purpose bucket.
 Steering and brake systems . . . Engine-driven, eight-piston, variable-displacement-type pump delivers 27 gpm (102 lpm) at 2,400 engine rpm and 2,000 psi (140,6 kg/cm²).

Tires:

16-24, 12-ply-rating, rock grader tread
 17.5-25, 12-ply-rating, loader tread
 20.5-25, 12-ply-rating, loader tread
 20.5-25, 12-ply-rating, loader rock tread

Wheel Treads:

Front and rear (center-to-center) 80 in. (2,03 m)

Capacities:

	U.S.	Liters
Cooling system	9 gal.	34,1
Fuel tank	50 gal.	189,3
Crankcase and filter	17 qt.	16,1
Transmission case and filters	9.75 gal.	36,9
Front differential	6 gal.	22,7
Rear differential	6.5 gal.	24,6
Loader hydraulic sump	17.5 gal.	66,2

Special Equipment:

Rear axle disconnect
 Reverse warning system
 Triple hydraulic system
 Bucket teeth
 Heater
 Engine coolant heater
 Pre-cleaner
 Side counterweights (2nd set)
 Splash guards for fenders
 Backhoe
 Sideboom
 Front bottom guard
 Canopy (includes roll-over protective structure and seat belt)
 Log and Lumber fork

JD644-A LOADER

Operating Information: (approx.)

OPERATING INFORMATION	BUCKET			
	General purpose	Loose materials	Light materials	Multi-purpose
Capacity, heaped, SAE	2-1/2 cu. yd. (1,91 m ³)	3 cu. yd. (2,29 m ³)	4-1/2 cu. yd. (3,44 m ³)	2-1/4 cu. yd. (1,72 m ³)
Capacity, struck, SAE	2.05 cu. yd. (1,57 m ³)	2.50 cu. yd. (1,80 m ³)	3.73 cu. yd. (2,45 m ³)	1.77 cu. yd. (1,35 m ³)
Bucket width	104.61 in. (2,65 m)	104.61 in. (2,65 m)	110.64 in. (2,80 m)	106 in. (2,69 m)
Bucket weight	1,867 lb. (847 kg)	2,025 lb. (918 kg)	2,480 lb. (1,124 kg)	2,490 lb. (1,129 kg)
*Breakout force, J732B SAE Standard Pivot point to cutting edge	41,515 lb. (18831 kg) 25.14 in. (639 mm)	34,975 lb. (15864 kg) 29.69 in. (754 mm)	25,600 lb. (11612 kg) 39.81 in. (1,01 m)	36,500 lb. (16556 kg) 25.6 in. (650 mm)
Breakout force, J732C SAE Standard using bucket hinge pin as pivot point 4 in. (102 mm) behind cutting edge	23,945 lb. (10861 kg)	20,960 lb. (9507 kg)	16,125 lb. (7314 kg)	22,865 lb. (10371 kg)
Tipping load, straight	18,605 lb. (8439 kg)	18,425 lb. (8357 kg)	17,865 lb. (8103 kg)	17,700 lb. (8029 kg)
Tipping load, 35-deg. turn	16,710 lb. (7580 kg)	16,550 lb. (7507 kg)	16,040 lb. (7275 kg)	15,895 lb. (7210 kg)
Tipping load, 40-deg. full turn, SAE	16,155 lb. (7328 kg)	16,000 lb. (7257 kg)	15,510 lb. (7036 kg)	15,370 lb. (6972 kg)
Loader operating weight	25,220 lb. (11440 kg)	25,380 lb. (11512 kg)	25,835 lb. (11719 kg)	25,845 lb. (11723 kg)

* SAE Standard J732B has been superseded by J732C and is included for reference only.

Adjustments to operating weights and tipping loads (approx.):				
Add (+) or deduct (-) lb. (kg) as indicated for loader equipped with:	Loader Operating Weight	Tipping Load, Straight	Tipping Load, 35-deg. turn	Tipping Load, 40-deg. full turn, SAE
Roll-over protective structure w/canopy	+700 lb. (318 kg)	+630 lb. (286 kg)	+595 lb. (270 kg)	+580 lb. (263 kg)
Cab (includes roll-over protective structure)	+1,200 lb. (544 kg)	+1,080 lb. (490 kg)	+1,015 lb. (460 kg)	+1,000 lb. (454 kg)
One additional set of side counter-weights (total of two sets)	+750 lb. (340 kg)	+1,530 lb. (694 kg)	+1,330 lb. (603 kg)	+1,280 lb. (581 kg)
16-24, 12-ply-rating, rock grader tread tires w/1,304 lb. (592 kg) fluid in rear	-700 lb. (318 kg)	-630 lb. (286 kg)	-565 lb. (256 kg)	-545 lb. (247 kg)
17.5-25, 12-ply-rating, loader tread tires w/1,160 lb. (526 kg) fluid in rear	-1,015 lb. (460 kg)	-945 lb. (429 kg)	-850 lb. (386 kg)	-820 lb. (372 kg)

JD644-A LOADER

Dimensions: (approx.)

