

644D LOADER SPECIFICATIONS

Specifications and design subject to change without notice. Wherever applicable, specifications are in accordance with SAE Standards. Except where otherwise noted, specifications are based on a machine with all standard equipment, 20.5-25, 12 PR, L2 tires with 1820 lb. (826 kg) CaCl₂ solution in rear tires, ROPS cab, full fuel tank, and 175 lb. (80 kg) operator.

Rated Power @ 2200 rpm:	SAE	DIN 70 020
Net	155 hp (116 kW)	116 kW
Gross	165 hp (123 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 10,000 feet (3050 m) altitude. Gross power is without cooling fan.

Engine: John Deere 6-466T

Type	4-stroke cycle, turbocharged diesel
Bore and stroke	4.56 x 4.75 in. (116 x 121 mm)
No. of cylinders	6
Displacement	466 cu. in. (7.636 L)
Maximum net torque @ 1400 rpm	480 lb-ft (651 Nm) (66.4 kg-m)
Cooling fan	Blower
Air cleaner w/restriction indicator	Dry
Electrical system	12 volt w/42-amp alternator
Batteries (two 12 volt)	
25 amps at 80°F (27°C)	Reserve capacity: 160 min. each
BCI group 31 cold cranking capacity at 0°F (-18°C)	625 amp

Torque Converter:

Type	Twin turbine
Torque multiplication	4.92 to 1

Transmission Power Shift planetary

Forward Speeds:

	mph	km/h
1	0-3.3	0-5.3
2	3.3-7.1	5.3-11.4
3	0-12.8	0-20.6
4	12.8-27.3	20.6-43.9

Reverse Speeds:

1	0-3.8	0-6.1
2	3.8-8.2	6.1-13.2

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

Differentials - choice of:

Front and rear conventional
Front hydraulic differential lock and rear conventional
Front NoSPIN and rear conventional

Drive Axles

..... Inboard-mounted planetary gears to each wheel. Front axle fixed. Rear axle oscillates 22-degrees total (15.6 in. [396 mm] vertical travel at center of tire).

Steering: Full power steering. Frame articulated 80 degrees by two hydraulic cylinders.

Turning radius (measured to centerline of outside tire)	16 ft. 6 in. (5.03 m)
Cylinder size: Stroke	17.24 in. (438 mm)
Bore	3.54 in. (90 mm)
Rod diameter	1.77 in. (45 mm)

Brakes:

Service Power-actuated, 4-wheel inboard-mounted, wet disk. Foot-operated by either pedal.
Parking 10 x 1.5 in. (254 x 38 mm) expanding shoe on transmission, output shaft, foot-operated.
Includes transmission disconnect with warning light and buzzer.

Hydraulic Systems:

Steering and loader functions An engine-driven gear-type pump delivers 63.0 gpm (3.97 L/s) at 600 psi (4137 kPa) (42.2 kg/cm²) and 2200 engine rpm. Loader function relief valve pressure setting is 2625 psi (18 099 kPa) (184.6 kg/cm²). The maximum steering pressure is 2400 psi (16 548 kPa) (168.8 kg/cm²).
Control Single-lever, dual hydraulic valve.
Optional triple hydraulic valve for fork or multipurpose bucket.
Brakes An engine-driven, gear-type pump delivers 3.6 gpm (0.23 L/s) at 2200 engine rpm and 600 psi (4137 kPa) (42.2 kg/cm²). Maximum system pressure is 2350 psi (16 203 kPa) (165.2 kg/cm²).

Loader hydraulic operating cycle times at full throttle:

Raise	6.1 sec.
Dump	2.0 sec.
Lowering: float	4.3 sec.
power	4.8 sec.

Maximum lift capacity with general purpose bucket:

Maximum height	14,680 lb. (6660 kg)
Ground level	31,325 lb. (14 210 kg)

Hydraulic Cylinders:	Bore	Stroke
Boom, two	6.25 in. (160 mm)	26.42 in. (671 mm)
Bucket, one	6.25 in. (160 mm)	34.06 in. (865 mm)
Cylinder rods		Ground, heat-treated, chrome-plated, polished
Boom cylinder rods	2.75 in. (70 mm) dia.	
Bucket cylinder rods	3.00 in. (76 mm) dia.	

Tires — choice of:

16.00-24, 12 PR, grader tread, G2
20.5-25, 12 PR, rock tread, L3
20.5-25, 12 PR, loader tread, L2 w/ or w/o valve stem protector
20.5-25, 16 PR, rock tread, L3 w/stem protector
20.5-25 XRAT
23.5-25, 20 PR, rock tread, L3 w/valve stem protector

Capacities:	U.S.	Liters
Cooling system	29 qt.	28
Fuel tank	67 gal.	254
Crankcase	18 qt.	17
Crankcase, including filter	20 qt.	19
Transmission case and filter	39 qt.	37
Front differential	24 qt.	23
Rear differential	24 qt.	23
Loader hydraulic sump	100 qt.	95

Additional Standard Equipment:

Adjustable, cushioned, vinyl seat	Hydraulic oil cooler
Antifreeze	Instrument panel warning lights:
Articulation transport lock	Hydraulic filter bypass
Cigarette lighter	Low brake pressure
Differential, conventional	Parking brake
front and rear	Key switch
Engine sideshields	Lights, driving w/o guard
Fuel filter	Lights, flashing and turn signal
Gauges:	Lights, stop and tail
Coolant temperature	Muffler
Electric hourmeter	Precleaner
Engine oil pressure	Pushbutton start
Fuel	Rear bottom guard
Transmission oil pressure	Reverse warning alarm
Transmission oil temperature	ROPS canopy w/seat belt
Voltmeter	Service step, left-hand rear
Hand grips	Toolbox
Horn	Transistorized voltage regulator
	Transmission clutch disconnect

Optional or Special Equipment:

Additional battery	Front fenders
Adjustable deluxe seat	Hydraulic front differential lock
Adjustable deluxe suspension	Hydraulic tube shield
cloth seat	License plate bracket
Adjustable deluxe suspension	Lights, front and rear work
vinyl seat	Lights, driving w/guard
Automatic boom height control	Lockable engine sideshields
Automatic return to dig	w/front hood
Auxiliary front bottom guard	Lockable instrument panel covers
Auxiliary cutting edges	NoSPIN front differential
Auxiliary spill guard	Rear axle disconnect
Bucket teeth	For ROPS cab:
Counterweight, side	Mirrors
Counterweight, rear	Radio—AM
Drawbar, bolt-on	Rear wiper and cover
Engine coolant heater	Windshield washer
Ether starting aid	
Floor mat	
ROPS cab w/heater/defroster, pressurizer, dome light, front wiper and 90-amp alternator	
ROPS cab w/air conditioner, heater/defroster, pressurizer, dome light, front wiper and 90-amp alternator	
SMV emblem	
Secondary steering	
3-in. (76 mm) seat belt	
Triple hydraulic valve for loader	
Water separator, fuel	
Windows, opening (rear side)	

644D LOADER OPERATING INFORMATION

OPERATING INFORMATION	Bucket Type			
	General Purpose	*General Purpose	Light Material	Multipurpose
Capacity, heaped, SAE	3 cu. yd. (2.29 m ³)	3.5 cu. yd. (2.68 m ³)	4.5 cu. yd. (3.44 m ³)	2.5 cu. yd. (1.91 m ³)
Capacity, struck, SAE	2.52 cu. yd. (1.93 m ³)	2.72 cu. yd. (2.08 m ³)	3.87 cu. yd. (2.96 m ³)	1.99 cu. yd. (1.52 m ³)
Bucket width	104.75 in. (2.66 m)	110.75 in. (2.81 m)	110.75 in. (2.81 m)	104.75 in. (2.66 m)
Breakout force, SAE J732C	24,430 lb. (109 kN) (11 085 kg)	21,080 lb. (94 kN) (9565 kg)	19,560 lb. (87 kN) (8875 kg)	23,220 lb. (103 kN) (10 535 kg)
Tipping load, straight	25,210 lb. (11 435 kg)	23,560 lb. (10 685 kg)	24,440 lb. (11 090 kg)	21,700 lb. (9845 kg)
Tipping load, 40-deg. full turn, SAE	21,860 lb. (9915 kg)	20,310 lb. (9210 kg)	21,120 lb. (9580 kg)	18,690 lb. (8475 kg)
Tipping load, 35-deg. turn	22,620 lb. (10 260 kg)	21,050 lb. (9550 kg)	21,870 lb. (9920 kg)	19,370 lb. (8785 kg)
Reach at 45-deg. dump, 7 ft. (2.13 m) clearance	60.14 in. (1528 mm)	62.04 in. (1576 mm)	63.28 in. (1607 mm)	86.84 in. (2206 mm)
Reach at 45-deg. dump, full height	36.75 in. (933 mm)	40.34 in. (1025 mm)	42.86 in. (1089 mm)	35.22 in. (895 mm)
Dump clearance at 45-deg. dump, full height	117.0 in. (2970 mm)	113.20 in. (2875 mm)	110.93 in. (2818 mm)	112.3 in. (2852 mm)
Overall length	23 ft. 0.7 in. (7.03 m)	23 ft. 6.1 in. (7.17 m)	23 ft. 9.3 in. (7.25 m)	23 ft. 7.1 in. (7.19 m)
Loader clearance circle, bucket in carry position	38 ft. 1 in. (11.61 m)	38 ft. 9.5 in. (11.82 m)	38 ft. 11.2 in. (11.87 m)	38 ft. 5.6 in. (11.72 m)
Operating weight	29,320 lb. (13 300 kg)	30,110 lb. (13 660 kg)	29,910 lb. (13 570 kg)	30,270 lb. (13 730 kg)

*See your dealer for buckets meeting this operating information.

Loader operating information is based on machine with all standard equipment, 20.5-25, 12 PR, L2 tires with 1820 lb. (826 kg) of CaCl₂ solution in rear tires, ROPS cab, full fuel tank and 175 lb. (80 kg) operator. Operating information is affected by tire size, ballast and attachments. For selected items, add or subtract the following:

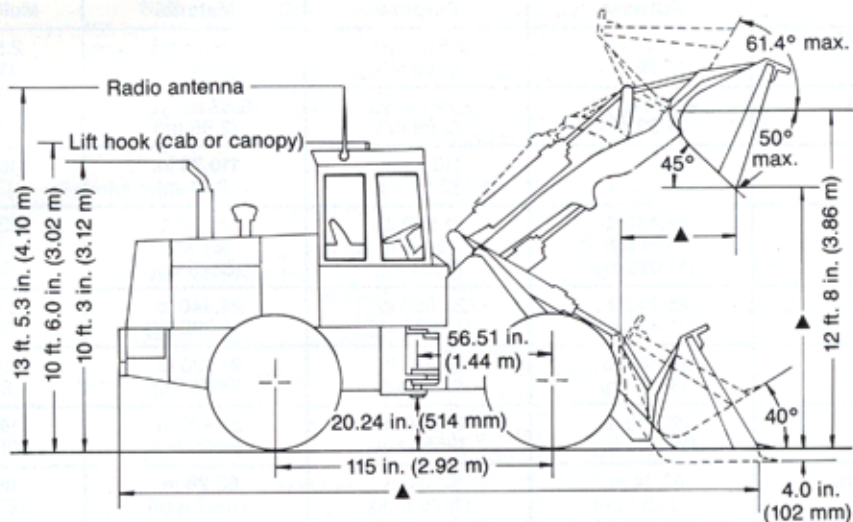
Adjustments to operating weights and tipping loads for general purpose bucket

Add (+) or deduct (-) lb. (kg) as indicated for loaders with:	Loader Operating Weight	Tipping Load Straight	Tipping Load 35° Turn	Tipping Load 40° Full Turn, SAE
16.00-24, 12 PR, G2 with CaCl ₂	- 750 lb. (340 kg)	- 905 lb. (410 kg)	- 825 lb. (375 kg)	- 800 lb. (365 kg)
16.00-24, 12 PR, G2 without CaCl ₂	- 2100 lb. (950 kg)	- 2915 lb. (1325 kg)	- 2645 lb. (1200 kg)	- 2570 lb. (1165 kg)
20.5-25, 12 PR, L2 without CaCl ₂	- 1820 lb. (825 kg)	- 2705 lb. (1225 kg)	- 2460 lb. (1115 kg)	- 2385 lb. (1080 kg)
20.5-25, 12 PR, L3 with CaCl ₂	+ 345 lb. (155 kg)	+ 260 lb. (120 kg)	+ 235 lb. (105 kg)	+ 230 lb. (105 kg)
20.5-25, 12 PR, L3 without CaCl ₂	- 1470 lb. (665 kg)	- 2450 lb. (1110 kg)	- 2225 lb. (1010 kg)	- 2155 lb. (980 kg)
20.5-25, 16 PR, L3 with CaCl ₂	+ 435 lb. (200 kg)	+ 325 lb. (145 kg)	+ 295 lb. (135 kg)	+ 285 lb. (130 kg)
20.5-25, 16 PR, L3 without CaCl ₂	- 1385 lb. (630 kg)	- 2385 lb. (1080 kg)	- 2165 lb. (980 kg)	- 2100 lb. (950 kg)
23.5-25, 20 PR, L3 with CaCl ₂	+ 2900 lb. (1315 kg)	+ 2585 lb. (1170 kg)	+ 2345 lb. (1065 kg)	+ 2280 lb. (1035 kg)
23.5-25, 20 PR, L3 without CaCl ₂	+ 505 lb. (230 kg)	- 980 lb. (444 kg)	- 890 lb. (405 kg)	- 860 lb. (390 kg)
Less ROPS cab	- 790 lb. (360 kg)	- 750 lb. (340 kg)	- 720 lb. (325 kg)	- 710 lb. (320 kg)
ROPS canopy in lieu of ROPS cab	- 350 lb. (160 kg)	- 315 lb. (145 kg)	- 305 lb. (140 kg)	- 300 lb. (135 kg)
**Side counterweights	+ 1295 lb. (585 kg)	+ 2500 lb. (1135 kg)	+ 2220 lb. (1010 kg)	+ 2140 lb. (970 kg)
***Rear counterweight (incl. drawbar)	+ 1505 lb. (682 kg)	+ 3705 lb. (1680 kg)	+ 3235 lb. (1465 kg)	+ 3095 lb. (1405 kg)

** Not to be used with 23.5-25 tires with CaCl₂

*** In lieu of ballast one weight can be used with ballast in 16.0-24 or 20.5-25 tires

644D LOADER DIMENSIONS

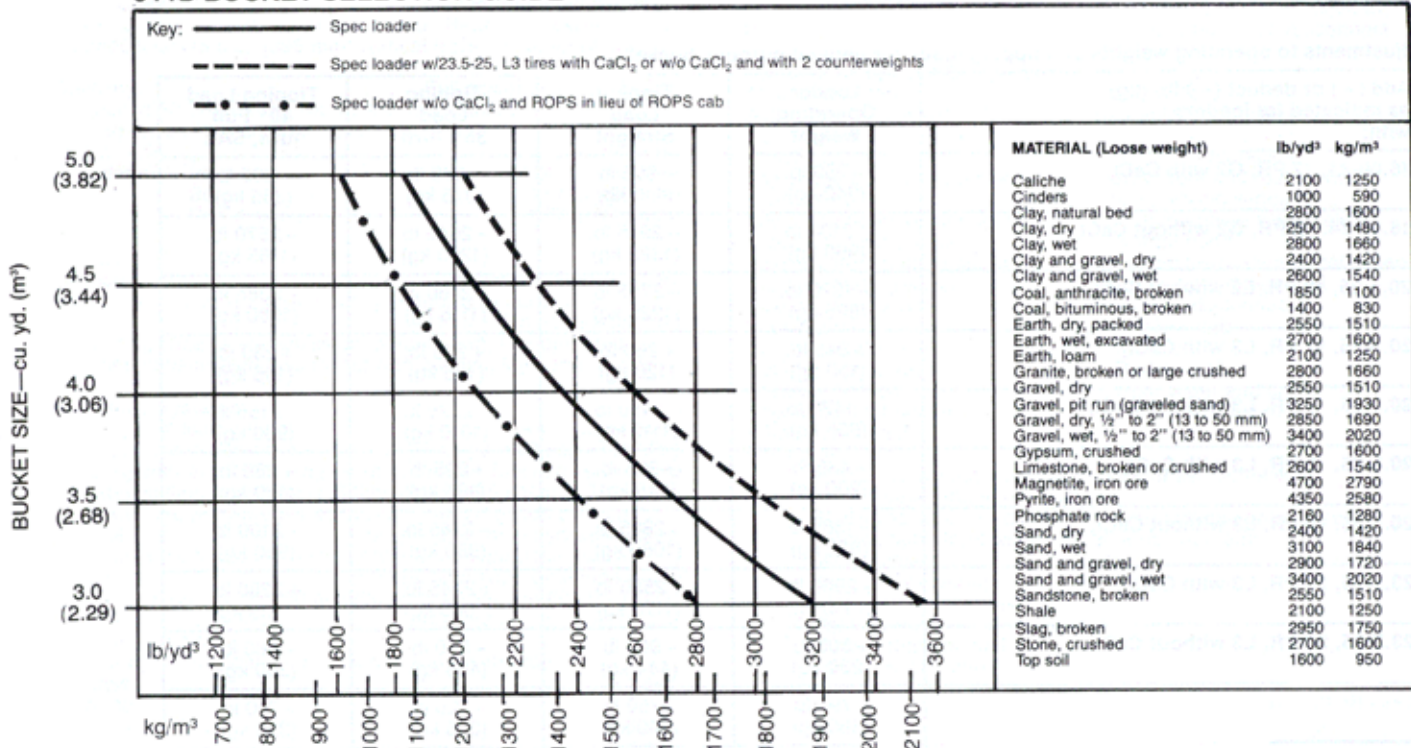


▲ SEE OPERATING INFORMATION

TIRES

	16.00-24	20.5-25	23.5-25
Tread width	76 in. (1930 mm)	80 in. (2030 mm)	84.8 in. (2155 mm)
Width over tires	94.1 in. (2390 mm)	102.6 in. (2605 mm)	110.2 in. (2800 mm)
Change in vertical height	-0.6 in. (15 mm)	0	2.4 in. (61 mm)

644D BUCKET SELECTION GUIDE*



*This guide, representing buckets not necessarily manufactured by Deere, will help you in selecting proper bucket size for material density and loader configurations. However, specific bucket size should only be determined after adding or subtracting all the tipping load changes due to specifications.