

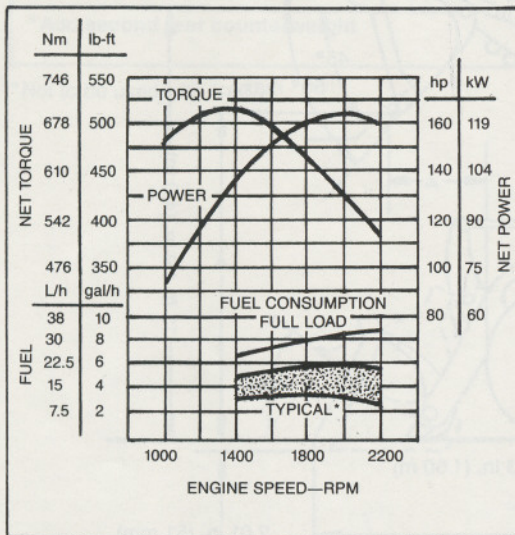


644E LOADER WITH COUPLER



Model shown includes optional and allied equipment

ENGINE PERFORMANCE



*Depending on operating variables

FEATURES

- 160 SAE net hp (119 kW) John Deere turbocharged diesel engine
- Four-wheel drive
- Bucket capacities to 3.75 cu. yd. (2.8 m³)
- Operating weights to 38,008 lb. (17 240 kg)
- Single phase, single stage torque converter with countershaft, power shift transmission. 4 speeds forward, 3 reverse
- Power steering. Articulated frame
- Four-wheel wet-disk power brakes and parking brake
- Inboard planetary final drives
- Single-lever or optional two-lever control w/ optional automatic return-to-dig and optional boom height control
- Optional front axle hydraulic differential lock or NoSPIN front differential
- Optional vandal protection
- Manual or optional hydraulic Quik-Tatch™ coupler
- Rollover protective structure (ROPS) with canopy. Meets criteria of SAE J394a, SAE J1040 APR88, OSHA 1926.1001, and ISO 3471. Also meets FOPS (falling object protective structure) criteria SAE J231 JAN 81 and ISO 3449.

ADD VERSATILITY WITH:

- Forks
- Material handling arm
- Blades
- Multipurpose buckets
- Side-dump bucket
- Snow blowers
- Snow plows
- Sweepers
- Special buckets

644E LOADER WITH COUPLER 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, 23.5-25, 12 PR, L2 tires, one rear counterweight, ROPS cab, full fuel tank, and 175-lb. (80 kg) operator.

Rated Power @ 2200 engine rpm:	SAE	DIN 70 020
Net	160 hp (119 kW)	119 kW
Gross	168 hp (125 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 6076T

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	510 lb-ft (691 Nm) (70.5 kg-m)
Cooling fan	Blower
Air cleaner w/restriction indicator	Dry type
Electrical system	12-volt w/65-amp alternator
Batteries (one 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)	925 amp

Torque Converter:

Type	Single phase, single stage
Torque multiplication	3.06 to 1

Transmission

Countershaft, Power Shift

Forward Speeds:	mph (max.)	km/h (max.)
1	4.8	7.7
2	7.6	12.2
3	16.4	26.4
4	25.5	41.0
Reverse Speeds:		
1	4.8	7.7
2	7.6	12.2
3	16.4	26.4

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 26-degrees total (36.1 in. [916 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)

Cylinder size: Stroke	19.45 in. (494 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

9.84 x 2.36 in. (250 x 60 mm) expanding shoe on transmission output shaft, foot-operated. Includes transmission disconnect with two-level monitor warning.

Hydraulic Systems:

Steering and loader functions

An engine-driven gear-type pump delivers 65.5 gpm (248 L/min) at 600 psi (4137 kPa) (42.2 kg/cm²) and 2200 engine rpm. Loader function relief valve pressure setting is 2850 psi (19 651 kPa) (200.4 kg/cm²). Maximum steering pressure is 2600 psi (17 927 kPa) (182.7 kg/cm²).

Control

Single-lever or optional two-lever, dual hydraulic valve. Optional triple hydraulic valve for fork or multi-purpose bucket.

Brakes

Engine-driven axial piston pump delivers 8.1 gpm (31 L/min) at 2200 engine rpm and 600 psi (4137 kPa) (42.2 kg/cm²). Maximum system pressure is 2300 psi (15 859 kPa) (161.7 kg/cm²).

Loader hydraulic operating cycle times at full throttle:

Raise	6.2 sec.
Dump	1.8 sec.
Lowering: float	3.5 sec.
power	4.5 sec.

Maximum lift capacity with 3.25 cu. yd. (2.5 m³) excavating bucket:

Maximum height	16,676 lb. (7563 kg)
Ground level	26,500 lb. (12 018 kg)

Hydraulic Cylinders:	Bore	Stroke
Boom, two	6.30 in. (160 mm)	26.77 in. (680 mm)
Bucket, one	7.09 in. (180 mm)	24.45 in. (621 mm)
Cylinder rods	Ground, heat-treated, chrome-nickel-plated, polished	
Boom cylinder rods	3.15 in. (80 mm) dia.	
Bucket cylinder rod	3.15 in. (80 mm) dia.	

Tires — choice of:

16.00-24, 12 PR, grader tread, G2
 20.5-25, 12 PR, loader tread, L2
 20.5-25, 16 PR, loader tread, L2
 20.5-25, 16 PR, rock tread, L3
 20.5 R25, One Star, L2 equivalent
 23.5-25, 12 PR, loader tread, L2
 23.5-25, 20 PR, rock tread, L3

Capacities:

	U.S.	Liters
Fuel tank	75 gal.	284
Cooling system	30 qt.	28.5
Crankcase	23 qt.	22
Crankcase, including filter	25 qt.	24
Transmission case and filters	14 qt.	13
Front differential	24 qt.	23
Rear differential	24 qt.	23
Loader hydraulic sump	120 qt.	115

Additional Standard Equipment:

Differential, conventional, front and rear	Single-level warnings:
Engine:	Air filter restricted
Antifreeze	Engine coolant temperature
Fan guard	Hydraulic filter restricted
Fuel filter	Low brake pressure
Muffler	Low electrical voltage
Precleaner and dry type air cleaner	Low engine oil pressure
Frames:	Low transmission oil pressure
Articulation transport lock	Secondary steering (optional)
Drawbar	Indicator only:
Lockable engine side shields and rear grille	Turn signals
Rear bottom guard	Floor mat
Service steps, left-hand rear	Hand grips
Hydraulic oil cooler	Horn
Lights:	Instruments:
Driving w/guard	Electric hourmeter
Flashing and turn signal	Fuel gauge
Stop and tail	Transmission oil temperature gauge
Operator's station:	Key switch
Adjustable, deluxe vinyl seat	ROPS canopy
Cigarette lighter w/ashtray	Two-inch (51 mm) seat belt w/retractor
Dual inside rearview mirrors	Reverse warning alarm
Dual level monitor system:	Transmission clutch disconnect
Two level warnings:	Transmission oil cooler
Parking brake on	

Optional or Special Equipment:

Buckets:	Three spool valve, single-lever control w/auxiliary control lever for third function
Auxiliary spill guard	
Bolt-on cutting edges	
Bucket teeth	
Differentials:	Three spool valve, two-lever control w/auxiliary control lever for third function
Front axle disconnect	
Front hydraulic differential lock	
Front NoSPIN differential	
Engine:	Lights:
Additional battery	Front and rear work
Alternator — 130 amp	Loader:
Cold weather (ether) starting aid	Automatic boom height control
Engine coolant heater	Automatic return-to-dig
Radiator sand shield	Operator's station:
Water separator, fuel	Mirrors, outside
Frames:	Radio — AM/FM for cab
Auxiliary bottom guards, transmission and front frame	ROPS cab w/heater/defroster/pressurizer, dome light, front and rear windshield wiper and washer, 90-amp alternator
Fenders, front or rear	ROPS cab w/air conditioning, heater/defroster/pressurizer, dome light, front and rear windshield wiper and washer, 90-amp alternator
Lift hooks	Seats:
License plate bracket	Adjustable deluxe suspension vinyl seat w/armrests
Rear counterweights	Adjustable deluxe suspension cloth seat w/armrests for cab
Steps, frame mounted	Secondary steering
Steps w/access platform	Three-inch (76 mm) seat belt w/o retractor
SMV emblem	
Transmission side frame guards	
Hydraulics:	
Two spool valve w/single-lever control	
Two spool valve w/two-lever control	

644E LOADER WITH COUPLER OPERATING INFORMATION — BUCKETS

OPERATING INFORMATION	GENERAL PURPOSE BUCKETS	
Capacity, heaped, SAE	3.25 cu. yd. (2.5 m ³)	3.75 cu. yd. (2.8 m ³)
Capacity, struck, SAE	2.78 cu. yd. (2.13 m ³)	3.17 cu. yd. (2.42 m ³)
Bucket width	109.45 in. (2.78 m)	109.45 in. (2.78 m)
Breakout force SAE J732C	35,098 lb. (156.1 kN) (15 920 kg)	32,534 lb. (144.7 kN) (14 757 kg)
Tipping load, straight	25,951 lb. (11 771 kg)	25,587 lb. (11 606 kg)
Tipping load, 35 deg. turn	22,703 lb. (10 298 kg)	22,368 lb. (10 146 kg)
Tipping load, 40 deg. full turn, SAE	21,912 lb. (9939 kg)	21,583 lb. (9790 kg)
Reach at 45 deg. dump 7 ft. (2.13 m) clearance	61.54 in. (1563 mm)	62.80 in. (1595 mm)
Reach at 45 deg. dump full height	38.74 in. (984 mm)	41.26 in. (1048 mm)
Dump clearance at 45 deg. dump, full height	115.59 in. (2936 mm)	113.07 in. (2872 mm)
Overall length	25 ft. 4.5 in. (7.74 m)	25 ft. 8.3 in. (7.83 m)
Loader clearance circle bucket in carry position	41 ft. 6.4 in. (12.66 m)	41 ft. 8.7 in. (12.72 m)
Operating weight	34,948 lb. (15 852 kg)	35,109 lb. (15 929 kg)

All information is based on machine with all standard equipment. 23.5-25, L2, 12 PR tires, one rear counterweight, 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 3.25 cu. yd. (2.5 m³) general purpose bucket and 60-in. (1524 mm) pallet fork.

Add (+) or deduct (-) lb. (kg) as indicated for machines with:	Loader Operating Weight	Bucket			Fork*		
		Straight	35° Turn	Full Turn	Straight	35° Turn	Full Turn
16.00-24, 12 PR, G2 w/o CaCl ₂	- 2160 lb. (980 kg)	- 1528 lb. (693 kg)	- 1360 lb. (617 kg)	- 1318 lb. (598 kg)	- 1032 lb. (468 kg)	- 919 lb. (417 kg)	- 891 lb. (404 kg)
16.00-24, 12 PR, G2 w/CaCl ₂	- 811 lb. (368 kg)	+ 381 lb. (173 kg)	+ 337 lb. (153 kg)	+ 328 lb. (149 kg)	+ 260 lb. (118 kg)	+ 229 lb. (104 kg)	+ 225 lb. (102 kg)
20.5-25, 12 PR, L2 w/o CaCl ₂	- 1587 lb. (720 kg)	- 1122 lb. (509 kg)	- 999 lb. (453 kg)	- 970 lb. (440 kg)	- 758 lb. (344 kg)	- 675 lb. (306 kg)	- 655 lb. (297 kg)
20.5-25, 12 PR, L2 w/CaCl ₂	+ 234 lb. (106 kg)	+ 1453 lb. (659 kg)	+ 1292 lb. (586 kg)	+ 1257 lb. (570 kg)	+ 983 lb. (446 kg)	+ 877 lb. (398 kg)	+ 851 lb. (386 kg)
20.5-25, 16 PR, L2 w/o CaCl ₂	- 1499 lb. (680 kg)	- 1060 lb. (481 kg)	- 944 lb. (428 kg)	- 915 lb. (415 kg)	- 717 lb. (325 kg)	- 637 lb. (289 kg)	- 617 lb. (280 kg)
20.5-25, 16 PR, L2 w/CaCl ₂	+ 322 lb. (146 kg)	+ 1515 lb. (687 kg)	+ 1347 lb. (611 kg)	+ 1310 lb. (594 kg)	+ 1027 lb. (466 kg)	+ 915 lb. (415 kg)	+ 888 lb. (403 kg)
20.5-25, 16 PR, L3 w/o CaCl ₂	- 1235 lb. (560 kg)	- 873 lb. (396 kg)	- 778 lb. (353 kg)	- 754 lb. (342 kg)	- 591 lb. (268 kg)	- 525 lb. (238 kg)	- 507 lb. (230 kg)
20.5-25, 16 PR, L3 w/CaCl ₂	+ 586 lb. (266 kg)	+ 1702 lb. (772 kg)	+ 1515 lb. (687 kg)	+ 1473 lb. (668 kg)	+ 1153 lb. (523 kg)	+ 1025 lb. (465 kg)	+ 999 lb. (453 kg)
20.5 R25, One Star, L2 equivalent w/o CaCl ₂	- 1120 lb. (508 kg)	- 791 lb. (359 kg)	- 705 lb. (320 kg)	- 683 lb. (310 kg)	- 534 lb. (242 kg)	- 476 lb. (216 kg)	- 461 lb. (209 kg)
20.5 R25, One Star, L2 equivalent w/CaCl ₂	+ 701 lb. (318 kg)	+ 1784 lb. (809 kg)	+ 1587 lb. (720 kg)	+ 1541 lb. (699 kg)	+ 1208 lb. (548 kg)	+ 1074 lb. (487 kg)	+ 1045 lb. (474 kg)
23.5-25, 12 PR, L2 w/CaCl ₂	+ 2396 lb. (1087 kg)	+ 3389 lb. (1537 kg)	+ 3016 lb. (1368 kg)	+ 2930 lb. (1329 kg)	+ 2293 lb. (1040 kg)	+ 2041 lb. (926 kg)	+ 1984 lb. (900 kg)
23.5-25, 20 PR, L3 w/o CaCl ₂	+ 494 lb. (224 kg)	+ 348 lb. (158 kg)	+ 311 lb. (141 kg)	+ 302 lb. (137 kg)	+ 236 lb. (107 kg)	+ 212 lb. (96 kg)	+ 207 lb. (94 kg)
23.5-25, 20 PR, L3 w/CaCl ₂	+ 2890 lb. (1311 kg)	+ 3739 lb. (1696 kg)	+ 3327 lb. (1509 kg)	+ 3230 lb. (1465 kg)	+ 2529 lb. (1147 kg)	+ 2251 lb. (1021 kg)	+ 2187 lb. (992 kg)
ROPS canopy in lieu of ROPS cab	- 320 lb. (145 kg)	- 298 lb. (135 kg)	- 251 lb. (114 kg)	- 238 lb. (108 kg)	- 201 lb. (91 kg)	- 170 lb. (77 kg)	- 161 lb. (73 kg)
Deduct one rear counterweight	- 910 lb. (413 kg)	- 2057 lb. (933 kg)	- 1762 lb. (799 kg)	- 1689 lb. (766 kg)	- 1391 lb. (631 kg)	- 1193 lb. (541 kg)	- 1142 lb. (518 kg)
**Add second rear counterweight	+ 1738 lb. (792 kg)	+ 2584 lb. (1172 kg)	+ 2213 lb. (1004 kg)	+ 2123 lb. (963 kg)	+ 1750 lb. (794 kg)	+ 1499 lb. (680 kg)	+ 1440 lb. (653 kg)

*Allied equipment ordered through John Deere dealer.

644E LOADER WITH COUPLER DIMENSIONS

Size	TIRES			
	16.00-24	20.5-25	20.5 R25	23.5-25
Tread width	77.16 in. (1960 mm)	82.28 in. (2090 mm)	82.28 in. (2090 mm)	80.31 in. (2040 mm)
Width over tires	95.28 in. (2420 mm)	104.41 in. (2652 mm)	104.84 in. (2663 mm)	105.71 in. (2685 mm)
Change in vertical height	-2.75 in. (70 mm)	-1.97 in. (50 mm)	-2.44 in. (62 mm)	0

OPERATING INFORMATION — PALLET FORK*

Tine length	54 in. (1372 mm)	60 in. (1524 mm)	72 in. (1829 mm)
Ground to top of tine clearance	12 ft. 6.3 in. (3818 mm)	12 ft. 6.3 in. (3818 mm)	12 ft. 6.3 in. (3818 mm)
Max. reach with fork level	5 ft. 0.6 in. (1539 mm)	5 ft. 0.6 in. (1539 mm)	5 ft. 0.6 in. (1539 mm)
Overall length	27 ft. 2.3 in. (8288 mm)	27 ft. 8.3 in. (8441 mm)	28 ft. 8.5 in. (8751 mm)
Tipping load, straight (fork level, load centered on tine)	17,745 lb. (8049 kg)	17,258 lb. (7828 kg)	16,325 lb. (7405 kg)
Tipping load, 35-deg. turn (fork level, load centered on tine)	15,496 lb. (7029 kg)	15,066 lb. (6834 kg)	14,238 lb. (6458 kg)
Tipping load, 40-deg. full turn (fork level, load centered on tine)	14,947 lb. (6780 kg)	14,531 lb. (6591 kg)	13,730 lb. (6228 kg)
Operating weight	34,873 lb. (15 818 kg)	34,943 lb. (15 850 kg)	35,087 lb. (15 915 kg)

OPERATING INFORMATION — MATERIAL HANDLING ARM*

Boom position	Retracted	Mid-position	Extended
Operating load	5,470 lb. (2481 kg)	4,320 lb. (1960 kg)	3,774 lb. (1712 kg)
Tipping load, straight	12,897 lb. (5850 kg)	10,190 lb. (4622 kg)	8,911 lb. (4042 kg)
Tipping load, 35-deg. turn	11,319 lb. (5134 kg)	8,942 lb. (4056 kg)	7,815 lb. (3545 kg)
Tipping load, 40-deg. full turn	10,937 lb. (4961 kg)	8,640 lb. (3919 kg)	7,549 lb. (3424 kg)
Operating weight	33,678 lb. (15 276 kg)	33,678 lb. (15 276 kg)	33,678 lb. (15 276 kg)

*Allied equipment ordered through John Deere

