644E LOADER WITH COUPLER

Model shown includes optional and allied equipment

ENGINE PERFORMANCE

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

*Depending on operating variables
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, 32.5, 12 PR, 5.2 yd, single rear counterweight, ROPS cab, full fuel tank, and 175-lb. (80 kg) operator.

**Rated Power** @ 2200 engine rpm:

<table>
<thead>
<tr>
<th>SAE</th>
<th>DIN 70 020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net</td>
<td>160 hp (119 kW)</td>
</tr>
<tr>
<td>Gross</td>
<td>168 hp (125 kW)</td>
</tr>
</tbody>
</table>

Net engine power is the rated engine power without air cleaner, exhaust system, alternator and cooling fan, at standard conditions per SAE J334 and DIN 70 020, using No. 2-D fuel @ 35 API gravity. Net derating is required up to 10,000 feet (3050 m) altitude. Gross power is without cooling fan.

**Engine**:

- John Deere 6076T
- 4-stroke cycle, turbocharged diesel
- Bore and stroke: 4.56 x 4.75 in. (116 x 121 mm)
- Net of cylinders: 6
- Displacement: 466 cu. in. (7636 L)
- Maximum net torque @ 1400 rpm: 770 lb ft (1041 Nm) @ 2200 engine rpm
- Coolant capacity: 240 qt.
- Air cleaner w/rectifier indicator: Dry type
- Electrical system: 12-volt w/65-amp alternator
- Batteries (one 12 volt)
- 20 amp at 80°F (27°C) . . . . . . Reserve capacity: 110 min. each
- Gross power is without cooling fan.

**Torque Converter**:

- Type: Single phase, single stage
- Torque multiplication: 3.0 to 1

**Transmission**:

- Countershaft, Power Shift

**Forward Speeds**:

<table>
<thead>
<tr>
<th>mph (max.)</th>
<th>km/h (max.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>3.2</td>
</tr>
<tr>
<td>3</td>
<td>4.8</td>
</tr>
<tr>
<td>4</td>
<td>6.4</td>
</tr>
</tbody>
</table>

**Reverse Speeds**:

| 1 | 2.2 |
| 2 | 7.6 |
| 3 | 12.7 |
| 4 | 18.4 |

**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 25-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
    - 17.5 in. (4.45 m)
  - 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-monitor warning.

**Hydraulic Systems**:

- Steering and loader functions: An engine-driven gear-type pump delivers 65.5 gpm (248 L/min) at 600 psi (4157 kPa) (42.2 kg/cm²) and 2200 engine rpm. Loader function relief valve pressure setting is 2850 psi (19651 kPa) (200.4 kg/cm²). Maximum steering pressure is 2300 psi (16.279 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 (16.279 kPa) (182.7 kg/cm²). Loader hydraulic operating cycle times at full throttle:
    - Raise: 8.2 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 ft. (5763 kg)
- Ground level: 25,000 lb. (11,358 kg)

**Hydraulic Cylinders**:

<table>
<thead>
<tr>
<th>Bore</th>
<th>Stroke</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.15 in. (80 mm) dia.</td>
<td>3.15 in. (80 mm) dia.</td>
</tr>
</tbody>
</table>

**Additional Standard Equipment**:

- Fuel, conventional, front and rear
- Engine:
  - Antifreeze
  - Fan guard
  - Fuel filter
  - Muffler
  - Precleaner and dry type air cleaner
- Frames:
  - Articulation lock
  - Lockable engine side shields
- Service steps, left-hand rear
- Hydraulic oil cooler
- Lights:
  - Driving w/guard
  - Flashing and turn signal
  - Stop and tail
- Operator's station:
  - Adjustable, deluxe vinyl seat
  - Cigarette lighter w/ashtray
  - Dual inside rearview mirrors
  - Dual level monitor system:
    - Two level warnings: Parking brake on
- Optional or Special Equipment:
  - Buckets:
    - Auxiliary spill guard
    - Bolt-on cutting edges
  - Bucket teeth
  - Differentials:
    - Front axle disconnect
    - Front hydraulic differential lock
  - Engines:
    - Additional battery
    - Alternator — 130 amp
    - Cold weather (ether) starting aid
  - Engine cooler heater
  - Radiator sand shield
  - Water separator, fuel
  - Frames:
    - Auxiliary bottom guards, transmission and front frame
    - Fenders, front or rear
    - Lift hooks
    - License plate bracket
    - Rear counterweights
    - Steps, frame mounted
    - Steps w/access platform
    - SMV emblem
    - Transmission side frame guards
- Hydraulics:
  - Two spool valve w/single-lever control
  - Two spool valve w/two-lever control
  - Tire pressures:
    - G2: 2200 psi (15859 kPa)
    - L2: 2200 psi (15859 kPa)
    - L3: 2200 psi (15859 kPa)
  - Tire sizes:
    - G2: 23.5-25, 12 PR, L2 tires, one rear counterweight, ROPS cab, full fuel tank, and 175-lb. (80 kg) operator.
## OPERATING INFORMATION

### GENERAL PURPOSE BUCKETS

| Capacity, heaped, SAE (cu. yd.) | 3.25 | 3.75
| - | (2.5 m³) | (2.8 m³)
| Capacity, struck, SAE (cu. yd.) | 2.78 | 3.17
| - | (2.13 m³) | (2.42 m³)
| Bucket width | 109.45 in. | 109.45 in.
| - | (2.78 m) | (2.78 m)
| Breakout force SAE J732C | 36,098 lb. (156.1 kN) | 32,534 lb. (144.7 kN)
| - | (15,920 kg) | (14,757 kg)
| Tipping load, straight | 25,961 lb. (11,771 kg) | 25,587 lb. (11,065 kg)
| - | (11,771 kg) | (11,065 kg)
| Tipping load, 35 deg. turn | 22,703 lb. (10,300 kg) | 22,358 lb. (10,150 kg)
| - | (10,300 kg) | (10,150 kg)
| Tipping load, 40 deg. full turn, SAE | 21,912 lb. (9,939 kg) | 21,583 lb. (9,700 kg)
| - | (9,939 kg) | (9,700 kg)
| Reach at 45 deg. dump 7 ft. (2.13 m) clearance | 81.54 in. (2.07 m) | 62.60 in. (1.64 m)
| - | (2.07 m) | (1.64 m)
| Reach at 45 deg. dump full height | 38.74 in. (1.00 m) | 41.26 in. (1.05 m)
| - | (1.00 m) | (1.05 m)
| Dump clearance at 45 deg. dump, full height | 115.59 in. (2.93 m) | 113.97 in. (2.94 m)
| - | (2.93 m) | (2.94 m)
| Overall length | 25 ft. 4.5 in. (7.74 m) | 25 ft. 8.3 in. (7.83 m)
| - | (7.74 m) | (7.83 m)
| Loader clearance circle in carry position | 41 ft. 6.4 in. (12.66 m) | 41 ft. 8.7 in. (12.72 m)
| - | (12.66 m) | (12.72 m)
| Operating weight | 34,948 lb. (15,852 kg) | 35,109 lb. (15,929 kg)
| - | (15,852 kg) | (15,929 kg)

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.

### Adjustments

<table>
<thead>
<tr>
<th>Add (+) or deduct (−) lb. (kg) as indicated for machines with:</th>
<th>Loader Operating Weight</th>
<th>Straight</th>
<th>Bucket 35° Turn</th>
<th>Full Turn</th>
<th>Straight</th>
<th>Fork* 35° Turn</th>
<th>Full Turn</th>
</tr>
</thead>
<tbody>
<tr>
<td>16.00-24, 12 PR, G2 w/o CaCl₂</td>
<td>−2160 lb. (960 kg)</td>
<td>−1528 lb. (693 kg)</td>
<td>−1360 lb. (617 kg)</td>
<td>−1318 lb. (598 kg)</td>
<td>−1032 lb. (468 kg)</td>
<td>−919 lb. (417 kg)</td>
<td>−891 lb. (404 kg)</td>
</tr>
<tr>
<td>16.00-24, 12 PR, G2 w/CaCl₂</td>
<td>−811 lb. (368 kg)</td>
<td>+381 lb. (173 kg)</td>
<td>+337 lb. (153 kg)</td>
<td>+326 lb. (149 kg)</td>
<td>+260 lb. (118 kg)</td>
<td>+229 lb. (104 kg)</td>
<td>+225 lb. (102 kg)</td>
</tr>
<tr>
<td>20.5-25, 12 PR, L2 w/o CaCl₂</td>
<td>−1597 lb. (720 kg)</td>
<td>−1120 lb. (509 kg)</td>
<td>−999 lb. (453 kg)</td>
<td>−970 lb. (440 kg)</td>
<td>−758 lb. (344 kg)</td>
<td>−675 lb. (306 kg)</td>
<td>−655 lb. (297 kg)</td>
</tr>
<tr>
<td>20.5-25, 12 PR, L2 w/CaCl₂</td>
<td>+234 lb. (106 kg)</td>
<td>+1453 lb. (659 kg)</td>
<td>+1292 lb. (586 kg)</td>
<td>+1267 lb. (570 kg)</td>
<td>+983 lb. (446 kg)</td>
<td>+877 lb. (396 kg)</td>
<td>+851 lb. (386 kg)</td>
</tr>
<tr>
<td>20.5-25, 16 PR, L2 w/o CaCl₂</td>
<td>−1490 lb. (660 kg)</td>
<td>−1060 lb. (482 kg)</td>
<td>−944 lb. (415 kg)</td>
<td>−915 lb. (415 kg)</td>
<td>−717 lb. (325 kg)</td>
<td>−637 lb. (289 kg)</td>
<td>−617 lb. (290 kg)</td>
</tr>
<tr>
<td>20.5-25, 16 PR, L2 w/CaCl₂</td>
<td>+322 lb. (146 kg)</td>
<td>+1515 lb. (687 kg)</td>
<td>+1347 lb. (611 kg)</td>
<td>+1310 lb. (594 kg)</td>
<td>+1027 lb. (466 kg)</td>
<td>+915 lb. (415 kg)</td>
<td>+888 lb. (403 kg)</td>
</tr>
<tr>
<td>20.5-25, 16 PR, L3 w/o CaCl₂</td>
<td>−1235 lb. (550 kg)</td>
<td>−873 lb. (396 kg)</td>
<td>−778 lb. (353 kg)</td>
<td>−754 lb. (342 kg)</td>
<td>−591 lb. (268 kg)</td>
<td>−525 lb. (238 kg)</td>
<td>−507 lb. (230 kg)</td>
</tr>
<tr>
<td>20.5-25, 16 PR, L3 w/CaCl₂</td>
<td>+356 lb. (160 kg)</td>
<td>+1702 lb. (772 kg)</td>
<td>+1515 lb. (687 kg)</td>
<td>+1473 lb. (668 kg)</td>
<td>+1153 lb. (523 kg)</td>
<td>+1025 lb. (465 kg)</td>
<td>+999 lb. (453 kg)</td>
</tr>
<tr>
<td>20.5 R25, One Star, L2 equivalent w/o CaCl₂</td>
<td>−1120 lb. (508 kg)</td>
<td>−791 lb. (359 kg)</td>
<td>−705 lb. (320 kg)</td>
<td>−683 lb. (310 kg)</td>
<td>−534 lb. (242 kg)</td>
<td>−476 lb. (216 kg)</td>
<td>−461 lb. (209 kg)</td>
</tr>
<tr>
<td>20.5 R25, One Star, L2 equivalent w/CaCl₂</td>
<td>+701 lb. (318 kg)</td>
<td>+1784 lb. (808 kg)</td>
<td>+1587 lb. (720 kg)</td>
<td>+1541 lb. (699 kg)</td>
<td>+1206 lb. (548 kg)</td>
<td>+1074 lb. (484 kg)</td>
<td>+1045 lb. (474 kg)</td>
</tr>
<tr>
<td>23.5-25, 12 PR, L2 w/CaCl₂</td>
<td>+2396 lb. (1087 kg)</td>
<td>+3398 lb. (1537 kg)</td>
<td>+3016 lb. (1358 kg)</td>
<td>+2930 lb. (1232 kg)</td>
<td>+2293 lb. (1040 kg)</td>
<td>+2041 lb. (926 kg)</td>
<td>+1984 lb. (900 kg)</td>
</tr>
<tr>
<td>23.5-25, 20 PR, L3 w/o CaCl₂</td>
<td>+494 lb. (224 kg)</td>
<td>+348 lb. (158 kg)</td>
<td>+311 lb. (141 kg)</td>
<td>+302 lb. (137 kg)</td>
<td>+236 lb. (107 kg)</td>
<td>+212 lb. (961 kg)</td>
<td>+207 lb. (94 kg)</td>
</tr>
<tr>
<td>23.5-25, 20 PR, L3 w/CaCl₂</td>
<td>4890 lb. (2185 kg)</td>
<td>+3739 lb. (1696 kg)</td>
<td>+3527 lb. (1599 kg)</td>
<td>+3230 lb. (1465 kg)</td>
<td>+2529 lb. (1147 kg)</td>
<td>+2251 lb. (1021 kg)</td>
<td>+2187 lb. (992 kg)</td>
</tr>
<tr>
<td>ROPS canopy in lieu of ROPS cab</td>
<td>−320 lb. (145 kg)</td>
<td>−296 lb. (135 kg)</td>
<td>−251 lb. (114 kg)</td>
<td>−236 lb. (108 kg)</td>
<td>−261 lb. (119 kg)</td>
<td>−217 lb. (97 kg)</td>
<td>−161 lb. (73 kg)</td>
</tr>
<tr>
<td>Deduct one rear counterweight</td>
<td>−910 lb. (413 kg)</td>
<td>−2057 lb. (933 kg)</td>
<td>−1782 lb. (799 kg)</td>
<td>−1699 lb. (766 kg)</td>
<td>−1391 lb. (631 kg)</td>
<td>−1193 lb. (541 kg)</td>
<td>−1142 lb. (518 kg)</td>
</tr>
</tbody>
</table>

Add second rear counterweight

**Add second rear counterweight** +1783 lb. (806 kg) +2584 lb. (1172 kg) +2213 lb. (996 kg) +1213 lb. (546 kg) +1750 lb. (794 kg) +1499 lb. (680 kg) +1440 lb. (653 kg)

*Allied equipment ordered through John Deere dealer.

**Not to be used with CaCl₂.
### 644E Loader with Coupler Dimensions

<table>
<thead>
<tr>
<th>Size</th>
<th>16.00-24</th>
<th>20.5-25</th>
<th>20.5 R25</th>
<th>23.5-25</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tread width</td>
<td>77.16 in. (1960 mm)</td>
<td>82.28 in. (2090 mm)</td>
<td>82.28 in. (2090 mm)</td>
<td>80.31 in. (2040 mm)</td>
</tr>
<tr>
<td>Width over tires</td>
<td>95.28 in. (2420 mm)</td>
<td>104.41 in. (2652 mm)</td>
<td>104.94 in. (2653 mm)</td>
<td>105.71 in. (2685 mm)</td>
</tr>
<tr>
<td>Change in vertical height</td>
<td>-2.75 in. (70 mm)</td>
<td>-1.57 in. (40 mm)</td>
<td>-2.44 in. (62 mm)</td>
<td>0</td>
</tr>
</tbody>
</table>

### Operating Information — Pallet Fork

<table>
<thead>
<tr>
<th>Tine length</th>
<th>54 in. (1372 mm)</th>
<th>60 in. (1524 mm)</th>
<th>72 in. (1829 mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ground to top of tine clearance</td>
<td>12 ft 6.3 in. (3818 mm)</td>
<td>12 ft 6.3 in. (3818 mm)</td>
<td>12 ft 6.3 in. (3818 mm)</td>
</tr>
<tr>
<td>Max. reach with fork level</td>
<td>5 ft 0.6 in. (1539 mm)</td>
<td>5 ft 0.6 in. (1539 mm)</td>
<td>5 ft 0.6 in. (1539 mm)</td>
</tr>
<tr>
<td>Overall length</td>
<td>27 ft 2.3 in. (8288 mm)</td>
<td>27 ft 8.3 in. (8441 mm)</td>
<td>26 ft 6.5 in. (7988 mm)</td>
</tr>
<tr>
<td>Tipping load, straight (fork level, load centered on tine)</td>
<td>17,745 lb. (7946 kg)</td>
<td>17,758 lb. (7967 kg)</td>
<td>16,935 lb. (7692 kg)</td>
</tr>
<tr>
<td>Tipping load, 35-deg. turn (fork level, load centered on tine)</td>
<td>15,498 lb. (6999 kg)</td>
<td>15,066 lb. (6843 kg)</td>
<td>14,238 lb. (6458 kg)</td>
</tr>
<tr>
<td>Tipping load, 45-deg. full turn (fork level, load centered on tine)</td>
<td>14,947 lb. (6790 kg)</td>
<td>14,531 lb. (6591 kg)</td>
<td>13,730 lb. (6229 kg)</td>
</tr>
<tr>
<td>Operating weight</td>
<td>34,873 lb. (15,818 kg)</td>
<td>34,943 lb. (15,850 kg)</td>
<td>35,087 lb. (15,915 kg)</td>
</tr>
</tbody>
</table>

### Operating Information — Material Handling Arm

<table>
<thead>
<tr>
<th>Boom position</th>
<th>Retracted</th>
<th>Mid-position</th>
<th>Extended</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating load</td>
<td>5,470 lb. (2481 kg)</td>
<td>4,320 lb. (1960 kg)</td>
<td>3,774 lb. (1712 kg)</td>
</tr>
<tr>
<td>Tipping load, straight</td>
<td>12,897 lb. (5850 kg)</td>
<td>10,190 lb. (4622 kg)</td>
<td>8,911 lb. (4042 kg)</td>
</tr>
<tr>
<td>Tipping load, 35-deg. turn</td>
<td>11,319 lb. (5134 kg)</td>
<td>8,942 lb. (4056 kg)</td>
<td>7,815 lb. (3545 kg)</td>
</tr>
<tr>
<td>Tipping load, 40-deg. full turn</td>
<td>10,037 lb. (4561 kg)</td>
<td>8,640 lb. (3919 kg)</td>
<td>7,549 lb. (3424 kg)</td>
</tr>
<tr>
<td>Operating weight</td>
<td>33,678 lb. (15,276 kg)</td>
<td>33,678 lb. (15,276 kg)</td>
<td>33,678 lb. (15,276 kg)</td>
</tr>
</tbody>
</table>

*Allied equipment ordered through John Deere*