ENGINE PERFORMANCE

FEATUES

145 SAE net hp (147.5 PS)
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 standard equipment, 20.5-25, 12-ply, loader tread tires with 1820 lb. (826 kg) of GaGI, solution in rear tires, side counterweights, ROPS cab, full fuel tank, and 175 lb. (79.4 kg) operator.)

**Power (@ 2200 engine rpm):**
- **SAE**
  - Gross: 160 hp (119.3 kW*)
  - Net: 145 hp (108.1 kW)
  - 147.5 PS
- **DIN**
  - Gross: 147 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.

*In the International System of Units (SI), power is expressed in kilowatts (kW).

**Engine:**
- John Deere turbocharged diesel, vertical 6-cylinder, valve-in-head, 4-stroke cycle.
- **Bore and stroke:** 4.75x5 in. (120.5 mm x 127 mm)
- **Piston displacement:** 531 cu. in. (8702 cm³)
- **Compression ratio:** 15.8:1
- **Piston:** Ground, heat-treated, chrome-plated, polished
- **Cylinder rods:** Ground, heat-treated, chrome-plated, polished
- **Connecting rods:** Ground, heat-treated, chrome-plated, polished
- **Valves:** Valve-in-head, 4-stroke cycle.
- **Lubrication:** Pressure system
- **Cooling:** Pressurized w/thermostat and controlled bypass
- **Air cleaner w/restriction indicator:** Dry
- **Transmission:** Power Shift planetary
- **Torque Converter:** Twin-turbine
- **Torque multiplication:** 5.03:1

**Transmission Capabilities:**
- **Front and rear:** 80 in. (2.03 m)
- **Transmission:** 5 speeds, 2 ranges

**Differentials:**
- **Front:** No-Spin
- **Rear:** Standard

**Brakes:**
- Service: Power actuated, 4-wheel, inboard-mounted wet disk. Foot-operated by either right or left pedal.
- Parking: 10x1.5 inch (254 mm x 38 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 Cylinders:**
- **Bore:** 6.25 in. (159 mm)
- **Stroke:** 20.1-41.5 in. (510 mm)

**Tires:**
- 20.5-25, 12-ply-rating, loader tread, L-2
- 20.5-25, 12-ply-rating, rock tread, L-3

**Wheel Treads:**
- Front and rear: 80 in. (2.03 m)

**Capacities:**
- **U.S.**
  - Fuel tank: 56 gal.
  - Coolant: 20 qu. (18.9 L)
  - Oil: 23 qu. (22.7 L)
  - Water: 20.8 qu. (19.6 L)
  - Antifreeze: 20.8 qu. (19.6 L)
  - Air cleaner: 23 qu. (22.7 L)

**Additional Standard Equipment:**
- Adjustable cushioned seat
- Engine side shields
- Front fenders
- Brakes:
  - 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
- Gigaret 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
- Preheater
- PreCleaner
## JD644-B Loader Operating Information

### Operating Bucket Information

<table>
<thead>
<tr>
<th>Operating Information</th>
<th>Bucket Type</th>
<th>Capacity, Heaped, SAE</th>
<th>Capacity, Struck, SAE</th>
<th>Breakout Force, J732C SAE</th>
<th>Tipping Load, Straight</th>
<th>Tipping Load, 40-deg.</th>
<th>Turning Clearance, Outside Bucket</th>
<th>Loader Operating Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>General Purpose</td>
<td>2½ cu. yd. (1.91 m³)</td>
<td>3 cu. yd. (2.29 m³)</td>
<td>4½ cu. yd. (3.44 m³)</td>
<td>2½ cu. yd. (1.91 m³)</td>
<td>2½ cu. yd. (1.91 m³)</td>
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<tr>
<td></td>
<td>Loose Materials</td>
<td>0.50 cu. yd. (0.42 m³)</td>
<td>0.75 cu. yd. (0.62 m³)</td>
<td>1.00 cu. yd. (0.79 m³)</td>
<td>0.50 cu. yd. (0.42 m³)</td>
<td>0.50 cu. yd. (0.42 m³)</td>
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<td>0.50 cu. yd. (0.42 m³)</td>
</tr>
<tr>
<td></td>
<td>Multipurpose</td>
<td>1.00 cu. yd. (0.79 m³)</td>
<td>1.25 cu. yd. (1.02 m³)</td>
<td>1.50 cu. yd. (1.22 m³)</td>
<td>1.00 cu. yd. (0.79 m³)</td>
<td>1.00 cu. yd. (0.79 m³)</td>
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<td>1.00 cu. yd. (0.79 m³)</td>
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</tbody>
</table>

### Maximum Recommended Material Weight, lb. per cu. yd. (kg/m³):

<table>
<thead>
<tr>
<th>All Standard Equipment with 20.5-25, 12-Ply-Rating Tires</th>
<th>2½ cu. yd. (1.91 m³)</th>
<th>3 cu. yd. (2.29 m³)</th>
<th>4½ cu. yd. (3.44 m³)</th>
<th>2½ cu. yd. (1.91 m³)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Loader less cab or canopy</td>
<td>2575 (1.92 m³)</td>
<td>2085 (1.57 m³)</td>
<td>1315 (1.08 m³)</td>
<td>2575 (1.92 m³)</td>
</tr>
<tr>
<td>Loader with canopy</td>
<td>2660 (1.92 m³)</td>
<td>2160 (1.57 m³)</td>
<td>1360 (1.08 m³)</td>
<td>2660 (1.92 m³)</td>
</tr>
<tr>
<td>Loader with cap</td>
<td>2715 (1.92 m³)</td>
<td>2205 (1.57 m³)</td>
<td>1390 (1.08 m³)</td>
<td>2715 (1.92 m³)</td>
</tr>
<tr>
<td>Loader with cap and fluid</td>
<td>3090 (1.92 m³)</td>
<td>2515 (1.57 m³)</td>
<td>1590 (1.08 m³)</td>
<td>3090 (1.92 m³)</td>
</tr>
<tr>
<td>Loader with cap, fluid, and first set of side counterweights</td>
<td>3450 (1.92 m³)</td>
<td>2810 (1.57 m³)</td>
<td>1785 (1.08 m³)</td>
<td>3450 (1.92 m³)</td>
</tr>
<tr>
<td>Loader with cap, fluid, first and second sets of side counterweights</td>
<td>3795 (1.92 m³)</td>
<td>3095 (1.57 m³)</td>
<td>1975 (1.08 m³)</td>
<td>3795 (1.92 m³)</td>
</tr>
</tbody>
</table>

### Adjustments to Operating Weights and Tipping Loads:

<table>
<thead>
<tr>
<th>Add (+) or Deduct (−) lb. (kg) as indicated for loader equipped with:</th>
<th>Loader Operating Weight</th>
<th>Tipping Load, Straight</th>
<th>Tipping Load, 40-deg. Full Turn, SAE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less ROPS cab</td>
<td>−350 lb. (159 kg)</td>
<td>−630 lb. (286 kg)</td>
<td>−770 lb. (349 kg)</td>
</tr>
<tr>
<td>ROPS canopy in lieu of ROPS cab</td>
<td>−320 lb. (145 kg)</td>
<td>−305 lb. (138 kg)</td>
<td>−275 lb. (125 kg)</td>
</tr>
<tr>
<td>Less side counterweights</td>
<td>−175 lb. (79 kg)</td>
<td>−2430 lb. (1092 kg)</td>
<td>−2025 lb. (919 kg)</td>
</tr>
<tr>
<td>17.5-25, 12-Ply-Rating, Loader Tread Tires</td>
<td>−184 lb. (83 kg)</td>
<td>−250 lb. (113 kg)</td>
<td>−215 lb. (98 kg)</td>
</tr>
<tr>
<td>20.5-25, 12-Ply-Rating, Rock Tread Tires</td>
<td>+174 lb. (79 kg)</td>
<td>+230 lb. (104 kg)</td>
<td>+200 lb. (91 kg)</td>
</tr>
<tr>
<td>Less CaCl₂ in Rear Tires</td>
<td>−1820 lb. (8260 kg)</td>
<td>−2435 lb. (1095 kg)</td>
<td>−2115 lb. (959 kg)</td>
</tr>
<tr>
<td>Second Set of Side Counterweights</td>
<td>+1294 lb. (587 kg)</td>
<td>+2300 lb. (1043 kg)</td>
<td>+1945 lb. (882 kg)</td>
</tr>
<tr>
<td>Bucket Teeth</td>
<td>+230 lb. (104 kg)</td>
<td>−330 lb. (150 kg)</td>
<td>−330 lb. (150 kg)</td>
</tr>
</tbody>
</table>
Special Equipment:
- Rear axle disconnect
- 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
- License plate bracket
- Defroster fan
- Automatic boom height control
- SMV emblem
- Auxiliary cutting edges
- Adjustable suspension seat
- Air conditioning

<table>
<thead>
<tr>
<th>BUCKET CAPACITIES</th>
<th>DIMENSIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A</td>
</tr>
<tr>
<td>2½ cu. yd. bucket</td>
<td>34.6 in. (879 mm)</td>
</tr>
<tr>
<td>3 cu. yd. bucket</td>
<td>37.8 in. (960 mm)</td>
</tr>
<tr>
<td>4½ cu. yd. bucket</td>
<td>45 in. (1143 mm)</td>
</tr>
<tr>
<td>2½ cu. yd. multipurpose</td>
<td>36.3 in. (922 mm)</td>
</tr>
</tbody>
</table>