**JD510 BACKHOE LOADER**

**ENGINE PERFORMANCE**

80 SAE net hp (85 DIN-PS)

Backhoe digging depth (ICED)—17 ft. 3 in. (5.26 m)

Power Shift transmission

Choice of 2 self-leveling loader buckets

Single-lever loader control

Single, swing-around seat

Choice of 4 heavy-duty backhoe buckets

Two-lever backhoe control

Extendable dipperstick available

Power steering

Self-adjusting wet-disk power brakes

Inboard planetary final drives

Roll-over protective structure (ROPS)

---

**FEATURES**

---

**ENGINE SPEED—RPM**

<table>
<thead>
<tr>
<th>HORSEPOWER</th>
<th>NET TORQUE</th>
<th>LB-FT</th>
</tr>
</thead>
<tbody>
<tr>
<td>80</td>
<td>210</td>
<td>200</td>
</tr>
<tr>
<td>70</td>
<td>190</td>
<td>180</td>
</tr>
<tr>
<td>60</td>
<td>170</td>
<td>160</td>
</tr>
<tr>
<td>50</td>
<td>150</td>
<td>140</td>
</tr>
<tr>
<td>40</td>
<td>130</td>
<td>120</td>
</tr>
</tbody>
</table>

**FUEL CONSUMPTION**

<table>
<thead>
<tr>
<th>NET HORSEPOWER</th>
<th>FUEL, LBS/HR-HP</th>
<th>HP-HR</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td>1100</td>
<td>150</td>
</tr>
<tr>
<td>30</td>
<td>1900</td>
<td>2300</td>
</tr>
</tbody>
</table>

---

---

---
**JD510 BACKHOE 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, these specifications are based on a unit equipped with 1½ cu. yd. (1.15 m³) loader bucket, 14 cu. ft. (0.40 m³) loader bucket, and 12 cu. ft. (0.36 m³) backhoe bucket, diesel engine and standard equipment.)

**Power (@ 2500 engine rpm):**

<table>
<thead>
<tr>
<th>SAE</th>
<th>DIN</th>
</tr>
</thead>
<tbody>
<tr>
<td>.83 hp (61.9 kW)</td>
<td>.80 hp (59.7 kW)</td>
</tr>
</tbody>
</table>

Engine: John Deere diesel, 4-cylinder, 4-stroke cycle

- **Bore and stroke:** 4.25x4.75 in. (108x121 mm)
- **Compression ratio:** 17.3 to 1
- **Maximum torque @ 1,300 rpm:** 202 lb-ft (274 Nm) (27.9 kg-m)
- **Piston displacement:** 269 cu. in. (4408 cm³)
- **Maximum power (@ 2500 engine rpm):** SAE NACC or AMA (U.S. Tax) horsepower.
- **Cooling:** Pressurized with thermostat and fixed bypass
- **Lubrication:** Pressure system with full-flow filter
- **Air cleaner:** W/restriction indicator.
- **Electrical system:** 12-volt w/alternator
- **Transmission:** 4-speed forward, 4 reverse: Power shift from 1st to 4th gears.
- **Two-Iever Backhoe control**
- **Single-Iever Loader control**

### Transmission:
- **Full power shift. 8 speeds forward, 4 reverse:** Power shift from forward to reverse in first 4 gears.

#### Final Drives:
- Inboard, planetary

#### Brakes
- Hydraulically power actuated, fully enclosed wet-disk. Self-equalizing. Foot-operated individually or simultaneously.

#### Steering:
- **Turning radius (brake applied):** 11 ft. 2 in. (3.40 m)
- **Number of turns, far left to far right:** 8

#### Hydraulic System: Closed-center
- **Max pressure:** 2350 psi (162 bar) (1652 kg/cm²)
- **Loader control:** Single-lever
- **Backhoe control:** Two-lever
- **Pump:** Piston, constant pressure, variable-displacement, 60 gpm (227 l/min) @ 2500 engine rpm
- **Filter:** 25-micron steel-enclosed paper cartridge in return

#### Hydraulic Cylinders: Bore Stroke
- **Loader boom:** 3.75 in. (95 mm) 28.7 in. (729 mm)
- **Loader bucket:** 3.5 in. (89 mm) 27.3 in. (693 mm)
- **Backhoe boom:** 5.5 in. (140 mm) 41.75 in. (1060 mm)
- **Backhoe crowd:** 5.5 in. (140 mm) 37.5 in. (953 mm)
- **Backhoe bucket:** 4 in. (102 mm) 37.5 in. (953 mm)
- **Backhoe swing:** 4.5 in. (114 mm) 9.9 in. (251 mm)
- **Stabilizer:** 4.5 in. (114 mm) 21.5 in. (546 mm)
- **Cylinder rods:** Ground, heat-treated, chrome-plated, polished
- **Loader cylinder rods:** 2 in. (51 mm) dia.
- **Backhoe boom, crowd, bucket and stabilizer cylinder rods:** 2.5-in. (64 mm) dia.
- **Backhoe swing cylinder rods:** 2 in. (51 mm) dia.
- **Bucket levels:** 4 in. (102 mm)
- **Lifting capacity, full height:** 6000 lb (2722 kg)
- **Height to bucket hinge pin:** 10 ft. 7 in. (3.23 m)
- **Maximum dump angle:** 45 deg.
- **Clearance, bucket dumped at 45 degrees:** 3 ft. 10 in. (1.12 m)
- **Maximum dump time:** 3.0 sec.
- **Lowering time (power):** 3.7 sec.

### OPERATING INFORMATION

#### LOADER:
- **Rollback at ground level:** 40 deg.
- **Breakout force:** 10,000 lb. (44.82 kN) (4536 kg)
- **Digging depth below ground level:** 4 in. (102 mm)
- **Lifting capacity, full height:** 6000 lb. (2722 kg)
- **Height to bucket hinge pin:** 10 ft. 7 in. (3.23 m)
- **Maximum dump angle:** 45 deg.
- **Clearance, bucket dumped at 45 degrees:** 3 ft. 10 in. (1.12 m)
- **Maximum dump time:** 3.0 sec.
- **Lowering time (power):** 3.3 sec.

#### BACKHOE:
- **Digging depth (ICED):**
  - **Maximum:** 17 ft. 3 in. (5.26 m)
  - **Depth:** 2 ft. (610 mm) flat bottom
  - **Height:** 8 ft. (2.44 m) flat bottom
- **Swing arc:** 180 deg.
- **Lifting capacity:**
  - **Boom at full reach and full height:** 2400 lb. (1089 kg)
  - **Dipper lifting, boom holding, full height:** 4000 lb. (1814 kg)
  - **Digging force (Bucket cylinder in power-dig position):** 12,662 lb. (56.75 kN) (5743 kg)
  - **Digging force, crowd cylinder:** 8811 lb. (39.49 kN) (3997 kg)
  - **Reach from center of swing mast:** 22 ft. 3 in. (6.78 m)
  - **Reach from center of rear axle:** 25 ft. 11 in. (7.90 m)
  - **Loading height (truck-loading position):** 13 ft. 6 in. (4.17 m)
- **Bucket rotation:** Adjustable for 148 or 161 deg.
- **Stabilizer Width:** Adjustable for 148 or 161 deg.

### Tires:
- **Front:** 14.5/75-16.1, 10-ply-rating, F3
- **Rear:** 18.4-26, 12-ply-rating, R4

### Wheel Treads:
- **Front:** 70.34 in. (1.79 m)
- **Rear:** 65.5 in. (1.66 m)

### Capacities:
- **U.S. Liters**
  - **Cooling system:** 4.75 gal. (18.0 L)
  - **Fuel tank:** 34 gal. (128.7 L)
  - **Engine lubrication, including filter:** 8 qt. (7.6 L)
  - **Transmission and hydraulic system:** 29.9 gal. (113.2 L)
### JD510 BACKHOE LOADER DIMENSIONS

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extendable dipperstick adds</td>
<td>5 ft. (1.52 m)</td>
</tr>
<tr>
<td>to all digging depth dimensions.</td>
<td></td>
</tr>
<tr>
<td>Ground clearance (minimum)</td>
<td>11.3 in. (287 mm)</td>
</tr>
<tr>
<td>Overall length (transport position)</td>
<td>24 ft. 7 in. (7.49 m)</td>
</tr>
<tr>
<td>Overall width (less loader bucket)</td>
<td>6 ft. 11.9 in. (2.13 m)</td>
</tr>
</tbody>
</table>

**Additional Standard Equipment:**
- Vertical muffler w/rain cap
- Differential lock
- Fuel gauge
- Lights
- Oil pressure indicator light
- Alternator charge indicator light
- Water temperature gauge
- Transmission oil pressure indicator light
- Cigaret lighter
- Transmission oil temperature gauge
- Tachometer
- Key switch w/push-button safety start
- Fenders
- Vandal protection
- Horn
- Hand throttle
- Foot throttle
- Electric hourmeter
- Deluxe swing-around seat
- Antifreeze
- Ether starting aid
- Bucket level indicator
- Rear reflector
- Transistorized voltage regulator
- Flat deck w/skid-proof platform

**Special Equipment:**
- ROPS w/canopy and seat belt
- Cab (includes ROPS and seat belt)
- Heater
- Defroster
- Pressurizer for cab
- Exhaust extension
- Bolt-on stabilizer street pads
- Extendable dipperstick
- Reversible stabilizer pads
- Parking brake
- Backup alarm

**SAE Operating Weight**
- 20,560 lb. (9326 kg)