510B BACKHOE LOADER

FEATURES

- 70 SAE net hp (52.2 kW)
- Backhoe digging depth (SAE) 15 ft. 8 in. (4.78 m)
- Unitized frame
- Isolated engine and operator's station
- Walk-in front entry
- Designed for quietness
- Closed-center hydraulic system
- Weight distributed for working stability
- Self-adjusting hydraulic wet-disk brakes
- Inboard planetary final drives
- Transaxle 1st and 2nd collar shift, 3rd and 4th synchronized
- Full-power-shift reverser
- Torque converter
- Single-lever loader control
- Two-lever backhoe control
- Two-lever stabilizer control
- Stabilizer lockouts — raise and lower
- Multi-adjustable swing-around seat w/high backrest and armrests
- Hydrostatic power steering
- Soundproofed cab w/integral ROPS/FOPS
- Vandal protection w/built-in locks

ADD VERSATILITY WITH:

- Extendable dipperstick
- Mechanical front-wheel drive with: Wet clutch—engage on the go
- Offset driveshaft for better ground clearance

ENGINE PERFORMANCE

- Model shown may include options

<table>
<thead>
<tr>
<th>Nm</th>
<th>lb-ft</th>
</tr>
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<tbody>
<tr>
<td>258</td>
<td>190</td>
</tr>
<tr>
<td>271</td>
<td>200</td>
</tr>
<tr>
<td>244</td>
<td>180</td>
</tr>
<tr>
<td>217</td>
<td>160</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>g/kWh</th>
<th>hp/hp</th>
</tr>
</thead>
<tbody>
<tr>
<td>.45</td>
<td>.65</td>
</tr>
<tr>
<td>.40</td>
<td>.55</td>
</tr>
<tr>
<td>.36</td>
<td>.50</td>
</tr>
</tbody>
</table>

With optional turbocharger
5108 BACKHOE LOADER SPECIFICATIONS

(Specifications and design subject to change without notice. Wherever applicable, specifications are in accordance with SAE Standards. Except where otherwise noted, these specifications are based on a unit with 19.5L-24, 10 PR, R4 rear tires; 11L-16, 12 PR, F3 front tires; 1.3 cu.-yd. (1.00 m³) loader bucket; 24-in. (610 mm) high-capacity backhoe bucket; ROPS/FOPS, full fuel tank and 175-bhp (70 kW) engine.)

<table>
<thead>
<tr>
<th>Rated Power @2200 rpm:</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAE</td>
</tr>
<tr>
<td>DIN 70 020</td>
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</table>

<table>
<thead>
<tr>
<th>Net hp (52.2 kW)</th>
<th>70 hp</th>
<th>54.7 kW</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gross hp (56.7 kW)</td>
<td>76 hp</td>
<td>56.7 kW</td>
</tr>
</tbody>
</table>

Displacement: 275 cu in (4,524 L)

Maximum net torque @1300 rpm: 204 lb-ft (277 Nm) (29.6 kg-m)

Cooling fan: Suction

Engine: John Deere 4-276D

Type: 4-stroke cycle, naturally aspirated diesel

Bore and stroke: 4.19 x 5.00 in (106 x 127 mm)

Compression ratio: 16.8:1

Lubrication: Pressure system w/full-flow filter and cooler

Transmission: Modulated, full-power shift with multiple wet-disk clutches. Reverser

Transmission: Single stage, dual phase, overrunning stator, 11-in (280 mm) diameter, stall torque ratio 2.83:1.

Controller: Single stage, dual phase, overrunning stator, 11-in (280 mm) diameter, stall torque ratio 2.83:1.

Reverser: Single stage, dual phase, overrunning stator, 11-in (280 mm) diameter, stall torque ratio 2.83:1.

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510B BACKHOE LOADER SPECIFICATIONS AND DIMENSIONS

Key:
A. Loading height, truck loading position................. 12 ft. 10 in. (3.91 m)
B. Reach from center of swing mast................................ 19 ft. 2 in. (5.84 m)
C. Reach from center of rear axle................................. 22 ft. 2 in. (6.75 m)
D. Digging depth (SAE):
   (1) 2-ft. (610 mm) flat bottom......................... 15 ft. 7 in. (4.75 m)
   (2) 8-ft. (2440 mm) flat bottom..................... 14 ft. 6 in. (4.43 m)
E. Maximum digging depth.................................... 15 ft. 6 in. (4.73 m)
F. Ground clearance, minimum................................. 13 in. (330 mm)
G. Bucket rotation............................................ 123, 127/155 degrees
H. Transport height ........................................... 12 ft. (3.65 m)
I. Overall length, transport................................. 22 ft. 11.5 in. (7.0 m)
J. Stabilizer width—transport................................. 7 ft. 8 in. (2.34 m)
K. Stabilizer spread—operating.............................. 9 ft. 10 in. (3 m)
L. Overall width (less loader bucket)...................... 92.1 in. (2340 mm)

Digging force, bucket cylinder
(power dig position)............................................. 9800 lb. (43.6 kN) (4445 kg)
Digging force, crowd cylinder............................... 7500 lb. (33.4 kN) (3402 kg)
Swing arc......................................................... 180 degrees
Operator control.............................................. Two levers
Bucket positions............................................... 12 or 20 deg. rollback/
Stabilizer angle rearward..................................... 13 degrees
Lifting capacity, maximum boom @65°..................... 5550 lb. (2523 kg)

Retracted
Extended
11 ft. 4 in. (3.45 m)...................................... 13 ft. 10 in. (4.22 m)
19 ft. 0 in. (5.80 m)...................................... 24 ft. (7.32 m)
22 ft. 11 in. (7.0 m)...................................... 27 ft. 11 in. (8.5 m)
15 ft. 7 in. (4.75 m)...................................... 20 ft. 9 in. (6.33 m)
14 ft. 6 in. (4.43 m)...................................... 19 ft. 10 in. (6.05 m)
15 ft. 6 in. (4.73 m)...................................... 20 ft. 8 in. (6.30 m)
13 in. (330 mm).......................................... 13 in. (330 mm)
123, 127/155 degrees.................................... 123, 127/155 degrees
12 ft. (3.65 m)........................................ 12 ft. (3.65 m)
22 ft. 11.5 in. (7.0 m)................................. 22 ft. 11.5 in. (7.0 m)
7 ft. 8 in. (2.34 m)......................................... 7 ft. 8 in. (2.34 m)
9 ft. 10 in. (3 m).......................................... 9 ft. 10 in. (3 m)
92.1 in. (2340 mm)...................................... 92.1 in. (2340 mm)
9800 lb. (43.6 kN) (4445 kg).......................... 9800 lb. (43.6 kN) (4445 kg)
7570 lb. (33.7 kN) (3434 kg)......................... 4935 lb. (21.9 kN) (2238 kg)
180 degrees............................................... 180 degrees
Right foot treadle..............................................
Right foot treadle..............................................
12 or 20 deg. rollback/................................
6 deg. forward...........................................
13 degrees...................................................
5410 lb. (2460 kg)........................................ 1735 lb. (790 kg)

*Note: Backhoe specifications are with 24-in. (610 mm) 8.8 cu. ft. (.25 m³) bucket.
With 24-in. (610 mm) standard-duty bucket, the digging forces increase and the depth and reach decrease.
Lifting Capacities: Ratings made from bucket hinge pin, loader bucket and stabilizers on firm, level ground. Lifting capacities are 87 percent of the maximum lift over any point on the swing arc and do not exceed 75 percent of the tipping load. Angle between boom and ground at 65 degrees. Machine equipped with 24-in. (610 mm) trenching bucket, standard or optional dipperstick (as indicated below) and standard equipment.

**Lift Capacity**

Backhoe with standard dipperstick.

Based on SAE J31 (except w/loader bucket on ground).

Backhoe with extendable dipperstick, retracted.

Based on SAE J31 (except w/loader bucket on ground).

Backhoe with extendable dipperstick, extended.

Based on SAE J31 (except w/loader bucket on ground).

Rated lift capacities are in lb. (kg)

Lift capacities are hydraulically limited.

*Loader bucket on ground significantly improves side stability, therefore improving lift capacity to the side. Lift capacity over the rear is not affected.
510B BACKHOE LOADER

LOADERS:
Operator control: Single lever
Rollback at ground level: 40 degrees
Breakout force: 9200 lb. (40.9 kN) (4173 kg)
Digging depth, bucket, below ground: 4 in. (100 mm)
Lifting capacity, full height: 6180 (2810 kg)
Height to bucket hinge pin, max.: 11 ft. (3.35 m)
Bucket dump angle, max.: 45 degrees
Dump clearance, bucket @ 45 degrees: 6 ft. 9 in. (2.67m)
Reach at full height, bucket @ 45 degrees: 30 in. (762 mm)
Raising time to full height: 4.5 sec.
Bucket dump time: 1.0 sec.
Bucket lowering time (power down): 3.0 sec.

Optional or Special Equipment:
Altitude-compensating engine turbocharger
Automatic return-to-dig
Backup alarm
Cab pressurizer
Cab with:
51-amp alternator
Fabric-covered swivel seat, suspension or non-suspension
Front defroster fan
Front and rear wipers
Integral ROPS/FOPS
Standard heater — 19,000 Btu (5.6 kW)
Cold-weather starting aid, remote mounted
Deluxe heater w/fresh air intake — 40,000 Btu (11.7 kW)
Economy seat, vinyl covered, suspension or rigid mounted
Engine coolant heater
Extendable dipperstick for backhoe
Fire extinguisher
Front counterweight
Heavy-duty batteries
Instrument panel vandal cover
Mechanical front-wheel drive
Rear defroster fan
Rear view mirror, inside mounted, curved, heavy-duty
Rear wheel spacers for tire chain clearance
Reversible stabilizer pads
Ripper tooth for backhoe, 24 in. (610 mm)
Rotating beacon light
Swivel seat, vinyl covered, suspension or non-suspension
SMV emblem
3-in. (76 mm) seat belt
Three- or four-lever, pedal-swing backhoe controls
Toolbox

BUCKETS

Struck Capacity Heaped Capacity

<table>
<thead>
<tr>
<th>Width</th>
<th>Capacity</th>
<th>Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>In. (mm)</td>
<td>Cu. Ft. (m³)</td>
<td>Cu. Yd. (m³)</td>
</tr>
<tr>
<td>Loader:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>General purpose</td>
<td>92 (2340)</td>
<td>1.66 (0.047)</td>
</tr>
<tr>
<td>Long lip</td>
<td>89.4 (2270)</td>
<td>1.25 (0.036)</td>
</tr>
<tr>
<td>Backhoe:</td>
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<td></td>
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<tr>
<td>Standard-duty</td>
<td>12 (305)</td>
<td>2.6 (0.07)</td>
</tr>
<tr>
<td></td>
<td>16 (406)</td>
<td>2.7 (0.08)</td>
</tr>
<tr>
<td></td>
<td>18 (457)</td>
<td>2.8 (0.08)</td>
</tr>
<tr>
<td></td>
<td>24 (610)</td>
<td>5.9 (0.17)</td>
</tr>
<tr>
<td></td>
<td>24 (610)</td>
<td>7.2 (0.20)</td>
</tr>
<tr>
<td></td>
<td>30 (762)</td>
<td>7.5 (0.21)</td>
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<td></td>
<td>36 (914)</td>
<td>11.2 (0.32)</td>
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<tr>
<td>Heavy-duty</td>
<td>18 (457)</td>
<td>4.2 (0.12)</td>
</tr>
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<td>24 (610)</td>
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<tr>
<td></td>
<td>30 (762)</td>
<td>7.5 (0.21)</td>
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<tr>
<td>Ejector</td>
<td>24 (610)</td>
<td>4.6 (0.13)</td>
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Additional Available Equipment:
- Auxiliary bolt-on cutting edge for loader buckets
- Auxiliary fuel tank
- Auxiliary hydraulic valves and circuit for loader and backhoe
- Backhoe lift eye
- Bolt-on teeth for loader bucket
- Front windshield and door kit
- Grille guard
- Lateral slides for operator's seat
- Loader bucket chain hooks, outer
- Longer dippersticks
- Light materials/snow loader buckets
- Multipurpose loader buckets
- 1% cu. yd. (1.15 m³) bucket
- Radio or radio cassette

*See your John Deere dealer for further information.