310C BACKHOE LOADER

FEATURES

- 65 SAE net hp (48.5 kW)
- Backhoe digging depth (SAE) 14 ft. 3 in. (4.34 m)
- Unitized frame—pin-on backhoe
- Isolated engine and operator's station
- Walk-in front entry
- Designed-in quietness
- Open-center hydraulic system
- O-ring face seal hydraulic plumbing
- 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 with anti-drift lock-outs

ENGINE PERFORMANCE

- Nm (lb-ft)
  - 271.200
  - 244.180
  - 217.160
  - 190.140

- kW (hp)
  - 70
  - 52
  - 45
  - 40

- L/h (gpm)
  - 15
  - 11
  - 7.5
  - 3.8

* Depending on operating variables

Model shown may include options

ADD VERSATILITY WITH:

- Multi-adjustable swivel seat
- Hydrostatic power steering
- Optional cab w/integral ROPS/FOPS
- Vandal protection w/built-in locks

Mechanical front-wheel drive with:
- Offset driveshaft for better ground clearance
- Extendable dipperstick
### 310C 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 17.5L-24, 10 PR, F3 rear tires, 11L-15, 8 PR, F3 front tires, 1.0 cu. yd. (0.76 m³) loader bucket, 24-in. (610 mm) standard-duty backhoe bucket, ROPS/FOPS, full fuel tank and 17 lb. (90 kg) operator.

<table>
<thead>
<tr>
<th>Rated Power @ 2200 rpm:</th>
<th>SAE</th>
<th>DIN 70 020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net</td>
<td>65 hp (48.5 kW)</td>
<td>49.5 kW</td>
</tr>
<tr>
<td>Gross</td>
<td>69 hp (51.8 kW)</td>
<td></td>
</tr>
</tbody>
</table>

Net engine power is with standard equipment including air cleaner, exhaust system, automatic, and cooling fan, at standard conditions per SAE J1349 and DIN 70 020, using No. 2-D fuel at 30 API gravity. No derating is required up to 5000 feet (1500 m) altitude. With optional ACT, 10,000 feet (3050 m) altitude. Gross power is without cooling fan.

* Altitude compensating turbocharger

**Engine:**
- Type: 4-stroke cycle, naturally aspirated diesel
- Bore and stroke: 4.19 x 4.33 in. (106.5 x 110 mm)
- No. of cylinders: 4
- Displacement: 239 cu. in. (3.917 L)
- Maximum net torque at 1200 rpm: 186 Ib-ft (252 Nm) (25.7 kg-m)
- Cooling fan: Suction
- Compression ratio: 17.8:1
- Lubrication: Pressure system w/full-flow filter and cooler
- Main bearings: 5
- No. of cylinders: 4
- Displacement: 239 cu. in. (3.917 L)
- Compression ratio: 17.8 to 1
- Cooling fan: Suction
- Compression ratio: 17.8 to 1
- Lubrication: Pressure system w/full-flow filter and cooler
- Main bearings: 5
- Air cleaner: Dry
- Electrical system: 12 volt
- Alternator: 65 amps

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

**Reverser:**
- Modulated, full-power shift with multiple wet-disk clutches.
- Reverser operating lever at left of steering wheel.

**Transmission:**
- Manual shift with first and second speeds having sliding collar engagement and third and fourth speeds engaged with cone-type synchronizers. Single shift lever, floor mounted.

<table>
<thead>
<tr>
<th>Travel Speeds:</th>
<th>Gear</th>
<th>Forward (km/h)</th>
<th>Reverse (km/h)</th>
</tr>
</thead>
<tbody>
<tr>
<td>With standard 17.5L-24</td>
<td>1</td>
<td>3.3</td>
<td>3.0</td>
</tr>
<tr>
<td>rear and 11L-15</td>
<td>2</td>
<td>5.7</td>
<td>5.1</td>
</tr>
<tr>
<td>front tires</td>
<td>3</td>
<td>12.3</td>
<td>11.1</td>
</tr>
<tr>
<td>With MFWD and 19.5L-24 (required) and rear and 12.00- 116.5 front tires</td>
<td>2</td>
<td>5.9</td>
<td>5.3</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>12.6</td>
<td>11.3</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>23.0</td>
<td>20.7</td>
</tr>
</tbody>
</table>

| Final Drives: | Planetary, inboard |

**Service Brakes:**
- Hydraulic, applied with separate pedals; hydraulically equalized when both pedals are depressed. Wet disks and facings are fully enclosed and self-adjusting.

**Secondary Brake:**
- Mechanical "V" groove band located on differential ring gear

**Steering:**
- Hydrostatic power
- Non-powered axle

**Hydraulic System:**
- Open-center
- Pressure, main relief: 2700 psi (18 620 kPa) (190 kgf/cm²)
- Pump: Gear type
- Flow @ 2200 rpm: 35 gpm (132 L/min)
- Filter, return oil: 10 micron, steel-enclosed replaceable element

**Hydraulic Cylinders:**

<table>
<thead>
<tr>
<th>Hydraulic Cylinders:</th>
<th>In. (mm)</th>
<th>Stroke (mm)</th>
<th>Rod (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Loader boom (2)</td>
<td>3.15</td>
<td>80</td>
<td>29.8</td>
</tr>
<tr>
<td>Loader bucket (1)</td>
<td>3.54</td>
<td>90</td>
<td>28.2</td>
</tr>
<tr>
<td>Backhoe boom (1)</td>
<td>4.53</td>
<td>115</td>
<td>34.8</td>
</tr>
<tr>
<td>Backhoe crowd (1)</td>
<td>3.94</td>
<td>100</td>
<td>32.2</td>
</tr>
<tr>
<td>Backhoe bucket (1)</td>
<td>3.54</td>
<td>90</td>
<td>31.0</td>
</tr>
<tr>
<td>Backhoe swing (2)</td>
<td>3.94</td>
<td>100</td>
<td>10.9</td>
</tr>
<tr>
<td>Backhoe extendable</td>
<td>2.5</td>
<td>64</td>
<td>48.0</td>
</tr>
<tr>
<td>Backhoe stabilizers (2)</td>
<td>3.54</td>
<td>90</td>
<td>16.9</td>
</tr>
<tr>
<td>Steering (1) regular axle</td>
<td>2.0</td>
<td>51</td>
<td>9.5</td>
</tr>
<tr>
<td>Steering (1) MFWD</td>
<td>2.36</td>
<td>80</td>
<td>7.9</td>
</tr>
</tbody>
</table>

**Tires:**
- Front: 7.50/50-16, 10 PR, F3
- Rear: 11L-16, 12 PR, F3

**Wheelbase:**
- 82.7 in. (2100 mm)

**Axle Ratings:**

<table>
<thead>
<tr>
<th>Axle Ratings: Static Rating</th>
<th>Dynamic Rating</th>
<th>SAE J43</th>
</tr>
</thead>
<tbody>
<tr>
<td>Front</td>
<td>56,000 lb</td>
<td>11,250 lb</td>
</tr>
<tr>
<td>Rear</td>
<td>56,000 lb</td>
<td>11,250 lb</td>
</tr>
</tbody>
</table>

**Additional Standard Equipment:**

- Air cleaner restriction indicator
- Muffler, under hood w/vertical exhaust
- Multiple fuse protected electrical system—12 volt
- Oil-to-air cooler for hydraulic system
- Oil-to-air cooler for reverser/differential lock
- Torque converter system
- Rear fenders
- Rear reflectors
- ROPS/FOPS canopy, isolation mounted, with roof and seat belt
- Steps and handholds
- Swivel seat, fully adjustable
- Torque converter
- Vandal protection w/built-in locks for engine access door and fuel tank cap

**SAE Operating Weight:**
- 13,100 lb. (5940 kg)

<table>
<thead>
<tr>
<th>Capacity</th>
<th>U.S.</th>
<th>Liters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fuel tank</td>
<td>26 gal</td>
<td>98</td>
</tr>
<tr>
<td>Engine coolant</td>
<td>17 qt</td>
<td>16</td>
</tr>
<tr>
<td>Engine oil including filter</td>
<td>9 qt</td>
<td>8.5</td>
</tr>
<tr>
<td>Torque converter and reverser system</td>
<td>8.5</td>
<td></td>
</tr>
<tr>
<td>Hydraulic system</td>
<td>21 gal</td>
<td>79</td>
</tr>
<tr>
<td>Transaxle: w/o MFWD</td>
<td>6 gal</td>
<td>23</td>
</tr>
<tr>
<td>w/MFWD</td>
<td>6 gal</td>
<td>23</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Additional Standard Equipment</th>
<th>Muffler, under hood w/vertical exhaust</th>
<th>Multiple fuse protected electrical system—12 volt</th>
</tr>
</thead>
<tbody>
<tr>
<td>Torque converter system</td>
<td>Rear fenders</td>
<td>ROPS/FOPS canopy, isolation mounted, with roof and seat belt</td>
</tr>
<tr>
<td>Steps and handholds</td>
<td>Swivel seat, fully adjustable</td>
<td>Torque converter</td>
</tr>
<tr>
<td>Vandal protection w/built-in locks for engine access door and fuel tank cap</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
310C BACKHOE LOADER SPECIFICATIONS AND DIMENSIONS

Drawing based on machine with 17.5L-24 tires

Key:

A. Loading height, truck loading position .......................... 10 ft. 10 in. (3.30 m)
B. Reach from center of swing mast ................................. 17 ft. 6 in. (5.34 m)
C. Reach from center of rear axle .................................. 20 ft. 10 in. (6.35 m)
D. Digging depth (SAE):
   (1) 2-ft. (610 mm) flat bottom ................................. 14 ft. 2 in. (4.32 m)
   (2) 6-ft. (2440 mm) flat bottom ............................... 13 ft. (3.96 m)
E. Maximum digging depth ........................................ 14 ft. 3 in. (4.34 m)
F. Ground clearance, minimum ..................................... 13 in. (330 mm)
G. Bucket rotation .................................................. 160 or 180 degrees
H. Transport height .................................................. 11 ft. 5 in. (3.48 m)
J. Overall length, transport ...................................... 22 ft. 11 in. (7.01 m)
K. Stabilizer width—transport .................................... 8 ft. (2.44 m)
L. Stabilizer spread—operating .................................. 8 ft. 11 in. (2.72 m)
M. Overall width (less loader bucket) ........................... 82 in. (2080 mm)

Digging force, bucket cylinder ................................. 11,540 lb. (51.5 kN) (5260 kg)
   (power dig position) ........................................ 6650 lb. (29.6 kN) (3020 kg)
Swing arc .......................................................... 180 degrees
Operator control .................................................. Two levers
Bucket positions .................................................. 12 or 21 deg. rollback
Stabilizer angle rearward ........................................ 7 degrees
Lifting capacity, maximum, boom @ 85° ...................... 4000 lb. (1820 kg)
Leveling angle ..................................................... 11 degrees

Extendable Dipperstick

Retracted ................................. 11 ft. 1 in. (3.36 m)
        17 ft. 7 in. (5.36 m)
        20 ft. 10 in. (6.35 m)
        14 ft. 2 in. (4.34 m)
        13 ft. (3.96 m)
        14 ft. 3 in. (4.34 m)
        13 in. (330 mm)
        160 or 180 degrees
        11 ft. 7 in. (3.53 m)
        22 ft. 11 in. (7.01 m)
        8 ft. (2.44 m)
        8 ft. 11 in. (2.72 m)
        82 in. (2080 mm)

Extended ........................................... 13 ft. 1 in. (3.99 m)
       21 ft. 1 in. (6.43 m)
       24 ft. 5 in. (7.44 m)
       16 ft. (5.49 m)
       17 ft. 1 in. (5.21 m)
       18 ft. 2 in. (5.58 m)
       13 in. (330 mm)
       160 or 180 degrees
       11 ft. 7 in. (3.53 m)
       22 ft. 11 in. (7.01 m)
       8 ft. (2.44 m)
       8 ft. 11 in. (2.72 m)
       82 in. (2080 mm)

Note: Backhoe specifications are with 24-in. (610 mm) standard bucket.
310C BACKHOE LOADER LIFTING CAPACITIES

Lifting Capacity Ratings made from bucket hinge pin, loader bucket and stabilizer 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.

Rated lift capacities are in lb. (kg)
Lift capacities are hydraulically limited.

Lift Capacity
Backhoe with extendable dipperstick, retracted.
Based on SAE J31.

Rated lift capacities are in lb. (kg)
Lift capacities are hydraulically limited.

Lift Capacity
Backhoe with extendable dipperstick, extended.
Based on SAE J31.

Rated lift capacities are in lb. (kg)
Lift capacities are hydraulically limited.
### 310C BACKHOE LOADER

**Loader:**
- Operator control: Single lever
- Breakout force: 8700 lb (38.7 kN) (3946 kg)
- Lifting capacity, full height: 5600 lb (2540 kg)
- Bucket dump time: 1.1 sec.
- Bucket lowering time (power down): 2.3 sec.

### Buckets

<table>
<thead>
<tr>
<th>Loader:</th>
<th>In. (mm)</th>
<th>Width (mm)</th>
<th>Heaped Capacity Cu. Yd. (m³)</th>
<th>Heaped Capacity Cu. Ft. (m³)</th>
</tr>
</thead>
<tbody>
<tr>
<td>General purpose</td>
<td>92 (2340)</td>
<td>1.0 (.76)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Long lip</td>
<td>89.4 (2270)</td>
<td>1.25 (.96)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Backhoe:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Standard-duty</td>
<td>12 (305)</td>
<td>3.0 (.06)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>16 (406)</td>
<td>4.5 (.13)</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>18 (457)</td>
<td>5.1 (.14)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>24 (610)</td>
<td>7.5 (.21)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>24 (610)</td>
<td>8.8 (.25)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>30 (762)</td>
<td>10.0 (.28)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>36 (914)</td>
<td>10.0 (.28)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>36 (914)</td>
<td>14.5 (.41)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Heavy-duty</td>
<td>18 (457)</td>
<td>5.1 (.14)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>24 (610)</td>
<td>7.5 (.21)</td>
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<tr>
<td></td>
<td>36 (914)</td>
<td>14.5 (.41)</td>
<td></td>
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</tr>
</tbody>
</table>

### Optional or Special Equipment:
- Altitude-compensating engine turbocharger
- Automatic loader return-to-dig
- Auxiliary hydraulic valves and circuit for loader and backhoe
- Backup alarm
- Cab with:
  - Fabric-covered swivel seat, suspension or non-suspension
  - Front defroster fan
  - Front and rear wipers
  - Integral ROPS/FOPS
- Standard heater—19,000 Btu (5.5 kW)
- Cab, quarter (front windshield and door)
- Cold-weather starting aid, remote mounted
- Counterweight, front, 850 lb. (385 kg)
- Counterweight, front, 415 lb. (188 kg)
- Deluxe cab interior trim package
- Economy seat, vinyl covered, suspension or rigid mounted
- Engine coolant heater
- Extendable dipperstick for backhoe
- Fire extinguisher
- Floor mat
- Heavy-duty batteries
- Horn
- Instrument panel vandal cover
- Lights:
  - Front rear turn signal lights
  - Rear brake lights
  - Rear halogen work lights
  - Rotating beacon light
- Mechanical front-wheel drive
- Rear defroster fan
- Rearview mirror, inside mounted, curved, heavy-duty
- Rear wheel spacers for tire chain clearance
- Reversible stabilizer pads
- Tachometer/hourmeter
- SMV emblem
- 3-in. (76 mm) seat belt
- Three- or four-lever, pedal-swing backhoe controls
- Toolbox
- Without loader return-to-dig

### Additional Available Equipment:
- Auxiliary bolt-on cutting edge for loader buckets
- Backhoe lift eye
- Bolt-on teeth for loader bucket
- Cab pressurizer
- Deluxe heater w/fresh air intake—40,000 Btu/hr (11.7 kW)
- Air conditioner, 24,000 Btu/hr (7.0 kW)
- 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
- MFWD driveshaft guard
- Multipurpose loader buckets
- Radio or radio cassette
- Special paint
- 3-point hitch and hydraulics

*See your John Deere dealer for further information*