84 LOADER

Model shown may include options

**ENGINE PERFORMANCE**

<table>
<thead>
<tr>
<th>Nm</th>
<th>lb-ft</th>
<th>hp</th>
<th>kW</th>
</tr>
</thead>
<tbody>
<tr>
<td>244</td>
<td>177</td>
<td>60</td>
<td>44.6</td>
</tr>
<tr>
<td>217</td>
<td>158</td>
<td>50</td>
<td>37</td>
</tr>
<tr>
<td>190</td>
<td>141</td>
<td>40</td>
<td>30</td>
</tr>
<tr>
<td>160</td>
<td>117</td>
<td>30</td>
<td>22</td>
</tr>
<tr>
<td>140</td>
<td>100</td>
<td>20</td>
<td>15</td>
</tr>
<tr>
<td>120</td>
<td>86</td>
<td>15</td>
<td>11.3</td>
</tr>
<tr>
<td>100</td>
<td>70</td>
<td>10</td>
<td>7.5</td>
</tr>
<tr>
<td>80</td>
<td>56</td>
<td>8</td>
<td>5.6</td>
</tr>
<tr>
<td>60</td>
<td>41</td>
<td>6</td>
<td>4.4</td>
</tr>
<tr>
<td>40</td>
<td>28</td>
<td>4</td>
<td>3.2</td>
</tr>
<tr>
<td>20</td>
<td>14</td>
<td>2</td>
<td>1.4</td>
</tr>
</tbody>
</table>

**FEATURES**

- 52 SAE net hp (39 kW)
- Four-wheel drive
- 1.0 cu. yd. (.8 m³) bucket
- Torque converter with Power Shift transmission: three speeds forward, one reverse
- Power steering; articulated frame
- Four-wheel wet-disk brakes and disk parking brake
- Inboard planetary final drives
- Single-lever loader control with standard automatic return-to-dig
- Roll-over protective structure (ROPS) with canopy. Meets criteria of SAE J394, SAE J1040A, and ISO 3471. Also meets FOPS (falling object protective structure) criteria SAE J231 and ISO 3449
- Standard vandal protection

**ADD VERSATILITY WITH:**

- Bucket teeth
- Auxiliary cutting edge
- Snow removal equipment

*Depending on operating variables*
84 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 machine with all standard equipment, 17.5/65-20, 10 PR, L2 tires, ROPS cab, full fuel tank, and 175-lb. (80 kg) operator.

<table>
<thead>
<tr>
<th>Rated Power @ 1800 rpm:</th>
<th>SAE</th>
<th>DIN 70 020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net</td>
<td>52 hp (39 kW)</td>
<td>40 kW</td>
</tr>
<tr>
<td>Gross</td>
<td>55 hp (41 kW)</td>
<td></td>
</tr>
</tbody>
</table>

Net engine power is with standard equipment including air cleaner, exhaust system, alternator, and cooling fan, at standard conditions per SAE J1349 and DIN 70 020, using No. 2-D fuel at 35 API gravity. No derating is required up to 5000 feet (1500 m) altitude. Gross power is without cooling fan.

Engine: Yanmar 4TN100
Type: 4-stroke cycle, naturally aspirated diesel
Bore and stroke: 3.9 x 4.3 in. (100 x 110)
No. of cylinders: 4
Displacement: 211 cu. in. (3.458 L)
Maximum net torque @ 1200 rpm: 174 lb-ft (236 Nm) (24 kg-m)
Cooling fan: Blower
Air cleaner w/restriction indicator: Dry
Electrical system: 24 volt w/25-amp alternator
Batteries (two 12 volt): 25 amps at 80°F (27°C) . Reserve capacity: 81 min. each
BCI group 24 cold cranking capacity at 0°F (-18°C) ..278 amp

Torque Converter:
Type: Single phase
Torque multiplication: 3.00 to 1

Transmission:
Power Shift
Forward Speeds:
1 mph (km/h) 2 3
0-5.6 0-9.0 0-9.6 0-15.5 0-17.7 0-28.5
Reverse Speeds:
1 0-7.1 0-11.5

Differentials:
Front and rear conventional

Drive Axles: Inboard-mounted planetary gears to each wheel. Front axle fixed. Rear axle oscillates 16 degrees.

Steering: Full power steering. Frame articulated 80 degrees by one hydraulic cylinder.
Turning radius (measured to centerline of outside tire): 12 ft. 6 in. (3.82 m)
Cylinder size: Stroke 9.85 in. (245 mm)
Rod diameter 1.18 in. (30 mm)
Bore 2.36 in. (60 mm)

Brakes:
Service Dual hydraulic, 4-wheel inboard-mounted, wet disk. Foot-operated by either pedal.
Parking 10.9 in. (277 mm) diameter disk on transmission output shaft, hand-operated with warning light.

Hydraulic Systems:
Steering and loader functions: An engine-driven gear-type pump delivers 21.1 gpm (1.33 L/s) at 2500 psi (17 238 kPa) (175 kg/cm²) and 1800 engine rpm. Loader function relief valve pressure setting is 2500 psi (17 238 kPa) (175 kg/cm²). Maximum steering pressure is 1850 psi (12 756 kPa) (130 kg/cm²).
Control: Single-lever, dual hydraulic valve.
Optional triple hydraulic valve with separate lever.
Loader hydraulic operating cycle times at full throttle:
Raise 4.4 sec.
Dump 1.0 sec.
Lowering: float 4.5 sec.
power 3.5 sec.
Maximum lift capacity with 1.0 cu. yd. (8 m³) general purpose bucket:
Maximum height 4850 lb. (2200 kg)
Ground level 6835 lb. (3100 kg)

 Hydraulic Cylinders: Bore Stroke
Boom, two 3.15 in. (80 mm) 22.5 in. (571 mm)
Bucket, one 3.15 in. (80 mm) 18.5 in. (470 mm)
Boom and bucket cylinder rods 1.77 in. (45 mm) dia.

Tires: 17.5/65-20, 10 PR, L2 tubeless w/valve stem protectors
Tread width 61 in. (1550 mm)
Width over tires 79 in. (2005 mm)

 Capacities:
U.S. Liters
Cooling system 21 qt. 20
Fuel tank 15.3 gal. 58
Crankcase 12 qt. 11.5
Crankcase, including filter 13 qt. 12.5
Transmission case and filters 24 qt. 23
Front and rear differential 10 qt. 9.5
Loader hydraulic sump 74 qt. 70

Additional Standard Equipment:
Adjustable, cushioned vinyl seat
Antifreeze
Articulation transport lock
Automatic return to dig
Counterweight, rear w/drawbar and service step
Differential, conventional
Dual hydraulic valve for loader
Electrical system, 24-volt
Front and rear fenders
Fuel filter
Fuel shut-off, manual
Gauges:
Coolant temperature
Electric hourmeter
Transmission oil pressure
Sight gauges —
Brake oil
Fuel tank
Hydraulic reservoir
Transmission
Hand grips
Horn
Key switch
Lights:
Driving
Stop and tail
Indicator lights —
Engine pre-heat
Hi-beam
Turn and flashing signals
Instrument panel warning lights —
Alternator
Engine oil pressure
Parking brake
Transmission oil temperature
Mirrors, rearview
Muffler

Optional or Special Equipment:
Auxiliary cutting edges
Bucket teeth
Lights, front and rear work
Rear wiper and washer for ROPS cab
ROPS cab w/heater, dome light, front wiper and washer, floor mat and sliding rear window
Triple hydraulic valve for loader
## Loader Operating Information

### Bucket Type

<table>
<thead>
<tr>
<th>Operating Information</th>
<th>General Purpose</th>
<th>Light Material</th>
<th>Multipurpose</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Capacity, heaped, SAE</strong></td>
<td>1.0 cu. yd. (.8 m³)</td>
<td>1.3 cu. yd. (1.0 m³)</td>
<td>0.78 cu. yd. (.6 m³)</td>
</tr>
<tr>
<td><strong>Capacity, struck, SAE</strong></td>
<td>0.9 cu. yd. (.7 m³)</td>
<td>1.17 cu. yd. (0.9 m³)</td>
<td>0.67 cu. yd. (.51 m³)</td>
</tr>
<tr>
<td><strong>Bucket width</strong></td>
<td>81.9 in. (2.08 m)</td>
<td>81.9 in. (2.08 m)</td>
<td>81.9 in. (2.08 m)</td>
</tr>
<tr>
<td><strong>Breakout force, SAE J732C</strong></td>
<td>9040 lb. (40.2 kN)</td>
<td>7795 lb. (34.7 kN)</td>
<td>9040 lb. (40.2 kN)</td>
</tr>
<tr>
<td><strong>Tipping load, straight, maximum reach</strong></td>
<td>8930 lb. (4050 kg)</td>
<td>8864 lb. (4020 kg)</td>
<td>8192 lb. (3715 kg)</td>
</tr>
<tr>
<td><strong>Tipping load, 40-deg. full turn, SAE</strong></td>
<td>7508 lb. (3405 kg)</td>
<td>7453 lb. (3380 kg)</td>
<td>6880 lb. (3120 kg)</td>
</tr>
<tr>
<td><strong>Tipping load, 35-deg. turn</strong></td>
<td>7740 lb. (3510 kg)</td>
<td>7682 lb. (3485 kg)</td>
<td>7100 lb. (3220 kg)</td>
</tr>
<tr>
<td><strong>Reach at 45-deg. dump, 7 ft. (2.13 m) clearance</strong></td>
<td>39 in. (990 mm)</td>
<td>40 in. (1015 mm)</td>
<td>39.2 in. (995 mm)</td>
</tr>
<tr>
<td><strong>Reach at 45-deg. dump, full height</strong></td>
<td>31 in. (790 mm)</td>
<td>34 in. (865 mm)</td>
<td>31 in. (790 mm)</td>
</tr>
<tr>
<td><strong>Dump clearance at 45-deg. dump, full height</strong></td>
<td>94.7 in. (2405 mm)</td>
<td>92 in. (2340 mm)</td>
<td>94.5 in. (2400 mm)</td>
</tr>
<tr>
<td><strong>Overall length</strong></td>
<td>15 ft. 3 in. (4.65 m)</td>
<td>15 ft. 7 in. (4.75 m)</td>
<td>15 ft. 3 in. (4.65 m)</td>
</tr>
<tr>
<td><strong>Loader clearance circle, bucket in carry position</strong></td>
<td>28 ft. 8 in. (8.74 m)</td>
<td>28 ft. 10 in. (8.79 m)</td>
<td>28 ft. 8 in. (8.74 m)</td>
</tr>
<tr>
<td><strong>Operating weight</strong></td>
<td>11,246 lb. (5100 kg)</td>
<td>11,316 lb. (5130 kg)</td>
<td>11,742 lb. (5325 kg)</td>
</tr>
</tbody>
</table>

Adjustments to operating weights and tipping loads for 1.0 cu. yd. (.8 m³) bucket

<table>
<thead>
<tr>
<th>Add (+) or deduct (−) lb. (kg) as indicated for loaders with:</th>
<th>Loader Operating Weight</th>
<th>Tipping Load Straight</th>
<th>Tipping Load 40° Full Turn, SAE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ROPS canopy in lieu of ROPS cab</strong></td>
<td>−512 lb. (232 kg)</td>
<td>−529 lb. (240 kg)</td>
<td>−452 lb. (205 kg)</td>
</tr>
<tr>
<td><strong>17.5/65-20, 10 PR, L2 tires with CaCl₂</strong></td>
<td>+750 lb. (340 kg)</td>
<td>+1050 lb. (475 kg)</td>
<td>+895 lb. (405 kg)</td>
</tr>
<tr>
<td><strong>Auxiliary cutting edges</strong></td>
<td>+125 lb. (57 kg)</td>
<td>−155 lb. (70 kg)</td>
<td>−130 lb. (59 kg)</td>
</tr>
<tr>
<td><strong>Bucket teeth</strong></td>
<td>+51 lb. (23 kg)</td>
<td>−62 lb. (28 kg)</td>
<td>−53 lb. (24 kg)</td>
</tr>
</tbody>
</table>
84 LOADER DIMENSIONS

84 BUCKET SELECTION GUIDE*

Key:
- Spec loader
- Spec loader with CaCl₂ in tires
- Loader w/ROPS canopy and without CaCl₂ in tires

MATERIAL (Loose weight) | lb/yd³ | kg/m³
---|---|---
Caliche | 2100 | 1370
Cinders | 1000 | 590
Clay, natural bed | 2800 | 1600
Clay, dry | 2550 | 1480
Clay, wet | 2800 | 1660
Clay and gravel, dry | 2400 | 1420
Clay and gravel, wet | 2600 | 1540
Coal, anthracite, broken | 1850 | 1100
Coal, bituminous, broken | 1430 | 830
Earth, dry, picked | 2550 | 1510
Earth, wet, excavated | 2700 | 1600
Earth, loam | 2100 | 1250
Gravel, broken or large crushed | 2800 | 1660
Gravel, dry | 2350 | 1510
Gravel, pit run (graveled sand) | 3250 | 1930
Gravel, wet, 1/2" to 2" (13 to 50 mm) | 2850 | 1690
Gravel, wet, 1/2" to 2" (13 to 50 mm) | 3400 | 2030
Gypsum, crushed | 2700 | 1600
Limestone, broken or crushed | 2900 | 1740
Magnetite, iron ore | 4700 | 2780
Magnetite, iron ore | 4350 | 2680
Phosphate rock | 2160 | 1320
Sand, dry | 2400 | 1420
Sand, wet | 3100 | 1840
Sand and gravel, dry | 2800 | 1720
Sand and gravel, wet | 3400 | 2020
Sandstone, broken | 2550 | 1510
Shale | 2100 | 1250
Slag, broken | 2950 | 1750
Slime, crushed | 2700 | 1600
Top soil | 1600 | 950

*This guide, representing buckets not necessarily manufactured by Deere will help you in selecting proper bucket size for material density and loader configurations. However, specific bucket size should only be determined after adding or subtracting all the tipping load changes due to specifications.