



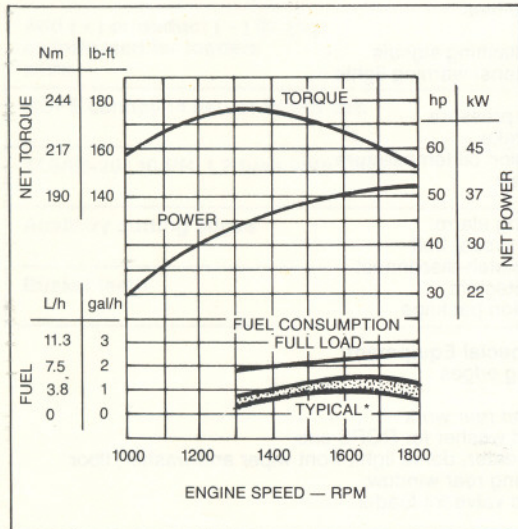
1837-1987  
**150**

# 84 LOADER



Model shown may include options

## ENGINE PERFORMANCE



\* Depending on operating variables

## FEATURES

- 52 SAE net hp (39 kW)
- Four-wheel drive
- 1.0 cu. yd. (.8 m<sup>3</sup>) 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



## 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.

|                                |               |                   |
|--------------------------------|---------------|-------------------|
| <b>Rated Power @ 1800 rpm:</b> | <b>SAE</b>    | <b>DIN 70 020</b> |
| Net .....                      | 52 hp (39 kW) | 40 kW             |
| Gross .....                    | 55 hp (41 kW) |                   |

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 @ 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

|                        |            |               |
|------------------------|------------|---------------|
| <b>Forward Speeds:</b> | <b>mph</b> | <b>(km/h)</b> |
| 1 .....                | 0-5.6      | 0-9.0         |
| 2 .....                | 0-9.6      | 0-15.5        |
| 3 .....                | 0-17.7     | 0-28.5        |

|                        |       |        |
|------------------------|-------|--------|
| <b>Reverse Speeds:</b> |       |        |
| 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 .....                                   | 9.65 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/cm<sup>2</sup>) and 1800 engine rpm. Loader function relief valve pressure setting is 2500 psi (17 238 kPa) (175 kg/cm<sup>2</sup>). Maximum steering pressure is 1850 psi (12 756 kPa) (130 kg/cm<sup>2</sup>).

Control ..... Single-lever, dual hydraulic valve.  
 Optional triple hydraulic valve with separate lever.  
 Loader hydraulic operating cycle times at full throttle:

|                       |          |
|-----------------------|----------|
| Raise .....           | 5.4 sec. |
| Dump .....            | 1.0 sec. |
| Lowering: float ..... | 4.5 sec. |
| power .....           | 3.5 sec. |

Maximum lift capacity with 1.0 cu. yd. (.8 m<sup>3</sup>) general purpose bucket:

|                      |                    |
|----------------------|--------------------|
| Maximum height ..... | 4850 lb. (2200 kg) |
| Ground level .....   | 6835 lb. (3100 kg) |

### Hydraulic Cylinders:

|                                     |                       |                   |
|-------------------------------------|-----------------------|-------------------|
|                                     | <b>Bore</b>           | <b>Stroke</b>     |
| 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:

|                                     |             |               |
|-------------------------------------|-------------|---------------|
|                                     | <b>U.S.</b> | <b>Liters</b> |
| 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  
 Reverse warning alarm  
 ROPS canopy w/seat belt  
 Transmission clutch disconnect  
 Valve stem protectors  
 Vandal protection package

### 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



## 84 LOADER OPERATING INFORMATION

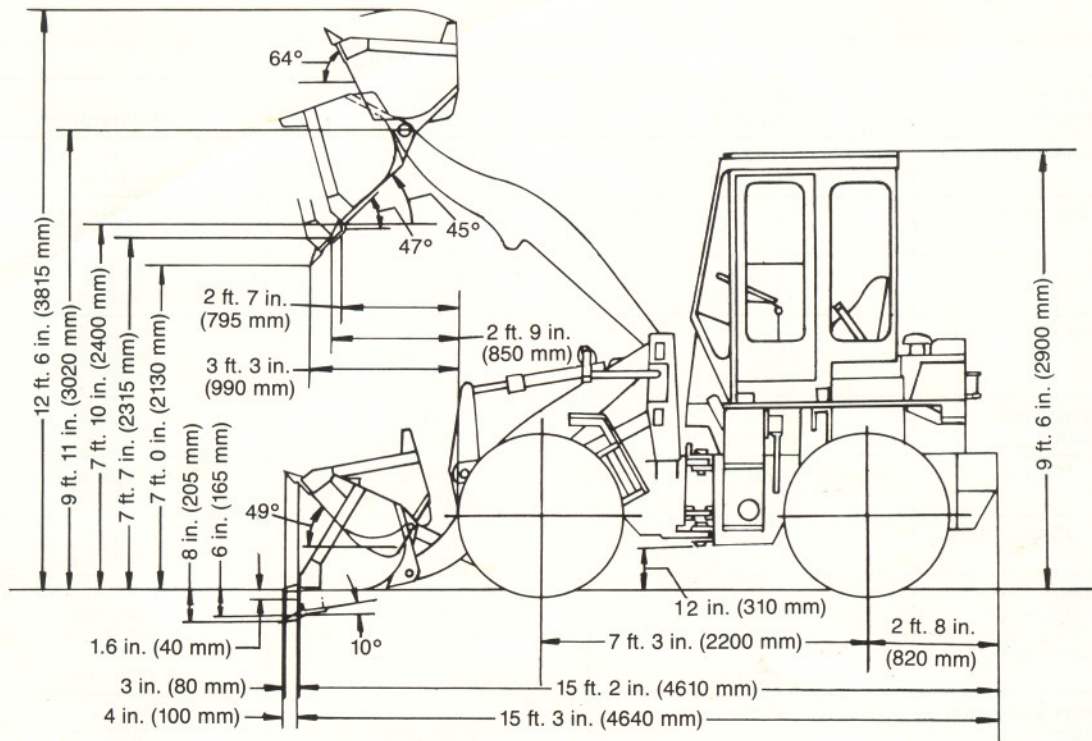
| OPERATING INFORMATION                             | BUCKET TYPE                         |                                      |                                       |
|---|-------------------------------------|--------------------------------------|---------------------------------------|
|   | General Purpose                     | Light Material                       | Multipurpose                          |
| Capacity, heaped, SAE                             | 1.0 cu. yd.<br>(.8 m <sup>3</sup> ) | 1.3 cu. yd.<br>(1.0 m <sup>3</sup> ) | 0.78 cu. yd.<br>(.6 m <sup>3</sup> )  |
| Capacity, struck, SAE                             | 0.9 cu. yd.<br>(.7 m <sup>3</sup> ) | 1.17 cu. yd.<br>(.9 m <sup>3</sup> ) | 0.67 cu. yd.<br>(.51 m <sup>3</sup> ) |
| Bucket width                                      | 81.9 in.<br>(2.08 m)                | 81.9 in.<br>(2.08 m)                 | 81.9 in.<br>(2.08 m)                  |
| Breakout force, SAE J732C                         | 9040 lb.<br>(40.2 kN)<br>(4100 kg)  | 7795 lb.<br>(34.7 kN)<br>(3535 kg)   | 9040 lb.<br>(40.2 kN)<br>(4100 kg)    |
| Tipping load, straight, maximum reach             | 8930 lb.<br>(4050 kg)               | 8864 lb.<br>(4020 kg)                | 8192 lb.<br>(3715 kg)                 |
| Tipping load, 40-deg. full turn, SAE              | 7508 lb.<br>(3405 kg)               | 7453 lb.<br>(3380 kg)                | 6880 lb.<br>(3120 kg)                 |
| Tipping load, 35-deg. turn                        | 7740 lb.<br>(3510 kg)               | 7682 lb.<br>(3485 kg)                | 7100 lb.<br>(3220 kg)                 |
| Reach at 45-deg. dump, 7 ft. (2.13 m) clearance   | 39 in.<br>(990 mm)                  | 40 in.<br>(1015 mm)                  | 39.2 in.<br>(995 mm)                  |
| Reach at 45-deg. dump, full height                | 31 in.<br>(790 mm)                  | 34 in.<br>(865 mm)                   | 31 in.<br>(790 mm)                    |
| Dump clearance at 45-deg. dump, full height       | 94.7 in.<br>(2405 mm)               | 92 in.<br>(2340 mm)                  | 94.5 in.<br>(2400 mm)                 |
| Overall length                                    | 15 ft. 3 in.<br>(4.65 m)            | 15 ft. 7 in.<br>(4.75 m)             | 15 ft. 3 in.<br>(4.65 m)              |
| Loader clearance circle, bucket in carry position | 28 ft. 8 in.<br>(8.74 m)            | 28 ft. 10 in.<br>(8.79 m)            | 28 ft. 8 in.<br>(8.74 m)              |
| Operating weight                                  | 11,246 lb.<br>(5100 kg)             | 11,316 lb.<br>(5130 kg)              | 11,742 lb.<br>(5325 kg)               |

Loader operating information is based on machine with all standard equipment, 17.5/65-20, 10 PR tires with ROPS cab, full fuel tank, 175-lb. (80 kg) operator. Operating information is affected by tire size, ballast and attachments. For selected items, add or subtract the following:

### Adjustments to operating weights and tipping loads for 1.0 cu. yd. (.8 m<sup>3</sup>) bucket

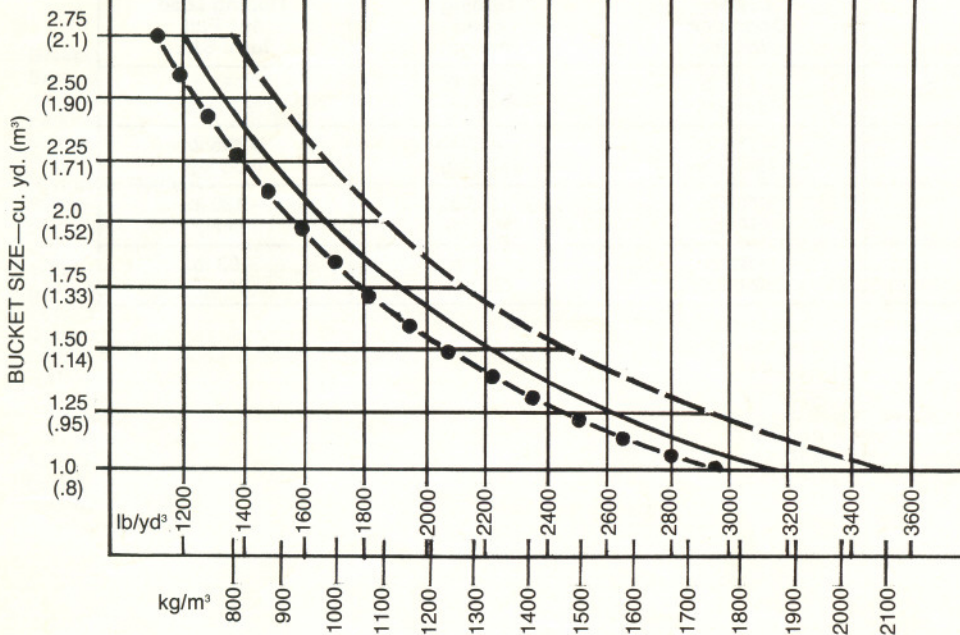
| Add (+) or deduct (-) lb. (kg) as indicated for loaders with: | Loader Operating Weight | Tipping Load Straight  | Tipping Load 40° Full Turn, SAE |
|---|-------------------------|------------------------|---------------------------------|
| ROPS canopy in lieu of ROPS cab                               | - 512 lb.<br>(232 kg)   | - 529 lb.<br>(240 kg)  | - 452 lb.<br>(205 kg)           |
| 17.5/65-20, 10 PR, L2 tires with CaCl <sub>2</sub>            | + 750 lb.<br>(340 kg)   | + 1050 lb.<br>(475 kg) | + 895 lb.<br>(405 kg)           |
| Auxiliary cutting edges                                       | + 125 lb.<br>(57 kg)    | - 155 lb.<br>(70 kg)   | - 130 lb.<br>(59 kg)            |
| Bucket teeth  | + 51 lb.<br>(23 kg)     | - 62 lb.<br>(28 kg)    | - 53 lb.<br>(24 kg)             |





84 BUCKET SELECTION GUIDE\*

Key:  
 — Spec loader  
 - - - Spec loader with CaCl<sub>2</sub> in tires  
 ●●● Loader w/ROPS canopy and without CaCl<sub>2</sub> in tires



| MATERIAL (Loose weight)             | lb/yd <sup>3</sup> | kg/m <sup>3</sup> |
|-------------------------------------|--------------------|-------------------|
| Caliche                             | 2100               | 1250              |
| Cinders                             | 1000               | 590               |
| Clay, natural bed                   | 2800               | 1600              |
| Clay, dry                           | 2500               | 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            | 1400               | 830               |
| Earth, dry, packed                  | 2550               | 1510              |
| Earth, wet, excavated               | 2700               | 1600              |
| Earth, loam                         | 2100               | 1250              |
| Granite, broken or large crushed    | 2800               | 1660              |
| Gravel, dry                         | 2550               | 1510              |
| Gravel, pit run (graveled sand)     | 3250               | 1930              |
| Gravel, dry, ½" to 2" (13 to 50 mm) | 2850               | 1690              |
| Gravel, wet, ½" to 2" (13 to 50 mm) | 3400               | 2020              |
| Gypsum, crushed                     | 2700               | 1600              |
| Limestone, broken or crushed        | 2600               | 1540              |
| Magnetite, iron ore                 | 4700               | 2790              |
| Pyrite, iron ore                    | 4350               | 2580              |
| Phosphate rock                      | 2160               | 1280              |
| Sand, dry                           | 2400               | 1420              |
| Sand, wet                           | 3100               | 1840              |
| Sand and gravel, dry                | 2900               | 1720              |
| Sand and gravel, wet                | 3400               | 2020              |
| Sandstone, broken                   | 2550               | 1510              |
| Shale                               | 2100               | 1250              |
| Slag, broken                        | 2950               | 1750              |
| Stone, 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.