

## ENGINE

John Deere engineered and manufactured. Replaceable wet type cylinder liners provide superior heat dissipation, longer life. High strength alloy head has replaceable valve seat inserts. The forged steel, 5-main bearing crankshaft is statically and dynamically balanced for smooth operation. Cast aluminum pistons provide good heat transfer and pistons are sprayed with cooling oil for longer life.

**Engine:** John Deere 4039D – Naturally Aspirated  
Rated power at 2,200 rpm.....70 SAE net hp (52.2 kW)  
.....74 SAE gross hp (55.8 kW)

John Deere 4039T with optional  
turbocharger.....75 SAE net hp (56 kW)  
.....79 SAE gross hp (59 kW)

Cylinders.....4  
Displacement.....239 cu. in. (3.917 L)  
Fuel consumption, typical.....1.0 to 2.0 gal./hr. (3.8 to 7.6 L/h)  
Torque rise.....20 percent  
with optional turbocharger.....25 percent  
Maximum net torque.....192 lb.-ft. (260 Nm)  
with optional turbocharger.....215 lb.-ft. (292 Nm)  
Lubrication.....pressure system w/spin-on filter and cooler  
Air cleaner.....dual stage dry type with safety element  
and precleaner

Electrical system.....12 volt with 95-amp alternator  
Sucker-type cooling fan

## TRANSMISSION

John Deere designed and built 4-speed helical gear, synchronized in all four gears, collar shift transmission with hydraulic reverser. Uses single stage, dual phase, 11-inch (280 mm) torque converter with 2.83:1 stall ratio.

## TRAVEL SPEEDS

|                          | Gear | Forward |        | Reverse |        |
|--------------------------|------|---------|--------|---------|--------|
|                          |      | mph     | (km/h) | mph     | (km/h) |
| With 19.5L-24 rear tires | 1    | 3.4     | 5.5    | 3.1     | 5.0    |
|                          | 2    | 5.9     | 9.5    | 5.3     | 8.5    |
|                          | 3    | 12.6    | 20.3   | 11.3    | 18.2   |
|                          | 4    | 20.8    | 33.5   | 18.8    | 30.3   |

## FINAL DRIVES

Heavy-duty, inboard mounted planetary type. Evenly distribute axle shock loads over three gears that run in a cooling oil bath.

## BRAKES

**Hydraulic wet disk service brakes** are mounted inboard and are pressure cooled and lubricated. They're self-adjusting and self-equalizing. Individual pedals can be applied together or separately. **Parking/emergency brake** is an independent system that is spring-applied, hydraulically released, and controlled by an electric switch on the control console. Automatically neutralizes reverser when parking brake is applied. A mechanical V-groove band applies pressure on differential ring gear. All brakes conform to SAE J1473.

## CAPACITIES

|                                            | U.S.            |
|--------------------------------------------|-----------------|
| Fuel tank (with ground level fueling)..... | 34 gal. (129 L) |
| Engine coolant.....                        | 17 qt. (16 L)   |
| Engine oil including filter.....           | 9 qt. (8.5 L)   |
| Torque converter and reverser system.....  | 8 qt. (7 L)     |
| Hydraulic system.....                      | 21 gal. (79 L)  |
| Transaxle with MFWD.....                   | 6 gal. (23 L)   |

## STEERING

Hydrostatic power steering gives superior control at all speeds. Excellent steering torque allows easy maneuvering with heavy loads. Power steering conforms to SAE J1151 and emergency steering SAE J53.

Non-powered axle  
Curb turning radius with brakes.....11 ft. 9 in. (3.57 m)  
without brakes.....13 ft. 3 in. (4.04 m)  
Bucket clearance circle with brakes.....31 ft. 6 in. (9.61 m)  
without brakes.....34 ft. 7 in. (10.55 m)  
Steering wheel turns, stop to stop.....2.2 to 2.9  
Mechanical-front-wheel drive  
Curb turning radius with brakes.....10 ft. 11 in. (3.34 m)  
without brakes.....13 ft. 8 in. (4.17 m)  
Bucket clearance circle with brakes.....29 ft. 9 in. (9.07 m)  
without brakes.....35 ft. 3 in. (10.74 m)  
Steering wheel turns, stop to stop.....2.5  
Axle oscillations stop to stop, both axles.....22 degrees

| Axle ratings: | Static                    | Dynamic                   | SAE J43                 |
|---------------|---------------------------|---------------------------|-------------------------|
| Front.....    | 56,000 lb.<br>(25 300 kg) | 56,000 lb.<br>(25 300 kg) | 18,800 lb.<br>(8500 kg) |
| Rear.....     | 43,500 lb.<br>(19 700 kg) | 58,000 lb.<br>(26 300 kg) | 15,260 lb.<br>(6900 kg) |

## HYDRAULICS

System.....open center  
Pressure, main relief.....2,700 psi (18 620 kPa)  
Pump.....gear type  
Flow at 2,200 rpm.....38 gpm (144 L/min.)  
Filter, return oil.....10-micron, spin-on enclosed  
replaceable element

## CYLINDERS

|                                            | Bore     |     | Stroke   |      | Rod      |    |
|--------------------------------------------|----------|-----|----------|------|----------|----|
|                                            | in. (mm) |     | in. (mm) |      | in. (mm) |    |
| Loader boom (2).....                       | 3.15     | 80  | 29.80    | 757  | 1.77     | 45 |
| Loader bucket (1).....                     | 3.54     | 90  | 28.19    | 718  | 1.77     | 45 |
| Backhoe boom (1).....                      | 4.53     | 115 | 38.54    | 979  | 2.20     | 56 |
| Backhoe crowd (1).....                     | 3.94     | 100 | 32.24    | 819  | 2.20     | 56 |
| Backhoe bucket (1).....                    | 3.54     | 90  | 31.00    | 788  | 1.97     | 50 |
| Backhoe swing (2).....                     | 3.94     | 100 | 10.94    | 278  | 1.97     | 50 |
| Backhoe extendable<br>dipperstick (1)..... | 2.50     | 64  | 48.00    | 1220 | 1.25     | 32 |
| Backhoe stabilizer (2).....                | 3.94     | 100 | 19.96    | 507  | 1.97     | 50 |
| Steering (1) non-<br>powered axle.....     | 1.97     | 50  | 9.49     | 241  | 0.98     | 25 |
| Steering (1) MFWD.....                     | 2.36     | 60  | 7.90     | 202  | 0.98     | 25 |

## TIRES

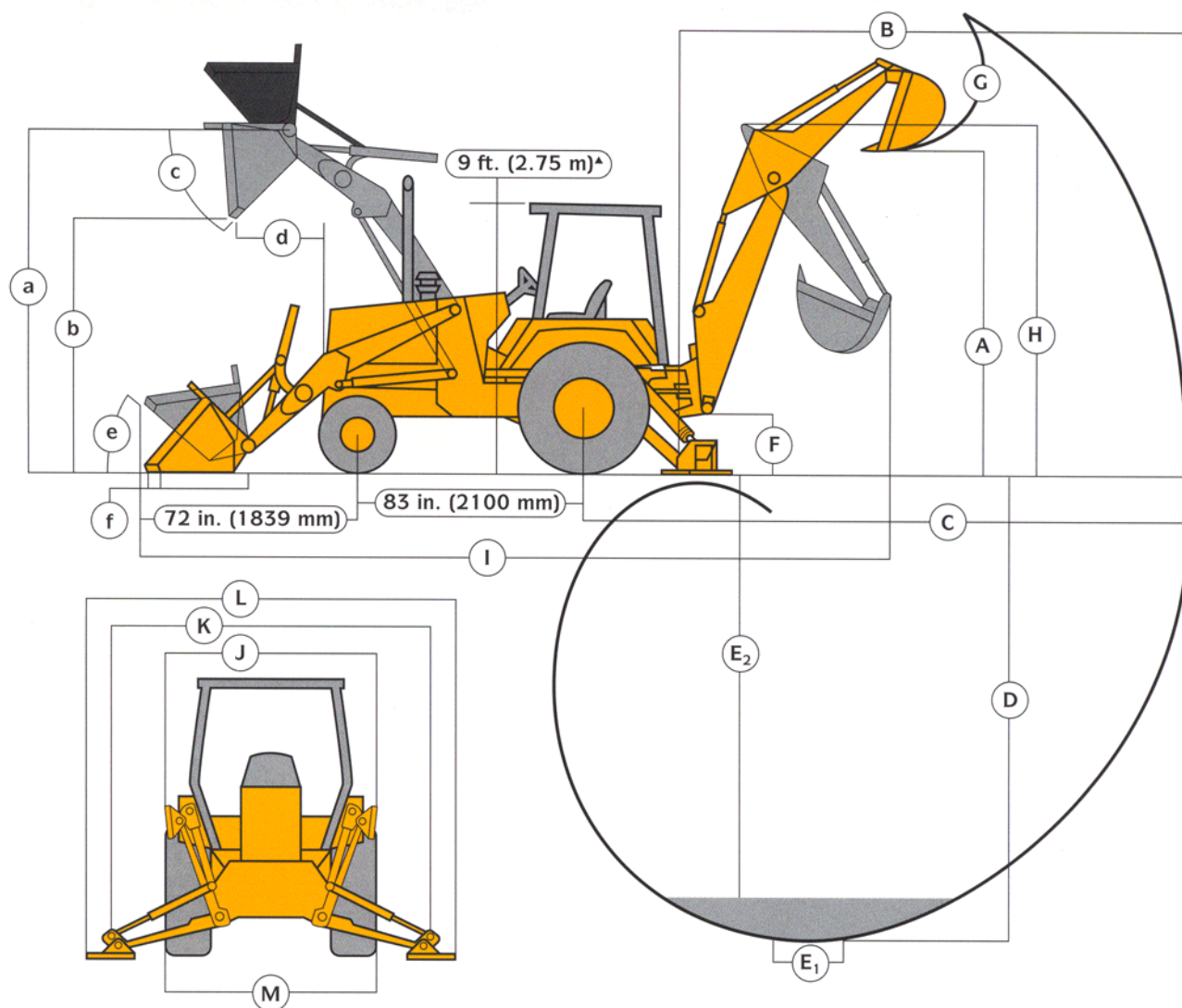
| Rear                              | Front               |
|-----------------------------------|---------------------|
| 16.9-24, 8 PR R4.....             | 11L-15, 8 PR F3     |
| 19.5L-24, 8 PR R4.....            | 11L-16, 12 PR F3    |
| With mechanical-front-wheel drive |                     |
| 19.5L-24, 8 PR R4.....            | 12-16.5, 8 PR       |
| 21L-24, 10 PR R4.....             | 14-17.5, 10 PR, NHS |

## OPERATING WEIGHTS

**SAE**  
310D.....13,600 lb. (6169 kg)  
cab adds.....500 lb. (227 kg)  
mechanical-front-wheel drive  
with tires adds.....190 lb. (86 kg)  
extendable dipperstick excluding required  
counterweight adds.....430 lb. (195 kg)  
optional 400-lb. counterweight adds.....400 lb. (181 kg)  
optional 750-lb. counterweight adds.....750 lb. (340 kg)  
backhoe bucket coupler adds.....200 lb. (91 kg)  
See backhoe and loader performance data for bucket weights.

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, 8 PR R4 rear tires, 11L-16, 12 PR F3 front tires, 1.12 cu. yd. (0.86 m<sup>3</sup>) loader bucket with auxiliary cutting edge and skid plates, 24-in. x 7.5-cu. ft. (610 mm x 0.21 m<sup>3</sup>) backhoe bucket.

## DIMENSIONS



### ▲ ROPS and cab

#### Key:

|                                                 | Backhoe*               |
|-------------------------------------------------|------------------------|
| A. Loading height, truck loading position ..... | 11 ft. 4 in. (3.45 m)  |
| B. Reach from center of swing mast .....        | 17 ft. 7 in. (5.36 m)  |
| C. Reach from center of rear axle .....         | 21 ft. (6.40 m)        |
| D. Maximum digging depth .....                  | 14 ft. 6 in. (4.42 m)  |
| E. Digging depth (SAE):                         |                        |
| (1) 2-ft. (610 mm) flat bottom .....            | 14 ft. 4 in. (4.37 m)  |
| (2) 8-ft. (2440 mm) flat bottom .....           | 13 ft. 2 in. (4.02 m)  |
| F. Ground clearance, minimum .....              | 13 in. (330 mm)        |
| G. Bucket rotation .....                        | 160 or 180 degrees     |
| H. Transport height .....                       | 11 ft. 11 in. (3.63 m) |
| I. Overall length, transport .....              | 22 ft. 7 in. (6.88 m)  |
| J. Stabilizer width – transport w/ROPS .....    | 7 ft. (2.12 m)         |
| K. Stabilizer spread – operating .....          | 10 ft. (3.05 m)        |
| L. Stabilizer overall width – operating .....   | 11 ft. 6 in. (3.50 m)  |
| M. Width over tires** .....                     | 85 in. (2.15 m)        |

\*See backhoe performance.

\*\*Width over tires with 16.9-24, 8 PR R4 tires is 81 in. (2.05 m).

#### Extendable Dipperstick

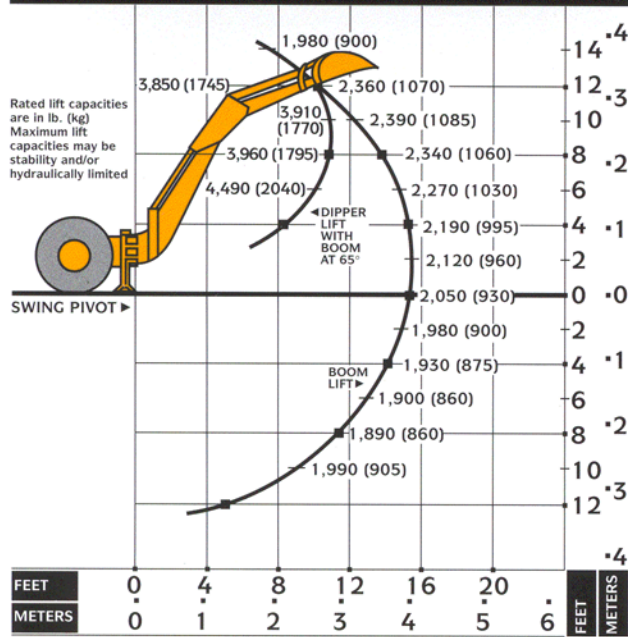
| Retracted             | Extended               |
|-----------------------|------------------------|
| 11 ft. 8 in. (3.55 m) | 13 ft. 11 in. (4.24 m) |
| 17 ft. 7 in. (5.36 m) | 21 ft. 3 in. (6.47 m)  |
| 21 ft. (6.40 m)       | 24 ft. 7 in. (7.50 m)  |
| 14 ft. 6 in. (4.42 m) | 18 ft. 3 in. (5.56 m)  |
| 14 ft. 4 in. (4.37 m) | 18 ft. 2 in. (5.53 m)  |
| 13 ft. 2 in. (4.02 m) | 17 ft. 4 in. (5.28 m)  |
| 13 in. (330 mm)       | 13 in. (330 mm)        |
| 160 or 180 degrees    | 160 or 180 degrees     |
| 12 ft. 7 in. (3.84 m) | 12 ft. 7 in. (3.84 m)  |
| 22 ft. 7 in. (6.88 m) | 22 ft. 7 in. (6.88 m)  |
| 7 ft. (2.12 m)        | 7 ft. (2.12 m)         |
| 10 ft. (3.05 m)       | 10 ft. (3.05 m)        |
| 11 ft. 6 in. (3.50 m) | 11 ft. 6 in. (3.50 m)  |
| 85 in. (2.15 m)       | 85 in. (2.15 m)        |

## BACKHOE PERFORMANCE

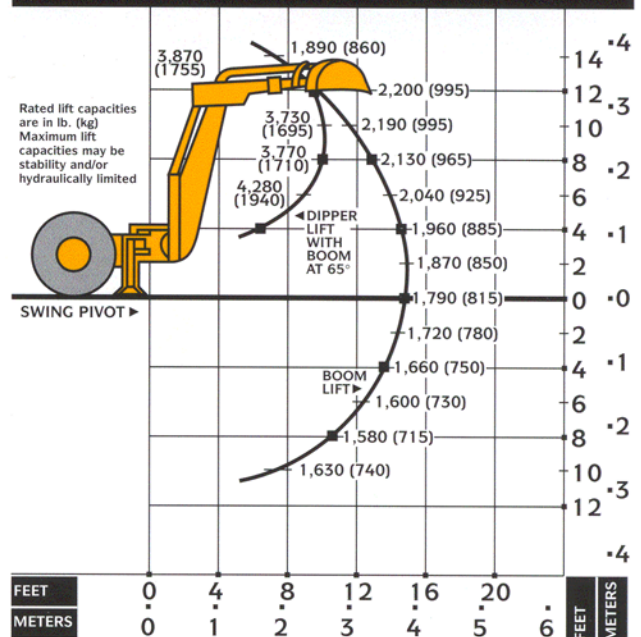
|                                                              |                          |                          |
|--------------------------------------------------------------|--------------------------|--------------------------|
| Digging force, bucket cylinder<br>(power dig position) ..... | 11,570 lb. (51.5 kN)     | 11,530 lb. (51.3 kN)     |
| Digging force, crowd cylinder .....                          | 6,650 lb. (29.6 kN)      | 4,550 lb. (20.2 kN)      |
| Swing arc .....                                              | 180 degrees              | 180 degrees              |
| Operator control .....                                       | Two levers               | Right foot treadle       |
| Bucket positions .....                                       | 12 or 21 degree rollback | 13 or 21 degree rollback |
| Stabilizer angle rearward .....                              | 13 degrees               | 13 degrees               |
| Lifting capacity, maximum .....                              | 5,200 lb. (2358 kg)      | 3,050 lb. (1383 kg)      |
| Leveling angle .....                                         | 14 degrees               | 14 degrees               |

\*Backhoe specifications are with 24-in. x 7.5 cu. ft. (610 mm x 0.21 m³) bucket.

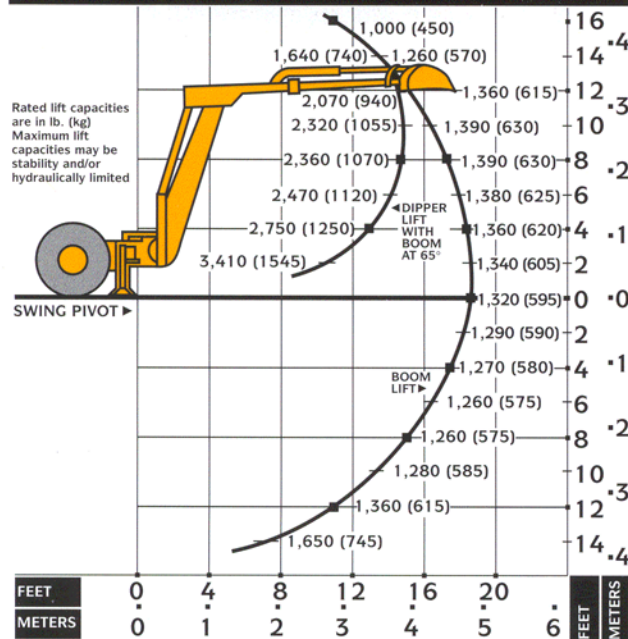
## LIFT CAPACITY Backhoe with standard dipperstick. Based on SAE J31.



## LIFT CAPACITY Backhoe with 4-ft. (1.22 m) dipperstick, retracted. Based on SAE J31.



## LIFT CAPACITY Backhoe with 4-ft. (1.22 m) dipperstick, extended. Based on SAE J31.



## BACKHOE BUCKETS

|                                 | Width    | Capacity     | Weight    |
|---------------------------------|----------|--------------|-----------|
|                                 | in. (mm) | cu. ft. (m³) | lb. (kg)  |
| Standard-duty                   | 12 (305) | 2.5 (0.07)   | 244 (111) |
|                                 | 18 (457) | 5.1 (0.14)   | 322 (146) |
|                                 | 24 (610) | 7.5 (0.21)   | 370 (168) |
|                                 | 30 (762) | 10.0 (0.28)  | 410 (186) |
|                                 | 36 (914) | 10.0 (0.28)  | 430 (195) |
| Heavy-duty with lift hook       | 36 (914) | 14.5 (0.41)  | 556 (252) |
|                                 | 12 (305) | 2.5 (0.07)   | 258 (117) |
|                                 | 18 (457) | 5.1 (0.14)   | 334 (151) |
|                                 | 24 (610) | 7.5 (0.21)   | 396 (180) |
|                                 | 30 (762) | 10.0 (0.28)  | 444 (201) |
| Extra heavy-duty with lift hook | 36 (914) | 10.0 (0.28)  | 480 (217) |
|                                 | 18 (457) | 5.1 (0.14)   | 362 (164) |
|                                 | 24 (610) | 7.5 (0.21)   | 424 (192) |
| Ditch cleaning                  | 30 (762) | 10.0 (0.28)  | 474 (215) |
|                                 | 36 (914) | 10.0 (0.28)  | 370 (168) |
|                                 | 36 (914) | 14.5 (0.41)  | 500 (235) |

## LOADER BUCKETS

|                                 | Width     | Heaped Capacity | Weight      |
|---------------------------------|-----------|-----------------|-------------|
|                                 | in. (mm)  | cu. yd. (m³)    | lb. (kg)    |
| Loader:<br>Heavy-duty long lip* | 86 (2184) | 1.12 (0.86)     | 918 (417)   |
|                                 | 92 (2340) | 1.42 (1.09)     | 965 (438)   |
| General purpose<br>long lip     | 89 (2270) | 1.25 (0.96)     | 775 (351)   |
|                                 | 92 (2340) | 1.25 (0.96)     | 1,560 (708) |
|                                 | 92 (2340) | 1.25 (0.96)     | 1,560 (708) |

\*With auxiliary cutting edge and skid shoes standard.  
NOTE: All buckets pre-drilled for auxiliary cutting edge.

## LOADER PERFORMANCE

|                                               | w/1.12 cu. yd.<br>(0.86 m³) Heavy-Duty<br>Long Lip Bucket |
|-----------------------------------------------|-----------------------------------------------------------|
| Operator control                              | single lever                                              |
| Breakout force                                | 9,350 lb. (41.6 kN)                                       |
| Lifting capacity, full height                 | 5,700 lb. (2585 kg)                                       |
| a) Height to bucket hinge pin, max.           | 10 ft. 11 in. (3.33 m)                                    |
| b) Dump clearance, bucket at 45 degrees       | 9 ft. (2.74 m)                                            |
| c) Bucket dump angle, max.                    | 45 degrees                                                |
| d) Reach at full height, bucket at 45 degrees | 27 in. (686 mm)                                           |
| e) Rollback angle at ground level             | 40 degrees                                                |
| f) Digging depth below ground, bucket level   | 4 in. (100 mm)                                            |
| Raising time to full height                   | 4.0 sec.                                                  |
| Bucket dump time                              | 1.1 sec.                                                  |
| Bucket lowering time (power down)             | 2.3 sec.                                                  |

|                                               | w/1.25 cu. yd.<br>(0.96 m³) General Pur-<br>pose Long Lip Bucket |
|-----------------------------------------------|------------------------------------------------------------------|
| Operator control                              | single lever                                                     |
| Breakout force                                | 7,420 lb. (33.0 kN)                                              |
| Lifting capacity, full height                 | 5,330 lb. (2415 kg)                                              |
| a) Height to bucket hinge pin, max.           | 10 ft. 11 in. (3.33 m)                                           |
| b) Dump clearance, bucket at 45 degrees       | 8 ft. 5 in. (2.56 m)                                             |
| c) Bucket dump angle, max.                    | 45 degrees                                                       |
| d) Reach at full height, bucket at 45 degrees | 33.6 in. (855 mm)                                                |
| e) Rollback angle at ground level             | 40 degrees                                                       |
| f) Digging depth below ground, bucket level   | 3.4 in. (86 mm)                                                  |
| Raising time to full height                   | 4.0 sec.                                                         |
| Bucket dump time                              | 1.1 sec.                                                         |
| Bucket lowering time (power down)             | 2.3 sec.                                                         |

|                                               | w/1.42 cu. yd.<br>(1.09 m³) Heavy-Duty<br>Long Lip Bucket |
|-----------------------------------------------|-----------------------------------------------------------|
| Operator control                              | single lever                                              |
| Breakout force                                | 8,240 lb. (36.7 kN)                                       |
| Lifting capacity, full height                 | 5,500 lb. (2495 kg)                                       |
| a) Height to bucket hinge pin, max.           | 10 ft. 11 in. (3.33 m)                                    |
| b) Dump clearance, bucket at 45 degrees       | 8 ft. 8 in. (2.65 m)                                      |
| c) Bucket dump angle, max.                    | 45 degrees                                                |
| d) Reach at full height, bucket at 45 degrees | 29.2 in. (743 mm)                                         |
| e) Rollback angle at ground level             | 40 degrees                                                |
| f) Digging depth below ground, bucket level   | 4 in. (100 mm)                                            |
| Raising time to full height                   | 4.0 sec.                                                  |
| Bucket dump time                              | 1.1 sec.                                                  |
| Bucket lowering time (power down)             | 2.3 sec.                                                  |

|                                               | w/1.25 cu. yd.<br>(0.96 m³) Multi-<br>purpose Bucket |
|-----------------------------------------------|------------------------------------------------------|
| Operator control                              | single lever                                         |
| Breakout force                                | 7,240 lb. (32.2 kN)                                  |
| Lifting capacity, full height                 | 5,070 lb. (2300 kg)                                  |
| a) Height to bucket hinge pin, max.           | 10 ft. 11 in. (3.33 m)                               |
| b) Dump clearance, bucket at 45 degrees       | 8 ft. 5 in. (2.56 m)                                 |
| c) Bucket dump angle, max.                    | 45 degrees                                           |
| d) Reach at full height, bucket at 45 degrees | 29.6 in. (753 mm)                                    |
| e) Rollback angle at ground level             | 40 degrees                                           |
| f) Digging depth below ground, bucket level   | 6 in. (150 mm)                                       |
| Raising time to full height                   | 4.0 sec.                                             |
| Bucket dump time                              | 1.1 sec.                                             |
| Bucket lowering time (power down)             | 2.3 sec.                                             |