



990

Wheel Loader

Technical Specifications

Configurations and features may vary by region. Please consult your Cat® dealer for availability in your area.

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990 Wheel Loader Specifications

Engine

| | | |
|---|-----------|--------------|
| Engine Model | Cat® C27 | |
| Rated Speed | 1,800 rpm | |
| Engine Power – ISO 14396:2002 | 561 kW | 752 hp |
| Gross Power – SAE J1995:2014 | 571 kW | 766 hp |
| Net Power – SAE J1349:2011 (Standard Ambient) | 521 kW | 699 hp |
| Net Power – SAE J1349:2011 (High Ambient) | 483 kW | 648 hp |
| Bore | 137.2 mm | 5.4 in |
| Stroke | 152.4 mm | 6.0 in |
| Displacement | 27.03 L | 1,649.5 in3 |
| Peak Torque (1,200 rpm) | 3557 N·m | 2,624 lbf-ft |
| Torque Rise | 18% | |

- Two engine emission options are available:
 1. Meets U.S. EPA Tier 4 Final and EU Stage V emission standards.
 2. Emits equivalent to U.S. EPA Tier 2.
- Net power advertised is the power available at the flywheel when the engine is equipped with fan at minimum speed, air intake system, exhaust system, and alternator.

Transmission

| | | |
|------------------------|---------------------------|----------|
| Transmission Type | Cat planetary power shift | |
| Forward 1 | 7.4 km/h | 4.6 mph |
| Forward 2 | 13.2 km/h | 8.2 mph |
| Forward 3 | 23.3 km/h | 14.5 mph |
| Reverse 1 | 8.15 km/h | 5.1 mph |
| Reverse 2 | 14.6 km/h | 9.1 mph |
| Reverse 3 | 25.7 km/h | 16.0 mph |
| Direct Drive Forward 1 | Lock-up disabled | |
| Direct Drive Forward 2 | 13.2 km/h | 8.2 mph |
| Direct Drive Forward 3 | 23.3 km/h | 14.5 mph |
| Direct Drive Reverse 1 | 8.15 km/h | 5.1 mph |
| Direct Drive Reverse 2 | 14.6 km/h | 9.1 mph |
| Direct Drive Reverse 3 | 25.7 km/h | 16.0 mph |

- Travel speeds based on Michelin 45/65R39 LD D2**L5 tires.

Operating Specifications

| | | |
|-----------------------------|--------------------|------------------------|
| Operating Weight – Standard | 80 974 kg | 178,517 lb |
| Rated Payload – Standard | 15.9 tonnes | 17.5 tons |
| Rated Payload – High Lift | 15.9 tonnes | 17.5 tons |
| Bucket Capacity Range | 8.6 m3- 10.0 m3 | 11.25 yd3- 13.0 yd3 |
| Cat Truck Match – Standard | 773-775 | |
| Cat Truck Match – High Lift | 775-777 | |

Hydraulic System – Lift/Tilt

| | | |
|---|---------------------------------|----------------------|
| Lift/Tilt System – Circuit | Positive flow control | |
| Lift/Tilt System | Variable displacement piston | |
| Maximum Flow at 1,800 rpm | 910 L/min | 240 gal/min |
| Relief Valve Setting – Lift/Tilt | 33 000 kPa | 4,786 psi |
| Cylinders, Double Acting: Lift, Bore and Stroke | 235 mm x 1287 mm | 9.3 in x 50.7 in |
| Cylinders, Double Acting: Tilt, Bore and Stroke | 292.1 mm x 820 mm | 11.5 in x 32.3 in |
| Pilot System | Open loop and pressure reducing | |
| Pilot Relief Setting | 3500 kPa | 507 psi |

Hydraulic Cycle Time

| | |
|---|--------------|
| Rack Back | 4.3 Seconds |
| Raise | 8.6 Seconds |
| Dump | 2.9 Seconds |
| Lower | 3.7 Seconds |
| Lower Float Down | 3.7 Seconds |
| Total Hydraulic Cycle Time (empty bucket) | 13.8 Seconds |

Hydraulic System – Steering

| | | |
|---------------------------------|------------------------------|--------------|
| Steering System – Circuit | Pilot, load sensing | |
| Steering System – Pump | Variable displacement piston | |
| Maximum Flow at 1,400 rpm | 364 L/min | 96.2 gal/min |
| Relief Valve Setting – Steering | 34 500 kPa | 5,004 psi |
| Total Steering Angle | 70° | |

Air Conditioning System

The air conditioning system on this machine contains the fluorinated greenhouse gas refrigerant R134a (Global Warming Potential = 1430). The system contains 2.7 kg of refrigerant which has a CO₂ equivalent of 3.861 metric tonnes (4.256 tons).

Axles

| | |
|-------------------|----------|
| Front | Fixed |
| Rear | Trunnion |
| Oscillation Angle | 8.5° |

Brakes

| | |
|--------|---------------|
| Brakes | ISO 3450:2011 |
|--------|---------------|

Service Refill Capacities

| | | |
|--|--------|-----------|
| Fuel Tank | 1064 L | 281.0 gal |
| Cooling System | 208 L | 54.9 gal |
| Engine Crankcase | 75.7 L | 20.0 gal |
| Transmission | 110 L | 29.1 gal |
| Differentials and Final Drives – Front | 271 L | 71.6 gal |
| Differentials and Final Drives – Rear | 261 L | 68.9 gal |
| Hydraulic System Factory Fill | 795 L | 210.0 gal |
| Hydraulic Tank (Implement and Hydraulic Fan) | 261 L | 68.9 gal |
| Hydraulic Tank (Steering and Braking) | 132 L | 34.9 gal |

- All nonroad Tier 4 Final/Stage V diesel engines are required to use only ultra low sulfur diesel (ULSD) fuels containing 15 ppm (mg/kg) sulfur or less. Biodiesel blends up to B20 (20% blend by volume) are acceptable when blended with 15 ppm (mg/kg) sulfur or less ULSD. B20 should meet ASTM D7467 specification (biodiesel blend stock should meet Cat biodiesel spec, ASTM D6751 or EN 14214. Cat DEO-ULS™ or oils that meet the Cat ECF-3, API CJ-4, and ACEA E9 specification are required. For further fluid specifications and guidelines, visit: <http://parts.cat.com/cda/files/3244668/7/SEBU6250-19.pdf>.

Sound Performance

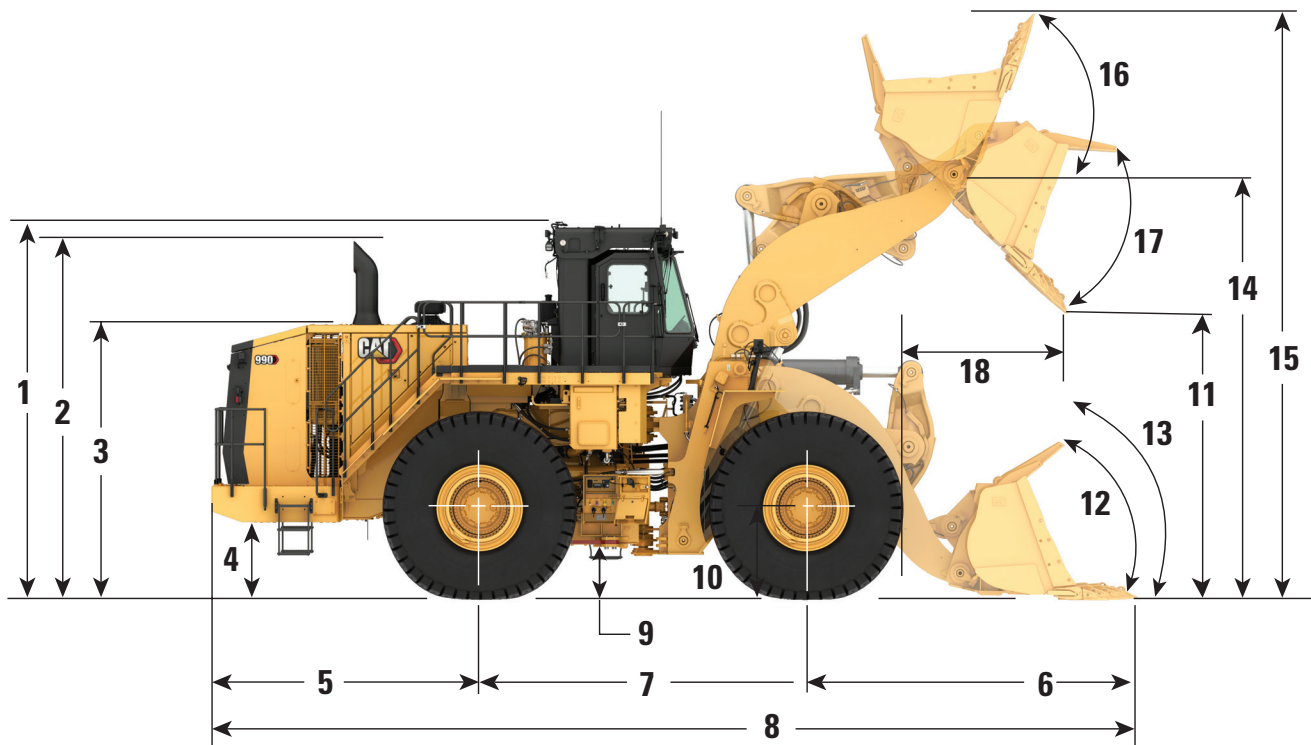
| | Standard | Suppression |
|--------------------------------------|-----------|-------------|
| Operator Sound Level (ISO 6396:2008) | 70 dB(A) | 69 dB(A) |
| Machine Sound Level (ISO 6395:2008) | 115 dB(A) | 113 dB(A) |

- The machine sound power level was measured according to the test procedures and conditions specified in ISO 6395:2008. The measurement was conducted at 70% of the maximum engine cooling fan speed.
- The operator sound pressure level was measured according to the test procedures and conditions specified in ISO 6396:2008. The measurement was conducted at 70% of the maximum engine cooling fan speed.
- Hearing protection may be needed when the machine is operated with a cab that is not properly maintained or when the doors or windows are open for extended periods or in a noisy environment.

990 Wheel Loader Specifications

Dimensions

All dimensions are approximate.



| | Standard Lift | | High Lift | |
|---|---------------|---------|--------------|---------|
| 1 Ground to Top of Rollover Protective Structure (ROPS) | 5240 mm | 17.2 ft | 5240 mm | 17.2 ft |
| 2 Ground to Top of Exhaust Stacks | 5049 mm | 16.6 ft | 5049 mm | 16.6 ft |
| 3 Ground to Top of Hood | 3862 mm | 12.7 ft | 3862 mm | 12.7 ft |
| 4 Ground to Bumper Clearance | 1079 mm | 3.5 ft | 1079 mm | 3.5 ft |
| 5 Rear Axle Centerline to Bumper | 3795 mm | 12.5 ft | 3795 mm | 12.5 ft |
| 6 Front Axle Centerline to Bucket Tip | 4689 mm | 15.4 ft | 5425 mm | 17.8 ft |
| 7 Wheelbase | 4600 mm | 15.1 ft | 4600 mm | 15.1 ft |
| 8 Maximum Overall Length | 13 084 mm | 42.9 ft | 13 820 mm | 45.3 ft |
| 9 Ground to Lower Hitch Clearance | 596 mm | 2.0 ft | 596 mm | 2.0 ft |
| 10 Ground to Center of Front Axle | 1290 mm | 4.2 ft | 1290 mm | 4.2 ft |
| 11 Clearance at Maximum Lift | 2193 mm | 7.2 ft | 4521 mm | 14.8 ft |
| 12 Rack Back Angle at Ground Level | 40.4 degrees | | 39.9 degrees | |
| 13 Rack Back Angle at Carry | 48.8 degrees | | 49.3 degrees | |
| 14 B-Pin Height at Maximum Lift | 6009 mm | 19.7 ft | 6470 mm | 21.2 ft |
| 15 Maximum Overall Height, Bucket Raised | 8281 mm | 27.2 ft | 8742 mm | 28.7 ft |
| 16 Rack Angle at Maximum Lift | 63.7 degrees | | 60.6 degrees | |
| 17 Dump Angle at Maximum Lift | 45 degrees | | 51 degrees | |
| 18 Reach at Maximum Lift | 2194 mm | 7.2 ft | 2583 mm | 8.5 ft |

Note: Specifications are calculated with 9.0 m³ (11.8 yd³) rock bucket and Bridgestone 45/65R39 VSDL One Star tires.

Bucket Capacity/Material Density Selection Guide

Standard Lift/High Lift

Rated Payload (Quarry Face) – 11.3 tonnes/12.5 tons

| Material Density | | | | Bucket Volume | |
|-------------------|--------------------|-----------------------|----------------------|----------------|-----------------|
| kg/m ³ | lb/yd ³ | tonnes/m ³ | tons/yd ³ | m ³ | yd ³ |
| 1590-1750 | 2,692-2,962 | 1.59-1.75 | 1.35-1.48 | 10.0 | 13.0 |
| 1728-1902 | 2,917-3,208 | 1.73-1.90 | 1.46-1.60 | 9.2 | 12.0 |
| 1849-2035 | 3,125-3,438 | 1.85-2.03 | 1.56-1.71 | 8.6 | 11.2 |

Standard Lift/High Lift

Rated Payload (Loose Material) – 20 tonnes/22 tons

| Material Density | | | | Bucket Volume | |
|-------------------|--------------------|-----------------------|----------------------|----------------|-----------------|
| kg/m ³ | lb/yd ³ | tonnes/m ³ | tons/yd ³ | m ³ | yd ³ |
| 1538-1692 | 2,588-2,847 | 1.54-1.69 | 1.29-1.42 | 13.0 | 17.0 |
| 1342-1477 | 2,256-2,482 | 1.34-1.48 | 1.13-1.24 | 14.9 | 19.5 |

Custom buckets are available upon request. Please work with your dealer for more information. Refer to the Large Wheel Loader Payload Policy.

990 Wheel Loader Specifications

Aggregate Package Operating Specifications – Standard Lift

For machines equipped with Bridgestone 45/65R39 VSDL One Star 6.7 bar (97 psi) pressure.

| | | 990 Std Agg | |
|---|-----------------|-----------------------|-----------------------|
| Bucket Type | | General Purpose | Coal |
| Ground Engaging Tools | | Bolt-on Cutting Edges | Bolt-on Cutting Edges |
| Cutting Edge Type | | Straight | Straight |
| Bucket Part Number (Group Level) | | 548-9350 | 451-5410 |
| Struck Capacity (ISO) | m ³ | 10.0 | 12.0 |
| | yd ³ | 13.1 | 15.7 |
| Heaped Capacity (ISO) | m ³ | 13.0 | 15.0 |
| | yd ³ | 17.0 | 19.6 |
| Bucket Width – Overall | mm | 4480 | 4450 |
| | ft | 13.1 | 15.7 |
| Clearance at 45° Dump (Edge) | mm | 4091 | 4108 |
| | ft | 13.4 | 13.5 |
| Reach at 45° Dump (Edge) | mm | 2123 | 2109 |
| | ft | 7.0 | 6.9 |
| Horizontal Arm and Level Bucket Reach (Edge) | mm | 4247 | 4225 |
| | ft | 13.9 | 13.9 |
| Digging Depth (Segment) | mm | 151 | 149 |
| | in | 6.0 | 5.9 |
| Overall Length – Bucket Level Ground | mm | 13 018 | 12 994 |
| | ft | 42.7 | 42.6 |
| Overall Height | mm | 8541 | 8575 |
| | ft | 28.0 | 28.1 |
| Loader Clearance Circle – Corner SAE Carry | mm | 21 015 | 21 001 |
| | ft | 68.9 | 68.9 |
| Rack Back Angle at SAE Carry | degrees | 49.1 | 49.1 |
| Full Dump at Maximum Lift | degrees | -45.0 | -45.0 |
| Tipping Load – Straight* | kg | 49 825 | 50 799 |
| | lb | 109,844 | 111,993 |
| Tipping Load – Straight (Tire Squash)* | kg | 46 940 | 47 424 |
| | lb | 103,485 | 104,552 |
| Tipping Load at Operating Weight (Articulated 35°)* | kg | 44 309 | 45 222 |
| | lb | 97,685 | 99,698 |
| Tipping Load at Operating Weight (Articulated 35°) (Tire Squash)* | kg | 40 189 | 40 575 |
| | lb | 88,601 | 89,452 |
| Breakout Force (SAE Rated)** | kN | 544.1 | 550.4 |
| | lbf | 122,314 | 123,741 |
| Operating Weight | kg | 81 250 | 80 924 |
| | lb | 179,125 | 178,408 |
| Weight Distribution at SAE Carry (Unloaded) | | | |
| Front | kg | 44 358 | 43 767 |
| | lb | 97,793 | 96,489 |
| Rear | kg | 36 892 | 37 158 |
| | lb | 81,333 | 81,919 |
| Loaded Machine Weight | kg | 101 208 | 100 882 |
| | lb | 223,125 | 222,407 |
| Weight Distribution at SAE Carry (Loaded) | | | |
| Front | kg | 77 694 | 77 050 |
| | lb | 171,285 | 169,866 |
| Rear | kg | 23 514 | 23 832 |
| | lb | 51,840 | 52,542 |

*Static tipping loads and operating weights include full fluids and 80 kg (176 lb) operator.

**Breakout force is measured 102 mm (4 in) behind tip of cutting edge with bucket hinge pin as pivot.
Full compliance to ISO 14397-1:2007.

990 Wheel Loader Specifications

Aggregate Package Operating Specifications – High Lift

For machines equipped with Bridgestone 45/65R39 VSDL One Star 6.7 bar (97 psi) pressure.

| | | 990 HL Agg | |
|---|-----------------|-----------------------|-----------------------|
| Bucket Type | | General Purpose | Coal |
| Ground Engaging Tools | | Bolt-on Cutting Edges | Bolt-on Cutting Edges |
| Cutting Edge Type | | Straight | Straight |
| Bucket Part Number (Group Level) | | 548-9350 | 451-5410 |
| Struck Capacity (ISO) | m ³ | 10.0 | 12.0 |
| | yd ³ | 13.1 | 15.7 |
| Heaped Capacity (ISO) | m ³ | 13.0 | 15.0 |
| | yd ³ | 17.0 | 19.6 |
| Bucket Width – Overall | mm | 4480 | 4450 |
| | ft | 13.1 | 15.7 |
| Clearance at 45° Dump (Edge) | mm | 4552 | 4569 |
| | ft | 14.9 | 15.0 |
| Reach at 45° Dump (Edge) | mm | 2512 | 2498 |
| | ft | 8.2 | 8.2 |
| Horizontal Arm and Level Bucket Reach (Edge) | mm | 4847 | 4825 |
| | ft | 15.9 | 15.8 |
| Digging Depth (Segment) | mm | 193 | 191 |
| | in | 7.6 | 7.5 |
| Overall Length – Bucket Level Ground | mm | 13 751 | 13 728 |
| | ft | 45.1 | 45.0 |
| Overall Height | mm | 9002 | 9036 |
| | ft | 29.5 | 29.6 |
| Loader Clearance Circle – Corner SAE Carry | mm | 21 698 | 21 682 |
| | ft | 71.2 | 71.1 |
| Rack Back Angle at SAE Carry | degrees | 49.5 | 49.4 |
| Full Dump at Maximum Lift | degrees | -51.1 | -51.1 |
| Tipping Load – Straight* | kg | 50 149 | 50 936 |
| | lb | 110,560 | 112,296 |
| Tipping Load – Straight (Tire Squash)* | kg | 47 551 | 47 886 |
| | lb | 104,832 | 105,570 |
| Tipping Load at Operating Weight (Articulated 35°)* | kg | 44 205 | 44 946 |
| | lb | 97,455 | 99,089 |
| Tipping Load at Operating Weight (Articulated 35°) (Tire Squash)* | kg | 40 153 | 40 409 |
| | lb | 88,522 | 89,086 |
| Breakout Force (SAE Rated)** | kN | 513.0 | 519.0 |
| | lbf | 115,321 | 116,673 |
| Operating Weight | kg | 88 691 | 88 365 |
| | lb | 195,529 | 194,812 |
| Weight Distribution at SAE Carry (Unloaded) | | | |
| Front | kg | 44 600 | 43 954 |
| | lb | 98,326 | 96,901 |
| Rear | kg | 44 091 | 44 412 |
| | lb | 97,204 | 97,911 |
| Loaded Machine Weight | kg | 108 649 | 108 323 |
| | lb | 239,529 | 238,811 |
| Weight Distribution at SAE Carry (Loaded) | | | |
| Front | kg | 81 288 | 80 586 |
| | lb | 179,210 | 177,661 |
| Rear | kg | 27 360 | 27 737 |
| | lb | 60,319 | 61,150 |

*Static tipping loads and operating weights include full fluids and 80 kg (176 lb) operator.

**Breakout force is measured 102 mm (4 in) behind tip of cutting edge with bucket hinge pin as pivot.

Full compliance to ISO 14397-1:2007.

990 Wheel Loader Specifications

Operating Specifications – Standard Lift

For machines equipped with Bridgestone 45/65R39 VSDL One Star 6.7 bar (97 psi) pressure.

| | | 990 Std Lift Tires: 45/65R39 VSDL, SLR: 1203 mm | | | |
|---|-----------------|---|------------------|------------------|------------------|
| Bucket Type | | Rock | Rock | Rock | HD Rock |
| Ground Engaging Tool | | Teeth & Segments | Teeth & Segments | Teeth & Segments | Teeth & Segments |
| Cutting Edge Type | | Spade | Spade | Spade | Spade |
| Bucket Part Number (Group Level) | | 499-7550 | 499-7560 | 499-7570 | 499-7580 |
| Struck Capacity (ISO) | m ³ | 7.0 | 7.5 | 8.0 | 7.0 |
| | yd ³ | 9.1 | 9.9 | 10.5 | 9.1 |
| Heaped Capacity (ISO) | m ³ | 8.5 | 9.0 | 10.0 | 8.5 |
| | yd ³ | 11.1 | 11.8 | 13.0 | 11.1 |
| Bucket Width – Overall | mm | 4610 | 4610 | 4610 | 4610 |
| | ft | 15.1 | 15.1 | 15.1 | 15.1 |
| Clearance at 45° Dump (Tooth Tip) | mm | 4044 | 3997 | 3976 | 4023 |
| | ft | 13.3 | 13.1 | 13.0 | 13.2 |
| Clearance at 45° Dump (Edge) | mm | 4217 | 4169 | 4148 | 4217 |
| | ft | 13.8 | 13.7 | 13.6 | 13.8 |
| Reach at 45° Dump (Tooth Tip) | mm | 2193 | 2241 | 2262 | 2197 |
| | ft | 7.2 | 7.4 | 7.4 | 7.2 |
| Reach at 45° Dump (Edge) | mm | 2027 | 2074 | 2095 | 2027 |
| | ft | 6.6 | 6.8 | 6.9 | 6.6 |
| Horizontal Arm and Level Bucket Reach (Tooth) | mm | 4330 | 4397 | 4427 | 4347 |
| | ft | 14.2 | 14.4 | 14.5 | 14.3 |
| Digging Depth (Segment) | mm | 130 | 130 | 130 | 130 |
| | in | 5.1 | 5.1 | 5.1 | 5.1 |
| Overall Length – Bucket Level Ground | mm | 13 084 | 13 151 | 13 181 | 13 102 |
| | ft | 42.9 | 43.1 | 43.2 | 43.0 |
| Overall Height | mm | 8281 | 8346 | 8375 | 8281 |
| | ft | 27.2 | 27.4 | 27.5 | 27.2 |
| Loader Clearance Circle (SAE carry with teeth) | mm | 20 898 | 20 933 | 20 949 | 20 886 |
| | ft | 68.6 | 68.7 | 68.7 | 68.5 |
| Rack Back Angle at SAE Carry | degrees | 48.8 | 48.8 | 48.8 | 48.8 |
| Full Dump at Maximum Lift | degrees | -45.0 | -45.0 | -45.0 | -45.0 |
| Tipping Load – Straight* | kg | 46 060 | 45 814 | 45 853 | 44 961 |
| | lb | 101,546 | 101,002 | 101,089 | 99,122 |
| Tipping Load – Straight (Tire Squash)* | kg | 43 583 | 43 319 | 43 318 | 42 507 |
| | lb | 96,084 | 95,502 | 95,500 | 93,712 |
| Tipping Load at Operating Weight (Articulated 35°)* | kg | 41 029 | 40 790 | 40 810 | 39 928 |
| | lb | 90,453 | 89,927 | 89,970 | 88,025 |
| Tipping Load at Operating Weight (Articulated 35°) (Tire Squash)* | kg | 37 499 | 37 240 | 37 211 | 36 425 |
| | lb | 82,671 | 82,100 | 82,036 | 80,303 |
| Breakout Force (SAE Rated)** | kN | 589.0 | 569.0 | 560.0 | 585.7 |
| | lbf | 132,411 | 127,914 | 125,896 | 131,675 |
| Operating Weight | kg | 79 031 | 79 164 | 79 310 | 80 069 |
| | lb | 174,233 | 174,526 | 174,848 | 176,521 |
| Weight Distribution at SAE Carry (Unloaded) | | | | | |
| Front | kg | 45 350 | 45 608 | 45 851 | 47 087 |
| | lb | 99,979 | 100,548 | 101,085 | 103,809 |
| Rear | kg | 33 681 | 33 556 | 33 458 | 32 982 |
| | lb | 74,254 | 73,979 | 73,763 | 72,713 |
| Loaded Machine Weight | kg | 94 906 | 95 039 | 95 185 | 95 944 |
| | lb | 209,231 | 209,525 | 209,847 | 211,520 |
| Weight Distribution at SAE Carry (Loaded) | | | | | |
| Front | kg | 71 467 | 71 773 | 71 996 | 73 186 |
| | lb | 157,557 | 158,233 | 158,724 | 161,348 |
| Rear | kg | 23 439 | 23 266 | 23 189 | 22 758 |
| | lb | 51,675 | 51,292 | 51,122 | 50,172 |

*Static tipping loads and operating weights include full fluids and 80 kg (176 lb) operator.

**Breakout force is measured 102 mm (4 in) behind tip of cutting edge with bucket hinge pin as pivot.

Full compliance to ISO 14397-1:2007.

990 Wheel Loader Specifications

Operating Specifications – High Lift

For machines equipped with Bridgestone 45/65R39 VSDL One Star 6.7 bar (97 psi) pressure.

| | | 990 High Lift Tires: 45/65R39 VSDL, SLR: 1203 mm | | | |
|---|-----------------|--|------------------|------------------|------------------|
| Bucket Type | | Rock | Rock | Rock | HD Rock |
| Ground Engaging Tool | | Teeth & Segments | Teeth & Segments | Teeth & Segments | Teeth & Segments |
| Cutting Edge Type | | Spade | Spade | Spade | Spade |
| Bucket Part Number (Group Level) | | 499-7550 | 499-7560 | 499-7570 | 499-7580 |
| Struck Capacity (ISO) | m ³ | 7.0 | 7.5 | 8.0 | 7.0 |
| | yd ³ | 9.1 | 9.9 | 10.5 | 9.1 |
| Heaped Capacity (ISO) | m ³ | 8.5 | 9.0 | 10.0 | 8.5 |
| | yd ³ | 11.1 | 11.8 | 13.0 | 11.1 |
| Bucket Width – Overall | mm | 4610 | 4610 | 4610 | 4610 |
| | ft | 15.1 | 15.1 | 15.1 | 15.1 |
| Clearance at 45° Dump (Tooth Tip) | mm | 4505 | 4458 | 4437 | 4484 |
| | ft | 14.8 | 14.6 | 14.6 | 14.7 |
| Clearance at 45° Dump (Edge) | mm | 4678 | 4630 | 4609 | 4678 |
| | ft | 15.3 | 15.2 | 15.1 | 15.3 |
| Reach at 45° Dump (Tooth Tip) | mm | 2583 | 2631 | 2651 | 2587 |
| | ft | 8.5 | 8.6 | 8.7 | 8.5 |
| Reach at 45° Dump (Edge) | mm | 2416 | 2463 | 2485 | 2416 |
| | ft | 7.9 | 8.1 | 8.2 | 7.9 |
| Horizontal Arm and Level Bucket Reach (Tooth) | mm | 4930 | 4997 | 5027 | 4947 |
| | ft | 16.2 | 16.4 | 16.5 | 16.2 |
| Digging Depth (Segment) | mm | 172 | 172 | 172 | 172 |
| | in | 6.8 | 6.8 | 6.8 | 6.8 |
| Overall Length – Bucket Level Ground | mm | 13 820 | 13 887 | 13 917 | 13 838 |
| | ft | 45.3 | 45.6 | 45.7 | 45.4 |
| Overall Height | mm | 8742 | 8807 | 8836 | 8742 |
| | ft | 28.7 | 28.9 | 29.0 | 28.7 |
| Loader Clearance Circle (SAE carry with teeth) | mm | 21 551 | 21 590 | 21 609 | 21 535 |
| | ft | 70.7 | 70.8 | 70.9 | 70.7 |
| Rack Back Angle at SAE Carry | degrees | 49.3 | 49.3 | 49.3 | 49.3 |
| Full Dump at Maximum Lift | degrees | -51.1 | -51.1 | -51.1 | -51.1 |
| Tipping Load – Straight* | kg | 42 209 | 41 962 | 41 939 | 41 136 |
| | lb | 93,054 | 92,509 | 92,460 | 90,690 |
| Tipping Load – Straight (Tire Squash)* | kg | 40 203 | 39 944 | 39 894 | 39 147 |
| | lb | 88,632 | 88,061 | 87,951 | 86,304 |
| Tipping Load at Operating Weight (Articulated 35°)* | kg | 37 248 | 37 010 | 36 973 | 36 172 |
| | lb | 82,117 | 81,593 | 81,511 | 79,746 |
| Tipping Load at Operating Weight (Articulated 35°) (Tire Squash)* | kg | 34 161 | 33 908 | 33 836 | 33 107 |
| | lb | 75,312 | 74,754 | 74,596 | 72,988 |
| Breakout Force (SAE Rated)** | kN | 555.3 | 536.3 | 527.8 | 552.0 |
| | lbf | 124,828 | 120,565 | 118,647 | 124,092 |
| Operating Weight | kg | 83 656 | 83 789 | 83 935 | 84 694 |
| | lb | 184,429 | 184,722 | 185,044 | 186,717 |
| Weight Distribution at SAE Carry (Unloaded) | | | | | |
| Front | kg | 47 067 | 47 347 | 47 615 | 48 980 |
| | lb | 103,765 | 104,382 | 104,973 | 107,982 |
| Rear | kg | 36 589 | 36 442 | 36 320 | 35 714 |
| | lb | 80,664 | 80,340 | 80,071 | 78,735 |
| Loaded Machine Weight | kg | 99 531 | 99 664 | 99 810 | 100 569 |
| | lb | 219,427 | 219,720 | 220,042 | 221,716 |
| Weight Distribution at SAE Carry (Loaded) | | | | | |
| Front | kg | 75 859 | 76 187 | 76 433 | 77 756 |
| | lb | 167,240 | 167,962 | 168,506 | 171,422 |
| Rear | kg | 23 672 | 23 477 | 23 377 | 22 813 |
| | lb | 52,187 | 51,758 | 51,537 | 50,294 |

*Static tipping loads and operating weights include full fluids and 80 kg (176 lb) operator.

**Breakout force is measured 102 mm (4 in) behind tip of cutting edge with bucket hinge pin as pivot.

Full compliance to ISO 14397-1:2007.

990 Wheel Loader Standard and Optional Equipment

Standard and Optional Equipment

Standard and optional equipment may vary. Consult your Cat® dealer for details.

| | Standard | Optional | | Standard | Optional |
|--|----------|----------|---|----------|----------|
| ELECTRICAL | | | OPERATOR ENVIRONMENT (CONTINUED) | | |
| Alarm, back-up | ✓ | | Keypad control with indicator lights | ✓ | |
| Alternator, 150 amp | ✓ | | LED warning strobe | | ✓ |
| Batteries, maintenance free (2 – 1,400 CCA) | ✓ | | Light, cab, dome | ✓ | |
| Converter, 10/15 amp, 24V to 12V | ✓ | | Lights, LED | | ✓ |
| Deutsch component connectors | ✓ | | Lunchbox, beverage holders | ✓ | |
| Electrical system, 24V | ✓ | | Mirrors, heated | | ✓ |
| Electronic transmission control | ✓ | | Mirrors, rearview (externally mounted) | ✓ | |
| Ground level starter lockout | ✓ | | Premium seat with heated and actively cooled leather, adjustable lumbar support, air adjustable bolsters on the seat and backrest, seat cushion tilt adjustment, and adjustable-length seat cushion | ✓ | |
| Ground level transmission lockout | ✓ | | Radio, AM/FM/CD/MP3, Bluetooth® with Satellite Sirius | | ✓ |
| Lighting system, halogen (front and rear) lighting, access stairway, engine compartment | ✓ | | Seat belt minder | ✓ | |
| Starter, electric | ✓ | | Seat belt, retractable, 76 mm (3 in) wide | ✓ | |
| Starter receptacle for auxiliary start | ✓ | | Steering and Transmission Integrated Control (STICT™) system with steering lock | ✓ | |
| OPERATOR ENVIRONMENT | | | Tinted glass | ✓ | |
| Air conditioner and heater with automatic temperature control | ✓ | | Trainer seat with lap belt | ✓ | |
| Cab precleaner, powered | ✓ | | Vital Information Management System (VIMS™) with graphical information display: external data port, customizable operator profiles, cycle timer, integral Cat Production Measurement | ✓ | |
| Cab, sound suppressed and pressurized, rollover protective structure/falling objects protective structure (ROPS/FOPS) | ✓ | | Wet-arm wipers/washers (front, rear, and corner) intermittent front wiper | ✓ | |
| Cat Detect, object detection system | | ✓ | Window pull-down visor | | ✓ |
| Cat Vision, rear vision camera system | ✓ | | POWERTRAIN | | |
| CB radio ready | | ✓ | Antifreeze, -50° C (-58° F) | | ✓ |
| Cigar lighter and ashtray | ✓ | | Autolube – linkage, cylinder, and hitch pins | | ✓ |
| Coat hook | ✓ | | Axle oil cooling | | ✓ |
| Electro-hydraulic tilt and lift controls (seat mounted) | ✓ | | Axle-shift oil-disc service brake | ✓ | |
| Flip-up armrest | ✓ | | Brakes, oil-disc, full hydraulic, enclosed | ✓ | |
| Heater and defroster | ✓ | | Case drain screens | ✓ | |
| Horn, electric | ✓ | | Cat Clean Emission Module (CEM) – Tier 4 only | ✓ | |
| Implement hydraulic lockout | ✓ | | Deluxe hydraulic filtration | | ✓ |
| Instrumentation, gauges: engine coolant temperature, fuel level, ground speed, gear, hydraulic oil temperature, speedometer/tachometer, torque converter temperature | ✓ | | Demand fan | ✓ | |
| Instrumentation, warning indicators: action alert system – three category, automatic transmission model enable status, brake malfunction, bucket float status, delayed engine shutdown status, engine idle shutdown status, engine malfunction, fuel economy mode enable status, hydraulic lockout, lockup clutch enable status, low fuel level, parking brake status, rimpull control enable status, seat belt warning, secondary steering (if equipped), throttle lock status, transmission gear | ✓ | | Electro-hydraulic parking brake | ✓ | |
| | | | Engine, C27 | ✓ | |
| | | | Engine block heater 120V or 240V | | ✓ |
| | | | Engine oil change system, high speed, Wiggins | ✓ | |
| | | | Fuel lines, heated | | ✓ |
| | | | Fuel priming pump (electric) | ✓ | |
| | | | Ground level engine shutoff | ✓ | |
| | | | High ambient cooling – software | | ✓ |
| | | | Hydraulic oil, Arctic -40° C (-40° F) | | ✓ |
| | | | Mufflers (under hood) – Tier 2 equivalent only | ✓ | |

990 Wheel Loader Standard and Optional Equipment

Standard and Optional Equipment

Standard and optional equipment may vary. Consult your Cat dealer for details.

| | Standard | Optional | | Standard | Optional |
|--|----------|----------|---|----------|----------|
| POWERTRAIN (CONTINUED) | | | OTHER CONTINUED | | |
| Precleaner engine air intake | ✓ | | Fast fill fuel system (Shaw-Aero) | | ✓ |
| Radiator, aluminum modular radiator (AMR) | ✓ | | Fenders, front and rear roading | | ✓ |
| Ride control | | ✓ | Fenders, steel (front) | ✓ | |
| Secondary steering | | ✓ | Ground level battery disconnect switch and starter receptacle for emergency start | ✓ | |
| Separated cooling system | ✓ | | Grouped/labeled lube points | ✓ | |
| Starting aid, ether, manual override | ✓ | | Guards, crankcase and power train | ✓ | |
| Throttle lock | ✓ | | Hitch, drawbar with pin | ✓ | |
| Torque converter, impeller clutch (ICTC) with lock-up clutch (LUC), rimpull control system | ✓ | | Hoses, Cat XT™ | ✓ | |
| Transmission, 534 mm (21 in) planetary power shift (electronic) (3F/3R) | ✓ | | Oil sampling valves | ✓ | |
| OTHER | | | Positive flow control hydraulic system | ✓ | |
| Access ladder, powered | | ✓ | Premixed 50% concentration of extended life coolant with freeze protection to -34° C (-29° F) | ✓ | |
| Automatic bucket lift kickout/positioner | ✓ | | Product Link™ | ✓ | |
| Automatic retarding control (ARC) | | ✓ | Sight gauges: hydraulic tanks, steering/fan and implement/brake, and transmission | ✓ | |
| Axle oscillation stop | | ✓ | Sound suppression, engine enclosure | | ✓ |
| Axle temperature sensor | ✓ | | Stairway, left and right rear access | ✓ | |
| Cab mounts, heavy duty | | ✓ | Steering, load sensing | ✓ | |
| Couplings, Cat O-ring face seals | ✓ | | Tire pressure monitoring system | | ✓ |
| Deluxe service center | | ✓ | Toe kicks | ✓ | |
| Economy mode with on demand throttle | ✓ | | Vandalism protection caplocks | ✓ | |
| Emergency secondary egress ladder | ✓ | | Venturi stack | ✓ | |
| Engine, crankcase 500-hour interval with CH4 | ✓ | | Wheel chocks | | ✓ |
| Engine idle management: auto idle kickdown, delayed engine shutdown, engine idle shutdown | ✓ | | OTHER OPTIONAL CONFIGURATIONS | | |
| | | | Millyard | | ✓ |
| | | | Steel mill | | ✓ |

990 Environmental Declaration

The following information applies to the machine at the time of final manufacture as configured for sale in the regions covered in this document. The content of this declaration is valid as of the date issued; however, content related to machine features and specifications are subject to change without notice. For additional information, please see the machine's Operation and Maintenance Manual.

For more information on sustainability in action and our progress, please visit <https://www.caterpillar.com/en/company/sustainability>.

Engine

- The Cat® C27 engine is available in configurations that meet U.S. EPA Tier 4 Final and EU Stage V emission standards or emits equivalent to U.S. EPA Tier 2.
- Cat Tier 4 Final and Stage V diesel engines are required to use ULSD (ultra-low sulfur diesel fuel with 15 ppm of sulfur or less) or ULSD blended with the following lower-carbon intensity fuels up to:
 - ✓ 20% biodiesel FAME (fatty acid methyl ester)*
 - ✓ 100% renewable diesel, HVO (hydrotreated vegetable oil) and GTL (gas-to-liquid) fuels
- Cat engines equivalent to Tier 2, are compatible with diesel fuel blended with the following lower-carbon intensity fuels up to:
 - ✓ 100% biodiesel FAME (fatty acid methyl ester)**
 - ✓ 100% renewable diesel, HVO (hydrotreated vegetable oil) and GTL (gas-to-liquid) fuels

Refer to guidelines for successful application. Please consult your Cat dealer or "Caterpillar Machine Fluids Recommendations" (SEBU6250) for details.

**Engines with no aftertreatment devices can use higher blends, up to 100% biodiesel.*

***For use of blends higher than 20% biodiesel, consult your Cat dealer.*

Air Conditioning System

- The air conditioning system on this machine contains the fluorinated greenhouse gas refrigerant R134a (Global Warming Potential = 1430). The system contains 2.7 kg (5.9 lb) of refrigerant which has a CO₂ equivalent of 3.861 metric tonnes (4.256 tons).

Paint

- Based on best available knowledge, the maximum allowable concentration, measured in parts per million (PPM), of the following heavy metals in paint are:
 - Barium < 0.01%
 - Cadmium < 0.01%
 - Chromium < 0.01%
 - Lead < 0.01%

Oils and Fluids

- Caterpillar factory fills with ethylene glycol coolants. Cat Diesel Engine Antifreeze/Coolant (DEAC) and Cat Extended Life Coolant (ELC) can be recycled. Consult your Cat dealer for more information.
- Cat Bio HYDO™ Advanced is an EU Ecolabel approved biodegradable hydraulic oil.
- Additional fluids are likely to be present, please consult the Operations and Maintenance Manual or the Application and Installation guide for complete fluid recommendations and maintenance intervals.

Features and Technology

- The following features and technology may contribute to fuel savings and/or carbon reduction. Features may vary. Consult your Cat dealer for details.
 - ECO mode minimizes fuel consumption for light applications
 - Load sensing hydraulics produce flow and pressure on-demand and only in amounts necessary to perform the needed functions
 - Reduce fuel burn while idling with engine idle shutdown
 - Extended maintenance intervals reduce fluid and filter consumption

Recycling

- The materials included in machines are categorized as below with approximate weight percentage. Because of variations of product configurations, the following values in the table may vary.

| Material Type | Weight Percentage |
|------------------------|-------------------|
| Steel | 69.07% |
| Iron | 11.38% |
| Nonferrous Metal | 1.61% |
| Mixed Metal | 0.63% |
| Mixed-Metal & Nonmetal | 0.00% |
| Plastic | 1.75% |
| Rubber | 10.2% |
| Mixed Nonmetallic | 0.02% |
| Fluid | 2.96% |
| Other | 1.89% |
| Uncategorized | 0.49% |
| Total | 100% |

- A machine with higher recyclability rate will ensure more efficient usage of valuable natural resources and enhance end-of-life value of the product. According to ISO 16714 (Earthmoving machinery – Recyclability and recoverability – Terminology and calculation method), recyclability rate is defined as percentage by mass (mass fraction in percent) of the new machine potentially able to be recycled, reused, or both. All parts in the bill of material are first evaluated by component type based on a list of components defined by the ISO 16714 and Japan CEMA (Construction Equipment Manufacturers Association) standards. Remaining parts are further evaluated for recyclability based on material type.

Because of variations of product configurations, the following value in the table may vary.

Recyclability – 98%



990

Millyard

The Cat 990® Millyard package provides the additional performance, productivity, and safety that is demanded in the millyard.

Proven Reliability

- Cat C27 engine is built and tested to meet your most demanding applications.
- Longer engine life and improved fuel efficiency with reduced rated speed.
- Designed for longer life, rebuildability, and higher resale value.
- Maximum responsiveness with Steering and Transmission Integrated Control (STIC™).
- Durable construction withstands the toughest loading conditions and multiple lifecycles.

Durability

- Best-in-class transmission for long life and consistent, smooth shifting; specifically designed for millyard applications.
- Advanced filtration system for extended performance and reliability of the hydraulic system.
- Advanced impeller clutch torque converter (ICTC) and rimpull control system (RCS) reduce tire slippage and wear, improve fuel efficiency, and reduce cost per ton.
- Linkage pin joints have optional auto-lube system to ensure long life.
- Heavy-duty steering cylinder mounts and axle mounting ensure increased structural integrity.

Achieve Greater Fuel Efficiency and Productivity

- Two engine emission options are available that meet U.S. EPA Tier 4 Final and EU Stage V emission standards or emits equivalent to U.S. EPA Tier 2.
- Positive flow control (PFC) hydraulic system increases efficiency and responsiveness with consistent performance.
- Planetary power shift transmission for maximum uptime.
- Convenient, responsive, electro-hydraulic controls increase operator productivity.
- Integrated steering and transmission controls.
- Operators can check tire pressure during operation with any change sending a fault code to VisionLink®, preventing premature tire failure.

Superior Fuel Efficiency

- Up to 54% fuel efficiency material per gallon of fuel (27% less fuel consumption).
- Economy mode for reduced rated engine speed and reduced fuel consumption.
- Positive flow-control hydraulics for full flow on demand at lower engine speeds.

- Engine idle shutdown for less fuel used while idling.
- Fully integrated electronic engine controls make your fuel go farther.

Reduced Maintenance Time and Other Costs

- 10% lower maintenance costs.
- Grouped service points.
- Electro-hydraulic controls.
- Swing-out engine compartment service doors.
- Ecology drains to prevent spilled contaminants.
- Ground level access to transmission control valves.
- Vital Information Management System (VIMS™) notifications to resolve problems before failure.
- Longer life, rebuildability, and high resale value.

Easy, Comfortable Operator Environment

- Best-in-class operator comfort and ergonomics.
- Premium seat with heated and actively cooled leather, adjustable lumbar support, air adjustable bolsters on the seat and backrest, seat cushion tilt adjustment, and adjustable-length seat cushion.
- Easy-to-reach levers and controls with seat-mounted implement pod to reduce fatigue.
- Ergonomic switch placement and displays with large backlit switches, LED indicators, and ISO symbols.
- Optional heated mirrors.
- Two-position rocker switch activates the electro-hydraulic parking brake.
- Reduced vibrations from isolated cab mounts and seat air suspension.
- Achieve precise positioning for easy loading in tight areas with 35 degrees of steering articulation.
- Precise machine control by load-sensing hydraulic steering system.

Purpose-Built Specialty Arrangements Millyard

- Designed to meet the demands of millyard applications.
- Designed for durability, ensuring availability in multiple lifecycles.
- Full hydraulic flow down to 1,400 engine rpm by using hydraulic flow sharing technology.
- Equipped with 45 degree angle access ladders and standard Cat Vision for enhanced safety.
- Cat forks are designed for maximum productivity and durability.
- Integrates front camera mounting location for maximum visibility to all fork tips during truck unloading.

990 Millyard Machine Specifications

Engine

| | | |
|---|---|-------------------------|
| Engine Model | Cat® C27 | |
| Emissions | U.S. EPA Tier 4 Final and EU Stage V or emits equivalent to U.S. EPA Tier 2 | |
| Rated Speed | 1,800 rpm | |
| Gross (ISO 14396:2002) | 561 kW | 752 hp |
| Gross (SAE J1995:2014) | 571 kW | 766 hp |
| Net Power – SAE J1349:2011 (Standard Ambient) | 521 kW | 699 hp |
| Net Power – SAE J1349:2011 (High Ambient) | 483 kW | 648 hp |
| Bore | 137.2 mm | 5.4 in |
| Stroke | 152.4 mm | 6.0 in |
| Displacement | 27.03 L | 1,649.5 in ³ |
| Peak Torque @ 1,200 rpm | 3557 N·m | 2,624 lbf·ft |
| Torque Rise | 18% | |

Operating Specifications

| | | |
|------------------|-----------|------------|
| Operating Weight | 91 807 kg | 202,398 lb |
| Tipping Load | | |
| Straight | 42 180 kg | 92,990 lb |
| Articulated | 37 148 kg | 81,896 lb |

Transmission

| | | |
|------------------------|---------------------------|----------|
| Transmission Type | Cat planetary power shift | |
| Forward 1 | 7.4 km/h | 4.6 mph |
| Forward 2 | 13.2 km/h | 8.2 mph |
| Forward 3 | 23.3 km/h | 14.5 mph |
| Reverse 1 | 8.15 km/h | 5.1 mph |
| Reverse 2 | 14.6 km/h | 9.1 mph |
| Reverse 3 | 25.7 km/h | 16.0 mph |
| Direct Drive Forward 1 | Lock-up disabled | |
| Direct Drive Forward 2 | 13.2 km/h | 8.2 mph |
| Direct Drive Forward 3 | 23.3 km/h | 14.5 mph |
| Direct Drive Reverse 1 | 8.15 km/h | 5.1 mph |
| Direct Drive Reverse 2 | 14.6 km/h | 9.1 mph |
| Direct Drive Reverse 3 | 25.7 km/h | 16.0 mph |

- Travel speeds based on Michelin 45/65R39 LD D2**L5 tires.

Hydraulic System – Lift/Tilt

| | | |
|---|---------------------------------|-------------------|
| Lift/Tilt System – Circuit | Positive flow control | |
| Lift/Tilt System | Variable displacement piston | |
| Maximum Flow at 1,800 rpm | 910 L/min | 240 gal/min |
| Relief Valve Setting – Lift/Tilt | 33 000 kPa | 4,786 psi |
| Cylinders, Double Acting: Lift, Bore and Stroke | 254 mm × 1264 mm | 10.0 in × 49.8 in |
| Cylinders, Double Acting: Tilt, Bore and Stroke | 317.5 mm × 819 mm | 12.5 in × 32.2 in |
| Pilot System | Open loop and pressure reducing | |
| Relief Valve Setting | 3500 kPa | 507 psi |

Hydraulic Cycle Time

| | |
|------------------|-------------|
| Rack Back | 4.8 Seconds |
| Raise | 9.4 Seconds |
| Dump | 2.9 Seconds |
| Lower | 3.7 Seconds |
| Lower Float Down | 3.6 Seconds |

Hydraulic System – Steering

| | | |
|---------------------------------|-------------------------------|--------------|
| Steering System – Circuit | Pilot, load sensing | |
| Steering System – Pump | Piston, variable displacement | |
| Maximum Flow @ 1,400 rpm | 358 L/min | 94.5 gal/min |
| Relief Valve Setting – Steering | 32 000 kPa | 4,641 psi |
| Total Steering Angle | 70° | |

Service Refill Capacities

| | | |
|---|--------|-----------|
| Fuel Tank | 1064 L | 281.0 gal |
| Cooling System | 208 L | 54.9 gal |
| Engine Crankcase | 75.7 L | 20.0 gal |
| Transmission | 110 L | 29.1 gal |
| Differentials and Final Drives – Front | 271 L | 71.6 gal |
| Differentials and Final Drives – Rear | 261 L | 68.9 gal |
| Hydraulic System Factory Fill | 795 L | 210.0 gal |
| Hydraulic Tank (Implement and Hydraulic Fan) | 261 L | 68.9 gal |
| Hydraulic Tank (Steering and Braking) | 132 L | 34.9 gal |

- All nonroad Tier 4 Final and Stage V diesel engines are required to use only ultra low sulfur diesel (ULSD) fuels containing 15 ppm (mg/kg) sulfur or less. Biodiesel blends up to B20 (20% blend by volume) are acceptable when blended with 15 ppm (mg/kg) sulfur or less ULSD. B20 should meet ASTM D7467 specification (biodiesel blend stock should meet Cat biodiesel spec, ASTM D6751 or EN 14214). Cat DEO-ULS™ or oils that meet the Cat ECF-3, API CJ-4, and ACEA E9 specification are required. For further fluid specifications and guidelines, visit:

<http://parts.cat.com/cda/files/3244668/7/SEBU6250-19.pdf>.

Axles

| | |
|-------------------|----------|
| Front | Fixed |
| Rear | Trunnion |
| Oscillation Angle | 5.5° |

Brakes

| | |
|--------|---------------|
| Brakes | ISO 3450:2011 |
|--------|---------------|

Sound Performance

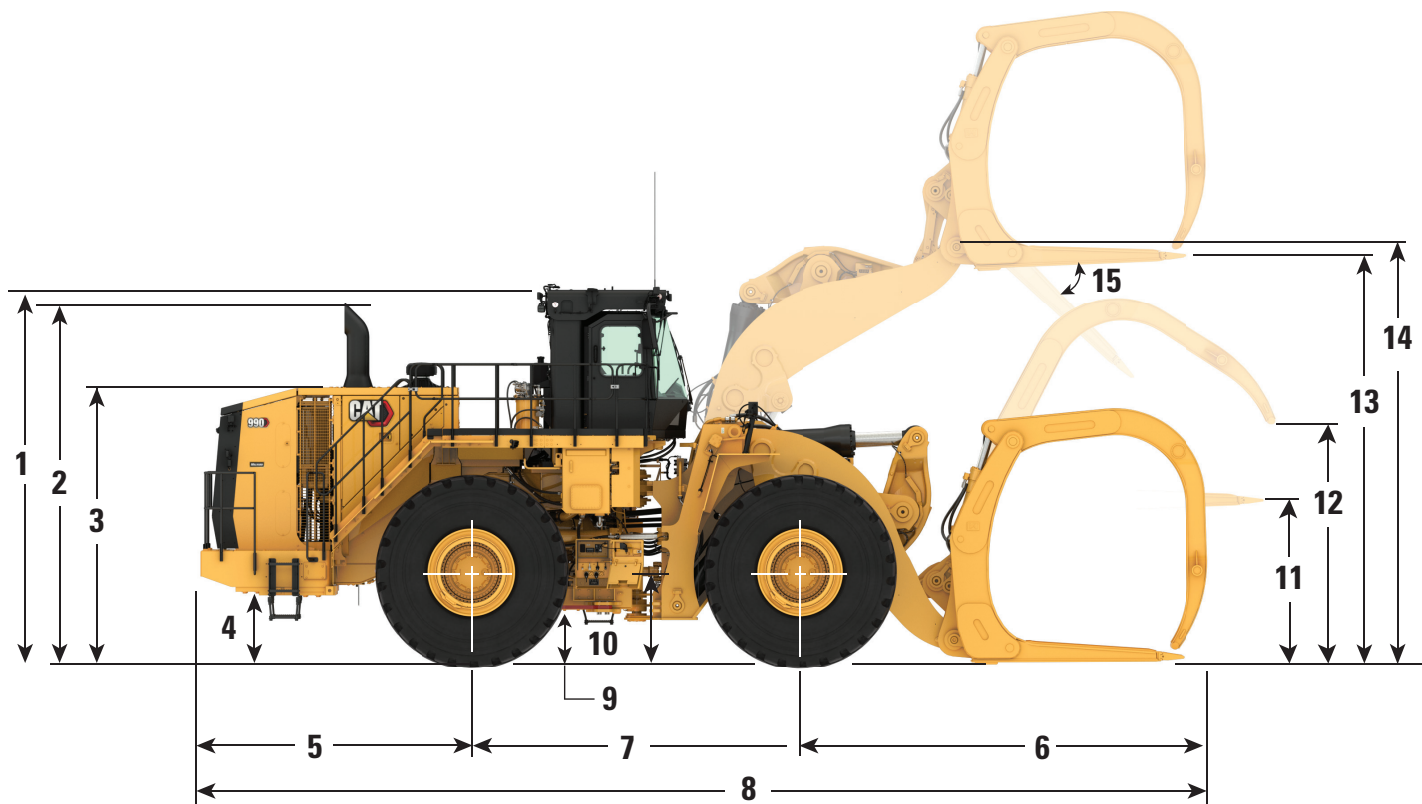
| | Standard | Suppression |
|--------------------------------------|-----------|-------------|
| Operator Sound Level (ISO 6396:2008) | 70 dB(A) | 69 dB(A) |
| Machine Sound Level (ISO 6395:2008) | 115 dB(A) | 113 dB(A) |

- The machine sound power level was measured according to the test procedures and conditions specified in ISO 6395:2008. The measurement was conducted at 70% of the maximum engine cooling fan speed.
- The operator sound pressure level was measured according to the test procedures and conditions specified in ISO 6396:2008. The measurement was conducted at 70% of the maximum engine cooling fan speed.
- Hearing protection may be needed when the machine is operated with a cab that is not properly maintained or when the doors or windows are open for extended periods or in a noisy environment.

990 Millyard Machine Specifications

Dimensions

All dimensions are approximate.



| | Millyard Linkage | |
|--|-------------------------|---------|
| 1 Ground to Top of Rollover Protective Structure (ROPS) | 5240 mm | 17.2 ft |
| 2 Ground to Top of Exhaust Stack | 5049 mm | 16.6 ft |
| 3 Ground to Top of Hood | 3862 mm | 12.7 ft |
| 4 Ground to Bumper Clearance | 959 mm | 3.1 ft |
| 5 Rear Axle Centerline to Bumper | 3795 mm | 12.5 ft |
| 6 Front Axle Centerline to Fork Tip | 5445 mm | 17.9 ft |
| 7 Wheelbase | 4600 mm | 15.1 ft |
| 8 Maximum Overall Length | 13 840 mm | 45.4 ft |
| 9 Ground to Lower Hitch Clearance | 596 mm | 2.0 ft |
| 10 Ground to Center of Front Axle | 1186 mm | 3.9 ft |
| 11 Fork Height with Level Arms | 2780 mm | 9.1 ft |
| 12 Fork Top Clamp Opening | 3715 mm | 12.2 ft |
| 13 Fork Height at Maximum Lift | 5662 mm | 18.6 ft |
| 14 Hinge Pin Height at Maximum Lift | 5904 mm | 19.4 ft |
| 15 Dump Angle at Maximum Lift | 29.3 degrees | |



990

Steel Mill

The Cat® 990 Steel Mill package provides the additional performance, productivity, and safety that is demanded in the steel mill.

Proven Reliability

- Cat C27 engine is built and tested to meet your most demanding applications.
- Longer engine life and improved fuel efficiency with reduced rated speed.
- Designed for longer life, rebuildability, and higher resale value.
- Maximum responsiveness with Steering and Transmission Integrated Control (STIC™).
- Durable construction withstands the toughest loading conditions and multiple lifecycles.

Durability

- Best-in-class transmission for long life and consistent, smooth shifting; specifically designed for steel mill applications.
- Advanced filtration system for extended performance and reliability of the hydraulic system.
- Advanced impeller clutch torque converter (ICTC) and rimpull control system (RCS) reduce tire slippage and wear, improve fuel efficiency, and reduce cost per ton.
- Linkage pin joints have optional auto-lube system to ensure long life.
- Heavy-duty steering cylinder mounts and axle mounting ensure increased structural integrity.

Achieve Greater Fuel Efficiency and Productivity

- Two engine emission options are available that meet U.S. EPA Tier 4 Final and EU Stage V emission standards or emits equivalent to U.S. EPA Tier 2.
- Positive flow control (PFC) hydraulic system increases efficiency, bucket feel, and responsiveness with consistent performance.
- Excellent visibility to the bucket edges and work area through a Z-bar linkage.
- Planetary power shift transmission for maximum uptime.
- Convenient, responsive, electro-hydraulic controls increase operator productivity.
- Superior digging, higher bucket fill factors, reduced dig times.
- Integrated steering and transmission controls.

Superior Fuel Efficiency

- Up to 54% fuel efficiency material per gallon of fuel (27% less fuel consumption).
- Economy mode for reduced rated engine speed and reduced fuel consumption.
- Positive flow-control hydraulics for full flow on demand at lower engine speeds.

- Engine idle shutdown for less fuel used while idling.
- Fully integrated electronic engine controls make your fuel go farther.

Reduced Maintenance Time and Other Costs

- 10% lower maintenance costs.
- Grouped service points.
- Electro-hydraulic controls.
- Swing-out engine compartment service doors.
- Ecology drains to prevent spilled contaminants.
- Ground level access to transmission control valves.
- Vital Information Management System (VIMS™) notifications to resolve problems before failure.
- Longer life, rebuildability, and high resale value.

Easy, Comfortable Operator Environment

- Best-in-class operator comfort and ergonomics.
- Premium seat with heated and actively cooled leather, adjustable lumbar support, air adjustable bolsters on the seat and backrest, seat cushion tilt adjustment, and adjustable-length seat cushion.
- Easy-to-reach levers and controls with seat-mounted implement pod to reduce fatigue.
- Ergonomic switch placement and displays with large backlit switches, LED indicators, and ISO symbols.
- Optional heated mirrors.
- Two-position rocker switch activates the electro-hydraulic parking brake.
- Reduced vibrations from isolated cab mounts and seat air suspension.
- Achieve precise positioning for easy loading in tight areas with 35 degrees of steering articulation.
- Precise machine control by load-sensing hydraulic steering system.

Purpose-Built Specialty Arrangements Steel Mill

- World class safety, operator comfort, and efficiency in pit digging and skull handling applications.
- Efficiency of manual throttle and ergonomics of throttle lock.
- Equipped with extra heat protection to key hoses and harnesses for improved reliability.

990 Steel Mill Machine Specifications

Engine

| | | |
|---|---|-------------------------|
| Engine Model | Cat® C27 | |
| Emissions | U.S. EPA Tier 4 Final and EU Stage V or emits equivalent to U.S. EPA Tier 2 | |
| Rated Speed | 1,800 rpm | |
| Gross (ISO 14396:2002) | 561 kW | 752 hp |
| Gross (SAE J1995:2014) | 571 kW | 766 hp |
| Net Power – SAE J1349:2011 (Standard Ambient) | 521 kW | 699 hp |
| Net Power – SAE J1349:2011 (High Ambient) | 483 kW | 648 hp |
| Bore | 137.2 mm | 5.4 in |
| Stroke | 152.4 mm | 6.0 in |
| Displacement | 27.03 L | 1,649.5 in ³ |
| Peak Torque @ 1,200 rpm | 3557 N·m | 2,624 lbf·ft |
| Torque Rise | 18% | |

Operating Specifications

| | | |
|----------------------------|--|---|
| Operating Weight | 92 848 kg | 204,693 lb |
| Rated Payload – Standard | 15.88 tonnes | 17.5 tons |
| Bucket Capacity Range | 8.6 m ³ - 9.2 m ³ | 11.25 yd ³ - 12.0 yd ³ |
| Cat Truck Match – Standard | 773-775 | |

Transmission

| | | |
|------------------------|---------------------------|----------|
| Transmission Type | Cat planetary power shift | |
| Forward 1 | 7.4 km/h | 4.6 mph |
| Forward 2 | 13.2 km/h | 8.2 mph |
| Forward 3 | 23.3 km/h | 14.5 mph |
| Reverse 1 | 8.15 km/h | 5.1 mph |
| Reverse 2 | 14.6 km/h | 9.1 mph |
| Reverse 3 | 25.7 km/h | 16.0 mph |
| Direct Drive Forward 1 | Lock-up disabled | |
| Direct Drive Forward 2 | 13.2 km/h | 8.2 mph |
| Direct Drive Forward 3 | 23.3 km/h | 14.5 mph |
| Direct Drive Reverse 1 | 8.15 km/h | 5.1 mph |
| Direct Drive Reverse 2 | 14.6 km/h | 9.1 mph |
| Direct Drive Reverse 3 | 25.7 km/h | 16.0 mph |

- Travel speeds based on Michelin 45/65R39 LD D2**L5 tires.

Hydraulic System – Lift/Tilt

| | | |
|---|---------------------------------|----------------------|
| Lift/Tilt System – Circuit | Positive flow control | |
| Lift/Tilt System | Variable displacement piston | |
| Maximum Flow at 1,800 rpm | 910 L/min | 240 gal/min |
| Relief Valve Setting – Lift/Tilt | 33 000 kPa | 4,786 psi |
| Cylinders, Double Acting: Lift, Bore and Stroke | 254 mm × 1264 mm | 10.0 in × 49.8 in |
| Cylinders, Double Acting: Tilt, Bore and Stroke | 317.5 mm × 819 mm | 12.5 in × 32.2 in |
| Pilot System | Open loop and pressure reducing | |
| Relief Valve Setting | 3500 kPa | 507 psi |

990 Steel Mill Machine Specifications

Hydraulic Cycle Time

| | |
|---|--------------|
| Rack Back | 4.8 Seconds |
| Raise | 9.4 Seconds |
| Dump | 2.9 Seconds |
| Lower | 3.7 Seconds |
| Lower Float Down | 3.6 Seconds |
| Total Hydraulic Cycle Time (empty bucket) | 15.9 Seconds |

Hydraulic System – Steering

| | | |
|---------------------------------|-------------------------------|--------------|
| Steering System – Circuit | Pilot, load sensing | |
| Steering System – Pump | Piston, variable displacement | |
| Maximum Flow @ 1,400 rpm | 358 L/min | 94.5 gal/min |
| Relief Valve Setting – Steering | 32 000 kPa | 4,641 psi |
| Total Steering Angle | 70° | |

Service Refill Capacities

| | | |
|--|--------|-----------|
| Fuel Tank | 1064 L | 281.0 gal |
| Cooling System | 208 L | 54.9 gal |
| Engine Crankcase | 75.7 L | 20.0 gal |
| Transmission | 110 L | 29.1 gal |
| Differentials and Final Drives – Front | 271 L | 71.6 gal |
| Differentials and Final Drives – Rear | 261 L | 68.9 gal |
| Hydraulic System Factory Fill | 795 L | 210.0 gal |
| Hydraulic Tank (Implement and Hydraulic Fan) | 261 L | 68.9 gal |
| Hydraulic Tank (Steering and Braking) | 132 L | 34.9 gal |

- All nonroad Tier 4 Final and Stage V diesel engines are required to use only ultra low sulfur diesel (ULSD) fuels containing 15 ppm (mg/kg) sulfur or less. Biodiesel blends up to B20 (20% blend by volume) are acceptable when blended with 15 ppm (mg/kg) sulfur or less ULSD. B20 should meet ASTM D7467 specification (biodiesel blend stock should meet Cat biodiesel spec), ASTM D6751 or EN 14214. Cat DEO-ULS™ or oils that meet the Cat ECF-3, API CJ-4, and ACEA E9 specification are required. For further fluid specifications and guidelines, visit:

<http://parts.cat.com/cda/files/3244668/7/SEBU6250-19.pdf>.

Axles

| | |
|-------------------|----------|
| Front | Fixed |
| Rear | Trunnion |
| Oscillation Angle | 5.5° |

Brakes

| | |
|--------|---------------|
| Brakes | ISO 3450:2011 |
|--------|---------------|

Sound Performance

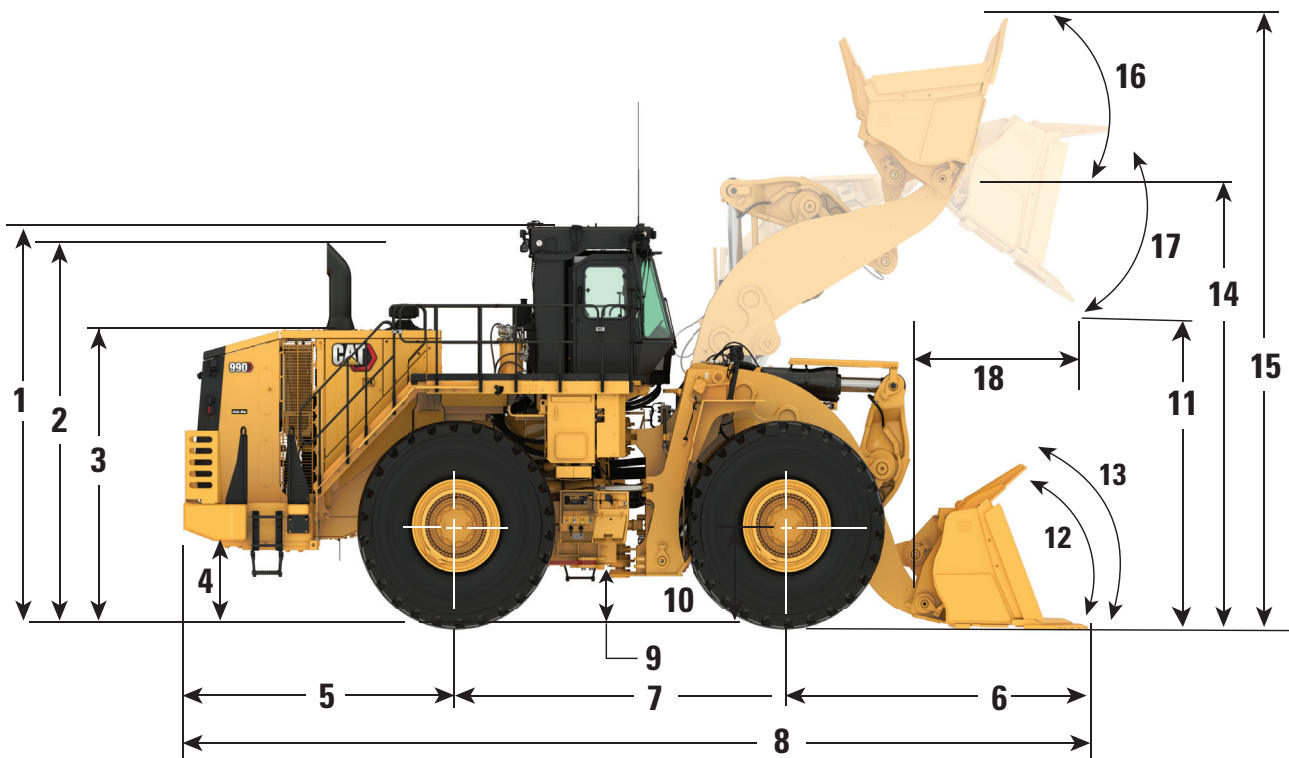
| | Standard | Suppression |
|--------------------------------------|-----------|-------------|
| Operator Sound Level (ISO 6396:2008) | 70 dB(A) | 69 dB(A) |
| Machine Sound Level (ISO 6395:2008) | 115 dB(A) | 113 dB(A) |

- The machine sound power level was measured according to the test procedures and conditions specified in ISO 6395:2008. The measurement was conducted at 70% of the maximum engine cooling fan speed.
- The operator sound pressure level was measured according to the test procedures and conditions specified in ISO 6396:2008. The measurement was conducted at 70% of the maximum engine cooling fan speed.
- Hearing protection may be needed when the machine is operated with a cab that is not properly maintained or when the doors or windows are open for extended periods or in a noisy environment.

990 Steel Mill Machine Specifications

Dimensions

All dimensions are approximate.



| | Standard Lift | |
|--|----------------------|---------|
| 1 Ground to Top of Rollover Protective Structure (ROPS) | 5240 mm | 17.2 ft |
| 2 Ground to Top of Exhaust Stacks | 5049 mm | 16.6 ft |
| 3 Ground to Top of Hood | 3862 mm | 12.7 ft |
| 4 Ground to Bumper Clearance | 1079 mm | 3.5 ft |
| 5 Rear Axle Centerline to Bumper | 3795 mm | 12.5 ft |
| 6 Front Axle Centerline to Bucket Tip | 4532 mm | 14.9 ft |
| 7 Wheelbase | 4600 mm | 15.1 ft |
| 8 Maximum Overall Length | 12 927 mm | 42.4 ft |
| 9 Ground to Lower Hitch Clearance | 596 mm | 2.0 ft |
| 10 Ground to Center of Front Axle | 1186 mm | 3.9 ft |
| 11 Clearance at Maximum Lift | 4011 mm | 13.2 ft |
| 12 Rack Back Angle at Ground Level | 40.3 degrees | |
| 13 Rack Back Angle at Carry | 48.7 degrees | |
| 14 B-Pin Height at Maximum Lift | 5904 mm | 19.4 ft |
| 15 Maximum Overall Height, Bucket Raised | 8214 mm | 26.9 ft |
| 16 Rack Angle at Maximum Lift | 63.8 degrees | |
| 17 Dump Angle at Maximum Lift | 46.8 degrees | |
| 18 Reach at Maximum Lift | 2128 mm | 7.0 ft |

990 Steel Mill Machine Specifications

Operating Specifications – Standard Lift

990K Standard, Tires: 45/65 R39 XLDD2, PN: 381-7084 SLR: 1186 mm

| Bucket Type | | Slag | |
|---|-----------------|----------|----------|
| | | Serrated | J600 |
| Ground Engaging Tool | | Spade | Straight |
| Cutting Edge Type | | 451-4880 | 451-4890 |
| Bucket Part Number | | 451-4880 | 451-4890 |
| Struck Capacity | m ³ | 7.4 | 7.8 |
| | yd ³ | 9.7 | 10.2 |
| Heaped Capacity (Rated) | m ³ | 9.2 | 8.6 |
| | yd ³ | 12.0 | 11.2 |
| Bucket Width | mm | 4708 | 4500 |
| | ft | 15.4 | 14.8 |
| Dump Clearance at Full Lift and 45° Discharge (Bare) | mm | 4128 | 4339 |
| | ft | 13.5 | 14.2 |
| Dump Clearance at Full Lift and 45° Discharge (with Teeth) | mm | 4077 | 4056 |
| | ft | 13.4 | 13.3 |
| Reach at Full Lift and 45° Discharge (Bare) | mm | 2131 | 1940 |
| | ft | 7.0 | 6.4 |
| Reach at Full Lift and 45° Discharge (with Teeth) | mm | 2193 | 2154 |
| | ft | 7.2 | 7.1 |
| Reach with Lift Arms Horizontal and Bucket Level (with Teeth) | mm | 4177 | 4164 |
| | ft | 13.7 | 13.7 |
| Digging Depth (Segment) | mm | 107 | 93 |
| | in | 4.2 | 3.7 |
| Overall Length (Bucket Level on Ground) | mm | 12 733 | 12 709 |
| | ft | 41.8 | 41.7 |
| Overall Height with Bucket at Full Raise | mm | 8231 | 8007 |
| | ft | 27.0 | 26.3 |
| Loader Clearance Turning Radius (SAE Carry with Teeth) | mm | 20 920 | 20 954 |
| | ft | 68.6 | 68.7 |
| Full Dump Angle | deg | -46.8 | -46.8 |
| Static Tipping Load – Straight (Rigid Tire) | kg | 66 782 | 68 511 |
| | lb | 147,229 | 151,038 |
| Static Tipping Load – Straight (Tire Squash) | kg | 62 455 | 64 071 |
| | lb | 137,688 | 141,251 |
| Static Tipping Load – Full Turn (Articulated 35°) (Rigid Tire) | kg | 59 023 | 60 713 |
| | lb | 130,122 | 133,848 |
| Static Tipping Load – Full Turn (Articulated 35°) (Tire Squash) | kg | 53 272 | 54 798 |
| | lb | 117,444 | 120,808 |
| Static Tipping Load – Bucket Level on Ground (Rigid Tire) | kg | 52 141 | 57 076 |
| | lb | 114,950 | 125,830 |
| Static Tipping Load – Bucket Level on Ground (Tire Squash) | kg | 48 287 | 52 858 |
| | lb | 106,454 | 116,530 |
| Breakout Force | kN | 691 | 806 |
| | lbf | 155,529 | 181,311 |
| Operating Weight | kg | 92 848 | 91 472 |
| | lb | 204,693 | 201,659 |
| Weight Distribution at SAE Carry (Unloaded) | | | |
| Front | kg | 43 713 | 41 424 |
| | lb | 96,370 | 91,322 |
| Rear | kg | 49 135 | 50 048 |
| | lb | 108,322 | 110,337 |
| Weight Distribution at SAE Carry (Loaded) | | | |
| Front | kg | 69 913 | 67 535 |
| | lb | 154,129 | 148,888 |
| Rear | kg | 38 810 | 39 812 |
| | lb | 85,562 | 87,769 |

Michelin XLDD2 2 Star with 6.3 bar (92 psi) pressure.



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Build Number: 11A
Global

