



# Cat<sup>®</sup> 990

## Wheel Loader

***The Cat<sup>®</sup> 990 Wheel Loader helps you move more material in less time, at a lower cost per ton, for a faster return on your investment. This machine offers significant fuel savings, lower maintenance costs, and greater productivity and durability to achieve multiple life cycles.***

### 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 Integrated Control (STIC™).
- Moves more material more efficiently with improved power and control.
- Durable construction withstands the toughest loading conditions and multiple life cycles.

### Durability

- Best-in-class transmission for long life and consistent, smooth shifting; specifically designed for mining 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.
- Frame resists torsional shock and twisting forces.
- Heavy-duty steering cylinder mounts and axle mounting ensure increased structural integrity.

### Achieve Greater Productivity

- Two engine emission options are available that meet U.S. EPA Tier 4 Final and EU Stage V emission standards or U.S. EPA Tier 2 and EU Stage II equivalent.
- Up to 10% more payload per pass on truck-loading applications with Performance Series Buckets.
- Payload increase to optimize pass on 775 trucks.
- 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.
- Operators can check tire pressure during operation with any change sending a fault code to VisionLink<sup>®</sup>, 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.



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## Increase Productivity and Efficiency with Integrated Technologies

- Developed to monitor, manage, and enhance your jobsite operations.
- Payload provides accurate weighing\* of the materials you are loading and hauling. Payload data is displayed in real-time to improve productivity and reduce overloading.
- Detect enhances awareness of the environment around working equipment and provides alerts to help keep people and assets safe on the jobsite.
- VisionLink wirelessly connects you to your equipment, giving you access to essential information you need to know to run your business.
- Gain valuable insight into how your machine or fleet is performing.
- Optional Advanced Productivity subscription provides comprehensive actionable information to help you manage and improve the productivity and profitability of your operations.

## Reduced Maintenance 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.
- Vehicle Information Management System (VIMS™) notifications to resolve problems before failure.
- Longer life, rebuildability, and high resale value.

## Safety Features

- Standard stairway lighting.
- Left- and right-hand stairs with 45-degree angle.
- Standard Cat Vision, rear vision camera system.
- Pressurized cabin with filtered and reduced sound levels.

*\*Not legal for trade.*

## Easy, Comfortable Operator Environment

- Best-in-class operator comfort and ergonomics.
- Comfort Series III seats with extra thick, contoured cushions (optional heated and ventilated seats).
- 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.
- Automatic cab temperature controls.
- 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 life cycles.
- Equipped with Economy Mode to save on fuel consumption by the use of On Demand Throttle.
- Equipped with Impleller Clutch Torque Converter (ICTC) and Rimpull Control System (RCS) to reduce tire slippage and fuel efficiency.
- 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 the entire fork tips during truck unloading.

## 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.
- Excellent visibility to the bucket edges and work area through a Z-bar design.
- Equipped with extra heat protection to key hoses and harnesses for improved reliability.

## Standard and Optional Equipment

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

	Standard	Optional		Standard	Optional
<b>ELECTRICAL</b>			<b>POWER TRAIN (CONTINUED)</b>		
Alarm, back-up	✓		Engine, C27	✓	
Alternator, 150 amp	✓		Engine block heater 120V or 240V		✓
Batteries, maintenance free (2 – 1,400 CCA)	✓		Engine oil change system, high speed, Wiggins		✓
Converter, 10/15 amp, 24V to 12V	✓		Fuel priming pump (electric)	✓	
Ground level starter lockout	✓		Ground level engine shutoff	✓	
Ground level transmission lockout	✓		High ambient cooling – software		✓
Lighting system, halogen (front and rear) lighting, access stairway, engine compartment	✓		Mufflers (under hood) – Tier 2 equivalent only	✓	
Starter, electric	✓		Precleaner engine air intake	✓	
Starter receptacle for emergency start	✓		Radiator, Aluminum Modular Radiator (AMR)	✓	
<b>OPERATOR ENVIRONMENT</b>			Separated cooling system	✓	
Air conditioner and heater with automatic heater control	✓		Starting aid, ether, manual override	✓	
Cab precleaner, powered	✓		Throttle lock	✓	
Cab, sound suppressed and pressurized, protective structure (ROPS/FOPS)	✓		Torque converter, Impeller Clutch (ICTC) with Lock Up Clutch (LUC), Rimpull Control System	✓	
Cat Vision, rear vision camera system	✓		Transmission, 534 mm (21 in) planetary power shift (electronic) (3F/3R)	✓	
CB radio ready		✓	<b>OTHER</b>		
Cigar lighter and ashtray	✓		Automatic bucket lift kickout/positioner	✓	
Coat hook	✓		Axle oscillation stop		✓
Flip-up armrest	✓		Axle temperature sensor	✓	
Heater and defroster	✓		Cab mounts, heavy duty		✓
Horn, electric	✓		Economy mode with on demand throttle	✓	
Implement hydraulic lockout	✓		Emergency platform egress	✓	
Keypad control with indicator lights	✓		Engine, crankcase 500-hour interval with CH4	✓	
LED warning strobe		✓	Engine idle management: auto idle kickdown, delayed engine shutdown, engine idle shutdown	✓	
Lunchbox, beverage holders	✓		Fast fill fuel system		✓
Mirrors, rearview (externally mounted)	✓		Fenders, front and rear roading		✓
Radio, AM/FM/CD/MP3, Bluetooth® with Satellite Sirius		✓	Fenders, steel (front)	✓	
Seat – leather/cloth, air suspension, heated/cooled	✓		Ground level battery disconnect and jump start receptacle	✓	
Seat belt minder	✓		Grouped/labeled lube points	✓	
Seat belt, retractable, 76 mm (3 in) wide	✓		Guards, crankcase and power train	✓	
STIC System with steering lock	✓		Hitch, drawbar with pin	✓	
Tinted glass	✓		Oil sampling valves	✓	
Trainer seat with lap belt	✓		Positive flow control hydraulic system	✓	
Wet-arm wipers/washers (front, rear, and corner), intermittent front wiper	✓		Premixed 50% concentration of extended life coolant with freeze protection to -34° C (-29° F)	✓	
Window pull-down visor		✓	Product Link™	✓	
<b>POWER TRAIN</b>			Sight gauges: hydraulic tanks, steering/fan and implement/brake, and transmission	✓	
Antifreeze, -50° C (-58° F)		✓	Stairway, left and right rear access	✓	
Axle-shift oil-disc service brake	✓		Steering, load sensing	✓	
Brakes, oil-disc, full hydraulic, enclosed	✓		Tire Pressure Monitoring System		✓
Case drain screens	✓		Toe kicks	✓	
Cat clean emission module (CEM) – Tier 4 only	✓		Vandalism protection caplocks	✓	
Demand fan	✓		Venturi stack	✓	
Electro hydraulic parking brake	✓		<b>OTHER OPTIONAL CONFIGURATIONS</b>		
			Millyard		✓
			Steel Mill		✓

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## Technical Specifications

### Engine

Engine Model	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 in <sup>3</sup>
Peak Torque (1,200 rpm)	3557 N·m	2,624 lbf·ft
Torque Rise	18%	

- 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.

Two engine emission options are available:

1. Meets U.S. EPA Tier 4 Final and EU Stage V emission standards.
2. Equivalent to U.S. EPA Tier 2 and EU Stage II.

### 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	8.6-10.0 m <sup>3</sup>	11.25-13.0 yd <sup>3</sup>
Cat Truck Match – Standard	773-775	
Cat Truck Match – High Lift	775-777	

### Transmission

Transmission Type			Cat planetary power shift		
Speed	km/h	mph	Speed	km/h	mph
Forward 1	7.3	4.5	Direct Drive Forward 1	Lock-up disabled	
Forward 2	13.3	8.3	Direct Drive Forward 2	13.7	8.5
Forward 3	22.9	14.2	Direct Drive Forward 3	24.5	15.2
Reverse 1	7.9	4.9	Direct Drive Reverse 1	8.7	5.4
Reverse 2	14.7	9.1	Direct Drive Reverse 2	15.4	9.6
Reverse 3	24.9	15.5	Direct Drive Reverse 3	26.4	16.4

- 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	
Relief Valve Setting – Lift/Tilt	33 000 kPa	4,786 psi

### Hydraulic Cycle Time

Rackback	4.3 Seconds
Raise	8.2 Seconds
Dump	2.9 Seconds
Lower	3.7 Seconds
Lower Float Down	3.6 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	
Relief Valve Setting – Steering	32 000 kPa	4,641 psi
Total Steering Angle	70°	

### Service Refill Capacities

Fuel Tank	1114.0 L	294.3 gal
Transmission	110.0 L	29.1 gal
Differentials and Final Drives – Front	271.0 L	71.6 gal
Differentials and Final Drives – Rear	261.0 L	68.9 gal
Hydraulic System Factory Fill	795.0 L	210.0 gal
Hydraulic Tank (Implement and Hydraulic Fan)	261.0 L	68.9 gal
Hydraulic Tank (Steering and Braking)	132.0 L	34.9 gal

- All nonroad U.S. EPA 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>.

### 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 CO<sub>2</sub> equivalent of 3.861 metric tonnes.

### Sound Performance – Tier 4 Final/Stage V

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

### Sound Performance – Tier 2/Stage II Equivalent

	Standard	Suppression
Operator Sound Level (ISO 6396:2008)	69 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 percent 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 percent 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.



AEXQ2600-01 (4-2023)  
Build Number: 11A  
(Global)

