



988 GC

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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988 GC Wheel Loader Specifications

Engine

Engine Model	Cat® C15	
Rated Speed	2,000 rpm	
Peak Power Speed	1,600 rpm	
Engine (ISO 14396:2002)	335 kW	449 hp
Gross (SAE J1995:2014)	340 kW	456 hp
Net Power (SAE J1349:2011)	278 kW	373 hp
Bore	137 mm	5.4 in
Stroke	171.5 mm	6.75 in
Displacement	15.2 L	927 in ³
Peak Torque (1,200 rpm) (SAE J1995:2014)	2411 N·m	1,778 lbf·ft
Torque Rise	16%	

- Two engine emission options are available:
 1. Meets U.S. EPA Tier 4 Final, EU Stage V, and Japan emission standards.
 2. Meets Brazil MAR-1 emission standards, equivalent to China Nonroad Stage III, U.S. EPA Tier 3 and EU Stage IIIA.
- 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	7.3 km/h	5 mph
Forward 2	12.2 km/h	8 mph
Reverse 1	7.6 km/h	5 mph
Reverse 2	13.6 km/h	8 mph
Direct Drive Forward 1	Lockup disabled	
Direct Drive Forward 2	12.7 km/h	8 mph
Direct Drive Forward 3	22 km/h	14 mph
Direct Drive Forward 4	39 km/h	24 mph
Direct Drive Reverse 1	Lockup disabled	
Direct Drive Reverse 2	14.1 km/h	9 mph
Direct Drive Reverse 3	25 km/h	16 mph
Direct Drive Reverse 4	40.8 km/h	25.4 mph

- Travel speeds based on 35/65-R33 tires.

Operating Specifications

Operating Weight	53 006 kg	116,858 lb
Rated Payload – Quarry Face	11.3 tonnes	12.5 tons
Bucket Capacity Range	6.4-7.6 m ³	8.3-10 yd ³
Cat Truck Match – High Lift	772/773/775	

Hydraulic System – Lift/Tilt

Lift/Tilt System – Circuit	EH-Load Sense	
Lift/Tilt System Pumps	Variable displacement piston	
Maximum Flow at 2,165 rpm	600 L/min	159 gal/min
Relief Valve Setting – Lift/Tilt	31 700 kPa	4,598 psi
Cylinders, Double Acting: Lift, Bore, and Stroke	190 mm x 1216 mm	7.5 in x 48.0 in
Cylinders, Double Acting: Tilt, Bore, and Stroke	170 mm x 722 mm	6.7 in x 28.4 in
Pilot System	Variable displacement piston	
Relief Valve Setting	3450 kPa	500 psi

Hydraulic Cycle Time (2,165 rpm)

Rackback	3.8 seconds
Raise	7.5 seconds
Dump	3.0 seconds
Lower Float Down	4.6 seconds
Total Hydraulic Cycle Time (empty bucket)	18.9 seconds

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Hydraulic System – Steering

Steering System – Circuit	Pilot, load sensing	
Steering System – Pump	Piston, variable displacement	
Maximum Flow at 2,165 rpm	200 L/min	52 gal/min
Relief Valve Setting – Steering	27 600 kPa	4,000 psi
Total Steering Angle	70°	
Steering Cycle Time (high idle)	3.0 seconds	
Steering Cycle Time (low idle)	5.2 seconds	

Air Conditioning System

The air conditioning system on this machine contains the fluorinated greenhouse gas refrigerant R134a (Global Warming Potential = 1430). The system contains 1.8 kg of refrigerant which has a CO₂ equivalent of 2.574 metric tonnes.

Axles

Front	Fixed
Rear	Trunnion
Oscillation Angle	±12.5°

Brakes

Brakes	ISO 3450:2011
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Operator Cab

ROPS/FOPS	ROPS/FOPS meet ISO 3471:2008 and ISO 3449:2005 Level II standards
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Sound Performance – Tier 4 Final/Stage V

	Standard	Suppression
Operator Sound Level (ISO 6396:2008)	72 dB(A)	72 dB(A)
Machine Sound Level (ISO 6395:2008)	112 dB(A)	110 dB(A)*

Sound Performance – Brazil MAR-1 and China Nonroad Stage III, Tier 3/Stage IIIA Equivalent

	Standard	Suppression
Operator Sound Level (ISO 6396:2008)	72 dB(A)	72 dB(A)
Machine Sound Level (ISO 6395:2008)	112 dB(A)	110 dB(A)

* European Union Directive “2000/14/EC” as amended by “2005/88/EC” and UK Noise Regulation 2001 No. 1701

- The machine sound power level was measured according to the test 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.

Service Refill Capacities

Fuel Tank	535 L	141 gal
Cooling System	101 L	27 gal
Crankcase	34 L	9 gal
Diesel Exhaust Fluid Tank (DEF)	21 L	5.5 gal
Transmission	75 L	20 gal
Differentials and Final Drives – Front	186 L	49 gal
Differentials and Final Drives – Rear	170 L	45 gal
Hydraulic System Fill	355 L	94 gal

- Cat U.S. EPA Tier 4 Final, EU Stage V, and Japan 2014 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

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

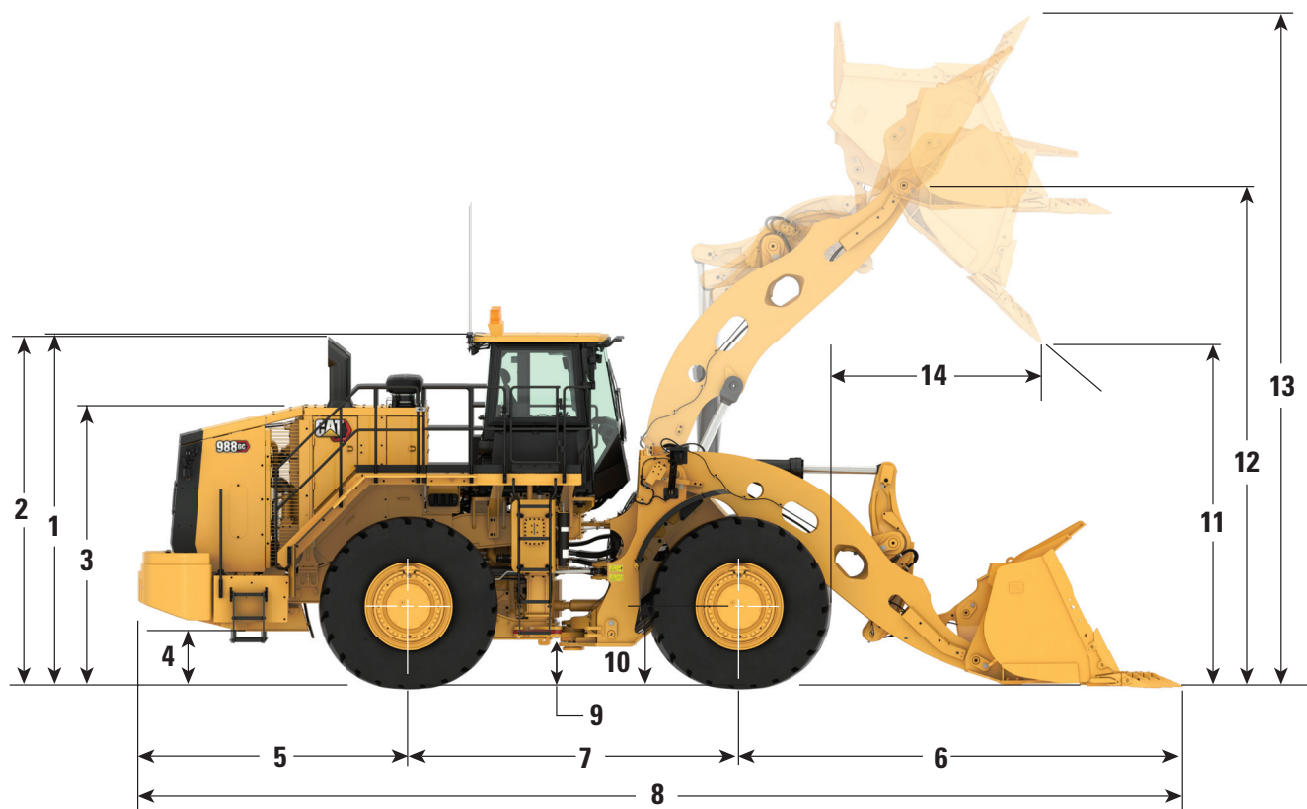
**Engines with no aftertreatment devices can use higher blends, up to 100% biodiesel.*

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

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Dimensions

All dimensions are approximate.



	High Lift	
1 Ground to Top of ROPS	4100 mm	13.5 ft
2 Ground to Top of Exhaust Stacks	4060 mm	13.3 ft
3 Ground to Top of Hood	3270 mm	10.7 ft
4 Ground to Fuel Tank Clearance	691 mm	2.3 ft
5 Rear Axle Centerline to Bumper	3132 mm	10.3 ft
6 Front Axle Centerline to Bucket Tip	4773 mm	15.7 ft
7 Wheel Base	3810 mm	12.5 ft
8 Maximum Overall Length	12 042 mm	39.5 ft
9 Ground to Lower Hitch Clearance	459 mm	1.5 ft
10 Ground to Center of Front Axle	978 mm	3.2 ft
11 Clearance at Maximum Lift (45° Dump)	3732 mm	12 ft
12 B-Pin Height at Maximum Lift	5755 mm	18.7 ft
13 Maximum Overall Height – Bucket Raised	7582 mm	25 ft
14 Reach at Maximum Lift (45° Dump)	2342 mm	7.7 ft

Note: Specifications are calculated with 6.9 m³ (9.0 yd³) rock bucket equipped with Michelin XLDD1 35/65 R33 tires.

Bucket Capacity/Material Density Selection Guide

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
1468-1614	2,500-2,750	1.47-1.61	1.25-1.38	7.6	10.00
1638-1801	2,778-3,056	1.64-1.80	1.39-1.53	6.9	9.00
1766-1942	3,001-3,300	1.77-1.94	1.50-1.65	6.4	8.30

Note: Rated Payload is the material weight in the bucket that the loader is designed to carry, excluding the weight of the bucket, GET, and wear material. Rated Payloads are published at 100%, even though Caterpillar does not allow 110% (must comply with ISO 14397). These values are given in terms of mass. There is no consideration to loose density weights of various materials since they are so diverse. Refer to the Large Wheel Loader Payload Policy.

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Operating Specifications – High Lift

For machines equipped with Bridgestone 35/65R33 VSDL One Star 97 PSI tires.

988 GC High Lift Tires: 35/65R33 VSDL, PN: 491-7382 SLR: 978 mm					
Bucket Type		Rock			
Ground Engaging Tool		Teeth and Segments			Bolt-On Cutting Edges
Cutting Edge Type		Spade			Straight
Bucket Part Number		623-2790	620-3365	624-7550	624-8380
Struck Capacity	m ³	5.0	5.5	6.0	5.5
	yd ³	6.5	7.2	7.8	7.2
Heaped Capacity (Rated)	m ³	6.4	6.9	7.6	6.9
	yd ³	8.3	9.0	10.0	9.0
Bucket Width	mm	3812	3812	3812	3755
	ft	12.5	12.5	12.5	12.3
Dump Clearance at Full Lift and 45° Discharge (Tooth Tip)	mm	3909	3854	3781	4263
	ft	12.8	12.6	12.4	14.0
Dump Clearance at Full Lift and 45° Discharge (Edge)	mm	4083	4028	3955	4263
	ft	13.4	13.2	13.0	14.0
Reach at Lift and 45° Discharge (Tooth Tip)	mm	2273	2328	2401	1947
	ft	7.5	7.6	7.9	6.4
Reach at Lift and 45° Discharge (Edge)	mm	2119	2174	2247	1947
	ft	7.0	7.1	7.4	6.4
Reach with Lift Arms Horizontal and Bucket Level	mm	4610	4687	4790	4128
	ft	15.1	15.4	15.7	13.5
Digging Depth (Segment)	mm	196	196	196	191
	in	7.7	7.7	7.7	7.5
Overall Length (Bucket Level Ground)	mm	11 950	12 027	12 130	11 465
	ft	39.2	39.5	39.8	37.6
Overall Height with Bucket at Full Raise	mm	7706	7772	7858	7858
	ft	25.3	25.5	25.8	25.8
Loader Clearance Turning Radius (SAE Carry)	mm	9097	9120	9151	9054
	ft	29.8	29.9	30.0	29.7
Rack Back Angle at SAE Carry	degrees	53.0	53.0	53.0	53.0
Full Dump Angle	degrees	-46.0	-46.0	-46.0	-46.0
Static Tipping Load – Straight (Rigid Tire)	kg	31 668	31 448	31 074	32 195
	lb	69,815	69,330	68,506	70,977
Static Tipping Load – Straight (Tire Squash)	kg	30 077	29 846	29 460	30 565
	lb	66,308	65,799	64,948	67,384
Static Tipping Load – Full Turn (Articulated 35°) (Rigid Tire)	kg	27 805	27 593	27 239	28 315
	lb	61,299	60,832	60,051	62,423
Static Tipping Load – Full Turn (Articulated 35°) (Tire Squash)	kg	25 366	25 139	24 768	25 826
	lb	55,922	55,421	54,604	56,936
Breakout Force	kN	338.6	324.2	306.7	391.2
	lb	76,120	72,883	68,948	87,945
Operating Weight	kg	50 861	50 996	51 179	50 605
	lb	112,129	112,426	112,830	111,564
Weight Distribution at SAE Carry (Unloaded)					
Front	kg	21 946	22 224	22 601	21 343
	lb	48,382	48,995	49,826	47,053
Rear	kg	28 915	28 772	28 578	29 262
	lb	63,746	63,431	63,003	64,511
Loaded Machine Weight	kg	62 201	62 336	62 519	61 945
	lb	137,129	137,427	137,830	136,565
Weight Distribution at SAE Carry (Loaded)					
Front	kg	43 323	43 647	44 118	42 697
	lb	95,510	96,225	97,263	94,130
Rear	kg	18 878	18 689	18 401	19 248
	lb	41,618	41,202	40,567	42,434

Standard and Optional Equipment

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

	Standard	Optional		Standard	Optional
ELECTRICAL			POWER TRAIN		
Alarm, backup	✓		Antifreeze -50°C (-58°F)		✓
Alternator, single 145 amp	✓		Brakes, oil-cooled, multi-disc, service/secondary	✓	
Batteries, dry	✓		Case drain screens	✓	
Converter, 10/15 amp, 24V to 12V	✓		Crankcase guard	✓	
Lighting system (LED, work lights, access and service platform lighting)	✓		Electro hydraulic parking brake	✓	
Starting and charging system, 24V	✓		Engine block heater 120V or 240V		✓
Starter emergency start receptacle	✓		Engine, C15 MEUI™ diesel, turbocharged/aftercooled	✓	
OPERATOR ENVIRONMENT			Ground-level engine shutoff	✓	
Air conditioner	✓		High ambient cooling – software		✓
Cab precleaner	✓		Turbine precleaner, engine air intake	✓	
Cab, sound suppressed and pressurized, integrated rollover protective structure (ROPS/FOPS), radio ready for entertainment, includes antenna, speakers, and converter (12-volt 5-amp) and power port	✓		Starting aid, ether, automatic		✓
Cat® Detect, object detection system		✓	Throttle lock, electronic	✓	
Cat Production Measurement*		✓	Torque converter, neutralizer	✓	
Cat Production Measurement* ready	✓		Transmission, planetary power shift, 4F/3R electronic control	✓	
Cat Vision, rear vision camera system	✓		Manual switch and automatic fuel priming	✓	
Controls, lift and tilt function	✓				
Graphical information display, displays real time operating information, performs calibrations, and customizes operator settings	✓				
Heater, defroster	✓				
Horn, electric	✓				
Instrumentation, gauges: coolant temperature, engine hour meter, hydraulic oil temperature, power train oil temperature	✓				
Light, cab, dome	✓				
Lights, directional	✓				
Lights, LED	✓				
Lunchbox, beverage holders	✓				
Mirrors, rearview (externally mounted)	✓				
Radio, AM/FM	✓				
Radio, CB ready		✓			
Seat, Cat Comfort (cloth), air suspension, six-way adjustable	✓				
Seat belt minder	✓				
Seat belt, retractable, 76 mm (3 in) wide	✓				
STIC™ System	✓				
Transmission gear indicator	✓				
UV glass	✓				
Wet-arm wipers/washers (front and rear) – intermittent front and rear wipers	✓				

*Not legal for Trade.

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Standard and Optional Equipment (*continued*)

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

	Standard	Optional		Standard	Optional
OTHER			OTHER (CONTINUED)		
Automatic bucket lift kickout/positioner	✓		Hydraulically driven demand fan	✓	
Base machine price includes a rim allowance	✓		Oil sampling valves	✓	
Cat Clean Emission Module (CEM)		✓	Premixed 50% concentration of extended life coolant with freeze protection to -34°C (-29°F)	✓	
Cold weather starting		✓	Rear access to cab and service platform	✓	
Couplings, Cat O-ring face seals	✓		Steering, load sensing	✓	
Doors, service access (locking)	✓		Tire Pressure Monitoring System		✓
Ecology drains for engine, radiator, hydraulic tank	✓		Toe kicks	✓	
Front and rear roading fenders		✓	Vandalism protection caplocks	✓	
Fuel tank, 535 L (141 gal)	✓		Wheel chocks		✓
Hitch, drawbar with pin	✓				
Hoses, Cat XT™	✓				
Hydraulic, steering and brake filtration/screening system	✓				

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® C15 engine is available in configurations that meet U.S. EPA Tier 4 Final, EU Stage V, and Japan 2014 emission standards or Brazil MAR-1 emission standards, equivalent to China Nonroad Stage III, U.S. EPA Tier 3 and EU Stage IIIA.
- The Cat® C15 engine meets U.S. EPA Tier 4 Final and EU Stage V emission standards.
- Cat U.S. EPA Tier 4 Final, EU Stage V, and Japan 2014 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 meeting Brazil MAR-1 emissions standards, equivalent to China Nonroad Stage III, U.S. EPA Tier 3 and EU Stage IIIA, 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 1.8 kg (3.9 lb) of refrigerant which has a CO₂ equivalent of 2.574 metric tonnes (2.837 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.

Sound Performance

Tier 4 Final/Stage V:

	Standard	Suppression
Operator Sound Level (ISO 6396:2008)	72 dB(A)	72 dB(A)
Machine Sound Level (ISO 6395:2008)	112 dB(A)	110 dB(A)*

Brazil MAR-1 and China Nonroad Stage III, Tier 3/Stage IIIA Equivalent:

	Standard	Suppression
Operator Sound Level (ISO 6396:2008)	72 dB(A)	72 dB(A)
Machine Sound Level (ISO 6395:2008)	112 dB(A)	110 dB(A)*

*European Union Directive "2000/14/EC" as amended by "2005/88/EC" and UK Noise Regulation 2001 No. 1701

- The machine sound power level was measured according to the test 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 operating with an open operator station and cab (when not properly maintained or doors/windows open) for extended periods or in a noisy environment.

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.
 - Engine Idle Management System and Auto Engine Idle Shutdown reduces idle RPM and maximize fuel efficiency
 - Load sensing hydraulics produce flow and pressure on-demand and only in amounts necessary to perform the needed functions
 - Cat Payload technology maximizes loading efficiency, helping operators of every skill level work more accurately to reduce load time, fuel costs and greenhouse gas emissions
 - Extended maintenance intervals not only reduce downtime but decrease the amount of fluid and filters that are replaced over the life of the machine
 - Optional Cat clean emissions module includes Diesel Particulate Filter (DPF), Diesel Oxidation Catalyst (DOC), and Selective Catalytic Reduction (SCR) technologies to reduce the engine's emissions



For more complete information on Cat products, dealer services, and industry solutions, visit us on the web at www.cat.com.

Materials and specifications are subject to change without notice. Featured machines in photos may include additional equipment. See your Cat dealer for available options.

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