Product Specifications For 988

Engine

Engine Power - ISO 14396:2002	580 hp
Engine Model	Cat® C18
Rated Speed	1700/rpm
Peak Power Speed	1500/rpm
Gross Power - SAE J1995:2014	588 hp
Net Power - SAE J1349:2011	538 hp
Bore	5.7 in
Stroke	7.2 in
Displacement	1105 in³
Peak Torque - 1,200 rpm	2104 lbf·ft
Torque Rise	58 %
Note (1)	Three engine emission options are available: 1. Meets U.S. EPA Tier 4 Final, EU Stage V, and Japan 2014 emission standards. 2. Meets Brazil MAR-1 emission standards, equivalent to U.S. EPA Tier 3 and EU Stage IIIA. 3. Meets China Nonroad Stage IV emission standards.
Note (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.

Operating Specifications

Operating Weight	112574 lb
Bucket Capacity Range	4.7-13 m3 (6.2-17 yd3)
Rated Payload - Quarry Face	12.5 t
Rated Payload - Loose Material	16 t
Cat Truck Match - Standard	770 - 772
Cat Truck Match - High Lift	773 - 775

Transmission

Transmission Type	Cat planetary powershift
Forward - 1	4 mile/h
Forward - 2	7.2 mile/h
Forward - 3	12.7 mile/h
Forward - 4	21.6 mile/h
Reverse - 1	4.7 mile/h
Reverse - 2	8.3 mile/h
Reverse - 3	14.4 mile/h
Direct Drive - Forward 1	Lock-up disabled
Direct Drive - Forward 2	7.8 mile/h
Direct Drive - Forward 3	13.9 mile/h
Direct Drive - Forward 4	24.4 mile/h

Direct Drive - Reverse 1	5 mile/h
Direct Drive - Reverse 2	8.9 mile/h
Direct Drive - Reverse 3	15.8 mile/h

Hydraulic System - Lift/Tilt

Lift/Tilt System - Circuit	EH- Positive Flow Control, Flow Sharing
Lift/Tilt System - Pump	Variable displacement piston
Maximum Flow at 1,400-1,860 rpm	153 gal/min
Relief Valve Setting - Lift/Tilt	4757 psi
Cylinders, Double Acting - Lift, Bore and Stroke	210 mm × 1050 mm (8.7 in × 41.3 in)
Cylinders, Double Acting - Tilt, Bore and Stroke	266 mm × 685 mm (8.7 in × 27 in)
Pilot System	Variable displacement piston
Relief Valve Setting - Main	551 psi

Hydraulic Cycle Time (1,400-1,860 Rpm)

Rack Back	4.5 s
Raise	8 s
Dump	2.2 s
Lower Float Down	3.5 s
Total Hydraulic Cycle Time - Empty Bucket	18.2 s

Hydraulic System - Steering

Steering System - Circuit	Pilot, load sensing

Steering System - Pump	Piston, variable displacement
Maximum Flow at 1,400-1,600 rpm	71.3 gal/min
Relief Valve Setting - Steering	4351 psi
Total Steering Angle	86 °
Steering Cycle Times - High Idle	3.4 s
Steering Cycle Times - Low Idle	5.6 s

Air Conditioning System

Air Conditioning	• The air conditioning system on this machine contains the fluorinated greenhouse gas refrigerant R134a or R1234yf. See the label or instruction manual for identification of the gas. • If equipped with 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).

Axles

Front	Fixed
Rear	Trunnion
Oscillation Angle	13 °

Brakes

Brakes	ISO 3450:2011

Operator's Cab

ROPS/FOPS	ROPS/FOPS meet ISO 3471:2008 and ISO 3449:2005 Level II standards

Sound Performance - Tier 4 Final / Stage V

Operator Sound Pressure Level (ISO 6396:2008)	73 dB(A)

Machine Sound Power Level (ISO 6395:2008)	111 dB(A)
Operator Sound Pressure Level (ISO 6396:2008)*	72 dB(A)
Machine Sound Power Level (ISO 6395:2008)**	109 dB(A)
Note (1)	* For machines in European Union countries and in countries that adopt the “EU Directives” and “UK Directives.”
Note (2)	** European Union Directive “2000/14/EC” as amended by “2005/88/EC” and UK Noise Regulation 2001 No. 1701.
Note (3)	The machine sound power level was measured according to ISO 6395:2008. The measurement was conducted at 70% of the maximum engine cooling fan speed.
Note (4)	The operator sound pressure level was measured according to ISO 6396:2008. The measurement was conducted at 70% of the maximum engine cooling fan speed.
Note (5)	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.

Sound Performance - Tier 3 / Stage IIIA

Operator Sound Pressure Level (ISO 6396:2008)	73 dB(A)
Machine Sound Power Level (ISO 6395:2008)	112 dB(A)
Operator Sound Pressure Level (ISO 6396:2008)*	72 dB(A)
Machine Sound Power Level (ISO 6395:2008)**	110 dB(A)

Note (1)	* For machines in European Union countries and in countries that adopt the “EU Directives” and “UK Directives.”
Note (2)	** European Union Directive “2000/14/EC” as amended by “2005/88/EC” and UK Noise Regulation 2001 No. 1701.
Note (3)	The machine sound power level was measured according to ISO 6395:2008. The measurement was conducted at 70% of the maximum engine cooling fan speed.
Note (4)	The operator sound pressure level was measured according to ISO 6396:2008. The measurement was conducted at 70% of the maximum engine cooling fan speed.
Note (5)	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	188 gal (US)
Cooling System	31.7 gal (US)
Coolant (Validated by Test Cell Fill Quantities)	33 gal (US)
Crankcase	15.9 gal (US)
Diesel Exhaust Fluid Tank (For Tier 4 Final/Stage V Only)	8.7 gal (US)
Transmission	24.3 gal (US)
Transmission - Validated by Test Cell Fill Quantities	29 gal (US)

Differential - Final Drives - Front	49.1 gal (US)
Differential - Final Drives - Rear	49.1 gal (US)
Hydraulic System Factory Fill	125.5 gal (US)
Hydraulic System - Tank Only	63.4 gal (US)
Note	• All non-road Tier 4 Final/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. Refer to guidelines for successful application. Please consult your Cat dealer or “Caterpillar Machine Fluids Recommendations” (SEBU6250). 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).** • For pre-Tier 4 engines: Cat engines 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. * For use of blends higher than 20% biodiesel, consult your Cat dealer. ** Tailpipe greenhouse gas emissions from lower-carbon intensity fuels are essentially the same as traditional fuels.

Dimensions (Approximate) - Standard Lift Linkage

Ground to Top of ROPS	13.8 ft
Ground to Top of Exhaust Stacks	14.8 ft
Ground to Top of Hood	10.9 ft
Rear Axle - Centerline to Bumper	10.5 ft
Front Axle Centerline to Bucket Tip	14 ft
Wheel Base	14.9 ft

Maximum Overall Length	39.3 ft
Ground to Lower Hitch Clearance	1.9 ft
Clearance at Maximum Lift	11.9 ft
B-Pin Height - Maximum Lift	18 ft
Maximum Overall Height - Bucket Raised	24.5 ft
Reach - Maximum Lift	6.5 ft

Dimensions (Approximate) - High Lift Linkage

Ground to Top of ROPS	13.8 ft
Ground to Top of Exhaust Stacks	14.8 ft
Ground to Top of Hood	10.9 ft
Rear Axle - Centerline to Bumper	10.5 ft
Front Axle Centerline to Bucket Tip	15.3 ft
Wheel Base	14.9 ft
Maximum Overall Length	40.7 ft
Ground to Lower Hitch Clearance	1.9 ft
Clearance at Maximum Lift	13.3 ft
B-Pin Height - Maximum Lift	19.3 ft
Maximum Overall Height - Bucket Raised	25.8 ft
Reach - Maximum Lift	6.8 ft

988 Standard Equipment

NOTE

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

ELECTRICAL

Alarm, back-up
Alternator, single 150 amp
Batteries, dry
Converter, 10/15 amp, 24V to 12V
Lighting system (LED, work lights, access and service platform lighting)
Starting and charging system, 24V
Auxiliary jump start receptacle
Starter lockout in bumper
Transmission lockout in bumper

OPERATOR ENVIRONMENT

Graphical Information Display, displays real time operating information, performs calibrations and customizes operator settings
CB radio ready
Air conditioner
Cat Vision, rear vision camera system
Cab, sound suppressed and pressurized, integrated rollover protective structure/falling objects protective structure (ROPS/FOPS) radio ready for entertainment, includes antenna, speakers and converter (12-volt 5-amp) and power port
Controls, lift and tilt function
Heater, defroster
Horn, electric
Instrumentation, gauges: – Coolant temperature – Engine hour meter – Hydraulic oil temperature – Powertrain oil temperature
Light, cab, dome
Lunchbox, beverage holders
Radio, AM/FM/CD/MP3 Bluetooth®
Mirrors, rearview (externally mounted)
Rimpull Control System (RCS)
Seat, deluxe
Seat belt minder
Seat belt, retractable, 76 mm (3 in) wide
Steering and Transmission Integrated Control (STIC™) System
UV glass
Vital Information Management System (VIMS™) with Graphical Information Display: External Data Port
Wet-arm wipers/washers (front and rear): – Intermittent front and rear wipers
Lights, directional

POWERTRAIN

Brakes, oil-cooled, multi-disc, service/secondary
Case drain screens

Electro hydraulic parking brake
Engine, C18 Mechanically Actuated Electronic Unit Injection (MEUI™) diesel, turbocharged/aftercooled
Ground level engine shutdown switch
Turbine precleaner, engine air intake
Premixed 50% concentration of extended life coolant with freeze protection to –34° C (–29° F)
Radiator, Aluminum Modular Radiator (AMR)
Starting aid, ether, automatic
Throttle lock, electronic
Torque converter, Impeller Clutch (ICTC) with Lock up clutch (LUC), Rimpull Control System
Transmission, planetary powershift, 4F/3R electronic control
Manual switch and automatic fuel priming
Cat Production Measurement ready

ADDITIONAL EQUIPMENT

Base machine price includes a rim allowance
Hydraulically driven demand fan
Couplings, Cat O-ring face seals
Doors, service access (locking)
Ecology drains for engine, radiator, hydraulic tank
Fuel tank, 712 L (188 gal)
Hitch, drawbar with pin
Hoses, Cat XT™
Hydraulic, steering and brake filtration/screening system
Cat Clean Emission Module (CEM)
Oil sampling valves
Rear access to cab and service platform
Steering, load sensing
Toe kicks
Vandalism protection caplocks

988 Optional Equipment

NOTE

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

POWERTRAIN

–50° C (–58° F) antifreeze
Crankcase guard
Engine oil change system, high speed, Wiggins
High ambient cooling – software
Cat Production Measurement

OPERATOR ENVIRONMENT

Cab precleaner
LED warning strobe
Window pull down visor

Handrail mounted mirrors

ADDITIONAL EQUIPMENT

Additional counterweight
Front and rear roading fenders
Fast fill fuel system (Shaw-Aero)
Cold weather package: additional starter and 2 batteries, engine block heater 120V or 240V, heated fuel lines

OTHER OPTIONAL CONFIGURATIONS

Aggregate Handler
Block Handler
Millyard
Steel Mill