# 988 WHEEL LOADER

Engine Power (ISO 14396:2002) Operating Weight Operating Weight – High Lift 432 kW (580 hp) 51 062 kg (112,574 lb) 54 258 kg (119,618 lb)

Engine meets U.S. EPA Tier 4 Final, EU Stage V, and Japan 2014 emission standards, Brazil MAR-1 and China Nonroad Stage IV emission standards, equivalent to U.S. EPA Tier 3 and EU Stage IIIA, and U.S. EPA Tier 2 and EU Stage II.



# THE CAT® 9888 UNCOST PER TON WITH OPTIMAL EFFICIENCY AND PRODUCTIVITY

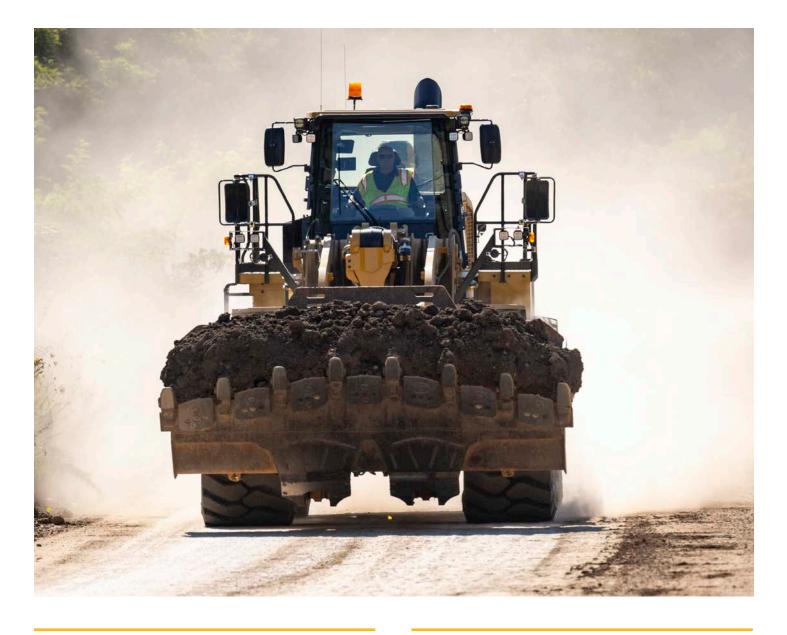
The Cat<sup>®</sup> 988 Wheel Loader combines the durability, reliability, and productivity of the proven 988 legacy. When paired with our 770, 772, 773, or 775 off-highway trucks, the 988 achieves great productivity.



### HELPING YOU MOVE MORE MATERIAL, IN LESS TIME

The 988 lets you move more material than the 988H at a low cost so you can achieve production targets, deliver on your commitments, meet deadlines, and maximize your profitability.

- + PRODUCTIVITY BOOSTED THROUGH IMPROVED CYCLE TIMES, BUCKET FILL FACTORS WITH OPTIONAL OPERATOR COACHING AND ASSIST
- + IMPROVED CONTROL TECHNOLOGY REDUCES FUEL BURN AND MOVES MORE MATERIAL
- + ENHANCED OPERATOR CONTROLS DELIVER GREATER EFFICIENCY, PRODUCTIVITY, AND COMFORT



# PROVEN POWER, LOW FUEL BURN

The Cat C18 engine delivers more than enough power for your most demanding applications while helping to keep your cost per ton low. Fully integrated electronic engine controls work in concert with the entire machine to make your fuel go further, and engine idle shutdown prevents unnecessary idling. The C18 meets Tier 4 Final/Stage V and Japan 2014 emission standards, Brazil MAR-1 and China Nonroad Stage IV emission standards, equivalent to Tier 3/Stage IIIA and Tier 2/Stage II, and is equipped with eco drains to reduce spills.

# PROVEN PERFORMANCE, **RUN EFFICIENTLY**

The 988 features a number of improvements that make it even more customer and operator friendly, including a new economy mode that helps to save fuel and energy while increasing efficiency and reducing environmental impact.



# INCREASED SAFETY

New operator presence feature detects when the operator leaves the seat and automatically applies the parking brake when the machine is not in motion. Optional seat belt beacon indicator light externally shows if the seat belt is being used by the operator.

# EASE OF OPERATION

With optional operator coaching, operator efficiency and bucket fill factor can be increased. Operator assist features help optimize the dig portion of every cycle with improvements, all designed to help the operator excel.



# MATCH AND **MOVE MORE**

Achieve even greater production with an optimized truck match to maximize the volume of material moved at the lowest operating cost per ton.

Cat® 770 36 t (40 ton) 3 PASSES
Cat 772 45 t (50 ton) 4 PASSES
Cat 773 56 t (61.7 ton) 5 PASSES
Cat 775 64 t (70.5 ton) 6 PASSES

#### THE CAT 988 IS OPTIMALLY MATCHED WITH CAT OFF-HIGHWAY TRUCKS.

# DO MORE FOR LESS WITH POSITIVE FLOW CONTROL

The positive flow control (PFC) hydraulic system provides more power and helps lessen fuel burn, providing consistent performance and better control. The optimized pump control produces hydraulic oil flow proportionate to implement lever movement. The PFC system also provides improved bucket feel and control through increased hydraulic response.

# ELECTRO HYDRAULIC SYSTEMS BOOST PRODUCTIVITY

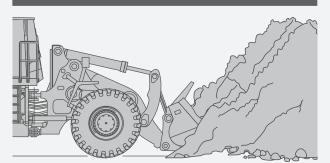
Electronically controlled hydraulic cylinder stops and easyto-use soft detent controls help make precise movements simple and comfortable. A load-sensing steering system with 43 degrees of articulation allows precise positioning and easy loading in tight areas.

# OPTIONAL COUNTERWEIGHT ENABLES PRECISION OPERATION

Load and carry applications are easier to optimize when operators have more precise control. An optional load and carry counterweight helps improve the stability of the machine and allows faster, more precise maneuvering than the standard counterweight.

# FASTER CYCLE TIMES AND FTTF **BUCKET FILL FACTORS** WITH OPERATOR COACHING

## **OPERATOR COACHING SYSTEM DELIVERS VITAL** FEEDBACK TO THE OPERATOR THROUGHOUT EVERY CYCLE, HELPING THEM WORK MORE EFFICIENTLY



- PROPERLY SHORTEN TRAVEL
- AVOID UNRACKING IN-DIG
- ENTER THE PILE WITH A LEVEL BUCKET

#### REDUCE THE DUMP HEIGHT AND USE THE KICKOUT

### DESIGNED TO HELP EVERY OPERATOR EXCEL

#### SINGLE PEDAL OPERATION

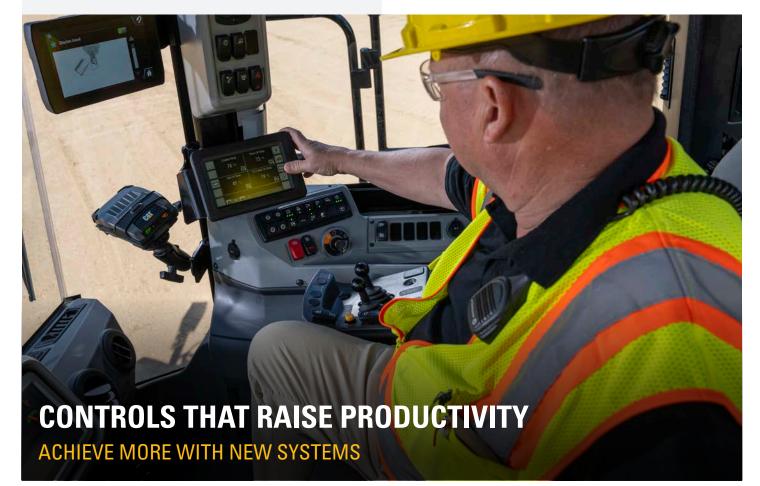
Throttle lock and impeller clutch torque converter (ICTC) give operators easier single left-hand pedal operation.

#### STEERING AND TRANSMISSION INTEGRATED **CONTROL (STIC™) MAXIMIZES RESPONSIVENESS**

Easier control and shorter, faster cycles reduce operator fatigue and increase efficiency. The STIC<sup>™</sup> system combines steering, gear selection, and more into a single lever.

#### **OPERATOR ASSIST OPTIMIZES PERFORMANCE**

Optional operator assist features help simplify the digging phase. Reducing tire slip and wear, available auto set tires sets the front tires to promote proper loading techniques. Lift stall prevention technology automatically manages rimpull in-dig to prevent hydraulic stall while lifting through the face, resulting in less time spent in the pile.



# WORLD-CLASS OPERATOR COMFORT AND ERGONOMICS

# EASY ENTRY

Operators access the cab by 45-degree anti-skid stairways mounted on both sides of the machine. The STIC control column folds up and out of the way to help make cab entry and seat adjustment easier.



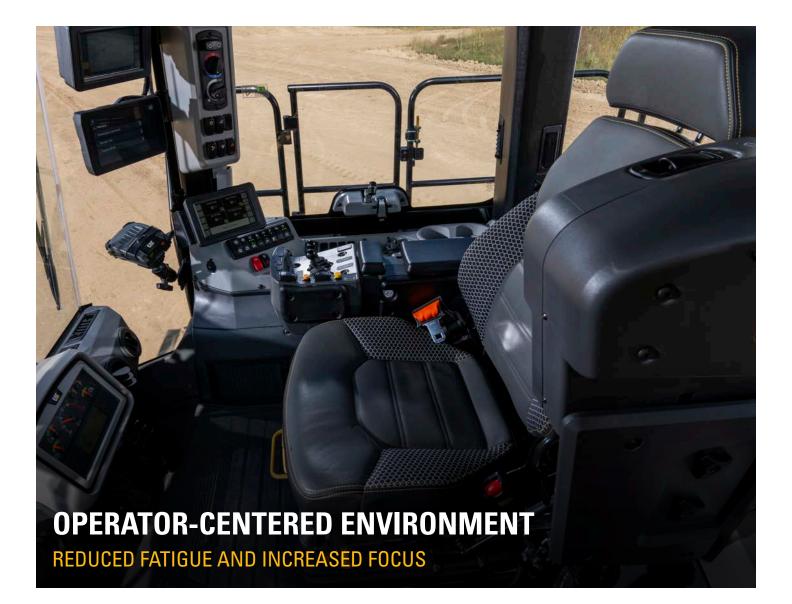
The premium plus seat delivers total comfort throughout the workday. Standard features include leather finish, forced air heating and cooling, two-way thigh adjustment, power lumbar and back bolster adjustment, and dynamic end dampening. The seat also features a flip-up armrest for easier ingress/egress.

#### CAB COMFORT MEASURES

The 988's cabin remains comfortable. Isolated cab mounts reduce vibration, while filtered, pressurized air and automatic climate control maintain an agreeable atmosphere. A floor storage tray helps keep items out of the operator's way.

## LOW OPERATOR SOUND LEVELS

Sound levels are lower than the 988H, and a newly redesigned STIC steering valve reduces steering noise in the cab.



# **TOTAL SAFETY FOCUS** HELPING OPERATORS STAY SAFE AND AWARE

Your most important job is keeping your team safe. We are constantly improving our products in an effort to provide a safe work environment for the operator and those who work on your job site.



### **EASY AND SAFE ACCESS**

The cab is accessed by 45-degree angle anti-slip stairways on the left and right sides, with standard stairway lighting. All access walkways are continuous to avoid trip hazards, equipped with highly effective anti-slip texture, and designed to provide three points of contact during all tasks. Many service points are accessible from ground level.



#### SEE AND BE SEEN WITH HIGH VISIBILITY

The cab provides excellent sight lines, with larger quarter windows, and a rear vision camera which enhances visibility behind the machine, helping operators work more safely and confidently. Optional heated mirrors and Cat Detect radar system are available to give the operator even greater awareness of the surrounding environment. High-visibility LED warning beacons and high performance LED work lights are available as options.



#### MASTER DISCONNECT SWITCH

Ground electrical service center with jump start receptacle and battery disconnect switch.



# A STRONG LEGACY

The 988 series has proven durable and reliable for nearly 60 years, and the 988 builds upon this legacy of durability, performance, safety, operator comfort, and serviceability.

# **STRONG STRUCTURES**

A full box-section rear frame helps resist torsional shock and twisting forces. Heavy-duty steering cylinder mounts efficiently transmit steering loads into the frame.

# **STRONG CONNECTIONS**

Every linkage and connection is engineered for maximum durability. Axle mountings have increased structural integrity, and the lower hitch pin, frame plate, and bearing size have been increased for greater strength and longer life compared to the 988H. The greased pin design of the front linkage pin joints helps increase their service life.

## **STRONG ARMS**

The lift arms are solid steel for excellent stress absorption, and the strength of key pin areas is enhanced through the use of one-piece castings. The Z-bar design of the arms enhances work site visibility.

# PERFORMANCE SERIES BUCKETS

Deliver fast fill times and better material retention, ultimately reducing cycle times while improving productivity and fuel efficiency.

# A PROTECTED POWERTRAIN

When the machine is turned off, a delayed engine shutdown system determines whether the engine needs additional cooldown time. If so, it moves the engine into idle for a short period before final shutdown. This helps preserve engine life and durability.

# THRIVE WITH CAT TECHNOLOGY SMART SYSTEMS THAT HELP SAVE YOU MONEY

The 988 features empowering technology that helps you work smarter, do more, and protect your investment.

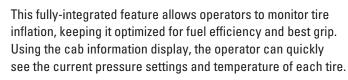


#### ■ UPGRADED TOUCHSCREEN WITH VITAL INFORMATION MANAGEMENT SYSTEM (VIMS<sup>™</sup>)

The improved touchscreen and user interface allow intuitive operation and easy navigation. VIMS<sup>™</sup> decreases service time by keeping operators and technicians informed about machine systems and allows access to a wide range of machine data, helping reduce maintenance overhead and providing opportunities to increase productivity and efficiency.

- Create productivity reports with payload and work cycle segmentation.
- Identify operator training needs through productivity data.
- Access detailed data logging of machine parameters and diagnostic codes.
- Track sensor information with trend analysis and histograms to monitor machine health.

#### TIRE PRESSURE MONITORING SYSTEM (TPMS)





# 

#### **O** CAT PRODUCTION MEASUREMENT (CPM)

Cat Production Measurement\* is an on-the-go scale system that brings payload weighing to the cab so operators can work more productively and deliver accurate loads with confidence. CPM's advanced weighing modes assist with payload accuracy and make the loading cycle faster.

\*Not legal for trade.



#### **CONNECTED BUCKET**

Track the working hours of the bucket to help predict the need for bucket maintenance or replacement of wear parts.









**ROCK BUCKETS** 

**HEAVY-DUTY ROCK BUCKETS** 

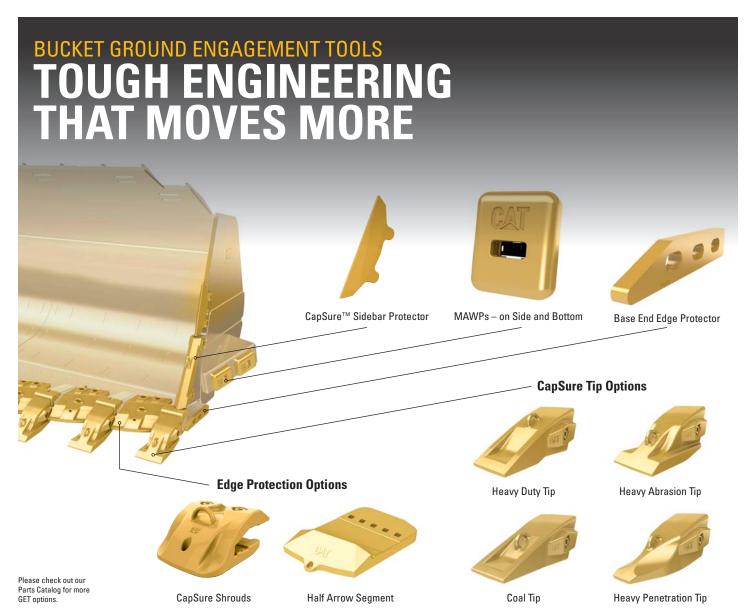
**GENERAL PURPOSE BUCKETS** 

**COAL BUCKETS** 

#### TOOLS TO GET EVERY JOB DONE AND LOWER YOUR COSTS

Cat ground engagement options give you the ability to adapt to any condition and do so while protecting your investment.

- Each bucket is designed to help make moving the appropriate material easy and efficient, and each is engineered with special features that help increase durability and service life.
- Cat Advansys<sup>™</sup> GET give you even more ability to adapt and specialize for higher profitability. These modular tips help protect expensive components, reduce your operating costs, and help you get the most out of your machine's performance.
- A number of GET components can be installed with simple, hammerless CapSure<sup>™</sup> retention technology. CapSure tips, shrouds, and sidebar protectors are easily locked and unlocked with a 180-degree turn of a 3/4 inch (19 mm) ratchet, making the process fast, easy, and safe.





WORLD-CLASS EFFICIENCY AND DURABILITY

# THE PERFORMANCE YOU NEED AT A LOW COST



### **PROVEN DESIGN THAT LOWERS YOUR COSTS**

The 988 Millyard uses all the highly durable structures, the advanced controls, and the efficient, long-life powertrain of the standard machine but provides the perfect tools and systems for forestry operations.



#### ADDED STRENGTH TO MOVE MORE

Unload a typical full-length log truck in a single pass with the larger lift and tilt cylinders and a unique tilt lever to maximize linkage force. Designed with 20% more lift capacity and 26% more tilt capacity over the standard 988.



#### THE RIGHT TOOLS FOR EVERY JOB

Three different fork designs with differing clamp and tine arrangements give you the right tool for any load, from individual logs to massive bundles. Open, high-visibility designs allow operators to work more efficiently and safely. A specially designed high-capacity bucket is perfect for moving woodchips.



#### CHANGE TOOLS QUICKLY

With an optional quick coupler and third valve hydraulic functions, your operators will be able to change forks or buckets in seconds.

# **BLOCK HANDLER AND STEEL MILL ARRANGEMENTS**



#### OPTIMIZED FOR BLOCK HANDLING

The 988 Block Handler special arrangement is ready for whatever your quarry can throw at it. It delivers stability and durability with an optimized counterweight. Larger tilt and lift cylinders on the linkage help improve load control and ensure safe and long lasting operation. Ride control acts as a shock absorber, providing the operator with a smoother ride over rough terrain.

#### STEEL MILL SPECIALTY ARRANGEMENT

Harsh steel mill environments can be tough on even the most durable machines, but this 988 has features that maximize uptime and ensure safety for the machine and operator. It is equipped with extra heat protection to axle seals, key hoses, and harnesses for improved reliability, and the transmission and parking brake override controls for enhanced operator safety.



## **TECHNICAL SPECIFICATIONS**

See cat.com for complete specifications.

ENGINE			
Engine Model	Cat® C18		
Rated Speed	1,700	) rpm	
Peak Power Speed	1,500 rpm		
Engine – ISO 14396:2002	393 kW	527 hp	
Gross – SAE J1995:2014	439 kW	588 hp	
Net Power – SAE J1349:2011	401 kW	538 hp	
Bore	145 mm	5.7 in	
Stroke	183 mm	7.2 in	
Displacement	18.1 L	1,105 in <sup>3</sup>	
Peak Torque @ 1,200 rpm – SAE J1995:2014	3023 N·m	2,230 lb-ft	
Torque Rise	58	%	

 Meets U.S. EPA Tier 4 Final, EU Stage V, and Japan 2014 emission standards, Brazil MAR-1 and China Nonroad Stage IV emission standards, equivalent to U.S. EPA Tier 3 and EU Stage IIIA, and U.S. EPA Tier 2 and EU Stage II.

• 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	52 781 kg	116,362 lb		
Rated Payload – Quarry Face	11.3 tonnes	12.5 tons		
Rated Payload – Loose Material	14.5 tonnes	16.0 tons		

**BUCKET CAPACITIES** 

4.7-13.0 m<sup>3</sup> 6.2-17.0 yd<sup>3</sup>

TRANSMISSION					
Transmission Type Cat switched reluctance electric drive				ectric drive	
Forward 1	7.0 km/h	4.3 mph	Reverse 1 7.0 km/h 4.3 mph		
Forward 2	11.3 km/h	7.0 mph	Reverse 2	11.3 km/h	7.0 mph
Forward 3	22.2 km/h	13.8 mph	Reverse 3	28.2 km/h	17.5 mph
Forward 4	32.1 km/h	20.0 mph	Reverse 4	N/A	N/A
HYDRAULIC SYSTEM – LIFT/TILT					
Lift/Tilt System – Circuit EH – positive flow control, flow sharin					
Lift/Tilt System Pumps Variable displacement piston			ent piston		
Relief Valve Setting – Lift/Tilt				32 800 kPa	4,757 psi

HYDRAULIC CYCLE TIME	
Rackback	4.5 seconds
Raise	8.0 seconds
Dump	2.2 seconds
Lower Float Down	3.5 seconds
Total Hydraulic Cycle Time (empty bucket)	18.2 seconds

#### HYDRAULIC SYSTEM – STEERING

Steering System – Circuit	Pilot, load sensing
Steering System – Pump	Piston, variable displacement
Steering Cut Off Pressure	30 000 kPa 4,351 psi
Total Steering Angle	86°
Steering Cycle Time (high idle)	3.4 seconds
Steering Cycle Time (low idle)	5.6 seconds

DIMENSIONS				
	Standard Lift		High Lift	
Ground to Top of Rollover Protective Structure (ROPS)	4202 mm	13.8 ft	4202 mm	13.8 ft
Ground to Top of Exhaust Stacks	4521 mm	14.8 ft	4521 mm	14.8 ft
Ground to Top of Hood	3334 mm	10.9 ft	3334 mm	10.9 ft
Ground to Bumper Clearance	933 mm	3.1 ft	933 mm	3.1 ft
Rear Axle Center Line to Bumper	3187 mm	10.5 ft	3187 mm	10.5 ft
Front Axle Center Line to Bucket Tip	4254 mm	14.0 ft	4661 mm	15.3 ft
Wheel Base	4550 mm	14.9 ft	4550 mm	14.9 ft
Maximum Overall Length	11 991 mm	39.3 ft	12 398 mm	40.7 ft
Ground to Lower Hitch Clearance	568 mm	1.9 ft	568 mm	1.9 ft
Ground to Center of Axles	978 mm	3.2 ft	978 mm	3.2 ft
Clearance at Maximum Lift (45° Dump)	3641 mm	11.9 ft	4043 mm	13.3 ft
B-Pin Height at Maximum Lift	5485 mm	18.0 ft	5887 mm	19.3 ft
Maximum Overall Height – Bucket Raised	7455 mm	24.5 ft	7849 mm	25.8 ft
Reach at Maximum Lift (45° Dump)	1981 mm	6.5 ft	2062 mm	6.8 ft

 $\bullet$  Specifications are calculated with 6.9 m³ (9.0 yd³) rock bucket and Michelin XLDD2 tires with 978 mm (3.2 ft) centerline of rear axle height.

#### **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  $CO_2$  equivalent 2.574 metric tonnes.

SOUND	
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)**
Tier 3/Stage IIIA and Tier2/Stage II	

Tier 5/Staye IIIA and Tierz/Staye II	
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)**
*For machines in European Union countries and in count Directives" and "UK Directives."	ries that adopt the "EU

\*\*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 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 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.

**Bucket Range** 

# **STANDARD & OPTIONAL EQUIPMENT**

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

ELECTRICAL	STANDARD	OPTIONAL
Alternator, single 150 amp	•	
Converter, 10/15 amp, 24V to 12V	•	
Lighting system (LED work lights, access and service platform lighting)	•	
Lighting system (high performance LED work lights, access and service platform lighting)		•
Lighting system (underhood service lighting)		٠
Starting and charging system, 24V	•	
Starter emergency start receptacle	•	
Starter lockout in bumper	•	
Transmission lockout in bumper	•	
OPERATOR ENVIRONMENT	STANDARD	OPTIONAL
Air conditioner	•	
Cat Vision, rear-vision camera system	•	
Cat Detect, object detection system	· ·	•
Cat Production Measurement ready	•	-
Cat Production Measurement	•	•
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	٠	
Cab precleaner		٠
Controls, lift and tilt function	•	
3rd function valve controls		٠
Graphical information display	•	
Instrumentation, gauges: coolant temperature, engine hour meter, hydraulic oil temperature, powertrain oil temperature	٠	
Mirrors, rearview (externally mounted)	•	
Radio, AM/FM/CD/MP3 Bluetooth®	٠	
Radio, CB ready	•	
Rimpull control system (RCS)	٠	
Seat, deluxe	•	
Seat, premium plus containing forced air heating and cooling, 2-way thigh adjustment, power lumbar and back bolster adjustment, ride stiffness, dynamic end dampening and leather finish		٠
Seat belt, retractable, 76 mm (3 in) wide	•	
Steering and Transmission Integrated Control (STIC™) system	٠	
Vital Information Management System (VIMS <sup>™</sup> ) with graphical information display: external data port, customizable operator profiles, cycle timer, integrated payload control system	۲	
Wet-arm wipers/washers (front and rear) – intermittent front and rear wipers	٠	
Operator presence	•	
Slope indication	٠	

POWERTRAIN	STANDARD	OPTIONAL
Premixed 50% concentration of extended		
life coolant with freeze protection to -34°C (-29°F)	•	
Automatic retarding controls	•	
Brakes, oil-cooled, multi-disc, service/ secondary	•	
Electro hydraulic parking brake	•	
Engine, C18 Mechanically Actuated Electronic Unit Injection (MEUI™) diesel, turbocharged/aftercooled	•	
Engine oil change system, high speed, Wiggins		٠
Ground-level engine shutoff	•	
Turbine precleaner, engine air intake	•	
Turbine precleaner, engine air intake dual stage		•
Radiator, aluminum modular radiator (AMR)	٠	
Throttle lock, electronic	•	
Torque converter, impeller clutch (ICTC) with lock up clutch (LUC), rimpull control system	•	
Transmission, planetary power shift, 4F/3R electronic control	٠	
ADDITIONAL EQUIPMENT	STANDARD	OPTIONAL
Autodig ready	٠	
Autodig, tire slip prevention, auto set tires, and lift stall prevention		٠
Operator coaching		٠
Cold weather package: additional starter and 2 batteries, engine block heater 120V or 240V, heated fuel lines		٠
Automatic bucket lift kickout/positioner	•	
Cat Clean Emission Module (CEM)	•	
EZ clean cooling system		٠
Fuel tank, 712 L (188 gal)	•	
Fast fill fuel system (Shaw-Aero)		•
Hitch, drawbar with pin	•	
Hydraulic, steering and brake filtration/ screening system	•	
Hydraulically driven demand fan	•	
Load and carry counterweight		٠
Steering, load sensing	•	6
Tire pressure monitoring system	6	•
Vandalism protection caplocks	•	
OTHER OPTIONAL CONFIGURATIONS	STANDARD	OPTIONAL
Aggregate handler		٠
Load and carry		٠
Millyard		•
Steel mill		•
Block handler		



# ZEPPELIN – GANZ IN IHRER NÄHE



Financial Günstige Finanzierungen für alle unsere Maschinen über unseren

Partner Cat Financial. Schnell. Einfach. Flexibel. Individuell.

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