

988K XE

WHEEL LOADER



Engine Power (ISO 14396:2002)	393 kW (527 hp)
Operating Weight – Standard	52 781 kg (116,362 lb)
Operating Weight – High Lift	54 258 kg (119,618 lb)

Engine meets U.S. EPA Tier 4 Final, EU Stage V, and Japan 2014 emission standards.



THE CAT[®] 988K XE

LOWER COST PER TON WITH INDUSTRY-LEADING EFFICIENCY AND PRODUCTIVITY

The Cat[®] 988K XE combines the unmatched durability, reliability, and productivity of the proven 988 platform with the efficiency of advanced electric drive. When paired with our 770, 772, 773, or 775 off-highway trucks, the 988K XE achieves even greater productivity.



HELPING YOU MOVE MORE MATERIAL, MORE EFFICIENTLY

The 988K XE lets you move more material at a lower cost so you can achieve production targets, deliver on your commitments, meet deadlines, and maximize your profitability.

- + PRODUCTIVITY BOOSTED UP TO 5% WITH LATEST UPDATES
- + IMPROVED CONTROL TECHNOLOGY REDUCES FUEL BURN AND MOVES MORE MATERIAL
- + ENHANCED OPERATOR CONTROLS DELIVER GREATER EFFICIENCY, PRODUCTIVITY, AND COMFORT



PROVEN POWER, LOWER FUEL BURN

The Cat C18 engine delivers more than enough power for your most demanding applications while keeping 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 emission standards and is equipped with eco drains to reduce environmental contamination from fluids.

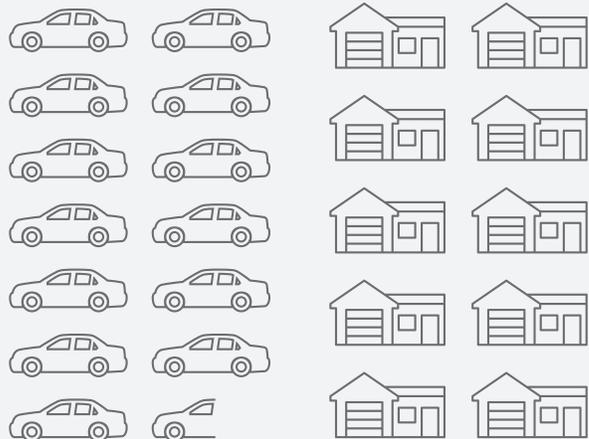
BOOST EFFICIENCY UP TO 49%

The 988K XE's advanced electric drive systems already increase efficiency by 25% over the base 988K model. That can increase to as much as 49% in tough face-loading applications.

DRIVEN TO LOWER EMISSIONS

THE **GREATER FUEL EFFICIENCY OF THE 988K XE** REDUCES HARMFUL GREENHOUSE GAS EMISSIONS COMPARED TO OTHER LOADERS.

The difference is as much as the emissions **13.5 CARS** or nearly **10 HOUSES** produce in one year.



Source - 988, Cat® Production Study, Jan 2017, TPG
<https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator>

TECHNOLOGY DESIGNED TO DO MORE

BUILT FOR GREATER PRODUCTIVITY



ELECTRIC DRIVE INCREASES PRODUCTIVITY UP TO 10%

The 988K XE's optimized electric drive requires no shifting and increases productivity during load-and-carry applications by up to 10%.

UP TO 10% INCREASE IN DOWNGRADE SPEED

Engine improvements increase downgrade speed by up to 10% and automatic retarding controls help maintain speed on grade.

UP TO 15% IMPROVED CYCLE TIMES WITH NEW TECHNOLOGY

With optional Operator Coaching, cycle times are improved up to 15%, and bucket fill factor is increased up to 10%. New Autodig features help optimize the dig portion of every cycle, with up to 10% improvement, 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 988K XE 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 with less fuel burn, providing consistent performance and better control. The optimized pump control produces hydraulic oil flow that is proportionate to implement lever movement. The PFC system also provides improved bucket feel and control through increased hydraulic response.

ELECTRO HYDRAULIC SYSTEMS BOOST PRODUCTIVITY

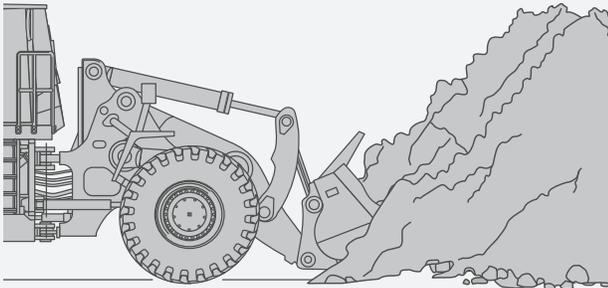
With the 988K XE's electro hydraulic controls, operators have the precise maneuvering control that leads to excellent productivity. Electronically controlled hydraulic cylinder stops and easy-to-use soft detent controls make precise movements simple and comfortable. A load-sensing steering system with 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 improves the stability of the machine and allows faster, more precise maneuvering.

15% FASTER CYCLE TIMES AND 10% BETTER BUCKET FILL FACTORS

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

New Go-Pedal with three dynamic braking levels gives operators easier single right-hand pedal operation.

STEERING AND TRANSMISSION INTEGRATED CONTROL (STIC™) MAXIMIZES RESPONSIVENESS

Though the 988K XE's electric drive does not shift in the traditional sense, the system is equipped with virtual gears to enable easier machine controllability. The STIC™ system combines virtual gear selection and directional control into a single lever, delivering maximum responsiveness and control.

AUTODIG OPTIMIZES PERFORMANCE

New optional Cat Autodig features simplify the digging phase to help increase dig cycle optimization by up to 10%. Further 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. This available option complements the already standard Tire Slip Prevention.



CONTROLS THAT RAISE PRODUCTIVITY
ACHIEVE MORE WITH NEW SYSTEMS

BEST-IN-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 make cab entry and seat adjustment easier.



PREMIUM PLUS SEAT

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 988K XE's cabin remains comfortable at all times. Isolated cab mounts reduce vibration, while filtered, pressurized air and automatic climate control maintain an agreeable atmosphere. A floor storage tray keeps items out of the operator's way.



LOW OPERATOR SOUND LEVELS

Sound levels are lower than in previous models, and a newly redesigned STIC steering valve reduces steering noise by 47%.



TOTAL SAFETY FOCUS

KEEPING EVERY WORKER 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 jobsite.



🪜 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, and a rear-vision camera 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 HID or LED work lights are available as options.



⚡ VOLTAGE WARNING SYSTEM

A hazardous voltage lamp assures operators and maintenance personnel that the electric drive system is de-energized and the machine is safe to work on.

BUILT FOR THE TOUGHEST CONDITIONS

ROBUST STRUCTURES



A STRONG LEGACY

The 988 series has proven durable and reliable for nearly 60 years, and the 988K XE is 90% identical to the well-respected 988K.

STRONG STRUCTURES

A full box-section rear frame resists 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. The greased pin design of the front linkage pin joints help 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 worksite visibility.

PROTECTED ELECTRONICS

The 988K XE's powered electronics feature solid state components to maximize durability in tough operating conditions and are sealed for total protection from weather. They are also liquid cooled to maximize heat protection and ensure long service life.

A PROTECTED POWER TRAIN

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 preserves engine life and durability.

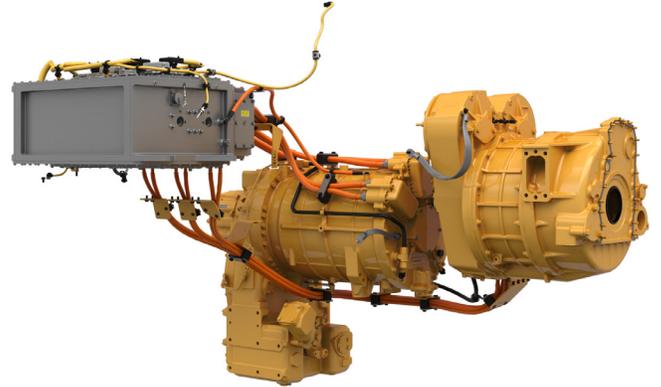
BUILT FOR LONG LIFE

SYSTEMS ENGINEERED TO MAXIMIZE YOUR RETURN ON INVESTMENT

The 988K XE is designed so that major components require less maintenance and fewer consumables and last twice as long as the equivalent in machines with mechanical transmissions.

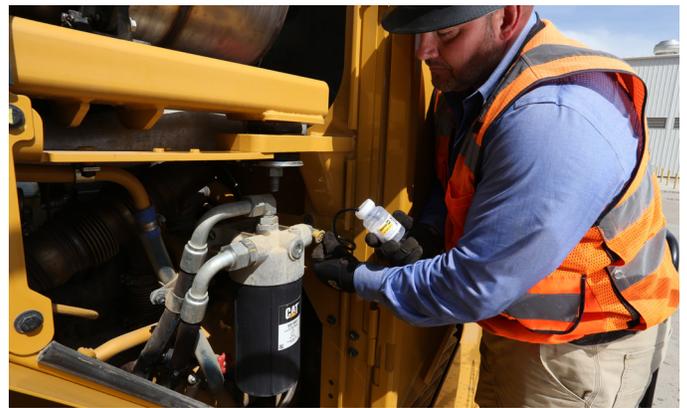
FEWER MOVING PARTS, LESS DOWNTIME

The electric drive systems of the 988K XE have fewer moving parts than mechanical torque converters and transmissions and have much longer maintenance intervals.



POWER TRAIN THAT MAXIMIZES YOUR INVESTMENT

The electric drive system increases engine life, extending the time between power train rebuilds, and helping reduce rebuild cost. The drive motor, generator, and inverter are highly durable and built to last through the second engine's life.



CAT TECHNOLOGY AND SUPPORT

System notifications from the Vital Information Management System (VIMS™) allow your operators and technicians to resolve problems before failure, helping reduce downtime and maintenance costs. You'll also have the full backing of Caterpillar's legendary support system: preventive maintenance programs, guaranteed maintenance contracts, excellent parts availability, and a worldwide dealer network. Genuine Cat remanufactured parts will lower your costs and further reduce the environmental impact of the machine over its service life.



CONSUMABLES LAST LONGER, REDUCING COSTS

With the 988K XE's advanced electric drive system, **power train oil lasts twice as long, and filters last 4 times as long.**

THAT MEANS LOWER COSTS FOR YOU AND REDUCED ENVIRONMENTAL IMPACT.

POWER TRAIN OIL

988K

988K XE

2x

FILTERS

988K

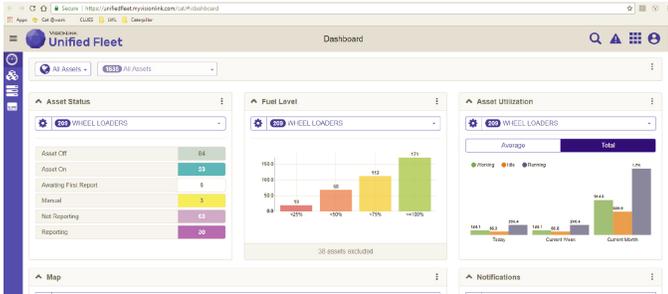
988K XE

4x

THRIVE WITH CAT TECHNOLOGY

SMART SYSTEMS THAT SAVE YOU MONEY

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



UPGRADED TOUCHSCREEN WITH VIMS™

The improved touchscreen and user interface allow intuitive operation and easy navigation. VIMS 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)

This fully integrated feature allows operators to monitor tire inflation, keeping it optimized for fuel efficiency and best grip. Using the cab Information Display, the operator can quickly see the current pressure settings and temperature of each tire.



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 speed the loading cycle.

*Not legal for trade.



ROCK BUCKETS



HEAVY-DUTY ROCK BUCKETS



GENERAL PURPOSE BUCKETS



COAL BUCKETS

TOOLS TO GET EVERY JOB DONE AND LOWER YOUR COSTS

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

- Each bucket is designed to make moving the appropriate material easy and efficient, and each is engineered with special features that increase durability and service life.
- Cat Advansys™ Ground Engaging Tools (GET) give you even more ability to adapt and specialize for higher profitability. These modular tips 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™ 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.

BUCKET GROUND ENGAGEMENT TOOLS

TOUGH ENGINEERING THAT MOVES MORE

CapSure™ Sidebar Protector

MAWPs – on Side and Bottom

Base End Edge Protector

Edge Protection Options

CapSure Tip Options

CapSure Shrouds

Half Arrow Segment

Heavy Duty Tip

Heavy Abrasion Tip

Coal Tip

Heavy Penetration Tip

Please check out our Parts Catalog for more GET options.



THE 988K XE MILLYARD ARRANGEMENT

WORLD-CLASS EFFICIENCY AND DURABILITY

THE PERFORMANCE YOU NEED AT A LOWER COST PER TON



PROVEN DESIGN THAT LOWERS YOUR COSTS

The 988K XE Millyard uses all the highly durable structures, the advanced controls, and the efficient, long-life power train of the standard machine but provides the perfect tools and systems for forestry operations. This means lower maintenance and fuel costs with higher productivity.



ADDED STRENGTH TO MOVE 20% 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. Up to 20% more lift capacity and 26% more tilt capacity over the standard 988K XE.



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.

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 ³	
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.
- 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			
Bucket Range	4.7-13.0 m ³ 6.2-17.0 yd ³		

TRANSMISSION							
Transmission Type				Cat switched reluctance electric 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 Sharing		
Lift/Tilt System Pumps	Variable displacement 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		

SERVICE REFILL CAPACITIES			
Fuel Tank	555 L	147.0 gal	
DEF Tank	33 L	8.7 gal	

- All nonroad Tier 4 Final/Stage V diesel engines are required to use:
 - The machine has the flexibility to run on either ultra-low-sulfur diesel fuel (ULSD with 15 ppm of sulfur or less).
 - Cat engines are compatible with the following renewable, alternative, and biodiesel* fuels that reduce greenhouse gases on a lifecycle basis:
 - Up to B20 biodiesel (FAME) **
 - Up to 100% HVO and GTL renewable fuels
- *Refer to guidelines for successful application. Please consult your Cat dealer or “Caterpillar Machine Fluids Recommendations” (SEBU6250) for details.
- **Engines with aftertreatment devices can use up to B20. Engines with no aftertreatment devices can use higher blends, up to B100.
- Cat DEO-ULS™ or oils that meet the Cat ECF-3, API CJ-4, and ACEA E9 specifications are required.
- Only use DEF that meets ISO 22241-1 standards.

DIMENSIONS					
	Standard Lift		High Lift		
Ground to Top of 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	

- 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	
	Standard
Operator Sound Level (ISO 6396:2008)	72 dB(A)
Machine Sound Level (ISO 6395:2008)	109 dB(A)

- 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.
- 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.

STANDARD & OPTIONAL EQUIPMENT

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

OPERATOR ENVIRONMENT	STANDARD	OPTIONAL
Air conditioner	•	
Cat® Detect, object detection system		•
Cat Vision, rear vision camera system	•	
Cab precleaner		•
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	•	
Cat Production Measurement		•
Cat Production Measurement ready	•	
Heater, defroster	•	
Horn, electric	•	
LED warning strobe		•
Lights, directional	•	
Lunchbox, beverage holders	•	
Mirrors, rearview (externally mounted)	•	
Radio, AM/FM/CD/MP3 Bluetooth® with Satellite Sirius		•
Radio, CB ready	•	
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	•	
Seat belt minder	•	
Seat belt, retractable, 76 mm (3 in) wide	•	
STIC™ System	•	
UV glass	•	
Virtual gear indicator	•	
Wet-arm wipers/washers (front and rear) – intermittent front and rear wipers	•	
Window pull-down visor		•
POWER TRAIN	STANDARD	OPTIONAL
Antifreeze -50°C (-58°F)		•
Automatic retarder controls	•	
Brakes, oil-cooled, multi-disc, service/secondary	•	
Case drain screens	•	
Cat Integrated Powered Electronics	•	
Cat SR drive motor	•	
Cat SR generator/pump drive	•	
Crankcase guard		•
Electro hydraulic parking brake	•	
Engine block heater 120V or 240V		•
Engine brake, SEA		•
Engine, C18 MEUI™ diesel, turbocharged/aftercooled	•	
Engine oil change system, high speed, Wiggins		•
Ground level engine shutoff	•	
High ambient cooling – software		•
Turbine precleaner, engine air intake	•	
Radiator, Aluminum Modular Radiator (AMR)	•	

POWER TRAIN (CONTINUED)	STANDARD	OPTIONAL
Starting aid, ether, automatic	•	
Throttle lock, electronic	•	
Manual switch and automatic fuel priming	•	
ELECTRICAL	STANDARD	OPTIONAL
Alarm, back-up	•	
Alternator, single 150 amp	•	
Converter, 10/15 amp, 24V to 12V	•	
Hazardous voltage lamp	•	
Lighting system (halogen, work lights, access and service platform lighting)	•	
Starting and charging system, 24V	•	
Starter emergency start receptacle	•	
Starter lockout in bumper	•	
Transmission lockout in bumper	•	
ADDITIONAL EQUIPMENT	STANDARD	OPTIONAL
Autodig feature, Tire Slip Prevention	•	
Autodig features, Auto Set Tires & Lift Stall Prevention		•
Autolube with auto shutoff		•
Automatic bucket lift kickout/positioner		•
Base machine price includes a rim allowance	•	
Cat Clean Emission Module (CEM)	•	
Cold weather starting (extra starter plus two batteries)		•
Doors, service access (locking)	•	
Ecology drains for engine, radiator, hydraulic tank	•	
EZ Clean cooling system		•
Fast fill fuel system (Shaw-Aero)		•
Front and rear roading fenders		•
Hitch, drawbar with pin	•	
Hydraulic, steering and brake filtration/screening system	•	
Hydraulically driven demand fan	•	
Load and carry counterweight		•
Oil sampling valves	•	
Operator Coaching		•
Premixed 50% concentration of extended life coolant with freeze protection to -34°C (-29°F)	•	
Rear access to cab and service platform	•	
Steering, load sensing	•	
Tire Pressure Monitoring System		•
Toe kicks	•	
Transmission brake	•	
Vandalism protection caplocks	•	
Wheel chocks		•
OPTIONAL CONFIGURATIONS	STANDARD	OPTIONAL
Aggregate Handler		•
Load and Carry		•
Millyard		•

