



65% MORE LIFT FORCE

- » Noticeable power and performance inside the pile
- » Quick loading cycles

FACTORY-READY FOR CAT MINESTAR™ SOLUTIONS

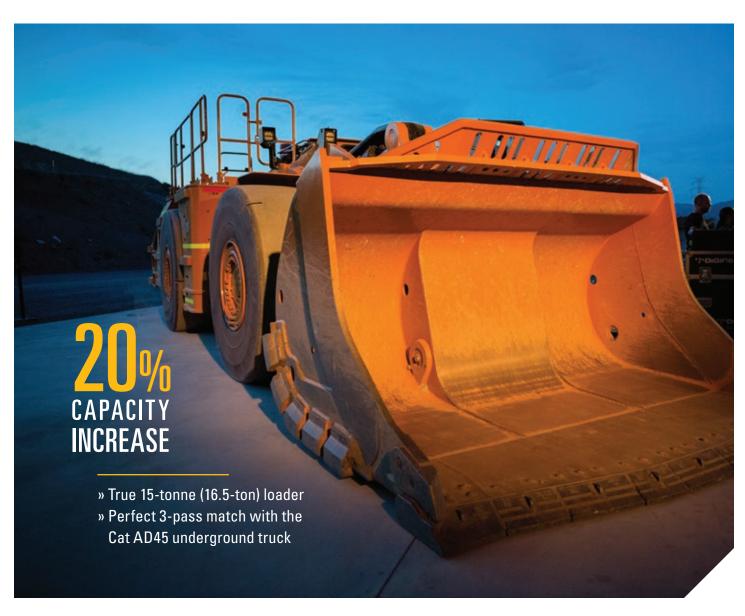
- » Multiple levels of autonomy
- » Up to 40% increase in machine utilization with Command for underground

34% MORE FUEL EFFICIENT

- » Cat C13 engine
- » Ultra-efficient hydraulics

3 ENGINE OPTIONS TO MEET INDIVIDUAL VENTILATION REQUIREMENTS

- » U.S. EPA Tier2/EU Stage II VR (Ventilation Reduction)
- » U.S. EPA Tier 3/EU Stage IIIA
- » EU Stage V



LOAD MORE EVERY CYCLE

The R1700 delivers superior productivity. It hauls 20% more material than its predecessor and is highly aggressive in the pile. With each cycle, it loads, climbs, hauls and dumps faster.

BETTER DIGGING

The R1700 delivers noticeable power and performance inside the pile. The state-of-the-art hydraulic system delivers 65% more lift force than previous versions and 24,190-kg lift and tilt breakout. Hydraulic system that provides significantly more breakout force during digging, and that gives the machine faster dumping times at the other end of the cycle. The front linkage cylinders have been repositioned for better mechanical lift. AutoDig helps new operators be productive faster and reduces fatigue for all operators.

BIGGER PAYLOAD

Thanks to a 20% capacity increase from previous models, the R1700 is a true 15-tonne (16.5-ton) loader for both load and haul and truck loading applications.

FAST CYCLE TIMES

The integrated ride control system gives operators confidence to travel at speeds above 5 km/h (3 mph) during load and carry operations for fast cycle times. And hydraulically actuated auto retarding improves cycle times as operators gain confidence and become more comfortable on downhill grades at faster speeds.





All new levels of power and performance for the R1700 start with the engine — the C13 — which is larger than the previous model. It's a heavy-duty performer with an in-line, 6-cylinder configuration that is turbo-charged and air-to-air aftercooled. In the R1700, this engine is set at a horsepower rating of 257 kW or 345 hp at 2,050 rpm for Stage V engines, and 269 kW or 361 hp at 1,800 rpm for engines that emit equivalent to Tier 3/Stage IIIA or Tier 2/Stage II VR (ventilation reduction).

This efficient and powerful engine delivers maximum loading and tramming performance in the most demanding mining applications. Complete system integration of the engine and transmission ensures fuel efficiency and smooth operation.

OPTIMIZED PERFORMANCE

The Mechanically Actuated, Electronic Unit Injection (MEUITM) high-pressure, direct injection fuel system electronically monitors operator demands and sensor inputs to optimize engine performance. Air-to-air aftercooling provides improved fuel economy by packing cooler, denser air into cylinders for more complete combustion of fuel and lower emissions.

BETTER SPEED ON GRADE

The Cat transmission on the R1700 is newly resized for durability. It is now governed by our APECS software, which allows the transmission to comfortably shift under higher torque conditions. This makes it possible for the machine to climb grades more quickly by reducing lost momentum between shifts, and it can potentially allow the loader to climb in a lower gear saving fuel. This will be determined by your mine conditions.

In addition, speed on grade is improved thanks to a new lock-up clutch torque converter. The same component used in our larger LHD range, it has been sized for extreme durability. It engages automatically as the machine shifts into second gear.

AFTERTREATMENT OPTIONS

Aftertreatment for the Stage V engine configuration is chassis-mounted for convenience and includes a Diesel Emission Fluid (DEF) tank sized to match the 12-hour capacity of the fuel tank. Aftertreatment components are carefully guarded and heat wrapped. The system uses regeneration to manage emissions inside the Clean Emissions Module (CEM). Regeneration can be set to automatic; the operator is informed when regeneration is happening, and the machine takes care of the process while continuing to operate.



The R1700 underground loader has been designed with operators in mind. The operator station is ergonomically designed for total machine control in a comfortable, productive and safe environment. All controls, levers, switches and gauges are positioned to maximize productivity and minimize operator fatigue.

DESIGNED FOR COMFORT

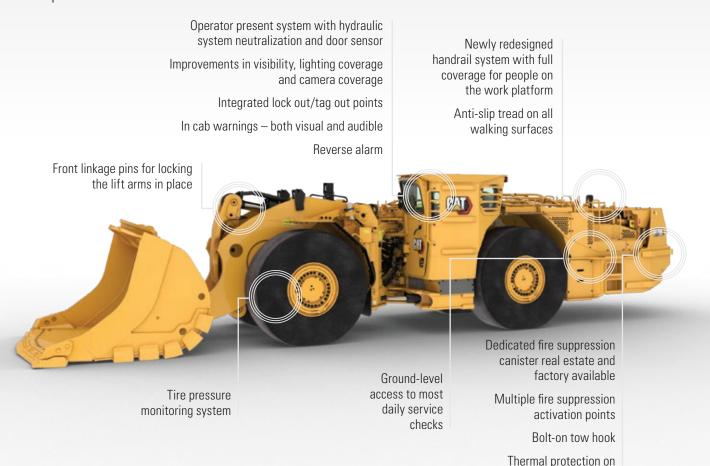
The cab on the R1700 maintains the same footprint as previous generations; however, the interior has been completely redesigned with new space allotment for the operator and all new electronic components. The operator sits slightly lower inside the cab for improved ride quality and head room.

Ride control is now fully integrated into the hydraulic system and engages automatically as the machine goes above 5 kph (3 mph).

- + Adjustable padding for the operator's knees and additional foot-space during pedal operation
- + Climate control standard with pressurized enclosed option
- + All new HVAC coverage with improved airflow, greater defrosting coverage and reduced noise levels
- + Improved ergonomics on all controls, plus easy-to-use joystick controls
- + Isolation-mounted cab to reduce vibration transfer to the operator
- + Optional dual pane windows for reduced noise and improved temperature control in extreme ambient conditions
- + Cab pressurization to keep dust out

DESIGNED FOR SAFETY

With two emergency exits, improved camera options, in-cab fire suppression activation and more, the R1700 is built with the safety of your people in mind. The operator present system door sensor and latch sensor help ensure the safety of anyone working in, on or around the machine by preventing startup with no operator in the cab.



DESIGNED FOR CONTROL

The R1700 features auto retarding that is hydraulically actuated. As the name implies, the system comes on automatically when the operator's foot is lifted from the throttle. This feature improves cycle times as operators gain confidence and become more comfortable on downhill grades at faster speeds.

DESIGNED FOR RESPONSIVENESS

During the load or dump cycle, the harder the operator pushes the controls, the faster the machine responds. Performance is also enhanced by automated loading of the bucket with the Auto Dig feature. In addition, the steering system is pilot controlled to provide more acute feel for the operator as they maneuver in tight places.

INFORMATION DISPLAYS

aftertreatment components

A high-resolution display gives operators real-time system information in 11 different languages, keeping them up to date on performance and machine status even before the motor starts. The display can be integrated into your mine's communications network and comes ready for Product Link™ Elite data analysis and Cat MineStar™ connectivity.

OPTIMIZED BUCKET

Ten bucket options — including six dump bucket sizes, one light material bucket, one ejector bucket option and two bolt-together options — are available for the R1700. And all have been designed and manufactured to match their performance capabilities.

Performance has never been better. We added strength to match improved breakout force and stiffness to the inside torque tube for torsional rigidity. The result is a patented bucket design that offers load path management for long wear life, increased throat angle for easier loading in rock, and improved tire coverage for cleanup and tire protection.

Bolt-Together Convenience

Changing or equipping a new bucket is a complicated process. Just getting a complete bucket into the mine can be difficult. Transporting it from the entrance to the face involves carriers or forklifts that are needed for other tasks, and welding together the pieces requires hours of highly skilled labor.

Two of the R1700's bucket sizes—the 6.8 m³ (8.9 yd³) option and the 7.5 m³ (9.8 yd³) option—are available in a bolt-together option created to solve these problems. It cuts replacement times by up to 75%.





FLEXIBLE AND RELIABLE GROUND ENGAGING TOOLS

Caterpillar offers three types of Ground Engaging Tool (GET) options for the R1700, so you can customize your machine to meet your site-specific needs and fit with your overall maintenance strategy. Whether you choose modular weld-on, Bolt-On-Half-Arrow (BOHA) or the Durilock Lip Shroud system, Cat GET helps you achieve the productivity and the bucket life you desire.

In addition, Cat Bucket Pro can help you manage GET performance and optimize bucket lifecycle costs. All Cat GET are built for strength and long life, so you spend less time replacing shrouds.

BOLT-ON HALF ARROW GROUND ENGAGING TOOLS

For the entire underground loader line, Caterpillar now offers Bolt On Half Arrow ground engaging tools (GET) for bucket edges. The system is designed for high abrasion applications where weld-on GET experience high wear rates. With a proven and reliable retention system, the bolt-on GET offer more wear material than standard weld-on GET, and the bolt-on design enables fast and easy removal and replacement. Despite additional wear material, the low-profile front edge eases pile penetration and promotes fast bucket loading.

BOHA GET can reduce changeout times while extending the life of traditional weld-on GET option—allowing the R1700's new bucket design to perform even better in heavy, hard-digging rock conditions. BOHA GET are bolted onto the bucket instead of welded—shortening replacement time from as much as 40 hours to as little as one or two. And with no need for welding, they are easier to replace.

DURILOCK™ LIP SHROUD SYSTEM

The new Durilock Lip Shroud system for underground loader buckets is a flexible, productive option for all Cat underground LHDs. This new system features hammerless installation and maintenance-free retention of GET. Three interchangeable shroud styles allow you to configure your loader to its current application needs — without stopping to change the base edge or retention system.

- + Standard Wedge shape for general production and development
- + Abrasion Contoured to put more material on the shroud base
- + Penetration Less leading-edge material to easily penetrate dense material





Reduced downtime and maintenance costs are key contributors to the R1700's ability to achieve the lowest possible owning and operating costs. With more robust structures, modular and longer-lasting components, parts commonality, more accessible maintenance areas and extended service intervals, the R1700 can be maintained in less time for less money by fewer people — helping you lower cost per ton and keep your machines hard at work.

IMPROVED SERVICE ACCESS

All filter and key service tasks have been grouped into a centralized service section. The radiator guard swings open for ground-level access to the radiator, and oil coolers and the batteries are easily accessed just under the centralized service location.

MODULAR AND LONGER LIFE COMPONENTS

The R1700 features several components — like the HVAC system and the cooling system — as modular designs that can be removed from the machine as a single unit and slotted back into place as a single unit, allowing the machine to get back into service much more quickly. Similarly, all machine ECMs are in a single, well protected and sealed box accessible from the work platform.

BUILT TO BE REBUILT

The R1700's frame, powertrain and components are all built to be rebuilt—using new, remanufactured or rebuilt parts and components—so you can take advantage of multiple lives of like-new performance at a fraction-of-new price. Reused or remanufactured components can deliver additional cost savings.



STRONG AND ROBUST

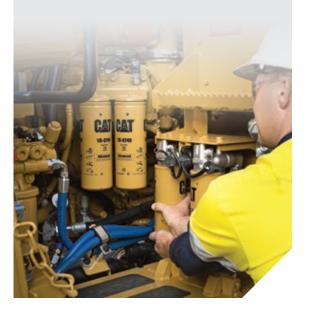
The R1700 is a strong, robust machine — which is clearly reflected in the design of its structures. Using the latest engineering design and validation tools, we've given this frame strength where it needs it most, and saved weight in other locations.

The front frame section has a new four plate design with a new, fully integrated front axle support casting at its base. This new casting absorbs greater impact, vibration and tram loads that come with the growth of the machine capacity and weight.

The lift arms on the R1700 are visibly stronger with additional steel thicknesses in key areas. This new design allowed us to widen access to service points to the front frame and hydraulic components. Bucket linkage, cylinder attachment points and cylinder sizes have been updated to greatly improve the mechanics of loading.

DOWNTIME-REDUCING FEATURES

- + Lubrication options fitted from the factory
- + Brake release and tow hook option that allows you to remove the machine and disengage the park brake.
- + Redesigned hitch with more space for technicians and clean & simplified hydraulic routings
- + Sealed electrical connectors, which lock out dust and moisture
- + Hardened and sealed electronics and ECMs
- + Scheduled Oil Sampling, which helps keep minor repairs from becoming major ones
- + Added remote mounted test ports for testing and troubleshooting
- Fuel tank that bolts in to the frame, allowing it to be easily cleaned or replaced if damaged



ENHANCED BY TECHNOLOGY

Cat[®] MineStar[™] Solutions for underground

The R1700 leaves the factory ready for MineStar, the mining industry's most comprehensive suite of technology offerings.

BOOST SAFETY, PRODUCTIVITY & UTILIZATION THROUGH AUTONOMOUS OPERATION

Integrating the industry-proven Cat® MineStar™ Command for underground, the R1700 offers multiple levels of autonomy through Caterpillar's scalable autonomous solution, including line-of-sight remote, teleremote operation, and co-pilot, which requires only directional input from the operator. This building block approach allows you to capture value at your most economic entry point while allowing scalability as technology maturity grows.

Command for underground enables remote operation of load-haul-dump machines—from simple line-of-sight to full autonomy—providing immediate productivity and efficiency gains and improving safety. Command allows you to relocate operators to a safe, comfortable location underground or

on the surface. Automation improves accuracy of tunnel navigation, boosting productivity and reducing machine damage caused by contact with drive walls.

FULLY AUTONOMOUS OPERATION

The addition of three new controls enable fully autonomous operation of the R1700.

- + Auto Pilot, which oversees tramming of the machine without input between the load and dump points.
- + Auto Dump, which allows the machine to dump into a fixed infrastructure without operator input.
- + Auto Dig, which enables autonomous digging and bucket loading.

GET ESSENTIAL OPERATIONAL INFORMATION

with MineStar Fleet for underground

Timely access to accurate information is key to running a productive mine. Fleet for underground provides real-time visibility to cycle time, payload, machine position and other key operational parameters and automatically records and tracks data up and down the value chain. Fleet can help you better understand machine usage, improve shift changes, manage tasks, maximize operational efficiency and more.

MAKE INFORMED DECISIONS AND OPTIMIZE YOUR MAINTENANCE STRATEGY

with MineStar Health

Machine health data is critical to helping you improve the reliability of your mining equipment, reduce unplanned downtime and prevent costly failures. MineStar Health products and services enable you to collect and transmit equipment data that enables proactive maintenance services and predictive equipment analysis. By staying connected with your machines, you can head off small problems while they're still small and keep your machines running as efficiently as possible as long as possible.



ADDRESS RISKS TO PEOPLE AND ASSETS

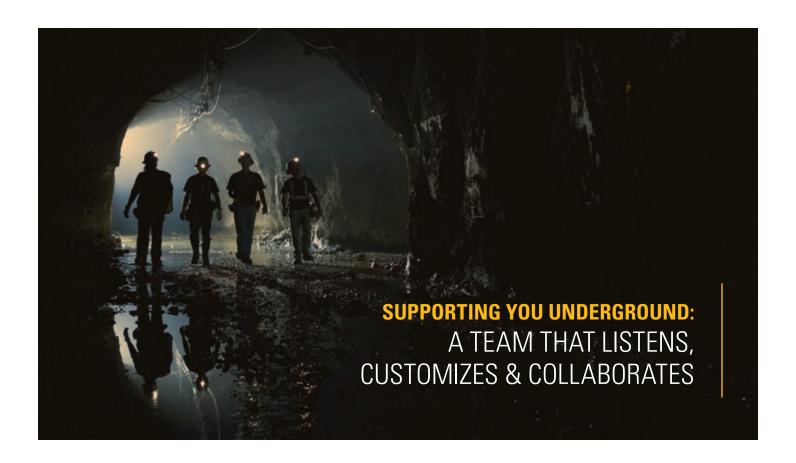
with MineStar Detect for underground

Detect prevents unintended interactions between people and assets by letting you "see" in the dark. Using a high-precision peer-to-peer proximity detection system coupled with a revolutionary communications and tracking network, Detect can prevent incidents and track people and machines—wherever they are underground—in real time and with no reliance on mine infrastructure. It provides operators continuous awareness of their surroundings to sub-meter accuracy, along with the location and status of all personnel and assets.



Product Link™ Elite system boosts connectivity and increases the availability of data provided by the R1700. The on-board hardware enables the loader to collect and transmit information into locally hosted or cloud-hosted applications such as MineStar Health Office, Health Equipment Insights, Equipment Care Advisor or Vision Link. The system opens the door for industry-leading equipment health and condition monitoring services from Caterpillar and your local Cat dealer.

Governments and regulatory agencies mandate that you establish and follow environmentally sound policies and practices as you meet the demand for mined materials. We're focused on doing our part to make sure our machines help you meet those regulations. Every piece of Cat equipment is designed to be better and do better. Because MINING the better we mine, the better the world can be. The R1700 can be equipped with three engine emission — FOR A options — EU Stage V, Tier 2 and Tier 3 — which reduce emission of NOx and particulates. And the optional **BETTER** Ventilation Reduction (VR) package incorporates selective engine hardware and software to further reduce diesel particulate matter in the engine exhaust. **WORLD** We are also committed to ongoing research and development into engine compatibility with diesel fuel blended with lower-carbon intensity fuels such as biofuels and renewable fuels, plus power options like electrification. Underground mining continues to be an early adopter of sustainable mobile equipment solutions, based on the need for a clean and safe working environment. In addition, we rebuild and remanufacture parts, components and complete machines to increase the lifespan of equipment — reusing instead of discarding, conserving energy, reducing waste, keeping nonrenewable resources in circulation for multiple lifetimes and minimizing the need for new raw materials. We're also listening to our customers and investigating ways we can help them in their efforts to recycle end-of-life machines and components. Retrofits and upgrades enhance and improve older machines to incorporate efficiency improvements and emission reductions, and to keep them in production longer to conserve energy, lower emissions and minimize the need for raw materials.



YOUR PARTNER FOR THE COMPLETE EQUIPMENT LIFECYCLE

No one knows more about how to get the most from a piece of Cat equipment than Caterpillar and your local Cat dealer. Our partnership starts with validation and testing of the machine and continues through the complete lifecycle of the loader.

The one-of-a-kind Cat dealer support network delivers expert service, integrated solutions, after-sales support, fast and efficient parts fulfillment, world-class rebuild and remanufacturing capabilities and more.

Cat dealers operate as nearly 200 local businesses—each one fully embedded in and committed to the geographic area it serves. That means you work with people you know, who know your business, and who respond on your timeframe.

Caterpillar and Cat dealer personnel will partner with you on site to improve the performance not only of your LHD but of your overall loading and hauling operation.

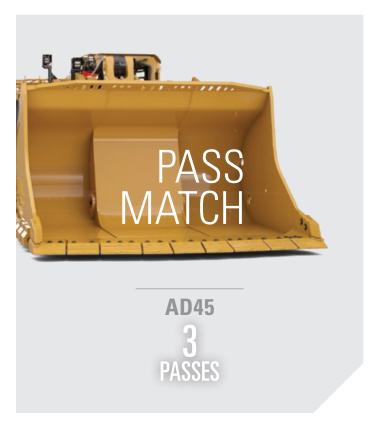
You'll have access to parts and service, as well as technicians who are focused on helping you optimize repairs to keep machines productive. And we help with training to ensure your operators have the skills and knowledge they need to work as efficiently and productively as possible.

We also work alongside you to ensure you achieve maximum value throughout the life of your equipment. Together with our Cat dealer network, we customize service offerings to provide a maintenance solution that fits your operation—whether you want to perform the majority of service yourself, or you're looking for an onsite partner to manage your maintenance organization. We're also consultants who can help you make smart decisions about buying, operating, maintaining, repairing, rebuilding and replacing equipment.

TECHNICAL SPECIFICATIONS

See cat.com for complete specifications.

ENGINE		
Engine Model	Cat® C13	
Engine Power – Stage V Engine – ISO14396:2002	257 kW	345 hp
Engine Power – Tier 3/Stage IIIA Equivalent Engine – ISO14396:2002	269 kW	361 hp
Engine Power – VR Engine – ISO14396:2002	269 kW	361 hp
TRANSMISSION		
Forward – 1st	4.9 km/h	3.0 mph
Forward – 2nd	9.2 km/h	5.7 mph
Forward – 3rd	16.4 km/h	10.2 mph
Forward – 4th	28.8 km/h	17.9 mph
Reverse – 1st	5.9 km/h	3.7 mph
Reverse – 2nd	10.5 km/h	6.5 mph
Reverse – 3rd	18.7 km/h	11.6 mph
Reverse – 4th	32.5 km/h	20.2 mph
OPERATING SPECIFICAT	IONS	
Rated Payload	15,000 kg	33,069 lb
Gross Machine Mass – Loaded	62,739 kg	138,316 lb
Static Tipping Load Straight Ahead, Lift Arms Horizontal	37,747 kg	83,218 lb
Static Tipping Load Full Turn, Lift Arms Horizontal	31,586 kg	69,635 lb
Break Out Force (Lift and Tilt)	24,190 kg	66,137 lb
Bucket Capacity Range	5.7-8.6 m ³	7.5-11.2 yd ³



HYDRAULIC CYCLE	TIMES		
Raise Time	6.8 seconds		
Dump Time	3.3 seconds		
Lower, empty, float down	2.9 seconds		
Total Cycle Time	13.2 seconds		
MACHINE DIMEN	SIONS		
Dump Bucket (STD)	5.7 m³	7.5 yd³	
Bucket Width over Cutting Edge	2830 mm	111 in	
Height – Max Bucket Raised	5664 mm	223 in	
Height – Max Dump	4918 mm	194 in	
Height – Max Lift Bucket Pin	4108 mm	162 in	
Height – Dump Clearance at Max Lift	2477 mm	98 in	
Height – Digging Depth	45 mm	2 in	
Height – Ground Clearance	393 mm	15 in	
Height – Top of Rear Guard	1987 mm	78 in	
Height – Top of ROPS	2541 mm	100 in	
Length – Overall (Digging)	11 098 mm	437 in	
Length – Overall (Tramming)	10 806 mm	425 in	
Length – Wheelbase	3680 mm	145 in	
Length – Front Axle to Hitch	1840 mm	72 in	
Length – Rear Axle to Bumper (with auxiliary lines)	3552 mm	140 in	
Length - Reach	1712 mm	67 in	
Width – Overall Tire	2767 mm	109 in	
Width – Machine without Bucket	2727 mm	107 in	
Width – Machine with Bucket	2860 mm	113 in	
Recommended Clearance Width	4000 mm	157 in	
Recommended Clearance Height	4000 mm	157 in	
TURNING DIMENSIONS			
Outside Clearance Radius	6857 mm	270 in	
Inner Clearance Radius	3139 mm	124 in	

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Outside Clearance Radius	6857 mm	270 in
Inner Clearance Radius	3139 mm	124 in
Axle Oscillation	8°	
Articulation Angle	44°	
TIR)EC	
LIN	ies	
Tire Size	26.5R25	

STANDARD AND OPTIONAL EQUIPMENT

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

POWERTRAIN		
	Standard	Optional
Brakes, full hydraulic enclosed wet multiple-disc (SAFR)	Х	
Cat C13 ATAAC Diesel Engine, 6-Cylinder	Х	
Engine Options (choose from):		
Engine, Ventilation Reduction (VR)		Х
Engine, Stage 3		х
Engine, Stage V		Х
Radiator, High Efficiency		х
Reversible Steering		Х
Torque converter with automatic lock up clutch	Х	
Transmission:		
Electronic Clutch Pressure Control (ECPC)	Х	
Automatic planetary power shift (4F/4R)	Х	
Transmission Neutralizer	Х	
Traction control	Х	

ELECTRICAL		
	Standard	Optional
12V Power Supply in Cab	Х	
Alternator, 150-amp	Х	
Battery Disconnect Switch, Ground Level	Х	
Diagnostic Connector	Х	
Electric Starting, 24V	Х	
External LED Lighting System, Front, Rear, Stop - brake - Tail light dual LED	Х	
Low Maintenance Batteries	Х	
Receptacle group, auxiliary start	Х	
Truck loading light, Service Bay light		х

TECHNOLOGY		
	Standard	Optional
Command for Underground*– Machine Pre-Requisites		Х
Autodig, Underground		Х
Cat Production Measurement (CPM) Payload Weighing System		Х
Product Link Elite - machine health and information	Х	
Tire monitoring		Х
* Please with your Regional Commercial or Te	chnology Repre	esentative

* Please with your Regional Commercial o	r Technology Representative	
prior to upgrading your machine to Comi	mand for Underground.	

OPERATOR ENVIRONME	NT	
	Standard	Optional
Automatic Brake Application (ABA)	Х	
Cab, ROPS and/or FOPS certified	Х	
Operators Station ROPS/FOPS Enclosed		Х
Camera, rear view		Х
Color Multi Purpose Display (CMPD)	Х	
Control units, roof mounted (with service panel access)	Х	
Electrohydraulic implement controls (single joystick)	Х	
Instrumentation/gauges	Х	
Light, warning, residual brake	Х	
Monitor, door latch	X	
Mounts, radio and speaker (x2)	Х	
Operator Presence System	Х	
Seat with inertia reel retractable seat belt	Х	
Secondary Steering System	Х	

OTHER STANDARD AND OPTIONA	L EQUIPMENT	
	Standard	Optional
Remote recover hook and bar		Х
Tire Arrangements (choose between):		
Tire, 26.5 X R25, VSMS2 Bridgestone		Х
Tire, 26.5 X 25, VSDL Bridgestone		Х
Rims (set of 4)	Х	
Bucket, Dump (5.7 m³/7.5 yd³)		Х
Bucket, various Sizes, Dump, Light Material, Ejector, Bolt Together		Х
GET and wear package options		Х
Centralised or Auto Lube systems		Х
Fast fill system		Х
Fire Suppression System – Ansul, Wet		Х
Handrails	Х	
Handholds and Handrails, quick release	Х	
Handrails, additional		Х
Lift arm postioner for return to dig	Х	
Ride Control System		Х



LOADER

For more complete information on Cat products, dealer services and industry solutions, visit us 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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