

R3000H

UNDERGROUND LOADER



Nominal Payload Capacity: 20 000 kg / 44,092 lb
Engine Power
VR Engine: 299 kW / 401 hp
Tier 3 Engine: 299 kW / 401 hp
Gross Machine Mass: 82 000 kg / 180,779 lb



**UNDERGROUND
CHALLENGES.**

**INNOVATIVE
SOLUTIONS.**

Underground hard rock mining presents special challenges when it comes to safe, efficient, productive operation — from environmental concerns and rising costs to communications and connectivity challenges. Even simple logistical issues become harder to manage as you dig deeper underground in search of new reserves.

But you want to do more than address these challenges. You want to work harder and turn those challenges into opportunities to improve.



At Caterpillar, we feel the same way. We're committed to listening to your challenges and collaborating with you to find new ways to improve the way you mine. From increasing productivity and reducing emissions to lowering operating costs and reducing maintenance and more, Cat® hard rock underground loaders and trucks are designed to help you meet your challenges head-on.

But we never stop looking for new ways to innovate and optimize. We continually improve our products and seek out new ways of mining, new ways to reduce impact, and new ways to get more out of game-changers like technology and automation.

No matter what you mine—or how far underground you mine it—you need an equipment provider that understands the unique problems you face, and that has years of experience in solving them. You need a partner like Caterpillar.



CAT® R3000H

UNDERGROUND LOADER



SUPER PRODUCTIVE AND BUILT TO LAST

Our largest underground loader, the Cat R3000H is a low-cost specialist. Designed for the largest underground mines, it's a super-productive, durable machine that delivers high performance and long life to lower cost per ton and overall cost of ownership.

Safety comes standard, with most safety features built in—including an Operator Present System that protects the machine and operator from uncontrolled machine movements.

Its 100% Caterpillar designed and manufactured powertrain components deliver top reliability and performance. And its durable frame and components combine with improved serviceability to deliver the high uptime you demand.

SAFETY-INFUSED DESIGN

- » Standard Operator Present system
- » Increased visibility
- » Improved access and egress
- » Safer service

UPDATED FOR MAXIMUM PRODUCTIVITY

- » Designed for the largest underground mines
- » Specialized in lowering costs

BUILT-IN POWER & PERFORMANCE

- » 100% Cat powertrain
- » Increased operator efficiency
- » Fast cycle times
- » Exceptional digging and lifting forces



LOAD MORE EVERY CYCLE

The R3000H is designed to maximize your operation's productivity. It's packed with features that speed up cycle times and increase operator performance.

EXCEPTIONAL DIGGING AND LIFTING

The R3000H features a productivity-boosting hydraulic system. High hydraulic flow rates offer responsive control and powerful digging and lifting forces, resulting in fast, efficient cycles. The large-bore lift and tilt cylinder gives it increased strength for high performance and durability in tough conditions. The operator can engage the service brakes and neutralize the transmission, maintaining high engine rpm for full hydraulic flow.

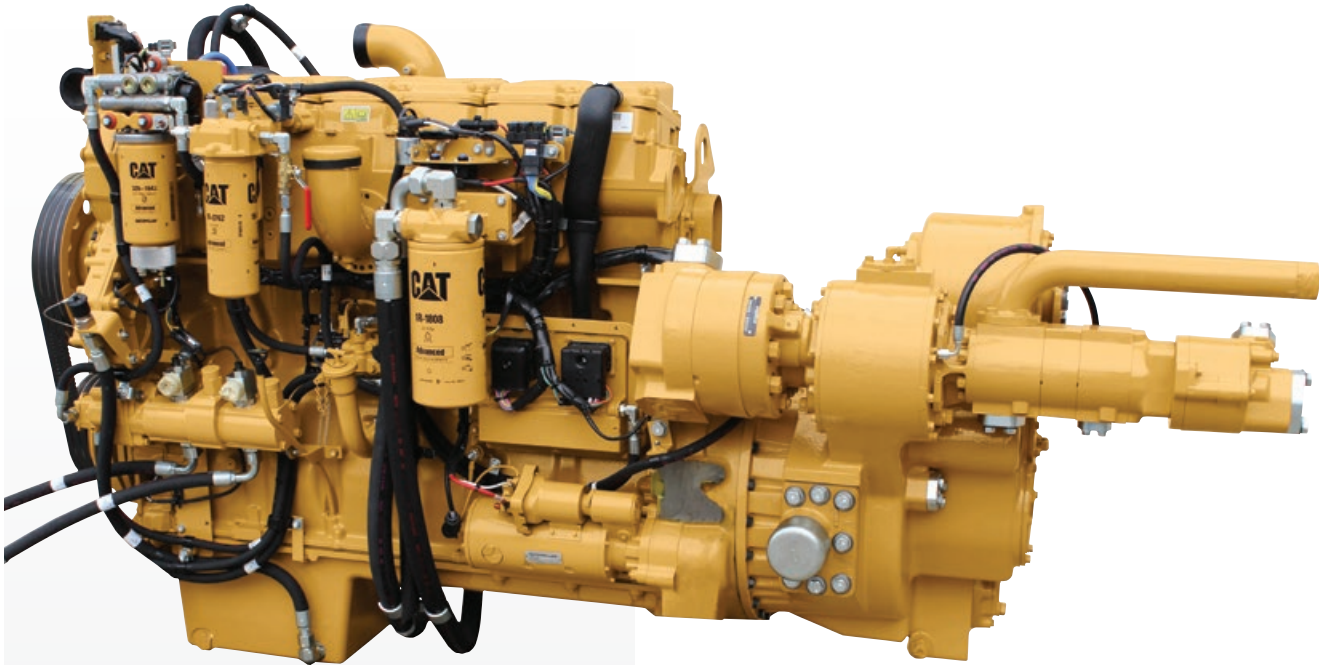
MAXIMIZED PAYLOAD

The LoadRite Payload Control System gives operators accurate, real-time updates on payload weight to help them reach maximum bucket capacity and reducing underloading.

INTEGRATED RIDE CONTROL

An optional ride control system uses a nitrogen-filled oil accumulator in the hydraulic lift circuit to act as a shock absorber for the bucket and lift arms. This results in reduced response to movement over rough ground, improving cycle times and load retention and enabling operators to travel at speeds above 5 km/h (3 mph) during load and carry operations.





POWERFUL & PRODUCTIVE

The efficient and powerful Cat C15 engine delivers maximum loading and tramping performance in the most demanding mining applications. It provides unequalled lugging force while digging, tramping and traversing steep grades. And the Cat four-speed planetary power shift transmission is matched with the engine to deliver constant power over a wide range of operating speeds. Torque rise effectively matches transmission shift points for maximum efficiency and fast cycle times. And the Torque Converter Lockup Clutch combines maximum rimpull while in torque converter drive with the efficiency and performance of direct drive when the lockup clutch is engaged.

OPTIMIZED PERFORMANCE

The Mechanically Actuated, Electronic Unit Injection (MEUI™) 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.

VENTILATION REDUCTION

The Cat C15 engine features the optional Ventilation Reduction (VR) Package, which incorporates selective engine hardware and software to minimize diesel particulate matter in the engine exhaust. Engines equipped with the VR Package feature a significant ventilation rate reduction, a decrease in fuel consumption and maintained or improved product performance. VR Package availability is subject to regional regulatory compliance. An Optional U.S. EPA Tier 3 and EU Stage III compliant engine is also available. A Cat Diesel Particulate Filter can be used with the VR engine package. The filter complements the VR engine by further reducing particulate matter in the exhaust.



A machine is only as productive as its operator, and the R3000H is built to give operators the tools they need to be as productive, safe and comfortable as possible.

DESIGNED FOR COMFORT AND SAFETY

The operator station is ergonomically designed for total machine control. All controls, levers, switches and gauges are positioned for maximum productivity and minimal fatigue. An optional sound-suppressed cab gives your people a quiet, secure working environment with fresh, pressurized, temperature-controlled air circulation.

EFFORTLESS CONTROL

The Steering and Transmission Integrated Control (STIC™) system allows operators to fully control the machine using a single controller. Simple side-to-side motion articulates the machine, while directional shifting is controlled by a three-position rocker switch. Gear selection is controlled by thumb-operated buttons.

SUPERIOR CONTROL

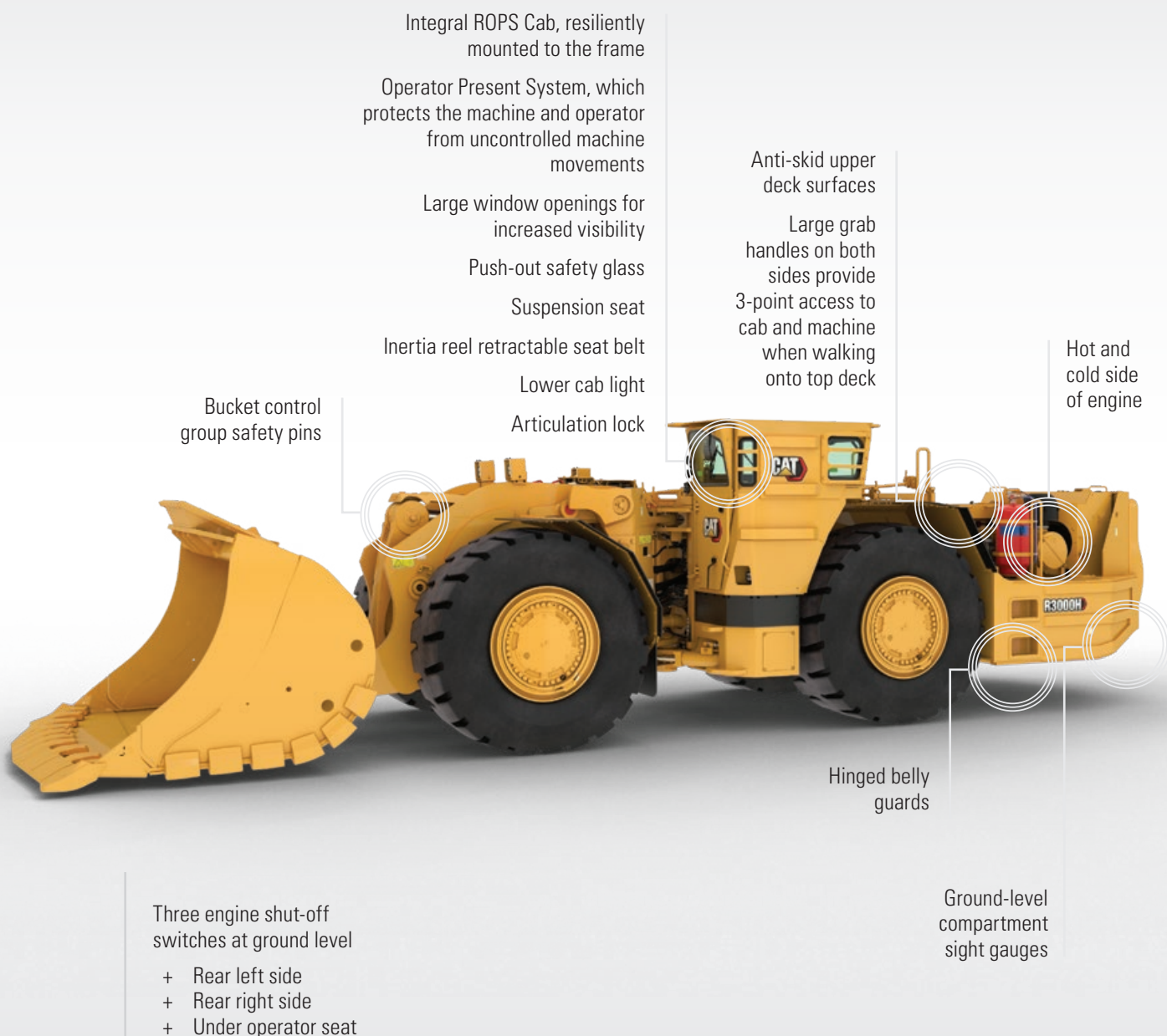
The four-corner oil-cooled braking system provides excellent control. The service brake system is actuated by modulated hydraulic pressure, while the parking brake function is spring-applied and fluid-released. This system ensures that the brake will function even if hydraulic pressure is lost.

EASY ACCESS TO INFORMATION

The Cat Electronic Monitoring System (EMS) gives operators and service technicians real-time access to critical machine data, making it easy to maintain peak production.

SAFETY-INFUSED

Your people are your top priority, and we've designed the R3000H to ensure the safety of everyone in your operation. It's packed with features that help it meet or exceed the most stringent safety standards.



A LOADER YOU CAN COUNT ON

Rugged Cat structures give the R3000H a durable, reliable backbone—resulting in a machine that can stand up to the harshest conditions of your mine.

BUILT TO BE REBUILT

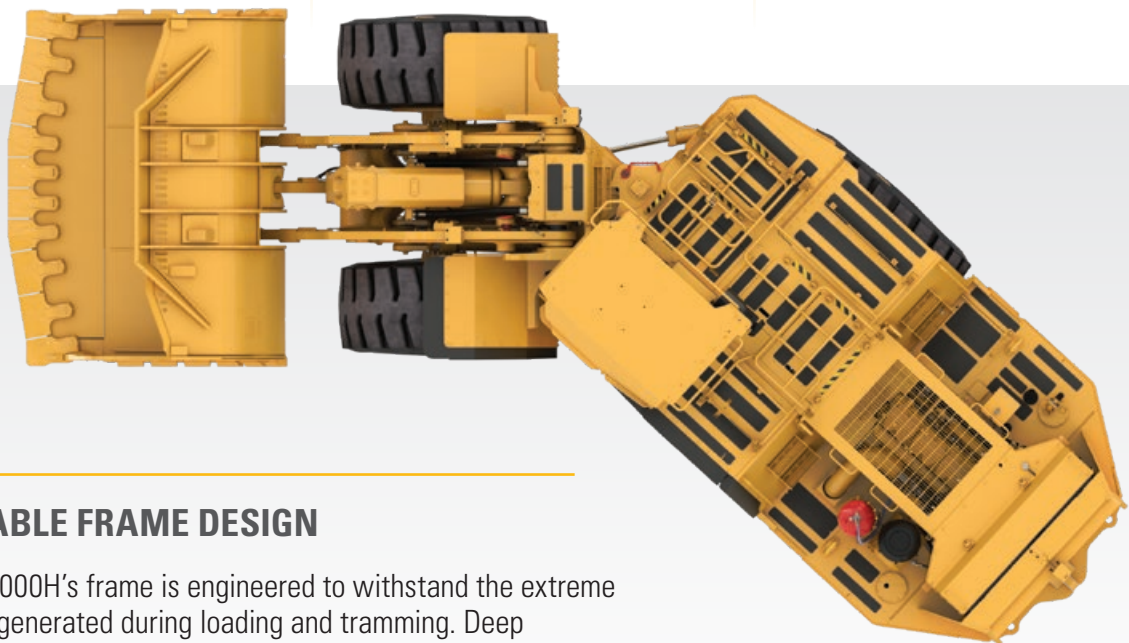
The frame, powertrain, engine and components are built to be rebuilt — delivering second and even third lives of like-new performance at a fraction of the cost of a new machine.

SPREAD HITCH DESIGN

The spread hitch design widens the distance between upper and lower hitch plates, better distributing forces for a longer life. The upper and lower hitch pins pivot on roller bearings to distribute horizontal and vertical loads over a greater surface area.

PROVEN Z-BAR LINKAGE

Our proven Z-bar loader linkage generates powerful breakout forces and provides an increased rack back angle for better loading and material retention. Heavy-duty steel lift arms with cast steel cross-tube efficiently distribute the force of loading and tramping for extended service life.



DURABLE FRAME DESIGN

The R3000H's frame is engineered to withstand the extreme forces generated during loading and tramping. Deep penetration and consistent welds ensure structures are solidly fused to provide a sturdy platform for the linkage and axles.



SPEND MORE TIME LOADING AND LESS TIME SERVICING

The R3000H delivers low owning and operating costs, and reduced downtime and maintenance costs are major contributors. With sturdy structures, longer-lasting modular components, parts commonality with other Cat machines and extended service intervals, the R3000H takes less time and fewer people to keep performing — driving down your cost per ton.

IMPROVED SERVICE ACCESS

Better access to service points makes daily access fast and easy, and reduces the amount of time and money you spend on regular maintenance procedures. Ground-level access to all tanks, filters, lubrication points and compartment drains also reduces maintenance times, and all engine oil and fuel filters are installed on the cold side of the engine.

DOWNTIME-REDUCING FEATURES

- + Radial seal air filters are easy to change, reducing time required for air filter maintenance.
- + Fluid level checks are made easier with sight gauges.
- + The Cat Electronic Technician (Cat ET) service tool enables quick electronic diagnosis of machine performance and key diagnostic data for effective maintenance and repairs.
- + Electrical connectors are sealed to lock out dust and moisture and harnesses are covered for protection.
- + Wires are color- and number-coded for easy diagnosis and repair.
- + Scheduled Oil Sampling (S-O-SSM) helps prevent minor repairs from becoming major ones. Sample point adapters are fitted standard to the machine.
- + Sealed colleted pins are fitted to all major bucket and lift arm hinge points for longer pin and bushing life. This reduces maintenance costs and extends service intervals. The sealed joints retain lubrication and prevent contaminant entry.
- + Field-proven Cat high pressure XT hydraulic hoses are exceptionally strong and flexible for maximum system reliability and long life in the most demanding conditions. Reusable couplings with O-ring face seals provide superior, leak-free performance and prolong hose assembly life.
- + Upper and lower hitch pins pivot on roller bearings to distribute horizontal and vertical loads over a greater service area. Shim-adjusted preload reduces maintenance time.



THE RIGHT TOOLS FOR THE JOB

OPTIMIZED BUCKET

The R3000H can be equipped with four different-sized buckets, including a light material bucket. These buckets deliver unmatched productivity and reliability, with two types of cast corners that allow for various cutting edges. And with the Cat Bucket Pro App, you can get real-time data on the performance of your bucket and Ground Engaging Tools (GET).

FLEXIBLE AND RELIABLE GROUND ENGAGING TOOLS

Caterpillar offers three types of Ground Engaging Tool options for the R3000H, 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 help you achieve the productivity and the bucket life you desire. In addition, the Cat Bucket Pro App provides real-time data on GET performance to help you plan maintenance, manage inventory and know cost per ton.

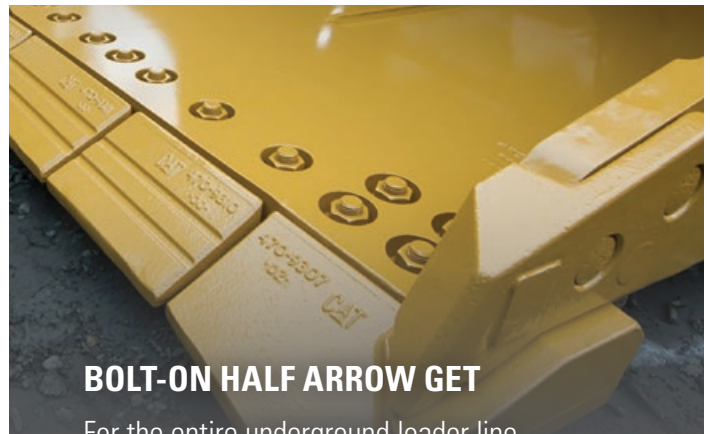
DURILOCK LIP SHROUD SYSTEM

The Durilock Lip Shroud system for underground loader buckets is a flexible, productive option for all Cat underground LHDs. This 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

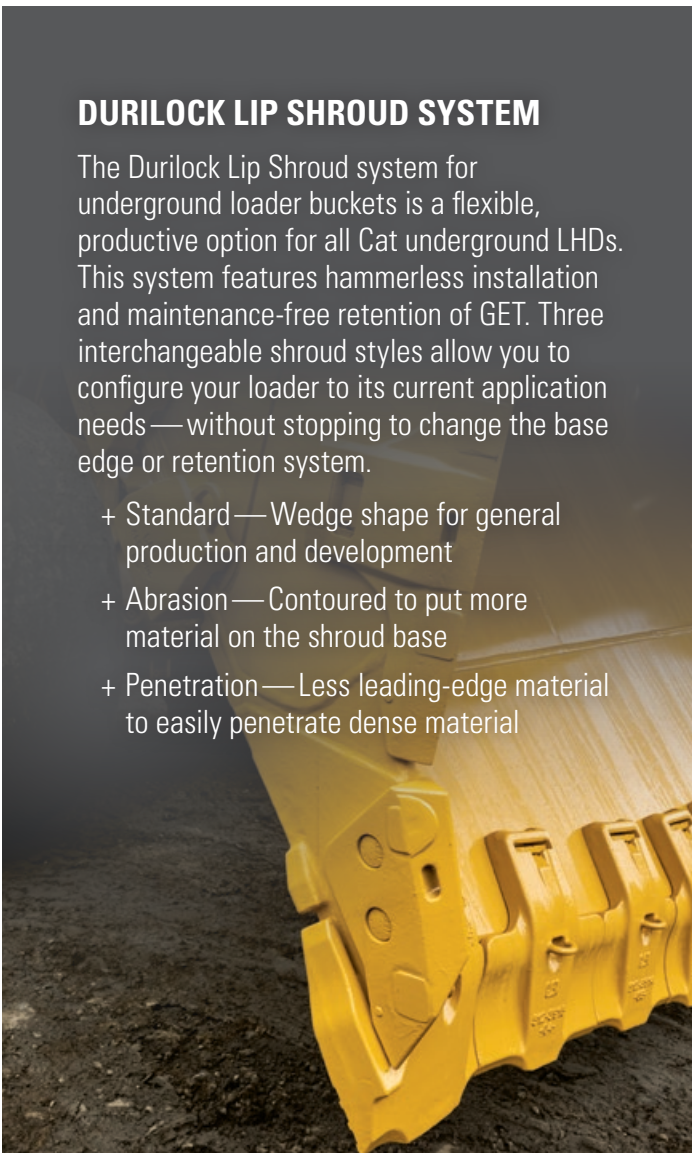
CAT MODULAR SEGMENT WELDED GET SYSTEM

Modular shrouds deliver welded part reliability with the replacement simplicity of a mechanical system. The integrated bevel allows for faster weld installation time — 20% faster than competitive shroud systems — and creates an 18% stronger modular shroud assembly by locking segments together. Wear indicators are visible from the top to help establish maintenance intervals.



BOLT-ON HALF ARROW GET

For the entire underground loader line, Caterpillar now offers Bolt-On Half-Arrow 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 the traditional weld-on GET option — allowing the R3000H 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.



CAT MINESTAR™ SOLUTIONS FOR UNDERGROUND

The R3000H can be equipped with Cat MineStar™, the mining industry's most comprehensive suite of technology offerings. No matter the size, type or complexity of your underground operation, Cat MineStar can help you deal with the challenges you face every day: Controlling costs. Extending equipment life. Working more productively. And keeping people safe.



RUN YOUR R3000H REMOTELY with MineStar Command for underground

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.



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.

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 in real time and with no reliance on mine infrastructure. It provides operators continuous awareness of their surroundings, along with the location and status of all personnel and assets.

ADDITIONAL TECHNOLOGY SOLUTIONS

- + The Cat Electronic Monitoring System (EMS) provides continuous access to critical machine data to keep the machine performing at a high level.
- + Cat Electronic Technician (ET) enables quick electronic diagnosis of machine performance and key diagnostic data for effective maintenance and repairs.
- + Cat Product Link™ Elite system boosts connectivity and increases the availability of data provided by the R3000H. The on-board hardware enables the loader to collect and transmit information into locally hosted or cloud-hosted applications. The system opens the door for industry-leading equipment health and condition monitoring services from Caterpillar and your local Cat dealer.



MINING — FOR A — **BETTER WORLD**

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 the better we mine, the better the world can be.

The R3000H's C15 engine features the optional Ventilation Reduction (VR) Package, which minimizes diesel particulate matter in the engine exhaust. A Cat Diesel Particulate Filter can be used with the VR engine package. The filter complements the VR engine by further reducing particulate matter in the exhaust.

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



SUPPORTING YOU UNDERGROUND: A TEAM THAT LISTENS, CUSTOMIZES & COLLABORATES

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, aftersales 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 work 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 expert 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® C15	
Engine Power – Tier 3 Engine – ISO14396:2002	299 kW	401 hp
Engine Power – VR Engine – ISO14396:2002	299 kW	401 hp
Bore	137.2 mm	5.4 in
Stroke	171.5 mm	6.8 in
Displacement	15.2 L	927.6 in ³

TRANSMISSION		
Forward – 1st	4.9 km/h	3.0 mph
Forward – 2nd	9.1 km/h	5.7 mph
Forward – 3rd	16.4 km/h	10.2 mph
Forward – 4th	28.2 km/h	17.5 mph
Reverse – 1st	6.6 km/h	4.1 mph
Reverse – 2nd	11.5 km/h	7.1 mph
Reverse – 3rd	20.5 km/h	12.7 mph
Reverse – 4th	31.3 km/h	19.4 mph

OPERATING SPECIFICATIONS		
Rated Payload	20,000 kg	44,092 lb
Gross Machine Mass – Loaded	82,000 kg	180,779 lb
Static Tipping Load Straight Ahead, Lift Arms Horizontal	47,264 kg	104,199 lb
Static Tipping Load Full Turn, Lift Arms Horizontal	40,003 kg	88,191 lb
Break Out Force (SAE)	28,020 kg	61,773 lb
Bucket Capacity Range	8.9 - 11.6 m ³ 11.6-15.2 yd ³	

HYDRAULIC CYCLE TIMES	
Raise Time	8.8 seconds
Dump Time	1.9 seconds
Lower, empty, float down	3.5 seconds
Total Cycle Time	14.2 seconds

TURNING DIMENSIONS		
Outside Clearance Radius	7536 mm	296.7 in
Inner Clearance Radius	3247 mm	127.8 in
Axle Oscillation	8°	
Articulation Angle	42.5°	

TIRES	
Tire Size	35/65 R33

MACHINE DIMENSIONS		
Dump Bucket	8.9 m ³	11.6 yd ³
Bucket Width over Cutting Edge	3354 mm	132.0 in
Height – Max Bucket Raised	6283 mm	247.4 in
Height – Max Dump	5408 mm	212.9 in
Height – Max Lift Bucket Pin	4553 mm	179.3 in
Height – Dump Clearance at Max Lift	2744 mm	108.0 in
Height – Digging Depth	48.4 mm	1.9 in
Height – Ground Clearance	476 mm	18.7 in
Height – Top of Rear Guard	2388 mm	94.0 in
Height – Top of ROPS	3002 mm	118.2 in
Length – Overall (Digging)	11493 mm	452.5 in
Length – Overall (Tramming)	11150 mm	439.0 in
Length – Wheelbase	3780 mm	148.8 in
Length – Front Axle to Hitch	1890 mm	74.4 in
Length – Rear Axle to Bumper (with auxiliary lines)	3582 mm	141.0 in
Length – Reach	1789 mm	70.4 in
Width – Overall Tire	3200 mm	126.0 in
Width – Machine without Bucket	3266 mm	128.6 in
Width – Machine with Bucket	3454 mm	136.0 in
Recommended Clearance Width	5000 mm	196.8 in
Recommended Clearance Height	4500 mm	177.2 in

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)	x	
Cat C15 ATAAC Diesel Engine, 6-Cylinder	x	
Engine Options (choose from)		
Engine, Ventilation Reduction (VR)		x
Engine, Stage 3		x
Filter, engine, remote mounted	x	
Particulate filter: wall flow/ flow thru		x
Fuel priming aid	x	
Precleaner, engine air intake	x	
Reversible Steering		x
Torque converter with automatic lock up clutch	x	
Transmission, automatic planetary power shift (4F/4R)	x	
Transmission Neutralizer	x	

ELECTRICAL		
	Standard	Optional
Alarm, reversing	x	
Alternator, 95 amp	x	
Battery Disconnect Switch, Ground Level	x	
Diagnostic Connector	x	
Electric Starting, 24V	x	
Lighting System, Halogen, Front, Rear, Stop	x	
Lighting, LED		x
Low Maintenance Batteries	x	
Receptacle group, auxiliary start	x	
Starting and charging system	x	

OPERATOR ENVIRONMENT		
	Standard	Optional
Automatic Brake Application (ABA)	x	
Cab, ROPS and/or FOPS certified	x	
Operators Station ROPS/FOPS Enclosed	x	
Camera, rear view		x
Horns, electric	x	
Pilot hydraulic implement controls (single joystick)	x	
Instrumentation/gauges	x	
Light, warning, residual brake	x	
Operator Presence System	x	
Seat with retractable seat belt	x	
Secondary Steering System		x

TECHNOLOGY		
	Standard	Optional
Command for Underground		x
Remote Control Interface (excludes Transmitter and Receiver), includes Warning Lights (Green)		x
Product Link Elite System	x	
Payload system, Loadrite		x

TIRES, RIMS AND WHEELS		
	Standard	Optional
Tire Arrangements (must select)	x	
35/65 R33, VSNT, Bridgestone		
35/65 R33, VSDL, Bridgestone		
35/65 R33, VSMS, Bridgestone		
Rims (set of 4)	x	

OTHER EQUIPMENT		
	Standard	Optional
Brake release arrangements, includes steering release: recovery hook or recovery bar		x
Brake axle cooling	x	
Various sizes, dump (8.9 m ³ /11.6 yd ³ , 9.5 m ³ /12.4 yd ³ , 10.5 m ³ /13.7 yd ³ , 11.6m ³ /16.2 yd ³)		x
Cap, radiator, manual release	x	
GET and wear package options		x
Centralised or Automatic lubrication system		x
Fast fill system		x
Fenders, front, rear	x	
Firewall	x	
Fire Suppression system		x
Guard, engine and transmission	x	
Handholds	x	
Handrails		x
Lift arm postioner for return to dig	x	
Lifting Group, Mine Transfer		x
Protection bars, rear frame	x	
Ride Control System		x
Radiator grill, swing out	x	
Service oil sample	x	



R3000H

LOADER

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

PEDJ1455

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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