

# R1300G

## UNDERGROUND LOADER



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<b>Nominal Payload Capacity:</b>	6 800 kg / 14,991 lb
<b>Bucket Capacities:</b>	2.5-3.4 m <sup>3</sup> / 3.2-4.4 yd <sup>3</sup>
<b>Engine Model:</b>	Cat® 3306B DITA
<b>Engine Power</b>	
<b>@ 2,200 RPM – ISO 14396:2002:</b>	117 kW / 157 HP
<b>Gross Machine Mass:</b>	29 702 kg / 65,482 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 trucks and loaders 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<sup>®</sup> R1300G

## UNDERGROUND LOADER



### **POWERFUL PERFORMANCE IN A COMPACT PACKAGE**

The R1300G is our smallest LHD, but with a breakout force of 12 020 kg (26504 lb) and 117 kW (157 hp) of engine power, it brings maximum production capability to smaller mines. Compared to competitive machines, it has a smaller turning circle, a larger fuel tank for a longer run time between refills, a better bucket reach and a greater dump angle for faster, more efficient bucket emptying. Power and drive train components are designed and manufactured by Caterpillar and fully integrated for high reliability and top performance.

An operator favorite, the R1300G features excellent loaded weight distribution, ride control and seat suspension for maximum comfort. To raise the bar on air quality in your mine, you can equip your R1300G with an optional diesel particulate filter.

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## PRODUCTION ADVANTAGE OVER COMPETITIVE MACHINES

- » Smaller turning circle
- » Larger fuel tank
- » Better bucket reach
- » Greater dump angle

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## OPERATOR FAVORITE

- » Excellent loaded weight distribution, ride control and seat suspension combine to set the standard for operator comfort.

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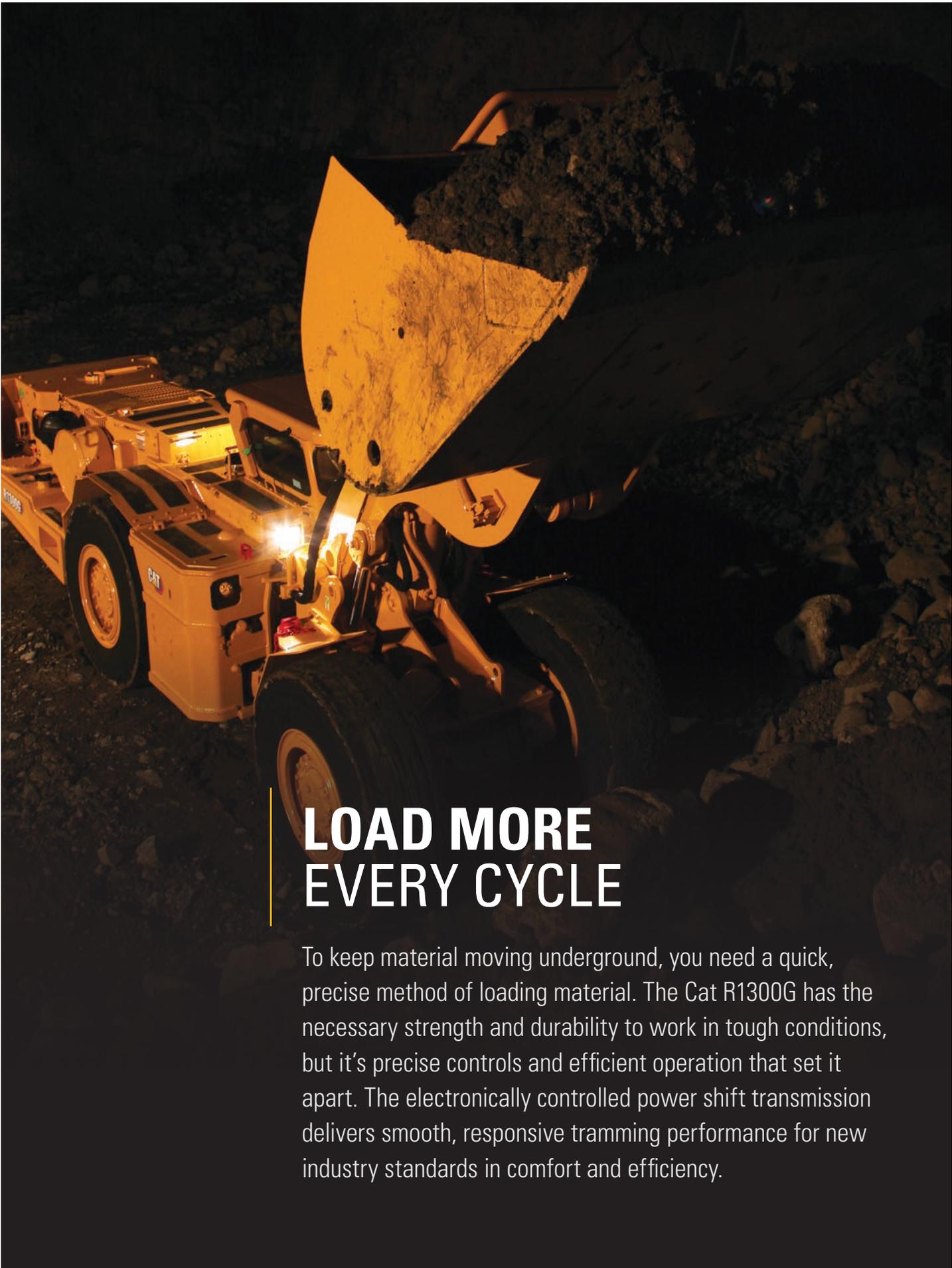
## EMISSION OPTIONS

- » Raise the bar on air quality by equipping the R1300G with an optional diesel particulate filter.

**BUILT  
TO LAST**

The R1300G is built to be rebuilt — lowering your cost per ton significantly over the life of the machine.





# LOAD MORE EVERY CYCLE

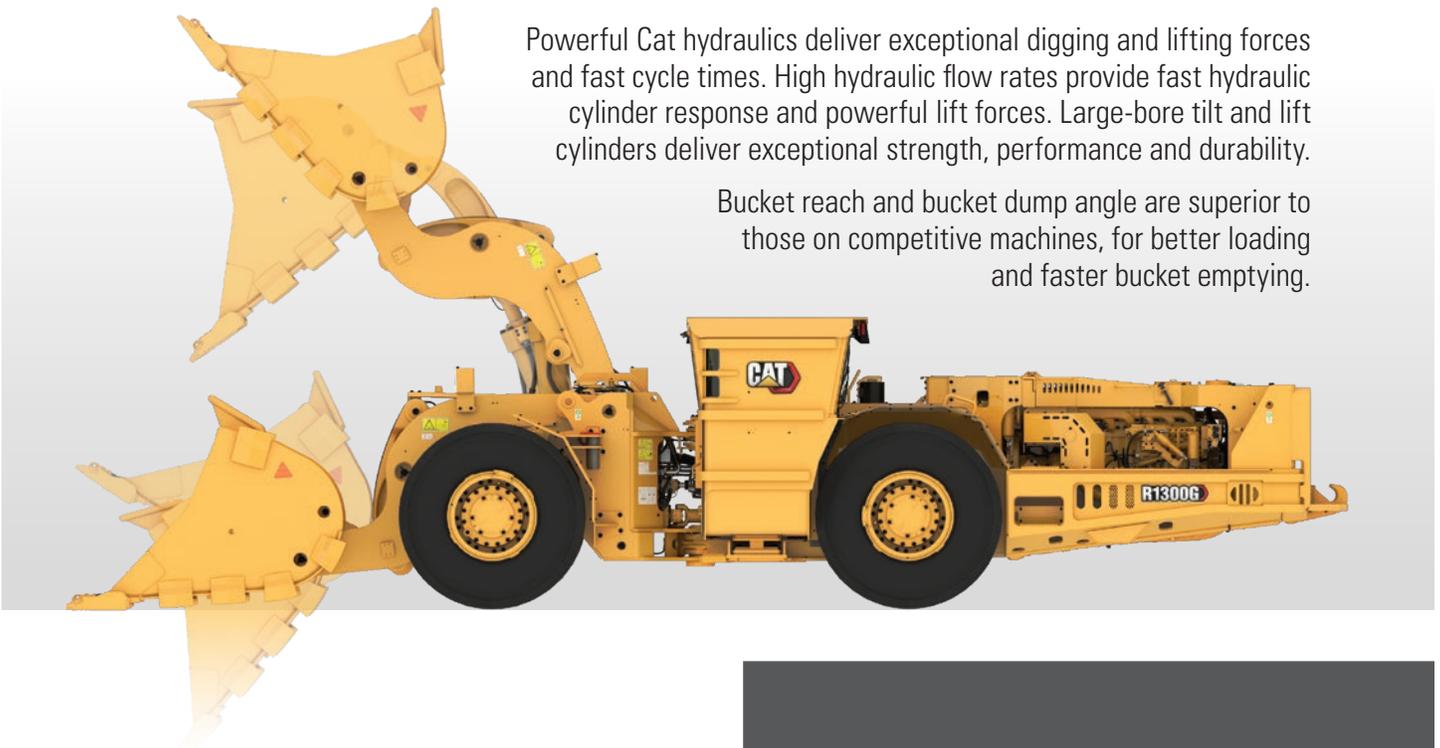
To keep material moving underground, you need a quick, precise method of loading material. The Cat R1300G has the necessary strength and durability to work in tough conditions, but it's precise controls and efficient operation that set it apart. The electronically controlled power shift transmission delivers smooth, responsive tramming performance for new industry standards in comfort and efficiency.

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## EXCEPTIONAL DIGGING AND LIFTING

Powerful Cat hydraulics deliver exceptional digging and lifting forces and fast cycle times. High hydraulic flow rates provide fast hydraulic cylinder response and powerful lift forces. Large-bore tilt and lift cylinders deliver exceptional strength, performance and durability.

Bucket reach and bucket dump angle are superior to those on competitive machines, for better loading and faster bucket emptying.



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## MORE POWER TO THE GROUND

The Cat four-speed planetary power shift transmission is Caterpillar designed and supported to provide maximum integration with the Cat 3306B engine — delivering constant power over a wide range of operating speeds. The high-capacity torque converter delivers more power to the wheels for superior powertrain efficiency.

Cat final drives work as a system with the planetary power shift transmission to deliver maximum power to the ground. Built to withstand the forces of high torque and impact loads, double-reduction final drives provide high torque multiplication to further reduce drive train stress.

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## SUPERIOR STABILITY

An oscillating rear axle ensures four-wheel ground contact for maximum traction and stability at all times, while the no-spin rear differential reduces tire wear and maximizes traction in uneven terrain.

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## EFFICIENCY-BOOSTING FUNCTIONS

- + The electronic auto shift transmission increases operator efficiencies and optimizes machine performance. The operator can choose between manual or auto shift modes.
- + Using the left brake pedal, the operator can engage the service brakes and neutralize the transmission, maintaining high engine rpm for full hydraulic flow — enhancing digging and loading functions.
- + The Steering and Transmission Integrated Control (STIC™) system integrates steering and transmission functions into a single controller for maximum responsiveness and smooth control. The low-effort, pilot-operated joystick implement control with simultaneous lift and tilt functions optimizes operating efficiency. Optional circuit controls enable the ejector bucket to be controlled from a switch on the joystick.

# POWER, RELIABILITY AND EFFICIENCY

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The R1300G is powered by the proven, reliable and durable Cat 3306B engine.



This efficient and powerful engine delivers maximum loading and tramming performance in the most demanding mining applications, including those at high altitudes, and is tolerant to contamination and compatible with high-sulfur fuels for worldwide use. Complete system integration of the engine and transmission ensures fuel efficiency and smooth operation.

The 3306B provides unequalled lugging force while digging, tramming and traversing steep grades. Torque rise effectively matches transmission shift points for maximum efficiency and fast cycle times.

## **IMPROVED FUEL ECONOMY**

The 3306B engine provides excellent fuel economy, burning less fuel per hour. Jacket water aftercooling provides improved fuel economy by packing cooler, denser air into cylinders for more complete combustion of fuel and lower emissions. The turbocharger enhances performance and efficiency. The high-pressure direct injection fuel system provides excellent fuel atomization for unmatched reliability and durability.

## **MANAGED HEAT**

Oil-cooled pistons increase heat dissipation and promote longer piston life, while full-length water-cooled cylinder liners provide maximum heat transfer.

## **AFTER-TREATMENT OPTIONS**

To provide better air quality in your underground mine, you can equip your R1300G with an optional Flow-Through Diesel Particulate Filter (DPF).

A Flow-Through DPF is an effective emission solution in underground applications. It delivers a greater than 50% Diesel Particulate Matter (DPM) reduction in the exhaust and it does not accumulate particulates or ash. This filter requires no maintenance or backpressure monitor.

# A LOADER YOU CAN RELY ON

Rugged Cat structures are the backbone of the R1300G's durability.



## STRONG BACKBONE

The R1300G features a frame that is engineered to withstand extreme forces generated during loading and tramming cycles. The precision manufacturing process ensures all structures are consistently built to high quality. Deep penetration and consistent welds throughout the frame ensure structures are solidly fused to provide a sturdy platform for the linkage and the axles.

## SPREAD HITCH DESIGN

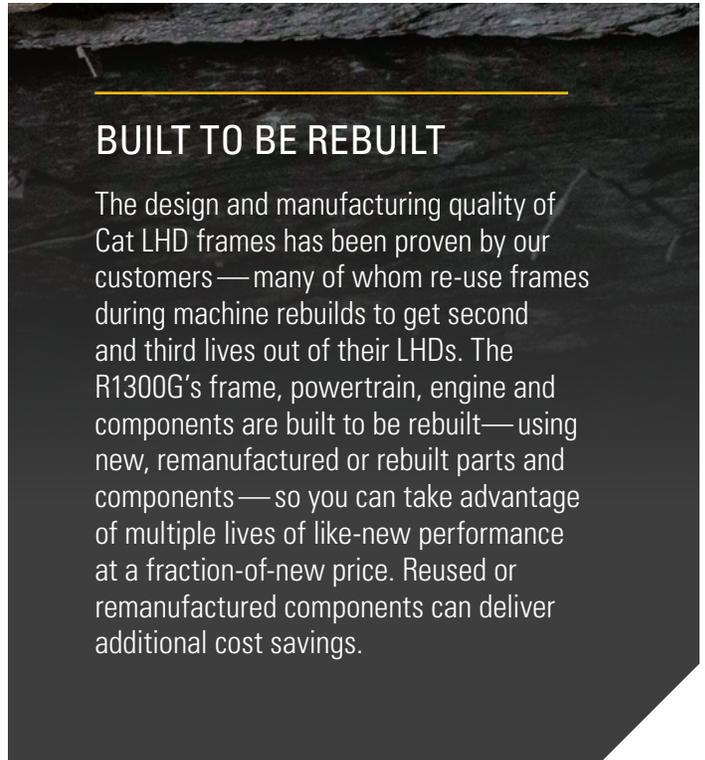
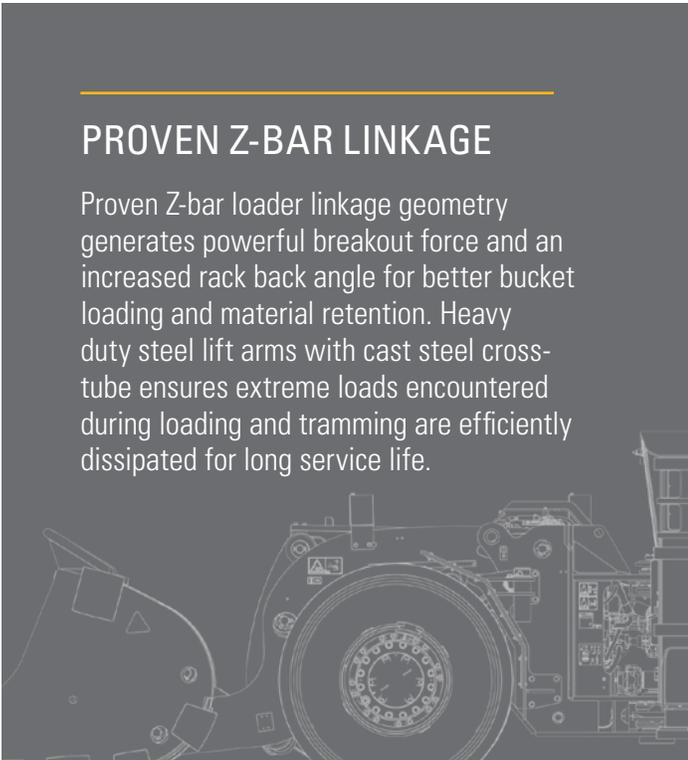
Spread hitch design widens the distance between upper and lower hitch plates to distribute forces and increase bearing life, and thicker hitch plates reduce deflection. Upper and lower hitch pins pivot on roller bearings to distribute horizontal and vertical loads over a greater surface area.

## PROVEN Z-BAR LINKAGE

Proven Z-bar loader linkage geometry generates powerful breakout force and an increased rack back angle for better bucket loading and material retention. Heavy duty steel lift arms with cast steel cross-tube ensures extreme loads encountered during loading and tramming are efficiently dissipated for long service life.

## BUILT TO BE REBUILT

The design and manufacturing quality of Cat LHD frames has been proven by our customers—many of whom re-use frames during machine rebuilds to get second and third lives out of their LHDs. The R1300G's frame, powertrain, engine and components are 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.





## **KEEP OPERATORS SAFE, COMFORTABLE & PRODUCTIVE**

The R1300G features an operator station that 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. Cabs are offered in both enclosed and open configurations to allow sites to choose based on their specific needs.

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### **DESIGNED FOR COMFORT AND SAFETY**

The optional sound-suppressed cab provides a quiet, secure working environment. Enclosed design provides fresh, pressurized, temperature-controlled air circulation with air conditioning for a more comfortable working environment. The operator station features an integrated Roll Over Protective Structure (ROPS) and Falling Object Protective Structure (FOPS) resiliently mounted to the frame, reducing vibration for a more comfortable ride.

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### **DURABLE AND SIMPLE CONTROLS**

The steering control, implement control and floor pedals use durable and simple pilot systems that are familiar to both operators and service technicians. Unlike electronic controls, these systems can handle the high degree of contamination and wet and muddy conditions often found in underground hard rock mines.

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### **EFFORTLESS OPERATION**

The STIC system makes it possible to control the complete mobility of the machine with a single controller. Simple side-to-side motion articulates the machine. Directional shifting (forward / neutral / reverse) is controlled using a three-position rocker switch. The thumb-operated buttons control gear selection.



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### DESIGNED FOR CONTROL

The four corner oil-cooled braking system provides excellent control, with planetary reduction at each wheel and torque that is developed at the wheels for less stress on the axle shafts. Planetary units can be removed independently from the wheels and brakes.

The service brake system is actuated by modulated hydraulic pressure, while the parking brake function is spring-applied and fluid-released. This system assures braking in the event of loss of hydraulic failure.

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### OPTIONAL RIDE CONTROL

The 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. The lift arm and bucket response to movement is dampened over rough ground, reducing fore and aft pitch, improving cycle times and load retention. A smoother, more comfortable ride gives operators the confidence to travel at speeds above 5 km/h (3 mph) during load and carry operations.

## SAFETY-INFUSED

The R1300G is infused with features to help both operators and service personnel feel safe and confident on the job. Caterpillar has been and continues to be proactive in developing mining machines that meet or exceed safety standards. Safety is an integral part of all machine and systems designs.

Transmission oil dipstick away from articulation point



Integral ROPS and FOPS cab, resiliently mounted to the frame

Large window openings for increased visibility

Windshield wipers on left, front and right windows

Push-out safety glass

Suspension seat

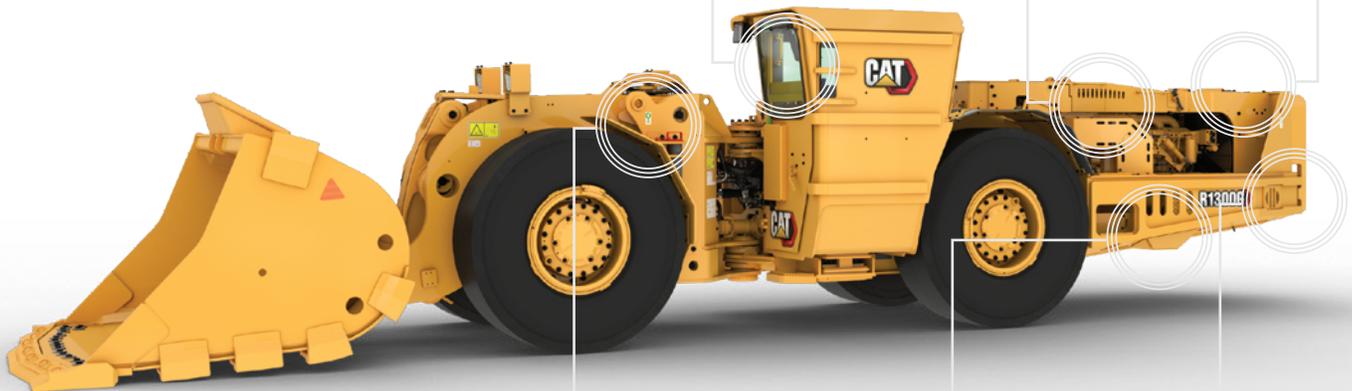
Inertia reel retractable seat belt

Steering frame lock

Anti-skid upper deck surfaces

Large grab handles on both sides provide 3-point access to cab and machine when walking onto top deck

Hot and cold side of engine



Lift arm support pins

Hinged belly guards

Secondary engine shut-off switch at ground level

Ground-level compartment sight gauges



## SPEND MORE TIME LOADING AND LESS TIME SERVICING

Reduced downtime and maintenance costs are key contributors to the R1300G'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 R1300G 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

Easy access to daily service points simplifies servicing and reduces time spent on regular maintenance procedures. Ground-level access allows convenient servicing to all tanks, filters, lubrication points and compartment drains. The modular radiator with swing-out grill provides easy access for cleaning or repair, while a built-in sight gauge allows for quick, safe coolant level checks.

## 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. There are no cables located in the outer articulation area.
- + Wires are color- and number-coded for easy diagnosis and repair.
- + Scheduled Oil Sampling (S-O-S<sup>SM</sup>) 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 DESIGN**

Aggressive Cat bucket designs deliver unmatched productivity in the most demanding applications. Underground mining buckets are designed for optimal loadability and structural reliability to help lower your cost-per-ton.

Buckets are available in a range of sizes to suit material types and densities, with multiple options including dump buckets and ejector buckets. Four dump bucket sizes and one ejector bucket option are available for the R1300G — and all have been designed and manufactured to match its performance capabilities.

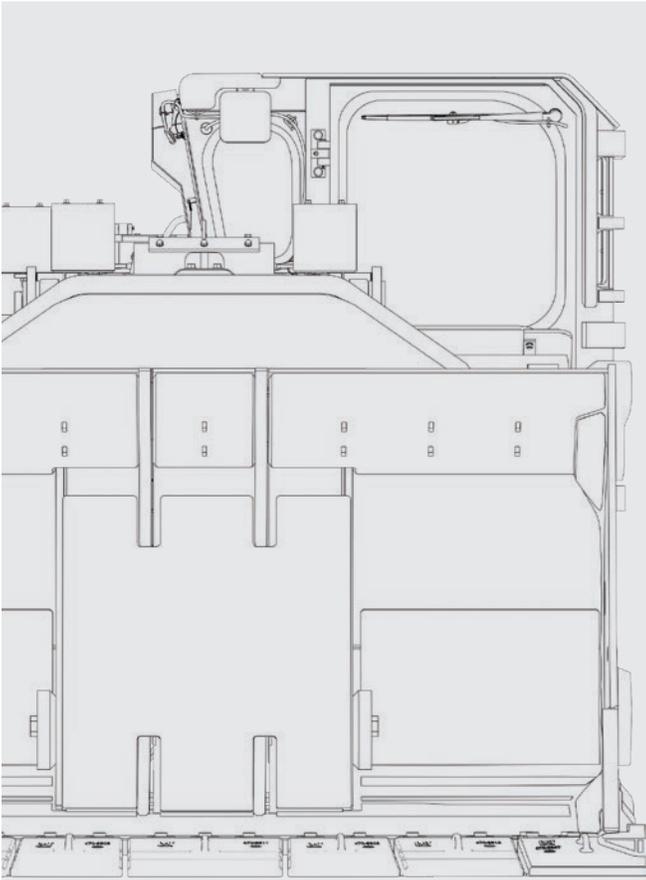
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## FLEXIBLE AND RELIABLE GROUND ENGAGING TOOLS

Caterpillar offers a number of Ground Engaging Tool (GET) options for the R1300G, so you can customize your machine to meet your site-specific needs and fit with your overall maintenance strategy. Whether you choose welded, bolted or hammerless, Cat GET help you achieve the productivity and 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.

### Cat Modular Segment Welded GET System

In this system, individual segments are configured to form lip assemblies. Modular shrouds deliver welded part reliability with the replacement simplicity of a mechanical system. Wear indicators are visible from the topside to help establish maintenance intervals.

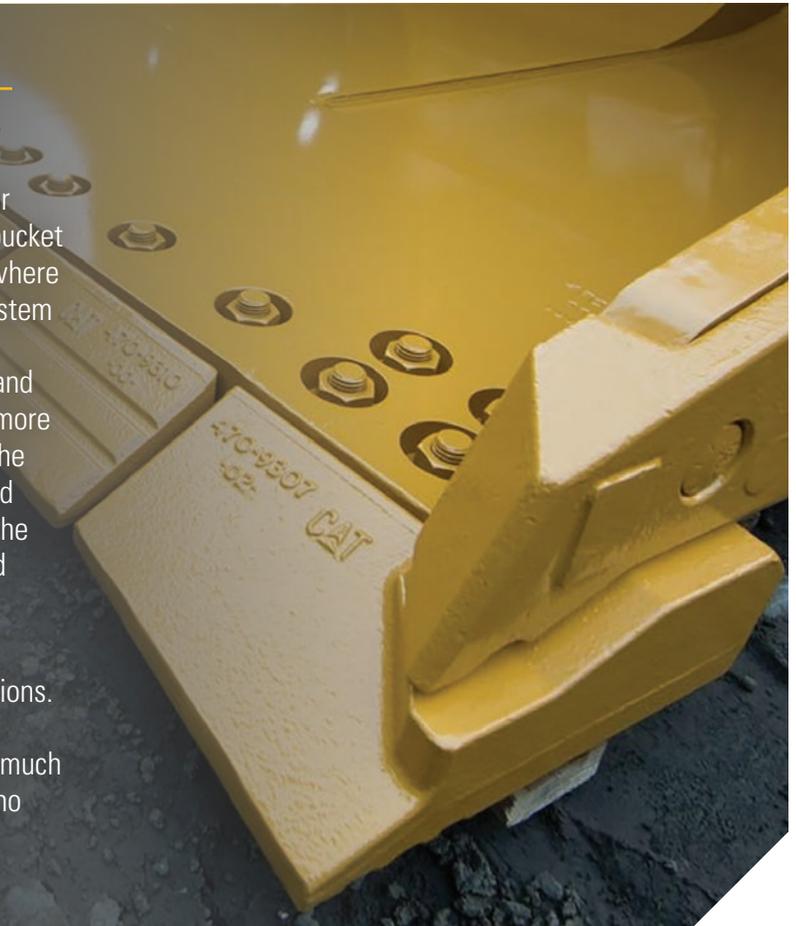


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## BOLT-ON HALF ARROW GET

For the entire underground loader line, Caterpillar now offers Bolt-On Half Arrow (BOHA) GET for bucket edges. Designed for high abrasion applications where weld-on GET experience high wear rates, the system delivers best-in-class lip protection with fewer parts than competitive systems. 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 options. 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.



# MINING — FOR A — **BETTER WORLD**

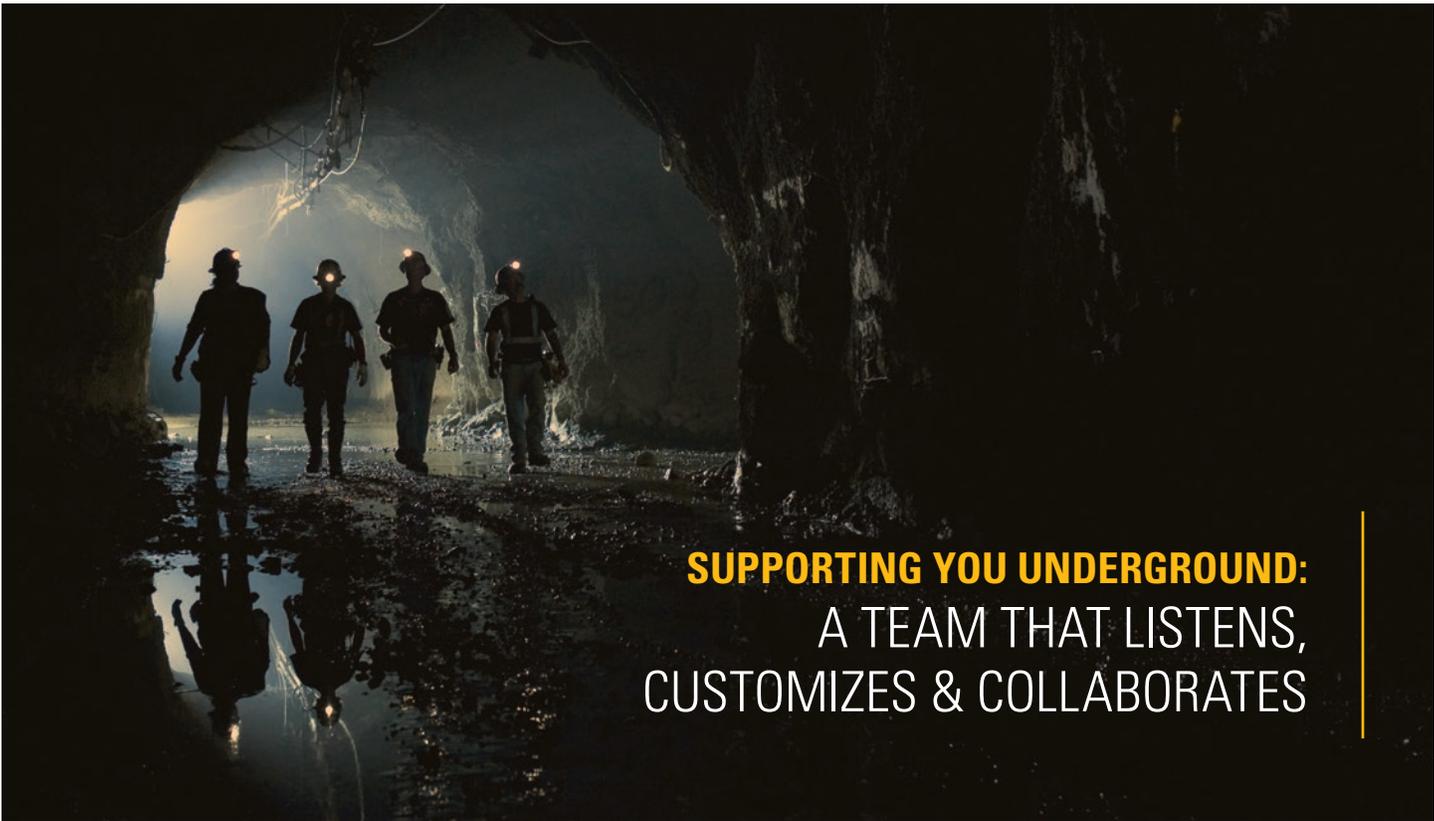
Governments and regulatory agencies mandate that you establish and follow environmentally sound policies and practices as you meet the demand for mined materials. We're focused on doing our part to make sure our machines help you meet those regulations. Every piece of Cat equipment is designed to be better and do better. Because the better we mine, the better the world can be.

At Caterpillar, we continue to research alternative energy sources such as biofuels and liquefied natural gas and power options like electrification to find new ways to reduce emissions. 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, 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](http://cat.com) for complete specifications.

ENGINE		
Engine Model	Cat® 3306B DITA	
Engine Power – ISO 14396:2002	117 kW	157 hp
Bore	120.7 mm	4.75 in
Stroke	152.4 mm	6 in
Displacement	10.5 L	640.75 in <sup>3</sup>

TRANSMISSION		
Forward 1	4.5 km/h	2.8 mph
Forward 2	7.8 km/h	4.8 mph
Forward 3	15.0 km/h	9.3 mph
Forward 4	26.3 km/h	16.3 mph
Reverse 1	4.5 km/h	2.8 mph
Reverse 2	7.8 km/h	4.8 mph
Reverse 3	14.8 km/h	9.2 mph
Reverse 4	23.0 km/h	14.3 mph

OPERATING SPECIFICATIONS		
Rated Payload	6,800 kg	14,991 lb
Gross Machine Mass – Loaded	29,702 kg	65,482 lb
Static Tipping Load Straight Ahead, Lift Arms Horizontal	20,575 kg	45,360 lb
Static Tipping Load Full Turn, Lift Arms Horizontal	17,870 kg	39,397 lb
Break Out Force (SAE)	12,020 kg	26,504 lb
Bucket Capacity Range	2.5 - 3.4 m <sup>3</sup>	3.2-4.4 yd <sup>3</sup>

HYDRAULIC CYCLE TIMES	
Raise Time	5.0 seconds
Dump Time	2.0 seconds
Lower, empty, float down	2.3 seconds
Total Cycle Time	9.3 seconds

TURNING DIMENSIONS		
Outside Clearance Radius	5717 mm	225.1 in
Inner Clearance Radius	2825 mm	111.2 in
Axle Oscillation	10°	
Articulation Angle	42.5°	

TIRES	
Tire Size	17.5 × R25

MACHINE DIMENSIONS		
Dump Bucket (STD)	3.1 m <sup>3</sup>	4.1 yd <sup>3</sup>
Bucket Width over Cutting Edge	2200 mm	86.6 in
Height – Max Bucket Raised	4302 mm	169.4 in
Height – Max Dump	3531 mm	139.0 in
Height – Max Lift Bucket Pin	2918 mm	114.9 in
Height – Dump Clearance at Max Lift	1560 mm	61.4 in
Height – Digging Depth	34 mm	1.3 in
Height – Ground Clearance	321 mm	12.6 in
Height – Top of Rear Guard	1628 mm	64.1 in
Height – Top of ROPS	2120 mm	83.5 in
Length – Overall (Digging)	9107 mm	358.5 in
Length – Overall (Tramming)	8714 mm	343.1 in
Length – Wheelbase	3050 mm	120.1 in
Length – Front Axle to Hitch	1525 mm	60.0 in
Length – Rear Axle to Bumper (with auxiliary lines)	2932 mm	115.4 in
Length – Reach	1583 mm	62.3 in
Width – Overall Tire	1900 mm	74.8 in
Width – Machine without Bucket	2109 mm	83.0 in
Width – Machine with Bucket	2290 mm	90.2 in
Recommended Clearance Width	3000 mm	118.1 in
Recommended Clearance Height	2800 mm	110.2 in

# STANDARD AND OPTIONAL EQUIPMENT

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

POWER TRAIN		
	Standard	Optional
Brakes, full hydraulic enclosed wet multiple-disc (SAFR)	x	
Engine		
Cat 3306B six cylinder, diesel	x	
DITA (Direct Injection, Turbocharged, Aftercooled)	x	
After-Treatment Options – DPF (Flow Through)		x
Fuel Priming Aid	x	
Park Brake Automatic Activation		x
Precleaner, engine air intake	x	
Radiator, High Efficiency		x
Reversible Steering		x
Torque converter	x	
Transmission, automatic planetary power shift (4F/4R)	x	
Transmission Neutralizer	x	

ELECTRICAL		
	Standard	Optional
Alarm, reversing	x	
Alternator, 75 amp	x	
Battery Disconnect Switch, Ground Level	x	
Battery, Low maintenance	x	
Diagnostic Connector	x	
Engine shutdown switch	x	
Lighting - Front, Rear, Stop (single)	x	
Receptacle group, auxiliary start	x	
Starter, electric, 24-volt	x	
Starting and charging system	x	

OPERATOR ENVIRONMENT		
	Standard	Optional
Cab, ROPS and/or FOPS certified	x	
Operators Station ROPS/FOPS Enclosed		x
Caterpillar Electronic Monitoring System (CEMS), (dash instrument panels)	x	
Horns, electric	x	
Instrumentation/gauges	x	
Light, warning, residual brake	x	
Pilot hydraulic implement controls (single joystick)	x	
Seat, Suspension Tee with retractable seat belt	x	
Secondary Steering System		x
Steering and Transmission Integrated Control (STIC™) Steering	x	

TECHNOLOGY		
	Standard	Optional
Remote Control Interface (excludes Transmitter and Receiver), includes Warning Lights (Green)		
Cattron		x
RCT		x

TIRES, RIMS, AND WHEELS		
	Standard	Optional
Tire Arrangements (choose between)		
Tire, 17.5 × R25 VSMS L5S Bridgestone		x
Tire, 17.5 × R25, VSDL Bridgestone		x
Rims (set of 4):		
Tubeless, set of 4	x	
Tube, set of 4		x

OTHER EQUIPMENT		
	Standard	Optional
Remote recover hook and bar		x
Bucket, Dump (3.1 m <sup>3</sup> /4.1 yd <sup>3</sup> )	x	
Various Sizes, Dump (2.5 m <sup>3</sup> /3.2 yd <sup>3</sup> , 2.8 m <sup>3</sup> /3.7 yd <sup>3</sup> , 3.4 m <sup>3</sup> /4.4 yd <sup>3</sup> ), Ejector (2.4 m <sup>3</sup> /3.1 yd <sup>3</sup> )		x
GET and wear package options		x
Centralised or Automatic lubrication system		x
Fast fill system		x
Fenders, front, rear	x	
Firewall	x	
Fluids - Arctic Fuel, Arctic Coolant		x
Handholds	x	
Lift arm positioner	x	
Lifting Group, Mine Transfer		x
Ride Control System		x
Radiator grill, swing out	x	
Service oil sample	x	



# R1300G LOADER

For more complete information on Cat products, dealer services and industry solutions, visit us at [www.cat.com](http://www.cat.com)

AEHQ8435

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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