

CAT® UNDERGROUND MINING LOADER (LHD)

# BUCKETS

DUMP, LIGHT  
MATERIAL,  
EJECTOR AND  
BOLT-TOGETHER



**CAT**®



## CAT BUCKETS

# THE SOLUTION THAT PAYS. LOAD AFTER LOAD.

Choosing the right bucket for your application is a critical part of achieving the best value from your Cat® underground loaders. Cat buckets are designed to increase durability and productivity. Integral to the machine, they're designed to fit with the loader structure and work as part of a system. With a wide variety of sizes and material densities, we can offer the right bucket ideally matched to your loader and your application. When combined with the right Ground Engaging Tools (GET), wear components and the Bucket Pro app, Cat buckets can help you achieve the optimal payload, bucket after bucket.



## TABLE OF CONTENTS

Why Cat Buckets?	4
Critical Bucket Design Factors	6
Ideal Match for Cat Loaders	7
Buckets	8
+ Dump Bucket	
+ Light Material Bucket	
+ Ejector Bucket	
+ Bolt-Together Bucket	
Choosing the Right Bucket	12
Pass Match	13
Ground Engaging Tools	14
Wear Components	16
Technology	18



## WHY CAT BUCKETS?

Caterpillar offers a wide variety of OEM designed, application-specific “fit for purpose” underground loader bucket solutions. Cat underground loader buckets are designed to meet target payload in the demanding environment of underground mining. They are designed to be durable and analyzed as an integral part of the entire vehicle system to help you achieve productivity and lower cost per ton. From the design to the materials to manufacturing and installation, the entire process meets Cat standards of quality and control.

Cat buckets are optimized for Cat machines and designed for each individual model, using accurate specifications, including machine force, to understand exactly how to size the buckets and deliver the ideal payload.

Bucket wear surfaces are armored with replaceable wear materials to extend the life of your bucket. Cat buckets are easy to rebuild, with all wear components available as service parts that you can get directly from your Cat dealer.



### **INTEGRATED LOADING SYSTEM**

We follow a dynamic approach to engineering — treating the bucket as part of a system rather than a static structure. A static structure designed in isolation has the propensity to cause problems to other parts of the system. Cat buckets are designed along with the loader structure, boom, frame and powertrain.

### **VIRTUAL VALIDATION**

Bucket design parameters are chosen to provide better material flow. Caterpillar engineers use proprietary dynamic analysis tools to understand the true system interactions. This complete system knowledge allows the engineers to make decisions that will result in optimal machine component life and value for the end user. Virtual validation also increases bucket durability and performance.

### **PROVEN IN THE FIELD**

We operate a fully functional proving ground where buckets are tested in real mining applications, including loading trucks and testing under extreme environments.

### **HIGH-QUALITY MANUFACTURING**

All Cat buckets are made with high quality materials, with every piece designed, manufactured and tested to meet our high standards. Our investment in tooling, equipment, facilities and expertise results in some of the most comprehensive bucket manufacturing facilities in the world.

### **CONTINUOUS INNOVATION**

We are always investing in research to improve our existing buckets and develop new ones that meet the needs of our customers.

### **CUSTOMIZABLE SOLUTIONS**

Caterpillar offers buckets for every application. A variety of liner packages offer flexibility for unique and extreme conditions. And when combined with Cat GET and wear components, they deliver optimal payload.

### **EXPERIENCED TEAM**

Our loader bucket and machine design teams have decades of experience working on Cat buckets.

### **SAFETY FOCUS**

We know that safety is important to our customers, so we look for ways we can support their initiatives with our bucket designs. We also follow a corporate safety initiative to maintain safe working conditions in our manufacturing facilities, which are clean, modern and updated to protect our employees.

### **UNPARALLELED SUPPORT**

Caterpillar offers unparalleled product support and performance validation through our global underground mining team, Cat Mining organization and global Cat dealer network. Cat dealers are in every mining region in the world, providing boots-on-the-ground support no matter how remote the location. Together with our dealers, we are committed to delivering the Cat brand promise.



# CRITICAL BUCKET DESIGN FACTORS

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## FRAGMENTATION

Blasting has a significant impact on the life of an LHD bucket. The larger the material, the more severe its impact. The addition of optional wear protection offerings where required provides optimum bucket protection and extends bucket life, while maintaining optimal payload capability. A variety of GET options are available to suit the application for material digging penetration.

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## ABRASION

Abrasion rates can be determined by the typical wear liner life or by bucket GET life. Severe abrasion can also influence internal and external wear plate options.

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## DENSITY

Material density is a concern in the tight confines of an underground operation. Caterpillar offers a variety of bucket size options to suit your machine.



## CAT BUCKETS ARE THE IDEAL MATCH FOR CAT UNDERGROUND LOADERS

Our buckets are designed to fit with the machine and work as part of your entire loading system, helping you meet target payload in a variety of applications.



## ADVANTAGE OF SELECTING AN OEM-DESIGNED BUCKET

There are a number of reasons why the OEM-designed bucket is the right choice, and there can be risks to using a third-party bucket.

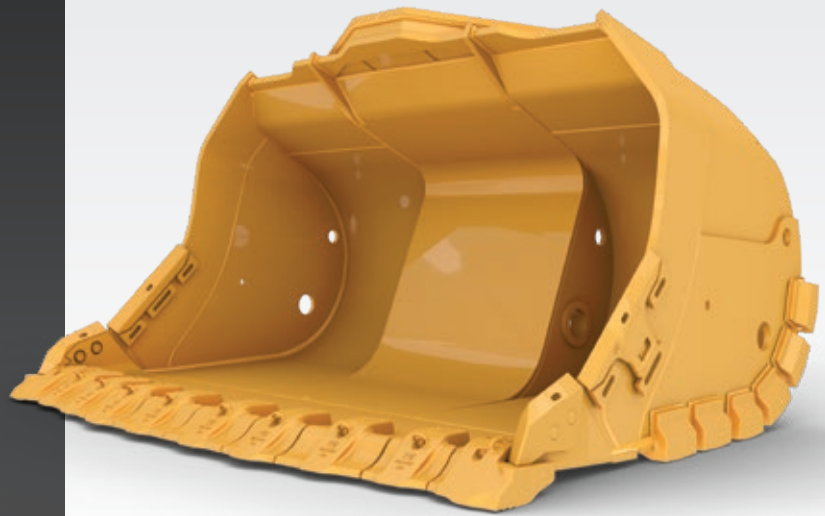
- + Cat buckets are designed to match ideally with a specific model. Off-the-shelf buckets may not be optimized for machine weight and digging forces to deliver optimized payload.
- + Cat loader capacities are calculated using Cat buckets, with correct weights and defined ISO standard heap ratios. The actual competitive bucket weight may be an unknown, and the addition of liners could further impact that potential discrepancy.
- + Cat buckets are ideally matched to ensure they don't interfere with the lift arms and frames or other attachments.
- + Cat buckets are designed for a specific payload policy. In many applications, the bucket payload can change dynamically with varying material density. In addition, there can be changes to the bucket weight due to GET or wear protection. For these reasons, the payload arrangement policy focuses on the Rated Payload of each bucket. This approach helps to ensure machines are used within their specified limits, while being productive and durable.
- + Selecting a third-party bucket could increase machine downtime for repairs.
- + Cat buckets help ensure accurate VIMS™ (Vehicle Information Management System), PLE (Product Link™ Elite) and CPM (Cat Payload Monitoring) readings.
- + If the bucket does not correctly fit the loader structure with different connection points and stiffness characteristics, the structure could experience a decrease in life.

## DUMP BUCKET

Caterpillar offers Dump buckets for all Cat Underground Loader models. Cat Dump bucket materials, design and fabrication are ideally suited to the harsh conditions and abrasive materials of an underground mine. They're also ideal for Cat machine balance and support better machine performance in penetration and loading — as well as high breakout force.

### FEATURES

- + Caterpillar offers multiple Dump bucket options for each loader model. All bucket designs also take bucket weight into consideration, targeting a stronger bucket and balanced weight for overall machine performance improvements.
- + Cat Dump buckets are built in the same factory as our machines and go through the same strict quality controls. They are just as tough as our underground loaders.
- + Caterpillar offers a full suite of GET options. Caterpillar and our Cat dealers offer one-stop shopping, which means fewer accounts.



### BUCKET CAPACITY RANGE

MODEL NOMINAL PAYLOAD CAPACITY	PART NUMBER	BUCKET CAPACITY
<b>R1300G</b> 6800kg / 14,991 lb	513-7350	2.5 m <sup>3</sup> (3.3 yds <sup>3</sup> )
	186-9278	2.8 m <sup>3</sup> (3.7 yds <sup>3</sup> )
	243-6143	3.1 m <sup>3</sup> (4.1 yds <sup>3</sup> )
	243-6224	3.4 m <sup>3</sup> (4.4 yds <sup>3</sup> )
<b>R1600H</b> 10 200kg / 22,487 lb	514-5710	4.2 m <sup>3</sup> (5.5 yds <sup>3</sup> )
	203-1792	4.8 m <sup>3</sup> (6.3 yds <sup>3</sup> )
	227-4704	5.6 m <sup>3</sup> (7.3 yds <sup>3</sup> )
	514-5720	5.9 m <sup>3</sup> (7.7 yds <sup>3</sup> )
<b>R1700</b> 15 000kg / 33,069 lb	467-1827	5.7 m <sup>3</sup> (7.5 yds <sup>3</sup> )
	467-1828	6.1 m <sup>3</sup> (8.0 yds <sup>3</sup> )
	467-1829	6.6 m <sup>3</sup> (8.6 yds <sup>3</sup> )
	616-0585	7.2 m <sup>3</sup> (9.4 yds <sup>3</sup> )
	467-1830	7.5 m <sup>3</sup> (9.8 yds <sup>3</sup> )
	549-5378	8.0 m <sup>3</sup> (10.5 yds <sup>3</sup> )
<b>R1700 XE</b> 15 000kg / 33,069 lb	467-1827	5.7 m <sup>3</sup> (7.5 yds <sup>3</sup> )
	467-1828	6.1 m <sup>3</sup> (8.0 yds <sup>3</sup> )
	467-1829	6.6 m <sup>3</sup> (8.6 yds <sup>3</sup> )
	616-0585	7.2 m <sup>3</sup> (9.4 yds <sup>3</sup> )
	467-1830	7.5 m <sup>3</sup> (9.8 yds <sup>3</sup> )
<b>R2900G</b> 17 200kg / 37,920 lb	303-8806	6.3 m <sup>3</sup> (8.2 yds <sup>3</sup> )
	249-4899	7.2 m <sup>3</sup> (9.4 yds <sup>3</sup> )
	249-4892	8.3 m <sup>3</sup> (10.9 yds <sup>3</sup> )
	249-4893	8.9 m <sup>3</sup> (11.6 yds <sup>3</sup> )
<b>R2900 XE</b> 18 500kg / 40,785 lb	638-3510	7.4 m <sup>3</sup> (9.7 yds <sup>3</sup> )
	638-3511	8.6 m <sup>3</sup> (11.2 yds <sup>3</sup> )
	638-3512	9.2 m <sup>3</sup> (12 yds <sup>3</sup> )
	638-3513	9.8 m <sup>3</sup> (12.8 yds <sup>3</sup> )
<b>R3000H</b> 20 000kg / 44,092 lb	356-1320	8.9 m <sup>3</sup> (11.6 yds <sup>3</sup> )
	524-6458	9.5 m <sup>3</sup> (12.4 yds <sup>3</sup> )
	372-1680	10.5 m <sup>3</sup> (13.7 yds <sup>3</sup> )
	372-1695	11.6 m <sup>3</sup> (15.2 yds <sup>3</sup> )

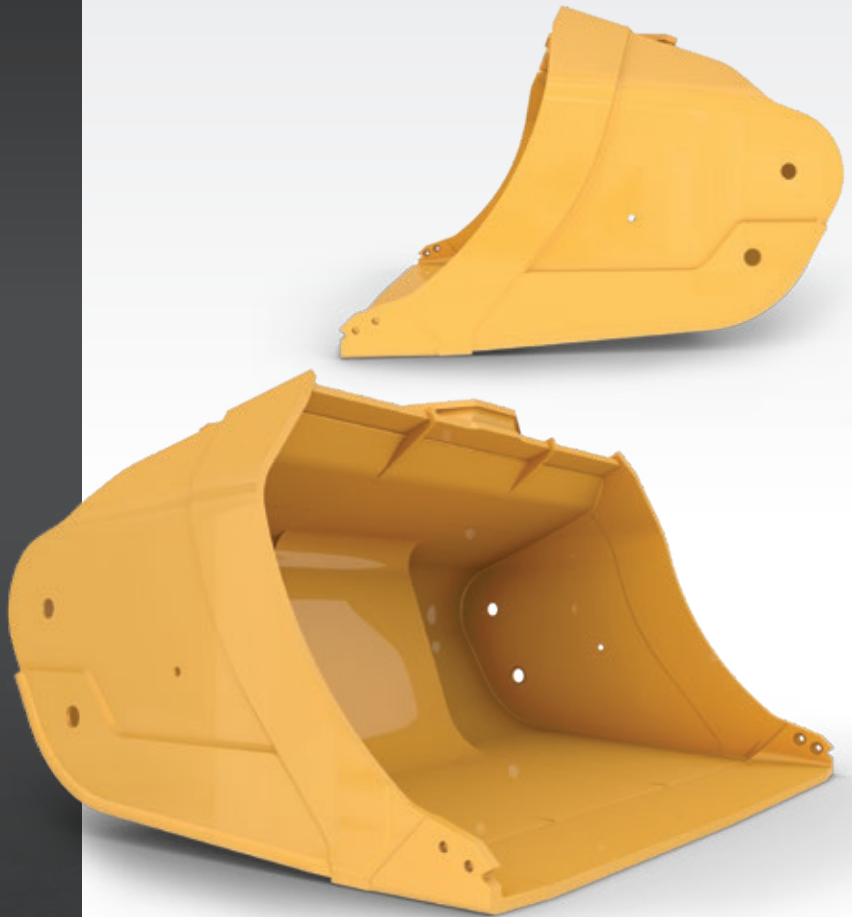


# LIGHT MATERIAL BUCKET

Caterpillar offers Light Material buckets for Cat R1700 and R2900 XE loaders. These are larger buckets that achieve maximum efficiency and greater capacity when loading light, loosely packed material. They are designed for optimal loadability and structural reliability to help lower your cost per ton.

## FEATURES

- + These lightweight buckets are designed for materials with light density, such as salt, potash and other materials.
- + These buckets are carefully designed to have larger capacity while maintaining machine performance and adhering to site-specific limitations.
- + GET and wear package offerings are limited these buckets, to prevent the machine from exceeding its swung load gross mass.



## BUCKET CAPACITY RANGE

MODEL NOMINAL PAYLOAD CAPACITY	PART NUMBER	BUCKET CAPACITY
<b>R1700</b> 15 000kg / 33,069 lb	467-1831	8.6 m <sup>3</sup> (11.2 yds <sup>3</sup> )
<b>R2900 XE</b> 18 500kg / 40,785 lb	634-7758	12.7 m <sup>3</sup> (16.6 yds <sup>3</sup> )



# EJECTOR BUCKET

Caterpillar offers Ejector buckets for Cat R1300G, R1600H and R1700 loaders. The Cat Ejector bucket has a moveable ejector plate that pushes material out of the bucket without the need to tip the bucket downward. This bucket can be fitted with multiple GET offerings and attachments.

## FEATURES

- + This bucket was specially designed for those mines with limited overhead space.
- + Powerful and durable Cat Ejector bucket components achieve maximum productivity.
- + Caterpillar also offers Ejector truck bodies.



## BUCKET CAPACITY RANGE

MODEL NOMINAL PAYLOAD CAPACITY	PART NUMBER	BUCKET CAPACITY
<b>R1300G</b> 6800kg / 14,991 lb	157-3624	2.4 m <sup>3</sup> (3.1 yds <sup>3</sup> )
<b>R1600H</b> 10 200kg / 22,487 lb	260-5198	4.8 m <sup>3</sup> (6.3 yds <sup>3</sup> )
<b>R1700</b> 15 000kg / 33,069 lb	566-6471	5.8 m <sup>3</sup> (7.6 yds <sup>3</sup> )

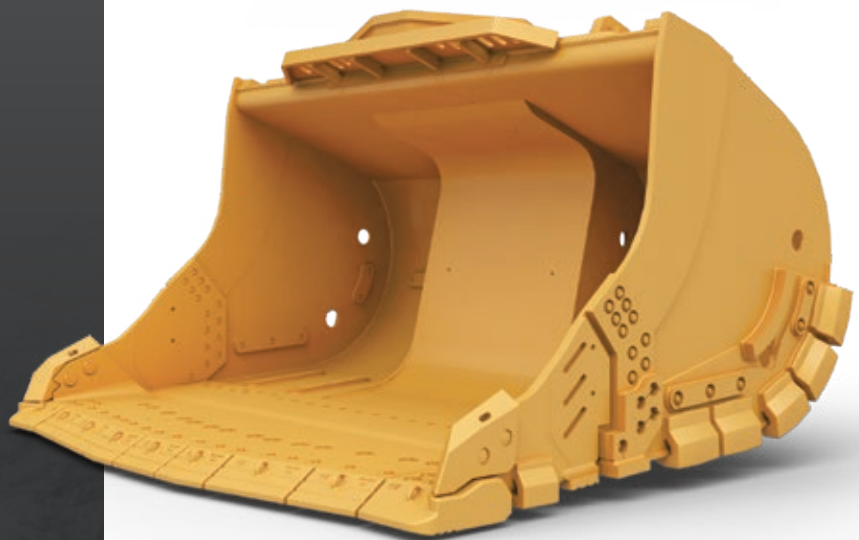
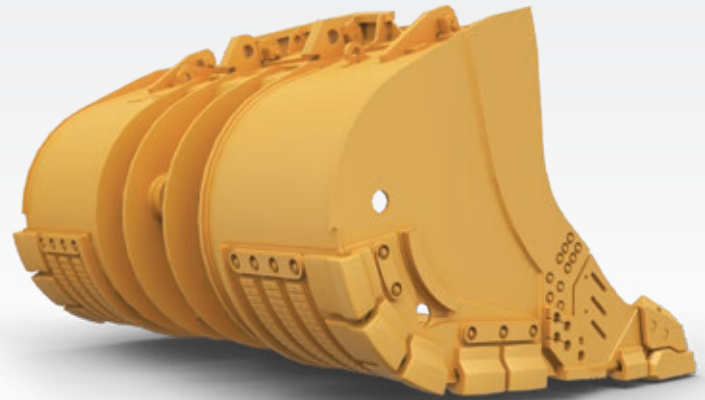


## BOLT-TOGETHER BUCKET

The Cat Bolt-Together bucket has the same strength and toughness you would expect of any Cat standard bucket, but requires no skilled maintenance operators for underground welding, resulting in lowered safety risks and quicker repair times. Caterpillar offers Bolt-Together buckets for Cat R1600H, R1700 and R1700 XE loaders.

### FEATURES

- + Bucket materials, design and fabrication are specially made for demanding environments and abrasive materials.
- + Buckets are modular in design and can be assembled faster.
- + Bolt-Together buckets can also make mine transfer operations easier, as they can be quickly disassembled and re-assembled to a smaller footprint.



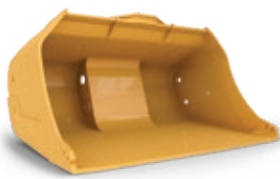
### BUCKET CAPACITY RANGE

MODEL NOMINAL PAYLOAD CAPACITY	PART NUMBER	BUCKET CAPACITY
<b>R1600H</b> 10 200kg / 22,487 lb	598-8733	5.3 m <sup>3</sup> (6.9 yds <sup>3</sup> )
<b>R1700</b> 15 000kg / 33,069 lb	561-1775 581-6671	6.8 m <sup>3</sup> (8.9 yds <sup>3</sup> ) 7.5 m <sup>3</sup> (9.8 yds <sup>3</sup> )
<b>R1700 XE</b> 15 000kg / 33,069 lb	561-1775	6.8 m <sup>3</sup> (8.9 yds <sup>3</sup> )

# CHOOSING THE RIGHT BUCKET



**Dump**  
2.5 – 11.6 m<sup>3</sup>  
(3.2 – 15.2 yds<sup>3</sup>)



**Light Material**  
8.6 – 12.7 m<sup>3</sup>  
(11.2 – 16.2 yds<sup>3</sup>)



**Ejector**  
2.4 – 5.8 m<sup>3</sup>  
(3.2 – 7.6 yds<sup>3</sup>)



**Bolt-Together**  
5.3 – 7.5 m<sup>3</sup>  
(6.9 – 9.8 yds<sup>3</sup>)

	Dump	Light Material	Ejector	Bolt-Together
R1300G	■		■	
R1600H	■		■	■
R1700	■	■	■	■
R1700 XE	■			■
R2900G	■			
R2900 XE	■	■		
R3000H	■			

## CUSTOM BUCKETS

Caterpillar can offer buckets for every application, including engineered-to-order buckets (under certain guidelines). We can also modify size, width, wear package and GET to meet some specific application conditions.

## BUCKET REBUILD

As Cat provides replacement parts for the bucket, they are designed to be rebuilt, lowering the total cost of ownership. This is not just a cost-effective solution, it's also a sustainable one. These solutions allow our customers to reuse instead of discard, conserve energy, reduce waste, keep nonrenewable resources in circulation for multiple lifetimes and minimize the need for new raw materials.



# PASS MATCH

The trucks and loaders that make up your loading and hauling system must match each other's capabilities and be suited for the specific characteristics of your mine and the demands of the operation. Our comprehensive line of trucks and loaders are ideally matched to help you achieve optimal hauling system performance.



5 PASS



3 PASS



4-5 PASS



3 PASS



3 PASS



3-4 PASS



3 PASS

## GROUND ENGAGING TOOLS: FLEXIBILITY AND RELIABILITY

Caterpillar offers a number of GET options, so you can customize your machine to meet your site-specific needs and fit with your overall maintenance strategy. All Cat GET are built for strength and long life, so you can spend less time replacing shrouds.

### BOLT-ON HALF ARROW GET

Cat bolt-on half arrow (BOHA) GET can reduce changeout times while extending the life of traditional weld-on GET options. For example, BOHA GET allow the R2900 XE'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.

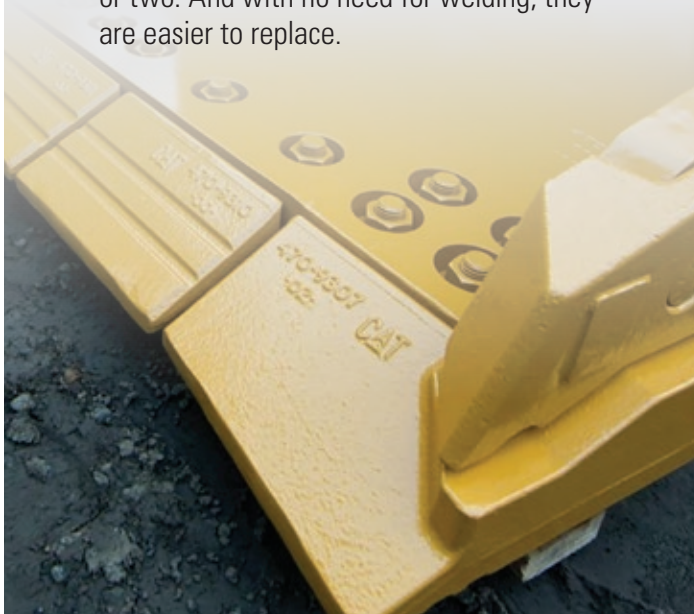
### CAT MODULAR SEGMENT WELDED GET SYSTEM

Modular shrouds deliver welded part reliability with the replacement simplicity of a mechanical system. An 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.

### 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





**GET SYSTEM OPTIONS FOR  
CAT UNDERGROUND LOADERS**

		MWOHA	BOHA	DURILOCK
R1300G	Dump	■	■	
	Ejector	■	■	
R1600H	Dump	■	■	
	Ejector	■	■	
	Bolt-Together	■	■	
R1700	Dump	■	■	■
	Ejector	■	■	
	Bolt-Together	■	■	■
	Light Material	■	■	■
R1700 XE	Dump	■	■	■
	Bolt-Together	■	■	■
R2900G	Dump	■	■	■
R2900 XE	Dump	■	■	■
	Light Material			
R3000H	Dump	■	■	■

## WEAR COMPONENTS

All Cat wear components for underground loaders are built to the highest standard of quality. We design each one for long life and reliable operation, helping you drive down maintenance time and reduce consumable costs while achieving the productivity you expect from a Cat component.



### WEAR PACKAGE MAINTENANCE

Regularly scheduled inspections and replacement of worn bucket components are essential to maintain high productivity. Heel shroud wear rates can be moderate to high and vary depending on operator technique.

#### Bucket edge protection

- + Bucket Edge Protector Group — External Underside Bucket Edge wear protection, available in bars, pads and mechanically attached wear plate system (MAWPS).
- + GET Protection Wear Bar — Wear Bars deflect materials from edge protection when back-dragging and redistribute wear pressures when loading materials.

#### Heel shrouds

Protect the bucket sides from damage and reduce the need for bucket rebuilds. Now available in two different sizes to meet the customers' requirements.

#### External bucket wear protection

Available in bars, pads and MAWPS.

#### Bucket sidebar protection

Hammerless Sidebar protection, including Shear Blocks, installs in minutes and extends the life of the sidebar to lower rebuild costs.

#### Wear liner

Located inside the bucket to improve bucket life.





## TECHNOLOGY

Cat buckets are the perfect match for Cat digging and payload management technology application.



### IMPROVE PRODUCTIVITY AND SAFETY WITH CAT PAYLOAD MANAGEMENT (CPM)

Cat Payload Management (CPM) includes an integrated onboard payload weighing scale with material management, cycle count and time recording and wireless production detail reporting capability. It brings payload weighing to the cab so operators can work more productively and deliver accurate loads with confidence. CPM's advanced weighing modes assist with payload accuracy and make the loading cycle faster.



### AUTODIG

Cat AutoDig automates the dig cycle, using hydraulic sensors to ensure the bucket is properly loaded and weight is correctly distributed. The operator positions the machine in front of the pile, engages AutoDig, and applies the throttle. AutoDig does the rest.

A Cat bucket is the ideal match for AutoDig. The system controls the bucket through the digging process, resulting in a properly filled bucket every time. Once the dig cycle is complete, the operator reverses out of the pile as normal — AutoDig will even flick the bucket to shake off any loose rock that could otherwise fall onto the haul roads, preventing safety and maintenance issues caused by loose debris.

AutoDig is a useful training tool for new or less skilled operators — they can gain confidence and familiarity with the digging process while also achieving high productivity and efficiency. And while it won't outperform a highly skilled operator on any individual dig, even the best operators have off days.

AutoDig offers predictable, repeatable performance while also reducing operator fatigue. Newer models even include a Return to Dig function that moves the bucket to ground level and dumps it to a preselected angle, allowing operators to accomplish more with less work. The combination of AutoDig and traction control will provide tangible cost benefits to underground mining operations and help new operators perform at a higher level for both manual and remote operation.



## BETTER MANAGE GET WITH BUCKET PRO

Your Cat dealer offers the sales, service and technical support you need to keep your bucket at maximum productivity. The Bucket Pro App helps you take that support to the next level.

You'll get real-time data on GET performance that will help you plan maintenance, manage your inventory and know your cost per ton.

- + Use your smartphone, iPad or tablet to perform regular inspections of GET and get instant reports.
- + Go online to calculate costs and view production trends of each bucket.
- + Use data to reduce costs and improve production of your GET system.

When you use Bucket Pro, your dealer can provide:

- + GET Inspection Reports. These instant, on-site reports include percent worn, future change-out dates and average life of all your GET.
- + Bucket Cycle Summary. These monthly summaries show bucket cycle trends for cost per ton, cost per hour and productivity, as well as average life trends.



UNDERGROUND LOADER

**BUCKETS**

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

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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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