

Cat® Ground Engaging Tools

PRODUCT CATALOG: HMS, ERS, DL, & LHD



CAT G.E.T. SOLUTIONS HELP BUILD A BETTER WORLD.

Protect expensive components. Reduce your operating costs. And get the most out of your machine's performance.

Choosing the right Ground Engaging Tools (G.E.T.) can make a big difference in your operation's productivity and profitability. That's why we've developed a wide array of integrated G.E.T. systems that are performance-built to specific application requirements.

Use this catalog to learn more about what's available for your equipment, then work with your Cat® dealer's G.E.T. Specialist or PSSR to select the components built for your industry and jobsite conditions. We'll make sure you get the rugged durability, solid protection and lowest cost-per-ton production system you need.





TABLE OF CONTENTS

Introduction to Cat G.E.T.

Tip Selection Guide.....	6
Cat Wear Management System	8
Base Edges and Cast Lips	10

Hydraulic Mining Shovel G.E.T.

CL-1 Cast Lip System (400 to 1,000 Ton).....	14
X-3 System (400 to 1,000 Ton).....	24
X-2 System (100 to 400 Ton).....	30

Electric Rope Shovels G.E.T.

X-4 System (800 to 1500 Ton).....	40
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Underground Load Haul
















Dump Loaders G.E.T.

Weld-On System	50
Durilock.....	52
Bolt-On Half Arrow System	58

Custom Solutions

Laminated Wear Products (LWP).....	63
Manganese Wear Products	64
Abrasion Resistant Material	66
Engineered to Order (ETO)	
Custom Products.....	68

CAT G.E.T. SYSTEM REFERENCE

CL-1	A Cast Lip G.E.T. System for HMS 6040 FS to 6090 FS				
		W850 6040FS	W900 6050 6060	W950 6050FS 6060FS	
X-3	Aftermarket G.E.T. for Cast Lip System for HMS 6040 FS to 6060 FS				
		C110 6040 FS 6050	C130 6050 FS 6060 6060 FS	C145 6090	
	Cat G.E.T. for Cast Lip System for DL 8200 to 8750				
	C110 8000	C130 8200/8750	C145 8750		
X-2	A Fabricated Lip System for HMS 6015B to 6040				
		C70 100 mm 6015B 6018	C85 100 mm 6020B 120 mm 6030 6018 FS	C95 140 mm 6030 FS 6040	
X-4	G.E.T. for ERS Cast Lip Systems 7295 to 7495				
		WH10 7295	WH12 7395 7495		
Underground Load Haul Dump Loaders	G.E.T. for R1300 to R3000				
					

MINING G.E.T. DESIGN PRINCIPLES

Cat G.E.T. is designed to match our world class Mining portfolio. G.E.T. is an important part of the total machine system. G.E.T. alone can influence machine performance by 5%, 10%, and even up to 20%! Choosing the right bucket, wear package, and G.E.T. is critical to get the most out of your machine.

Why choose genuine Cat components over aftermarket G.E.T. systems? It's simple! We design the G.E.T., bucket, and machine as a system offering the best overall performance.

RELIABILITY

Components are designed for specific machine kinematics, to meet rated load requirements, reduce stress levels, and withstand high breakout force / impact conditions.

DURABILITY

Our innovative solutions and robust product development ensure we always have long lasting materials and retention solutions. A wide range of options are available to meet all applications.

PERFORMANCE

Our tools are made to cut through hard material with low dig energy. Self-sharpening designs, low profile geometry, and light weight solutions ensure your bucket can be filled to capacity every time. And retention systems are simple, safe, reliable, and easy to change. This ensures less downtime and more time loading.



TIP SELECTION GUIDE

Bucket tips come in many shapes and sizes to meet all applications. The chart below will help to determine whether your bucket impact and abrasion conditions. Knowing these will help to guide in the best tip for the job.

Every tip is designed as a unique balance of:

1 STRENGTH

The resistance to breakage from impacts

2 PENETRATION

The ability to cut through material - "sharpness"

3 WEAR LIFE

The weight of wear material available and material properties—"hardness"

Here we see common Caterpillar tip shapes that align with principles above

ABRASION TIPS

Are longer and have more wear material to prioritize **wear life**

PENETRATION TIPS

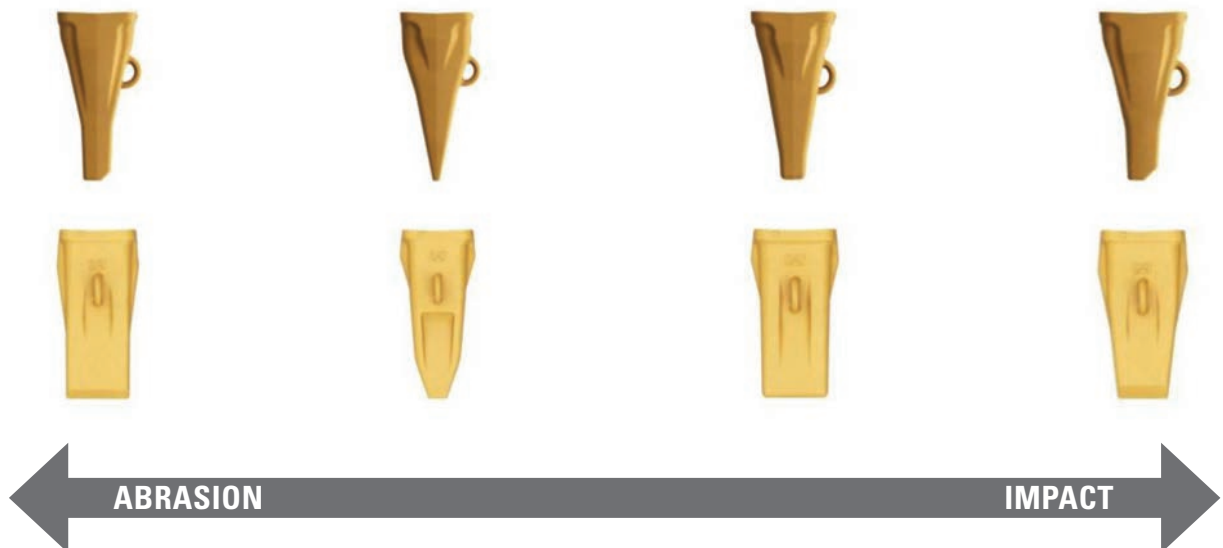
Have a small contact surface and tapered body prioritizing **penetration**

GENERAL PURPOSE TIPS





Balances **strength, penetration and wear life**

IMPACT TIPS

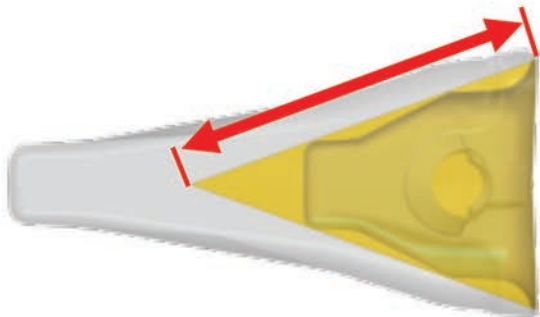
Have a shorter overall length and stronger tip pocket to prioritize **strength**



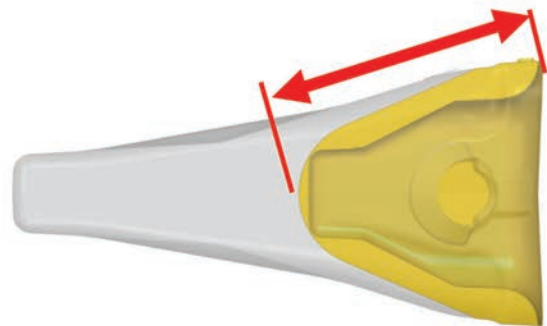
When selecting the proper tip shape it is critical to understand the application and environment of your site. The table below provides a general guide to determine levels of abrasion and impact.

		LOW	MODERATE	HIGH	EXTREME
ABRASION	Average Tip Wear Life	≥ 8 weeks 1,000 hrs +	3-8 weeks 400-1,000 hrs	1-3 weeks 100-400 hrs	≤ 1 week 100 hrs or less
IMPACT	Material Size	 0-6" 0-152mm	 6-18" 152-457mm	 18-36"+ 457-914mm+	 36"+ 914mm+

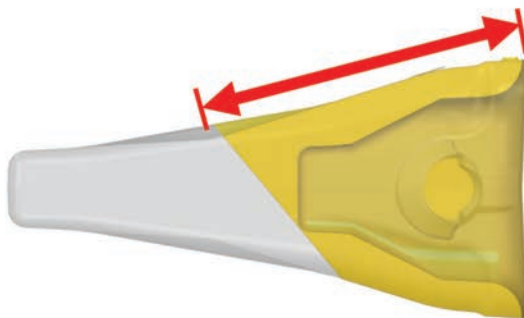
Overserving the wear profile of your current tips allows insight to the proper tip selection. Tip wear profile is a result of machine operation and material conditions. The following profiles can be used as a guide to select the optimum tip shape. These shapes also help to understand tip length varies at wear out.



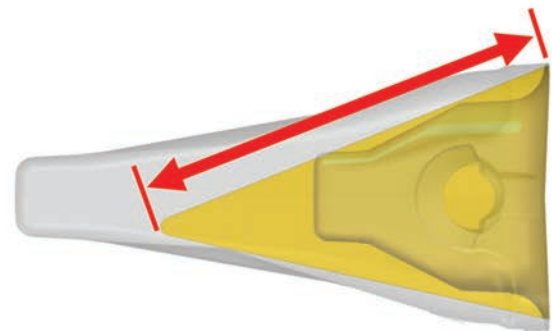
NORMAL ABRASIVE



HIGH IMPACT ROCK



WALL SCRATCHING



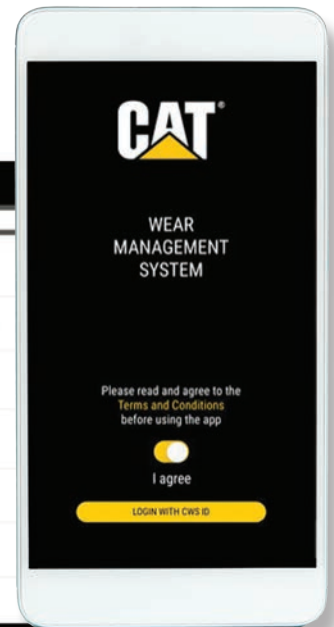
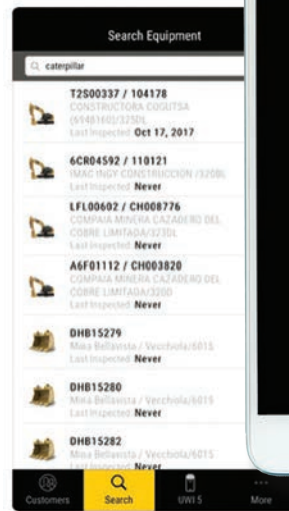
UNEVEN WEAR

CAT WEAR MANAGEMENT SYSTEM INTRODUCES...

BUCKET PRO



You may be familiar with CTS Pro for Cat Undercarriage Inspections. Now, the Cat Wear Management System is launching the second module to help you manage G.E.T. on your bucket fleet.



Your Cat dealer offers sales, service and technical support you need to keep your bucket at maximum productivity.

- » Work with your Cat Dealer to set up your site and bucket fleet within the Bucket Pro App.
- » Use smart phone, Ipad, or tablet to perform regular inspections of G.E.T. 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 G.E.T. system.



USING BUCKET PRO, YOUR DEALER CAN PROVIDE:

- » **G.E.T. Inspection Reports**
These instant, on-site reports include % worn, future change out dates, and average life of all your G.E.T. components.

19232016 CAT WMS

CAT Wear Management System **Bucket GET Inspection Report**

Dealer: Jonathan Whitmer 10Mar18
Inspector: Date

Cat G.E.T. ERS Dipper Active V20171901 Bucket 4 60.4 m3 N/A
Customer Type Status Bucket SN Bucket REF # Capacity P/N

Ph 2 Caterpillar CAT007495HD2017 SMU (Service Meter Unit) 6450
Model Machine SN Service Meter Hours

Site Name

Applications Summary

Copper High High 125
Material Impact Abrasion Hours Per Week

General Recommendations

Bucket #	Wear %	Wear Type	Wear Rate	Current Hours	Start Date	End Date	Current Hours	Remaining Life (Hours)
398-3028	8	Normal Wear	3.4	73	01Aug17	31May18	5411	1461
	9	Abnormal Wear	3	85	01Aug17	18Apr18	4647	697
Average Life (Hours)							4960	1010
Wear Caps								
1	Normal Wear	1.4	31	01Mar18	30Mar18	806	556	
2	Normal Wear	1.4	31	01Mar18	30Mar18	806	556	
3	Normal Wear	1.4	31	01Mar18	30Mar18	806	556	
4	Normal Wear	1.5	23	01Mar18	09Apr18	1087	837	
5	Normal Wear	1.4	31	01Mar18	30Mar18	806	556	
6	Normal Wear	1.3	38	01Mar18	25Mar18	658	408	
7	Normal Wear	1.3	38	01Mar18	25Mar18	658	408	
8	Normal Wear	1.4	31	01Mar18	30Mar18	806	556	
9	Normal Wear	1.3	38	01Mar18	25Mar18	658	408	
Average Life (Hours)							788	538
Lip Shrouds								
1	Normal Wear	1.3	81	01Aug17	01May18	4877	927	
2	Normal Wear	1.3	81	01Aug17	01May18	4877	927	
3	Normal Wear	1.3	81	01Aug17	01May18	4877	927	
394-9744	4	Normal Wear	1.1	94	01Aug17	24Mar18	4202	252
394-9744	5	Normal Wear	1	100	01Aug17	10Mar18	3950	0
394-9744	6	Normal Wear	1.1	94	01Aug17	24Mar18	4202	252
7	Normal Wear	1.3	81	01Aug17	01May18	4877	927	
8	Normal Wear	1.3	81	01Aug17	01May18	4877	927	

- » **Bucket Cycle Summary**—these monthly summaries show bucket cycle trends of CPT, CPH, and Productivity as well as average life trends.

- » Get real time data on G.E.T. performance and expected life.
- » Plan maintenance
- » Manage Inventory
- » Identify the best G.E.T. solutions
- » Know your CPT



GET THE FACTS YOU NEED! STOP MANAGING YOUR G.E.T. WITH OPINIONS AND ASSUMPTIONS.

Talk to your Product Support Representative or G.E.T. Specialist today to learn how they can help you simplify your bucket management.

CAT BASE EDGES AND CAST LIPS

FABRICATED LIPS

Fabricated lips are plate steel products that typically use weld-on adapters. There is little service rebuild performed on the “plate lip” itself. Gauges are often used to position shroud retention bosses on the lip prior to welding. Hydraulic mining shovels less than 400 tons and smaller draglines often use fabricated edges in their buckets.



ALLOY

It is critical to choose the right alloy for your base edge. Along with being weldable, it must have hardness to resist wear and toughness to allow flexing. Caterpillar has developed and proven our base edge alloy in the toughest conditions.

WELD QUALITY

Your machine puts extreme loads on adapter welds, Caterpillar manufacturing process uses the highest quality weld process and finishing to ensure the longest weld life.

BUTTER BEAD

Caterpillar makes field installation simple and reliable. We apply butter beading to all bucket joint surfaces.



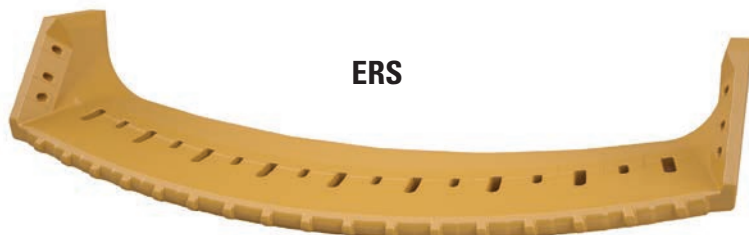
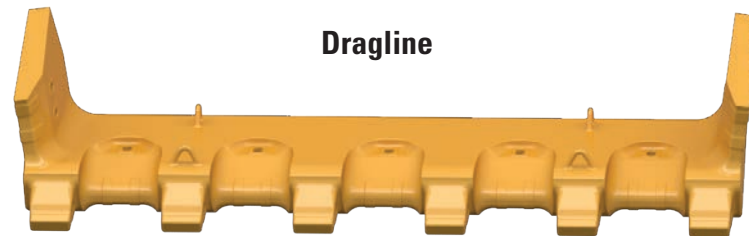
**Caterpillar guarantees our base edge assemblies from defects.*

CAST LIPS

Cast lips are poured steel products that typically use mechanically attached couplers/adapters. Rebuilding the cast lip profiles to design specifications is critical to lip integrity and G.E.T. reliability. Precision gauges are required during the rebuild process to ensure proper dimensional fit. Hydraulic mining shovels greater than 400 tons, large draglines, and electric rope shovels commonly have cast edges in their buckets or dippers.

Just like base edges the alloy, weld quality, and butter bead are critical features of Cat cast lips. In addition Caterpillar uses high quality processes to ensure the best casting and G.E.T fit.

CAT CAST LIP PORTFOLIO



Extend Lip Lifecycle - Machined surfaces provide precise dimensional control and tighter fitting G.E.T.



CAT G.E.T. SOLUTIONS FOR HYDRAULIC MINING SHOVELS

100-1,000 TON



CL-1 FOR HYDRAULIC MINING SHOVELS

400 to 1,000 Ton

MAXIMUM PRODUCTIVITY THE MOMENT YOU HIT THE GROUND.

Caterpillar offers two styles of G.E.T. systems for CL-1. A performance system focused on increasing productivity, rates of penetration, and bucket fill. The other being an extended wear life system focused on maintaining the benefits of the performance system, but for use in hard rock applications and high abrasion areas.

HIGH PERFORMANCE

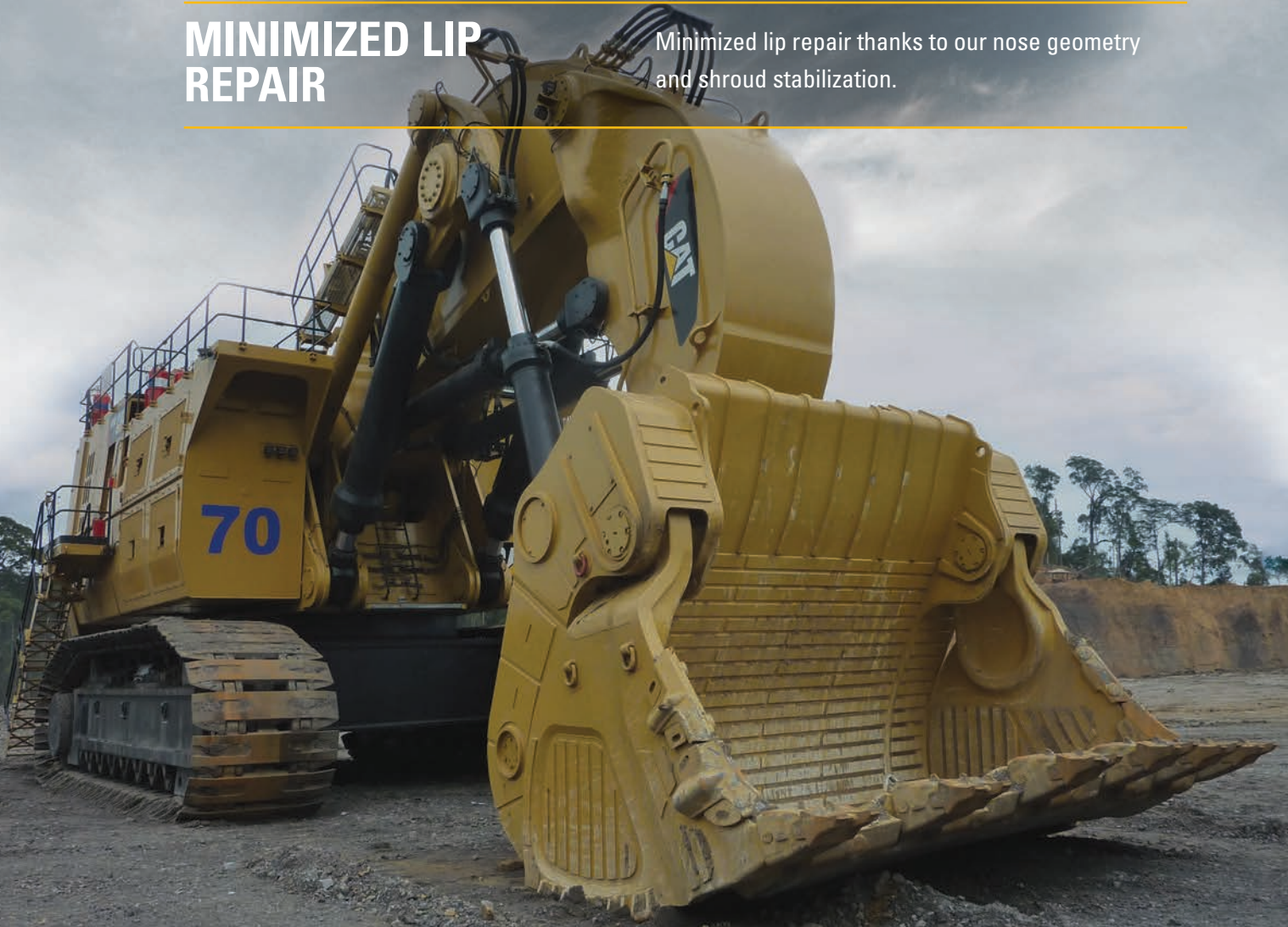
High performance, high productivity and quick change out times.

MAXIMUM LIP PROTECTION

Maximum lip protection, due to the tapered shroud design.

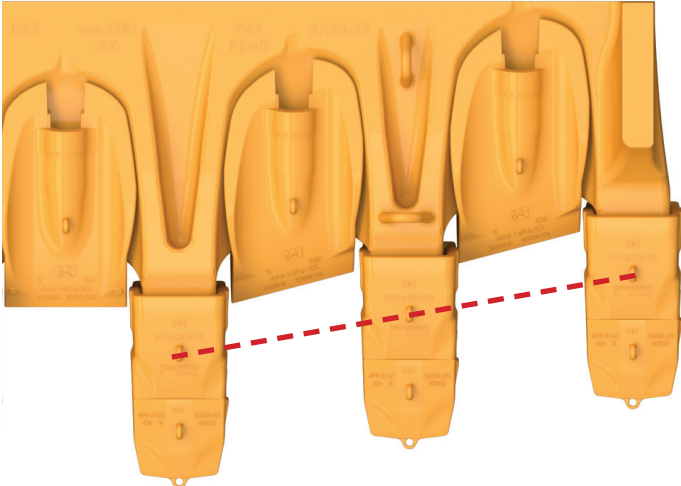
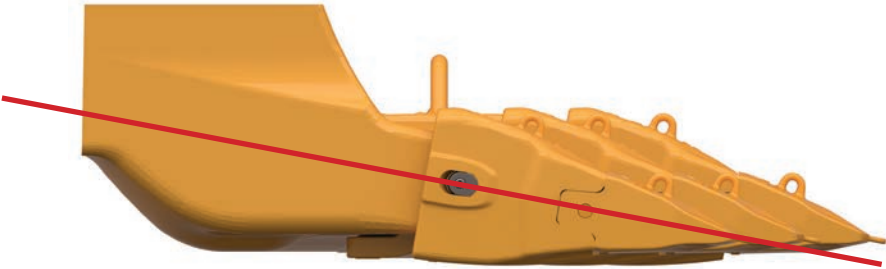
MINIMIZED LIP REPAIR

Minimized lip repair thanks to our nose geometry and shroud stabilization.



CL-1 LIP AND SYSTEM DESIGN

CL-1 cast lips are designed for use with CL-1 G.E.T systems. It is designed to be highly productive with a lowest cost per ton target. CL-1 lips are light weight which result in faster cycle times, improved RSL, and higher capacity bucket.



- » Less energy required to penetrate and fill the bucket
- » Stronger lip resulting in less flex
- » Less maintenance of cast lip due to positive retention
- » Optimized Spade Angle Shrouds reduce normal material forces on the shroud faces
- » Contoured shroud is recessed into the lip
- » 4300, 5100, 5600 mm widths
- » 5 nose sizes to match application

CL-1 COUPLERS

All CL-1 couplers secure to the CL-1 nose base with a hammerless retainer that pulls the coupler tight. Coupler pocket has dual load bearing surfaces to minimize nose stress and wear.

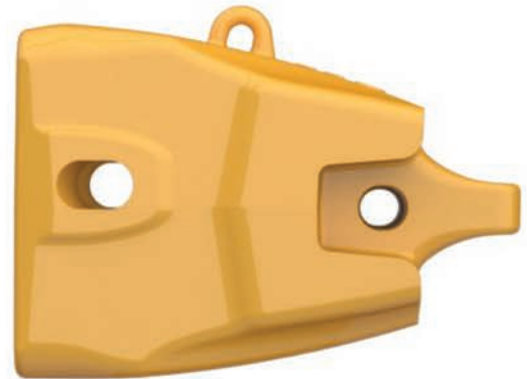
PERFORMANCE COUPLER

- » Minimize nose wear - Coupler pocket evenly distributes load on nose base to reduce stress.
- » Durable tip life - Concave fit tooth and coupler transfers load into larger components.

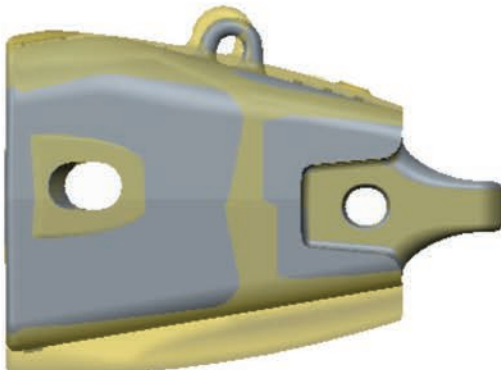


EXTENDED WEAR LIFE COUPLER

- » Decreases maintenance time
 - Increase in wear material reduces number of times for change outs
- » Maintain Penetration and Material Flow
 - Material added to top of coupler to create a uniform profile
- » Decreases wear on retention
 - Added material around retention system



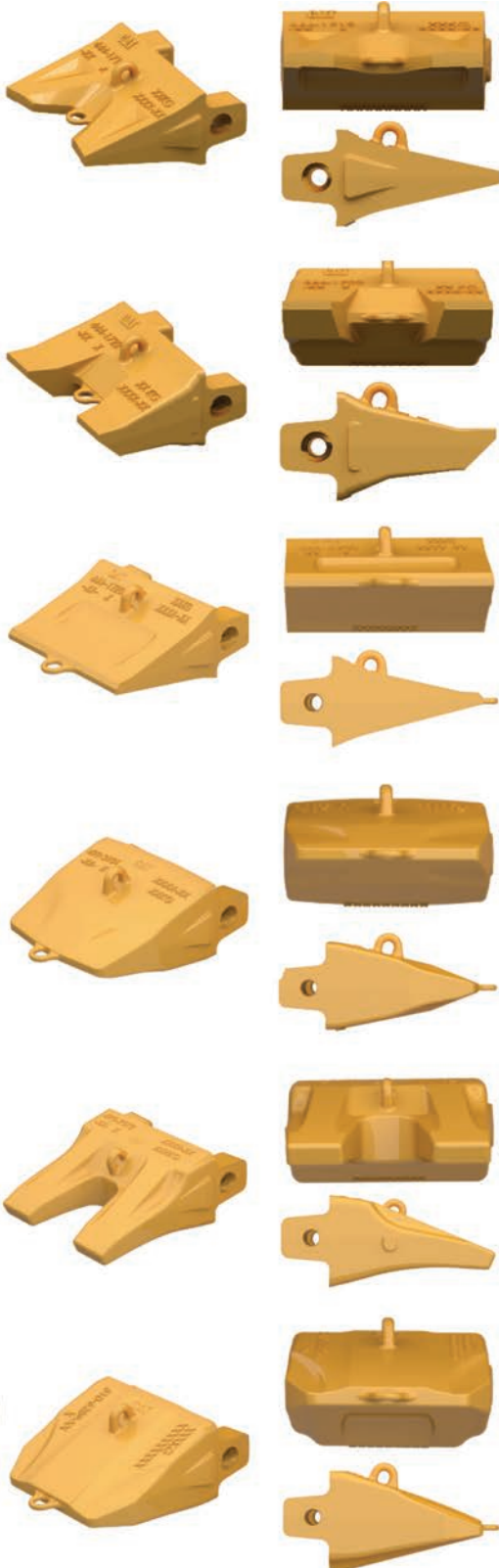
Overlay comparison of EWL to Intermediate Coupler



- » Weight of the coupler has
- » increased which translate to additional wear material
- » **On Avg. by 23%**

CL-1 TIP OPTIONS

The CL-1 tip design improves penetration, resulting in more efficient bucket fill. The retainer lock is built into each tip, simplifying installation. Our hammerless pull ring retention (PRR) secures the tip with the retainer lock. One turn with a common square drive will unlock the tip. Tip stabilizer legs contact coupler before pin to deflect operating load.



PENETRATION

The penetration tip provides excellent penetration for moderate impact and abrasion applications.

ABRASION

Typically used in high abrasion applications where aggressive penetration is needed. This tip has 8% more wear material than the CL-P tip.

PANEL

The panel tip provides good all around penetration and abrasion resistance in standard applications.

PERFORMANCE

The precision tip provides excellent productivity, it works best in moderate impact and abrasion applications.

HEAVY DUTY PENETRATION

The HD penetration tip provides the highest level of penetration in high impact and abrasion applications.

EXTENDED WEAR LIFE

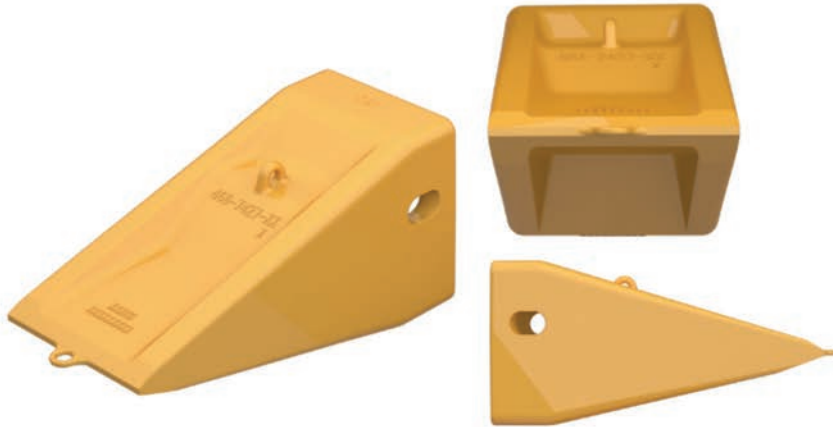
The EWL tip provides the same excellent productivity as the precision tip but is for use in hard rock and extremely abrasive mining applications.

CL-1 BOX POINT TIPS

Cat box point tips are designed to act as both a tip and coupler for your CL-1 lip. The box point tips require fewer change outs compared to traditional tips; therefore, reducing the maintenance cost of your G.E.T.

PANEL BOX POINT

The panel box point tip provides good overall penetration and abrasion resistance in moderate impact and abrasion applications.



PENETRATION BOX TIP

The penetration tip provides excellent penetration for moderate impact and abrasion applications.



The Pull Ring draws the tapered pin into the retainer until it locks into pin channel. Spiral pin head pulls pin out of pin indentation. Dust plug shortens clean out time.



Integrated retainer lock



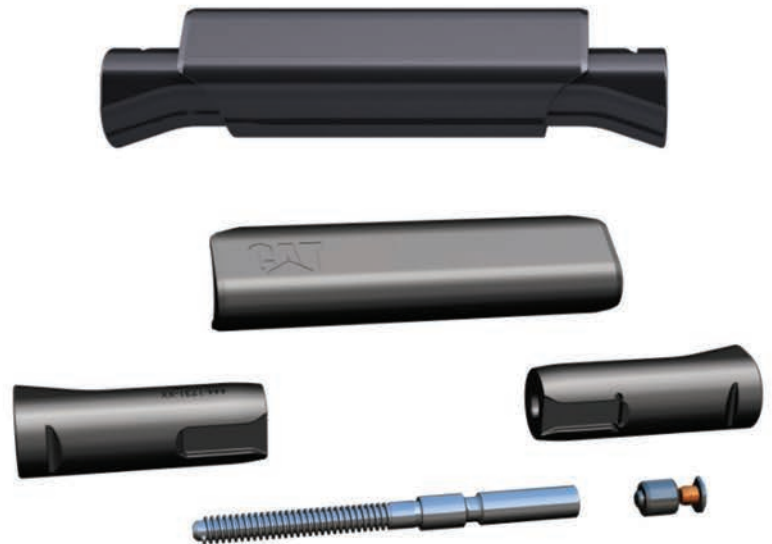
COUPLER RETENTION SYSTEM

- » Safety Focus— Hammerless Retention
- » Minimize nose wear—Balanced Positive uptake
- » No Special Tooling—Square Hex Drive

CL-1 couple retention can serviced as one assembly or a service kit.

Retainer pulls coupler onto nose base and inward, reducing side movement.

Retainer locking cap reduces primary torque screw movement during operation. Dust plug reduces cleanout time during service.



INSTALLATION & REMOVAL

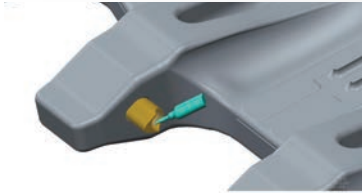
COUPLER INSTALLATION

Follow these six simple steps for fast, safe and easy installation and removal:

Scan the QR Code to the right to watch the installation video.



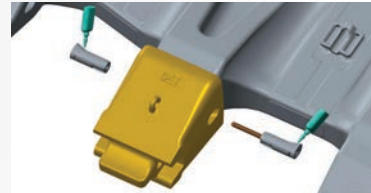
- 1** Insert retainer body into nose base hole, lubricate.



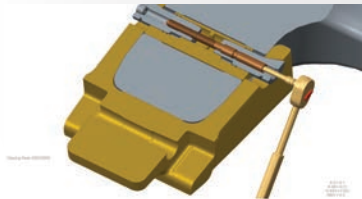
- 2** Slide coupler onto nose base.



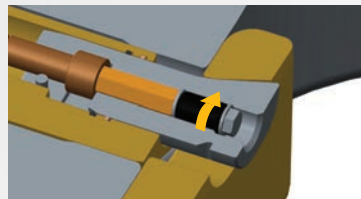
- 3** Insert retainer ends into body, lubricate.



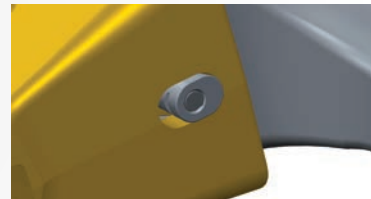
- 4** Tighten the captured bolt to specified torque.



- 5** Insert locking plug, hand tighten, plus quarter turn.



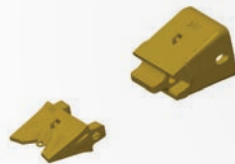
- 6** Insert dust plug.



TIP INSTALLATION

Follow these four simple steps for fast, safe and easy installation and removal:

- 1** Ensure tip pocket and coupler nose are clean of fines and slide the tip onto the coupler nose.



- 2** If not previously installed, install a dust plug into square drive of tip retaining pin and screw the rope pull into tail end of pin and tighten.



- 3** Insert tip retaining pin into the tip and coupler assembly, rotating the pin clockwise until pin shoulders butt up to cast shoulders.



- 4** Insert a suitable pry bar through loop of rope pull and lever across to lock tip retaining pin into place.



CL-1 CAST LIP PROTECTION

The tapered shroud design provides maximum lip protection, reducing lip wear. Shroud retention inserts into shroud body and is secured to the lip with a dual locking system, ensuring your lip protection stays tight during service.

- » **Maximized Performance**—Low profile delivers penetration and optimized material placement reduces unnecessary steel cost and weight.



EXTENDED WEAR LIFE SHROUD

- » Increase in leg thickness around shroud’s edge
On Avg. by 47mm
- » Increase in surface area
On Avg. by 41%
- » Increase in weight
On Avg. by 25.5%



Overlay of comparison of EWL to Performance Shrouds



SHROUD RETENTION SYSTEM:

- » Safety focus—hammerless retention.
- » Minimize lip wear—primary retention reduces movement and deflector retention keeps shroud tight, reducing periodic maintenance.
- » No special tooling—square hex drive.

CL-1 WING PROTECTION

Wing shrouds secure to the wings with a hammerless bolt retainer that inserts into the shroud body and pulls the shroud tight to the wing.

MAXIMIZE PROTECTION

Low profile delivers penetration, and optimized material placement reduces unnecessary steel cost and weight.

IMPROVE SAFETY

Hammerless retention reduces the chance of injury.

REDUCE TOOLING

No special tooling required—only a square hex drive.



INSTALLATION & REMOVAL

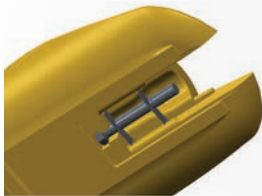
CL-1 CAST LIP & WING PROTECTION INSTALLATION

Follow these four simple steps for fast, safe and easy installation and removal:

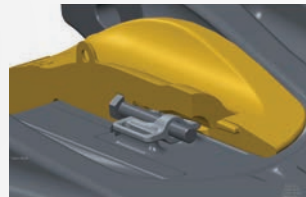
Scan the QR Code to the right to watch the installation video.



- 1** Insert retaining bolt into shroud and secure into position with retainer clip.



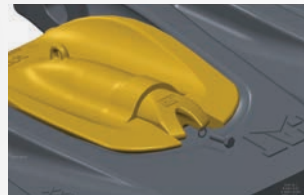
- 2** Align shroud with mounting boss weldment. Ensure retaining bolt aligns with the boss groove.



- 3** Install the belleville washer, thick washer, belleville washer, then cone nut onto the retaining bolt as shown.



- 4** If installing end cap, align end cap and insert end cap bolt with schnorr washer and tension.



WING SHROUD INSTALLATION

Follow these four simple steps for fast, safe and easy installation and removal:

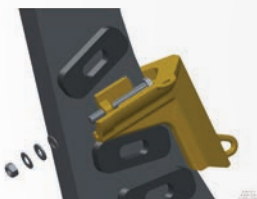
- 1** Insert retainer bolt into shroud and secure into position with retainer clip.



- 2** Align lower wing shroud with mounting boss. Ensure retaining bolt aligns with mounting boss groove. Repeat for upper wing shroud.



- 3** Install the belleville washer, thick washer, belleville washer, then cone nut onto the retaining bolt.



- 4** Tighten.



X-3 SYSTEM FOR HYDRAULIC MINING SHOVELS 400 to 1,000 Ton

The X-3 class of G.E.T. readily fits onto existing nose base systems for 500-ton hydraulic mining shovels. Side pin and vertical (wedge and spool) couplers work with a full selection of tip styles and lip protection. The robust design can be easily enhanced with Cat Laminated Wear Products to extend the life in high-abrasion applications.

SIMPLIFY INSTALLATION

Retainer is built into the tip.

SPEED UP CHANGE-OUT

Lock or unlock with just one turn.

ENHANCE JOBSITE SAFETY

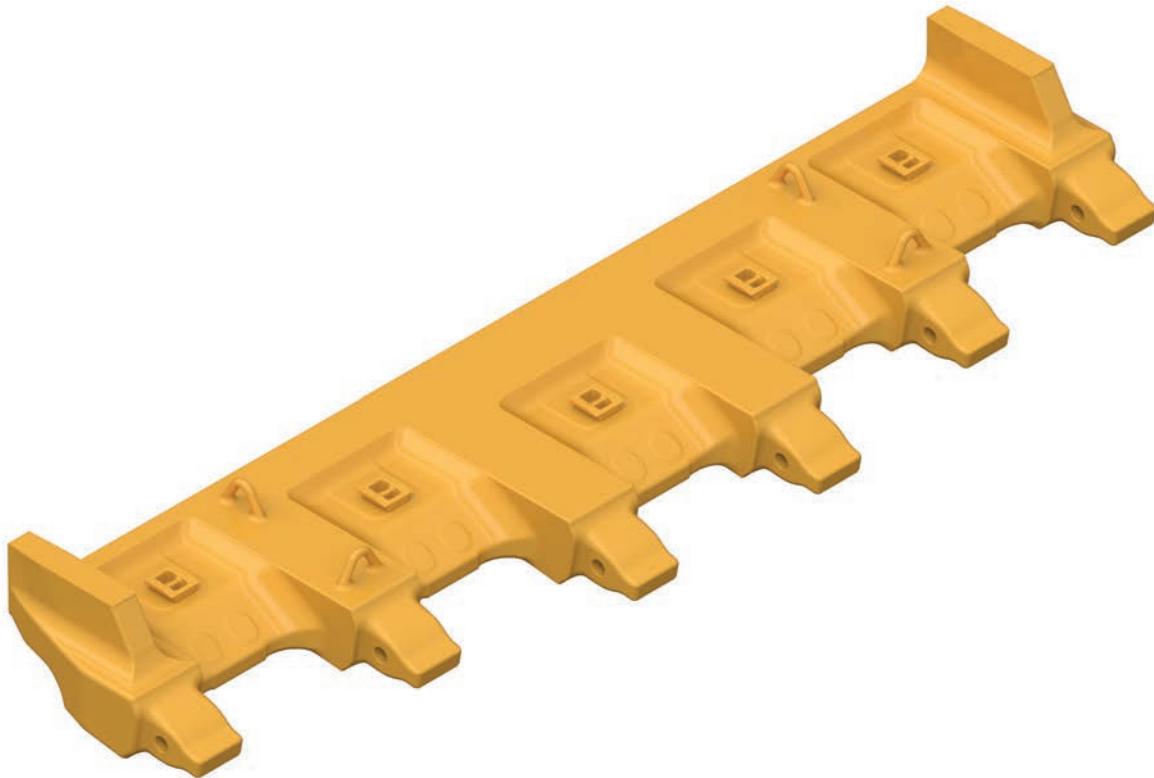
No special tools are required
to service this hammerless system.



CAT RELOAD™ CAST LIPS

Reload cast lips are designed for use with X-3 G.E.T system with a Cat C130 nose base. It is a “classic design” focused on reliability and lowest cost per hour.

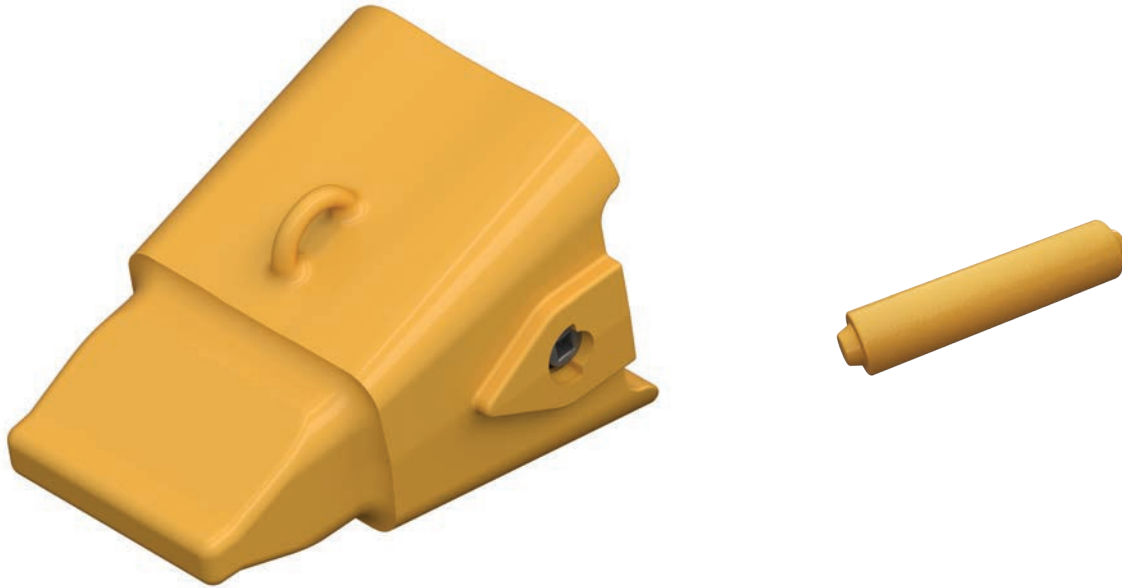
- » 100% CapSure retention—simple, fast, safe, reliable
- » Machined fit surfaces—Optimized fit control between G.E.T. and new lips
- » Cat C130 specific nose base—not compatible with aftermarket adapters
- » 4300 mm and 5100 mm widths available



***Aftermarket only—cannot be sold on new machines**

X-3 COUPLER OPTIONS

Intermediate couplers pin onto the existing nose base. The side pin design, featuring CapSure retention, enables fast hammerless removal of the coupler and tip. These three-piece systems minimize wear of more expensive components, helping to provide a low cost per ton. No additional pins are required to secure the tip to the coupler.



Side Pin Coupler & Pin



Wedge & Spool Coupler & Pin

X-3 TIP OPTIONS

CapSure retention is built into each tip, eliminating the need to inventory and assemble separate retainers. One turn with a common square drive will lock or unlock the tip. Your Cat dealer can help you choose the tip that offers the right balance of penetration and wear life for your application.



CENTERLINE

This general purpose Centerline tip provides excellent penetration in impact and abrasion applications.



CENTERLINE ABRASION

This Abrasion Centerline tip is ideal for moderate impact and high-abrasion applications. It's 12 percent longer than the Centerline tip.



TWIN SPIKE

For easy penetration in moderate impact, high-abrasion applications, this Long Split tip has 40 percent less leading-edge material compared to the Centerline tip.



BELOW CENTERLINE

This general-purpose Below Centerline tip for moderate abrasion, high-impact applications is angled down 15 degrees to optimize penetration. The paneled bit also aids penetration and self-sharpening.



HEAVY DUTY BELOW CENTERLINE

This Heavy Duty Below Centerline tip for extreme top abrasion and high-impact environments is most common in dragline applications. Angled down 15 degrees to optimize penetration, it's 17 percent longer and features 70 percent more wear material than the Below Centerline tip.



HEAVY DUTY

This combination of Split and Long Below Centerline tips is typically used in low-impact and extreme abrasion applications where aggressive penetration is needed. It's angled down nine degrees and has 85 percent more wear material than the Below Centerline tip.

ENGINEERED TO ORDER (ETO) OPTIONS AVAILABLE

Custom offerings are available from your Cat dealer for your application.

X-3 CAST LIP & WING PROTECTION

Shrouds are easily secured to the edge with our retention boss. CapSure retention is built into each shroud eliminating the hammer and need to inventory and assemble separate retainers. One turn with a common square drive will lock or unlock the shroud.



Lip Shroud & Retention Boss



Two-piece wing shrouds offer flexible protection. Change the worn protector by driving out the pin.

LIP SHROUD INSTALLATION

Follow these three simple steps for fast, safe and easy installation and removal:

1

Install retention boss (welded).



2

Slide shroud over lip and boss.



3

Rotate CapSure retainer 180°.



INSTALLATION & REMOVAL

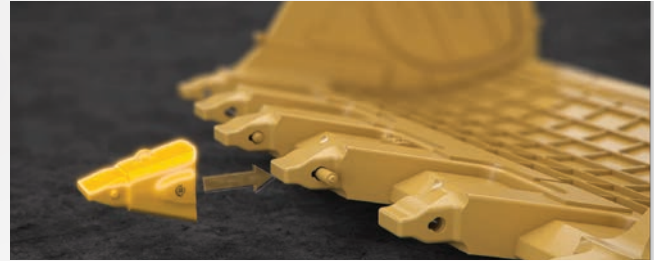
X-3 COUPLER INSTALLATION

Follow these three simple steps for fast, safe and easy installation and removal:

- 1 Insert pin into nose base hole.



- 2 Slide coupler onto nose base.



- 3 Rotate CapSure retainer 180° into locked position.



TIP INSTALLATION

Follow these two simple steps for fast, safe and easy installation and removal:

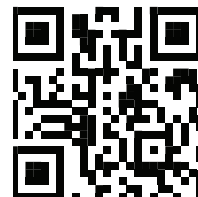
- 1 Slide tip onto coupler.



- 2 Rotate CapSure retainer 180° into locked position.



Scan the QR Code to the right to watch the installation video.



X-2 SYSTEM FOR HYDRAULIC MINING SHOVELS 100 to 400 Ton

The X-2 class adapters are welded to our fabricated base edges that provide industry-leading durability. Hammerless shrouds protect the base edge, while conventional pins secure the wing shrouds. Six tip shapes are available to help you be productive in any application. All hammerless components feature CapSure retention that is serviced with a simple square drive.

SIMPLIFY INSTALLATION

Retainer is built into the tip.

SPEED UP CHANGE-OUT

Lock or unlock with just one turn.

ENHANCE JOBSITE SAFETY

No special tools are required
to service this hammerless system.



FABRICATED EDGES

Caterpillar provides a complete line of base edge assemblies for Cat buckets. For mixed fleet buckets your Cat dealer can perform a bucket inspection and Provide a custom Cat G.E.T. layout.



MODEL	SIZE CLASS	ADAPTERS AVAILABLE
6015B	C70	100mm
6018	C70	100mm
6020B	C85	100mm
6030	C85	120mm
6018 FS	C85	120mm
6030 FS	C95	140mm
6040	C95	140mm

Contact: GET_Layouts@cat.com

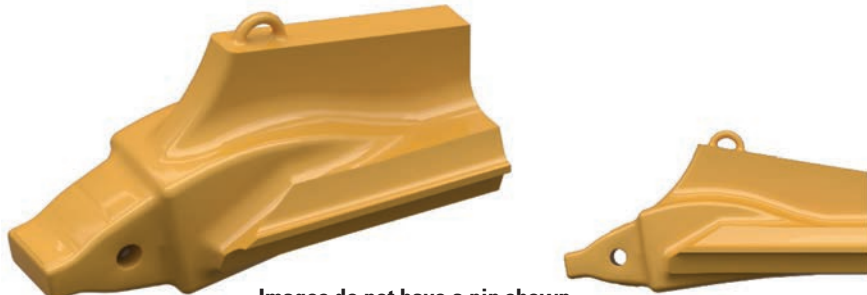
- To request bucket inspection forms
- To submit request for Cat GET base edge assemblies

X-2 ADAPTERS

The side pin design supports CapSure retention for fast, hammerless removal of the tip. The replaceable pin ensures a secure fit each and every time. Straddle leg adapters reduce corner stress and the time associated with adapter and sidebar maintenance.



Center Adapter



Images do not have a pin shown

Cast Corners



Images do not have a pin shown

Corner Adapter—Straddle Leg

X-2 TIP OPTIONS

CapSure retention is built into each tip, eliminating the need to inventory and assemble separate retainers. One turn with a common square drive will lock or unlock the tip. Your Cat dealer can help you choose the tip that offers the right balance of penetration and wear life for your application.



GENERAL PURPOSE

X2-GP tips are symmetrical and the baseline for other tip styles.



ABRASION

X2-A tips are for high-abrasion applications and feature approximately **62 percent more wear material** than the X2-P tip.



PENETRATION

X2-P tips are ideal for densely compacted material. They feature a leading-edge profile that is **50 percent sharper** than the X2-GP style.



IMPACT

X2-I tips are **25 percent stronger** than the X2-GP to withstand high-impact applications.



HD PENETRATION

The HD penetration tip provides the highest level of penetration in high impact and abrasion applications.



SHARP

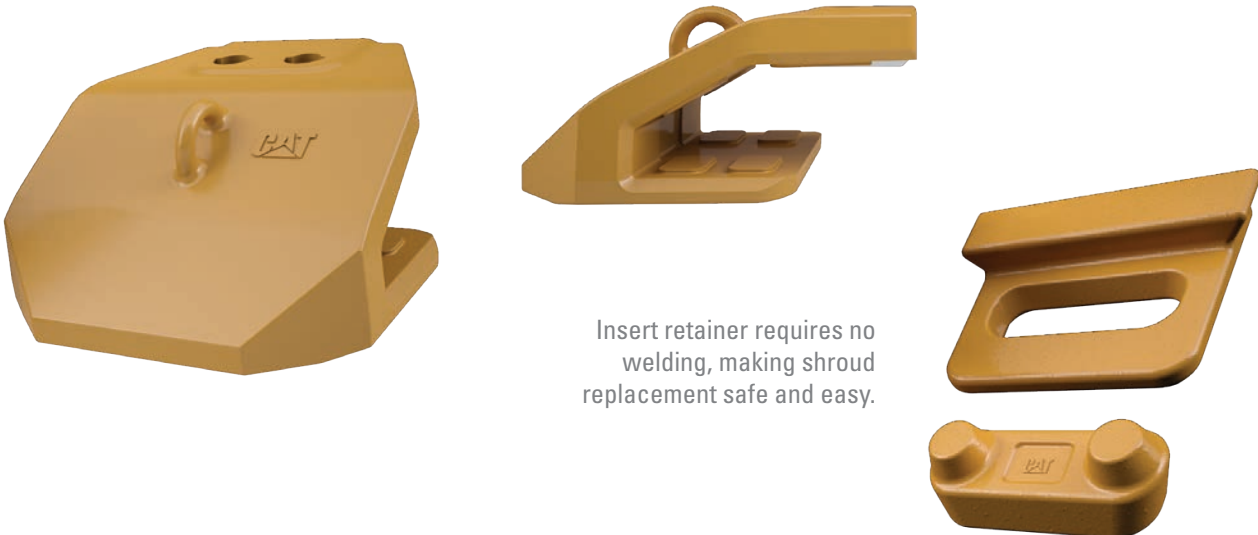
The sharp tip provides the highest level of penetration in low to moderate impact and abrasion applications.

ENGINEERED TO ORDER (ETO) OPTIONS AVAILABLE

Custom offerings are available from your Cat dealer for your application.

X-2 LIP & WING PROTECTION

Shrouds are easily secured to the edge with our retention boss. CapSure retention is built into each shroud, eliminating the hammer and need to inventory and assemble separate retainers. One turn with a common square drive will lock or unlock the shroud.



Change the worn protector by driving out the pin.

TIP INSTALLATION

Follow these three simple steps for fast, safe and easy installation and removal:

- 1** Insert pin into nose base hole.



- 2** Slide tip onto nose base.



- 3** Rotate CapSure retainer 180° into locked position.



Scan the QR Code to the right to watch the installation video.



LIP SHROUD INSTALLATION

Follow these three simple steps for fast, safe and easy installation and removal:

- 1** Insert retention boss.



- 2** Slide lip shroud onto lip.



- 3** Rotate CapSure retainer 180° into locked position.



WING SHROUD INSTALLATION

Follow these three simple steps for fast, safe and easy installation and removal:

- 1** Insert washers through lip pin holes.



- 2** Install wing shroud on lip.



- 3** Insert pins to secure wing shroud in place.



BASE EDGE END PROTECTION (BEEP)

PROTECT YOUR CORNERS—WITHOUT CUTTING THEM.

Beeps are an important part of the base edge system. Without beeps, the ends of the plate lip can wear quickly, causing damage to the base edge and washing away adapter welds. This can cause issues with corner adapter reliability and replacement.

BOOST YOUR UPTIME

Through-hardened Rc ~45 (Br ~3.0) weldable steel is easily installed in the shop or the field.

EXTEND LIFE

Extended base edge end protects adapter corner welds.

SPEED UP INSTALLATION

Height and bevel are matched to the base edge, so there's no additional fabrication.



SHROUD DEFLECTORS

Can have a critical role in protecting the lip shroud retention system from overload. Shroud deflectors should be used and maintained to ensure reliability of lip shrouds.



Shroud Deflectors

WELD-ON HEEL SHROUDS

WELD-ON HEEL SHROUDS

Weld-on heel shrouds protect the bottom and side of the bucket, concentrating extra wear material in the corner where it's needed most, and are ~400 Bn in hardness. Straight or curved shrouds come in three sizes, offering up to two inches of corner protection.





Imperial Oil
Esso

CAT
7495
HF

CAT G.E.T. SOLUTIONS FOR ELECTRIC ROPE SHOVELS

800-1,500 TON



X-4 SYSTEM FOR ELECTRIC ROPE SHOVELS 800 to 1,500 Ton

HAMMERLESS G.E.T. FOR ELECTRIC ROPE SHOVELS (ERS)

The industry standard for electric rope shovels (ERS), the Whisler style adapter is matched with CapSure retention—making installation and removal quick and safer than hammered alternatives.

IMPROVE SAFETY

Installation and removal is safer with our hammerless screw-drive adapter.

SPEED UP CHANGE-OUT

One retainer, one turn, means fast and easy change-outs.

SIMPLIFY INSTALLATION

No piece part assembly—CapSure retention system is built into the component.



ERS CAST LIP DESIGN

PERFECT FIT, BEST RELIABILITY, EVERY TIME

Cat ERS lip systems are delivered ready to work, saving hours of G.E.T. fitment and installation time. Fully machined lip surfaces ensure that Cat G.E.T. fits perfectly, and secures tightly. This reduces the rate of lip wear, extending your lifecycle. Machined retention holes reduce stress that originates in this area.



EXTEND LIP LIFECYCLE

Machined surfaces provide precise dimensional control and tighter fitting G.E.T.



REDUCE STRESS CRACKING

Machined retention holes lower stresses by 22%



ADAPTER & EDGE PROTECTION

The Whisler style adapter is secured to the lip with either hammerless or traditional C-clamp and wedge retention. The hammerless wedge retention assembly is often reusable, helping to lower your operating costs.

G.E.T. MORE FLEXIBILITY

Hammerless and traditional designs are available.

SIMPLIFY INSTALLATION

Tapered adapter slot provides quick and easy wear cap installation and removal.



Adapter & Retention System

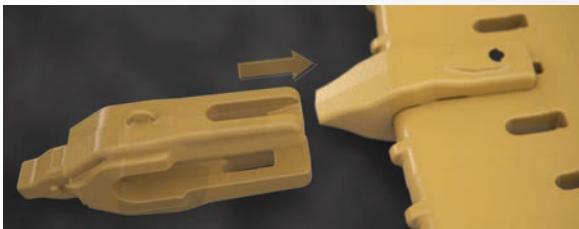
Wear Cap

The wear cap removes easily due to a tapered fit with the adapter.

INSTALLATION & REMOVAL

Follow these four simple steps for fast, safe and easy installation and removal:*

- 1** Position adapter onto dipper edge.



- 2** Insert C-clamp.



- 3** Insert wedge assembly and tighten.



- 4** Torque wedge assembly to specifications.



* See dealer for procedures.

TIP OPTIONS

Choose from five tip profiles designed for a broad range of applications. Your Cat dealer can help you select the option that offers the right balance of penetration and wear life for your jobsite.



GENERAL PURPOSE

X4-GP tips are symmetrical and the baseline for other tip styles.



PEN ABRASION

X4-PLA tips are designed for high-abrasion, low-impact applications where penetration is critical. They are 17 percent longer and have four percent more wear material in the tip body.



ABRASION

X4-A tips feature approximately 27 percent more wear material than the X4-GP tip.



IMPACT

X4-I tips are 16 percent stronger than the X4-GP to withstand high-impact applications.



OIL SAND PENETRATION

X4-OSP tips have been designed with a stream line shape in mind for better penetration, a deeper recess to keep the tip sharp throughout its wear life, and is 1" longer than the pen abrasion tip to extend its productive wear life.

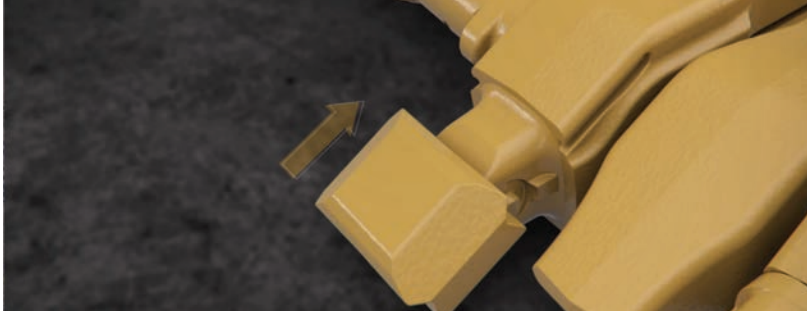
ENGINEERED TO ORDER (ETO) OPTIONS AVAILABLE

Custom offerings are available from your Cat dealer for your application.

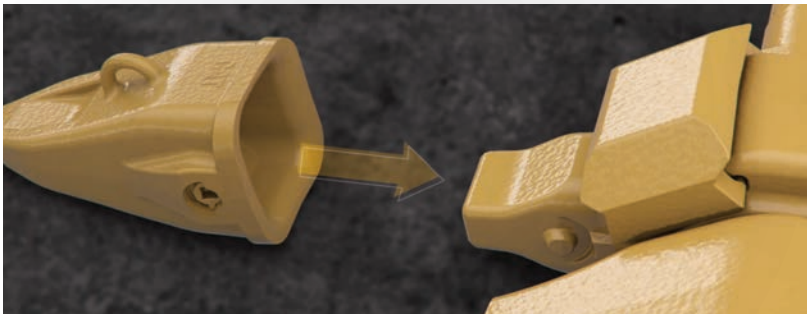
TIP & WEAR CAP INSTALLATION & REMOVAL

It's safe and easy—just follow this three-step hammerless process:

- 1** Slide wear cap onto tapered slot on adapter.



- 2** Slide tip onto adapter.



- 3** Rotate lock 180° with a 19mm square drive.



above to watch the installation video.

LIP SHROUDS WITH CAPSURE RETENTION

FAST, EASY, ONE-PIECE PROTECTION.

Get superior penetration and lip protection with the Whisler hammerless shroud system.

SHORTEN CHANGE-OUT TIME

One turn locks/unlocks retainer.

ENHANCE SAFETY

Hammerless CapSure system allows for fast, easy installation and removal while reducing the risk of injury.

LOWER YOUR COSTS

Retention boss is reusable, reducing your owning and operating costs.

INSTALLATION & REMOVAL

It's safe and easy—just follow this three-step hammerless process:*

- 1** Weld retention boss onto edge.



- 2** Slide edge shroud over retention boss.



- 3** Rotate 180° to lock.



WH12 Lip Shroud



WH12 Short Lip Shroud



Welded Base

* See dealer for procedures.

WING SHROUDS

BALANCED PROTECTION AND PENETRATION.

With a wing shroud, you can protect the structural integrity of your bucket and sustain enhanced penetration.

REDUCE YOUR COSTS

Wing shroud shields the bucket edge to minimize wear and maintenance.

SIMPLIFY REMOVAL

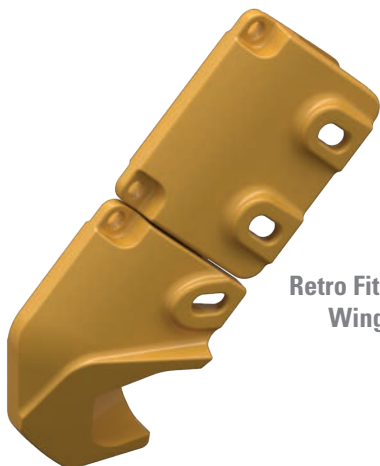
Caterpillar patented design has all of the same features and benefits as the adapter retention.

SAFETY REMOVAL

Low install torque improves installation speed and safety.



Pin on Wing Shroud



Retro Fit Hammerless Wing Shrouds



Wedge and Spool Hammered



Hammerless Retention





CATERPILLAR

CAT

AD45B

CAT G.E.T. SOLUTIONS FOR UNDERGROUND LOAD HAUL DUMP LOADERS

R1300-R3000



MODULAR SEGMENT SYSTEM for R1300 to R3000 LHD

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.

**BEVEL INTERLOCK SPEEDS
UP WELD INSTALL TIMES**

20% Faster Installation vs competitive shrouds systems

**BEVEL INTERLOCK
IMPROVES RELIABILITY**

18% Stronger modular shroud assembly

**SIMPLIFIED
MAINTENANCE**

Easier maintenance planning with integrated Wear Indicators

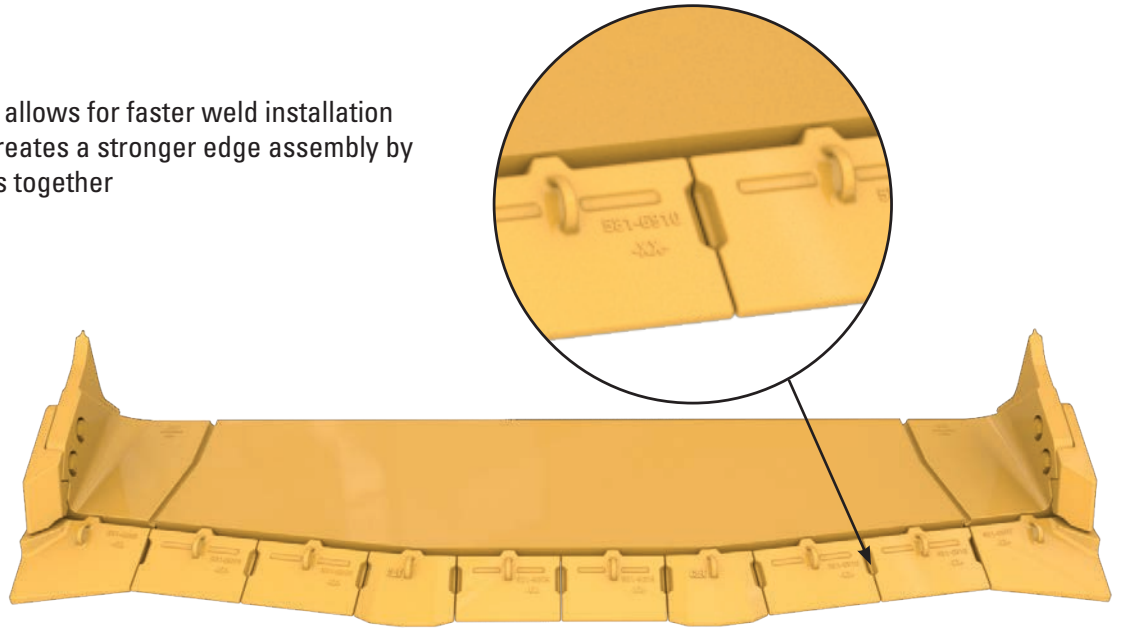


MODULAR SEGMENT SYSTEM

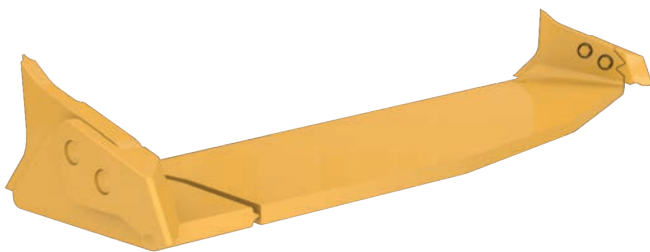
R1700 TO R3000 LHD

Individual segments are configured to form Lip Assemblies that range from covering all LHD size classes. 1920 to 3754mm configurations are built today, with custom widths available on request.

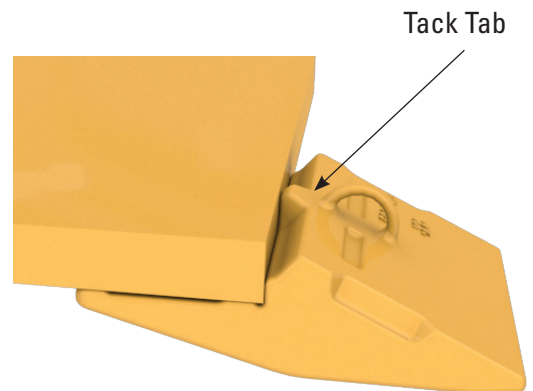
Integrated Bevel allows for faster weld installation time times and creates a stronger edge assembly by locking segments together



30% Bucket lifecycle extension with Integral Corners



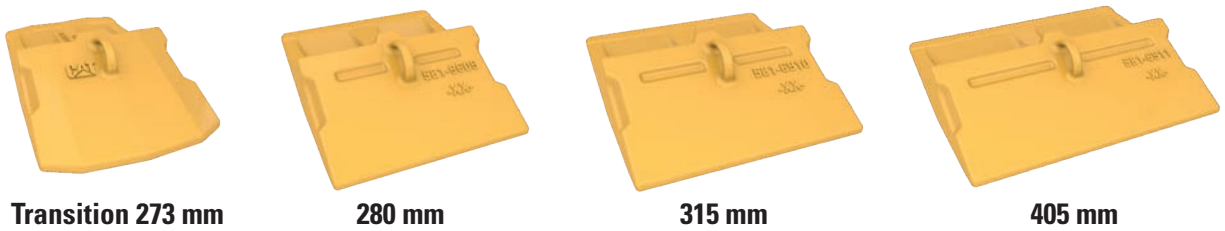
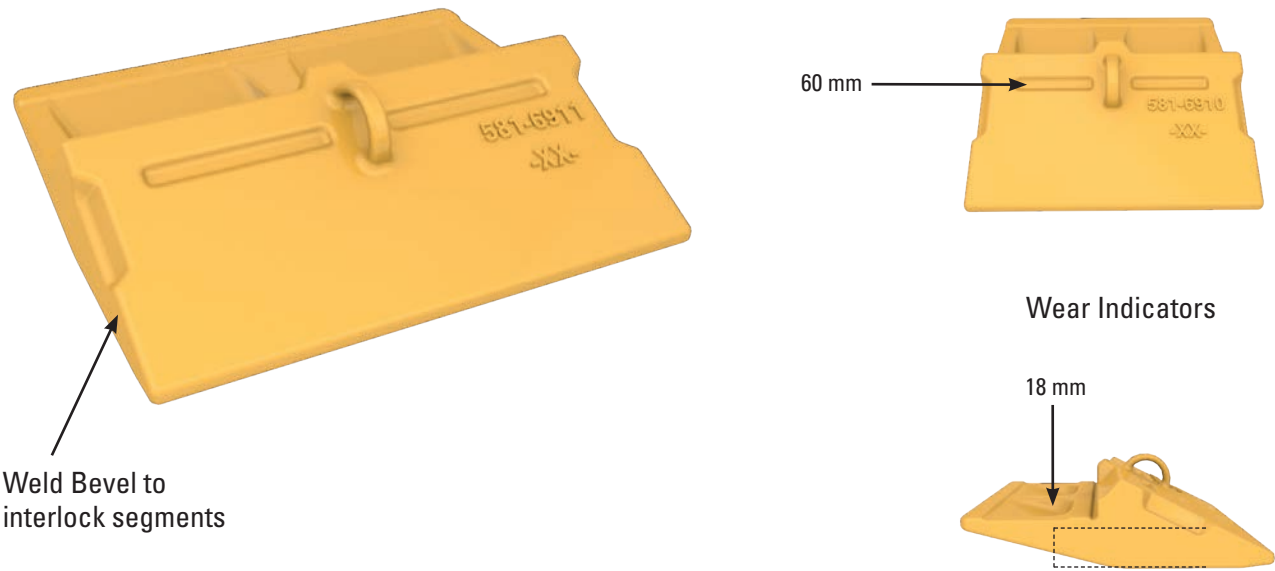
Tack Tab and bevel simplify installation



MODULAR SEGMENT SYSTEM

R1300 TO R3000 LHD

Segments are designed for easy serviceability and intuitive maintenance planning. Corners are wear balanced with the centers segments to help extend the service life of the modular segment system.



Segments have – 80% allowable wear material



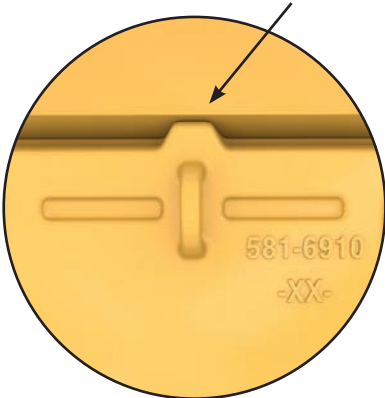
Corners have ~ 40% more material for balanced system wear

MODULAR SEGMENT SYSTEM

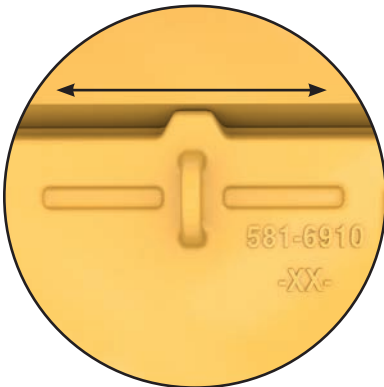
R1300 TO R3000 LHD

Modular segments are designed for easy fitment and fast installation. Three simple steps will create a modular system that delivers superior reliability and performance.

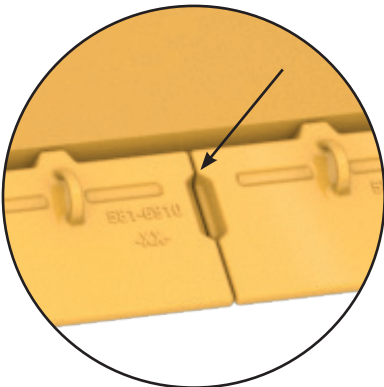
1 Position Shroud and use Tack Tab to secure shroud to the edge



2 Weld Shroud to base edge according to Cat Special Instructions



3 Weld Shroud Bevel Interlock according to Cat Special Instructions



CAT DURILOCK™ SHROUD SYSTEM

With Cat INFINITITE™ Retention for R1700 and R3000 LHD

Cat Durilock™ Shrouds adapt to your ever-changing mining environment in minutes without having to change the base edge or retention system. Infitite™ secures the 3 shroud systems for maintenance free retention.

HAMMERLESS

50% Faster Installation & removal vs competitive shrouds systems.

MAINTENANCE FREE

No Re-torque. INFINITITE™ spring delivers continuous retaining force.

DYNAMIC

3 performance levels from the same base edge system

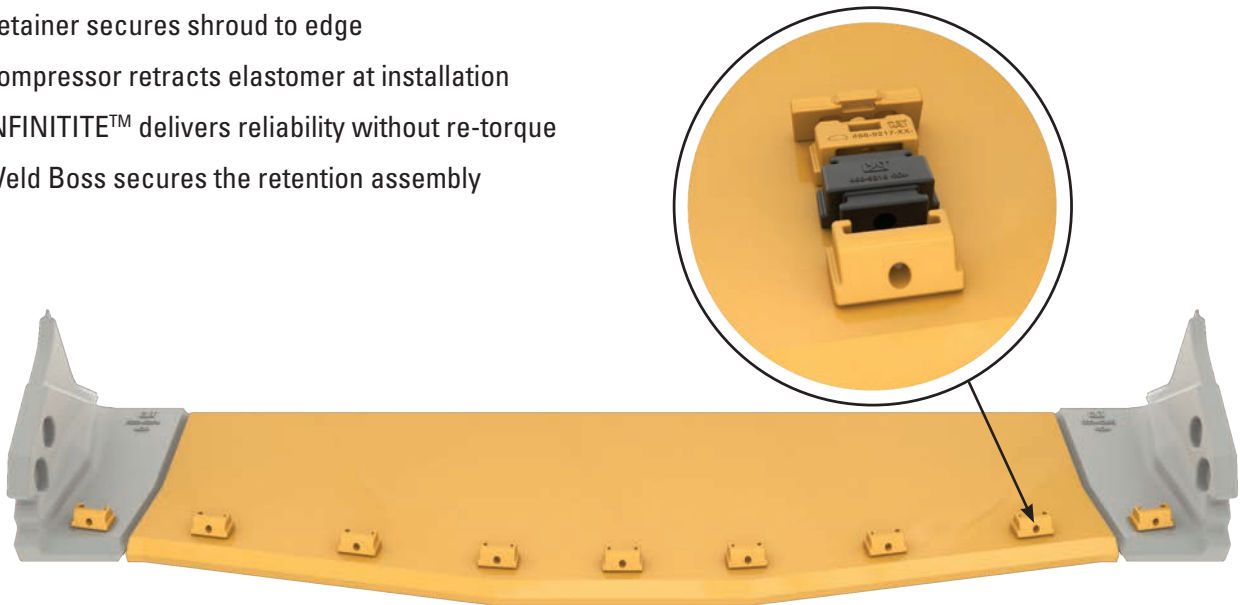


CAT DURILOCK™ SHROUD SYSTEM

WITH CAT INFINITITE™ RETENTION FOR R1700 TO R3000 LHD

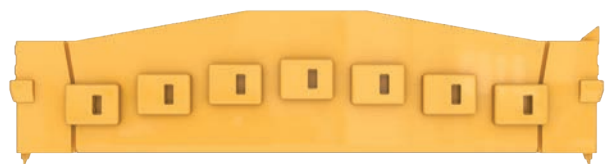
The Lip assembly provides the mounting surfaces for the shrouds and corner protectors, which balance corner and center station wear rates.

- » Retainer secures shroud to edge
- » Compressor retracts elastomer at installation
- » INFINITITE™ delivers reliability without re-torque
- » Weld Boss secures the retention assembly



STEPPED CORNER BASE EDGE

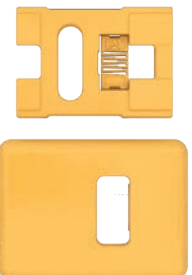
- » Reduces corner shroud torsional loads by 26% to prevent breakage



WEAR BAR – MAWPS PLATE

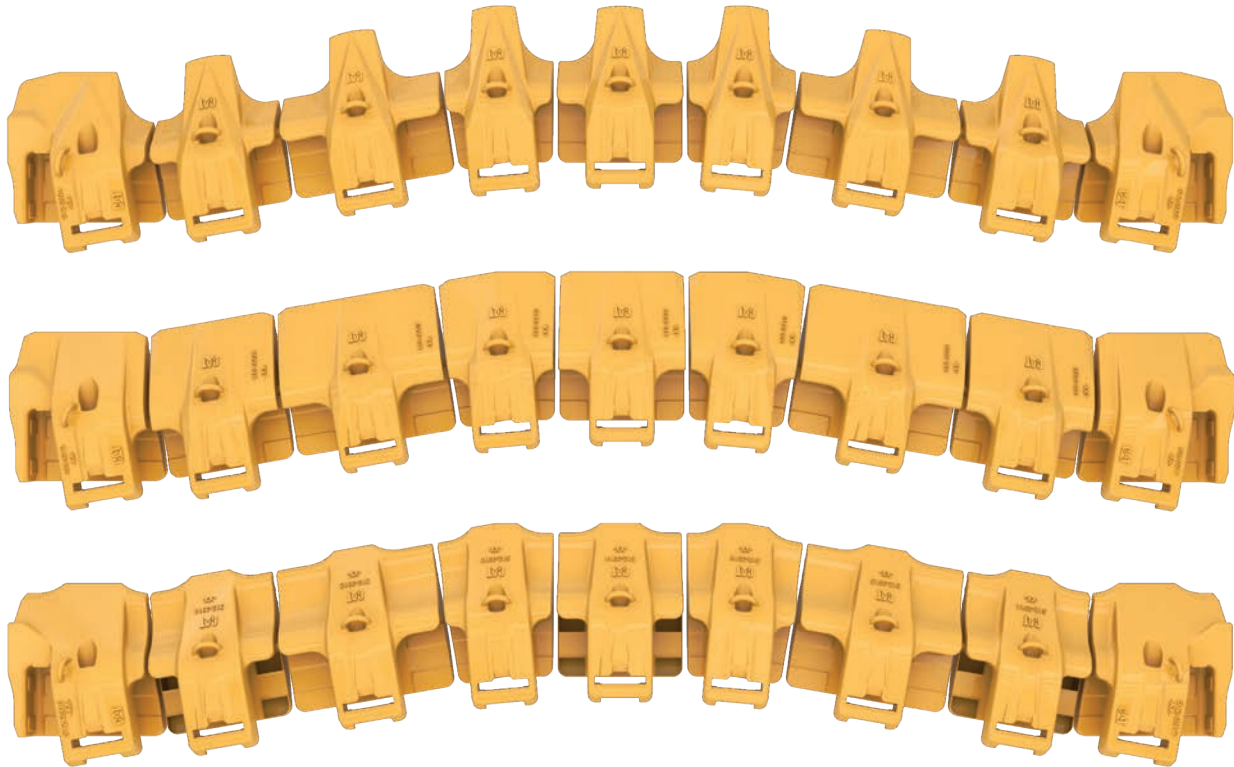
- » Wear bars can extend base edge life **30%**
- » MAWPS* retention replaced in minutes

* Mechanically Attached Wear Plate System



CAT DURILOCK™ SHROUD SYSTEM

WITH CAT INFINITITE™ RETENTION FOR R1700 TO R3000 LHD



D50P

Penetration of a tip, protection of a lip shroud.

Serrated edge design increases material penetration and bucket fill factors.



D50S

Balanced wear design for most applications

Baseline design provides equal distribution of Wear Material for applications that do not involve heavy floor cleaning



D50A

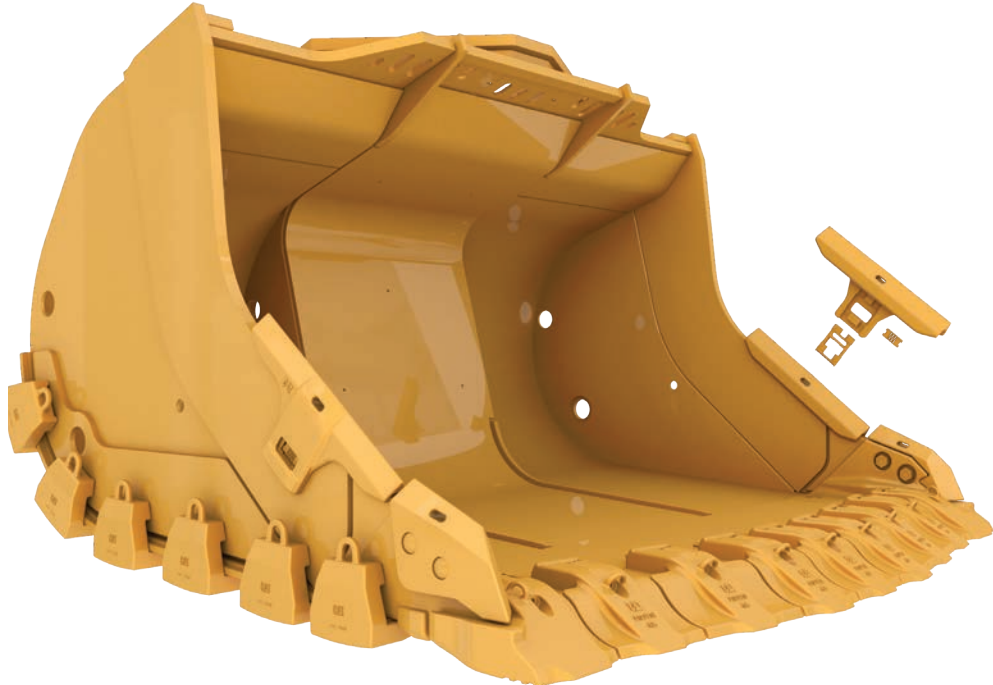
Long Life while maintaining a sharp penetrating profile

12% more usable wear material through the contoured design which repositions material on shroud base

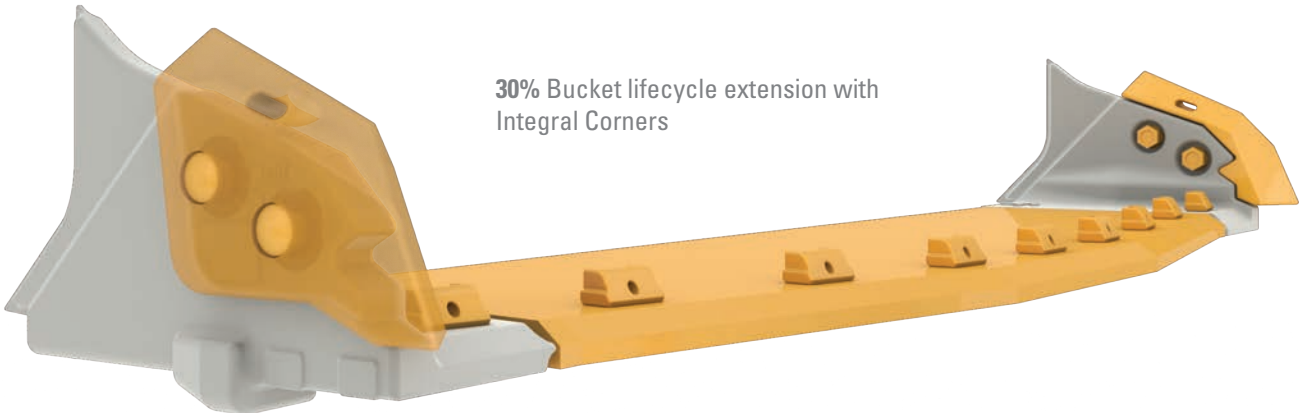
CAT DURILOCK™ SHROUD SYSTEM

WITH CAT INFINITITE™ RETENTION FOR R1700 TO R3000 LHD

Hammerless Sidebar protection installs in minutes and extends the life of the sidebar to lower rebuild costs. The protectors compliment Corner Guards and are compatible with any Cat Durilock lip shroud system.



Hammerless Sidebar protection through Cat MAWP retention technology.



30% Bucket lifecycle extension with Integral Corners

CAT DURILOCK™ SHROUD SYSTEM

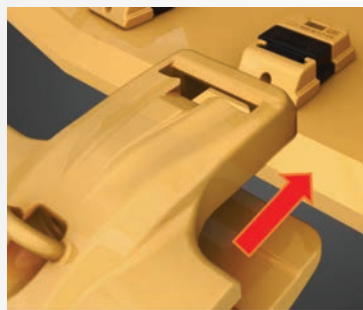
WITH CAT INFINITITE™ RETENTION FOR R1700 TO R3000 LHD

The INFINITITE™ retainer is easy to handle compared to small complex retention and has no hardware to fail or break. The positive retention system keeps shrouds tight, reducing edge damage often experienced with loose-fitting shrouds.

- 1** Assemble Spring/Compressor onto the weld boss. Place nut in compressor body



- 2** Slide shroud onto base edge assembly



- 3** Bolt should engage nut (in the compressor)
Tighten bolt until retainer slides into shroud body

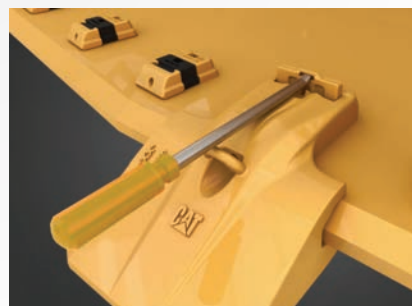


- 4** Remove bolt from shroud after installing retainer



REMOVAL

Use a flathead screwdriver to remove the Retainer from the Shroud



CAT DURILOCK™ SHROUD SYSTEM

BUCKET CONFIGURATIONS BY MODEL AND BUCKET

MODEL	BUCKET WIDTH	DESCRIPTION
R1300G	1920	Bucket 2.4M ³ (3.1 YD ³)
R1300G	1980	Bucket 2.8M ³ (3.7YD ³)
R1300G	2170	Bucket 3.1M ³ (4.1 YD ³), Ejector Bucket 2.4M ³ (3.7 YD ³), Ejector Bucket 2.8M ³ (3.7 YD ³), Ejector Bucket 2.4M ³ (3.7 YD ³), Ejector Bucket 2.8M ³ (3.7 YD ³), Bucket 3.4M ³ (4.5 YD ³)
R1300G	2370	Bucket 3.4M ³ (4.5YD ³)
R1600G	2410	Bucket 3.9M ³ (5.1YD ³)
R1600G	2570	Bucket 4.2M ³ (5.5 YD ³), Bucket 4.8M ³ (6.2 YD ³), Bucket 5.6M ³ (7.3 YD ³), Bucket High Pen 4.8M ³ (6.2 YD ³), Ejector Bucket 4.8M ³ (6.3 YD ³), Ejector Bucket 4.8M ³ (6.3 YD ³)
R1600G	2830	Bucket 5.9M ³
R1600G	2870	Bucket 5.9M ³ (7.7 YD ³), Bucket High Pen 5.9M ³ (7.7 YD ³)
R1700	2672	Bucket 5.0M ³ (6.5 YD ³), Bucket High Pen 5.0M ³ (6.5 YD ³), Bucket 4.6M ³ (6.0 YD ³)
R1700	2772	Bucket High Pen 5.7M ³ (7.5 YD ³), Ejector Bucket 5.6M ³ (7.3 YD ³), Bucket 5.7M ³ (7.5 YD ³), Ejector Bucket 5.6M ³ (7.3 YD ³)
R1700	2932	Bucket 6.7M ³ (8.8 YD ³), Bucket High Pen 6.7M ³ (8.8 YD ³)
R1700	2982	Bucket 7.4M ³ (9.7 YD ³), Bucket High Pen 7.4M ³ (9.7 YD ³)
R1700	3492	Bucket Light Mat 8.8M ³ (11.5 YD ³)
R1700	2830	Bucket 5.7M ³
R1700	3244	Bucket 7.5M ³
R2900/R3000	3054	Bucket 7.2M ³ (9.4 YD ³), Bucket High Pen 7.2M ³ (9.4 YD ³), Bucket 6.4M ³ (8.4 YD ³)
R2900/R3000	3154	Bucket 8.2M ³ (10.7 YD ³), Bucket High Pen 8.2M ³ (10.7 YD ³), Bucket 8.3m ³ (10.9 yd ³)
R2900/R3000	3354	Bucket 8.9M ³ (11.6 YD ³), Bucket High Pen 8.9M ³ (11.6 YD ³), Bucket 8.9M ³ (11.6 YD ³)
R2900/R3000	3454	Ejector Bucket 7.1M ³ (9.3 YD ³), Bucket 9.5 M ³ , Bucket 3500 mm Light Mat 10.5M ³ (13.7 YD ³), Bucket 10.5m ³ (13.7 yd ³)
R2900/R3000	3754	Bucket 3800 mm Light Mat 11.5M ³ (15.0 YD ³), Bucket 11.6 m ³ (15.2 yd ³)

CAT BOLT-ON HALF ARROWS

MAXIMUM LIP PROTECTION THROUGH INTEGRATED DESIGN

The bolt-on half arrow (BOHA) system delivers best-in-class lip protection with fewer parts than competitive systems. Reducing maintenance cost through better protection, and fewer parts to manage. BOHA segments have superior hardness vs. welded components.

HIGH PERFORMANCE

14% harder than weld-on.

SIMPLIFY INSTALLATION

Up to 75% faster replacement vs. weld-on when using Cat dirt blocker rings.

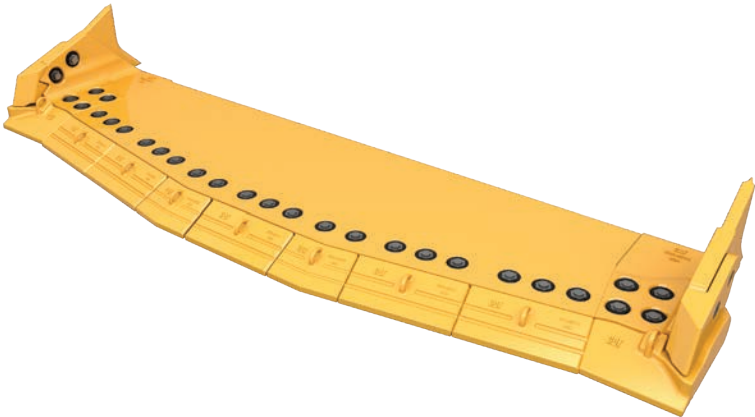
SAFETY

No welding-related concerns.



BOHA BASE EDGE DESIGN

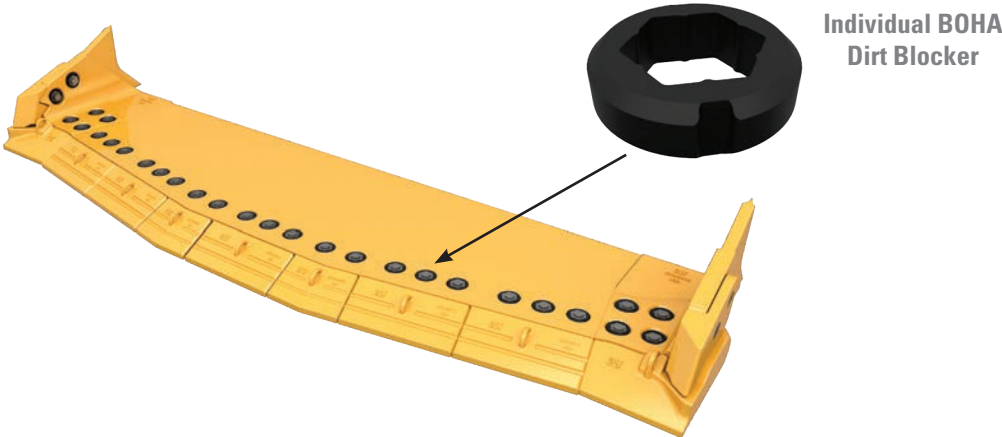
The BOHA system includes a base edge specific to your bucket, which includes cast corners (R1700-3000) and butter bead, reducing installation times by 75%.



50% more contact area reduces stress and impact, which will extend the service life of your base edge system.

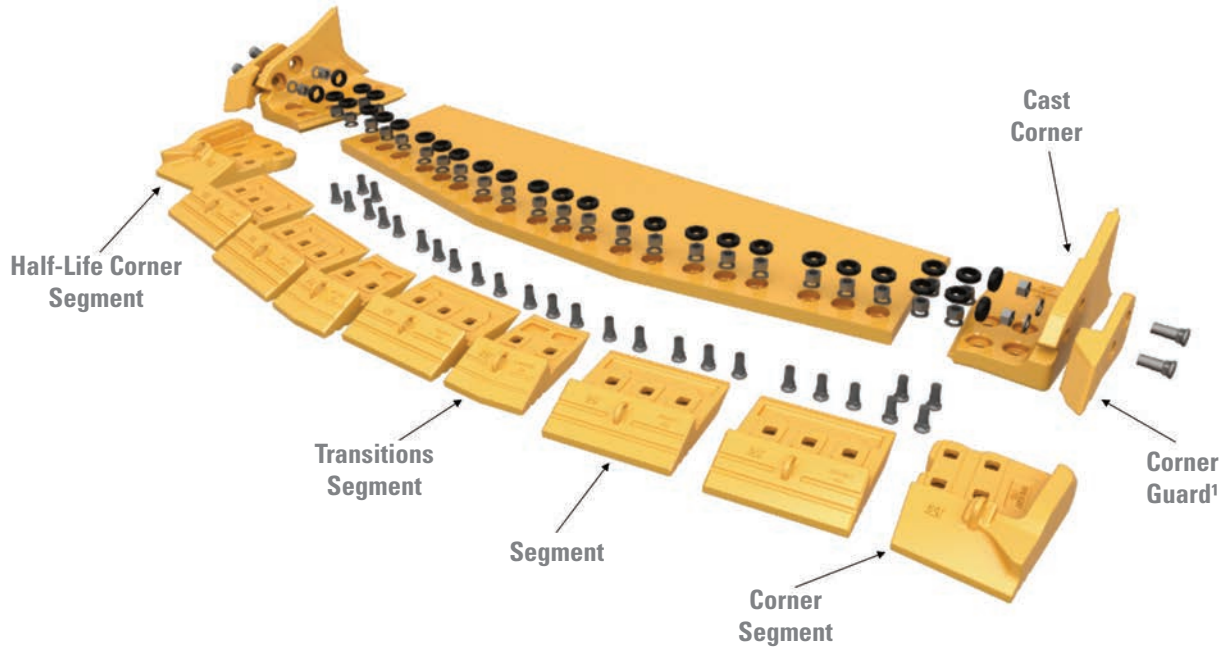


Reduce clean-out times from minutes to seconds. Dirt blocker rings compresses for easy installation and removal with a common pick or flat screw driver.



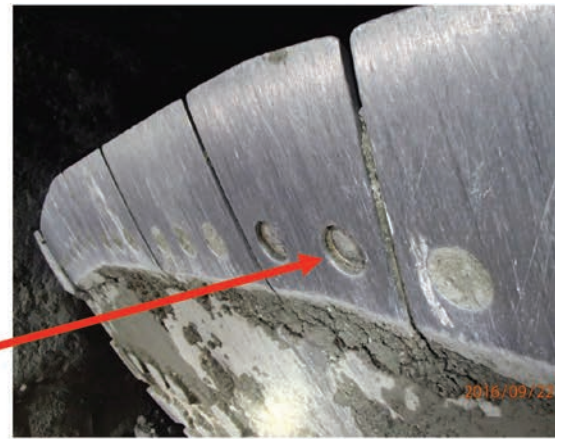
BOHA PERFORMANCE DESIGN

The BOHA system includes a base edge specific to your bucket, which includes cast corners (R1700-3000) and butter bead, reducing installation times by 75%.



Maintenance-friendly with integrated wear indicators

- » Replace full corners with Half Life Corners² at center segment half-life.
- » End-of-life indicators are on the segment, as well as the bolt hole depth.



¹ Corner Guards are only available for R1700-R3000 Machine Sizes.

² Half Life Corners are only available for R1300-R1700 Machine Sizes.

BOHA REMOVAL AND INSTALLATION³

The BOHA system includes a base edge specific to your bucket, which includes cast corners (R1700-3000) and butter bead, reducing installation times by 75%.

- 1** Install the center half arrow to base edge using nuts, washers, and bolts. Tighten the nuts loosely by hand.



- 2** Install all half arrows from the center segment out to the corner segments. Tighten loosely by hand.



- 3** Install a bucket corner guard to both corners of base edge using nuts, half washers, and bolts. Tighten the nuts loosely by hand.



- 4** Ensure all half arrows and bucket corner guards are hard against base edge. Use an impact wrench to tighten nuts fully. Insert the dirt blocker rings into the counterbores of base edge over all full nuts.



- 5** When half arrows are at half-life, replace the corner segment edges with new half-life corner segment edges.



³ These instructions are only meant as an overview. For the complete instructions please view M0081516 in SIS.

TOTAL WEAR PROTECTION

INCREASED PRODUCTIVITY. FOR EVERY ENVIRONMENT. FOR EVERY APPLICATION.

Get the best available protection for every product on your site, from wheel loaders to cable shovels, with our Total Wear Protection line.

LAMINATED WEAR PRODUCT (LWP)



Chocky Bars, available in four shapes, feature a V-groove design that can be bent around a radius. They can be separated or modified in length. The inset of the Cat logo allows for the trapping of fine material in each section, extending the life of the wear material itself. Chocky bars come in four sizes.



Wear Buttons, designed for applications that optimize the round profile, trap material to provide material-on-material wear. Wear buttons are available in four sizes.



Tear Drop Wear Button fits in with the existing line of circular Wear Buttons. The tear drop shape can extend into corners or follow natural tapers on the protected surface.



Roll Bars protect the leading edge of dozers, loaders, mining shovels and other equipment, providing maximum wear protection while minimizing drag. Roll bars are available in three sizes.



Wear Lugs are for the use on earth moving equipment in the sidebar and leading edge of the bucket. The profile shape of the top of the Wear Lug allows this product to be utilized in TTT applications for further traction on track shoes.



Bolt Protectors help prevent hardware wear on cutting edges, top plates, sidebar protectors and more by allowing material to pack. They also allow for easier removal when replacing G.E.T.

LAMINATED WEAR PRODUCT (LWP)

Wear Blocks are used in areas where a single piece needs to cover a large or specific surface area. There are several new Wear Blocks in the portfolio that give more flexibility and options for coverage.



6x8" Wear Blocks are versatile and long lasting. They feature a zigzag inset design that allows for material-on-material wear. They prevent channel wear common in parallel grooves, delivering extended life in extreme operations.



3x4" Wear Patch Blocks can be plug welded in tight areas. They can also be grouped together where no gaps are desired between parts.



11" Trapezoidal Wear Blocks can fill a tapered area or be staggered in a pattern to avoid straight-line channels. They feature a zigzag inset design that allows for material-on-material wear. They prevent channel wear common in parallel grooves, delivering extended life in extreme operations.



4x8.5" Skid Wear Blocks are rectangular shaped and perimeter welded in place.

MANGANESE WEAR PRODUCTS

MANGANESE WEAR PRODUCTS



Cat Manganese Wear Bar is the first to market product and is designed for the most impact prone applications, including mining shovel heels and lips, and in fixed plant applications including primary and secondary crushers.



Cat Manganese Wear Block are designed for the most impact prone applications.

BI-METALLIC WEAR PRODUCTS



Cat Bi-Metallic Wear Blocks use a unique mechanical bonding process for the highest impact applications. The mild steel jacket and fingers create a strong bond to the chrome white iron.

TUNGSTEN WEAR PRODUCTS



Cat Tungsten Sidebars are designed to be installed on the bucket wings of any HMS, ERS, or LHEX bucket. These are an alternative method of protection over OEM cast wing shroud systems. The tungsten carbide sidebars strengthen the bucket sidewall and provide a shadowing effect that can protect the sidewall from wear.

WEAR PRODUCTS STANDS

The specially designed stands are engineered to support over 2,500 pounds of wear products. They can be placed at the point of use parts store, warehouse, weld shop, fabrication shop for easy storage or consignment plans.

See PEBJ0031 for more information.



Full Stand



Half Stand





Cocky bars in application

ABRASION RESISTANT MATERIAL (A.R.M.)

Cat Abrasion Resistant Material is a coating made of extremely hard tungsten carbide particles that forms a protective shield over key wear surfaces. Cat G.E.T. with A.R.M. is ideal for high-abrasion, low-to-moderate impact applications—such as working in sand, gravel and other abrasive materials that can severely diminish G.E.T. wear life.

EXTEND YOUR WEAR LIFE

Tungsten carbide offers three to five times the life of through-hardened G.E.T.

LOWER YOUR COST PER HOUR

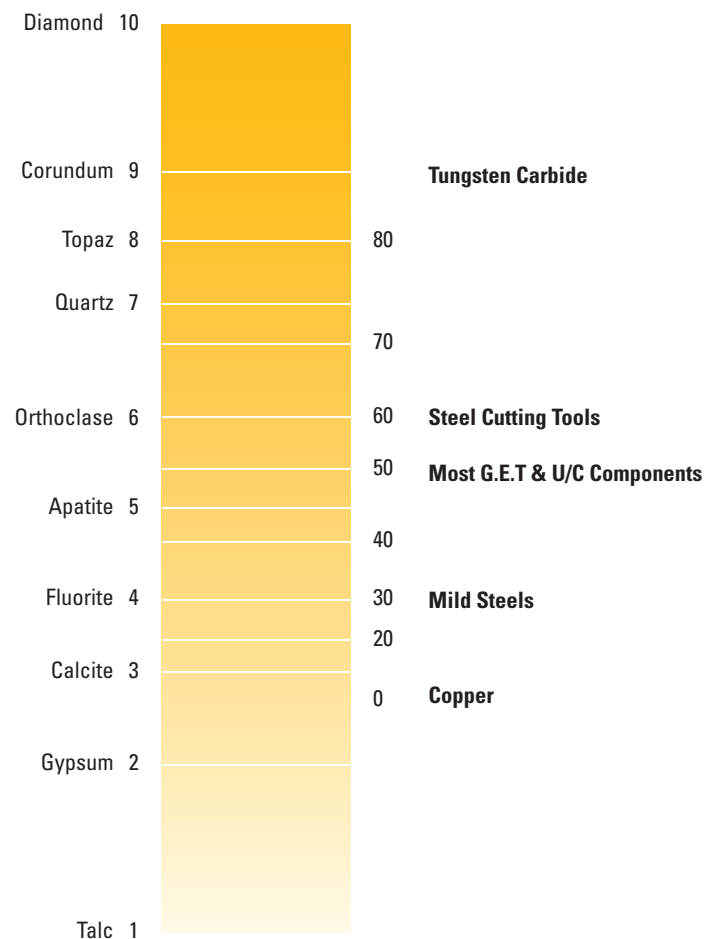
Self-sharpening wear pattern means fewer change-outs in the right applications.



HARDNESS COMPARISON

MOHS HARDNESS

ROCKWELL "C" HARDNESS



EXAMPLE PARTS WITH A.R.M. APPLIED



A.R.M.
OPTION
AVAILABLE

NOTE: Products available with the A.R.M. option feature this symbol.

ENGINEERED TO ORDER (ETO) CUSTOM PRODUCTS

Bucket and blade products are continually refined as they work and wear, so the G.E.T. solution often needs to be “tailored” to your unique wear environment. Your Cat dealer can provide that custom product for your application.

OVERLAY PRODUCTS

Abrasion Resistant Material (A.R.M.) and Plasma Resistant Material (P.R.M.) can be applied to G.E.T. components to extend their life.



Custom base edges and cutting edges are available for your bucket.



CASTINGS - LIP SHROUDS, COUPLER, TIPS



Contact: GET_ETO_Request@cat.com

- To request ETO forms
- To submit ETO request



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