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

The most important part of any machine is its work tool. Buckets or blades, tips or edges, rippers or side cutters—no matter the size, work tools and Ground Engaging Tools (G.E.T.) are the main reason the machine exists. G.E.T. have a direct effect on the machine’s ability to produce. Improper selection affects not only your productivity, but also your fuel consumption, maintenance costs and possibly the longevity of your equipment.

Caterpillar offers “off-the-shelf” and custom G.E.T. systems that maximize machine productivity, and your Cat® dealer can help you establish an effective management program that minimizes preventable problems—working to reduce your operating and maintenance costs.

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.

BUILT FOR IT.
EL]ECTRIC ROPE SHOVEL (ERS)
DOZERS

No other manufacturer in the world has more experience moving material than Caterpillar. We invented the dozer over 100 years ago—and we’ve been the market leader ever since. There are more Cat dozers at work in the world than any other brand.

Dozers work in dozens of different industries, applications, climates and environments and can be customized for specific jobs—just like the G.E.T. that protect their blade or ripper system. From parts availability to expert support and service, Cat customers can count on one reliable source—Caterpillar and Cat dealers.
SYSTEM OVERVIEW

Dozers move ground at mines, construction sites, residential developments and hundreds of other places. A dozer’s main work tools are a blade and a ripper. The universal blade is curved, wide and tall so that it can carry material. Other blades are flat or shorter, but they all do a similar job: leveling the ground. The ripper loosens the rocky or compact earth, which makes dozing or loading easier.

Both the blade and ripper have to balance ground penetration with wear life. Excessive worktool or G.E.T. wear material can make the machine less effective. Cat dozer cutting edges and end bits are designed as a balanced system to move more material over a longer period with less downtime—which translates into a lower cost per hour for you. Select from dozens of ripping system configurations or have your Cat dealer help you choose the best option for your application.

CUTTING EDGES & END BITS

BALANCED EDGE SYSTEMS FOR EVERY APPLICATION.

Matching your cutting edge wear rates with your end bit selection is easy with our broad portfolio of options. You achieve a balanced system, which helps reduce both maintenance intervals and operating costs, leading to more productivity.

Cat end bits and cutting edges can be custom ordered with Cat Abrasion Resistant Material (A.R.M.), which is recommended for applications where sand, gravel or other abrasive materials severely diminish wear life. Hard tungsten carbide particles are bonded to critical wear areas, providing up to five times greater wear life than similar end bits and cutting edges without A.R.M. See your Cat dealer for details.

SAFER, SIMPLER INSTALLATION
Threaded holes allow easier handling of edges at first install or during rotation to wear opposite edge.

MINIMAL THROW AWAY
Multiple edge sections allow you to rotate or replace only the worn areas.

IMPROVED PRODUCTIVITY
Broad offerings allow you to have both end bit penetration and long cutting edge life, resulting in less maintenance.
CUTTING EDGE & END BIT OPTIONS

We have G.E.T. for your blade, no matter the application or environment. As machines grow larger, their jobs become tougher, and so do Cat G.E.T. Maximum wear life and breakage resistance is possible with our steel alloy that can endure 2x the heat and pressure of traditional blade steel products. Consult your local Cat dealer to help determine the best cutting edge system for your application to give you the lowest cost per hour.

D3 - D5 END BIT OPTIONS

LEVEL CUT/ FINISH (FACTORY FIRST FIT)
- Recommended for finish and semi-finish dozing
- Matches cutting edge’s depth of cut
- Low-impact, low-abrasion materials only

LEVEL CUT REVERSIBLE
- Reversible finish and semi-finish dozing end bits
- Used in applications where curbing is not a requirement

LEVEL CUT EXTENDED REVERSIBLE
- Longer reversible finish and semi-finish dozing end bits used to extend the length of the blade
- Used in applications where curbing is not a requirement
D6 END BIT OPTIONS

LEVEL CUT/FINISH (FACTORY FIRST FIT)
- Recommended for finish and semi-finish dozing
- Matches cutting edge's depth of cut
- Low-impact, low-abrasion materials only

LEVEL CUT REVERSIBLE
- Reversible finish and semi-finish dozing end bits
- Used in applications where curbing is not a requirement

HOT CUPPED
- Forward protruding profile for better penetration than flat plate

GENERAL PURPOSE
- Sharpened, forward protruding profile for excellent penetration
- For fast blade loading, high productivity applications

UTILITY
- Thick cross-section for high face wear applications
- Recommended for high-impact, high-abrasion applications

EXTENDED WEAR LIFE (EWL)
- 25% more usable wear material than General Purpose
- Prolonged life and excellent penetration in abrasive conditions

See page 188 for more details on Abrasion Resistant Material (A.R.M.).

D7 - D9 END BIT OPTIONS

LEVEL CUT/FINISH
- Recommended for finish and semi-finish dozing
- Matches cutting edge's depth of cut
- Low-impact, low-abrasion materials only

UTILITY
- Thick cross-section for high face wear applications
- Acceptable in high-impact, high-abrasion applications

HOT CUPPED
- Forward protruding profile for better penetration than flat plate

GENERAL PURPOSE (FACTORY FIRST FIT)
- Sharpened, forward protruding profile for excellent penetration
- For fast blade loading, high productivity applications

EXTENDED WEAR LIFE (EWL)
- 25% more usable wear material than General Purpose
- Prolonged life and excellent penetration in abrasive conditions

See page 188 for more details on Abrasion Resistant Material (A.R.M.).
D10 - D11 END BIT OPTIONS

LEVEL CUT/ FINISH
- Recommended for finish and semi-finish dozing
- Matches cutting edge’s depth of cut
- Low-impact, low-abrasion materials only

UTILITY
- Thick cross-section for high face wear applications
- Acceptable in high-impact, high-abrasion applications

HOT CUPPED
- Forward protruding profile for better penetration than flat plate

GENERAL PURPOSE
- Sharpened, forward protruding profile for excellent penetration
- For fast blade loading, high productivity applications

EXTENDED WEAR LIFE (EWL: FACTORY FIRST FIT)
- 25% more usable wear material than General Purpose
- Prolonged life and excellent penetration in abrasive conditions

EXTREME EXTENDED WEAR LIFE (EEWL)
- 25% more usable wear material than General Purpose
- Prolonged life and excellent penetration in abrasive conditions

HIGH ABRASION
- New cast edges and end bits provide up to 40% longer wear life than Extended Wear Life (EWL)
- Optimized material placement

HIGH-ABRASION CAST CUTTING EDGE SYSTEM

MAXIMIZE MACHINE UPTIME IN THE MOST ABRASIVE APPLICATIONS.
Designed to fit Cat D10 and D11 universal and semi-universal blades, this cast cutting-edge system delivers reduced machine downtime and maximum productivity in low to moderate impact pushing applications. The new high-abrasion end bits are now married up with complementary cast high-abrasion cutting edges, an offering that Cat has never had in the past.

MAXIMUM WEAR LIFE
- New cast edges and end bits provide up to 40% longer wear life than Extended Wear Life (EWL).

LESS THROW AWAY
- Optimized material placement results in more wear material and less throwaway weight.
A COUPLE MINUTES CAN SAVE YOU HOURS.
Ensuring a long life for your blade and the G.E.T. that protects it involves three simple steps. Clean surfaces, new hardware and proper installation technique are shared as tips and tricks below. Always follow the specific instructions for your machine. Your local Cat dealer is only a phone call away if you need assistance.

1) Clean and Pristine
   - Surfaces, bolts and nut threads must be clean to ensure maximum clamping force
   - When installing, use new hardware as old bolts may have suffered metal fatigue

2) Center Out
   - Cutting edge bolts are installed from the center outward—do not install from both ends toward the center
   - End bit bolts are installed first from the center outward, then from the center inward

3) Torque, Bang, Torque
   - Tighten all bolts to the required torque
   - Wearing safety goggles, seat bolt heads in the countersinks with a heavy hammer
   - Tighten the bolts again to required torque

BLADE PROTECTION
PUSH BACK ON COSTLY REPAIRS.
Protect your blades from impact and aggressive wear with the line of Cat blade protection for dozers. All Cat blade products are manufactured to the factory contour, making fit and installation fast and efficient.

REDUCE BLADE DAMAGE
Push plates distribute the high forces created when pushing scrapers.

EXTEND BLADE SERVICE LIFE
Wear plates extend the service life of the blade “skin” in highly abrasive conditions.

SIMPLIFY INSTALLATION
Cat wear bars are 450 BHN and beveled to accept weld bead—a fast way to add strength and protection.

BLADE MAINTENANCE & REPAIR
Only a Cat cutting edge support will guarantee dimensional accuracy like the factory originals. Cutting edges and end bits are fastened to your cutting edge support. This bolted connection requires a perfectly flat and smooth surface the full length of the blade to ensure your G.E.T. stays secure. When millimeters matter, count on Cat quality and your Cat dealer’s capabilities.
SIDEBAR PROTECTOR
Dozers need sidebar protection, too. Large dozers, like large loaders, work in high-impact and extreme abrasion. Increase carrying capacity and simplify your blade maintenance with hammerless protection. Simply weld in the protector adapter once and save hours each time you replace the sidebar protection.

LOW MAINTENANCE
Protects the blade edge and extends sidebar reach to reduce maintenance cost and increase capacity.

HAMMERLESS
Fast, easy removal and installation. Reduces risk of injury.

RIPPER SYSTEMS
CAUSE A DISTURBANCE, GAIN PRODUCTIVITY.
Selecting the proper ripping tools can make the difference between just being able to rip a material and being able to reach optimum efficiency and maximum production (lowest cost/yd³). Production ripping (>20% of operation) usually requires a single shank ripper, as do very hard or tightly compacted materials. The more varied the job conditions, the greater the need for the multishank ripper. The multishank is especially useful in pre-ripping for scrapers or other loading tools.

LOWER OPERATING COSTS
Hammerless design allows pin re-use on R style adapters.

HAMMERLESS DESIGN
Fast, easy removal and installation. Reduces risk of injury.

For more information on ripper systems, please reference The Handbook of Ripping (AEDK0752).
RIPPER SYSTEM AVAILABILITY

Tooth penetration can be the key to ripping success. That’s why we offer a variety of tip styles and profiles. Our alloy steel tips withstand higher operating temperatures and are also self-sharpening. Shank protection helps you cut the material and extend your maintenance intervals. The products below are readily available, or you can consult your Cat dealer for custom options.

<table>
<thead>
<tr>
<th>TIP OPTIONS</th>
<th>R350</th>
<th>R450</th>
<th>R500</th>
<th>R550</th>
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<tbody>
<tr>
<td>Centerline - Short</td>
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<td>Centerline - Intermediate</td>
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<td>Centerline - Intermediate A.R.M.</td>
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<td>Centerline - Long</td>
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<td>Centerline - Sharp Limestone</td>
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<td>Centerline - Sharp A.R.M.</td>
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<td>Protector - Std</td>
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<td>Multi pc Sharp &amp; Guard</td>
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HAMMERLESS RIPPER TIPS CAPSURE RETENTION

Always use the longest tip without excessive breakage. Centerline tips have equal wear material on both sides and can be reversed, which can extend the life and help maintain sharpness. Cat penetration ripper tips have an aggressive angle to break through even the hardest surfaces and dig into the ground more effectively. Both hammerless options feature a topside deflector, which creates a smooth transition with the shank protector.

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<tr>
<th>SHANK PROTECTOR</th>
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</table>

| SHORT CENTERLINE     |      |      |      |      |
| Used in extreme impact conditions | |      |      |      |
| Sacrifices some wear material | |      |      |      |

| INTERMEDIATE CENTERLINE |      |      |      |      |
| Used for moderate impact and abrasion conditions | |      |      |      |
| 33% longer than Short Centerline | |      |      |      |

| INTERMEDIATE PENETRATION |      |      |      |      |
| Used for moderate impact and abrasion conditions | |      |      |      |

| LONG PENETRATION       |      |      |      |      |
| Designed for low-impact, highly abrasive conditions where breakage is not a problem | |      |      |      |
| 20% longer than Intermediate Penetration | |      |      |      |
Hammerless removal and installation is possible with your current side pin shank/adapter system. CapSure™ retention is built into each tip, so you only need to insert a pin to experience faster, safer, easier tip change out.

**Installation & Removal**

1. Insert pin into adapter hole.
2. Insert washer into adapter hole.
3. Slide the tip onto adapter.
4. Turn retainer 180° to lock/unlock.

Removal and installation animation is available at www.youtube.com/watch?v=UW6_jjqa_eA or by scanning the QR code to the right.

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**R Series Ripper Tip Options**

Always use the longest tip without excessive breakage. Centerline tips have equal wear material on both sides and can be reversed, which can extend the life and help maintain sharpness. Cat penetration ripper tips have an aggressive angle to break through even the hardest surfaces and dig into the ground more effectively.

<table>
<thead>
<tr>
<th>Tip Type</th>
<th>Characteristics</th>
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</thead>
<tbody>
<tr>
<td>Short Centerline</td>
<td>Used in extreme impact conditions, sacrifices some wear material</td>
</tr>
<tr>
<td>Intermediate Centerline</td>
<td>Used for moderate impact and abrasion conditions, 17% more wear material than Short Centerline</td>
</tr>
<tr>
<td>Long Centerline</td>
<td>Used in low-impact, high-abrasion conditions where breakage is not a problem, 30% more wear material than Intermediate Centerline</td>
</tr>
<tr>
<td>Sharp Centerline A.R.M.</td>
<td>Intermediate Centerline tip, which is tapered to a pick-like point on the end, A.R.M. strip on one side enhances sharpening action, offers best penetration and 13% more wear material than Short Centerline</td>
</tr>
<tr>
<td>Sharp Limestone</td>
<td>Used in limestone or caliche applications, chisel point penetrates in hard-to-penetrate materials, 16% more wear material than Short Centerline and 10mm shorter than Intermediate Centerline</td>
</tr>
<tr>
<td>Short Penetration</td>
<td>Used in extreme impact conditions, sacrifices some wear material</td>
</tr>
<tr>
<td>Intermediate Penetration</td>
<td>17% more wear material and 50mm longer than Short Penetration, used for moderate impact and abrasion conditions</td>
</tr>
<tr>
<td>Long Penetration</td>
<td>Used in low-impact, high-abrasion conditions where breakage is not a problem, 4% more wear material and 47mm longer than Intermediate</td>
</tr>
<tr>
<td>Sharp Penetration</td>
<td>Intermediate Penetration length tip, factory sharpened to ensure maximum penetration</td>
</tr>
</tbody>
</table>

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20 DOZERS

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INSTALLATION & REMOVAL
The R Series Tooth and Adapter system uses the standard pin and retainer system. The Tooth Pin Remover tool is available to make removal easier.

1. Place the tool on the tip and align the extractor with the pin.
2. Strike the tool with a hammer until the pin is removed.

RIPPER SHANK PROTECTOR
WANT BETTER PRODUCTIVITY WITH LESS COST? WE’VE GOT YOU COVERED.
Shank protectors cut through material with sharp edges, lowering the ripping effort. Minimize the wear, and required maintenance, on the more expensive shank body when you guard it with a protector. Never rip without Cat G.E.T. Our hammerless options offer fast, easy removal and installation without specialty tools.

SHARPMENDED PROFILE
Cuts through tough and compact materials, causing lower ripping resistance and less horsepower loss.

EXTENDED PROTECTORS
60% more coverage.

FULL LENGTH
Triangle-shaped guard-bar integrates with sharp lower protector for maximum ripping protection.

Single shank machine
RIPPER SHANK PROTECTOR OPTIONS

Four different protection options align with the tractor’s ripping system and the most common applications.

**GENERAL PURPOSE**
- Baseline protector R350 and R450 only

**SHARP**
- Penetrates compact material better than standard design
- Hammerless option has 40% more wear material than side pin version

**EXTENDED PROTECTOR**
- 60% more shank protection than Sharp

**INTEGRATED SHARP**
- Works with triangle-shaped bar to provide complete shank protection

INSTALLATION & REMOVAL
Hammerless retention made simple. The CapSure™ locking system allows for safer and easier removal/installation in four steps.

1. Insert pins and washer into shank hole.
2. Place shank protector over lower pin.
3. Position retainer over upper pin.
4. Turn retainer 180° to lock/unlock.

Removal and installation animation is available at www.youtube.com/watch?v=UW6_iqoa_eA or by scanning the QR code to the right.
MOTOR GRADERS

We offer hundreds of cutting edge options available on the shelf, plus the ability to customize through our Made as Order (MAO) program. Unique offerings like the Cat GraderBits™ system meet the toughest application needs and are complemented by multiple End Bit options. Trust your Cat dealer to offer you solutions that focus on total machine productivity.
CHOOSING AN EDGE

Edge selection is critical for enhancing production and keeping cost to a minimum. Application affects the cutting edge shape, metallurgy and style. Impact, penetration and abrasion define your application environment. An edge has to penetrate the material and not break during operation. Edge life then becomes a matter of metallurgy and thickness.

WHAT IS YOUR APPLICATION?

DEVELOPING A ROAD OR PERFORMING HEAVY MAINTENANCE
» A flat edge is best suited for this application. A better penetrating option is a flat serrated edge. A flat edge has limited ability to carry material forward.

GRADING HARD-PACKED GRAVEL, FROZEN EARTH AND ICE
» A serrated edge penetrates better than a continuous edge because it exerts more down pressure. A curved serrated edge penetrates better than a flat serrated edge with a forward mold board.

RECONDITIONING OR FINISH GRADING AN EXISTING ROAD SURFACE
» Curved edges penetrate the roadway while carrying existing material forward to leave a smooth flat surface. A better penetrating option is a curved serrated edge. A serrated edge will not leave as clean a roadway surface as a continuous edge.

MOTOR GRADER CUTTING EDGE OPTIONS

PARTNER WITH CATERPILLAR, EDGE OUT THE COMPETITION.

Caterpillar offers a wide range of cutting edges for motor graders. Each provides certain benefits when used in the appropriate application. Using the right edge is critical for enhancing production and keeping total costs to a minimum. The three factors to consider in choosing a cutting edge are shape, width and thickness.

There are two basic edge shapes—flat and curved—with serrated edges available in both configurations. In addition, the Cat GraderBits system dramatically expands the range of edge shape options. Cat offers two types of grader edges and three edge thicknesses for the 16M and 24M motor graders.

SUPERIOR DURABILITY, MORE OPTIONS
Cat DH-2 through-hardened steel edges are available in a variety of shapes and thicknesses to fit every application.

EXTENDED EDGE LIFE
Maximize your edge life with tungsten carbide edges.

MAXIMUM PENETRATION, MINIMUM WASTE
Cutting bit systems.
THROUGH-HARDENED CUTTING EDGES

Most Cat edges are through-hardened steel, which offers high-impact resistance. High-carbon edges have good surface hardness and perform well in high-abrasion, low-impact applications such as finish work. High-carbon edges will not withstand the impact level of a through-hardened edge.

FLAT
- Heavy road maintenance and pioneering
- Maximum strength and available wear material
- Best option for abrasion and impact resistance

FLAT SERRATED
- Better penetration than a continuous edge (greater down pressure per inch of edge contact)
- Designed to penetrate packed gravel, frozen earth and ice
- For severe impact conditions, install over a 6” (152 mm) edge to reduce tooth breakage

CURVED
- Provides superior penetration and rolling action necessary for fine grading and finish work
- Finishing tolerances less than 1/4” (6 mm)—the best value may be in selecting a narrow and thin cutting edge

CURVED SERRATED
- A curved serrated edge penetrates better than a straight serrated edge with a forward mold board

EDGE WIDTH EQUALS WEAR MATERIAL
- An 8” (203 mm) edge provides twice the wear material as a 6” (152 mm) edge at about 35% more cost
- Hardware cost and R&I downtime are reduced by 50%

TUNGSTEN CARBIDE TILE CUTTING EDGES

Cat Tungsten Carbide Cutting Edges combine through-hardened steel with the wear resistance of tungsten carbide. When used in high-abrasion, low-impact applications, they can provide up to 20 times the life of a standard through-hardened edge. Fewer edge changes means less downtime and lower hardware costs.

TUNGSTEN CARBIDE EDGES
- Tungsten carbide edges have a continuous row of trapezoid-shaped carbide “tiles.” This patented shape forms a leading / cutting edge
- Carbide tile bottom must be flat to the ground. 20° maximum tilt
- Max 5 mph/8kph
- Do not use on roads with large embedded rocks

FLAT EDGES
- Maximum strength and available wear material
- Longest wearing edge available in high abrasion and low impact

CURVED EDGES
- Curved-edge design improves penetration and rolling action
- Trapezoid-shaped tungsten carbide tile on leading edge stays sharp as it wears
- Shorter edge sections speed rotation and reduce “throw-away” due to edge crowning

SERRATED EDGES
- Better penetration than a continuous edge (greater down pressure per in² of edge contact)
- No cast angle restrictions
TUNGSTEN CARBIDE INSERT CUTTING EDGES

Cat carbide insert edges offer long wear life in higher speed applications like state/county road snow removal. The tungsten carbide is brazed into a milled groove in the center of the edge. The design offers impact resistance and minimizes edge “crowning” in applications that require a level grading operation.

GRADERBIT SYSTEM

SMOOTH OUT THE TOUGHEST ROADWAYS IN A SINGLE PASS.

The Cat GraderBit edge system outperforms steel blades in high-production road reconditioning applications. Individual cutting bits are faced with tungsten carbide to form a serrated edge to penetrate and lift material to the surface immediately. As a result, most road maintenance jobs can be accomplished in a single pass.

MORE PRODUCTION, LESS WASTE

Cuts through tough and compact materials, causing lower ripping resistance and less horsepower loss.

CUSTOMIZABLE

Create edge patterns that deliver optimum performance.

LONGER LIFE

Up to 10x more wear life than a 10” edge.
MOTOR GRADERS

3534

GRADERBIT SYSTEM

GraderBit adapter board options are 3’ (914mm) and 4’ (1219mm) sections. Two hole-spacing patterns are available to control aggregate flow. Standard boards are used for most roadways, and the mining board hold pattern is 50% wider to accommodate large aggregate in mine environments.

INSTALLATION & REMOVAL

Operators can install the entire system in about an hour and field-replace individual bits in minutes without removing the moldboard. Varying bit widths allow you to create both serrated and continuous edge configurations. GraderBits do not require daily inspection like rotating bit systems.

1. Bit insertion into adapter board.

2. GraderBits are held in place with a snap ring.

3. Adapter boards bolt up to the moldboard like standard edges.

4. Keep bits perpendicular to the road surface. The cast angle is not to exceed 10°, penetration depth 1½” max, max. 6 mph/10kph.

STANDARD BITS
- Baseline bit - 30mm wide
- Moderate penetration
- Standard Board Bit Gap: 32mm
- Mining Board Bit Gap: 48mm

PENETRATION BITS
- Narrower than standard bit - 23 mm wide
- Wider gap allows larger aggregate to flow through
- Standard Board Bit Gap: 40mm
- Mining Board Bit Gap: 55mm

SHARP BITS
- 50% narrower than the standard bit - 15.5 mm wide
- Allows larger aggregate to flow through
- Standard Board Bit Gap: 45mm
- Mining Board Bit Gap: 62mm

WIDE BITS
- Can configure as a continuous edge
- Twice as wide as the standard bit (60 mm)
- Standard Board Bit Gap: 3mm
- Mining Board Bit Gap: 18mm

MIX AND MATCH
- Mix and match bits to control the size of the aggregate left behind
- Use wide bits on the end of the moldboard to prevent excessive wear
MINING BIT SYSTEM
The Mining Bit System works like the GraderBit system, but is upgraded to withstand the extreme applications faced by large motor graders (16M and 24M).

DOUBLE CARBIDE, NO RESTRICTIONS
Protects the face and bottom of the bit, eliminating vast angle restrictions.

INTEGRATED DESIGN
Bit profile helps maintain proper grading angle.

ROTATING BIT SYSTEM
The rotating bit system outperforms steel blades in high-production road reconditioning applications. Individual cutting bits have tungsten carbide tips and form a serrated edge to penetrate and lift material to the surface immediately. As a result, most road maintenance jobs can be accomplished in a single pass.

MORE PRODUCTION, LESS WASTE
Material is brought to the surface for reuse, reducing the expense of spreading new gravel.

NO RESTRICTIONS
No cast angle restriction.

EASY INSTALLATION & MAINTENANCE
Bits changed individually with no special tools.
ROTATING BIT SYSTEM

Rotating Scarifier Bits are self-sharpening for more uniform wear and long life. Cutting height is maintained as cutting tools may be rotated from position to position. Carbide bits can last as long as 5-10 sets of conventional grade blades.

Rotating Scarifier Bits are made for applications such as dirt and gravel reclamation, oil road reclamation, and snow and ice removal.

1” SHANK
- Smooth design

3/4” SHANK
- Engineered with flat sides that aid in bit rotation

ADAPTER BOARDS
- Either 5/8” or 3/4” bolt hole punch
- 3’ (914mm)-21 bits
- 4’ (1219mm)-28 bits
- Standard Board uses 7/8” bit
- Heavy Duty board uses 1” bit

OPERATING TIPS
- 20° Board Angle
- Moldboard may vibrate and bits may not turn if angle is not correct

INSTALLATION & REMOVAL

Improve safety and simplify edge change-out. Carbide bits allow you to use a threaded bolt and link to remove and install sections. Even worn edges can be removed, because the threads are located in the back half of the hole.

1. Drilled and tapped holes.
2. Attach approved lifting device.
3. Lift.
OPERATING TECHNIQUES FOR REDUCED COST.
Through better management of the interface between machine and materials, operators can maximize productivity, lower machine operating costs and reduce cab vibration, improving operator comfort.

MOLDBOARD POSITION
- Start with moldboard 2” (4” for 24M) ahead of the edge
- Grade with cutting edge 90° to the road
- Maintain fixed angle to ensure constant edge thickness
- Laid back reduces penetration and can wear moldboard
- Frequent angle changes will shorten the edge life

SPEED AND EXCESSIVE DOWN PRESSURE
- Use accumulator to absorb shocks
- < 6mph/8kph speed
- Excess speed can cause edge slivering
- Need penetration? Choose a thinner edge, a serrated edge or the Cat GraderBits system for the most compacted materials

CROWNING
- Occurs when the cutting edge conforms to the material being graded
- A narrow and thin edge reduces the “throw away” material
- Extreme crowning may require a bit system

STANDARDIZE YOUR HARDWARE
- Moldboard bushings reduce 3/4” holes to 5/8”
- Simplify inventory and lower cost

END BIT SYSTEM
PUT AN END TO MOLDBOARD WEAR.
Made of through-hardened DH-2 steel for added strength and service life, Cat end bits protect moldboard edges from wear.
END BIT SYSTEM
Maximize moldboard life and lower repair costs. Use Cat end bits, overlays, repair plates and hardware to protect and repair your moldboards and working edges.

MOLDBOARD END BITS
» Recommended for all applications
» Made of through-hardened DH-2 steel for added strength and service life

OVERLAY END BITS
» Fit over existing end bit
» Recommended for applications such as ditching
» Add strength and limit corner wear
» When worn on one side, overlay end bits can be rotated for a second wear life

MOLDBOARD REPAIR PLATES
» Extend moldboard life with Cat Moldboard Repair Plates
» Routine monitoring and timely edge replacement can prevent damage
» When repair is needed, repair plates provide a way to extend moldboard life

HARDWARE
» When replacing ground engaging tools, always use Cat hardware regardless of the application
» Cat Grade 8 hardware is performance-matched to Cat G.E.T. in both strength and durability

RIPPER-SCARIFIER SYSTEM
GET MORE OUT OF YOUR GRADER.
Scarifier and ripper systems on motor graders can be used to improve road surfaces by lifting material from compacted and worn areas or by removing the “crowning” that causes excessive wear on cutting edges.

ENHANCE PRODUCTION
Loosen material to reduce grading time and fill voids while saving on edge wear.

EXTEND VERSATILITY
Reduce need for dozer ripping or cutting bit systems.
RIPPER-SCARIFIER COMPONENTS

Scarifiers can be mounted before the blade (V-Block design) or behind the machine (Straight Block design). Rear-mounted ripper-scarifiers are more versatile than forward-mounted configurations. Rip or scarify by changing shank position.

V-BLOCK
- Loosen compacted surfaces, rocky subgrades and frozen ground
- Fit ahead of the blade (mid mount)
- Holds up to 11 shanks and scarifies up to 46” (1168 mm) wide

STRAIGHT BLOCK
- Low-impact applications and shallow scarifying
- Higher allowable speed (up to 3rd gear) in shallow
- Holds up to 17 shanks and scarifies up to 72” (1828 mm) wide
- May be used as a mid-mount scarifier

SCARIFIER TIPS
- We offer three types of scarifier tips for surface reconditioning.
  - Tip has a tapered design that secures it to the shank
  - Through-hardened tips for general purpose scarifying
  - Heavy-Duty for deep penetration and extended distances
  - A.R.M. for high-abrasion/low-impact conditions extends tip life 3 to 5 times over through-hardened

SCARIFIER SHANKS
- Through-hardened and tempered to resist wear, bending and breakage
- Front or rear notch for V-Block or Straight Block
- Standard or extended lengths

R SERIES RIPPER TIP OPTIONS

Caterpillar offers three options for the R350 ripper tip size class for 16M and 24M motor graders. Due to the extreme nature of maintaining haul roads, scarifiers are not offered on 16M and 24M.

CENTERLINE tips have equal wear material on both sides and can be reversed, which can extend the life and help maintain sharpness.

PENETRATION ripper tips have an aggressive angle to break through even the hardest surfaces and dig into the ground more effectively.

PENETRATION - SHARP tips are an intermediate length. They come factory sharpened to ensure maximum penetration.
INSTALLATION & REMOVAL

The R Series Tooth system uses the standard pin and retainer system. The Tooth Pin Remover tool is available to make removal easier.

1. Place the tool on the tip and align the extractor with the pin.

2. Strike the tool with a hammer until the pin is removed.
HYDRAULIC EXCAVATORS

Cat Hydraulic Excavators are the most versatile machines on the jobsite, working in applications ranging from small landscaping projects to large surface extraction mines—and everywhere in between. Together, Cat buckets and G.E.T. make up the only bucket system designed and developed to optimize hydraulic excavator performance and your productivity. Rely on your Cat dealer for expert support and service for your specific application.
SYSTEM OVERVIEW

Hydraulic excavators are extremely versatile machines used for a variety of purposes, from grading to mass excavation to demolition work. A hydraulic excavator’s main work tool is a bucket, but these machines can also be equipped with hydraulic couplers to pick up a variety of tools.

Balancing your desired productivity/penetration with the wear life of your system is critical. Excessive wear material can reduce productivity and increase fuel burn. Cat hydraulic excavator buckets and G.E.T. are designed as a balanced system to increase life while minimizing drag.

TIP SELECTION GUIDE

Even though bucket tips come in many shapes and sizes, you don’t have to be an expert to choose the right ones. Use the chart below to determine if the material you’re digging in is high, medium or low impact and abrasion—then find the balance you need among these three factors:

1. STRENGTH
   - The ability to withstand digging and penetrating shocks and high breakout forces

2. PENETRATION
   - The ability to penetrate tough material when it’s tightly compacted, rocky or frozen

3. WEAR LIFE
   - The ability to withstand wearing, scouring and abrasive action of the material being handled

<table>
<thead>
<tr>
<th>IMPACT (material size)</th>
<th>ABRASION (tip life)</th>
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<tbody>
<tr>
<td>SMALL HEX (311-319)</td>
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<td>MEDIUM HEX (320-329)</td>
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<tr>
<td>LARGE HEX (336-390)</td>
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<td>0 - 1”</td>
<td>0 - 75 mm</td>
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<td>&gt; 1,000 hours</td>
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<td>1 - 3”</td>
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<td>250 - 1,000 hours</td>
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<tr>
<td>3+”</td>
<td>75 mm+</td>
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<tr>
<td>&lt; 250 hours</td>
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K SERIES TIP & ADAPTER SYSTEM

MAXIMUM PRODUCTIVITY MEETS HAMMERLESS RETENTION.

Looking for a vertical retention tip and adapter system that stays sharper, changes easier and holds tighter? Choose the K Series system’s twist-on design and vertical retainer, which together provide reliable retention and easy installation and removal.

<table>
<thead>
<tr>
<th>IMPROVE YOUR PRODUCTIVITY</th>
<th>Low-profile shape provides optimal sharpness, penetration and digging ability throughout the tip life.</th>
</tr>
</thead>
<tbody>
<tr>
<td>EXTEND LIFE</td>
<td>More wear material can effectively be used before the tips are changed, adding 10-15% more usable life.</td>
</tr>
<tr>
<td>INCREASE DURABILITY</td>
<td>The tip and adapter fit together precisely to reduce tip movement and adapter wear.</td>
</tr>
<tr>
<td>STAY SAFE &amp; REDUCE MAINTENANCE COSTS</td>
<td>One-piece vertical retainer allows for easy installation and removal.</td>
</tr>
<tr>
<td>SIMPLIFY INSTALLATION</td>
<td>Rails on both sides of the adapter and a twist-on design hold the tip in place, allowing for quicker installation.</td>
</tr>
</tbody>
</table>
K SERIES DRIVE-THROUGH TIP & ADAPTER SYSTEM

The drive-through system is for K80-K100 adapters and tips.

INSTALLATION & REMOVAL
It’s safe and easy—just use a standard pry tool and follow this three-step process:

1 INSERT RETAINER
2 HAMMER RETAINER
3 SECURE RETAINER

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

K SERIES HAMMERLESS TIP & ADAPTER SYSTEM

The hammerless system is for K110-K170 adapters and tips.

INSTALLATION & REMOVAL
It’s safe and easy—just use a standard pry tool and follow this three-step hammerless process:

1 INSERT RETAINER
2 PRESS DOWN RETAINER
3 REMOVE RETAINER

Scan the QR code to the right to watch the installation video.
HYDRAULIC EXCAVATORS

K SERIES TIP OPTIONS

Below are the tip shapes best suited for the wide range of jobsite conditions performed by hydraulic excavators. We also offer additional K Series tips more commonly used with wheel loaders. Your Cat dealer can help you choose the one that offers the right balance of penetration and wear life for your application.

EXTRA DUTY

- Extra Duty and Extra Duty Abrasion Resistant Material (A.R.M.)* tips include approximately 60% more wear material in the tip body. The A.R.M. wears around the profile to increase penetration.

GENERAL PURPOSE

- General Purpose tips are symmetrical and the baseline for other tip styles. All wear comparisons are to the General Purpose tip unless otherwise noted.

WIDE

- Wide tips are used to maintain smooth trench floors and in low-abrasion, easy-to-penetrate material.

PENETRATION PLUS

- Penetration Plus tips feature 25% more wear material and a leading edge with 25% less cross-sectional area. They self-sharpen as they wear.

PENETRATION

- Penetration tips are ideal for densely compacted materials. They feature a leading edge with 60% less cross-sectional area—allowing for maximum penetration—and a single center rib that self-sharpens as it wears. These tips are available with A.R.M.*

SPIKE

- Spike tips are used to achieve maximum penetration. They are typically used in cohesive material and stay sharp during the life of the tip.

DOUBLE SPIKE

- Double Spike tips are used in the corner positions with the spike tips for hard-to-penetrate, fracturable materials.

K SERIES ADAPTER OPTIONS

All K Series adapters feature rails on both sides of the nose for a twist-on design that stays in place during installation.

MACHINE COMPATIBILITY

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</table>

*Abrasion Resistant Material (A.R.M.) is a welding process that bonds very hard tungsten carbide particles to Cat G.E.T. to create a protective shield over the component. Typically, the A.R.M. process doubles wear life—and can last even longer in some applications.
J SERIES TIP & ADAPTER SYSTEM

SIDE-PIN SECURITY WHEN YOUR APPLICATION DEMANDS IT.
Great performance and proven reliability over time—that’s what you get with this classic horizontal retention system, a staple in the construction and mining industries.

BOOST YOUR VERSATILITY
Industry-standard side-pinned design performs across a variety of applications.

ENHANCE YOUR RELIABILITY
Weld-on adapters offer excellent retention.

IMPROVE SAFETY & MAINTENANCE TIME
Ability to retrofit means you can use the hammerless CapSure™ system.
J SERIES TIP & ADAPTER SYSTEM

INSTALLATION & REMOVAL
Simply use the standard pin and retainer system—and make removal even easier with our Tip Pin Remover tool.*

1. Place the tool on the tip and align the extractor with the pin.
2. Strike the tool with a hammer until the pin is removed.
3. Place the tool over the tip (A), locate the pin in the hole of the holder (B) and strike the tool (C).

J SERIES TIP OPTIONS
Below are the tip shapes best suited for the wide range of jobsite conditions performed by hydraulic excavators. We also offer additional J Series tips more commonly used with wheel loaders. Your Cat dealer can help you choose the one that offers the right balance of penetration and wear life for your application.

**HEAVY DUTY LONG**
- Heavy Duty Long and Heavy Duty Abrasion Resistant Material (A.R.M.)* tips include approximately 60% more wear material in the tip body. The A.R.M. wears around the profile to increase penetration.

**LONG (GENERAL PURPOSE)**
- Long tips are symmetrical and the baseline for other tip styles. All wear comparisons are to the Long tip unless otherwise noted.

**WIDE**
- Wide tips are used to maintain smooth trench floors and in low-abrasion, easy-to-penetrate material.

**PENETRATION PLUS**
- Penetration Plus tips feature 30% more wear material and 25% less cross-sectional area. They self-sharpen as they wear.

**PENETRATION**
- Penetration and Penetration A.R.M.* tips are ideal for densely compacted materials. They feature a leading edge with approximately 50% less cross-sectional area and a single center rib for strength—allowing for maximum penetration.

**SPIKE**
- Spike tips are used to achieve maximum penetration. They are typically used in cohesive material and stay sharp during the life of the tip.

**SPIKE CORNER**
- Spike Corner tips can be used in the corner position with sharp center tips.

**DOUBLE SPIKE**
- Double Spike tips are used in the corner positions with the spike tips for hard-to-penetrate, fracturable materials.

* Abrasion Resistant Material (A.R.M.) is a welding process that bonds very hard tungsten carbide particles to Cat G.E.T. to create a protective shield over the component. Typically, the A.R.M. process doubles wear life—and can last even longer in some applications.

**OPTION AVAILABLE**

**ABRASION IMPACT**
- Long tips are symmetrical and the baseline for other tip styles. All wear comparisons are to the Long tip unless otherwise noted.
- Heavy Duty Long and Heavy Duty Abrasion Resistant Material (A.R.M.)* tips include approximately 60% more wear material in the tip body. The A.R.M. wears around the profile to increase penetration.
- Long tips are symmetrical and the baseline for other tip styles. All wear comparisons are to the Long tip unless otherwise noted.
- Wide tips are used to maintain smooth trench floors and in low-abrasion, easy-to-penetrate material.
- Penetration Plus tips feature 30% more wear material and 25% less cross-sectional area. They self-sharpen as they wear.
- Penetration and Penetration A.R.M.* tips are ideal for densely compacted materials. They feature a leading edge with approximately 50% less cross-sectional area and a single center rib for strength—allowing for maximum penetration.
- Spike tips are used to achieve maximum penetration. They are typically used in cohesive material and stay sharp during the life of the tip.
- Spike Corner tips can be used in the corner position with sharp center tips.
- Double Spike tips are used in the corner positions with the spike tips for hard-to-penetrate, fracturable materials.

* J550 and smaller use the pin removal tool. Consult your dealer for larger systems.
GENERAL DUTY TIPS
General Duty tips offer a reliable, competitively priced parts option for small to medium-sized excavators operating in low to medium impact conditions. Tips are available in the J250-J460 size range.

General Duty tips are:
- A match if you require quality and long wear
- Designed to fit J Series adapters, reducing risky fit-ups
- Backed by the standard Caterpillar warranty against breakage under normal, recommended operation in low to medium impact applications

Side-pin retrofit design used on J-style adapters means the pin is reusable. A ¾-inch retainer lock requires no special tools and allows for hammerless installation and removal. Positive stop is cast into the tip to prevent over-rotation—just turn 180 degrees to lock or unlock.

LOW OPERATING COSTS
ENHANCE JOBSITE SAFETY & MAINTENANCE TIME
CHANGE OUT TIPS QUICKLY & EASILY
SPEED UP YOUR INSTALLATION TIME

J SERIES MACHINE COMPATIBILITY

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LOW OPERATING COSTS
- Lose the hammer, not the flexibility.
  - Simplify bucket tip replacement with hammerless CapSure retention. These tips are matched to side-pin adapters, allowing the flexibility to use our conventional pin retention if your application demands it.

ENHANCE JOBSITE SAFETY & MAINTENANCE TIME
- Lower operating costs
- Enhance jobsite safety and maintenance time
- Change out tips quickly and easily
- Speed up your installation time

LOWEST OPERATION COSTS
ENHANCE JOBSITE SAFETY & MAINTENANCE TIME
CHANGE OUT TIPS QUICKLY & EASILY
SPEED UP YOUR INSTALLATION TIME

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GENERAL DUTY TIPS
General Duty tips offer a reliable, competitively priced parts option for small to medium-sized excavators operating in low to medium impact conditions. Tips are available in the J250-J460 size range.

General Duty tips are:
- A match if you require quality and long wear
- Designed to fit J Series adapters, reducing risky fit-ups
- Backed by the standard Caterpillar warranty against breakage under normal, recommended operation in low to medium impact applications

Side-pin retrofit design used on J-style adapters means the pin is reusable. A ¾-inch retainer lock requires no special tools and allows for hammerless installation and removal. Positive stop is cast into the tip to prevent over-rotation—just turn 180 degrees to lock or unlock.

LOW OPERATING COSTS
ENHANCE JOBSITE SAFETY & MAINTENANCE TIME
CHANGE OUT TIPS QUICKLY & EASILY
SPEED UP YOUR INSTALLATION TIME

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LOW OPERATING COSTS
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J SERIES MACHINE COMPATIBILITY

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HAMMERLESS TIP & ADAPTER SYSTEM FEATURING CAPSURE RETENTION

INSTALLATION & REMOVAL
It's fast, easy and safe with the CapSure locking system—just follow these four simple steps:

1. Insert pin and washer into the adapter hole.
2. Slide the tip onto the adapter.
3. Tighten 180° into the locked position with a 3/4” ratchet.
4. Remove by loosening 180° to the unlocked position.

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

CAPSURE TIP OPTIONS
We offer four CapSure tip options designed for a range of jobsite conditions. Your Cat dealer can help you choose the one that offers the right balance of penetration and wear life for your application.

HEAVY DUTY ABRASION
- Heavy Duty Abrasion tips are ideal for high-abrasion applications like sand, gravel and shot rock. They have the maximum amount of wear material—approximately 145% more—and the tip base features 25% more surface area than Heavy Penetration tips.

HEAVY PENETRATION
- Heavy Penetration tips are ideal for high-impact, hard-to-penetrate materials. They feature approximately 120% more material in the high wear area as well as a sharp spade design with 70% less cross-sectional area on the leading edge than Heavy Duty Abrasion tips.

HEAVY DUTY
- Heavy Duty tips are the baseline for other tips. All wear comparisons are to the Heavy Duty tip unless otherwise noted.

PENETRATION PLUS
- Penetration Plus tips feature 30% more wear material and 25% less cross-sectional area. They self-sharpen as they wear.

MACHINE COMPATIBILITY

<table>
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<th>EXCAVATOR</th>
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<td>390</td>
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<td>336</td>
<td>Mass Excavation</td>
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<tr>
<td>390</td>
<td>Mass Excavation</td>
<td>J700 (Retrofit), J800 (Retrofit)</td>
</tr>
</tbody>
</table>

EXCAVATOR LINKAGE SIZE CLASS

Reach N/A
Reach J550 (Retrofit)
Reach J600 (Retrofit)
Reach J700 (Retrofit), J800 (Retrofit)
Mass Excavation J550 (Retrofit)
Mass Excavation J600 (Retrofit)
Mass Excavation J700 (Retrofit), J800 (Retrofit)

HAMMERLESS TIP & ADAPTER SYSTEM FEATURING CAPSURE RETENTION

INSTALLATION & REMOVAL
It's fast, easy and safe with the CapSure locking system—just follow these four simple steps:

1. Insert pin and washer into the adapter hole.
2. Slide the tip onto the adapter.
3. Tighten 180° into the locked position with a 3/4” ratchet.
4. Remove by loosening 180° to the unlocked position.

Scan the QR code to the right to watch the installation video.
HYDRAULIC EXCAVATORS

BASE EDGE SYSTEMS

FASTEST INSTALLATION TIMES IN THE INDUSTRY.

Cat base edge systems go through a series of carefully controlled manufacturing processes to deliver maximum strength, durability and long life. They come completely welded and assembled, dramatically shortening your installation and replacement time.

INCREASE DURABILITY

A consistent heat-treat process maximizes strength and resists abrasion. Shot blasting removes impurities that can cause inclusions on a weld, and controlled cooling reduces the chance of stress points.

SAVE INSTALLATION & REPLACEMENT TIME

Butterbead is applied to the back side of the base edge and the top strap of the corner adapter, so you can weld the edge onto the bucket without preheating.

OPTIMIZE MACHINE PERFORMANCE

Base edges are designed by Caterpillar engineers for optimal performance on specific machines.
BASE EDGE SYSTEMS

Base edge replacement involves replacing a base edge assembly, which includes adapters welded in from the factory, or replacing a bolt-on cutting edge (BOCE) base edge, which comes with factory-drilled holes for bolt-on G.E.T. Choose from three shapes (base edge for BOCE, straight and spade base edge assemblies) to get the right protection for your application.

GET MORE ACCURACY

Lasers place the adapters within 0.1 mm of specifications.

BOLT-ON CUTTING EDGE

STRAIGHT

SPADE

BUTTERBEAD BASE EDGE ASSEMBLY

DURABLE PROTECTION COMBINED WITH SHORTER INSTALLATION TIMES.

The protection you need, with no preheating required—that’s what you get with butterbead weld prep. This technique, which involves applying a layer of weld to a heat-treated, higher hardness part, makes it possible to weld a base edge to a bucket without preheating the hardened part. Choose from two shapes (straight and spade) on cutting edges thicker than 50mm and three levels of build to get the right protection for your application.

SPEED UP YOUR INSTALLATION TIME

Weld prep eliminates the need for preheating, shortening edge installation time by 30-50%.

GET MORE DURABILITY

Base edges have the proper butter bead weld because it is applied in the factory.
BASE EDGE END PROTECTION (BEEP)

PROTECT YOUR CORNERS—WITHOUT CUTTING THEM.
Reduce base edge end wear and subsequent corner adapter weld erosion with our BEEP design. It makes adapter replacement on the edge much easier when it’s time to rebuild the base edge assembly. BEEPs are available in a wide array of thicknesses and angles to fit 336-390 hydraulic excavators.

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.

SIDE & EDGE PROTECTION

MAINTAIN YOUR PERFORMANCE EDGE.
Protect your bucket’s structural integrity with sidebar protectors and shear blocks or increase penetration and performance with side cutters.

» Sidebar Protectors
» Side Cutters
» Half Arrows
» Top Covers
» Cutting Edges
» Weld-On Edge Shrouds

BOOST YOUR UPTIME
EXTEND LIFE
SPEED UP INSTALLATION
SIDEBAR PROTECTORS

Protect your bucket’s structural integrity with sidebars and shear blocks.

INCREASE YOUR UPTIME

Shear block protects the pin from extreme loads and breakage, helping ensure sidebar protector retention.

CUT YOUR MAINTENANCE COSTS

Sidebar protector protects the bucket edge.

SIDEWALL PROTECTORS

Shear block bears the loads instead of the pins.

SIDEWALL PROTECTORS

Protect your bucket’s structural integrity with sidebars and shear blocks.

GENERAL PURPOSE SIDEWALL

» Effective in moderate-impact conditions.
» Suitable for most soil conditions.
» Provides a strong, wear-resistant surface to help protect bucket edges.
» Extends bucket side width to match the teeth bite.

HEAVY DUTY SIDEWALL

» Designed for tough digging conditions.
» More wear material.
» Covers more of the sidebar for enhanced protection of the bucket.
» Scallop profile improves bucket penetration and machine performance.

STRIKEOFF SIDEWALL

» Half arrow shape to provide better penetration than bare bucket.
» Protects the lower bucket sides and corners.
» For use in moderate-to-light conditions.
» Can be stacked for more protection.

INCREASE YOUR UPTIME

Shear block protects the pin from extreme loads and breakage, helping ensure sidebar protector retention.

CUT YOUR MAINTENANCE COSTS

Sidebar protector protects the bucket edge.
BOLT-ON HALF ARROWS, TOP COVERS, CUTTING EDGES & WELD-ON SHROUDS

Protect your investment in buckets and base edges with these flexible components. Half arrows allow for a smooth transition of material over the base edge to protect the leading edge. Top covers complement the half arrows to protect the base edge fully. Modular edge shrouds are designed to fit any bucket configuration and extend the life of your excavator bucket edge assembly.

SIMPLIFY MAINTENANCE

Individual pieces that protect the edge can be changed independently.

ENHANCE DURABILITY

Half arrows cover the leading edge for smooth material transition.

BOOST YOUR UPTIME

Top cover reduces wear on weld joints.

BUCKET SELECTION GUIDE

We offer four standard bucket durability categories suitable for any application. Each category is based on the bucket’s intended durability when used in the recommended application and material.

GENERAL DUTY

> For digging in low-impact, lower-abrasion materials such as dirt, loam and mixed compositions of dirt and fine gravel. Example: Digging conditions in which General Duty tip life exceeds 800 hours.

HEAVY DUTY

> For a wide range of impact and abrasion conditions including mixed dirt, clay and rock. Example: Digging conditions where Penetration Plus tip life ranges from 400 to 800 hours.

> HD buckets are a good “center line” choice, or starting point, when application conditions are not well known.
Choosing the right durability.

Choosing the wrong bucket can easily reduce production and increase operating costs by 10-20% or more. It can also cause unnecessary wear and fatigue for both machine and bucket. Contact your local Cat dealer for more detailed information on choosing the right excavator, bucket and work tool attachment combinations to meet your application needs.

SEVERE DUTY

- For higher abrasion conditions such as well-shot granite and caliche. Example: Digging conditions where tip life ranges from 200 to 400 hours with Penetration Plus tips.

EXTREME DUTY

- For very high-abrasion conditions including high quartzite granite. Example: Digging conditions where tip life is less than or equal to 200 hours with Extra Duty tips.
ADDITIONAL BUCKET STYLES

Several different bucket styles are available—each with a special purpose:

**DITCH CLEANING**

These buckets are designed for cleaning ditches, sloping, grading and other finish work. Their shallow depth and compact size make working in confined areas easier. Drainage holes allow liquid to empty so material dumps more easily. Ditch Cleaning Buckets are available for 311-336 excavators.

Tilt Buckets feature a full 45° of tilt in each direction, powered by two double-acting cylinders. Tilt Buckets are available for 311-329 excavators.

**CENTER-LOCK™ PIN GRABBER PERFORMANCE**

This bucket is designed with a patented recessed pin to provide maximum digging performance while keeping the versatility and convenience of a coupler. Tip radius is reduced and allows up to 10% improvement in breakout force when compared to a conventional pin-on bucket and coupler combination.

Center-Lock Pin Grabber Performance Buckets are available for 315-349 excavators in General Purpose and Severe Duty durability.

**POWER**

Power Buckets are for use in abrasive applications where breakout force and cycle times are critical—and for use in materials such as tightly compacted mixed dirt and rock. (Not recommended for clay.) Breakout force is maximized due to decreased tip radius and increased pin spread. Machine cycle times in most material are improved over a standard bucket in a similar application.

Heavy Duty Power Buckets are available for 320-336 excavators.

**WIDE TIP**

Wide Tip Buckets are intended to perform best in low-impact materials such as dirt and loam where leaving a smoother floor and minimal spillage is necessary. The bucket is engineered to be used exclusively with Cat Wide Tips. Corner adapters face straight forward to create a smooth edge.

General Duty Wide Tip Buckets are available in widths from 24” to 78” for 311-349 excavators.

**HIGH CAPACITY**

High Capacity Buckets are designed and built for use in high-production truck-loading applications. With proper application and set up, these buckets will move more material in a minimal amount of passes—maximizing production.

High Capacity Buckets are available for 338-390 excavators in General Duty durability.

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**CAT DEALER & BUCKET MANAGEMENT**

**CHOOSING CAT G.E.T. IS EASY.**

Your Cat dealer makes it easy to choose the right G.E.T. for your machines and applications. In addition to a broad portfolio of products, your dealer offers the sales, service and technical support you need to keep productivity high and operating costs low. Trust your Cat dealer to:

**MAXIMIZE PRODUCTIVITY**

- Buckets and G.E.T. products are designed to meet your application requirements, rather than simply fit onto your machine.

**IMPROVE PERFORMANCE**

- Get the most out of your bucket and G.E.T. with expert advice that helps you lower costs and reduce unscheduled maintenance.

**SIMPLIFY MAINTENANCE**

- Tailored G.E.T. systems simplify your maintenance. We develop solutions that fit your expectations, including custom products.

**MANAGE WEAR**

- Intuitive Cat Inspect bucket inspection programs help you monitor how your G.E.T. system is wearing so you can adapt to changes in application and operation.

Talk to your Product Support Representative or G.E.T. specialist today to learn how they can help you simplify your bucket management by using Cat Inspect.
HYDRAULIC EXCAVATOR (HEX)
RIP AND LOAD

Using rippers mounted on large HEX is a cost-effective alternative to blasting in quarries and site development. In site development, rippers on smaller excavators and backhoe loaders can readily deal with asphalt, caliche and frozen ground.

IMPROVE YOUR PRODUCTIVITY

Increase productivity by adding efficiency and flexibility to your operation.

EXTEND LIFE

A through-hardened hammerless wear tip and shank protector extend wear life.

INCREASE DURABILITY

Upsized, hammerless adapters and tips accommodate higher loads and abrasion, while edge segments and top covers protect your base edge.
RIPPER-TO-BUCKET CHANGES ARE MADE HYDRAULICALLY IN LESS THAN 35 SECONDS. This gives the operator complete flexibility to continually adjust ripping, sorting and loading work.

SIMPLE CHANGES

BLAST FREE

Pull material down and change bucket quickly and easily.

Ripper allows you to work without blasting in areas with unstable land or sound regulations.
STRENGTH. DURABILITY. LONG LIFE. PLUS EVERYTHING YOU NEED TO BOOST UPTIME ON YOUR JOB.

Choose from Cat K Series or J Series Tip & Adapter Systems and a full line of bolt-on and half arrow cutting edges. Optimize your machine’s productivity in every jobsite condition with the wide range of G.E.T. products available. Cat buckets and G.E.T. make up the only bucket system designed and developed to maximize the performance and productivity of your Cat wheel loader.
BOLT-ON CUTTING EDGES (BOCE)

BALANCED EDGE SYSTEMS FOR EVERY APPLICATION.

Finding the best solution for your bucket and application is easy with Cat’s broad portfolio of edge options. Increase your machine’s productivity by reducing operating costs and maintenance interval costs.

Cat bolt-on cutting edge options are available in standard and heavy-duty thicknesses, Cat Abrasion Resistant Material (A.R.M.) and half arrow options. Cat A.R.M. is recommended for applications where sand, gravel or other abrasive materials severely diminish wear life. Hard tungsten carbide particles are bonded to critical wear areas, providing up to five times greater wear life. See your Cat dealer for details.

We have G.E.T. for your bucket, no matter the application or environment. Maximum wear life and breakage resistance is possible with our steel alloy that can endure 2x the heat and pressure of traditional cutting edge steel products. Consult your local Cat dealer to help determine the best cutting edge system for your application to give you the lowest cost per hour.

STANDARD BOCE

- This is the baseline for all other bolt-on edge systems.
- Lower initial price.
- Low- to medium-impact, low-abrasion materials only.

HEAVY DUTY BOCE

- 5mm thicker edge thickness delivering increased wear life.
- Medium- to high-impact, medium-abrasion materials.

ABRASION RESISTANT BOCE

- Lighter weight than the HD edge.
- Up to 5x the wear life of a standard BOCE.
- For use in high-abrasion, low-impact materials only.

HALF ARROW BOCE

- Protects the front of your base edge as well as the bottom.
- For use in high-abrasion, high-impact materials.

TOP COVER

- Protects the bevel and top of your base edge.
- Use with half arrows to fully protect your base edge investment.

SERRATED BOCE

- Increases the penetration of your bolt-on edge system.
- For use in packed or frozen materials.
- Maintains smooth floor.
**K SERIES TIP & ADAPTER SYSTEM**

**MAXIMUM PRODUCTIVITY MEETS HAMMERLESS RETENTION.**

Looking for a vertical retention tip and adapter system that stays sharper, changes easier and holds tighter? Choose the K Series system’s twist-on design and vertical retainer, which together provide reliable retention and easy installation and removal.

### IMPROVE YOUR PRODUCTIVITY

Low-profile shape provides optimal sharpness, penetration and digging ability throughout the tip life.

### EXTEND LIFE

More wear material can effectively be used before the tips are changed, adding 10-15% more usable life.

### INCREASE DURABILITY

The tip and adapter fit together precisely to reduce tip movement and adapter wear.

### STAY SAFE & REDUCE MAINTENANCE COSTS

One-piece vertical retainer allows for easy installation and removal.

### SIMPLIFY INSTALLATION

Rails on both sides of the adapter and a twist-on design hold the tip in place, allowing for quicker installation.

---

**TIP SELECTION GUIDE**

Even though bucket tips come in many shapes and sizes, you don’t have to be an expert to choose the right ones. Use the chart below to determine if the material you’re digging in is high, medium or low impact and abrasion—then find the balance you need among these three factors:

1. **STRENGTH**
   - The ability to withstand digging and penetrating shocks and high breakout forces

2. **PENETRATION**
   - The ability to penetrate tough material when it’s tightly compacted, rocky or frozen

3. **WEAR LIFE**
   - The ability to withstand wearing, scouring and abrasive action of the material being handled

---

<table>
<thead>
<tr>
<th>IMPACT (material size)</th>
<th>ABRASION (tip life)</th>
<th>STRENGTH</th>
<th>PENETRATION</th>
<th>WEAR LIFE</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOW 0-4&quot;</td>
<td>0-102mm</td>
<td>&gt; 1,000 hours</td>
<td>The ability to withstand digging and penetrating shocks and high breakout forces</td>
<td></td>
</tr>
<tr>
<td>MEDIUM 4-12&quot;</td>
<td>102-305mm</td>
<td>250-1,000 hours</td>
<td>The ability to penetrate tough material when it’s tightly compacted, rocky or frozen</td>
<td>The ability to withstand wearing, scouring and abrasive action of the material being handled</td>
</tr>
<tr>
<td>HIGH 12&quot;</td>
<td>305mm+</td>
<td>&lt; 250 hours</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**K SERIES DRIVE-THROUGH TIP & ADAPTER SYSTEM**

The drive-through system is for K80-K100 adapters and tips.

- Lower-profile tip
- No hole in adapter
- Twist-on design

**INSTALLATION & REMOVAL**

It's safe and easy—just use a standard pry tool and follow this three-step process:

1. **INSERT RETAINER**
2. **HAMMER RETAINER**
3. **SECURE RETAINER**

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

Bolt-on adapters available

---

**K SERIES HAMMERLESS TIP & ADAPTER SYSTEM**

The hammerless system is for K110-K170 adapters and tips.

- Lower-profile tip
- Twist-on design

**INSTALLATION & REMOVAL**

It's safe and easy—just use a standard pry tool and follow this three-step hammerless process:

1. **INSERT RETAINER**
2. **PRESS DOWN RETAINER**
3. **REMOVE RETAINER**

Retainer - bolt drive
- Extreme Packing
- Slag Operations

Scan the QR code to the right to watch the installation video.
K SERIES TIP OPTIONS

Below are the tip shapes best suited for the wide range of jobsite conditions performed by wheel loaders. We also offer additional K Series tips more commonly used with excavators. Your Cat dealer can help you choose the one that offers the right balance of penetration and wear life for your application.

**HEAVY ABRASION**

- **Heavy Abrasion** tips are ideal for high-abrasion applications like sand, gravel and shot rock. They feature the maximum amount of wear material—approximately 145% more—and a tip base with 25% more surface area than Heavy Duty Penetration tips.

**HEAVY PENETRATION**

- **Heavy Penetration** tips are ideal for high-impact, hard-to-penetrate materials. They feature approximately 120% more material in the high wear area as well as a spade design that has 60% less cross-sectional area on the leading edge than Heavy Abrasion tips.

**HEAVY DUTY**

- **Heavy Duty** and **Heavy Duty Abrasion Resistant Material (A.R.M.)** tips include approximately 60% more wear material in the tip body. The A.R.M. wears around the profile to increase penetration.

**GENERAL PURPOSE**

- **General Purpose** tips are symmetrical and the baseline for other tip styles. All wear comparisons are to the General Purpose tip unless otherwise noted.

**PENETRATION PLUS**

- **Penetration Plus** tips feature 25% more wear material and a leading edge with 25% less cross-sectional area. They self-sharpen as they wear.

**PENETRATION**

- **Penetration** tips are ideal for densely compacted materials. They feature a leading edge with 60% less cross-sectional area—allowing for maximum penetration—and a single center rib that self-sharpen as it wears. These tips are available with A.R.M.*

---

* Abrasion Resistant Material (A.R.M.) is a welding process that bonds very hard tungsten carbide particles to Cat G.E.T. to create a protective shield over the component. Typically, the A.R.M. process doubles wear life—and can last even longer in some applications.
K SERIES ADAPTER OPTIONS

All K Series adapters feature rails on both sides of the nose for a twist-on design that stays in place during installation.

MACHINE COMPATIBILITY

<table>
<thead>
<tr>
<th>WHEEL LOADER</th>
<th>BUCKET TYPE</th>
<th>SIZE CLASS</th>
</tr>
</thead>
<tbody>
<tr>
<td>950</td>
<td>Material handling, general duty</td>
<td>K80</td>
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<tr>
<td></td>
<td>Rock</td>
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<tr>
<td></td>
<td>Heavy-duty quarry rock</td>
<td>K110</td>
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</tr>
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<td>Heavy-duty quarry rock</td>
<td>K110</td>
</tr>
</tbody>
</table>

J SERIES TIP & ADAPTER SYSTEM

SIDE-PIN SECURITY WHEN YOUR APPLICATION DEMANDS IT.

Great performance and proven reliability over time—that’s what you get with this classic horizontal retention system, a staple in the mining industry.

BOOST YOUR VERSATILITY

Industry-standard side-pinned design performs across a variety of applications.

ENHANCE YOUR RELIABILITY

Weld-on adapters offer excellent retention.

IMPROVE SAFETY & MAINTENANCE TIME

Ability to retrofit means you can use the hammerless CapSure™ system.
J SERIES TIP OPTIONS

Below are the tip shapes best suited for the wide range of jobsite conditions performed by wheel loaders. We offer additional J Series tips more commonly used with excavators. Your Cat dealer can help you choose the one that offers the right balance of penetration and wear life for your application.

- **Heavy Duty Abrasion** tips are ideal for high-abrasion applications like sand, gravel and shot rock. They feature the maximum amount of wear material—approximately 145% more—and the tip base has 35% more surface area than Heavy Duty Penetration tips.

- **Heavy Penetration** tips are ideal for high-impact, hard-to-penetrate materials. They feature approximately 120% more material in the high wear area, and the spade design has 70% less edge area than Heavy Duty Abrasion tips.

- **Heavy Duty Long** and **Heavy Duty Abrasion Resistant Material (A.R.M.)** tips include approximately 60% more wear material in the tip body. The A.R.M. wears around the profile to increase penetration.

- **Heavy Duty Abrasion** tips are ideal for high-abrasion applications like sand, gravel and shot rock. They feature the maximum amount of wear material—approximately 145% more—and the tip base has 35% more surface area than Heavy Duty Penetration tips.

- **Penetration Plus** tips feature 30% more wear material and 25% less cross-sectional area. They self-sharpen as they wear.

- **Penetration and Penetration A.R.M.* tips are ideal for densely compacted materials. They feature a leading edge with approximately 50% less cross-sectional area and a single center rib for strength—allowing for maximum penetration.

- **Rock Chisel** tips are Heavy Duty Long tips ideal for high-impact and high-abrasion applications, such as granite. Additional length and wear material in the body helps retain the chisel shape throughout tip life.

*Abraion Resistant Material (A.R.M.) is a welding process that bonds very hard tungsten carbide particles to Cat G.E.T. to create a protective shield over the component. Typically, the A.R.M. process doubles wear life—and can last even longer in some applications.*

**INSTALLATION & REMOVAL**

Simply use the standard pin and retainer system—and make removal even easier with our Tip Pin Remover tool.*

1. Place the tool on the tip and align the extractor with the pin.
2. Strike the tool with a hammer until the pin is removed.
3. Place the tool over the tip (A), locate the pin in the hole of the holder (B) and strike the tool (C).

*J550 and smaller use the pin removal tool. Consult your dealer for larger systems.
**BASE EDGE SYSTEMS**

**FASTEST INSTALLATION TIMES IN THE INDUSTRY.**

Cat base edge systems go through a series of carefully controlled manufacturing processes to deliver maximum strength, durability and long life. They come completely welded and assembled with no need for preheating, dramatically shortening your installation and replacement time.

**INCREASE DURABILITY**

A consistent heat-treat process maximizes strength and resists abrasion. Shot blasting removes impurities that can cause inclusions on a weld, and controlled cooling reduces the chance of stress points.

**SAVE INSTALLATION & REPLACEMENT TIME**

Butterhead is applied to the back side of the base edge and the top strap of the corner adapter, so you can weld the edge onto the bucket without preheating.

**OPTIMIZE MACHINE PERFORMANCE**

Base edges are designed by Caterpillar engineers for optimal performance on specific machines.

---

**GENERAL DUTY TIPS**

General Duty tips offer a reliable, competitively priced parts option for small to medium-sized wheel loaders operating in low to medium impact conditions. Tips are available in the J250-J460 size range.

General Duty tips are:

- A match if you require quality and long wear
- Designed to fit J Series adapters, reducing risky fit-ups
- Backed by the standard Caterpillar warranty against breakage under normal, recommended operation in low to medium impact applications

**J SERIES MACHINE COMPATIBILITY**

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</table>
BASE EDGE SYSTEMS

Base edge replacement for a heavy-duty rock or a heavy-duty abrasion wheel loader bucket usually involves a base edge assembly, which is a base edge with adapters welded in place at the factory. General purpose and material handling buckets typically have a straight base edge with holes that can accept bolt-on cutting edges or bolt-on adapters and segments.

GET MORE ACCURACY

Lasers place the adapters within 0.1mm of specifications.

BUTTERBEAD BASE EDGE ASSEMBLY

DURABLE PROTECTION COMBINED WITH SHORTER INSTALLATION TIMES.

The protection you need, with no preheating required—that’s what you get with butterbead weld prep. This technique, which involves applying a layer of weld to a heat-treated, higher hardness part, makes it possible to weld a base edge to a bucket without preheating the hardened part. Choose from two shapes (straight and spade) and three levels of build, available on 50mm and larger base edges, to get the right protection for your application.

GET MORE DURABILITY

Base edges have the proper butterbead weld because it is applied in the factory.

SPEED UP YOUR INSTALLATION TIME

Weld prep eliminates the need for preheating, shortening edge installation time by 30-50%.

STRAIGHT

SPADE

Angled Adapter
BASE EDGE END PROTECTION (BEEP)

PROTECT YOUR CORNERS—WITHOUT CUTTING THEM.
Reduce base edge end wear and subsequent corner adapter weld erosion with our BEEP design. It makes adapter replacement on the edge much easier when it’s time to rebuild the base edge assembly.

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.

SIDE & EDGE PROTECTION

MAINTAIN YOUR PERFORMANCE EDGE.
Protect your bucket’s structural integrity and enhance penetration with sidebar protection and shear blocks.

» Sidebar Protectors
» Performance Series Sidebar Protectors
» Corner Guard System
» Half Arrows
» Top Covers
» Segments
SIDEBAR PROTECTORS
Protect your bucket’s structural integrity and enhance penetration with sidebars and shear blocks.

INCREASE YOUR UPTIME
Shear block protects the pin from extreme loads and breakage, helping ensure sidebar protector retention.

CUT YOUR MAINTENANCE COSTS
Sidebar protector protects the bucket edge.

PERFORMANCE SERIES SIDEBAR PROTECTORS
Installation & Removal
Get all the benefits of the sidebar protector without the hammer. Performance Series Mechanically Attached sidebar protectors use proven hammerless spring retainers for fast, easy installation and reduce the risk of injury.

1. Insert the protector into the dove tail base plate.
2. Mechanically attached wear plate compression retainer.
3. Install one end of the compression retainer.
4. Install the other end of the compression retainer in place using a small pry bar.

Scan the QR code to the right to watch the installation video.
**CORNER GUARD SYSTEM**

Reduce your bucket’s maintenance costs and increase bucket performance with the Cat Corner Guard system. Cat corner guards are an easily replaced bolt-on system to fit your 950-982 wheel loader buckets. These corner guards are available with and without adapters to fit your application needs.

1. Slide the corner guard into place.
2. Torque, Bang, Torque bolts to the proper bolt torque.

**TOP COVERS, SEGMENTS & HALF ARROW SEGMENTS**

Protect your investment in buckets and base edges with these flexible components. Half arrow segments allow for a smooth transition of material over the base edge to protect the leading edge. Top covers complement the half arrow segments to protect the base edge fully. And segments are ideal for moving re-handled materials with medium impact and medium abrasion.

**SIMPLIFY MAINTENANCE**  
 Individual pieces that protect the edge can be changed independently.

**ENHANCE DURABILITY**  
 Half arrow segments cover the leading edge for smooth material transition.

**BOOST YOUR UPTIME**  
 Top cover reduces wear on weld joints.

**SAVE ON INVENTORY COSTS**  
 Reversible segment creates more leading edge wear material, reducing piece parts.
We offer four standard bucket durability categories suitable for any application. Each category is based on the bucket’s intended durability when used in the recommended application and material.

### GENERAL PURPOSE
- Good all around performance for stockpiling, re-handling, excavating and bank loading.  
- Intended for use in low-impact materials.

### MATERIAL HANDLING
- For stockpile loading loose materials such as gravel, sand and dirt in load-and-carry applications.  
- Intended for use in low-impact materials.  
- These are the best performers for production loading.  
- Flat bottom bucket.

### ROCK BUCKETS
- For use in applications such as face loading limestone and other unprocessed rock. Also used in truck and hopper loading for a wide range of quarry materials.  
- Intended for use in moderate- to high-abrasion applications.  
- Balances the need for high production in more abrasive applications.

### HEAVY DUTY QUARRY ROCK BUCKET
- For use where maximum abrasion resistance is required.  
- Intended for use in high-abrasion, high-impact applications.

---

### SEGMENTS
Segments give you more leading edge wear material, extending life and reducing your investment in piece parts.

**NOTE:** Half arrow segments and segments each have a separate center, as well as separate left-hand and right-hand profiles, to account for spade base edges.

<table>
<thead>
<tr>
<th>WHEEL LOADER</th>
<th>SEGMENT TYPE</th>
<th>THICKNESS</th>
</tr>
</thead>
<tbody>
<tr>
<td>950</td>
<td>Standard</td>
<td>30</td>
</tr>
<tr>
<td></td>
<td>Heavy duty</td>
<td>35</td>
</tr>
<tr>
<td>962</td>
<td>Standard</td>
<td>30</td>
</tr>
<tr>
<td></td>
<td>Heavy duty</td>
<td>35</td>
</tr>
<tr>
<td>966</td>
<td>Standard</td>
<td>30</td>
</tr>
<tr>
<td></td>
<td>Heavy duty</td>
<td>35</td>
</tr>
<tr>
<td>972</td>
<td>Standard</td>
<td>30</td>
</tr>
<tr>
<td></td>
<td>Heavy duty</td>
<td>35</td>
</tr>
<tr>
<td></td>
<td>Half arrow</td>
<td>30</td>
</tr>
<tr>
<td>980</td>
<td>Standard</td>
<td>30, 35</td>
</tr>
<tr>
<td></td>
<td>Heavy duty</td>
<td>45</td>
</tr>
<tr>
<td></td>
<td>Abrasion Resistant Material</td>
<td>35</td>
</tr>
<tr>
<td></td>
<td>Half arrow</td>
<td>45</td>
</tr>
<tr>
<td>982</td>
<td>Standard</td>
<td>30, 35</td>
</tr>
<tr>
<td></td>
<td>Heavy duty</td>
<td>45</td>
</tr>
<tr>
<td></td>
<td>Abrasion Resistant Material</td>
<td>35</td>
</tr>
<tr>
<td></td>
<td>Half arrow</td>
<td>45</td>
</tr>
</tbody>
</table>

**NOTE:** Half arrow segments and segments each have a separate center, as well as separate left-hand and right-hand profiles, to account for spade base edges.
Choosing the wrong bucket can easily reduce production and increase operating costs by 10-20% or more. It can also cause unnecessary wear and fatigue for both machine and bucket. Contact your local Cat dealer for more detailed information on choosing the right wheel loader, bucket and work tool attachment combinations to meet your application needs.

**ADDITIONAL BUCKET STYLES**

Several different bucket styles are available—each with a special purpose:

- **COAL**: Coal Buckets are high-volume material movers for loading and stockpiling coal and other materials of similar density.

- **GRAPPLE**: Grapple Buckets clamp loose material with dual ladder-style grapple tines. These are key producers in transfer stations, landfills or wherever loose, lightweight material needs to be moved.

- **HIGH DUMP**: High Dump Buckets utilize dedicated dumping cylinders and a bottom hinge to “roll out” material. Higher than ordinary bucket types, they are ideal for transfer stations or loading high-sided trucks.

- **MULTI-PURPOSE**: Multi-Purpose Buckets have a unique action that can load, bulldoze, clamp and perform many other tasks. A versatile design for site cleanup, demolition or similar situations.

- **SIDE DUMP**: Side Dump Buckets dump both to the front and to the side of the machine, an advantage when working in tight quarters such as street work, tunnel construction and building levees.
ADDITIONAL BUCKET STYLES (CONT.)

SLAG: Cat Slag Buckets are heavy duty and specifically constructed to handle extreme conditions that come with handling hot slag.

WASTE HANDLING: Waste Handling Buckets move large volumes of low-density waste in transfer stations, landfills and recycling yards. Large capacities give maximum production when loading conveyors, trucks or hoppers.

WASTE LOAD & CARRY: Load & Carry Buckets are primarily designed to load and carry lightweight material, minimizing contact with the floor for less bucket and floor wear.

WASTE DOZING: Dozing Buckets are designed to push waste loads along the floor to a hole or hopper in the floor for below-grade truck loading.

WOODCHIP: As the name suggests, Woodchip Buckets are optimized for moving large volumes of wood chips. The flat floor and straight edge work to scoop the bucket full and help heap the load high.
MECHANICALLY ATTACHED WEAR PLATE SYSTEM (MAWPS)

Safeguard wear areas with this hammerless system—available for a wide variety of applications.

**INCREASE YOUR UPTIME**

Two minute change-out—no hammer required.

**LOWER YOUR INVENTORY COSTS**

Flexible, versatile system welds to flat and curved surfaces.

**SIMPLIFY INSPECTIONS**

Wear indicator holes allow for quick and easy inspections, reducing maintenance time.

**EXTEND WEAR LIFE**

You can install the system perpendicular to material flow, then rotate it for more wear material.

**RETENTION WITHOUT THE RISK.**

Retention components are located within the base plate, where they’re shielded from wear and load—eliminating the risk of wear plates falling off.

MAWPS VERSUS STEEL PLATES.

When you choose MAWPS instead of steel wear plates, you can see cost savings as high as 44%, thanks to significantly lower labor and replacement costs.

<table>
<thead>
<tr>
<th>TOTAL ANNUAL COSTS WITH STEEL PLATES</th>
<th>PARTS</th>
<th>LABOR</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Installation costs</td>
<td>$4,000</td>
<td>$1,200</td>
<td>$5,200</td>
</tr>
<tr>
<td>Replacement costs (2x per year)</td>
<td>$8,000</td>
<td>$2,400</td>
<td>$10,400</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>$15,600 or $7.80/hour</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TOTAL ANNUAL COSTS WITH MAWPS</th>
<th>PARTS</th>
<th>LABOR</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Installation costs</td>
<td>$4,000</td>
<td>$600</td>
<td>$4,600</td>
</tr>
<tr>
<td>Replacement costs (2x per year)</td>
<td>$4,000</td>
<td>$83</td>
<td>$4,083</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>$8,683 or $4.34/hour</td>
</tr>
</tbody>
</table>
INSTALLATION & REMOVAL
Save time and money with MAWPS’ two-minute installation and removal.

1. Weld the adapter perpendicular to material flow for maximum wear material (or parallel to flow with the Cat logo on top for maximum coverage).

2. Position the wear plate over the base plate and slide the wear plate onto the base plate.

3. Install one end of the compression retainer with the plug and pry it into place with an 8mm-wide small pry bar.

4. Clean, use pry bar to remove the compression retainer, and slide the wear plate off the base plate.

Reduce maintenance hours with MAWPS’ easy-to-use wear indicator holes. Just look, then rotate or replace.

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

SOLID MAWPS
DESIGN SOLUTIONS FOR YOUR BUCKET.

With solid MAWPS, you can enhance protection while keeping machine weight to a minimum. Choose a layout designed by Caterpillar engineers for your specific machine or application to maximize your productivity. Cat dealers can access the global library of MAWPS layouts.

<table>
<thead>
<tr>
<th>SIZE</th>
<th>MACHINE</th>
</tr>
</thead>
<tbody>
<tr>
<td>50 Series</td>
<td>S330, 994</td>
</tr>
<tr>
<td>40 Series</td>
<td>993, 5130, R2660</td>
</tr>
<tr>
<td>30 Series (available with A.R.M.)</td>
<td>992, 990, 5060, 374-386</td>
</tr>
<tr>
<td></td>
<td>R1700, R1600</td>
</tr>
<tr>
<td></td>
<td>980 and down</td>
</tr>
<tr>
<td>20 Series (available with A.R.M.)</td>
<td>365 and down</td>
</tr>
<tr>
<td></td>
<td>Trucks</td>
</tr>
<tr>
<td></td>
<td>972 and down</td>
</tr>
<tr>
<td>10 Series</td>
<td>320-349</td>
</tr>
<tr>
<td></td>
<td>R1330</td>
</tr>
</tbody>
</table>
SKELETAL MAWPS
STAY COVERED ACROSS YOUR PASS MATCH.
Quick and easy to install, skeletal MAWPS protect the rear portion of truck bodies to help you maximize uptime. A through-hardened DH-2 wear plate slides onto a weld-on base plate and is held in place with a patented compression retainer, trapping materials from any direction.

TRAP MORE MATERIAL
The skeletal wear plate traps material in and between plates, allowing for material-on-material wear instead of wear on steel body liner products.

EXTEND WEAR LIFE
Because the compression retainer is positioned low in the base plate, more of the wear plate can be worn away before you need to replace it.

SIMPLIFY REMOVAL & INSTALLATION
You can typically replace worn wear plates in two minutes or less without hammering or welding.

INCREASE YOUR FLEXIBILITY
Available in standard and heavy-duty sizes, skeletal MAWPS can be customized to fit virtually any truck body configuration—flat floor or dual slope.

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.

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.

Wear Blocks 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.

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.

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.
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.

WELD-ON HALF ARROWS
Weld-on half arrows can be used to customize a bucket with sidebar protection, as side cutters to improve penetration or as segments between teeth to reduce scalloping.

WELD-ON EDGE SHROUDS
Stackable edge shrouds are designed to fit any bucket configuration and extend the life of your excavator bucket edge assembly. Shroud profile is designed to work with K Series vertical pin retainers and horizontal J Series side pins. Tabs allow for easy alignment while installing your edge protection. Two shroud sizes are available per edge thickness to fit any bucket tooth spacing.
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

<table>
<thead>
<tr>
<th>Material</th>
<th>Mohs Hardness</th>
<th>Rockwell “C” Hardness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diamond</td>
<td>10</td>
<td>100</td>
</tr>
<tr>
<td>Corundum</td>
<td>9</td>
<td>80</td>
</tr>
<tr>
<td>Topaz</td>
<td>8</td>
<td>70</td>
</tr>
<tr>
<td>Quartz</td>
<td>7</td>
<td>60</td>
</tr>
<tr>
<td>Orthoclase</td>
<td>6</td>
<td>50</td>
</tr>
<tr>
<td>Apatite</td>
<td>5</td>
<td>40</td>
</tr>
<tr>
<td>Fluorite</td>
<td>4</td>
<td>30</td>
</tr>
<tr>
<td>Calcite</td>
<td>3</td>
<td>20</td>
</tr>
<tr>
<td>Gypsum</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Talc</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

EXAMPLE PARTS WITH A.R.M. APPLIED

Two-Strap K Series Adapter  J Series Penetration Tip  K Series Heavy Duty Tip

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