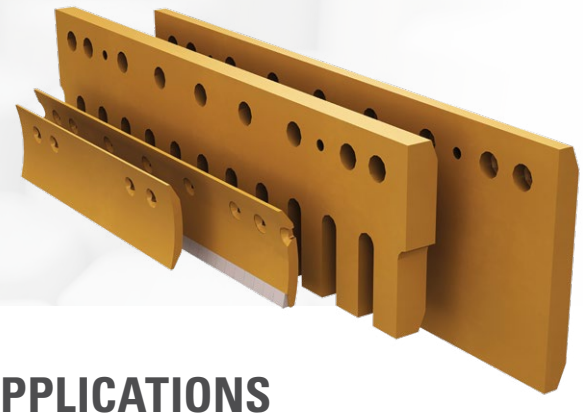
CAT® CUTTING EDGE SYSTEMS

MOTOR GRADERS

Find the best solution for your application with our broad portfolio of motor grader cutting edges and end bits. We've designed these parts to help you lower your cost per hour, decrease downtime and move more material.



DIFFERENT MATERIALS FOR DIFFERENT APPLICATIONS

Cat motor grader cutting edges come available in three types of materials: DH-2, Tungsten Carbide, and High Carbon.

The vast majority are made of DH-2 material. Cat through-hardened DH-2 steel edges deliver excellent value because they last longer and offer high impact resistance. That means you'll buy fewer edges, have less downtime and spend less money on labor and hardware.

Tungsten Carbide cutting edges combine the toughness of Cat DH-2 steel with the wear resistance of tungsten carbide. These provide extended life in highly abrasive conditions to lower operating costs. In fact, tests show that tungsten carbide edges can provide up to 20 times the life of a standard DH-2 edge. That means less downtime for edge changes and lower hardware costs for your operation. Tungsten Carbide cutting edges are developed for high-abrasion, low-to-medium impact applications, such as:

- Unimproved earthen material roads
- Public sand and gravel roads
- Mining or logging haul roads

Caterpillar also offers high-carbon edges for those light-duty applications where impact is extremely low. High-carbon edges have a relatively high surface hardness and will provide good life in high-abrasion applications or in finish work. (It is important to realize that high-carbon edges will not withstand the impact of a DH-2 edge and, therefore, care should be taken to choose an application with very low impact.)

TIPS FOR 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.

MATCH THE RIGHT EDGE TO 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.

GRADERBIT2™ SYSTEM

Add the GraderBit2 System for finish grading, maintaining roadways or reconditioning haul roads. It's designed for easy maintenance, and no tools are required for bit installation or removal.

The pull-ring pin makes bit installation / removal easy without the need for tools.

ALSO CONSIDER EDGE WIDTH AND THICKNESS

Edge width translates into wear material, so a wider edge usually delivers longer life. Edge thickness is determined by penetration requirements: Harder-to-penetrate materials call for the use of a thinner edge, but a thicker edge can be used for easier-to-penetrate materials to extend wear life.

INSTALL YOUR NEW PARTS CORRECTLY

+ Use new bolts and nuts when installing new cutting edges and end bits to ensure against metal fatigue
+ Surfaces must be clean of dirt, paint, scale, rust and weld splatter
+ Mating surfaces must be clean and flat to assure maximum clamping force
+ Bolt and nut threads must be clean; do not apply lubricant to the hardware, as this may over-stretch the bolt
+ Cutting edge bolts are installed from the center outward or from one end to the other
+ End-bit bolts are installed first from the center outward, then from the center inward
+ Tighten all bolts to the required torque
+ Seat bolt heads in the countersinks with a heavy hammer
+ Tighten the bolts again to required torque (it is extremely important to keep all hardware tight)
+ After installation, watch for wear occurring from the bottom up, which can lead to crowning problems

USE THESE OPERATING TECHNIQUES

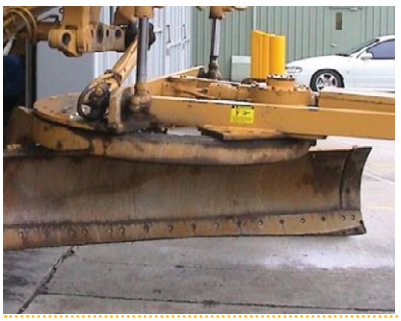
Through better management of the interface between machine and materials, operators can maximize productivity, lower machine operating costs and reduce cab vibration, improving operator comfort.

ESTABLISH A PROPER 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

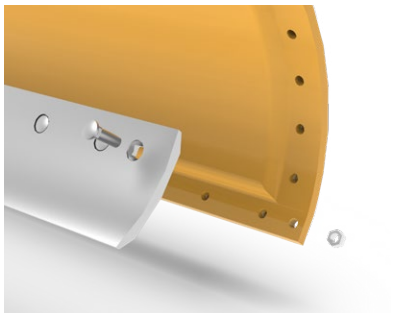
CONTROL SPEED AND EXCESSIVE DOWN PRESSURE

+ Use accumulator to absorb shocks
+ < 6mph/8kph speed
+ Excess speed can cause edge slivering



MANAGE 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"

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