



Grader Blades

Grader Blades

Cutting Edges for Earth Moving and Snow Removal





Innovation Is the Heart of Our Road Maintenance Competitive Edge!

At Kennametal, we have a single goal: to engineer a competitive edge for our customers in every major manufacturing industry, including Road Maintenance.

Within the Road Maintenance market sector, Kennametal optimizes performance, produces significant productivity gains, and substantially decreases costs for our customers. Our grader blades, snowplow blades, and accessories continue to garner global recognition for their unsurpassed productivity in even the most extreme operating conditions.

We offer the widest selection and the most innovative designs of carbide blades available in the industry. We apply our expertise in highly complex metallurgy and materials science in tungsten carbide powders, high-speed steels, ceramics, industrial diamond, and other materials that are particularly resistant to heat, abrasion, pressure, and wear.

To help you learn more about our Road Maintenance offerings and find a solution that best meets your needs, you can request additional literature or information by contacting our Customer Service Department at 800/222-9327.

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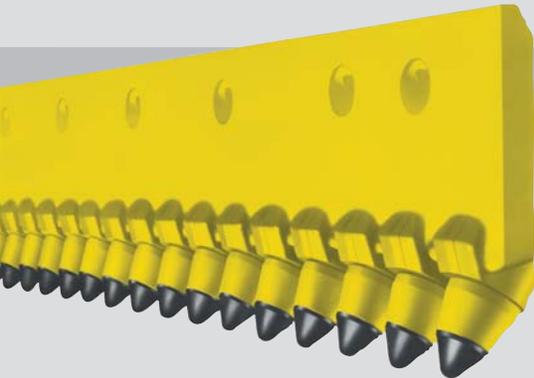
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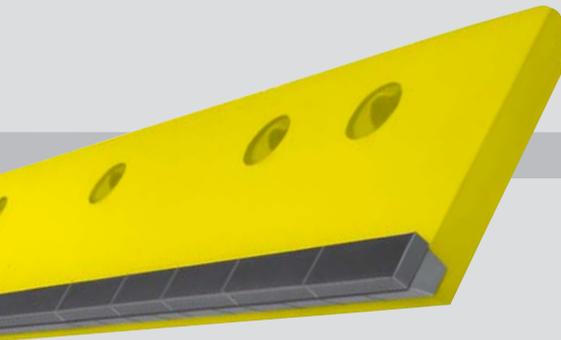
Kennametal Inc. encourages the safe use of its products. To help avoid personal injury or damage to tools, please follow these guidelines:

- Wear approved personal protection equipment, including eye and ear protection, steel-toed shoes, hard hat, and vest.
- Make sure tools are properly seated and securely retained.
- Do not strike cutting tools with metal objects. Carbide tips could shatter.
- Use a soft-headed hammer or other approved installation tools to insert cutting tools.
- Exercise care when removing tools.
- Inspect tools before each use. Do not use dull, cracked, burred, or bent tools.
- Operate all machines with safety in mind. Stand clear of machines in use, and make sure protective guards are in place.
- Do not change tools when the blade is moving.



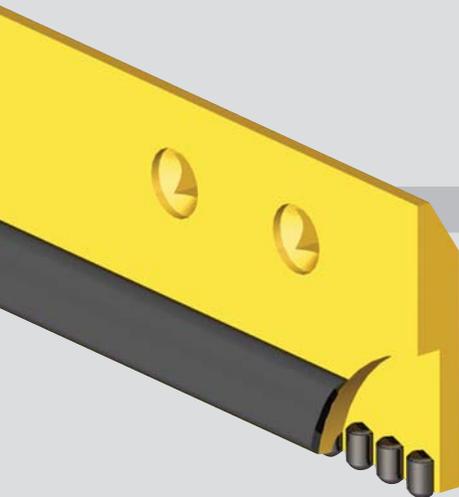
Scarifier Blades

- Penetrates hard-packed, gravel, and frozen surfaces easily with less down pressure and horsepower.
- Eliminates “washboarding” and pot holes with fewer passes than standard blades.
- Decreases the number of passes necessary to properly maintain a road surface.
- Features replaceable, rotating, self-sharpening, solid carbide-tipped cutting tools that wear uniformly and last longer than all-steel blades.
- Reduces machine and operator downtime significantly by eliminating the need to replace entire blade sections and instead, allowing for the quick change of individual tools.



Dual-Carbide Blades

- Provides maximum wear resistance.
- Features two tungsten carbide inserts, specifically designed for high-abrasion and low-impact applications.
- Outlasts imbedded carbide granule-style blades.
- Offers the longest lasting blade life span in the industry.
- Reduces costs associated with replacement part inventory, downtime, labor, and overall operations.
- Resists “crowning” and maintains a straighter cutting edge throughout the life of the blade.



I.C.E.™ / KenCoat™ Blades

Combining Isolated Carbide-Edge (I.C.E.) Blades and Kennametal Carbide Overlay Application Technology (KenCoat)

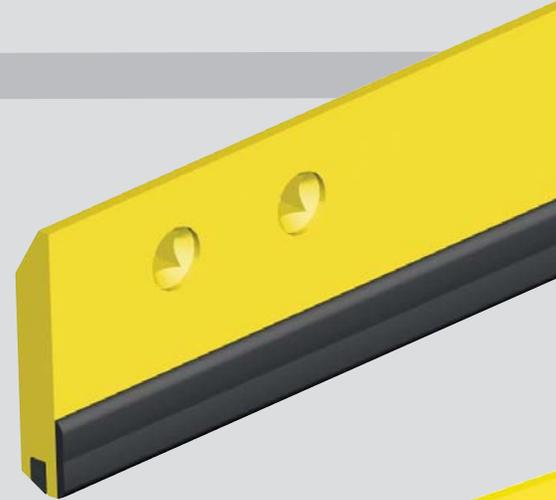
- Combines durable, individually mounted bullet-shaped inserts with wear-resistant carbide granules imbedded in a tough, abrasion-resistant, steel-weld material in one blade.
- Features optimal levels of blade wear, impact, and fracture resistance.
- Designed specifically for maximum performance and blade longevity.
- Performs effectively in snow removal operations on roads with imbedded lane markers and rumble strips.
- Withstands high-speed plowing over excessive joints, major cracks, and uneven road surfaces.

Kennametal Offers the Most Innovative Line of Tungsten Carbide Grader Blades, Snow Removal Blades, and Road Maintenance Blades in the Industry!

KenCoat™ Blades

Kennametal Carbide Overlay Application Technology

- Economical choices for moderate-impact applications.
- Resists wear from down pressure.
- Provides wear life three to five times greater than standard carbide blades.
- Features wear-resistant carbide granules imbedded in an abrasion-resistant, steel-weld material that offers better protection of the solid carbide insert in the blade.
- Available in both 1-inch (25mm) and 1.50-inch (38mm) wide KenCoat protection.



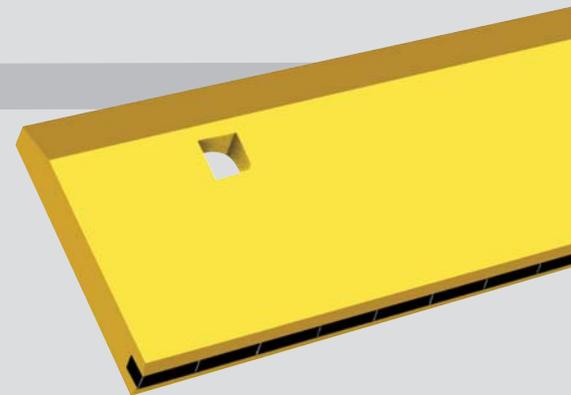
Armored Blades

- Economical choices for higher-impact applications.
- Offers wear life three to five times greater than standard carbide blades.
- Protects carbide insert by reinforcing the mild steel face with a securely welded hardened-steel plate.
- Available in 3-foot (914mm), 4-foot (1219mm), and 5-foot (1524mm) lengths.



Grader Blades for Plowing Snow

- Offers unparalleled combination of fracture and wear resistance.
- Our brazing expertise ensures that inserts stay firmly in place, without residual stress, resulting in a more durable blade.
- Available in an unmatched variety of styles and sizes — each backed by the road maintenance industry's best quality assurance program.
- Sold in combinations of 3-foot (914mm) and 4-foot (1219mm) lengths for more versatility, safety, and ease of use.





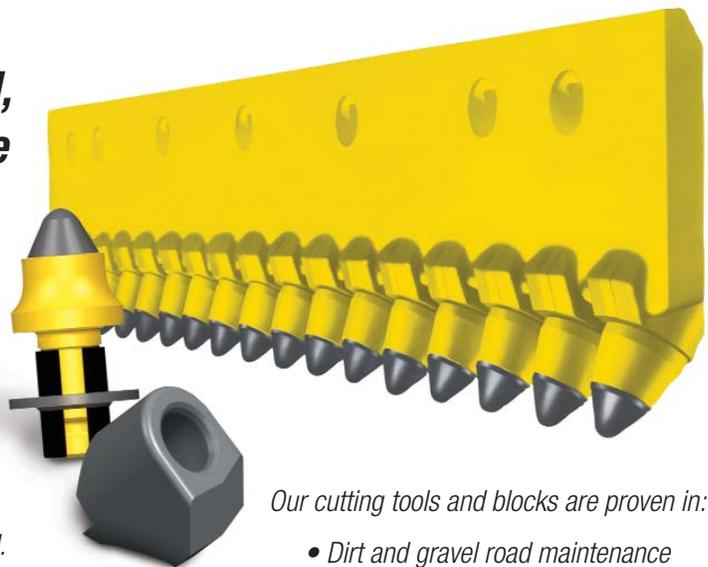
Scarifier Blades

Carbide-Tipped Cutting Tools, Blocks, and Accessories for Scarifier Blade Systems

Expanded Offering!

... engineered to deliver economical, consistent, and reliable performance in a wide range of applications!

- *Kennametal's exclusive tungsten carbide-tipped cutting tools outlast all-steel blades.*
- *Features rotating, self-sharpening cutting tools for more uniform wear and longer tool life.*
- *Provides exceptional cutting action in demanding, tough surfaces, including hard-packed gravel roads and frozen ground.*
- *Maintains an even cutting height by enabling cutting tools to be rotated from position to position.*
- *Reduces machine and operator downtime significantly by enabling operators in a matter of minutes to individually change worn cutting tools without using special tools, and without replacing entire blade sections and bolts.*



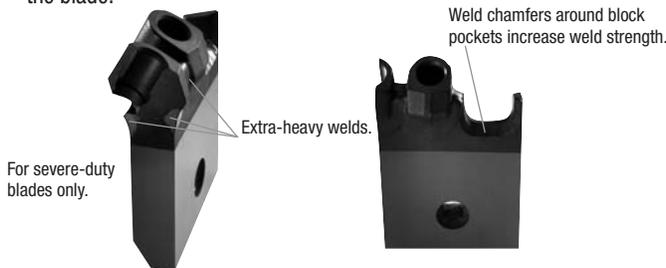
Our cutting tools and blocks are proven in:

- *Dirt and gravel road maintenance*
- *Hard-packed snow and ice removal*
- *Chip and seal road reclamation*
- *Tar sand road reclamation*
- *Spot asphalt milling*
- *Spreading loose material*
- *Mixing calcium chloride, magnesium chloride, or other dust suppressants*

A Variety of Blade Styles to Match Your Conditions!

Kennametal scarifier blades are available in three different styles, specifically designed to perform optimally in a range of ground conditions from light to the harshest of applications:

- **Standard-Duty Blades** — Ideal for light-use road grading in average conditions and applications.
- **Heavy-Duty Blades** — Generally ideal for road grading in most conditions and applications.
- **Severe-Duty Blades** — Ideal for grading in extreme road conditions and applications. Feature a 6-inch (152mm) blade width instead of the 5-inch (127mm) width of standard- and heavy-duty blades for more clearance between the toolholder blocks on the back of the blade and the “frog” of the moldboard. Include extra-heavy welds to reduce block breakout from the blade.



Our scarifier blades are available in 3-foot (914mm) and 4-foot (1219mm) lengths, with a variety of depths and widths. Additionally, all Kennametal scarifier blades use a “universal” bolt hole pattern so they are compatible with all makes and models of motor graders.

Using multiple, shorter-length blades to cover the entire moldboard length enables you to more easily and safely install the lighter, smaller Kennametal scarifier blades. In addition, should a section become damaged, it is more easily and economically replaced. Unlike competitive systems, Kennametal scarifier blades are repairable. Should an individual cutting tool holder (block) become worn or broken, it can be cut out and replaced. With most competitive systems you would need to replace the entire blade.

Our blades are easier to use and more versatile than competitive systems. The attack angle of the cutting tools is preset for ease of use, optimum tool rotation, and performance. Kennametal systems also accept a wider variety of cutting tool styles including both rotating and non-rotating type tools to handle a wider variety of conditions.

Best of all, Kennametal’s scarifier blade systems are designed so that just the cutting tools get replaced, not the blades. Partially worn cutting tools can be easily repositioned along the moldboard to maintain a straighter edge and achieve balanced cutting tool wear life. A single person can change an entire set of cutting tools in a matter of minutes, even in the field, with no special tools required!

Blade Selection Guide for Various Moldboards Lengths

Use the following table to determine the length and number of blades required to outfit your grader with a scarifier system. The length of your moldboard determines how many 3-foot (914mm) or 4-foot (1219mm) blade sections you will need.

Length of Moldboard	Size and Quantity of Scarifier Blade Sections Required for (1) Moldboard Assembly		Number of Cutting Tools Required
	3-ft. (914mm) Sections	4-ft. (1219mm) Sections	
12 ft. [144" (3658mm)]	0	3	72
13 ft. [156" (3962mm)]	3	1	78
14 ft. [168" (4267mm)]	2	2	84
16 ft. [192" (4877mm)]	0	4	96

NOTE: Kennametal recommends the use of Grade 8, Number 3 head-plow bolts and nuts when installing blades.

Scarifier Blade Sizes /Ordering Information

Upon determining the length and number of scarifier blades required, use the following specifications table to determine the specific style of scarifier blade — standard-, heavy- and/or severe-duty that you need. Also use this chart to determine the number of cutting tools required.

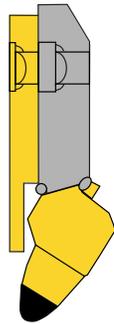
Thickness in. (mm)	Width in. (mm)	Length in. (mm)	Blade Type	Bolt Dia. in. (mm)	New Order Code	Old Part Number	Quantity of Cutting Tools Required	Approximate Weight lbs. (kg.)
.875 (22)	5 (127)	36 (914)	standard duty	.625 (16)	1012359	906009435	18	50 (23)
.875 (22)	5 (127)	48 (1219)	standard duty	.625 (16)	1012360	906009436	24	70 (32)
.875 (22)	5 (127)	36 (914)	standard duty	.750 (19)	1012361	906009437	18	50 (23)
.875 (22)	5 (127)	48 (1219)	standard duty	.750 (19)	1012362	906009438	24	70 (32)
1.25 (32)	5 (127)	36 (914)	heavy duty	.625 (16)	1012351	906009409	18	65 (29)
1.25 (32)	5 (127)	48 (1219)	heavy duty	.625 (16)	1012352	906009410	24	86 (39)
1.25 (32)	5 (127)	36 (914)	heavy duty	.750 (19)	1012354	906009412	18	65 (29)
1.25 (32)	5 (127)	48 (1219)	heavy duty	.750 (19)	1012353	906009411	24	86 (39)
1.25 (32)	6 (152)	36 (914)	severe duty	.625 (16)	1083322	—	18	81 (37)
1.25 (32)	6 (152)	48 (1219)	severe duty	.625 (16)	1083323	—	24	109 (49)
1.25 (32)	6 (152)	36 (914)	severe duty	.750 (19)	1013086	—	18	81 (37)
1.25 (32)	6 (152)	48 (1219)	severe duty	.750 (19)	1013087	—	24	109 (49)

NOTE: The above blades feature conical toolholder blocks positioned on 2-inch (51mm) centers. All blades are punched in a heavy-duty standard highway punch pattern, meaning the last two holes of each blade are on 3-inch (76mm) centers with the rest of the holes on 6-inch (152mm) centers. Kennametal scarifier blades can be used in combination to fit virtually every make and model of motor grader manufactured.

Cover Blades

Kennametal's optional cover blades provide exceptional wear resistance and superior protection of the main blade body. We recommend using our wear-resistant steel cover blades when the scarifier system is operating in extremely abrasive conditions or when carrying heavy debris loads on the moldboard.

The new, redesigned cover blade features an improved design that better protects the blocks and welds. Made of more wear-resistant steel and thicker than our previous models, these new cover blades attach easily through existing bolt holes on the blade. Simply use bolts that are .750-inch (19mm) longer than those used to attach the scarifier blade to the moldboard. Additionally, you can change cover blade sections without changing the entire scarifier blade.



Cover Blades Ordering Information

Thickness in. (mm)	Width in. (mm)	Length in. (mm)	Order Code	Bolt Diameter in. (mm)
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For standard-duty blades:

.750 (19)	5 (127)	36 (914)	1810486	.625 (16)
.750 (19)	5 (127)	48 (1219)	1803906	.625 (16)
.750 (19)	5 (127)	36 (914)	1810484	.750 (19)
.750 (19)	5 (127)	48 (1219)	1810485	.750 (19)

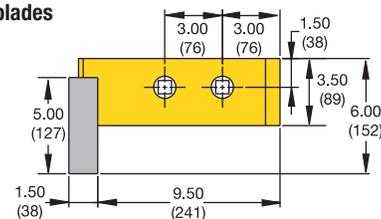
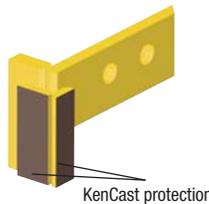
For severe-duty blades:

.750 (19)	6 (152)	36 (914)	1791493	.625 (16)
.750 (19)	6 (152)	48 (1219)	1791494	.625 (16)
.750 (19)	6 (152)	36 (914)	1799128	.750 (19)
.750 (19)	6 (152)	48 (1219)	1799131	.750 (19)

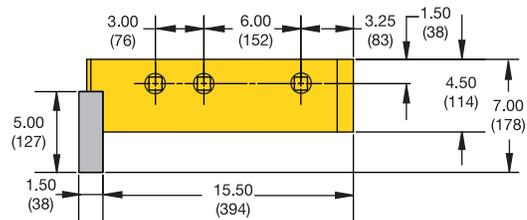
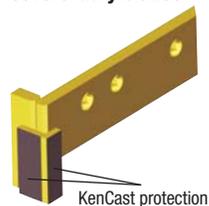
End Protectors

Kennametal also highly recommends the use of our carbide end protectors for scarifier blades. The heavy-duty design and tough steel supports of our end protectors resist breakage and bending in any road application. Our end protectors feature KenCast™ composite material that combines the wear resistance of Kennametal's exclusive tungsten carbide with the ductility of air-hardening steel.

For standard- and heavy-duty blades



For severe-duty blades



End Protectors Ordering Information

Bolt Design	Description	Bolt Diameter in. (mm)	Order Code Catalog Number	Old Part Number	Approximate Unit Weight lbs. (kg.)
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For standard-duty and heavy-duty blades:

2-bolt design for standard- and heavy-duty systems	right-hand end protector	.625 (16)	1012885 KCWB-0348	1012563/ 909260274	10 (5)
2-bolt design for standard- and heavy-duty systems	left-hand end protector	.625 (16)	1012884 KCWB-0349	1012564/ 909260275	10 (5)
2-bolt design for standard- and heavy-duty systems	right-hand end protector	.750 (19)	1012911 KCWB-0350	1012571/ 909260282	10 (5)
2-bolt design for standard- and heavy-duty systems	left-hand end protector	.750 (19)	1012912 KCWB-0351	1012572/ 909260283	10 (5)

For severe-duty blades:

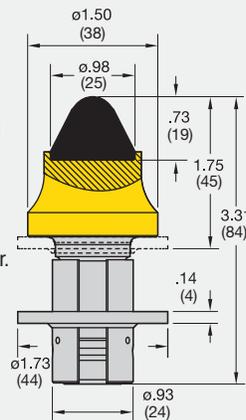
2-bolt design for severe-duty systems	right-hand end protector	.750 (19)	1718695 KCWB-0415	KCWB-0415	21 (10)
2-bolt design for severe-duty systems	left-hand end protector	.750 (19)	1718697 KCWB-0416	KCWB-0416	21 (10)
3-bolt design for severe-duty systems	right-hand end protector	.750 (19)	1821674 KCWB-0442	—	25 (11)
3-bolt design for severe-duty systems	left-hand end protector	.750 (19)	1821679 KCWB-0443	—	25 (11)

NEW!

C87WFRKCSB 2041786



- Superior wear and rotation.
- Washer keeps out debris and improves rotation for longer bit life and less block wear.
- New full-sleeve retainer protects the inside of the bore to prevent uneven wear.
- Washer precompresses the retainer which makes it easier to install.
- Retainer grips tighter to prevent bit loss!



Cutting Tools for Scarifier Blades Packaging Information

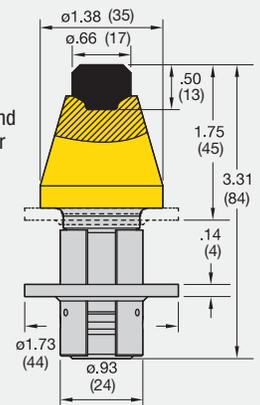
Order Code	Catalog Number	Pcs. Per Container	Weight lbs. (kg.)
2041786	C87WFRKCSB	50	.841 (.38)

NEW!

C87HDRP 3837213



- Economy-sized carbide tip.
- Washer keeps out debris and improves rotation for longer bit life, less block wear.
- Full sleeve retainer protects inside of the bore to prevent uneven wear.
- Retainer grips tighter to prevent bit loss.
- Washer precompresses the retainer for easier installation.



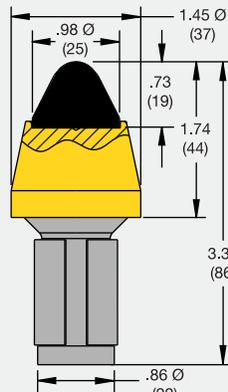
Cutting Tools for Scarifier Blades Packaging Information

Order Code	Catalog Number	Pcs. Per Container	Weight lbs. (kg.)
3837213	C87HDRP	50	.756 (.34)

C858KCSB 1010880



- Longest wearing carbide tip available.
- For use on all types of road surfaces.
- Specially designed carbide tip for extra-long tool life and added steel-wash protection.
- 1.45" (37mm) diameter cutting tool shoulder protects block face from excessive wear.



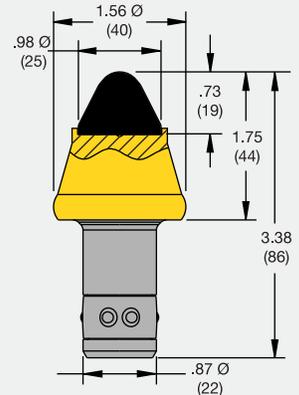
Cutting Tools for Scarifier Blades Packaging Information

Order Code	Catalog Number	Pcs. Per Container	Weight lbs. (kg.)
1010880	C858KCSB	50	.840 (.38)

C87KCSBSR 1010937



- Same design as C858KCSB, with added "barbed" short retainer for improved cutting tool retention.



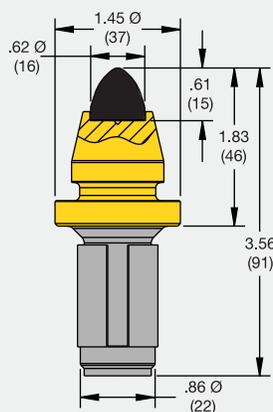
Cutting Tools for Scarifier Blades Packaging Information

Order Code	Catalog Number	Pcs. Per Container	Weight lbs. (kg.)
1010937	C87KCSB SR	50	.815 (.37)

C387DS 1010906



- Sharper carbide tip for increased penetration.
- Large carbide tip for long tool life in average cutting conditions.
- Specially designed flange protects block from excessive wear.
- Puller groove for easier tool extraction from front side of blade.



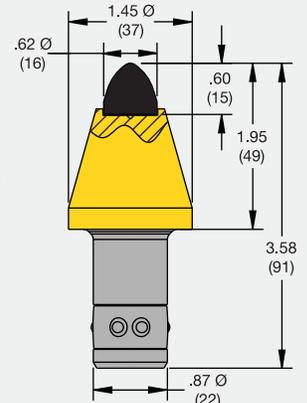
Cutting Tools for Scarifier Blades Packaging Information

Order Code	Catalog Number	Pcs. Per Container	Weight lbs. (kg.)
1010906	C387DS	50	.674 (.31)

C87DSSR 1010935



- Same tip design as C387DS, but shank features "barbed" short retainer for improved retention in block.
- Larger steel body provides longer wear life.



Cutting Tools for Scarifier Blades Packaging Information

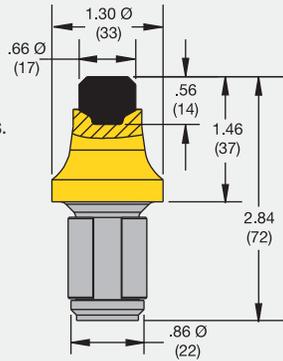
Order Code	Catalog Number	Pcs. Per Container	Weight lbs. (kg.)
1010935	C87DS SR	50	.772 (.35)

**Larger Tip,
Stronger Braze!**



**C855HD
1011208**

- Larger carbide tip than similar competitive tools.
- Improved with 30% stronger braze.
- Blunt-nose tip style.
- Fits competitive blade systems.



Cutting Tools for Scarifier Blades Packaging Information

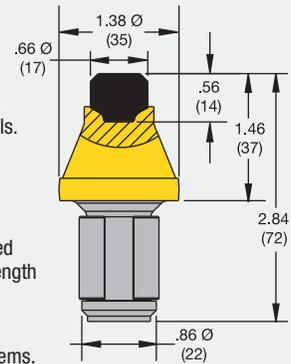
Order Code	Catalog Number	Pcs. Per Container	Weight lbs. (kg.)
1011208	C855HD	50	.540 (.24)

**Larger Tip,
Stronger Braze!**



**C855HDX
1011206**

- Larger carbide tip than similar competitive tools.
- Improved with 30% stronger braze.
- Same body style as C855HD, but with added steel for increased strength and wear life.
- Fits Kennametal and competitive blade systems.



Cutting Tools for Scarifier Blades Packaging Information

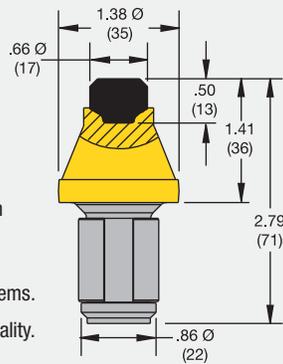
Order Code	Catalog Number	Pcs. Per Container	Weight lbs. (kg.)
1011206	C855HDX	50	.597 (.27)

NEW!



**C855HDX-4
3386038**

- Economy-sized carbide tip.
- Improved with 30% stronger braze.
- Additional steel in body style for added strength and wear life.
- Fits Kennametal and competitive blade systems.
- Reliable Kennametal quality.



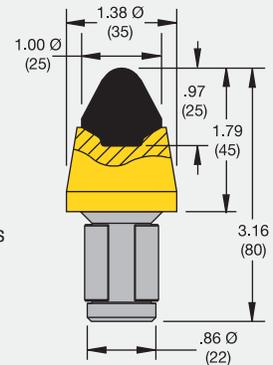
Cutting Tools for Scarifier Blades Packaging Information

Order Code	Catalog Number	Pcs. Per Container	Weight lbs. (kg.)
3386038	C855HDX-4	50	.570 (.26)

**C855KCSB
1855704**



- Designed for maximum wear life and durability (like C858KCSB), but made to fit Kennametal and some competitive blade systems.
- Longer gage length for reduced wear on blades and blocks.
- Ideal for general-duty and heavy-impact applications.



Cutting Tools for Scarifier Blades Packaging Information

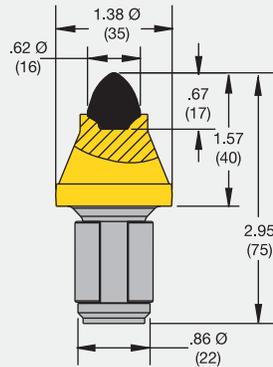
Order Code	Catalog Number	Pcs. Per Container	Weight lbs. (kg.)
1855704	C855KCSB	50	.780 (.35)





C855LR 1011001

- Sharp carbide tip.
- Fits Kennametal and competitive blade systems.

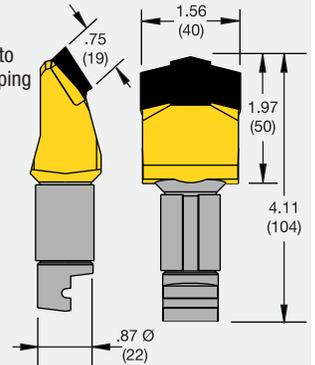


Cutting Tools for Scarifier Blades Packaging Information

Order Code	Catalog Number	Pcs. Per Container	Weight lbs. (kg.)
1011001	C855LR	50	.544 (.25)

AR15087 1012240

- For fine grading or scarifying in soft to medium-hard conditions, or for scraping without penetrating road surface.
- 1-1/2" (38mm) cutting face width for better block protection.
- Swept-back carbide edge design provides exceptional tool life.
- Non-rotating tool (not self-sharpening).
- Wider tool face reduces gap between cutting tools for smooth, grooming applications.



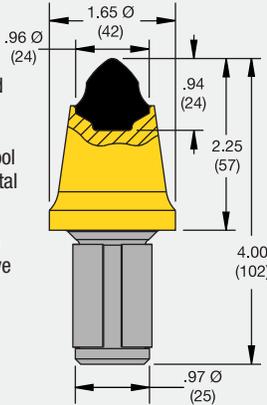
Cutting Tools for Scarifier Blades Packaging Information

Order Code	Catalog Number	Pcs. Per Container	Weight lbs. (kg.)
1012240	AR15087	40	1.000 (.45)



C100 24.43SB 1847237

- Specially designed and manufactured for use in competitive "mining duty" systems. (This tool does NOT fit Kennametal blade systems.)
- Contains more carbide than similar competitive designs.



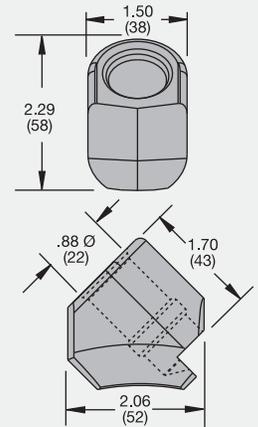
Cutting Tools for Scarifier Blades Packaging Information

Order Code	Catalog Number	Pcs. Per Container	Weight lbs. (kg.)
1847237	C100 24.43SB	25	1.180 (.54)



C87GB Block 1012234

- Replacement toolholder for Kennametal blade systems.
- Easily welded with a 7018 or 8018 low-hydrogen rod, with no pre-heating required.



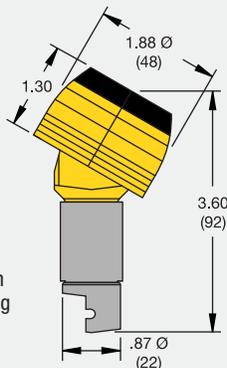
Cutting Tools for Scarifier Blades Packaging Information

Order Code	Catalog Number	Pcs. Per Container	Weight lbs. (kg.)
1012234	C87G BLOCK	30	.950 (.43)



KCWB-0448 1834342

- Specially designed to act as a "skid shoe" for ice-removal applications.
- Features durable, long-lasting KenCast™ material on wear surface.
- Place cutting tools in varied positions along moldboard length to prevent penetration of road surface when clearing ice on paved surfaces.
- Non-rotating tool.



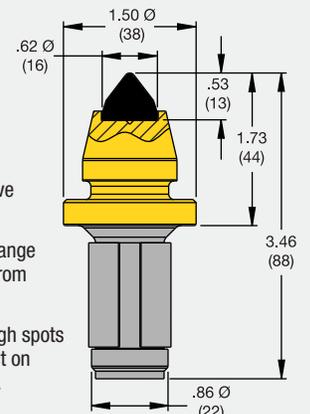
Cutting Tools for Scarifier Blades Packaging Information

Order Code	Catalog Number	Pcs. Per Container	Weight lbs. (kg.)
1834342	KCWB-0448	25	1.500 (.68)



C387BF 1010817

- Sharp pointed tip for easy penetration of hard surfaces.
- Excellent in soft to medium-hard abrasive conditions.
- Specially designed flange protects block face from excessive wear.
- Ideal for removing high spots and washboard effect on asphalt-paved roads.



Cutting Tools for Scarifier Blades Packaging Information

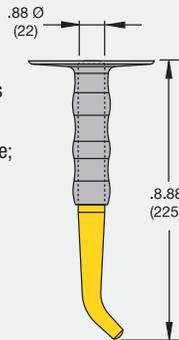
Order Code	Catalog Number	Pcs. Per Container	Weight lbs. (kg.)
1010817	C387BF	50	.659 (.30)

Extraction Tools

Make cutting tool changes easier and safer!

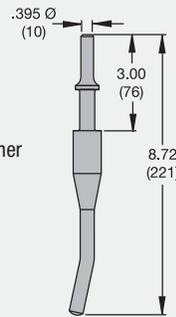
KHP2 Hammer Punch 1012247

- For removing cutting tools from blocks.
- Hardened tip for longer life; used with a hammer.
- Plastic hand protector for added safety.



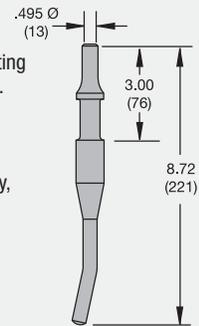
KAHP1 Air-Hammer Punch 1012245

- For removing cutting tools from blocks.
- Hardened tip for durability.
- Fits all light-duty, air-hammer guns that have a .375" (10mm) chuck.



KAHP 1D Air-Hammer Punch 1012246

- For removing cutting tools from blocks.
- Hardened tip for durability.
- Fits all heavy-duty, air-hammer guns that have a .500" (13mm) chuck.



Retainers

LR87 1011935

- Replacement retainer for use with C387DS, AR15087, C387BF, KCWB-0448, and C87BF cutting tools.



C87SR 1012363

- Replacement retainer for use with C87KCSBSR and C87DSSR cutting tools.



LR858 1012089

- Replacement retainer for use with C858KCSB.



SR Washer 44MM 1992068

- Replacement washer for C87WFRKCSB



RPR07 Retainer 1990418

- Replacement retainer for C87WFRKCSB



LR85 1012117

- Replacement retainer for use with C855DS, C855HD, C855HDX, C855LR, C855KCSB, and C855HDX-4 cutting tools.



C100SB 1851733

- Replacement retainer for use with C100 24.43SB cutting tools.



Reducer Bushing 1104522

- Reduces bolt hole size in blades from .750" (19mm) bolt to .625" (16mm) bolt.

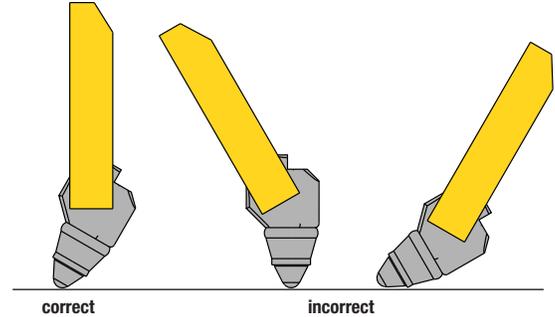


**Log on to
www.kennametal.com
to learn more about
our complete line of products
and services!**



These guidelines will help you maximize your Kennametal scarifier blade performance:

1. Kennametal recommends using only Grade 8, No. 3 head plow bolts and matching Grade 8 heavy hex nuts to install our scarifier blades.
2. Position and operate blades at a 90-degree angle to the road surface so cutting tools are at the proper cutting angle (see drawing).
3. Carbide-tipped cutting tools should be used to penetrate a depth no greater than 1.00-inch (25mm).
4. Inspect the blade and cutting tools daily. Replace lost, worn, or broken cutting tools immediately.
5. Kennametal carbide cutting tools are self-rotating and self-sharpening. Inspect cutting tools daily by turning them with your hand to ensure they are rotating properly. Cutting tools that do not turn can usually be freed by several light taps with a soft-headed hammer. Clean cutting tool and block assemblies with a solvent cleaner when necessary to ensure proper rotation of the cutting tool. Do not use oil for this purpose. Oil will cause dirt to adhere to the cutting tool, preventing proper rotation.
6. Do not use these blades to remove large rocks or boulders. These blades are intended for use in scarifying roads to return them to their original aggregate condition. Using Kennametal scarifier blades to remove large rocks or boulders terminates and voids all warranties and obligations from Kennametal as manufacturer and supplier.
7. When transporting scarifier blades fitted with long-retainer cutting tools, be sure to roll the moldboard backward so the blade is horizontal and the cutting tools are pointed upward. This will prevent the cutting tools from vibrating out of the blade while in transit. This procedure is not necessary when using short-retainer cutting tools in the blade.
8. The travel speed of the grader may affect the performance of the blade. When working in heavy-impact applications, use a lower speed (such as second gear). This will reduce the risk of cutting tool breakage or blade damage.
9. “Backdragging” is not recommended. This procedure increases the risk of breakage or loss of cutting tools and puts unnecessary stress on the blade, bolts, and moldboard.
10. Use Kennametal carbide end protectors in applications (like ditching) that subject the side of the blade to wear. End protectors do not interfere with penetration and protect the ends of the blade from excessive wear.



To replace a worn or broken block:

1. Cut out the broken block, if necessary, and clean the recess to remove rust and loose material.
2. Align the new block at the appropriate attack angle and tack weld into position.
3. Weld around the upper part of the block first on the front and back side of the blade.
4. Use Airco 7018M or equivalent welding material.
5. Use a welding rod (stick) with a maximum .125-inch (3mm) diameter or a welding wire with a maximum .052-inch (1mm) diameter.
6. Angle the weld gun or rod to run a root pass along the block base where it meets the .500-inch (13mm) wide steel “tongue” between the blocks. Do not weld back and forth between the blocks. Run one pass on each side of the block in opposite directions to weld it to the blade.



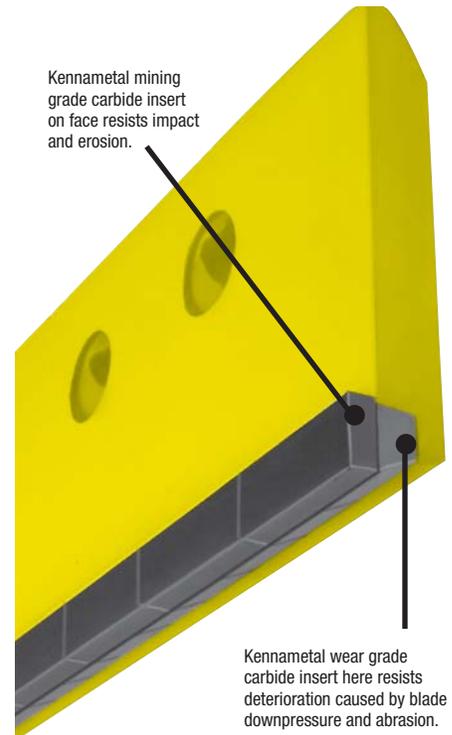
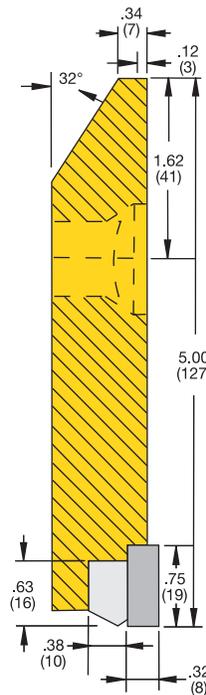
Dual-Carbide Blades

Dual-Carbide Blades with a New Improved Braze and a More Wear-Resistant Steel Body!

70% Stronger Braze!

... engineered specifically to reduce costs associated with replacement part inventory, downtime, labor, and overall operations!

- Available exclusively through Kennametal – the only manufacturer of this innovative blade.
- Outlasts imbedded carbide granule-style blades.
- Features a universal bolt-hole and a variety of available lengths for maximum compatibility.
- Dual-carbide tungsten insert blades, specifically designed for high-abrasion and low-impact applications to stay straight; maintain a sharp, clean edge; and stop crowning:
 - First insert is formulated with our proprietary macrocrystalline carbide grade for toughness and impact resistance and mounts on the front of blade.
 - Second insert is made from a wear-resistant carbide grade and mounts directly behind the first insert to resist wear caused by blade down pressure and abrasion.
- Backed by a comprehensive warranty program.



Dual-Carbide Blade Sizes/Ordering Information

(Blades beveled at top to fit grader moldboard)

Thickness in. (mm)	Width in. (mm)	Length in. (mm)	New Order Code	Old Part Number	Bolt Dia. in. (mm)	Weight lbs. (kg.)
.875 (22)	5 (127)	24 (610)	1011871	904981999	.625 (16)	32 (15)
.875 (22)	5 (127)	36 (914)	1011872	904982000	.625 (16)	48 (22)
.875 (22)	5 (127)	48 (1219)	1011875	904982001	.625 (16)	63 (29)
.875 (22)	5 (127)	36 (914)	1011879	904982003	.750 (19)	48 (22)
.875 (22)	5 (127)	48 (1219)	1011877	904982002	.750 (19)	63 (29)
.875 (22)	5 (127)	60 (1524)	1311238	N/A	.625 (16)	77 (35)

When ordering, please provide Order Code and be sure to specify hole size and moldboard length.

Specifications

- Steel holder:** SAE 1040-1045, hot-rolled
- Carbide inserts:**
- Front .750-inch (19mm) high, impact resistant
 - Rear .625-inch (16mm) high, wear resistant

Braze: A high-strength alloy material

Bolting Recommendations

To reduce the likelihood of blade chatter and/or failure, use Grade 8, Number 3 head plow bolts and nuts.

Hole-Punch Data

- Standard 6-inch (152mm) on centers
- .687-inch (17mm) square, countersunk to receive .625-inch (16mm) diameter plow bolts;
- OR** .812-inch (21mm) square, countersunk to receive .750-inch (19mm) diameter plow bolts
- Holes accurately punched to fit ANY make/model of grader

Dual-Carbide Blade Accessories

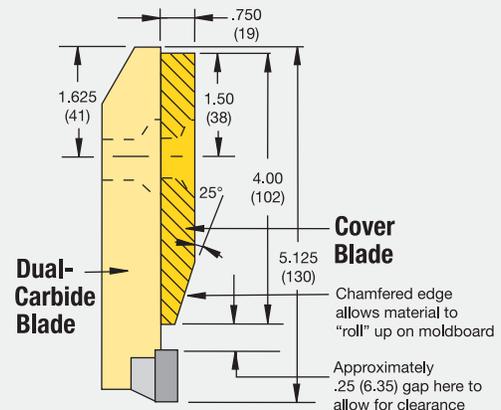
Improved! New DCI Cover Blades — Now 3/4-inch (19mm) Thick!

When operating in extremely abrasive conditions, our optional cover blades provide added wear resistance for the non-carbide portion of the blade. The chamfered bottom edge inhibits any interruption of the rolling action of bladed road material. The cover blades are attached using the same bolts as those used for attaching the dual-carbide blade below it, simply by increasing the length of the bolts by a .500-inch (13mm). It's not necessary to use end protectors when cover blades are used. Fabricated from wear-resistant steel, these cover blades are available in the following sizes:

3/4" (19mm) Thick Dual Carbide Cover Blades Ordering Information

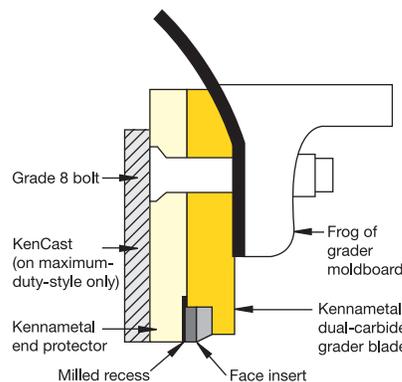
Thickness in. (mm)	Width in. (mm)	Length in. (mm)	Order Code	Old Part No.*	Bolt Dia. in. (mm)
.750 (19)	4 (102)	36 (914)	2492564	1156908	.625 (16)
.750 (19)	4 (102)	48 (1219)	2478681	1156910	.625 (16)
.750 (19)	4 (102)	36 (914)	2872390	1156911	.750 (19)
.750 (19)	4 (102)	48 (1219)	2872388	1156912	.750 (19)

* Replaces old 1/2-inch (13mm) thick blade part numbers.



End Protectors

Kennametal highly recommends the use of our carbide or standard steel end protectors. Our end protectors avoid impact damage by covering the last 9-inches (229mm) of each of the end blades on either side of the moldboard. They are installed over the dual-carbide blade, using the same bolt holes (as shown in the diagram). An installation guide is available upon request.



End Protectors for Dual-Carbide Blades Ordering Information

Standard Steel Type		
New Order Code	Old Part Number	Description
1011918	904009820	Standard for .625 (16) bolts
1011919	904009821	Standard for .750 (19) bolts



Carbide Type		
New Order Code	Old Part Number	Description
1012555	909260265	Maximum-duty right for .625 (16) bolts
1012556	909260266	Maximum-duty right for .750 (19) bolts
1012560	909260270	Maximum-duty left for .625 (16) bolts
1012561	909260271	Maximum-duty left for .750 (19) bolts



I.C.E.[™] / KenCoat[™] Blades

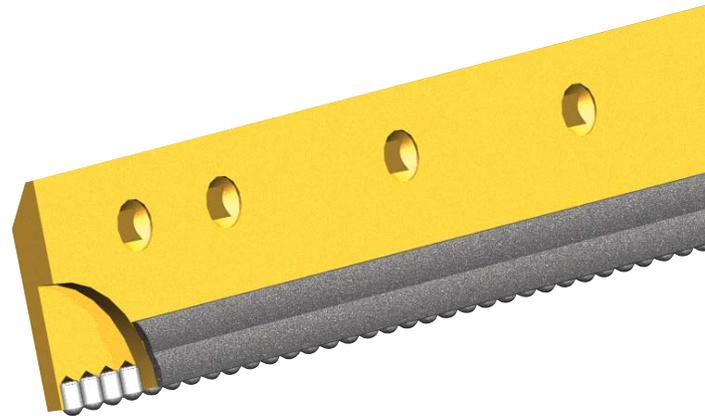
Snowplow / Grader Blades — Two Unique Technologies Combined into One!

New Offering!

... engineered to revolutionize grading!

I.C.E. – Isolated Carbide Edge and KenCoat – Kennametal Carbide Overlay Application Technology Combined into One Advanced Blade for Graders!

- *Combines durable, individually mounted bullet-shaped inserts protected with a layer of wear-resistant carbide granules imbedded in a tough, abrasion-resistant, steel-weld material in one blade.*
- *Offers maximum blade strength and blade longevity — even in the harshest of road applications.*
- *Features the highest levels of combined blade wear, impact, and fracture resistance.*
- *Performs effectively to remove snow on roads with imbedded lane markers and rumble strips by effectively resisting carbide fractures.*
- *Improved penetration versus traditional straight edged designs.*



When the going gets tough ... get our tough new I.C.E.™ / KenCoat™ blades!

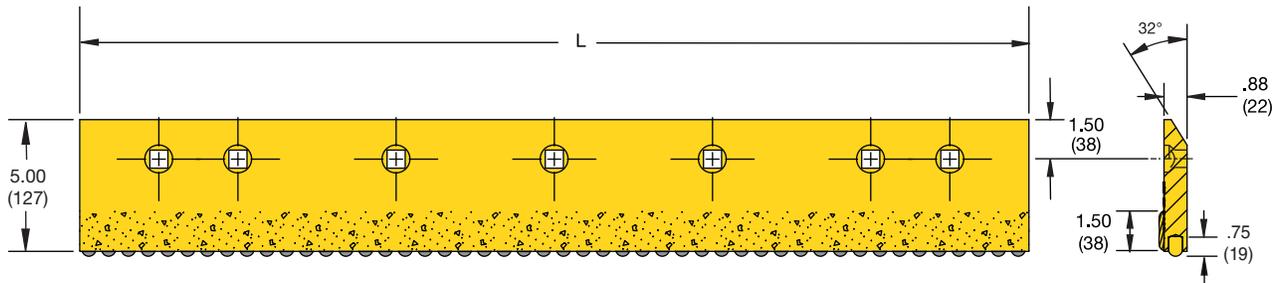
Traditional carbide-edged blades are prone to premature failure in tough, high-impact applications because cracks that occur in a single carbide insert often travel the length of the blade through all the carbide inserts. Kennametal's new I.C.E. / KenCoat blades eliminate total blade fractures and provide one of the strongest carbide blades available today!

Our new I.C.E. / KenCoat blades withstand blade edge breakage and damage caused by the harshest road conditions, aggressively cutting through hard-packed road surfaces. Within one blade, we combine the durable, individually mounted bullet-shaped inserts of the I.C.E. Series™ with KenCoat wear-resistant carbide granules imbedded in a tough, abrasion-resistant, steel-weld material. Together, these two technologies provide the ultimate in blade strength, performance, and longevity.

I.C.E. / KenCoat blades feature a row of .500-inch (13mm) diameter, .750-inch (19mm) high, bullet-shaped tungsten carbide inserts on the wear edge of the blade and a 1.50-inch (38mm) wide band of KenCoat carbide in front of the inserts.

I.C.E. / KenCoat Blade Sizes / Ordering Information

Thickness in. (mm)	Width in. (mm)	Length (L) in. (mm)	Order Code	Bolt Dia. in. (mm)	Weight lbs. (kg.)
.875 (22)	5 (127)	36 (914)	1923523	.625 (16)	45 (20)
.875 (22)	5 (127)	48 (1219)	1923524	.625 (16)	60 (27)
.875 (22)	5 (127)	36 (914)	2388888	.750 (19)	45 (20)
.875 (22)	5 (127)	48 (1219)	2388889	.750 (19)	60 (27)





KenCoat™ Blades

Kennametal Carbide Overlay Application Technology

Expanded Offering!

***...engineered to provide wear life
three to five times greater than
standard carbide blades!***

- *Economical choices for moderate-impact applications.*
- *Provides enhanced blade protection and resistance to wear caused by down pressure.*
- *Features wear-resistant carbide granules imbedded in an abrasion-resistant, steel-weld material.*
- *Available in 1-inch (25mm) wide and 1-1/2-inch (38mm) wide KenCoat protection.*
- *Fits all makes and models of graders.*

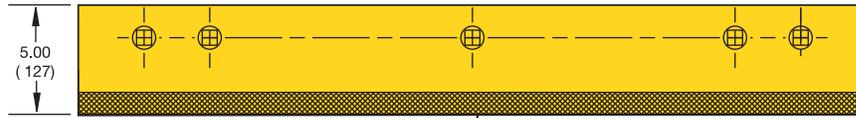


KenCoat Grader Blades use our exclusive Kennametal Carbide Overlay Application Technology to fortify the mild steel face of standard carbide insert blades, providing enhanced blade protection and strength.

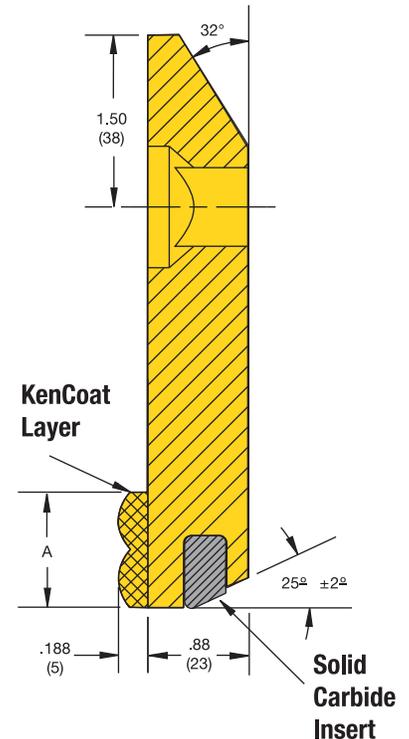
When working on unpaved surfaces, the mild steel of standard carbide insert blades often wears away, weakening the carbide insert and making it susceptible to impact and breakage. KenCoat Grader Blades are economical choices to prevent this type of wear.

The “KenCoat” layer consists of wear-resistant carbide granules imbedded in a tough, abrasion-resistant, steel-weld material and protects a solid carbide insert that is brazed in place and resists wear from down pressure.

KenCoat Grader Blades are .875-inch (22mm) thick and 5-inch (127mm) wide (tall). They are available in both standard 36-inch (914mm) and widepass 48-inch (1219mm) lengths and fit all makes and models of graders.



KenCoat Layer



KenCoat Blade Sizes / Ordering Information

1" (25mm) Wide KenCoat Protection

Thickness in. (mm)	Width in. (mm)	Length in. (mm)	Order Code	Bolt Dia. in. (mm)	Weight lbs. (kg.)	Size A in. (mm)
.875 (22)	5 (127)	36 (914)	1231173	.625 (16)	45 (20)	1.00 (25)
.875 (22)	5 (127)	48 (1219)	1180020	.625 (16)	60 (27)	1.00 (25)
.875 (22)	5 (127)	60 (1524)	1750822	.625 (16)	75 (34)	1.00 (25)
.875 (22)	5 (127)	36 (914)	1728716	.750 (19)	45 (20)	1.00 (25)
.875 (22)	5 (127)	48 (1219)	1728718	.750 (19)	60 (27)	1.00 (25)

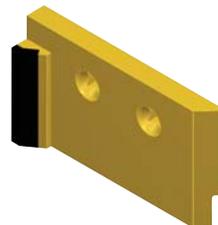
1-1/2" (38mm) Wide KenCoat Protection

Thickness in. (mm)	Width in. (mm)	Length in. (mm)	Order Code	Bolt Dia. in. (mm)	Weight lbs. (kg.)	Size A in. (mm)
.875 (22)	5 (127)	36 (914)	2619561	.625 (16)	45 (20)	1.50 (38)
.875 (22)	5 (127)	48 (1219)	2619509	.625 (16)	60 (27)	1.50 (38)
.875 (22)	5 (127)	60 (1524)	2619556	.625 (16)	75 (34)	1.50 (38)
.875 (22)	5 (127)	36 (914)	2619559	.750 (19)	45 (20)	1.50 (38)
.875 (22)	5 (127)	48 (1219)	2619560	.750 (19)	60 (27)	1.50 (38)

Blades utilize a row of 5/8" (16mm) high trapezoid-shaped tungsten carbide inserts on the wear edge.

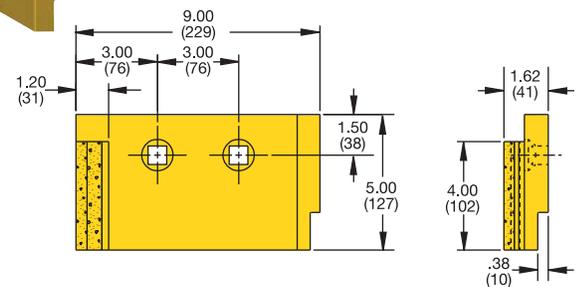
KenCoat Grader Blade – End Protector Assembly

Our end protectors avoid impact damage by covering the last 9-inches of each of the end blades on either side of the moldboard. This is especially important while performing applications such as ditching. They are installed over the KenCoat blade, using the same bolt holes. An installation guide is available upon request.



End Protectors for KenCoat Blades

Description	Bolt Dia. in. (mm)	Order Code	Catalog Number	Weight lbs. (kg.)
Right-hand end protector	.625 (16)	1776828	KCWB-0433	11.9 (5)
Left-hand end protector	.625 (16)	1776829	KCWB-0434	11.9 (5)
Right-hand end protector	.750 (19)	1780238	KCWB-0435	11.9 (5)
Left-hand end protector	.750 (19)	1780239	KCWB-0436	11.9 (5)





Armored Blades

Hardened-Steel Armored Blades

Expanded Offering!

...engineered to provide economical yet high-performance life for your graders!

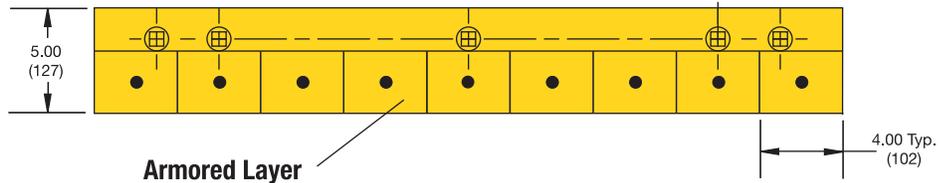
- *Economical choices for higher-impact applications.*
- *Protects carbide insert by reinforcing the steel face with a securely welded, hardened-steel plate.*
- *Reduces blade wear caused by unpaved surfaces, extending blade life by three to five times as compared to standard carbide blades.*
- *Available in 3-foot (914mm), 4-foot (1219mm), and 5-foot (1524mm) lengths.*
- *"Standard highway punched" to fit all makes and models.*



Kennametal Armored Blades are designed to provide better protection of the steel face of standard carbide insert blades. When working on unpaved surfaces, the mild steel can deteriorate, exposing the carbide insert to greater impact and causing blade breakage. Kennametal Armored Blades are the economical choice to prevent this type of wear.

Kennametal Armored Blades use a securely welded, hardened-steel plate to protect and further strengthen the inserts. The wear-resistant, armored blades are .875-inch (22mm) thick in the bolt area and 1.0625-inch (27mm) thick in the armor plate area. The blades are 5-inch wide (127mm) (tall) and are available in 36-inch (914mm), 48-inch (1219mm), and 60-inch (1524mm) lengths.

Like all Kennametal grader blades, they are “standard highway punched” to fit all makes and models of graders.

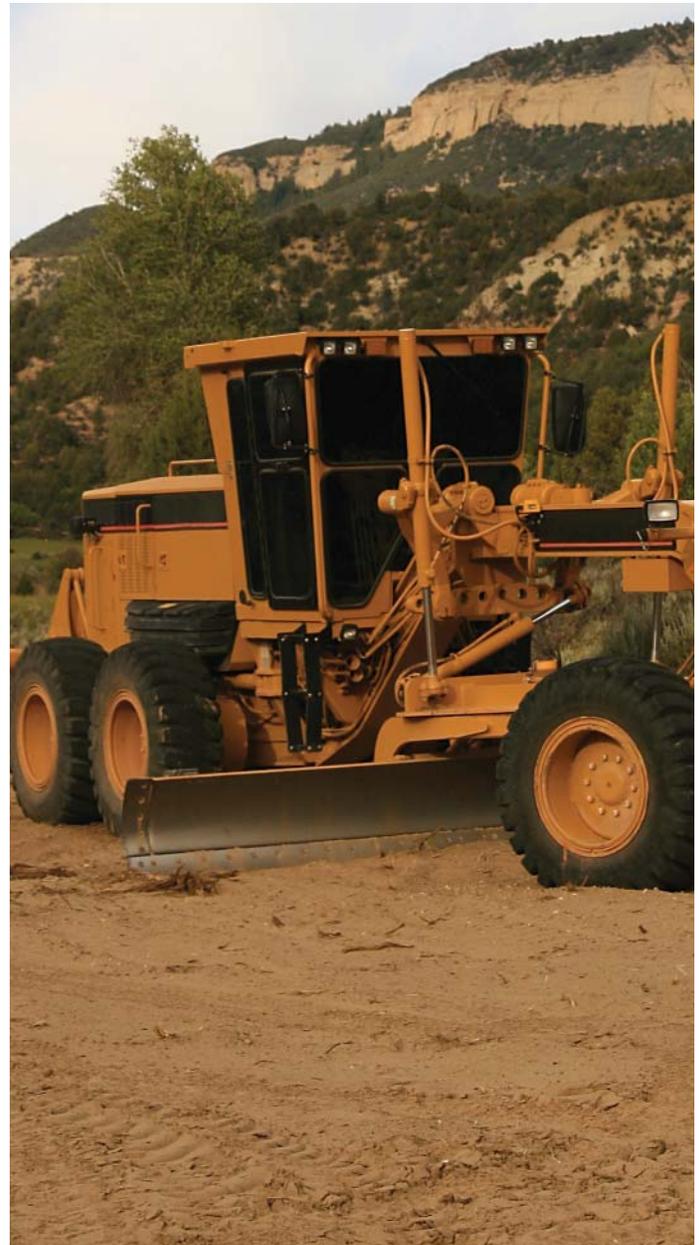
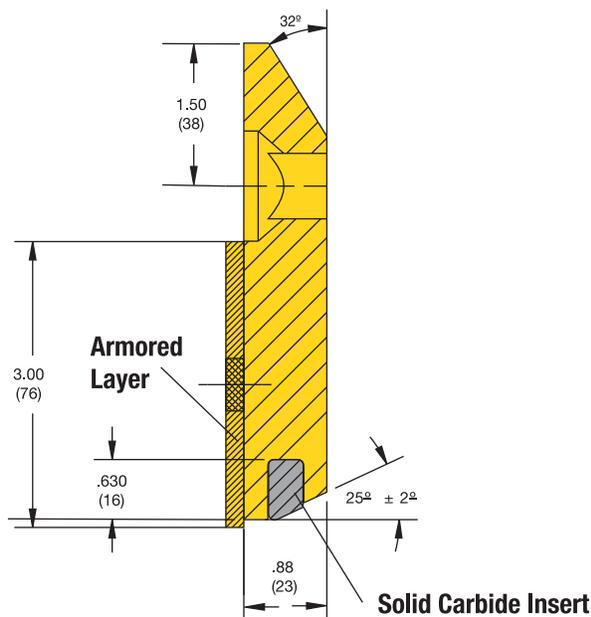


Armored Blades Ordering Information

Thickness in. (mm)	Width in. (mm)	Length in. (mm)	Order Code	Bolt Dia. in. (mm)	Weight lbs. (kg.)
.875 (22)	5 (127)	36 (914)	1105976	.625 (16)	47 (21)
.875 (22)	5 (127)	48 (1219)	1013304	.625 (16)	63 (29)
.875 (22)	5 (127)	60 (1524)	1075124	.625 (16)	72 (33)
.875 (22)	5 (127)	36 (914)	1728714	.750 (19)	47 (21)
.875 (22)	5 (127)	48 (1219)	1728713	.750 (19)	63 (29)

Replacement Wear Patch

Thickness in. (mm)	Width in. (mm)	Length in. (mm)	Order Code	Bolt Dia. in. (mm)	Weight lbs. (kg.)
.186 (5)	3 (76)	4 (102)	1012159	—	.01 (.005)





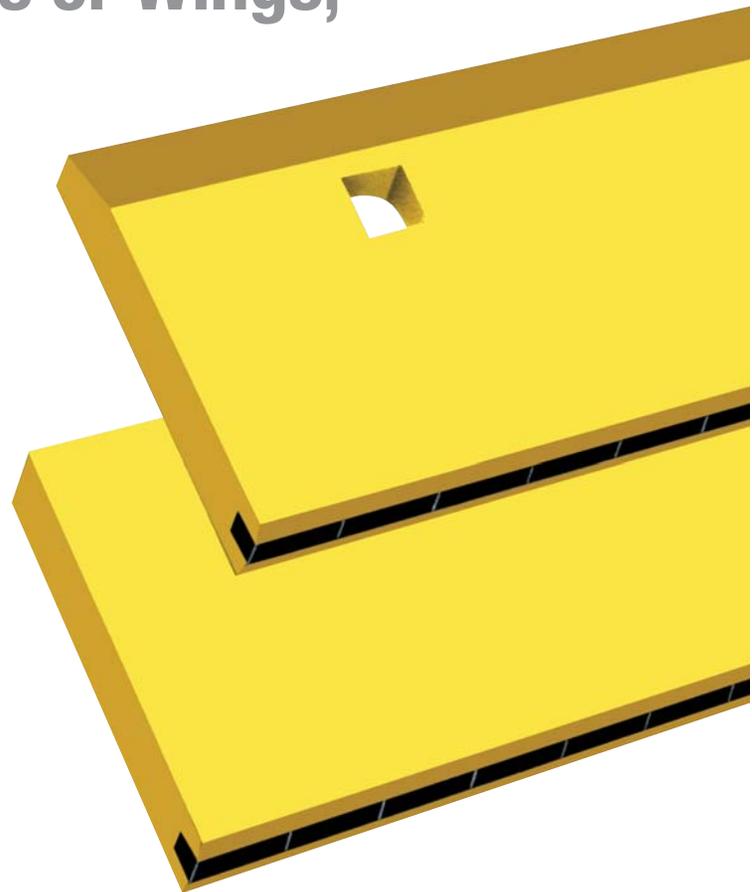
Snow Removal Blades

Tungsten Carbide-Edged Blades for Graders, Equipped with Front Plows or Wings, and Underbody Plows

Optimal Performance!

...engineered to withstand extreme winter road conditions!

- *Economically priced blades for paved road surfaces.*
- *Features genuine Kennametal tungsten carbide inserts formulated with macrocrystalline technology.*
- *Provides superior wear-resistance and longevity, outlasting competitive all-steel blades by up to 20:1.*
- *Our brazing expertise ensures that inserts stay firmly in place, without residual stress, resulting in a more durable blade.*
- *Available in an unmatched variety of styles and size – all backed by the road maintenance industry's best quality assurance program.*
- *Sold in combinations of 3-foot (914mm) or 4-foot (1219mm) lengths for more versatility, safety and ease of use.*



Our tungsten carbide-edged grader blades stand up against the toughest winter snow-packed roads.

Equipped with genuine Kennametal tungsten carbide inserts, which are secured firmly to the blade with our superior brazing technique, these snowplow blades offer unparalleled fracture and wear resistance. In fact, our tungsten carbide-edged snowplow blades are field tested and proven to have a life span 20 times greater than competitive all-steel blades.

Kennametal tungsten carbide-edged snowplow blades are available in a variety of lengths in two styles: standard-size .625-inch (16mm) carbide inserts and heavy-duty .750-inch (19mm) carbide inserts.



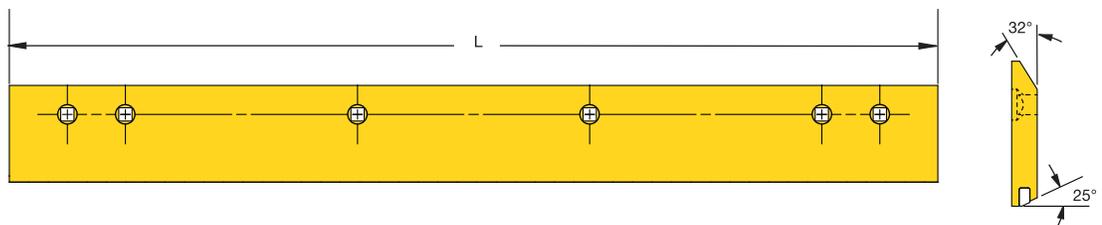
Snowplow Blades Ordering Information

Standard Size .625" (16mm) Carbide Inserts

Thickness in. (mm)	Width in. (mm)	Length (L) in. (mm)	Order Code	Catalog Number	Bolt Hole Distance from Top in. (mm)	Hole Spacing in. (mm)	Weight lbs. (kg.)
.875 (22)	5 (127)	36 (914)	1011883	PB-736H top beveled	1.50 (38)	3-3-12-12-3-3 (76-76-305-305-76-76)	40 (18)
.875 (22)	5 (127)	48 (1219)	1011885	PB-748H top beveled	1.50 (38)	3-3-12-12-12-3-3 (76-76-305-305-305-76-76)	55 (25)
.875 (22)	5 (127)	60 (1524)	1011887	PB-760H top beveled	1.50 (38)	3-3-12-12-12-12-3-3 (76-76-305-305-305-305-76-76)	70 (32)

Heavy-Duty Size .750" (19mm) Carbide Inserts

Thickness in. (mm)	Width in. (mm)	Length (L) in. (mm)	Order Code	Catalog Number	Bolt Hole Distance from Top in. (mm)	Hole Spacing in. (mm)	Weight lbs. (kg.)
.875 (22)	5 (127)	36 (914)	1011928	GDR36A0138	1.50 (38)	3-3-12-12-3-3 (76-76-305-305-76-76)	45 (20)
.875 (22)	5 (127)	48 (1219)	1011930	GDR48A0140	1.50 (38)	3-3-12-12-12-3-3 (76-76-305-305-305-76-76)	57 (26)



Grader Blades

KENNAMETAL

The proven global leader in the design, manufacture, implementation, and sale of premium-quality tooling systems for underground and surface mining, road rehabilitation, aggregates production, and waste recycling!

Unquestioned technical expertise in the production and application of cemented brazed tungsten carbide!

Kennametal Inc. (USA)

Mining and Construction Division
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