

SPRING 2021

NEW PRODUCT GUIDE



Special Offers Inside

Up to 50% OFF Drilling, Milling, Cut-Off, and Swiss Turning Solutions...



KYOCERA Precision Tools

KYOCERA PRECISION TOOLS (KPT)

KYOCERA Precision Tools (KPT) is a division of the Kyocera-SGS Precision Tools Group specializing in the manufacturing, servicing, and marketing of Indexable Cutting Tools and Printed Circuit Board (PCB) drills. With over 40 years of cutting tool expertise, KYOCERA has become the market-leader in Japan and has an established global presence with manufacturing, technical centers and sales offices in the Americas, Europe, and Asia.

CUTTING-EDGE, COST-EFFICIENT SOLUTIONS

KYOCERA Precision Tools develops state-of-the-art indexable cutting tools that exceed quality expectations while providing the cost-efficiency that today's metalworking consumer demands. Though ceramic technologies were the nucleus of the original business model, Kyocera has become a global leader in the metal removal industry by developing state-of-the-art cutting tool solutions using carbide, cermet, CBN and PCD. Over the past 40 years, Kyocera has developed some of the highest-quality, innovative indexable tooling solutions the industry has seen, including the **MEC Ultra-Hurricane** 90° Milling Cutters, the **MFH-Raptor** High-Feed Milling Cutters, the **DRZ & DRV** Family of Magic Drills, and **CCX**, the first-ever CVD Coated Cermet.



PRODUCTS



Turning & Boring



Holemaking



Indexable Milling



Small Tools for Swiss Lathes



Quick-Change Tooling & Specialty Tools



Grooving & Cut-Off

HOW TO REACH US

KYOCERA Precision Tools

102 Industrial Park Road Hendersonville, NC 28792 Phone: (800) 823-7284 Email: ctsales@kyocerapti.com Web: www.kyoceraprecisiontools.com

Spring 2021

Product Guide Overview

2021 Spring Promos

Page 4 ~ 9

New Promotions Available!

- 25% OFF the Purchase of a DRA Replaceable Tip Drill Body and 1 or more DA Drill Tips
- **50% OFF** the Purchase of a M-THREE (MEV) Milling Cutter and 10 or more Compatible TOMT Inserts
- **50% OFF** the Purchase of a KTKF Jet Coolant-Through Cut-Off Holder and 10 or more Compatible Inserts in Grades PR1725 or PR1535
- **50% OFF** the Purchase of a Swiss Jet Coolant-Through Turning Holder and 10 or more Compatible Inserts in Grades PR1725, PR1705 or PR1535

2021 Spring New Products

New Products and Lineup Expansions Available!

- DRV Magic Drill Expansion
- MFLN Heavy Milling Series
- MFF Finish Milling Series
- MFH-RAPTOR High-Feed Milling Expansion
- MEAS High-Speed Aluminum Milling Series

• KPK High Performance Cut-Off Blade Series

Page 10 ~ 23

- EZ-Bar Small Interanl Machining Series Expansion
- SIGC Small Internal Grooving Expansion
- SKS Chipbreaker Molded Sharp Edge Finishing Inserts



Locate a Distributor

Use our **Locate a Distributor** map at: www.KyoceraPrecisionTools.com/locate

FREE Ceramic Knife

Receive a free Kyocera Ceramic Knife with test report submission:

See Back Cover



High-Efficiency Replaceable Tip Drill



View DRA Brochure for Full Product Offering: WWW.KYOCERAPRECISIONTOOLS.COM/DRA

Replaceable Tip Drills

High-Efficiency and Fast Insert Replacement

Optimal Web Thickness Limits Deflection
Fine Chip Breaking and Smooth Deep Hole Cutting
Long Tool Life and Stable Machining of Various Workpieces
Easy Insert Replacement





GM General Purpose



KM Cast Iron



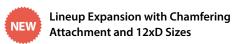
PR1535 PR152



Flat Bottom Counterboring



HQP High Precision





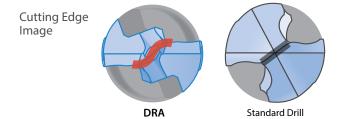


25% OFF the Purchase of a **DRA Drill Body** and **1** or more **DA Insert Tips** Promo Code: **DRA25**

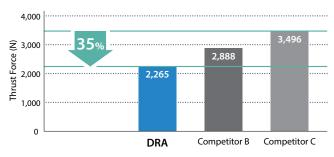
View DRA Brochure for Full Product Offering: WWW.KYOCERAPRECISIONTOOLS.COM/DRA

Low Cutting Force Design Improves Hole Accuracy

The special chisel edge with S-curve reduces thrust force and controls vibration



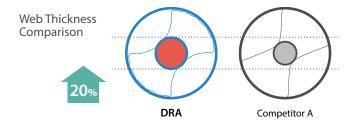
Low Cutting Force Comparison (Internal Evaluation)



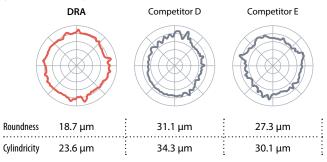
Cutting Conditions : $Vc = 390 \, \text{sfm}$, $f = 0.010 \, \text{ipr}$, Drilling Diameter $\emptyset 0.551$ ", Drilling Depth 1.772", Wet , Workpiece : $1049 \, \text{Steel}$

Optimal Web Thickness Limits Deflection

The hole accuracy is improved by controlling drill deflection with a 20% thicker web compared with Competitor A



Roundness · Cylindricity Comparison (Internal Evaluation)



Cutting Conditions : Vc = 390 sfm, f = 0.012 ipr Drilling Diameter $\emptyset 0.551$ ", Measurement Position 2.165", Wet Workpiece : 1049 Steel





50% OFF the Purchase of an M-THREE (MEV) Milling Cutter and **10** or more Compatible **TOMT Inserts** Promo Code: MEV50

View MEV Brochure for Full Product Offering: WWW.KYOCERAPRECISIONTOOLS.COM/MEV

Multi-Functional Milling

High-Efficiency and Fast Insert Replacement

The next generation of high-performance, economical, multi-functional milling cutters

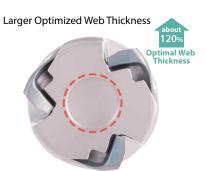
New triangular insert designs for lower cutting forces, higher rigidity, and excellent chatter resistance

Wide variety of applications from slotting, helical milling, and shouldering, to ramping, facing and pocketing



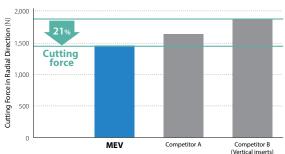


Low Cutting Force



High Rigidity

Cutting Force Comparison (Internal Evaluation)



Cutting Conditions: Vc = 655 sfm, D.O.C. \times ae = 0.118" \times 0.709", fz = 0.004 ipt End Mill: 00.750" (3 flutes), Dry Workpiece : 4140



50% OFF the Purchase of an **M-THREE** (**MEV**) **Milling Cutter** and **10** or more Compatible **TOMT Inserts** Promo Code: **MEV50**

View MEV Brochure for Full Product Offering: WWW.KYOCERAPRECISIONTOOLS.COM/MEV

The Economical Choice: Improved Insert Life with 3 Cutting Edges

Insert

Unique triangle inserts with 3 cutting edges

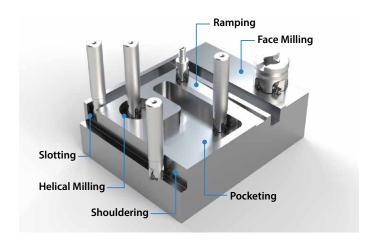
PR15-series utilizes excellent MEGACOAT NANO coating technology with wear and adhesion resistance



Toolholder

Engineered with state-of-the-art simulation and analysis technology, the MEV is built to reduce cutting stress on the cutter body Increased hardness and wide contact surface for improved durability







Jet Coolant-Through Turning and Cut-Off



50% OFF the Purchase of a KTKF Jet Coolant-Through (JCT) Cut-Off Holder and **10** or more Compatible Inserts in Grades **PR1725** or **PR1535** Promo Code: JCT50

View JCT Brochure for Full Product Offering: WWW.KYOCERAPRECISIONTOOLS.COM/JCT

KTKF-JCT

Jet Coolant-Through Cut-Off Holders

The KTKF-JCT discharges coolant in two directions toward rake surface of insert and breaks chips into small pieces

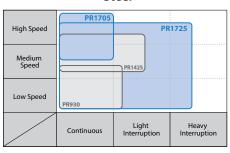
Coolant is also directed from the flank face of the insert to supply an ample amount of coolant to the tool edge area to help further suppress insert wear

PR1725

1st recommendation for steel machining

Excellent surface finish and long tool life

Steel

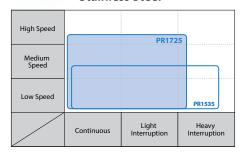


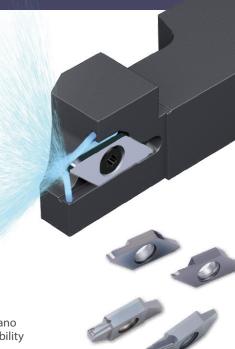
PR1535

1st recommendation for stainless steel machining

Tough substrate and special nano layer coating with improved stability

Stainless Steel







50% OFF the Purchase of a **Swiss Jet Coolant-Through (JCT)** Turning Holder and **10** or more Compatible Inserts in Grades **PR1725**, **PR1705** or **PR1535**

View JCT Brochure for Full Product Offering: WWW.KYOCERAPRECISIONTOOLS.COM/JCT

Promo Code: JCT50

Screw-Clamp-JCT

Jet Coolant-Through Turning for Small Parts Machining

Double coolant hole design delivers an ample supply of coolant to the cutting edge with excellent chip control and longer tool life

Available in SCLC, SDJC, SVJB and SVJP styles for CC.., DC.., VB.., and VP.. insert geometries

PR1725

1st recommendation for steel machining

Excellent surface finish and long tool life

PR1705

High-hardness ultra-fine particle carbide substrates

Excellent wear resistance and high precision machining

PR1535

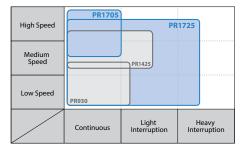
1st recommendation for stainless steel machining

Tough substrate and special nano layer coating with improved stability

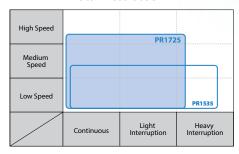




Steel



Stainless Steel







Economical Inserts with 4 Cutting Edges and Excellent Chip Evacuation

2xD to 6xD drilling lineup with 4 chipbreakers for various machining applications

High speed and highly efficient machining with the combination of a CVD outer insert and PVD inner insert

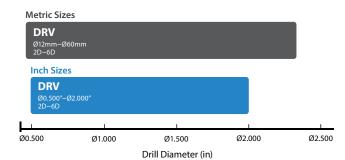
Excellent hole accuracy with a highly rigid design for better chatter resistance



Ø1.562" ~ Ø2.000" (2D, 3D, 4D, 5D, 6D) Large Dia Lineup Expansion



Ø40mm ~ Ø60mm (2D, 3D, 4D, 5D, 6D) Large Dia. Lineup Expansion







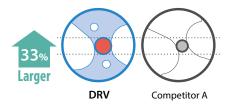
Featured New Products



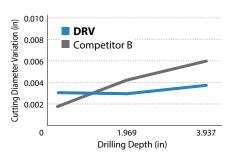
Excellent Drilling Precision with Less Variation in Cutting Diameter

Optimal Web Thickness and Low Cutting Force Design Reduces Chattering

Web Thickness Comparison (Internal Evaluation)

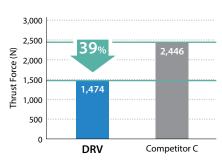


Cutting Diameter Variation Comparison (Internal Evaluation)



Cutting Conditions : Vc = 490 sfm, f = 0.0024 ipr Cutting Dia. $\emptyset 0.812''$ (5D), Wet, Workpiece : 1049

Cutting Force Comparison (Internal Evaluation)



Cutting Conditions : Vc = 660 sfm, f = 0.0047 ipr Cutting Dia. $\emptyset 0.812''$ (3D), Wet, Workpiece : 1049

Unique Insert Design to Control Chip Flow

Outer Edge Insert

Unique Insert Pattern to Differentiate between Outside and Inside Inserts





U-shaped Cutting Edge

Smooth Chip Evacuation with Compact Chips

Chip Shape Comparison of Outer Insert Cutting Edge (Internal Evaluation)





16% **Smaller** Chips

Cutting Conditions: Vc = 490 sfm, f = 0.0024 ipr, Cutting Dia. Ø0.812 (3D), Wet Workpiece: 1049

Inner Edge Insert

Spoon-shaped Cuttina Edae

Excellent Chip Evacuation with 6xD Maximum Deep-Hole Drilling

Weight per Unit of Length for Chips Generated by the Inner Insert (Internal Evaluation)









Cutting Conditions : $Vc = 820 \text{ sfm}, f = 0.0031 \text{ ipr}, Cutting Dia. } \emptyset 0.812 \text{ (5D)}, Wet, Workpiece : 304 \text{ (5D)},$



4-Edged Tangential Inserts for Large Depths of Cut and High Feed Rates

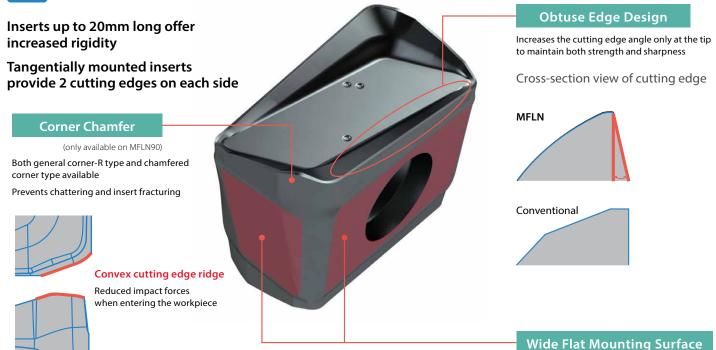
Tough and Reliable 4-edged Inserts for Stable Heavy Milling
Highly Efficient Milling with Large Depths of Cut up to 20 mm and Feed Rates up to 0.016 ipt
Three Different Cutting Lead Angles Available



Featured New Products

1

Tough and Reliable Inserts for Stable Heavy Milling

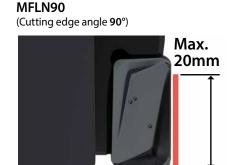


Holds insert firmly in heavy milling applications

2

Large D.O.C. and High Feed Rates with 90°, 70°, and 45° Cutting Edge Angles

3 Cutter styles cover a wide variety of machining applications



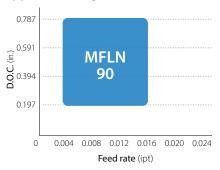
MFLN70 (Cutting edge angle 70°)

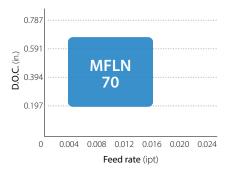


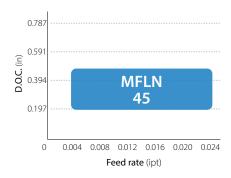
MFLN45 (Cutting edge angle 45°)



Applicable Range







For more product information visit:

WWW.KYOCERAPRECISIONTOOLS.COM/MFLN

KYOCERA Precision Tools



Innovative Finishing Technology with Excellent Efficiency

Enhanced Cutter Design for a Better Finishing Solution Molded Wiper Insert Design

High Feed Rates (f = Max 0.197 ipt) and High-Quality Surface Finish (0.8 μ m Ra)

Adjustable Cutting Edge Height for Improved Usability



Featured New Products

1

Innovative Solutions for Finish Machining

Designed with a unique insert combination of semi-finishing and finishing, the MFF drastically improves productivity by reducing finish quality issues.



SOLUTION

Increase feed to f = 0.197 ipt

Achieved 0.8 µm Ra surface finish

No grinding required

Achieved 5 µm flatness

The above is the result of a field test. Actual results will depend on machining environment, workpiece rigidity, machine, etc. For more details, see case studies on page 4 and 5.

Finishing Insert

Provides excellent surface finish Adjustable cutting edge and a single insert eliminates runout

Molded Wiper Insert for High-Quality Surface Finish

Utilizes Kyocera's unique molded insert technology for high feed rates and excellent surface finish



PR1525

PV60M

	Parts	Workpieces	Industries
MFF Machining Solutions	Plate / Frame / Case Cylinder Pump / Rail Turbine Housing Casing / Mold Base	SS400 / NO.45 / 80-60-03 Cast Iron Mold Steel Carburized and Hardened Steel (60 HRC)	Industrial Machining Machine Tools Shipbuilding / Automotive Construction Machinery Molds
Can be used on a wide variety of parts and workpieces			
		····	



Stable Machining with Greater Chatter Resistance

Reduce Cycle Time During Roughing Applications

Multi-Functional for Various Applications

MFH Mini / Micro High Feed Mills for Small Machining Centers



Tough Edge GH Chipbreaker and Grade PR015S Added





MFH-Micro

10mm Dia. / Inch Shank End Mill 0.500" Dia. / Fine Pitch End Mill



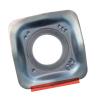
MFH-Mini

0.750" ~ 1.250" Long Shank End Mills



4 Different Insert Designs Offer a Variety of Machining Options

GM (General Milling)



1st Choice for General Purpose

Multiple Metalworking Processes

GH Chipbreaker Excellent Fracture Resistance

Convex Cutting Edge Design

Reduces cutting force when entering workpiece Surpresses chattering and fracturing

NEW





Tough Edge

Excellent Fracture Resistance

LD (Large D.O.C.)



1st Choice for Large D.O.C.

Available for Scale Removal

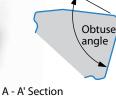
FL (Wiper Edge)



Wiper Edge

Roughing and Finishing Even in Low Horsepower Machining Centers

A A'



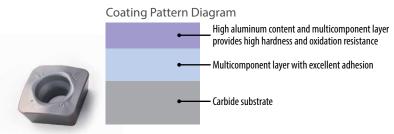
Tough Edge Design

Combining with PR015S is excellent for machining hardened material with improved fracture resistance

PR015S MEGACOAT HARD

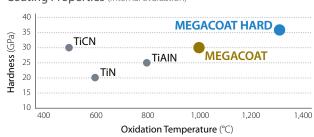
Thermal property of the substrate reduces cracks and notch wear with a high hardness and heat-resistant coating for improved wear resistance when machining in hardened materials

MEGACOAT HARD Improves Wear Resistance with High Hardness and High Heat-resistant PVD Layer



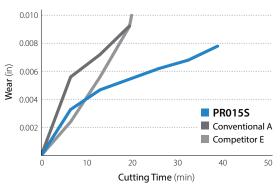
Combining GH chipbreaker and grade PR015S reduces heat cracking and improves fracture resistance for stable machining in hardened material

Coating Properties (Internal Evaluation)





Cutting Performance Comparison (Internal Evaluation)



Cutting Conditions: $Vc = 165 \text{ sfm}, \\ fz = 0.008 \text{ ipt}, \\ D.O.C. = 0.039" \times 1.240", \\ Wet \\ SOMT140520ER-GH \\ Competitor Tough Edge Chipbreaker (Flat type) \\ Workpiece: D2 (55HRC)$

Cutting Edge

GH-PR015S
(32min)

Conventional A
(19min)



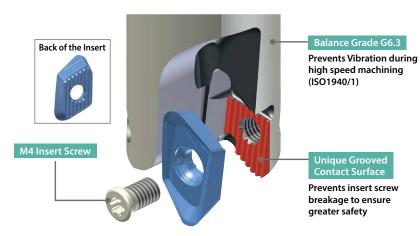


Efficiency Machining for Aluminum

Grooved Insert Pockets Provide Secure Clamping to Ensure Stable, High Speed Machining

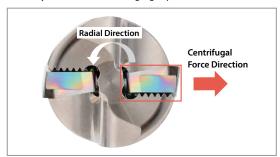
Sharp Cutting Edge with Low Cutting Force Design Simultaneous 3-axis with a Max. Ramping Angle of 20° (Ø1.000"/Ø25mm)

Kyocera's Proprietary Hydrogen-free DLC Coated PDL025 Inserts

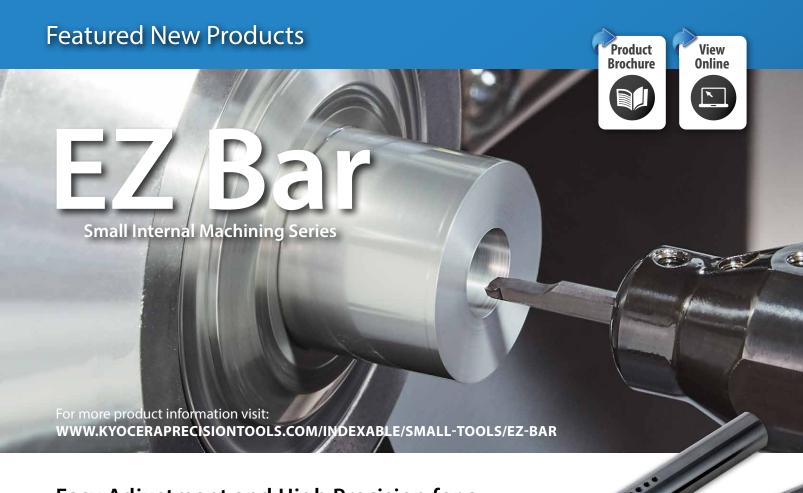


Grooved Insert Pocket

Centrifugal force is applied across the grooved surface to reduce pressure on the insert screw and to prevent insert screw breakage and safely secure the insert during high-speed revolutions





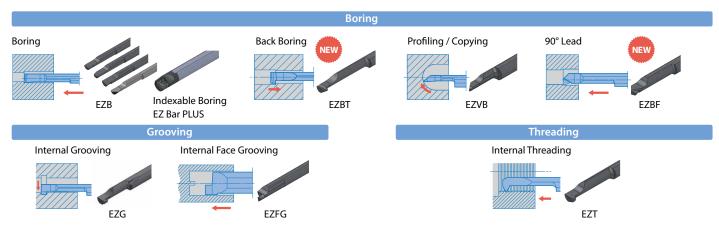


Easy Adjustment and High Precision for a Wide Range of Applications

The EZ Bar Prevents Deviation with High-rigidity Clamping Unique Design Provides a Smooth Supply of Coolant Large Lineup for Internal Grooving, Threading, Boring, and Back Turning Operations



PR1725 MEGACOAT NANO PLUS Grade for Long Tool Life and Excellent Surface Finish



PR1725

PVD Coating for Small Parts Machining

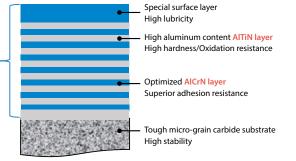
1st Recommendation for Steel Machining Excellent Surface Finish and Long Tool Life Great Performance in Small Parts Machining Applications

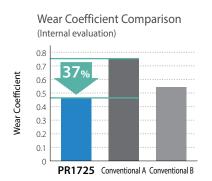
MEGACOAT NANO PLUS

AlTiN/AlCrN Nano laminated film with superior wear resistance and adhesion resistance. Excellent surface finish and long tool life.

REDUCES CRACKING

Reduces abnormal damage such as chipping because of increased lamination layer with a thinner gap than conventional coatings





Superior Wear and Chipping Resistance

High Strength with nano laminated film layer properties Internal stress optimization reduces chipping

Applicable to Various Workpiece Materials

Superior high temperature properties and oxidation resistance make for great performance in steel, stainless steel and free-cutting steel

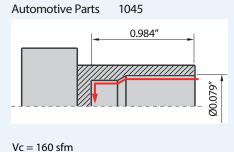
Excellent Surface Finish

Special surface layer with great lubricity reduces adhesion

High Machining Stability

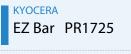
Tough micro-grain carbide substrate provides stable machining

Improved machining efficiency. 2.8 times longer tool life



f = 0.0018 ipr D.O.C.. = 0.008"

EZBR035035HP-015F PR1725



18,000 pcs/corner

x 2.8

Tool Life

Conventional
Conventional Tool A

6,300 pcs/corner

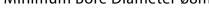
The EZ Bar (PR 1725) showed 2.8 times longer tool life than Conventional A's tooling.

(User Evaluation)



High-Precision Small Internal Grooving with a ø8 mm Minimum Bore Diameter

Newly Developed Clamping System Ensures a Firm Insert Hold for High-Precision Machining Excellent Chip Evacuation with Double Coolant Holes
Long Tool Life with MEGACOAT NANO PLUS "PR1725"
Minimum Bore Diameter ø8mm





Full Radius Inserts Added







Molded Sharp Edge Chipbreaker for Small Part Finish Applications

Featured in Grades PR1725, PR1705, and PR1535

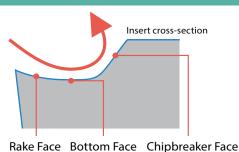
Excellent Chip Control in a Wide Range of Machining Applications High-Precision Sharp Edge with Periphery Grinding Anti-welding Properties for Improved Mirror Surface Finishes

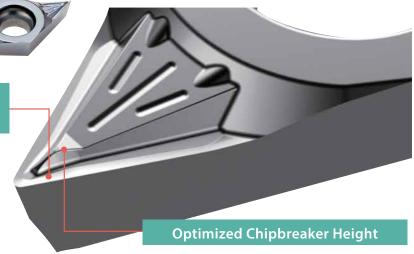


SKS Chipbreaker

D.O.C.: 0.008" to 0.059"
Excellent Chip Control and Surface Finish

Rake face, bottom face, and chipbreaker face ensure properly curled chips





Stabilized chip control when machining at high feed rates Improved chip evacuation when machining at large D.O.C.



FREE Ceramic Knife with Each Test Report Submitted

Submit a Test Report of any products listed in this Spring 2021 Product Guide and we'll send you one of Kyocera's popular ceramic paring knives FREE!

To fill out a test report form visit:

WWW.KYOCERAPRECISIONTOOLS.COM/TESTING



102 Industrial Park Road Hendersonville, NC 28792 Customer Service | 800.823.7284 - Option 1 Technical Support | 800.823.7284 - Option 2

