

Press release

KYOCERA Introduces New Industrial Cutting Tools for Cast Iron Machining

Kyocera MFK milling tools reduce costs, improve quality in machining workpieces of complex-shaped cast iron

February 2, 2015 – Kyoto/Neuss – Kyocera Corporation today launched its new MFK indexable milling cutter for cast iron, a milling system that will allow machinists to reduce costs and improve their milling operations through the use of double-sided, 10-edge negative inserts.



Contact:

Kyocera Fineceramics GmbH
Daniela Faust
Manager Corporate Communications
Hammfelddamm 6
41460 Neuss
Germany
Tel.: +49 2131/16 37 - 188
Fax: +49 2131/16 37 - 150
Mobil: +49 175/7275706
daniela.faust@kyocera.de
www.kyocera.eu

Grayling Düsseldorf
Jan Leder, Marina Engelhardt-Temme
Rather Str. 49d
40476 Düsseldorf
Germany
Tel.: +49 211/96 485 - 41/ - 47
Fax: +49 211/96 485 - 45
jan.leder@grayling.com
marina.engelhardt-temme@grayling.com

Press release

Name	Cast iron milling cutter (MFK)
Models	Toolholders: 24 models (custom designs available separately) Inserts: Offered in 4 chipbreakers and 3 grades
Recommended work material	Gray and ductile cast irons
Production facility	Shiga Yohkaichi Plant (toolholders) Kagoshima Sendai Plant (inserts)

Development Background

Automotive engines, construction equipment and machine tools require metal components in complex shapes that are commonly created by casting molten metal in specialized molds. Castings taken from these molds require difficult finish machining. Many workpieces are challenging to hold securely during the machining process because their complex shapes limit clamping rigidity. Insufficient clamping rigidity causes vibration and chattering due to the cutting forces of the machining process. In addition, cast iron workpieces are susceptible to a phenomenon known as “breakout,” in which the edge of the workpiece chips away rather than being cut cleanly. Cutting tool inserts that can improve machining quality by reducing the cutting forces and preventing chipping are therefore in great demand.

Contact:

Kyocera Fineceramics GmbH
Daniela Faust
Manager Corporate Communications
Hammfelddamm 6
41460 Neuss
Germany
Tel.: +49 2131/16 37 - 188
Fax: +49 2131/16 37 - 150
Mobil: +49 175/7275706
daniela.faust@kyocera.de
www.kyocera.eu

Grayling Düsseldorf
Jan Leder, Marina Engelhardt-Temme
Rather Str. 49d
40476 Düsseldorf
Germany
Tel.: +49 211/96 485 - 41/ - 47
Fax: +49 211/96 485 - 45
jan.leder@grayling.com
marina.engelhardt-temme@grayling.com

Press release

New Product Outline

Kyocera's new MFK cast iron milling cutter utilizes a newly developed double-sided insert with 10 cutting edges. Although negative inserts offer cost benefits because cutting edges can be formed on both sides of the insert, they tend to increase cutting resistance, causing a decrease in sharpness or an increase in chattering. To address this challenge, Kyocera has developed uniquely shaped inserts using its proprietary molding technology, which reduces both cutting resistance and chattering. The inserts also improve machining quality through a double-edge structure in which two cutting edges are provided for the insert corners.



Kyocera's MFK milling cutters offer improved quality and better cost performance in machining cast iron, with higher productivity in conditions ranging from roughing to finishing

Contact:

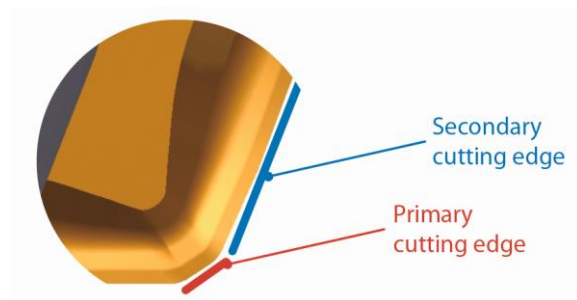
Kyocera Fineceramics GmbH
Daniela Faust
Manager Corporate Communications
Hammfelddamm 6
41460 Neuss
Germany
Tel.: +49 2131/16 37 - 188
Fax: +49 2131/16 37 - 150
Mobil: +49 175/7275706
daniela.faust@kyocera.de
www.kyocera.eu

Grayling Düsseldorf
Jan Leder, Marina Engelhardt-Temme
Rather Str. 49d
40476 Düsseldorf
Germany
Tel.: +49 211/96 485 - 41/ - 47
Fax: +49 211/96 485 - 45
jan.leder@grayling.com
marina.engelhardt-temme@grayling.com

Press release

New Product Features

1. Double-sided, 10-corner negative inserts provide quality and cost benefits



1.1 Proprietary edge shape reduces cutting resistance

The newly developed negative inserts utilize two lead angles per corner. Using molding technology developed by Kyocera, a large axial rake angle is provided on cutting edges, reducing cutting resistance and facilitating smoother machining. Increasing the lead angle also reduces cutting resistance in an axial direction of the workpiece, vibration and chattering.

1.2 Double-edged structure helps prevent inserts from fracturing and breakout

A proprietary double-edged structure using two main cutting edges is utilized on each corner to cushion initial shock at the moment of workpiece contact — the onset of cutting. This helps prevent inserts from fracturing and breakout, helping to stabilize the machining process and improve finish quality.

Contact:

Kyocera Fineceramics GmbH
Daniela Faust
Manager Corporate Communications
Hammfelddamm 6
41460 Neuss
Germany
Tel.: +49 2131/16 37 - 188
Fax: +49 2131/16 37 - 150
Mobil: +49 175/7275706
daniela.faust@kyocera.de
www.kyocera.eu

Grayling Düsseldorf
Jan Leder, Marina Engelhardt-Temme
Rather Str. 49d
40476 Düsseldorf
Germany
Tel.: +49 211/96 485 - 41/ - 47
Fax: +49 211/96 485 - 45
jan.leder@grayling.com
marina.engelhardt-temme@grayling.com

Press release

2. Newly developed CVD material for cast-iron milling offers long tool life and stable machining

Kyocera has added the new CA420M CVD* material for cast iron milling to its insert grade lineup. CA420M is comprised of a newly developed, high-toughness base substrate with a new CVD coating developed using proprietary crystal-control and film-formation technologies. Improved abrasion resistance, essential in machining cast iron, will allow CA420M to deliver better cost performance, longer tool life and a more stable machining process.

3. Accommodates a wide range of cast-iron machining conditions, from roughing to finishing

Kyocera's extensive lineup of milling cutters, insert shapes, and grades ensures an ideal combination to cover a wide range of conditions, from cast iron roughing to finishing. The MFK family of products is comprehensively designed to help improve customer productivity.

*The Chemical Vapor Deposition coating method allows multiple layers of different materials, resulting in thicker film.

For more information about Kyocera:

www.kyocera.eu

Contact:

Kyocera Fineceramics GmbH
Daniela Faust
Manager Corporate Communications
Hammfelddamm 6
41460 Neuss
Germany
Tel.: +49 2131/16 37 - 188
Fax: +49 2131/16 37 - 150
Mobil: +49 175/7275706
daniela.faust@kyocera.de
www.kyocera.eu

Grayling Düsseldorf
Jan Leder, Marina Engelhardt-Temme
Rather Str. 49d
40476 Düsseldorf
Germany
Tel.: +49 211/96 485 - 41/ - 47
Fax: +49 211/96 485 - 45
jan.leder@grayling.com
marina.engelhardt-temme@grayling.com

Press release

About Kyocera

Headquartered in Kyoto, Japan, Kyocera Corporation is one of the world's leading manufacturers of fine ceramic components for the technology industry. The strategically important divisions in the Kyocera Group, which is comprised of 230 subsidiaries (as of April 1, 2014), are information and communications technologies, products which increase quality of life, and environmentally friendly products. The technology group is also one of the largest producers of solar energy systems worldwide, with more than 5 gigawatts of solar power having been installed around the world to date.

The company is ranked #531 on *Forbes* magazine's 2014 "Global 2000" listing of the world's largest publicly traded companies.

With a global workforce of about 70,000 employees, Kyocera posted net sales of approximately €10.19 billion in fiscal year 2013/2014. The products marketed by the company in Europe include laser printers, digital copying systems, microelectronic components, finoceramic products and complete solar power systems. The Kyocera Group has two independent companies in the Federal Republic of Germany: Kyocera Finoceramics GmbH in Neuss and Esslingen and Kyocera Document Solutions in Meerbusch.

The company also takes an active interest in cultural affairs. The Kyoto Prize, a prominent international award, is presented each year by the Inamori Foundation — established by Kyocera founder Dr. Kazuo Inamori — to individuals and groups worldwide who have contributed significantly to the scientific, cultural, and spiritual betterment of humankind (converted at present €362,000 per prize category).

Contact:

Kyocera Finoceramics GmbH
Daniela Faust
Manager Corporate Communications
Hammfelddamm 6
41460 Neuss
Germany
Tel.: +49 2131/16 37 - 188
Fax: +49 2131/16 37 - 150
Mobil: +49 175/7275706
daniela.faust@kyocera.de
www.kyocera.eu

Grayling Düsseldorf
Jan Leder, Marina Engelhardt-Temme
Rather Str. 49d
40476 Düsseldorf
Germany
Tel.: +49 211/96 485 - 41/ - 47
Fax: +49 211/96 485 - 45
jan.leder@grayling.com
marina.engelhardt-temme@grayling.com