New PVD technology, MEGACOAT

MEGACOAT for High Precision Finishing

MEGACOAT enables high precision finishing with a sharp cutting edge.

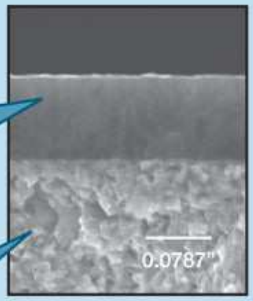
F Series
L10~L14

● Wear and high heat resistance

MEGACOAT
Nitride solid solution metal with a high melting point
High hardness with oxidation resistance
Smooth surface

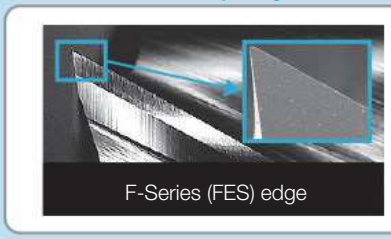
● Fracture resistance with stable cutting

Super Micro-grain cemented carbide



High Quality, Sharp Edge

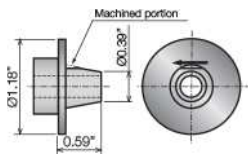
●Smooth surface quality



Case Studies

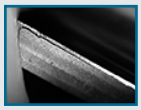
Free Cutting Carbon Steel

· OA parts
· Vc=289 sfm (n=3,500min⁻¹)
· ap=0.0197"
· fz=0.0091 ipt (Vf=126.0 ipm)
· Wet
· 4FESM080-190-08

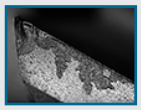


MEGACOAT	230 pcs/edge	
Competitor Coated Carbide E		100 pcs/edge

· Kyocera showed 2.3 times longer tool life than Competitor E.
· Kyocera's new coating technology resolved edge fracturing and provided stability compared with Competitor E.
· Kyocera showed superior finished surface compared with Competitor E.



MEGACOAT
(Number of workpiece processed: 230 pcs/edge)

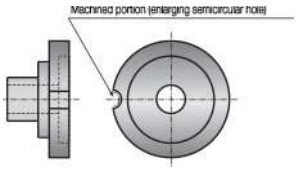


Competitor Coated Carbide E
(Number of workpiece processed: 100 pcs/edge)

(Customer Evaluation)

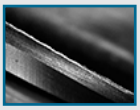
Chromium Steel

· Automotive parts
· Vc=131 sfm (n=3,200min⁻¹)
· ap=0.0039"
· fz=0.0004 ipt (Vf=2.8 ipm)
· Wet
· 2FESM040-110-06



MEGACOAT	700 pcs/edge	
Competitor Coated Carbide F		350 pcs/edge

· Kyocera processed twice as many workpieces compared to Competitor F.
· Competitor F is limited to 350 workpieces due to excessive wear.
· Kyocera prevents chipping there by enabling long-life and stabilized machining.



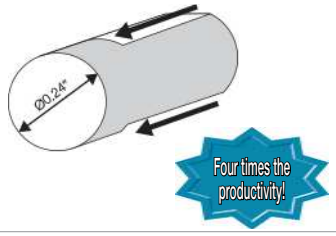
MEGACOAT
(Number of workpiece processed: 700 pcs/edge)

Competitor Coated Carbide F
(Number of workpiece processed: 350 pcs/edge)

(Customer Evaluation)

Carbon Steel

· Machine parts
· Vc=328 sfm (n=3,980min⁻¹)
· ap=0.0177"
· fz=0.0020 ipt (Vf=31.5 ipm)
· Wet
· 4 flutes
· Tool life 4000 pcs/edge
· 4FESW080-080-08



4FESW080-080-08	Table feed	Vf=31.5 ipm
Competitor Coated Carbide G		Table feed Vf=7.9 ipm

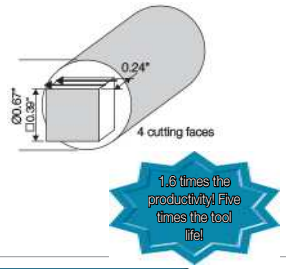
[Competitor Coated Carbide G]
Ø8·4 flutes
Vc=207 sfm (n=2508min⁻¹)
ap=0.0177"
Tool life 4000 pcs/edge
fz=0.0008 ipt (Vf=7.9 ipm)

User comments:
· Was able to increase both cutting speed and table feed rate.
· Despite the increase in machining conditions, burr formation decreased.

(Customer Evaluation)

Free Cutting Carbon Steel

· Machine parts
· Vc=328 sfm (n=3,200min⁻¹)
· ap x ae=0.1378" × 0.1181"
· fz=0.0020 ipt (Vf=25.2 ipm)
· Wet
· 4 flutes
· 4FESW100-080-10



4FESW100-080-10	Table feed	Vf=25.2 ipm
Competitor Coated Carbide H		Table feed Vf=15.7 ipm

[Competitor Coated Carbide H]
Ø7·4 flutes
Vc=144 sfm (n=2000min⁻¹)
ap × ae=0.1378" × 0.1181"
fz=0.0020 ipt (Vf=15.7 ipm)

User comments:
· Automatic general purpose end mills have a shorter edge length with improved rigidity, which enabled an increase from conventional Ø7 to Ø10, thus improving machining conditions.
· Compared to conventional tools, tool life improved five times.

(Customer Evaluation)