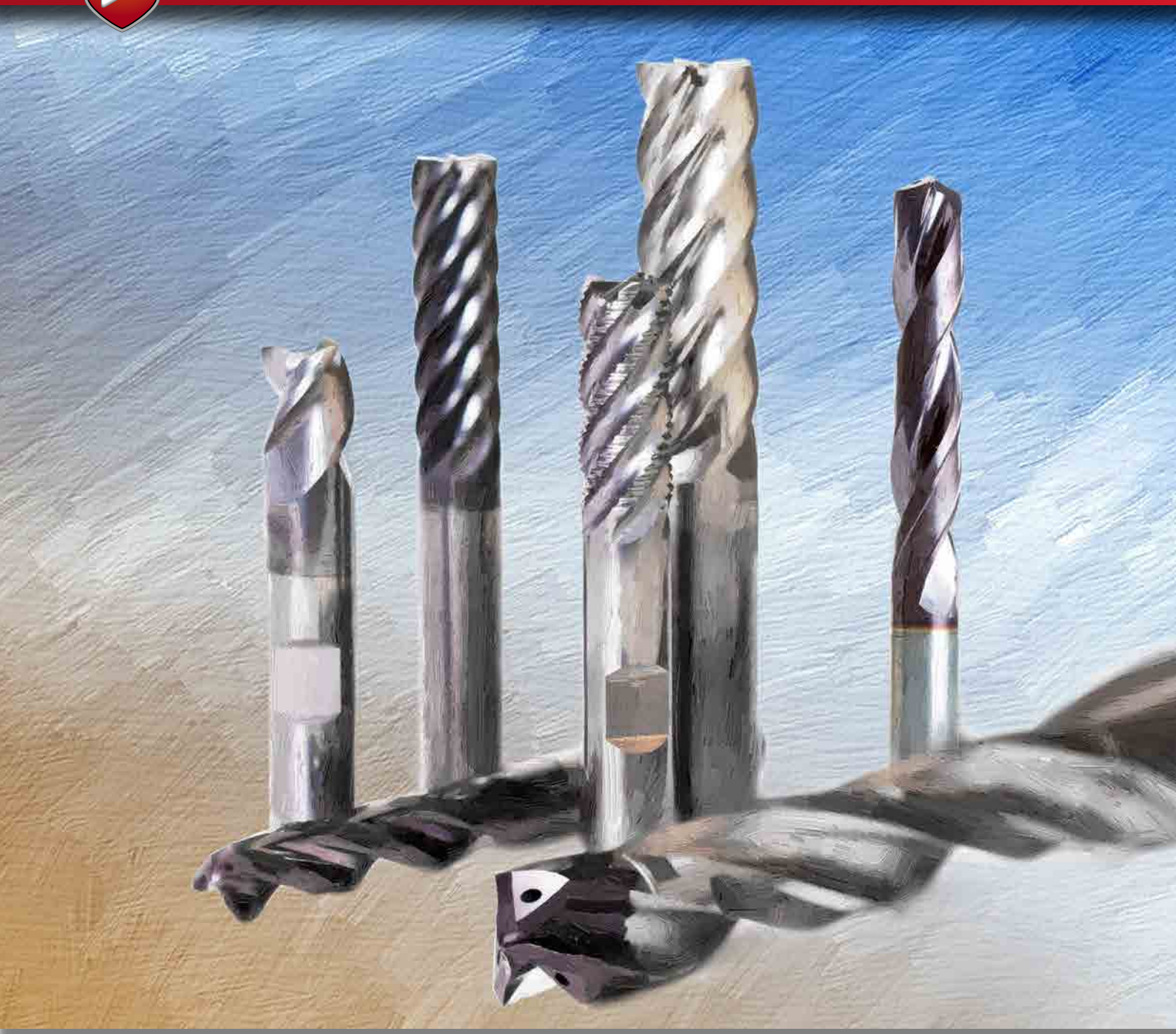
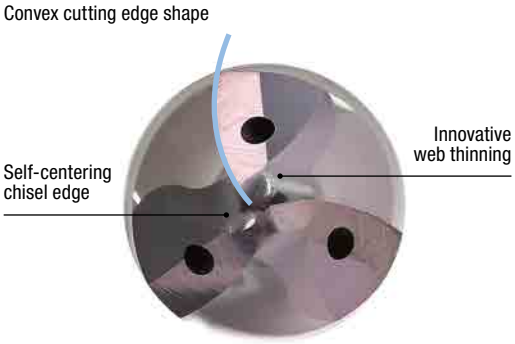


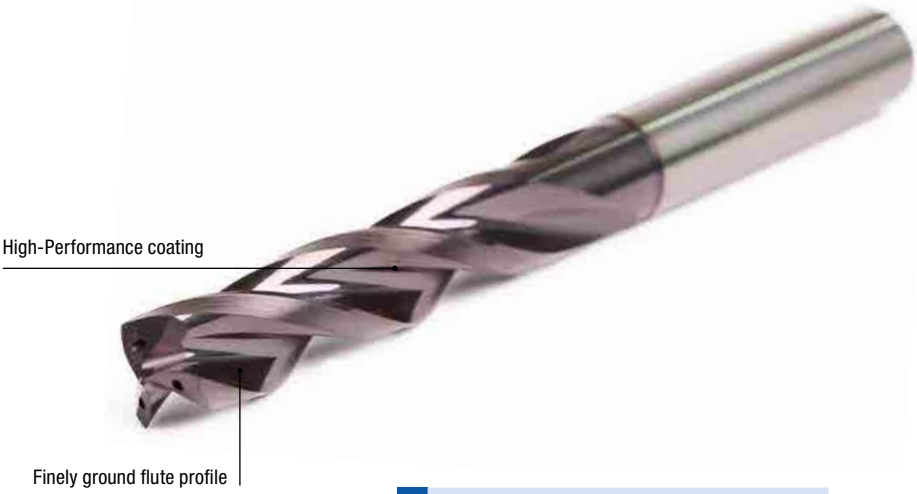
Solid carbide drills and end mills

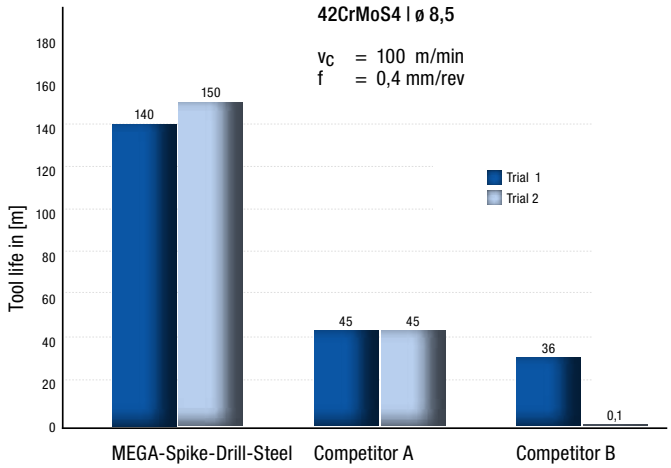
Innovations 2018

MILLER
MAPAL GROUP

MEGA-Spike-Drill-Steel
Highest feed in steel







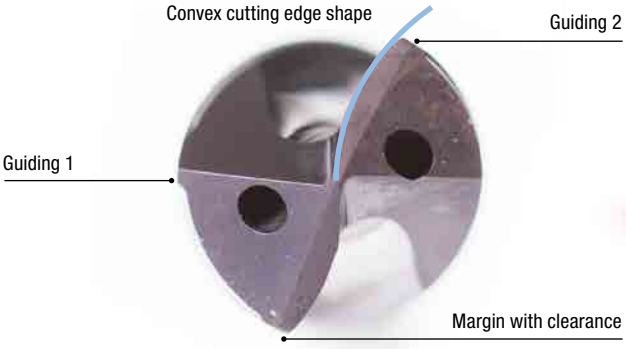
AT A GLANCE

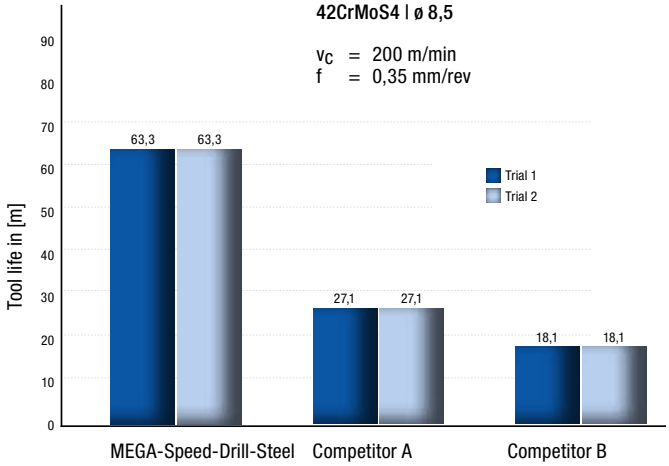
- Drills with three cutting edges for highest performance level
- Specially intended for machining steel
- New shape of main cutting edge; adjusted coating
- Ideally suited for difficult drilling tasks
- Available in the diameters 4 to 20 mm in designs of 3xD (M9933) and 5xD (M9935)

ADVANTAGES

- Considerably increased feed rate
- Fast chip removal
- Robust tool with stable cutting edges
- No oscillation when machining
- Long tool life

MEGA-Speed-Drill-Steel
Highest speed in steel





AT A GLANCE

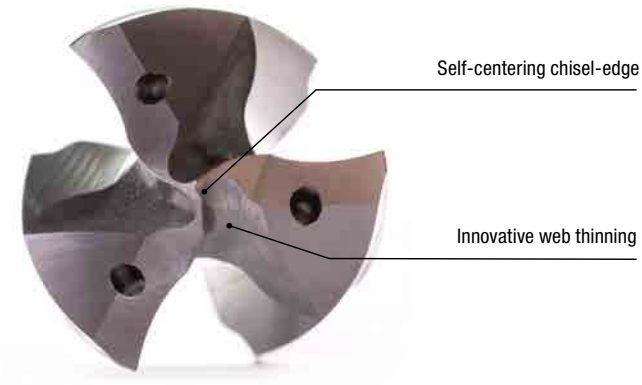
- High-Performance from the MEGA-Speed-Drill series
- Specially intended for machining steel
- Optimized shape of main cutting edge; and design of cutting edge
- Unique, finely ground flute profile
- Available in the diameters 3 to 20 mm in design 5xD (M9925)

ADVANTAGES

- Doubled cutting speed and 20 % higher feeds compared to equivalent drills with two cutting edges
- Extremely robust cutting edges
- Long tool life
- Fast chip removal
- Highest productivity

TTD-Tritan

The triple cutting edged replaceable head system



AT A GLANCE

- First triple cutting edged replaceable head drill available as standard
- Tool head and tool holder are joined by particularly sturdy Hirth serrations
- Available as an universal model for machining steel in the diameter range from 12 to 32,4 mm
- Corresponding holders available in 3xD and 5xD

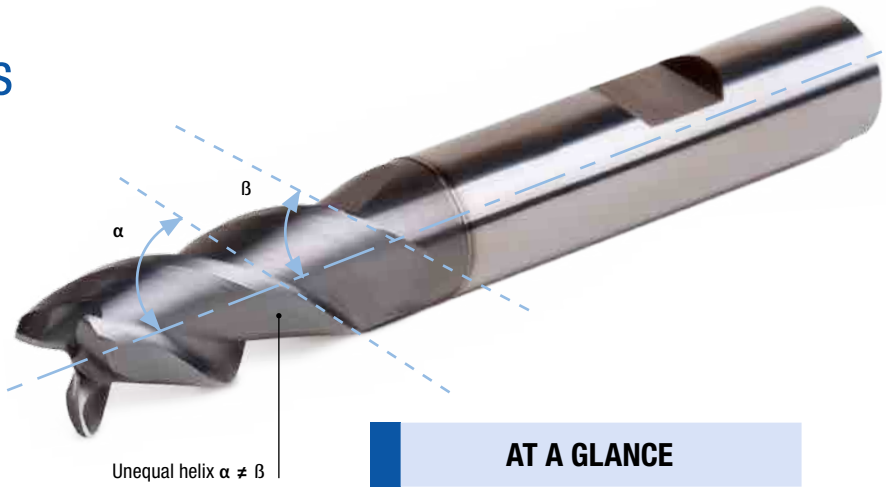
ADVANTAGES

- Up to doubled feed rate compared to head drills with two cutting edges
- The tool is perfectly centred via its pronounced drill point and ensures very good circularity
- Lower costs even with large diameters
- Boring on inclined surfaces possible

OptiMill-Uni-HPC-Pocket

Efficient milling of pockets

Drill point

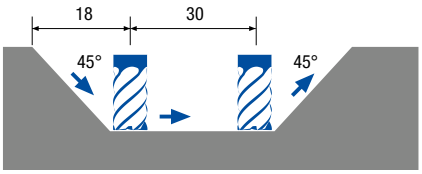


Helical plunging (42CrMo4V) | ø 12

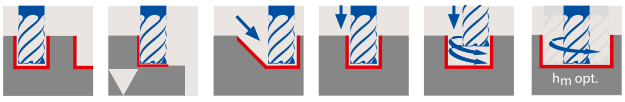
v_c	=	220 m/min
f_z	=	0,05 mm
n	=	5.836 rev/min
v_f	=	875 mm/min
a_p	=	18 mm (total)
G	=	1,5*
$S_{max.}$	=	0,75 x D**

Ramping (GGG40) | ø 12

v_c	=	190 m/min
f_z	=	0,06 mm
n	=	5.040 rev/min
v_f	=	907 mm/min
a_p	=	18 mm
α_{max}	=	45°



Applications:



* Ratio of circular pocket diameter at plunging and tool diameter
** Maximum incline of the helix

AT A GLANCE

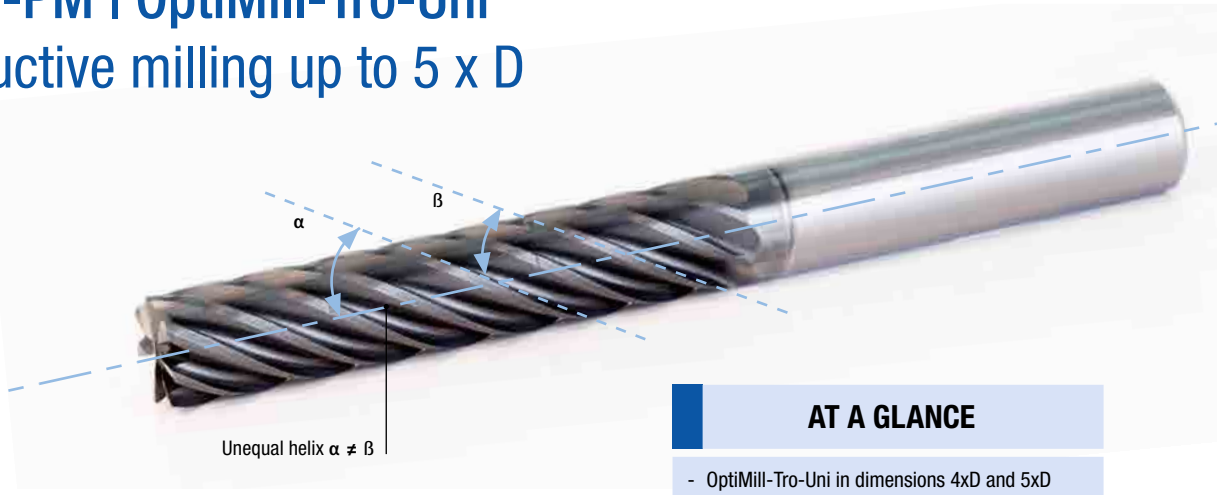
- Universal machining of steel, stainless steel and cast iron
- Available in the designs “long”(M3993) and “overlong”(M3991) with cylindrical shank form HB in a diameter range of 5.7 to 20 mm
- Point geometry with integrated drill point
- Suitable for angled entry at up to 45°, for helix milling and for plunging

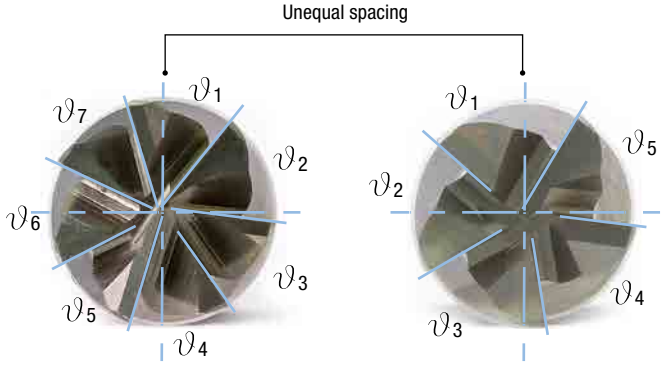
ADVANTAGES

- Pilot bore drilling and tool changing are eliminated
- Point thinning with three large chip flutes for optimum discharge of the chips
- Long tool lives thanks to special cutting edge preparation, wear-resistant coating and ductile carbide substrate
- High feed rates up to 2xD possible

OptiMill-Tro-PM | OptiMill-Tro-Uni

Highly productive milling up to 5 x D





OptiMill-Tro-PM | z = 7 | 5xD | ø12 (X6CrNiMoTi17-12- 2)

v_c	=	180 m/min
f_z	=	0,11 mm
a_p	=	52 mm
$a_{e\ min}$	=	0,91 mm
$a_{e\ max}$	=	1,21 mm
h_m	=	0,060 mm

OptiMill-Tro-Uni | z = 5 | 5xD | ø12 (16MnCr5)

v_c	=	240 m/min
fz	=	0,18 mm
a_p	=	52 mm
$a_{e\ min}$	=	0,20 mm
$a_{e\ max}$	=	1,09 mm
h_m	=	0,092 mm

AT A GLANCE

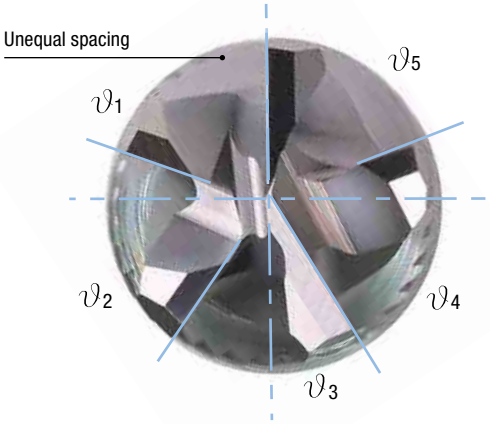
- OptiMill-Tro-Uni in dimensions 4xD and 5xD (M3099-4D/5D) with 5 cutting edges
- OptiMill-Tro-PM in dimensions 2xD to 5xD (M3299-2D/3D/4D/5D) with 7 cutting edges
- Available in diameters 4 mm to 25 mm in uneven cutting edge distribution for reduced vibration during machining
- New substrate, improved ductility and resistance to bending
- Flute profile adjusted to L/D ratio
- Chip breaker for optimum evacuation of short, divided chips

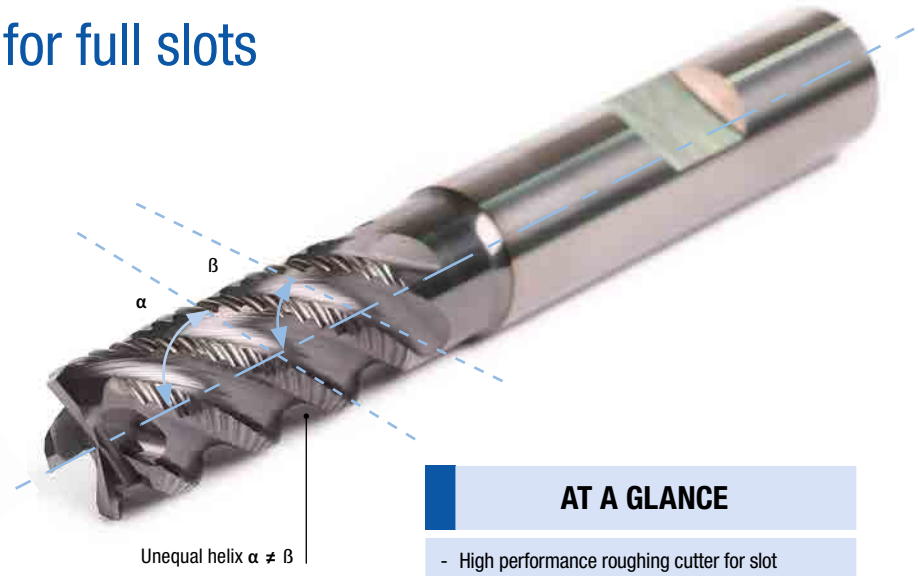
ADVANTAGES

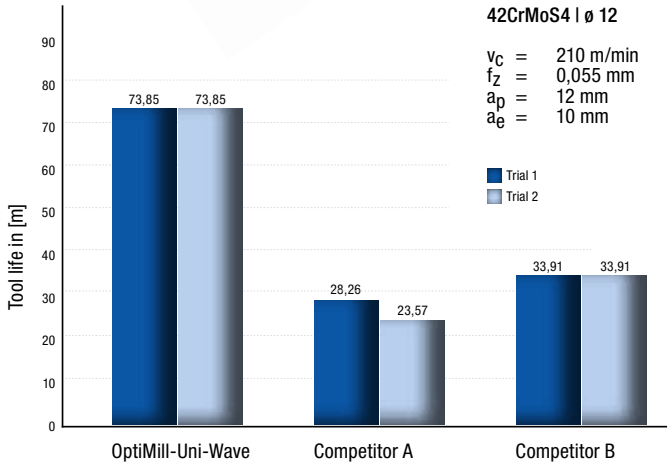
- Highest axial feed ap up to 5xD
- Usage of the whole cutting length
- Increased productivity due to reduced machining time
- High material removal rate and longer tool life

OptiMill-Uni-Wave

Fast and cost-effective for full slots







AT A GLANCE

- High performance roughing cutter for slot milling up to 2xD
- Can be used on many different materials
- New diamond knurl geometry
- Uneven spacing of the five cutting edges
- Available in long design (M3985) in shank form HB with a diameter range of 4 to 25 mm

ADVANTAGES

- Higher levels of performance and less oscillation and vibration compared to existing HPC roughing cutters
- Extreme machining rates possible
- Process reliable chip evacuation due to short, tightly rolled chips
- Highly cost-effective machining

MILLER
MAPAL GROUP

The specialist for
solid carbide drills and end-mills

Solid carbide drills for steel, aluminium,
stainless steel and hardened materials

High performance drills with more cutting
edges and additional guiding chamfers

TTD replaceable head drills

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stainless steel, plastics and hardened materials

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