

Solid carbide drills and end mills

Innovations 2024



Expertise in solid carbide tools

Miller GmbH & Co. KG, Präzisionswerkzeuge in Altenstadt produces solid carbide precision tools for drilling and milling with resounding success and an innovative production strategy.

The greatest strengths of MILLER are its extensive range of standard products with application-specific catalogue tools as well as its high degree of flexibility in developing outstanding complex custom tools made of solid carbide.

MILLER's many years of experience, accumulated know-how and high level of process understanding in the area of solid carbide tools are reflected in the standard range. Process reliability, efficiency and the highest productivity for customers are therefore guaranteed.

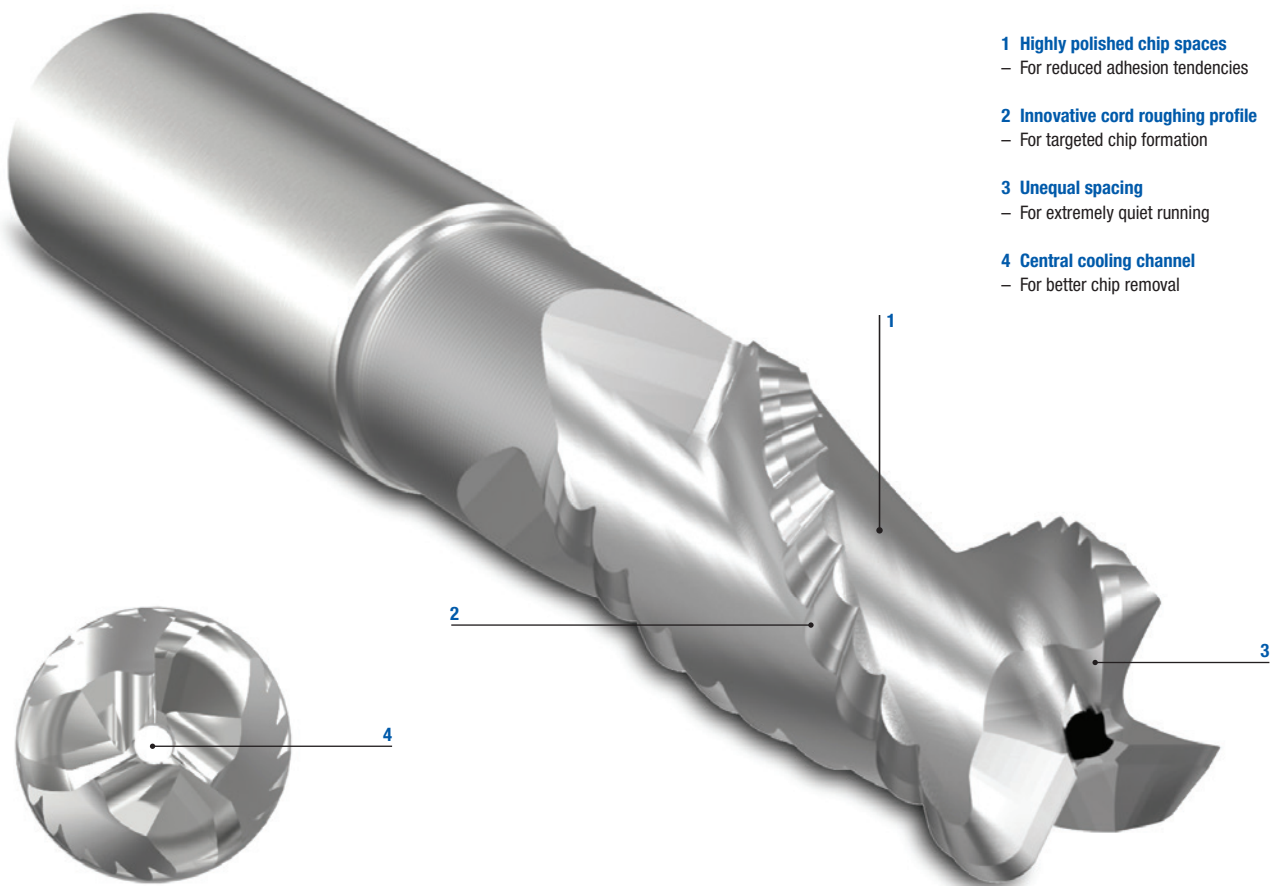
Drills and milling cutters from MILLER only find their way to the customer after extensive research and development, design and simulation using the latest software, and production and inspection on the latest manufacturing equipment. In conjunction with the most efficient cutting materials, MILLER therefore offers the optimal tool for almost all applications and workpiece materials.

OptiMill®-Alu-Wave

A new dimension of high-volume aluminium machining

The OptiMill-Alu-Wave is a newly developed roughing cutter for machining aluminium materials. It produces short chips and ensures smooth cutting behaviour thanks to its unique cord roughing geometry. The milling cutter has a central cooling channel that minimises the formation of built-up edges and safely removes chips. It also offers configurable corner radii for precise near-contour roughing.

Due to its high machining volume, the OptiMill-Alu-Wave allows efficient material removal and, in this way, increases productivity. Available in various lengths, it adapts perfectly to the individual requirements of any roughing task.



- 1 Highly polished chip spaces**
– For reduced adhesion tendencies
- 2 Innovative cord roughing profile**
– For targeted chip formation
- 3 Unequal spacing**
– For extremely quiet running
- 4 Central cooling channel**
– For better chip removal

Features

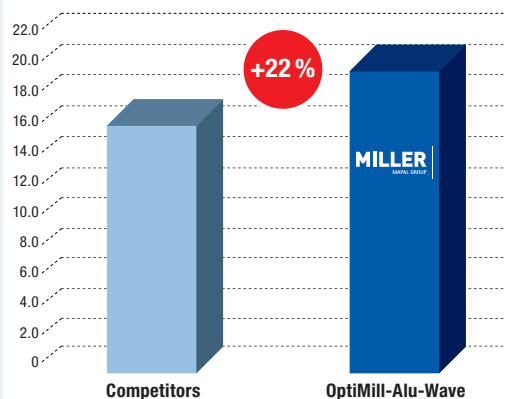
Configurable features:

- Ø area: 12.00 - 25.00 mm
- Shank form: HB | Safe-lock®
- Cutting edge design: Radius | Chamfer 45° of Ø 12.00 – 25.00 mm | 0.40 – 1.00 mm
- Coating: Available as DLC coating with cutting material HP910

Dimensions:

- Short, medium and long projection length with neck
- Ø area: 12.00 - 25.00 mm

MATERIAL REMOVAL RATE [dm³/min]



Workpiece material: EN-AW50

- Tool Ø: 25.00 mm
- Spindle speed: 24.465 1/min
- Feed: 26.738 mm/min
- Material removal rate: 20.1 dm³/min

MEGA-Deep-Drill-Steel

Efficient deep drilling up to 40xD

The new MEGA-Deep-Drill-Steel is a deep drill for highly efficient deep drilling applications on steel and cast-iron materials. Due to its innovative geometrical and cutting material design, the deep drill is ideally adapted to high feed rates and maximum productivity in bore machining up to 40xD.

The convex cutting edge and the optimised core diameter profile result in excellent cutting properties with maximum stability. The cooling channel diameters were enlarged by approx. 20% to ensure optimal cooling of the main cutters and cutting edges as well as improved chip removal.

The deep drill is suitable for emulsion and MQL on machining centres with a coolant pressure of 10–40 bar.

The four margin lands ensure exact boring accuracy and a very low bore runoff. The adapted guide length and the widened rear margin lands ensure maximum guiding accuracy even with inclined bore outlets. With its smooth surface, the HiPIMS head coating enables maximum tool life and ensures smooth chip flow.



✓ HIGH WEAR RESISTANCE



Good cutting properties, short chips

- Convex cutting edge shape

Maximum tool life

- Innovative cutting material

Maximum stability

- Perfectly adapted core diameter profile

⚙️ PROCESS RELIABILITY



Exact boring accuracy

- Thanks to four margin lands

Very low bore runoff

- Thanks to the larger circumference surface area of the rear margin lands

Maximum guiding accuracy even with inclined bore outlets

- Ideal length of margin lands

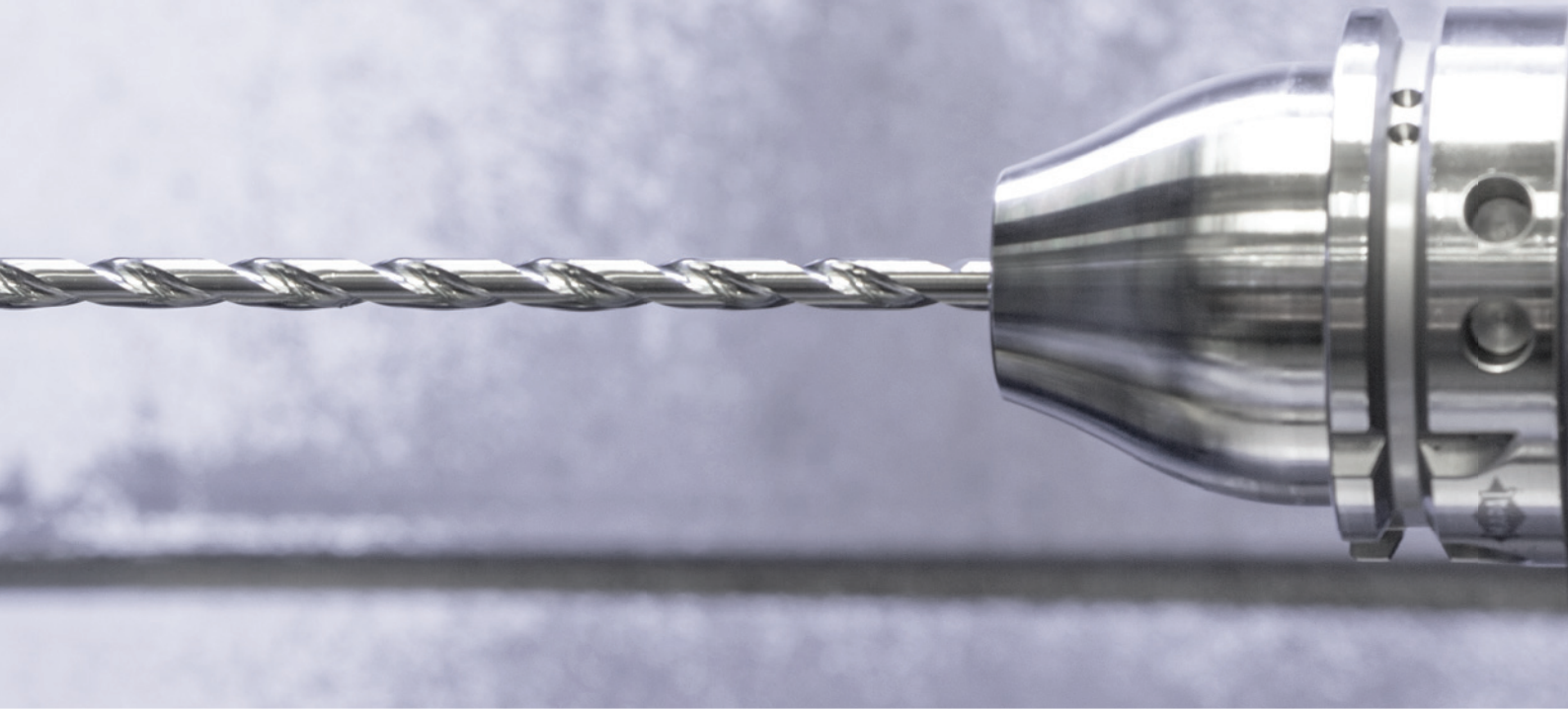
Available from
JANUARY 2024!

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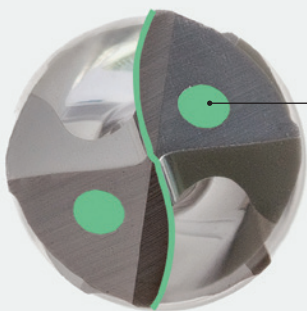
Steel
workpiece
materials

K

Cast-iron
workpiece
materials



MAXIMUM PRODUCTIVITY



Cooling channel \varnothing +20%

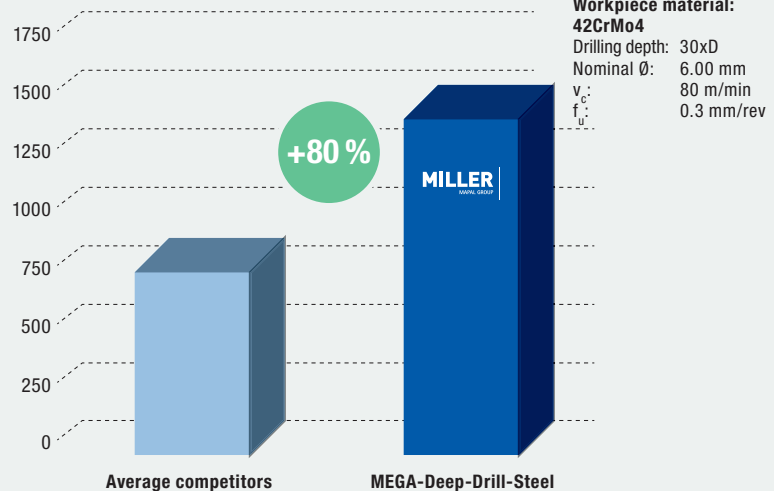
Good cutting properties and maximum feed rates

- Thanks to spherical main cutter
- Maximum cooling capacity
- Maximum cutting stability

Ideal chip removal

- Tightly rolled chips

Maximum tool life according to the number of bores



Available from
NOW ON!

OptiMill®-Composite-Speed-Plus

Uncoated



Performance
LINE

Performance Line:
High-performance tools, broad field of application, greater productivity in series manufacturing

NEW TOOL DESIGN FOR MORE PRODUCTIVITY

Compared to previous router tools, the OptiMill-Composite-Speed-Plus markedly improves quiet running and increases tool life.

NEW

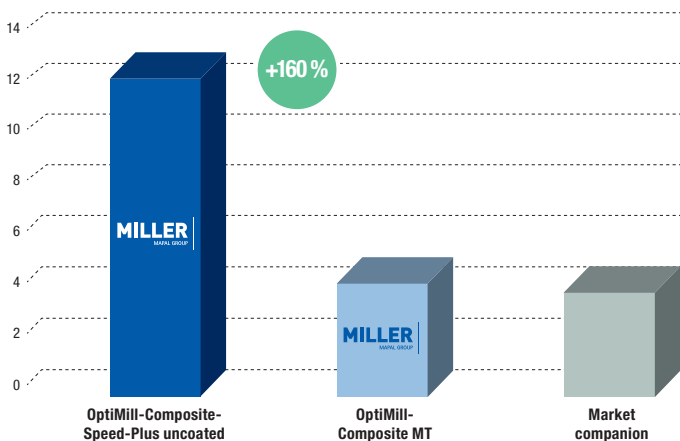
OptiMill-Composite MT | Router tools

Increased productivity

OptiMill-Composite-Speed-Plus, uncoated

● ● ● ●		Tool life	● ● ● ●
● ● ● ●		Quiet running	● ● ● ●
● ● ● ●		Productivity	● ● ● ●
● ● ● ●		Cutting quality	● ● ● ●

COMPARISON TOOL LIFE [m]



Material:
CFRP unidirectional with thermoset matrix
n: 7,958 1/min
f_z: 0.028 mm/z
v_c: 200 m/min
v_f: 1,783 mm/min
a_p: 10 mm
a_e: 8 mm

AT A GLANCE

- First choice in unfavourable process conditions
- Extremely sharp cutting edge for optimum cutting quality
- Ideal for workpiece material with low abrasiveness

Available from
NOW ON!

MILLER | Innovations 2024

OptiMill®-Composite-Speed-Plus

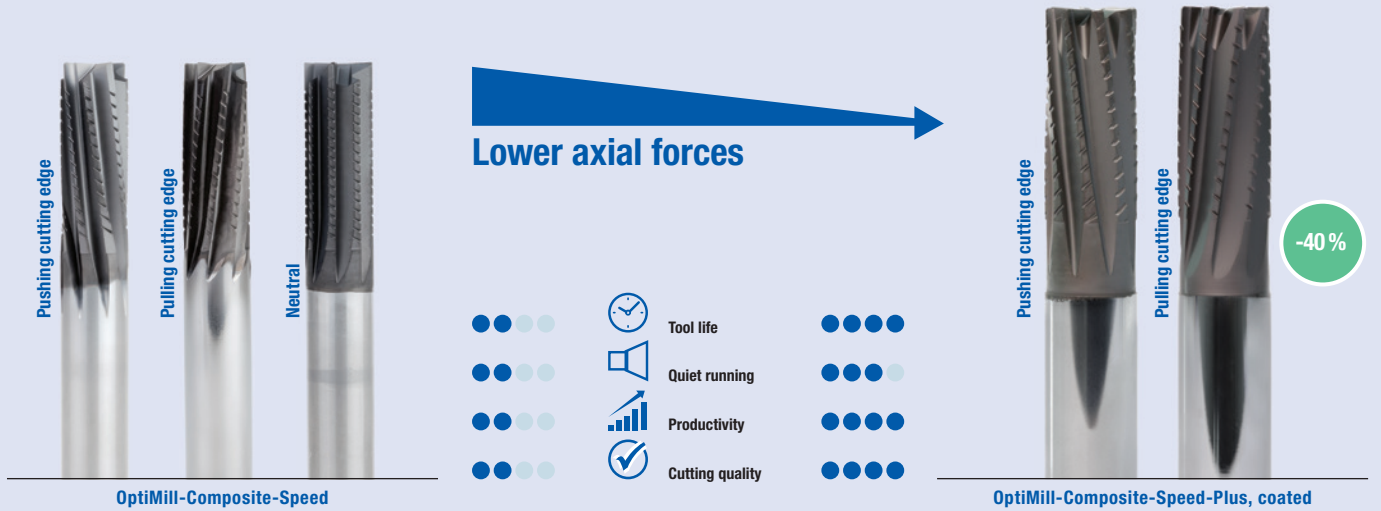
Coated



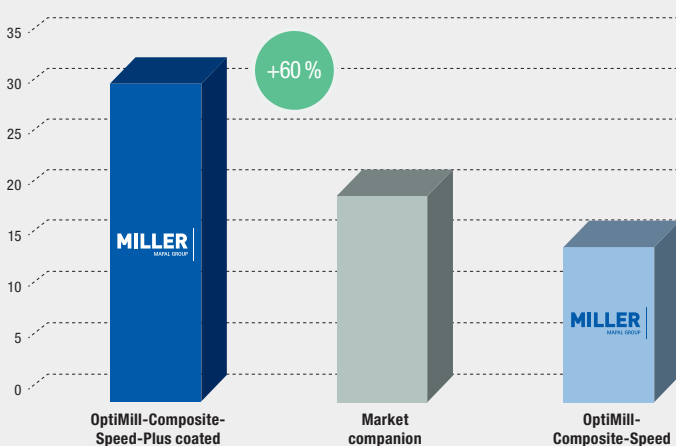
Expert Line:
Specialist tools for selected applications,
maximum precision and productivity

FURTHER DEVELOPMENT REDUCES AXIAL FORCES

Axial forces for the OptiMill-Composite-Speed-Plus are reduced by 40 percent compared to the OptiMill-Composite-Speed. A neutral series is not required for this reason.



COMPARISON TOOL LIFE [m]



Material:
CFRP unidirectional
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n: 7,962 1/min
f_z: 0.028 mm/z
v_c: 200 m/min
v_f: 1,783 mm/min
a_p: 10 mm
a_e: 8 mm

AT A GLANCE

- First choice in good process conditions
- Even MAPAL uniform diamond coating thickness distribution for increased process reliability
- Increased coating thickness for maximum tool life
- Highest productivity

Your specialist for solid carbide drills
and milling cutters

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

High performance drills with more cutting edges
and additional margin lands

Replaceable head drill TTD

Solid carbide milling range for steel, aluminium,
stainless steel and hardened materials

High-performance milling cutters
for high machining volumes

Tool product line for machining modern
workpiece materials and super alloys

