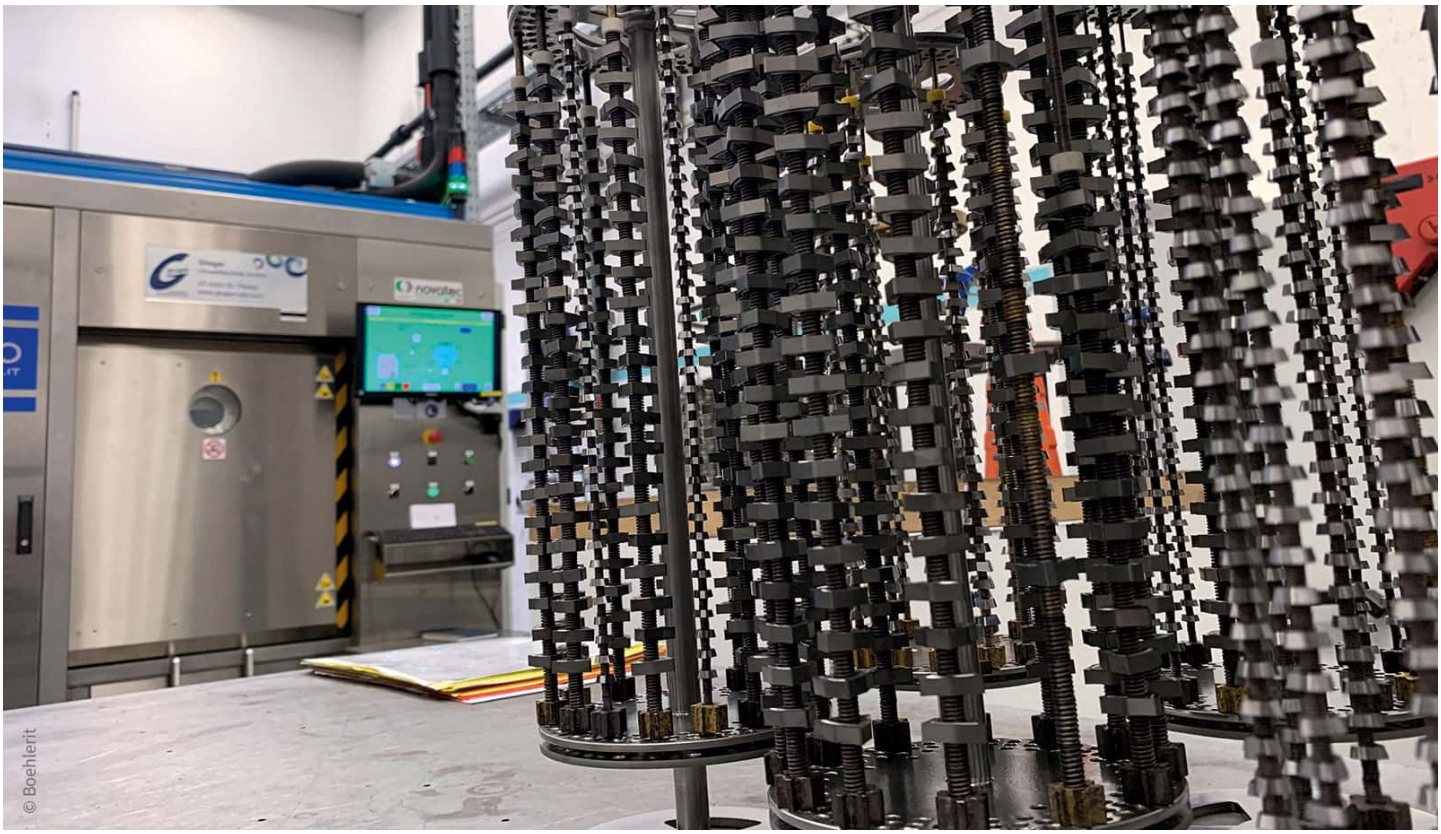
HiPIMS opens up enormous potential in turning

Dr Arno Köpf next to the CC800® HiPIMS from Boehlerit.

Boehlerit uses the development possibilities of the CC800® HiPIMS

Short distances and the complete tool development process from a single source – this strategy has put Boehlerit from Kapfenberg, Austria, on course for growth. Gerhard Melcher, Sales Manager at Boehlerit, gets confirmation of this every day. A key component in the development of new, high-performance coatings is the CC800® HiPIMS from CemeCon – giving the cutting material and tool specialists from Styria an absolute technological edge.

Boehlerit carbides and precision tools solve the world's most demanding machining tasks and set standards in the machining of metal, wood, plastics and composite materials. Examples include highly specialized tools for crankshaft machining as well as for metallurgical technology for rotary peeling, tube and sheet metal machining and heavy-duty cutting. The Austrian experts' recipe for success undoubtedly includes a high level of vertical integration and extensive know-how in all facets of tool manufacturing – from design to coating technology.



Broad innovation and investment offensive at Boehlerit: the new cleaning system optimally prepares the inserts for coating.

To meet ever-increasing demands and ensure continuous growth, Boehlerit relies on the latest technologies and is pursuing a broad innovation and investment offensive. “Over the past two years, we have invested tens of millions in equipment, automation and digitalization in manufacturing at various locations,” says Gerhard Melcher. “We are securing an absolute technological advantage with the CC800® HiPIMS from CemeCon.”

„Früher galt: PVD zum Fräsen, CVD zum Drehen. Die HiPIMS-TECHNOLOGIE änderte das schlagartig. Mit ihr sind heute SCHICHTDICKEN bis zu 12 µm realisierbar. Das ermöglicht einen erfolgreichen Einsatz in ANSPRUCHSVOLLEN DREHPROZESSEN.“

Dr. Arno Köpf, Entwicklungsleiter für PVD-Beschichtungen bei Boehlerit

Paradigm shift with HiPIMS

“In the past, the undisputed dogma in specialist circles was: PVD coatings for milling and CVD coatings for turning. It was unthinkable to use PVD coatings in turning operations, as the required coating thicknesses

could not be achieved with this technology," explains Dr Arno Köpf, head of development for PVD coatings at Boehlerit. "HiPIMS technology changed that abruptly. Today, it is possible to achieve coating thicknesses of up to 12 µm in a reproducible manner. This enables successful use even in demanding turning processes."

HiPIMS enables coating thicknesses of up to 12 µm and also significantly increases the quality and performance of the coatings.

What does HiPIMS technology have that others don't? Thanks to the synchronization of the HiPIMS cathode pulses with the substrate table – a unique CemeCon feature – the residual stresses of the coating can be actively managed. This enables high coating thicknesses of up to 12 µm. In addition, HiPIMS again significantly increases the quality and performance of the coatings: HiPIMS coatings are very smooth as well as hard and tough at the same time. They have excellent adhesion and, thanks to the uniform distribution of coating thicknesses, provide optimum wear protection for the tool.

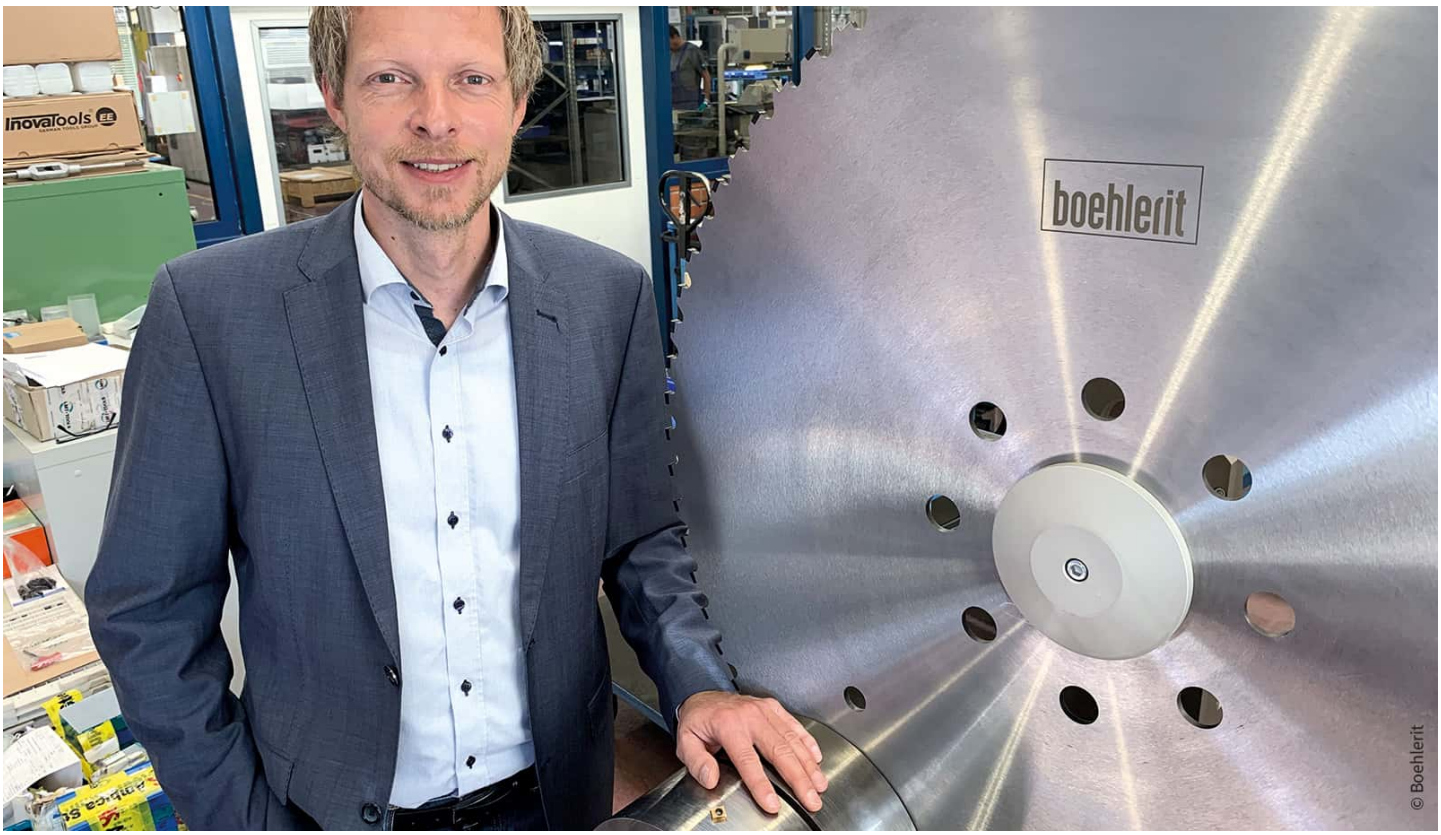
„HiPIMS-TECHNOLOGY opens up enormous OPTIMIZATION POTENTIAL for us: it allows us not only to further improve coating variants that have been tried and tested for years, but also to develop INNOVATIVE COATING COMPOSITIONS that open up NEW MARKETS for us. The possibilities are enormous.“

Gerhard Melcher, Sales Manager at Boehlerit.

HiPIMS coatings already successfully in use

Boehlerit is already using HiPIMS coatings on tools for milling, in crankshaft and tube machining, and in the turning of stainless materials. New cutting material grades with HiPIMS coatings for draw peeling and turning of steel are in the test phase. SawTec 2.0 circular saw blades are an innovative highlight in Boehlerit's product range. Their special feature: unlike other solutions on the market, the cutting edges are not soldered on, but can be replaced. This saves users an enormous amount of time and money. Another

plus is the new HiPIMS coatings on the replaceable cutting edges. “This makes our new saw blades perfect for steel and stainless materials, especially in robust applications. Initial projections have shown that an average of four SawTec 2.0 saw blades can replace around 100 brazed saw blades,” adds Thomas Waltenberger, segment manager at Boehlerit.



Thomas Waltenberger: “Thanks to HiPIMS coating, the new SawTec 2.0 saw blades are perfect for machining steel and stainless materials.”

New possibilities and enormous potential

“HiPIMS technology opens up enormous optimization potential for us: it allows us not only to further improve coating variants that have been tried and tested for years, but also to develop innovative coating compositions that open up new markets for us. The possibilities are enormous,” says a delighted Gerhard Melcher.

Boehlerit

Boehlerit, headquartered in Kapfenberg, Austria, has been part of the Brucklacher family group of companies (Bilz, Boehlerit and Leitz) since 1991. With 800 employees at twelve locations worldwide, the company develops and produces cutting materials, semi-finished products and precision tools as well as tool systems for milling, turning, drilling and forming for a wide range of materials. These include highly specialized tools for crankshaft machining as well as for metallurgical technology for rotary peeling, tube and sheet metal machining and heavy-duty cutting. Hard metals for structural parts and wear protection are also among the company's strengths. The cutting and wear protection materials are continuously developed using modern analysis methods and in close cooperation with universities and research institutes. Thanks to its many years of expertise in metallurgy, coating technology and with state-of-the-art

pressing technology, Boehlerit is also a competent and sought-after development partner for toolmakers.

www.boehlerit.com

CC800® HiPIMS

Coating plant

Thick layers

12 µm

Steel

CVD-coatings

Boehlerit

turning processes