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Boehlerit - The independent development partner for Toolmaker

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Boehlerit has been a pioneer in the production of carbide since 1932. Today, the standard portfolio includes more than 70 cutting-edge carbide grades, which are used by almost all well-known toolmakers for a wide range of applications. In addition, as a development partner for toolmakers, the Kapfenberg company, with its decades of experience, offers the development of individual carbide grades, coatings and geometries. In this way, real machining innovation often begins in Boehlerit's own powder production.

Compared to the past, modern carbides are characterised by more uniform microstructures. This is primarily due to the higher purity of the raw materials, but above all also to more uniform sintering conditions in modern production facilities.

High metallurgical flexibility for individual tool developments

Boehlerit's metallurgy centre, with its own powder production, has been the hub for the development of innovative cutting materials for decades. Over 10,000 m² of production space offer maximum metallurgical flexibility for the production of indexable inserts and blanks as well as for the provision of carbide granulate for toolmakers. The dynamic FEM calculation for the digital customer-specific design of modern tool systems is supportive here.

Boehlerit is an independent carbide specialist in the tool industry and a close development partner for Toolmaker. In its cooperation with toolmakers, the family-run company guarantees direct collaboration between technologists with discretion and product protection. *"When you work as a long-term partner with almost all well-known tool manufacturers, trust is the order of the day,"* emphasises Dr Christian Kolbeck, Head of Segment Wear Parts & Toolmaker. However, Boehlerit is not only a technological pioneer and one of the world's leading manufacturers of carbide cutting materials for tools used in metal, wood and plastics processing, but also ethical. Only carbides made exclusively from conflict-free raw materials are produced. This ethically justifiable procurement of materials and raw materials has been one of the pioneering elements of the company's compliance culture for many years.

Press release

State-of-the-art production and coating processes

The continuous development of production processes using state-of-the-art production equipment plays a major role in the carbide expertise. This includes the latest servo-electric powder presses, which offer the highest reproducibility and dimensional accuracy and enable the production of highly complex geometries. A special feature among the presses at Boehlerit is one of the largest carbide presses with a pressing force of 650 tonnes. Cubic and round parts with a surface area of up to 250 cm² are pressed economically and in series production on this press. All in all, the production range extends from the smallest carbide part weighing a few tenths of a gram to large parts weighing more than 100 kilograms. The tools for this are made in the company's own press tool shop. This guarantees µm-precise tools with which complex indexable inserts are precision-manufactured. *"Our hand shaping department requires very special know-how, and we use it to produce more than 7,000 different types of carbide parts every year,"* Kolbeck adds. Here, the constructive shaping, taking into account the so-called sintering shrinkage, requires a great deal of experience. In addition to sintering, Boehlerit's know-how is based on its own coating centre. The main coating technologies (PVD, HT-CVD and MT-CVD) for hard material coating of indexable inserts are available.

State-of-the-art production machines guarantee the highest quality

As part of its quality and automation offensive, Boehlerit has decided on a comprehensive investment package that specifically addresses the three decisive factors of its products - substrate, cutting edge finishing and coating. Four new high-end sintering systems (three pressure sintering systems and one vacuum sintering system) were purchased, as well as a large 5-axis turning/milling machine on which preforms are produced. In addition, six new grinding machines for inserts ensure a long-term guarantee of the high quality level. Boehlerit produces around 150 to 200 pressing tools made of sintered carbides per year for customers, but also for its own needs. For this purpose, Boehlerit procured a new 5-axis hard milling machine, which now performs milling, grinding and testing in one clamping and replaces the EDM technology previously used for this purpose in this area. Particularly in coating technology - one of the company's core competences - investments are naturally being made on an ongoing basis. In addition to the latest PVD technology (HiPIMS), Boehlerit is expanding its CVD plant park with a new coating plant equipped with its own innovations. Boehlerit is using its expertise in coating technology here and thus has the entire process in its own hands. This is one of the reasons for the company's technological lead and offers new possibilities with regard to the deposition of innovative hard material coatings.

One of the world's most modern 4.0 ram extruders, a new double-sided fine grinding machine with planetary kinematics, new cleaning and washing systems and new simulation software, which, for example, examines chip formation and chip flow even before the step into the cutting laboratory, finalize the investment programme. All the new systems are networked with each other. Of course, sustainability and energy efficiency have long been at the top of Boehlerit's agenda. Especially in times of energy crisis, these investments are particularly effective in many respects.

Press release

From powder to rapid prototyping to cutting tests

The development tasks of the carbide pioneers at Boehlerit are defined by the performance requirements of the tool manufacturers and users respectively. Process-optimised manufacturing technologies, from its own powder production, coupled with the latest pressing and grinding technologies to the most modern coating technologies, guarantee toolmakers a head start in the productivity of their tools time and time again. A particular advantage in product development for toolmakers is the production of prototypes using state-of-the-art laser-assisted rapid prototyping. Boehlerit thus helps customers to save time and money in tool development. This also includes cutting tests, evaluation and advice. Finally, one of the most modern testing and packaging systems for indexable inserts in the industry contributes to the high quality standard. It guarantees 100 % quality assurance in the μm range. With particularly strict dimensional checks and the monitoring of all metallurgical parameters, Boehlerit guarantees Toolmaker a consistently high quality of its tools.

Press release

The company

Boehlerit, headquartered in the Austrian town of Kapfenberg, sets global standards with carbides and tools for the processing of metal, wood, plastics and composites. With cutting materials, semi-finished products, precision tools and tool systems for milling, turning, drilling and forming, Boehlerit ensures process safety and efficiency on a global scale. The company's extensive product portfolio includes highly specialised tools for the machining of crankshafts as well as for the mining industry, for bar peeling, tube and sheet metal processing and heavy-duty machining. The Boehlerit product range also features carbides for construction components and wear protection. When it comes to coating technology, Boehlerit holds a global monopoly, ranging from the first-ever nano-CVD bonding layer to the hardest diamond layer worldwide. With its many years' experience in metallurgy, coating technology and state-of-the-art press technology, Boehlerit is a highly competent development partner for toolmakers.

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Pictures

Abb. 1: Boehlerit - The independent development partner for Toolmaker



Pictures

Abb. 2: Dr. Christian Kolbeck, Head of Segment Wear Parts & Toolmaker

