

# FACTS

**CEMECON**  
The Tool Coating

CUSTOMER MAGAZINE FOR COATING TECHNOLOGY

No. 62 04/2026



**Micro milling tool from HPTec GmbH  
with HiPIMS InoxaCon® coating ensures  
a dependable manufacturing process**

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## **Quality in CFRP milling increases with manufacturing demands**

Greater process reliability and cost efficiency for aircraft construction: CemeCon and Hufschmied Zerspanungssysteme GmbH collaborate to design new tool

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## **A Safe Investment in the Leading Position**

Premium coatings for W.P.P. Engineering Co., Ltd.

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“Our mission statement, “*Precision means leaving nothing to chance,*”  
is a firm promise to all our customers, including those  
who face changing tasks in their day-to-day operations. Accordingly,  
we rely on *MultiCon®* for coating “*universal geniuses*” for different areas  
of application—because you can always rely on the performance and  
robustness of the tool.”

*Martin Seifriz, Managing Director, Nachreiner GmbH*



## Imprint

**Published by**  
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**Edition**  
Circulation of English version: 4,100  
Circulation of German version: 4,700

**Photographs**  
Photographs unless otherwise  
indicated: CemeCon.

Page 4: Hufschmied Zerspanungssysteme GmbH  
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Greater process reliability and cost efficiency for aircraft construction: CemeCon and Hufschmied collaborate to design new tool

# Quality in CFRP milling increases with manufacturing demands

When milling carbon fiber reinforced plastics, the aviation industry in particular demands maximum quality of the machined surfaces and the highest process reliability. Hufschmied Zerspanungssysteme GmbH and CemeCon have been working closely together to set new standards for this important industry of the future. A jointly developed premium tool combines geometry, substrate, and diamond coating to create an optimal solution.

The machining of carbon fiber reinforced plastics, or CFRP for short, which are particularly advantageous for lightweight construction, is one of the greatest challenges in the machining industry. Even more demanding variants of these composite materials are used in aircraft construction. At the same time, there is an absolute focus on maximum component quality, which completely rules out compromises and demands the highest performance from the milling tools used. This is because the high-strength fibers must be cleanly divided, despite their different orientations within the matrix. Otherwise, fiber protrusions or delaminations occur, which require at least time-consuming manual reworking.

The manufacture of large aircraft parts, such as shells or segments for the fuselage, presents aircraft manufacturers and suppliers with a very specific problem: the wall thicknesses here often range from a few millimeters to several centimeters. Enormous transverse forces act on the milling tool at the transitions. In the worst case, it can break and fragments can get inside the component—resulting in costly production interruptions or even the loss of entire components. The use of copper mesh as lightning protection poses a further challenge during machin-

ing. The aim is to achieve a component edge that requires no reworking—without any copper protrusions.

These are precisely the challenges that development partners Hufschmied and CemeCon have set themselves. The Bavarian tool manufacturer and the coating specialist worked together to design a new milling tool that significantly increases process reliability in CFRP milling and at the same time extends its tool life by more than 50 percent compared to tools used in the same application.

## A STRUCTURED PATH TO THE NEW PREMIUM TOOL

“Our customers in the aviation industry repeatedly emphasize this in discussions: When machining components made of fiber-reinforced composites, process reliability is the top priority, as even the smallest component deviations can be very expensive. This has inspired us to develop a significantly improved solution to win over users in this field,” says Fabian Lindinger, Head of Application Technology at Hufschmied. The foundation was laid for the groundbreaking HEXACUT® 058 milling cutter specifically designed for CFRP aircraft components.

On the way there, the existing tool geometry was first re-examined and revised at the Hufschmied development center near Augsburg, Germany. In addition to optimum process reliability, the new tool had to meet another requirement: the cutting quality had to be guaranteed over a period of use as long as possible.

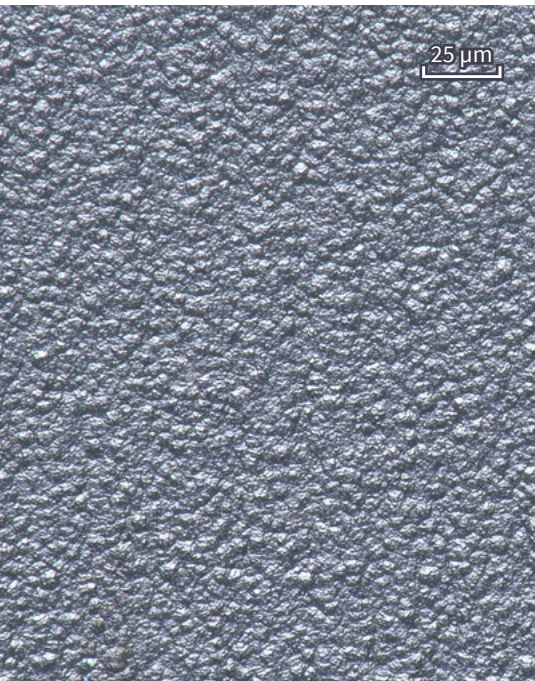
Jointly developed by Hufschmied and CemeCon, the new HEXACUT® 058 milling cutter impresses with maximum process reliability and outstanding tool life when machining CFRP for aircraft construction



## PERFECT COORDINATION OF TOOL PARAMETERS

The rest of the process showed how a strong partnership in innovative technology can make all the difference: essential to achieving an ideal overall result was, of course, the customized coating, which was tailored to the tool geometry developed by Hufschmied and the innovative substrate. To this end, the coating experts at CemeCon specified a diamond coating material for the new tool, which already achieved absolutely outstanding quality in tests. “It was extremely fascinating to observe how the optimal pairing of carbide substrate and coating material gradually emerged,” recalls Javier Fuentes. The Head of Coating and Cutting Material Development at Hufschmied emphasizes: “Through productive teamwork, we were finally able to achieve a homogeneous wear pattern that allows us to achieve a clear, smooth milling edge at a consistently

The diamond coating adapted for the new premium tool—shown here magnified 1,000 times—ensures a very uniform wear pattern and guarantees a clear, smooth cutting edge at a consistently high level throughout the entire tool life



# HUFSCHMIED

## ZERSpanungSSYSTEME

Founded in 1991 and headquartered in Bobingen near Augsburg, **Hufschmied Zerspanungssysteme GmbH** manufactures process-optimized precision tools for machining and friction stir welding.

As a specialist in the machining of plastics, glass fiber, and carbon fiber materials, Hufschmied is a European leader in the development of solutions for new materials. The high-performance tools from this established system supplier to renowned machine tool manufacturers are particularly valued in the automotive and aerospace industries, as well as in medical technology.

high level throughout the entire tool life. And coating spalling or even tool breakage simply no longer occurred in the product tests.”

Marco Furrer, Sales Manager at CemeCon, explains: “We specifically adapted the proven CemeCon coating material CCDia®AeroSpeed® for the new Hufschmied tool. This enabled us to achieve exceptional adhesion to the carbide selected by Hufschmied despite the high coating thickness. The impressive result: the new HEXACUT® 058 from Hufschmied offers users consistently high cutting quality, maximum process reliability, also due to substantially less vibration, and a significantly longer tool life.

### STRONG PARTNERS WORKING ON AN EQUAL FOOTING

The entire project benefited greatly from the professional cooperation between the parties involved, as the partnership between Hufschmied and CemeCon has long gone beyond a mere supplier-customer relationship. Working closely together, they worked out important details such as edge preparation, cutting radii, layer thickness, and layer architecture. “By combining our expertise, we were

able to optimize all parameters until we had achieved a solution that was consistent in every aspect,” explains Michael Woda, Manager Development Diamant at CemeCon.

The companies are also continuing to work together in the series production of the HEXACUT® 058. The premium milling cutters of the new type are coated at CemeCon’s headquarters in Würselen, in the world’s largest diamond coating center, and subjected to comprehensive quality control. Independently of this, Hufschmied rechecks relevant criteria, such as homogeneous layer thickness distribution—for end customers, this means additional process reliability.

“This project, like our other collaborations with CemeCon, some of which have been going on for many years, makes an important contribution to establishing Hufschmied worldwide as a synonym for first-class machining solutions,” says Managing Director Christel Hufschmied, delighted with the development success. “The new diamond tool and the joint effort with CemeCon to bring it to industrial maturity are helping us to achieve our goals in the long term.”



From left to right: Kaiwit Ngamdokmai, Suntad Mungkalung, Witsanurak Rakchumkong, Thamonwan Prompingka, and Wanmongkon Suthamrangsee. The WPP team relies entirely on HiPIMS for both equipment and technology projects and coating services

## Premium coatings for the Asian market

# A safe investment in the leading position

In many parts of the world, tool manufacturers are taking advantage of the competitive edge offered by the unrivaled HiPIMS technology. In Thailand, it is CemeCon's consulting-savvy partner WPP that is enabling customers in this region to achieve a real innovation boost, whether with premium-quality coating services or the advantages of their own HiPIMS-coating system.

Especially in globally challenging economic times, investment decisions are not easy to make. When it comes to the future viability of their companies, tool manufacturers also need the assurance that their investments will pay off. Some solutions make this particularly easy: HiPIMS undoubtedly represents a quantum leap in PVD coating for cutting tools. This unique technology guarantees extremely dense, smooth, and adhesive coatings with outstanding mechanical properties—even on complex geometries.

### ASIAN MARKET WITH CONSIDERABLE POTENTIAL

Wittaya Ponpet, Managing Director of W.P.P. Engineering Co., Ltd. in Bangkok, has been a reliable technology partner to tool manufacturers in Thailand and Vietnam for many years. His CemeCon customers greatly appreciate the fact that the perfect tool requires the perfect coating: “The coatings we offer in the highly competitive Southeast Asian market result in tools with maximum performance, long tool life, and highest process reliability. HiPIMS is partic-

ularly impressive when machining demanding materials and meeting high expectations for surface quality.” He continues: “Our customers have undergone a complete change in thinking: having their own HiPIMS coating system integrated into tool production is considered as a guarantee of success, offering the highest possible quality standards and, at the same time, a very high degree of flexibility.”

HiPIMS-coated precision tools are used in Thailand, for example, by suppliers to the Japanese automotive industry and in traditional mechanical engineering. They also increase the potential and stability of cutting tools in mold making, component manufacturing for consumer electronics, and the large Asian two-wheel industry.

“BECOME A LEADER IN YOUR BUSINESS”

Together with his team, Wittaya Ponpet provides sound advice, reliable sales, and first-class technical support for all aspects of CemeCon technology in Thailand with his own HiPIMS turnkey solution. WPP perfectly complements its portfolio and creates



Wittaya Ponpet, Managing Director of W.P.P. Engineering Co., Ltd., is delighted that his customers can benefit from the superior performance of the latest CC800® HiPIMS system

a comprehensive range of services for tool manufacturers from a single source. The company combines in-depth local market knowledge with the same competencies and high quality found at all international CemeCon locations and the German headquarters. WPP is also supported by the Indian CemeCon branch under the management of Managing Director Manish Adwani—for example, with technical service or fast spare parts deliveries from the local warehouse.

The benefits of having a strong local partner become particularly apparent when tool manufacturers purchase their own HiPIMS system. “Our customers who invest here can rely 100% on a lasting technological advantage ,made in Germany;” says Wittaya Ponpet. “Become a Leader in your Business” is the offer! To achieve this goal, CemeCon and WPP are providing their business partners with the perfect tool so that they can offer increasingly powerful tools to the market.

HIGH-END COATING WITH A CLEAR HOME ADVANTAGE

WPP’s sales and service offerings for production equipment for cutting

tools are complemented by an excellent coating service. This enables WPP to provide easy local access to HiPIMS technology even for small series or samples—naturally as a complete package including pre- and post-treatment as well as comprehensive quality assurance based on the model of CemeCon’s world-leading coating center in Würselen, Germany.

Whether with your own system or via the coating service: HiPIMS can be used to apply an almost unlimited va-

riety of coating materials in the widest range of coating thicknesses available on the market. Tool manufacturers in Thailand and neighboring countries thus receive an application-specific, tailor-made coating solution at any time, paving the way for them to broaden their range of services and become pioneers in their industry.

# WPP

WE OFFER SOLUTIONS

**W.P.P. Engineering Co., Ltd.**, founded in Bangkok in 2008, is the leading regional full-service provider of solutions and technology for tool manufacturing. The expertise developed over many years in collaboration with internationally renowned partners and its innovative strength have made WPP a leading technology service provider in Southeast Asia. The company’s goal has always been to drive the economic success of its customers with new technologies and innovative complete solutions.

CemeCon HiPIMS offers a wide range of applications for greater productivity and cost efficiency with maximum quality

# Everything but ordinary: universal tools with premium coatings

Hydraulic components today, gear-boxes tomorrow, sensor mounts the day after tomorrow—in many manufacturing companies, machining tasks cover an enormous range. Instead of long-planned series with clearly defined materials and geometries, changing materials and a wide variety of machining processes characterize the everyday work of many users. A challenging production environment in which the universal applicability of tools is becoming increasingly important. This is where CemeCon's HiPIMS coating materials come into their own

in a very special way: they enable tools with outstanding flexibility—combined with consistent process reliability, high precision, and long tool life.

## AGILITY AS AN ECONOMIC SUCCESS FACTOR

Even for universal applications, milling cutters and drills with CemeCon coatings are always custom-made. Dr. Christoph Schiffers, Product Manager Technology at CemeCon: “Designed for a wide range of machining applications, our high-quality coatings

are a key factor in achieving greater productivity and cost efficiency while maintaining maximum quality.” This crucial factor paves the way for flexible and fast manufacturing processes at all times: the focus of tools and coatings to a variable product range enable tool makers and end users to adapt quickly in dynamic market environments.

## PERSONAL AND PRACTICAL ADVICE IS OUR PASSION

To make this possible, every order of our customers at the CemeCon coating center is tailored individually, regardless of batch size or degree of specialization. Every batch meets consistently high premium requirements: from cleaning to the selection of the coating material and the engineering of the coating to the final quality control. Personal contact partners with an understanding of technology and application provide practical advice and deliver solutions that are economical and efficient in real-world manufacturing environments and not just on a datasheet.

CemeCon's HiPIMS coating material MultiCon® provides a particularly dense and homogeneous coating structure with excellent adhesion and optimized wear behavior.

### MultiCon® in detail

Coating technology: **HiPIMS**

Properties: **optimal wear behavior, excellent adhesion, extremely smooth**

Coating material: **AlCrN-based**

Max. operating temperature: **1,100 °C**

Color: **dark gray**

Coating thickness: **3 µm** (for shank tools)

Material: **tempered steel 1,400 N/mm²**

Tool: **solid carbide mill, Ø 8 mm**

$v_c = 150 \text{ m/min}$

$n = 6,460 \text{ min}^{-1}$

$f_z = 0.085 \text{ mm/tooth}$

$a_p = 0.028 \text{ mm}$

$a_e = 0.5 \text{ mm}$

Cooling: **emulsion**

### Application example

Milling



## HIGH-END EXPERTISE IN UNIVERSAL USE

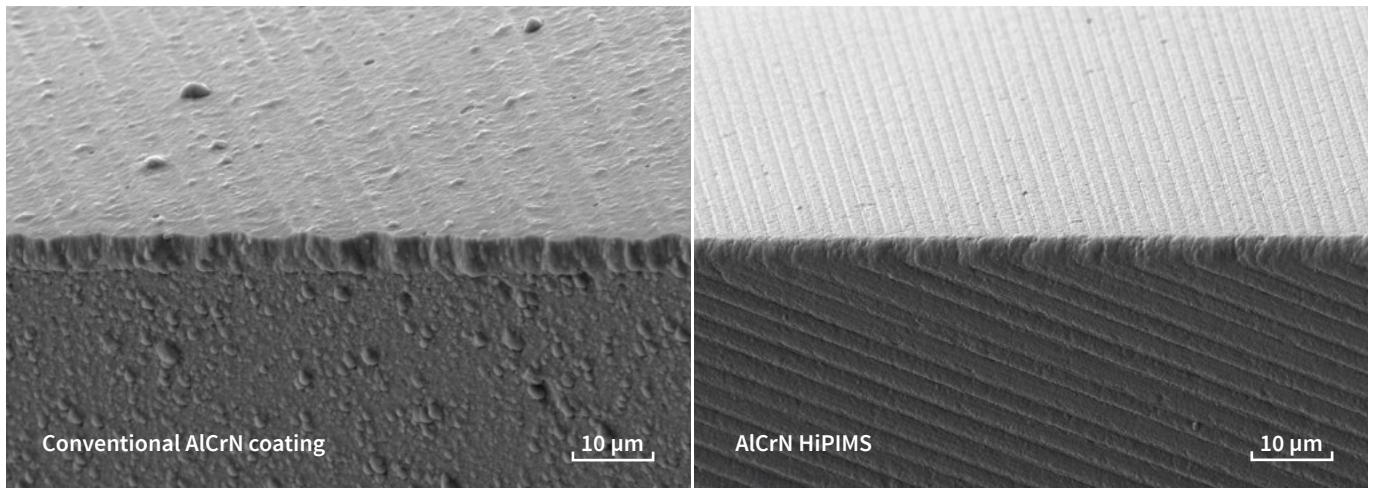
The HiPIMS AlCrN coating MultiCon® is a high-performance coating material that offers a wide range of applications for steel processing. HiPIMS enables an extremely smooth AlCrN coating without the droplets typical of traditional processes. It effectively reduces friction and improves chip flow—a major advantage when working with frequently changing materials. HiPIMS creates a particularly dense and homogeneous coating

structure with excellent adhesion and optimized wear behavior.

This paves the way for tool manufacturers to differentiate their cutting tools from the competition: The universal coating material MultiCon® significantly increases productivity, enables reproducible, longer tool life at the highest level, and increases process reliability compared to arc technology. The example of MultiCon® impressively demonstrates how CemeCon directly incorporates its decades of experience in highly



The high-performance HiPIMS coating material MultiCon® enables shank tools to be used in a particularly wide range of applications in steel processing



specialized high-end machining into coating solutions that are designed for universal use.

## CUSTOMIZED SOLUTIONS UNLOCK POTENTIAL

“The competitive situation in the market for tools for universal applications is very challenging. And the rapidly rising material prices for carbide also call for innovative and efficient solutions. Makers of tools for contract manufacturers or suppliers who do not want to commit to narrow application windows can use a universal HiPIMS coating from CemeCon to significantly increase the performance and quality of their tools. Thereby

they will set themselves apart from their competitors,” explains Marco Furrer, Sales Manager at CemeCon. CemeCon offers user support as a service to all tool manufacturers for solving machining tasks in a team—this service is often a decisive argument in favor of choosing a HiPIMS coating from Würselen. “This gives our customers the certainty that they are well equipped for any requirement—regardless of what machining task tomorrow may bring,” concludes Furrer.

HiPIMS enables extremely smooth AlCrN coatings—these do not exhibit any droplets, which are unavoidable with conventional processes

Micro milling tool with HiPIMS InoxaCon® coating ensures a dependable manufacturing process

# Absolutely reliable: unmanned production of precision components for medical technology

Together with CemeCon, tool manufacturer HPTec has developed the RQR 350 milling cutter with a diameter of only 3 millimeters and InoxaCon® coating. This “miracle tool” for micro-machining in medical technology guarantees uncompromising machining quality and exceptionally long tool life. This makes it ideal for a stable, precisely reproducible manufacturing process that can be safely automated overnight.

A steady hand is not everything: since surgical instruments are used directly in the human body, the requirements for their surface quality, burr-free finish, and dimensional accuracy are particularly critical. This is a matter of course that has also driven Bacher Medizintechnik GmbH for decades as a manufacturer of instruments for endoscopy and minimally invasive surgery. At the same time, cost-effectiveness is required in component manufacturing: When machining so-called jaw parts—functional instrument gripping heads for grasping or separating tissue—the Baden-Württemberg-based company therefore relies on manufacturing processes that run automatically for many hours.

Even in unmanned production, continuous in-process control is naturally carried out throughout the entire process. An integrated 3D measuring probe system and supplementary laser measurement continuously monitor the relevant geometries, thus ensuring that the required quality is maintained at all times, even during automated night shifts.

Another important aspect is the performance of the machining tool: “In medical technology, there is no room for fluctuating quality,” explains Mate Bekavac, Head of CNC Manufacturing at Bacher Medizintechnik. “Especially with batches that run unmanned overnight, i.e., without the possibility of direct intervention, I have to be able to rely 100% on the tool working fail-safe right down to the last jaw. Additionally, I need to be sure that there is no scrap.”

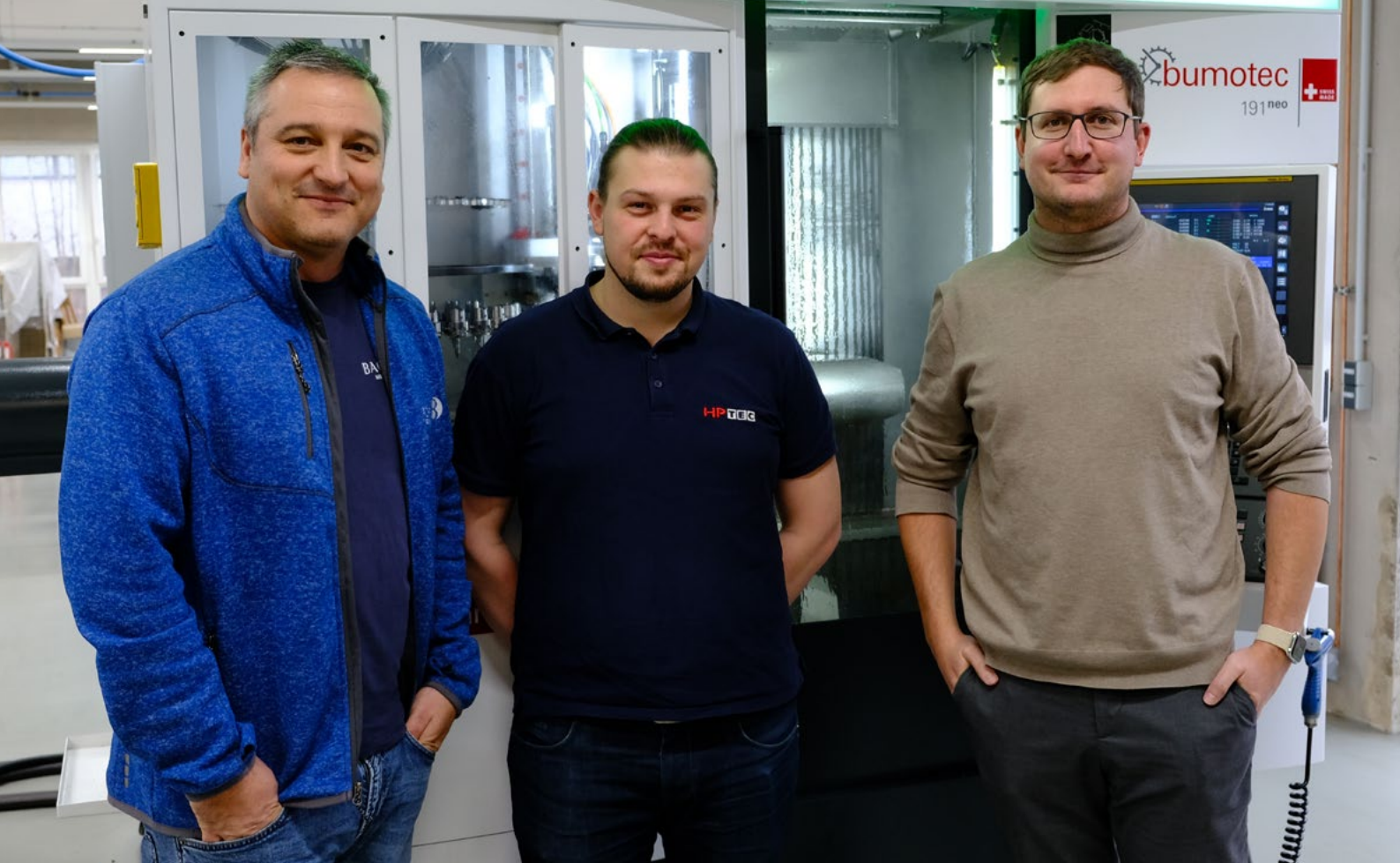
## THE CHALLENGE: ROUGHING WITH DIAMETERS UP TO THREE MILLIMETERS

The requirements profile for the partner HPTec was thus clearly defined—the tool manufacturer was to develop a roughing tool with a long tool life and persistently high sharpness for consistently stable and high-quality machining. A particular technical challenge was that only a very small tool diameter of no more than 3 millimeters was permitted. The required high-performance machining tool still had to absorb high forces and remove large amounts of material in a short time.

HPTec’s first step toward a solution was to optimize the tool geometry: Within a short time, the developers succeeded in achieving a balanced ratio of core diameter, chip space, and cutting geometry, ensuring stability and efficient chip removal. The design is complemented by special roughing and finishing teeth. These produce short chips and, with the appropriate coating, achieve an extremely uniform surface finish even during the roughing process.

## OPTIMAL TOOL COATING COMPLEMENTS OPTIMAL TOOL GEOMETRY

A key performance factor of the new RQR 350 milling cutter is the HiPIMS coating from CemeCon. During the joint development phase, the coating specialist and tool manufacturer HPTec designed a coating that gives the cutting edge outstanding sharpness and long-lasting performance. The basis for this is the very hard and temperature-stable InoxaCon® coating material based on TiAlSiN. Thanks to CemeCon’s many years of experi-



Mate Bekavac, Head of CNC Production at Bacher Medizintechnik, Julian Reck, HPTec Key Account Manager, and Andreas Bacher from the management team at Bacher Medizintechnik (from left to right) are extremely satisfied with the performance of the newly developed tool with CemeCon's InoxaCon® coating

ence with HiPIMS, the coating could be adapted to support the long-term stability of the tool, thereby significantly increasing its tool life.

“With the innovative micro milling cutter, we are already achieving excellent surface quality during roughing with a low allowance of maximum 0.05 millimeters, which allows us to carry out the subsequent finishing process with a very small engagement width,” says Bekavac. “This significantly diminishes the cutting forces and thus the load on the finishing tool, reduces burr formation, and has a positive effect on the entire process.”

Julian Reck, Key Account Manager at HPTec GmbH, adds: “Especially in micro and fine machining, it is crucial that the coating does not ‘round off’

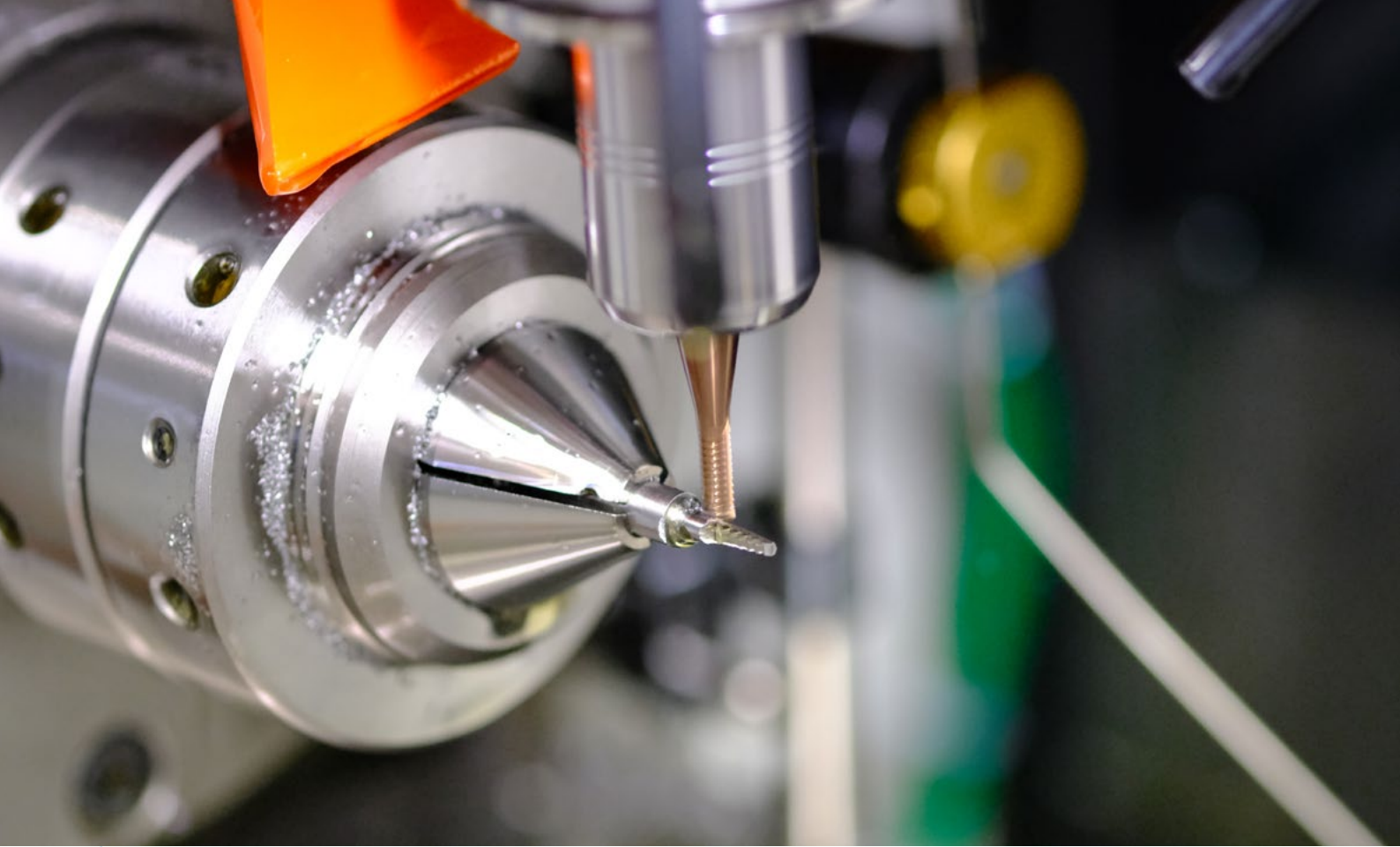
the cutting edge. CemeCon has specified the HiPIMS coating for us in such a way that exactly that is achieved: high hardness, excellent adhesion, and a layer thickness and homogeneity that optimally complements the carbide substrate and tool geometry.” As a result the tool life is many times longer than that of the competing tools previously used, offering additionally consistent machining quality throughout the entire tool life.

For Bacher Medizintechnik, the decisive advantage lies not only in this extended tool life, but above all in 100% reliable processes. Wear-related quality deterioration during unmanned production would result in unnoticed rejects—and thus high costs. “The new tool gives us the assurance that the jaw parts still have exactly the required

quality even after many hours of automated production,” says Bekavac.

#### TECHNICAL EXCELLENCE AND COLLABORATIVE DEVELOPMENT OPEN UP NEW PERSPECTIVES

The project clearly shows how close cooperation between users, tool manufacturers and coating specialists leads to measurable success. For HPTec, the tool developed in collaboration with CemeCon is also another important step into a strategic growth market. The company's many years of experience in the manufacturing of high-precision tools for the printed circuit board and dental industries—including as an OEM—could be seamlessly transferred to the demanding field of medical technology. The expertise gained—from precision engineering



The red-gold, TiAlSiN-based coating material InoxaCon® contributes significantly to the stability and tool life of the new RQR 350 milling tool from HPTec. It thus enables safe and efficient automated processes in the manufacture of surgical instruments

and reliable process stability to strict quality requirements—provided an ideal basis for developing innovative, robust solutions tailored precisely to the application in medical technology.

“For us, projects like this are more than just product development,” emphasizes HPTec Sales and Marketing Manager Wolfgang Würtz. “They show how we can tap into new markets and expand our technological expertise in a targeted manner together with strong partners.”

The combination of optimized tool geometry, high-performance HiPIMS coating and close user integration makes this flagship project a good blueprint for further applications—even beyond medical technology: wherever precision, process reliability and cost-effectiveness must come together.

## HPTEC

HPTec has been manufacturing high-precision tools of outstanding quality and reliability for the machining industry since 1977. From its production site in southern Germany, a team of around 80 dedicated employees supplies customers worldwide with innovative, comprehensive and application-specific solutions.

In addition to a diverse product range and technical support, HPTec offers a range of services. These include regrinding and ringing of tools as well as customized solutions for customer tool management. The company also offers a CNC prototyping service for sampling or small series.

# Micromachining leaves no room for error

Excellent surfaces, stable processes, predictable tool life

CemeCon delivers reproducible perfection—even in the 1/10 µm range

## Maximum process reliability with micro tools

- 100% conforming parts, stable machining processes, predictable tool life
- Reproducible coating quality worldwide
- Tightest tolerances in the 1/10 µm range

## Higher tool performance with super-sharp cutting edges

- Smooth coatings without imperfections
- Extremely smooth surfaces reduce tool wear
- HiPIMS coating thicknesses below 1 µm, diamond from 3 µm—perfect for intricate geometries

## Longer tool life, higher productivity

- Very hard and tough HiPIMS and diamond coatings
- Excellent adhesion even on sharp cutting edges
- Diamond coatings for extreme wear resistance and high thermal conductivity

## Full precision of the tool is maintained

- Homogeneous layer growth even on complex micro tool geometries
- Only minimal cutting edge rounding

## The highest coating quality begins before coating

- Perfect cleanliness as a quality factor
- Specially developed cleaning and handling processes for micro tools

## Our coating recommendations for micro-machining

### HiPIMS

AluCon®

FerroCon®

InoxaCon®

MultiCon®

SteelCon®

### Diamond

CCDia® AeroSpeed®

CCDia® CarbideSpeed®

CCDia® CarbonSpeed®

CCDia® FiberSpeed®

CCDia® MultiSpeed®

# Step by step to successful plant implementation

CemeCon works in partnership with customers from the initial inquiry to the successful start of production of their own in-house coating system—and far beyond. Transparency and clarity about the project phases are always the focus, giving the partners involved reliable planning security.

For many tool manufacturers, the decision to purchase their own coating system from the developer and technology leader CemeCon is a strategic step toward future viability. The extraordinary flexibility of the systems and the wide range of possibilities offered by the coating processes pave the way to greater independence and enhanced development potential in production. Thanks to in-house coating, control over quality and availability is entirely in your own hands.

Of course, tool manufacturers often ask themselves numerous questions in advance: How can unnecessary effort be avoided when getting start-

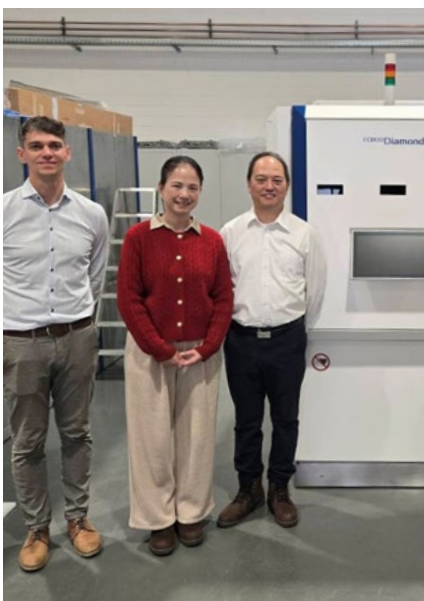
ed? What specific steps are necessary? How can stable production be achieved as quickly as possible? In which way will advisory support be provided during intensive phases? When can independent production begin and tool customers be reliably supplied? CemeCon provides transparent, targeted answers with a structured project process for the design, implementation, and operation of its systems. Every customer can rely on this!

EXTENSIVE PRACTICAL  
EXPERIENCE—A ROCK-SOLID  
FOUNDATION FOR CONSULTING

With nearly 500 HiPIMS and diamond coating systems installed worldwide, CemeCon has exceptionally broad experience. And the wealth of technical knowledge is constantly growing in CemeCon's coating centers around the world, where development and production are closely interlinked. This

is because the entire coating process, including pre- and post-treatment, is carried out here on a daily basis. This continuous work under real industrial production conditions ensures that CemeCon's developers have a deep understanding of the technical and economic requirements for high-performance coatings for cutting tools.

This means that CemeCon is very close to the needs of the industry and ideally equipped for technology transfer to its customers. Tool manufacturers benefit directly, as all findings from the CemeCon coating lines are incorporated directly into plant concepts, training courses, and process flows. This guarantees that every customer receives a turnkey system, including all the peripherals required for the pre-treatment, cleaning, and post-treatment of their tools. This enables them to start producing premium quality products immediately, reliably, and economically.



Alvin Yin, owner of the Taiwanese tool manufacturer IDI Precision Machinery (third from left), personally informed himself about the coating system for his company during a stay in Germany with his family. The CemeCon employee Jens Jordine, Junior Project Manager (far left) welcomed the guests at the CemeCon site

## KNOWLEDGE EXCHANGE FOR AN INDIVIDUAL SOLUTION

Every coating machine implementation begins with an intensive, personal exchange between CemeCon and the customer. “Even at this early stage, specific requirements and customer needs are examined in detail and technical questions are clarified. Spatial conditions, existing manufacturing processes, and business objectives are also included in the joint planning,” explains Jens Jordine, Junior Project Manager at CemeCon. At the same time, customers gain in-depth insight into coating technology and all associated workflows.

All these aspects form the basis for the order- and application-specific development and implementation of a customized coating line. A clear structure with a strong focus on efficiency ensures that defined milestones

are reliably achieved and enables the customer to plan time and resources realistically for the entire process.

## TRAINING, COMMISSIONING, AND PRODUCTION SUPPORT

Even before technical acceptance, the customer’s production team is trained at the CemeCon site on identical systems. During this key step in the project process, personal contacts pass on in-depth knowledge of the coating processes. All training courses have been optimized for a practical approach and a very user-friendly experience. This allows future plant operators to internalize the optimal workflow and then use the technology independently in everyday production. “On this basis, a quick transition to stable, independent series production is possible immediately after installation at the production site,” says Jordine.

## SUSTAINABLE PARTNERSHIP ON EQUAL TERMS

With the successful commissioning of the system, the premium service marks the beginning of a new chapter in the customer relationship. CemeCon’s goal is to provide long-term support to its partners to ensure their continued competitive edge in the market. Supplementary training, worldwide troubleshooting, maintenance services, high-quality consumables, original spare parts—available for years and decades—as well as participation in continuous technological development ensure that coating lines run reliably and profitably in the long term. Competent contact persons, short communication channels, and a common understanding of production goals also characterize this further cooperation.

# 3 steps to your own in-house coating solution

# 1

## Collaborative analysis for a tailored solution

*Assessment of requirements and definition of objectives*

# 2

## Joint planning and implementation

*System design and integration into existing production processes*

# 3

## Training, commissioning, and production support

*Qualification of the team and stable production ramp-up*



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