

FACTS

CC800[®] HiPIMS – OPENING NEW WORLDS



**HIGH-PERFORMANCE
COATINGS
FROM 1 µm TO 12 µm**

12 µm THICK PVD COATINGS? NO PROBLEM WITH HiPIMS!

WORLD FIRST: FERROCON[®]QUADRO
ENSURES THE HIGHEST WEAR VOLUMES
Pages 4/5

TAPCON[®]GOLD – THE COATING FOR THE PERFECT THREAD

HiPIMS ENABLES THE BEST PERFORMANCE
DURING MANUFACTURE OF SCREW THREADS
Pages 14/15

MORE AND MORE NEW APPLICATIONS

HiPIMS is set to change the tool industry – we're sure of that. It will open up new markets and fields of application for manufacturers, thanks to its enormous and unique capabilities. A CC800® HiPIMS coating plant delivers everything today for which previously two or even three different technologies were required in the past. The CC800® HiPIMS is versatile and agile enough to produce thin high-performance coatings for micro tools; our newly developed, high-performance coating TapCon®Gold for taps (see pages 14/15), which is specifically tailored to this special application; and the latest groundbreaking coating for cutting inserts – FerroCon®Quadro. With a coating thickness of up to 12 µm, FerroCon®Quadro ensures the highest wear volumes and opens up applications for the HiPIMS coatings, which previously were only possible with coatings produced using the CVD process. This is a paradigm shift in roughing and heavy machining! Read more about it on pages 4/5.

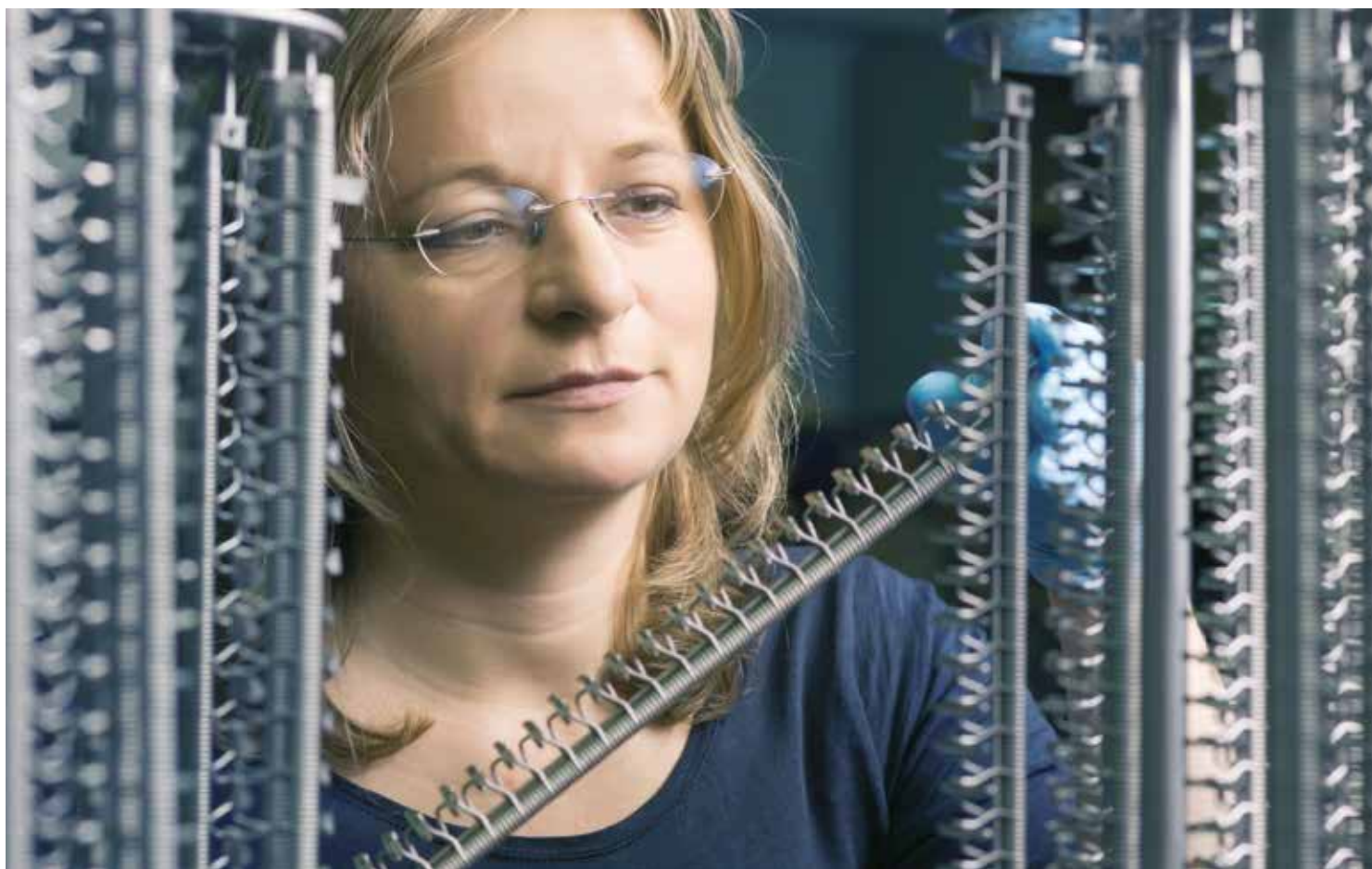
More and more companies want to take advantage of this and numerous other features of the technology. For example, Zhuzhou Huarui Precision Cutting Tools Co., Ltd. is gaining an edge with the HiPIMS plant in the highly competitive Chinese market for cutting inserts (more on pages 6/7). AddLife Coating Systems is also investing in a CC800® HiPIMS plant and is thereby raising available coating technology to a new level in India (see pages 12/13).

Yours sincerely,


Dr Toni Leyendecker


Dr Oliver Lemmer


Bernd Hermeler



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With CC800® HiPIMS, Huarui secures a competitive edge.



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Consistently high coating quality wins over PY INDUSTRIE.



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AddLife raises coating technology to a new level in India.



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WORLD FIRST: FERROCON®QUADRO ENSURES THE HIGHEST WEAR VOLUMES

12 µm THICK PVD COATINGS? NO PROBLEM WITH HiPIMS!

For a long time it was technically inconceivable, but CemeCon has now perfected very thick PVD coatings with FerroCon®Quadro. Coatings up to 12 µm can be realized with firm adhesion! Completely new options are opening up for machining steel and cast iron.

Wherever thick chips fall, during heavy roughing as well as during turning of certain materials, for example, protective coatings are vital for the tool and ensure high productivity. Very smooth and adhesive coatings are deposited using PVD coating processes. Many applications, however, require thicker coatings, which previously

were only produced using the CVD method.

FLEXIBLE AND FUTURE-PROOF

With HiPIMS CemeCon now makes thick coatings possible using a technology that is environmentally friendly and does not use any toxic or explosive gases. This PVD technology, which was developed into a marketable commodity by CemeCon, combines the advan-

tages of all established coating processes. "Our HiPIMS is capturing more and more fields and is competing in markets that previously had to be served in a highly differentiated manner. Our plant customers greatly appreciate this, since the flexibility and future reliability of HiPIMS not only make them feel good, but confirm their decision about having made the right investment," explains Christoph Schiffers, Technology Product Manager at CemeCon.

A CC800® HiPIMS coating plant delivers everything today for which previously two or even three dif-





ferent technologies were required. The field of application has now been expanded still further by coatings from 1 to 12 µm, from a high performance coating for micro tools to an extremely wear-resistant insert coating.

This means that for the first time the coating service of cutting inserts is also relevant for specific tool man-

ufacturers. "With FerroCon®Quadro, we can create thick, adhesive and yet smooth coatings, which make reworking the tools superfluous. Due to process temperatures below 500 degrees during coating, we preserve the substrate and thereby prevent carbide embrittlement. And the fact that with HiPIMS we can integrate almost every element of the periodic table into a coating

opens up for our customers maximum leeway in the coating specifications. I have to admit that we ourselves are positively surprised again and again by how flexible HiPIMS is as a PVD process and how far we continue to move the boundaries. It is an incomparable technology!" Inka Harrand, Product Manager Cutting Inserts at CemeCon, adds enthusiastically.

Further information on FerroCon®Quadro at wendschneidplatten.cemecon.de/en.

	Arc	CVD	HiPIMS
Topography	Droplets	Rough	Smooth
Coating temperature	500 °C	1000 °C	500 °C
Max. coating thickness	4 µm	10–15 µm	12 µm
Internal stress	High compressive stress	Tensile stress	Low compressive stress
Toughness	High	Low	Very high
Ease of production	Yes	No (Precursor)	Yes
Flexibility	Low	None	High (almost all coating materials, all substrates)
Microtool	No	No	Yes

12 μm MAKE THE DIFFERENCE IN A COMPETITIVE MARKET

The Chinese market for cutting inserts offers enormous opportunities among tough competition. Only innovative solutions make a supplier stand out from the crowd. Zhuzhou Huarui Precision Cutting Tools Co., Ltd. was very impressed by the HiPIMS coating machine with CemeCon coatings of unrivaled thickness.

Whether in mold making, aerospace, the automobile, railroad and energy industries – for roughing and heavy duty machining, customers need maximum metal removal rates. Usual chip thickness and feed rates during high performance cutting can only be achieved with the toughest coatings. High wear is also the order of

the day. Stainless steel and other difficult to cut materials raise the bar when it comes to machining with the highest efficiency, which is only possible with PVD coatings.

Zhuzhou Huarui Precision Cutting Tools Co., Ltd. is a manufacturer of high-tech cutting inserts in Zhuzhou, the heart of Chinese insert

manufacturing. The company has met these requirements for several years with two CemeCon sputter coating systems. "We have always been very satisfied with the results of the CC800®/9 XL," says Xiao Xukai, the proprietor of Huarui, who asked the question any forward thinker would: "What is the next step? Which technology accelerates growth and our success?"

THE CLEAR WINNER:
CC800® HiPIMS

And so the experts searched for a new coating system to further improve performance of their cutting inserts and give them the competitive edge. "For this purpose, we carried out numerous tests with different manufacturers and examined all coatings thoroughly. The most superior system quickly emerged: the CC800® HiPIMS," says Xiao Xukai. "It impressed us in every respect: For fast results, stainless 316L was machined in a test – and the HiPIMS system immediately stood out from all the other technologies and manufacturers.



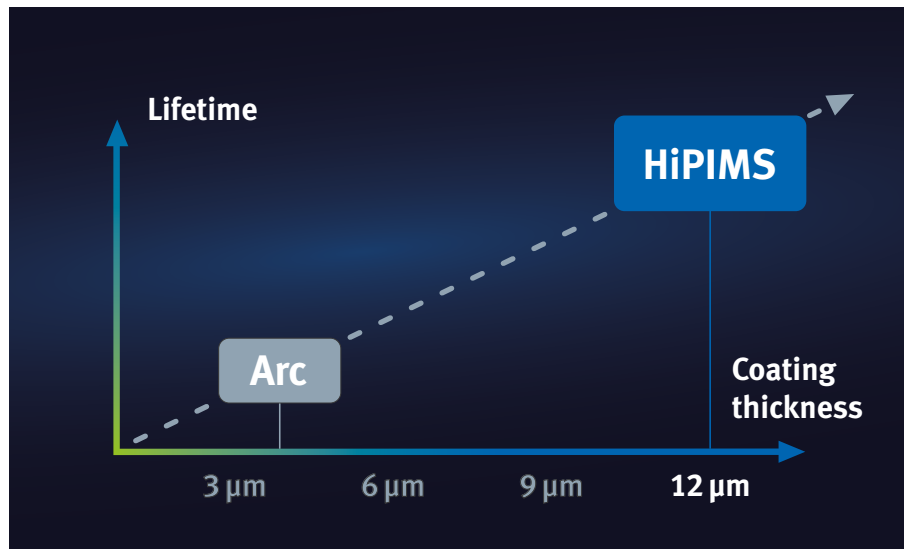
Huarui has been using sputter systems for coatings for a long time. To increase the performance of their inserts even further, Huarui is now investing in a CC800® HiPIMS.

With regard to coating thickness in particular, the technology is groundbreaking – perfect for our inserts."

HiPIMS radically reduces the intrinsic stress in the coating. Arc technology in the mass production of inserts is limited to a coating thickness of 4 μm – with HiPIMS 12 μm is possible. This is a paradigm shift in roughing and heavy machining! Every μm of coating thickness ensures better performance and increases the service life of the inserts considerably.

ADVANTAGE INOXACON®

Xiao Xukai: "Another success story of the CC800® HiPIMS is the coating material InoxaCon®. Anybody can machine carbon steel, but high-grade steel is a different material altogether. The tests also show: The HiPIMS coating significantly stands out from the competition."



12 μm coating thickness – a new horizon in coating technology for cutting inserts.

InoxaCon® is ideal for machining stainless steels. High temperatures occurring on the cutting edge can damage the tool. The HiPIMS coating effectively protects the tool from the heat load during the machining process. Thanks to its extreme smoothness and low affinity to stainless steels, built-up edges are reliably prevented – an advantage for high process reliability.

CemeCon will be integrating the CC800® HiPIMS into production at Huarui in the fall. Since the company does not want to do without the increased performance of the HiPIMS coatings until then, it is having the cutting inserts coated in the Chinese coating center of CemeCon. Huarui can then present the first inserts with HiPIMS coating at the EMO in Hanover.

ZHUZHOU HUARUI PRECISION CUTTING TOOLS CO., LTD.

HARDSTONE

Headquartered in ZhuZhou, Zhuzhou Huarui Precision Cutting Tools Co., Ltd. is located in the heart of Chinese cutting insert manufacturing. Founded in 2007, the company manufactures cutting inserts for turning, milling, threading, grooving and drilling. The portfolio also includes solutions for high-speed machining, aluminum machining and machining of high-strength and extremely hard materials. Thanks to increased investment in tool design, excellent quality and exceptional service, Huarui has made a name for itself with the HARDSTONE brand as a competent and reliable partner in numerous sectors. Customers include companies from the mold making, aerospace, automobile, railroad, heavy machine and energy industry as well as communication.

www.chinacuttingtools.cn



CONSISTENT QUALITY IS IMPRESSIVE

Cutting inserts are used in many different applications, for example, when rough machining steel materials with high removal rates or when finishing high-precision components made of aluminium. PY INDUSTRIE develops tool solutions that are precisely tailored to the requirements of machining tasks. When it comes to coating, their experts rely on the know-how of CemeCon. They are impressed by the reproducibility of the high-quality coatings and the reliable delivery times.

Steels, stainless steels, cast iron, titanium, aluminum, composite materials as well as wood and plastics – PY INDUSTRIE offers the right cutting insert for many

machining tasks. As varied as their portfolio may be, the company makes no compromises when it comes to quality. "For example, our customers in the aerospace,

automotive, gas and oil industries expect consistently high levels of performance to be able to execute their demanding machining tasks to perfection – without compromise. The composition of geometry, cutting material and coating must be exactly matched and may not vary from batch to batch or even tool to tool. Unfortunately, in the past, however, we increasingly had problems obtaining reproducible coatings with high quality and short delivery times," says Grégory Guidolin, Managing Director of PY INDUSTRIE, describing the previous situation.

TESTED AND RATED
AS EXCELLENT

The insert experts went in search of a new supplier of coatings and found CemeCon to be a competent and reliable partner. Mirrored processes and productions at all locations, in addition to docu-



© PY INDUSTRIE

PY INDUSTRIE guarantees their customers the best performance. The excellent machining results of the coating solutions from CemeCon impressed the French experts.

mented quality assurance right from the start, ensure that tool manufacturers on all continents receive the same specification with consistently high quality.

PY INDUSTRIE's main concern was to find solutions for processing stainless steels, aluminum and titanium. With their Premium Plus service and close collaboration with the French insert manufacturer, CemeCon adapted the coatings to the French company's exact requirements. "We guarantee our customers high-performance inserts in all applications. That is why we checked the quality and performance of the different coating solutions in several samples at CemeCon – and the very good machining results have fully convinced us. AluSpeed®, for example, has been very successful for aluminum machining," says Guidolin.



PY INDUSTRIE produces cutting inserts with uncompromising quality requirements. For consistently high coating quality, they have found a competent and reliable partner in CemeCon. (Photo: PY INDUSTRIE)

LARGE COATING CAPACITIES AVAILABLE

After the initial tests, PY INDUSTRIE quickly had larger batches coated at CemeCon. One of the

world's largest coating centers in Würselen has the capacity to coat large quantities of tools in a timely manner. Another advantage of the CemeCon coating service is a production line specifically for cutting inserts. It is precisely tailored to the requirements of this tool group and enables the targeted combination of special pre- and post-treatments, coating material, layer thickness and other details for the special requirements of cutting inserts. This results in individual coatings that enable every customer to stand out in the market.

Grégory Guidolin adds: "We have been working successfully with CemeCon for a year now and are completely satisfied. The delivery times are reliable and we always get the same high coating quality."

PY INDUSTRIE



At the foot of the Pyrenees in Montardon, France, PY INDUSTRIE produces top quality inserts for a wide range of applications. With 40 years of experience, the experts face the technical challenges of modern

industrial production. Whether it is a single part or series production – PY INDUSTRIE designs individual tooling solutions for the special requirements of its customers from the aerospace, automotive, oil, gas and other industries.

www.pyind.com



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"INNOVATIVE TECHNOLOGIES from strategic partners, such as the CC800® HiPIMS from CemeCon, are the KEY TO OUR COMPETITIVE ADVANTAGES and, ultimately, successful and satisfied Horn customers."

Lothar Horn, CEO of Paul Horn GmbH

"The CC800® HiPIMS impressed us in every respect: For fast results, STAINLESS 316L WAS MACHINED in a test – and the HiPIMS system immediately stood out from all the other technologies and manufacturers. With regard to COATING THICKNESS in particular, the technology is GROUNDBREAKING – perfect for our INSERTS."

Xiao Xukai, proprietor of Zhuzhou Huarui Precision Cutting Tools Co., Ltd.



"With the CC800® HiPIMS we are taking coating technology in India to a whole NEW LEVEL."

Mufaddal Rangwala, Technical Director of AddLife Coating Systems Pvt. Ltd. and
Shoeb Rangwala, Managing Director of AddLife Coating Systems Pvt. Ltd.

"The CC800® HiPIMS
greatly enhances THE PERFORMANCE of our TAP DRILLS
enabling us to GROW OUR BUSINESS."

Marcin Kołodziej, president of Fabryka Narzędzi FANAR S.A.



"The new PROTECH
INNOVATION CENTER and
HiPIMS – a perfect fit."

Miroslav Palo, CEO of
ProTech Service, s.r.o.

"With the investment in
the CC800® HiPIMS, we
are strengthening the
successful and long-standing
COOPERATION with CemeCon.
This technology is opening up
NEW TARGET GROUPS for us."

Dipl.-Ing. Volkmar Kanne,
CEO of Kanne Premiumwerkzeuge

"PLUS 30% with FerroCon® on
HOBBING CUTTERS!"

Lubomír Zima, CEO of CemeCon s.r.o.

COATING TECHNOLOGY IN INDIA IS ON A WHOLE NEW LEVEL

Located in the center of India's high-tech industry, AddLife Coating Systems Pvt. Ltd. has become an important driver in the coatings industry over the last six years. In order to consolidate its market position in a country that is rapidly becoming a technology nation, the company is investing in the latest technology and expanding its lead with a new CC800® HiPIMS system – that's "Incredible India".

Bangalore (Bengaluru) is known as the Silicon Valley of India, and it is also one of the country's most important centers for education and research. For this reason, other industries – most notably aerospace – industry have also decided to settle there. This makes it an ideal location for cutting tool manufacturers and companies like AddLife Coating Systems Pvt. Ltd., which caters to the

requirements of tool manufacturers with a modern coating center.

"In the past, customers were not always satisfied with the consistency of the coating quality, which changed dramatically with the installation of our first two CC800®/9 ML systems from CemeCon," explains Shoeb Rangwala, Managing Director of AddLife Coating Systems

Pvt. Ltd. Thanks to comprehensive training at the coating center in Würselen, Germany, and in-house production, the systems have now been running reliably and without problems for six years.

OVERWHELMED BY SUCCESS

In India's booming market, stagnation means falling behind, which is why AddLife wanted to invest in state-of-the-art technology and expand its capacities and capabilities with a CC800® HiPIMS system. The coating experts from India conducted various tests with the coating materials FerroCon® and InoxaCon® for different machining applications and materials. "We knew that the



With the CC800® HiPIMS, AddLife is expanding its capabilities and opportunities of extending its market position. (Photo: AddLife)

"With the **CC800® HiPIMS**
we are taking
coating technology
in India to a whole
NEW LEVEL."

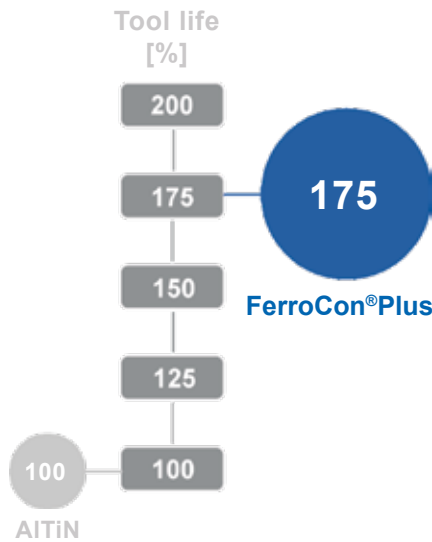
Mufaddal Rangwala (left),
Technical Director of AddLife and
Shoeb Rangwala, Managing Director of AddLife.



extremely smooth and stress-free coatings would provide some performance improvements. The fact that we achieve a tool life that is 50 to 200 percent longer, depending on the application, has really overwhelmed us. One example: When drilling forged steel, FerroCon®Plus achieved a 175-percent increase in tool life compared with AlTiN-coated tools. This brings the coating technology in India to a whole new level," says Mufaddal Rangwala, Technical Director at AddLife.

AddLife quickly ordered a HiPIMS coating system, making it one of the first customers in India to use the high-performance technology for

Material: 1.0552 ($R_m = 520 \text{ N/mm}^2$)
Solid carbide drill, $\varnothing 15.1 \text{ mm}$
 $v_c = 180 \text{ m/min}$, $f = 0.36 \text{ mm}$



drills, milling cutters and reaming tools. "HiPIMS is also on everyone's lips here, and so there was a pile of inquiries asking whether we could not offer that as well. And now we are delighted to be one of the pioneers – safe in the knowledge that, with the new system technology, the high quality of the coatings and the comprehensive service of CemeCon, we can look forward to continued success in the future," summarizes Rangwala.

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ADDLIFE COATING SYSTEM PVT. LTD.



AddLife Coating Systems Pvt. Ltd. has been operating a successful coating service for all types of cutting tools since 2013. To optimally cover the broad spectrum of applications, the Bangalore-based Indian company relies on CemeCon's world-class system technology to supply customers from a wide range of industries with extremely smooth PVD coatings.

www.addlifecoating.com



The AddLife team in the production area.
(Photo: AddLife)

TAPCON®GOLD – THE COATING FOR THE PERFECT THREAD

Internal thread production – whether through hole or blind hole – is one of the most challenging cutting tasks. It is particularly important as one of, if not the last, machining step. Process reliability is the top priority in order not to waste the almost completed component. HiPIMS coating technology opens up here enormous possibilities. The new coating material TapCon®Gold has been specially developed for HSS taps and thread formers and adapted to the requirements of the machining task.

Internal threads can be found in almost every component. These range from engine blocks and many other vehicle components to cellphones and multimedia products – wherever something has to be screwed together. They are so commonplace that we hardly

notice them. Extensive know-how goes into their production. Before they are placed into the components, the components are milled, turned, drilled, etc. The thread comes last. "That makes thread production such a critical process. If there is an error during this machining step, the component must at best be reworked in a costly and time-consuming way. In the worst case scenario, the almost finished workpiece becomes scrap, and the previous work was in vain. Process

reliability is therefore essential," summarizes CemeCon's Round Tools Product Manager Manfred Weigand.

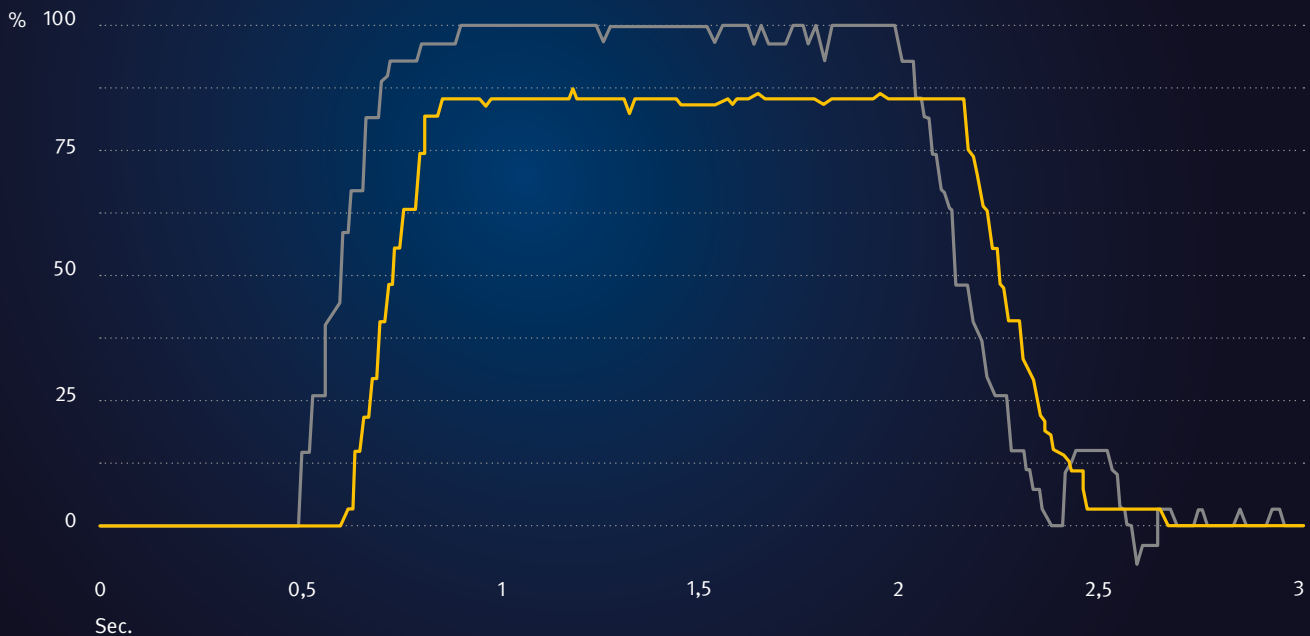
THE PATH TO THE FUTURE

The threading tools used must therefore not only have a long service life but must also maintain a constant thread quality and tolerance over their entire service life. This places specific demands on the coating: "The traditional TiN and TiCN coatings have been the points of reference for threading tools for many years. With the development of our HiPIMS coating material TapCon®Gold specifically



TORQUE COMPARISON

TiN coating by competitor
TapCon®Gold



A stable low torque is enormously important for precise and efficient thread production. The newly developed HiPIMS coating material TapCon®Gold has been tailored specifically to these requirements and is the ideal coating base for HSS taps and thread formers.

for HSS taps and thread formers, there has been for the first time a performance leap to precisely these coatings. The gold-colored coating material is opening the path to the future," explains Weigand.

PERFECT PROPERTIES FOR THREAD PRODUCTION

Torque is the critical factor during thread production. The lower the torque, the margin of safety until the tool fails is not only greater, but also the quality of the cut or formed thread is generally better. Furthermore, material adhesions to the threading tools must be prevented. These are often the cause for poor performance. Thanks to

its extreme smoothness and high density, TapCon®Gold ensures stable low torques and reliable chip removal without adhesions. Running-in behavior is excellent thanks to the very low-friction surface. In addition, the high degree of toughness of the coating material optimally protects the cutting edges during threading. Together with the exceptional coating adhesion, an integrated complete package results that prepares the HSS taps and thread formers perfectly for the demands of thread production.

COATING CAN BE SO DIVERSE

Why does TapCon®Gold have these outstanding properties?

The coating material owes them to the unique HiPIMS technology. Weigand explains: "HiPIMS coating materials are extremely smooth and adhesive, which in particular ensures low torques during thread drilling and forming. TapCon®Gold also scores points with tribological properties, which minimize the adhesion of the machined material on the tool surface. And finally, the specific composition of TapCon®Gold ensures outstanding machining performance and service life."

COATING TECHNOLOGY UP CLOSE

HiPIMS is the coating technology of the future and opens up enormous possibilities. In Horseheads (USA), CemeCon customers were able to experience the full production process and the benefits of the technology up close at three live events – and many were amazed at how quickly outstanding results can be achieved.

In the late 19th century, a United States Congressional representative from Missouri established the saying: "Fancy words don't convince me, you have got to show me!" This attitude summarizes how businesses work today: In order for a new technology or process to be implemented in an existing manufacturing chain, the product has to work more efficiently and provide a

significant improvement compared with the status quo.

SHOW ME!

That's what CemeCon Inc., has been doing at its Horseheads, New York, coating center. Since February, the experts have organized three HiPIMS live coating events, enabling customers to experience

the CC800® HiPIMS up close. "We have introduced them in all details – from process technology to handling and maintenance. For example, they have helped change targets, sealed the chamber and interfaced with the software to gain a better understanding of how easy the machine is to use," said Ryan Lake, Sales Manager at CemeCon Inc.

Customers who came to CemeCon with very different requirements followed the process from pre-treatment to post-treatment. The demonstrations, each of which lasted less than six hours, showed the tool manufacturers how easy it is to integrate premium PVD coating technology into their own production chain. Fast deposition rates and flexible coating options



Handling is really simple: Scott Para (left) and Brandon Wilkins load the CC800® HiPIMS coating chamber.

are clear advantages of HiPIMS technology. "Additionally the open software allows users to easily customize their own coating formulas, which will help establish a compelling product on the market," said Ryan Lake.

EXCEPTIONAL COATINGS IN A SHORT TIME

One customer expressed their delight: "This is great: I have completely new products and we can keep our legacy products." The coating time was also much shorter than expected. The customer was impressed with the final result: With a cycle time of just four hours and 40 minutes, the CC800® HiPIMS deposited FerroCon® coating on various types of indexable inserts.



Nicholas Kane retrieves the coated tools from the system.



At the HiPIMS live coating events, CemeCon Inc. enabled customers to experience the CC800® HiPIMS up close.

CemeCon's patented HiPIMS technology is unique and achieves faster deposition rates without the loss of voltage as seen in other commercial methods. The adhesion of the coatings is unsurpassed, which currently makes them the most homogeneous PVD tool coatings on the market.

Another HiPIMS Live Coating attendee made, perhaps, the perfect summation, saying "The whole reason we're here is that this is different than anything else on the market – this has characteristics we can't find anywhere else."

CLEAN CUTS, LONGER LIFE, BETTER SURFACES

Since the introduction of HiPIMS, the product has been well received rather quickly by North American tool manufacturers, but especially in the coating service. InoxaCon® and FerroCon® have become inte-

gral parts of several customer products, and end users are impressed.

"In the meantime, the focus is shifting toward integrating HiPIMS into their own production processes. Since the CC800® HiPIMS was adopted early on in the European and Asian markets, pressure is now on North American companies. There is now an emphasis on integrating the technology, since HiPIMS-coated tools are firmly established in the global market, raising the bar for every tool manufacturer," stressed Ryan Lake.

When HiPIMS hit the market, not only was it a step forward for PVD tool coatings, but it is proving to be the big leap that tool manufacturers and end users have been waiting for. "By combining the best features of current PVD coating processes, HiPIMS is the technology of the future, don't take our word for it, see it for yourself at a HiPIMS live coating event," said Ryan Lake.

EVERYTHING FOR THE CUSTOMER

Japan is one of the leading technology countries in the world. Many developments are driven forward there or in collaboration with Japanese companies. This is not different in the tool industry. Japanese tool manufacturers have a global market share of more than 20 percent. This high-tech and trendsetting market is ideal for CemeCon. That's why CemeCon is expanding its Japanese subsidiary into a coating center by the end of the year. Alexander Marxer, Managing Director of CemeCon K.K., is looking forward to providing better support to customers there.

CemeCon K.K. was founded in 2016. How have your previous experiences been?

ALEXANDER MARXER: CemeCon has been active in Japan for more than 20 years. Our products, especially the diamond and HiPIMS technologies, fit the innovative Japanese and Korean tool industry very well. The founding of CemeCon

K.K. was the first step to improving our service in Japan and give the tool manufacturers there immediate access to our coating and plant technologies.

One of the challenges was building a good infrastructure and a competent team – Japanese-speaking, of course. In other words: With

our technology, we give the tool manufacturers the opportunity to stand out from their competitors and our customer service ensures that the CemeCon machines work 365 days a year and make money for our customers.

What comes next?

ALEXANDER MARXER: Our team and our network are growing steadily. The next logical step, in order to reflect the significance of this innovative market, is the construction of our own coating center. A good location both for our employees as well as our customers was especially important to us. We found it with Atsuta in Nagoya. We are therefore planning to complete our coating center by the end of this year.

As of 2020, we will initially be offering our customers a diamond and subsequently also a HiPIMS coating service. In addition, we will then have the opportunity to demonstrate our machine technology and its advantages by means of "Live Batches". As a result, the customer



Alexander Marxer, Managing Director of CemeCon K.K., is looking forward to providing better support to Japanese customers soon thanks to the coating center.

"Our **DIAMOND** and **HiPIMS**
TECHNOLOGY fit the
INNOVATIVE JAPANESE AND
KOREAN TOOL INDUSTRY very well.

With the construction of our **COATING**
CENTER in Japan, we will be able to **SUPPORT**
our customers even **BETTER**."

Alexander Marxer, Director of CemeCon K.K.

will coat their own tools in our machines. Our Japanese research and development engineers will support the coating process in order to find the best possible coating solution in a short time. Another important point will be the expansion of the customer service center. We are constantly expanding our team of service technicians as well as the pool of available spare parts.

What makes the Japanese market so special?

ALEXANDER MARXER: As in Germany, Japanese tool manufacturers are dedicated to innovation and quality. They also focus on trust and stability. With great innovative power, the Japanese manufacturers try to bring new products onto the market every year. In doing so, they want to distance themselves from the lower prices of their competitors. I am impressed again and again at how Japanese engineers concentrate on constantly improving their products in a structured way. I am therefore convinced that Japan's future in tool making is bright.

Japanese manufacturers are absolute leaders in quality and quality management. The crucial point is "kaizen" – improvement. The cycle "measure - analyze - improve" is intended to constantly increase performance and the level of quality and ensure a place at the top. This is what we also want to orientate ourselves on in our coating center. In the case of the trust factor, it's about finding a common solution that fits the customer's requirements exactly.

What are the advantages for Japanese tool manufacturers that decide on CemeCon?

ALEXANDER MARXER: That's very easy: It's the technology! It has been specially developed for coating cutting tools and provides optimum solutions for manufacturers. In doing so, CemeCon concentrates on two different technologies – diamond and HiPIMS. This focus over many years makes CemeCon the market leader in these areas.

HiPIMS is going to change the tool industry. Our HiPIMS solutions outperform other coatings in most applications. The reason is the com-

prehensive control of the process: For example, by controlling internal stress, we can produce very thick coatings of up to 12 µm, which are exceptionally well-suited for turning.

Diamond technology is even more complex: The essential success parameters are the combination of the correct pre-treatment, the patented multi-layer technology and the reliable CC800® Diamond coating plant. To date, CemeCon is the only company in the world that offers this total know-how as a production solution.



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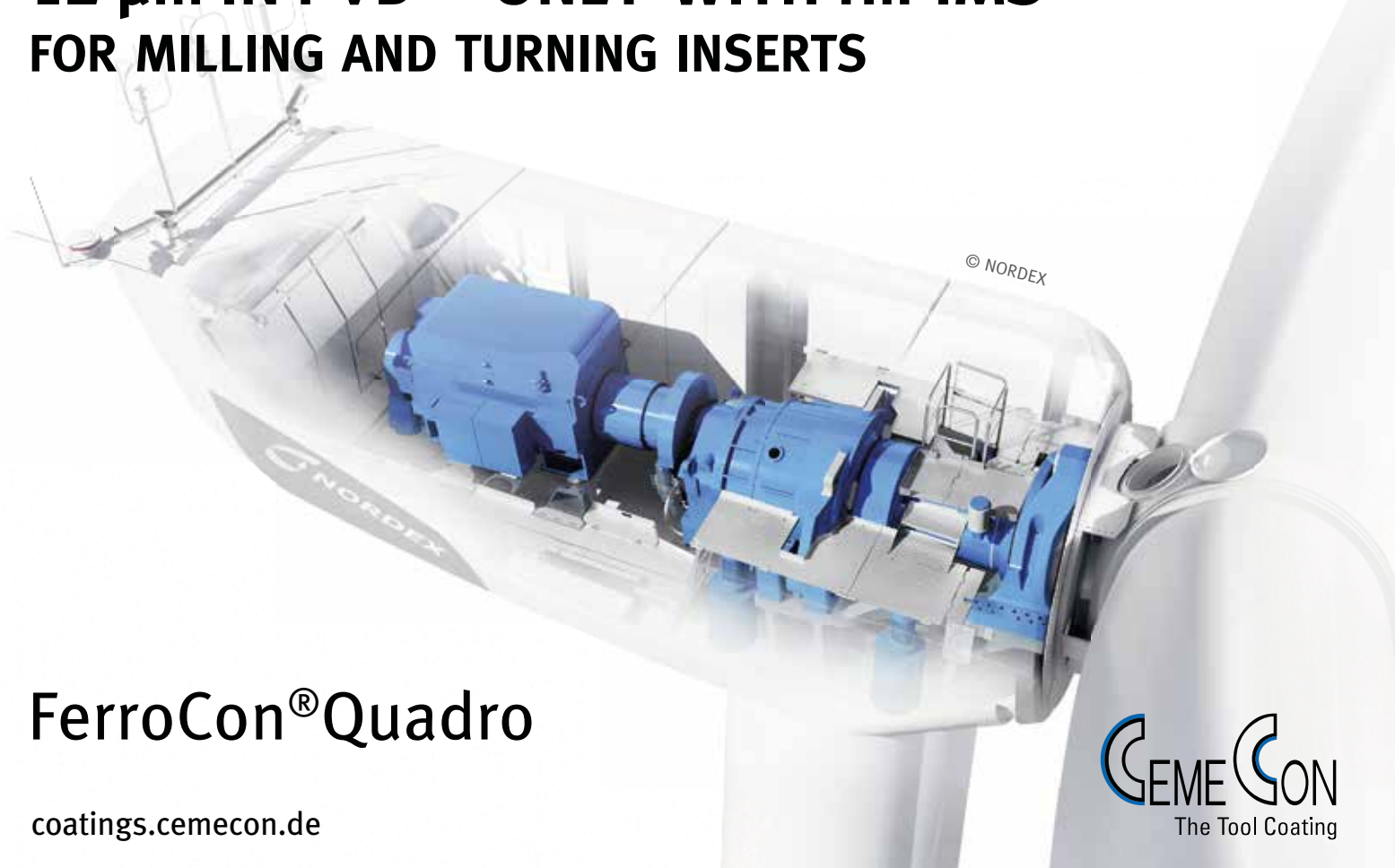
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12 µm IN PVD – ONLY WITH HiPIMS FOR MILLING AND TURNING INSERTS



FerroCon® Quadro

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CEMECON
The Tool Coating

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OUR NEXT EVENTS 2019

16TH - 21ST SEPTEMBER 2019

EMO
Hanover (Germany)

01ST - 03RD OCTOBER 2019

Toolex
Sosnowiec (Poland)

08TH - 10TH OCTOBER 2019

V2019 – Vakuum & Plasma
Dresden (Germany)

09TH OCTOBER 2019

mav - Expertentreff
Innovative Zerspanungskonzepte
Ludwigsburg (Germany)

22ND - 24TH OCTOBER 2019

SOUTH-TEC 2019
Greenville (USA)

12TH - 13TH NOVEMBER 2019

VDI Wissenstransfer Zerspanung
Düsseldorf (Germany)

20TH - 23RD NOVEMBER 2019

Metalex
Bangkok (Thailand)

26TH - 29TH NOVEMBER 2019

**China International Mould,
Metalworking, Plastics &
Packaging Exhibition (DMP)**
ShenZhen (China)

28TH - 29TH DECEMBER 2019

38. Hager Symposium
Hagen (Germany)

05TH - 06TH DECEMBER 2019

**The 18th international Conference on
Reactive Sputter Deposition (RSD)**
Braunschweig (Germany)