

12 μm make the difference in a competitive market



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.

Huarui INVESTS IN CC800[®] HiPIMS

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.

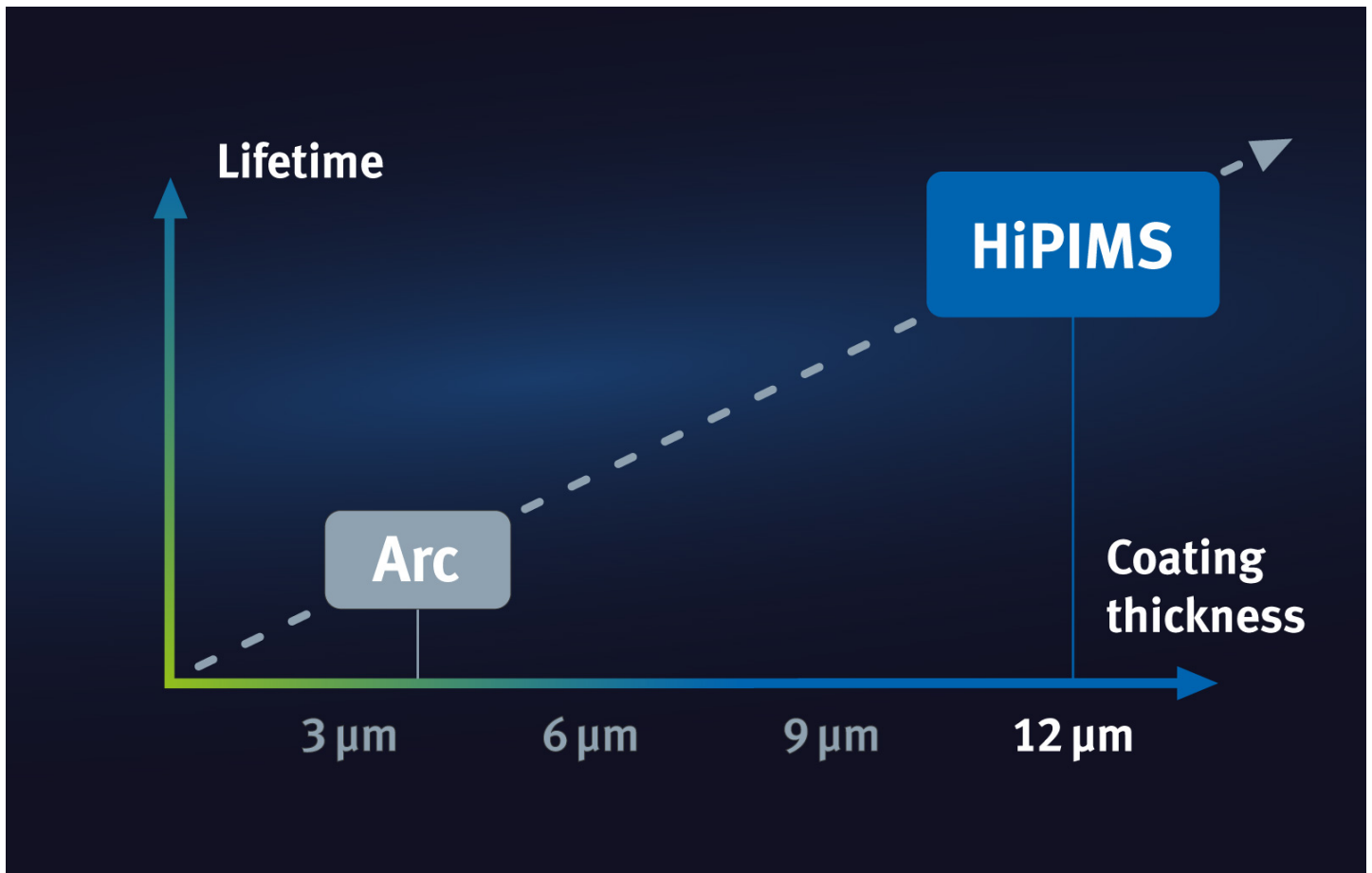
Whether in mold making, aerospace, the automobile, railroad and energy industries – for roughing and heavy duty machining, customers need maximum metal removal rates. Usual chip thickness and feed rates during high performance cutting can only be achieved with the toughest coatings. High wear is also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



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

Advantage InoxaCon®

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

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.

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Frictional heat

Coating plant

Bonding

Coating stress

Coating specifications

Milling

Aerospace

Thick layers

12 μm

Roughing Machining

Low abrasion wear

Zhuzhou Huarui Precision Cutting Tools