Always the right solution for tool and mold makers

Milling punches from carbide: CCDia®CarbideSpeed® ensures excellent surface finishes.

Make punches, dies and molds with HiPIMS and diamond coatings

Milling or die sinking? This question arises almost daily in tool and die making when it comes to the production of punches, dies, injection molds or similar. Unfortunately, there is no one true machining strategy for all eventualities. Diverse requirements determine which process achieves the desired results. CemeCon has the right premium coating on hand for all cases, making it the ideal partner for tool and mold making.

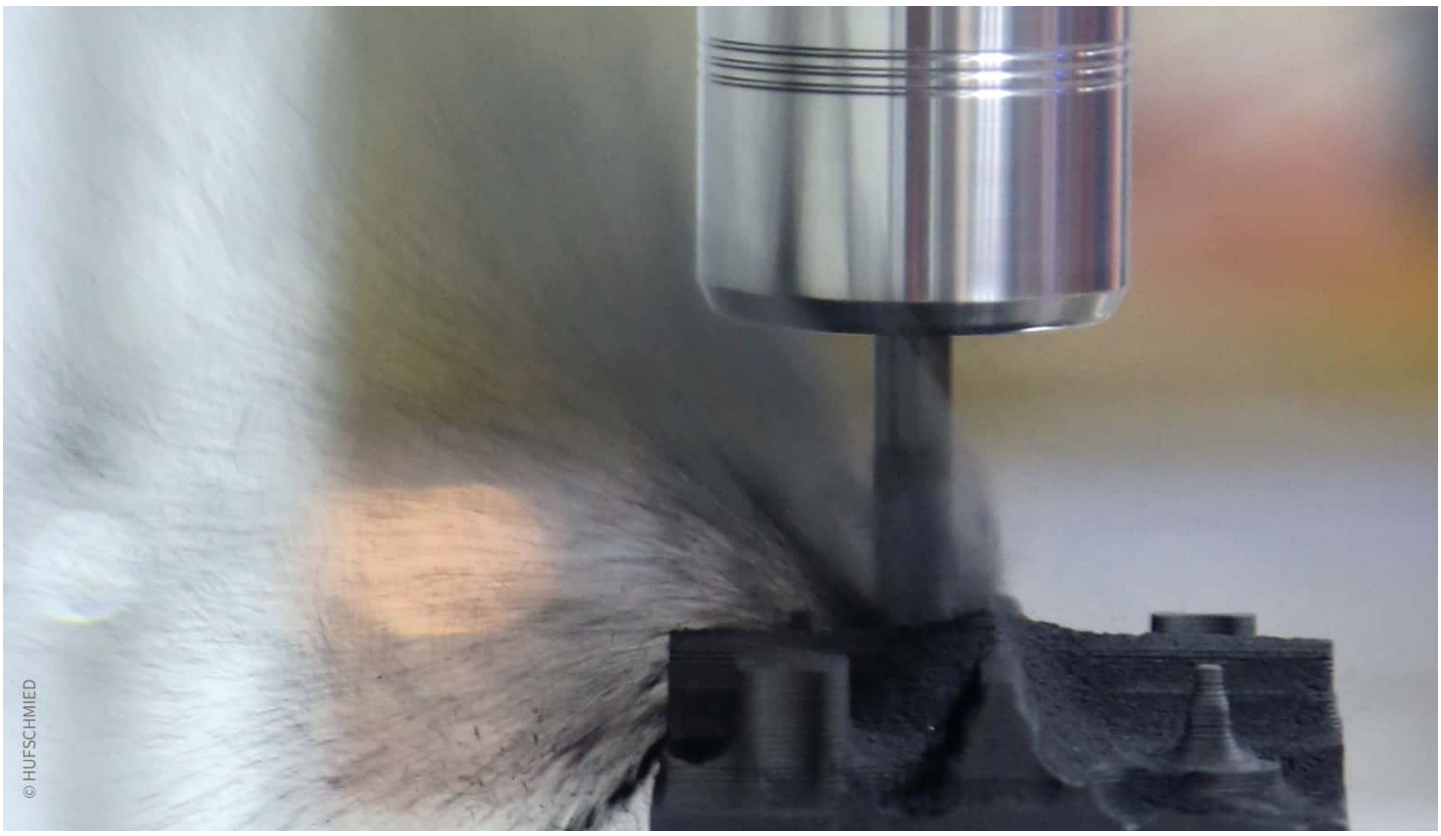
Tool and mold makers usually use hardened steel or carbide for the production of punches, dies and injection molds. This is because these resistant materials ensure long service lives. What is advantageous for precision parts, however, makes machining more difficult. This is why, in the past, manufacturers mainly relied on die sinking with copper or graphite electrodes. Today, however, technological advancements also enable economical milling of the sometimes very complex geometries.

The choice of the right manufacturing process depends on various factors. For example, EDM is unbeatable, especially for the manufacture of components with narrow and deep contours. It can be used economically, especially in large-scale production and for large components. In contrast, HSC milling impresses with fast machining times and the best surface finishes, usually even without reworking. In addition, it enables highly complex 3D contours. Milling plays out its advantages especially for small series and test tools.

“The processes have one thing in common: High-performance precision tools are an absolute must - either

for manufacturing the electrodes from graphite or copper or for milling the steel or carbide itself," knows Manfred Weigand, Product Manager Round Tools at CemeCon. "With our HiPIMS and diamond coatings, we offer the right solution for every application."

The basis of all premium coatings are their coating materials: CemeCon has developed the diamond coating CCDia®CarbideSpeed® especially for milling carbide. As diamond coatings are unsuitable for machining ferrous materials due to their high affinity, the HiPIMS coatings FerroCon® and InoxaCon® represent the right choice for milling the hardened steels. For machining the graphite electrodes, CemeCon recommends the diamond coating material CCDia®CarbonSpeed®. For machining the copper electrodes, the HiPIMS coating material AluCon® is excellently suited, but a thin diamond coating can also produce the required results.



Diamond coatings from CemeCon offer the ideal solution for milling graphite electrodes (Photo: HUFSCHMIED).

Manfred Weigand: "Close cooperation with our customers is the key to designing the right coating for a specific application. Because only if we know all the parameters can we optimally match pretreatment, coating material, specification, such as coating thickness, and finish to each other, the tool and the requirements. This is how precision tools with our premium coatings achieve outstanding results! By the way: whether HiPIMS or diamond - our customers always have the same contact persons who know all products in detail."

Those who have their tools coated at CemeCon not only find the right solution for every application, but also have logistical advantages. The Würselen coating center is home to both diamond and HiPIMS coating systems. The fact that all tools can be sent to one address ensures less logistical effort and thus saves time and costs. This also applies to the CemeCon coating centers on the other continents. Here, mirrored processes and productions always enable the same coating in the same, accustomed quality.

At a glance: Solutions for tool and mold makers			
Graphite milling	**Copper milling**	**Carbide milling**	**Steel milling**
CCDia®CarbonSpeed®	AluCon®	CCDia®CarbideSpeed®	FerroCon®, InoxaCon®
Coating material Diamond	**Coating material** HiPIMS (TiB2 based)	**Coating material** Diamond	**Coating material** HiPIMS (AlTiN respectively TiAlSiN based)

AluCon®

InoxaCon®

FerroCon®

Diamond

CCDia® CarbonSpeed

HiPIMS

Carbide

Tool and mould making

graphite electrodes

stamp

Dies

CCDia®CarbideSpeed®

injection molds

sinking

copper electrodes