**SEPTEMBER 2024 | AMB STUTTGART**

**PCD milling programme for aluminium machining**

With over 30 years of experience in the development and production of precision tools made from ultra-hard cutting materials, Horn offers a comprehensive range of PCD milling cutters for productive machining of aluminium. During this time, Horn has proven itself in numerous industries - and has thus become an important partner in the field of PCD tools. The new PCD milling programme is part of this long-standing development and complements the portfolio. Based on market experience and customer requirements, Horn has methodically developed a complete standard programme of milling tools. The standard series range DM20 to DM90 enables reliable machining of aluminium, non-ferrous metals and technical plastics. With a focus on resource conservation, customised cutting edge lengths and tool design, the tools are available from stock.

With this product programme, Horn offers a wide range of standard and special tools, from simple PCD end mills to complex and modular combination tools. As a driving force, the focus is on economical, well thought out solutions with high productivity combined with Horn technology, flexibility and reliability. The Horn high-performance PCD grade consists of a sophisticated mixture of diamond grains of different sizes. As the volume percentage of diamond increases, so do the effective hardness, toughness and cutting edge quality. Strict quality standards and their control are a matter of course and ensure strong performance.

**Machining of aluminium**

The tensile strength, elongation, hardness and yield strength of aluminium can be influenced by alloying elements such as silicon, magnesium, copper, zinc and manganese. The material can become soft during machining due to heat development, stick to the cutting tool and even destroy it due to disrupted chip flow. It is therefore important that the material and cutting parameters are properly matched. It depends on the aluminium alloy, the cutting tool, the cutting feed rate and speed, as well as the type and quantity of coolant.

Aluminium is a versatile material that is used in all sectors of the economy. Supplemented by the new PCD milling programme, Horn offers a broad portfolio of optimised tools for economical machining of the light metal.

**HORN tools for machining aluminium**

The most important features of HORN‘s wide range of standard and special tools are special chip breaking geometries with sharp inserts, polished rake faces and coatings with very good anti-friction properties to counter the strong adhesion tendency of aluminium. Carbide inserts for grooving are ground peripherally to ensure extremely sharp inserts. For machining aluminium alloys with a high silicon content, the inserts are coated. The portfolio includes coated and uncoated circular tools and solid carbide cutters for milling. Single-edged milling cutters with a large chip space are also available for rapid metal removal rate based on high cutting data. Ultra hard cutting materials such as PCD and CVD-D with precision-lasered cutting edges are available for long service life or more complex work. MCD-tipped tools are used for high-polish machining of reflective surfaces or aluminium blow moulds, for example.

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Photo caption: With the new PCD milling programme, Horn offers a wide range of standard and special tools, from simple PCD end mills to complex and modular combination tools.

Source: HORN/Sauermann



Photo caption: The Horn high-performance PCD grade consists of a sophisticated mixture of diamond grains of different sizes.

Source: HORN/Sauermann

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