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CVD coatings for steel and cast iron machining

Steel and cast iron are the most frequently used materials in the machining industry. They are used, for example, for pump housings, compressors or steering systems. The developers at MAPAL always focus on the economical machining of these large groups of materials, as two successful examples show.

**MAPAL Präzisionswerkzeuge
Dr. Kress KG**
Postfach 1520 | D-73405 Aalen

Contact:
Andreas Enzenbach

Phone: +49 7361 585-3683
Fax: +49 7361 585-1019
E-mail: presse@mapal.com

Cutting material series for milling cast and steel components

MAPAL has developed a specially tailored CVD-coated cutting material series for milling cast and steel materials. The new cutting materials show their strengths especially at high cutting speeds or when users are dry milling.

The new cutting materials HC760, HC770 and HC775 impress with their extremely heat-resistant α -aluminium oxide coating with excellent layer adhesion, and thus long tool lives. Users can apply them at very high cutting speeds in a significantly higher range than their counterparts with a PVD coating. This results in shorter machining times.

The new cutting materials are also ideally suited for dry machining. Stable machine conditions are required for their use.

Fine boring of interrupted cuts with multiple cutting edges with EA system and CVD coating

Machinists are faced with open or extremely interrupted cuts in the case of gear pump cast housings, for example. MAPAL has developed a fine boring tool with multiple cutting edges and guide pads in order to machine such

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bores faster, more reliably and more cost-effectively. MAPAL's own CVD coating, which ensures a long tool life, is used for these tools. It is ideally suited for difficult machining conditions during reaming and fine boring.

Several cutting edges on the tool significantly reduce the machining time compared with spindle tools or fine boring tools with one cutting edge. At the same time, the guide pads arranged opposite the cutting edges ensure maximum accuracy. The tool can be set to high precision. Appropriate distribution of material removal on the cutting edges ensures long tool lives and very good surface quality.

MAPAL's own EasyAdjust system (EA system) is used to clamp the indexable inserts. Its cassette holds the indexable insert stably and without any play. The back taper of the minor cutting edge is already integrated in the cassette, thus eliminating the need for back taper setting. The precise guidance of the cassette on a precision guide pin ensures that the back taper remains unchanged even during diameter setting.

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