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MAPAL expands milling cutter range for lightweight materials

The trend towards lightweight construction is resulting in the constant development of new materials with a very wide range of properties which create new demands also on the machining. Tool manufacturers have to react here, as reliable machining is no longer assured with the normal geometries. MAPAL has now expanded its extensive milling cutter product range that has been well-established on the market for many years to include four new high-performance milling cutters.

Thermoplastics are widely used in the automotive sector, for example in the production of instrument panels. Due to its low melting temperature, the material requires special tool geometries in order to avoid melting. MAPAL has therefore developed the solid carbide OptiMill-Thermoplastic with very sharp cutting edges for the reliable machining of thermoplastics. Its special geometry not only ensures the optimum discharge of the chips, but also minimises the build-up of heat during milling. MAPAL also offers the OptiMill-Thermoplastic-FR for the machining of special fibre-reinforced thermoplastics, predominantly carbon fibres. As carbon fibres are very abrasive, the solid carbide milling cutter is diamond coated. Thanks to the arrangement of the cutting edges around the circumference, the fibres are cut off cleanly without burr formation.

The solid carbide end milling cutter, OptiMill-Composite-UD, was added to the milling cutter range for the milling of parts made from fibre composite materials such as CFRP that are either very thin or are difficult to machine. Thanks to its cutting edge geometry, it achieves a simultaneous pulling and pushing cut with compression effect in the part, thus preventing delaminations and fibre projections. The milling cutter is diamond coated for a long tool life.

Due to their low weight and flexural strength, honeycomb structures are used for support and reinforcement between the inner and outer skin of aircraft or in the

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vanes of wind energy converters. The difficulty when machining this very light material is its comb structure. MAPAL has developed the OptiMill-Honeycomb to meet the special demands of machining honeycombs. The eight-bladed solid carbide end milling cutter has extremely sharp cutting edges, a helix angle of 15 degrees and very fine serration. The new OptiMill-Honeycomb reliably machines even honeycombs with a wide variety of outer layers or with fillings.

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The new milling cutters, OptiMill-Thermoplastic, OptiMill-Thermoplastic-FR, OptiMill-Composite-UD and OptiMill-Honeycomb are immediately available in a wide range of dimensions.

Captions:

MAPAL expands its milling cutter range for lightweight materials with the four models, OptiMill-Composite-UD, OptiMill-Honeycomb, OptiMill-Thermoplastic and OptiMill-Thermoplastic-FR.

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MAPAL – tooling the customer's success

MAPAL Präzisionswerkzeuge Dr. Kress KG is one of the leading international suppliers of precision tools for the machining of practically all materials. The company founded in 1950 supplies leading customers from the automotive and aerospace industries and from machine and plant engineering. With its innovations the family-owned company sets trends and standards in production and machining technology. MAPAL sees itself as a technology partner, supporting its customers with the development of efficient and resource-conserving machining processes using individual tool concepts. The company is represented with production facilities, sales subsidiaries and representatives in 44 countries worldwide. In 2014 the MAPAL Group had 4,500 employees, generating sales of EUR 510 million.

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