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New series of cutting materials for the milling of cast iron grades

MAPAL offers a broad portfolio of ISO tools for milling operations. A new series of cutting materials has been developed specially for the milling of cast iron that covers the whole bandwidth of grades – GJL, GJV and GJS.

Preliminary results show that the new cutting materials allow not only a significant increase in tool life and hence greater cost-effectiveness, but also higher cutting speeds and therefore maximum productivity. The cutting material series is based on newly developed carbide substrates. The structures of the carbides have been modelled in such a way that they provide an optimum relationship between ductility and wear resistance.

The cutting material series includes three PVD-coated carbides and two CVD-coated grades. The PVD coating here consists of an optimised TiAlCrN with very fine structuring of the layers to create an optimum relationship between ductility and hardness/wear resistance. The CVD coating is based on an MT-TiCN with an alpha-Al₂O₃ top coat. This layer combination offers not only high wear resistance, but also good thermal stability.

A special post-treatment has been developed for both the PVD coating and the CVD coating that ensures an extremely smooth surface and hence an optimum chip flow. This minimises tribochemical wear. With the CVD coating, the post-treatment additionally sets a selective intrinsic stress in the coating, stabilising the cutting edge or increasing the ductility of the cutting material.

The optimum cutting material for the milling of cast iron grades is therefore available for everything from dry to wet machining and for a very wide range of applications and machine conditions.

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Pictorial material:

MAPAL has developed new cutting materials for the milling of all cast grades.

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Short profile of MAPAL Dr. Kress KG:

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 in particular 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 outlets and service partners in 44 countries. In 2015 the MAPAL Group had 4,800 employees, generating sales of EUR 540 million.