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**New PCD milling programme – end mills**

The new PCD milling programme from Paul Horn GmbH, with a focus on productive and reliable machining of aluminium, includes a wide range of standard and special tools from end mills to complex and modular combination tools. The PCD end mills in the DM20–DM33 series are universal all-rounders and, with their respective technical specifications, are suitable for a wide range of applications.

DM20

The PCD end mills in the DM20 series are universal all-rounders and are suitable for a wide range of applications. The double-edged PCD-tipped milling tools with centre cutting capability cover almost the entire range of machining applications and are universally suitable for non-ferrous metals and non-metallic materials such as engineering plastics. The series is rounded off by a specially adapted body design for dry or wet machining. Different PCD substrates as well as modern and customised technologies for cutting edge preparation ensure productive machining processes, as well as reliably high performance and a long tool life. With a semi-standard tool, HORN also offers the fast and flexible option of customisation to meet specific customer requirements.

DM25

The DM25 product range with cutting edge lengths between 8 mm (0.314“) and 18 mm (0.708“) is particularly suitable for contour and finishing milling operations on external and internal contours when high cutting feed rates are required. The multi-edge design significantly reduces machining cycle times. While the R series with internal cooling is preferred for non-ferrous metals, the C series with an additional positive rake angle is suitable for machining abrasive materials through to graphite and fibre-reinforced plastics.

DM27

Modern fibre-reinforced composites are lighter, stronger and more stable - which is why they are becoming increasingly important for industrial applications. When machining these abrasive materials, the focus is on the quality of the component edges. Fraying, delamination or chipping create stringent criteria for tool geometry and grade in order to be able to control these component-specific and wear-related conditions. The risk of vibration on thin-walled components or when trim cutting panels, taking into account down or up milling options, represents an additional consideration for stable milling. With a positive-negative insert arrangement, coupled with internal cooling and a centre cut, the tools in the DM27 series offer a coordinated overall package for universal milling applications.

DM30

Milling tools in the DM30 series are specially designed for cutting tall components. The PCD-tipped milling tools in a spiral design impress with their smooth, paring cutting action . The segmented design reduces cutting forces and machining noise. The precise positioning and arrangement of the PCD inserts ensures high surface quality milling without burrs. The tools are suitable for peripheral milling, trimming or circular milling operations and can be used at small to medium infeed depths, as well as for finishing operations with maximum utilisation of the cutting edge length. The cutting edges are high quality and burr-free.

DM33

Components made from high-strength and forged aluminium are challenging to machine and place stringent demands on the tool. In contrast to classic aluminium die casting, extruded and forged aluminium causes long chip formation due to the lack of silicon and a compressed material structure. In addition, there are built-up edges and above-average stress on the tool. With the DM33 series, HORN offers a customised milling concept. Whether for face milling or ramping, the tools are designed to produce bores or pockets by helical entry into solid material without pre-machining and with high infeed values. Holes, cut-outs, pockets or profiles can be produced reliably and economically using tools of 12 mm (0.472“) to 16 mm (0.630“) and 20 mm (0.787“) diameter. The tools are designed with a central coolant channel and offer reliable chip flow even during deep machining operations. For larger bores, larger screw-in diameters are available in the DG-V series in conjunction with tool holders of various lengths.

This extensive expansion of the Horn portfolio in the area of ultra-hard cutting materials offers users the opportunity to obtain the appropriate, reliable tool solution for their machining applications. The focus is on cost-effectiveness and productivity combined with Horn technology, flexibility and reliability.

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Photo caption: The double-edged PCD-tipped milling tools in the DM20 series with centre cutting capability cover almost the entire range of machining applications.

Source: HORN/Sauermann



Photo caption: The DM25 product range is particularly suitable for contour and finish milling operations on external and internal contours when high cutting feed rates are required.

Source: HORN/Sauermann



Photo caption: With a positive-negative insert arrangement, coupled with internal cooling and centre cutting, the tools in the DM27 series offer a coordinated overall package for universal milling applications.

Source: HORN/Sauermann



Photo caption: The milling tools in the DM30 series are specially designed for cutting tall components.

Source: HORN/Sauermann



Photo caption: The DM33 series PCD milling cutter is a milling concept designed for applications where there is a tendency for the formation of built-up edges and for above-average stress on the tool.

Source: HORN/Sauermann

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