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Industry news

Lach's cool runner

German company Lach Diamant is using the occasion of this year's AMB metalworking fair in Stuttgart to launch its new dreborid® cool-injection system, which is available for all Lach PCD and CBN cutting tools.

The increased use of highly abrasive materials, such as high silicon-aluminium alloys, composite materials (GRP, CFRP, etc), titanium and hard ferrous metals in the automobile and aircraft industries and manufacturers of wind energy plants has put increasing high demands on the machining process for selected cutting materials.

PCBN cutting tools are superior PCD with regard to their thermal resistance (up to 1500°C with PCBN and a maximum of only 720°C with PCD), but in terms of hardness (diamond is 7000 Knoop hardness, CBN is only 4700) and therefore cutting performance, there are no alternatives to PCD for machining of non-ferrous materials.

In the past, designing PCD milling cutters and step drills with targeted cooling channels in the tool body to reduce the temperature at the cutting edge had only limited success: the PCD cutting edge failed in extreme application cases when machining aluminium and composite fibre materials. Premature wear and breakage of the PCD cutting edge all the way to graphitisation were the consequences.

Lach has addressed this problem with its new, patented invention the dreborid cool-injection system. With this, the PCD cutting edge is integrated into the coolant channel or the integrated coolant

channel is led directly through the PCD cutting edge. The stressed cutting edge is thus relieved from damaging heat through maximum cooling by liquid, air or gas, since the "muzzle opening" of the coolant stream is located directly at the cutting face of the cutting insert.

Accordingly, the cooling of the cutting insert is achieved from the inside. The coolant can easily dissipate the heat from the material, the coolant then exiting from the coolant channel at the immediate proximity of the cutting edge and being directed

by the shortest distance to the outside of the cutting inserts. The result is optimum cooling and excellent chip removal.

With this dreborid cool-injection system being available for Lach's range of multiple-edged Monoblock PCD milling cutters and step-drilling tools, these tools will become even more efficient and versatile in their application. This system can also bring great advantages to Lach's range of single edged cutting tools used in extreme turning operations.

www.lach-diamant.de

