PRESS RELEASE

Date: 28.05.2019

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MAPAL Expert Day highlights potential in steel and cast machining

Have the possibilities for increasing efficiency in the machining of steel and cast materials been exhausted? Not in the slightest, as the "MAPAL Dialog" Expert Day proved. Scientists from Dortmund Technical University, users and the tool specialists from MAPAL presented new solutions with great potential.

150 customers and interested parties in machining obtain information from the Aalen-based precision tool manufacturer

In the middle of May, the precision tool manufacturer MAPAL invited around 150 customers and interested parties to the "MAPAL Dialog" Expert Day at the company headquarters in Aalen. The two one-day events each focused on new developments in the machining of steel and cast materials. MAPAL's very own core business, as Managing Partner Dr Jochen Kress emphasised in his introduction: "This is where our roots lie." In order to break ground with new machining possibilities and more productivity for users, MAPAL is continuously and intensively working with these workpiece materials. Both in terms of tool geometry and high-performance coatings. "We have built up a lot of expertise," emphasised Kress during his presentation. The company has its own coating facilities and a large analytical department for tools and workpiece materials. New opportunities will also be created thanks to the close cooperation between the research and development department and universities and scientific institutes.

Optimal process strategy and key influencing factors

An insight into one of these research projects was provided by Professor Dr Dirk Biermann, Head of the Institute for Machining Research at the Technical University of Dortmund. At the heart of the project was a central application, a part from a major car manufacturer. Biermann explained the optimum process strategy for spiral deep bore drilling with solid carbide tools and presented the influence of minimum quantity lubrication (MQL) on the temperature development during machining. What changes

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does the machining process do to the edges of the parts? And how can 3D printed tool holders be used for vibration dampening during turning? These questions were also part of the research, with results that were as astonishing as they were interesting.

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Maximum performance and process reliability with intelligently optimised tools

Specialists from MAPAL highlighted the specific advantages provided by optimised tools when machining steel and cast materials. Ulrich Krenzer, Managing Director of the Centre of Competence for Solid Carbide Tools, demonstrated how a three-edged drill performs during cast and steel machining. It can machine an axial piston pump in half the time compared to a double edge tool. At the same time, it doubles the number of parts from 5,400 to 10,800.

Jochen Schmidt, Product Manager Clamping Technology, explained additive manufacturing and its advantages in hydraulic clamping technology. In order to achieve better cutting parameters and higher process reliability, the specialists use additive manufacturing to place the clamping range closer to the point of action and increase stability. “This has an enormous impact on the cost per part,” stressed Schmidt.

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Special milling tools instead of a new machine

Markus Zapke, Team Leader for Tooling, Equipment & Processes at the Siemens gas turbine plant in Berlin, reported on the challenge of machining the blade groove of a large gas turbine. Siemens usually relies on reaming for this slot machining; a machining process for the production of inner and outer profiles. "In this case the slots were too deep, we would have had to buy a new machine," said Zapke. As an alternative, MAPAL has developed custom tools for milling with which the slot can be machined smoothly.

Other presentations dealt with increasing tool life through high-performance coatings and new tools as well as methods for chip removal. Another topic that was discussed was the digitisation of production processes and the intelligent networking of machines.

Machining live at the machine

In the Research and Development Centre, the participants had the opportunity to see how the tools performed when machined live. MAPAL presented trochoidal milling as well as high-performance machining in the field of drilling and milling. Another highlight was a new chip breaker for steel and the milling cutter range with radial ISO indexable inserts for steel and cast machining. Customers and interested parties used the opportunity to obtain information from the development engineers and technicians and have some in-depth discussions with them.

During the breaks, there was also a lively exchange between the participants and the speakers, product specialists and Dr Jochen Kress. The accompanying product exhibition showed other sectors and fields of application in which MAPAL is active. These include die & mould sector, digital tool logistics and the field of e-mobility.

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Captions:

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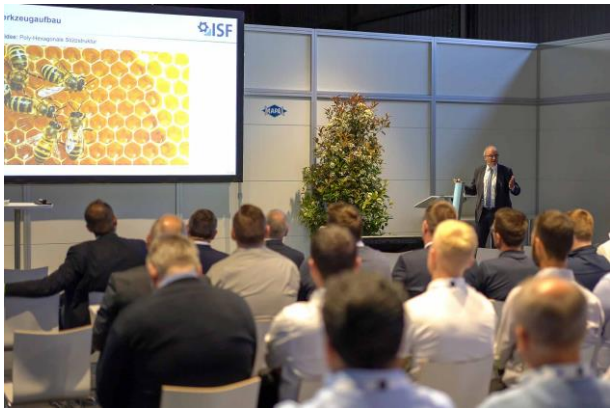
The participants of the “MAPAL Dialog” Expert Day received information from the research and development centre about the precision tool manufacturer’s new product innovations.



Honeycomb as a model: Amazing research results were presented at the “MAPAL Dialog” Expert Day by Professor Dr.-Ing. Dirk Biermann, Director of the Institute for Metal-Cutting Manufacturing at the Technical University of Dortmund.

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Dr Jochen Kress, President of the MAPAL Group, tells of the company's intensive, continuous involvement in steel and cast machining.

150 customers and interested parties accepted MAPAL's invitation and learned all about the potential in steel and cast machining.

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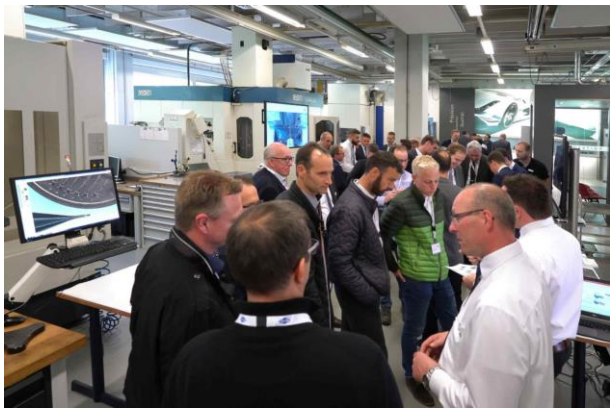

Visitors to the MAPAL Dialog Expert Day took the opportunity to see the possibilities presented live on processing machines in the Research and Development Centre.

In-depth discussions with product managers and development engineers took place …

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… where very specific contents could be examined in detail.

If published, please send a voucher copy
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