

VOLLMER PCD DAYS FOCUSES ON NEW TECHNOLOGY



Vollmer of America recently hosted a three day event at their Carnegie, Pennsylvania location focused on PCD technology. This event was modeled after a similar event that was held at the company's corporate headquarters in Biberach, Germany.

Demonstrations of new machine technology along with guest speakers from the major PCD suppliers generated excitement and great dialogue throughout the week.

Arndt Hauger, PCD Product Manager, and Alexander Schmid, PCD Technician, from Biberach, Germany were both present to highlight some of the latest Vollmer technology to the attendees. Two fully automated QXD200 machines were demonstrated to explain various machine options and the processing of PCD drills. The QWD760 machine was also demonstrated to illustrate the machine's capabilities for producing PCD tools for the automotive industry.

In addition to the hands-on machine demonstrations, Arndt presented information to the group regarding the ability to process drills and end mills utilizing the ExLevel software. This software is a 3D modeling package that enables the machine operator or tool designer to create a virtual tool prior to any processing in the machine. This model can be exported to other software packages and used to verify results in a virtual operation. Changes or modifications to designs can be made quickly and transferred directly to the machine.

Arndt also detailed the new polishing functions available on the machine. The polishing function creates a much smoother cutting edge resulting in longer tool life and improved part finishes in many applications. Currently, this polishing is limited to straight edges

on tools and saws, but new features are inevitable as Vollmer continues to introduce additional capabilities for the QXD platform several times a year.

Thursday was the focal point of the week as speakers representing Zoller, Megadiamond, Element Six, Diamond Innovations, American Superabrasives and GM Powertrain discussed specific items of interest to the attendees. Over 70 attendees from 27 companies were on hand to see the demonstrations and hear the various speakers.

Werner Lueken of Zoller began the presentations discussing current trends that Zoller has seen in measurement requirements at various end users and tool producers. Werner also shared some of the methods and solutions that Zoller has introduced to make tool manufacture and resharpening more efficient. Matt Collier of Megadiamond was the next speaker and discussed the V-tec end mill in great detail. This PCD configuration is showing great promise in many aerospace applications as the braze joint is removed from the heat zone allowing the tool to be run at increased speeds and feeds when compared to standard planar PCD designs.

Lunch was followed with a presentation by Stephen Kelly of Element Six. Stephen provided an overview of Element Six and discussed the newly introduced WPC102 product. The WPC102 is a multilayer, multimodal product that has shown to have quicker processing times. The metal layer on top of the diamond has also been shown to protect the diamond from leaching and chipping in certain applications. Dwight Dyer of Diamond Innovations was the next speaker. Dwight discussed the 1200 product along with some of the success seen using this product in processing of titanium materials. Information on tool processing was also shared with the groups and how to avoid the most common modes of tool failure.

Mike Mustin of American Superabrasives followed with a presentation on Ilijin PCBN materials. PCBN continues to be an area of huge potential growth for the tool producers in a wide assortment of applications. Dr. Viktor Astakhov, a faculty member of Michigan State University who is involved heavily with PCD use at various GM Powertrain locations finished the day's presentations. Viktor shared many of the items

that prohibit the automakers from having a great understanding of the PCD materials and also showed examples of defective tool fabrication that leads to premature tool failure. The tools run in these operations often run at speeds approaching 25,000 rpm in high silicon aluminum materials. Chips from these materials adhere to the tool and can help lead to failure.

Several other manufacturers were on hand to discuss materials and tool processing with the attendees. Dave Simpson and Aaron Nolan represented Sumitomo Electric Carbide, Russ Scofield represented Big Sky EDM, and Woosuk Chung of Iljin was in attendance with several of his colleagues. Brian Jones from Advanced Superabrasives also demonstrated proper methods of dressing grinding wheels.

Many positive comments have been received from the attendees concerning the agenda that was in place and several mentioned how nice it was to be able to interact with all of the PCD manufacturers in one location. Multiple attendees have requested that Vollmer conduct more seminars that also address more advanced applications and processes.