

International Technology Day – Many Possibilities with Waterjet Machines from FLOW

More than 50 experts in waterjet technology met at Flow Europe GmbH in Bretten, Germany, at the end of September this year for the first International Waterjet Technology Day. The visitors, representing every branch of industry, from subcontractor to Formula 1 engineer, were fascinated and amazed alike by the presentations and variety of possibilities offered by waterjets. Dr. Mohammed Hashish, the “godfather of waterjet cutting”, who had traveled to Bretten from the USA especially for the event, managed to arouse the enthusiasm of even the most experienced of experts.

Bretten, November 2004 - Waterjet technology cannot only be used to cut a variety of materials such as steel, titanium, copper, brass, plastic, glass or composites. Drilling and graving also belong to the spectrum of applications of this technology. In graphic presentations Dr. Hashish, inventor of abrasive waterjet cutting and Senior Vice President Technology at Flow International, demonstrated the incredible diversity and flexibility of this technology.

Hole drilling has had a firm place in the everyday applications of the technology for many years. In the aerospace industry, for example, up to 1.3 million cooling air holes are drilled into the blades of a single aircraft engine turbine. Neither heat nor stress may act on the material during this process.

“Today, with abrasive waterjet machining, we have a micromachining process at our disposal that allows us to safely drill holes of the smallest diameters,” said Dr. Hashish. According to the scientist, process control is a crucial factor in achieving the most different of drill hole geometries. His example of the new F-22 jetfighter vividly illustrated the possibilities of the technology for the machining of plate metal. This fighter needs a heat conducting plate of titanium with 35,000 square holes with a web width of 0.25 mm. “Were one to cut this plate with a laser, it would look like a potato chip at the end,” said Dr. Hashish in explaining the thermal stress on this material.

Apart from further speeches on precision cutting and milling with waterjets, Flow Europe also presented its new and spacious Demonstration Laboratory. Live demonstrations of the new Waterjet Machining Center WMC^{®2} impressively illustrated the many advantages of this further development of the successful WMC. The WMC2 offers shorter work cycles through optimized work processes in the FlowMaster[®] control, a modular design and the possibility of equipping the machine with different pressure intensifiers or HyPlex pumps. A variety of cutting heads can be used depending on the application, allowing the WMC2 to perform reliable productivity at the highest level.

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A further highlight was the demonstrations on the IFB Integrated Flying Bridge. This showed two examples of FLOW's ongoing investment in technology by cutting aluminium parts with less than 0.035 mm taper, and also drilling 1 mm holes in 25 mm thick glass without fracture. "The Technology Day was a complete success and clearly showed how strong our company is," said Jochen Trautmann, General Manager of Flow Europe GmbH.

Flow Europe GmbH is a division of Flow International Corporation, USA and the European Headquarters for all products relating to ultra-high pressure waterjet cutting technology. FLOW is a world leader in the development, design and sales of complete water- and abrasive-jet cutting machines for processing a wide variety of raw materials.

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