Press Release

Synova Launches 5-Axis MCS 500 for 3D Machining and Hole-Drilling in Europe

Advanced Laser MicroJet® system for aviation and power generation industries premieres at EMO 2017 in Hannover

DUILLIER, Switzerland, September 12, 2017 - Synova, a provider of advanced laser cutting systems, has developed a new CNC (Computer Numerical Control) machine with 5-axis capability to satisfy stringent technical requirements in the aerospace and energy sectors. As engine manufacturers continuously seek to improve performance, high-quality machining of turbine engine components and process stability in production are critical to success. The new MCS 500 with water jet guided Laser MicroJet® (LMJ) technology allows precise and fast 2D and 3D laser cutting and drilling of hot section components used in modern jet engines and industrial gas turbines with high repeatability.

The MCS 500 is based on a platform manufactured by Makino. Thanks to Synova's "wet" laser process, it drills cylindrical cooling air holes in turbine blades and vanes and cuts complex geometries such as diffuser shapes without any heat damage. Superalloy turbine blades with non-conducting thermal barrier coating (TBC) can be processed in one simple step without cracks or delamination in the ceramic coating and with extremely low recast. "Synova's MCS 500 Laser MicroJet machine enables our customers to drill holes and to shape diffusers in components already pre-coated with a thermal barrier, as opposed to post-coating drilling processes currently being used. This approach significantly simplifies the overall process, improves quality and reduces overall manufacturing", says Dr Bernold Richerzhagen, Synova Founder and CEO.

The LMJ machine also enables 3D machining of components that are made of new heat-resistant and ultra-hard materials such as ceramic-matrix composites (CMCs) without affecting their basic structure. GE Aviation is an aero-engine manufacturer that relies on Synova's MCS 500 for machining CMC shrouds for its LEAP engines.

The LMJ system can be flexibly incorporated into production as either a standalone system or into automated lines for operator-free high-volume production. It is equipped with various interfaces that can be custom configured with automation and handling according to individual needs.

All MCS machines incorporate Synova's unique water jet guided laser technology (Laser MicroJet®) that generates a cylindrical laser beam within a hair-thin water jet, resulting in perfectly parallel walls, tight kerf widths, smooth cutting surfaces and sharp edges without heat affected zone and free of micro-cracks, oxidation and depositions.

Synova will exhibit at EMO in Hannover, Germany from September 18 to 23 in Hall 12, booth A39. Join us there and learn more about the technology.

About Synova

Synova S.A., headquartered in Duillier, Switzerland, manufactures advanced laser cutting systems that incorporate the proprietary water jet guided laser technology (Laser MicroJet®) in a true industrial CNC platform. Customers benefit from significant yield and quality improvements in cutting, as well as enhanced capabilities for precision machining a wide range of materials. For more information, contact us at sales@synova.ch or visit our website at www.synova.ch.

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