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With Art: two images -- overall and work area images of VLD-300
Caption: Mitsui Seiki introduces new laser drilling machine offering high-speed production and precision
Link to: http://www.gorcomm.com/pr/VLD300.jpg **AND/OR** http://www.gorcomm.com/pr/VLD300.jpg

Mitsui Seiki Demos 5-axis CNC laser drilling machine and "Heavy Metal" MCs at IMTS 2008

Booth 8767

[FRANKLIN LAKES, NJ – MAY 28, 2007] Highlights in Mitsui Seiki's IMTS display from September 8 – 13 in Chicago will be its new Laser Drilling Machine and its lineup of "Heavy Metal" Horizontal and Vertical CNC Machining Centers.

The "VLD-300" is a small, vertical, Nd:YAG laser drilling machine for 12-in. cube parts (300 mm x 300 mm x 300 mm in X, Y, Z axes). This machine was developed collaboratively with several aerospace engine component manufacturers who expressed a need for a higher-speed and more accurate laser-drilling machine than what was currently available on the market. It's common for some workpieces, primarily jet engine high temperature alloy parts, to require about 3,000 small diameter cooling airflow holes – each at a different angle – to be drilled in a non-contact manner. Laser is often the best option for speed and to minimize material stress. Inconel, Waspalloy, Hastalloy, and nickel-based titanium alloys are the typical materials.

The VLD-300 offers positioning accuracy and repeatability in X, Y, Z-axes of 0.00004" (0.001 mm). A axis positioning accuracy is ±6 arc seconds; repeatability ±3 arc seconds. C-axis accuracy is ±4arc seconds; repeatability ±2 arc seconds. X, Y, Z-axes cutting feed rate is 0.004 ~ 787" (0.1 ~ 20,000 mm) X, Y, Z-axes acceleration rate is 1.5g.

Mitsui Seiki partnered with a European laser company for the Nd:YAG version of this new machine. The VLD-300 is designed to also work with CO2, diode pump, and

fiber lasers for different aerospace and other industry applications, such as certain electronics, medical, and automotive parts.

For rigidity and stability, the VLD-300 has a cast iron bed and linear motor drives. A dust collection system, combined with an interior work area of smooth, highly sloped surfaces, keeps cutting debris from contaminating the work zone and equipment. The Nd:YAG system offers a focal length of 200 mm or 300 mm with a height sensor for scanning and work offset probing. The machine is "automation ready" for devices such as pallets and robotic loading/unloading equipment. A Fanuc 310iM control features the Microsoft® Windows®-based platform and seamlessly controls the machine, laser, and the auxiliary equipment.

Mitsui Seiki's line of "Heavy Metal" CNC machining centers are the result of decades of experience and R&D in titanium and nickel alloy airframe and aerospace engine component manufacturing. The 4 and 5-axis horizontal machining centers in the advanced product line range from 500 mm x 500 mm to 1,500 mm x 1500 mm square pallets (20 in. to 60 in.).

All the machines are designed for highest volumetric accuracy and stiffness. The beds use a patented cast metal for rigidity and thermal stability. Hand scraping is used to achieve the geometrical requirements now being demanded by progressive energy equipment manufacturers. This, combined with positioning accuracies, measured in microns ensure overall volumetric component precision. A variety of milling spindles are available, from ultra high torque geared units (essential for cutting tough materials in low rpm, high frequency machining) to high speed direct drive spindles for super finish applications. These machines are capable of handling large bending moments at the tool taper interface up to 35,000 inch pounds to increase productivity in roughing operations and stability in finishing operations.

For more information, visit IMTS 2008 Booth #8767, or contact Mitsui Seiki, 563 Commerce Street, Franklin, NJ, (201) 337-1300, www.mitsuiseiki.com.

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