

## **New Linear Drive Machining Center Offering Superior Speed and Motion Control**

(Franklin Lakes, NJ – May 2003) Mitsui Seiki USA, Inc. is announcing the launch of a new vertical machining center, the “VL 50,” featuring linear motor technology. The successful application of linear motors on the X, Y, and Z-axes, a “first” in the industry according to Mitsui Seiki, offers superior speed and motion control to perform high-speed point milling in multi-axis contouring applications. Linear technology also provides very high geometric and positioning accuracies, offering consistently high precision even on long job runs. The low-heat, counteracting, permanent magnet linear motors Mitsui Seiki uses eliminate mechanical backlash, vibration, and noise normally associated with ball screws and other types of drives.

Mitsui Seiki developed the design of this machine to satisfy specific needs in the mold and die, aerospace, and precision parts industries for high speed machining of high temperature alloys and hardened tool steel components. These applications were chosen because of the severe requirements for 3-D contouring, tight tolerances, and fine surface finishes. “The overall applications for this new technology are far reaching,” says Scott Walker, President of Mitsui Seiki USA, “and will eventually encompass many aspects of machining center use, in all industries.” Walker sites such examples as semiconductor, micro machining, and graphite EDM parts as possible future areas. The new VL 50 has an X, Y, Z work envelope of approximately 16” x 12” x 8” and its toolchanger can accommodate 16 tools. Its rapid traverse and cutting feed rates in all axes is 1,574 ipm (40 m/min). The acceleration/deceleration rate is 1G. Spindle speeds range from 300 to 30,000 rpm. The control system is a Fanuc 15i MB.

Contributing to the speed and accuracy benefits of the VL 50 is a custom alloy used on the sliding components – column, spindle head and carriage – which reduces the weight of these components while maintaining excellent stiffness and thermal stability. The three-point, heavily ribbed cast iron bed weighs over 14,300 lbs. (6500 kg) and fully supports ultra-high machining speeds. A precision glass scale feedback system detects 0.1-micron increments. Its ISO 230-2 bi-directional accuracy is less than 2 microns. All axes incorporate roller guideways that are mounted on hand scraped surfaces to ensure accuracy, reduce wear, and volumetric tolerance degradation.

Additional important design features include excellent coolant and chip management to meet the needs of high performance cutting, enhanced ergonomics and safety systems for operators, setup, and maintenance personnel.

For more information, contact Mitsui Seiki USA, Inc., (201) 337-1300, [www.mitsuseiki.com](http://www.mitsuseiki.com).

###