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Mazak to Spotlight Advanced Medical Manufacturing Technology at MD&M West
Multi-Tasking and 5-axis solutions produce small, complex parts with absolute precision

Florence, Kentucky, November 19, 2012 – At the 2013 Medical Design and Manufacturing (MD&M) West Show, taking place Feb. 12 – 14 at the Anaheim Convention Center in California, Mazak will demonstrate how its advanced Multi-Tasking and 5-axis technologies can accurately machine small, highly complex medical parts and significantly reduce design-to-market time for quickly fulfilling patient needs.

Show attendees who visit Mazak booth 3189 will experience the new INTEGREGX i-100ST Multi-Tasking machining center and VERTICAL CENTER NEXUS COMPACT 5-axis vertical machining center. Both are small-footprint, high-speed machines that Mazak designed to provide high levels of precision and productivity as well as superior surface finishes when cutting tough materials, such as stainless steel, Inconel and titanium.

Both machines utilize Mazak's new MATRIX 2 CNC control specifically designed for optimized 5-axis machining. The control is a Level 3 control in Mazak's 3-4-5 "The Next Level of Productivity" manufacturing solution. The 3-4-5 solution is the industry's most comprehensive grouping of manufacturing resources and one that encompasses Mazak's 3 Levels of Control, 4 Levels of Automation and 5 Levels of Multi-Tasking. 3-4-5 allows manufacturers to effectively identify the right level of technology needed for improving their specific operations and advancing productivity to the next level.

Within the MATRIX 2 CNC control are enhanced hardware and software functionalities that make the control easy to use while also delivering high accuracy and increased productivity. Control hardware performance is much faster with higher processing speeds for small increment operation. Furthermore, a 5-axis spline interpolation function in the control's software provides smooth toolpaths from long block-by-block programs, easy tool vector control and shorter cycle times as well as superior surface finishes.

INTEGREGX i-100ST

As a Level 4 machine in Mazak's 5 Levels of Multi-Tasking, the INTEGREX i-100ST provides full, simultaneous 5-axis capability. The 5 Levels of Multi-Tasking allow manufacturers to precisely match machine capabilities to part-processing requirements. Machine features and functionalities within the other four levels range from Level 1 with single spindle and rotating tool capabilities and Level 2 with Y-axis off-center machining to Level 3 machines featuring independent milling spindle headstocks with B-axis indexing, as well as full Y-axis travels and tool storage, and Level 5 Ultra-Tasking machines with additional specialized machining functions and Multi-Tasking automation.

The INTEGREX i-100ST takes up minimal floor space, measuring 119.2" x 98.2". It employs two opposing turning spindles, a milling spindle and lower turret for processing first and second operations simultaneously or performing required sequential operations on a single workpiece.

The machine's turning spindles both employ a 15 hp integral motor spindle with maximum spindle speeds of 6,000 rpm. For high precision C-axis contouring, the main spindle indexes in 0.0001-degree increments, while the second spindle provides increments of 0.001 degrees. Each spindle features a 6" chuck with a 2.4" bore size that accommodates bar stock of up to 2" in diameter.

The INTEGREX i-100ST has a powerful 10 hp, 12,000-rpm milling spindle mounted in the rotating B-axis with a range of 240 degrees in 0.0001-degree indexing increments. For high accuracy of motion, B-axis scale feedback comes standard on the machine. The machine's 36-tool magazine accommodates tools up to 5.1" in diameter when neighboring stations are empty and up to 3.5" in diameter when stations are occupied.

For off-centerline operations, the INTEGREX i-100ST provides ample axes travels of 8.2" in Y, 17.7" (8.7" second spindle) with a below centerline capability of 1.96" in X and 35.5" in Z, allowing the machine to process a wide range of part sizes and shapes. The machine's three linear axes attain high-speed rapid traverse rates of 1,575 ipm (40 m/min).

The machine's lower drum turret indexes per step in just 0.14 seconds with nine tool positions to enhance machining productivity. The turret can work at either the main or second turning spindles with the same tool, which allows it to perform balanced cutting operations on one part working in tandem with the machine's vertical milling spindle. There is also the option for milling capability with the lower turret. All of which provides the flexibility to process a workpiece's second operation in the machine's second spindle or to perform first and second operations simultaneously on one workpiece.

VERTICAL CENTER NEXUS COMPACT

The Mazak VERTICAL CENTER NEXUS COMPACT vertical machining center, available in 3- and 5-axis versions, easily fits into most facilities with its 65" x 88" compact footprint. The machine gets its power and versatility from a robust, high torque 25 hp, 12,000-rpm CAT 40 spindle and axis travels of 19.69" in X, 16.93" in Y and

20.08” in Z. An optional 40 hp, 20,000-rpm spindle is also available. Furthermore, its table measures 25.6” x 15.7” and accommodates parts up to 661 lbs.

For rigid and precise 5-axis machining of small, complex parts, VERTICAL CENTER NEXUS COMPACT’s rotary/tilt table is constructed with durable high-speed roller drive technology, allowing the table to rotate and tilt at speeds of 100 rpm and 75 rpm, respectively. The table supports a maximum workpiece weight of 66 lbs., tilts at angles from -20 degrees to 120 degrees and provides a holding torque of 249 ft lbs and machining torque of 63 ft lbs.

The VERTICAL CENTER NEXUS COMPACT features Mazak’s MX Hybrid Roller Guide System to deliver levels of durability and reliability that result in long-term accuracy. This innovative way system increases vibration dampening, extends tool life, handles higher load capacities and eliminates tramp oil in the coolant by utilizing a greener grease-based lubrication system.

About Mazak Corporation

Mazak Corporation is a leader in the design and manufacture of productivity-improving machine tool solutions. Committed to being a partner to customers with innovative technology, its world-class facility in Florence, Kentucky recently increased its production capacity to 200 machines per month. Continuous training and development of the workforce has created a “lean” culture, which has created opportunities for continuing growth in America. Mazak maintains eight Technology Centers across North America to provide local hands-on applications, service and sales support to its customers. For more information on Mazak's products and solutions, visit www.mazakusa.com or follow us on Twitter at @MazakCorp and on Facebook at <http://www.facebook.com/MazakCorp>.

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