Five-Axis Machining Center Minimizes Workpiece Setup

Makino's F5-5XR vertical machining center combines the speed, precision and flexibility required for tight tolerance, five-axis, hard-milling applications. Based upon the F5, the F5-5XR is an affordable five-axis solution for complex, die/mold, and medical parts.
The F5-5XR offers the same speed and precision of the F5, but with the added flexibility inherent to five-axis machining centers. Using simultaneous five-axis, "2+3 machining" or even simple five-face machining techniques, the F5-5XR helps manufacturers reduce part set-up and handling, cut lead-times, improve quality, and lower costs, while providing outstanding precision and fine finishes in very demanding, complex, 3D contoured part applications.

The F5-5XR provides X-, Y-, and Z-axis travels of 35.4, 19.7, and 17.7 in. respectively. The 39.4 x 19.7 in. machine work table provides ample room for the 5XR table and workpiece arrangement, as well as additional table space for a vice to accommodate other non-five axis work and an optional laser Automatic Tool Length Measurement (ATLM) system.

The F5-5XR's new rotary table design offers advanced performance with increased speed, accuracy, and power. Its compact design provides an expanded work zone over previous rotary tables, facilitating larger workpieces.

A dual taper, double disc braking mechanism generates higher clamping torque for both the tilt and rotary axes, supporting heavier cutting forces in hard materials. This table design also offers improved productivity through increased tilt and rotary speeds, while maintaining precise positioning accuracies with a repeatability of ±2 arc seconds.

Included in the standard configuration of the F5-5XR is a highly productive 20,000 rpm, HSK-63A spindle which incorporates Makino's patented core-cooling, under-race, and jacket spindle temperature control system. The two-range spindle supplies unique, wide range capability with the stiffness and rigidity at lower ranges for roughing operations, and vibration, chatter-free production of small details and fine features utilizing small tools at high rpm. In addition, a 30 tool magazine provides capacity for a wide array of tooling.

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