

For Immediate Release

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Photo caption: parts such as aerospace blades are ideal for more efficient, more accurate machining with Mitsui Seiki's new Dynamic 5-axis Fixture Offset software function.

Dynamic 5-Axis Fixture Offset Introduced By Mitsui Seiki

[FRANKLIN LAKES, NJ – November 2005] Mitsui Seiki USA has announced the availability of an Advanced Dynamic 5-Axis Fixture Offset function on its Fanuc controlled 5-axis CNC machining centers. This feature allows tremendous versatility and reduced part changeover for high-precision 4- and 5-axis simultaneous machining in addition to 5-sided and polyhedral machining.

One of Mitsui Seiki's newest machines, the Vertex 550-5X, 5-axis vertical machining center is equipped standard with the new Fanuc 31i control which has many features to support precision high-speed 5-axis applications and is the fastest of its kind. The Advanced Dynamic 5-Axis Fixture Offset function incorporated in the control is exclusive only to Mitsui Seiki, and is not available on other machine brands.

According to Scott Walker, President of Mitsui Seiki USA, 4- and 5-axis simultaneous machining of complex shapes, particularly simultaneously contoured aerospace and medical device parts, are sometimes difficult to run in production because part form accuracy and surface finish are often the direct result of how well the part is fixtured. In many applications, the part datum must be aligned perfectly at the "programmed center points" which take into account the orbiting points of the rotary axes, or the part program must be reposted to offset the error in setting up subsequent parts. The results are usually the same, either the manufacturer has to utilize very elaborate fixtures, or the operator must be diligent enough to set the new parts back on center. With Mitsui Seiki's Advanced Dynamic 5-axis fixture offset compensation, the operator can simply apply a work coordinate offset adjustment and the control will continuously track and update the part programmed vector points dynamically in real time. In some cases a spindle probe can be utilized to pick up the necessary part datum's and apply the 5 axis work coordinate offsets automatically.

The standard Fanuc controls have a “rotary table dynamic fixture offset” function, which calculates the vector for the destination of the rotary axis command and offsets the X-, Y-, and Z-axis destination accordingly. This scheme is suitable for 5-sided machining and only works when the centerline of the rotary axes intersect at right angles.

The advanced Mitsui Seiki Dynamic 5-Axis Fixture Offset function continuously calculates the offset vector for current position and offsets X-, Y- and Z-axis position accordingly in real time. As a result, not only can the machine be used for 5-sided machining, but also 4- and 5-axis simultaneous machining.

Dynamic 5-Axis Fixture Offset is featured on Mitsui Seiki’s new Vertex 550-5X VMC, an exceptionally compact and fast vertical machining center that delivers high volumetric accuracy. The machine has a standard 15,000-rpm spindle with 25,000-rpm available as an option.

For more information, contact Mitsui Seiki USA, Inc. (201) 337-1300, or on the web at www.mitsuseiki.com.

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