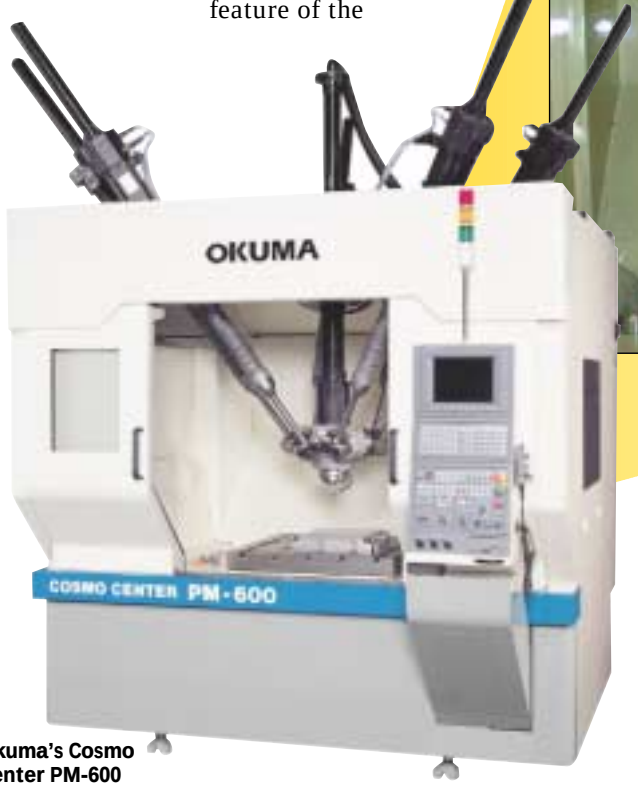
High speed and efficiency in an unusual package

THE COSMO CENTER PM-600 IS A high-efficiency die/mold machine that integrates operations for cutting complicated shapes. It operates continuously and tackles high-speed machining as well as sculptured surfaces.

The machine is efficient reports its manufacturer, thanks to its fast spindle speeds and acc/dec rates (328 ft/min). These keep noncutting time to a minimum. A six-axis control, which is a feature of the parallel-mechanism design, provides a high degree of freedom and integrates operations. The parallel-mechanism design also eliminates the need for guideways.



Okuma's Cosmo Center PM-600 parallel-mechanism machine tool handles mass production of complicated shapes as well as die/mold machining.

The 7-kW, 30,000-rpm spindle is controlled by expanding or contracting six supporting ballscrews. Each ballscrew is integrated with a hollow servomotor and a hollow rotary encoder developed for the parallel mechanism as a drive-and-position-detection unit. The control unit is an Okuma OSP-U100M.

Each universal joint consists of a combination of pretensioned roller bearings. The hexapod axes for the feed system have a ballscrew with a wide lead. And the hexapod drive axes use common parts for easy maintenance.

The attitude and position of the spindle is controlled by expanding and contracting six ballscrews.

In addition, the Cosmo Center's table holds a load capacity of 1,100 lb. Furthermore, the machine provides ample axis movement with *X* and *Y*-axes travels of 23.26 in. as well as 15.75 in. in *Z*.

A 40-taper spindle motor delivers speeds from 50 to 12,000 rpm (50 to 30,000 rpm optional). The spindle slants within a range of ±25°.

An integrated 20-station automatic toolchanger for part machining or a 12-station automatic toolchanger for die/mold machining provides continuous operation on the Cosmo Center. ■

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