

Production Machine Adds Rotary Transfer Concepts

BY DEREK KORN

CNC technology has increased the flexibility of rotary transfer machines to the point that they can be used for more than just dedicated, high-volume production work. Some of these machines are now viable alternatives for medium-volume jobs and even relatively small batches, in some instances.

Hydromat (Saint Louis, Missouri) has developed a new machine platform that it says melds the company's CNC rotary transfer philosophy with machining center principles to offer an alternative to stand-alone production lines and flexible machining systems. Its Icon "productivity machine" also can produce parts that are larger than most conventional rotary transfer machines can accommodate.

The six-station Icon can machine parts ranging in size from 2- to 8-inch cubes. At the heart of the machine is a rotary table that transfers six 300-mm

workholding pallets to the machine's six stations (table rotation time is 4.5 seconds). Four of these stations (located at positions 2, 3, 5 and 6) can be fitted with both vertical and horizontal milling spindles, enabling eight tools to cut at the same time. Each spindle offers 29 kW of power and maximum speed of 12,000 rpm. Pallet B-axis rotation provides the spindles with access to five sides of a part and enables simultaneous, four-axis machining operations. Each spindle has a dedicated 10-tool, disc-style automatic tool changer that accommodates HSK 63 toolholders (optional 80-bar-pressure coolant through the spindle is available).

This six-station production machining center can have up to eight tools cutting at the same time. The two idle stations on either side of the machine can be used for loading, gaging or re-clamping parts.





A central rotary table transfers 300-mm workholding pallets to the machine's six stations. Four of these stations can perform simultaneous vertical and horizontal milling operations.

The loading station at position 1 allows manual or robotic loading/unloading, while the opposing station at position 4 can be used for gaging, re-clamping or part loading. Inner and outer doors are located at these two non-machining stations. The inner doors keep chips and coolant within the machining zone so that operators can safely handle workpieces while during machining operations. Standard Fanuc 300i controls are located on either side of the machine at positions 1 and 4 for operator convenience. ■

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