RUNNING FEWER PARTS PAYS OFF

ROTARY TRANSFER MACHINES NOW COMPETITIVELY MANUFACTURE SMALL AND MEDIUM LOT SIZES.

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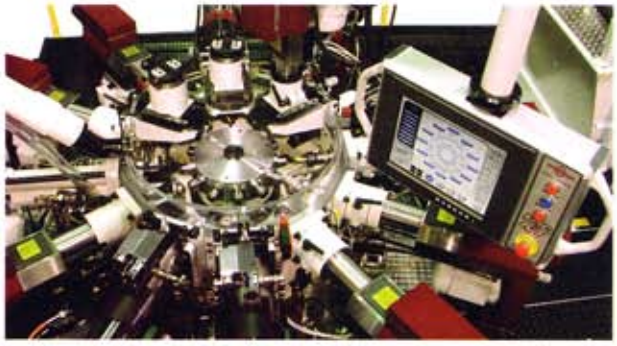

SHOPS USING TRADITIONAL ROTARY TRANSFER systems have always had to justify the long changeover times of such machines by running high-volume jobs. But this is no longer the case because today's advanced rotary transfer machines changeover in hours, making them cost effective and competitive for low-volume jobshop environments as well.

Embedded motion control (EMC) technology stands out as one of the significant reasons for reductions in rotary transfer changeover times. Low cost, full-CNC transfer systems built on EMC architectures transform machine stations into flexible accurate plug-and-play units that shops can quickly and easily configure or reconfigure and position or reposition anywhere around the machine ring. This is possible because the self-contained EMC tool spindle units carry their own hydraulic servo valves and control devices and retain program information no matter where they are stationed.

In addition to quick changeovers, EMC-type machines boost part quality by letting shops use such capabilities as in-process gaging and precision offsetting, part tracking and error mapping to eliminate stack tolerances. These capabilities improve holding positions and tolerances by as much as 15 percent over previous machines.

EMC-type machines further enhance part quality because each station has infinite feed control capability for eliminating retraction marks on O.D.s and I.D.s. Being able to vary feedrates can also help reduce break-through and intersection burrs.

Contributor to this article: Hydromat Inc. (www.hydromat.com)

Comparing changeover time: Standard hydraulic rotary transfer system versus an EMC-type machine

Collet changes:
Standard = 6 min. per station for 12 stations = 72 min.
EMC = 2 min. per station for 12 stations = 24 min.

Station rpm changes:
Standard = 12 min. per station for 6 stations = 72 min.
EMC = 2 min. per station for all 12 stations = 24 min.

Changing flange adaptors:
Standard = approximately 150 min.
EMC (programmable *X*/*Y* flanges) = 1 min.

Changing and setting values:
Standard = 25 min. per valve for 4 valves = 100 min.
EMC = no valves to set

Tooling setup:
Standard = 100 min. to prepare special tooling
EMC = 36 min. (less special tooling is required)

Setting origins:
Standard = 9 min. per station for 9 stations = 81 min.
EMC = 55 min. to do all origins

Setting cut offs:
Standard = about 25 min.
EMC = 2 min.

Totals:
Standard = 600 min. (10 hr.)
EMC = 119 min. (1.9 hr.)