RPM
REPORTING □ PROBING □ MONITORING
□trends in the machining industry□
RPM is a monthly, one-page, PDF newsletter published by DATRON Dynamics, Inc. to cover trends in the high-speed micro-tooling industry.

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Cool Customer!

John Dionne of Hybricon earns Cool Customer accolades due to his ability to optimize the capabilities of Datron machine centers by writing macros that leverage the sheer power of the controller. Hybricon employs Datron machines to manufacture front-panels, compact PCI enclosures, backplanes and rackmount systems. John uses the enormous table travel to set up large fixtures that hold multiple parts. The machine runs unattended while he programs other jobs.

About Hybricon: A world-class manufacturer of backplanes, card frames, and powered enclosures for electronics packaging, this ISO 9001 registered company serves a worldwide market through its headquarters in Ayer, MA.

Tool School.

Just like dad always said, "You need to use the right tool for the job." So consider this, when used for high-speed machining of aluminum, our 2 flute, high-helix tool (0068863K) can obtain feed rates of 250"/min. milling through 1/8" aluminum with superb tool life and edge finishes. Give it a try. And when you're all done and staring at that beautiful part, be sure to put the tool away — because dad also said, "A place for everything and everything in its place."

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"Smart Machines" Manage Tools.

In last month's RPM, we "dropped the smart bomb" — explaining that our unique Z-Correction Probe entitles us to the "Smart CNC Machine" tagline. We also indicated that there are more aspects of our machines that allow us to stake our claim on this self-proclaimed title without hesitation. And while all of this may seem somewhat promotional, our goal is to be simultaneously educational. So, this month, while touting our superior tool management, we hope that we'll provide you with some insight as to the differences in available technology. Here goes.

In the world of machining with large tools, monitoring spindle load can be used as a means of detecting breakage. If there is a fluctuation or drop-off in the current, then the operator knows that the tool might be broken. Unfortunately, the benefits of this process are limited because it is used only as a means of checking tools and reporting possible breakage without systematically replacing the broken tool. So, the best that a manufacturer can hope for is that the machine will shut off and prevent additional damage to costly blanks. Still, production time is lost — and if the tool breakage occurs early in a "lights-out" overnight shift it can significantly impact schedules and revenue. Furthermore, this option is not available for micro-tools because the load involved is sometimes so small that the fluctuation in power usage doesn't register.

Datron's "smarter" Tool Management System™ is made up of three separate components working in concert: the tool checker, the tool changer, and the software. The tool checker is a mechanical sensor that measures tool length and detects the broken tool. The tool changer is a rack, or tray, that has space for spare tools, as well as empty sockets where the machine places broken tools before picking up a replacement. Operators can stock the rack with spare tools, thereby having a ready supply should tools break during "lights out" operation. The software is a macro program that can be set up to run a tool check after executing a number of lines of code. For instance, a tool check macro can initiate a check after every 500 lines of code by employing an "if/then" statement such as, "Measure this tool; if the length is shorter than the listed parameter, then change the tool."

This ability to "manage" tools rather than just check them is another feature that distinguishes Datron products — making them "Smart CNC Machines".