## Programming, Macros Automate CAM's Reach

At Wilson Tool International, two senior CNC programmers demonstrate how management flexibility in executing their jobs has greatly improved productivity from the time orders are received to the completion of machined parts to fill the orders.

**Read more, P54**

*Kevin Hjelmgren (left) and Gary Warlow wrote progams using GibbsCAM macros to automate processes at Wilson Tool's bending division and make parts as needed in "lots of one."*

## Welding Training System Gives Instant Feedback

ALMACO (Nevada, IA) uses the LiveArc welding performance management system to provide immediate training feedback to welding operators to track their performance—both in the simulation and live welding modes, allowing them to correct issues quickly.

**Read more, P62**

*Easy-to-use, the Miller Electric LiveArc system provides immediate feedback on performance to ALMACO welding operators, both in simulation and live welding modes.*

## Presetting System Saves Die-Maker Time, Money

H. Beck Machinery Ltd. (Windsor, ON, Canada) specializes in high-accuracy, large-scale CNC custom machining using 10 large machines from boring mills to a six-axis Droop + Rein mill and a five-axis Fidia machining center.

**Read more, P131**

*Zoller tool management systems have saved H. Beck Machinery machine time and permitted longer untended machine operation in its machining of auto stamping dies from roughing to finishing.*

of-position welding, so that was very important for us to be able to get accurate feedback to correct those."

"The training from LiveArc is very beneficial to employees," said welder/fabricator Johns. "It teaches them how to weld up to ALMACO standards." ✎

For more from Miller Electric Mfg. Co., go to www.millerwelds.com, or phone 920-734-9821.

# Presetting System Saves Die-Maker Time, Money

H. Beck Machinery Ltd. (Windsor, ON, Canada) specializes in high-accuracy, large-scale CNC custom machining using 10 large machines from boring mills to a six-axis Droop + Rein mill and a five-axis Fidia machining center. The company machines automotive stamping dies complete from roughing to finishing. "With our wide range of large capacity milling machines, we can handle a variety of different machining applications, and we are always eager to meet new challenges," said General Manager Markus Lewandowski.



*Markus Lewandowski with the Zoller smile vision-based tool presetter that can measure every type of drilling, turning, and milling tool.*

Beck Machinery's specialized jobs include Class A stamping dies for the automotive OEM and Tier One suppliers. The parts are very large—weighing up to 20 tons—and are for pressing an entire bodyside for a vehicle. They are very costly to cast and then to machine, so mistakes in machining must be avoided.

It typically requires more than two weeks on two shifts for roughing and finishing, so it is essential to have correctly set tools in three dimensions for every machine to run reliably untended. The finishing machines—the Fidia and Droop + Rein—usually run 24/7 with spindle speeds up to 24,000 rpm. The Fidia has run almost 24/7 since 2009. Machines are inspected every year and laser calibrated in each axis.
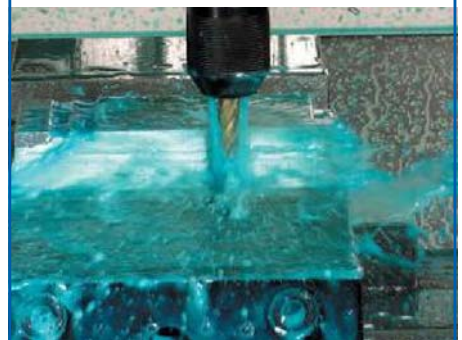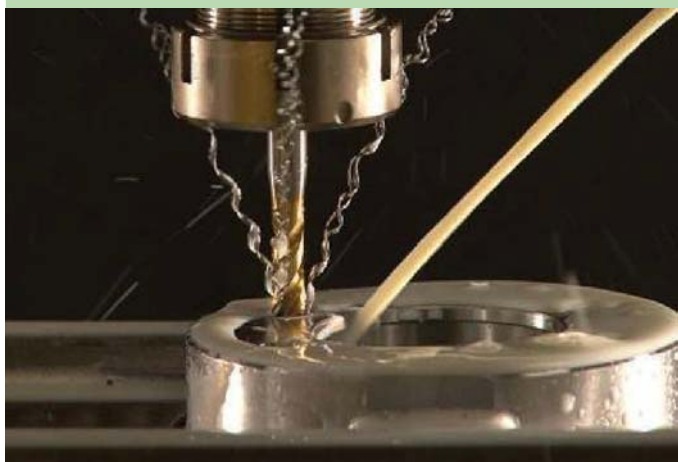
# SHOP SOLUTIONS

The tooling cost, tool adjustment time, and potential variability between tools and inserts used to machine the dies, led Lewandowski to seek a better way of managing the tools. On a trip to Germany, he visited Zoller at a trade show. After further investigation, the company ultimately invested in a Zoller smile CNC presetter, a tool management system, and a Zoller Tool Organizer for storing tool inventory from Zoller Inc. (Ann Arbor, MI).

It was an important step for the company. The new tool management system helped reduce machining time, contributed to improved die quality, resulted in tool cost savings, and reduced tool design time in the CAM room. The tool management system includes storage and interface to the ToolOrganizer, NC program management, management of measuring devices, fixture management, tool usage statistics, stock recording and ordering directly from the presetting department.

"Today, due to optimized tool-change, presetting, and storage procedures, we have gained 1500 hours of machine time per year," Lewandowski said. "Laser-checking the tool length on-machine did not permit running all weekend untended. The machine would stop if it detected an incorrect tool point location before machining. Operators would have to touch off the $Z$ height with the laser checker in the machines. A couple of hours of pre-lasering tool lengths and adjusting was typical before we could begin machining."

H. Beck can now manage its full complement of tools from the office—CNC machines, SupplyBay Vending Machines, Zoller ToolOrganizers—or directly at the presetting and measuring machine and enjoy central data storage in the Zoller system. H. Beck takes advantage of stored tool data and DIN 4000 article characteristic information to optimize inventory cost control as well as tool production. Management can regularly see tool ordering and cost reports.

One of the keys for H. Beck is the tool storage management module of the system that allows it to manage tool assemblies and tool components, and keep accessory inventories up-to-date. The storage location management in the warehouse includes a 3D design kit which allows the company to display current stock three-dimensionally, easily and quickly and assign items to a virtual bin location.

Since H. Beck has installed the Zoller system, it fully prepares each tool for the job before it starts, avoiding missteps in production and operator time wasted looking for the correctly built tool for the job.

"With the Zoller system we identify every tool with a tag," Lewandowski said. "Although the machines have a laser for tool length adjustment, using it makes for a longer tool

measuring cycle at the machine. Presetting on the Zoller, we are now within 0.005 mm on every tool without wasting time on-machine for setting tools.

"Previously, over the machining of a typical die we would have used up to several hours of machine time adjusting tools," Lewandowski said. "The five-axis machine required tool length adjustment for every tool and insert change to identify $Z$. This was done on-machine by feel. Using the Zoller system, on the other hand, has improved the quality of the dies because the Zoller can confirm that the tools are adjusted dead-on, tool to tool."

For their application, serving an entire shop, H. Beck chose the smile 600 universal CNC tool presetter. The Zoller smile at H. Beck provides a measuring range of 600 mm in $Z$, 300 mm in $X$, and 600-mm tool diameter with spindle supports for HSK63 and steep taper 50.

The Zoller smile tool presetting and measuring machine is easy to operate, equipped with all required standard measuring functions, and is designed specifically for measuring tools for manufacturing production. The vision-based tool presetter and measuring machine can measure every type of drilling, turning and milling tool. Its operation is easily learned.

Zoller high-performance image processing technology helps speed tool measuring in the H. Beck tool presetting room. Ideal for shop-floor operation, smile offers an ergonomic, functional, modular design of robust proven components matched with upgradeable software.
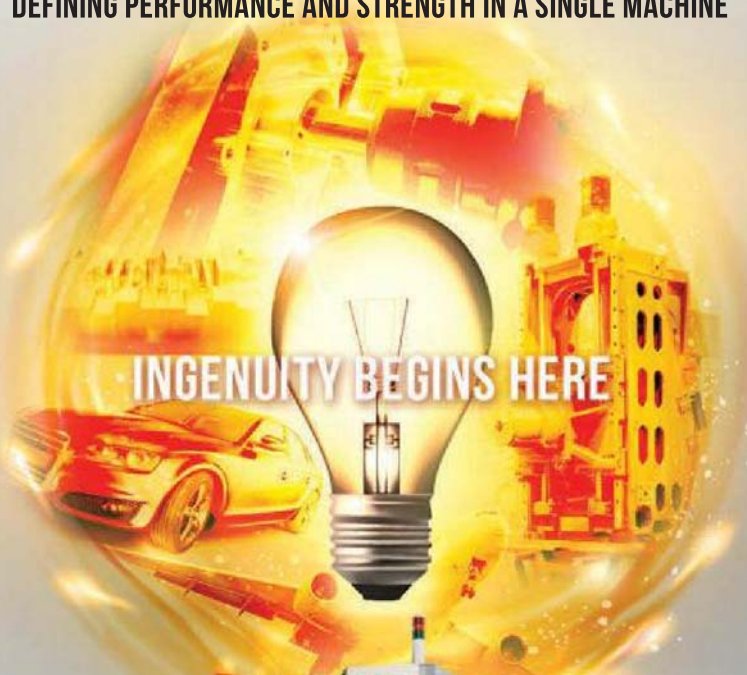
"Every tool is 3D-scanned and that information is output in our machining simulation data," Lewandowski said. "Since every tool has a tool number and known characteristics, we can load the tool in the part process with full confidence that the tool is precisely what is needed to machine the dies. This process means that in the CAM room

we save 200 hours of design time each year by scanning the tools compared to designing them." ↪

For more information from Zoller Inc., go to www.zoller-usa.com, or phone 734-332-4851.