

# Opportunity Knocks

Performance Motion reduces cycle times, improves part quality, and expands capabilities with WorkNC

Fulfilling the dreams of diehard tinkerers and professional manufacturers alike, Performance Motion is in the business of producing high-quality, inexpensive shop-floor components while continuously expanding its capabilities.

Based in Xenia, Ohio, Performance Motion specializes in making motion-controlled products for CNC equipment — specifically touch-probes, rotary tables and 3D printers — and the software needed to program it.

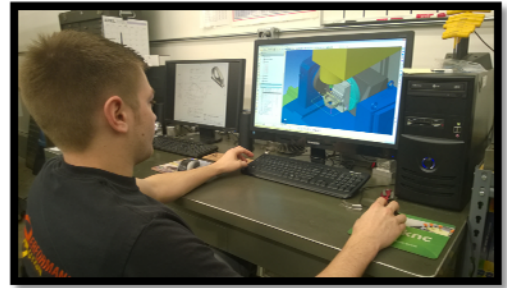
While the company has catered primarily to hobbyists — customers with a knack for designing and building expensive “toys” — it’s expanding to incorporate other markets and taking advantage of its growing capacity by performing general machine work.

“Motion-control equipment for customers who make wood routers accounts for much of our business,” says Vic Hartings, co-owner and plant manager of Performance Motion. “The applications are very broad. In many cases, people buy the components and use them just a couple of times, but we also have product that’s running 40 hours a week. Our stuff is built to last.”

While the business isn’t wholly without competition, Hartings has sized up the other players and notes that most often the product quality simply isn’t there.

“We are very unique because everything we make is designed, developed and manufactured in house,” he explains. “The hardware, software, electronics, and even the circuitry are produced by us. Ninety percent of what we make is done here.”

The only outsourcing that does take place at Performance Motion is that of the sheet-metal enclosures required for electronic components.



## About The Company:

Name: Performance Motion

Business: Production of high-quality shop-floor components

Website: [performancemotion.com](http://performancemotion.com)

## Benefits Achieved:

- Significant time savings and improvement in part quality
- Maximization of existing 3-axis machines and new 5-axis machine
- Expansion of capabilities to include mold production

## Comments:

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**Vic Hartings**  
Co-owner and Plant Manager

**worknc**

### Vero Software

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Co-owned by Hartings, his father — a long-time tool and die maker — and a third partner with a background in software and circuit board design, Performance Motion opened its doors in 2010. For 25-year-old Hartings, who “first ran a Bridgeport machine standing on a five-gallon bucket,” the business was simply an extension of what he and his father had always done.

“Nothing about the company was really planned,” Hartings says. “We always had machines in our garage. We started making things, and it just snowballed from there.”

As business picked up and opportunities for expansion grew, the company acquired a new 5-axis Hurco mill to increase efficiency and expand capabilities.

“We were at the point where we were designing parts that could be made on the equipment that we had, rather than parts that we really wanted to make,” says Hartings, who used a 3-axis machine prior to the purchase of the new 5-axis Hurco. “It worked, but it wasn’t the best.”

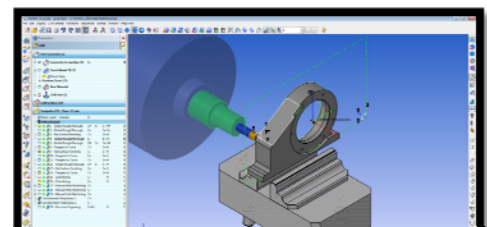
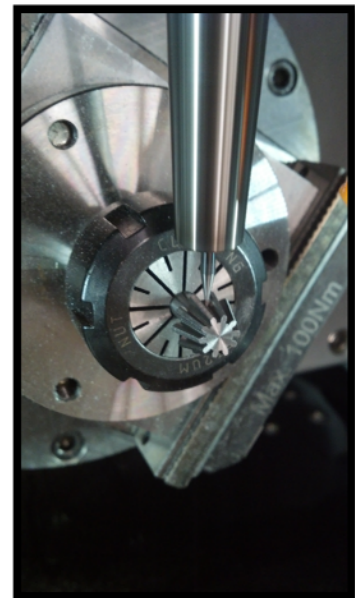
Once the partners decided to acquire the new machine tool, they knew they’d also need new computer-aided-manufacturing software to program it.

“We did have CAM software in the past, but it was just alright,” Hartings says. “We wanted to invest in something that would utilize all of the capabilities that the Hurco has to offer.”

Hartings researched options, shopped around for a more powerful CAM package at industry trade shows and, upon the recommendation of a Hurco representative, decided to try the WorkNC CAM solution by Vero Software.

To make certain that WorkNC was the right solution for Performance Motion, Hartings shared a selection of part files with a WorkNC representative and requested that he program the parts.

“The rep loaded the part files in his laptop for the first time in front of me. I watched him program the parts, and it looked to me like what he did was very minimal,” he says. “I was impressed.”



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After two days of training on the new Hurco and “a one or two-hour crash course” in WorkNC, Hartings was up and running.

“I started on a Wednesday training on the new Hurco, and by Saturday I was making good parts on the machine. I had no formal training on WorkNC, but in a couple of days I was making 5-axis parts.”

The benefits of the CAM implementation also extended to the company’s 3-axis machinery.

“All of the benefits the software were seen on my 3-axis machines,” Hartings says. “Older 3-axis parts were re programmed in WorkNC, and we saw results in time savings and in the quality of the parts. It was like we had a new machine.”

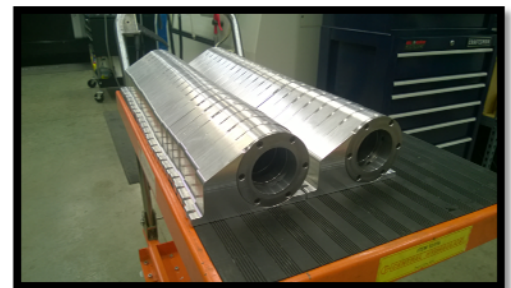
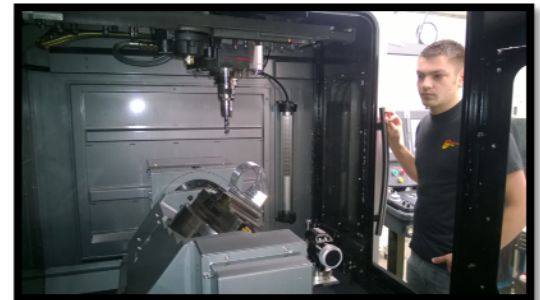
Throughout the implementation process, Hartings was also impressed by the technical support he received from WorkNC representatives. “Customer support is really important, and the support I’ve received has been really phenomenal.

“There is an online service portal that is great. It’s updated with new training videos and information that helps a lot. I had one major issue with a part when I first started. I called the WorkNC customer support and had problem fixed in about an hour. What more can I ask for?”

**Expanding Horizons**

Aluminum accounts for the lion’s share of material used at Performance Motion, while steel, stainless steel, and titanium round out the list. The production of probes requires “hundreds of parts,” while 3D printers and CNC rotary tables require 40-50 parts.

Using his former software and 3-axis machine with an indexer, Hartings could machine a rotary-table housing in 45 minutes. With the implementation of the new Hurco and WorkNC, Hartings can now machine a much higher-quality housing in 17 minutes.



“The quality of the part is twice as good as it used to be,” he says.

“Dimensionally, everything is a lot better. I have better quality and better cycle times that are, in some cases, a third to half of what they used to be. Making customer-specific changes on the fly takes just a few minutes now. Some customers want their logo or a little change here or there to fit their specific needs. I use to dread this with our other CAM software, but WorkNC makes it easy.”

For Hartings, who likes to enjoy both new machining challenges and the predictable “normalcy of production,” a benefit of using WorkNC is the ability to devote time to tackling new projects with greater freedom.

“What’s really cool about WorkNC is the automation,” he says. “I can load my part, set up my stock, and easily go from there. The software knows a lot, in the background of the program, about how to machine a part. It allows the programmer to think about the more complicated work by automatically taking care of the easier stuff.”

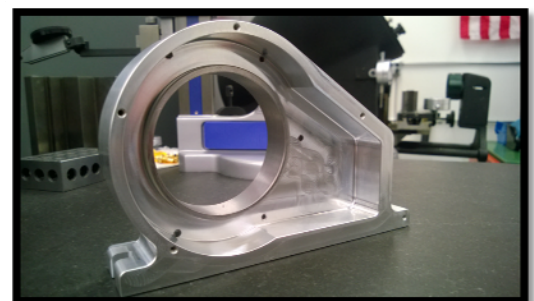
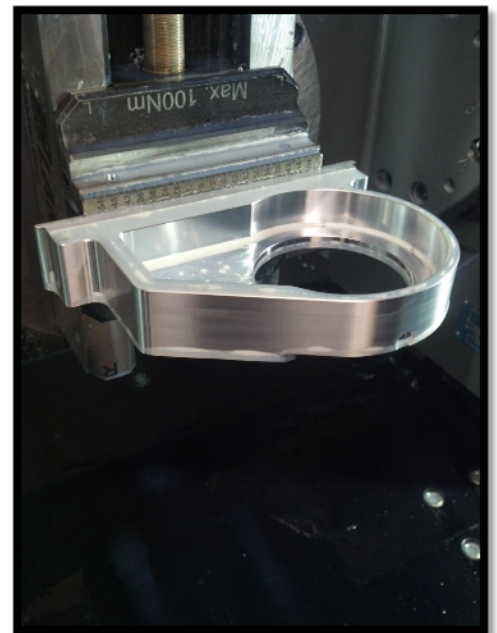
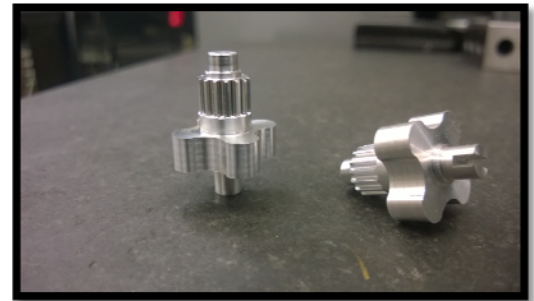
Hartings stresses, however, that while WorkNC is easy to use, it has also empowered him to make challenging parts that he was unable to make before its implementation.

“It’s software that’s really easy to use, but allows you to machine more complex parts,” he says. “It’s also quick. What would take five or six hours to program before takes maybe an hour. Time that would have been spent programming can now be spent on other things.”

Among the tasks upon which the automation and overall efficiency of WorkNC has allowed Hartings to focus is the design and production of prototype parts.

“Recently, I’ve been doing a lot of prototype one-off parts for products that we’re working on,” he says. “That’s where the software is really paying off for us.”

Hartings utilizes computer-aided-design (CAD) software, as well as the CAD capabilities of WorkNC, to produce solid models that are easily imported into the CAM software.



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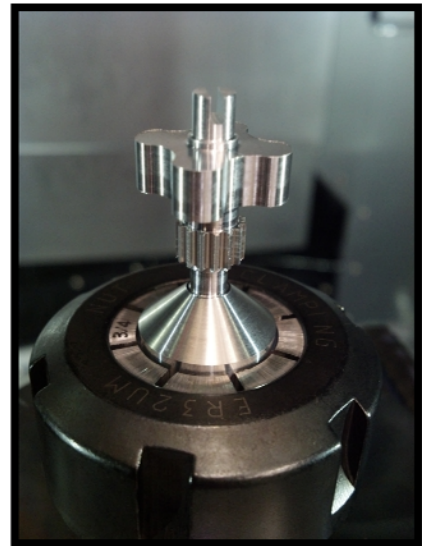
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“Usually within two-three hours of loading a part in WorkNC, I have the part running in the machine or done and in my hand,” Hartings says. “WorkNC allows us to design something, make it and prove it out in a short period of time. What’s interesting for us is that we make 3D printers and we print a lot of prototype stuff on our printers. In some cases, I can machine the part in less time than it takes me to print it.”

While Performance Motion has never produced molds from which it could produce its own parts, the addition of WorkNC stands to change the game for Hartings and his team. In fact, the company is gearing up to release its first molded part.

“With WorkNC, we have the capability now of making our own molds and making our own parts,” Hartings says. “It’s a huge cost savings, since molds can cost close to \$7,000. It’s really opened up a whole other capability for us.”



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