

FIELD NOTES

→ PRODUCT:

GF Machining Solutions' Mikron HSM 500 MoldMaster

→ SUPPLIER:

Machine Tool Systems

→ END USER:

Hi-Quality Carbide Tooling

www.hiqualitycarbide.com
www.gfms.com/us
www.machinetoolsystems.com

→ Hi-Quality Carbide Tooling isn't a shop that likes to sit still and when opportunity knocks, owners Tim and Wendy Middlehurst open the door. So when they began to get requests from customers about doing more complex forms with carbide, they decided to investigate machinery to meet that demand.

"The current market for carbide work is very poor," says Tim Middlehurst. "Our customers have been pushing us to take on more complex work in carbide and in order to do this kind of work you need a sink EDM and to operate a sink EDM, you need electrodes, which are made on a high speed milling machine. So it's a package."

Ultimately, they selected the Form 30 sinker EDM and the Mikron HSM 500 milling machine both built by GF Machining Solutions, available in Canada through distributor Machine Tool Systems.

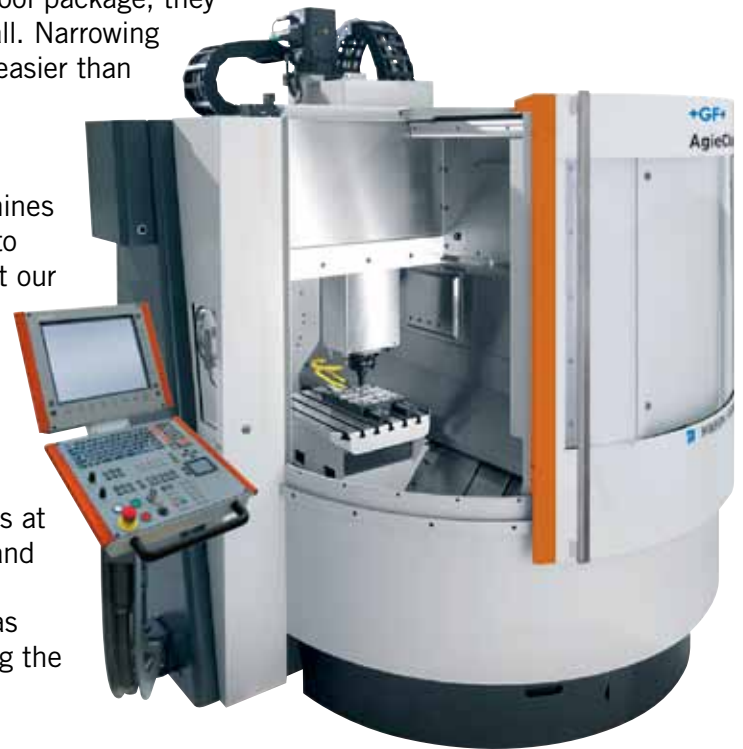
Before selecting the machine tool package, they attended IMTS in Chicago last Fall. Narrowing down sinker EDM machines was easier than narrowing down the best milling machine for their shop, says Tim Middlehurst.

"There are lots of milling machines to choose from so it came down to selecting the one that would meet our criteria, and the most important criteria was spindle speed. The HSM 500 comes with a 42,000 rpm spindle speed as a standard and most others came in at 20,000 rpm with an option to go to 35,000 rpm. The machine runs at 42,000 rpm for hours at a time and there are no problems."

The machine's performance was another factor that made selecting the Mikron an easy decision.

"The machine comes with a Heidenhain CNC control and while it's the first time we've used Heidenhain controls, because the control works efficiently with the Heidenhain glass scales, that contributes to making the machine faster and more accurate than it would be with a control from another supplier. We also had a demonstration of the machine at John's [John Manley, president of Machine Tool Systems] facility in Mississauga and the repeatability couldn't be matched by the other machines we had seen at IMTS."

The Mikron HSM 500 MoldMaster high speed milling machine's 42,000 rpm HSK spindle uses ceramic hybrid ball bearings with oil-air minimal lubrication and a liquid cooled stator jacket and bearings. The machine cuts at feedrates up to 20 m/min (784.4 ipm) and has rapid traverse rates up to 42 m/min (1,574.8 ipm). The machine comes standard with a graphite extraction system touch probe capability and absolute optical linear scales with 20 nm step resolution on the X, Y and Z axes for precise machine



positioning. Equipped with the company's SmartMachine, the HSM 500 MM increases tool life through vibration monitoring, boosts productivity by reducing machine warm-up wait time and shortens cycle times with optimized machine motion, claims GF Machining Solutions.

They purchased the two machines in November, with delivery and installation in December. Since then the machines have been running problem-free, other than some minor tweaking.

"The team John has gives us all the support we need and the facility is only 45 minutes away from us. Any time we've had any issues, they've been right on top of it. Nothing is ever perfect and we've had some software glitches but that's not a GF Machining issue, it has to do with our CAM software because we're now asking the software to do things it wasn't designed for and our supplier is working with us on that."

While Tim and Wendy Middlehurst purchased the machines to meet specific customer needs, the Mikron's flexibility has helped Hi-Quality Carbide Tooling expand into new markets.

"We're machining finished machine components and ammunition support tooling," says Tim Middlehurst. "We're now able to do the jobs that were no-quotes before. The surface finishes right off the milling machine are impressive, moreso than what we had anticipated."



Wendy and Tim Middlehurst with one of their latest machine investments, the Mikron HSM 500 milling machine from GF Machining Solutions.

Hi-Quality Carbide Tooling's 743 sq m (8,000 sq ft) shop is now reaping the rewards of its investments. Tim Middlehurst says they're now getting work from competitors because of the quality of sink EDM and increasing business for parts requiring precision milling.

The company has witnessed steady growth in recent years, says Wendy Middlehurst, and recently purchased a wire EDM machine, the GF Machining Solutions CUT P550.

"We do not have room for more machines, so as of late, we've been replacing older machines with newer ones. The next step will be an expansion with this existing facility which is something that may happen within the next two to five years. What we've learned is that you cannot grow without investment in your business so we've decided to invest and we'll see where we go from there."