



Behind every great tool there's a great idea

The tool:
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The idea:
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- Why it's great:**
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TOOLS PLUS IDEAS



grows its precision machining business with investment in new machines

The owner and general manager of Mississauga, Ont.-based S-3 Industries, Mario Seselja, is vocally passionate about keeping and bolstering manufacturing in Canada. He has been in the industry for more than 30 years now, and understands – as do all that who understand the industry – how essential it is for our economy.

Mario has a passion for machining. S-3 (www.s3industries.ca) has six modern CNC machines, but Mario maintains older machines on which, quite often, he'll work his magic. As important as CNC machines are for processing speeds, he understands that an operator still needs to understand intuitively the effect of an insert on a workpiece – that you have to use all your senses to ensure the quality of your product.

This is the bedrock he's set for S-3 to grow from. To help it grow, he's created a small, tight team of specialists. Ben Sayago does all the programming, Vince Ferri serves as operations manager, Mario's daughter Lisa is the primary administration "guru", who manages all customer accounts and internal system documentation, and his son Adam came on full time about one year ago and serves as a systems administrator. And late last year, as the company grew further, they brought on a new team member. Phil Sopnick is S-3's new lathe programmer and operator, responsible for all turning applications.

Vince Ferri was brought onto the team to get the company's ISO processes established, and to help prospect for new customers. Vince has been involved in the industry for more than 20 years now, having started at 15 years old in the tool room at Magna. He's since worked as a process and projects engineer, and is a Six Sigma Black Belt.

Mario himself has worked most of his career in the aerospace sector, including many years at McDonnell Douglas. The work continues to be his passion.

S-3 produces a wide variety of products using all types of aluminum, nickel-based alloys, castings, various steels (stainless, cold roll, etc.), titanium, Inconel, and other exotic metals, as well as plastics and phenolic.

The company's customers include aerospace, military & defense, satellite & communications, and energy & resource companies.

Mario started the shop at a challenging time – back

in 2009, when plenty of shops were trying to cut costs and prices to keep afloat. As Vince notes, "we were watching other companies drop their prices and close their doors."

"When we first approached a lot of clients, we were doing just a few parts at a time, developing their trust," says Vince. "They could see quite quickly that we know what we are doing, and when they visited they saw we run a clean, efficient shop."

It has been a slow growth process for S-3, but for the precision work they are doing, it just makes sense.

"We are now doing runs of a couple hundred pieces sometimes," says Vince. "And now, we've made it into one company's Kanban system – we're supplying components at need. We've earned their trust through our work ethic and quality. In general, we're getting a lot of repeat business now."

The key to keeping such a tight crew running is that everyone understands how to do all the jobs on the floor. "We challenge each other on what we're capable of doing," says Vince. "A lot of people don't know how few people work here. Having the right equipment and knowing how to use it well is at the heart of our success."

S-3 recently added two new CNC machines to its floor to help boost productivity – the new Hurco VM10i, and the Mazak Variaxis j-500.

Hurco's VM series of 3-axis machining centers features a small footprint with a large work cube. It has a one-piece machine base and incorporates travels of 26 in. on the x-axis, 16 in. on the y, and 20 on the z. It has a 10,000 RPM spindle speed with a side mount electric 20 station ATC.

The i-Series comes with Hurco's UltiMotion. The engineering team at Hurco refers to UltiMotion as soft motion because the software controls the motion control system, versus a conventional motion control that relies on hardware. The software is more efficient in how it processes the motion so there is less chatter, less vibration, less machine jerk, which results in better surface finish (www.hurco.com/ultimotion). Ultimately, the system is supposed to cut production time significantly.

It includes an upgraded programmable feed rate of 600 in. per minute, and flexible controls with Conversational and ISNC (Fanuc) Programming,



Far left and right: Examples of the precision parts S-3 specializes in producing. Opposite page: The compact Hurco VM10i in action. Above: Adam Seselja unloads a part from the Mazak Variaxis j-500.

with Verification 3D Graphics.

The footprint size and capabilities of the Hurco were ideal for S-3's shop floor.

"You can do many production pieces on the VM10i with ease, but it's also great for secondary operations," says Vince. "If we do a big run on the five axis, we can use the Hurco to finish off those parts. It is fast to set up, and incredibly user-friendly."

"That is really Hurco's advantage – its controls," says Adam Seselja. "I've only been working in manufacturing for two years, but I can basically operate the machine with 100 percent confidence. If you know how to use Windows, you can operate this."

The Mazak Variaxis j-500 is a high-accuracy, multi-surface machining center. It has a relatively small footprint, and it's been ergonomically designed to allow easy access, and efficient load and unload capabilities. Maximum workpiece diameter is 500 mm, and maximum workpiece height is 350 mm.

Both machines together are allowing S-3 to cut production times significantly.

There are always new investments to make, however. Vince is currently considering the purchase of a new CMM to streamline operations further. He has a particular product in mind, but he wants to make sure it doesn't add more steps to production. "Why would I do things twice if I can avoid it?" he says.

Staying as efficient as possible is essential at S-3 – a sentiment the company's clients no doubt understand quite well, and appreciate in their business partner. **MPP**

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