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INSIDE: CUTTING TOOLS | CMM / QUALITY CONTROL | CNC MACHINING | WELDING



DIY spirit alive and well at

TOOLING DEVELOPMENT INC.

By Rob Colman

In an era in which it seems everything is for sale, and we make so little, it's refreshing to meet men like Tooling Development owner Peter Plank, who has turned his do-it-yourself spirit into a busy business, as well as an innovative engine for further growth (www.tooldev.com).

When Plank first launched his company, it was with a focus on the design and manufacture of special-purpose machines and fixtures.

"For example, a manufacturer would approach us with a new product, give us a drawing, and then we would design the process for them, perhaps recommend a machine and then build the fixtures that go onto the machine to manufacture the product more efficiently," Plank explains.

However, there is less security in that work than in actually making the products, so Plank has taken his machining

knowledge and fixturing expertise and is now designing and making parts for a variety of industries and markets.

"Our niche has really become helping customers develop their products, with the long term goal to partner in the manufacture of those products," says Plank. "We have a Dimension 3D prototype printer, so we can design in 3D space using MasterCam and solid modeling. Then we can produce prototypes in plastic with the 3D printer. Invariably, if you are part of the design process, you can then tailor a part to some degree around an efficient process. Traditionally a customer doesn't know all that much about machining, and they may ask for something that is not that easy to do – if you don't say anything, that complexity just drives up the price."

This interactive, open-minded process usually yields positive results.



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Continued from the cover

ON THE COVER: Tooling Development owner Peter Plank in front of his newest CNC machine, the Haas VF-4. **Inset:** Examples of parts produced by Tooling Development. **RIGHT:** On the shop floor of Tooling Development's new Uxbridge facility. **BELOW and FAR RIGHT:** Examples of Tooling Development's fixturing, and another example of a part produced by the company.



In one instance, Plank has used the printer to create a novel adjustment on a bar feeder so that it can run lights-out in a way the manufacturer was convinced wasn't possible. In the right hands, any tool can be a boon to business.

Tooling Development works primarily in aluminum (80 percent of production) and stainless steel (about 10 percent). The rest may be mild and tool steels. Plank's customers are evenly divided between the U.S. and Europe. Only about 25 percent of production is for the Canadian market.

3D printing technology

The 3D printer was purchased, to a certain extent, at the behest of one of Plank's customers. "A drawing doesn't mean that much to people," he notes. However, he admits that, with his love of innovative tools, it didn't take much to convince him it was a good idea. Interestingly, it has become a more valuable tool for his internal use than for producing parts for customers.

"To give you an idea, we use the printer for components used in some special-purpose machines we build," says Plank. "We found it would be easier to build it in the 3D printer than to send it out to have a single piece made. The average part can be built in a 3D printer in about 2-3 hours. You don't make any money on the process, but for our own needs it has been a help. Furthermore, there are very few restrictions to the shape; once the part is designed, the real thing is just a mouse click away."

A consistent machining platform

While the 3D printer is a useful tool, the bulk of Plank's production comes from the nine Haas machines he has on the floor – two lathes and seven vertical machining centers. The most recent addition was a VF-4, which he took delivery of earlier this year.

"We were very short on capacity," says Plank. "Though that fluctuates, I never want to get caught with my pants down, unable to finish a job."

"We buy custom extrusions in a very narrow range of recipe because almost all of our products are anodized and have to have a very good surface finish," Plank explains. "So when Alcan delivers the aluminum to the extruder, they test all the bars and focus on a very small tolerance range and only extrude those bars which meet their narrow criteria for anodizing ability."

The Haas products have been excellent for Plank's purposes. He'd done a great deal of research before purchasing his first machine and felt it had the best user interface and flexibility necessary, and thought he could grow with the company.

"What I didn't want, and don't want, is a mix of machines and controls," says Plank. "I want it so that guys can go from machine to machine, as simply as possible. And if I need to move some tooling from one machine to another, I can do that as well. The machines are very modular."

"Another thing is that Haas is well represented at the trade schools – as is MasterCam – so future machinists know how to use them. That can be a big help in training. And I've found that the service is very good. If something goes wrong, the Haas team gets me going again quickly."

Fixturing know-how

Of course, Plank and his team add further ingenuity to these machines to create a competitive advantage.

"We pride ourselves on coming up with innovative ways of doing things," says Plank.

"Staying flexible and applying innovative ideas is a key ingredient in staying efficient."

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Constant innovation

Plank never stops creating new ways to help himself and his company. For instance, he and his team have built their own coolant recycling system in the new building. "We built it because if you go and buy a standard unit, they are built for a broad range of industry, whereas our work is very specific. This allowed us to tailor the coolant recycler to our specific needs," he explains.

He has also built his own stamping machine, to produce small metal-stamped parts. And he is able to create some molded plastic components on this same machine.

Currently, he is working on developing a robot that will be able to take over some surface finishing operations. The more he can automate the better.

"Our economic climate dictates you need to invest in a good process rather than manpower," Plank notes.

What's next for this busy company? Well, Plank hints that he is interested in products aimed at having a positive impact on the planet, and the creation of his own products in this sector. With the design tools, and space to grow, expect to see Plank and his company on the pages of MP&P again soon. **MPP**

"If we make little pieces, we don't just make one at a time, we do 70 at a time. We create fixtures that allow us to clamp 70 or 80 parts with one lever. Doing things like this allows us to cut down on loading and unloading times. We just think as much as possible about how we can change the way we machine products – for instance, using a fourth axis in the process may allow us to do more operations at once – to produce them better and more efficiently.

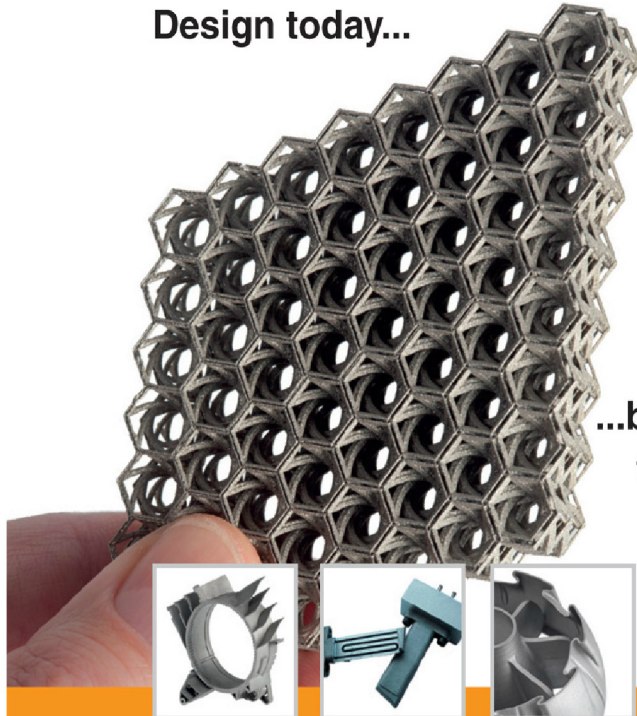
"For instance, some products that we have been making for 15 years now cost less than they did 15 years ago," Plank continues. "You are often forced to reduce your prices, but if we hope to compete with China, we have to do things smarter and capture niche markets. Extremely high volume items are probably better suited to China, so we concentrate on very specialized and medium quantity production work."

As Plank puts it, he is constantly trying to refine his processes. "You develop a process based on a certain quantity and that changes as the size of the order changes," he notes. Plank is also documenting how all of his products are processed so that new employees can be brought up to speed with regular production items quickly.

This attention to detail and innovation has allowed Plank to grow the company such that, when I visited him, he was in the midst of shifting production to a new, wholly owned building in Uxbridge, Ont. He had been operating one 6,000 square foot facility in Newmarket, Ont., plus a second unit that was 1,500 square feet just up the road from that. He had all his Haas machines on-site in Uxbridge when I was there, and three of his five staff members there operating the machines. The move has been in the works for about three years, so Plank will be happy when it is completed. As of the printing of this magazine, it should be done.

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