

Launching and Growing a Precision Machine Shop Straight Out of High School

Marvel Machining Founder Makes
Uncle's Dream a Reality with
HCL CAMWorks.



When Bradley Thomas showed an interest in welding while still in high school, his uncle introduced him to machining. Over time, Thomas built a career in the trade, guided by his uncle's advice and experience. His uncle often described machining as steady, rewarding work and shared that, if he could do it all over again, he would have chosen to start his own business rather than work for someone else.

Although owning a machine shop was not originally Thomas' dream, his uncle consistently encouraged him to pursue that path. Believing Thomas had the skills, work ethic, and determination to succeed as a business owner, he urged him to work toward building something of his own. Those conversations and his uncle's mentorship ultimately played a significant role in Thomas' decision to start his own machine shop.



Marvel Machining is ITAR-compliant and provides precision CNC machining to a variety of industries.

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When I evaluated CAMWorks, I found it to be extremely efficient because it uses SOLIDWORKS computer-aided design (CAD) software as the front-end modeling and geometry engine,” Thomas explains. “Most of my clients give me SOLIDWORKS files for the parts that they want me to machine, and the bi-directional associativity between SOLIDWORKS and CAMWorks makes machining much more efficient.”



Bradley Thomas
Owner, Marvel Machining

So, in 2013, Thomas founded Marvel Machining, bought his first CNC machine, and began machining parts manually. However, Thomas quickly realized that growing his business would require time-saving automation and computer-aided manufacturing (CAM) technology. Today, Marvel Machining uses HCL CAMWorks software for 2.5-axis machining, including multi-axis for advanced milling applications ranging from 4-axis to full 5-axis machining. The company has been able to save time, increase productivity, and support continued growth by leveraging HCL CAMWorks solutions.

Since that initial decision to implement HCL CAMWorks software, Marvel Machining has increased its quality workmanship and precision CNC machining services. The Minnesota-based machine shop produces machined prototypes and parts for a range of clients, including defense companies that require International Traffic in Arms Regulations (ITAR) certification, which Marvel Machining holds, and is not possible with a CAM system that relies on cloud-based licensing.

Heightened Efficiency Grows Machining Capacity

Through hard work and the heightened machining efficiency afforded by HCL CAMWorks solutions, Thomas has been able to continually grow Marvel Machining, acquiring additional machining capacity beyond the company's initial CNC machine. Today, the precision machine shop operates four Haas CNC machines, including a VF2 SS Super-Speed Vertical Mill, a VF3 SS Super-Speed Vertical Machining Center, an EC 400 Pallet Pool Horizontal Mill, an ST-20 Turning Center, and most recently added—a UMC750 full 5 axis.

“Using CAMWorks, we’ve been able to grow the business, adding CNC machines and employees to better serve our customers,” Bradley points out. “CAMWorks makes machining quick and easy, whether it involves automatically creating a toolpath for the part from the SOLIDWORKS feature tree or pulling the program for a complex part from the CAMWorks technology database [TechDB™].”



Marvel Machining expanded their business to include full 5-axis machining with the help of HCL CAMWorks.

Increasing Throughput Year over Year

In addition to supporting Marvel Machining's greater machining capacity, the selection of HCL CAMWorks solutions is helping the precision machine shop increase its volume of business, continually increasing throughput year over year.



Thomas credits SOLIDWORKS CAM and HCL CAMWorks in enabling Marvel Machining to achieve consistent growth and save programming time through automation.

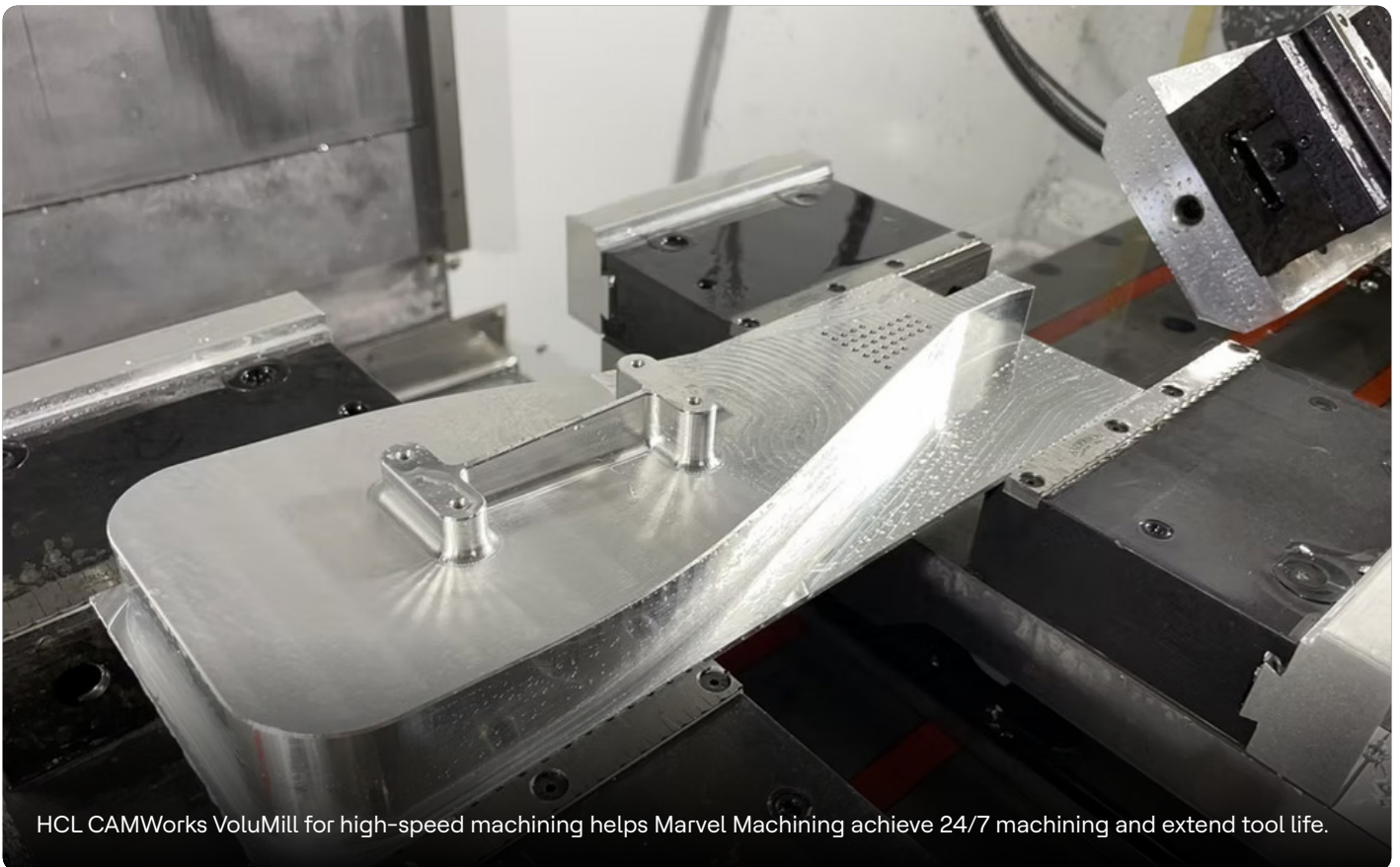
“Because CAMWorks software is quick and easy to operate—and also provides tools for automating machining processes—it’s a huge time saver and has allowed us to grow and boost our throughput every year,” Thomas notes.

“Also, using CAMWorks enables us to make changes to part toolpaths without having to re-program,” Thomas continues. “For example, we could receive a part from a client with a hole in it that the client wants to move to a new location. With CAMWorks, we can shift the

hole to a new location in SOLIDWORKS and CAMWorks will automatically see the change and adjust the toolpath accordingly. This capability serves as a real value-added service because it makes it very easy for customers to make revision changes to parts.”

Automation Supports 24/7 Machining, Extends Tool Life

Because Marvel Machining can make fast changeovers from one part to the next and have pre-set tools and machining programs ready to go with CAMWorks, the company can keep its machines running around the clock while simultaneously leveraging HCL CAMWorks VoluMill high-speed machining software to extend tool life. “We have a lot of changeover from part to part, and CAMWorks helps us to automate machining to stay ahead of the program from one operation to the next,” Thomas stresses.



HCL CAMWorks VoluMill for high-speed machining helps Marvel Machining achieve 24/7 machining and extend tool life.

“For instance, our Haas EC 400 Pallet Pull Horizontal Mill has been running non-stop and hasn’t shut down for 40 days, which means the company is making money while everyone is sleeping,” Thomas continues. “Instead of being a bottleneck, CAMWorks is actually the driver of greater efficiencies in our processes. CAMWorks helps us reduce setup times, save and reuse machining programs, and continue to grow.”

The Client

Company: Marvel Machining

Headquarters: Zimmerman, MN, USA

Industry: Machine shop specializing in precision CNC milling, prototype services, grinding, turning, and machining – with ITAR certification.

The Challenge

Establish and grow a precision CNC machine shop by leveraging machining hardware and software technologies to automate the production of precision machined prototypes and parts; improve productivity; increase accuracy; and eliminate unnecessary costs and delays.

The Solution

Implement SOLIDWORKS CAM, HCL CAMWorks multi-axis milling, and HCL CAMWorks VoluMill high-speed machining software to support up to full 5-axis machining and take advantage of the solutions' seamless integration with SOLIDWORKS 3D modeling software to save time, boost productivity, and support growth.

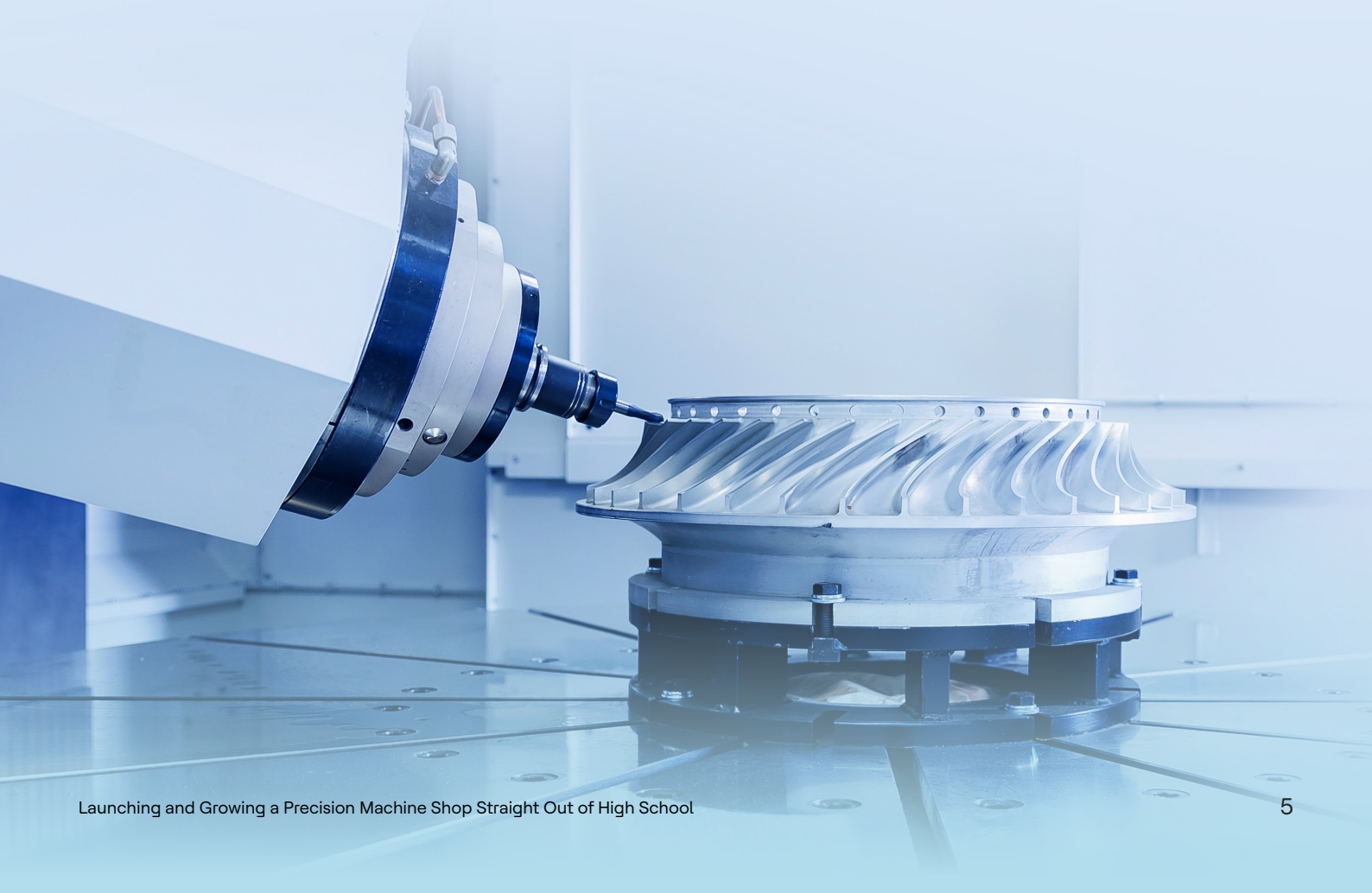
The Benefits

Established and grew precision CNC machining business, including expansion to full 5-axis machining

Increased machining volume every year

Saved time and money through automation and changeover efficiencies

Extended tool life using HCL CAMWorks VoluMill high-speed machining software



HCLSoftware

About HCL CAMWorks

2026 © HCLSoftware. All rights reserved. HCL CAMWorks is the next generation best-in-class CNC programming solution that enables users to program smarter and machine faster. HCL CAMWorks provides advanced CAD/CAM technologies including Full Integration with SOLIDWORKS and Solid Edge, Automatic Feature Recognition, Tolerance Based Machining, ShopFloor Tools, and TechDB™ to capture and reuse your best programming practices.

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