

CUSTOMER: **Mirotech** □ 199 Waterloo Street □ Oshawa, Ontario, L1H 3W9 Canada □ www.mirotech.ca

Making Test Fixture Production 10x Faster!

For over 20 years, Mirotech has manufactured test fixtures that allow electronics engineers and developers to test electronic equipment in a controlled and repeatable environment. When testing printed circuit boards (PCB), electronic components, and chips, a test fixture is designed to hold the component in place while it is tested with controlled electronic signals. Because PCB and other components vary so much in size and composition, the test fixtures developed by Mirotech to accommodate them are highly customized and this has resulted in a low volume, high mix production environment.

The company was founded in 1997 by owner, Mirek Koalicki, who had been working for a small manufacturer making test fixtures. He'd become a master of the process even though the tools of the day were somewhat crude compared to today's technology. So, he decided to start his own business to serve this market and he purchased a used CNC machine made in the 1980's.

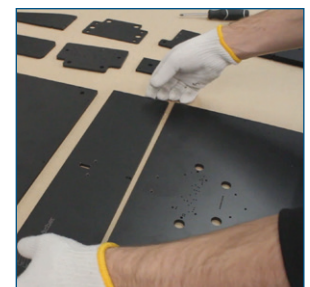
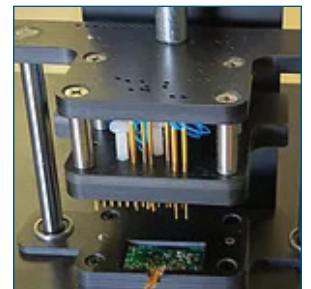


Innovative benchtop PCB test fixtures and customized testing solutions for the electronics industry

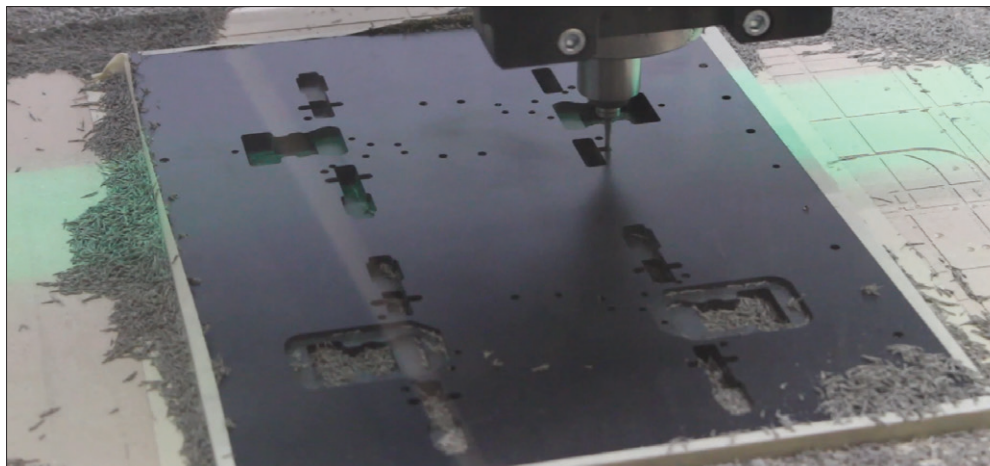
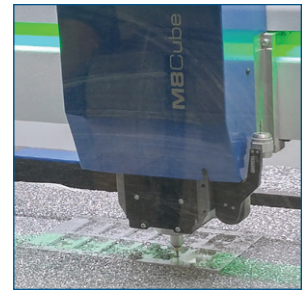
Each test fixture manufactured by Mirotech is custom designed to accommodate the PCB or component it's designed to test.

Very early on Koalicki met with DATRON Dynamics, a company that had been started only a year earlier to bring German-engineered high-speed milling machines to the North American market. Koalicki recalls, *"I immediately identified DATRON's technology as the ideal solution for making test fixtures, but I also knew that I'd have to wait until we'd grown a bit more as a company and could afford the equipment investment."*

They built a sizable customer base including Canada's premier electronics manufacturers such as Siemens, Microart Services, Eberspächer, and CUI and now sheer demand dictated that Mirotech had to increase their capacity. Koalicki says, *"It took a while longer than I had hoped, and when we were ready, we were ready in more ways than one. We'd grown the business, but then we had a bottleneck in production. I was excited to be able to go back to DATRON with my predicament, because they had just come out with their new M8Cube technology and I was confident that they still offered the best solution."*

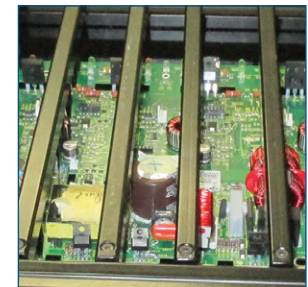
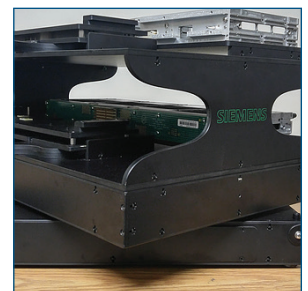


What Koalicki brought to DATRON in terms of a production challenge, was a material called Arboron, an industrial grade laminate used for 90% of Mirotech's test fixtures, and a need to produce their parts 100% faster. Koalicki would rely on Mirotech's Electro-mechanical Engineering Technologist, Derek Day, to help in the evaluation of DATRON's technology. They found that the DATRON machine was highly efficient in the milling of Arboron sheet material in thicknesses of 1/4", 3/8", and 1" using only air blown on the tool for cooling. Day explains, *"The work area on the DATRON allowed us to make more pieces and larger pieces to tighter tolerances and faster than we could before. And with no coolant to clean up, we could eliminate that secondary operation altogether for added efficiency."*



Arboron is an industrial-grade laminate that Mirotech uses to produce test fixtures and it can be milled using air for cooling.

So Mirotech settled on and M8Cube and prepared themselves for training with excitement and a bit of apprehension since they'd been working on their current machine for about 22 years. But they were pleasantly surprised at the simplicity of the machine control software and the short period it took to start effectively using their new machine. Day recalls, *"For training, the DATRON tech was up here for 3 days and was very thorough. CAMing was completely new to us so he made sure we were all set with that before he finished. I'm not a programmer, and what is great about the technology is that it allows me to design and cut pieces myself."* That empowerment added bandwidth to Mirotech in terms of designing parts.



The M8Cube's 40" x 32" X,Y travel provided Mirotech with a large machining envelope to work on sheet material. The sheets are secured to a fixture with double-sided tape and the fixture is held with a vacuum table. Regarding job setup Day says, *"We've verified that it is useful to use the probe during setup and we're able to locate the angle and the corner in order to get the cut within a few thou which is real nice."*





M8Cube's 40" x 32" work area provides ample room for sheet material to mill larger parts or nested milling of multiple parts.

In less than a year, the company was producing parts **10 times faster** than they had before, far exceeding their goal. Koalicki explains, *"Our current process is 10 times faster due to the M8Cube and we have added flexibility as far as who runs it because it's so easy. Even servicing it is easy. We had an issue with the probe, so we called DATRON and they walked us through a probe calibration right over the phone. It was an easy, immediate fix without having to have a technician come."*

The machine has had an unforeseen impact on Mirotech's growth because it has allowed them to expand their offering into different business segments. Day says, *"Because of the ease and flexibility of the M8Cube, we've been able to expand our capabilities and serve other industries like engraving and rapid prototyping. We're using Fusion 360 for CAM and it integrates well with the DATRON software, the post is great. I program at my desk and post it right to the machine and in 60 seconds it goes."* Both Koalicki and Day agree that the growth potential by adding this one machine is almost limitless. Koalicki says laughing, *"We're only running one shift a day, we could get another two shifts out of the DATRON ... and now we're confident that we have all the capacity we need."*

