

## Manufacturing Case Study—



Denes Szabo holds an L-shaped part produced on Mile-Hi's new Feeler Machine by Methods Machine Tools, Inc.

# New Methods Feeler VMC Cuts It Big

*A Colorado Machine Shop Solves  
"Big" Machining Problems with a  
New Feeler by Methods Machine Tools*

**T**oday's manufacturing landscape is driven by efficiency, productivity and increasingly, overnight delivery demands. Given this, manufacturing practices that may have worked a few years ago might now mean the difference between success and failure.

Arvada, CO's Mile-Hi Machine was learning that lesson first hand. They had been managing to machine large parts using smaller machining centers and repositioning the work-piece as they went. But that method left them open to the errors generated by multiple setups.

That's why when Mile-Hi Machine was approached to manufacture a large medical part, they knew it was time to address the issue. They launched a search for a new, reliable, good quality, high performance vertical machining center with a larger work envelope capable of handling large parts.

### **A Family-Run Success**

Mile-Hi Machine, Inc. was founded in 1969 by Mike Szabo, the father of George, Mike and Denes Szabo, three brothers who now run the business. Located in Arvada, Colorado, Mile-Hi Machine is a precision machine shop that serves the aerospace, medical, telecommunication, computer and military industries. By 1980 Mile-Hi Machine was able to buy

**As Seen in CNC-West Feb/March 2012**

the building they were established in, and by 1997 they had doubled in size. Today they report 12 employees and average annual sales of \$1.1 million.

Mile-Hi Machine manufactures components for customers including Lockheed Martin, Kelly Air Force Base, Hewlett Packard Company, Cobe Laboratories, and other prestigious companies. Sixty percent of their work is in aluminum, 35% in steel, and the rest is in plastic, bronze and brass.

Mile-Hi Machine's manufacturing facility comprises five lathes and 15 VMCs.

"The industry is more interesting now," says George Szabo. "Every part is different and we face the challenge of managing high mix, short run operations where you might be prototyping two or three pieces or cranking out 1,000 parts on any given day."

### ***Tight Tolerances***

With a steady flow of defense, medical and aerospace work, Mile-Hi Machine works in tolerance requirements that go down to tenths-level accuracies.

"We have a full-time inspector, a quality room and systems, and a CMM that provides full traceability," says Szabo, Mile-Hi employee since age 12, and now company president.

Many of Mile-Hi Machine's customers require 100% inspection, so it's important for them to deliver high quality and repeatability of its parts. Their customers also need confidence in the machine shop they choose, so they can trust that parts are always accurate and made to specification.

### ***New Customer with Large Parts***

It was well into the great recession when Mile-Hi Machine

was approached by a potential customer to manufacture a top to a medical cart in 1/4" aluminum. The part was 23" x 22" and larger than the work envelope on the machines they currently had. In the past, Mile-Hi had handled larger parts by repositioning the piece on a smaller machine, but this required more set-ups and a greater chance of error.

"If I have a larger part that requires re-positioning beyond the work table, it introduces human error. I really wanted to be able to do the work, but I needed the Y-axis to move to 24" in order to do the job efficiently and cost-effectively," explains Szabo. "Mile-Hi researched a number of machines, but we weren't comfortable with most of them. Then we found out Methods Machine Tools, Inc. was offering a Feeler machine in the size we needed that provided the quality for a reasonable investment and the reliability that's associated with the Methods' name."

### ***Methods Feeler VMP-1100***

Feeler is an all new lineup of machine tools featuring extensive design and engineering by Methods Machine Tools, Inc. and designed to meet the needs of the U.S. customer. Methods Machine Tools, Inc. has been a leading supplier of precision machine tools, automation and accessories for over 50 years, providing extensive applications engineering support, installation, parts, service, and training through a network of large state-of-the-art technology centers and dealers throughout North America. Feeler Machining Centers, Turning Centers, Bridge Mills, and Boring Mills are manufactured to Methods' specifications by Fair Friend Group (FFG), the second largest builder of VMC's in the world.

Globally, Feeler Machines have earned a reputation for



**As Seen in CNC-West Feb/March 2012**



*View of Mile-Hi's Feeler VMC at work.*

quality and performance, innovative design and rigid construction.

“When Methods came out with Feeler, we were convinced it was designed for the American market and would perform well for us,” says Szabo.

Methods recommended the Feeler VMP-1100 in the fall of 2010. The machine offers a 10,000-rpm spindle with 25 hp and comes standard with a 30-tool automatic tool changer. The machine has an X-axis travel of 43.3”, a Y-axis travel of 24” and a Z-axis travel of 23.6” so machining larger parts can be handled without repositioning the workpiece. Mile-Hi went with Methods recommendation

“Choosing the Feeler machine was an easy decision,” says Szabo. “We have used Methods’ machines for 30 years now. The reason we have stayed with Methods is because of the quality and the up-time of their equipment. We need machines that consistently produce high tolerance parts day after day. We were confident that if Methods was backing the Feeler machine, we’d get the performance and quality we needed,” continued George.

## **Success with Feeler**

Mile-Hi Machine’s first big test for their new Feeler was an aerospace part job. The customer had a critical order and needed parts ASAP. Feeler was immediately put to work on the job. The part needed to be machined within a very tight tolerance. It was also a high visibility project—the customer

wanted to visit during the machining process and spot check parts. Because the Feeler was able to machine the whole 30” x 18” part in one operation with several tools, valuable production time was saved. With the Feeler, Mile-Hi was able to reduce the machining time to produce the part by 25%, and improve machining accuracy with fewer part operations. The Feeler sailed through this test successfully without a hitch.

With the larger size of the Feeler table movement, Mile-Hi Machine has been able to finish large jobs with less set ups, which helps them run their operations more efficiently. There’s also less machine idle time, which increases the shop’s productivity.

“We were confident with our decision to go with Methods and were comfortable with Feeler,” Dennis Szabo says. “We took their recommendation and never regretted it. The Feeler machine has been running 24/7 since November 2010 with absolutely no problems.

“For quality and affordability it’s right up there,” adds George Szabo.

Mile-Hi Machine has also added some new customers and increased business by 10% since installing the Feeler.

“We found a great fit with the Feeler VMP-1100,” George Szabo adds. “The reason we chose Methods and continue to do business with them is because they had the right machine for the right price to suit our needs. If we have a problem it is solved quickly and we’re back up in a matter of hours. We always trust Methods Machine to be there.” ■