

A Quality Edge

Multisensor technology gives Ontario blow mouldmaker a competitive edge

MISTAKES ARE COSTLY in manufacturing, and in today's competitive environment, your mistake may mean a new customer for your competitor.

It's why quality's role in manufacturing continues to grow and why manufacturers like Garrtech Inc., a blow mould manufacturer in Stoney, Creek, ON, have made significant investments in quality control.

For Garrtech, the investment was an approximate \$175,000 Zeiss CMM, the Contura G2, equipped with multisensor technology. The automated measuring system, purchased and installed in February 2012, replaced an older CMM from another supplier that could not keep up with changing demands from

customers for tighter tolerances and faster quality reporting. The CMM was purchased from Zeiss' Canadian distributor, Elliott Matsuura Canada Inc., Oakville, ON.

"Our machines, several of which have probes on them, are quick, and our machinists are skilled at their

before the new CMM was installed. "It was imperative for me to have four days to do my complete final inspection, but now with the new CMM, I've cut that time to a day or a day and a half."

The CMM is equipped with three probes loaded on Zeiss' MSR mini



The Zeiss multisensor CMM has cut final inspection time by 40 to 50 per cent, says Tina Brogaard, quality assurance manager.

MultiSensor rack (the CMM can be equipped with a second rack and additional probes). The RDS articulating probe allows the probe to move, scan and measure in all angular positions. A camera, the ViScan, for visual inspection, has the ability to view at 5, 10 and 20 times magnification (Garrtech is using 5 times magnification). When equipped with the RDS, it allows for measurements in all spatial directions

work, but I [quality department] was the bottleneck," says Tina Brogaard, quality assurance manager at Garrtech, referring to the situation

Why Multisensor Technology?

 Multisensor technology is defined as a measurement system with two or more sensor options for data acquisition.

Multisensor technology makes sense in today's competitive market. A single sensor can't measure every part feature and provide every measurement function and parameter a customer may require, so a manufacturer is

often forced to buy multiple stand-alone devices.

Metrology equipment advances means multisensor devices now have the ability to offer more data generated quickly and automatically, which in turn cuts the time and cost associated with such tasks in a quality department.

"The benefits derive from sensor integration with the CMM hardware and software platform,

the ability to seamlessly switch from one sensor to another within a measurement plan, and the ability to evaluate data from multiple sources within that measurement plan," notes John Pearson, technical sales engineer with Carl Zeiss Industrial Metrology, Brighton, MI, who spoke with *Shop Metalworking Technology* for an article on multisensor technology in our May 2012 issue.

without having to rechuck a part. While the CMM is automated, Garrtech can change probes “on the fly” (via the tool rack) or manually if required, adds Brogaard. The CMM also comes with Zeiss’ Calypso software, which Brogaard describes as “absolutely fantastic” because of its user friendliness. The Windows-based software develops the measuring tasks and the feature-oriented interface makes it easy to use. Calypso offers a common interface for measuring 3D parts when different sensors are being used.

Brogaard estimates the new CMM has cut final inspection time by 40 to 50 per cent, and she’s now able to produce faster and better customer reports with key quality data.

“Our customers are adamant about reports and the quicker I can provide them with the information, the quicker we can start machining the part. Our customers have never doubted what we produce in terms of quality, but now we have another fully automated, precise tool that backs up what our machinists are doing.”

The other aspect of having a CMM with multisensor technology is customer delivery, adds Brogaard.

“When our customers come in for inspection we have reliable data with all the critical dimensions they require, all in one report and I can generate that report quickly, which has cut down the time I used to spend on data input.”

With the older CMM, there was no automated visual scan; Brogaard performed manual scans with an eye

loop equipped with a scale. For every measurement, Brogaard would have to shine a light on the part being measured, do the manual scan with the eye loop and then write down the measurement.

“I would have to do this on different parts and when I had 19 moulds, for example, times two, I’d be looking at hundreds of measurements by eye and that was time consuming and it hurt my eyes.”

The CMM has been in operation for more than a year and has run smoothly ever since, but Brogaard says she’d like to add more capability.

Making Blow Moulds for 22 Years

In an industry that has seen many shops driven out of business because of low cost tooling from India and China, blow mould manufacturer Garrtech Inc., Stoney Creek, ON, has found a recipe for success: investing in technology, machinery and engineering services difficult to replicate by offshore competitors.

The blow mould manufacturing services include part design, mould design and construction.

The 35,000 sq ft plant operates 19 CNC multi-axis machining centres equipped with an automated tool crib system for increased machine uptime and productivity. An in-house engineering department with reverse engineering and 3D model generation capabilities supports the shop, as does a quality department equipped with the recently purchased CMM with multisensor technology.



Garrtech is looking at merging quality processes inline on the shop floor and offline in the quality department.

“Zeiss offers so many tools and I’ve looked into the laser scanner. It would give us the ability to better scan 3D contours and would also be good for reverse engineering. I can do this type of measurement now, but it would be quicker with a laser scanner.”

The multisensor technology has the added advantage of allowing manufacturers to add new tools when requirements change.

Longer term, Brogaard says Garrtech is looking at merging quality processes inline and offline.

“We’ll be able to communicate between the machines equipped with probes in our shop with the quality department. We’re not there yet, but we’re working on this.” SMT



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