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# Managing Market Changes

Ontario shop invests in machining technology to tackle changing economic conditions



Marijan Munjic, seen here with his new Studer grinder, purchased the cylindrical grinder to machine main and input shafts for GM's Volt.

changed course and turned to the oil and gas industry. When that industry experienced one of the worst downturns in recent history in 2014-2015, MTM did what it does best: it changed course. It landed a multi-year purchase order with a major auto parts supplier to produce the main and input shafts for the electric motor of GM's electric vehicle, the Volt and purchased a Studer S33CNC OD cylindrical grinder from distributor Machine Tool Systems to support the new work. That was in 2015.

Today, MTM produces approximately 5,000 shafts annually on the Studer and keeps the cylindrical grinder busy with other work from customers in the automotive, oil and gas, mining and nuclear industries.

The 1,525 sq m (16,400 sq ft) machine shop is also home to multiple CNC machine tools including five axis, mill-turn, vertical lathes and machining centres from Nakamura-Tome, DMG MORI, Mazak, O-M Ltd. and Haas.

## Machining the tough stuff

Munjic doesn't hesitate when asked how the company landed the job for the complex machining of the Volt's main and input shafts.

"We know we are definitely the best for this kind of machining in this area. The main shaft is the most critical component of the Volt's electric motor. But it's not just machining the shafts for the Volt. A customer came to us for component prototyping and we used the Studer to create the prototypes. These were very tight tolerance parts for four different prototype parts."

The automotive parts supplier visited MTM to see the prototype

## THE PROBLEM

How to accommodate a multi-year auto parts order

## THE SOLUTION

Purchase a new cylindrical grinder

If you're a machine shop, you know that business agility is critical. No one knows this better than Marijan Munjic, owner of MTM Automation and Aerospace, a precision machine shop in Guelph, ON, that has survived and grown through economic ups and downs.

When he formed his company in 1996, the shop's mainstay was the automotive market, but when economic changes spurred a slowdown, Munjic set his sights on the aerospace industry. When a major aerospace customer decided to outsource its business to Quebec, MTM



The main shaft is the most critical component of the Volt's electric motor. MTM has also used the Studer to create tight tolerance prototypes for customers.



The Studer S33 CNC cylindrical grinder is equipped with a fixed wheelhead with two motor spindles for external grinding and an internal grinding attachment.



parts being machined on the Studer. Munjic says the customer was so impressed with the performance of the machine that it purchased one for its own shop.

When MTM landed the purchase order for the Volt shaft work, it knew it needed the best quality CNC grinder on the market and in Munjic's opinion that was the Studer.

"It's a world class machine and it's very accurate. The machine has two OD grinding wheels, which means we perform rough and finish grinding in one machine."

And just as important, Munjic says he's impressed with the long life of the grinding wheel.

"We establish the micron size in the morning and usually don't need to check the dressing until the end of the shift. We dress only the roughing

## MACHINING | Grinding

wheel because it's the one that takes off a lot of material, but for finishing we don't need to dress it. The Studer is so accurate that in an eight hour shift, you don't have to dress that finishing wheel; it keeps its size."

While the automotive parts sector keeps MTM busy, Munjic says business in aerospace, oil and gas, mining and nuclear energy is picking up and the Studer will continue to play an important role for any grinding requirements. And MTM is well positioned to take on more work. The company is AS900 certified for aerospace machining and is approved for nuclear work too.

"We make parts for a customer that produces components for the nuclear industry and we are looking to increase work in this industry, as well as in the oil and gas market, which is starting to pick up, and mining and aerospace."

Munjic, a tool and die maker originally from Croatia who still enjoys working in the shop, says his machine shop is well equipped to take on more work with his multitude of CNC machine tools, and if he were to purchase more machines, he would consider manual grinders.

"Sometimes you have one or two parts that need to be ground and it doesn't make sense to set up these kinds of jobs on an expensive CNC machine. It would be better to use manual machines for these one-offs and save the Studer for high quality, larger production jobs."

He has no complaints either about the Studer, nor the support he receives from the builder and the local distributor, Machine Tool Systems.

"We've had no troubles with the Studer. It is a quality machine. We have very good service too and the Studer people have responded right away when we have had some issues." SMT

<http://mtmautoaerospace.com/>  
[www.studer.com](http://www.studer.com)  
[www.machinetoolsystems.com](http://www.machinetoolsystems.com)

A close up look at the shafts MTM Automation and Aerospace machines in its shop.



### THE EQUIPMENT



**THE STUDER S33** is a CNC cylindrical grinder designed for grinding medium sized workpieces in individual and batch production. It can be fitted with automation and is especially suitable for precision machining of parts such as the Volt shaft that MTM manufactures, and for toolmaking. The machine is equipped with a fixed wheelhead with two motor spindles for external grinding and an internal grinding attachment. The fixed wheelhead is adjustable to 0° or 30° for external grinding or turret wheelhead for external and internal grinding with a Hirth manual swivel of 2.5° or an automatic swivel of 1°. Three grinding wheels ensure that the workpiece can be machined even more individually and quickly for complete machining. Distance between centres is 650 or 1,000 mm. The machine is designed with a C axis for the workhead to allow for thread grinding, while a swivelling machine table allows for grinding of cones.

