



The 5 Axis Leap

The Problem

Meeting increased customer demands for aggressive delivery times

The Solution

Increase machining capacity with investment in three, five axis universal milling machines

BY KIP HANSON

Quebec mouldmaker embraces five axis technology in a big way

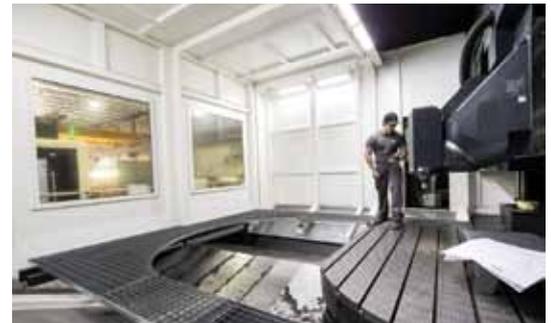


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WHEN ANDRÉ ROCHETTE decides to do something, he does it in a big way. As president of Rocand Inc., Sainte-Foy, QC, he was faced with a substantial increase in sales and development activity. He wasn't about to let his customers down. "Client relations are very important to us, and as a Tier 1 automotive supplier, we have to meet aggressive delivery times. Our existing equipment was unable to keep up with demand, so it was a simple decision. We increased capacity to meet our customers' needs."

Most manufacturers would respond by purchasing an additional machine to meet that need. Rocand ordered three. "Small, medium, and large," laughs Rochette, describing his new five axis CNC universal milling machines from DMG. "Our goal is to continually produce high quality products to the automotive industry, with the best lead time and a competitive price. Choosing that equipment was a way for us to achieve those goals."

Mouldmakers need a number of



The 340p in Rocand's shop, the largest of the three DMG machines the company purchased to meet growing customer needs.

capabilities to do their work. Chief among these is an efficient method of removing large amounts of material quickly. DMG delivered that with its U-series machines. The largest of Rocand's new machines, the DMU 340 P, has a 3400 mm work envelope and table load capacity of 16 tons. Its 52 kW, 12,000 rpm spindle boasts 430 Nm of torque. And since Rocand purchased the optional 24000 rpm pickup spindle, it can rough and finish five sides of the workpiece in one handling. Says Rochette, "now we can do more machining in a single operation and produce tools for our customers in the



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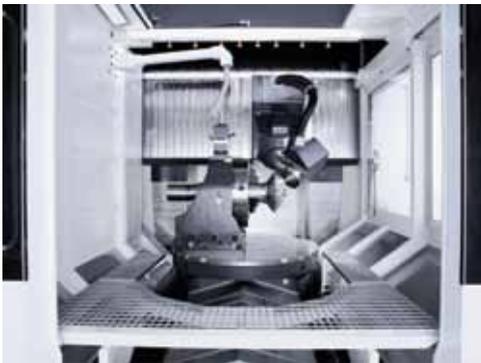


Assembly of an extrusion blow mould cavity.

shortest possible time.”

Those tools include sophisticated injection moulds for motor covers. “That one has an integrated lead-frame, with two overmoulded components inside,” says Rochette. “We had to develop that expertise to manage a variety of global programs for all the major car manufacturers, including Porsche, Mercedes, BMW, Peugeot, Renault, GM, Ford, Nissan and Hyundai.”

Why did Rocand choose DMG?



An inside look at the DMU 210p, the medium size machine in the trio of DMG machines Rocand purchased.

“We’ve been doing five axis machining since 2004 and already had a good idea of what we needed,” explains Rochette. “But we wanted to look at different approaches to high speed machining, so we visited the 2011 EMO show in Hanover, Germany. We looked at a number of machine tools, but the deciding factor for us was DMG’s approach on the design of the equipment, the size and the configuration for our application. Aside from the quality of the machines overall, many of them have a cubic work envelope, which is very good for mouldmaking.”

The machines have been in production since September 2012. “This investment allows us to serve our different customers as quickly as possible, with quality products at a competitive price. The DMG equipment helps us to achieve that objective.”

Rocand has been on a steady growth path since its doors opened in

Presetting for Uptime



EVEN THE BEST MACHINE tool is useless if it’s not making parts. When Rocand purchased its DMG machines, founder André Rochette recognized this fact and made one additional investment: a DMG Microset V10 20-70 linear MV IV presetter. “What we like to do in the new DMG machines is cut materials,” says Rochette. “Of course, each machine has the capability to measure a tool’s length and diameter, but while you’re doing that, it’s obvious that you’re not cutting.”

The V10 linear presetting system from DMG increases machine uptime by allowing a technician to configure the tool length and diameter offline while the machine is producing parts. Fully automated offsets can be sent directly to the machine control, avoiding manual input and the possibility of mistakes. And the V10’s linear scales assure measuring accuracy to +1 µm, and measuring cycles up to 25 per cent faster than its competitors, claims DMG. Says Rochette, “by presetting tools offline, we are ready to start cutting when we arrive at the machine.”

Reducing setup time is only part of the story. “It’s not just the time we save, but also the precision we can achieve over manual tool setting methods,” explains Rochette. “If you measure outside, you’re relying less on a human and more on technology. The V10 measures the tool the same way, every time.”

When you’ve made an investment as large as Rocand’s, it only makes sense to optimize that investment by measuring cutting tools accurately, consistently, and offline.



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MACHINING | Milling

1996. It achieved ISO 9001 certification in 2001, doubled the size of its production floor a year later, and is adding space to the facility again this year. With technical centre facilities in Mexico, Brazil, France and Germany, Rocand is now a leader in complex injection and extrusion blow moulding, and prides itself on fair and ethical relationships with its clients. The trio of DMG machines now sitting on Rocand's shop floor can only serve to strengthen those relationships. SMT

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THE EQUIPMENT

5 Axis Champions



JEAN-PIERRE BOYER is the DMG North American regional sales manager for Quebec. "We presented Rocand with a variety of options, but the company settled on the DMU 100 mB, DMU 210 P and DMU 340 P. They are very satisfied with the equipment."

They should be. DMG designs its machines with mouldmakers in mind, explains Boyer. "They have a high speed machining strategy built directly into the controller. With the DMU's gantry-style design, DMG can control the thermal expansion of the machine extremely well. And the machine itself is very fast and very flexible."

The DMU series offers capabilities to satisfy even the most demanding of industries. The largest machine (DMU 600) offers a 30-ton table load option, tool magazines up to 313 tools, and an optional geared spindle drive with 2500 Nm of torque. Many of the machines can be configured with linear drive motors, pallet changers, integrated measuring systems, and a number of milling heads



The DMU 100 machine.

and rotary table options. With pickup spindles available to 24000 rpm, HSK, and B axis machining angles to -20°, the DMU can tackle most anything that comes its way.

Perhaps the most unique option on the larger machines is an interchangeable head. On HSK-equipped spindles, an electronic connector built into the milling head opens the door to high tech possibilities such as laser structuring of workpiece surfaces and ultrasonic oscillation of the Z axis to aid in hard milling of advanced materials.

Rocand is part of an elite club. While there are upwards of 500 DMG machines operating in Canada today, you can count the number of manufacturers who own a 340P on one hand. That fact should put a smile on the face of André Rochette as he steps onto the shop floor each morning.

For more information on machining technologies, visit Shop Metalworking Technology's **MACHINING ZONE** online at www.shopmetaltech.com.

