

FIELD NOTES

→ **PRODUCT:**

Circle Segment
End Mills

→ **SUPPLIER:**

Emuge Corp.

→ **END USER:**

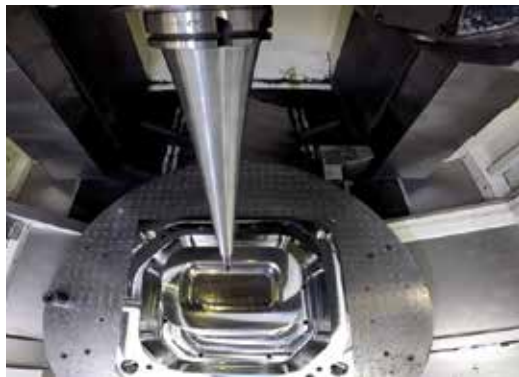
Calframax
Technologies Inc.



→ Calframax Technologies Inc., based in Oldcastle, ON, near Windsor, has been in business for more than 23 years. The injection moulding company specializes in making containers. Its bread and butter is five-gallon pails and lids, but Calframax manufactures containers of all different sizes, from small thin-walled 8 oz. tubs to 12-gallon screwtop pails.

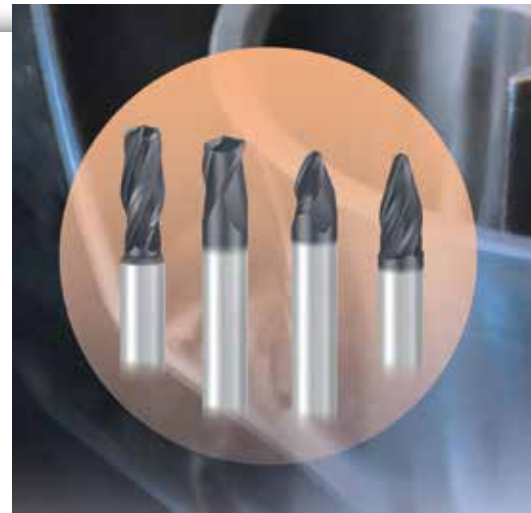
Until a couple of years ago, Calframax was using a long 90° indexable tool to cut the moulds for square containers. “It was doing a parallel vertical stepover, which leaves a very aggressive scallop height – in other words a poor finish,” says plant manager Rob Roberts. Calframax had to do a lot of polishing to get the required +/- 1/1000 tolerance.

“We need a very consistent sidewall thickness. If there are any inconsistencies in our moulds, that results in poor filling. We need a very consistent part that can be shot at a high volume.”



The time factor was another concern. “It would run for at least eight to ten hours all the way around the core,” Roberts says, “and then another eight to ten hours around the cavity of the moulding surface.”

After seeing Emuge’s new Circle Segment End Mills in action at an open house event, Calframax asked Emuge to bring the technology to the shop.



Calframax worked with Emuge, who provided application and programming assistance, to test the end mills and success followed. Roberts hasn’t looked back.

The moulding surface now takes three to four hours per pass, and tool life has been extended. But as impressive as it is, the time savings is almost a secondary consideration. “We never complain about being able to save time,” says Roberts, “but for us it’s really about the quality of the product that it’s given us. We get a finish that requires little if any polishing whatsoever – an immaculate finish.”

The end mills are used on a DMG MORI 160 five axis mill-turn centre. Now, instead of a parallel vertical stepover, Calframax is doing a horizontal Z-level cut with the circle segment end mills, which yields a much better finish and consistent cuts. “We were getting 2/1000 tolerances with the old tool, but now we’re well within the 1/1000 we need.”

Conveniently, Calframax didn’t have to upgrade its software to handle the new end mills. The company has used Mastercam CAD/CAM software since the company’s early days. “We found that Mastercam does a phenomenal job at manipulating those circle segment end mills in a five axis cutting path,” Roberts says. “It worked well right away.”

www.calframax.com
www.emuge.com