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Jessco Manufacturing...Finds its right Tool

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Mike Eaton and Chris Fletcher (see figure 1) run a two-person machine shop named Jessco Manufacturing Inc. in Washington state, where they make plastic injections molds, as well as design mechanical and plastic parts (www.jesscoeng.com). In the mid-to-late 1990s, they had an in-house programmer who wrote a custom CAM application which handled all their CNC needs. After he left in 1999, Jessco started using Surfcam which was already owned by a new partner who had joined the company. While they found it very difficult to use, they battled through it for three years, trying to comprehend how it worked. "I tried learning Surfcam, but I am more of designer, not a CAM guy – it was pretty technical and I didn't have time for it," founder Mike Eaton recalled.

Figure 1 - Mike Eaton and Chris Fletcher of Jessco Manufacturing Inc. stand in front of on of their two CNC machines. Mike Eaton is holding a cavity of a mold for a Jacuzzi component, which was just machined with tools controlled by VisualMill.

When the business relationship with that partner ended, Jessco looked into buying Surfcam but after analyzing the costs associated with acquiring it, it would have been prohibitive. Eaton noted the it "cost 16 to 18 thousand dollars just to get started, and that doesn't include the expense of training that was needed with every new version – which also required travel to Seattle. Then there was also the $1800 a year in maintenance." Machinist Chris Fletcher added "in addition, there were no solid modeling capabilities, so visualizing results was very difficult."

So the pair began their search for a new CAM application. Two of the packages they look at were Esprit and Mastercam. They were interested in Esprit and even put down $6,000 for what they thought was a complete 2D/3D package. However, when they returned from their Esprit training, they found out that the reseller wanted $12,000 more for the 3D capabilities, which ended that deal. After briefly looking at Mastercam, they realized that for the same amount that they would spend on 2 ½ axis machining, they could get 5-axis capabilities from another system they had just started researching called VisualMill from MecSoft Corporation out of Irvine, California.

After evaluating the product and company some more, Jessco made the decision to switch to VisualMill.

Unlike their Surfcam experience, they found that VisualMill required no formal training. It only took about a day to run through the tutorials by themselves, and in almost no time they were creating toolpaths (see figure 2) and cutting metal (see figure 3 and 4). In addition to the excellent tutorials provided, when they realized the software didn't come with the post processor they needed for their CNC, they phoned technical support, "and 15 minutes later we had it via an email," recalled Eaton. Even though this happened four months ago when Jessco first purchased the software, his sustained level of impressiveness with this degree of service lead me to believe that it could have happened yesterday.

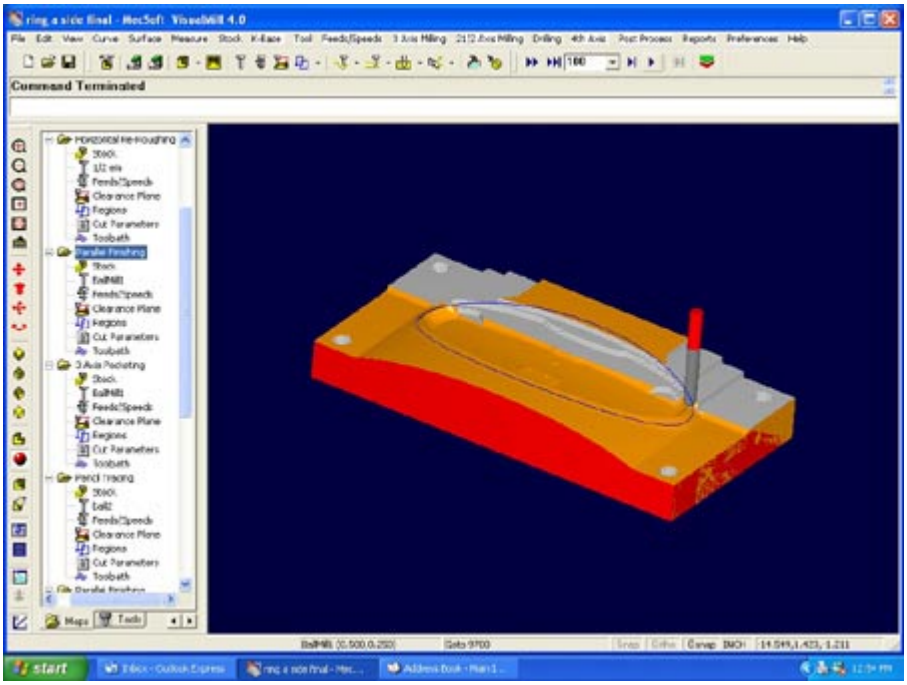

Figure 2 – VisualMill's simply user interface, shown here, makes it possible to understand how to generate toolpaths in a short period of time.

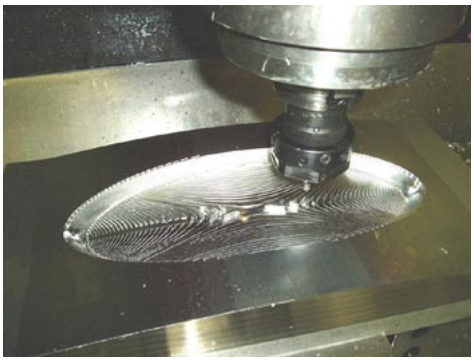

Figure 3 and 4 – The CNC machines in action making the same part shown in the previous two images.

While ease of use and helpful technical support are certainly MecSoft's strong points, surely you would expect an expensive program such as Surfcam to win out on quality and speed. "Not so," says Eaton, who feels that he "can achieve a smoother finish, while also having my toolpaths generate 10 times faster than Surfcam." Fletcher added that "the extra selection of toolpaths that VisualMill offers allows you to do a lot more functions…functions that are not available in SurfCAM. For instance, tools such as the Drill Plunge give you the option of getting the material out of there really fast. So you don't run a big risk of breaking tools – because

most of the meat is out of there." Eaton added how efficient VisualMill's toolpaths are by saying, "we are very happy with how the tools stay in contact with the material an extremely high percentage of the time."
The pair also talked about the ease of which VisualMill reads in their solid models from SolidWorks. Via VisualMill's Parasolid import capabilities, interoperability has not been a problem at Jessco (see figure 5). "Being able to work with and machine the solids created in SolidWorks saves us at least 30%, time-wise," noted Fletcher.

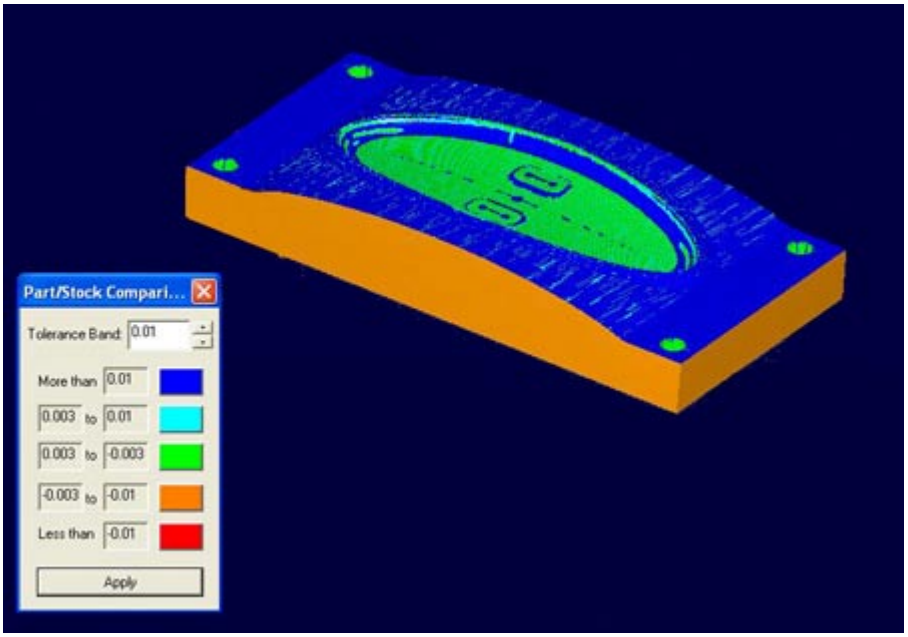

Figure 5 – The Jacuzzi part was built in SolidWorks and it takes 90 seconds to regenerate, due to its complex internal shapes. However, it imported without a hitch into VisualMill, which also had no problem creating a toolpath. The final part can be seen in figure 1.

Conclusions

If CAM software that cost one-third as much as its major competitors meant operating a program that was slow, produced poor quality parts, and left you without any technical support, then it wouldn't be worth it. The same program wouldn't be such a good value if weeks of expensive training were involved and it took months to become efficient, leading to hours of lost productivity. However, using VisualMill, Jessco has become proficient almost immediately (see figure 6), and in the four months that they have been using it, they have already seen improved quality and a return on their investment several times over. "I almost feel like we have been rewarded for the time and money we wasted with other systems, because finding and then implementing VisualMill has been like a dream" Eaton concluded.

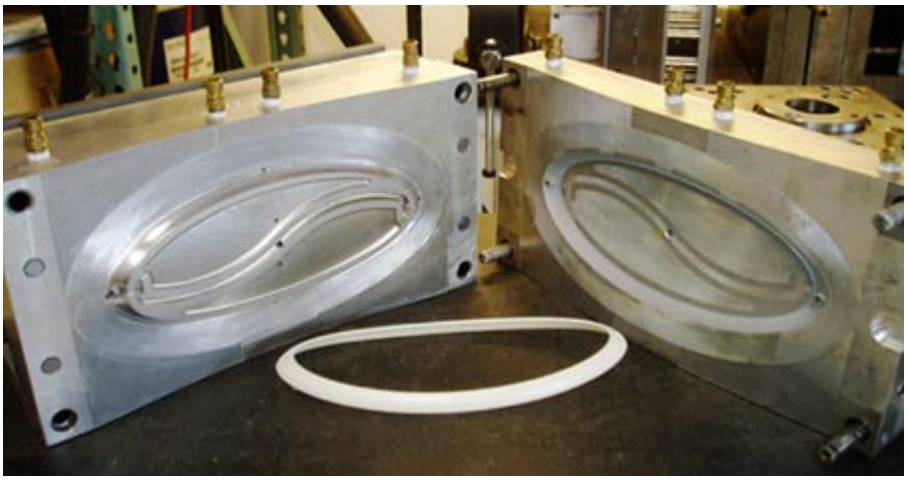

Figure 6 – The final core and cavity for the Jacuzzi part, with the molded part in the foreground.