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Finding a Middle Ground

Steve Ryan is the owner of RyanTech Engineering (www.ryantecheng.com), a small design and prototyping firm located in California. His company is a leader in designing innovative battery-powered Personal Transportation Vehicles (PTV), as well as other products such as lightweight bikes (see figure 1) and racecars (see figure 2).

Fig 1 – A lightweight bike frame designed by RyanTech Engineering

Fig 2 – A racecar designed by RyanTech Engineering

Since he started his company back in 1989, he has always been at the forefront of technology. Many years ago, he began using Mastercam from CNC Software for his manufacturing needs, however, despite his best efforts, he found the product had "too much of a learning curve." He also tried lower-cost products, like BobCAD, thinking that they would be easier – which they were – but then he ran up against a lack of the CAM features he needed to manufacture his high-precision

aluminum and plastic prototypes.

So about three years ago, Ryan started to search for a new CAM program. He looked at GibbsCAM, ArtCAM and a few others, but decided that they weren't worth the money. "There were not many systems back then that featured a graphical user interface. So when we saw VisualMill from MecSoft we were impressed with how easy it seemed and how it was actually in our price range," recalls Ryan. "The kicker was finding out how robust it was. I remember thinking 'my goodness – there are high-end products out there and VisualMill has many of their same tools at a fraction of the price, all within a simple interface.'"

As it turned out, VisualMill's graphical user interface wasn't just smoke and mirrors. "The software was truly easy to learn – it only took me a half day to get up and running with it – and that's without any formal training. Since then, the support has been phenomenal," Ryan said echoing the comments of other VisualMill users who, like Ryan, have recalled times when the post-processor they required arrived from MecSoft via email in 20 minutes.

Favorite Tools

Now a veteran of the product, he points to the flexibility of the software as being one of its many strong points. "One of our machines uses cold air as a coolant, while a vacuum removes scrap material. We were able to alter the G-code so that both the machine and vacuum turn it on and off automatically. It sounds simple, but it has proved to be a great time saver," Ryan said.

Ryan also points to the flexibility when machining, noting "in VisualMill, there are different ways to attack a machining problem – it gives us a lot of approaches to cut material the way we want to."

He also pointed out how the software has helped to "up the quality, due to little things like being able to control the step over, in addition to the amount of control we now have over the toolpath with VisualMill. In addition, we are able to machine items that we weren't able to before, which has helped to expand our business." Ryan also pointed out how his company is better able to retain customers because of the improved turnaround times that have occurred since VisualMill was implemented.

As a company heavily involved in prototypes, Ryan also points to the Region command (see figure 3) as one of the program's most useful tools.

It allows him to control toolpath in a small region, so "you don't have to re-machine the entire part if there is a change, such as a pocket that needs to be deeper. This is helpful when you are dealing with prototypes," Ryan said. Currently still on version 4, he is looking forward to moving to version 5, which has extended re-machining capabilities, among its many enhancements.
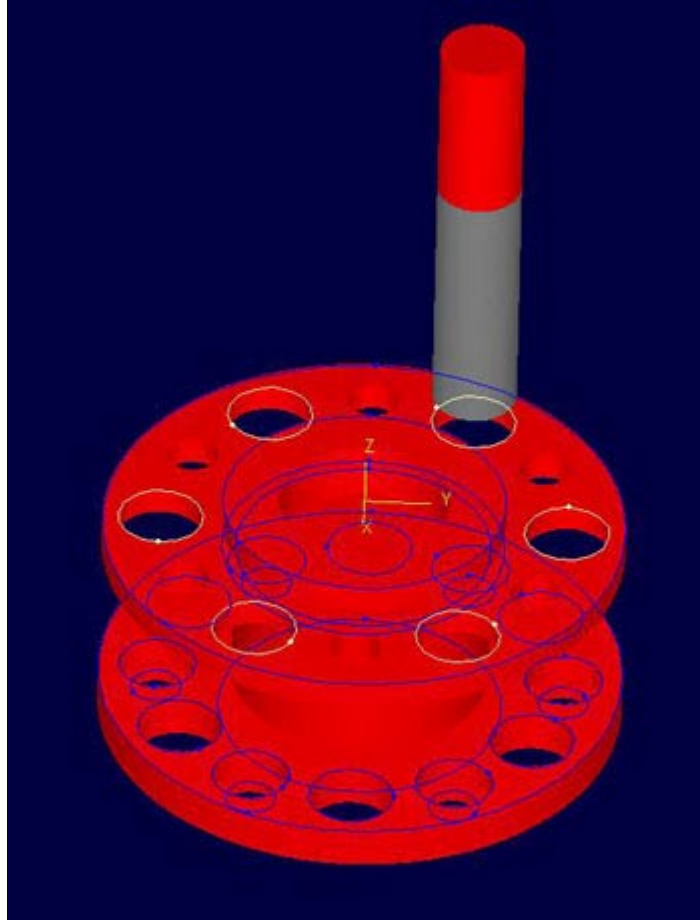
Fig 3 – Region Control is one of the most important features of VisualMill, and this image shows how a set of holes can be selected and then a Peck Drill operation performed only on them.

Other Programs

In addition to VisualMill, Ryan also uses SolidWorks and Rhino. From SolidWorks he exports an IGES file, which he says comes over fine in almost all cases . He talked about how with IGES you can export sketches, which automatically become regions in VisualMill, which is very handy. If there is a problem with a model, like a missing surface, then he simply goes from SolidWorks to Rhino, manually removes and rebuilds the offending surface and then moves that Rhino model into VisualMill. "The direct translation from Rhino is great, and the three programs work together really well," Ryan pointed out. As a side business, Ryan also creates prototypes for other companies so he has extensive experience dealing with many other types of file formats and he is satisfied with VisualMill's import capabilities.
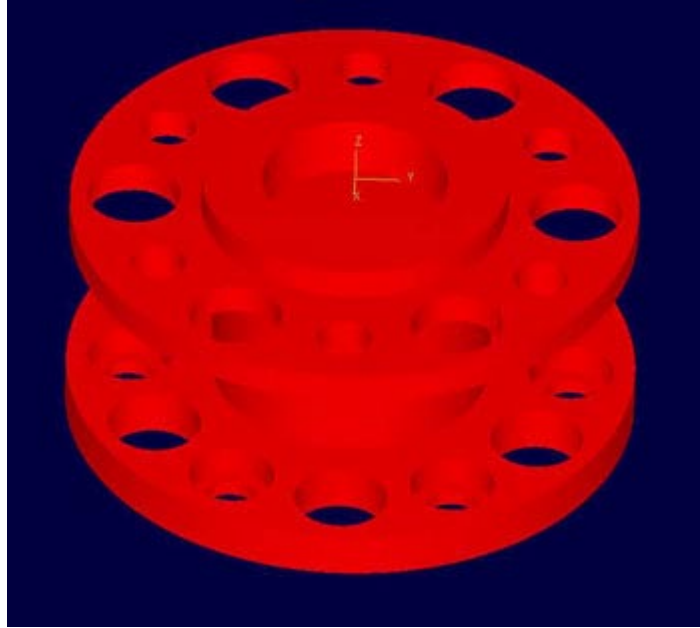
Figure 4 – This model was imported without any problems from SolidWorks via IGES

Fig 5 – Part machined in VisualMill.

Conclusions
Some users start with low-end CAM products and when they eventually get frustrated with their lack of features, they migrate to the high-end. Others start on the high-end and eventually get frustrated with their long learning curve and high maintenance costs, so they move to a low-end product. Steve Ryan tried both the high-end and the low-end. However, he seems happiest – and most productive – right in the middle, enjoying outstanding features without sacrificing power or breaking the bank.