

MecSoft Corporation

18019, Sky Park Circle, Suite K,L
Irvine, CA 92614, USA

PHONE: (949) 654-8163
E-MAIL: SALES@MECSOFT.COM
WEBSITE: WWW.MECSOFT.COM

VisualMill meets Hollywood

Ever since Bill Barschdorf changed his profession from scaring kids to entertaining them, he dreamed that there was an easier way to directly create prototype models and sculptures. You see, Barschdorf used to create the makeup and monsters used in Hollywood blockbusters like "Nightmare on Elm Street, Part 4" and The Abyss. However, one day in 1994, when he was still working in the movie business and running his company called Altered Anatomy FX, he received a call from Mattel Toys offering him the opportunity to design foam footballs. Ever since then, the monster maker became a toy maker. After 7 years running that company he closed the doors and opened BNT Studios in 1998 (www.bntstudios.com and www.bnt4cncrp.com) in Riverside, California. He now describes himself as a toy sculptor, prototyper, designer and model maker. Since that day almost 10 years ago, he has streamlined his process, while picking up new big name clients such as Jakks Pacific, Fischer-Price and Hasbro.



Figure 1: A toy figure Barschdorf created, machined and cast with the help of VisualMill.

Learning a New Craft

Barschdorf first began using digital modeling and CNC milling for the creation of all his sculptures and model-making projects about five years ago. He streamlined the design phase when he learned about Rhino, a general 3D modeling program from Robert McNeel and Associates. "I wanted to get the design and modeling part down first, before I streamlined the machining end of things by upgrading to better equipment and CAM software," Barschdorf recalled. While Rhino fulfills much of his needs, he also taught himself other modeling programs such as Newtek's Lightwave and 3D Studio Max from Autodesk and is working on learning Maya and Autodesk Inventor.

While these programs were the turning point for increased design creativity and workflow productivity, it was Roland's 1998 introduction of the MDX-3, a desktop milling machine, which

allowed Barschdorf to realize his dream of a machine that could sculpt for him. He used the MDX-3 for about three years along with the software that comes with the machine, and its limitations “just about drove me nuts” said Barschdorf. The toolpaths it created were flawless; however, it just didn’t give him the versatility in machining he needed.



Figure 2: A toy figure Barschdorf created, machined and cast with the help of VisualMill.

Despite these problems, he decided to make a transition when he purchased Roland’s flagship milling machine, the MDX-650, which he now uses. “It is so much faster than the previous machine, it couldn’t be called a desktop milling device, but rather a subtractive rapid prototyping (SRP) machine (as opposed to most RP processes which add material),” Barschdorf suggests. He was very excited about this new device, because of its superior speed, but once again, the software that Roland provided with this product was not capable of meeting his needs. “I realized that acquiring a new CAM (computer-aided manufacturing) application was the key to solving all my problems and addressing the current limitations,” Barschdorf says.



Figure 3: A toy figure Barschdorf created, machined and cast with the help of VisualMill.

Enter VisualMill

After investigating different applications; he came across VisualMill from MecSoft Corporation. He bought the program and eventually taught himself how to use it even though he had little CAM experience. After a few months of using VisualMill he saw his productivity rise dramatically. “I think a lot of people would like to get to the point where I am at, but are afraid of the time involved and the long learning curve. However, you have to start somewhere – I went from knowing absolutely nothing about this type of technology to being considered the ‘leader of pack’ in my field in just a few years.” He now does 98% of his workflow in the digital world, compared to old school traditional

sculpting on an armature with clay or wax or as Barschdorf puts it "I now use my arsenal of digital sculpting tools instead wire loops and rakes."

Barschdorf points to two specific VisualMill commands that really aide his productivity. One is called Parallel Finishing and the other is Pencil Trace. With VisualMill, Barschdorf can easily rough out a part on his milling machine with a large tool and then proceed to the Parallel Finishing. The Parallel Finishing command helps Barschdorf cut the material properly, compared to the Roland software which had minimal options. As Barschdorf points out "the versatility of the parallel finishing operations in VisualMill has given me the right type of commands to program the types of tool paths I have needed for a long time."

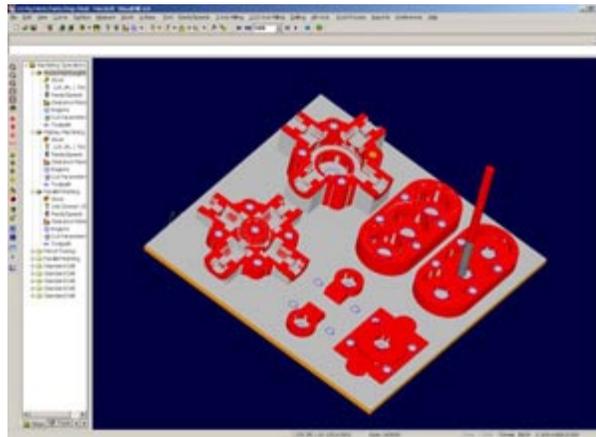


Figure 4: The Horizontal Roughing tool in VisualMill is another useful command for Barschdorf.

After the Parallel Finishing runs are done he uses the Pencil Trace command to calculate the material that is remaining and creates tool paths just to remove the last bits of residual material with a finer tool. "Since all my machining is so small this feature is invaluable to me. I think I am using smaller end mills than most CAM users and machine operators as I typically have to machine to a .050- .030-inch ball end mill, and that is tricky machining. It's like doing the final detail hand work, but now a lot of it is done right on the machine." With the addition of VisualMill to his arsenal now every part that comes off the MDX-650 is between 95% - 98% completely sculpturally machined. In addition, "my hand clean up and detail work now takes very little time," notes Barschdorf. "It is reduced to a brush down with naphtha and only small wire loops and pin tools for delineating the really small details." In the past, with the Roland software, he may have had to run the entire original tool path three or four times, each time with a progressively smaller tool in order to achieve the fine detailed needed in his toy products. It was like "machining the same part four times...downright painful and simply too time-consuming," noted Barschdorf.



Figure 5: In addition to toys, Barschdorf also does mechanical parts, and here is the completed part shown in figure 4.

Data Translation

Barschdorf also talked about the flawless translation of data between Rhino and VisualMill. "The software has a direct import capability with Rhino so it keeps the model within proper, workable tolerances," Barschdorf said. He also noted that he wishes there was direct import from 3D Studio Max and Lightwave, as the DXF neutral format he has to employ requires some prep work in order to get the tolerances correct. These manual calculations ensure that the resulting mesh will be dense enough; if not, the final machining won't be as smooth and detailed as he requires.

Conclusions

So the road to modernization hasn't always been a smooth one for Barschdorf, but he has hung in there, taken his lumps, and progressed onward. He still thinks of himself as "not all the way there yet, but getting through it." Yet, he encourages others to follow his lead. With VisualMill, he found an affordable package that maximized his productivity, while fueling his creativity. He concluded by saying, "I am on the cutting edge of subtractive rapid prototyping – and pioneering it in many new ways. As a result, my dreams have been realized."

As a final bonus, it's always nice when others appreciate your efforts. As Larry McCauley, the Manager of the Boys Sculpting division at Mattel Toys says, "in my opinion, Bill Barschdorf is probably the most proficient sculptor who successfully blends the digital modeling and traditional sculpting media together."