Cheetah Tool Creates Production Parts for Riveting System with DuraForm® Plastic

Cheetah Tool, founded in 2003, hoped to bring high-speed technology to industrial, high-strength blind rivet fastening systems. The start-up company created its early prototypes totally through machining, with components made from metal and plastics.

"It's a complicated hand tool with many functions inside it," said David Fulbright, founder of Cheetah Tools (Waco, Texas). "Typically, you have to machine every part at $60 to $250 per part, and you don't get it right the first time."

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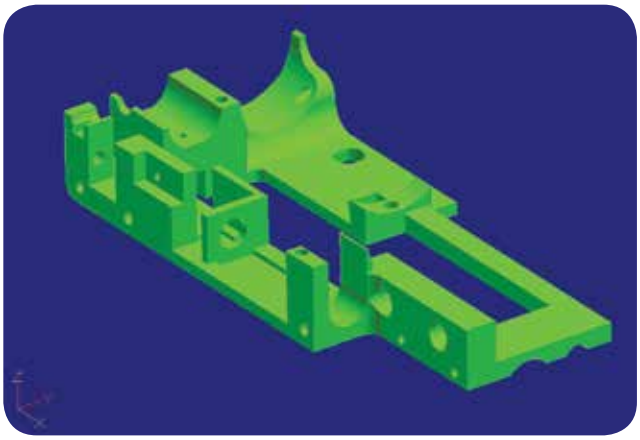
– David Fulbright
Cheetah Tool Founder

Looking for light-weight material options, faster results, parts consolidation and design freedom, Cheetah Tool began working with a Rapid Prototyping parts service provider Harvest Technologies (Belton, Texas). "3D Systems' sintering technology provided by Harvest helped us design and create very complicated parts in days instead of weeks or months," Fulbright said. "We put the phrase 'Rapid Prototyping' to work. We had astronomical savings in time and money by using SLS® technology and DuraForm® Plastic."

Using the quick and cost-effective flexibility of SLS® technology, Cheetah Tool performed four design iterations to make the rivet system easier to assemble, more reliable and perform at an optimal level. The company relied on Harvest's long-time RP experience to overcome the technical challenges of manufacturing complex geometries from light-weight plastics.

"This was one of the more demanding production applications because it required aesthetically finished exterior parts, as well as structural interior components," said Ron Clemons, director of business development at Harvest. "By combining David Fulbright's design skills and willingness to design for the SLS® process, and Harvest's technical ability to customize production to meet his specific needs, we were able to produce a very good final product."

Cost Savings and Quicker Time to Market



In hindsight, Chetaah Tool saved hundreds of thousands of dollars in tooling and shortened their time to market by months. “If the 3D Systems’ technology wasn’t available, I would have needed a million more dollars and with all the intricate parts, it would not have been possible to complete the riveting tool,” Fulbright said.

Twenty-five percent of the production hand tool is manufactured in DuraForm® Plastic, a testament to the plastic’s excellent mechanical properties, elevated temperature resistance and smooth surface finish. Not only are parts accurate, but they are also machinable, paintable and have good chemical resistance.

“We’ve been pleased that we could do something no one in the industry has been able to do,” Fulbright said. “This tool has been asked for by the transportation industry for 30 years.”

With a cycle time of less than two seconds, the Automatic Blind Rivet System increases productivity while eliminating operator fatigue. The 3.6 kg. (8 lb.) tool provides quick, seamless operation and can be used manually or as a fully automated system.