

# Plastics News

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## Mantle's 3D printing can reduce tooling time, costs

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Plastics processors are automating the fabrication of steel tooling to reduce lead times, costs and labor shortages.

San Francisco-based Mantle Inc. (S27055), a metal 3D printing company focused only on tooling, said it has sped up the process to make production-grade mold and die inserts.

Founded in 2016, Mantle officials have seen a growing number of processors, OEMs and mold makers incorporate its patented technology. "We are currently seeing the highest percentage of OEMs attempting to reshore manufacturing in the past 18 years," Mantle Marketing Director Ethan Rejto said. "The reshoring, combined with rising costs and lead times of foreign tooling, is driving the increase in demand for domestic tooling."

Mantle offers an option to meet the demand. The technology combines 3D printing of tool steel pastes with traditional computer numerically controlled machining to produce tools the company that said deliver the accuracy, surface finish and steel properties needed for demanding applications. This capability gives processors production-representative parts during prototyping, according to Rejto.

"With the push of a button,

our technology gets them 85 percent of the way there, and then it requires just a little bit of finishing to be molding in tool steel," Rejto said.

Many Mantle technology adopters are sharing case studies, including Spectrum Plastics, General Pattern Co., Westec Plastics and Westminster Tool.

General Pattern, a 100-year-old injection molder in Blaine, Minn., found success for an automotive trim component. The company was able to produce dead-sharp features on the tool as printed.

"They put it right into the mold and were shooting parts off it," Rejto said.

The tool took 10 hours of active printing to produce compared with 40 hours the traditional way, saving work and time for General Pattern, which manufactures metal and plastic components.

Speed to market is a constant consideration with the company's three divisions being rapid prototyping, rapid tooling and rapid manufacturing.

Mantle's technology is all about rapid, Rejto said.

"It prints over the weekend. It prints overnight. It prints while you're at the beach and you just have to go in and maybe do some touch-up work," Rejto said.

Tools made with Mantle's technology have produced millions of parts while reducing tooling lead times and costs and helping

manufacturers solve their labor shortages, according to Chief Commercial Officer Paul DiLaura.

A week before NPE2024, the company put on a webinar about demand for domestic tooling rising at a time the number of tool shops is shrinking. The number of toolmakers in the U.S. has dropped by 50 percent over the past 25 years, Mantle officials said, pointing to U.S. Bureau of Labor statistics.

DiLaura sees the company's 3D printing technology as a way for processors to future-proof their businesses as the pool of toolmakers dries.

A big part of the appeal is that tool shops can do more with the same number of people in a tight labor market, he said.

For example, Westminster Tool staff reduced lead time for a complex steel prototype tool by 50 percent, which eliminat-



Rejto



DiLaura

MANTLE INC.  
S27055

Reshoring, rising costs, and lead times of foreign tooling drive the increase in demand for domestic tools. Mantle Inc. photo



ed more than 110 hours of labor and machine time.

Time is valuable in the plastics industry for winning business, DiLaura said, and Mantle continues to see good adoption, new customers and new use cases.

In August 2023, injection molder Westec turned to Mantle technology after trying to hire a toolmaker for one and a half years with no success.

"It's that hard to find and hire

toolmakers. The decline in the U.S. is a big concern," DiLaura said.

When one of Westec's customers, Gracon Manufacturing, wanted to implement a design change, Mantle became the Plan B with great results reported.

With two hours of toolmaker time and the printer running lights out over a weekend, the H13 tool steel inserts were done in just five days compared with more than two weeks.



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