

3DPrintedParts.com Extends Same-Day Shipping with Figure 4 Standalone

Figure 4 Standalone enables contract manufacturer to exceed customer expectations with injection-molded quality 3D printed parts

3DPrintedParts.com is a contract manufacturer in Grand Rapids, Michigan, that combines engineering application knowledge with manufacturing capability to provide parts on demand to its customers. A division of Scarlett, Inc., 3DPrintedParts.com works with many customers who are looking for ways to get products to market faster. The addition of two 3D Systems Figure 4™ Standalone 3D printers has helped the company accelerate part turnaround and advance its reputation through injection-molded quality 3D printed parts for both prototyping and end-use applications.

CHALLENGE:

Accelerate delivery of high-quality prototypes and end-use parts in the digital manufacturing environment to provide unparalleled customer service

SOLUTION:

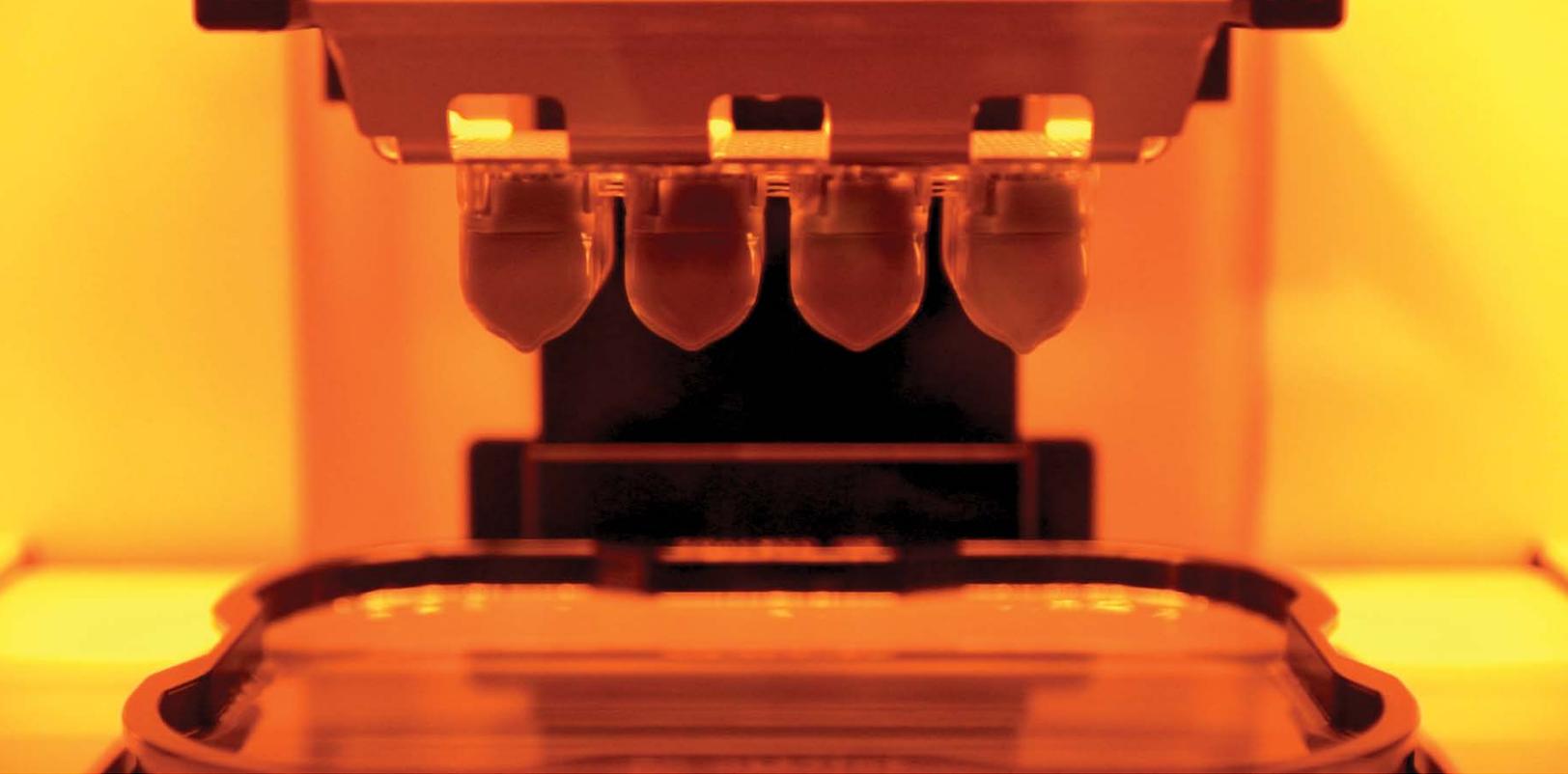
High speed 3D printing on 3D Systems' Figure 4™ Standalone 3D printers with Figure 4™ TOUGH-GRY 15 material and a file preparation and print management workflow powered by 3D Sprint® software

RESULTS:

- Extension of same-day shipping cutoff time from 8AM to 12PM
- Injection-molded quality 3D printed parts without the time and expense of tooling
- No minimum order quantities
- Digital Light Printing (DLP) enables batch printing without extending build time
- Full return on investment projected within a year

3DPrintedParts.com projects a full return on investment for its Figure 4 Standalone 3D printers within a year.





3DPrintedParts.com says Figure 4 Standalone has been a great tool for helping customers avoid tooling costs for low-volume production.

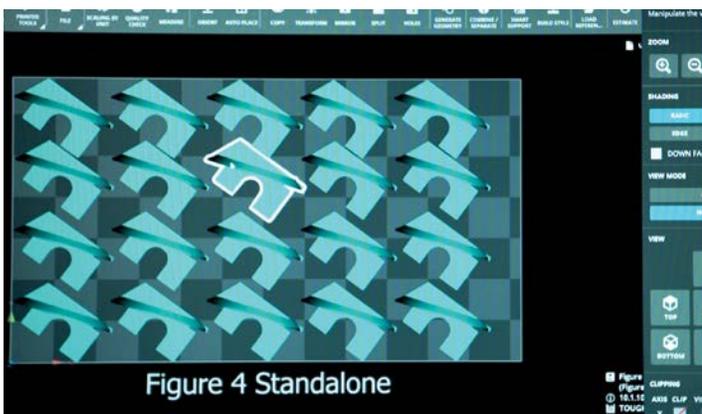
According to Mike McLean, general manager at 3DPrintedParts.com, approximately 60-percent of the parts produced on the Figure 4 Standalone printers are for prototyping, but the quality and material properties of the final prints are opening up more opportunities. "We're finding we can help companies get their minimum viable products to market by directly printing them, and are seeing more and more growth in end-use parts and even rapid tooling," McLean says.

Across prototyping and production applications McLean reports a positive experience with standout print speed, reliability, material quality and ease-of-use. The company projects a full return on investment for its Figure 4 Standalone printers within a year.

Injection-molded quality in 3D printed prototypes

When 3DPrintedParts.com was first in the market for high-end plastic 3D printers, it evaluated all available options. The factors that ultimately attracted the company to Figure 4 Standalone were the machine warranty, ease-of-use, low entry cost and part quality: "I think the part quality was probably the best we saw," McLean says.

The first project 3DPrintedParts.com worked on using its Figure 4 Standalone was "a grand slam" says McLean. The customer presented the business with a part that had been challenging to 3D print using Fused Deposition Modeling (FDM), and needed 30 prints with a rapid turnaround. Using Figure 4 Standalone and Figure 4™ TOUGH-GRY 15 material, 3DPrintedParts.com was able to print the part in batches of five and achieve a very high resolution with accelerated print speeds.



Build time and material usage estimates in 3D Sprint software help 3DPrintedParts.com provide its customers with near instant quotes.



The surface quality of Figure 4 parts is so good 3DPrintedParts.com's customers can hardly believe they are not injection molded.

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“FDM machines can produce noticeable layer lines and even some part defects that make you wonder if the part will fail,” McLean says. “On Figure 4 Standalone we were printing at a 50-micron layer thickness and the parts were absolutely smooth. When we delivered them to the customer, they were dumbfounded. They went from having something unusable to something that exceeded their expectations in just two days.”

3DPrintedParts.com reports the Figure 4 TOUGH-GRY 15 material is rigid and durable, enabling it to be used for robust prototyped parts as well as some end-use components. “The surface quality is so good that when we hand parts to customers they can hardly believe they’re not injection molded,” McLean says. Figure 4 Standalone offers flexibility for quick material change outs as well as the ability to allocate materials based on job requirements.

3D Systems’ plastic printers include 3D Sprint® software, enabling streamlined file optimization, preparation and

printing, as well as a suite of advanced features for design, file correction, analysis and more. The software’s estimates for build time and material usage also help 3DPrintedParts.com provide its customers with near instant quotes. “Figure 4 and 3D Sprint are a godsend,” says McLean. “3D Sprint is a great tool for developing fast and reliable predictions of build time and quality, which is critical to our costing.”

Figure 4 print speeds enable same-day shipping, improved cost-efficiency

The print speed offered by Figure 4 Standalone has enabled the contract manufacturer to extend its cutoff time for same-day shipping by four hours, from 8AM to noon. “Not a lot of machines in the market today give you that capability,” says McLean. “The speed at which we’re able to produce parts on Figure 4 Standalone allows us to turn parts around and keep the machine busy, reducing our overhead costs per part and passing benefits along to our customers.”

Figure 4 Standalone enables material to be allocated based on job requirements.



3D Systems' Figure 4 technology uses Digital Light Printing (DLP) with a non-contact membrane that builds parts by projecting full design layers rather than tracing geometries along a point. In addition to delivering exceptional surface quality, this process removes the relationship between build volume and total print time, making print duration the same whether one part is being printed or ten. Factoring in build time as part of the cost equation, McLean says: "The more we can fill up the build plate, the less expensive per part cost is going to be."

3DPrintedParts.com's customers are also able to save costs in product development by eliminating the need for minimum order quantities with Figure 4 Standalone. Conventionally, the business' customers would face an expense of \$10,000 to \$80,000 to initiate tooling for any level of production. Now, with the ability to digitally manufacture parts at any quantity, they are free of that limitation and can massively accelerate cost-efficient prototyping and new product introductions.

Growing demand for end-use 3D printed parts

According to McLean, 3DPrintedParts.com is excited about the number of end-use applications it has been able to answer using Figure 4 Standalone. "A lot of people look at DLP and other plastic 3D printing as strictly a prototyping tool, but Figure 4 Standalone has been a great tool in helping customers avoid the tooling costs for their low-volume production needs," says McLean. Over the course of three months, the business used its Figure 4 Standalone printers to produce more than two thousand production parts.

With 3D printing as a manufacturing method, more designs become viable than with the conventional limitations of tooling. For this reason, 3DPrintedParts.com is enthusiastic about partnering with its customers to design parts for 3D printing around mechanical properties and materials to lower per part costs beyond what is possible with traditional manufacturing. "The material pricing and print speed of Figure 4 Standalone takes a lot of other technologies off the table when we're discussing how to manufacture a part for a customer," McLean says.

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