



InterPRO Helps Distek Serve More Customers with **3D Printed Adapters**

Origin One Production
Case Study

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Dan Straka
InterPRO President



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Introduction

InterPRO Additive Manufacturing Group, a service bureau, started out as a 3D printing prototyping company and is seeing growth in production applications, due to advancements in 3D print technology and materials. InterPRO's client Distek, a leading manufacturer of laboratory testing instruments for the pharmaceutical and biotechnology industries, asked InterPRO to help them manufacture a motor adapter that would allow prospective customers to use Distek's technology with customers' existing motors. InterPRO used Stratasys' Origin® One's next-generation 3D printing hardware and software to print parts that were compatible with Distek's bioreactor and their client's devices. The parts had injection molded-like strength, consistency, and durability. The surface finish had an impressive, consumer-grade look and feel.

Challenge

Distek's challenge was to produce a motor adapter that was compatible between their proprietary bioreactor and their clients' motors. However, the adapter design wasn't easily manufacturable by CNC machining, injection molding, or even cast urethane. In addition, the company needed a fast turnaround, to meet immediate customer needs for a variety of adapter sizes in low volumes. High up-front tooling costs and long lead times, plus low-volume demand, ruled out traditional methods. As a result, InterPRO turned to 3D printing as a possible solution.



Dan Straka, InterPRO's president, thought 3D printing could be a fast and cost-effective option for Distek, but he needed to find a suitable 3D printing technology and a material that could meet the application's tough requirements.

Previous prints using FDM technology did not produce acceptable results, due to poor surface finish and aesthetics and prohibitive costs. Enter the Stratasys Origin One 3D printer, which he had purchased in 2019 for exactly this type of challenge. InterPRO was sure they could achieve the economical results Distek needed and produce consumer-grade parts using the Stratasys Origin One.



Solution

The large diversity of materials available for use in 3D printing increases the number of applications InterPRO can address.

“As a service bureau, every new material is a new problem we can solve for someone,” Straka said.

InterPRO used matte black LOCTITE® 3843, a tough ABS-like material, on the Stratasys Origin One, to 3D print durable, high-impact, professional-looking parts, with a consumer-grade finish indistinguishable from traditionally made parts.

Technology Benefits

- The Origin One printer can produce two 80mm height adapters in just 2.5 hours – with zero tooling costs.
- This type of manufacturing agility and speed to market is a major advantage of the Origin One’s 3D printing technology.
- InterPRO is printing multiple SKUs as needed for Distek clients, allowing Distek the manufacturing flexibility to address clients’ individual needs in real time, at no additional cost.
- Distek is producing multiple adapters for various motor configurations.
- The ability to print parts on demand means there’s little advantage to holding inventory.

“Our bioreactor is a state-of-the-art system, and in keeping with our brand’s identity, it was important to offer a motor adapter that not only functioned well and was chemical resistant but also looked truly professional, with a smooth surface finish,” said Shawn Craig, project manager and mechanical engineer at Distek, Inc.

“Having explored traditional options, injection molding didn’t make sense, given the fast turnaround and high-mix small lot sizes we needed, added Craig. “3D printing with the Stratasys Origin One and LOCTITE materials enabled us to meet the turnaround time, functional specs, and aesthetics required to confidently adopt this technology for end-use adapters.”



Business Impact

InterPRO can provide just-in-time manufacturing solutions through its extended capabilities, powered by the Stratasys Origin One, their industrial materials, high throughput, and economic part viability.

- The Stratasys Origin One provides a 3D printing platform that enables new applications for end users and allows users to address smaller, more “bespoke” markets, while maintaining a good ROI.
- It provides an ideal solution for new products being introduced to the market; parts where the lead time or tooling cost doesn't lend itself to injection molding; or products that include high-mix, low-volume components that require different sizes.

Industrial 3D printing can be a business facilitator, with the right technology, materials, throughput, and manufacturing economics. By offering robust 3D printing solutions to customers, InterPRO gains a new market for the production of end-use parts.

“Our clients are seeing real success from our service offering,” Straka said. “Stratasys Origin One parts are a combination of cosmetically appealing parts, with advanced material properties you don't typically see in 3D printed thermoset plastics. That's a winning combination for our clients and their production needs.”

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