



ADDITIVE BREAKTHROUGHS ENABLE CONSUMER-GRADE FINISHES THAT RIVAL INJECTION MOLDING

Background

Distek, a leading manufacturer of laboratory testing instruments for the pharmaceutical and biotechnology industry, needed to manufacture a motor adapter that would allow prospective customers to use their existing, in-house motors to test the company's new single-use bioreactor.

The Challenge

Shawn Craig, project manager and mechanical engineer at Distek, Inc., explained, "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 but looked truly professional with a smooth surface finish."

"Having researched our options, injection molding didn't make sense, given the fast turnaround and small lot sizes we needed. We quickly discovered that 3D printing was our fastest and most cost-effective route."

Though Distek required only a small quantity of motor adapters, it needed multiple styles of adapters to fit various controller models. Originally, Distek 3D printed the adapters using the FDM (fused deposition modeling) process out of ABS (acrylonitrile butadiene styrene). While the FDM-printed adapters were functional, the costs were high, and the adapters had an unprofessional, coarse finish, including visible additive material layer lines.

The Solution

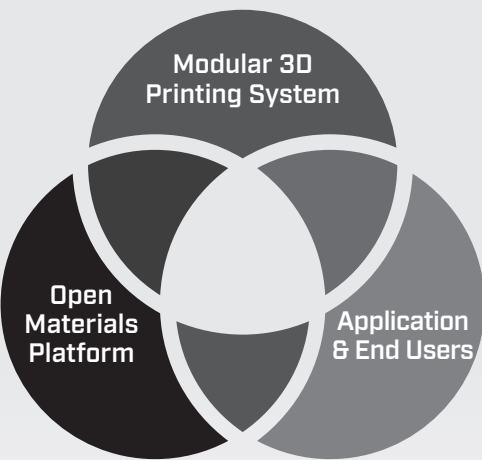
Distek approached its long-standing additive manufacturer, InterPRO Additive Manufacturing Group, to inquire about the feasibility of printing parts that were not only durable but also attractive.

In turn, InterPRO contacted both LOCTITE®, for its materials expertise, and Origin, a Silicon Valley additive manufacturing start-up with a production-ready 3D printer that can print LOCTITE materials. With an understanding of the demands of the application, LOCTITE supplied a durable, high-impact material that delivers a consumer-grade finish.

The Origin printer produced two adapters in a single run in only 2.5 hours – with zero tooling costs and no lead time.

"The smooth surface of these adapters rivals anything you could get by injection molding," noted Dan Straka, general manager of InterPRO. "High tech and consumer-facing products need to function well, look good and last. The most exciting thing is, by offering these types of solutions to our customers, we unlock opportunities for them to address a much larger market and much more diverse market segments."

"Things are moving faster and faster for our customers and we need to be nimble in providing solutions that fulfill their needs," said Craig. "3D printing with these state-of-the-art materials gives us professional-looking, commercial-grade parts – with no up-front investment and zero risk. What's more, they are half the cost of FDM-printed parts."



A new ecosystem, comprised of modular 3D printing hardware and software from Origin, application-specific materials from LOCTITE and experienced service bureaus like InterPRO, enable printing of parts that exceed injection molded strength, consistency, and durability with a consumer-grade look and feel.

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LOCTITE®

Open Additive Ecosystem Enables Mass Production

Recently, Origin announced an open additive manufacturing ecosystem designed to unlock additive mass production. To support this ecosystem, Origin offers a printer with modular hardware, extensible software and open materials which, together, can generate parts that exceed injection molded strength, consistency, and durability with a consumer-grade look and feel, at a competitive cost.

Cindy Deekitwong, director of Global Marketing and Strategy for LOCTITE's 3D printing business, said, "Every day, LOCTITE is developing ground-breaking materials to address the specific needs of the market, including resilient elastomers, heat-resistant polymers, biocompatible formulations, and other high-performance materials. Open technology and partnerships between the technologists and the chemists now enable additive manufacturing to compete against conventional injection molding without the underlying risks, long lead times and penalties for design iteration."

"Under this exciting new ecosystem, we are delighted to offer our customers revolutionary materials that enable the use of additive manufacturing for true high-volume production," she added.

Benefits of Open Additive Manufacturing

- Enables agility and speed to market.
- Fosters innovation and ability to develop niche parts.
- Reduces expenses; eliminates risk.
- Makes small lots cost effective to produce.
- Enables production expansion on demand.

"3D printing with these state-of-the-art materials gives us professional-looking, commercial-grade parts, with no up-front investment and zero risk."

Distek 3D prints motor adapters that have a consumer-grade finish without the expense and long lead times required to produce conventional injection molded parts.



About LOCTITE

LOCTITE is the world leader in the adhesives industry and provides the most innovative products for the use of daily glue. With a constantly growing portfolio of high-performance materials, specialized equipment and post-processing solutions, LOCTITE overcomes the limitations of conventional 3D printing to enable additive manufacturing for the production of durable, functional parts. Through its strategic partnership with technology leaders for specialized equipment, LOCTITE is driving the adoption of 3D printing beyond prototyping and toward the production of final parts. (loctite.com)

About Origin

Based in San Francisco, CA, Origin is an open platform for additive mass production. The company has worked with a network of material partners for over a year to develop a wide range of commercial grade materials for its system, resulting in some of the highest performance and most resilient materials in additive manufacturing, at prices and print speeds that enable high volume production. The company was founded in 2015 and is led by alumni from Google and Apple. (origin.io)

About InterPRO

For more than two decades, InterPRO has offered an array of prototyping print services including stereolithography (SLA), selective laser sintering (SLS), fused deposition modeling (FDM), cast urethane parts, rapid silicone and custom finishing. InterPRO is also an authorized reseller of HP Jet Fusion 3D printing systems. (interpromodels.com)

About Distek, Inc.

Distek, Inc. is a leading manufacturer of laboratory testing instruments for the pharmaceutical and biotechnology industry. The company's solutions include water bath and bathless dissolution, media preparation and disposal, in-situ fiber optic UV, bathless tablet disintegration, content uniformity and dissolution autosampling and a robust bioprocessing portfolio. (distekinc.com)