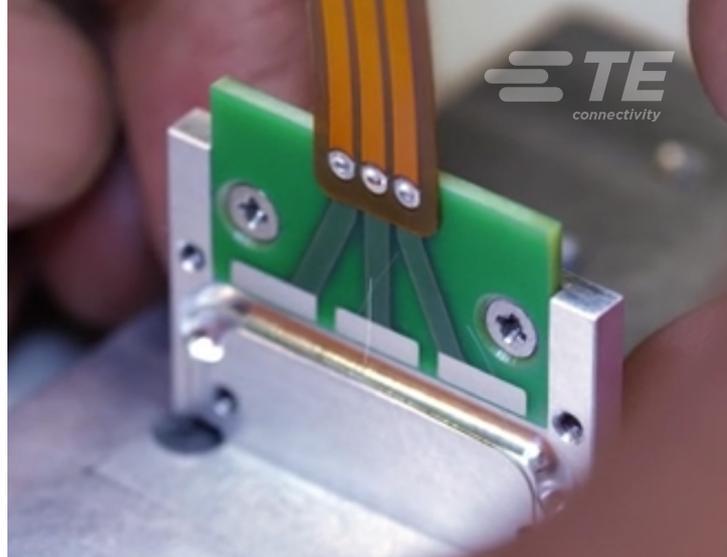


# Stratasys Origin One produced end- use 3D printed electrical connectors that meet aerospace requirements

Stratasys Origin One delivers end-use parts to withstand harsh environments

TE Connectivity, a world leader in the production of connectors and sensors, manufactures 192 billion parts annually for its global customer base. For each of their customers, TE must address the best way to meet customer requirements to ensure a timely design, and production costs allow for an acceptable ROI.

The global trend is an ever-increasing compression of product design cycles. When TE Connectivity wanted to address customer needs for fast turn designs of production-ready connectors and accessories, the hunt for the perfect 3D printing solution and materials to solve the problem began in earnest. TE Connectivity, an early adopter of 3D printing technologies, had been beta testing the Origin One since 2018. Early on, the additive manufacturing group saw the potential for the technology and material offerings to address design cycle timing with materials that perform well in harsh environments.



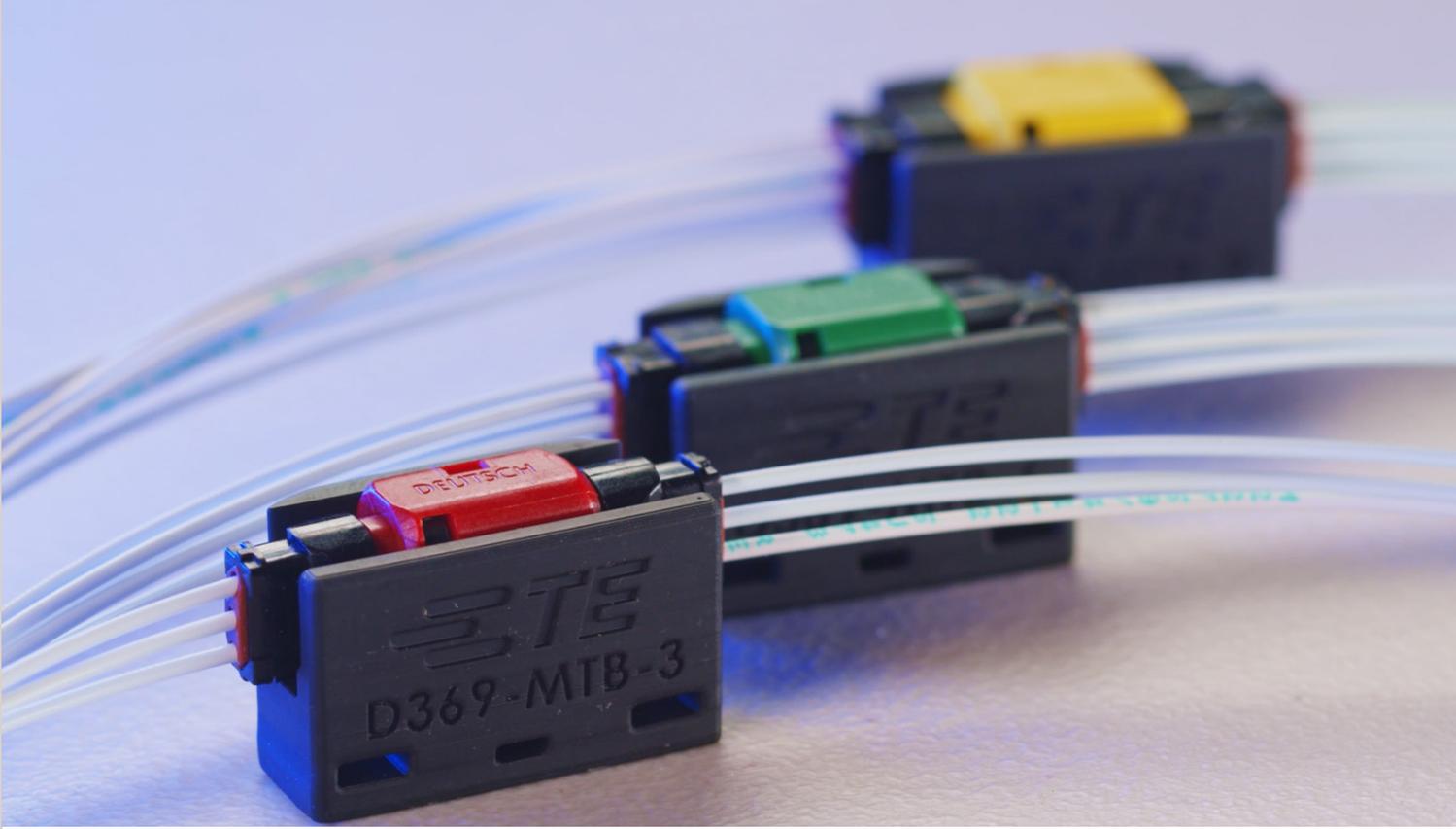
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Stratasys has been a great partner in helping us optimize accuracy and repeatability for connectors that require +/- 50 micron accuracy, and demonstrating the possibilities of using additive manufacturing to produce part volumes in the tens thousands.

**Mark Savage**

Senior Manager, Additive Manufacturing of TE Connectivity





# Flexible production volumes and expanded catalog options with the Origin One 3D printer

## The problem: one size doesn't fit all

TE Connectivity was approached by an existing aerospace client with a request they didn't want to pass up: connectors and holders for a helicopter. The missing part needed to address the unique cabling in the final product was a never-before designed or produced custom holder. The timeline and requirements for a production-grade holder meant that traditional development timelines and manufacturing methods were inadequate for both TE Connectivity and its customer.

## Another hurdle: aerospace-grade materials

The other factor, of course, was material choice. Fused filament-based additive technologies could provide the mechanical properties required, such as high heat and flame retardant properties, but would not be able to meet other requirements:

namely, +/- 0.002 in. accuracy. These traditional workhorse technologies wouldn't be the best fit. TE Connectivity needed a 3D printing solution that could process aerospace-grade materials accurately, consistently, and fast. Only the Stratasys Origin One met those requirements.

## The final test: production validation

As a world leader in the manufacturing of high-performance connectors and accessories, TE Connectivity required precise accuracy and repeatability across systems in a manufacturing line without fail, all while maintaining a build rate exceeding 10 parts per hour to ensure scalable production. The final stage of their relationship with the helicopter manufacturer required that the parts pass industry standard airworthiness and environmental tests to ensure that the part would not fail during a variety of operating conditions.

# Delivering scalable, profitable part production

## Fast, accurate 3D printing

Together with Stratasys and Henkel, using an Origin One 3D printer, TE Connectivity was able to address their customer's stringent needs. The solution was powered by Stratasys' Programmable PhotoPolymerization P3™ technology. Stratasys's strong partnership with Henkel Loctite ensured that the correct material for the job was available; a flame retardant photopolymer capable of printing at the accuracy needed for such small parts. TE Connectivity has been able to 3D print thousands of connector parts for multiple clients, including TE's first-ever aerospace 3D printed production product, the 369 Series connector holder, which is key for helping ensure that the connectors inside of the aircraft remain mated correctly and securely.

Learn how you can expand your production offerings and increase your client portfolio by reaching out to your Stratasys representative today.

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Today, we're seeing the hardware, the software, and the materials from Stratasys really come together to begin making production scale a reality for us. We believe this helps make TE Connectivity a more agile and cost-effective partner for many of the world's leading OEMs, in industries from automotive to aerospace to appliances, as we work to build a more connected future.

### Mark Savage

Senior Manager, Additive Manufacturing of TE Connectivity

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