



Continental ranks among the automotive technology leaders and offers a broad product range of passenger cars, commercial vehicles and two-wheelers (Credit: Continental AG).

Continental Strengthens Production Capabilities with Specialized FDM Additive Manufacturing Materials

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**Head of Samples and Mechanical Solutions,
Continental Engineering Services**



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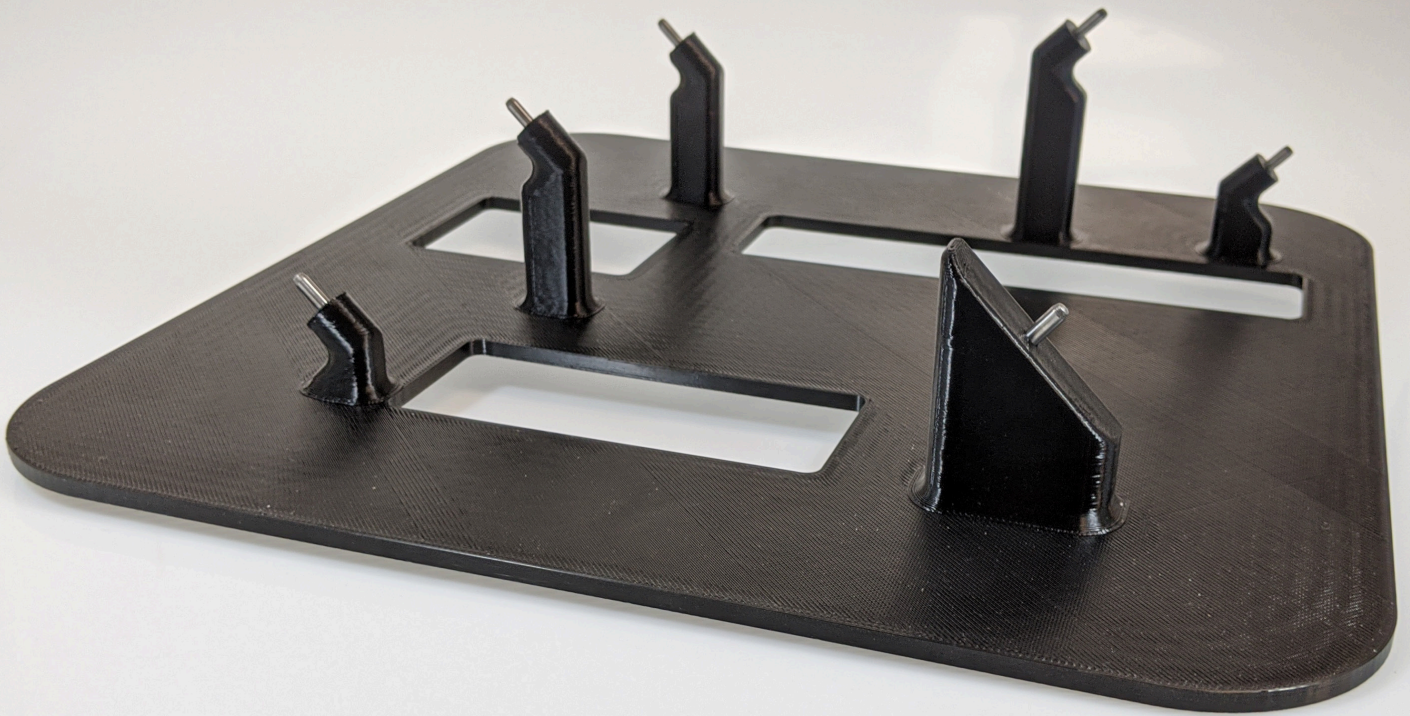
Renowned as one of the world's leading tire manufacturers, Automotive technologies leader [Continental AG](#) actually has an even wider solutions portfolio, including automotive part production, connectivity, automated driving and mobility services via its Continental Engineering Services (CES) division. With a unique business model that combines the entire process chain from design to production, testing and validation, Continental provides custom solutions for its large customer portfolio.

Part of the company's global brand is the Product Solutions Segment within Continental Engineering Services (CES), a stand-alone company. CES is responsible for manufacturing components, prototypes and small series parts for external customers, as well as internal solutions for the Continental production line and machinery. Continental bolstered its service offering and manufacturing capabilities with the construction of an Additive Design and Manufacturing (ADaM) Competence Center. This state-of-the-art facility houses some of the world's most advanced industrial-level additive manufacturing technologies.

"We have been working with additive manufacturing since 1996 alongside traditional productions methods," explains Stefan Kammann, Head of Samples and Mechanical Solutions, Continental Engineering Services. "Our ADaM Competence Center allows us to integrate this technology into our operations on a much larger scale, from design through to post-production."



Stefan Kammann in front of the Fortus 450mc 3D printer at the ADaM Competence Center.



This X-ray guide is used to ensure automotive sensors are kept in place during production and to guarantee product repeatability. It is printed with ULTEM™ 9085 resin.

A Material World

Spearheading the capabilities of Continental's ADaM Center is an industrial-grade [Stratasys Fortus 450mc™ FDM® 3D printer](#), used to manufacture production parts, prototypes and – most notably – jigs and fixtures for the company's own production line machinery.

“We carefully select additive manufacturing technologies in our Competence Center according to their high-performance capabilities so that we can undertake the widest range of applications possible,” Kammann explains. “The Fortus 450mc stands out in our portfolio as it enables us to access highly specialized materials, such as ULTEM™ 9085 resin and ABS-ESD7™, that allow us to meet the requirements of demanding production applications on the factory floor. In fact, the Fortus 450mc is the only 3D printer we have that is capable of creating ESD-compliant production parts in very little time.”

According to Kammann, the Fortus 450mc can produce parts in just a few hours – which means the team can set print jobs to run overnight and have finished parts in their hands the very next morning. This affords the team much more production agility, especially when it comes to replacement parts.

“With the Fortus 450mc, we're able to quickly manufacture replacement production tools and parts in high-performance thermoplastics that perform in the same way we would expect of a traditionally manufactured equivalent,” says Kammann. “This avoids lengthy manufacturing times associated with traditionally produced tools, and bypasses costly machine downtime associated with the wait for replacement parts. Instead, we are able to ensure continuous production and little to no machinery downtime.”

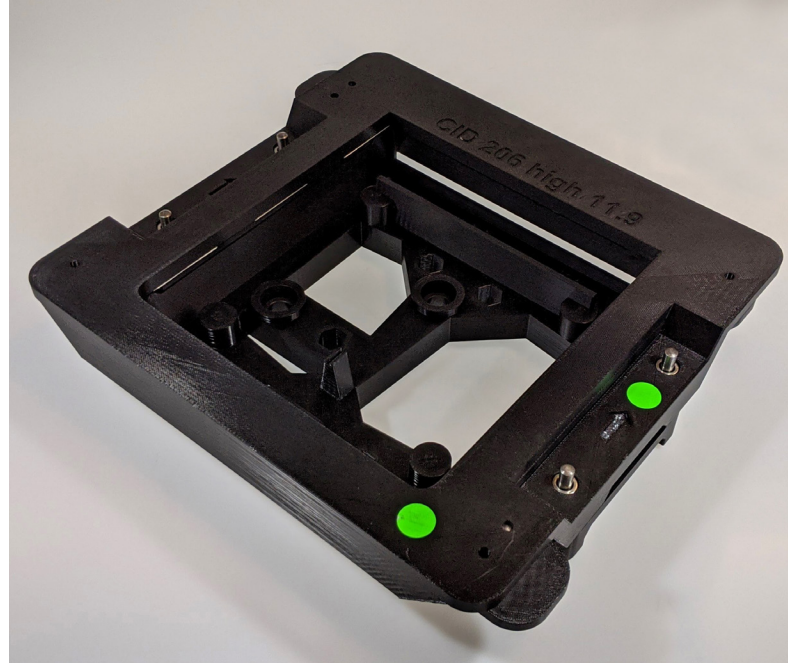
ESD is Key

When it comes to the production of automotive parts and solutions, CES works with multiple electronic parts and components on its manufacturing floor. Static-dissipative properties are therefore paramount for all machinery parts that come into contact with electronic components. This ensures that static discharge, which could damage products, impair performance or even cause an explosion or fire, is avoided. For the many fixtures and tools manufactured in-house, ABS-ESD7 material meets the necessary electrostatic discharge standards for handling sensitive electronic parts – while also offering durability and stability.

As Kammann explains, this is exemplified in the production of automotive displays.

“We are able to 3D print the gluing jig for the automotive display assembly with ABS-ESD7 material, which means we have a fast, safe, and ESD-compliant solution in-house that is customizable,” he says. “This not only ensures continuous fast production, but also shows how we look for the best technology to solve the manufacturing challenges we are faced with.”

By integrating the Fortus 450mc within its production operations, Continental has taken



This ESD-compliant auto display gluing jig printed with ABS-ESD7 material ensures safe handling around electronics.

automotive part production to the next level, resulting in the cost-effective production and fast turnaround of high-quality parts with the necessary material attributes to meet its exacting demands.

Kammann concludes, “The Fortus 450mc has integrated seamlessly into our production and service solutions. We are seeing increased customer demand for 3D printed parts, so we will continue to explore ways to further expand the use of this technology within design and production to ensure we optimize our service offering.”

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