



Press Release

Formnext: TRUMPF prints copper in large format for the first time with a green laser

TruPrint 5000 optimized for series production // Green laser crucial for copper processing // Preform enables hybrid production

Ditzingen/Frankfurt, 14 November 2022 – Large copper components can now be processed on 3D printers from TRUMPF as easily as common 3D printing materials such as stainless steel. The high-tech company has equipped its largest 3D printer, the TruPrint 5000, with the green laser for the first time for this purpose. "The green laser is crucial for processing copper. We are a leader in this technology. With the TruPrint 5000 Green Edition, we are responding to the demand for systems with larger installation space for the production of copper components such as components for electric motors or heat exchangers," says Roland Spiegelhalder, product manager at TRUMPF responsible for the TruPrint 5000.

The system is energy efficient and repeatable. "Therefore, it is very well suited for series production. Users produce large copper components faster and in higher quality with the new TruPrint 5000 Green Edition system than with comparable machines using infrared technology," says Spiegelhalder.

Preform enables hybrid production

Hybrid production is now possible with the new TruPrint 5000. The user no longer has to additively manufacture the entire component. This lowers costs. For example, users of the TruPrint 5000 can use the Preform function to print special functions such as cooling channels onto milled or cast components. In the large installation space of the system, maintenance technicians can also repair turbine blades of engines additively. "For this, the system has to work particularly precisely. This is made possible by our Preform system, which is based on a sophisticated camera system," says Spiegelhalder. The Preform Advanced variant has additional sensors and operates automatically. "This enables series production of hybrid components," says the TRUMPF product manager.



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TruPrint 5000 benefits from TRUMPF mechanical engineering expertise

For a long time, one challenge in additive manufacturing was the wide dispersion of machines. "However, the TruPrint 5000 is so sophisticated that there is no difference between machine A and machine B if they are to produce the same component. We are therefore talking about very good reproducibility here," says Spiegelhalter. To achieve this, TRUMPF has contributed its entire knowledge of additive manufacturing, mechanical engineering and laser technology. In addition, the high-tech company has done a lot of basic research, for example, on the gas flow within the system and the exposure strategy of the lasers.

Multilasers work even more precisely

With its three fiber lasers, the TruPrint 5000 can produce metal components even faster. "This multilaser principle can be compared to hand writing not only with one pencil, but with several at the same time," says Spiegelhalter. However, it is a major challenge to ensure that all the lasers in the system work accurately within a few micrometers. The lasers must be perfectly calibrated. To make this possible, TRUMPF has developed the Automatic Multilaser Alignment system. The lasers automatically measure themselves during the construction job at a freely selectable interval and correct their position independently. "This ensures very high accuracy and saves time because the user no longer has to interrupt the construction job for up to an hour for the measurement. The aerospace industry in particular, with its high quality requirements, benefits from this," says Spiegelhalter. This function also allows the TruPrint 5000 to measure and recalibrate itself before and after each build job. It is no longer necessary for a service technician from TRUMPF to come to the machine to do this.

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TRUMPF TruPrint 5000 Green Edition

With the green laser, the TruPrint 5000 Green Edition can also additively manufacture large copper components (Photo: TRUMPF)



Preform

Users of the TruPrint 5000 can use the Preform function to print special functions such as cooling channels onto milled or cast components. The picture shows a milling cutter design from Paul Horn GmbH. (Photo: TRUMPF)



About TRUMPF

TRUMPF is a high-tech company offering manufacturing solutions in the fields of machine tools and laser technology. The Company drives digital connectivity in the manufacturing through consulting, platform products and software. TRUMPF is a technology and market leader in highly versatile machine tools for sheet metal processing and in the field of industrial lasers.

In 2021/22, the company employed some 16,500 people and generated sales of about 4.2 billion euros. With over 80 subsidiaries, the TRUMPF Group is represented in nearly every European country as well as in North America, South America and Asia. The company has production facilities in Germany, France, the United Kingdom, Italy, Austria, Switzerland, Poland, the Czech Republic, the United States, Mexico and China.

Find out more about TRUMPF at www.trumpf.com

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