Next generation TruPrint 5000

Ready for series production. Built for performance.

06

Software and Monitoring

Optimized process control tools for production environments

01

Maximum Productivity

Multijob Processing enables unattended build job change-over and restarts, even over night

02

Unmatched Quality

Automatic Multilaser Alignment and Calibration delivers consistent, precise results, especially on multi-laser parts

05

Multi-Laser Power

4 x 1 kW (925 W on workpiece) TRUMPF fiber laser

04

Build Automation

Automatic, unattended build job change-over and restart. Turnover in only 15 minutes

03

Automated Powder Handling

Closed-loop powder and open-loop powder supply options

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Next generation TruPrint 5000 Large Build Production System

The new generation TruPrint 5000 is a highly productive 3D printing system specially designed for industrial serial production, and large part builds.

This new platform focusses on reduction of cost per part and offers a broad range of options to achieve optimal results for your application.

High Performance Under Control

The comprehensive monitoring and calibration ecosystem developed for the new TruPrint 5000 platform is the key to achieving a robust, repeatable, and high-quality production process.
With advanced online monitoring — including Automatic Multilaser Alignment, Powder Bed and Melt Pool Monitoring — combined with precise Laser Power, Scanfield, and Laser Focus calibration, the system ensures maximum performance and complete process control.

01

Maximum Productivity

The new generation of the TruPrint 5000 supports multijob processing. The machine can automatically start a new build job by moving the completed build job aside. The completed build job can then be depowdered parallel to the ongoing new build job. This is especially suitable for smaller build jobs that are produced in serial production. Double-side recoating also cuts inactive time by up to 50%, reducing costs per part.

02

Unmatched Quality

Automatic Multilaser Alignment (AMA) is a real-time monitoring system that ensures stable laser offset throughout the entire build process. Laser alignment is checked every two layers outside of the build area with an accuracy of the half beam spot diameter or 40 µm. In combination with the scanfield **calibration** option, it gives you the superior, especially for multilaser parts.
Other calibrations can be done by the user, such as the laser power and focus position check, ensuring a stable and repeatable process.

03

Automated Powder Handling

The **closed-loop powder system** sieves excess powder in parallel to the building process and returns it to the machine. This ensures a continuous supply of powder to the machine during the PBF process. It is also possible to add an **open-loop powder unit.** This enables you to collect excess powder or connect to a third-party sieving station so powder can be recycled and used in other machines as well.

04

Build Automation

Once the first build job is complete, the finished build-cylinder is automatically moved to the side for manual unpacking. In parallel the machine can load a new empty build-cylinder and restart a second job. The operation is done without human interaction and a restart time of only 15 minutes.

05

Laser Power and Pre-heating

The new generation TruPrint 5000 offers 4 x 1kW TRUMPF fiber laser (up to 925W on workpiece) with a spot size from 80 to 200 µm for optimal output and maximum productivity. The build plate can be preheated up to 200°C and optionally equipped with an active cooling system that prevents potential overheating for stable process conditions especially with specific alloys.

06

Software and Monitoring

TruTops Print is a highly optomized software solution for the digital 3D printing process chain. You can tune the laser splitting with the TruTops Print Multilaser Assistant. With its intelligent monitoring solutions, the build process and machine conditions can be monitored, analyzed and controlled remotely.

TruPrint 5000		
Build volume	mm x mm	500 x 500 x 400 mm
Processable materials[1]		Weldable metals in powder form, such as: stainless steels, tool steels, aluminum, nickel-based or titanium alloys
Theoretical build rate[2]	cm³/h	50 - 450
Layer thickness[3]	µm	30 - 150
Max. laser power (TRUMPF fiber laser)	W	4 x 1kW (925W on workpiece)
Beam diameter	µm	80 - 200
Scan speed (powder bed)	m/s	Max. 3
Preheating	°C	Up to 200
Shielding gas		Nitrogen, argon
Automation		Automatic process start
Power supply	V / A / Hz	400 / 63 / 50
Dimensions	mm	2250 x 3600 x 2500
Weight (incl. periphery)	kg	6900
Filter unit		Saturation, long-term

[1] Current material and parameter availability upon request
[2] Actual build rate consists of 4 lasers exposure (recoating excluded). Dependent on process parameters, material and degree of filling
Subject to modifications. Please ask your local TRUMPF contact to check local product availability.

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