Additive manufacturing allowed the company to become a pioneer for an entire industry

Manufacturing dental crowns, prostheses or bridges using conventional processes such as milling is complex, costly and takes a long time. This is faster, more simple and more effective when using additive manufacturing. The dental technology supplier CADSPEED is the proof of this; it produces dentures for many European countries using a TruPrint 1000 with multilaser principle. The company is therefore a pioneer in the dental industry.

CADSPEED GmbH

www.cad-speed.de

CADSPEED, a dental milling centre for digital CAD/CAM dental technology, headquartered in Nienhagen near Hanover, produces dentures with its 38 employees. In addition to conventional production methods, CADSPEED also offers additively manufactured dentures, e.g. implant tertiary structures and digital model casting. The company produces and supplies semi-finished products to customers in Europe within 24 hours.

NUMBER OF EMPLOYEES	INDUSTRY	TURNOVER
38	Dental technology	€4.5 million (2018)

APPLICATIONS

- Additive manufacturing: laser metal fusion (LMF)

TRUMPF PRODUCTS

- TruPrint 1000

Challenges

Like all dental technicians, Hindrik Dehnbostel, owner of CADSPEED, has a space problem. This is because corners and edges are hard to produce using the milling machine – the tooth is too small for this and the requirements are too high. Furthermore, the tools do not reach everywhere and occasionally break. The consequence of this is reworking. It can therefore take several weeks until the patient receives the denture.

Solutions

Additive production systems are not familiar with these types of problems. Since the component is built up layer-by-layer and software controls the process, even delicate structures can be achieved with ease. Laser metal fusion (LMF) also saves material. In conventional methods, dental technicians first produce the basic shape and then hollow it out. Up to 80 percent of the material ends up in the rubbish. LMF only requires as much powder as is necessary for the component. A further advantage is that 3D printing

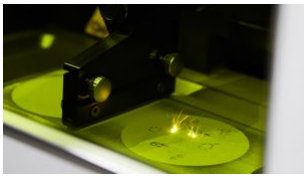
is significantly faster when production hours are compared. This is because a dental technician normally requires around 20 minutes per tooth. Up to 70 tooth units can be created per run in two to three hours on a platform using additive technology.

Implementation

At the end of 2017, CADSPEED permanently installed a TruPrint 1000 from TRUMPF with the multilaser principle in their factory. Two laser beams melt the denture into shape at the same time. This shortens the company's process duration hugely. Dehnbostel tested the machine for three months and then bought it. Since then, the system has been running in three-shift operation five days a week. "The system works reliably and robustly," states the dental technician.

Forecast

Although the additive technology provides many advantages for dental technology, the industry is slow to catch on according to Dehnbostel. "Many dental laboratories are worried that it will make their work redundant. But the new technologies are a blessing for the industry," states the entrepreneur. The CADSPEED boss is sure that companies will not be able to avoid using 3D printing in the long term: "One day, the patient will decide how they want their denture to be produced."



Learn more about our additive manufacturing systems

TruPrint 1000

Discover the TruPrint 1000 with multilaser option – ideal for cost-effective and high-quality production of individual dental products, such as dental crowns.

Zum Produkt