

Press release

The future of 3D metal printing

New metal laser melting centre sets standards

Georgensgmünd (D), 2018: At the end of 2016, the county commissioner and the mayor participated in the ground-breaking ceremony for the new metal laser melting centre in Georgensgmünd. A little over one year later, the hall was occupied. Since then, 3D-printed precision components have been manufactured according to new standards. The centre meets all requirements of a modern production environment in the area of additive manufacturing.

Investment in the future – new standards set

3D metal printing presents special requirements in the area of environmental and health protection and occupational safety. The sensors in the new hall monitor temperature and humidity and are equipped with an argon warning system. Constant overpressure and air exchange at the rate of six times per hour ensure that the air is free of powder. The hall was also constructed according to a complete energy efficiency concept and for optimum part flow. The challenge here was handing off the additively manufactured blanks that were previously freed of powder and support structure to the adjoining machine finishing. In the last few years, toolcraft has invested about 12 million euros in the expansion of innovative manufacturing technology. This includes investment in a simulation-based software environment. In addition to the laser melting machines, a vacuum furnace that comply with aeronautical standards was installed.

Verify quality via analysers

The new metal laser melting centre includes a laboratory for analysing material and manufactured samples. It can perform porosity and joint analyses, determination of oxygen and nitrogen content, tensile tests and grain size distribution assessment. Dynamic fatigue testing establishes alloy dynamic strength under reverse bending stress.

Complete process chain is Nadcap-certified

toolcraft has been manufacturing 3D-printed precision components since 2011. Operations started with a single machine and have now expanded to encompass ten. The company can map the entire process chain on its premises. Siemens NX software ensures data consistency, from design and simulation to manufacture and machine finishing to optical, tactile, and non-destructive testing. FEM calculations and topology optimisations are also integrated. The entire process is Nadcap-certified, thus meeting the stringent requirements of the aerospace industry. toolcraft is only the second company in Europe to clear this high bar of approval. TÜV SÜD has also added its quality seal. Further investment is planned in the area of build-up welding (DED/LMD) of metals.

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About toolcraft

toolcraft is a pioneer of forward-looking technologies, such as 3D metal printing and the construction of customised turnkey robotic solutions. The company tests and develops innovative engineering processes until they are ready to be used on production lines. As a provider of comprehensive solutions, toolcraft covers the entire process chain, from the initial idea to manufacturing, quality assurance and testing in the areas of CNC machining, 3D metal printing, injection moulding, spark erosion (EDM) and mould making. Its clients include market leaders in the semiconductors, aerospace, medical technology, optical, special machinery manufacturing, motor sports and automotive industries. Building close working relationships with collaborative partners as well as universities, other institutions of higher education and research centres is an important part of its corporate philosophy. The medium-sized family-owned company, located in Georgensgmünd and Spalt, was founded by Bernd Krebs in 1989.