

High-temperature material for use in medicine

toolcraft invests in environmentally friendly temperature-control equipment for processing PEEK

Georgensmünd (D) 11.05.2016: On a daily basis, the medical technology industry strives to find technological manufacturing solutions capable of making long-lasting improvements to our quality of life. toolcraft's contribution is the production of small and micro injection-moulded parts. The company's expertise in this area ranges from standard thermoplastics to high-temperature materials. By making targeted investments in specific state-of-the-art equipment and process technology, the company manufactures products such as hearing aids using a two-component injection moulding process. Now toolcraft is investing in a new method for heating the injection-moulding tool needed to process polyetheretherketone (PEEK) in an environmentally friendly manner.

PEEK – a versatile high-temperature material

The high-temperature material PEEK is resistant to almost all organic and inorganic chemicals. As well as being used as an insulating material in power cables, its properties make it ideal for use in a wide variety of sectors, including the automotive, aerospace and food industries. In comparison with the majority of other thermoplastics, PEEK has a very high melting point of between 370 and 400°C and can be processed in its liquid state during injection moulding. Since it is autoclavable, biocompatible and radiolucent, it is especially useful in the medical technology industry, where it can, for example, be used to produce dental implants or processed into hearing aids.

New method for controlling the temperature of PEEK

When processing PEEK, Toolcraft currently employs cartridge heaters that heat the mould to the required temperature of at least 200°C. Since these heaters are electrical, they are slow at conducting heat, making the temperature difficult to control. The new investment made by toolcraft breaks this cycle. "The equipment's temperature control medium enables the tool to be constantly heated to 200°C. This is the ideal mould temperature for PEEK for the production of injection-moulded parts," says Thomas Lender, head of injection moulding at toolcraft.

Improved quality and environmentally friendly at the same time

The new solution allows the temperature of the injection-moulding tool to be maintained at an even level, while the constant conduction of heat enables heating with a minimal amount of energy. Furthermore, the steady temperature enhances the reproducibility of the injection-moulded parts. The reduced cycle time increases the output, while the quality of the components produced is also improved. The new equipment therefore enables effective PEEK processing using an environmentally friendly method.

Pressemitteilung / Press release

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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 robotics 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.