



Perfect joining of 3D printed components

More and more areas of application in the future

- >> The global market for additively manufactured components is growing steadily to new record levels every year. This concerns components made of plastics, ceramics as well as metals.

The variety of processes is increasing significantly and is leading to material and process optimization. Annual growth of at least 20% is expected for the next few years.

Single pieces as well as small and medium batch productions can be produced by the 3D printing can be made profitable. Compared to conventional manufacturing processes such as milling, turning or casting, the production cost reasons not linked to the complexity of a component.

Often, the 3D-printed parts are not stand-alone parts, but have to be joined with another component. For cost reasons, only the actual functional area is the 3D arm, an optical lens with a 3D printed mount, or 3D printed lattice structures with a support structure.

Wide range of possible combinations

The material combinations can be extremely diverse: ceramic with ceramic, metal with ceramic, metal with metal, or even other material combinations with plastic. This greatly expands the design freedom of 3D printing and enables components with optimal geometry, weight, function, cost and, above all, fast and sustainable availability.

However, the material properties of 3D-printing parts differ from those of parts manufactured from solid material, for example. This must be taken into account when selecting and performing joining operations. We at EUROMAT have addressed this issue and provide a wide range of possible joining processes and materials. These range from adhesive bonding, soldering, and welding technologies to novel nano joining processes with which even ceramic-metallic components can be joined with low stress and stress-free with high reliability.

