



PRECISION IS OUR PROFESSION

3D PRINTING

OF METALLIC IMPLANTS

For the production of implants, we offer high-quality and precise metal prints - especially for complex geometries.

The reduced number of manufacturing steps enables a reduction in time and costs.

Precise 3D printing of implants:

- ✓ Materials: Titanium, CoCr, 316L, others on request
- ✓ High precision: Tolerances $\pm 0,2 \%$,
for smaller parts less than $\pm 100 \mu\text{m}$
- ✓ High resolution: Minimum detail size
 $x = 100 \mu\text{m}, y = 100 \mu\text{m}, z = 20 \mu\text{m}$
- ✓ Maximum size of the components:
 $140 \times 140 \times 115 \text{ mm}$
- ✓ Strengths comparable to castings:
Porosity of less than 0,3 %



Manufacturing of complex geometries

3D Printing stands out where casting and machining reach their limits. One example is the production of **porous surface structures** which improves cell attachment leading to a faster healing process

Due to the freely selectable geometry, the **mechanical properties** can be precisely adjusted. In case of bone implants for the locomotor system, for example, individual/flexible designs can prevent unbalanced load and bone resorption.

Combination of manufacturing processes

With our wide range of different high-precision manufacturing processes, we offer the production of multipart assemblies from a single source. The rotor of this heart pump, for example, was **laser cut and drilled** from a tube, while the remaining parts were manufactured using 3D printing.



Prototype development with 3D printing

Projects that could also be realized with alternative manufacturing processes will benefit from expedited lead times provided by 3D printing. Especially the development of prototypes and individual parts can be greatly accelerated.

Post Processing of 3D printed implants

As a specialist for the production of implants we offer a wide range of post processing steps ranging from **mechanical processes** such as grinding and sandblasting as well as chemical processes like **passivation** and **electropolishing**.

