

# HAILTEC



Prototypes  
& Series

## PRECISION ENGINEERING FOR MEDICAL TECHNOLOGY



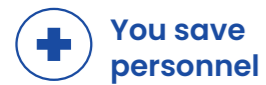
Your One-Stop Supplier  
from Raw Material to  
Cleanroom-Packaged  
Component

# HAILTEC

## RELAXED TO MDR-COMPLIANT COMPONENTS

Labor shortage, small batch sizes, and increasing regulation – how can you stay competitive? With our comprehensive service, you can utilize a state-of-the-art technology arsenal without having to invest yourself. As a 13485-certified contract manufacturer, we support renowned medical technology manufacturers with surgical components or micrometer-precise implants, cleanroom-packaged and MDRReady. Whether prototype or series: trust us with your component manufacturing and focus relaxed on your core competencies.

The one-stop supplier from the region trusted by medical technology manufacturers.



You save personnel



You save (investment) costs



You utilize an MDR-compliant supply chain



## CONTENT

5 Good Reasons for HAILTEC  
Page 3

Technology Park for Medical Technology  
Page 4

Application Areas  
Page 5

Success Stories  
Page 13

Company Overview  
Page 15

Have you got your HAILTEC Sample Box?  
Page 18

# 5

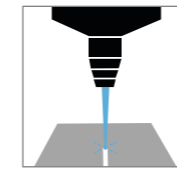
## Good Reasons for HAILTEC

1. With validated processes, we reliably and passionately manufacture your products in the Tuttlingen-Tübingen medical technology cluster.
2. Large technology arsenal including laser fine cutting, ultra-short pulse lasers, and micro water jet cutting.
3. Secure processes, automatable and scalable from quantity 1 to 500,000.
4. Short and reliable delivery times.
5. Comprehensive service from manufacturability analysis to sampling and cleanroom-packaged delivery of your components.

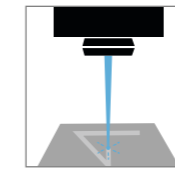
Technological Expertise + Thoughtful Service  
= Your Competitive Advantage

# HAILTEC

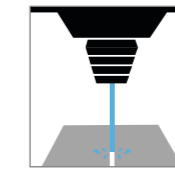
## TECHNOLOGY PARK FOR MEDICAL TECHNOLOGY



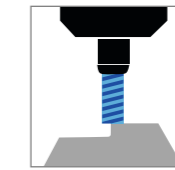
Laser Fine Cutting



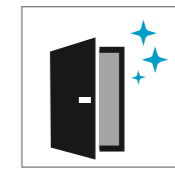
Ultra-Short Pulse  
Laser Processing



Micro Water Jet  
Cutting



CNC Precision  
Manufacturing



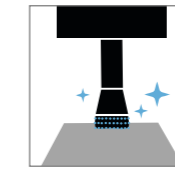
Cleaning and  
Cleanroom



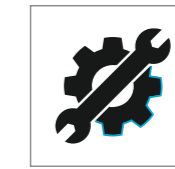
Precision Forming  
Technology



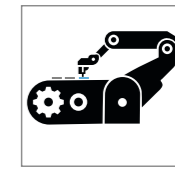
Metrology



Finishing  
(Surface Finish)



Toolmaking and  
Construction



Automated  
Production Systems



# IMPLANTS

Whether titanium mesh or spinal implants – we combine CNC precision manufacturing with laser micro-machining for economical and highly precise production of your components. The QCW fiber lasers used represent low thermal input and protect sensitive materials. The precision of our lasers avoids rework and increases the efficiency of the entire manufacturing process.

**Scalable:** Thanks to automated processes, we manufacture samples and series economically.

**Batch traceable:** Digitized processes facilitate regulatory processes such as traceability and supplier audits.

**Complete:** Optionally including anodizing, UDI labeling, and cleanroom packaging.



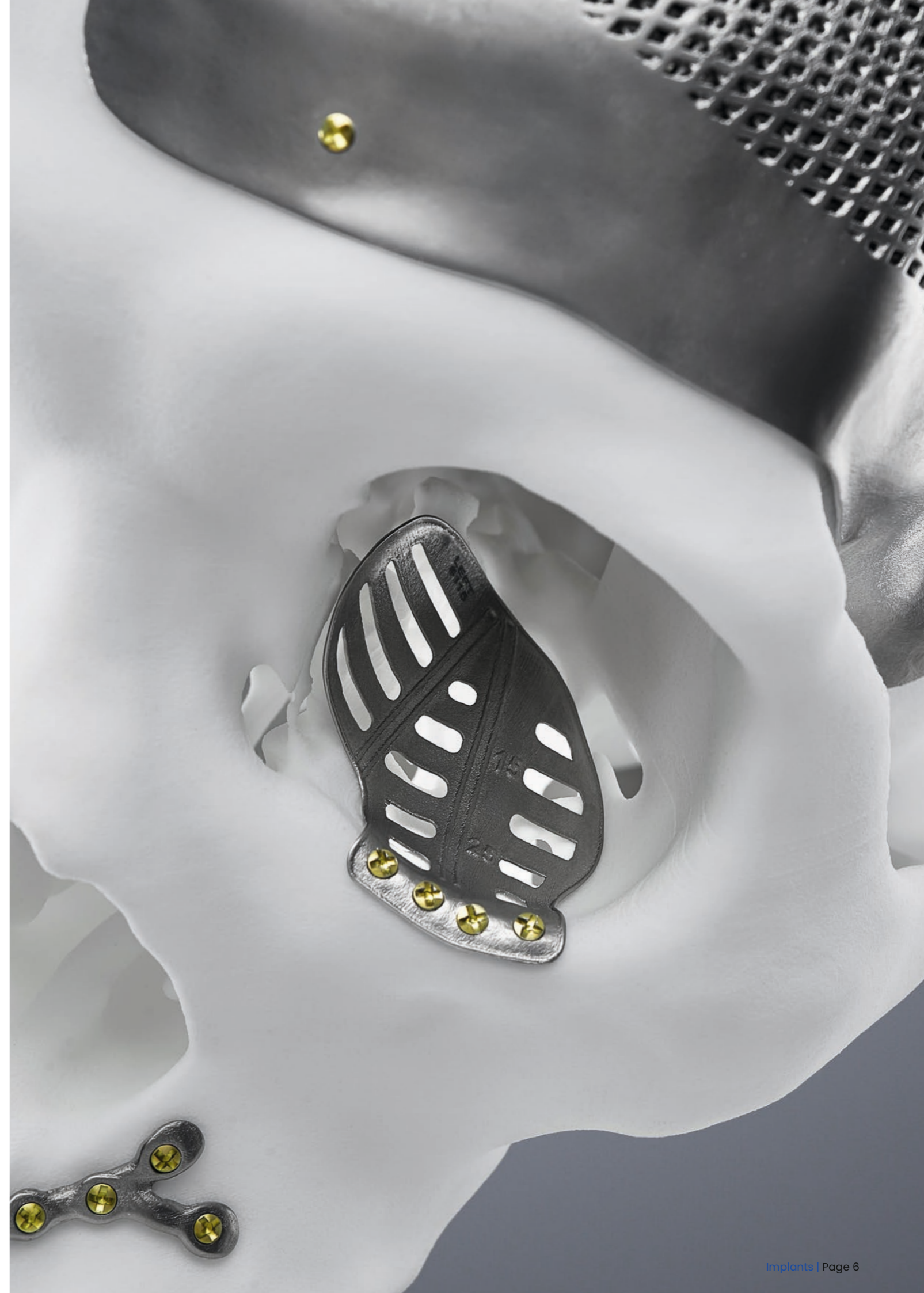
Thoroughly Documented

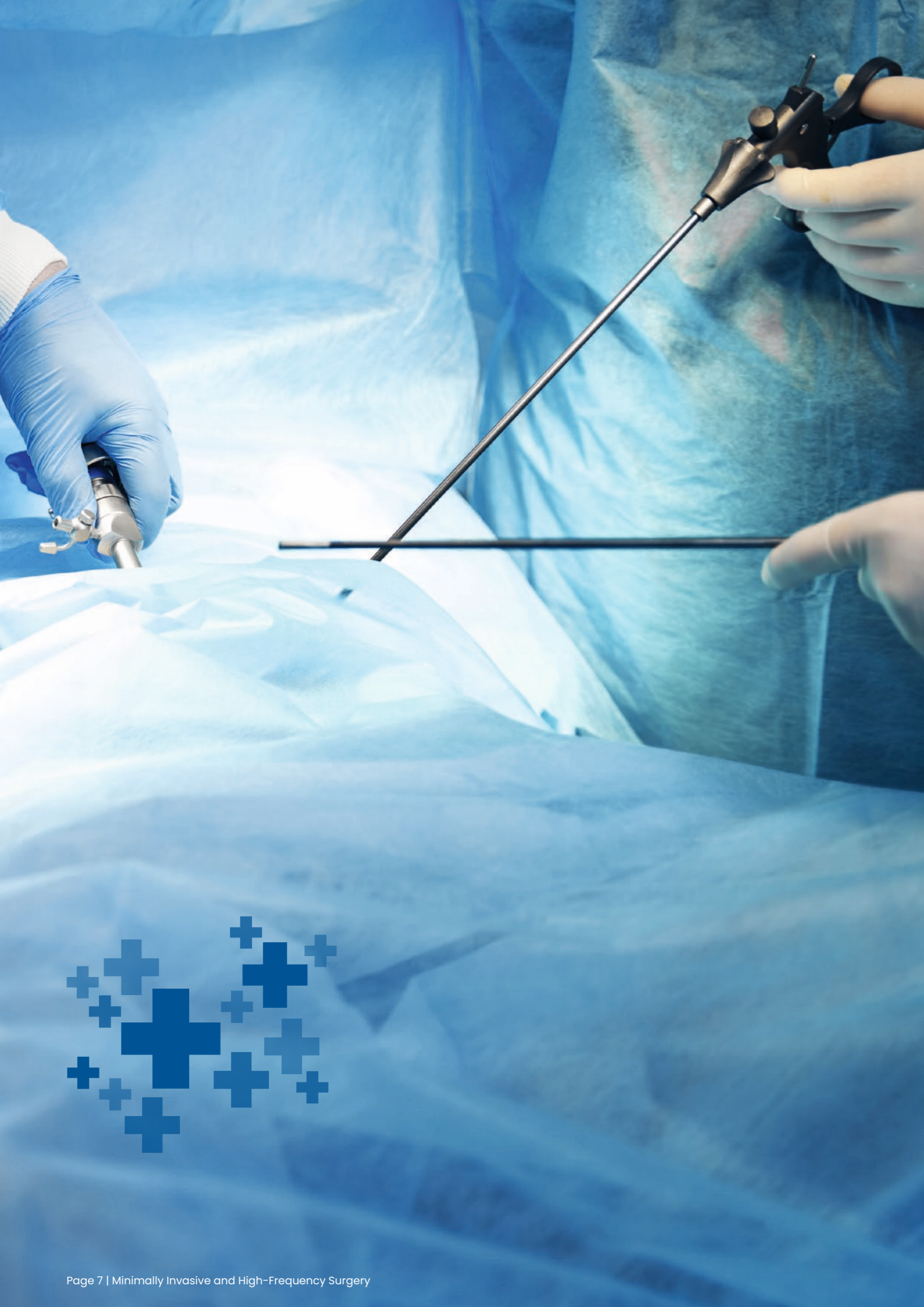


Automated Manufacturing



State-of-the-Art Metrology





## APPLICATION AREAS

# MINIMALLY INVASIVE AND HIGH-FREQUENCY SURGERY

In minimally invasive surgery, instruments for effective vessel sealing, for example, play a significant role. We manufacture precision mechanical components such as springs, connectors, rods, etc. Single-use products ensure sterility and minimize the risk of cross-contamination. With extensive experience and a complete technology park, we support your production.

**Precise:** We bend or laser your components with utmost precision.

**Comprehensive:** From our own toolmaking to the cleanroom-packaged product, we manage all steps to implement your components.

**Automated:** HAILTEC is your partner from prototype to series, thanks to fully automated machine loading.

 One-Stop-Supplier

 Years of Medtec Experience

 Broad Technology Mix

## MEDICAL INSTRUMENTS

HALTEC delivers top quality for medical technology needs, from manufacturability testing through the development of manufacturing processes to the production of your orthopedic instruments. Given the tight tolerances required for successful orthopedic surgery and implantation, our medical instruments meet and exceed your quality and safety requirements.

**Best Practices:** Depending on the product, we use the ideal technology, combining, for example, micro water jet cutting with CNC precision manufacturing.

**Precise:** We laser your instruments with tolerances of  $\pm 10 \mu\text{m}$  reproducibly and accurately.

**Material Diversity:** Medical stainless steels, titanium, or nitinol – with extensive material stock, we accelerate your processes.

 **Fast & Flexible**

 **ISO 13485  
Certified**

 **Validated Processes**



## QUALITY AND MEASUREMENT LABORATORY

With validated processes, we ensure the highest quality and safety standards. Our in-house measurement laboratory provides you with the data for your quality assurance. Equipped with digital systems from Keyence to nano-precise surface measurement in 3D from Alicona, our measurement laboratory is a delight for your quality management.

+

Optical measurement with color-coded representation

+

Digital data and measurement protocols can be directly processed further

+

Batch traceability guaranteed

+

Initial sampling on request possible

Member of networks and associations



*Die Werkzeugmacher*

HAILTEC – Your certified partner

Zertifiziert nach

EN ISO 9001

Zertifiziert nach

EN ISO 13485

## SCALING PRODUCTION Thanks to Automation

### The challenge:

A customer in the development phase needed a medical component made of high-strength spring steel with a tensile strength of approximately 1800 N / mm<sup>2</sup> (material 1.4310) in a material thickness of 0.7 mm. The sample was very well received and demand quickly rose to more than 250,000 pieces. Due to the delicate part geometry and the high tool wear with this material, an alternative to the stamping process had to be found.

### The solution:

We developed an automated manufacturing solution using laser technology. Thanks to fully automated machine loading, we replaced the wear-intensive stamping process and ensured that the production remained economically comparable and of top quality, despite the high material requirements with a sheet thickness of 0.7 mm.

### The result:

Thanks to the optimized processes, we were able to efficiently and high-quality meet the customer's high production demand. Laser manufacturing enables consistently high precision with process stability of +/- 0.01 mm, as the laser, unlike a stamping tool, does not wear out.



## MANUFACTURING MICRO-STRUCTURED IMPLANTS

### The challenge:

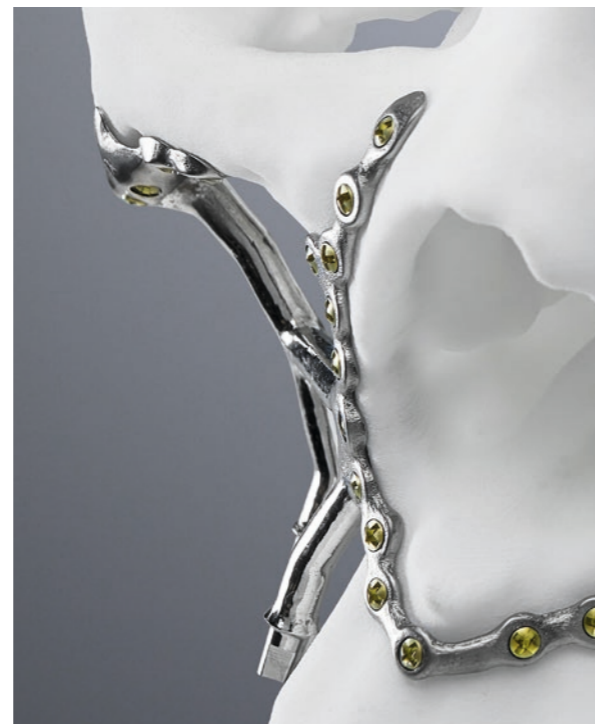
A manufacturer needed micro-implants with a special surface that had to be created through micro-structuring. Creating the structure through etching proved to be extremely difficult and inefficient.

### The solution:

With HAILTEC, the ultra-short pulse laser (USP) came into play. With its ultra-short laser pulses, it sublimates or evaporates the material without thermal influence, creating very finely resolved structures. This method convinced the customer thanks to its advantages over etching: high reproducibility, fast availability, and the ability to efficiently handle even small batch sizes.

### The result:

After the successful prototype phase, we are now manufacturing the micro-implants in series. The series launch went smoothly, and the customer is very satisfied.



## BALANCING PEAK DEMANDS WITH TITANIUM MESH

### The challenge:

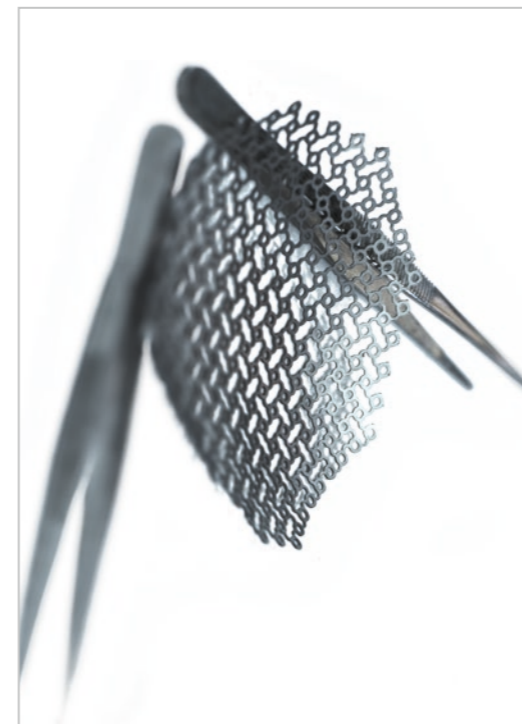
An implant manufacturer urgently needed support in manufacturing mesh from titanium Grade 2. It was necessary to combine machining and laser processing to achieve the required quality and precision.

### The solution:

Thanks to comprehensive technological equipment, we were able to quickly and flexibly deliver in the required quality without the customer having to invest in additional machines or personnel. The first step involved CNC machining, drilling, and countersinking of the titanium plate. The second step was laser fine cutting of the implant contours with a pulsed QCW fiber laser. This method allows tolerances of  $\pm 0.01$  mm with minimal thermal impact on the material and nearly burr-free cuts.

### The result:

We successfully manufactured batch sizes of 120 pieces each for a product family with seven components. The customer was able to efficiently manage their production peaks and now knows where to get short-term help with capacity bottlenecks.



## WE TRANSFORM METAL TO TRANSFORM THE WORLD

At HAILTEC, small parts with a big impact are created. Making a positive difference with components that extend or save lives – that drives us. Behind the factory halls, the Alb buffalo graze, inside we dedicate ourselves to forward-looking high technology. With more than 40 employees, we produce close to nature and as CO<sub>2</sub>-neutrally as possible on the Swabian Alb.

We are courageous enablers for future industries such as medical technology, where the finest components are in demand. You come to us because you trust our technologies and us as people. Under the motto “Anything but 08/15”, precision mechanical components for minimally invasive surgery as well as aerospace parts made of molybdenum are created.

## This is how HAILTEC ticks:

+

Accurate

+

Courageous

+

Inventive

+

Honest

## COW OUT, LASER IN From Farm to High-Tech Plant

From farm to high-tech farm: “Cow out, laser in” is the micro-version of our origin story. 25 years ago, Wilfried Hailfinger built today’s company HAILTEC and converted the cow stable into laser production. A farm as a high-tech farm: We develop and manufacture small, precise components in the Swabian Alb from quantities of 1 to 500,000. And if the job is urgent, we’ll „get the cow off the ice“ for you – that is what we say in German for getting challenging jobs done.



# HAILTEC

Your expert for precision  
mechanical prototypes and  
small series production

- + Laser fine cutting
- + Micro waterjet cutting
- + Ultrashort pulse laser processing
- + Precision forming technology
- + CNC precision manufacturing
- + Metrology by Alicona

# HAILTEC

## DO YOU ALREADY HAVE YOUR HAILTEC SAMPLE BOX?

We know how difficult it is to be convinced by just images and text when it comes to high-precision components. That's why we offer you a special service: Order our exclusive sample box for free. After all, seeing and feeling are the best ways to be convinced of the quality and craftsmanship of our products.

- + Selected examples of components for medical technology.
- + Detailed information on the manufacturing processes and their benefits.
- + Contact details for personal consultation and next steps

» If you request a sample part from HAILTEC today, you'll likely be working with us ten years from now. Because as a tech-crazy team, we have so much fun doing what we do that you'll feel it in the results. «

Alexander Renz  
CEO

**Alexander Renz**  
+49 7387 988 58 0  
sales@hailtec.de  
www.hailtec.de



**Here's how it works:**  
Scan the QR code and order  
your personal sample box  
on our website.

**WE TRANSFORM METAL TO  
TRANSFORM THE WORLD**

