

INNOVATION IN PERFECTION



**We are your specialists**  
in the fields of titanium processing  
and surface refinement



[www.hegedues.de/en](http://www.hegedues.de/en)

**viktor**<sup>®</sup>  
HEGEDÜS



The HEGEDÜS company

# Top quality made in Germany since 1980

Our family company from Swabia is one of Europe's specialists in titanium processing, colour marking and surface refinement.

We offer our medical technology and industry customers a wide range of services at our development and manufacturing location in Wehingen, Germany.

In addition to the professional surface finishing of titanium **using acid etching or anodising**, another one of our key services is the production of high-quality **sleeves and turned parts**.

This wide range of services is supplemented by the manufacture of **colour marking using ART-tech® and other ink systems** and by numerous **surface finishing** services and the manufacture of our own **collection of titanium jewellery** from our brand Tiabelle.

DISCOVER HEGEDÜS –  
INNOVATION IN PERFECTION

The HEGEDÜS company

# A benchmark for innovation, precision and quality

As a highly specialised company,  
we are a skilled and reliable partner for  
the processing and surface refinement  
of titanium products.





Quality made in Germany. We develop and produce absolutely everything in Baden-Württemberg.

We develop and produce our high-quality products at our company headquarters in Wehingen, Germany. Viktor Hegedüs GmbH has been certified in accordance with the EN ISO 13485 and ISO 9001 standards for more than a decade. Accordingly, all of the relevant processes are validated and traceably documented.



The HEGEDÜS company

# Perfection is achieved through skill



Personal and professional advice is a matter of teamwork for us.

Our strengths include personal and professional advice as well as the development of customised product and application solutions.

To guarantee that we can deliver on this promise, we have a large team of skilled experts at our customers' disposal with many years of experience and a wealth of specialist knowledge.





**Absolute customer satisfaction is our daily aspiration.**

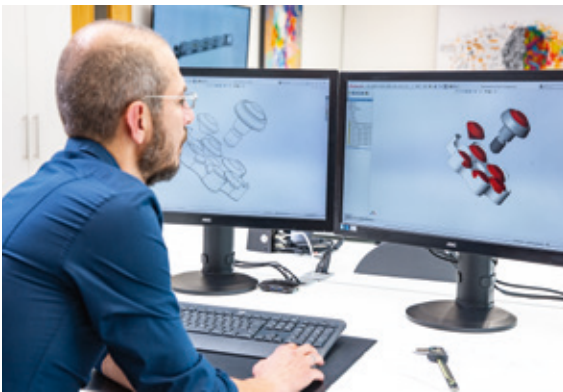
- Solid and skilled contact
- Professional analysis of individual customer requirements
- Realistic estimation of feasibility and delivery time
- Exploration of versions and alternatives
- Complete process documentation and traceability
- Appropriate certifications
- Validated processes
- Comprehensive quality controls

The HEGEDÜS company

# For us, progress means always staying one step ahead

HEGEDÜS stands for individual solutions at the highest level.

As a leading innovator, we continuously develop new product and manufacturing solutions in our own laboratories and employing state-of-the-art testing systems so as to be able to offer our customers the decisive competitive advantage.



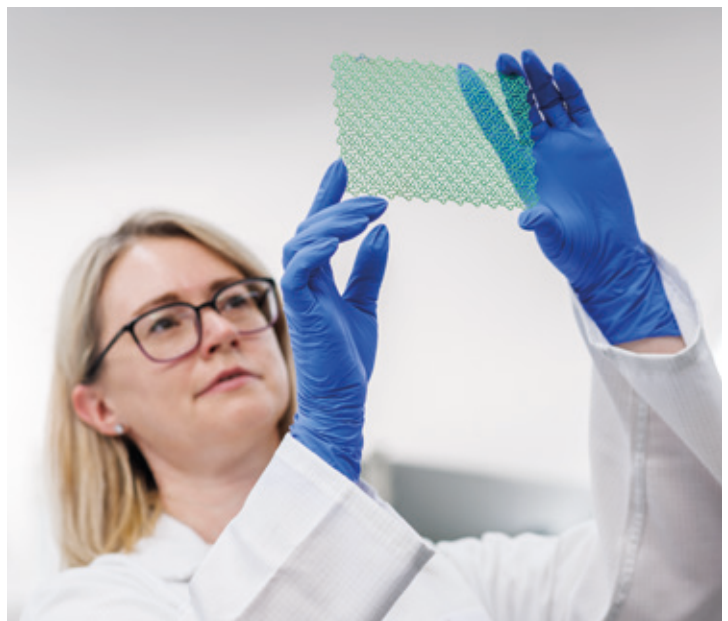
Have we sparked your interest?  
If so, please do not hesitate to contact us.

As specialists in titanium processing and surface refinement, we are your reliable and skilled partners. We would be delighted to meet your demands with precision and innovation.



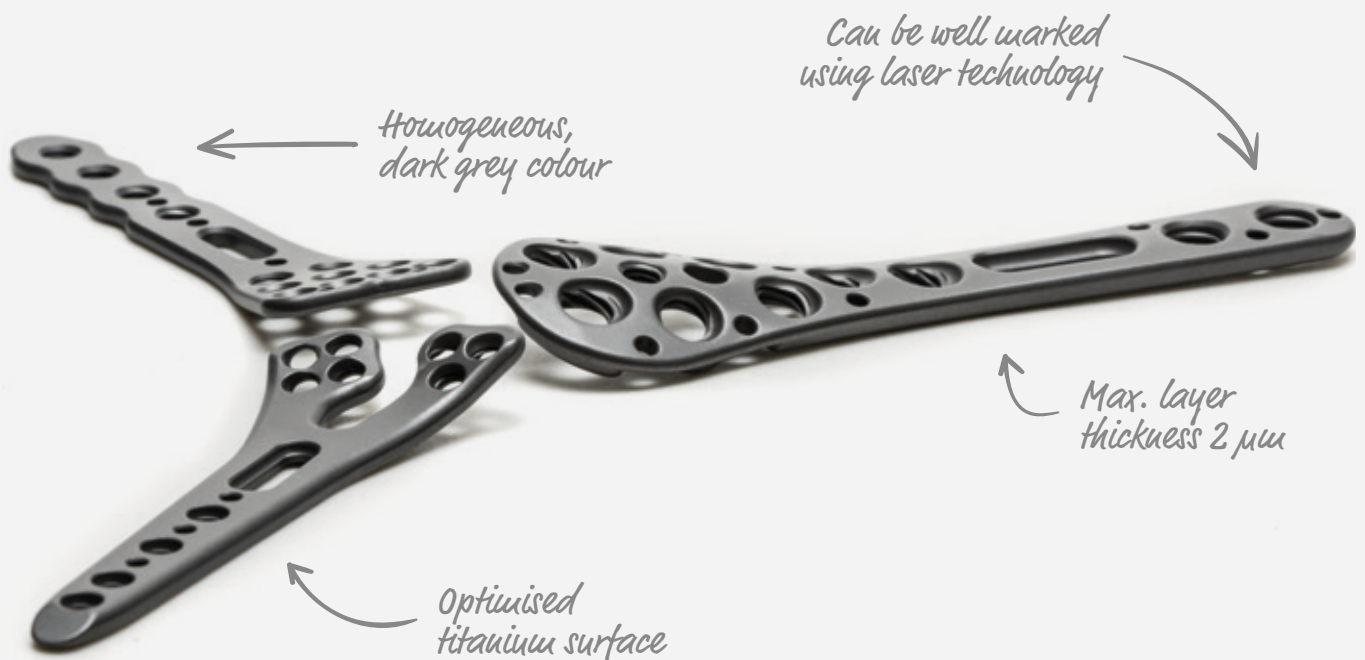
We achieve high-quality, top products with expertise and state-of-the-art manufacturing technology.

Our highly qualified and continuously trained staff as well as continuous investment in state-of-the-art manufacturing technologies put us in a position to offer our customers high-quality premium products today and in the future.



Type-II titanium anodising

# Dark anodising for optimised surface properties



Type-II titanium anodising (dark anodising) is the optimal process for improving the biomechanical properties of medical implants made of titanium significantly.

# Type-II titanium anodising – the technical surface optimisation

With type-II titanium anodising (dark anodising according to AMS 2488), titanium implants get a significantly thicker and more resistant oxide layer with a homogeneous, dark grey surface appearance. Dark anodised surfaces decrease the tendency towards cold welding between titanium implants significantly and can also be much more easily removed following successful fracture healing.

### Product advantages

- Decreased integration behaviour
- Easy to remove the implant after the fracture has healed
- Higher pretensioning of screw connections possible
- Improvement of tribology
- High biocompatibility



More information



Bone nail



Mesh plates



Pedicle head



Pedicle screw (partially anodised)

# Colour-coding with Recolor

The patented Recolor process allows further colour-coding of the dark-anodised implant if so desired. This means the advantages of type-II and type-III anodising can be combined.

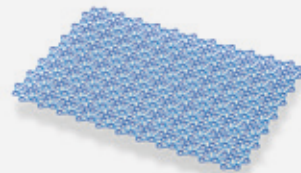
### Product advantages

- Customised colour-coding
- Diverse design possibilities
- Multiple colours possible on a single implant
- Results that stay the same



Type-III titanium anodising

# Colour anodising makes the difference



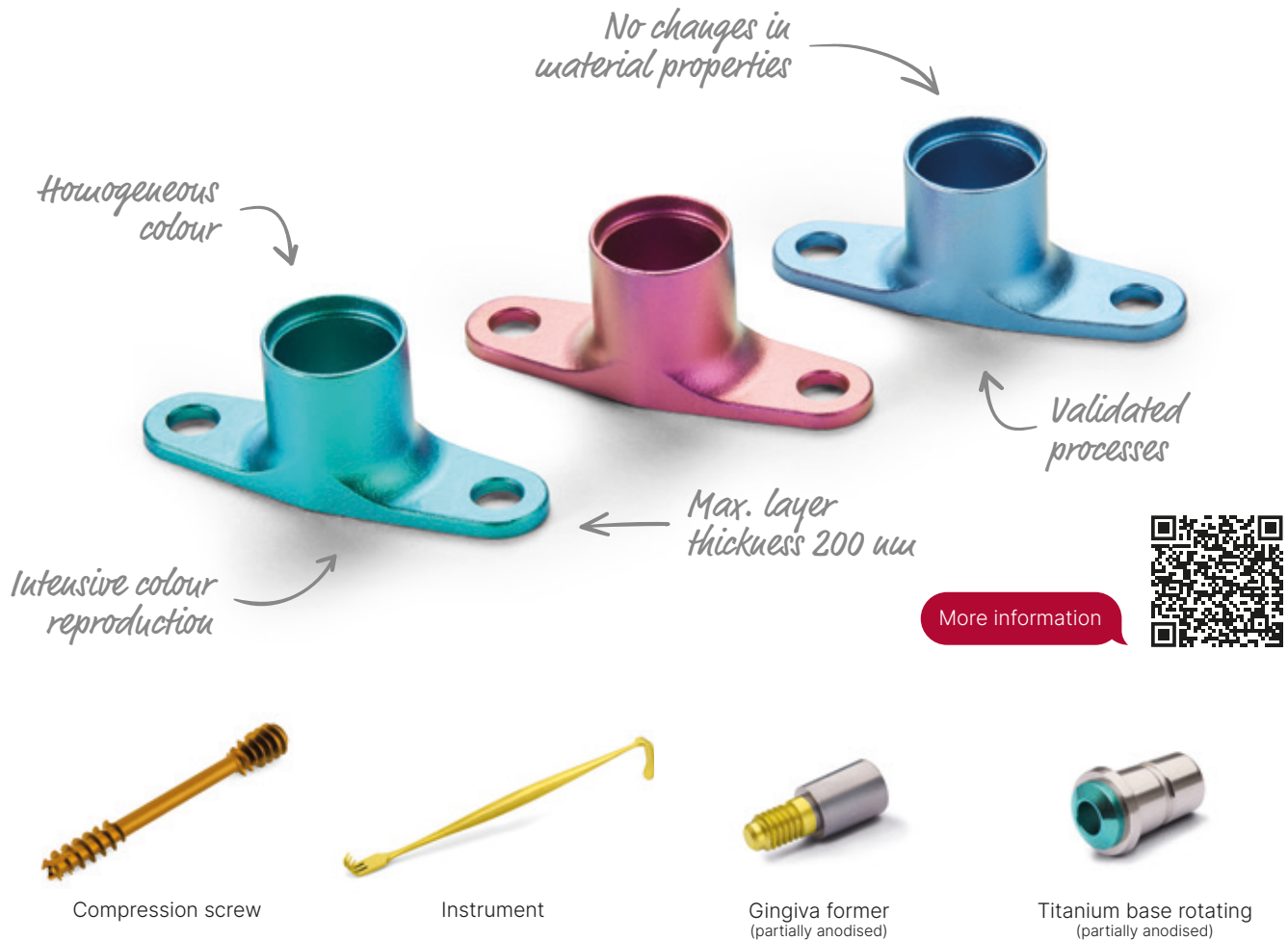
Type-III titanium anodising (colour anodising) gives the titanium surface of the implant an extremely thin, coloured oxide layer. This homogeneous colouring enables the implant to be clearly identified on the basis of the colour.

## Type-III titanium anodising – the clear colouring

Clear colouring means different implant components can be identified quickly. This reduces the risk of implants being mixed up during operations, contributing significantly to patient safety. This colouring process occurs in highly modern galvanising machines. At the customer's request, just parts of surfaces can be anodised (partial anodising).

### Product advantages

- Homogeneous colour
- Colour identification
- Exactly reproducible shades
- Broad spectrum of colours



## Colour variations type-III titanium anodising



## Colour-coding with Recolor

The Recolor technique allows additional custom marking of titanium products, for example with logos, measurement, depth markings, batch numbers, QR codes/barcodes etc.

### Product advantages

- Customised colour-coding
- Broad spectrum of colours
- Diverse design possibilities
- High contrasts



ART-tech®

# Resistant and permanent colour marking



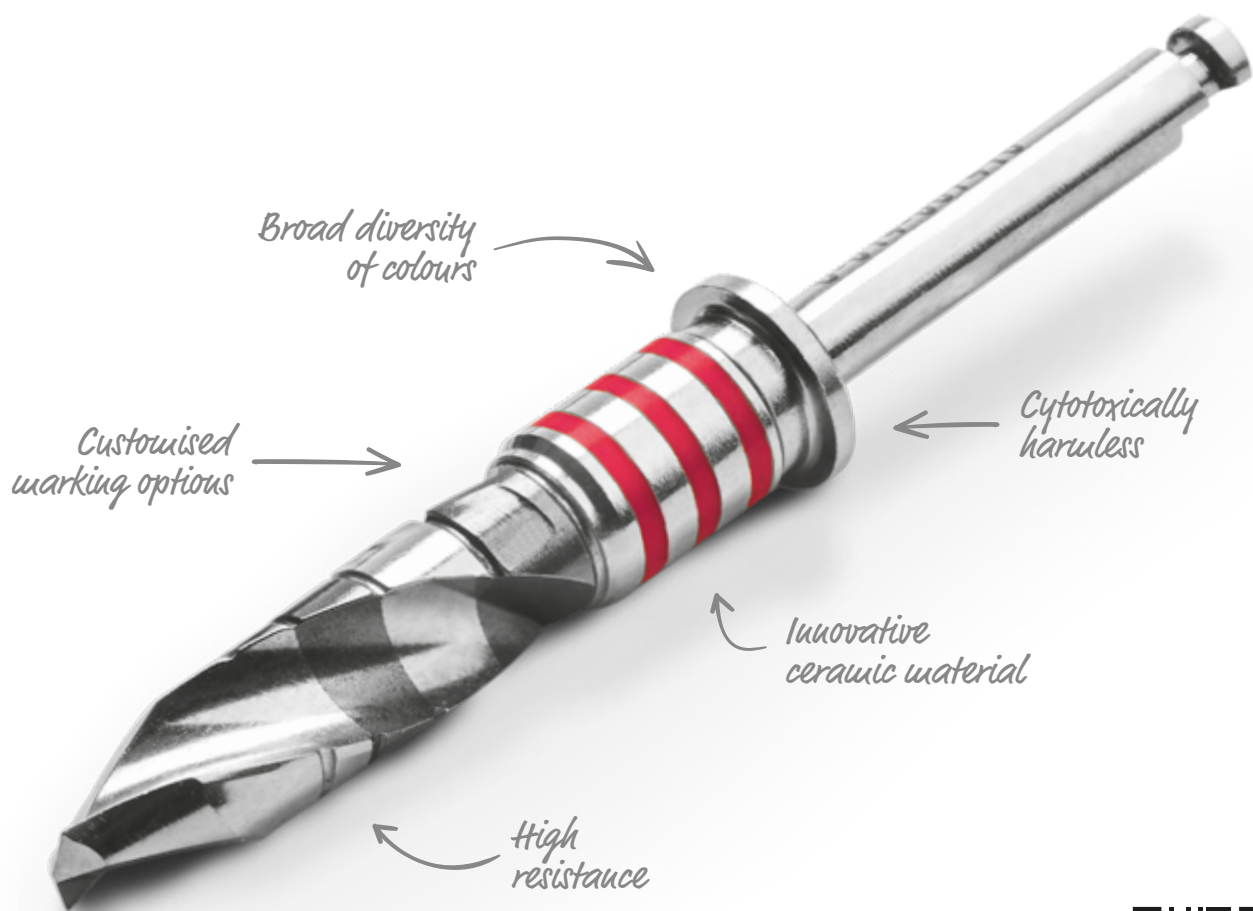
ART-tech® is an extremely resilient coloured ceramic for the permanent marking of products. The high-quality, biocompatible material is used to produce a flush design in customised colours on components, thereby ensuring there is no confusion.

## ART-tech® – the modern standard in colour marking

ART-tech® products impress with their extraordinarily high resilience in all common reprocessing processes and temperature ranges. Even aggressive media such as cleaning agents in hospitals and coolants from production plants do not limit the material's inherent biocompatibility. The wide range of colours ART-tech® are cytotoxically harmless and can be used effectively for a broad spectrum of custom requirements.

### Product advantages

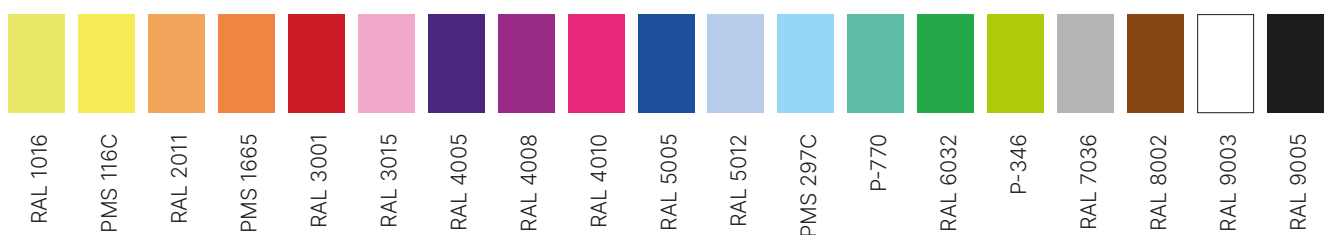
- Highly resilient
- Abrasion-resistant
- Sterilisable
- Biocompatible
- Long-term studies available
- Validated processes



More information



### Colour variations ART-tech®



## ART-tech®

ART-tech® is the permanent and resistant colour marking for numerous uses.

The ART-tech® coloured ceramic is inserted with precision and by hand with subsequent control and hardness tests.

An exact quantity of coloured ceramic is inserted into the recess to ensure the result is a completely flush product surface.





Colour-coding with ink

# Practical solutions with system



More information

**Colour marking** is essential in medical technology in particular. To always be able to offer our customers a high-quality solution for the most varied of requirements, we also carry out colour marking with ink systems from verified manufacturers.

Colour coding with ink offers a wide range of possibilities for custom marking of medical instruments or workpieces. This type of colour coding can also be used where only minimal recesses in the component are possible.

#### Product advantages

- Small depths are sufficient
- Wide range of applications
- Fast solution
- Broad spectrum of colours from verified manufacturers



## Titanium acid etching

# Effective cleaning and surface refinement

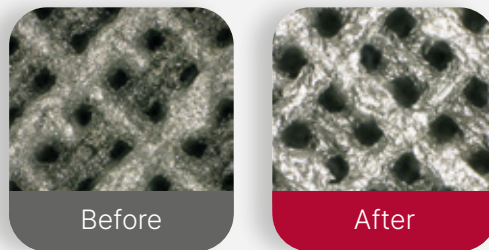


Image: Close-up of a mesh structure, magnified image (50x)



More  
information

Through the proprietary **titanium acid etching** refinement process, impurities can be removed from 3D printing products without leaving any residues and the surface structure can be individually optimised.

Our titanium acid etching refinement process allows complete, process-safe removal of production residues, thereby making it possible to achieve a high-quality final result. The homogeneous and even removal of material across the whole workpiece is continually checked by the company's in-house laboratories and measuring facilities.

### Product advantages

- Removal of impurities
- Brighter appearance
- Controllable surface roughness
- Optimised integration behaviour
- Validated process

Surface finishing

# Perfect finish for your products



More  
information

The perfect finish completes the decisive step from blank to quality product. We are well aware of that and have been drawing on our extensive experience in the finishing of surfaces for many years already with the aim of offering our customers a perfect result.



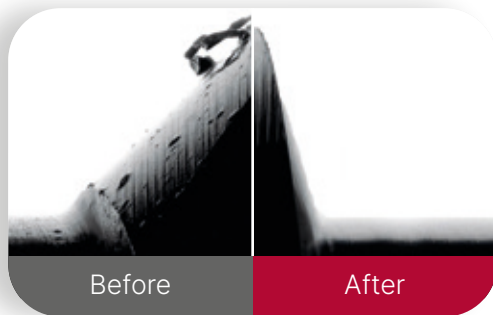
## Polishing

We polish your products as per your custom specifications and wishes in order to ensure a smooth surface and perfect appearance.



## Blasting technology

We can surface-blast even the smallest of components and complicated geometries for you in order to achieve optimal results.



## Deburring

Sophisticated deburring processes allow us to remove residual burrs for you completely and without leaving any residues.

Image: Magnified view of a thread flank (100x)



## Cleaning

We remove all product residues for you. We have the right cleaning method available for almost any impurity.

Image: Magnified view of micro screw hexagonal drive (100x)

Sleeves, turned parts and thin nuts

# Special products require special manufacturing



We have been specialists in the manufacture of housing sleeves and the associated thin nuts for many years. We are a skilled and reliable partner for the manufacture of customised and highly precise turned parts too.



Turned part



Thin nuts



Connector sleeves



Sleeve with marking



M18x1/M12x1 sleeve



M12x1/M8x1 sleeve



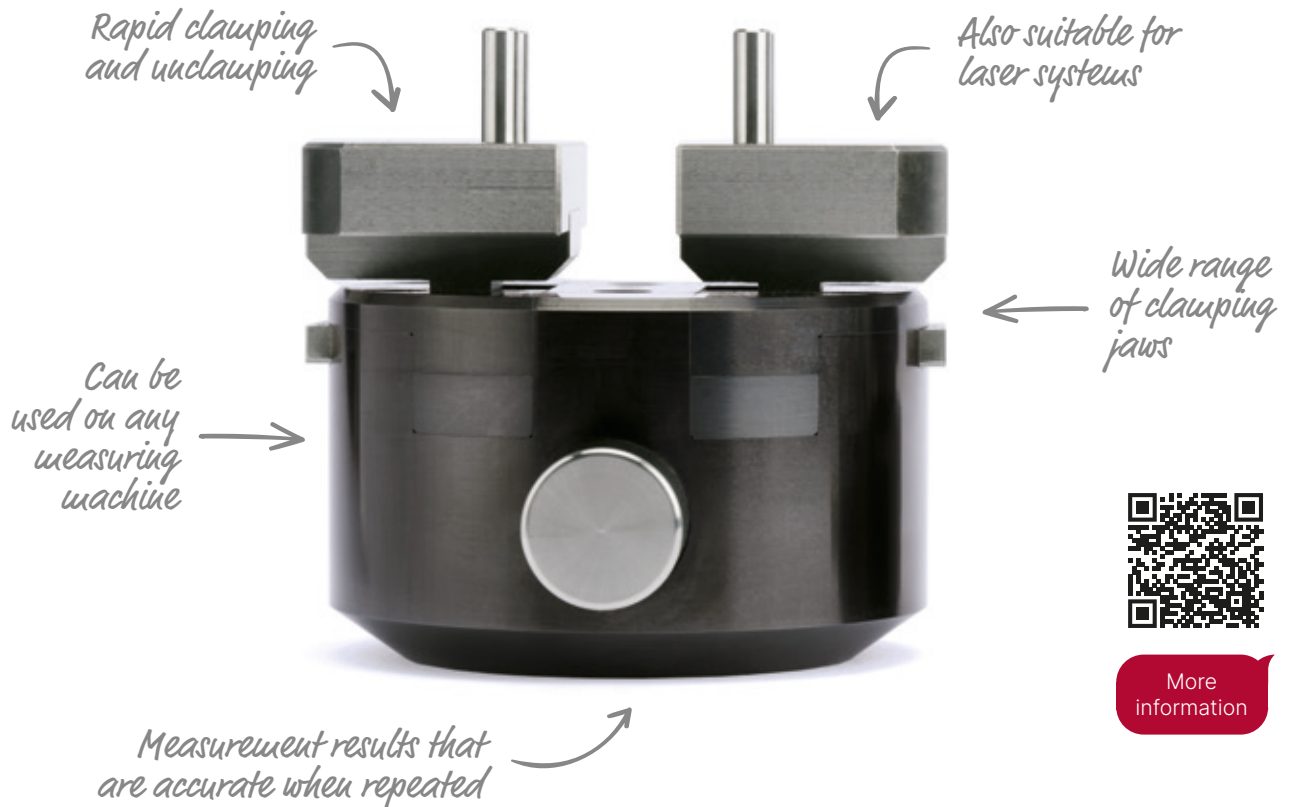
M30x1.5 sleeve



Ø 8 mm sleeve

## The FIXATOR clamping system

# Time-saving, precise and surprisingly easy to use



With our **FIXATOR**, components for measuring machines and laser marking systems can be clamped more quickly, more easily and with a high degree of repeat accuracy. The **FIXATOR** thus offers significant potential time and money savings.



Example uses with different workpieces.

### Product advantages

- Error-free clamping and unclamping of components
- Also suitable for laser systems
- Can be performed quickly by anyone
- Automated, manual and pneumatic operation possible
- Precise reproduction of measuring procedures
- All features of a component can be measured in a single work step
- Enormous time-saving potential
- Inner and outer clamps available

Tiabelle

# Stylish titanium jewellery creations



*Tiabelle*  
Titanium Jewellery



Our enthusiasm for titanium, with its wide range of fascinating properties and timeless silvery grey surface, inspired us to create our own titanium jewellery collection. We founded our own brand, **Tiabelle**, for our titanium jewellery, and we are continuously expanding.

## Passion and perfection

We have specialised in the high-quality finishing of titanium since 1980. With our precision in manual processing, stylish design and numerous innovations, we are always setting new standards with our titanium jewellery collections.

More information



TRINITY earrings



CRYSTAL PEARL earrings



ENYA earrings



LARA necklace



## Original handmade with love

In our manufacturing, each of our pieces of jewellery is designed with a great deal of passion and manufactured using traditional craftsmanship.

Before a unique Tiabelle product leaves our factory, we check the quality and the precise processing of each individual piece. Because we want to ensure that we give the best that we have to offer: Professional craftsmanship of the highest quality and perfection, beautifully presented in small works of art bringing lots of people joy.



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