

## Our services

### Consulting service & engineering

- Design optimization
- Optimizing of cost effectiveness
- Consulting for your entry into AM
- On-site training at your location

### Materials

- Aluminium (AlSi10Mg)
- Inconel (IN718)
- Titanium (Ti6Al4V Gd. 23)
- Further materials on request

### Order quantity from 1 to serial production

- Single parts
- Functional prototypes
- Small series

### Post-processing

- Surface finishing
- Mechanical finishing
- Heat treatment

### Quality inspection

- 3D scanning
- Metallography
- Individual part numbering
- 100 % control and documentation of the geometries

In collaboration with our partners we offer additional inspection methods.

### Technical data

- Maximum size of parts (L x W x H)  
278 mm x 278 mm x 330 mm
- Density > 99.5 %
- Tolerance +/- 0.1 mm
- Surface roughness 15 - 35 µm



ProtoShape is your ISO 9001 certified partner and Swiss pioneer in additive manufacturing. We process **aluminium, inconel** and **titanium**. Using selective laser melting, we produce **individual parts, functional prototypes** and **serial parts**.

ProtoShape was founded in 2012. Together we have more than 20 years of experience in additive manufacturing. You too can benefit from our experience.

We look forward to hearing from you.

**Dr. Felix Reinert**, CEO

+41 32 530 88 40

[felix.reinert@protoshape.ch](mailto:felix.reinert@protoshape.ch)

**Jan Eisenhuth**, Sales

+41 32 530 88 40

[jan.eisenhuth@protoshape.ch](mailto:jan.eisenhuth@protoshape.ch)

**ProtoShape GmbH**

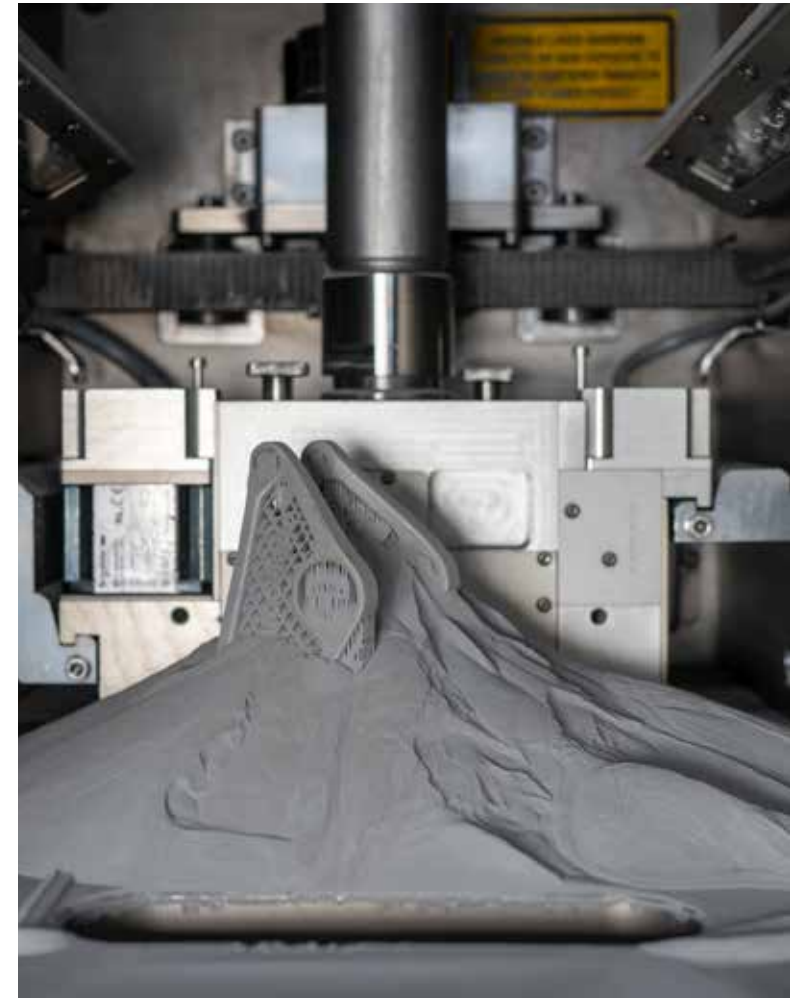
Aarbergstrasse 5 | 2560 Nidau-Biel | Switzerland

+41 32 530 88 40 | [info@protoshape.ch](mailto:info@protoshape.ch)

[www.protoshape.ch](http://www.protoshape.ch)



**Your service provider for  
additively manufactured metal parts**



## Aluminium (AlSi10Mg)

### Reproduction of a part

ProtoShape has replicated the cooling water distribution part of a vintage car using **3D scanning** and **3D printing**. Old moulds and documentation were not necessary.

The spare part was made of **aluminium**. The AlSi10Mg alloy is very convenient to process. It is used for **thin-walled parts** with **complex geometries** in the automotive industry.



Cooling water distributor made of aluminium

### Material properties

- Low material density
- Light metal
- Good processability
- High electrical conductivity

### Application areas

- Automotive industry
- Space and Aerospace
- Prototyping

## Titanium (Ti6Al4V Gd. 23)

### Ultralight deflection lever

In order to demonstrate the possibilities of additive manufacturing, ProtoShape has redesigned a deflection lever of a spring-loaded mountain bike. Thanks to **hollow struts** and **gaps with grid structures**, the additive titanium part is **50 % lighter**.

In a research project, the fatigue strength of additively manufactured titanium parts is determined in order to enable their use in aerospace.



Titanium deflection lever with customized inscription

### Material properties

- Corrosion resistance
- Biocompatibility
- Low thermal expansion
- High strength at low density

### Application areas

- Medical technology
- Space and Aerospace
- Automotive industry

## Inconel (IN718)

### Turbine wheel

The blade tips of these turbine wheels are very thin and inclined, which makes the production by selective laser melting a challenge. ProtoShape has delivered an excellent result thanks to **suited process parameters**.

The turbine wheels were used by ABB Turbo Systems AG on the test bench and **successfully passed all planned tests**.



Inconel turbine wheel

### Material properties

- Corrosion resistance
- High mechanical strength up to 700 °C
- Good weldability
- Can be hardened

### Application areas

- Space and Aerospace
- High temperature range
- Turbine parts