TRUMPF

Rethink production

Push your bike parts to the next level!

Our Additive Manufacturing technology for your Bicycle Application:

Laser Metal Fusion (LMF/LPBF)

Mountainbike Pedal

Material: Ti6Al4V Gr. 5

Freedom of design and material variety

- Titanium for combined strength and lightweight
- Reduced wall thickness with high strength
- Integrated bearing seats - no mechanical rework necessary

EFFECT: Fast time to market with extraordinary materials

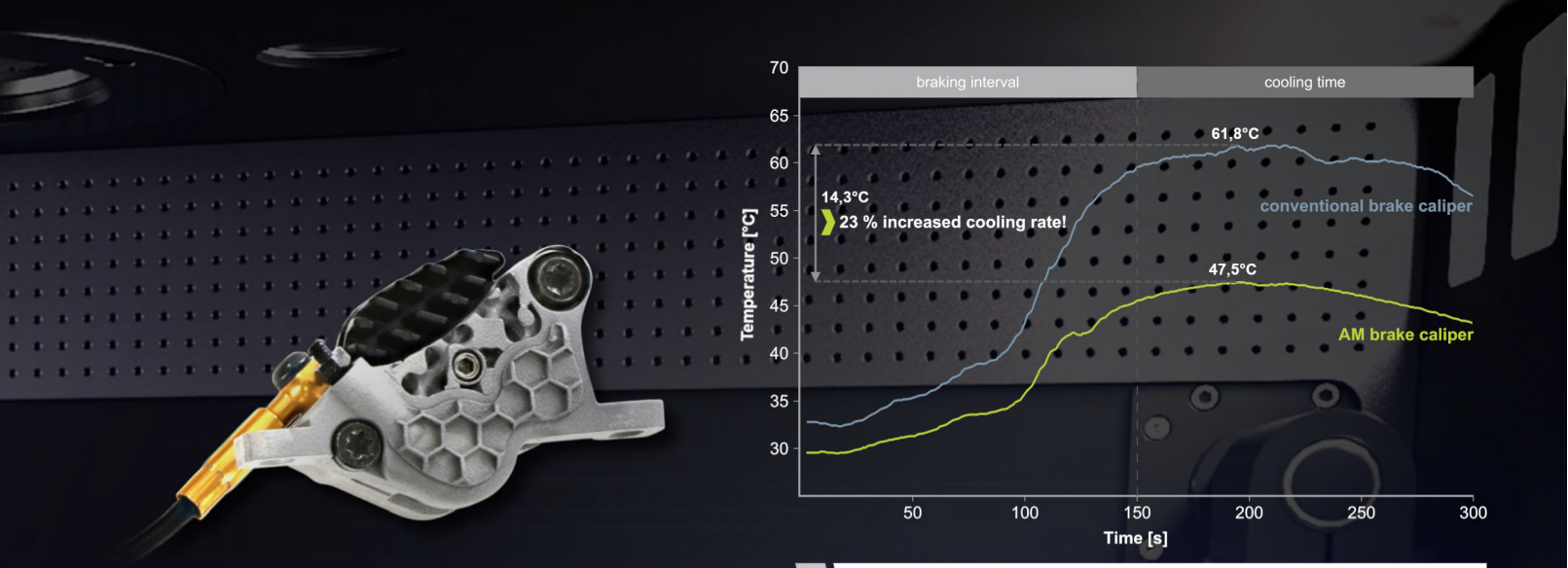
Brake Lever

Material: Ti Gr. 2

Lightweight titanium lever for serial production

- Low part costs: appr. 12 - 15€ p.P.
- Lattice structures in the finger area for textured grip
- High stiffness using topology optimization
- Fast time-to-market for custom build design

EFFECT: Customizable brake feeling with less weight



Brake Caliper*

Material: AlSi9Cu3

Integrated cooling structures for optimized efficiency

- Lattices and honeycomb for improved air cooling
- Lightweight through material saving
- Customizable brake designs from quantity one
- No restrictions for inner oil flow design

EFFECT: Cooling rate performance increase by **23%**

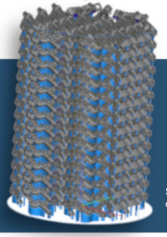
*Functional design based on conventional caliper

Additive serial production

Part costs "Brake Caliper" with optimized 3D printing production:

- **Machine:** TruPrint 3000
- **Parts p. a.:** 15.000
- **Overall build time:** 91h
- **Parts on platform:** 280

Production cost / part:
appr. **15 - 20 €**



Stacked buildjob on TruPrint 3000

Push your bike parts to the next level

Benefit from our AM Bike Application Experts at TRUMPF

- **Improved performance**

  Form follows function: High performance materials and new design options (e.g. topology optimization) enable unmatched part performance

- **Lightweight**

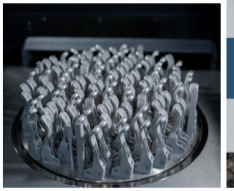
  Removal of unnecessary volume to safe weight. Lattice structures and a high variety of infills maintain the part strength and reduce material at the same time.

- **Highend materials**

  Efficient usage of high strength materials like aerospace grade titanium allow completely new applications both for mechanical stress resistance and volume reduction.

- **Competitive part costs**

  In terms of sustainability and additive serial production the TRUMPF TruPrint machines guaranty a highly efficient material usage resulting in attractive part costs.



Contact: application.am@trumpf.com / consulting.am@trumpf.com

TRUMPF Laser- und Systemtechnik GmbH
Johann-Maus-Str. 2 · 71254 Ditzingen · Germany
additive.manufacturing@trumpf.com
www.trumpf.com/s/additivemanufacturing

TRUMPF