



PERSONALISED BIKE SADDLES

1. Perfect fit, unprecedented comfort.
2. Integral process - scan, print & coat.
3. Unique 3D lattice design.

Additive manufacturing holds unique opportunities for individually personalised sports devices that support optimal comfort and performance. In a joint effort with BASF Forward AM and Hyperganic, software partner specialised in mass customization, atum3D created the world's first 3D printed bike saddle with customised zonal cushioning for the individual cyclist, whether recreational or professional. Our DLP Station printers enable fast and consistent printing of high-quality and unique saddles on a mass-production scale.

atum 3D

3D Manufacturing Excellence

MASS-CUSTOMISED BIKE SADDLES

atum3D is dedicated to bringing the benefits of additive manufacturing to the world of sports. Together with BASF Forward AM, we are proud to present the first integral solution to manufacture individualised bike saddles on a mass-production scale. Bridging the gap between end-user quality requirements, process performance, and cost-efficiency, our DLP Station enables on-site saddle printing. The result? Fast and accurate production of exceptionally comfortable individualised, robust bike saddles that allow cyclists to maximise both experience and performance.

READY, SET, GO!

We combine our printers and print preparation software with scanning, modelling and resin solutions into an end-to-end solution that gets you underway right off the bat.

1. PRESSURE MAPPING

- **Pressure Sensitive Foil**

» Using a printed flexible pressure-sensitive foil, the first step is to scan the individual cyclist's bone structure. This process results in a pressure map, indicating the precise mass and pressure distribution applied to the saddle by the cyclist.

2. MODEL

- **Hyperganic 3D Modelling Software**

» Specialised software translates the pressure map into a bespoke lattice design of the multiple functional zones within the saddle, finetuning each one to the cyclist's individual physical properties.

3. PRINT

- **Operator Station Professional**

» After importing the design in atum3D Operator Station, our software prepares the bike saddle model for print in just a few clicks. Multiple saddles can be combined in a single printer run.

- **DLP Station 5-365 EXZ**

» The extended Z-axis allows printing personalised saddles up to 45 cm in length with accuracy and speed. This enables new levels of cost-efficiency for customised, industrial-scale manufacturing.

- **BASF Forward AM Ultracur3D® EL 150 resin**

» Ultracur3D® EL 150 by BASF Forward AM is ideally suited for applications requiring elasticity and flexibility, delivering medium hardness and an optimal combination of high strength, excellent elongation at break and outstanding long-term rebound.

4. POST-PROCESSING

- **Cleaning & Post-Curing**

» After printing, the cleaning and post-curing processes can be largely automated to further reduce the lead time and increase ease-of-use. To this end, atum3D offers the Cleaning Station, Curing Station and Finishing toolkit extensions.

- **BASF Forward AM Ultracur3D® Coat F Coating**

» In the final step, the production saddle is given a hard-wearing yet flexible coating of BASF Forward AM Ultracur3D® Coat F, available in an extensive spectrum of colors. With class-leading adhesion and outstanding elasticity, this makes the perfect finishing touch for lattice-structure applications that need to combine excellent flexibility with durability and attractive haptics.

5. RIDE

- **The comfort of a personalised, high-quality saddle**

» The saddle is one of the crucial contact points between cyclist and bike. A well-fitting saddle is vitally important to every cyclist, decisive to both performance and comfort. Finding the perfectly fitting saddle was a challenge - until now!

PERSONALISED BIKE SADDLE BENEFITS

The saddle's internal lattice structure is composed of thousands of individual 3D printed struts, each designed to dissipate the high pressure applied by the rider when cycling. Leveraging the benefits of the lattice structure, this new saddle is a massive improvement in cushioning and pressure distribution, delivering unprecedented comfort for casual cyclists and a performance leap for ambitious riders.

Summarised, the benefits of the atum3D products in this integral personalised bike saddle serial production solution include:

- Best-in-class build speeds of up to 150 mm/hour.
- Intuitive print job preparation, easy printer set-up and workflow.
- DLP Station 5-365 EXZ's extended Z-axis allows printing multiple personalised saddles up to 45 cm in length in a single run. This large build envelope enables new levels of cost effectiveness for uniquely customised, industrial-scale manufacturing.
- Print robust bike saddles with a perfectly individualised saddle structure that optimally distributes bone and muscle pressure, maximizing rider comfort by minimizing peak-pressure points.
- With this integral solution, you are ready for mass customization and on-site printing.




hyperganic



Ultracur3D® is a registered trademark of BASF Group.

atum3D strives for 3-fold excellence. With proprietary **software, hardware** and an **open resin platform**, we offer exceptional **accuracy, speed** and **cost-effectiveness**. We aim to make your life easy with comprehensive **training, services** and **support**. Team up with atum3D and become a part of the next industrial revolution!

For more information and specifications, please call +31 (0)85 488 26 60 or visit atum3D.com.

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