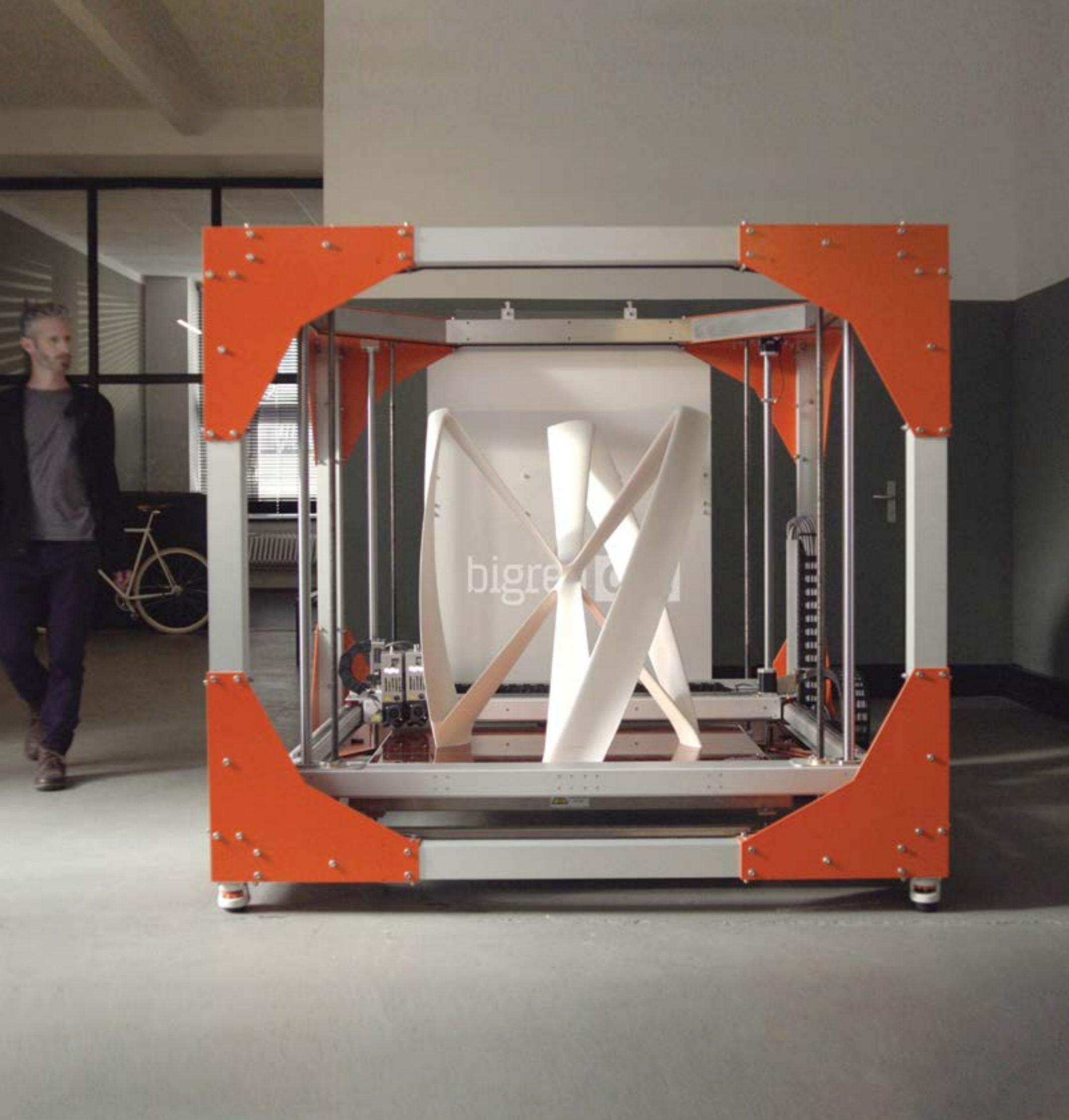


# bigrep **ONE**



## LARGE **3D PRINTERS** FOR **INDUSTRIAL APPLICATIONS**

The Most Advanced **Additive Manufacturing** Technology



# bigrep **ONE**

## **AWARD-WINNING INDUSTRIAL DESIGN FOR **BIG IDEAS****

German-engineered to work around the clock, the BigRep ONE is a world-leading large-scale 3D printer at an affordable price point.

BigRep's international team of experts has designed and manufactured a machine that achieves the best possible conditions for printing large objects. The highest quality machinery enables accuracy, speed and easy access to the print bed for large-format printing of industrial objects.

Industrial users rely on the BigRep ONE for high speed printing that does not compromise on quality. This is even more pronounced in our new Power Extruder for 0.6 mm, 1 mm and 2 mm nozzles, which enhances prints for a wide range of applications.

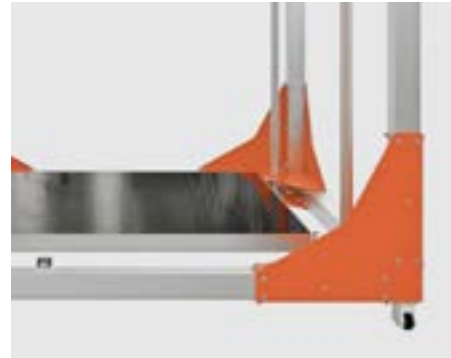
Created by BigRep - recent winners of the German Brand Award 2018 - the ONE is a large-scale FFF 3D printer that has been expertly made for industrial professionals by industrial professionals. The workhorse machine won the German Design Award 2016.



# UNCOMPROMISING GERMAN ENGINEERING THE BIGREP ONE

The BigRep ONE was developed to make 3D printing of large-scale industrial objects as easy as possible. Every detail has received our full expertise and experience - for better quality, higher speed and increased safety.

BigRep large-scale 3D printers are German-engineered for high performance, around the clock. Made from the highest quality materials, and manufactured in Germany, BigRep's workhorse machines are built to be reliable partners for innovation.



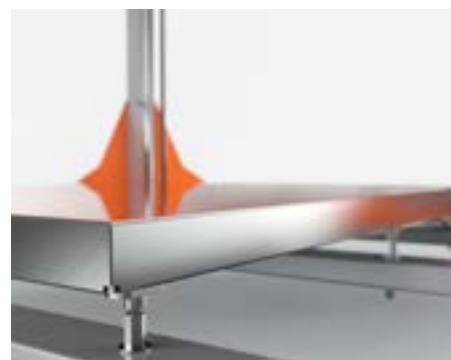
## Open & Safe The Frame Construction

The open format ensures that the user has the best possible view for monitoring the quality and progress of the object at all times. Moving parts have been enclosed for safety, aided by integrated sensors that ensure precision and user friendliness.



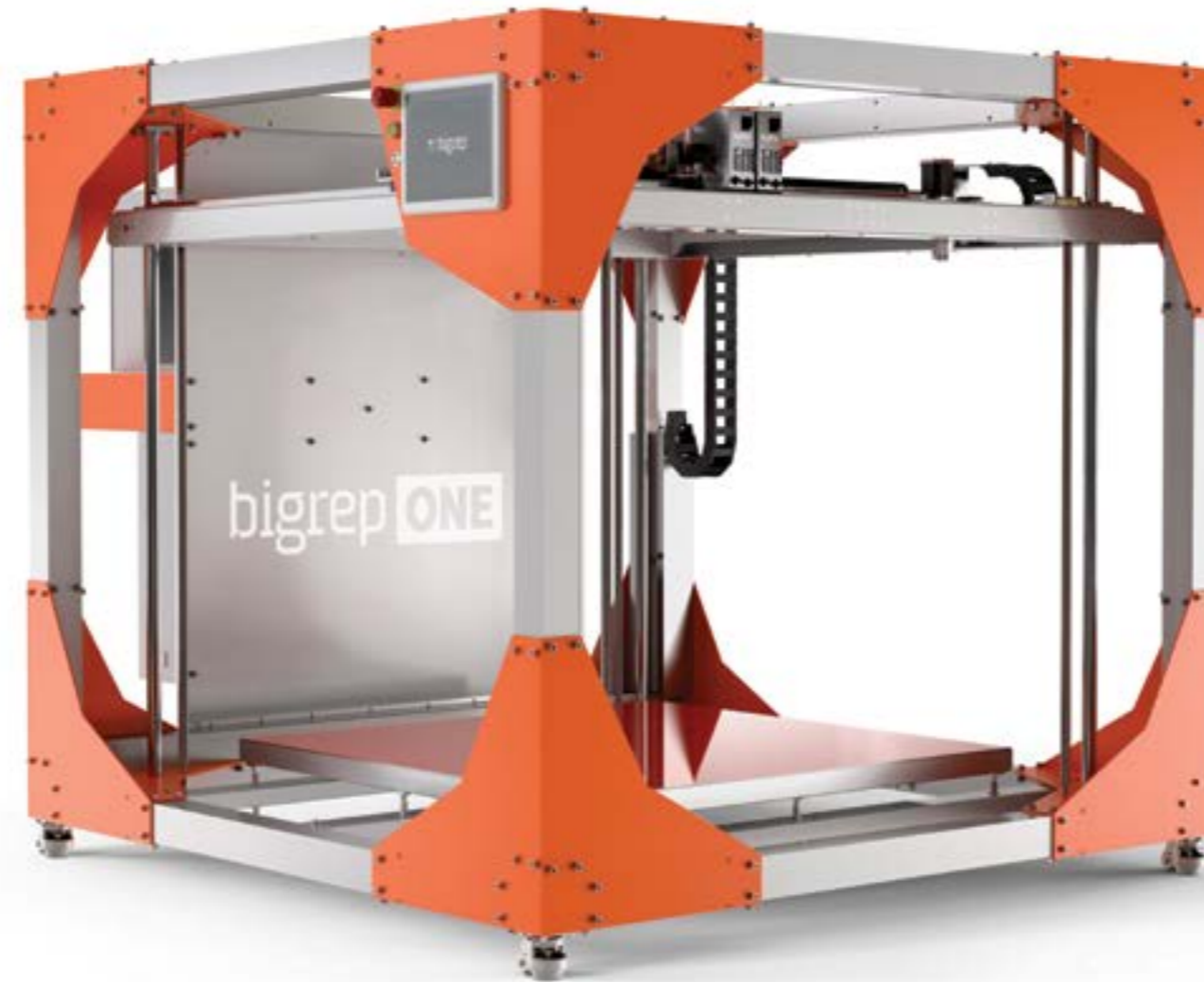
## Modular & Independent The Extruders

The modular print heads operate independently, allowing for unbeatable flexibility when printing in two colors or with a different material (break-away or soluble). Fitted with either 0.6 mm, 1 mm or 2 mm nozzles, the hot ends can be easily adjusted and replaced without the need for tools. During the printing process, the inactive print head moves upwards slightly to avoid making contact with the object.



## Semi-Automatic Print Bed Levelling The Print Bed

The heated print bed mounted with polyimide foil provides optimal adhesion in the printing process right from the outset. Thanks to an integrated inductive sensor, the print bed can be leveled quickly and effortlessly, thereby considerably reducing preparation time.



## Big, Bigger, the Biggest The Build Volume

The BigRep ONE features a build volume of 1005 mm x 1005 mm x 1005 mm. With a capacity of over one cubic meter, the BigRep ONE provides the largest serially produced FFF 3D printer currently available on the international market.



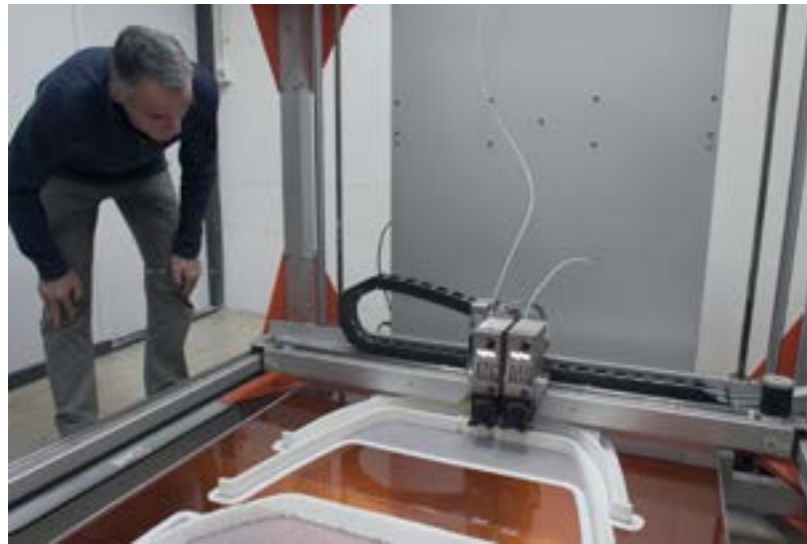
## Spacious & Flexible The Spool Holder

The spool holder has been designed to fit all standard spool sizes. It can hold two spools of up to 8 kg. An in-built detection system notifies the user when the filament is about to end. Optionally a filament enclosure box is available to protect filament from dust and moisture.

## Easy & Intuitive The Graphical User Interface

The new intuitive user interface on touch panel PC enables many new features, such as remote load, check print progress via webcam, change print parameters, resume print after power failure, and many more.





### Villeroy & Boch Revolutionizing Prototyping

Ceramics manufacturer Villeroy & Boch is using the BigRep ONE to maximize prototyping and design speed. They are now able to produce bathtubs and shower trays 1:1 at high levels in around three weeks.



### Teignbridge Large Metal Cast Patterns

Custom propeller manufacturer Teignbridge is producing patterns 33% faster using large-scale 3D printing, rather than traditional milling methods. With the BigRep ONE, Teignbridge now only needs two days to produce a pattern, including post processing, as well as saving 90% on pattern maker labor costs.



### Steelcase Revolutionizing Prototyping

Steelcase, global leader in office furniture and space solutions, is using the BigRep ONE to print full-scale samples of new designs, to see how the final product would fit in a working space. The large-scale 3D printing technology enables Steelcase to save on costs in product development and get to market quicker.

## OUR NEW POWER EXTRUDER

Print faster, and in a wider variety of print specifications, by installing a BigRep Power Extruder on the BigRep ONE. Compatible with our new power hot ends with 0.6 mm, 1 mm and 2 mm nozzles, users have the flexibility to quickly and independently switch between nozzles as required.



Experience higher print speed in combination with a finer surface finish, thanks to our new hot ends with 0.6 mm, 1mm and 2mm nozzles. Switch hot ends yourself in as little as 10 minutes, for optimum range and flexibility in print projects.

Accelerate print times by up to 60% with higher material throughput, at the same resolution level, depending on geometry and print parameters. Maximize the output of your BigRep ONE by completing prints even up to 100% faster with the 2 mm hot end.

	Standard Extruder	Power Extruder
Nozzle size	1 mm	0.6 mm, 1 mm & 2 mm
Layer height range	0.3 mm - 0.8 mm	0.1 mm - 1.4 mm
Max. throughput with 1mm nozzle (% comparison)	22 mm <sup>3</sup> /s	40 mm <sup>3</sup> /s (+82%)
Max. throughput (% comparison)	22 mm <sup>3</sup> /s	55 mm <sup>3</sup> /s (+150%)



The BigRep ONE was created for a range of applications: from industrial rapid prototyping to ready-to-go design products – anything is possible. It provides you with affordable and easy-to-use technology for large objects and ideas.

## REDEFINING ADDITIVE

## TECHNICAL SPECIFICATIONS

With a build volume of more than one cubic meter, the BigRep ONE was designed and constructed for countless printing hours, consistent quality and optimal results.

Build volume	<b>x 1005 y 1005 z 1005 (mm)</b>
Layer height resolution	<b>0.1 mm - 1.4 mm*</b>
Acceleration	<b>Up to 400 mm/s<sup>2</sup></b>
Extruder	<b>Two modular extrusion heads</b> - Standard Extruder with 1 mm nozzle - Power Extruder with 0.6 mm, 1 mm and 2 mm nozzles (option)
Printing technology	<b>FFF – Fused-Filament-Fabrication (FDM)</b>
Certified BigRep materials	<b>PLA, PETG, Pro HT, Pro HS, TPU</b> Other filaments upon request
Support materials	<b>PVA</b> Other filaments upon request
Print bed temperature	<b>Max. 80 °C</b>
Printer weight	<b>Approx. 460 kg</b>
Size	<b>x 1850 y 2250 z 1725 (mm)</b>
Power	<b>208 V – 240 V, 16 A, 50 / 60 Hz</b>
Safety certifications	<b>CE approved</b>

\* Depending on selected extruder/ nozzle

## ENGINEERED & MANUFACTURED IN GERMANY

Meticulously engineered in the German capital Berlin, BigRep ONE printers are serially produced by Olpe Jena GmbH and put through the most rigorous quality tests to ensure optimal performance under pressure. This means BigRep's workhorse printers are made to last, and produced using the highest quality materials and using tailor-engineered open-source software. BigRep also applies the same standards to its materials, producing high-performance filaments in cooperation with trusted suppliers, to make materials for professionals making industrial objects.

## **COST-EFFICIENT** TECHNOLOGY FOR A BROAD RANGE OF **APPLICATIONS**

BigRep 3D printers set new standards and enable a broad range of industrial applications using German-engineered large-scale 3D printing technology. It is easy to use and can be employed virtually anywhere, allowing for quick and cost-efficient manufacturing of prototypes, molds and final products.



### **ENGINEERING AND RAPID PROTOTYPING**

Being able to produce prototypes quickly and cost-efficiently opens up new development and design possibilities for industrial users. BigRep's large-scale 3D printing technology enables large numbers of iterations to be manufactured simply and quickly, without incurring high costs. This means better products, increased customization potential and shorter development times.



### **PATTERNS, JIGS AND FIXTURES**

Across industries, a core challenge faced by engineers and workshop managers lies in fast production of customized jigs, fixtures and other tooling. In foundries, for example, large-scale patterns are required as a basis to create forms for sand casting. BigRep's additive manufacturing technology enables businesses to gain a competitive advantage by quickly creating these objects, rather than relying on traditional, time-consuming methods of production, such as CNC.



### **RESEARCH, DEVELOPMENT AND EDUCATION**

BigRep's advanced 3D printers offer new possibilities for teaching and research to students, teachers and scientists alike. The workhorse machines are easy to use, and the accessible print beds enable numerous users to observe and experiment with additive manufacturing processes as they gain experience in the production of large-scale objects. From printing with embedded sensors, to experimenting with flexible filaments, there are unlimited opportunities for users to breathe life into their research.

## **REFINE** BIG PRINTS WITH **POST-PROCESSING**

Objects printed with FFF can be treated and refined in various ways, for example by improving or modifying their surfaces, or by using objects as positive or negative forms for molding and casting processes.



### **SUBTRACTIVE TECHNIQUES**

Grinding, tumbling, sanding and abrasive blasting are the most common subtracting methods for finishing FFF 3D-printed objects. These techniques enable users to create prototypes that adequately convey the final product's look and feel.



### **MATERIAL COATING**

Various coating methods, such as electroplating (metal coating), liquid coating and foiling can create true-to-form design prototypes from 3D-printed objects. Certain coating methods can also improve functional characteristics of a print, such as strength, temperature resistance and adhesiveness.



### **CHANGING MATERIAL PROPERTIES**

To enhance layer bonding, increase mechanical strength and alter surface texture, 3D-printed materials can be chemically changed. Methods such as thermal treatment, vapor smoothing and tempering modify the properties of the material with a thermoheating process on a molecular level.

## REDEFINING **ADDITIVE**

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