

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



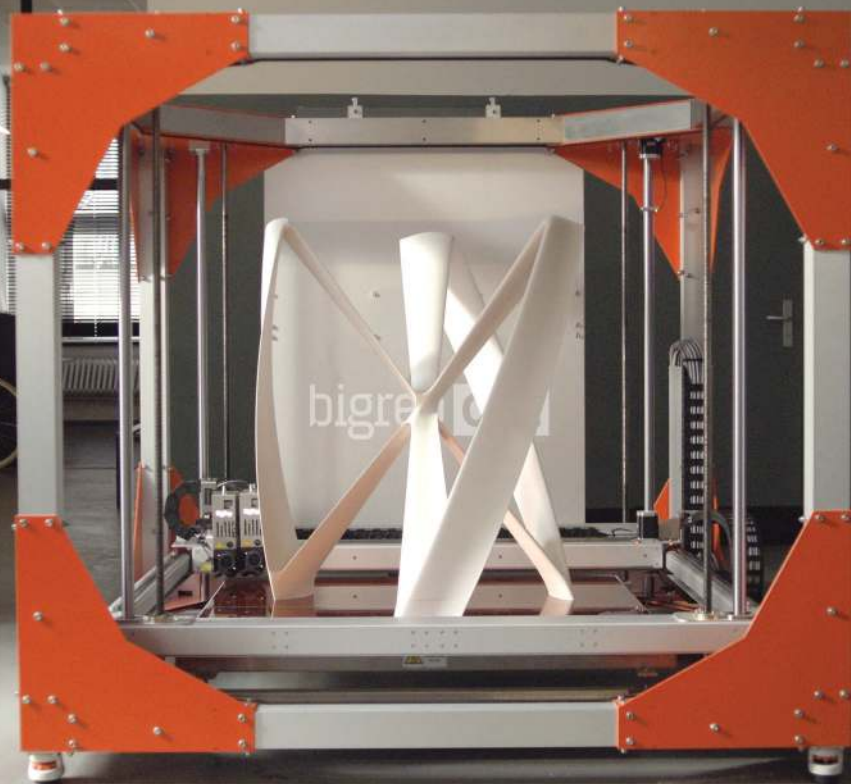
bigrep **ONE**



bigrep **STUDIO**

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.

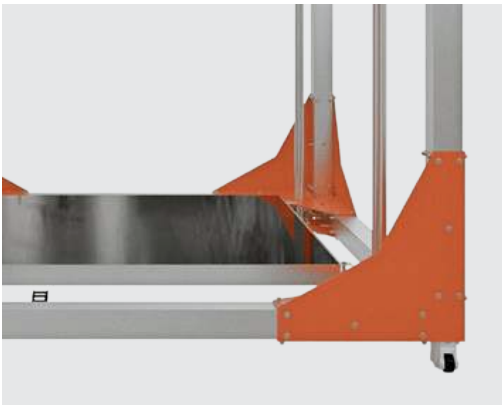
Industrial users rely on the BigRep ONE for high speed printing that does not compromise on quality. This is even more pronounced in our new Power Extruder for 0.6 mm, 1 mm and 2 mm nozzles, which enhances prints for a wide range of applications.

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.

[WATCH THE STUDIO'S PRODUCT VIDEO](#)

# UNCOMPROMISING GERMAN ENGINEERING – THE NEW **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.



## **Open and Safe**

### The Frame Construction

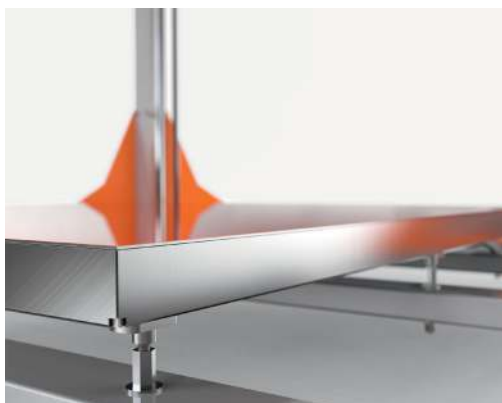
The open format ensures that the user has the best possible view for monitoring the quality and progress of the object at all times. Moving parts have been enclosed for safety, aided by integrated sensors that ensure precision and user friendliness.



## **Modular and 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.

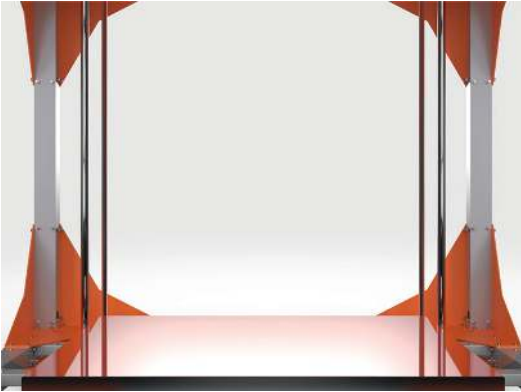


## **Semi-Automatic Print Bed Levelling**

### 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.

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.



## **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 and 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.



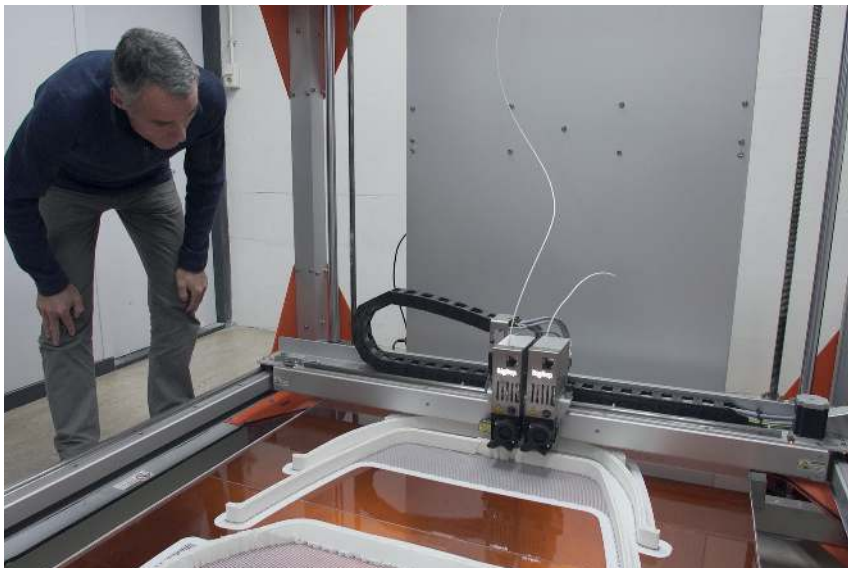
## **Easy and Intuitive**

### 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.

DISCOVER HOW INDUSTRIAL MANUFACTURERS USE THE PRINTERS





## **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.



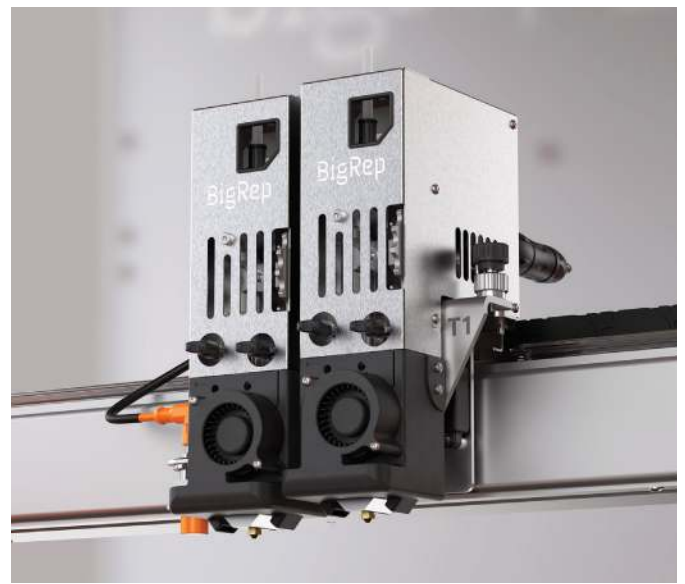
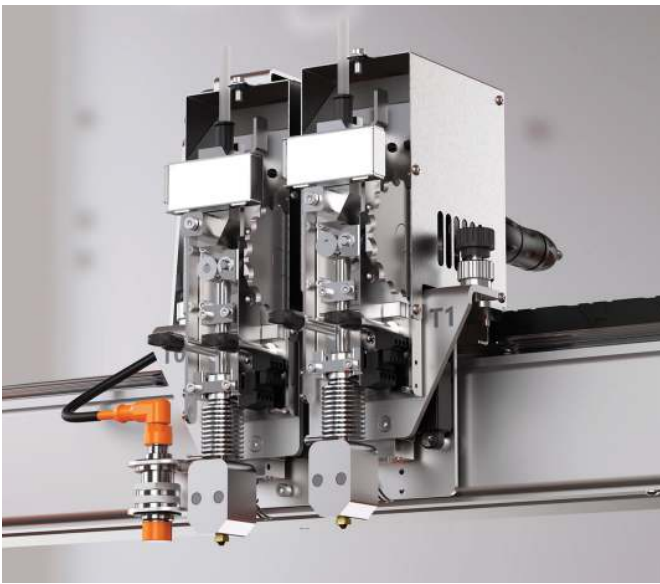
## **STEELCASE**

### BRINGING DESIGNS TO MARKET FASTER

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 and 2 mm 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	<b>1 mm</b>	<b>0.6 mm, 1 mm &amp; 2 mm</b>
Layer height range	<b>0.3 mm - 0.8 mm</b>	<b>0.1 mm - 1.4 mm</b>
Max. throughput with 1mm nozzle (% comparison)	<b>22 mm<sup>3</sup>/s</b>	<b>40 mm<sup>3</sup>/s (+82%)</b>
Max. throughput (% comparison)	<b>22 mm<sup>3</sup>/s</b>	<b>55 mm<sup>3</sup>/s (+150%)</b>



MEET US AT A TRADE SHOW CLOSE TO YOU

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.

**Smart solutions for big prints.**



# 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, Pro FLEX</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.



# bigrep STUDIO



## FAST AND PRECISE **LARGE-SCALE 3D PRINTING** IS FINALLY ACCESSIBLE IN ONE **COMPACT** PACKAGE

With the BigRep STUDIO, we introduce a workhorse printer that brings a new dimension to large-scale 3D printing. The industrial-grade quality machine has a print volume of 500 mm x 1000 mm x 500 mm that enables continuous printing of large objects in a space-saving package.

Fitting easily through doors, the size of the STUDIO is optimal for setting up the printer in all workspaces.

The dual extruder equipped with two 0.6 mm hot ends has been specially designed for speed and precision. The direct-drive all-metal hot end allows for printing of a larger variety of high-performance filaments.

As winner of the prestigious 2018 German Innovation Award, the STUDIO is the ideal German-engineered 3D printer for professionals across industries to bring their innovative designs to life.

WATCH THE STUDIO'S PRODUCT VIDEO

# QUICK AND PRECISE - BIGREP STUDIO FOR LARGE-SCALE PRINT PROJECTS

The BigRep STUDIO is optimal for premium large-scale 3D print projects and has been specifically designed for speed and precision. Delivering high-quality results around the clock, it is an ideal size for all working and production environments.



## Comfortable to Use

### The Ergonomic Design

Raised for maximum user comfort, the BigRep STUDIO stands at an ideal height for everyday use. Keeping everything compact and accessible, two filament spools can be held below the printer, alongside additional storage space.



## Accelerated Printing with Precision

### The Print Head

The direct drive extruder with two 0.6 mm hot ends enables printing using industrial materials at maximum speed and precision. Its innovative print head was specially designed to achieve a high level of detail for large-scale print projects, allowing for a layer height of as little as 0.1 mm.



## Saves on Space

### The Slim Build

Preparation time is significantly reduced for all print projects, with the print bed reaching an optimal adhesion temperature of 60°C in just 10 minutes. Distance from the print bed can be continually calibrated, allowing for maximum flexibility and control over print levels.

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.



## **Saves on Space**

### The Slim Build

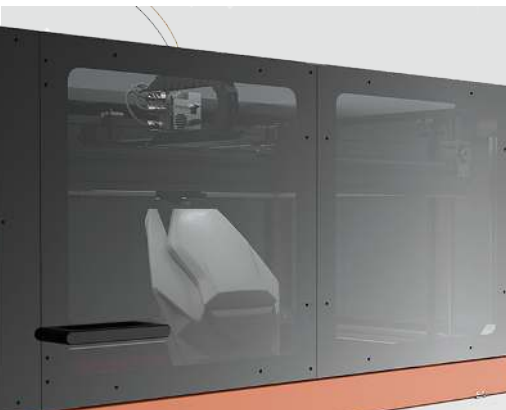
The BigRep STUDIO is a 3D printer that slots perfectly into all workspaces. Simpler to transport than other larger 3D printer models, its slender frame easily fits through standard doors in offices and studios, either as one piece or in two parts.



## **Enclosed Environment**

### The Slide Walls

The STUDIO's side-wall housing for increased safety, including auto-pause of print jobs upon opening. The semi-transparent doors enable users to visually monitor the printing process and slide back to provide easy access to the print bed.



## **Easy and 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.

**DISCOVER HOW INDUSTRIAL MANUFACTURERS USE THE PRINTERS**



## WHEEL RIM PROTOTYPE

### 3D PRINTING COMPLEX GEOMETRIES

BigRep defied conventions of wheel rims by creating a complex geometric design only possible with large-scale 3D printing. Printed with BigRep technology, the intertwining braces provide superior structural support as well as an original aesthetic touch, and challenge the line and layer norms of wheel rims or hubcaps.



## AUTOMOTIVE PROTOTYPING

### CUSTOM MOTORCYCLE COVER FOR BMW

As part of a collaborative project, BigRep and world-renowned automotive manufacturer BMW demonstrated vehicle customization potential. BMW 3D modelled an innovative motorcycle seat and tank, which BigRep printed using its large-scale 3D printing technology.



## EXHAUST MANIFOLD

### PRINTING & PLATING PARTS

BigRep and Polymetal partnered on producing a 3D-printed exhaust manifold prototype that was then plated with a thin layer of metal, to improve the mechanical properties of the object. With the BigRep STUDIO, the product development process can be faster and more cost-efficient, for accelerated testing of new automotive component designs.



# AN **EXTRUDER** FOR **FINE FINISHES**

Fast, precise 3D prints are always just a few clicks away with the BigRep STUDIO. The two 0.6 mm hot ends on the direct drive extruder enable printing of large-scale objects and ideas quickly, in ultra-fine detail. You have the ultimate freedom to vary print speed, temperature and material flow during the printing process. The STUDIO works around the clock, to help your business deliver optimal results more quickly and efficiently.



The STUDIO has a unique dual extruder equipped with two 0.6 mm hot ends, which has been optimized for both speed and precision. The second hot end retracts to enable clean dual extrusion prints. The STUDIO's extruder enables printing with a layer height of 0.1 mm

to create high-resolution prints. The all-metal hot end allows for the printing of a larger variety of high-temperature filaments, including flexible materials, such as BigRep Pro FLEX, PLA, Pro HT and more.

	Dual Extruder
Nozzle size	<b>0.6 mm</b>
Layer height range	<b>0.1 mm - 0.5 mm</b>
Max. throughput	<b>19 mm<sup>3</sup>/s</b>



MEET US AT A TRADE SHOW CLOSE TO YOU

Fitting comfortably into all workspaces, the BigRep STUDIO has been expertly engineered to make in-house 3D printing easier than ever before. Its speed and precision means you can bring your large-scale prototypes and ideas to market quickly and efficiently. More control gives your business that extra competitive edge.

# TECHNICAL SPECIFICATIONS

Fitting neatly into an ergonomically designed, easily transportable package, the BigRep STUDIO is a workhorse machine that punches above its weight to deliver top-grade results around the clock.

Build volume	<b>x 1000 y 500 z 500 (mm)</b>
Layer height resolution	<b>100 – 500 microns</b>
Acceleration	<b>Up to 600 mm/s<sup>2</sup></b>
Extruder	<b>Dual extruder</b> Equipped with two 0.6 mm hot ends
Printing technology	<b>FFF – Fused-Filament-Fabrication (FDM)</b>
Certified BigRep materials	<b>PLA, PETG, Pro HT, Pro HS, Pro FLEX</b> Other filaments upon request
Print bed temperature	<b>Max. 75 °C</b>
Printer weight	<b>Approx. 350 kg</b>
Size	<b>x 1693 y 1056 z 1506 (mm)</b>
Power	<b>208 V – 240 V, 16 A, 50/60 Hz</b>
Safety certifications	<b>CE approved</b>

## ENGINEERED & MANUFACTURED IN GERMANY

BigRep STUDIO printers are engineered in the heart of Berlin, and serially produced by renowned manufacturer Heidelberger Druckmaschinen in the south-west of Germany. BigRep's experts design, engineer and build the STUDIO to perform around the clock, and apply the highest standards to its manufacturing processes. Made for professionals who know, and expect, the best quality prints every time.

# **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.



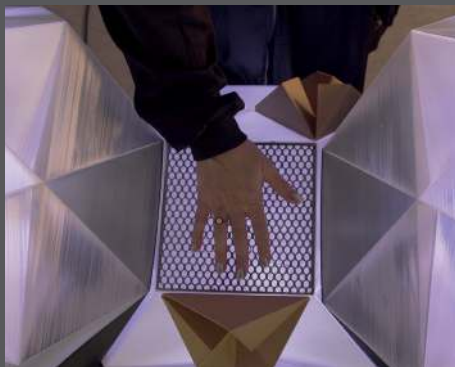
## ENGINEERING AND RAPID PROTOTYPING

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.

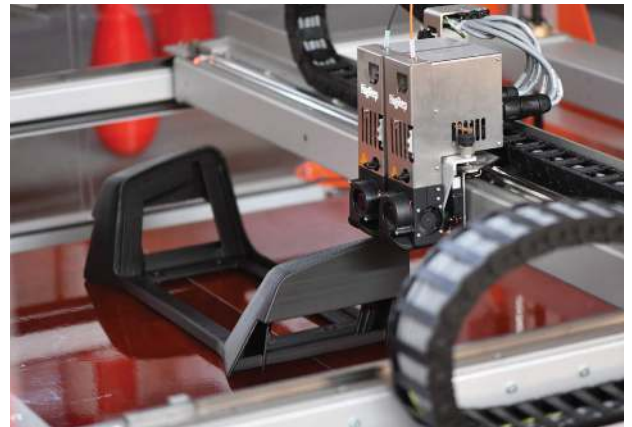
# OUT OF THE BOX

## INNOVATION DEPARTMENT & SOLUTIONS CENTER

From experiments to complete furniture, from individual parts to objects composed of multiple materials, from the initial idea to the final product – anything is possible. BigRep’s Innovation Department NOWlab tailors 3D printing solutions for major global brands such as Airbus, Audi, BMW, Deutsche Bahn and Etihad, to revolutionize their businesses and help them stay competitive.



For a building renovation, NOWlab helped construction company Geiger to reduce costs and time in creating large concrete casting molds.



NOWlab is collaborating with Deutsche Bahn to identify items from their portfolio for additive manufacturing.



A 3D-printed modular wall, comprised of sensor-embedded components, was designed by NOWlab and printed on the BigRep ONE.



NOWlab and BigRep developed a robotic additive manufacturing solution to print on existing objects.

# BIGREP'S **FULL-SERVICE** APPROACH

BigRep's ONE and STUDIO are workhorse machines that have been specially engineered as large-format 3D printers that deliver high-quality results around the clock.

## **UNMATCHED SERVICE**

BigRep is committed to providing its customers around the world with 360° service, supporting them with installation and ongoing technical support. The BigRep Academy provides both initial and ongoing training to customers, helping them to discover the potential of their machine and continually develop innovations using the printer.

## **GLOBAL SUPPORT NETWORK**

With a broad network of staff, technicians and partners located across every continent, BigRep ensures there is always the support close by – BigRep's top-level service is as dependable as its hard-working 3D printers.

## **QUALITY COMMITMENT**

Part of BigRep's commitment to support is a dedication to quality – from partnering with the best manufacturers to assemble the machines (Olpe Jena and Heidelberger Druckmaschinen), to using the highest quality materials, and meticulously innovating and optimizing BigRep's already world-renowned 3D printing technology.





# THIS IS BIGREP!

## 3D PRINTING EXPERTS

Operating around the world, BigRep provides top-quality technical and training services to help customers get the most from their BigRep machines. From its headquarters in Berlin, Germany, to its offices in the USA and Singapore, BigRep's international team of experts is consistently innovating and finessing the now world-renowned industrial printers.

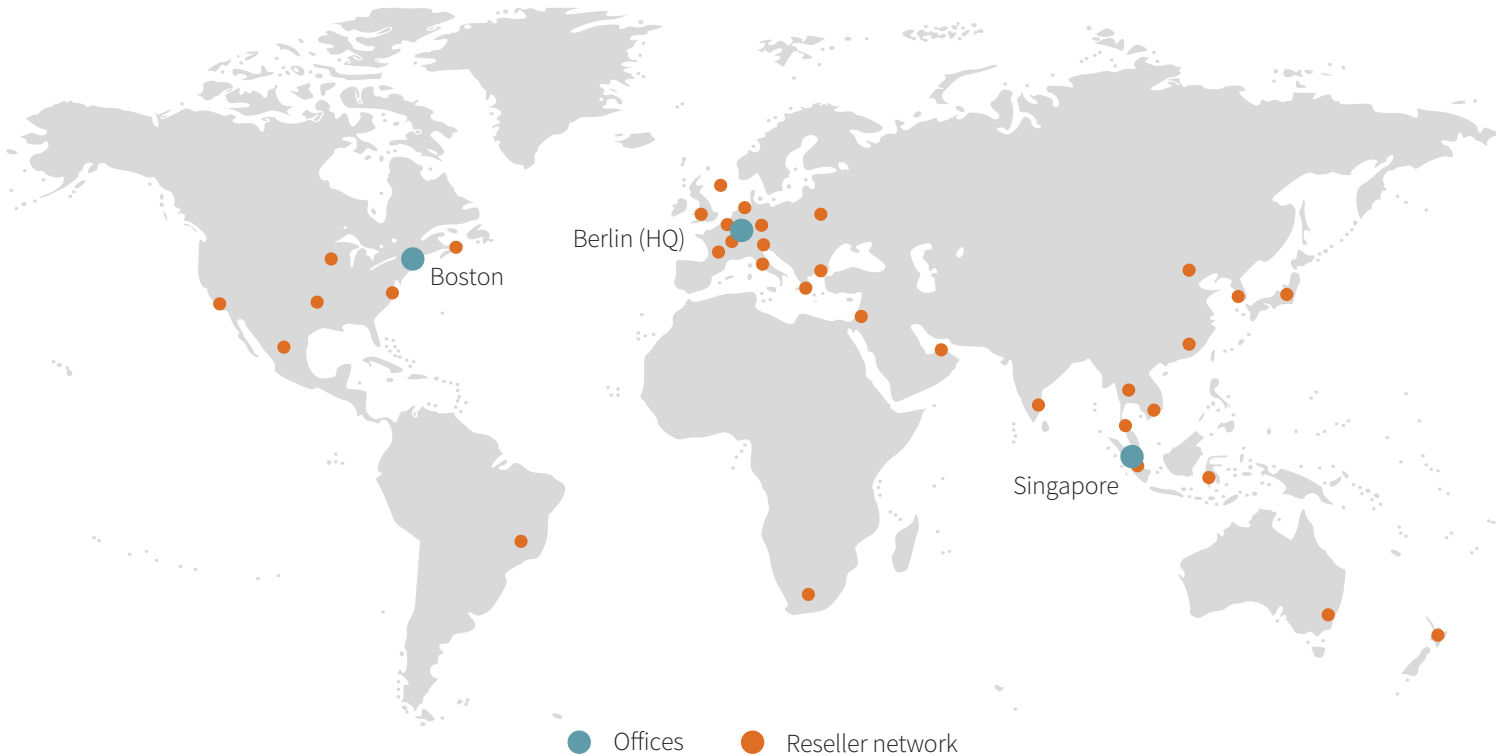
BigRep's mission is to provide the highest quality large-scale 3D printing solutions at an affordable price point, empowering companies across industries and around the globe to innovate. With major global investors Klöckner & Co, BASF and Körber Group on board with its vision, BigRep is led by industry experts setting global standards for quality in machinery, software, materials and service.

### PRINCIPAL INVESTORS





BigRep's network of partners is growing by the day, bringing high-quality large-scale 3D print technology to more corners of the globe. As experts in their fields, and technology leaders in their communities, they are important innovation partners working alongside BigRep's global offices.



**SELECTED CUSTOMERS & PARTNERS**



# SMART SOLUTIONS FOR **BIG IDEAS**

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