



# PRINTING IN THE THIRD DIMENSION

SCHMOLZ + BICKENBACH GUSS

Providing special cast solutions



“Anything one man  
can imagine, other men  
can make real.”

**Jules-Gabriel Verne**  
French author  
8.2.1828 – 24.3.1905



## NEW SPACE FOR DESIGN AT SCHMOLZ + BICKENBACH CASTING GROUP

Do you want to implement your creative vision or outlined draft and realise it in an uncomplicated way? Whether prototype, individual item or small batch: the 3D printer creates precise models of innovative and complex forms within the shortest timeframe.

SCHMOLZ + BICKENBACH CASTING GROUP creates 3D prints for design engineers and investment founders, architects and designers, and all other creative minds. An idea only or a final CAD dataset – the generative production process offers decisive advantages.

### Performance

- High-performance 3D printer
- Installation space L x W x H  
1,060 x 600 x 500 mm
- High-performance print head  
with 600 dpi
- Printing of precise models with  
complex shapes and undercuts

### Advantages of 3D printing

- Tool-free production
- Low production costs
- Short manufacturing times
- Production of individual items  
and small batches on the basis  
of CAD data
- Resilient, detailed models



**Lilly Schürmann**  
Product Designer

## PROTOTYPE

My everyday work is determined by rapidly changing technologies and complex product requirements. As such, I cannot imagine being without the interactive development process with prototypes.

During product development, questions always arise with respect to feasibility – the 3D printer answers these questions for me in the minimum time. Only a few days pass between draft and finished prototype. Within the project team, we therefore have a basis for discussion and we are able to gain experience with the product, quickly eliminate weak points, and perform optimisations.

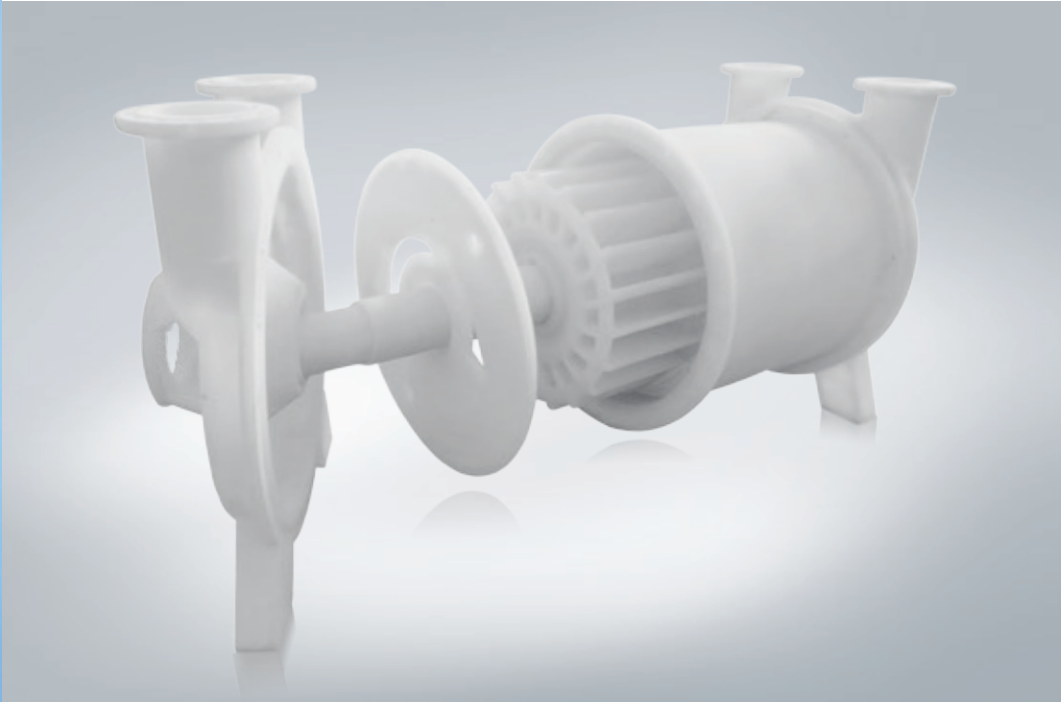


**Rainer Brinker**  
Investment Founder

## RAPID PROTOTYPING

We specialise in the manufacture of investment castings in small batch sizes and the production of individual items. As such, the production of a conventional tool is too cost-intensive and time-consuming. We therefore have our models created quickly and cost-effectively by SCHMOLZ + BICKENBACH CASTING GROUP with Rapid Prototyping.

The generous installation space of L 1,060 x W 600 x H 500 mm makes the possibilities almost limitless. Different shapes in changing quantities can be generated in one cycle. The Jobbox is used efficiently due to the CAD-based space occupation.



**Udo Ganzer**  
Design Engineer

## FUNCTIONAL MODELS

Nowadays, when designing a component, any spatial representations desired can be generated for it using professional 3D CAD applications. Nonetheless, checking of the form and function is vital for certain projects. Tight development deadlines are often the rule, so we rely on the 3D printer of SCHMOLZ + BICKENBACH CASTING GROUP, which creates functional

models for us both with maximum precision and in the shortest time.

Through functional testing, we have often been able to identify weak points in advance and to eliminate them before the start of production. Moreover, assembly and handling tools can be prefabricated even in the early stages.



**Markus Duthmann**  
Machine and  
Plant Builder

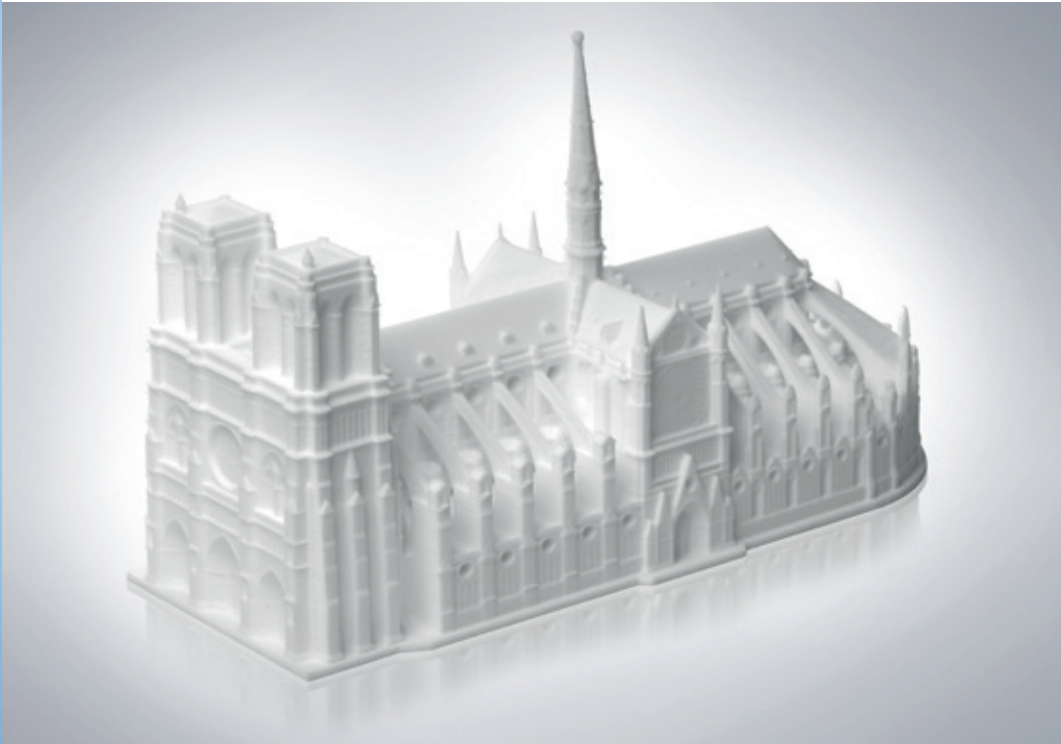
## RAPID CASTING

For our customers, we produce individual solutions for machine building. We therefore need various cast components in stainless steel as individual parts or in small batches.

In order to meet our demand quickly and reliably, we have the castings

produced by the CASTING GROUP with Rapid Casting. With the 3D printer, the high costs of classic model production can be reduced. In addition, this process drastically reduces the production time. We therefore offer our customers decisive advantages in the market launch of their machines.





**Holger Krasnik**  
Architect

## ARCHITECTURAL MODELS

3D printed models are now essential for us. They are excellently suited to use in competitions, tendering processes or client presentations, as they are waterproof and dimensionally stable. Another advantage is that our drafts can be implemented more quickly and more precisely.

The painstaking gluing of scale models is therefore finally a thing of the past. Only in very few cases is the acquisition of a 3D printer worthwhile for an architect's office, so SCHMOLZ + BICKENBACH CASTING GROUP represents the ideal partner for our requirements.

## DESIGN

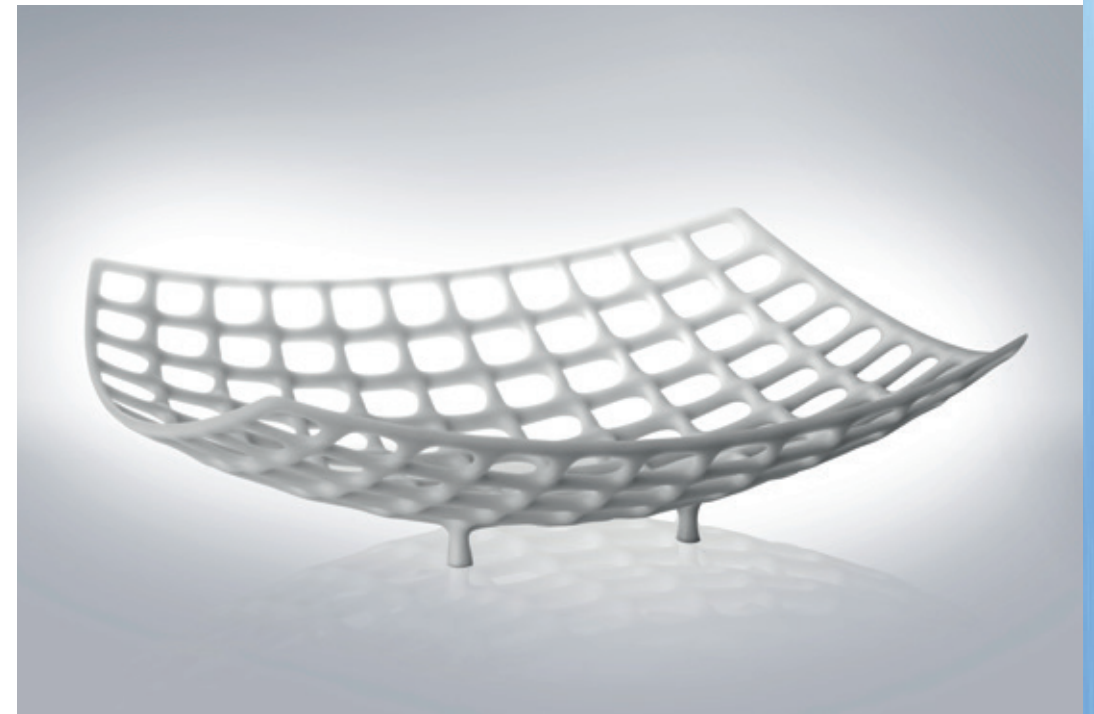
As a designer, I am always on the lookout for new processes and materials in order to create something extraordinary.

3D printing sets completely new standards in the implementation of creative ideas. With the virtually unlimited design freedom, I give my

imagination free rein and exploit the new possibilities to the full. As such, drafts can be realised that cannot be produced using conventional mechanical processes, due to their complexity. Delicate structures, fine surfaces or elaborate ornaments – they present no challenge for the 3D printer.



**Barbara Rewald**  
Designer

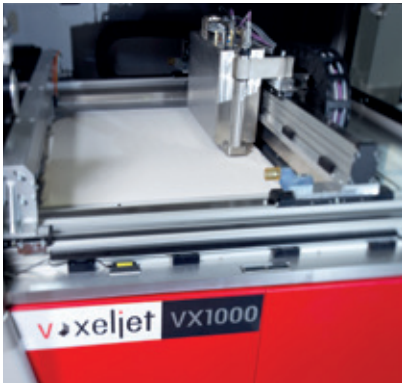


## WE REALISE YOUR IDEA!

Whether individual special requests or short-notice 3D prints: on the site in Ennepetal, we are here to advise you from briefing to production and to make your creative drafts a reality with Europe's largest 3D printer for the CONTURA® and investment casting process. The models are produced fully automatically from 3D CAD data and thin layers of powder are repeatedly applied to a building platform

in a constructive process. These are printed with a liquid binding agent, so the powder particles are bound together layer by layer.

Depending on the size and complexity of the component, this work stage takes up to 30 hours. With the inorganic binding agent, the production process is not only fast but also environmentally friendly.



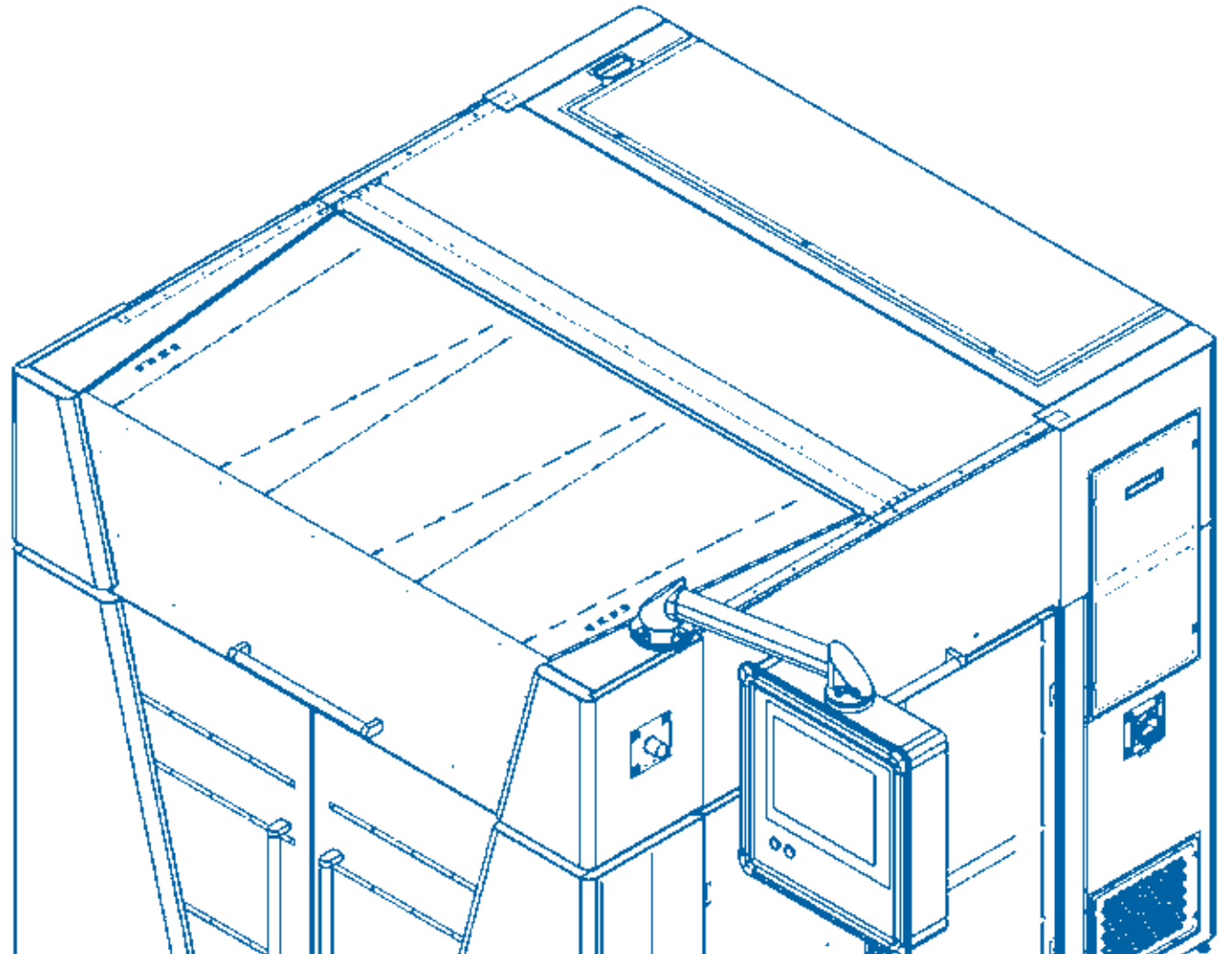
### AT A GLANCE

Installation space L x W x H  
1,060 x 600 x 500 mm

Material  
PolyPor – PMMA

Layer thickness  
150 µm

Print resolution  
600 dpi





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