



Company Presentation





Agenda

- › **Company**
- › Process
- › Materials
- › Systems
- › Services
- › Case studies

Regional and global company

established in
1999

4 Locations
(Germany, USA, India,
China)

8 cubic meters of
cohesive build volume
VX4000

More than
20
sales partners

> 430 patents
in the field of additive
manufacturing

more than
250
employees

since
2013
listed publicly (nasdaq)

more than
6,000,000
litre per year worldwide
printing capacity

Our applications

Metal casting



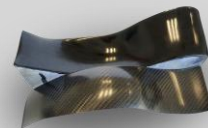
- › Aerospace
- › Automotive
- › Engineering
- › Art a.o.

Plastics



- › Functional parts
- › Mockups
- › Design

Tooling



- › Concrete formwork
- › Thermoforming
- › Laminating

voxeljet: sustainable customer relationships

Markets

- › Foundry
- › Automotive
- › Reverse Engineering
- › Aerospace
- › Pumps and heavy industry
- › Architecture
- › Art and design
- › Film and museum

Applications

- › Metal casting
- › Functional parts (polymers)
- › Concrete casting
- › Laminate (CFK / GFK)
- › Thermoforming
- › Mock-ups
- › Ceramic

References





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Binder-Jetting-Process



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voxeljet printing materials



Sand process

- › Sand casting molds and cores
- › Formwork for concrete casting
- › Tooling for laminating & thermoforming
- › Common foundry materials (silica sands, cerabeads a.o.)



Plastic process

- › Models for investment casting / display model
- › Made of acrylic plastics (PMMA)



High Speed Sintering

- › Plastic models for end use, e.g. sports and automotive industries
- › PA12, PP, TPU, EVA a.o.



Ceramic process

- › Ceramic molds and cores
- › Tailored powders (e.g. Al₂O₃, SiC, ...)



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What is a 3D Printer?

Price target: ca. 1,000 €

Build envelope: 1,2 l



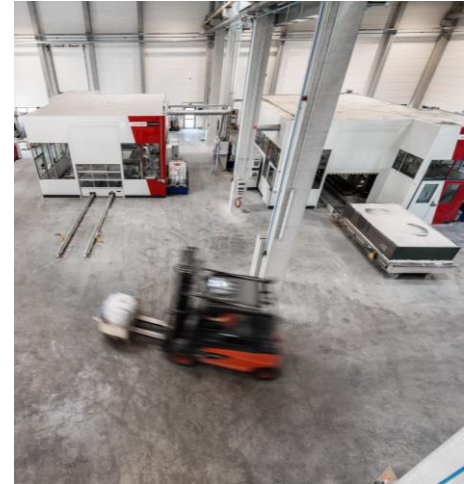
Price target: ca. 1,600,000 €

Build envelope: 8,000 liters



VX4000: world's biggest industrial 3D sandprinter

- › Largest industrial cohesive build space of 4,000 x 2,000 x 1,000 mm
- › Resolution up to 300 dpi
- › Over 25,000 individually controllable nozzles
- › Unique machine concept: Integrated jobbox can be flexibly adjusted in size



Our 3D printing systems

	System	Build space*	Material
VX4000		4,000 x 2,000 x 1,000	Sand
VX2000		2,000 x 1,000 x 1,000	Sand
VX1300 X		1,300 x 600 x 500	Sand
VX1000		1,000 x 600 x 500	Sand / Plastic / Ceramic
VX200		300 x 200 x 150	Sand / Plastic / Ceramic

*build space depending on height & process



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voxeljet Service Center in Germany

Sand



- › 300,000 l printing capacity/month
- › VX1000 PDBs
VX4000-Systems
Generis based systems
- › Area of the sand production approx. 3,600 m²

Plastic



- › 21,000 l printing capacity/month
- › Multiple VX1000 PMMA-printing systems (PPB)
- › Area of the plastic production approx. 600 m²

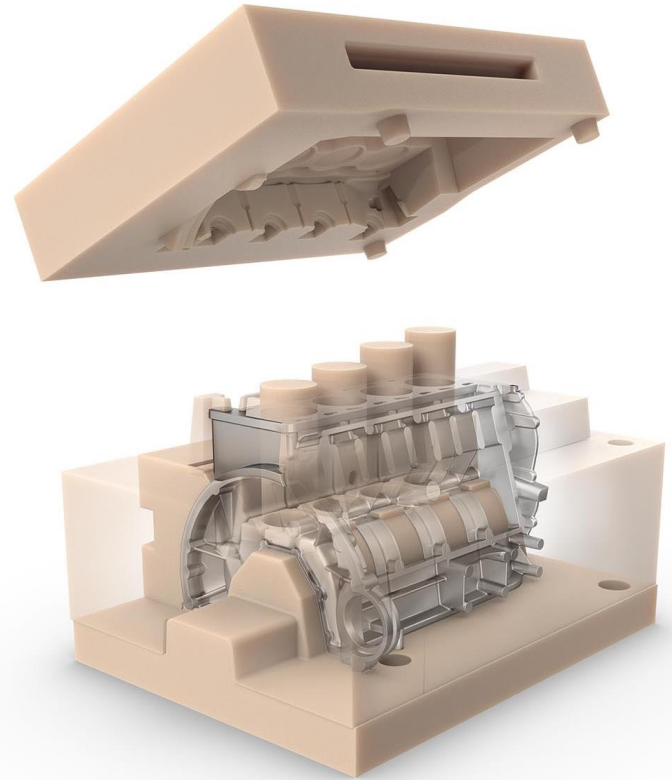


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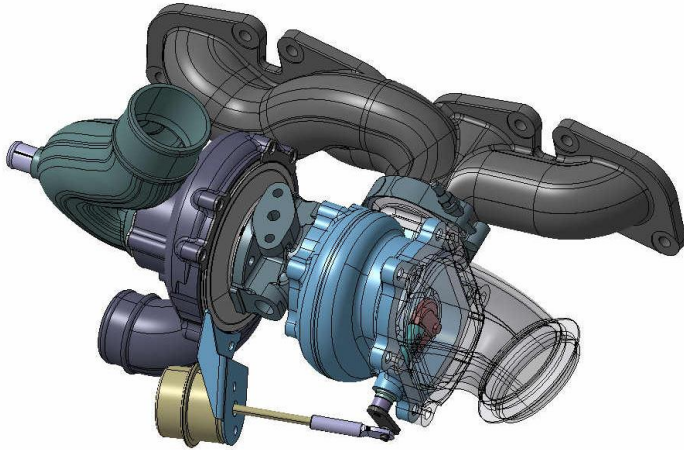
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Sand casting – Engine block

- › Simplification of complex cores
- › Combination with conventional molds is also possible
- › Gating system optimization
- › Impact on the gas flow direction, etc.



Exhaust manifold Brabus – Sand - Automotive



Source: Lütgemeier GmbH

Project:

- › Brabus SLS 6.3 ltr. 8 cylinder
- › Quantity: 4 pcs each
- › Lead time: 23 days

in cooperation with

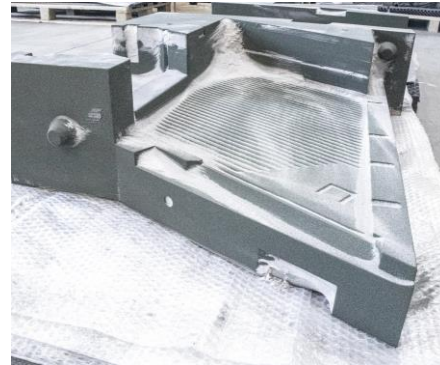
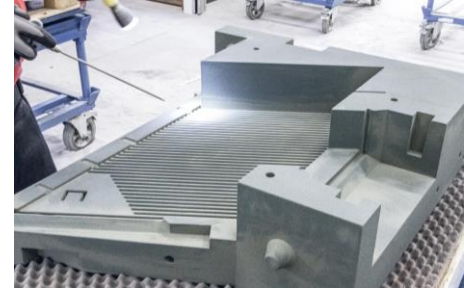


Source: Lütgemeier GmbH

Parts to be made:

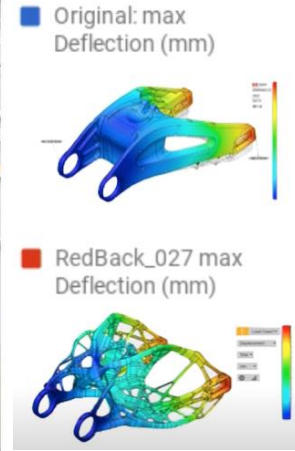
- › Exhaust manifold (Material 1.4848)
- › Turbine housing (Material 1.2828)
- › Compressor housing (Material AlSi7Mg)
- › Material: Cores printed in phenol + silica sand

Sand Casting – E-Motorcycle battery housing



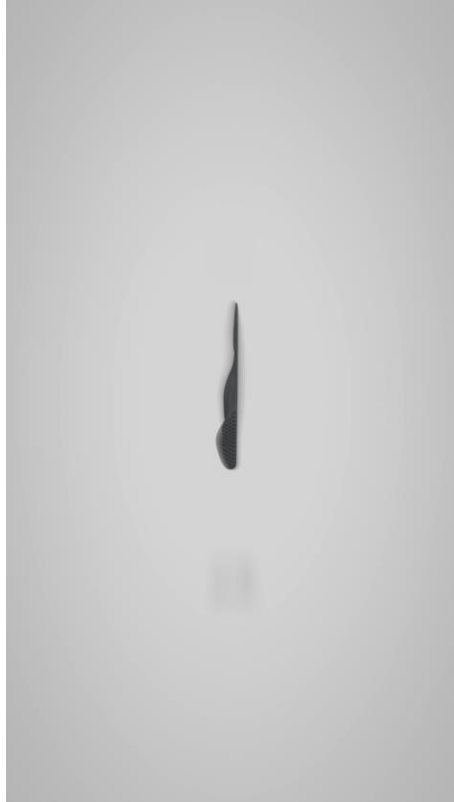
Autodesk Swingarm – Sand - Automotive

- › Three parts bolted together
- › Weighs 7,429 g
- › Maintain performance of existing swingarm while reducing weight
- › Geometric freedom and the stability of classic precision casting



© pictures Autodesk

HSS: serial production of polymer parts



- › Cost efficient
- › Extrem materialtolerant
- › Maximum output, minimum cost



Thank you!

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