

BOOKLET APPLICATIONS

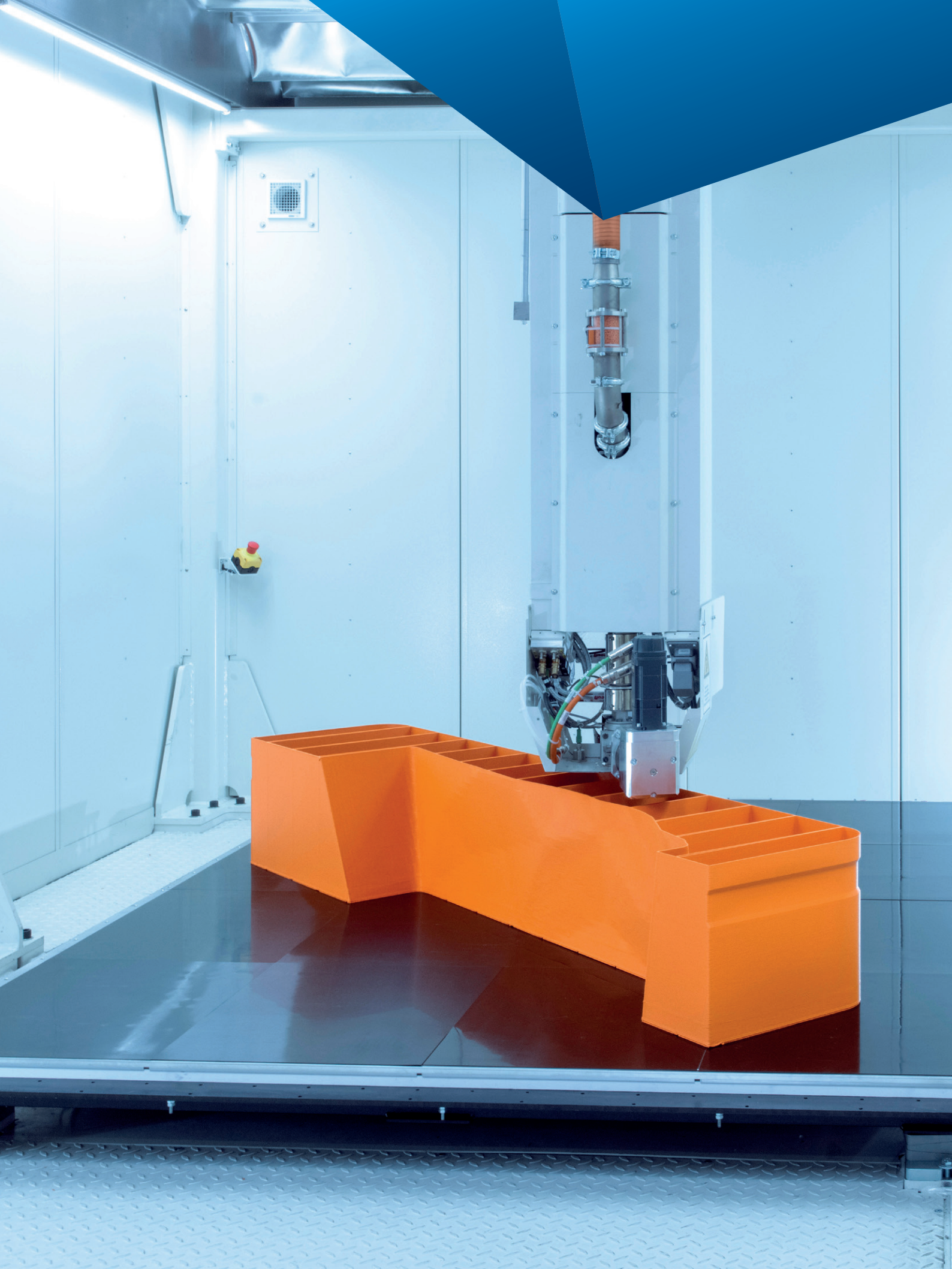
ADDITIVE MANUFACTURING

KraussMaffei

Pioneering Plastics

Hand
Oberfläche





WE ARE BRINGING ADDITIVE MANUFACTURING ALL THE WAY TO INDUSTRIAL SERIES PRODUCTION

What sets us apart? Our decades of experience in mechanical engineering have given us a wealth of cross-technology expertise in plastics processing and guarantee the industrial mechanical engineering standard in 3D printing as well.

Our systems set themselves apart with an automated end-to-end process—always with the goal of a high quality print at the first time. This way, we always guarantee the best cost per part and high quality assurance across the entire printing process. Furthermore, as a one-stop solution provider, we offer our customers everything from a single source—from solution-oriented consultation to our global service network. Additive manufacturing at KraussMaffei means more than endless flexibility.

powerPrint – Granulate-based large-scale 3D printer

The powerPrint prints large-size components to an industrial standard—in a way that is cost-effective, design-independent and results in uniform product quality. The granulate-based large-scale 3D printer provides high process stability with a thermally insulated, closed build chamber with efficient thermal management. The industrial system design ensures a high degree of work safety. The customized extruder is likewise outstanding: fast, cost-effective processing of a wide variety of materials creates maximum productivity.



YOUR BENEFITS

- High quality assurance and high productivity thanks to automation
- Fast overall turnaround time with automated printing process: less than 1 week for data preparation, printing and post-processing
- Cost-effective production through reduction of manual work and use of cost-effective materials

powerPrint

MOST IMPORTANT TECHNICAL DATA

Additive manufacturing process	Fused Granular Fabrication (FGF)
Maximum component size	2.0 x 2.5 x 2.0 m (xyz)
Type of build chamber	Thermally insulated and closed build chamber
Material	Fiber-reinforced or virgin thermoplastics
Temperature of the extruder	Up to 400 °C
Maximum discharge rate	70 kg/h
Nozzle diameter	From 2 to 20 mm, in 2 mm steps
Printing bed	Heatable up to 180 °C with 16 printing plates fixed by a vacuum. Printing bed has 16 zones with variable heating
Machine footprint	6900 mm x 5100 mm x 6400 mm
Component removal	By crane with open roof or forklift

Materials	Application
ABS (GF or CF)	Technical material with very good printing and machining properties and low temperature resistance. Ideal for easy and cost-effective production of molds and tools.
PEI (CF)	High performance material with exceptional thermal and chemical properties ideal for high temperature applications .
PETG (GF & CF)	Versatile and strong material with excellent printing and machining properties at low cost. Ideal for cost sensitive production of design and end-use parts.
PC (CF or GF)	Highly technical material with advanced mechanical and thermal properties with a high chemical resistance. Ideal for engineering applications with mid temperature processes and high mechanical pressure.
PP (GF or CF)	Lightweight polymer with high chemical resistant and good mechanical properties. Ideal for end-use parts where the use of Polyolefins is required.

powerPrint PRINT ON DEMAND

Our Print on Demand-Service makes it possible to print large components to individualized requirements. We offer our customers consultation, print preparation and post-processing. In addition to specific evaluation criteria, e.g. for the material to be used, engineering and weight, the following requirements must be taken into account:

Requirements and selection criteria

- Dimensions: 0.5 x 0.5 x 0.5 m to 2.0 x 2.5 x 2.0 m
- Overhangs: angles of max. 30°
- Wall thicknesses: min. 3 mm up to max. 32 mm
- Thermal requirements up to max. 140 °C

Build-up strategy: filling or infill

Fully filled or with infill

- 3D mold can be implemented
- High variation of applications possible
- High material consumption

Multi-walled with stiffening

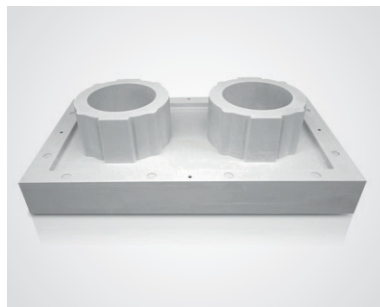
- Efficient material consumption
- Fast set-up
- Easy adaptation to mechanical requirements

Single-walled

- Low material consumption
- Fast set-up
- Cost-effective production of components



Multi-walled with stiffening



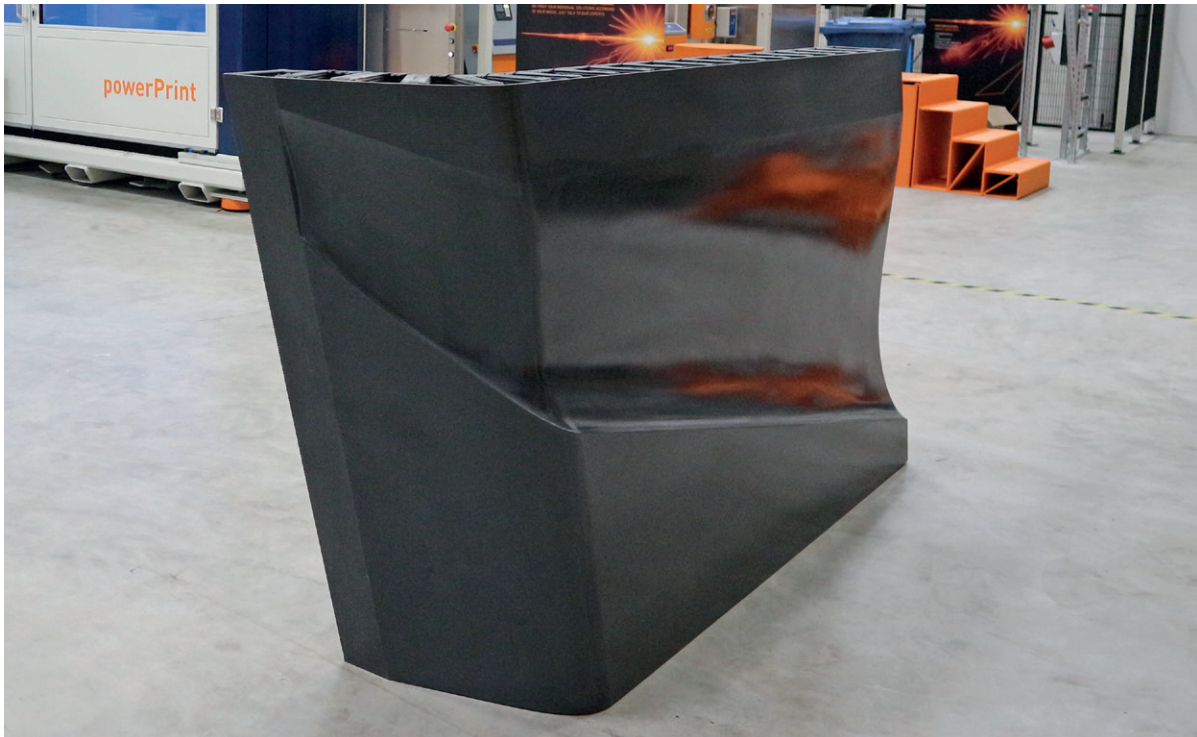
Fully filled or with infill



Single-walled

Applications

LAYUP TOOL FOR WINGLET



Key facts

- Dimensions: 2250 x 550 x 1180 mm
- Weight: ca. 220 kg
- Printing time: 28 h
- Material: ABS with 20 % carbon fiber

YOUR BENEFITS

- High precision and custom fit: Accurately designed to match winglet specifications, ensuring exact alignment and superior build quality
- Reduced production time by 50% and costs up to 40%: Cuts down manufacturing time and expenses compared to traditional tooling methods, streamlining the layup process

Applications

MOLDING TOOL FOR A FLYING WING

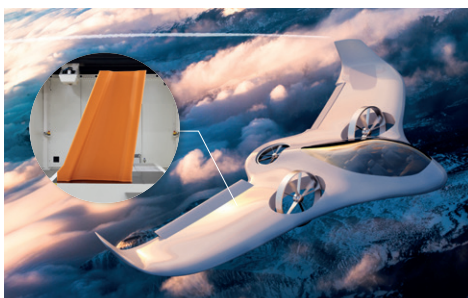


Key facts

- Dimensions: 1250 x 410 x 1850 mm
- Weight: approx. 300 kg
- Printing time: 30 hours
- Material: recycled PETG with 30% glass fiber

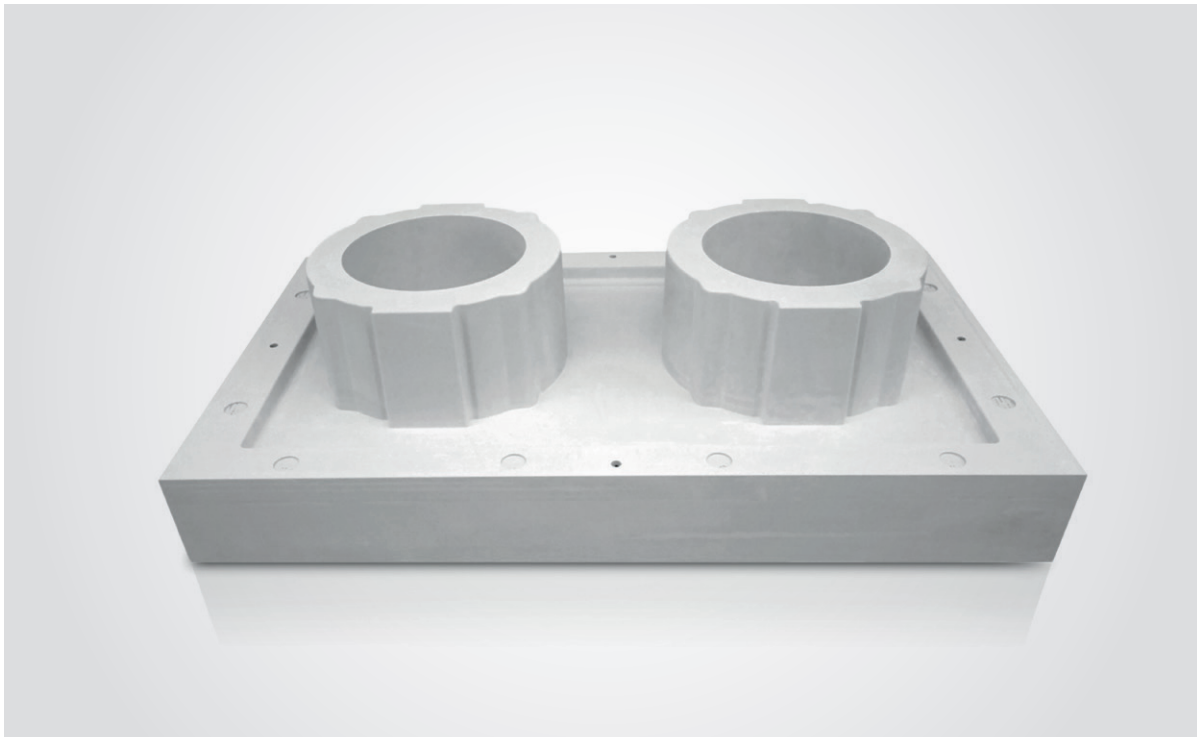
YOUR BENEFITS

- Integrated design for both wing sides in one tool: Achieves a minimum project duration reduction of 50%, along with a cost savings of at least 40%



Applications

FOUNDRY MODEL FOR SAND CASTING



Key facts

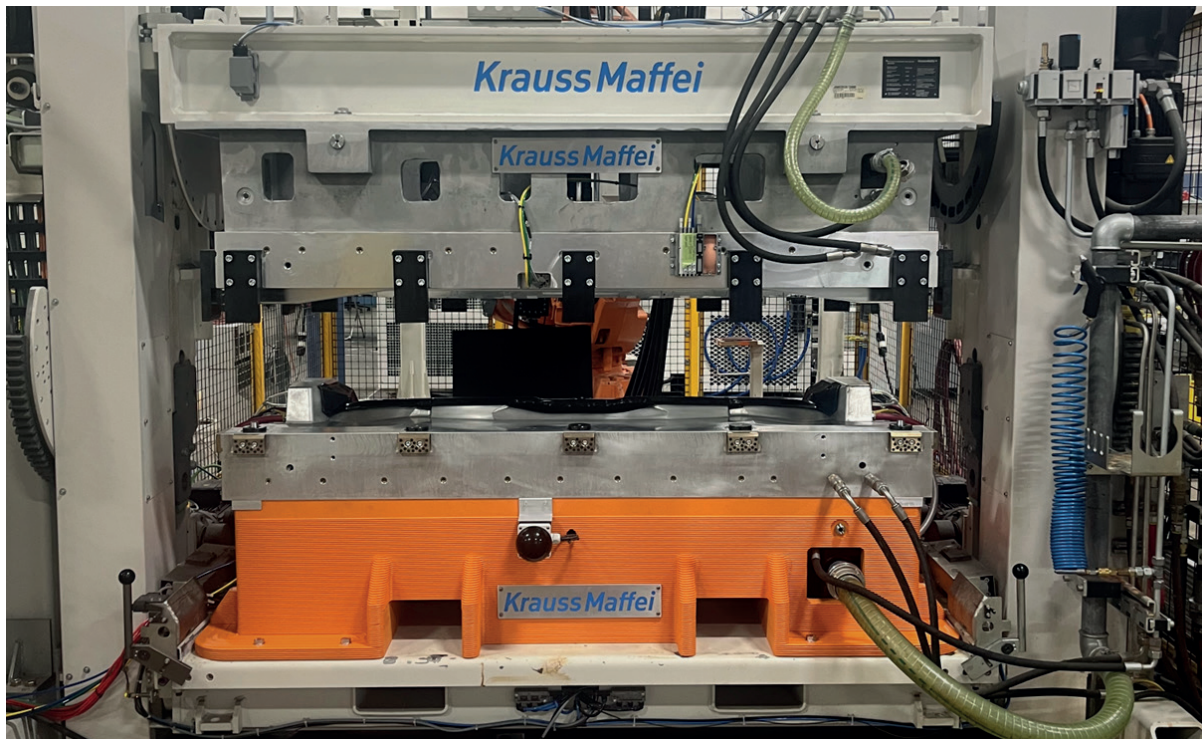
- Dimensions: 1600 x 900 x 500 mm
- Weight: ca. 120 kg per cylinder
- Printing time: 11 h 45 min per cylinder
- Material: Recycled PETG with 30% glassfiber

YOUR BENEFITS

- Up to 70% reduction in manual labor: Significantly decreases the need for manual processes, streamlining production efficiency
- Sustainable production with recycled materials: Utilizes recycled materials, promoting environmental sustainability in the casting process

Applications

TOOL RISER FOR INSTRUMENT PANEL FOAM TOOL



Key facts

- Dimensions: 1158 x 2040 x 410 mm
- Printing time: 14 hours 22 minutes
- Weight: 275 kg
- Material: Recycled PETG with 30% glassfiber

YOUR BENEFITS

- Over 70% cost savings and 50% reduction in milling time: Significantly lowers production costs and halves milling times compared to traditional methods

Applications

EXTRUDER SCREW TRANSPORT AIDS



Key facts

- Dimensions: 2036 x 198 x 230 mm
- Weight: 100 kg
- Printing time: 11 hours for 3 pieces in one printjob
- Material: ABS with 20% carbonfiber

YOUR BENEFITS

- Extended durability and enhanced handling: Offers a service life of at least 2 years (compared to 6 months for conventional wooden versions) with improved ease of use and maintenance

Applications

STANDING TABLE PRINTED DESK COLLECTION



Key facts

- Dimensions: 1970 x 700 x 1100 mm
- Weight: ca. 60 kg
- Printing time: 10 hours
- Material: Recycled PETG with 30% glassfiber

YOUR BENEFITS

- Customizable surface textures: Enables unique textures and patterns without extending manufacturing time
- Efficient material use: Lightweight yet stable designs, reducing waste and resource usage

Applications

STANDING VASE



Key facts

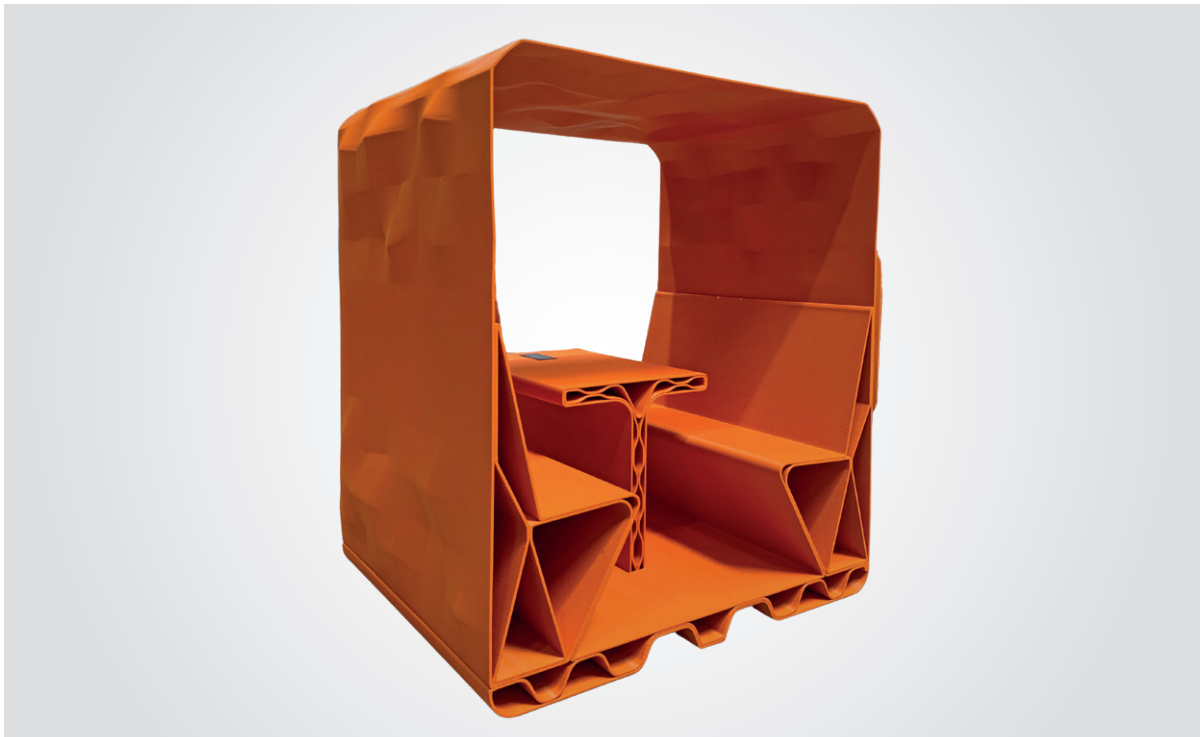
- Dimensions: 550 x 549 x 1001 mm
- Weight: ca. 16 kg
- Printing time: 10 hours
- Material: Recycled PETG with 30% glassfiber

YOUR BENEFITS

- Hollow standing feet for an interior, protected cable duct
- Process-typical strands for one-of-a-kind design
- Fast delivery time
- Low manual effort due to automated AM process

Applications

MEETING BOX



Key facts

- Dimensions: 2000 x 1600 x 2100 mm
- Weight: ca. 660 kg
- Printing time: 33 hours
- Material: Recycled PETG with 30% glassfiber

YOUR BENEFITS

- Seamless integration and mobility: Designed with built-in seating, table, power supply, and transport guides, all printed in a single manufacturing step with minimal manual work for assembly, making it highly functional and easy to relocate

Applications

LEARNINGPOD



Key facts

- Dimensions: 1690 x 1100 x 2080 mm
- Weight: 210 kg
- Printing time: 20 hours
- Material: Recycled PETG with 30% glassfiber

YOUR BENEFITS

- Seamless integration and mobility: Designed with built-in seating, table, power supply, and transport guides, all printed in a single manufacturing step with minimal manual work for assembly, making it highly functional and easy to relocate

Applications

BRANCH LINE FOR PIPE & FITTING



Key facts

- Dimensions: 850 x 420 x 1000 mm
- Weight: ca. 120 kg
- Printing time: 32 h
- Material: PP with 30% carbonfiber

YOUR BENEFITS

- Precision customization and improved flow: Tailored to exact specifications, optimizing fit and flow for complex piping layouts

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