

A step forward to customized manufacturing

Roboze

ARGO 1000

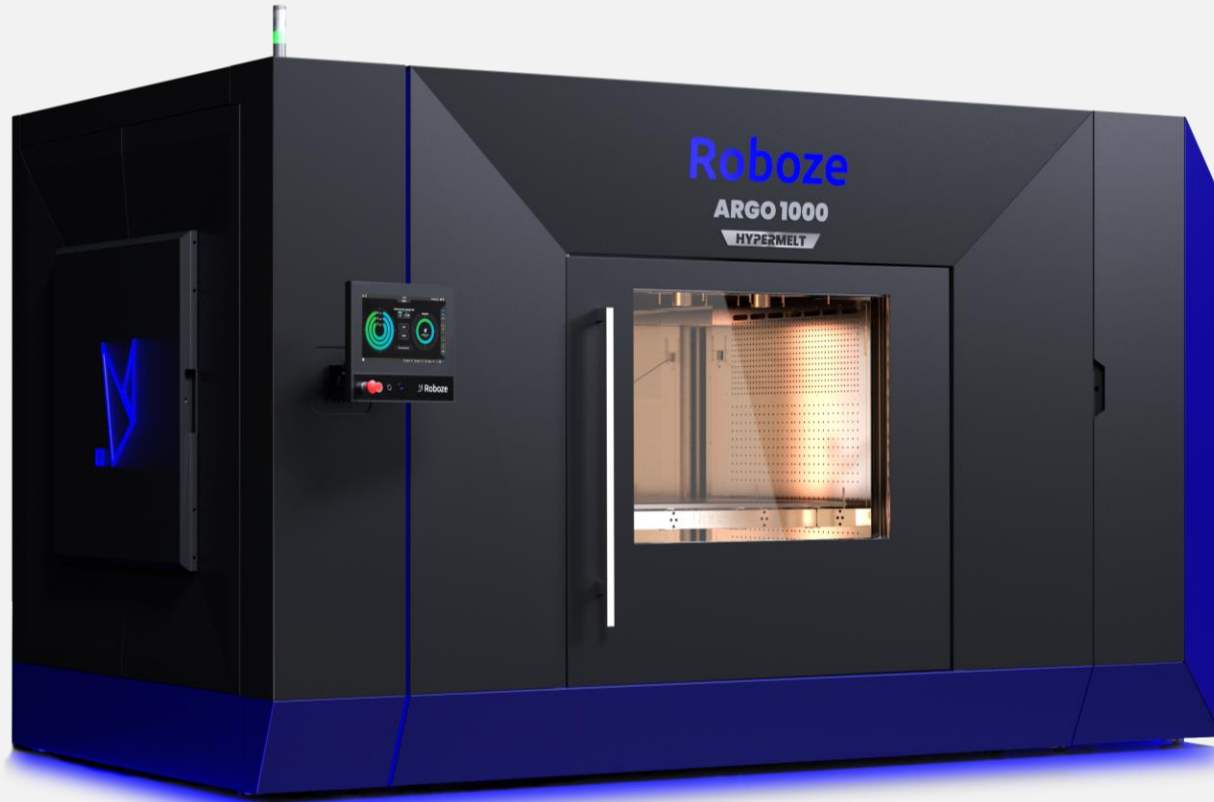
HYPERMELT

ARGO 1000 Rev 2.0 - Presentation - ENG [3.0]



Production Series

ARGO 1000 HYPERMELT



5X
CHEAPER FEEDSTOCK

8X
BIGGER BUILD

10X
FASTER PRODUCTION

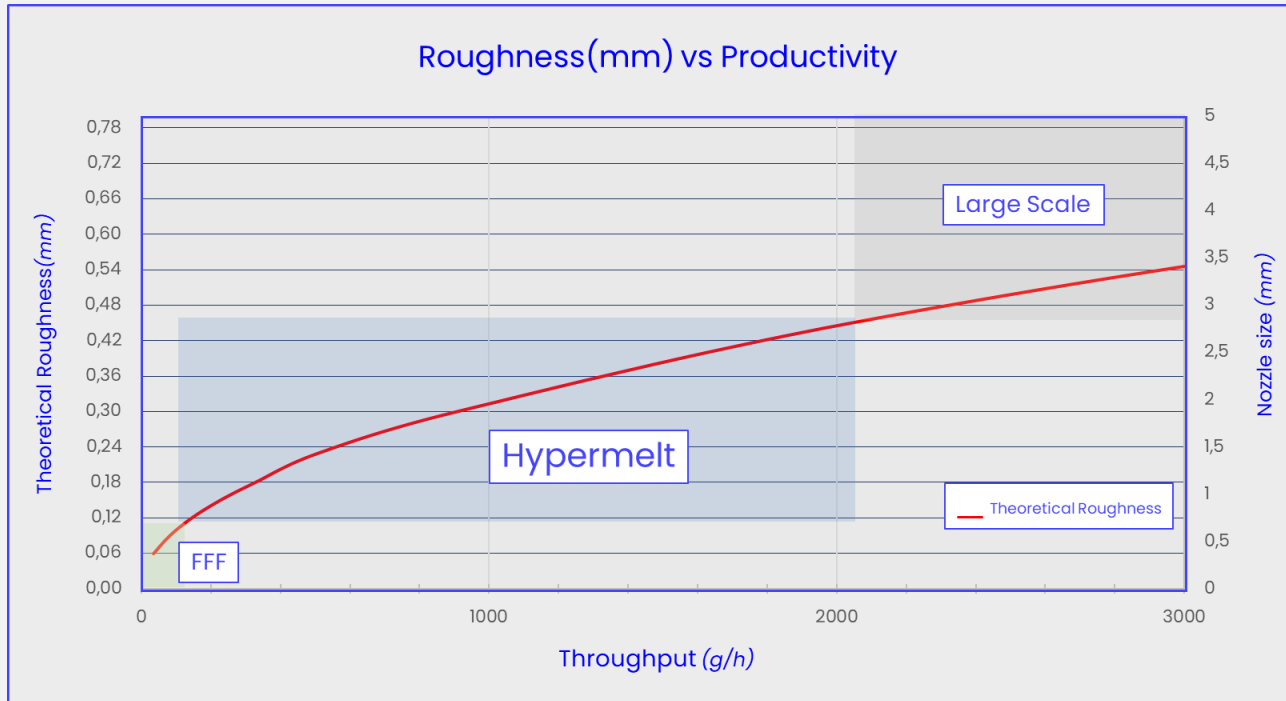
2X
STRONGER PARTS

ARGO 1000 is the world's largest **Pellet-based 3D printer**, equipped with **heated chamber up to 180°C**, to quickly produce **large format parts** in incredibly strong **super polymers** and **composites**.

#PrintStrongLikeMetal

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ARGO 1000 HYPERMELT



**Unlock the Broadest Application space in Additive
Optimal productivity vs Surface finish**



Commercial Aviation
& Defence



Space Exploration
& Services



Robotics & Industrial
Automation



Energy
& Utilities



Medical Devices



Mobility

ARGO 1000 HYPERMELT

Super polymer and composite printing

Weight reduction up to 80% compared to metal, increasing corrosion resistance while having great mechanical performance and temperature resistance.

Heated chamber up to 180°C

New performance levels

We can reach tensile strength even up to 250-300 MPa. enabling new applications with high performance requirements.

**Carbon PEEK 30%
Carbon PA PRO up to 40%**

Dual Extrusion System

A dual extrusion system, for water-soluble support structures or IDEX (Independent Dual Extruder) for duplicated printing.

Increased Productivity

Large Volume Neat Super polymers

The only Large format printer able to process neat polymers such as ULTEM™ 9085 and PEKK in large dimension thanks to the controlled heated chamber.

**Build Volume
1000x1000x1000 mm**

Costs & Lead Time Reduction

HYPERMELT technology of ARGO 1000 allows for a throughput of up to 2 kg/h. A 10-15 times production speed vs other extrusion systems.

Up to 2 Kg/h



Increased Productivity

Dual Extrusion System

A dual extrusion system enhances versatility, speed and precision in 3D printing.

From Neat Super Polymers to Composites



Materials Available in 2024

ULTEM™ 9085
PEKK
Carbon PEEK 30%
Carbon PA 25%
ABS
Water-soluble support
Breakaway support

Materials Available in 2025

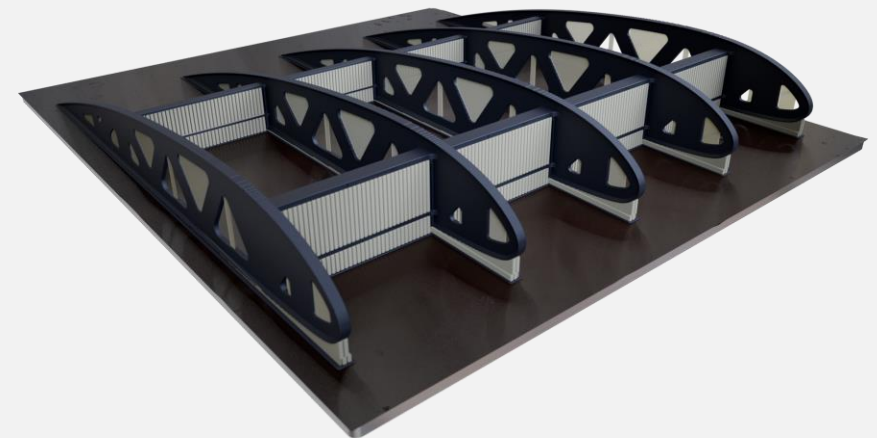
Elastomers
Recycled materials
Commodities

Main Advantages

- Produce **Complex geometries** in 1 cubic meter with high performance materials
- **High Productivity** up to 2 kg/h
- **Customized nozzles** designed specifically for industrial applications
- IDEX mode for **duplicate printing**

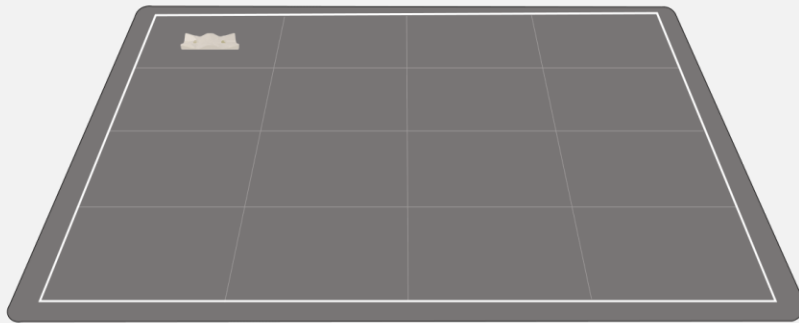
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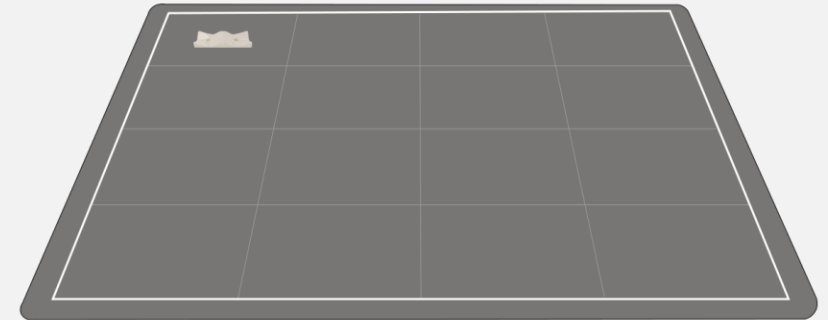
IDEX process

BEFORE



12 parts in 12 hours

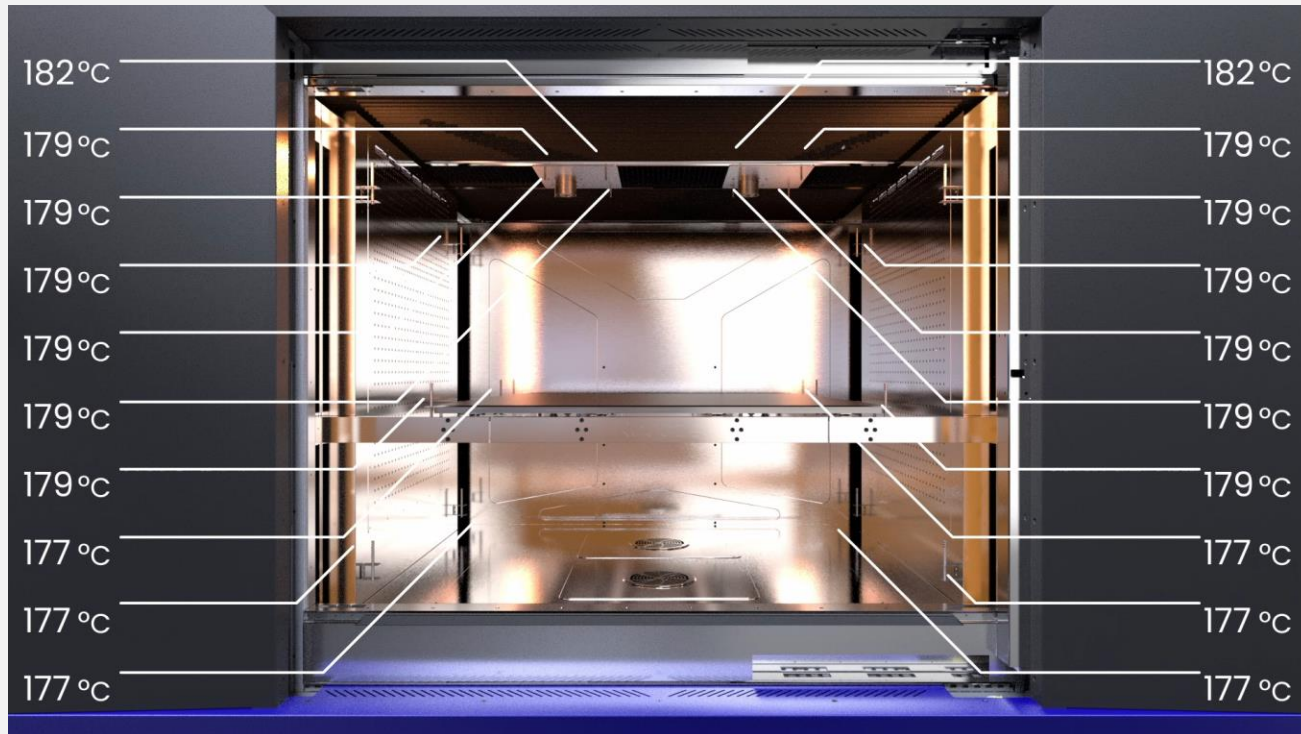
IDEX - Duplicate



24 parts in 12 hours

DOUBLE
your work efficiency

Efficiency Unleashed Innovatively Engineered for Production



Heated Chamber Up to 180°C

Optimized print quality and controlled material shrinkage, ensuring successful printing of advanced materials.

All under your control

The chamber features 20 sensors (4 mounted on extrusion systems) meticulously monitoring temperatures up to 180°C, ensuring uniform thermal distribution through all the build envelope.

High-volume super polymers processing

Cutting-edge capabilities of processing neat and filled super polymers in a thermally controlled environment up to 1m³.

RAILWAY SECTOR

Railway machinery refurbishment companies are increasingly turning to 3D printing to create custom parts for old trains, replacing traditional manufacturing techniques such as sheet metal bending.

Sheet metal bending is a complex process that requires specialized skills and equipment, along with different **production steps**. The bending radius, angle, and thickness of the sheet must all be carefully considered to ensure a quality result. Additionally, the process is difficult to automate, leading to **inconsistencies** in the finished products.

In this case, there was a need for a commuter **train dashboard** that incorporated a novel electronic display and a redesigned control panel. By replacing aluminum with 3D printed **ULTEM™ 9085**, the dashboard was **two times lighter** and more compact than the original, satisfying the customer's aesthetic demand.

ULTEM™ 9085 **EN45545-2 R6** certification made implementation on trains immediate, greatly simplifying any qualification process required in the Railway Industry.



	Sheet bending	ARGO 1000
Overall dimensions	224 x 257 x 905 mm	
Production steps	Cutting, bending and forming, welding, and assembly	One single automated print job
Final weight	9,2 kg	4,5 kg
Lead time	3 days	26 h
Production cost	1920	-30%

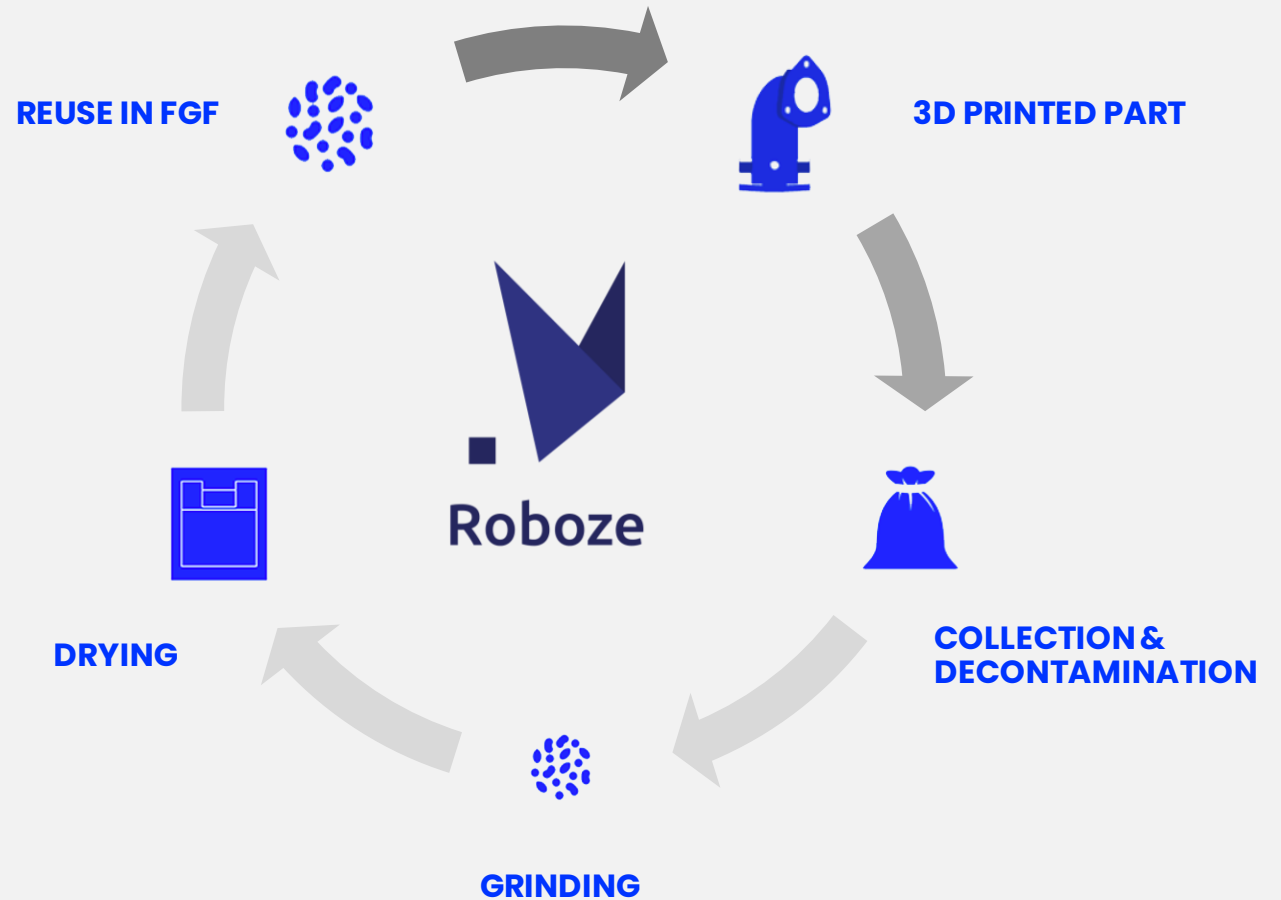
CIRCULAR ECONOMY – SUSTAINABLE ECONOMIC PRACTICES

Cost-Effective Recycling

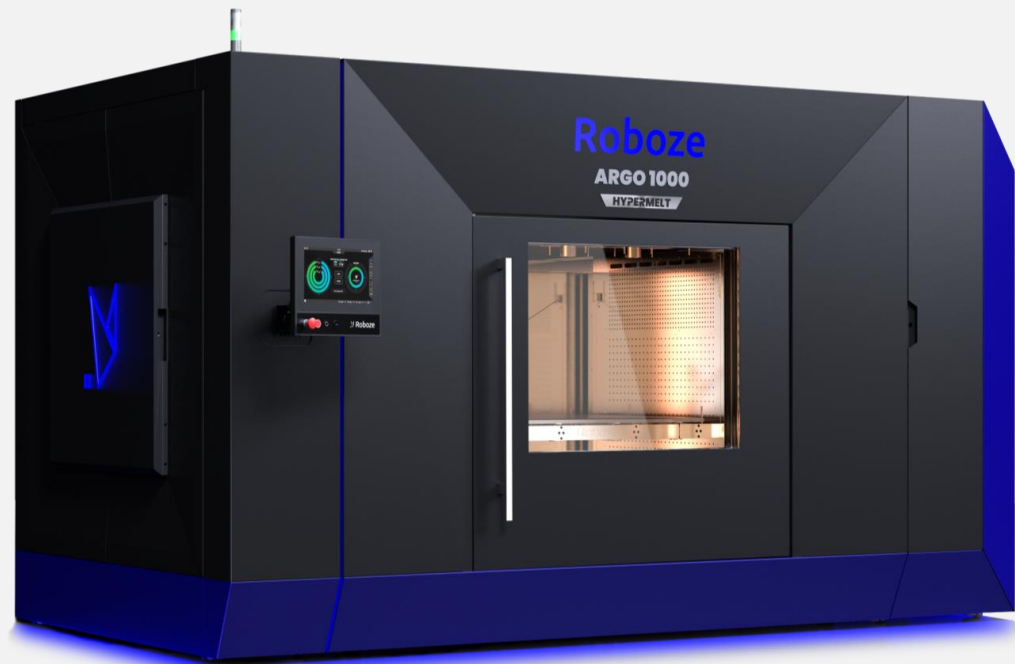
Recycling cuts costs, fostering a sustainable economic cycle for users by reducing expenses linked to new material purchases.

Strategic Economic Benefit

Circular practices highlight environmental responsibility and yield a strategic economic edge for those adopting it in production.



ARGO 1000 HYPERMELT



Production Series

Roboze ARGO 1000 HYPERMELT

External Dimensions	4500 x 2350 x 2150 mm 177.2 x 92.5 x 84.5 in
Build Volume	1000 x 1000 x 1000 mm 39.37 x 39.37 x 39.37 in
Machine weight	4500 kg / 9920 lb
Extruder Temperature	450 °C / 932 °F
Heated Chamber	180 °C / 356 °F
Vacuum Plate	Yes

MATERIALS

Super Polymers	PEKK CARBON PEEK 30% ULTEM™ 9085 PEI GF 30%
Techno Polymers	CARBON PA 25% TOOLINGX CF PC GF 30%
Commodities	ABS ABS CF 20% PP GF 20%
Elastomers	TPU TPC
Sustainable	BIOPOLYMERS RECYCLED POLYMERS

#PrintStrongLikeMetal

FAQ

1. How much is the amount of time and number of human resources for installation?

The installation requires the commitment of two certified technicians for a maximum period of three days, up to the initiation of the first print test. This approach ensures accurate installation and a comprehensive check of functionalities, guaranteeing that the system is ready for optimal use.

2. How does the machine start, monitor and stop?

Machine startup, monitoring and stoppage processes are managed through seamless integration of advanced automation. The automated system ensures safe and efficient startup, guiding the user to maximum operational efficiency. A key element in this process is the human-machine interface (HMI), which is integrated into the system and plays a key role in facilitating user interaction. The HMI provides an intuitive interface and can be accessed remotely, enabling the transmission of print programs and remote monitoring, the latter supported by a camera installed in the printing chamber. This functionality enables complete and comfortable control of operations, providing an advanced and flexible user experience.

3. What safety precautions should be followed during use?

During use, it is crucial to strictly adhere to safety precautions to ensure a secure working environment. Machine operators must wear standard Personal Protective Equipment (PPE), including safety glasses, durable gloves, and appropriate protective clothing. These PPE items are essential to minimize the risk of injuries and ensure the operator's safety during daily operations. Additionally, it is advisable to provide regular training to operators on the correct use of PPE and specific precautions to take during the machine's use.

4. How is preventive maintenance performed?

Preventive maintenance is facilitated through the use of Scheduled Maintenance Management Software. This software assists the user in planning and scheduling maintenance activities in advance. Additionally, it integrates onboard machine manuals and video tutorials, easing routine maintenance operations. This innovative approach not only streamlines the management of maintenance tasks but also provides practical resources directly on the machine to guide operators through necessary steps. The integration of digital resources significantly contributes to optimizing and simplifying the preventive maintenance process, ensuring maximum efficiency in maintaining machine performance.

5. What spare parts are available and how are these obtained?

Spare parts are offered in two categories to meet different maintenance needs: the Service Kit, designed for routine maintenance and containing basic replacement parts sufficient for one year of operation, and the Service Package, a more comprehensive solution that includes moderately complex spare parts needed to replace various machine systems that could cause downtime. Additionally, the package includes the availability of 1 or 2 on-site technical services per year to perform maintenance and calibrations. Both options can be acquired through our customer service.

6. Is there a warranty period? What are the terms and conditions?

To obtain specific details regarding the warranty period and its related conditions, it is recommended to refer to the General Terms and Conditions available in the footer of the roboze.com website, under the "GTC Sale" section at point 5 of the document.

FAQ

7. What are the technical specifications of the machine?

With a print volume of one cubic meter, the system boasts a substantial production capacity of up to 2 kg/h of material. The chamber can reach temperatures of 180°C, ensuring proper processability of super polymers. Equipped with a dual extrusion system, it allows for the creation of water-soluble support structures or utilizes IDEX (Independent Dual Extruder) technology for duplicated-image printing. The ability to load carbon fiber onto pure polymers enhances the performance of parts, delivering superior mechanical results.

8. Is the machine compatible with other devices or systems?

Yes, for devices like Chiller, UPS, Drying Feeding. It is also possible to interconnect the machine with third-party business management systems to monitor, schedule, and send print jobs. This compatibility and flexibility enable seamless integration and adaptation of the machine to the specific needs of the operating environment.

9. Is there technical support available? If yes, how can I contact them?

Our company provides dedicated technical support to ensure a seamless user experience. You can contact our technical support team through our website by filling out the contact form or by sending an email to support@roboze.com. For immediate support, we also provide dedicated phone lines. We guarantee fast response times and professional assistance to resolve any issues you may encounter while using our machine. We are here to ensure that you can maximize the potential of your equipment.

10. Can I use whatever pellet/nozzle diameter I want?

You have the flexibility to use pellets and nozzle diameters of your choice. However, it is important to note that, in our commitment to ensuring optimal performance and material quality, we develop tailored profiles and extruders for the materials included in our portfolio. If you wish to use different materials or extruders not present in our portfolio, we can collaborate with the Roboze team to conduct a cost analysis and jointly develop a customized printing profile. This will ensure that your machine is configured appropriately to meet your specific needs while maintaining high standards of performance and reliability.

11. How to change the printing material?

The material change is facilitated by loading channels equipped with an automatic cleaning system. Each material macro family is managed by a single extruder. The material change procedure can be performed in the safe zone of the machine. To streamline the process, a guided procedure is available directly from the Human-Machine Interface (HMI). From the HMI, you can manage the entire process, including material preparation for printing. Please note that, while most operations are automated, changing the extruder is a manual procedure. However, all necessary instructions will be provided via the HMI to simplify and guide the user through the process.

12. What post-processing techniques should I consider to get a finished part?

To obtain a finished part, post-processing techniques depend on the layer height used during printing. Options such as tumbling, polishing, and milling can be considered to remove surface imperfections, achieve a smooth surface, or further shape the part according to aesthetic and functional requirements.

BARI, IT

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