



Roboze

Additive Production with
High Performance Plastics

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#PrintStrongLikeMetal

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IMPRESE ELETTROTECNICHE
ED ELETTRONICHE



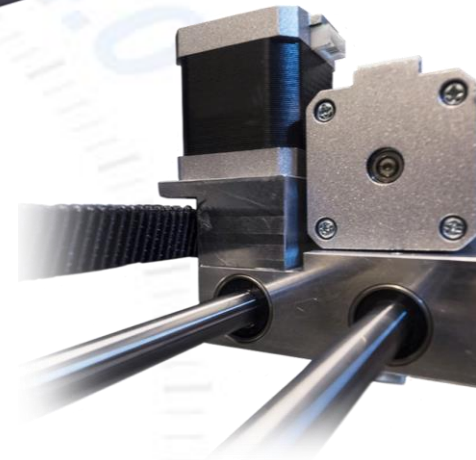
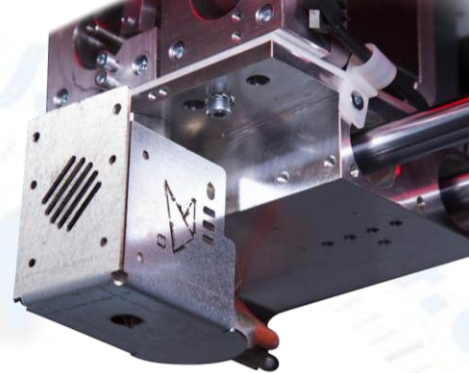
Roboze Technology

Three factors that make Roboze technology unique

The success of Roboze brand comes from the high quality of its products, the meticulous selection of its business partners and the accurate management of the post sales relationships: it offers its customers mechatronic know-how and advanced materials engineering.

All this represents the perfect mix for those who need a **high performance 3D printing**, that guarantees the best details and meets their real and current needs.

- Beltless System
- HVP Extruder
- Materials Engineering



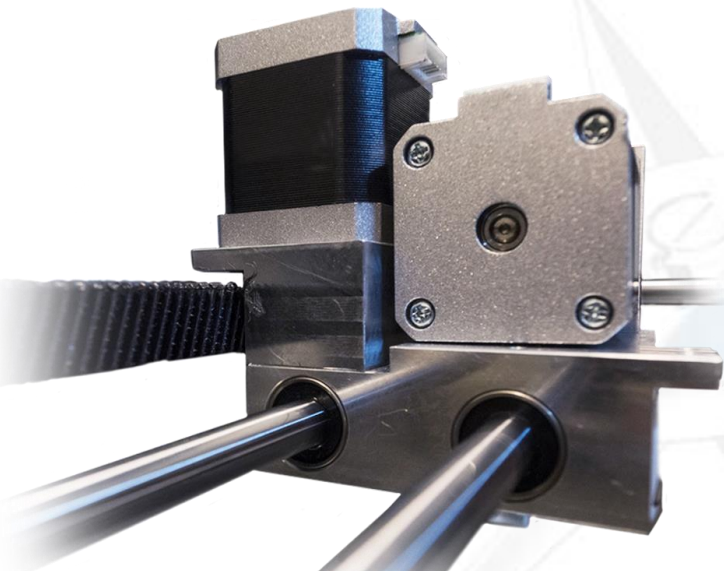


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Patented Beltless System

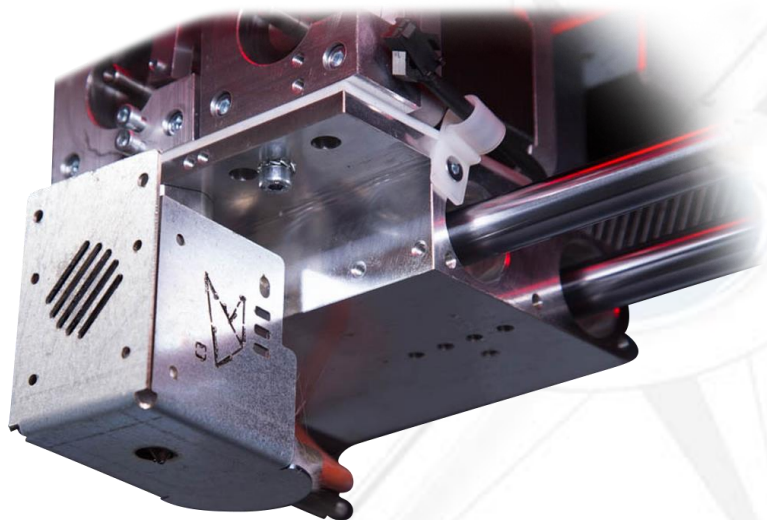
The innovation that eliminated belts in 3D printing



- 10 micron tolerances (in the Production solution)
- Mechanical Repeatability
- Low Maintenance

HVP Extruder - patent

Designed and produced to print high viscosity polymers
pending



- Temperatures up to 550° C
- Entirely made in **AISI303**
- Compressed air cooling system

Materials Engineering

Specifically engineered for the most extreme sectors and able to guarantee unique performance



The highest chemical, thermal and mechanical performance are the result of the collaboration between Roboze R&D department with scientific partners and research centers, specialized in materials engineering.



Comodity Polymers

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PP

Polypropylene



PP, polypropene, is a commodity polymer used in a wide variety of common use applications and automotive components, thanks to its high bump, abrasion, and chemical resistance and electric insulation properties.



Mid-Range Polymers

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Mid-Range Polymers



ULTRA

Polylactic Acid

High surface quality
Easy to print
Hypoallergenic



FLEX

Thermoplastic elastomer

Abrasion resistance
Fatigue strength
Atmospheric agents and ozone
resistance



STRONG

Acrylonitrile-butadiene-styrene

Good processability
Impact resistance
High surface energy



PC-LEXAN™

Polycarbonate copolymer

High impact resistance and ductility
at low temperature (up to -30°C)
Flame resistance



FUNCTIONAL

Polyamide
Low wear

Good chemical and mechanical
resistance



Ultra-Polymers

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Ultra-Polymers



PEEK

Polyether ether

stone

High chemical
resistance
High thermal
resistance
Self lubricating

Continuous Use Temperatures

Test Method: UL 746 B

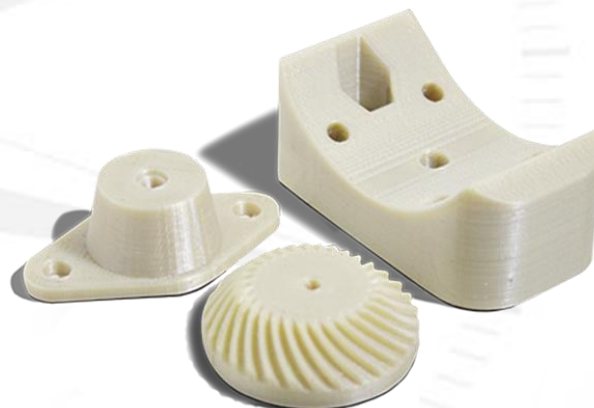
Value: 245°C

Aerospace certified

ULTEM™ AM9085F

Polyether imide

Thermal
resistance
Flame retardant





Composite Materials

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Composite materials



CARBON PA

PA + carbon fiber

High mechanical
properties
Good thermal resistance
Good surface quality

Tensile Strength

Test Method: ASTM D638

Value: 138 MPa

HDT (load 1.82MPa)

Test Method:

ISO75

Value: 280°C

CARBON PEEK

PEEK + carbon fiber

Carbon fiber improves the compressive strength, the stiffness and the PEEK load capacity.

Extraordinary properties, useful for metal replacement in the most extreme environments.



Composite materials



GLASS PA

PA + glass spheres

Increased mechanical properties

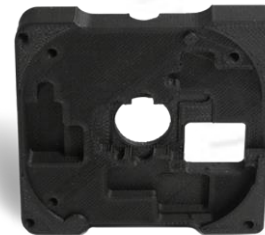
Totally insulator



CARBON PP

PP + carbon fiber

25% increased mechanical
resistance than PP



ABS-ESD

ABS + carbon nanotubes

Electrostatic protection with a
resistivity target 10^7 ohms
electric (the typical range is of
 10^6 - 10^9 ohms)



Industries and Applications

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Aerospace



Today's challenges

Weight savings
Supply chain efficiency
Materials certifications

How Roboze solutions face them

Materials and process validation to increase quality
Reduction of flight costs thanks to lighter parts
Contributing to revolutionize and speed up the supply chain
Traceability, reliability and repeatability of the printed parts



Automotive/Motorsport



Today's challenges

- Less emissions due to weight savings
- Faster time-to-market
- Supply chain optimization



How Roboze solutions face them

- Reducing the aircraft production costs thanks to lighter components
- Innovation in more complex and integrated parts produced on demand
- Fast iteration between projects
- Acceleration of lead time



Manufacturing Industry

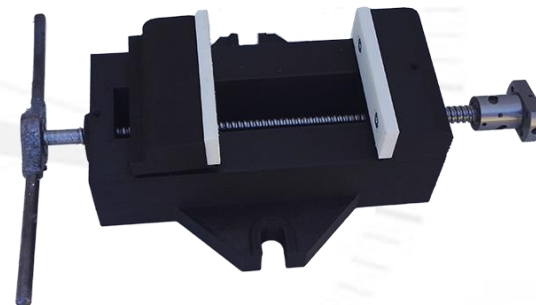


Today's challenges

Warehouse
dematerialization
Reduction of shipping
costs
Personalization of jigs
and tools

How Roboze solutions face them

Functional parts according to operating tests of
the tools
Optimization of the materials' parameters
Faster supply
Increased productivity





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Case Studies

1. Tooling



"The annual cost for pursuing these templates was around one thousand euro, today the annual cost is around ten euro".

Grazia Cappiello

Engineer at the Manufacturing, Equipment&Tooling department, IVECO

"Roboze's materials can be used in direct contact with aesthetic parts of the vehicle, not releasing any residues and/or abrasions"

Grazia Cappiello

Engineer at the Manufacturing, Equipment&Tooling department, IVECO

"The availability and rapidity in reaction to our assistance requests and the received support make Roboze a solution that definitely makes a difference"

Usciaras Federico Cirillo

Process Engineering Manager



sliding doors templates in ULTRA/PLA



sliding door stopper in PEEK

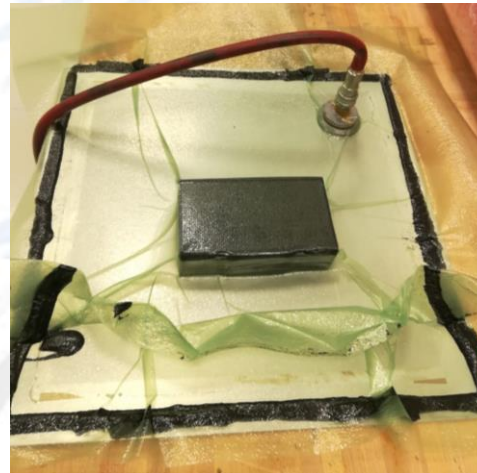


Case Studies

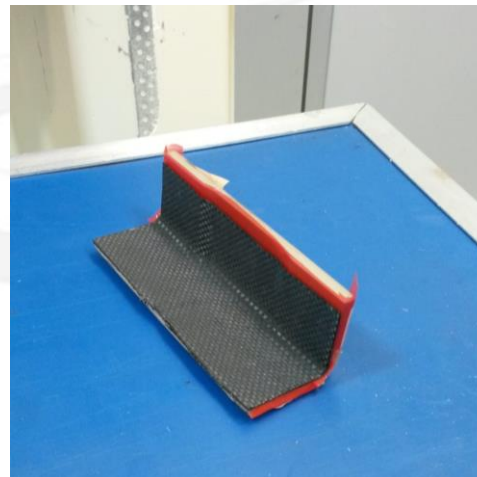
2. Hand -lay Up/ Composite Industry *Aerospace Company*

"Before producing our tools in house with Roboze solutions, we had to wait around 2/3 months for their supply. The molds were created in steel and aluminum, depending on the exposure to heat and pressure, with very short reuse cycles due to the consequent enlargement of the parts.

Using Roboze One + 400 has allowed us not only to reduce supply time but to create moulding and treatment tools, produced in CARBON PA and PEEK. The second one, in particular, has been subjected to a polymerization cycle at 180° C for 2 hours with a pressure of 6 bar without distortions".



Moulding tool in Carbon PA



Moulding tool in PEEK

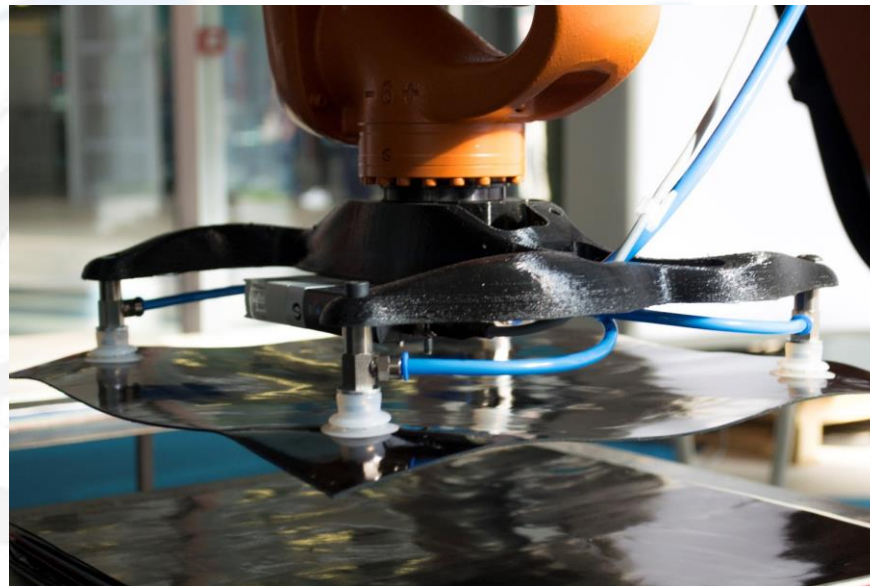
Case Studies

3. Product development



"We chose Roboze as partner for 3D printers supply because it is the only one that allows to work with the most advanced existing technopolymers. This factor, combined with the extraordinary mechanical solidity that characterizes the printer, offers our customers the only valid solution, able to guarantee repeatability and total reliability in the production of functional components for the industry."

Jacopo Gervasini
co-founder CEO at Caracol Studio



Interface flange, customized ad hoc in Carbon PA



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Trusted by



Elbit Systems

Honeywell



AIRBUS
GROUP



dallara



Mercedes-Benz

MERCK





Industries and Applications

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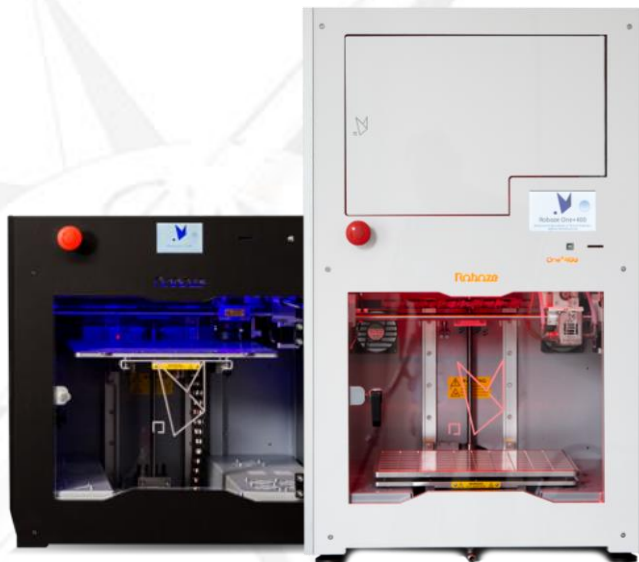


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DESKTOP SERIES

The most precise and versatile FFF 3D printers in the world





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DESKTOP / PRODUCTION SERIES

High performance technology for the most extreme applications





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ED ELETTRONICHE



PRODUCTION SERIES

From prototyping to the production of large scale finished parts





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INDUSTRY 4.0



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