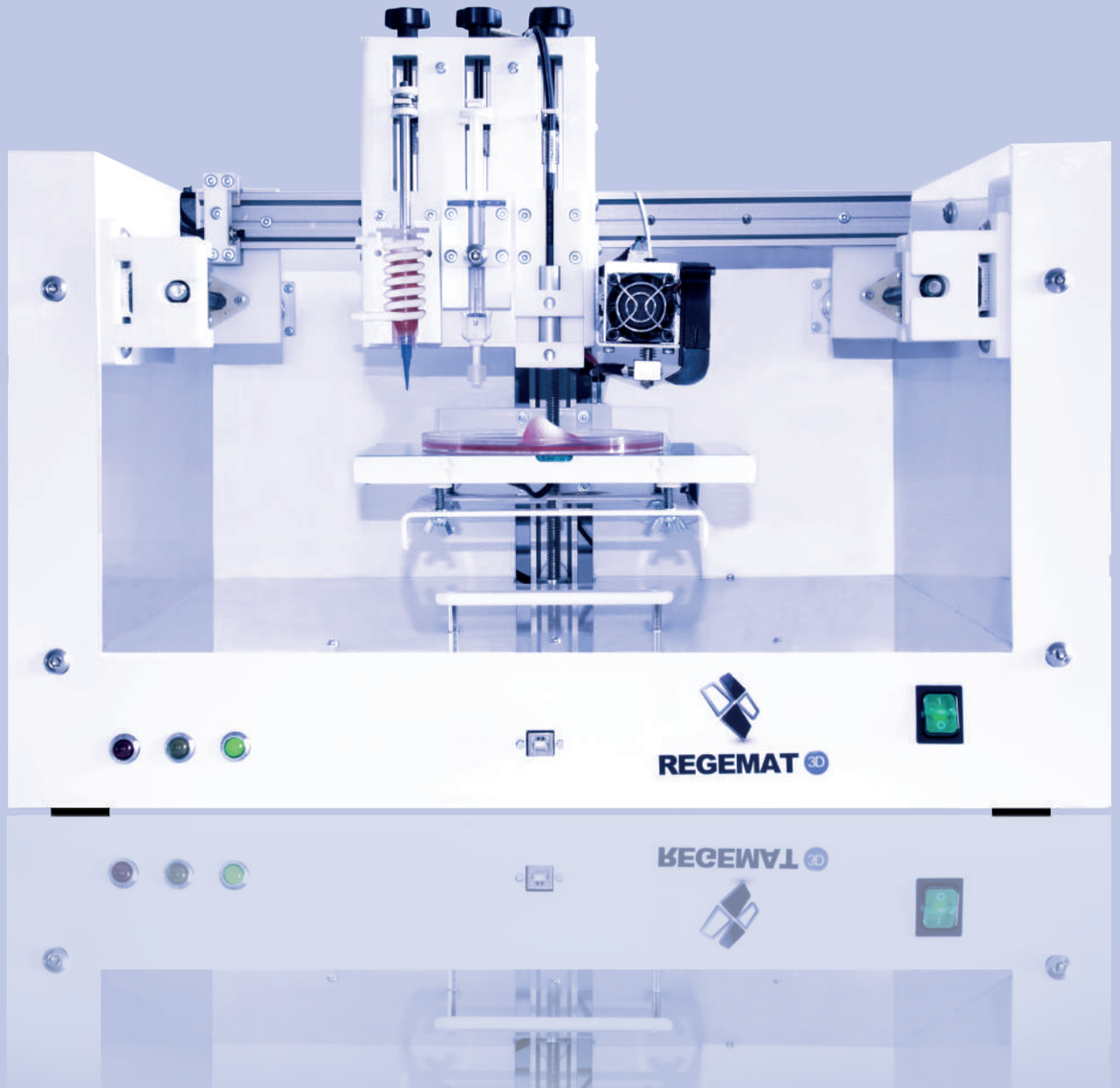
REGEMAT 3D

Customized systems for your research

What would you like to create?

BIO V1

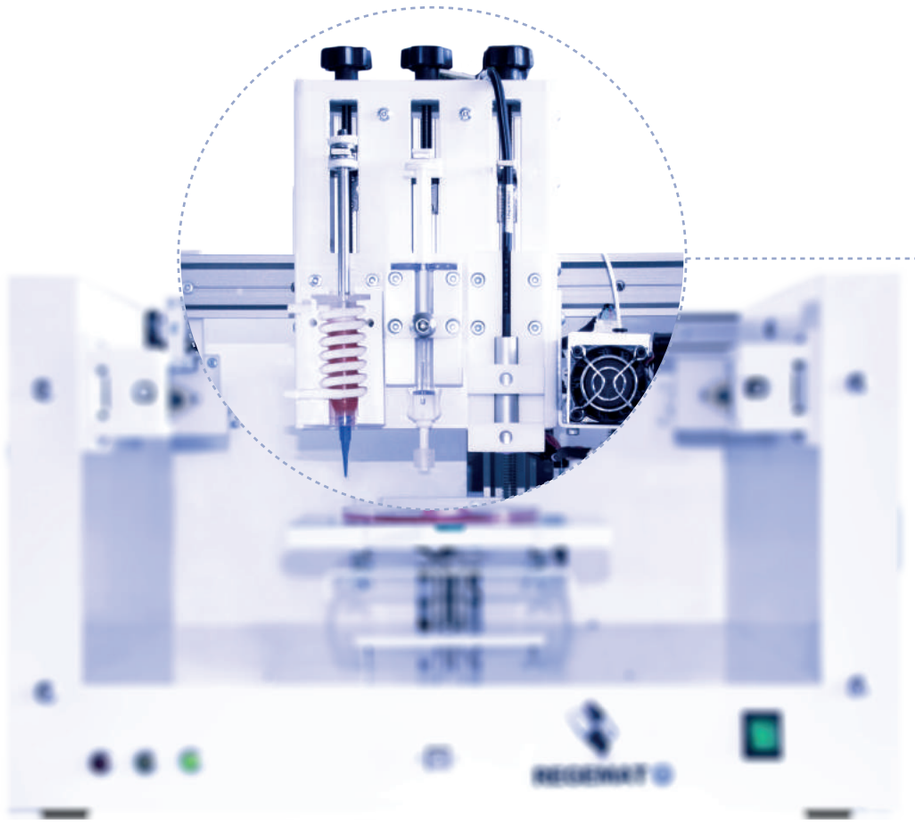


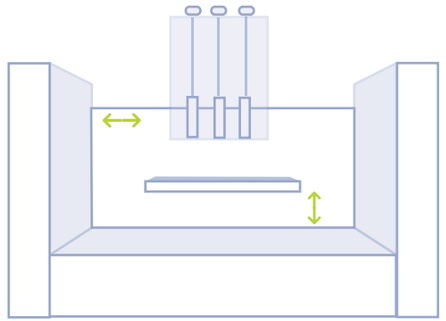
Modular system 310 V1

Each application requires specific solutions. A modular system has been developed to create an equipment that adapts to the requirements of each investigation.

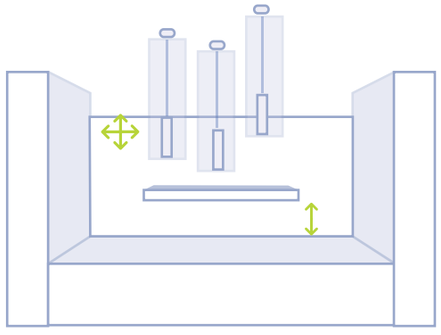
Compact / Independent head

Our heads system enables to include different syringe modules and tools for any application.





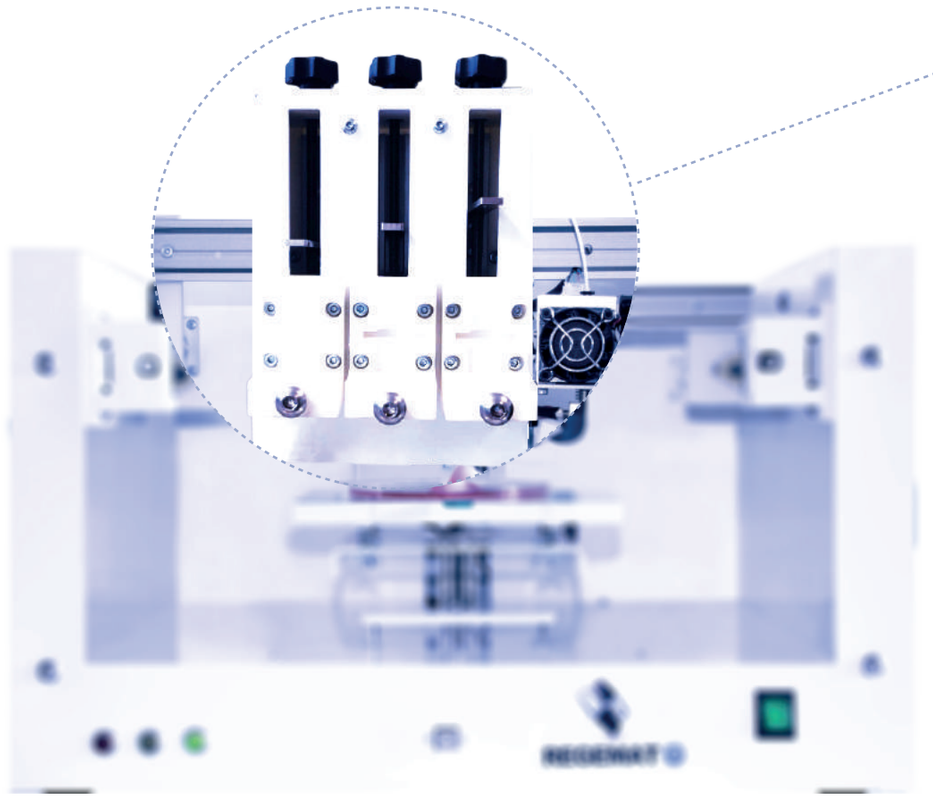
The compact head permits the implementation of four tools with move adjustment in the planes x and y.

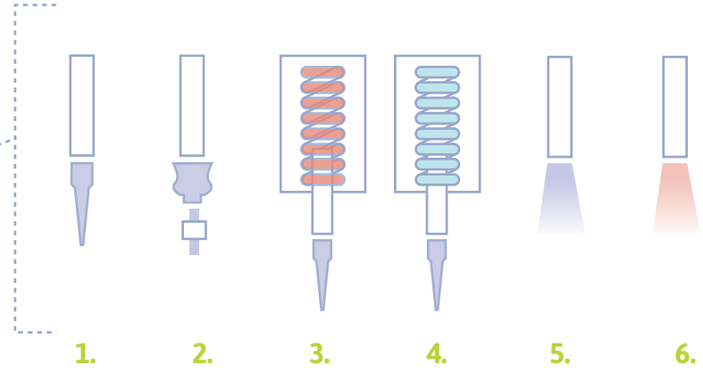


The individual head permits the incorporation of three tools with independent move adjustement in the axes X and Y.

Extrusion tools

We design components adaptableto extrusion tools following the nature and characteristics of the materials. The module can be adapted to the features of the material to extrude.



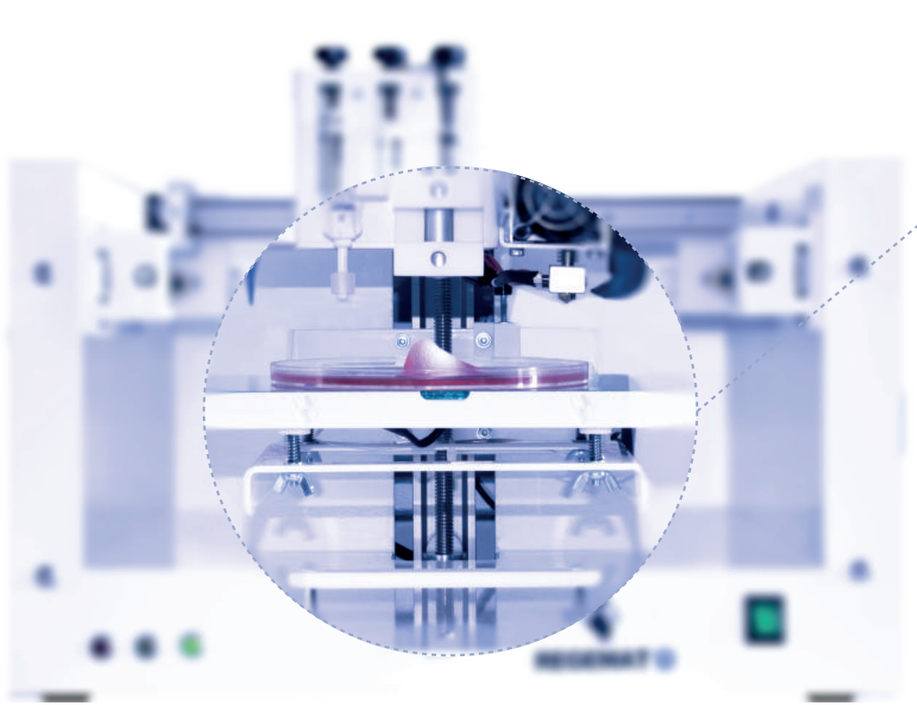


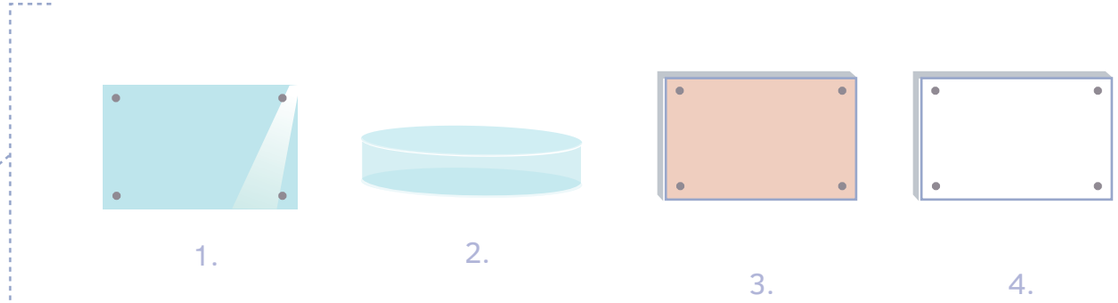
Extrusion tools

1. Extrusion syringe
2. Two component syringe
3. Heated syringe module
4. Cold syringe module
5. UV light curing system
6. Infrared light curing system

Surfaces

The height of the material output can be adjusted due to the implementation of automated calibration in the axes x, y and z, and the independent movement system in the axis z of the heads.



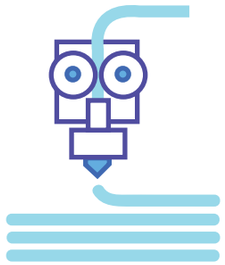


Printing surfaces

1. Glass plate
2. Petri dish
3. Heated bed
4. Cold bed

Technology BIO V1

The implantation of BIO V1 technology has been introduced with the objective of optimizing the process of bioprinting. Our equipment has benn configured for use of technologies as FDM, IVF and IPF

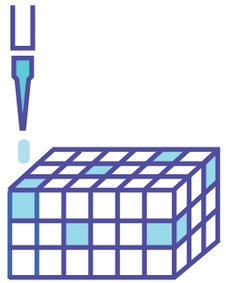


FDM

Fused Deposition Modeling

This technology enables the modeling of the scaffold with the purpose of creating complex external structures and a meshed internal structure.

In this process of manufacturing by addition, a thermoplastic material comes into contact with the hot surface of an extruder, which gradually deposits each layer of the material.

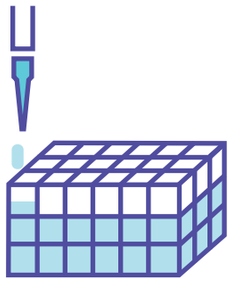


IPF

Injection Pore Filling

The IPF technology will conduct a complete injection of bioink ensuring the filling of all the layers of the scaffold after printing.

This technology facilitates the filling of volumes when working with small areas as in case of osteochondral injuries.



IVF

Injection Volume Filling

The IVF technololgy enables to select specific layers on which to inject cells into the selected pores. This also permits the injection of controlled amounts that can be even different in each layer.

With this technology, cellular viability and survival are enhanced and guaranteed in extreme conditions, as occurs in works with thremoplastics at high temperatures.

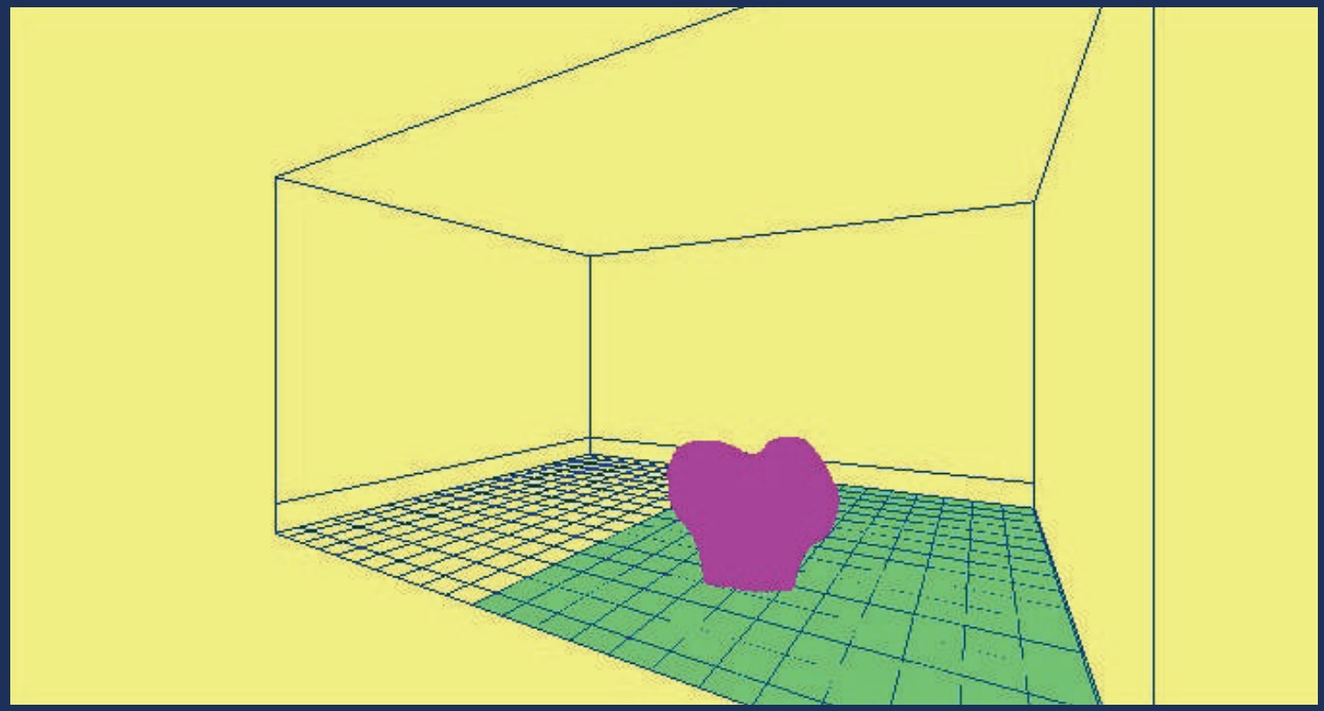
Software BIO V1

The development of our own software and hardware has led to the design of a customized equipment that adapts to the specific necessities of each project.

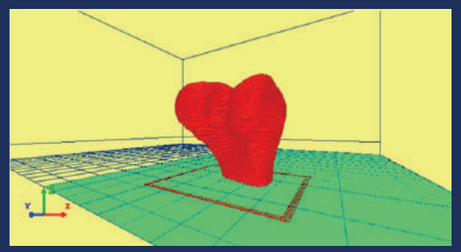
3D object preview

Our fully intuitive software facilitates the design of individual structures together with the import of geometries from .stl files.

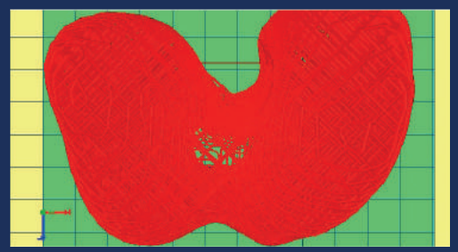
After the design or import of the structure by previewing the piece, we will be able to configure the internal meshed and a wide range of printing parameters.



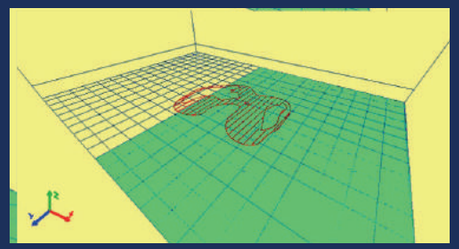
Object in .stl format display



G - Code display



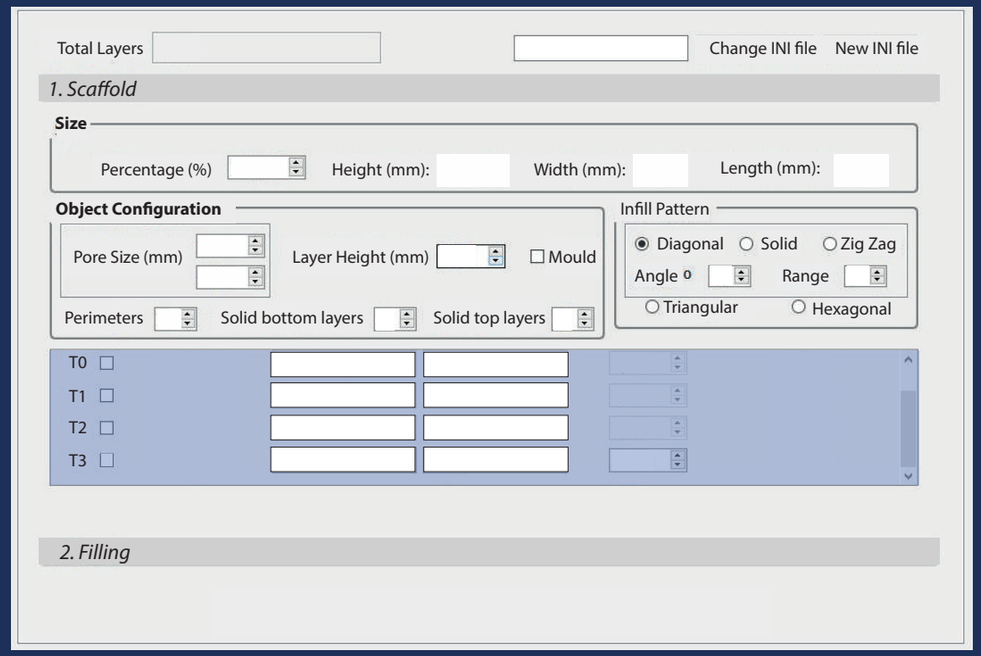
Layered display



Internal meshed display

Scaffold setting

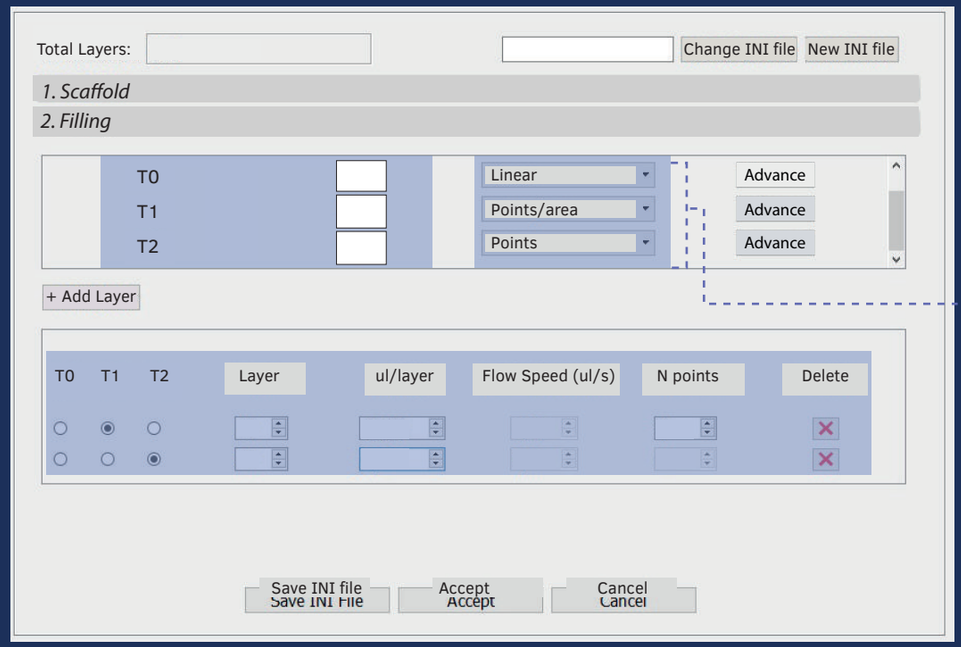
Selection of the layers and perimeters of each tool



Injection parameters setting

Setting of the syringes for the injection

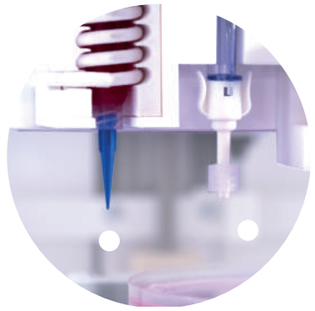
Selection of the layers for injection



Injection technology

Components BIO V1

The BIO V1 can adapt and customize according to the requirements of each investigation.



Cold syringe

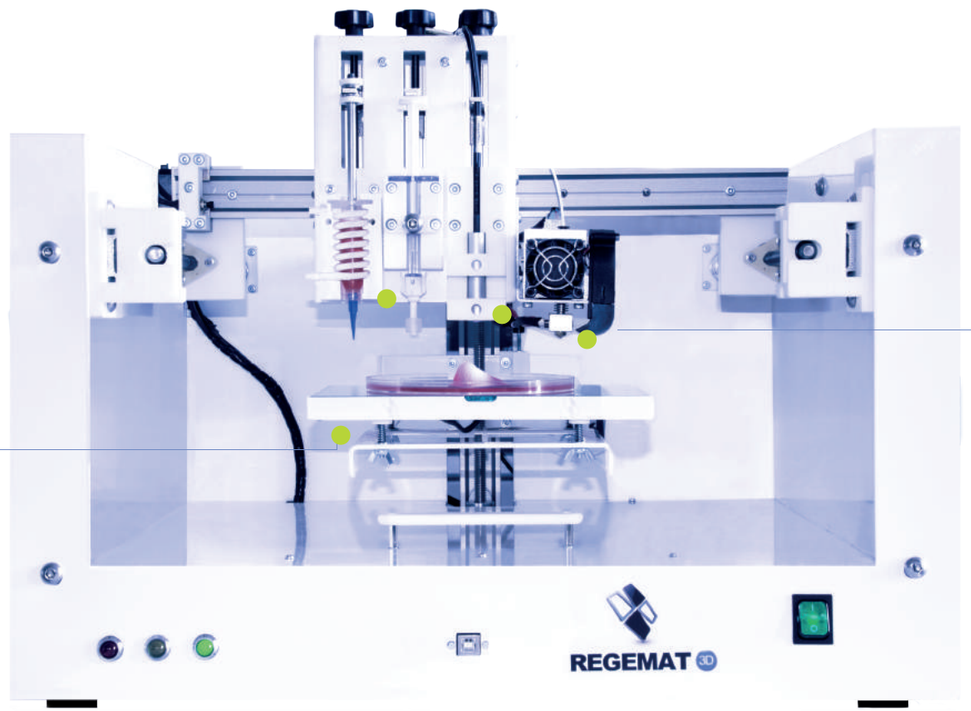
Drop of the material temperature due to a heat exchanger

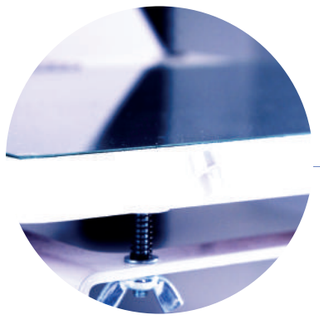
Two component syringe

Simultaneous extrusion of two mixed materials to produce an homogeneous compound

UV light curing system

UV light source that falls directly upon the extruded material with automatic or manual control





Cold/Heated bed

Heat and/or cooling system homogeneous in the whole surface to keep the temperature stable

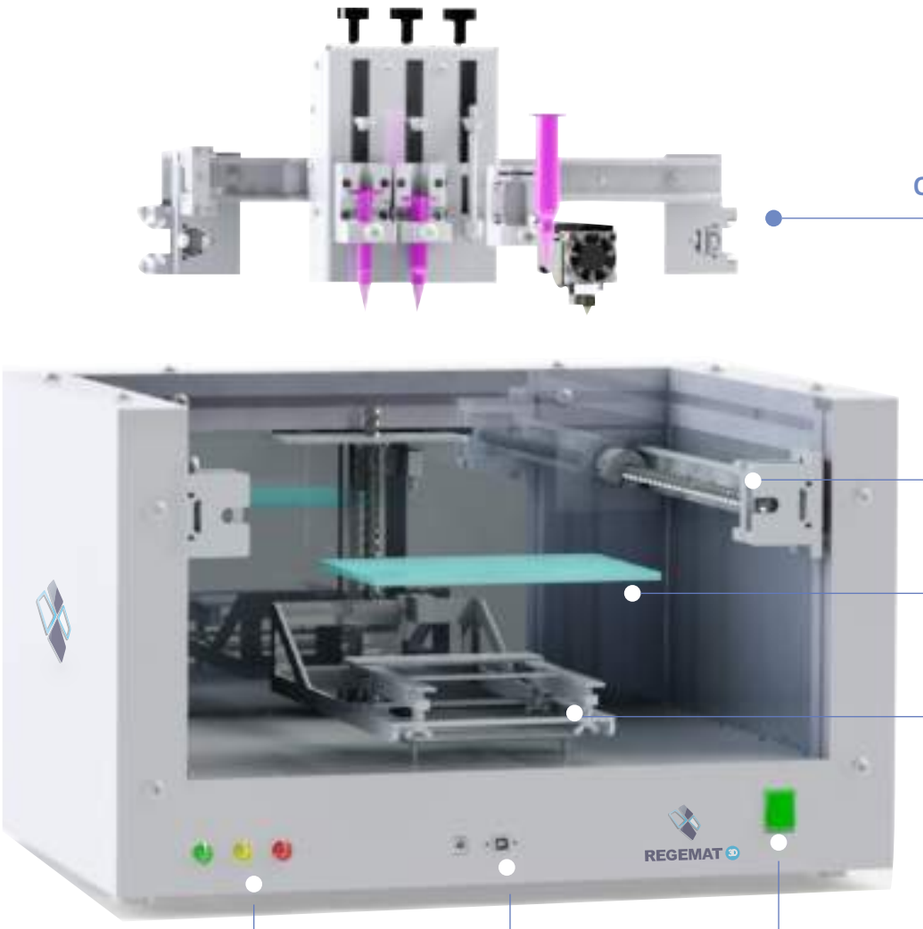
Filament extruder

Filament melting system for the creation of scaffold layer by layer

Technical specifications BIO V1

Via a display of the BIO V1 bioprinter and the head of the system, the technical characteristics of the equipment are specified

BIO V1 Display



Complete structure of the head

Movement by spindle on X and Y axis

Resolution 150 µm

Construction volume

150 mm x 160 mm x 110 mm

Support with mechanical displacement

400 nm

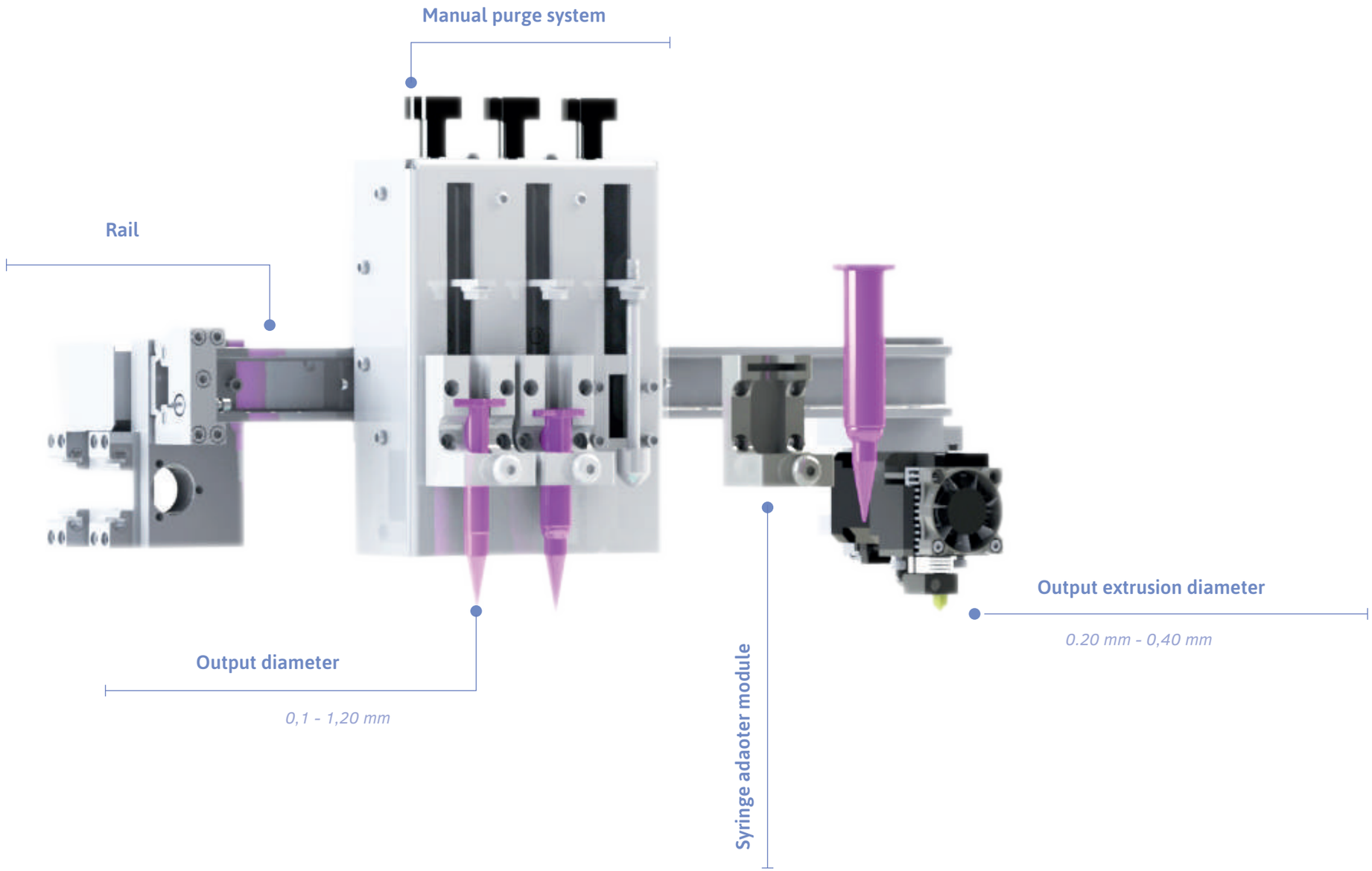
Operating status indicators

Conexion

USB

Switch

BIO V1 Head Display

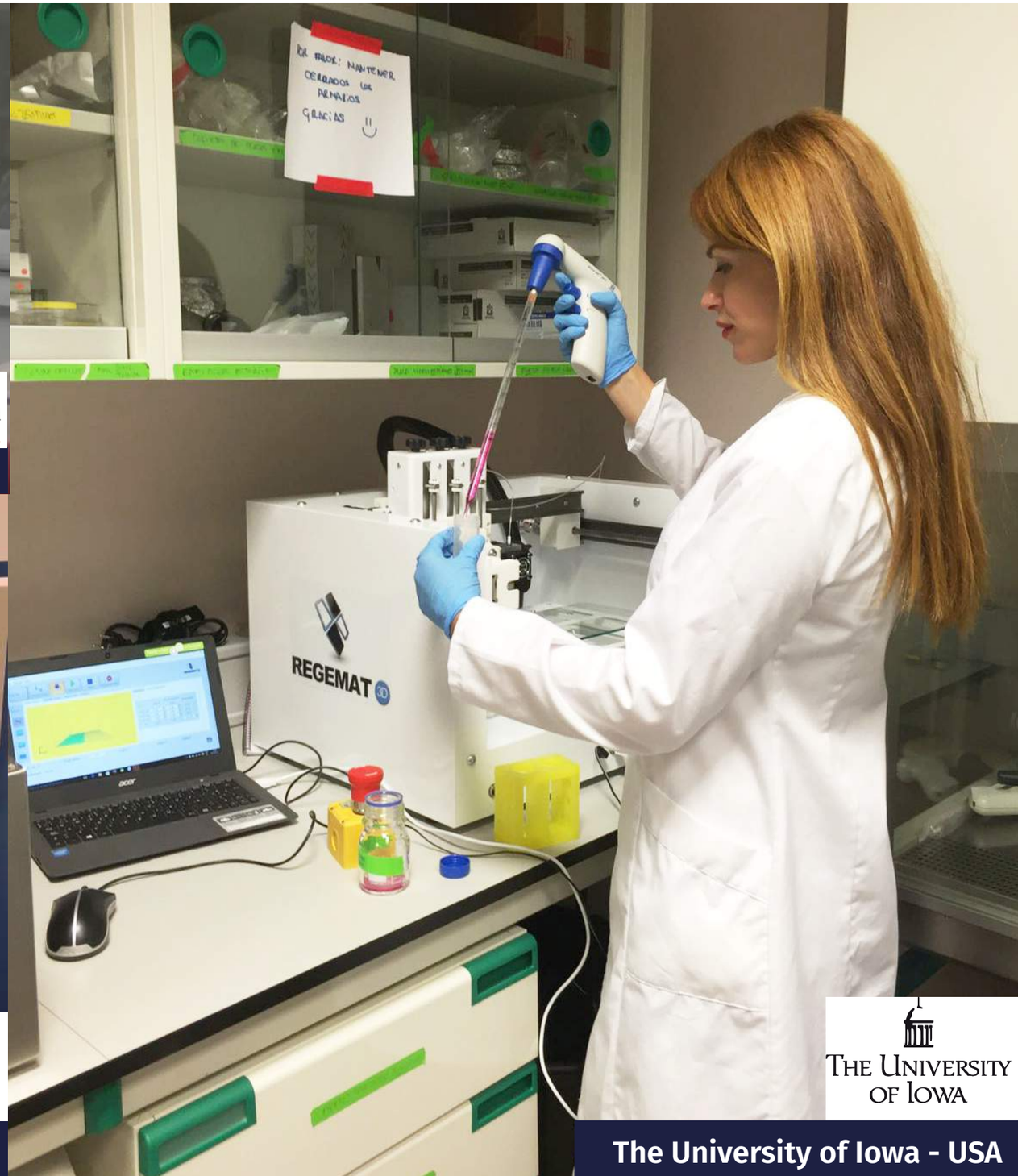


Presence in more than 20 countries


Regemat 3D
Distributors

Users

The University of Granada - Spain



The University of Iowa - USA

The University of Sidney - Australia

Users

Virgen del Rocío Hospital - Seville, Spain

Paper and Fibre Institute (RISE PFI) - Sweden

National Institute of Rehabilitation (INR) - Colombia

La Paz Hospital - Madrid, Spain

REGEMAT 3D

Living Tissues Technologies