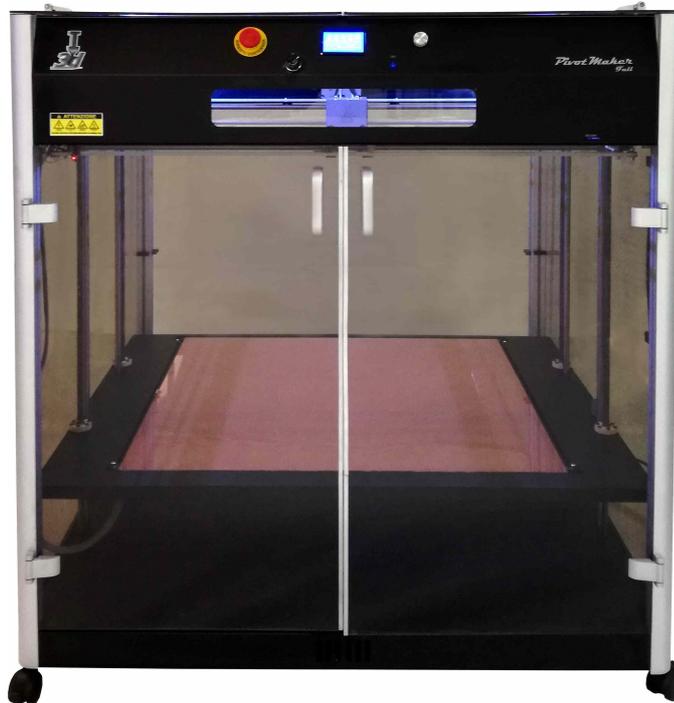# PivotMaker

PivotMaker 3D printer with FFF printing technology (Fused Filament Fabrication) allows to create large objects and prototypes in a single print thanks to its print plate that measures 850 x 850 x 850 mm.

The printer is equipped with two modified Volcano E3D extruders that allow printing with two colours or with support materials (PVA / HIPS) and reach an extrusion temperature of 300 ° C.

Brass nozzles with a standard diameter of 0.6 and 1 mm (optional 0,40 - 0,80 mm - 1,20 mm) can be interchanged with the aid of a 7 mm spanner. This system allows you to change the nozzle diameter to achieve different print resolutions.

The sturdy structure in powder coated steel and Lexan opal 5 coating is equipped with integrated self-locking wheels for easy handling.

PivotMaker is supplied assembled and ready for use.

The printer uses the Cartesian movement for the X, Y axes with a static support mechanism composed of 16 mm INA cemented linear bars and for the dynamic support of self-lubricated linear bars 2x10 mm each.

The Z-axis consists of four 16 mm INA cemented linear bars and four 14x3 IGUS trapezoidal bars. The components are in ergal 7075 T651.

Mechanical features that allow speed in printing and layer accuracy.

The linear movement is controlled by NEMA 23 1/32 step motors.

The printing speed is 10-80 mm / s with a layer resolution of 100-500 microns (0.1 -0.5 mm) with a dimensional accuracy of the X, Y ± 0.3 mm axes.

PivotMaker has no proprietary filaments, supports the following materials with a diameter of 1.75 mm:

- PLA
- PLA VOLCANO
- ABS Special
- ALFA+
- ETIL LAY
- PVA
- PETG
- HIPS

- PLA GRAFYLON
- CARBON-P
- PLA CERAMO
- LAYWOOD
- T-GLASE
- N-ASA

PivotMaker is equipped with a 100 ° C heated bed and a 50 ° C tempered chamber (at 25 ° C ambient temperature). These features guarantee the correct adhesion of the large object to the printing surface and also allow the printing of special materials with high retractions.

PivotMaker has a control panel on the front that allows managing, control and modifies all the printing parameters.
During printing, through the control panel, it is possible to modify some parameters to improve the default settings in the creation of the .gcode.
The parameters concern extrusion temperature, ventilation, flow, printing speed and filament change.

PivotMaker offers the user the possibility of printing via USB input with the help of the computer or independently via an SD card.
It is also possible to remotely control the printing process via the dedicated IP camera via the webcam of the tablet supplied. Inside the tablet, supplied, there is an application for managing the printing parameters.

The printer is equipped with filament sensors that detect the absence of the wire inside the bowden and put the printer automatically to perform the function of pause - displacement of the extruder body for coil replacement - of the print.

PivotMaker Full is equipped with self-leveling of the build plate. Before each printing, the plate is aligned through a probe which analyzes 30 points of the printing plane and performs the correction of the different heights.

PivotMaker doesn't require continuous maintenance, but only a few precautions such as the cleaning and lubrication of the axes, so that the printer is always in conditions of optimum efficiency.
PivotMaker supports files in .STL to .gcode format.
For the creation of these files, it is possible to use open source software like Cura and Slic3r.

Together with the PivotMaker Full printer, a starter kit is provided which includes:

- User manual e maintenance
- SD Card
- USB cable
- Cutter for finishing
- Harmonic steel wire for cleaning the nozzles
- Spatula

- 2 spools 2,5 Kg di filament
- Grommets for filament cleaning
- DPI security
- UPS
- Tablet

Technical specification

Tecnology: FFF-Fused Filament Fabrication

Build dimension: 850x850x850 mm

Resolution layer Z axis: 100 micron – 500 micron

Filament diameter: 1,75 mm

Nozzle diameter: 0,6 mm -1 mm. Brass. Interchangeable

Extruders : n. 2 E3DvVolcano

Connectivity: USB – SD Card – PC/Tablet remote controle

Equipment: Key ignition, filament detection, wire change system, emergency stop button

CONTROL & FIRMWARE

Megatronics 3.1

Driver DRV8825

Marlin Firmware

DIMENSIONS & WEIGHT

3D printer dimensions : 1220x1220x1345 mm

Weight approx: 140 Kg

Shipping weight approx: 260 Kg

Dimensions wood box: 1360x1360x1750 mm

TEMPERATURE

Extrusion temperature max: 300°C

Operating temperature: 15° -32 °C

Heated bed: 100°C

Temperate chambre: 50°C (room temperature 25°C)

MECHANICS

Build plate: Heating plate and tempered glass 5 mm

Structure: Powder coated steel - lexan coating 5 mm

Frame: 45x45 aluminum profiles

XY Assi: XY static support: Linear cemented shaft INA

XY dynamic support: self-lubrificated linear shaft

Z-axis : N° 4 Linear cemented shaft INA, n°4 trapezoidal shaft IGUS

Motors: NEMA 23 stepper motors. 1/32 step

Printing speed : 10 – 80 mm/s

Transfer speed : 10- 200 mm/s

OPERATING REQUIREMENTS

Power: 240 – 400 V AC 50 Hz 2000 Watt