

USER MANUAL

SHAREBOT VIKING

**VER. 0.3
23/05/2019**



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Warning

As with all professional products, the Sharebot Viking, as well as its accessories and materials must be handled carefully and professionally to ensure a secure working environment and high durability of the device.

It should therefore be noted that any modification of the printer will void the warranty. The same applies to any printer malfunction caused by improper use.

Do not open the front door of the 3D printer while the machine is running.

Never look directly into the projected light and wear protective goggles throughout the printing operation.

The material trays are spare parts and are not covered by the warranty.

The projector LEDs have a set service life.

Regular maintenance will ensure consistent results over the entire period.

You can find further details on safe use of the printer on the technical data sheet and the material producers manufacturer's guidelines.

The accessories kit contains cutters and/or other sharp tools. Handle these with care.

The Sharebot Viking is a 3d printer based on CE-certified digital mask technology:

- 2006/42/CE

- 2014/20/UE

- 2011/65/UE

a high-precision professional tool.

Correct usage is a prerequisite for achieving optimum results.

Technical features

Printing range	192 x 120 x 200 mm
Accuracy XY	75 µm (+/- 25 µm)
Accuracy Z	20-100 µm, depending on the relevant material parameter
2K / UV projector	2560 x 1600 pixel
Wavelength	405 nm (+/- 5nm)
Printer dimensions	39x29x47 cm
Weight	Approx. 21,5 kg
Working temperature	18°- 25° C

This data is subject to change for technical reasons.

Quick-start

Opening the package

You have just received your Sharebot Viking, containing the following:

- Sharebot Viking 3D printer
- Accessories box
- Power cable
- LAN cable
- USB Pendrive
- Manufacturing kit (spatula, nitrile gloves, resin filter, superlube pen, napkins)
- CE declaration

Before starting

First of all you need to prepare the workplace in which you intend to install the 3D printer. Ensure that you have removed all obstacles from the area, that it is well-ventilated and that it is not exposed to any direct natural light.

Ensure that all sides of the 3D printer are accessible and that there is sufficient space for the manufacturing kit for finishing work on the printed object.

Ensure that the surface on which the 3D printer is positioned is level and stable.

To use the printer you need:

- Power socket with 100-240 VAC, 50-60 Hz.
- PC with Windows operating system for installing the slicing software with the following requirements: i5 processor, at least 8GB RAM, Windows 7.

Options:

- a lan network or a Windows PC with an ethernet port to send files and manage the 3D printer.
- a wireless network to send files and manage the 3D printer.

Open the package of your Sharebot Viking, carefully remove the manufacturing kit from the packaging and place it on the work surface.

Remove the 3D printer from the packaging carefully and place it upright on the work surface.

ATTENTION: Connect the blue USB cable from USBa to USBb port (3, FIG.1).

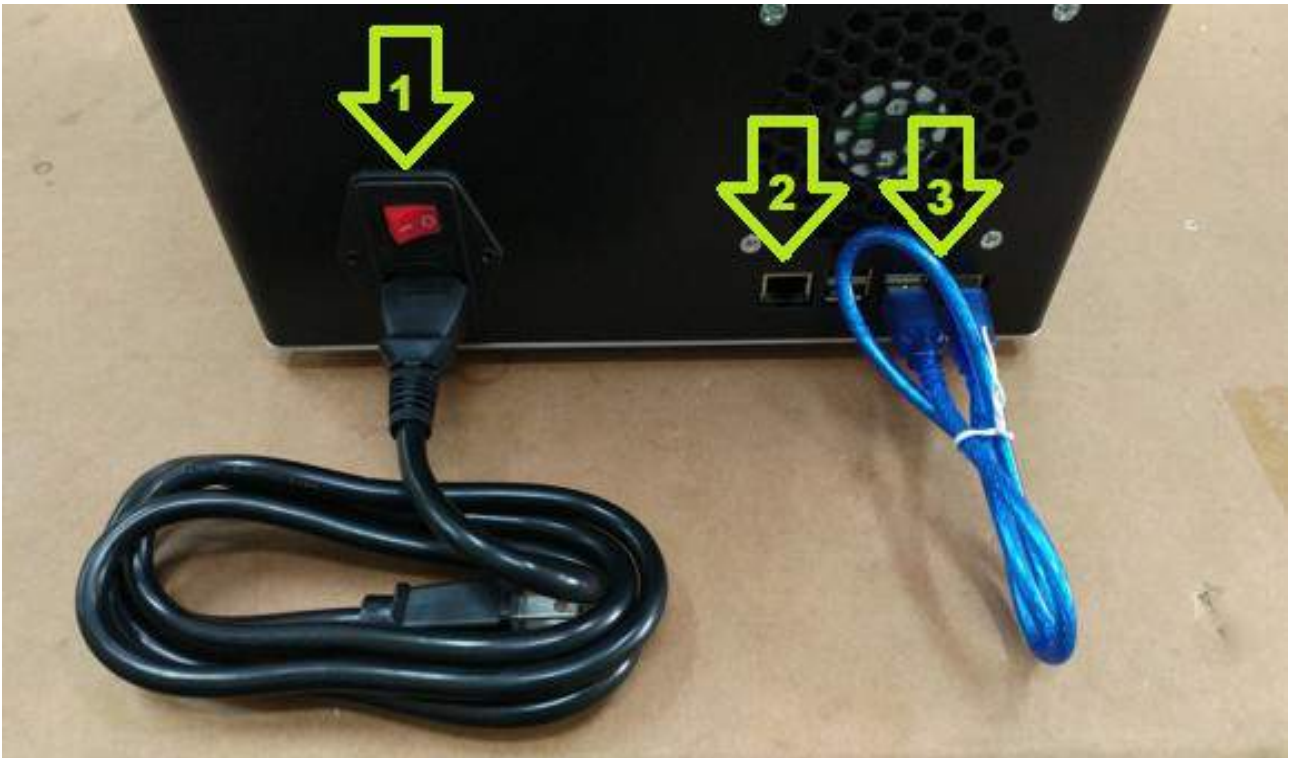


Fig. 1

Connect the 3D printer: power line 1, the LAN cable 2, the USBa-USBb bridge 3, and the USB HUB 4, on the back of Sharebot Viking (Fig. 1b):

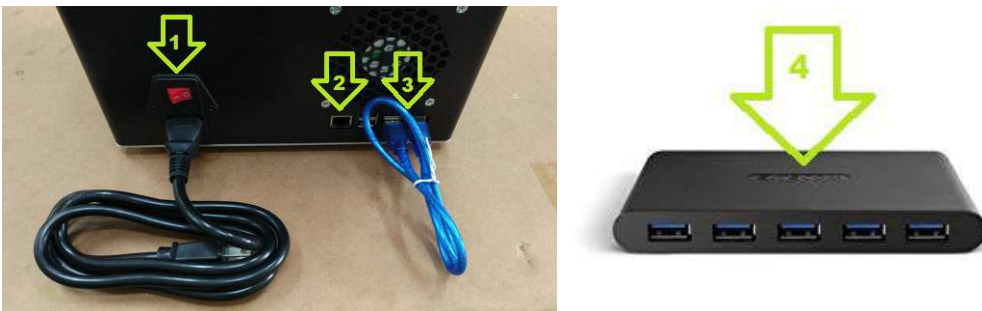


Fig.1b

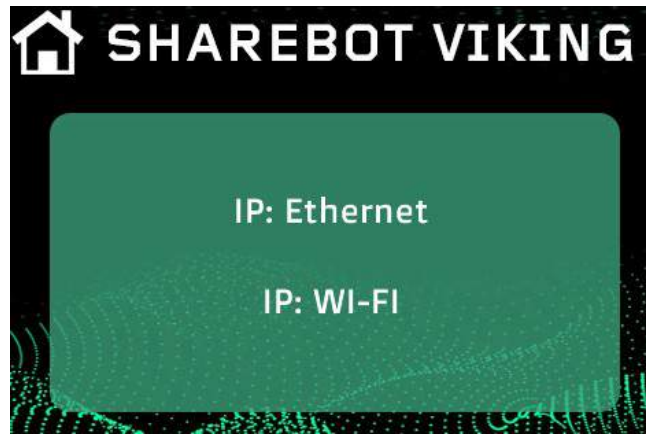
Connection and configuration

The Sharebot Viking has an internal operating system using which you can manage the printer.

Connect the machine with the LAN cable to your internal net (connect to a router not directly to a PC).

Connect to network

Connect the LAN cable, and check the lcd interface, Settings/IP the Ip address assigned to the 3d printer from the net. Use this IP to access to Sharebot from a browser connect to the same net.



Use your wireless network

To configure the wireless connection it is necessary to initially connect the printer to the network via the lan connection then use the function “Configuration” - “Network config” - “Wireless” from your browser. Is possible to activate or deactivate the wifi connection.

Choose the wifi network by scanning the available networks, select the type of security (WPA – open) and once the connection has been configured click "SAVE" and the next confirmation.

Use the IP assigned to the printer to connect to the 3D printer through the same wifi network.

On the frontal LCD of the machine will be displayed the assigned IP for the LAN and for the Wireless connection.

Installation and use of slicing software

Instructions for installation, configuration and use of the slicing software can be found in the Slicing Software Handbook (Pyramis).

Using the printer interface

After you have chosen the desired access mode you can access the printer’s management interface.

There are two main pages, the “Dashboard” and the “File manager”.

Via the “Dashboard” you can display the status of the printer and suspend the operation.

In the “Filemanager/CWS file” section you can manage your object files, i.e. you can upload the files that you want to build.

Dashboard

If you are connected to the printer via the network, the dashboard is the first page that is displayed once you have started up the printer. The status of the printer is shown on this page. By clicking the “Dashboard” symbol you can return from the sub-menu to the Dashboard at anytime (Fig 5).

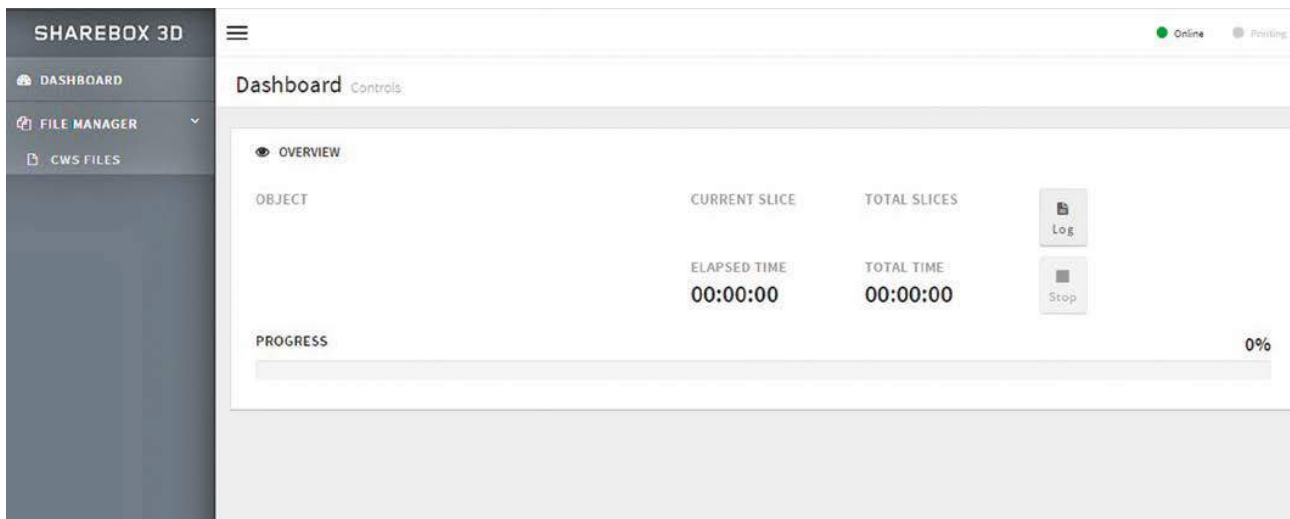


Fig. 5

In the “Overview” section is shown the status of the print operation. Here you can suspend the print operation at any time by clicking “Stop” button.

Meaning of the fields shown:

Object	Name of the running print job
Current layer	Number of layers that have already been printed
Total layers	Total numbers of layers
Time elapsed	How long the printer has already been running
Total time	Expected time for the entire print
Progress	Percentage-based progress of the print operation

There are two other displays at the top right:

The led with the “Online” label is green when the printer is ready for operation. The led with the “Printing” label is red when a print is currently running.

Attention: If the “Online” led is not green, contact the support service.

Managing files

If you select the “File manager” menu and the “CWS file” option you can access the file manager. Here you can upload prepared print jobs, delete saved jobs and start a new building process.

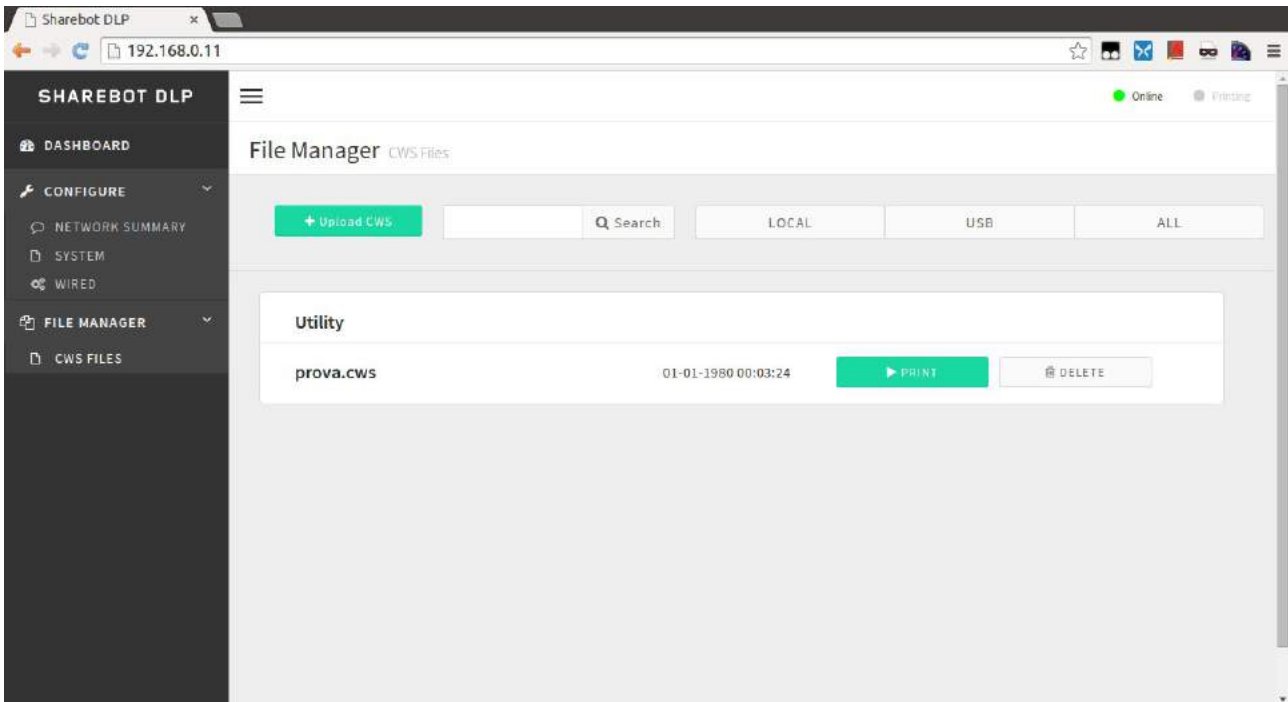


Fig. 6

Click on “Upload CWS” option to load a file into the printer.

When you select this option the upload window will open, then using the “Select file” option you will be able to upload the desired object.

With the “Local”, “USB” and “All” options you can display the files in the internal printer memory, the USB stick or both.

Each file can be printed via the “Print” button or deleted using “Delete” button.

In this page you can also find the “UTILITY” file:

- Plate down: will bring the printing plate down;
- Plate up: will bring the printing plate down and after up to the Z max length;
- Plate up 50mm: will move the printing plate up of 50mm from the actual position;
- Cleaning Cycle: will start the cleaning cycle, a full open projection that can be use to polimerize the resin with eventual impurities on th bottom of the material tray.

First print

Attention: If you are working with liquid resin for the first time, please observe all precautionary measures.

Calibrate the printing plate

Open the semi-transparent front door and remove the transport locks in the printing range of the device.

Insert the material tray in the relevant position (Fig 2).

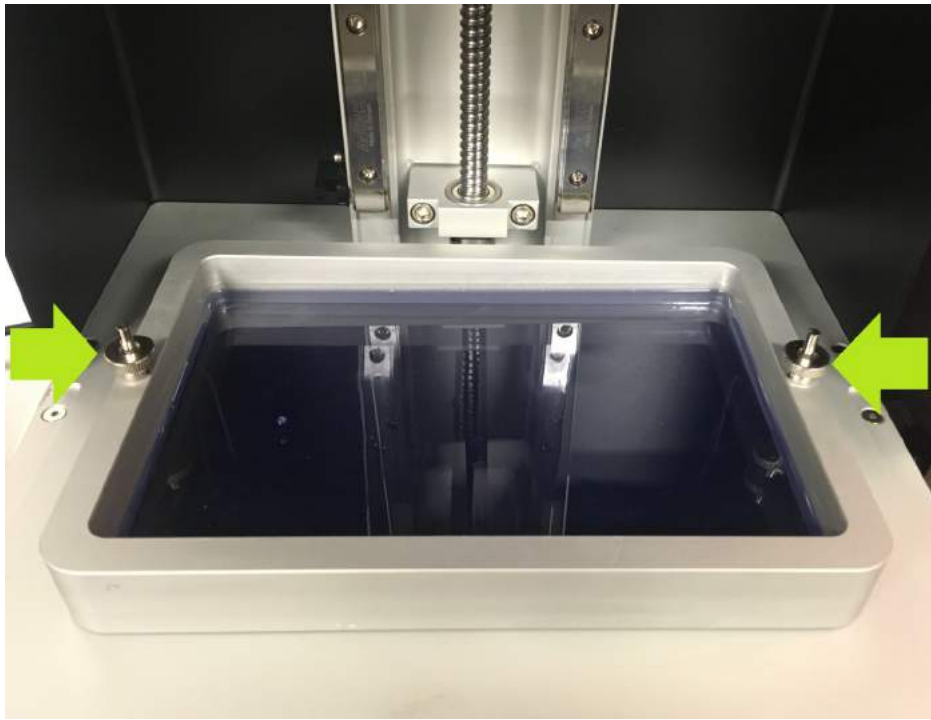


Fig.2

Insert the building plate in the appropriate position and lock the quick-release lock (Fig 3).

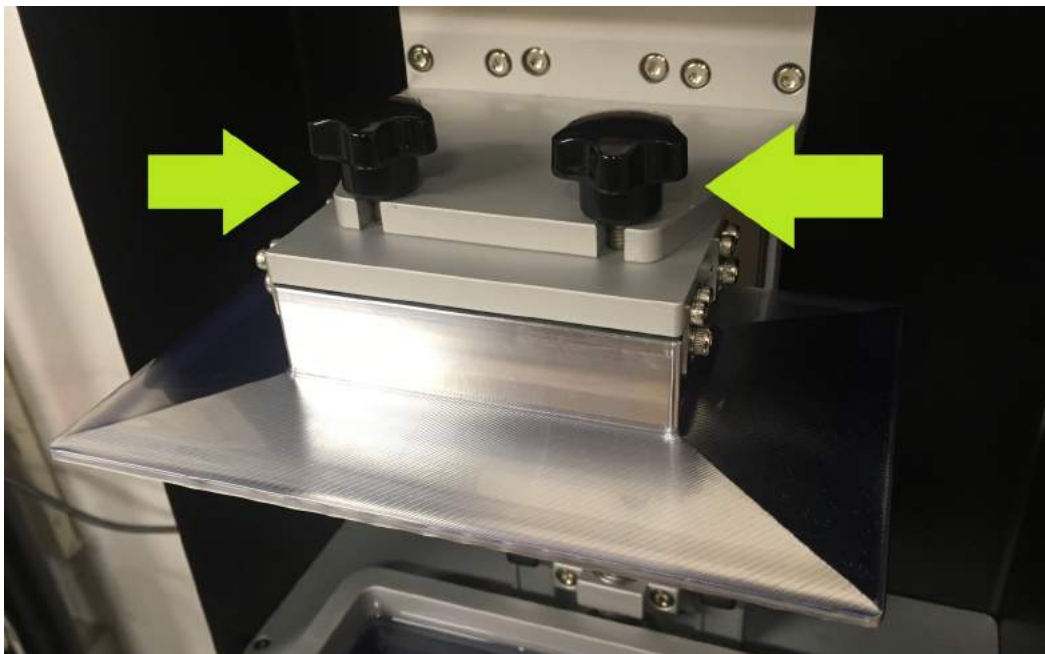


Fig. 3

1-Release the 4 screw on the printing plate side (Fig.4);

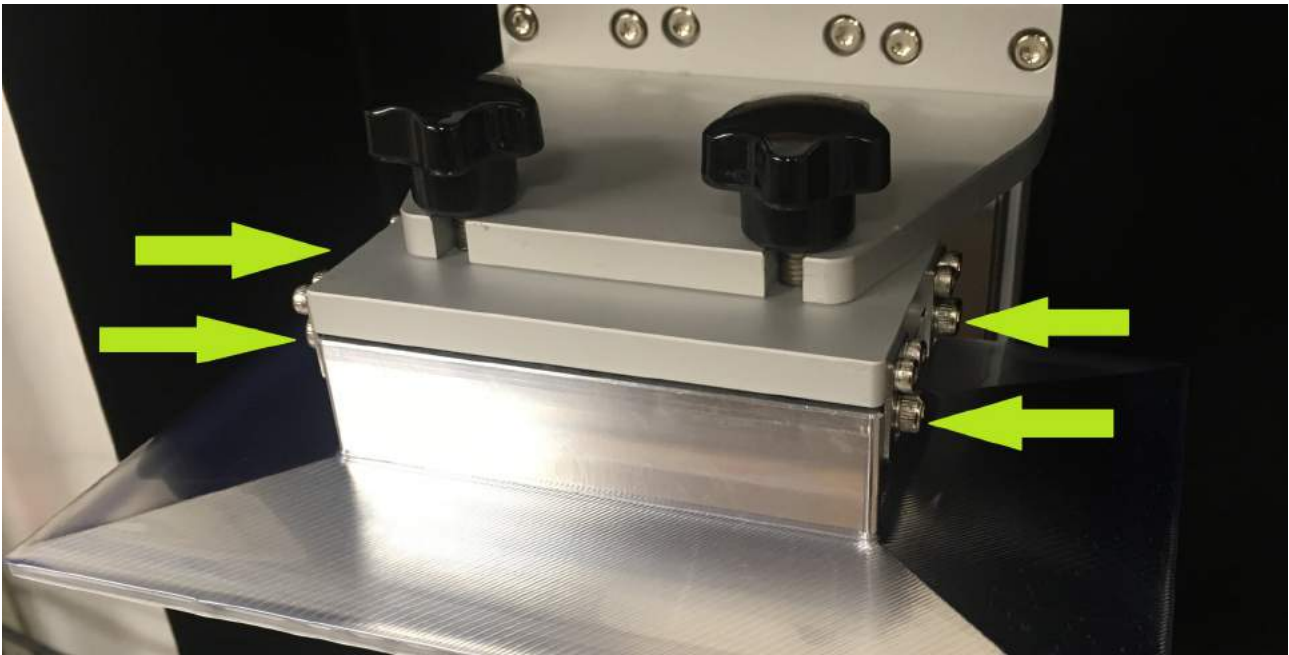


Fig. 4

2- From the printer interface, send the service file “plate down”, the printing plate will move down;

3-Tighten the 4 screw (Fig.4);

Fill the material tray

You can then fill the material tray with the corresponding resin. The resin may be filled to a maximum of half the height of the edge of the tray. (as shown in image 7a).

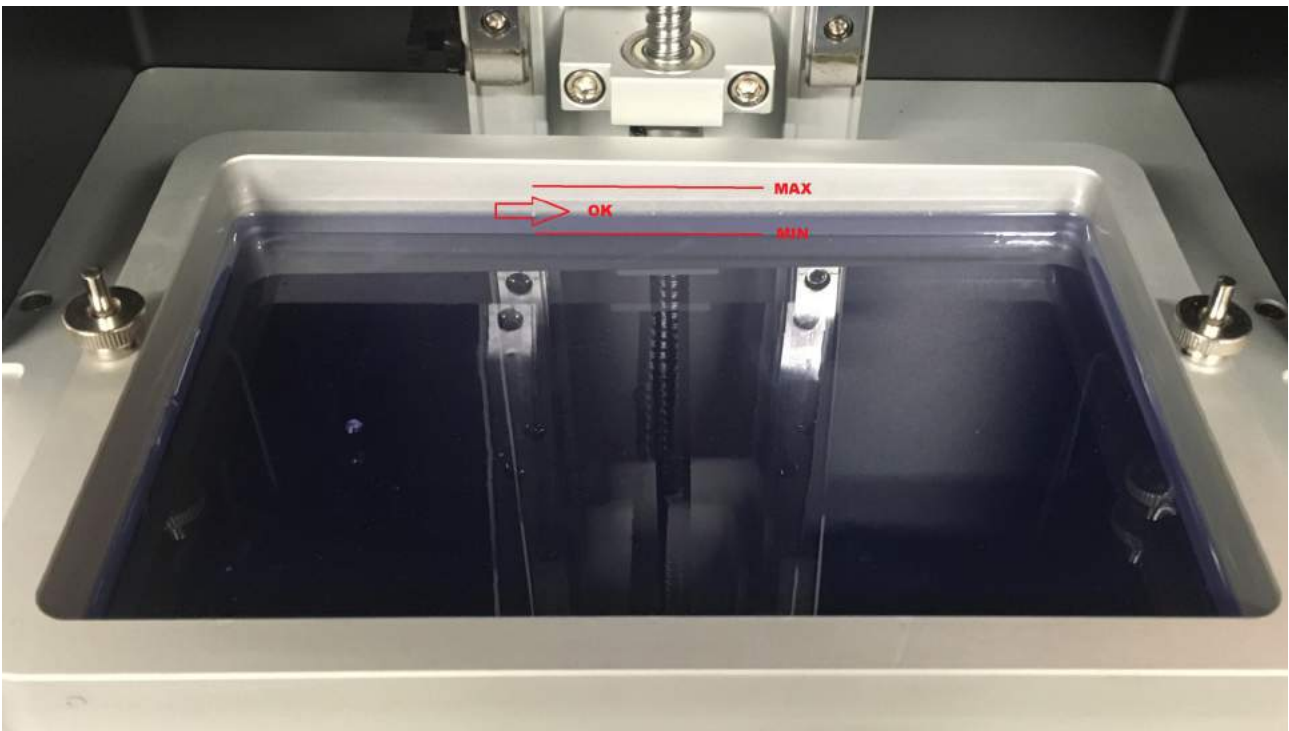


Fig. 7

Ensure that no resin is spilled out of the tray. Take special care to ensure that no resin drips into the machine. If liquid resin does drip into the machine disconnect the power cable from the printer and refer to technical support as the resin in the printer may permanently damage the projector.

After filling the tray properly (Fig. 7b), close the front door of the printer.

Start a printing operation

Start a printing job the web interface following these steps:

- connect to the printer’s management interface
- select the “File manager” option
- press the “Print” button of the file that you want to build (if you want to print the object from a USB stick select the “USB” option)
- confirm the start of the printing process

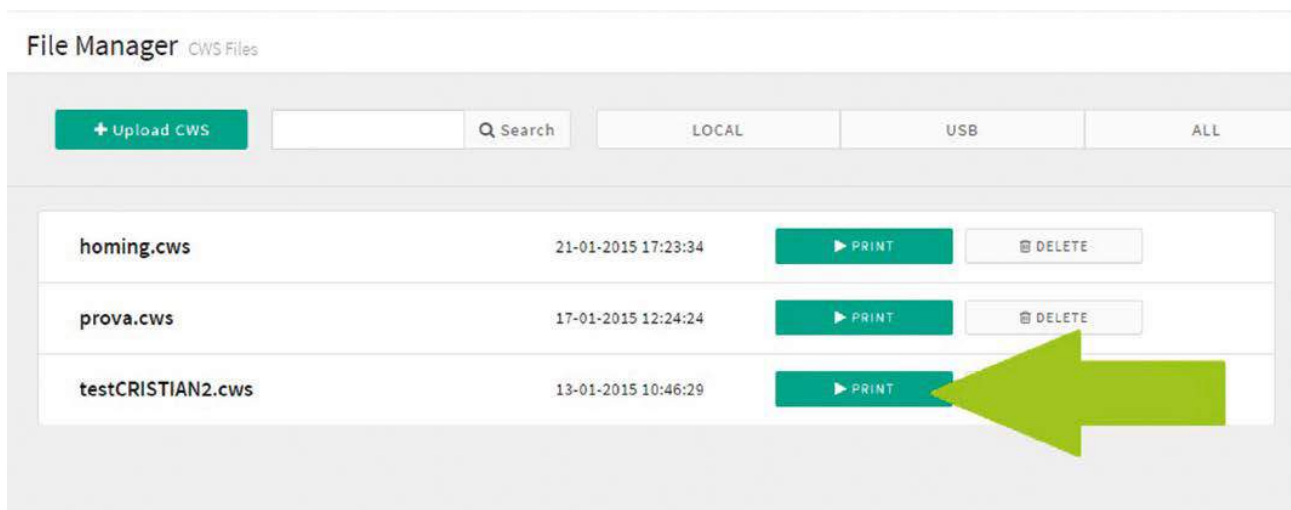


Fig. 8

After completion of the printing operation

At the end of a printing operation additional steps need to be carried out to finish the object and clean the printer.

Remove and finish the object

Warning! Do not remove the tray before removing the building plate beforehand.

The correct procedure for removal and post treatment of the object is:

- ensure that the building plate is not exposed to natural light
- put the manufacturing kit within proximity of the printer
- wear the gloves (nitrile)
- open the printer's front door
- remove the building plate with the object and place it next to the manufacturing kit
- remove the object from the building plate with a spatula.
- continue with the cleaning and finishing following the instructions of the material manufacturer.

Cleaning

Once the printing operation is finished you have to clean the 3D printer so:

- remove the material tray from the printer with the remaining resin.
- pour the remaining resin into a bottle (if necessary, you can filter the resin with an appropriate filter)
- clean the tray with ethanol and a piece of kitchen paper
- reinsert the tray into the printer
- clean the building plate and place it in the printer
- alternatively, you can store the filled material tray in a dark and closed space so that it is not exposed to natural light and is safely stored. This will allow you to quickly reuse the material for the next printing process.

Please observe the instructions of the material manufacturer here.

Print details

Instructions for aligning the print object

The alignment of the print object must first be considered with regard to the printing range, since the creation of an object is based on layers and each layer is created on top of the previous one.

It is advisable to first identify the flat surface and tilt the object in order to break up single layer larger areas into areas with several small layers for a safer adhesion to the build plate.

If a surface is tilted more than 45 degrees or some parts have no base (hang in the air), special precautions should be taken for the print object.

First check whether you can turn the object so that it lies on the printing plate and no parts are suspended in the air (Fig. 9).

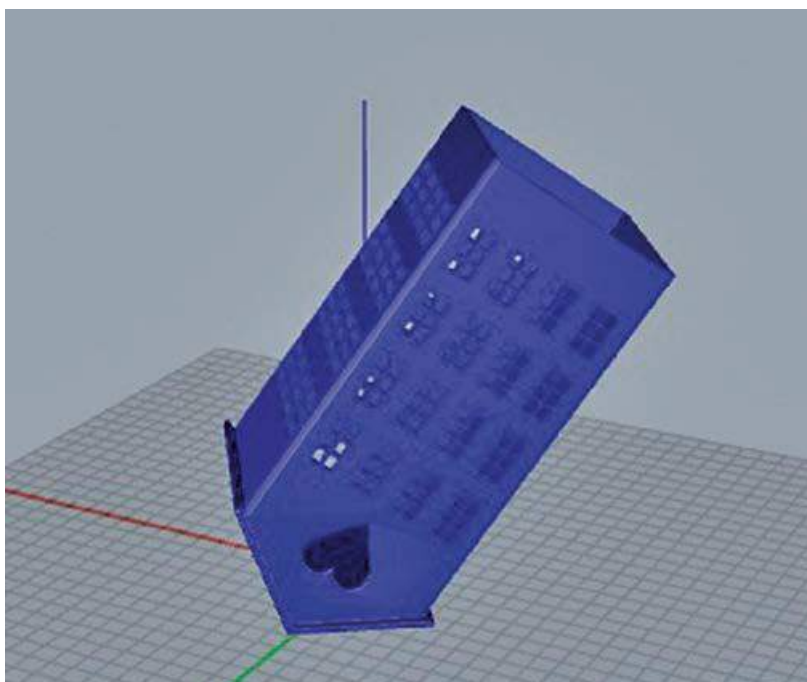


Fig.9

Support

If it is not possible to prevent parts from hanging in the air, it is important to prop up the object with support structures. With the help of supports you can create complex print objects with hanging parts. Supports can be created automatically or manually with the slicing software.

Two points to bear in mind when creating supports manually:

- the size of the supports must be sufficient for the printed object
- the supports must be positioned under all small parts of the object in the direction of the building plate.

After the printing operation remove these supports to ensure the object is clean and retains the desired shape.

Hollow objects

You can print filled or hollow objects, large objects are generally printed in hollow form to avoid any warping of the resin. Special discharge channels may potentially need to be created for non-polymerized resin to ensure that it can flow out of the object. It is advisable to do this while modelling the object or subsequently with the help of the relevant software.

(Fig. 10: Example of a file that should not be hollow)

(Fig. 11: Example of a file that can be hollow)

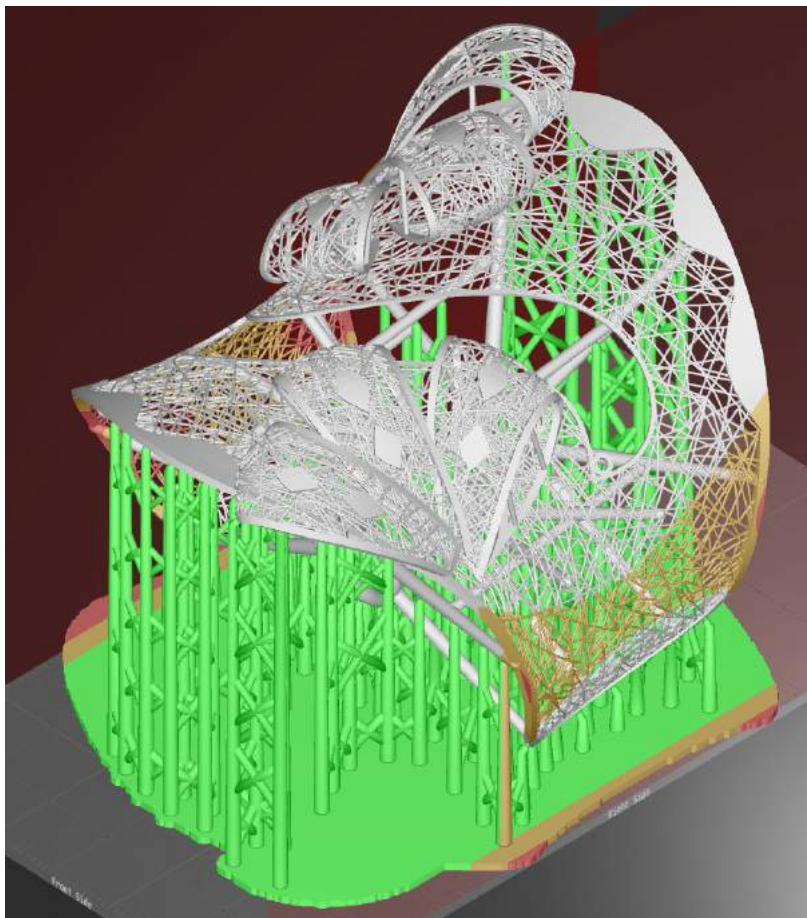


Fig.10

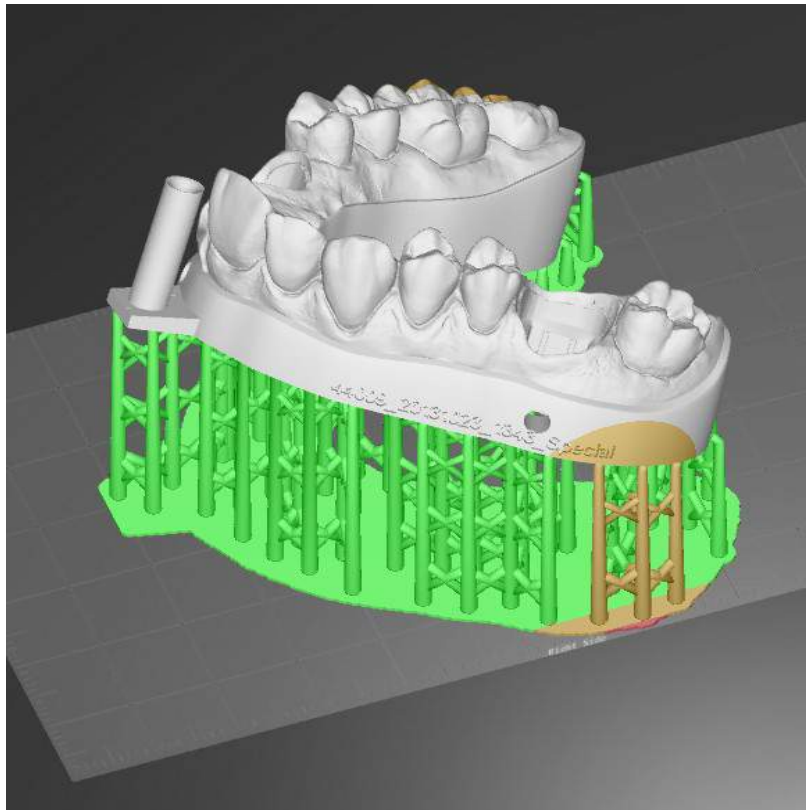


Fig.11

Potential problems and remedies

Resin escaping from the material tray.

Suspend the printing operation in this case. Remove the discharged resin before it gets into the printer or the projector, and then restart the process.

Object is not fixed to the building plate.

The print is lost and may become stuck in the tray. In this case stop the print operation, run the Z-axis homing function available in the “Service program” directory then remove the building plate and start the cleaning cycle also available in the “Service program” section. Carefully remove the polymerized material from the tray with the spatula.

Before you restart the printing operation, make the following checks:

- check that the base of the tank and the building plate are clean and not worn
- check that the distance between the printing plate and the base of the tray has not changed. A calibration of the building plate may be necessary
- check that the object has sufficient stability
- check that enough supports are in place.

The object base and support are attached to the printing plate but the object is on the bottom of the tank

Check the support size and position and the orientation of the object.

Check the temperature of the resin and the room temperature are in the operative range, usually 18 – 25 °C.

The resin is almost empty during a printing process.

You can refill some resin during the printing process. Press the “Pause” command on the lcd interface then refill the tray material up to the level sign of the tray.

The resin leaves behind residue and impurities on the base of the tray.

In this case you can start the tray base automatic cleaning cycle. You will find the function in the “Service program” directory. During the cycle the resin on the base of the tray is polymerized, at the end carefully remove the polymerized resin layer on the base by hand ensuring to not damage the base of the tray while doing it.

Maintenance

Proper use of the material tray

Handle the tray with care in order to guarantee a long service life and achieve high-quality objects, follow these rules:

- As soon as the printing operation is complete, empty the tray and clean the base with a paper towel.
- Take care not to damage the base of the tank if you have to remove objects.
- To achieve an optimum printing result, use a tank for a max. of 2 kg resin.
- Use a different tray for each resin in order to avoid contamination.

Lubrications of the axes

Add a drop of the oil contained within the accessories kit to the top of the Z-axis screw and the Z-guide (Fig. 12).

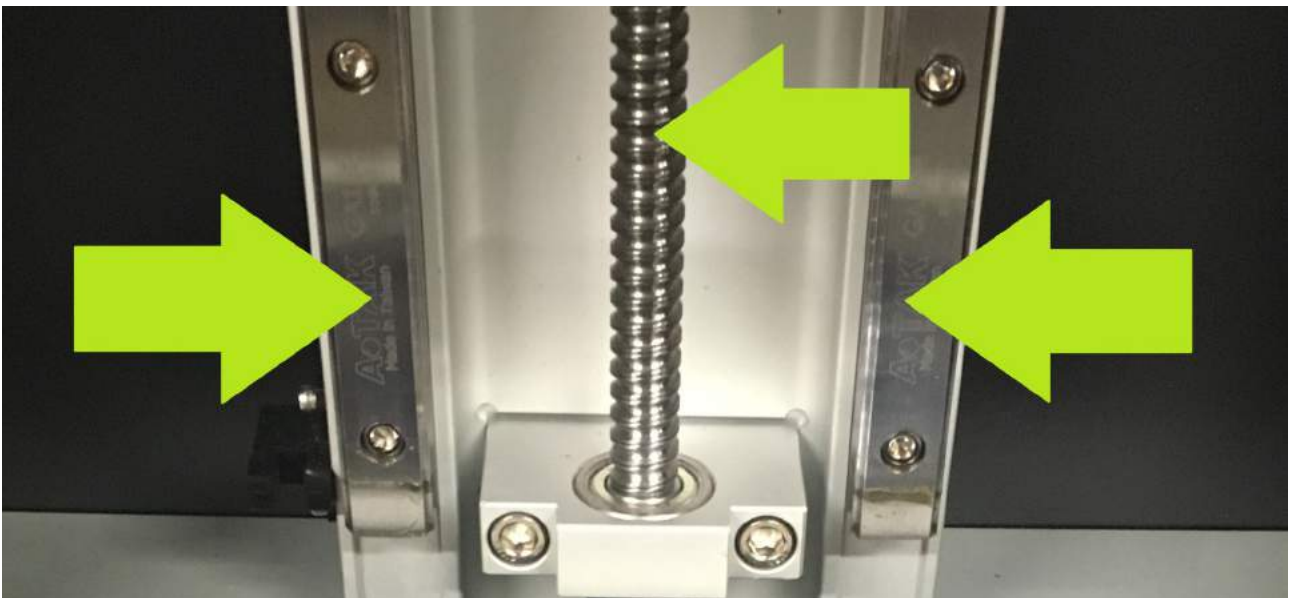


Fig.12

Ensure the correct ventilation

The printer has cooling fans on the bottom and rear.

Ensure that no dust or any other powder-like substances inhibit ventilation.

Firmware update

Updating the firmware for the 3D printer:

- download the “updater.img” file
- copy the file to an empty pendrive
- insert the pendrive in the 3d printer usb port
- shutdown and restart the machine
- remove the pendrive from the 3d printer usb port