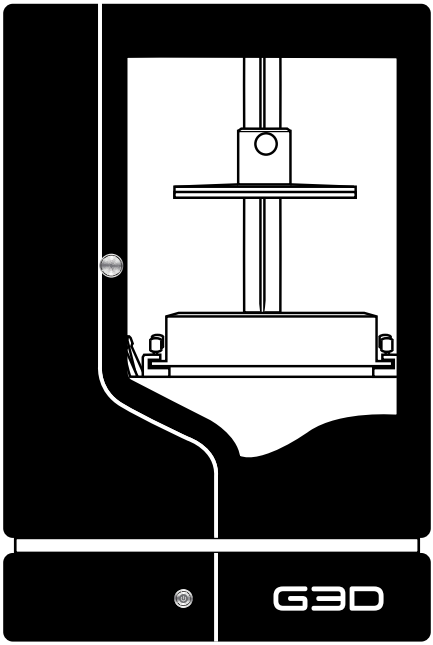
G3D

YOU THOUGHT IT WAS SCIENCE FICTION ®

# T-1000




UV 3D Printer **Manual** v1.8

The manual covers the most basic operations. For more information, please check g3dsys.com.

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# SPECIFICATIONS

## HARDWARE

| | | |
|---|---|---|
| Printer Technology | | DLP/SLA |
| Build Volume (Max) | | 441 cu. in<br>7,225,344 cu. mm |
| Build Dimension (Max) | | 7.06 in(L) x 5.29 in(W) x 11.81 in(H)<br>179.20 mm(L) x 134.40 mm(W) x 300.00 mm(H) |
| Thickness per layer(Z axis) | Max | 0.00472 in<br>120 µm |
| | Min | 0.00029 in<br>7.50 µm |
| Print Speed | | 25 min/in - 35min/in<br>0.98 min/mm - 1.38 min/mm |
| Material | | Photopolymer |
| Printer Weight | | 29 kg<br>63.9341 lbs |
| Dimension | H | 26.71 in<br>678.50 mm |
| | W | 17.86 in<br>453.60 mm |
| | L | 11.66 in<br>296.13 mm |
| Input | | 110 - 220 VAC, 0.8A<br>50 Hz - 60 Hz |
| Operating Temperature | | 17ºC - 40ºC<br>62.6ºF - 104ºF |

## SOFTWARE

| | |
|---|---|
| Connectivity | WiFi / USB / Ethernet |
| System compatibility | Windows / Mac / Linux |
| Supported file | G3D, G3L / importable STL |

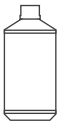
# SPECIFICATIONS

## XY RESOLUTION TO BUILD VOLUME

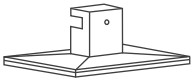
| Resolution | Build Dimension | Build Volume | Speed |
|---|---|---|---|
| 100 µm | 4.03 in x 3.02 in x 11.81 in<br>102.4 mm x 76.8 mm x 300 mm | 143.97 cu. In<br>2359296 cu. mm | 25 min/in<br>0.98 min/mm |
| 125 µm | 5.04 in x 3.78 x 11.81 in<br>128 mm x 96 mm x 300 mm | 224.96 cu. In<br>3686400 cu. mm | 32 min/in<br>1.26 min/mm |
| 150 µm | 6.05 in x 4.54 in x 11.81 in<br>153.6 mm x 115.2 mm x 300 mm | 323.94 cu. In<br>5308416 cu. mm | 35 min/in<br>1.38 min/mm |
| 175 µm | 7.06 in x 5.29 in x 11.81 in<br>179.2 mm x 134.4 mm x 300 mm | 440.92 cu. In<br>7225344 cu. mm | 35 min/in<br>1.38 min/mm |

## PACKAGE CONTENTS

Be sure all items listed here were included with your printer.



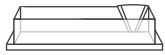
Resin



Build Plate

Clippers

Scraper



Vat

# ABOUT 3D PRINTING

## INTRODUCTION

3D printing refers to creation of three-dimensional objects from a cad file, one layer at a time. 3D printing is used in rapid prototyping and additive manufacturing.

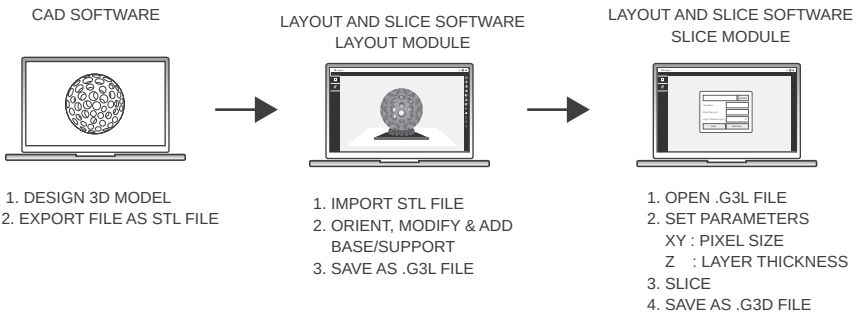
The most common and widely used in additive 3D printing are fused deposition modeling (FDM), stereolithography (SLA) and digital light processing (DLP).

One of the main advantages of 3D printing is the speed at which parts can be produced compared to traditional manufacturing methods. Another advantage in 3D printing is low cost in labor where it requires an operator to press a button, 3d printer then follows an automated process to produce the part. 3D printing allows customization and has a relatively small learning curve to operate successfully.

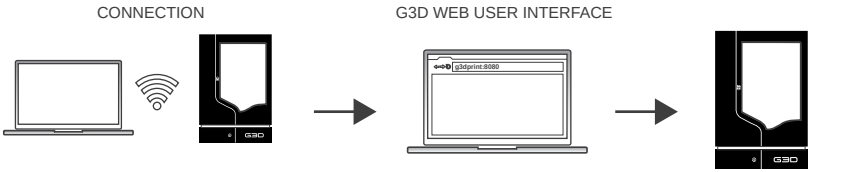
## T-1000 UV 3D PRINTING

The T-1000 is a digital light processing (DLP) 3D printer which uses ultraviolet light to cure the resin. Prints are produced by “photopolymerization” or hardening series of thin layers.

T-1000 UV 3D printing begins with a 3D model from a computer-aided design (CAD) software, you need to export the 3D model file as an STL file. Once you have the STL file, preparation must be done in the G3D Layout and Slice software. Import the STL file into the Layout module of the software, this is where you modify, orient and add support or base. After the layout is complete, save the file as a G3L file. In the Slice module of the software, open the G3L file, this is where you will slice the model of the file, in order to divide it into horizontal layers or known as the Z layer thickness or height. Once the model of the file is sliced, save the file as G3D file, this is now ready to upload in the G3D Web UI that will integrate with the T-1000 for printing.



# ABOUT 3D PRINTING




1. CONNECT YOUR DEVICE TO T-1000 PRINTER WIFI

SSID: G3DPrinter
PASSWORD: G3D54321

1. TYPE: G3DPRINT:8080 IN THE WEB BROWSER
2. UPLOAD .G3D FILE FOR PRINTING

3. PREPARE THE PRINTER

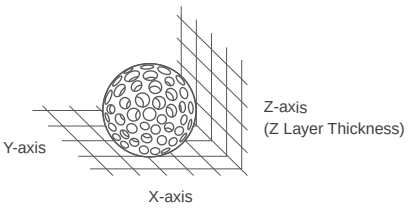
## DIGITAL LIGHT PROCESSING

T-1000 has a completely custom designed UV LED light engine that uses the DLP technology to cure liquid resin into solid prints. Digital Light Processing (DLP) is a display device that uses a digital micromirror device. The display device is a projector that will flash a single image of each layer across the entire build plate at once. Image is displayed as square pixels therefore the print is composed of voxels.

## PHOTOPOLYMER RESIN

G3D Photopolymer Resin is a type of polymer that changes its physical properties when exposed to UV light. Photopolymer liquid plastic resin turns to solid when introduced to a specific light source.

G3D Resins have optimal settings that can be your reference as your base line when your printer is set to XY:175 microns and Z Layer: 120 microns. Consult to the Resin Cure Matrix for more info about cure time settings.



# ABOUT 3D PRINTING

## SELF-LEVELING VAT

The T-1000 has a self-leveling vat system which ensures accurate prints. After several prints there's a possibility that the build plate can misalign after several usage. An unlevel build plate can cause first layer issues that can result in poor adhesion.

It is best to position the build plate before you print. This process will enable the printer to self-level the vat and align the build plate.

Ensure to untighten all vat lock screws before you press <⬚Position Build Plate> button or this can damage the self-leveling system of the printer.

If the printer is newly purchased or you will use a new vat on the printer, untighten all vat lock screws and release all calibration levers before you press <⬚Position Build Plate> button.

SELF-LEVELING VAT SYSTEM

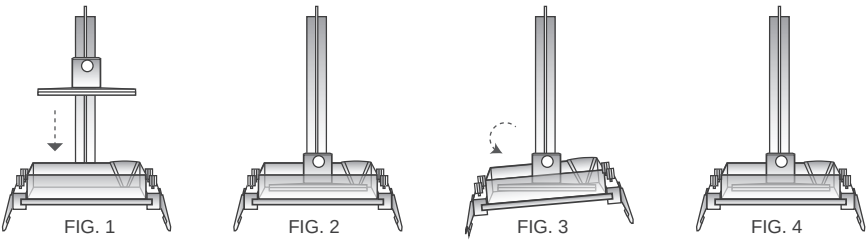
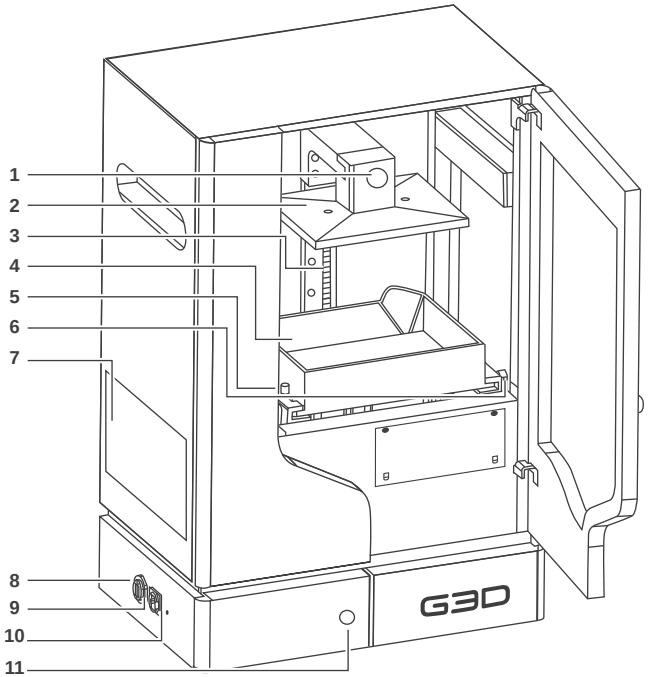


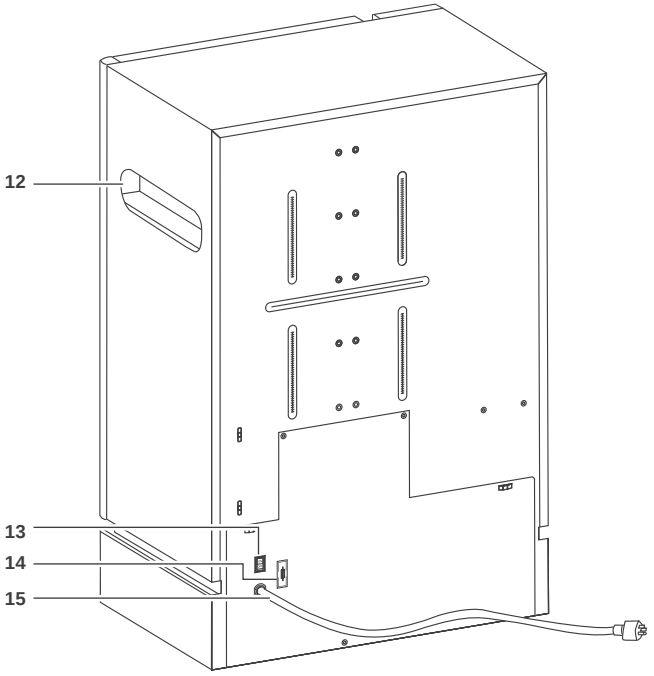
FIG. 1 FIG. 2 FIG. 3 FIG. 4

After self-leveling, lock all calibration levers and tighten all vat lock screws to prepare for printing.

# GETTING TO KNOW THE T-1000




| | | | |
|---|---|---|---|
| 1 | Build plate lock screw | 7 | Servo panel |
| 2 | Build plate | 8 | USB port |
| 3 | Acme thread | 9 | Ethernet port |
| 4 | Vat | 10 | WiFi reset |
| 5 | Vat lock screw | 11 | Power button |
| 6 | Calibration lever | | |




12 Lifting handle

13 Main switch

14 Fuse holder

15 Power cable

## SAFETY

Please read the following safety precautions before operating the T-1000 UV 3D printer.

**ELECTRICAL**
- Do not modify or disassemble the printer.
- Modification to the printer voids warranty.
- Ensure to discharge static electricity when you configure the printer or projector.
- Do not open front panel, rear panel and electronic panel while power is on.

**OPERATION**
- Keep printer in a well-ventilated area.
- Do not stare at the uv light for a long period of time during operation. It can cause permanent loss of vision.
- Do not operate with wet hands.
- Shake the resin bottle well before each use.
- Uninterruptible power supply recommended.

**GUIDELINES**
- Do not expose printer to extremely high temperatures, such as direct sunlight, flame or other sources of heat.
- Maintain the printer in a flat and sturdy surface.
- Keep printer dry.
- Do not remove the FEP sticker/film on the vat. It is for the vat's protection, manufacturer's warranty will be void if it's damaged or removed.

## EXPLANATION OF THE SYMBOLS

| Symbol | Description |
|---|---|
| ~ | AC voltage |
| | Indoor use only |
| | RECYCLING<br><br>This product bears the selective sorting symbol for Waste electrical and electronic equipment (WEEE). This means that this product must be handled pursuant to European directive 2012/19/EU in order to be recycled or dismantled to minimize its impact on the environment.<br><br>User has the choice to give his product to a competent recycling organization or to the retailer when he buys a new electrical or electronic equipment. |
| TÜVRheinland C US | Proof of compliance with the Canadian national standards adopted by the Standards Council of Canada (SCC) and US national standards. |

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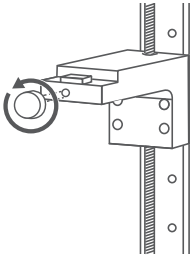
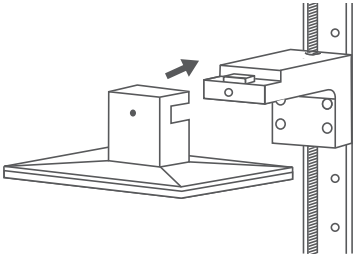
## SETTING THE BUILD PLATE

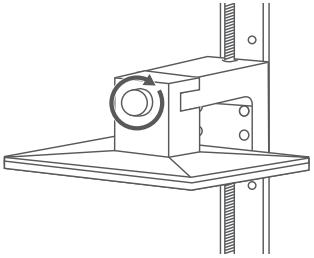
1. Remove the build plate lock screw.



2. Insert the build plate.



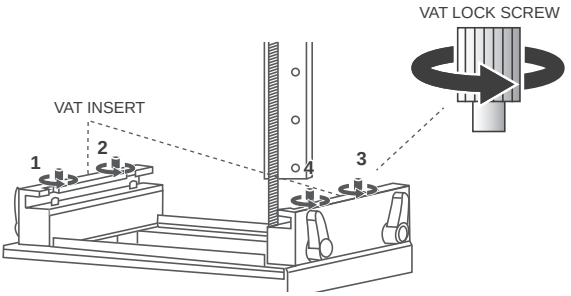
3. Insert and lock the build plate lock screw.



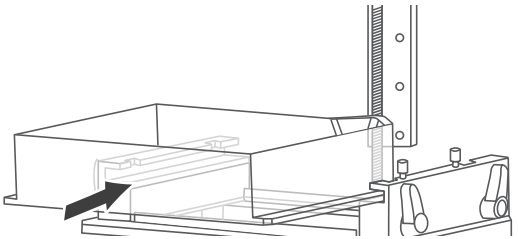
## SETTING THE VAT

See “Vat handling” on page 54.

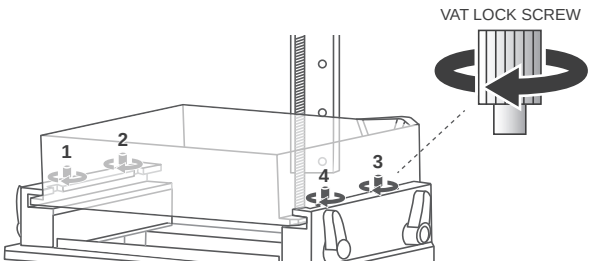
1. Untighten all vat lock screws.




2. Insert the vat.
   *Spout should be at the back right of the printer.

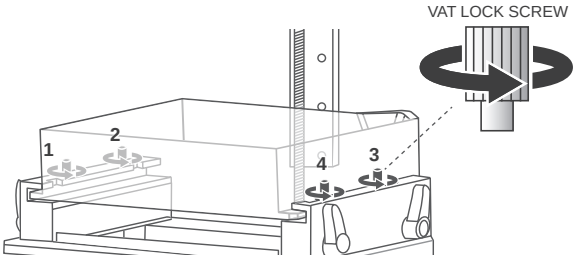


3. Tighten all vat lock screws.

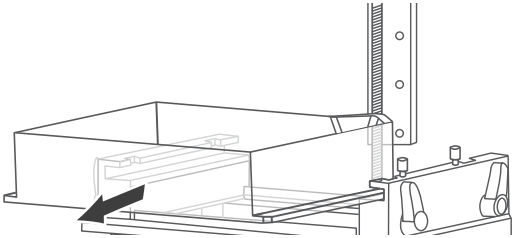


## REMOVING THE VAT

1. Untighten all vat lock screws.



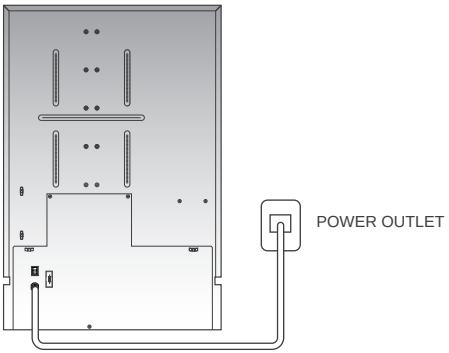

2. Remove the vat.



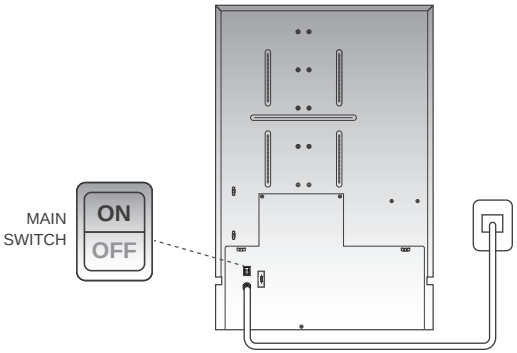
# GETTING STARTED

## POWERING ON

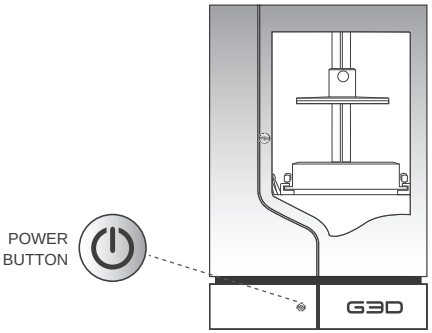
1. Plug the power cable into a power outlet. Uninterruptible power supply recommended.




2. Turn on main switch.

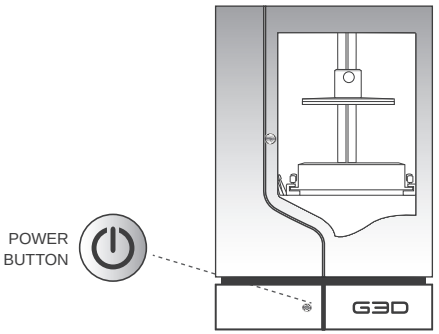



3. Press <⏻> power button for 2-3 seconds. A red light-emitting diode (LED) will illuminate from the power button.

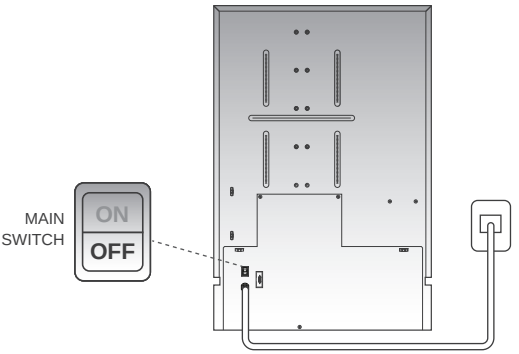


## POWERING DOWN

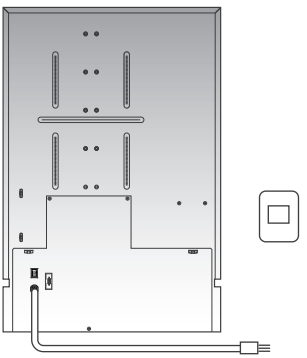
1. Press <⏻> power button and hold it down for 5 seconds then release the power button. Wait until the light goes off.




2. Turn off main switch.

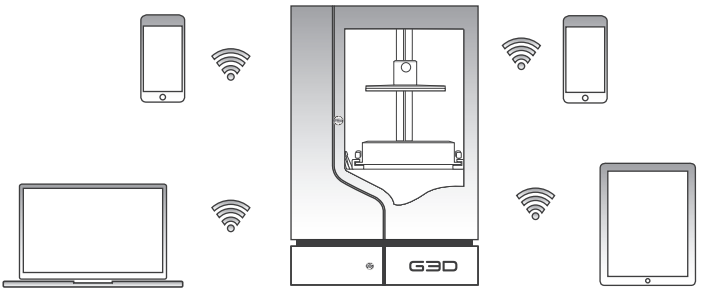



3. Unplug the power cable.



# GETTING STARTED

## CONNECTING YOUR DEVICE TO T-1000 PRINTER WIFI



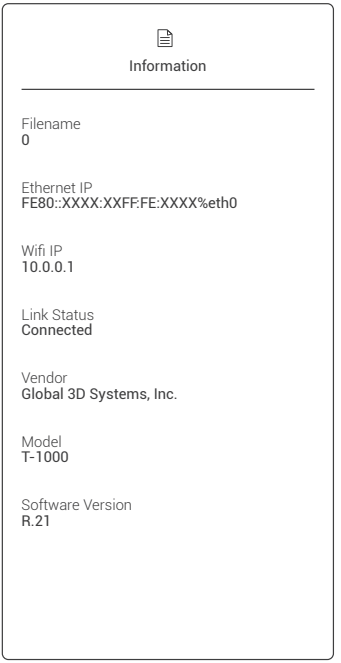

1. Search the “G3DPrinter” default (SSID) Printer WiFi in the network.
   It automatically appears 15 seconds after you power on the T-1000.

2. Enter the password “G3D54321” to connect.

3. In your web browser, type the default hostname <g3dprint:8080> in the url box and press enter.

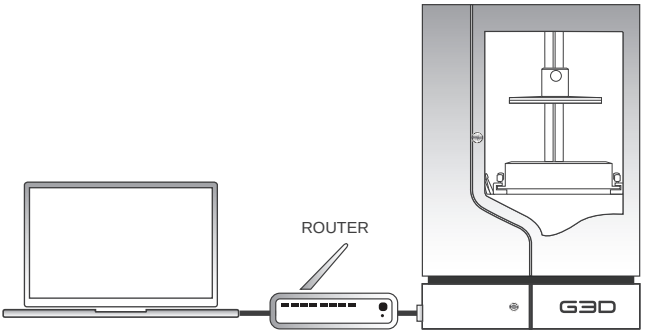
# GETTING STARTED

After an initial login, you will now see your ip address in the information box.




## CONNECTING VIA ETHERNET

Once you join your Home WiFi you can use Ethernet or use Ethernet only.



# GETTING STARTED

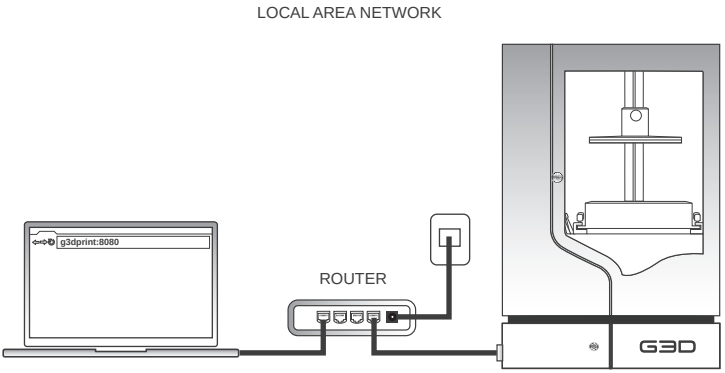
## CONNECTING VIA ETHERNET

This is for desktop without wireless capability to connect to the T-1000.

Equipment:

- Wired Router
- Power adapter with power cord

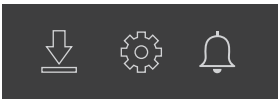
1. Plug the power adapter into a socket.
2. Connect one end of an ethernet cable into your desktop's network adapter.
3. Connect the other end of that ethernet cable on the port of your router.
4. Plug one end of an ethernet cable to ethernet port of T-1000.
5. Plug one end of that ethernet cable to the router.
6. Type g3dprint:8080 in the web browser, then press enter.



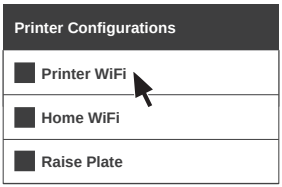
## CHANGING DETAILS OF T-1000 PRINTER WIFI SETTINGS

This is optional unless you have multiple printers.

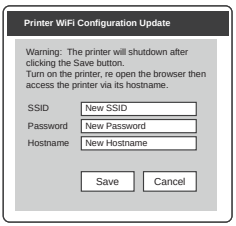
1. Press <⚙>cogwheel icon.



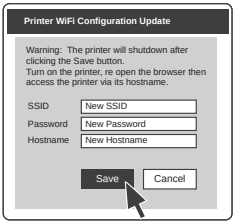
2. Select <Printer WiFi>.



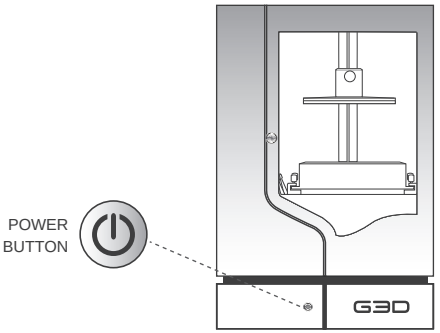

3. A printer configuration window will appear after you select the Printer WiFi. You need to type your new SSID, new password and new hostname. Only alphanumeric characters, underscore or dash are allowed for SSID and Hostname. Password should be >= 8 alphanumeric characters.




4. Save settings and confirm.



5. Printer will shutdown after you press the save button.
6. Push <⏻>power button to turn on the printer.



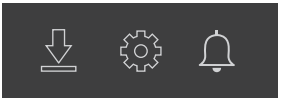

## OPTIONAL IF YOU CHANGE YOUR PRINTER WIFI

1. Search and connect to your <NewSSID> from your WiFi network.
2. Enter your <NewPassword> to connect.
3. Open the web browser and type your <NewHostname:8080> to access the G3D Web UI.

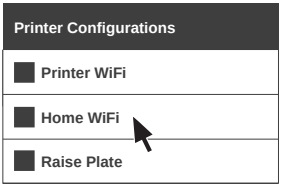
## CONNECTING T-1000 TO HOME WIFI

This is optional, you do not necessarily need to connect the printer to your Home WiFi unless you want to receive updates.

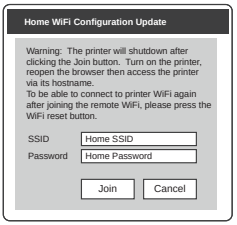
1. Press <⚙> cogwheel icon.



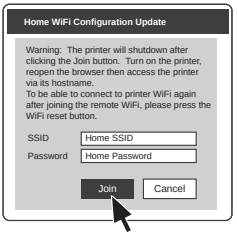
2. Select <Home WiFi>.



3. A printer configuration window will appear and you need to type your home SSID and home password.



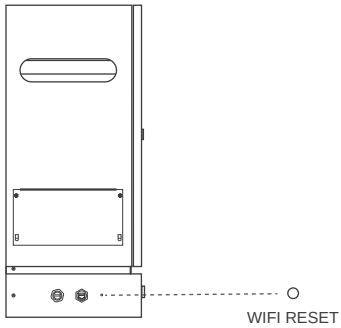

4. Join settings and confirm.




5. Printer will shutdown after you press the join button.
6. Push <⏻>power button to turn on the printer.
7. Connect the device to Home WiFi where the printer is also connected.
8. Wait 30 seconds and hit <↻> refresh button.
9. In web browser, if you haven't changed the hostname configuration, type <g3dprint:8080> in the url box and press enter to access the G3D Web UI.

## RESETTING WIFI CONNECTION

Once you are connected to your Home WiFi. The only way to re-connect your device to T-1000 Printer WiFi is to push manually the printer's reset WiFi switch, located at the left panel of printer. Use a small pin to push the WiFi reset. This resets all of your WiFi settings to default.



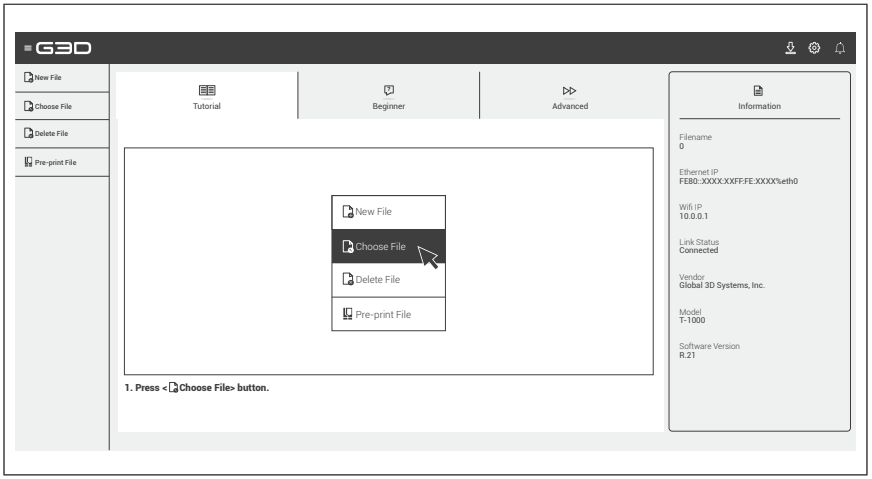

1. Push down the WiFi reset until the printer shuts down.
2. Push <⏻>power button to turn on printer.
3. Search and connect to "G3DPrinter" SSID using the default settings.

   SSID : G3DPrinter
   Password : G3D54321

4. In web browser, type the default hostname <g3dprint:8080> in the url box and press enter to access the Web UI.

## G3D WEB USER INTERFACE

The T-1000 has an onboard web interface which is the Web UI.  It integrates with the T-1000 to print 3D objects.

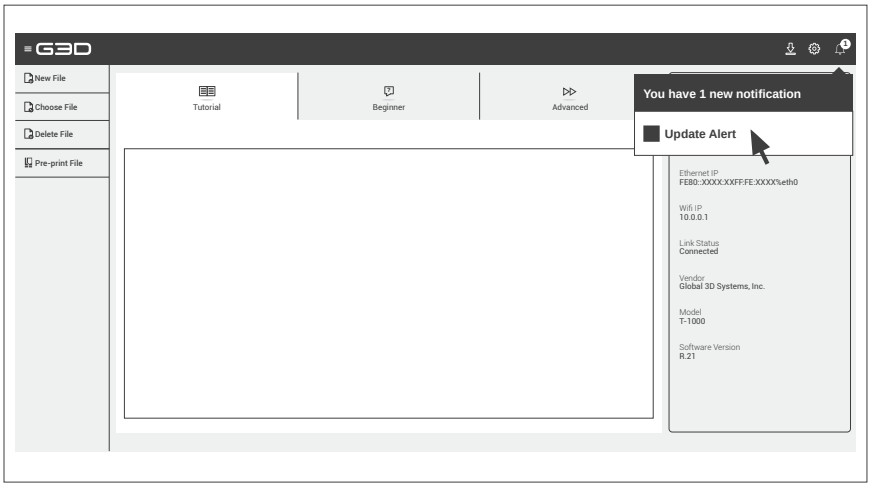


## UPDATING THE G3D WEB UI

When we update the G3D Web UI, you will receive a notification.

1. Make sure printer is connected to the internet.
2. Press <1> update alert button.
3. Press <Yes> button to confirm.
4. Printer will shutdown after an update.
5. Push <⏻> power button to turn on printer.

For ease of use, add a bookmark to your web user interface.

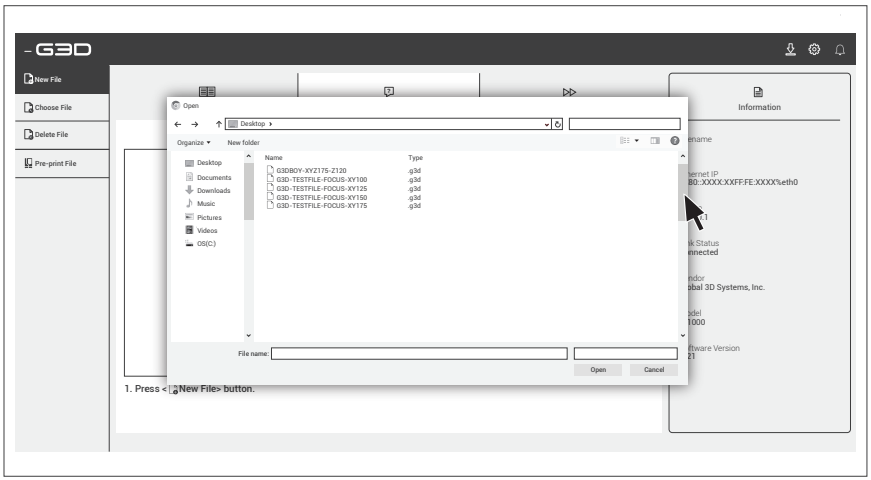


# PRINTING WITH T-1000

## UPLOADING A NEW FILE

Layout and slicing must be done before to prepare the G3D file, please check Layout and Slice manual for more details.

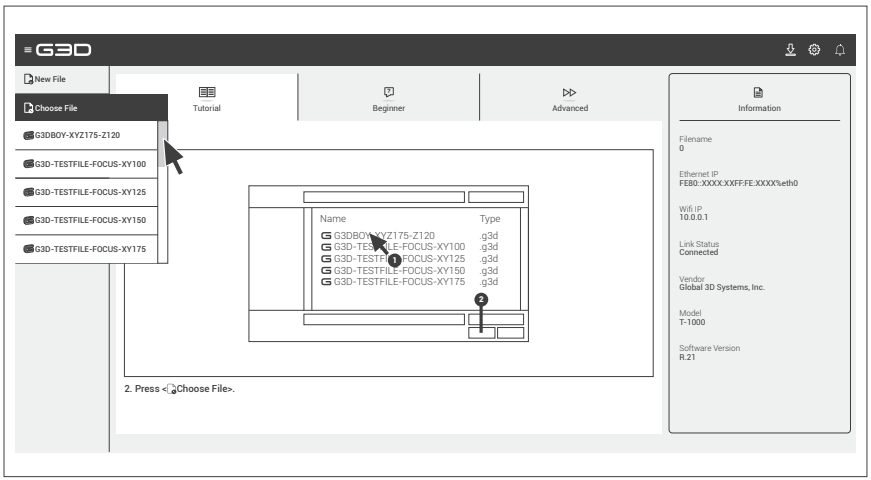
1. Press <New File> button.
2. Select a file. The selected .g3d file will be uploaded in G3D Web UI.




## CHOOSING A FILE

The G3D Web UI has several 3D files ready for printing. Layout and Slice software allows you to create .g3d files. Layout and Slice software allows the importation of 3D files in preparation for printing.

1. Press <Choose File> button.
2. Select a file.



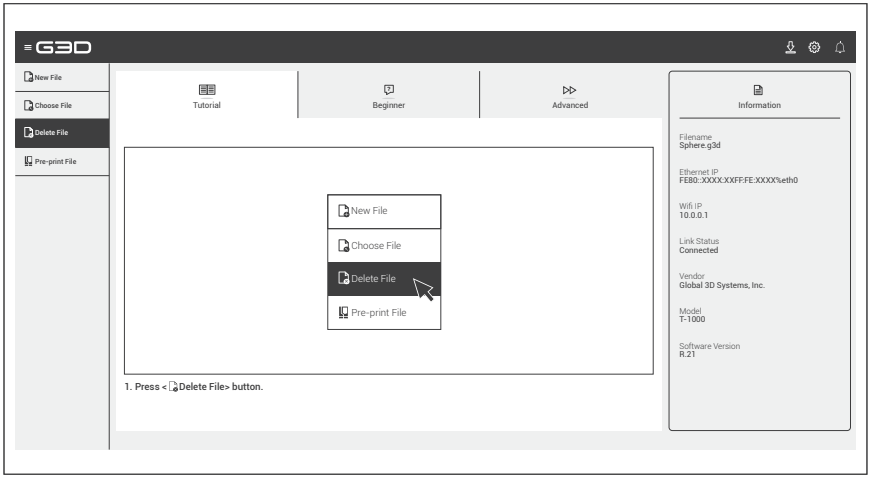
# PRINTING WITH T-1000

## UPLOADING FILES FROM USB

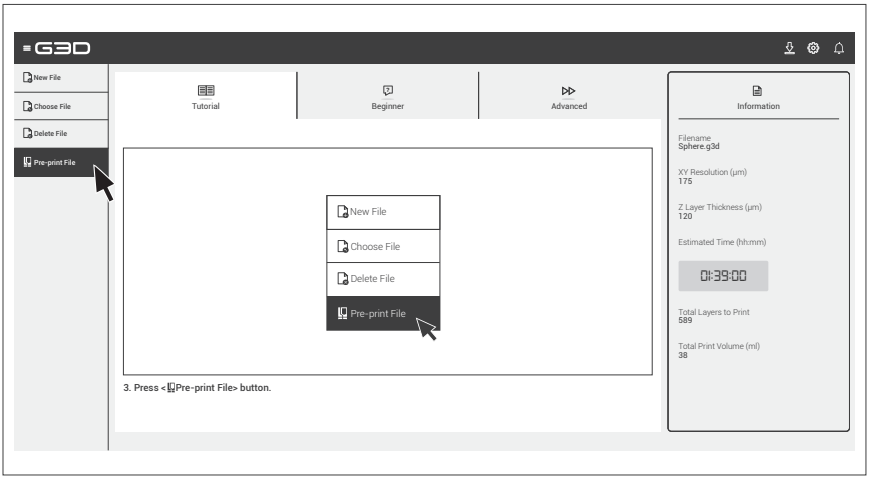
You can print a file from your USB by plugging it in the printer's USB port. All .g3d files in the root of the USB will be automatically detected by the software and will be in the dropdown list of the G3D Web UI.

## DELETING A FILE

Select a file and press <Delete File> button.

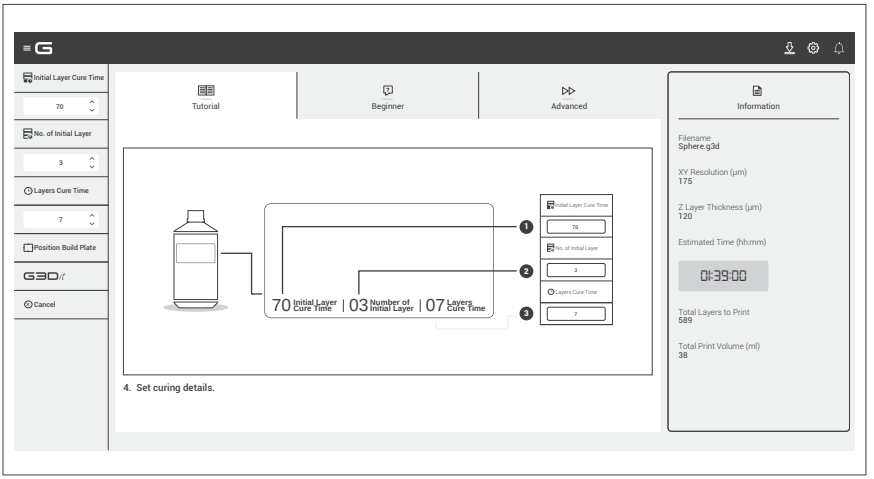


3. Press <Pre-print File> button.




## SETTING CURE TIME

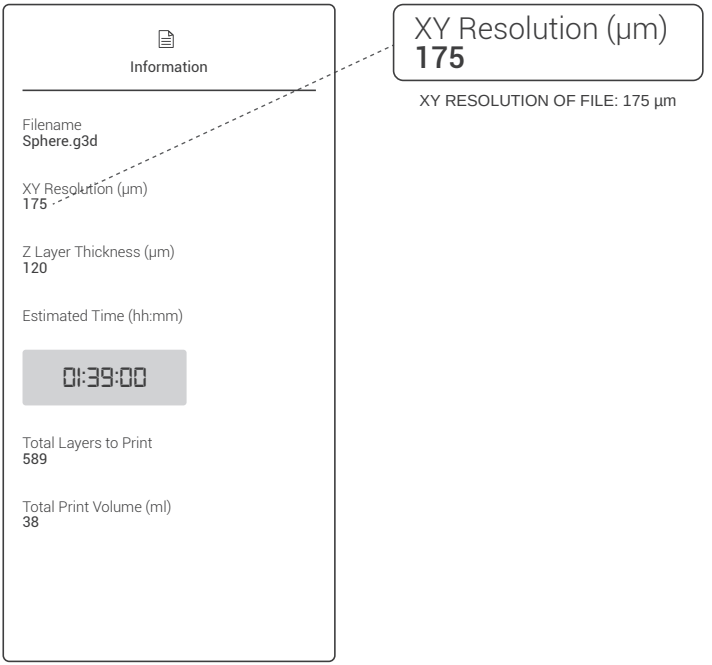
1. Input the curing details.




Refer to “Resin Cure Matrix on pages 57-59.

Be sure to check www.g3dsys.com for resin time setting updates.

Check the XY resolution of the file in the info box. Always confirm that your printer is set to the correct XY.



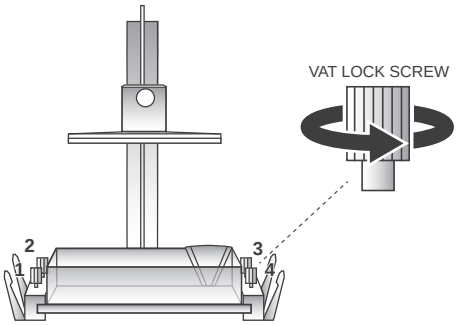
## CALIBRATING THE VAT

It is important to level the vat after you purchase your printer or when you need to replace a vat.

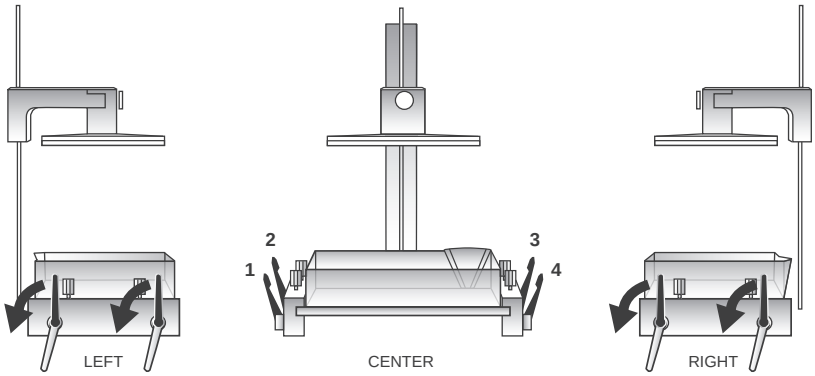
See “Removing the vat” on page 14 to replace a vat.

See “Setting the vat” on page 13 to replace a vat.

1. Untighten all vat lock screws.

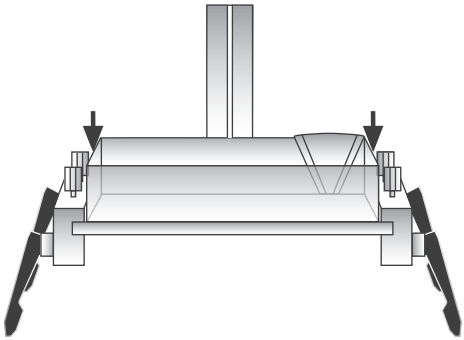



2. Release all calibration levers.



## CALIBRATING THE VAT

3. Gently push down the sides of the vat to check if the calibration levers are in unlocked position.



4. Press <⬚Position Build Plate> button and <Yes> button to confirm.
5. Wait until movement has stopped.

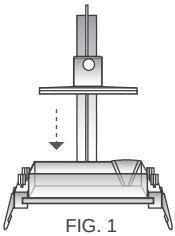


FIG. 1

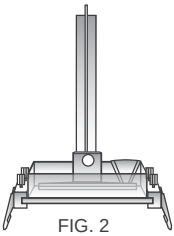


FIG. 2

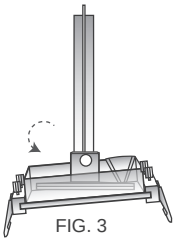


FIG. 3

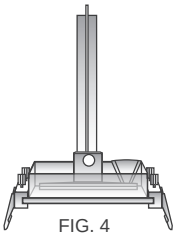
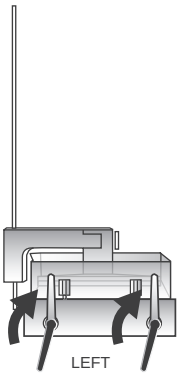
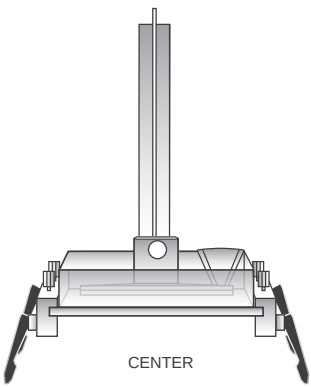
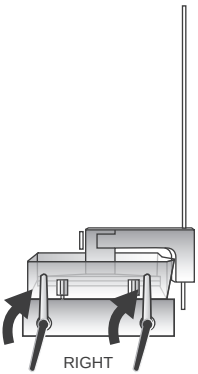


FIG. 4

6. Lock all calibration levers.

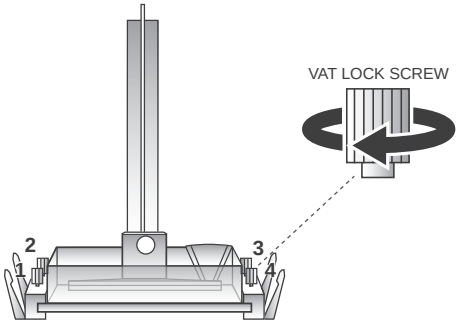

LEFT


CENTER


RIGHT

## CALIBRATING THE VAT

7. Tighten all vat lock screws.

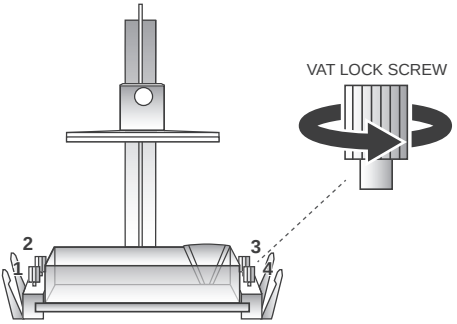


# PRINTING WITH T-1000

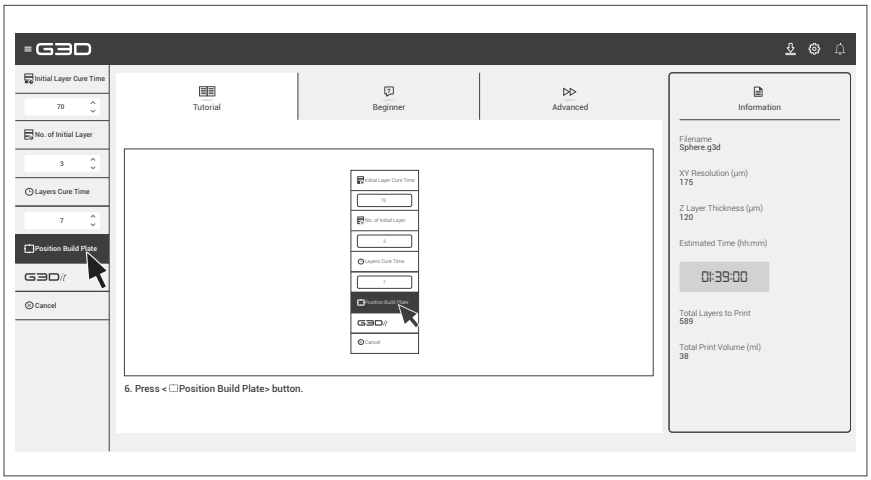
## POSITIONING THE BUILD PLATE

You must always position the build plate before printing.

1. Untighten all vat lock screws.

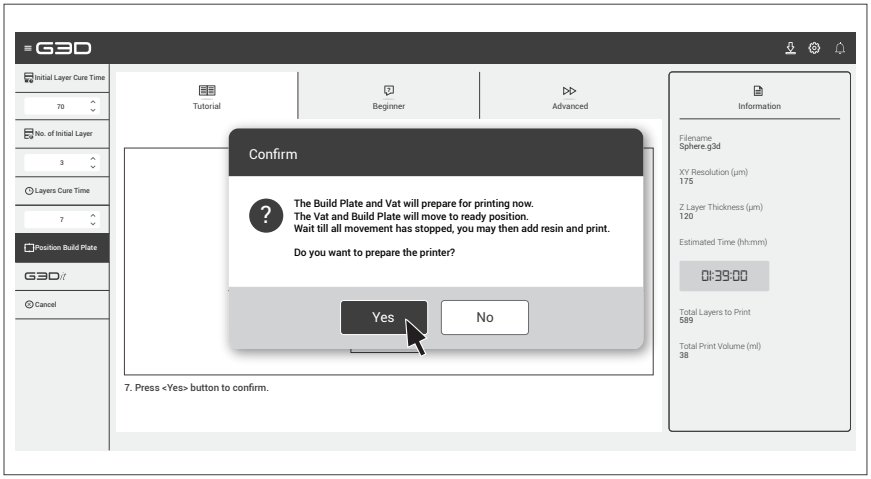



2. Press <Position Build Plate> button.



## POSITIONING THE BUILD PLATE

3. Press <Yes> button to confirm.




The printer will position the build plate. Wait until all movement has stopped. (Fig. 4)

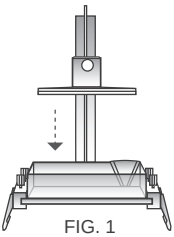


FIG. 1

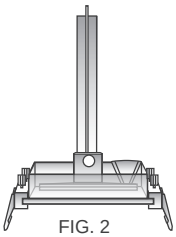


FIG. 2

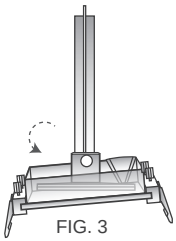


FIG. 3

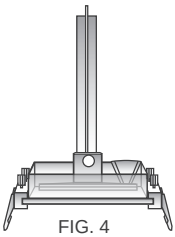
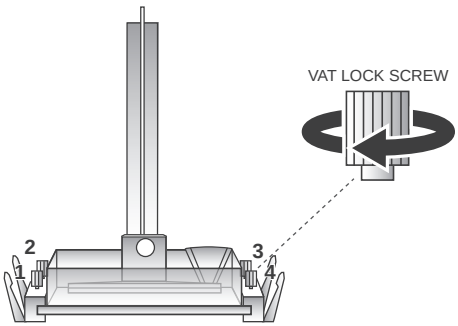


FIG. 4

4. Tighten all vat lock screws.



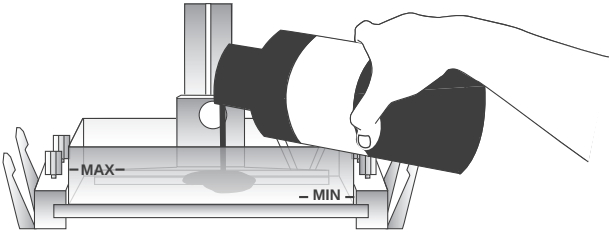
# PRINTING WITH T-1000

## FILLING THE VAT

Shake the resin bottle before each use.

Never overfill the vat past max line to avoid overflow and spill of resin inside the printer.

1. Pour resin into the vat before starting to print.




## PRINTING

The projector is set to a default XY resolution of 175 microns. If you will print a file with a different XY resolution, change the XY resolution setting of the projector and adjust the focus of the projector. The XY resolution of the projector should always match the XY resolution of the file.

See “Adjusting the XY resolution of the projector” on page 37.

See “Focusing the projector” on page 41.

1. Press < G3D/t > button to print.

### SAFETY PRECAUTIONS

Do not stare at the UV light for prolonged period of time, it is equivalent to staring at the sun which can cause sunburn on your eyeball.

The door window is UV protected. It should be closed during normal operations.

# PRINTING WITH T-1000

## PAUSE PRINTING

⚠ Pausing is not advised.

1. Press <Pause> button.

You can add more resin during printing.

## ABORT PRINTING

1. Press <Abort> button.
If you abort during printing, the build plate will move up and go back to its home position. Page will redirect to index page after 30 seconds.

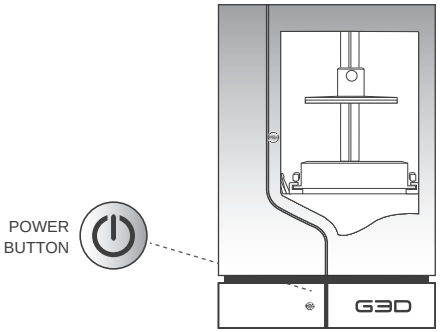
# ADJUSTING THE PROJECTOR

## ADJUSTING THE XY RESOLUTION OF PROJECTOR

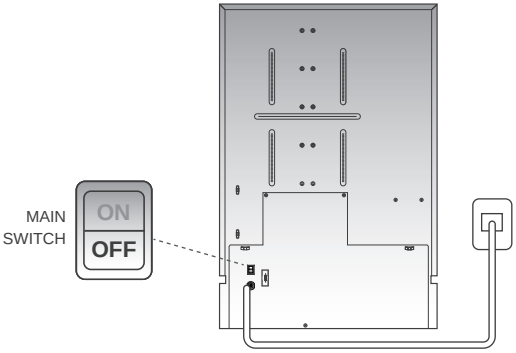
To effectively print a file, the XY resolution setting of the projector should have the same XY resolution indicated in the info box of G3D Web UI, if not issue will arise.

⚠ Do not open the rear panel while the power is on. Before you remove the rear panel make sure to touch any metal frame of the printer to avoid electrostatic discharge damage.

1. Press <⏻> power button and hold it down for 5 seconds then release the power button. Wait until the light goes off.

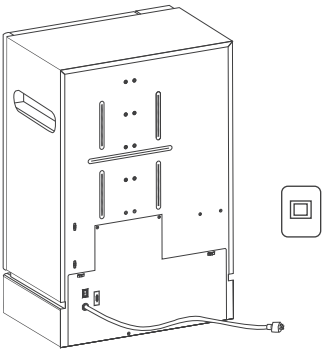



2. Turn off main switch.

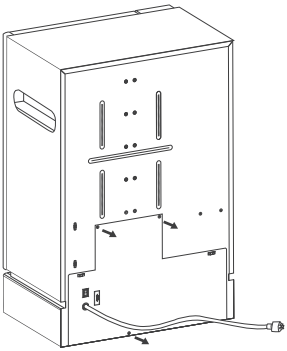


## ADJUSTING THE XY RESOLUTION OF PROJECTOR

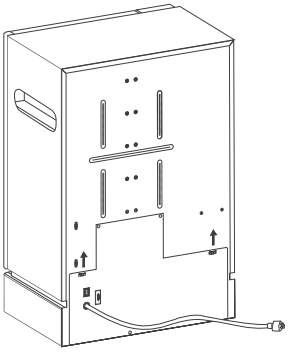
3. Unplug the power cable.



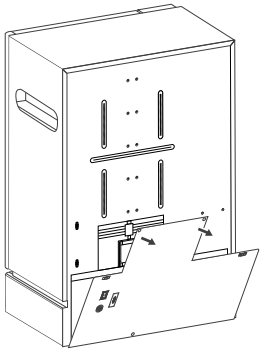
4. Remove screws.



5. Lift the panel to open.



5.1

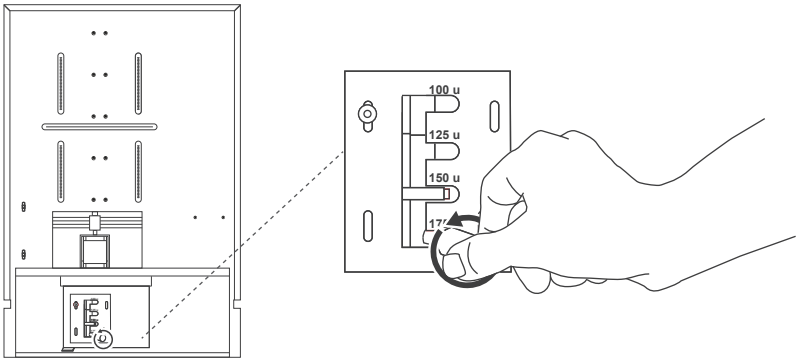


5.2

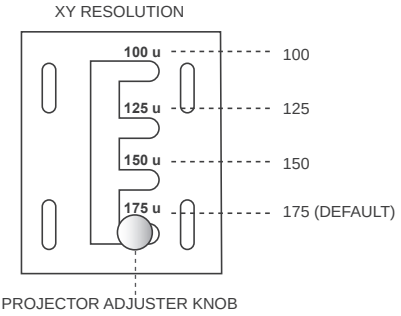
# ADJUSTING THE PROJECTOR

## ADJUSTING THE XY RESOLUTION OF PROJECTOR

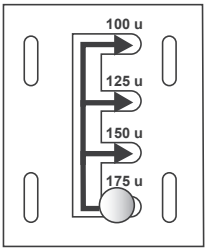
6. Slightly untighten the projector adjuster knob to allow free movement.




7. Set the required XY resolution of the file.

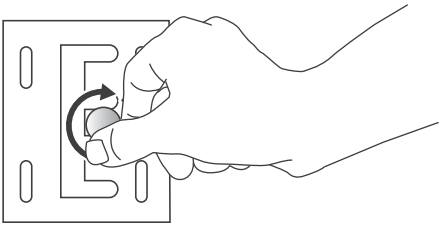



8. Put the projector adjuster knob into the slot for lock position.

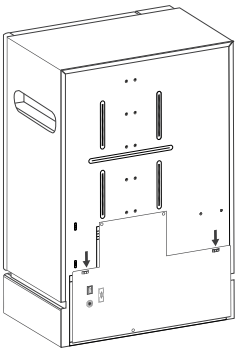


## ADJUSTING THE XY RESOLUTION OF PROJECTOR

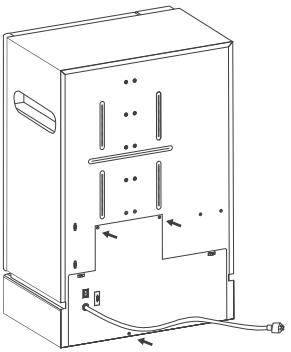
9. Tighten the projector adjuster knob, just enought to secure from slipping.



10. Insert hook panel to close.



11. Return screws.



# ADJUSTING THE PROJECTOR

## FOCUSING THE PROJECTOR

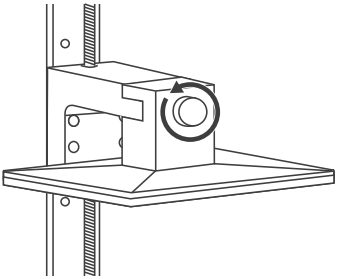
It is essential to focus the projector properly after you have adjusted the XY resolution setting of the projector. Make sure to calibrate the vat and raise the build plate before you adjust the focus of the projector.

See “Calibrating the vat” on page 30.

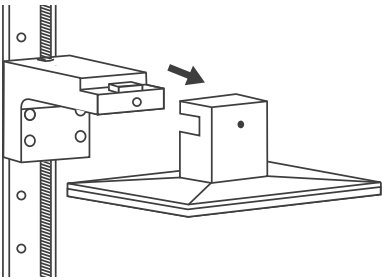
See “Raising the build plate” on page 47.

Be alert of moving mechanism.

1. Remove the build plate lock screw.



2. Remove the build plate.



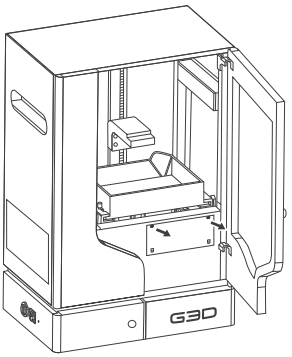
# ADJUSTING THE PROJECTOR

## FOCUSING THE PROJECTOR

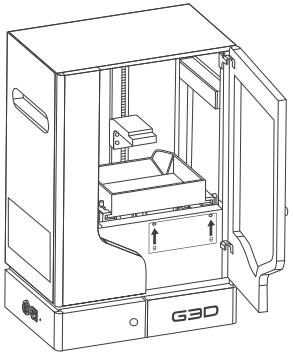
In preparation of focusing the projector, you need to open the front panel projector.

Discharge static electricity.

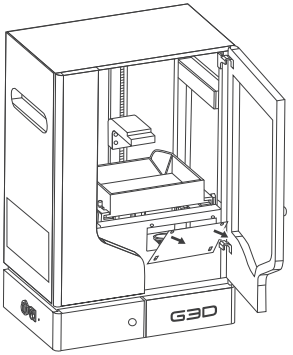
3. Remove screws.



4. Lift to open the front panel projector.



4.1



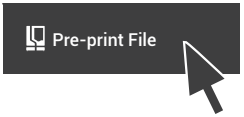
4.2

5. Load a “G3D-TESTFILE-FOCUS” file with the same XY resolution setting as the printer.

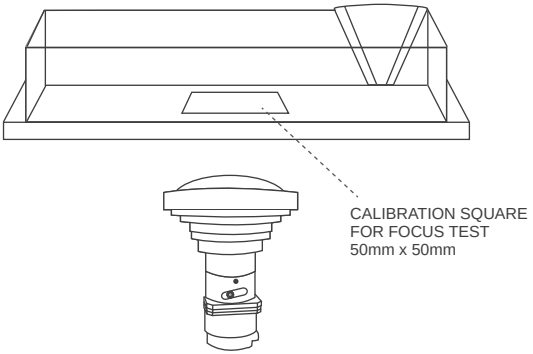
| XY RESOLUTION | CALIBRATION FOCUS TEST FILES |
|---|---|
| 100 µm | G3D-TESTFILE-FOCUS-XY100.g3d |
| 125 µm | G3D-TESTFILE-FOCUS-XY125.g3d |
| 150 µm | G3D-TESTFILE-FOCUS-XY150.g3d |
| 175 µm | G3D-TESTFILE-FOCUS-XY175.g3d |

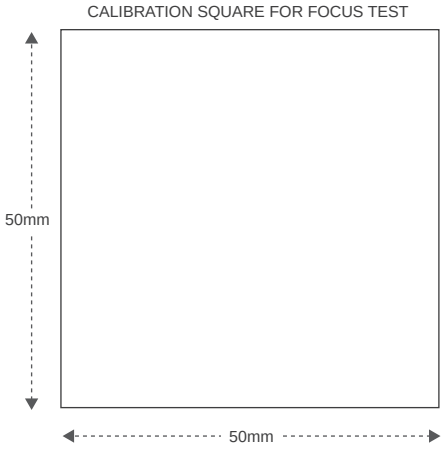
## FOCUSING THE PROJECTOR

6. Press <Pre-Print File> button.



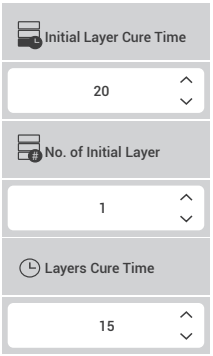

7. Place a white paper with a square outline on top of the vat, dimension should be 50mm x 50mm.



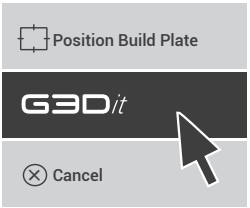
## FOCUSING THE PROJECTOR

8. Configure the following settings.




Wear safety glasses for uv light protection for prolong exposure.

9. Press < G3D*it* > button.



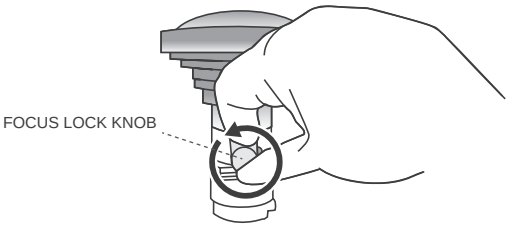

10. Ensure that the projected uv light of “G3D-TESTFILE-FOCUS” has identical dimension with the calibration square. The projected UV light should be sharp. If the uv light is blurred, adjust the focus ring of the projector.

# ADJUSTING THE PROJECTOR

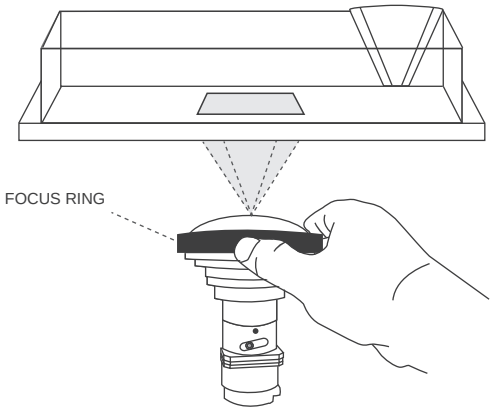
## FOCUSING THE PROJECTOR

⚠ Make sure not to drop the focus lock knob in the printer.

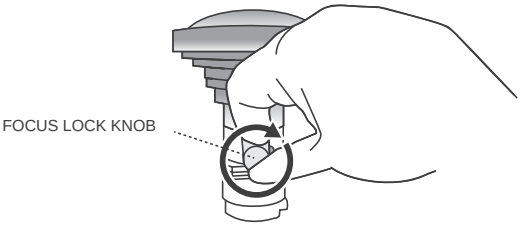
11. Slightly loosen the focus lock knob. Rotate the knob counter clockwise to a 360 degree only. Do not remove the focus lock knob from the projector.




12. Slowly dial the focus ring until the projected uv light of TestFocus appears sharp.

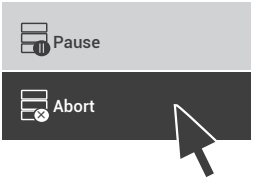



13. After focus is perfect, lock the focus lock knob.

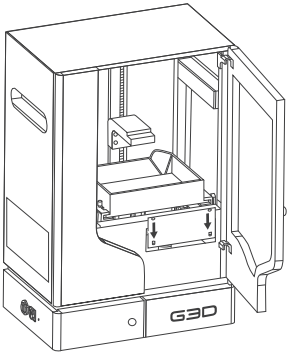


## FOCUSING THE PROJECTOR

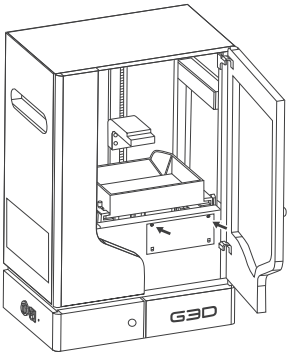
14. Press <Abort> button.




15. Insert and attach the front panel projector to the printer.




16. Return screws.




17. Attach the build plate to the bracket.

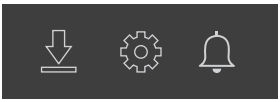
See “Setting the vat” on page 13.

# CLEANING GUIDE

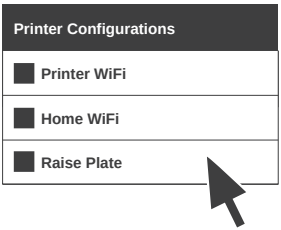
## RAISING THE BUILD PLATE

This procedure is optional. Normally, after printing or aborting, the build plate will move up and go back to its home position.

1. Press <⚙> cogwheel icon.



2. Press <Raise Plate> button.



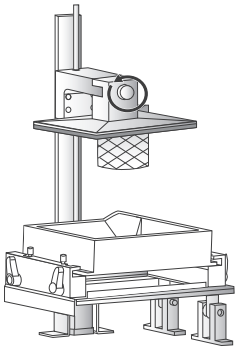

## REMOVING THE BUILD PLATE

Do not remove the vat before the build plate to ensure that the resin will not drip inside the printer.

Wear protective gloves.

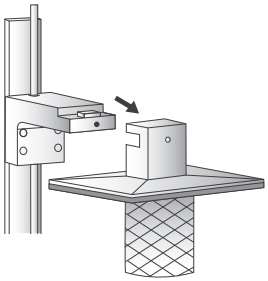
Wear safety glasses or goggles for eye protection.

1. Remove the build plate locking screw.



## REMOVING THE BUILD PLATE

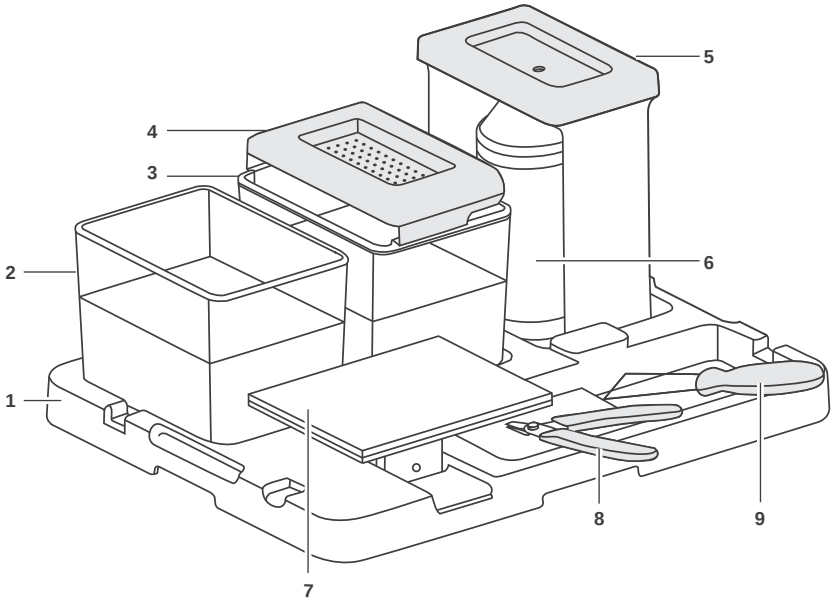
2. Remove the build plate from bracket.



# CLEANING GUIDE

## G3D PRINT WORKSTATION KIT

The cleanliness of your printer is as important as cleaning your prints. Proper care is essential for longer lasting printing. The print workstation kit will help you organize your cleaning materials and cleaning process of your printer and prints.



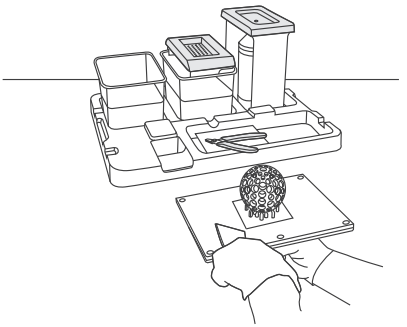

| | | | | | |
|---|---|---|---|---|---|
| 1 | Print Workstation Tray | 4 | Strainer | 7 | *Build Plate |
| 2 | Alcohol Tub | 5 | Funnel | 8 | *Clippers |
| 3 | Water Tub | 6 | *Bottle | 9 | *Scraper |

*Not included in the G3D print workstation kit.
*G3D Print Workstation Kit is optional, you can purchase separately.

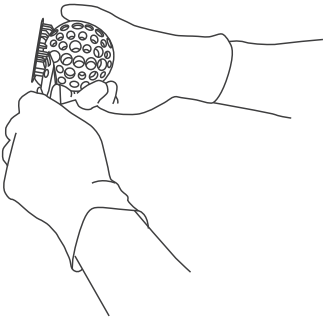
# CLEANING GUIDE

## REMOVING THE PRINT

1. Place the build plate with print on a flat ground. Use a scraper to remove the print from the build plate.

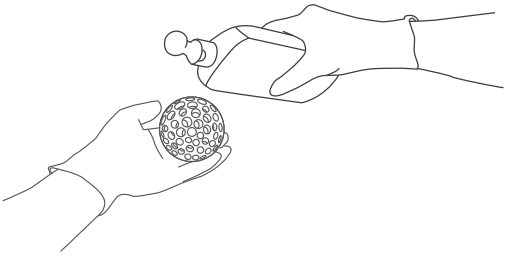


2. Use clippers to remove supports.



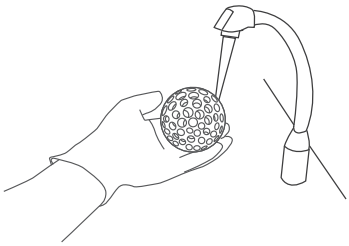
## CLEANING THE PRINT

1. Wash the print with grease cutting detergent soap.

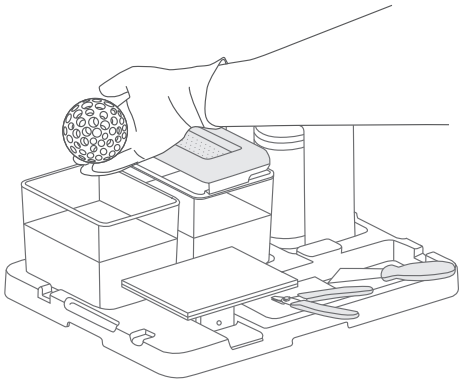


## CLEANING THE PRINT

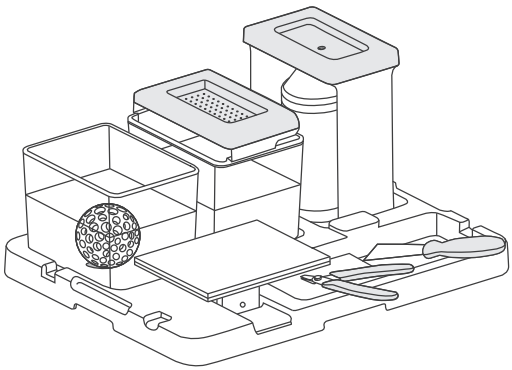
2. Rinse the print with clean water.



3. Place the print inside the alcohol tub.



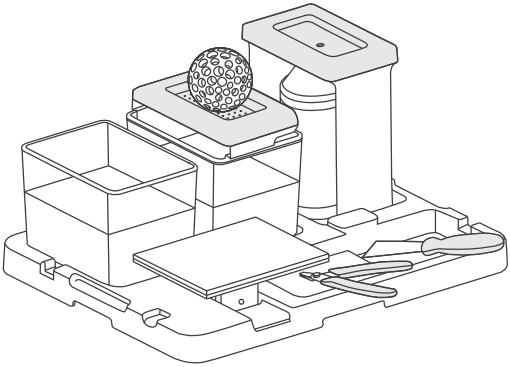
4. Soak the print for 2-3 minutes inside the alcohol tub.



# CLEANING GUIDE

## CLEANING THE PRINT

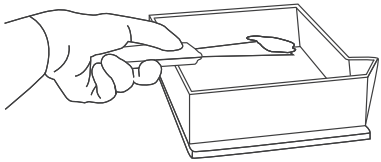
1. Let the print dry on top of the strainer.



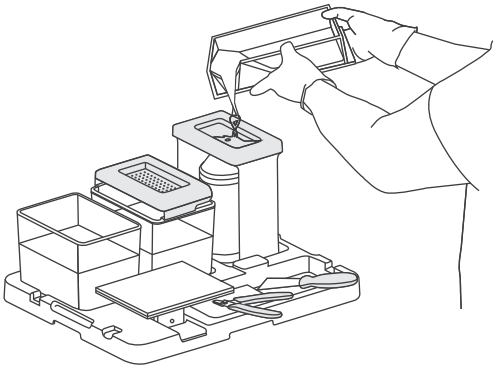
## CLEANING THE VAT

- Never use alcohol or acetone when cleaning the vat.
- Store the resin bottle in a cool, dry and well ventilated area away from direct sunlight.
- Never mix used resin to new resin. Save old bottles for used resin storage.
- Strainer not included in the print workstation kit.

1. Remove resin debris inside the vat.



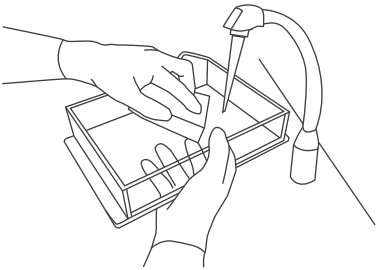
2. Use a strainer to separate resin from any solid particles. Pour the left over resin to an empty bottle.



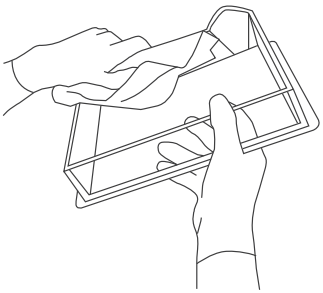
# CLEANING GUIDE

## CLEANING THE VAT

3. Wash and apply grease cutting detergent soap into the vat. Perform a quick leak test if you need to check the vat.



4. Rinse the vat with clean water.
5. Wipe the vat with a paper towel.



## CLEANING THE PROJECTOR

1. Power down the printer.
2. Use a microfiber cloth if projector has dust.
3. Gently wipe the lens in a circular motion.

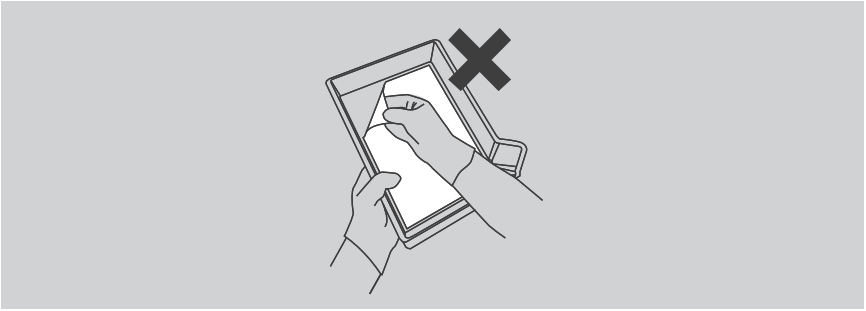
## CLEANING THE T-1000 AFTER PRINTING

1. Power down the printer.
2. Wipe the surface with a damp cloth to remove splash or splatter of resin.

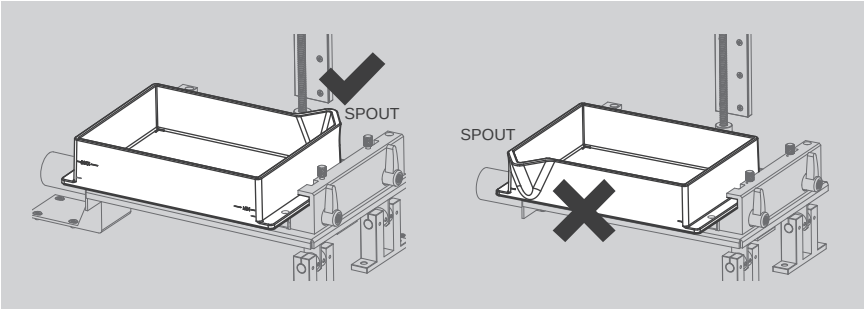
## VAT HANDLING

Prolong lifespan of vat with proper care and cleaning between prints. For best print results, ensure that the vat is always clean and scratch free.

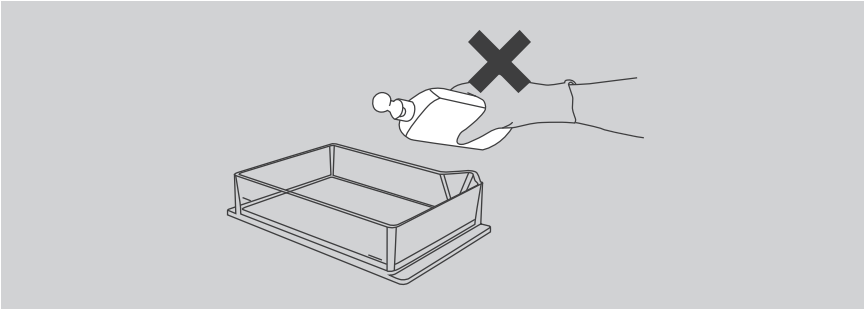
- Do not remove the FEP film on the vat. It is for the vat's protection, manufacturer's warranty will be void if it's damaged or removed.



- When setting the vat, spout should be located at the back right of the printer and resin level indicator should be in front.




- Never use alcohol or acetone when cleaning the vat.



- Replace the vat if there are any cracks or leaks.
- Clean the vat after printing.
- Do not leave the resin inside the vat when not in use or printing.
- Do not expose the vat to excessive heat or direct sunlight.

## TROUBLESHOOTING

### Q1. Why does the print always peel away from the build plate during printing?

Please try the following:

1. Make sure to calibrate the vat and position the build plate before printing.
2. Make sure to tighten the build plate lock screw, vat locking screws and calibration levers.
3. Check and improve the support structures of your 3d model. For more complexed designs, add supports.
4. Make sure to add base to your 3d model.
5. Adjust the cure time settings. Refer to the resin time settings of the manufacturer.

### Q2. Why is the print deformed or distorted after printing?

1. Make sure that the vat is clean and scratch-free.
2. Make sure that the projector is dust-free.
3. Make sure that your file and the projector is set to the correct XY resolution.
4. Adjust the focus of the projector.
5. Calibrate the vat and position the build plate.
6. Make sure that after printing you do not leave the print on the build plate hanging for prolong period of time.

### Q3. Why is the print misaligned after printing?

1. Make sure that the build plate is clean and without any evidence of residue.
2. Make sure to tighten the vat lock screws and calibration levers.

# CONTACT

## SUPPORT

Our website has extensive documentation and troubleshooting information about your T-1000 3D printer. It's a great resource when you want to try to solve issues quickly on your own.
**g3d@g3dsys.com**

If you need help resolving an issue with your T-1000 UV 3D printer, email our G3D Support Team. To help us understand your problem from the start, please include pictures or a video as attachments to your email.
**g3d@g3dsys.com**

## SALES

To learn about other G3D products, including G3D resin, please email us or visit our website.
**g3d@g3dsys.com**

## FEEDBACK

We would love to hear from you, tell us what's on your mind.
**g3d@g3dsys.com**

# RESIN CURE MATRIX

## STD CLEAR 101V5

| XY PROJECTOR SET | Z LAYER THICKNESS (microns) | INITIAL LAYER CURE TIME (seconds) | NUMBER OF INITIAL LAYER | LAYERS CURE TIME (seconds) |
|---|---|---|---|---|
| 175 | (L) 120 - 97.5 | 60 - 70 | 3 | 8 - 12 |
| | 90 - 67.5 | 60 - 70 | 3 | 8 - 12 |
| | 60 - 37.5 | 60 - 70 | 3 | 7 - 10 |
| | 30 - 7.5 (H) | 60 - 70 | 3 | 7 - 8 |
| 150 | (L) 120 - 97.5 | 50 - 60 | 3 | 6 - 12 |
| | 90 - 67.5 | 50 - 60 | 3 | 6 - 12 |
| | 60 - 37.5 | 50 - 60 | 3 | 6 - 10 |
| | 30 - 7.5 (H) | 50 - 60 | 3 | 6 - 8 |
| 125 | (L) 120 - 97.5 | 40 - 50 | 3 | 5 - 9 |
| | 90 - 67.5 | 40 - 50 | 3 | 5 - 9 |
| | 60 - 37.5 | 40 - 50 | 3 | 5 - 8 |
| | 30 - 7.5 (H) | 40 - 50 | 3 | 5 - 7 |
| 100 | (L) 120 - 97.5 | 35 - 40 | 3 | 4 - 8 |
| | 90 - 67.5 | 35 - 40 | 3 | 4 - 8 |
| | 60 - 37.5 | 35 - 40 | 3 | 4 - 7 |
| | 30 - 7.5 (H) | 35 - 40 | 3 | 4 - 7 |

Optimal Settings | (L) - Lowest Resolution | (H) - Highest Resolution

## STD YELLOW-T 102V1

| XY PROJECTOR SET | Z LAYER THICKNESS (microns) | INITIAL LAYER CURE TIME (seconds) | NUMBER OF INITIAL LAYER | LAYERS CURE TIME (seconds) |
|---|---|---|---|---|
| 175 | (L) 120 - 97.5 | 60 - 70 | 3 | 7 - 12 |
| | 90 - 67.5 | 60 - 70 | 3 | 7 - 12 |
| | 60 - 37.5 | 60 - 70 | 3 | 7 - 10 |
| | 30 - 7.5 (H) | 60 - 70 | 3 | 7 - 10 |
| 150 | (L) 120 - 97.5 | 55 - 65 | 3 | 7 - 10 |
| | 90 - 67.5 | 55 - 65 | 3 | 7 - 10 |
| | 60 - 37.5 | 55 - 65 | 3 | 7 - 8 |
| | 30 - 7.5 (H) | 55 - 65 | 3 | 7 - 8 |
| 125 | (L) 120 - 97.5 | 40 - 50 | 3 | 6 - 8 |
| | 90 - 67.5 | 40 - 50 | 3 | 6 - 8 |
| | 60 - 37.5 | 40 - 50 | 3 | 6 - 7 |
| | 30 - 7.5 (H) | 40 - 50 | 3 | 6 - 7 |
| 100 | (L) 120 - 97.5 | 35 - 40 | 3 | 3 - 7 |
| | 90 - 67.5 | 35 - 40 | 3 | 3 - 7 |
| | 60 - 37.5 | 35 - 40 | 3 | 3 - 6 |
| | 30 - 7.5 (H) | 35 - 40 | 3 | 3 - 6 |

Optimal Settings | (L) - Lowest Resolution | (H) - Highest Resolution

# RESIN CURE MATRIX

## STD RED-T 103V1

| XY PROJECTOR SET | Z LAYER THICKNESS (microns) | INITIAL LAYER CURE TIME (seconds) | NUMBER OF INITIAL LAYER | LAYERS CURE TIME (seconds) |
|---|---|---|---|---|
| 175 | (L) 120 - 97.5 | 60 - 70 | 3 | 7 - 12 |
| | 90 - 67.5 | 60 - 70 | 3 | 7 - 12 |
| | 60 - 37.5 | 60 - 70 | 3 | 7 - 10 |
| | 30 - 7.5 (H) | 60 - 70 | 3 | 7 - 10 |
| 150 | (L) 120 - 97.5 | 55 - 65 | 3 | 7 - 10 |
| | 90 - 67.5 | 55 - 65 | 3 | 7 - 10 |
| | 60 - 37.5 | 55 - 65 | 3 | 7 - 8 |
| | 30 - 7.5 (H) | 55 - 65 | 3 | 7 - 8 |
| 125 | (L) 120 - 97.5 | 40 - 50 | 3 | 6 - 8 |
| | 90 - 67.5 | 40 - 50 | 3 | 6 - 8 |
| | 60 - 37.5 | 40 - 50 | 3 | 6 - 7 |
| | 30 - 7.5 (H) | 40 - 50 | 3 | 6 - 7 |
| 100 | (L) 120 - 97.5 | 35 - 40 | 3 | 3 - 7 |
| | 90 - 67.5 | 35 - 40 | 3 | 3 - 7 |
| | 60 - 37.5 | 35 - 40 | 3 | 3 - 6 |
| | 30 - 7.5 (H) | 35 - 40 | 3 | 3 - 6 |

Optimal Settings | (L) - Lowest Resolution | (H) - Highest Resolution

## STD BLUE-T 104V1

| XY PROJECTOR SET | Z LAYER THICKNESS (microns) | INITIAL LAYER CURE TIME (seconds) | NUMBER OF INITIAL LAYER | LAYERS CURE TIME (seconds) |
|---|---|---|---|---|
| 175 | (L) 120 - 97.5 | 60 - 70 | 3 | 7 - 12 |
| | 90 - 67.5 | 60 - 70 | 3 | 7 - 12 |
| | 60 - 37.5 | 60 - 70 | 3 | 7 - 10 |
| | 30 - 7.5 (H) | 60 - 70 | 3 | 7 - 10 |
| 150 | (L) 120 - 97.5 | 55 - 65 | 3 | 7 - 10 |
| | 90 - 67.5 | 55 - 65 | 3 | 7 - 10 |
| | 60 - 37.5 | 55 - 65 | 3 | 7 - 8 |
| | 30 - 7.5 (H) | 55 - 65 | 3 | 7 - 8 |
| 125 | (L) 120 - 97.5 | 40 - 50 | 3 | 6 - 8 |
| | 90 - 67.5 | 40 - 50 | 3 | 6 - 8 |
| | 60 - 37.5 | 40 - 50 | 3 | 6 - 7 |
| | 30 - 7.5 (H) | 40 - 50 | 3 | 6 - 7 |
| 100 | (L) 120 - 97.5 | 35 - 40 | 3 | 3 - 7 |
| | 90 - 67.5 | 35 - 40 | 3 | 3 - 7 |
| | 60 - 37.5 | 35 - 40 | 3 | 3 - 6 |
| | 30 - 7.5 (H) | 35 - 40 | 3 | 3 - 6 |

Optimal Settings | (L) - Lowest Resolution | (H) - Highest Resolution

# RESIN CURE MATRIX

## STD GRAY-T 107V1

| XY PROJECTOR SET | Z LAYER THICKNESS (microns) | INITIAL LAYER CURE TIME (seconds) | NUMBER OF INITIAL LAYER | LAYERS CURE TIME (seconds) |
|---|---|---|---|---|
| 175 | (L) 120 - 97.5 | 70 - 80 | 3 | 10 - 14 |
| | 90 - 67.5 | 70 - 80 | 3 | 10 - 14 |
| | 60 - 37.5 | 70 - 70 | 3 | 8 - 12 |
| | 30 - 7.5 (H) | 70 - 70 | 3 | 8 - 12 |
| 150 | (L) 120 - 97.5 | 60 - 70 | 3 | 9 - 12 |
| | 90 - 67.5 | 60 - 70 | 3 | 9 - 12 |
| | 60 - 37.5 | 55 - 65 | 3 | 8 - 10 |
| | 30 - 7.5 (H) | 55 - 65 | 3 | 8 - 10 |
| 125 | (L) 120 - 97.5 | 55 - 65 | 3 | 8 - 10 |
| | 90 - 67.5 | 55 - 65 | 3 | 8 - 10 |
| | 60 - 37.5 | 45 - 55 | 3 | 7 - 8 |
| | 30 - 7.5 (H) | 45 - 55 | 3 | 7 - 8 |
| 100 | (L) 120 - 97.5 | 45 - 55 | 3 | 4 - 7 |
| | 90 - 67.5 | 45 - 55 | 3 | 4 - 7 |
| | 60 - 37.5 | 35 - 40 | 3 | 4 - 6 |
| | 30 - 7.5 (H) | 35 - 40 | 3 | 4 - 6 |

Optimal Settings | (L) - Lowest Resolution | (H) - Highest Resolution