

PROFLUIDICS 285D  
PROFLUIDICS 285D

CADworks3D  
μMICROFLUIDICS PROFLUIDICS 285D

# USER MANUAL

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Utility V6.3.0 and Touchscreen Panel



# **In** dex

<b>1</b>	<b>System requirement</b>	<b>Pg.2</b>
<b>2</b>	<b>Open Utility and Connect to printer</b>	<b>Pg.3-4</b>
<b>3</b>	<b>Import file</b>	<b>Pg.5</b>
<b>4</b>	<b>Hot key</b>	<b>Pg.6</b>
<b>5</b>	<b>Semi-Auto mode</b>	<b>Pg.7</b>
<b>6</b>	<b>Duplicate and resize model</b>	<b>Pg.8-11</b>
<b>7</b>	<b>Generate Nameplate</b>	<b>Pg.12</b>
<b>8</b>	<b>Auto arrangement</b>	<b>Pg.13</b>
<b>9</b>	<b>Auto support</b>	<b>Pg.14</b>
<b>10</b>	<b>Model arrangement</b>	<b>Pg.15-22</b>
<b>11</b>	<b>Build supports</b>	<b>Pg.23-29</b>
<b>12</b>	<b>Build support – View mode</b>	<b>Pg.30-32</b>
<b>13</b>	<b>Tool bar</b>	<b>Pg.33-38</b>
<b>14</b>	<b>Printer setting</b>	<b>Pg.39-52</b>
<b>15</b>	<b>Engineering mode (computer)</b>	<b>Pg.53-55</b>
<b>16</b>	<b>Printing record and update firmware</b>	<b>Pg.56</b>
<b>17</b>	<b>Print via touch screen panel</b>	<b>Pg.57-64</b>

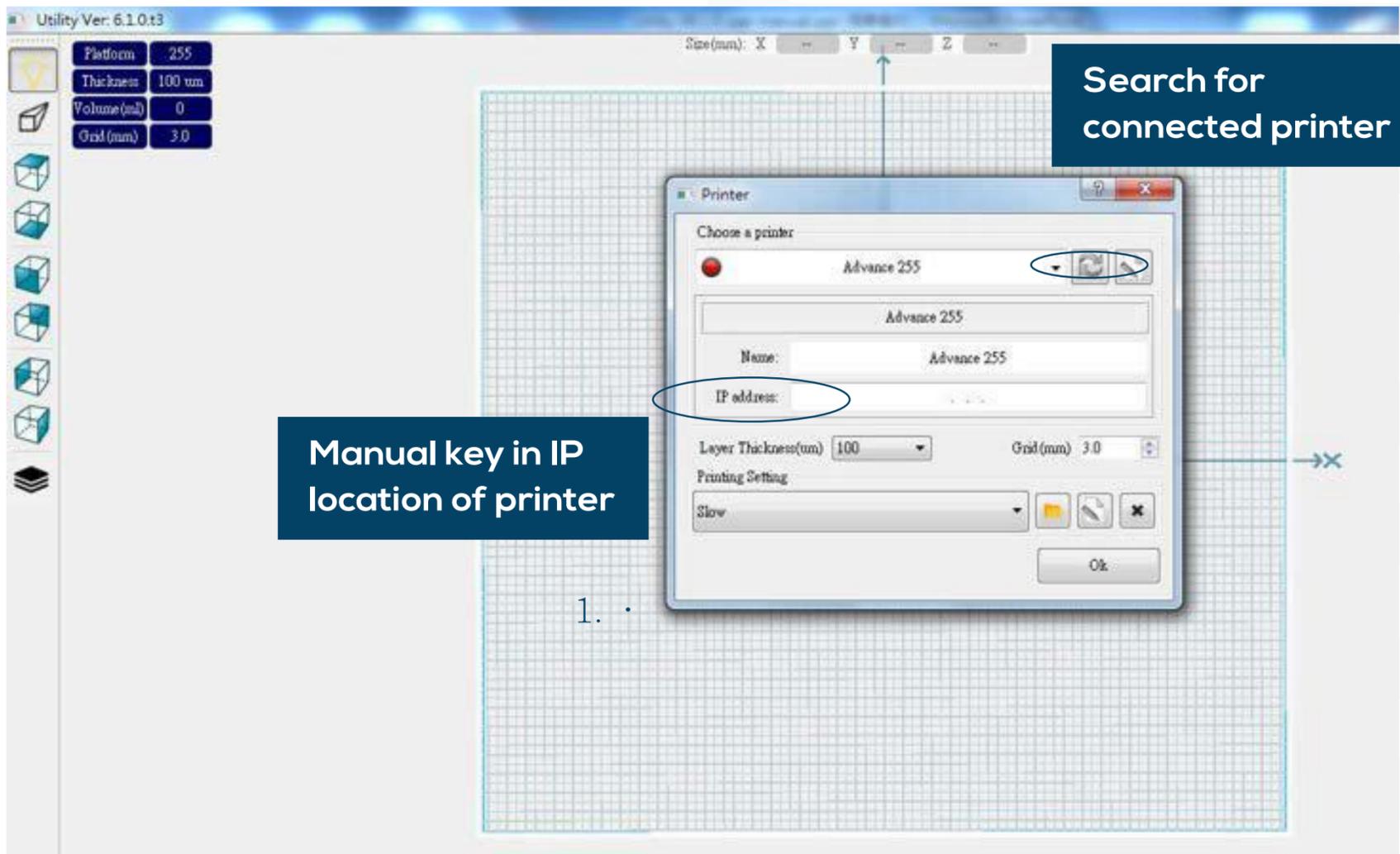
# S system requirements

Minimum PC requirements for using Utility: If your device falls short, installation is still possible but may result in a subpar experience.

Operating system:	Windows 10
CPU:	Intel Core i7 or above
RAM:	8 GB or above
Hard drive space:	250 GB SSD or above
Graphic cards:	Dedicated Graphics 2GB or above ; Support Open GL 3.3 or above
Browser:	Use Google Chrome only
Wifi Dongle:	Advance Series/ Profession Series / Prime Series / Hyper Series suggest to use with D-Link DWA-127 Wireless Networking Adapter. Ultra Series suggest to use with EW-7811Un Other brand and model of wireless network adapter may not compatible to our printer

# Open Utility and Connect printer

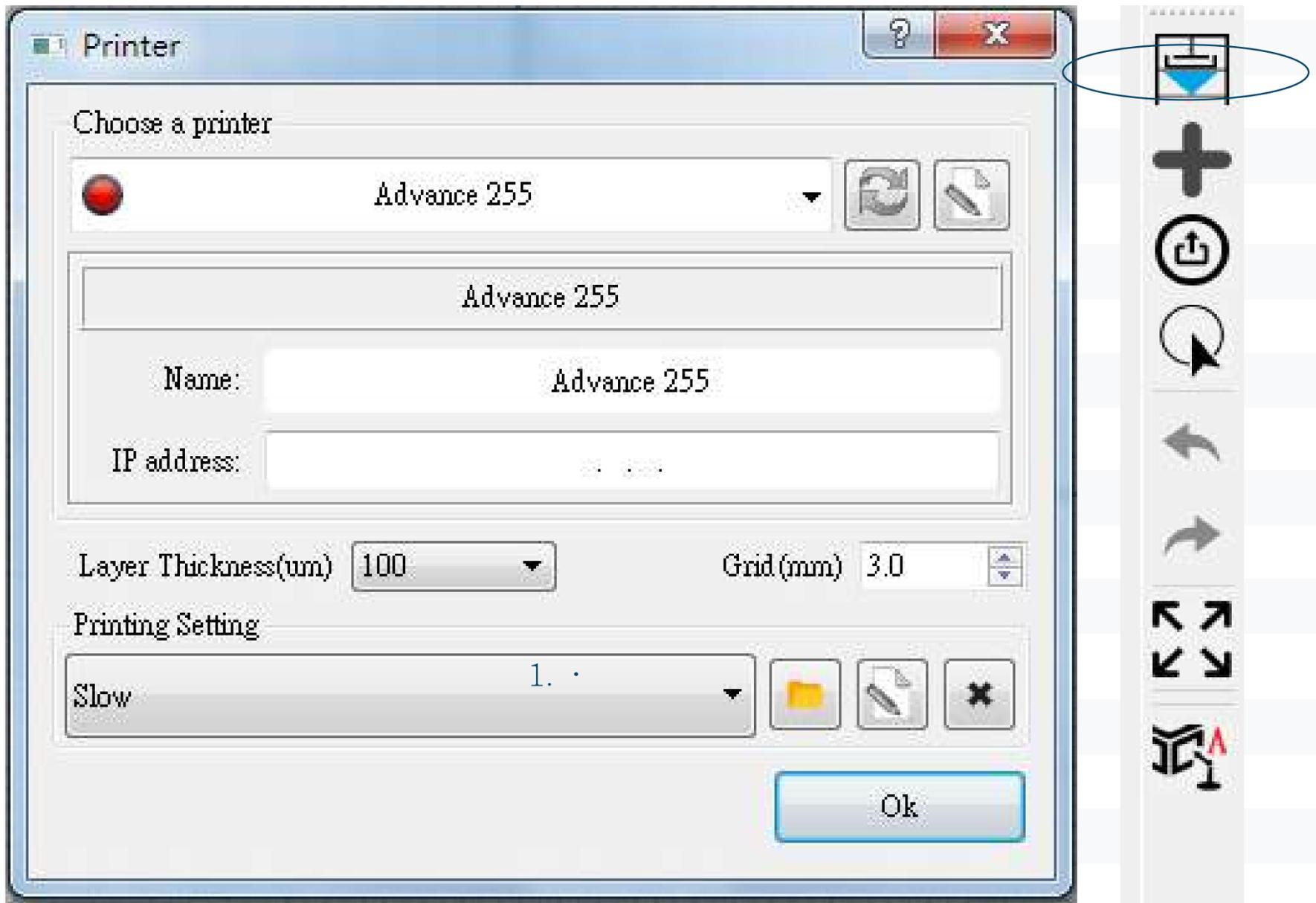
1. Unzip the installation file, and click Utility.exe
2. Need to connect to printer first, otherwise cannot use Utility



To connect your printer to a laptop:

- Use an RJ-45 cable for a basic connection (1 minute).
- Connect both devices to a local area network (a few seconds).
- Utilize an IP sharer for quick connectivity (a few seconds).
- Insert a WIFI dongle into the printer's USB port, enable WIFI in engineering mode, and connect to the network specified on the printer (a few seconds).

# Choose a Printer



- Choose the desired printer and select the appropriate building platform size.
- Adjust the Z layer thickness and set the grid size of the building platform.
- Ensure to input the printer information each time you utilize this panel.

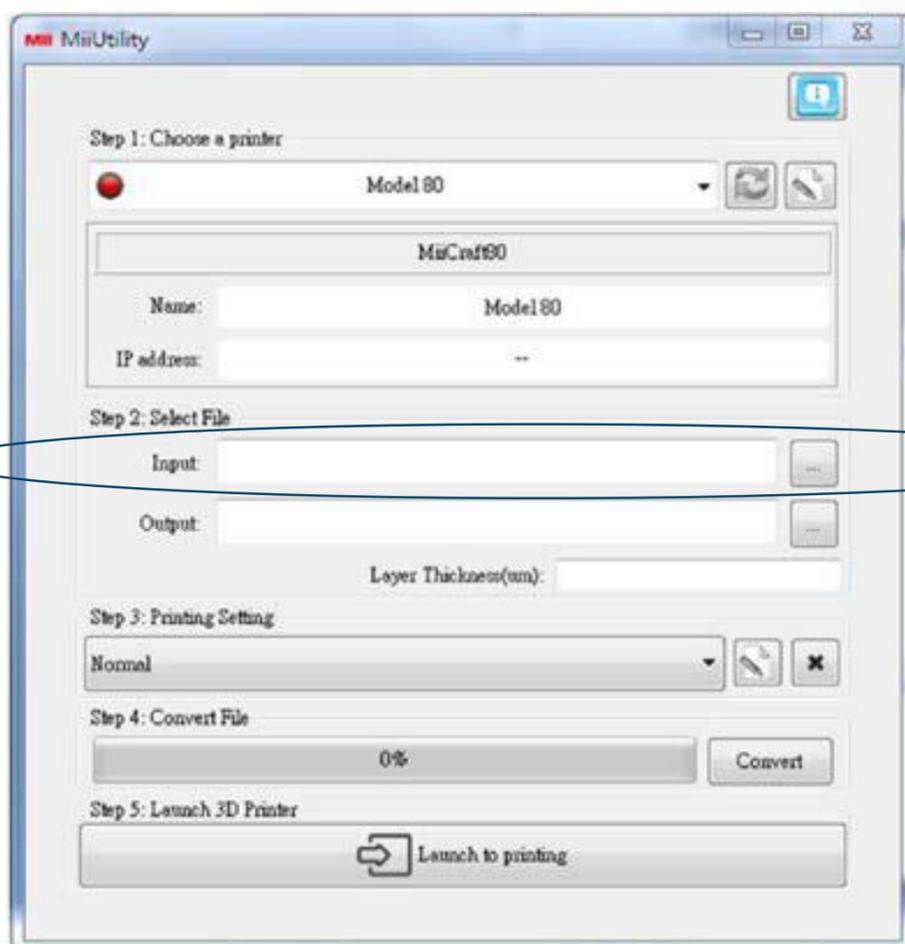
## Printer Information

Platform	255
Thickness	100 um
Volume (ml)	0
Grid (mm)	3.0

# Import STL Files

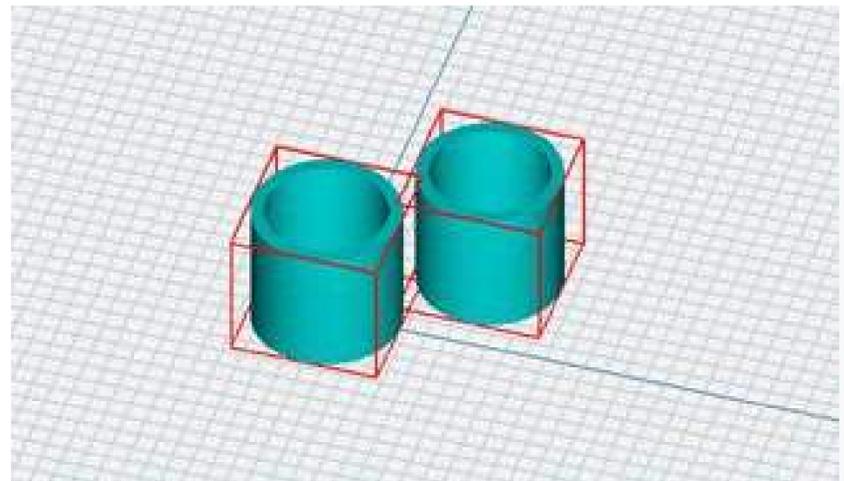
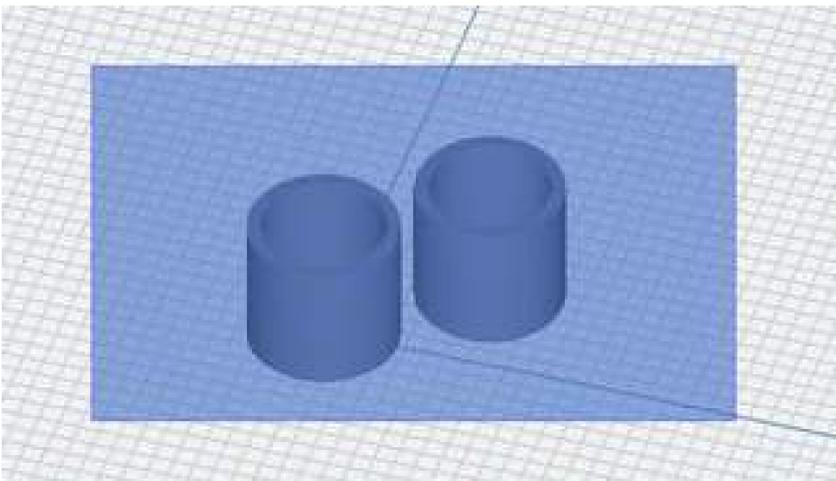
There are two methods to import .stl files into Utility:

1. Utilize the toolbar and click on the icon located on the right side, which resembles a picture.
2. Simply drag and drop the .stl file from its folder directly into Utility.



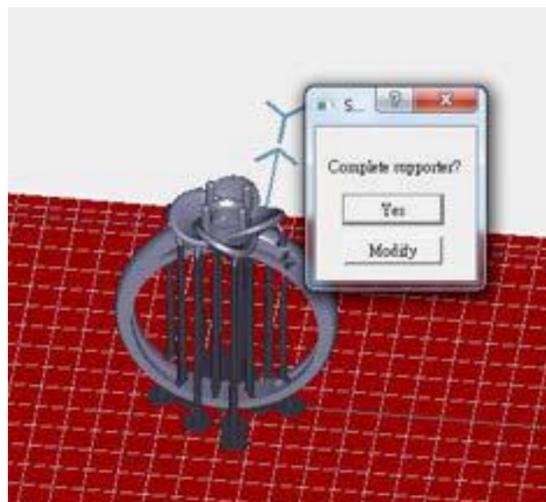
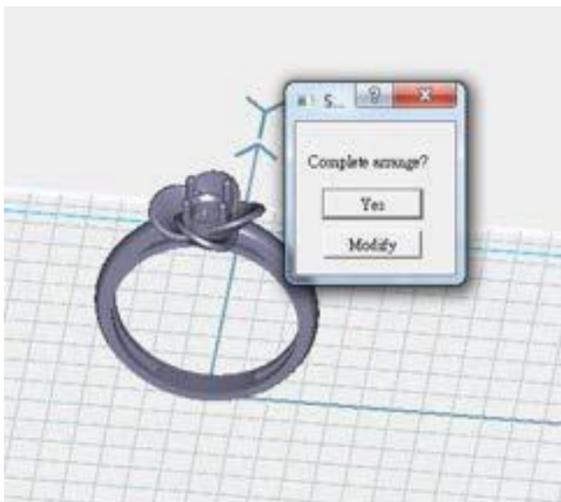
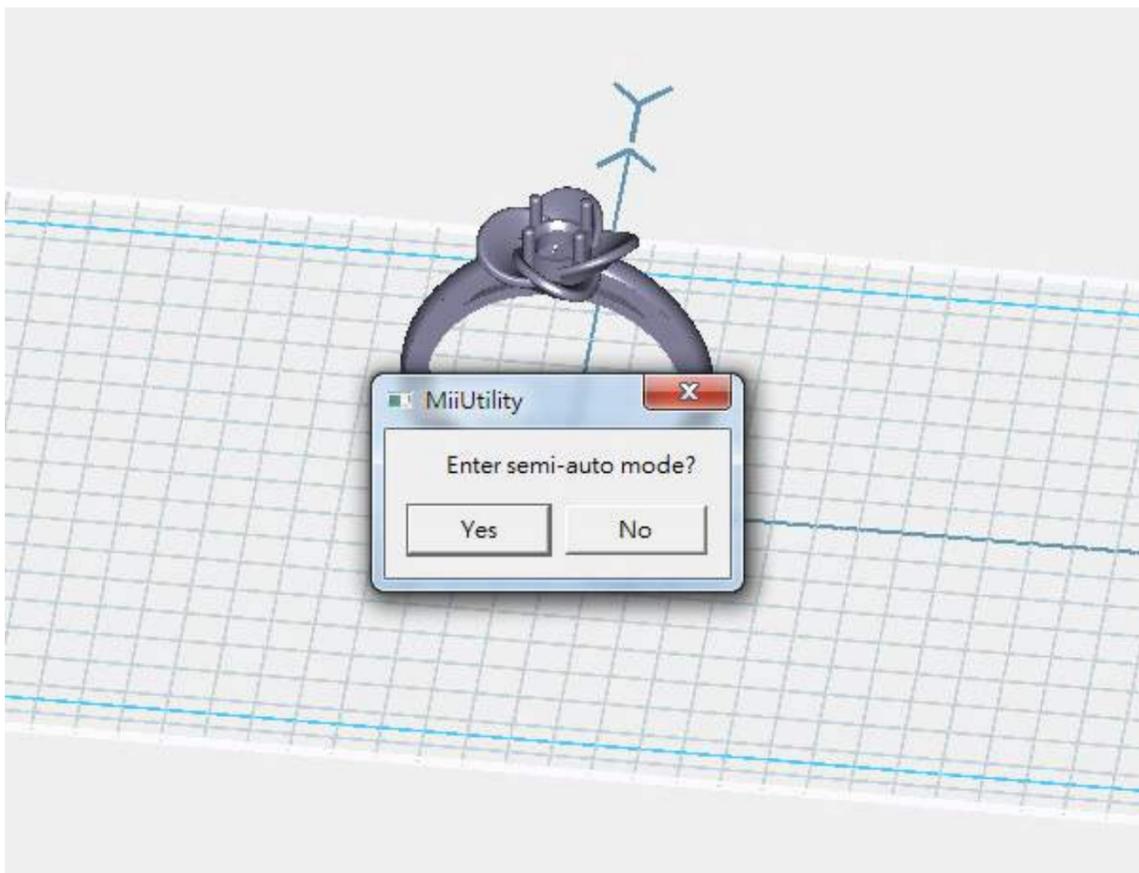
## Hot Key

- Right Mouse Button –Rotate platform
- Middle Mouse Scroll -Zooms in and out making the view of the build area larger or smaller
- Middle Mouse Button -Move platform
- Alt+E = Move model 
- Alt+R = Rotate model 
- Ctrl + D = Duplicate object
- Ctrl + mouse click = Multi select the object
- Ctrl + mouse click + drag = Move multiple object
- Mouse click + drag area = Box selection



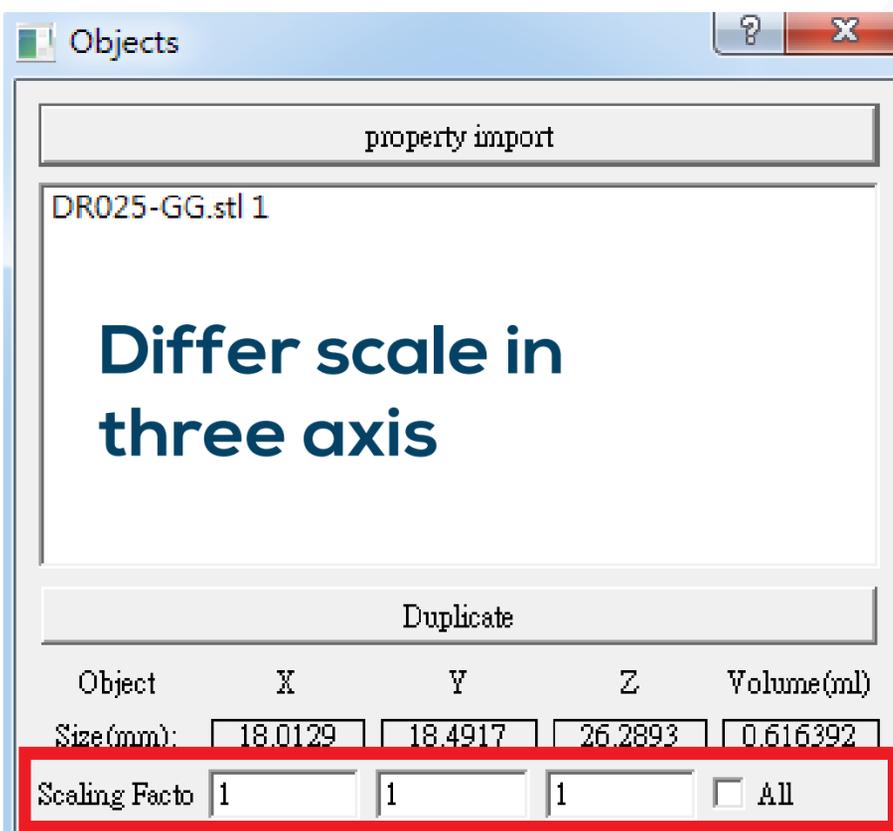
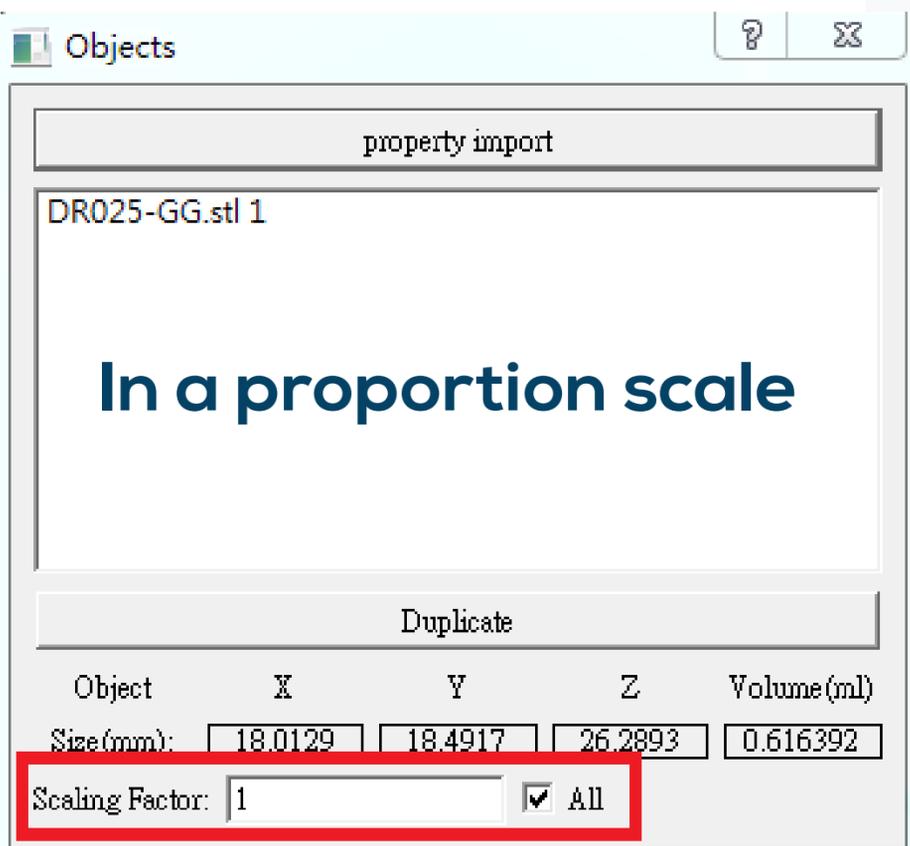
# Semi Auto Mode

1. Import the model into the Utility.
2. Click on the "Printer" option in the toolbar.
3. Activate the Semi-auto mode.
4. Proceed by clicking "Yes" for Auto arrangement and Auto support.  
Then, initiate the slicing process by clicking on the "Convert" button.



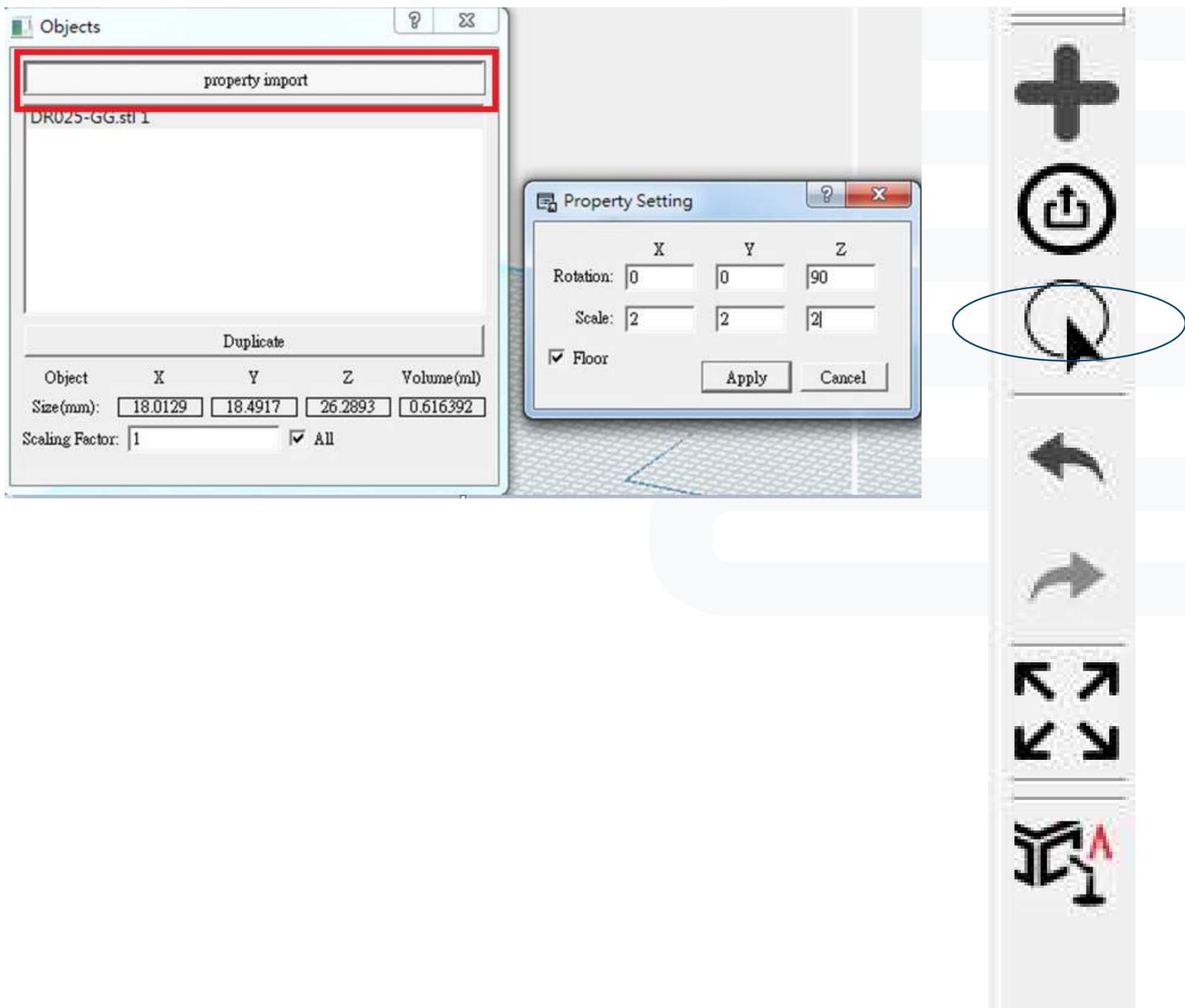
# Duplicate and Resize Model

1. Locate the toolbar and click on the icon positioned on the right, represented by a picture. Note: When the file name is highlighted, it indicates that the model has been selected, and the instructions are now active.
2. Choose the "all" option to apply proportional scaling for amplifying or minimizing the model.



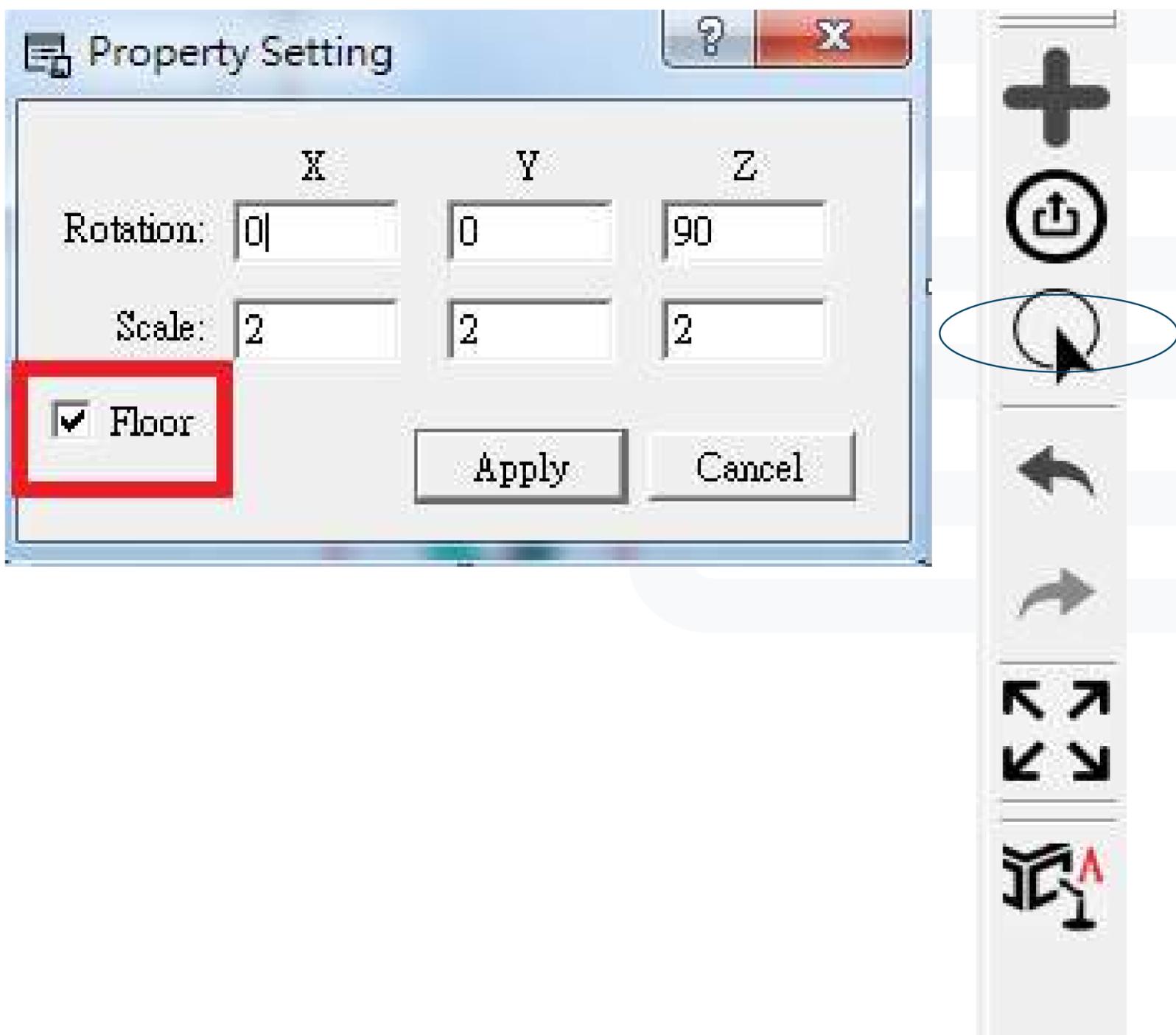
# Duplicate and Resize Model

- Property import, the setting will apply to every model import later  
 EX: Property import setting Z axis rotate 90 degree, X,Y,Z amplify 2 times, so the model import later will all follow this setting



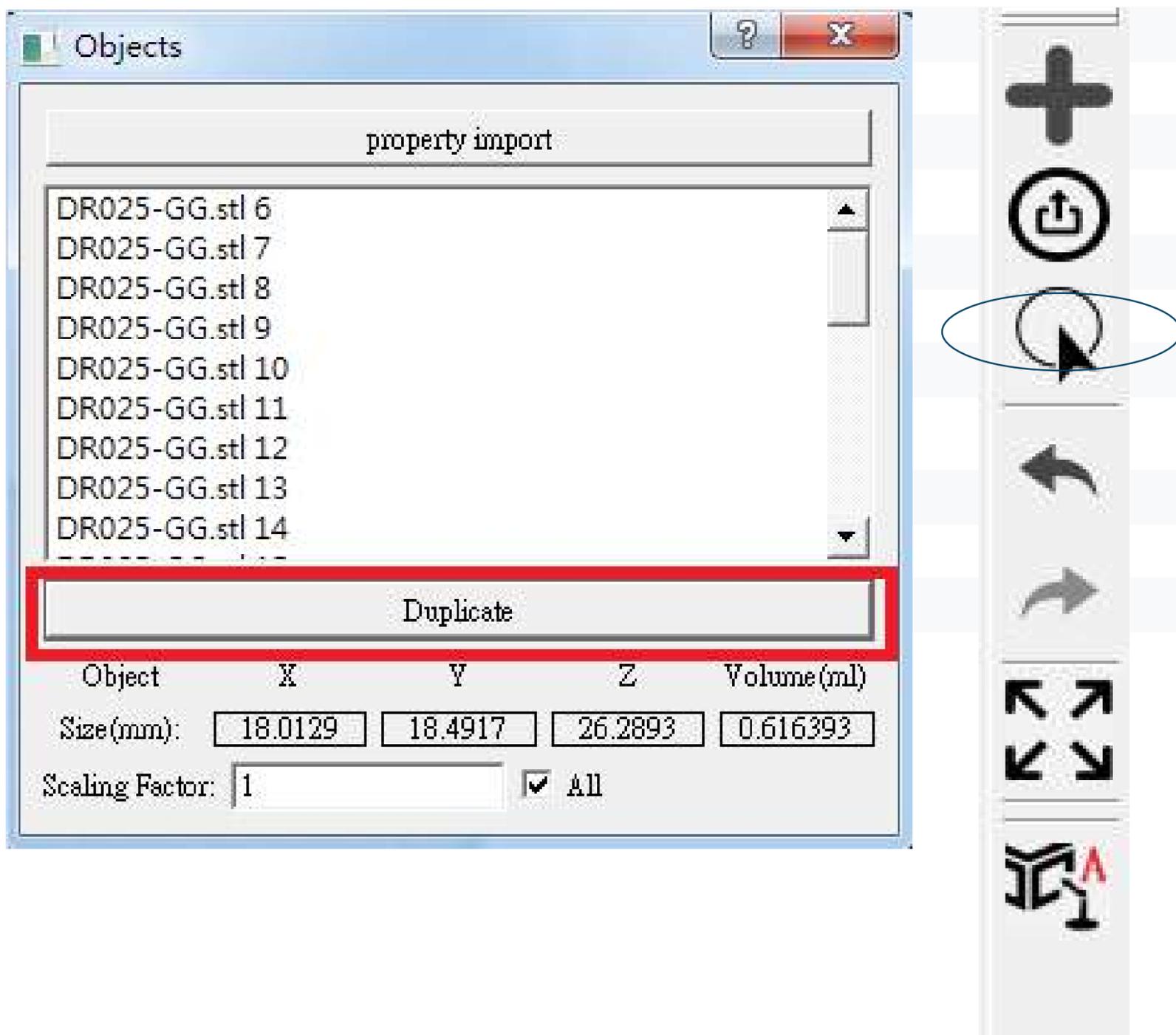
# Duplicate and Resize Model

3. Property import, select "Floor" to let model import with Z coordinate zero



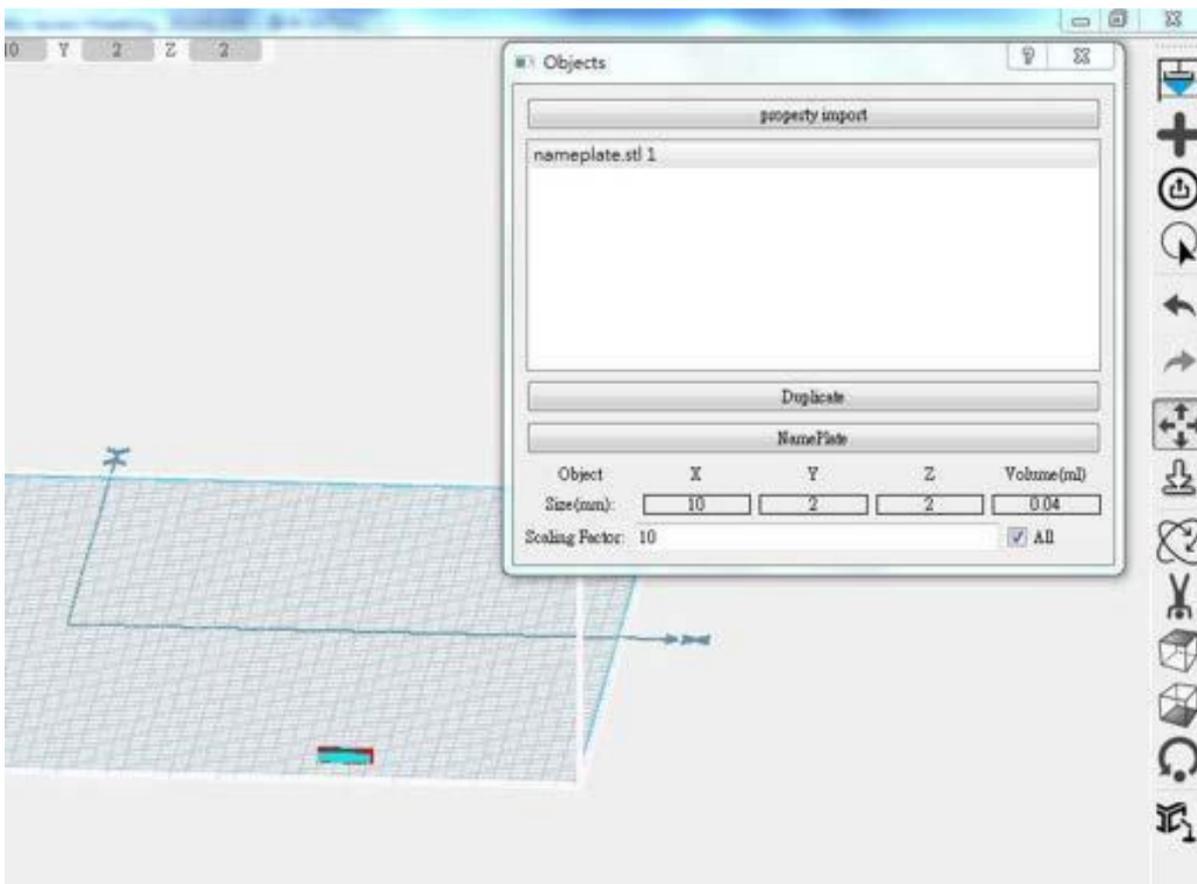
# Duplicate and Resize Model

## 4. Duplicate selected model



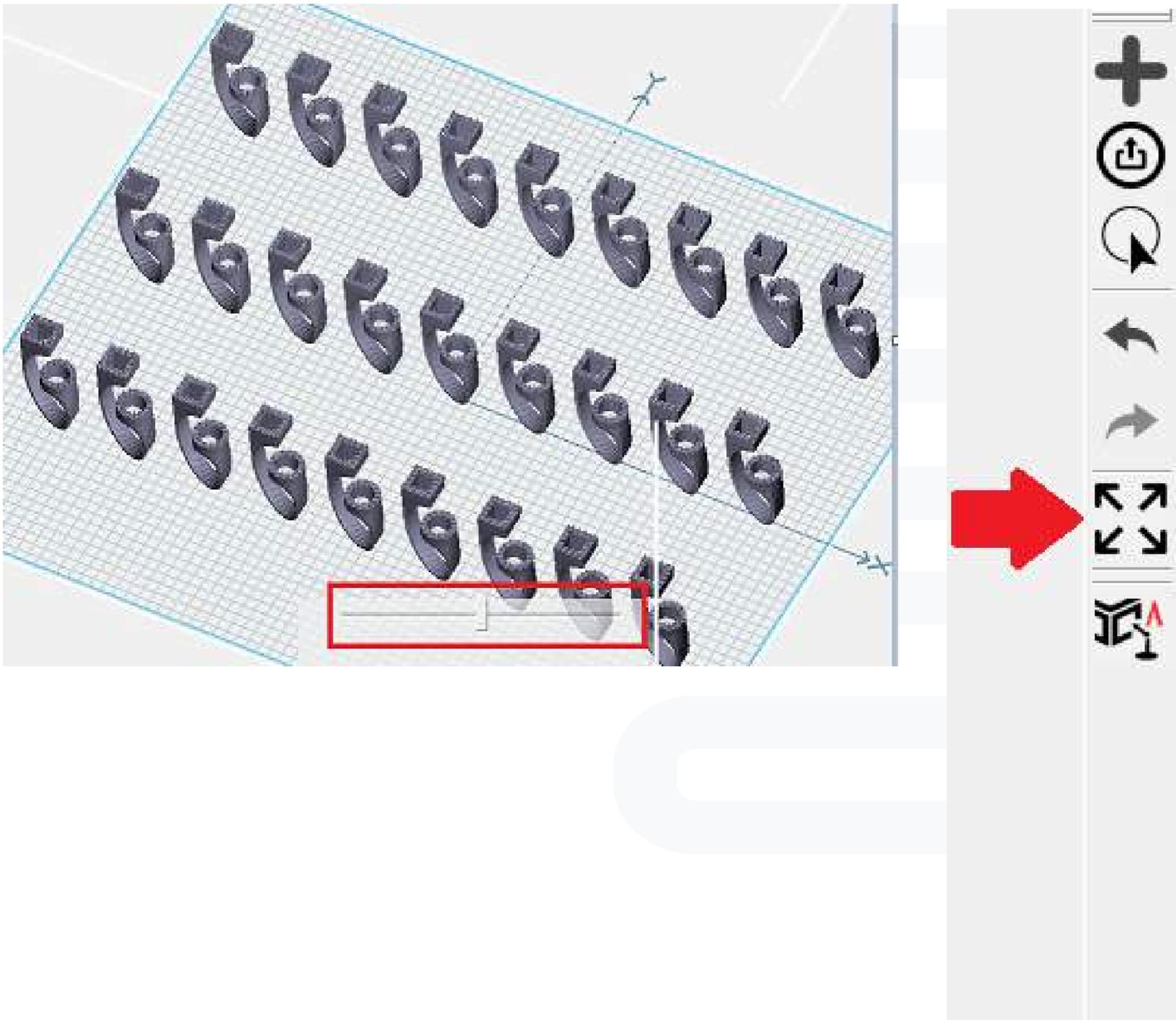
# Generate Nameplate

1. Nameplate is a serial number combines date, machine serial number and printing job number.



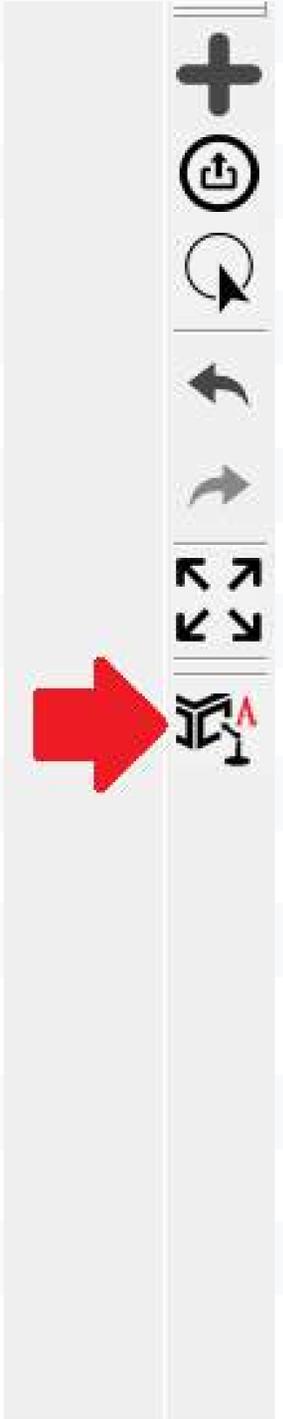
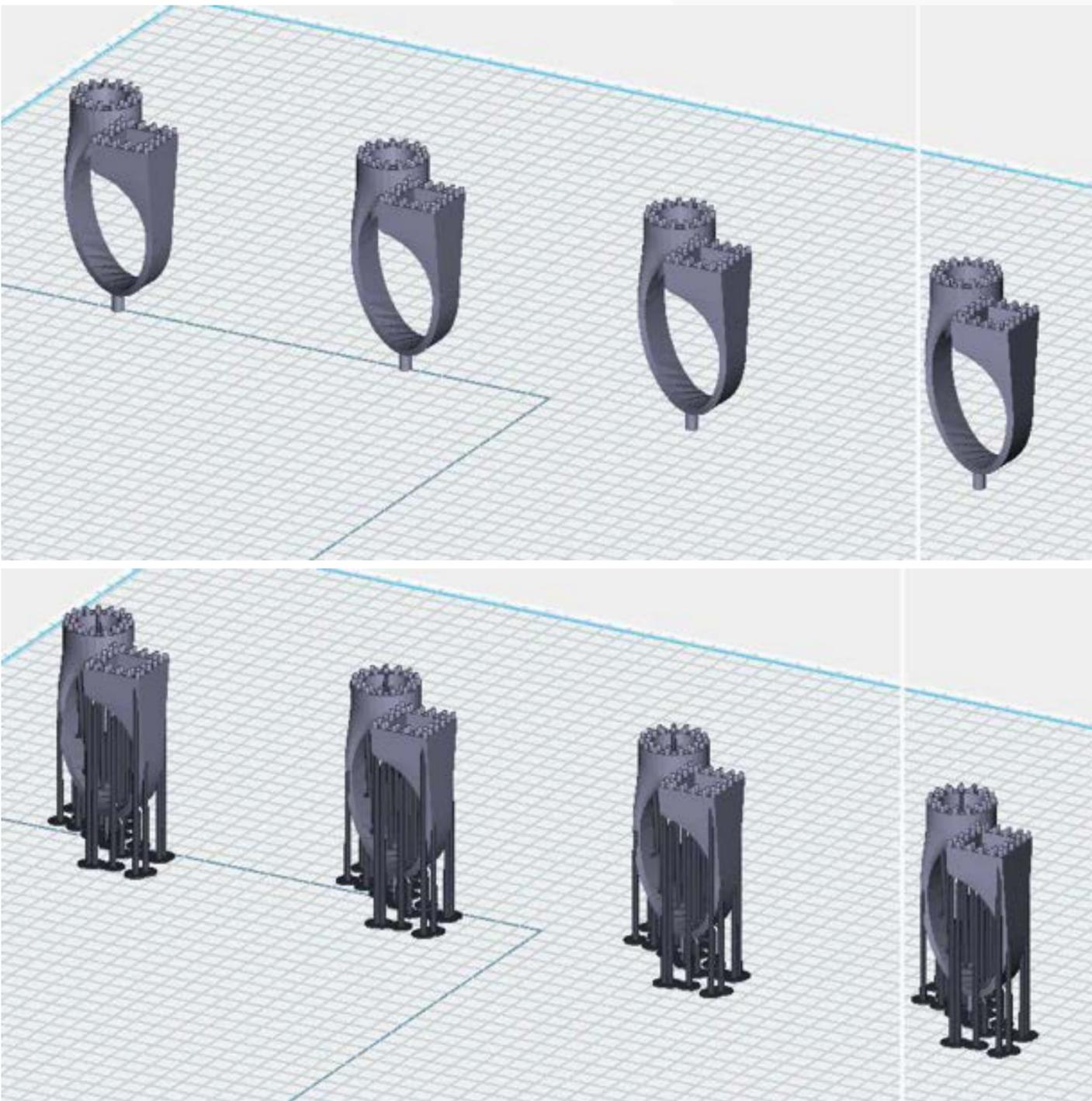
# Auto arrangement

In the toolbar, look for the icon on the right side that resembles a picture. This icon allows for multiple model auto arrangement. You can adjust the spacing between models using the horizontal scroll bar.



# Auto support

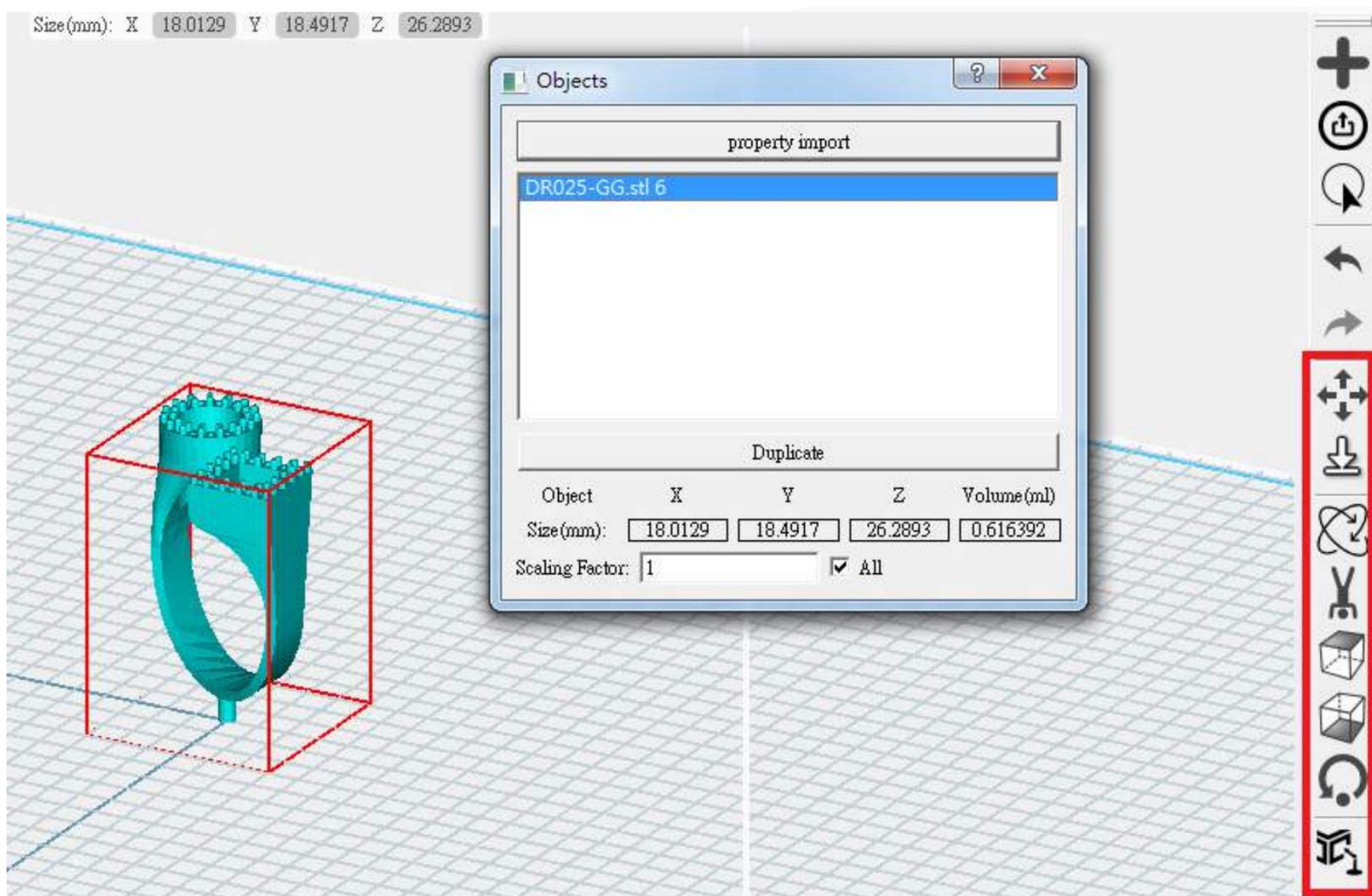
Tool bar, as picture on the right.  
Build auto support for every model.



# Model arrangement

Highlight/select a specific model, and additional settings will appear in the toolbar (as indicated by the red box below).

In this section, you can customize the arrangement of the selected model. You can also create custom supports for the model.

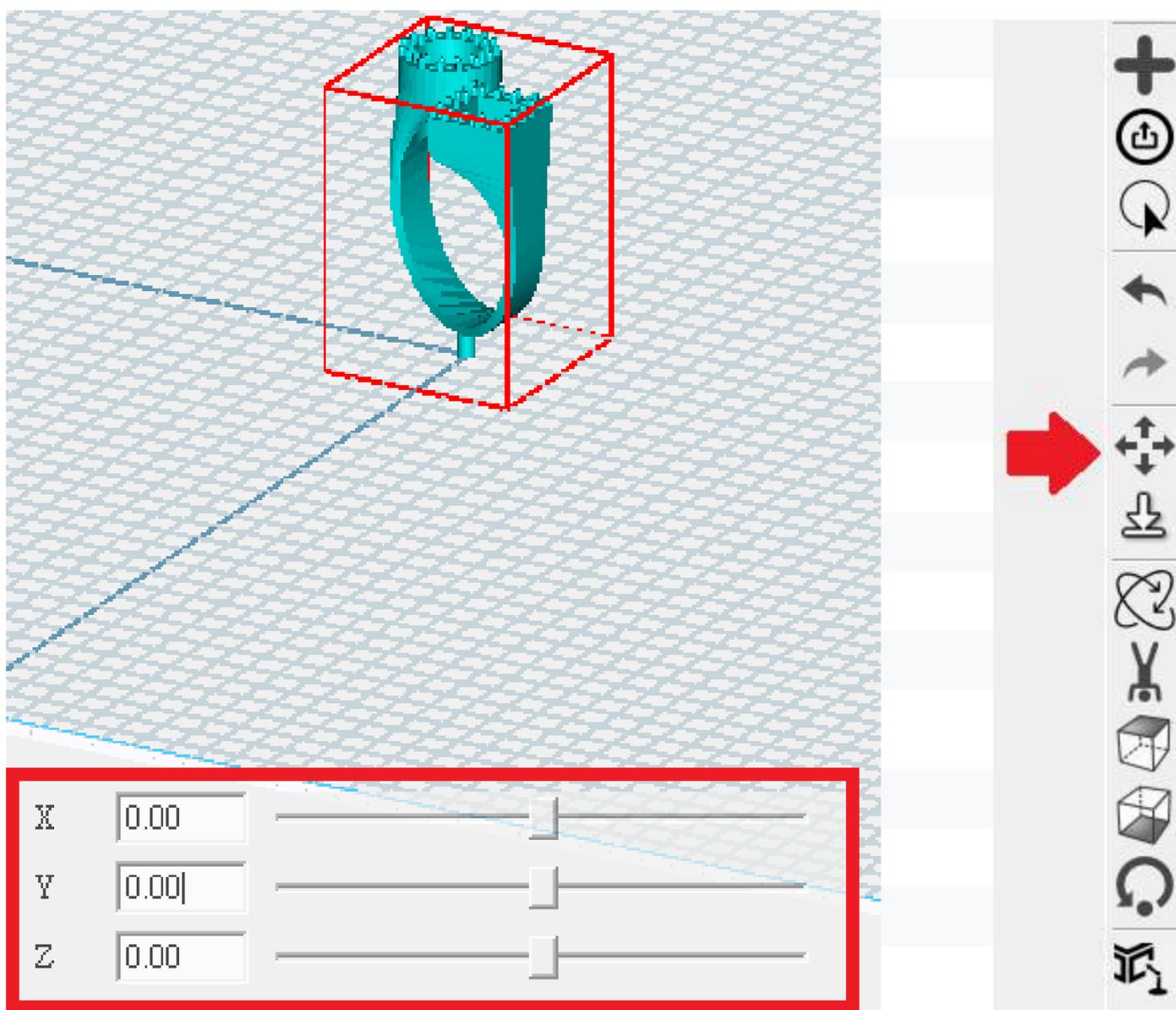


# Model arrangement

Choose a model and click on the toolbar.

You can then drag and move the model.

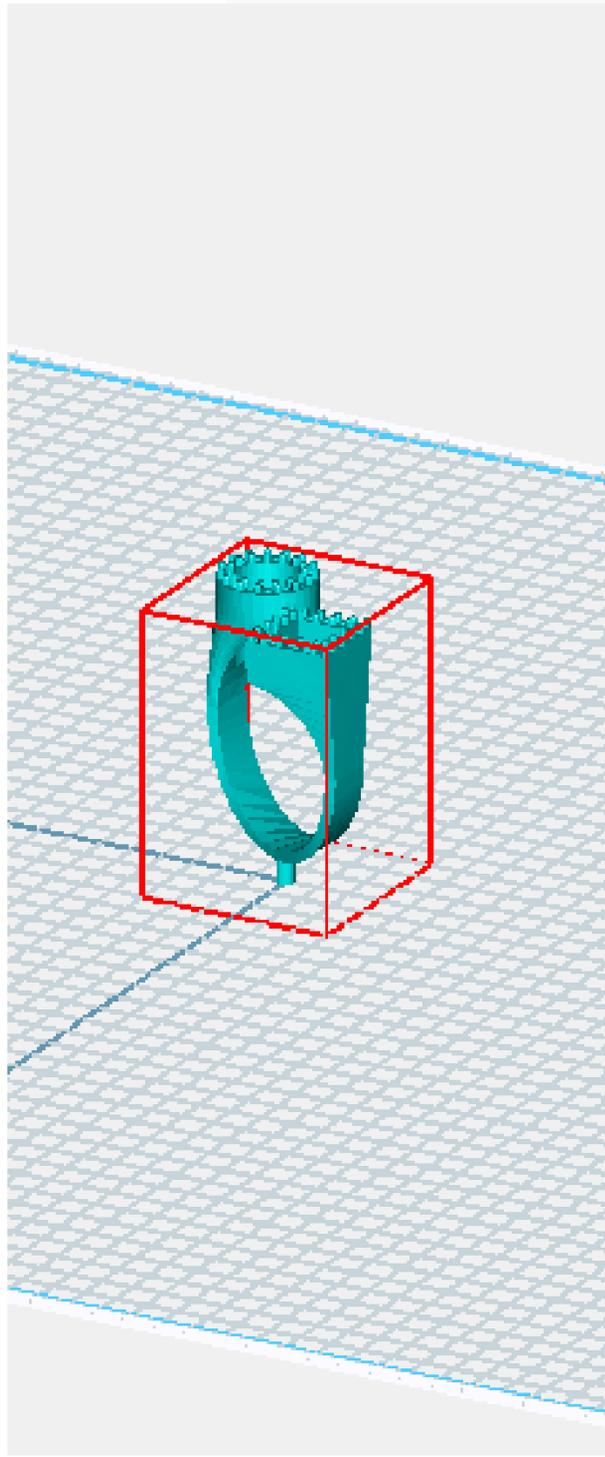
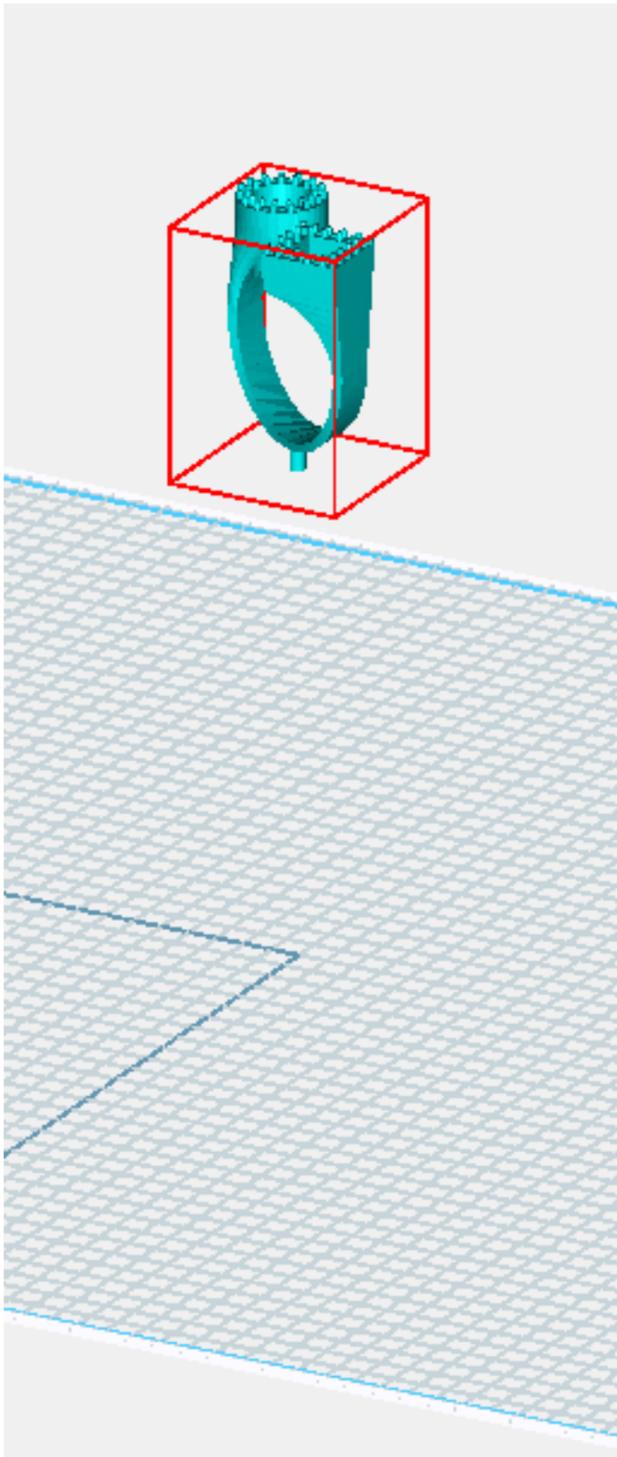
Alternatively, you can set the X, Y, and Z coordinates for precise positioning.



# Model arrangement

Select model, and click on tool bar

Put model down to floor

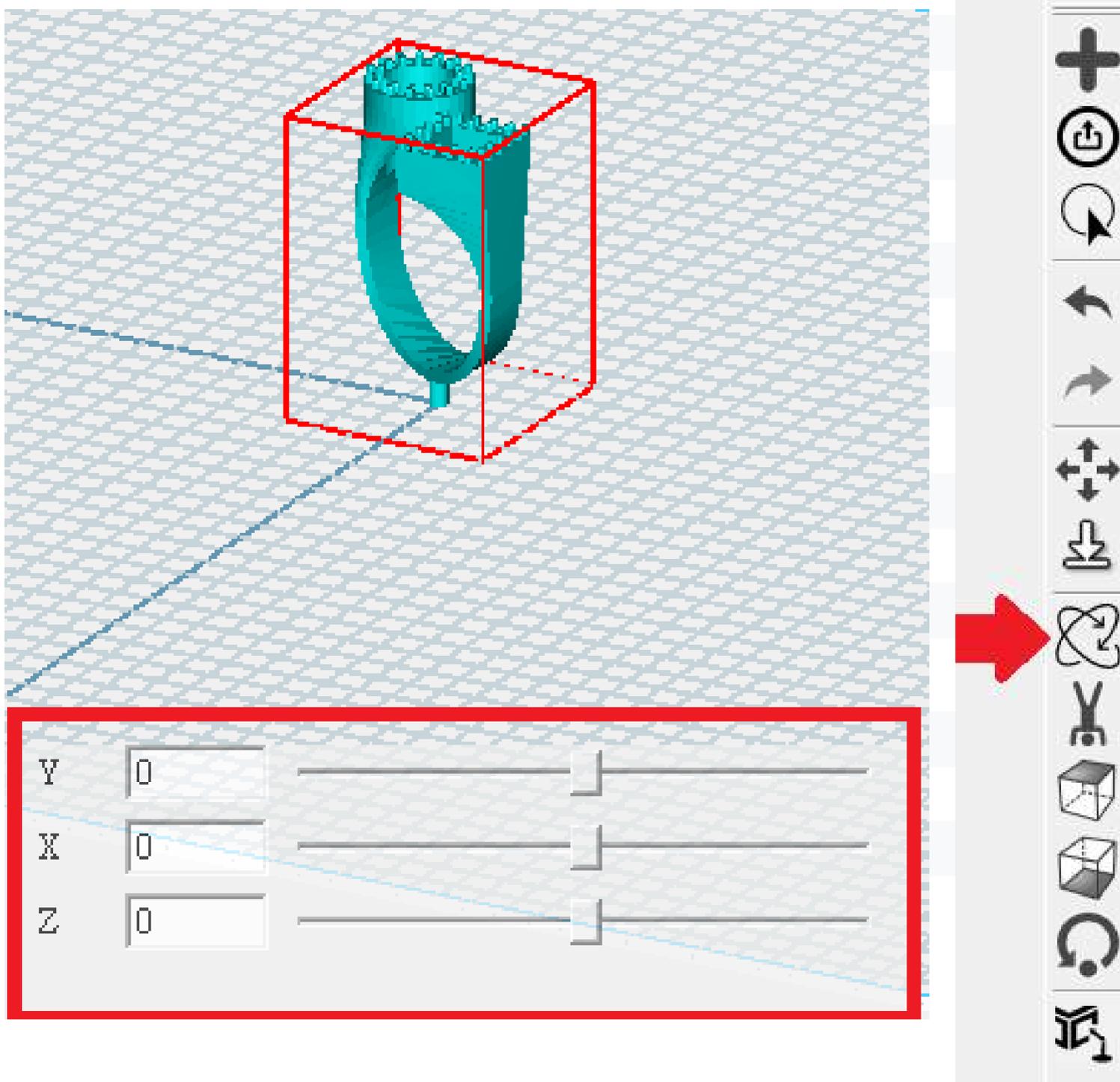


# Model arrangement

Select a model and click on the toolbar.

Adjust the rotation degree for the X, Y, and Z axes.

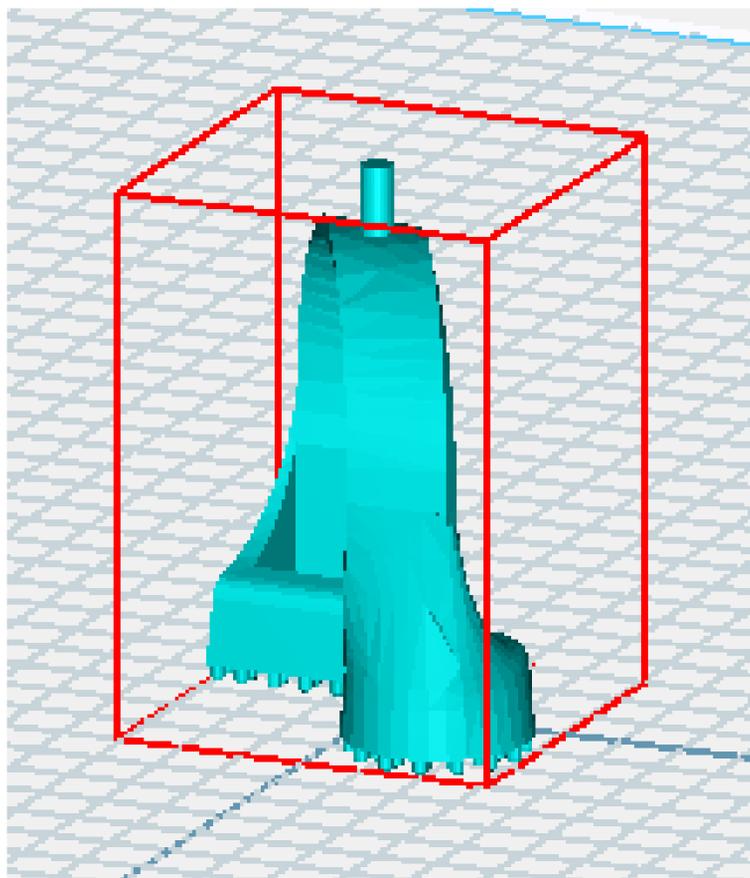
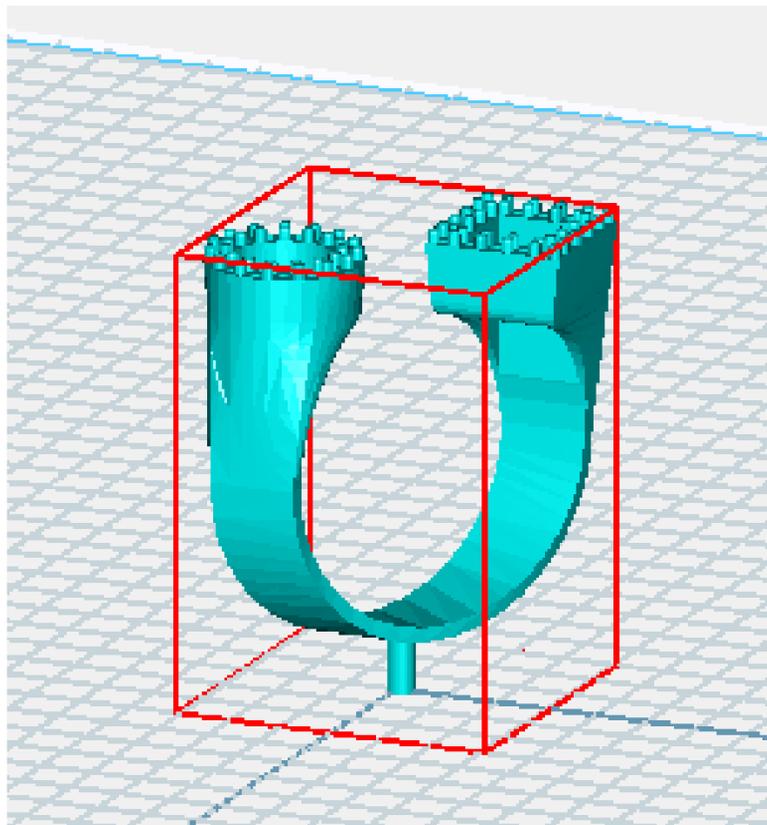
Alternatively, you can use the horizontal scroll bar to make rotational changes.



# Model arrangement

Select a model and click on the toolbar.

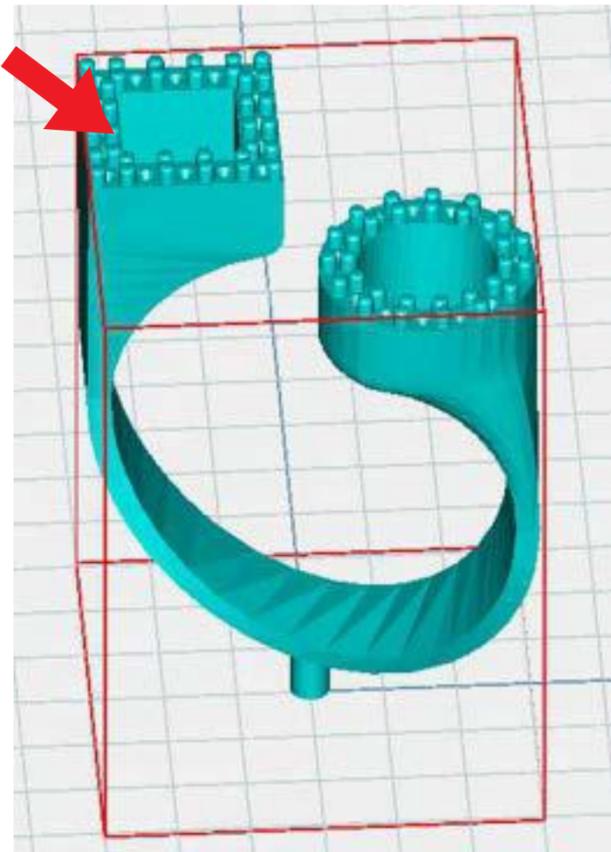
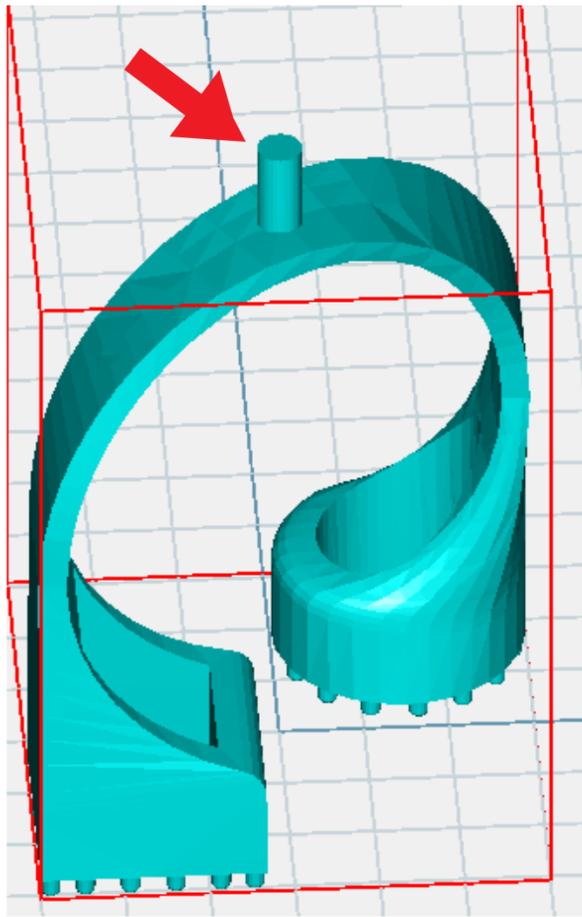
Choose the option to flip the model upside down.



# Model arrangement

Select a model and click on the toolbar.

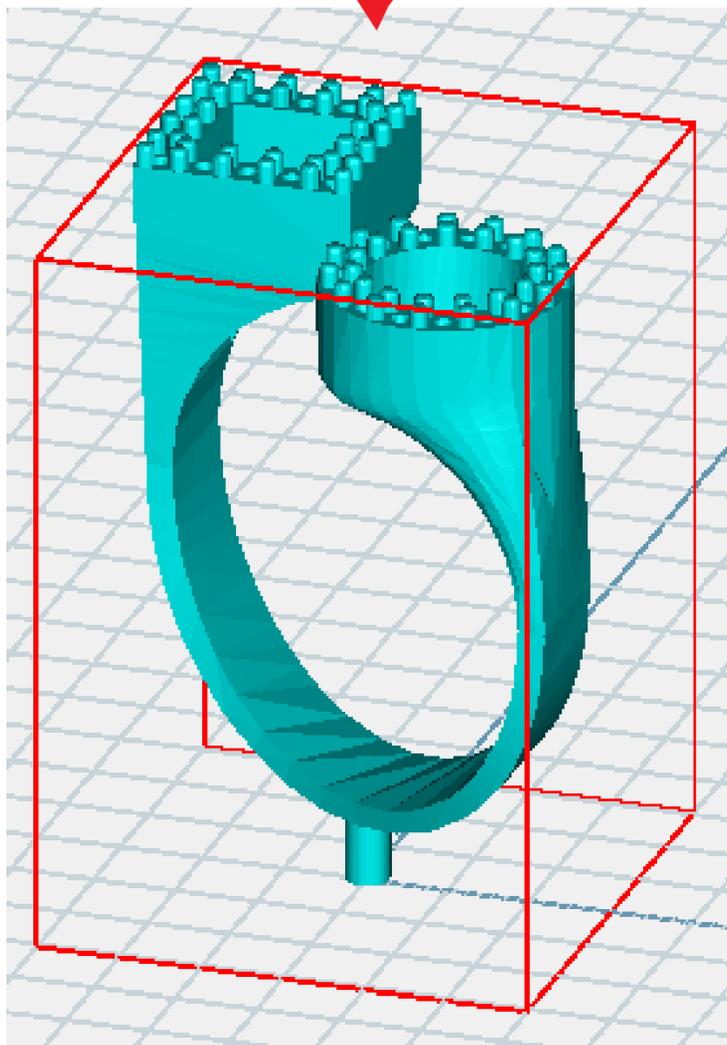
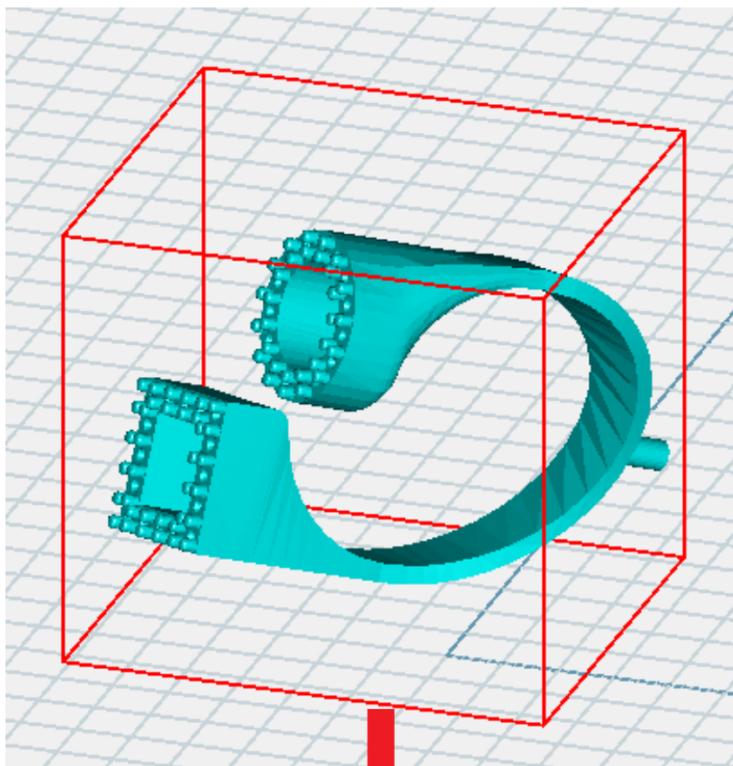
Click on a specific side to position it face up, vice versa.



# Model arrangement

Select a model and click on the toolbar.

Click on a specific side to position it back to default rotation.

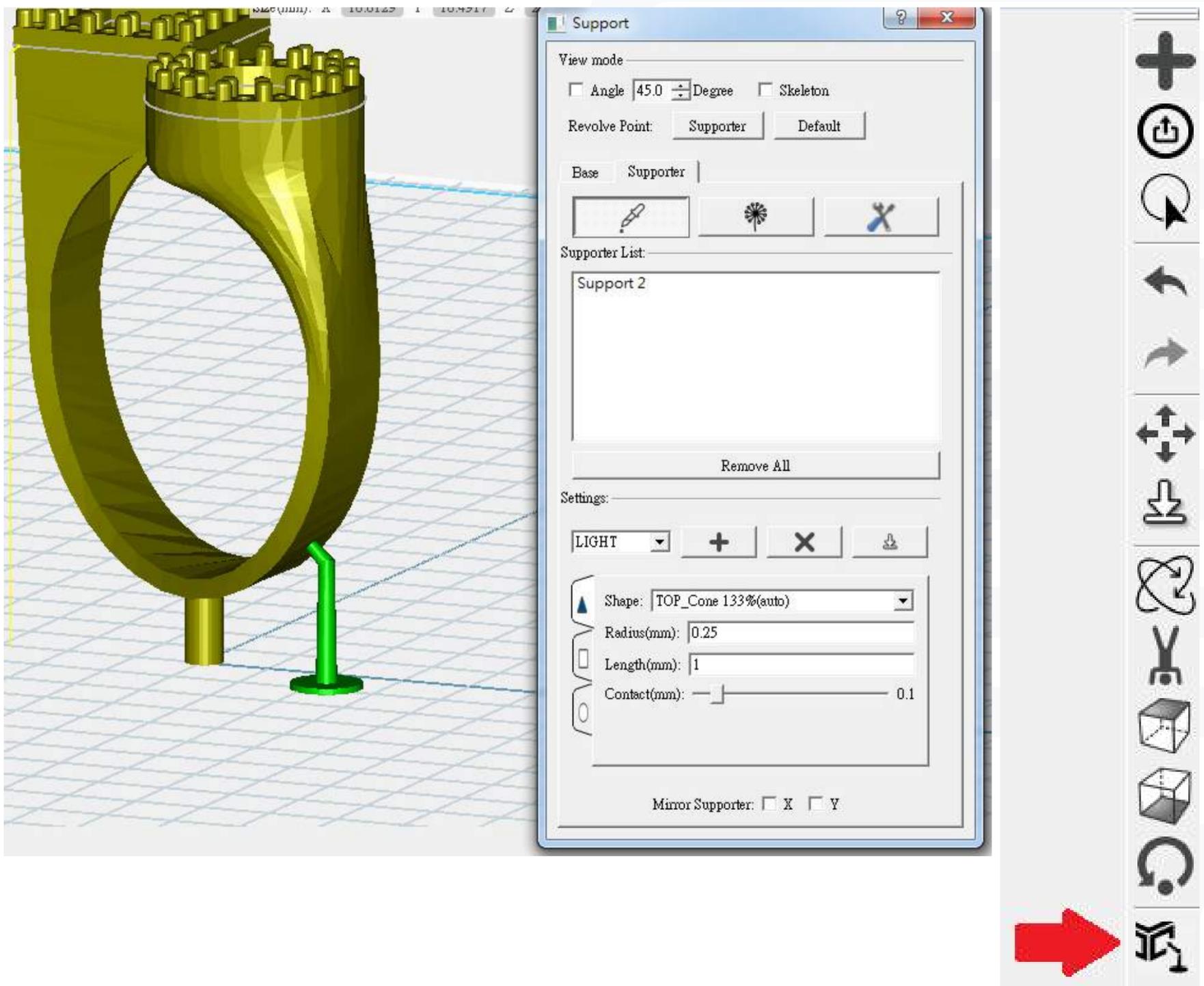


# Model arrangement

Highlight/select a specific model, and additional settings will appear in the toolbar (as indicated by the red box below).

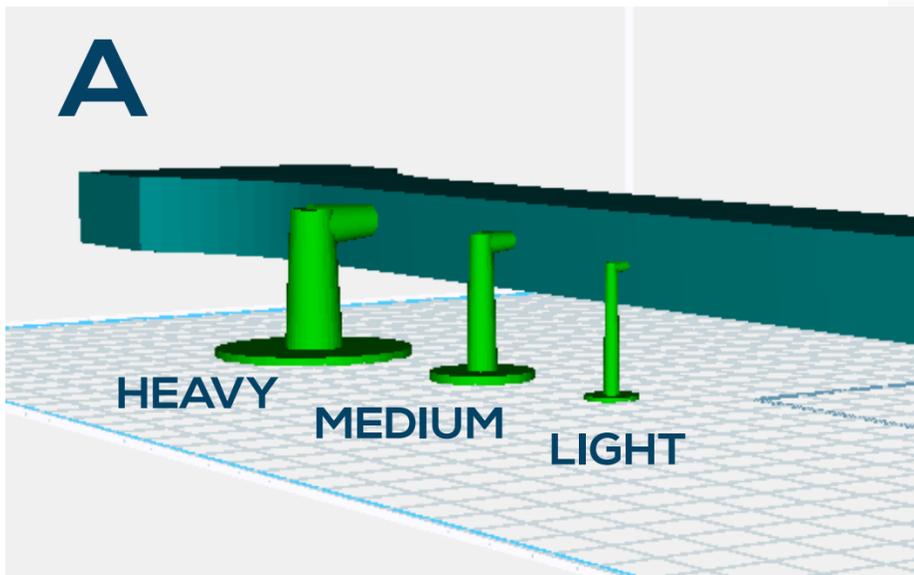
In this section, you can create personalized supports for the model.

To add support, simply click on the desired location where you'd like to add it.



# Build Supports

3 kinds of basic support setting can be selected by user preference



B : Add Support Setting

C: Delete Support Setting

D: Download Support Setting

Settings:

**A** **B** **C** **D**

LIGHT + X Download

Shape: TOP\_Cone 133%(auto)

Radius(mm): 0.25

Length(mm): 1

Contact(mm): 0.1

Mirror Supporter:  X  Y

# Build Supports

A : Top support shape

B : Top support radius

C : Top support thickness

D : Top support and moel contract

Top  
Middle  
Bottom

Settings:

LIGHT + X

Shape: TOP\_Cone 133%(auto)

Radius(mm): 0.25

Length(mm): 1

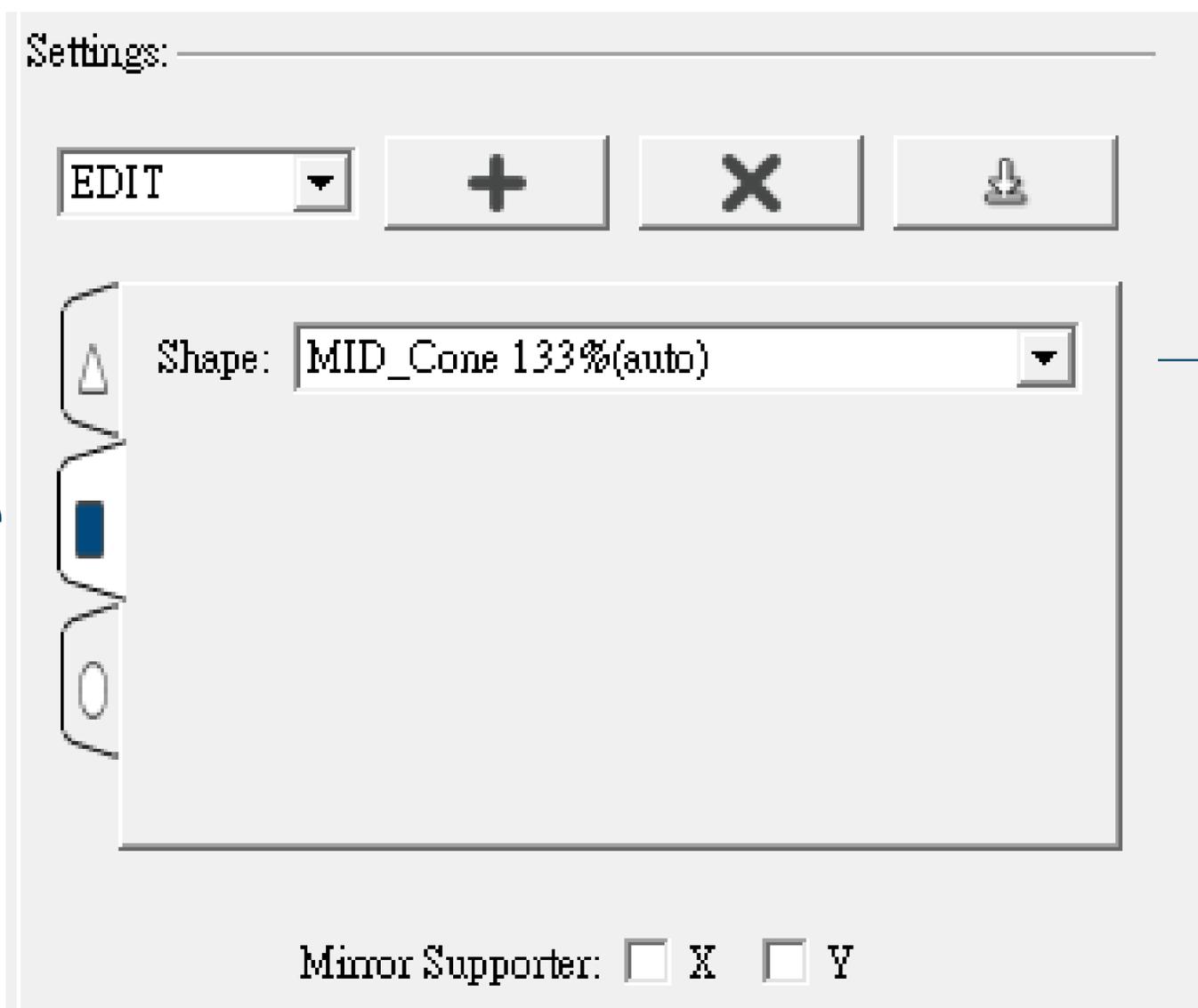
Contact(mm): 0.1

Mirror Supporter:  X  Y

# Build Supports

A : Middle support shape

Middle



# Build Supports

- A : Bottom support shape
- B : Bottom support radius
- C : Bottom support thickness

Bottom

Settings:

EDIT

Shape:

Radius(mm):

Thickness(mm):

Mirror Supporter:  X  Y

# Build Supports

## Mirror Supporter

Build symmetrical supports according to X axis or Y axis

Settings:

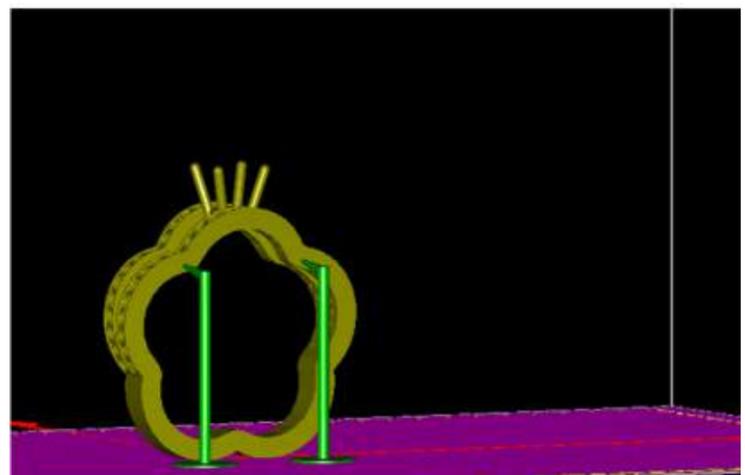
EDIT

Shape:

Radius(mm):

Thickness(mm):

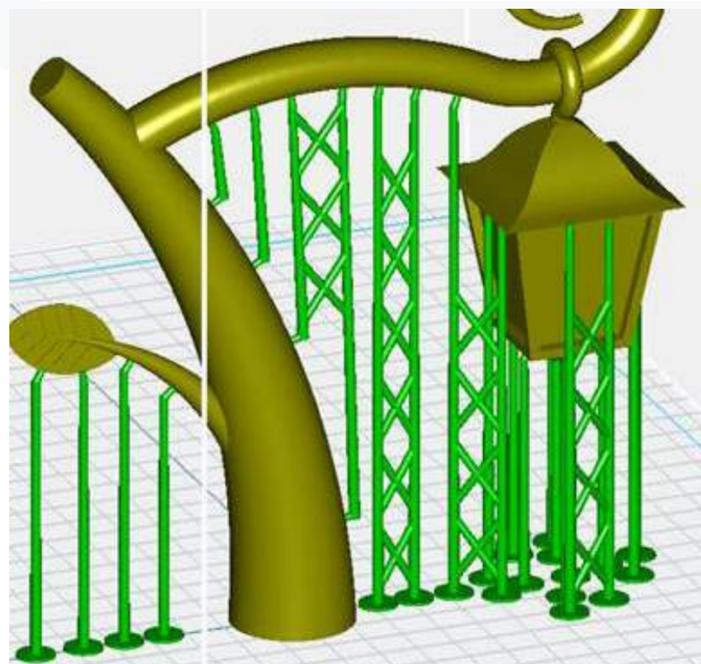
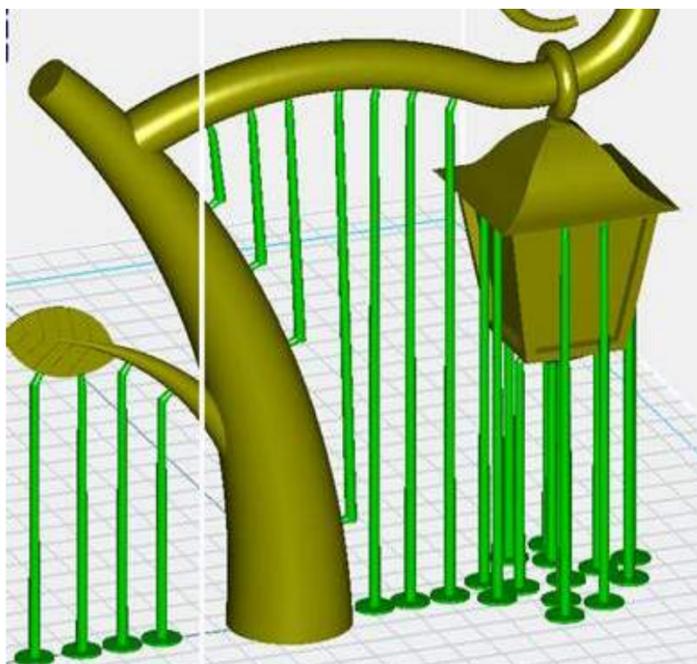
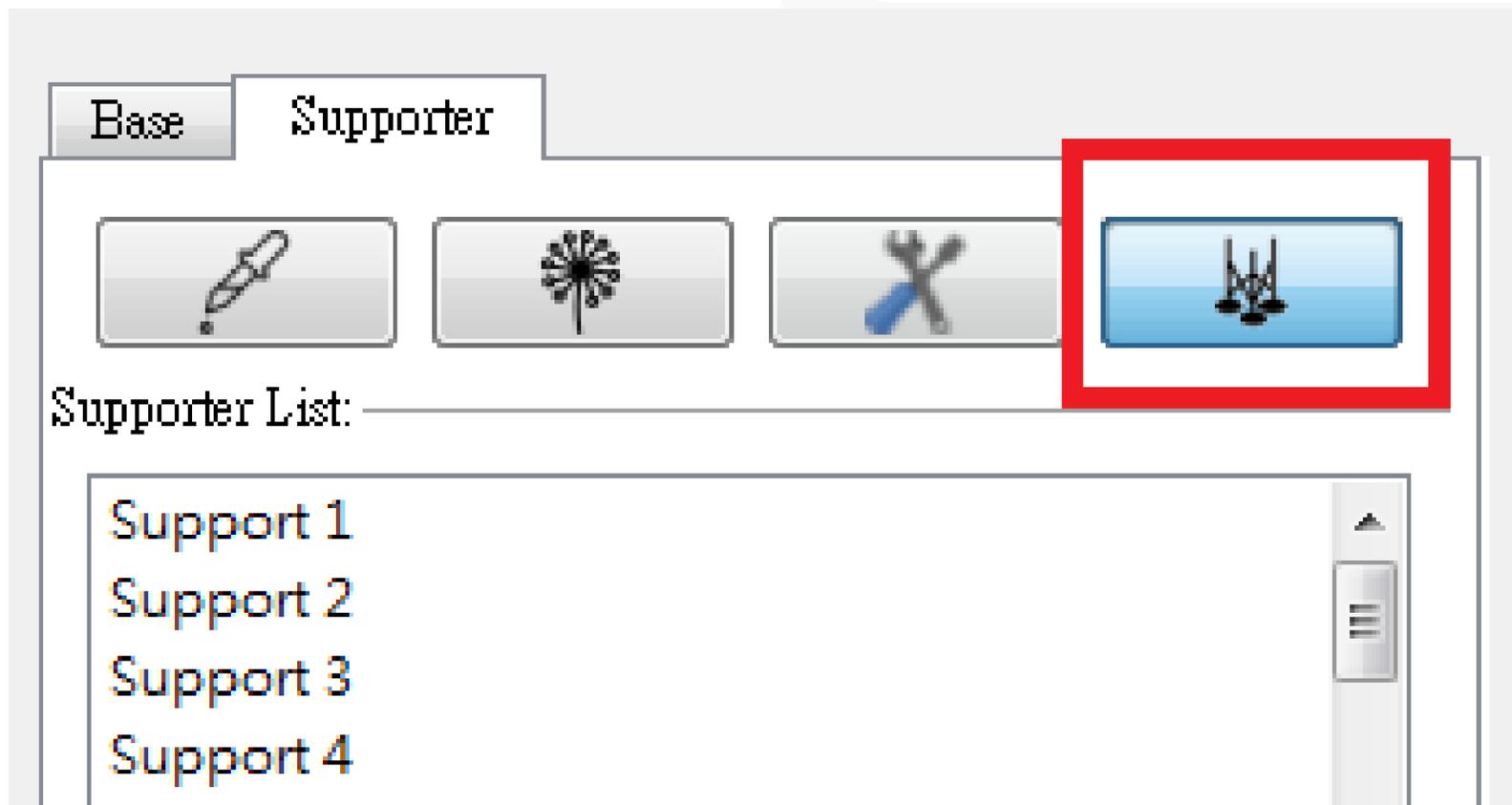
Mirror Supporter:  X  Y



# Build Supports

## X type Supporter

- Begin by adding a minimum of two supports to the model.
- Enable the cross structure function by clicking on it.
- Select two supports that you want to have a cross structure between.
- To cancel the cross structure, click on the same two supports again.



# Build Base

Base available or not

Base type

Base size

Base thickness

Base Supporter

Base:

BASE\_Rectangular

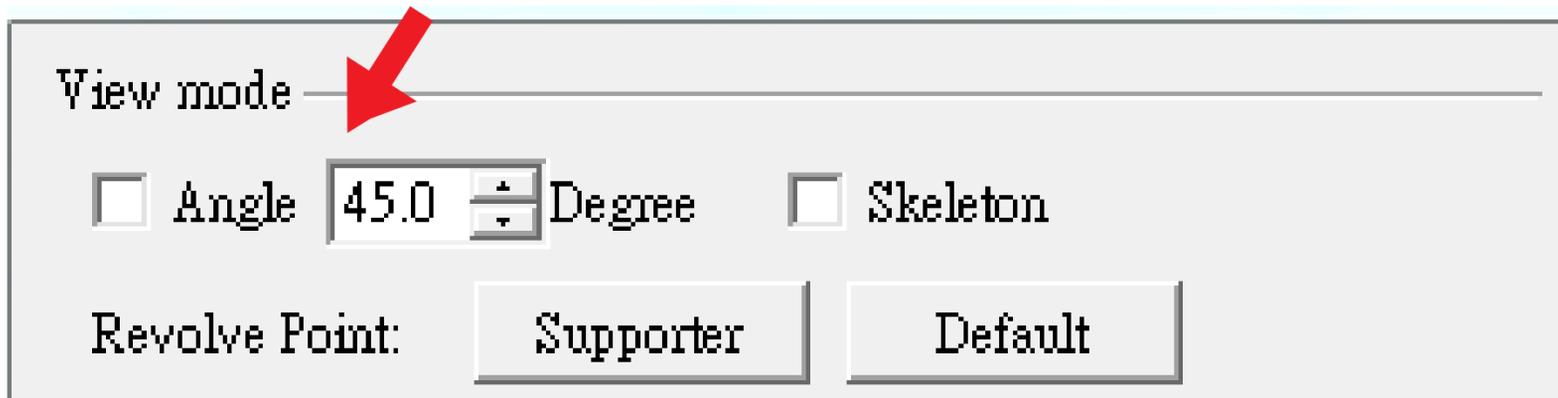
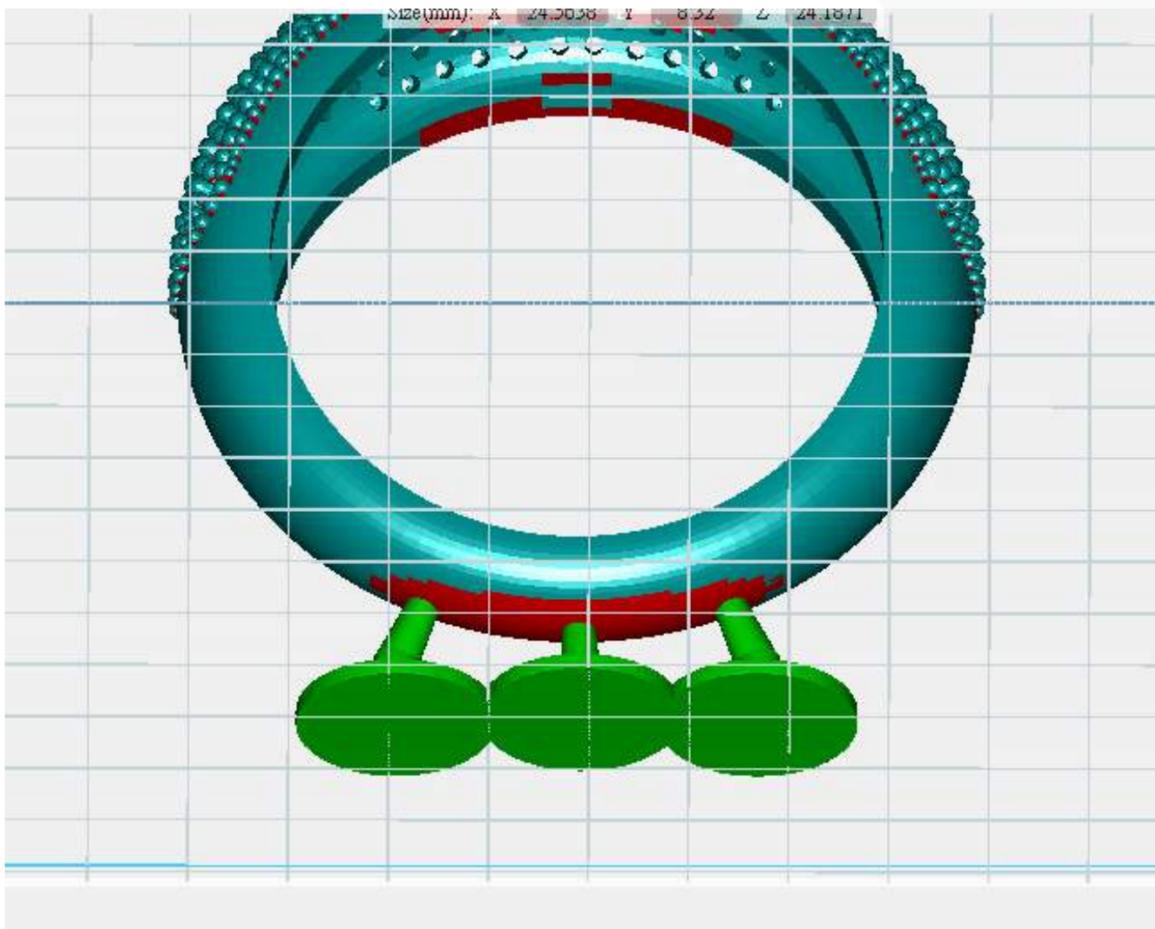
Object Size: 100%

Thickness(mm): 0.5

## Build Support - View Mode

The Angle Indicator feature assists in identifying the bevel angle of the object's surface.

- a) If the angle is below a certain threshold, it will appear red in the preview.
- b) The red areas indicate flat regions that may be unsupported or unsupported areas where additional supports need to be built.



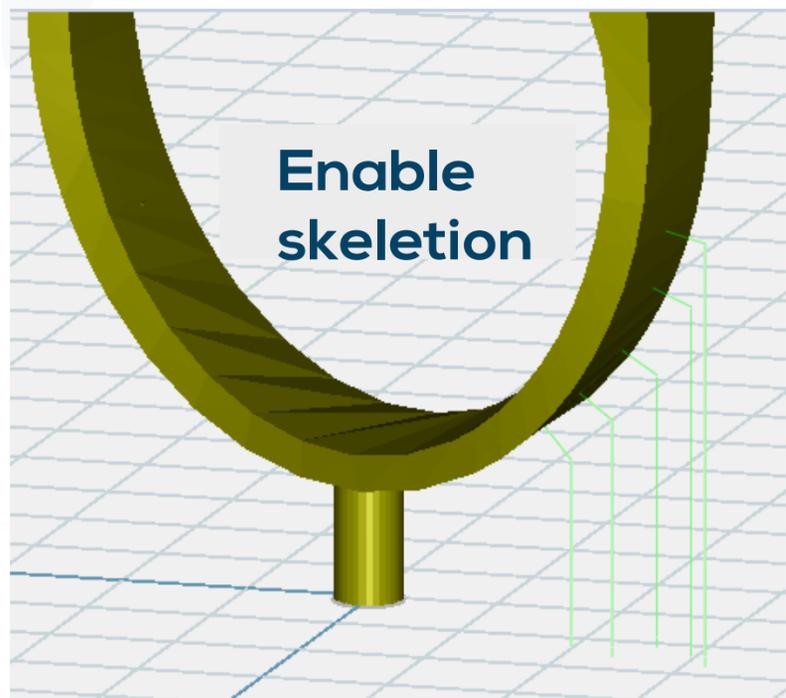
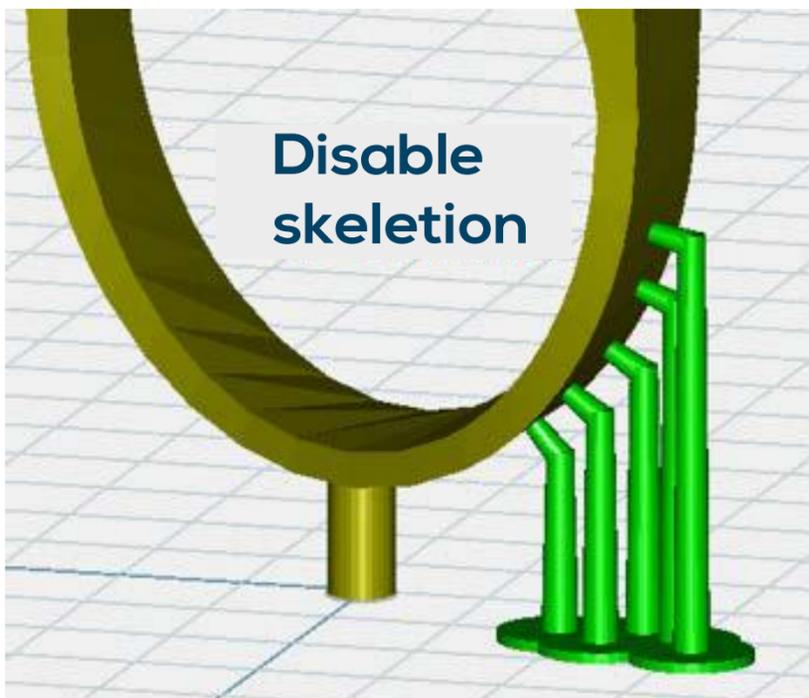
# Build Support - View Mode



View mode

Angle 45.0 Degree  Skeleton **Show Support in line**

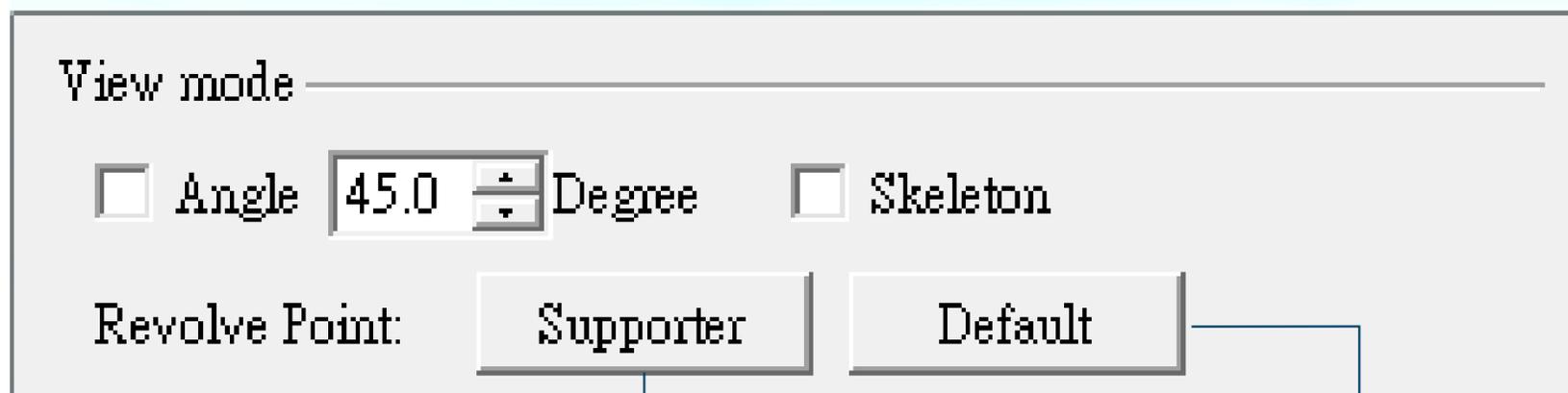
Revolve Point:



## Build Support - View Mode

To view the 360-degree position of a support:

- a) Choose a support.
- b) Click on the "Revolve point: supporter" option.
- c) Utilize the fixed support as the center for rotation.
- d) Observe the support from various angles to see its position from all sides.



Default (Use platform as view rotation center)

## Tool Bar



Create new file

Open layout

Save layout

Export as. stl

Options (General setting)

Surface polishing view

Perspective view

The .mil file format is an editable format used in Utility. It allows you to save your working status, including the platform, layout, and supporter functions, at any point in time. You can save your progress as a .mil file and later reopen it to continue editing.

# Tool Bar



Overlook

Look up

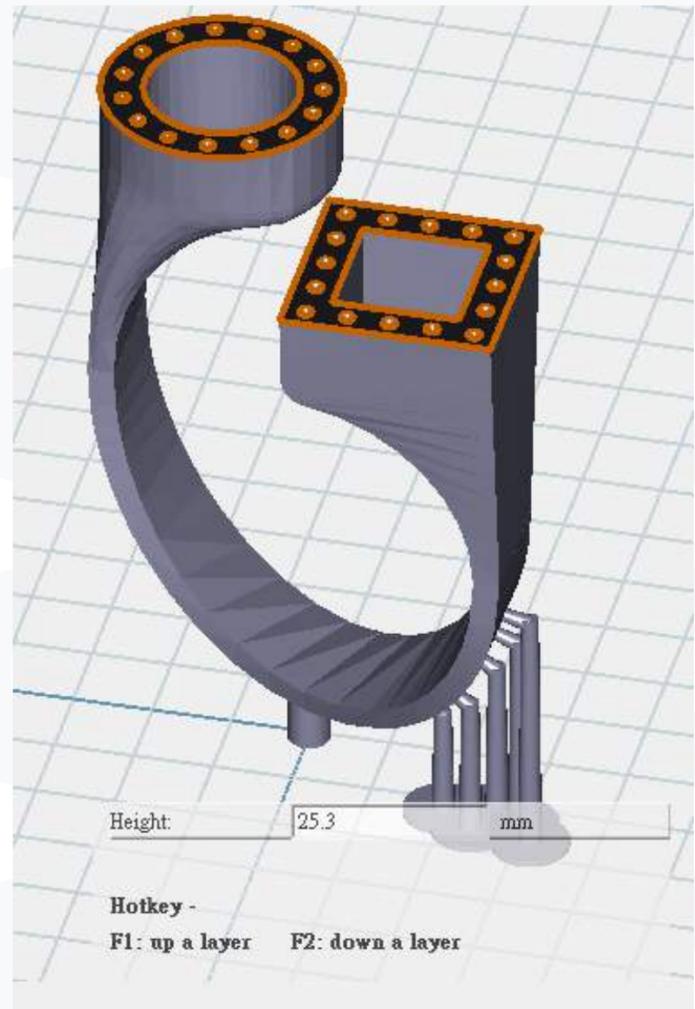
Front view

Back view

Left side

Right side

Slice view

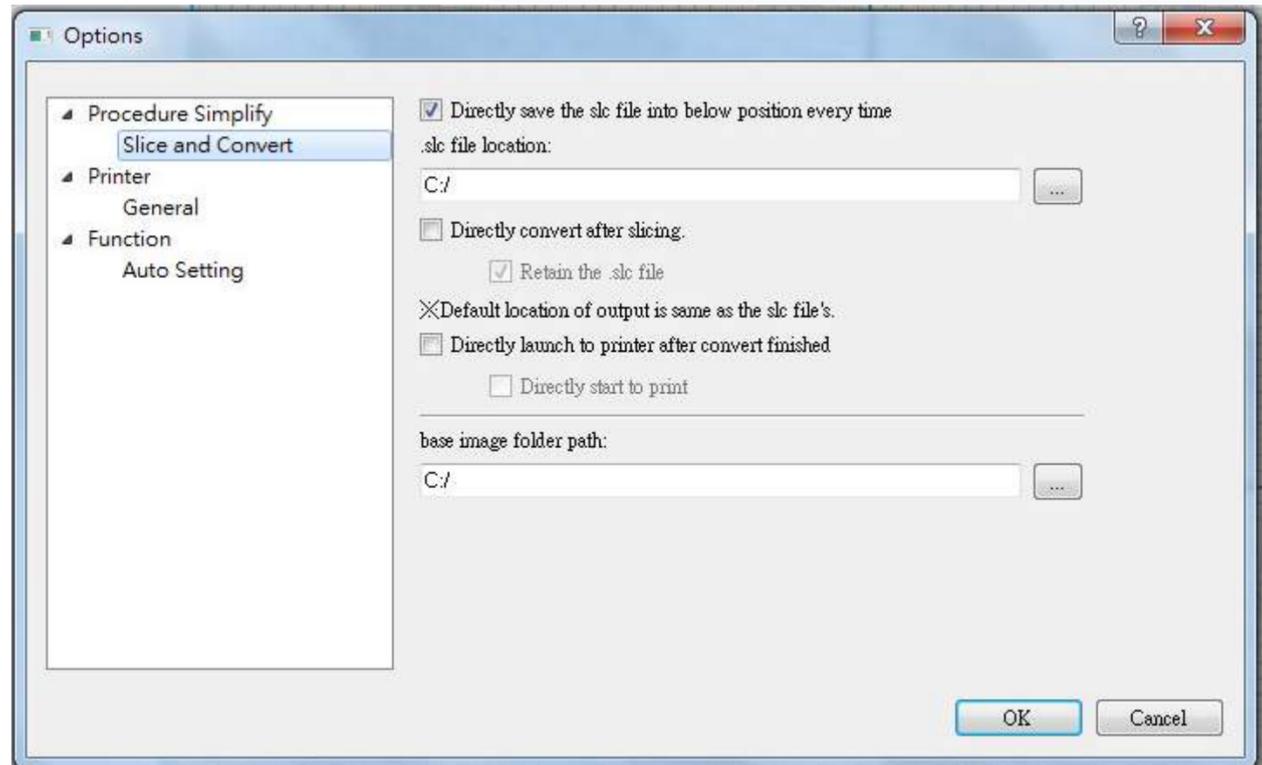


In the Slice view, you can preview each layer of the model without exporting it as a .slc file just yet.

# Tool Bar



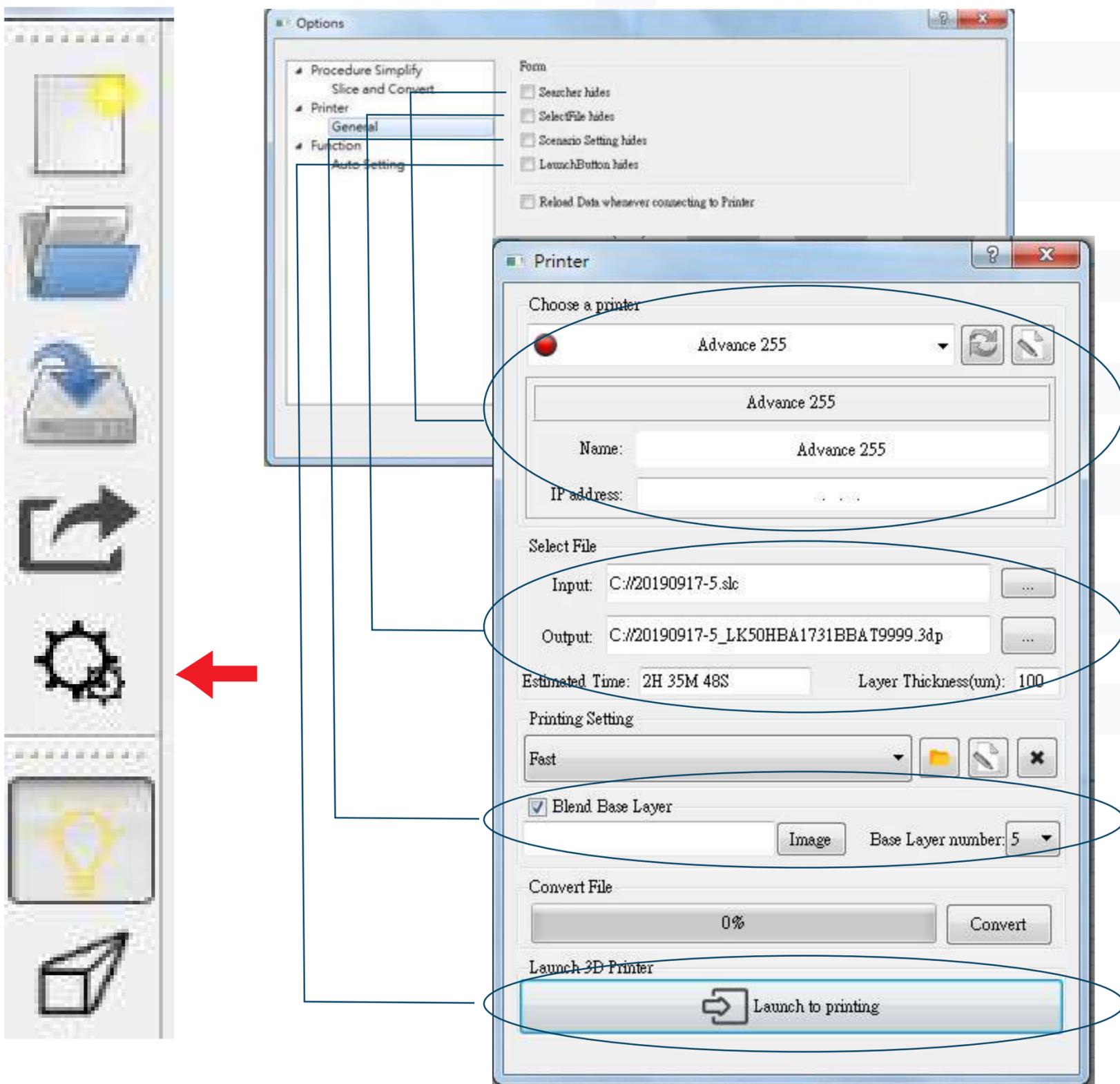
The Procedure Simplify feature allows you to configure settings to skip certain procedures and avoid frequent inquiry alerts.



# T Tool Bar - Option setting

**Printer panel setting:** Customize the visibility of certain function panels by hiding them.

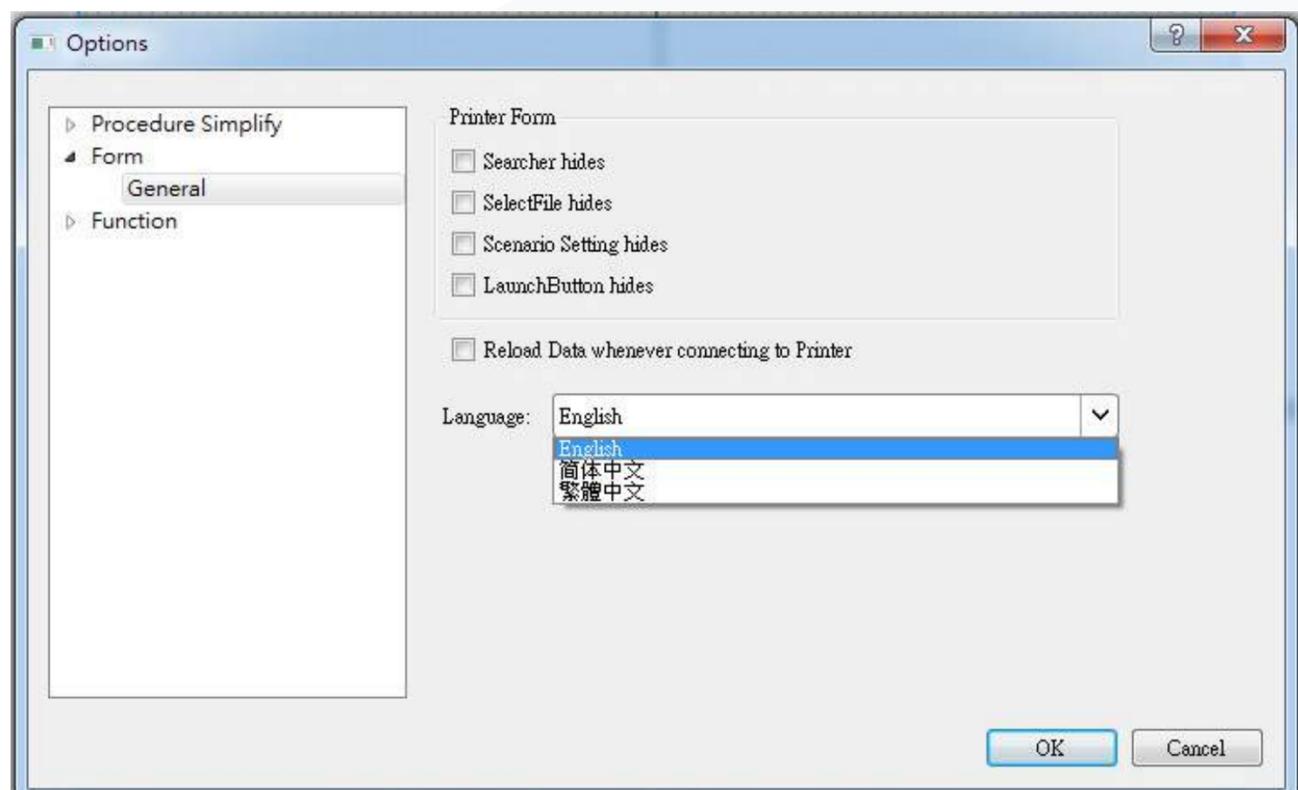
**Enable the option to reload data, specifically the Printer calibration data, whenever connecting to the printer.**



# Tool Bar - Option setting

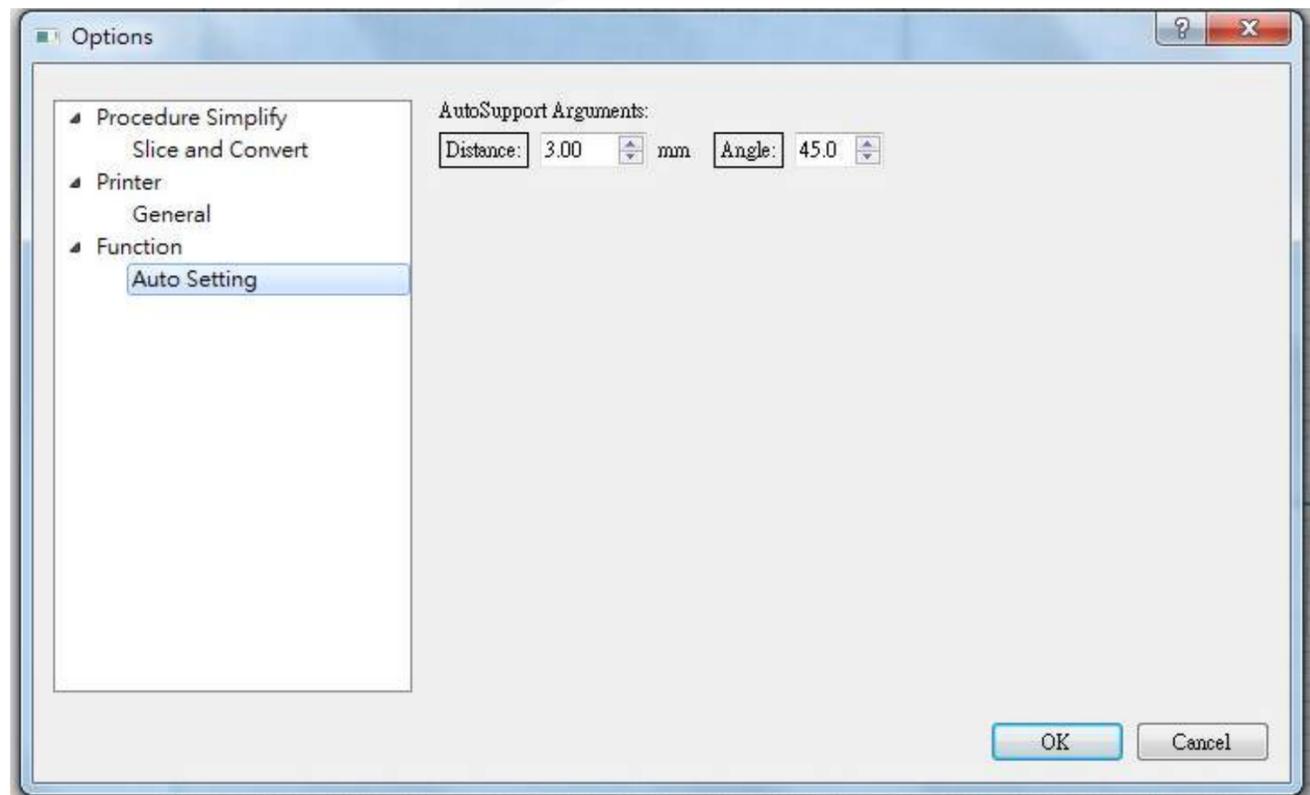
User interface language:

Englihs, Traditional Chinese, Simplified Chinese

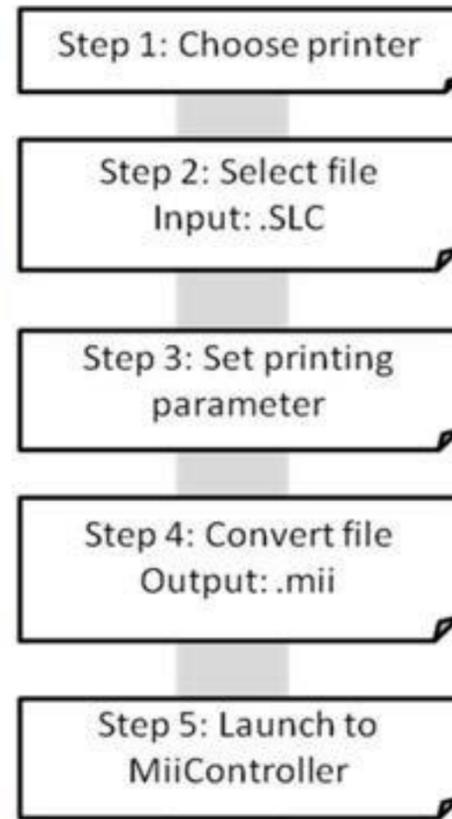


## Tool Bar - Option setting

**Distance:** Adjust the distance between supports and the density of supports. **Angle:** Automatically generate supports for areas on the model surface that are below a certain angle.



# Printer Setting



## Step 01

### Scan online printer

-  Online printer
-  Offline printer

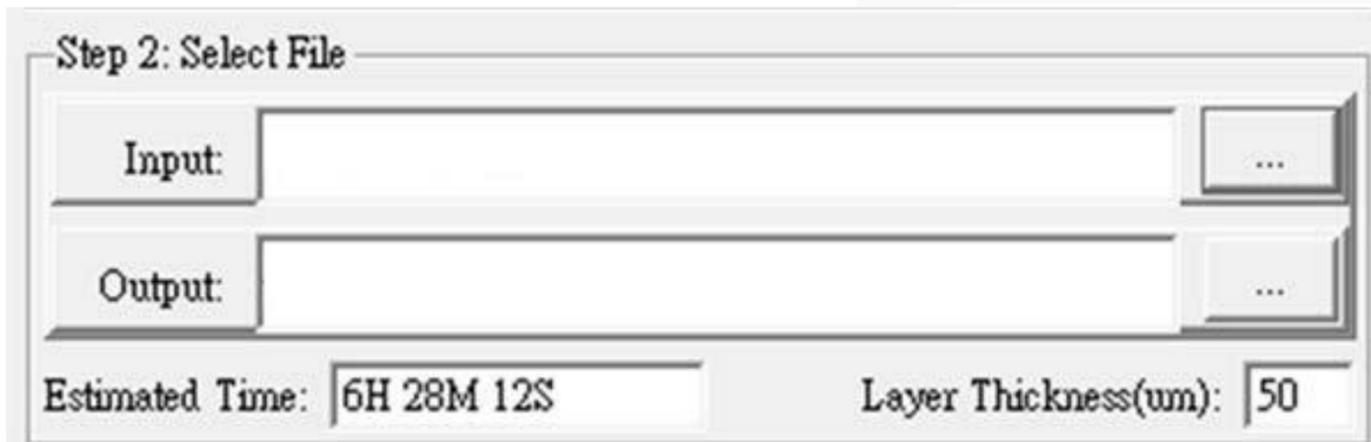


 Trouble shooting

If unable to connect computer and printer, please check computer's proxy setting, it has to be close.

# Printer Setting

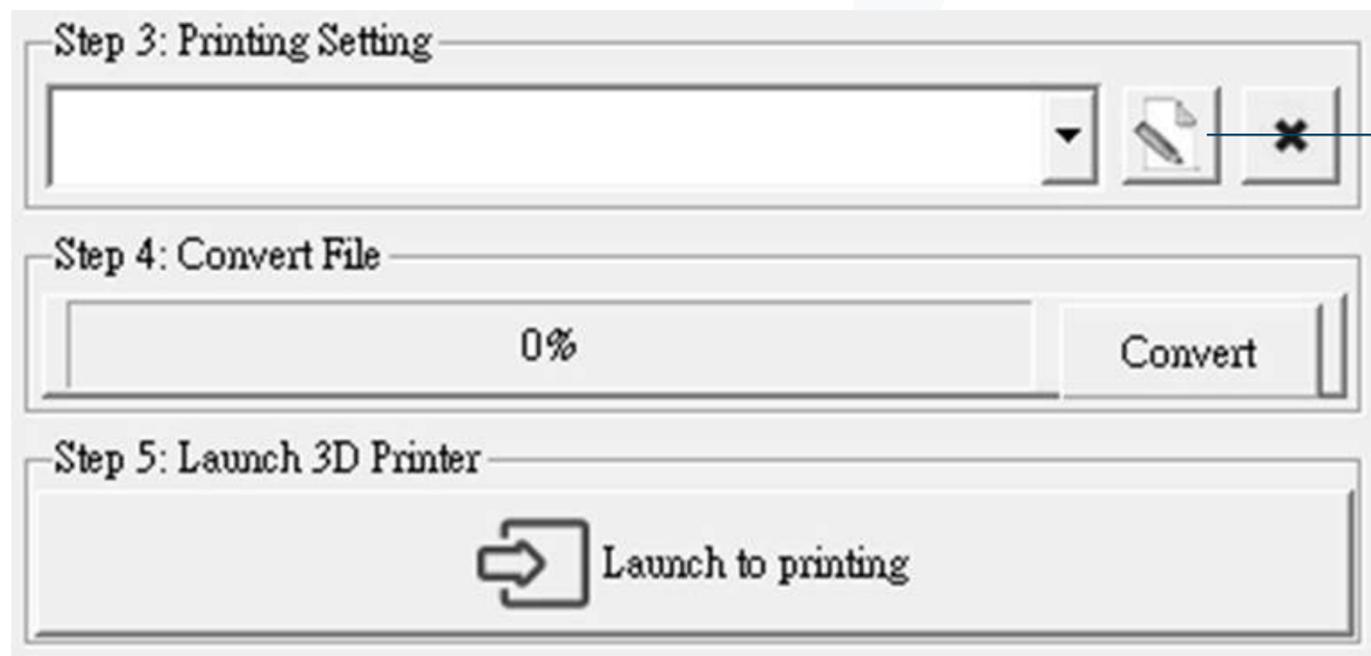
## Step 02



Default user edit .slc file

Output .3dp file

Estimated printing time



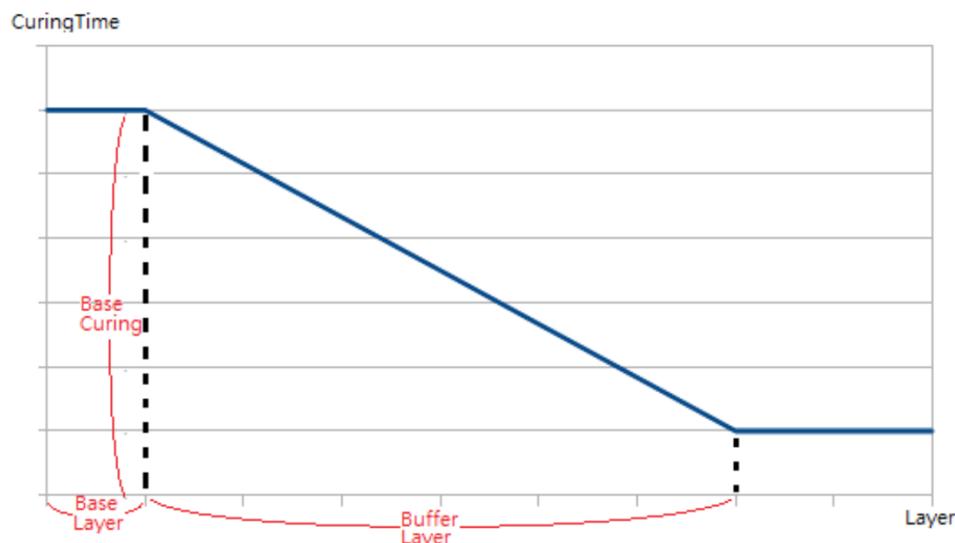
1) Select .mps file

2) Edit .mps file  
(printing parameter)

# Printer Setting



Curing Time(s): 2.00	The amount of time for UV curing(seconds) per layer
Speed: Normal	Slow, Normal and Fast, means different peeling speed. Recoater mode including recoater back and forth. Also user can select "advanced" to set user defined peeling mode
Gap Adj(mm): 0.00	Adjust thickness of the first layer
Base Layers: 1	Define number of base layers
Base Curing(s): 5.00	Curing time for base layers
Buffer Layers: 3	Set the Number of buffer layers
Power(%): 100	At 100% is the existing brightness of light engine. User can adjust the power in response to different resin character
Print Delay(s): 1	For first layer, picker stay for at least 1 sec. then cure
Image Calibration: <input checked="" type="checkbox"/>	Make image calibration for this printer
Anti-aliasing: Max (default)	
Image Pixel Offset: 0 (default)	
Overlap(%): 50	
Edge Enhance: 0	
Blur: 0	

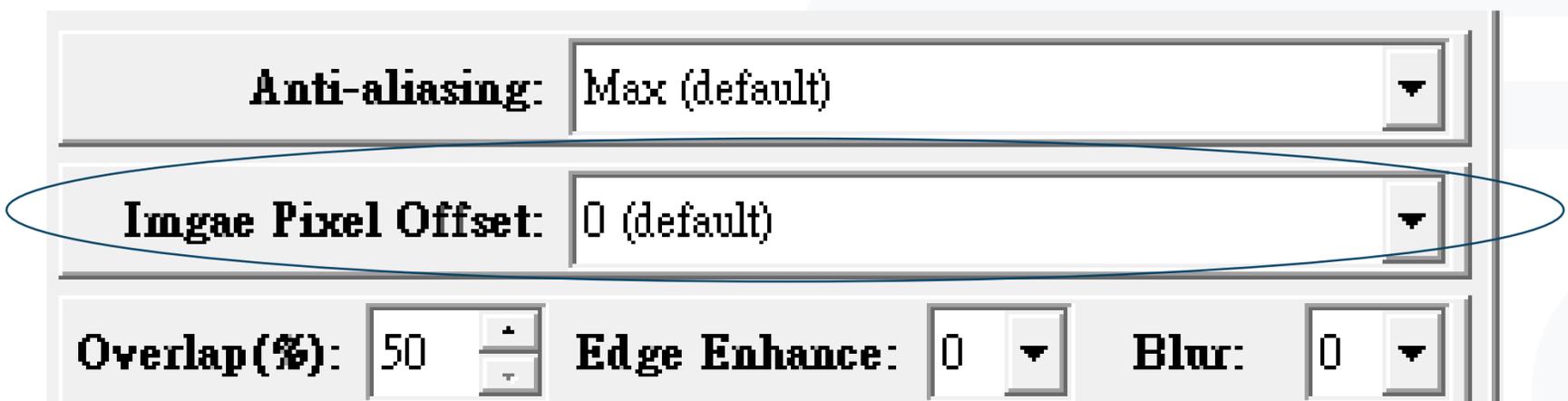
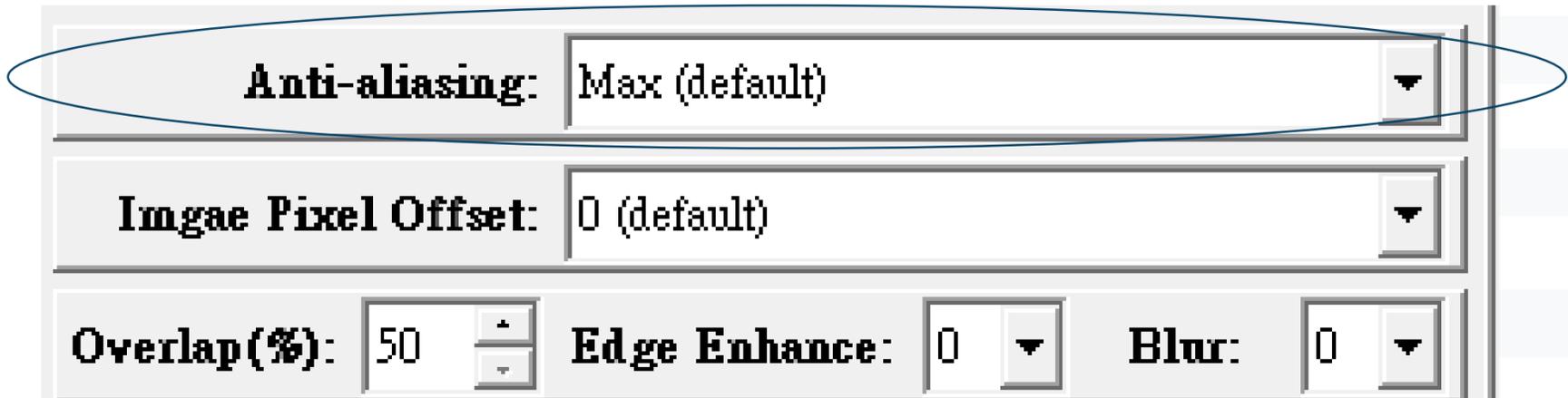


# Printer Setting

	Ultra series	Advance series	Profession series
Image Calibration	●	●	●
Anti-aliasing	●		●
Pixel offset	●		●
Edge enhance		●	●
Overlap (%)		●	
Blur		●	
Contour exposure		●	●
Resin Shrinkage compensation	●	●	●
Flip image	●	●	●

● Active

# Printer Setting



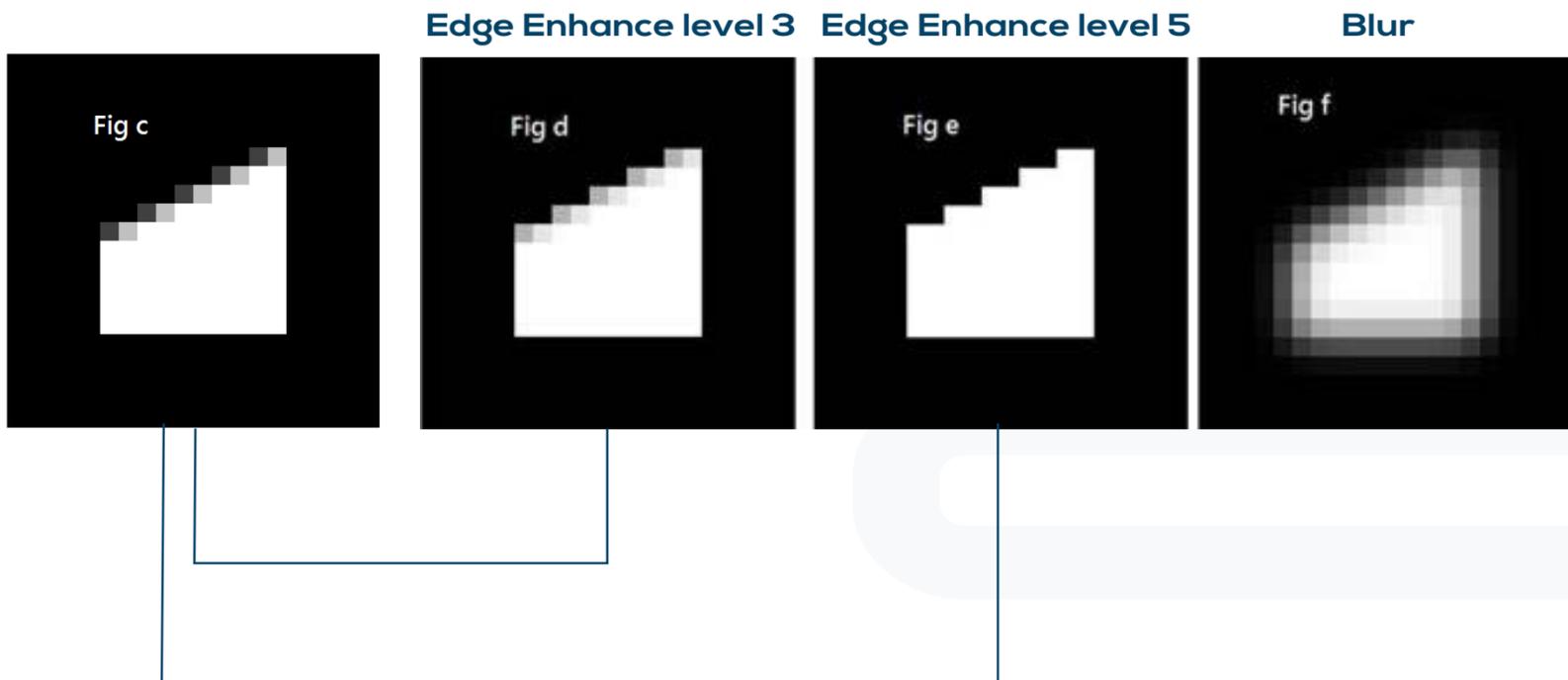
The Pixel Offset feature allows for slight adjustments to the edge pixels:

A value of -2 will erode the edge by 1 pixel.

A value of 2 will add 1 pixel to the edge.

# Printer Setting

Anti-aliasing:	Max (default)	▼
Image Pixel Offset:	0 (default)	▼
Overlap(%):	50	▲ ▼
Edge Enhance:	0	▼
Blur:	0	▼

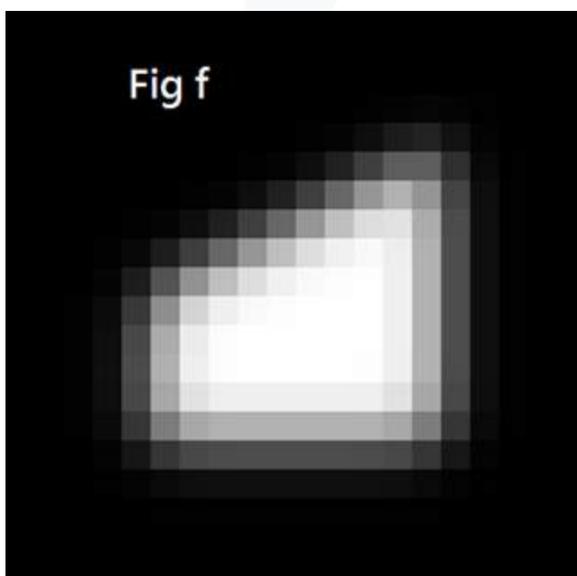
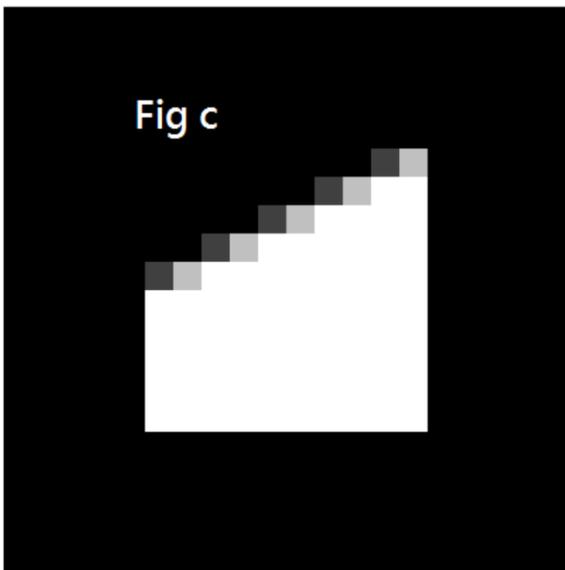


# Printer Setting

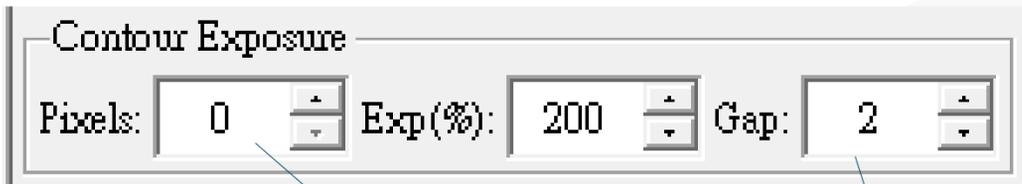
Only apply to Advance series

Anti-aliasing:	Max (default)	▼
Image Pixel Offset:	0 (default)	▼
Overlap(%):	50	▲ ▼
Edge Enhance:	0	▼
Blur:	0	▼

Blur



# Printer Setting

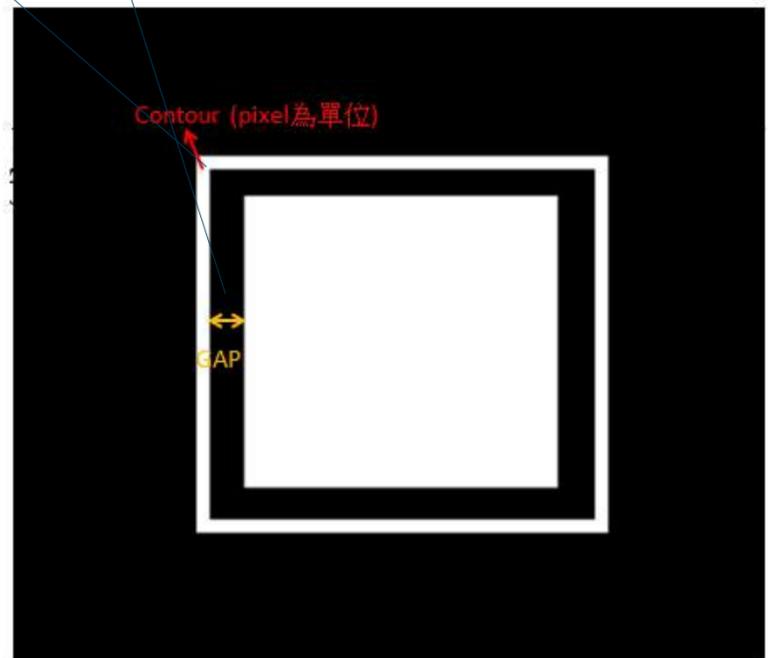
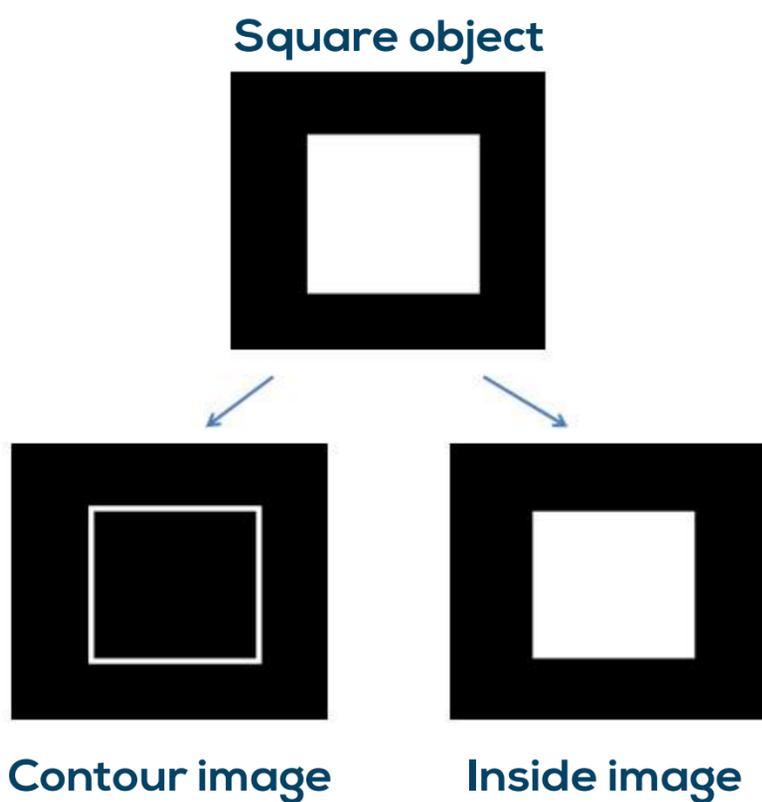


**Pixels : Contour pixel**

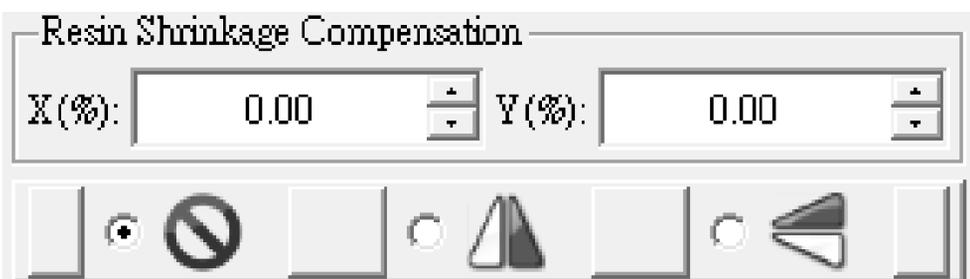
**Exp (%) : Contour exposure time**

The percentage is compare to curing time

(Inside image exposure time is same as curing time)



If user set contour pixel, one image will become 2 image, contour and inside

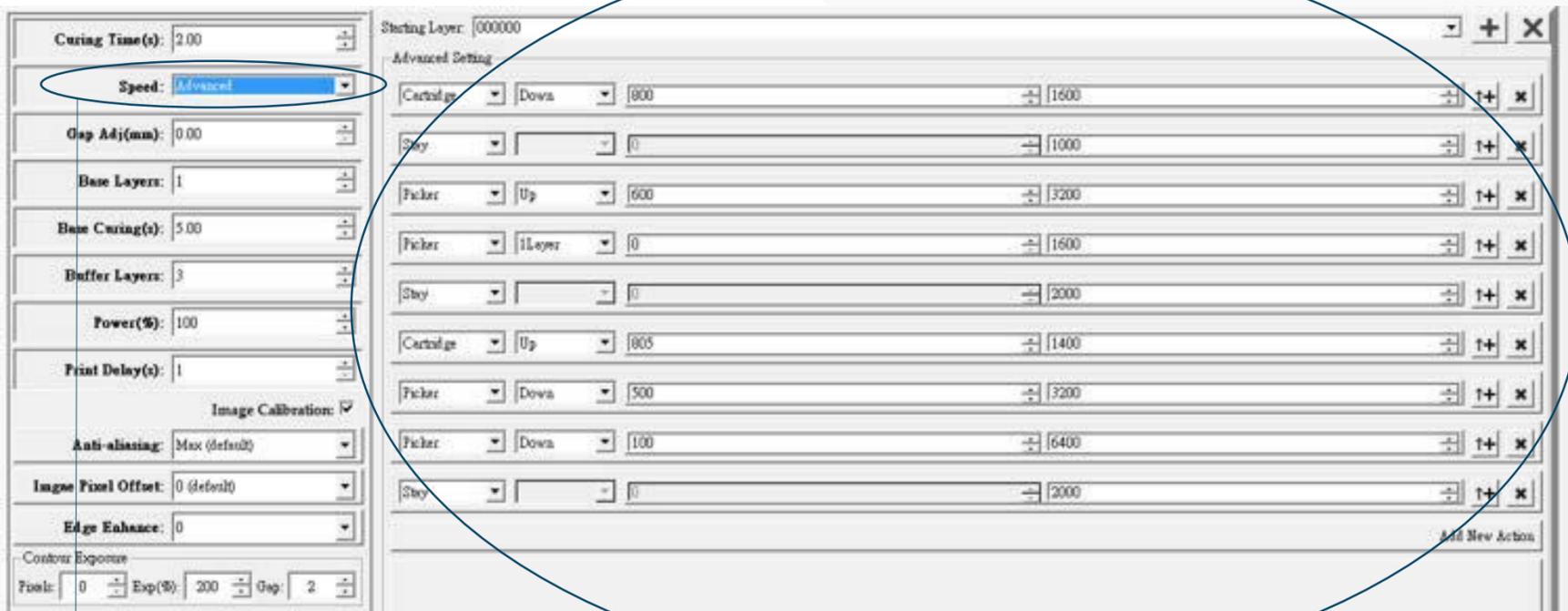


+0% to 9.9% → Enlarge an image

-0% to -9.9% → Shrink an image

Flip image by X axis or Y axis

# Printer Setting - Advance setting



Speed : select Advance

Enable Function: Customize peeling mode

# Printer Setting - Advance setting

The advanced settings provide the advantage of choosing the peeling mode:

**Tilt mode:** Adjusts the up-and-down movement of the cartridge (tank) to enable peeling of larger areas.

**Direct mode:** Focuses on the picker's movement while keeping the cartridge stationary, allowing for faster peeling.

**Sweep:** Controls the movement of the recoater.

These advanced settings can be applied starting from the specified starting layer.

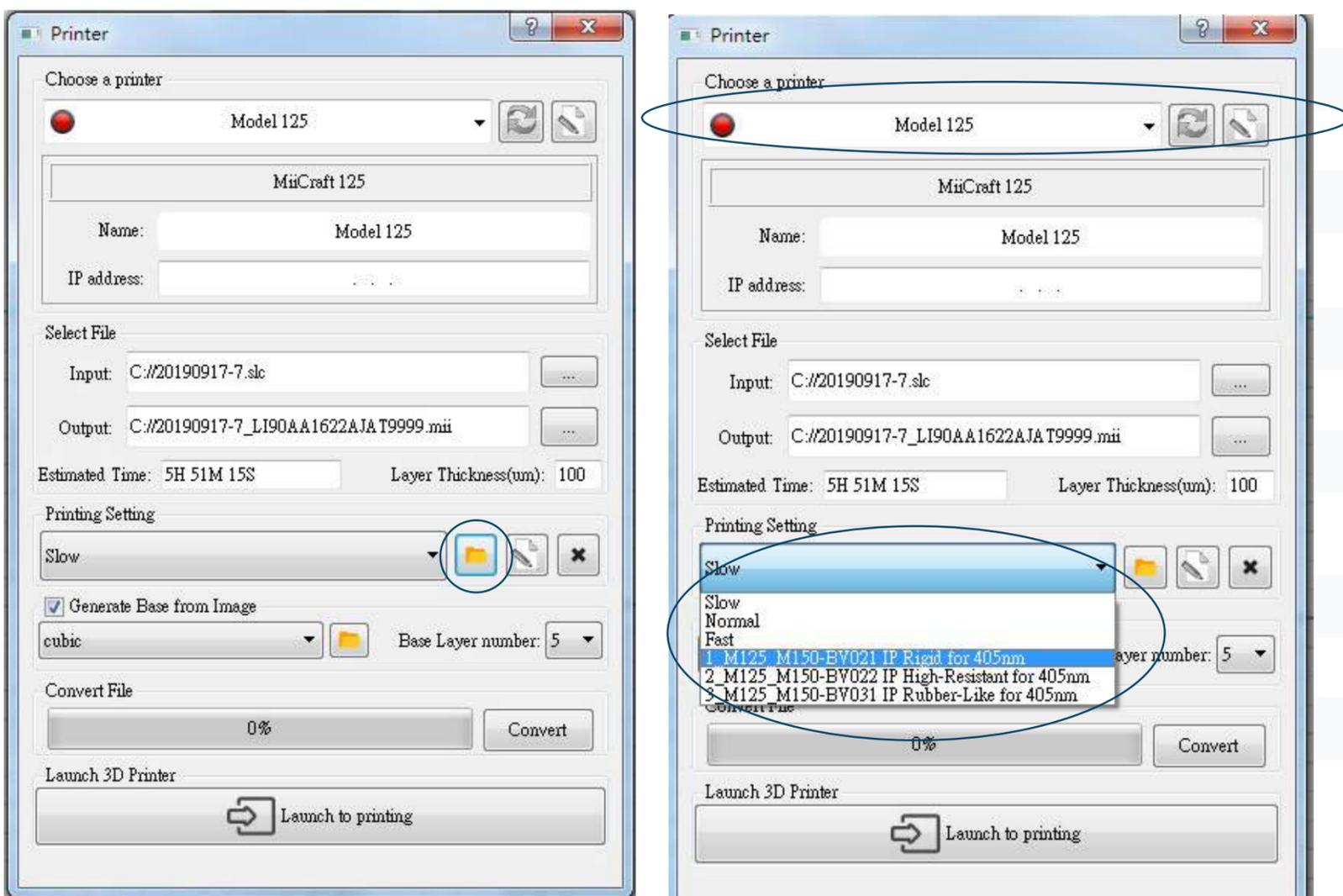
Items	Movement	Step (25um/step)	Half Step period (micro second)
Starting Layer: 000000			
Advanced Setting			
Cartridge	Down	800	1600
Stay		0	1000
Picker	Up	600	3200
Picker	1Layer	0	1600
Stay		0	2000
Cartridge	Up	805	1400
Picker	Down	500	3200
Picker	Down	100	6400
Stay		0	2000
Add New Action			

# .mps file user management

To assign a user management file (.mps):

The printer selection will determine the .mps files available to you. For example, if you choose the MiiCraft Profession Printer, you can only select .mps files specifically designed for the MiiCraft Profession Printer.

Place the desired .mps files into the user-assigned folder. Once placed in this folder, the .mps files will appear in the printing setting list, as shown in the picture.



# Generate Base from Image

In Step 3: Printing setting:

Choose the image shape for the base:

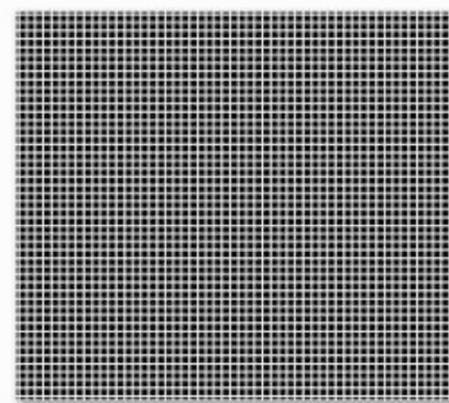
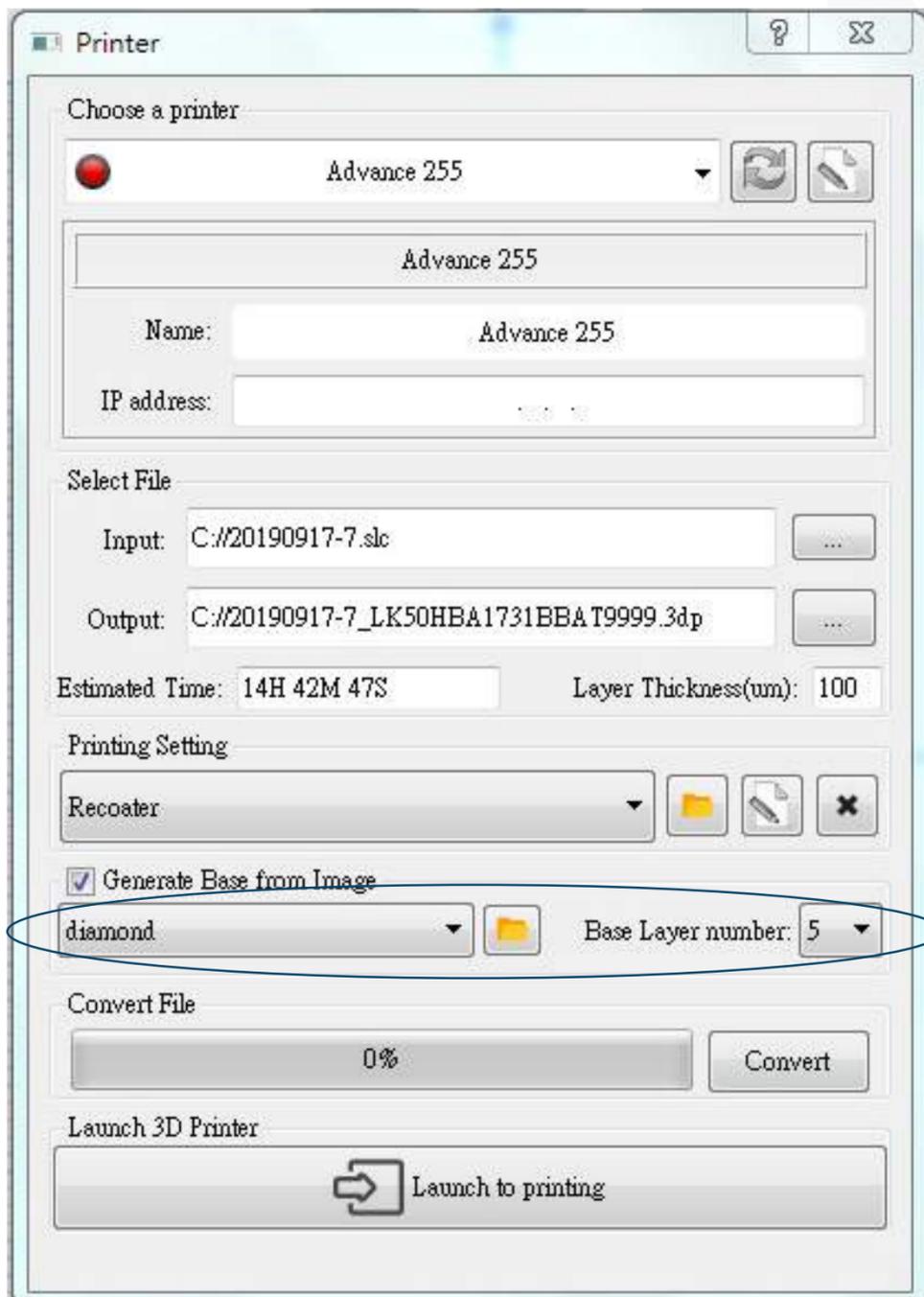
Cubic

Diamond

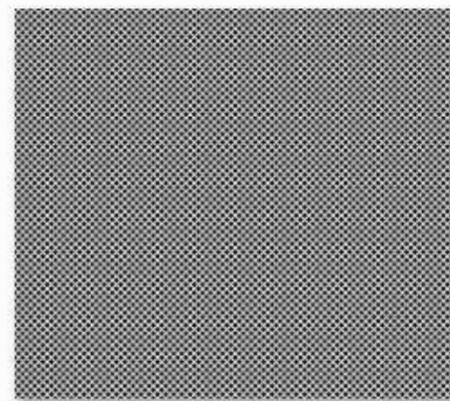
Hexagon

Or use a custom DIY image as the base.

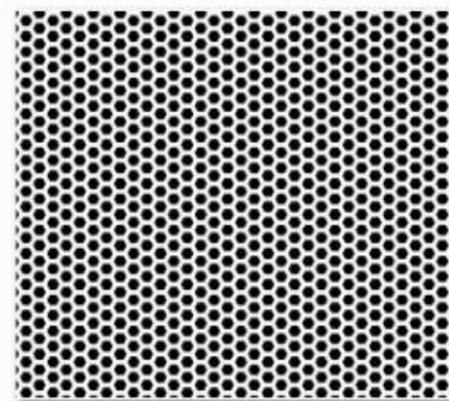
Adjust the thickness of the base layer for the selected image shape.



cubic.png

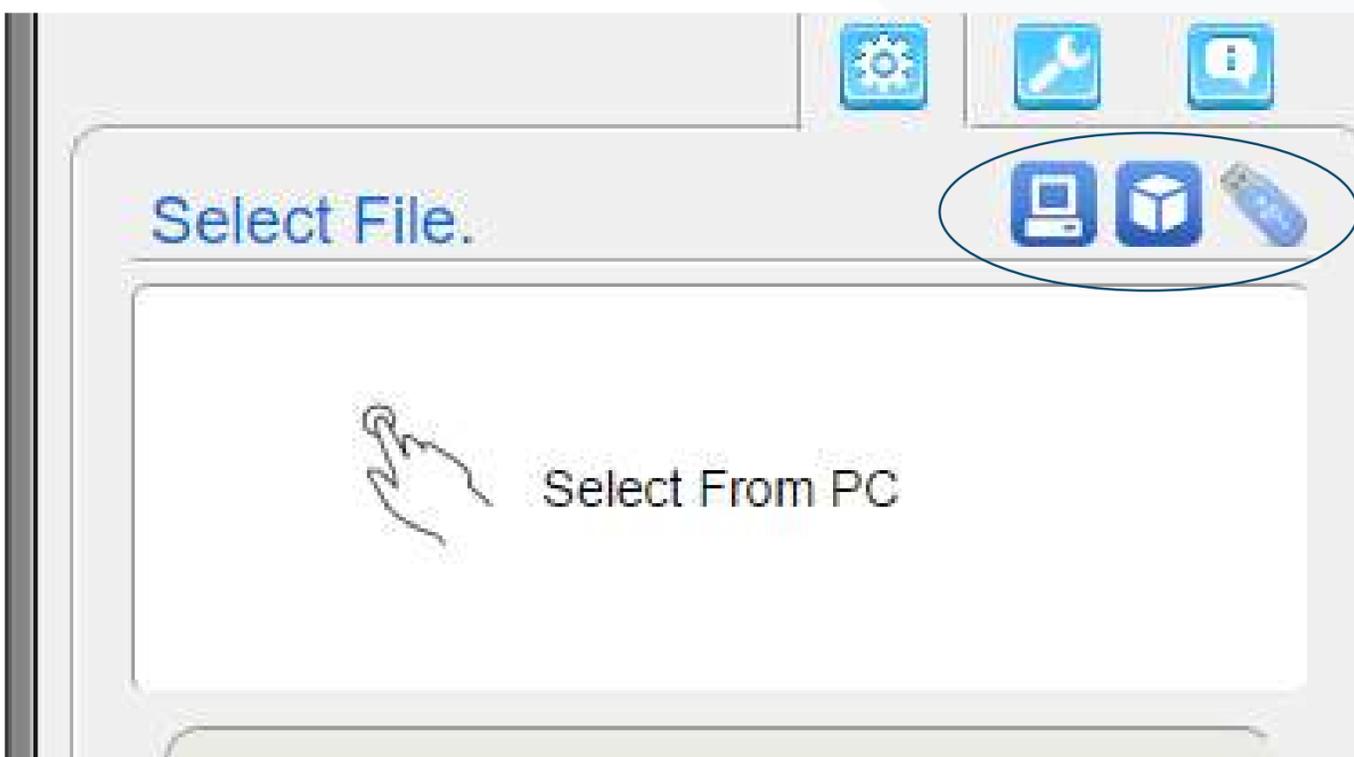


diamond.png



hexagon.png

## Printer via computer



**To select a .3dp file for printing:**

**Choose one of the following options:**

**Select the file from your computer.**

**File size limit: 500MB.**

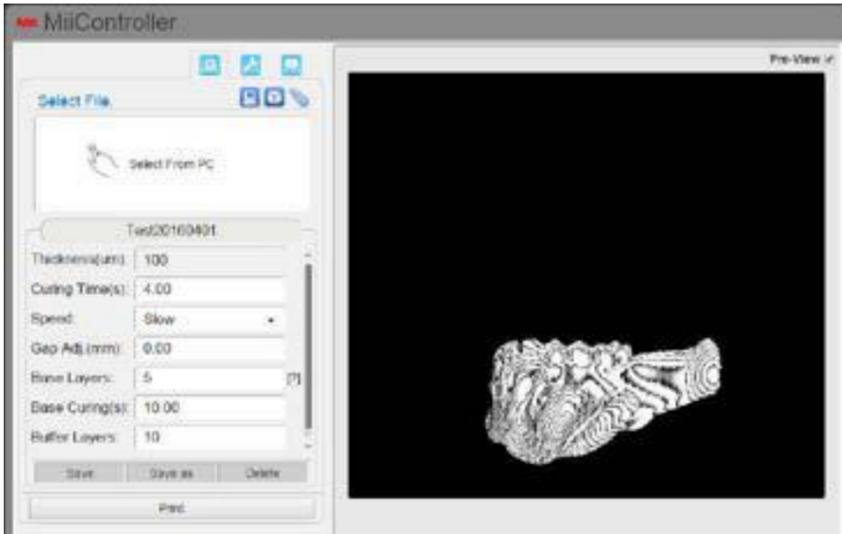
**Access the file saved in the printer.**

**Insert a USB drive into the printer and select the file from it.**

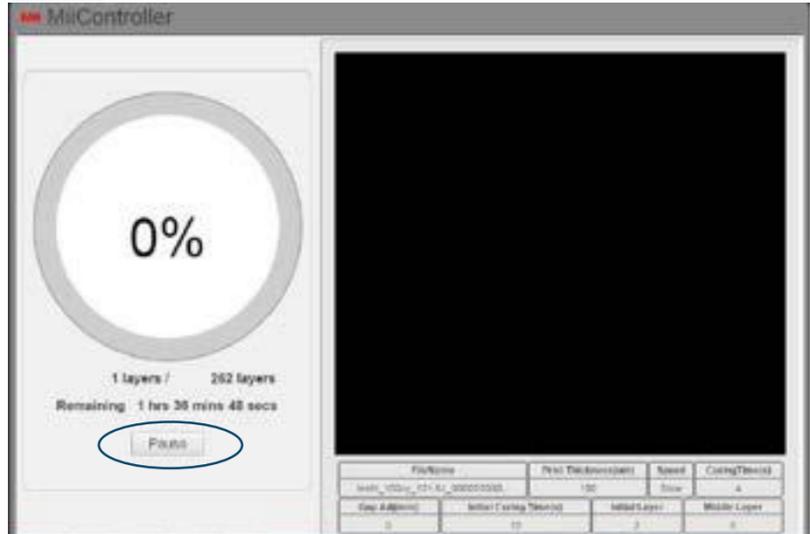
**File size limit: 1GB.**

# Printer via computer

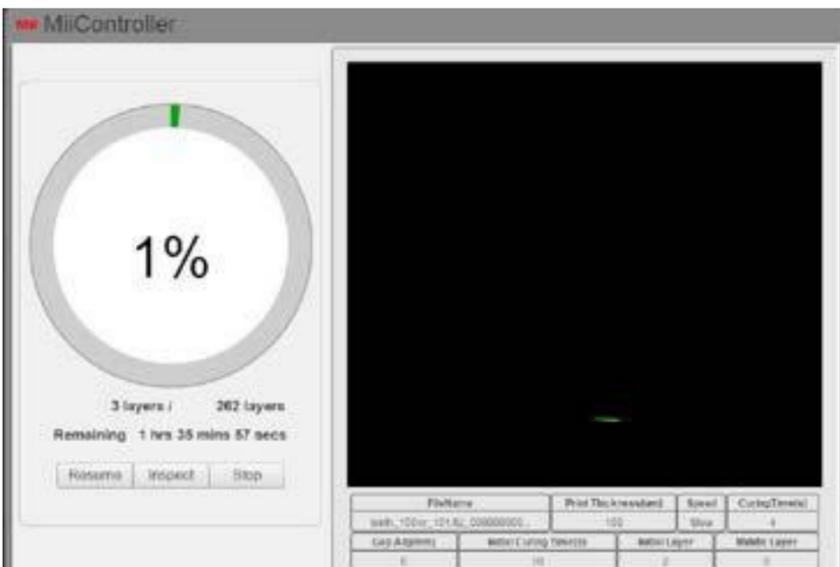
1



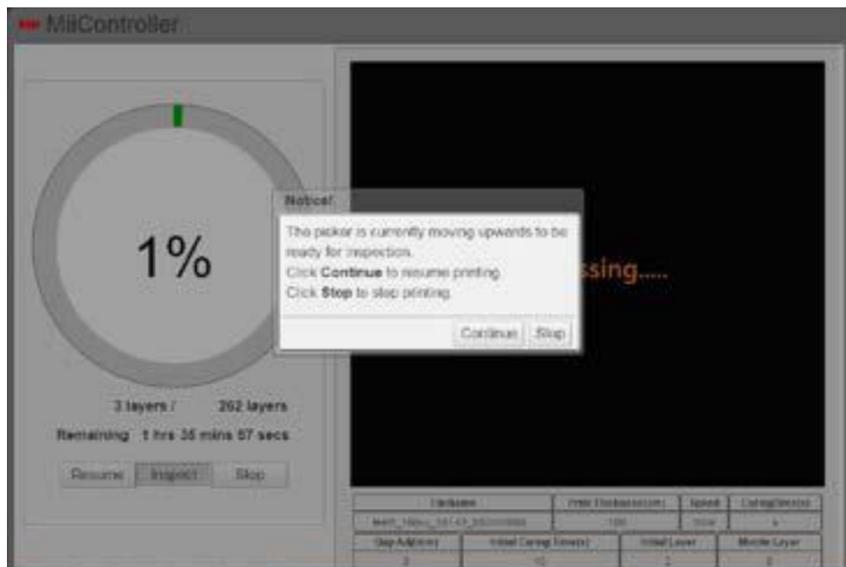
2



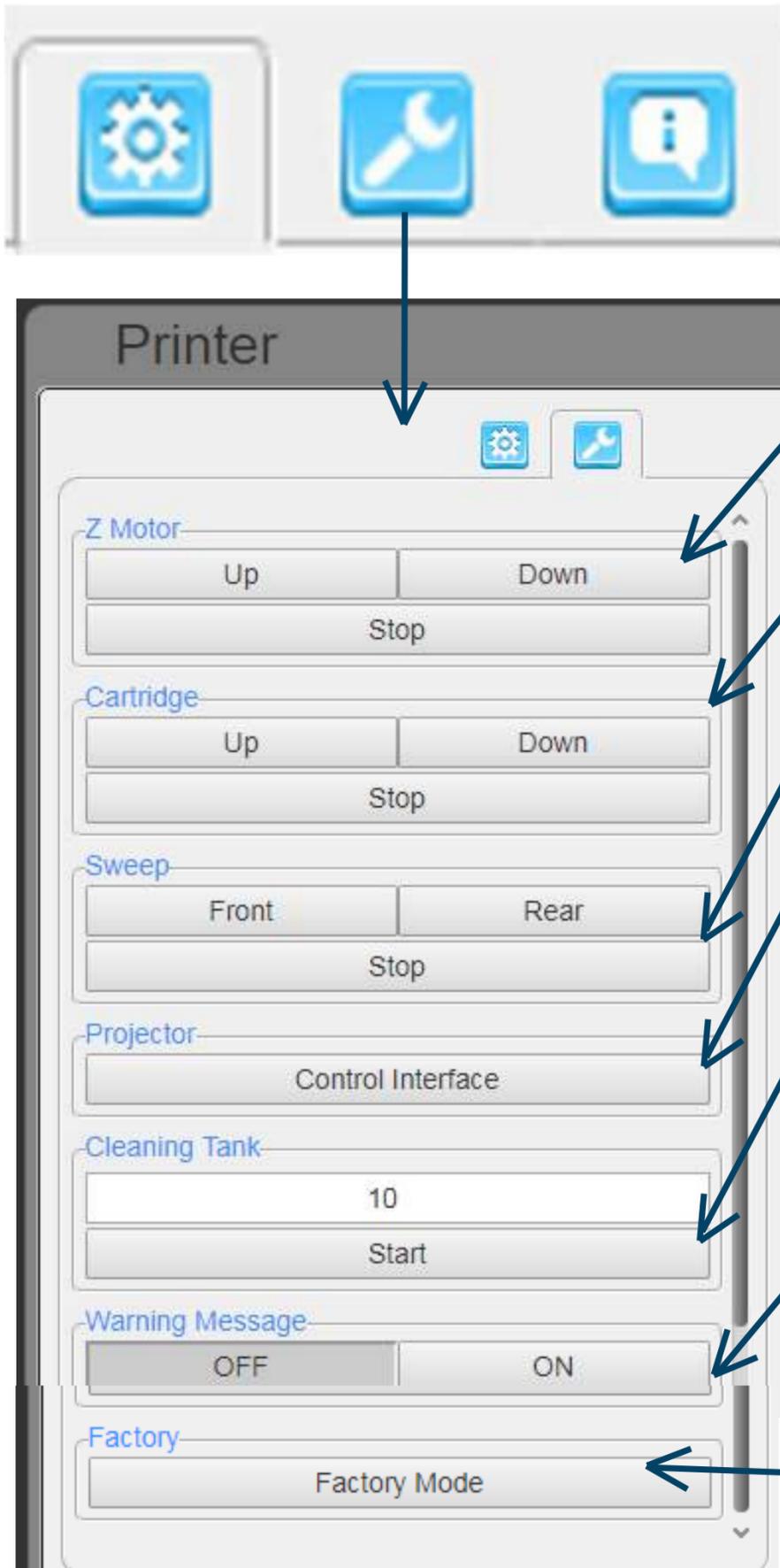
3



4



# Engineering mode (Computer)



Control Z-platform  
(Build platform)

Control recoater blade

Control teflon module

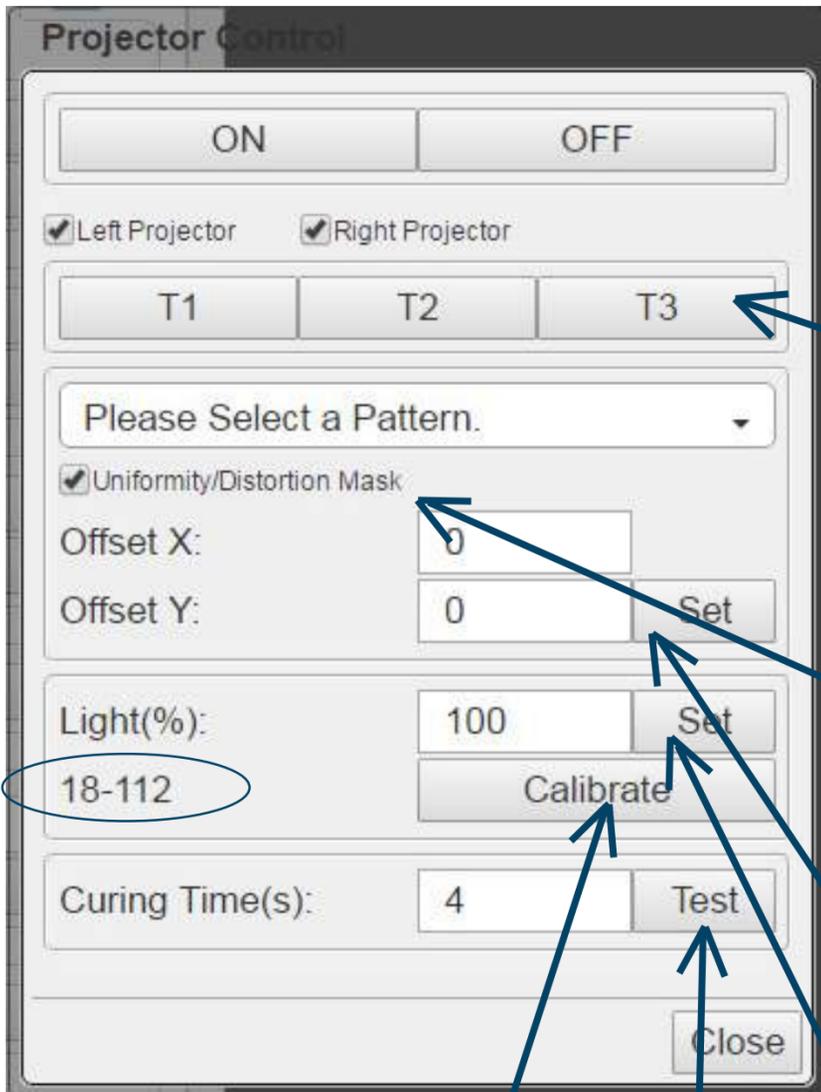
Introduce in the  
next page

Project a complete  
patter, the residual  
will be transformed  
into a solid layer

On/off of warning  
message shows  
before print

Key in password to use  
Factory mode  
(For distributor use)

# Engineering mode (Computer)



← For the Advance series machine, choose either the left or right projector to control.

T1/T2/T3 options allow you to use the test pattern inside the projector or select a pattern from the menu.

Tick the option to apply printer calibration, which suggests a suitable range.

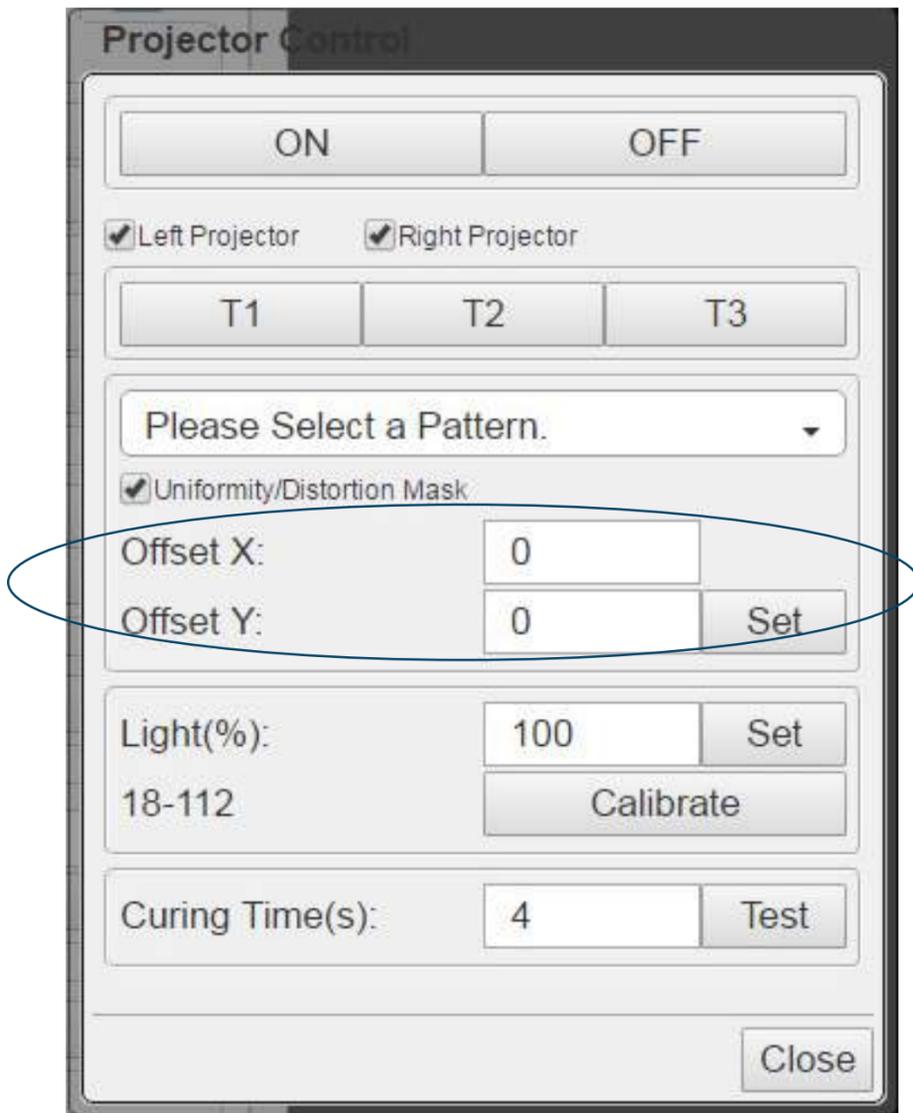
Fix the left projector and adjust the right projector along the X or Y axis.

Light(%): The brightness of the light engine can be adjusted within the suggested range, with 100% representing the existing brightness.

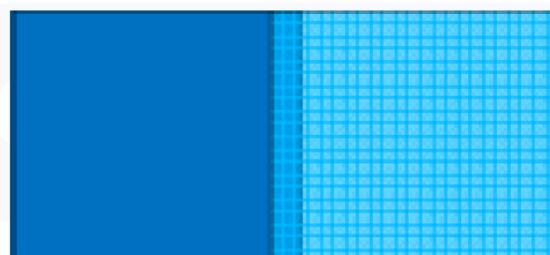
Calibrate: Resets the brightness settings to default.

Curing Time(s): Allows you to test print curing time.

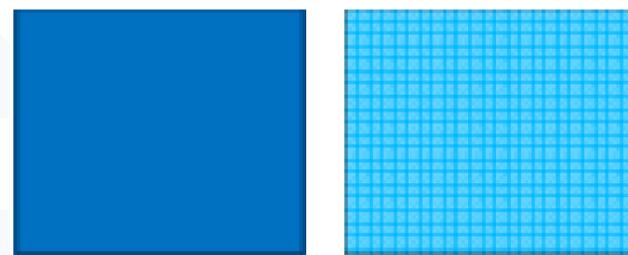
# Engineering mode (Computer)



Fix the left projector image, and move right projector image through X axis.



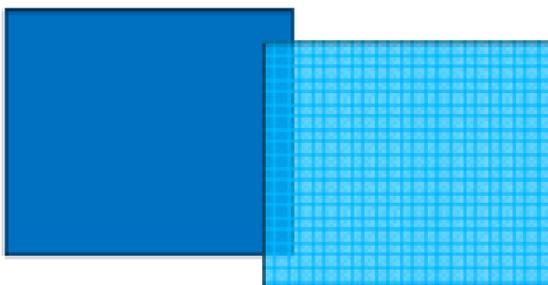
Offset X : -9



Offset X : 9

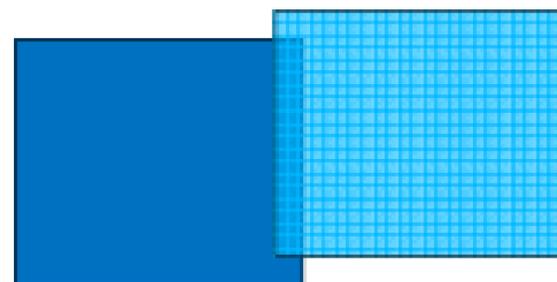
Fix the left projector image, and move right projector image through Y axis

Printer back side



Printer door side  
Offset X : -9

Printer back side



Printer door side  
Offset X : 9

# Printing record & Update firmware

The screenshot shows the 'Printer' application window. On the left, the printer details for 'Advance 205' are displayed, including Name (Test#1), SN (LK50HAA1800BAAT0001), and FW (2.0.3.t17). An 'Upgrade FW' button is highlighted with a blue circle. On the right, a 'Search interval' dropdown is set to '2019/04/18 - 2019/05/18'. Below this, a table displays printing records for 'DUAL\_RUNIN' files.

File Name	Print Thickness(um)	Curing Time(s)
DUAL_RUNIN	50	1.50
Gap Adj.(mm)	Base Curing Time(s)	Base Layers
0.000	5.00	1
Speed	Print Delay(s)	Start Time
file	1	2019/05/17 19:55:10
End Time	Total Layer	
2019/05/18 05:19:38	3788	

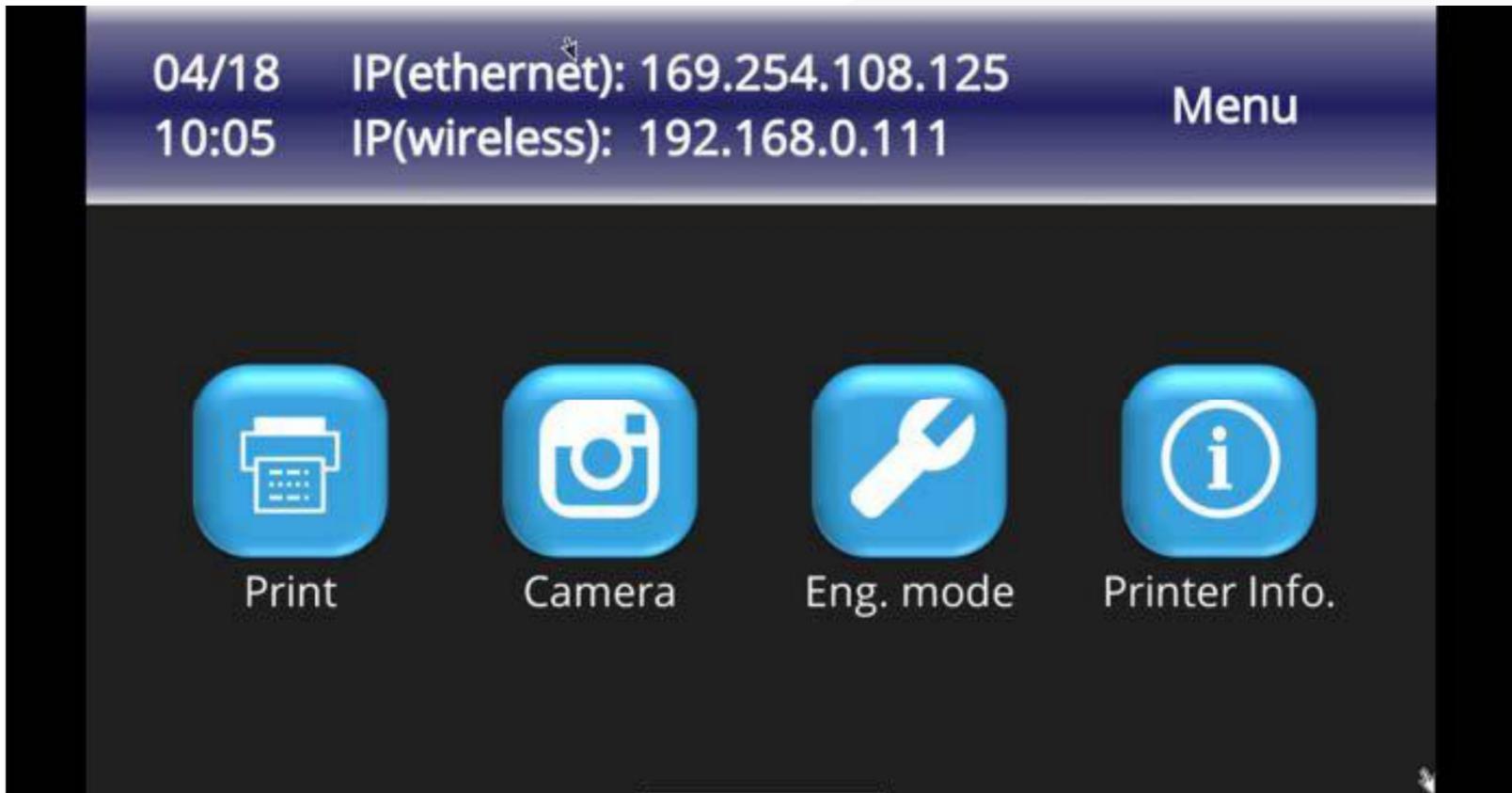
  

File Name	Print Thickness(um)	Curing Time(s)
DUAL_RUNIN	50	1.50
Gap Adj.(mm)	Base Curing Time(s)	Base Layers
0.000	5.00	1
Speed	Print Delay(s)	Start Time
file	1	2019/05/17 09:17:02
Stop Time	Total Layer	
2019/05/17 17:37:22	3392(3788)	

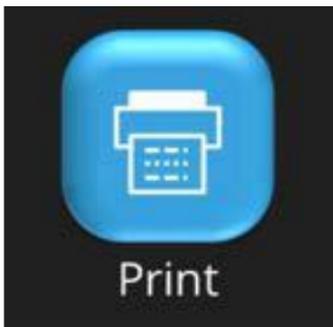
Upload the latest Firmware package to upgrade printer firmware

Record

# Printer via touch panel



## Printer via touch panel

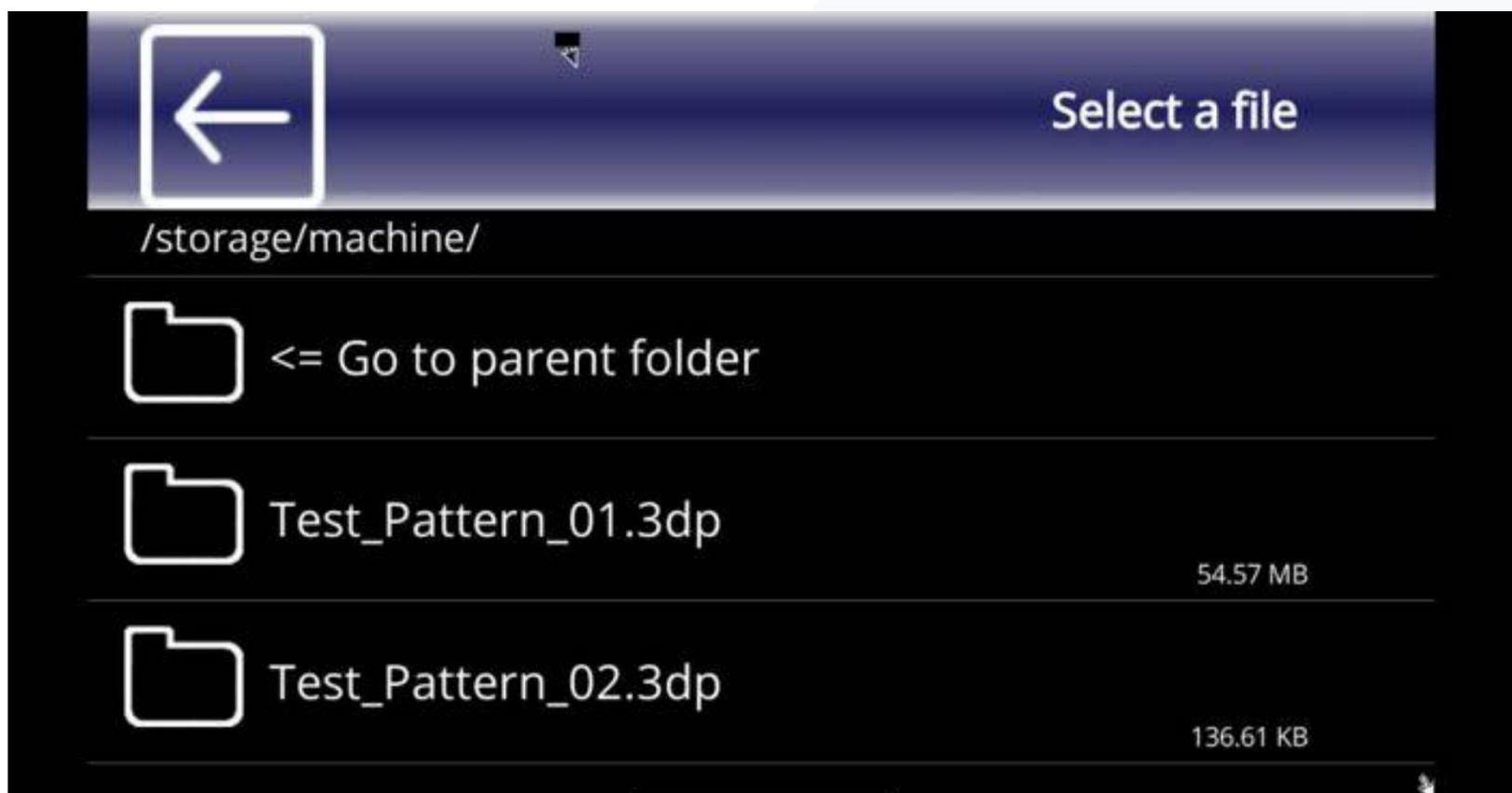


Choose a .3DP file from either:

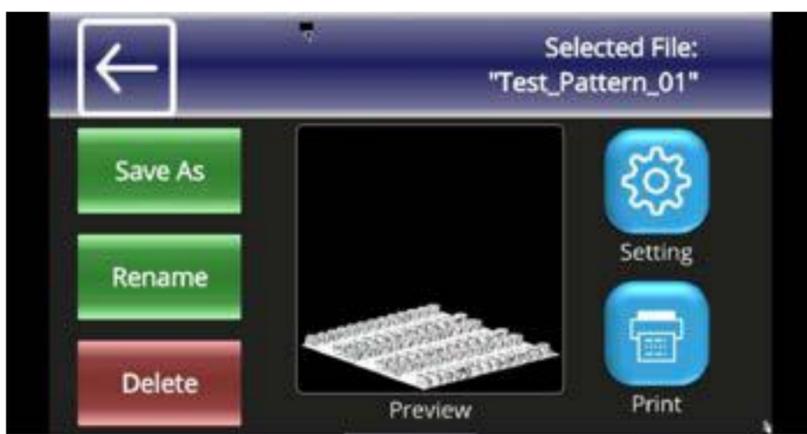
1. The machine (file saved in the printer), or
2. A USB drive (inserted into the printer).

File input size limitations:

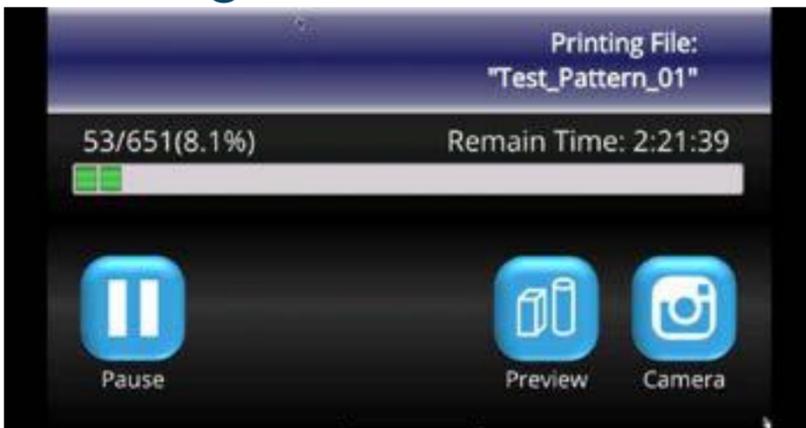
1. Uploading from the computer has a file limit of 500MB.
2. Uploading from a USB drive has a file limit of 1GB.



# Printer via touch panel



## Printing



## Preview



## Pause



Let build platform moving upwards for inspect

# Touch screen panel



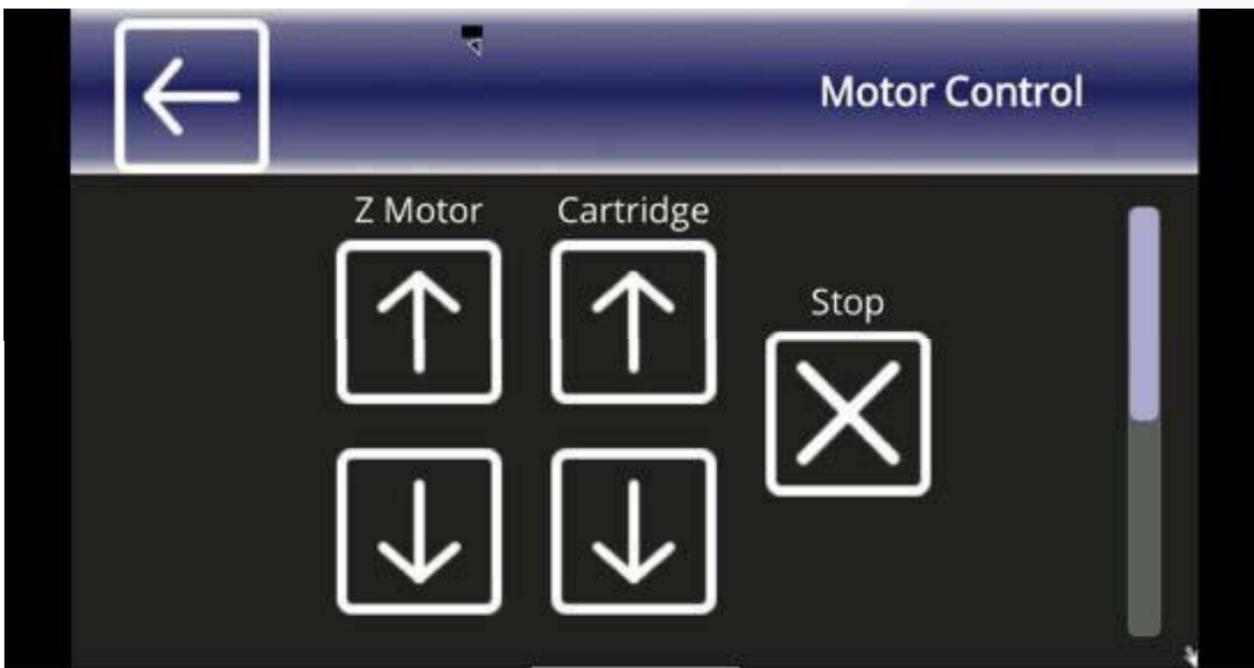
Upload the latest Firmware package to upgrade printer firmware



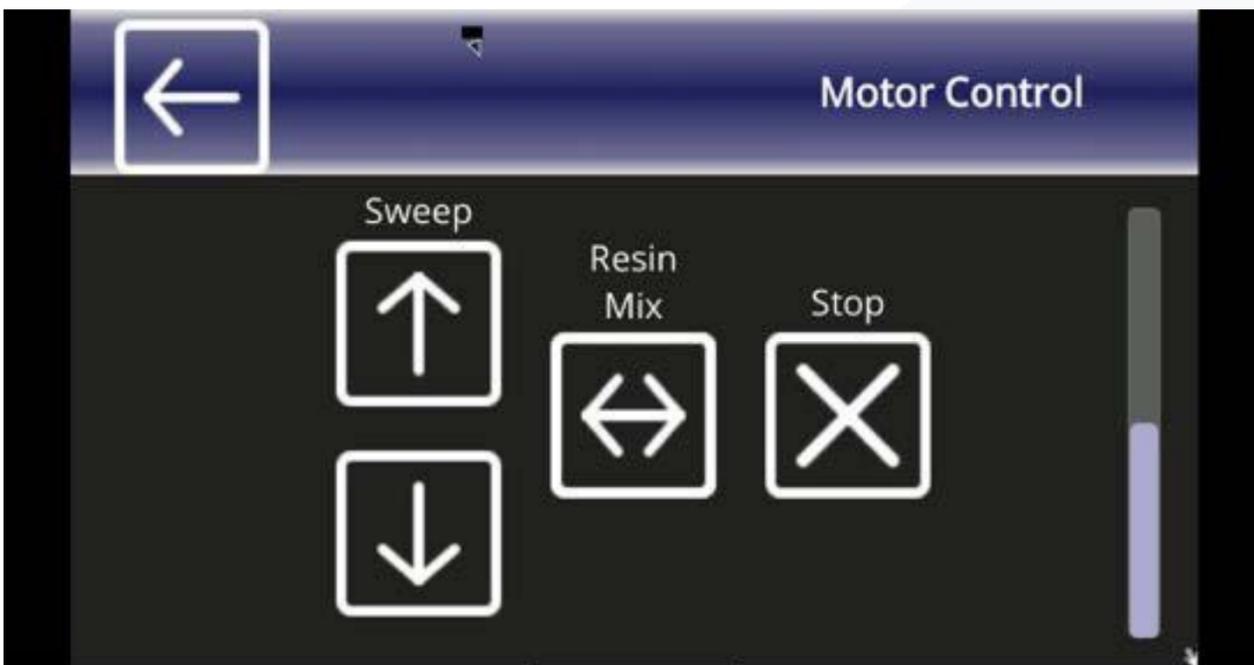
Printing record

Search WiFi  
Printer connect to Wifi

# Touch screen panel



Control Z-platform (Build platform)  
Control teflon module



Control recoater blade

# Touch screen panel



Select a pattern to project

Tick this option to apply printer calibration function

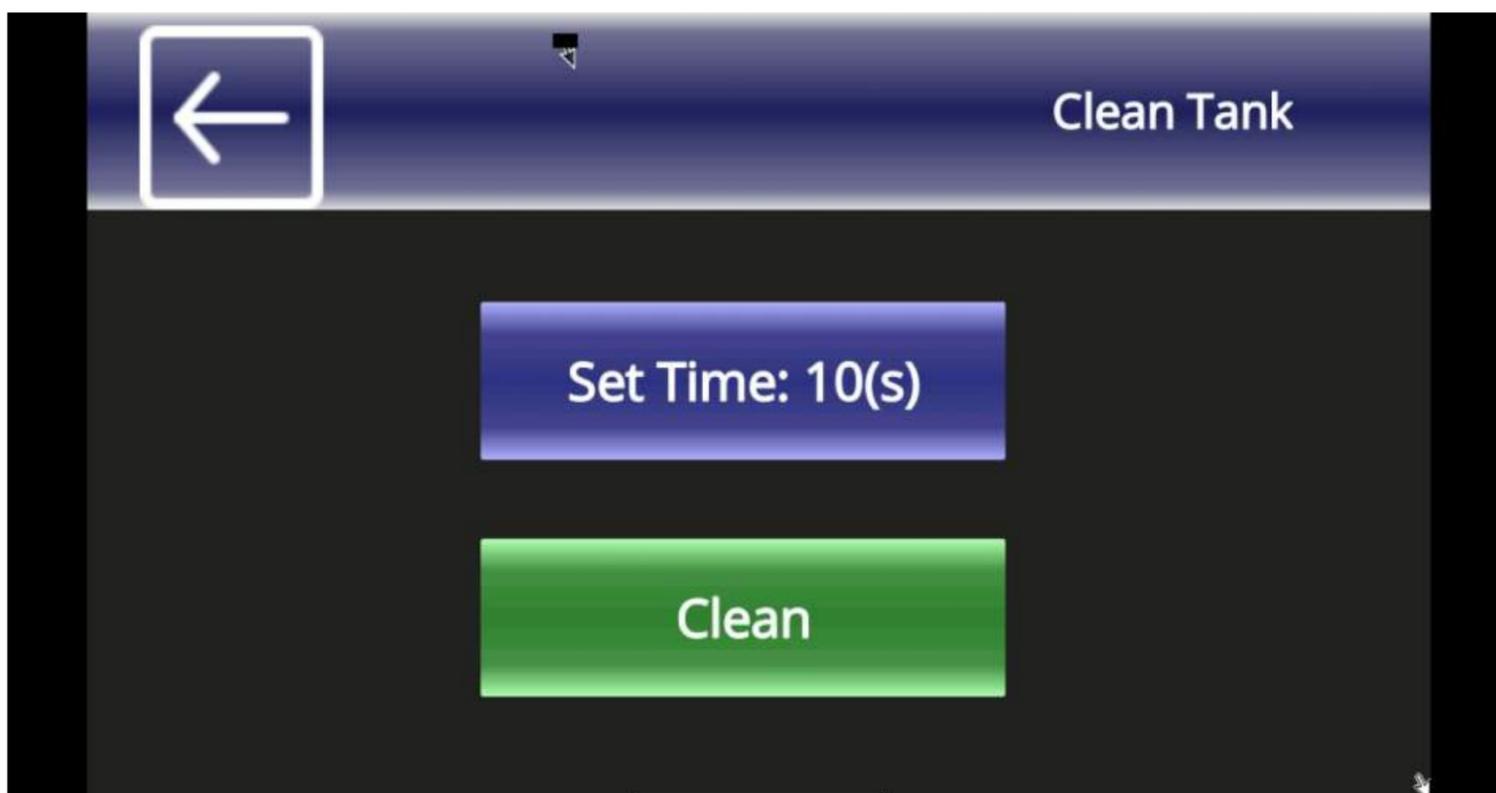


Select a pattern to project

Light(%): At 100% is the existing brightness of light engine. The suggest range is base on the printer's condition, user can only set the % within the suggest range

Reset to default setting of brightness

## Touch screen panel



After a printing failure, it is essential to clean any residual material that may be stuck on the Teflon module before starting another printing job. Here are two methods to clean the residual material:

1. Utilize the "Clean tank" function on the touch panel. This function projects a complete pattern that transforms the residual material into a solid layer.
2. Use a scrape tool to gently lift and remove one side of the solid layer from the Teflon module, taking care to avoid damaging the module.

# Touch screen panel

