PHROZEN

Cad Modification

Building Support

Phrozen DLP One Manual

Concept

- Not everything can be printed by 3D Printer. Perfect match among 3D Printer, Design, and Experience is required.
- For safety reason, we suggest you to use ANY TYPES of 3D Printer in open space.
  - Open your window and wear mask/gloves when in operation.
  - Don’t worry. Resin and 3D Printer from Phrozen are safe if you follow our guidelines.
  - If you feel sick or something wrong in printing process, please stop immediately.

Support Is Foundation Of Printing

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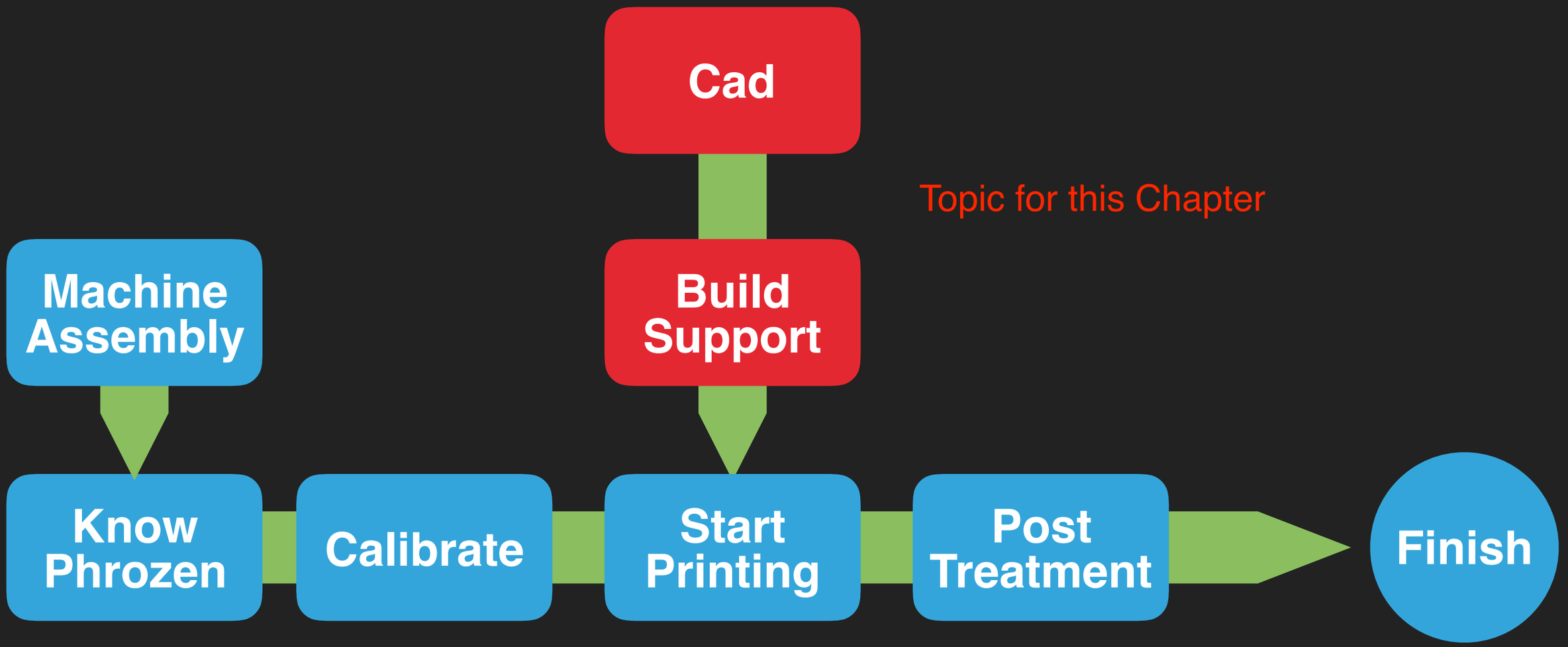
- A object is sliced layer by layer so that we can print it. Support is used to strengthen model structures, especially for overhang parts.
- What is good support? It includes
  - Support Tip Size
  - Angle of support
  - Strength of overall model structure
- However, support tip size will influence the model's appearance when you cut it. Generally we tilt model to proper angle to minimize the numbers of support.
- **Suggested Support Software：MeshMixer**
  - Free and easy to operate.
  - Download link：http://www.meshmixer.com/download.html

Agenda


Cad
Build Support
Topic for this Chapter
Machine Assembly
Know Phrozen
Calibrate
Start Printing
Post Treatment
Finish

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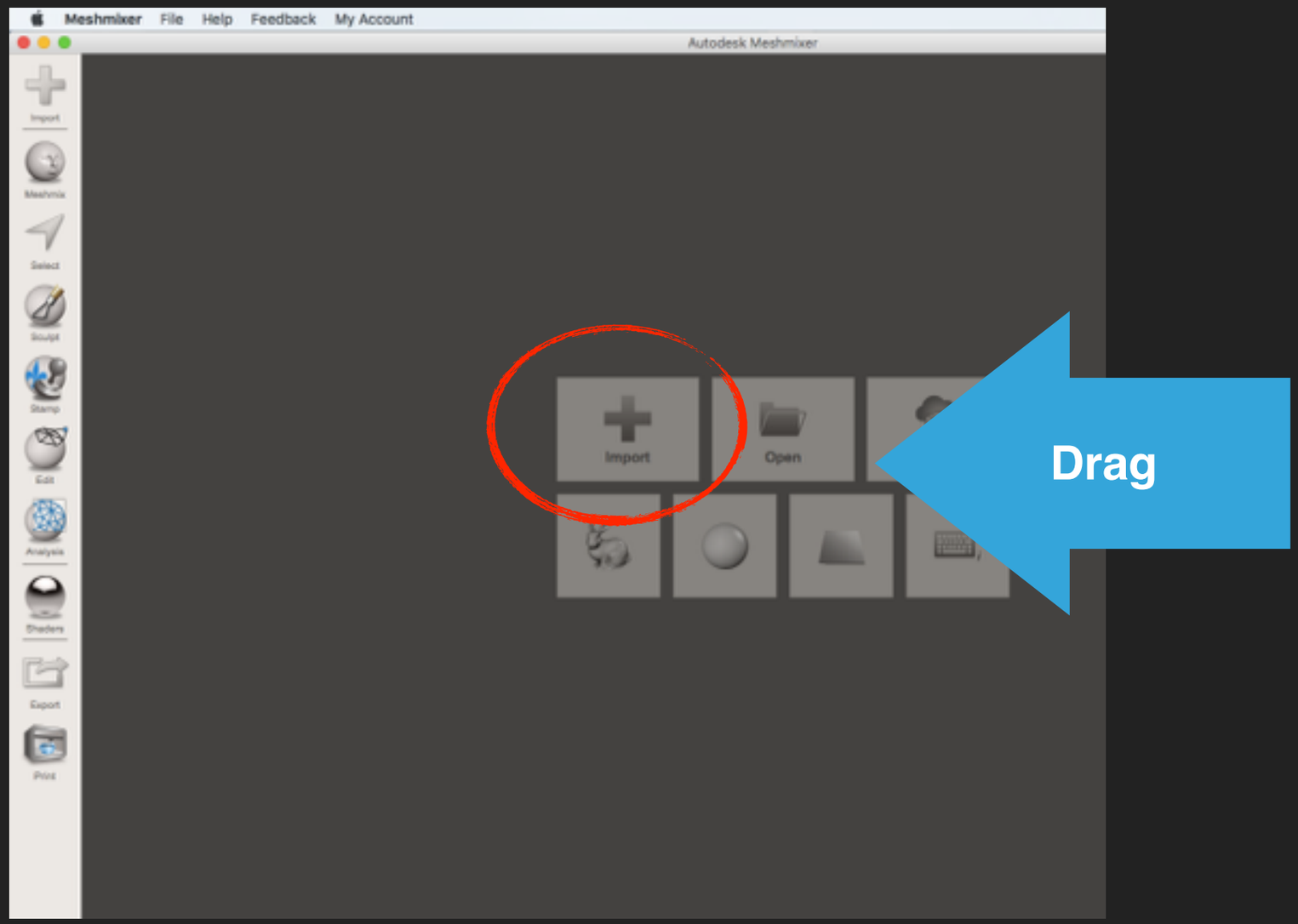
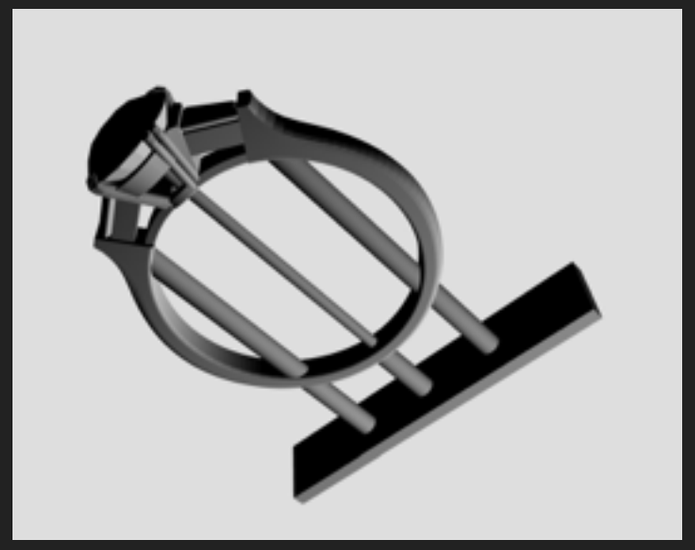
1. Meshmixer – Cad Modification
2. Meshmixer – Building Support
3. Meshmixer – Hollow Model

Process for Meshmixer

Open Your File

1. Open MeshMixer. Click Import and load your file.





Put Your File In The Center

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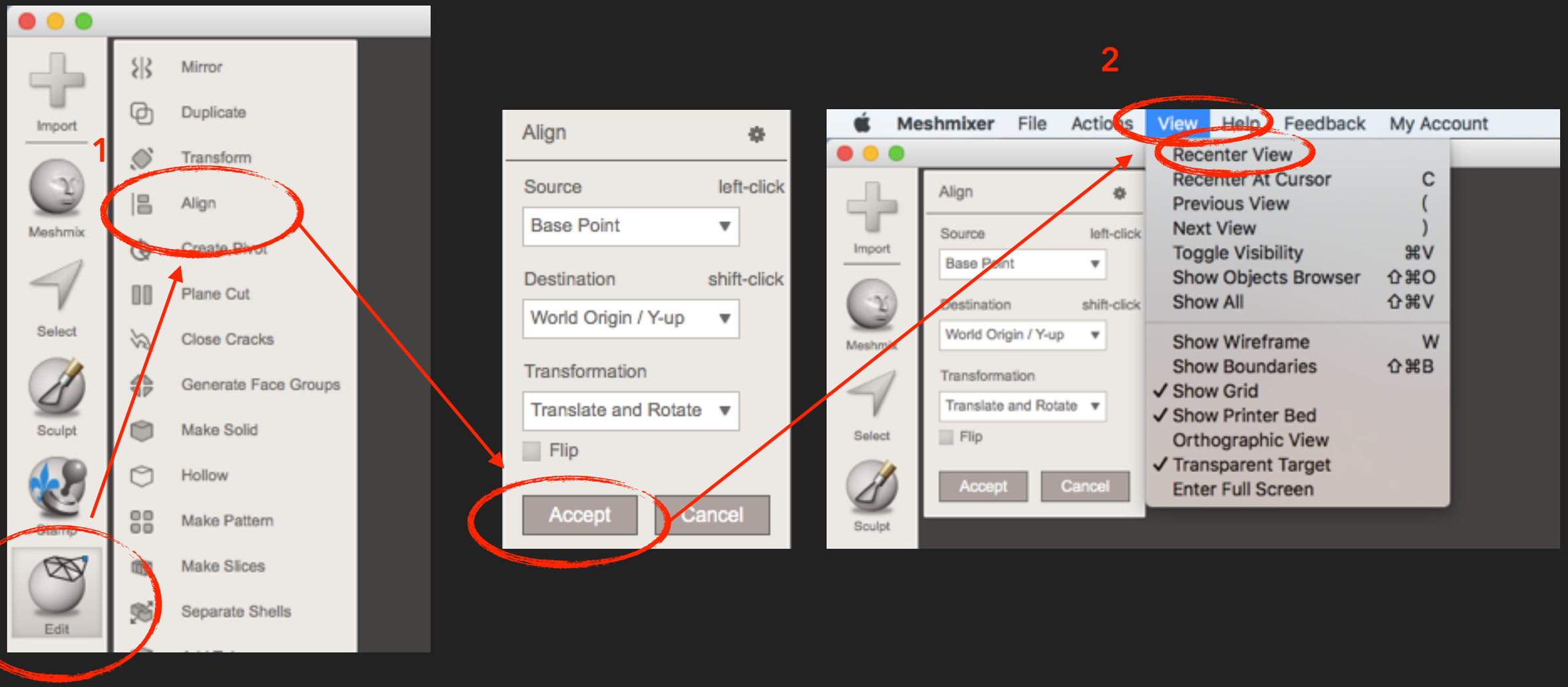
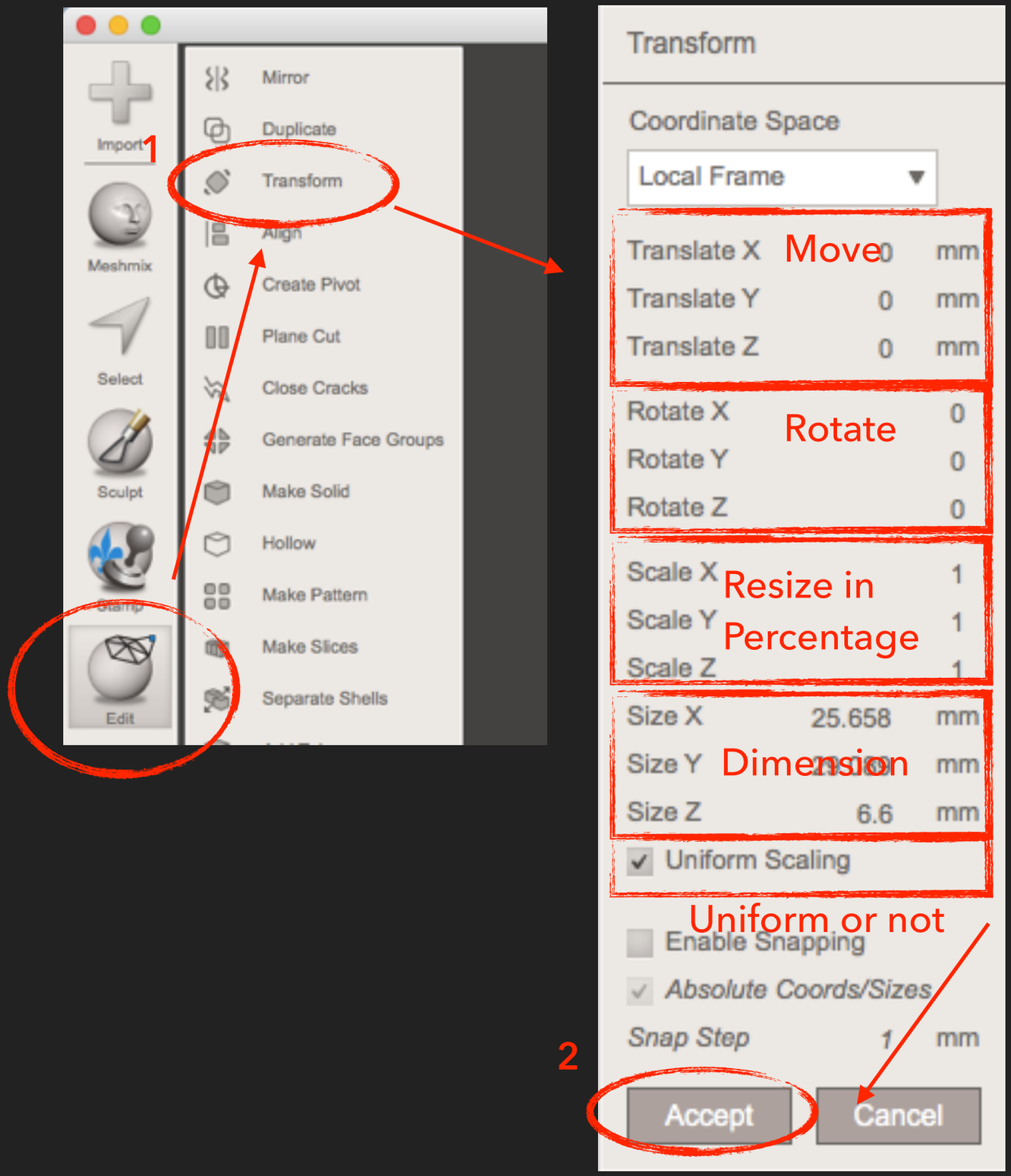
1. Open Edit and Click Align. Click Accept to Put your file in the center

2. Click View and Recent View. Then you can have best view of the file.

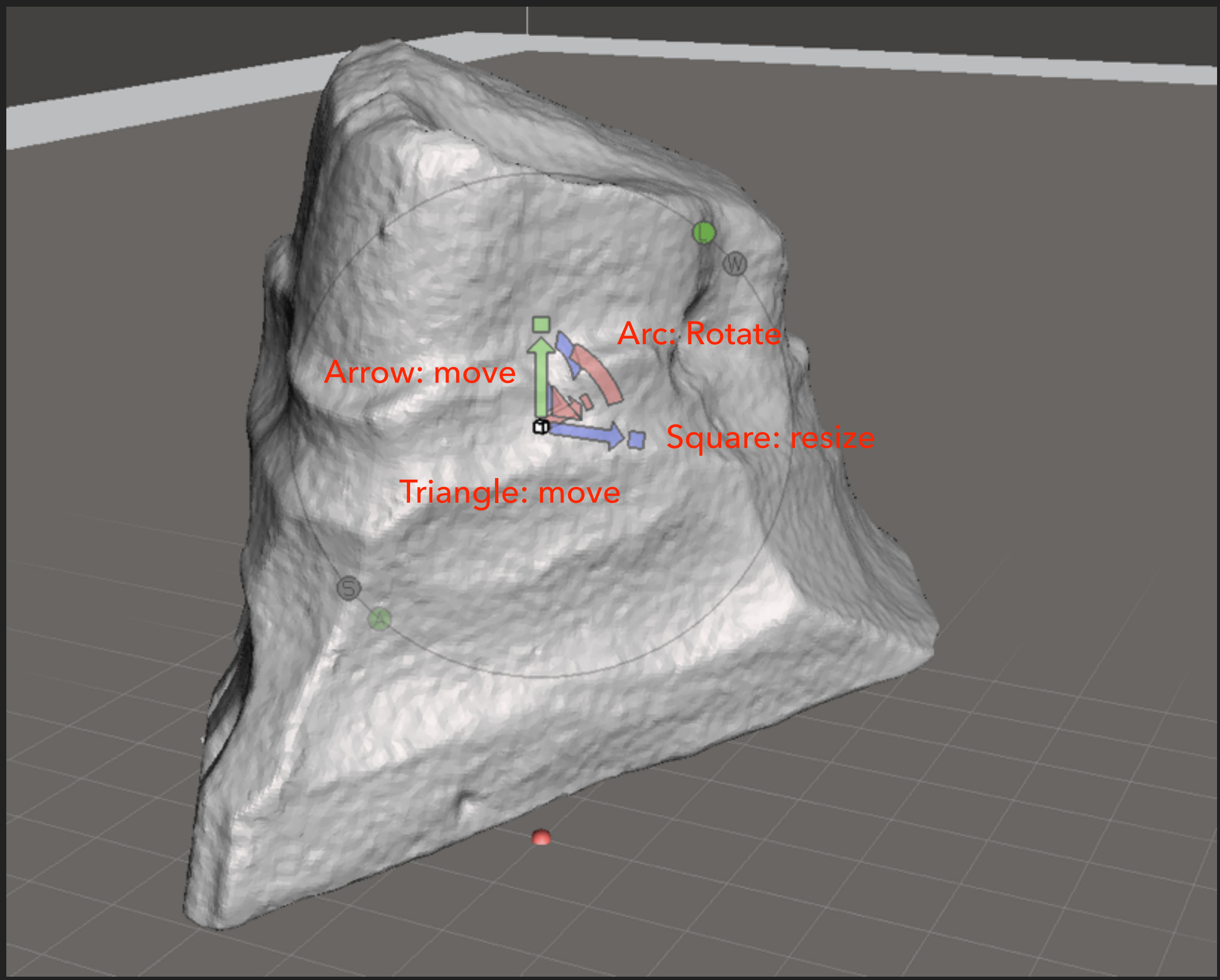


Modification：Rotate / Dimension Change

1. Click【Transform】in Edit.
   - Translate：Move position of your file.
   - Rotate：Rotate your angle of your file
   - Scale：Input percentage to resize your file.
   - Size：Enter actual dimension to resize your file.
   - Uniform Scaling can decide to change your file uniformly or not.
2. After modification, click【Accept】to finish it.



Modification：Rotate / Dimension Change



Building Support

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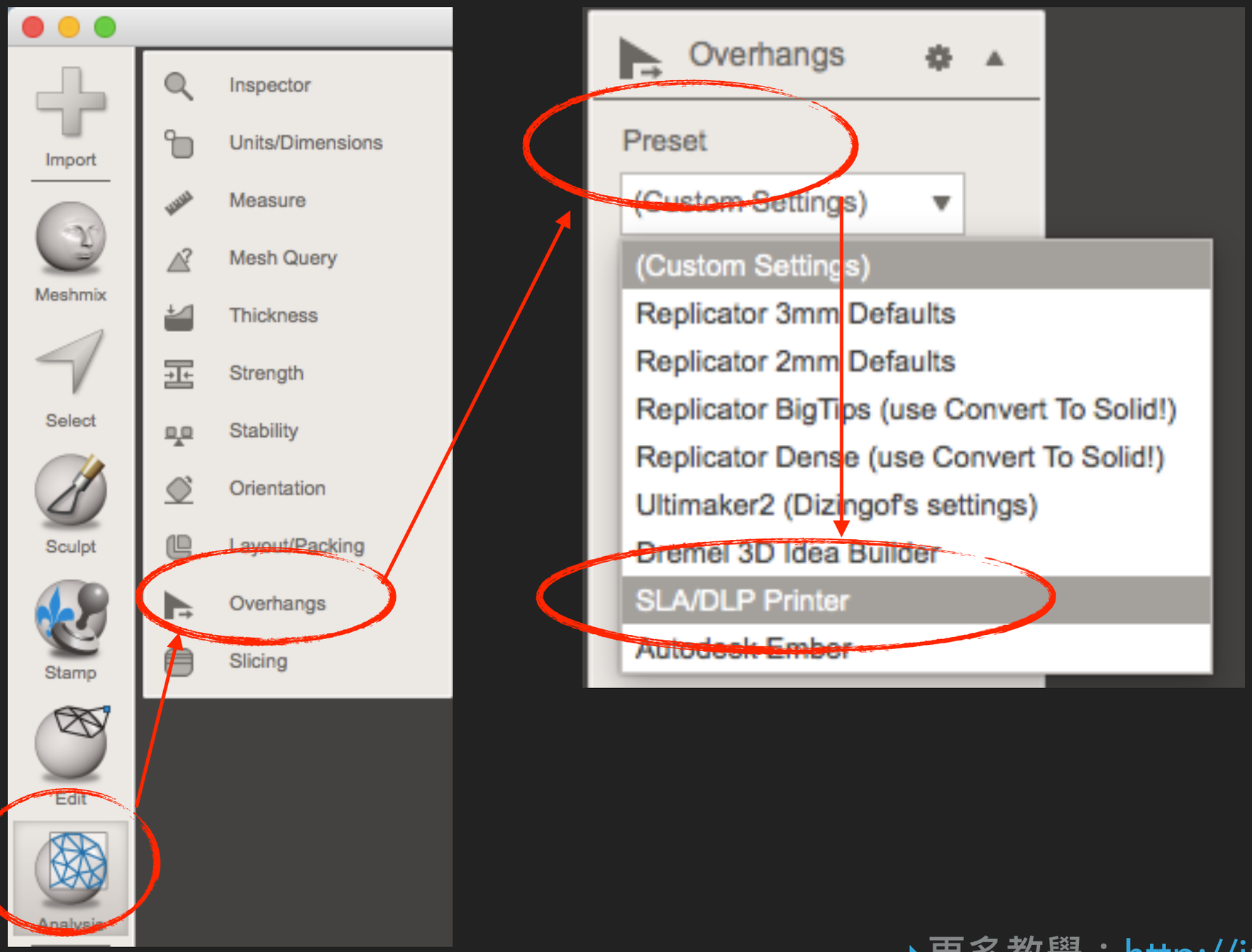
1. Click【Overhangs】in Analysis.

2. Select 【SLA/DLP Printer】in Preset.



▸更多教學：http://inplus.tw/archives/1519

Building Support

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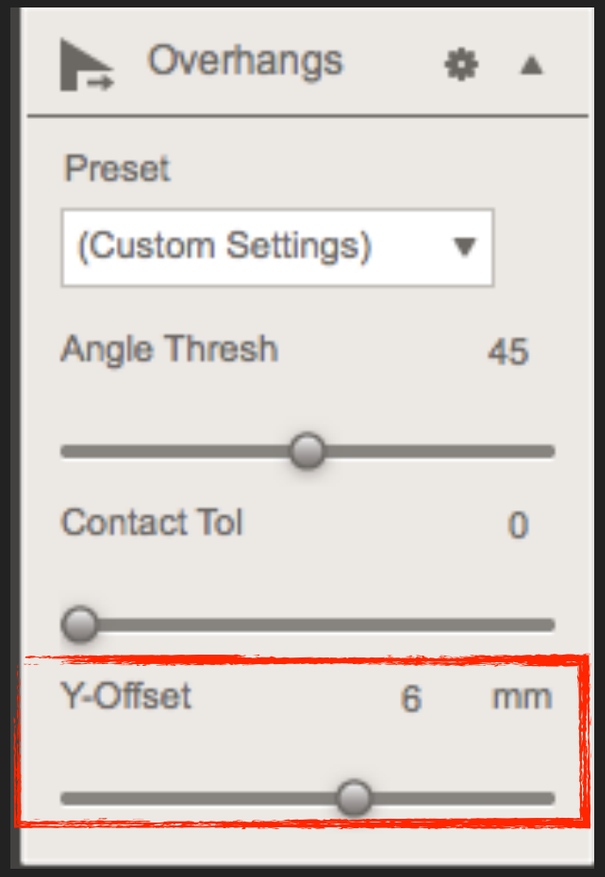
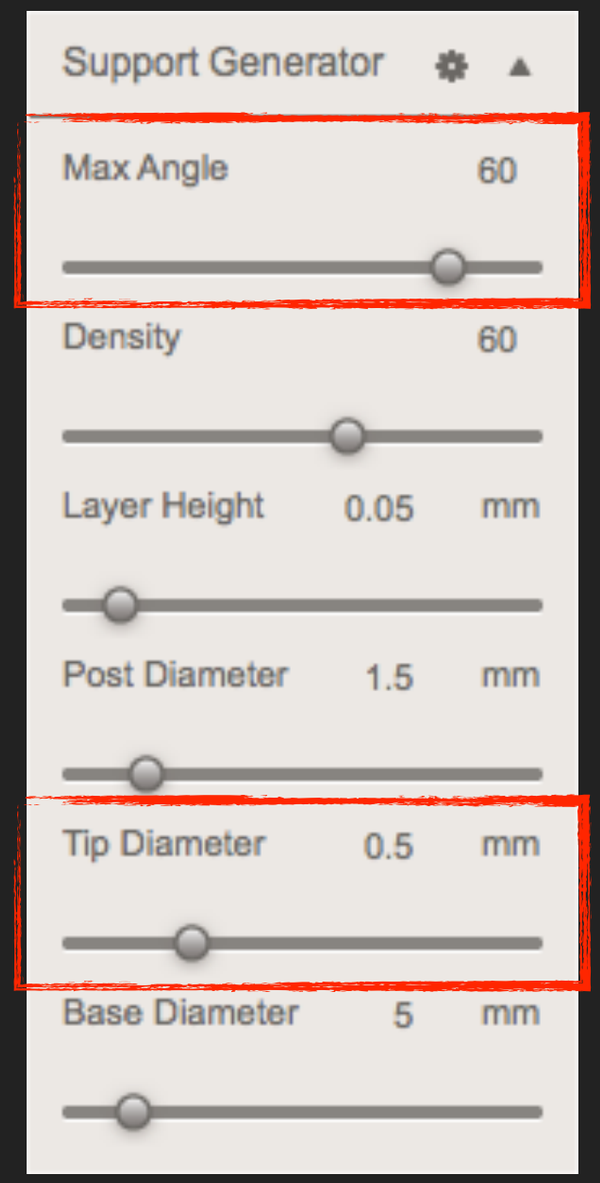
1. Suggested parameter as table below (red part are suggested to change) :

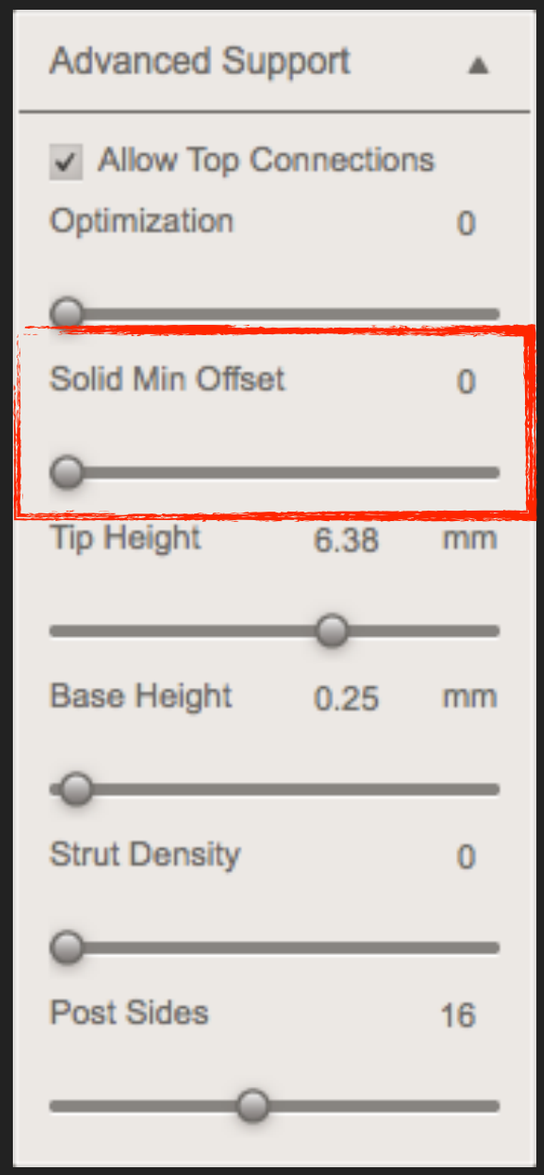
The more the angle, the stronger the structure.



Offset from base plane



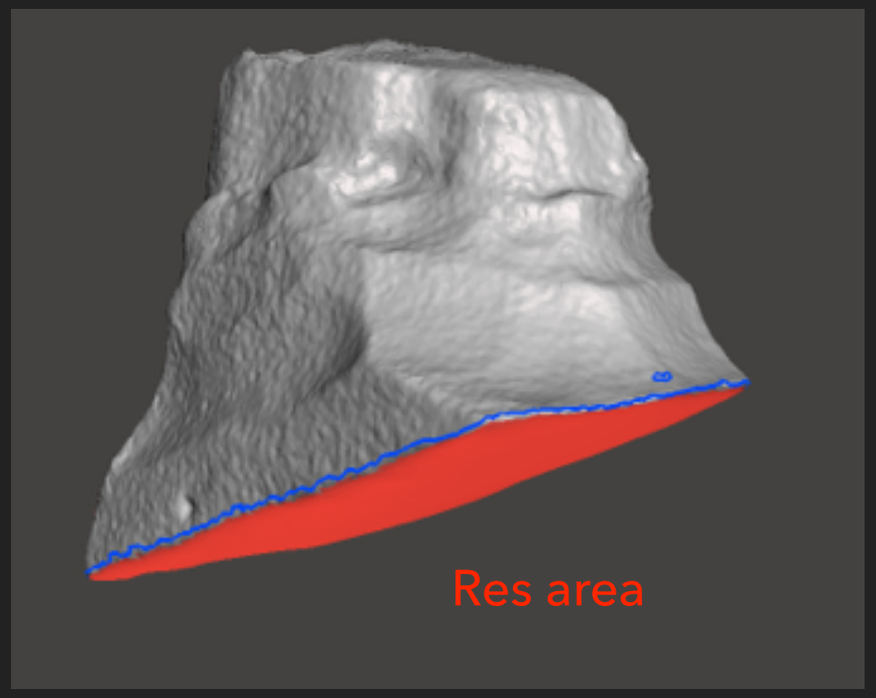
Tip size ranges from 0.5mm to 0.8mm.

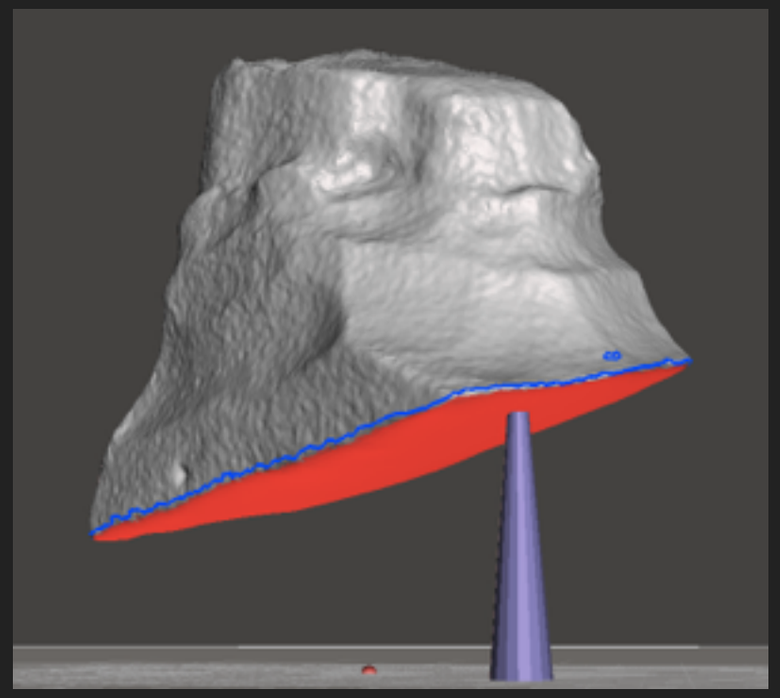


Distance between support tip and model. Suggest to be zero.

Building Support

1. Res area: suggested to build support.
2. Click red area, and you will get support automatically.
3. Click red area and drag, and you will get support manually.
4. Push Ctrl and click existing support, and you can remove it.





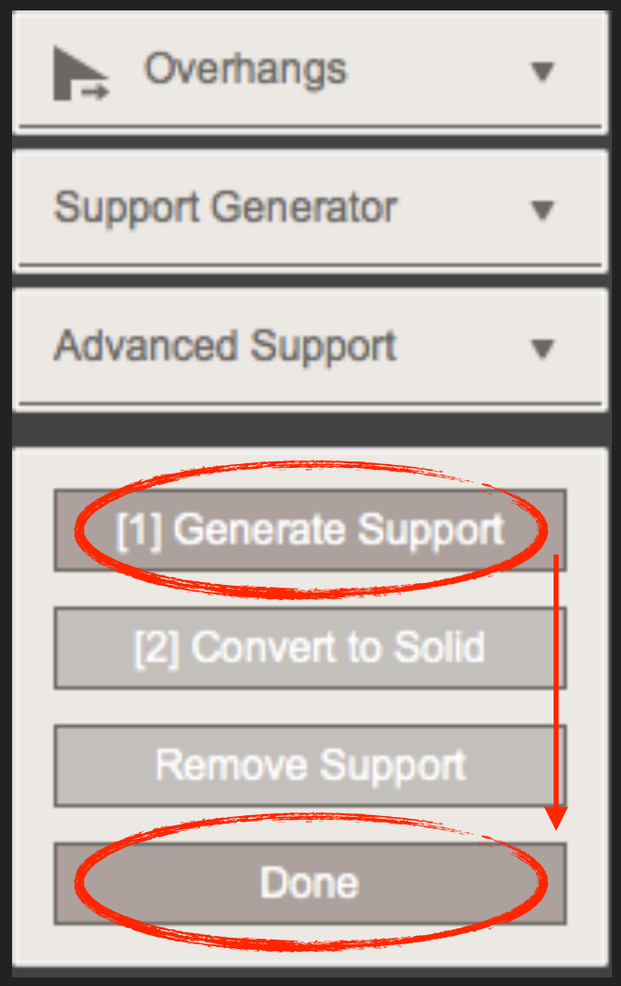
2 ways for adding support：
(1) Click Red Area
(2) Click Red Area and Drag

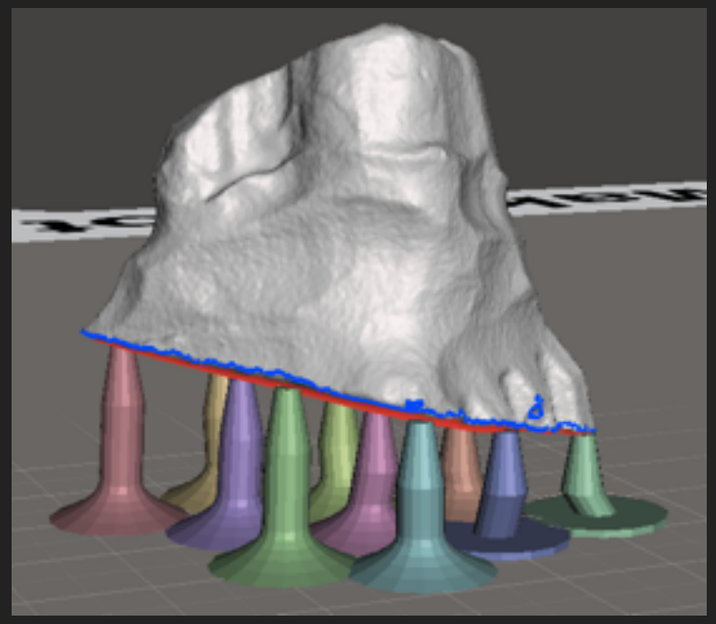
How to remove support?
Push Ctrl and click it.

Building Support

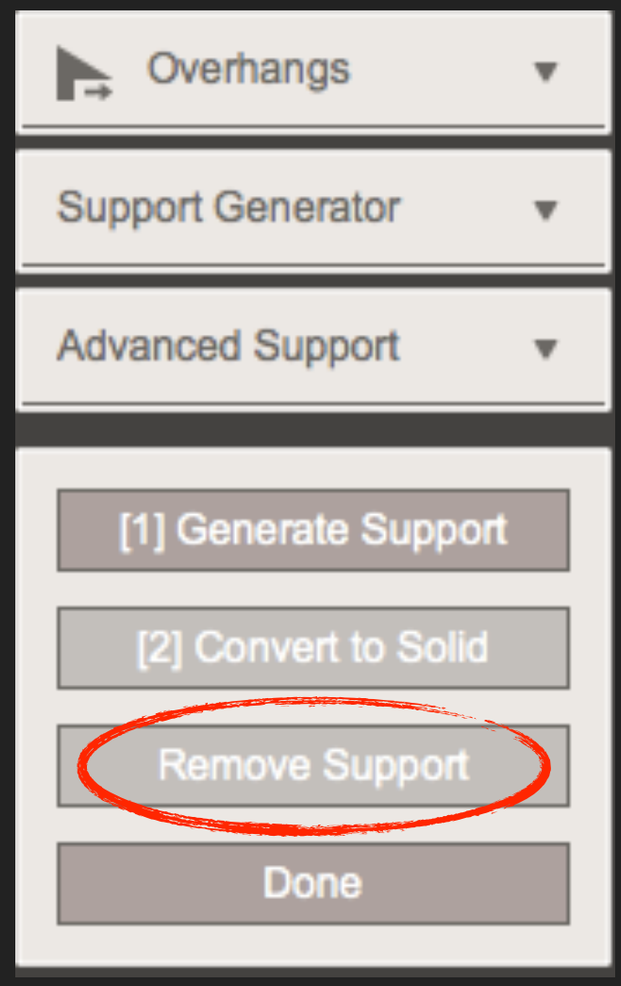
1. Click【Generate Support】, software will help you building support.
2. Once confirm, click【Done】to finish it.
3. Would like to Reset? Click【Remove Support】.

Satisfied





Not Satisfied



Example: Ring

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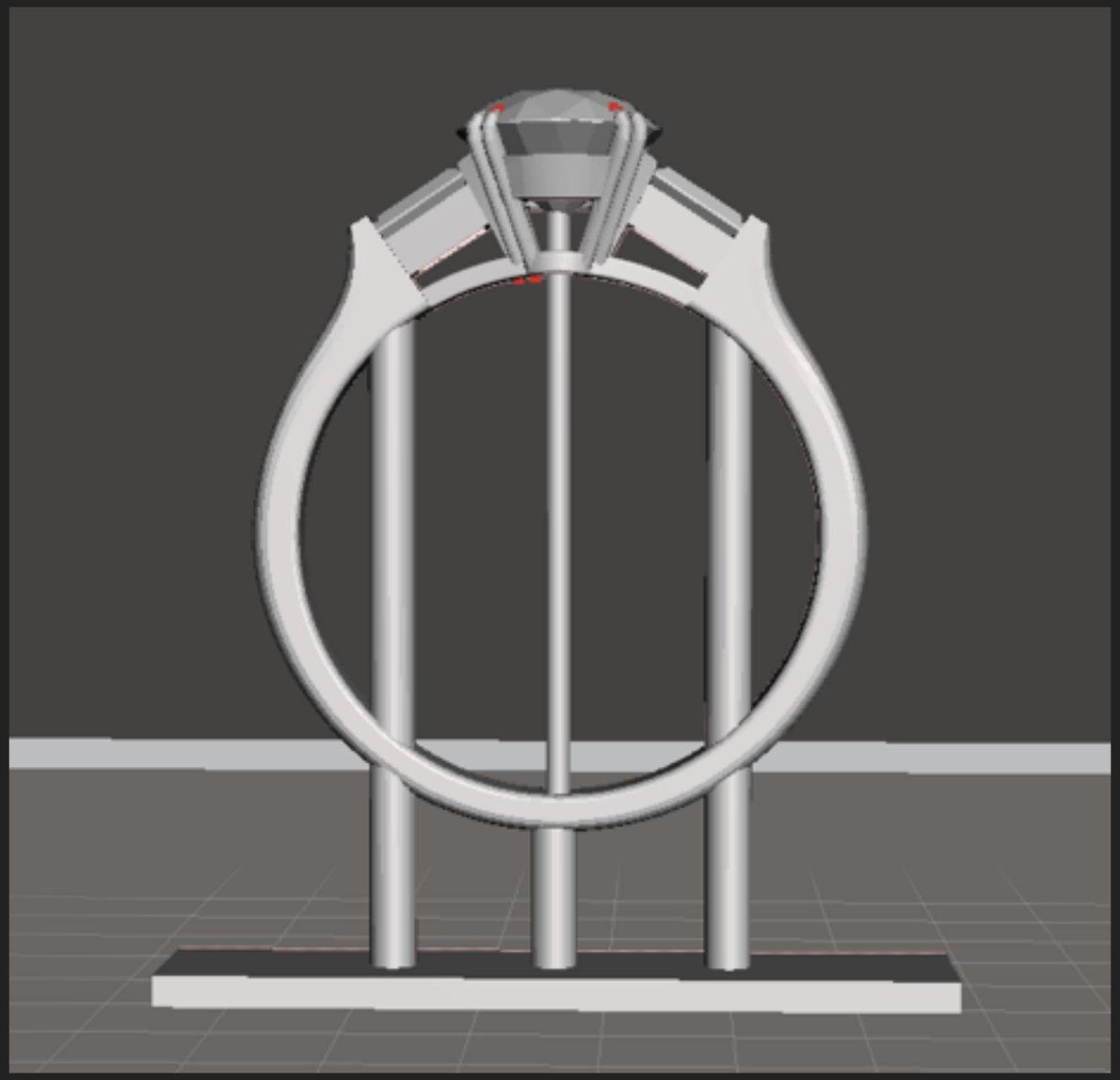
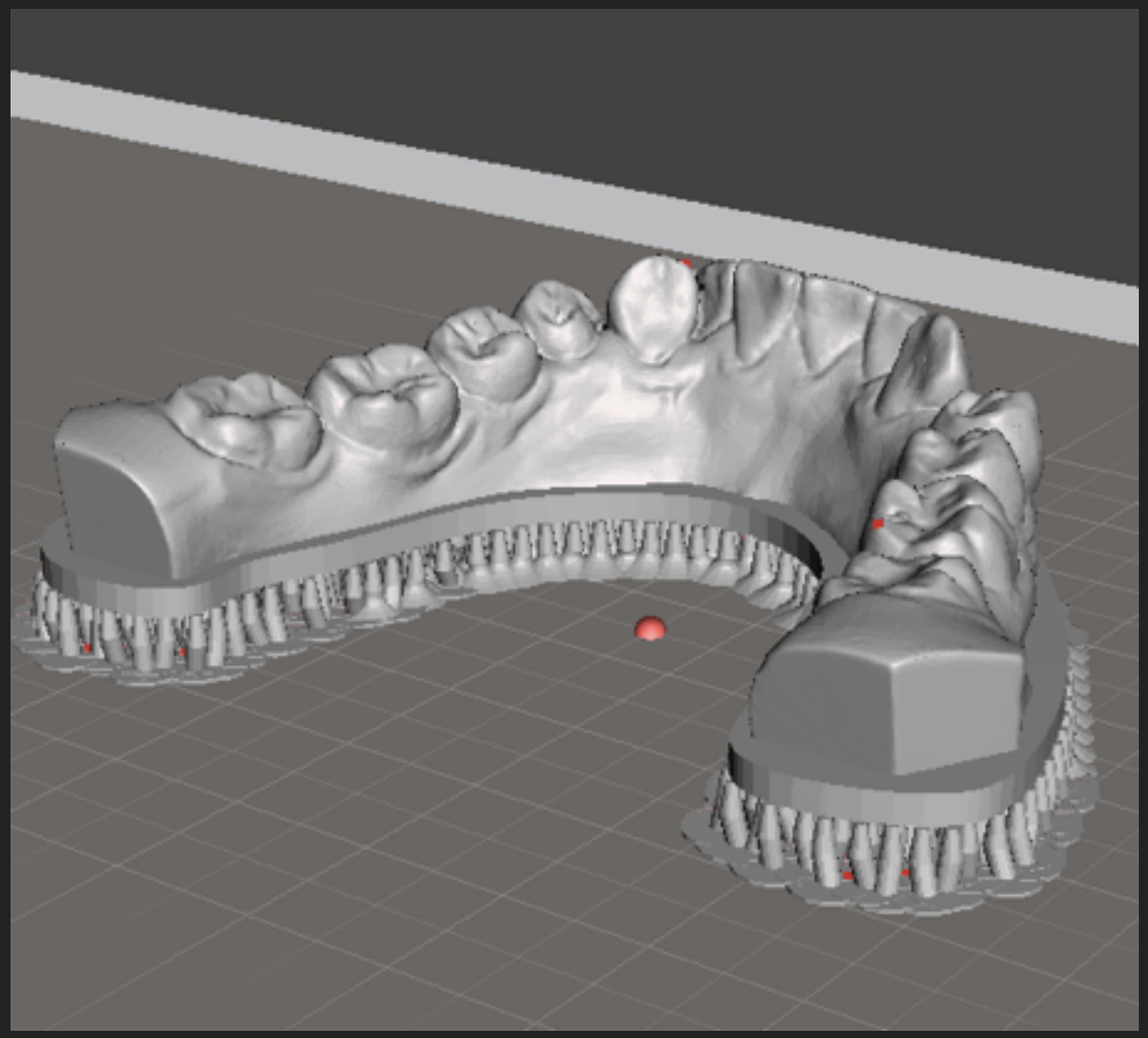


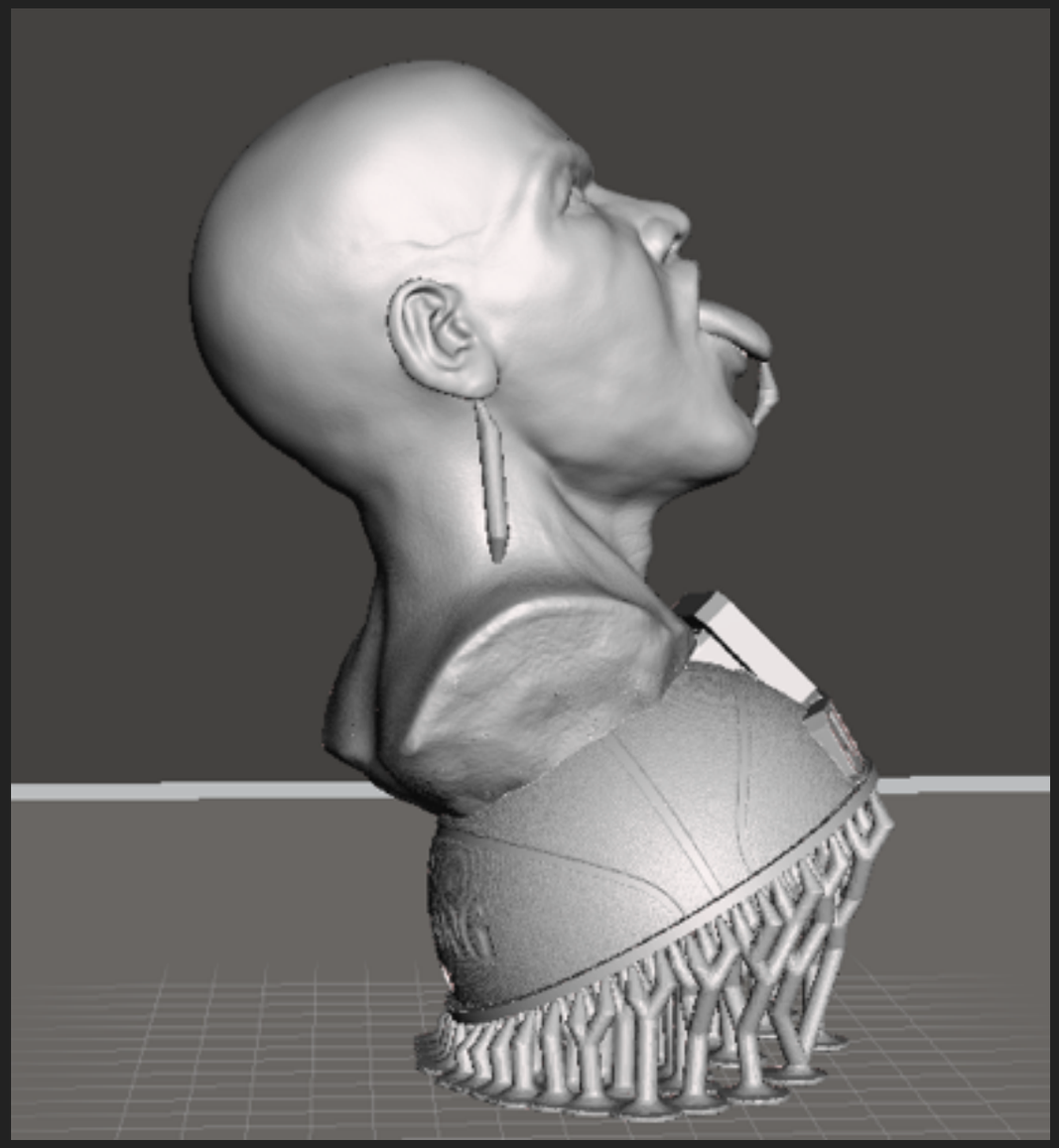
- Use Pillars Structure for better structural strength.
  - Tip Diameter = Post Diameter = 1.5
  - Max Angle close to 90 deg
- Can add more pillar in bottom part of ring. It is to ensure the curve of the ring could be formed perfectly.

Example: Flat Item



- For better handling for post treatment, we suggest to build support on flat design.
- Suggest to tilt the models to reduce peeling strength in printing. This can increase the yield in printing.
  - Note: Tilt will reduce resolution slightly.

Example: Statue



- You can tilt models slightly to reduce numbers of support in overhang.
  - Note: Tilt will reduce resolution slightly.
- Suggest to hollow the model. Benefits are reducing material usage and improve yield.
  - Note: If hollow, please have 2 holes on model to reduce vacuum force and resin residuals during printing.

Example: Rod or Cylinder

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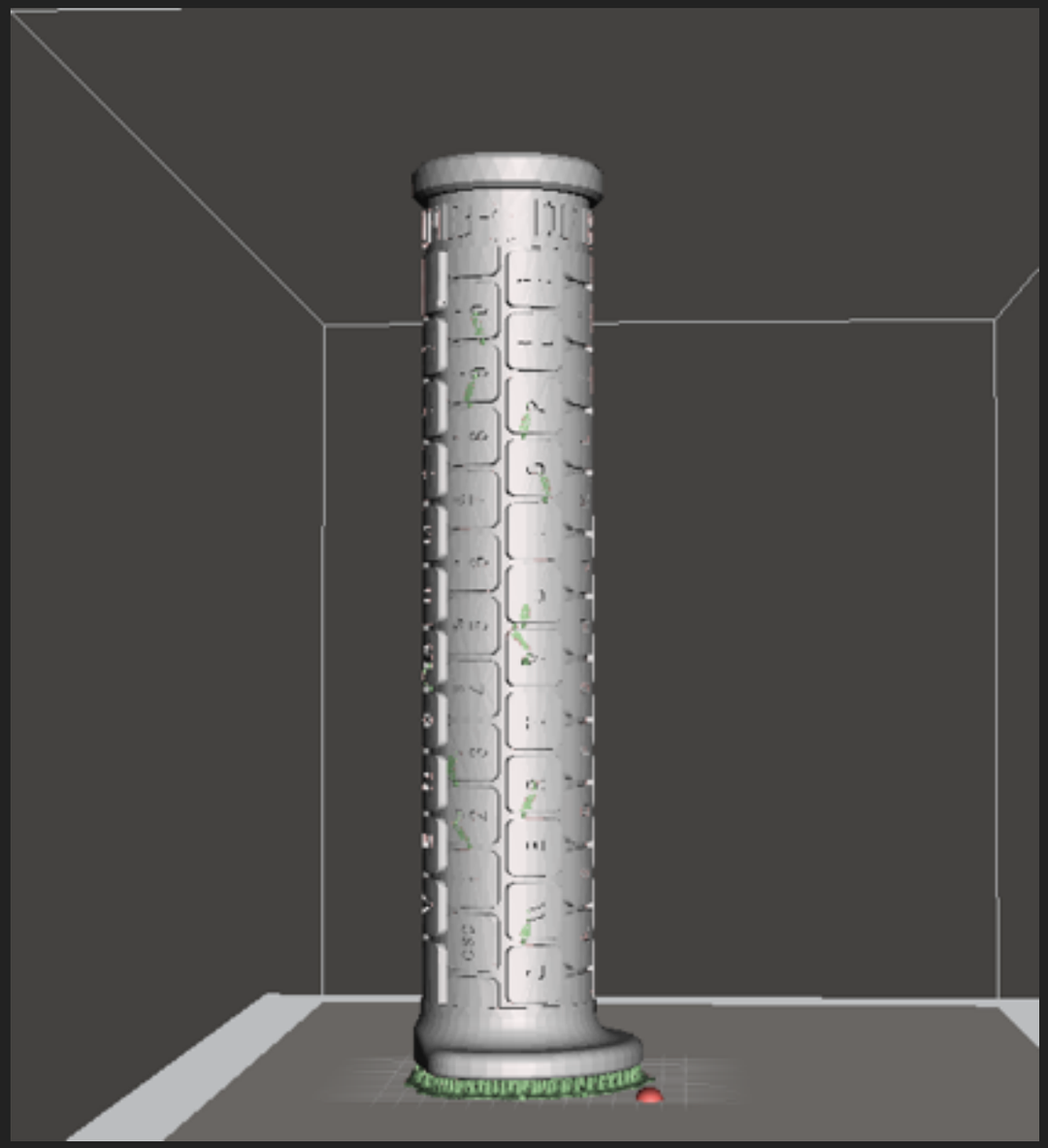


- We will print in same area for rod or cylinder
  - Reduce lifetime of local releasing materials
  - Temperature of local area will increase and cause failure.
- Suggest:
  - Use slow mode for printing.
  - Keep resin at high level.
  - Check printing every 2-3 hours.

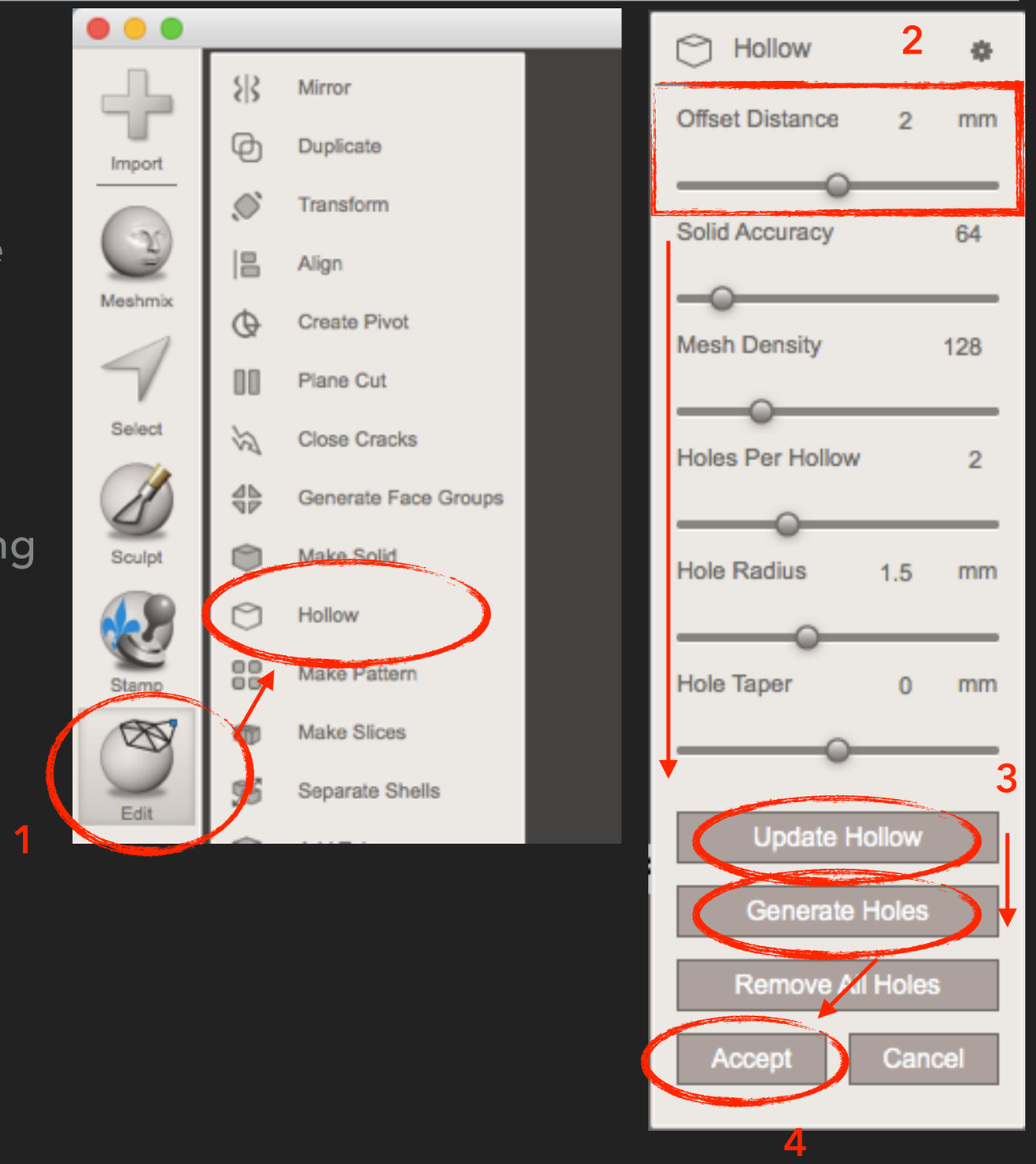
Modification: Hollow

1. Click【Hollow】in Edit.

2. You can select thickness (generally 2 mm) in Offset Distance. Click【Update Hollow】to continue.

3. After Hollow, select【Generate Hole】to open holes on model. It can reduce vacuum force and resin residuals during printing.

4. Once confirmed, click【Accept】to finish it.

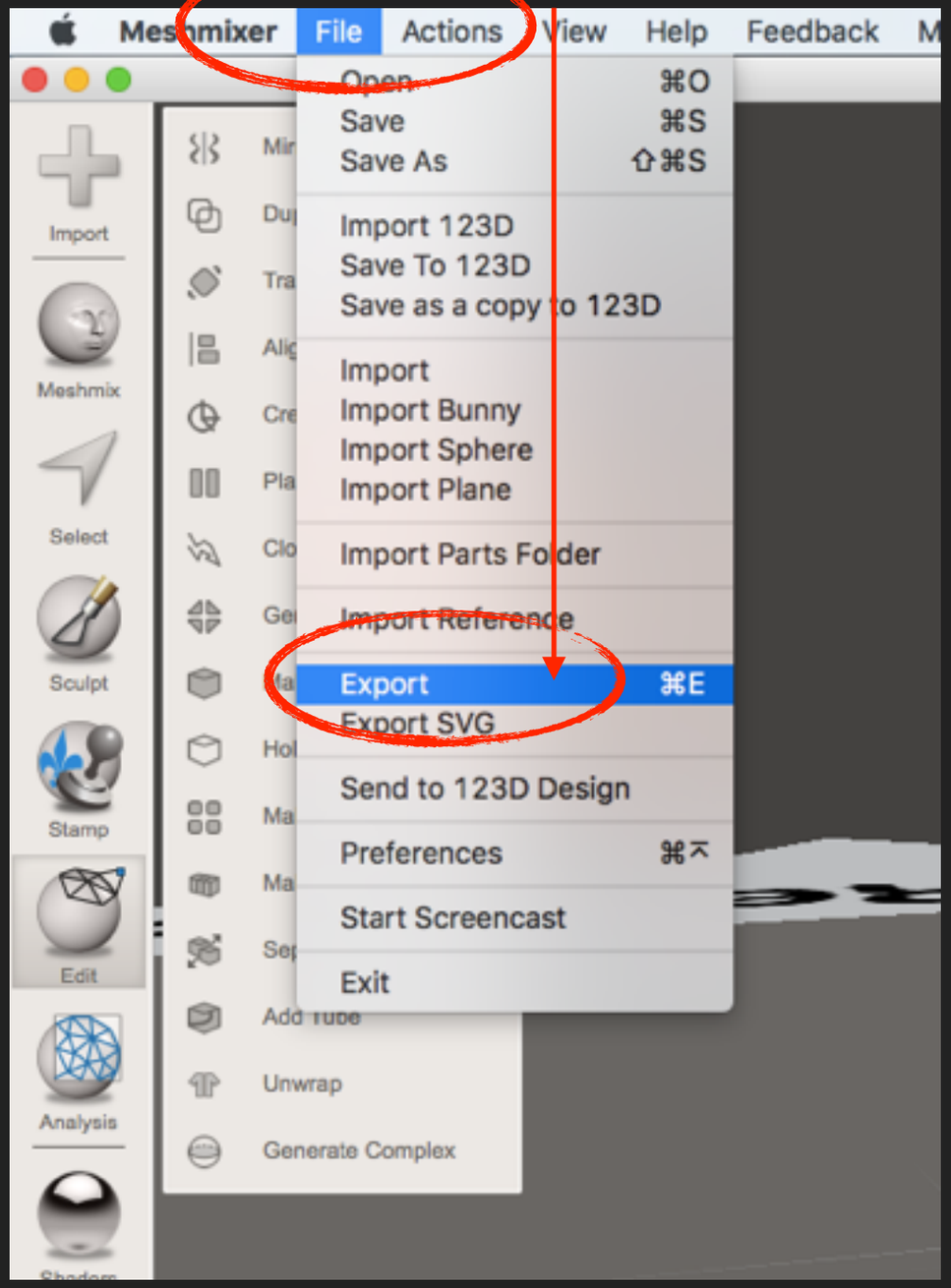


Export File

1. Click【Export】in File.

2. Save the file in STL format and finish.

1



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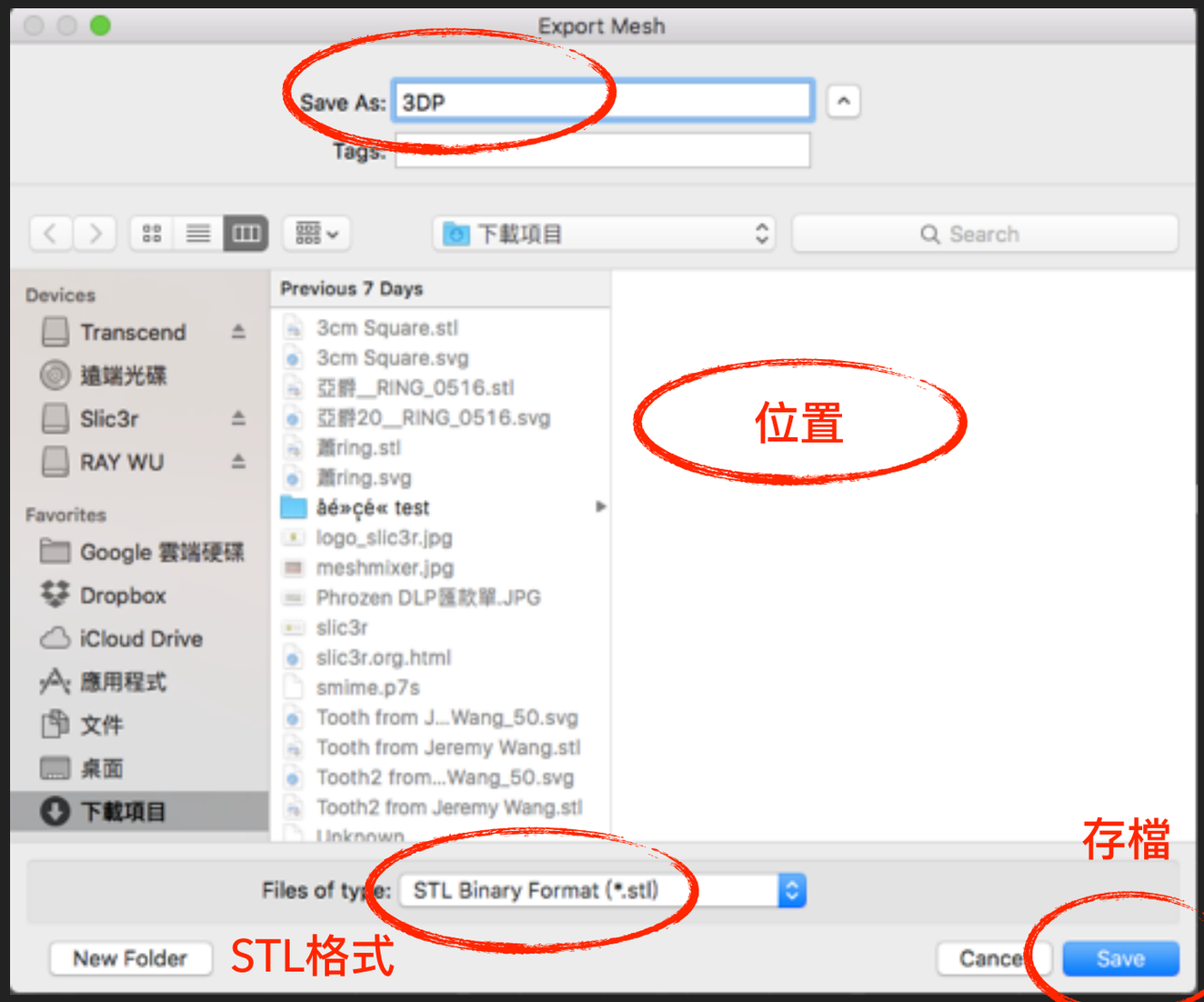

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Next Is Getting To Know Phrozen One!

CONGRATULATIONS!