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Module 3

Using the Software

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The purpose of this module is to introduce you to the process of loading a 3D model on the computer and then sending it to print.

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Selecting a Model

- The Bambu Lab P1S is a standard/general use 3D printer that can print with fairly high quality depending on the model, but you must be mindful of your appointment time as high quality models will take longer to print.
- Another thing to consider is supports. Some models require supports to print properly and removing supports after a print can cause slight imperfections.

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Selecting a Model

- 3D models should be in .3MF, .STL or .OBJ format to ensure they can be read by the software.
- Thingiverse.com is a great place to get started. It hosts thousands of 3D models.
- Bambu Lab also has their own 3D model repository called Maker World.

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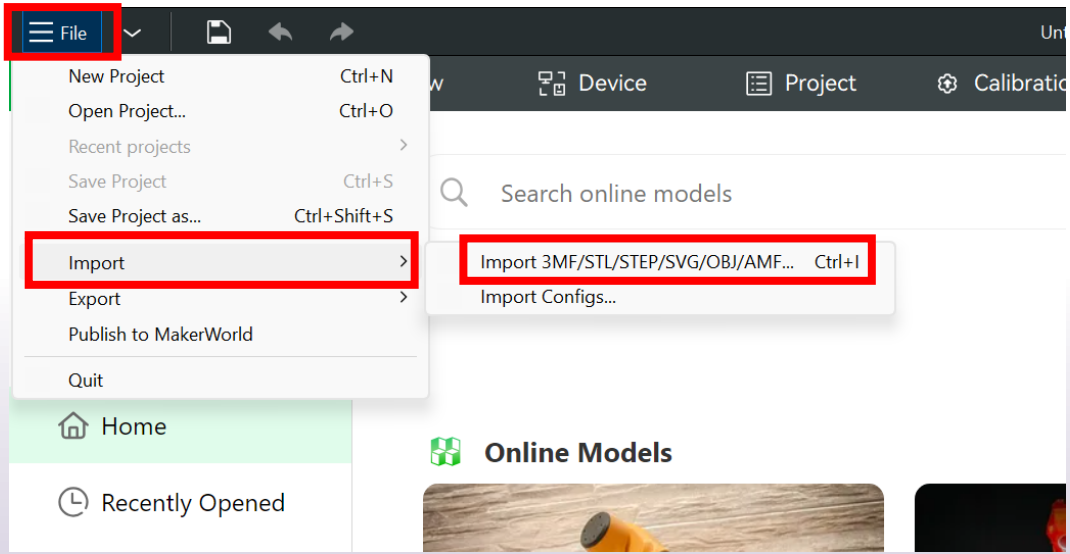
Bambu Studio - Loading the Model

When using the 3D printers, you will also be given a laptop with **Bambu Studio** pre-installed.

First open Bambu Studio by **clicking the green logo ->**

Load Model – With Bambu Studio open, select **File > Import > Import 3MF/STL…** and navigate to the saved location of the 3D file and select open.



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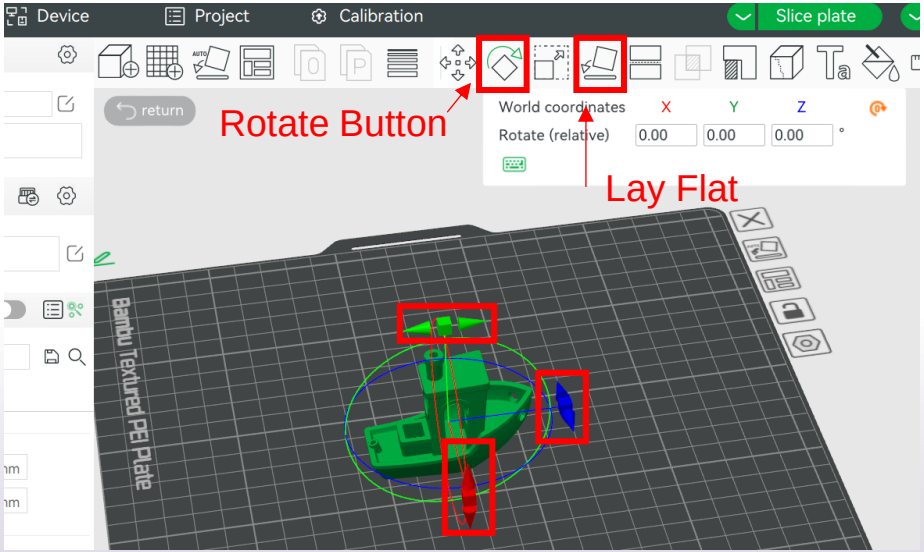
Bambu Studio - Orienting your Model

Rotate - The Rotate button will give you the ability to orient your model in along all three axes. Once you click the rotate button, three circles will surround your model. The blue circle will allow you to rotate around the Z axis. The green circle will rotate around the Y axis. The red circle will rotate around the X axis. You can also manually type the rotation angles.

You may need to use the rotate feature to ensure the flattest part of the print is on the bed.

Lay Flat - The Lay Flat button will let you choose a flat part of your design to lay on the bed. It is highly recommended to use this option after rotating your model in the Z direction, as it will help prevent adhesion issues during the print.



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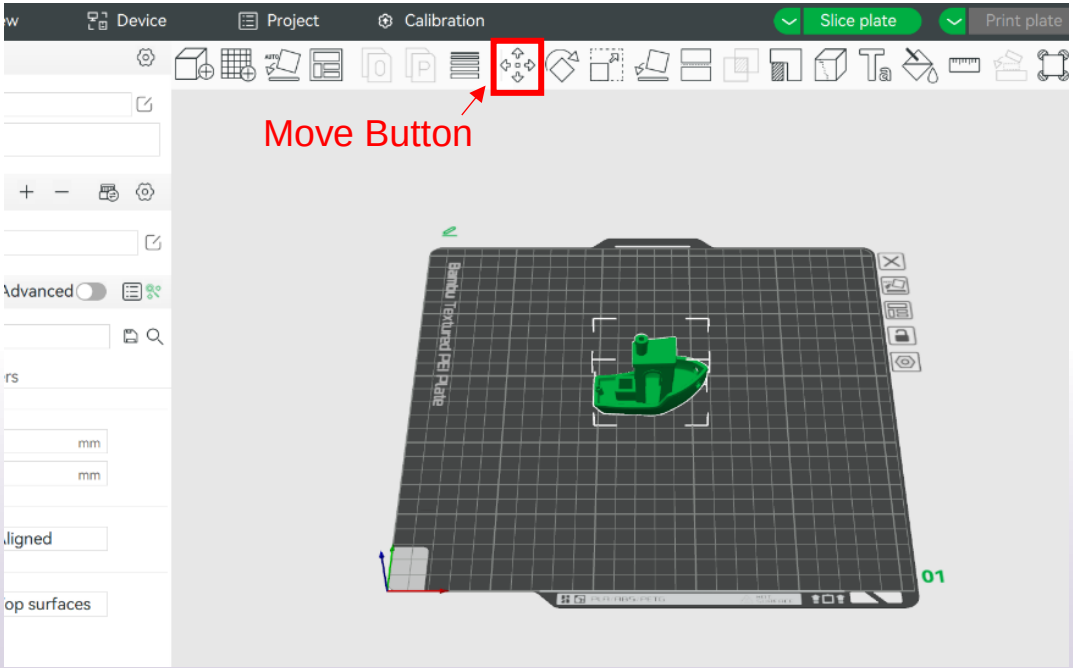
Bambu Studio - Orienting your Model

Model Orientation - Move your model to change where it is printed on the build plate. Do this by selecting the **Move** button or by *left-clicking and holding* on the model and dragging it to the desired location.
You can also *left-click and hold* elsewhere on the bed to view your model from different angles.

Zoom – Use the scroll wheel on the mouse to zoom in and out.



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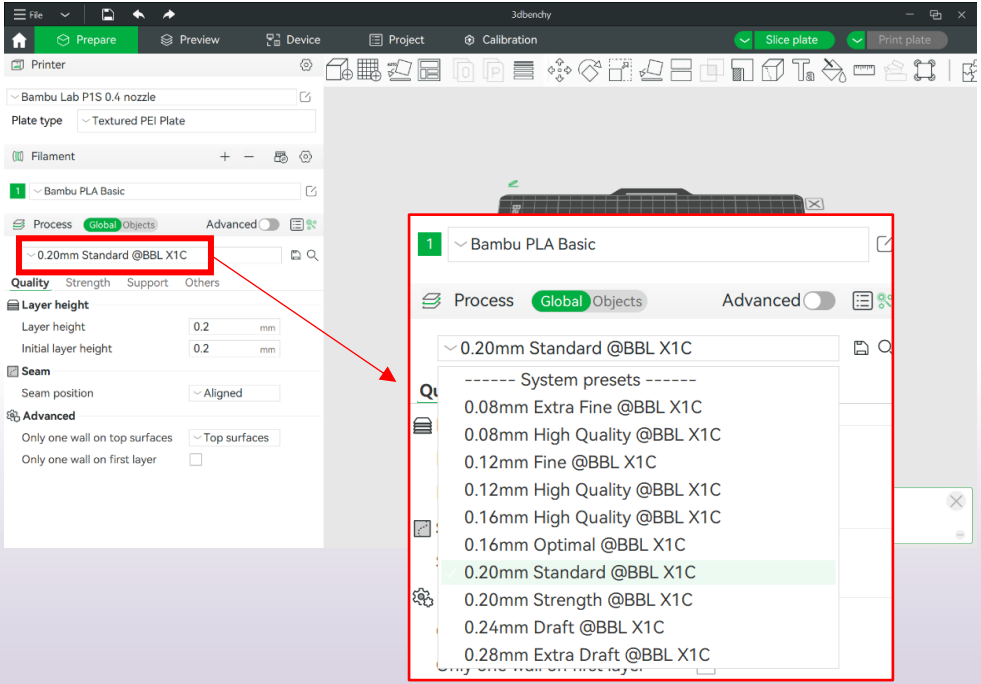
Bambu Studio - Getting read to Print

Presets - The print quality settings can be found near the top left-hand corner of the window.

Extra Fine/High Quality - Designed to give greater detail and finer objects, will increase print time.

Extra Draft - Not as much detail. Faster prints. Good for testing and prototyping.

Standard- Designed to give a medium resolution.



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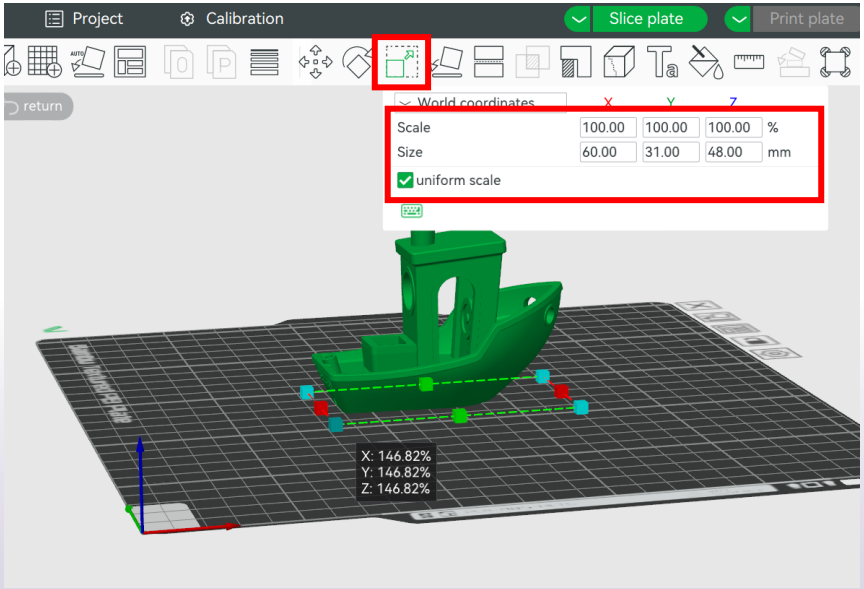
Bambu Studio - Sizing your Model

Resize - The Scale button displays the model's dimensions, along with the ability to scale along the X, Y, or Z axes. Anything below the number 100 will reduce the object's size, while anything above the number 100 will increase the object's size. You can also manually type in the dimensions in millimeters (mm).

As a default, it will be set to uniform scaling. This will cause the X, Y, and Z axes to be scaled by the same amount when you make a change to any of them. To disable this, uncheck **Uniform Scaling** in the lower section of the scaling window.



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Bambu Studio - Getting Ready to Print

Supports - Some models will require support material to print properly. This will usually occur when an object has an angle in relation to the build plate between 0 to 45 degrees. It is highly recommended to orient your object so that it minimizes or eliminates the need for support.

Build Plate Adhesion - Some models that don't have a lot of points of contact with the bed will need a brim or raft to prevent the model from shifting during the printing process.
Image B is an example of a model that would require both supports and a brim.

Note: Supports and brims increase print times.

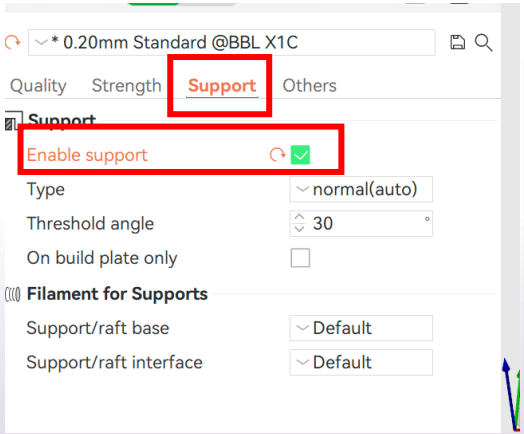

Image A.

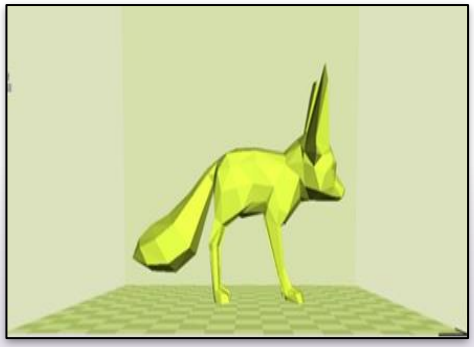

Image B.

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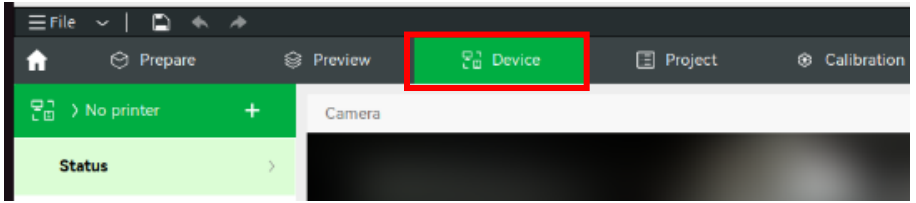
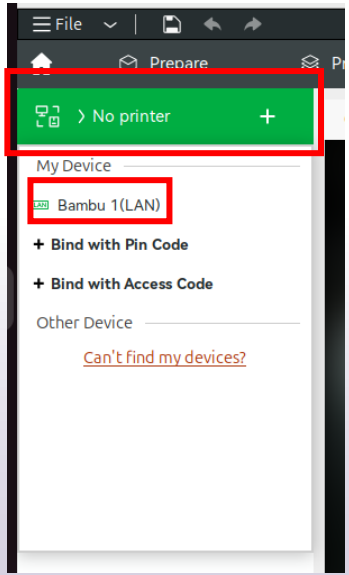
Connecting to Printer

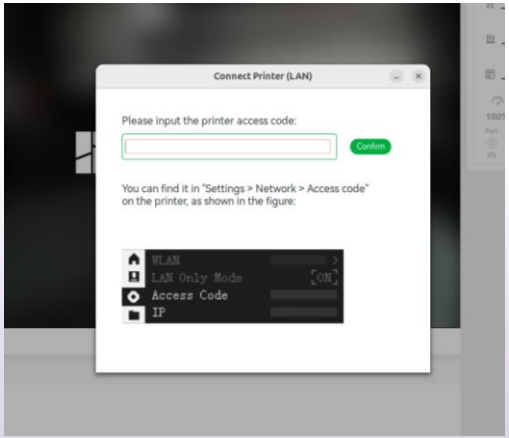
Click “Device” to go to the Printer tab and click “No printer” to bring up the list of available printers

Select the printer associated with your laptop and it should automatically

If it fails to connect, try again and it will ask you for an access code that will be printed on your laptop







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Example of Printed Supports

To the right is an example of what supports look like. Notice the supports fill in the gaps and areas that are not touching the build plate. Supports are designed to be removed after the print has completed.

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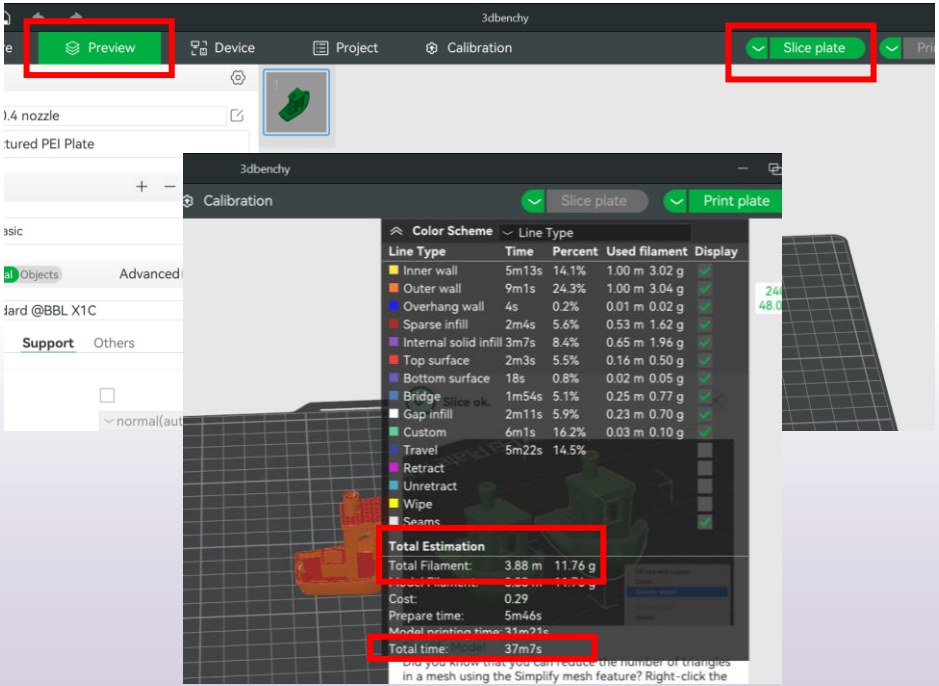
Bambu Studio - Getting ready to Print

Select the **Preview** button (top left) to switch to the preview window.

If your model doesn't automatically start slicing, click the "Slice plate" button to see the break down

Time/Weight estimates - The estimated time and weight is located in the preview break down. Estimates are not a guarantee.



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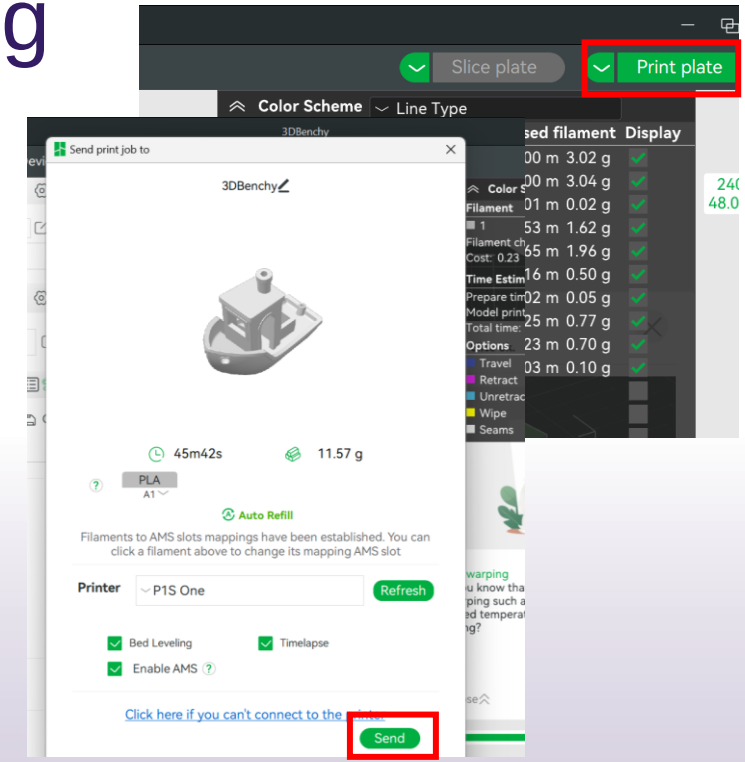
Bambu Studio - Printing

If everything in the preview window looks okay, simply select **Print plate**. Then click **Send** in the following window. The printer will take a few minutes to heat the bed and extruder to the appropriate settings based on the material selected. After it does a nozzle clean and an alignment check it will begin printing.



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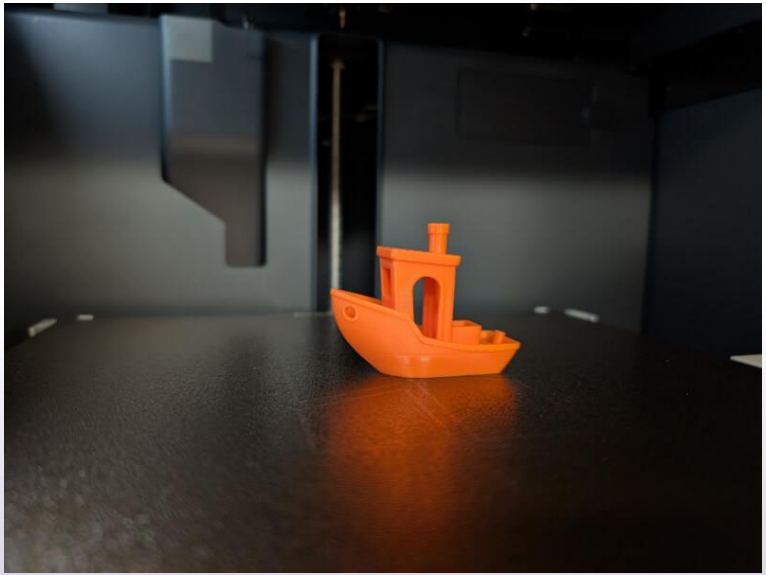
Bambu Studio - Printing Complete

Remember the P1S will let you know the print is finished and ready to be removed when it pushes the print bed to the bottom and displays “Print Complete” on the screen.

Open the door and lift the build plate off the print bed. If your print job doesn’t immediately lift off, you can **slightly** bend the print bed to help the print detach from it. If it’s still not easily lifting off the build plate you can use the scraper tool to help lift it off.

Please use the safety glove on the hand opposite the scraper tool to prevent injury.

Note: The printer cannot detect when a print job is failing and it will be up to you to cancel or pause the print if you notice it is not printing correctly.



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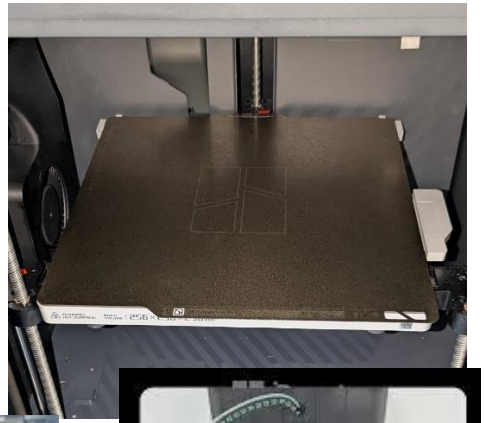
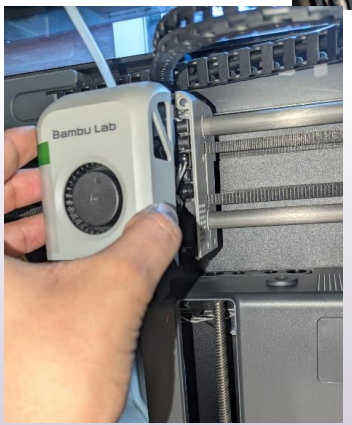
Bambu Studio - Errors

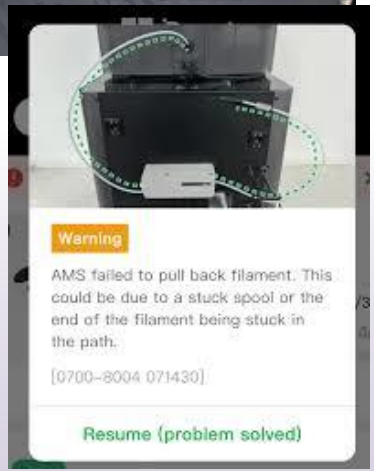
You may encounter errors while printing.
Common errors include:

- Filament Knot – remove the entangled filament and untangle it before reloading
- Z-Axis Level Error – check to make sure the build plate is properly placed on the bed and nothing is underneath
- Toolhead Fell Off – The toolhead is magnetic so gently place it back into place
- Filament Jam – a piece of filament broke and is stuck in the machine, let staff know so it can be placed out of service until repaired

View the full 3D Printing Guide for more details on these errors







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End of Module 3