

B3300

User Manual

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1. Unpacking

1. Remove printer from outer packaging.
2. Remove loose contents from inside printer body.
3. Cut and remove the white zip ties to free carriage and HeatBed.
Accessories and the Syringe Pump Assembly can be found in second box.
4. Install Glass onto HeatBed.

2. B3300 Printer Installation

1. The power supply operates at 110V by default. If 220V is desired, flip the switch on the power supply under the printer to set it from 110V to 220V.
2. Connect power cord.
3. Install Dual Syringe Pump Assembly (SPA) base into carriage base. Place the Dual SPA onto the carriage base and screw it in with the provided screws. (2 screws with washers).
4. Place the video system into corresponding location.
5. Connect electrical connector to both SPA motors.

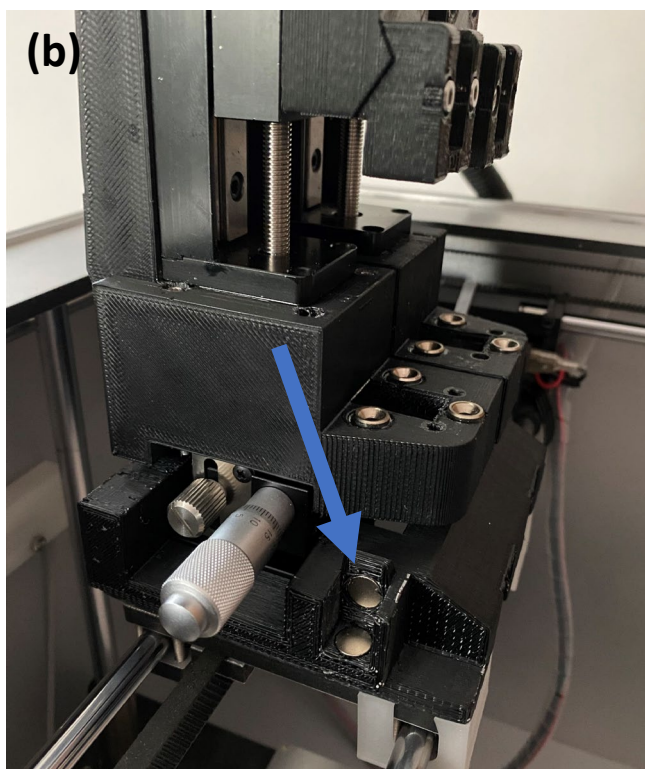
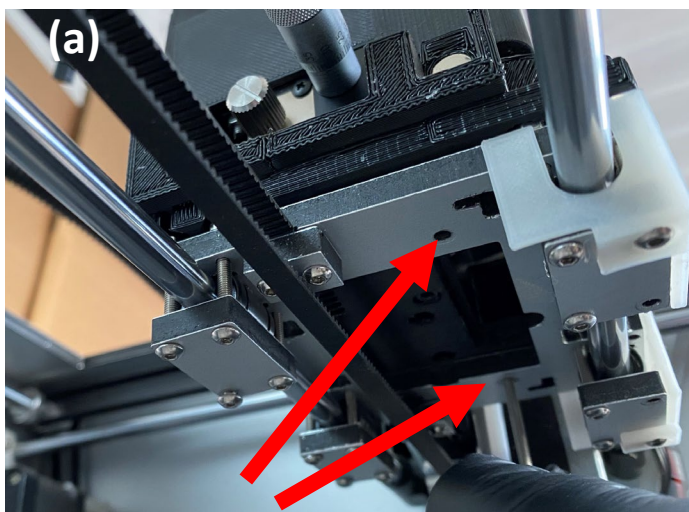


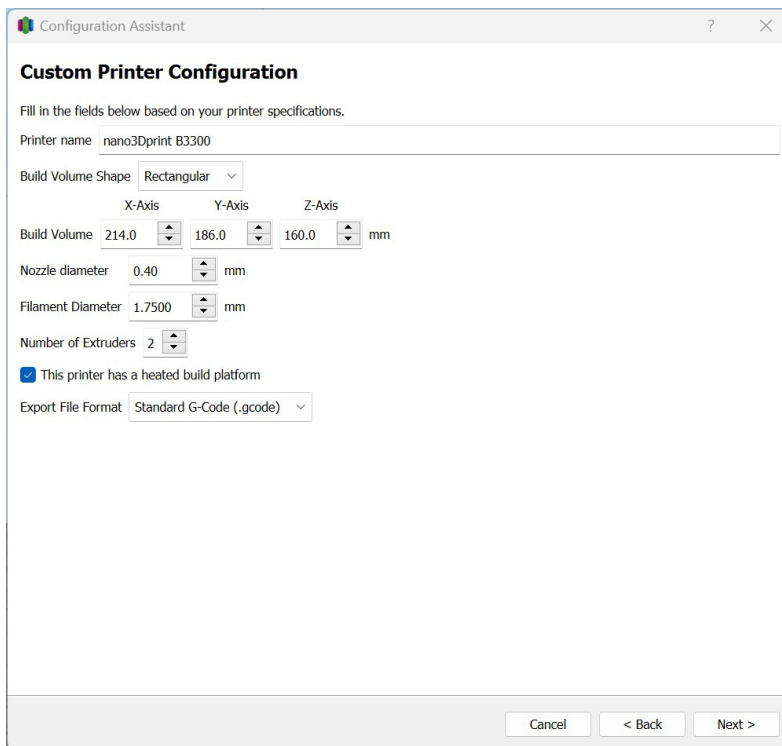
Figure 1. (a) Depicts view of the underside of the carriage. Red arrows indicate locations where you need to screw in the Dual SPA to secure it to the carriage. Insert the screws from below the carriage. (b) The blue arrow indicates where the video system will snap on to. (c) Green arrow indicates where the electrical wire connector will plug into.

3. Computer Software

We recommend Windows system.

Install Simplify3D:

1. You should have received a verification email from Simplify3D when your printer shipped. Follow verification email's instructions on how to install Simplify3D.
2. Follow Simplify3D instructions. To learn more visit:
<https://www.simplify3d.com/support/faq/>
3. Make sure following configuration and settings for Simplify3D match if adding B3300 Dual Printer manually, otherwise importing FFF profiles will have right configuration settings:



The screenshot shows the 'Configuration Assistant' window with the 'Custom Printer Configuration' tab selected. The window contains the following fields and settings:

- Printer name:** nano3Dprint B3300
- Build Volume Shape:** Rectangular
- Build Volume:** X-Axis: 214.0, Y-Axis: 186.0, Z-Axis: 160.0 mm
- Nozzle diameter:** 0.40 mm
- Filament Diameter:** 1.7500 mm
- Number of Extruders:** 2
- ☒ This printer has a heated build platform
- Export File Format:** Standard G-Code (.gcode)

At the bottom of the window are three buttons: 'Cancel', '< Back', and 'Next >'.

Figure 2.
3D Printer
Information

4. In provided SD card, find "Simplify3D Settings v5" folder for your FFF profile printer settings. Import provided FFF profile settings to your Simplify3D software. Under File > select "Import Printer Profiles..." > then select location of provided FFF profiles.

** Note: There are two FFF profile for the B3300 which can be found in provided SD card. One with a built-in purge line and the other without.

1. nano3Dprint B3300 – Dual
2. nano3Dprint B3300 – Dual – without built-in purge

If FFF profile settings are missing, you can download them in the following link:

<https://drive.google.com/drive/folders/16XJzkkP1HOPVkJFvvsJdL8QHnvx1ZXvbN?usp=sharing>

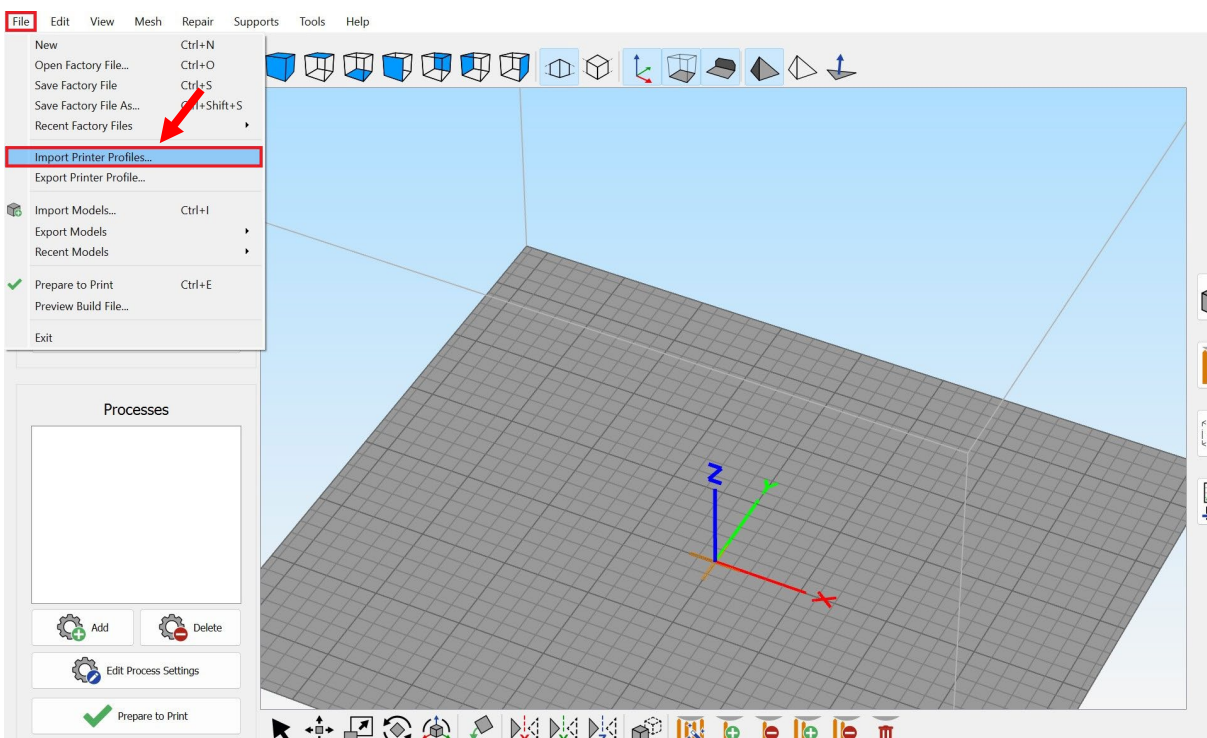


Figure 3. To import FFF Profile Printer Settings: File > "Import Printer Profiles..." > select FFF profiles > Click "OK".

5. After FFF profile is imported, make sure following configuration and settings for Simplify3D match:

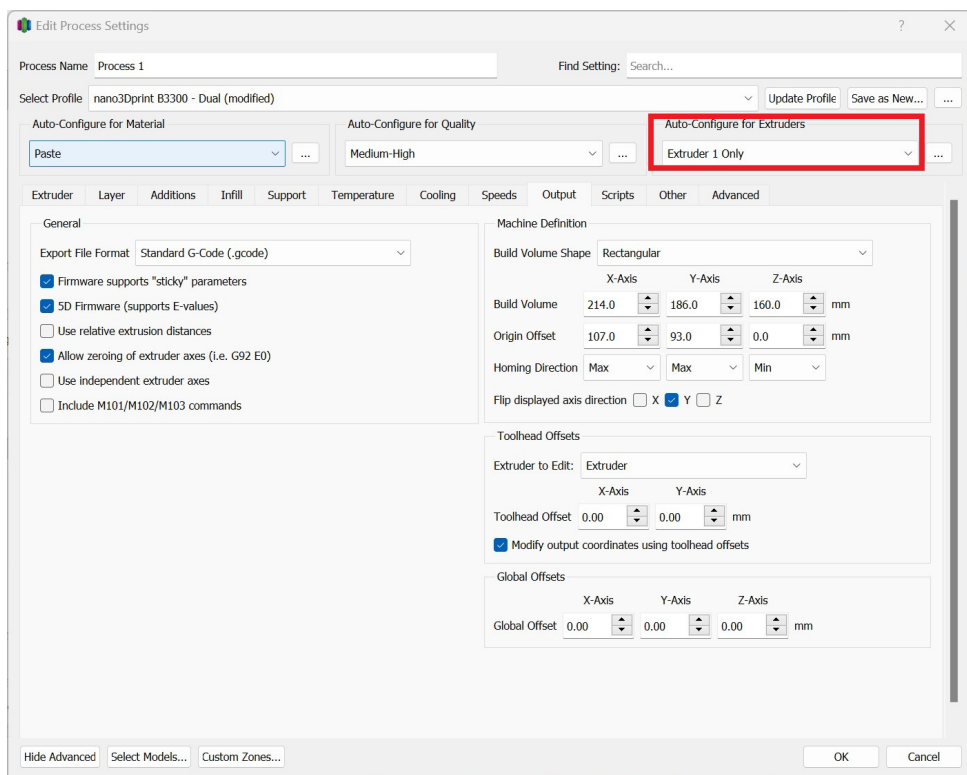


Figure 4. For “Extruder 1 Only” Printer Settings.

****The “Auto-Configure for Extruders” dropdown menu is where you will select which extruder you will be using.**

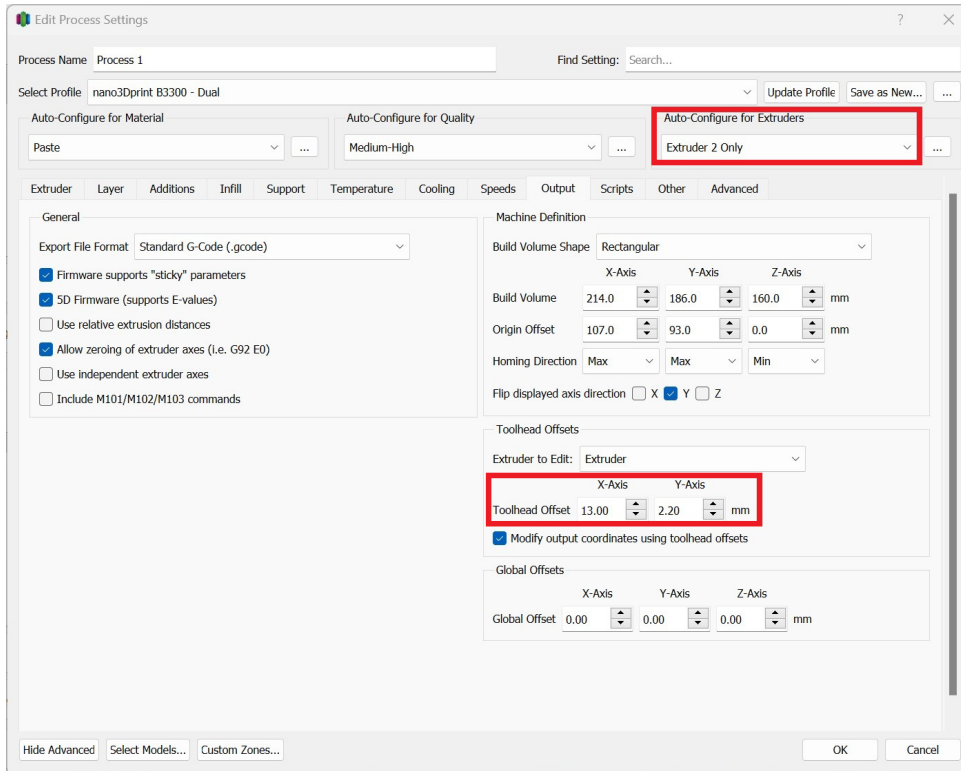


Figure 5. For “Extruder 2 Only” Printer Settings.

*Note the Toolhead Offsets.

This setting sometimes varies nozzle-to-nozzle and may need alignment adjustment. If printing with both Extruder 1 and Extruder 2, please refer to the Alignment Tutorial.

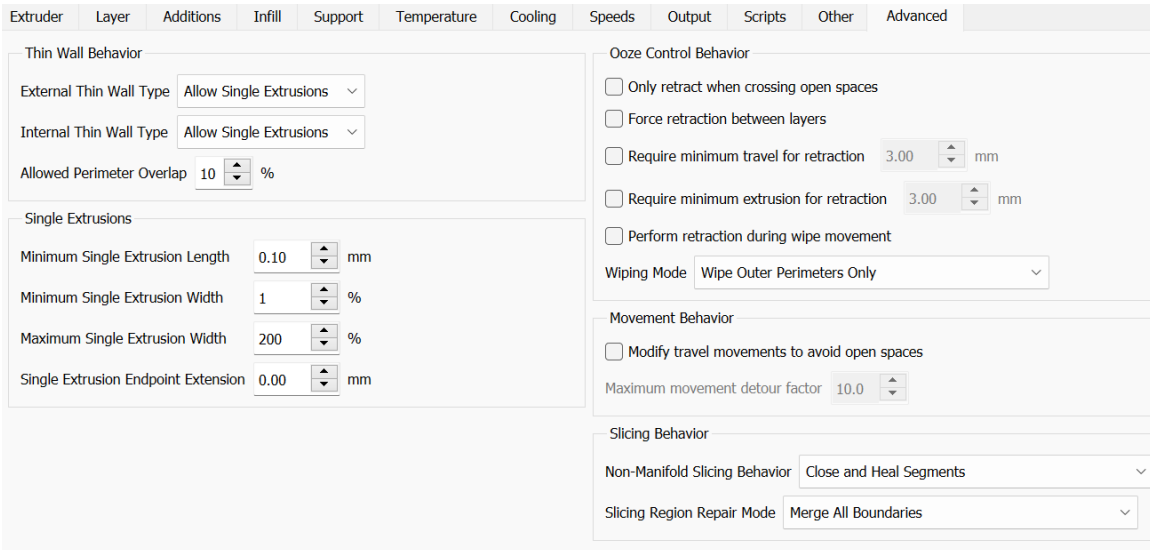


Figure 6. Settings for both A2200 Filament and Paste Printer and the B3300

*Note the Thin Wall and Single Extrusions Settings. This helps with printing of small features.

**** These settings are suggestions. Adjust your settings as needed for your print. For software troubleshooting, visit the Simplify3D software website: www.Simplify3D.com**

4. Operating Your Printer – “Paste/Ink”

1. Prepare your ink: Remove from packaging. Remove cap. Install dispenser tip. Manually extrude with hand to make sure ink is flowing.
2. Lower the print bed a little bit to prevent syringe tip from making contact with HeatBed as ink preparation is in progress
3. Retract chosen syringe pump assembly (SPA – extruder 1 or extruder 2) depressor arm for starting location appropriate for syringe in use.

For fast large-step retract, use GCODE file in provided SD card:

- Insert provided SD card to card reader slot on the right side of the printer.
- On touch screen, press "PRINTING" button.
- Select "SYRINGE COMMANDS" folder then select chosen dispenser folder (“E1” or “E2”) then select "RETRACT" folder.
- Select desired travel distance (10mm, 15mm, etc.) Use distance guide located on the side of the SPA to select appropriate distance. The distance between each marker is 10mm.

**** Please be careful to make sure not to select too large of a travel distance. Motor will crash and cause damage. ****

- Repeat steps until there is enough room to insert syringe below depressor arm. Use manual retract if necessary.

For manual small-step retract, use touch screen:

- Press “EXTRUSION” button
- Select chosen dispenser either Extruder 1 or Extruder 2
- Adjust travel distance (.1mm, 5mm, 1.0mm) and travel speed (Slow, Normal, Fast).
- Recommended setting: 1.0mm, Fast

- Press “OUT” button until there is enough room to insert syringe below depressor arm.

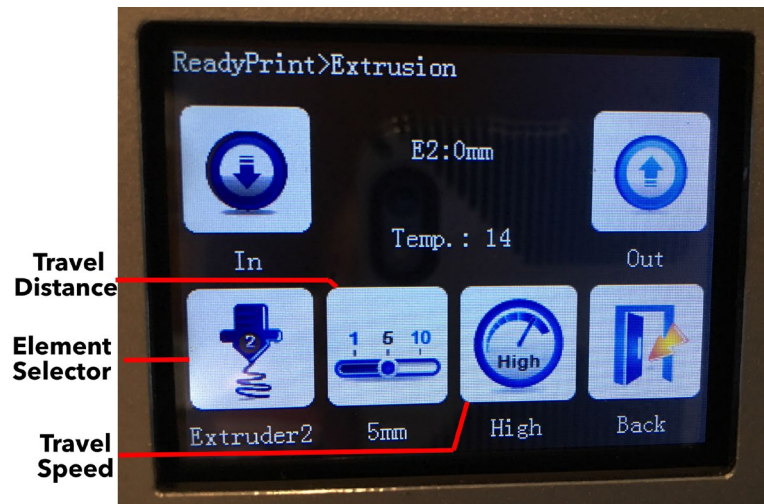


Figure 7. Touch screen showing extrusion menu.

4. Insert syringe into syringe adapter, make sure plunger's flat side is facing front if you will be using the syringe clamp.



Figure 8. Syringe in the adapter.

5. Place syringe and adapter into chosen SPA slot. Place retraction clamp in designated slot and tighten securing screws.

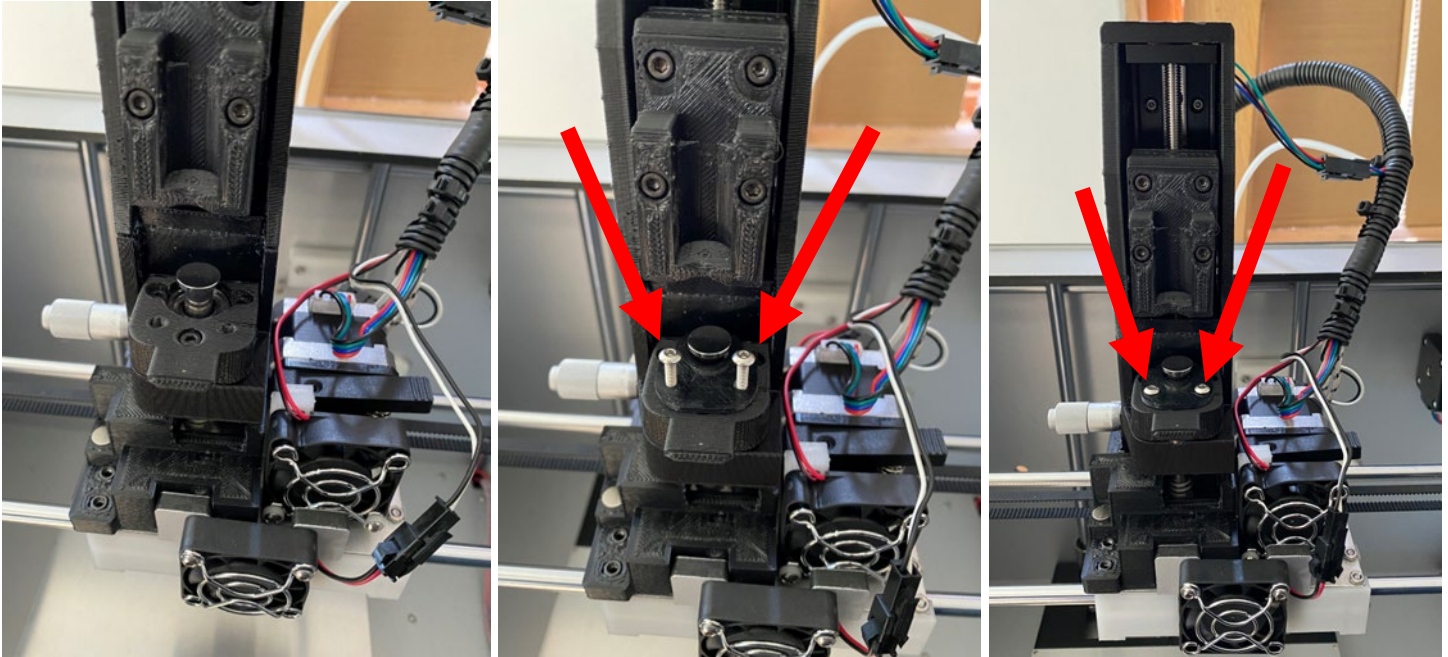


Figure 9. Syringe in adapter placed into the slot. Arrows show the securing retraction clamp down with screws.

6. Move depressor arm to starting position for syringe (top of syringe).

For fast large-step loading, use GCODE file in provided SD card:

- Insert provided SD card to card reader slot on the right side of the printer.
- On touch screen, press "PRINTING" button.
- Select "SYRINGE COMMANDS" folder then select chosen dispenser folder ("E1" or "E2") then select "LOAD" folder.
- Select desired distance (10mm, 15mm, etc.) Use distance guide located on the side of the SPA to select appropriate distance. The distance between each marker is 10mm.

**** Please be careful to make sure not to select too large of a distance.**

Motor will crash and cause damage. **

- Repeat steps until the depressor arm is starting location appropriate for syringe in use. It is recommended to use manual load once the depressor arm is close to the starting location (top of the syringe).

For manual small-step loading, use the touch screen:

- Press “EXTRUSION” button
- Select chosen dispenser either Extruder 1 or Extruder 2
- Adjust to desired travel distance (.1mm, .5mm, 1.0mm) and travel speed (Slow, Normal, Fast).

Press “IN” button until depressor arm is at starting location appropriate for syringe in use and extrude a small amount of material to check if it is still flowing. If the ink/paste is flowing, you are ready to start your print. If not, your syringe maybe clogged. Replace dispensing tip or manually extrude by hand.

**** Note: Only use Slow travel speed and .1mm travel distance when depressor is close to the syringe. ****

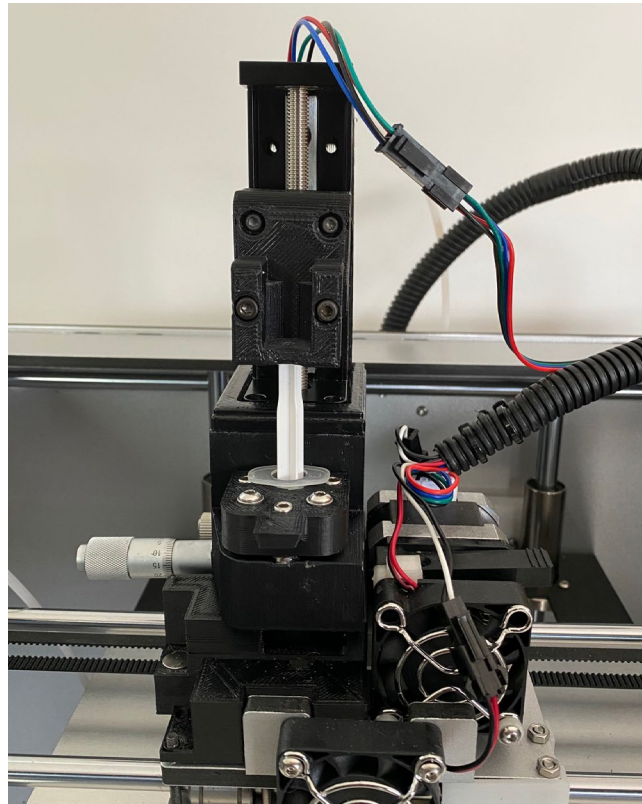


Figure 10. The depressor arm is now in the starting position.

7. (Optional): Depending on your application, you can install the syringe clamp for retracting the syringe plunger and in doing so retracting the print material. Make sure that the flat side of the plunger is facing front. Place clamp so that the depressor arm and the top of the plunger is between the clamp. Tighten securing screw.

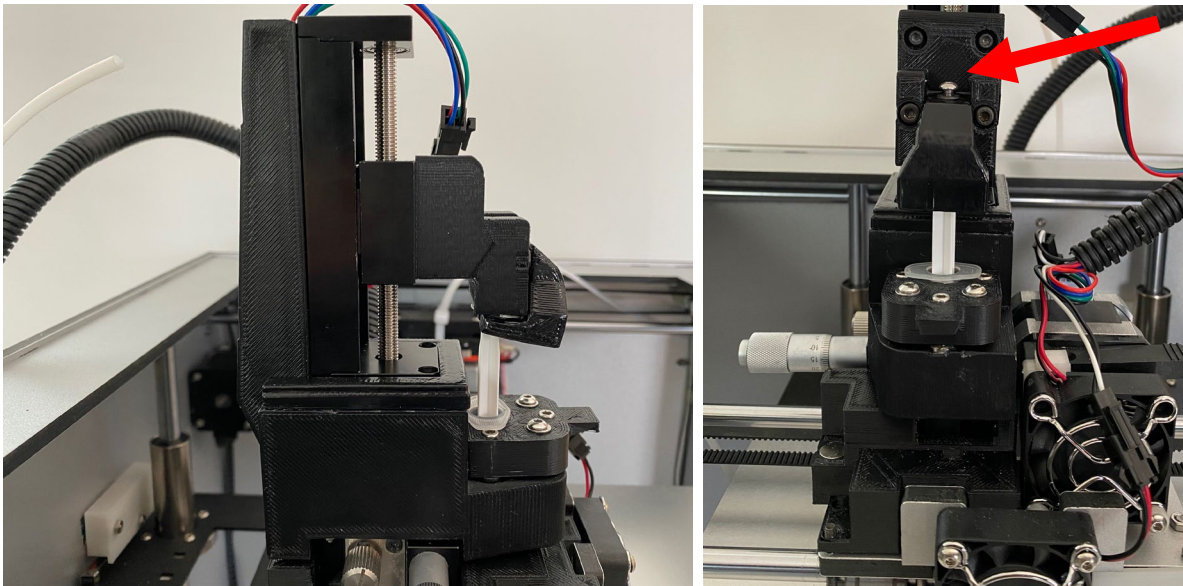


Figure 11. Syringe clamp is placed. Arrow shows the securing screw for the syringe clamp.

8. Start the print: Press “PRINTING” button on touch screen and select your design file and start the print. (Print will start when all print settings are nominal for operation – this may take a few minutes.)
9. Happy printing!

**** If the nozzle is pressing into or too far away from the print surface, see appropriate leveling procedure in Calibration Section. ****

5. Print Surface Height Calibration – “Paste/Ink Only”

1. Download calibration file from:
<https://drive.google.com/drive/folders/16XJzkkP1HOPVkJFvusJdL8QHnvx1ZXvbN?usp=sharing>
2. Save calibration file into SD Card.
3. Eject your SD Card from your computer and input it into the printer’s SD Card slot located on the right side of the printer.
4. Start calibration print:
 - On printer touch screen, go to “PRINTING”
 - Select calibration file and start print.
5. As calibration file is printing, analyze print and adjust Stage height as needed. You can tighten or loosen the screws in the front and back of the Stage to adjust height. It may take some time and patience but once adjusted, you will likely only have to do this once in a while.

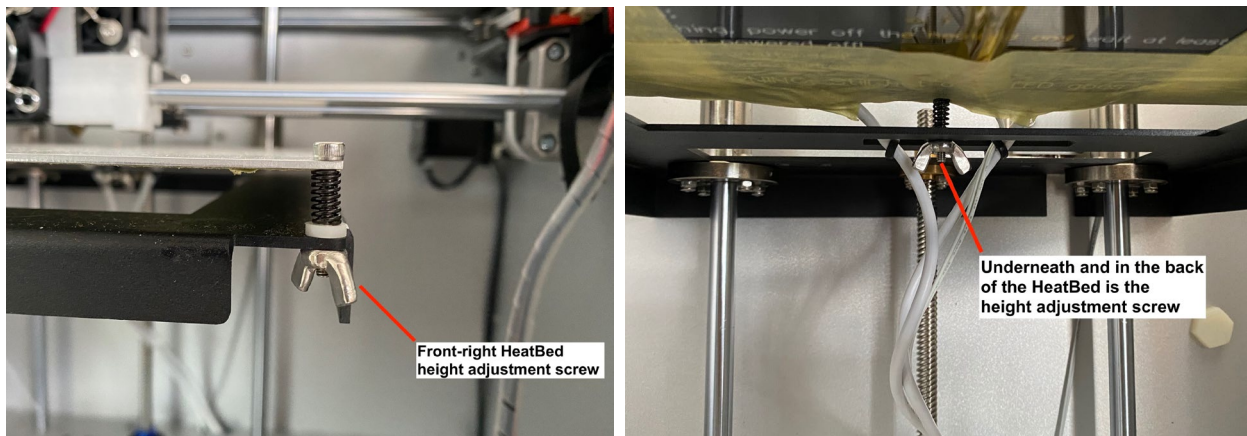


Figure 12. Stage height adjust screws.

**** NOTE:** There is fine adjustment for the height of the dispenser nozzle.

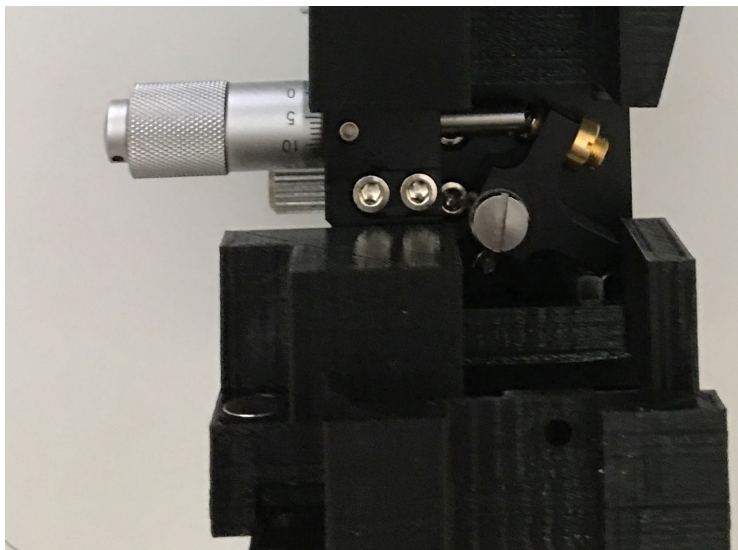


Figure 13. Fine height screw adjustment for dispenser nozzle.

6. How to use Video Monitoring System

1. Plug camera into the computer. (Test LED light to indicate successful connection. - LED light adjuster on wire.)



Figure 14. LED light adjuster.

2. Open Camera app for Windows. Open Photo Booth or QuickTime Player for Mac.
3. Select "Teslong Camera" as camera in use, otherwise the default camera will be selected.

Switching Auto Focus to Manual Focus:

1. In Camera App for Windows, go to gear icon in top left corner for Settings.

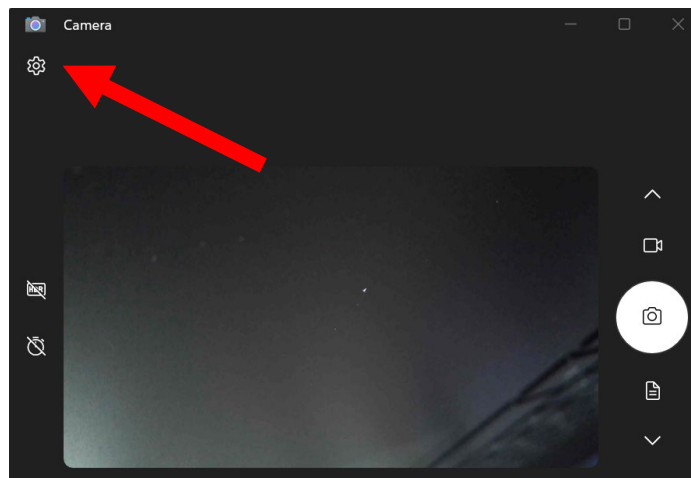


Figure 15. Settings – Camera App, Windows.

2. Select "Camera Settings" and turn on "Pro Mode".

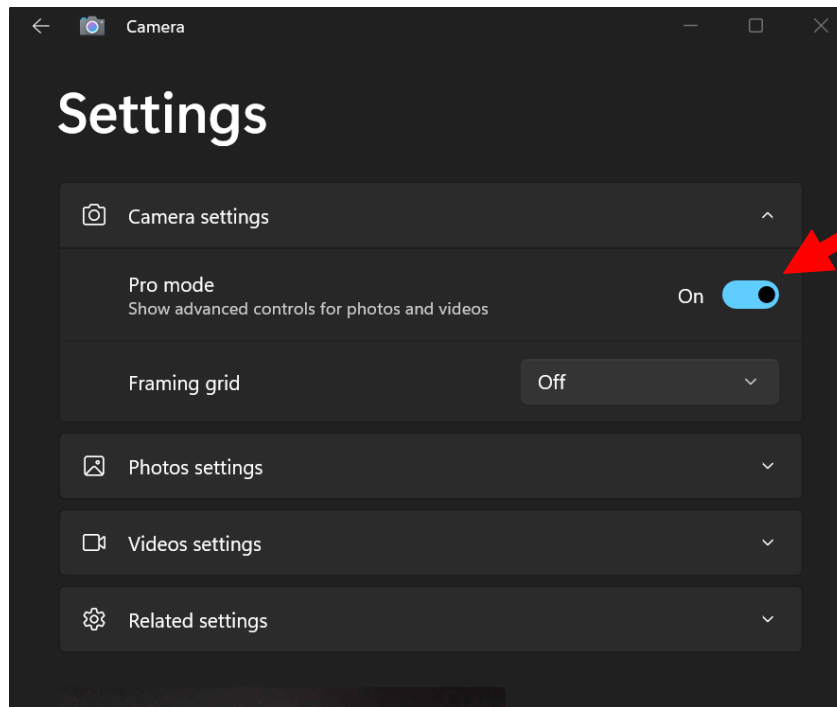


Figure 16. Settings – Camera settings > Pro Mode set to on.

3. Go back to camera view, find the “Manual Focus” button on the left side of the window. A slider will appear and you can adjust from auto focus to manual.

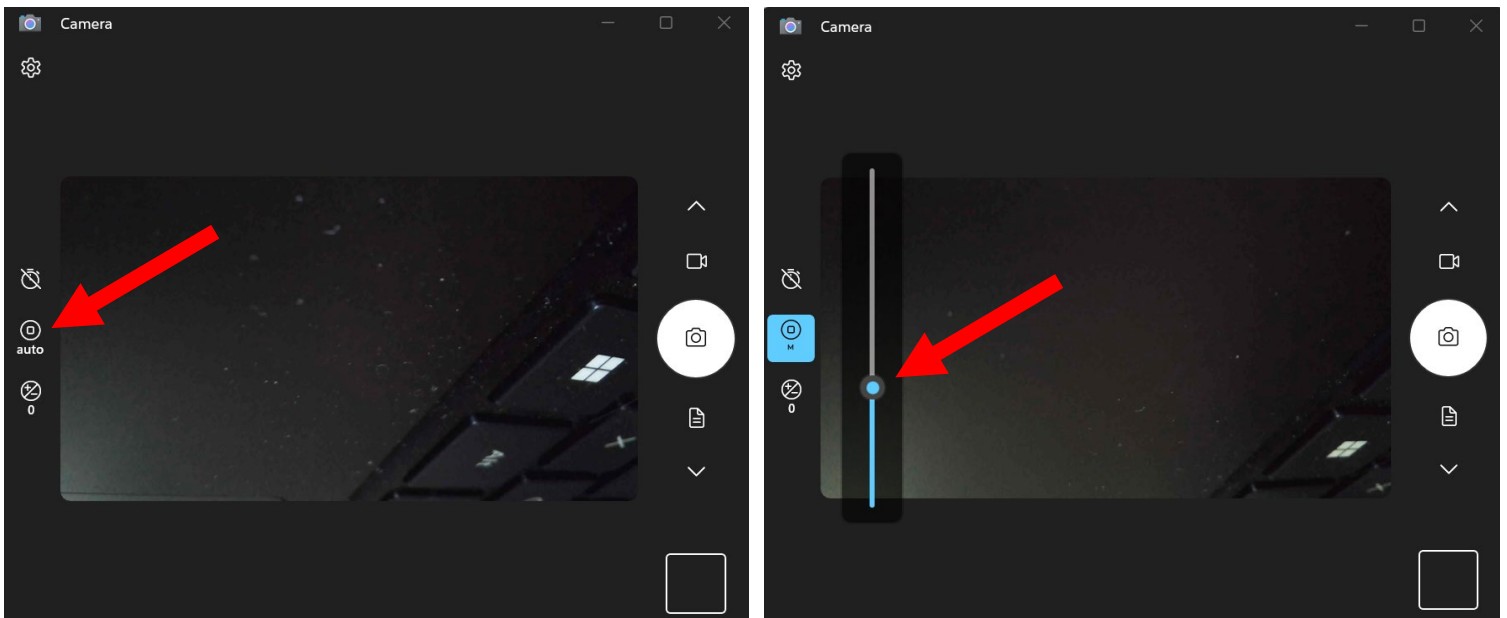


Figure 17. Camera View – Manual focus control.

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