

LULZBOT® TAZ PRO

Welcome to the LulzBot Community

Thank you for choosing the LulzBot® TAZ Pro 3D Printer. This Quick Start Guide will familiarize you with the proper use and operation of your TAZ Pro. By the time you finish, you will have completed your own calibration test on your new printer.



Complete documentation is available online at [LulzBot.com/downloads](https://lulzbot.com/downloads). If you have questions while setting up your LulzBot TAZ Pro, please contact our technical support team by emailing [support@LulzBot.com](mailto:support@lulzbot.com) or calling +1 (970) 377-1111.

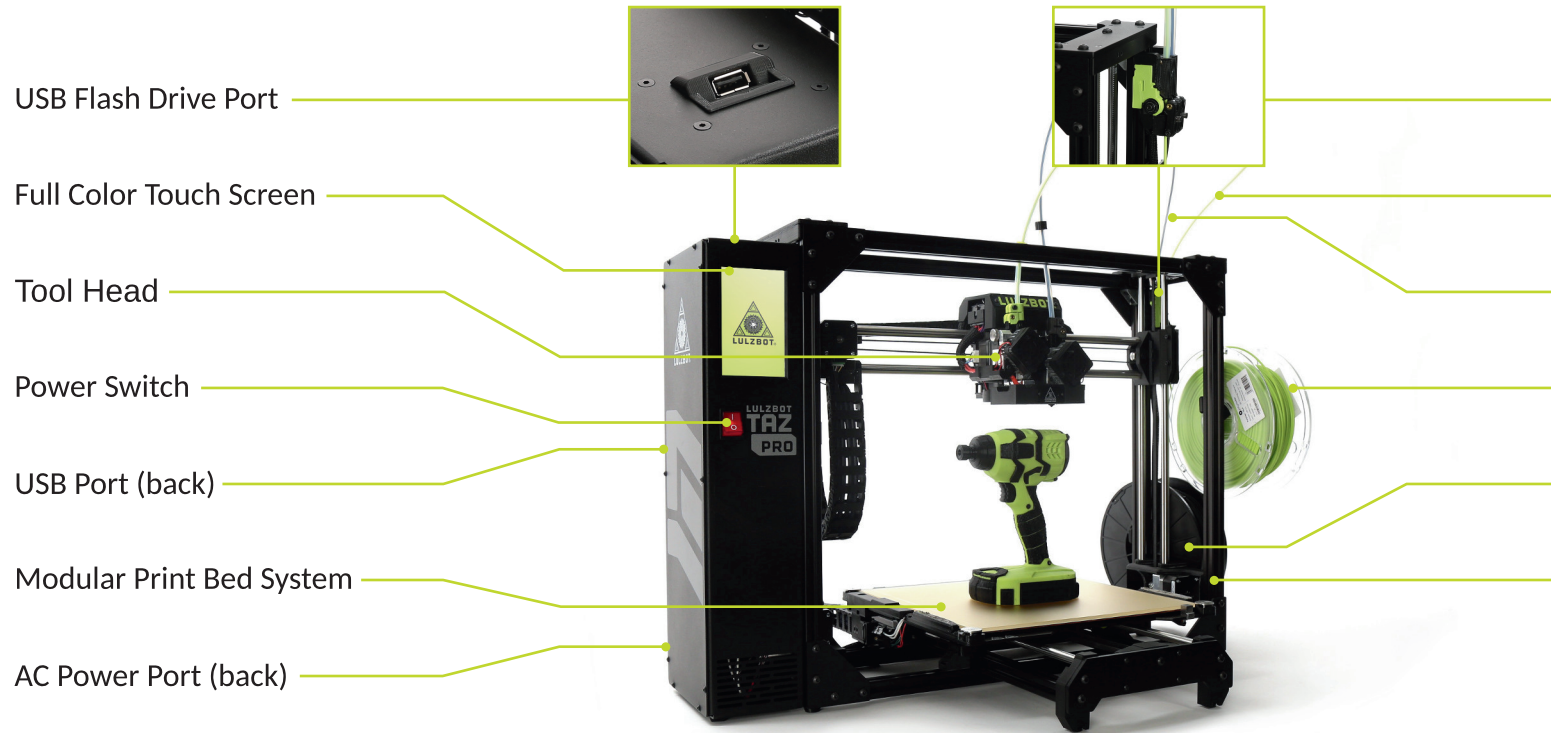
Learn more at [LulzBot.com/support](https://lulzbot.com/support).



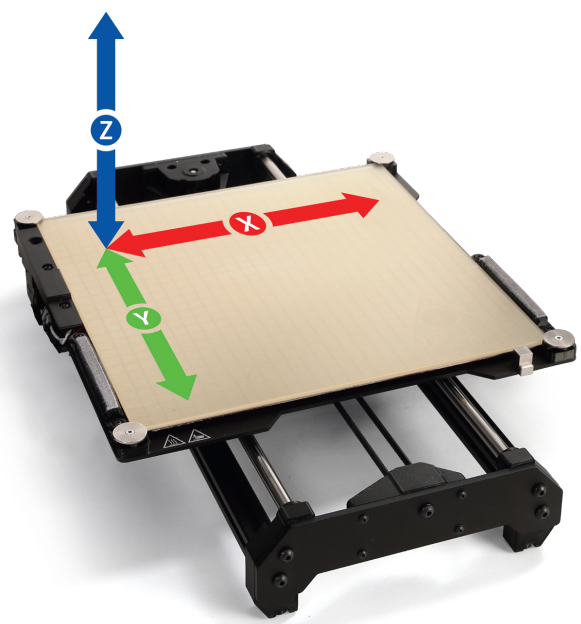
Read the included User Safety Sheet completely before beginning the Quick Start Guide.

1

LulzBot TAZ Pro Key Components



- _____ Filament Run Out Sensor
- _____ Extruder 1 Filament Guide Tube
- _____ Extruder 2 Filament Guide Tube
- _____ Extruder 1 Filament Holder
- _____ Extruder 2 Filament Holder
- _____ Aluminum Frame



Cartesian Coordinate System

The LulzBot TAZ Pro can move on three linear axes: X, Y, and Z.

Tool Head Anatomy

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Your LulzBot TAZ Pro Dual Extruder is self-actuating and automatically calibrates, providing the highest quality true multi-material printing possible without the need for lengthy manual calibration.

Extruder 1 Filament Guide Tube

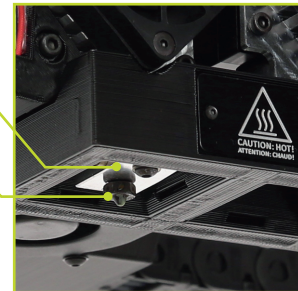
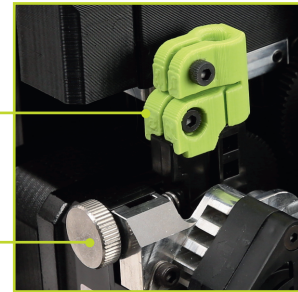
Extruder 1 Idler

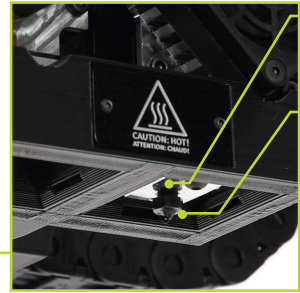
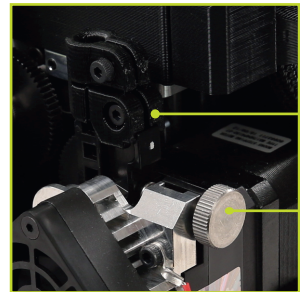
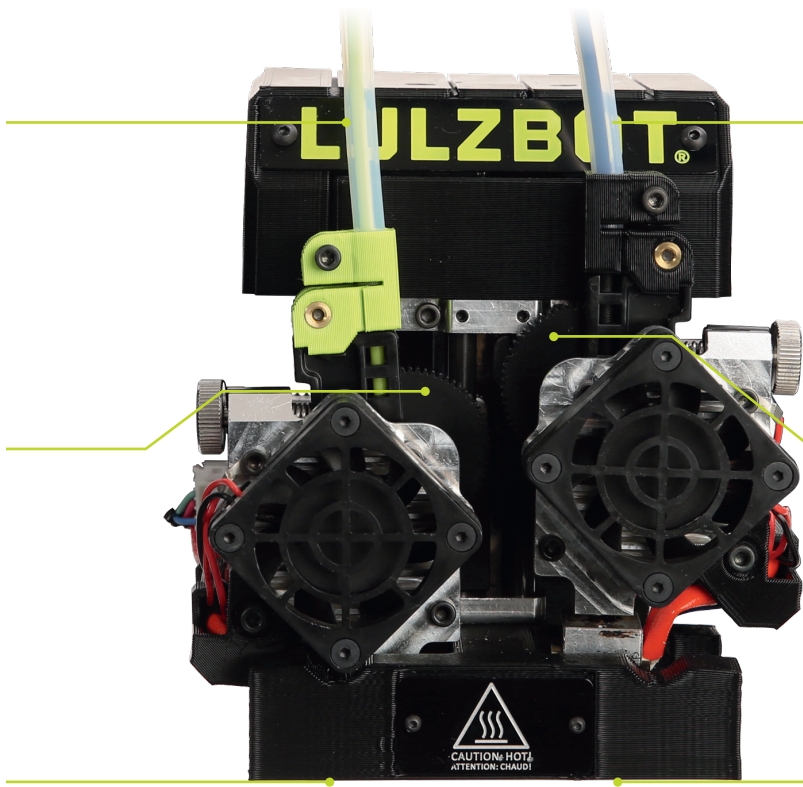
Extruder 1 Idler Adjustment Knob

Extruder 1 Drive Gear

Extruder 1 Heater Block

Extruder 1 Nozzle





Extruder 2 Filament Guide Tube

Extruder 2 Idler

Extruder 2 Idler Adjustment Knob

Extruder 2 Drive Gear

Extruder 2 Heater Block

Extruder 2 Nozzle

2

Unpack your LulzBot TAZ Pro Desktop 3D Printer

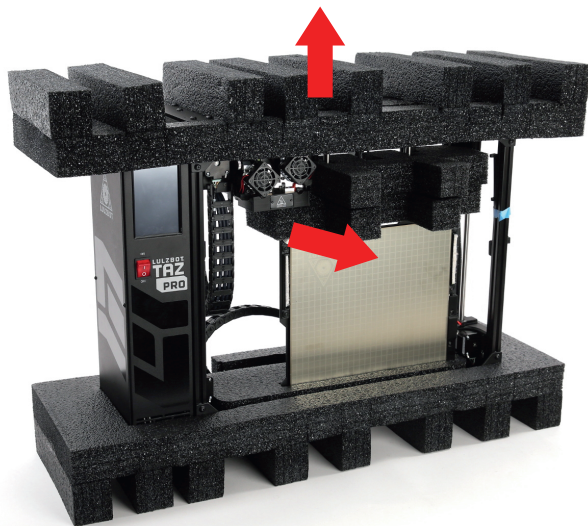
2.1 Place printer box on its side and carefully open the top of the box. Use the two black straps wrapped around the printer to remove it from the box. Once it has been removed, pull the tabs where the black straps have been heat sealed to separate them.



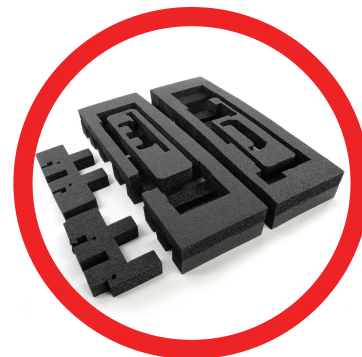
2.2 After removing the protective cardboard from the printer remove all additional contents.



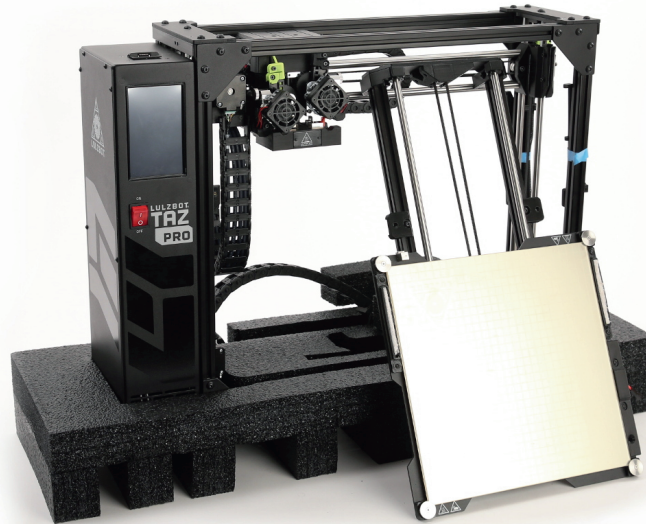
2.3 Stand the printer up and carefully remove the packaging foam from the top of the printer. Remove the central foam by peeling it away starting at the side closest to the tool head. Confirm all contents in the included Packing List have been removed from the box.



! Save all of the provided packaging materials. In the case that warranty service is needed, the 3D printer **must** be shipped in its original packaging.



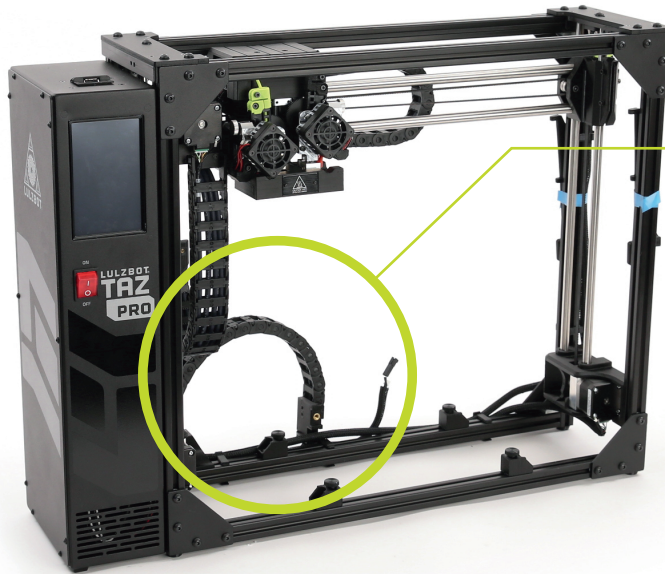
2.4 Slide the modular print bed up out of the lower foam as you tilt the Y-axis assembly away from the tool head. Lift the y-axis assembly out of the lower foam then lower the bed and remove it from the printer frame. Once the modular print bed is clear, lift the printer from the final piece of packaging foam.



3

Assemble your LulzBot TAZ Pro Desktop 3D Printer

3.1 The operating area for your LulzBot TAZ Pro is 32.76 inches by 28 inches (83.2 cm by 71 cm). Place your printer in an area with enough space to function without encountering any obstructions.



3.2 Move the Y-axis cable chain into place by grasping the base of the cable chain and rotating it 90° until it snaps into place.



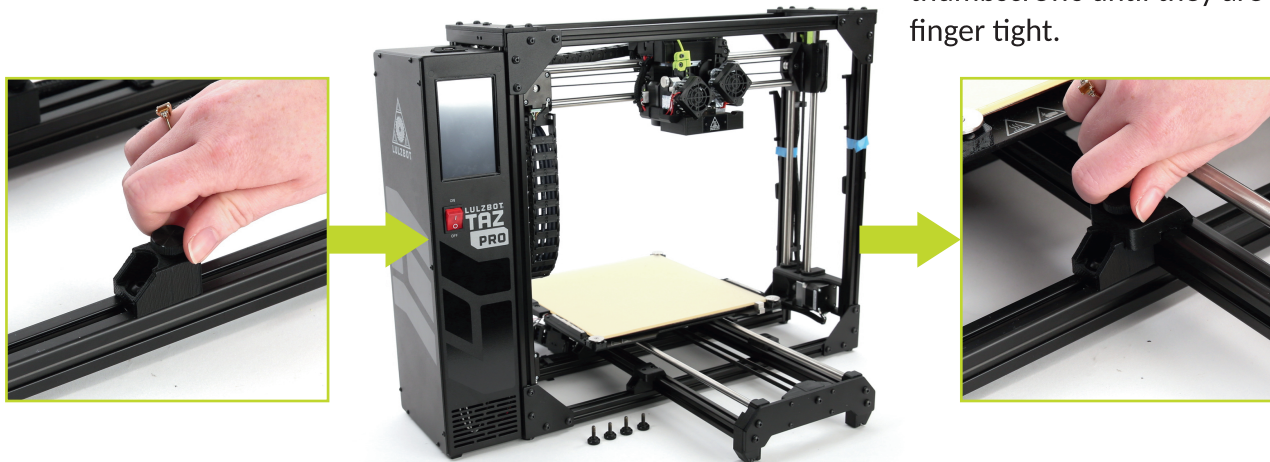
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If the Y-Axis Cable Chain does not rotate downward easily, loosen the screw at the base of the cable chain to allow for easier adjustment.

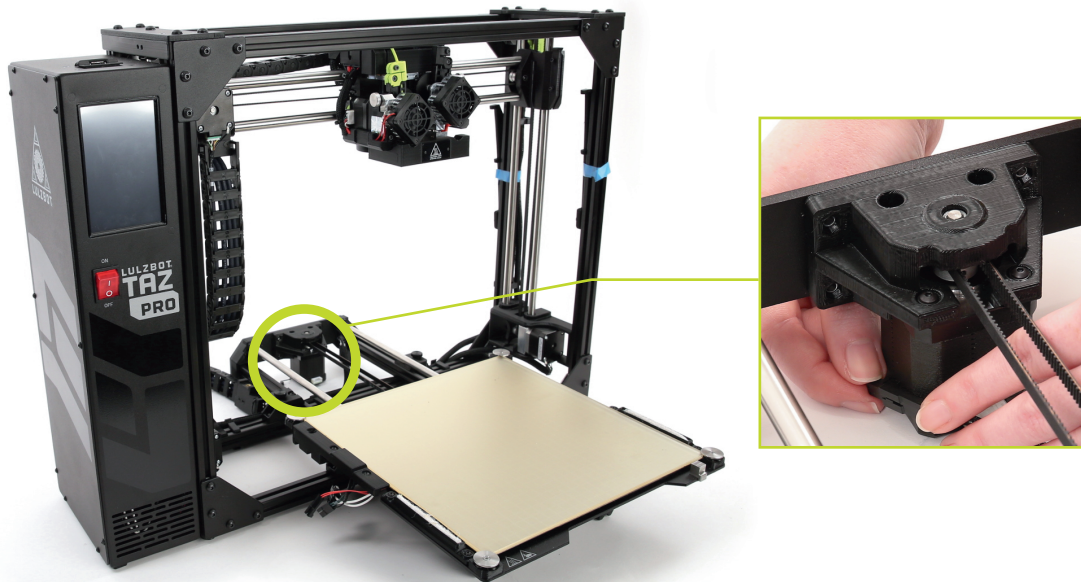
3.3 Unscrew and save the four (4) thumbscrews from the mounting brackets.

3.4 Place the Y-axis assembly on the frame with the LulzBot logo on the front right corner of the modular print bed. Line up the four mounting brackets.

3.5 Slide the modular print bed away from you and screw in the front two thumbscrews until they are finger tight. Slide the modular print bed forward and screw in the back two thumbscrews until they are finger tight.



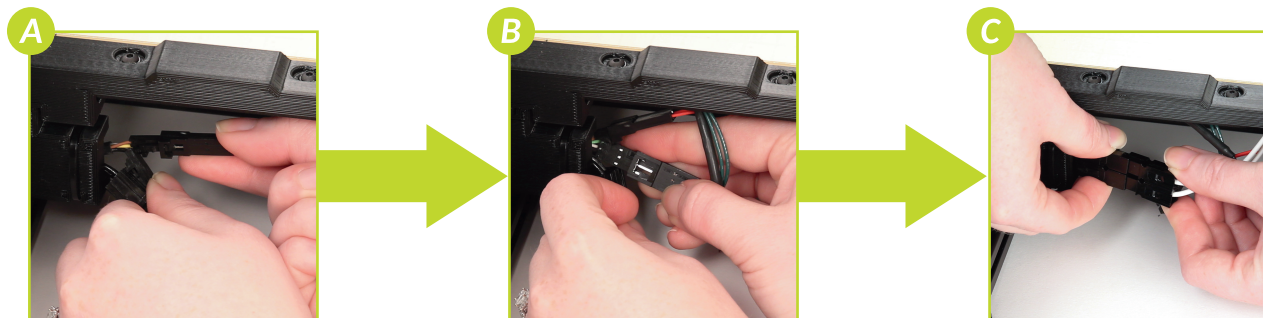
3.b Connect the Y-axis stepper motor to the wiring harness, plugging in first the black connector, followed by the white connector into the stepper motor.



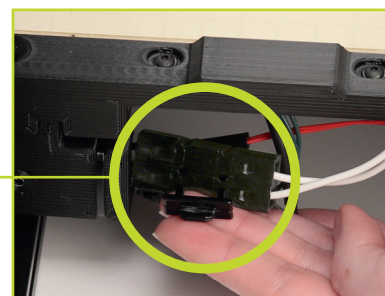
3.7 Align the end of the Y-axis cable chain under the modular print bed as shown. Once in place, secure the cable chain to the bed using the included 4 mm hex driver and the inset screw on the modular print bed. Turn the 4 mm hex key counter-clockwise until you feel the threads seat (to prevent stripping the threads), then while holding the cable chain level, turn the hex key clockwise to screw on the cable chain.



3.8 Connect the three sets of wire connectors underneath the bed as shown below starting with the small two pin connection (A), then the small three pin connection (B), then the large heater connection (C).



3.9 Once all connections are in place, locate the bed power harness retention clip in your tool bag. Press the two prongs of the clip into the two holes on the heater connection.



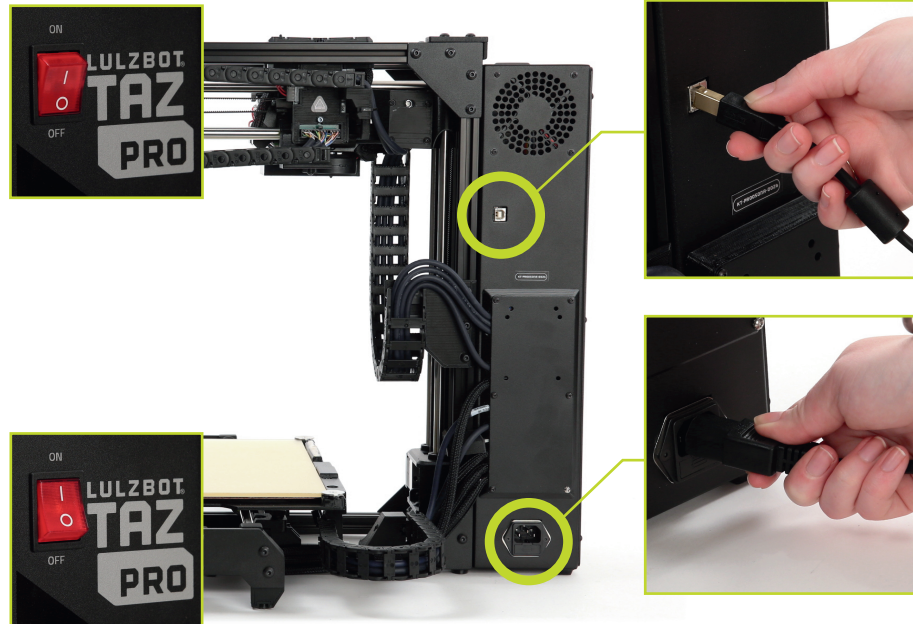
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During the printer startup cycle, the X-axis will move to the top of the frame and make contact with the left and right limit switches in order to level the X-axis. This process also completes before each print.

3.10 Verify that the power switch on the front of the printer is in the Off position.

3.11 Plug in the USB cable between a computer and the back of the printer, and AC power connection on the back of the printer.

3.12 Flip the power switch to the On position to turn on the 3D printer.



4

Setting up Cura LulzBot Edition

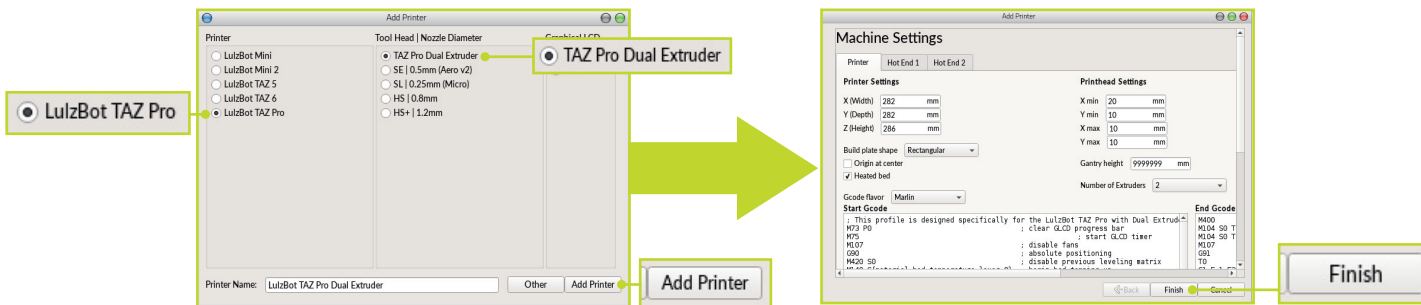
4.1 Cura LulzBot Edition, the recommended software to control your 3D printer, includes built-in support for over 30 materials. Find installation instructions, troubleshooting information, and more at [LulzBot.com/Cura](https://lulzbot.com/Cura).

Already have Cura LulzBot Edition? Update now to get additional material support and new slicing profiles. Expert help and advice is available at [LulzBot.com/Support](https://lulzbot.com/Support).

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There may be later versions of Cura LulzBot Edition available at [LulzBot.com/Cura](https://lulzbot.com/Cura), with added features and functionality. We recommend checking for updates regularly.

4.2 Launch Cura LulzBot Edition. The **Add Printer** menu will automatically appear. Select **LulzBot TAZ Pro** and **TAZ Pro Dual Extruder**, then click **Add Printer**. Existing users should select the **Settings** dropdown menu, **Printer**, then **Add Printer...** On the next menu that appears, click **Finish** to complete the printer setup. Cura LulzBot Edition is now ready for use with your LulzBot TAZ Pro.



4.3 New firmware is consistently being developed to add new functionality and ensure your LulzBot TAZ Pro is creating the best quality prints. Update the printer firmware now by clicking the **Settings** dropdown menu and selecting **Printer**, then **Manage Printers....** With **LulzBot TAZ Pro Dual Extruder** highlighted, click **Upgrade Firmware** and follow the prompts to install the latest firmware.

4.4 Two 3D models named TAZ_Pro_Calibration01.stl and TAZ_Pro_Calibration02.stl will automatically load onto Cura LulzBot Edition's virtual print bed the first time you run Cura LulzBot Edition with your LulzBot TAZ Pro.

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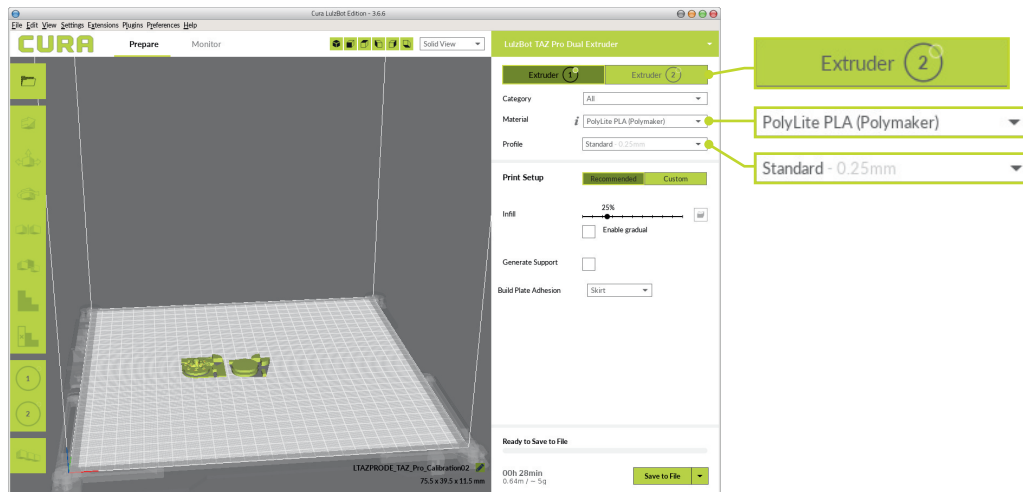
*If the Dual Calibration models are not present in the virtual print bed, you can download them from download.lulzbot.com/3D_Models/TAZ_Pro_Calibration or from the included USB flash drive, then load them into the virtual print bed using the **Open File** button in the main Cura interface.*

4.5 Locate the included sample coils of green and black PLA filament. We strongly recommend using the included PLA sample filament for your first print.

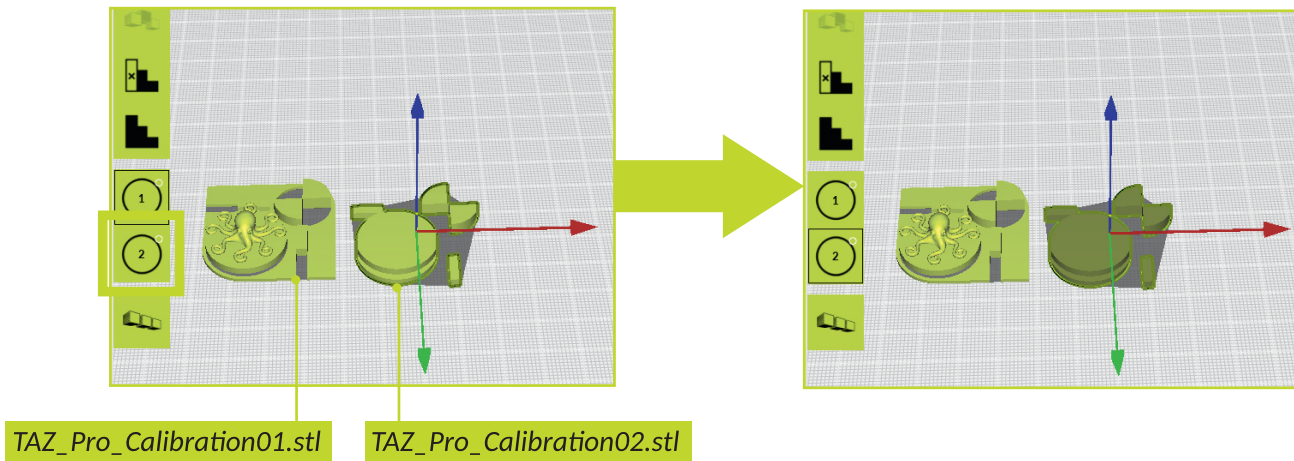
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Filament is the term for the materials your LulzBot TAZ Pro uses to 3D print objects. The included sample filament, PLA, is made from natural renewable resources. PLA and other types of filament can be purchased at [LulzBot.com/filament](https://lulzbot.com/filament).

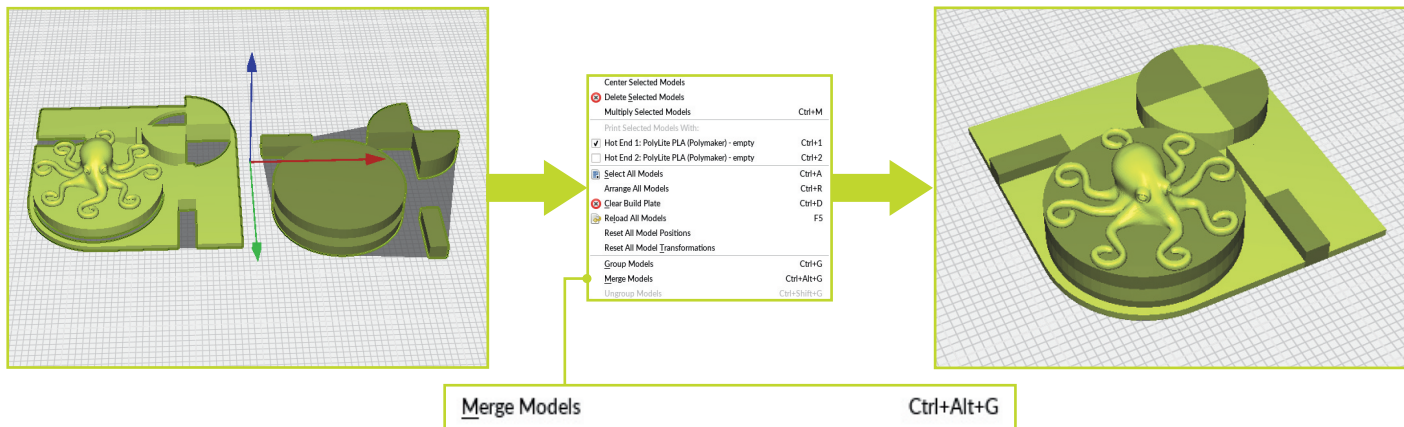
4.b In the Prepare sidebar on the right side of the screen, confirm that PolyLite PLA (Polymaker) is selected for Material and Standard is selected for the Profile to be used for printing on Extruder 1. Click on the **Extruder 2** button and confirm that PolyLite PLA (Polymaker) and Standard are selected for Extruder 2.



4.7 Click on the TAZ_Pro_Calibration02.stl model on the virtual print bed, then click on the **2** on the left side of the print area. This designates TAZ_Pro_Calibration02.stl as the piece to be printed with extruder 2. The model will change color based on the filament selected for extruder 2 to reflect the change.



4.8 With TAZ_Pro_Calibration02.stl selected, hold shift and click on TAZ_Pro_Calibration01.stl to select both models. Right click on TAZ_Pro_Calibration01.stl and select **Merge Models** from the dropdown menu to combine the models into a single print.



When printing a single model with soluble support in future prints, check the **Generate Support** box and select **Hot End 2** as the support extruder rather than assigning an object to Extruder 2.

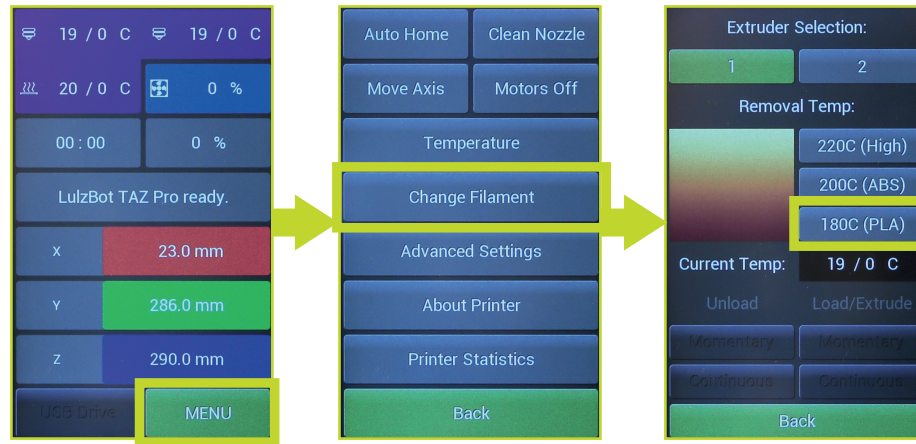
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Preparing your LulzBot TAZ Pro to print

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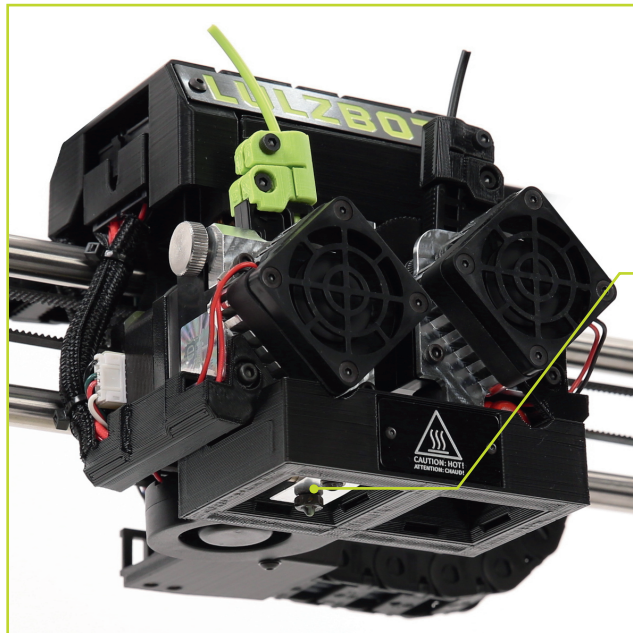
Your LulzBot TAZ Pro was tested for quality assurance before being packaged. You will need to remove the remaining filament left in the tool head from this process before loading new filament for your next print. Follow the steps below to remove or change filament.

5.1 Press the **Menu** button then the **Change Filament** button on the printer touchscreen. Press the **180c (PLA)** button to heat the hot end to the appropriate filament removal temperature.



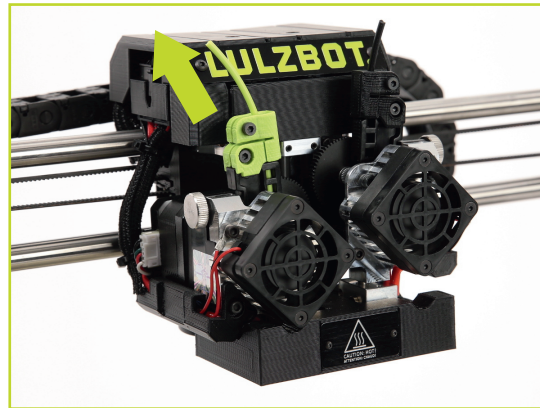
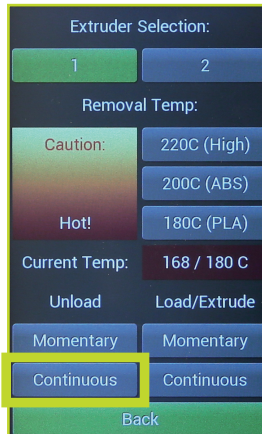


The hot end is now heating up to 180°C (356°F) and can burn your skin.



Very hot!
Do not touch!

5.2 Once the hot end reaches the appropriate filament removal temperature, press the **Continuous** button in the **Unload** column to start retracting filament. Once the filament stops moving, pull it out of the idler. Press the **Continuous** button again to stop the extruder.

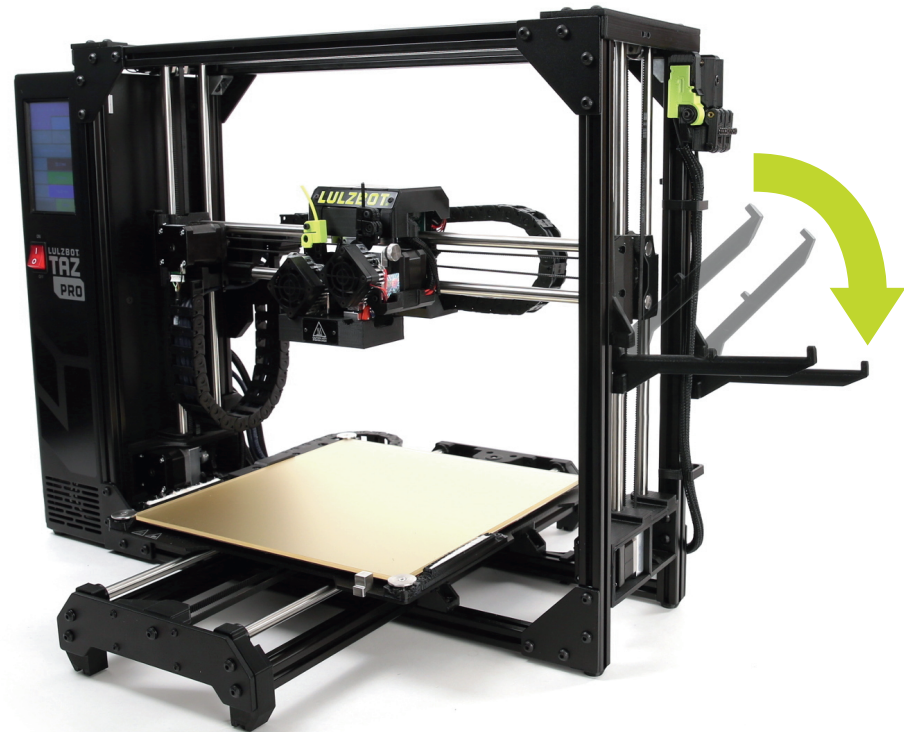


5.3 After removing the filament from extruder 1, press the 2 button to select the second extruder and complete the same process for extruder 2.

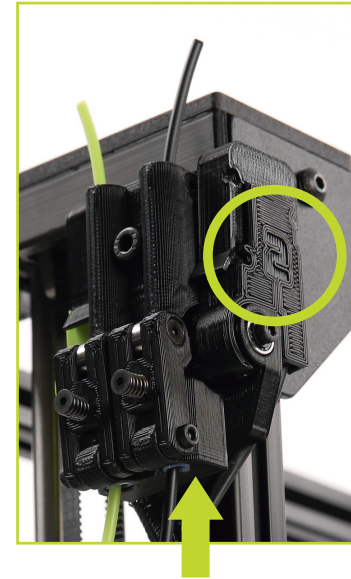
5.4 Remove the blue tape holding the two filament holders in place along the right side of the printer and rotate them down into place. Once in position place the green filament on the front filament holder and the black filament on the back filament holder.

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The filament holders may need to be adjusted to accommodate larger reels of filament. Use the included 4mm hex key to loosen the screw at the base of the filament holder, move it to the appropriate position, and retighten.



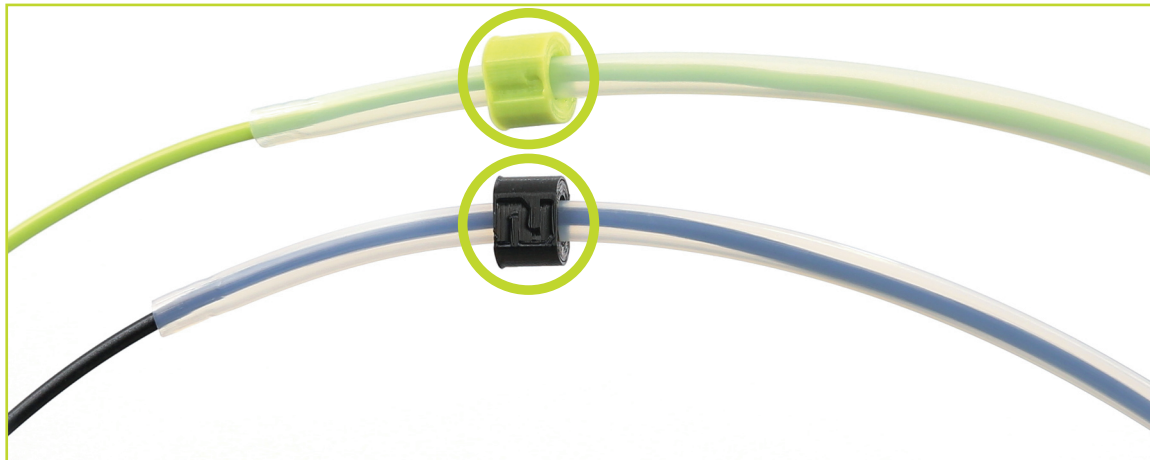
5.5 Feed the front, LulzBot Green filament up into and through the filament sensor marked 1, and the rear, black filament up into and through the filament sensor marked 2.



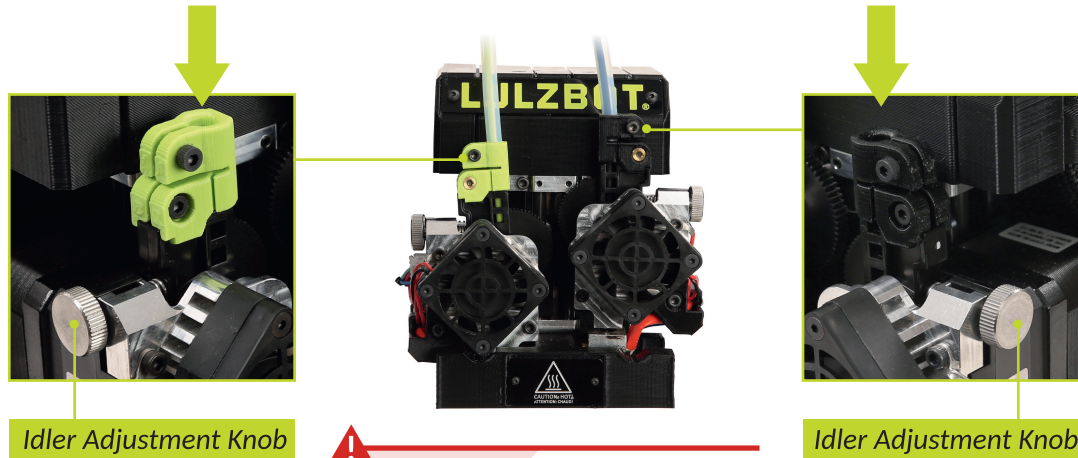
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Note that the filament sensors 1 and 2 correspond to Extruder 1 and Extruder 2 and must go to the correct extruder in order for your TAZ Pro to function properly.

5.b Obtain the two clear filament feed tubes unpacked earlier. Feed the LulzBot Green filament into the filament feed tube marked with the printed LulzBot Green 1 label. Feed the black filament through the second feed tube marked with the printed black 2 label.



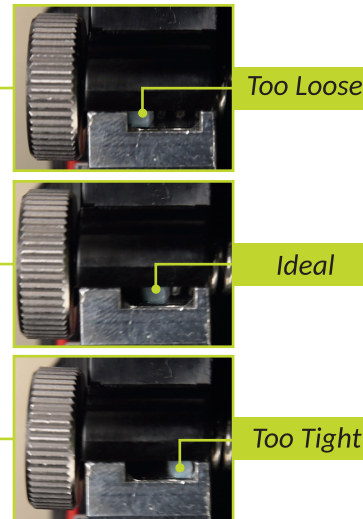
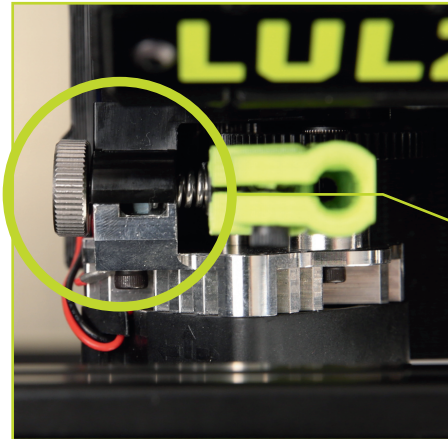
5.7 Locate the idler adjustment knob feed path on each idler where the loaded filament was removed during steps 5.2 and 5.3. Filament feeds down this path and into the hot end for printing.



! The hot end is still heated to 180°C (356°F) and can burn your skin.

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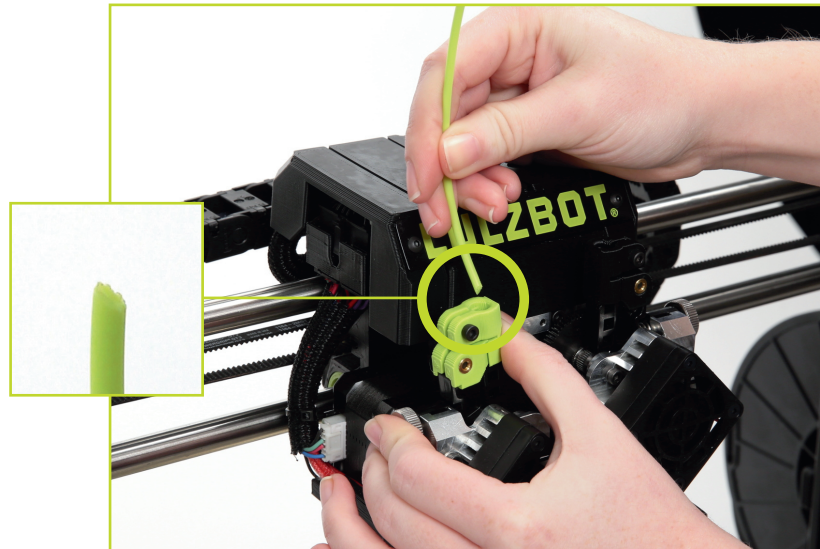
During printing, each extruder idler holds filament against the extruder hob which pushes filament down into each hot end. Correct idler tension is important for keeping filament flowing properly during the printing process. The idler tension can be seen by looking at the tool head from above. Rotating the idler adjustment knob clockwise will move the internal nut closer to the idler knob, loosening the idler, while rotating counterclockwise will push the internal nut away from the idler knob, tightening the idler.



5.8 Feed the filament completely through each feed tube until it exits the labeled side. Straighten the filament slightly and while pinching the extruder idler, feed the LulzBot Green filament into Extruder 1. The idler may need to be loosened for filament to be inserted properly. Once the filament is in place, tighten the idler to the ideal tension shown opposite.

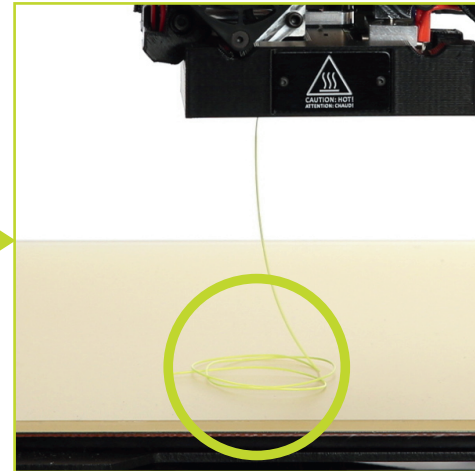
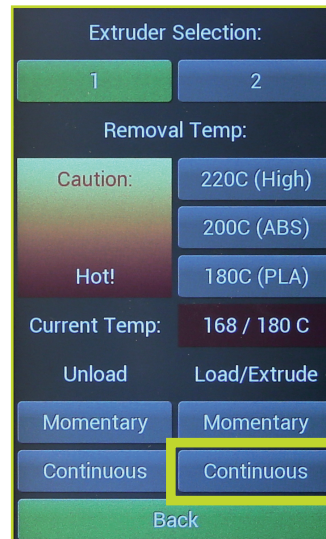


The filament must be inserted past the extruder hob gear for filament to extrude properly. If there is resistance while pushing filament through the idler, trimming the filament at a 45° angle and may help.



5.9 Select Extruder 1 and press the Continuous Load/Extrude button and let filament advance until it extrudes smoothly as shown. Press the Continuous Load/Extrude button again to stop extruding.

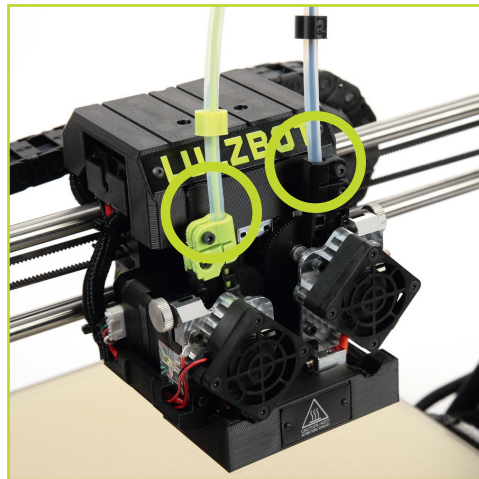
5.10 Complete steps 5.8 and 5.9 for Extruder 2.



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After removing filament, a small residual amount remains in the hot end that needs to be cleared out through the process detailed above. This purging process helps to remove any residual material left in the hot end.

5.11 Firmly seat the filament guide tubes into the corresponding extruder idler and filament sensor matching the label number and color. Confirm that the LulzBot Green filament is loaded into filament sensor 1 and feeds into the filament feed tube labeled 1, and extruder 1. Confirm that the black filament is loaded into filament sensor 2, feeds into the filament feed tube labeled 2, and extruder 2.



b

Starting your First Prints



Before starting a print, check that your printer is ready. The hot end is still hot, use caution:

- *Confirm that all packaging has been removed from your LulzBot TAZ Pro.*
- *Verify that the 3D printer is in a well-ventilated area, on a flat and level surface, and with 30 centimeters (12 inches) clearance in all directions.*
- *Check that both filament guide tubes are securely in place in their respective extruder idler and filament sensor. This is required for proper filament run-out operation.*

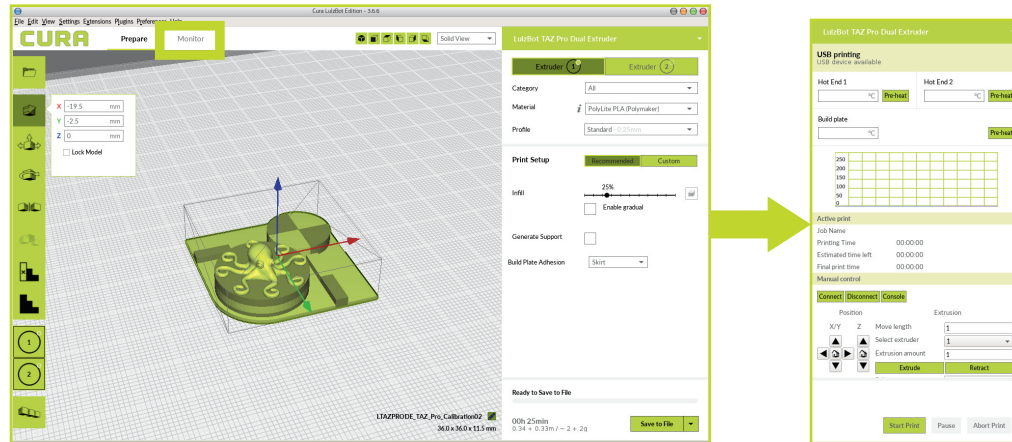


If you need to make changes to your model, use the Prepare sidebar in Cura. Once changes are made, Cura will automatically begin implementing the changes (also known as reslicing).



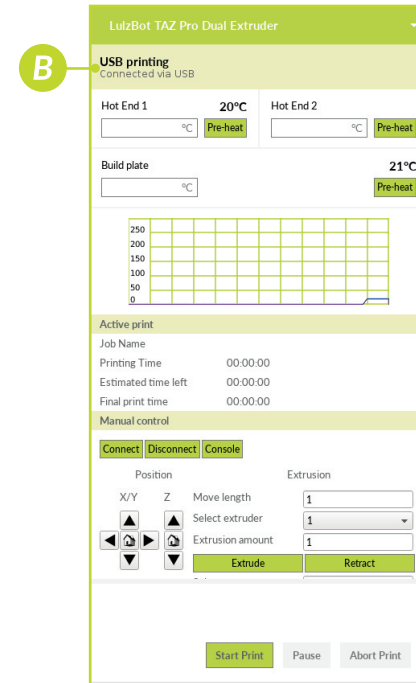
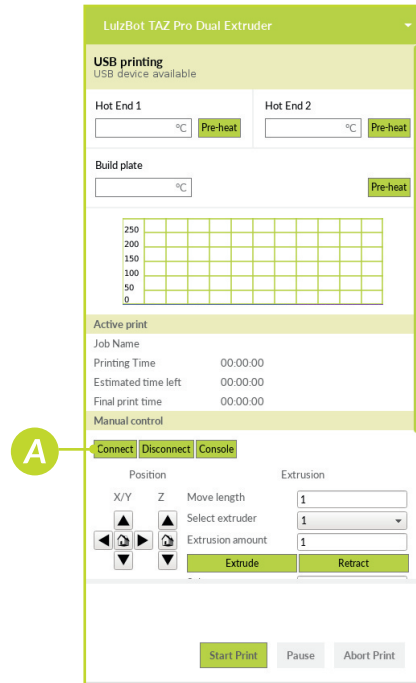
The X-axis gantry may shift after your 3D printer is powered off. Each time you power on your printer the X-axis will be leveled during the automated homing process.

b.1 Your LulzBot TAZ Pro 3D Printer is now ready to print! Click on the **Monitor** button at the top of the main Cura interface. This will change the sidebar on the right side of the screen to show printer information and controls.

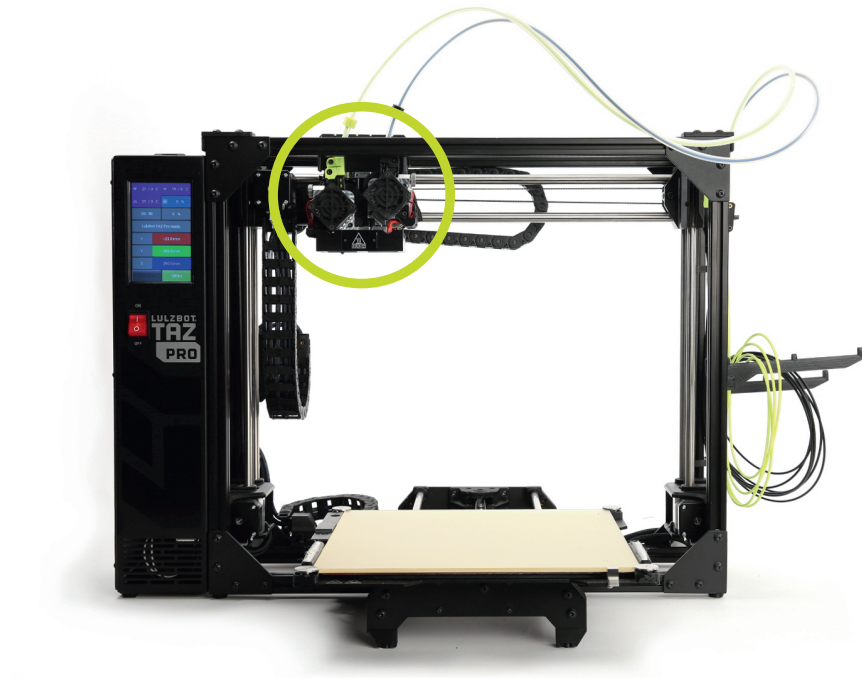


i Once models are sliced, they may also be saved to the included USB flash drive by clicking **Save to File**. Once saved, models may be printed directly from the USB flash drive.

b.2 Click the **Connect** button under **Manual Control (A)** to connect to the printer. Once connected the top status bar will change from **USB device available** to **Connected via USB (B)** and the current hot end and build plate temperatures will be displayed. Click **Start Print** below the **Monitor** sidebar to start your first 3D print, then watch your LulzBot TAZ Pro automatically prepare itself for 3D printing.



b.3 Your 3D printer will first move the tool head to the top left corner of the build area and allow each hot end to reach probing temperature. Depending on ambient temperature this can take one to three minutes.

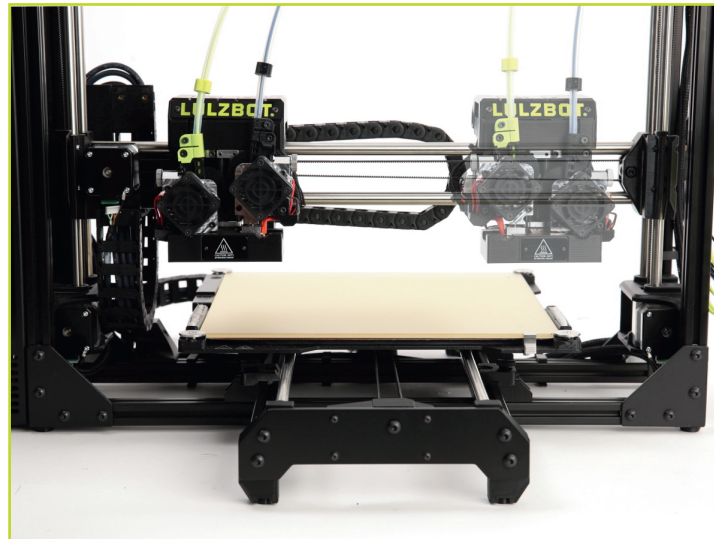


b Starting your First Prints

b.4 Once each hot end reaches its wiping temperature the tool head will move to the left wiper pad and then the right wiper pad, cleaning each nozzle of residual filament. After both nozzles have been cleaned your LulzBot TAZ Pro will heat to probing temperature and conduct an automated self-leveling sequence by touching each bed corner. Once the leveling process is complete, printing will commence.



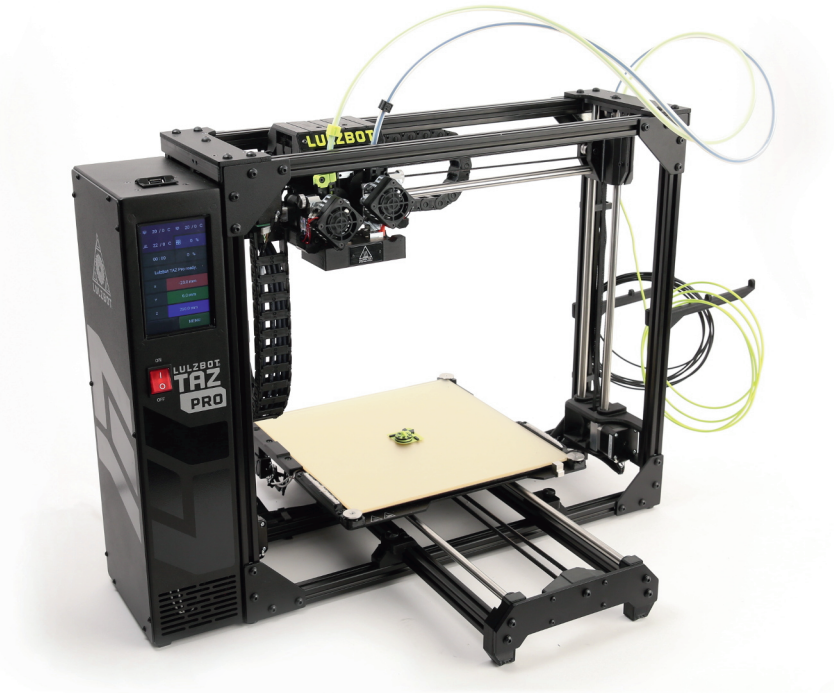
If probing fails to detect one of the bed corners, the printer will attempt self-cleaning again, then repeat probing. If this fails more than three times, or if the bed corner is visibly pushed down during probing, the printer requires manual nozzle cleaning. Refer to the Maintenance section at the end of this guide for details on nozzle cleaning.



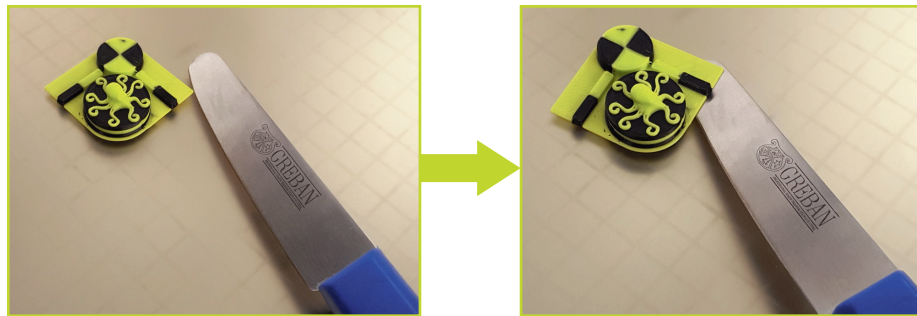
b.5 After your LulzBot TAZ Pro is finished 3D printing, the tool head and print bed will automatically move into the cooling position with the tool head in the top left of the build area and the print bed fully back.



Your print bed is now cooling. Do not attempt to remove your 3D printed object before the print bed moves forward. Attempting to do so could either burn your skin on the hot end or print bed, damage your printer, or damage your 3D printed object.

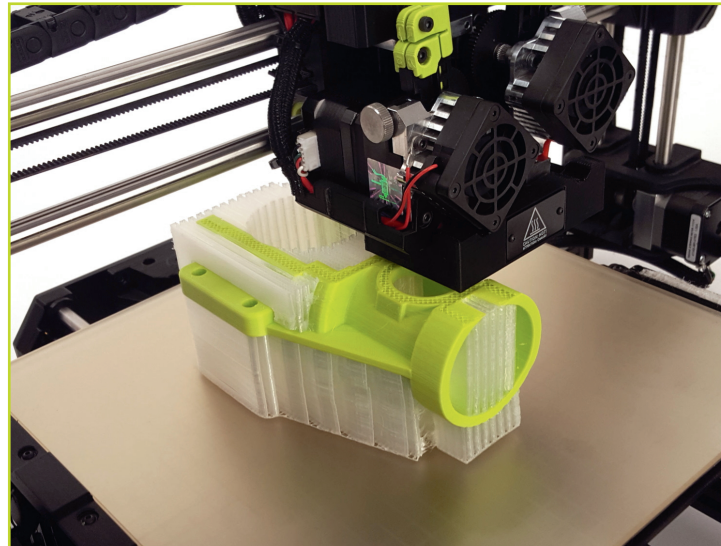


b.b Once finished cooling to the proper removal temperature, the tool head will move to the top right and the print bed will move forward. Once the print bed has stopped moving, remove your first calibration print by gently sliding the included blue-handled knife under each corner, then under the center of the print until it separates from the bed.



The blade of the blue-handled knife is sharp. Exercise caution when using it. The blade should be nearly parallel with the print bed and move parallel to the bed. Avoid prying prints up and away from the bed.

b.7 Now that your LulzBot TAZ Pro has completed its first print, you can also print models with more complex geometry using soluble support. Use the steps in sections 4, 5, and 6 in order to set up dissolvable support filament just like a standard filament in extruder 2, and prepare your LulzBot TAZ Pro to start printing. Find sample prints at [LulzBot.com/impossible](https://lulzbot.com/impossible).



b.8 When a print that utilizes soluble support is complete, let the print soak in warm water, agitating the print and changing the water as needed until the support material has dissolved. Check with your local wastewater authority prior to disposing of the PVA solution.

7

Maintenance and Care

There is a small length of the PLA filament remaining in each hot end after your first sample print. You can remove the remaining filament by following the steps in Section 5. Use this process whenever changing filament to ensure a clean switch between different filaments, and to avoid extrusion issues due to print temperature differences.

When using a filament other than PLA for future prints, there may be a difference in the temperature required for purging the residual filament in the hot end and printing with the new filament. When changing filament, choose a temperature that splits the difference between the two required printing temperatures. The chart on the opposite page lists printing temperatures for some of the most popular filament available for your TAZ Pro.

Printing, Part Removal, and Bed Preparation

Filament	Purging Temperature (°C)	Part Removal Temperature (°C)	Print Bed Preparation (See maintenance section for more information)
ABS, HIPS	220	50	Isopropyl alcohol wipe
PLA	180	45	Isopropyl alcohol wipe
PETg	220	50	PVA glue stick
Bridge, PCTPE, Nylon 910	220	50	PVA glue stick
Ninjaflex, PolyFlex	200	Fully Cooled	Plain Glass or PVA glue stick
PA-CF	220	50	Isopropyl alcohol wipe
PolyCast	180	45	Isopropyl alcohol wipe

Your LulzBot TAZ Pro Desktop 3D Printer is capable of printing a variety of materials including abrasive materials because of its high maximum print temperature and hardened steel nozzles. In addition, new materials are frequently added to our catalog, each thoroughly tested to develop the profiles included in Cura LulzBot Edition. Shop our full range of materials at [LulzBot.com/filament](https://lulzbot.com/filament).

Important Information About Your 3D Printer

Warranty and Support

Your machine comes with a comprehensive one-year warranty and customer support period including Colorado, USA based technical support available by email at support@LulzBot.com and over the phone at +1 (970) 377-1111. For more information please visit us at LulzBot.com/support.

Extended warranties of one, two, and three years may also be purchased to further protect your investment. Email sales@LulzBot.com for more information.

Source Files

This product is certified Open Source Hardware and runs with Free Software because we support your right to see how it works, make modifications, and share your modifications with others. Find the source files online at Download.LulzBot.com, and see what's next by following our research and development online at devel.LulzBot.com.

Filament Materials

Your LulzBot TAZ Pro utilizes an open format filament system. We strongly recommend you purchase your 3D printing filament materials from LulzBot.com, where every filament has been thoroughly tested to work on your printer and comes with optimized print settings for easier printing.

If you choose to purchase elsewhere, avoid low quality filaments that can lead to failed prints and even damage your LulzBot TAZ Pro. Low quality filament can contain foreign objects, unlisted materials, blends, voids and density variations, and varying filament diameter. Purchasing consistent and reliable filament is key to protecting your investment in a LulzBot Desktop 3D Printer.

LCD Controller and USB Flash Drive Printing

Your LulzBot TAZ Pro can be operated without a USB connection to a computer by using the LCD Controller and included USB Flash Drive. Once a .gcode file is saved to the included USB flash drive, plug it into the port located on the top of the electrical box, press the USB Drive button from the main menu and select the model you want to print.

Maintaining Your LulzBot TAZ Pro 3D Printer

Make sure that the hot end and print bed are at room temperature before beginning any cleaning or maintenance unless otherwise noted.

Print Bed

Adhesion to your LulzBot TAZ Pro's modular heated print bed is the foundation of a great 3D print. The bed can be used in three supported configurations: PEI, PEI with glue stick, or plain glass. Your LulzBot TAZ Pro ships with the PEI surface facing up since it's the most commonly used print surface. Refer to the chart in at the beginning of Section 7 of this guide for bed preparation for specific materials.

Following these tips will help you get the most out of your print bed:

PEI: Oil on your skin and accumulated dust can negatively affect print adhesion to PEI. For optimal performance, lightly wipe the print bed and corner washers with a dry paper towel between prints. To deep clean the PEI print surface and corner washers, wipe with diluted Isopropyl Alcohol (1:10 IPA to water ratio) and a clean cloth.

Always wait for your PEI print surface to cool to removal temperature before attempting to remove 3D printed objects. Treated appropriately, PEI is highly durable, but note that even well-treated PEI will not last forever. It will need to be replaced periodically and is considered a consumable item. Replacement Glass/PEI Print Surfaces can be purchased at [LulzBot.com](https://lulzbot.com).

PEI with Glue Stick: For some filaments a polyvinyl alcohol (PVA) glue stick, such as an Elmer's® brand glue stick is necessary for bed adhesion and/or release. Apply glue stick in light, even coats. Remove accumulated glue with a damp paper towel occasionally to maintain a flat, smooth base for your 3D prints.



Plain Glass: The ability to print on plain glass is especially useful for TPU filaments such as Ninjaflex. To use the glass surface, unscrew each corner washer holding the print bed in place with the supplied 2 millimeter hex key, then flip the print surface and place it back on the heater with the glass side up. Screw in each corner washer to hold the bed in place. Using care not to over-tighten, make sure that the washers are flat and parallel with the surface of the glass. If you do not wish to use the plain glass surface when printing TPU filaments it is highly recommended to use a PVA gluestick on the PEI print surface.

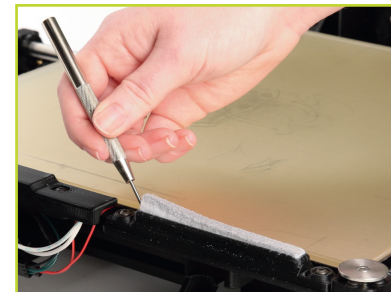
Electronics Box Cleaning

Unplug the USB cable and power cord and remove filament from the filament holder before beginning any maintenance on the LulzBot TAZ Pro's control box. Unscrew the ten screws holding the control box panel in place and remove the panel to gain access to the control box. Using compressed air, clear the fans, power supply, and area around the control board of any dust or debris that may have collected inside.

Nozzle Wiping Pads

A clean nozzle tip is critical to your LulzBot TAZ Pro's performance, ensuring metal-to-metal contact in the leveling sequence. If you are experiencing leveling failures or have noticed prints starting too close to the bed, one or both of your nozzle wiping pads may require attention.

The wiping pads are both reversible and replaceable. To remove a pad, pry up on it with the dental pick or tweezers from your LulzBot TAZ Pro tool kit. Then, either flip the pad over if the other side is unused, or replace the pad with one of the spares included in the tool kit. Additional pads can be purchased online at LulzBot.com.



Tool Head Cleaning

A dental pick is included with your printer for cleaning the Titan Extruder Hobb components of the tool head (the Titan Extruder Hobb is the small grooved metal part of the tool head that feeds filament into the extruder). Use compressed air to clear any residual filament from the tool head.

Check all fans on the tool head to ensure that they are functioning properly during printing. Note that the extrusion cooling fan on the bottom of the tool head may not turn on until later in the print depending on filament used. Blow out all fans with compressed air to clear any dust or debris.

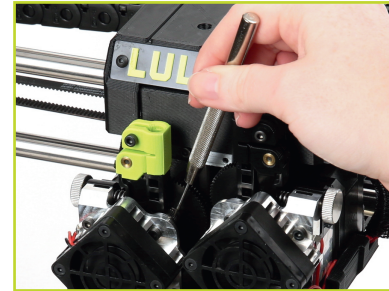
Over time you may also experience an accumulation of filament on the nozzles and heater blocks. To clean off this accumulated filament, heat the hot end to be cleaned up to 205°C (401°F) and then carefully wipe affected areas using the maroon Scotch-Brite™ scrubbing pad from your TAZ Pro's tool kit. Never clean the hot end with metal utensils.

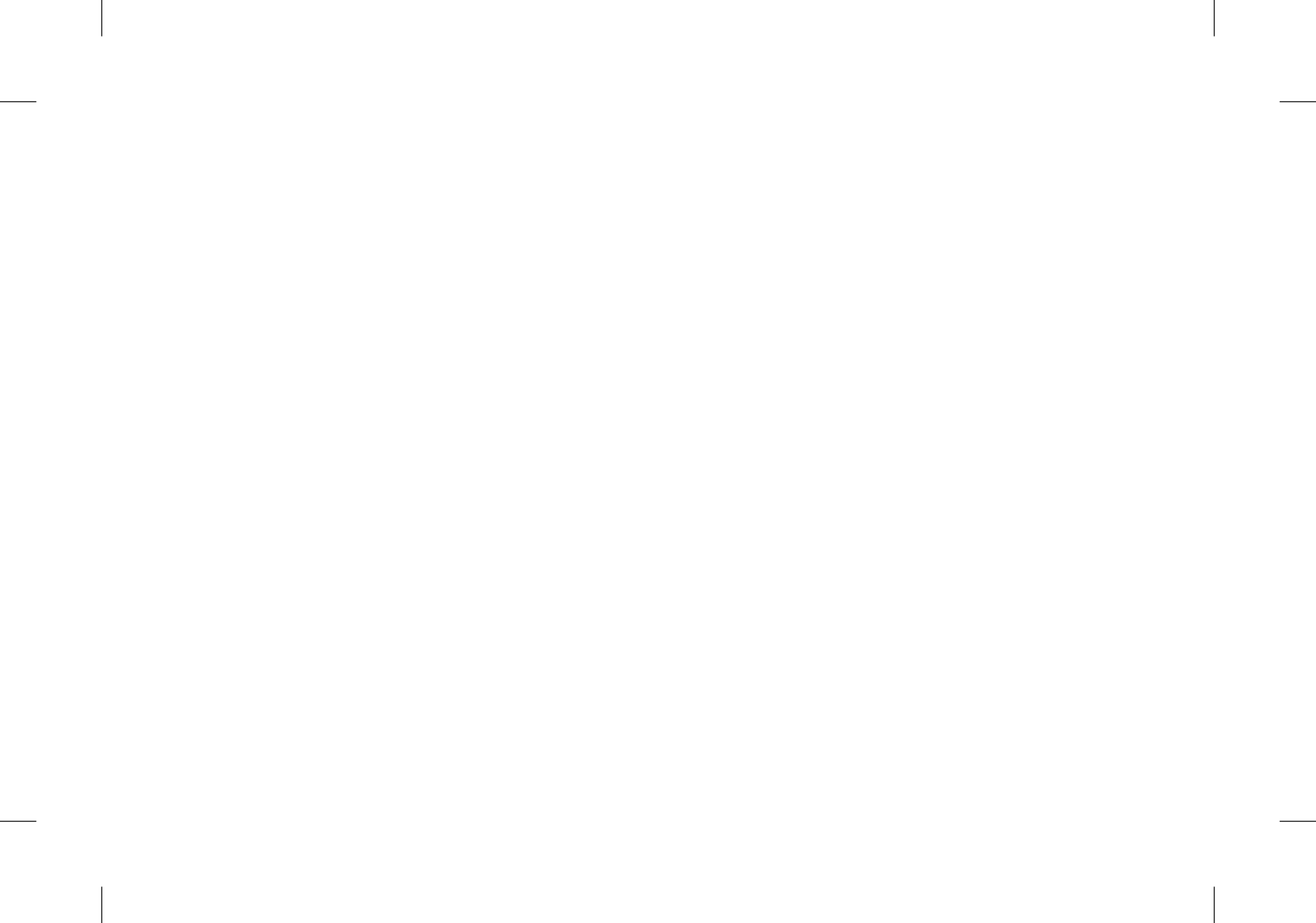
Smooth Rod Cleaning

Wipe down the smooth rods on the X, Y, and Z axes using a clean, dry cloth. The bushings that allow movement along the smooth rods are self-lubricating. **Never apply lubricant to the smooth rods.**

Print Area Cleaning

With regular use, dust and debris can collect underneath the printer that may cause interference with Y axis motion. Periodically clean and dust the area under and surrounding the printer to prevent this.







Happy?

Why keep a good thing a secret?
Share your LulzBot LOVE with the World!

Here's how:

Tell your coworkers, friends, and family.

Share your experience by writing a LulzBot TAZ Pro review on Amazon.

Tag your projects with LulzBot on Instagram, facebook, and Twitter.



Not Happy?

We're here to help! Our friendly technical support is available 7 days a week.

Contact us here:

+1-970-377-1111

support@lulzbot.com

LulzBot.com/Support

