LULZBOT MINI 3

START HERE

RELIABILITY.
REPEATABILITY.
PERFORMANCE.

LULZBOT® LULZBOT MINI 3

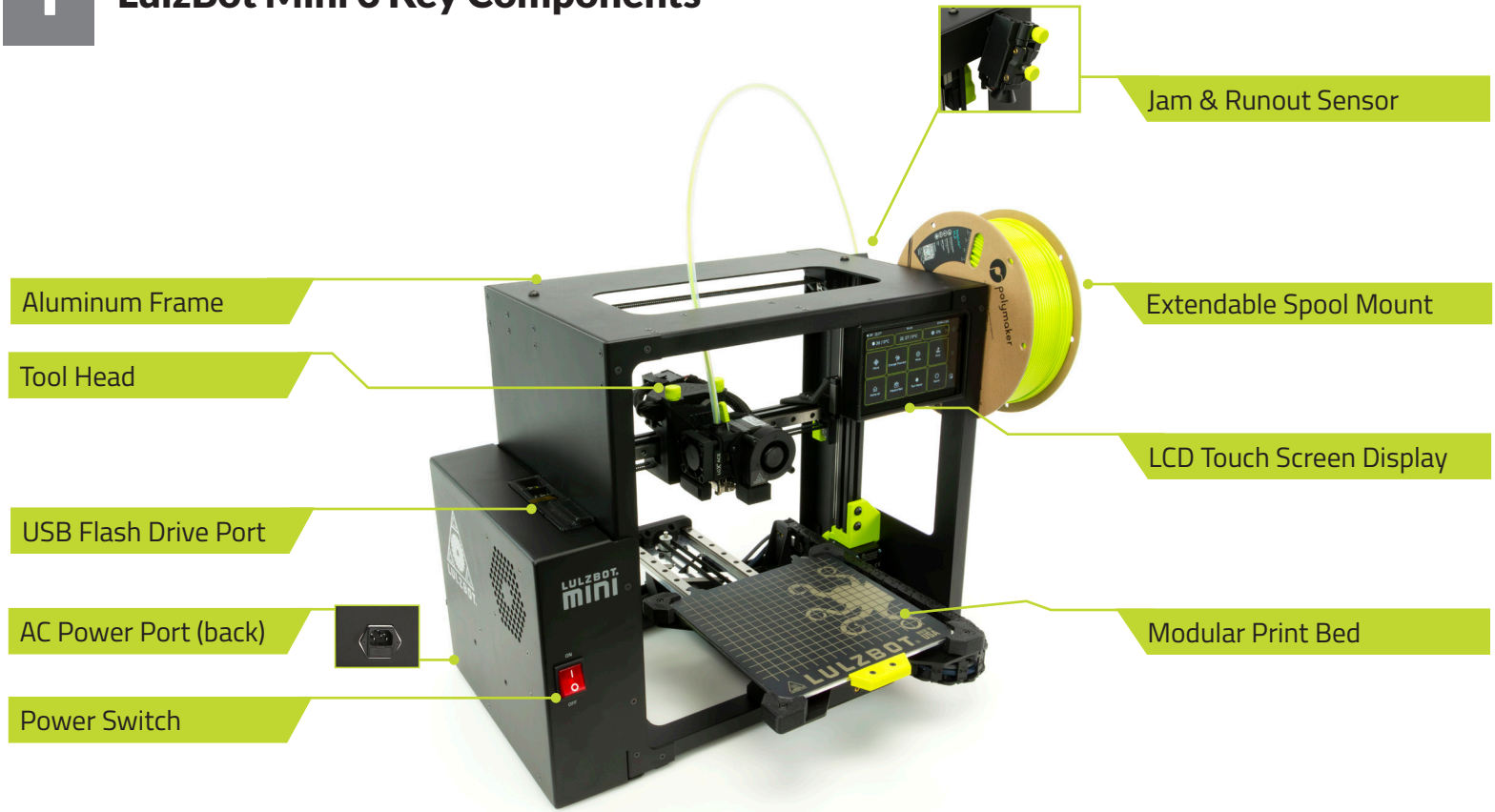
Welcome to the LulzBot Community

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

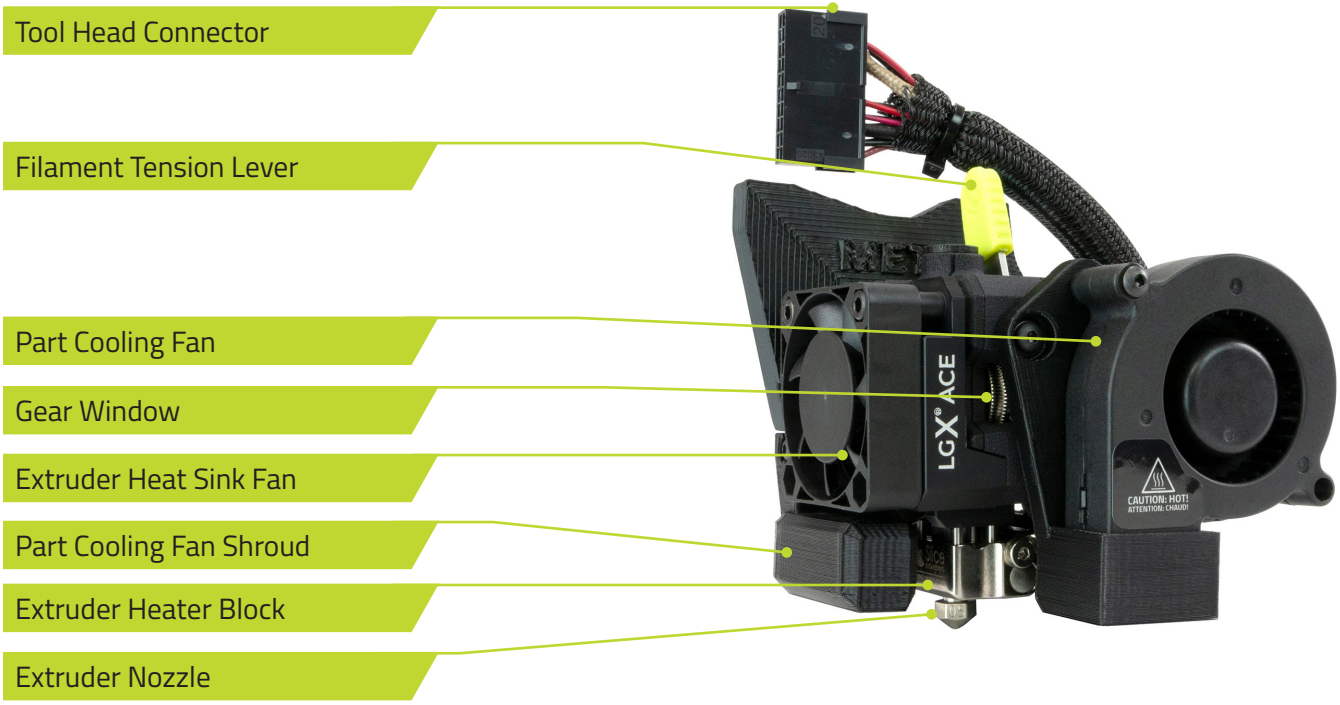
Complete documentation is available online at ***https://gitlab.com/lulzbot3d/printers/lulzbot-mini-3/-/tree/main****. If you have questions while setting up your LulzBot Mini 3, please contact our technical support team by emailing* ***Support@LulzBot.com*** *or by calling* ***1 (701) 809-0800 ext. 2****. Learn more at* ***LulzBot.com/Support****.*

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

1 LulzBot Mini 3 Key Components



Tool Head Key Components



* Additional Tool Heads available at LulzBot.com

Filament Tension Lever

Filament Path

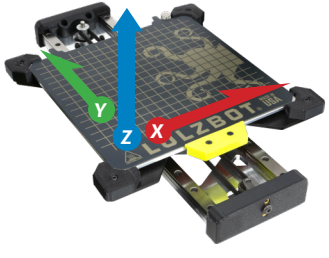
Extruder Heat Sink Fan

Extruder Heater Block

Extruder Heater Cartridge

Extruder Nozzle

Your LulzBot Mini 3 Extruder automatically calibrates: using the installed BL Touch and by leveling the X-axis gantry before each print. These features ensure the highest quality printing possible without the need for manual calibration.



Cartesian Coordinate System

*The LulzBot Mini 3 can move on three linear axes: **X**, **Y**, and **Z**.*

2 Unpack your LulzBot Mini 3 Desktop 3D Printer

Prefer video?
Follow along with the
Mini 3 Basics playlist!

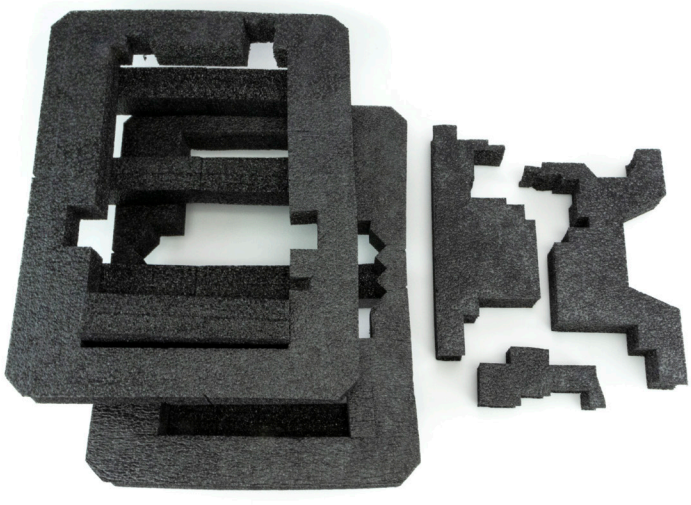
2.1 With the printer box upright, carefully open the top of the box. Remove the tool kit, documentation bag, and top most layer of foam. Firmly grasp the Mini 3, slowly lifting the printer from the box.

2.2 Included in the box should be a document packet, filament, and tool kit alongside your Mini 3.

2.3 Remove the packaging foam from the bottom of the printer, placing the printer on a flat level surface. **A** Remove the three pieces of central foam. **B** Locate the two orange shipping prints, remove from belts. Confirm all items have been removed from the box.

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

2.4 Be sure to double check your Mini 3 to assure that all packaging materials have been successfully removed. Place these back in the box and in a safe location. Use this visual guide to assess all packing materials are accounted.



2.5 The operating area for your LulzBot Mini 3 is 24.0 inches wide by 19.6 inches deep by 18.5 inches tall (61 cm by 50 cm by 47 cm). Place your printer in an area with enough space to function without encountering any obstructions.

It's important to ensure you Mini 3 has proper clearance. Allow 12 inches of clearance on all sides.

When powered on, allow for 45-60 secs for the operating system to boot up. During the printer startup cycle, the Mini 3 will not make any movements.

2.6 Verify that the power switch on the front of the Mini 3 is in the **OFF** position.

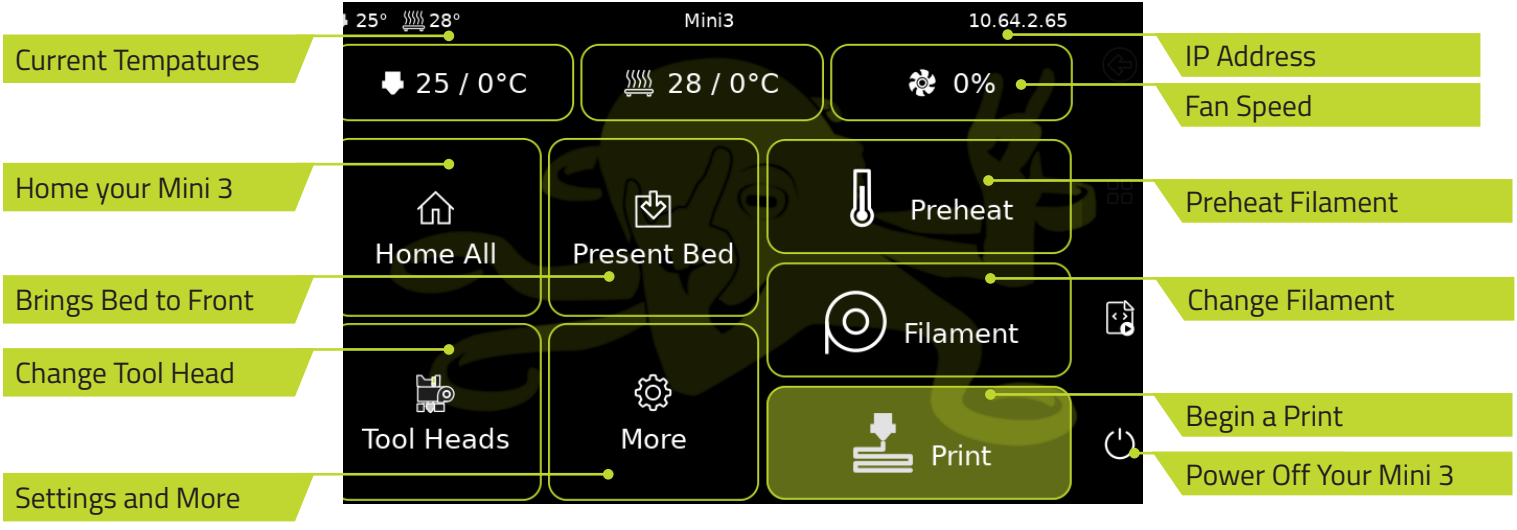
2.7 Plug in the AC power connection.

2.8 Flip the power switch to the **ON** position to turn on the Mini 3.

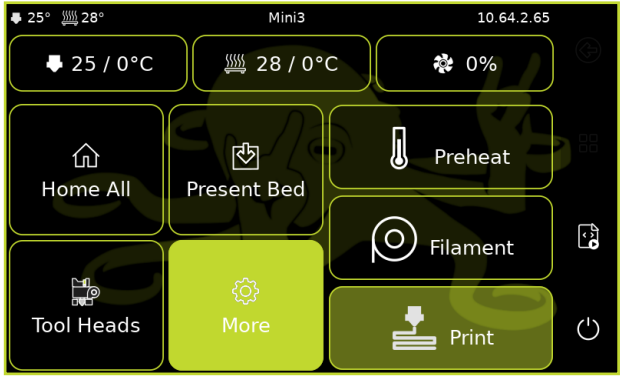
3 Setting up Your Mini 3

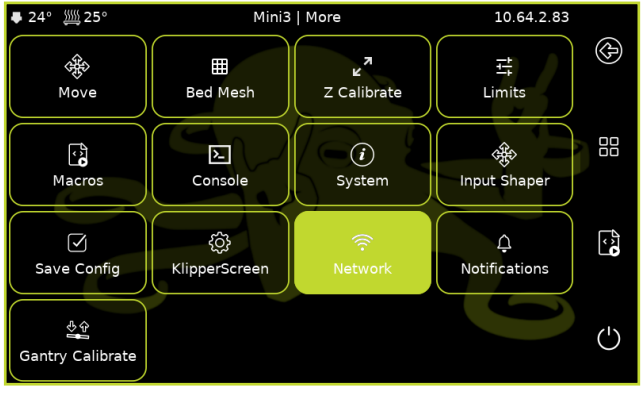
Setting Up
Your Mini 3
[Video Walkthrough]

3.1 The Mini 3 features a robust full color touch screen interface. The diagram below will help you identify a few of the different aspects you can find here and some of the capabilities of your new Mini 3. Let's start by connecting your Mini 3 to Wi-Fi. Proceed to chapter 4 if you don't wish to connect to Wi-Fi

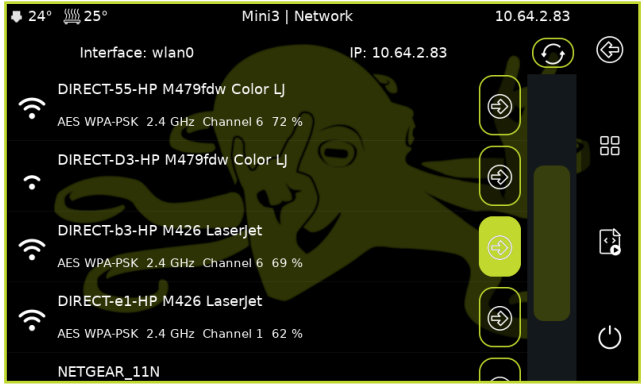


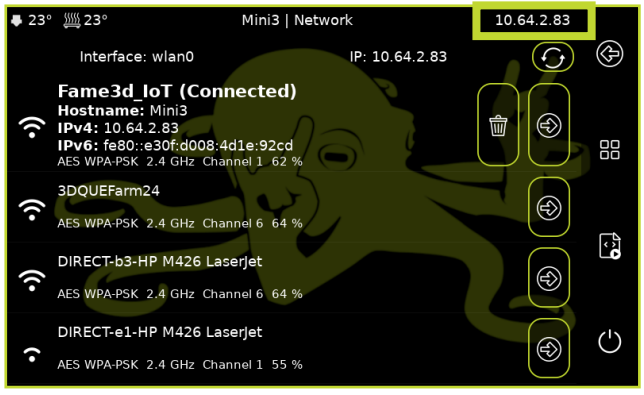
3.2 To begin, select **More** on the home screen. On the next screen select **Network**.





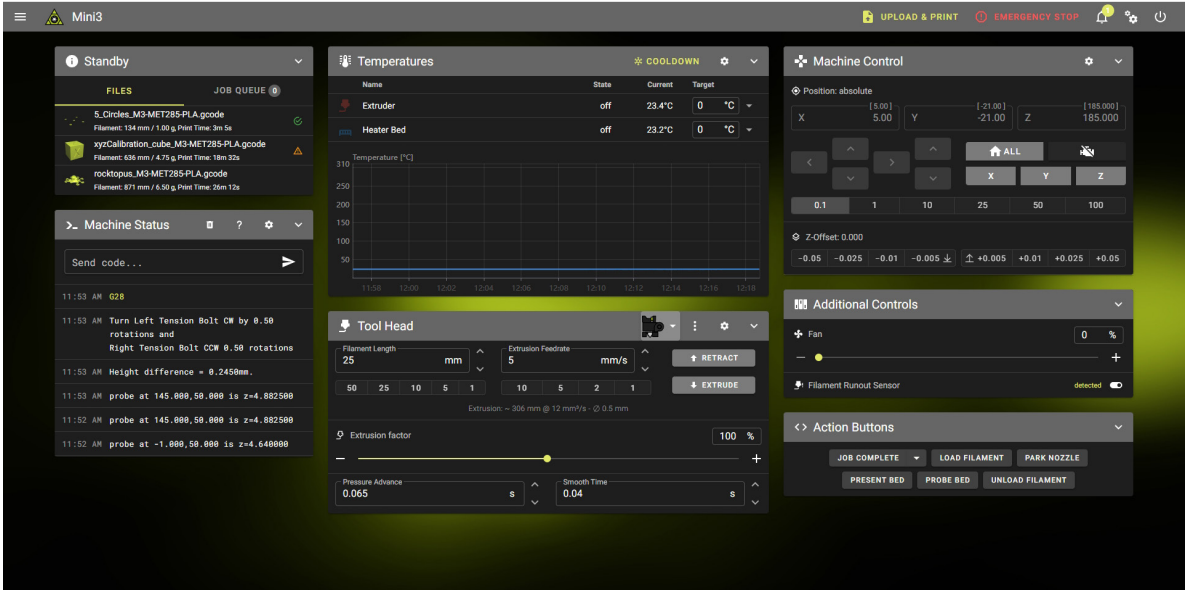
3.3 Locate the network you intend to connect to, then select the **arrow** button on the right of the screen. You will be prompted to input your password, select **Save**. A string of commands will appear on your screen, when completed select **Close**. Your Mini 3 will display the connected network and **IP Address** in the top right.





Printer IP Address and Web Interface [Video Walkthrough]

3.4 Your Mini 3 is incapable of being tethered via USB cable. To access your Mini 3 from your computer, open an internet browser and type in the **IP address** previously found in the top right corner of your printer's LCD and press enter. The computer must be connected on the same Wi-Fi network to be able to connect to your Mini 3. Chapter 6 will cover more on how to use Mainsail to operate your Mini 3.



4 Setting up Cura LulzBot Edition

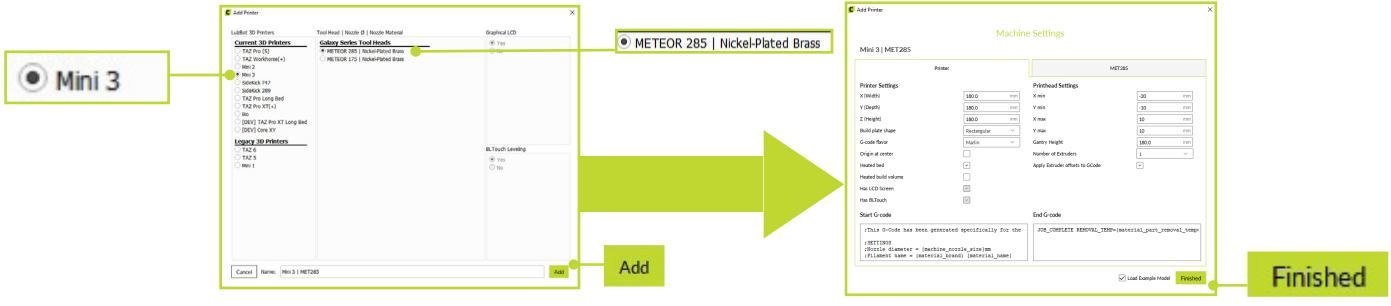
4.1 Cura LulzBot Edition is the recommended software to control your LulzBot Mini 3. It includes built-in support for compatible materials, optimized for use with the Mini 3. Find installation instructions, troubleshooting information, and more at **LulzBot.com/Cura**.

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**.

*The LulzBot Mini 3 is compatible with Cura LulzBot Edition version 4.13.10 and later. If you have an older version of Cura LulzBot Edition installed, you will need to download the latest version at **LulzBot.com/Cura** in order to use your LulzBot Mini 3.*

There may be later versions of Cura LulzBot Edition available with added features and functionality. We recommend checking for updates regularly.

4.2 Launch Cura LulzBot Edition. The **Add Printer** menu will automatically appear the first time the program is launched. Select **LulzBot Mini 3** and **Meteor 285 | Nickel-Plated Brass**, then click **Add**. Existing users should select the **Displayed Printer** drop-down menu, 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 Mini 3.



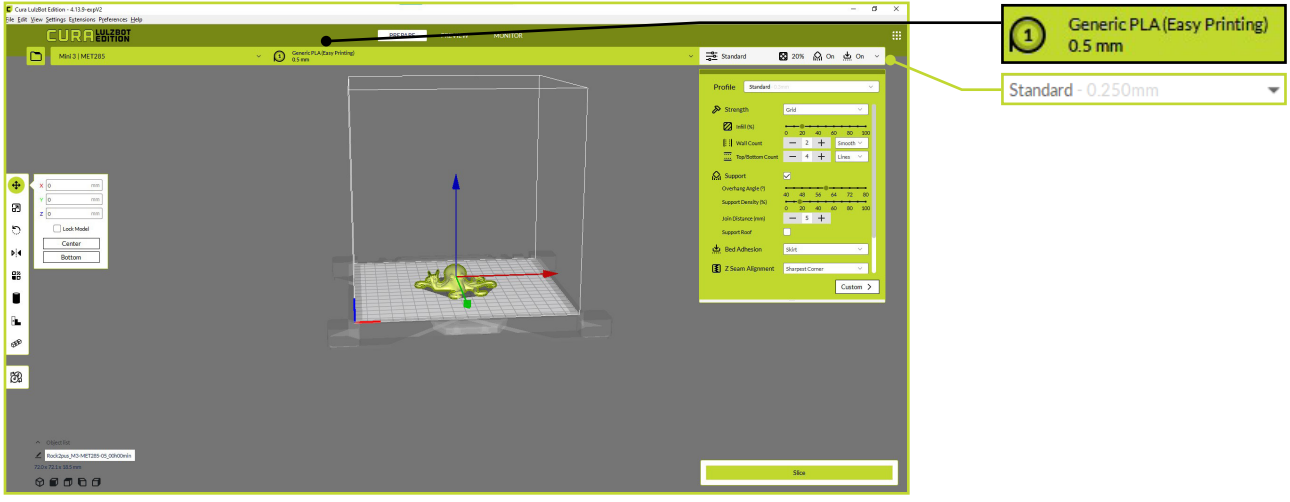
4.3 A predesignated model, **rocktopus.stl**, will automatically load onto Cura LulzBot Edition's virtual print bed the first time you run Cura LulzBot Edition. This will be your first print on your new Mini 3!

*If the first print model is not present in the virtual print bed, you can download it from **https://gitlab.com/lulzbot3d/printers/lulzbot-mini-3/-/tree/main/sample_prints/Rocktopus** or from the included USB stick, then load it onto the virtual print bed using the **Open File** button in the main Cura interface.*

4.4 Locate the included sample of 2.85 mm PLA filament. We strongly recommend using the included PLA sample filament for your first print.

*Filament is the term for the materials your LulzBot Mini 3 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/store/filaments.***

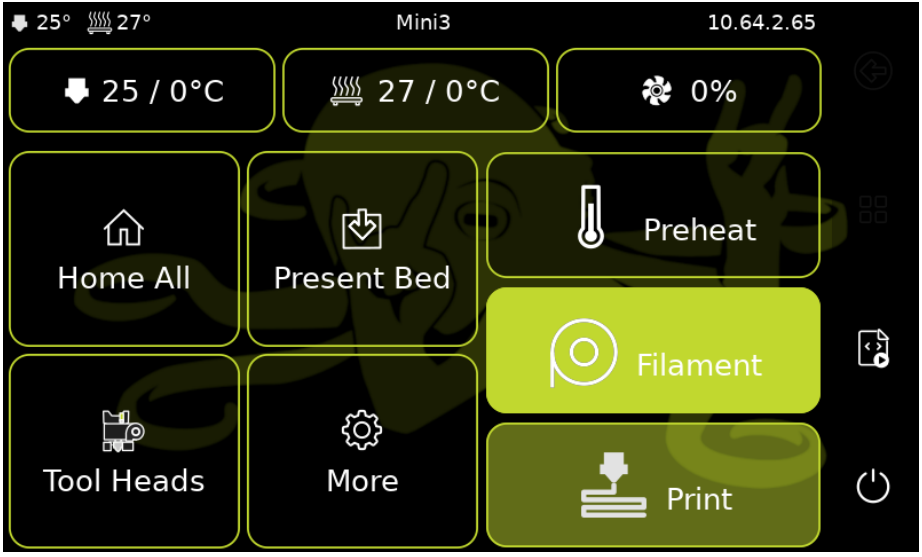
4.5 In the **Filament Drop Down** in the center of the ribbon towards the top of the screen, confirm that **Standard PLA** is selected for **Material** and **Standard** is selected for the **Profile** to be used for printing, located on the far right.



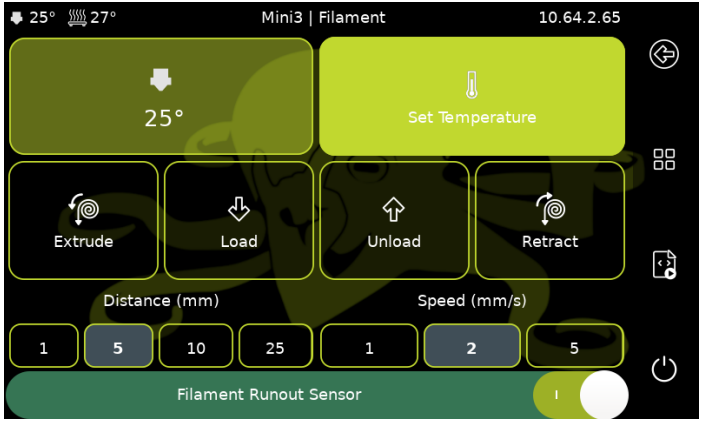
5 Preparing your Mini 3 to Print

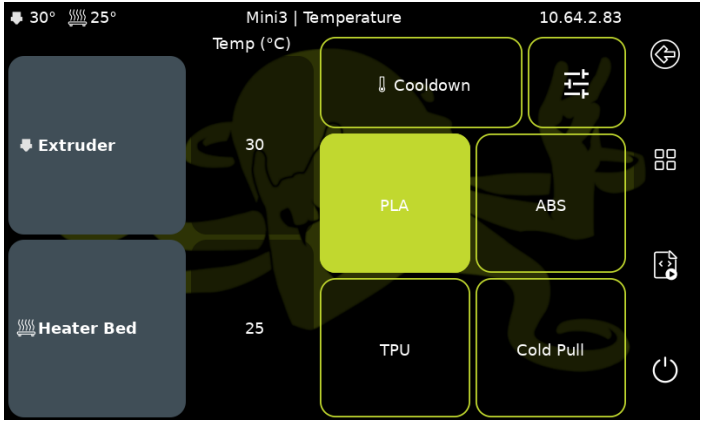
Your LulzBot Mini 3 was tested for quality assurance before being packaged. You will need to remove the remaining filament left in the Tool Head from this process before loading new filament for your next print. Follow these steps below to remove or change the filament.

5.1 Press the **Filament** button on the home screen



5.2 Select the button that says **Temperature** in the upper right of the screen. Then select **PLA**. Your Tool Head will now begin heating up to 180°C.

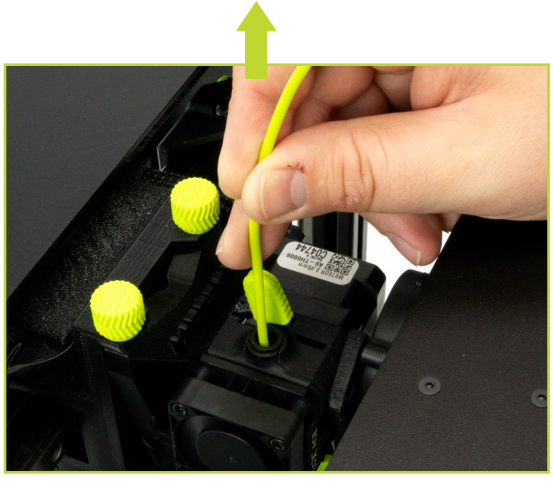




HOT SURFACE BURN HAZARD. CONTACT MAY CAUSE BURN. DO NOT TOUCH THE HOT END.

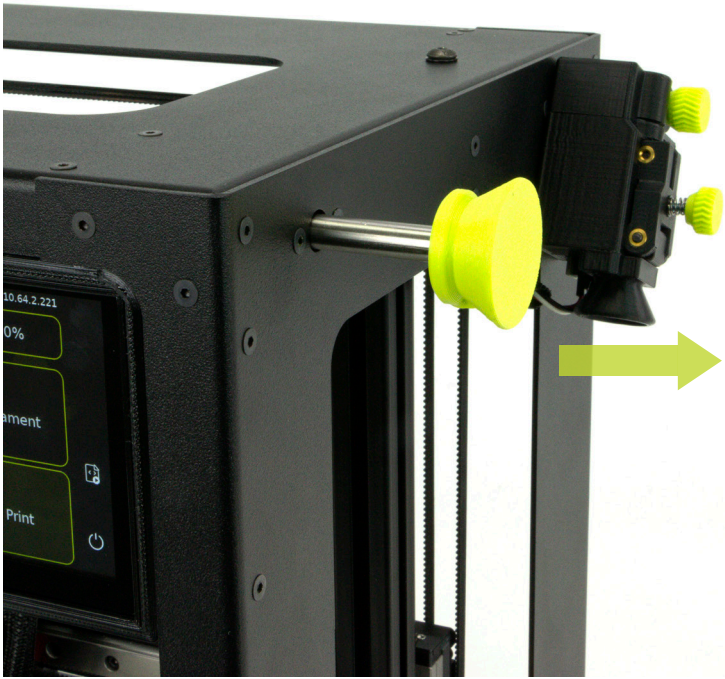
The hot end on the extruder is now heating up to 200°C (392°F) and can burn your skin if you touch it.

5.4 Once the Tool Head reaches the appropriate filament removal temperature, Push the filament tension lever towards the Tool Head mount. Firmly grasp the tail of filament, pulling it out of the idler.

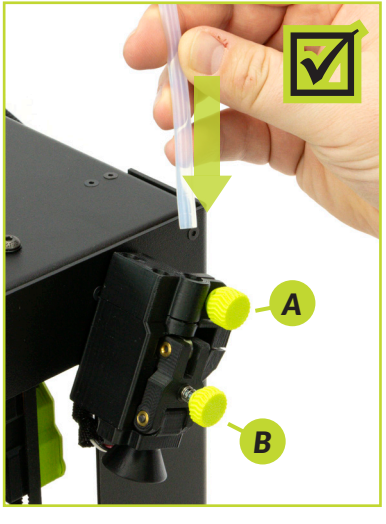


The hot end is heated to 200°C (392°F) and can burn your skin.

5.5 A LulzBot Green knob can now be pulled out from the side of the Mini 3. Place the included filament on this spool holder so the filament can feed, in a counterclockwise motion, into the filament runout sensor.



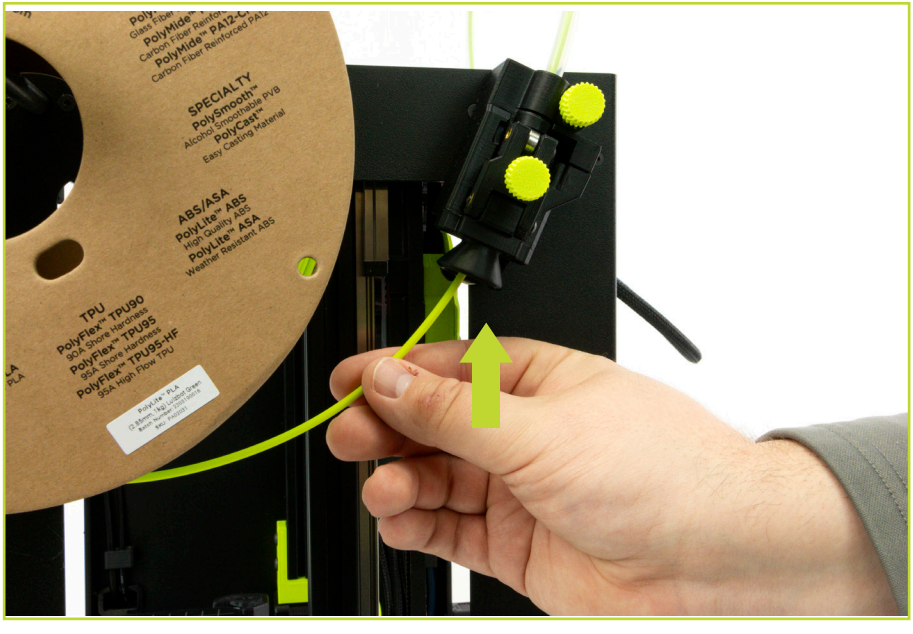
5.b Obtain the clear filament feed guide tube for 2.85mm filament from the additional contents you removed from the box earlier. Insert the feed guide into the top of the filament sensor.



The runout sensor has two thumb screws for tensioning the A PTFE guide tube and B filament separately. It's important to ensure proper tension when switching to 1.75mm filament.

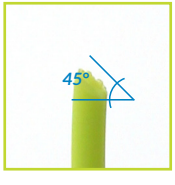
It is not necessary to tension for 2.85mm filament for your first print.

5.7 Feed the included sample coil of 2.85mm PLA filament into and through the bottom of the filament sensor.

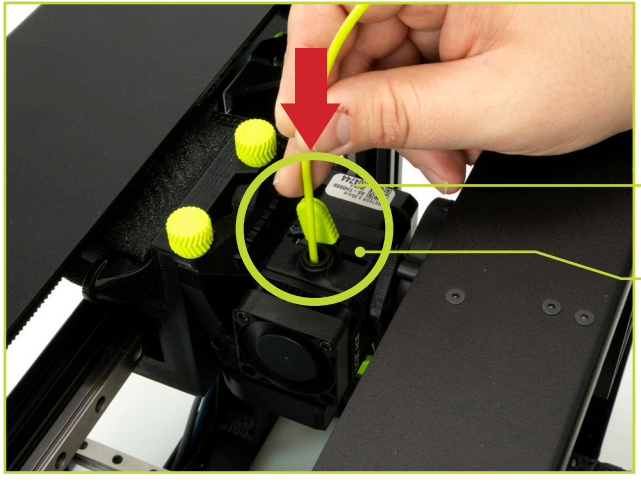


5.8 Push the filament by hand completely through the feed tube until it exits. Straighten the filament slightly. Feed the included sample coil of 2.85mm PLA filament into the extruder.

The filament must be inserted completely to extrude properly. If it is difficult to feed filament into the filament feed path, trimming the filament at a 45° angle may help.

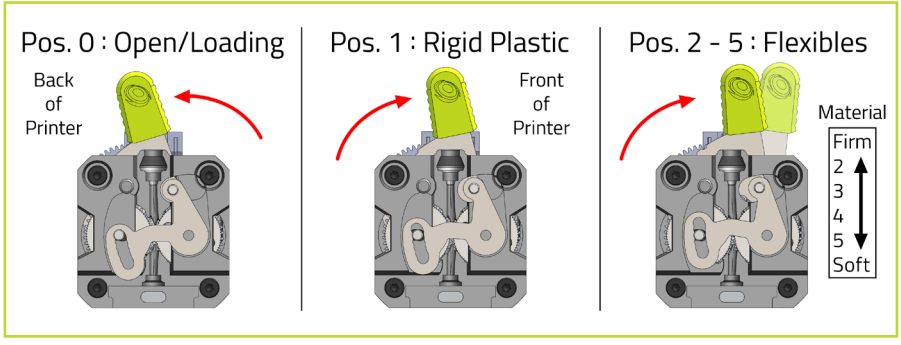


The hot end is still heated to 200°C (392°F) and can burn your skin.



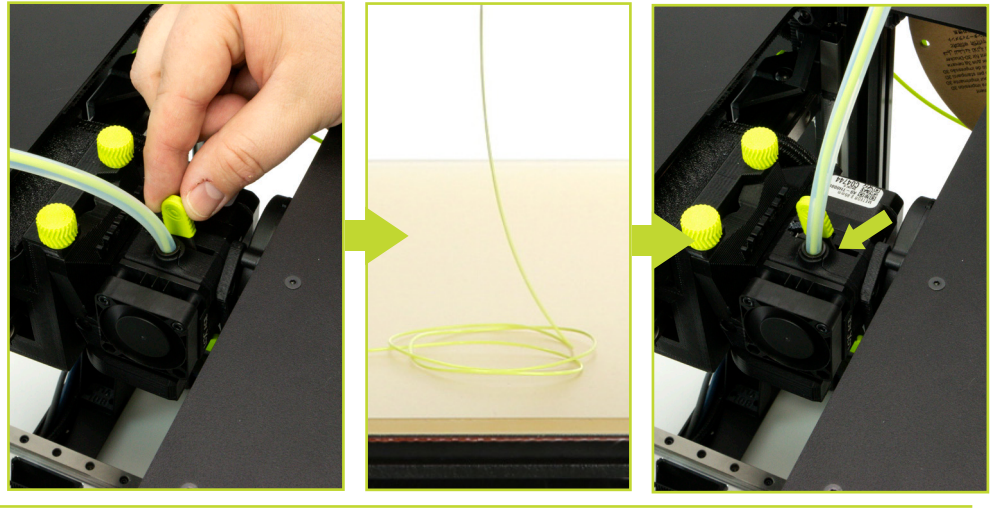
SETTING FILAMENT TENSION

The Meteor 285 Tool Head has a ratcheting filament tensioner. This new style of tensioner will make an audible click when moved to the varying degrees of tension. When pushed all the way towards the Tool Head mount, the tension is completely open, allowing for filament to feed easily. When pulled towards the user this tightens the tension. In total there are five stages of tension, displayed below.



5.9 Pull the filament tension lever towards yourself until one audible click is heard. Use the previous diagram to ensure proper filament tension when using filaments other than PLA. On the Mini 3 screen press **Load** under the filament menu to begin extruding filament.

5.10 Once filament is extruding, insert the filament guide tube into the quick connect on the top of the extruder.



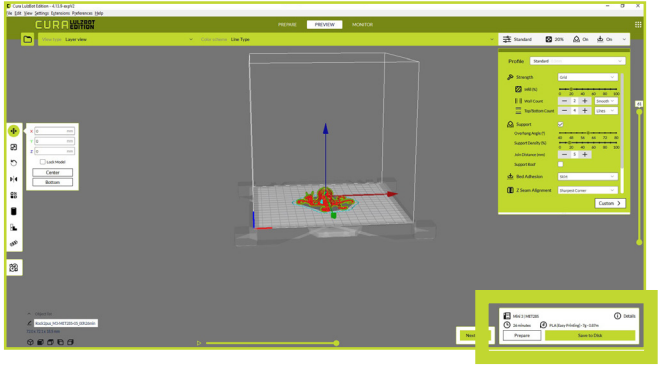
After removing filament, a small residual amount remains in the hot end that needs to be cleared out through the process of purging as detailed above. This purging process helps to remove any residual material left in the hot end.

*If you need to make changes to your settings, use the **Prepare** dropdown at the top right corner of Cura. Once changes are made, Select **Slice** in the lower right corner to begin implementing the changes, also known as re-slicing.*

Your Mini 3 can be operated without a USB flash drive. Once models are sliced and a .gcode file is saved, models may be printed directly from your desktop over Wi-Fi connectivity, if you have Mainsail set-up, and selecting the model you would like to print.

Printing via USB flash drive

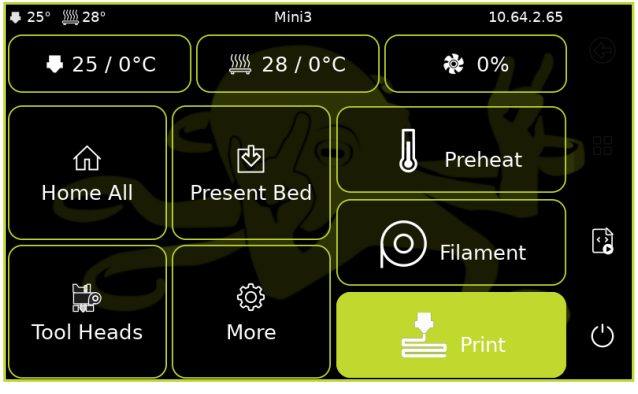
b.1 Locate the 16GB USB flash drive from the tool kit. Insert into your computer that has Cura LulzBot Edition open, select Save to Disk in the lower right hand corner. Save your .gcode onto the USB flash drive and safely eject the USB flash drive from your computer, and insert into your Mini 3.

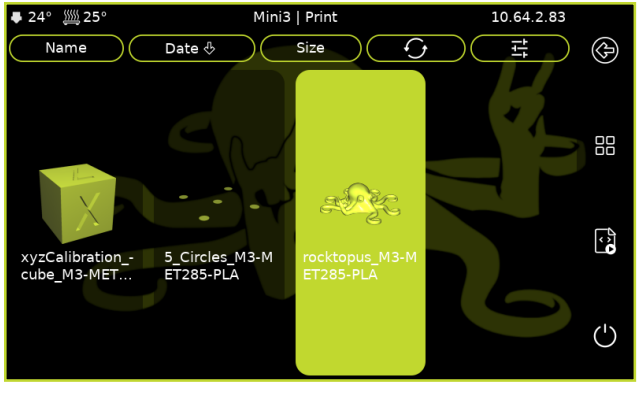


Before starting a print, check that your printer is ready. The hot end is still hot, use caution:

- *Confirm that all packaging has been removed from your Mini 3*
- *Verify that the 3D printer is in a well-ventilated area, on a flat and level surface, and has 30cm (12in) clearance in all directions.*

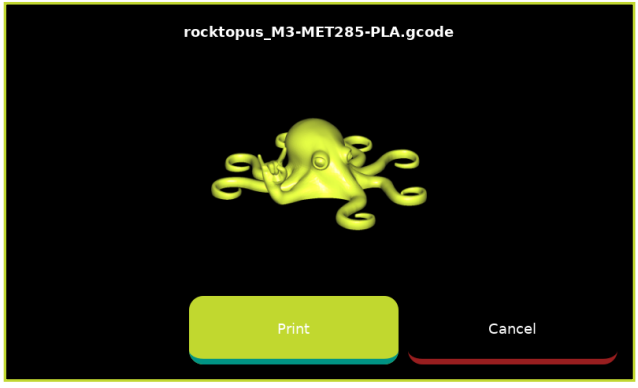
6.2 Your 3D printer is now ready to print! Click **Print** from the main interface on the Mini 3's touch screen. Then select the model you intend to print.

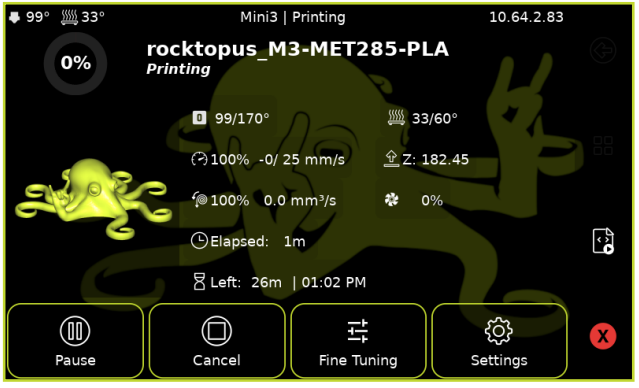




Only .gcode files uploaded via Wi-Fi will show a model preview, when printing via USB no model preview will be available.

6.3 After selecting your model, click **Print**. Your printer will now begin printing shortly! You can monitor your prints progress from the LCD touch screen.

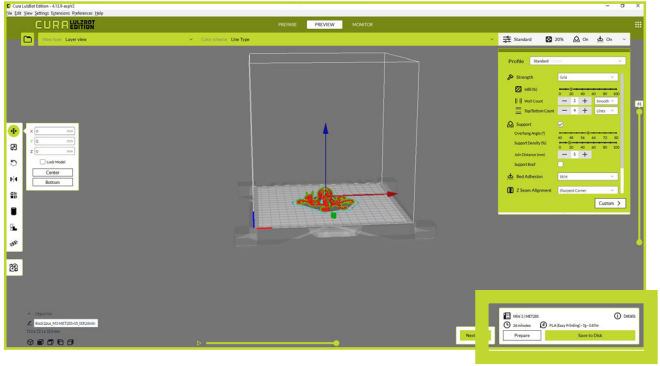




Printing via Wi-Fi Connectivity

6.4 For your first print, a pre-supplied .gcode file is already loaded into Mainsail.

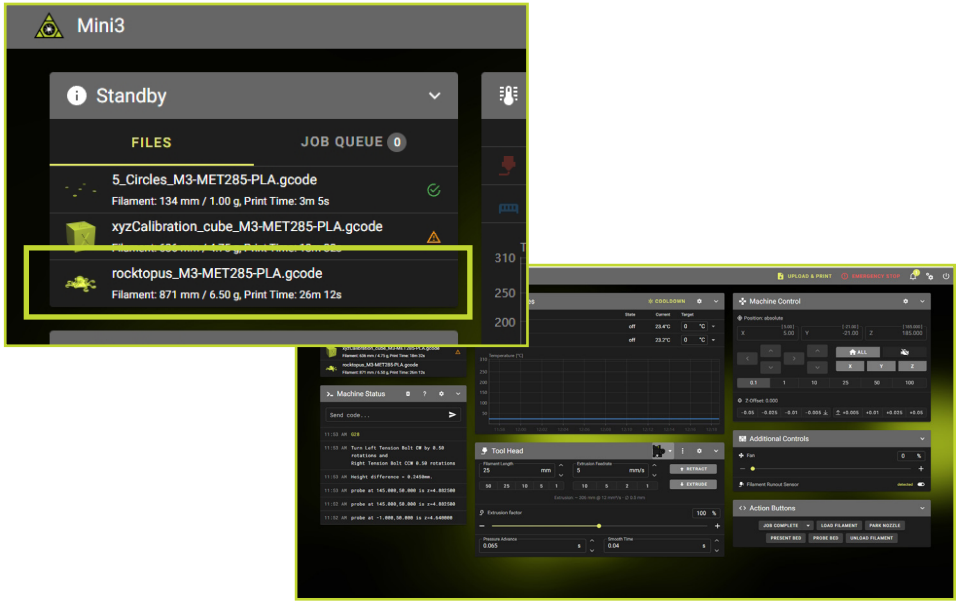
For future print jobs, save to your computer from Cura LulzBot Edition, select **Save to Disk** in the lower right hand corner after slicing. Return to the web browser with your Mini 3's IP address that opened Mainsail. Drap and drop the **.gcode** file anywhere in the opened browser window.

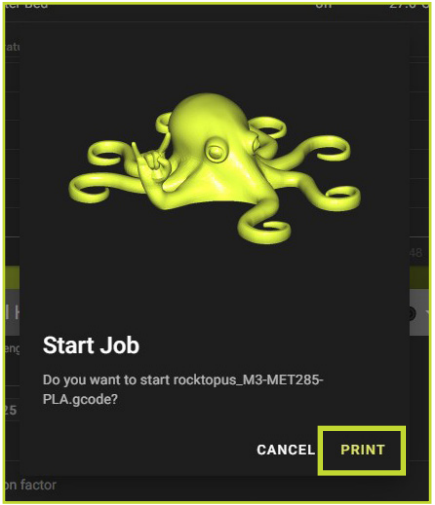


Before starting a print, check that your printer is ready. The hot end is still hot, use caution:

- *Confirm that all packaging has been removed from your Mini 3*
- *Verify that the 3D printer is in a well-ventilated area, on a flat and level surface, and has 30cm (12in) clearance in all directions.*

6.5 With mainsail open, locate the **rocktopus.gcode** file in the upper left hand corner under **Standby**. Once selected a popup will appear in the center of the screen, click **Print** for your Mini 3 to begin its first print job!

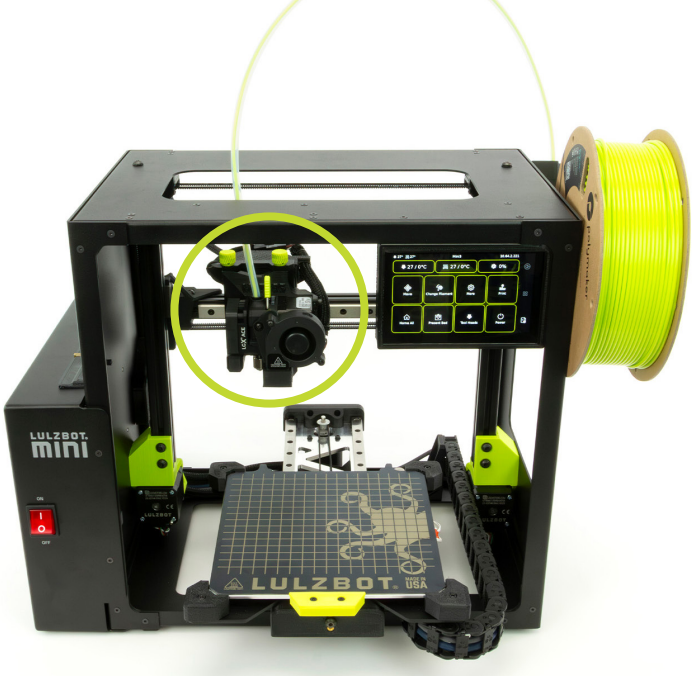




6.6 The screen will update with useful information about your current print job such as, probing success, temperature, and time elapsed.

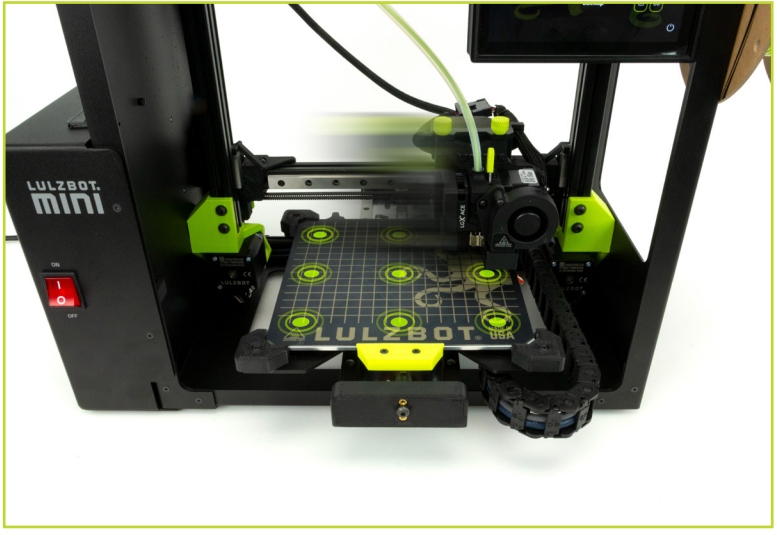
While the Mini 3 is printing you may select the print preview image. This will enlarge the print preview window.

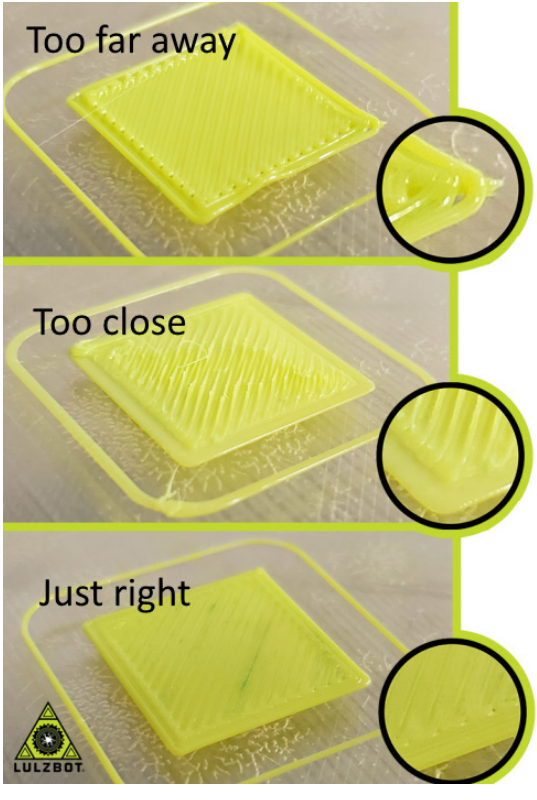
6.7 Your 3D printer will first move the Tool Head to the top left corner of the build area and allow the hot end to reach probing temperature. Depending on ambient temperature, this can take a few minutes.



6.8 Once the hot end reaches its probing temperature, the Mini 3 will conduct an automated self-leveling sequence by deploying the pin on its BLTouch. When the leveling process is complete, the printing process will commence.

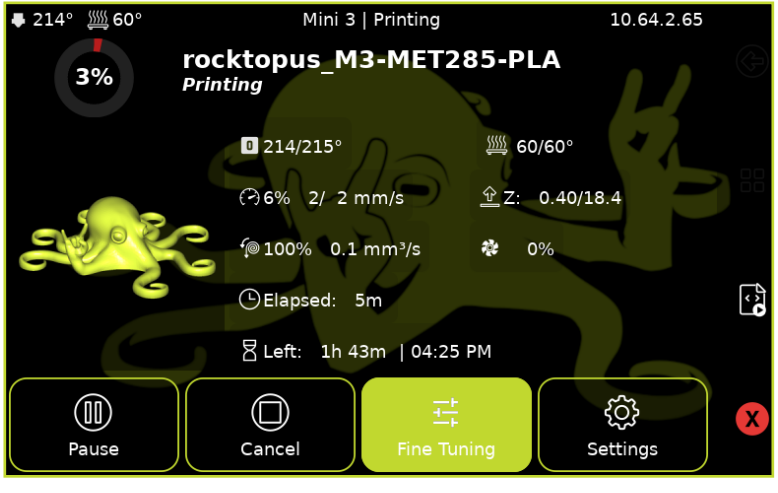
Always watch your LulzBot Mini 3 start the printing process to visually ensure proper functionality. Ensure material is adhering to the print bed and the printer is functioning normally before leaving the printer unattended.





6.9 While watching the first layer, take note of the quality of extruded filament. Too squished or not adhering to the bed means the Z-Offset will need to be adjusted. Refer to the graphic on the left to help identify the quality of your Z-Offset.

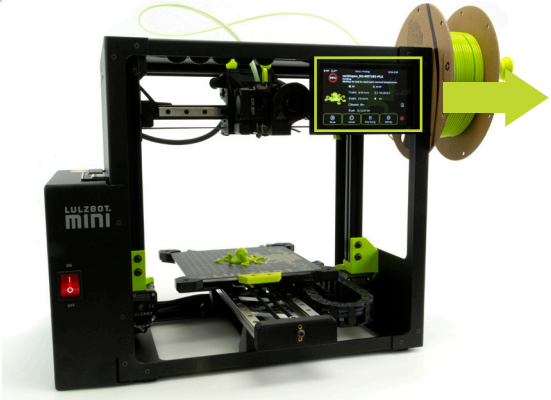
To begin adjusting adjusting the Z-Offset, select **Fine Tuning** from the Mini 3's touch screen.



6.10 There are three columns on the Fine Tuning menu, locate the left most column with **Z+** and **Z-** buttons. Selecting **Z+** will move the nozzle, where filament is being extruder, farther away from the bed, reducing squish. Selecting **Z-** will move the nozzle closer to the bed, increasing squish. At the bottom of the column are two increments of 0.01 and 0.05, these are the distances in millimeters the nozzle will move.

6.11 After your LulzBot Mini 3 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 in the back position.

It is very important to save your Z-Offset for future printing. To save, your print job must fully complete. On the completed print screen select Save Z Probe and then select Apply.



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 print bed surface, or damage your 3D printed object.

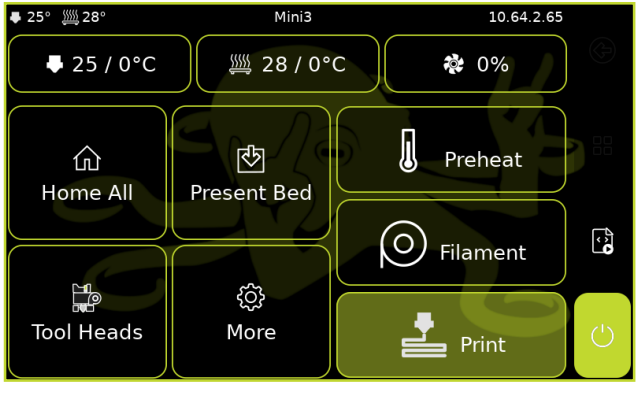
6.12 Once finished cooling to the proper removal temperature, the Tool Head will move to the top left and the print bed will move forward. Once the print bed has stopped moving, remove your first print by gently lifting the flexible magnetic top sheet by the bright LulzBot Green tab. The model should release easily. Replace the flexible magnetic top sheet, ensuring it doesn't overlap any bed corner.

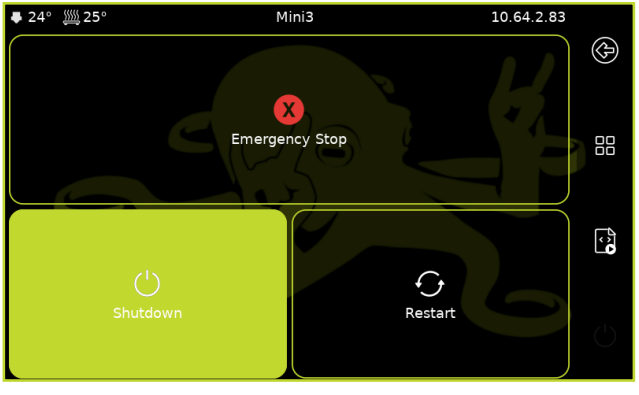
6.13 Now that your first print is complete, your Mini 3 is ready to go to work! For more projects, ideas, and ready-to-print models, visit **download.lulzbot.com/3D_Models/**.

Shutting Down Your Mini 3 [Video Walkthrough]

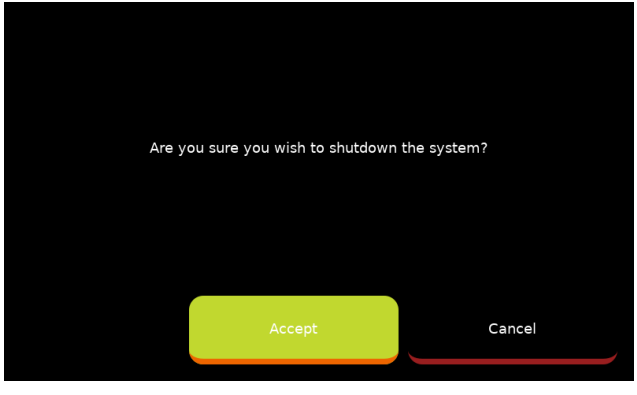
In order to ensure your Mini 3's longevity and connection to your wireless network, it is important to power off from the LCD touch screen.

On the home screen, select the **Power Button** in the lower right corner, on the next screen select **Shut Down** in the lower left corner.





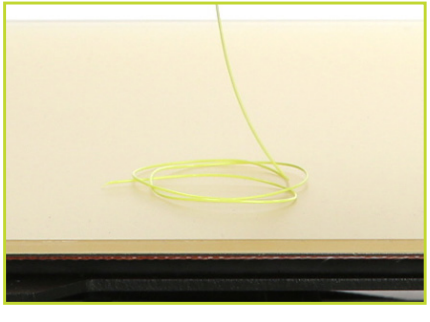
6.15 Select **Accept**, your Mini 3 will now begin shutting its operating system down. When the text **reboot:power down** displays, you are safe to turn the power switch to the off position from the front of the control box. Failure to power the Mini 3 down correctly can result in potentially corrupted operating systems.



7 Maintenance and Care

There is a small length of PLA filament remaining in the 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 the 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 in this chapter lists printing temperatures for some of the most popular filament available for your Mini 3.



Important Information About Your 3D Printer

Customer Feedback
Why keep a good thing secret? Share your LulzBot LOVE on social media! You can share your experience by writing a review or sharing your LulzBot Mini 3 projects on social media.

@LulzBot3D @LulzBot3D @LulzBot3D @LulzBot3D @LulzBot3D LulzBot

Not happy? We're here to help. Contact our friendly customer support team. We'd love to solve your problem and get you printing again! Check out the Warranty and Support section for details.

Warranty and Support
Your machine comes with a limited one-year warranty and customer support period including USA-based technical support available via email at **Support@LulzBot.com** or by phone at **1 (701) 809-0800 ext 2**. For more information, please visit **LulzBot.com/Support**.

Extended warranties of one, two, and three years may be purchased to further protect your investment. Email **Sales@LulzBot.com** or call **1 (701) 809-0800 ext 1** for more information.

Warranty and customer support cover electrical, mechanical, and motion systems on the printer. Material issues are not covered by LulzBot customer support. Material questions and concerns should be directed to the material manufacturer. For more information about the warranty on your LulzBot 3D Printer, visit **www.LulzBot.com/content/shipping-standard-warranty-and-return-policies**

Source Files
This product 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 **gitlab.LulzBot.com**.

Printing, Part Removal, and Bed Preparation

Filament (Printing temp varries with hardware and filament manufacturer)	**Printing Temperature** (°C)	**Purging Temperature** (°C)	**Part Removal Temperature** (°C)	**Print Bed Preparation** (See maintenance section for more information)
ABS	245	220	50	50/50 IPA and Water mix
PLA	210	180	45	50/50 IPA and Water mix
PETg	240	220	50	PVA glue stick (regular)
Nylon, PA-6, PA-12, PA-CF	240-290	220	50	PVA glue stick (regular)
TPU, Ninjaflex, PolyFlex	230	200	Fully Cooled	Plain Glass or PVA glue stick
HIPS	245	220	50	50/50 IPA and Water mix
PVB, PolyCast, Polysmooth	220	180	45	50/50 IPA and Water mix

Your LulzBot Mini 3 Desktop 3D Printer is capable of printing entry and expert level filament materials including: PLA, ABS, TPU, PC-ABS, Polycarbonate, PVA, and more. In addition, new materials are frequently being added to our catalog, with profiles included in Cura LulzBot Edition. Shop our full range of materials at **LulzBot.com/store/filaments.**

Maintaining Your LulzBot Mini 3 Desktop 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 Mini 3 modular heated print bed is the foundation of a great 3D print.
Additional print beds and configurations can be purchased from the LulzBot online store.

Depending on the filament chosen, check for the Adhesion Info section in Cura. Here you can find the correct configuration for the specific filament. If no adhesion information is present, it is safe to assume that you can print directly onto the default PEI print surface.

Your LulzBot Mini 3 ships with the smooth PEI surface which is the most commonly used print surface. Refer to the chart at the beginning of Section 7 of this guide for bed preparation for specific materials.

Lack of print bed adhesion
Your print bed may start to get dirty or lose some of its adhesive properties due to extended use. With the provided scuff pad that came with your printer, you can revitalize the PEI surface of your build plate and bring back some of that lost adhesion.

PEI Surface Cleaning/Prepping OHAI

Electronics Box Cleaning: ⚠ ***Unplug the power cord before beginning any maintenance on the LulzBot Mini 3 control box.***

Remove filament from the filament holder and unscrew the ten screws holding the control box panel in place. Then 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.

Never use metal to clean your nozzle.

Linear Rail Cleaning: Wipe down the linear rails on the X, Y, and Z axes using a clean, dry lint free cloth.

Never apply lubricant to the smooth rods.

WARNING -
Electric shock can kill.

***ALWAYS** disconnect the printer by unplugging the power cord before attempting to enter the electronics box enclosure.*

Failure to follow warnings could result in personal injury, death, or property damage.

Print Area Cleaning: With regular use, dust and debris can collect underneath the printer and may cause interference with the Y-axis motion. Periodically clean and dust the area underneath and surrounding the printer to prevent this. Make sure that the hot end and print bed are at room temperature before beginning any cleaning or maintenance unless otherwise noted.

Maintaining Your LulzBot Mini 3 Desktop 3D Printer

HOT SURFACE BURN HAZARD. CONTACT MAY CAUSE BURN. DO NOT TOUCH THE HOT END.
The hot end on the extruder can quickly heat up beyond 180°C (356°F) and can burn your skin if you touch it.

Tool Head Cleaning: While the dual drive gears usually remain clean, you should inspect the drive gears from time to time. Use a can of condensed air to clear any debris from prolonged filament grinding and general use.

Check all fans on the Tool Head to ensure that they are functioning properly during printing. Note that the extrusion cooling fan on the front of the Tool Head may not turn on while printing the first few layers on the print bed depending on the filament used. While the printer is off, blow out all fans with compressed air to clear any build up of dust or debris.

The nozzle and heater block are coated to reduce the accumulation of filament. However, if you notice an accumulation of filament on the nozzle and heater block, it can be cleaned by heating the hot end up to 205°C (401°F) and then carefully wiping the affected areas using the maroon Scotch-Brite™ scrubbing pad from your Mini 3 tool kit.

Do not use metal to clean the nozzle on your Tool Head. Metal will short the self leveling function and can blow an internal fuse or damage your printer.

Filaments

Grow With The Mini 3

When it's time to replenish your supplies be sure to check out LulzBot's extensive offering on a wide variety of filaments!

PLA
Easy Printing

TPU
Flexible

PETg
Easy Printing
Strength

ABS
Strong
Temperature Resistance

ASA
UV Resitance
Chemical Resitance

Nylon
Very Strong
Available in ESD Safe

PVA
Water Soluble

See All Filament

LULZBOT MINI 3

LulzBot® Mini 3 Quick Start Guide v.1.1 (June 12, 2024 11:44 AM)


LULZBOT®