LULZBOT®
TAZ 6

OPERATION

ONCE ASSEMBLED, USE THIS GUIDE
TO SET UP YOUR FIRST PRINT

It's time for your first 3D print on the LulzBot TAZ 6 desktop 3D printer! Prior to starting this guide, your 3D printer should be fully unboxed, assembled, and ready for operation. When you have finished this Operation Guide, you will have your own 3D printed rocktopus.

Every LulzBot TAZ purchased from Aleph Objects, Inc. or an Official LulzBot Reseller is covered by a non-transferable one-year warranty and technical support. If you have questions along the way, contact us by emailing ***support@lulzbot.com***. In the United States you may call us at **+1-970-377-1111**. Find a full list of regional contact phone numbers online at **LulzBot.com/contact/**

Read the included Safety and Warnings sheet completely before beginning this guide. Find the full printed user manual for your LulzBot TAZ included with your printer, or view the digital version on the SD card or online at ***LulzBot.com/TAZ***

KNOW YOUR MACHINE



Graphical LCD
SD Card Slot
Control Knob
Power Switch
Extruder

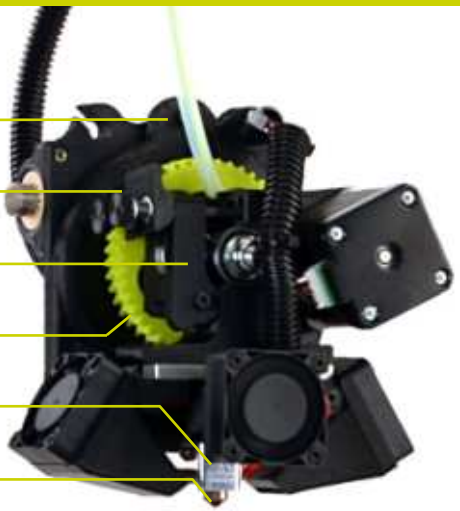
USB Port (back)
Power Port (back)
Rock2pus
P.E.I. Print Surface
Y-Axis Assembly

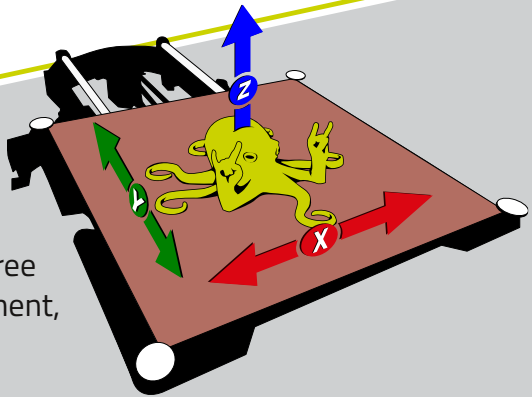
Filament Guide Tube
Aluminum Frame
Smooth Rod
Lead Screw

Tool Head

Filament Reel

M3 Screw (2.5mm)
Idler Retainer
Hinged Idler
Drive Gear
LulzBot v2 Hot End
Nozzle





The Cartesian Coordinate Robot
The LulzBot TAZ can move on three linear axes that define its movement, X, Y, and Z.

STEP
1

Download and Install the Software for your LulzBot® TAZ

1A Visit **LulzBot.com/Cura** to find download and installation instructions for Cura LulzBot Edition, the software that will control your 3D printer. Even if you already have Cura installed on your computer, visit **LulzBot.com/Cura** anyway to get the latest version.

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Unable to download Cura from the Internet? You can also find download packages on the included SD card that comes with your LulzBot TAZ.



STEP
2

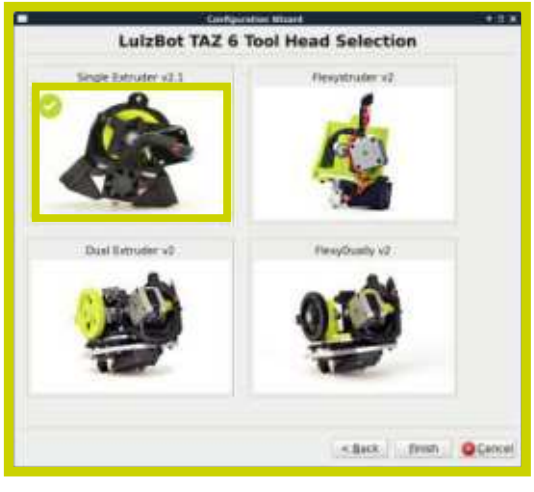
Configure the Software for your LulzBot TAZ

2A Launch Cura LulzBot Edition. Begin the Configuration Wizard to select your machine and under “Select your machine,” select LulzBot TAZ 6.

2B Click **Next >**, and then select **Single Extruder.**

2C Click **Next >**, and then click **Finish** to complete the Configuration Wizard. Cura LulzBot Edition is now ready for use.





STEP
3

Connect and Power On Your LulzBot® TAZ

3A Verify that the power switch is in the **Off** position.



3B If you haven't already, plug the AC power cable into your 3D printer and plug the other end into an AC power outlet.



3C Plug the square USB connector into your printer and to a computer.

3D Power on your LulzBot TAZ.





STEP 4

Prepare for Your First Print

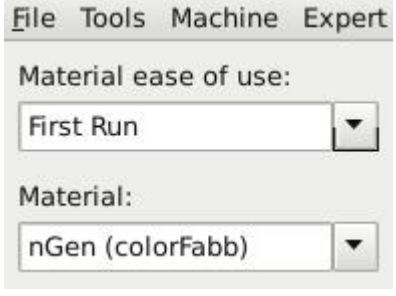
4A A 3D model named **rocktopus** will automatically load onto Cura's virtual print bed the first time you run the software. The rocktopus is the first object you will 3D print on your LulzBot® TAZ.

*If the rocktopus model is not present on the virtual print bed, you can download it from **LulzBot.com/rocktopus** or from the included SD card, then load it using the **Load Model** button in the main Cura interface.*

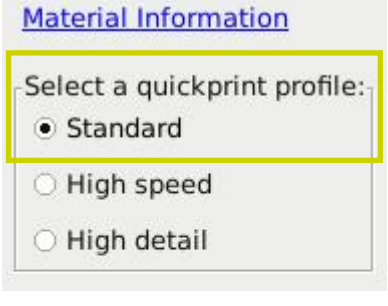
4B Locate the included sample coil of nGen filament. We recommend using this filament sample for your first rocktopus print.

*Filament is the name for the materials your LulzBot TAZ uses to 3D print objects. The included filament is a co-polyester called **nGen** by colorFabb, a premium filament manufacturer.*

4C In Cura, on the left side of the screen under “Material ease of use” select **First Run**. The “Material” option will change to nGen.



4D Under “Select a quick print profile”, select **Standard**. Leave all other options off.

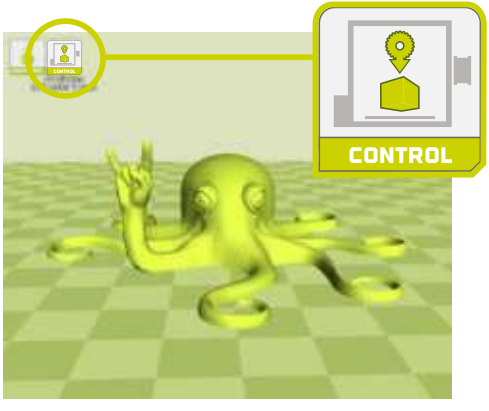


STEP
5

Control Your LulzBot® TAZ and Set the Temperature

5A Using your computer, click the **Control** button found in the left-upper portion of the main Cura interface. A new window called “Printer Interface” will open. The word “Operational” will appear once the machine is connected.

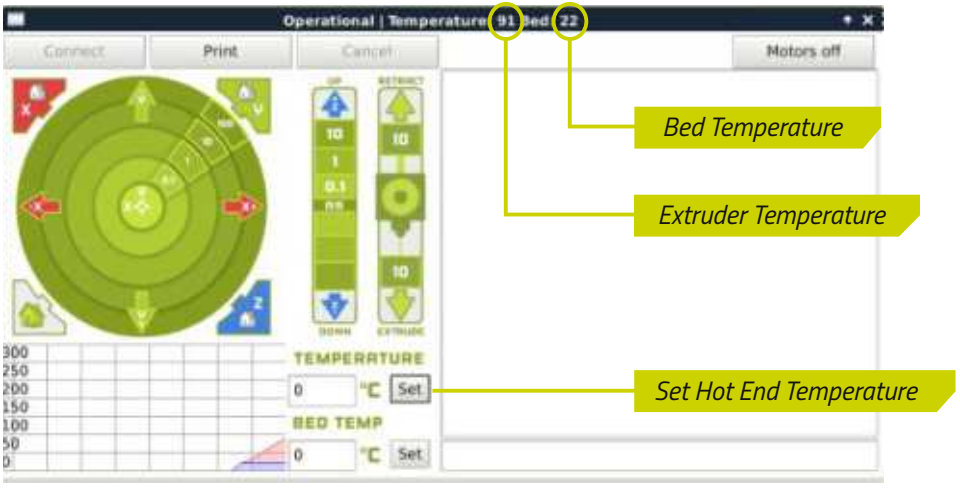
*If the **Control** button does not appear, verify that your USB cable is fully inserted at both ends. If you still do not see the **Control** button, review the software installation instructions for your operating system at **LulzBot.com/Cura***





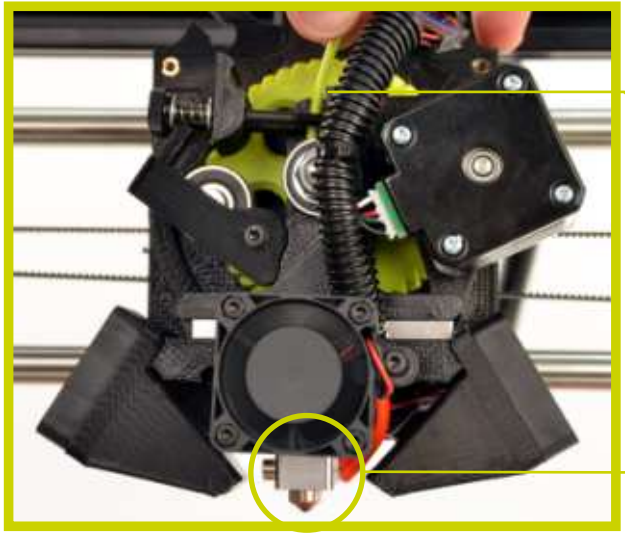
You need to remove the remaining filament left in the tool head from quality assurance before loading new filament for your first print. 230°C is the required hot end temperature to remove nGen from the tool head.

5B Using the Printer Interface window, raise the hot end temperature up to 230°C by typing 230 under "Temperature", then clicking **Set** in the Printer Interface window. Monitor the current printer temperature using the status bar at the top of the Printer Interface window.



STEP 5 *Continued...*

The hot end is now heating up to 230°C (446°F) and can burn your skin.



nGen Filament

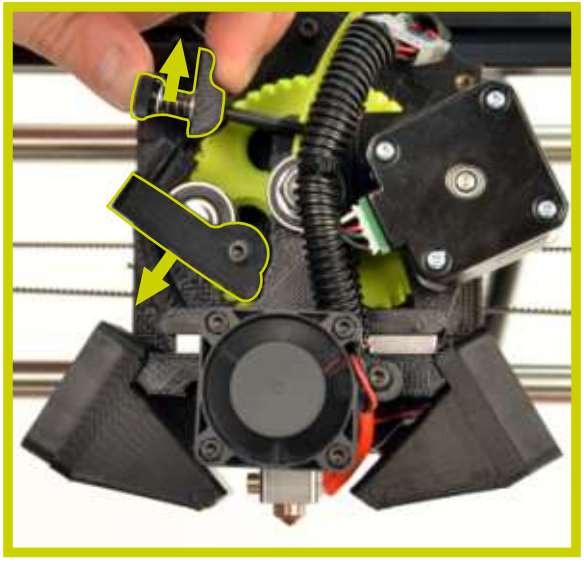
Hot End

Very hot!
Do not touch!

STEP
6

Lower the Hinged Idler and Remove Loaded Filament

6A Locate the tool head of your LulzBot TAZ. Using the idler retainer, compress the springs and slide up, allowing the hinged idler to move freely. Then, allow the hinged idler to rotate into the open position.

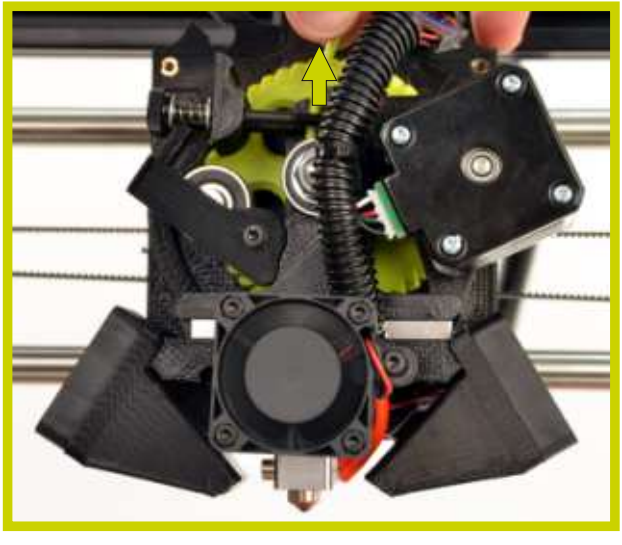


STEP 6 *Continued...*

6B Wait until the status bar of the Printer Interface shows the temperature has reached 230°C.



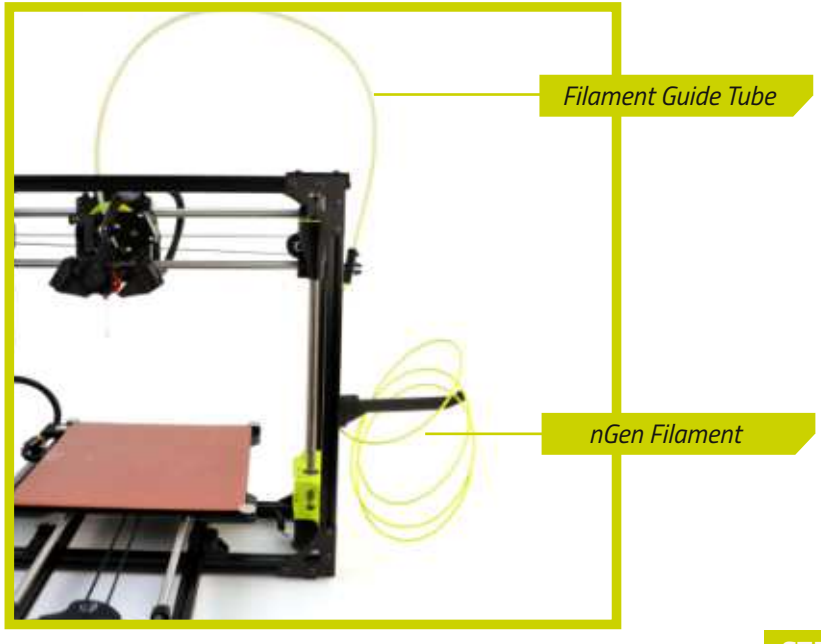
6C Once the temperature has reached 230°C, pinch the nGen filament loaded in the tool head and remove it by pulling up.



STEP
7

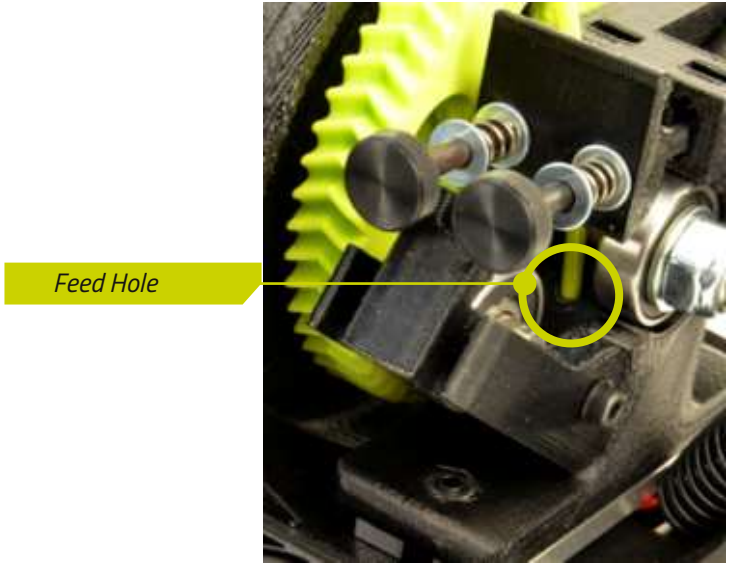
Prepare and Load Filament

7A We recommend using the included nGen filament sample for your first rocktopus print. Mount the nGen filament sample on the filament holder, then pass the filament through the filament guide tube so it feeds down into the tool head.



STEP 7 *Continued...*

7B Locate the feed hole in the extruder body where you removed the loaded filament during **Step 6**. Filament feeds through this hole and down into the hot end for printing.



The hot end is now heating up to 230°C (446°F) and can burn your skin.

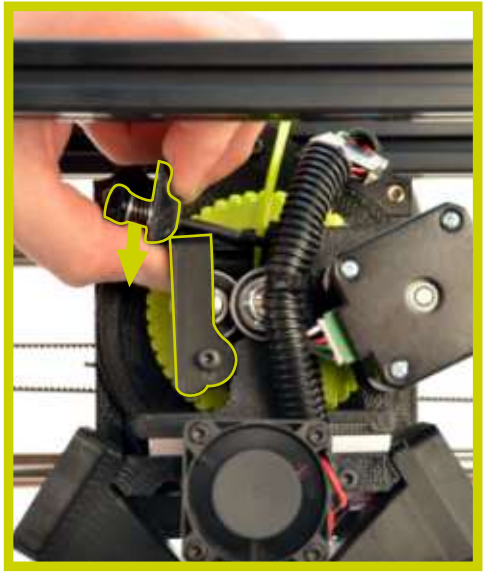
7C Make sure the idler retainer is touching the springs so it is out of the way. Push the nGen filament down into the feed hole in the extruder body and through the hot end, until a small amount of filament comes out of the tip of the nozzle. This may require a firm push.



STEP
8

Raise the Hinged Idler

Compress the springs with the idler retainer and rotate the hinged idler clockwise into an upright position. Lock the hinged idler into place by sliding the idler retainer back down into the locked position.



STEP 9

Verify Print Extrusion

9A Make sure your LulzBot TAZ is ready for printing by verifying the printer's ability to extrude filament. Using your computer, click the **Extrude 10** button in the Printer Interface and watch for filament to feed through the nozzle, towards the print bed.



STEP 9 *Continued...*

9B If you do not see filament coming through the nozzle and the drive gear stops moving, click the **Extrude 10** button once more and wait. Repeat as needed until you see consistent and repeatable extrusion.



9C Wait ten seconds for the filament to cool, then remove the extruded filament with the included tweezers.

STEP
10

Start Your First Print

Wait! Are you ready to print? Check that your LulzBot TAZ is in a well-ventilated area on a flat and level surface with 30 centimeters (12 inches) of clearance in every direction.

Did you make changes to your object after opening the Printer Interface window? If so, you will need to close and re-open the Printer Interface window to incorporate these changes.

STEP 10 *Continued...*

10A Click **Print** in the Printer Interface window to start your first 3D print, then watch your LulzBot TAZ automatically prepare itself for 3D printing.



10B Your LulzBot TAZ will first cool down and move to the front of the bed to clean off its nozzle. After cleaning, your LulzBot TAZ will then conduct an automated bed-leveling sequence, heat up to final temperature, and start printing. This process can take up to five minutes.

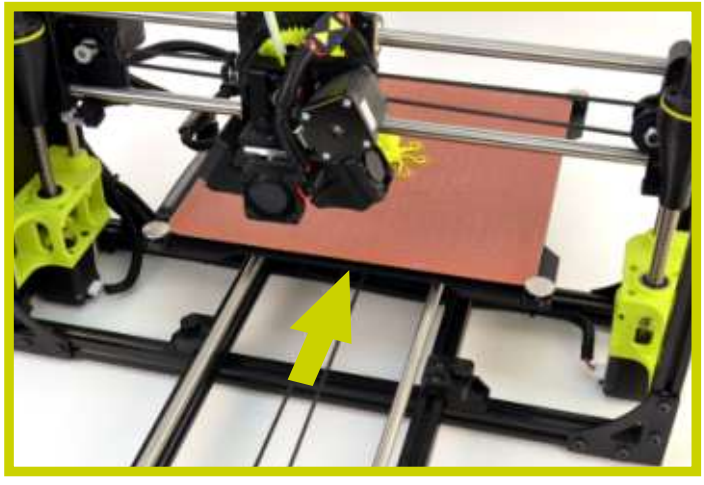
10C Watch as your very own rocktopus is made before your eyes! Total print time should take approximately one hour.



STEP
11

Cooling and Part Removal

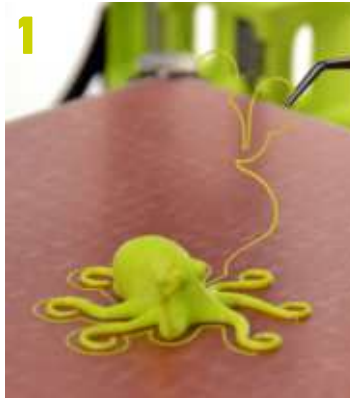
11A After your LulzBot TAZ is finished 3D printing, the print bed will automatically move backwards into the cooling position.



Your printer is now actively 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, or damage your 3D printed object.

11B Once finished cooling, the print bed will move forward indicating it is now safe to remove your printed rocktopus by lifting gently underneath it with the included blue handled knife. Carefully slide the blade under two or three of the tentacles, then slowly slide the blade under the center until it releases from the print surface.

The thin line around your rocktopus is called the print 'skirt' and can be removed and discarded before or after you remove your printed object, whichever you find easier.









The blade is sharp, so be careful when using the blue handled knife. When in use, the knife blade should be nearly parallel with the print bed. Carefully pry away from the bed, with the sharp edge between the object and print bed.

STEP
12

Rock on

Congratulations! Now that your LulzBot TAZ is up and running, share your 3D printing skills on social media using ***#rocktopus***.



Don't forget to tag us in your post, then follow us for the latest news. You can find LulzBot on Twitter, YouTube, Facebook, Google+, and LinkedIn. Next, join us on the LulzBot Forum at ***Forum.LulzBot.com***!

Need ideas for what to print next? Get inspired by visiting ***LulzBot.com/learn***.

STEP 13

Your Next Print

13A There is a length of the nGen sample filament remaining in the hot end after your first rocktopus print. If you want to continue printing with the provided sample, proceed to **Step 13D**. To remove this filament, repeat **Step 5** and **Step 6** in this guide.

13B If you plan to use a filament other than nGen for your next print, there may be a difference in the temperature required for purging the residual filament in the hot end and the temperature required for 3D printing with the new filament.

Using the Printer Interface window, set the hot end to a temperature that splits the difference between the the two temperatures. (For example, if the recommended temperature for one filament is 240˚C and the other is 200˚C, set the hot end temperature to 220˚C.) Load the new filament following the procedures in **Step 7** and **Step 8**.

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After removing filament, a small residual amount remains in the hot end that needs to be cleared out through a process called purging.

STEP 13 *Continued...*

Purging, Part Removal, and Bed Preparation Guide

Filament	Purging Temperature (˚C)	Safe Print Bed Temperature for Part Removal (˚C)	Print Bed Preparation (See maintenance section for more information)
ABS, HIPS	240	50	Isopropyl alcohol wipe
PLA	205	45	Isopropyl alcohol wipe
Magnetic Iron, Stainless Steel PLA	230	50	Isopropyl alcohol wipe
nGen	230	50	PVA glue stick
n-vent, INOVA-1800, t-glase	240	50	PVA glue stick
Bridge, PCTPE, 910	240	60	PVA glue stick

Your LulzBot TAZ desktop 3D printer is capable of printing in even more advanced and expert level filament materials including: PC-ABS, PC-Max, polycarbonate, 645 Nylon, ColorFabb HT, Conductive PLA, PVA, and more. Plus, we add new materials to our catalog frequently. See the full manual for the complete material guide.

Explore our full range of filaments by visiting **LulzBot.com/filament**

Splitting the difference in temperature between the two filaments is important, otherwise you may lower the quality of your next print or even clog the nozzle.

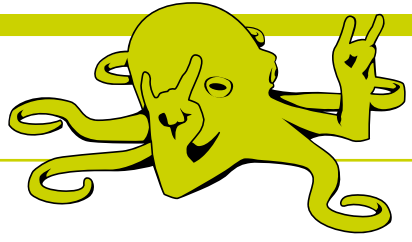
13C Purge the residual filament that remains in the hot end using the **Extrude 10** button, as shown in **Step 9**. Wait until the drive gear stops moving and repeat as needed until you see consistent and repeatable extrusion of the new filament. Change the hot end temperature to that of the new filament then close the Printer Interface window.

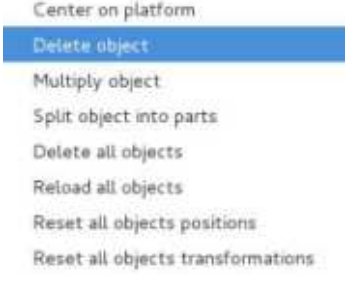
You must close and re-open the Printer Interface window before proceeding so that the g-code file for your next print is generated.

STEP 13 *Continued...*

13D Clear the virtual print bed by right clicking (or holding control and clicking) the rocktopus model and selecting **Delete Object**. Then upload the new model that you want to print next by clicking **Load Model** in the main Cura Interface.

*Not sure what to print next? Rock on with the rock2pus, which you can download at **LulzBot.com/rock2pus***







13E With your new object set, re-open the Printer Interface window by clicking **Control** in the main Cura interface.

13F After the print is complete, follow the object removal instructions outlined in **Step 11**.

Maintaining Your LulzBot® TAZ Desktop 3D Printer

Warranty and Support
Your machine comes with a non-transferable comprehensive one-year warranty and customer support. For more information please visit us at **LulzBot.com/Support**.

Source Files
This product is licensed as Open Source Hardware and runs with Free Software because we respect your freedom to see how it works, make modifications, and share your modifications with others. Find the source files online at **Download.LulzBot.com/TAZ/6.0/**, and see what's next by following our research and development online at **Devel.LulzBot.com**.

Filament Materials
Your LulzBot TAZ 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 default 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. 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, and well worth it to protect your investment in a LulzBot 3D printer.

Nozzle Wiping Pad
A clean metal surface on the nozzle is critical for the automated bed leveling process to be successful. Your LulzBot TAZ has a special wiping sequence in place to repeat the wiping process if the nozzle is not clean enough. The printer will repeatedly wipe and attempt to connect with the self-leveling sensor. If necessary, clean the nozzle with a cloth.

Over time your nozzle wiping pad will need to be replaced. If in observing the nozzle wiping sequence the cleaning appears to be less effective, and is leaving more filament residue on the nozzle, be proactive in replacing the nozzle wiping pad.

Continued...

Replacement time for the nozzle wiping pad will vary depending on the types of materials you are 3D printing with. Several spares are included with your LulzBot TAZ, and additional nozzle wiping pads are available for purchase online at **LulzBot.com**.

Print Bed
Make sure that the hot end and print bed are completely cooled and at room temperature before beginning any cleaning or maintenance of the print bed.

Your LulzBot TAZ has a PEI print surface, which helps printed objects adhere to the bed. Note that the oil on your skin can negatively affect print adhesion. For optimal performance, lightly wipe the print bed with a dry paper towel between prints.

If you start seeing adhesion issues and your prints are not sticking to the print bed, carefully wipe the bed with isopropyl alcohol, which you can purchase from your local pharmacy. A light and gentle sanding with fine (2000-3000 grit) sandpaper is also helpful, which you can purchase from your local hardware store. For some filaments a polyvinyl alcohol (PVA) glue stick, such as Elmer's® brand glue stick, is necessary for bed adhesion and removal.

Tool Head Cleaning
Make sure that the hot end and print bed are completely cooled and at room temperature before beginning any cleaning or maintenance of the tool head.

Included with your printer you will find a dental pick and thin wire brush for cleaning the hobbed bolt component of the tool head. (The hobbed bolt is the small grooved metal part of the tool head that feeds filament into the feed hole.)

Over time you may also experience an accumulation of filament on the nozzle and heater block. To clean up this accumulated filament, heat the hot end up to 180°C (356°F) and then carefully wipe affected areas using a clean dry cloth.

Need Support?

Documentation
https://www.lulzbot.com/support/lulzbot-taz-6

Community
https://forum.lulzbot.com

Email
support@lulzbot.com

Phone
+1-970-377-1111

