

Start Here

UNPACKING YOUR LULZBOT™ TAZ 3D PRINTER

Note:

Save all packaging materials, foam, clips, inserts, documents, and the cardboard box in case you need to ship your printer or contact technical support.



- 1** Remove the Accessory Tray foam insert from the box and set it aside.



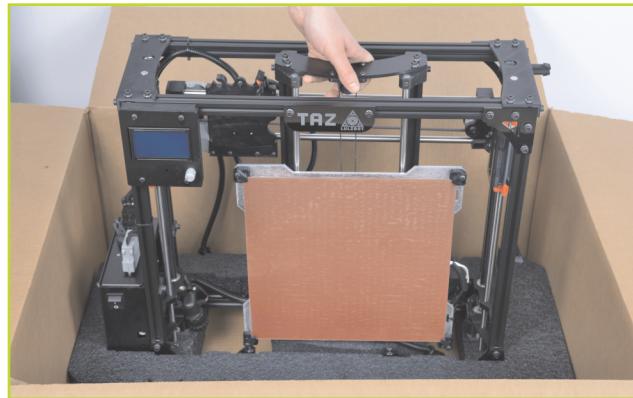
- 2** Slide out the tool bag and gray foam block from the left side of the printer frame.



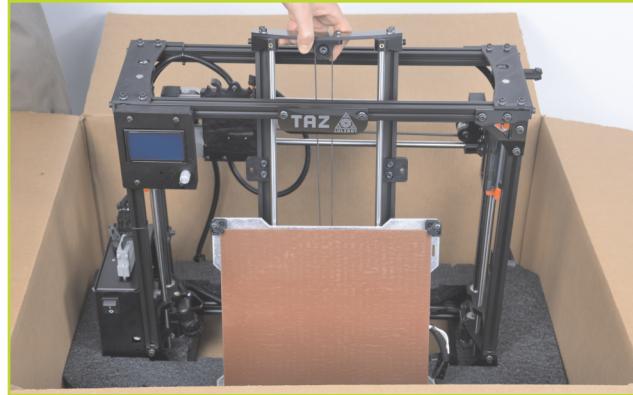
- 3** Keeping the printer in the box, grab the printer by its black side frames. Pick up and rotate the printer 90 degrees, setting it upright within the box. Verify that the part of the frame with the LCD and TAZ name plate are up. Remove the top black foam.



- 4 A** Remove the print bed assembly (Y axis) packed in the body of the printer by sliding it up approximately 15 cm (6 inches), freeing it from the black packing foam.



- B** Rotate the print bed assembly (Y axis), tilting the bottom toward front of box. Lower the print bed assembly (Y axis) into the box so it is parallel with printer frame, then lift out and set it aside.



- C** Carefully remove the entire printer frame from the box and set it on a sturdy, flat surface near an electrical outlet. Now you are ready to set up your LulzBot™ TAZ 3D printer!

NEXT UP: Setting up your 3D printer

Quick Start Guide

SETTING UP YOUR LULZBOT™ TAZ 3D PRINTER

**READ THE ENCLOSED USER MANUAL
COMPLETELY BEFORE POWERING UP
YOUR LULZBOT™ TAZ 3D PRINTER**



Remove Protective Pieces!



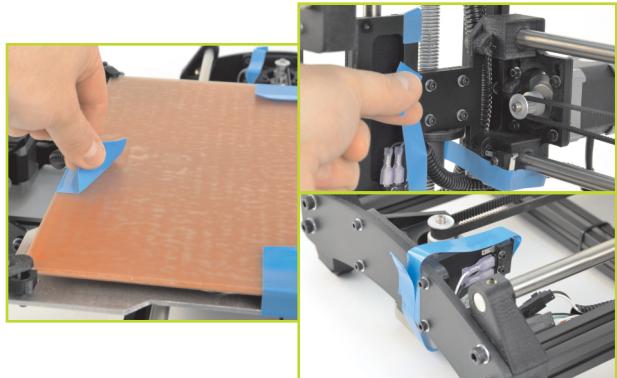
Locate and remove the gray foam block used to hold the X axis carriage in place during shipping.



Remove the red protective packing clips from the Z and Y axis smooth rods.

Mounting Printer Bed (Y Axis) to Printer Frame

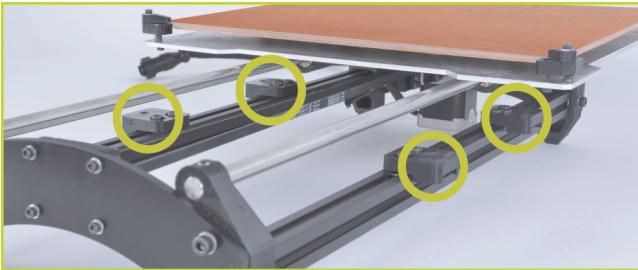
- 1 Place the printer frame and Y axis assembly on a flat and level surface. Remove the four pieces of tape from the print bed. Gently remove the tape from each endstop switch.



- 2 Locate the four Y axis bolts on the lower frame (see green circles below). Turning counter clockwise, remove each Y axis bolt and set aside.



3 Locate the four Y axis mount brackets on the Y axis.



4 With the print surface facing up and the stepper motor end of the Y axis facing back, slide the Y axis assembly on to the Y axis mount brackets, aligning the holes on the brackets with the bolt holes on the Y axis assembly.

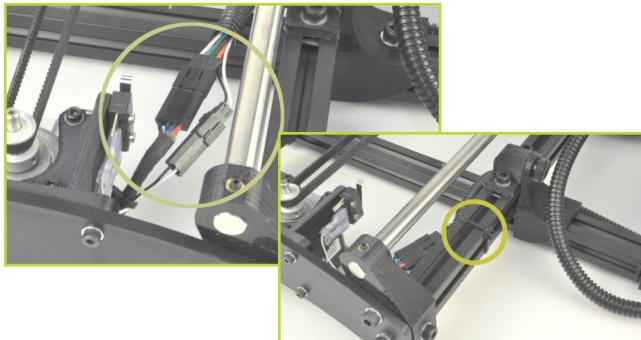
Thread the four Y axis bolts through the brackets, into the printer frame.



Note:

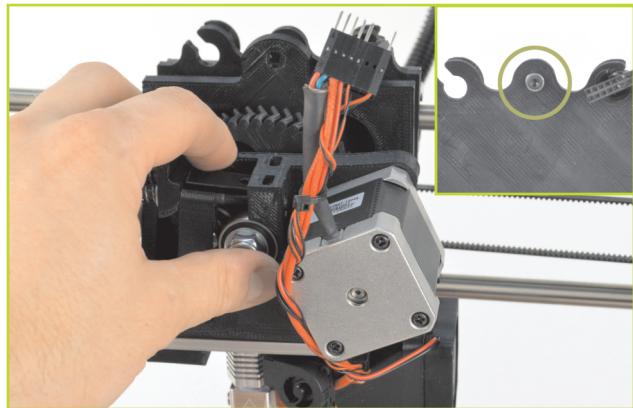
Before completely tightening the Y axis bolts, push down on the Y axis aluminum bars against the printer frame lower bars by slightly tilting the printer on the side edge, enough to lift the feet of the Y axis off the table. The weight of the Y axis will seat it against the printer's frame. While the printer is slightly tilted, tighten the four Y axis bolts.

5 Pull the print bed completely to the front of the printer to access the Y axis connectors. Towards the back of the Y axis find the matching input and output 4-pin stepper motor connectors and Y axis connectors, match and connect them. Each connector will click to indicate that it is locked. Locate one of the three small black zip ties that are included in the documents bag. Wrap and tighten the zip tie around the Y axis wiring and the black Y axis frame extrusion.



b With the included 2.5mm hex driver, locate and remove the 3mm tool head screw in the top center of the X axis carriage. Next, take the tool head out of the Accessory Tray foam insert.

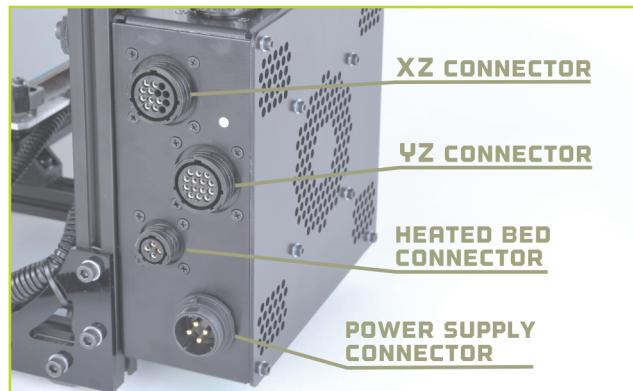
Mount the tool head onto the X axis carriage, bottom first. The tool head mount will slide into the bottom portion of the carriage and self center. Replace the 3mm screw to secure the extruder tool head onto the X axis carriage.



7 Plug in the tool head. Note the pin orientation: The tool head connector should have a small gap in the pins on the right-hand side. When the tool head is fully seated, the connectors should fit flush against each other.



8 Locate the four locking connectors on the back of the electronics case enclosure. Each connector matches a keyed plug, which may require rotating the plug until the keys line up and the plug can be pushed in. Once the plug is pushed in, turn the locking sleeve clockwise until it is tight against the electronics enclosure.



8 **CONT.** The top-most connector matches the large straight plug from the XZ cable. The next connector down matches the large angled plug from the YZ cable. The third connector matches the smallest plug, from the heated bed cable.

Note:

Clear your workspace of anything that could obstruct the movement of your 3D printer. Ensure there is nothing flammable near your printer. Operate your printer in a well ventilated area, but keep it away from drafty windows and air vents.

Attaching the Power Supply

9 Locate and unwrap the power supply, USB cables, and AC power cable. The power supply is auto-switching and will automatically adjust for voltage from 110V-240VAC.

The power supply should be off. Verify the AC power cable is unplugged before proceeding.



10 Locate the blue 24VDC output cable plug from the power supply. Connect the blue power supply plug into the keyed power supply connector on the printer electronics enclosure. Once the plug is pushed in completely, turn the locking sleeve clockwise until it is tight against the electronics enclosure. Hand tighten only!

11 Check that all four plugs are inserted into the correct connector. Use the image to the right to reference how the rear of the electronics enclosure should appear with all four plugs connected.

Check that the locking sleeve of each connector is firmly hand tightened.



12 Plug the AC power cable into the power supply. Then plug the other end into an AC power outlet.

Flip on the power switch on the power supply. The switch will light up red when in the "On" position.

13 Locate the USB plug on the front of the electronics enclosure. Plug in the USB cable, square B plug end, into the USB receptacle on the front of the electronics enclosure. Plug in the larger A end of the USB cable into your computer.

14 Flip on the power switch on the front of your LulzBot™ TAZ 3D Printer. If everything is connected properly, the LCD will initialize and should display a "Ready" message in the lower left corner.

If your Graphical LCD controller shows any error messages or does not seem to power on properly, check all connections made in previous steps. Visit LulzBot.com/support for more assistance.

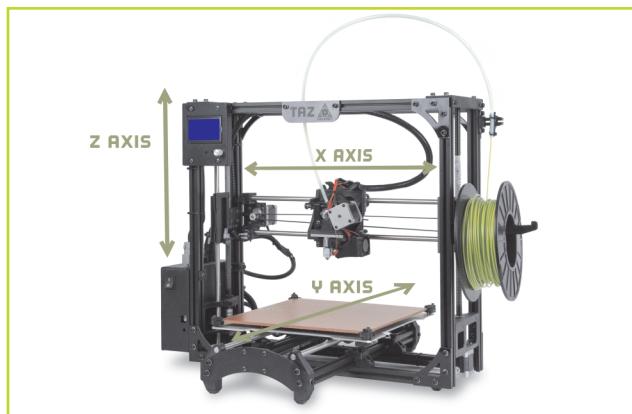
Attaching the Filament Guide

15 Find the filament guide in the Accessory Tray box. Mount the black clip onto the top right side of the printer frame, so the tube arches over the frame and towards the tool head.

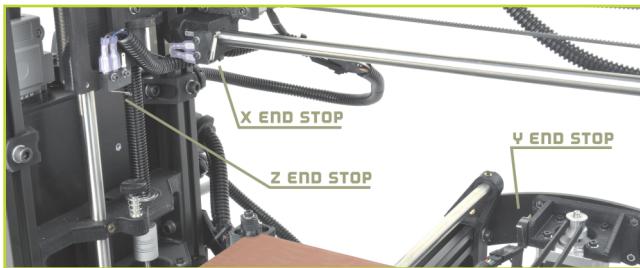


Before 3D printing, familiarize yourself with the LulzBot™ TAZ cartesian motion system

16 **A** The printer moves in three axes: X, Y, and Z. These three axes allow the tool head to move to any point within the print area. Note the location of the mechanical end stops, which are small switches at the home point of each axis. Each end stop switch allows the printer to find the home, or starting point, of each axis.



B The mechanical end stops should never be blocked during the initial homing function, or during a print.



Adjustment of the Z Axis

17 **A** This step is essential to producing quality prints with your 3D printer. First, install Cura LulzBot™ Edition—the recommended software for your LulzBot—and connect to the printer as described in the Cura section of the LulzBot™ TAZ manual. Press the **CONTROL** button to open the **PRINTER INTERFACE**. Use the homing buttons to **HOME X** and **HOME Y**. When Cura is first launched, a model should be visible on the work plane. If not, load a model (STL file) to control your 3D printer. We recommend the rocktopus, which can be found at LULZBOT.COM/ROCKTOPUS

Do not use the Home Z button until after the Z axis end stop has been adjusted. Verify that the red shipping clamps on the Z axis smooth rods have been removed.

B Once connected to the printer in Cura, rotate the Z axis end stop trigger (mounted on the X-axis motor mount) counter-clockwise to raise the thumb-screw approximately 1cm higher toward the Z axis end stop.

C In Cura, press the **HOME Z** button to home the Z axis. The print head will lower to about 1cm above the heated bed. If there's a grinding sound, stop, turn the printer off and check that the Z axis is level in relation to the body of the printer (see 18b). Manually rotate one of the Z axis linear threaded rods by hand if needed.

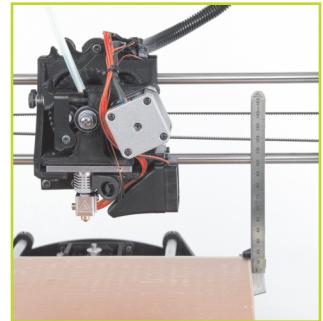


Raising the Z Axis

18 **A** Use the **+Z 10** button to move the Z axis up in 10mm increments. Raise the Z axis until the print head nozzle is approximately 40-50mm away from the print bed.

B With the Z axis above the bed, use the included 150mm ruler to measure the distance from the bottom of the X axis smooth rod and the top surface of the Y axis aluminum bed plate on the left side. The distance measurement should be the same on left and right.

B CONT. If not, in Cura, turn off the stepper motors by pressing the **MOTORS OFF** button. Turn the threaded rod by hand on one side of the printer to raise or lower that side to match the measurement on the other side.



Fine Adjustment of the Z Axis End Stop

19 Rotate the end stop trigger clockwise to lower the surface of the thumb-screw by roughly the same amount as the distance between the nozzle tip and the print surface. Press the **HOME Z** button to home the Z axis. The tip of the nozzle should be very close to the surface of the bed.

Leveling the Print Bed

20 **A** Slide a once-folded piece of paper underneath the nozzle, adjust the Z axis end stop trigger and home the Z axis through Cura by pressing the **HOME Z** button until the tip of the nozzle applies pressure on the paper. The paper should only be able to slowly pulled out with only slight resistance.

B Move the tool head over to the far right side of the X axis by using the **+X 100** button in Cura. As the X axis carriage approaches the end of the X axis, use the **+X 10** button and the **+X 1** button until the tip of the nozzle is near the front right corner of the bed.

C Slide the same piece of paper under the nozzle and home the Z axis. Adjust that bed corner's bed leveling screws so that the tension felt when moving the paper under the nozzle matches the tension felt previously. To raise or lower the front right corner of the bed, adjust only the screw with the spring. Turn the screw clockwise to lower the bed, decreasing the tension felt when moving the paper under the nozzle. Turn the screw counter-clockwise (raising the corner) to increase the tension felt when moving the piece of paper under the nozzle. Once adjusted, press the **+Z 10** button to raise the Z axis.

D Repeat the same process, first raising the Z axis, then using the **+Y** button to move the heated bed to place the nozzle on the rear right corner of the bed. Adjust the height of the bed using the same procedure as outlined above. Finally, raise the Z axis and move the X axis carriage over to the rear left corner of the bed and perform the same leveling procedure to adjust the last corner. Close the Control window, **RIGHT CLICK** on the work plane and select **DELETE ALL OBJECTS**.

NEXT UP: Create your first 3D print

Create Your First 3D Print

ATTACH FILAMENT

1 Before printing, mount filament onto the filament arm. We recommend using the ABS sample filament included with your printer for your first print.



A Place the filament on the filament arm (front right hand side of the printer) with the filament feeding counter clockwise. Feed the filament through the filament guide, it should wind through the tube and end at the tool head.

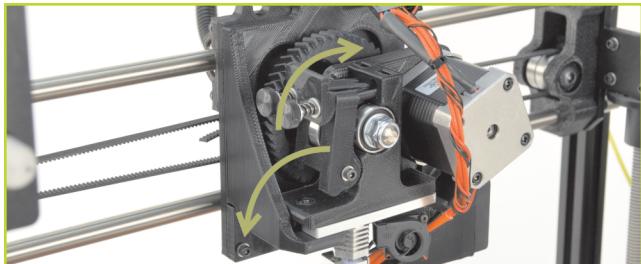
B In Cura, load the Bed Calibration file, which can be found in the calibration directory on the included SD card (named **bed_calibration.stl**) or at: LulzBot.com/downloads. Download the file and press the **LOAD MODEL** button in Cura.

C Highlight the **bed_calibration.stl** file and select the **OPEN** button. It should appear in the Cura work plane. Press the **CONTROL** button to open the Printer Interface window.

SET TEMPERATURE

2 Turn on the hot end and print surface using the following temperatures. The temperature settings for ABS are: 240C for the hot end and 110C for print bed. These temperature settings will work for HIPS as well. For PLA use 205C for the hot end and 60C for the bed. These temperatures are for LulzBot filaments. If needed, adjust the temperature depending on the filament source, color, and type. Click the **MOTORS OFF** button.

LOAD FILAMENT



3 **A** Load the plastic filament into the extruder by gently squeezing both the idler screws and the plastic clip together and pull upwards to release the idler. The idler can be rotated downward, allowing access to the hobbed bolt and filament feed hole. Once the hot end is up to extrusion temperature, remove the short length of ABS that is left in the extruder for shipping. If using PLA, raise the temperature to 220C to remove the ABS filament sample. Push the PLA in while still warm to purge the ABS out of the hot end. Drop the hot end temperature down to 205C prior to printing.

B Feed the end of the plastic filament into the filament feed hole and push the filament through the extruder by slowly pushing the filament down into the hot end.

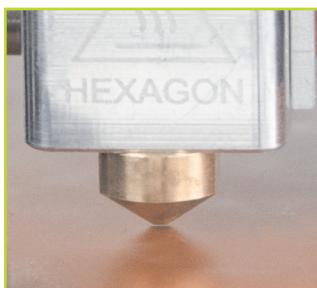


C Once the filament extrudes a small amount out of the nozzle, raise the idler and slide the two idler bolts and plate back into place. Tighten the two idler bolts. Tighten the two screws until the top of the thumbscrews are about 10mm (0.4 inches) away from the plastic clip.

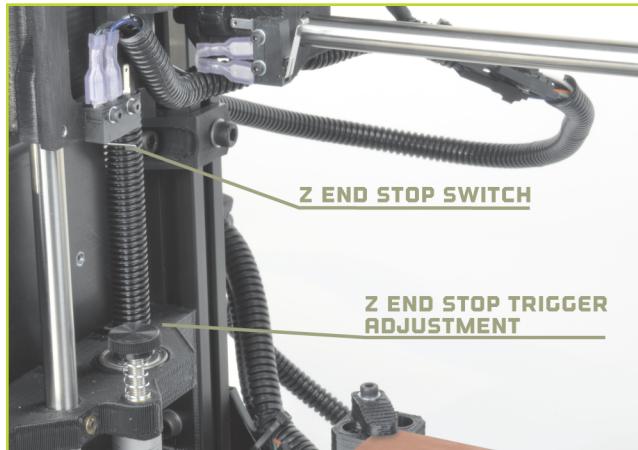
D Press the **EXTRUDE 10** button in Cura. Filament should extrude out of the nozzle tip. If it does not, hit the **EXTRUDE 10** button again several times while slowly tightening the two extruder thumbscrews while extruding until reliable, repeatable extrusion has been achieved. If the extrusion stalls, open the extruder and trim off any filament with a chewed-out section. Repeat the above process until your printer can repeatedly extrude.

HOME PRINTER

4 **A** Use the **HOME** buttons to home the X axis and Y axis, then the Z axis. When the Z axis is at home, the nozzle tip should be right above the glass with a small visible gap.



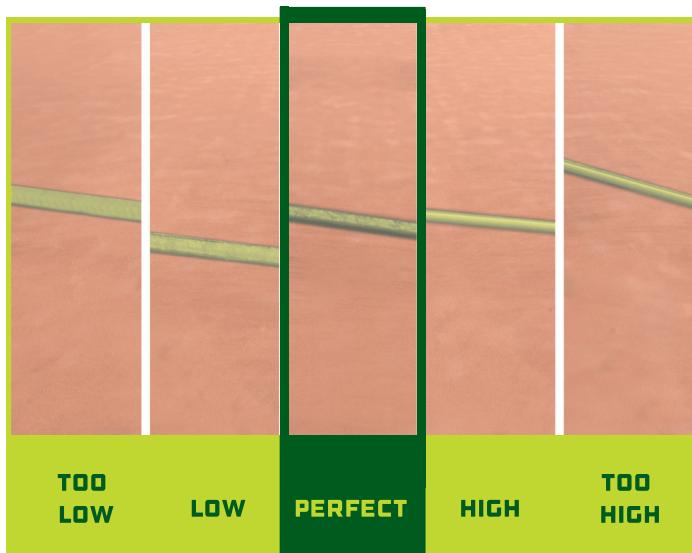
B To decrease or increase the Z homing height, adjust the Z end stop trigger, which is on the far left of the printer, mounted on the X axis motor mount. Decrease the gap by turning clockwise. Increase the gap by turning counter-clockwise. Once the axes have been homed, the hot end, and print surface have reached the correct temperature, it is time to print!



Z PRINT HEIGHT

5 **A** Confirm that the top of the Printer Interface window is displaying your current printer temperatures. Press the **PRINT** button to start printing the Bed Calibration file.

B When the print starts, check to ensure a good first layer adhesion. If the first layer is too high or low, pause the print and adjust the Z end stop trigger. Raise/lower a corner to minimize/increase the extrusion width to match the others. Remove any printed material, verify that your printer is at the correct printing temperatures, and press **RESUME** or **PRINT**.



YOUR FIRST PRINT



- b** **A** Download and load the Rocktopus STL file from: LulzBot.com/Rocktopus
- B** Load the file in Cura, select the **STANDARD** print profile and **MATERIAL**, and press the **CONTROL** button. When the printer is operational, bring the hot end (240C ABS/HIPS, 205C PLA) and the heated bed (110C ABS/HIPS, 60C PLA) up to printing temperature.
- C** Once the printer reaches the appropriate set temperatures, press the **PRINT** button to begin the print.

REMOVE PART

7 **A** After the part is finished, the hot end and bed will automatically cool down. Once the bed cools, carefully remove the part off the surface with the included printed object removal tool. If your part is large, you may need to lift at multiple points.

B Keep going by printing something else! Visit LulzBot.com/next for more ideas, information, and tips!



LULZBOT

For more information, call +1-970-377-1111
or email support@lulzbot.com

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