START HERE

UNPACKING YOUR TAZ 3D PRINTER

**1** Remove the Accessory Tray foam insert from the box, set aside.
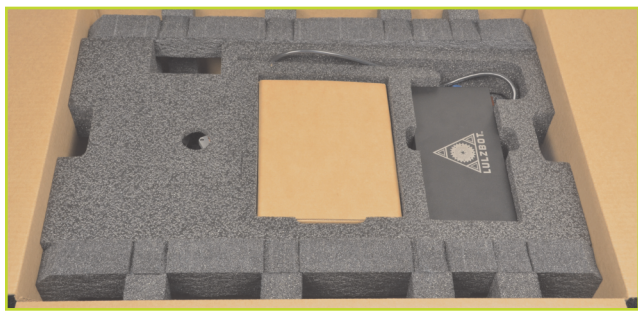
**2** Slide out the tool bag and foam padding from the left side of the printer frame.

3 While keeping the printer in the box, pick up by the black aluminum frame and rotate the printer and foam 90 degrees - setting it upright within the box. Make sure name plate at top is UP. Remove top foam.
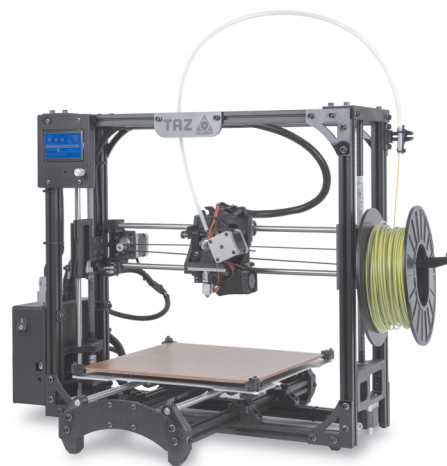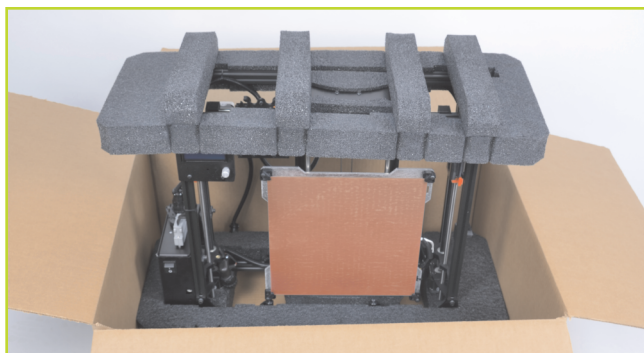
4 **A** Remove the printer bed assembly (Y-axis) packed in the body of the printer by sliding it up 6", freeing it from the packing foam.
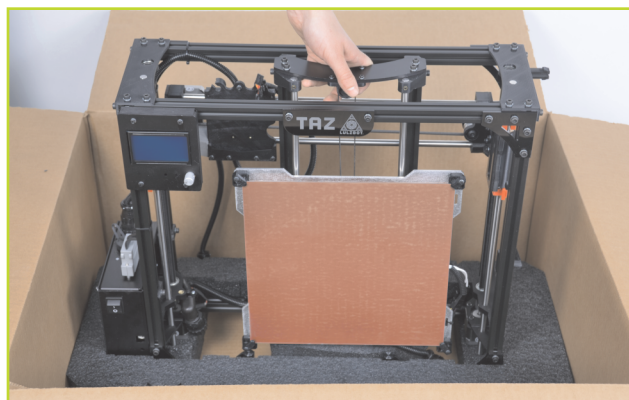
B Rotate printing bed assembly, tilting the bottom toward front of box. Lower entire bed into box so it is parallel with printer frame, then lift out and set aside.
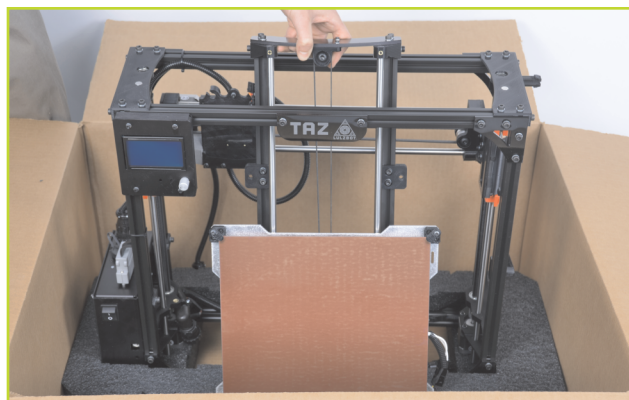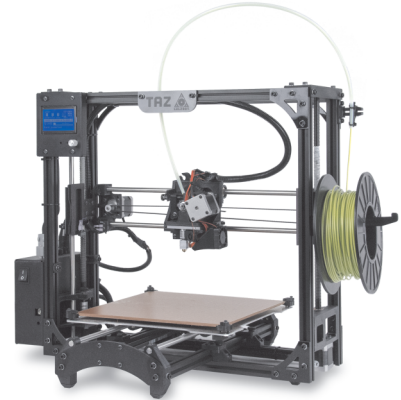

C Carefully remove printer frame from box and set it on a sturdy, flat surface - you're ready for assembly!

Next up: **Setting up your printer**

QUICK START GUIDE

SETTING UP YOUR TAZ 3D PRINTER

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

Remove Protective Pieces!

Locate and remove the gray foam block used to hold the X axis carriage in place during shipping.
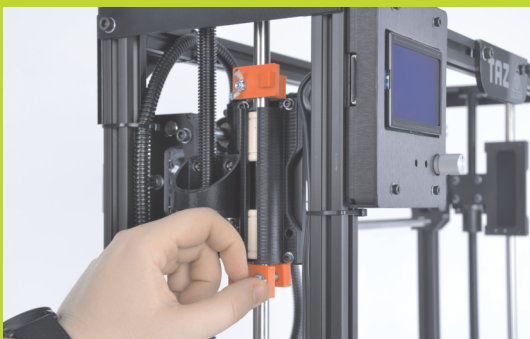
Remove red protective packing clips from Z and Y axis smooth rods.

Mounting Printer Bed (Y Axis) to Printer Frame

1 Place the TAZ frame and Y axis assembly on a flat and level surface. Remove four pieces of tape from the print bed. Gently remove the tape from each end-stop switch.
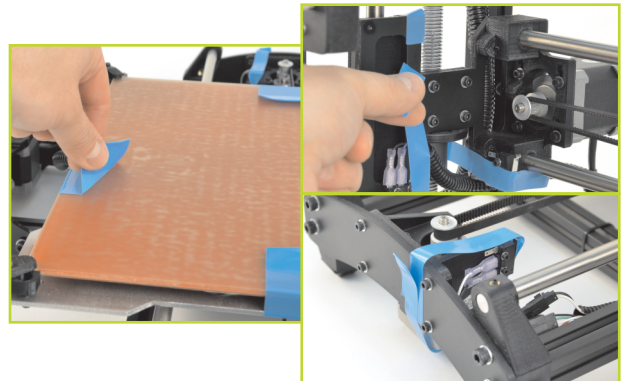
2 Locate the four Y axis bolts on the TAZ frame (see green circles below). Turning counter clockwise, remove each Y axis bolt and set aside.
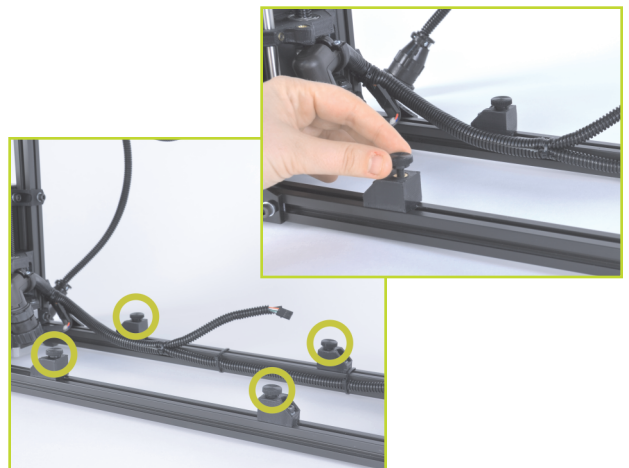
3 Locate the four Y axis mount brackets on the TAZ Y axis.

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.

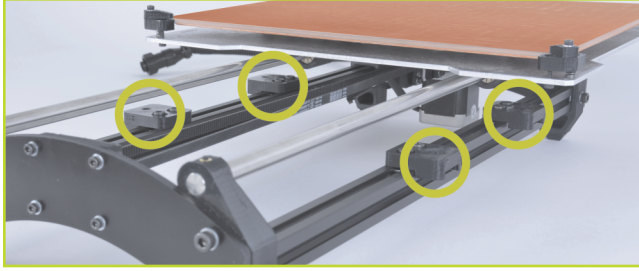Thread the four Y axis bolts through the brackets, into the TAZ frame.

Note: Before completely tightening the Y axis bolts, push down on the y axis aluminum bars against the TAZ 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 TAZ 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. You will find matching male and female 4-pin stepper motor connectors and Y axis connectors by matching the male and female connectors. The connector will click to ensure 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.
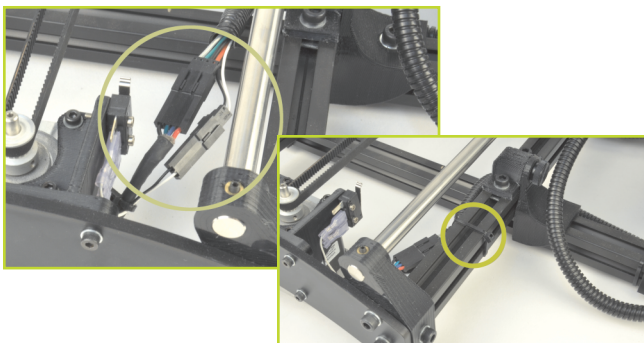
6 Locate and remove, with the included 2.5mm hex driver, the tool head 3mm screw in top center of the X axis carriage. Remove the extruder head from the Accessory Tray foam insert.

Place the extruder tool head mount onto the X axis carriage bottom first. The extruder 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.
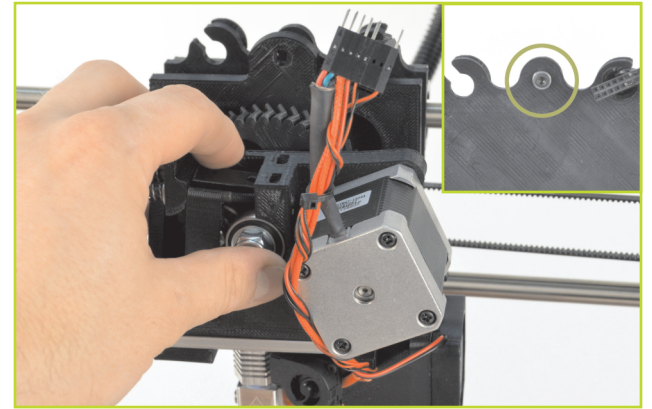
7 Plug in the tool head. Note the pin orientation- The tool head connector should have a small gap in the pins on the right hand side. When fully seated the connectors should fit flush against each other.

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.

XZ CONNECTOR

YZ CONNECTOR

HEATED BED CONNECTOR

POWER SUPPLY CONNECTOR
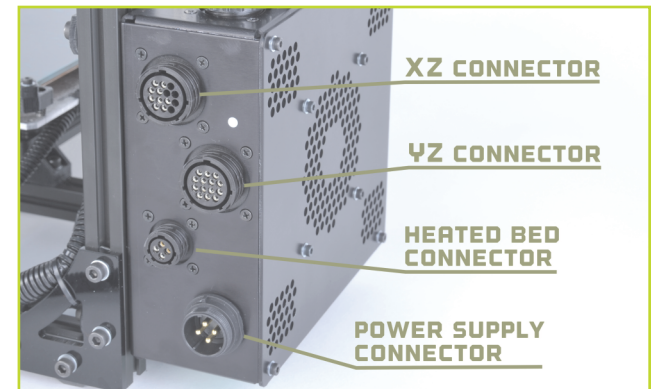
8 cont. The top most connector matches the large straight plug from the XZ cable. The next connector down matches the large angled plug from the YZ cable. The third connector matches the smallest plug, from the heated bed cable.

Note: Make sure your printer work space is clear of anything that could obstruct the movement of the printer, and that there are no flammable fabrics or liquids near the printer surface. Avoid placing your printer near a drafty window or air conditioner vent.

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.

Make sure the power supply is completely unplugged before moving on to the next step.

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 TAZ 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 electonics 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 TAZ 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 TAZ 3D Printer. If everything is connected properly, the LCD will initialize and should read "TAZ Ready" in the lower left corner.

If your LCD shows any error messages or does not seem to power on properly, check all connections made in previous steps. If the problem persists, please contact our customer support team for assistance.

Attaching the Filament Guide

15 Locate the filament guide with attached PTFE tube. The filament guide easily attaches to the filament guide mount on the top right side of the printer frame.
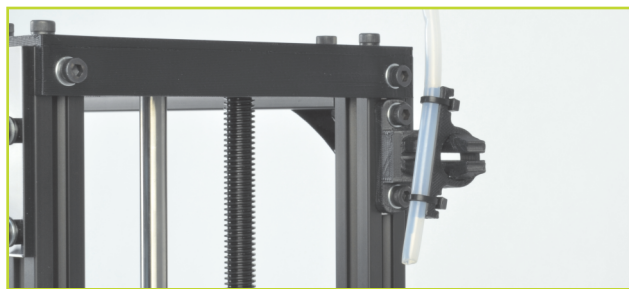
Before printing, familiarize yourself with the TAZ cartesian motion system

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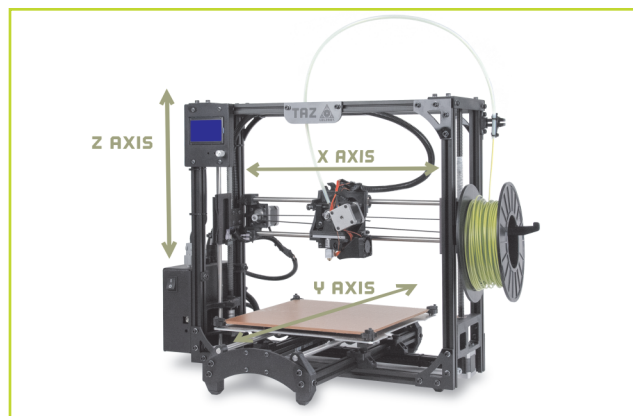
B The mechanical endstops should never be blocked during the initial homing function or during a print.

Adjustment of the Z Axis

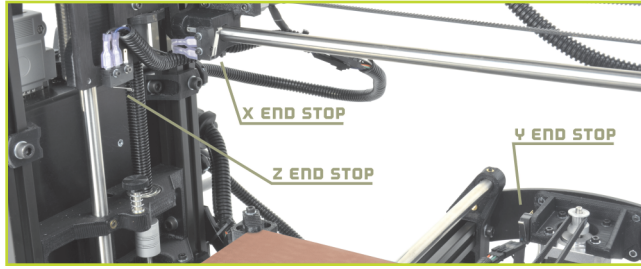**17** **A** Take the time to go through this calibration procedure to help ensure that your prints are consistent and trouble free. Install Cura- our recommended print host software and connect to the printer as described in the Cura software section in the complete TAZ 3D printer manual. Use the homing buttons to home the X and Y axis. 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.

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

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 hot end will lower to about a centimeter 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.
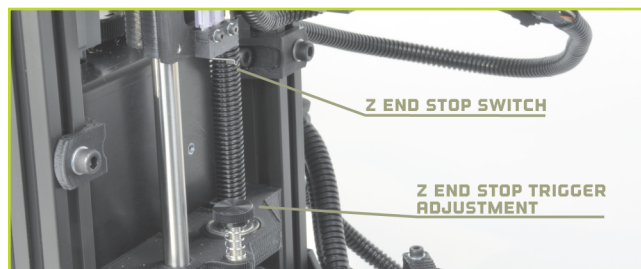

Raising the Z Axis

18 **A** Use the **+Z 10** button to move the Z axis up in 10mm increments. Raise the Z axis until the hot end 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.
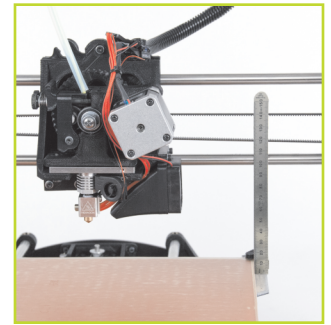
Fine Adjustment of the Z Axis End Stop

19 Rotate the endstop 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. You should be able to slowly pull out the sheet of paper with only slight resistance.

B Move the hot end nozzle tip 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 Y 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. 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

YOUR FIRST 3D PRINT

Attach filament

1 Before printing, load filament onto the filament arm, which holds 1kg and 5lb plastic reels but can be modified to work with other reel and spool types. We recommned 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 end of the filament through the feed tube, through the PTFE sleeve and exiting near the extruder.
When changing filament, slide the opposite end of the filament through one of the holes in hub of the filament spool to keep the filament from unwinding.

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:
http://www.LulzBot.com/downloads.
Once you have downloaded the file, 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 Control Window (Pronterface view).

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. You may need to adjust the temperature depending on the filament source, color, and type. Click the **Motors Off** button.

Load Filament
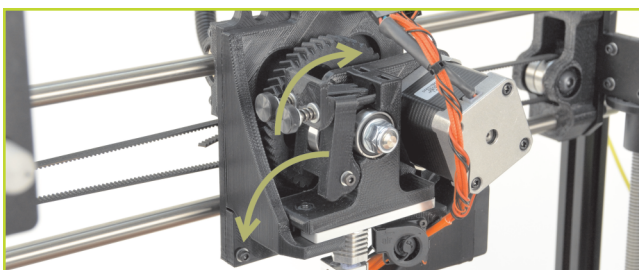
3 **A** Load the plastic filament into the extruder by gently squeezing both the idler screws and the plastic clip together and pull upwards to release the idler. The idler can be rotated downward, allowing access to the hobbed bolt and filament feed hole. Once the hot end is up to extrusion temperature, remove the short length of ABS that is left in the extruder for shipping. If you are using PLA, you may need to 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.
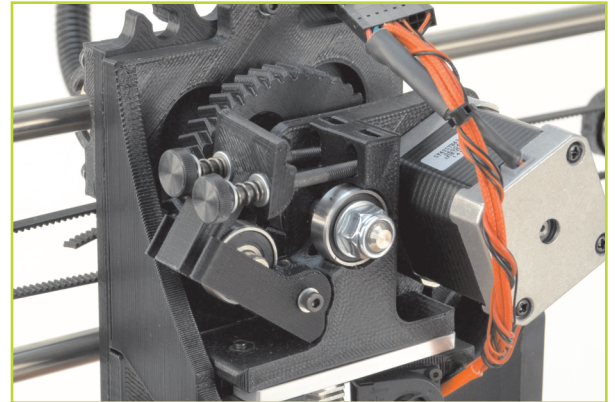
C Once the filament extrudes a small amount out of the nozzle, raise the idler and slide the two idler bolts and plate back into place. Tighten the two idler bolts. Tighten the two screws until the top of the thumbscrews are about 10-11mm away from the plastic clip.

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 as you slowly tighten the two extruder thumbscrews while extruding until you achieve reliable, repeatable extrusion. If the extrusion stalls, you may need to open the extruder and trim off any filament with a chewed out section. Repeat the above process until you 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.
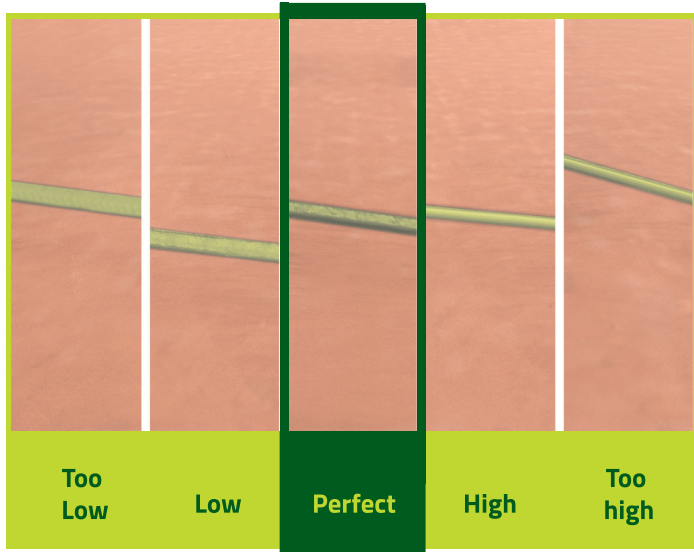
B To decrease or increase the Z homing height, adjust the Z end stop trigger, which is on the far left of the printer, mounted on the X axis motor mount. Decrease the gap by turning clockwise. Increase the gap by turning counter-clockwise. Once you have homed the axes and the hot end and bed have reached the correct temperature it is time to print!
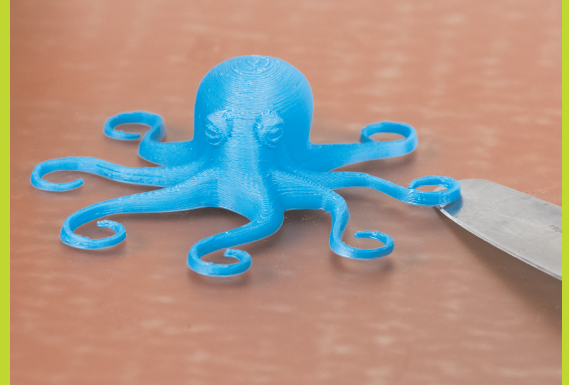

Z END STOP SWITCH

Z END STOP TRIGGER ADJUSTMENT

Z Print Height

5 **A** Confirm that the top of the Control 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 you are at the correct printing temperatures and press **Resume** or **Print.**

| Too Low | Low | Perfect | High | Too high |

Remove Part

6 **A** After the part is finished, the hot end and bed will automatically cool down. If you are printing PLA, you will need to turn the heated bed off. Once the bed cools, carefully pop 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 **http://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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ALEPH OBJECTS INCORPORATED

WHAT'S YOUR FAVORITE COLOR?

ABS, PLA, HIPS, PET, NYLON AND SPECIALTY FILAMENTS: GET THEM ALL AT LULZBOT.COM

Your go-to outlet for the highest quality filament and parts. We test all materials extensively before adding them to our store - because efficient innovation shouldn't be slowed by less-than-perfect materials.