Start Here
UNPACKING YOUR TAZ 3D PRINTER

Note: Save all packing materials, packing clips, inserts, documents, and the box in case you need to ship your printer or contact customer support.
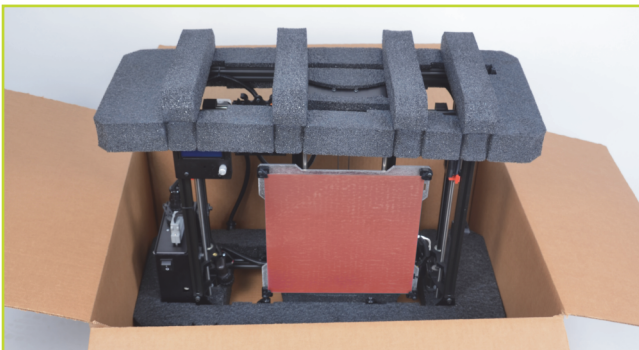
**1** Remove the Accessory Tray foam insert from the box, set aside.

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

3 **A** While keeping the printer in the box, pick up by the black aluminum frame and rotate the printer and foam 90 degrees - setting it upwright 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.
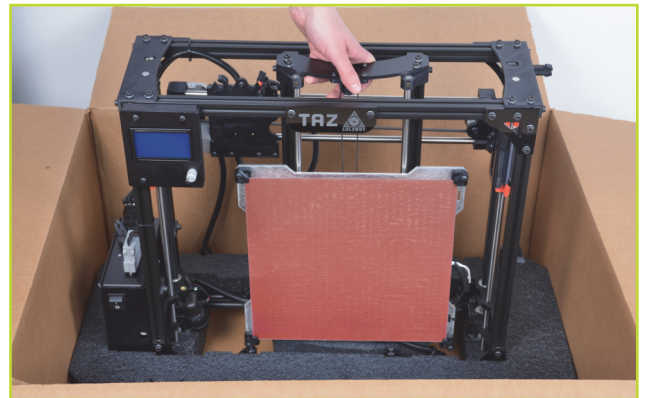
B Rotate printing bed assembly, tilting the bottom toward front of box. Lower entire bed into box so it is parallel with printer frame, then lift out and set aside.
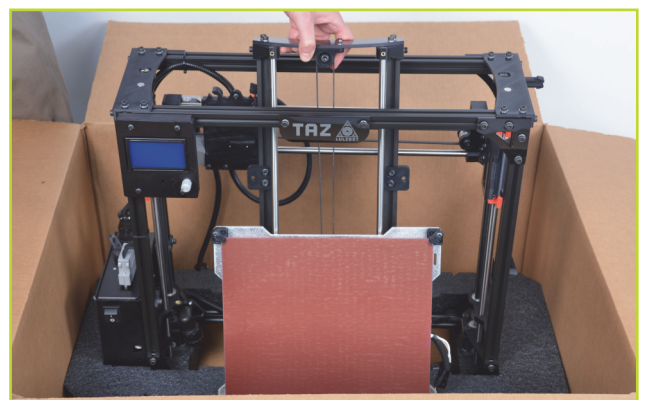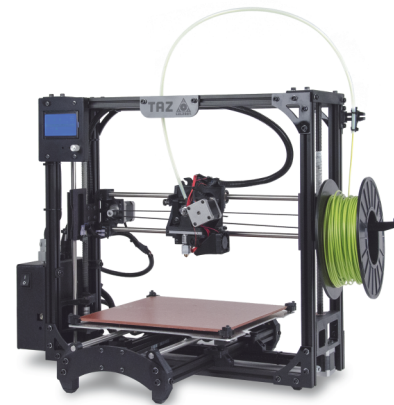

Carefully remove printer frame from box and set it on a sturdy, flat surface - you're ready for assembly!
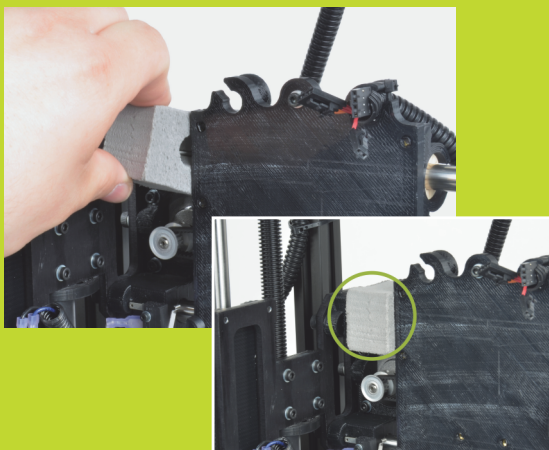
NEXT UP: Setting up your printer

Quick Start Guide

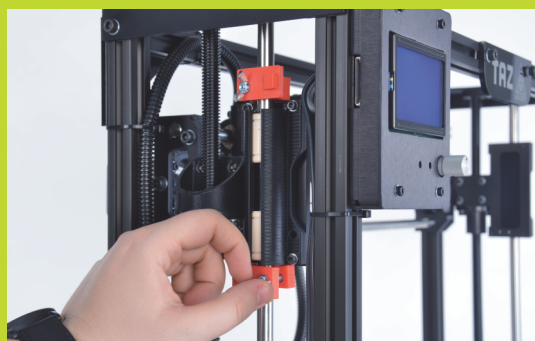## SETTING UP YOUR TAZ 3D PRINTER

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

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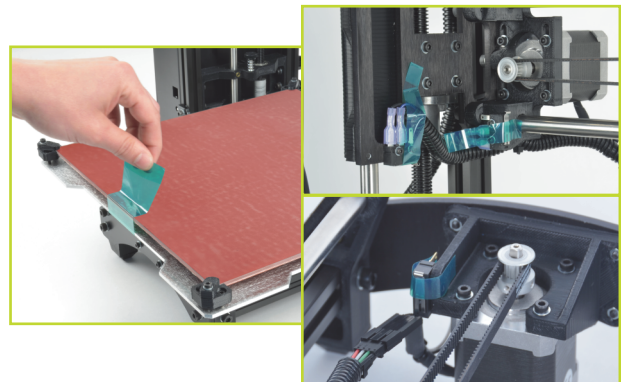
2 Locate the four Y axis bolts on the TAZ frame (see green circles below). Turning counter clockwise, remove each Y axis bolt and set aside.

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

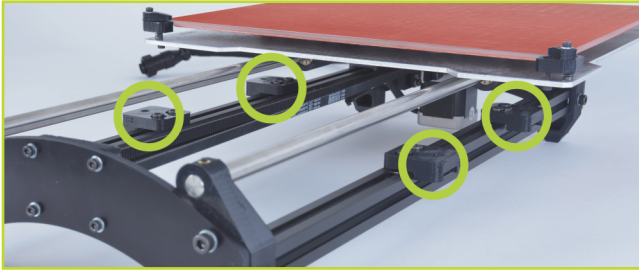**4** With the print surface facing up and the stepper motor end of the Y axis facing back, slide the Y axis assembly on to the Y axis mount brackets, aligning the holes on the brackets with the bolt holes on the Y axis assembly.

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.
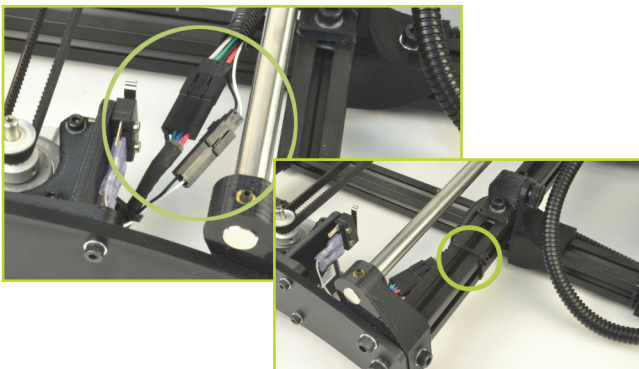
6 Locate and remove, with the included 2.5mm hex driver, the tool head 3mm screw in top center of the X axis carriage. Remove the extruder head from the Accessory Tray foam insert.

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.
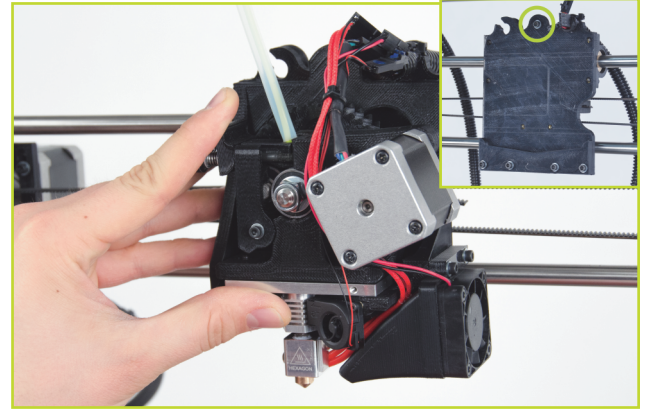
7 Connect the extruder assemblies' 4-pin connectors: match the orange/red wire connector pair for the hot end and the mixed color wired connector pair for the extruder motor. Connect the matching pairs together so they lock and click.

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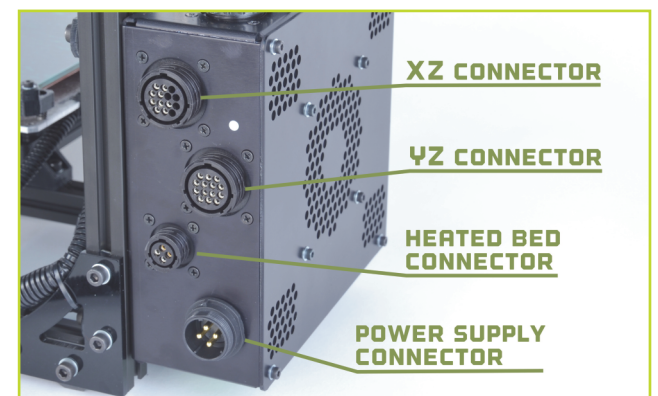
The top most connector matches the large straight plug from the XZ cable. The next connector down matches the large angled plug from the YZ cable. The third connector matches the smallest plug, from the heated bed cable.

Attaching the Power Supply

9 Locate and unwrap the power supply, USB cables, and AC power cable. Make sure the power supply is completely unplugged before moving on to the next step. Change the AC input switch to 110V or 220V, depending on your regional AC voltage standard. The switch is located on the side of the power supply.

24 VDC OUTPUT CABLE

AC INPUT RECEPTACLE

AC POWER CABLE [US TYPE SHOWN]

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.

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 should appear with all four plugs connected.

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

12 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 the A end of the USB cable into your computer.

Attaching the Filament Guide

13 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.
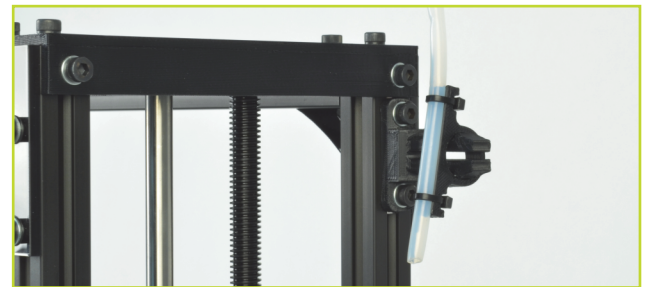
Before printing, familiarize yourself with the TAZ cartesian type system

14 **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.
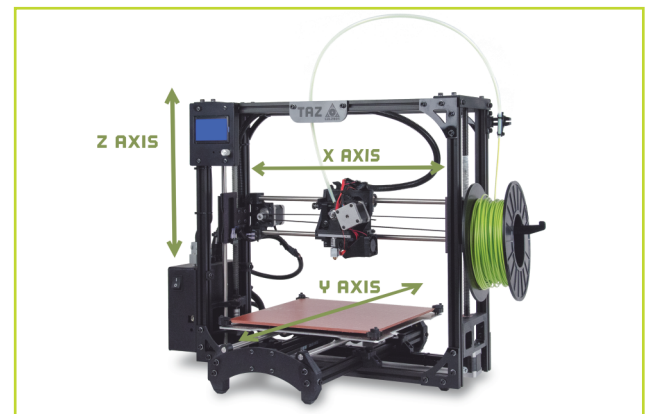
Z AXIS
X AXIS
Y AXIS

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

Adjustment of the Z Axis

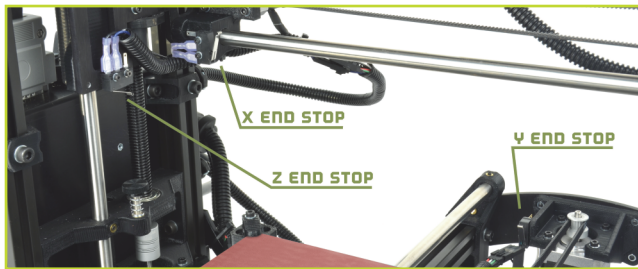**15** **A** Take the time to go through the leveling procedure to help ensure that your prints are consistent and trouble free. Install the Printrun software and connect to the printer as described in the Printrun software section in the complete TAZ 3D printer manual. Use the homing buttons to home the X and Y axis.

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

B Adjust the Z axis end stop trigger on the far left of the printer, mounted on the X-axis motor mount. Once connected to the printer in Pronterface, rotate the Z axis end stop trigger counter-clockwise to raise the thumb-screw approximately 1cm toward the Z axis end stop.
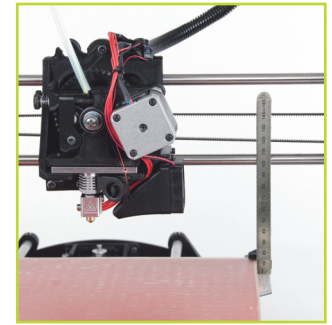
C Press the Home Z button to home the Z axis. The hot end will lower to about a centimeter above the heated bed. If there's a grinding sound, stop, turn the printer off and check that the Z axis is level in relation to the body of the printer. Manually rotate one of the Z axis linear threaded rods by hand if needed.

Raising the Z Axis

16 **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. If not, in Pronterface, turn off the stepper motors by pressing the **Motors Off** button. Turn the threaded rod 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

17 Rotate the screw counter-clockwise to raise 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 now be very close to the surface of the bed.

Leveling the Print Bed

18 **A** Slide a piece of paper underneath the nozzle, adjust the Z axis end stop and home the Z axis until the tip of the nozzle applies firm 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. As the X axis carriage approaches the end of the Y axis, use the +X 10 button and the +X1 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 the 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.

NEXT UP: Create your first 3D print

Create Your First 3D Print

1. ATTACH FILAMENT

Before printing, load a reel of filament onto the filament arm, which holds 1kg and 5lb plastic reels but can be modified to work with other reel and spool types.

Place the filament reel 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. Your filament reel is now mounted and ready for the next steps.

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.

2. SET TEMPERATURE

Set the hot end and print surface for ABS or PLA plastic and turn both on. Temperature settings for ABS should be set at 240C for the hot end and 85C for print surface. 205C for the hot end and 60C for print surface for PLA. 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.

3. LOAD FILAMENT

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 230C to remove the ABS filament and then drop the temperature back down to 205C.
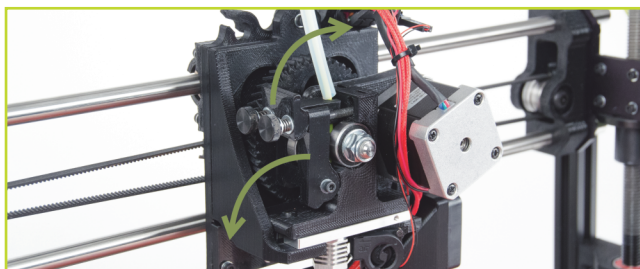
B Feed the end of the plastic filament into the filament feed hole and push the filament through the extruder by slowly pushing the filament down into the hot end.
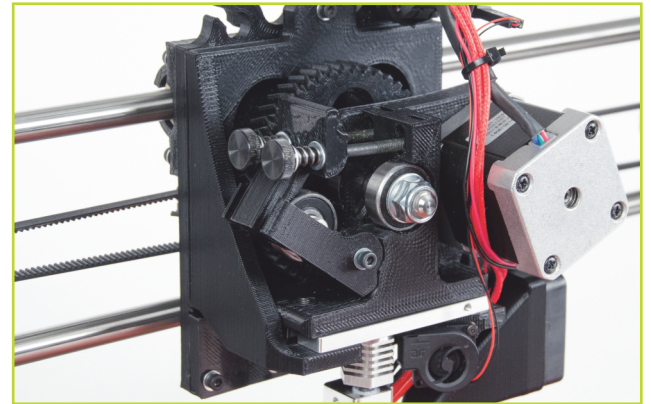
C Once the filament extrudes a small amount out of the nozzle, raise the idler and slide the two idler bolts and plate back into place. Tighten the two idler bolts. Tighten the two screws until the top of the thumbscrews are about 10mm away from the plastic clip.

D Change the Z manual extrude speed to 150mm/min in Printrun (found to the right of the Reverse button). Press the Extrude button in Printrun. Slowly tighten the two extruder thumbscrews while extruding until you achieve reliable, repeatable extrusion, compressing the springs to (~5mm +-2mm). If the extrusion stalls, you may need to open the extruder and trim off any filament with a chewed out section.

4. HOME PRINTER

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.

B To lower or raise the Z home height, adjust the Z end stop trigger, which is on the far left of the printer, mounted on the X axis motor mount. Lower it by turning clockwise and raise it 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
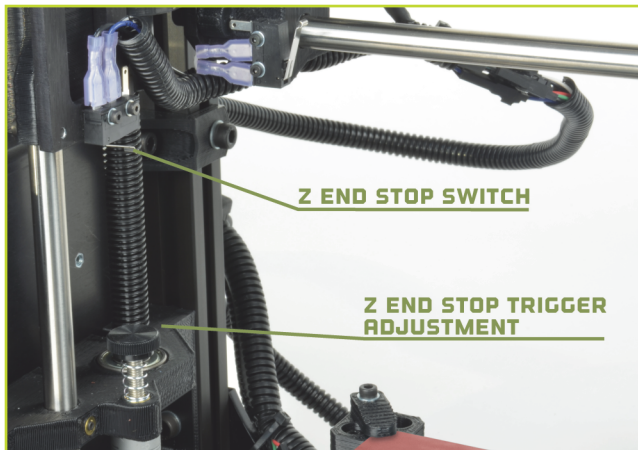
5. Z PRINT HEIGHT

A Load the bed_level.gcode file, which can be found in the calibration directory on the included SD card or at: http://www.LulzBot.com/support/downloads. Once you have downloaded the file, press the Load File button in Printrun.

B Highlight the bed_level.gcode file and select the Open button. It should appear in the Printrun G-Code viewer. Press the Print button to begin the print.

C 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 and press Restart.

| VERY LOW | LOW | PERFECT | HIGH | VERY HIGH |
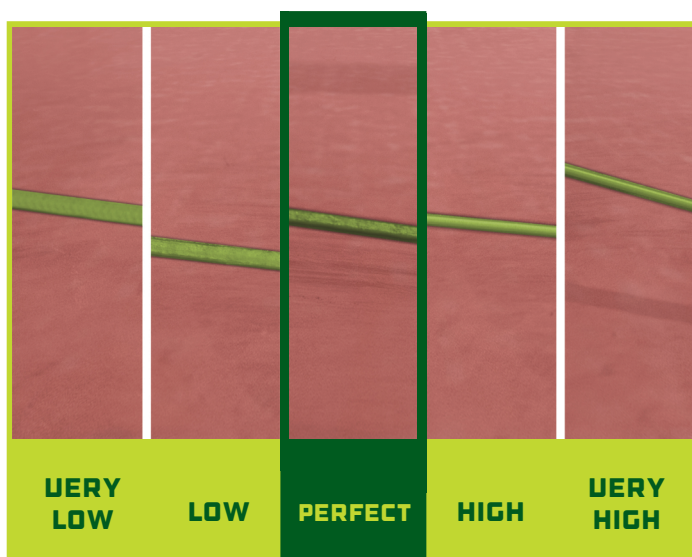
YOUR FIRST OCTOPUS!
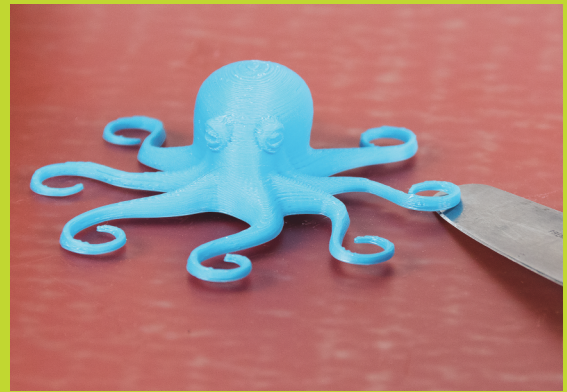
Load the **octopus.gcode** file:
http://download.lulzbot.com/TAZ/5.0/novelties/

Load the file in Pronterface, bring the hot end **(240C ABS/205C PLA)** and the heated bed **(85C ABS/60C PLA)** up to printing temperature.

Once the printer is at the appropriate temperature, press the **Print** button to begin the print.

6. REMOVE PART

A After the part is finished, the hot end will automatically cool down. If you are printing PLA, you will need to turn the heated bed off. Once the bed cools, pop the part off the surface with the included clam knife. If your part is large, you may need to pry at multiple points.

B Reset the heated bed to the correct temperature before starting the next print.

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, WOOD, NYLON AND EXPERIMENTAL FILAMENTS: GET THEM ALL AT LULZBOT.COM

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