

Admin



## gMax 1.5+ and gMax 2 Layer Shifting

gCreate\_Anna · Nov 25, 2020 · gmax 1.5 xt+ gmax 1.5+ gmax 2 layer shifting troubleshooting

Watch ...



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Nov 25, 2020

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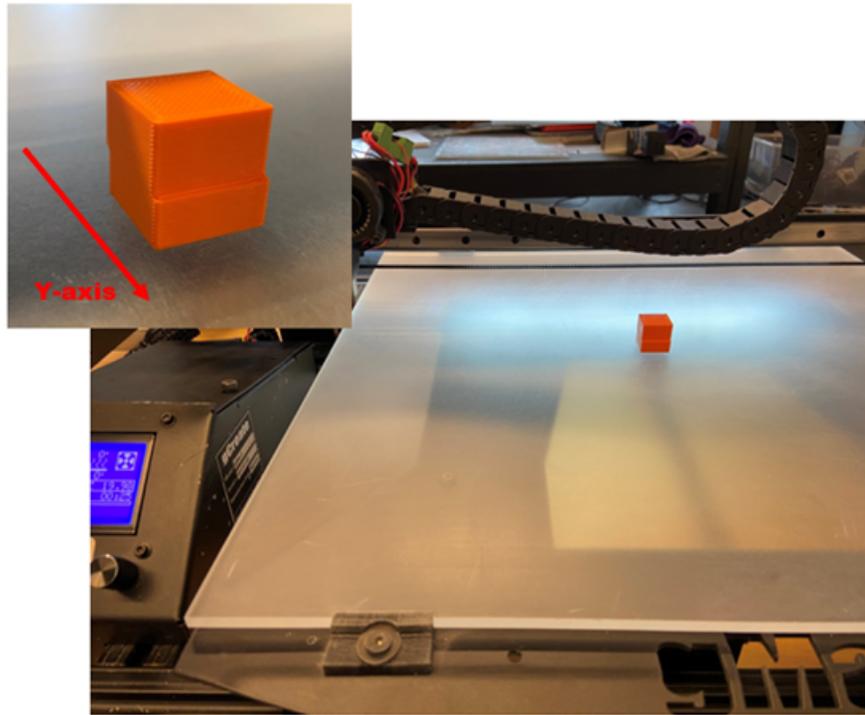
### Fixing Layer Shifting in 3D Printing

Layer shifting is a printing issue where the layers of a print *shift* from where the printer thinks it should be, causing an improper alignment of layers.

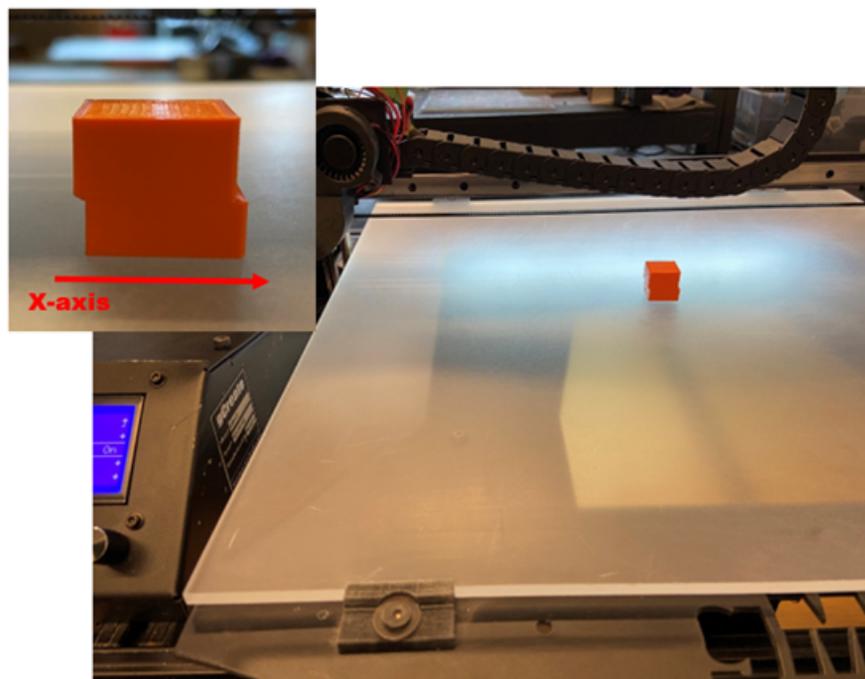
A layer shift can happen after the print starts and the printer will continue printing in the wrong spot. There are multiple causes for layer shifting in your 3D prints including:

- Room temperature
- Motor overheating
- Electronics cooling issues
- Stepper drivers' potentiometers set at wrong values
- Jerk, acceleration and print settings
- Heavy prints
- Print warping

The first thing to do is recognize on which axis did the layer shifting occurred, the Y-axis being the most common. Below are a series of pictures which can help you recognize which axis had the issue.



*Pic. 1: Y-axis Layer Shift*



*Pic. 2: X-axis Layer Shift*

Once you have identified the axis where the layer shifting occurred, the next step is to start troubleshooting.

#### **Room Temperature**

If the temperature of the room where you are printing is high, you might want to consider moving your printer to a room under 104 Fahrenheit (40 Celsius). High room temperatures can cause your printer to overheat and therefore, produce a messy print.

#### **Latest Firmware**

Check if you have the most updated firmware corresponding to your printer model:

<http://forum.gcreate.com/index.php?resources/categories/firmware.3/>

### **Correct gCreate Config Files**

Check that you have the proper slicing configuration files. The settings in these files have been dialed in for the gMax printer. Make sure to always get your configuration files directly from us.

These can be found here:

<http://forum.gcreate.com/index.php?resources/>

### **Overheating**

If the print is still going and you noticed the layer shifting, check how hot the motors are. If your motors are hot, check if your stepper drivers are hot as well. If they are, follow *Step Four* for proper cooling.

Check the internal fans inside the electronic case for proper cooling.

1. Turn off your printer.
2. Use a 3.0mm Hex key and open the electronic case.
3. Put top case that you just removed directly to the left of the exposed electronics case (**be careful not to break the fan wire from the rear PCB**)
4. Turn on the printer.
5. Carefully, check that both internal fans in the electronic case work properly.

Note: The gMax 2 has two internal cooling fans. If your printer does not have the second internal fan it can be purchased here:

<https://shop.gcreate.com/products/gmax-2-internal-case-fan>

### **Adjust Stepper Driver Current**

Check the value of potentiometers on the stepper drivers corresponding to the axis that shifted.

For more information on how to adjust your stepper drivers, please visit our forum:

<http://forum.gcreate.com/index.php?threads/adjusting-stepper-drivers.1951/>

### **Jerk and Acceleration Settings**

Check your jerk/print settings. Sudden or fast movements may cause your printer to fail and generate a layer shift.

#### **Jerk:**

Rapid change in direction over a very short distance. The printer will shake rapidly if the jerk is set too high and may cause a layer shift.

Adjust your jerk settings in your slicing software. **Set to 3.**

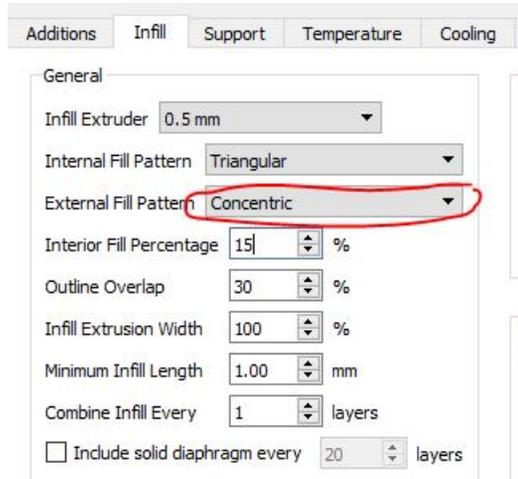
#### **Acceleration:**

As the extruder approaches a corner the print head will slow down unto it reaches that corner like your car approaching a stop sign. Lowering this value will help prevent layer shifts but may sacrifice time. **Set to 300.**

#### **Additional information:**

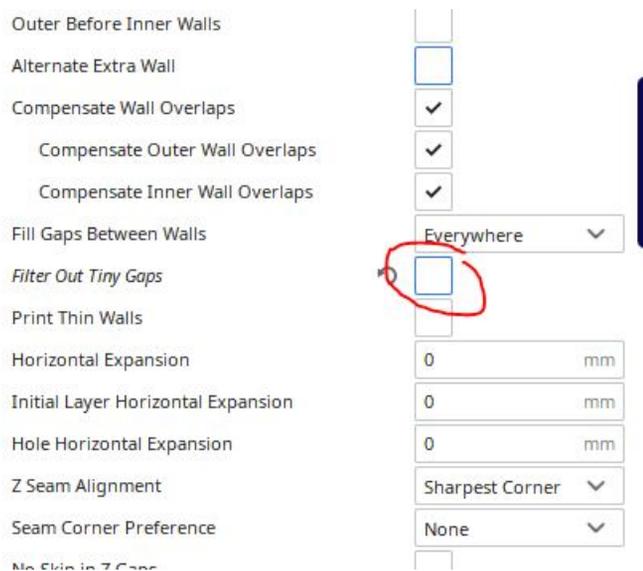
Depending on your model you may still have a lot of small rapid movements. Changing slicing settings can help prevent these movements and improve surface quality.

Set your exterior fill pattern to concentric. This can be done in most slicing software:



#### *Concentric Infill in Simplify3D*

In Cura, turn off "Filter Out Tiny Gaps" to prevent small rapid movements. This can be found under the "Shell" dropdown.



#### *Cura 4.8 Filter Out Tiny Gaps*

### Heavy Object

If you are printing a heavy object, it is possible that the weight of the print is causing the motors to overwork, causing your motors to overheat. One possible way to solve this issue is to lower the speed of your print or adjust the jerk and acceleration settings as described below.

### Print Curling

If your print has a lot of overhangs you may need to turn on "Support" material not to support the model but rather hold it down from curling up. Prints curl when the plastic cools especially on steep overhangs.

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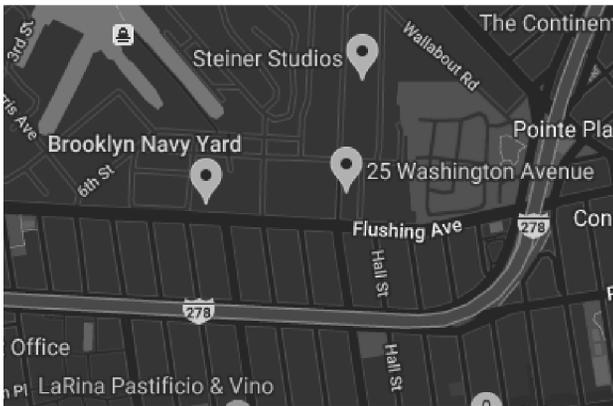
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