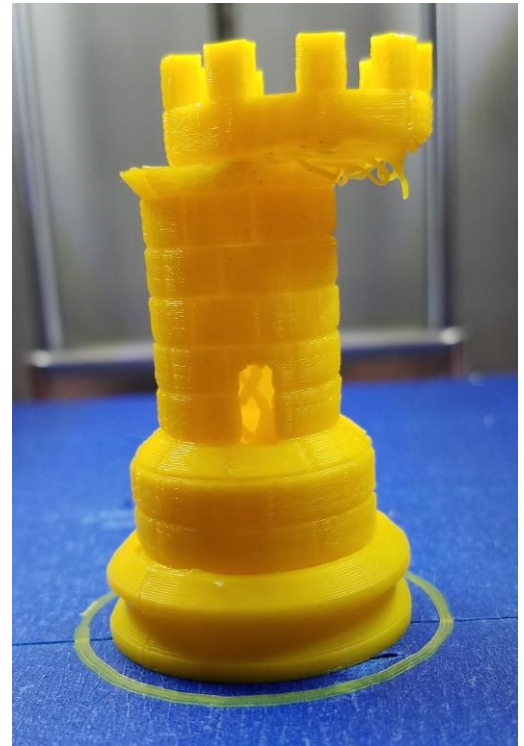


## PRINT SHIFTING

### Description of Issue

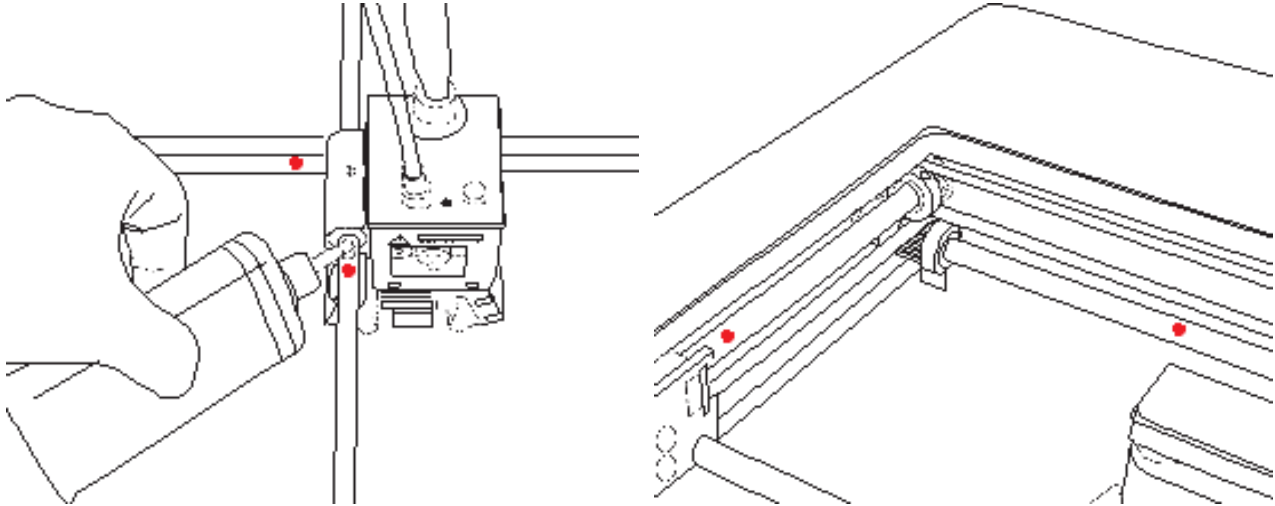
Lower and top layers' shift during printing causing a stepping effect. Mechanical parts are preventing smooth motion and the added friction is causing the driver, or motor to work overtime and shift during printing. This could be caused by dirt and oil that have accumulated over time and the debris causes the bushing to seize along the rod.



### Resolution

Inspect the X+Y axis smooth rods and linear bearings. NOTE: Grease based lubricant can seize and damage linear bearings. We don't recommend re-oiling the rods or bearings as most lubricants dry, and gunk up even faster.

1. Clean with a bit of degreaser (WD-40) by spraying a small amount onto a towel and wiping along the rod (move the extruder around by hand to rotate the rod and move the sliders).
2. Also, apply degreaser between the bushing and rod to remove any grime between the moving components.



3. Check to see if anything is obstructing the carriage (or sliders) from moving.
4. When printer is not in operation, move the carriage on both X+Y axis and observe for any inconsistency or obstruction on the gantry.
5. Check for over extrusion. Over extrusion is caused by a large deviance in filament diameter calibration. If filament is set to 1.75 mm in diameter and is set to 1.70 mm within the slicing software, the extruder is overcompensating for the extrusion amount and will over extrude plastic on each layer. This may cause excess filament to obstruct the nozzle pathing when cooling.



Zero out your caliper in its closed position. Take caliper to a section of filament and lightly pinch filament and take a reading. In this case, filament diameter is 1.73 mm.



Move down on filament and take another reading. Here we have 1.74 mm.



Move to a new section of filament and take a third reading. Here we have 1.72 mm.

With the three readings, find the average by adding them together and dividing by three.

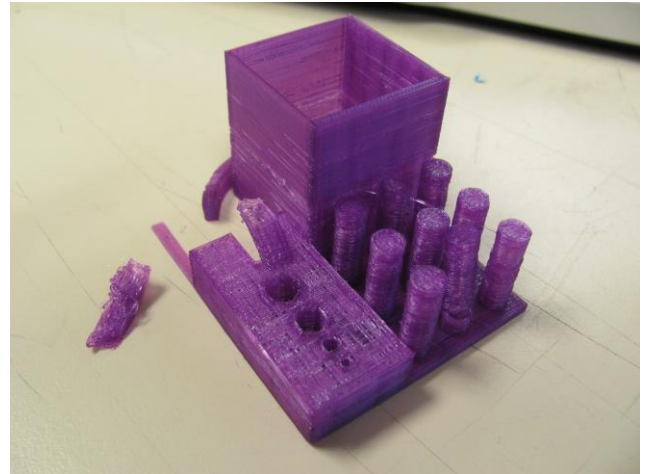
$$(1.73 + 1.74 + 1.72) / 3 = 1.73 \text{ mm}$$

This is the number to set in the Trifecta software.

## PRINT SKIPPING

### Description of Issue

There are gaps in the printed object because some layers have been skipped (in part or completely). This could be due to several things such as software extrusion temperature lower than normal, print speed on the Trifecta software exceeds the rate in which the filament can be melted, using a non-VariQuest filament, filament on the spool is in a tangle, or the hotend is clogged.



### Resolution

1. Check to see if the software extrusion temperature is above 215 degree Celsius, if not adjust extrusion temperature. Lower than normal extrusion will cause additional back pressure to the hotend, leaving the print surface with gaps.
2. Check to make sure printing speed is not between 100-120 mm/s as this is considered too high and may affect the quality of large surface prints.
3. Make sure you are using VariQuest filament only. We are not sure what other manufacturers include in their filament formula, and the unknown substances inside the filament could cause the hotend to clog.
4. Check the spool of filament to make sure there are no tangles in it. If need be, remove the spool of filament, undo the tangle and inspect the drive gear for any residue stuck. Note: Make sure to properly store filament when not in use by retracting the filament and coiling back onto the spool. Thread the loose end through one of the holes to prevent filament tangling.



5. Check to see if the hotend is clogged. It could be clogged from dust and other small particles that may have been exposed to the filament when left in the open-air space.
  - a. Please see the Trifecta™ 800 [User's Guide](#) (Page 36) located on the VariQuest Resource Center for additional details.

## SD CARD NOT READING

### Description of Issue

There are many reasons a SD card may not be readable. The most common are corrupted file, damaged card, or damaged card reader.

### Resolution

1. Corrupted File – file is corrupted during the read / write process.
  - a. Check the file on the computer to make sure it's present. Then load the file into the Trifecta software to check for file integrity.
2. Damaged SD card
  - a. SD card may have external / internal damage, test with another SD card, or check SD card functionality on computer.
3. Damaged card reader on the computer is preventing the read / write of information onto the SD card.
  - a. Check the card and files on a different reader if available.