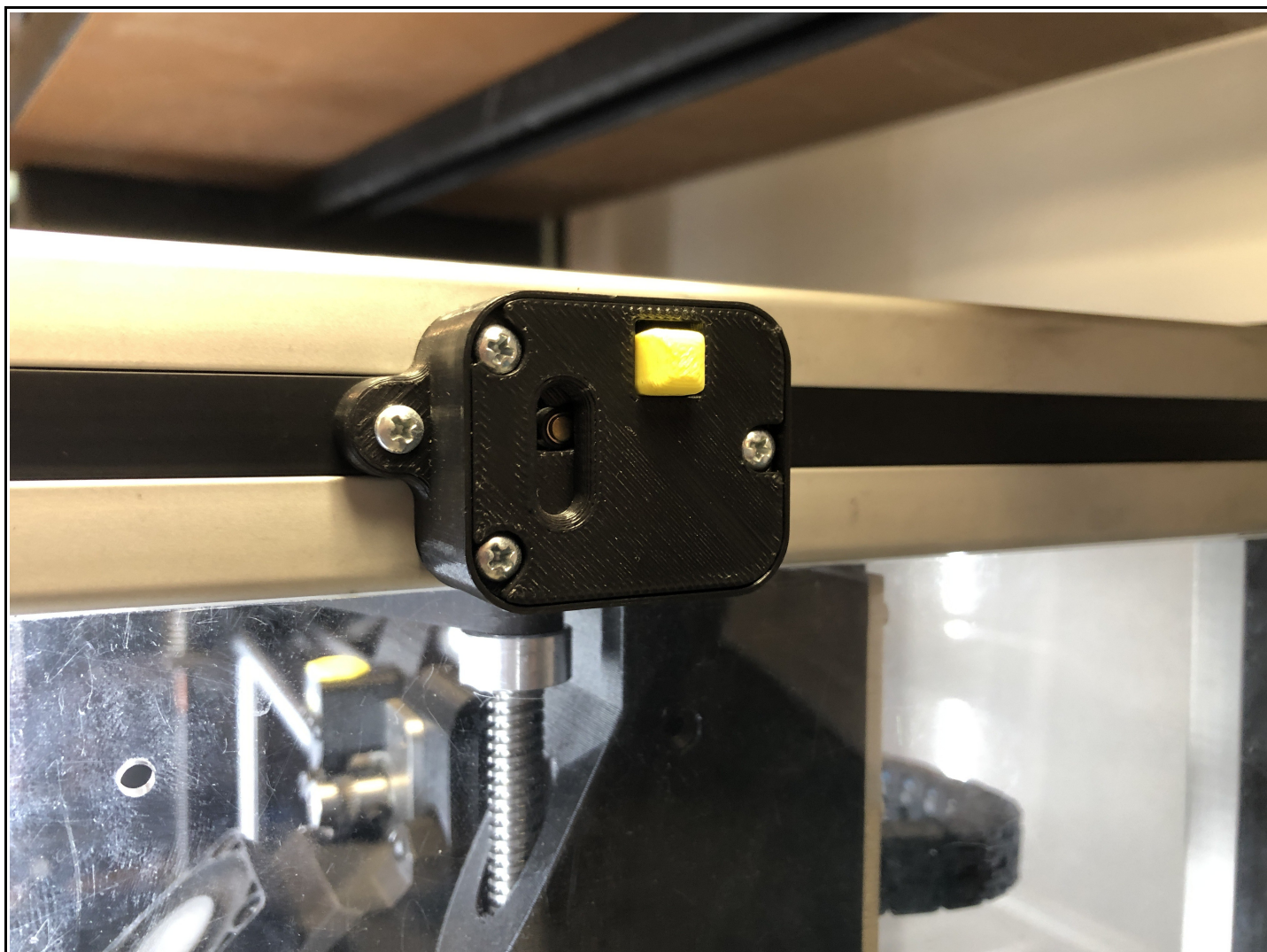


FABLICATOR

Filament Out Sensor Operation



The filament out sensor can be used in two ways:

- To perform a quick change of filament during a print
 - To continue a print that ran out of filament when you were not present
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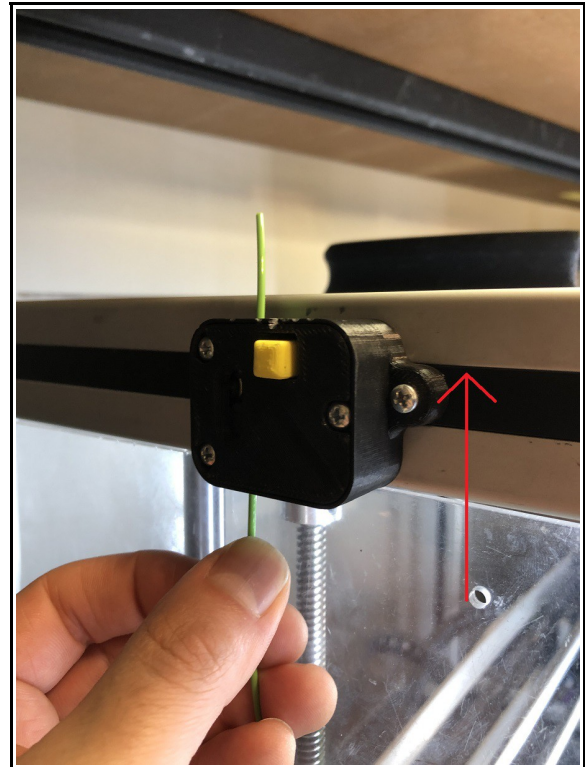
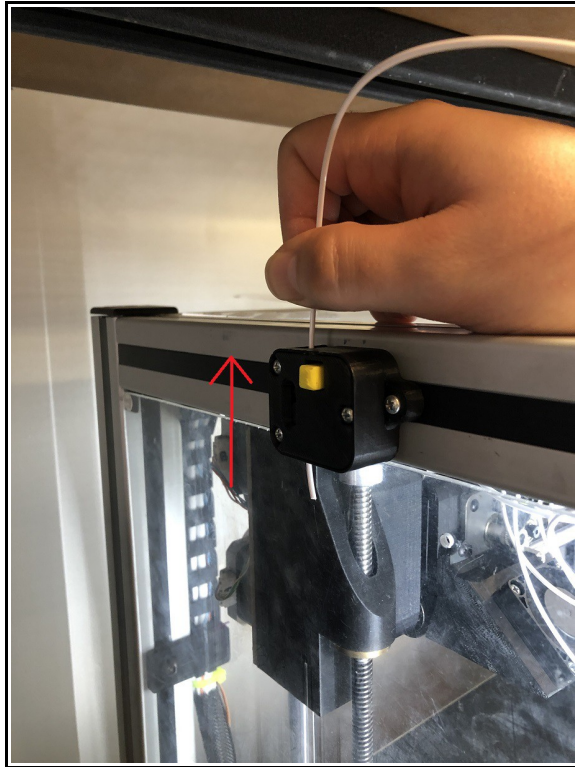
SECTION I

Performing a Quick Filament Change During a Print

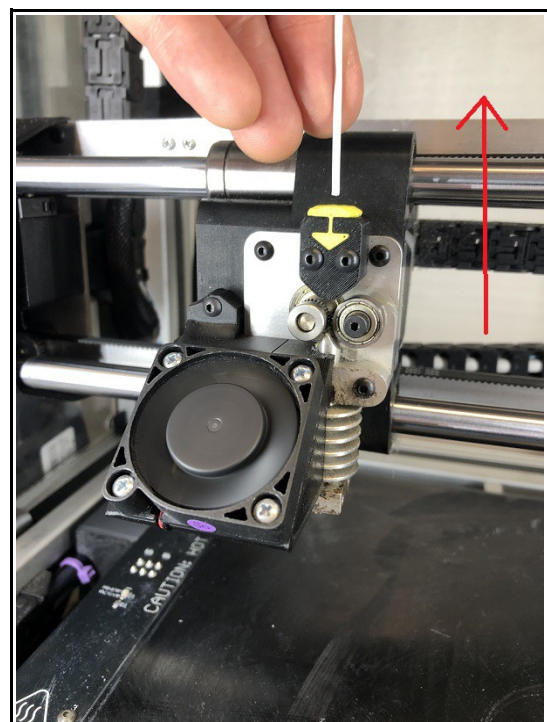
- *If you are performing a filament change during a print sliced in Dual Material Mode on the MX model, the extruder that on which you wish to change the material must be the active extruder, meaning that it should be the nozzle that is currently printing.*
1. Without pausing the print, cut filament currently on printer below the filament out sensor. Then remove the spool and add the new filament spool that you intend to continue the print with.



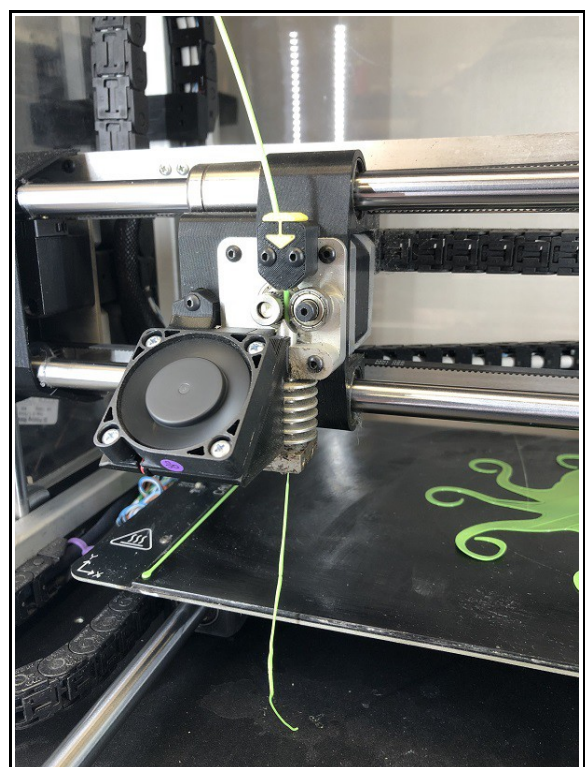
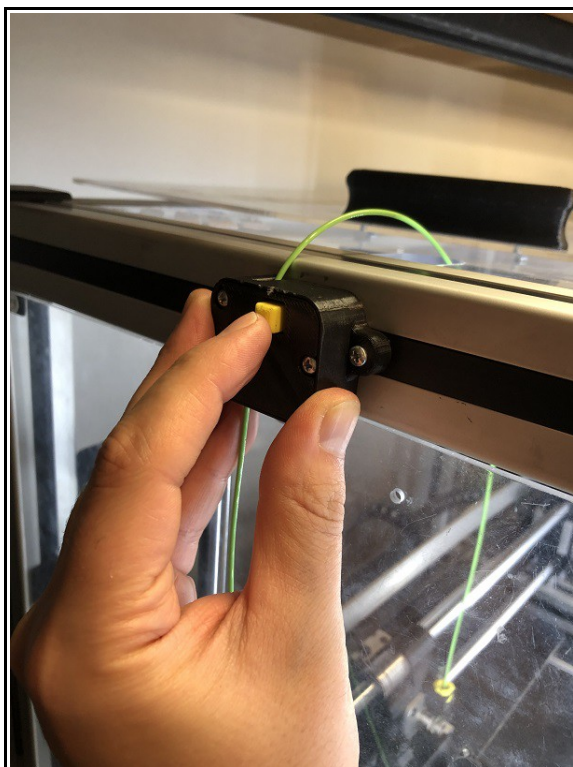
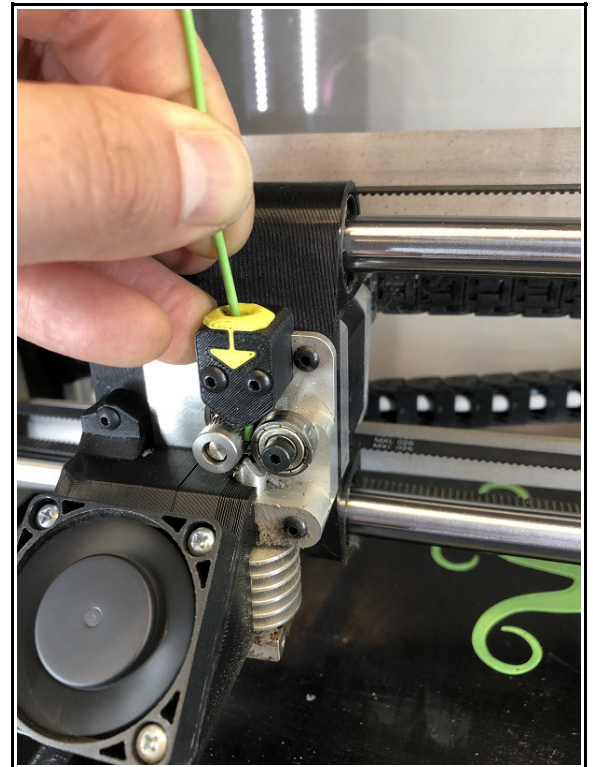
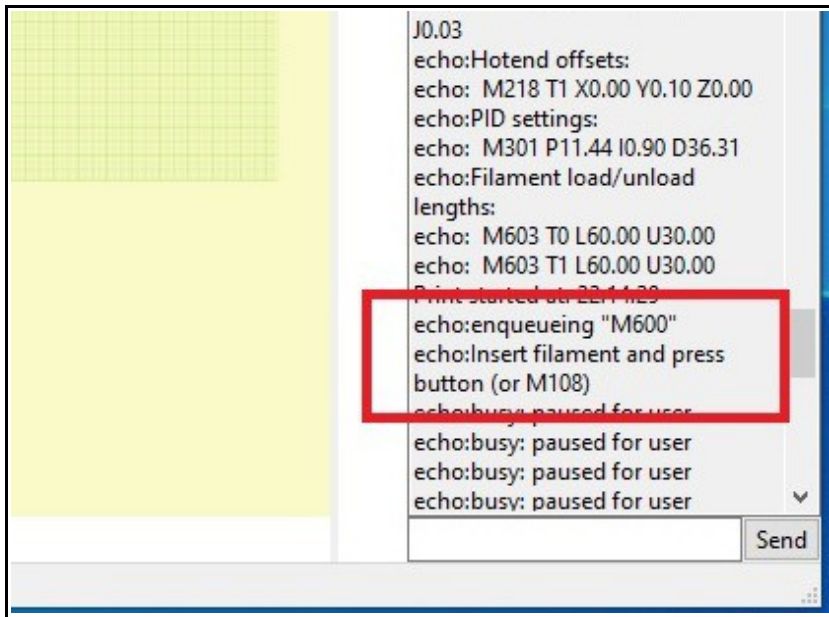
2. Pull the loose filament through the top of the filament out sensor. Push the new filament up through the bottom of the filament out sensor and leave it hanging in the air for now.



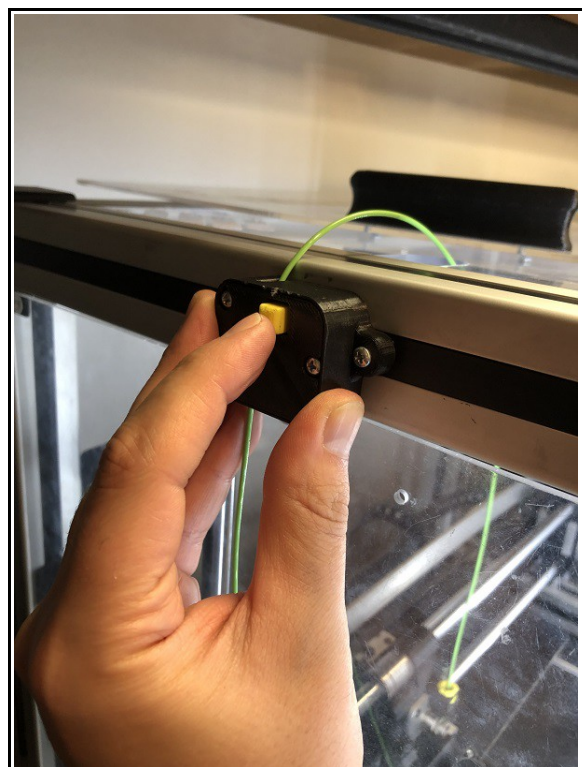
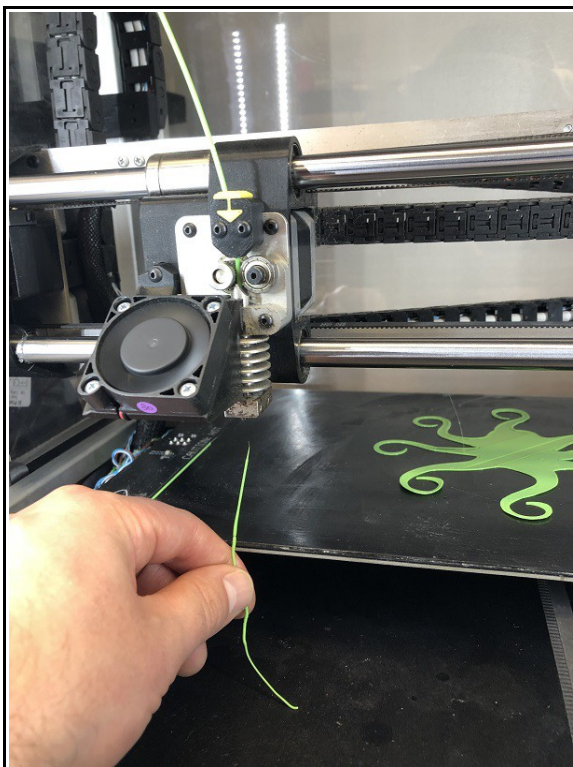
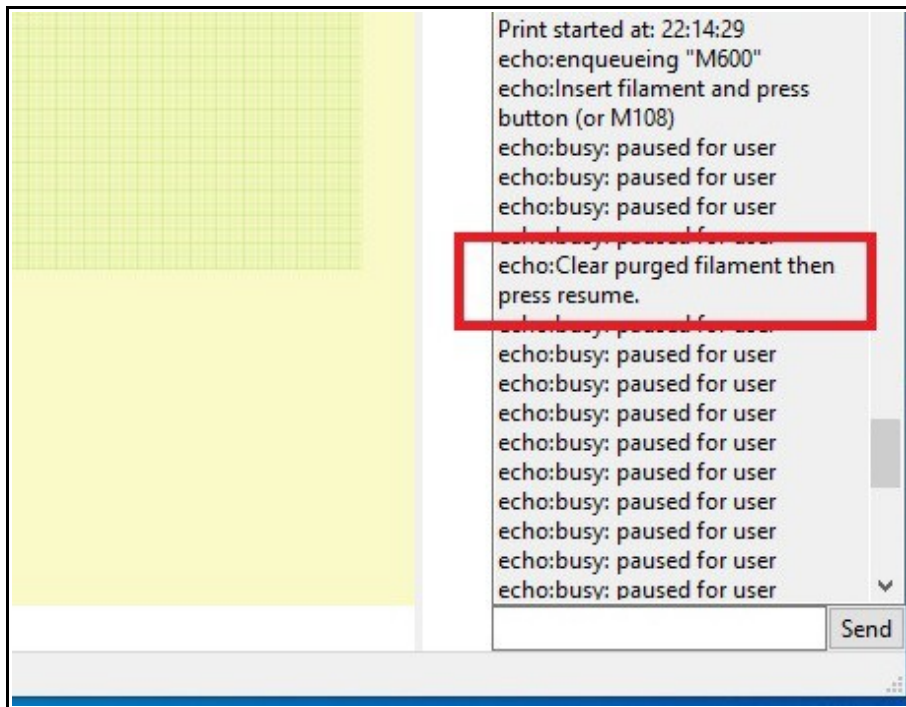
3. The print will pause upon pulling the original filament out of the top of the sensor. The nozzle will lift and move to the side, and the extruder will back the filament out of the top of the nozzle. At this point you may remove the filament. It may be necessary to engage the E disable switch briefly to pull the filament free from the nozzle.



- Referring to the Fablicator program, a message will appear after pulling the original filament from the top of the sensor stating *"M600" Insert filament and press button*. This is indicating that you may hold the new filament to the extruder driver and press the yellow button on the filament out sensor. The new filament will then be driven down into the nozzle and a short amount will extrude through the nozzle.



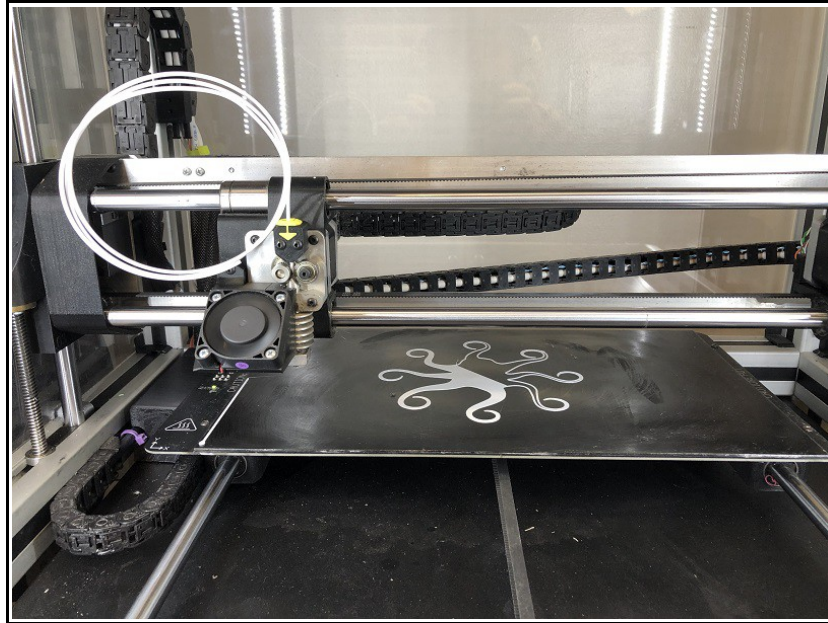
- When the filament finishes extruding, a new message will appear, stating to *Clear purged filament then press resume*. At this point, remove the purged filament then press the yellow button on the sensor. The print will then resume from where it left off.



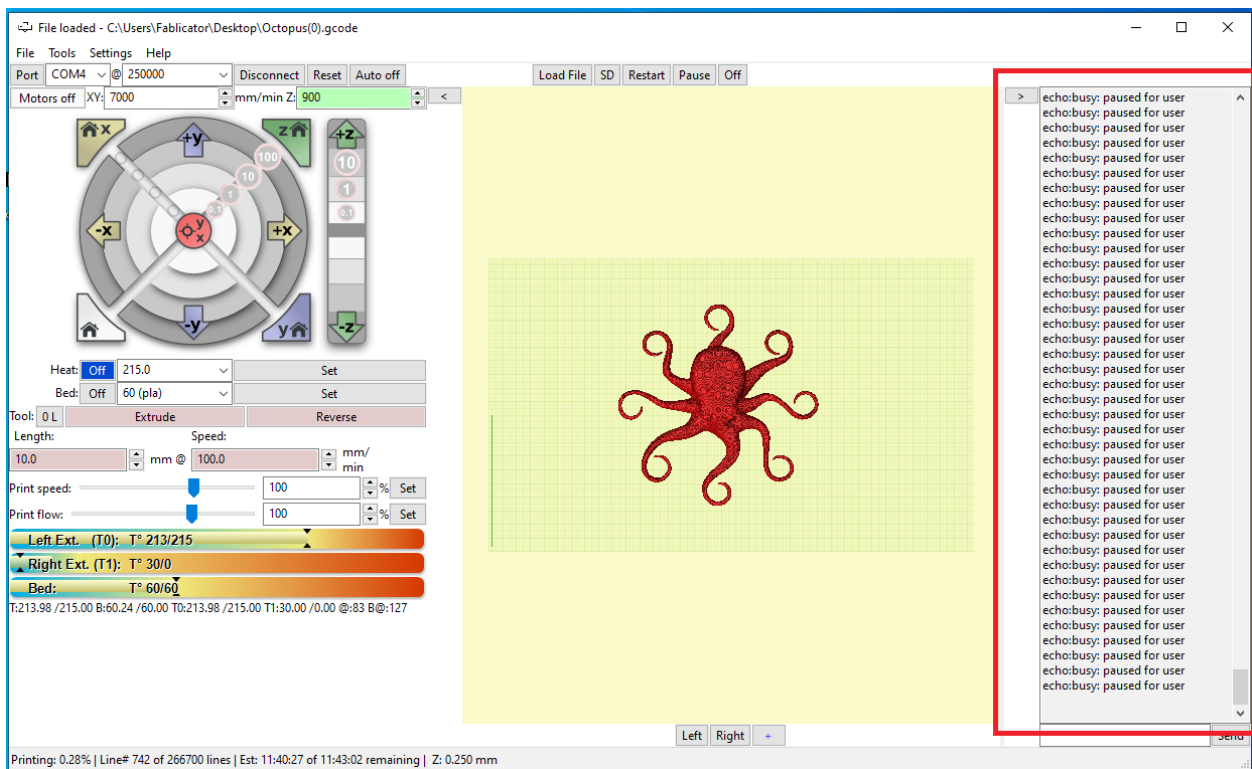
SECTION II

Continuing a Print that Ran Out of Filament

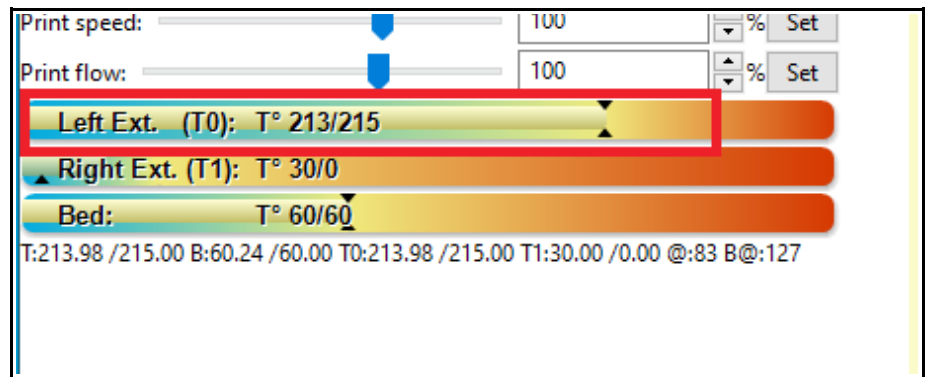
1. Upon returning to a printer which ran out of filament, you will find that the filament has pulled through the sensor, the nozzle has parked above the bed and to the side, and the filament has backed out of the nozzle. The remaining filament may be hanging above the extruder.



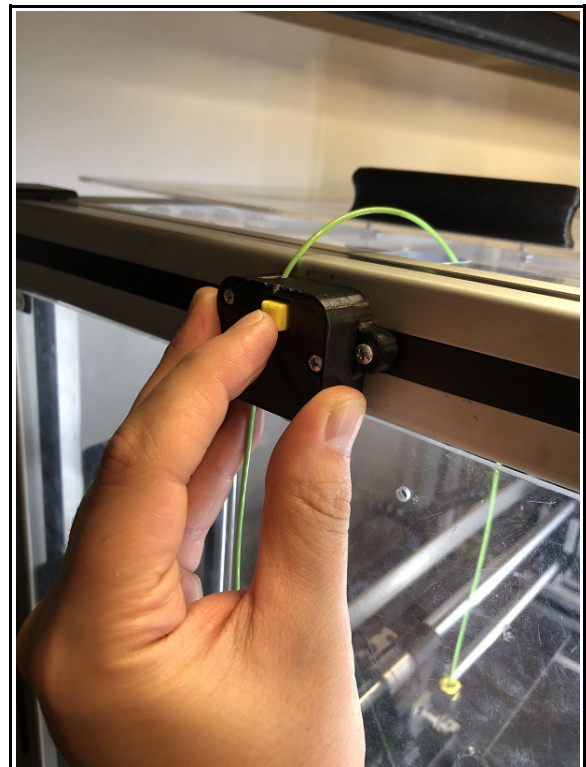
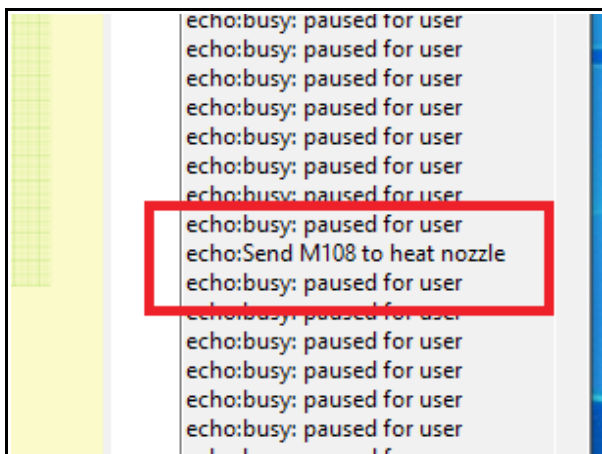
2. Referring to the Fablicator program, the script window to the right side will be filled with the message *echo:busy: paused for user*.



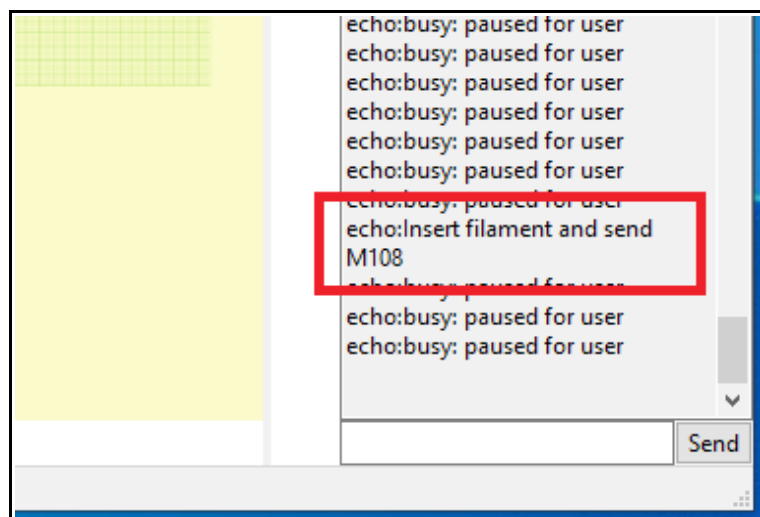
- Although the Fablicator program will still display that the nozzle temperature is at its set point, the nozzle will have cooled. This is because the filament-out sensor interrupts communication between the printer and the computer when the filament first pulls out of the sensor.



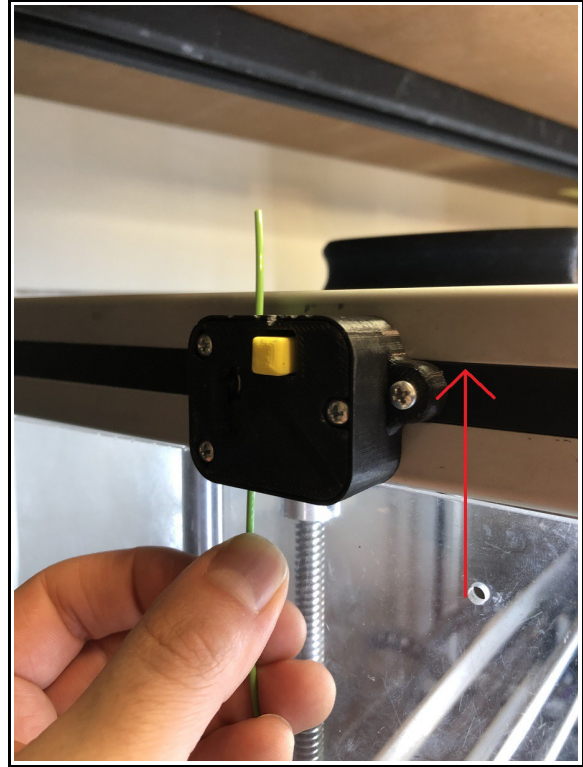
- Scrolling up further in the script window, you may also find a line which states *Send M108 to heat nozzle*. At this point, press the yellow button on the filament-out sensor to heat the nozzle back to temperature.



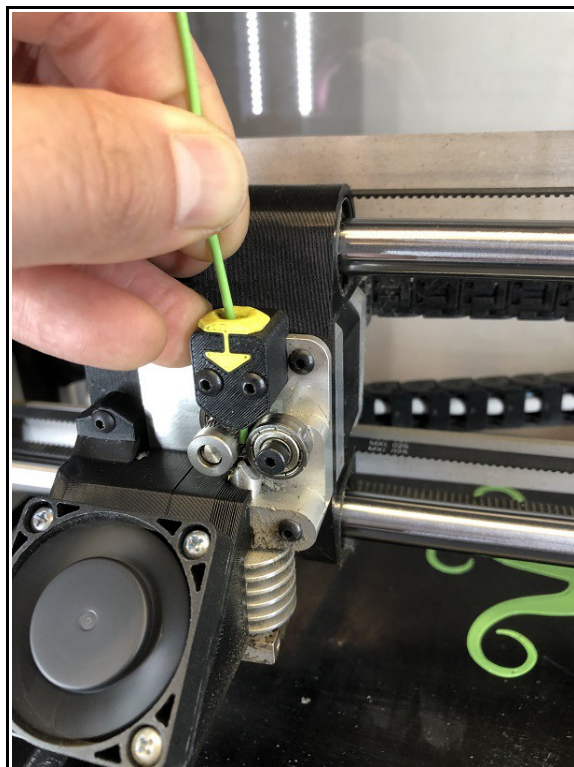
- Since the temperature is not displayed in the Fablicator program, watch the script window for the command *Insert filament and send M108* to appear. This indicates that the nozzle has come back up to temperature. This should only take a minute or two.



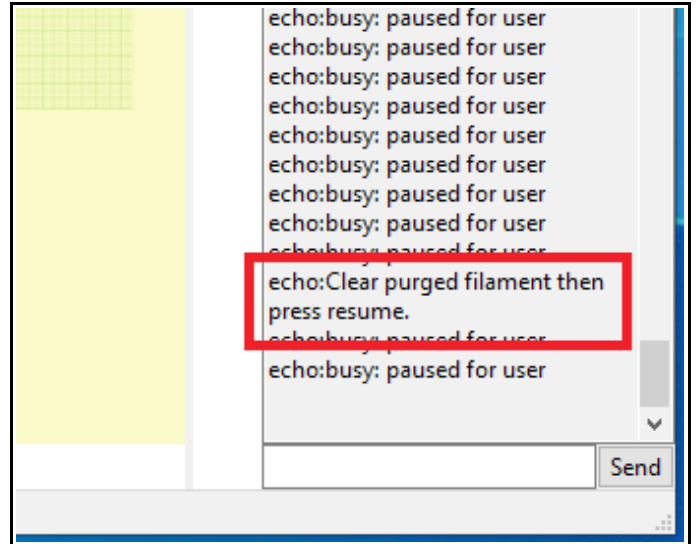
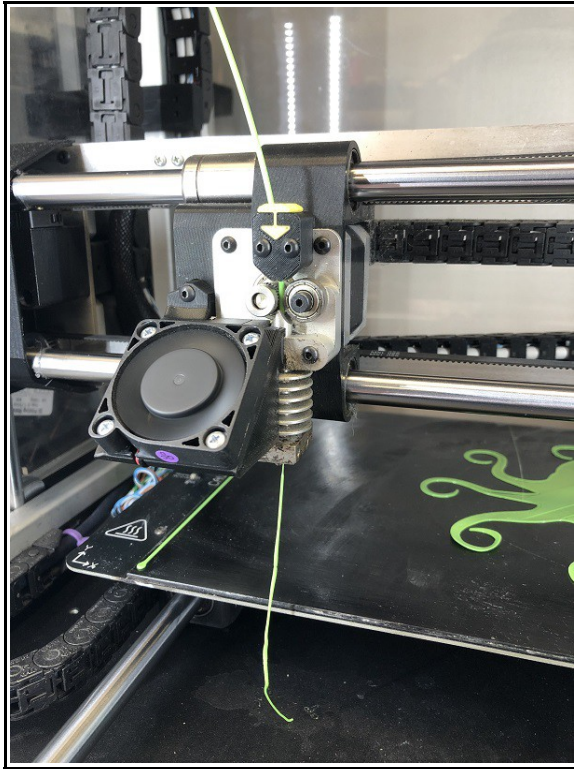
6. While waiting for the nozzle to come back up to temperature, remove the old filament spool and add the new spool of filament which you intend to continue the print with. Route the new filament through the filament-out sensor on its way to the extruder.



7. Once the *Insert filament and send M108* command from step 5 appears, hold the filament to the extruder driver and press the yellow button on the filament-out sensor.



- The filament will be driven down into the nozzle and a small amount will be extruded. The message *Clear purged filament and then press resume* will then appear in the script window of the Fablicator program.



- Clear the purged filament and then press the yellow button on the filament-out sensor. Your print will then resume.

