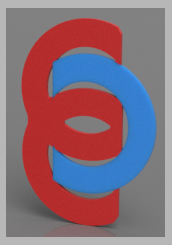
BTC Klipper Guide
Toolchange Sequence and Positioning



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With Contribution from :
Armon | LNX.3

https://discord.gg/Xwqbjj4VjH

https://github.com/Bikin-Creative/Lineux-Toolchanger

A big thank you to everyone who made this project possible.

Macros inspired by Axial Flux / Klicky Probe

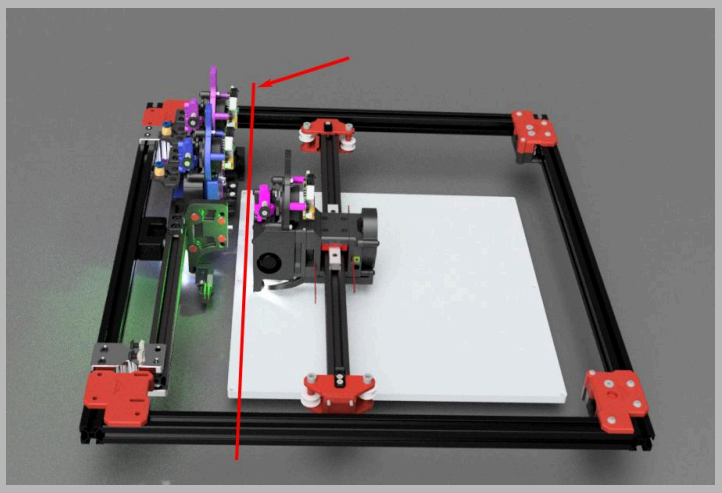
Important

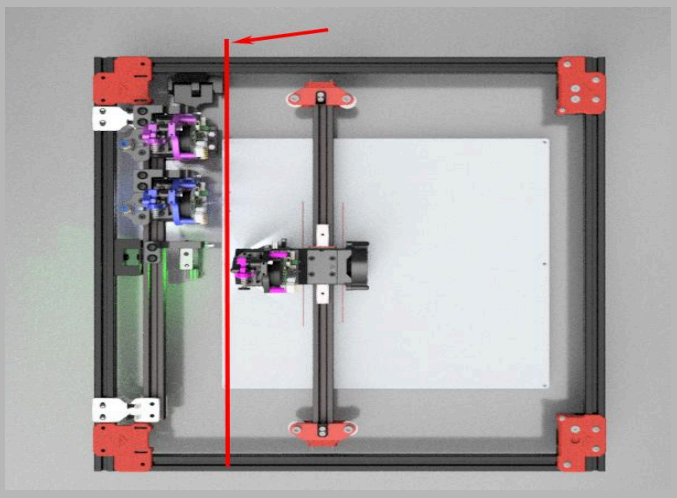
- All figures in this guide are examples. Please use your own coordinate when applying on your printer.
- Proceed with a very slow speed if you are running it for the first time to prevent any damage.
- X and Y must be homed to get the correct coordinates.
- We are humans and are prone to mistakes. If you encounter any issues/faults with the guide, please raise them on our Discord.

Ready? Let's go….

Step 1

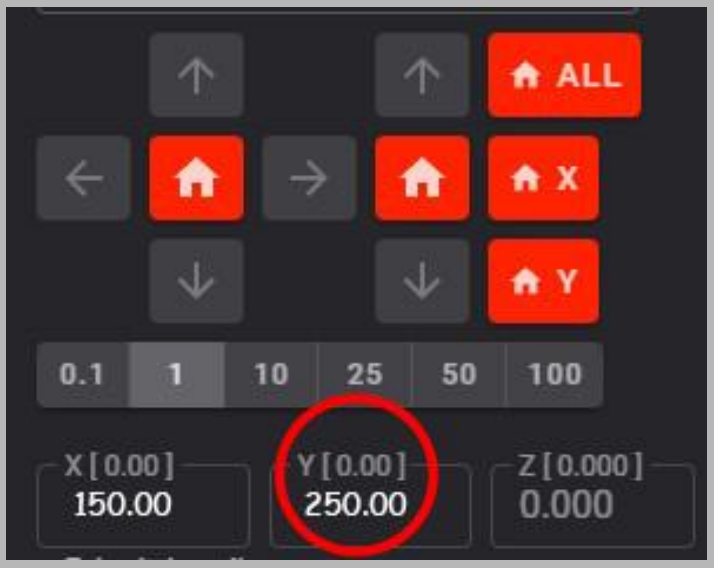
After homing Y and X (Z homing is not required), cycle your carriage manually in Y axis using the jog dial buttons so that the tool on the carriage is cleared about 5mm from the tools on the docks.

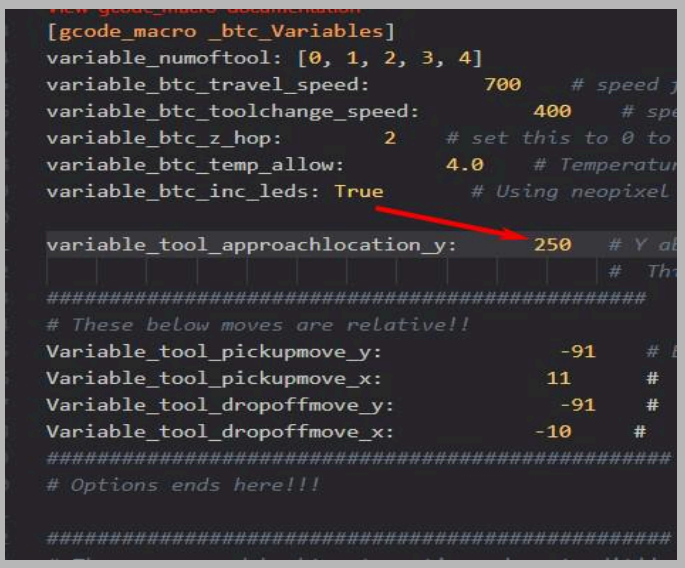




Check the console for the coordinate of Y and enter that into "`variable_tool_approachlocation_y`" in btc_variables.cfg. In this example, u will enter 250 as your approach location Y ,save and close the file.

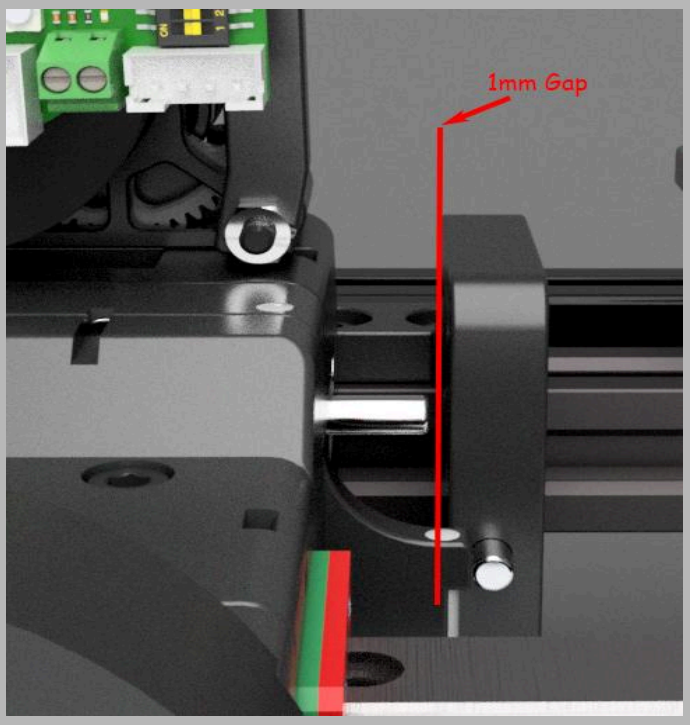
"Do not save and restart yet"

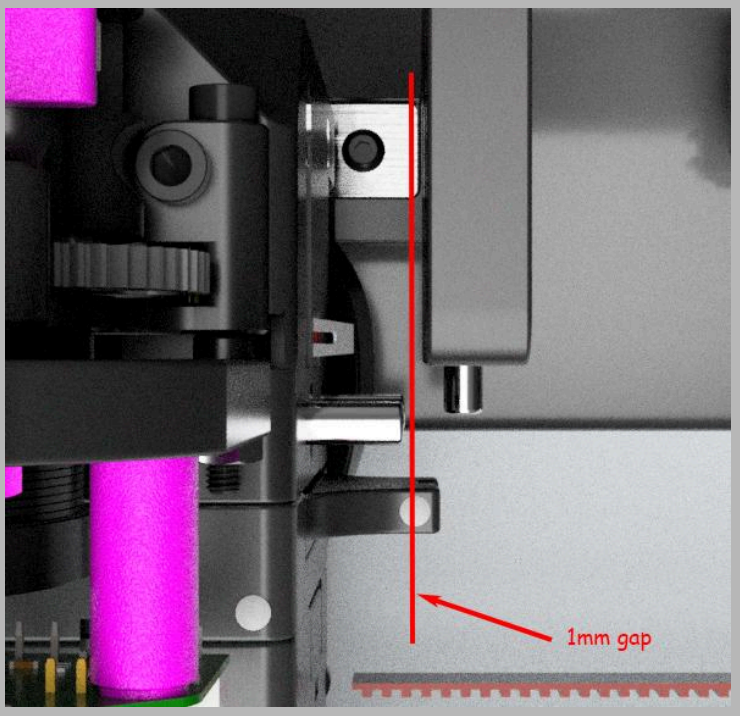




Step 2

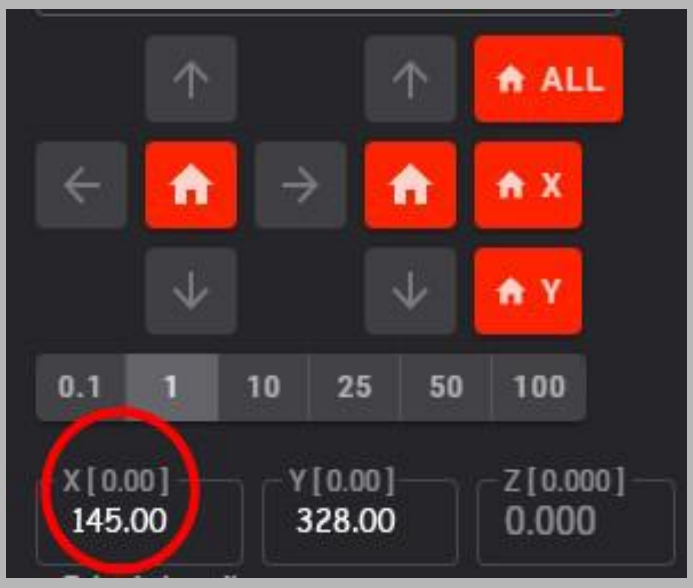
Next, cycle the carriage manually in X axis using the jog dial buttons to the respective dock for the tool which is on the carriage. Eyeball the dowel so that it clears about 1mm from the dock. If necessary, cycle the carriage manually in Y axis as well so that the dowel is closer to the dock and makes it clearer.

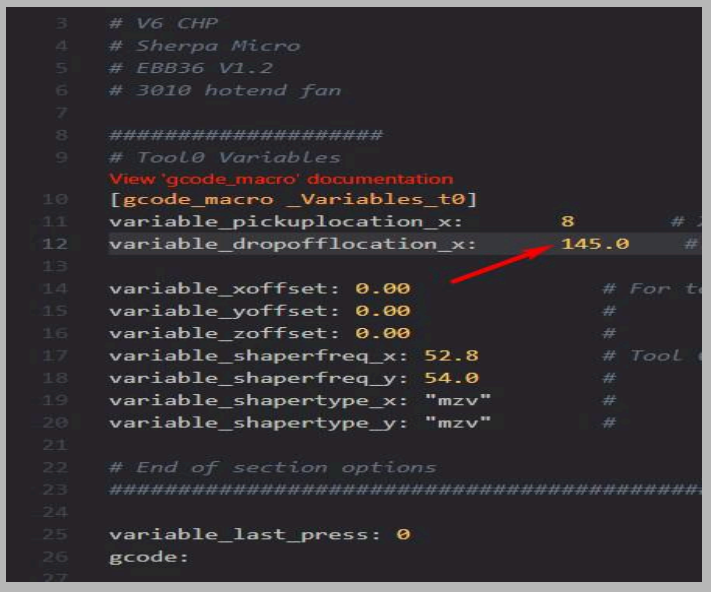




Check the console for the coordinate of X and enter that into "`variable_dropofflocation_x`" in tool_0.cfg. In this example, u will enter 145.0 as your dropoff location X, save and close the file.

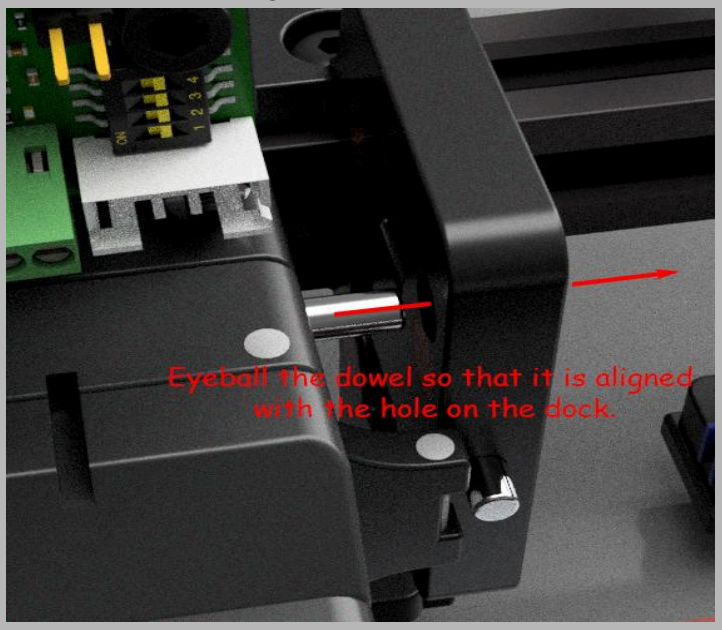
"Do not save and restart yet"

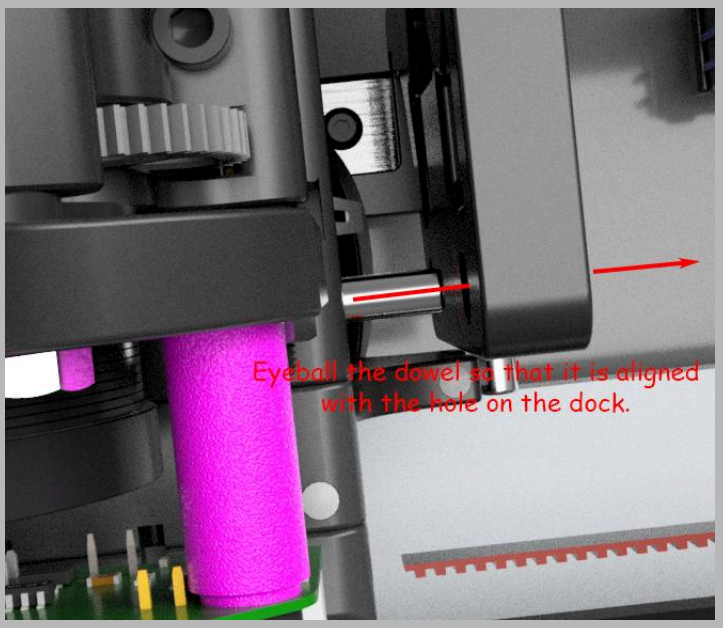




Step 3

Next, cycle the carriage manually in the Y axis to move the tool to the dock location. Eyeball the toolhead dowel so that it is aligned with the holes on the dock.

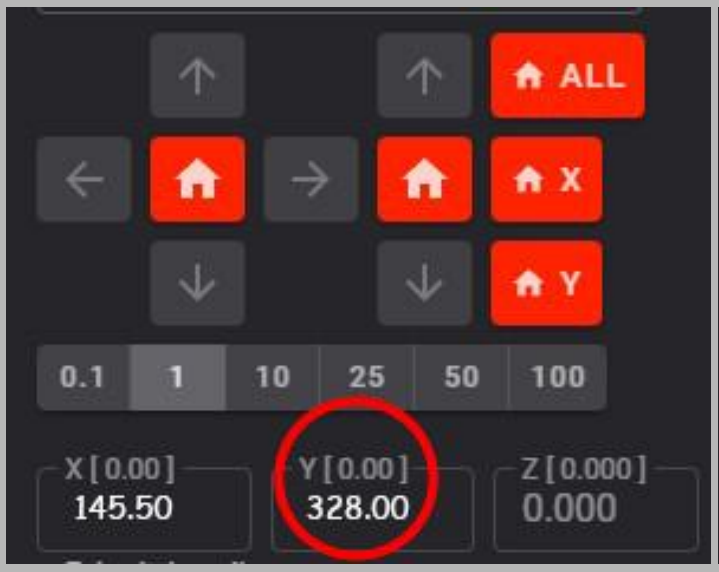


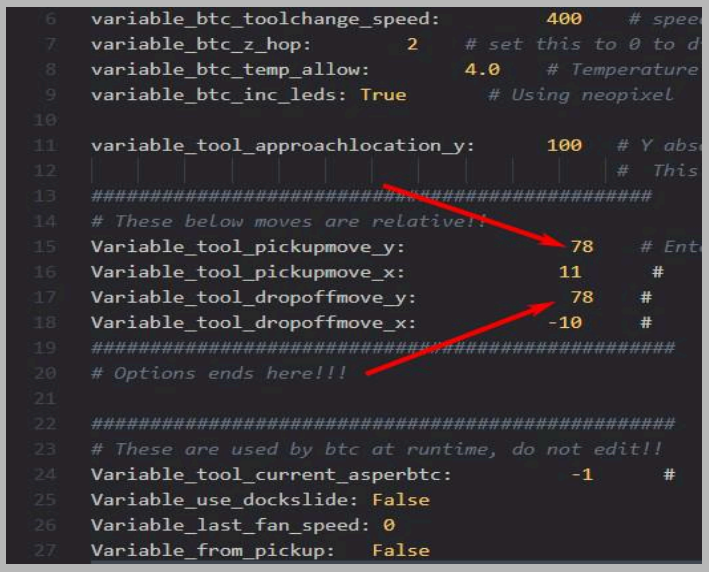


Check the console for the coordinate of Y. In this example, the value is 328.0. Now you will need to subtract "`variable_tool_approachlocation_y`" from this value. **The equation will be : 328.0 - 250.0(tool_approachlocation_y) = 78.0**

Enter the value, in this example its 78.0 into "`Variable_tool_pickupmove_y`" and "`Variable_tool_dropoffmove_y`" in btc_variables.cfg, save and close the file.

"Do not save and restart yet"





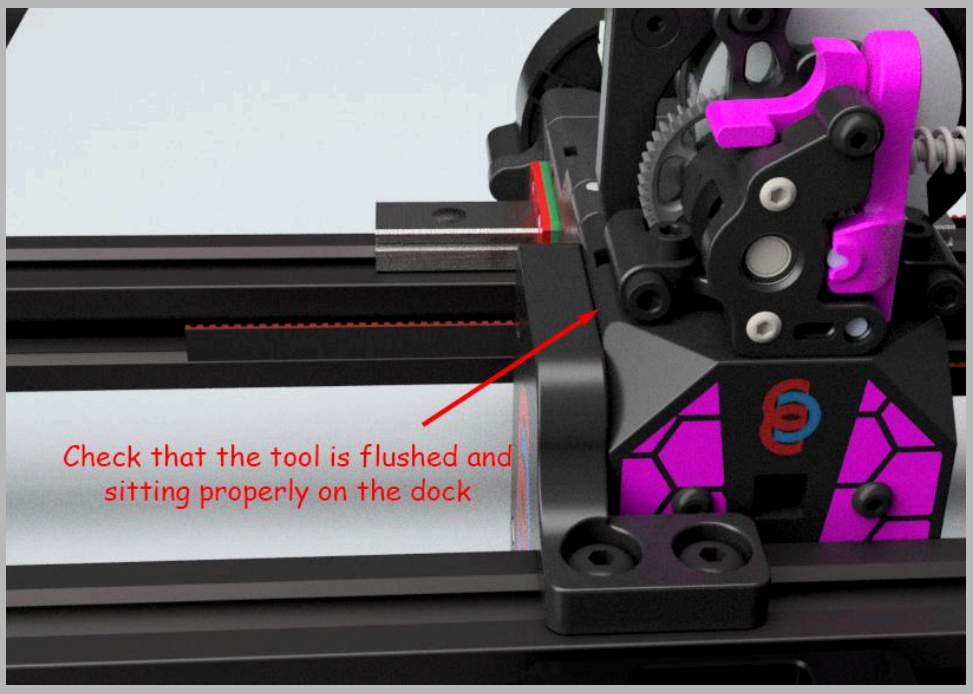
```
variable_btc_toolchange_speed:          400     # spee
variable_btc_z_hop:         2     # set this to 0 to d
variable_btc_temp_allow:          4.0     # Temperature
variable_btc_inc_leds: True         # Using neopixel

variable_tool_approachlocation_y:       100     # Y abs
                                                #  This
#####################################################
# These below moves are relative!!
Variable_tool_pickupmove_y:                78     # Ent
Variable_tool_pickupmove_x:               11      #
Variable_tool_dropoffmove_y:               78     #
Variable_tool_dropoffmove_x:              -10     #
#####################################################
# Options ends here!!!

#####################################################
# These are used by btc at runtime, do not edit!!
Variable_tool_current_asperbtc:           -1      #
Variable_use_dockslide: False
Variable_last_fan_speed: 0
Variable_from_pickup:    False
```

Step 4

Next, cycle the carriage manually in the X axis to move the tool towards the dock until the tool is flushed and sitting perfectly on the dock. It should roughly be 10mm in movement for that sequence but you may adjust accordingly to get it perfectly lined up with the dock.

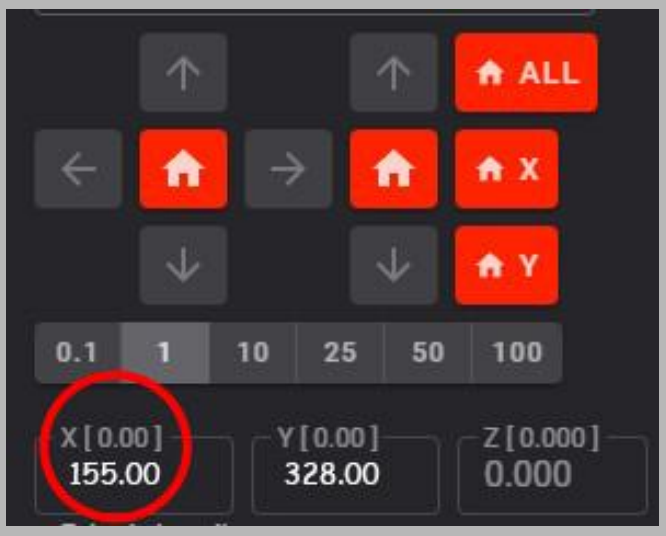


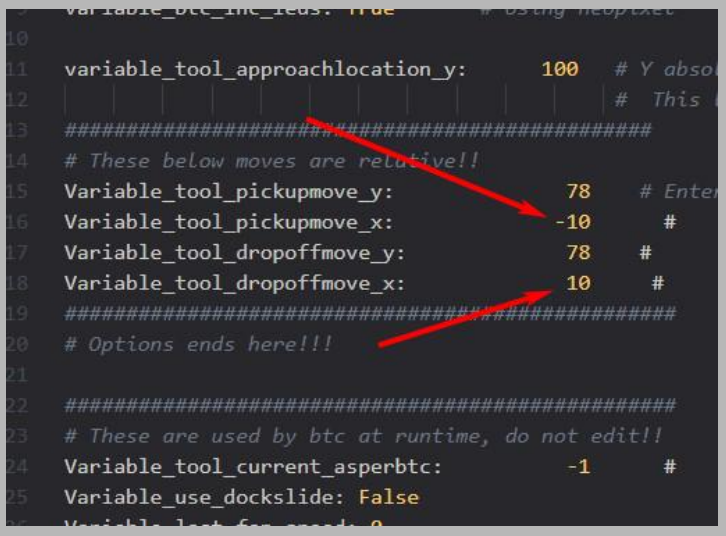
Check the console for the coordinate of X. In this example, the value is 155.0. Now you will need to subtract "`variable_dropofflocation_x`" from this value.

The equation will be : 155.0 - 145.0(variable_dropofflocation_x) = 10.0

Enter the value, in this example its 10.0 into "`Variable_tool_dropoffmove_x`" in btc_variables.cfg
Invert the value, in this example it will be -10.0 and enter it into "`Variable_tool_pickupmove_x`" in btc_variables.cfg, save and close the file.

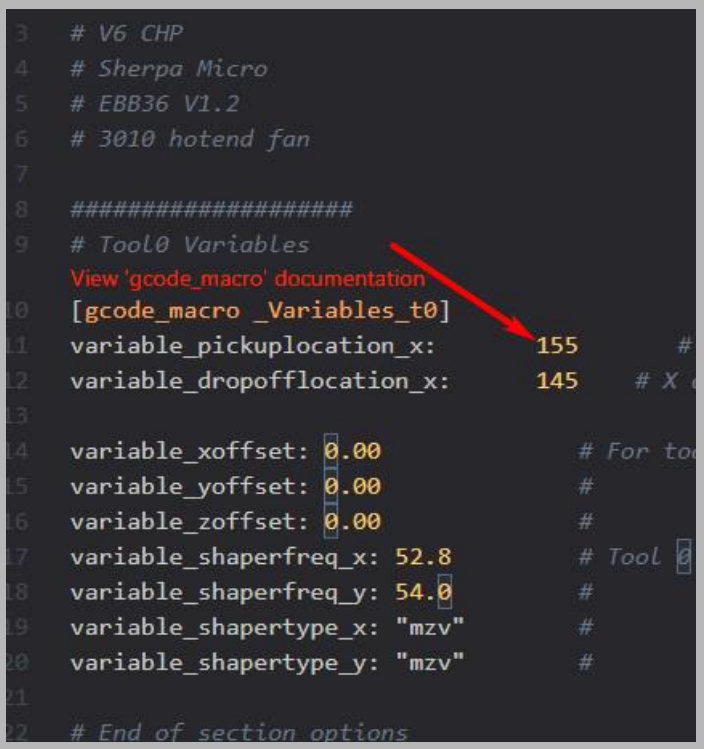
"Do not save and restart yet"





Step 5

Next, enter the value of X coordinate 155.0 into "`variable_pickuplocation_x`" in tool_0.cfg



If you have more than 1 tool, you can repeat step 2, 4 and 5 for the other tools. You will only need to find out the "`variable_dropofflocation_x`" and "`variable_pickuplocation_x`" for the other individual tools.

Once everything is complete, ***you may save and restart*** your klipper now. The tool position setup is completed.

Checked and Verified 18/03/2024