




Slicing multi-color for M3 hotend

Video Tutorial



Step 1: choose printer presets "Z8 + M3 hotend"


Print settings:



  0.4mm nozzle multi color






Filament:


  Generic PLA





  Generic PLA




  Generic PLA



Printer:

  Z8 + M3 Hotend




Supports:

None

Infill:

20%


Brim: 

Purging volumes...

Step 2: load 3d model files (stl/obj/AMF file etc.)

<input type="checkbox"/> 名称	修改日期	类型	大小
<input checked="" type="checkbox"/> 4C_Niko_Dog_1.stl	2018/7/28 12:23	STL 文件	6,056 KB
<input checked="" type="checkbox"/> 4C_Niko_Dog_2.stl	2018/7/28 12:23	STL 文件	2,494 KB
<input checked="" type="checkbox"/> 4C_Niko_Dog_3.stl	2018/7/28 12:23	STL 文件	607 KB
<input checked="" type="checkbox"/> 4C_Niko_Dog_4.stl	2018/7/28 12:23	STL 文件	571 KB


Multi-part object detected



Multiple objects were loaded for a multi-material printer.
Instead of considering them as multiple objects, should I
consider
these files to represent a single object having multiple parts?

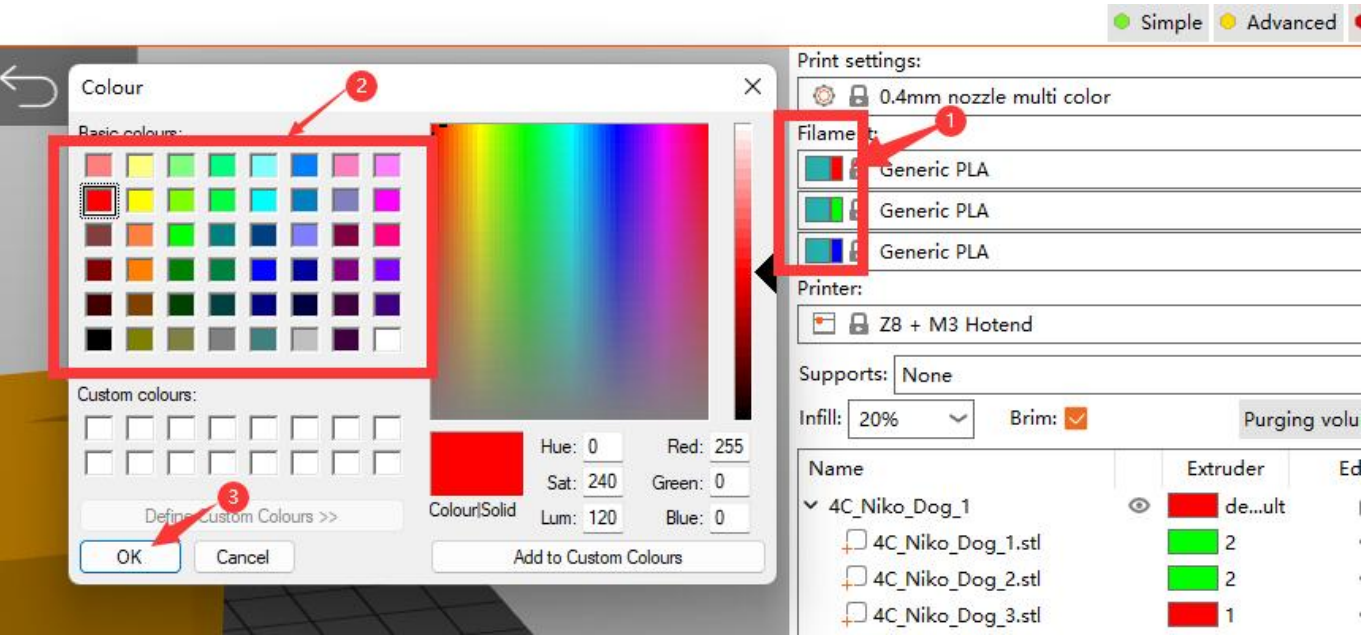
Yes

No

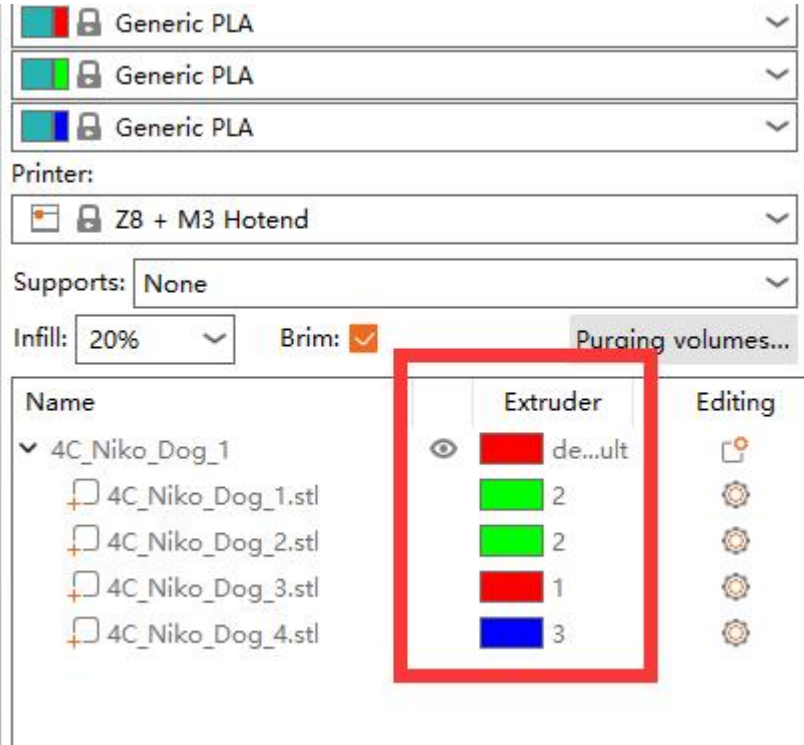
-  Usually, "split model" is innneed to print multi colors 3d model files, that is, a 3d model has been split into multiple STL files according to colors, and these files use the same origin coordinate position so that they can be merged correctly.

- ✨ PrusaSlicer has a powerful new feature, it can paint a 3d model file into multi colors, for details, please refer to 🎬 [Slicing guide - Convert one color 3d file to multi colors](#).

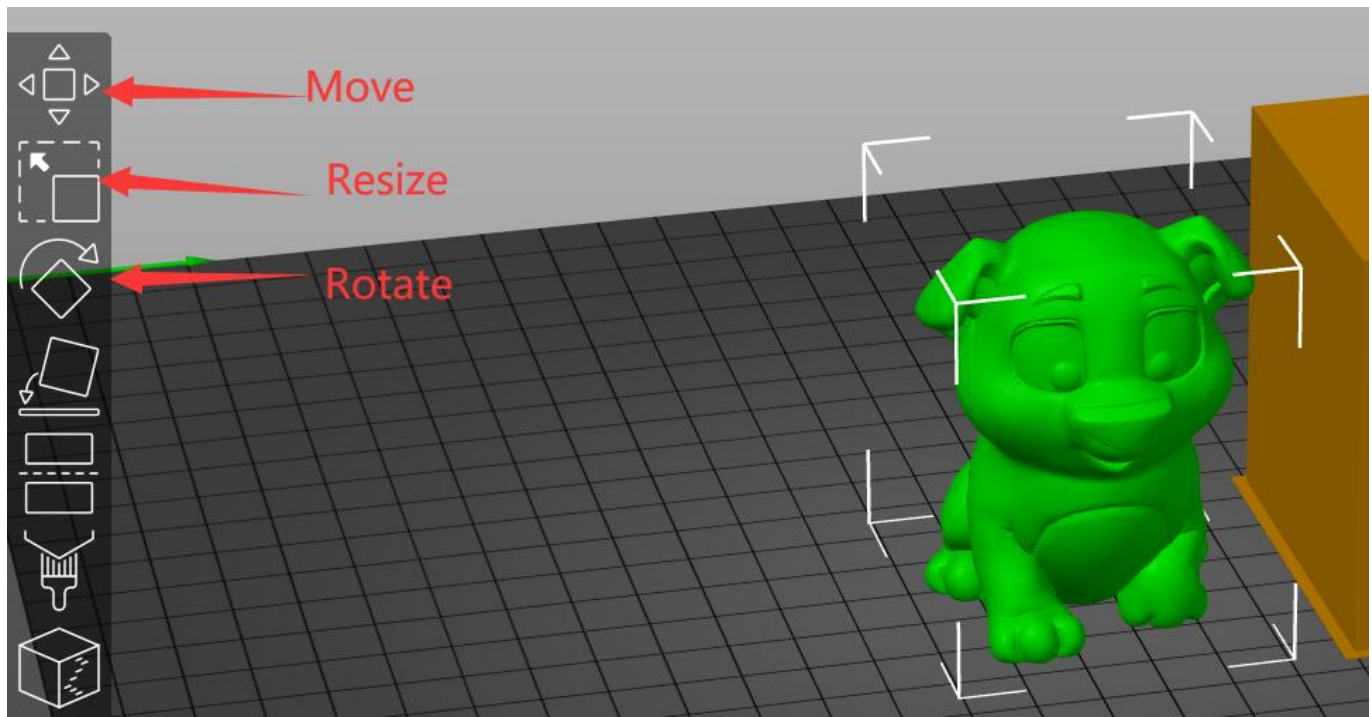
Step 3: Choose filament type and set filament color



Step 4: Assign extruders to different parts



Step 5: Resize, cut, rotate, move the 3d model if need



Step 6: Set the print settings

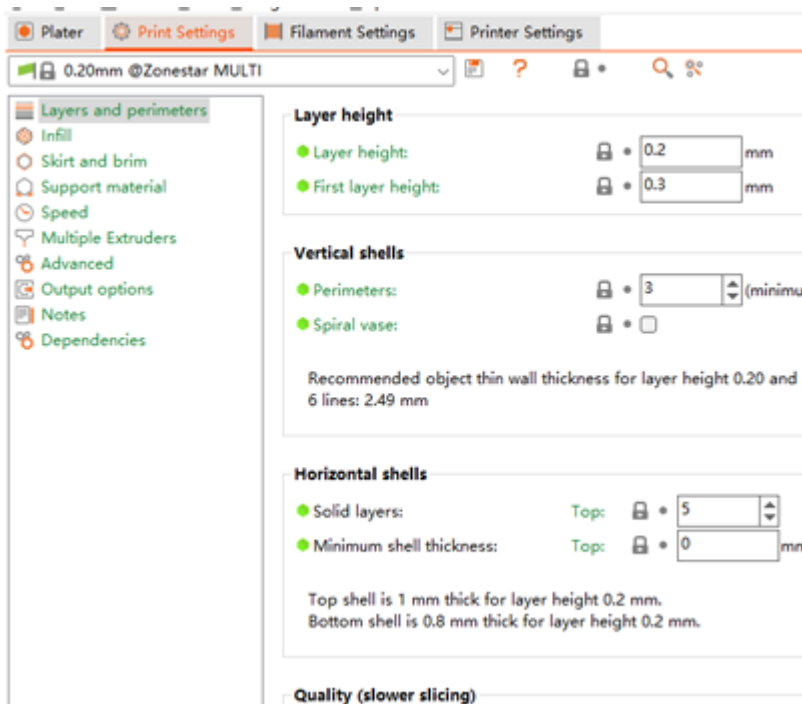
⚠ Please note that the "Retraction when tool is disabled" should be set to 0.

Retraction when tool is disabled (advanced settings for multi-extruder setups)

● Length: mm (zero to disable)

● Extra length on restart: mm

set layer height, print speed, support, infill, etc.

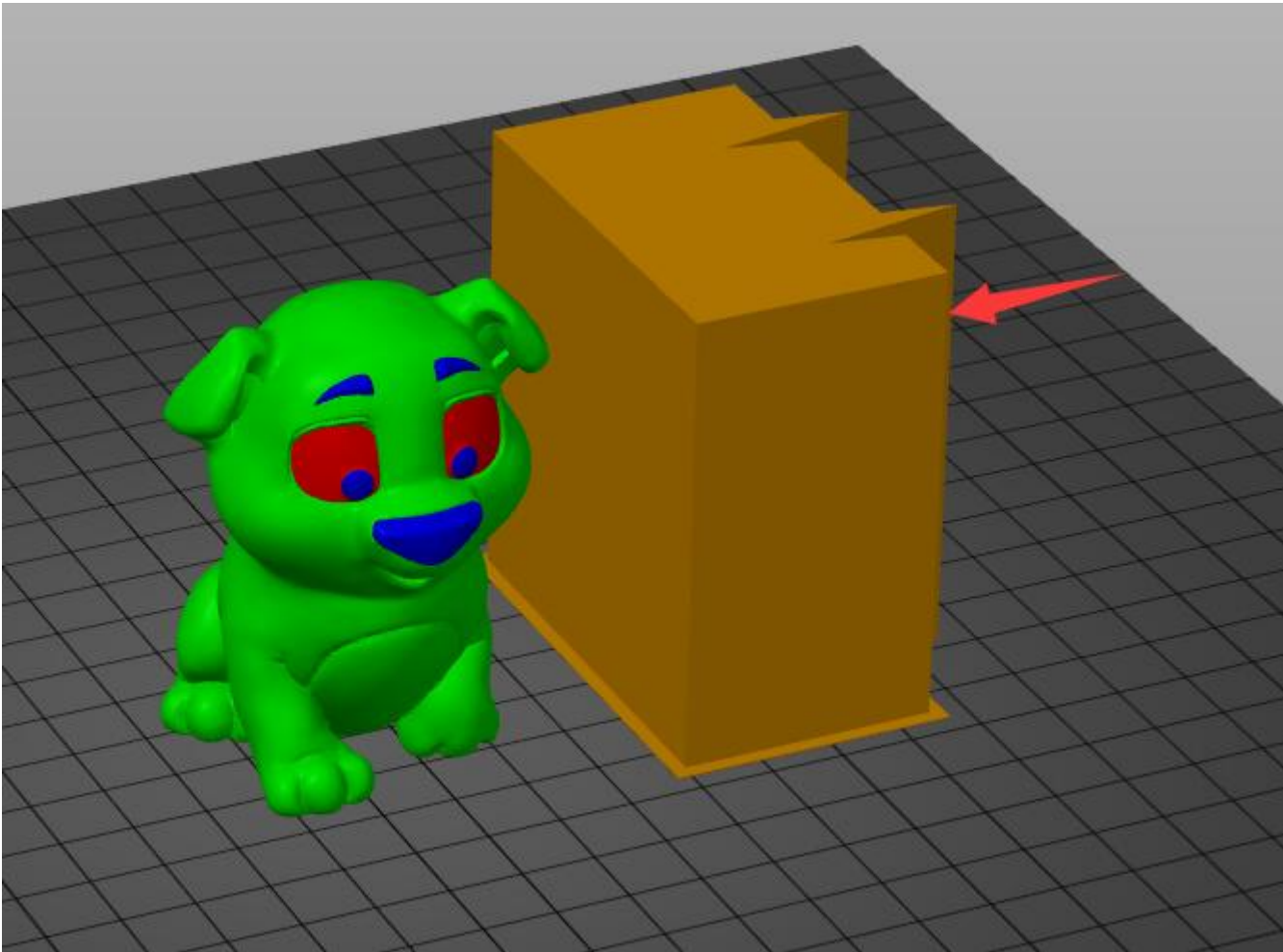


You need to set these parameters according to the shape of the model and your requirements for print quality. Even for some models, printing cannot be completed normally without support. For details please refer to:

-  [PrusaSlicer introduction](#)
-  [Slic3r User Manual](#)

Step 7: Set parameters for "wipe tower"

You may notice that a square will appear in the sliced figure, which is called "Wipe tower" in PrusaSlicer. Because for the multi-color printer, while switching extruders, there are still the previous color filaments inside the hotend, it need to be clean before printing another color.



In order to obtain better cleaning effect and minimize to waste filament, we can set the purging volume according to different colors. Please see the following table, the columns shows the previous extruder and the rows shows the next extruder to be printed. When we change from the extruder with lighter color filament to the extruder with darker color filaments, we can set a smaller "purging volume". On the contrary, when we change from the extruder with darker color filaments to the extruder with lighter color filament, we need to set a bigger "purging volume".

Wipe tower - Purging volume adjustment

Here you can adjust required purging volume (mm³) for any given pair of tools.

Extruder changed to

	1	2	3
1		300	200
2	50		50
3	50	100	

Show simplified settings

OKCancel

Z8 + M3 Hotend

Supports: None

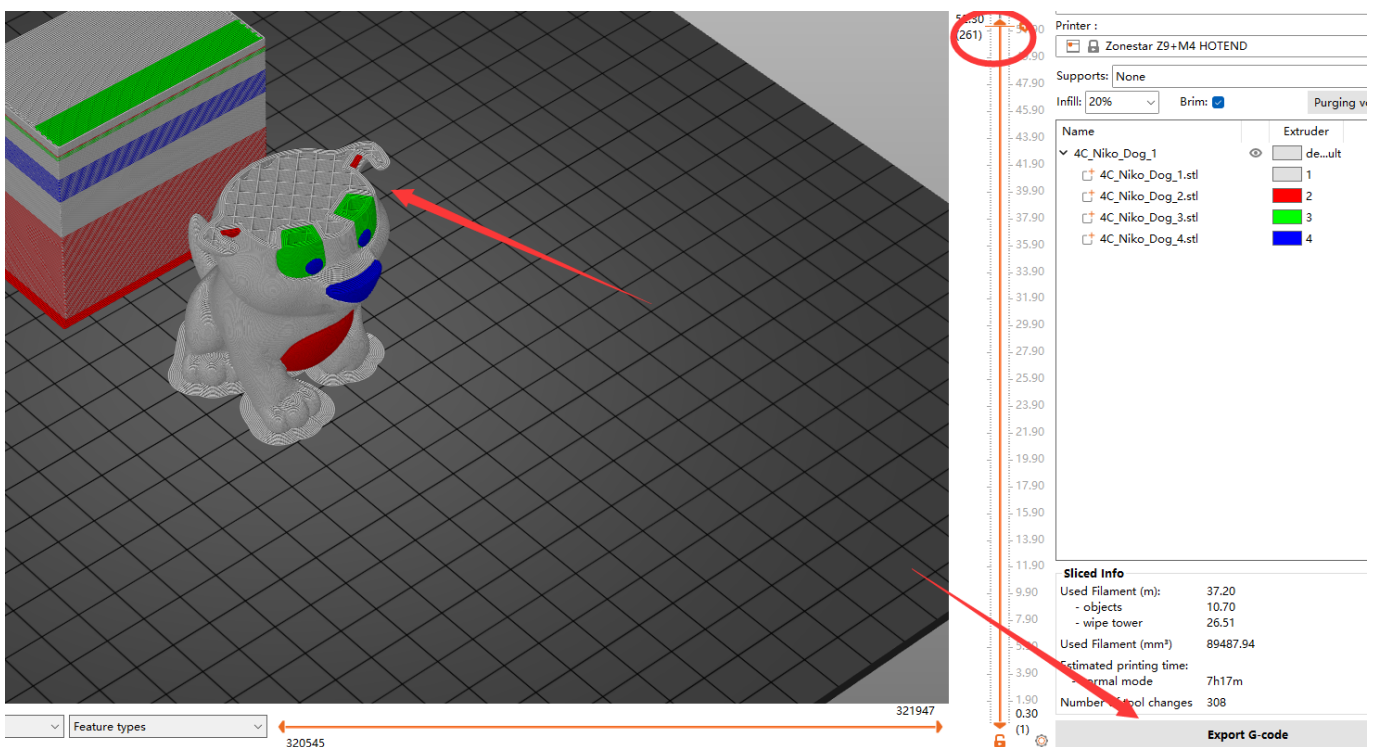
Infill: 20%
Brim: ☒ 1 Purging volumes...

Name	Extruder	Editing
4C_Niko_Dog_1	de...ult	
4C_Niko_Dog_1.stl	2	
4C_Niko_Dog_2.stl	2	
4C_Niko_Dog_3.stl	1	
4C_Niko_Dog_4.stl	3	

Step 8: Slicing



Step 9: Preview the sliced result (gcode file) and then save to gcode file to your PC and then copy to SD card



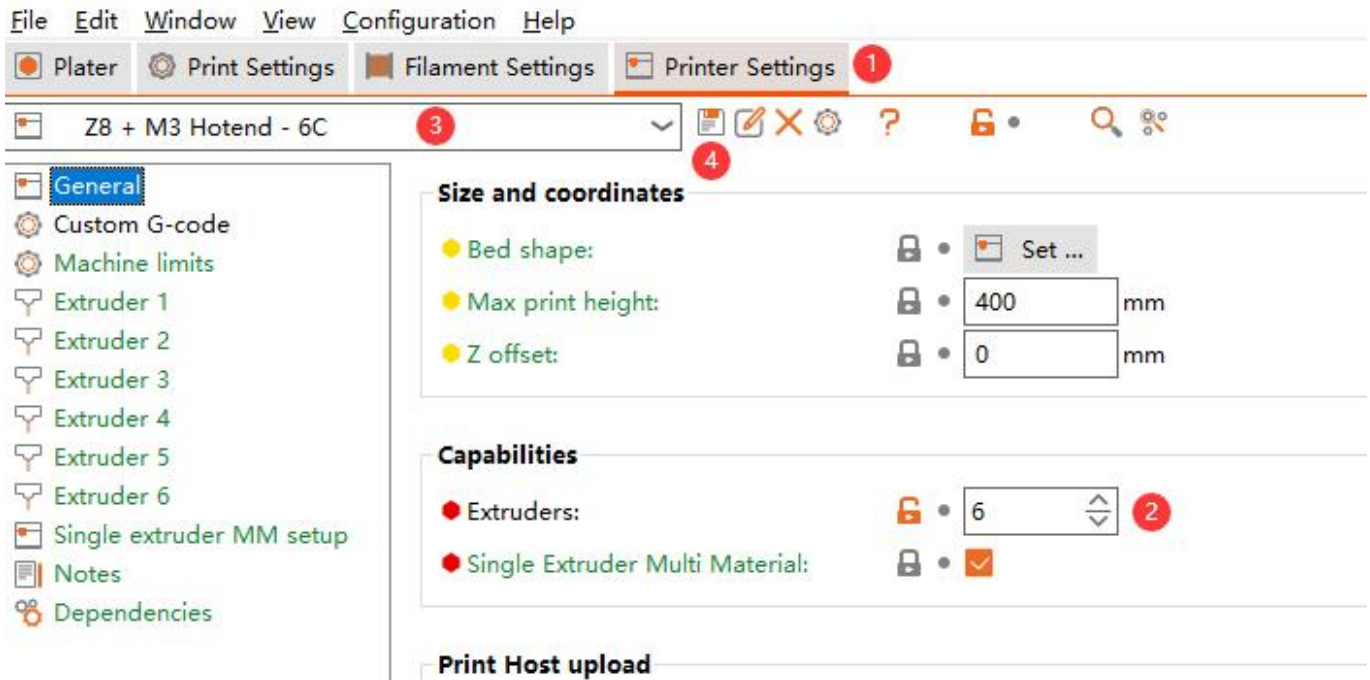
How to print more than 3 colors using M3 hot end

Video Tutorial

M3 hot end can mix 2 ~ 3 actual extruders filament to produce a new color filament, and this new color filament can be used as a new extruder (called "**virtual extruder**"), the operation steps are as follows:

The following example shows how to set 6 extruders - 3 actual extruders and 3 virtual extruders - to print a 6 color 3d model.

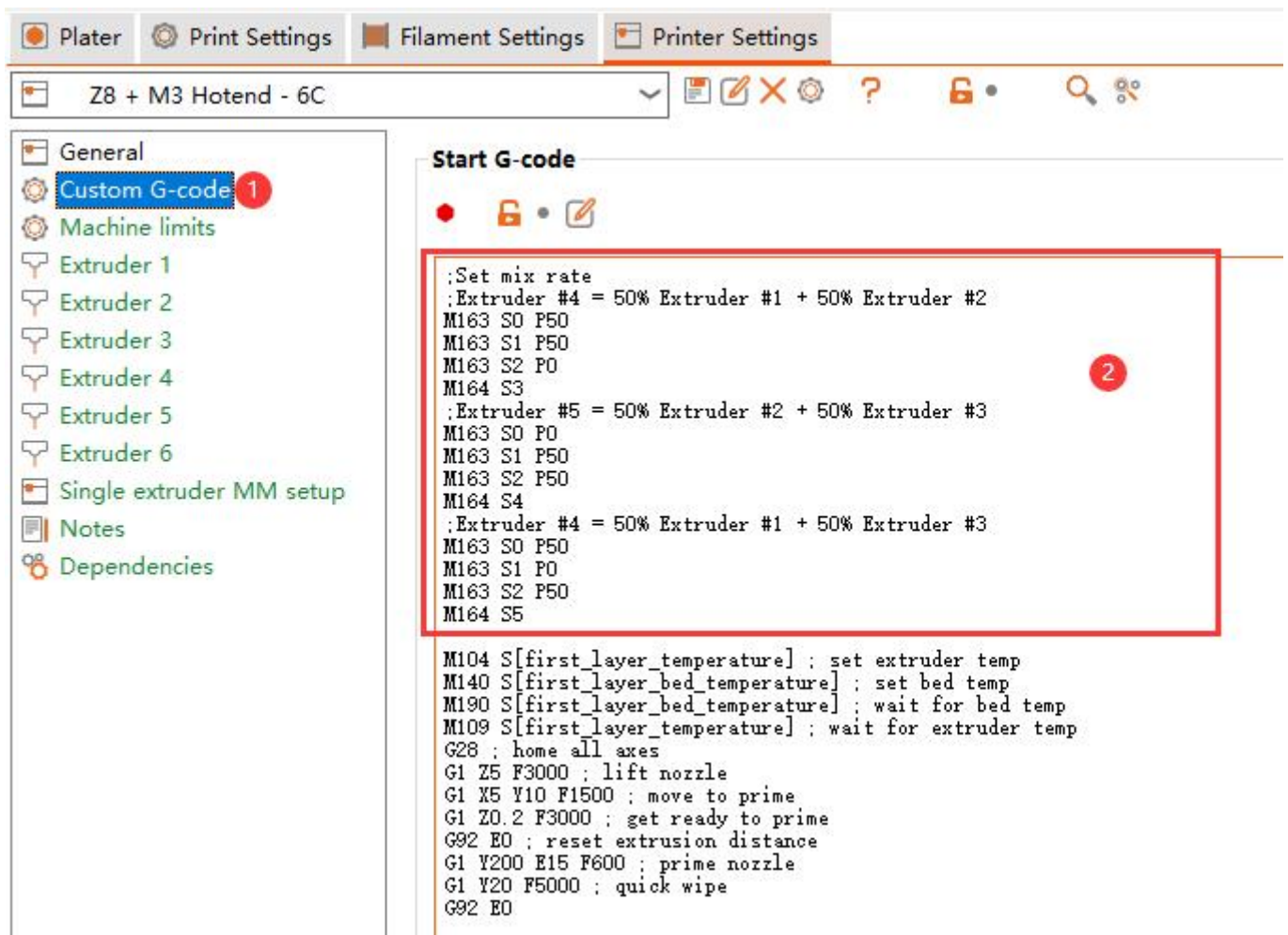
Step 1: Add virtual extruders



⚠ Suggest to save the settings to a new profile.

Step 2: Set mix rate of the new "virtual extruder"

Add "Set mix rate" commands to "Start Gcode".



⚠ Suggest that these g-codes be placed at the front of the "Start G-code".

```

;Set mix rate
;Extruder #4 = 50% Extruder #1 + 50% Extruder #2
M163 S0 P50
M163 S1 P50
M163 S2 P0
M164 S3
;Extruder #5 = 50% Extruder #2 + 50% Extruder #3
M163 S0 P0
M163 S1 P50
M163 S2 P50
M164 S4
;Extruder #4 = 50% Extruder #1 + 50% Extruder #3
M163 S0 P50
M163 S1 P0
M163 S2 P50
M164 S5

```



Introduction to "M163" and "M164" commands

M163: Set a single mix factor for a mixing extruder, must be followed by M164 to normalize and commit them.

S[index] The channel (actual extruder) index to set
P[float] The mix value from (0.0 ~ 100.0)
R Reset all mixing extruder settings to default

M164: Normalize and commit the mix rate to a virtual extruder.

S[index] The virtual extruder to store

Normalize: Automatically scale the mixing ratio values of each extruder to meet machine requirements

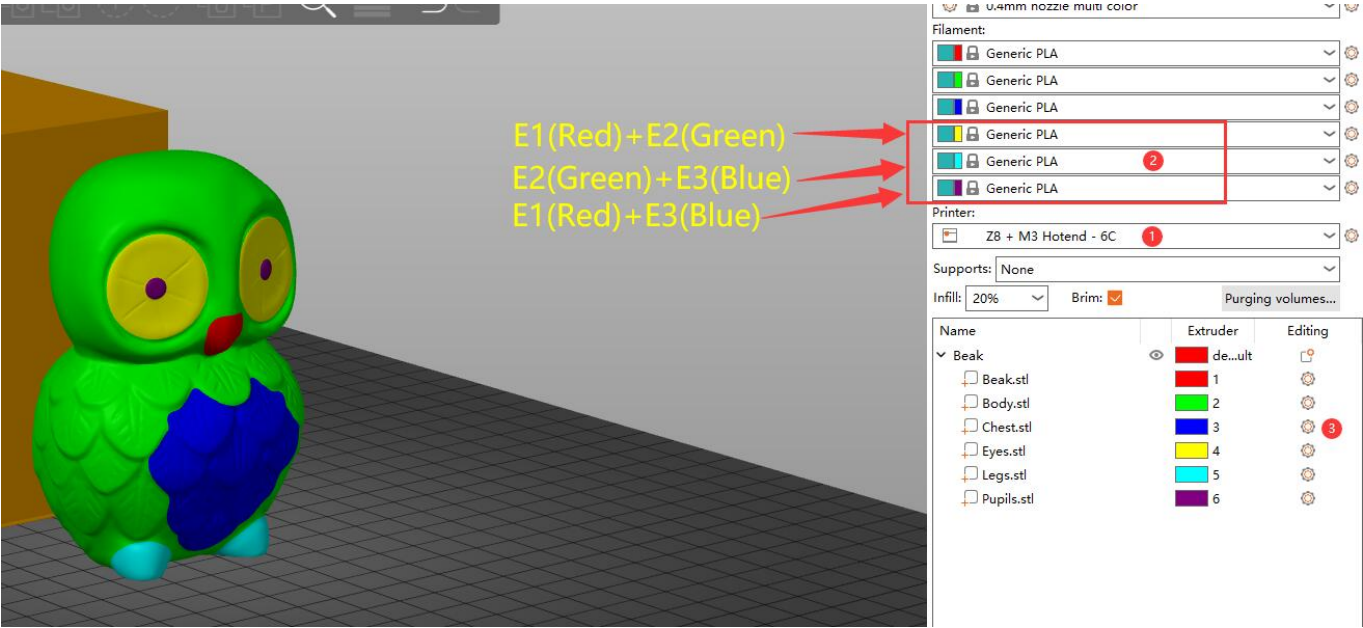
Step 3: Assign the new virtual extruders to 3D model and slicing

Now you can assign 6 extruders to the 3D model, slicing process is exactly the same as the 3 extruders.



Choose the **printer profile**¹ before slicing, and you can click the color block to set the **filament color**² of

the new extruders.



Appendix

 [Mixing color feature use guide](#)