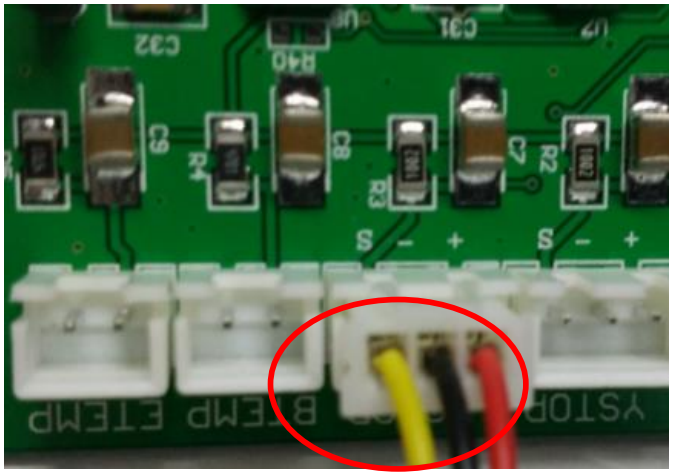
X3 Automatic Leveling Debug Guide

Step 1: Preparation

- Please make sure all the wires connections are correct.
- Connecting the Postion Sensor(**PS**) to mainboard **Z STOP** Position***(fig1).***
- Turn on the power, ensure that LCD display & 5 keypads are functioning normally.
- Let **PS** close to the printing platform, the light on the PS lighting when the distance about 3~5mm.***(fig2) .***
- Before debugging,please ensure that the LCD operate Menu and the keypad operations.



Melzi board

Fig 1: Connect PS to Control board

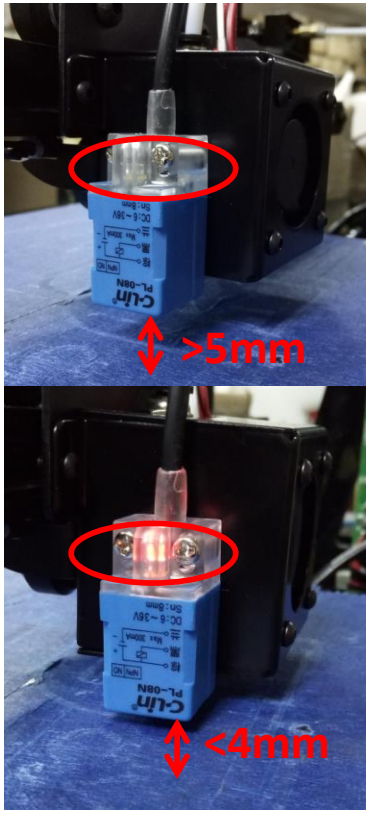


Fig 2: PS Trigger Height

Note:：

1、Please leveling by hand when assembly finished in the first time Level X,Y-Axial.

2、Please leveling by hand when the automatic leveling function be fail to level Z-Axial platform *(fig5)*.

Step 2: Preliminary Leveling

1. Turn off power.
2. Adjust the 4pcs nuts from the platform, keep them leveling ***(fig3).***
3. Measure the height of X-slide, ensure the right and the left distance almost same. ***(fig4)***,If the height (>1mm) Turn the Z-coupling ensure them almost leveling.
4. Adjust the extruder to Middle position , then turn the right and left Z-coupling synchronously, until the distance about 0.5mm between the platform and the extruder***(fig5)*** .
5. Move extruder left and right, be attention to the distance between extruder and platform, adjust the lower Z-coupling ensure them almost leveling.
6. Turn the right and left Z-coupling synchronously, adjust the distance almost 0.2mm between the extruder and platform.

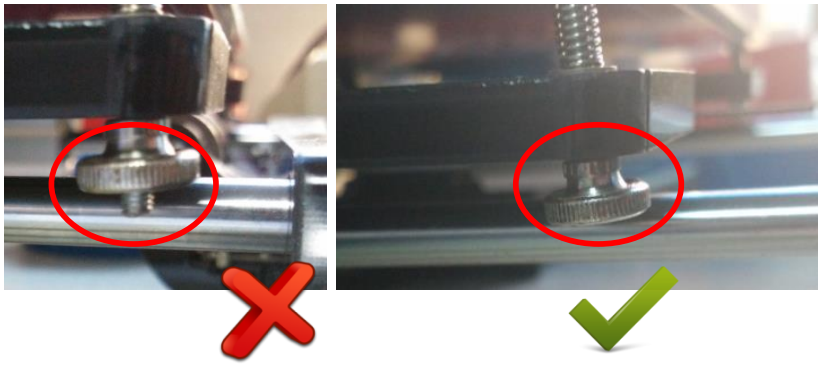


Fig 3: set nut height

Fig 4: measure height of X-slide

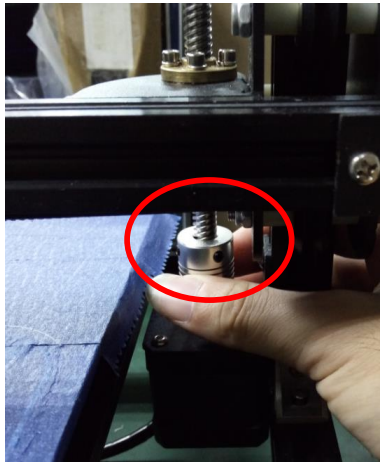


Fig 5:Adjust X-slide height

Step 3: Assemble PS and setting Z offset*

1. Turn off power.
2. Install **PS** to Extruder cover**(fig 6).**
3. Turn Z-coupling synchronously(right & left), ensure the distance almost 0.2mm between extruder and platform. Measure the height between the PS and platform about 2~3mm. Otherwise please adjust PS position.
4. Clean the extruder head, ensure the extruder head hasn't extra filament.
5. Turn on power.
6. Operate keypad enter **Prepare->Auto Home**->confirm. Measure the height between the extruder and platform, record this distance value.
7. Operate keypad enter **control**->**Motion**->***Z Offset***->confirm**(fig 7),** adjust ***Z offset*** to the previous value**(fig 8).** We suggest you set a minor value when you first adjust.
8. Operate keypad enter **control->*Store memory*** save done setting **(fig 9).**
9. Operate keypad enter **control->*Load memory*** updata the setting **(fig 10).**
10. Operate keypad enter **Prepear->Auto Home**->confirm.
11. Operate keypad enter **Prepear->Bed Leveling Test**->confirm. Check if the height between the extruder and platform is about 0.2mm.
12. Check the height between extruder and platform, Increase ***Z offset*** when the height too large.Otherwise, Decrease ***Z offset*** if the height too small (**repeat 7~11**) .

***Note:** **Z offset** means the distance between the extruder head and platform when **PS** is trigged!

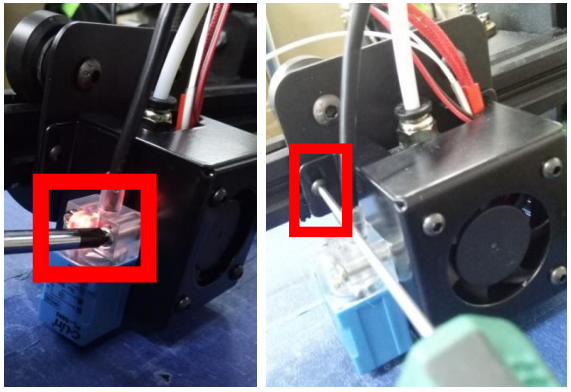


Fig 6: Install PS

Fig 7 : Set Z Offset

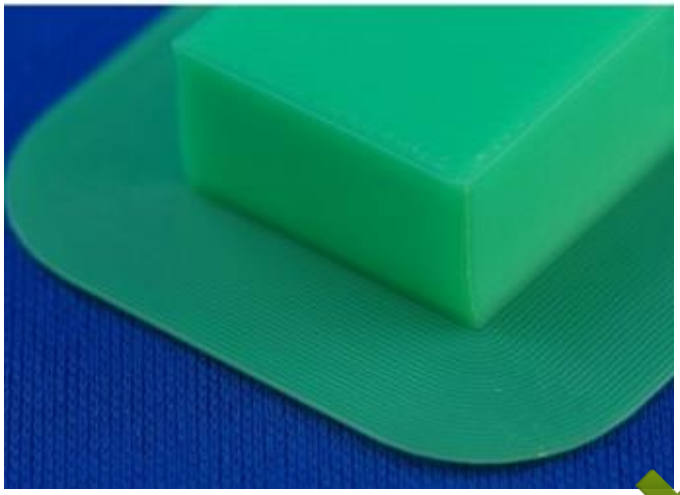
Fig 8 : Adjust Z Offset

Fig 9 : Store Setting

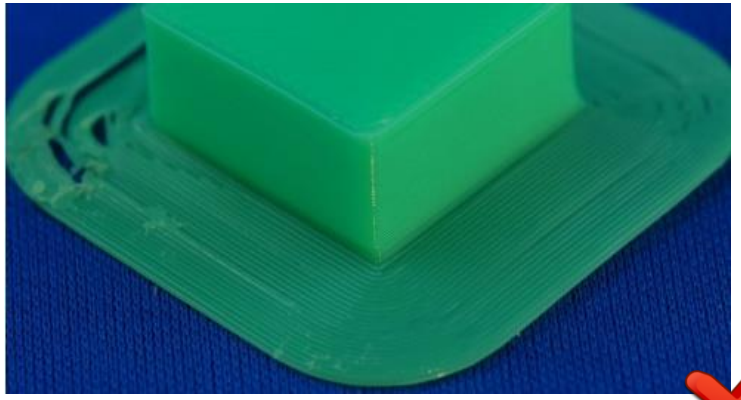
Fig 10 : load Setting

4th step: Confirm.

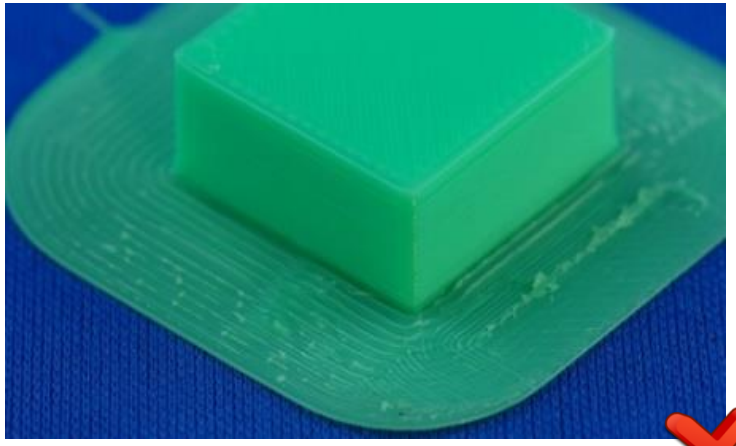
- Turn off power supplpy,insert SD card,then turn on power supply.
- Select ***X3_automatic level_test.gcode*** from SD card, start to print.Observe the distance between extruder and platform,level again if it is not leveling.



Perfect Z offset



Z offset is too high

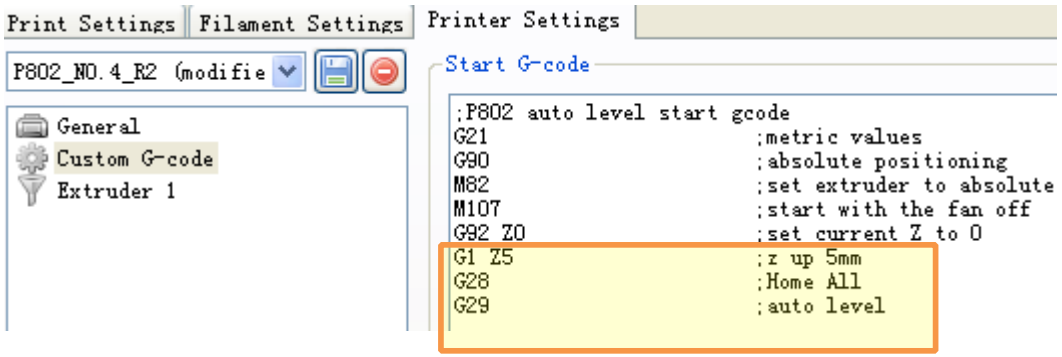


Z offset is too low

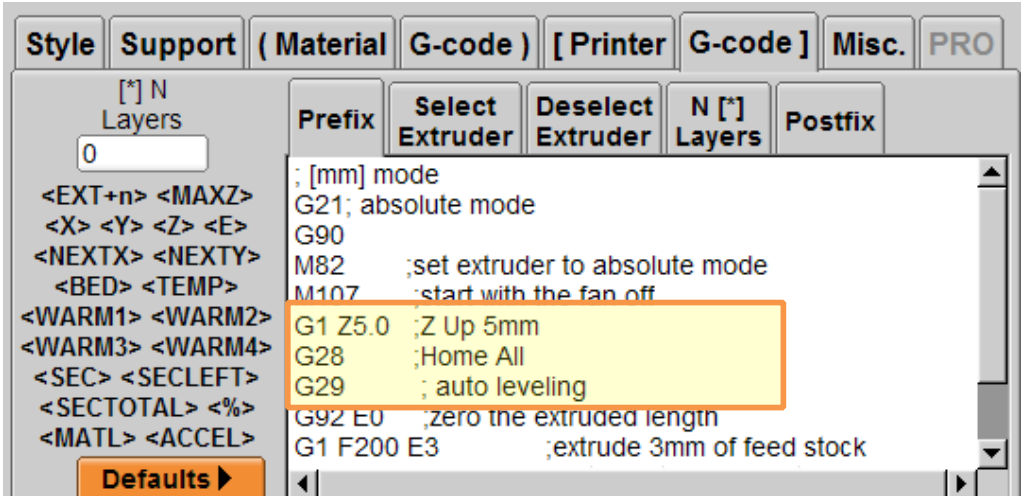
Step 5: Set the slicer software to add automatic leveling

In order to start an automatic level before printing , you need put the command **G29** behind file **G28** for each printing file, please set the ***start g-code*** of the slicer software as below:

Slic3r



Kisslicer



Cura