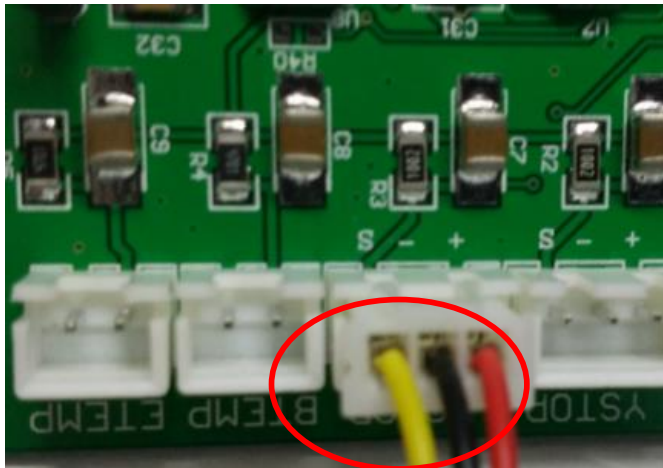


X3 Automatic Leveling Debug Guide

Step 1: Preparation

- Please make sure all the wires connections are correct.
- Connecting the Position 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.



MelziV3 board

Fig 1: Connect PS to Control board

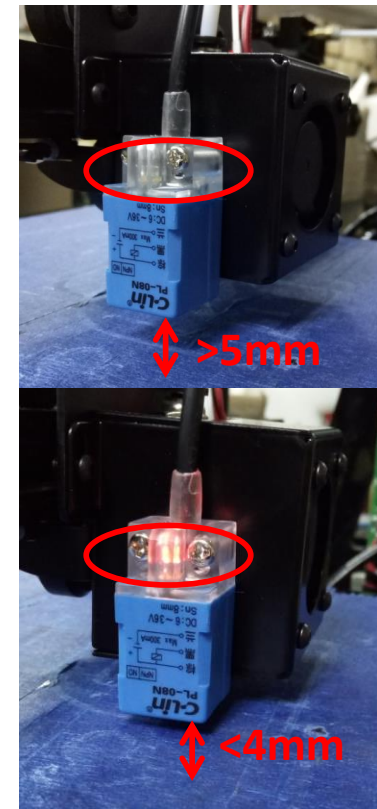


Fig 2: PS Trigger Height

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 ($>1\text{mm}$) 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.

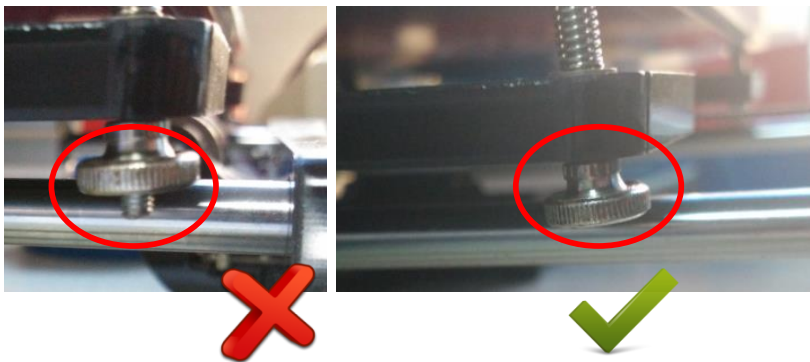


Fig 3: set nut height

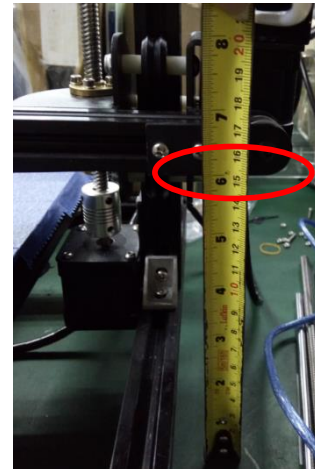


Fig 4: measure height of X-slide

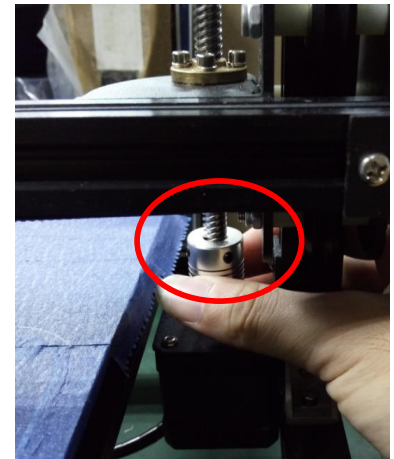


Fig 5: Adjust X-slide height

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** update 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



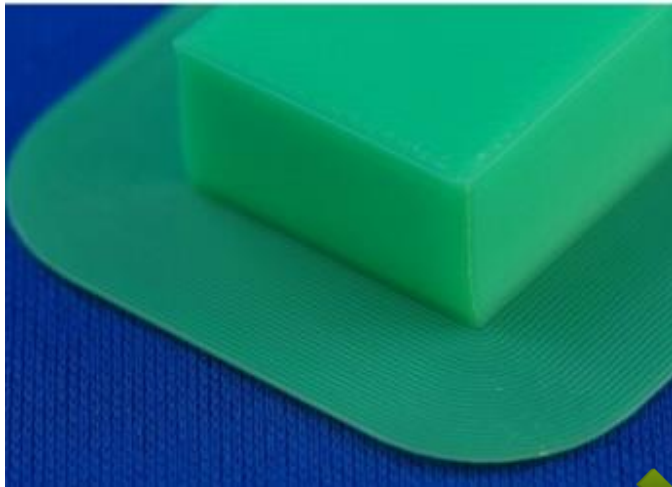
Fig 9 : Store Setting



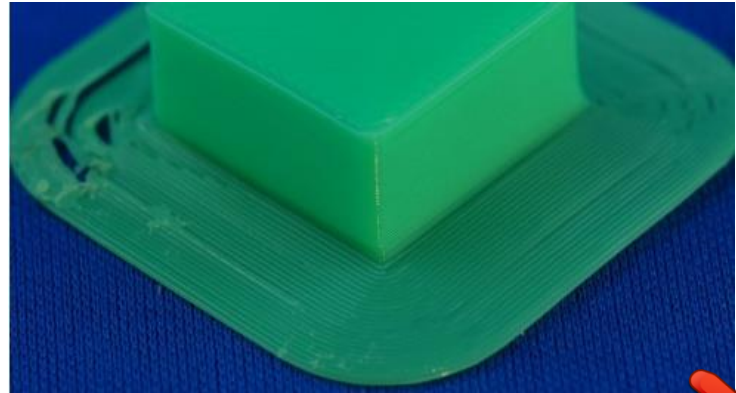
Fig 10 : load Setting

4th step: Confirm.

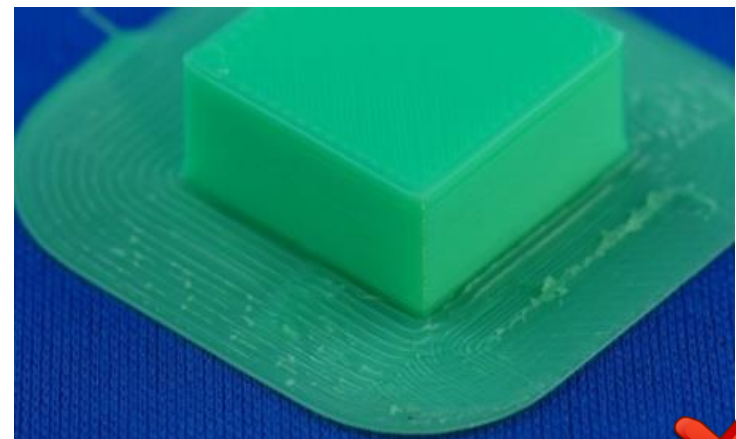
- Turn off power supply,insert SD card,then turn on power supply.
- Select ***X3_automatic_level_test.gcode*** from SD card, start to print.Observe the distance between extruder and platform,level again if it is not leveling.



Perfect Z offset



Z offset is too high



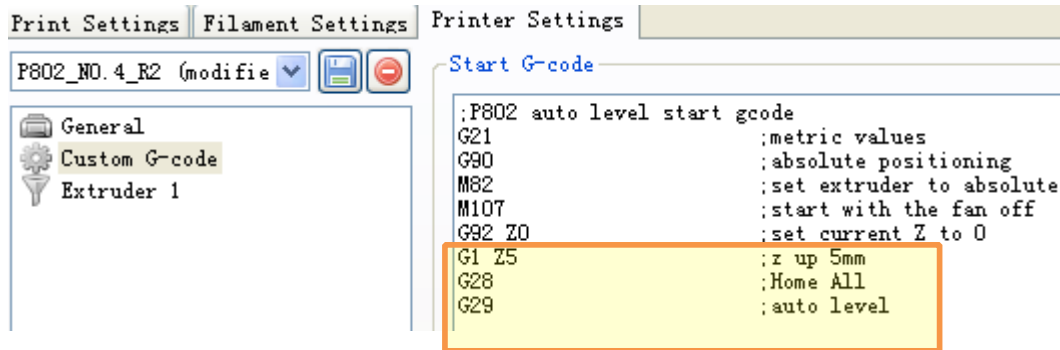
Z offset is too low



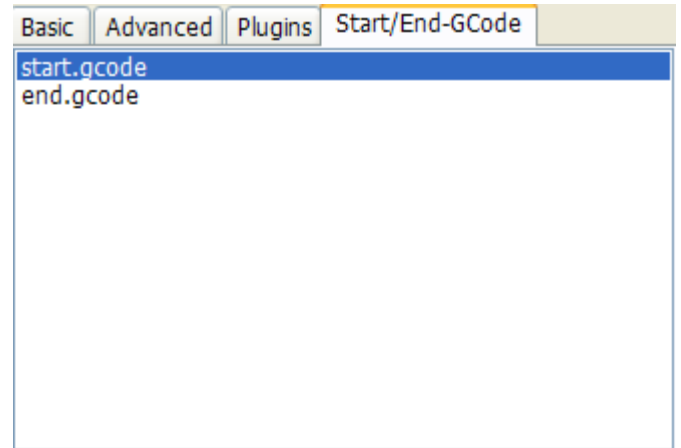
Step 5: Set the slicer software to add automatic leveling

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



Cura



```
;Sliced at: {day} {date} {time}
;Basic settings: Layer height: {layer_height}
;Print time: {print_time}
;Filament used: {filament_amount}m {filament}
;Filament cost: {filament_cost}
;M190 S{print_bed_temperature} ;Uncomment to
;M109 S{print_temperature} ;Uncomment to add
G21 ;metric values
G90 ;absolute positioning
M82 ;set extruder to absolute mode
M107 ;start with the fan off
G92 Z0 ;set current Z to 0
G1 Z5 ;z up 5mm
G28 ;Home All
G29 ;auto leveling
G1 Z15.0 F{travel_speed} ;move the platform
G92 E0 ;zero the extruded l
G1 F200 E3 ;extrude 3mm of feed
G92 E0 ;zero the extruded l
G1 F{travel_speed}
```

The lines G1 Z5, G28, and G29 are highlighted with a yellow box.

Kisslicer

