

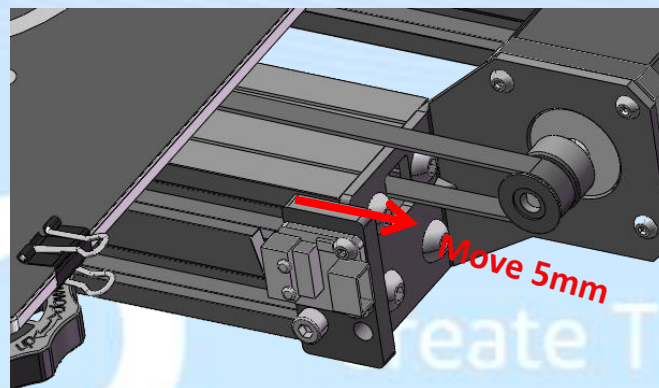
# MBL Function Tutorial

**Introduction:** This is a function to achieve automatic leveling without purchasing an automatic leveling module.

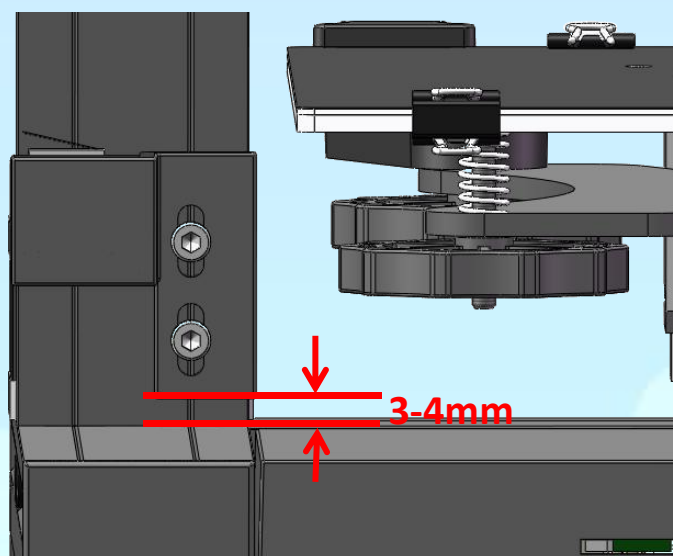
## Setting method:

### 1. Hardware modification

- ① Move the Y-axis sensor back 5mm; Do not move too much, otherwise the Y-axis frame may collide with the motor.



- ② Leaves the distance about 3-4mm between Z limit switch and Aluminium profile.



## 2. For configuration change

① Download the machine firmware, select the machine model, and move the "elegoo.txt" file to the TF card separately. (Please check the password in the firmware update tutorial)




② Open "elegoo.txt" in text format and modify the following places (as shown below)

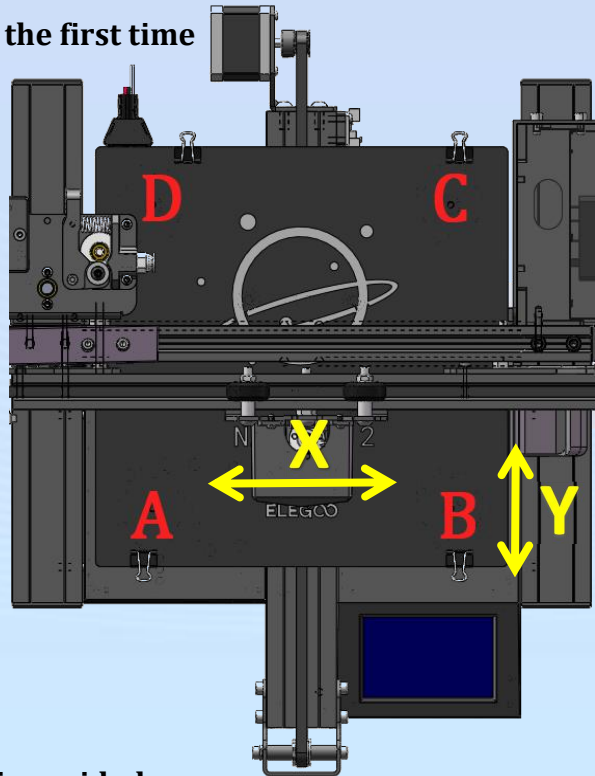
- >cfg\_leveling\_mode                      0 ➡ 1
- >BED\_LEVELING\_METHOD                0 ➡ 5
- >GRID\_MAX\_POINTS\_X                4            #4-5 points are recommended.
- >GRID\_MAX\_POINTS\_Y                4            # 4-5 points are recommended.
- >Z\_MIN\_PROBE\_PIN\_MODE            0 ➡ 1
- >X\_PROBE\_OFFSET\_FROM\_EXTRUDER    32.55 ➡ 0            #must be set to 0
- >Y\_PROBE\_OFFSET\_FROM\_EXTRUDER    -7 ➡ 0            #must be set to 0
- >Y\_MIN\_POS 0 ➡ -5            #Distance = The distance from the nozzle center to the platform edge after returning to the sensor

③ Save the "elegoo.txt" file, insert the TF card into the machine then fire up the printer.



### 3. Operation:

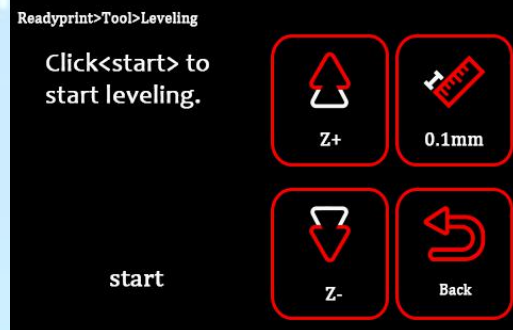
#### 1) Manual leveling - level the bed for the first time

- ① Select the **【 Tool 】**  **【 AutoLevel 】** to start leveling: Click **【start】** and Wait for zeroing to complete, then click **【Z-】** to move down 6-8mm. Click **【 Back 】**  **【 Home 】**  **【 Motor-off 】** .
- ② As shown in the figure, manually move X-axis (extrusion head) and Y-axis (hot bed), then adjust the nut to make the nozzle close to the platform until the four corners of the platform **ABCD** are adjusted to a relatively flat state.



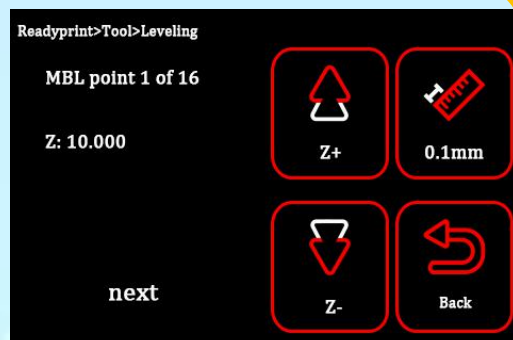
#### 2) Semi-automatic leveling - generating grid plane

- ① Click **【 Tool 】**  **【 AutoLevel 】**  **【 Start 】** to start leveling, then click **【 Z- 】** to move the nozzle closer to the platform (it is better to use A4 paper to assist leveling)

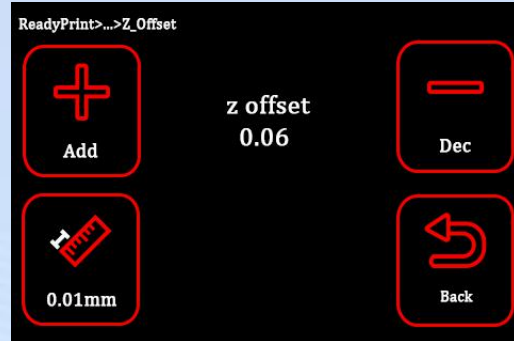


- ② Click **【 next 】** to level to the last point. Click the last **【 next 】**, the machine will automatically return to zero before the leveling is completed.

**Note:** If you accidentally press start after leveling, it's necessary to level again, please take care of your operation.

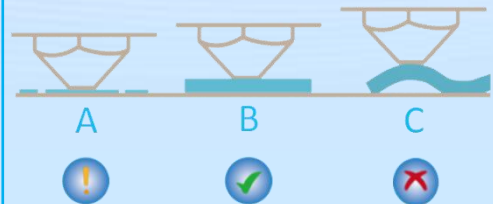


③ Click **【Back】** **【Back】** **【Tool】** **【Z\_Offset】**, where allows you to fine-tune the distance between the nozzle and the platform. Adjust it to Z0.06mm under normal conditions, to prevent the bed from being pressed too tightly when printing the first layer. But you still need to determine the value according to the actual printing situation.

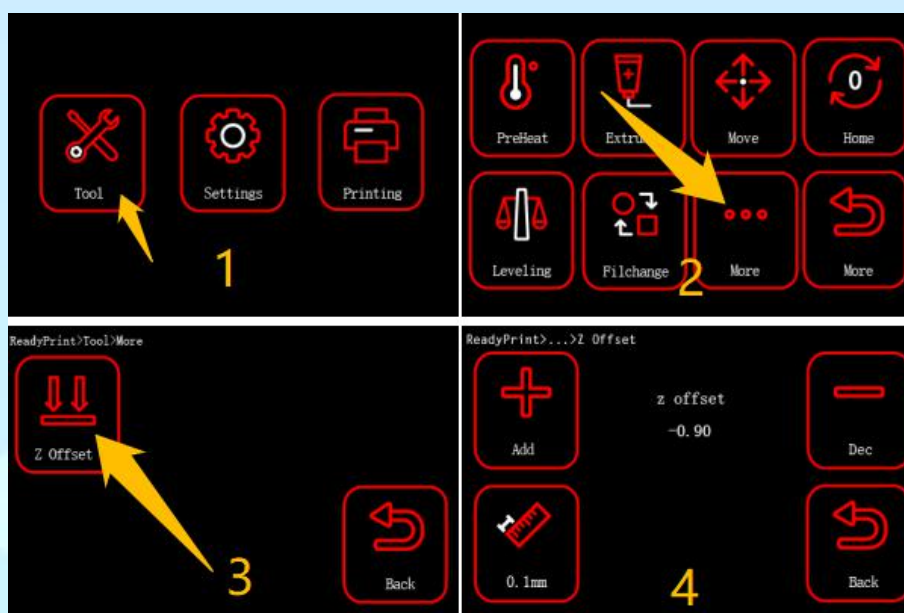


### Tip:

When you print the test model, please observe the printing status of the first layer. If the first layer looks like **A** and **C**, which indicate that the Z height is not well compensated, and the Z axis compensation value needs to be reset. If the layer looks like **B**, it proves that you have set the proper Z axis height, which is the optimum distance between the nozzle and the plate.



If the status "A" or "C" appears, you can regulate the "z\_offset" again following the below steps. There is no need to clicking **【Autolevel】** again. All you need to do is to click **【Back】** to save the "z\_offset" after you complete the adjustment process. (The "z\_offset" will only work after the auto-leveling is turned on).



## Notice:

After you use the automatic leveling and reset the Z offset, there is no need to add G29 command to the beginning of the G-code file. Because the manual grid leveling will be automatically written into the **EEPROM** of the motherboard. You can simply use ELEGOO\_Cura software for normal slicing.



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