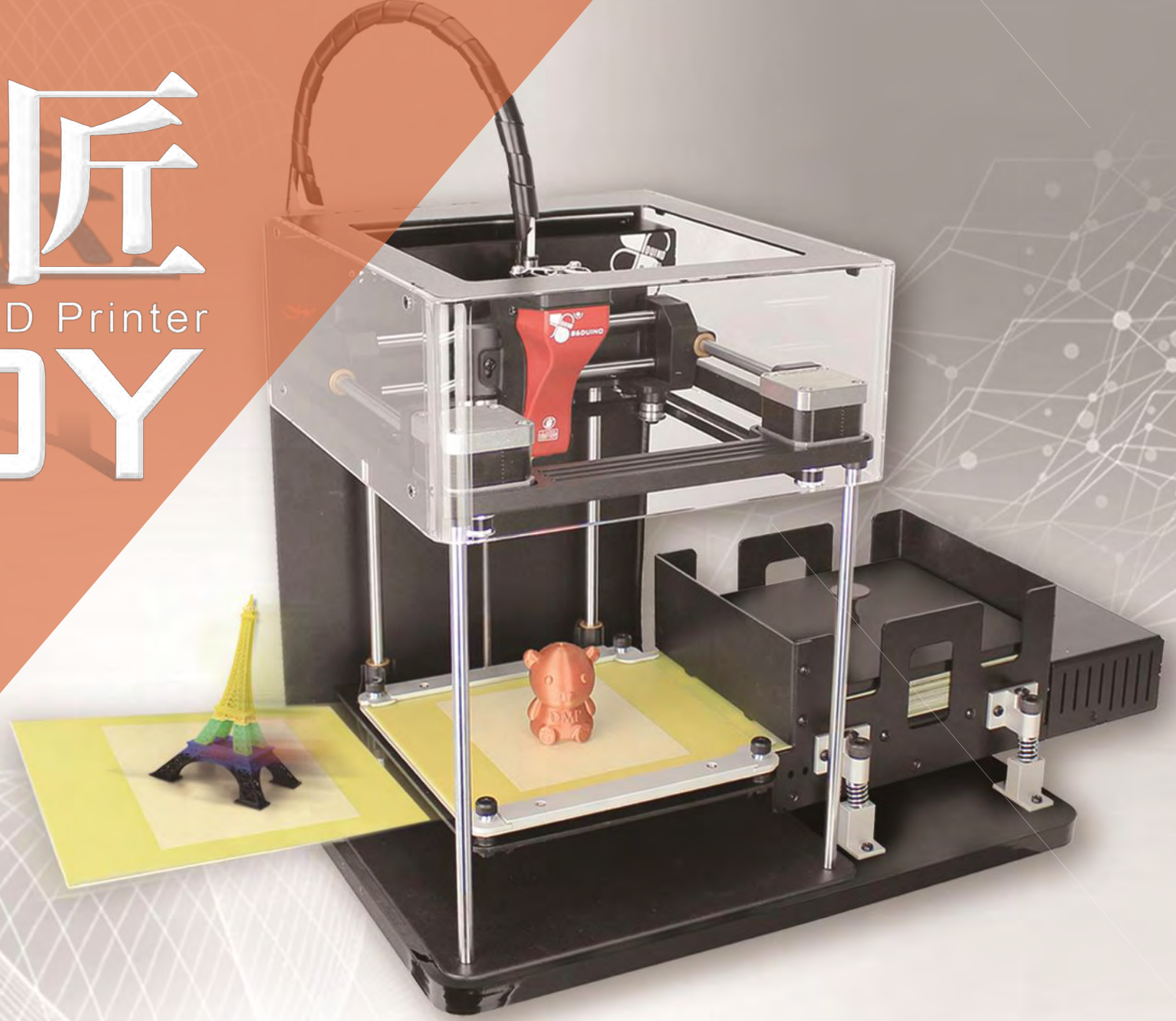
86DUINO 印匠

The Delicate 3D Printer

ENJOY

Quick Start Manual



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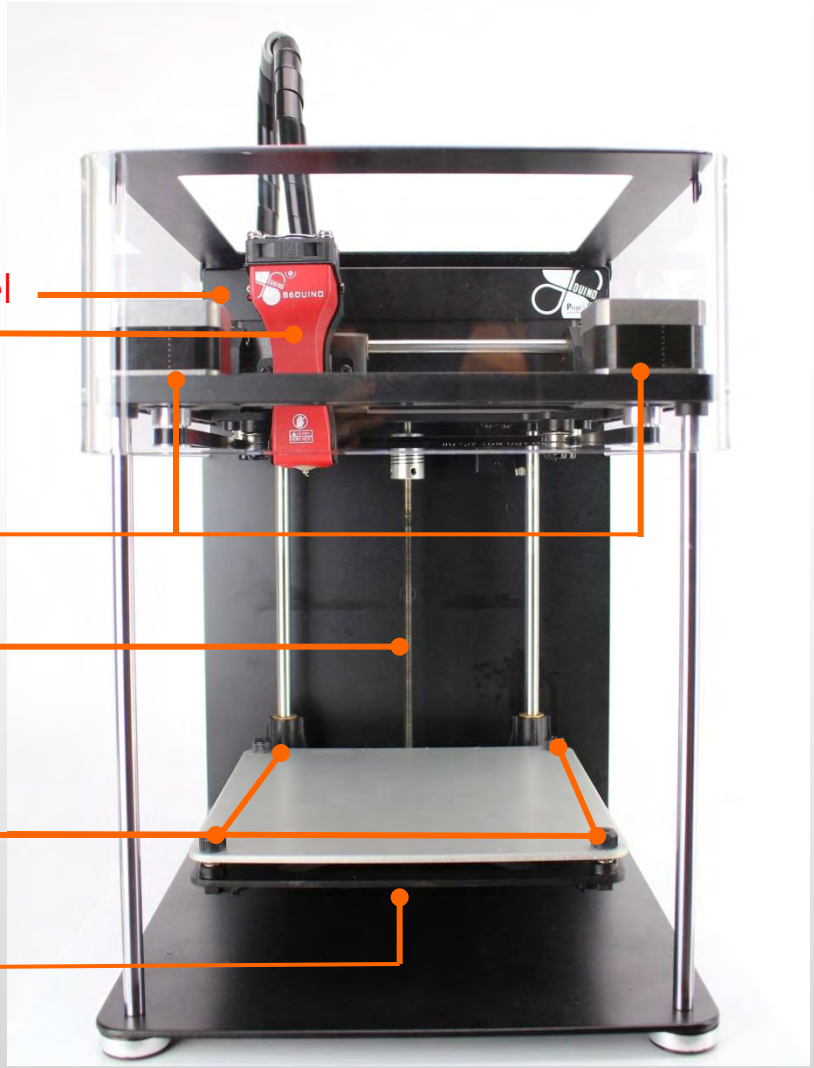
ENJOY

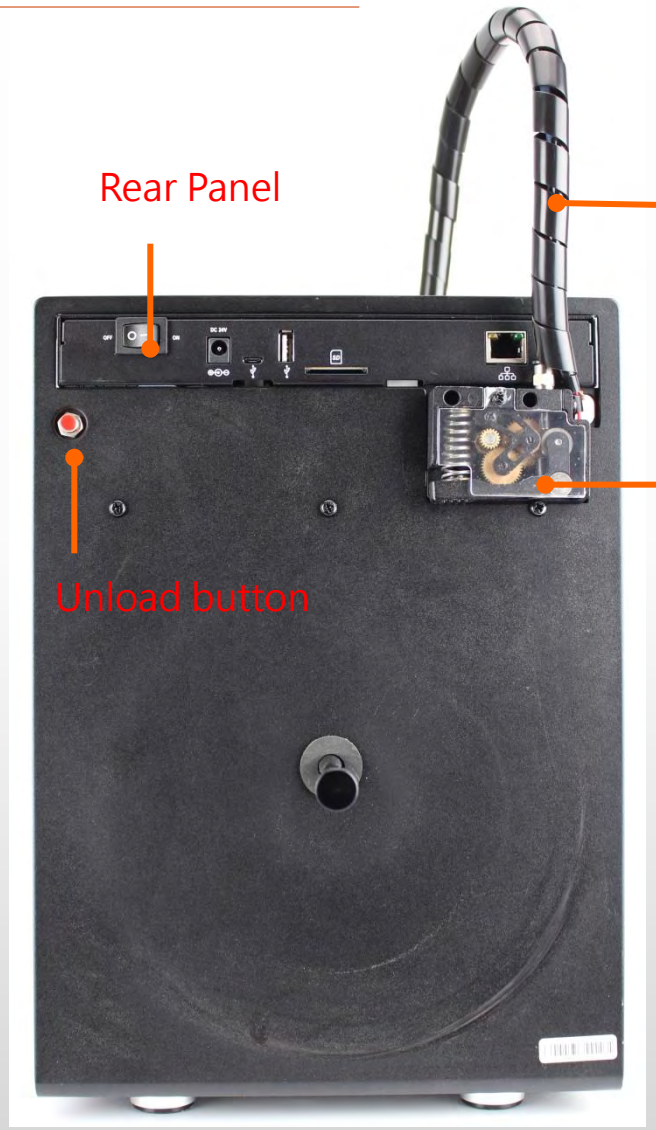
CONTENTS

PART 1

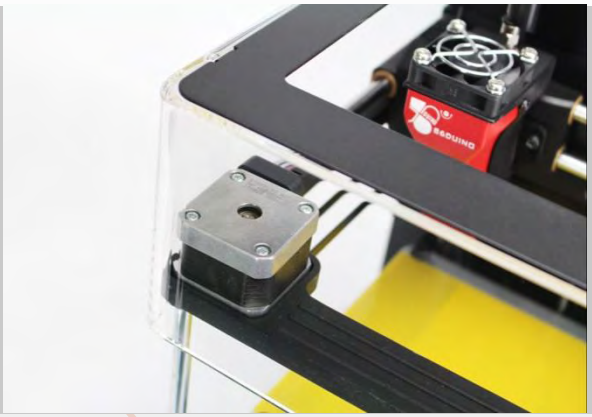
ENJOY Introduction



Front view



Rear view



PART 2

Software Installation

Install print S/W

Driver Install

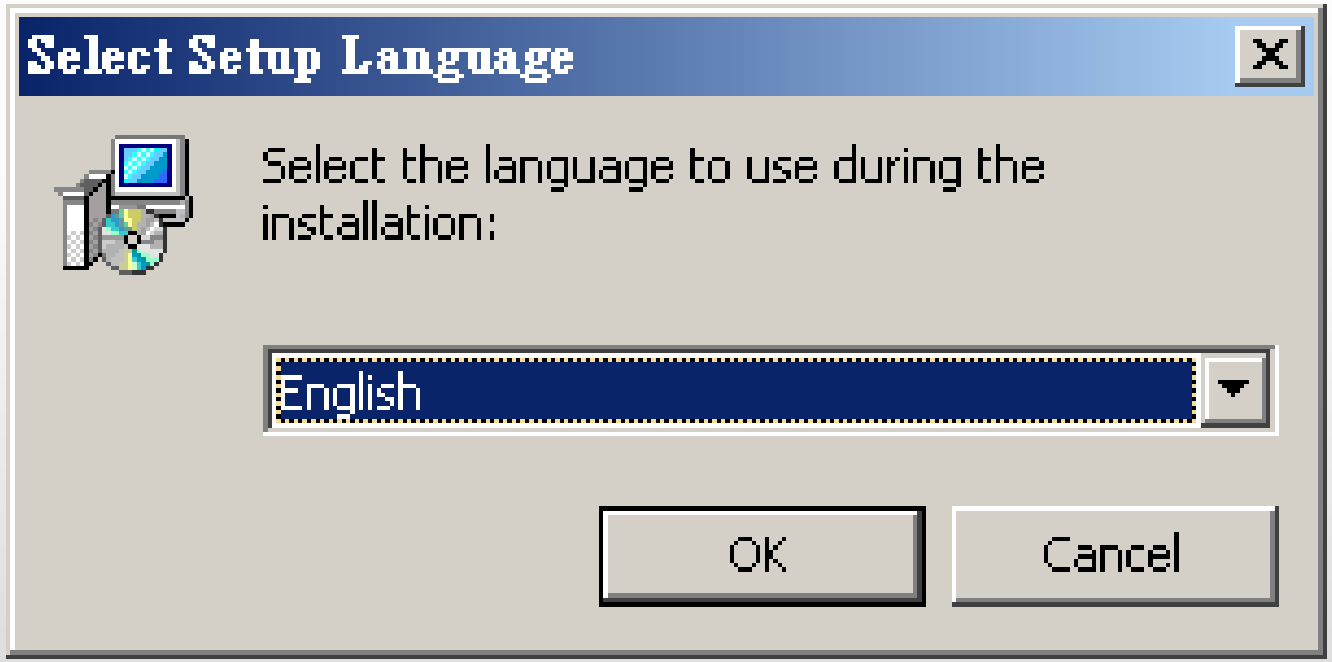
S/W-Print software install (1/6)

Download 86DuinoRepetierHost file from following to your computer:

http://www.86duino.com/86Duino-Enjoy/setup86DuinoRepetierHost_1_5_6.exe

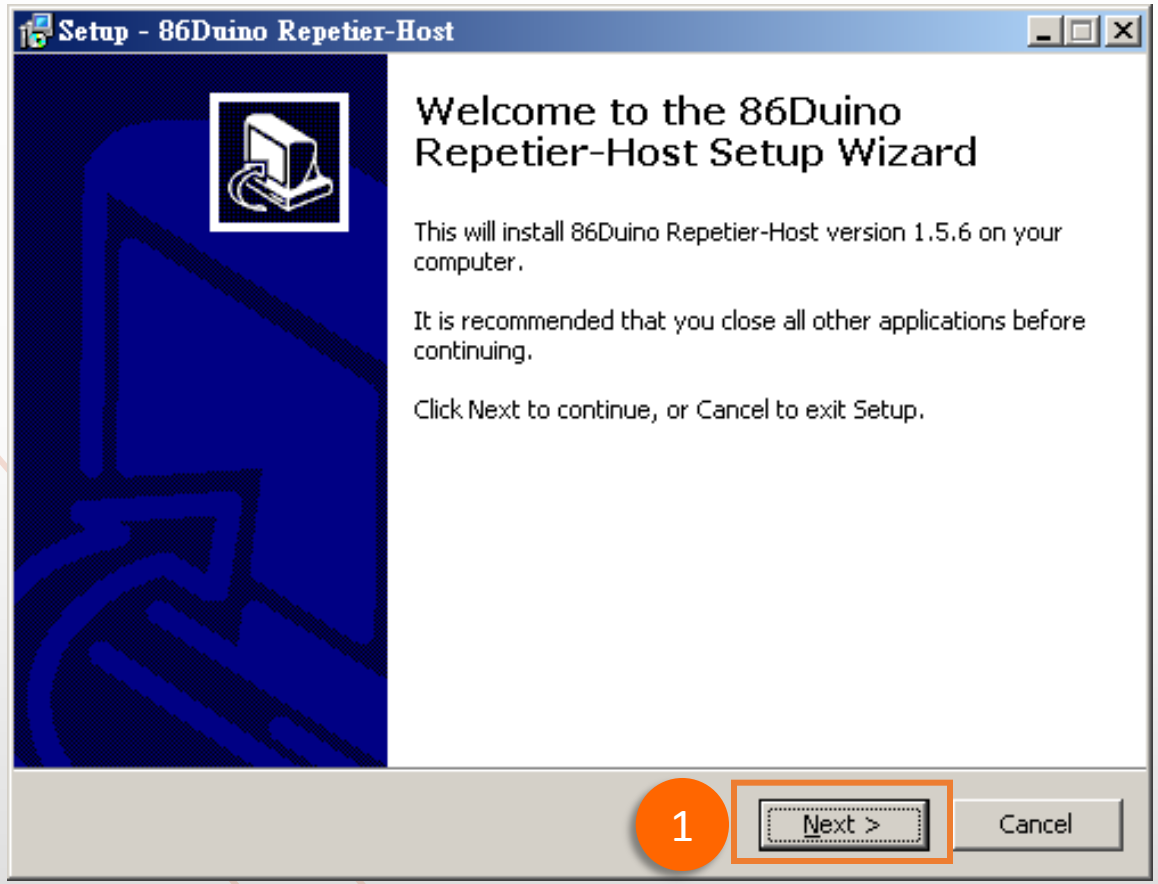
Double click the setup file icon 。

Setup icon

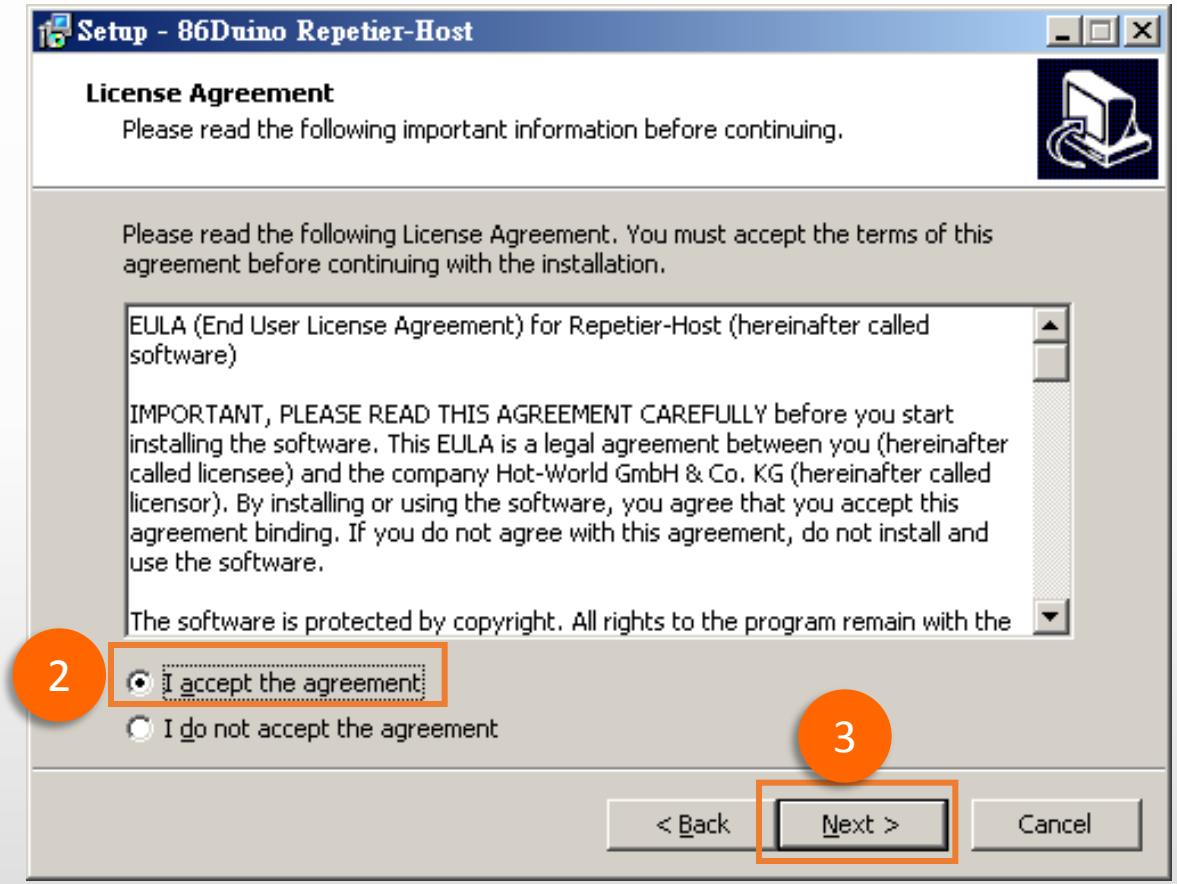


Select the language you prefer and click “OK”

S/W-Print software install (2/6)

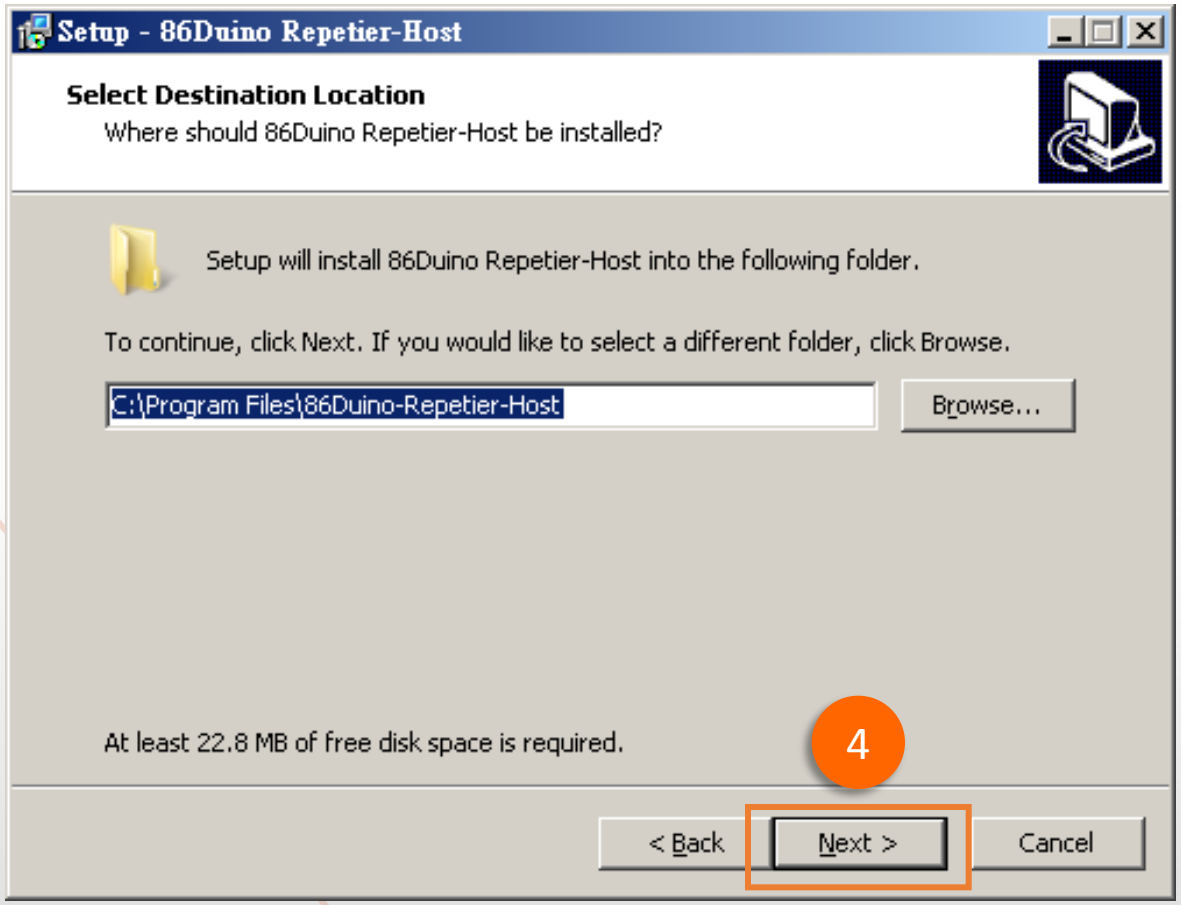


Click “Next” on Setup Wizard :

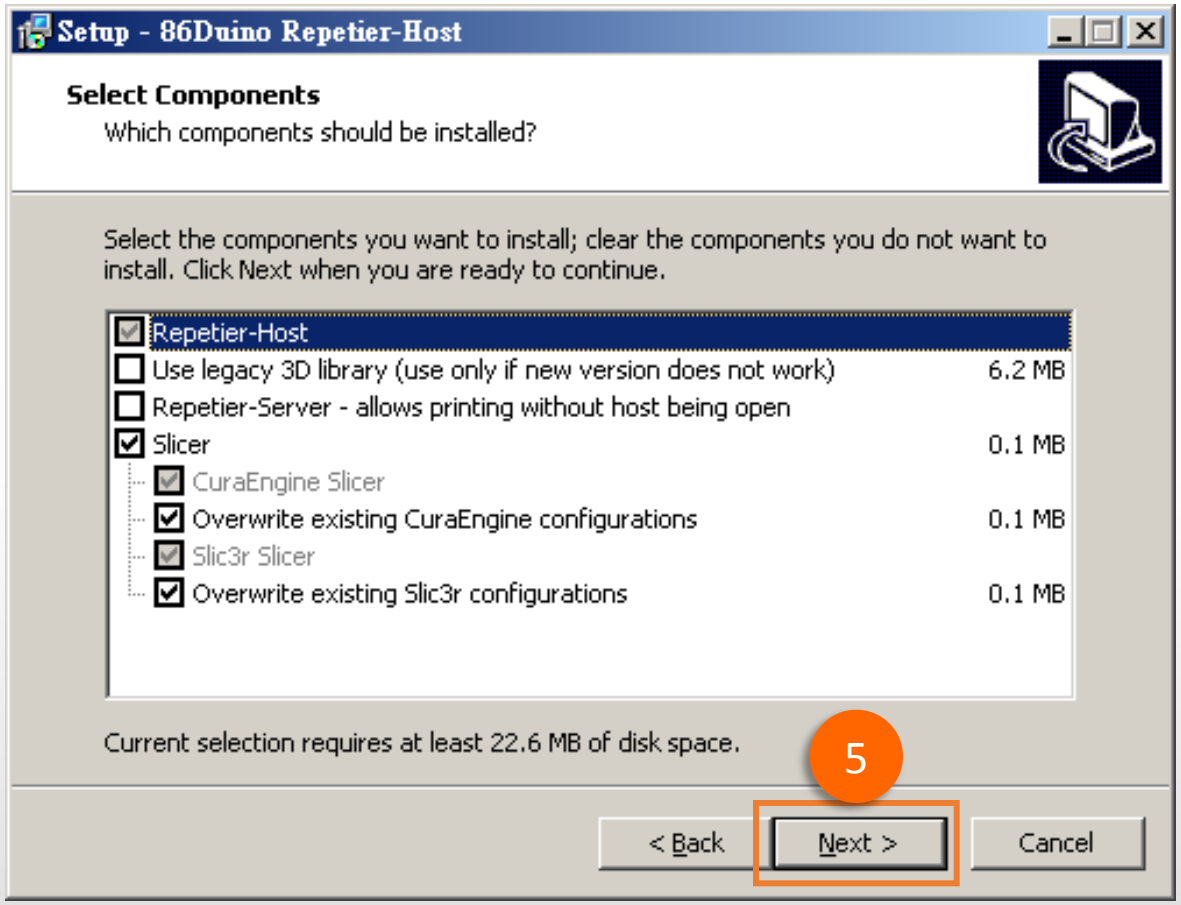


Read the License Agreement and if in agreement, Select “I accept the agreement” and then click “Next” .

S/W-Print software install (3/6)

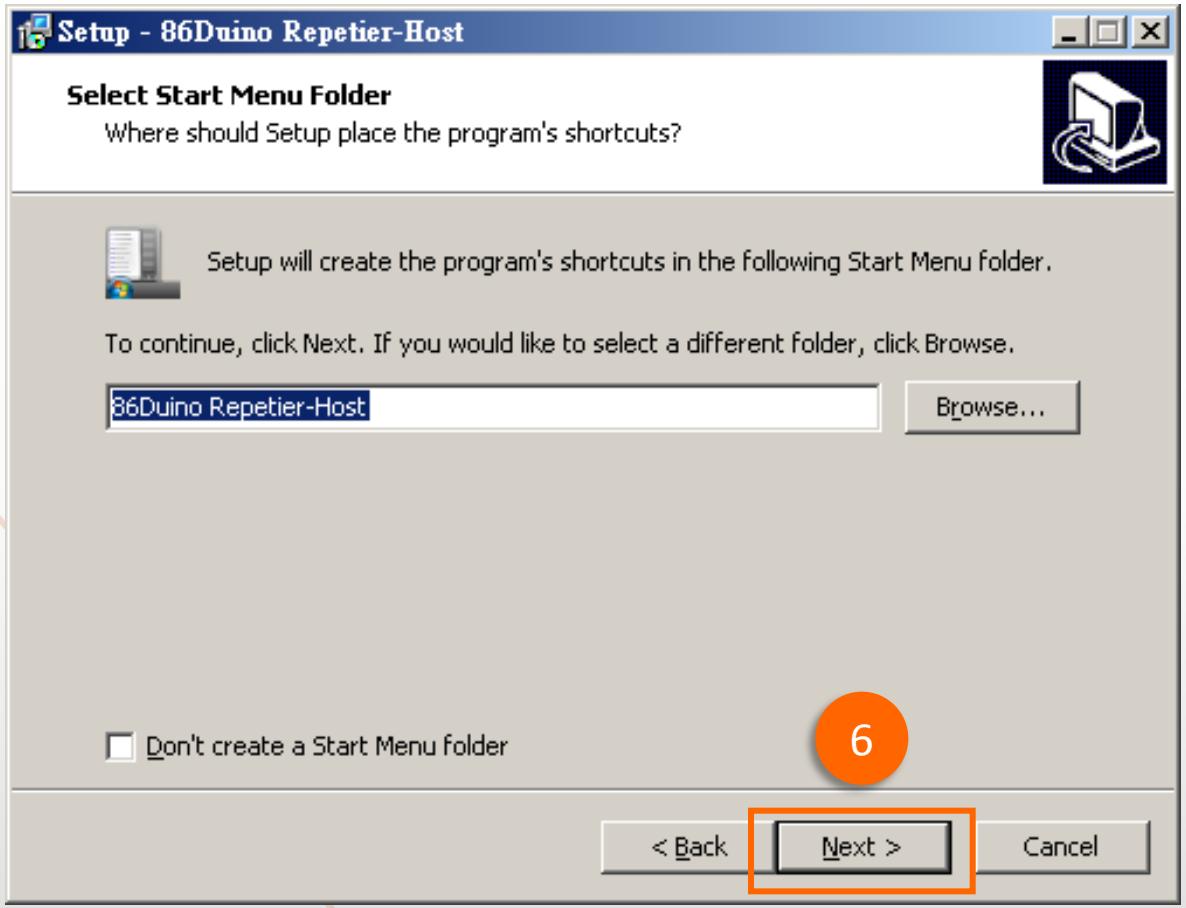


Click “Next” if you like to put it under “Program Files” or you can choose your preferred location by clicking “Browse…”

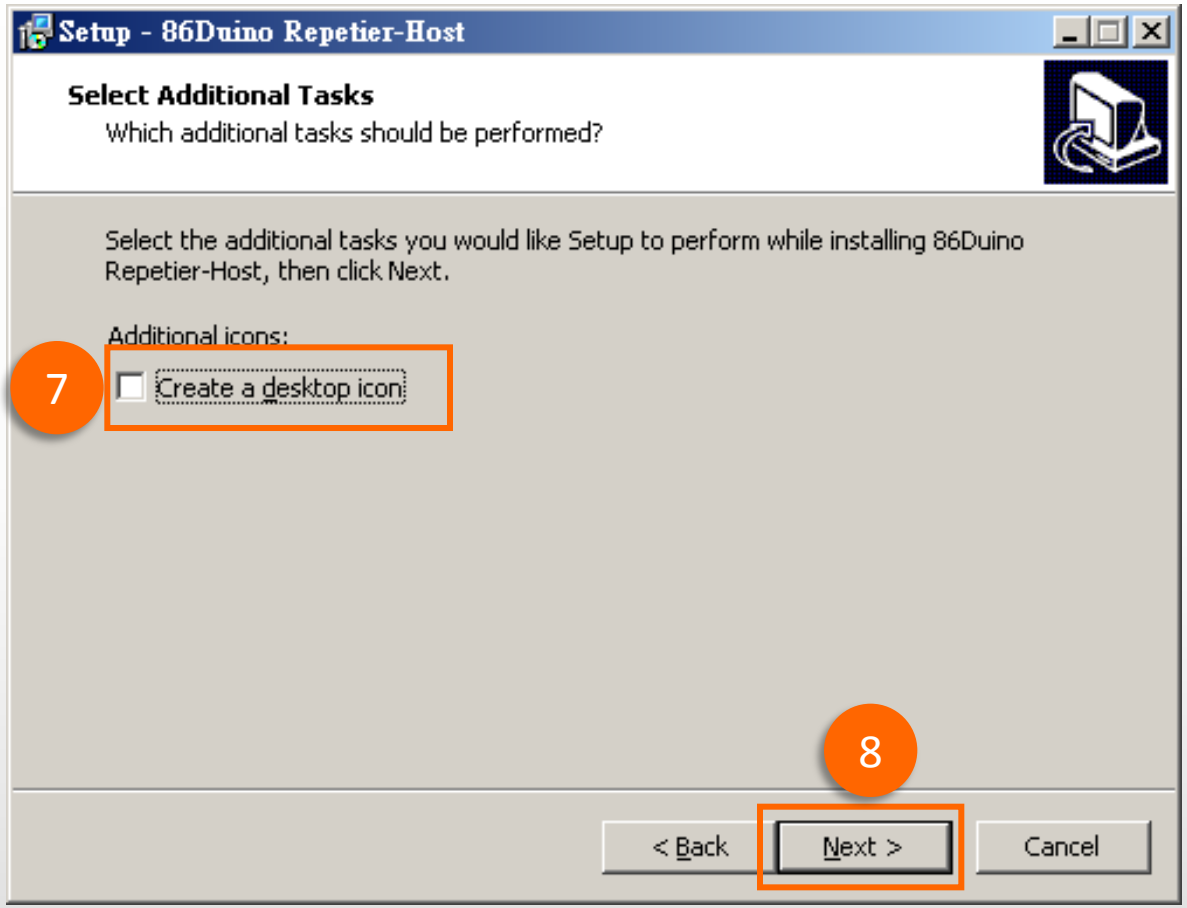


then click “Next” (default setting)

S/W-Print software install (4/6)

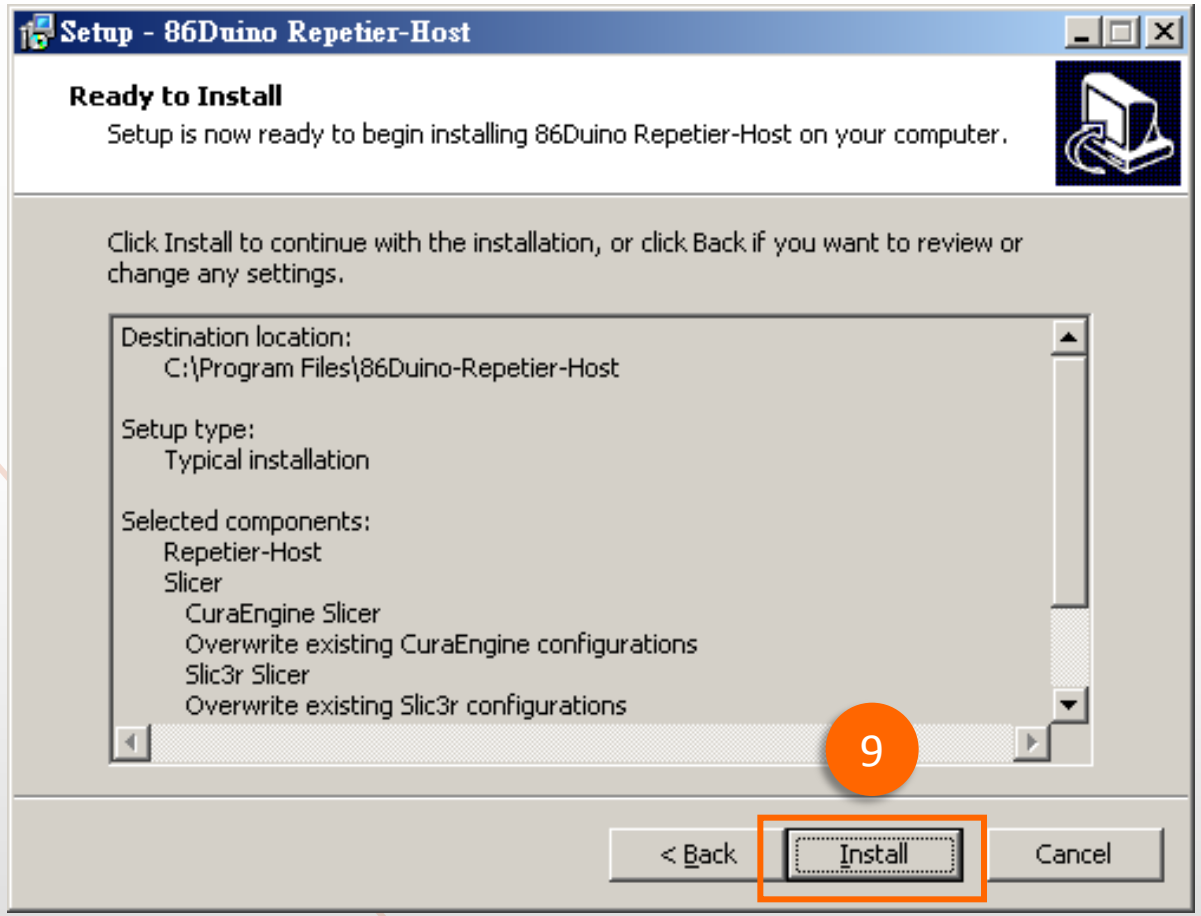


Click “Next” if you like to put the shortcut in “86Duino Repetier-Host” folder or you can click “Browse…” to choose a different folder.

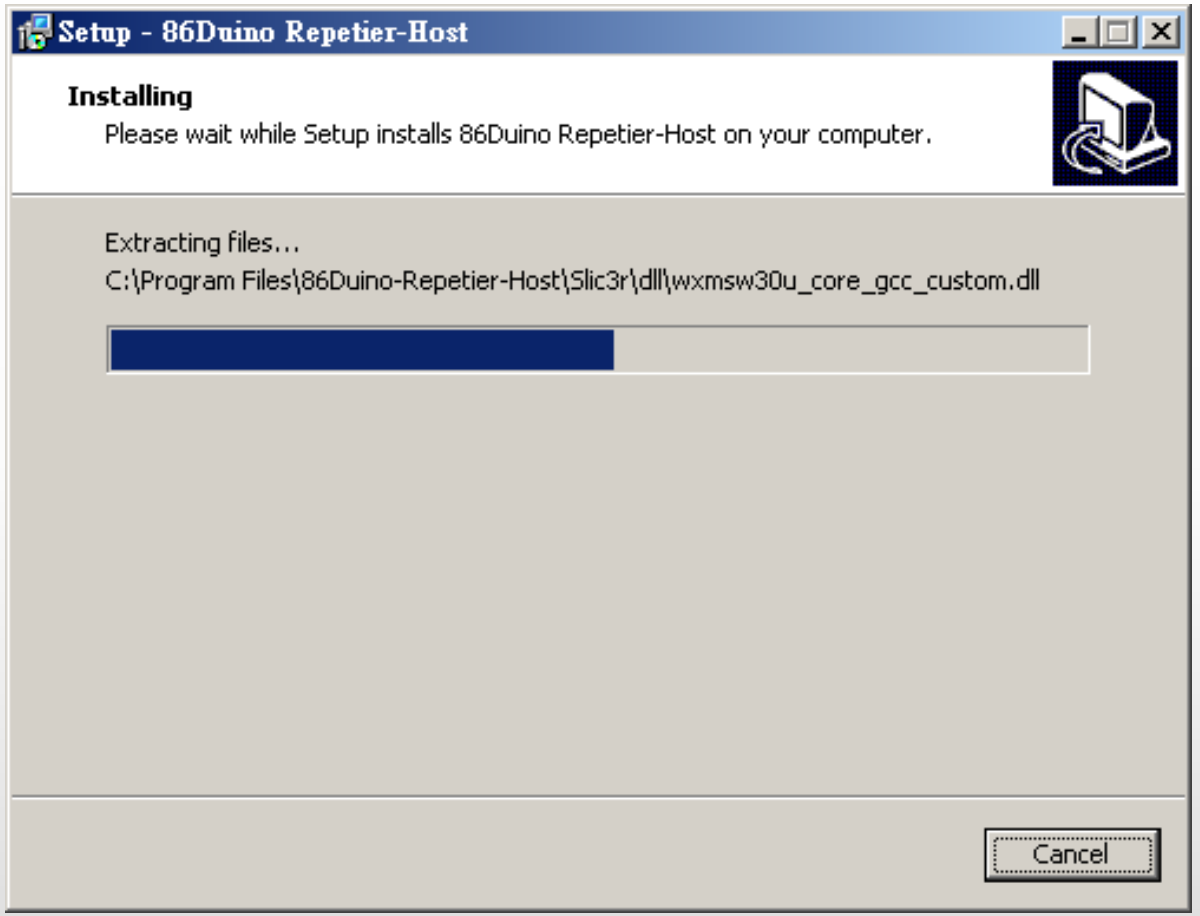


If you would like to create a desktop icon, check off, “Create a desktop icon” and then click “Next”.

S/W-Print software install (5/6)



Click “Install” to start the installation.

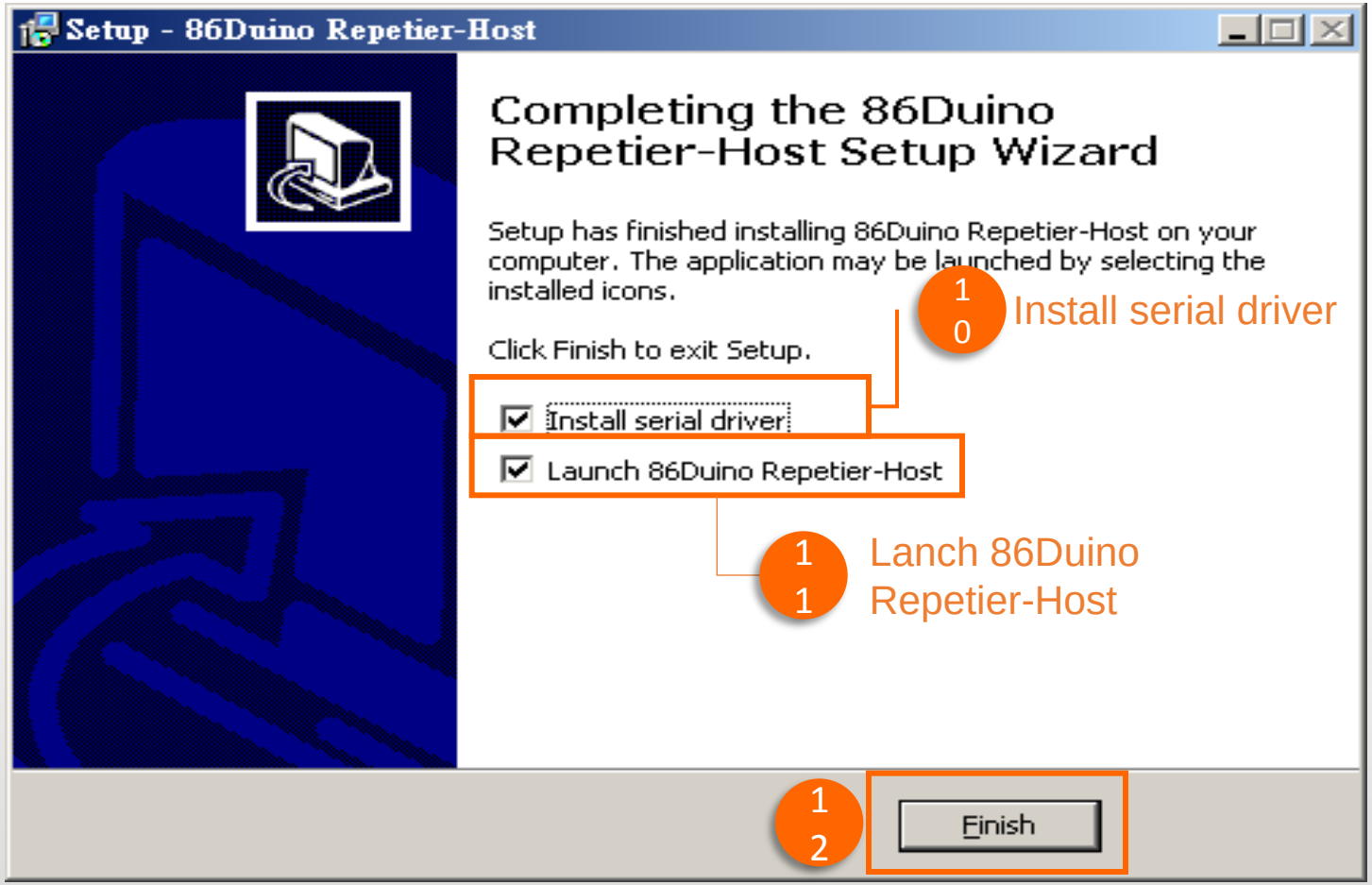


Software Installation

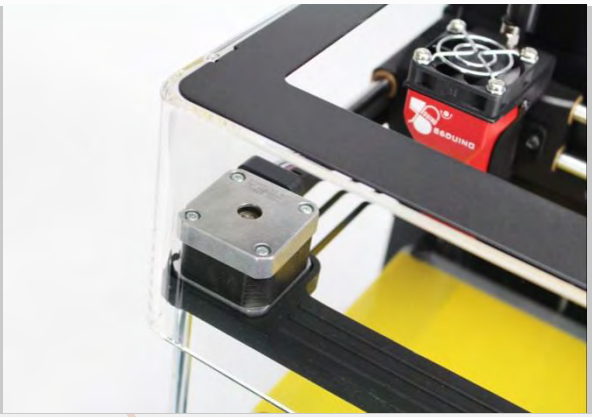
S/W-Print software install (6/6)

- After installation is complete, you can choose whether to continue to install the driver.
- If the previous driver has been installed, you can skip the "Driver Installation" teaching content.
- If you do not execute software now and then, can be performed by clicking "RepetierHost.exe" file.

86Duino Repetier-Host Icon



Installation completion



PART 2

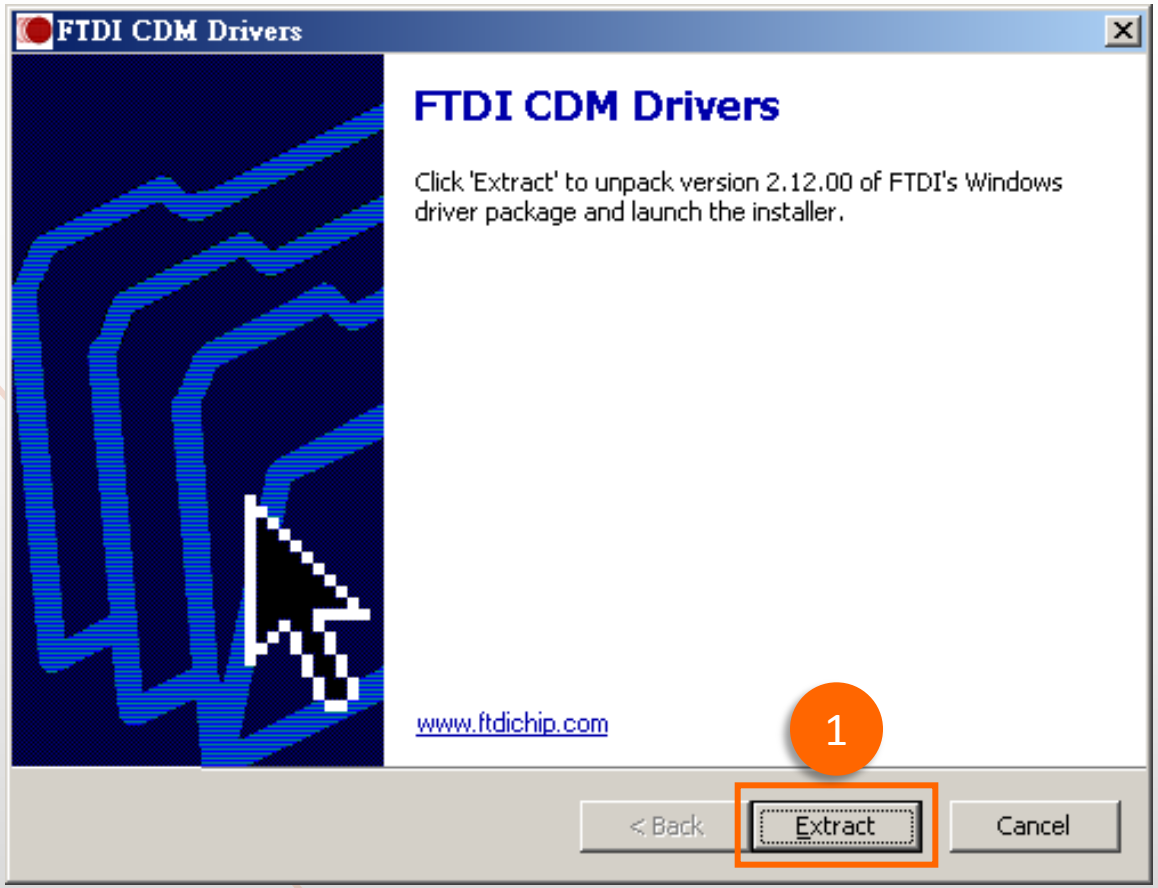
Software Installation

Install print S/W

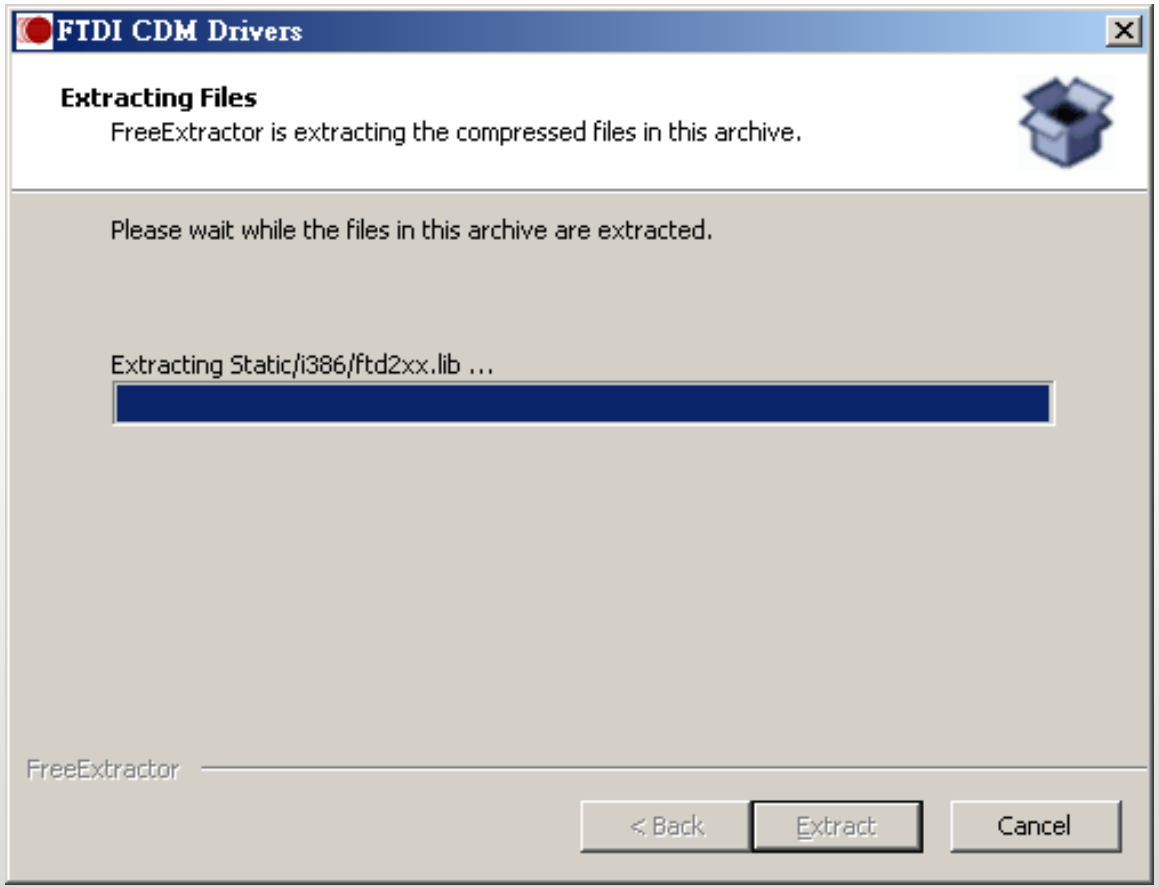
Driver Install

S/W-Driver install (1/3)

If you choose to print software installation to continue after the completion of driver installation, the following installation screen will appear, please follow the instructions to complete the installation:

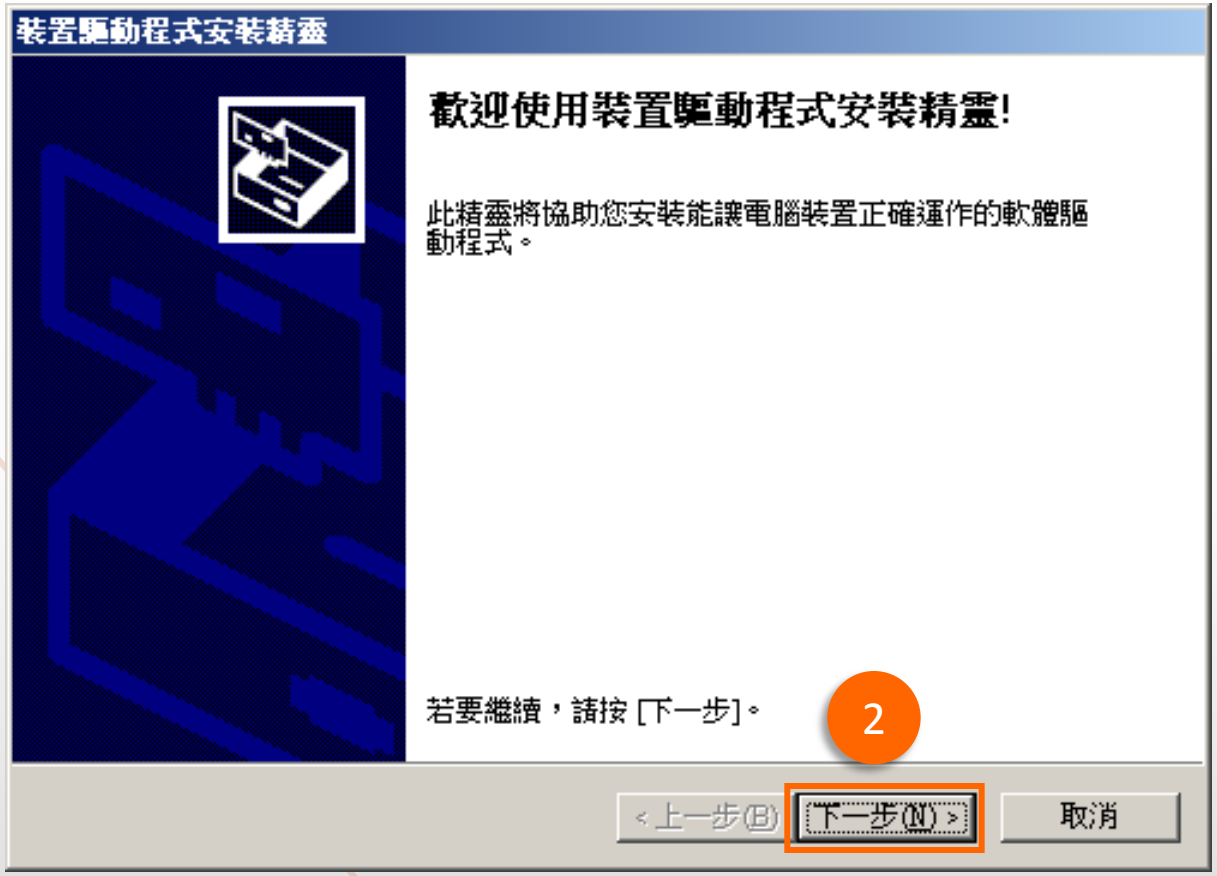


Driver extract confirmation screen



Driver extracting screen

S/W-Driver install (2/3)



Click “Next” for Setup Wizard :

Read the License Agreement and if in agreement, Select “I accept the agreement” and then click “Next” .

S/W-Driver install (2/3)

Install screen

Installation completion screen

PART 3

Hardware Assembly

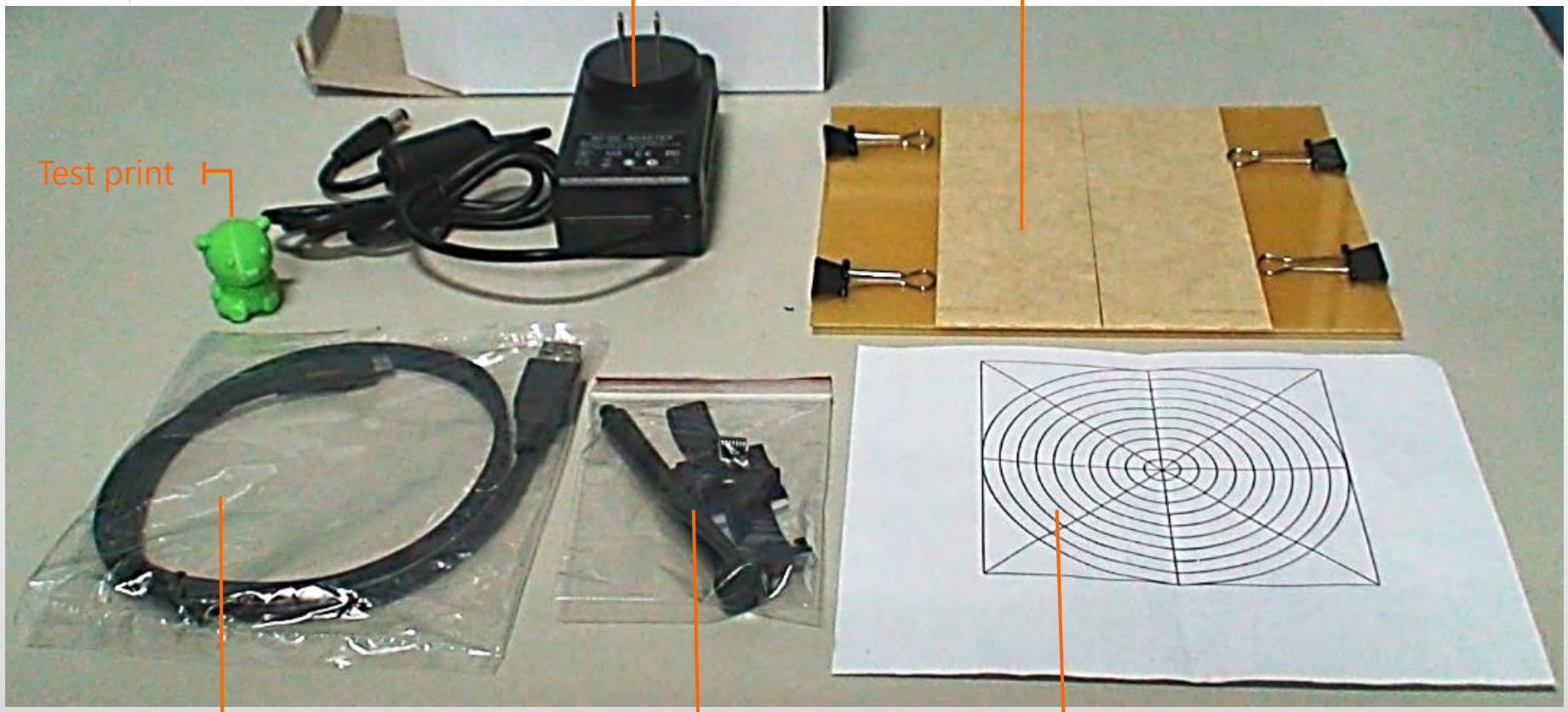
Hardware Intro | Cable installation | Power and Trans cable install

Hardware Intro /Description

ENJOY Printer

Accessories

ENJOY includes the following items at the box:



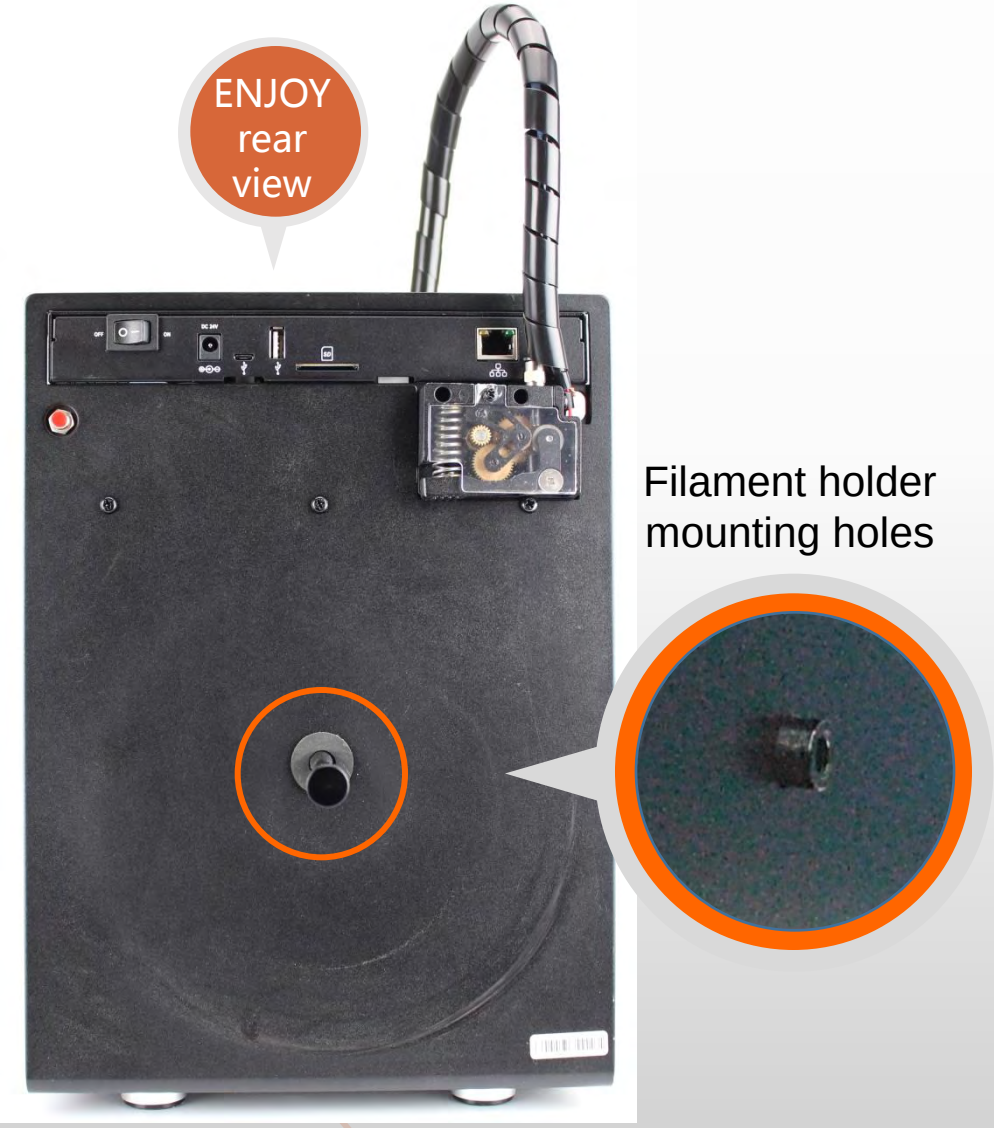
PART 3

Hardware Assembly

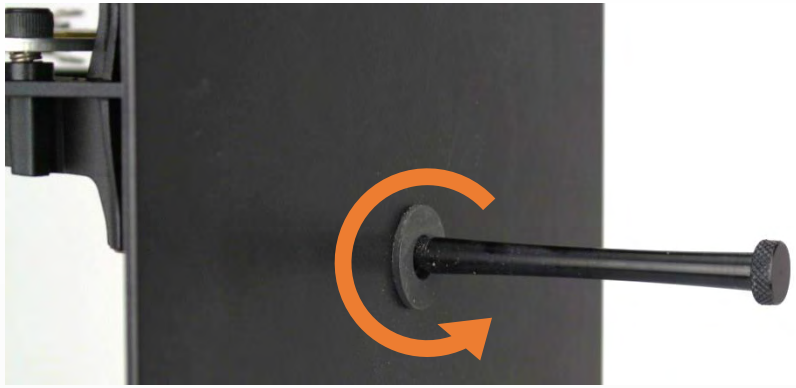
Hardware Intro | Cable Installation | Power and Trans cable install

Cable Installation （1/5）

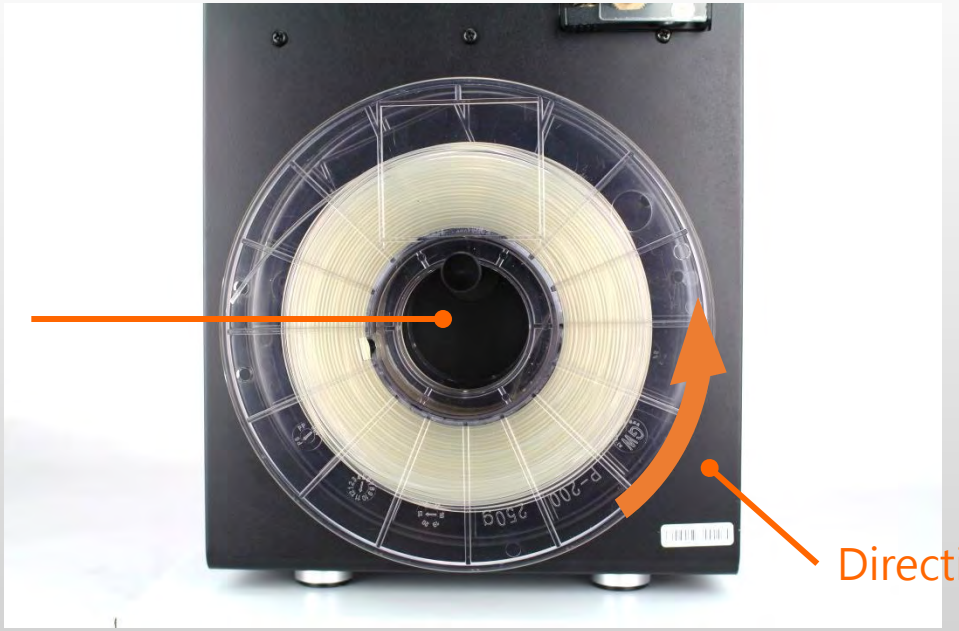
Mounted filament holder on the rear of the printer:



1. Counterclockwise direction of the mounting holder



2. Place the Filament hanging on the holder (note direction)

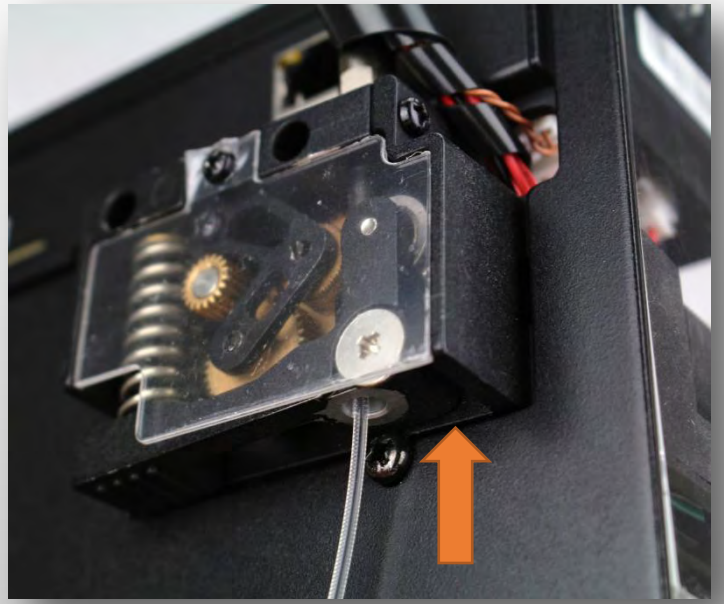


Cable Installation （2/5）

Prior to each use, remove the harden/used end of the filament by cutting off 2 inch from the end to be loaded into the extruder.

3. Cutting

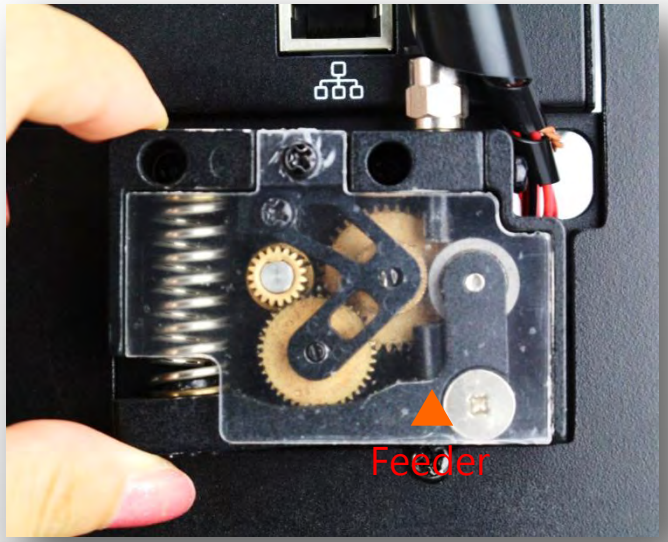
4. feed the filament into the Feeder



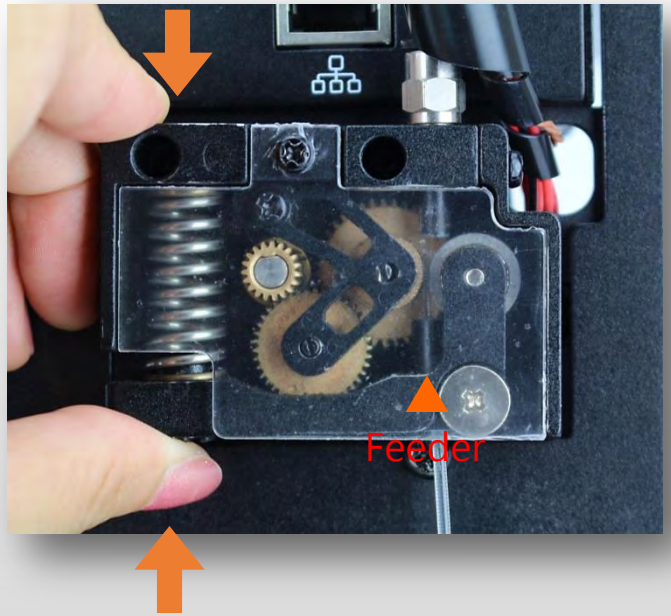
Cable Installation （3/5）

Push up on the spring to the left while feeding the filament up into the tube.

5. Push up on the spring



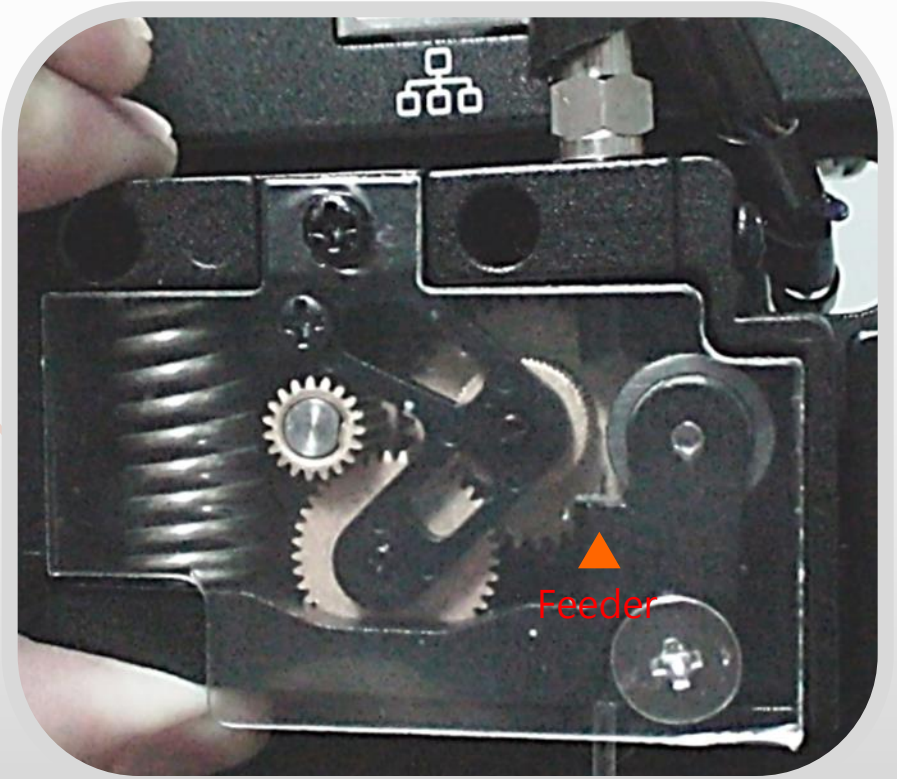
6. gears will be moved to the right, to generate the space



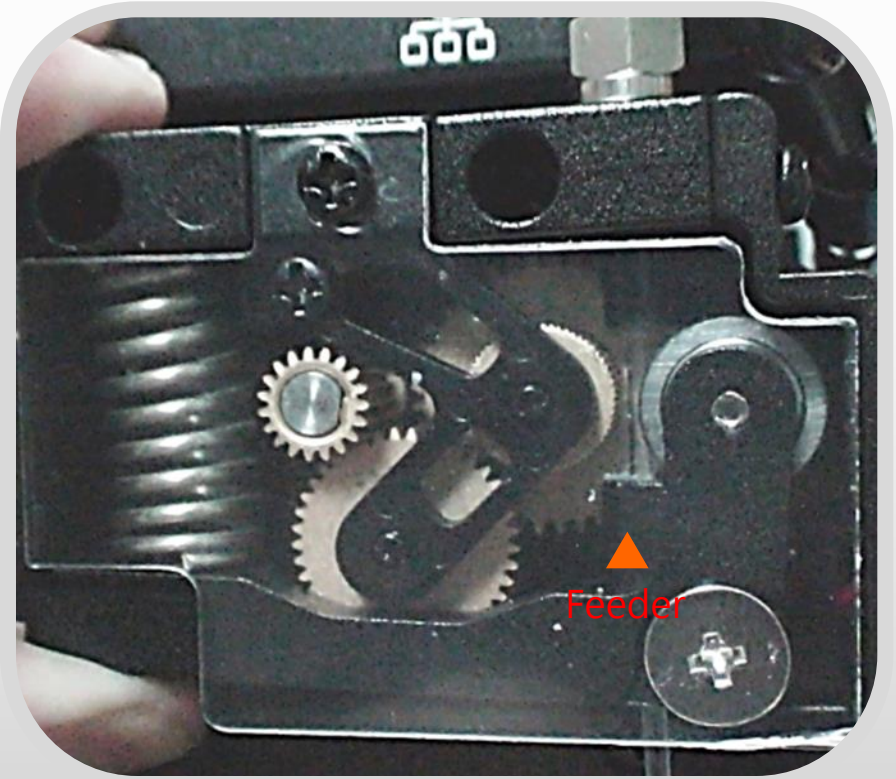
Cable Installation （4/5）

Continue to feed the filament up into the extruder until you feel there is NO room for more filament.

7. Feed the filament up into the feeder



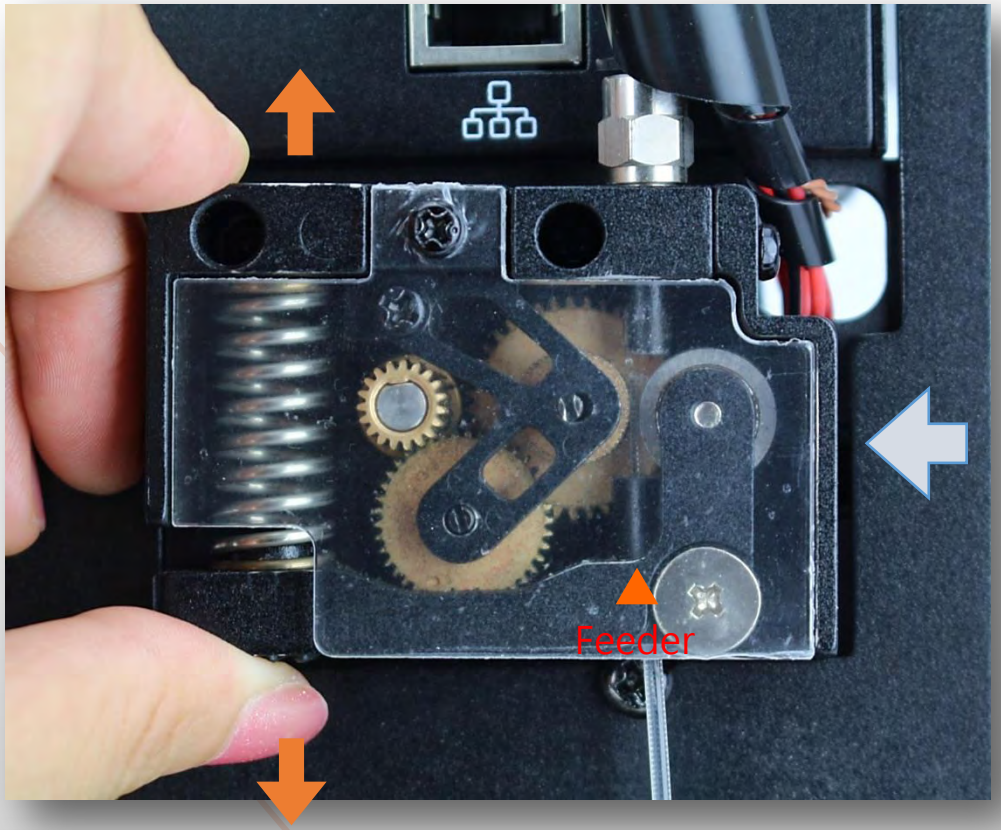
8. until you feel there is NO room for more filament.



Cable Installation（5/5）

When you feel there is NO room for more filament. Release the spring. The filament is now loaded.

9. Release the spring



10. The filament is now loaded

PART 3

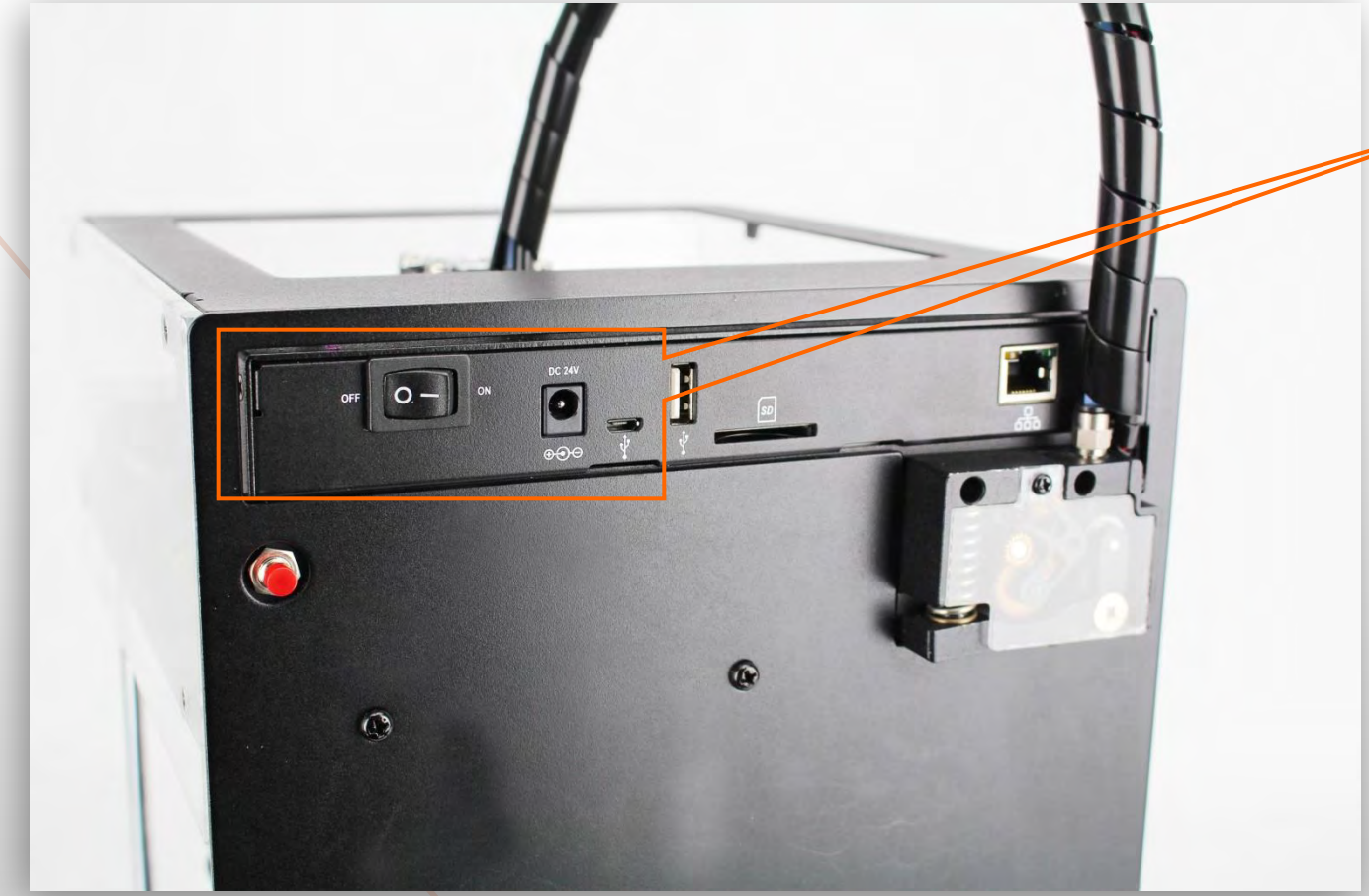
Hardware Assembly

Hardware Intro | Cable Installation | Power and Trans cable install

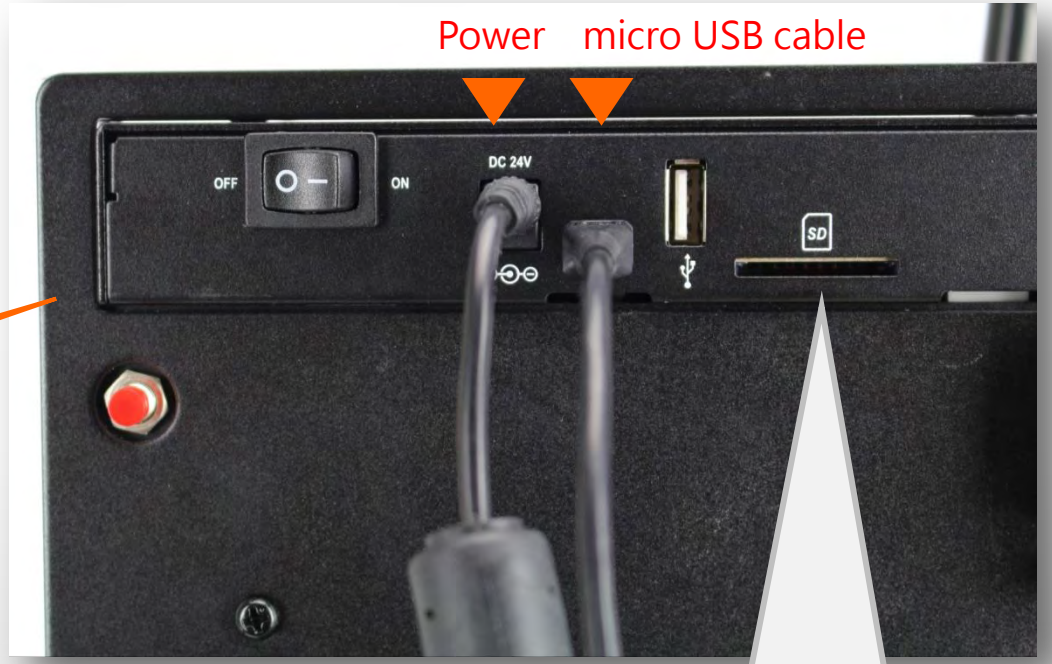
Connect Enjoy Printer (1/2)

With the Power switch in the OFF position, connect the provided power supply to an AC (100-240V) source and the USB cable to a computer.

Panel



Power micro USB cable

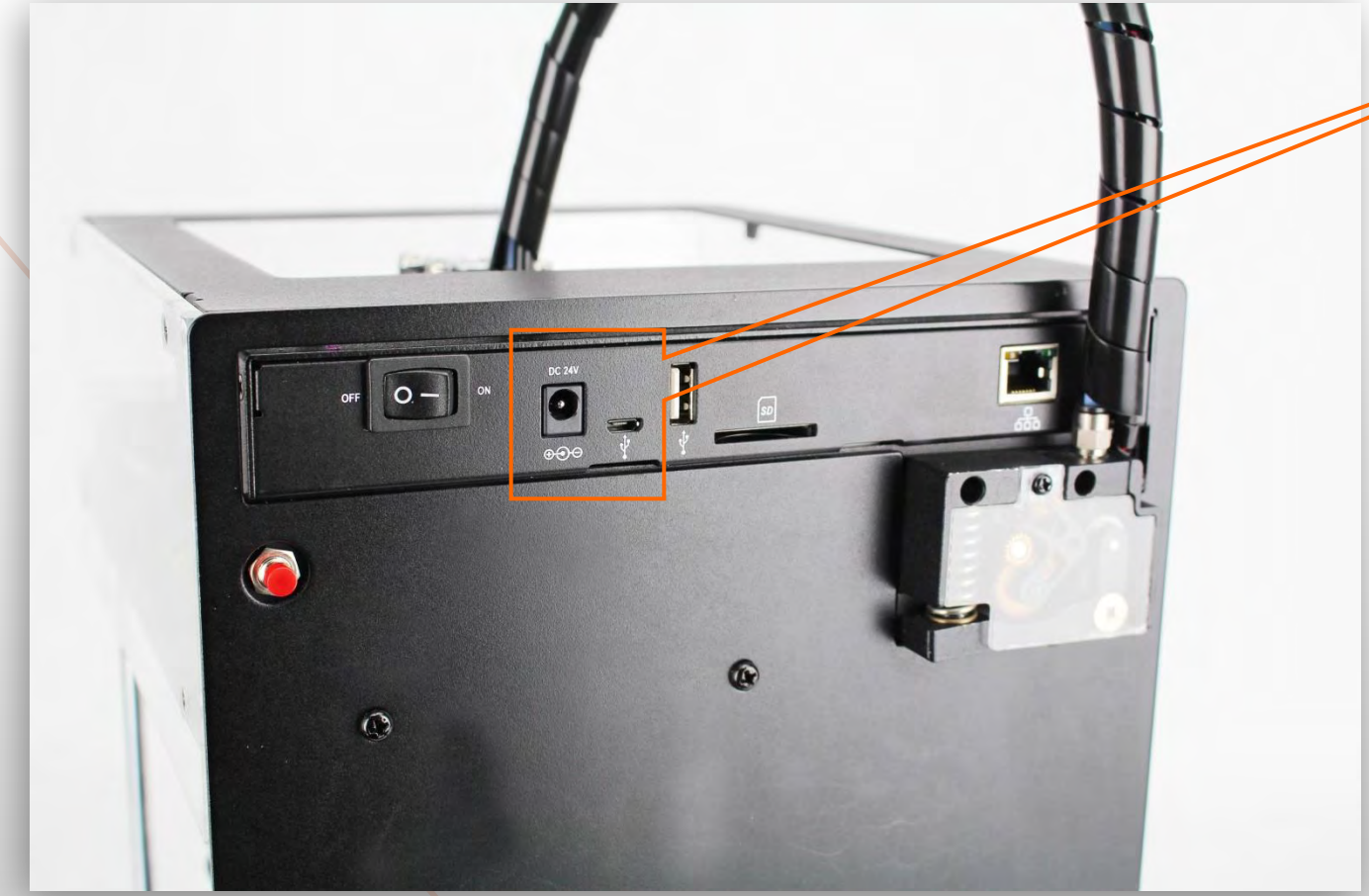


Direction

Connect Enjoy Printer (2/2)

If you are worried of cables may affect the filament rotates, the entire line can be used to secure the wire loop:

Panel



Complete Installation Reference

Cable ring (before)

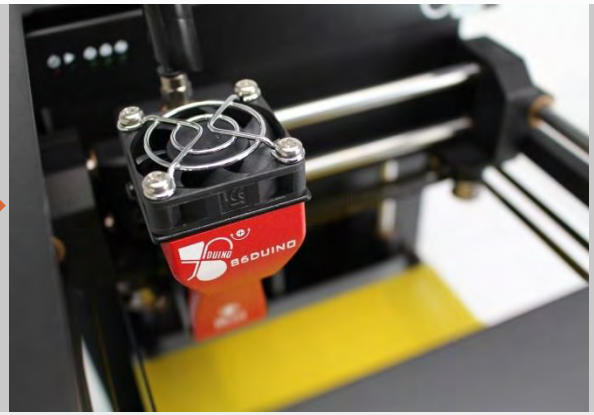
Cable ring (after)

Direction

Calibration Settings

Setup and connection | Extruder Calibration | Print bed Calebration

PART 4



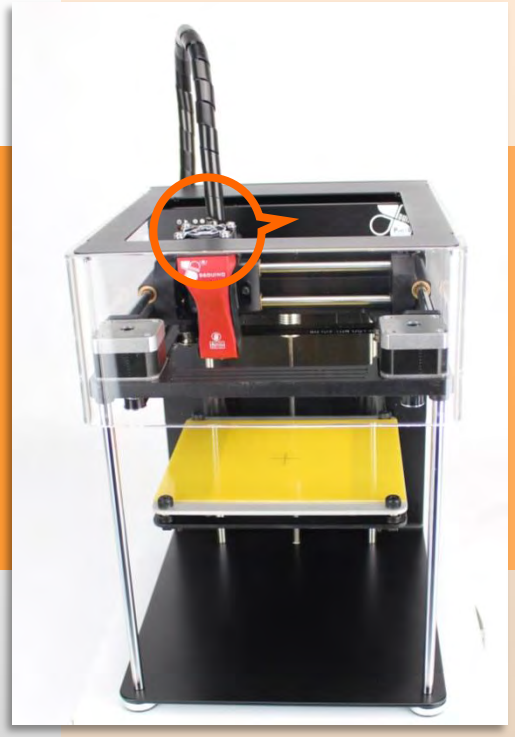
Software setup and connection (1/7)

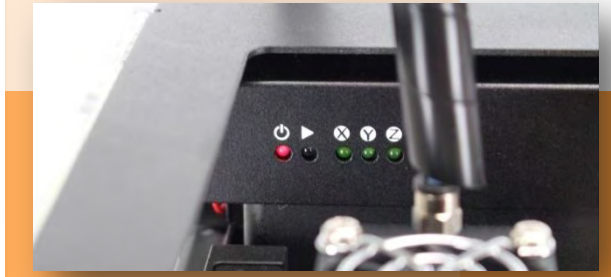
Power on, then all LED on the panel lights blink once after leaving Red lighted.

1. Power adapter

2. Switch power on

3. all LED on the panel lights blink once after leaving Red lighted.





Software setup and connection (2/7)

Enjoy Printer via micro USB cable to the PC, then the PC will automatically install the driver.

4. Micro USB Cable connect to PC

5. Driver installed

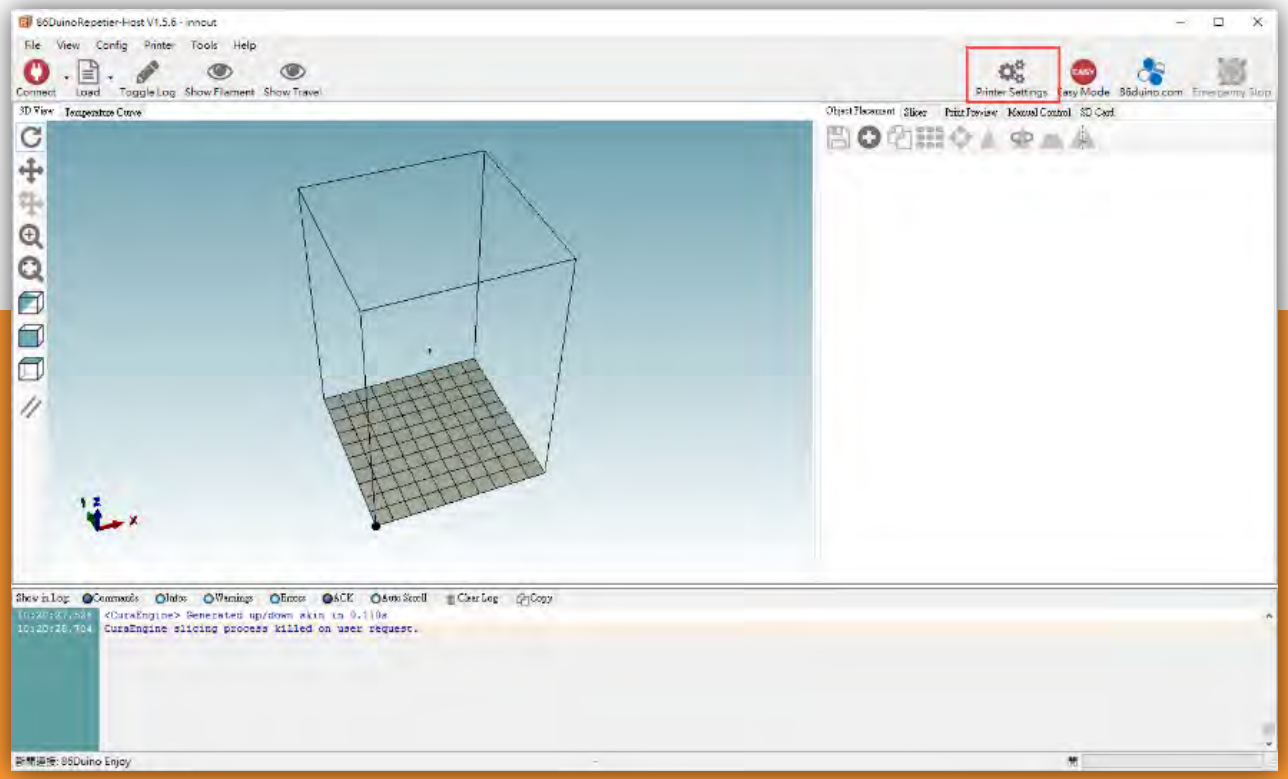
6. Device manager confirmed

Software setup and connection (3/7)

Run 86Duino-Repetier-Host (RH) program, and check printer status:

1. Start screen

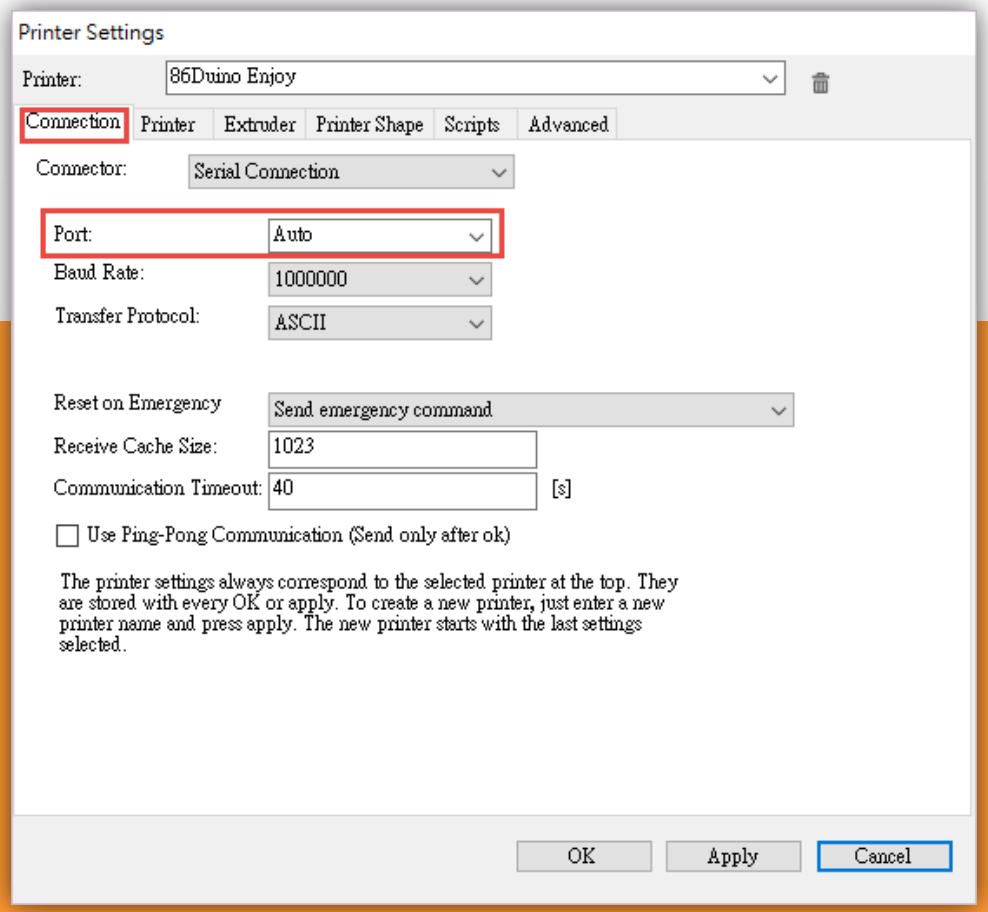
2. click "Printer Setup" button



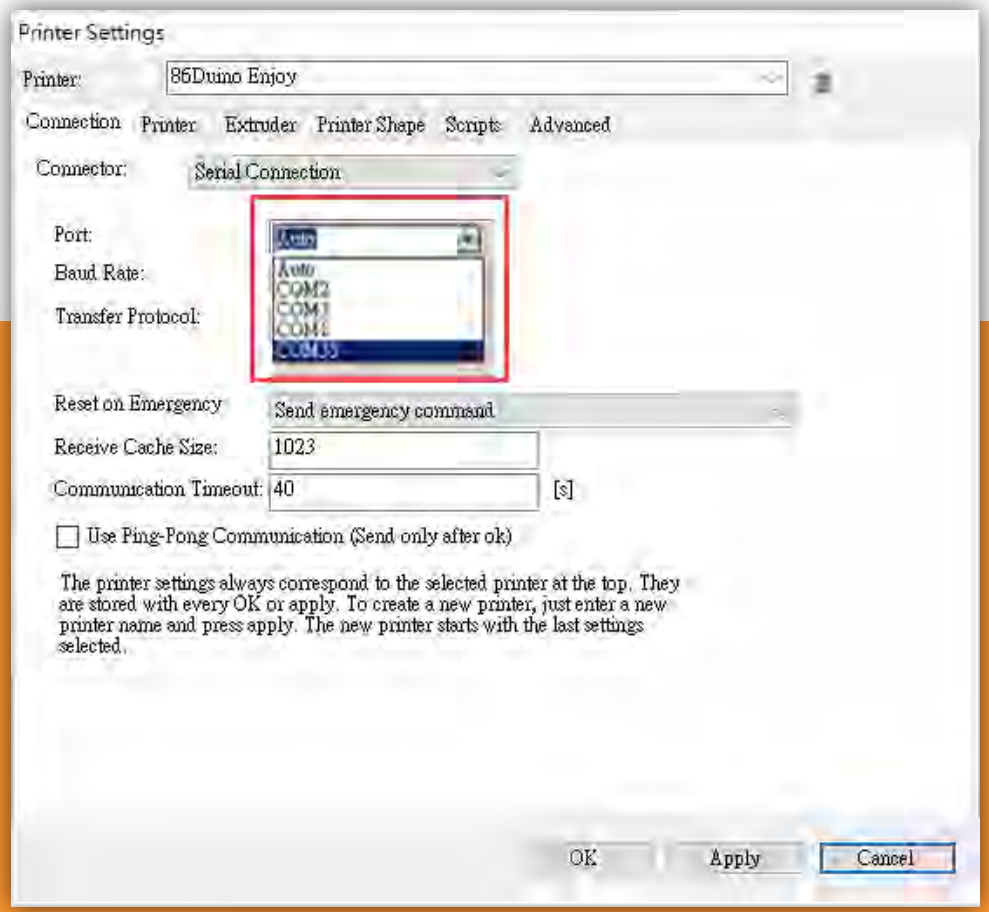
Software setup and connection (4/7)

Printer Setup-If cannot connect the Enjoy printer to PC(default Auto does not work）

3. Select “Connection” tab and click “Port” tab



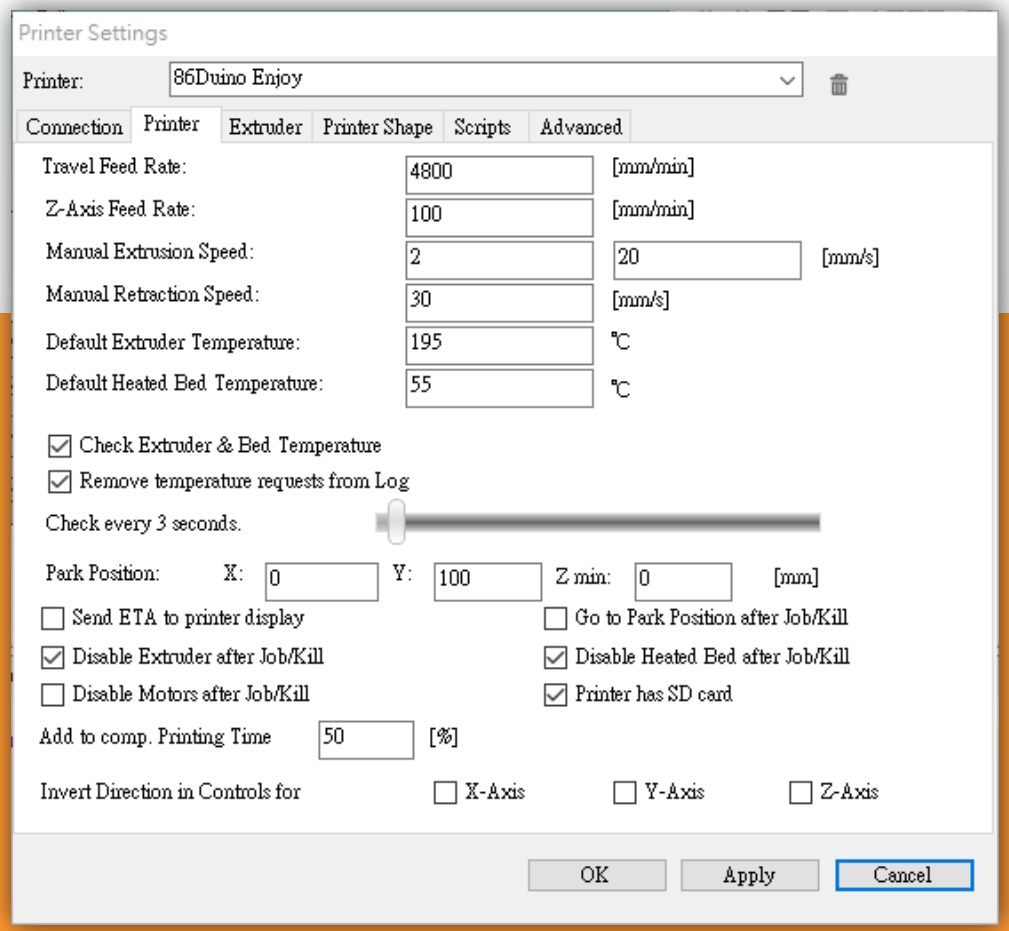
4. Manually select the port



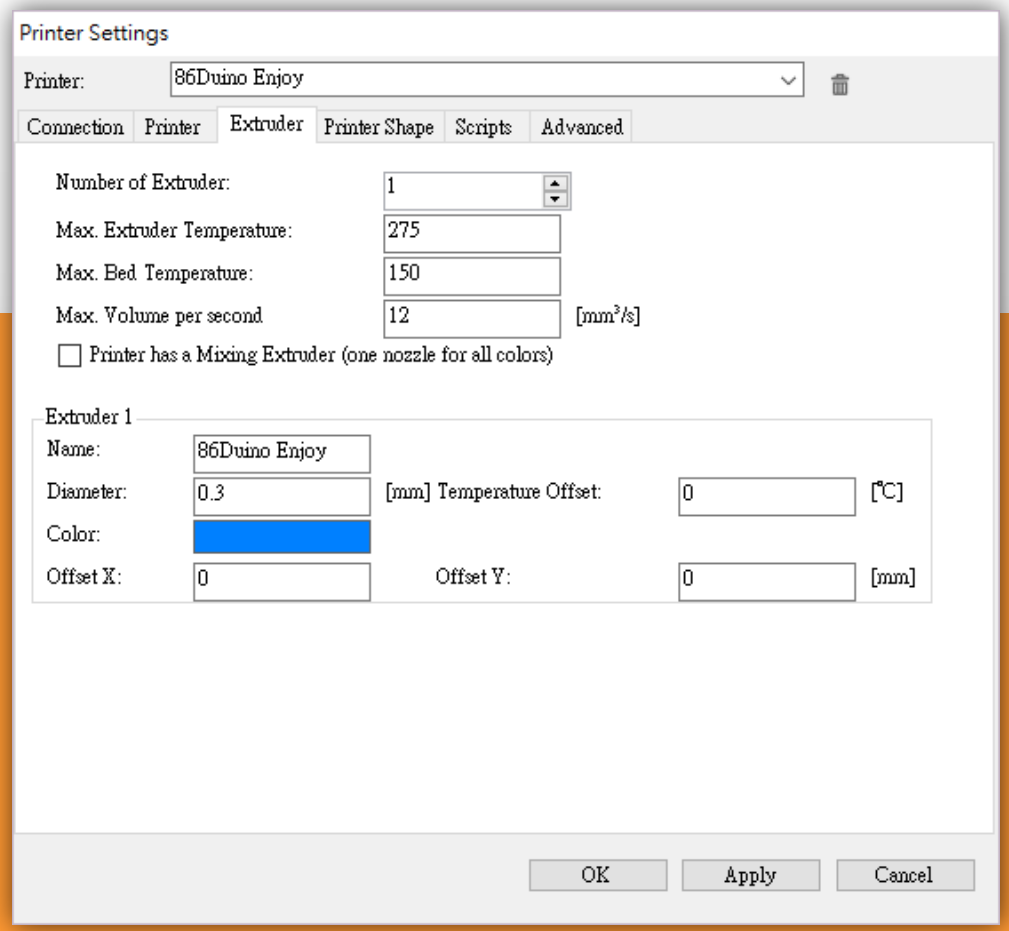
Software setup and Connection (5/7)

Printer Setup - Printer and setting (default)

5. Select "Printer" tab, the default setting as shown



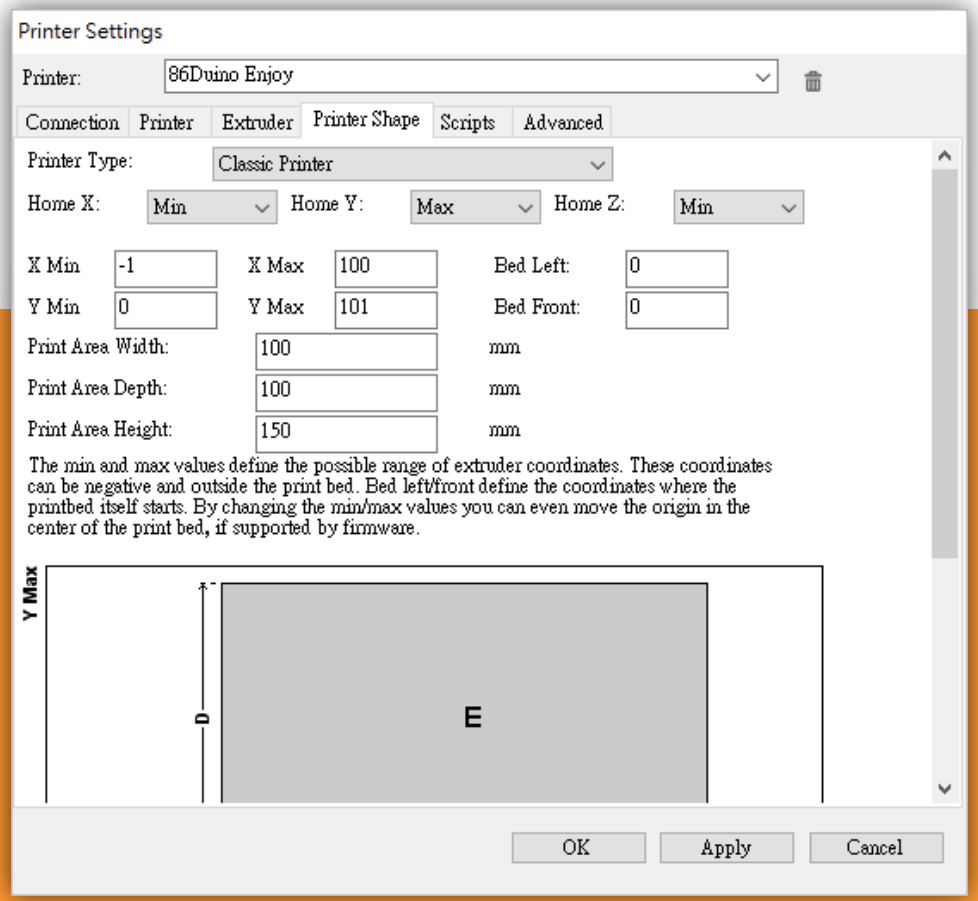
6. Select “Extruder" tab, the default setting as shown



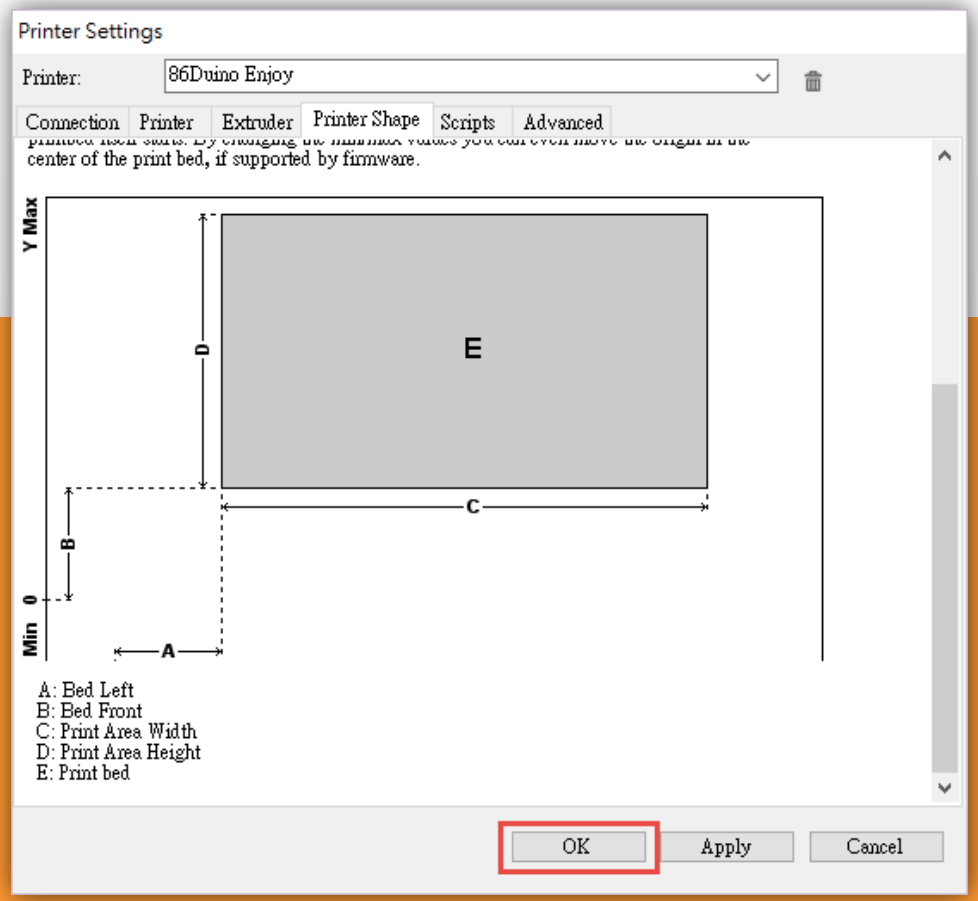
Software setup and Connection (6/7)

Printer Setup - Printer and setting (default)

7. Select "Printer Shape" tab, the default setting as shown

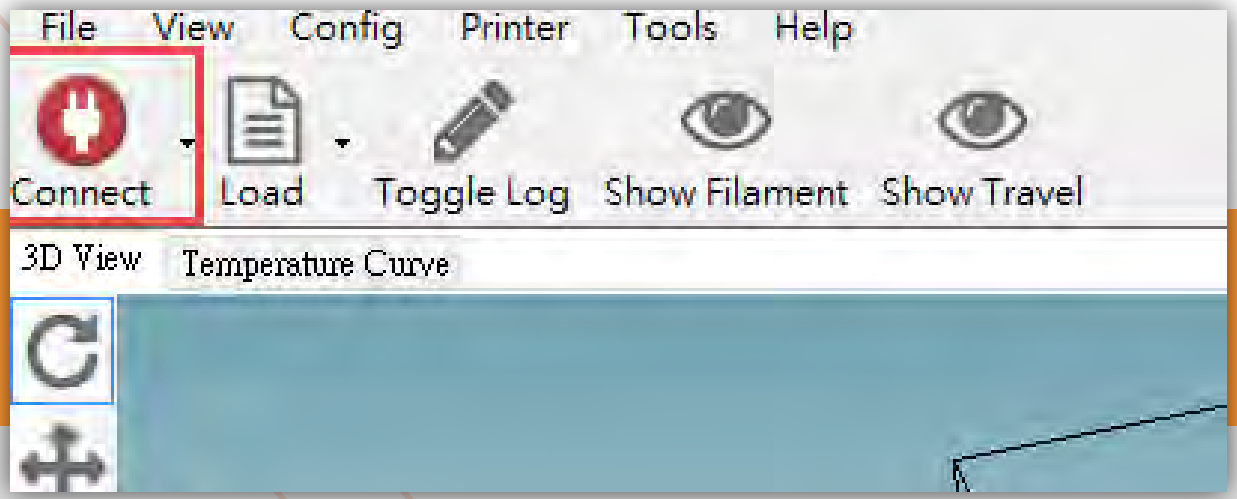


8. Click ok and Exit

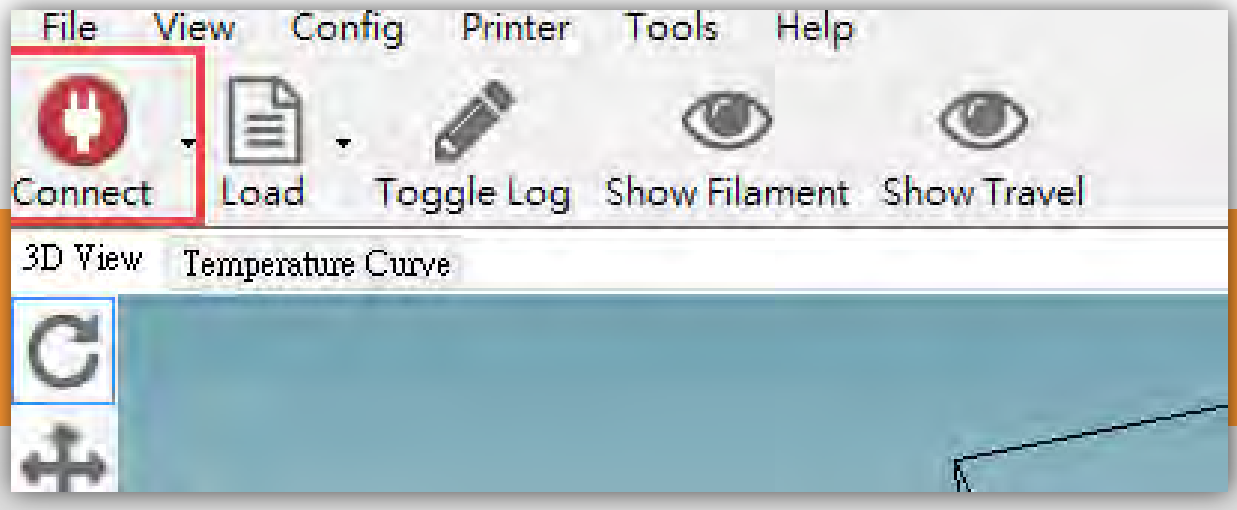


Software setup and Connection (7/7)

9. Confirm the printer power on and micro USB cable connected PC, press the top left "Connect" button



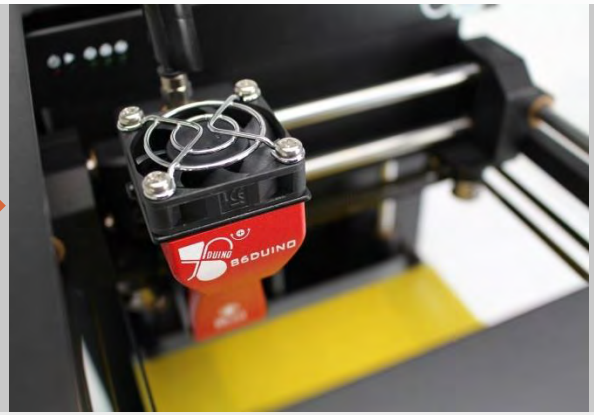
10. The Enjoy Printer will emote a short 3-beep pepping sound and the red “Connect" icon will turn green



Calibration Settings

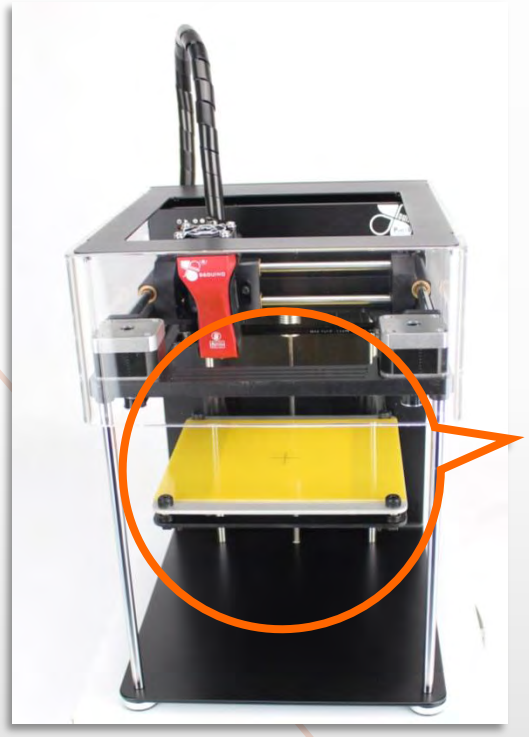
Setup and connection | Extruder Calibration | Print bed Calebration

PART 4

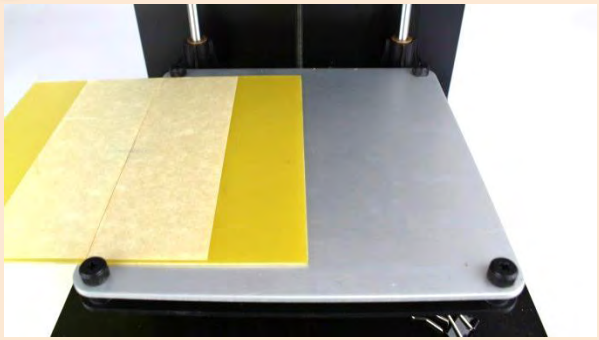


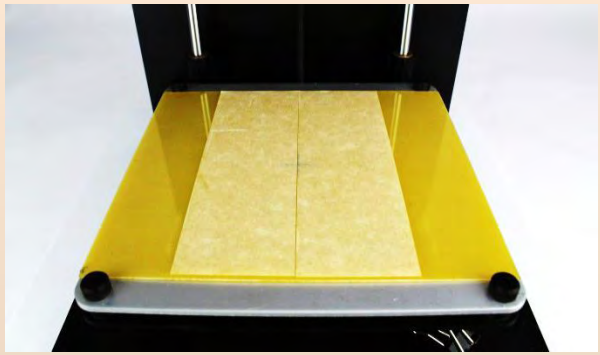
Leveling the Platform – Extruder Correction(1/10)

Extruder home position operation

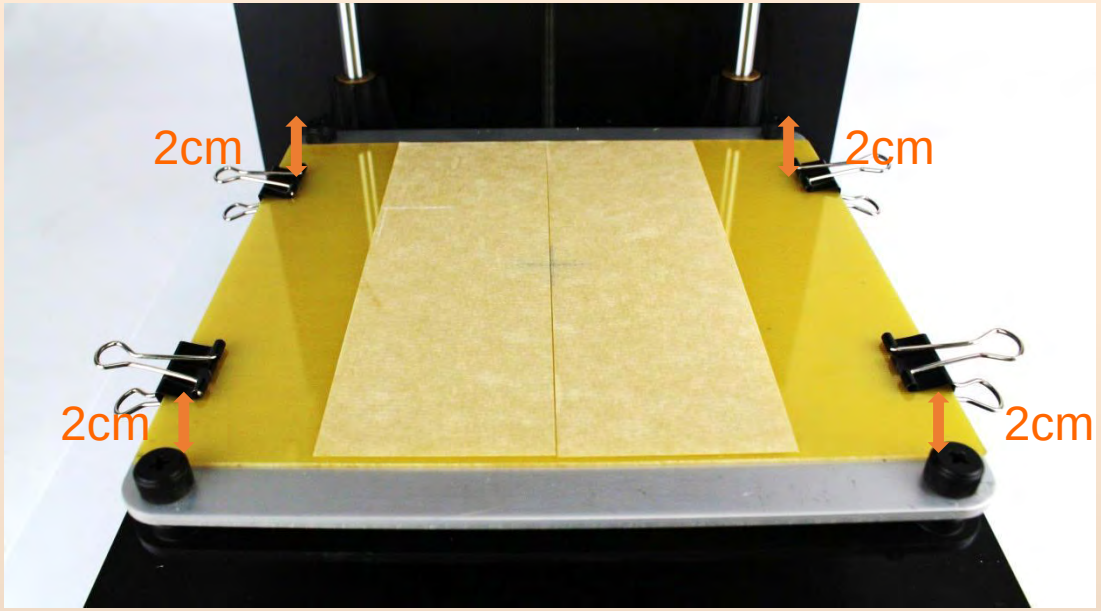


1





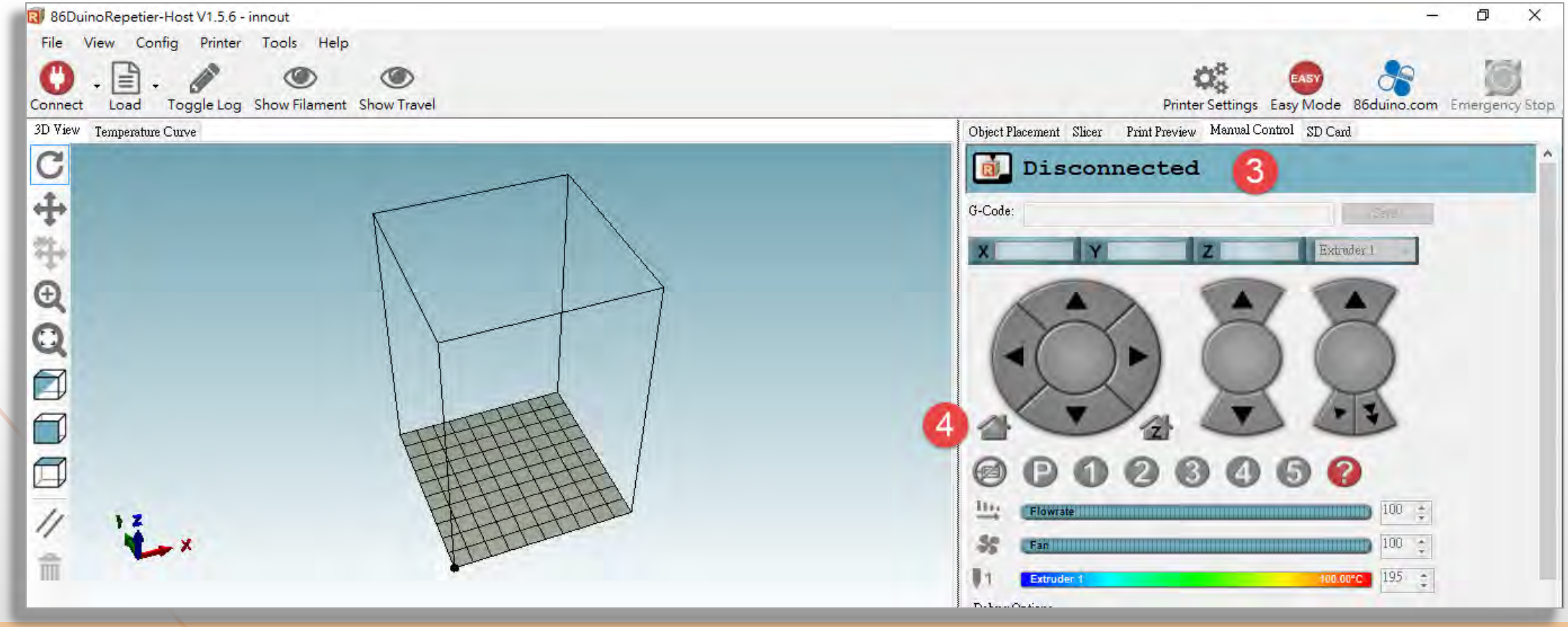
2



1. The object is placed on the tray to print bed (Attention the direction)
2. The clips sandwiched around object tray, the tray will be fixed on the print bed, clips should be noted from the level of about 2 cm above the knob, so as not to affect the follow-up bed horizontal adjustment.

Leveling the Platform – Extruder Correction(2/10)

Extruder home position operation



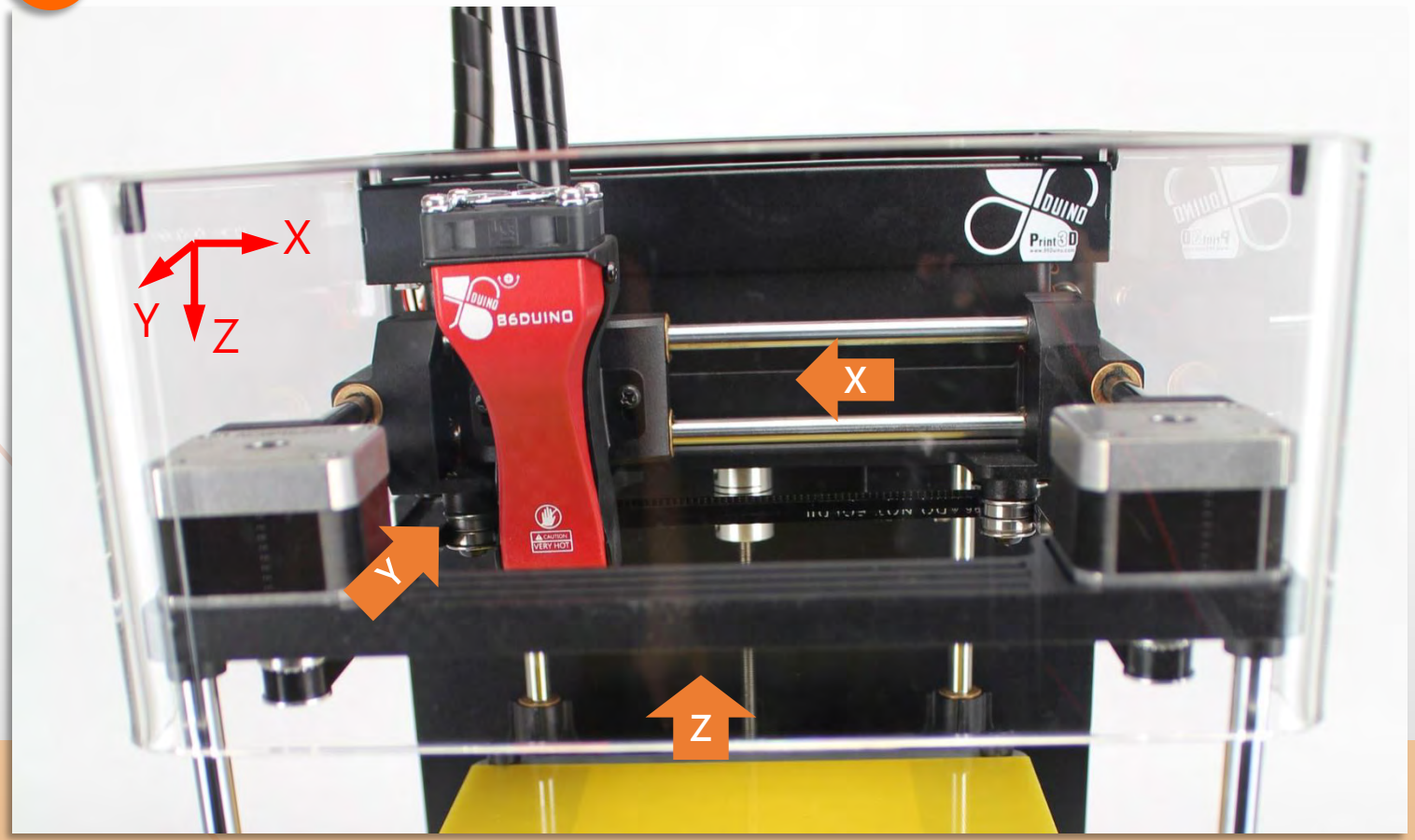
3. Click the "Manual Control” tab on the right side
4. then click on the Home icon, then the printer begins to move the extruder and print bed to home position

*note! Make sure to dismount the cable ties and other protective components of the fixed printer after this operation to avoid motor damage.

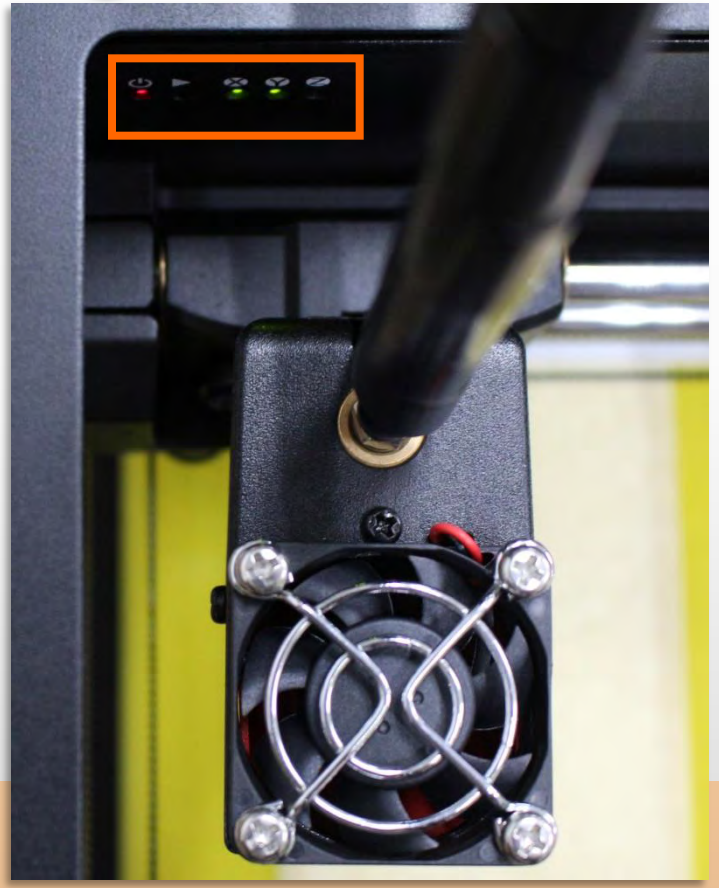
Leveling the Platform – Extruder Correction(3/10)

Extruder home position operation

5



6

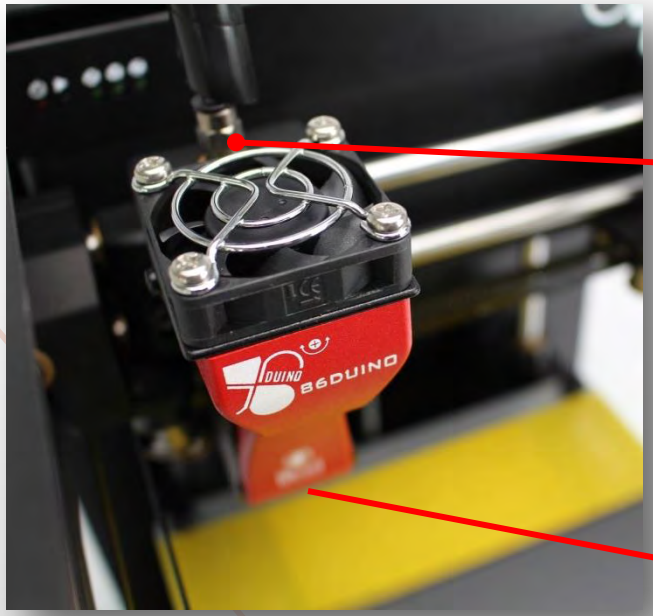


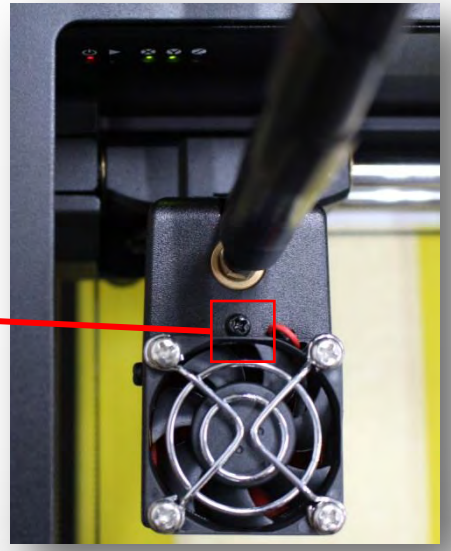
5. Extruder and print bed will move to home position

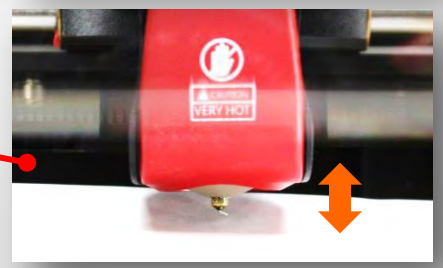
6. The extruder and print bed will reposition then stop. The X and Y LED will light up green, but NOT the Z LED

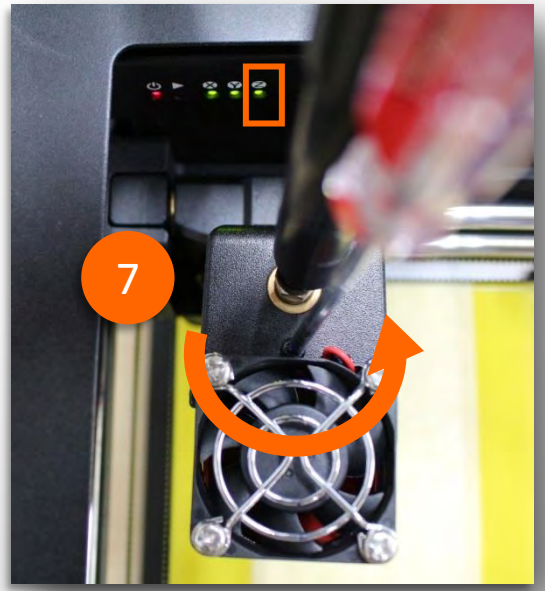
Leveling the Platform – Extruder Correction(4/10)

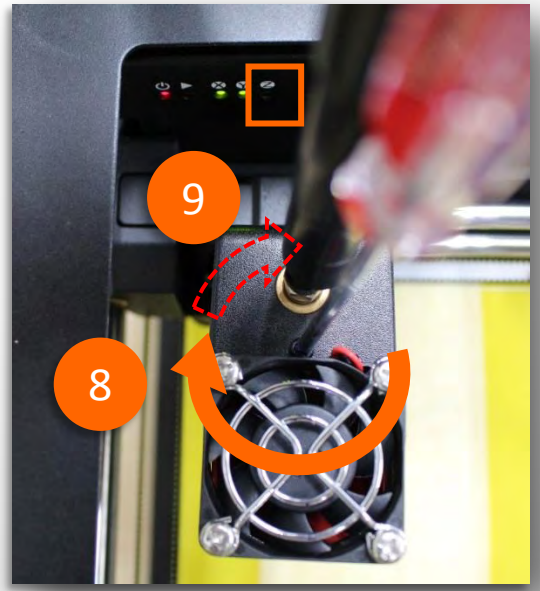
Extruder home position operation







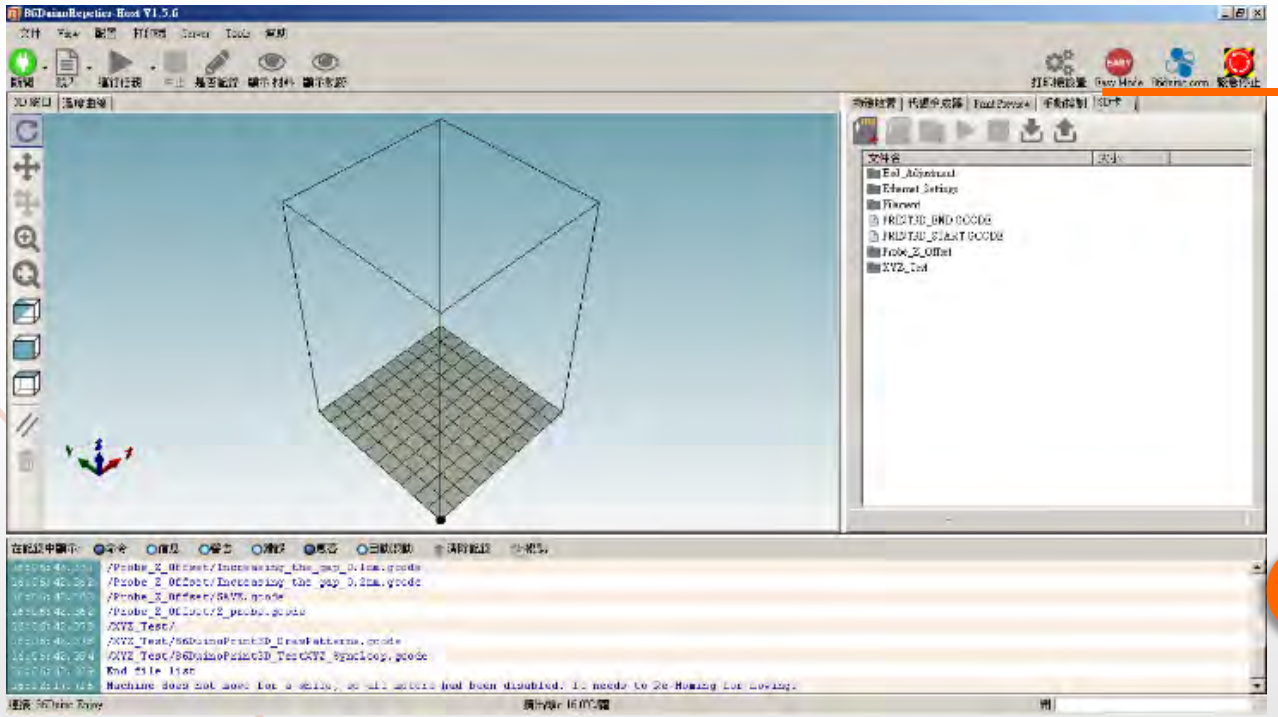


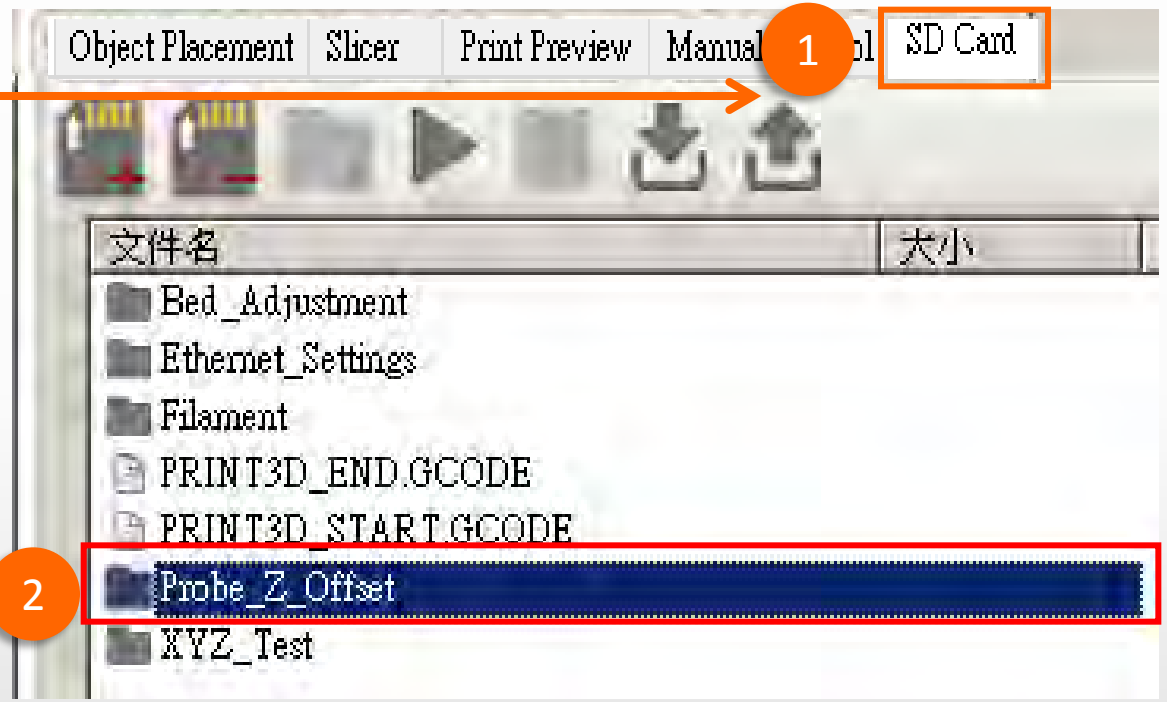


7. Using a Philips screwdriver, turn the screw (shown in the picture below) counter clockwise until the Z LED lights up green
8. Then, turn the screw back, clockwise, half a turn or until the Z LED turns off again.
9. In this case, please re-clockwise about a quarter turn more, let extruder in good position

Leveling the Platform – Extruder Correction(5/10)

Extruder Z offset

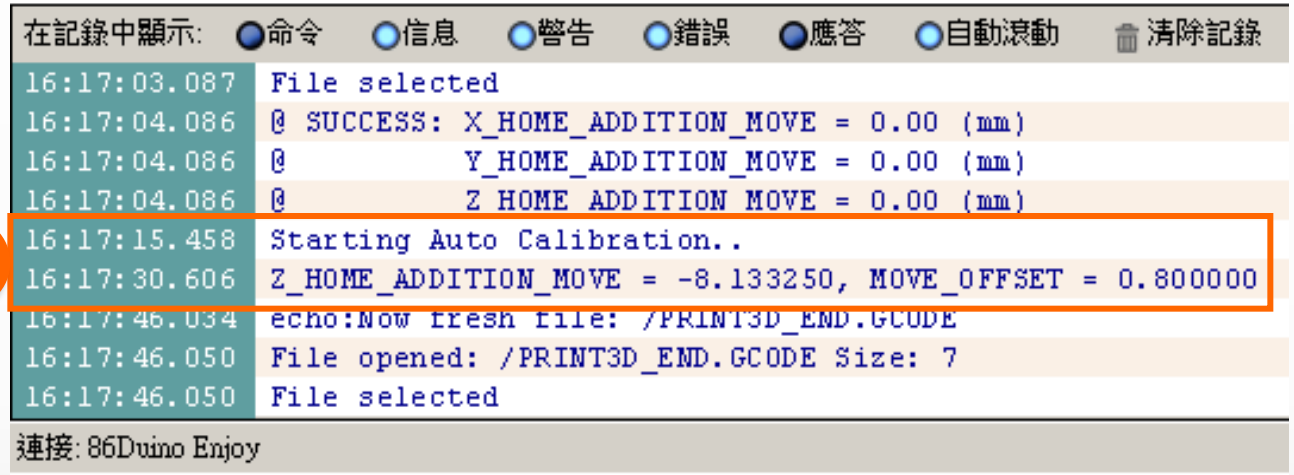




1. Click the “SD Card” tab
2. then double click on the “Probe Z offset” folder

Leveling the Platform – Extruder Correction(6/10)

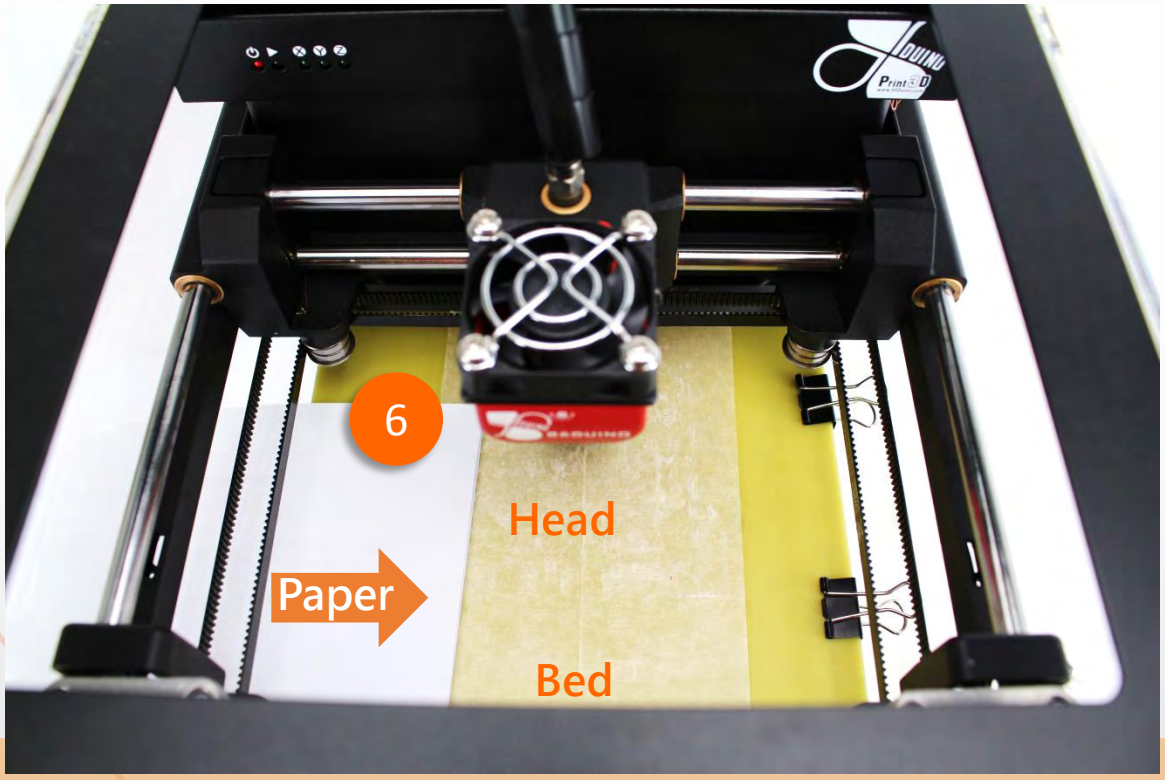
Extruder Z offset

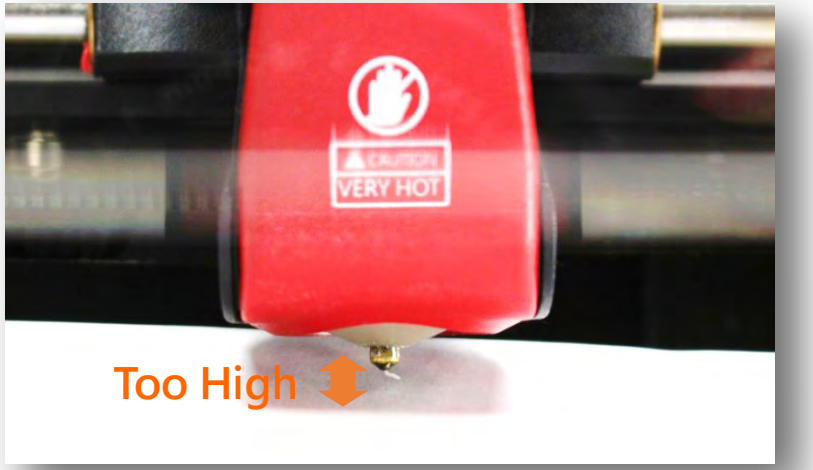


3. Click the “Z Probe gcode”
4. Click the “Start” 「▸」 icon at the top
5. The head will reposition and stop at the center of the platform/bed, status windows also show adjustment result.

Leveling the Platform – Extruder Correction(7/10)

Extruder Z offset





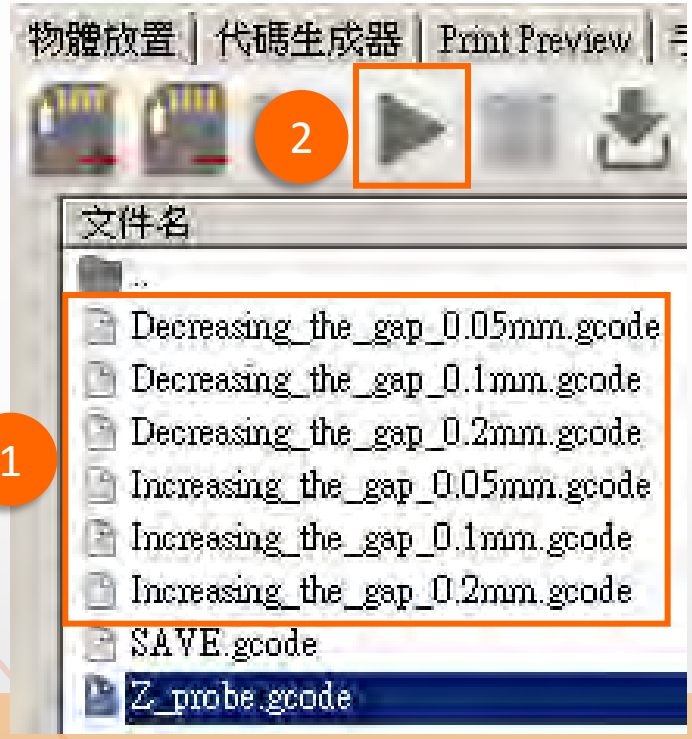
6. Using a strip of test paper (e.g., using a regular A4 sized paper,), try to insert the test paper between the head and the bed:

If you can insert the test paper between head and bed, but feel no resistant as you move the test paper around, the gap between the head and the bed is too large. You will need to click on Decreasing_the_gap

If you can NOT insert the test paper between the head and bed, the gap between the head and the bed is too small. You will need to click on “Increasing_the_gap

Leveling the Platform – Extruder Correction(8/10)

Extruder trimming

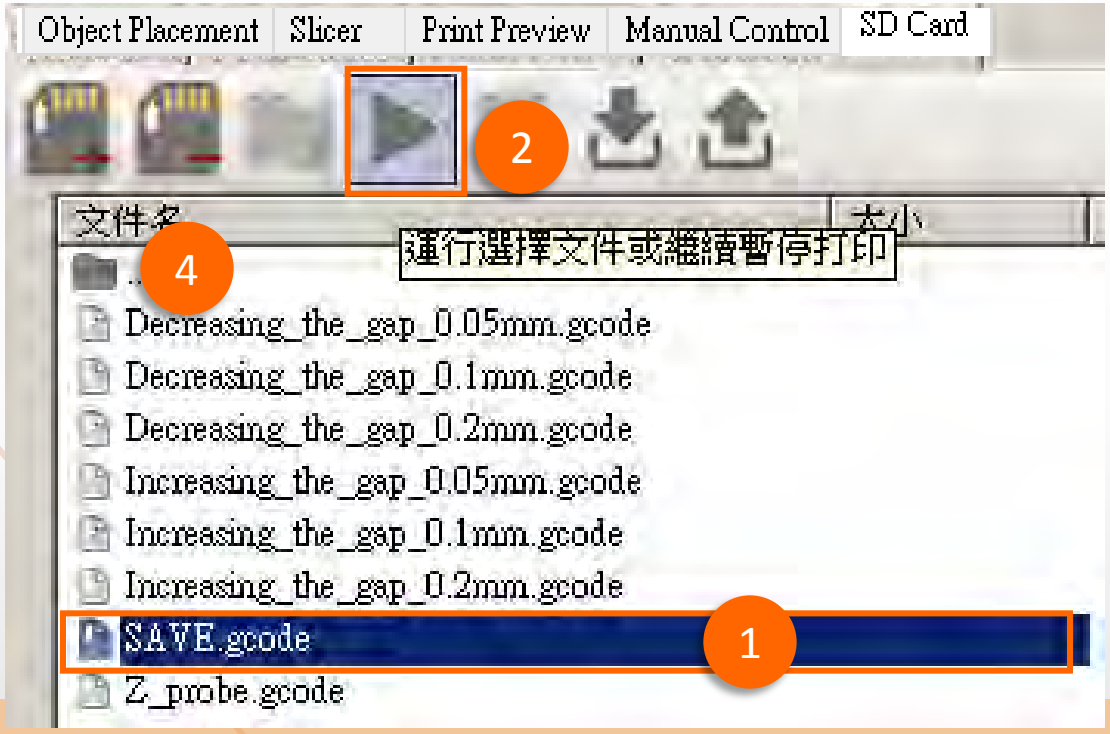


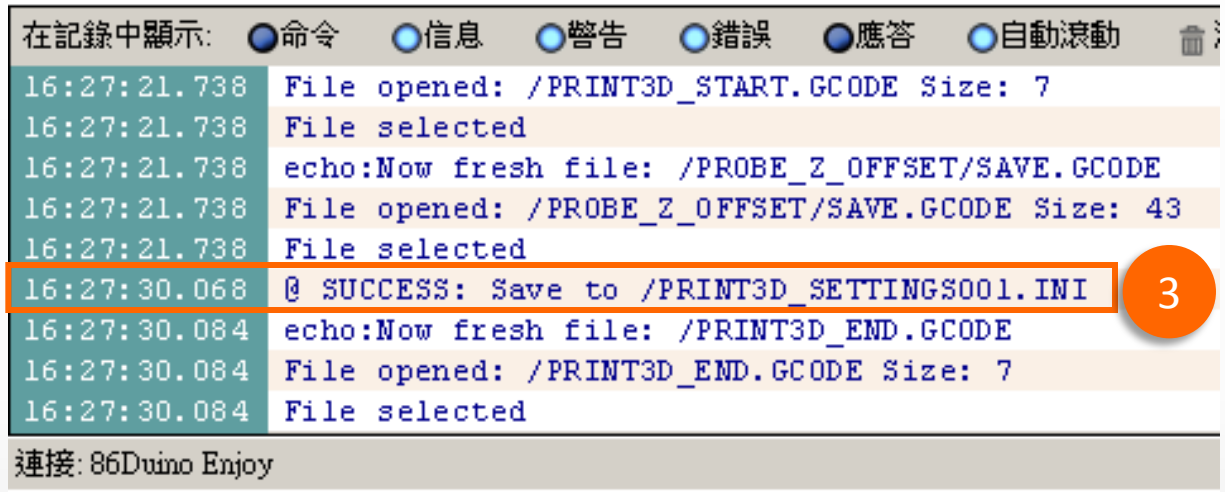
Option	Note
Decreasing_the_gap_0.05mm	0.05 mm
Decreasing_the_gap_0.1mm	0.10 mm
Decreasing_the_gap_0.2mm	0.20 mm
Increasing_the_gap_0.05mm	0.05 mm
Increasing_the_gap_0.1mm	0.10 mm
Increasing_the_gap_0.2mm	0.20 mm

1. Select Decreasing or Increasing option
2. click the “Start” icon at the top of the screen. The head and bed will re-calibrate
3. Repeat the above two steps until you can insert the test paper between the head and bed, and feel resistance when you move the test paper around

Leveling the Platform – Extruder Correction(9/10)

SAVE Extruder trimming





1. Now you can click “SAVE gcode
2. Click on the「►」 icon at the top of the screen
3. Status Windows will show SAVE success*
4. Double click on the folder icon(#4) to go back to the previous manual

*** Do not turn off the Printer before the save completed or disconnect the connection, otherwise it will cause serious damage to the system !**

Leveling the Platform – Extruder Correction(10/10)

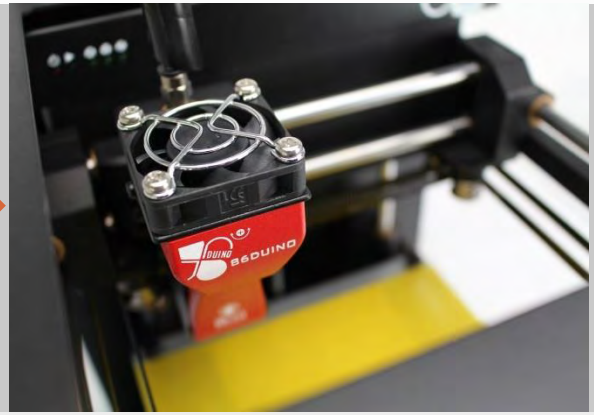
After the completion of the extruder correction and save, you do not need to do correction every time, but if the following situations occur, recommended do extruder correction again:

1. Printers have moved
2. Extruder collision with objects
3. Object will not stick to build plate
4. Objects warping

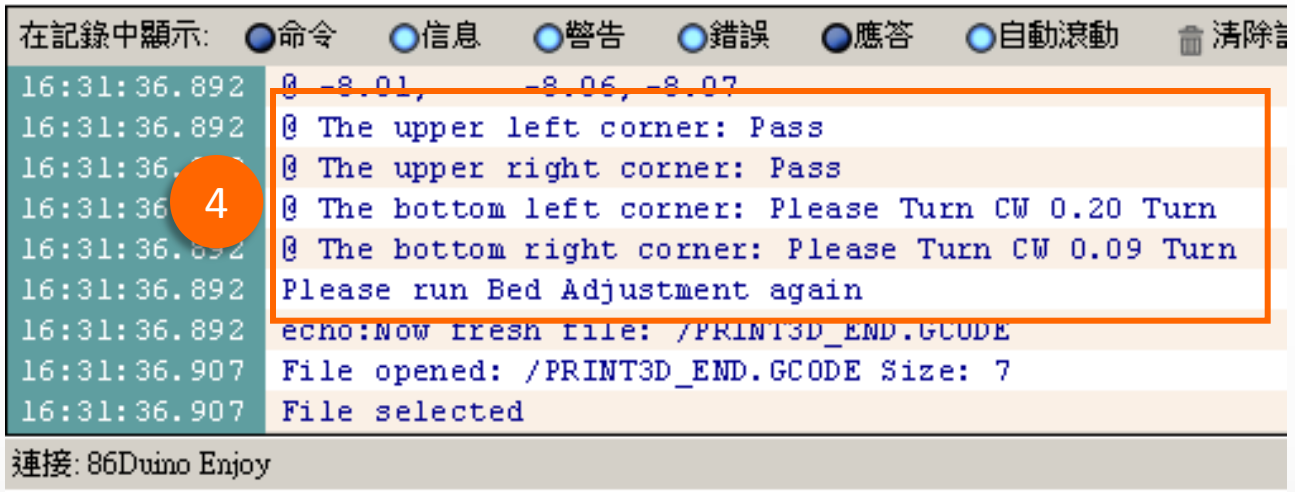
Calibration Settings

Setup and connection | Extruder Calibration | Print bed Calebration

PART 4

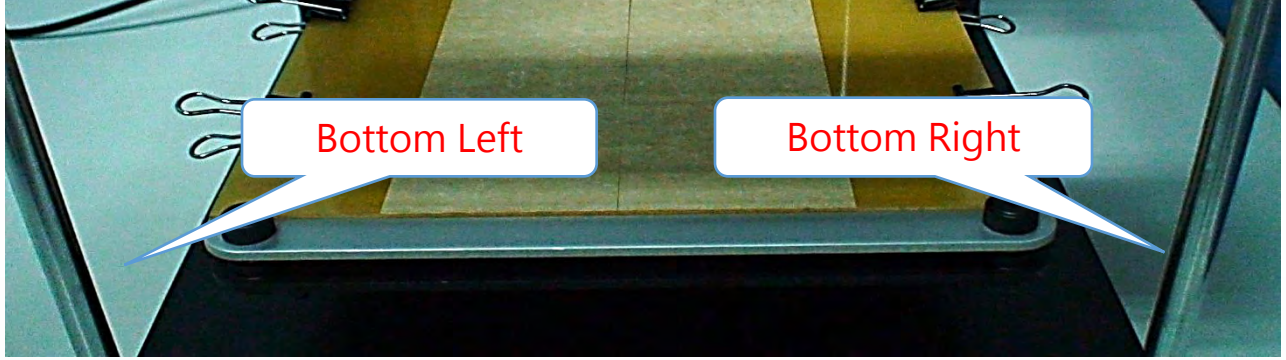


Leveling the Bed(1/3)

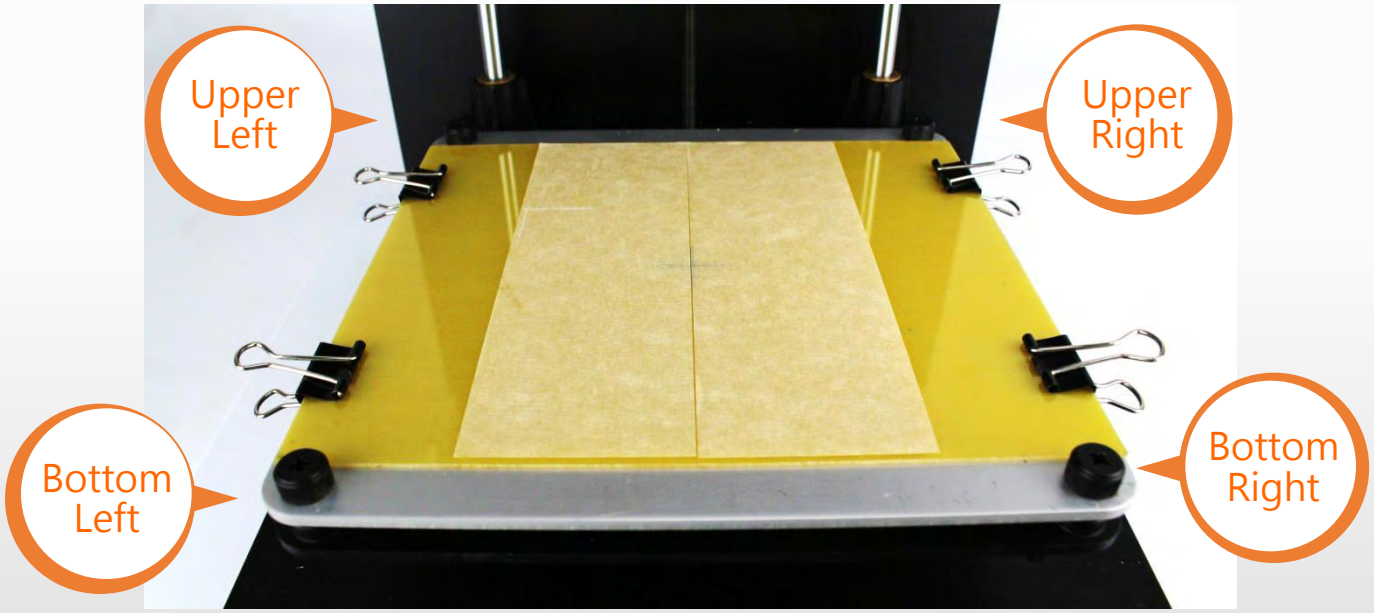


1. Double click on the “Bed Adjustment” folder
2. Click on “Bed_Adjustment.gcode
3. click on the “Start” icon (#2) at the top. The head will do a 9 point test. Wait until the head has stopped completely
4. Review the Log window at the bottom left, scrolling down/up if needed, to see the following result

Leveling the Bed(2/3)



Position	Knob	Note
The upper left corner:	Pass	passed and do not need any adjusting
The upper right corner:	Pass	passed and do not need any adjusting
The bottom left corner:	Please Turn CW 0.20 Turn	Turn the adjustment knob Clockwise 0.20 of a turn.
The bottom right corner:	Please Turn CCW 0.09 Turn	Turn the adjustment knob Counterclockwise 0.09 of a turn.



5. Knob Position

Leveling the Bed(3/3)

在記錄中顯示: 命令 信息 警告 錯誤 應答 自

```
16:58:31.385  @ -8.14,     -8.12, -8.05
16:58:31.385  @ -8.09,     -8.15, -8.10
16:58:31.385  @ The upper left corner: Pass
16:58:31.385  @ The upper right corner: Pass
16:58:31.385  @ The bottom left corner: Pass
16:58:31.385  @ The bottom right corner: Pass
16:58:31.385  echo:Now fresh file: /PRINT3D_END.GCODE
16:58:31.401  File opened: /PRINT3D_END.GCODE Size: 7
16:58:31.401  File selected
```

連接: 86Duino Enjoy

Go back to step again and repeat the step until you see all four corner are Pass. Now you have completed the leveling of the platform.

Print Test

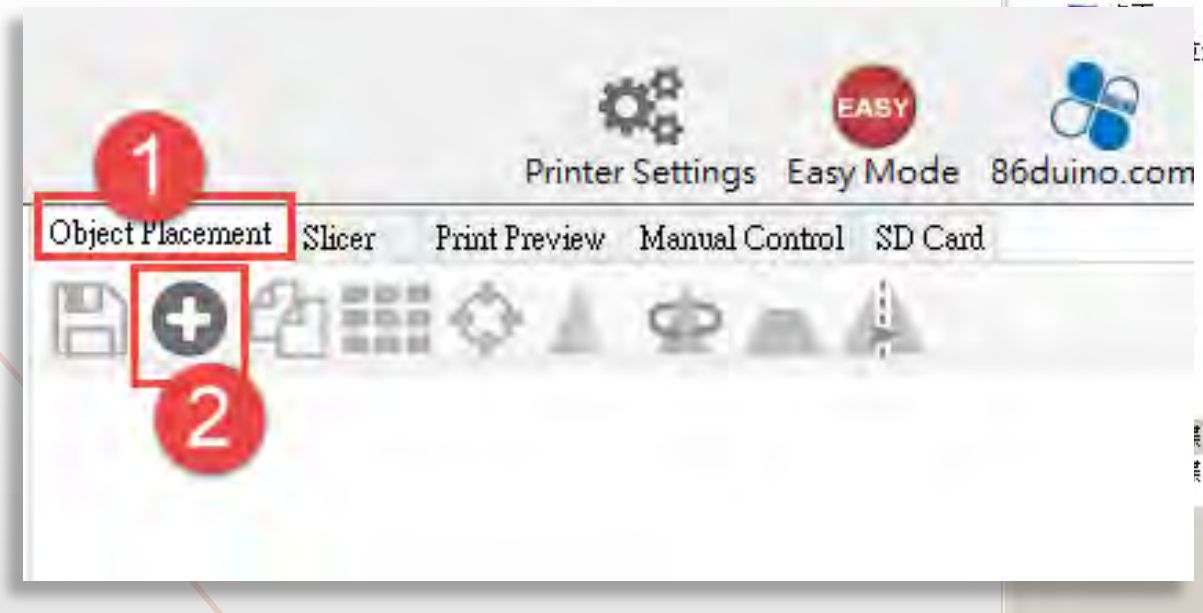
Load 3D object | Adjust print object

Slice and G-Code | Start print

PART 5

Load 3D object (1/2)

Load Object



1. Click the “object replacement ” tab
2. Click “Add object”
3. *Select 3D print file you are going to Print （ *.STL ）
4. Click on to load the file

Load 3D object (1/2)

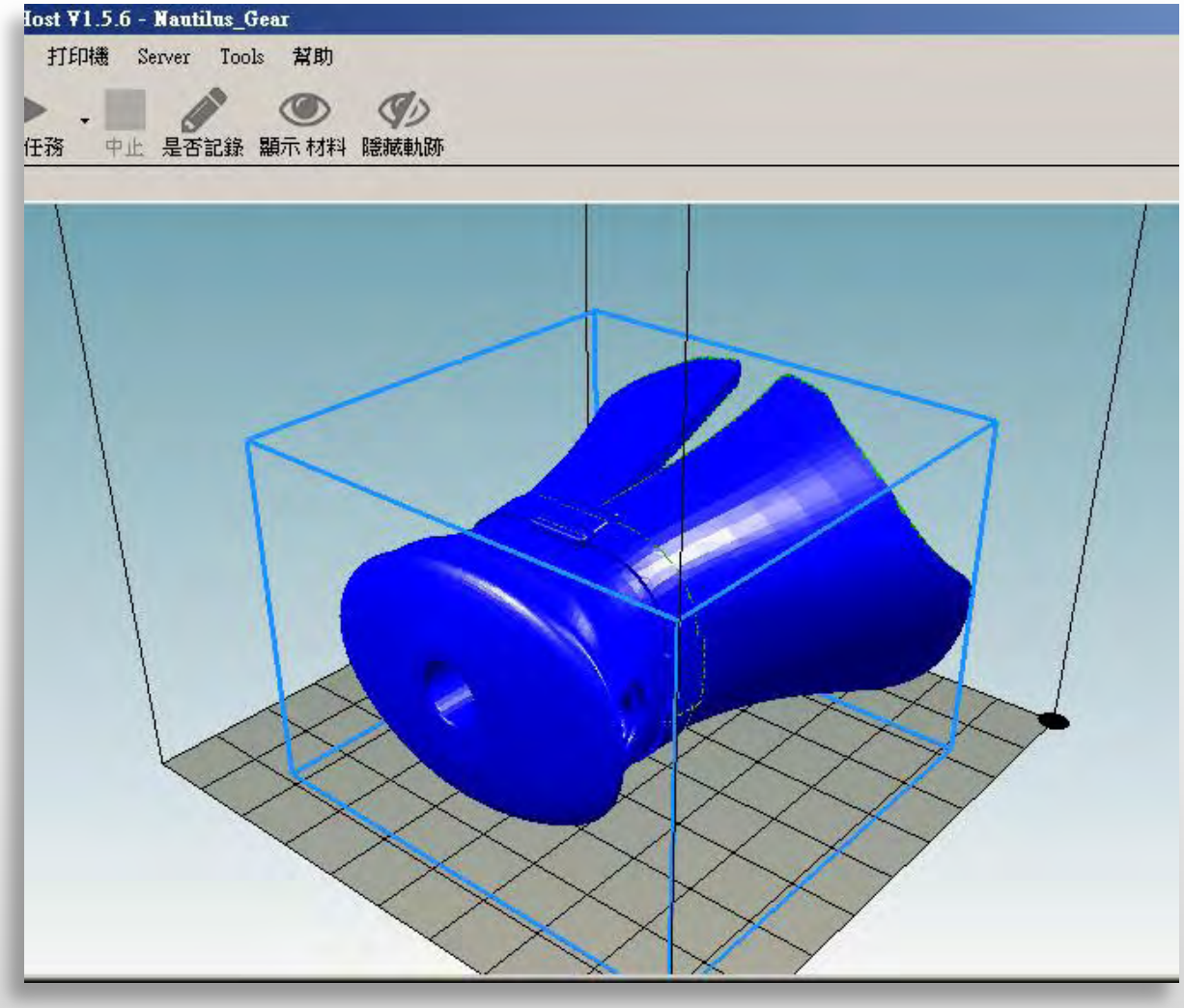
You can review the file/image with some options on the left side tool bar:

Press and hold the left mouse button and move mouse, can change the viewing angle

Press and hole scroll wheel and move the mouse horizontally movable perspective

Up / down scroll wheel to zoom in / wide view

Right-click on the object and hold and move the mouse, the position of the movable object



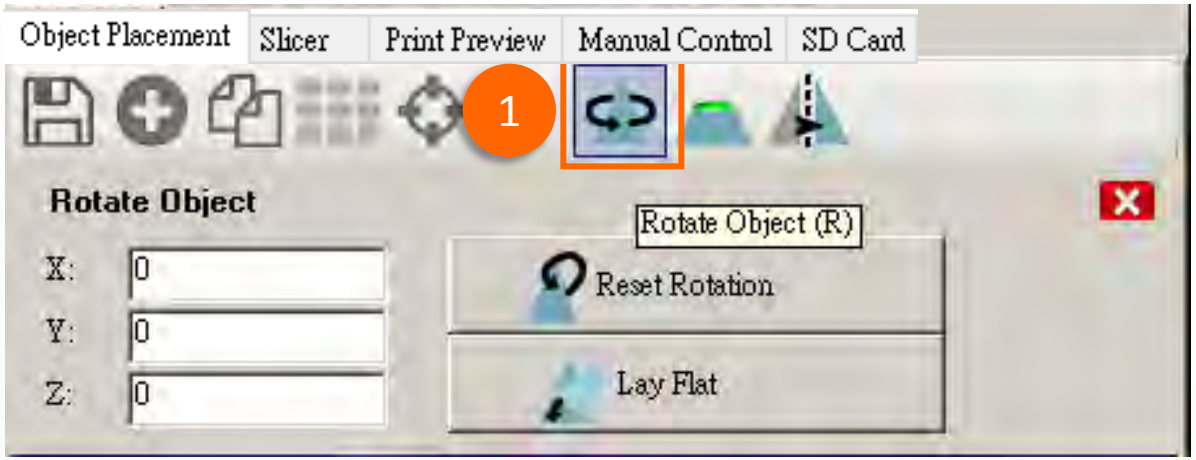
Print Test

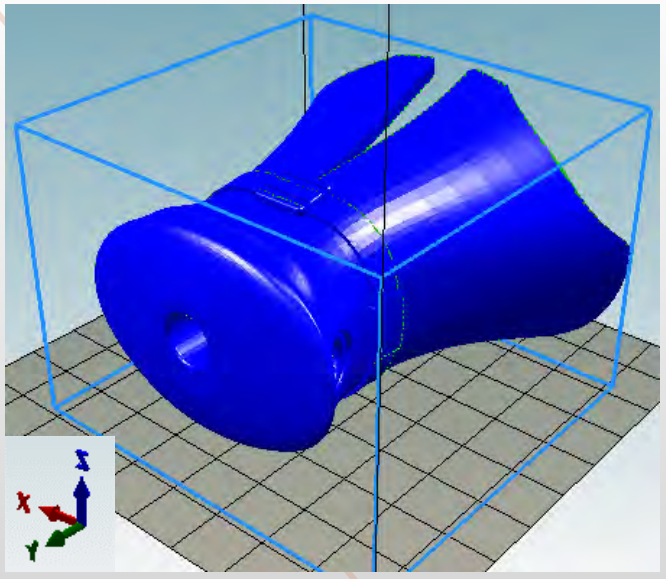
Load 3D object | Adjust print object

Slice and G-Code | Start print

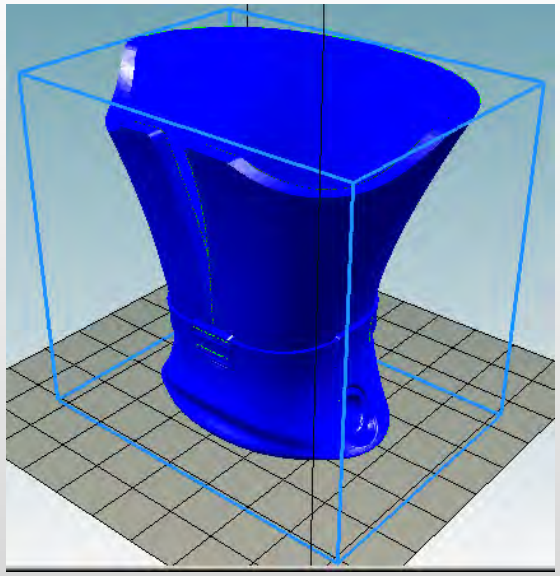
PART 5

Adjust the print object - rotate object





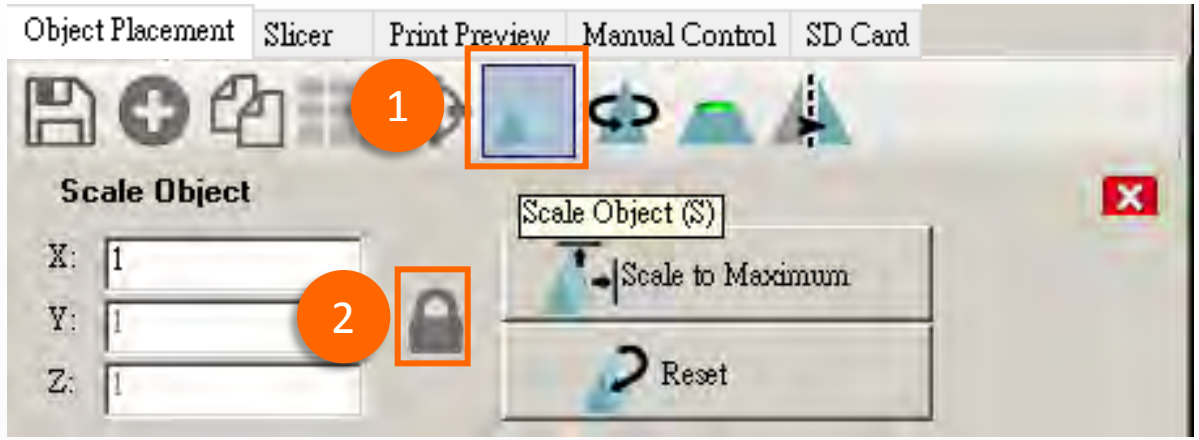
Before

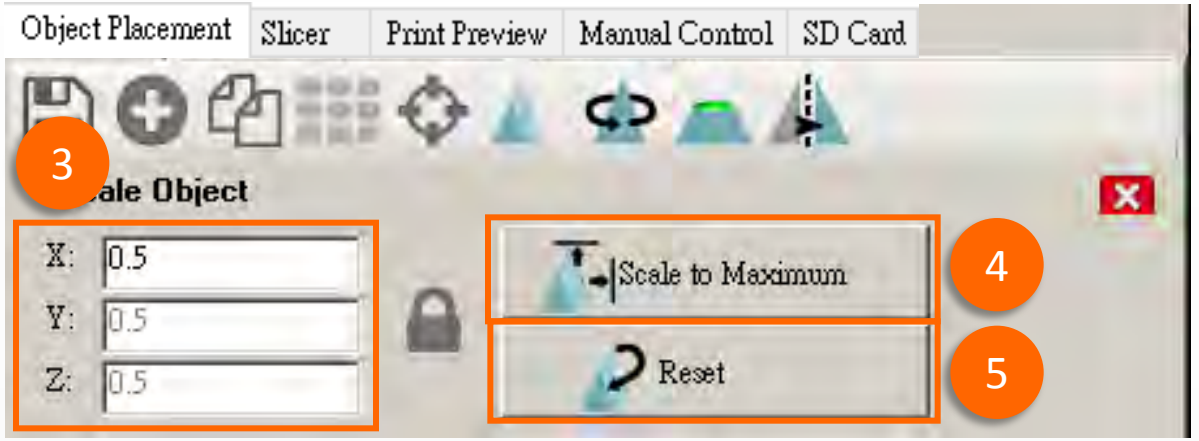


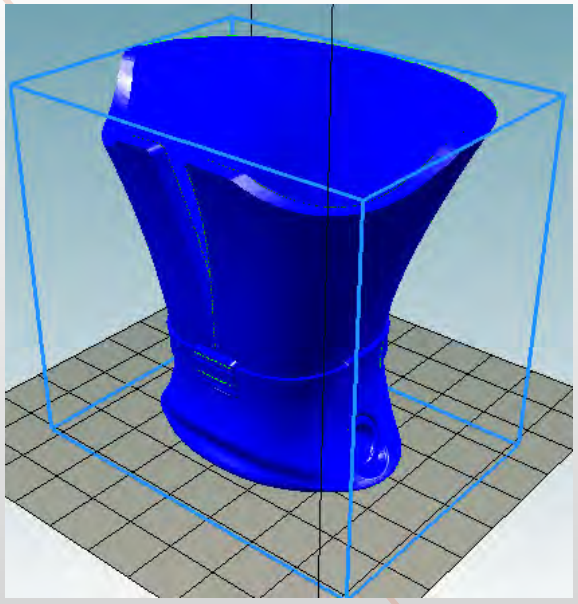
After

1. Click Rotate object icon
2. by the X, Y, Z axis input rotation angle, you can see the result of the rotation
3. “Reset Rotation” button to reset the rotation
4. Click on "Lay Flat" button, you can automatically rotate the object closest to the bottom

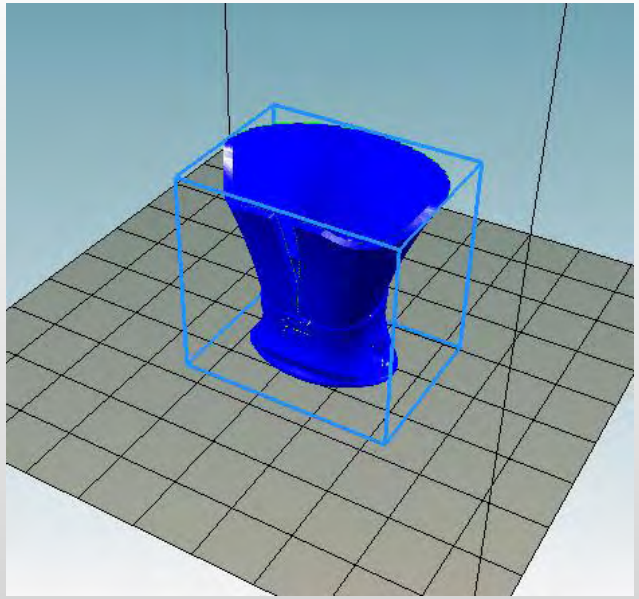
Adjust the print object - rotate object







Before



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Print Test

Load 3D object | Adjust print object

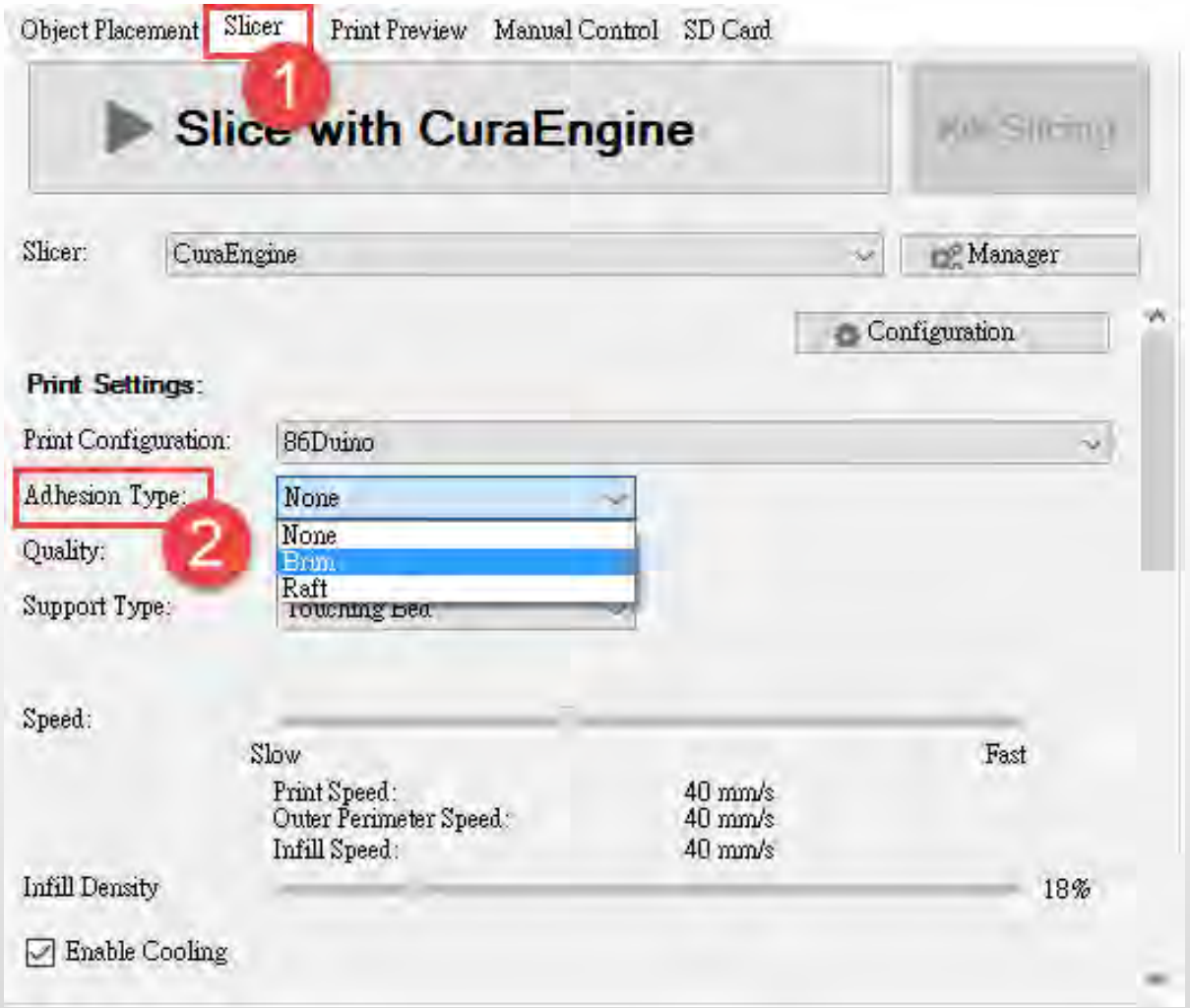
Slice and G-Code | Start print

PART 5

Slice and G-Code

Slice with CuraEngine

1. Click Slice Tab
2. Click「Adhesion Type」menu，setting Adhesion type：
   1) None：None
   2) Brim：Thin layer on the bottom
   3) Raft：Thick layer on the bottom



Slice and G-Code

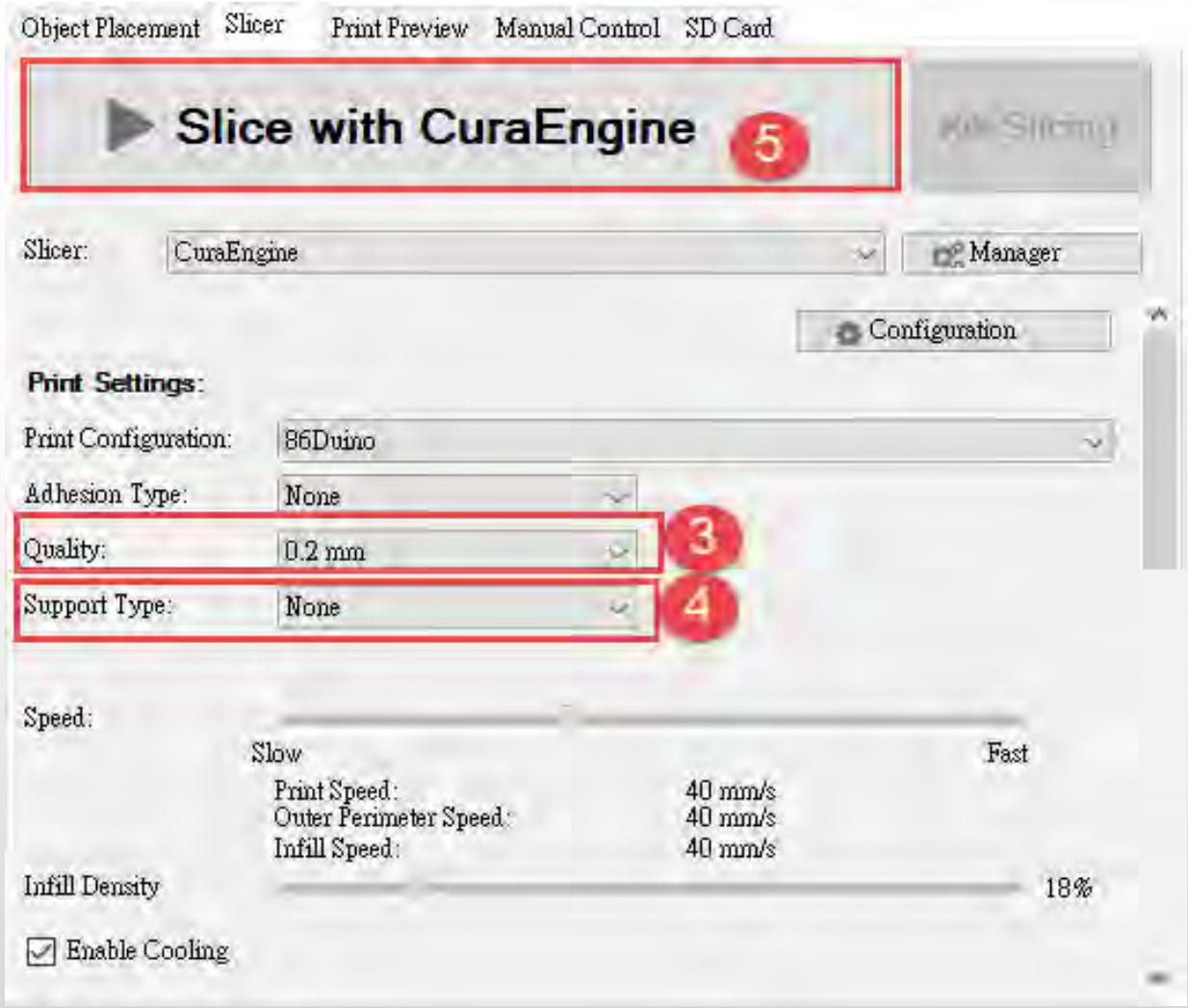
Slice with CuraEngine

3. Click the "Quality" menu, set * print thickness, have 0.1 mm and 0.2 mm options

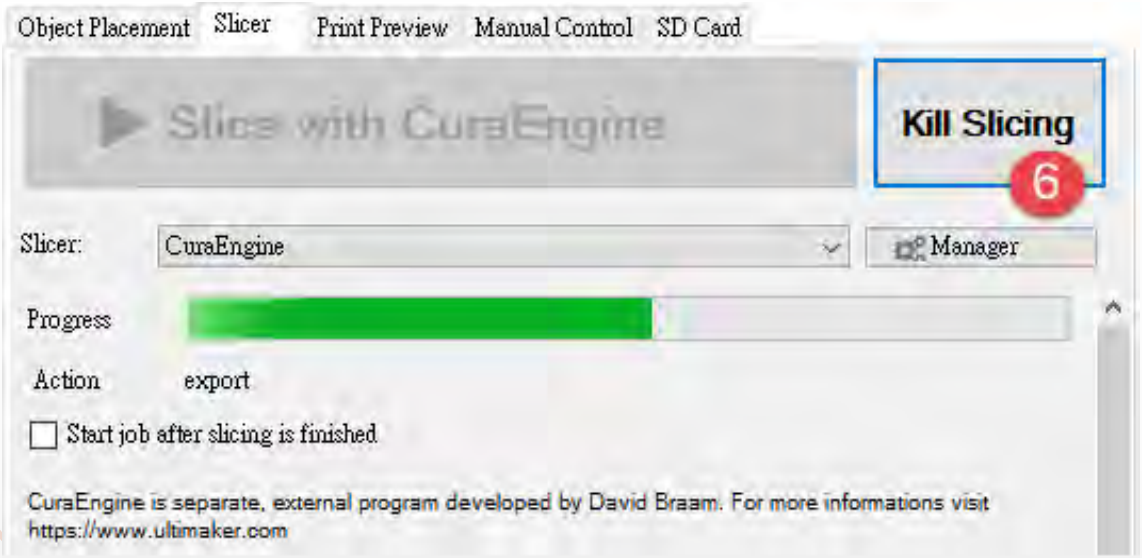
4. Click on "Support Type" menu, set the object support mode:

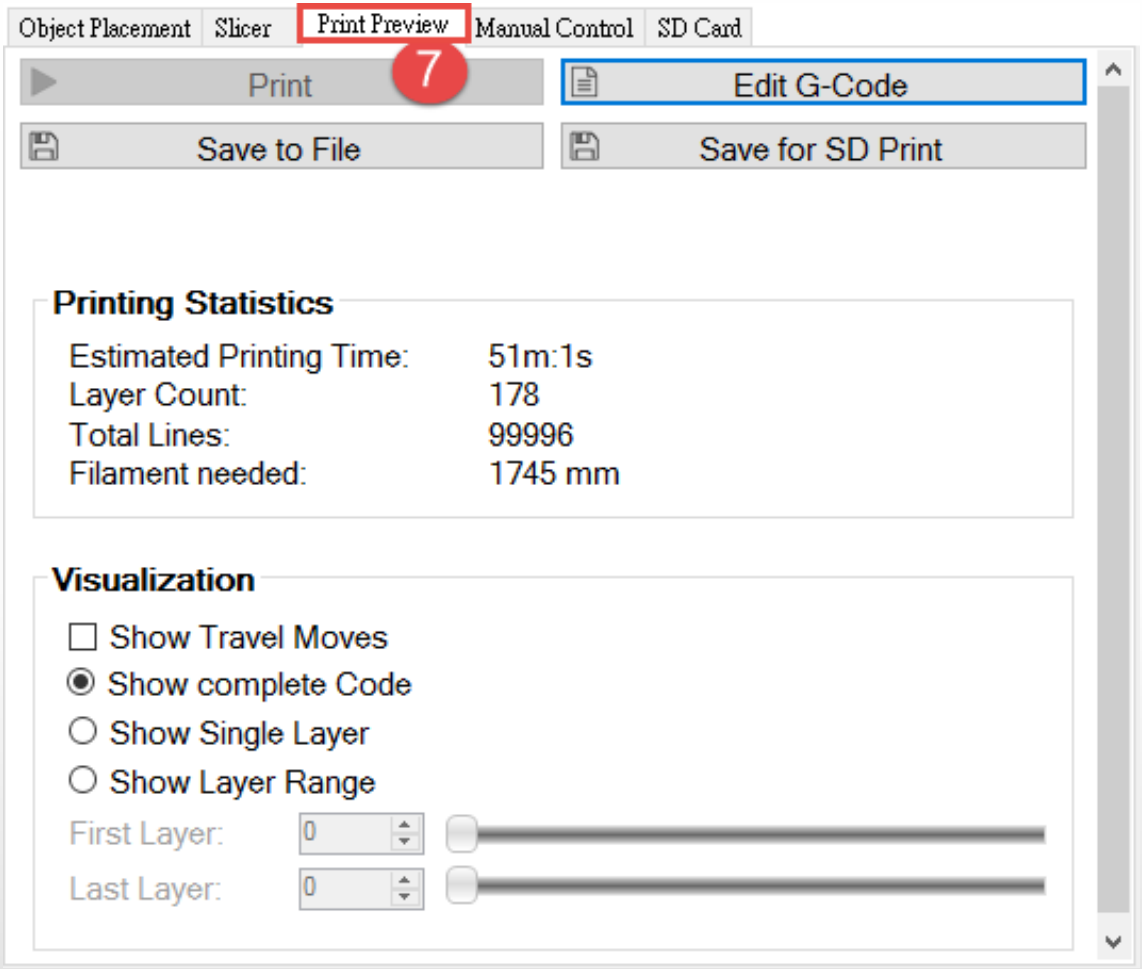
   - None：No support
   - Touching Bed：only the bottom portion of the floating object and generate support layer
   - Everywhere：All objects floating parts are produced support layer

5. Click the “Slice with CuraEngine" produce print codes (G-Code)



Slice and G-Code





Slice with CuraEngine

6. The Show Print code generation progress, to cancel code generation can click “Kill Slicing" button

7. Print code completion, it will automatically jump to "Print Preview" tab to display the estimated time to print, number of layers and the estimated length of the filament length, and is ready to begin printing

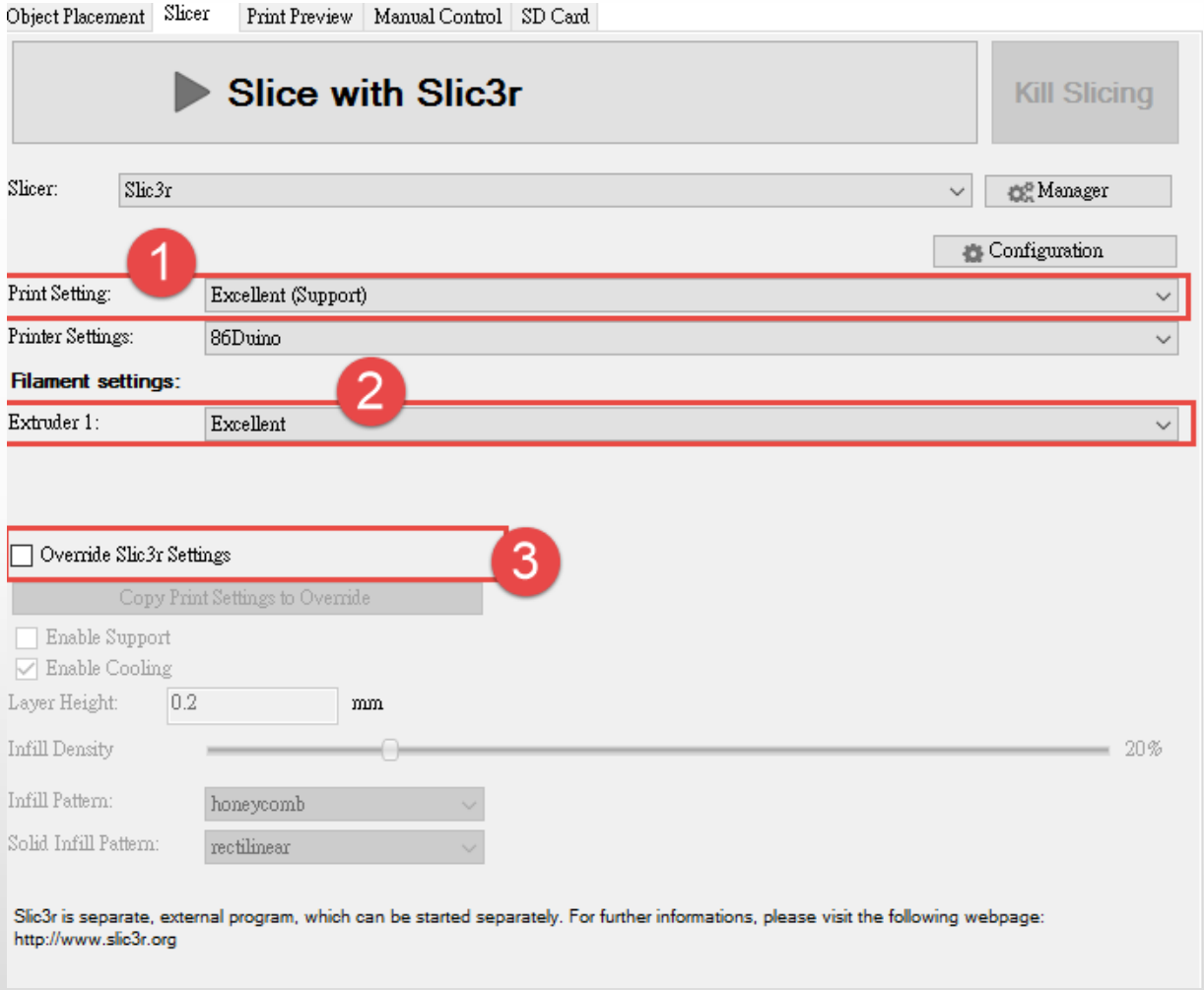
Slice and G-Code

Slice with Silc3r

1. Print quality setting
   - Excellent(Support):Excellent with support
   - Excellent ：Excellent without support
   - Fast (Support) ：Fast with support
   - Fast ：Fast without support
   - Regular (Support) ：Regular with support
   - Regular ：Regular without support

2. Extrusion quality (Extruder 1) :
   - Excellent
   - Fast
   - Regular

3. Override Slic3r Settings:this option is reserved for advanced users, no need to checked



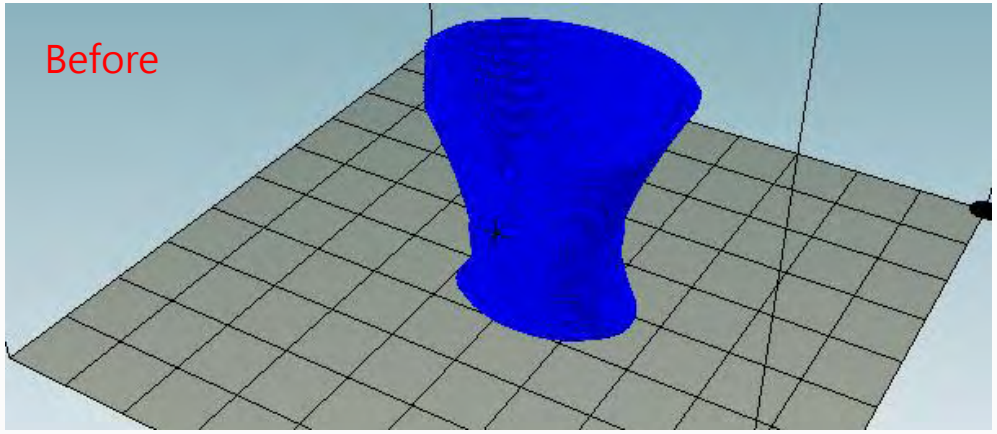
Print Test

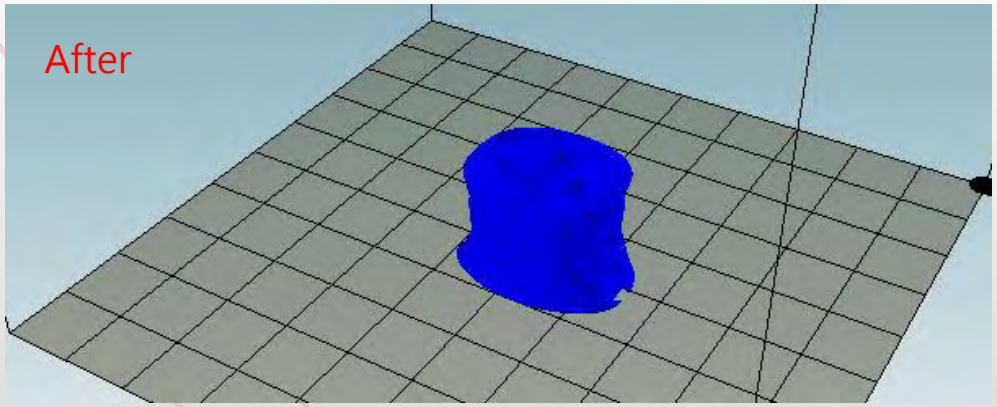
Load 3D object | Adjust print object

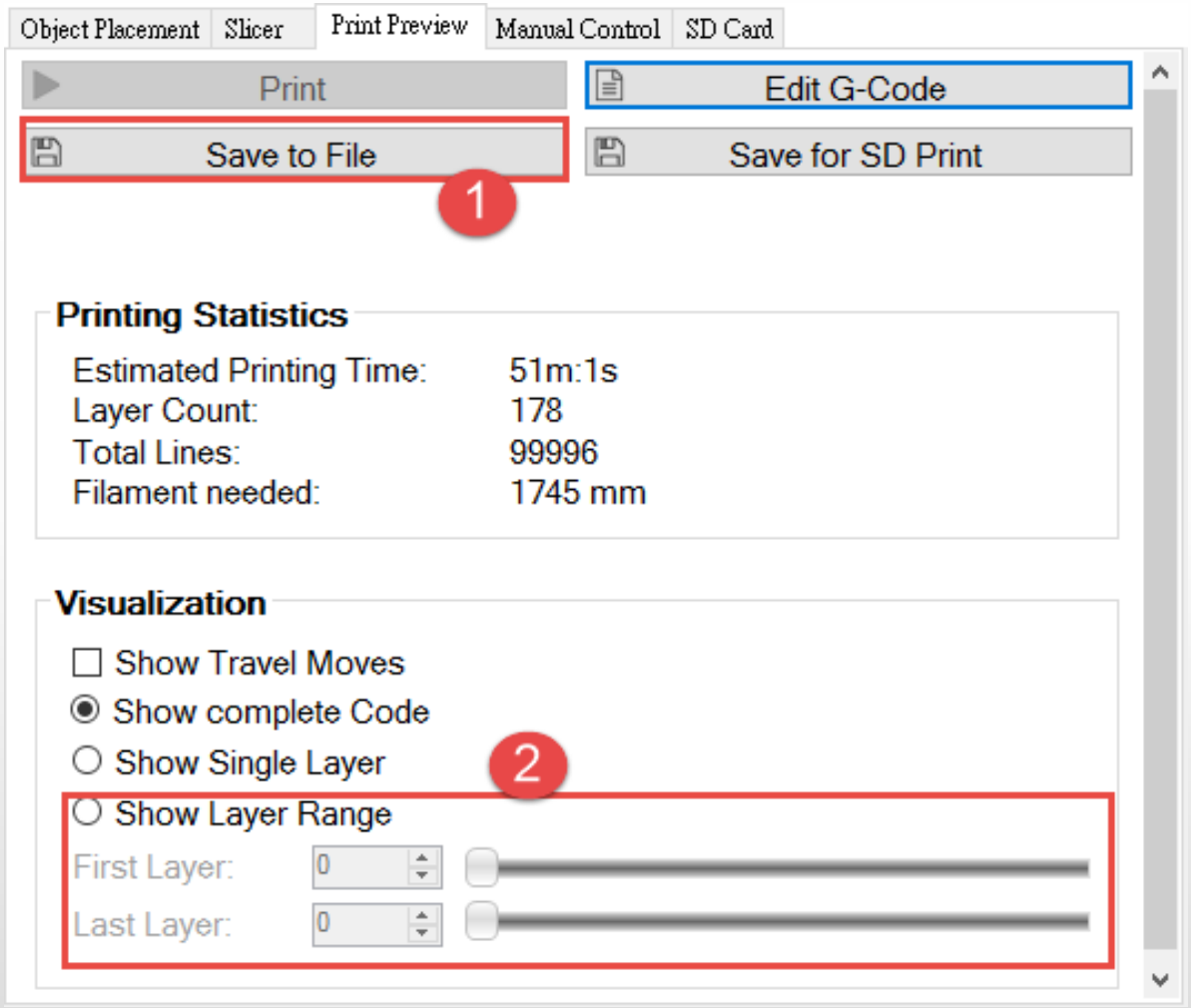
Slice and G-Code | Start print

PART 5

Start Print



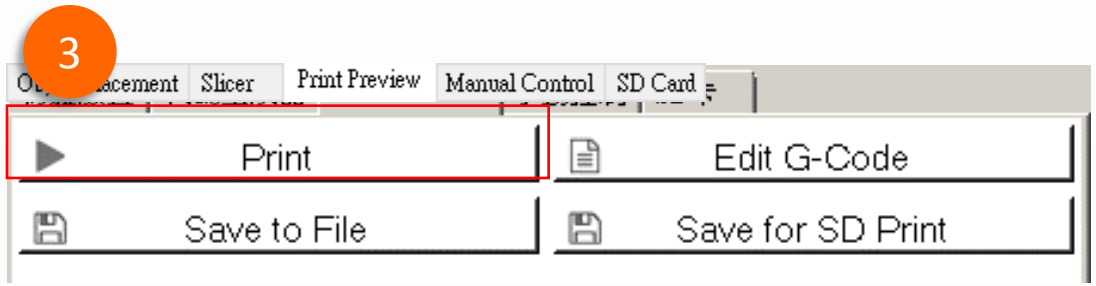




1. Click on "Save to File" button, you can save code is as "* .gcode" type file

2. Slider the “First layer" and “Last layer" or set the number, you can watch the print path between the layers

Start Print

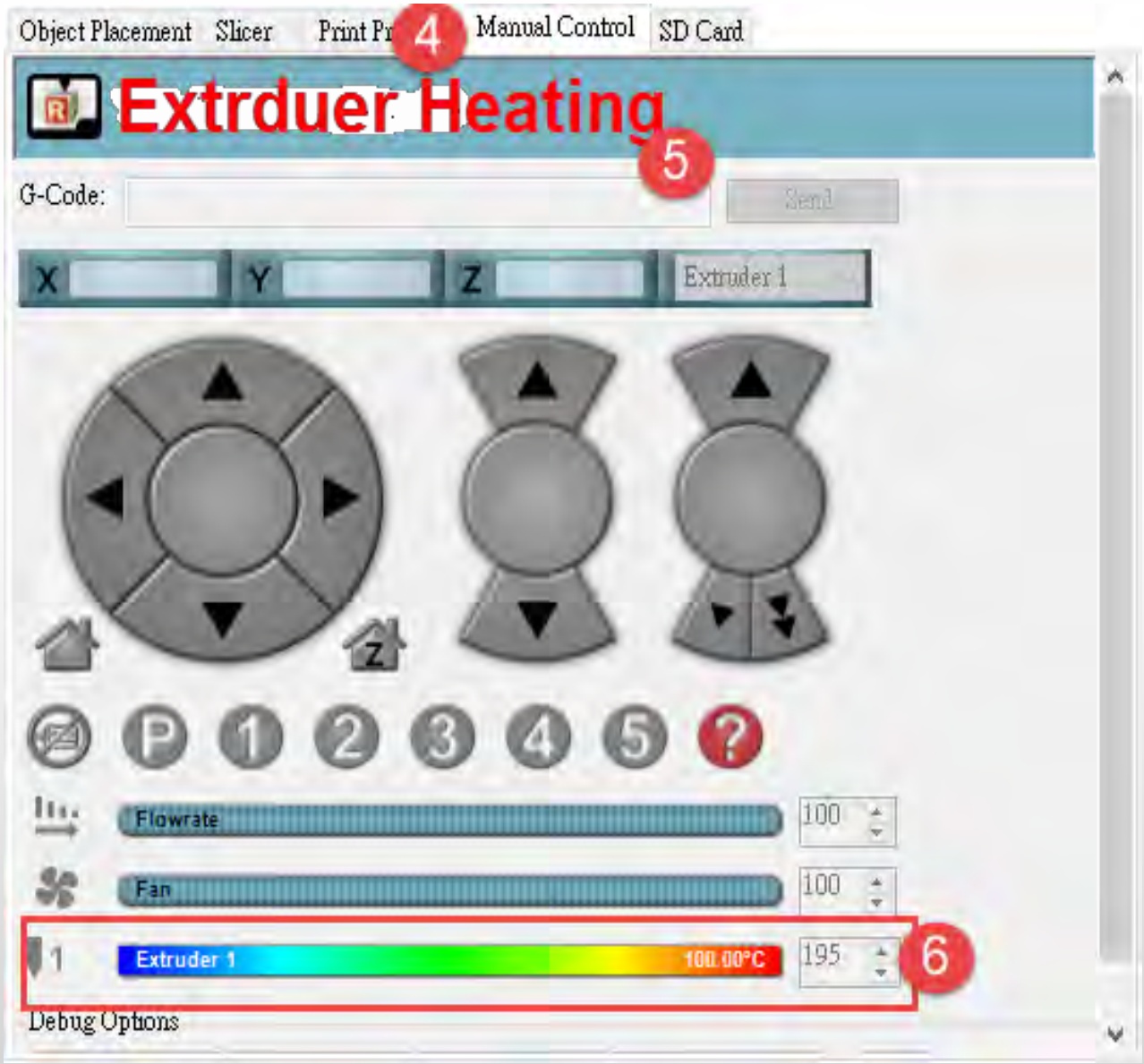


4. Click on "Print" button to start printing

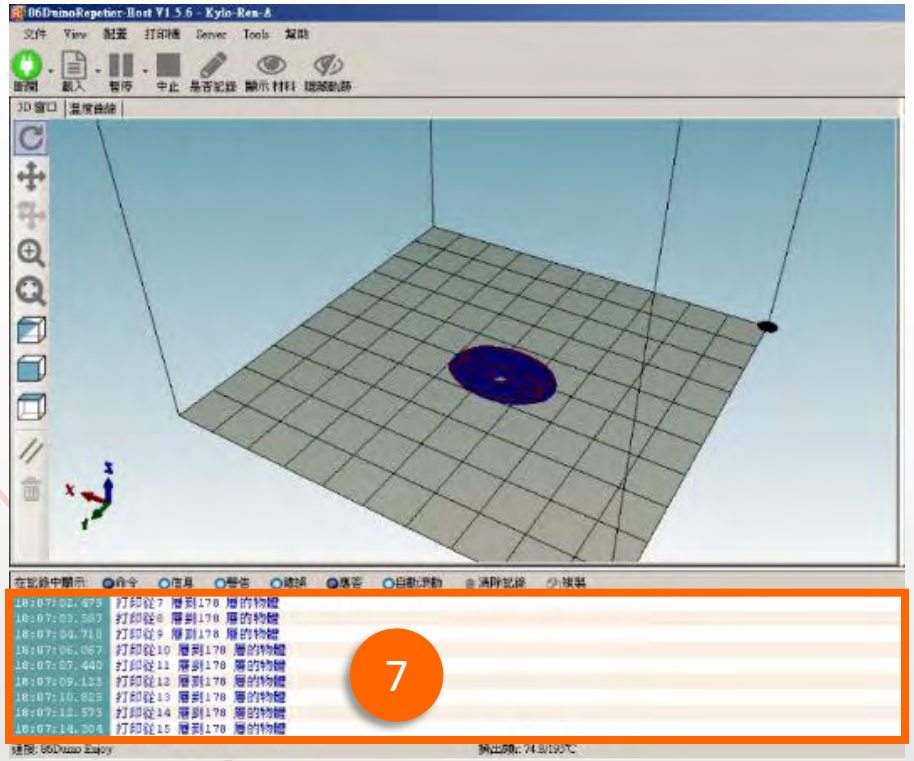
5. At this time will automatically jump to "manual control" tab, and displays the status of print

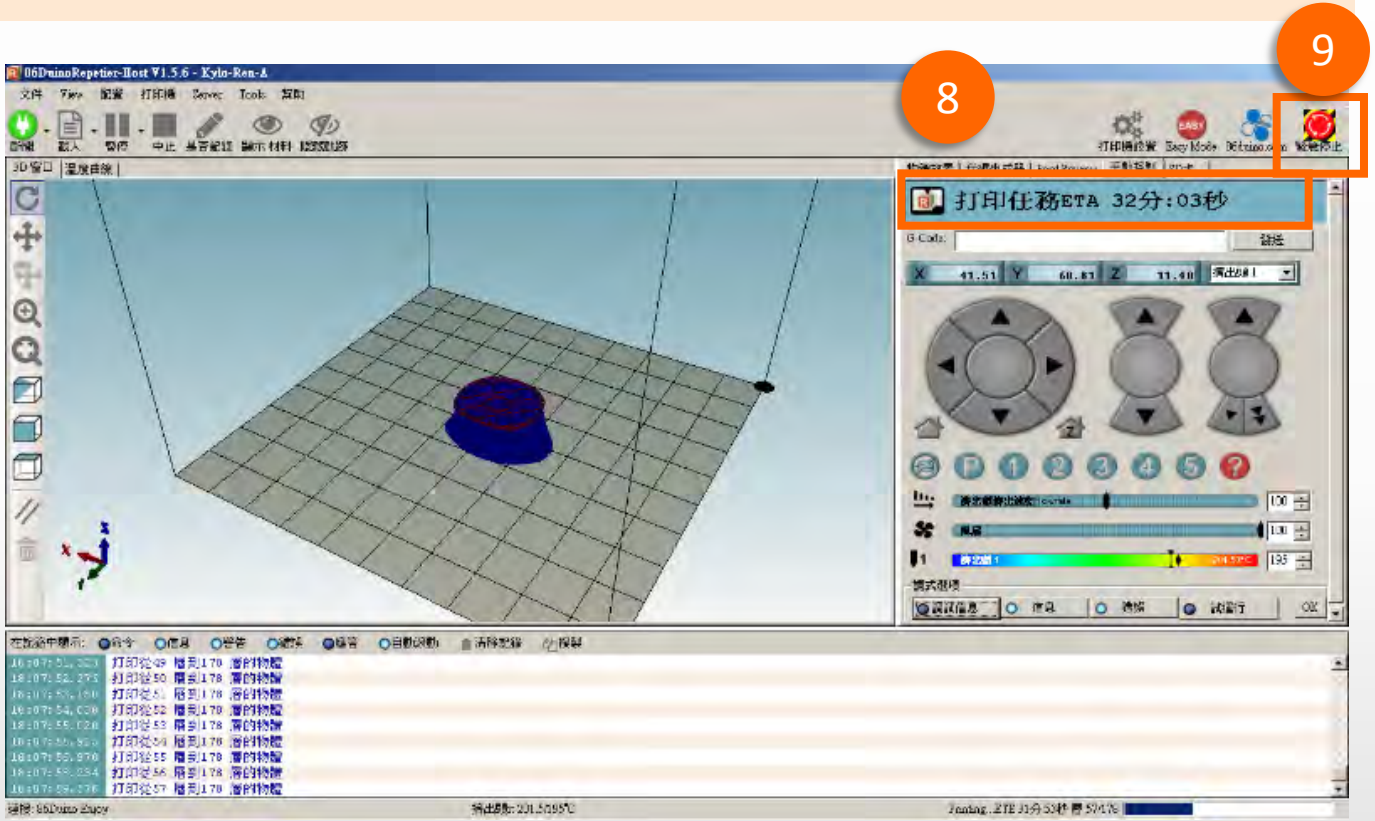
6. Will first heated extruder before the start of printing, wait a few minutes

7. After the extruder to be heated to a preset temperature will begin to print



Start Print





7. At the same time printing, software will continue to transmit the code to the printer to print

8. "Manual control" tab will show "Code Transmission" remaining time (note! Non-print time remaining)

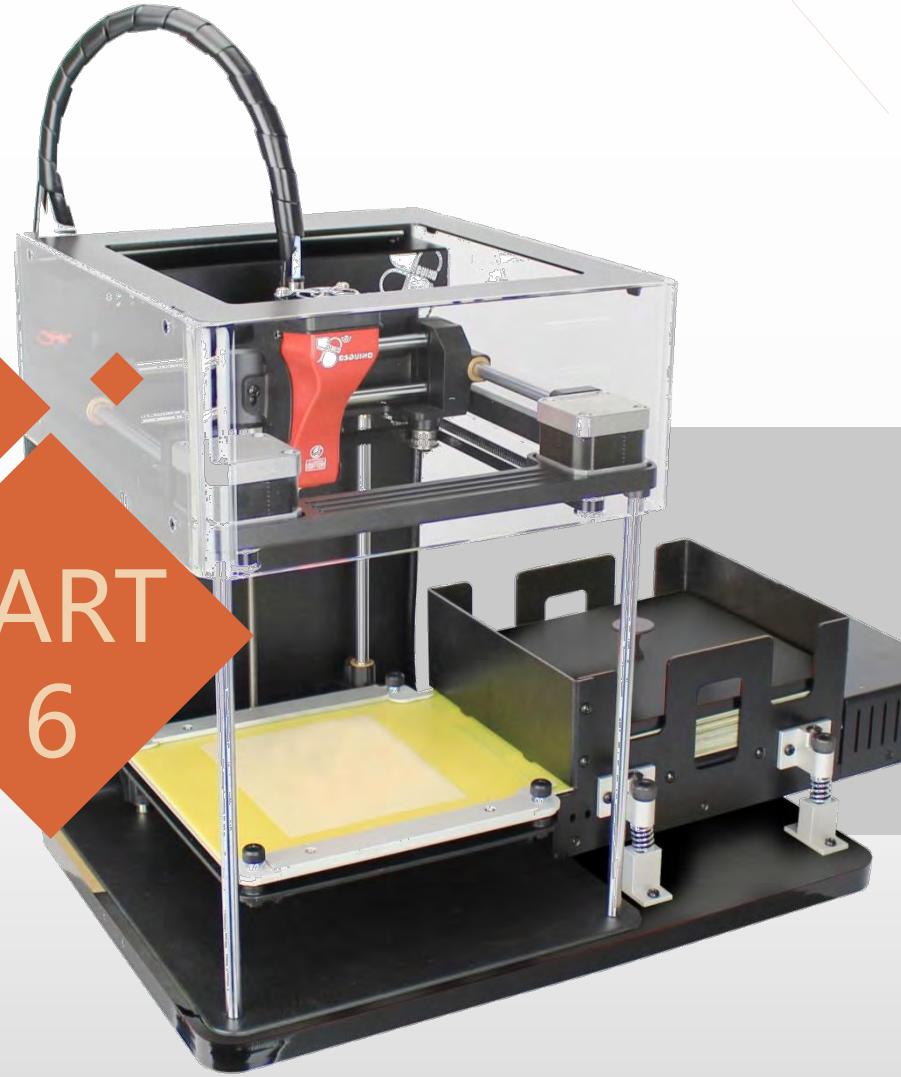
9. During the printing process if you need to stop the printing, for whatever reason, click on “Emergency Stop” button on the top right.

Enjoy Auto Exchange

PART 6

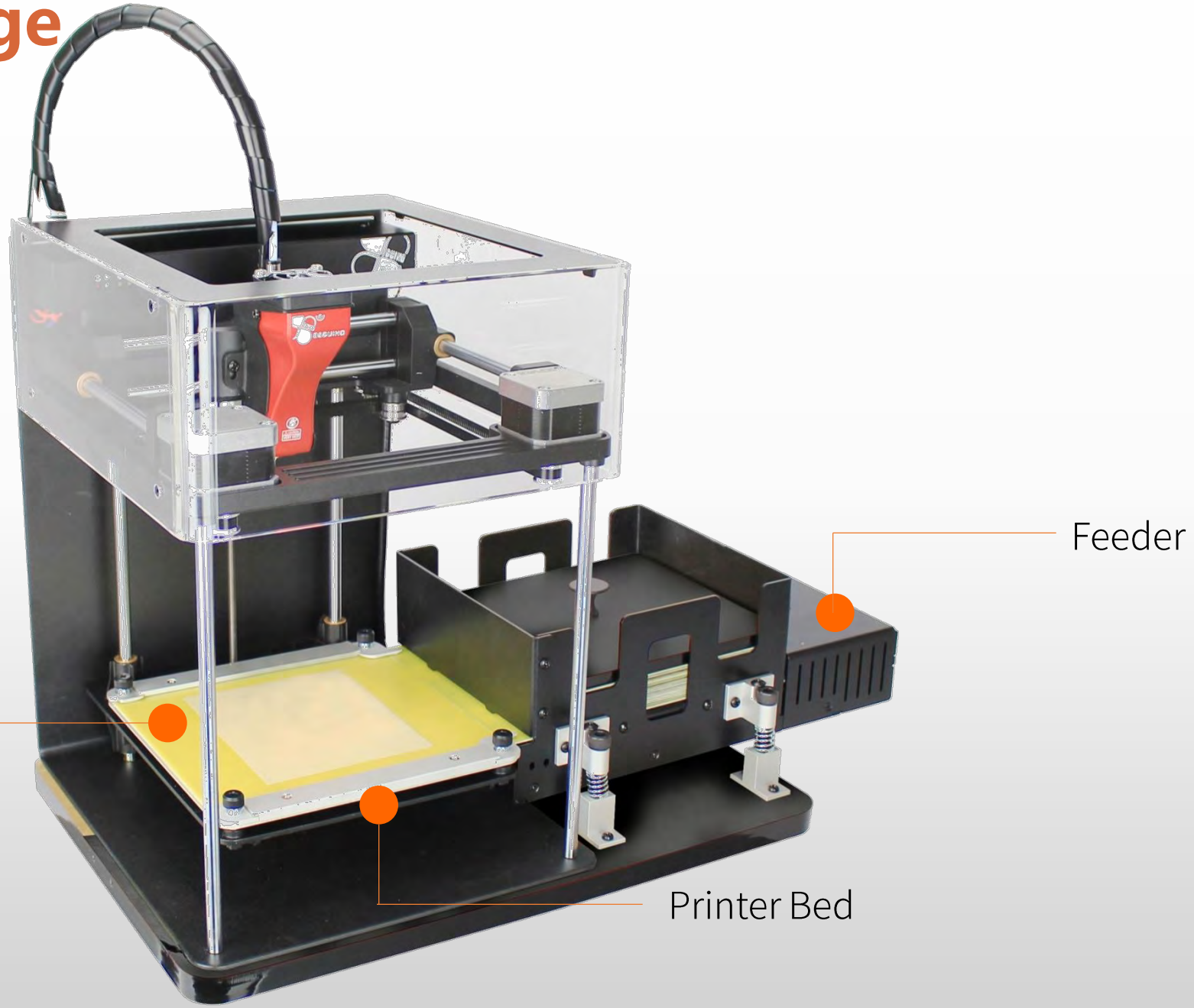
Install and adjust procedure | installation and connectionSlice

Adjustment procedure | Automatically print instructions



Enjoy Auto Exchange

Install and adjust procedure

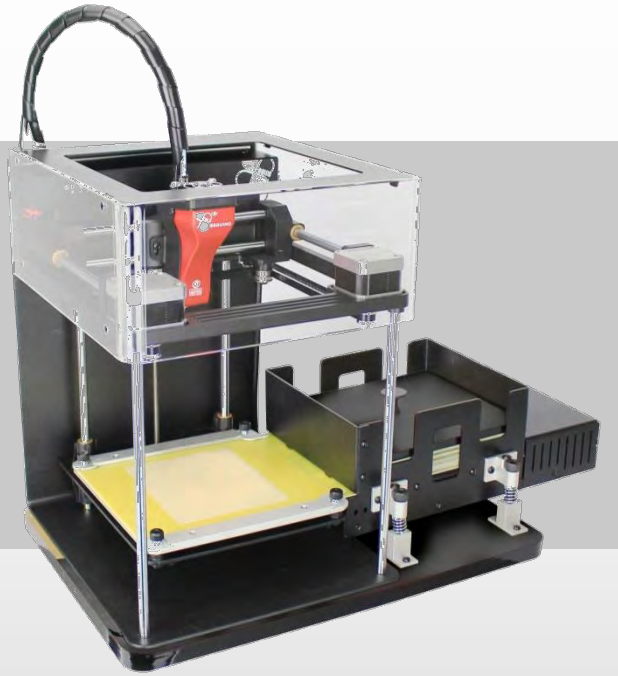


Enjoy Auto Exchange

Install and adjust procedure | installation and connectionSlice

Adjustment procedure | Automatically print instructions

PART 6



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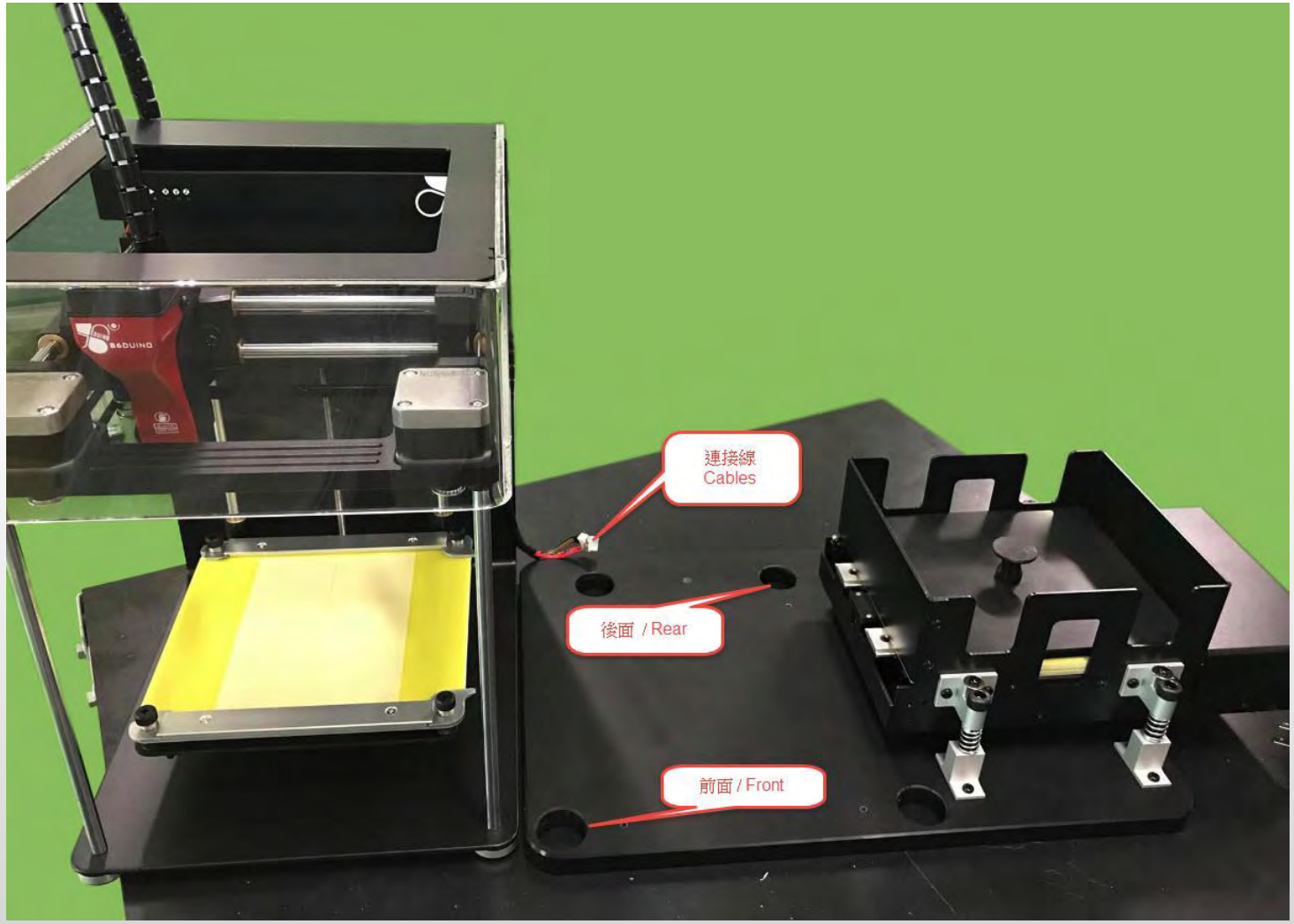
Installation and connectionSlice

1. There are 2 boxes of printer, the main 86Duino Enjoy 3D printer and Auto feeder. After taking out both, place the 3D printer on the preset holes. The front and rear directions are as shown in the following figure.



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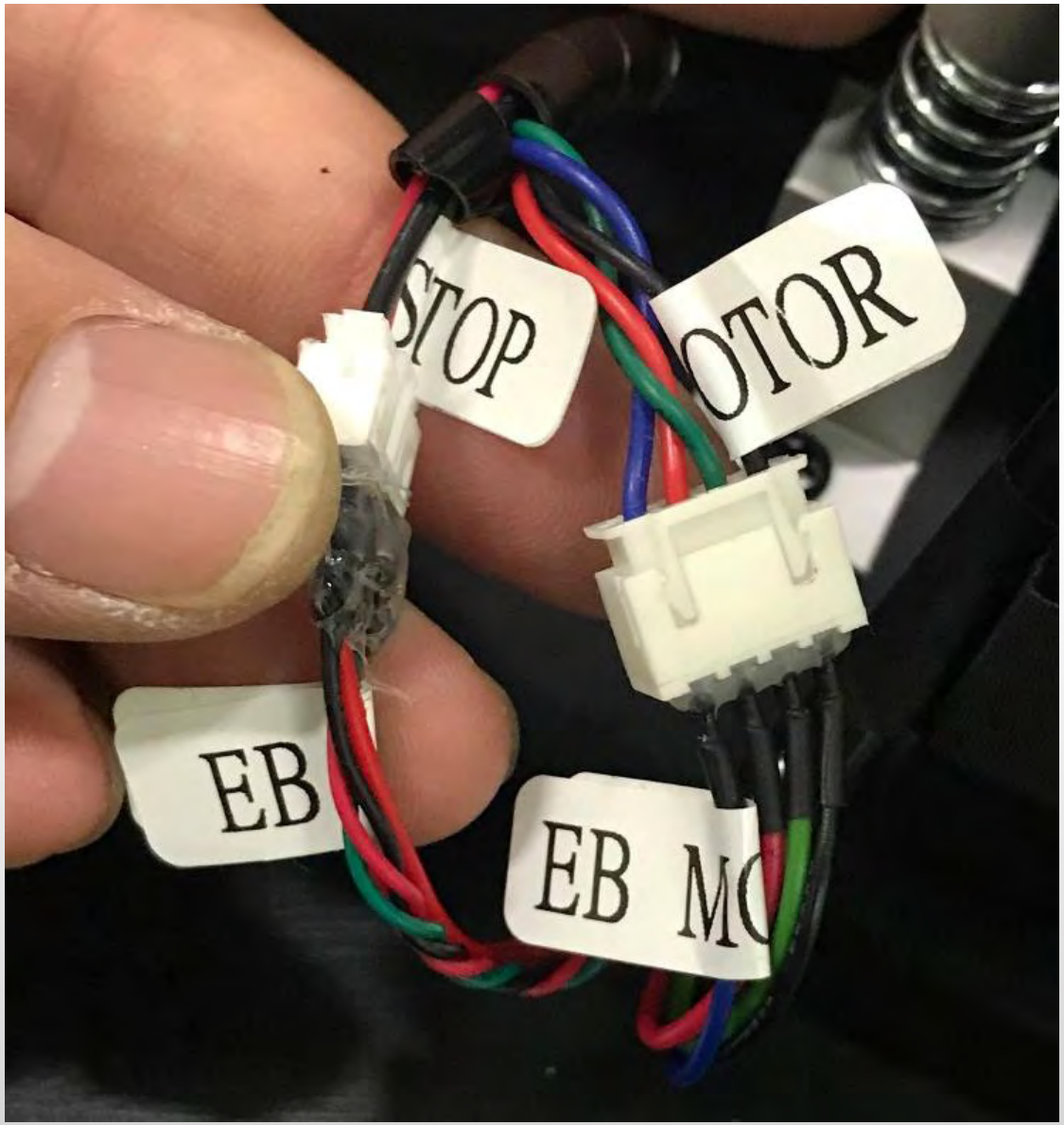
Installation and connectionSlice

2. There are two cables connecting main 3D printer and Auto feeder. The connectors are used as fool-proof devices. Simply connect the 2 cables and complete the installation and connection.

2-1 Stepper motor cable (3PIN) lable MOTOR is connected to lable EB MOTOR.

2-2 Signal cable (2PIN) lable EB is connected to lable STOP.

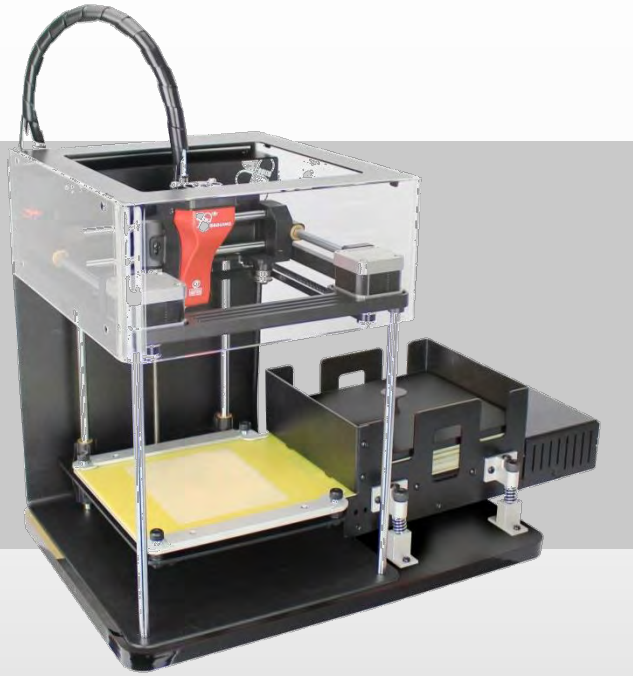


Enjoy Auto Exchange

PART 6

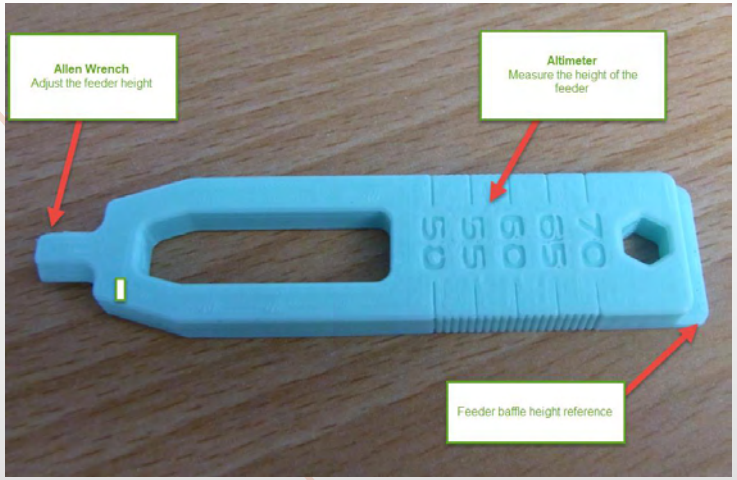
Install and adjust procedure | installation and connectionSlice

Adjustment procedure | Automatically print instructions



Enjoy Auto Exchange

Adjustment procedure



Step 1. Print bed calibration. (Leveling the bed)

(Need to put a print plate together to adjust)

Please refer to Page 45 to 48.

Step 2. Extruder calibration (Z Probe)

(Need to put a print plate together adjust)

Please refer to Page 34 to 44.

Step 3. Enjoy Auto feeder adjustment：

(Enjoy Auto adjustment tool is 3D printed,

included in the package)

Enjoy Auto Exchange

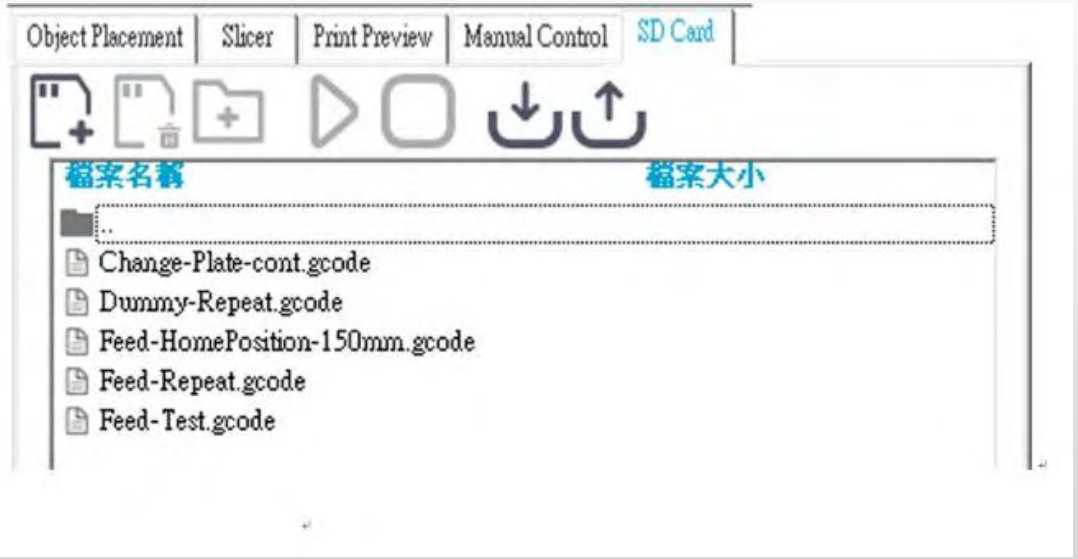
Adjustment procedure – Step 3. 1/5

A. Move the printer Z-axis to position 150 mm

"RUN Feed-HomePosition-150mm.gcode"

Please keep the Reptier-Host software connected

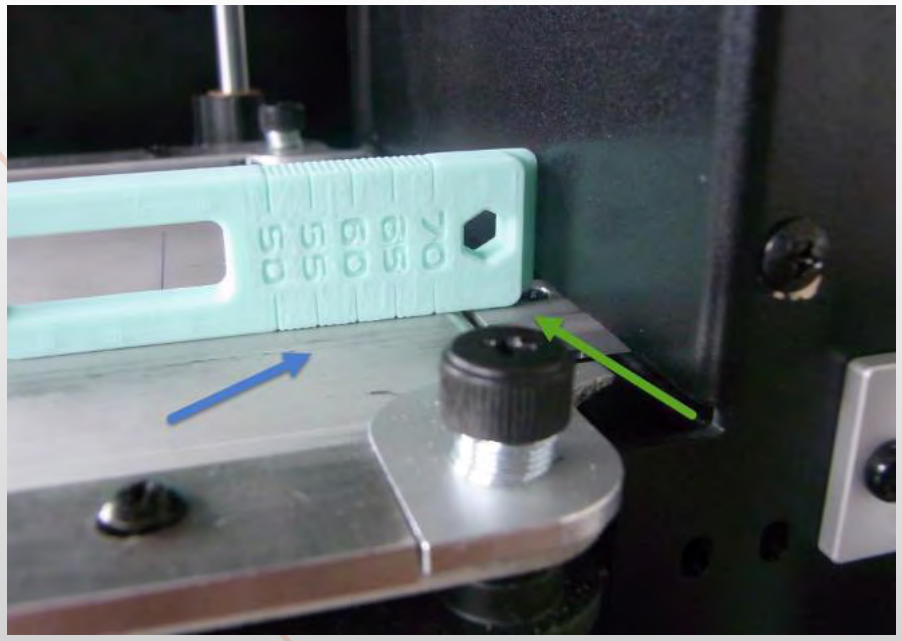
File located in the Enjoy_Auto_setting directory



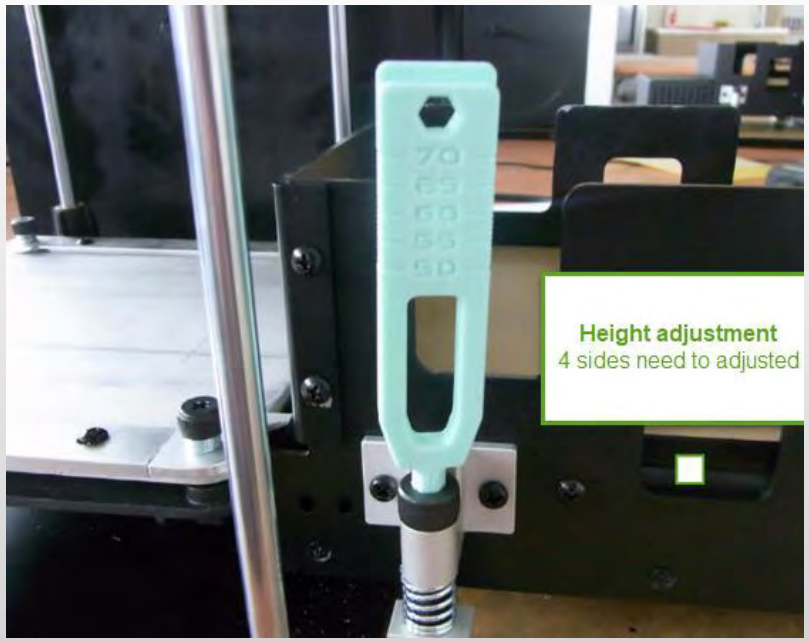
Enjoy Auto Exchange

Adjustment procedure – Step 3. 2/5

B. Adjust the print bed and feeder platform level
Blue arrow is print bed (do not need to put a print plate) Green arrow is feeder



Please try to keep at the same level, if the feeder is higher than the print bed, the print plate will not be push out, use tool to adjust the height, clockwise lower, counter-clockwise rise, please note both 4 sides must adjust



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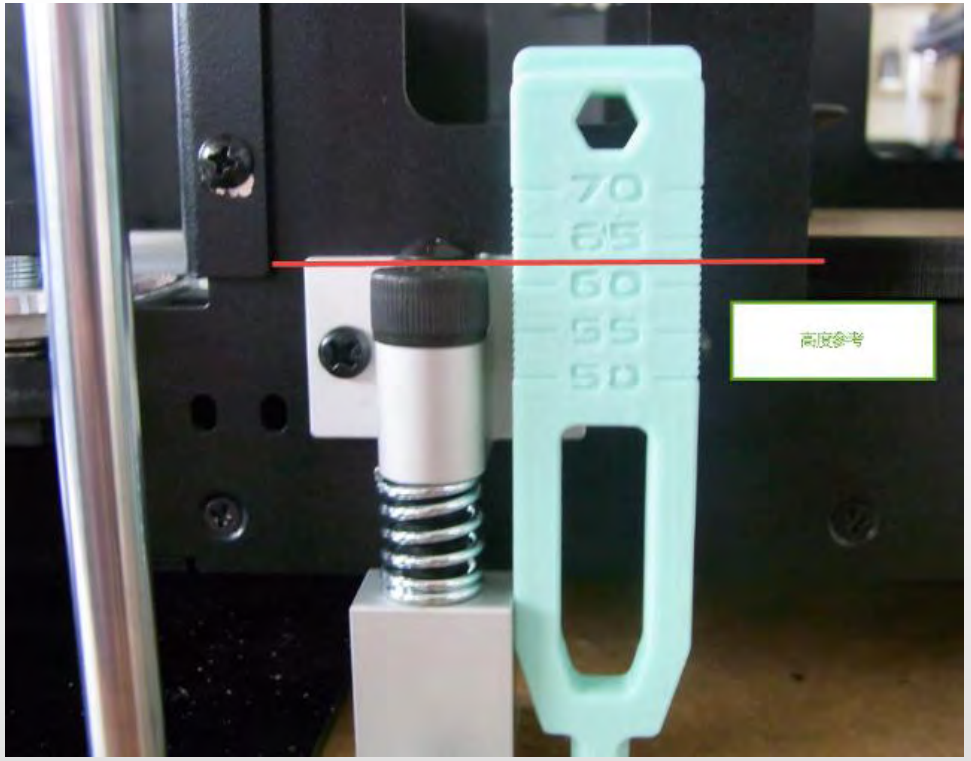
Adjustment procedure – Step 3. 3/5

C. Four screws on the feeder to adjust the level

Use the altimeter on the tool to adjust the height of the 4 screws and set to the same height. The height of the feeder four sides are the same.



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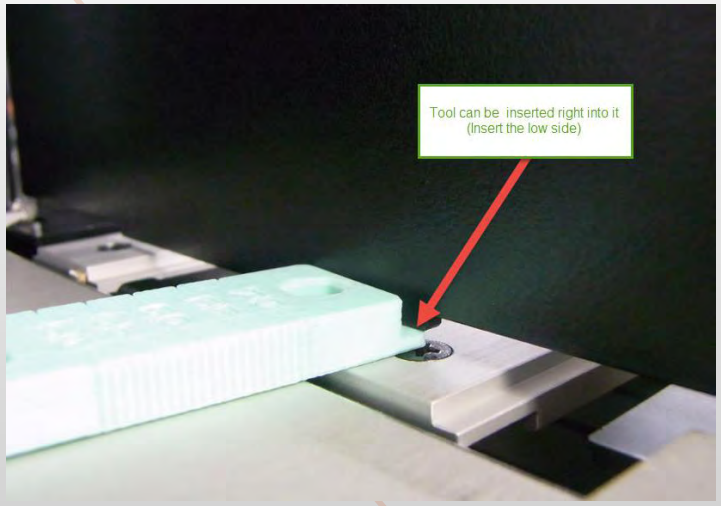
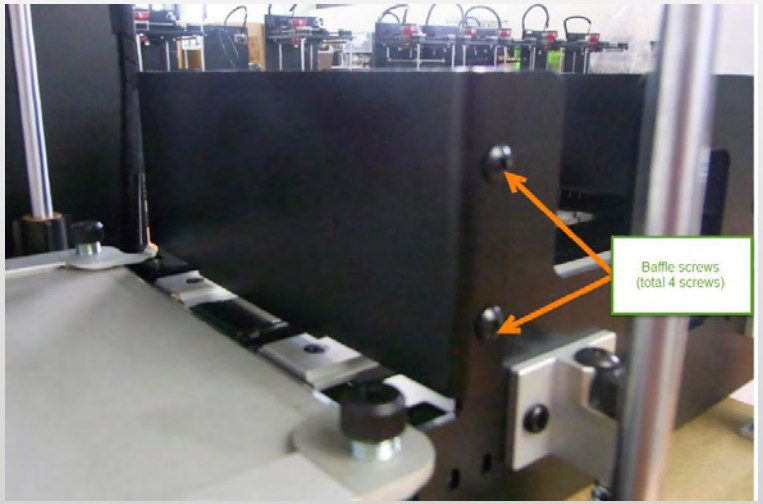
Adjustment procedure – Step 3. 4/5

D. Measure the height of the feeder baffle

The design of the baffle on the feeder is a "convex" shape, the purpose is to ensure that each time the feeder will only push one print plate, in order to prevent when transport displacement, measure before use, as long as let the baffle height of the measurement tool can be plugged in, the baffle height does not go in that too tight, if too tight please unscrew to pull the baffle, too loose please reduce the baffle's height.





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Adjustment procedure – Step 3. 5/5

After all the adjustments are completed, you can test push a print plate.

"Run Feed-Test.gcode", This gcode will be executed as below:

1. Print bed move to Home position
2. Print bed move down to 150mm position
3. Feeder motor move to Home position
4. Feeder push and change print plate, after that feeder motor move to Home position

Enjoy Auto Exchange

Adjustment procedure

Step 4.

Adjustment Test Feed Repeat

Run Feed-Repeat-SD.gcode, This gcode will be executed as below:

1. Print bed move to Home position
2. Print bed move down to 150mm position
3. Feeder motor move to Home position
4. Feeder push and change print plate, after that feeder motor move to Home position
5. Return to step c and repeat again (will executed until there is no print plate or power off)

Enjoy Auto Exchange

Adjustment procedure

Step 5.

Adjustment Test Dummy Repeat

Run Dummy-Repeat-SD.gcode, This gcode will be executed as below:

1. Print bed move to Home position
2. Print bed move down to 150mm position
3. Feeder motor move to Home position
4. Feeder push and change print plate, after that feeder motor move to Home position
5. Print bed move to Home position
6. The extruder will move a clockwise 70mm diameter circle
7. Return to step b and repeat again (will executed until there is no print plate or power off)

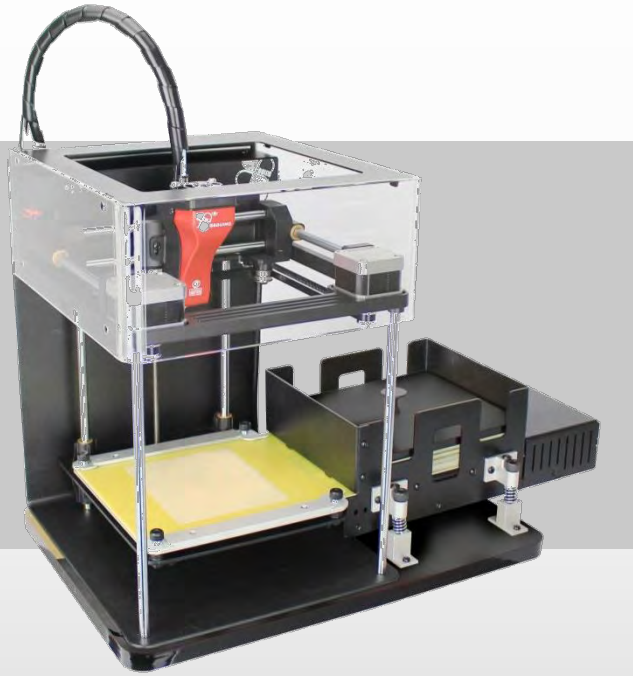
Enjoy Auto Exchange

PART 6

Install and adjust procedure | installation and connectionSlice

Adjustment procedure

Automatically print instructions



Enjoy Auto Exchange

Automatically print instructions – single file printing

To print a single file automatically, create a folder called "gcode" on the SD Card and copy file into this gocde folder, please rename to "auto.gcode"

e.g. \gcode\auto.gcode

Enjoy Auto Exchange

Automatically print instructions – multi-files print

For multi-files cycle and automatically print

1. please create subfolder called EnjoyXXX in gcode folder. It is very important to name it exactly.

e.g. \gcode\EnjoyXXX

XXX is the number 000 ~ 999, used to set files in folder to print cycle times

000 -> 1 time
001 -> 1 time
002 -> 2 times
...
...
...
998 -> 998 times
999 -> never stop

2. copy gcode files to EnjoyXXX folder to print, such as:

Files print order according to the file name (sort by ASCII code)

\gcode\Enjoy999\abc.gcode

\gcode\Enjoy999\abcd.gcode

\gcode\Enjoy999\abcde.gcode

...

...

...

\gcode\Enjoy999\zzxxyy.gcode

PART 7

Appendix

Appendix-A Unload Filament

1. Within a short time when you will not use printer, suggest unload filament from the extruder, so as to avoid filament solidification leads to clogged extruder.

2. Turn the power on, press and hold the rear red button after three seconds unload release, then the system will issue a warning sound, the system will begin to filament unloading automatically.

3. Unloading takes about three minutes or so, at same time also cleanup extruder when unload filament