

86DUINO 印匠

The Delicate 3D Printer

ENJOY

Quick Start
Manual ▼



1

ENJOY Introduction

2

Software Installation*

- Install print S/W
- Driver Install

3

Hardware

- Hardware Intro
- Cable installation
- Power and Trans cable install

4

Calibration Settings

- Setup and connection
- Extruder Calibration
- Print bed Calibration

5

Print test

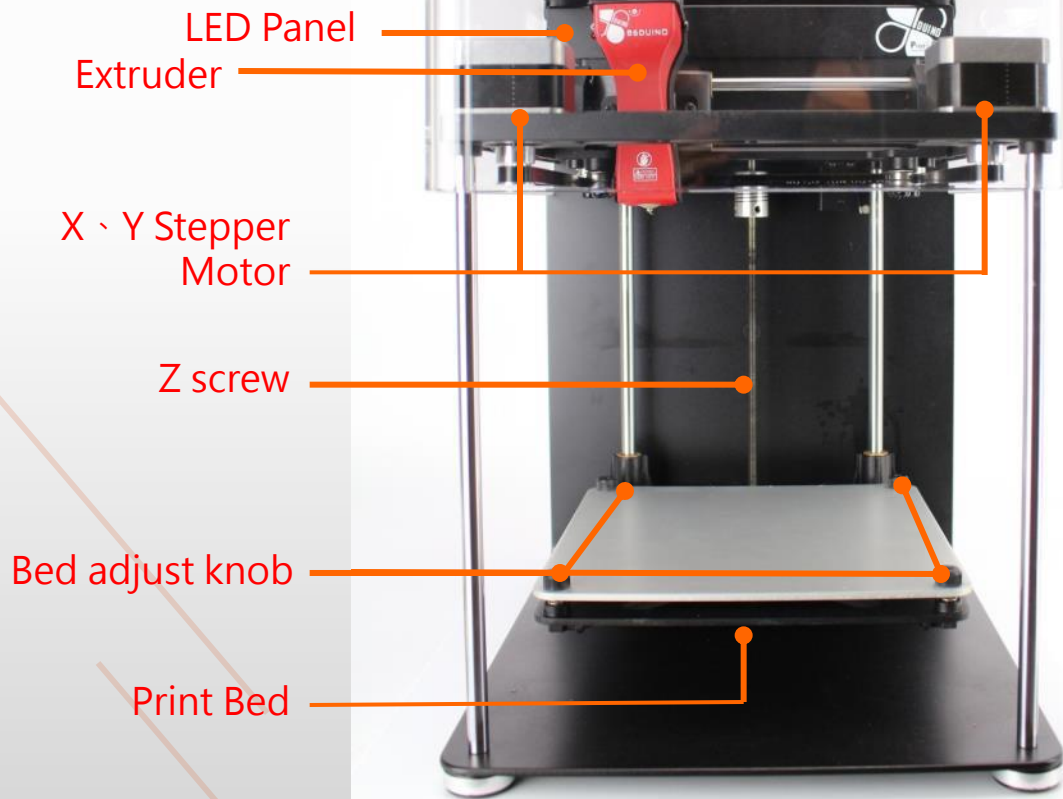
- Load 3D object
- Adjust print object
- Slice and G-Code
- Start print

6

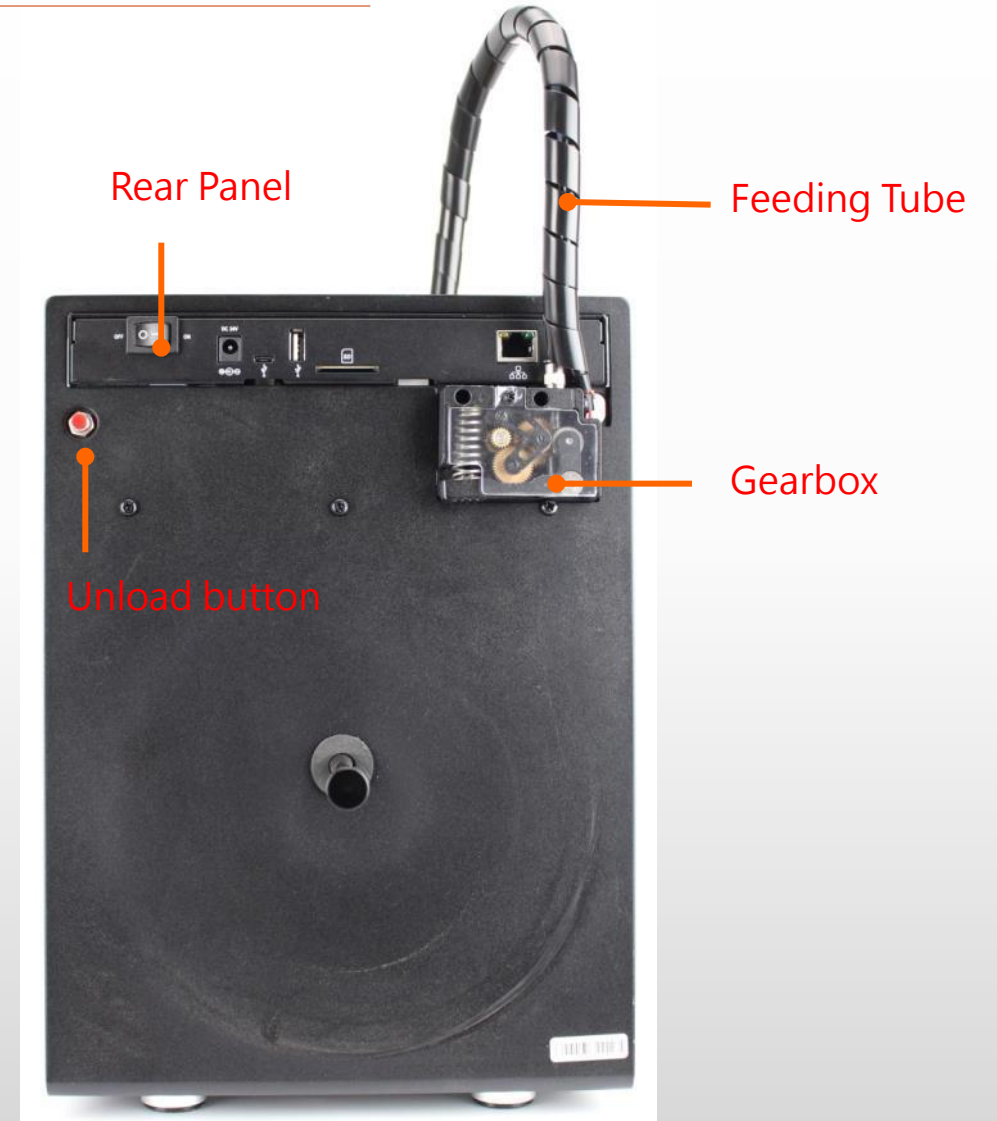
Appendix

PART
1

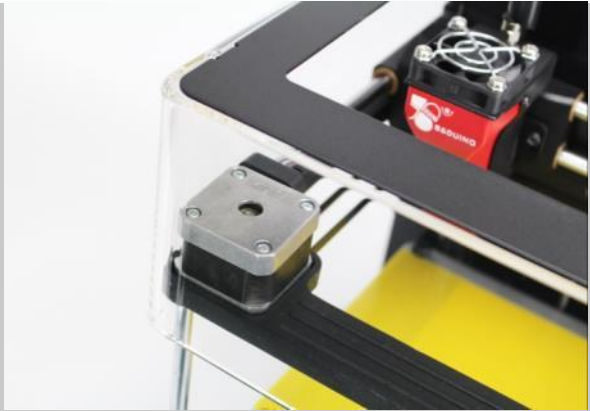
ENJOY Introduction



Front view



Rear view



PART 2

Software Installation

Install print S/W

Driver Install

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

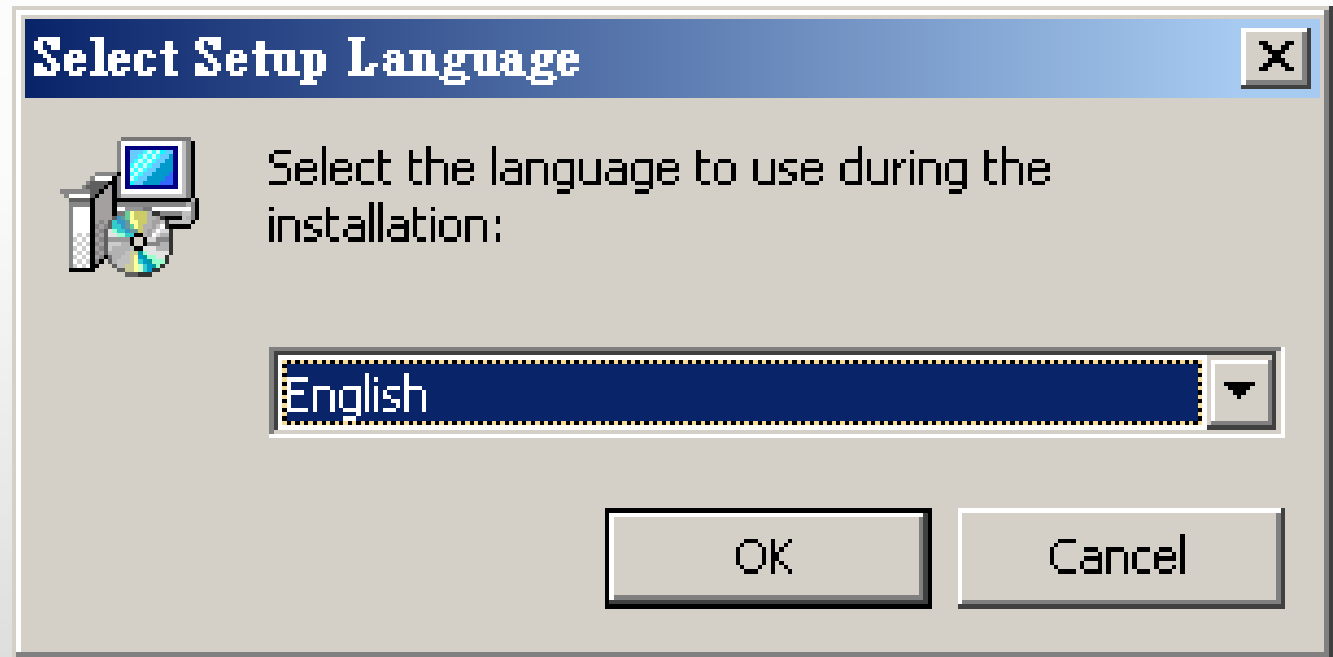
Download 86DuinoRepetierHost file from following to your computer:

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

Double click the setup file icon .

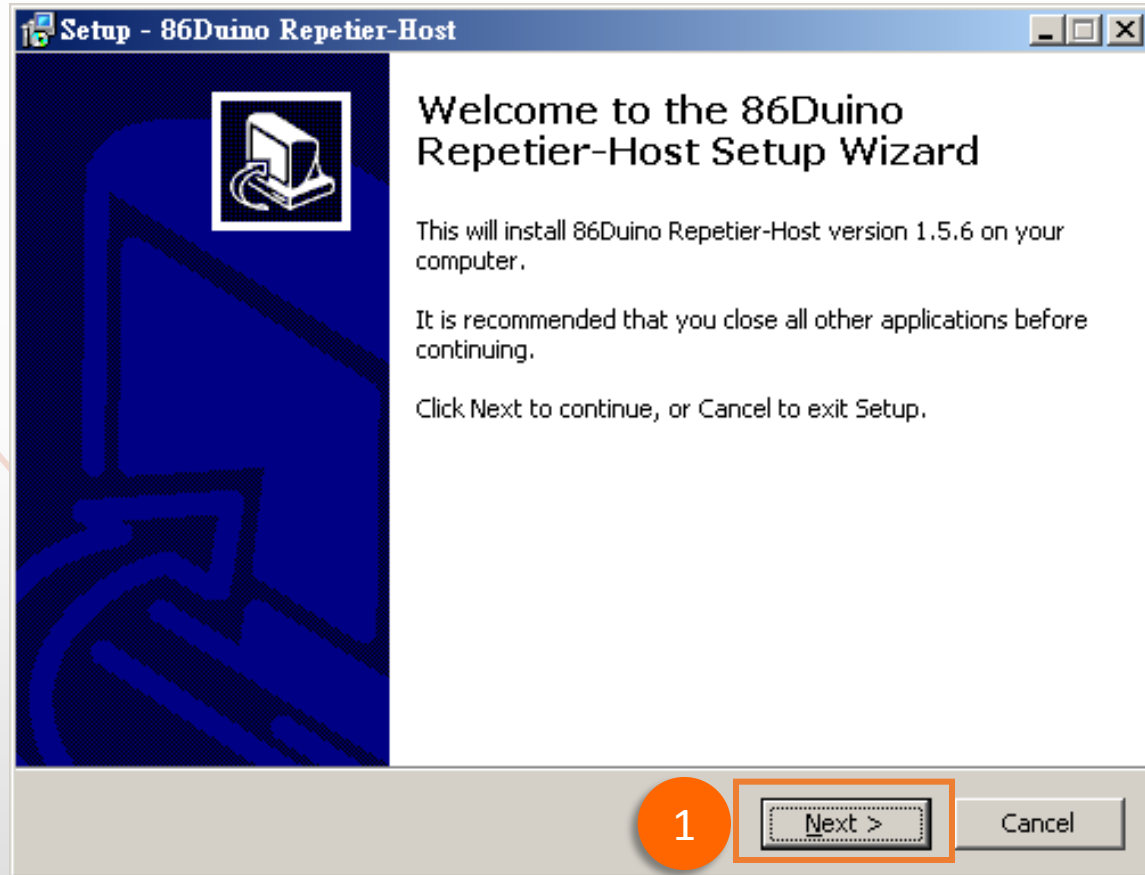


Setup icon

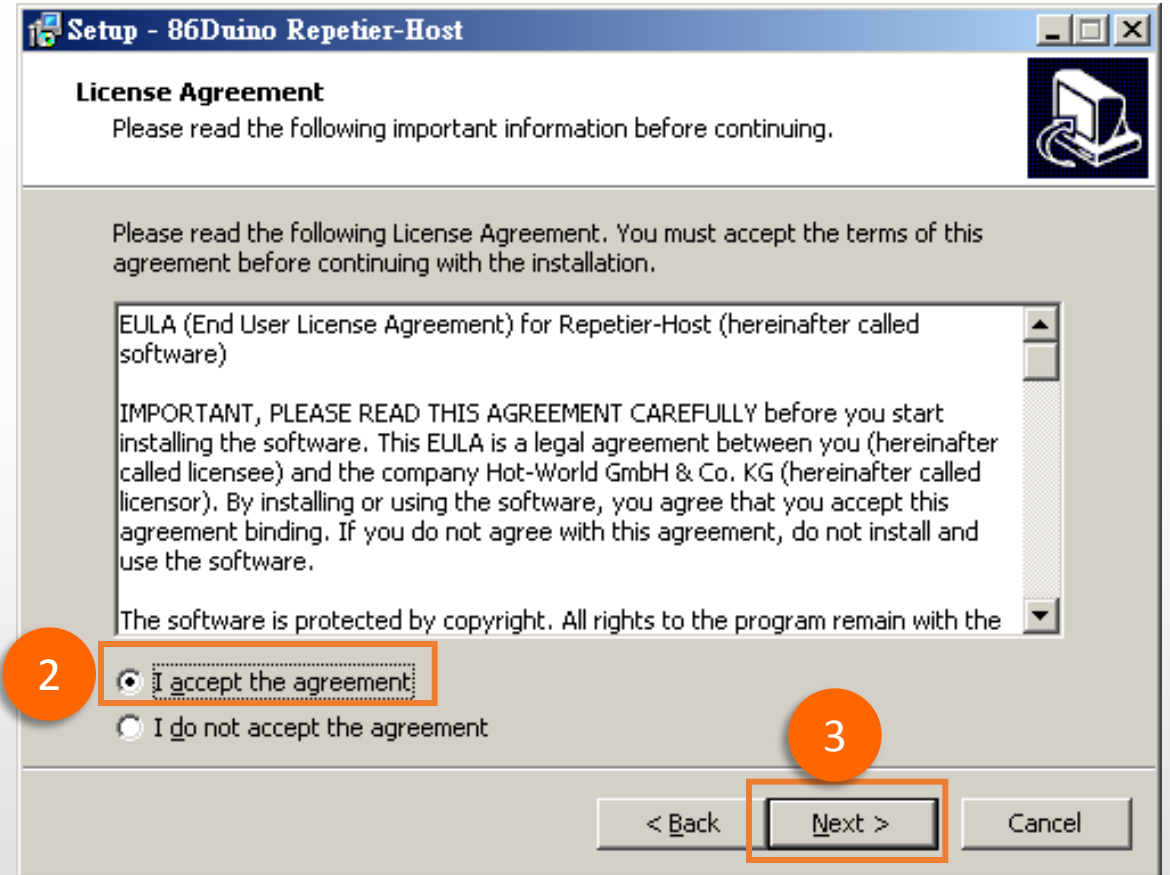


Select the language you prefer and click "OK"

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

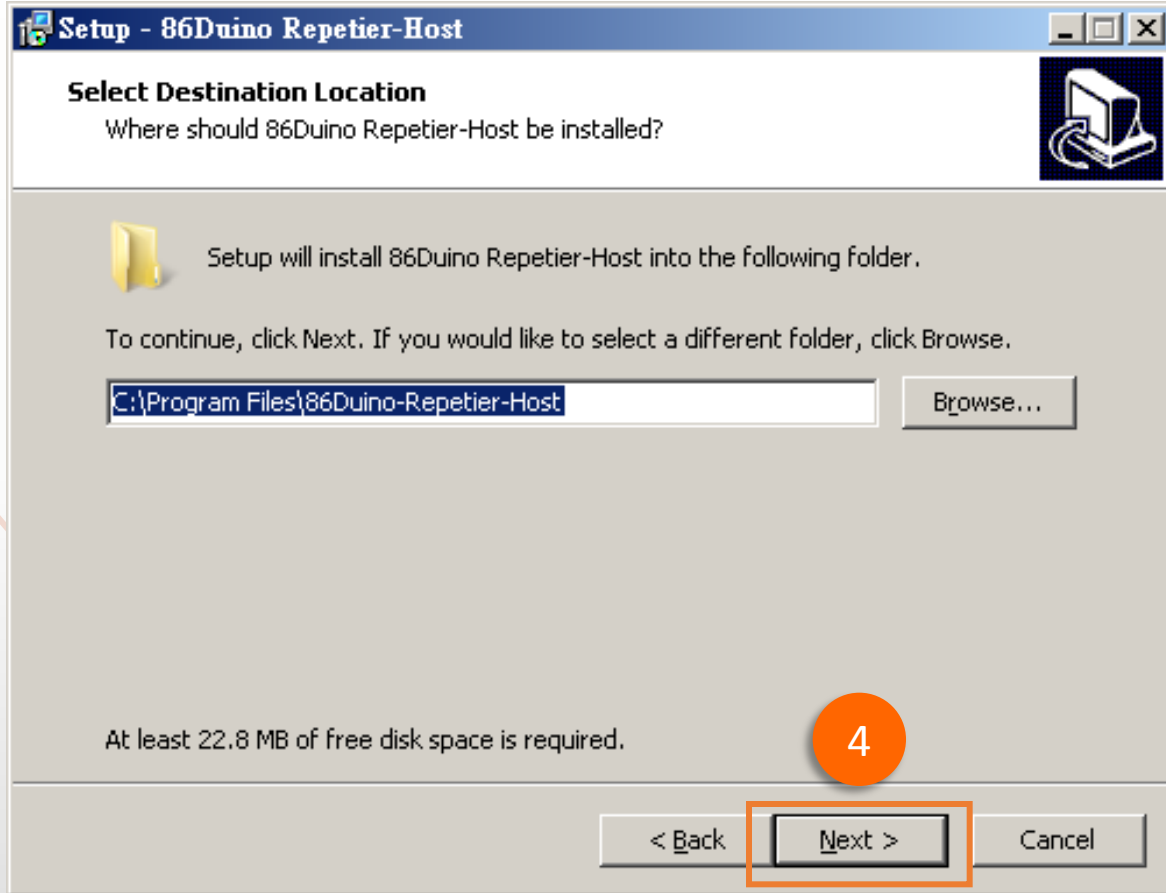


Click "Next" on Setup Wizard :

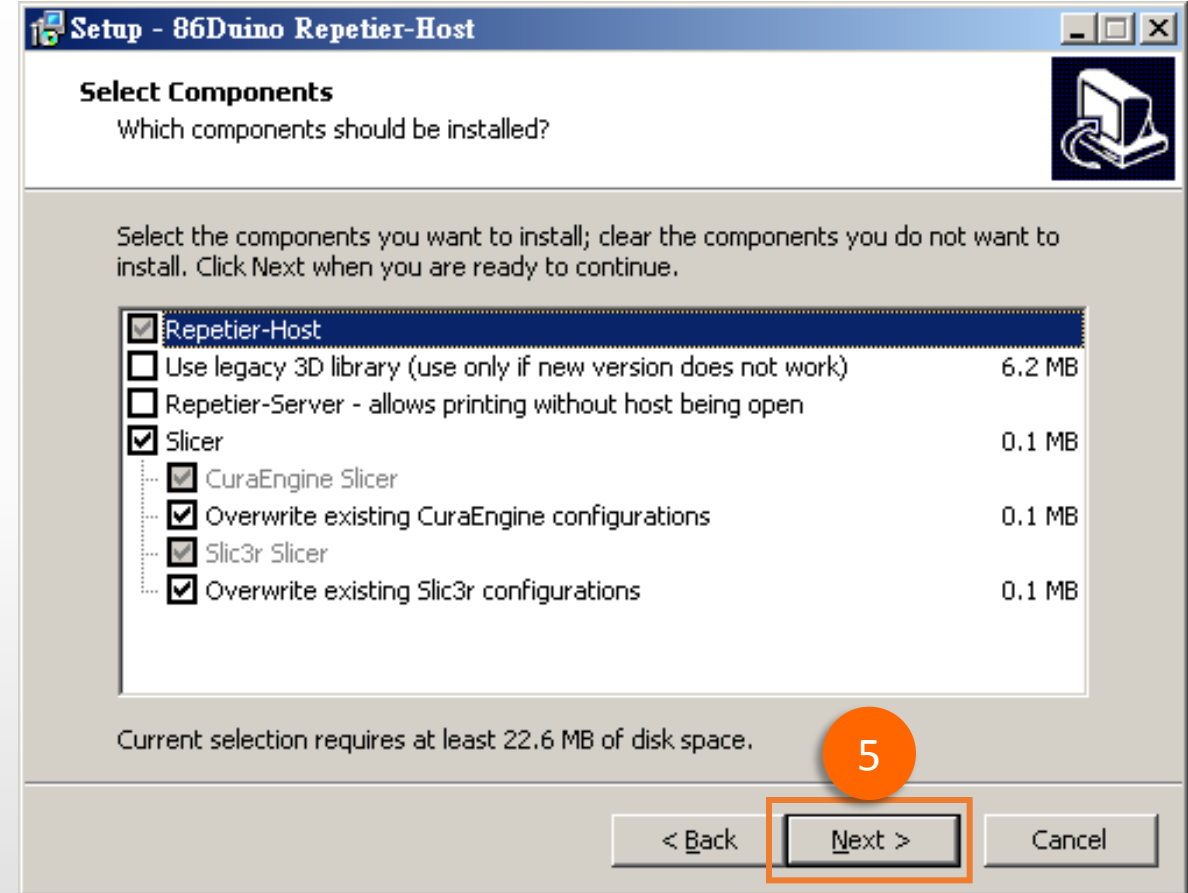


Read the License Agreement and if in agreement, Select "I accept the agreement" and then click "Next" .

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

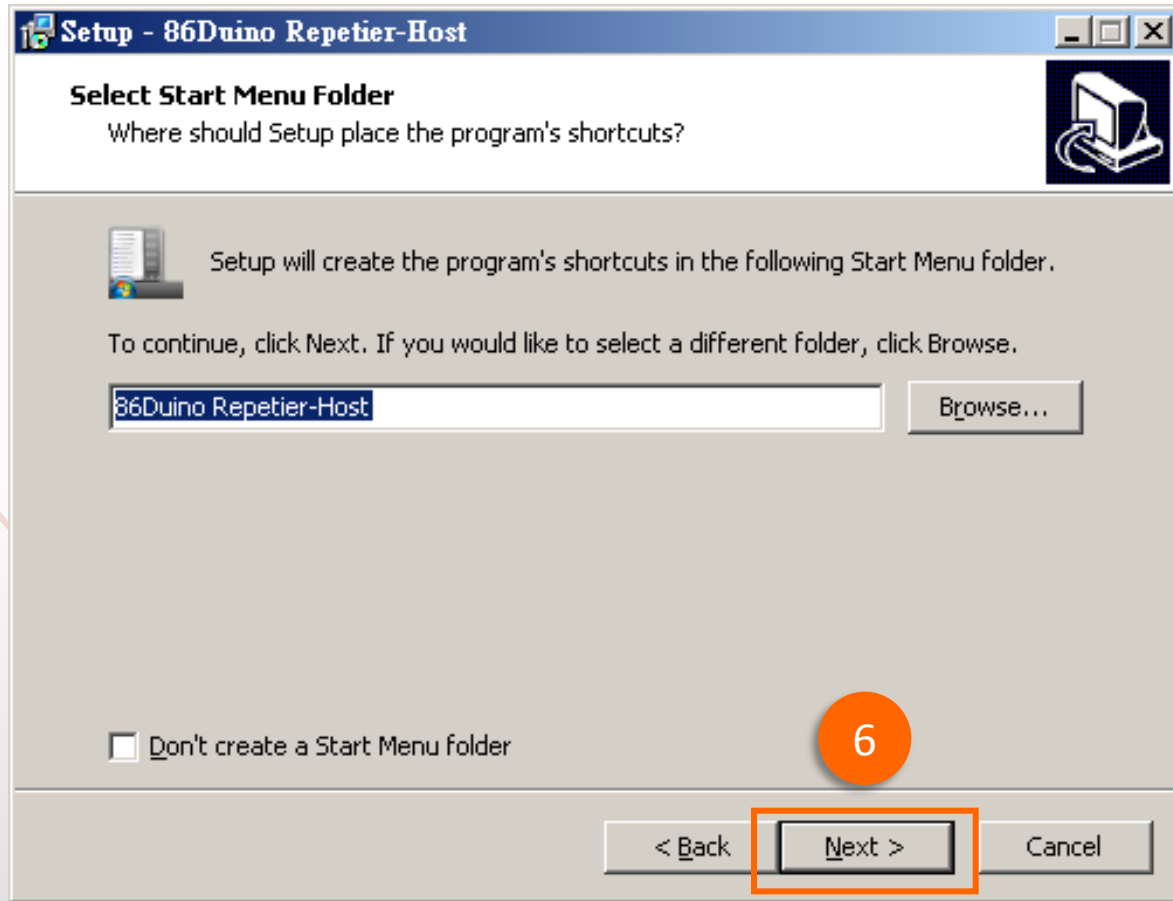


Click "Next" if you like to put it under "Program Files" or you can choose your preferred location by clicking "Browse..."

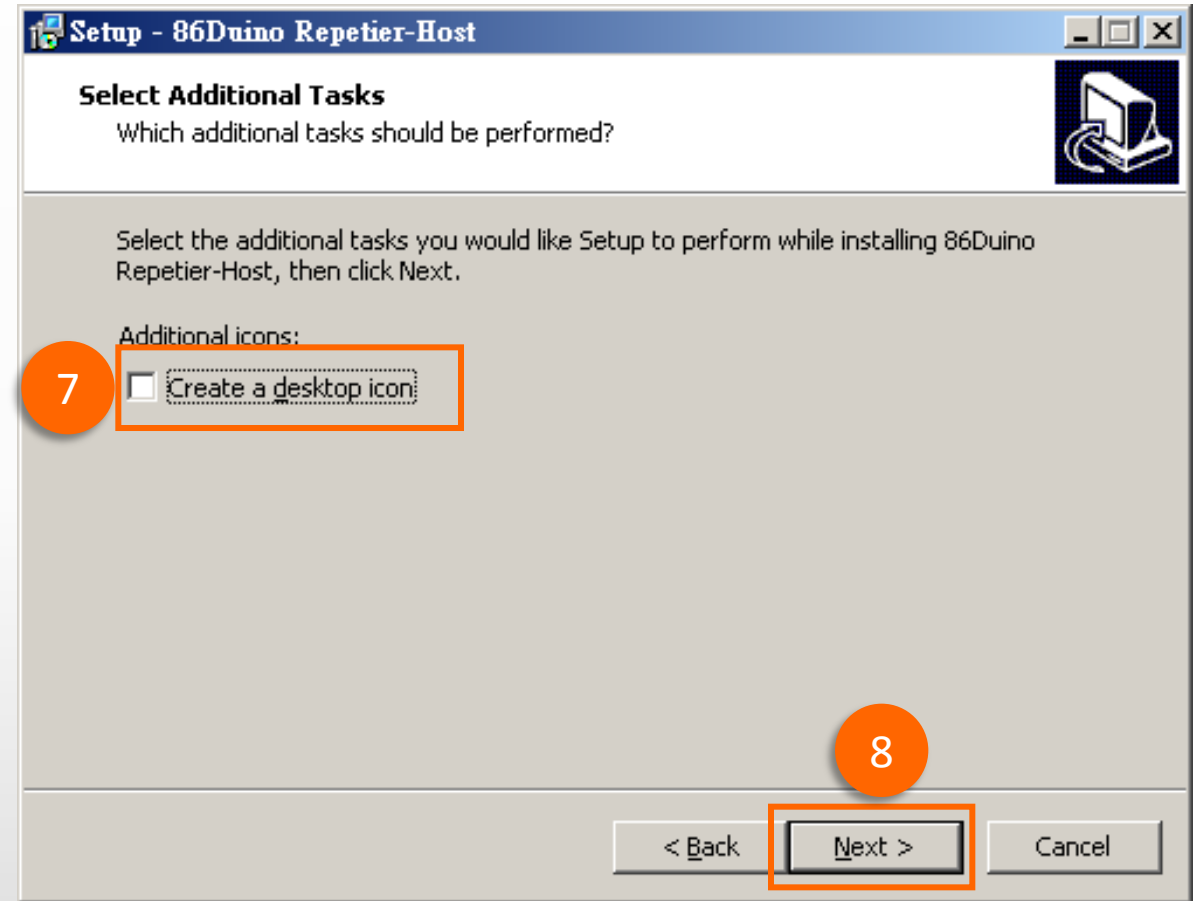


then click "Next" (default setting)

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

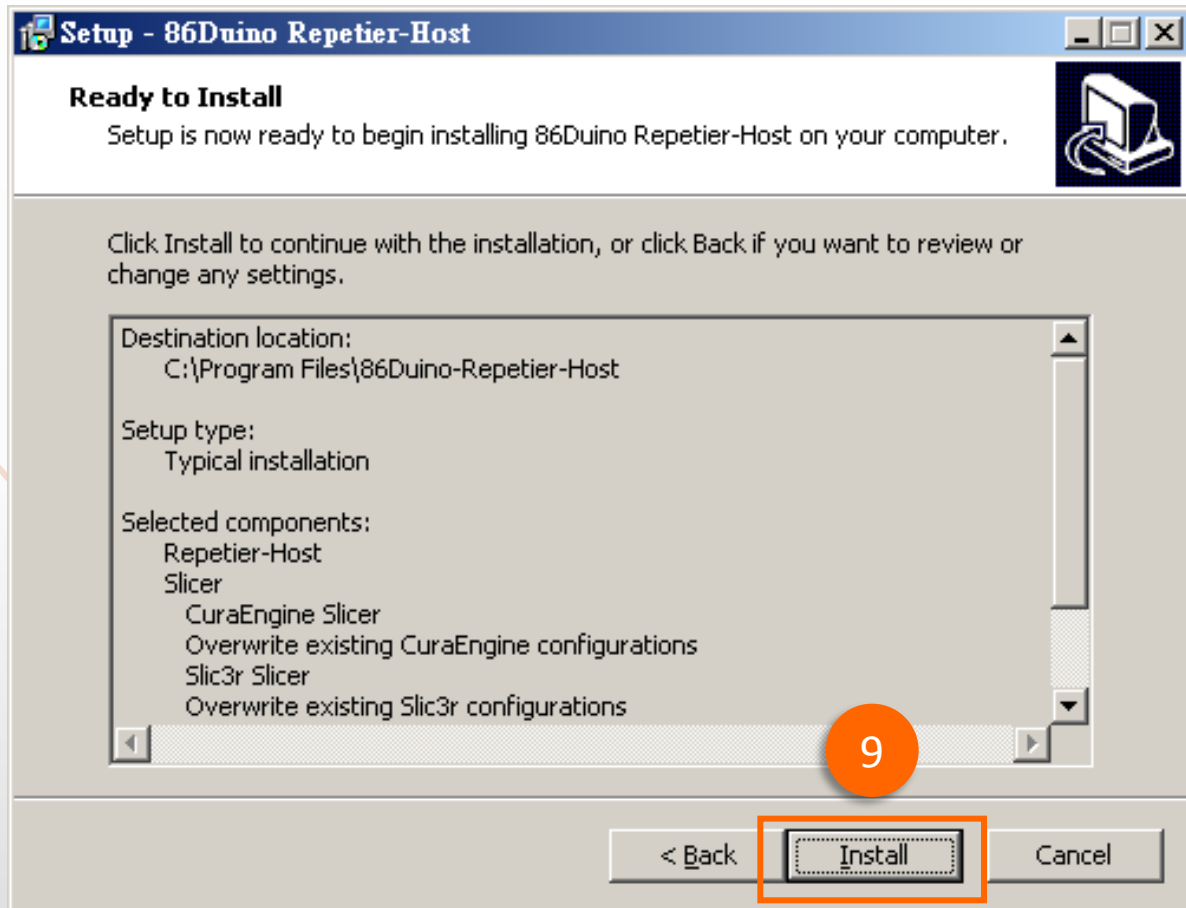


Click "Next" if you like to put the shortcut in "86Duino Repetier-Host" folder or you can click "Browse..." to choose a different folder.

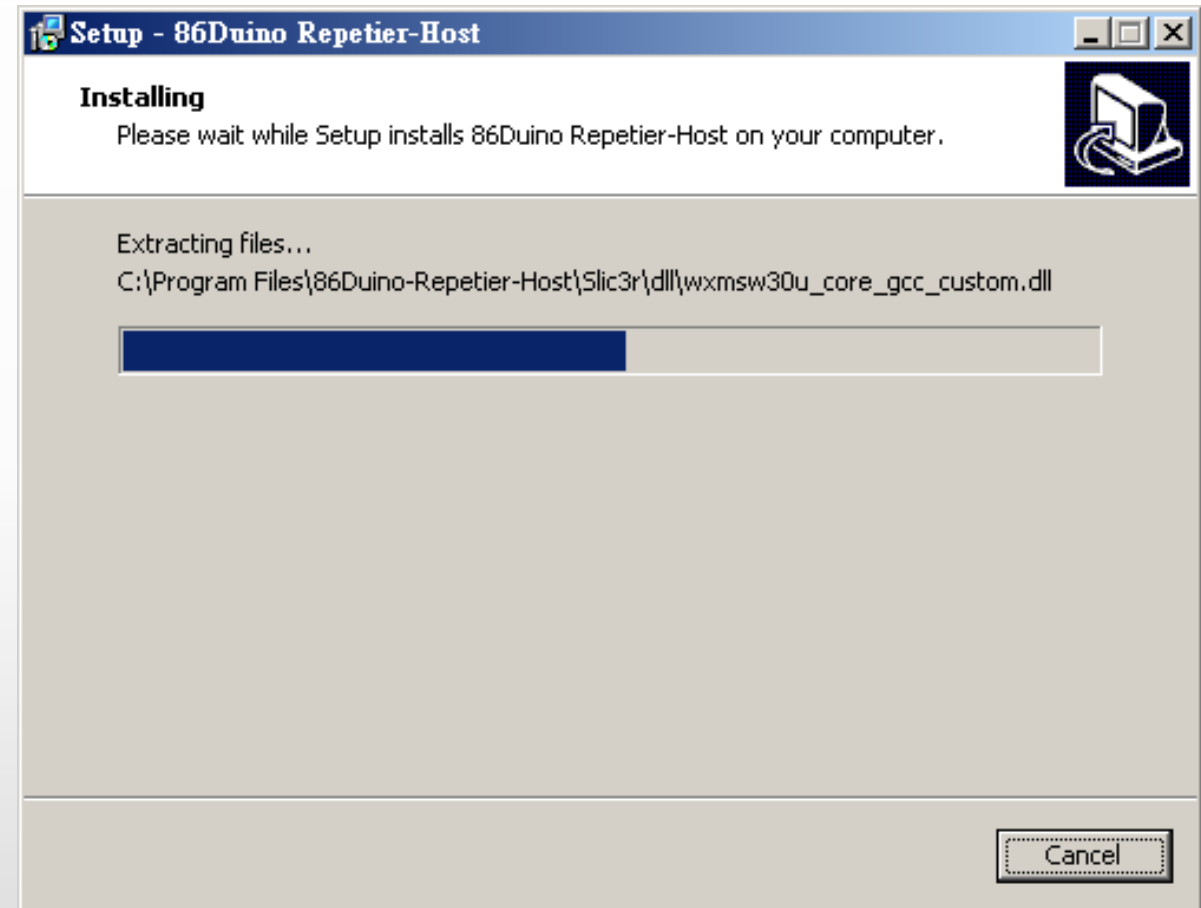


If you would like to create a desktop icon, check off, "Create a desktop icon" and then click "Next".

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



Click "Install" to start the installation.



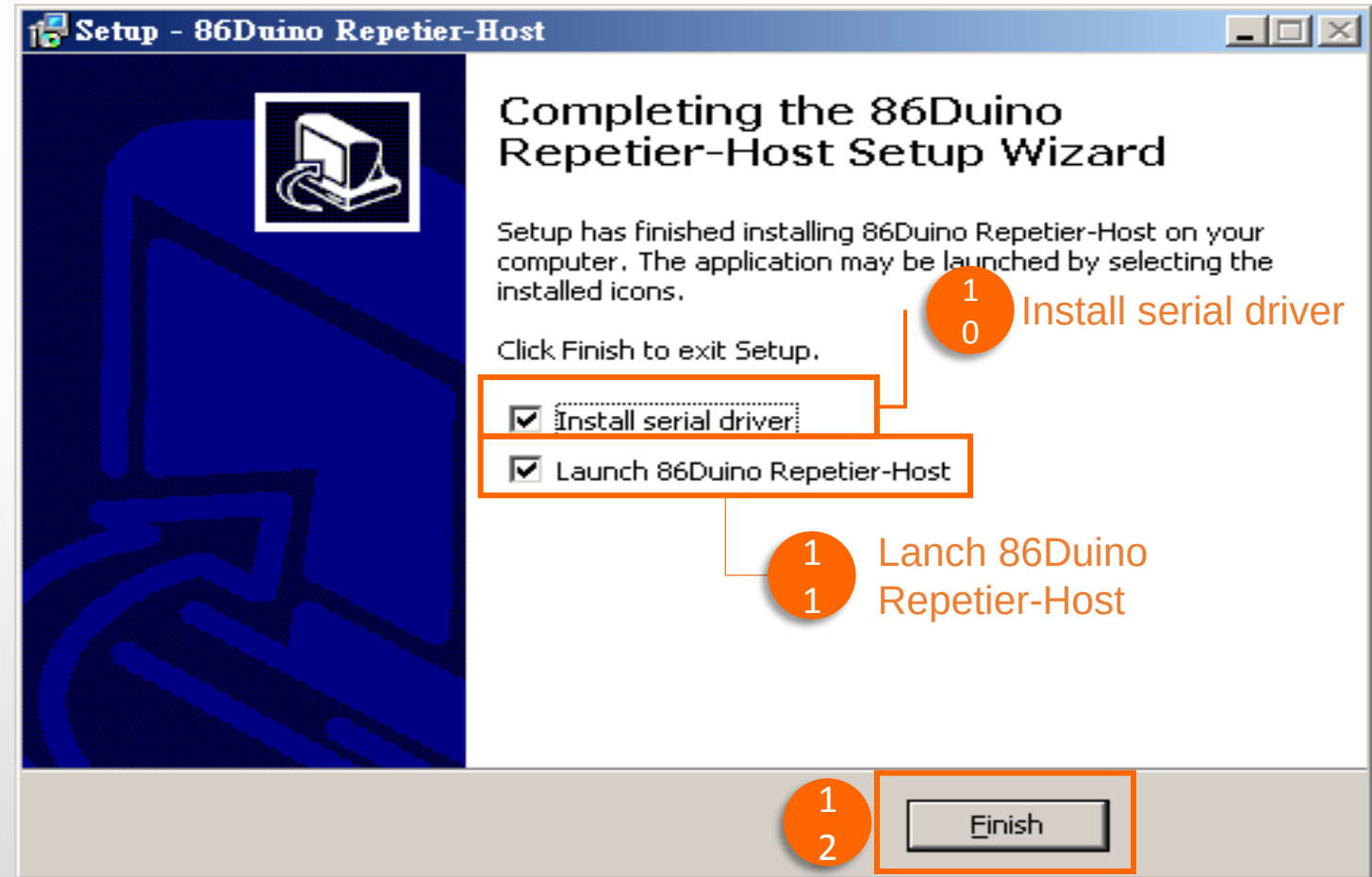
Software Installation

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

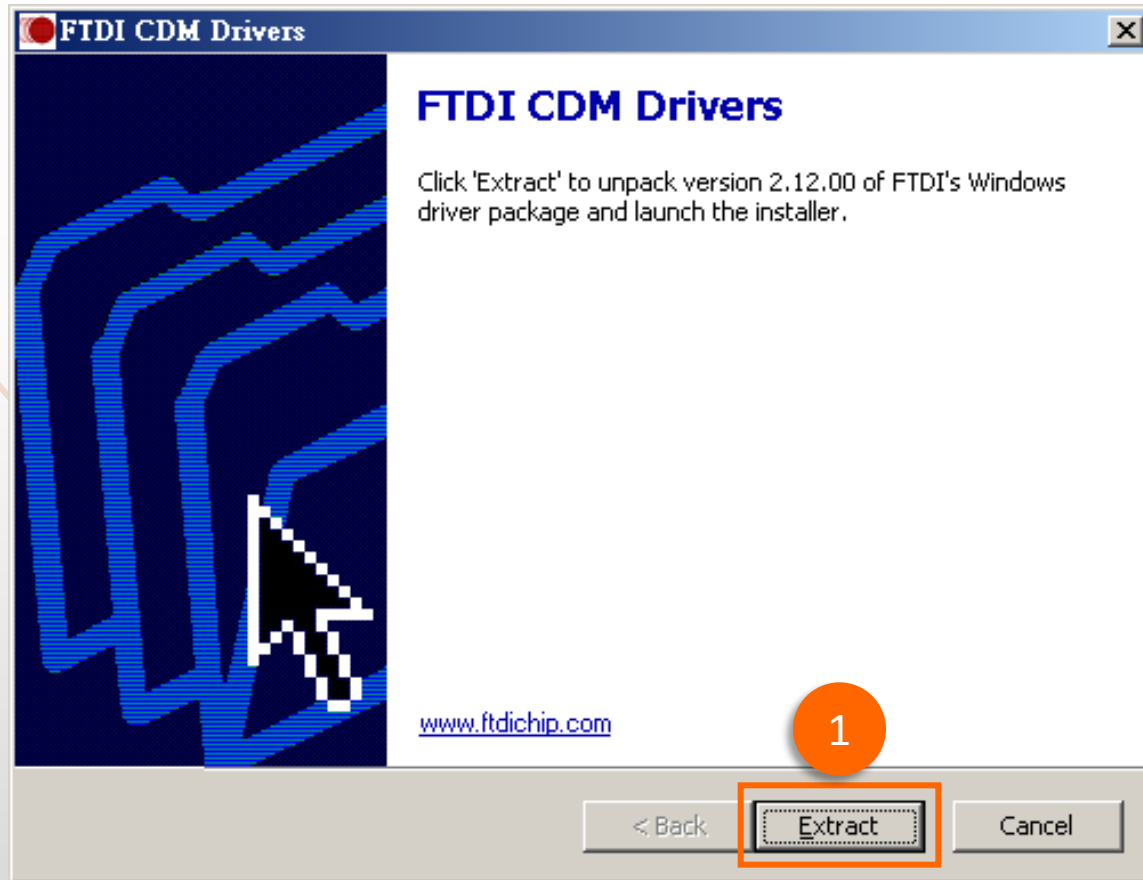
Software Installation

Install print S/W

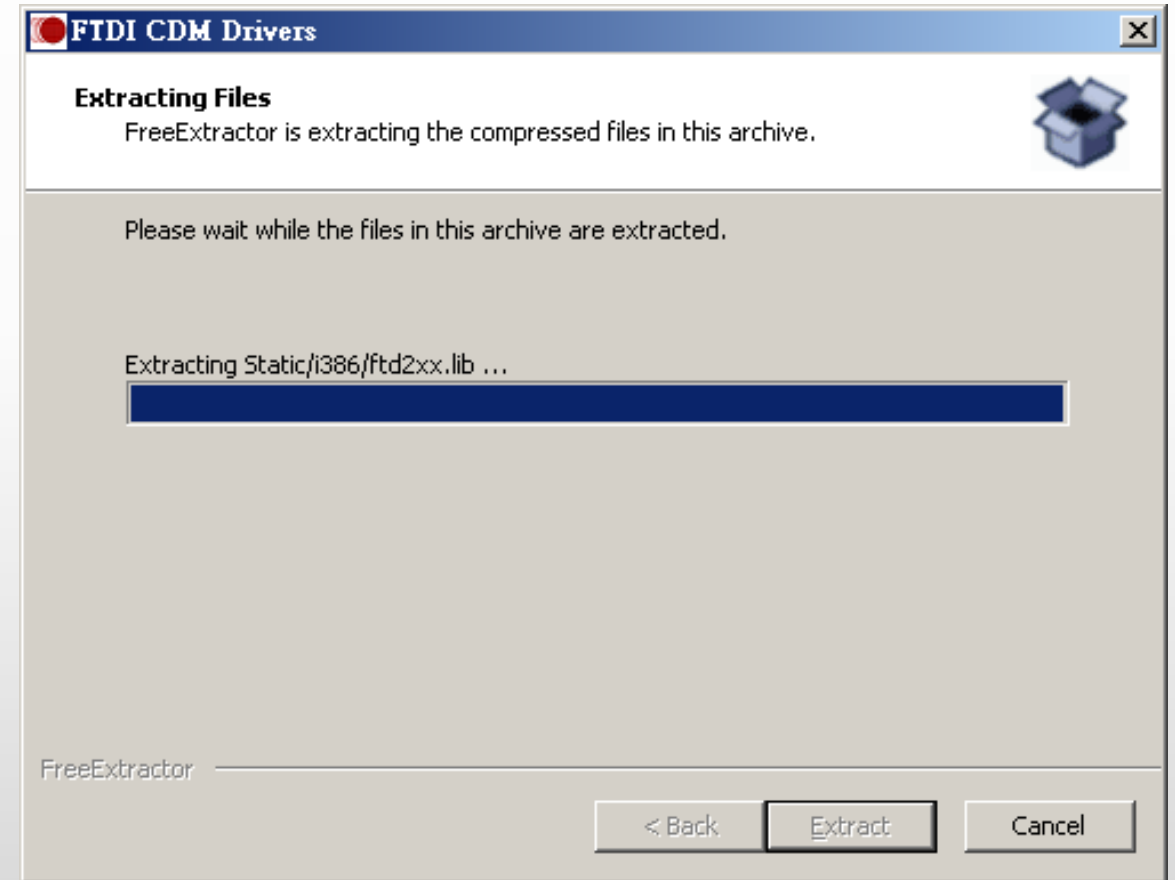
Driver Install

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:

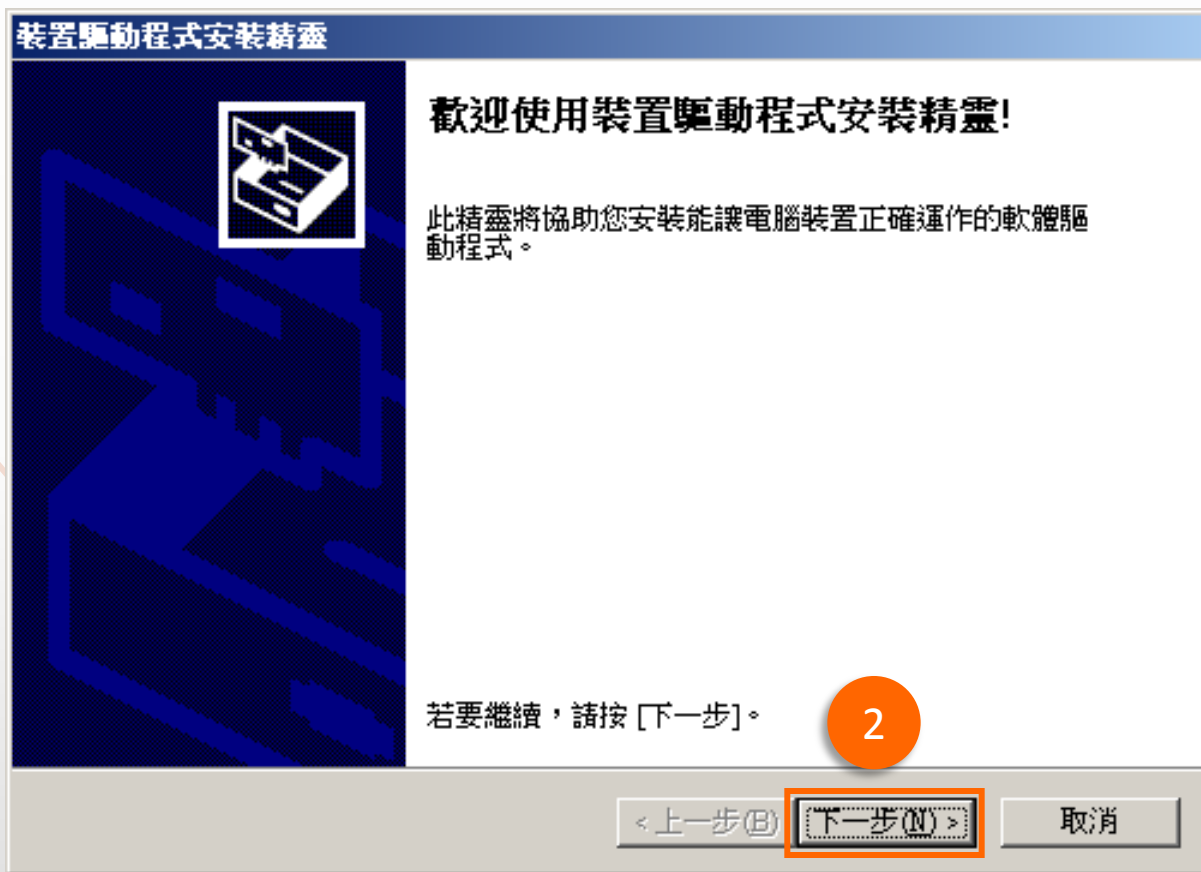


Driver extract confirmation screen

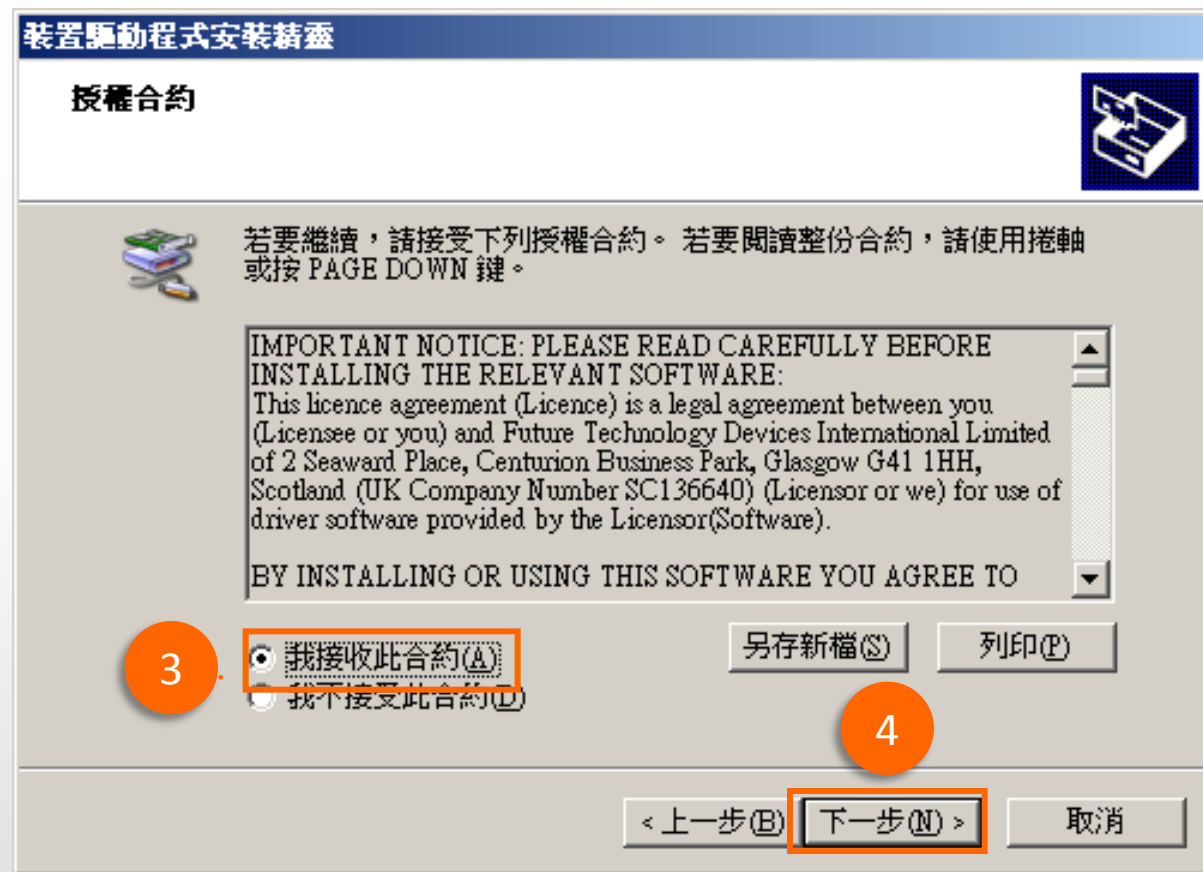


Driver extracting screen

S/W-Driver install (2/3)



Click "Next" for Setup Wizard :

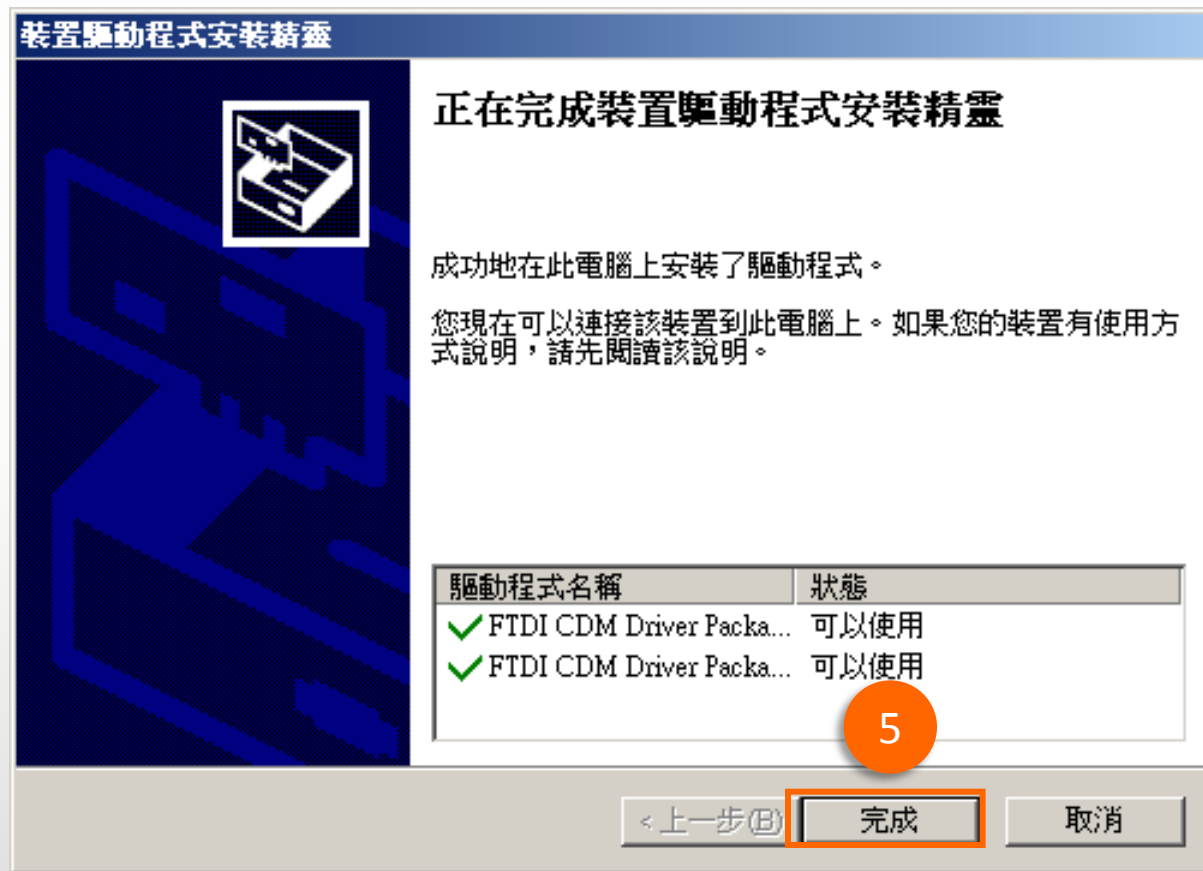


Read the License Agreement and if in agreement, Select "I accept the agreement" and then click "Next" .

S/W-Driver install (2/3)



Install screen



Installation completion screen



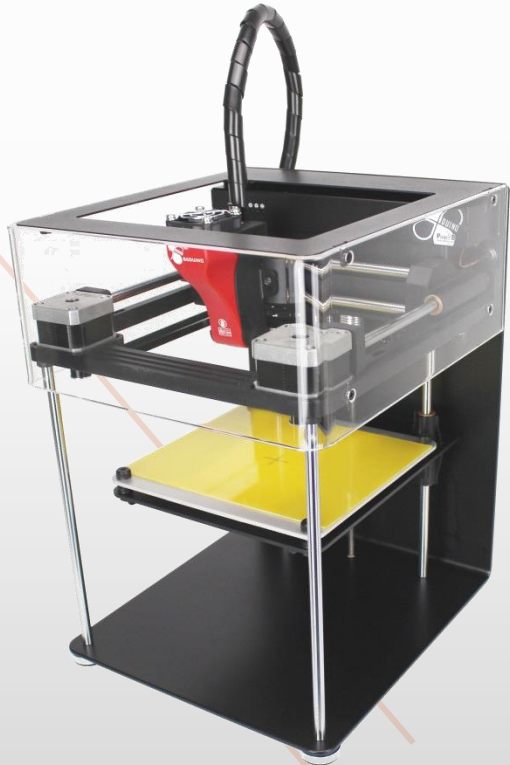
PART 3

Hardware Assembly

Hardware Intro | Cable installation | Power and Trans cable install

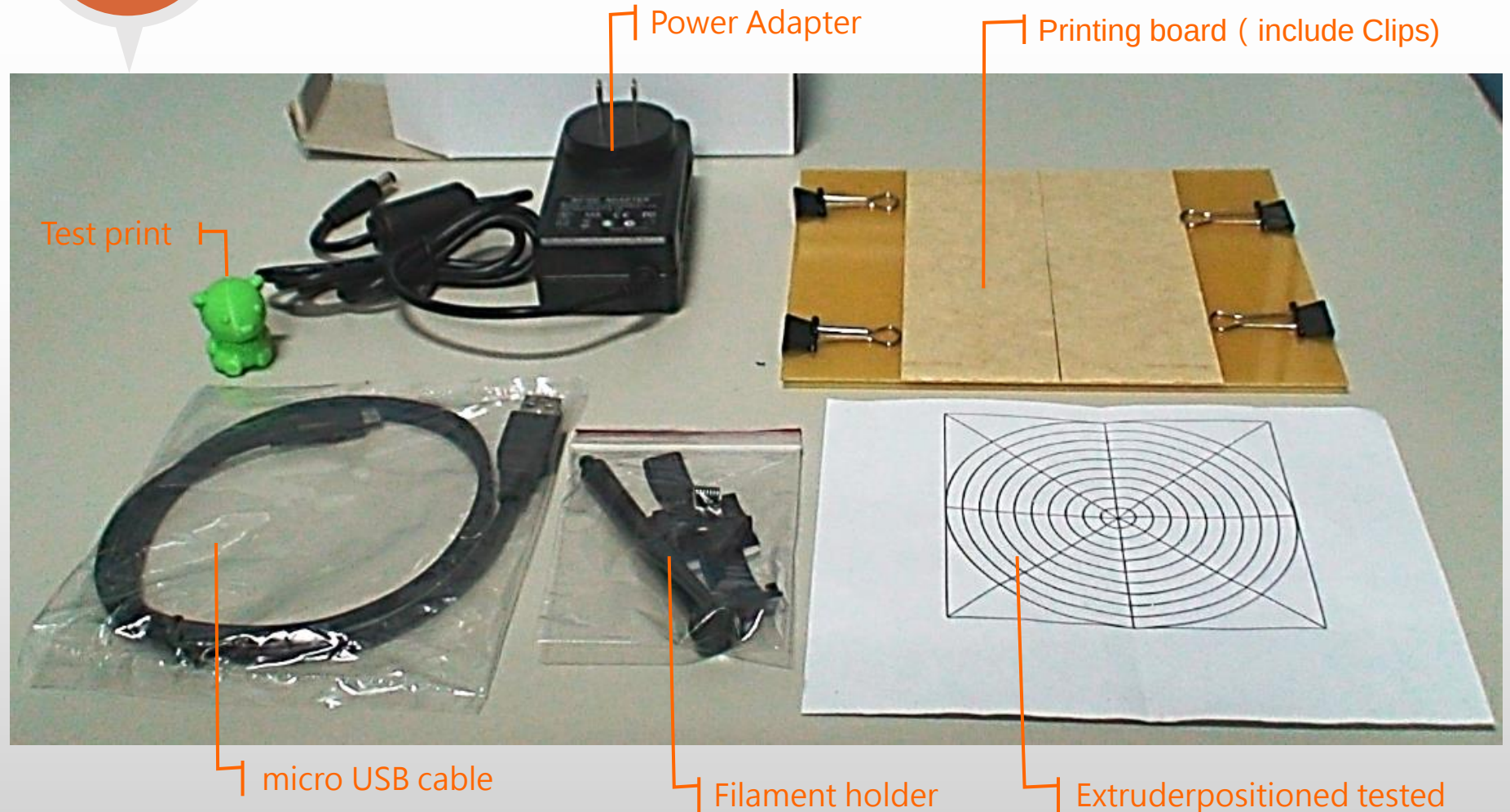
Hardware Intro /Description

ENJOY
Printer



Accessories

ENJOY includes the following items at the box:





PART 3

Hardware Assembly

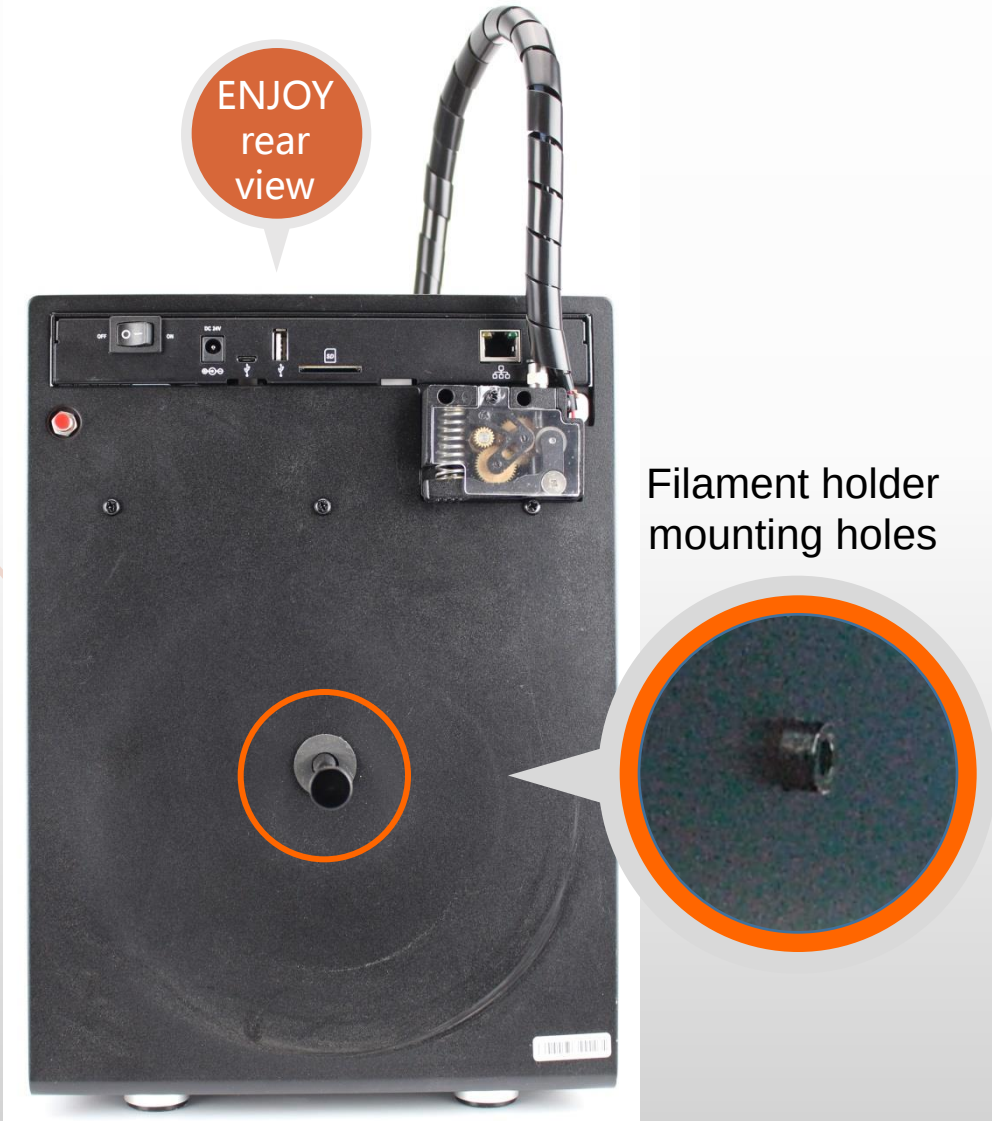
Hardware Intro

Cable Installation

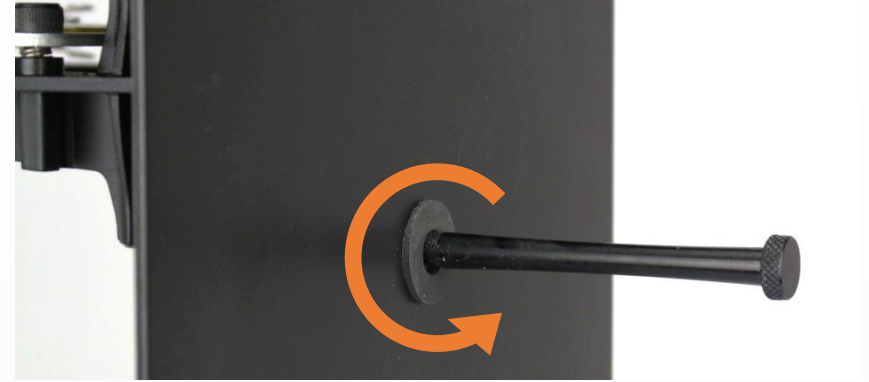
Power and Trans cable install

Cable Installation (1/5)

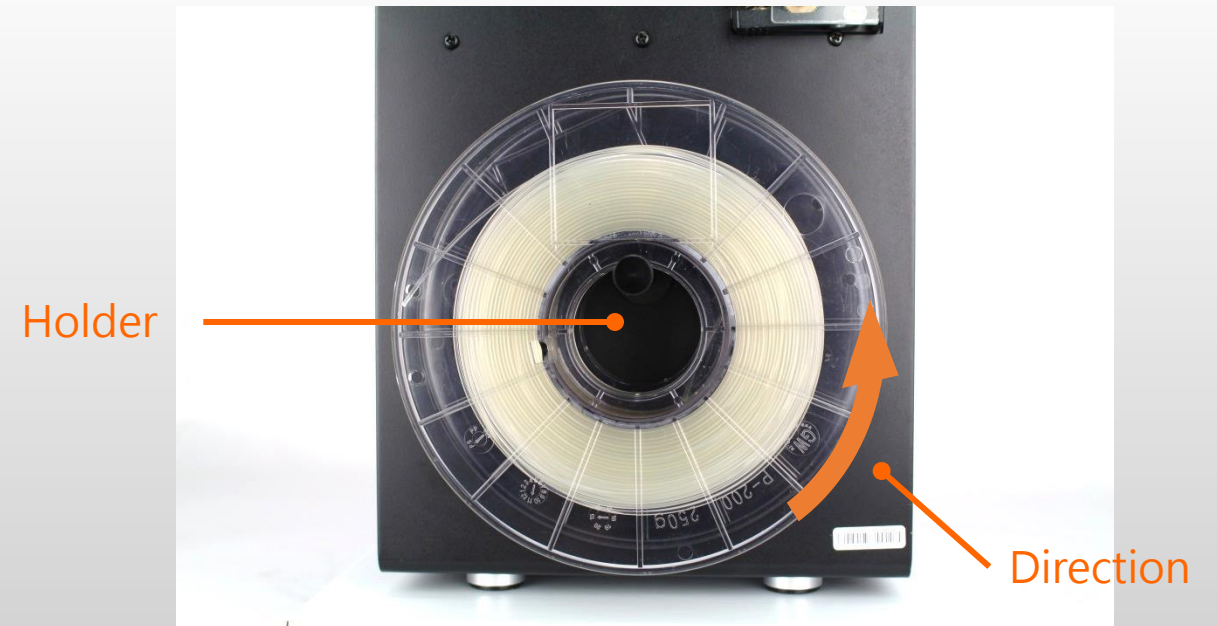
Mounted filament holder on the rear of the printer:



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.

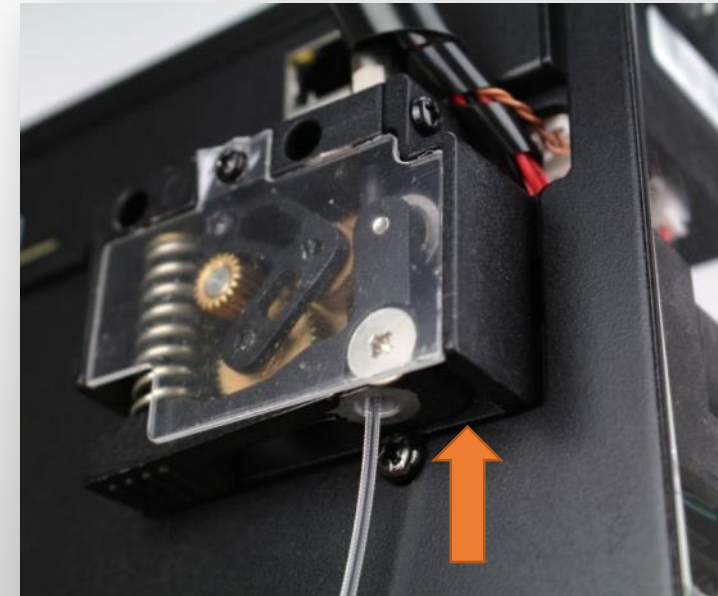


Feeder

3. Cutting



4. feed the filament into the Feeder



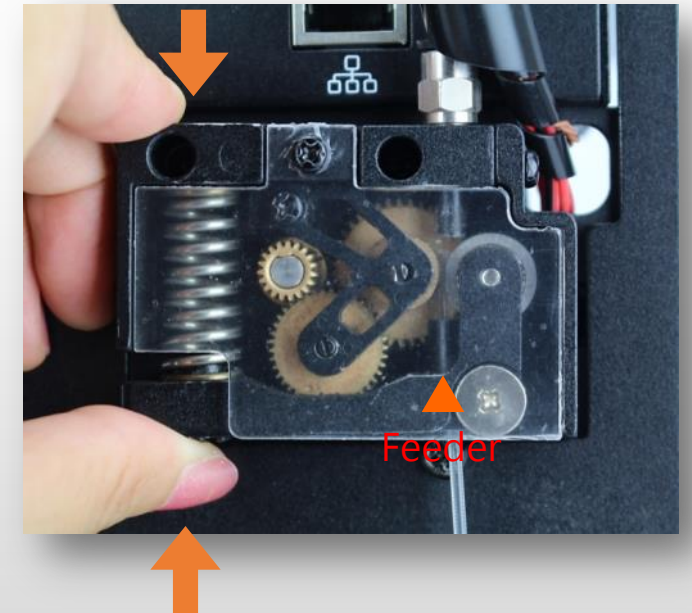
Cable Installation (3/5)

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



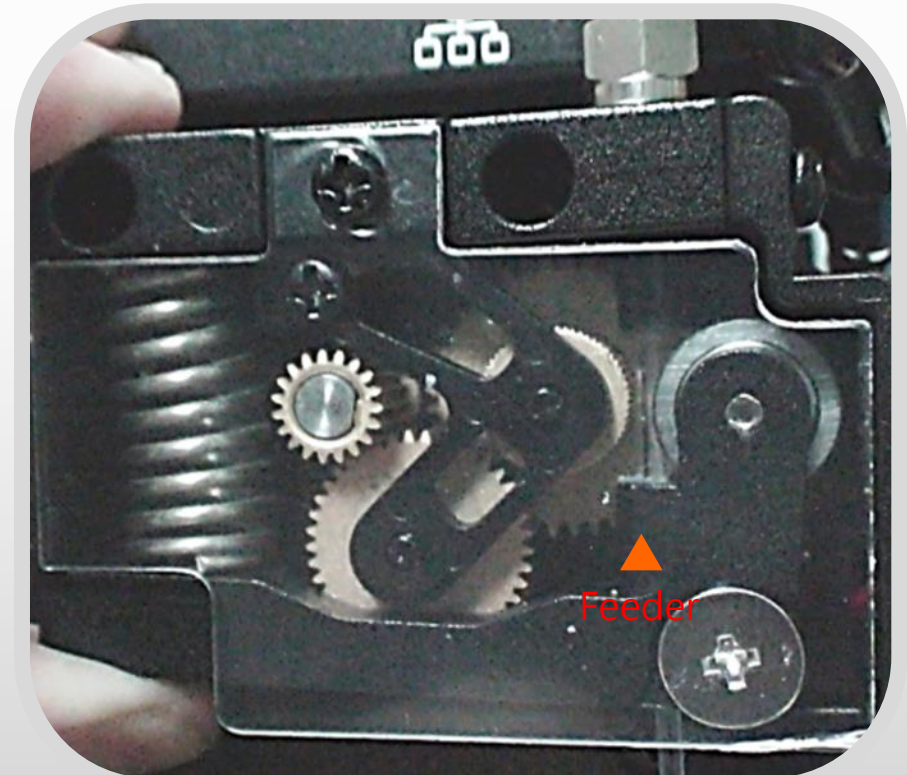
Cable Installation (4/5)

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



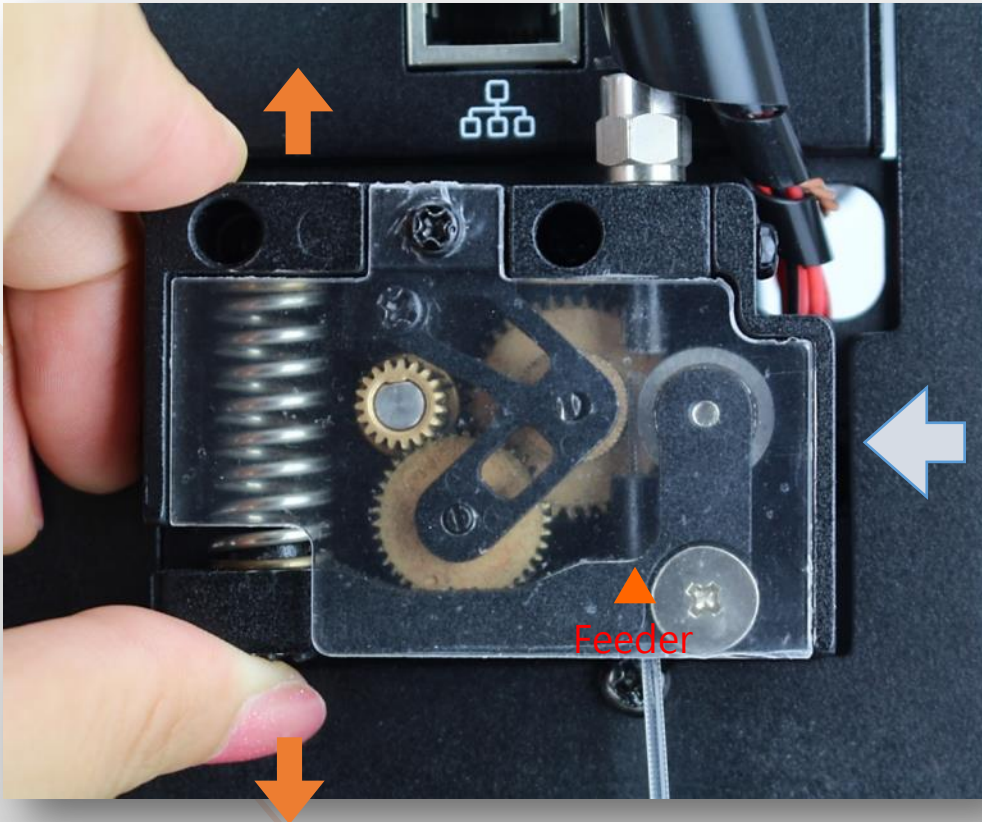
8. until you feel there is NO room for more filament.



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

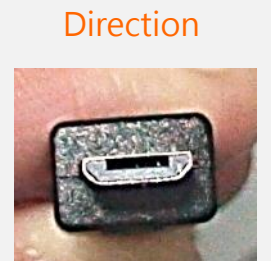
Hardware Intro | Cable Installation

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

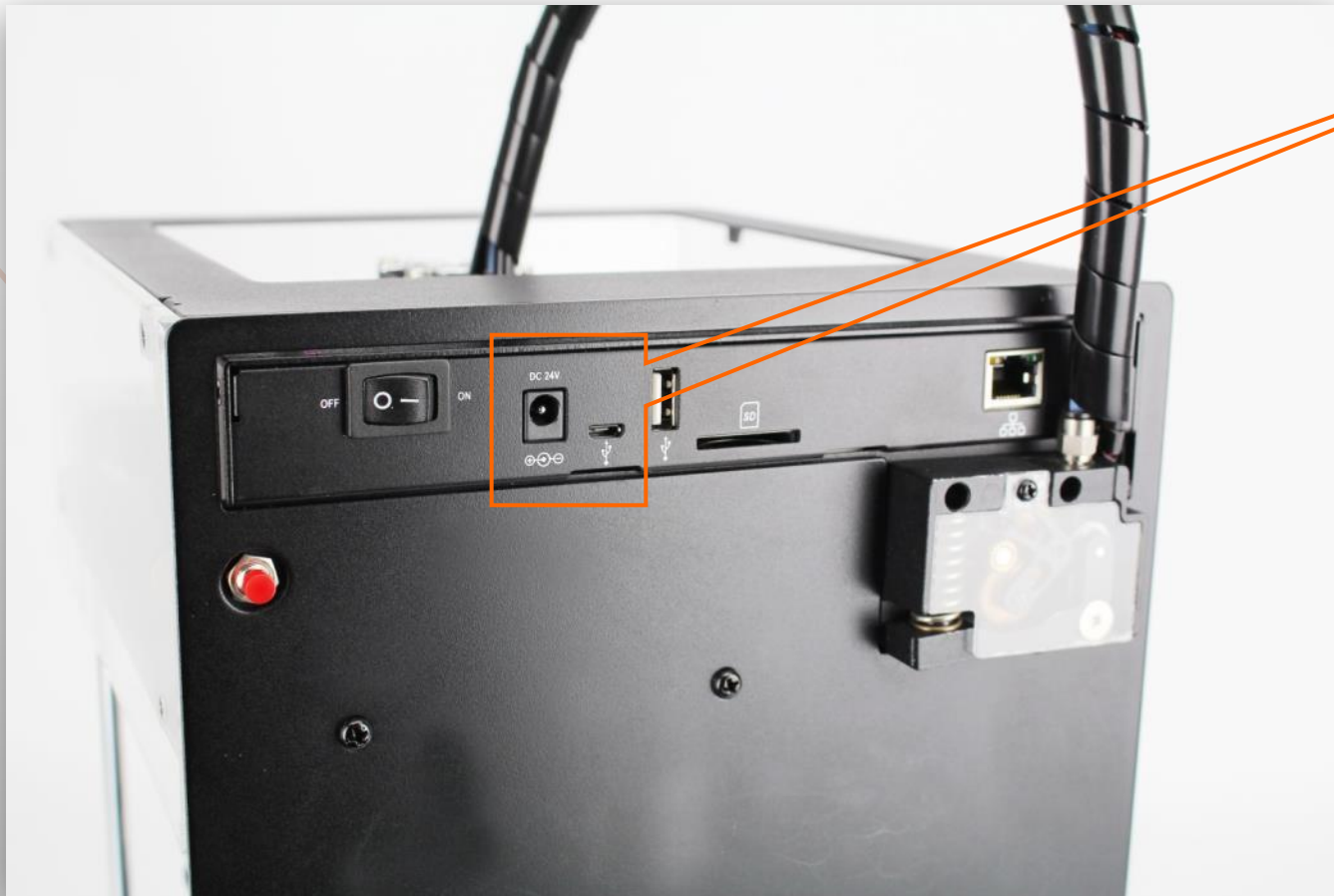


Direction

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)



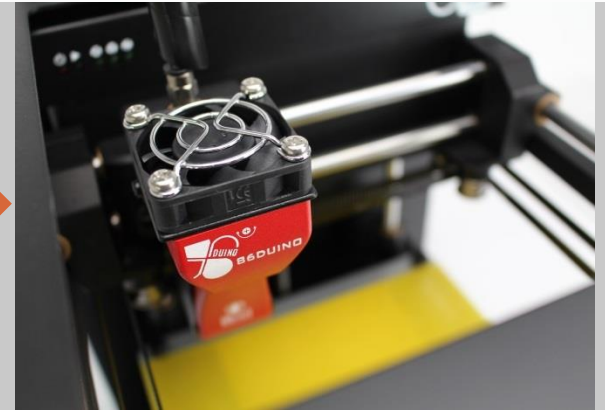
Direction

Calibration Settings

Setup and connection

Extruder Calibration | Print bed Calibration

PART
4



Software setup and connection (1/7)

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

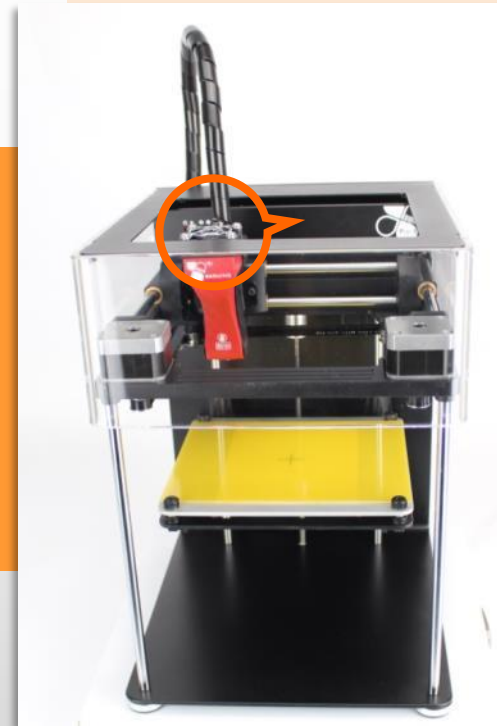
1. Power adapter



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.

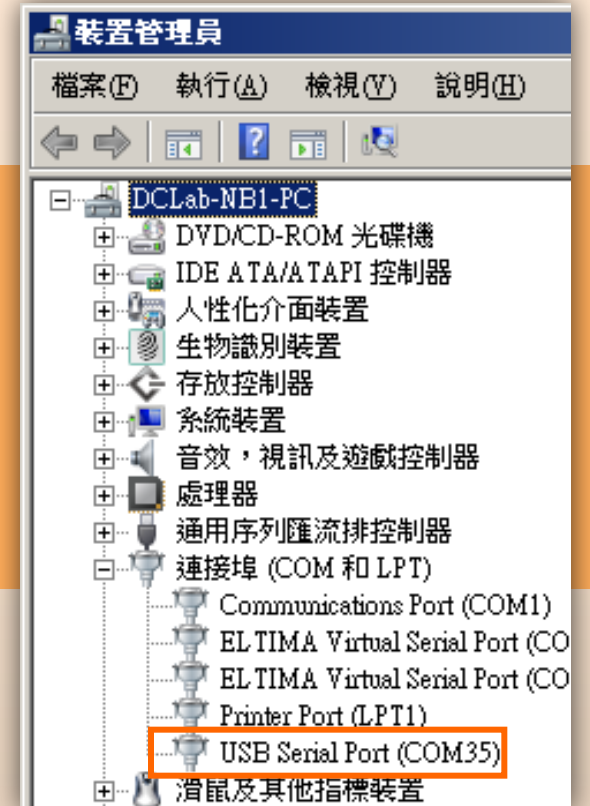
4. Micro USB Cable connect to PC



5. Driver installed



6. Device manager confirmed



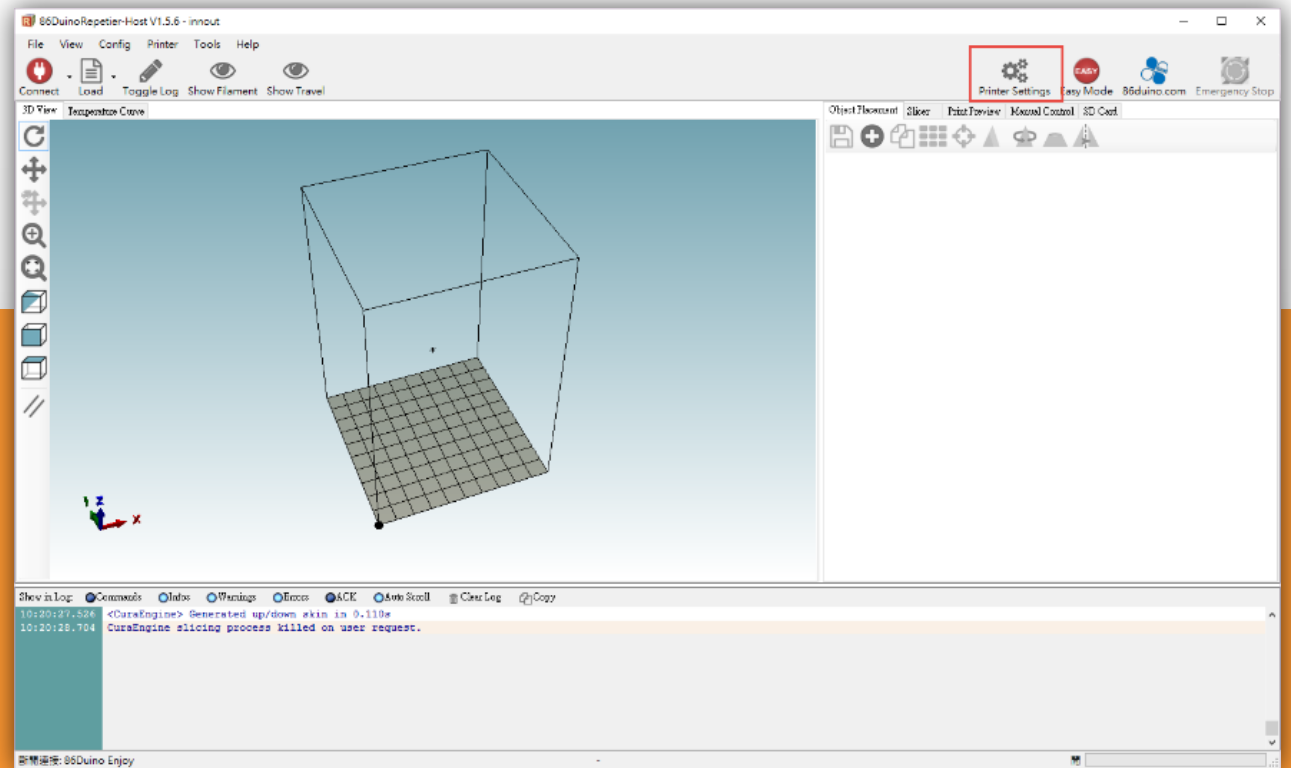
Software setup and connection (3/7)

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

1. Start screen



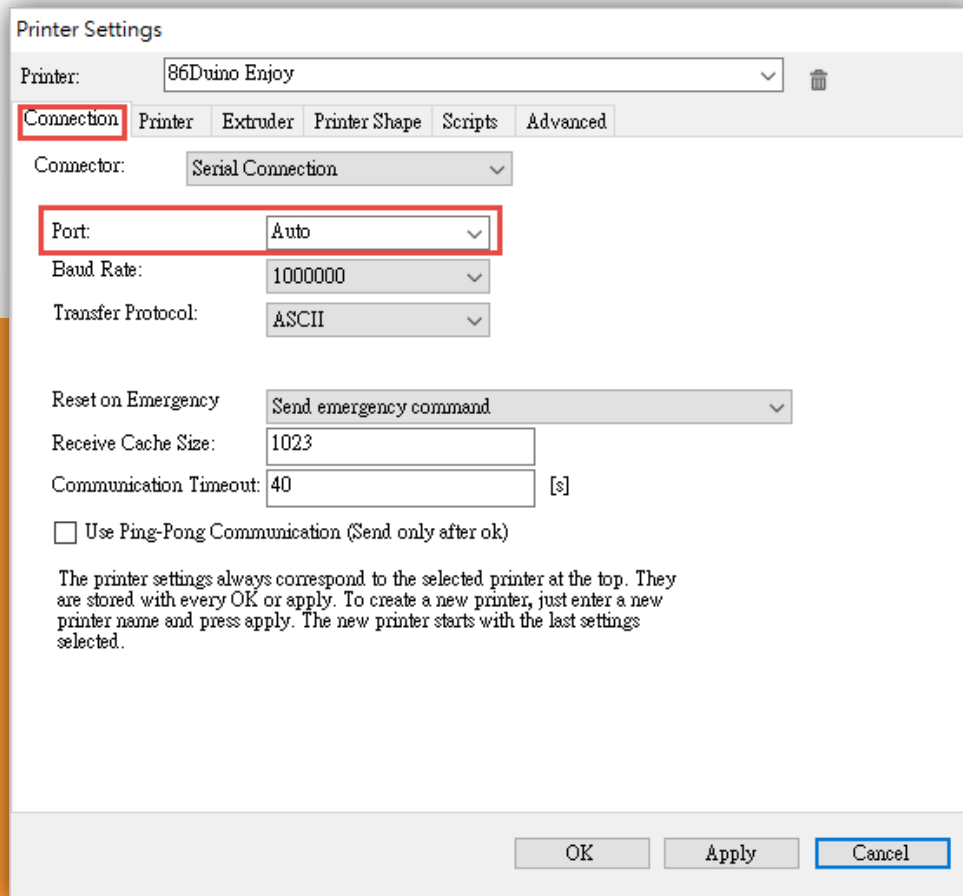
2. click "Printer Setup" button



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



Printer Settings

Printer: 86Duino Enjoy

Connection Printer Extruder Printer Shape Scripts Advanced

Connector: Serial Connection

Port: Auto

Baud Rate: 1000000

Transfer Protocol: ASCII

Reset on Emergency: Send emergency command

Receive Cache Size: 1023

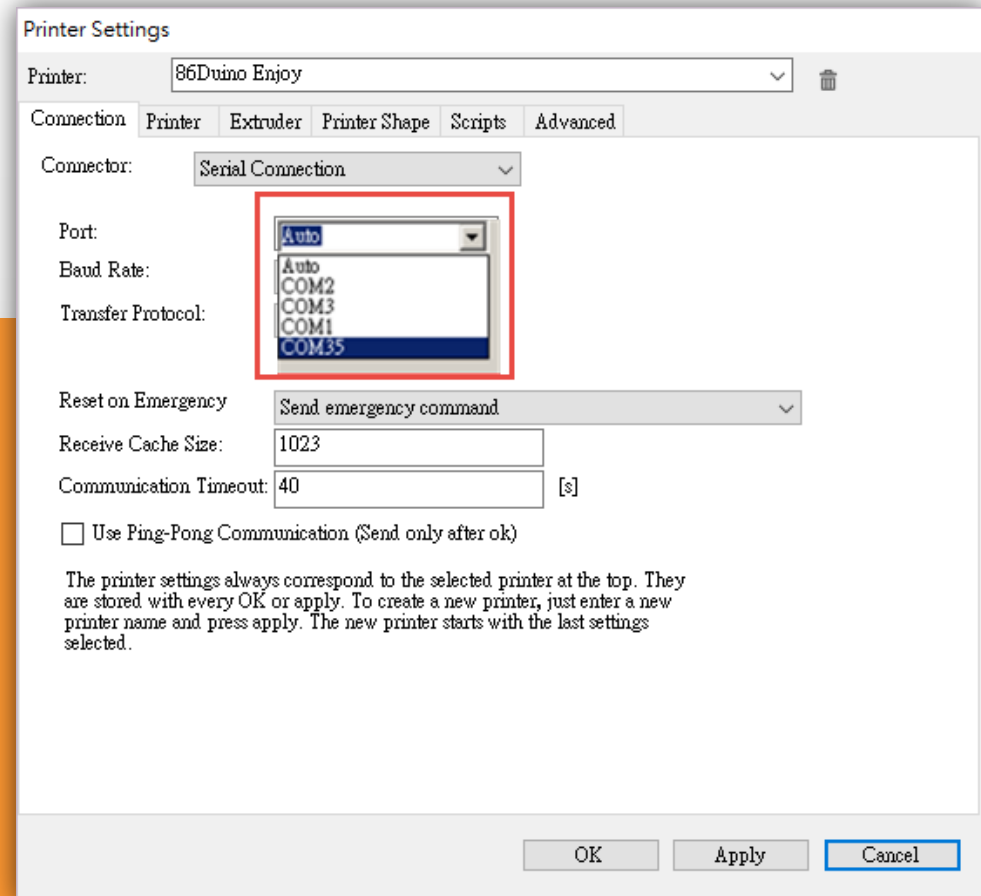
Communication Timeout: 40 [s]

☐ Use Ping-Pong Communication (Send only after ok)

The printer settings always correspond to the selected printer at the top. They are stored with every OK or apply. To create a new printer, just enter a new printer name and press apply. The new printer starts with the last settings selected.

OK Apply Cancel

4. Manually select the port



Printer Settings

Printer: 86Duino Enjoy

Connection **Printer** Extruder Printer Shape Scripts Advanced

Connector: Serial Connection

Port: Auto

Baud Rate:

Transfer Protocol:

Reset on Emergency: Send emergency command

Receive Cache Size: 1023

Communication Timeout: 40 [s]

☐ Use Ping-Pong Communication (Send only after ok)

The printer settings always correspond to the selected printer at the top. They are stored with every OK or apply. To create a new printer, just enter a new printer name and press apply. The new printer starts with the last settings selected.

OK Apply Cancel

Software setup and Connection (5/7)

Printer Setup - Printer and setting (default)

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

The 'Printer Settings' dialog box is shown with the 'Printer' tab selected. The printer name is '86Duino Enjoy'. The settings are as follows:

Parameter	Value	Unit
Travel Feed Rate:	4800	[mm/min]
Z-Axis Feed Rate:	100	[mm/min]
Manual Extrusion Speed:	2	[mm/s]
Manual Retraction Speed:	30	[mm/s]
Default Extruder Temperature:	195	°C
Default Heated Bed Temperature:	55	°C

Check Extruder & Bed Temperature: ☒
Remove temperature requests from Log: ☒
Check every 3 seconds: [Slider]
Park Position: X: 0 Y: 100 Z min: 0 [mm]
Send ETA to printer display: ☐
Disable Extruder after Job/Kill: ☒
Disable Motors after Job/Kill: ☐
Go to Park Position after Job/Kill: ☐
Disable Heated Bed after Job/Kill: ☒
Printer has SD card: ☒
Add to comp. Printing Time: 50 [%]
Invert Direction in Controls for: X-Axis ☐ Y-Axis ☐ Z-Axis ☐

Buttons: OK, Apply, Cancel

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

The 'Printer Settings' dialog box is shown with the 'Extruder' tab selected. The printer name is '86Duino Enjoy'. The settings are as follows:

Parameter	Value	Unit
Number of Extruder:	1	
Max. Extruder Temperature:	275	
Max. Bed Temperature:	150	
Max. Volume per second	12	[mm³/s]

Printer has a Mixing Extruder (one nozzle for all colors): ☐

Extruder 1

Parameter	Value	Unit
Name:	86Duino Enjoy	
Diameter:	0.3	[mm]
Color:	[Blue]	
Offset X:	0	[mm]
Offset Y:	0	[mm]
Temperature Offset:	0	[°C]

Buttons: OK, Apply, Cancel

Software setup and Connection (6/7)

Printer Setup - Printer and setting (default)

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

The screenshot shows the 'Printer Settings' dialog box with the 'Printer Shape' tab selected. The 'Printer' dropdown is set to '86Duino Enjoy'. The 'Printer Type' is 'Classic Printer'. The 'Home' coordinates are: Home X: Min, Home Y: Max, Home Z: Min. The 'Print Area' dimensions are: Width: 100 mm, Depth: 100 mm, Height: 150 mm. The 'Bed' dimensions are: Bed Left: 0, Bed Front: 0. A diagram at the bottom shows a gray rectangle 'E' representing the print bed, with dimensions 'D' (height) and 'C' (width). The 'Y Max' label is on the left of the diagram.

Printer Settings

Printer: 86Duino Enjoy

Connection Printer Extruder **Printer Shape** Scripts Advanced

Printer Type: Classic Printer

Home X: Min Home Y: Max Home Z: Min

X Min: -1 X Max: 100 Bed Left: 0

Y Min: 0 Y Max: 101 Bed Front: 0

Print Area Width: 100 mm

Print Area Depth: 100 mm

Print Area Height: 150 mm

The min and max values define the possible range of extruder coordinates. These coordinates can be negative and outside the print bed. Bed left/front define the coordinates where the printed itself starts. By changing the min/max values you can even move the origin in the center of the print bed, if supported by firmware.

Y Max

D

E

OK Apply Cancel

8. Click ok and Exit

This screenshot is identical to the previous one, but the 'OK' button at the bottom right is highlighted with a red rectangle. A legend at the bottom left of the diagram area defines the labels: A: Bed Left, B: Bed Front, C: Print Area Width, D: Print Area Height, E: Print bed.

Printer Settings

Printer: 86Duino Enjoy

Connection Printer Extruder **Printer Shape** Scripts Advanced

Printer Type: Classic Printer

Home X: Min Home Y: Max Home Z: Min

X Min: -1 X Max: 100 Bed Left: 0

Y Min: 0 Y Max: 101 Bed Front: 0

Print Area Width: 100 mm

Print Area Depth: 100 mm

Print Area Height: 150 mm

The min and max values define the possible range of extruder coordinates. These coordinates can be negative and outside the print bed. Bed left/front define the coordinates where the printed itself starts. By changing the min/max values you can even move the origin in the center of the print bed, if supported by firmware.

Y Max

D

E

Min 0

A

B

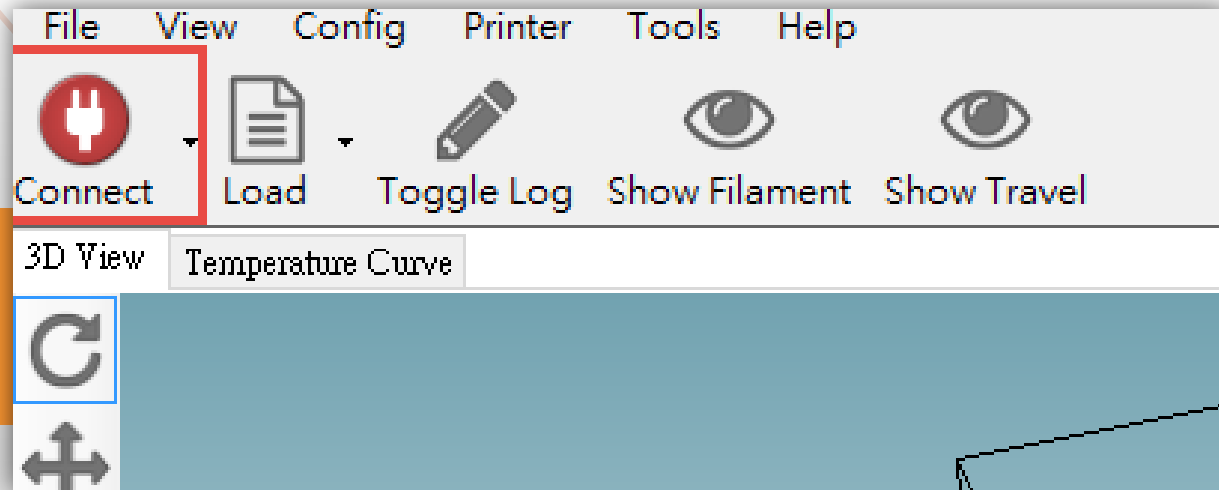
C

A: Bed Left
B: Bed Front
C: Print Area Width
D: Print Area Height
E: Print bed

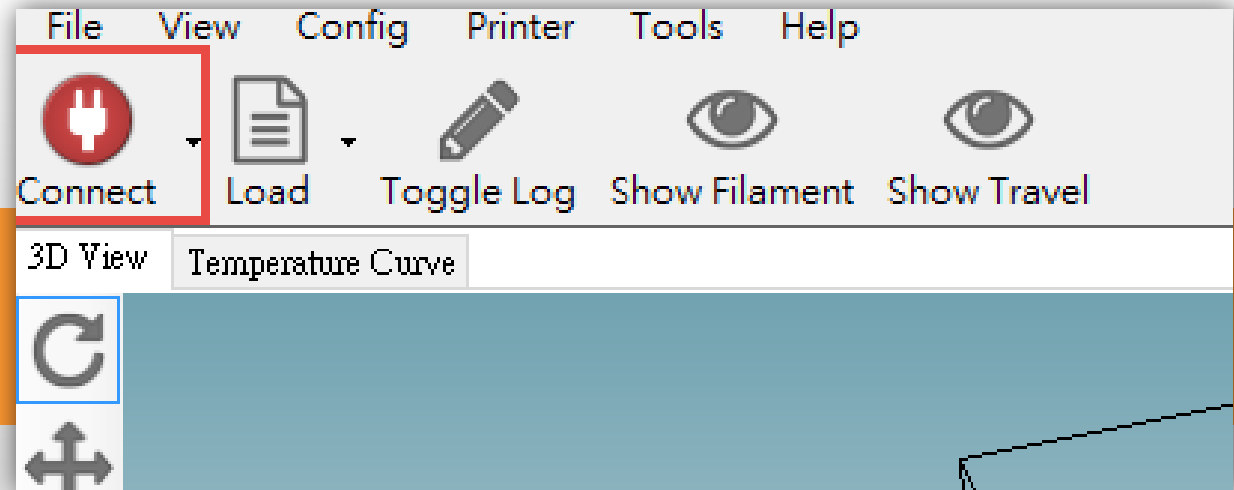
OK Apply Cancel

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 emit a short 3-beep peeping sound and the red "Connect" icon will turn green



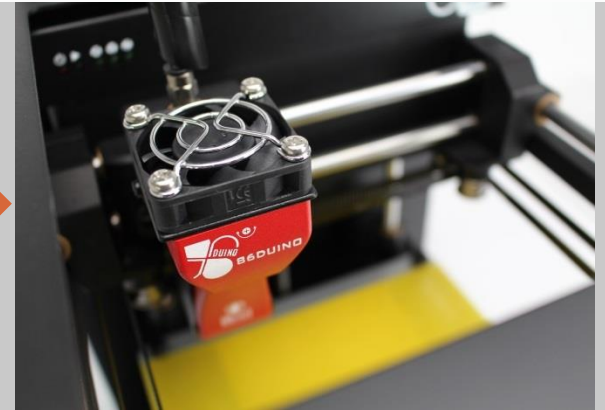
Calibration Settings

Setup and connection

Extruder Calibration

Print bed Calibration

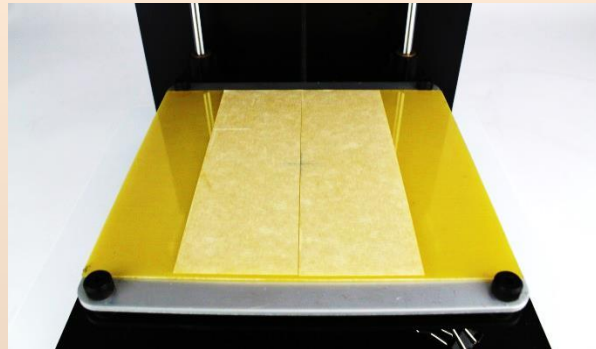
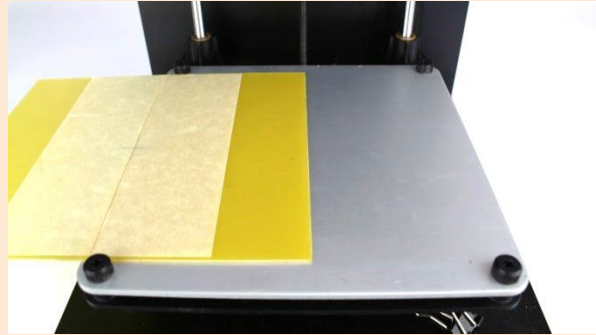
PART
4



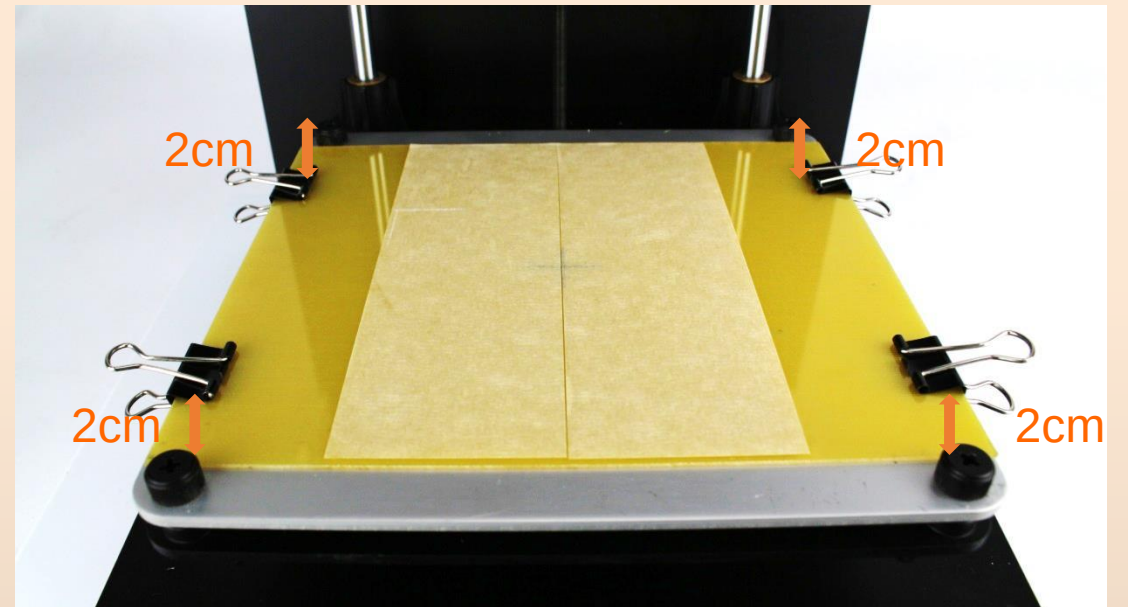
Leveling the Platform – Extruder Correction(1/10)

Extruder home position operation

1



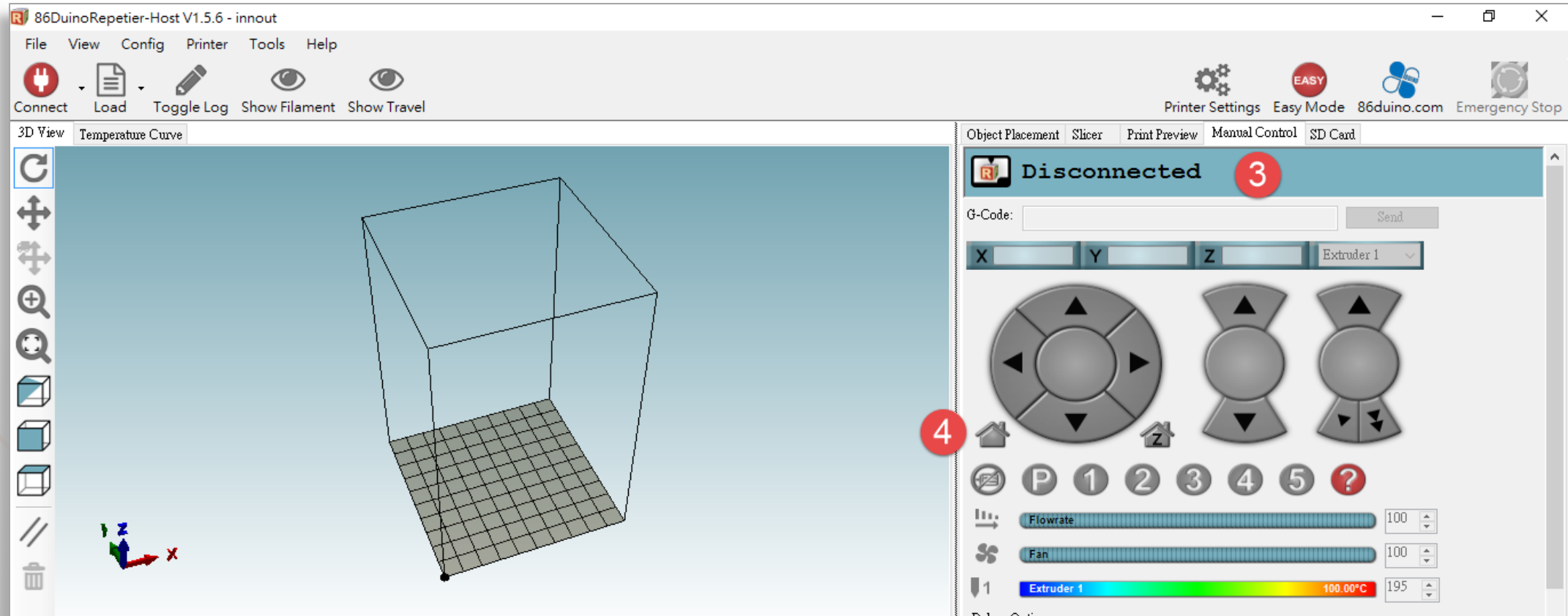
2



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

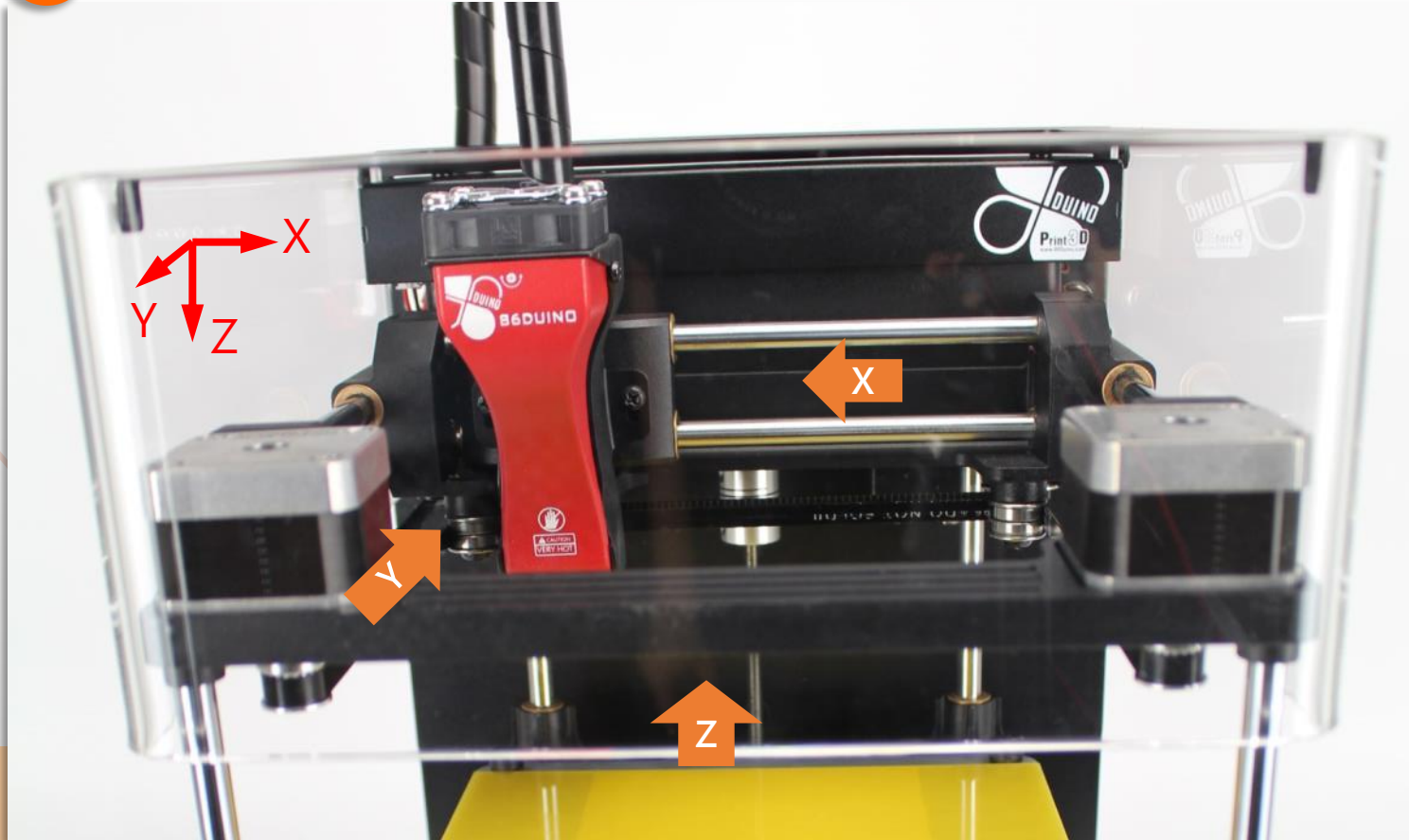
4. then click on the Home icon, then the printer begins to move the extruder and print bed to home position

*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

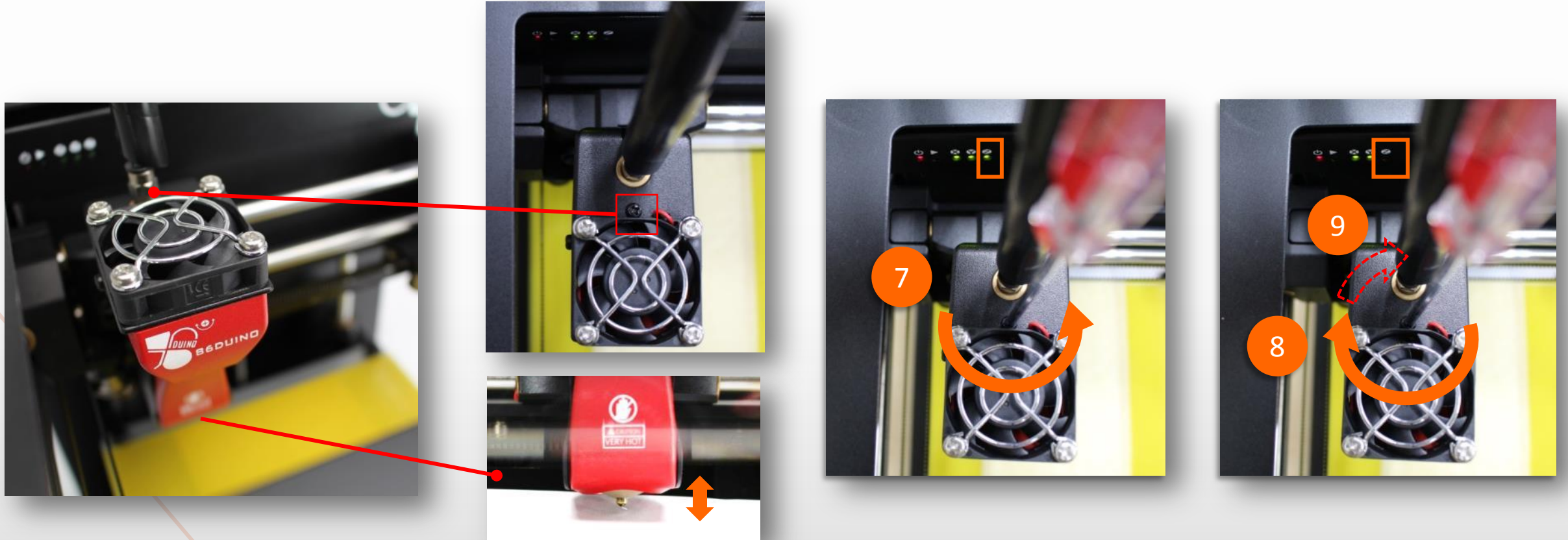


5. Extruder and print bed will move to home position

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)

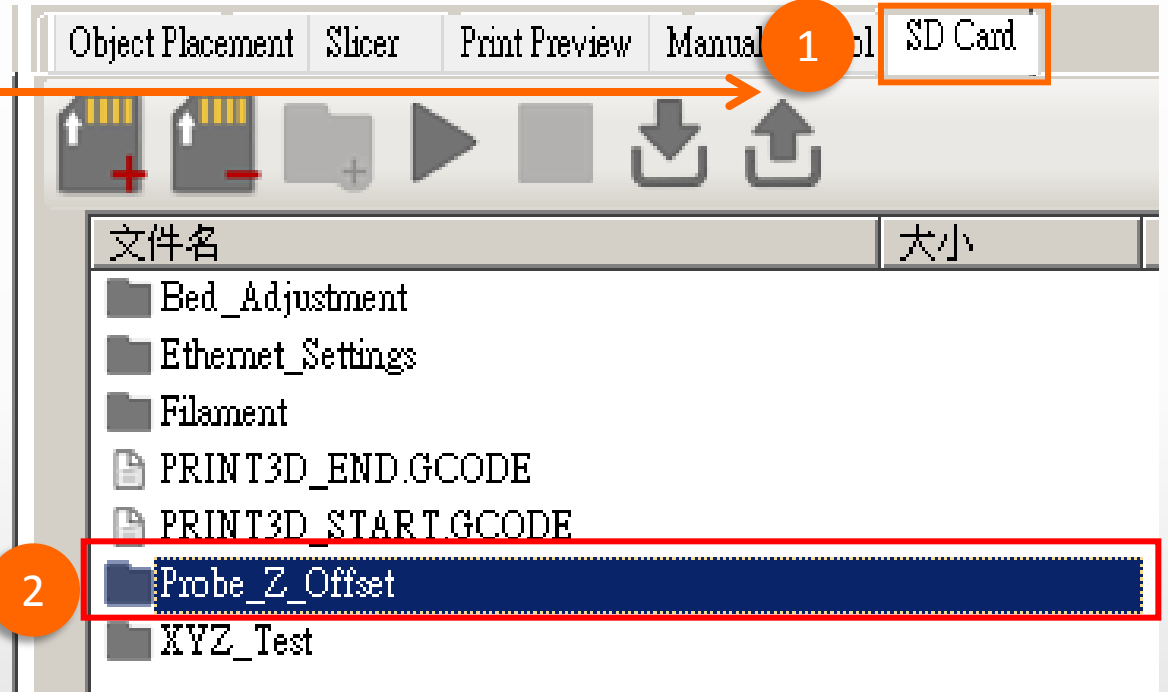
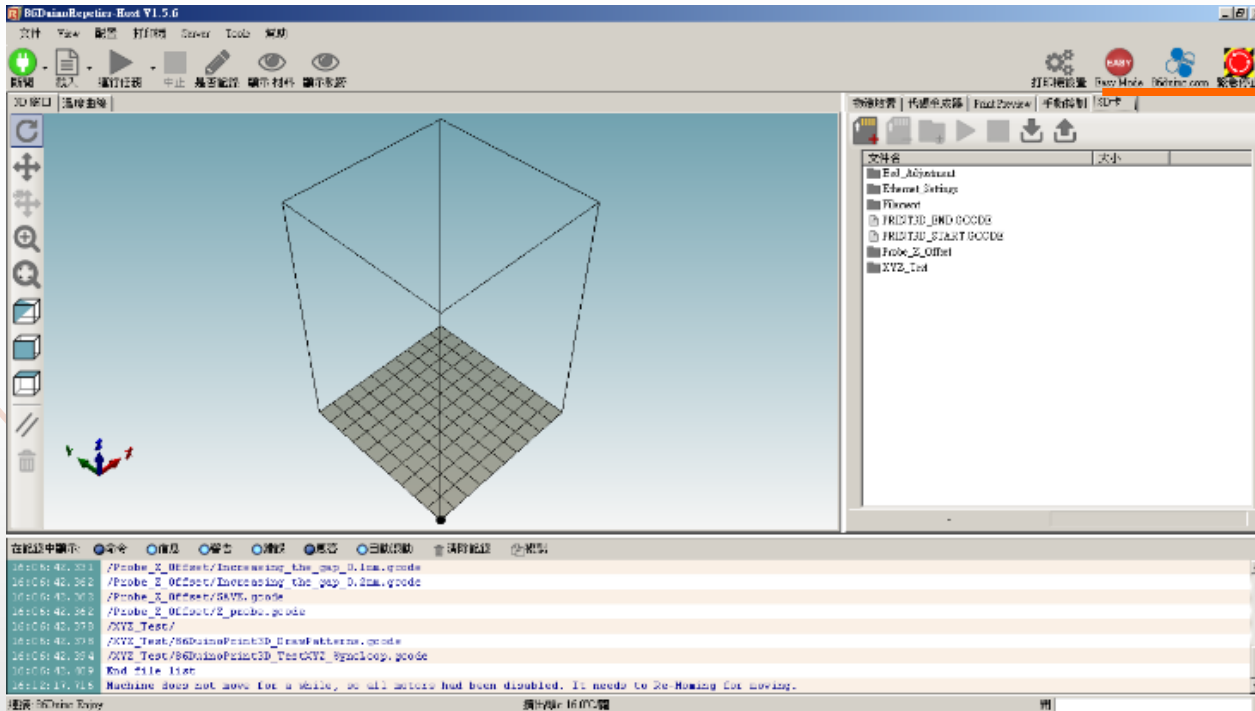
Extruder home position operation



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)

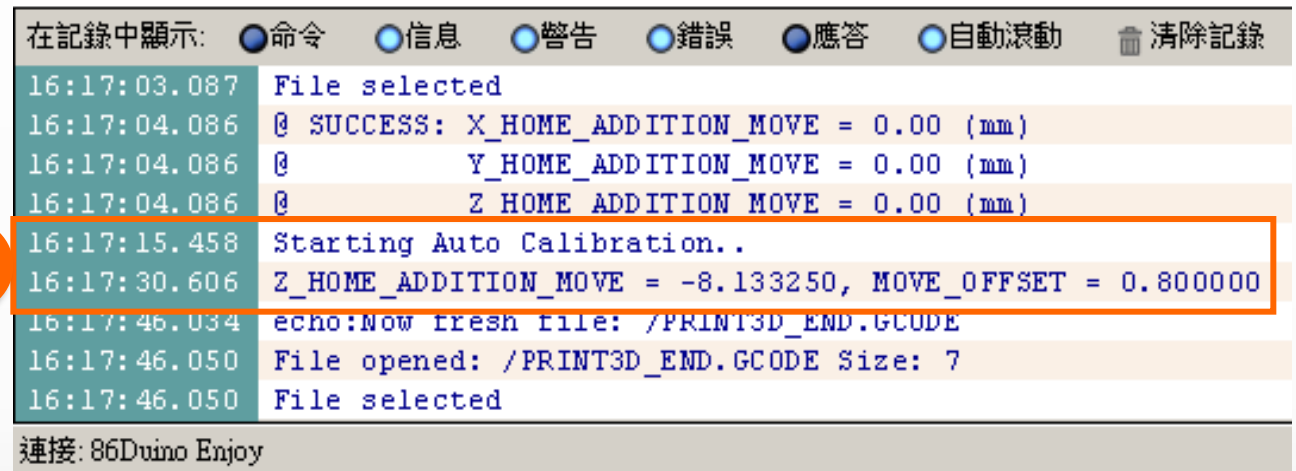
Extruder Z offset



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

Leveling the Platform – Extruder Correction(6/10)

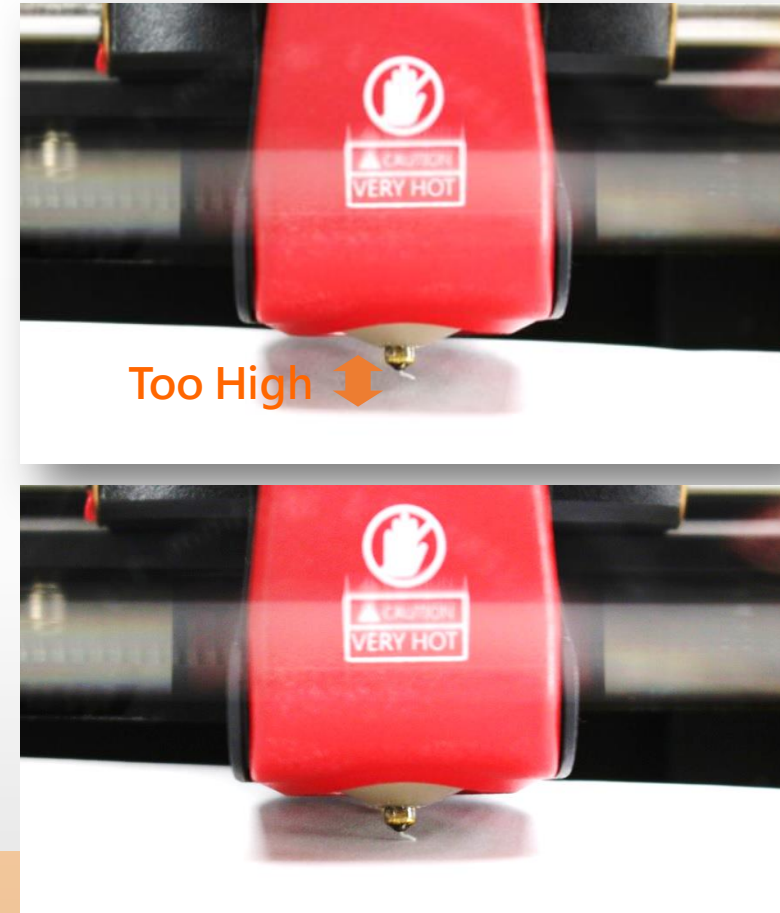
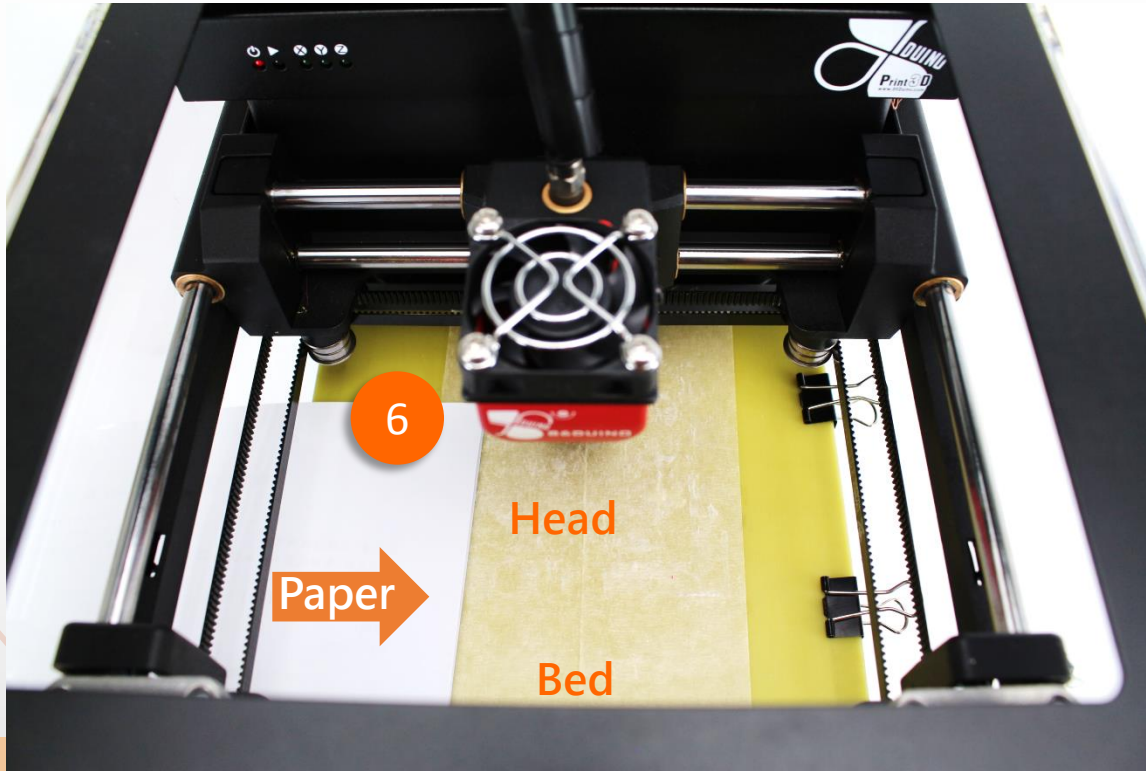
Extruder Z offset



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

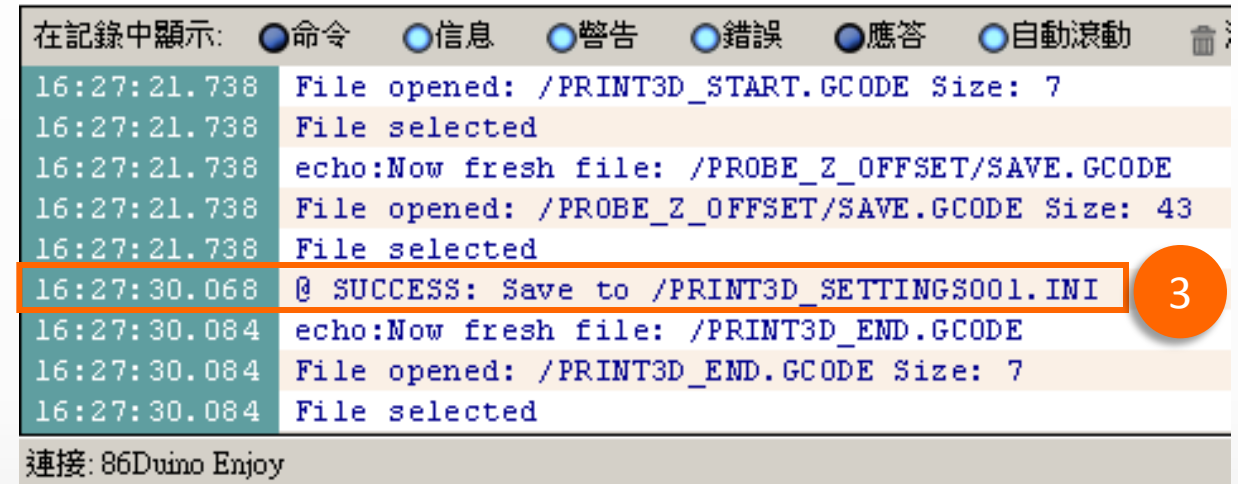


Option	Note
Decreasing_the_gap_0.05mm	0.05 mm
Decreasing_the_gap_0.1mm	0.10 mm
Decreasing_the_gap_0.2mm	0.20 mm
Increasing_the_gap_0.05mm	0.05 mm
Increasing_the_gap_0.1mm	0.10 mm
Increasing_the_gap_0.2mm	0.20 mm

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)

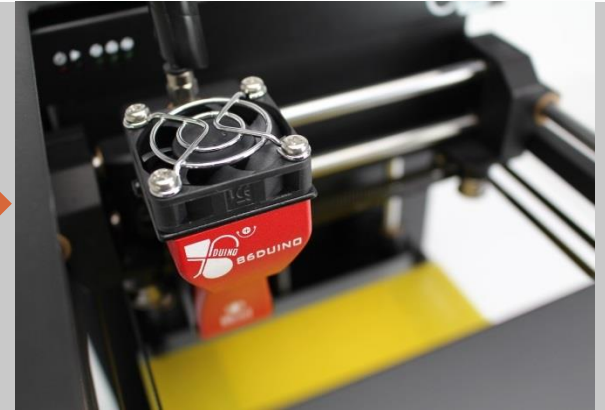
After the completion of the extruder correction and save, you do not need to do correction every time, but if the following situations occur, recommended do extruder correction again:

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

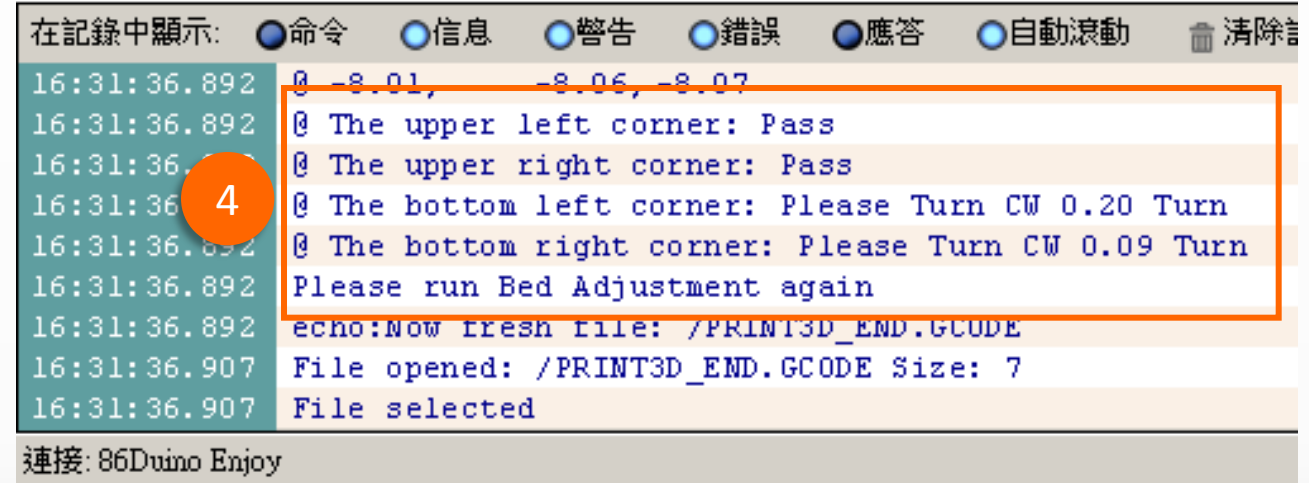
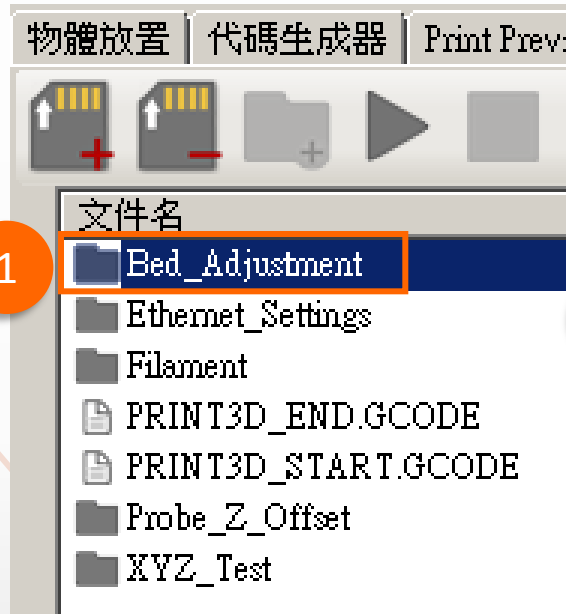
Calibration Settings

Setup and connection | Extruder Calibration | **Print bed Calibration**

PART
4



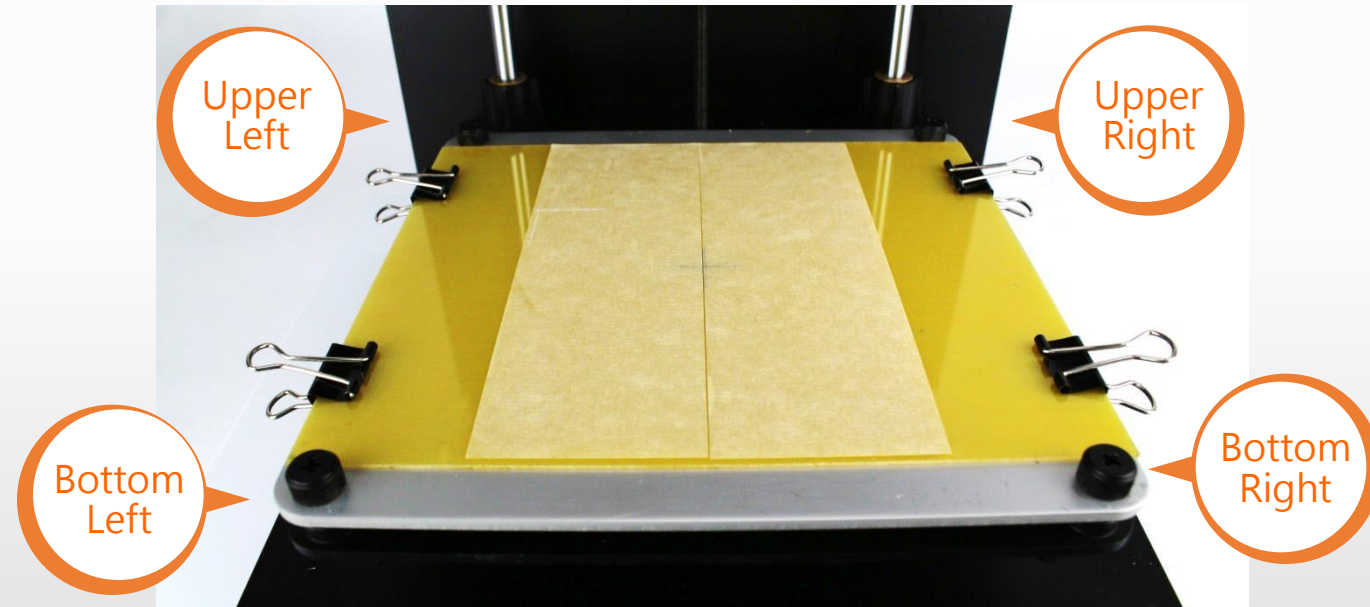
Leveling the Bed(1/3)



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.



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

Slice and G-Code |

Adjust print object

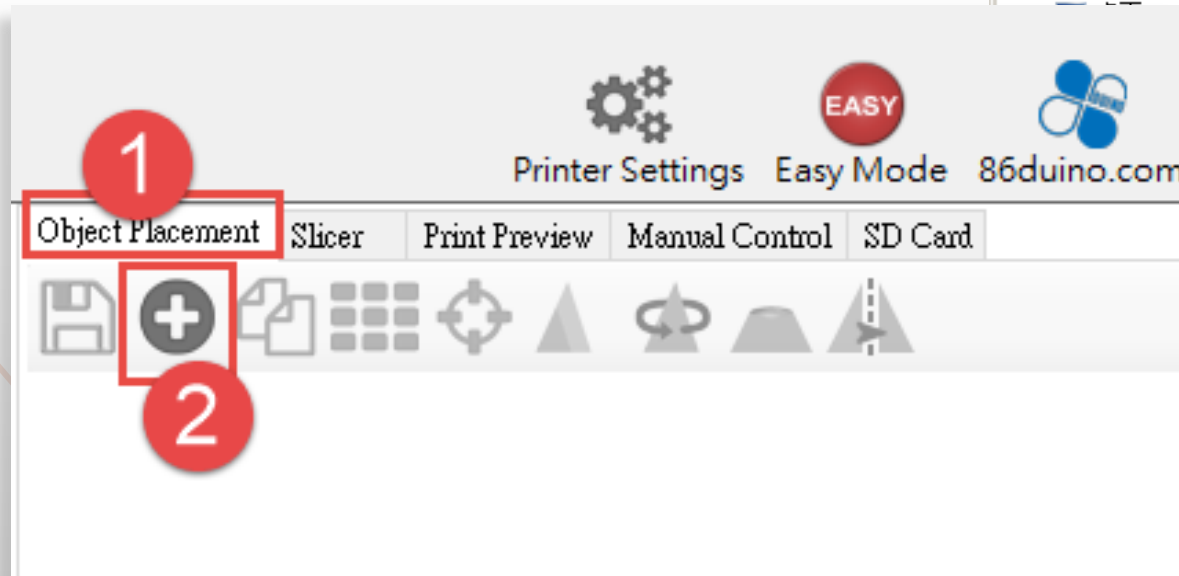
Start print

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)

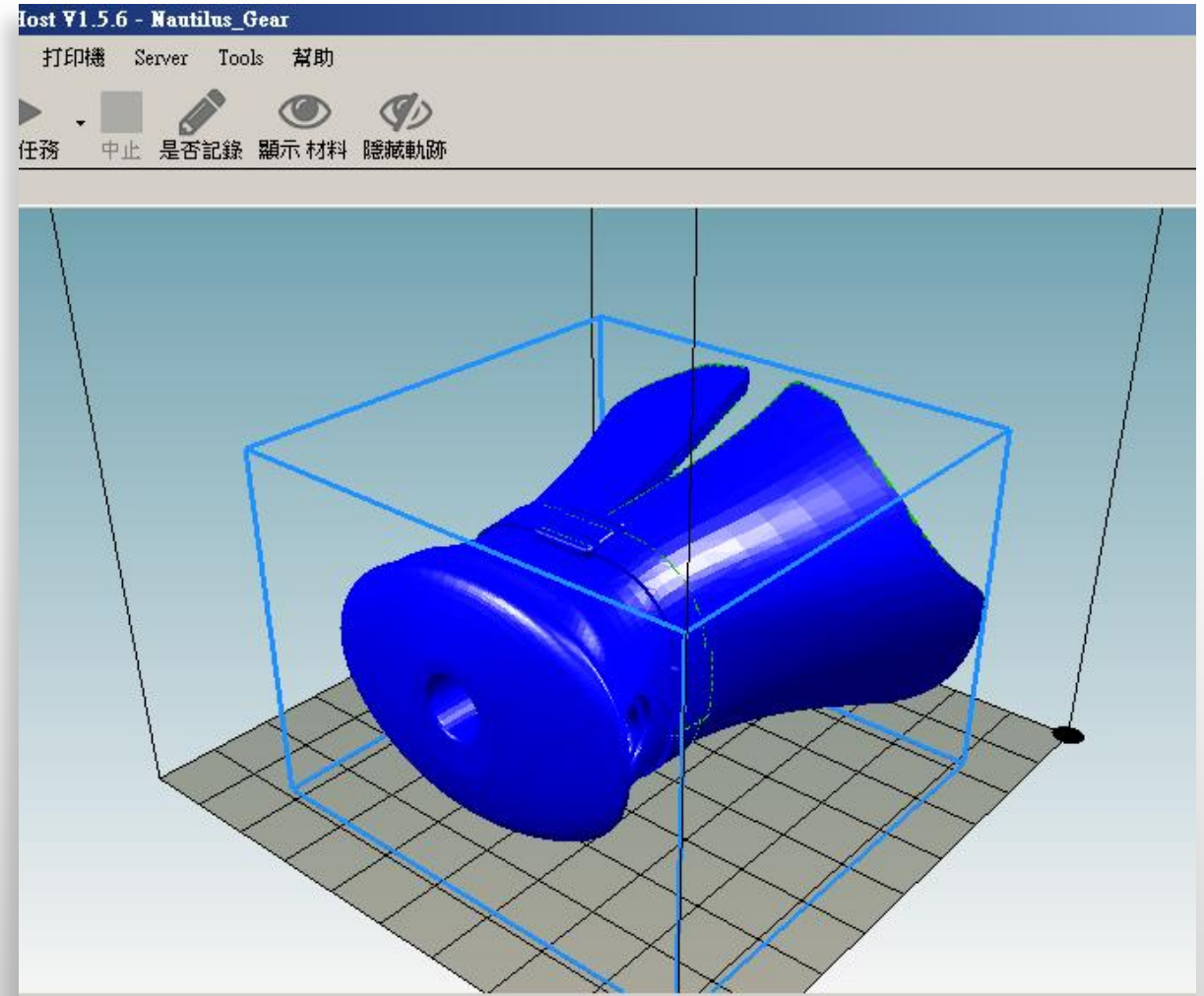
You can review the file/image with some options on the left side tool bar:

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

Press and hold 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

Slice and G-Code

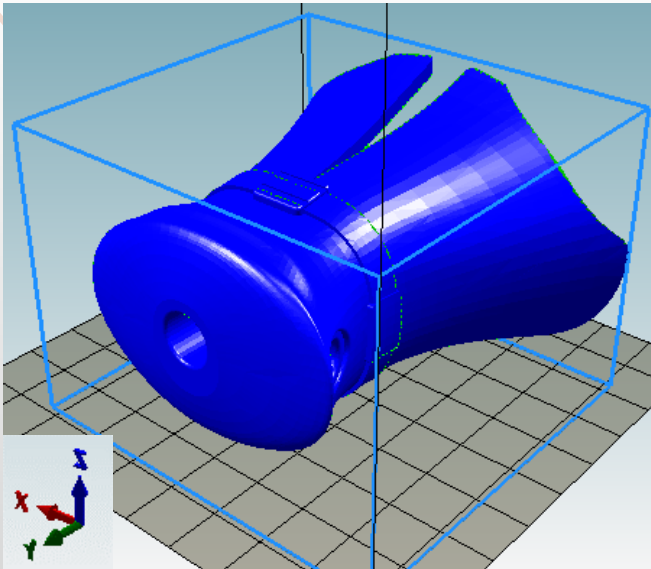
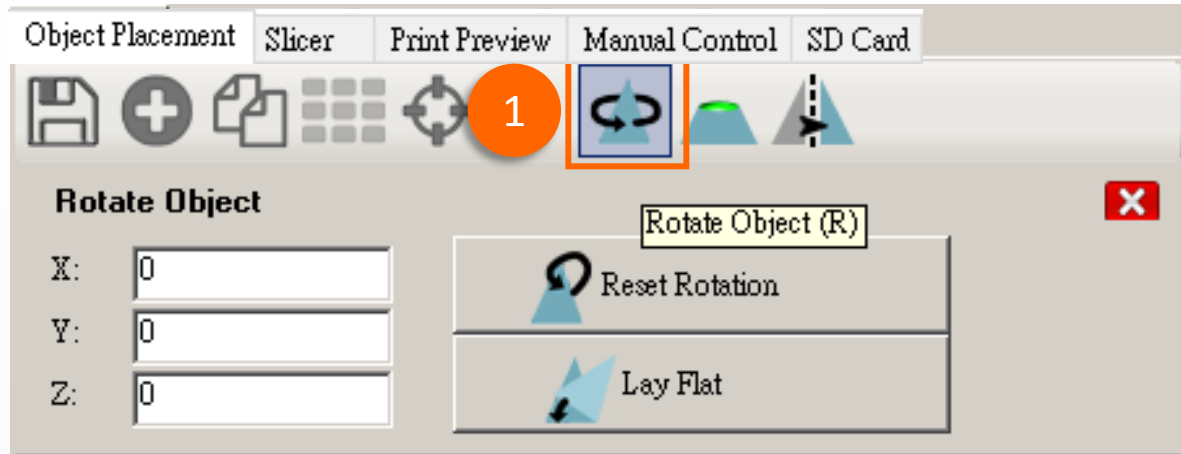
Adjust print object

Start print

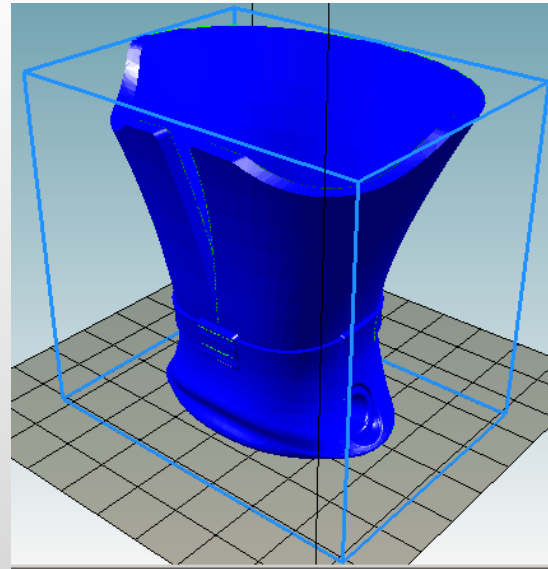
PART
5



Adjust the print object - rotate object



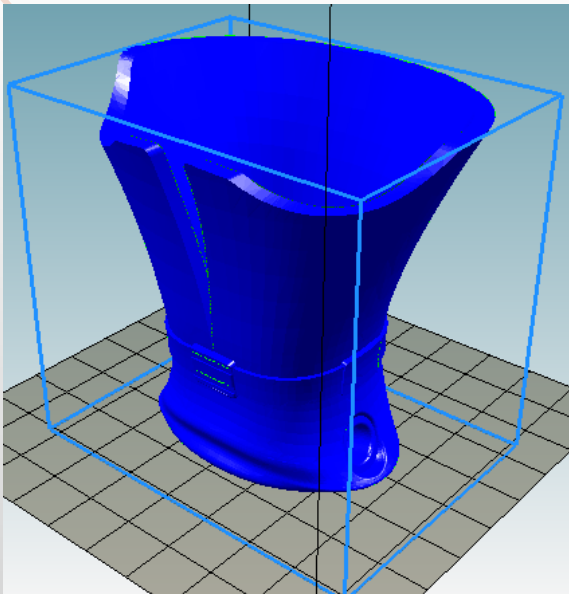
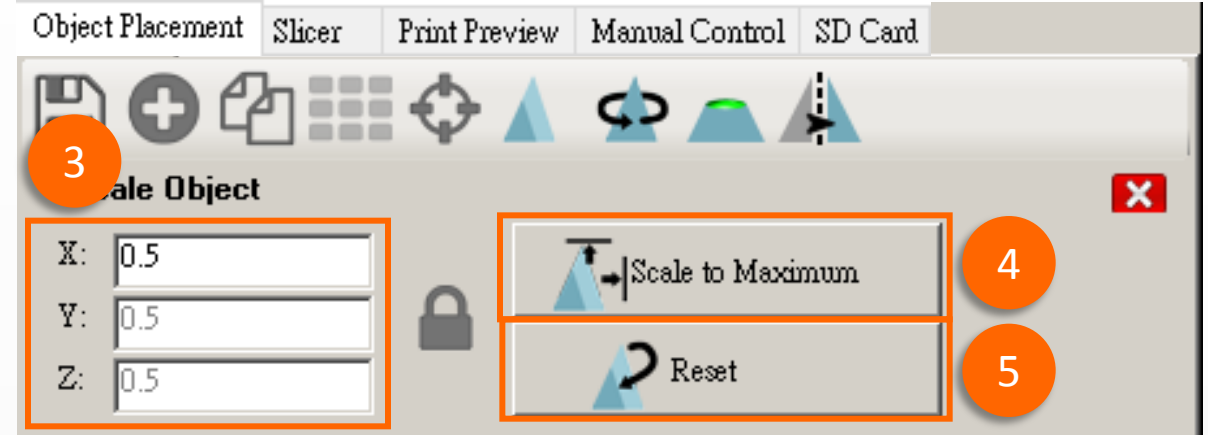
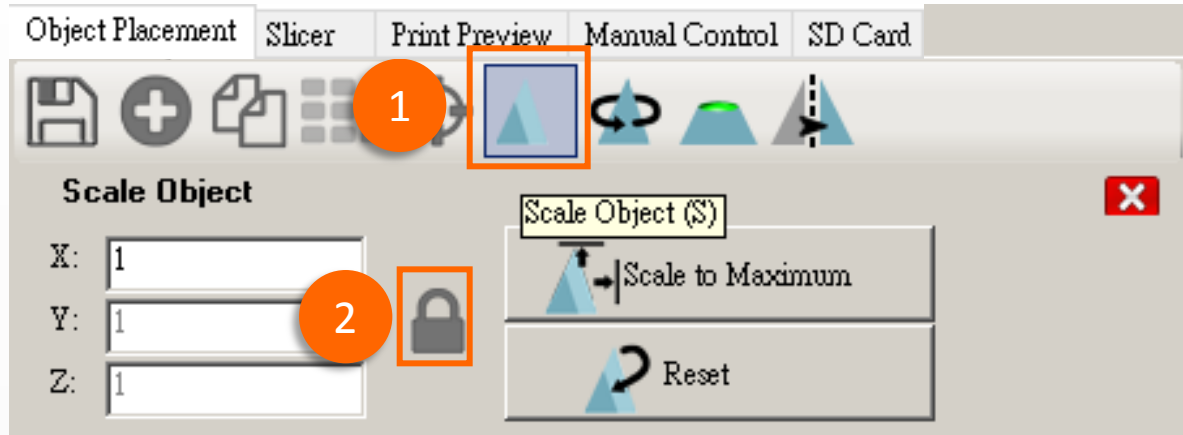
Before



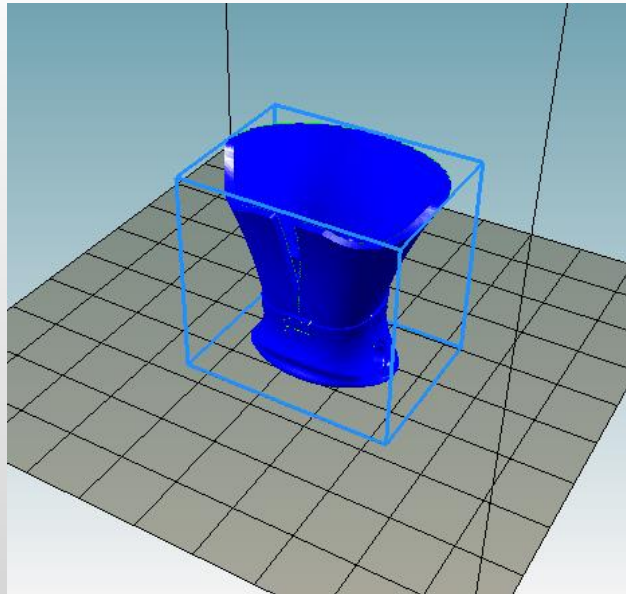
After

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



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

Print Test

Load 3D object

Slice and G-Code

| Adjust print object

Start print

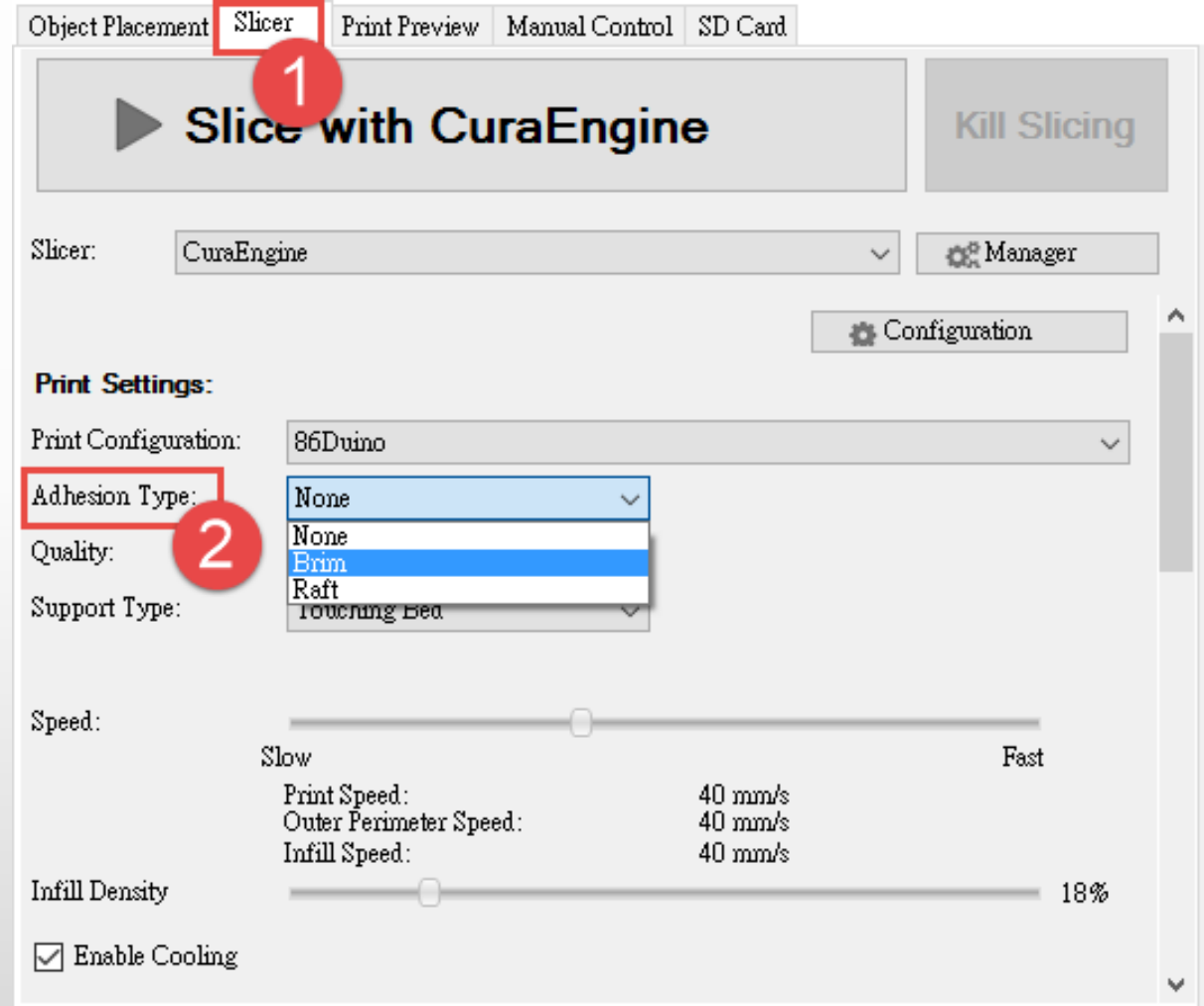
PART
5



Slice and G-Code

Slice with CuraEngine

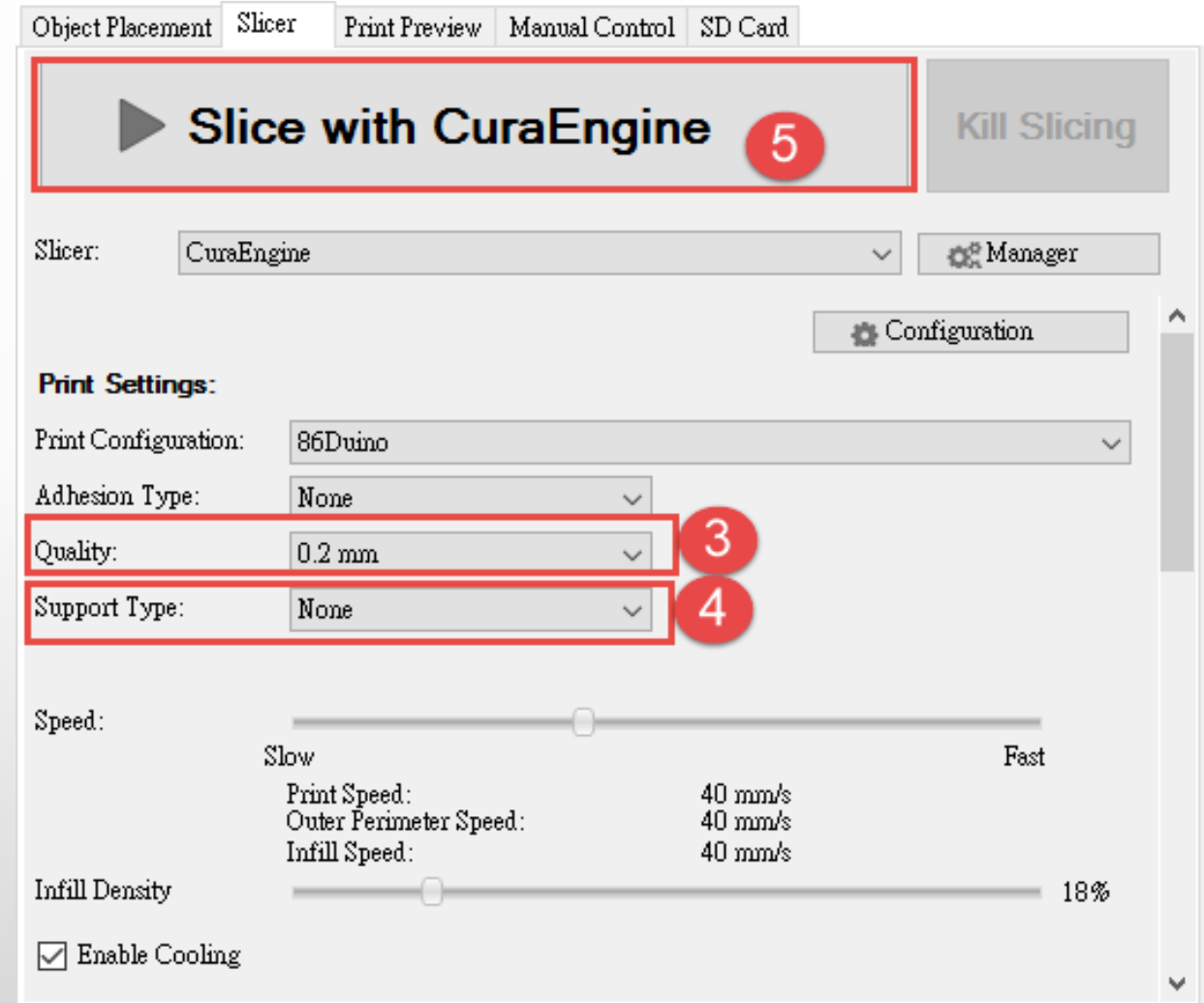
1. Click Slice Tab
2. Click 「Adhesion Type」 menu · setting Adhesion type :
 - 1) None : None
 - 2) Brim : Thin layer on the bottom
 - 3) Raft : Thick layer on the bottom



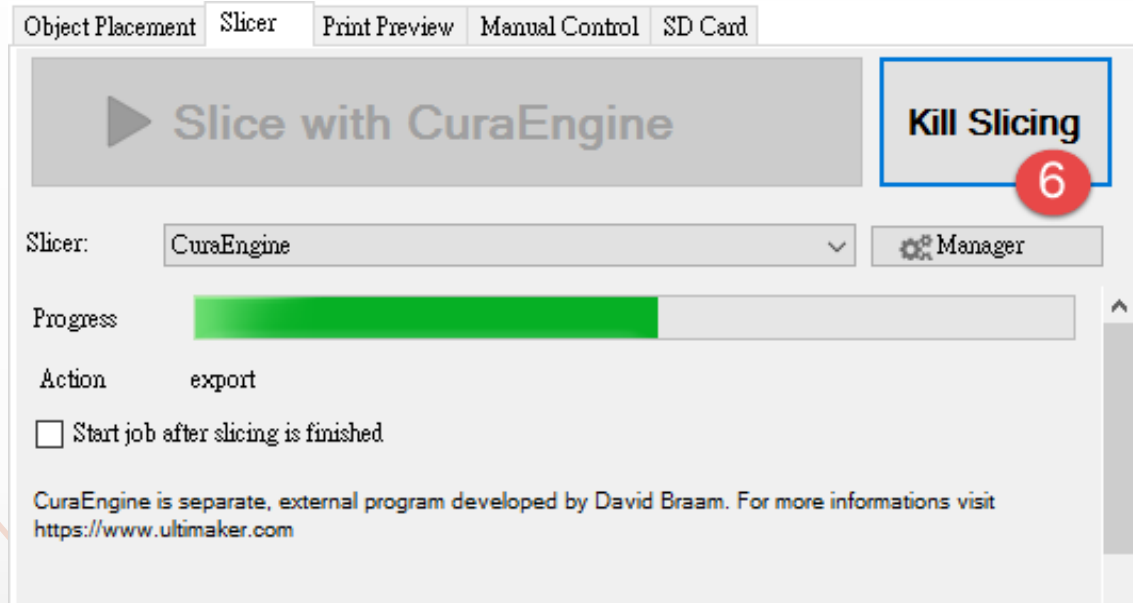
Slice and G-Code

Slice with CuraEngine

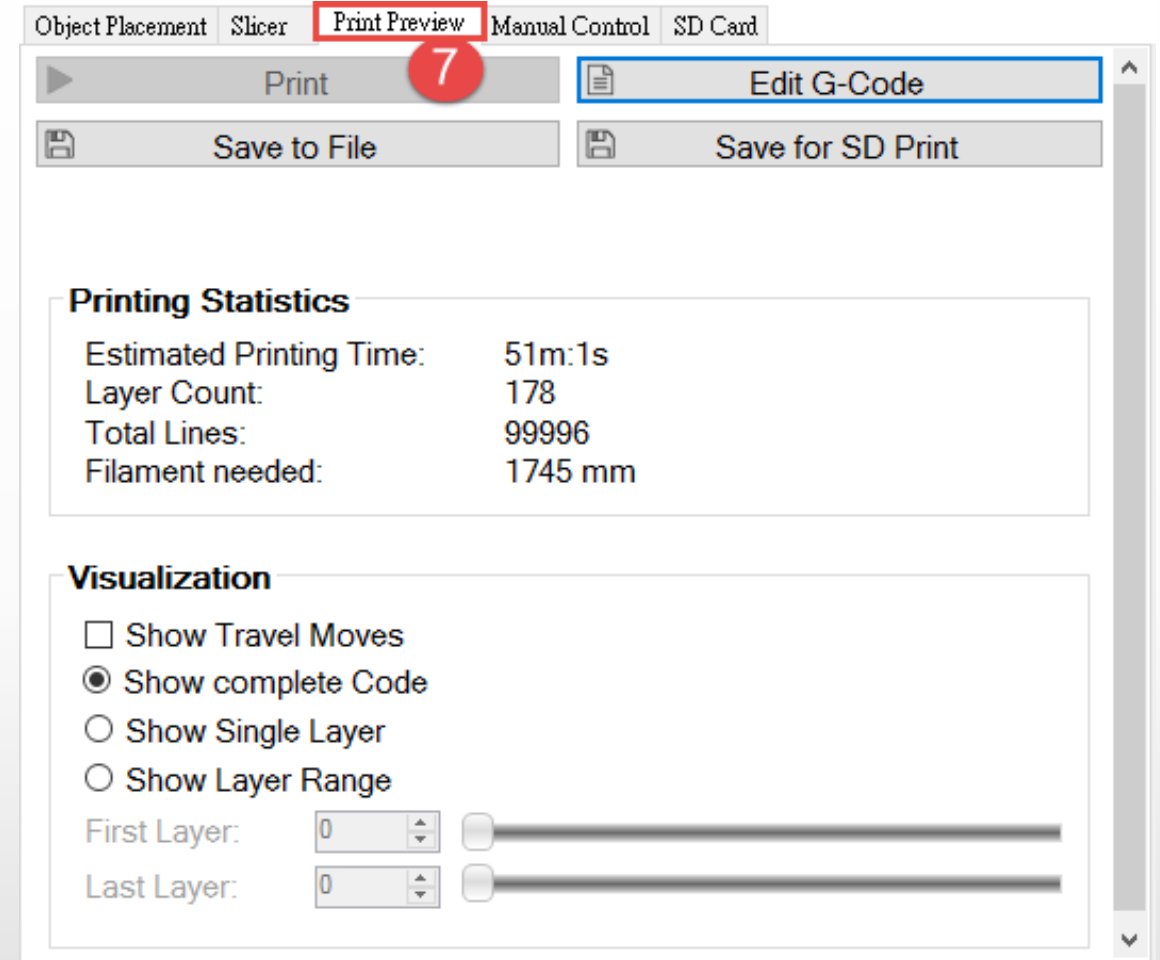
3. Click the "Quality" menu, set * print thickness, have 0.1 mm and 0.2 mm options
4. Click on "Support Type" menu, set the object support mode:
 - None : No support
 - Touching Bed : only the bottom portion of the floating object and generate support layer
 - Everywhere : All objects floating parts 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

The screenshot shows the Slic3r software interface with the following elements:

- Top navigation tabs: Object Placement, Slicer, Print Preview, Manual Control, SD Card.
- Buttons: "Slice with Slic3r" (with a play icon) and "Kill Slicing".
- Dropdown menu: "Slicer:" set to "Slic3r", with a "Manager" button.
- Dropdown menu: "Print Setting:" set to "Excellent (Support)", highlighted with a red box and a red circle with the number 1.
- Dropdown menu: "Printer Settings:" set to "86Duino".
- Section: "Filament settings:" with a dropdown menu "Extruder 1:" set to "Excellent", highlighted with a red box and a red circle with the number 2.
- Section: "Override Slic3r Settings" with an unchecked checkbox, highlighted with a red box and a red circle with the number 3. Below it is a "Copy Print Settings to Override" button.
- Checkboxes: "Enable Support" (unchecked) and "Enable Cooling" (checked).
- Text input: "Layer Height:" set to "0.2 mm".
- Slider: "Infill Density" set to 20%.
- Dropdown menu: "Infill Pattern:" set to "honeycomb".
- Dropdown menu: "Solid Infill Pattern:" set to "rectilinear".
- Footer text: "Slic3r is separate, external program, which can be started separately. For further informations, please visit the following webpage: <http://www.slic3r.org>".

Print Test

Load 3D object

Slice and G-Code

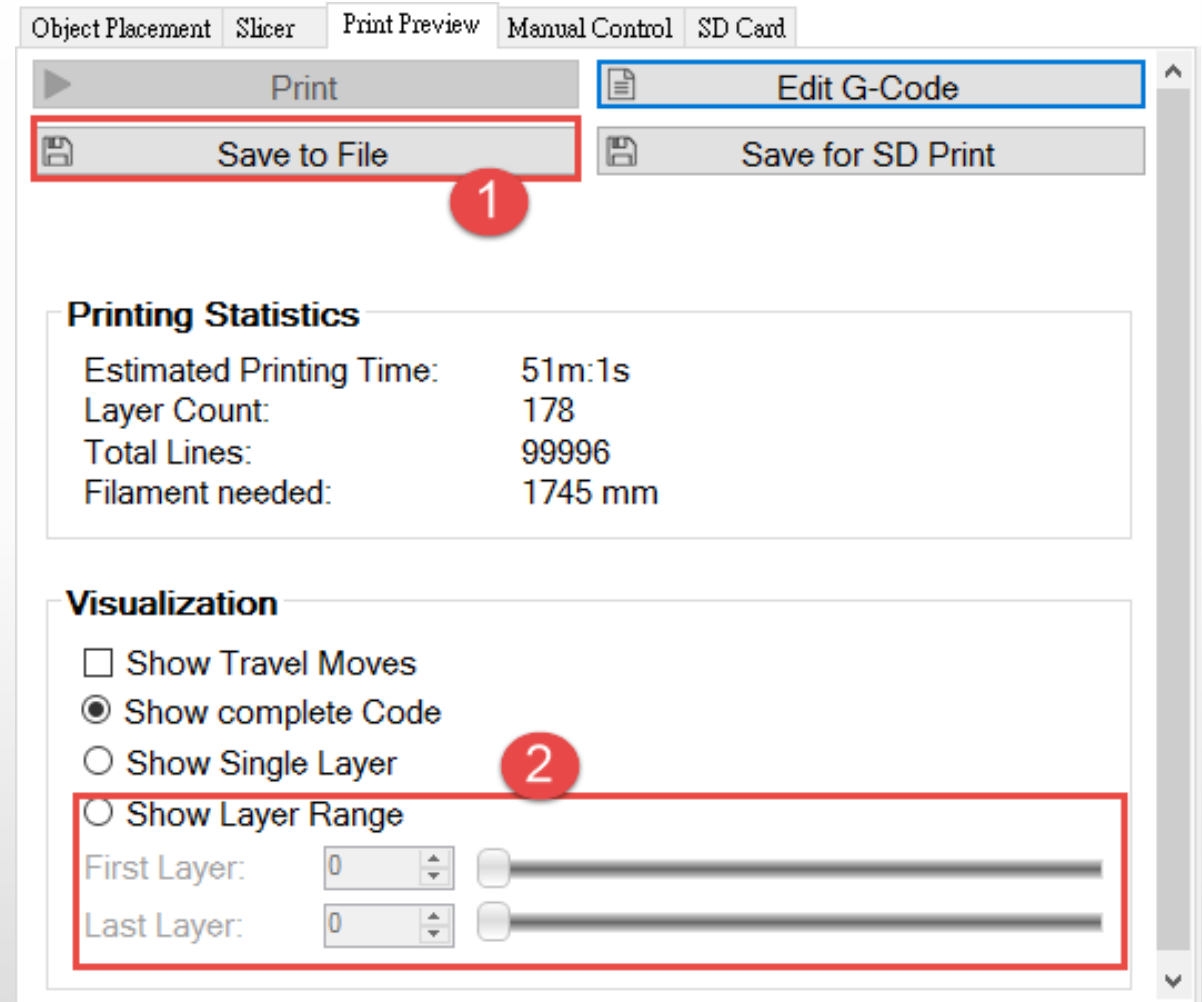
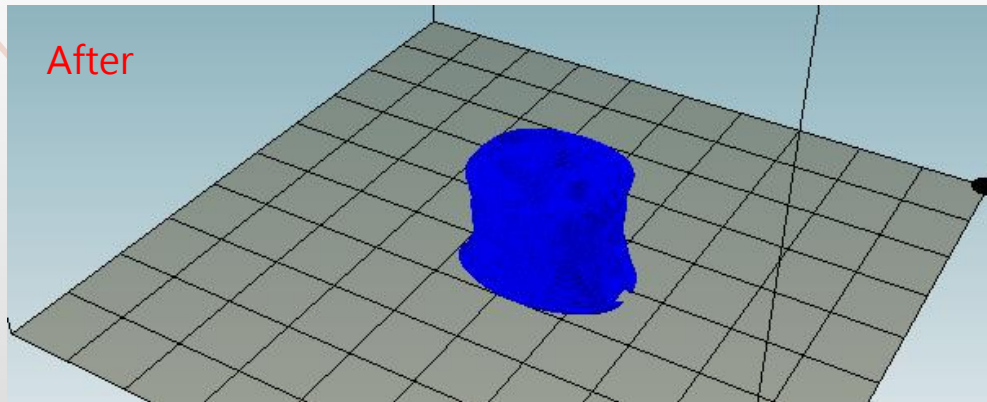
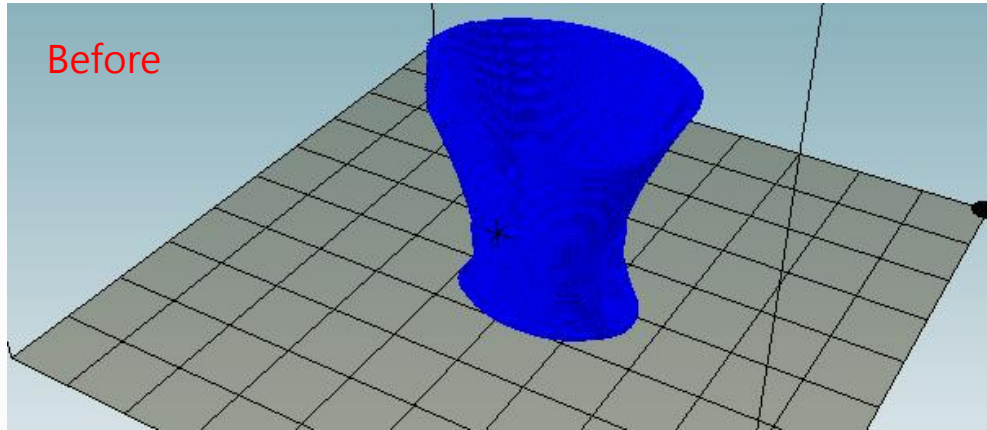
| Adjust print object

Start print

PART
5

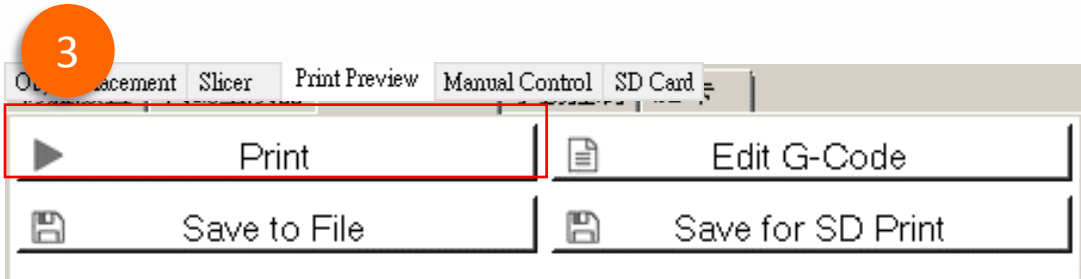


Start Print

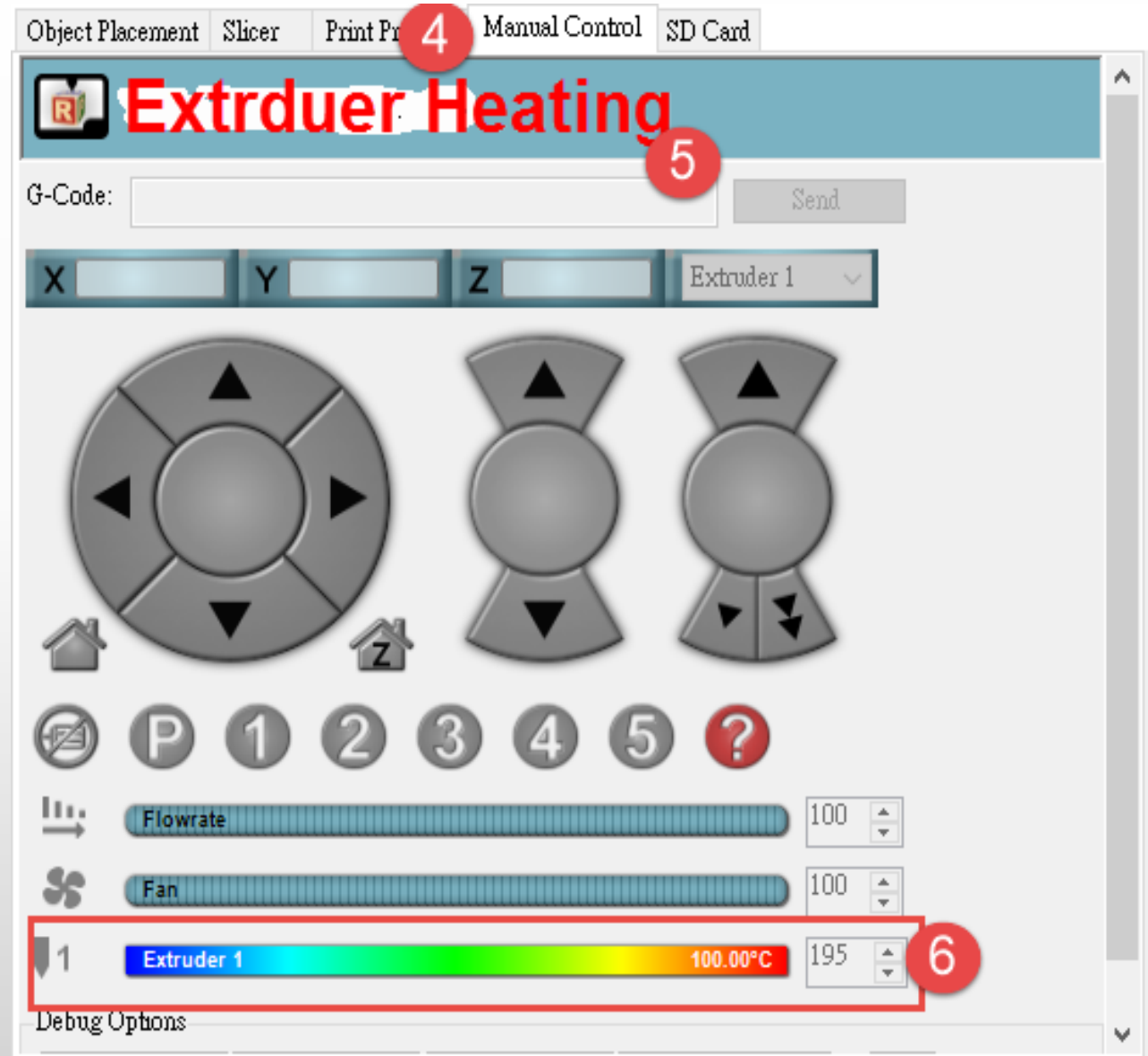


1. Click on "Save to File" button, you can save code as "*" .gcode" type file
2. Slider the "First layer" and "Last layer" or set the number, you can watch the print path between the layers

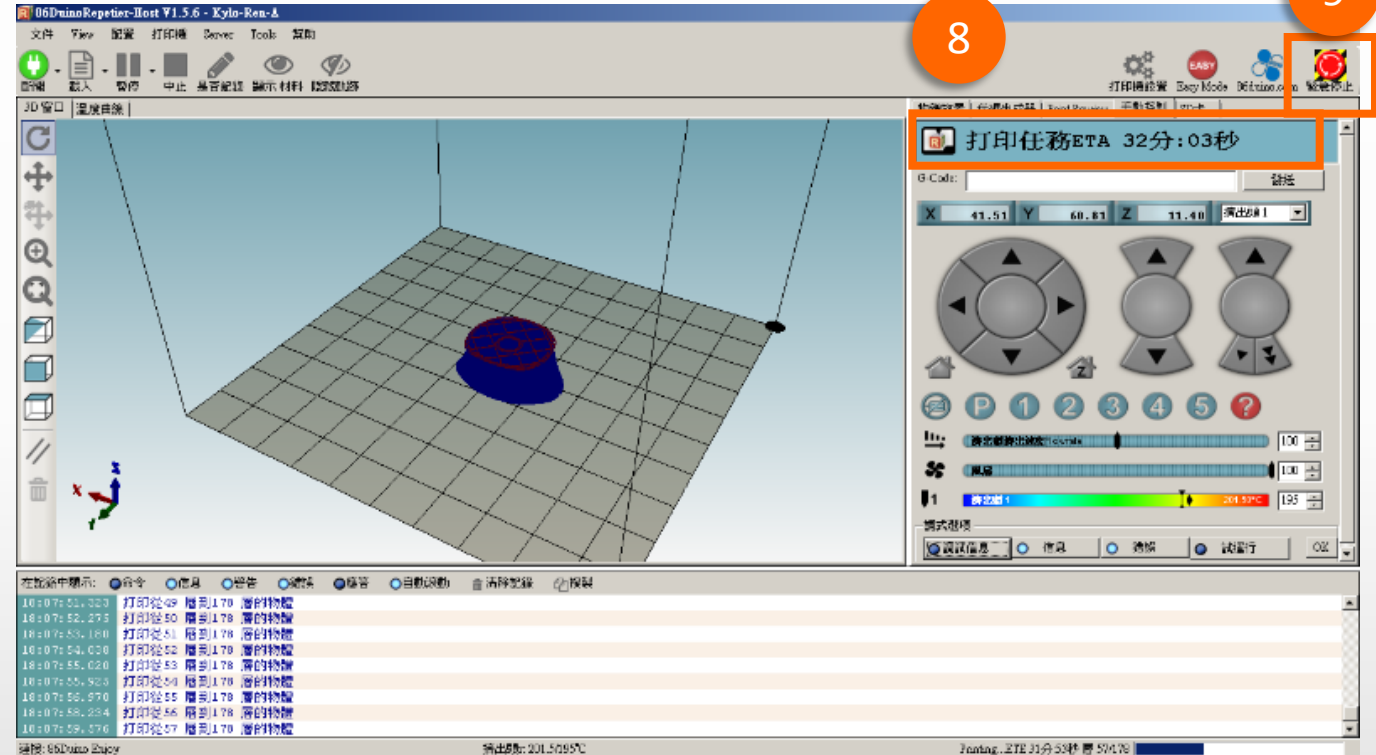
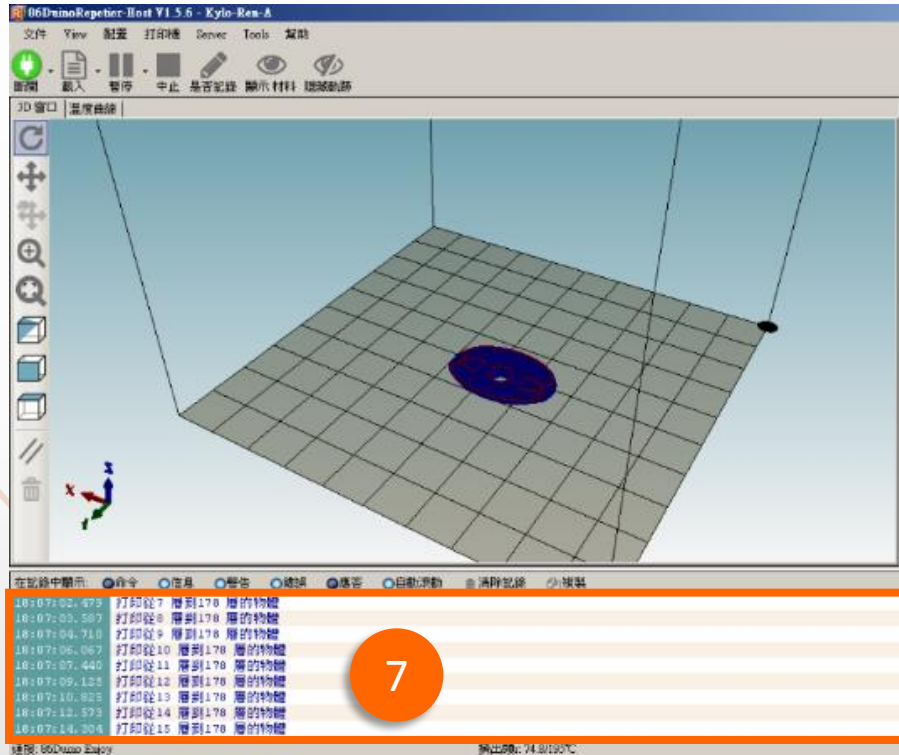
Start Print



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.



Appendix

PART 6

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

