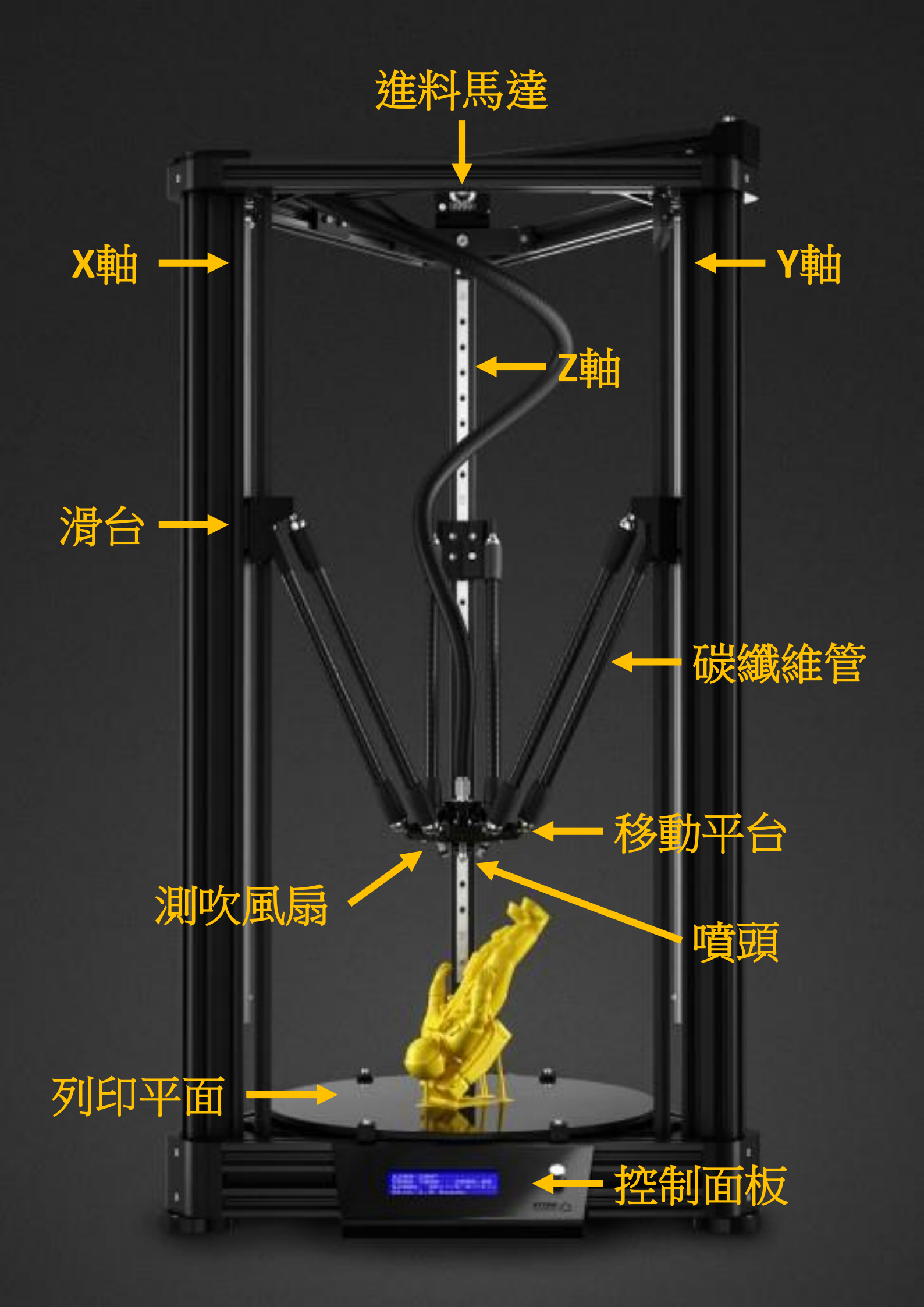
Atom 2.0 使用須知手冊 (簡化版)


進料馬達
X軸
Y軸
Z軸
滑台
碳纖維管
移動平台
測吹風扇
噴頭
列印平面
控制面板

安全注意事項

- 噴頭與擠出的料溫度至少180度，請勿隨意碰觸
- 鏟刀 非常銳利，請小心使用
- 滑台、碳纖維管、移動平台、進料與各軸馬達的移動可能造成夾傷

切片軟體與設定檔下載

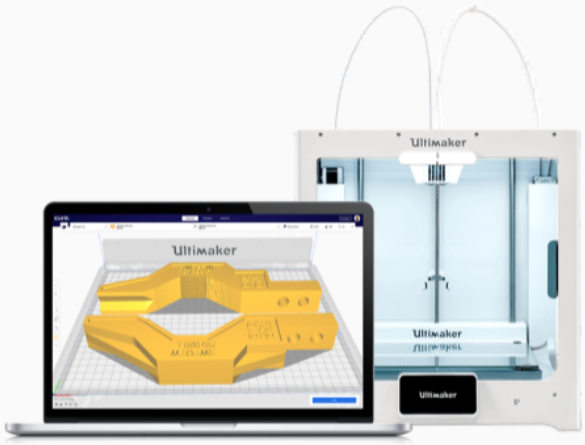
Ultimaker Cura

Trusted by millions of users, Ultimaker Cura is the world's most popular 3D printing software. Prepare prints with a few clicks, integrate with CAD software for an easier workflow, or dive into custom settings for in-depth control.

Ultimaker Cura 4.2.1

Download for free

Find previous versions
Download Ultimaker Cura 4.3 beta



https://ultimaker.com/software/ultimaker-cura

軟體與教學 » 3D列印機

最大列印範圍

ATOM 2.0
⌀ 220 x 320 mm

ATOM Plus**
⌀ 420 x 990 mm

*因安全設定，機台實際最大範圍會小一些
**因精準度問題，Plus目前不開放使用

3D列印機下載區

TITLE

請到ultimaker官網下載最新版的cura.txt
May 12 台科建築數位工坊

CURA設定檔-Configuration.7z
May 12 台科建築數位工坊

SilkwormAtom.ini
Feb 23 台科建築數位工坊

使用教學

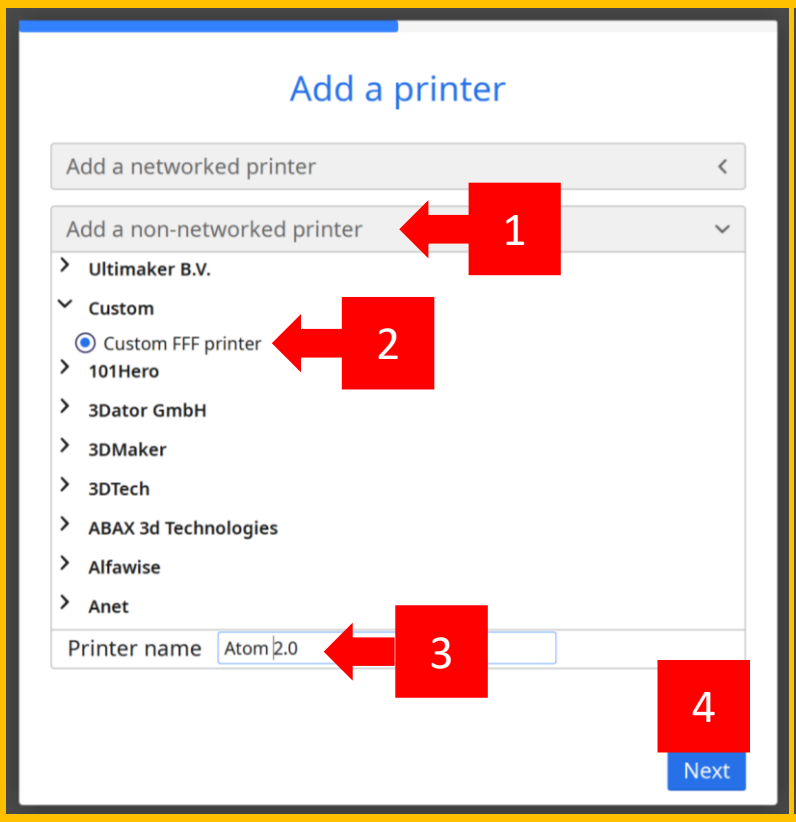
ATOM 官方教學: https://atom3dp.squarespace.com/start-tw
參考教學一: http://tinyurl.com/a3dpTutorial
參考教學二: https://goo.gl/Lhg2ta

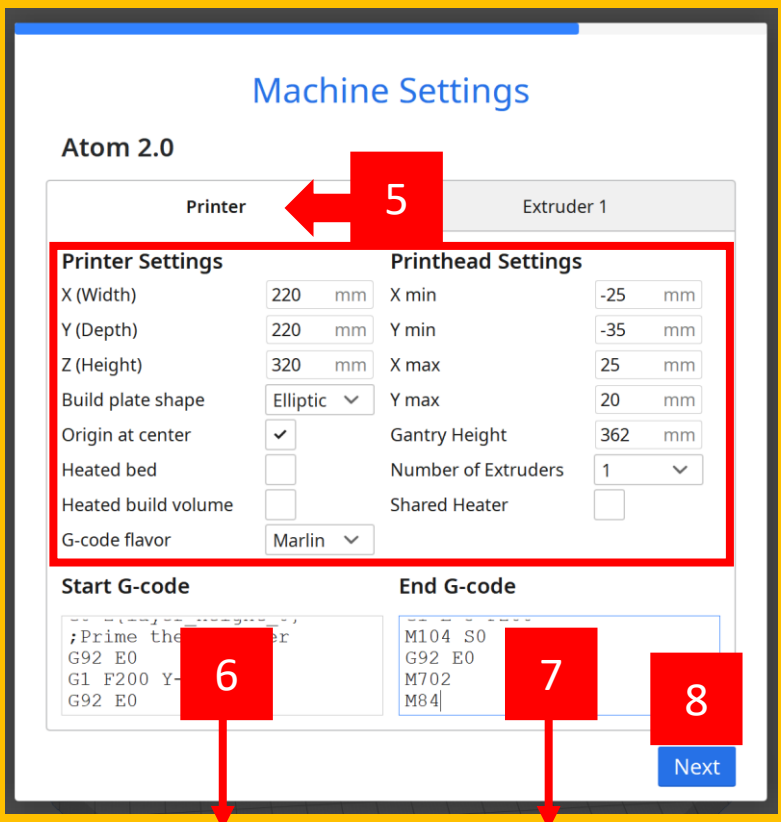
外掛

Silkworm: https://projectsilkworm.com/

http://ttda.ntust.edu.tw

切片軟體機台設定 (以Cura 4.6.1為例)

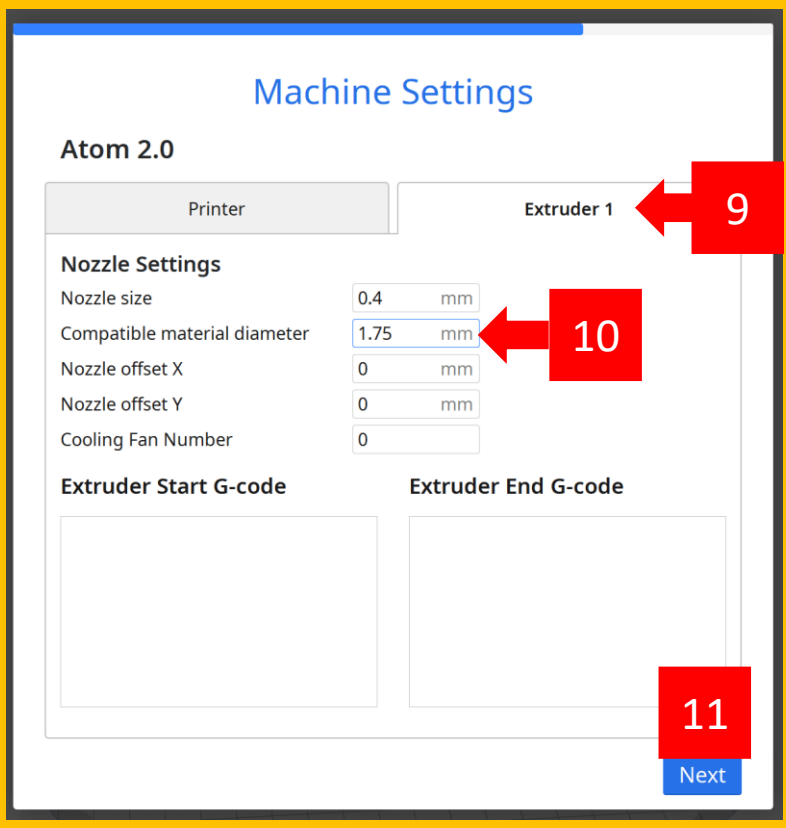




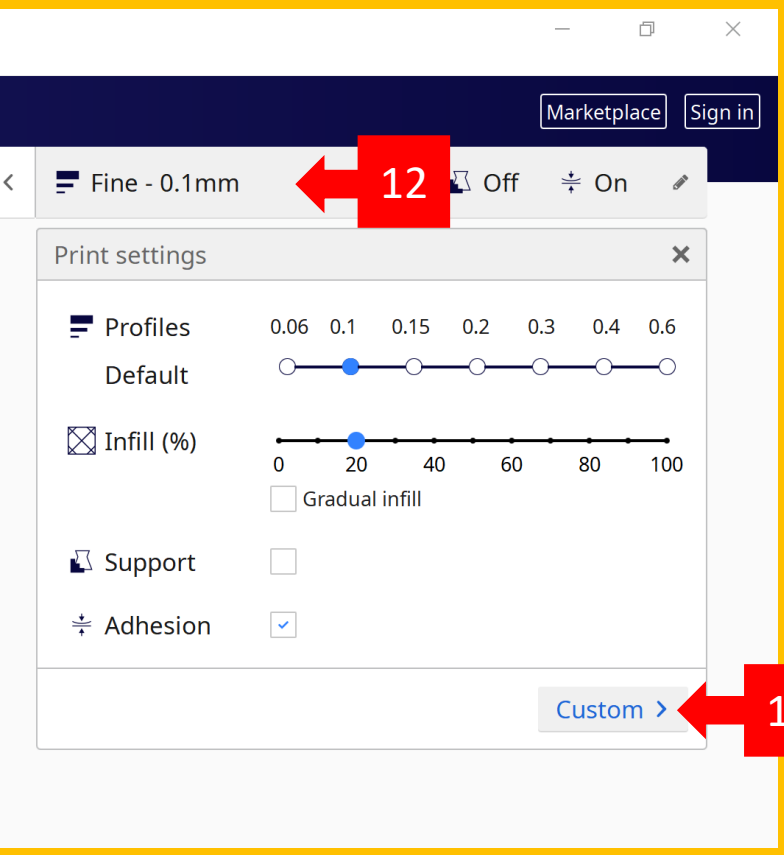
Start G-code
G28
G1 Y-110 Z15.0 F6000
G0 Z{layer_height_0}
;Prime the extruder
G92 E0
G1 F200 Y-100 E6
G92 E0

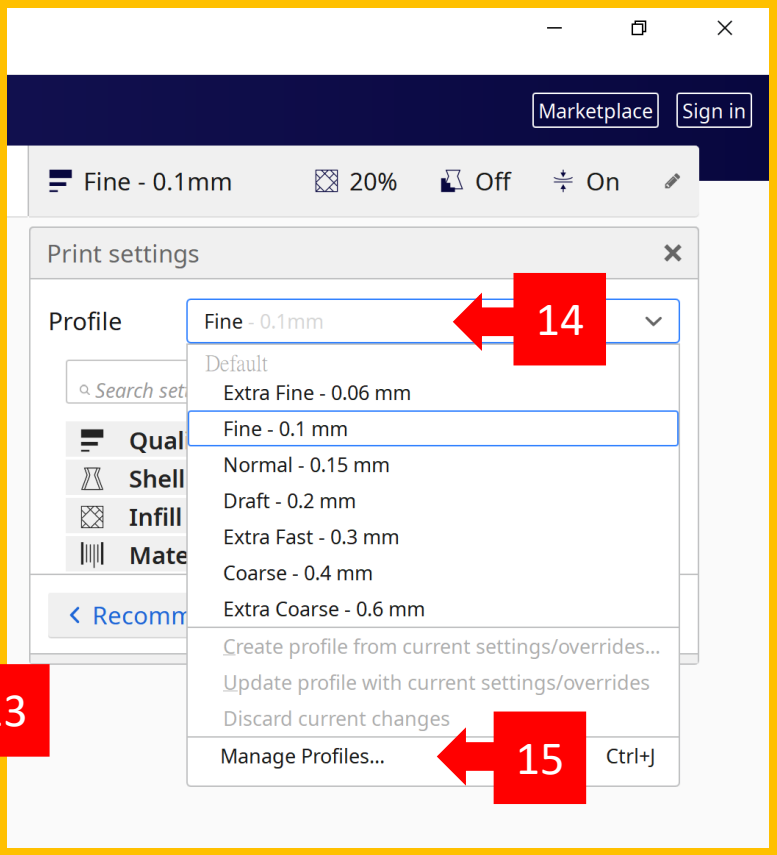
End G-code
G28
G1 E-3 F200
M104 S0
G92 E0
M702
M84

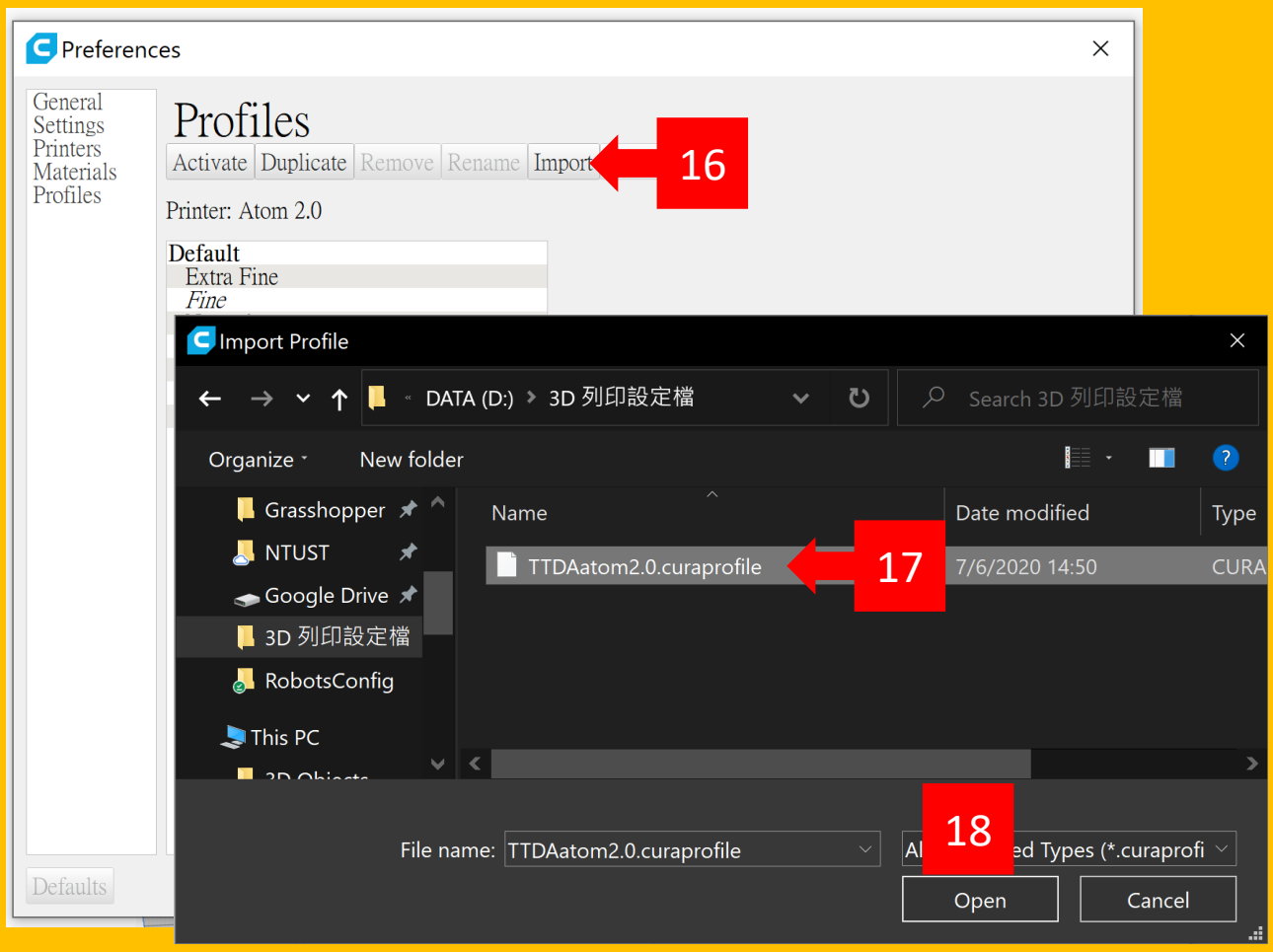
Start 跟 End G-code 在
Cura設定檔-Configuration.7z 裡面有



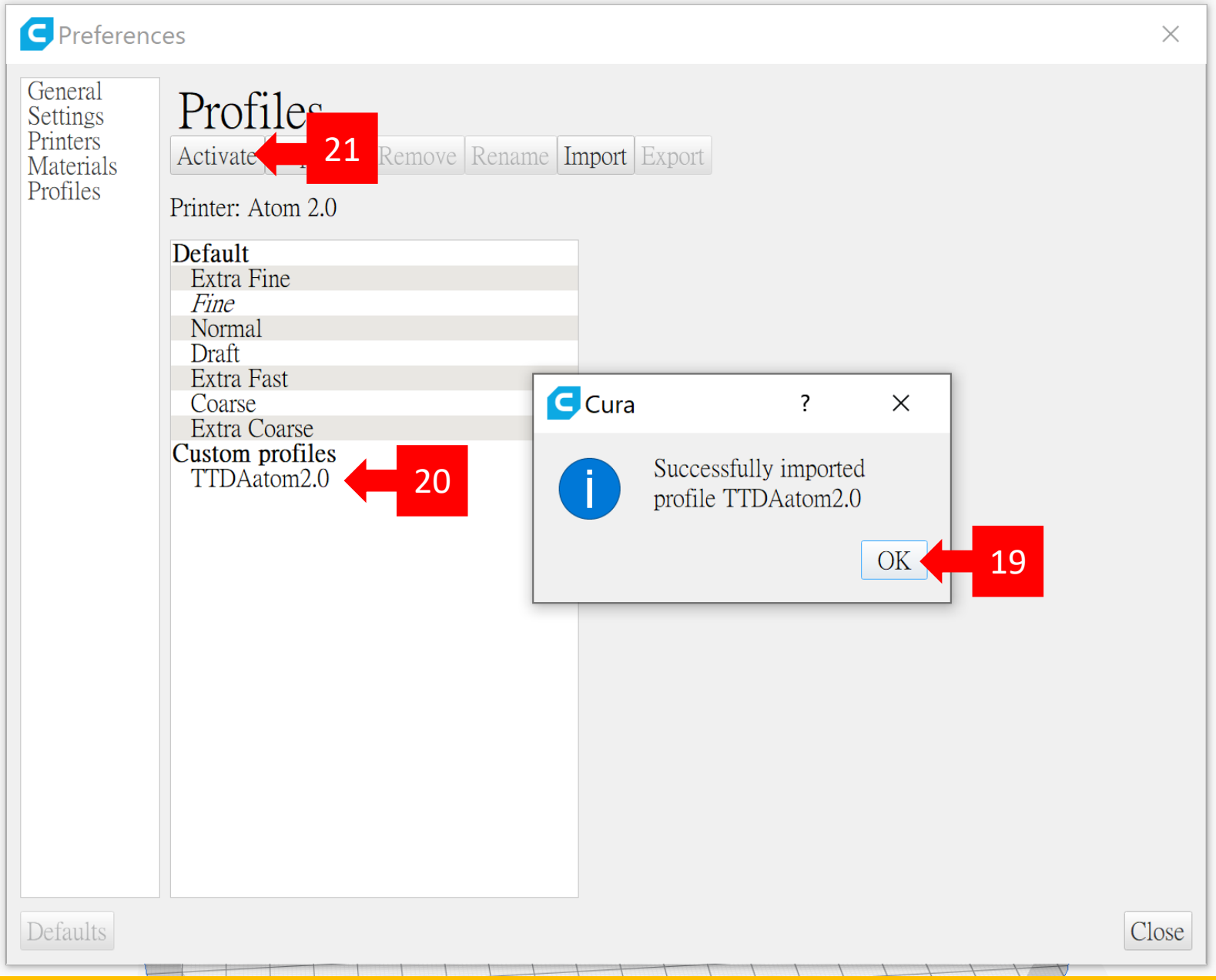
切片軟體列印設定匯入 (以Cura 4.6.1為例)



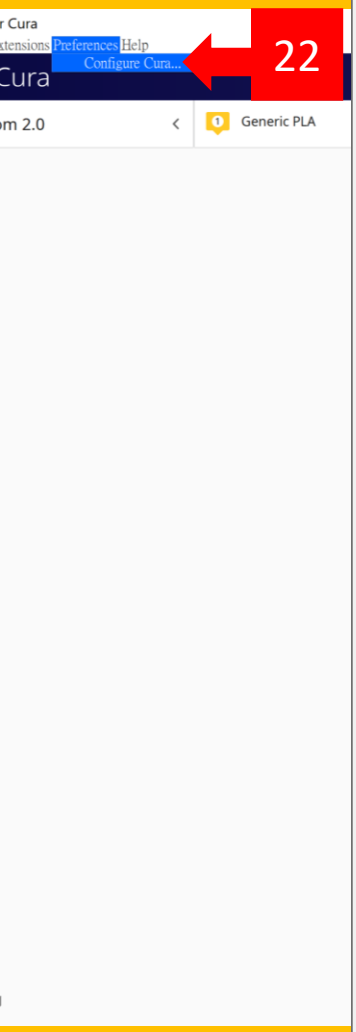


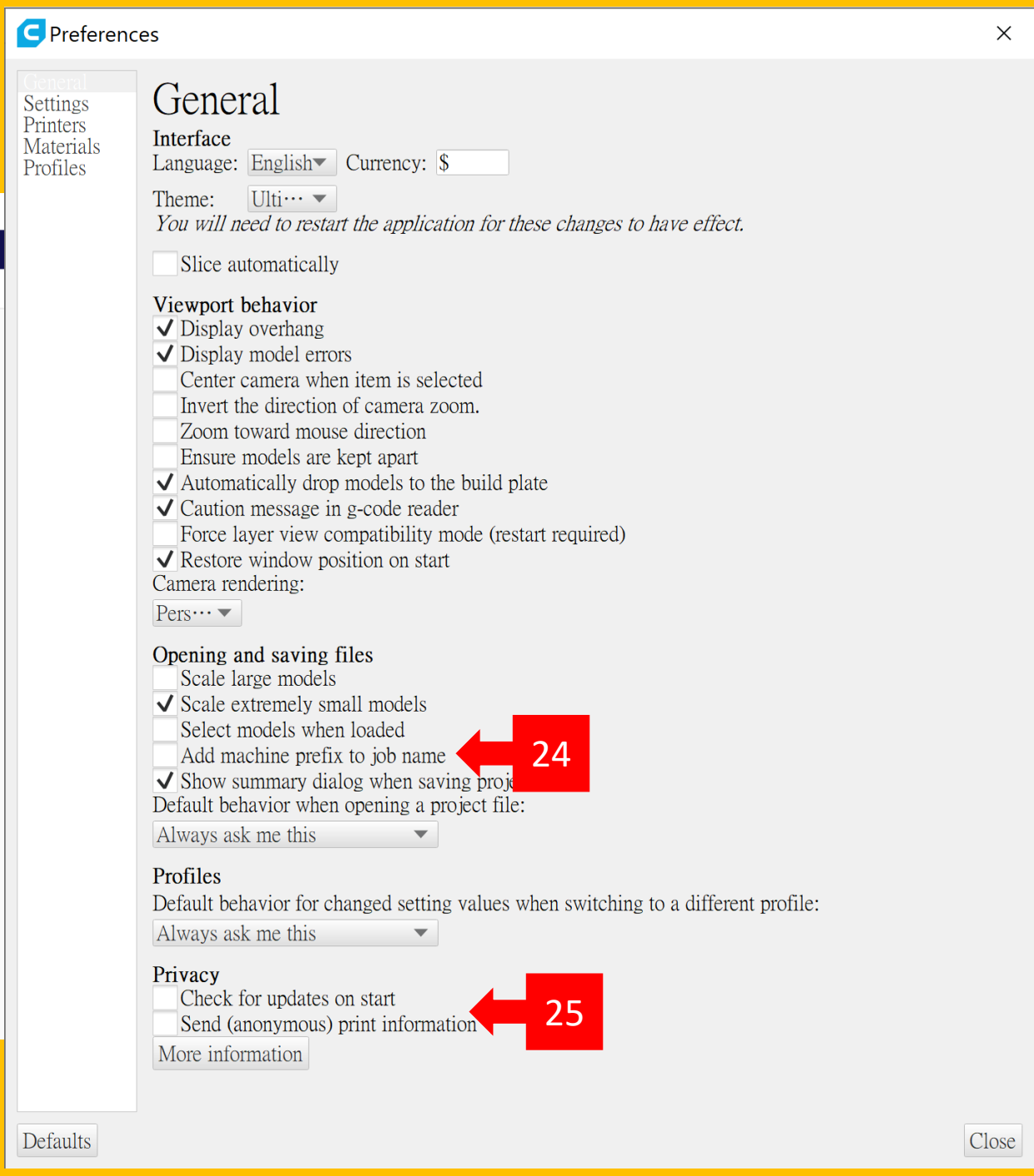


切片軟體列印設定匯入 (以Cura 4.6.1為例)



切片軟體編號設定(以Cura 4.6.1為例)





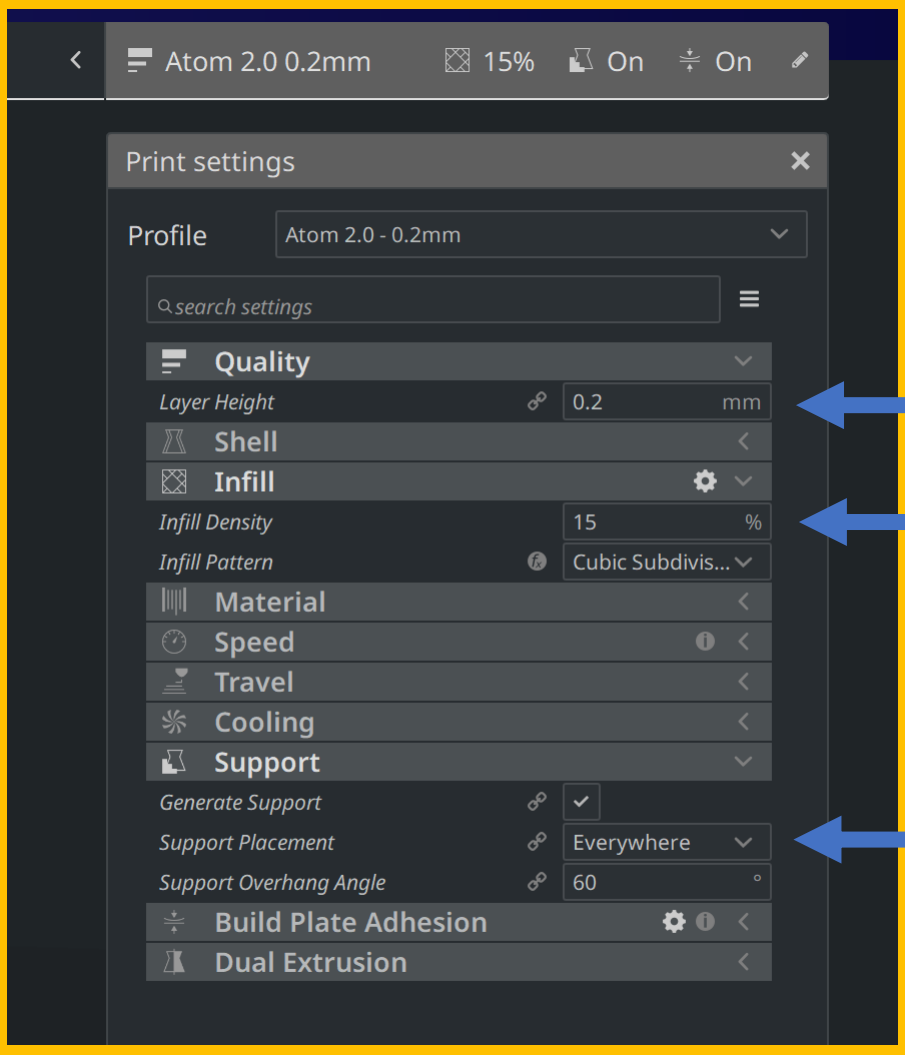
切片

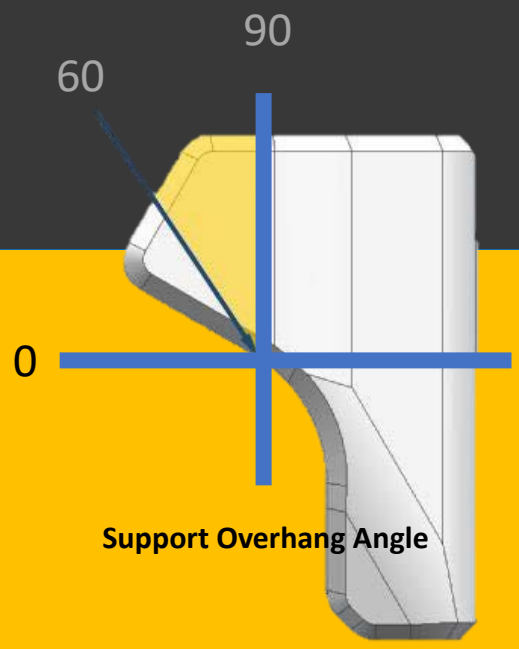
1. 模型存為有支援檔的檔案格式

All Supported Types (*.jpeg *.jpg *.gcode.gz *.ufp *.ctm *.amf *.png *.stl *.glb *.g *.ply *.zae *.gif *.gcode *.3mf *.x3d *.dae *.gltf *.bmp *.obj)
3MF File (*.3mf)
AMF File (*.amf)
BMP Image (*.bmp)
COLLADA Digital Asset Exchange (*.dae)
Compressed COLLADA Digital Asset Exchange (*.zae)
Compressed G-code File (*.gcode.gz)
G File (*.g)
G-code File (*.gcode)
GIF Image (*.gif)
JPEG Image (*.jpeg)
JPG Image (*.jpg)
Open Compressed Triangle Mesh (*.ctm)
PNG Image (*.png)
STL File (*.stl)
Stanford Triangle Format (*.ply)
Ultimaker Format Package (*.ufp)
Wavefront OBJ File (*.obj)
X3D File (*.x3d)
glTF Binary (*.glb)
glTF Embedded JSON (*.gltf)
All Files

建議以下格式
.dae
.stl
.obj

2. 依照需求做切片設定





Layer Height 層高
0.1 至 0.4 [建議0.2]

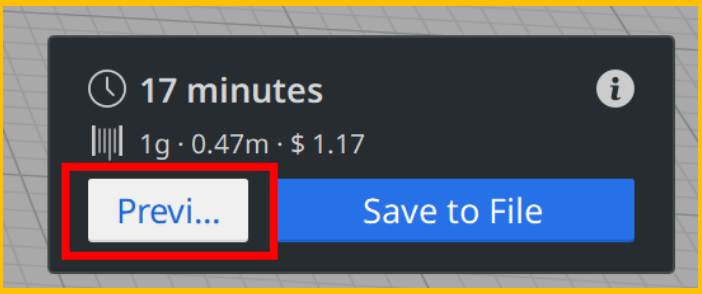
Infill Density 密度
15 至 100 [建議15]

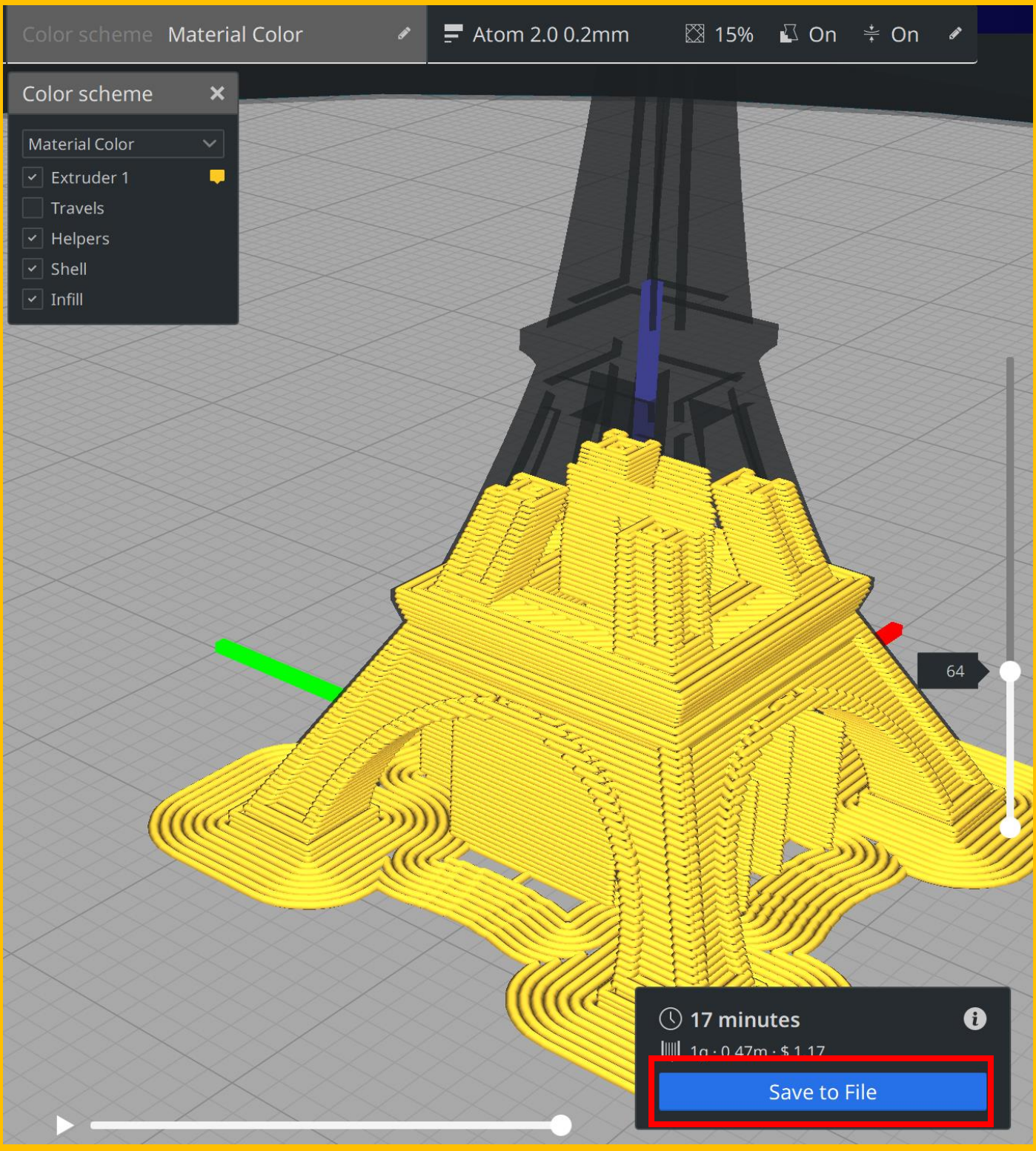
Support 支撐
Touching/Everywhere
0 至 60

切片

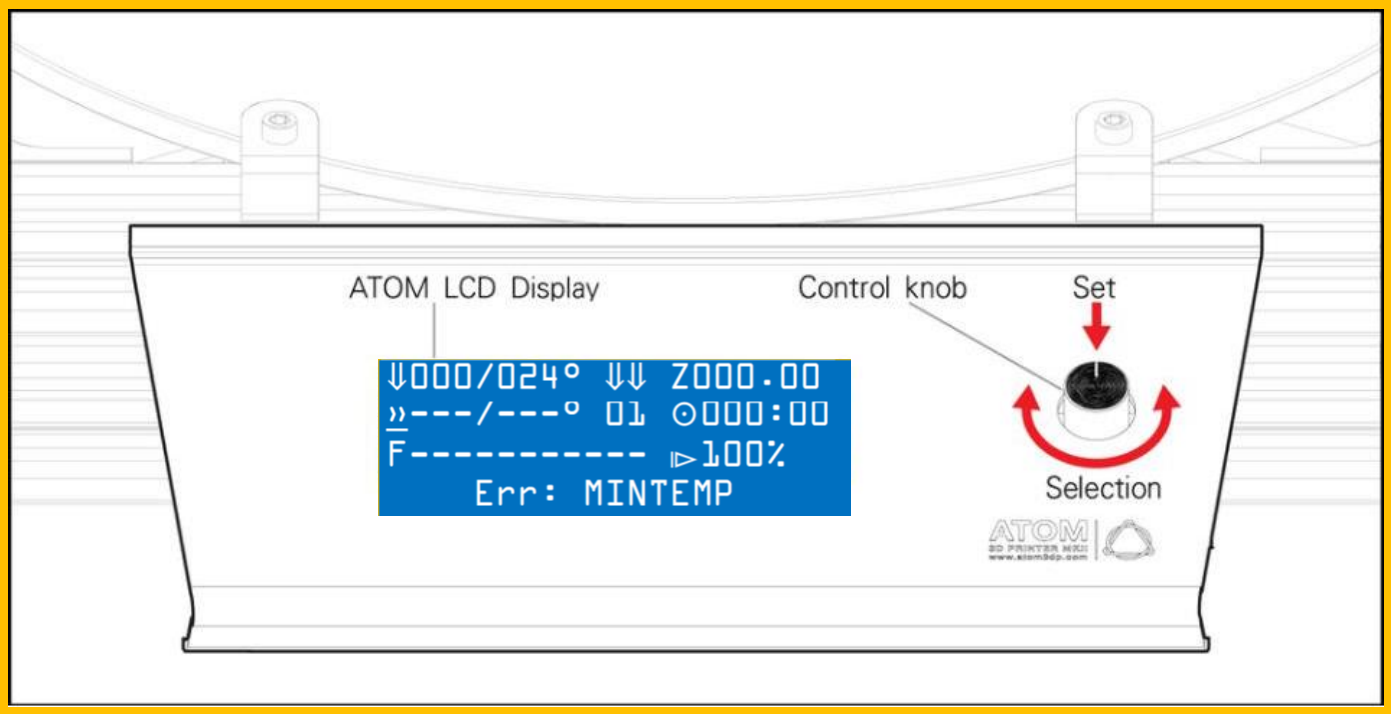
3. 切片與檢查

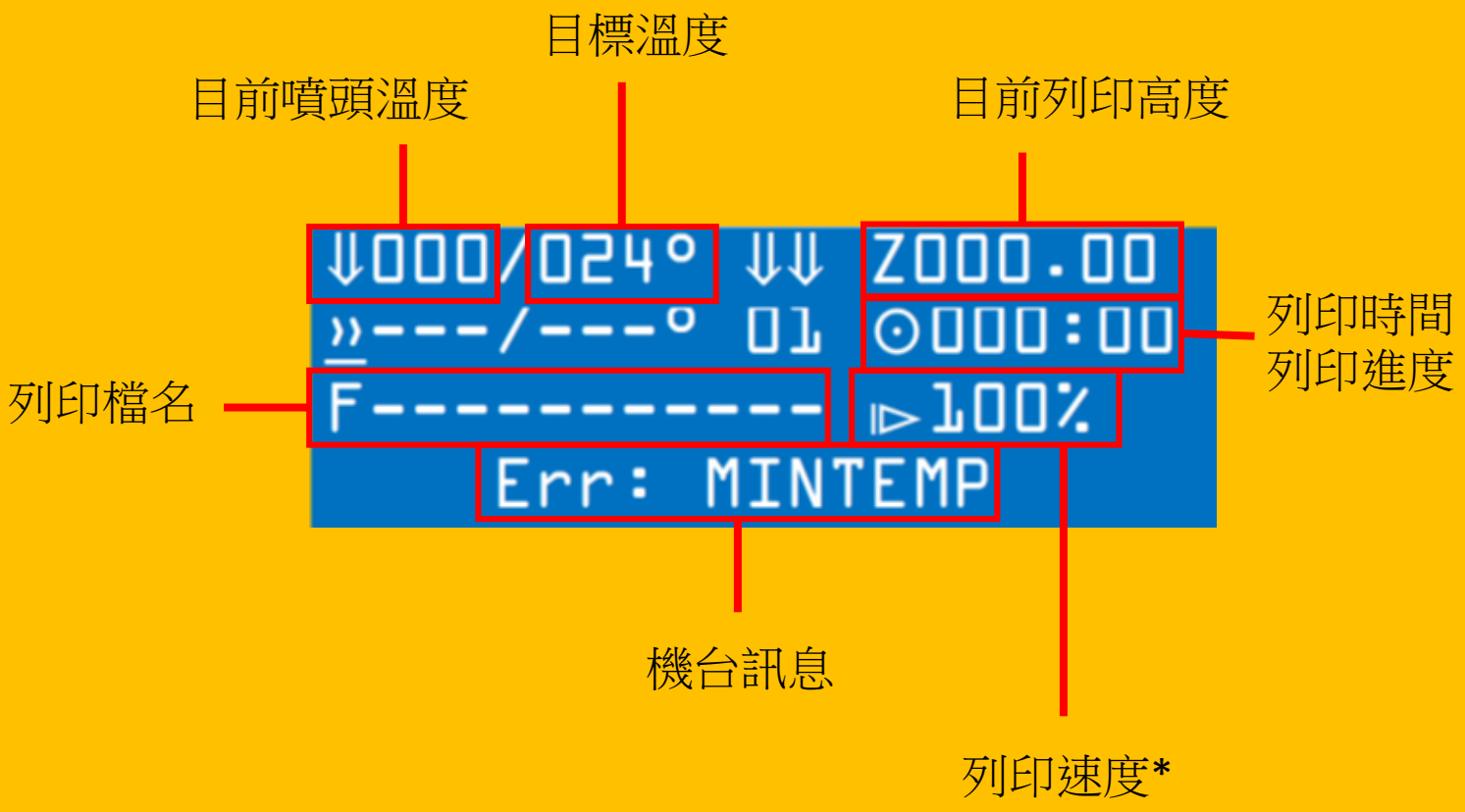

Slice


17 minutes
1g · 0.47m · $ 1.17
Previ...
Save to File


Color scheme
Material Color
Atom 2.0 0.2mm
15%
On
On
Color scheme
Material Color
Extruder 1
Travels
Helpers
Shell
Infill
64
17 minutes
Save to File

機台介面與操作

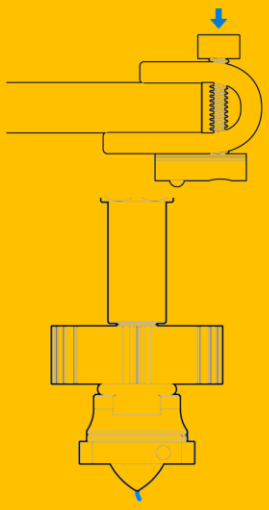




*在主畫面時旋轉轉扭可以調整列印速度，請勿超過105%

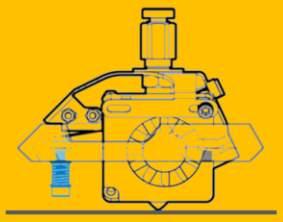
使用步驟

1. 檢查機台



列印面有固定不會移動
Print surface is secured

噴頭沒有堆積
Hot end is clean



校正螺絲高度正確
Adjustment screw height
correctly adjusted

2. 手動上料

fig.1 - Trimming PLA Filament

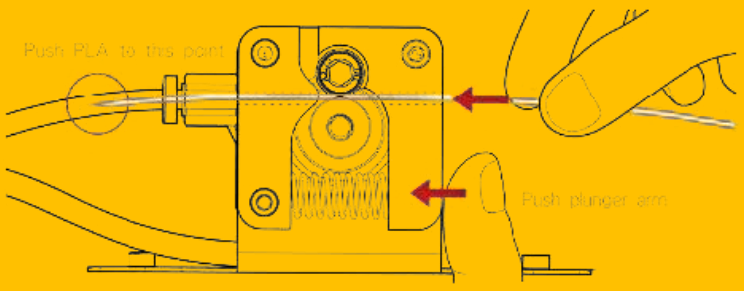


fig.2 - Feeding PLA Filament For Automatic Loading

3. 加熱進料

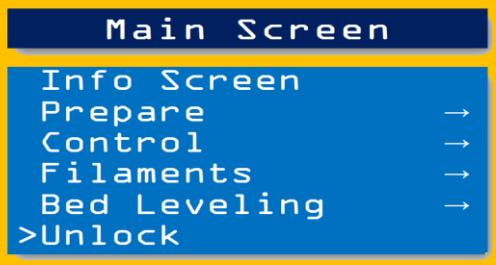
```
Main Screen
 Info Screen
 Prepare              →
 Control              →
>Filaments            →
 Bed Leveling         →
 Unlock
```

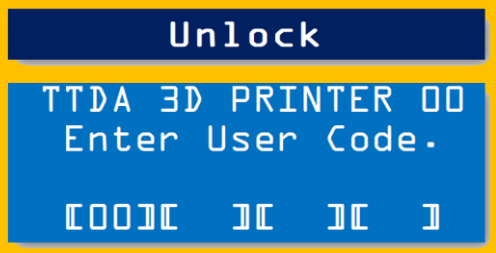
```
Filaments
 Main
 Disable Ext Motors
>Preheat ⇓ (024°)
 Load E0
 Unload E0
 Cool Down
```

```
Filaments
 Main
 Disable Ext Motors
 Preheat ⇓ (200°)
>Load E0
 Unload E0
 Cool Down
```

使用步驟

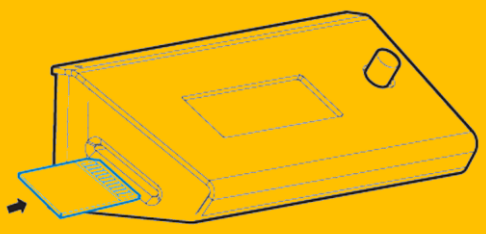
4. 機台解鎖

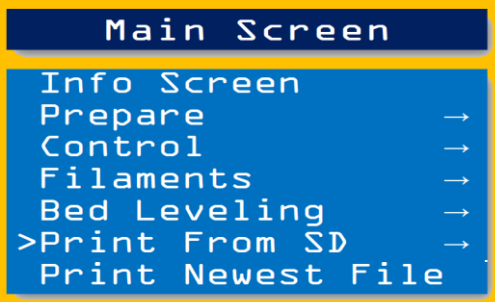




輸入登記表單上給的密碼
Enter user code displayed on booking form

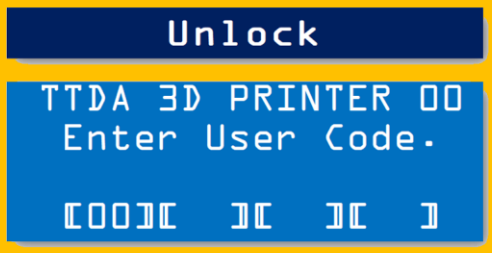
5. 列印檔案





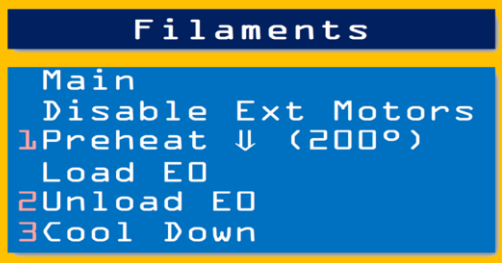
列印前記得再列印面上上膠或貼膠帶
Apply a thin layer of glue or masking tape before printing

6A. 繼續列印



若你還有其他檔案要列印，
請重複 4,5
If you have more files to print, repeat 4,5

6B. 結束列印

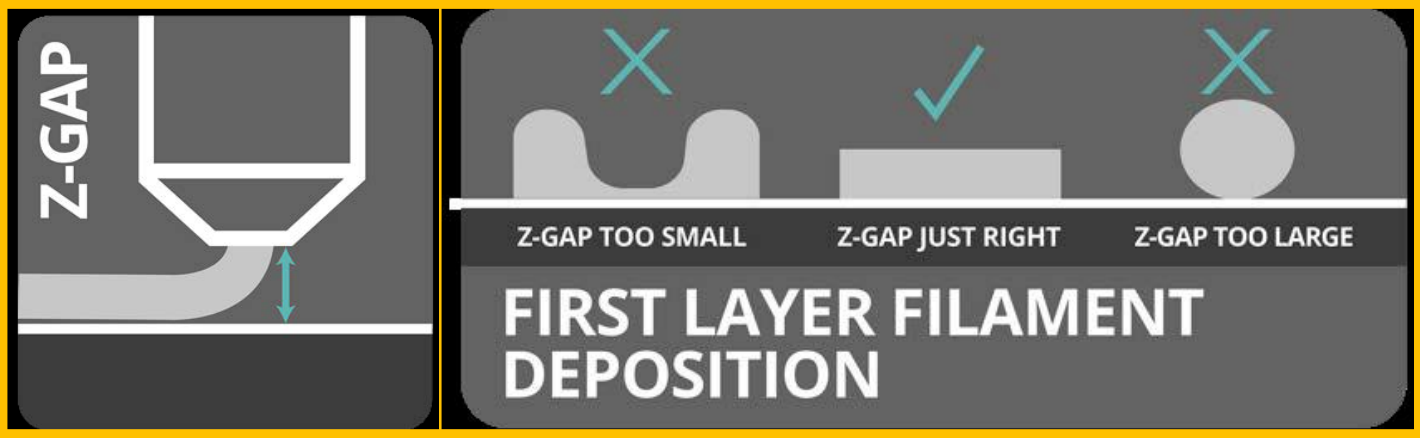


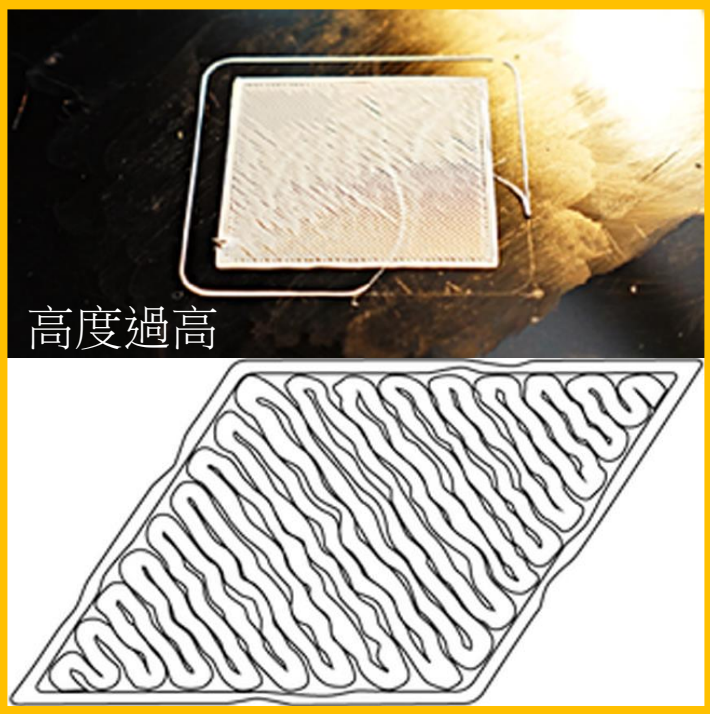
列印結束後，請記得退料
After you've finished printing, please remove your filament from the machine

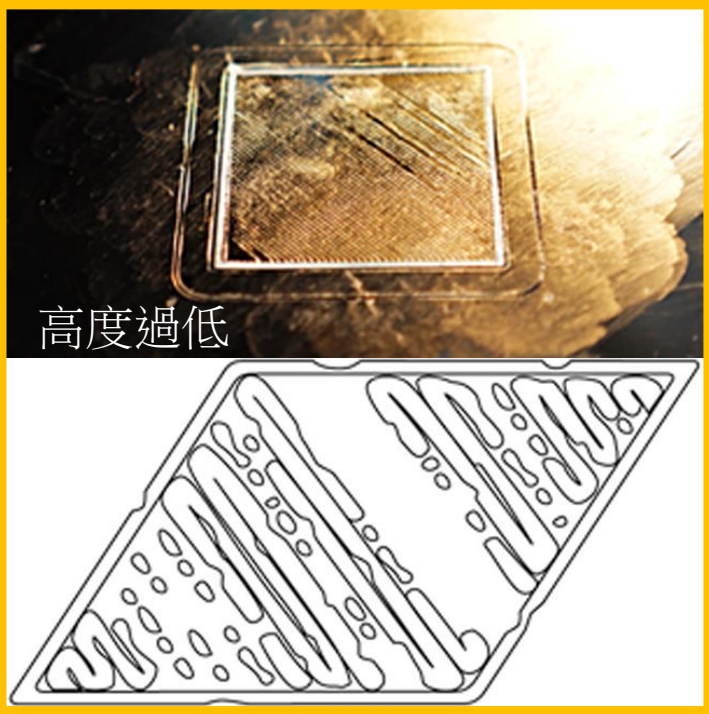
8. 清理環境

列印問題排除

Z-height 調整







調整方式

```
Main Screen
  Info Screen
  Prepare                →
  Control                →
  Filaments              →
>Bed Leveling            →
  Print From SD          →
  Print Newest File
```

```
Bed Leveling
  Main
  Preheat ⇓ (024°)
  Auto Calibration
1Auto Level
2Adjust Offset
  Cool Down
  …
```

Adjust Offset 前先在列印面上放一張一般厚度的紙
噴頭應該剛好碰到紙，紙可以滑動且感覺到一點與噴頭摩擦的阻力

Auto Calibration/Level 注意事項

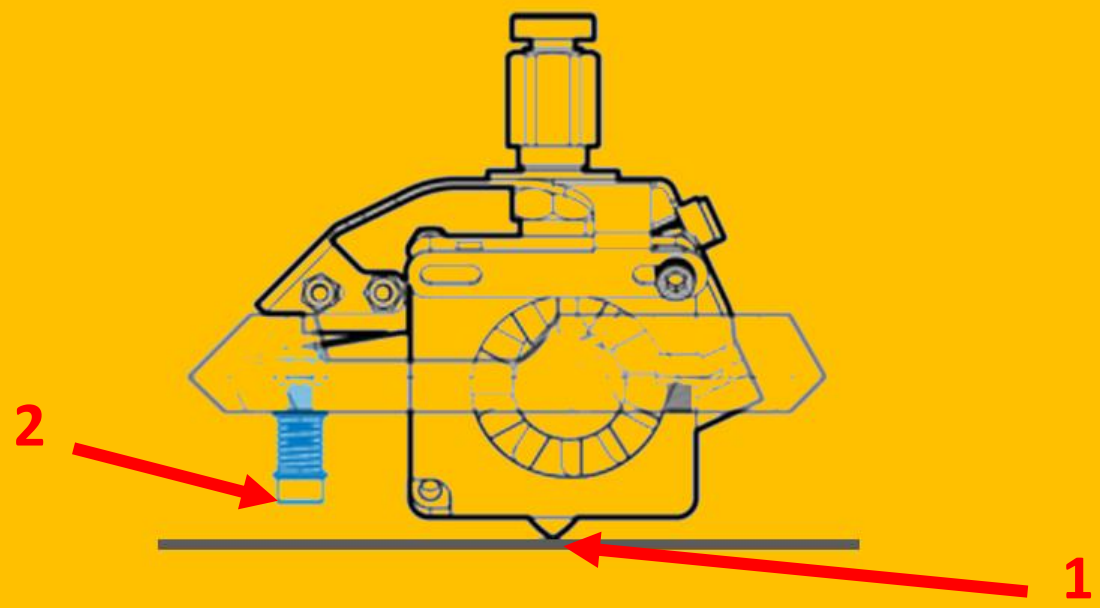
Main Screen	Bed Leveling
Info Screen	Main
Prepare →	Preheat ⇓ (024°)
Control →	A Auto Calibration
Filaments →	B Auto Level
>Bed Leveling →	C Adjust Offset
Print From SD →	Cool Down
Print Newest File	…

A) Auto Calibration 只有在有重組噴頭組/移動平台時才需要執行
若有執行 A 就必須執行 B 與 C

B) Auto Level 在移動平台有掉落或列印嚴重不平時才需要執行
若有執行 B 就必須執行 C

C) Adjust Offset 一般不會單獨執行，都會搭配Auto Level

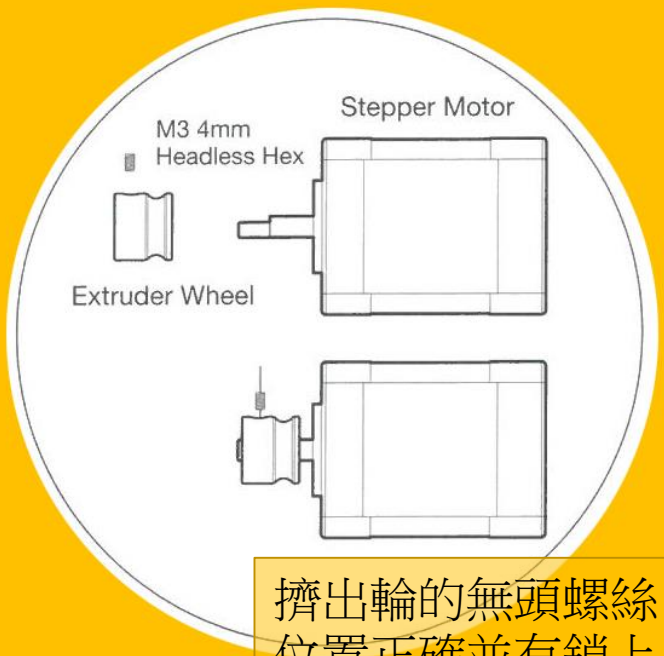
執行A 或 B 時，噴頭會多次重覆碰觸列印平面
請確認
1. 每次都有碰到列印平面
2. 校正螺絲沒有碰到列印平面



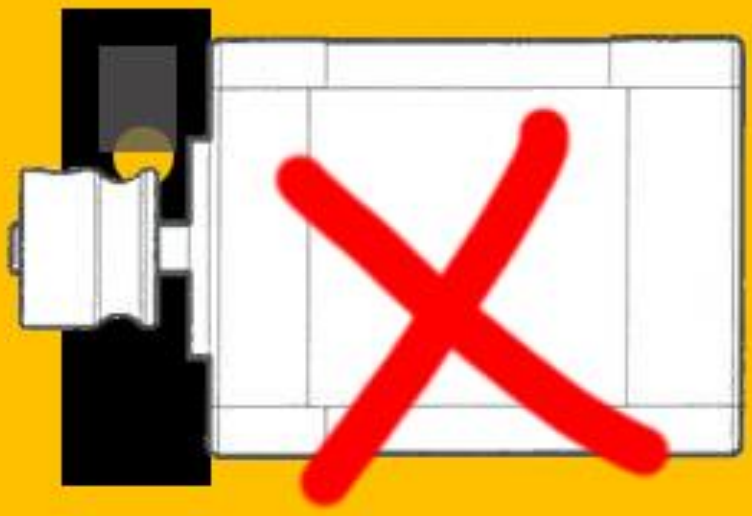
問題排除

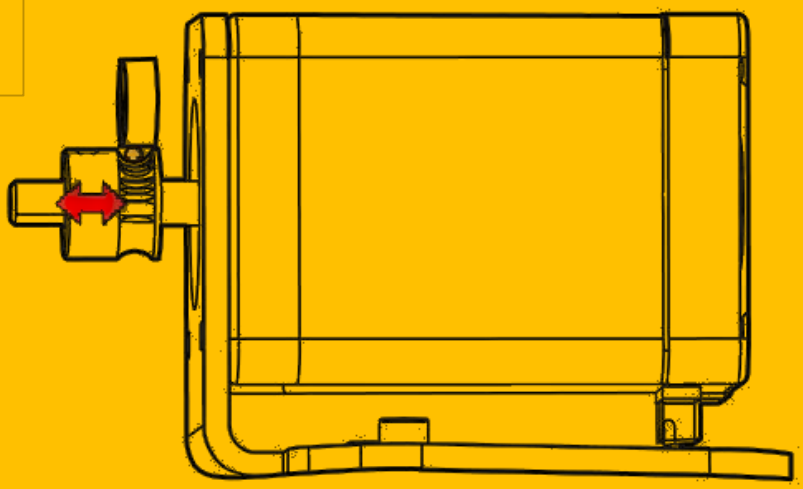
若發現列印不順、機台嚴重咬料 (grinding)
請檢查/做以下的動作:

1. 檢查進料馬達組裝正確



擠出輪的無頭螺絲
位置正確並有鎖上





2. 提高列印溫度

200C -> 230C

問題排除

3. 做冷拉 (Cold pull) 清理噴頭內部

1. 拔掉噴頭組上的鐵氟龍管，加熱噴頭 (180度以上)
2. 直接將PLA插入噴頭組，確認有耗材擠出
3. 降溫到 90度 等30秒
4. 快速將PLA拉出

4. 清理鐵氟龍管

1. 拔除鐵氟龍管
2. 撕一小塊衛生紙
3. 用耗材將衛生紙從一頭推入另一頭推出

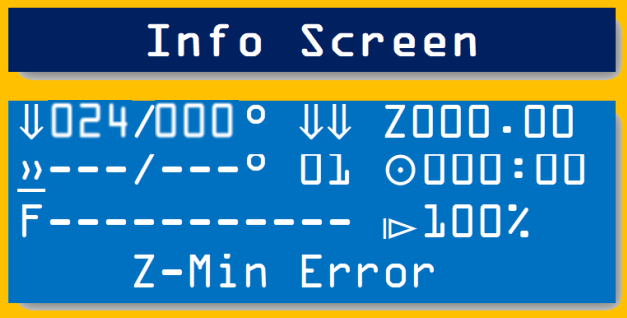
5. 清理噴頭

1. 加熱噴頭
2. 垂直插入 <0.4mm 的針
3. 垂直拉出針

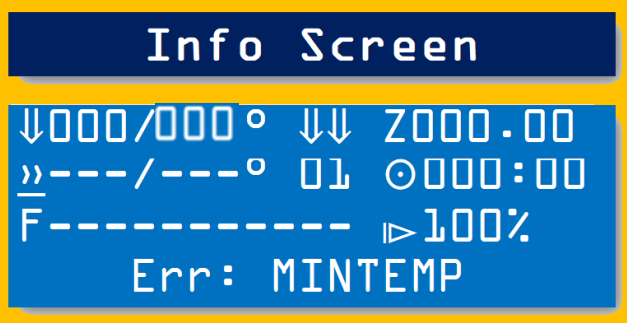
問題排除

若發現列印有偏移的情況，請檢查:

1.噴頭組與移動平台之間的螺絲有鎖緊
2.三軸的皮帶鬆緊度差不多，沒有過緊或過鬆的狀況



校正螺絲沒有壓到微開關
Adjustment screw isn't touching the microswitch



熱敏電阻有問題，需更換
Faulty Thermistor Replacement Required