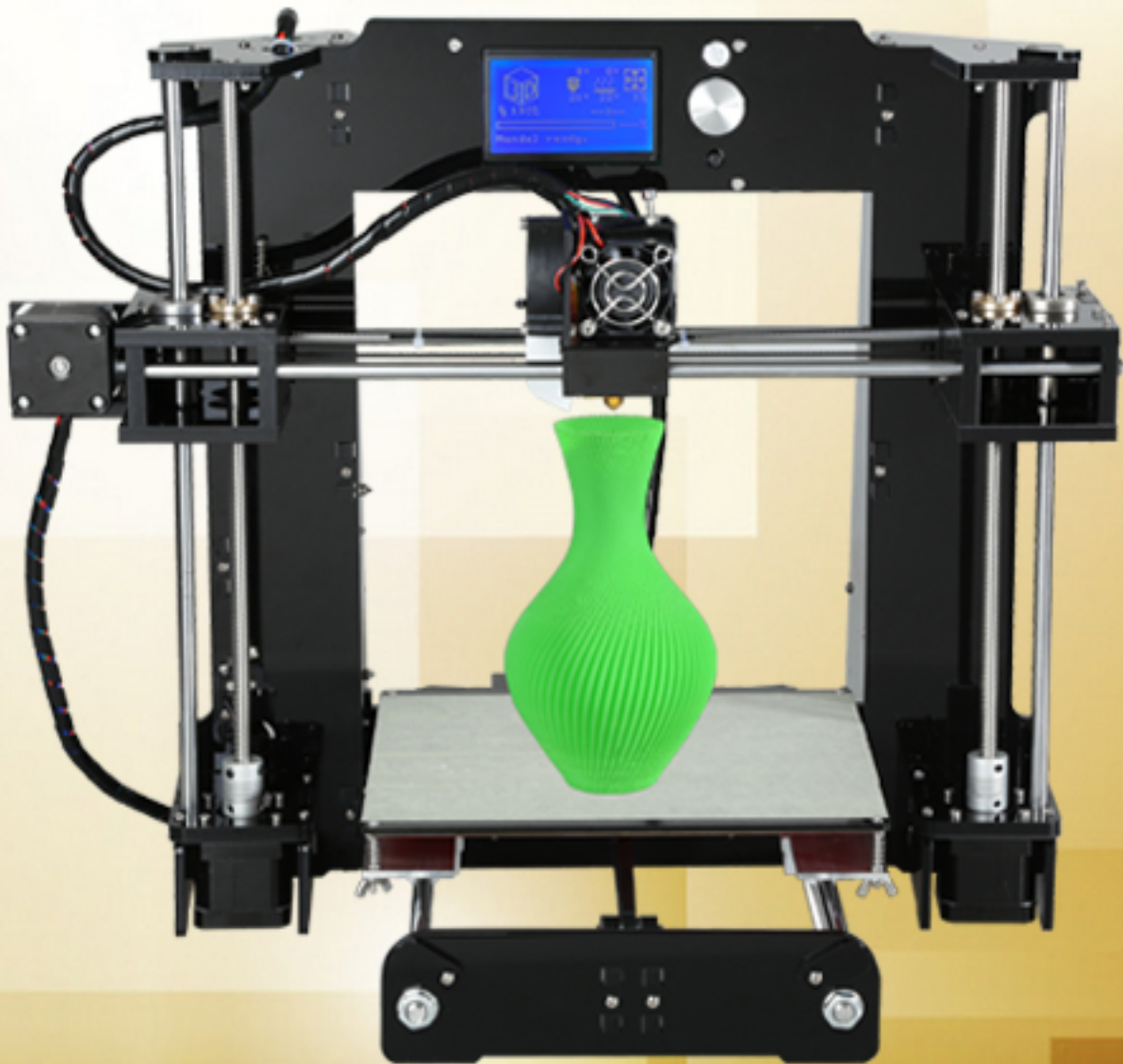


# Operation Instruction

Model:A6



After sales support

## Welcome to Anet Facebook and Twitter Page

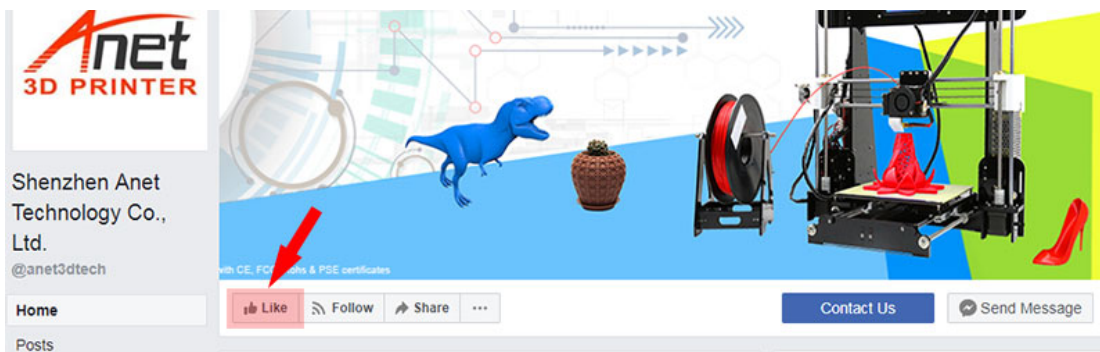
The latest news, products etc information from Anet would be published in Facebook, Twitter. And we have after-sales service team in Facebook to help you solve using issues.

Let's have a look how to join us:

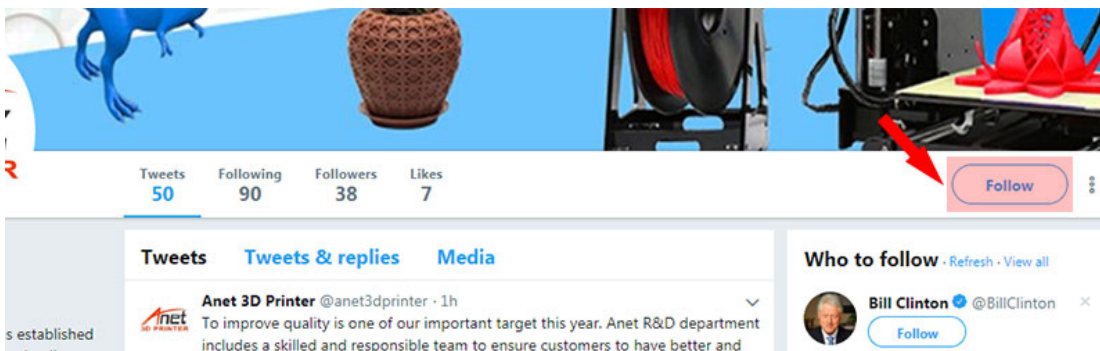
1. You can visit following links to find Anet and join us:

Facebook: [facebook.com/anet3dtech](https://facebook.com/anet3dtech)

Twitter: [twitter.com/anet3dprinter](https://twitter.com/anet3dprinter)



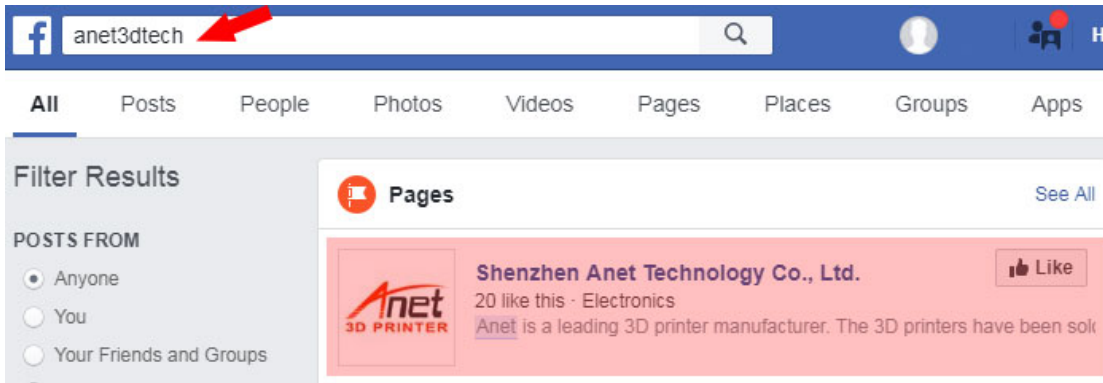
In Anet Facebook page(@anet3dtech), click “Like”;



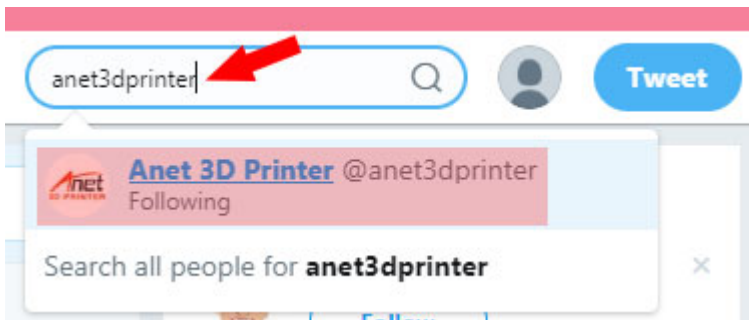
In Anet Twitter page(@anet3dprinter), click “Follow”;

2. In Facebook and Twitter, You can search keywords to find Anet:

In Facebook search box, please search “**anet3dtech**” ; Find Anet page and “Like” us;

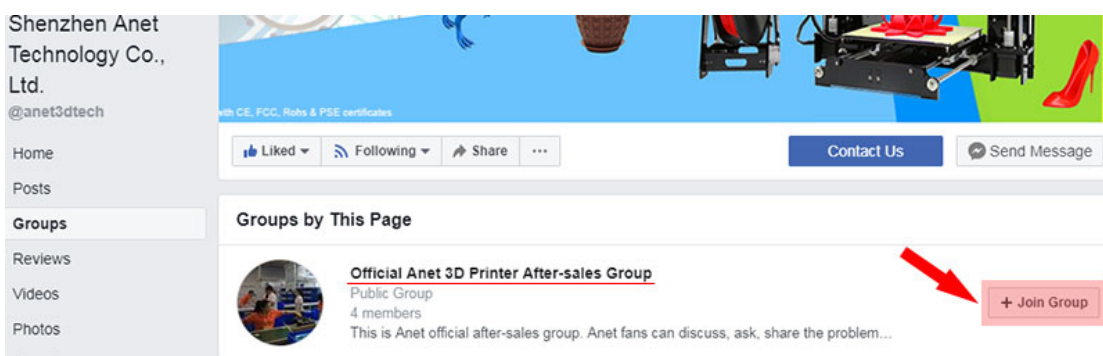


In Twitter search box, please search “**anet3dprinter**”; Find Anet page and “Follow” us;



3. In Anet Facebook page, you can also join our after-sales group:

Follow above two methods, you can find Anet Facebook page, then on the left side click “**Groups**”, you would see “**Official Anet 3D Printer After-sales Group**”, click “**Join Group**” to join us;



4. Scan QR code to find Anet Facebook and Twitter page:



[facebook.com/anet3dtech](https://facebook.com/anet3dtech)



[twitter.com/anet3dprinter](https://twitter.com/anet3dprinter)

# Contents

INTRODUCTION .....	5
A. Security Considerations.....	6
B. Product Details .....	7
1.Specifications.....	7
2.Machine parts .....	7
3.Exploded drawing .....	8
4.Tool List .....	9
C. Cura Software .....	12
1.Installation of Cura14.07 .....	12
1.1 File location in the TF card .....	12
2. Cura Setting.....	21
2.1 Clear platform .....	21
2.3 Layer height settings .....	26
D. Printing Operation .....	53
1.Display Introduction .....	53
2. Filament Feeding.....	56
2.1 Set Preheat.....	56
3. Platform Adjustment.....	59
4. Printing .....	61
E. FAQ .....	65
1. Z Axis Ajustment .....	65
1. Nozzle blocking .....	67
3.FAQ .....	70
VI. Maintenance.....	71
VII. Maintenance Service Provision .....	72

# INTRODUCTION

A6 FDM 3D printer can print CAD 3D printer model to real . A6 uses Acrylic to build its frame while it uses linear bearings , belts and threaded rods to build X , Y , Z axis . It enables A6 to print steadily with no vibration .

Note:

1. All statement included in this Instructions have been checked carefully , if any typographical errors or misunderstanding , we have the final interpretation .
2. No noification if any update .

## A. Security Considerations

To avoid danger when using 3D printer , please pay attention to precautions below .



### Danger

During Operation , the maximum temepature of nozzle can be 260 °C while hotbed can be 100 °C . For your safety , during printing or cooling down , do not touch the nozzle , hotbed and models under printing . Power works at 110V/220V 50HZ AC and supply ground needed . Do not use other power supply , or it may cause components damage , fire or electric shock . And we take no responsibility for this .



### Warning

We suggest wering protective goggles when removing auxiliary support materials .  
Some filaments will emit slight irritant gases , so we suggest to use 3D printer in a ventilated environment .

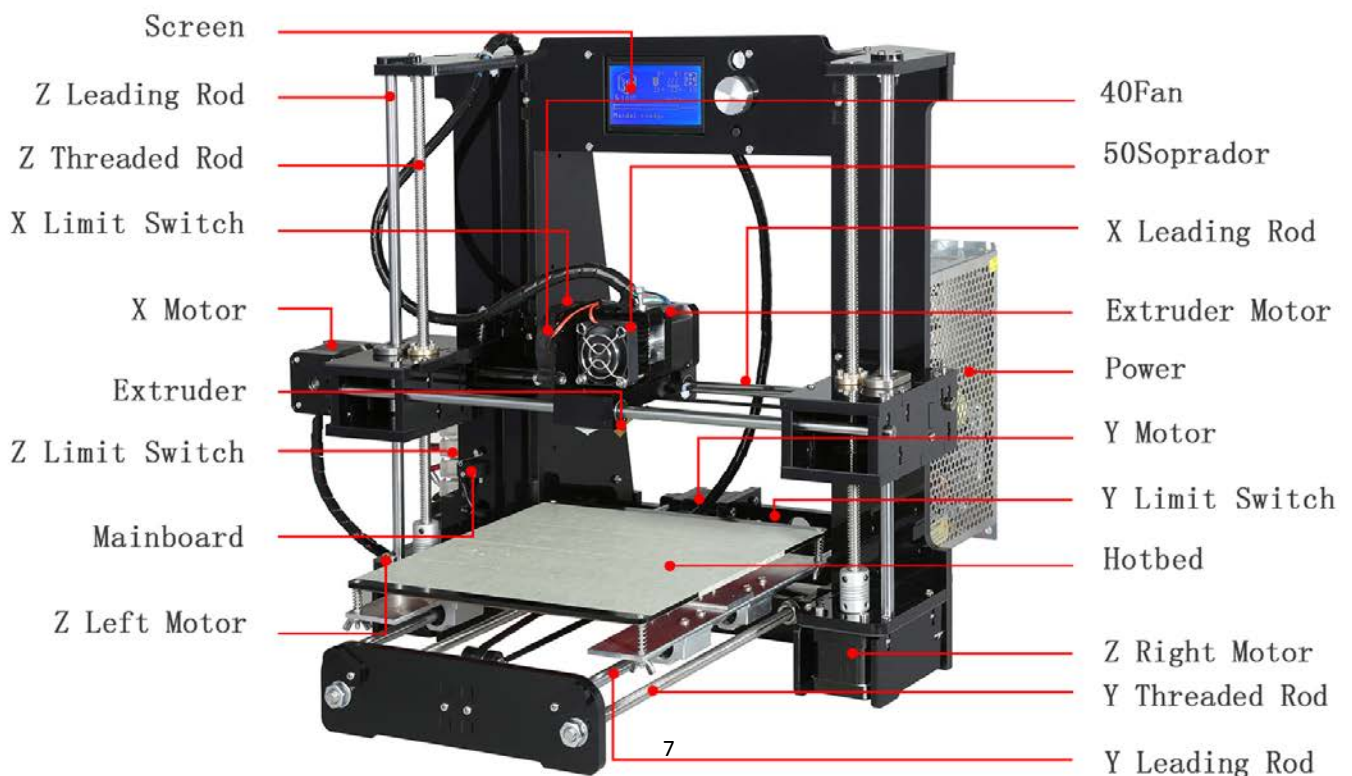
Note: ABS filament will emit a bit toxic gases when it melts .

## B. Product Details

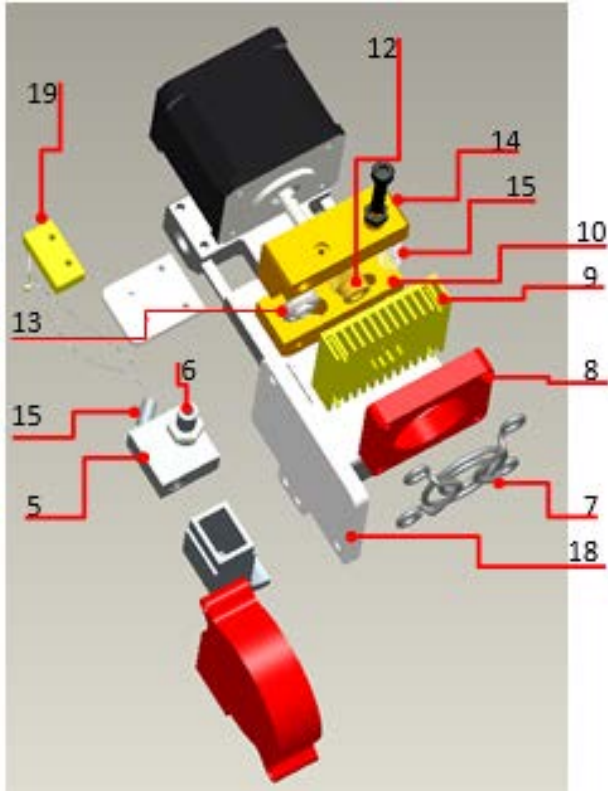
### 1.Specifications

Model: A6	Nozzle diameter: 0.4mm
Layer thickness: 0.1-0.3mm	Machine size: 480*400*400mm
Printing speed: 10-120mm/s	Machine weight: 7.6KG
X Y axis position accuracy: 0.012mm	Packing size: 450*446*215mm
Z axis position accuracy: 0.004m	Gross weight: 9.5KG
Printing material: ABS,PLA	Build size: 220*220*240mm
Material tendency: PLA	LCD screen: 12864 LCD
Filament diameter : 1.75mm	Offline printing: SD CARD
Software language: Multi-Language	File format: STL、G-Code、OBJ
Function of support: automatically	OS: windows(linux、 mac)
Software: Cura	Working condition: 10-30°C, Humidity 20-50%

### 2.Machine parts

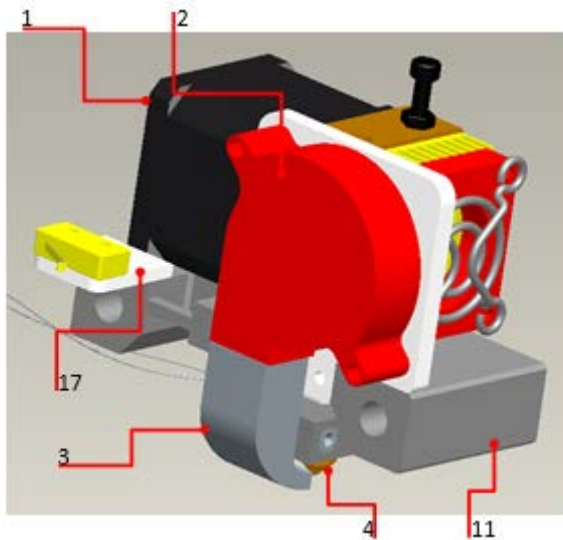


















### 3.Exploded drawing















NO	Part Name	Quantity
1	Extruder Motor	1
2	Blower	1
3	Wind Mouth	1
4	Nozzle(0.4mm)	1
5	Heating Block	1
6	Throat	1
7	Fan Cover	1
8	Fan	1
9	Heat Sink	1
10	Extruder Seat	1
11	Bend Parts	1
12	Brass Wheel	1
13	U-Bearing	1
14	Briquetting	1
15	Spring	1
16	Heating Pipe	1
17	Limited Switch Seat	1
18	Blower Seat	1
19	Limited Switch	1

















## 4.Tool List

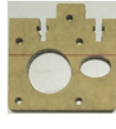


Anet 3D Printer A6 assembly parts list

Item	Material number	Picture	Name	QTY	Item	Material number	Picture	Name	QTY
1-1	1300100050		Main support plate	1	2-1	1700200016		Mainboard	1
1-2	1300100064		Side support plate	2	2-2	1700200017		12864 LCD Screen	1
1-3	1300100045		Back plate	1	2-3	1700100001		Hot bed fixed aluminum plate	1
1-4	1300100049		Front plate	1	2-4	1700200001		220mm*220mm*3mm Hot bed	1
1-5	1300100046		Filament support plate	2	2-5	1101900001		Plastic nippers	1
1-6	1300100047		Filament support plate connecting plate	1	2-6	1101900008		5mm*160mm Screwdriver	1

Item	Material number	Picture	Name	QTY	Item	Material number	Picture	Name	QTY
1-7	1300100057		Mainboard baffle	1	2-7	1700200020		Three parts below in this bag	1
2-23	1700100017		Guide rod 422mm 2pcs Guide rod 380mm 2pcs Guide rod 340mm 2pcs	6	2-7-1	1202100006		Wire 65CM	1
2-24	1700100018		T type lead screw M8*318mm 2pcs Threaded rod M8*400mm 2pcs Threaded rod M8*150mm 1pcs	5	2-7-2	1700200013 1700200014 1700200019		Z axis Limit switch A 20CM Y axis Limit switch B 50CM X axis Limit switch C 90CM	3
2-25	1700100019		Screw bag include below screws		2-7-3	1300400003 1300400004		Pillar washer M3*7 4pcs Pillar washer M3*15 4pcs	8
2-25-1	1700100020		M3*18 Spacer 42pcs		2-8	1700100013		Three parts below in this bag	1
2-25-2	1700100021		M3 Nut 52pcs	1	2-8-1	1101900010		3mm*130mm Screwdriver	1
2-25-3	1700100022		M8 Nut 14pcs M8 Spacer 12pcs	1	2-8-2	1101900004 1101900006 1101900005 1101900007		Hex wrench M1.5 Hex wrench M2 Hex wrench M2.5 Hex wrench M3	4

Item	Material number	Picture	Name	QTY	Item	Material number	Picture	Name	QTY
2-25-4	1700100023		M4*8 screw 16pcs M4*14 screw 4pcs	1	2-8-3	1101900002		Open spanner	1
2-25-5	1700100024		M3*30 screw 12pcs	1	2-9	1700200005		5015 Air blower	1
2-25-6	1700100025		M3*12 screw 19pcs	1	2-10	1700200027		Power line of hot bed	1
2-25-7	1700100026		M2*12 screw 6pcs M3 wing nut 4pcs Spring 4pcs	1	2-11	1700300009		Five parts below in this bag	1
2-25-8	1700100027		M3*6 screw 2pcs M3*10 screw 2pcs M3*25 screw 2pcs	1	2-11-1	1300100005		Y axis belt fixation clamp	4
3-1	1700300007		Left Z axis nut support	1	2-11-2	1300100010		Guide rod back up plate	8
3-2	1700300008		Right Z axis nut support	1	2-11-3	1300100007		Y axis Limit switch fixed plate	1

Item	Material number	Picture	Name	QTY	Item	Material number	Picture	Name	QTY
3-3	1700100028		Extruder	1	2-11-4	1300100042		Y axis motor support	1
3-4	1700200008		X axis motor	1	2-11-5	1300100040		X axis Limit switch fixed plate	1
3-5	1700200009		Y axis motor	1	2-12	1300100044		Z axis motor support Plate	4
3-6	1700200010		Z axis motor	2	2-13	1300100048		Screen baffle plate	1
3-7	1700300001		1.7M Belt	1	2-14	1300100039		5015 Air blower fixed plate	1
3-8	1202200007		1.5M wire	1	2-15	1300100063		Z axis motor fixed plate	2
3-9	1300500005		Four parts below in this bag	1	2-16	1300100065 1300100056		Support plate lock plate	2

Item	Material number	Picture	Name	QTY	Item	Material number	Picture	Name	QTY
3-9-1	1300500001		4.5M Winding pipe	1	2-17	1300100041		Y axis motor fixed plate	1
3-9-2	1300900001		Belting	10	2-18	1700300010		Y axis belt bearing support	1
3-9-3	1300400006		R clip	3	2-19	1300300002		Wind mouth	1
3-9-4	1300400005		Locating piece	2	2-20			1.5M Power line	1
3-10	1300200011		linear slider	4	2-22	1700200018		16GB TF card and card reader	1
3-11	1200100002		Power Supply	1	2-23	1202100031		X Motor line 40CM Y Motor line 40CM Left Z Motor line 40CM Right Z Motor line 90CM Extruder Motor line 90CM	5
3-12	1501500001		Finger package	10					

## C. Cura Software

### 1.Installation of Cura14.07

a: Where can I find the software?

1) SD card with shipment; 2) download from Internet;

b: Installation process

1) From SD card with shipment


Insert SD card and open the file

#### 1.1 File location in the TF card

1)Insert SD card , open the file

名称 ^	修改日期	类型	大小
 Installation Instruction	2016/7/7 星期四 ...	文件夹	
 Print Model STL	2016/6/22 星期三 ...	文件夹	
 Software	2016/7/7 星期四 ...	文件夹	
 Test file GCODE	2016/6/22 星期三 ...	文件夹	
 Tool List&other pictures	2016/7/7 星期四 ...	文件夹	

名称 ^	修改日期	类型	大小
 CH340G Drive	2016/7/7 星期四 ...	文件夹	
 Cura 14.07	2016/7/7 星期四 ...	文件夹	
 RepetierHost_1_0_5	2016/7/7 星期四 ...	文件夹	

名称 ^	修改日期	类型	大小
 Cura download link.txt	2016/7/1 星期五 ...	文本文档	1 KB
 Cura_14.07.exe	2015/8/11 星期二 ...	应用程序	18,377 KB

## 2) Download from Internet

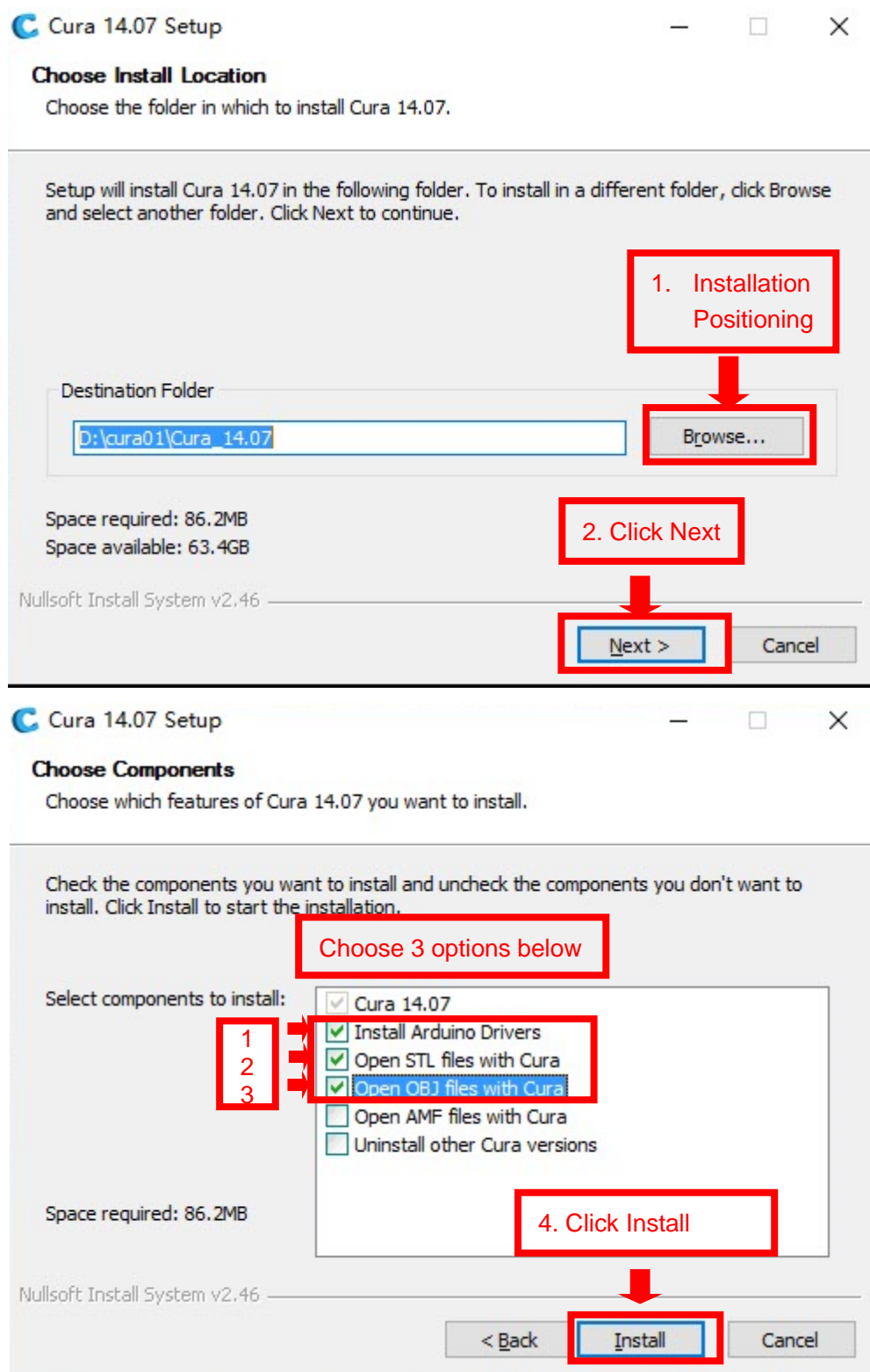
Official Website: <https://ultimaker.com/en/cura-software/list>

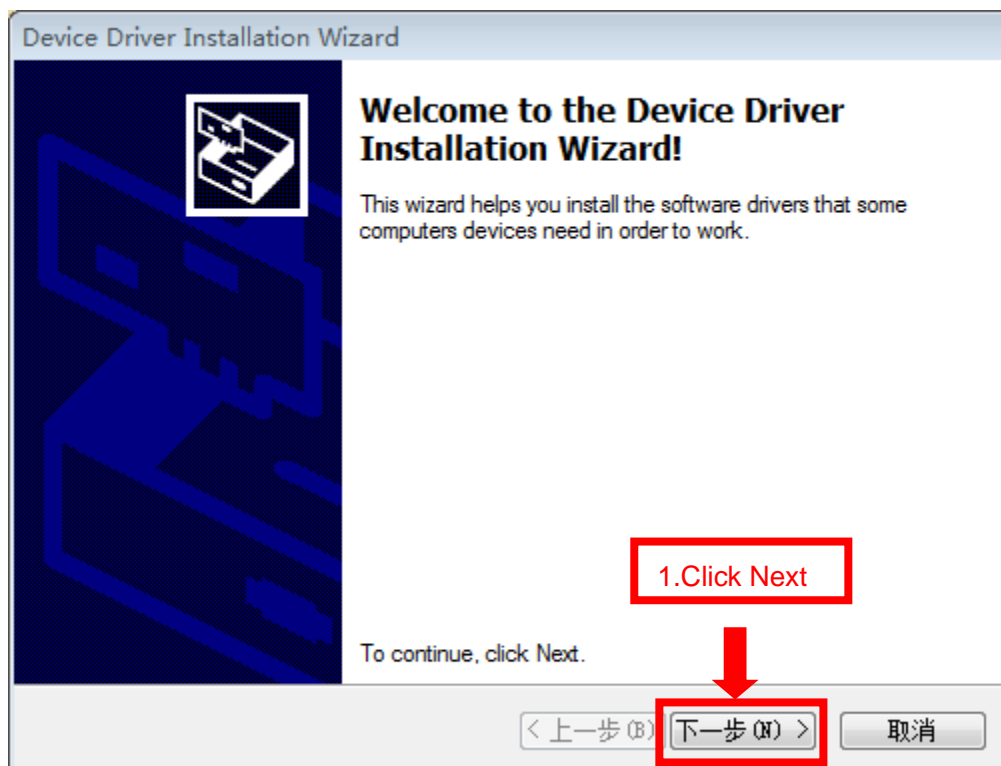
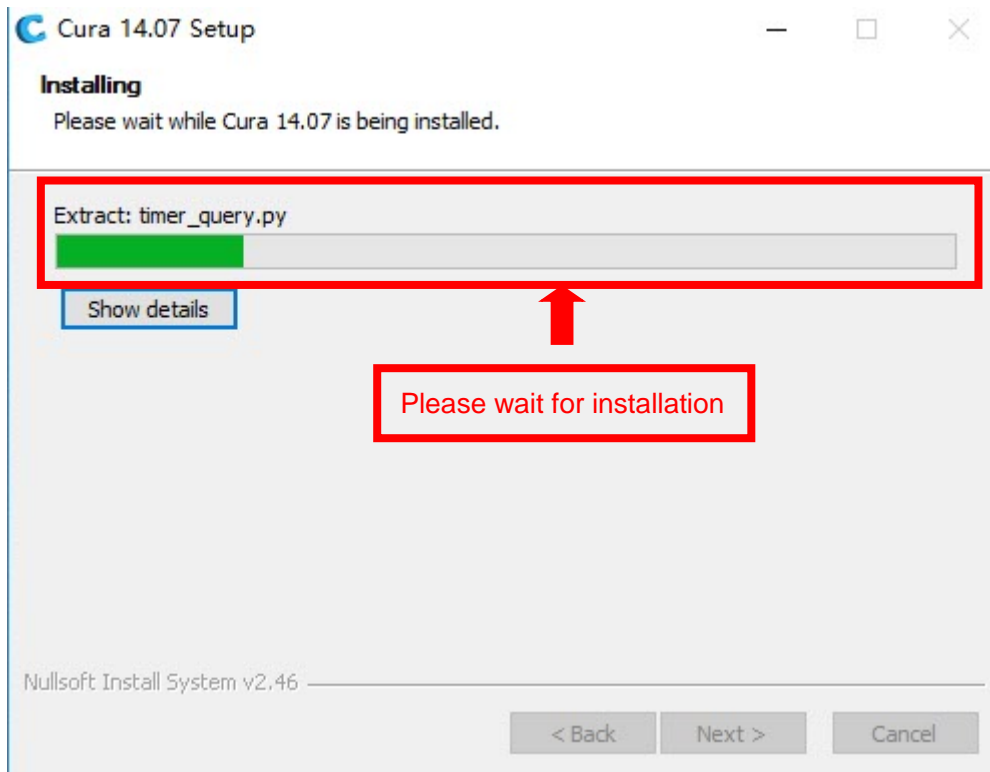
Choose corresponding software to download

### WINDOWS

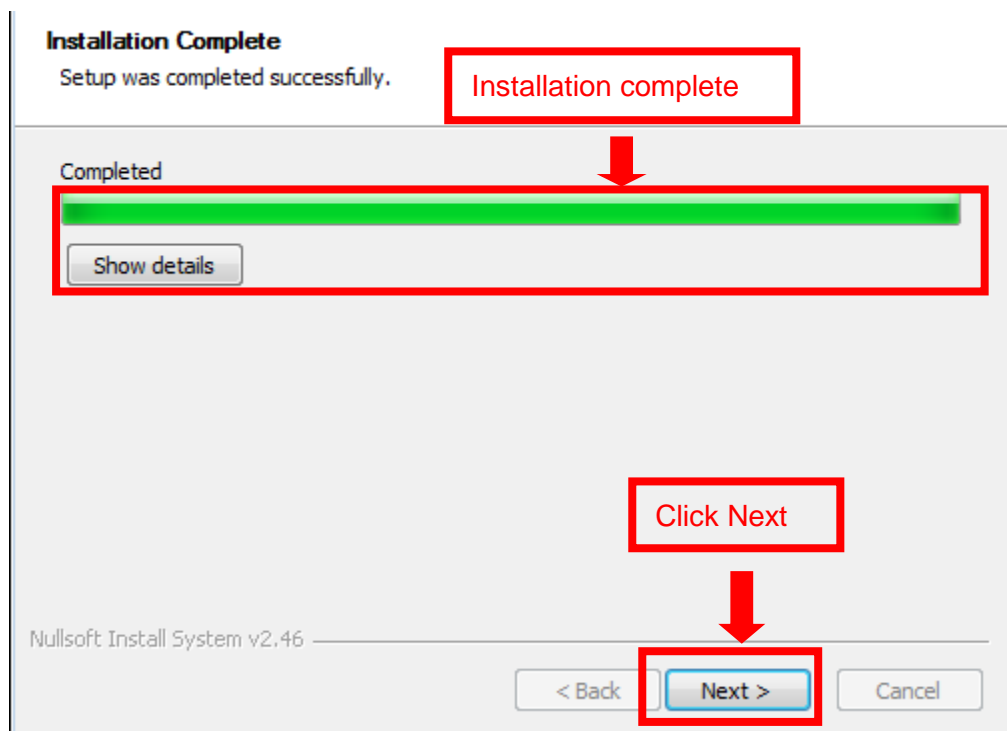
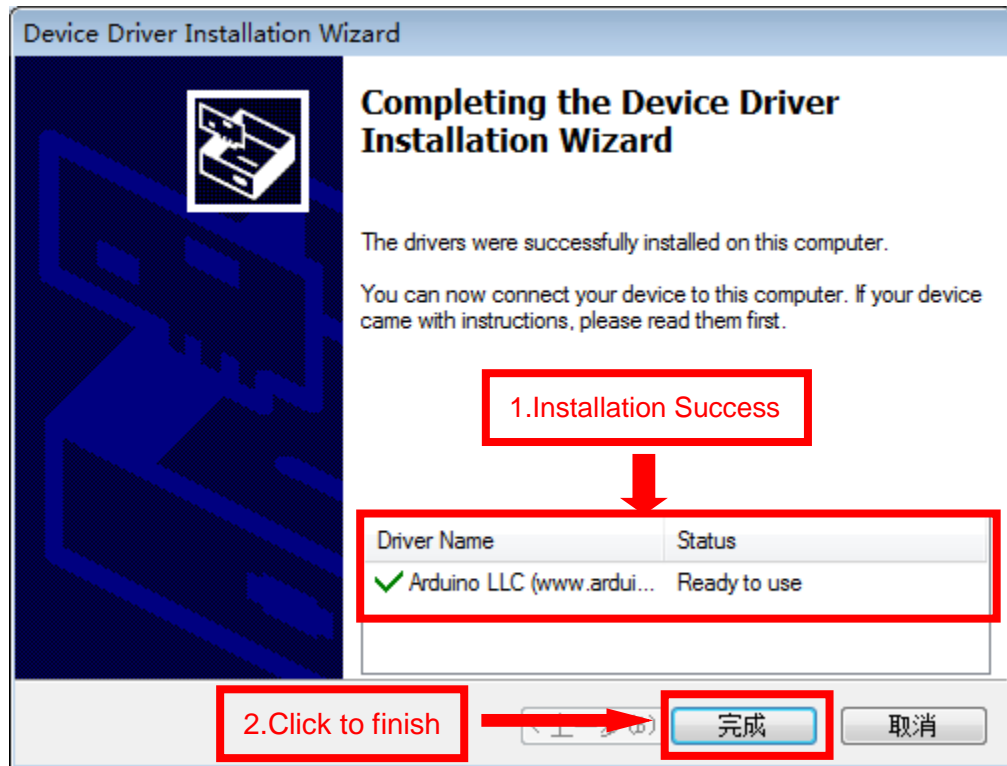
Version: 2.1.2 32 bit	Release date: 6/7/16
Version: 2.1.2 64 bit	Release date: 6/7/16
Version: 15.04.6	Release date: 6/7/16
Version: 15.04.5	Release date: 3/17/16
Version: 15.04.4	Release date: 1/5/16
Version: 15.04.03	Release date: 11/4/15
Version: 15.04.2	Release date: 7/28/15
Version: 15.04	Release date: 4/15/15
Version: 15.02.1	Release date: 2/19/15
Version: 15.01	Release date: 1/30/15
Version: 14.12	Release date: 12/15/14
Version: 14.09	Release date: 9/19/14
Version: 14.07	Release date: 7/3/14
Version: 14.06	Release date: 6/16/14
Version: 14.03	Release date: 3/17/14
Version: 14.01	Release date: 1/10/14
Version: 13.12	Release date: 12/23/13
Version: 13.11	Release date: 11/22/13
Version: 13.10	Release date: 10/18/13
Version: 13.06.4	Release date: 6/26/13
Version: 13.04	Release date: 4/26/13
Version: 13.03	Release date: 3/8/13
Version: 12.12	Release date: 12/24/12
Version: 12.11	Release date: 11/12/12
Version: 12.10	Release date: 11/8/12

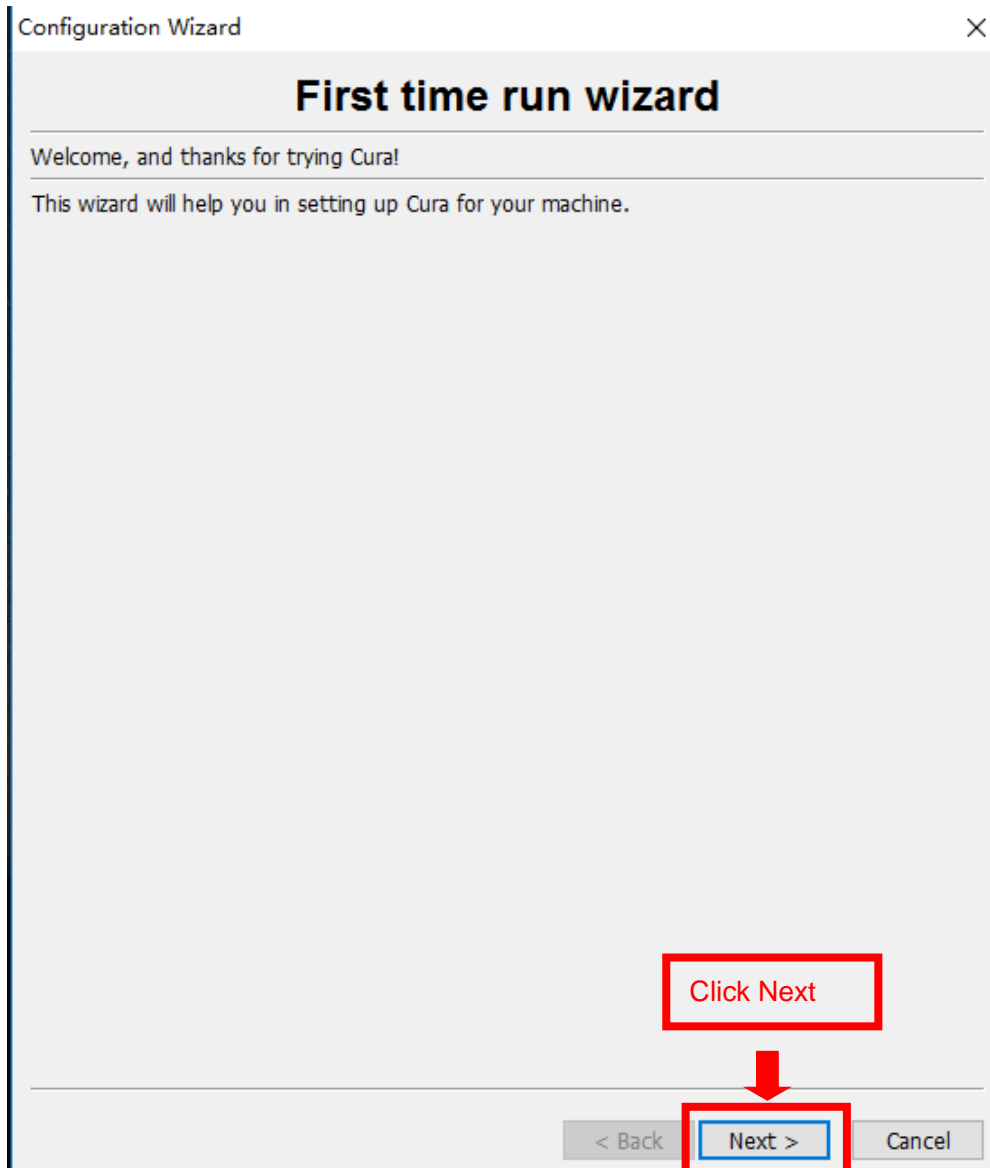
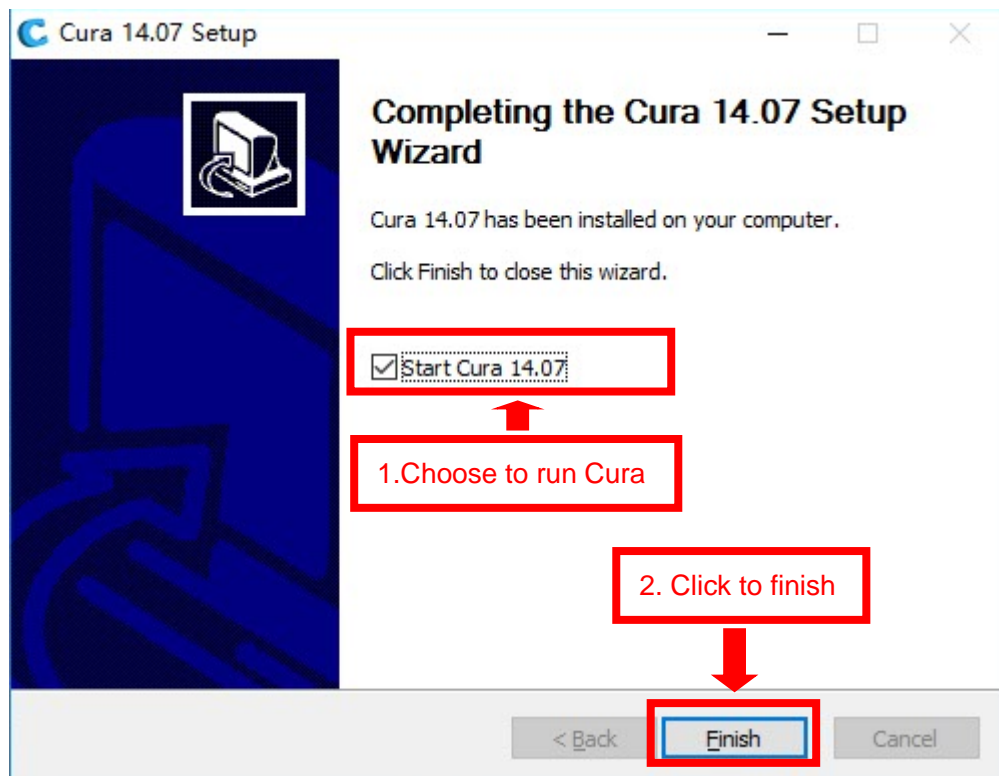
## b. Software Installation Process











Configuration Wizard

## Select your machine

What kind of machine do you have:

- ☐ Ultimaker2
- ☐ Ultimaker Original
- ☐ Printbot
- ☒ Other (Ex: RepRap, MakerBot)

The collection of anonymous usage information helps with the continued improvement of Cura.  
This does NOT submit your models online nor gathers any privacy related information.

Submit anonymous usage information: ☒

For full details see: <http://wiki.ultimaker.com/Cura:stats>

3.Click Next

< Back Next > Cancel

## Other machine information

The following pre-defined machine profiles are available

Note that these profiles are not guaranteed to give good results, or work at all. Extra tweaks might be required.

If you find issues with the predefined profiles, or want an extra profile.

Please report it at the github issue tracker.

- ☐ BFB
- ☐ DeltaBot
- ☐ MakerBotReplicator
- ☐ Mendel
- ☐ Prusa Mendel i3
- ☐ punchtec Connect XL

☒ Custom...

1. Choose to customize

2. Click Next

< Back

Next >

Cancel

Configuration Wizard

×

## Custom RepRap information

RepRap机器几乎都不一样，所以你需要设置你自己的参数。  
请在运行机器之前检查这些默认参数  
如果你想要添加一个默认的机器参数配置，  
请在github上提交

你需要手动安装Marlin或者Sprinter固件

机器名称

A6

机器宽度 (mm)

220

机器深度 (mm)

220

机器高度 (mm)

230

喷嘴大小 (mm)

0.4

热床

☒

0,0,0为打印初始中心(RoStock)

☐

This is A6 parameter

You can customize name here.

We default these data .  
You can fill in according to  
actual condition

Choose this option

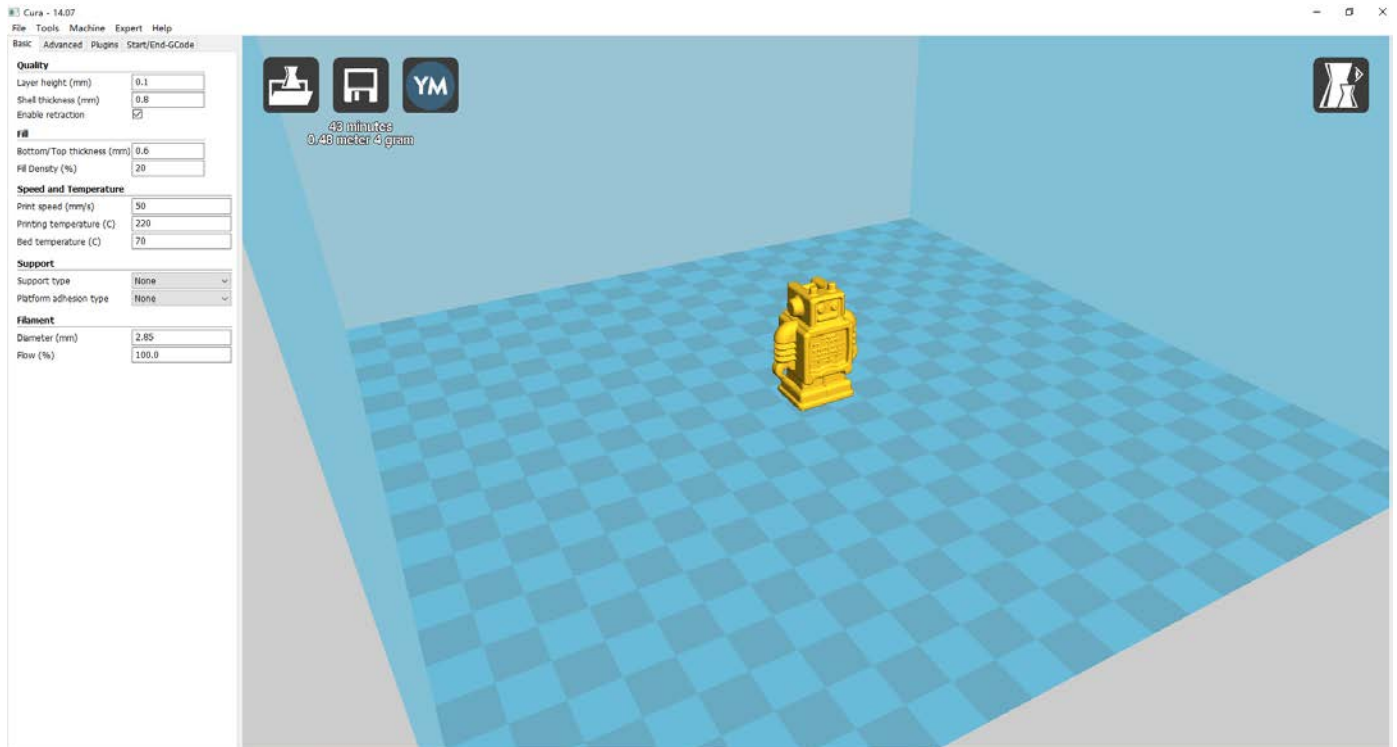
DO NOT choose this option !!!

1.Click to finish

< Back

Finish

Cancel



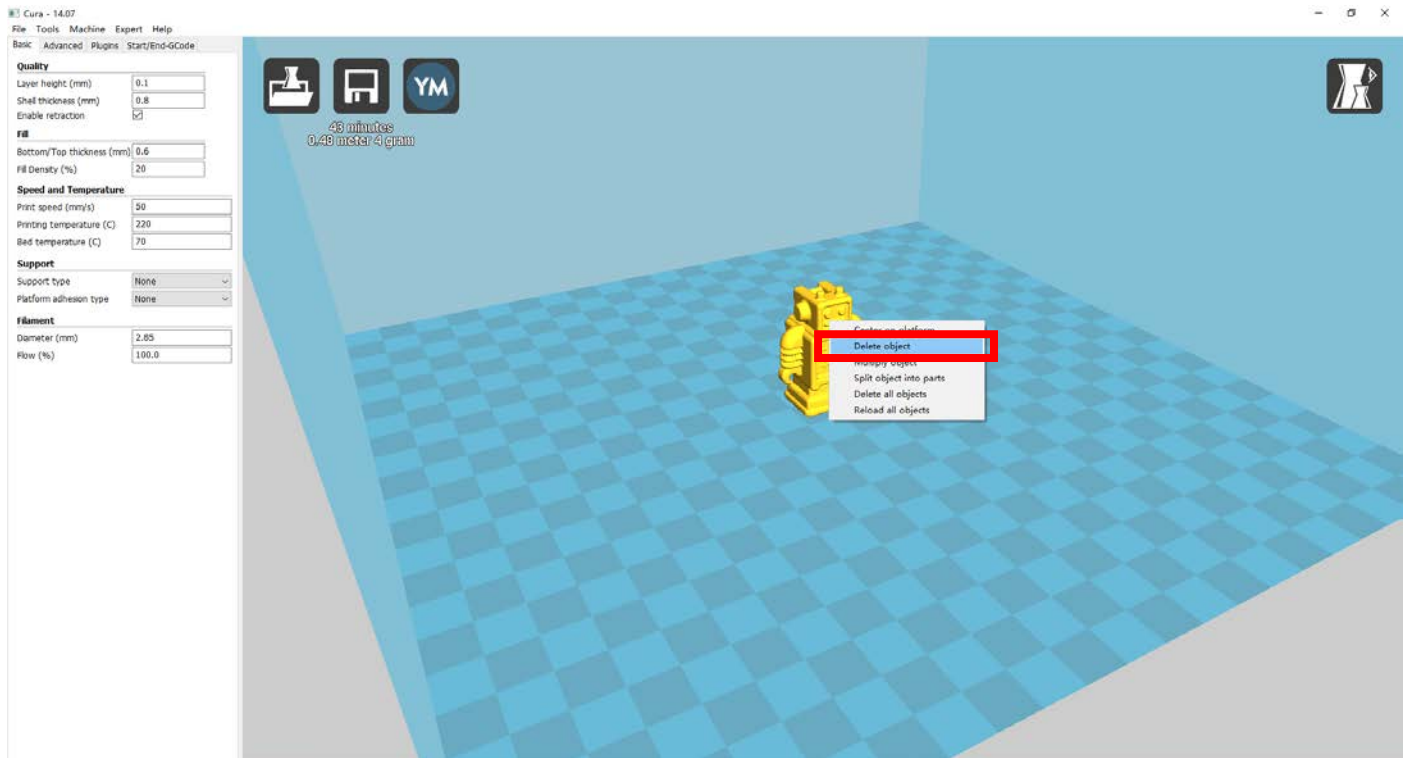
Now you have finished the installation. Next , enter Cura .

## 2. Cura Setting

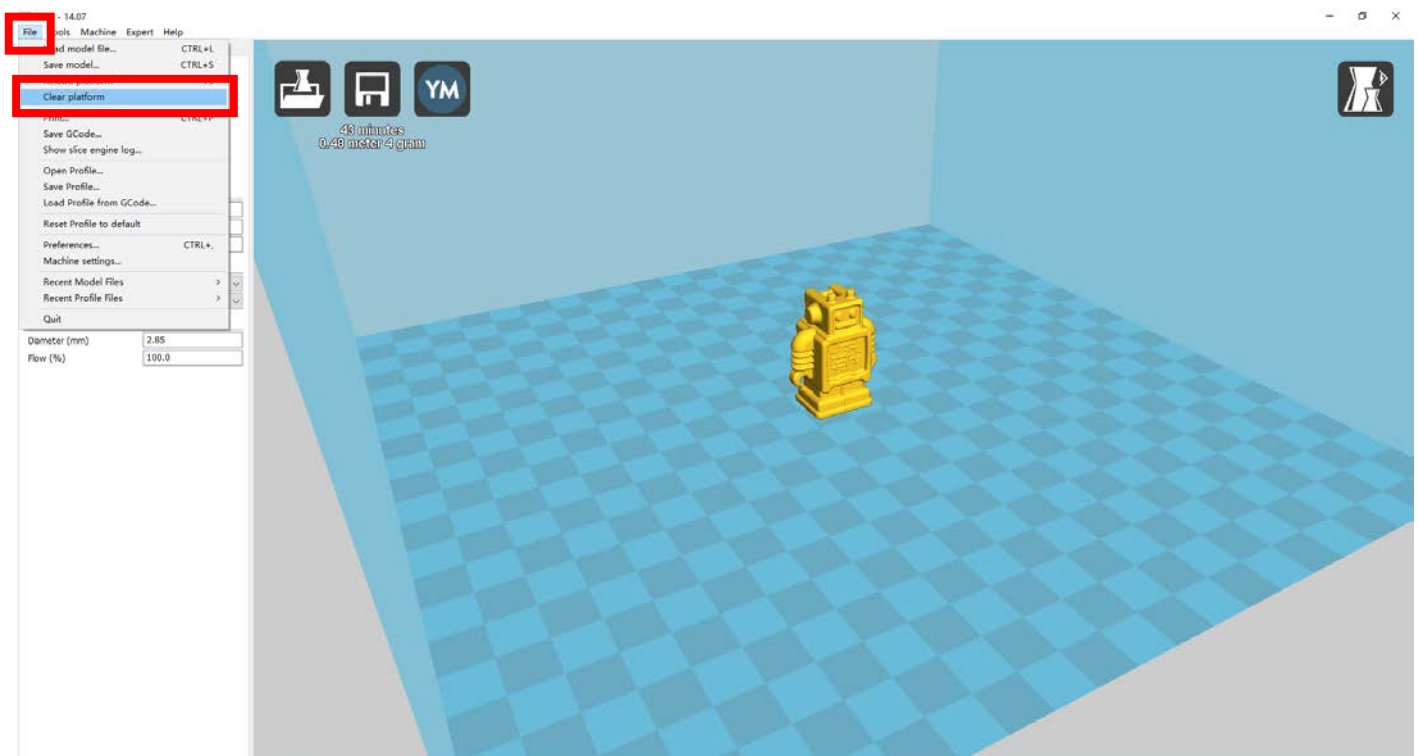
### 2.1 Clear platform

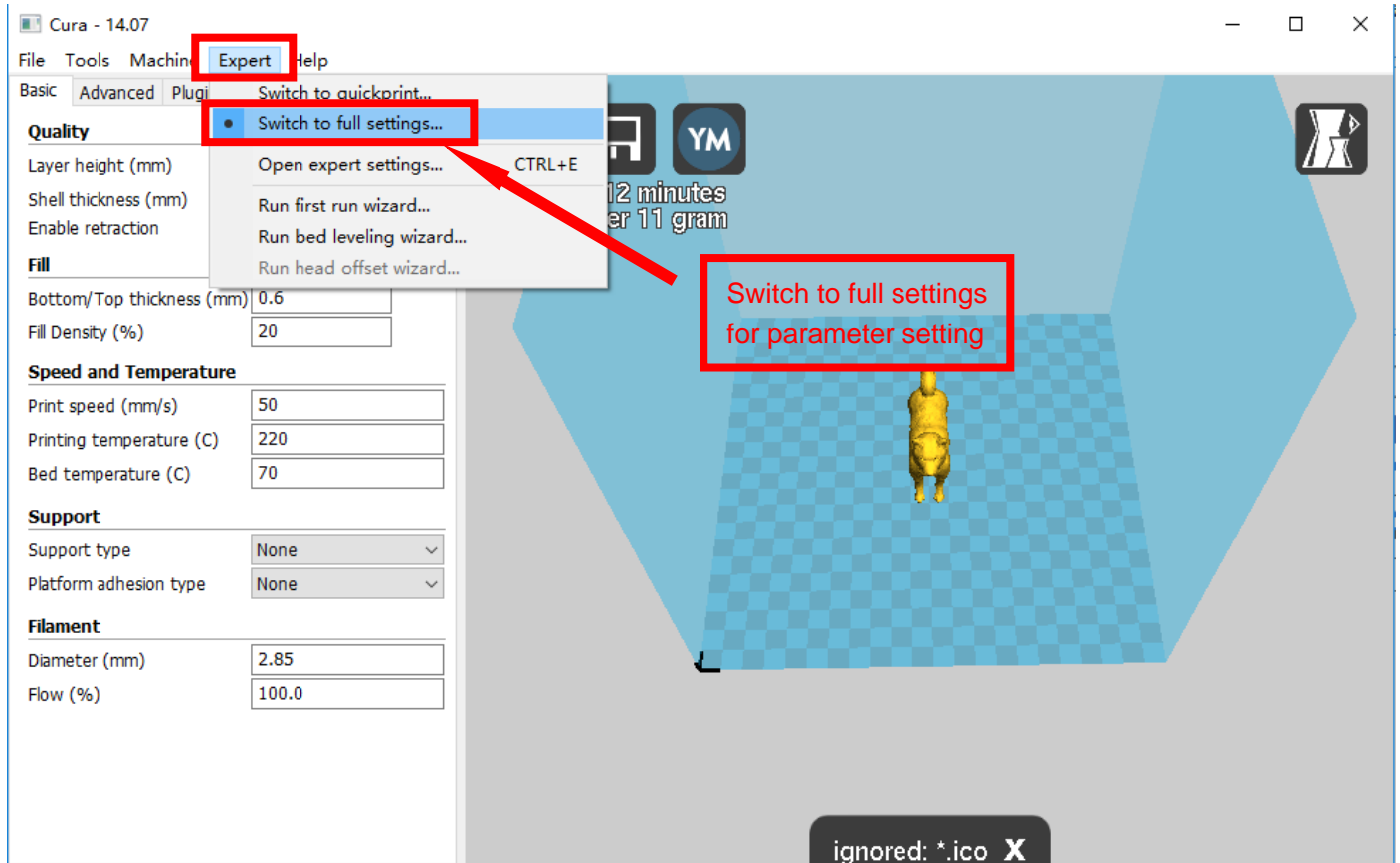
Delete the dog. Two ways for you :

1.Move mouse to dog ,right click, click “delete object”.

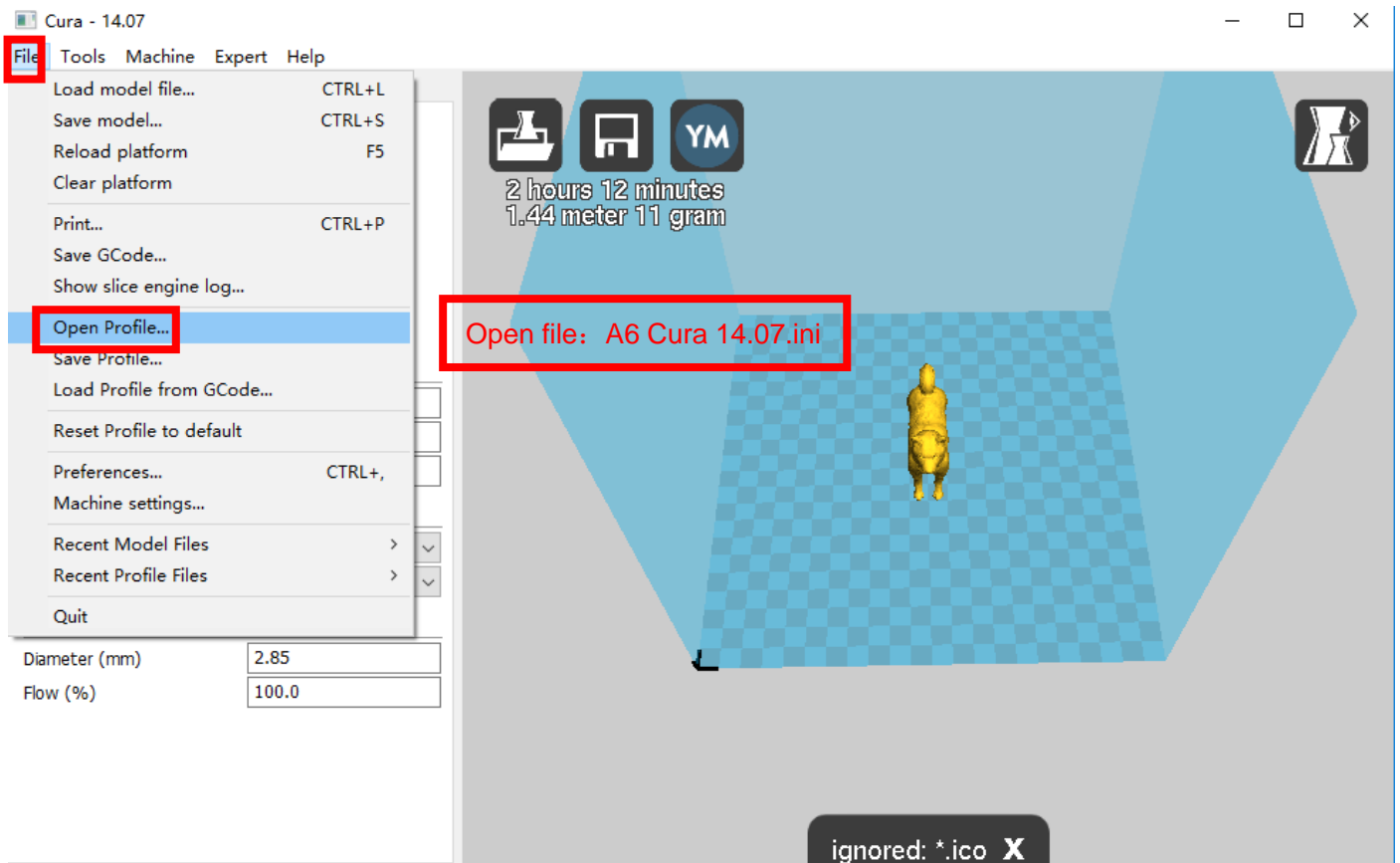


2. Left click “File” , choose ”Clear platform”.



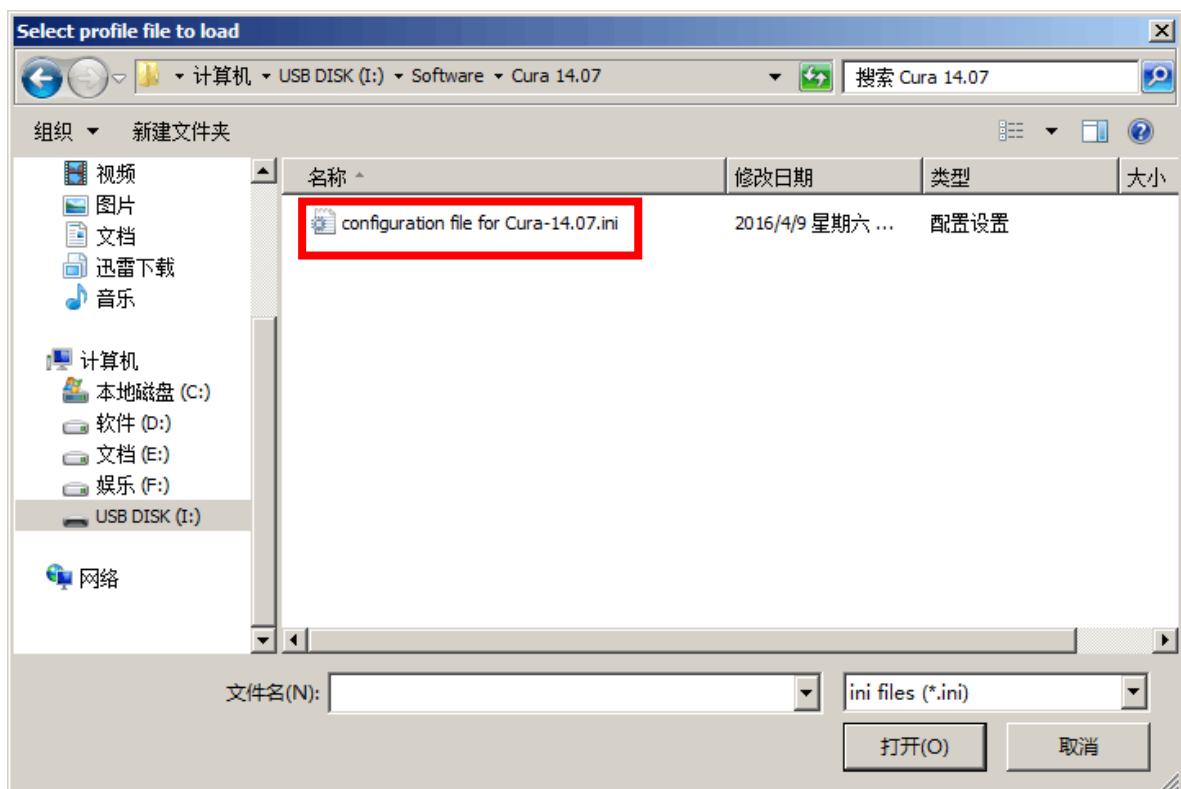


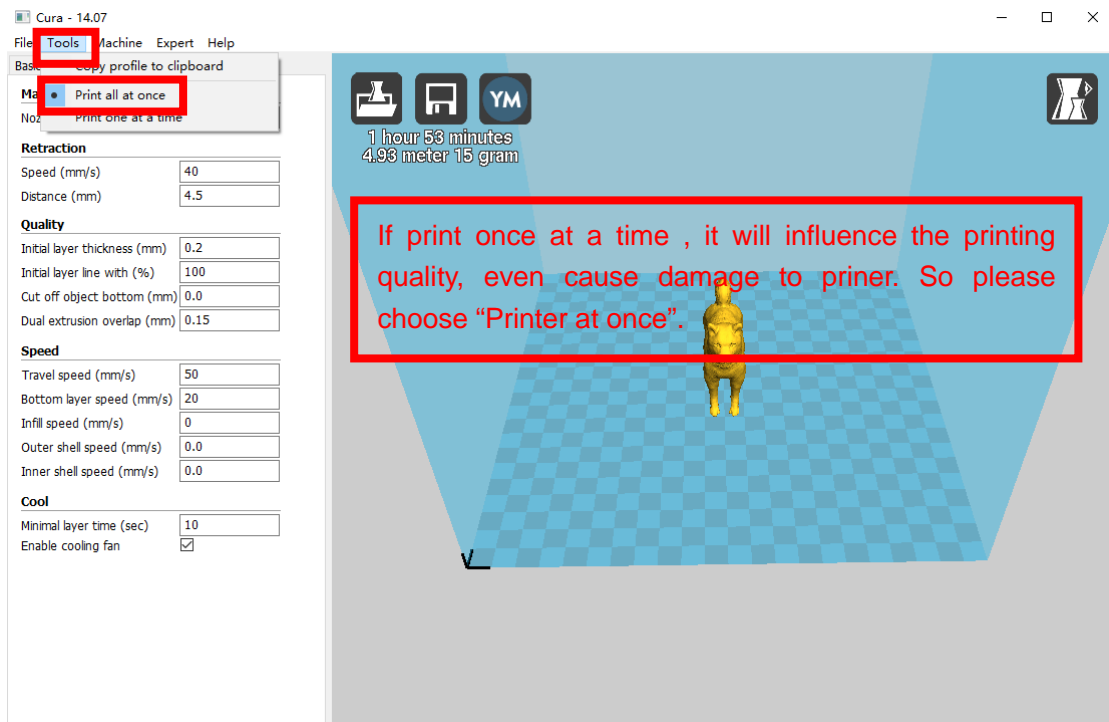
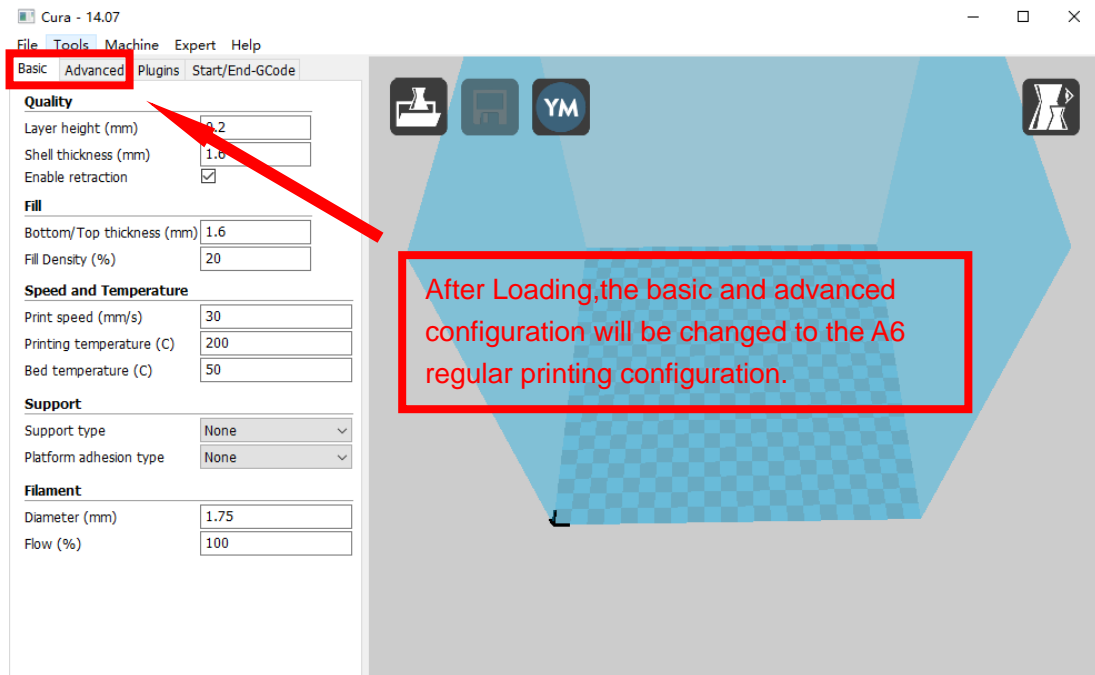




Position of configuration file: Computer/SD card)/ configuration file for cura-14.07

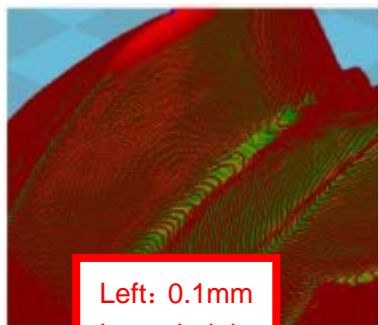
(suggestion :keep this file copy to your computer)



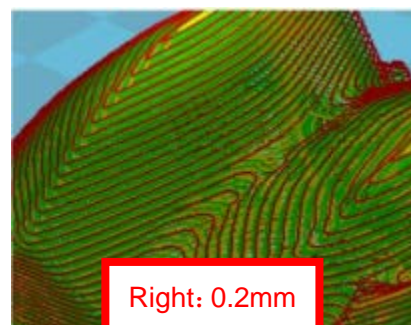


## 2.3 Layer height settings

Layer height: 0.1mm cost long time but have the best printing precision. 0.2mm cost half time compared to 0.1mm , but have general printing precision. 0.3 cost less time with not good precision. It defaults 0.2mm.



Left: 0.1mm  
Layer height



Right: 0.2mm  
Layer height

Layer height setting

Cura - 14.07

File Tools Machine Expert Help

Basic Advanced Plugins Start/End-GCode

**Quality**

Layer height (mm)

Shell thickness (mm)

Enable retraction ☒

**Fill**

Bottom/Top thickness (mm)

Fill Density (%)

**Speed and Temperature**

Print speed (mm/s)

Printing temperature (C)

Bed temperature (C)

**Support**

Support type

Platform adhesion type

**Filament**

Diameter (mm)

Flow (%)

Printing temperature (C)

Bed temperature (C)

**Support**

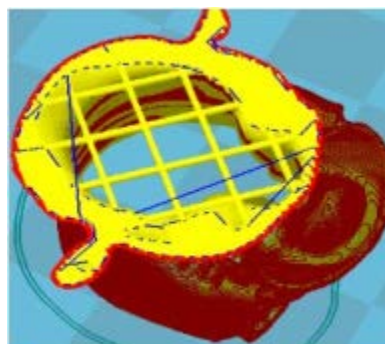
Support type

Platform adhesion type

**Filament**

Diameter (mm)

Flow (%)



0.8mm



1.2mm



2mm

Shell thickness setting

**Quality**

Layer height (mm) 0.2

Shell thickness (mm) 1.2

Enable retraction ☒**Fill**

Bottom/Top thickness (mm) 1.2

Fill Density (%) 20

**Speed and Temperature**

Print speed (mm/s) 30

Printing temperature (C) 200

Bed temperature (C) 50

**Support**

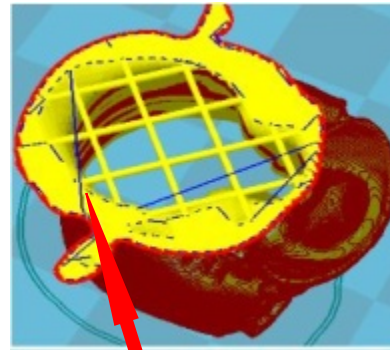
Support type None

Platform adhesion type None

**Filament**

Diameter (mm) 1.75

Flow (%) 100

The  
the le

Enable

Enable retraction to avoid filaments leakage when nozzles move in empty area

**Quality**

Layer height (mm) 0.2

Shell thickness (mm) 1.2

Enable retraction ☒**Fill**

Bottom/Top thickness (mm) 1.2

Fill Density (%) 20

**Speed and Temperature**

Print speed (mm/s) 30

Printing temperature (C) 200

Bed temperature (C) 50

**Support**

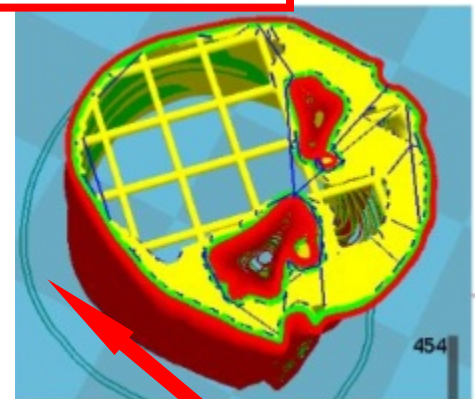
Support type None

Platform adhesion type None

**Filament**

Diameter (mm) 1.75

Flow (%) 100



Bottom/Top thickness  
Under the same  
fill density

When fill density is less than 20%, it's easy for 0.6mm thickness to cause hollow on the top. 1.2mm normally won't have this issue.

Bottom/Top thickness

Bottom/Top thickness

Cura - 14.07

File Tools Machine Expert Help

Basic Advanced Plugins Start/End-GCode

**Quality**

Layer height (mm) 0.2

Shell thickness (mm) 1.2

Enable retraction ☒

**Fill**

Bottom/Top thickness (mm) 1.2

Fill Density (%) 20

**Speed and Temperature**

Print speed (mm/s) 30

Printing temperature (C) 200

Bed temperature (C) 50

**Support**

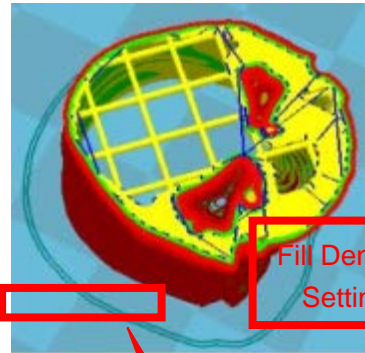
Support type None

Platform adhesion type None

**Filament**

Diameter (mm) 1.75

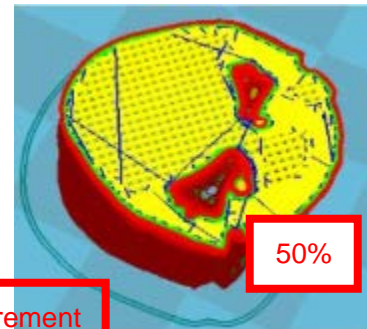
Flow (%) 100



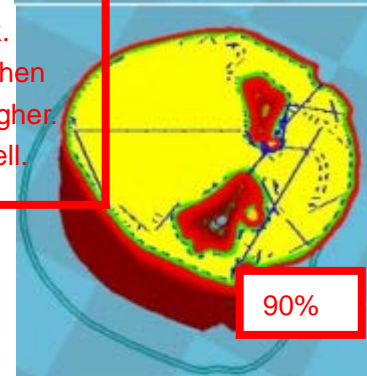
Fill Density Setting

20%

Fill Density: If strength requirement is not so high , set 10% is ok. Please improve fill density when strength requirement gets higher. Printing time will go up as well.



50%



90%

Printing Speed set

This is default speed. If other speed is set, it prints more accurately while taking more time. High printing speed takes less time but may not print accurately, making the model less precise. Normally 40-60 print speed is suitable.

Printing Temperature

PLA filament temperature setting: nozzle: 200-220°C

ABS filament temperature setting: nozzle: 230-250°C

Cura - 14.07

File Tools Machine Expert Help

Basic Advanced Plugins Start/End-GCode

**Quality**

Layer height (mm) 0.2

Shell thickness (mm) 1.2

Enable retraction ☒

**Fill**

Bottom/Top thickness (mm) 1.2

Fill Density (%) 20

**Speed and Temperature**

Print speed (mm/s) 30

Printing temperature (C) 200

Bed temperature (C) 50

**Support**

Support type None

Platform adhesion type None

**Filament**

Diameter (mm) 1.75

Flow (%) 100



**Quality**

Layer height (mm)	0.2
Shell thickness (mm)	1.2
Enable retraction	<input checked="" type="checkbox"/>

**Fill**

Bottom/Top thickness (mm)	1.2
Fill Density (%)	20

**Speed and Temperature**

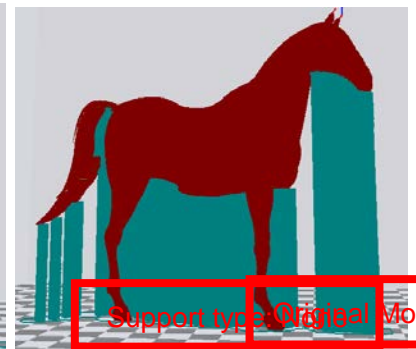
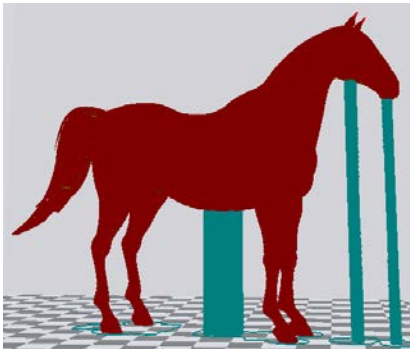
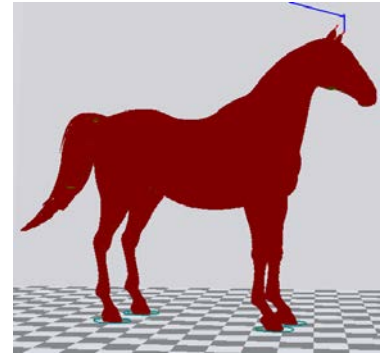
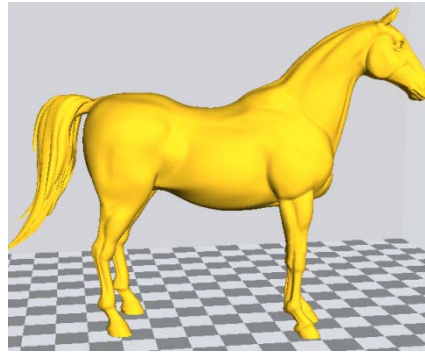
Print speed (mm/s)	30
Printing temperature (C)	200
Bed temperature (C)	50

**Support**

Support type	None
Platform adhesion type	None
	Touching buildplate
	Everywhere

**Filament**

Diameter (mm)	1.75
Flow (%)	100



Support type: Original Model

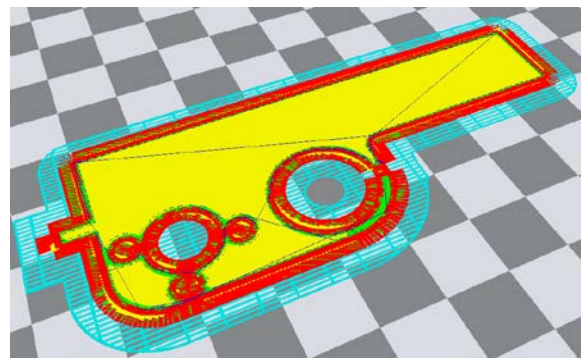
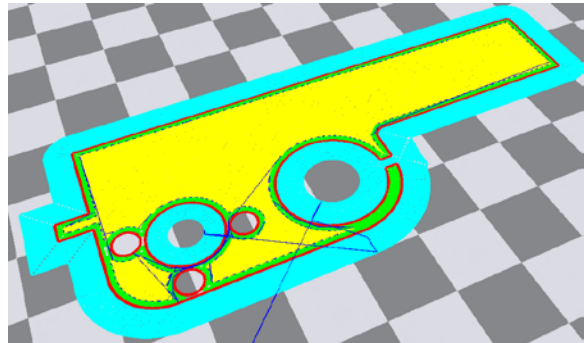
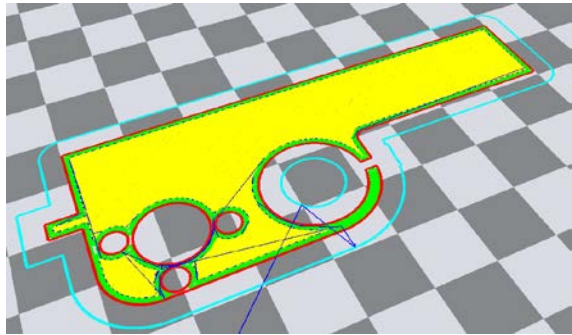
Attention: Normally we add support to complex model or model with vacant parts. It may have influence on the surface if you choose everywhere. You'd better circle around the model and try to avoid unnecessary support.

Support type setting

Support type: Touching

Support type: Everywhere





None: no support

Brim: Touch with the adge

Cura - 14.07

File Tools Machine Expert Help

Basic Advanced Plugins Start/End-GCode

Quality

Layer height (mm)

0.2

Shell thickness (mm)

1.2

Enable retraction

☒

Fill

Bottom/Top thickness (mm)

1.2

Fill Density (%)

20

Speed and Temperature

Print speed (mm/s)

30

Printing temperature (C)

200

Bed temperature (C)

50

Support

Support type

None

Platform adhesion type

None

Filament

Diameter (mm)

2.75

Flow (%)

100

None

Brim

Raft



Raft: Totally touch with the bottom

Attention: please choose None if the printing platform is ready and the high temperature adhesive tape is good. Please choose Brim when the model is small . Choosing Raft makes it difficult to separate model from the platform



Cura - 14.07

File Tools Machine Expert Help

Basic Advanced Plugins Start/End-GCode

**Quality**

Layer height (mm)	0.2
Shell thickness (mm)	1.6
Enable retraction	<input checked="" type="checkbox"/>

**Fill**

Bottom/Top thickness (mm)	1.6
Fill Density (%)	20

**Speed and Temperature**

Print speed (mm/s)	30
Printing temperature (C)	200
Bed temperature (C)	50

**Support**

Support type	None
Platform adhesion type	None

**Filament**

Diameter (mm)	1.75
Flow (%)	100

Attention: A6 use 1.75mm filament

Attention:

Flow is proportion of filament, we suggest to use 100  
Increasing flow & decrease diameter has the similar effect

Model surface gets many bumps when flow is too big; model frame gets flimsy if flow is too small.

Cura - 14.07

File Tools Machine Expert Help

Basic **Advanced** Plugins Start/End-GCode

**Machine**

Nozzle size (mm)

**Retraction**

Speed (mm/s)

Distance (mm)

**Quality**

Initial layer thickness (mm)

Initial layer line width (%)

Cut off object bottom (mm)

Dual extrusion overlap (mm)

**Speed**

Travel speed (mm/s)

Bottom layer speed (mm/s)

Infill speed (mm/s)

Outer shell speed (mm/s)

Inner shell speed (mm/s)

**Cool**

Minimal layer time (sec)

Enable cooling fan ☒

We suggest not to change it , A6 default 0.4mm

We suggest not to change it , or use the data in the picture

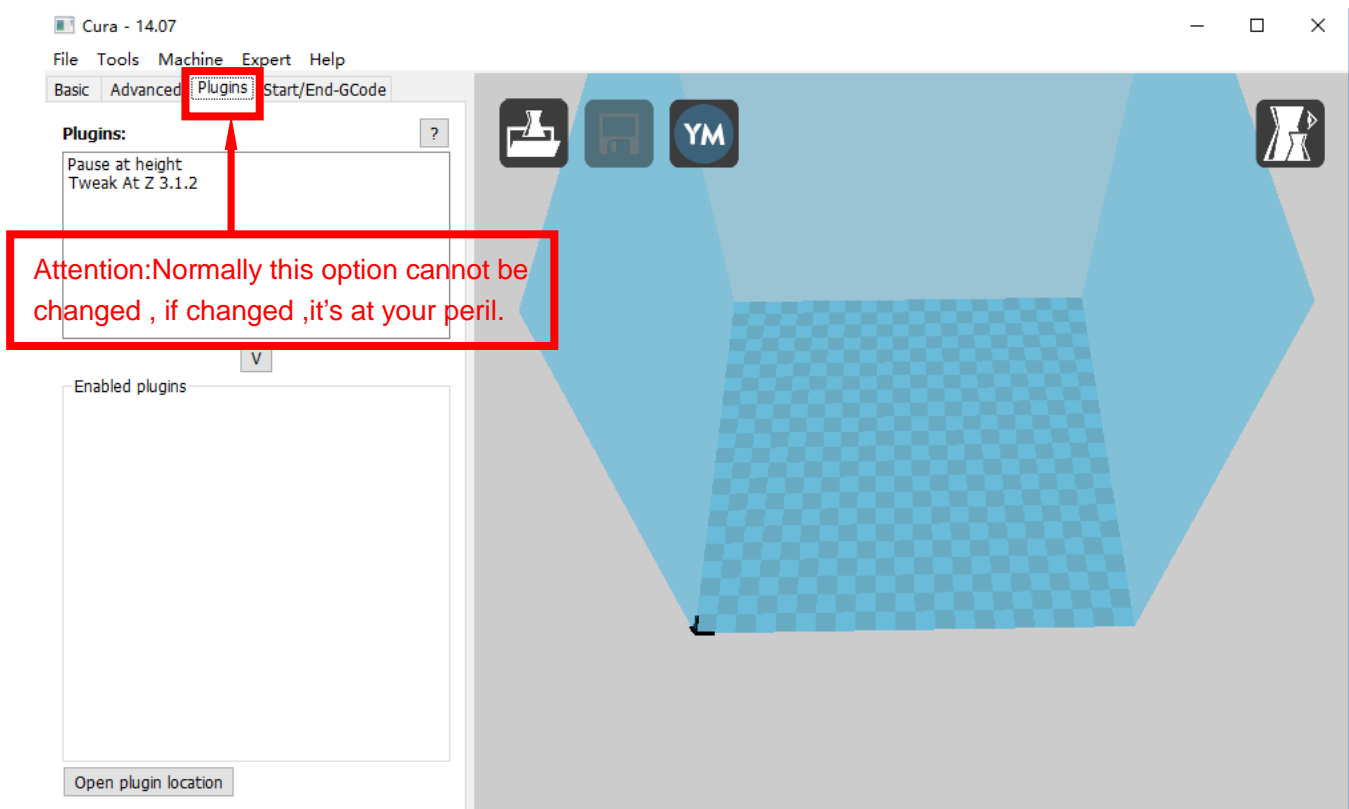
We suggest 0.2mm to avoid initial layer tilt, 0.3mm is more easy to separate from the platform.

Initial layer line proportion

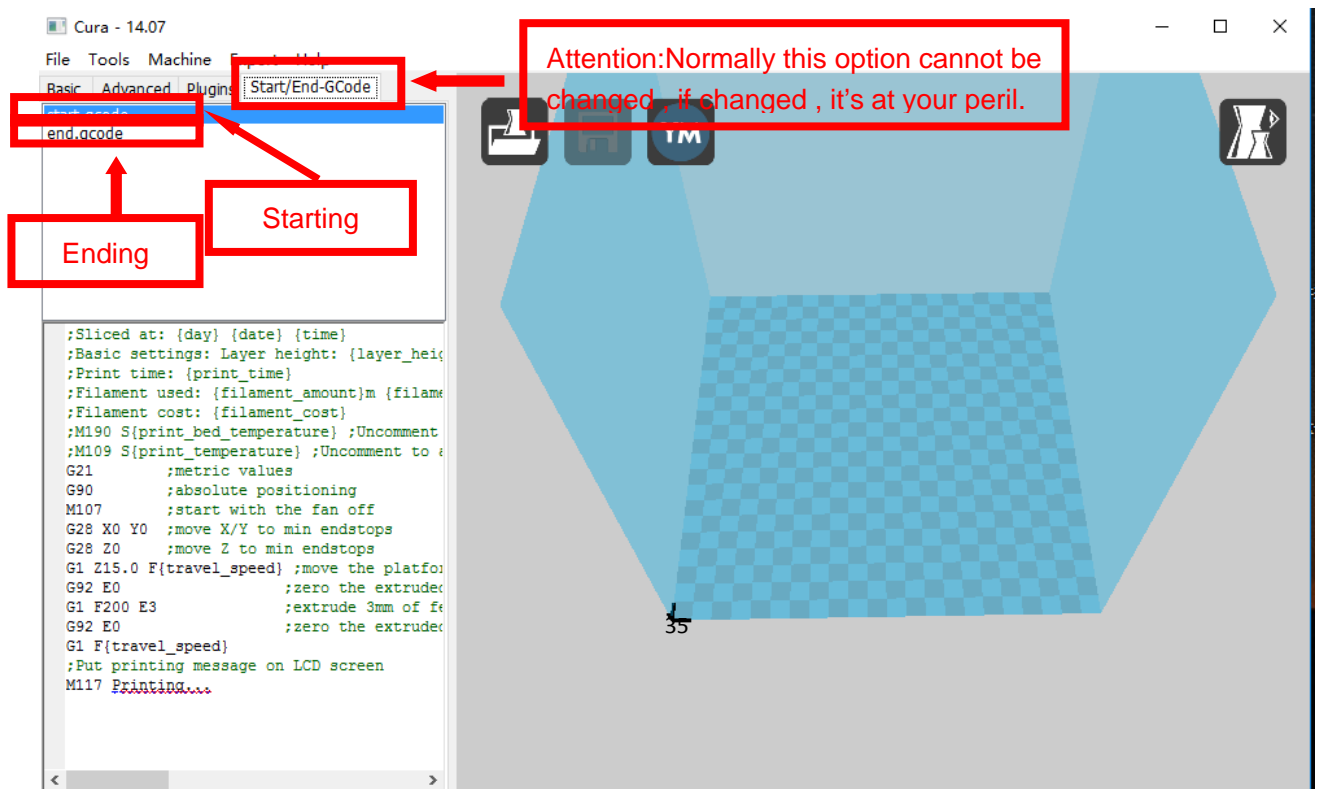
"0" means using default speed

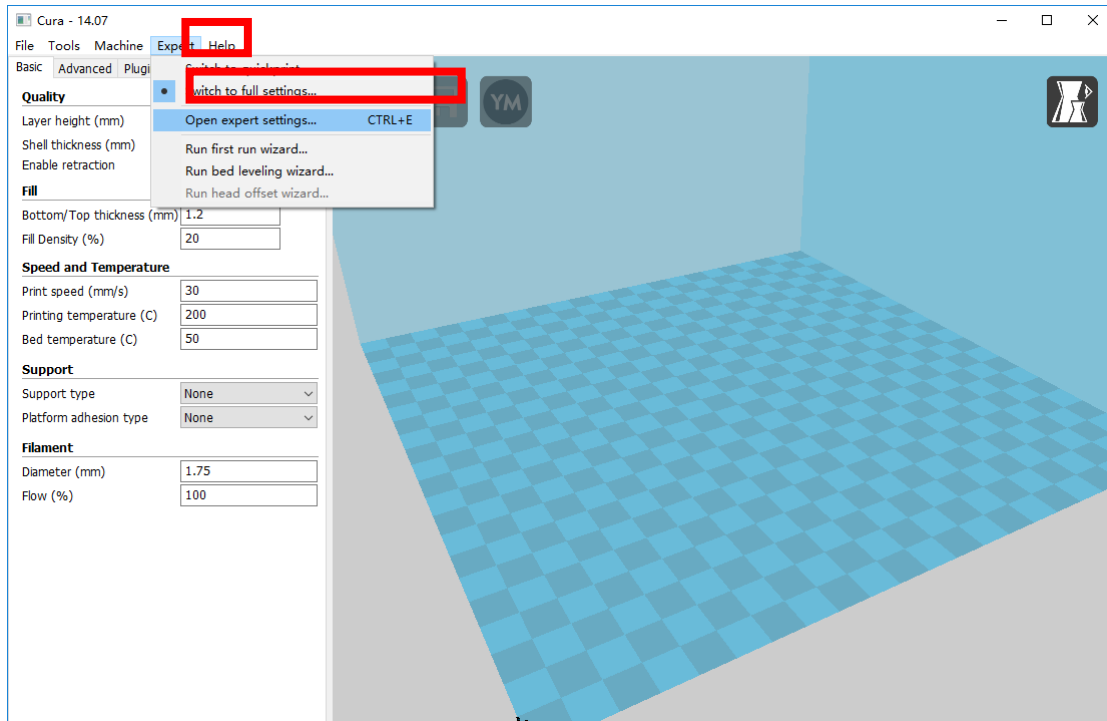
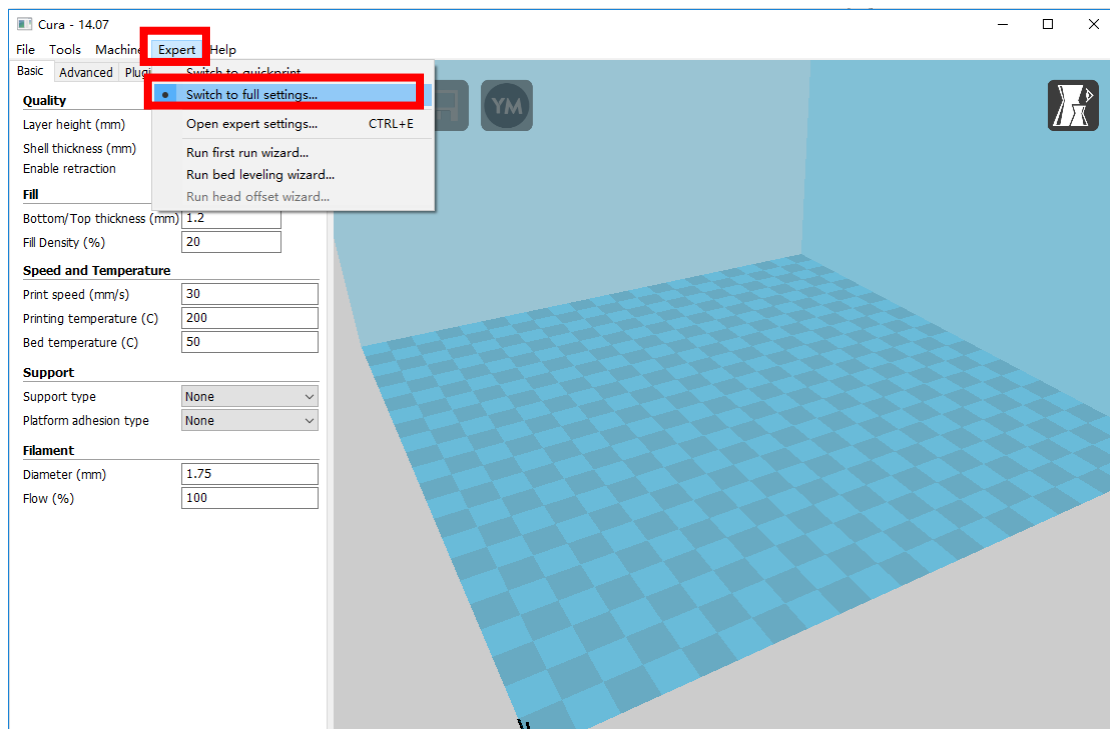
Min printing time for each layer. When the time is less than 10 , it prints slower. It's better to decrease time when printing thin and long models.

We suggest not choose this when printing ABS.



### 3.Expert Setting

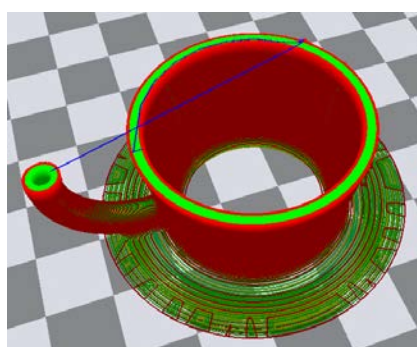




Expert config X

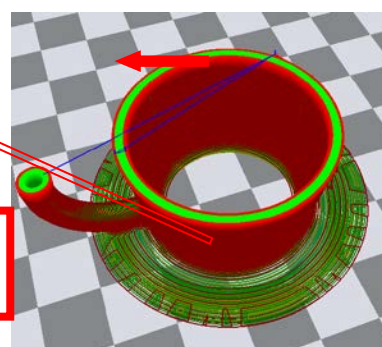
Retraction		Support	
Minimum travel (mm)	1.5	Structure type	Lines
Enable combing	<input checked="" type="checkbox"/>	Overhang angle for support (deg)	60
Minimal extrusion before retracting (mm)	0.02	Fill amount (%)	10
Z hop when retracting (mm)	0.0	Distance X/Y (mm)	0.7
		Distance Z (mm)	0.15
Skirt		Black Magic	
Line count	1	Spiralize the outer contour	<input type="checkbox"/>
Start distance (mm)	3.0	Only follow mesh surface	<input type="checkbox"/>
Minimal length (mm)	150.0		
Cool		Brim	
Fan full on at height (mm)	0.5	Brim line amount	4
Fan speed min (%)	30		
Fan speed max (%)	100	Raft	
Minimum speed (mm/s)	10	Extra margin (mm)	5
Cool head lift	<input type="checkbox"/>	Line spacing (mm)	3
		Base thickness (mm)	0.3
Infill		Base line width (mm)	1
Solid infill top	<input checked="" type="checkbox"/>	Interface thickness (mm)	0.27
Solid infill bottom	<input checked="" type="checkbox"/>	Interface line width (mm)	0.4
Infill overlap (%)	15	Airgap	0.22
		Surface layers	2
		Fix horrible	
		Combine everything (Type-A)	<input checked="" type="checkbox"/>
		Combine everything (Type-B)	<input type="checkbox"/>
		Keep open faces	<input type="checkbox"/>
		Extensive stitching	<input type="checkbox"/>
Ok			

1. The minimum length before retraction . Used to avoid frequent retraction. No need to change.
2. Enable Combing: Digital for surface quality , the nozzle will try not to go through surface , that's why Cura is better than Slic3r.
3. Minimum extrusion length , to avoid frequent extrusion.



Printing route  
with Combing

Go aside of the  
surface



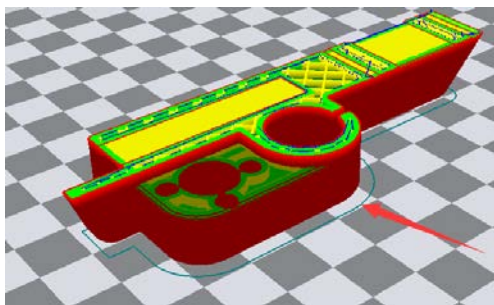
Printing route  
without Combing

Go through the  
surface

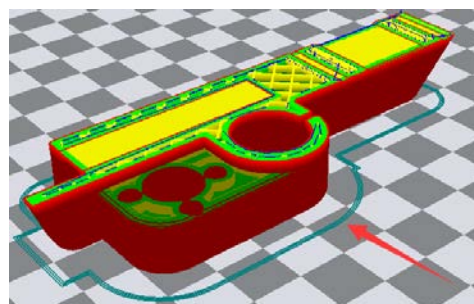
Expert config ×

<b>Retraction</b>		<b>Support</b>	
Minimum travel (mm)	1.5	Structure type	Lines
Enable combing	<input checked="" type="checkbox"/>	Overhang angle for support (deg)	60
Minimal extrusion before retracting (mm)	0.02	Fill amount (%)	10
Z hop when retracting (mm)	0.0	Distance X/Y (mm)	0.7
<b>Skirt</b>		Distance Z (mm)	0.15
Line count	1	<b>Black Magic</b>	
Start distance (mm)	3.0	Spiralize the outer contour	<input type="checkbox"/>
Minimal length (mm)	150.0	Only follow mesh surface	<input type="checkbox"/>
<b>Cool</b>		<b>Brim</b>	
Fan full on at height (mm)	0.5	Brim line amount	4
Fan speed min (%)	30	<b>Raft</b>	
Fan speed max (%)	100	Extra margin (mm)	5
Minimum speed (mm/s)	10	Line spacing (mm)	3
Cool head lift	<input type="checkbox"/>	Base thickness (mm)	0.3
<b>Infill</b>		Base line width (mm)	1
Solid infill top	<input checked="" type="checkbox"/>	Interface thickness (mm)	0.27
Solid infill bottom	<input checked="" type="checkbox"/>	Interface line width (mm)	0.4
Infill overlap (%)	15	Airgap	0.22
		Surface layers	2
		<b>Fix horrible</b>	
		Combine everything (Type-A)	<input checked="" type="checkbox"/>
		Combine everything (Type-B)	<input type="checkbox"/>
		Keep open faces	<input type="checkbox"/>
		Extensive stitching	<input type="checkbox"/>
		Ok	

Skirt is to avoid extruder unfilled before printing , and it appears only when platform attachment type is None. Normally "1" is ok . Change it to "0" when your model reaches the maximum size , or the printing size will be too big.



Peripheral line quantity: 1  
Start distance: 3



Peripheral line quantity: 1  
Start distance: 3

Expert config
×

Retraction

Minimum travel (mm)1.5
Enable combing☒
Minimal extrusion before retracting (mm)0.02
Z hop when retracting (mm)0.0

Skirt

Line count1
Start distance (mm)3.0
Minimal length (mm)150.0

Cool

Fan full on at height (mm)0.5
Fan speed min (%)30
Fan speed max (%)100
Minimum speed (mm/s)10
Cool head lift☐

Infill

Solid infill top☒
Solid infill bottom☒
Infill overlap (%)15

Support

Structure typeLines
Overhang angle for support (deg)60
Fill amount (%)10
Distance X/Y (mm)0.7
Distance Z (mm)0.15

Black Magic

Spiralize the outer contour☐
Only follow mesh surface☐

Brim

Brim line amount4

Raft

Extra margin (mm)5
Line spacing (mm)3
Base thickness (mm)0.3
Base line width (mm)1
Interface thickness (mm)0.27
Interface line width (mm)0.4
Airgap0.22
Surface layers2

Fix horrible

Combine everything (Type-A)☒
Combine everything (Type-B)☐
Keep open faces☐
Extensive stitching☐

Ok

1. To ensure the attachment of model to platform , fan won't start at the beginning.
- 2-4. Fan speed min & max : If they are not equal , the soft ware will choose a suitable speed during them.
5. Condition to choose cool head lift : When it's printing with the minimum speed but still cannot reach the minimum time , you need to choose cool head lift . But it may cause filament leak.



Expert config

×

Retraction

Minimum travel (mm)

1.5

Enable combing

☒

Minimal extrusion before retracting (mm)

0.02

Z hop when retracting (mm)

0.0

Skirt

Line count

1

Start distance (mm)

3.0

Minimal length (mm)

150.0

Cool

Fan full on at height (mm)

0.5

Fan speed min (%)

30

Fan speed max (%)

100

Minimum speed (mm/s)

10

Cool head lift

☐

Infill

Solid infill top

☒

Solid infill bottom

☒

Infill overlap (%)

15

Support

Structure type

Lines

Overhang angle for support (deg)

60

Fill amount (%)

10

Distance X/Y (mm)

0.7

Distance Z (mm)

0.15

Black Magic

Spiralize the outer contour

☐

Only follow mesh surface

☐

Brim

Brim line amount

4

Raft

Extra margin (mm)

5

Line spacing (mm)

3

Base thickness (mm)

0.3

Base line width (mm)

1

Interface thickness (mm)

0.27

Interface line width (mm)

0.4

Airgap

0.22

Surface layers

2

Fix horrible

Combine everything (Type-A)

☒

Combine everything (Type-B)

☐

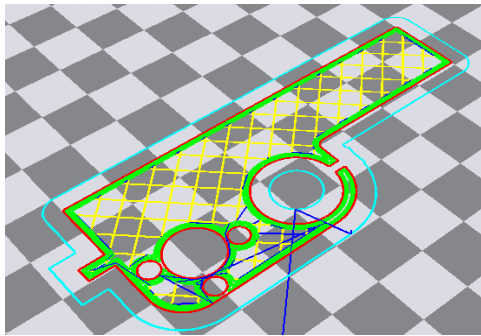
Keep open faces

☐

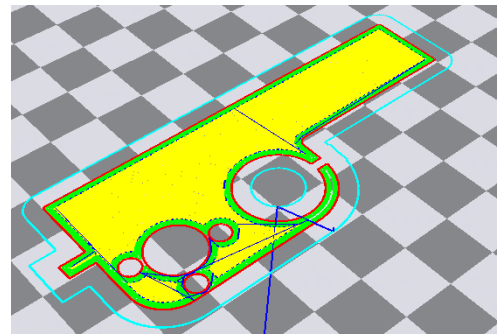
Extensive stitching

☐

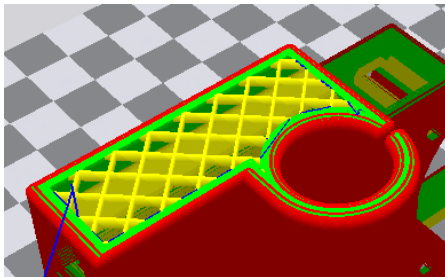
Ok



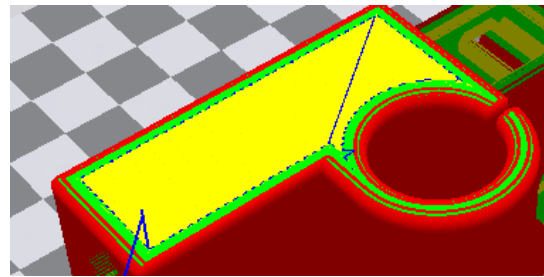
No solid infill bottom



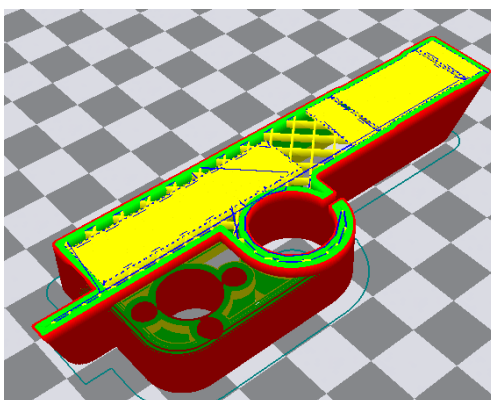
With solid infill bottom



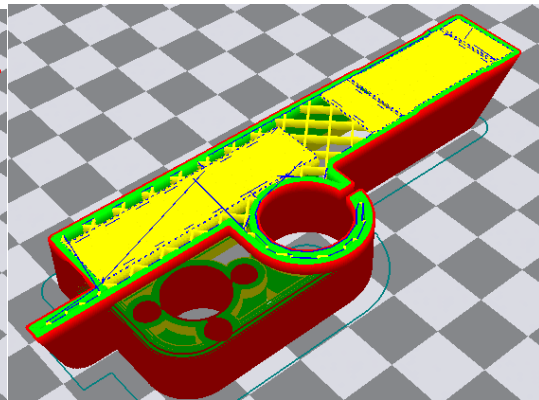
Infill overlap: 20



Infill overlap: 40



No solid infill top



With solid infill top

Expert config
×

**Retraction**

Minimum travel (mm)

1.5

Enable combing

☒

Minimal extrusion before retracting (mm)

0.02

Z hop when retracting (mm)

0.0

**Skirt**

Line count

1

Start distance (mm)

3.0

Minimal length (mm)

150.0

**Cool**

Fan full on at height (mm)

0.5

Fan speed min (%)

30

Fan speed max (%)

100

Minimum speed (mm/s)

10

Cool head lift

☐

**Infill**

Solid infill top

☒

Solid infill bottom

☒

Infill overlap (%)

15

**Support**

Structure type

Lines

Overhang angle for support (deg)

60

Fill amount (%)

10

Distance X/Y (mm)

0.7

Distance Z (mm)

0.15

**Black Magic**

Spiralize the outer contour

☐

Only follow mesh surface

☐

**Brim**

Brim line amount

4

**Raft**

Extra margin (mm)

5

Line spacing (mm)

3

Base thickness (mm)

0.3

Base line width (mm)

1

Interface thickness (mm)

0.27

Interface line width (mm)

0.4

Airgap

0.22

Surface layers

2

**Fix horrible**

Combine everything (Type-A)

☒

Combine everything (Type-B)

☐

Keep open faces

☐

Extensive stitching

☐

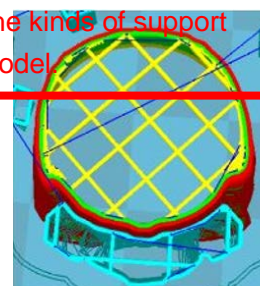
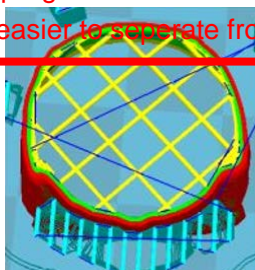
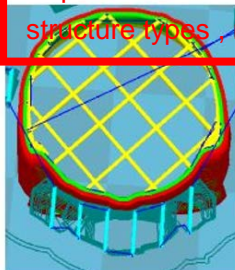
Ok

Structure types:lines  
Infill covertap: 15  
Distance X/Y: 0.7

Structure types:lines  
Infill covertap: 30  
Distance X/Y: 0.7

Structure types:grids  
Infill covertap: 15  
Distance X/Y: 0.7

These above are examples , you can set these options according to actual requirements. The biggest progress Cura has made is the kinds of support structure types , making it easier to separate from the model.



Expert config ×

**Retraction**

Minimum travel (mm)

1.5

Enable combing

☒

Minimal extrusion before retracting (mm)

0.02

Z hop when retracting (mm)

0.0

**Skirt**

Line count

1

Start distance (mm)

3.0

Minimal length (mm)

150.0

**Cool**

Fan full on at height (mm)

0.5

Fan speed min (%)

30

Fan speed max (%)

100

Minimum speed (mm/s)

10

Cool head lift

☐

**Infill**

Solid infill top

☒

Solid infill bottom

☒

Infill overlap (%)

15

**Support**

Structure type

Lines ▼

Overhang angle for support (deg)

60

Fill amount (%)

10

Distance X/Y (mm)

0.7

Distance Z (mm)

0.15

**Black Magic**

Spiralize the outer contour

☐

Only follow mesh surface

☐

**Brim**

Brim line amount

4

**Raft**

Extra margin (mm)

5

Line spacing (mm)

3

Base thickness (mm)

0.3

Base line width (mm)

1

Interface thickness (mm)

0.27

Interface line width (mm)

0.4

Airgap

0.22

Surface layers

2

**Fix horrible**

Combine everything (Type-A)

☒

Combine everything (Type-B)

☐

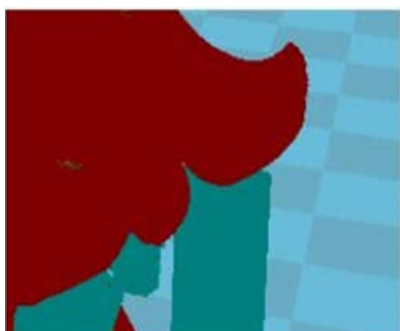
Keep open faces

☐

Extensive stitching

☐

Ok



It's difficult to separate if the distance between support and the supported place is too close; The surface will be influenced if the distance is too far.  
Different angle will generate different support , you can try the examples we provide above which will have different effect.

60°

43

45°

30°

Expert config ×

**Retraction**

Minimum travel (mm)

1.5

Enable combing

☒

Minimal extrusion before retracting (mm)

0.02

Z hop when retracting (mm)

0.0

**Skirt**

Line count

1

Start distance (mm)

3.0

Minimal length (mm)

150.0

**Cool**

Fan full on at height (mm)

0.5

Fan speed min (%)

30

Fan speed max (%)

100

Minimum speed (mm/s)

10

Cool head lift

☐

**Infill**

Solid infill top

☒

Solid infill bottom

☒

Infill overlap (%)

15

**Support**

Structure type

Lines

Overhang angle for support (deg)

60

Fill amount (%)

10

Distance X/Y (mm)

0.7

Distance Z (mm)

0.15

**Black Magic**

Spiralize the outer contour

☐

Only follow mesh surface

☐

**Brim**

Brim line amount

4

**Raft**

Extra margin (mm)

5

Line spacing (mm)

3

Base thickness (mm)

0.3

Base line width (mm)

1

Interface thickness (mm)

0.27

Interface line width (mm)

0.4

Airgap

0.22

Surface layers

2

**Fix horrible**

Combine everything (Type-A)

☒

Combine everything (Type-B)

☐

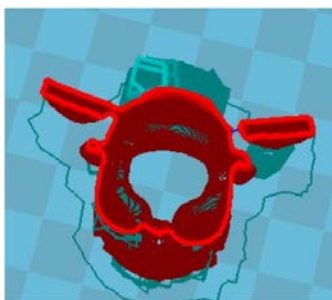
Keep open faces

☐

Extensive stitching

☐

Ok



When choosing "Spiralize the outer contour" : Z axis rises while X,Y axis moves , and only a hollow bottom and a single layer of



When choosing "Only follow mesh surface" : The model prints along the surface

Attention: The software defaults not open the option above , you'd better not turn it

Expert config ×

**Retraction**

Minimum travel (mm)	1.5
Enable combing	<input checked="" type="checkbox"/>
Minimal extrusion before retracting (mm)	0.02
Z hop when retracting (mm)	0.0

**Skirt**

Line count	1
Start distance (mm)	3.0
Minimal length (mm)	150.0

**Cool**

Fan full on at height (mm)	0.5
Fan speed min (%)	30
Fan speed max (%)	100
Minimum speed (mm/s)	10
Cool head lift	<input type="checkbox"/>

**Infill**

Solid infill top	<input checked="" type="checkbox"/>
Solid infill bottom	<input checked="" type="checkbox"/>
Infill overlap (%)	15

**Support**

Structure type	Lines <span>▼</span>
Overhang angle for support (deg)	60
Fill amount (%)	10
Distance X/Y (mm)	0.7
Distance Z (mm)	0.15

**Black Magic**

Spiralize the outer contour	<input type="checkbox"/>
Only follow mesh surface	<input type="checkbox"/>

**Brim**

Brim line amount	4
------------------	---

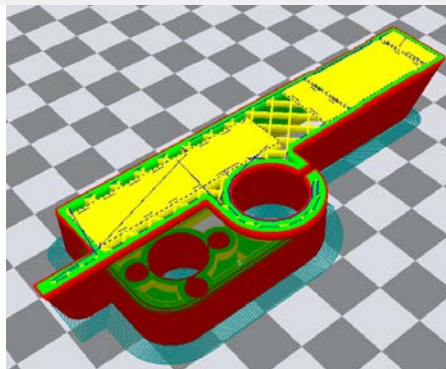
**Raft**

Extra margin (mm)	5
Line spacing (mm)	3
Base thickness (mm)	0.3
Base line width (mm)	1
Interface thickness (mm)	0.27
Interface line width (mm)	0.4
Airgap	0.22
Surface layers	2

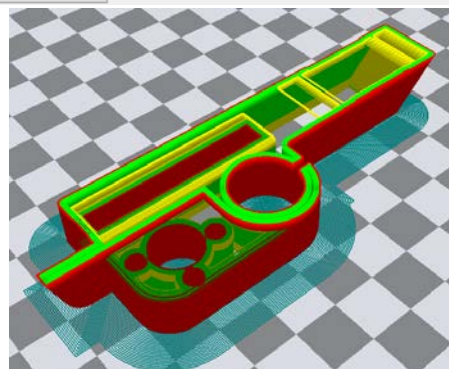
**Fix horrible**

Combine everything (Type-A)	<input checked="" type="checkbox"/>
Combine everything (Type-B)	<input type="checkbox"/>
Keep open faces	<input type="checkbox"/>
Extensive stitching	<input type="checkbox"/>

Ok



Brim line amount: 10



Brim line amount: 20

Guidance to use Brim if needed: Expert → Expert Settings → Support → Support Types → Brim.

The images above are only for reference , please set the parameter according to actual requirement.

Expert config ×

**Retraction**

Minimum travel (mm)

1.5

Enable combing

☒

Minimal extrusion before retracting (mm)

0.02

Z hop when retracting (mm)

0.0

**Skirt**

Line count

1

Start distance (mm)

3.0

Minimal length (mm)

150.0

**Cool**

Fan full on at height (mm)

0.5

Fan speed min (%)

30

Fan speed max (%)

100

Minimum speed (mm/s)

10

Cool head lift

☐

**Infill**

Solid infill top

☒

Solid infill bottom

☒

Infill overlap (%)

15

**Support**

Structure type

Lines ▼

Overhang angle for support (deg)

60

Fill amount (%)

10

Distance X/Y (mm)

0.7

Distance Z (mm)

0.15

**Black Magic**

Spiralize the outer contour

☐

Only follow mesh surface

☐

**Brim**

Brim line amount

4

**Raft**

Extra margin (mm)

5

Line spacing (mm)

3

Base thickness (mm)

0.3

Base line width (mm)

1

Interface thickness (mm)

0.27

Interface line width (mm)

0.4

Airgap

0.22

Surface layers

2

**Fix horrible**

Combine everything (Type-A)

☒

Combine everything (Type-B)

☐

Keep open faces

☐

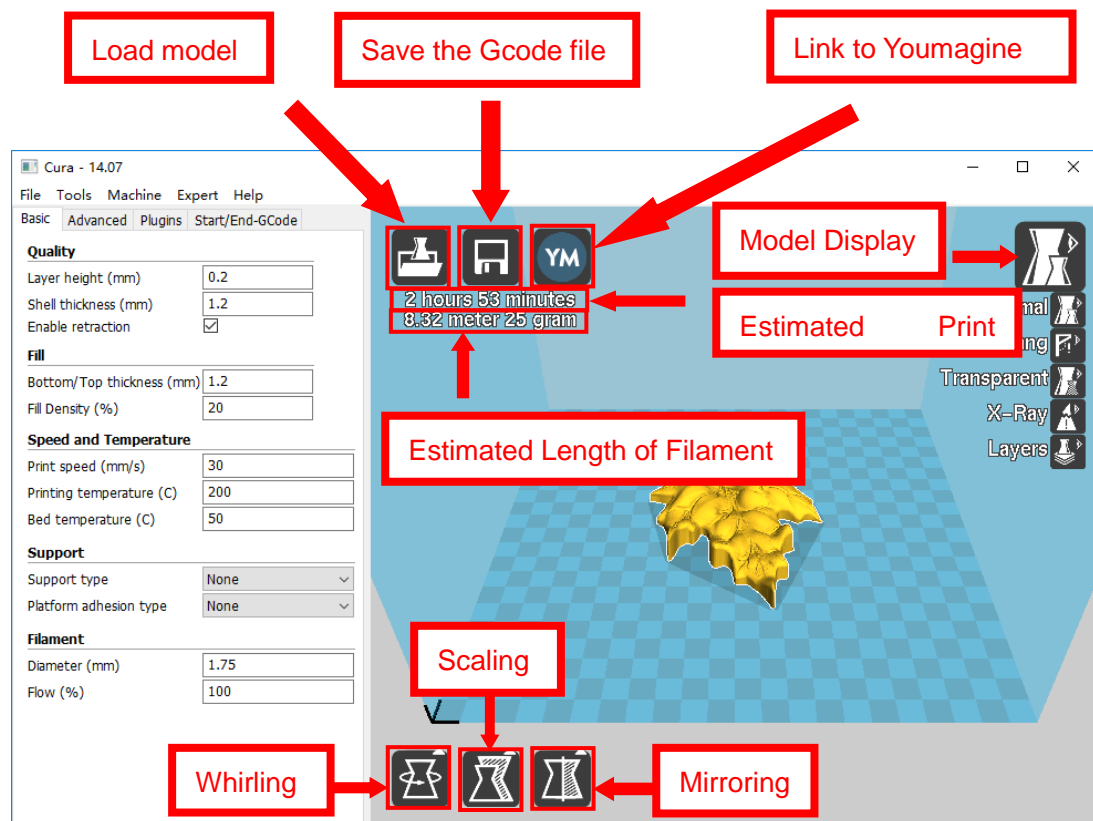
Extensive stitching

☐

Ok

Guidance to use Raft if needed: Expert → Expert Settings → Support → Support Types → Raft.

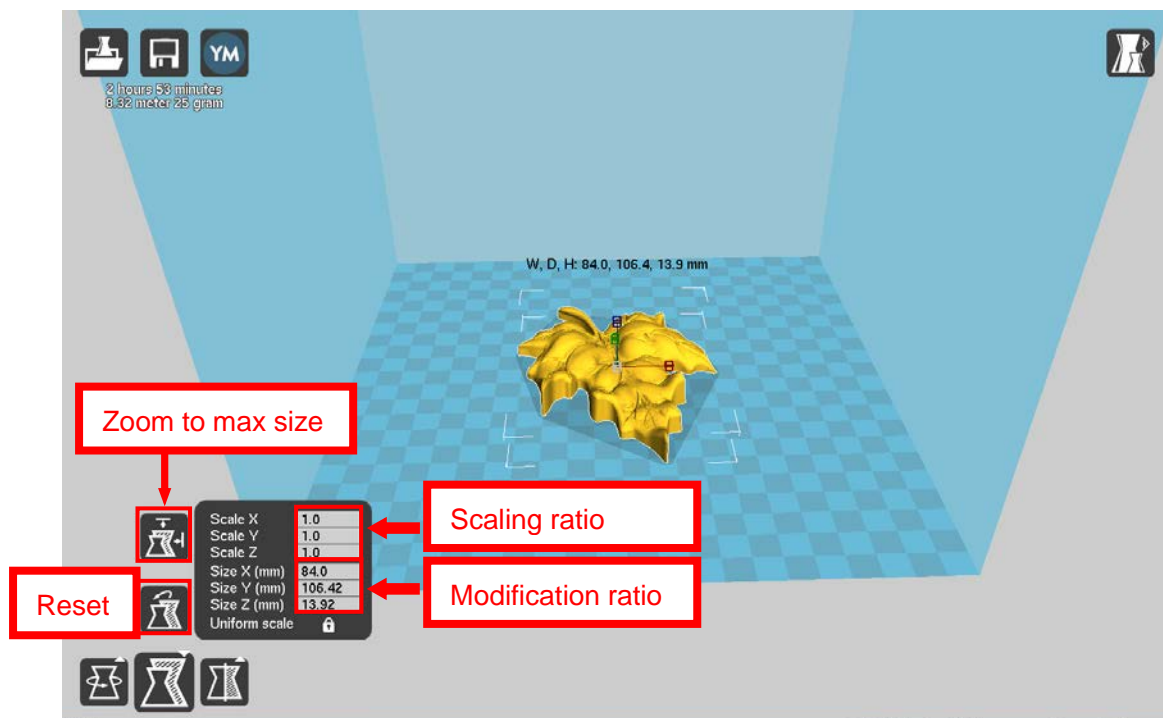
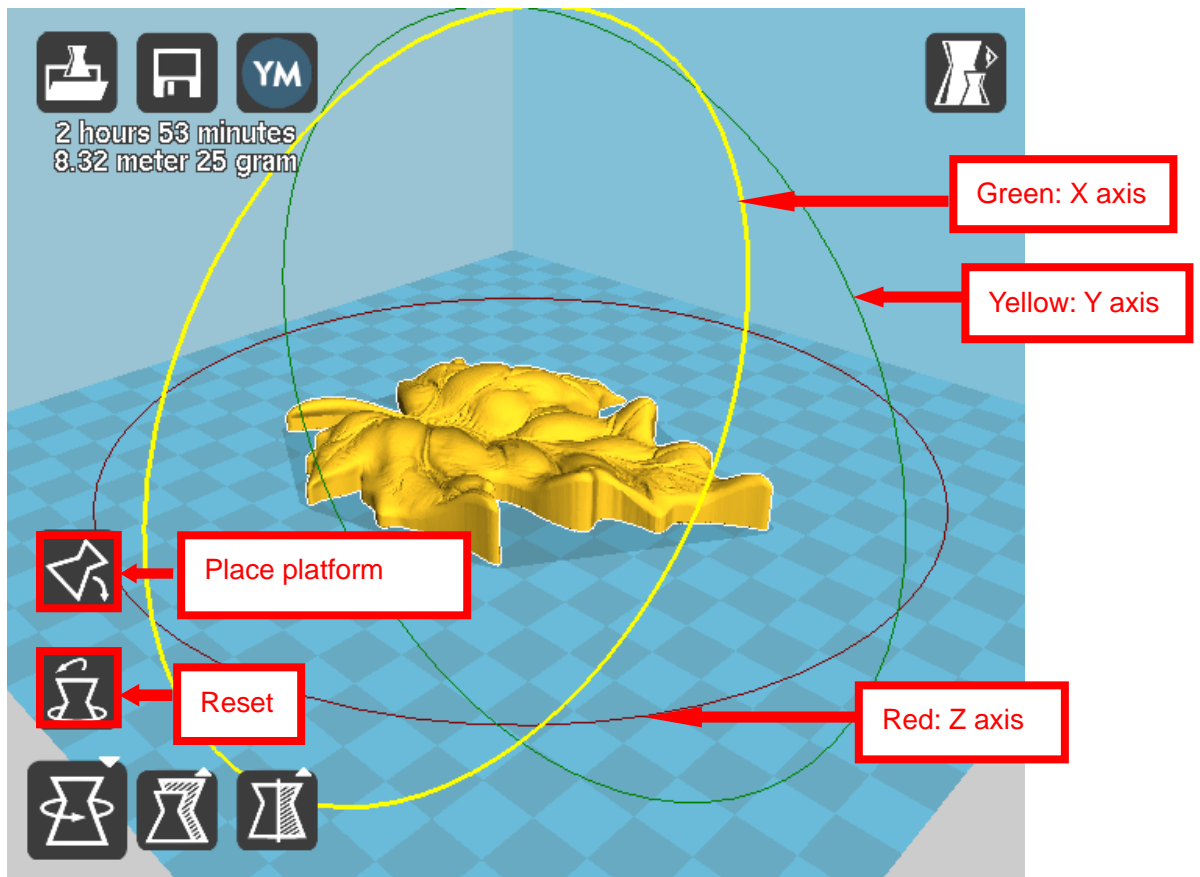
The images above are only for reference , please set the parameter according to actual requirement.

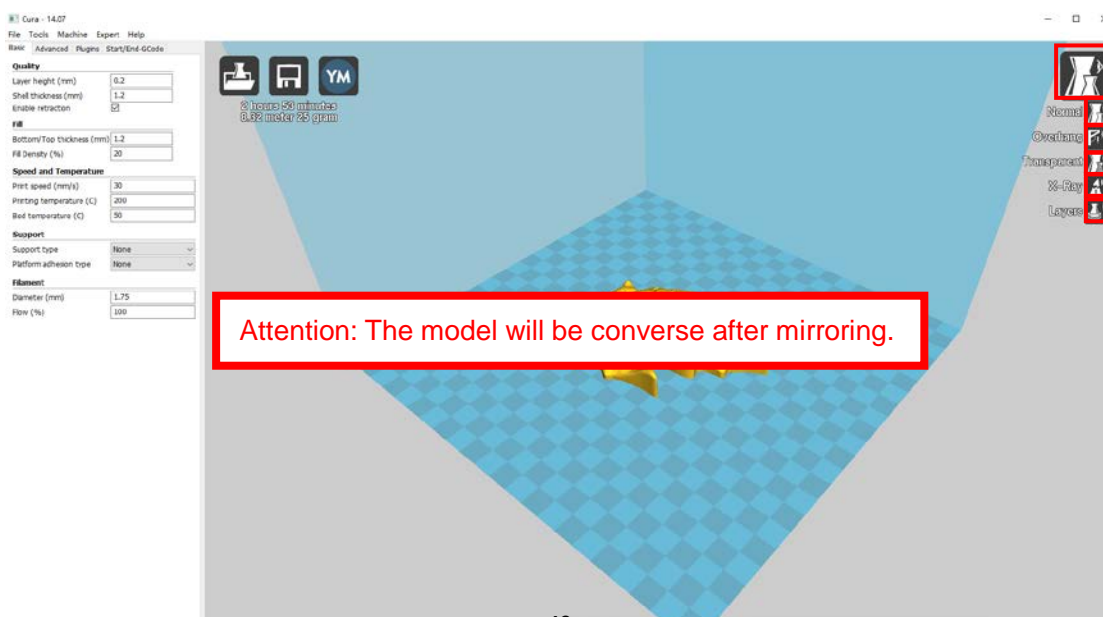
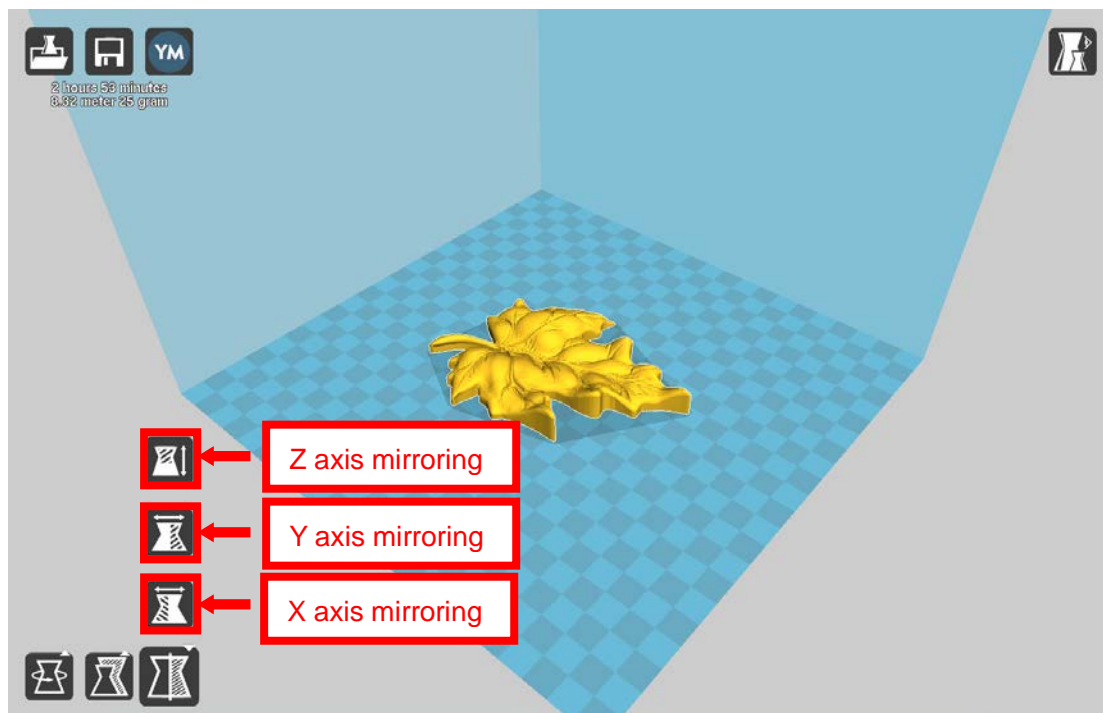


Left click the model and you will see the icon of "whirling, scaling, mirroring."

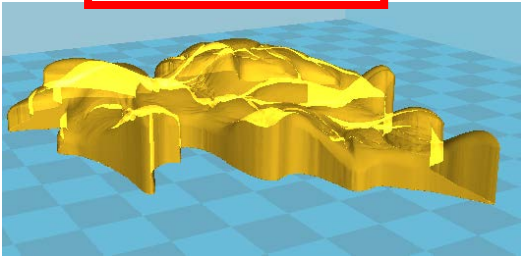
Left click to select model and move → move model.  
 Slide mouse wheel → scaling.  
 Right click to select model and move → whirling.  
 Shift + right click platform and move → move platform



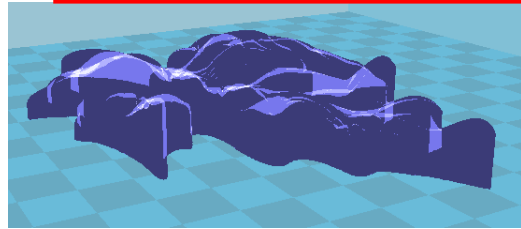




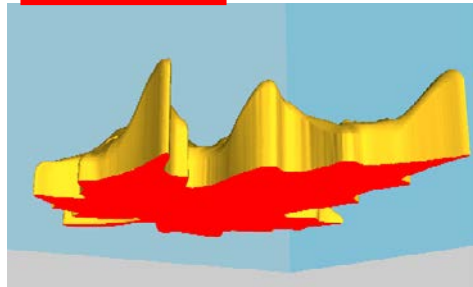
Normal: Most used.



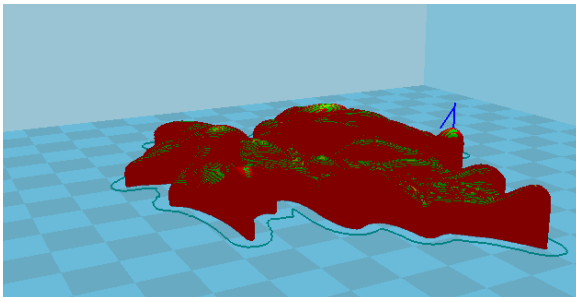
Overhang: Used to see the vacant part.

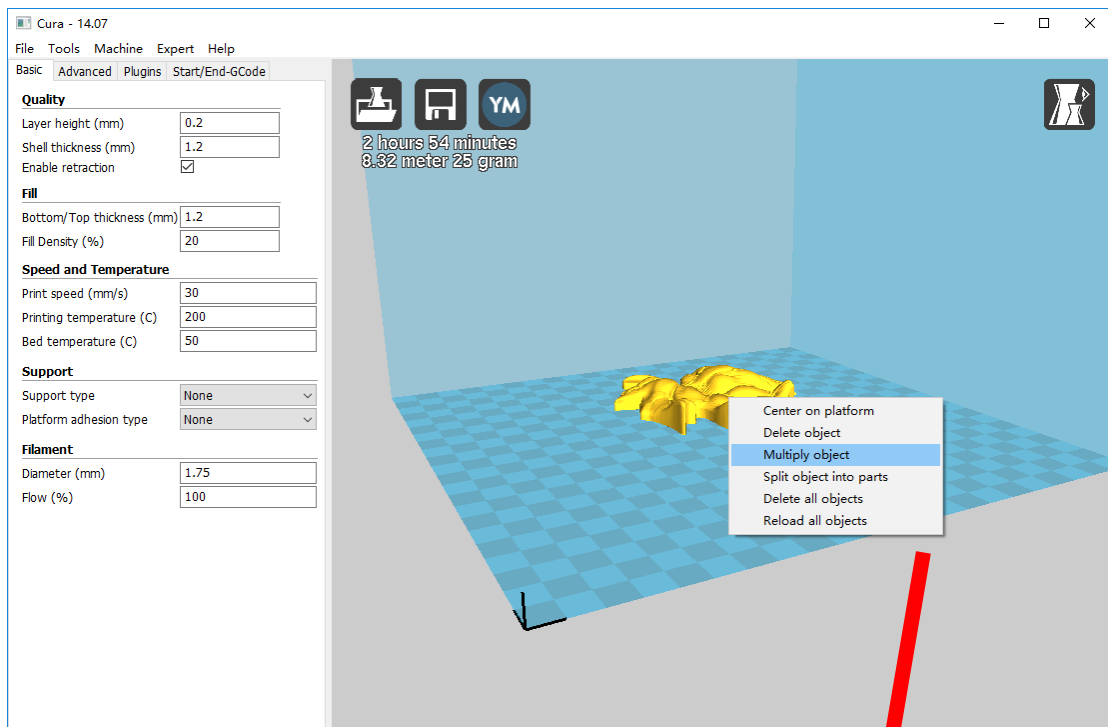


Transparent



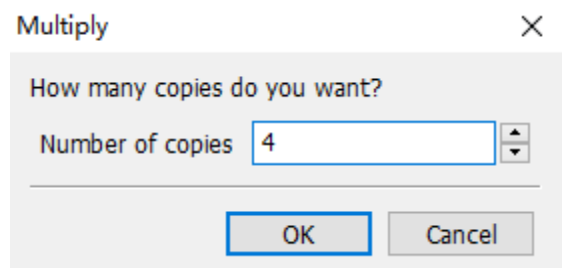
Layers: Used to simulate the effect of each layer and the path.

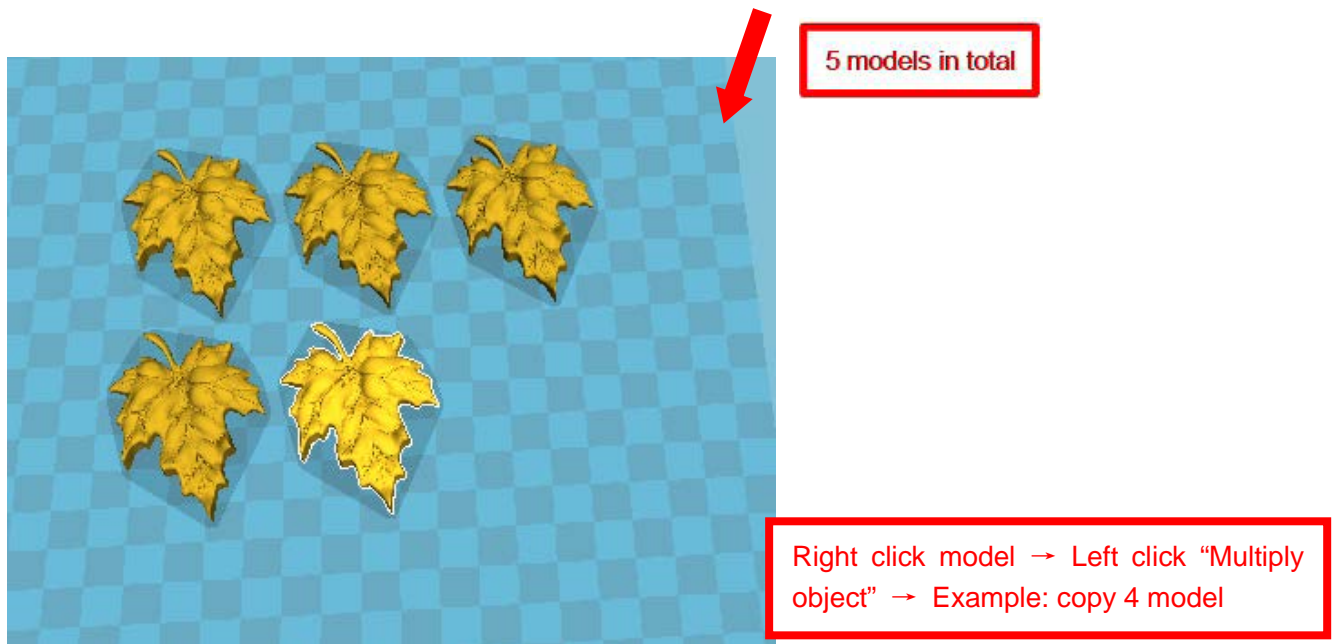




5 models in total

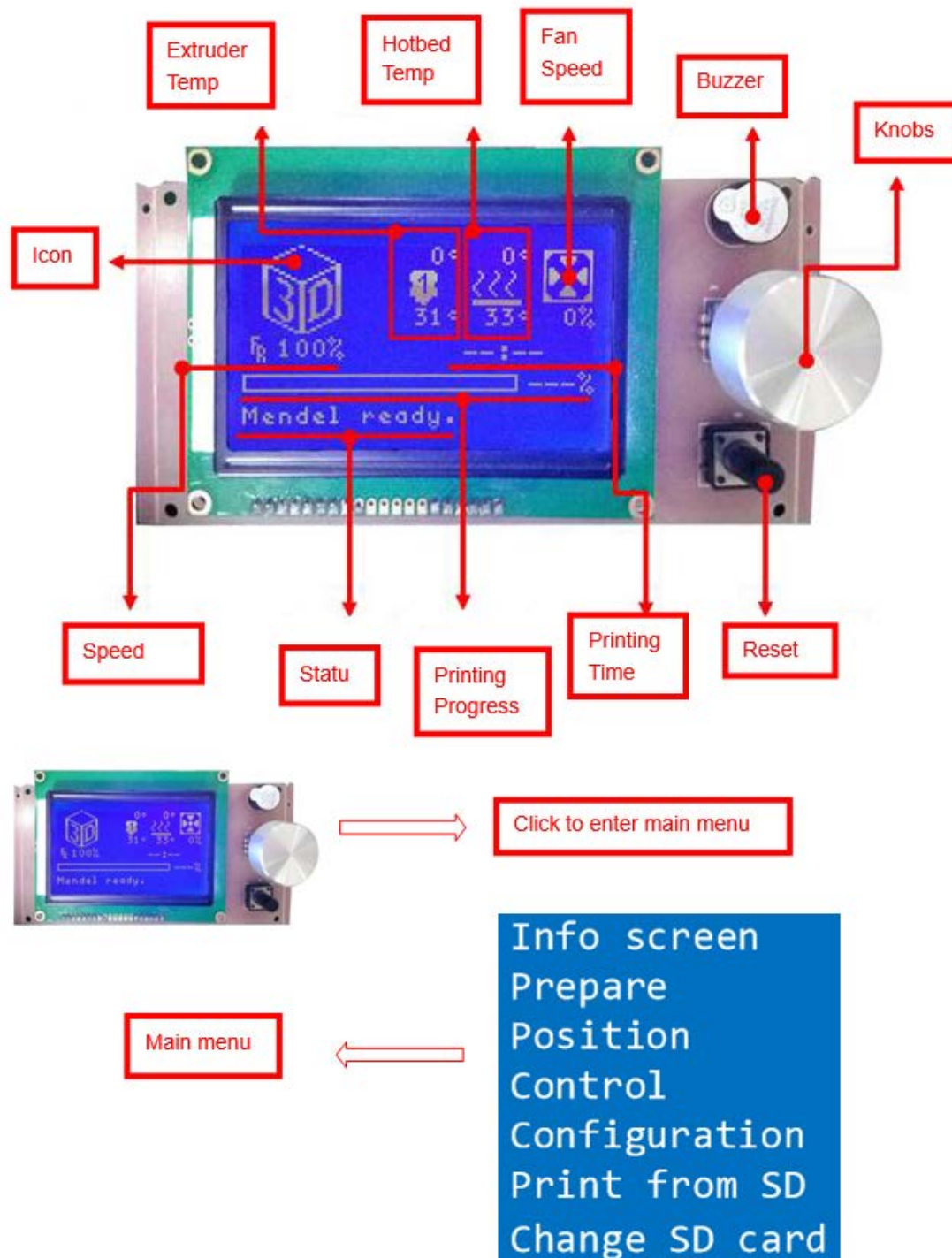
Attention: You can try other functions by yourself.

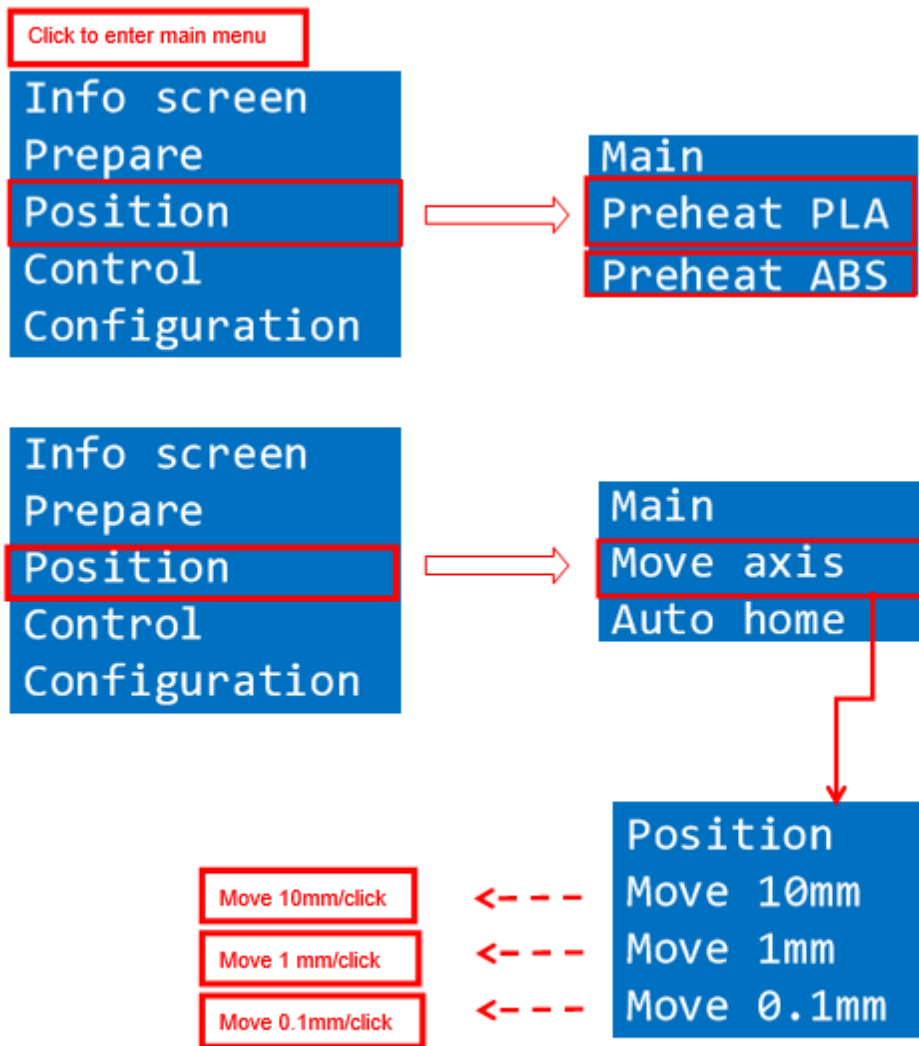


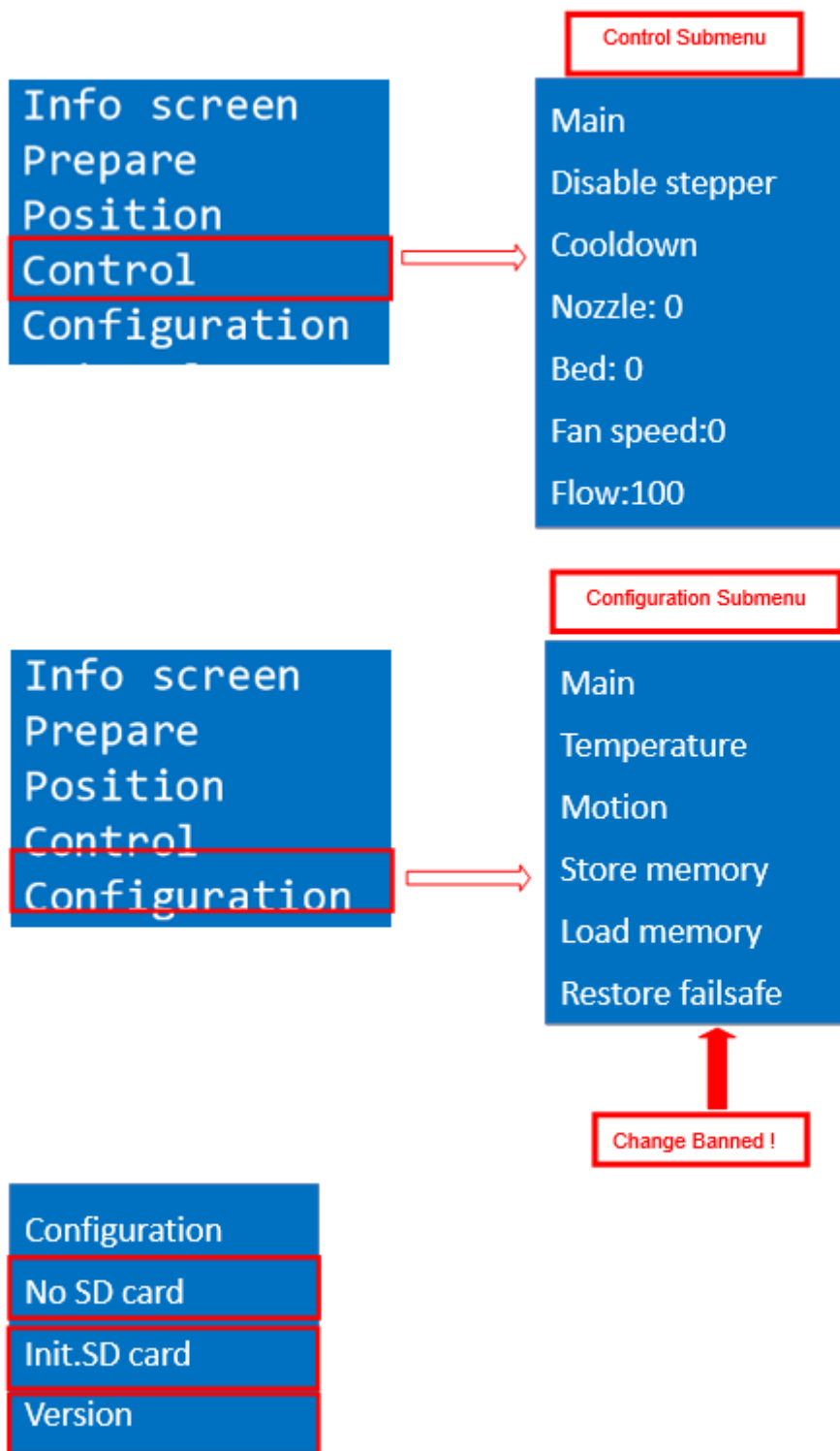


## D. Printing Operation

### 1.Display Introduction







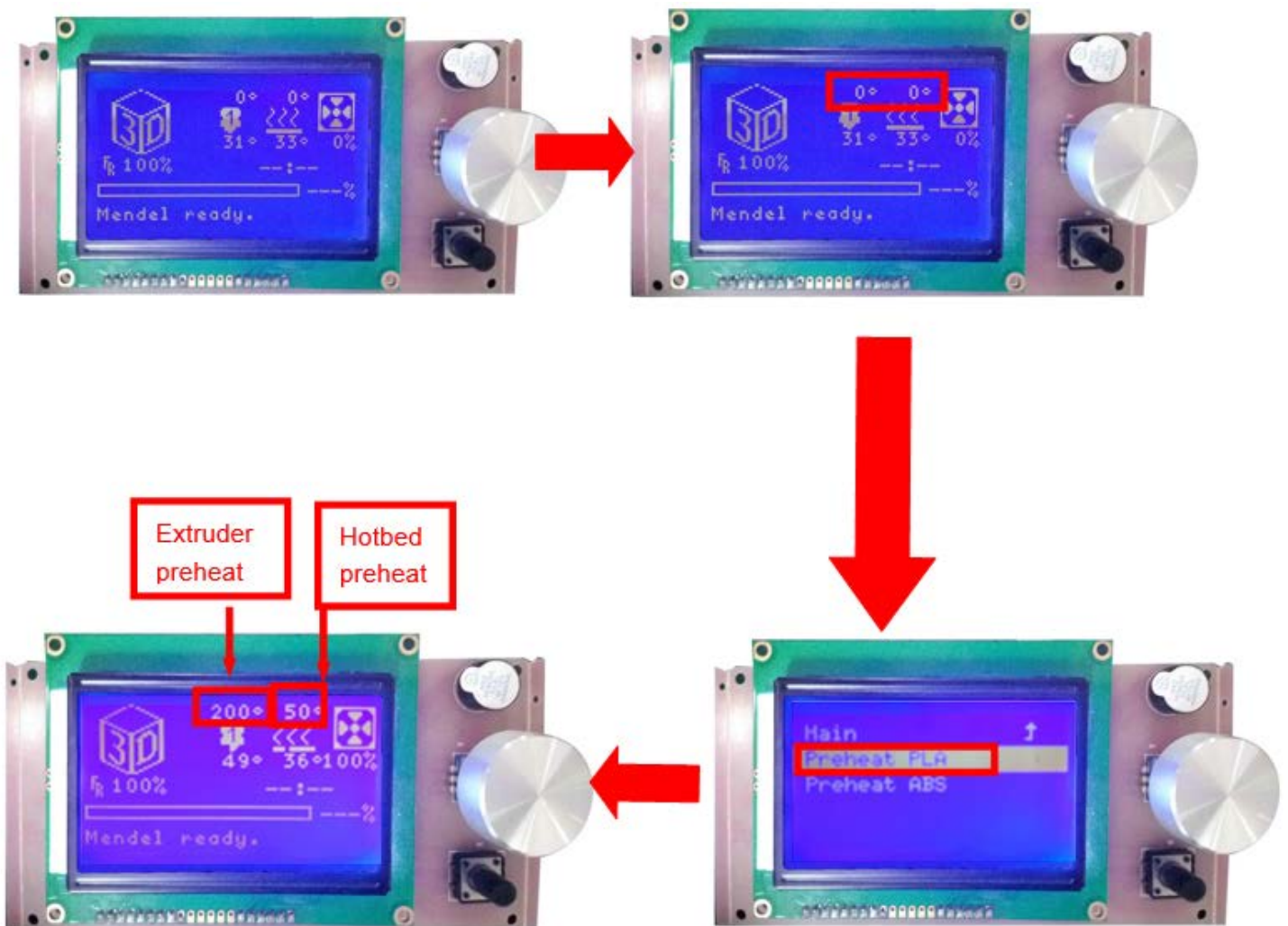


## 2.Filament Feeding

### 2.1 Set Preheat

Attention: Before filament installation, we need to preheat. Use PLA as example .

Press Knobs → Prepare → Preheat PAL → Start preheating

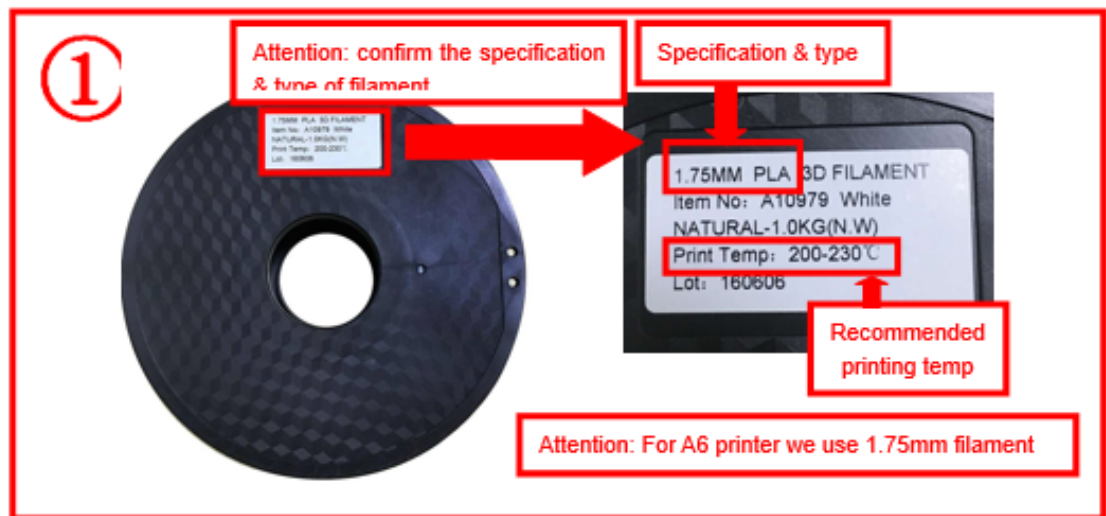


Attention: Please choose "Preheat ABS" if you want to print with ABS

## 2.2 Filament Installation

Attention: only when extruder temp reaches 200°C can we put filament in the printer.

Confirm Extruder Temp has reached 190°C → 1 roll PLA → Stroke the filament head straight → Press extruder screw. Meanwhile, hold the white wind mouth → Meanwhile, stick filament into the extruder quickly until filament goes out from the nozzle → Filament installation succeed



②

Attention: Install filament only when temp reaches 190°C

③

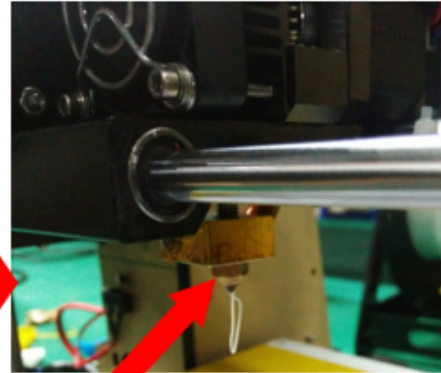
Stroke the filament head straight → Press extruder screw. Meanwhile, hold the white wind mouth → Meanwhile, install filament into the extruder quickly until filament liquid goes out from the nozzle



④



Press extruder screw, hold on wind mouth. Stick filament in quickly until filament goes out from extruder.



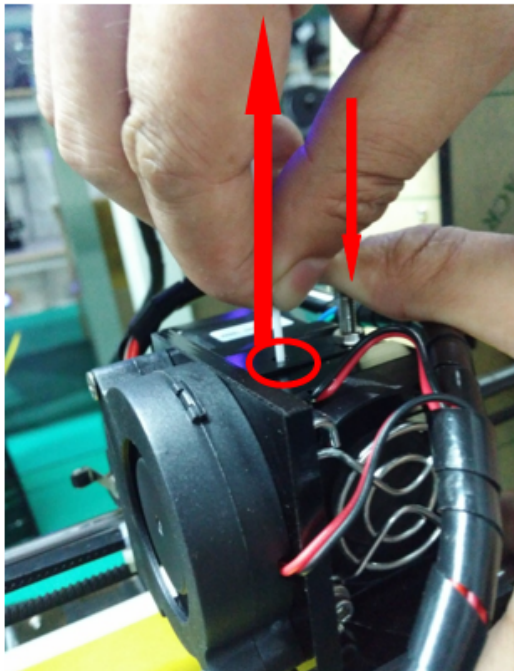
Attention:High temp!!

If the shape of output filament is average , means installation is good.

Filament installation succeed

## 2.3 Pull out filament

When Change filament/Long-term not in use of printer , you need to pull out filament.



Use PLA as example

1. Preheat extruder to 190°C
2. Press extruder screw, hold wind mouth. Meanwhile, stick filament down for a few length, then pull out with average speed.

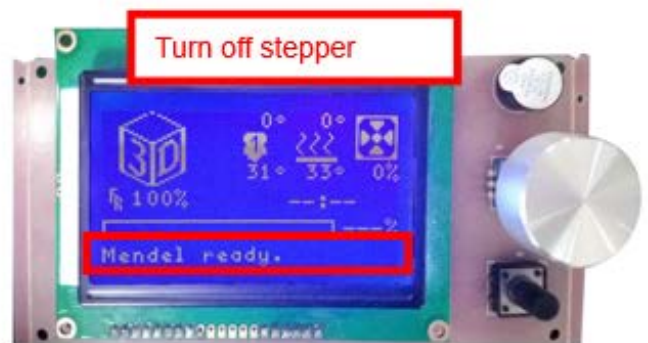
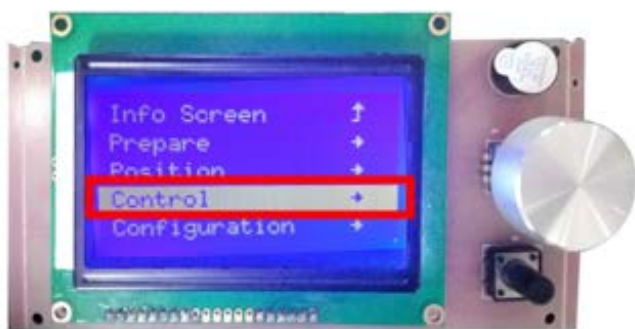
Precautions:

1. Do not stick down for long length in order to avoid failure of pulling out. Replace filament timely.
2. Please confirm you have preheated the extruder to 190°C. Do not pull out before 190°C , or it will cause irreparable damage.

### 3.Platform Adjustment



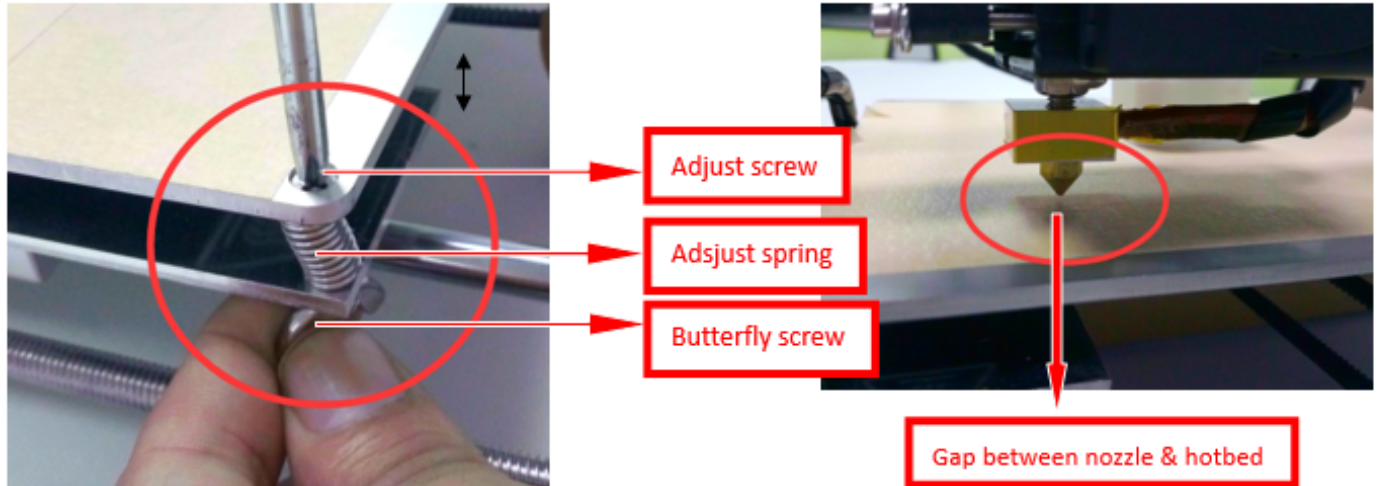
1. Choose "Position" → "Auto home" , printer will move to limited switch until it stops.



2. Turn off stepper motor: based on step 1 , enter "Quick settings" → "Disable stepper"

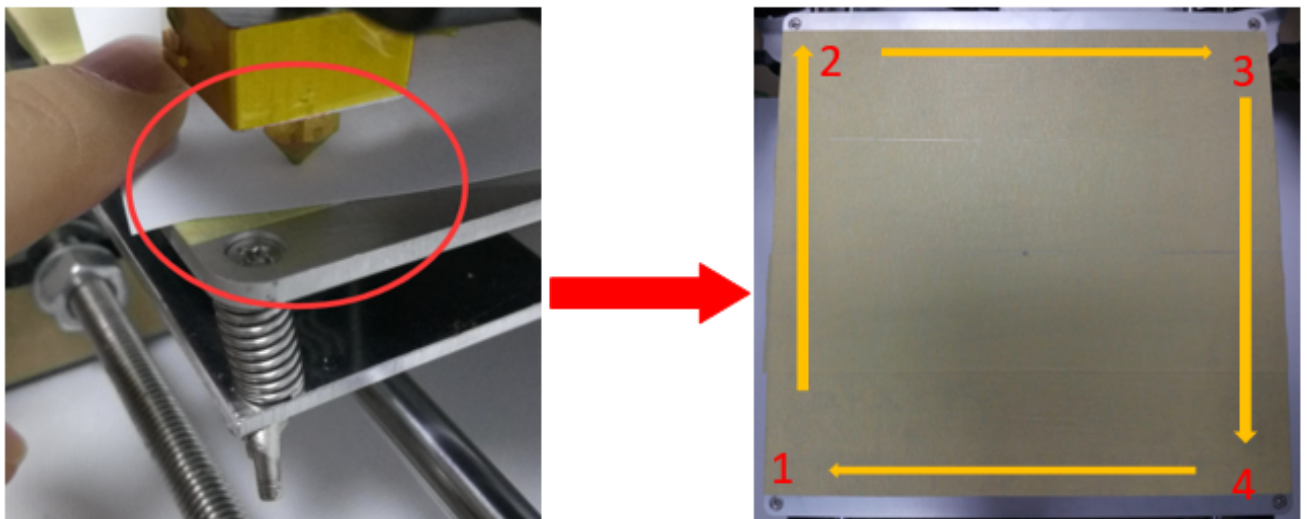


3. Please manually move nozzle to platform and check the gap between nozzle and platform.



4. When the gap is more than 2mm, you need to adjust the height of Z limited switch.

Example: When the gap is 12mm, you need to adjust limited switch down by 10mm. The rest 2mm can adjust by spring on the hotbed.



After adjustment of springs, reset printer and close stepper motor to test. Use A4 paper to test the gap.

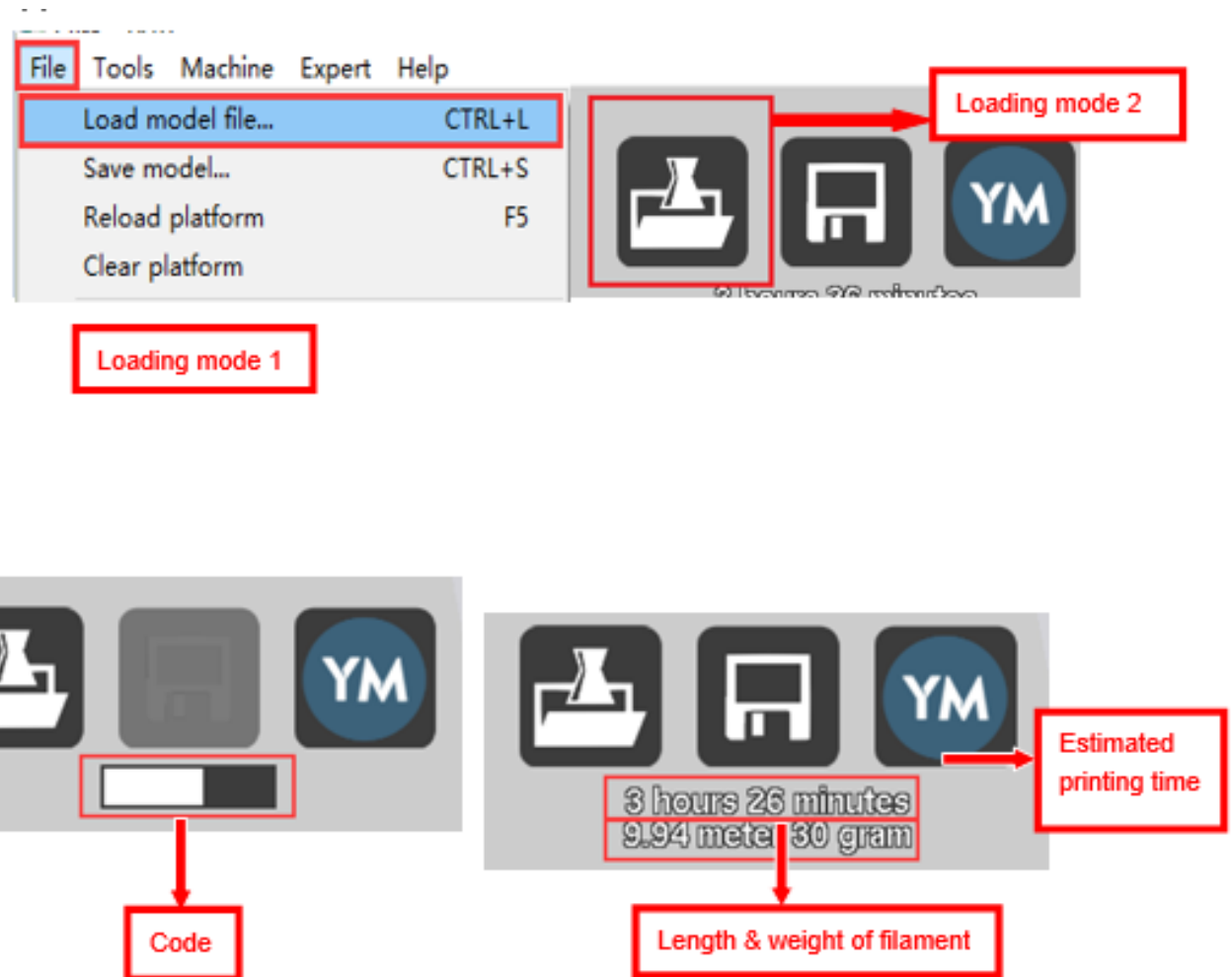
Tips: When you are familiar with the printer with time going by, we can adjust while it's printing. It's because the printing speed is slow at the beginning so that there's enough time for adjustment. Meanwhile, the printing effect will be better.

## 4. Printing

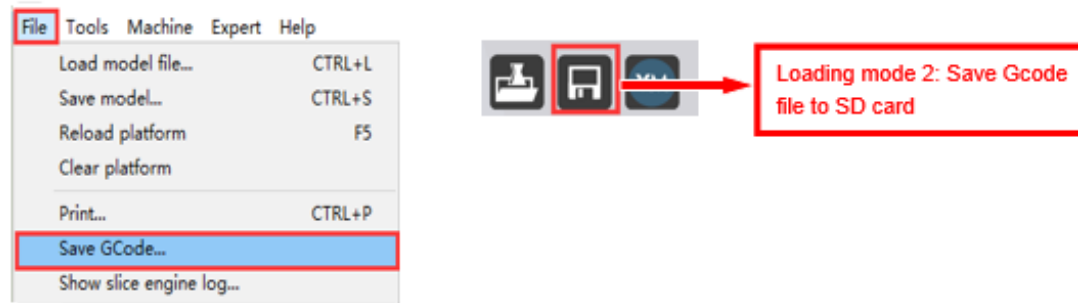
### 1) SD Card Offline Printing

#### a. Loading mode

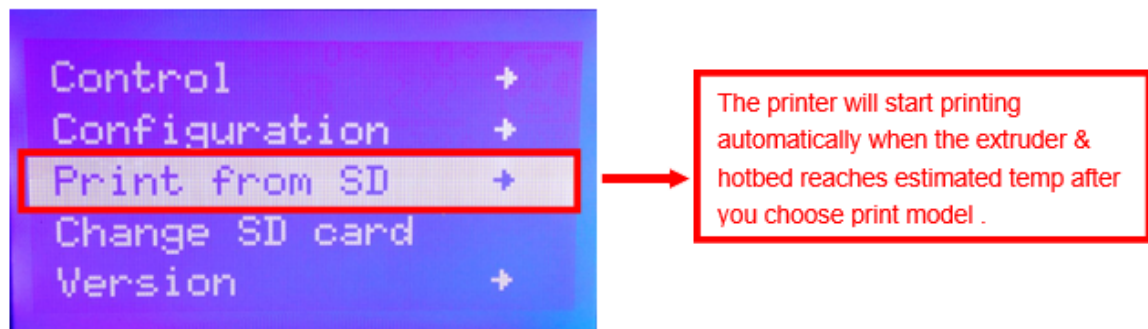
Cura supports STL file & G-code file.



## b. Code Saving

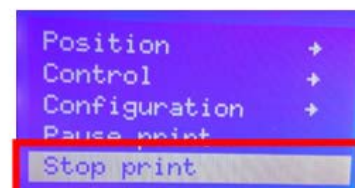
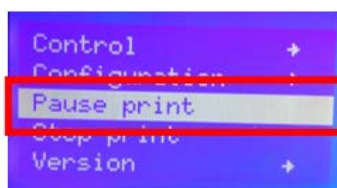


Copy file to SD card . Then connect SD card to printer, click reset. Picture below shows the location of print file , there are 2 methods to find print file.

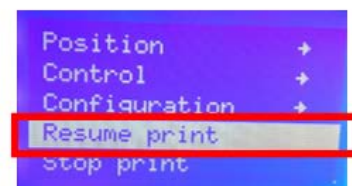


## c. Introduction of Stop print , Pause print , Continue Print:

Only when the printer is printing can we use Stop print, Pause print, Continue Print.

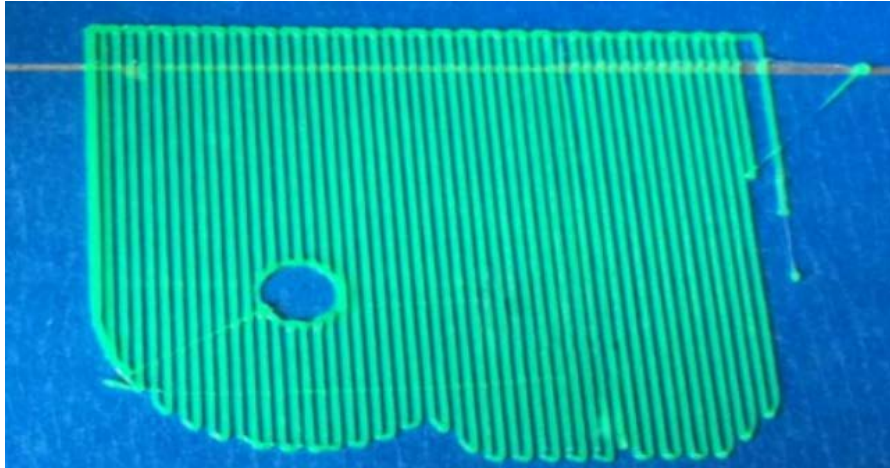


Attention: Please use the function according to your requirement .

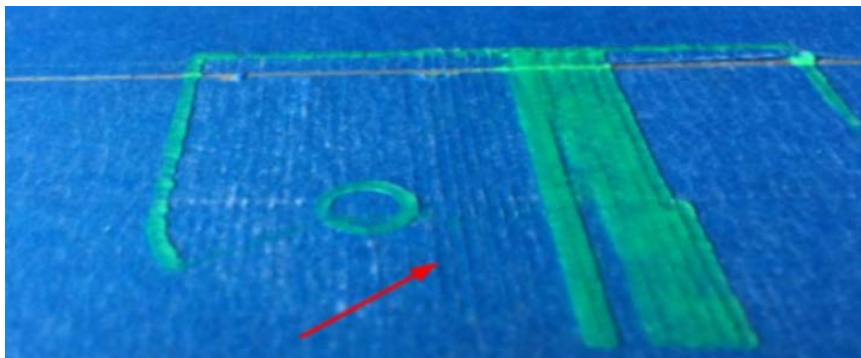


d. Judgment of the gap between nozzle and platform.

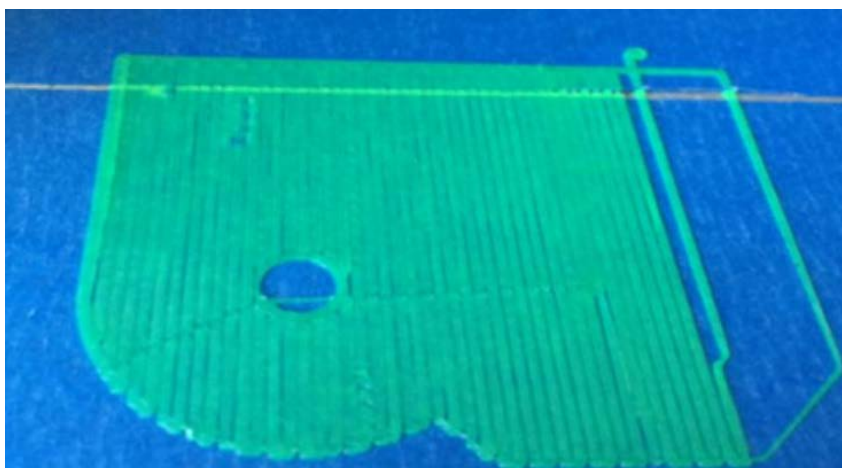
1. Too big gap: The printed model is uneven, curled with gap. It means the gap is too big for filament to reach the platform, making the printing effect so bad.



2. Too close gap: The printed model edge has irregular projections. It means the gap is too close to print normally. Sometimes it even cannot output filament



3. Appropriate distance: Printed model flat with no gap, no glitches. It means the distance is appropriate to print

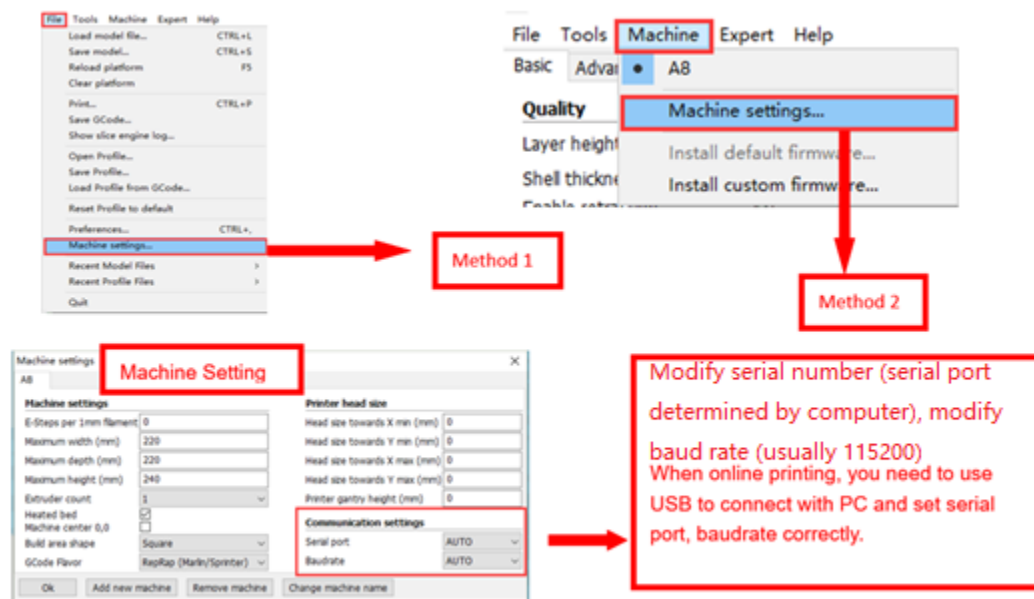


Wait to print complete after gap adjustment.

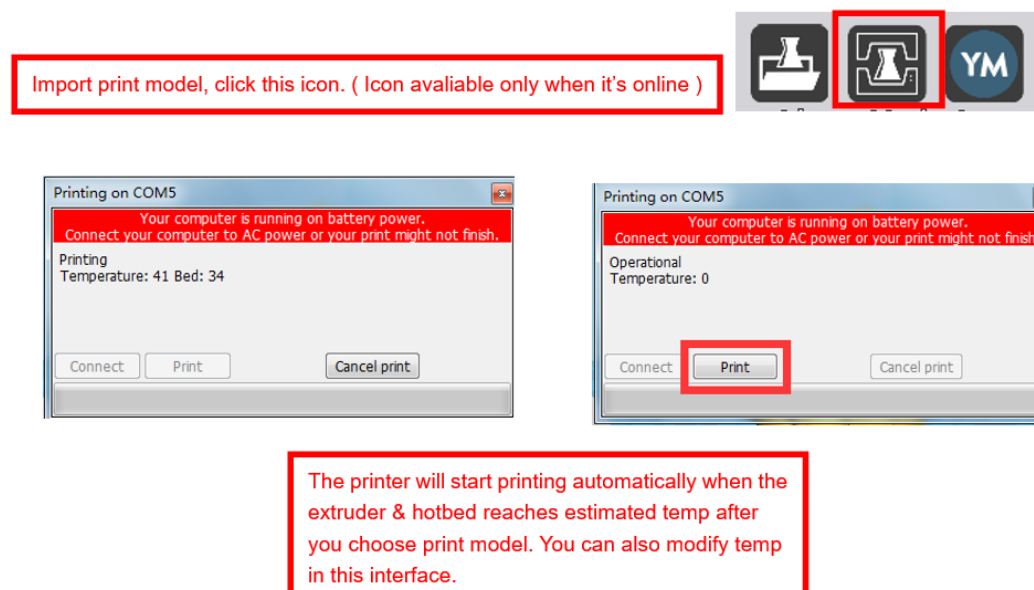


## 2) USB Online Printing

### a. Machine settings ( Use USB to connect to PC )



### b. Online Printing

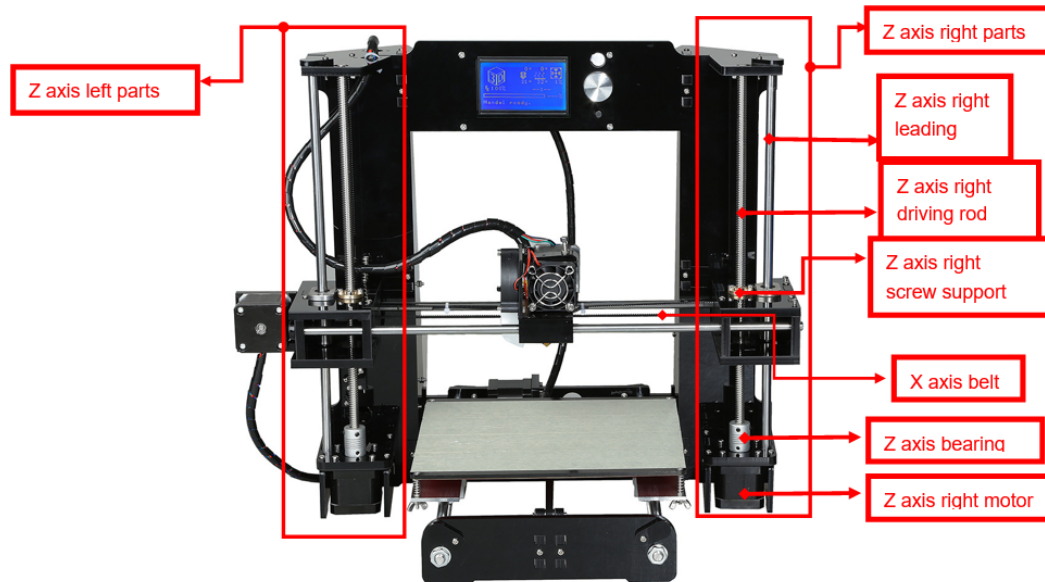


## E. FAQ

### 1. Z Axis Adjustment

During installation, we need to test moving parts:

1.

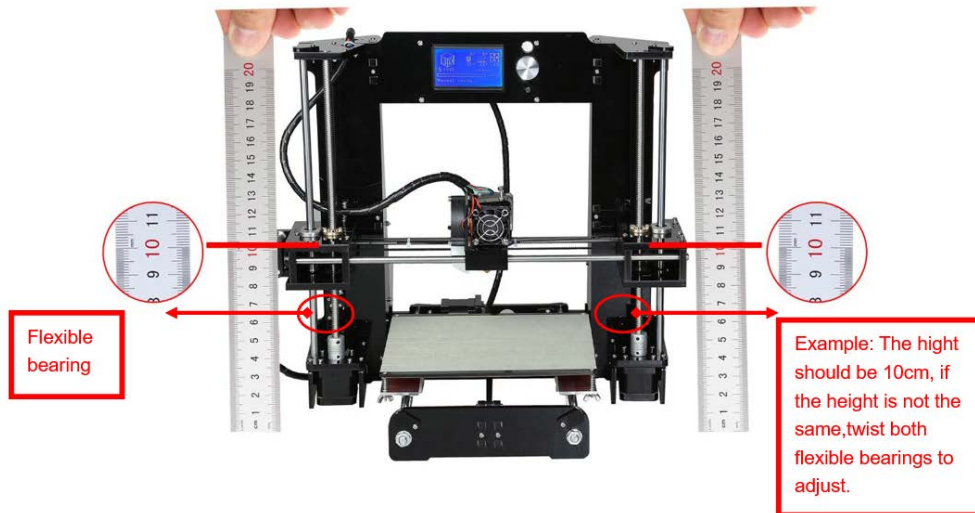


Use right Z axis for reference as shown above.

Reasons for Z axis's not smooth movement:

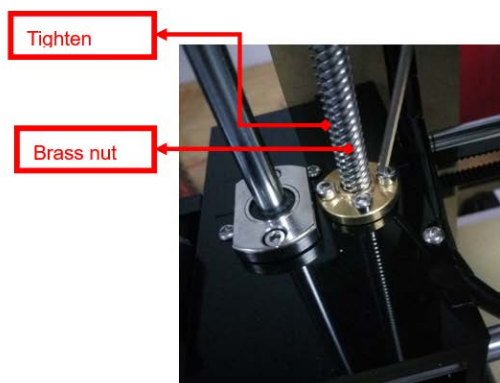
1. The height of both Z axis screw support is apparently different.
2. Large deviation of leading rod and motor rod's concentricity.
3. X belt is too tight.

Preparation: Before Z axis moving adjustment, please confirm the height of both Z axis screw support is the same. ( Keep the same height of two white parts )

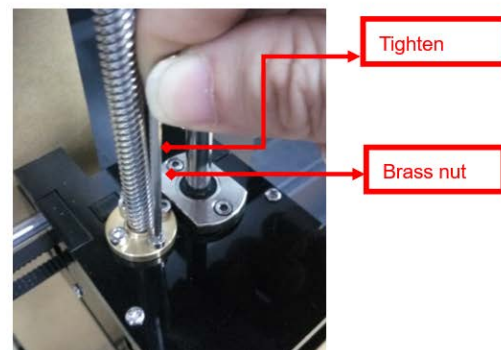


## 2.7 adjust connectivity

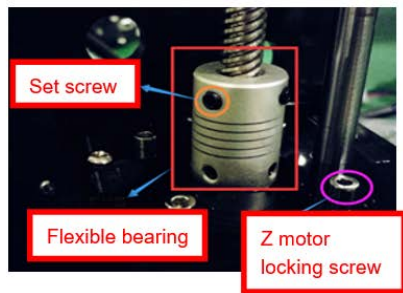
1. Click to adjust Z axis to move ( Position  $\rightarrow$  Z pos.Fast  $\rightarrow$  +/- ). If it cannot move smoothly, you need to adjust the unsmooth side's screw support. Try to keep them at the same height.
2. We can also tight/loose the Z motor screw according to requirments. This is to correct the deviation in the first time installation. Please take steps as follows to lock screws,



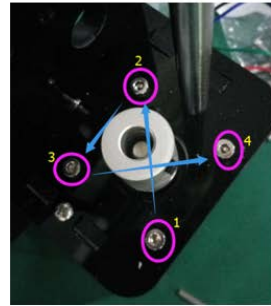
Z axis left screw support



Z axis right screw support



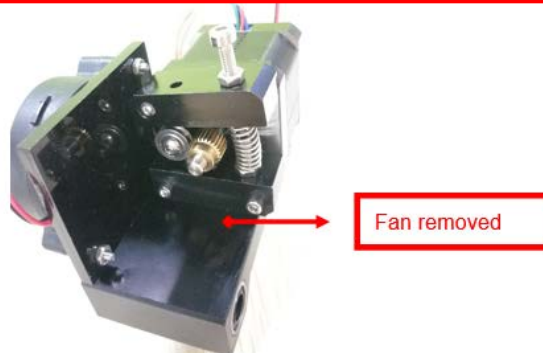
Z motor & Flexible bearing



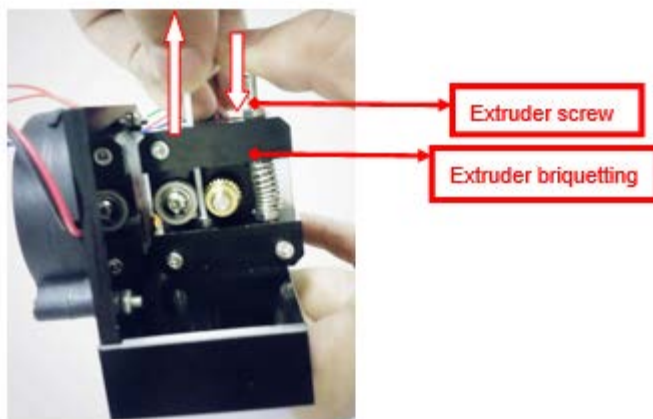
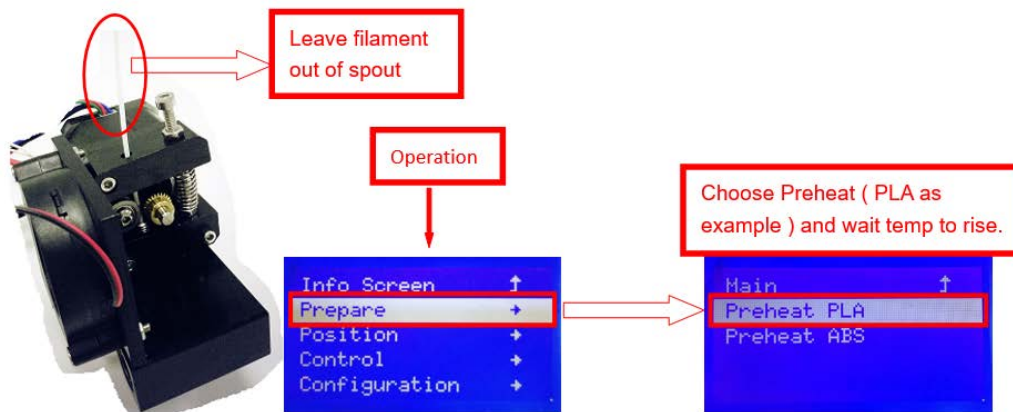
Z motor screw locking sequence

## 1. Nozzle blocking

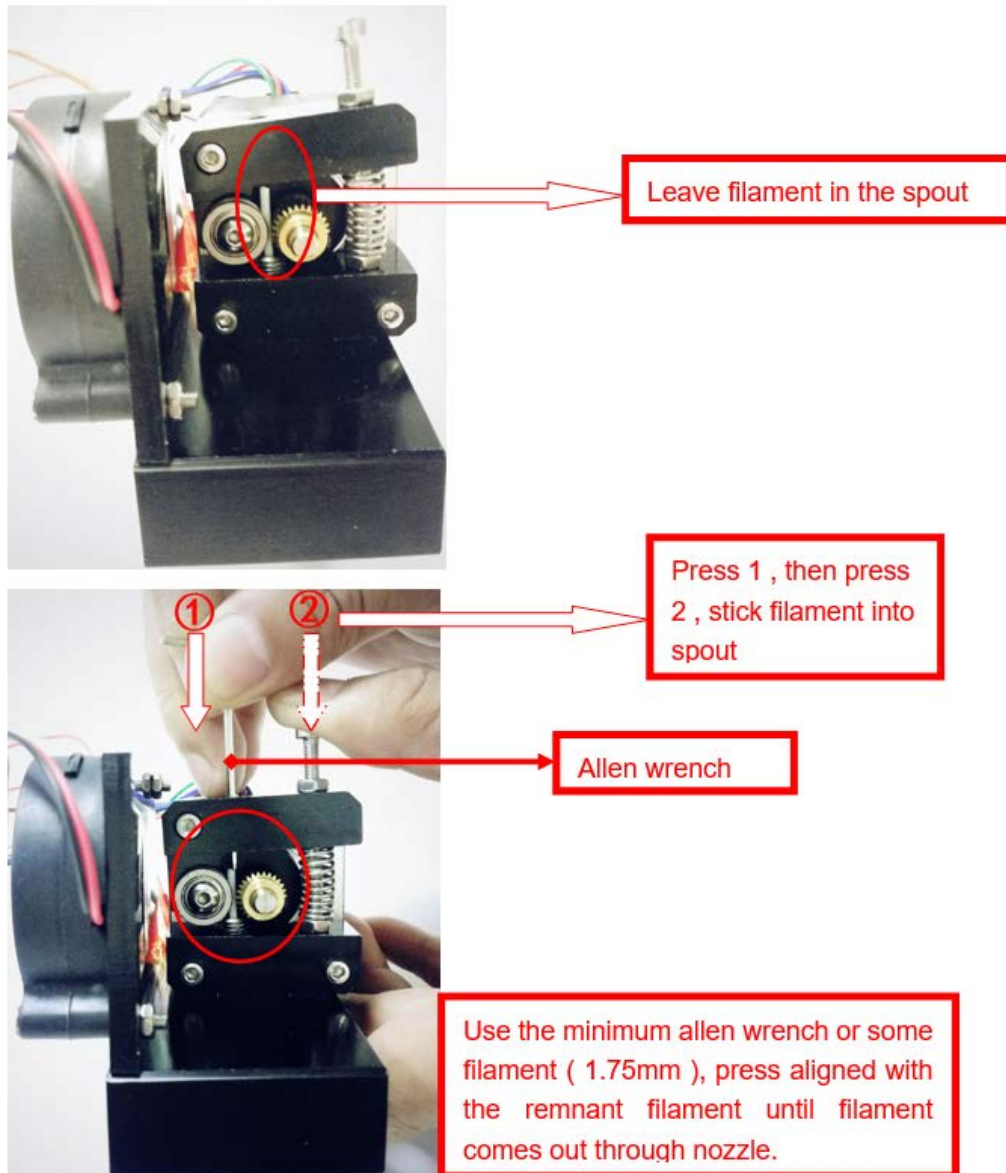
Tips: We have removed fan to show obviously. Please consider movement according



A. Only a little filament left in the nozzle and difficult to take out:



## B. Filament full filled in spout



### 3.FAQ

No.	Symptom	Reason	Method
1	Print model dislocation	Synchronous wheel/belt loose.	Tighten set screws or fasten belt
2	Glitch with the print model	Too high temp or slicing problem.	Extruder temp is too high and retracting speed & distance is too small
3	Foamy print model	Low temp or not smooth filament entering.	Rise extruder temp or check if brass nut and bearing is good. Replace a nozzle if methods above can't solve the problem.
4	Printer model is warped	Hotbed level isn't well adjusted.	Adjust hotbed
5	Unavailable G-code transformation	Wrong setting/wrong save path	Choose right machine type and change the right path
6	Software installation failed	Different OS	Reset OS
7	Unusual temp	Broken temp sensor	Change a new one

## VI. Maintenance

Important maintenance tips:

1. maintenance of X,Y,Z axis: Add some lubricants on the rods to reduce friction when the machine works noisy and a little bit shake.
2. Please refer to the USER MANUAL before printing, do preparation of hot bed adjustment first.
3. When finished printing, the filament should keep sealing, avoid moisture.
4. Preheat the extruder at the beginning of 2 nd time printing, let extruder auto-push filament for a while.
5. Machine should do some regular maintenance, drop some lubricating oil on thread rod, polished rod and bearings to avoid fatigue wear.
6. Do not let the fan and air-condition blow to the hot bed when printing.
7. Keep the working condition at "Temp:10-30°C, Humidity:20-70%".



## **VII. Maintenance Service Provision**

1. This product executes regulations of "Product Warranty Card".
2. Please contact supplier or customer service if the product have any problems . Do not repair it by yourself, otherwise you need to bear all the consequences.