# PRINT-RITE™

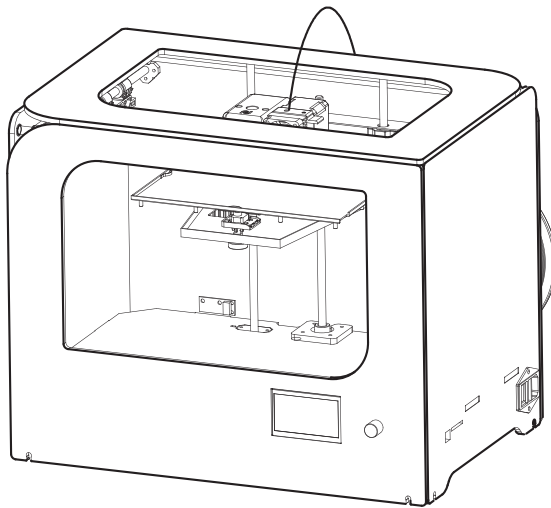# CoLiDo™ 3.0
## 3D Printer

# USER MANUAL



\* Carefully and thoroughly read this manual before using

View us at  *www.colido.com*

V1.02

# Index

This User Manual is designed to start your journey with CoLiDo Desktop 3D Printer in the right direction.

In Chapter 1~5, you can learn the basic knowledge of CoLiDo Desktop 3D Printer, how to unbox safely, how to setup correctly. In Chapter 6~9, you can learn how to calibrate the platform, how to print, how to maintain and how to troubleshoot.

Welcome you to the world of CoLiDo Desktop 3D Printer.

Following this manual will help you fully understand the Printer and make amazing products.

In this manual, Safety Alert Symbol will be marked in the start of safety message. The Safety Alert Symbol means potential safety hazards which will possibly harm you or others and cause product or property loss.

## Safety Alert Symbol

**WARNING:  HOT SURFACE,   DO NOT TOUCH**
Desktop 3D Printer has high temperature when working.
Make sure the Desktop 3D Printer cool down before touching inside.

**WARNING:  HAZARDOUS MOVING PARTS,   KEEP FINGERS AND OTHER BODY PARTS AWAY**
The moving parts of Desktop 3D Printer will possibly cause harm. Do not touch the Desktop 3D Printer inside when the printer is working.

**WARNING:  Make sure stand by Desktop 3D Printer when it working.**

**CAUTION:  Be careful when using  Print-Rite unapproved material, which may damage Printer and impact print quality.**

**CAUTION:  Disconnect power plug from power socket during emergency.**

**CAUTION:  Power socket must be located near the Printer and within reach.**

**CAUTION: Place Desktop 3D Printer in well-ventilated area as it will melt plastic and emit plastic odor when printing.**

# Interference of Radio and Electromagnetism

The Printer has been tested and certified to comply with the restriction of FCC Part 15, which is related to Class B digital facility.
The restriction is designed to provide reasonable protection against harmful interference in residential area when install the Printer. The Printer will generate, apply and radiate Radio Frequency Energy. If the Printer is not installed and used in accordance with the manual, it may cause harmful interference to radio communications. However, there is no warranty to the interference if the Printer is installed in a special environment. If the Printer does cause harmful interference to the receiver of radio or television, which can be determined by turning on and turning off the Printer, the user is suggested to adopt below one or more methods to eliminate the interference:

1. Change the orientation and location of the receiving antenna.
2. Increase the distance between the Printer and the receiving device.
3. Connect the Printer and the receiving device separately with two power sockets in different power supply circuit.
4. Get help from the dealer of the Printer or an experienced radio/
TV technician.
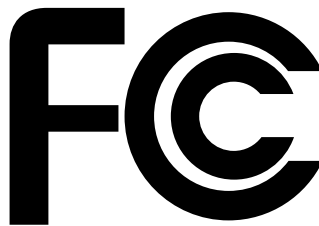
## Printing

Print Technology: Fused Deposition
                        Modeling
Construction Dimension: 225*145*140mm
Layer Resolution Setting: 0.1~0.4mm
Positional Accuracy: XY: 0.011mm
                        Z: 0.0025mm
Filament: PLA/ABS/TPU
Filament Diameter: 1.75mm
Nozzle Diameter: 0.4mm

## Mechanical

Frame:  Acrylic
Platform: Coated glass
XYZ Bearing: Steel
Stepper Motors:
1.8° step angle,
1/16 micro-stepping

## Electrical

Storage Temperature: 0 ℃ ~ 32 ℃ [32 ℉~ 90 ℉]
Operating Temperature: 15 ℃ ~ 32 ℃ [60 ℉~ 90 ℉]
Power: 220W
Input Voltage: 220V 50/60HZ

## Dimension

Printer Size: 467*320*380MM
Package Size: 580*435*555MM
Net Weight: 10.5KG
Gross Weight: 18KG

## Software

Software package: REPETIER-HOST
File Type: .STL，.GCO
Operating System: WINDOWS 7, MAC OS
Connection: USB, SD Card

# Chapter 4 Print Principle

CoLiDo Desktop 3D Printer makes solid, three-dimensional objects by melting PRINT-RITE PLA/ABS filament.
The designed 3D files are converted into CoLiDo command through computer software "Repetier-Host" and sent to the CoLiDo printer via SD Card or USB Cable. Then, the printer will heat up and melt PRINT-RITE PLA/ABS filament and push it out from the nozzle to make a solid object layer by layer.
This method is called Fused Deposition Modeling or FDM.
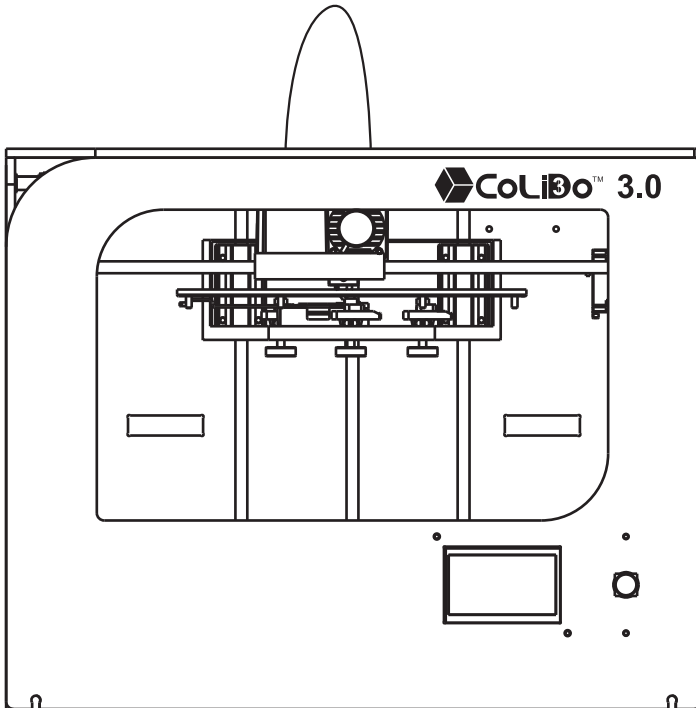
Before setting up CoLiDo Printer, please note that the Printer has been inspected and packed carefully at the manufacturing facility.
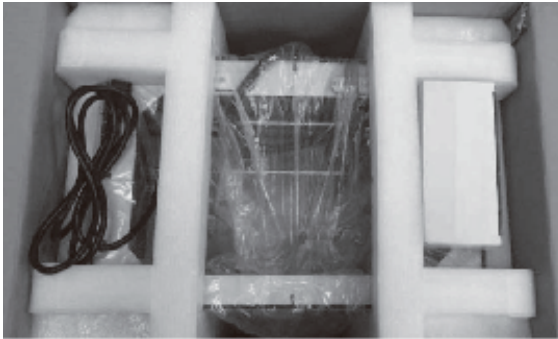
Hope you can take more time to unpack carefully and set it up.

## 5.1 Unpack CoLiDo Printer

⚠

CAUTION： Do not forcely tear anything when unpack and setup CoLiDo Printer. It may damage the Printer.
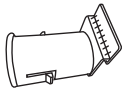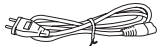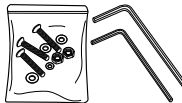
❶ Place the printer package box on a dry and flat surface when opening.



❷ Take out all accessories inside the Printer box.
Please refer to the Accessory Checklist at next page.

NOTE: In case there are any missing accessory, kindly email the Printer serial number, name and qty of missed accessory to 3Dsupport@utec.com.mo.

PLA Filament 1 Cartridge (500g) ······················
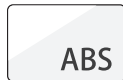
Spool Holder 1PC ··········································

SD Card 1PC ··············································

Power Cable 1PC ··········································

USB Cable 1PC ············································

Tools 1 Set ···············································

SD Card Reader 1PC ······································

PLA Glass Platform 1PC ···································
PLA

ABS Glass Platform 1PC ···································
ABS

Adhesive Tape ············································

3D printed samples 1 Set ·································

❶ Hold firmly the package foam of the Printer as shown on picture. Carefully lift up the printer when taking it out of the box. Place the Printer on flat ground and carefully remove the package foam and bag of the Printer.
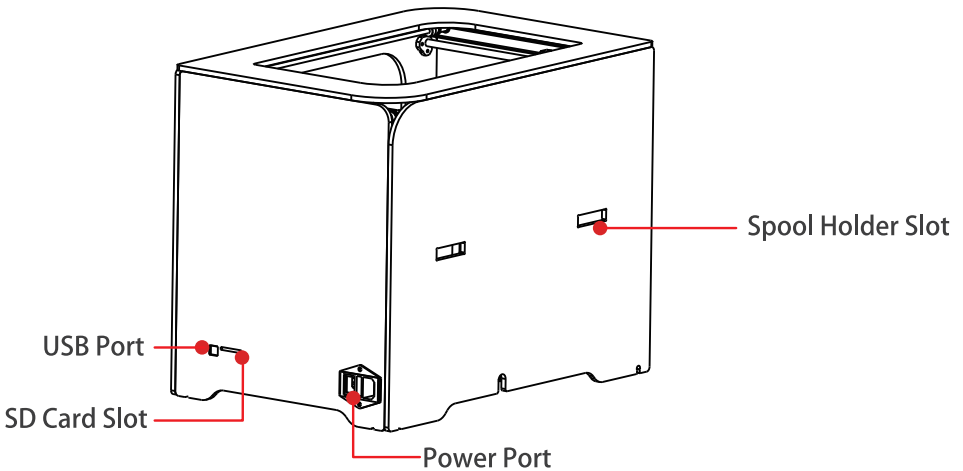
⚠️ NOTE: Do not pull or twist the cable at any time.
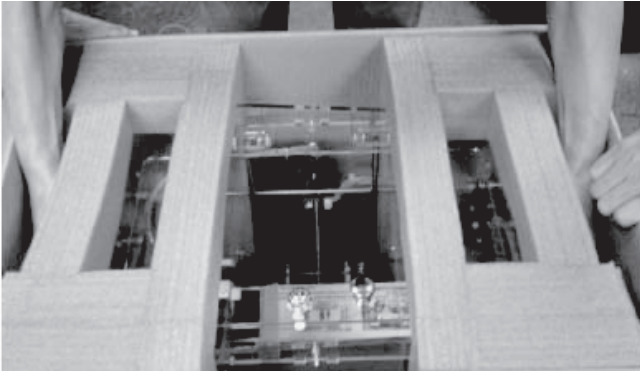


❷ CoLiDo Printer is unpacked. Please keep the packing material in good shape. It will be re-used in the future to avoid unnecessary damage during transportation.

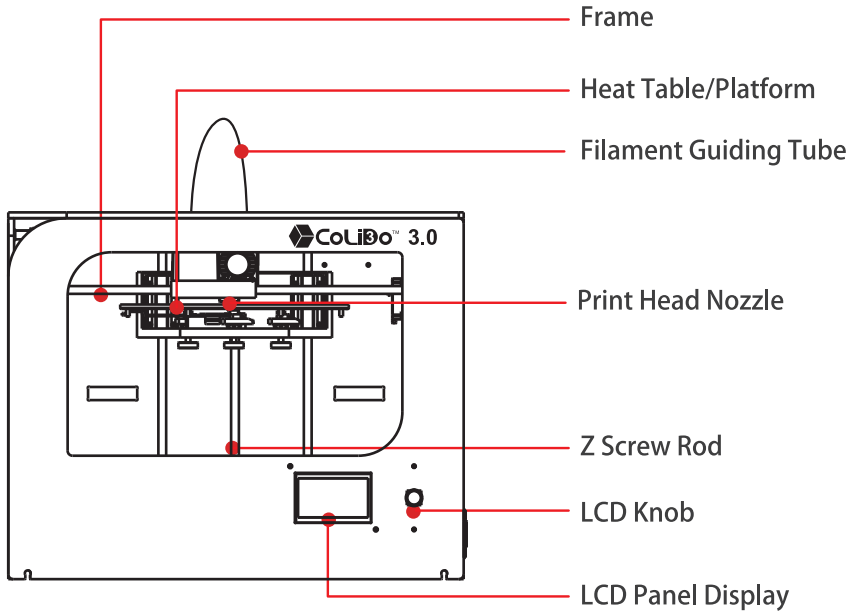⚠️ NOTE: Please keep the packing material in good shape. It will be re-used in the future to avoid unnecessary damage during transportation.

# 5.4 CoLiDo 3D Printer Structure Illustration



Frame

Heat Table/Platform

Filament Guiding Tube

Print Head Nozzle

Z Screw Rod

LCD Knob

LCD Panel Display

Spool Holder Slot

USB Port

SD Card Slot

Power Port

# 5.5 Release Printer Head

**1** Remove the two locking brackets to release the printer head. (Use the Allen Key in the Accessory to unlock the screws)
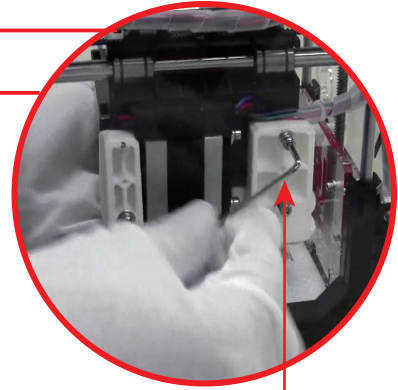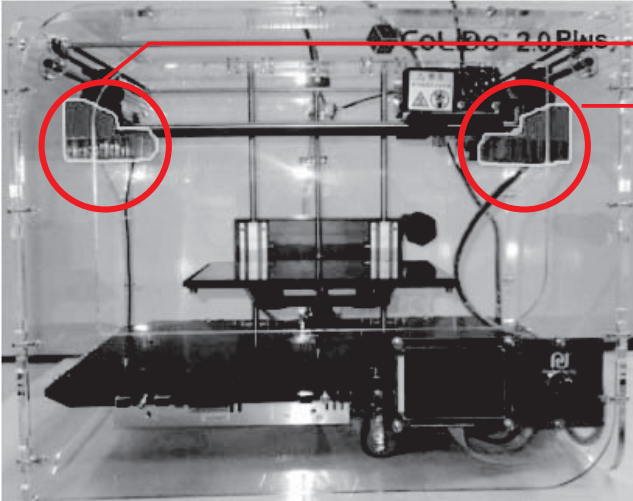


**Allen Key**

**2** Remove the tape then remove plastic foams under the platform.
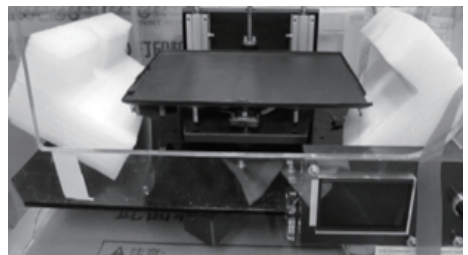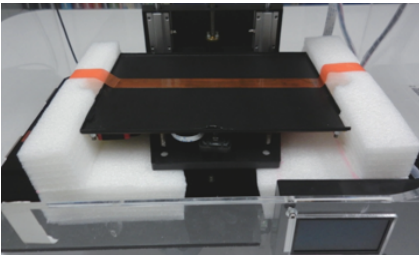
Insert Spool Holder into the Spool Holder Slot located at the back of the printer and put down to lock as shown below.

(Back view of the Printer)
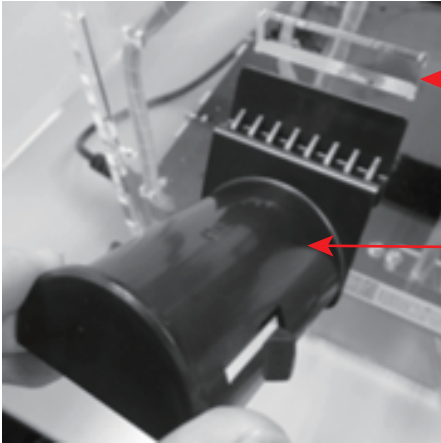


Spool Holder Slot

Spool Holder
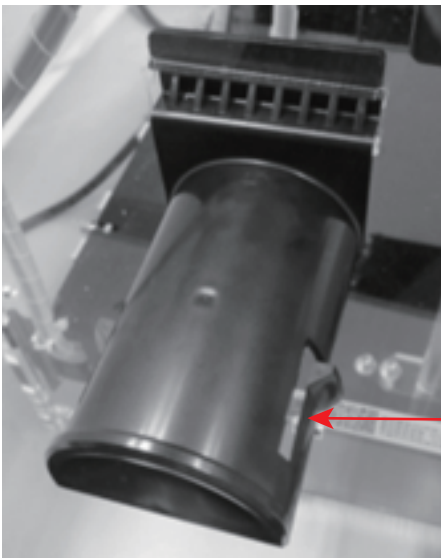


Spring of Spool Holder

# 5.7 Mount Filament

❶ Take out filament cartridge from the box and remove the vacuum bag.



❷ Mount filament cartridge on the spool holder and lock by the spring of the spool holder.
NOTE: The black thumb pin and the printed "Note" must be facing front.
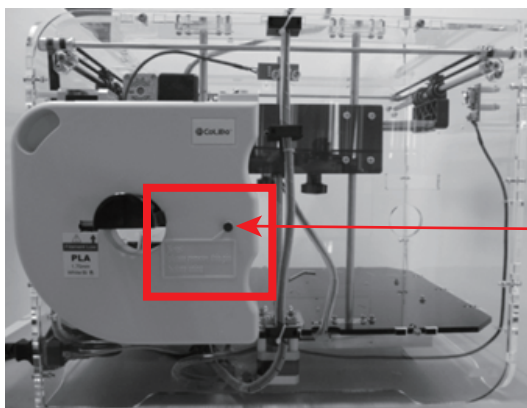


**Black Thumb Pin**

❸ Remove the black thumb pin to release filament.



NOTE: To avoid damage to the cartridge, do not pull filament until:
1. Black thumb pin is removed.
2. Cartridge is installed into the printer.

14

**❶** Gently pull the filament from the cartridge.
Cut the filament tip flat using scissor for easy installation.
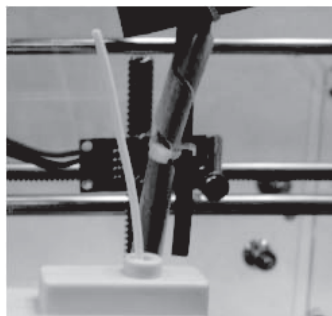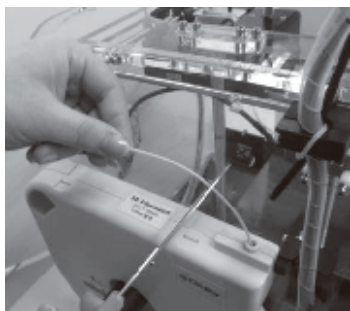




**❷** Insert filament into the Filament detetor (see below picture) until it comes out from the other end of the tube.
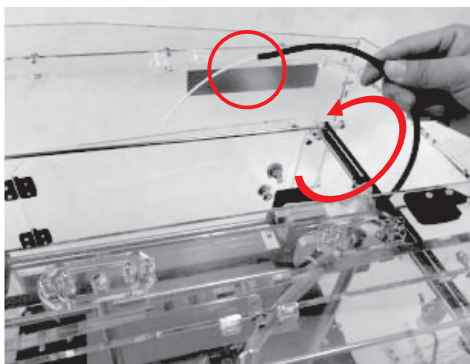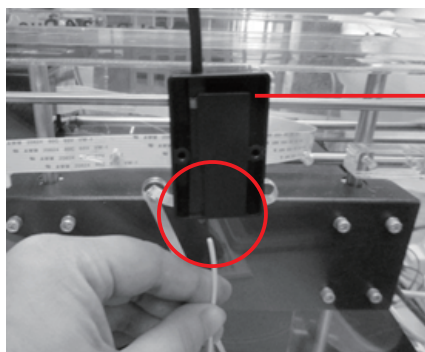




Filament detector

NOTE: Make sure that the Filament is inserted into the tube properly to avoid filament jam during operation.

Do not push back excess filament into the cartridge.

Ensure that the filament is mounted on the left of the printer (Back view of the Printer) and rotate counterclockwise direction.

**3** Push down the Printer Head arm.
Insert the filament into the hole located on the top of Printer Head.
It is better to make the filament more straight and insert it until reach
the end of the nozzle.
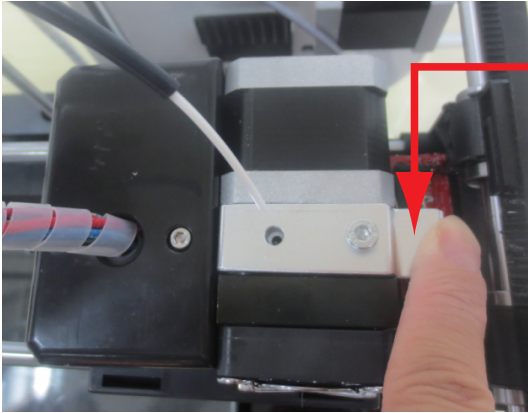


Printer Head arm

**4** Push and release the Printer Head arm to lock the filament.



Printer Head arm

❶ Get two Glass Platforms from package .
    Select Glass Platform according to the selected filament material that will
    be used. The two platforms are coated Glass Platform which mark
    "PLA" or  "ABS" to  distinguish.

| | |
|---|---|
| PLA Use Only<br><br>PLA | ABS Use Only<br><br>ABS |
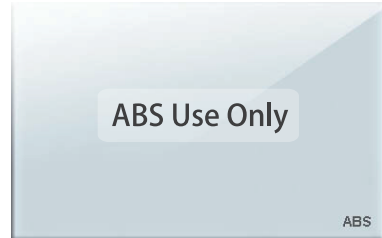
Coated Glass Platform

NOTE:
1. Do not change the platform heating temperature setting to avoid the
    printed object not sticking on the platform.
   (PLA platform: 65~70℃, ABS platform: 100~110℃)

2. Clean the glass platform using lint-free cloth or wet tissue. Don′t use
    alcohol or any cleaning chemical solution in cleaning the glass platform,
    it will damage the glass coating.

3. Please wait for the platform temperature to cooldown (25~30℃)
    before removing the printed object. Quickly removing the printed object
    will cause damage on the printed object and/or glass coating.

# 5.9  Install Glass Platform

**2** Install the Glass Platform to the Heat Table of the Printer and locked by 2 spring sheets in the Heat Table.



Glass Platform

Spring Sheet

Heat Table
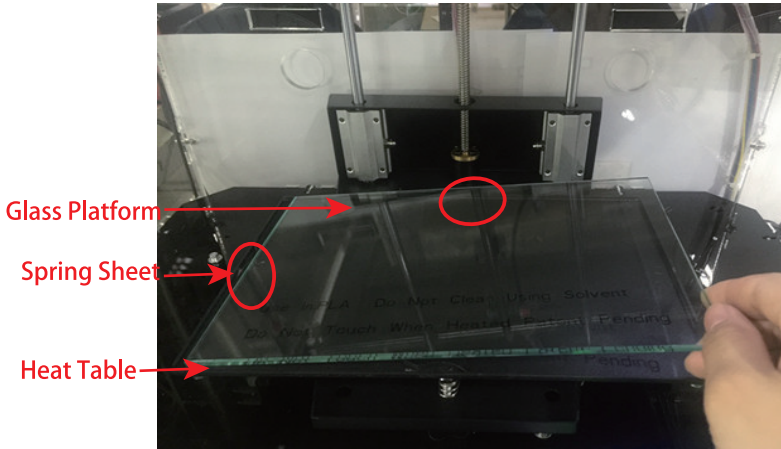
**3** To uninstall the Glass Platform, push the right lower conner as below picture.
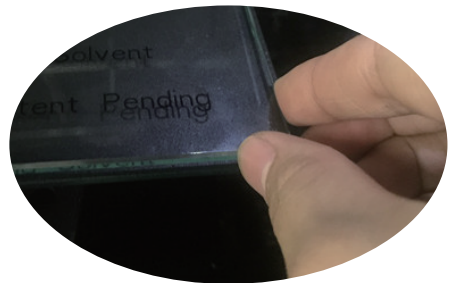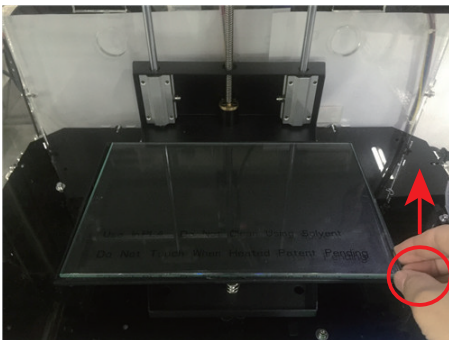
Connect Power Cable to the Printer

⚠️
NOTE: Make sure printer switch is at "O" position.



❶ Plug-in the power cable to AC power source.

NOTE: The socket-outlet should be installed near the printer and should be accessible.
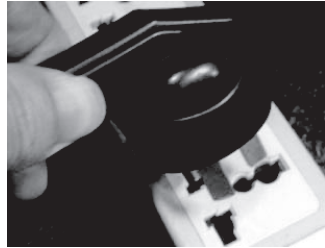


❷ Properly insert the SD Card in SD Card slot. (SD card stores .gco files to print directly)

NOTE: Before inserting or removing SD Card, please turning off the printer to avoid damanging the SD Card.
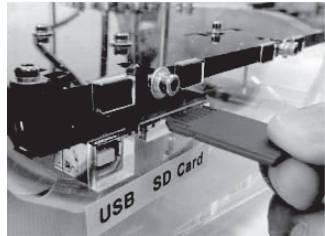


❸ Power on the printer by switching to "I" position as shown.



⚠️ CAUTION: Only use the Power Cable included in the package. Power Supply Socket should be near to the Printer , such the power can be disconnected easily in case of emergency.

## Initial display of LCD Panel
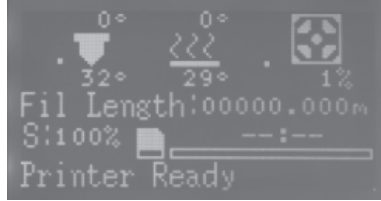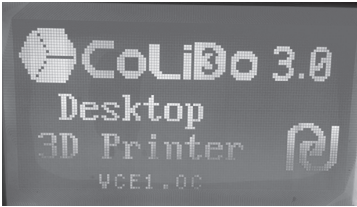


## 6.1 Main Menu

6.1.1 Push the LCD knob to go to main menu and you can see three submenus (picture A).
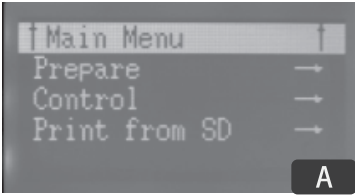


6.1.2 Rotate the LCD knob and select "Prepare" (picture B), then push the LCD knob to go to "Prepare" submenu. (picture C)
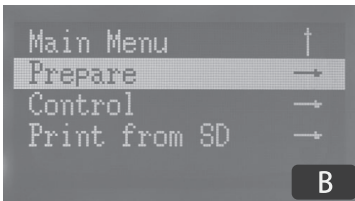


6.2.1 Rotate the LCD knob and select "Calibrate Mode" (picture D), then push the LCD knob to start the calibration .
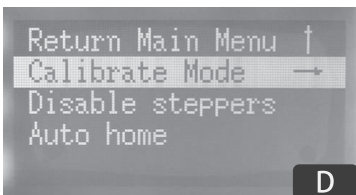


NOTE: "Calibrate Mode" is to guide user to operate the printer and to check the printer work well.

6.2.2 The platform will move up and the printer head will go to the 1st location Point 1 (picture E) and the LCD Display screen will show as picture F.
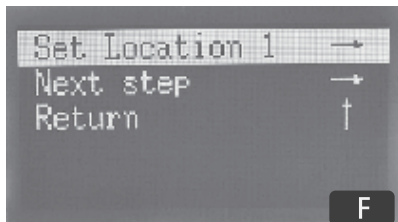




6.2.3 Start to calibrate the table and nozzle.

6.2.3.1 Sound assist system: When start calibrate mode, there are two types of the buzz sound to assist the calibration.
1. Short buzz sound: that means the calibration is not correct.
2. continued buzz sound: that means the calibration is correct.

6.2.3.2 Calibration Standard Condition:

The continued buzz sound: The gap between nozzle tip and glass Platform are in the good condition.

Nozzle Tip

Glass Platform
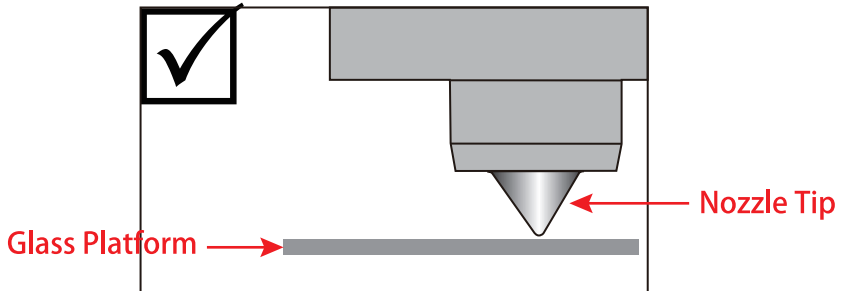
Note: If the calibration standard condition is not met, platform level must be adjusted.

Condition 1: There are no sound at all.

Adjustment 1: Rotate the adjusting knob under the platform until the printer make continued buzz sound as standard condition.
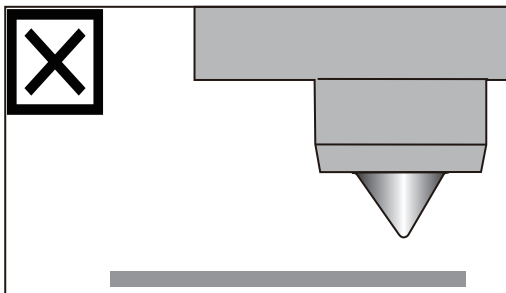
Condition 2: Short buzz sound.

Adjustment 2: Rotate the adjusting knob under the platform until the printer make continued buzz sound as standard condition.
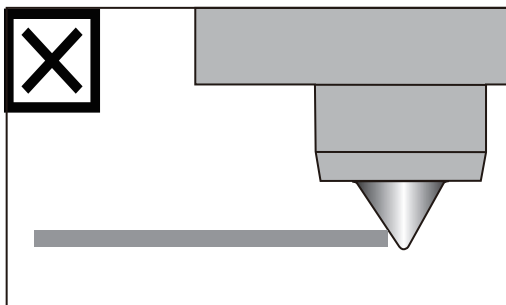
6.2.4 When the sound assist system not stable or not working well, please follow the steps below to calibrate the printer.

To adjust the gap between glass platform and nozzle, please follow the refer pictures below to visually adjust the printer:

When look through reflection image on the glass platform, the nozzle tip and the platform have big gap (As Fig. A), please rotate adjusting knob to rise up the platform until the nozzle tip and the reflection nozzle tip image just meet together to stop rotating. (As Fig.B)

Nozzle Tip

Glass Platform

Reflection
Nozzle Tip
Image

A

Nozzle Tip

Glass Platform

Reflection
Nozzle Tip
Image

B
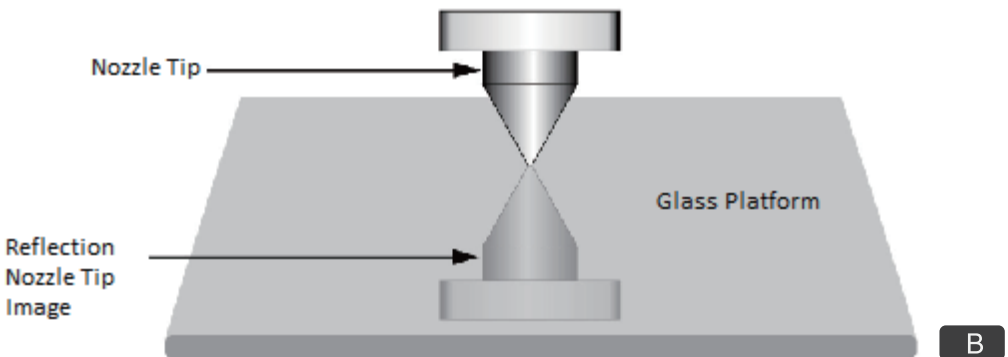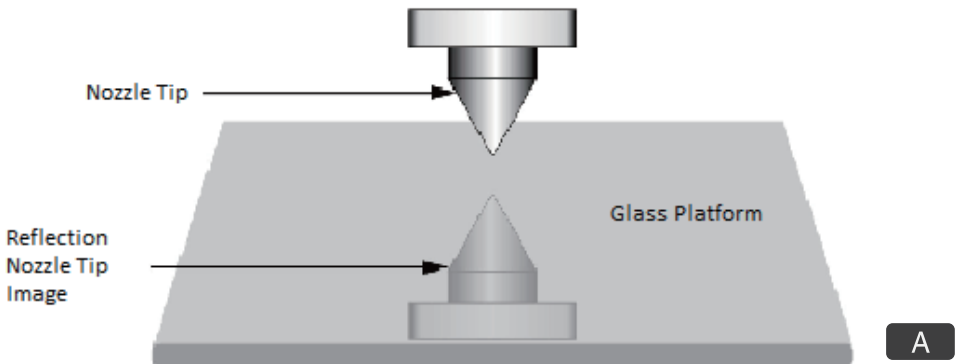
The adjusting knob location as picture H (total 3PCS).



Adjusting Knob

H
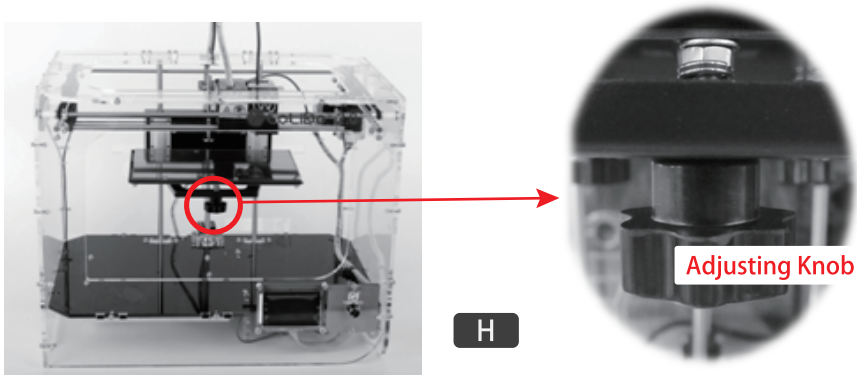
**6.2.5** After rotate the adjusting knob to meet the Calibration Standard Condition, rotate the LCD knob to select "Next Step" as picture I, then press the LCD knob to next point to calibrate.



Set Location 1 →
Next step →
Return ↑

I
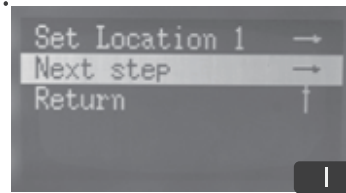
**6.2.6.** Follow 6.2.3 and 6.2.4 procedure to calibrate point 2,3 and 4 as picture J.



Set Location 2 →
Next step →
Return ↑

Set Location 3 →
Next step →
Return ↑

Set Location 4 →
Next step →
Return ↑



Point 3
Point 1
Point 4
Point 2

J
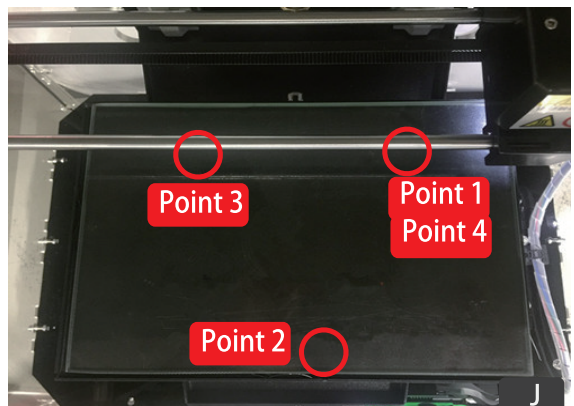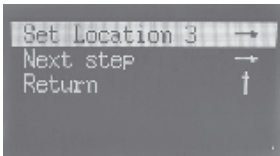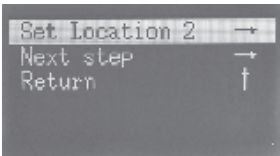
# 6.3 Nozzle & Filament Test

**6.3.1** After calibration, the screen will show Picture K, push the LCD knob to select the filament you are using.

```
PLA Filament    →
ABS Filament    →
TPU Filament    →
Return          ↑
                    K
```
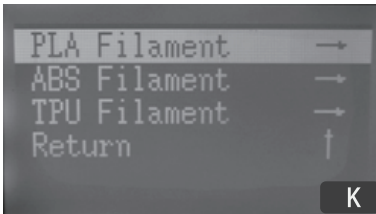
**6.3.2** The screen will show Picture L, make sure the filament is inserted into the printer head correctly.

```
Load PLA filament
                    L
```
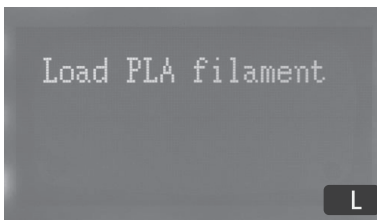
**6.3.3** The nozzle will start to heat up as picture M. Once the nozzle actual temperature reach the setting temperature as picture N, the filament will auto load into the nozzle and flow out from the nozzle.

```
205°      0°
82°      32°      1%
Fil Length:00000.000m
S:100%        --:--
Nozzle Heating..wait   M
```

NOTE: the setting temperature for PLA and ABS is different as below. Incorrect temperature setting will result to printer damage.

**Nozzle Setting Temperature**

```
205°      0°
205°      31°      1%
Fil Length:00000.099m
S:100%        00:01
Load Filament          N
```
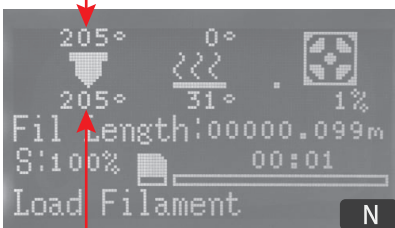
| Filament | Nozzle Setting Temperature |
|----------|----------------------------|
| PLA | 205℃ |
| ABS | 220℃ |

**Nozzle Actual Temperature**

6.3.3  Check the melted filament flow condition base on below instruction.

   a.  If good condition as picture O, the printer will go ahead to test printing.
   b.  If no good condition as picture P, push the LCD knob to show screen as
      picture Q and select "Stop Calibrate" to return to main menu.
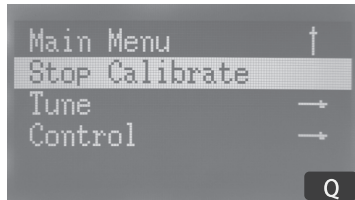


Good condition:
The melted filament flow out smoothly and continuously from the nozzle.
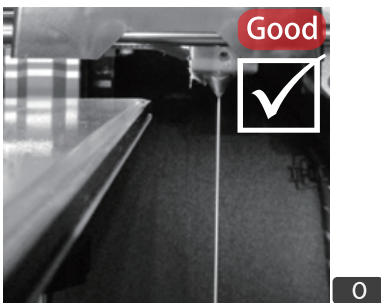


No Good condition:
The melted filament do not flow out smoothly and continuously from the nozzle.



**Note:** If the filament flowing is in No Good condition, check the following.
   a. Nozzle Temperature - must be the equal to the set temperature and according to the filament material melting temperature.
   b. Nozzle Cleanliness - No Clogging by refer to troubleshoot clogged nozzle label on the front of the printer.
   c.  Filament Insertion on the receiving port correctly.
     If problem still occur kindly email 3Dsupport@utec.com.mo

# 6.4 Print test with SD Card

6.4.1 After nozzle and filament inspection, the screen will show as below picture R. The printer will start to heat up the platform a few minutes.
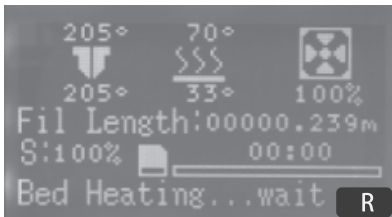


NOTE: If screen shows no test file such as picture S, means that the test file cannot be found n SD card. Check the following.
1. Check if the SD Card is inserted into the SD card slot well.
2. Check if the test file is saved in the SD Card. The test file name will be updated base on the shipped printer.
(For example:
PCT1.gco for PLA filament and
ACT1.gco for ABS filament)
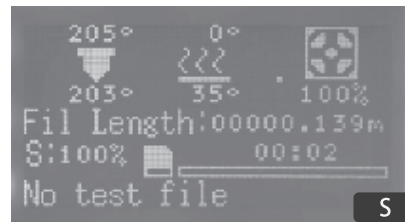


6.4.2 Once the platform temperature reach the setting temperature as picture T, the nozzle will heat up next as picture U.

Platform Setting Temperature



Platform Actual Temperature
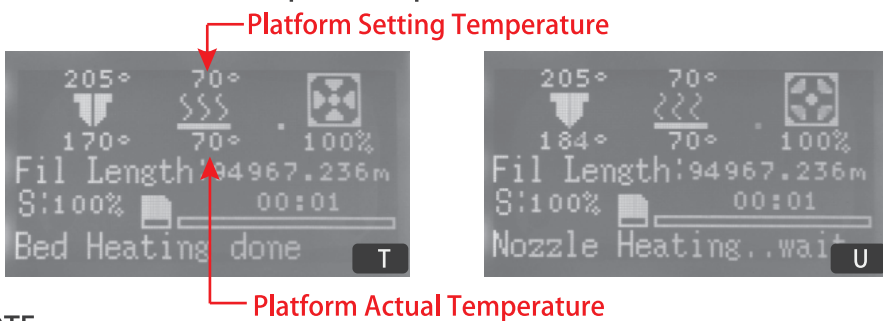
NOTE:
The platform setting temperature for PLA and ABS is different . Incorrect temperature setting will result in the object sticking on the platform.

| Filament | Nozzle Setting Temp | Platform Setting Temp |
|----------|---------------------|-----------------------|
| PLA | 205℃ | 65~70℃ |
| ABS | 220℃ | 100~110℃ |

# 6.4  Print test with SD Card

6.4.3 Once the nozzle temperature reach the setting temperatuer (Picture V), the heating is done and the printer start to print.



6.4.4 Finish printing the test file, the LCD Display will show as picture W. The platform and the nozzle will start to cooldown.
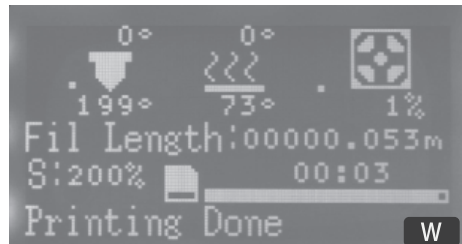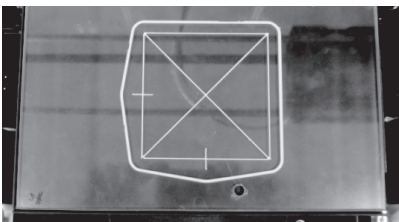


NOTE: Please wait for few minutes to cooldown the platform before removing the printed object.

6.4.5  LCD Display Screen Definition

Platform SettingTemp

Nozzle Setting Temp

Nozzle Actual Temp

Fun Running Speed

Filament Consume Length

Printing Speed

Printing Consume Time

Printing Process Bar

Printing File Name

Platform Actual Temp
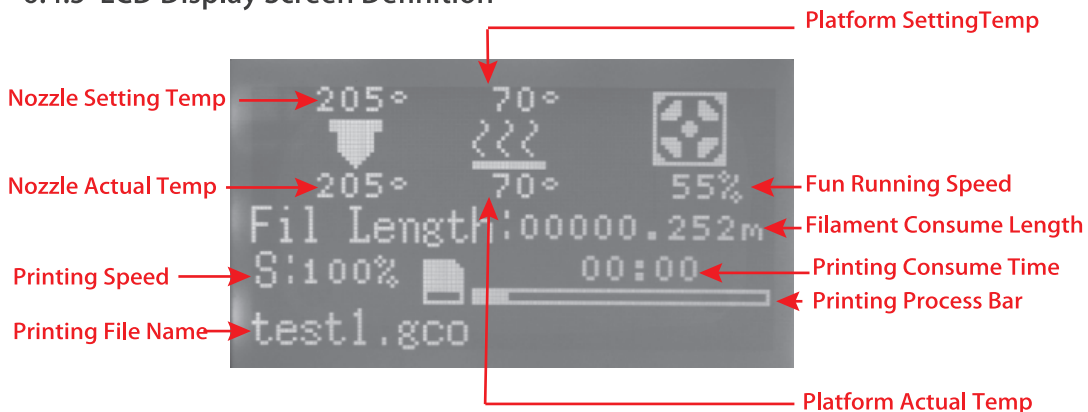
# 6.5 Filament detector and Recovery system

### 6.5.1 Filament detector

When filament used up or broken, the printer will stop print and LCD disply will shown as Fig. A. Please prepare new filament and select "Resume print" (As Fig. B). Press down the print head arm and push down the remain filament about 1cm when the nozzle reach to the target temperature, then pull it out (Fig. C) Please refer chapter5.8 to load new filament.



A



B



C
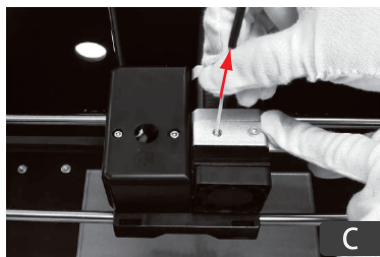
Note: Please clean the remain filament on the nozzle. The G-code must be save in the SD card to print if use the filament detector. (It must be NOT save in the submenu)

Note: Wait more than 60 second to restart the printer if you turn it off.

### 6.5.2 Recovery system

When meet power failure:

Situation 1: If need to continue print after power failure, please use the adhesive tape to fix the print platform and the skirt. DO NOT move the object, priter head and X, Y, Z bearing. After reconnect power, use the LCD knob to seclect "Resume print".

Situation 2: If need to re-print object, seclect "Cancel print".(Fig.B)



A



B
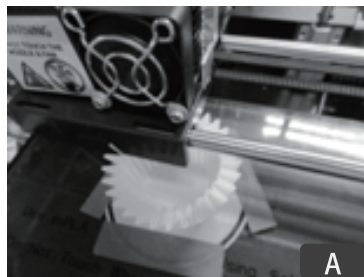
Note: Please set up a brim for the object. (Refer Chapter 7.5) The G-code must be save in the SD card to print if use the recovery function. (It must be NOT save in the submenu)

# 6.6 Prepare Menu
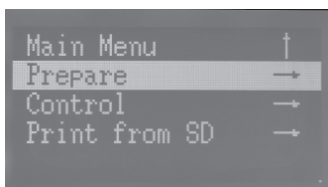


There are 6 submenus under "Prepare" as below picture I~II:

1、 Calibrate Mode → Printer calibration and test
   (Refer to 6.1~6.4)。
2、 Disable Steppers→Unlock all motors, can move the position of the
   platform and the printer head manually.
3、 Auto Home→Printer Head will go to initial position.
4、 Reset X Home→Printer Head return to X initial position. Y, Z position will
   not change.
5、 Change Filament →Load or unload filament (Refer to 6.6)
6、 Cooldown→Cool down the temperature of the platform and the nozzle to
normal temperature.
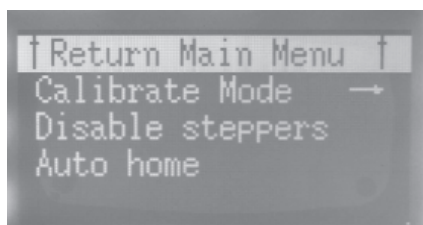
# 6.7 Change Filament

"Prepare" - "Change Filament" has two submenus: (as picture a)

      Load Filament

      Unload Filament

```
Auto home
Reset X Home
Change Filament    →
Cooldown
```

```
Load Filament    →
Unload Filament  →
Return           ↑
                        a
```
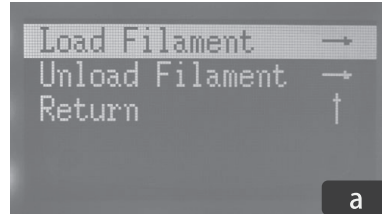
6.7.1. Select "Load Filament" and proceed as below picture b~f.

```
PLA Filament    →
ABS Filament    →
TPU Filament    →
Return          ↑
                    b
```

```
Load PLA filament

                        c
```
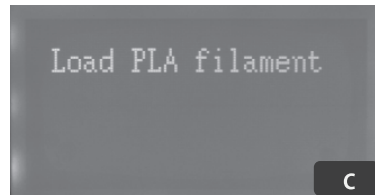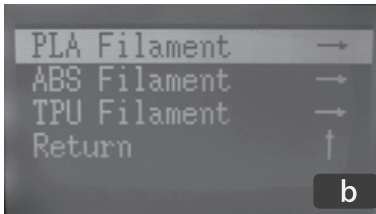
a. Select the filament material you are using

b. Insert the filament to the hole of the printer head

```
205°        0°      
 ▼        ≀≀≀      
  82°      32°      1%
Fil Length:00000.000m
S:100% ▪        --:--
Nozzle Heating..wai
                       d
```

```
205°        0°      
 ▼        ≀≀≀      
 205°      31°      1%
Fil Length:00000.099m
S:100% ▪        00:01
Load Filament
                       e
```
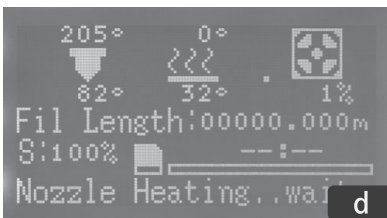
c. Heating up nozzle temperature to the  setting temperature

d. Once reach the setting temperature, The  filament will be semi-auto loaded into the nozzle and flow out.
Check the filament flowing condition by refer to 6.3.3.

```
205°        0°      
 ▼        ≀≀≀      
 205°      29°      1%
Fil Length:00000.099m
S:100% ▪        00:02
Load Filament Done
                       f
```

e. Finish the filament loading

# 6.7 Change Filament

6.7.2. Select "Unload Filament" and proceed as below picture g~k.

```
Load Filament    →
Unload Filament  →
Return           ↑
```
g

```
Unload filament
```
h
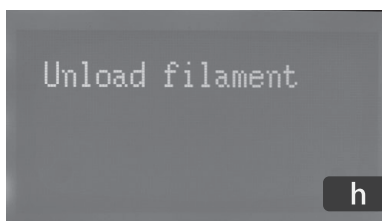
a. Heating up the nozzle temperature to the setting temperature (picture i).

```
220°        0°      [⊞]
178°       31°    100%
Fil Length:00000.000m
S:100%            --:--
Nozzle Heating..wait
```
i

b. Once the temperature reachs the setting temperature as below picture g, the filament will be semi-auto unload from the nozzle.

```
220°        0°      [⊞]
220°       31°    100%
Fil Length:94967.236m
S:100%            00:01
Unload Filament
```
j
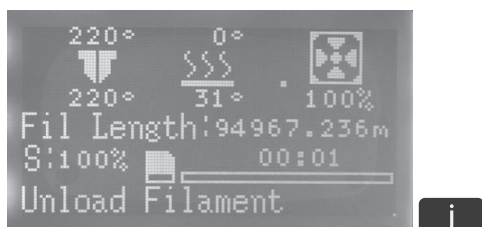
c. Once the LCD display will show screen as below picture k, finish the filament unloading and gently pull out the filament from the nozzle.

```
220°        0°      [⊞]
220°       38°    100%
Fil Length:00000.039m
S:100%            00:02
Unload Filament Done
```
k

# 6.8 Control Menu



There are 6 submenus under "Control":
1、 中文(Chinese) →to change to Chinese Display.
2、 Temperature →to adjust temperature.
3、 Speed: 100%→to adjust print speed.
4、 Printer Runprama →to refer to printer
running info.
5、 Printer Info →to refer to printer basic
information.
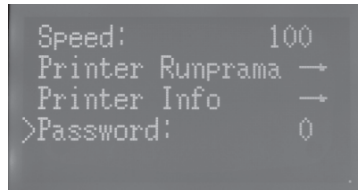6、 Password→Manufacturer setup. Forbit user
to adjust.
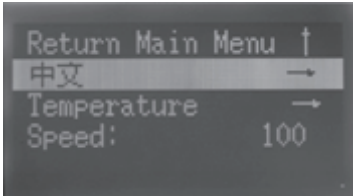




6.8.1 "中文": The Display has two languages with Chinese (中文) and English. Select the languge and push the knob to confirm to change to another language that you want to show in LCD Display as below (Chinese).
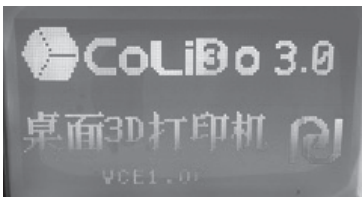




Change Chinese to English: Push the knob, select "参数"- "English".
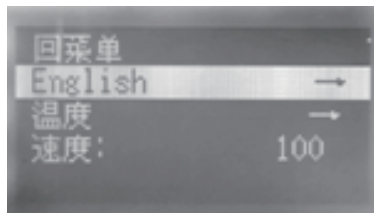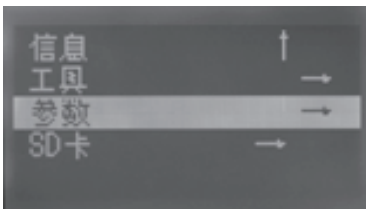




NOTE: Once change the language in LCD disaply, the printer will be restarted. If changing during printing, the printing will stop.

# 6.8 Control Menu

### 6.8.2 Temperature menu can set up below parameter:

```
↑Return              ↑
 Nozzle:        220  ← Set up the nozzle setting temperature (0~260)
 Bed:             0  ← Set up the platform setting temperature (0~135)
 Fan speed:      255 ← Set up the Fan speed. (0~255)
```

Setting method: Rotate the knob to select the parameter that you want to adjust and push the knob to confirm. Then rotate the knob to adjust the setting you want and push the knob to confirm the number. The parameter will be run to the system.

NOTE: 1. Do not adjust the temperature during the heating;

2. When adjust the temperature during printing, need increase or reduce the temperature 5~10℃ step by step, or the printing will stop.

### 6.8.3 "Speed" is to adjust the printing speed during printing. It can be adjusted base on actual condition. The number increases, the printer speed also increases. The number can be set from 10% to 200% and the default speed is 100%.

### 6.8.4 "Printer Runprama" menu as below.
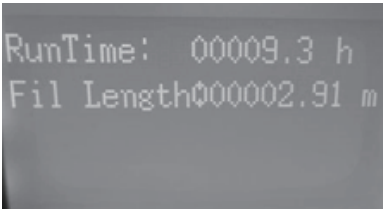
```
RunTime:   00009.3 h   ← The printer total turning-on time
Fil Length000002.91 m  ← Filament total usage for the printer
```

### 6.8.5 "Printer Info" menu as below.
It is to show the printer basic information such as Printer type, Version No and License No.
The actual Version No and License No will be depend on the shipped printer.
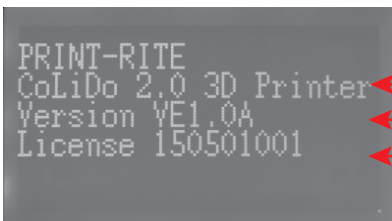
```
PRINT-RITE
CoLiDo 2.0 3D Printer  ← The printer type
Version VE1.0A         ← The printer version No
License 150501001      ← The printer version release date
```

# 6.9 Print from SD Menu

"Print from SD Card" is to select the print file from SD Card to print.

6.9.1 The default documents when out of factory is:
(it will be updated depend on the shipped printer)



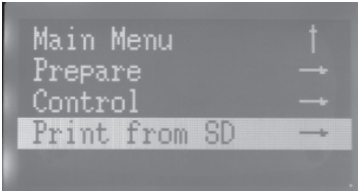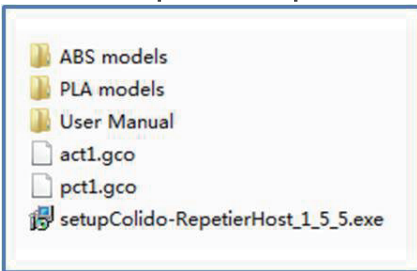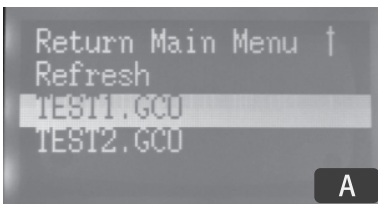NOTE: PCT1.gco is test file for PLA filament, ACT1.gco is test file for ABS filament.

6.9.2 Rotate the knob to select the print file that you want to print (.GCO file) and push the knob to confirm to start to print the file.



A Select the print file that you want to print
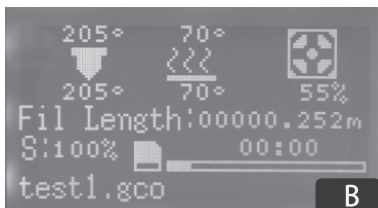


B Once the platform temperature and the nozzle temperature reach the setting temperature, the printer start to print.

NOTE: The printer just can read the G-code (GCO). You can print .GCO file with SD Card directly. Otherwise, you can convert .STL file to .GCO file using software REPETIER-HOST, then save the GCO in SD card to print directly or connect REPETIER-HOST in the computer to print through USB cable .

### 6.9.3 Pause Printing Feature:

1. Push LCD knob and rotate to select "Pause Print";
2. Push LCD knob and rotate to select "Resuming print" to resume print.

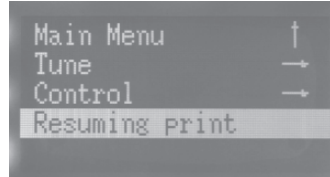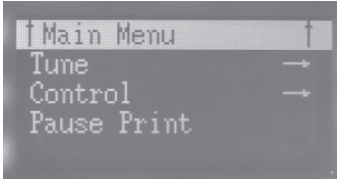NOTE: When pause printing, the printer head will go to home position and be locked. The nozzle and the platform temperature will keep on.
  a. Please clear up the remained filament outside the nozzle tip before resume printing.
  b. If resume printing after pause long time, please make sure the nozzle no clogged by pressing the printer head arm and pushing the filament into the nozzle until the filament flow out smoothly.

### 6.9.4 Stop Printing Feature:

1. Push LCD knob and rotaet to select "Stop Print";
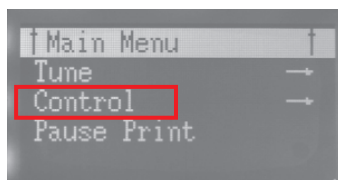2. Once stop, the printer head will go to home postion. the nozzle and the platform temperature will cooldown.
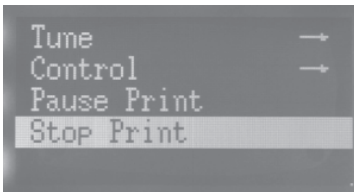
### 6.9.5. Adjust Printing settings Feature:

During printing, rotate the LCD knob and rotate to select "Control". You can adjust the setting temperature, speed or review the printer information. (Refer to 6.8)

If you want to print files from computer, you need install REPETIER-HOST.
Computer Operation System: WINDOWS 7, MAC OS

⚠ REPETIER-HOST is a software which is used to slice the 3D models (.GCO or .STL) and command CoLiDo Printer to print.

## 7.1 Install REPETIER-HOST (WINDOWS)

❶ Find "setupColido-RepetierHost_1_5_5 .exe" in SD Card, double click to start.

Select Setup Languange to use during the installation.

NOTE: For the actual version of the software, please refer the version in the SD card.
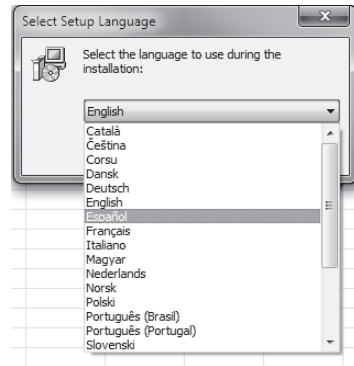
❷ Start to install. (You will be asked "Do you want to allow the following program to make changes to this computer?" ,please click "Yes" to continue installation.
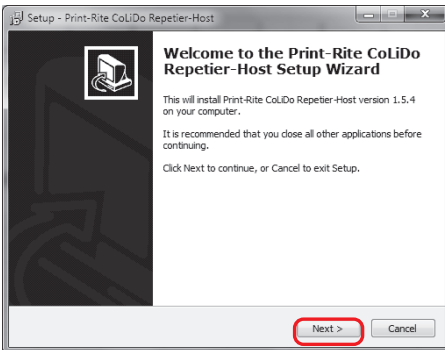
Click "Next"
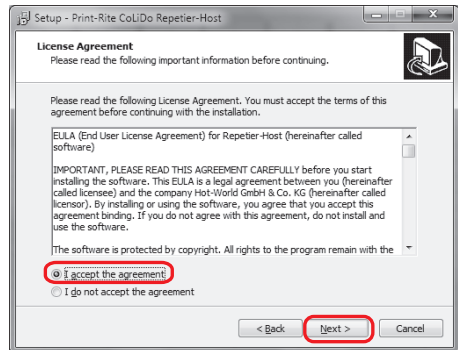
Click "I accept the agreement" ,
Click "Next"

❸ Select a destination to save the software and select the components should be installed, then click "Next" and "Install".
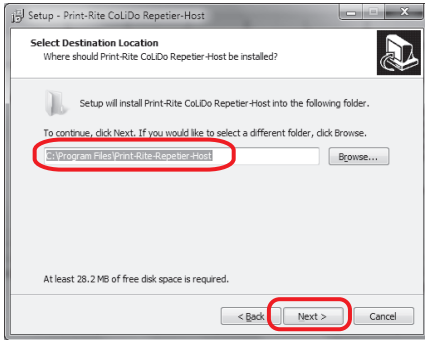
Click "Next"
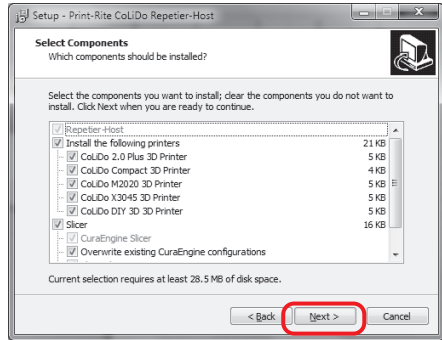
Click "Next"
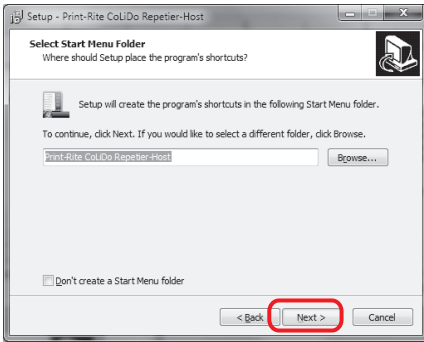
Click "Next"
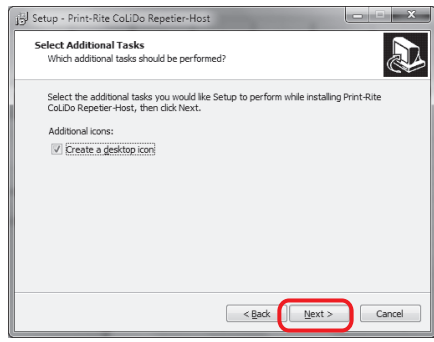
Click "Create a desktop icon"
Click "Next"
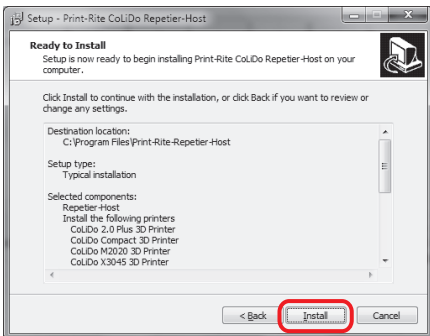
Click "Install"
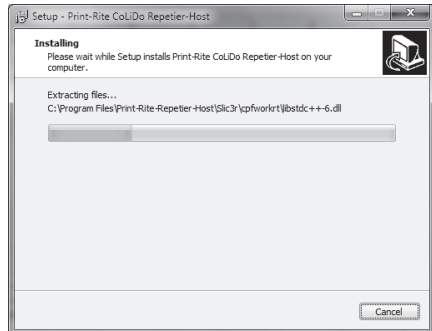
if antivirus message appear, please allow the operation timely.

**4** Click "Install Arduino driver", "Install FTDI serial driver" and "Launch Print-Rite CoLiDo Repetier-Host" and then click "Finish".
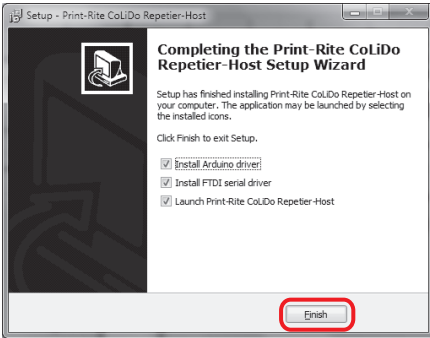


Click "Finish"

**5** Install Arduino drivers.
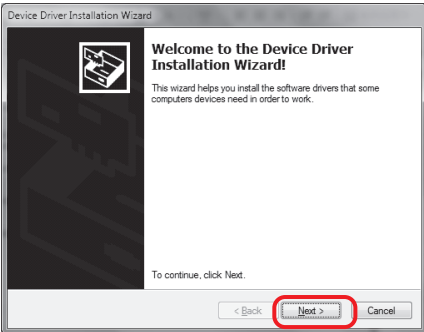


Click "Next"
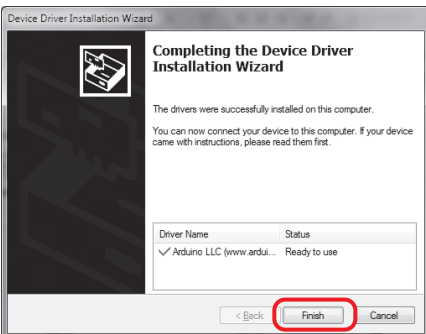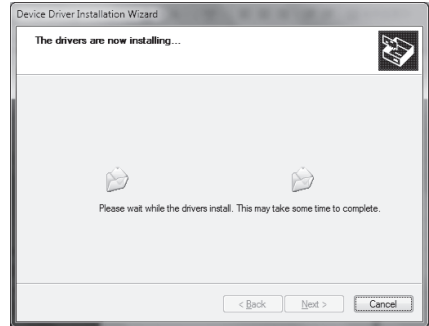




Click "Finish"

# 7.1 Install REPETIER-HOST (Cont.)

**6** Install FTDI Drivers.
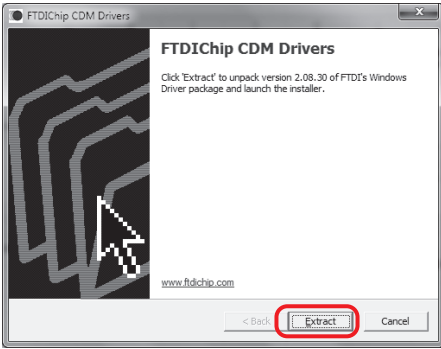


Click "Extract"



Click "Next"
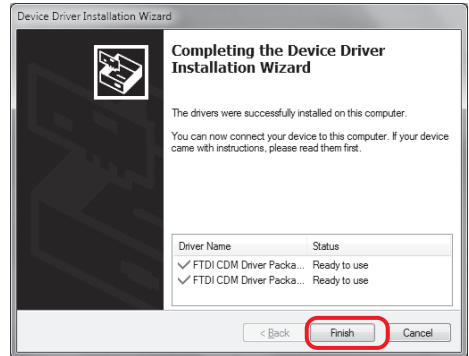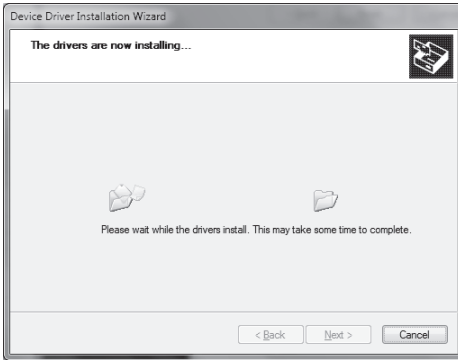




Click "Finish"

**Connect the printer to the computer using USB Cable and Turn ON the printer.**

When the computer is the first time connecting the printer, there is connection reminder at the right bottom of the computer.
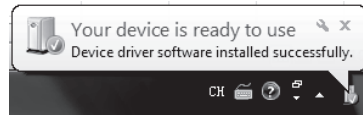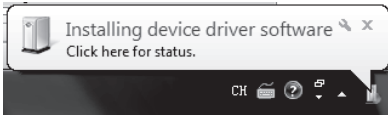


❶ double click  to go into "Repetier–Host" software.

❷ Select language you want in the software, "Config" - "Language".
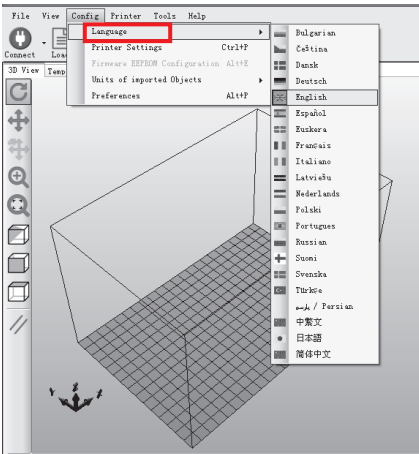


❸ click "Printer Settings".

Printer Settings

④  Printer Settings as below.

Connection:  Select Printer: CoLiDo 2.0 Plus 3D Printer (Be in common use with 3.0); Baud rate: 115200.

Select the correct Port  COMx such the printer can connect witht the Repetier.

NOTE: COMx dependant on different computer or 3D printer you are  using. Different 3D printer has different COMx, which can be located and matched with COMx in Device Manager as below.

(COM1 cannot be selected)

Printer Shape:  as below data.  After checked, click "Apply" and "OK".

42

❺ Click "Connect".



NOTE: After the printer is really connected with the Repetier software, the actual extruder and bed temperature of the printer will be shown in the bottom of the Repetier software. Also, the Temperature Curve is moving.



Extruder: 24.7°C/Off Bed: 28.6°C/Off
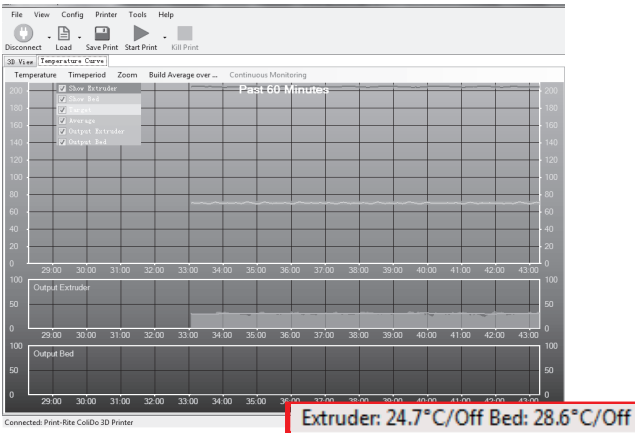
NOTE: Once click "Connect" in Repetier Host to connect the printer, the printer will be re-started.
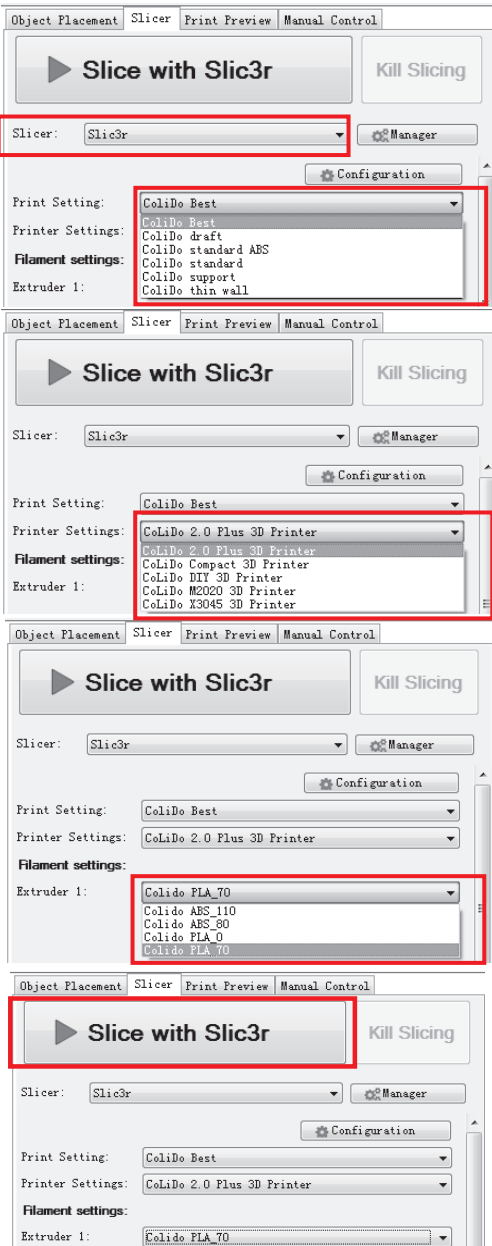
❻ Click "Load", select the print file that you want to print and click "Open".
Note: The print file should be with .GCO or .STL format.
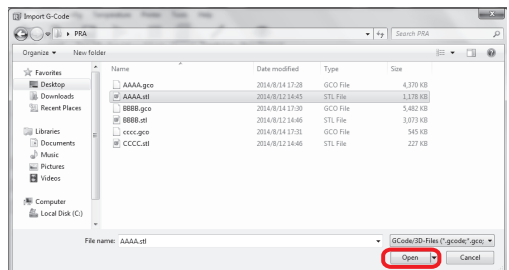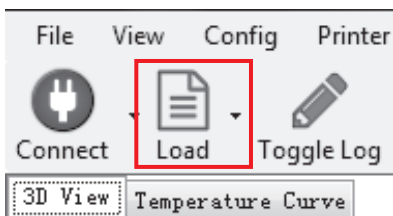
**❼** Select the print effect that you want to print, select PLA or ABS filament that you are using. Then click "Slice with Slic3r" to generate G-code.

Step1: Select "Slic3r"

Step 2: Select the effect that you want to print

CoLiDo Best - For small object
CoLiDo standard - For big object
CoLiDo standard ABS - For ABS material object
CoLiDo draft - For fast printing
CoLiDo support - For the model adding support
CoLiDo thin wall - For the thickness lower 2mm
                                        thin wall object

Step 3: Select printer type "CoLiDo 2.0 Plus 3D Printer" you are using. (Be in common use with 3.0)

Step 4: Select Extruder base on the PLA/ABS filament you are using and the platform required temperature

CoLiDo ABS_110
   - For ABS Filament with platform temp 110℃
CoLiDo ABS_80
   - For ABS Filament with platform temp 80℃
CoLiDo PLA_0
   - For ABS Filament with platform temp 0℃
CoLiDo PLA_70
   - For PLA Filament with platform temp 70℃

Step 5: Click "Slice with Slic3r" to slice the file
            to generate g-code

**8** After slice, you can see the estimated printing time and filament usage. Also, you can see the printed shape of the object in the "3D View".



Estimated printing time

Estimated filament usage
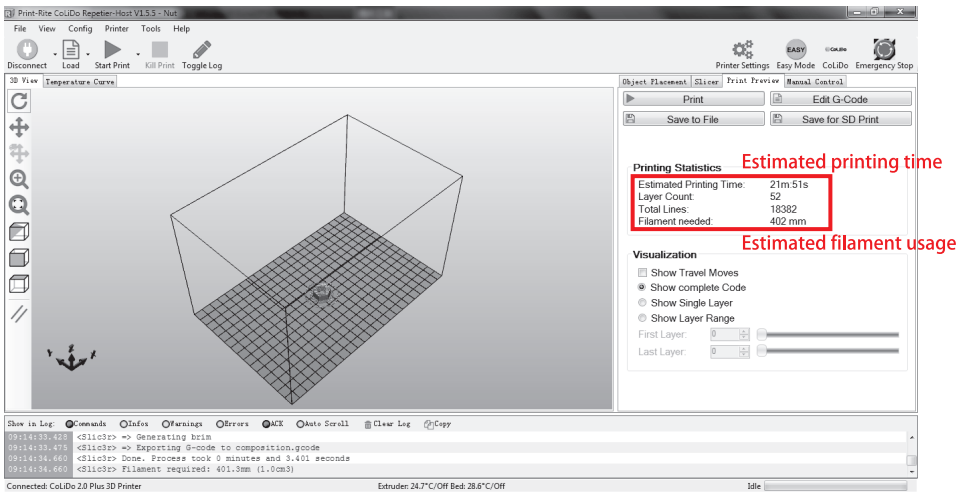
**9** Click "Print", start to print.
Once the platform and the nozzle actual temperature reach the setting temperature, the printer will start to print.
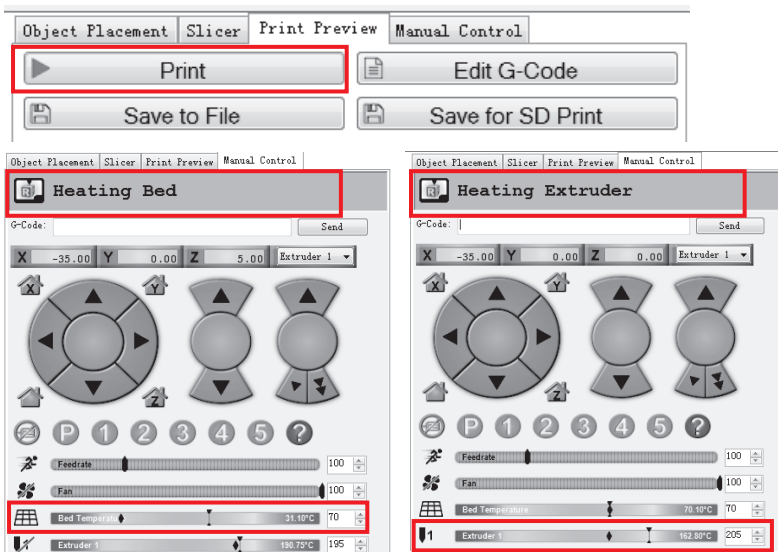
**➓ Printing.**

1. You can see the printing track from "3D View";
   You can se temperature go up/down from "Temperature Curve".
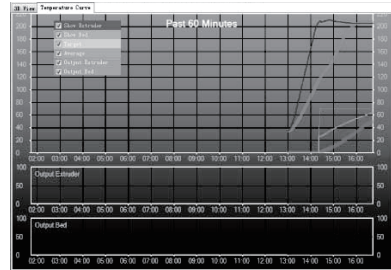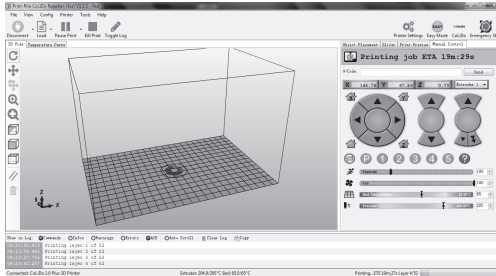


2. You can click "Pause Print" and "Continue Printing" to pause/resume printing.
   You can click "Kill print" to stop the printing and cannot be resumed.
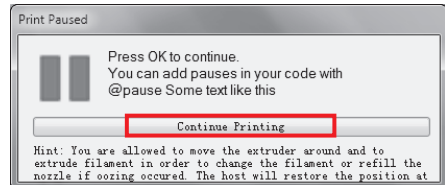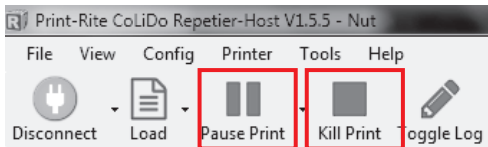


**⓫** If want to print the file using SD Card, you can click "Save for SD Print"
after slice, to save the GCO file in the computer or SD Card.
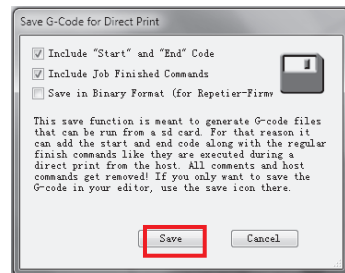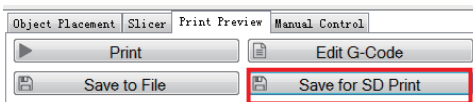


NOTE: The saved file name just can be
      English words, number, underline,
      blank space.

**⓬ Finish Print.**

⚠ Caution: Please wait for a few minutes to cooldown before remove
              the printed object.

**⓭ NOTE:**

1. When connecting the computer to the printer to print, need disable the
   screen saver and sleep settings of the computer, or the printing will stop.
2. When printing using SD Card, please disconnect USB to the computer.

1. 3D object can be adjusted such as scale down/up  X/Y/Z, rotate X/Y/Z, copy, mirror, autoposition and split before slice. After adjusting the object, It is better to click "Center Object".



Add other 3D object    Autopostion    Scale up/down    View cross section    Delete

Save the adjusted 3D object    Copy 3D model to print more    Center the object    Rotate X/Y/Z    Mirror 3D model    Obejct Informations

3D model dimension

2. For 3D printing layer by layer base on FDM process, we suggest printing the model with OA structure. If printing the model with OB or OC structure (Call Overhang Printing),  the parallel or downward layer will fall down on the model or on the platform due to no supporter to the layer.  So, you need add supporter for overhang object.



Remark:

OA – the structure is upward to stretch
OB – the structure is parallel to stretch
OC – the structure is downward to stretch

3. The 3D model must be closed surface or line to print base on FDM process. If below message appeares, it is better to repair the object before printing. Recommend repaire website: https://netfabb.azurewebsites.net.

The object is not manifold. This essentially means, that it is not watertight. This normally causes problems during slicing, resulting in unwanted results. We strongly advice to repair the file. One free repair service is: https://netfabb.azurewebsites.net

# 7.5 Repetier-Host Advanced 3D Printing

## 7.5.1 Slic3r settings

For printing setting, you can click "Configuration" to review or have your customized "Print/Filament/Printer Settings" in Slic3r for advanced user.



### 7.5.1.1 Print Settings (For example "CoLiDo standard")

a. Layers and perimeters



Lower the Layer height and higher the printing precise , but longer the printing time.

Select "Spiral vase", will print thin wall model or hollow model.

PRINT-RITE

## b. Infill



Higher fill density and longer printing time

4 fill pattern : as right picture.

Select "Only infill where needed", will only print the outside single perimeter.

| Line | Rectilinear | Concentric | Honeycomb |
|------|-------------|------------|-----------|
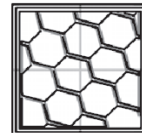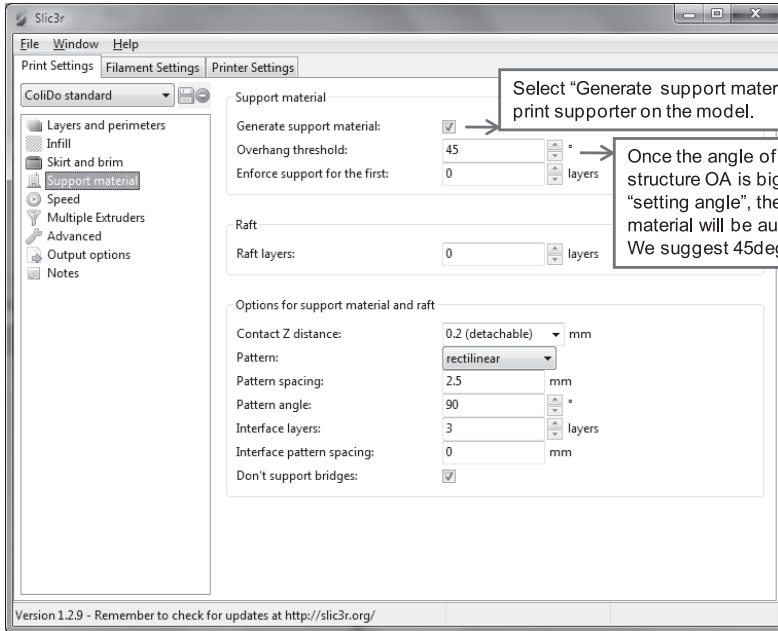
## c. Skirt and brim



Brim
Skirt

## d. Support Material



Select "Generate support material", will auto print supporter on the model.

Once the angle of the overhang structure OA is bigger than the "setting angle", the support material will be auto generated. We suggest 45degree

**Overhang threshold:**

Support Material Pattern:
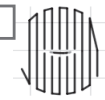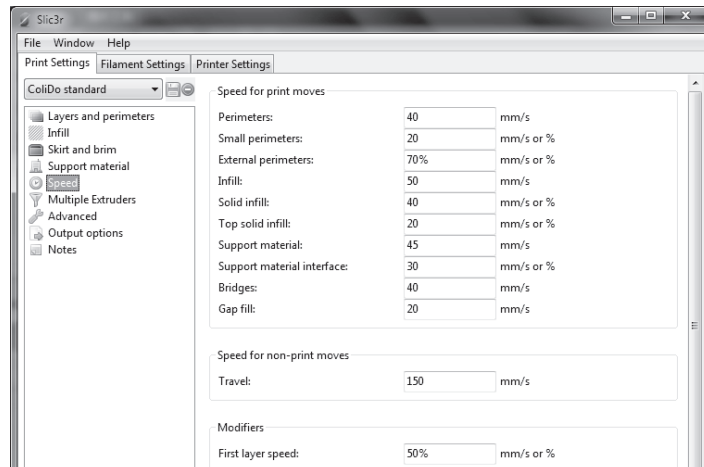
Rectilinear          Rectilinear Grid          Honeycomb

## e. Speed

## 7.5.1.2 Filament Settings (For example "CoLiDo PLA_70")
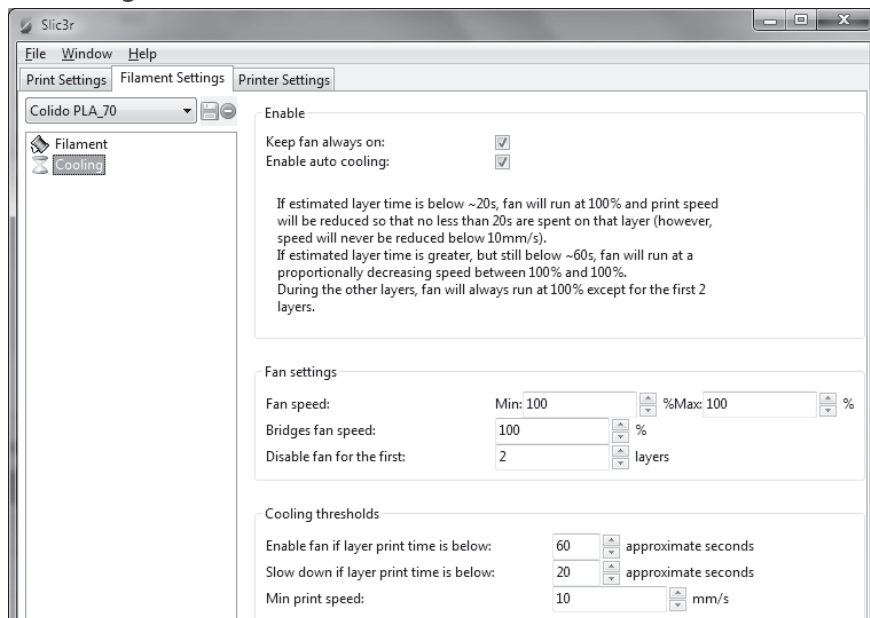
### a. Filament



Adjust some object finish, revise between 0.9~1.1

Setup the extruder and bed setting temperature

**NOTE:**

To revise the temperature, need click the up/donw narrow instead of revise the number directly.

### b. Cooling

## 7.5.1.3 Printer Settings

### a. Extruder 1



If do not want Retraction, revise the "Length" to "0".

When printing many objects at the same time, revise the "Lift Z" from "0" to "2~5" to avoid the nozzle cross the object..

### b. Custom G-code



Action before printing.

Action after printing.

## 7.5.1.4 Save the settings

If you want to save the revised settings , click "Save" and have customized name. Then you can select customized name/settings when you slice.
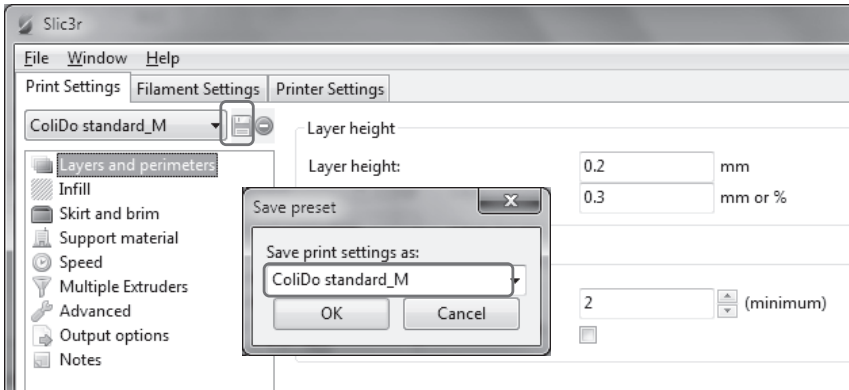


## 7.5.2 Other Skills

a. Design supporter on the 3D model to aviod overhang structure (the supporter can be easily removed.)
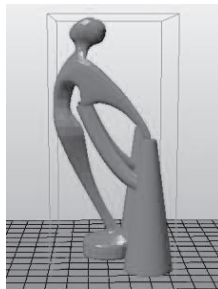


b. When printing the hollowed-out object, it is better to lower the nozzle temperature by 5~10 degrees to avoid silky threads.

c. If the object is bigger than the printer printing area, it is better to divide the object in several parts to print, then assemble together.
If the object is smaller, it will easy moving on the platform and offset, it is better to copy printing several objects at one time.

d. The printing environment has minor impact on the filament sticking condition. If cold printing environment, it is better to increase the nozzle temperature 5~10℃ and vice versa.

PRINT-RITE

### 7.5.3 CuraEngine

It is another slicer software to convert 3D model to g-code.
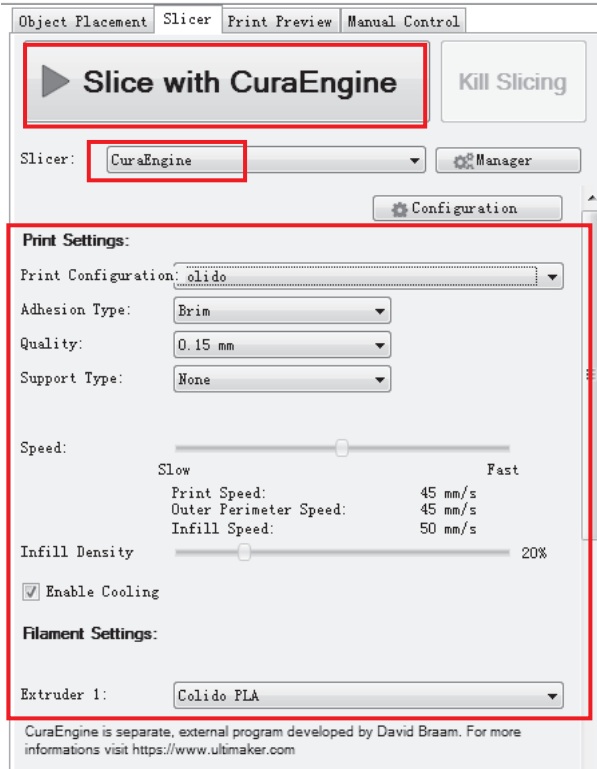


Step1: Select "CuraEngine";

Step2: Select "Print Settings" and "Filament Settings";

Step3: Click "Slice with CuraEngine".

If you want to view or customize CuraEngine settings, cilck "Configuration".
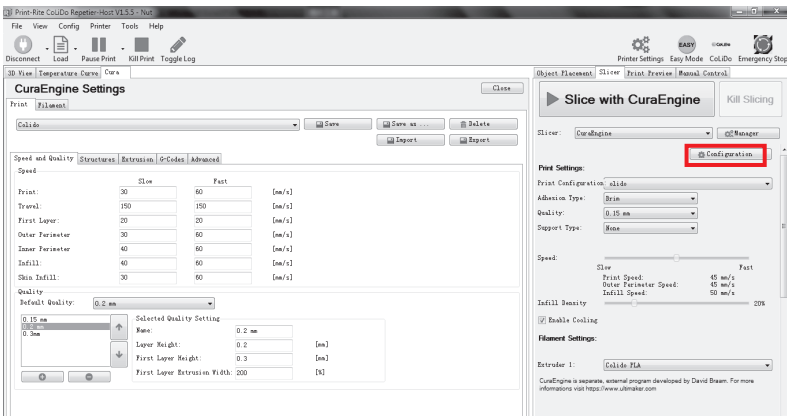
## Lubricate the Z-axis Screw Rod and the X-axis Idler Pulley

After printing around 50 hours, you should lubricate the Z-axis screw rod and the X-axis Idler Pulley.

To lubricate Z-axis screw rod, please follow up below process:

**1.** Prepare the lubricate (own by customer) such as SKF Bearing Grease .
**2.** Slowly rotate the Z screw rod to move up/down the platform of the 3D Printer.
**3.** Use a clean, lint-free cloth to spread the grease onto the top/bottom of the Z-axis screw rod.
**4.** Make sure the grease cover the inside of the Z-axis screw rod.



Z Screw Rod
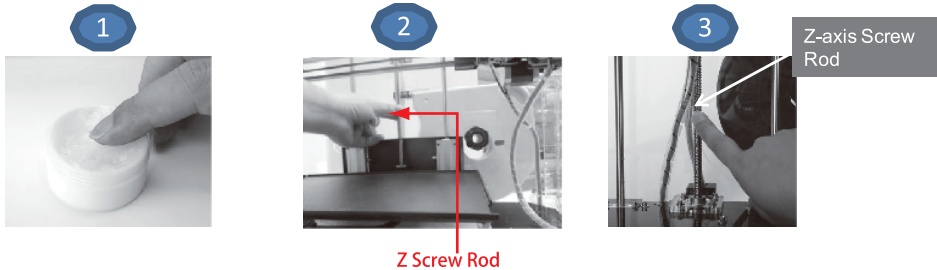
To lubricate X-axis / Y-axis rod, please follow up below process:

**1.** Prepare the lubricate (own by customer) such as SKF Bearing Grease .
**2.** Use a clean, lint-free cloth to spread the grease onto the X-axis / Y-axis rods.
**4.** Move the printer head left/right and forward/backward to have the grease application on the rods uniformly.

PRINT-RITE™
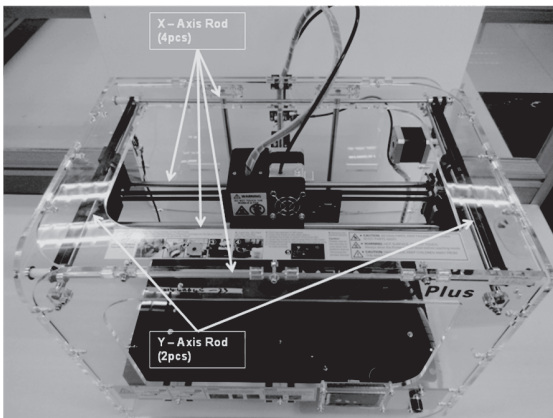
| Display Error | Cause | ⚒ Solution |
|---|---|---|
| Err：Check Filament | Filament used up or broken | 1. Remove the remain filament: Press down the printer head arm, push filament going down around 3cm, then pull out the filament; 2. Reinstall the new filament: Filament must going through the detector, straighten the front of the filament, press down the printer head arm and send new filament through the guiding hole. Push down until filament flowing out from nozzle tip; 3. Press on the rotating knob and select "Resume print". |
| Err：Heating Failed | Nozzle temperature abnormal | 1. Restart printer； 2. If the error showing up again during the printing, please contact with our customer service. |
| Err：DDMK Failed | Recovery mode start | 1. Check the power connection； 2. Restart printer； 3. Press on the rotating knob, select "Resume print". |
| Err：Data Failed | Data reading failed | 1. Restart printer； 2. Resend the print command. 3. Check the slicing file. |
| Err：MAX TEMP | Nozzle temperature sensor error | Please contact with our customer service. |
| Err：MIN TEMP | Nozzle temperature sensor error | Please contact with our customer service. |
| Err：MAX TEMP BED | Heat bed sensor error | Please contact with our customer service. |
| Err：MIN TEMP BED | Heat bed sensor error | Please contact with our customer service. |

PRINT-RITE

## Consumable (Filament)

| ? Question | 🔧 Solution |
|---|---|
| What is the PLA/ABS default setting temperature? | 1. PLA: Nozzle temperature is 205℃, Platform temperature is 65~70℃;<br>2. ABS: Nozzle temperature is 220℃, Platform temperature is 100~110℃. |
| How to store the filament when the printer will is out of use for a long period of time? | If you do not use the the filament for a long time, keep your filament spool or cartridge in a closed plastic bag to avoid the filament absorbing the moisture. Also, ensure insert the filament tip into the small hole of the spool to avoid filament entangle when use next time. |
| How about the length of 1000g and 500g PLA/ABS filament? | 1. 1000g: PLA around 320~330m, ABS around 390~400m;<br>2. 500g: PLA around 160~165m, ABS around 195~200m. |
| Can Printrite filament compatible with other 3D printer? | Yes, Printrite filament can compatible with other FDM 3D printer, such as Makerbot, Afinia, Reprap, UP!, etc. The filament diameter should be 1.75mm. |

## 3D Printer

| ? Question | 🔧 Solution |
|---|---|
| Does the printer support offline printing? | Support offline printing by using SD card. |
| How long will it take to print an object? | The required time depends on the object size and resolution level. The higher the resolution level, the slower printing speed. The printer is configured with different print setting option: Best, Standard, draft. After you select the printing setting to slice, the repetier software will show the needed time . |
| How to fix the clogged nozzle? | 1. Refer to chapter 6.6, once the nozzle reached the setting temperature, please press the printer head arm and at the same time pull on the filament to extract it from the nozzle.<br>2. Refer to the label on the printer, clean the nozzle using longer Allen Key in the accessory.<br>3. Disassemble the printer head by unlocking the screws on the Fan, clean the blocked filament inside the nozzle. |
| Can I adjust the parameter during printing? | For new user, we do not suggest adjusting the parameter during printing.<br>For advanced user, you can push the knob to select "Control" to adjust Nozzle or Bed temperature and printing speed during printing. |
| How can I know if the printer is properly working? | Refer to chapter 6.2~6.4 in user manual, print one of the test file in SD Card supplied with printer. (For example: PCT1.gco for PLA filament, ACT1.gco for ABS filament) |
| The filament cannot come out from the nozzle during printing? | 1. The platform maybe too close to the nozzle tip, which will prevent the filament extruding from the nozzle. Please select "Prepare"-"Calibrate Mode" of LCD screen to re-calibrate the platform. ( refer to chapter 6.2 in user manual)<br>2. Remove the filament from the printer head (refer to chapter 6.6 in user manual), cut the filament tip flat, make a length of filament straight and re-load it into the printer head. Make sure that the filament is properly inserted into the nozzle receiving port.<br>3. Disassemble the printer head, check the gear which is pulling the filament into the nozzle. If there are presence of filament powder residue is filled in, clean the gear using the brush. Check also if the gear tooth is damaged. If yes, replace the gear with a new one. |
| The printer makes a clicking noise when printing? | 1. The filament is not properly inserted into the nozzle . Please unload the filament, cut the end of the filament flat and re-load into the printer head. (refer to chapter 5.8)<br>2. It maybe a short length of the filament blocked in the nozzle from the last time it printed. Refer to chapter 6.6 in user manual, heat the nozzle and push the blocked filament into the nozzle tip by loading new filament, the blocked filament will be melted out. |
| The filament cannot be removed from the printer head? | 1. Check if the nozzle actual temperature reachs the setting temperature;<br>2. Refer to chapter 6.6 in user manual, when the nozzle actual temperature reach the setting temperature, press the printer head arm and push a bit filament into the nozzle until the filament come out from the nozzle, then pull the filament out quickly. |
| The printed sample stick to the platform too tight and cannot be removed? | 1. Please wait a few minutes for the platform and the printed samples cooldown, then remove the printed sample.<br>2. If the printed samples still stick to the platform tightly, please carefully remove it using a scalpel. |

# Chapter 10 Troubleshoot

| 3D Printer | |
|---|---|
| ❓ Question | 🛠 Solution |
| The printed object cannot stick to the platform? | 1. Make the temperature setting correct. PLA, nozzle temperature is 205℃, platform temperature is 70℃; ABS: nozzle temperature is 220℃, platform temperature is 110C. Make sure the selected setting is matched with the material you are using. <br> 2. Re-calibrate the platform to meet "calibration standard condition" (The test sheet must be lay down flat in the platform and the test sheet must be touching the nozzle tip). <br> 3.Make sure that the glass platform you are using is correct base on the filament material. No dust, oil or damage coating on the glass platform. If yes, please clean up using lint-free cloth or replace the platform. |
| The printer cannot read the files on SD card and cannot start to print with SD Card? | 1. Turn off the printer and turn on again the printer. <br> 2. If the printer still cannot read the file, please check if the files saved in SD card in .GCO format and correct file name (Engilsh word, number, underline, blank space). If the file is not .GCO format, please convert it to .GCO format through Repetier-Host software. (refer to chapter 7.3 in user manual). <br> 3. Please double check if the SD card insert into the SD card slot well. If not, please re-insert. |
| How to clean the excess filament around the nozzle? | Preheat up the nozzle to 220℃ by rotate LCD knob to select "Control" -" Temperature" -" Nozzle". Once the nozzle actual temperature reachs the setting temperature 220℃, clean the nozzle using the lint-free cloth or tissue. |
| Need pause/resume during printing? | 1. During printing with SD Card, push the LCD knob and rotate it to select "Pause print"; Then push LCD knob and rotate it to select "Resuming print". <br> NOTE: Please be more patient after selecting "Pause print", the printer need ~30s to buffer. <br> 2. During printing with Repetier control, click "Pause Job" and then click "Continue Printing". |
| Need stop during printing? | 1. During printing with SD Card, push the LCD knob and rotate it to select "Stop print". After stop, the printing can be resumed. The printer head will go to home position and the nozzle & bed temperature will cooldown. <br> NOTE: Please be more patience after selecting "Stop print", the printer need ~30s to buffer. <br> 2. During printing with Repetier control, click "Kill Job". The printer head will stop moving and the nozzle & bed temperature will cooldown. <br> 3. If the printing still not stop after above, please turn off the printer, wait ~10s and turn it back on. Then push the LCD knob and select "Prepare"-"Auto Home" so the printer head go to home position. |
| Download files from 3D model website cannot be printed well? | 1. Refer to chapter 7.2 & 7.3 in user manual, re-setup Repetier-Host and select correct filament material to print. <br> 2. The printed object will have different printing effect with different filament material. For example, if the object cannot be printed well with ABS filament, you can test to print with PLA filament. <br> 3. Check if the object shape is closed drawing, if it need scale up/down, rotating, adding supporter, etc to meet FDM process by refer to 7.5. <br> If Repetier-Host shows warning message when load the object, it is better to repair the object through the website: https://netfabb.azurewebsites.net |
| The STL file cannot be sliced to gco file in Repeiter software? | When load STL file to Repetier software, the object will show all dark blue color in the 3D view window, it means that the file can be sliced. <br> 1. If the object show some red and some green, it mean the object has unclosed line or surface and cannot be sliced. Also, Repetier-Host will show warning message to suggest repairing the object. <br> 2. If the object is not touch with he printing area or exceed the printing area, please click " ⊕ " place in the middle, or click " ▲ " to scale down and then place in center. |
| How to set parameters for the 3D printer to insert them in Repetier/Slic3r software? | 1. The Repetier-Host software of the printer has standard settings for selecting to use directly. <br> 2. For the advanced user, click "Configuration" to revise the parameters. Refer to 7.5 in user manual for detail. |

PRINT-RITE™

| 3D Printer | |
|---|---|
| ❓ Question | 🛠 Solution |
| How to do if the LCD Disply show "Err: MINTEMP"? | CoLiDo printer operation temperature is 15℃~32℃, please place the printer under the right room temperature such the printer can have good printing. Once change the printer to place in the right room temperaure, need turn off and turn on back to refresh the printer. |
| How much the printing speed? | The printer printing speed is 20~120mm/s. |
| Repetier-Host software cannot connect to 3D printer though the software installed correctly? | 1. Ensure the printer connect to computer with USB cable and turn on;<br>2. Refer to chapter 7.2 , make sure that the selection of COM port in printer setting is right. The port should be the last one when turn on the printer and matched with COM port in Device Manager. Once connected, the Temperature Curve will be moving.<br>NOTE: "COM1" cannot be used. |
| The printed object easy to warp when printing? | 1. Adjust the adjusting knob to have the nozzle tip more close to the platform.<br>2. The contact area of the object to the platform is too small, use Repetier software to add brim before slicing: Click "Configure" - "Brim", add the Brim width with "8~10mm".<br>3. Add the nozzle temperature higher 5~10℃.<br>4. Maybe have a cover to cover the top of the printer when printing ABS to avoid the heat dissipation too fast. |
| How to evaluate if the filament enough or not to print the object? | After convert STL file to GCO file in Repetier-Host software, customer can see the needed filament usage (Length) of printing the object . Customer can evaluate the actual filament length is enough to meet the needed filament length. |
| How to clean the coating glass platform if the remain filament stick on it? | 1. Clean the glass platform using lint-free cloth or wet tissue. Do not use alcohol or any cleaning chemical solution in cleaning the glass platform, it will damage the glass coating.<br>2. If still cannot clean the remain filament on the glass platform, please replace a new one. |
| How to download Repetier for Mac OS or Linux? | Go to website Repetier.com to free download the Repetier software for opertion system Mac OS or Linux. |
| How to get free 3D modeling software? | Website to download free 3D modeling software:<br>http://www.hongkiat.com/blog/25-free-3d-modelling-applications-you-should-not-miss/ |
| How to get free 3D model to print? | 1. Use 3D modelling software such as UG, 3DMAX and above free software to design your 3D model file and save as STL format.<br>2. Use scanner to scan 3D model . We recommend scanner "Structure Sensor" which need work with APPLE IPAD.<br>3. Download 3D model from Website:<br>http://www.thingiverse.com<br>http://www.hongkiat.com/blog/download-free-stl-3d-models/<br>http://www.hongkiat.com/blog/60-excellent-free-3d-model-websites/ |
| CoLido Printer parts life time ? | Nozzle : 1500hours<br>PLA and ABS Glass Platform : 300 times use in same location<br>Motor : 3000 hours<br>End Stop (Limit Switch) : 10000 times<br>Belt : 2000hours<br>Linear bearing : 3000hours<br>Fan : 20000h<br>Display panel : 20000h<br>Rotary knob : 100000 times |

If you need more assistance, kindly please contact with us:
Email: 3Dsupport@utec.com.mo