

**5X/7X Series**  
**USER MANUAL**

# 1. UI Menu Function description

CARTRIDGE	CARTRIDGE 1	LOAD
	CARTRIDGE 2	UNLOAD
		UNLOCK

Setting		
	Extruder	
	Bed Leveling	
	Z Offset	
	Nozzle Control	
		Nozzle Cleaning Auto
		Nozzle Cleaning Manual
		Nozzle Calibration
		XY Calibration
		Enter Pattern Value
	Nozzle change	
	X,Y,Z	
	Network	
		Wifi
		Wired
	Bed Lowering	
	Cleaning Case	
	Open Material	
	Test Print	
	S/W Update	
	General	
		Active Leveling
		Lamp
		Power Saving
		Beep
		Unit
		Temperature
		Length
	Voice Guide	
		Speech
		Volume
		Speed
	Language	
	Time setting	
	Time zone	
	E-mail	
	Security	

Information	NAME
	CHANGE NAME & PW

MODEL NAME
SERIAL NO.
VERSION
GUI VER.
WIRED IP
WIRED MAC IP
WIRELESS IP
WIRELESS MAC IP
WEB SITE
GUIDE
HISTORY

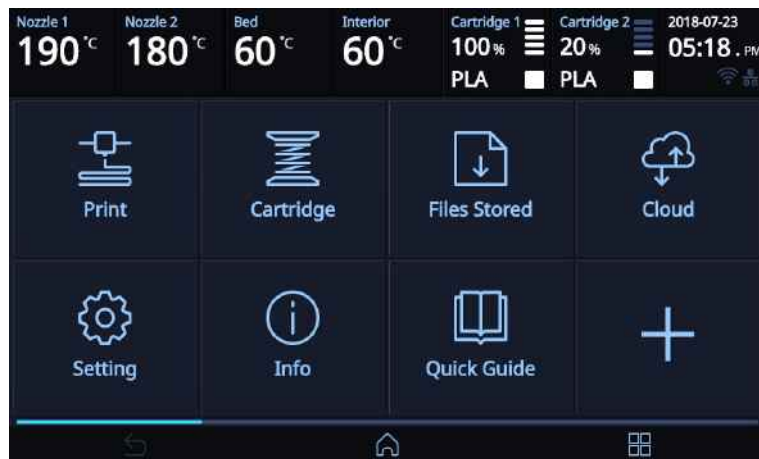
## 1.1 CARTRIDGE

CARTRIDGE	CARTRIDGE 1	LOAD
	CARTRIDGE 2	UNLOAD
		UNLOCK

### LOAD

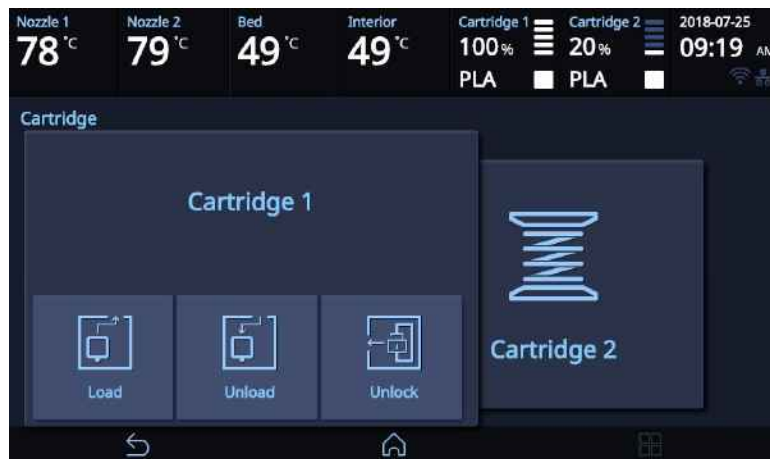
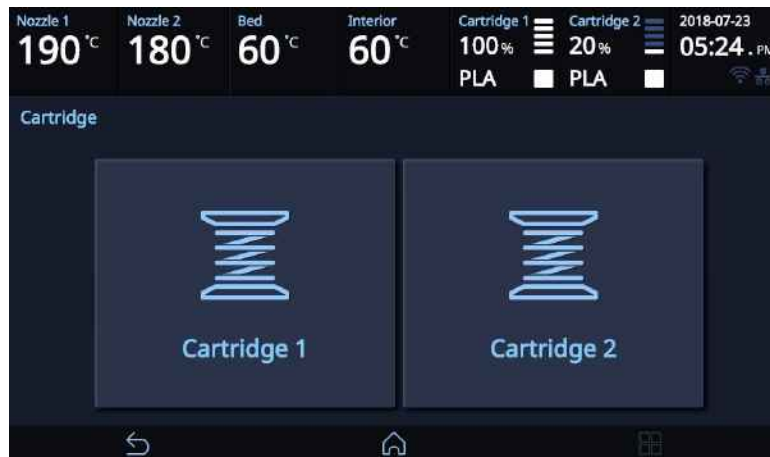
This function automatically loads filament to the Nozzle.

- 1 From the HOME screen press **[Cartridge]**.

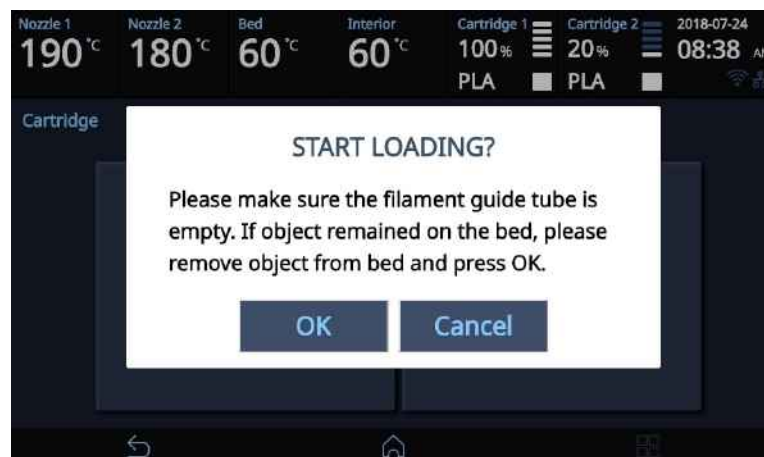


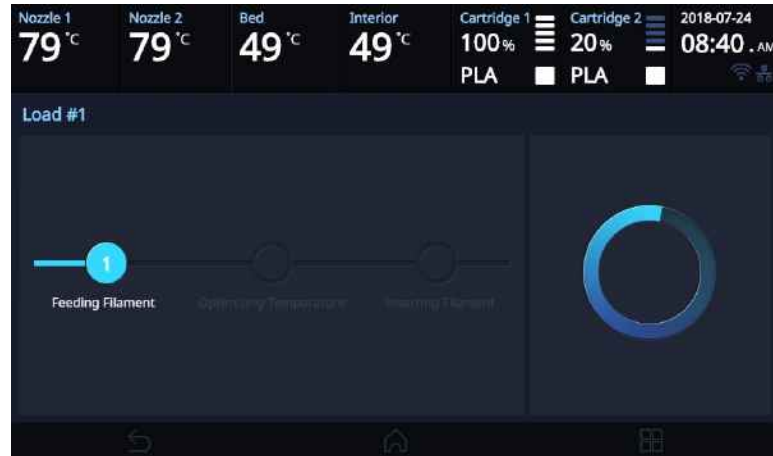
## 2 UI Menu Function

- 2 Press [LOAD] to activate Cartridge load.



- 3 When [OK] is pressed at the cartridge load confirming message, cartridge load will automatically proceed. The filament reaches to the nozzle and it is heated up to the specified temperature. Then the filament is inserted into the heated nozzle. After the process has finished, screen will automatically return to the [HOME] screen.

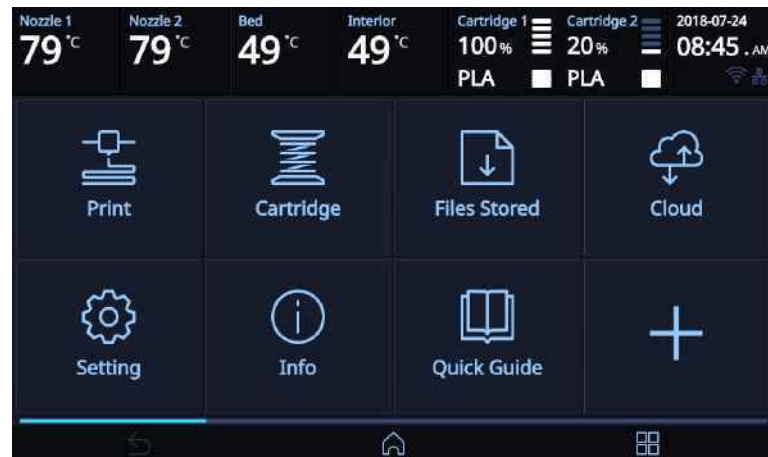




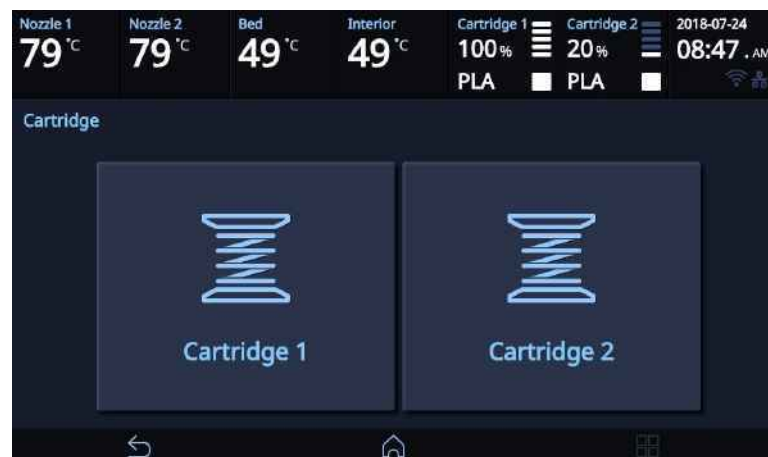
## UNLOAD

This function automatically unloads filament from the nozzle.

- 1 From the HOME screen press **[Cartridge]**.



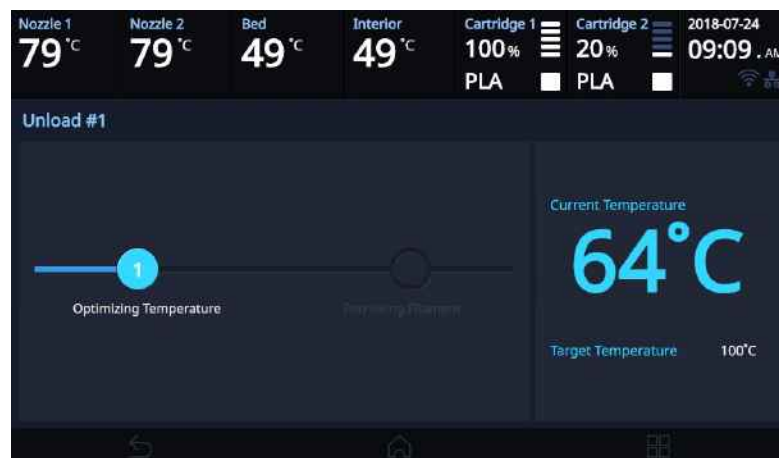
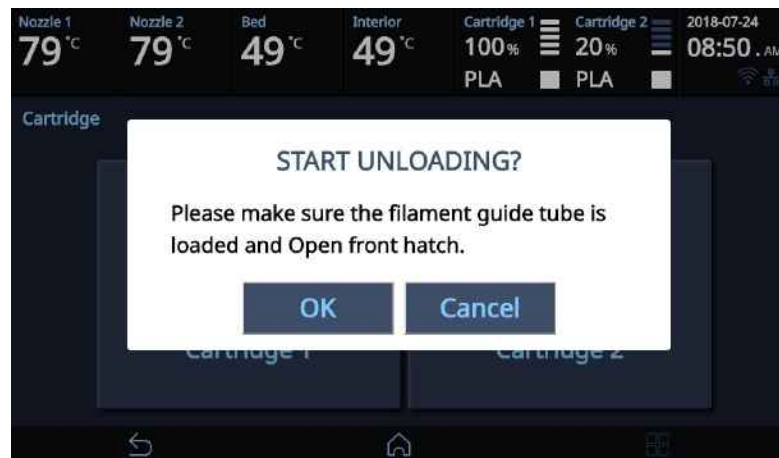
- 2 Press **[UNLOAD]** to activate Cartridge unloading.





- 3** When **[OK]** is pressed at the cartridge unload confirming message, cartridge unloading will automatically proceed. To remove filament, the nozzle is heated up to the specified temperature and the filament unload starts.

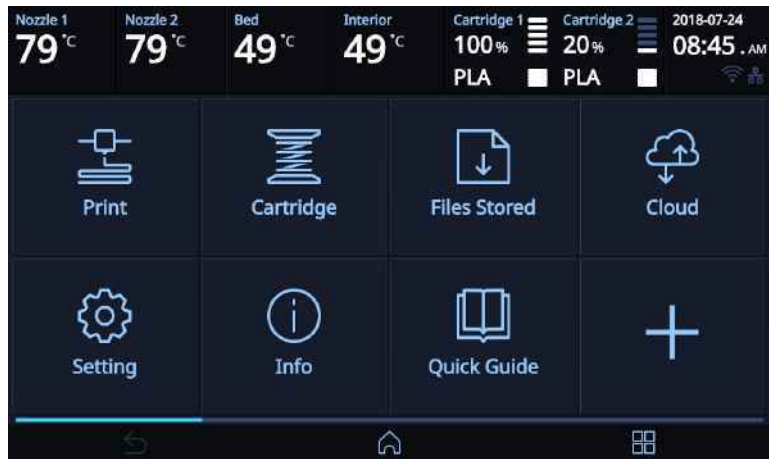
After the filament has been removed, the screen will automatically turn to the **[UNLOCK]** screen to let the user remove the cartridge.



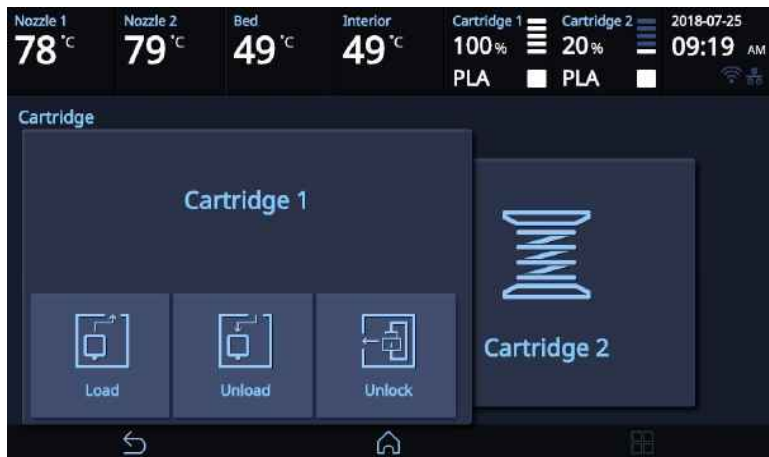
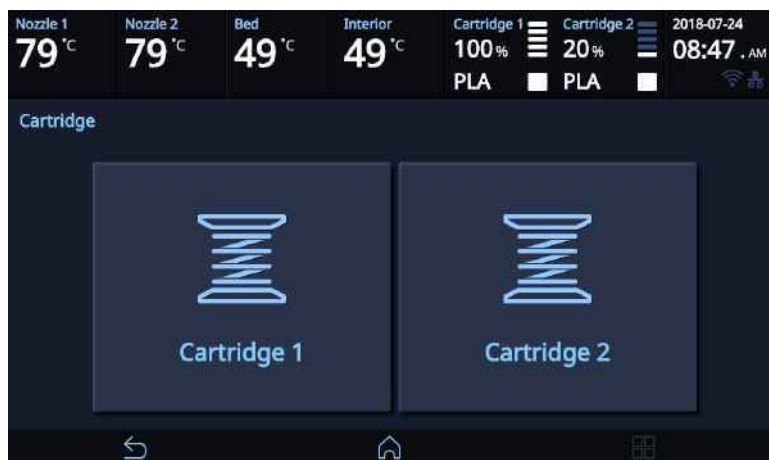
### ❖ Unload PVA, Flexible Filament.

Follow the instructions when you unload soft-materials such as PVA, Flexible.

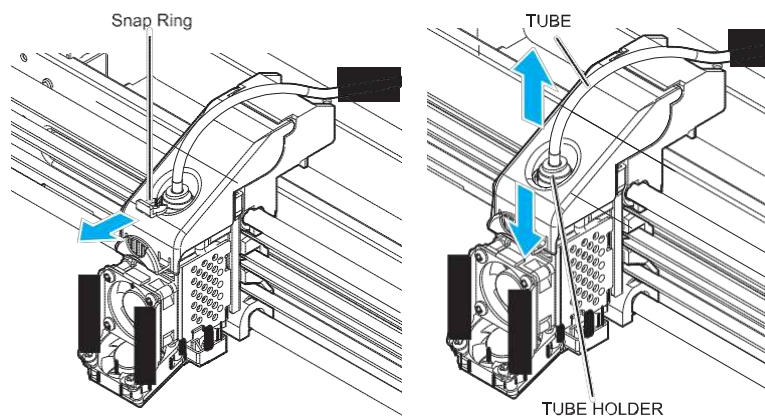
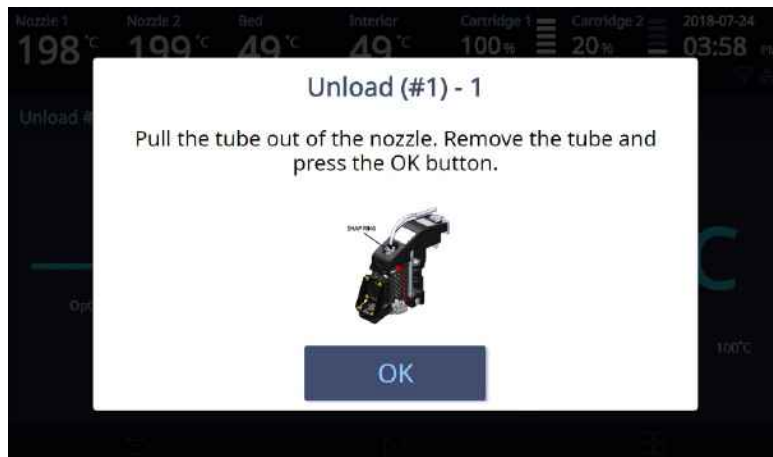
- 1** From the HOME screen press **[CARTRIDGE]**.



**2** Press [UNLOAD] to activate Cartridge unloading.

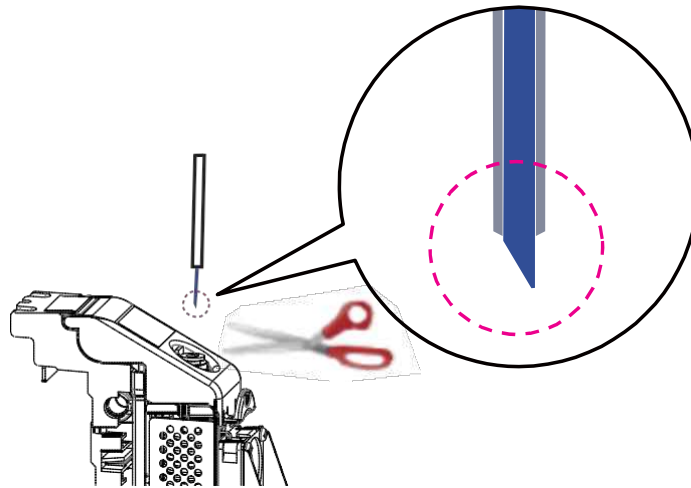
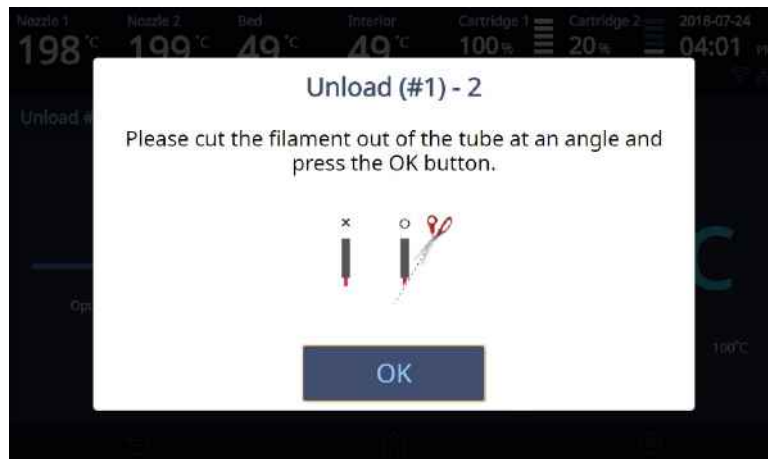


- 3** Remove the snap ring and tube from the nozzle as shown in the following UI screen, and press the **[OK]** button.

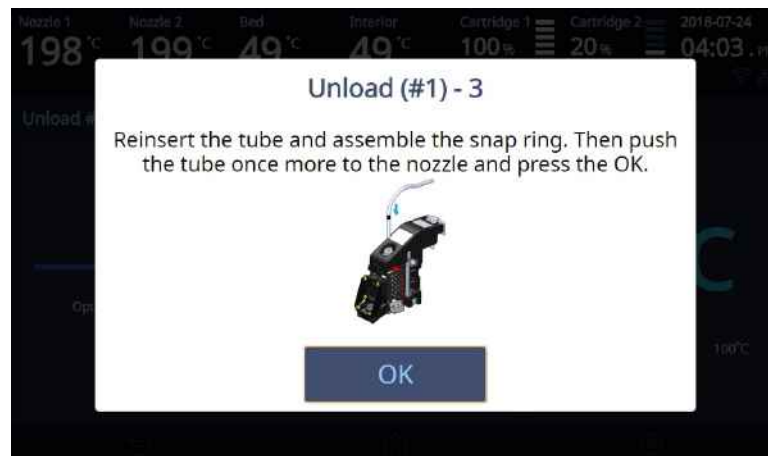


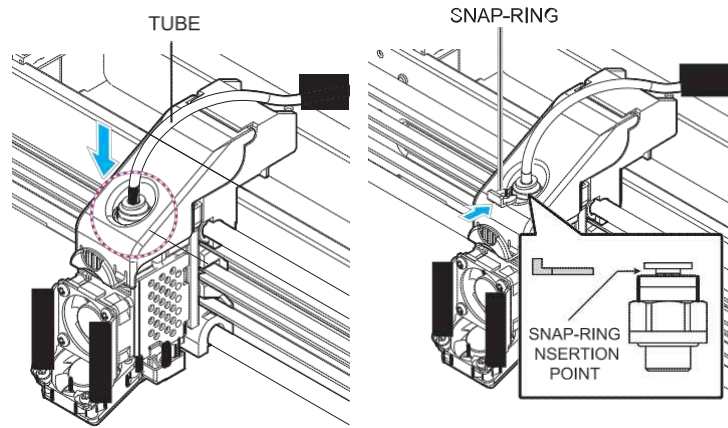


- 4 Cut the filament that came out of the tube as shown below and press the [OK] button.

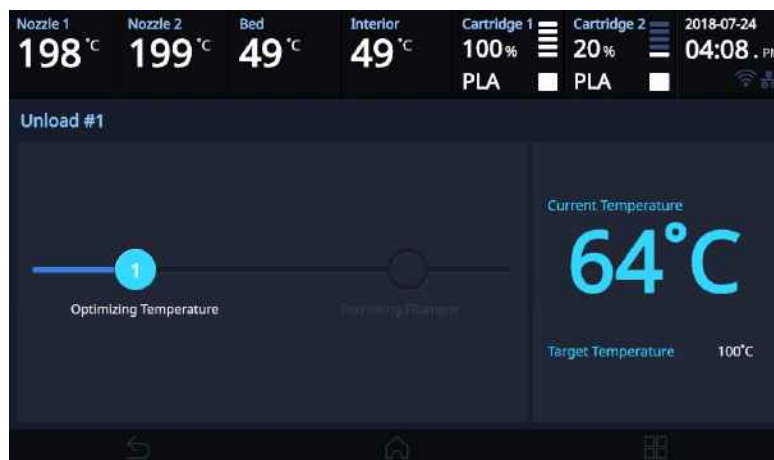


- 5 Reinsert the tube into the nozzle and assemble the snap ring. Push the tube back toward the nozzle again and press the [OK] button.





- 6** After the filament has been removed, the screen will automatically turn to the [UNLOCK] screen to let the user remove the cartridge.



### UNLOCK

This Function is to remove the cartridge out of the printer. Cartridge unlock automatically initiates when filament unload is finished. Cartridge unlock can also be manually done by the user.

#### ❖ When unlock screen automatically appears after cartridge unload.

- 1 For 10 seconds **[LOCK]** state is deactivated and the user can detach cartridge from printer. If the cartridge can't be pulled out even after "unlock", gently push it forward and then try to pull out again.

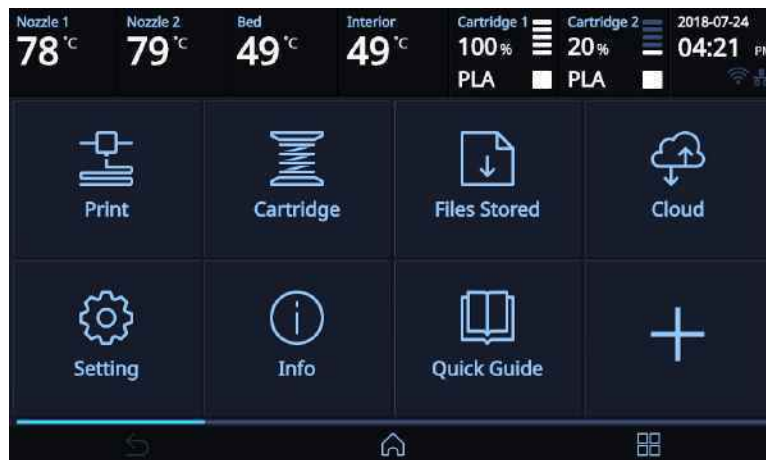


- 2 After 10 seconds printer will automatically change to **[LOCK]** state and **[UNLOCK]** appears.

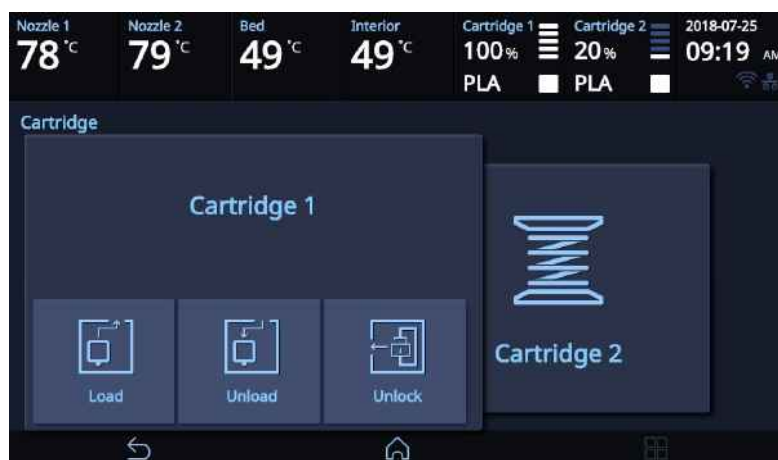
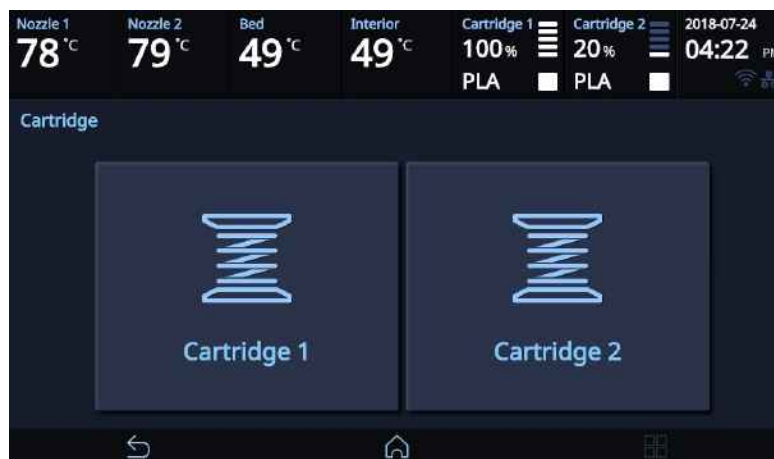


❖ To manually unlock later.

**1** From home screen press [CARTRIDGE].



**2** Press [UNLOCK] to activate UNLOCK function.



## 2 UI Menu Function

- 3 For 10 seconds **[LOCK]** state is deactivated and the user can detach cartridge from printer.  
If the cartridge can't be pulled out even after "unlock", gently push it forward and then try to pull out again.



- 4 After 10 seconds printer will automatically change to **[LOCK]** state and **[UNLOCK]** appears.



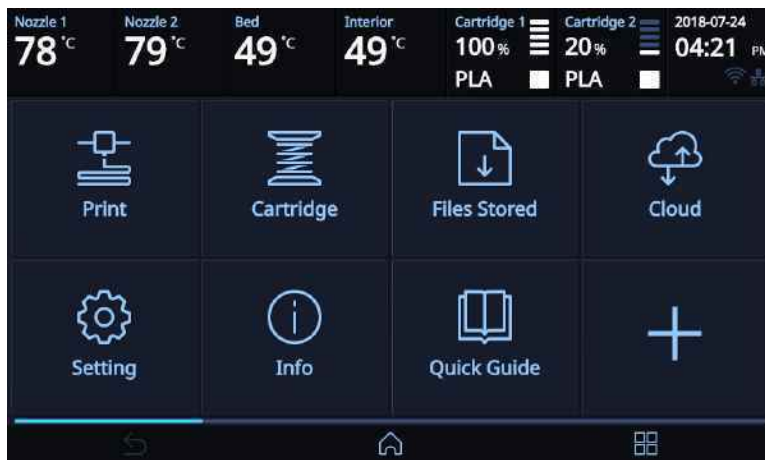
## 1.2 Settings

Setting	
	Extruder
	Bed Leveling
	Z Offset
	Nozzle Control
	Nozzle Cleaning Auto
	Nozzle Cleaning Manual
	Nozzle Calibration
	XY Calibration
	Enter Pattern Value
	Nozzle change
	X,Y,Z
	Network
	Wifi
	Wired
	Bed Lowering
	Cleaning Case
	Open Material
	Test Print
	S/W Update
	General
	Active Leveling
	Lamp
	Power Saving
	Beep
	Unit
	Temperature
	Length
	Voice Guide
	Speech
	Volume
	Speed
	Language
	Time setting
	Time zone
	E -mail
	Security

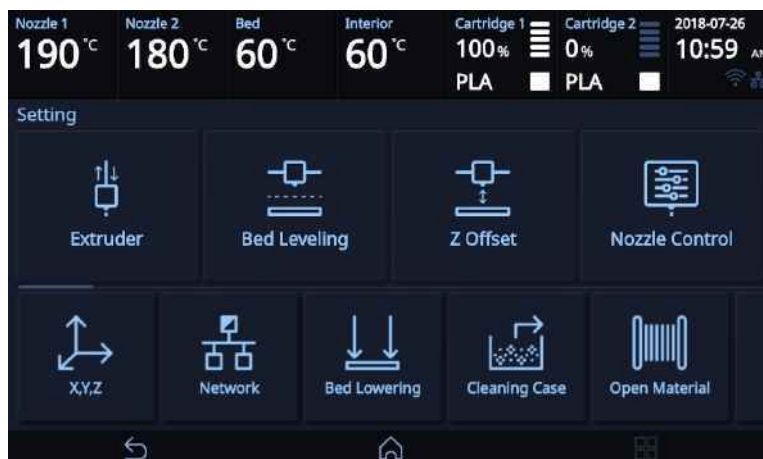
### Extruder

This function is used to fine control the filament to its position.

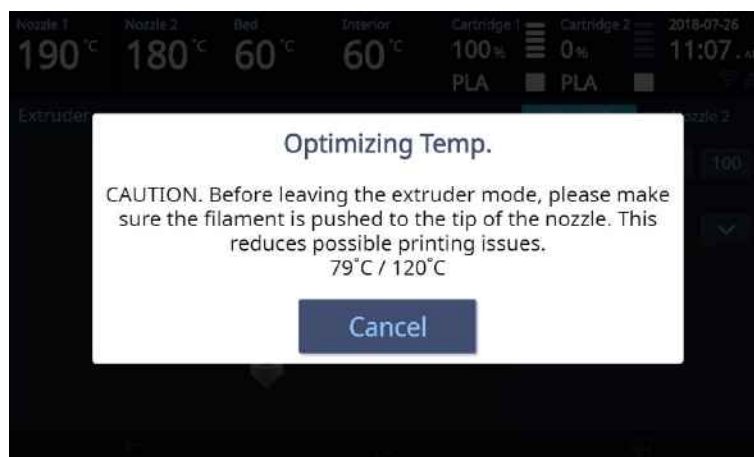
- 1 From home screen press **[Setting]**.



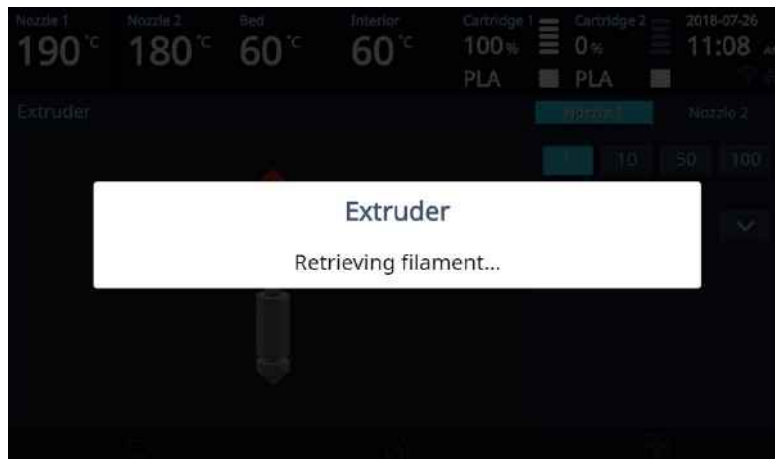
- 2 Press **[Extruder]** to enter Extruder settings.



- 3 To Control **[Extruder]**, Nozzle temperature needs to be raised.



- 4 Select the nozzle that you will use to move the filament.  
 Press **[1]**, **[10]**, **[50]**, **[100]** to select an amount.  
 In the image shown below, press the direction to move the filament.

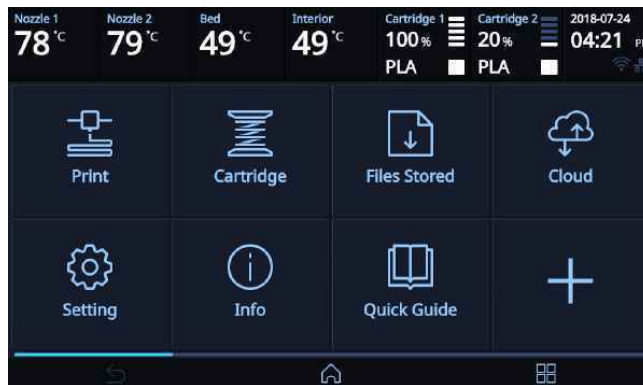




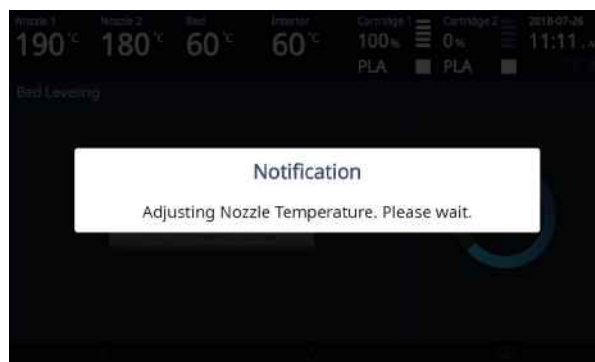
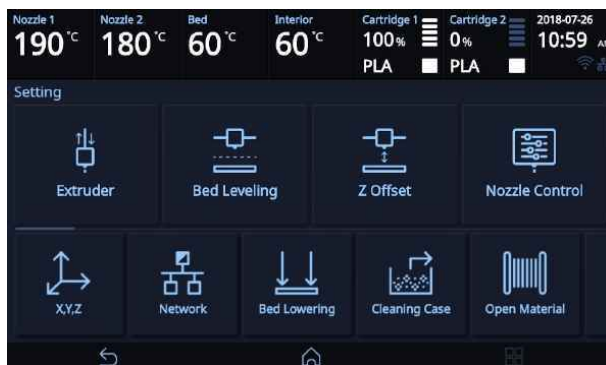
## Bed Leveling

This function is used to perform the leveling of the bed.

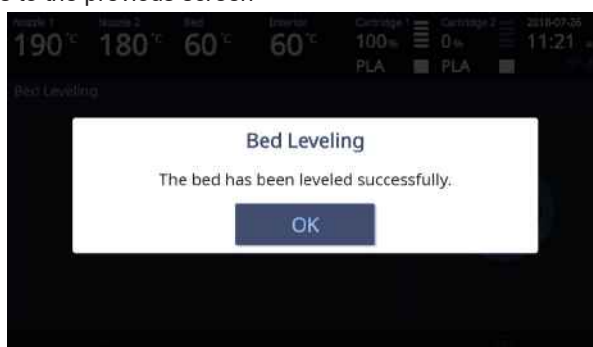
- 1 From home screen press **[Setting]**.



- 2 Press the **[Bed Leveling]** button to enter Bed Leveling settings.  
If the current Nozzle temperature is too high, process for cooling down the Nozzle temperature is added.



- 3 The leveling is performed automatically. When all settings are done the program returns to the previous screen



## Z Offset

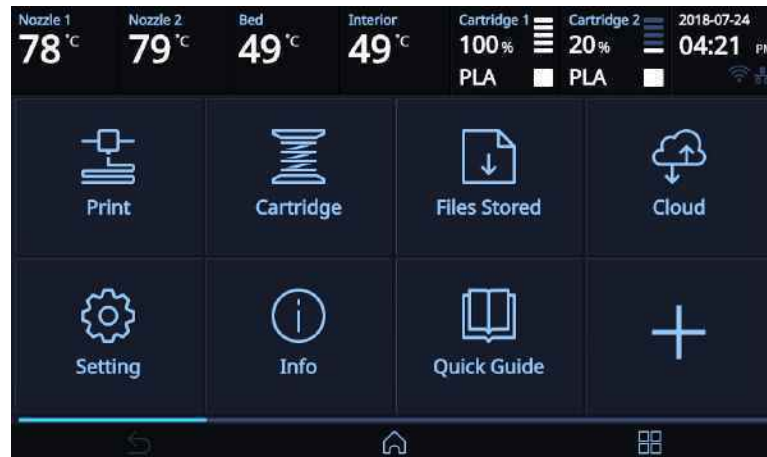
※After bed leveling, it is highly recommended to check the z-offset.

This Menu allows user to control the GAP in between Nozzle and BED. Standard is 0.25mm and can be customized. **[+]** button widens the GAP, **[-]** button shortens the GAP.

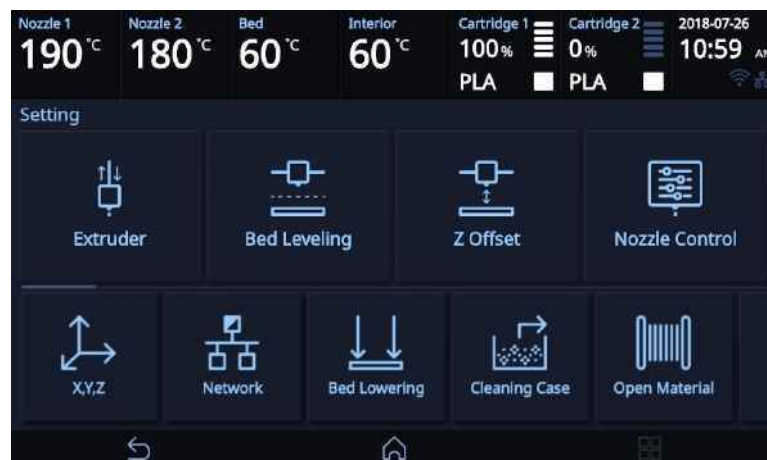
※For higher adhesive strength between the print output and the bed, shorten the distance of the z-offset.

For less adhesive strength, widen the distance of the z-offset.

**1** From home screen press **[Setting]**.



**2** Press the **[Z Offset]** button to access Z Offset screen.



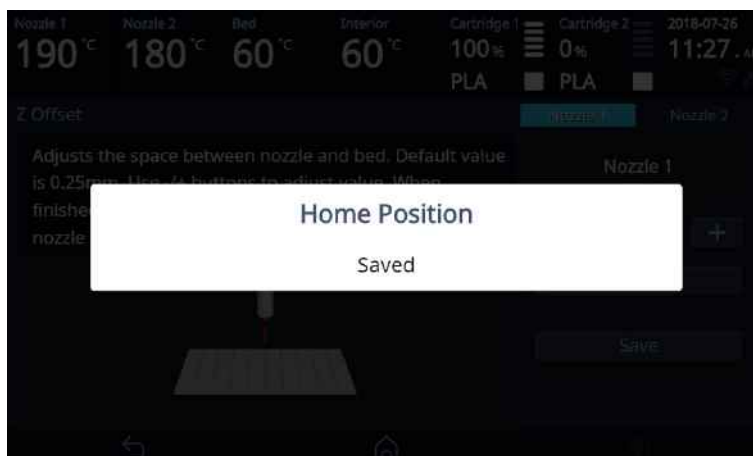
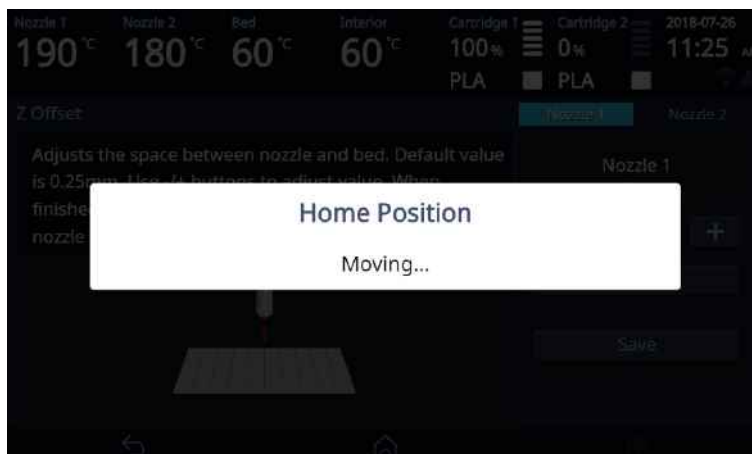
- 3** Select the nozzle that you will use to adjust the gap. Default value is 0.25mm, Use [+], [-] buttons to move in 0.05 mm unit.



- 4** Use the [Move] and [Save] buttons to adjust the gap and to save the setting.

The saved value is applied when next time the print starts.

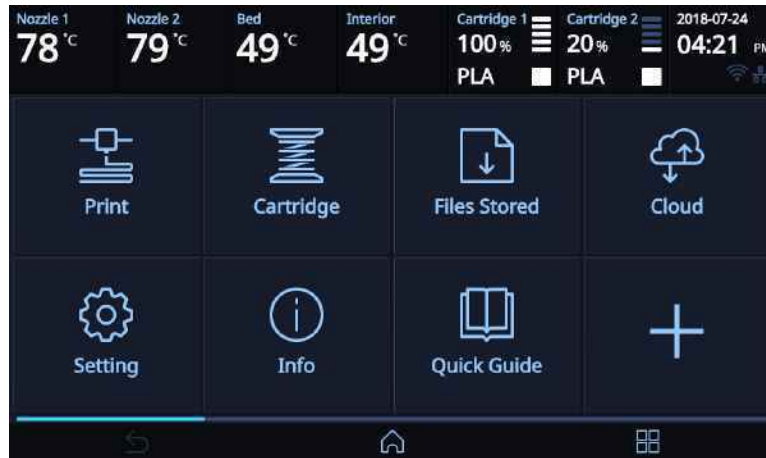
These values will be reset if bed leveling is initiated.



### Nozzle Cleaning Auto

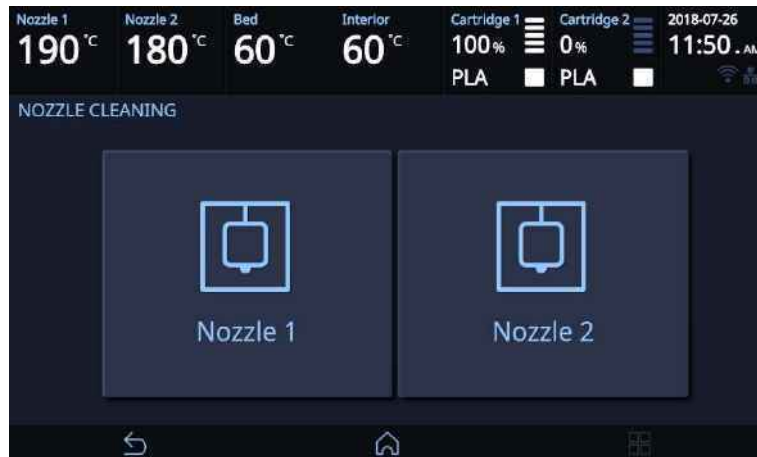
Function used when nozzle needs cleaning of left over filament residue.

- 1 From home screen press **[Setting]**.



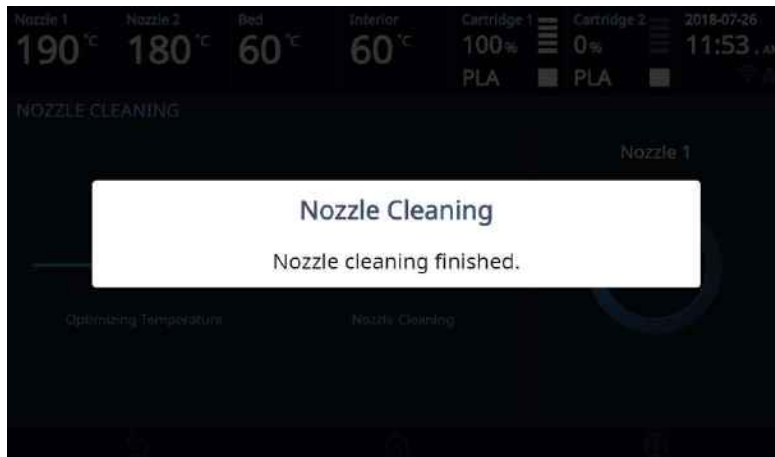
- 2 Press the **[Nozzle Control]** , **[Nozzle Cleaning Auto]** button to access nozzle cleaning settings. Select the nozzle that you want to clean.





- 3** In order to get rid of filament residue, the nozzle needs to be heated. When the specified temperature is reached, it moves on to the next step to remove filament residue. Once finished message will appear, printer will return to the settings screen.

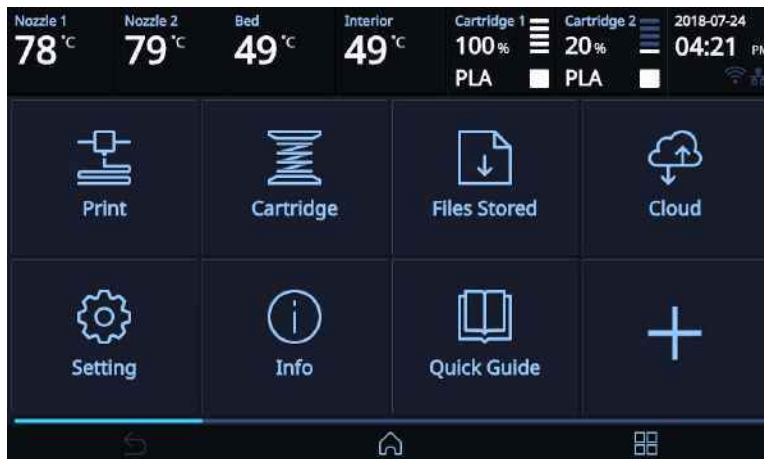




## Nozzle Cleaning Manual

Function used when nozzle needs cleaning of left over filament residue.

- 1 From home screen press **[Setting]**.



- 2 Press the [Nozzle Control], **[Nozzle cleaning Manual]** button to access nozzle cleaning settings. Select the nozzle that you want to clean.

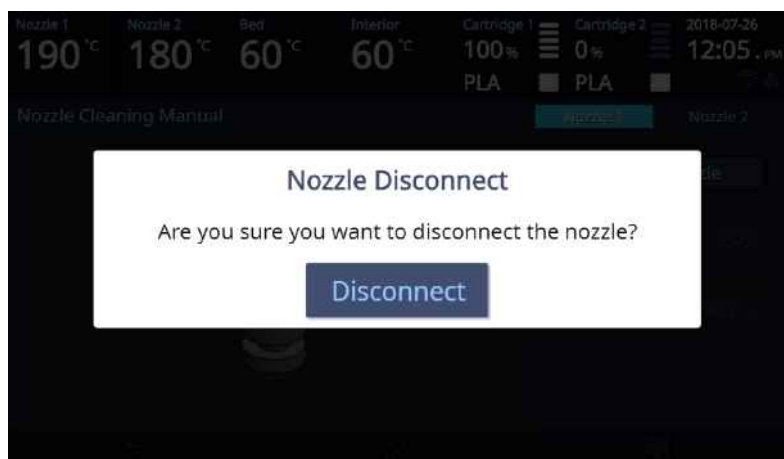




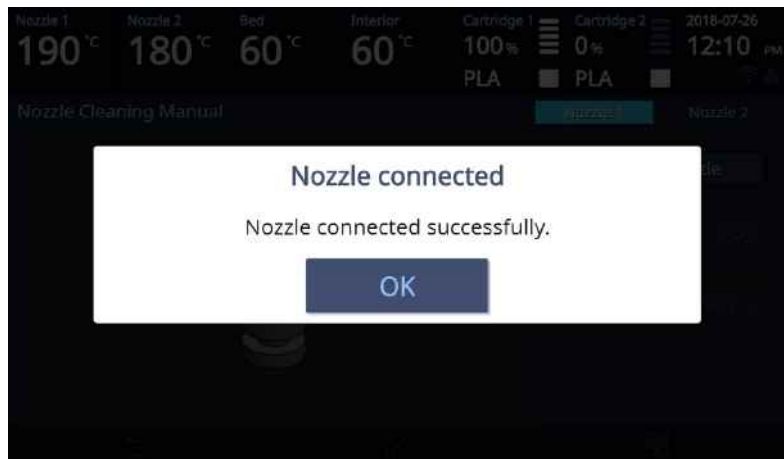
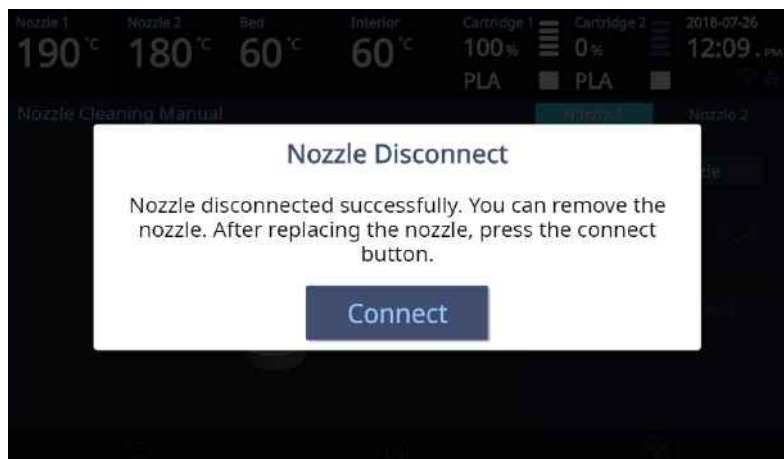
3 Press the [Heating nozzle] , Set the temperature and start Heating Nozzle.



4 Press the [Nozzle Disconnect] and [Disconnect] button to disconnect the nozzle.



5 Then press the [Connect] button to connect the nozzle..

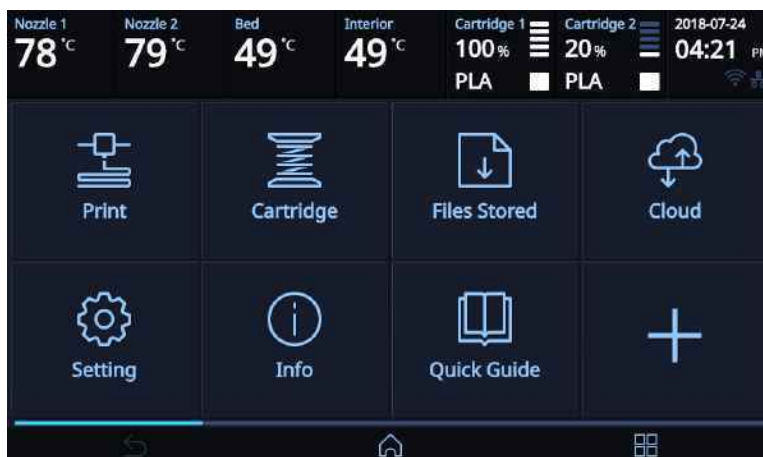




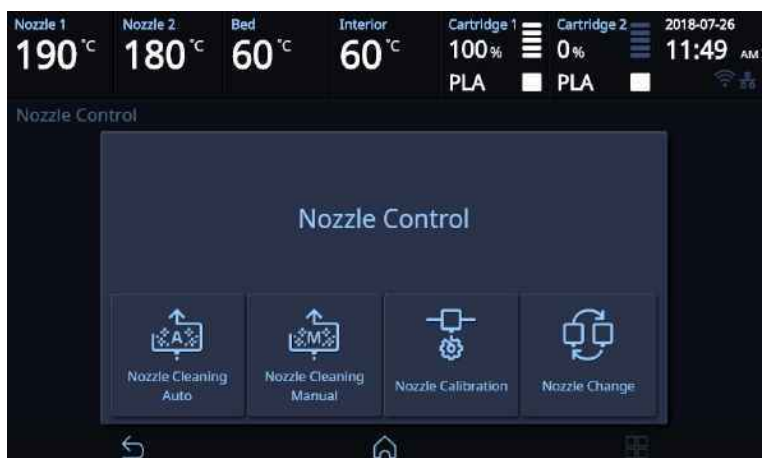
## Nozzle Calibration

- Printing of the XY Calibration Pattern

**1** From home screen press **[Setting]**.



**2** Press the **[Nozzle Control]**, **[Nozzle Calibration]** button to access the Nozzle Calibration screen.



- 3 To print the XY calibration pattern, press the **[XY Calibration]** button.



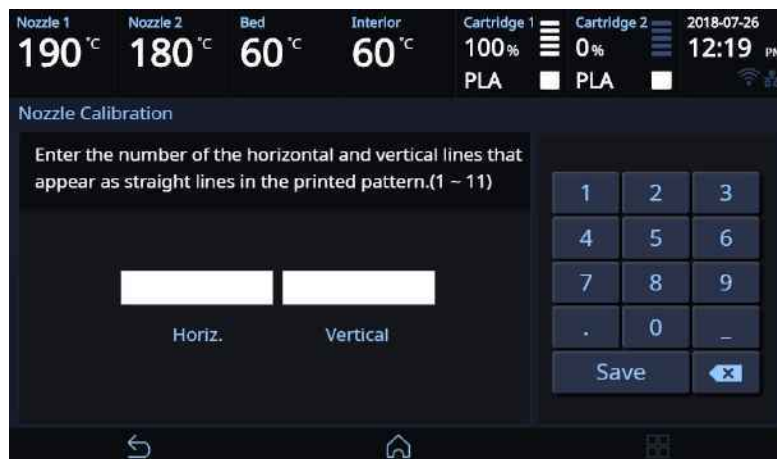
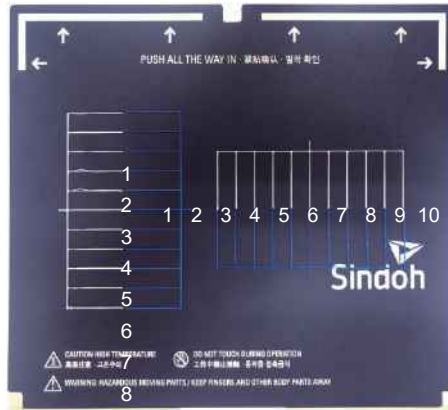
- 4 Press the **[Yes]** button to access the XY Calibration printing screen.



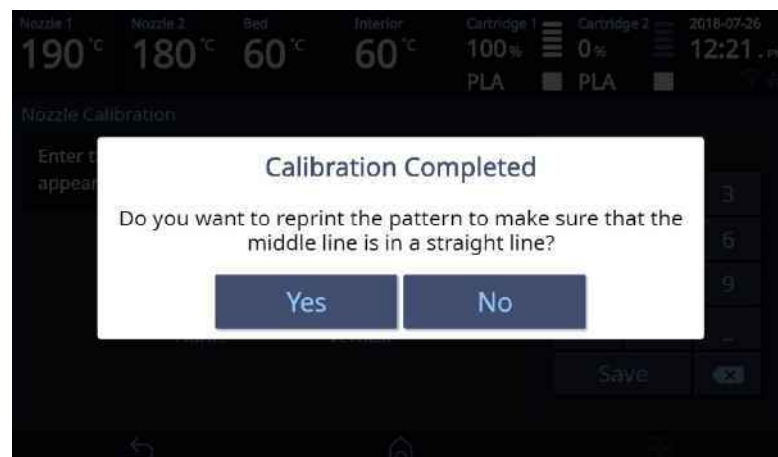
- 5 When the temperature of the nozzle and the bed rises and reaches the target temperature, printing will begin.



- 6 After printing the XY calibration pattern, enter the number of the line that is most linear among those printed with nozzles 1 and 2, and then press the **[Save]** button. Select the most linear line (No.1 starts from the top for horizontal lines and from the left for vertical lines)



- 7 To print the pattern for the calibrating nozzle again, press the **[Yes]** button. Press the **[No]** button to return to the Home screen.

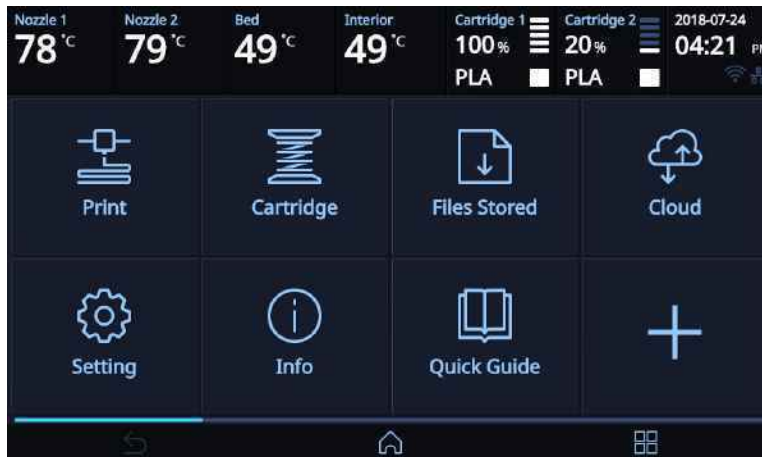


### Note

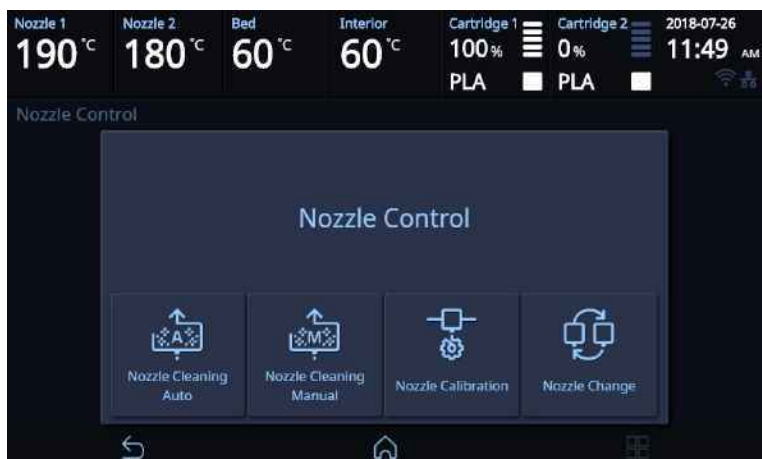
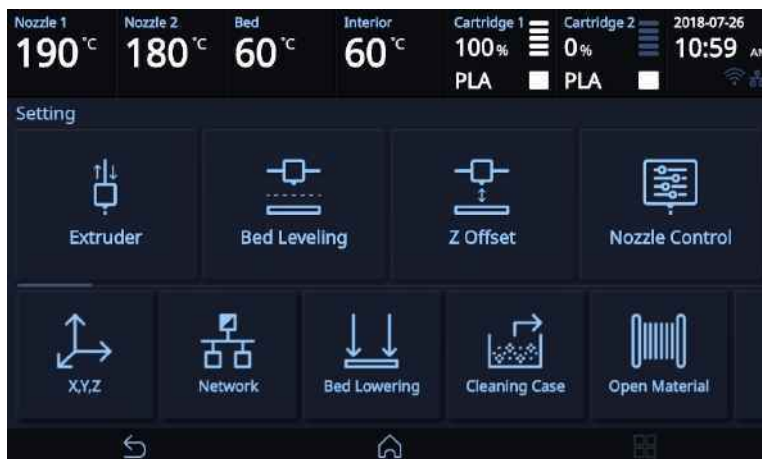
- Generally, the use of PLA material is recommended when performing XY-Calibration. Inevitably, XY-Calibration using ABS material is also possible.  
After the calibration is complete, there may be remainders on the bed during the process of removing the calibration pattern. (Pattern marks do not affect the function of the bed.)

▣ Entering the Pattern Value

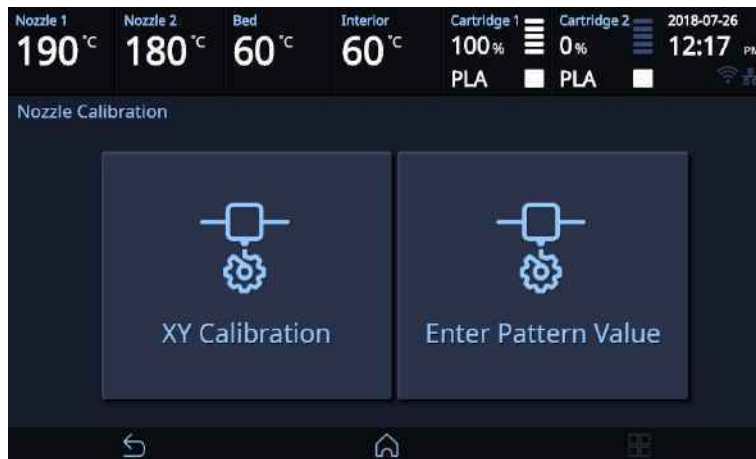
1 From home screen press [Setting].



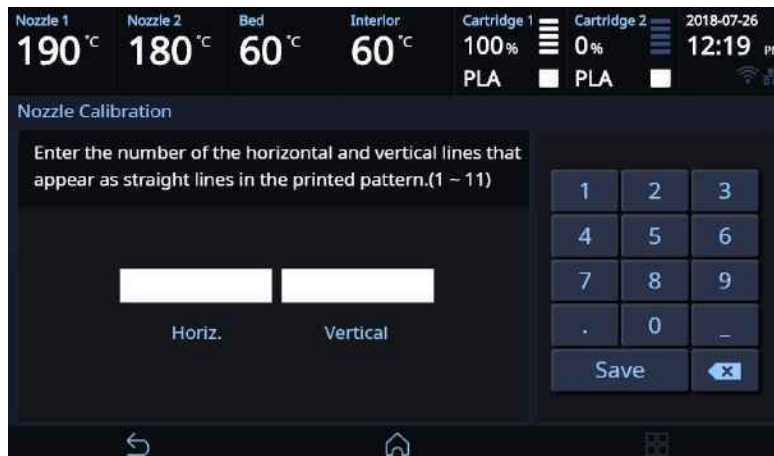
2 Press the [Nozzle Calibration] button to access the Nozzle Calibration screen.



- 3 Press the **[Enter Pattern Value]** button to access the Enter Pattern Value.



- 4 Enter the values for the horizontal and vertical lines. And press **[Save]** button.



- 5 To print the pattern for the calibrating nozzle, press the **[Yes]** button. Press the **[No]** button to return to the Home screen.

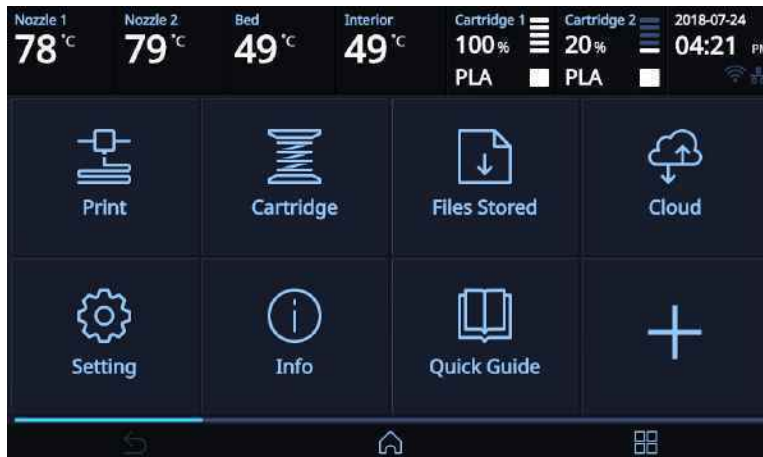




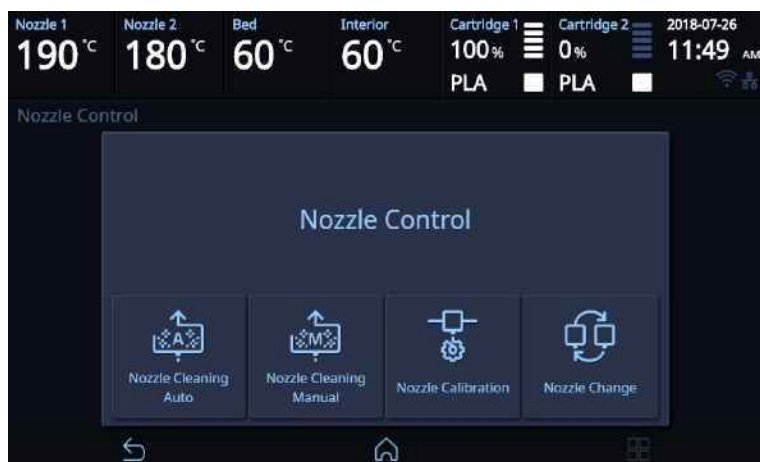
## Nozzle Change

Function used when nozzle needs changing the nozzle.

- 1 From home screen press **[Setting]**.



- 2 Press the **[Nozzle Control]** , **[Nozzle Change]** button to access nozzle change settings.



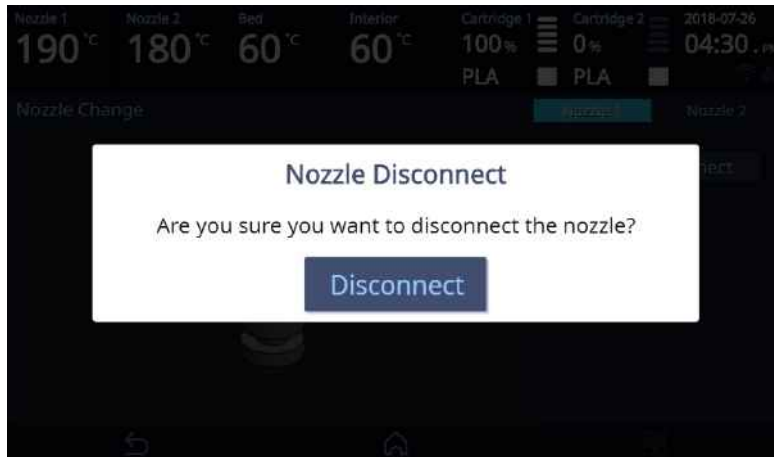


3 Select Nozzle to change nozzle.

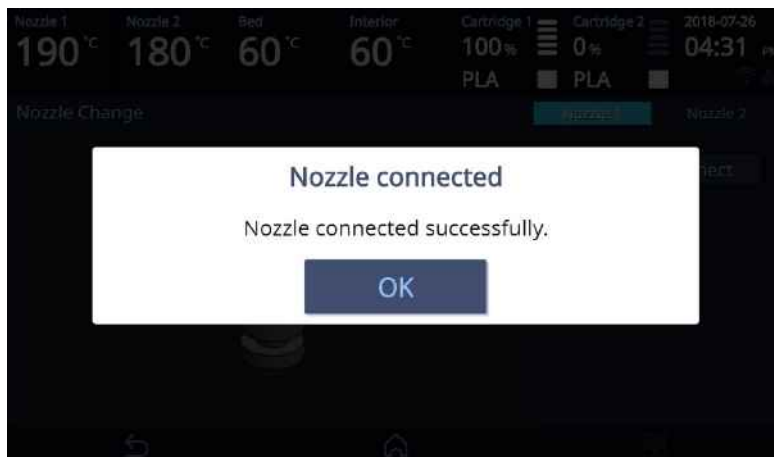
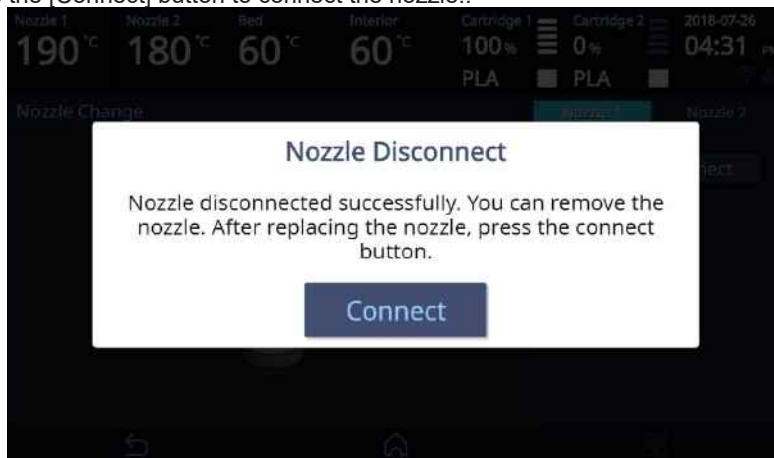


4 Press the [Nozzle Disconnect] and [Disconnect] to disconnect the nozzle.





5 Then press the [Connect] button to connect the nozzle..

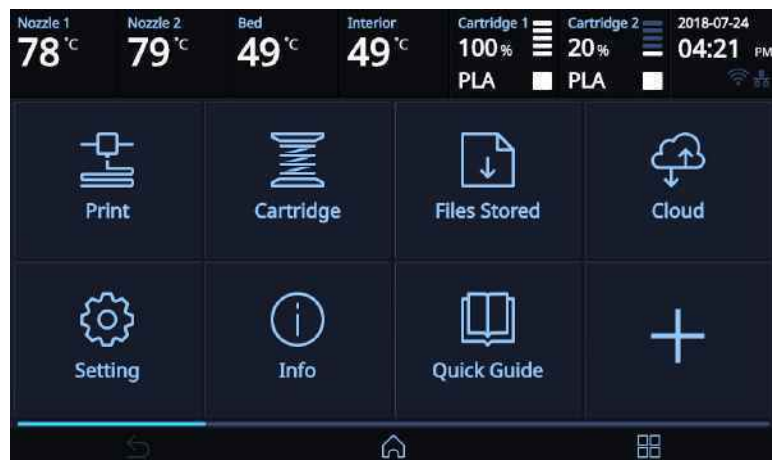




## X, Y, Z

Use to change the positions of the X axis of Nozzle, and the Y, Z axes of Bed.

- 1 From home screen press **[Setting]**.

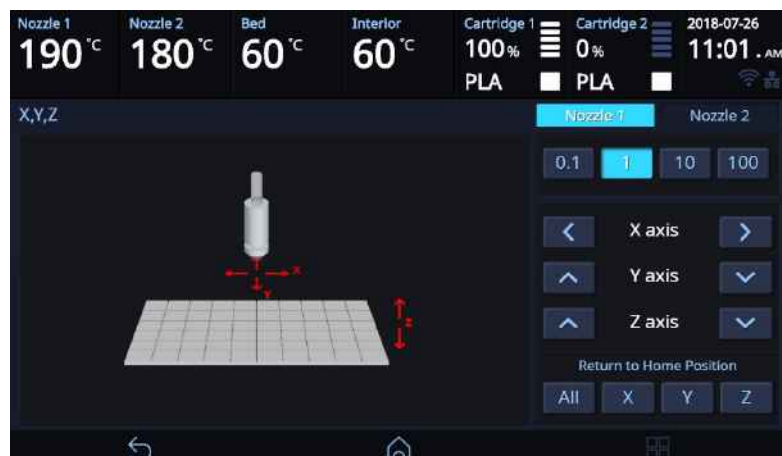


- 2 Press the **[X,Y,Z]** button to enter X, Y, Z.



- 3 Press either **[0.1]**, **[1]**, **[10]**, or **[100]** to select the length of transfer, and press the arrows to move the Bed and the Nozzle in the respective position.

To move to each axis' home location, press **[All]**, **[X]**, **[Y]** or **[Z]**.

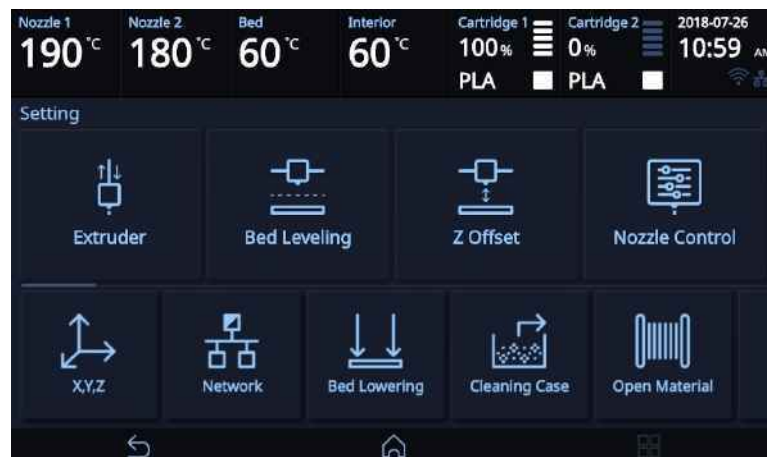
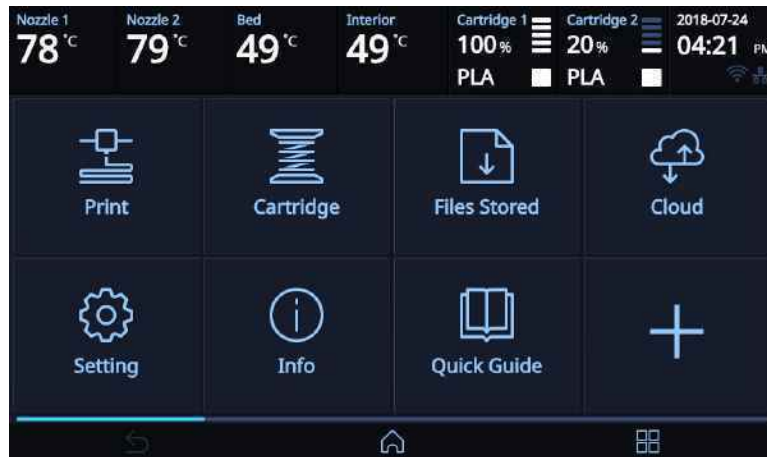


---

## Network

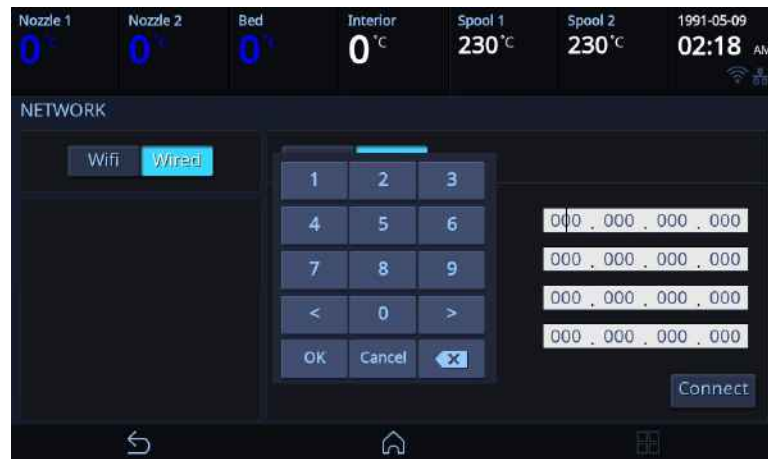
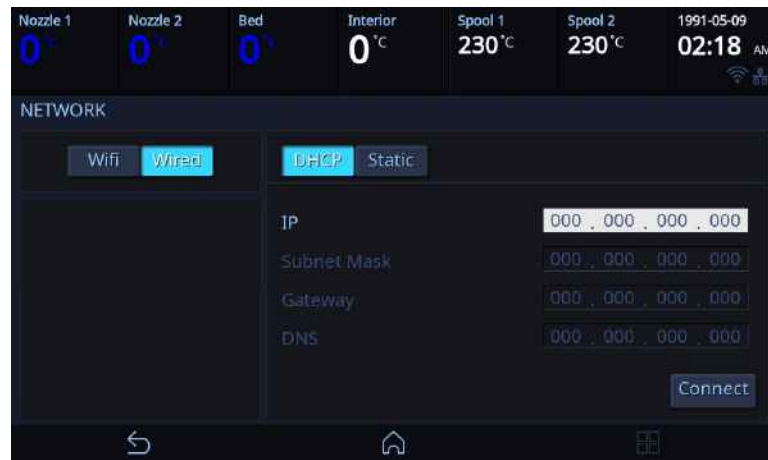
This is a menu to configure users network setting. IP address can be set up manually or automatically via DHCP setting. Wifi network is also supported.

- 1 From home screen press **[Setting]** and **[Network]** button.

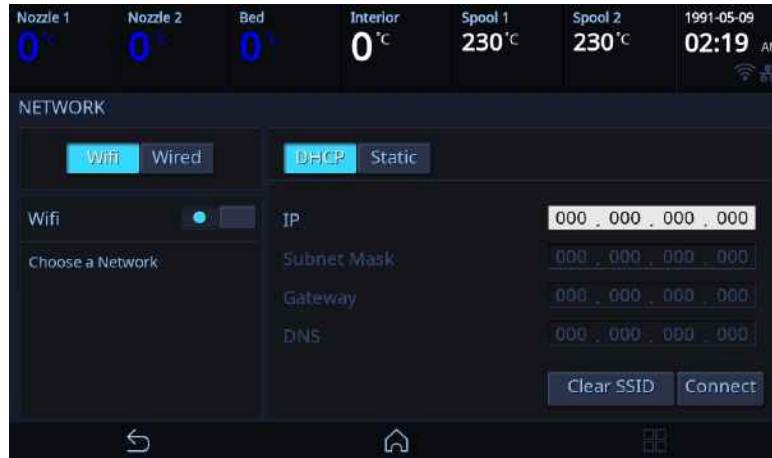


## 2 UI Menu Function

- 2 The default network setting is Wired (connection using LAN line).  
Press **[DHCP]** for automatic IP address setup. To manually input a fixed IP address press **[Static]** and enter an IP address. Press **[Connect]** to save the changes.



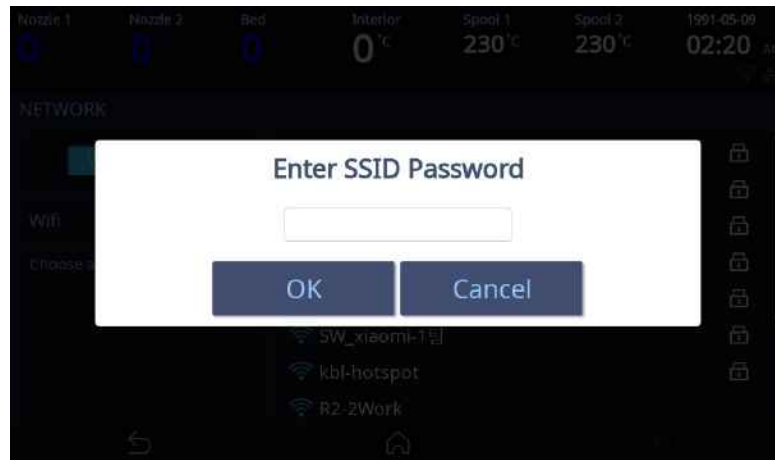
- 3** In any case to use Wifi press the **[Wifi]** button.  
 Wifi setting can be turned **ON** or **OFF**.



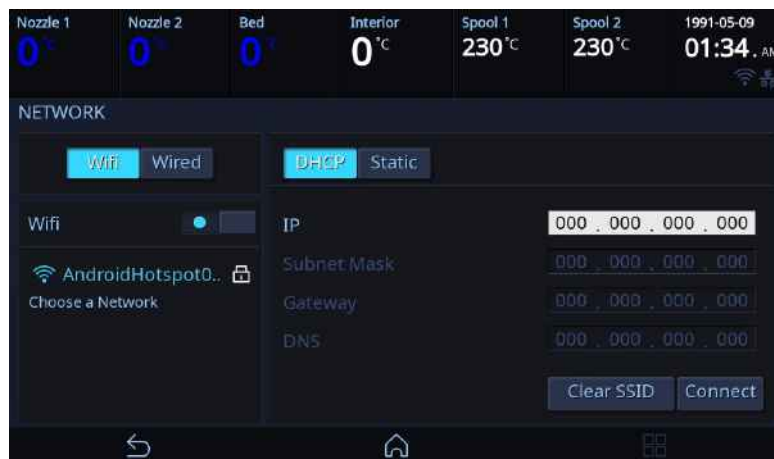
- 4** To select a Wifi network, click **[Choose a network]** and the printer shows all available Wifi connections.



- 5 Select a wireless network from the list to connect to the network. For a password-protected network, a dialog pops up and asks for the password.  
You can refresh the network list by clicking **[Choose a network]**.



- 6 After successful connection printer may ask for **[DHCP]**, **[Static]** similar to the WIRED setting.  
When all settings are finalized press **[Connect]** to save settings.  
When you want to delete connected SSID, please press **[Clear SSID]**

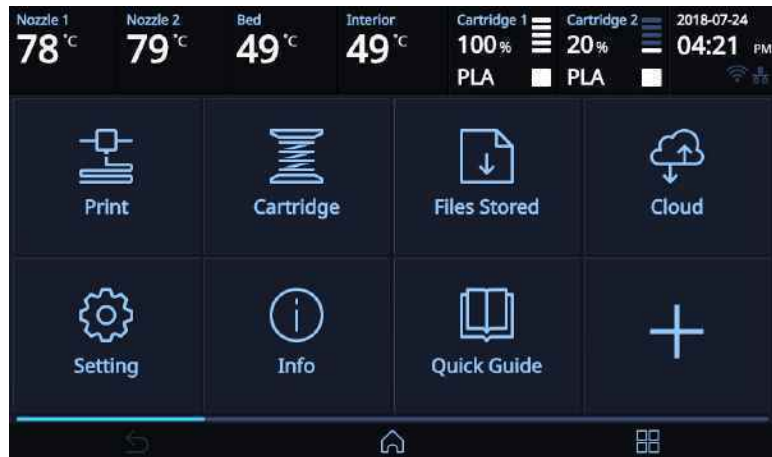




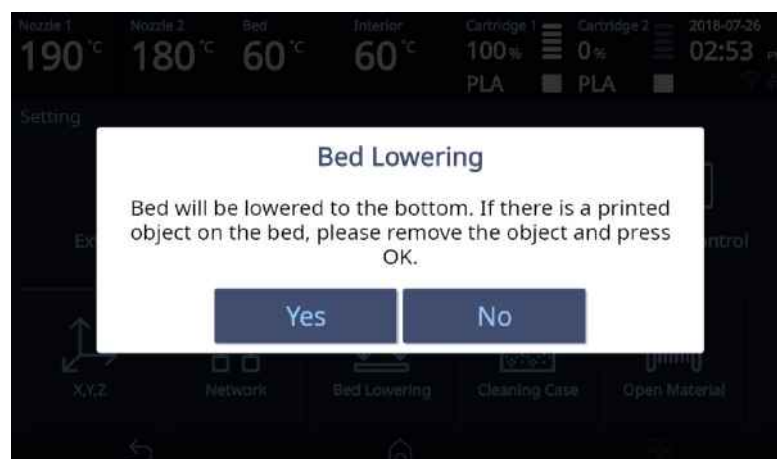
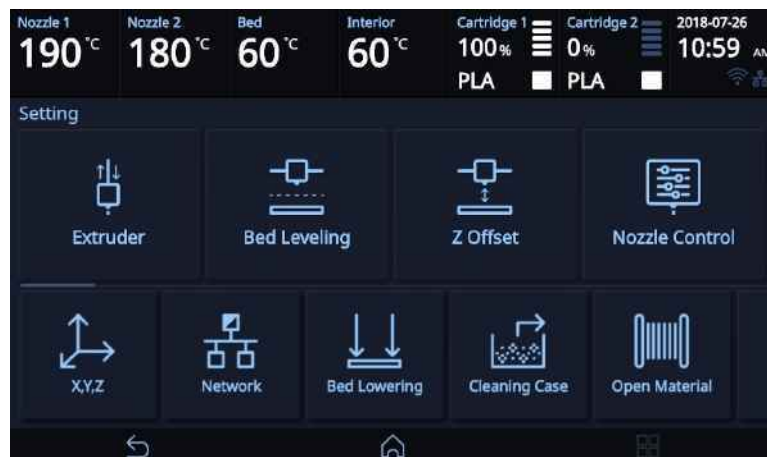
## Bed Lowering

Use this function, in times of moving printer to a different location.  
Bed will be lowered to the bottom and will be locked into position.

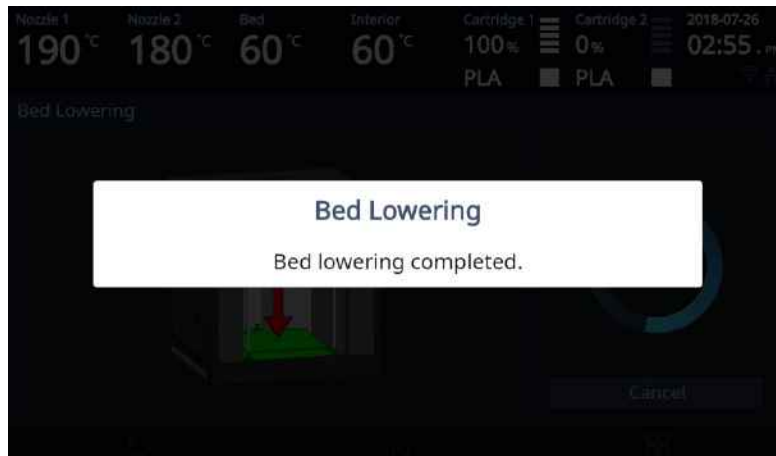
- 1 Press **[Setting]** from the home screen.



- 2 Press the **[Bed Lowering]** button to enter Bed Lowering settings.



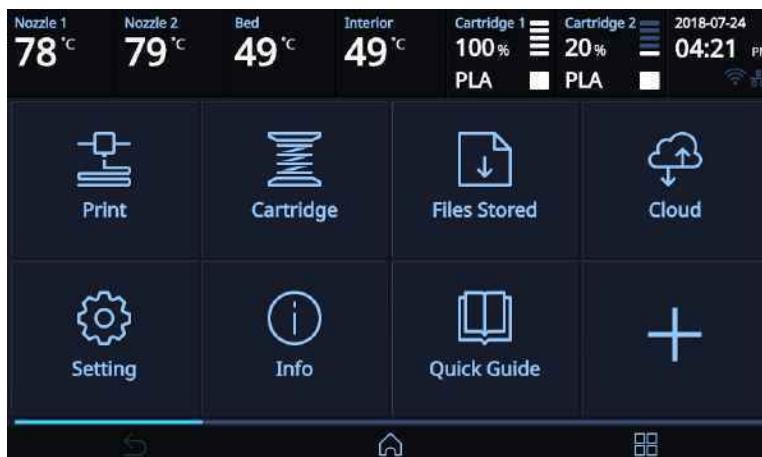
**3** Upon selection, the bed will automatically be lowered.



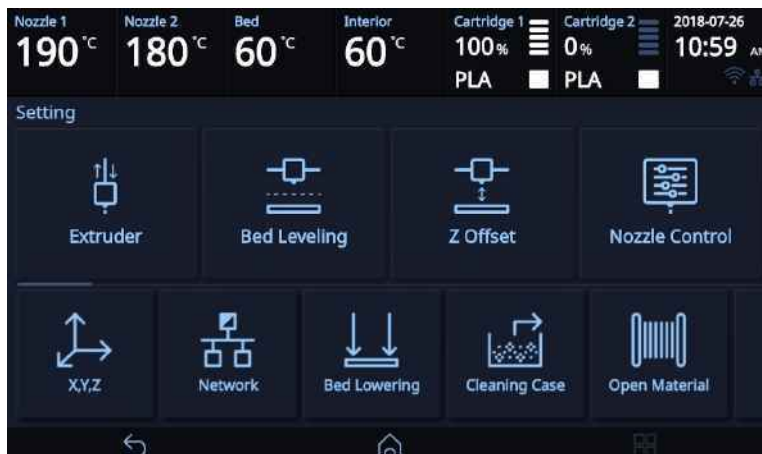
### Cleaning Case

Function used to clean out the case for the collected filament residue.

**1** From home screen press [Setting].



**2** Press the [Cleaning Case] button to enter Cleaning Case settings.



3 Pressing [Start] button, the nozzle will automatically position itself to the left and right side to be visible and accessible. Like shown in the image, empty the CASE, press [OK] when done and user will be returned to the home screen.



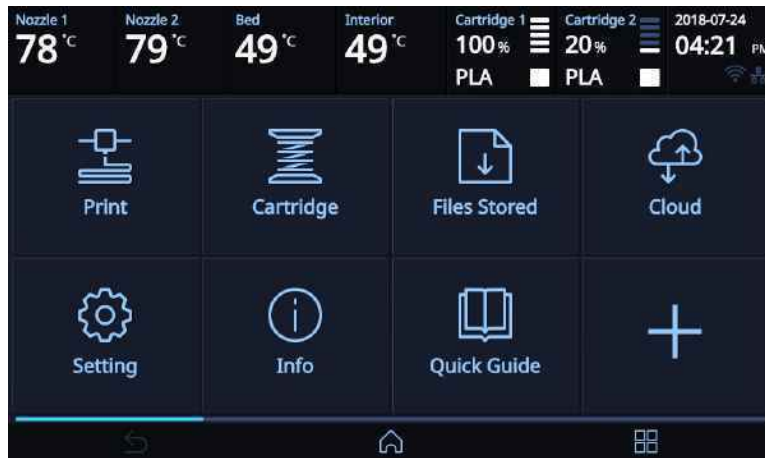


---

## Test Print

This function allows the user to test print a sample model already saved in the printer.

- 1 From home screen press **[Setting]**.

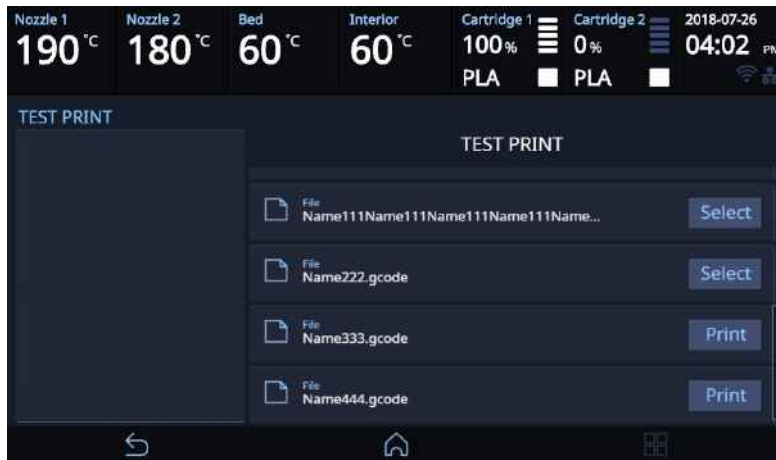


- 2 Press the **[Test Print]** button.



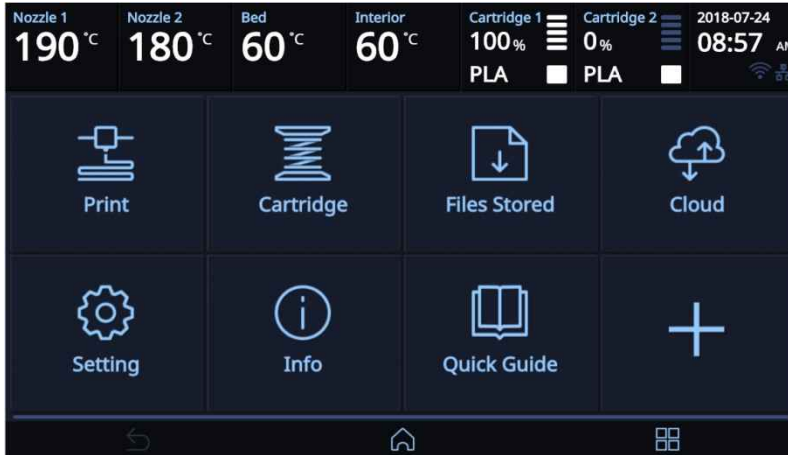


3 Select the test file to print.

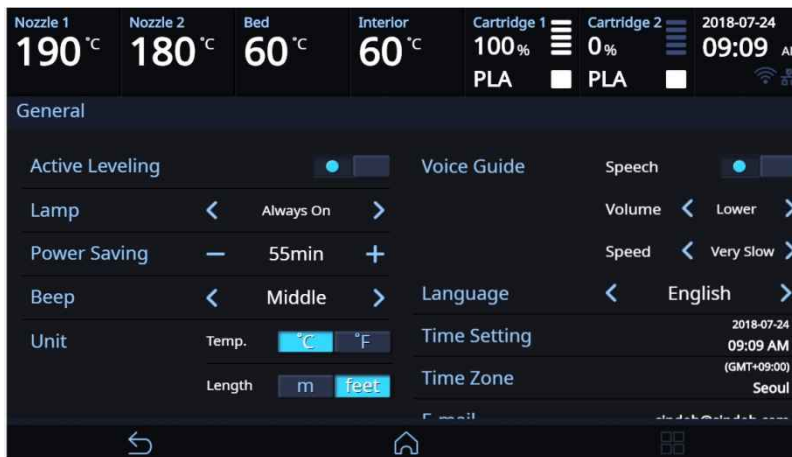


**General Setting.**

**1** From home screen, press **[Setting]**.



**2** Press the **[General]** button.



Menu	Description	Value
Active Leveling	This function executes Bed leveling before printing starts and offset the bed leveling by moving the bed in the direction the Z-axis during the printing.	On, Off
Lamp	Menu to configure settings for machine lamp. <b>Note</b> - Lamp will be activated as connecting the Web Monitor	Always On, On only in Printing, Always Off,

Menu	Description	Value
Power Saving	Function to set timer for printer energy saver mode.	0 ~ 100 Min 0 Min : Do not use Energy Saving Mode. 5~100Min : Energy Saving Mode in 5 ~ 100 Min. of Inactivity.
Beep	The volume level of beep sound can be adjusted using this menu.	Off, Low, Middle, High
Unit	Settings for the units of measurements displayed on the printer.	Temp : °C, °F Length : m, feet
Voice Guide	This menu enables you to configure the sound of Voice Guide in the machine.	Speech : On, Off Volume : Lower, Low, Normal, High, Highest Speed : Very Slow, Slow, Normal, Fast, Very Fast
Language	Menu to set language for machine.	English, 한국어, 中文, Español, Français, 日本語, Deutsch
Time Setting	You can view or change the time setting.	Refer to "Time Setting" section
Time Zone	You can view or change the time zone setting.	Refer to "Time Zone" section
E-mail	The printer takes an image of the current printing status and sends the information to the email address specified. Printer will send information of completion (%) based on the PC program standard settings. Maximum of 10 emails can be sent.	Refer to "E-Mail" section
Security	This menu enables you to set up the Security menu whether to use the 3D printer or not.	On, Off

## TIME SETTING

You can view or change the time setting.

**1** From general setting screen press **[Time Setting]**.

**2** The time setting can be changed in this screen.



**TIME ZONE**

You can view or change the time zone setting.

- 1** From general setting screen press **[Time Zone]**.
- 2** A preferred time zone can be selected from the time zone list.  
Once Time Zone has been set, the printer will restart to apply the new settings.



**E-MAIL**

The printer takes an image of the current printing status and sends the information to the email address specified.

Printer will send information of completion (%) based on the PC program standard settings. Maximum of 10 emails can be sent.

- 1** From general setting screen press **[E-mail]**.
- 2** Configure the setting for email notification to be sent out from the device.  
Only the information that is required for sending the email is set up from the printer and the recipient information has to be configured in the Slicer program.



Category	Description
E-mail Address	The sender info to be seen by the recipient(e.g. sender@domain.com) The recipient can reply to this email address

Category	Description
Address	SMTP server address (e.g. smtp.domain.com) - This is the server address of the email service (xxxx@gmail.com)
Port	SMTP Server Port (e.g. 25) - Normally the port number 25, 587 or 465 is used. Due to the increased security, some service providers do not allow the use of port number 465. If port number 465 is not available, please use 25, 587 or the port number that the service provider recommends.
ID	SMTP server login ID (e.g. sender) - Enter the ID for your email. - Depending on the service provider, a full email address may be requested. Please contact server administrator or email service provider for more information.
PW	SMTP server login password (e.g. *****) - Enter the password for your email
Security	Security method used when sending mail to SMTP server -The default value is [None]. For further details, contact your server hosting company or mail service provider.

Inquire your email server administrator or services provider for detailed information of the input information on each category. Especially for SMTP server log in ID, it may be needed to enter the entire email address which includes the domain name.

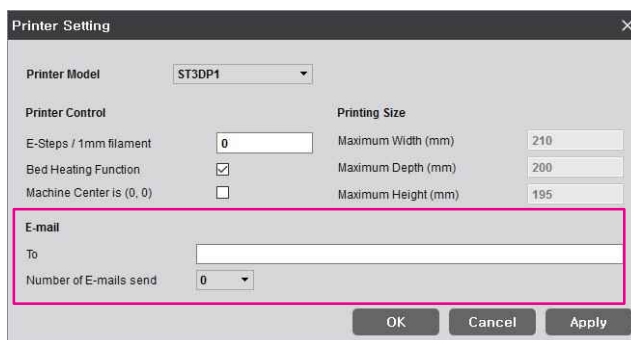
This setting is for the SMTP (Simple Mail Transfer Protocol) server to be used for sending emails. The SMTP setting may have to be enabled depending on the system.

To check the detailed setting values, please refer to the setup information from your email service provider. For the set up to use the outgoing email service, please find information by internet search or your email service provider's instructions.

A certain amount of interval time may be required after setting up the SMTP service before using. For more details, please inquire your email provider for the service policies.

A certain amount of interval time may be required after setting up the SMTP service before using. For more details, please inquire your email provider for the service policies.

**3** Configure the recipient email information from the 3DWOX slicer program.



Under **[E-mail]**, input the recipient email address(es) and select the number times that you wish to send the notification emails.

Additional recipient addresses can be added by using semicolon.  
e.g. [recipient1@test.com](mailto:recipient1@test.com); [recipient2@test.com](mailto:recipient2@test.com); [recipient3@test.com](mailto:recipient3@test.com)

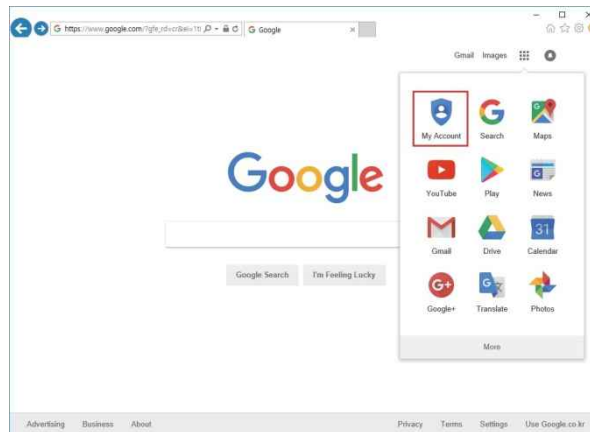
The maximum number of notification emails that can be sent is 10. Regardless of the number entered for the email notification, an email will be sent out for the user to see if the initial email notification is working properly by default. e-mail will be sent out one more time than the number that the user entered. However, the total number of e-mail that is sent will not exceed 10 times. (When user selects 10 times, the notification e-mail will be sent out 10 times)

### ❖ In the case of using a Google email account.

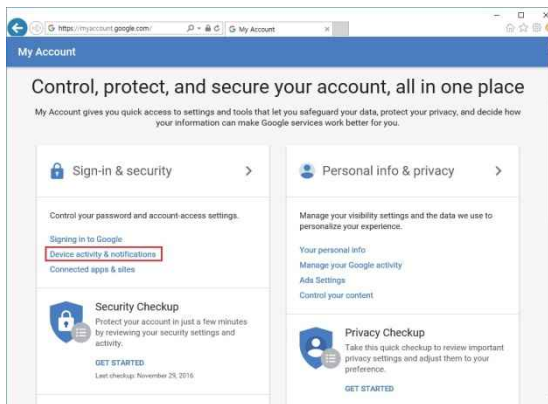
According to Gmail policies, the following settings have to be met.

#### ▣ Google account setting

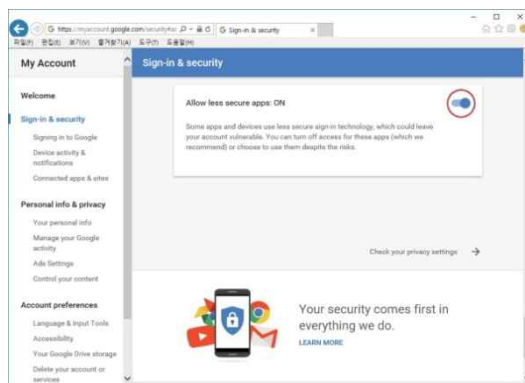
- 1 Log into your Google account that you are planning to use.
- 2 Click on the apps button on the top right hand corner.  
After click on **"My Account"**



- 3 Under **"Sign-In & Security"** click **"Device activity & notifications"**



- 4 Scroll down and there is a "Allow less secure apps" criteria. Set it to **"On"** to enable the option.



**▣ Printer Setting**

- 1** Set "**smtp.google.com**" for the settings of the email address.
- 2** For Google, 25 and 587 ports are compatible.

**⚠ Caution**

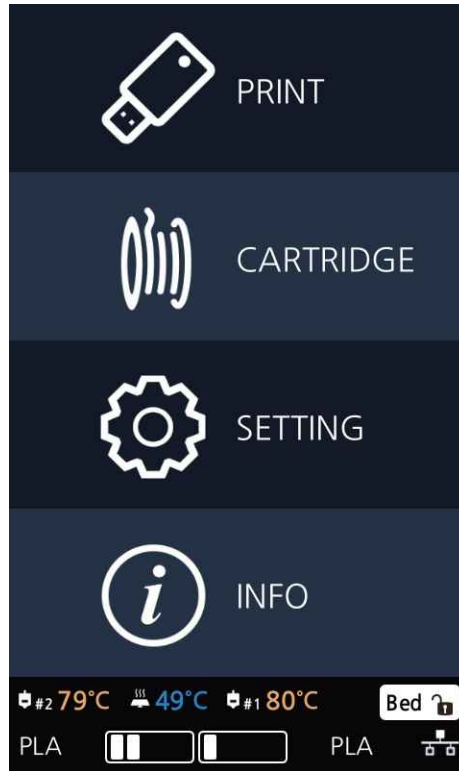
- **According to the service provider, the email address and port number may be changed. For more information please contact service administrator**



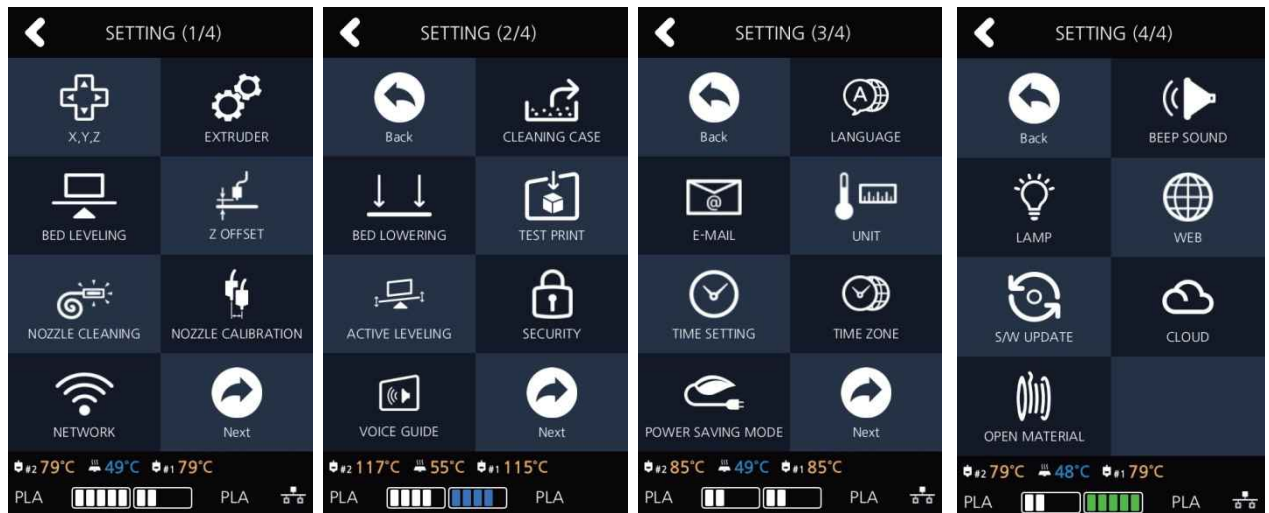
## WEB

While network is connected, I can open the internet browser tab in the Firmware to load 3D Printer homepage.

- 1 From the home screen, enter the settings menus by pressing the **[Setting]** button.



- 2 Press the **[Next]** and enter the **[WEB]** menu.



## 2 UI Menu Function

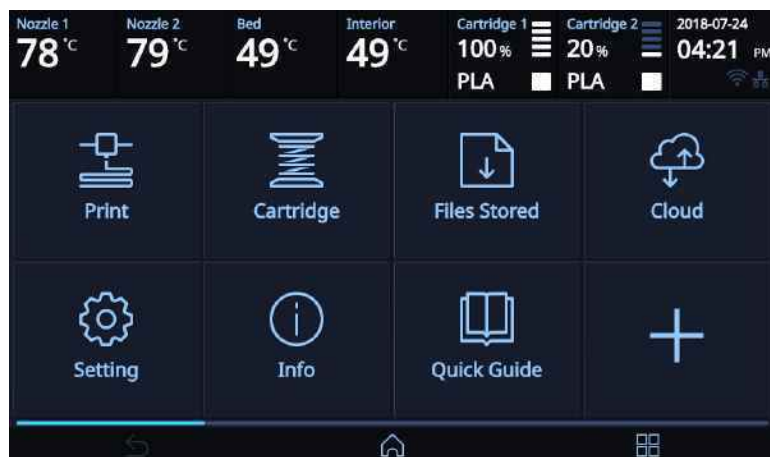
- 3 The 3dprinter homepage will be opened and user can view the information of user preference. The company website address is <http://3dprinter.sindoh.com/>



### S/W UPDATE

With the printer connected to the internet user is able to download the latest software.

- 1 From the home screen, press [Setting].



- 2 Press [S/W Update] button.



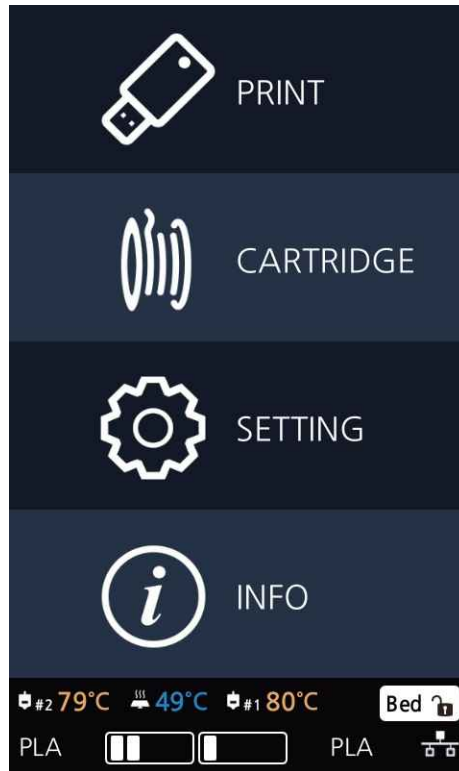
- 3 Press the [Start Update] button, and printer will start updating. After it has finished, restart the printer and updates will be applied.



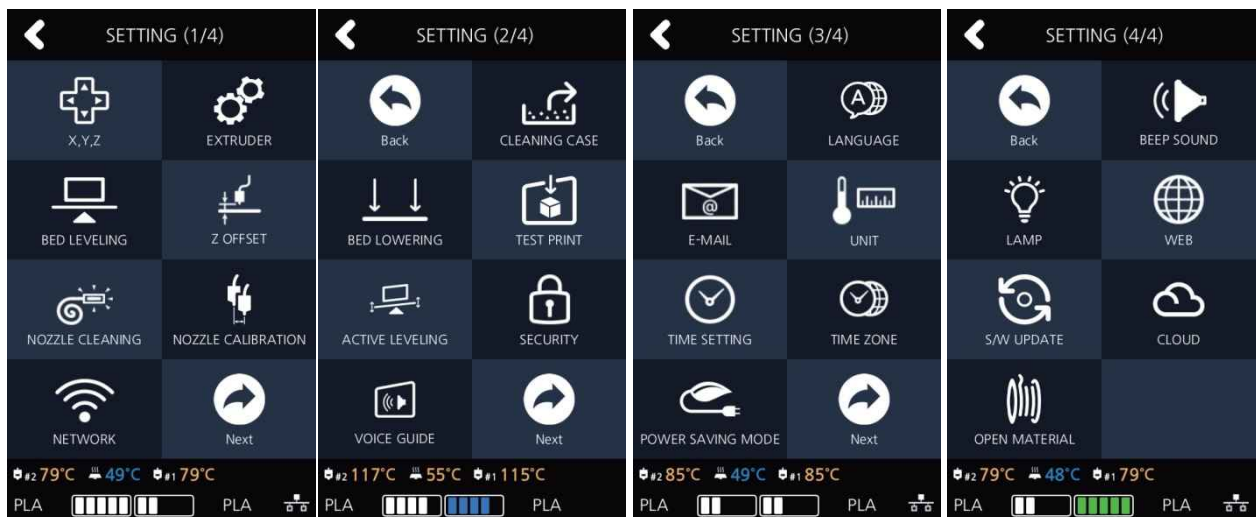
### CLOUD

This menu enables you to set up the Cloud menu whether to use the 3D printer or not. The machine will automatically reboot once the Cloud function setting is changed.

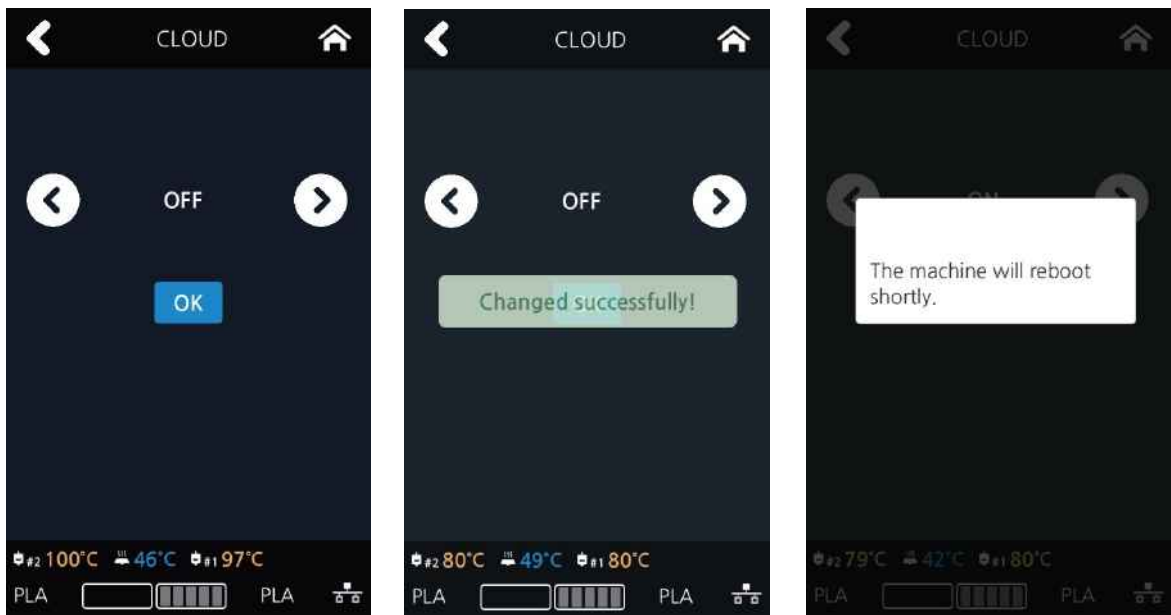
- 1 From the home screen, press **[Setting]**.



- 2 Press **[Next]** 3 times and select **[CLOUD]**.



- 3 Select whether to add or remove the function by using the arrow key and then press **[OK]** to save.



## Open Material

The OPEN MATERIAL enables the usage of a third-party filament without any cartridge and smart chip.

In the cartridge mode, the filament is automatically loaded and unloaded in optimal conditions, with our filament and smart chip.

On the other hand, the OPEN MATERIAL requires some manual operations by users for loading and unloading the filament.

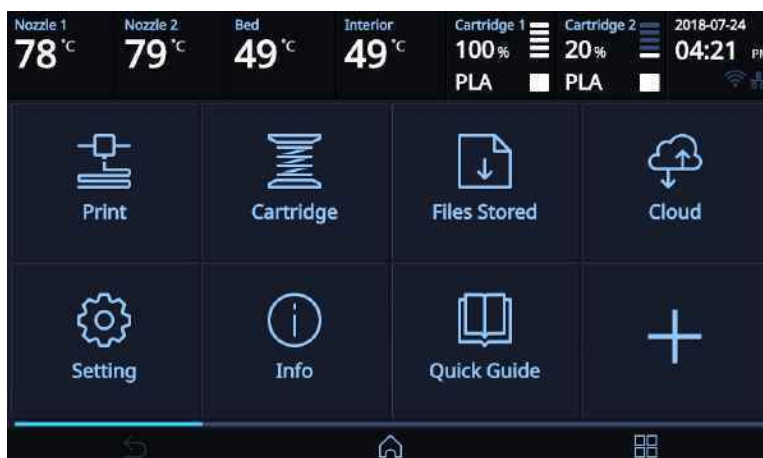
Instead, it has the advantage of being able to use a third-party filament.

To use the OPEN MATERIAL, change the machine settings in the following procedure.

Then, follow the UI guide to load the filament.

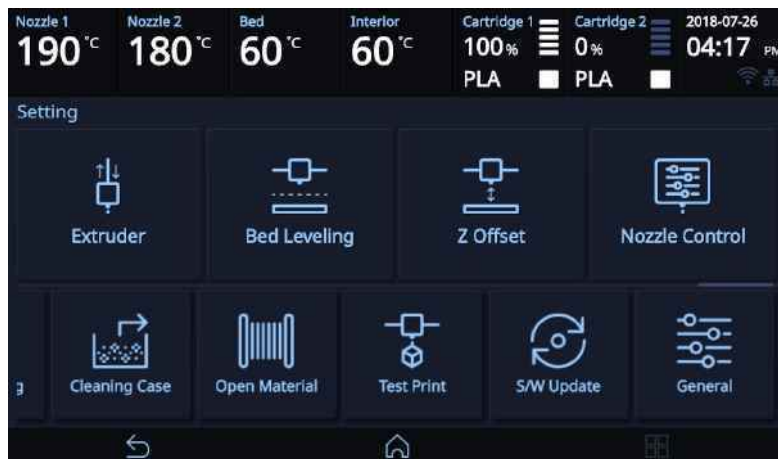
For “**how to use the slicer in the Open Material,**” refer to the slicer manual in the memory stick.

- 1 Press the **[Setting]** button on the Home screen to access settings.



## 2 UI Menu Function

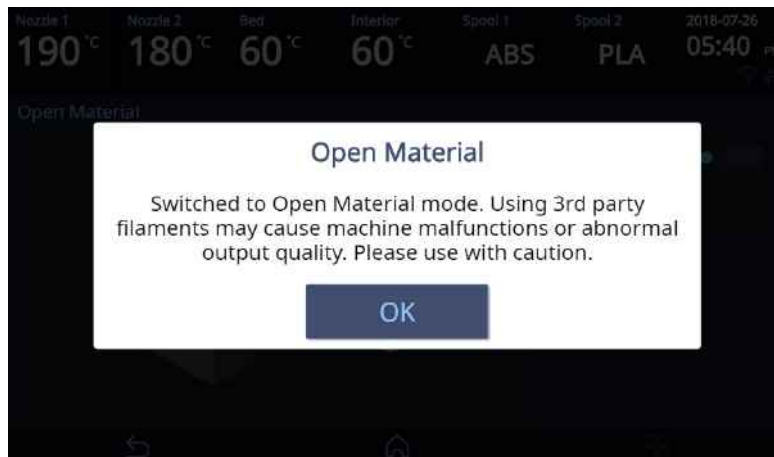
2 Press the [Open Material] button to access the Open Material screen.



3 Press the [Open Material] button.



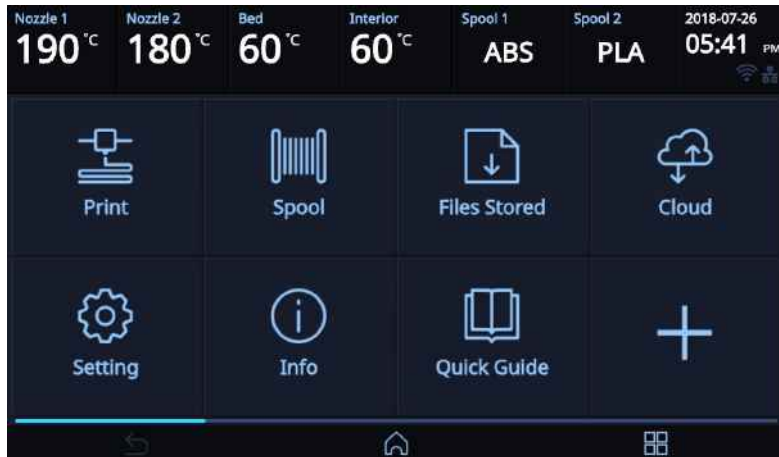
- 4** Read the **Open Material** guide pop-up and then press the **[OK]** button.



**⚠ Caution**

- Improper usage of a third-party filament may cause device failure and poor printing quality. Therefore, it is important to create a correct gcode and apply it to a device by fully understanding the characteristics of a third-party filament, including the recommended printing temperature and speed.
- As soft filament with shore hardness of 65 D or less (TPU, TPE, etc.) may cause transfer problem, it is not applicable. A filament containing abrasive additives (metal component, carbon fiber) may cause transfer problem and reduce the service life of nozzles.
- If a third-party filament has a too large spool, it would not be usable with it inserted. Make sure that the spool to be used has the width of 67 mm or less and an outer diameter of 213 mm or less.
- When 3rd Party Filament gets all consumed, the filament end sometimes gets stuck in the machine and this tends to cause the filament feeding problem (EC 401). If EC401 occurs, in order to continue printing, please load new filament spool after unloading the left-over filament previously used in the machine.

5 “OPEN MATERIAL” is displayed at the bottom of the main screen.



Although the supports open material mode, we recommend the use of Sindoh filament on the printer. The filament available for use in Open Material Mode is shown below.

Filament	Bed Preparation	Recommended Nozzle Temp(°C)	Recommended Bed Temp(°C)	Remark
PLA	N/A	200	60	Sindoh / 3 <sup>rd</sup> party
ABS	N/A	230	90	Sindoh / 3 <sup>rd</sup> party
FLEX	N/A	240	60	Sindoh / 3 <sup>rd</sup> party
PVA	N/A	230	60	Sindoh / 3 <sup>rd</sup> party
PETG	N/A	230-250	80	3 <sup>rd</sup> party
ASA	N/A	235-255	110	3 <sup>rd</sup> party

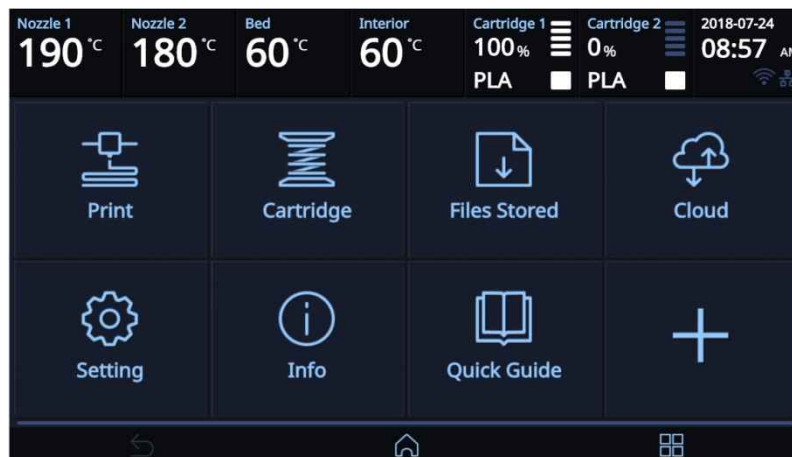


### 1.3 Information

INFORMATION	NAME
	CHANGE NAME & PW
	MODEL NAME
	SERIAL NO.
	VERSION
	WEB SITE
	WIRED IP
	WIRED MAC IP
	WIRELESS IP
	WIRELESS MAC IP
	HISTORY

In this menu user is able to view the detail information of the printer, and set device name & password. In **[HISTORY]** screen, user is able to view all the records of past works.

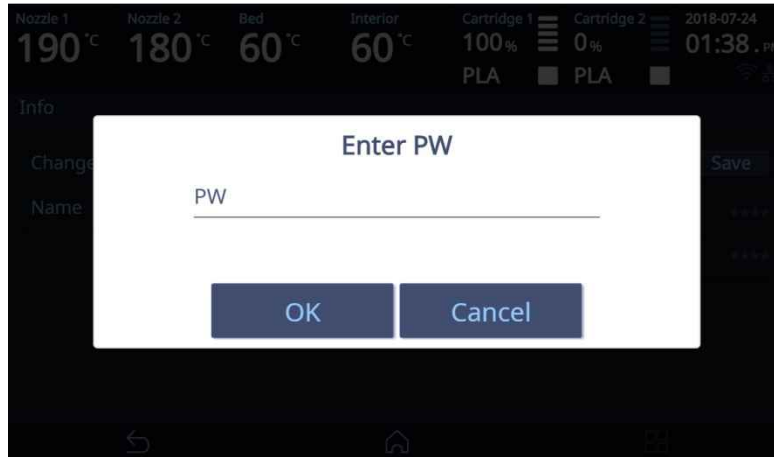
**1** From home screen, press **[INFO]**.



**2** To set password and name for printer, select **[Change Name & PW]**.



**3** By entering the password, you can edit name and set a new password. Pressing **[Save]** saves the changes.



**Reference**

- \*Initial password is '0000'.

**4** In **[INFO]** screen, press **[History]** to access to view all the records of past works..



Temperature and filament status: Nozzle 1: 0 °C, Nozzle 2: 180 °C, Bed: 60 °C, Interior: 60 °C, Cartridge 1: 100% PLA, Cartridge 2: 0% PLA. Date: 2018-04-17, Time: 04:04 PM.

History

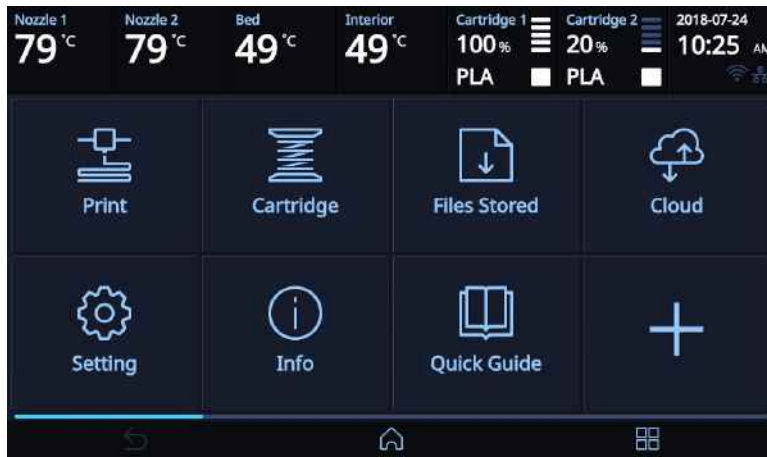
Metric	Value	File Name
Total Print Time	2hours 31min	bunny.bin
Total Filament Used	2.1	cat.bin
Current Filament Usage Recoder	3.7 / 1hours31min	dog.bin
		dog.bin

Navigation icons: back, home, and a grid icon.

**5X/7X Series**  
**USER MANUAL**

# 1. Printing

User can print p via USB flash drive, USB cable, or over the network. The following on the printer means it is ready to start print.



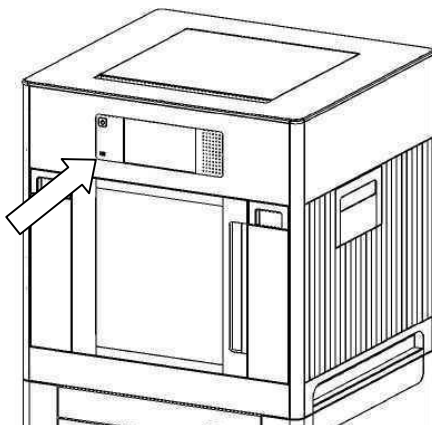
## 1.1 Printing from USB Flash Drive

### 1 Connecting USB flash drive to the printer.

In order to print using a USB flash drive, insert the flash drive into the USB port.

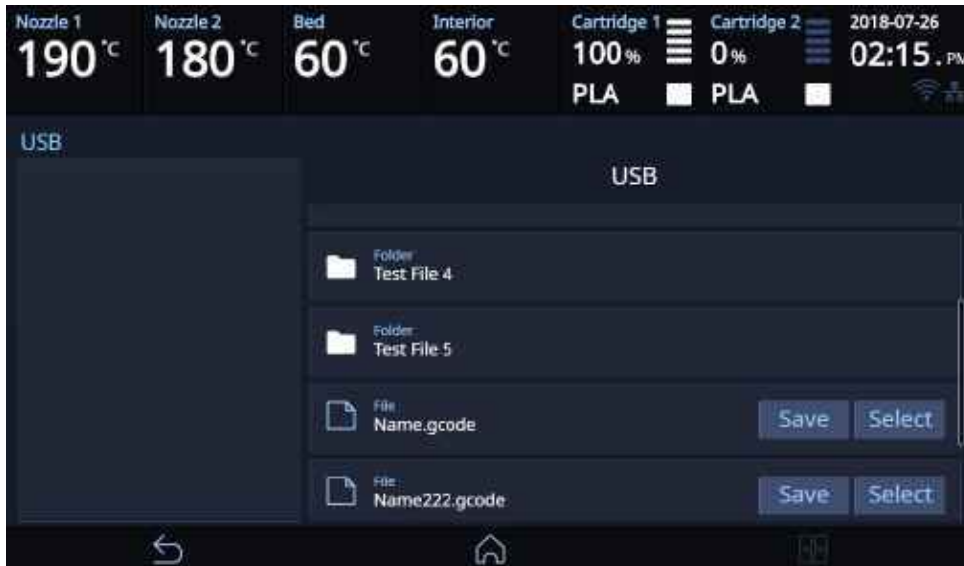
When the USB flash drive is connected while in the home screen, a list of files in the USB appears.

When **[PRINT]** is selected without the USB flash drive connected, a message requesting for USB connection will pop up and once USB flash drive is connected a list of the USB files will emerge.



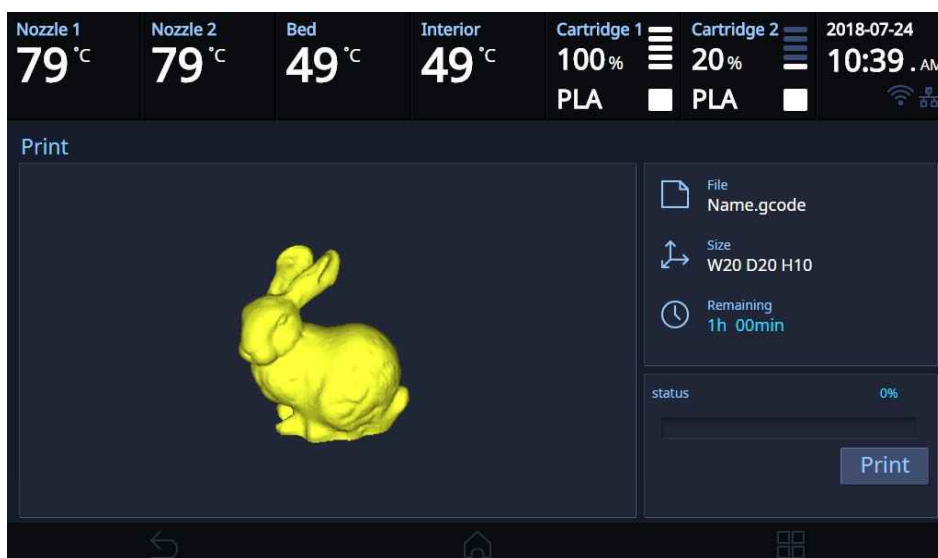
**2** Printing Files

Select a file to print in the USB list.



**3** Print Preview

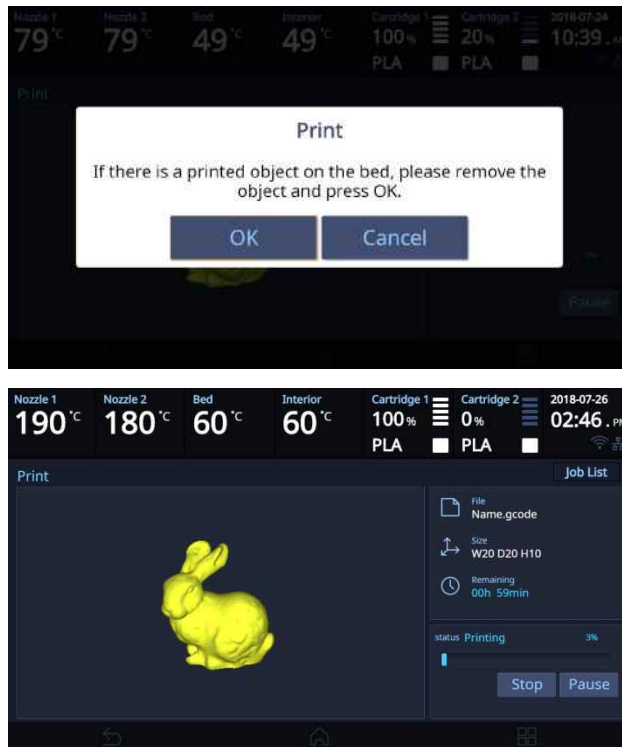
Once selected, a preview of the model appears on the screen.



### 3 Printing

#### 4 Printing

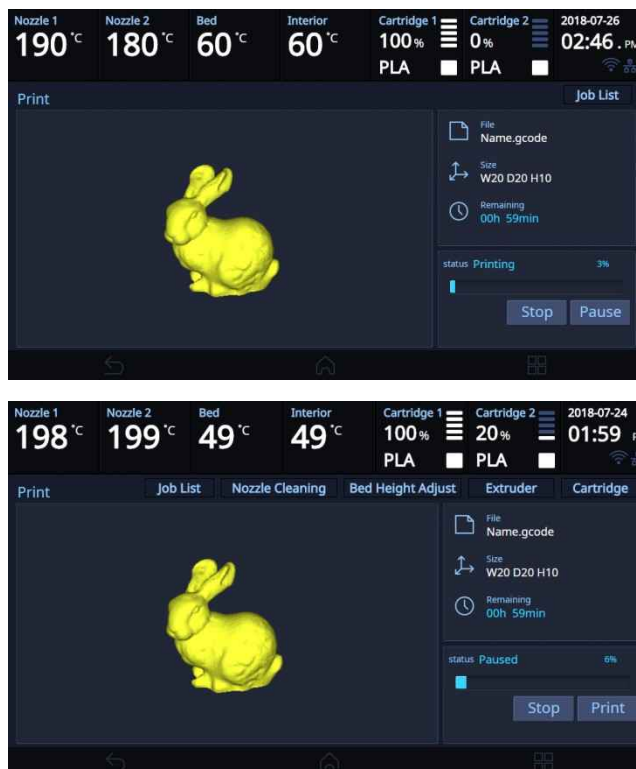
Once [ **Print** ] is pressed the nozzle starts to be heated. When the specified temperature is reached, the printing starts.



#### 5 Pausing Print

Pressing [ **Pause** ] during a print will pause the progress.

Press [ **Print** ] again and nozzle is heated again, and the printer will continue printing.



**6** Additional Functions of Pausing

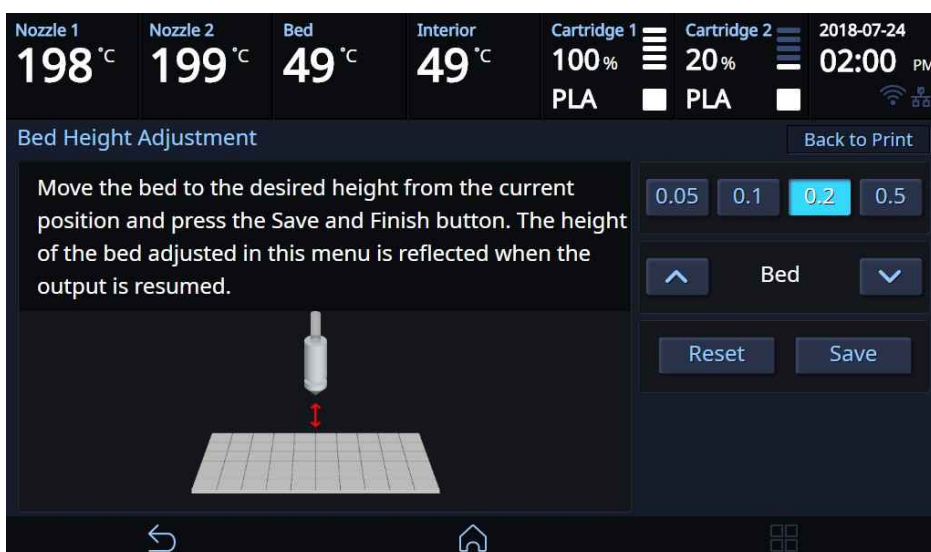
Press the [ **Pause** ] button during printing to pause it, additional function buttons will appear.



These additional functions include [ **Nozzle Cleaning** ], [ **Bed Height Adjustment** ], [ **Extruder** ], and [ **Cartridge-Load, Unload, and Unlock** ]. These additional functions are used for any mechanical problem or if the user needs them.

▣ Bed Height Adjustment

- ① This menu is used to adjust the height of the bed during printing for a high-quality outcome.
- ② [ **Save** ] the adjusted bed height and return to the printing screen to print the adjusted bed height.
- ③ Press the [ **Reset** ] button to return the bed to its previous position.







- ▣ Extruder

It functions just like the extruder operation in your printer's settings.

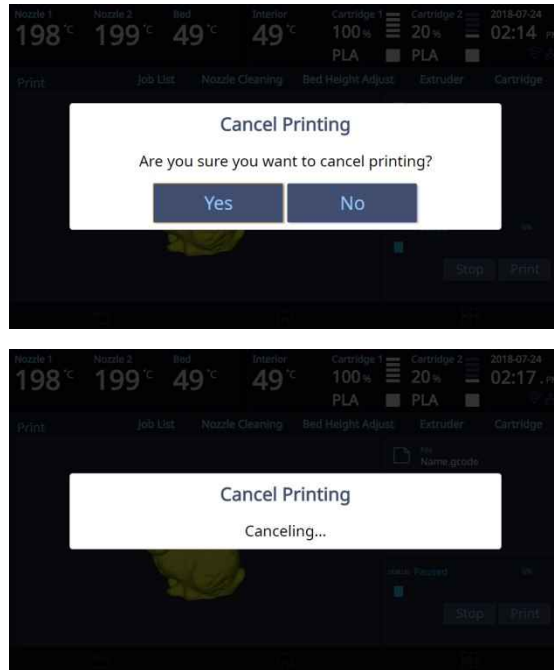
- ▣ Cartridge

The cartridge can be loaded, unloaded, or unlocked during printing.

**8** Print Cancelation

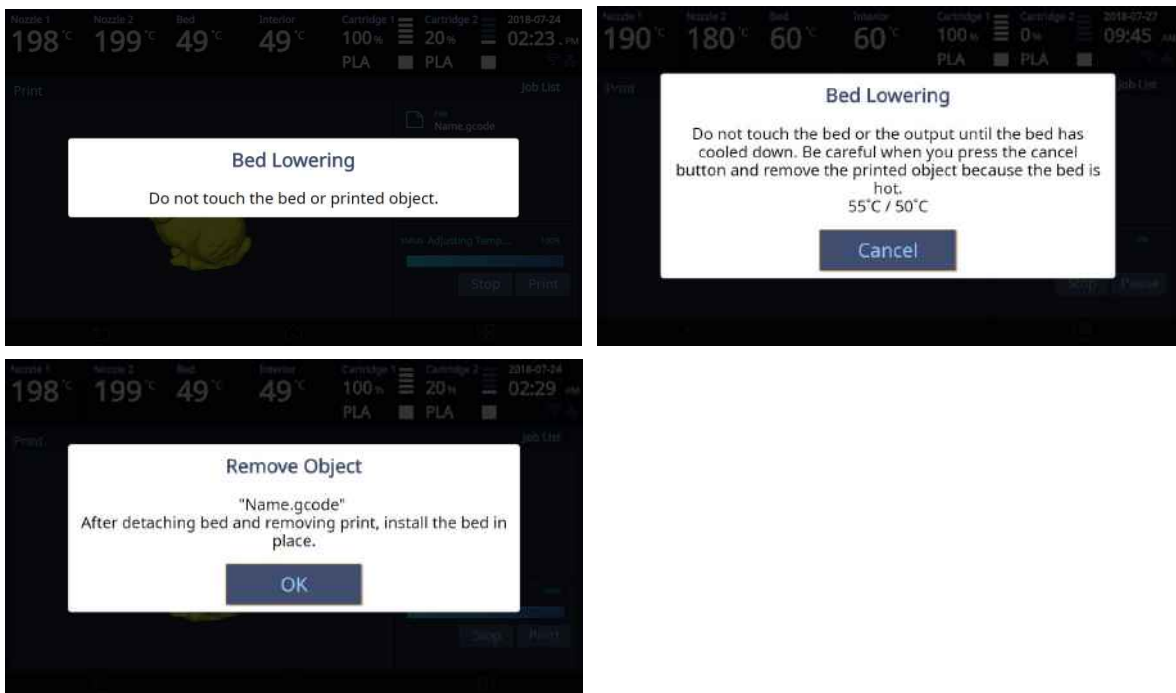
During print pressing [ **Stop** ] button a message pops up and asks for confirmation on the print canceling. When confirmed, the rest printing job is canceled.

Another message requesting the removable of left print will popup press [ **OK** ] and screen will return to home screen.



**9** Printing Completion

After printing has completed, follow the instructions and remove the printed product. Press the [ **OK** ] to return to home screen.



**Reference**

- Methods of removing printables refer to P. 4-2 "1. Printed Output Check".

### 1.2 Printing Via PC

- 1 Prepare PC connected to the same network where the printer is connected to.
- 2 Run 3DWOX Slicer program.
- 3 Press the “Print” button.
- 4 Following Steps (Same as steps 3~9 of printing via USB)

#### Note

- Pause, print cancelation, please refer to P.3-2 Printing from USB Flash Drive section.

### 1.3 Print Job Management

You can manage print jobs in queue.

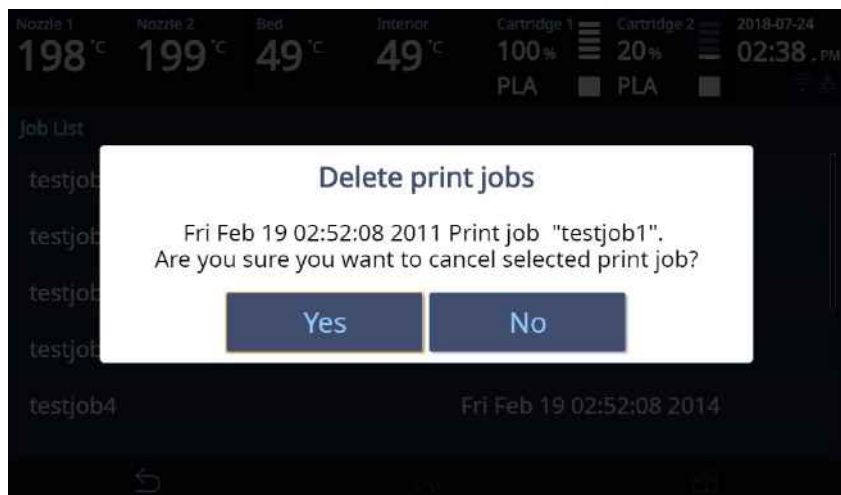
- 1 Press the [Job List] button on the upper left hand corner while printing.



**2** The print jobs in queue are listed.



**3** You may click the list to look at the information of the print job and delete it if necessary.



## 1.4 Printing with Two Types of Filaments

**1** Two nozzles can cross print the same material.

- PLA & PLA
- ABS & ABS

**2** Two nozzles can cross print the same material.

- PLA and PVA

	PLA	ABS	FLEX	PVA
PLA	O	X	X	O
ABS	X	O	X	X
FLEX	X	X	X	X
PVA	O	X	X	X

## 1.5 Changing Filaments

To prevent clogging of the nozzle when switching from the used filament to different material filament, you must perform Nozzle Cleaning.

**5X/7X Series  
USER MANUAL**

# 1. Printed Output Check

## 1.1 Detaching Printed Output

To safely detach the printed model, first let the bed cool down. Bed top plates must be detached as well.

**⚠ Caution Hot Surface**

- Without sufficient cooling the bed can be very hot. Please be cautious coming into contact . It may cause burns.

**⚠ Caution Heavy Risk**

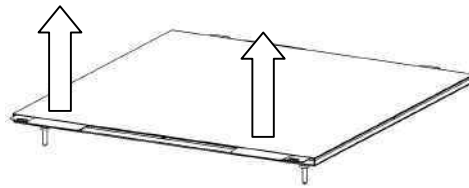
- When you detach the bed it may fall and cause injury. Please detach the bed carefully to prevent it from dropping.

**1** Cooling the Bed

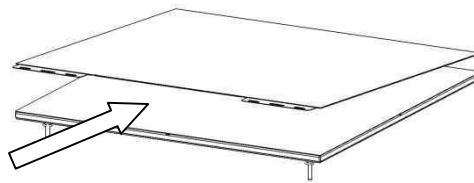
After the printer has finished printing, check the LCD screen and built-in speaker. Wait until temperature goes below 50°C or 122°F. Do not touch the bed or the bed handle until you are told you can touch the bed.

**2** Detaching Bed

The Flexible Bed is detached if you hold the bed handle and lift it.



You can easily detach a large output if you insert a plastic here in a direction of lower left corner of the bed as shown in the picture.



**3** Detaching the printed output

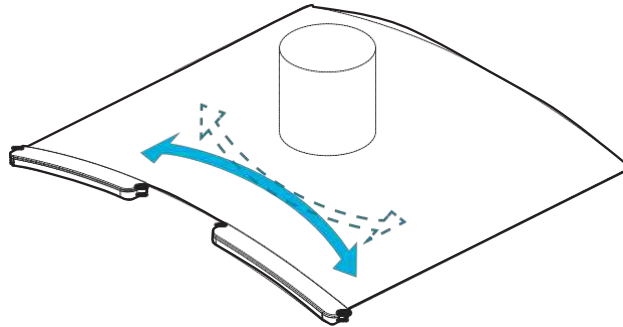
**⚠ Caution Risk of Injuries**

- The scrapper is very sharp. Handle with care. Please be cautious of injuries when removing printed objects with the scrapper.
- When you have printed the large object, be careful when removing the bed so that the object does not touch the interior of the printer.



Detach the object from the Flexible Bed. The object can be easily detached by bending the Flexible Bed up and down. Using the scrapper provided with the printer will be useful.

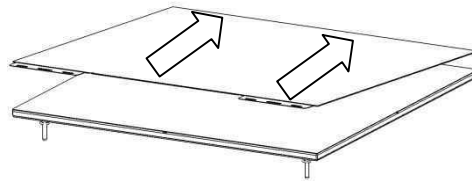
Be careful not to apply too much pressure while using the scrapper could damage the bed sheet and the bed. Depending on the filament material the printed output may easily break or damage, please be cautious.



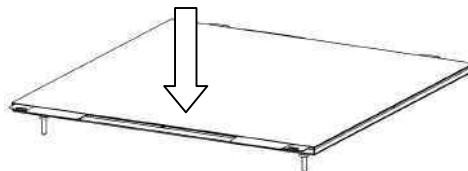
#### **4** Flexible Bed Installation

After a period of time bed locking will automatically released, if bed is unlocked, press the lock button again to fix the bed into position before installation.

(1) Push the Flexible Bed all the way in as shown in the picture.



(2) Place Flexible Bed fix to position.



(3) If the flexible bed is placed at an angle, it may be difficult to level the bed. Place it down to match the base.

#### **Caution**

- Any foreign substance left on a surface of the bed can cause a problem in printing.  
Make sure there is nothing left on the bed before usage.

## 1.2 PVA Filament Removal Guide

- 1 After printing a model with PVA supports, Detach the printed output from the bed, and then soak it in water. Once it's soaked in water, the PVA support will get dissolved.

### Note

- If the water is warm, the dissolution time can be shortened. Make sure to keep the water temperature does not exceed 35°C; otherwise, the shape of the PLA can be deformed due to hot temperature..
- Able to shorten the dissolution time by Stirring or flowing the soaking water.
- After 10 min of dipping the output in the water, the PVA support will become soft and easy to remove. Use a tweezer type tool to remove the support.

- 2 Remove any remaining PVA from the output by rinsing it.

- 3 Wastewater Handling

- Dispose of Wastewater in accordance with your local and national waste posed through the drain only if the waste water distribution network is connected to a waste water treatment plant. The water with dissolved PVA can cause clogging in the drain. Pour it into the drain, followed by hot water for 30 sec or more to remove any possible PVA residue.

## 1.3 Improving Printing Quality

- 1 Nozzle, Bed temperature

Depending on the material (PLA, ABS etc.), optimum temperature for the nozzle and bed can be different.

Environmental factors (temperature, humidity) can affect the quality of the printed product.

There is no absolute value for optimum temperature. Testing various temperatures and finding the optimum temperature are needed.

Temperature options can be changed in the 3DWOX Desktop slicer.

Material	Appropriate nozzle temperature	Appropriate bed temperature
PLA	190 °C ~ 210 °C	50 °C ~ 60 °C
ABS	210 °C ~ 240 °C	Above 80 °C
FLEXIBLE	235 °C ~ 250 °C	50 °C ~ 60 °C
PVA	225 °C ~ 240 °C	50 °C ~ 60 °C

- 2 Support

For higher printing quality, minimize the use of supports.

However, shapes that are located in midair needs a support. If it's the case, control the distance so it can easily separate.

### **3. If problems persist**

**1** Please visit <http://3dprinter.sindoh.com>.

**5X/7X Series**  
**USER MANUAL**

# 1. Type of Consumables (Material, Color)

**PLA**

**Color:** White, Black, Gray, Red, Yellow, Green, Blue, Pink, Purple

**ABS**

**Color:** white, black, gray, red, yellow, green, blue

**Flexible**

**Color:** white, red, green

**PVA**

**Color:** Translucent White

## Notice to Users

<b>Type</b>	<b>Notice</b>
• <b>Class A equipment (commercial telecast equipment)</b>	This equipment is a Class A EMC (electromagnetic compatible) equipment, and should not be used in household locations
• <b>Class B equipment (domestic telecast equipment)</b>	This equipment is a Class B EMC (electromagnetic compatible) equipment, for household purposes, available to be used in any location.

※ This Product is a Class A equipment.

