



2X Series

USER MANUAL

- Read the User Manual before operating the product, and keep the manual at a convenient place near the product.



Safety Instructions

Be sure to observe the following instructions when using the device.



Warning: Failure to observe the instructions may lead to death or serious injury.

- Directly plug the power cord in the receptacle on the wall. Do not use extension cord.
- If the power cable or plug is worn or damaged, pull out the power plug.
- The exposure of the interior of the machine can cause electric shock or burns.
Do not remove covers or screws other than specified in this manual.
- Please be cautious. In the process of printing, the temperature of the nozzle and the heated bed rise higher than 100 degrees Celsius.
- Do not place the machine in a highly moist environment as it may cause deformation and malfunction.
- Avoid contact of electrical terminal with metal product such as necklaces, coins, keys, watches, etc.
- Do not hold the shaft for lifting or moving of the printer.
- For the following situations turn off power and pull out the power plug
 - When in contact with liquid
 - When in need for a service or repair request
 - When the device cover is damaged
- For the method of disposal contact local service center or use a proper collection site.
- Please turn off power when leaving the office after business hours or in circumstances where machine is unoccupied for a long period of time as it may cause abrupt fire accidents.



Caution: Failure to observe instructions may cause injuries or damages to property.

- Protect device from humid or wet conditions eg. rain, snow, etc
- Remove power cord from receptacle on the wall before moving device.
- Be careful not to damage power cord while device is being translocated.
- When removing the power cord, please pull the plug and not the power cable.
- Be cautious of clips, staples and any other small metal objects from falling inside the device.
- Please be cautious on safety when touching the interior of the machine, e.g. cleaning the interior.
- Do not dispose of device or consumables together with household waste.
For the method of disposal, please contact local service center or use a proper collection site.
- Interior of device may be very hot. Please do not touch the part with "Caution: High Temperature" sign or its surrounding areas as it may cause burns.
- Our product maintains high quality standards and performance.
It is recommended to use genuine components only, components can be acquired from any authorized distributors.

Before use

Thank you for purchasing our product.

This user manual contains detailed information about correct use of device and easy maintenance to maintain the optimal state, and to contribute to the rationalization of office work of your company.

Carefully read the user manual before using the device and keep close at hand.

In order to use device correctly and safely, please carefully note the precautions before use.

Prohibition and limitation

1. This User Manual has been created for the convenience of the user, actual product may differ from image and explanations shown.
2. The contents of this user manual is subject to change without notice. We are not responsible for the direct and/or indirect loss or damages caused by results of handling or operating the product in any case and for results occurring from user's negligence.
3. The copyrighted literary works can be duplicated and used for personal use or household use and within the same parameter. In other cases than the aforementioned, it is prohibited by law.
4. The above details present only a part of the applicable laws and regulations. Details on these laws/regulations may not be stated as they are. We do not guarantee its correctness and completeness. Please consult a legal advisor to check if the object you intend to print is legal.
5. User is responsible for all loss derived from modification of the product executed by the user or third party.
6. Font used in the printer GUI and the user manual is the "NANUM" font provided by NAVER.

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1. Preface

This User Manual describes detailed explanations and points to note in connection with operating and using the machine. Please read the User Manual carefully before using machine, and keep it for reference purpose.

Important

- The content of the User Manual is subject to change without any prior notification.
 - Sindoh shall not be liable for consequential, special, indirect damages or losses caused by the handling or operating of the machine or by the user's negligence.
 - Copyrighted works can be printed and used for home and/or personal use; other usage is prohibited by law.
 - The above details present only a part of the applicable laws and regulations and the details of the law may not be stated as they are. Sindoh is not responsible for its correctness and completeness.
- Please consult your legal advisor to check if the object you intend to print is legal.

Note

- The User Manual may include a little different descriptions of the machine from the actual one.
- Some options may not be available in some countries. Please contact local distributor for details.
- Some standard units are optional in some countries.
- Please consult your local service center.
- In some countries some models are not available.
- Please consult your local sales office.
- This manual uses metric units of measurement

2. Conventions

Symbols

This manual uses the following symbols and meanings.

Warning

- Indicates importance safety notes.
- Ignoring these notes could result in serious injury or death.
- Be sure to read these notes carefully for your safe operations of the machine.

Caution

- Indicates important safety notes.
- Ignoring these notes could result in minor injury, or damage to the machine or to property.
- Be sure to read these notes for your safe operations of the machine.

Important

- Indicates points to pay attention to when using the machine, and explanations of likely causes of filament misfeeds, damage to originals, or loss of data.
- Be sure to read these explanations before operating the machine.

Note

- Indicates supplementary explanations of the machine's functions, and instructions on resolving user errors.

Reference

- This symbol is located at the end of sections. It indicates where you can find further relevant information.

[]

Indicates the messages or menus that appear on the machine's LCD display panel.

[]

Indicates the names of each function key on the machine control panel and the display window.

3. Safety Information

Plug the power cord into a properly grounded outlet which is near and quickly accessible from the machine.
Do not use or place the machine in wet or humid environment.

⚠ Caution Hot Surface

- The inside of the machine may be hot. To reduce the risk of injury from a hot component, allow some time to cool down.
(Please be cautious of getting burns during printing as the Nozzle and the heating bed will maintain a high temperature of over 100 degrees.)
- Do not put any portion of your body or objects on any part during machine operation as the motor and bed can be in very high temperature and can cause burns/injuries. Please be cautious.
- When the power is on, do not let any of your body touch the machine except the bed.
If you have to touch the bed while the power is on, please do so after the bed temperature has been lowered to room temperature.
- If you have to touch any parts other than the bed, please do so after the bed and nozzle temperature have been lowered to room temperature.
- After the printer has finished printing, check the LCD screen and built-in speaker.
Do not touch the bed or the bed handle until you are told you can touch the bed.



⚠ Caution Electric Shock

- Proceed your work after turning off the machine and unplugging the power cord from the outlet in case of accessing the system board, or installing hardware or optional memory devices. If the machine is connected with other device, turn it off and separate the cables from the machine.
- This product has been designed, tested and approved to meet strict safety requirements of international safety standard. Some safety features of parts may not be guaranteed. Sindoh is not liable for problems caused by using an unauthorized spare parts or consumables.
- Disconnect the power cord and all the cables connected to the machine to prevent from any electrical shock when cleaning the outside or inside of the machine.
- Be sure to turn off the power before removing the nozzle from the machine. Electrical damage to the internal parts of the nozzle may occur.



⚠ Caution Injuries

- Do not twist, fold, step or place heavy objects on the power cord.
- Be careful with the power cord peeled off or overloaded.
- Do not let the power cord pinched by furniture or walls.
- Misusing the cord could result in fire or electrical shock.
- Check the cord regularly. When checking the cord, unplug the cord from the outlet first.
- Please consult a qualified engineer for services or repairs not stated in this User Manual.

Before using the Machine

⚠ Caution Injuries

- To prevent personal injuries or damages to the machine, you need to follow the below instructions before moving the machine.
 - Do not open the front and top door during machine operation.
 - Do not open the rear cover or touch any parts of the rear extruder unit during machine operation.
 - When the power is on, do not let any of your body touch the machine except the bed.
 - If you have to touch any parts other than the bed, please do so after turning the power off, removing the power cord from the plug and after the bed and nozzle temperature have been lowered to room temperature.
 - Turn the power switch off, then unplug the power cord from the power outlet.
 - Unplug and release all the cords and cables before moving the machine.
 - Only use the power cords provided with this machine or cords that are approved by the manufacturer.
 - Do not put any portion of your body or objects during machine operation, as the bed, motor, nozzle will be in operation and moving. Small objects such as neckless, hair, etc may cause personal injuries or damages to the machine.
 - If any problems occur(malfunction, body part being caught inside the machine, etc) during machine operation, quickly press the pause [||] or stop [■] button located on the on the bottom right of the touch screen located on the bottom right of the upper side.



Nozzle



Bed



UI



4. Precautions

4.1 Installation

⚠ Warning

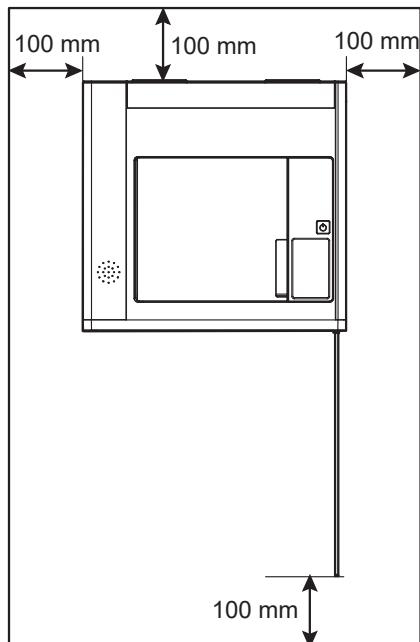
- Install the machine in a well ventilated area.

You can smell small odor during machine operation. It should not be harmful; however, if the area where the machine is located is not ventilated, make sure to ventilate the area appropriately time to time.

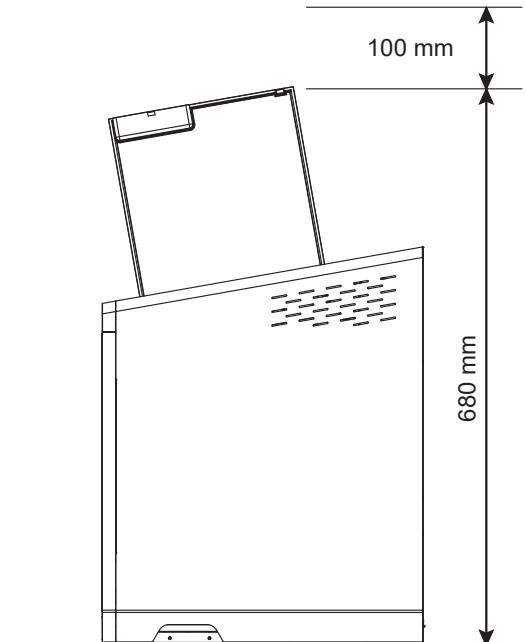
💡 Important

- Install the machine with its vents spaced at least 10 cm away from walls and other equipments.
- Secure properly sufficient space around the machine for easy ventilation and operation.
- Use the machine at temperatures of 16 °C ~ 29 °C and relative humidity of 20% ~ 70%.
- Do not install or use the machine outdoor.

Top View



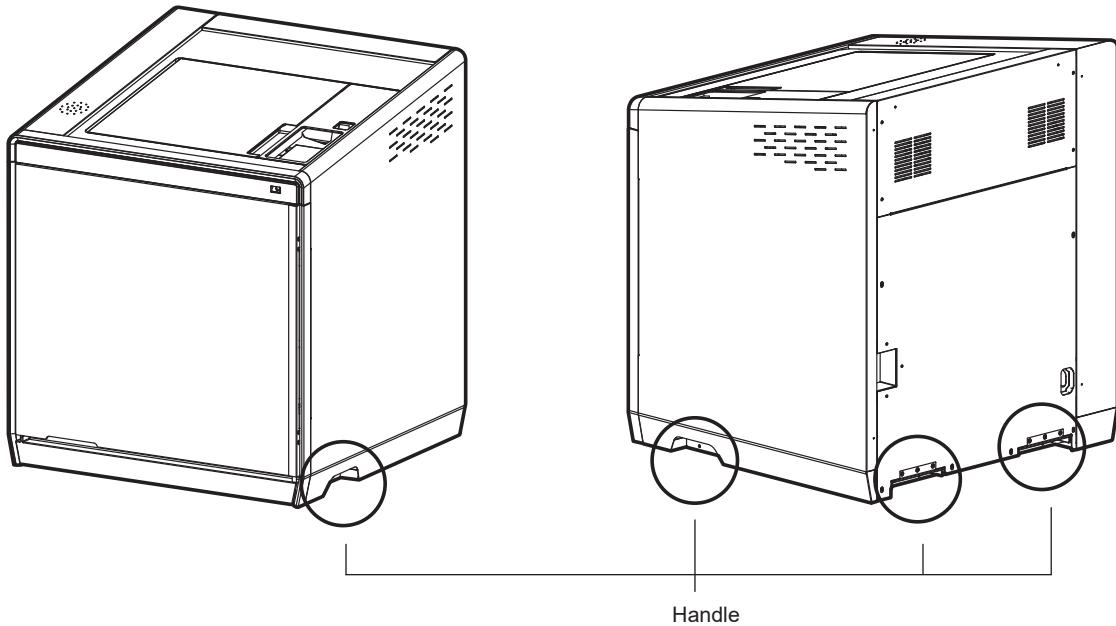
Side View



4.2 Moving the Machine

⚠ Warning

- Before moving the machine, be sure to unplug the power cord from the outlet.
- When moving the printer, it is recommended that two people lift and move the printer for safety.
- Hold the bottom handles of the machine when moving it.
- Bend your knees enough to protect your spine when lifting the machine.
- The unit is heavy. Make sure to carry with two or more people.



5. Consumables Handling

Warning

- Do not burn the Cartridge unit or filament. It may be a cause of big fire or burn by ignition.

Caution

- Keep them out of the reach of children.
- If skin irritation occurs after touching the filament, please see a doctor.

Important

- Do not keep the cartridge unit in the following places.
 - Exposed to fire
 - Exposed to direct sunlight;
 - Where temperature or humidity may rise;
 - Where sharp change of temperature may occur;
 - Covered with dust;
 - Inside a vehicle for extended time.
- Keep cartridges away from physical impact or vibration.
- Do not unpack cartridges until you are just ready to use them.

How to Remove and Store a PVA Filament

1 Remove the printed model from the bed, and dip it in water.

Once the output with PVA is dipped in water, the PVA will start to be dissolved.

Note

- If the water is warm, the dissolution time can be shorter.
- Make sure that the water does not exceed 35°C; otherwise, the shape of the PLA can be deformed.
- Stir the water to lessen the dissolution time.
- After 10 min of dipping the output in water, the PVA support will become soft and easy to remove.
- Use a tweezer to remove it.

2 Remove any remaining PVA from the output by washing it.

3 Wastewater Handling

- 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. (PVA is biodegradable, so it will not cause water pollution.)

4 Storage

- PVA filament is water-soluble, so it is vulnerable to humidity, and its characteristics may change if it is exposed to air for a long time. Thus, make sure to observe the following steps in storing a PVA filament.

- ① Unload the nozzle if the printing of the PVA filament is finished or if it is not being used anymore.
- ② Remove the PVA filament and the silica gel from the cartridge.
- ③ Put the PVA filament and the silica gel in the zipperbag provided so that they would not be exposed to air during storage.

6. Instructions for Use

⚠ Caution

- The nozzle and the bed that are inside the machine are very hot during machine operation.
Please be cautious not to touch the nozzle or the bed during removal of the printed object or during inspection of the machine inside. It may become the cause of injuries or burns.
- Never operate the machine in the way this manual does not specifically instruct.

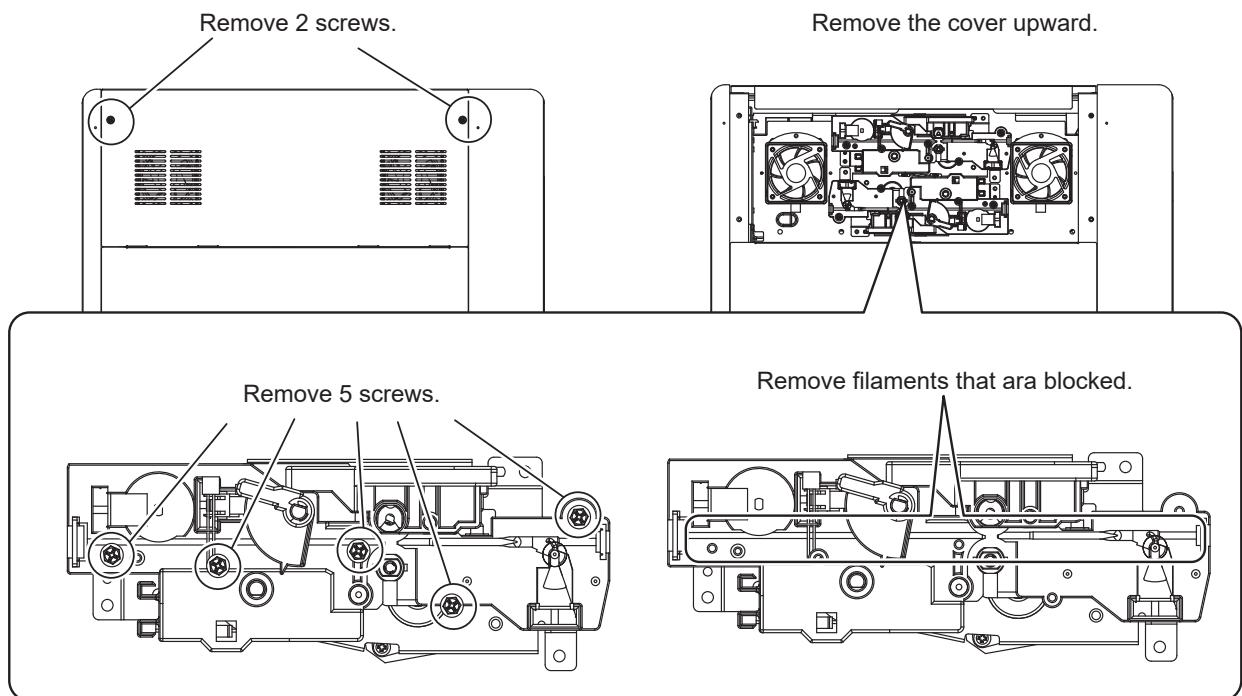
Notification for California customers, USA

⚠ Warning

- This product uses chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. This appliance and its accessories can cause low-level exposure to chemicals during operation, which can be reduced by operating the appliance in a well ventilated area.

⚠ Caution

- Do not open the rear cover or touch any parts of the extruder unit during machine operation to prevent personal injuries or damages.
- If you need inspection of the extruder unit, turn off the power and disconnect the power cord and follow the instructions below.



7. Ventilation

 **Caution**

- Use the machine in a place with good ventilation. If the machine is used in a place without good ventilation, this may be harmful for your health. Ventilate it on a regular basis.
- Do not block vents. Inappropriate cooling may lead to high temperatures inside the machine.
- In general, a new machine may produce small amount of gaseous components, so ensure good ventilation when the machine is used for the first time. If the machine is in operation for an extended time, do not stay in the same room for a long time.

8. Notices

❖ Noise Emission Level

The following are measured in accordance of ISO 7779 and reported to meet ISO 9296.

Some modes may not be available in your purchased products.

Average Sound Pressure at 1 Meter Away	
Printing	45dBA(Normal Print Condition - Printing speed 40 mm/s, Travel speed 100 mm/s)
Standby	under 40 dBA

❖ Temperature/Humidity

Operation	16 °C ~ 29 °C 20%RH~70%RH
Shipping	-30 °C ~ 50 °C, 15%RH~95%RH(for 0 °C or lower temperature, room's temperature should be higher than the outdoor's; must not touch the floor)
Storage	-30 °C ~ 50 °C, Below 80%RH(No condensation, must not touch the floor)

❖ Disposal of The Products

Do not dispose the machine and consumables together with household wastes.

For disposal or recycling, contact your local sales office.

❖ EMI(Electromagnetic Interference) Notice

This machine complies with the limits for Class A.

Class A (Industrial Device) : This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

① FCC COMPLIANCE STATEMENT

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received, Including interference that may cause undesired operation.

② INFORMATION TO USER

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

③ CAUTION

Any changes or modifications not expressly approved by the manufacturer responsible for compliance could void the user's authority to operate the equipment.

④ DECLARATION OF CONFORMITY (DOC Letter): 12page**❖ Wireless LAN Specifications**

The wireless device may be affected by electromagnetic interference so it should not be used for life saving services.

❖ WLAN Notice

Exposure to radio frequency radiation

The following notice is applicable if your printer has a wireless network card installed.

The radiated output power of this device is far below the FCC radio frequency exposure limits.

A minimum clearance of 20 cm (8 inches) must be maintained between the antenna and any persons for this device to satisfy the RF exposure requirements of the FCC.

❖ Power Consumption

Power Consumption of the Products

The below table shows power consumption.

Mode	Description	Power Consumption(W)
Printing	A device is printing using electronic input data.	350W
Standby	A device is in standby mode.	80W
Power Off	A power plug is plugged into the outlet with the machine's switch off .	0.5W

The above power consumption is the hourly average value.

Instant power consumption can be much higher than the average value.

Deactivated Mode

The machine consumes power even in the deactivated mode. Unplug the power cord to completely stop the power consumption.

Total Energy Usage

It would be useful to calculate the Total energy usage of the machine.

Since the electricity bill is charged in Watt unit, you have to multiply time spent in each mode by power consumption in order to calculate the energy use.

Total energy usage is the sum of energy used in each mode.

Condensation

Dramatic change of the ambient temperature may produces water droplets on the interior and exterior of the machine. Wipe the water droplets on the outer surface, but for the inside please let them dry off by leaving front door and cover opened.

DECLARATION OF CONFORMITY

Product name : 3D Printer

Model name : 2X

FCC Rules : Tested to comply with FCC Part 15, Class A

Operating Environment : For HOME OR OFFICE USE

FCC COMPLIANCE STATEMENT:

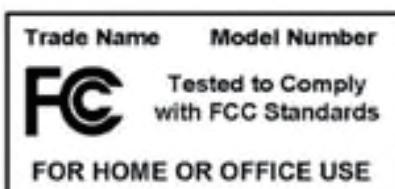
This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

RESPONSIBLE PARTY:

Name : Sindoh America, Ltd.

Address : 6047 Tyvola Glen Circle, Suite #115, Charlotte, NC 28217

Phone No. : 1-704-414-6690



We hereby declare that the above specified equipment with the trade name and model number was tested conforming to the applicable FCC Rules under the most accurate measurement standards possible, and that all the necessary steps have been taken and are in force to assure that production units of the same equipment will continue to comply with the Commission's requirements.

Manufacturer : Sindoh Co., Ltd.

Date of Issue :

Title/Name :

Signature :

Sindoh Co., Ltd.

3, Seongsuiro24(isipsa)-gil, Seongdong-gu, Seoul, 133-705 Korea



9. Disposal of Used Battery

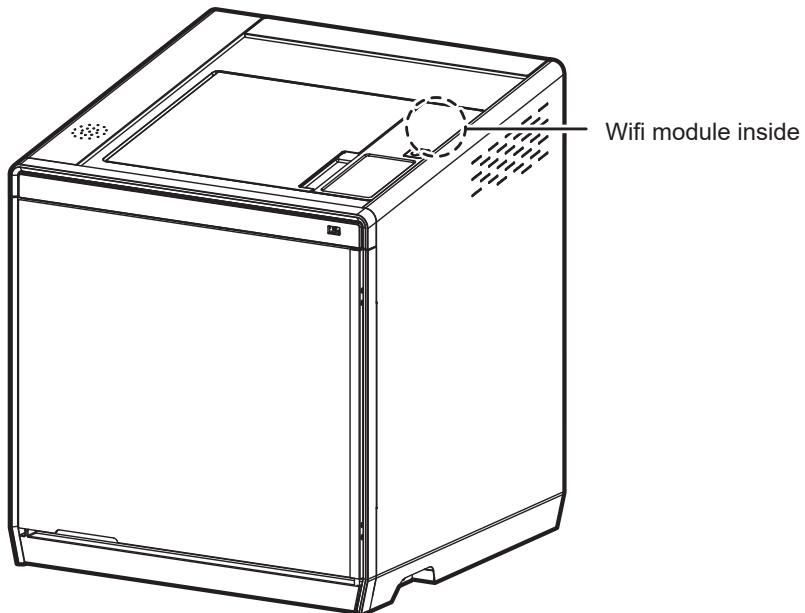
Control board uses a Lithium battery.

Please discard used batteries following the environmentally friendly procedure stated on the manufacturer guidelines.

To replace batteries, please contact a qualified service engineer.

10. Wifi Module Disclaimer

- ❖ This module includes a Wifi module, compatible only with Sindoh 3DWOX models.



❖ Precautions

This Wifi module can cause radio interference, therefore it should not be used for any purposes related to human lives.

Do not expose this product to water, humidity or liquid.

Do not expose this product to direct light, hot temperature or fire.

Warning

- If the machine has been modified by an unauthorized personnel, Sindoh is not liable for the machine trouble or failure.

Caution

- To prevent RF signals that exceed FCC RF exposure limits from being exposed to human, this module has been mounted in a place that minimizes human access.

❖ Precautions

Frequency	IEEE 802.11b : 2400MHz ~ 2484MHz IEEE 802.11g : 2400MHz ~ 2484MHz IEEE 802.11n(20MHz) : 2400MHz ~ 2483MHz IEEE 802.11n(40MHz) : 2400MHz ~ 2483MHz
Antenna Power Density	IEEE 802.11b : 10mW(10dbm)/MHz IEEE 802.11g : 10mW(10dbm)/MHz IEEE 802.11n(20MHz) : 10mW(10dbm)/MHz IEEE 802.11n(40MHz) : 10mW(10dbm)/MHz
No. of Channels	IEEE 802.11b : 14 IEEE 802.11g : 14 IEEE 802.11n(20MHz) : 14 IEEE 802.11n(40MHz) : 9
Modulation	IEEE 802.11b : DSSS/CCK IEEE 802.11g : OFDM IEEE 802.11n(20MHz) : OFDM IEEE 802.11n(40MHz) : OFDM
Power Consumption	5V 500mA(Maximum)
Dimension	37.0mm X 28.0mm X 3.7 mm
Operation Temperature	0 ~ 60 °C
Storage Temperature	-10 ~ 80 °C

11. USB Memory Disclaimer

❖ FCC COMPLIANCE STATEMENT

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

❖ INFORMATION TO USER

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

❖ CAUTION

Any changes or modifications not expressly approved by the manufacturer responsible for compliance could void the user's authority to operate the equipment.

❖ Specification of compatible USB flash drive for 3DWOX

- Please use the enclosed USB flash drive.
- The enclosed USB flash drive is in FAT32 format.
The 3DWOX 3D printer does not support USB flash drives in NTFS format.
- The warranty will not be valid if a 3rd party USB drive is used.

❖ IC Identification on Class of ITE

CAN ICES-3 (B)/NMB-3 (B)

DECLARATION OF CONFORMITY

Product name : USB Flash Drive

Model name : 8GB-WJ004, 4GB-WJ004

FCC Rules : Tested to comply with FCC Part 15, Class A

Operating Environment : For HOME OR OFFICE USE



**Tested to Comply
with FCC Standards**

FOR HOME OR OFFICE USE

FCC COMPLIANCE STATEMENT

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

RESPONSIBLE PARTY

Name : Sindoh America, Ltd.

Address : 6047 Tyvola Glen Circle, Suite #115, Charlotte, NC 28217

Phone No. : 1-704-414-6690

We hereby declare that the above specified equipment with the trade name and model number was tested conforming to the applicable FCC Rules under the most accurate measurement standards possible, and that all the necessary steps have been taken and are in force to assure that production units of the same equipment will continue to comply with the Commission's requirements.

Manufacturer : Sindoh Co., Ltd.

Address : 3, Seongsuiro24(isipsa)-gil, Seongdong-gu, Seoul, 04797 REPUBLIC OF KOREA

2X Series
USER MANUAL

**Preparations for
Machine Operation**

1

1. Machine Specifications

1.1 Printing

Printing Method	Fused Filament Fabrication
Max. Print Length(mm)	W(max):228, D(max):200, H(max):300
Print Layer Thickness Setting	0.05~0.4mm
Basic Nozzle diameter	0.4mm
Filament width	1.75mm
Printable materials	PLA, ABS, FLEXIBLE, PVA(Water-soluble)
Printable color	White, Black, Gray, Red, Yellow, Green, Blue, Pink(PLA), Purple(PLA)
Bed leveling	Auto measuring + Manual leveling
Print Head	Two Nozzle

1.2 Temperature/Speed

Continuous Nozzle Usage/ Maximum Temperature	Recommended Temperature(Nozzle): PLA 200 °C, ABS 230 °C, Flexible 225 °C, PVA 200 °C / Max 250°C
Continuous Bed Usage/ Maximum Temperature	Recommended Temperature(Bed): PLA 60 °C, ABS 90 °C, Flexible 60 °C , PVA 60 °C / Max 100°C
Recommended printing speed/maximum speed	40mm/s Recommended / 200mm/s max

* Continuous operation at maximum temperature can cause malfunction, Please use in case of nozzle clogging or other troubles.

1.3 Machine

Power	350W
Dimensions	490 x 466 x 573
Weight	31kg (excluding cartridge)
Port	USB Device, USB Host , Wifi, Ethernet
Cartridge	Auto Load / Unload

1.4 Software/Support

Supported Software	Sindoh Exclusive Slicer
Supported File Format	*.stl, *.ply, *.obj, *.gcode, *.amf
Supported Operating System	Windows 7 or above, Mac OSX 10.10 or above
Recommended Memory Requirements	DRAM 8 GB+

Note

- Graphics must support OpenGL 2.0 or higher.

1.5 Default Setting of Print layer Width

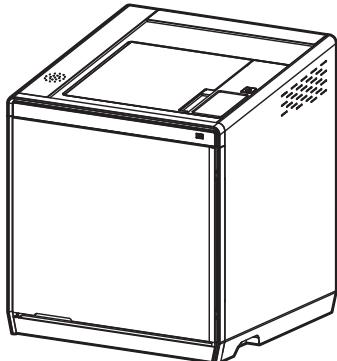
Nozzle Width	0.4mm
Print Layer Width	0.2mm

2. Basic Components

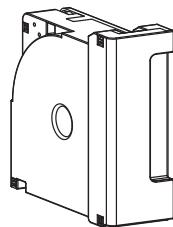
Please check all basic components are in the box.

⚠ Caution

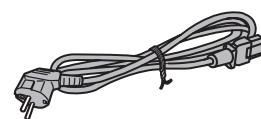
- Please keep the box and packaging material; they are needed for product exchange or repair service.



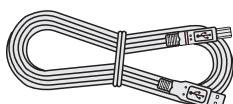
3D Printer



Cartridge



Power Cable



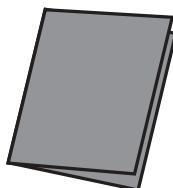
USB Cable



Scrapper



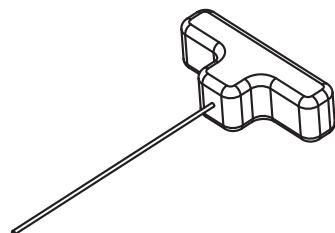
USB Drive



Reference Guide



Tube for Cleaning



Nozzle Cleaner

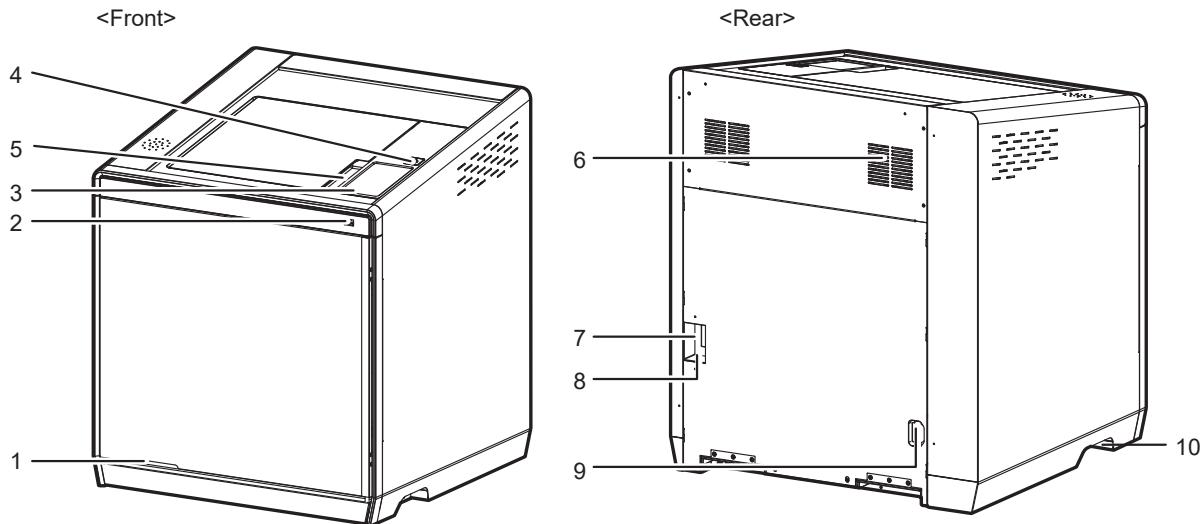


Spring Nozzle Cleaner

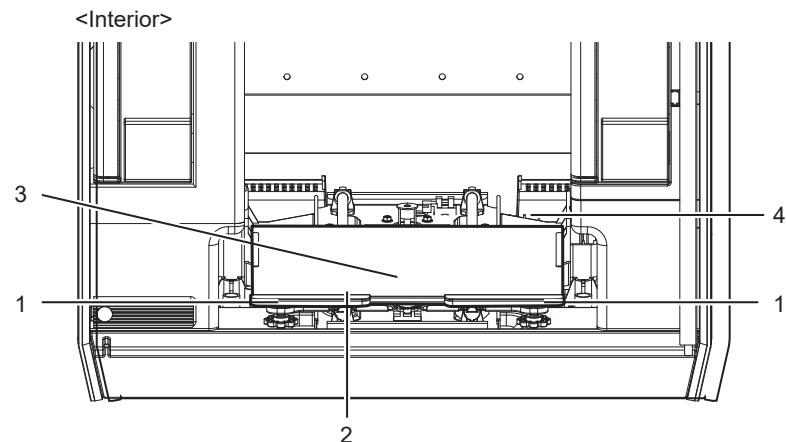
⚠ Warning

- The blades of the scrapper can be very sharp. Please be cautious. Please do not use for other than removing printables.
Please do not touch the blade of the scrapper.

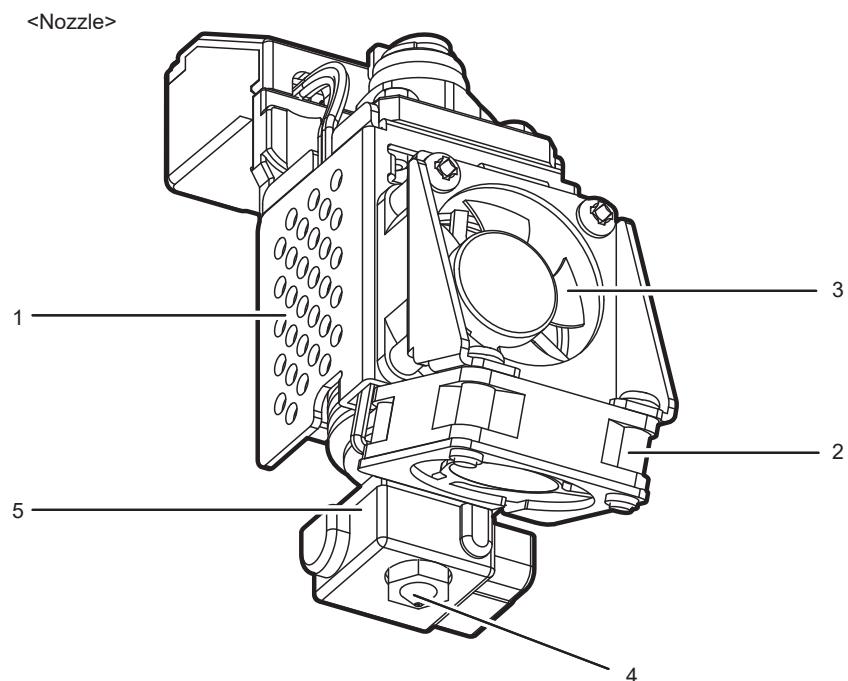
3. Understanding the Device Parts



No.	Part Name	Description	
1	Front door handle	A handle to open the front door.	
2	USB port	Connect USB flash drive containing printing information and print directly from USB flash drive.	
3	LCD Control panel	Screen used to control printer. Caution - Usage of printer is recommended after removing the protection film on LCD control panel. If the film is not removed, the touch screen may not work properly.	
4	Power Button	Briefly press this button to turn on printer. Press and hold for 2 seconds to turn off the printer	
	Power Button Indicator	Lamp On	Power is On.
		1 second interval flickering	Can be turned on instantly. (power cable is connected) Caution - If in case of not using the printer for long period of time, please unplug the power cord. - The lamp may flicker for a few seconds after the power cord is disconnected.
		Lamp Off	Inactive Mode. (Power cord is unplugged)
5	Top door handle	A handle to open top door.	
6	Ventilator fan(Odor removing filter)	Discharges heat from interior. Filters out odor created through printing.	
7	Lan Port	Allows a device to connect to a network using a LAN cable.	
8	USB Port	Used to connect printer to computer with a USB cable.	
9	Power port	Power cord connector.	
10	Carrying Handles	Handles to use when moving the printer.	



No.	Part Name	Description
1	Bed height adjustment Knob	Used to level the Flexible bed.
2	Removable bed handle	Used to assemble and dismantle Flexible bed
3	Bed heater	Heats the printables' bottom surface to stabilize it on the bed.
4	Flexible bed (bed sheet)	Seating space for Printable

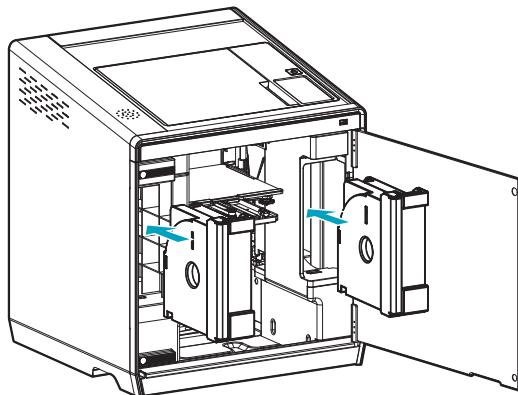


No.	Part Name	Description
1	Body	Main body of the nozzle part.
2	Fan 1	Cooling fan for extrusion.
3	Fan 2	Cooling fan for Nozzle heatsink.
4	Nozzle	Nozzle for printing.
5	Heater block	Nozzle part for filament heating.

4. Installation(Product connection, Cartridge Setup and Software installation)

4.1 Device Connection

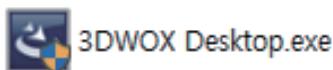
- 1** On the rear side of the machine, connect the power cable to the power socket.
Next, connect the power cable to the power outlet.
- 2** Press the power button, located on top of the machine.
- 3** After main menu is displayed on the LCD screen, install the cartridge (Refer to UI manual “LOAD”).



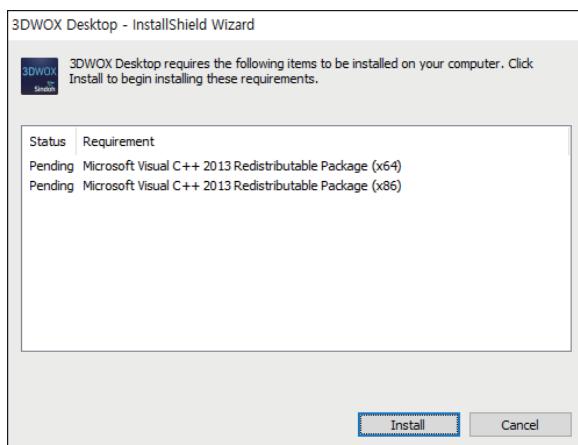
- 4** Connection to PC
 - 1) Direct Connection: Connect one end of the enclosed USB cable to the back of the 3DWOX and the other end to the PC.
 - 2) Network Connection: Refer to 2-26(Network) of the User Manual.
- 5** Plug USB flash drive in, and install machine drivers and Slicer program.

4.2 Program Installation

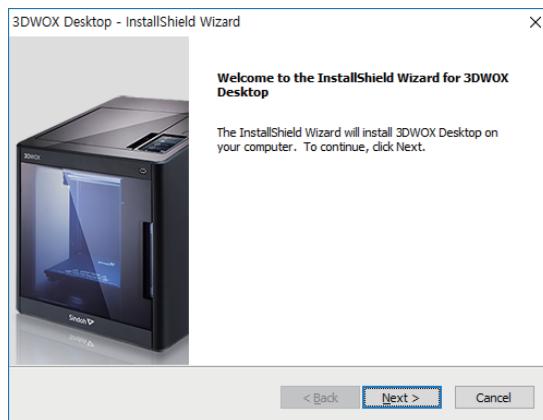
- 1** Start the installation of 3DWOX Desktop program by clicking on “**3DWOX Desktop.exe**” file in the enclosed USB.



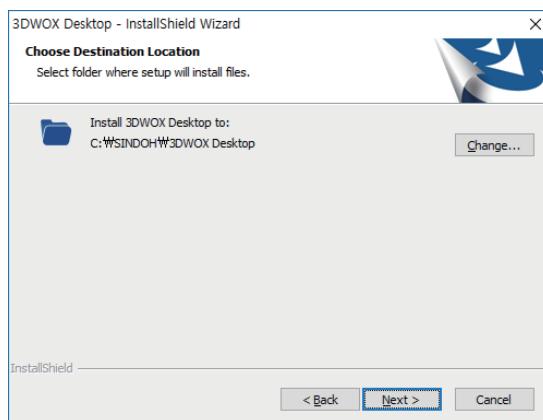
- 2** Install the additional files required by the software first.



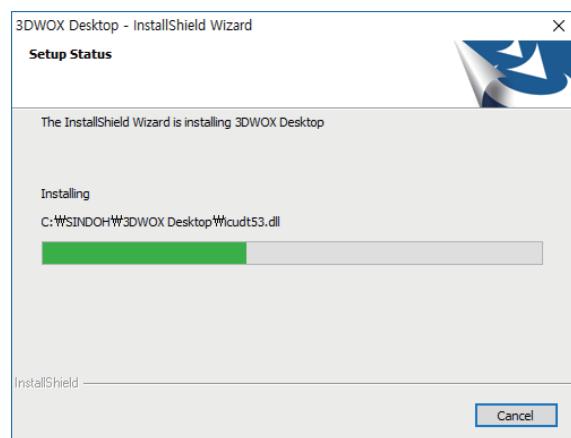
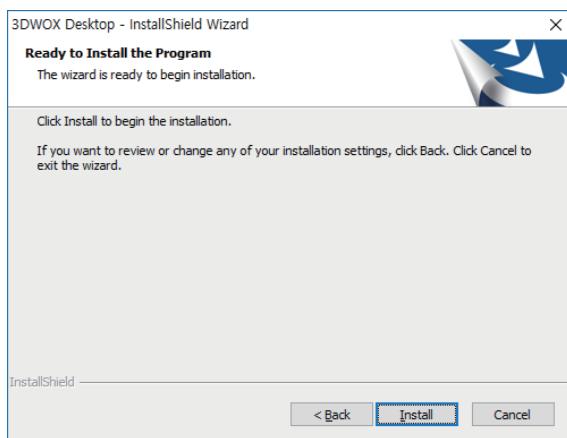
- 3** When installation of the file is complete, a pop-up window shows up as picture below.
Press [**Next**] button to initiate the installation of 3DWOX Desktop program.



- 4** Choose the destination location of the file and press [**Next**] to proceed.

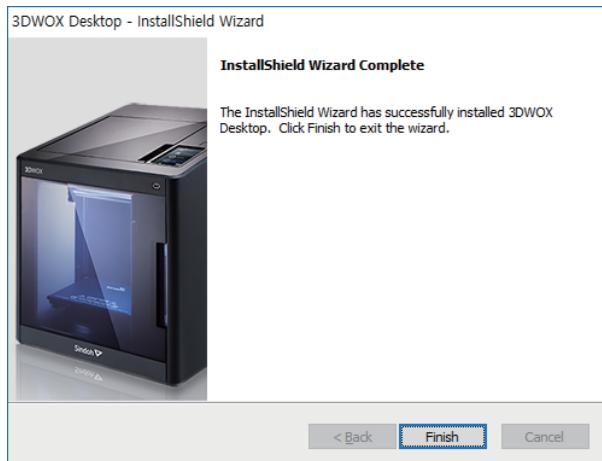


- 5** The file gets saved and the installation starts.



1 Preparations for Machine Operation

- 6 After all installation is complete, you can see that the “**3DWOX Desktop**” created on the desktop of your computer.



2X Series
USER MANUAL

UI Menu Function

2

1. UI Menu Function description

CARTRIDGE	CARTRIDGE 1	LOAD
	CARTRIDGE 2	UNLOAD
		UNLOCK

SETTING	X Y Z	NOZZLE 1 NOZZLE 2
	EXTRUDER	NOZZLE 1 NOZZLE 2
	BED LEVELING	
	Z OFFSET	NOZZLE 1 NOZZLE 2
	NOZZLE CLEANING	NOZZLE CLEANING 1 NOZZLE CLEANING 2
	NOZZLE Calibration	XY Calibration ENTER PATTERN VALUE
	NETWORK	WIRELESS NETWORK SELECT DHCP / STATIC SSID DELETE
		WIRED DHCP / STATIC
	CLEANING CASE	
	BED LOWERING	
	TEST PRINT	
	ACTIVE LEVELING	
	SECURITY	
	VOICE GUIDE	
	LANGUAGE	
	E-MAIL	
	UNIT	
	TIME SETTING	
	TIME ZONE	
	POWER SAVIG MODE	
	BEEP SOUND	
	LAMP	
	WEB	
	SOFTWARE UPDATE	

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

* indicates factory set value.

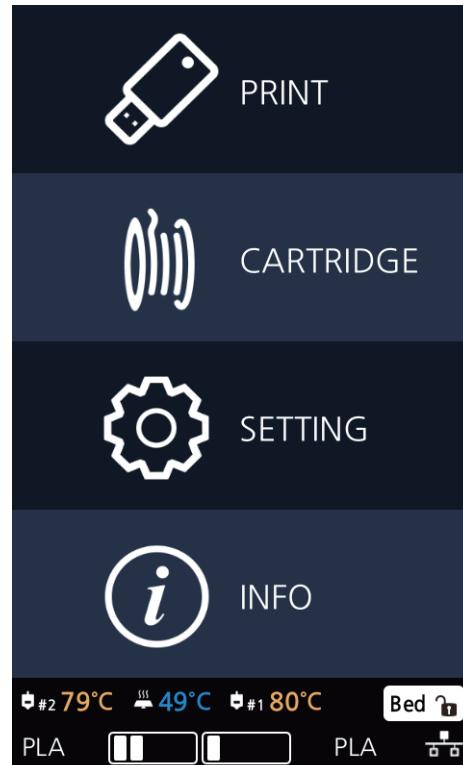
1.1 CARTRIDGE

CARTRIDGE	CARTRIDGE 1	LOAD
	CARTRIDGE 2	UNLOAD
		UNLOCK

LOAD

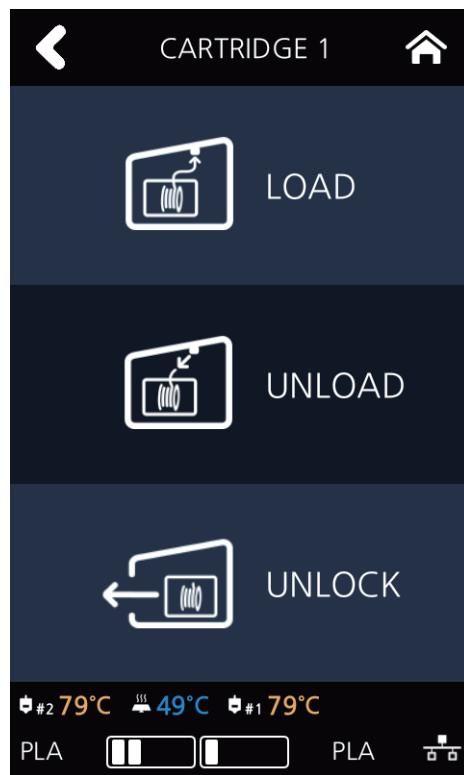
This function automatically loads filament to the Nozzle.

- From the HOME screen press [CARTRIDGE].

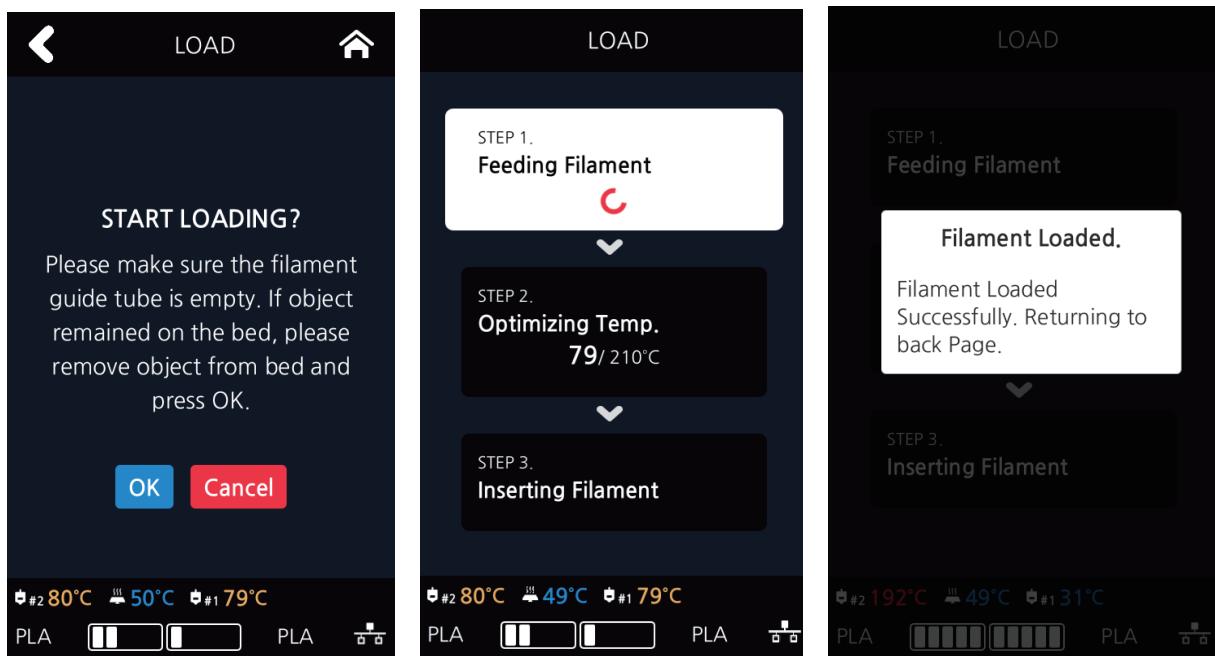


2 UI Menu Function

- 2 Press [LOAD] to activate Cartridge load.



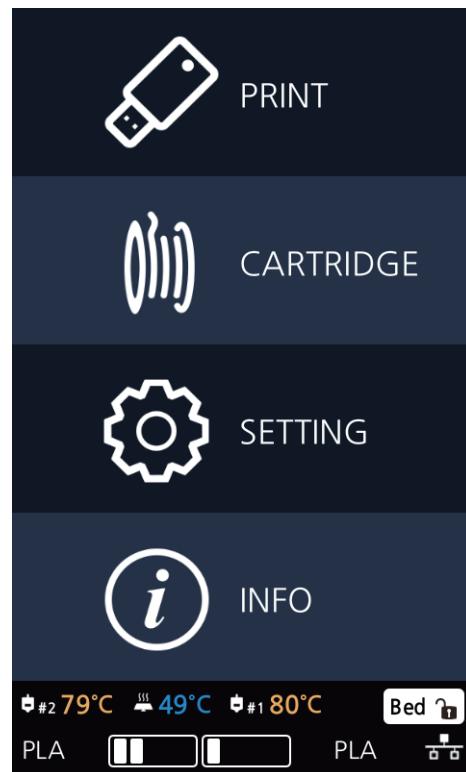
- 3 When [OK] is pressed at the cartridge load confirming message, cartridge load will automatically proceed. The filament reaches to the nozzle and it is heated up to the specified temperature. Then the filament is inserted into the heated nozzle. After the process has finished, screen will automatically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



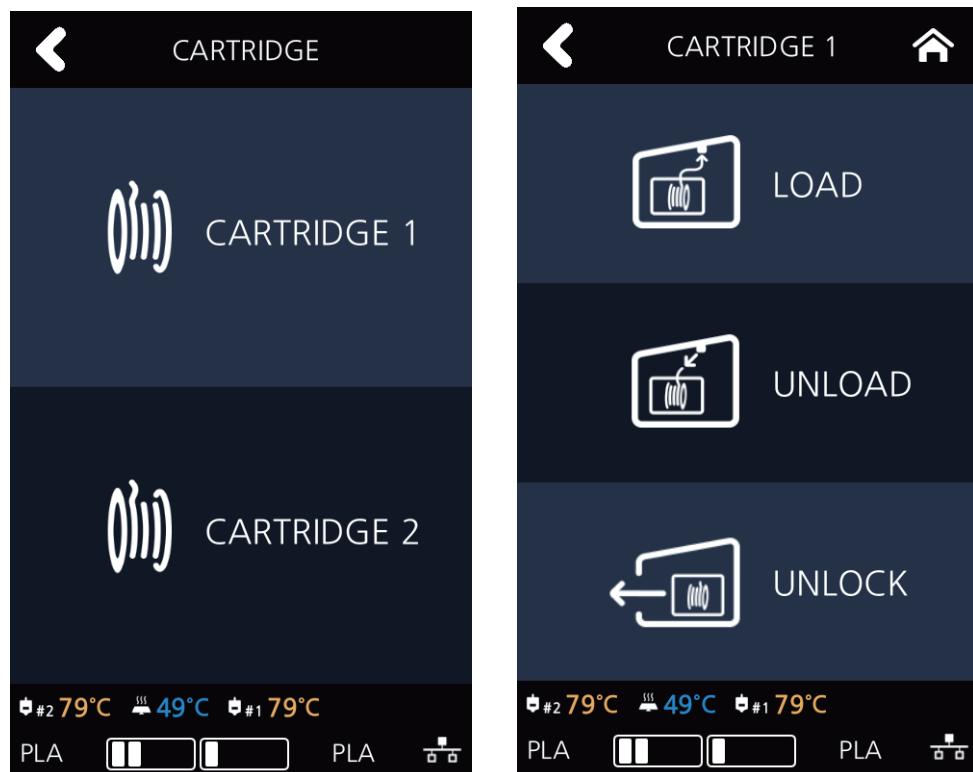
UNLOAD

This function automatically unloads filament from the nozzle.

- From the HOME screen press [CARTRIDGE].



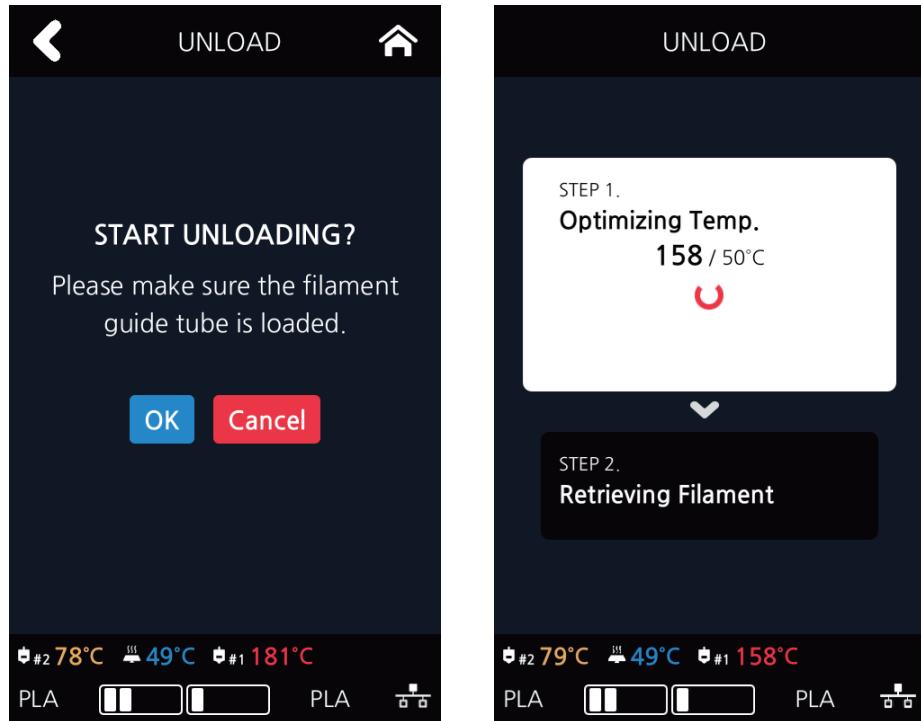
- Press [UNLOAD] to activate Cartridge unloading.



2 UI Menu Function

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.

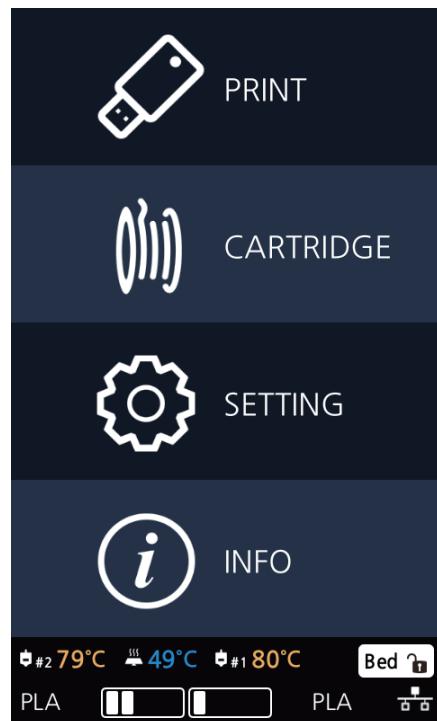
After the filament has been removed, the screen will automatically turn to the [UNLOCK] screen to let the user remove the cartridge.



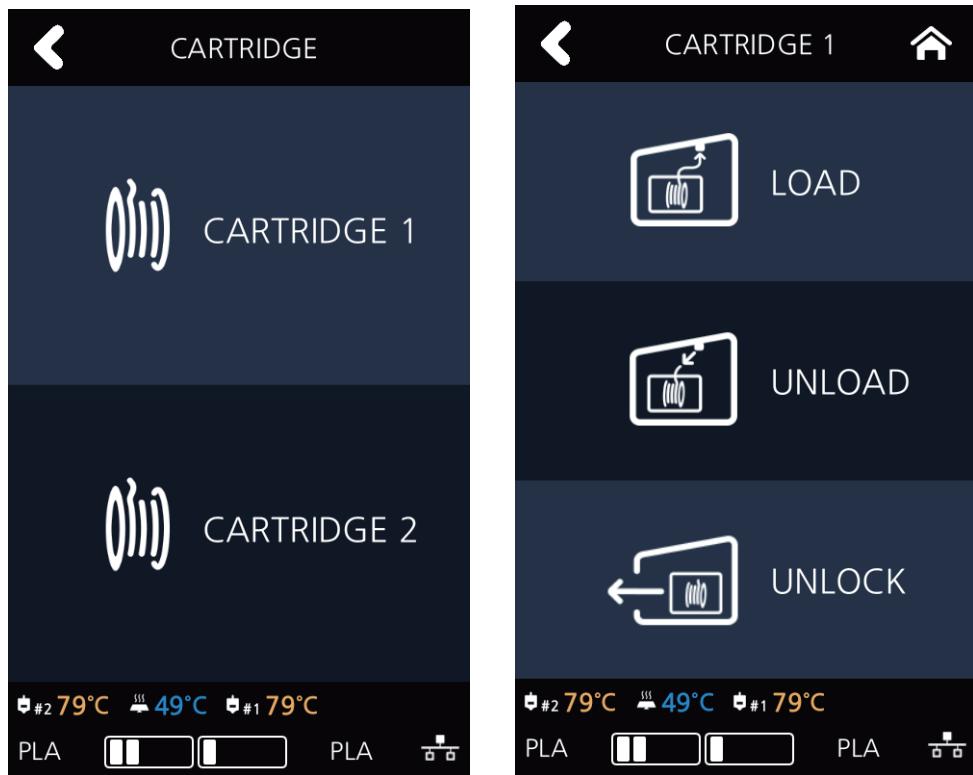
Unload PVA, Flexible Filament.

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

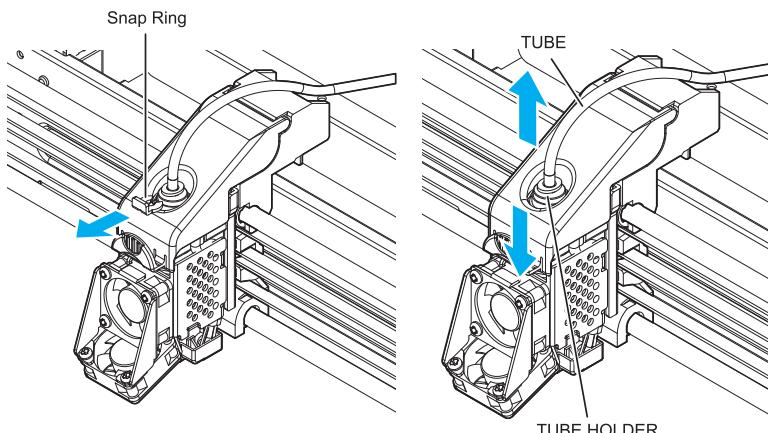
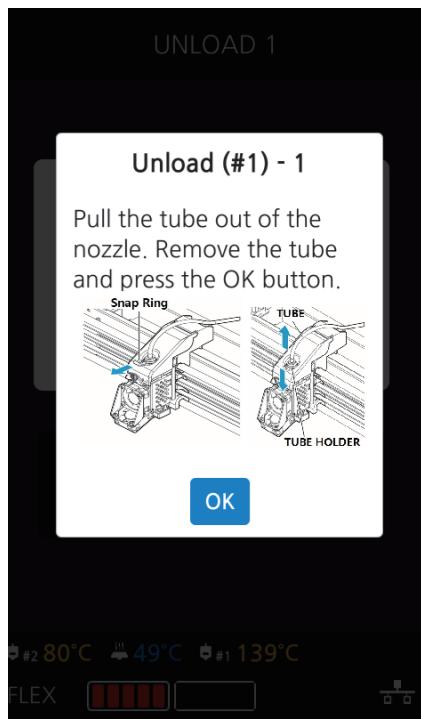
- 1 From the HOME screen press [CARTRIDGE].



- 2 Press [UNLOAD] to activate Cartridge unloading.

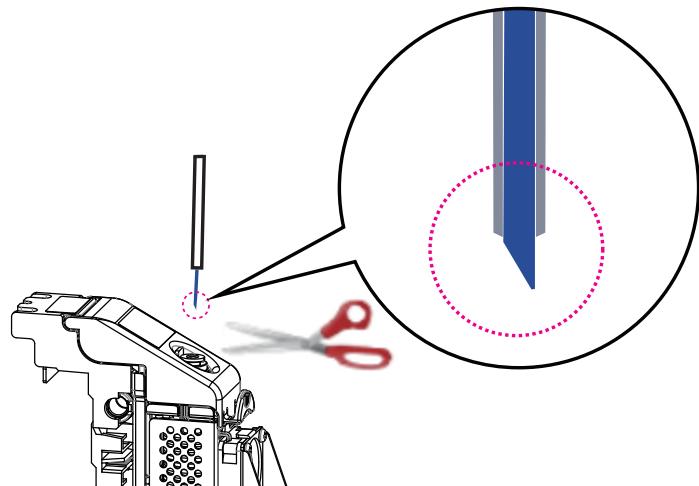
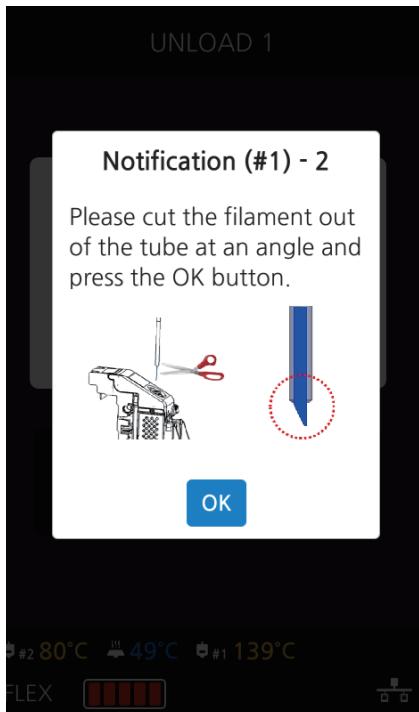


- 3 Remove the snap ring and tube from the nozzle as shown in the following UI screen, and press the [OK] button.

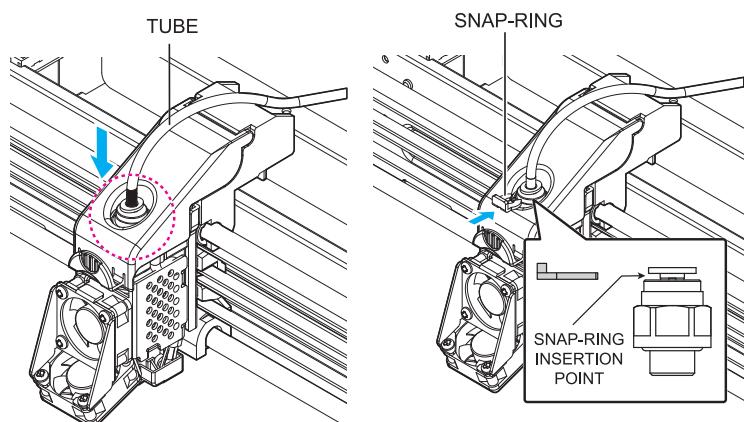
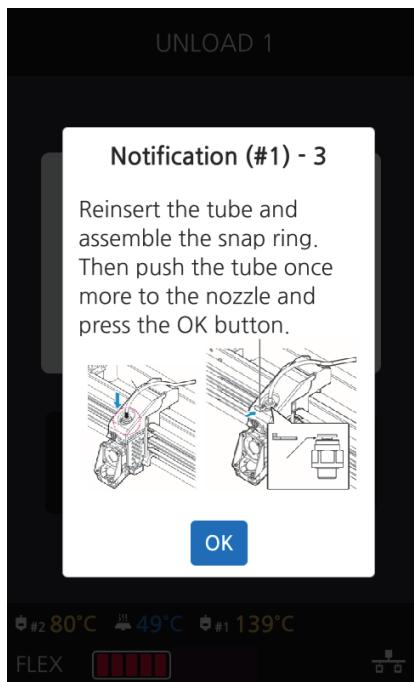


2 UI Menu Function

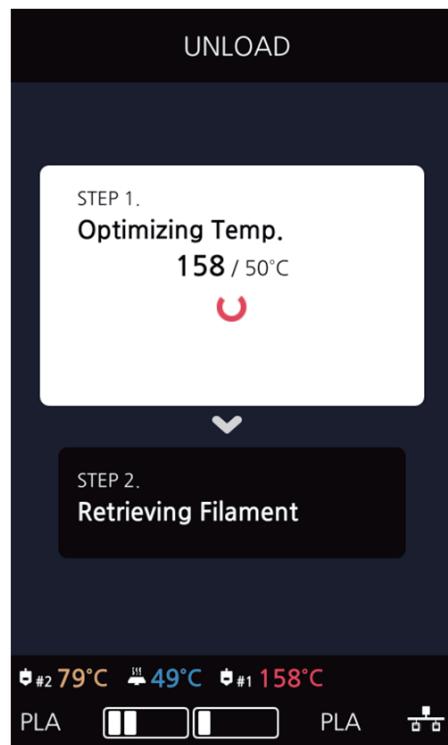
- 4 Cut the filament that came out of the tube as shown below and press the [OK] button.



- 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.

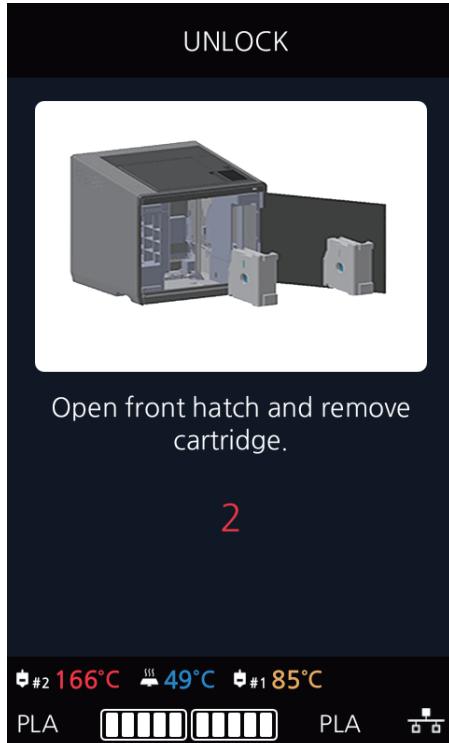


UNLOCK

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.

- 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.

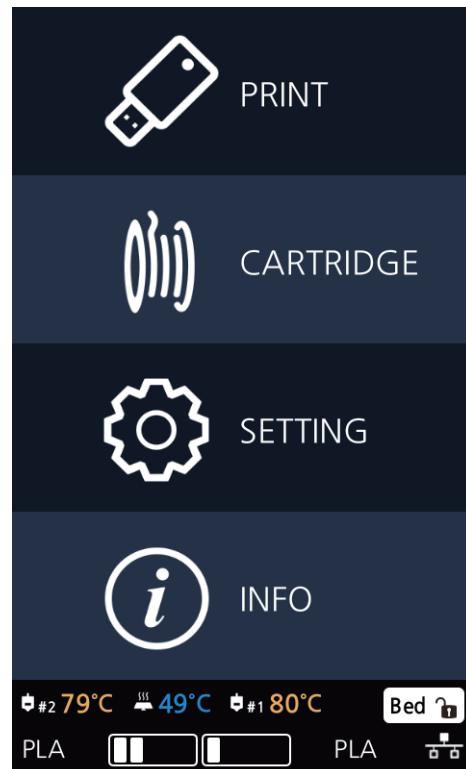


- After 10 seconds printer will automatically change to [LOCK] state and [UNLOCK] appears.

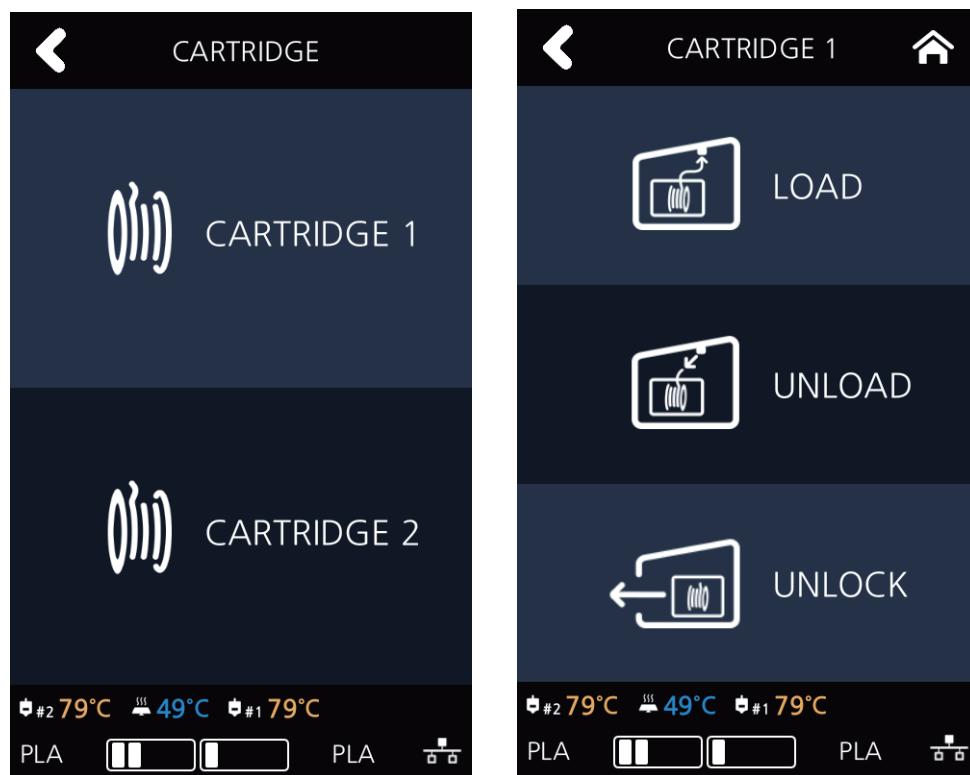


❖ To manually unlock later.

- From home screen press [CARTRIDGE].

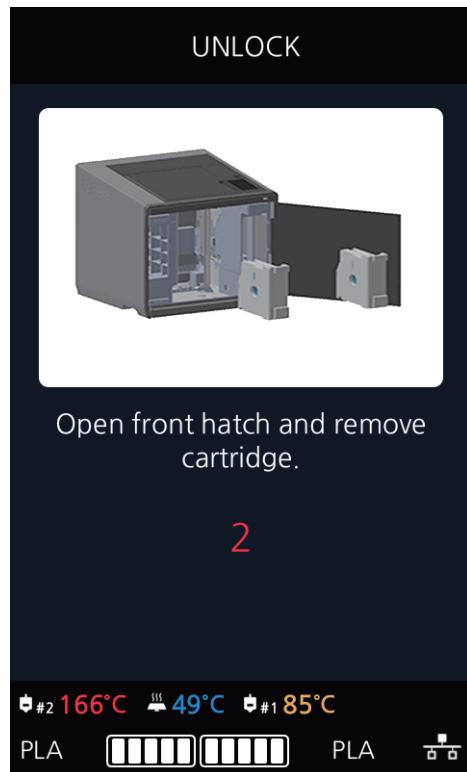


- Press [UNLOCK] to activate UNLOCK function.

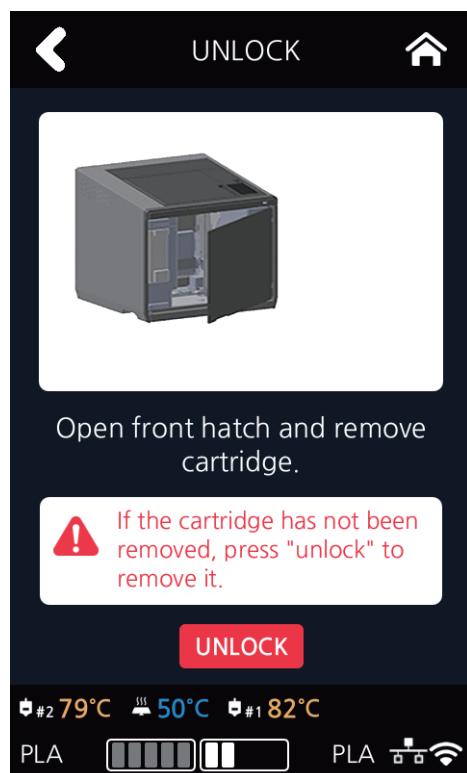


2 UI Menu Function

- 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	X Y Z	NOZZLE 1
		NOZZLE 2
EXTRUDER		NOZZLE 1
		NOZZLE 2
BED LEVELING		
Z OFFSET		NOZZLE 1
		NOZZLE 2
NOZZLE CLEANING		NOZZLE CLEANING 1
		NOZZLE CLEANING 2
NOZZLE Calibration		XY Calibration
		ENTER PATTERN VALUE
NETWORK	WIRELESS	WIRELESS
		NETWORK SELECT
		DHCP / STATIC
		SSID DELETE
	WIRED	DHCP / STATIC
CLEANING CASE		
BED LOWERING		
TEST PRINT		
ACTIVE LEVELING		
SECURITY		
VOICE GUIDE		
LANGUAGE		
E-MAIL		
UNIT		
TIME SETTING		
TIME ZONE		
POWER SAVIG MODE		
BEEP SOUND		
LAMP		
WEB		
SOFTWARE UPDATE		

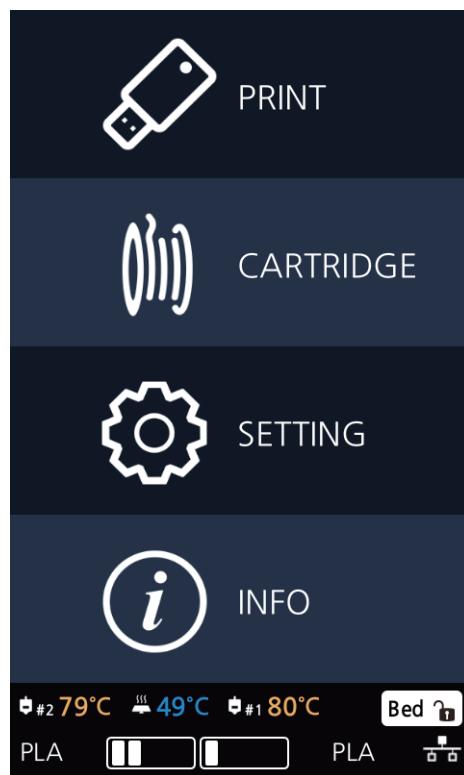
* indicates factory set value.

2 UI Menu Function

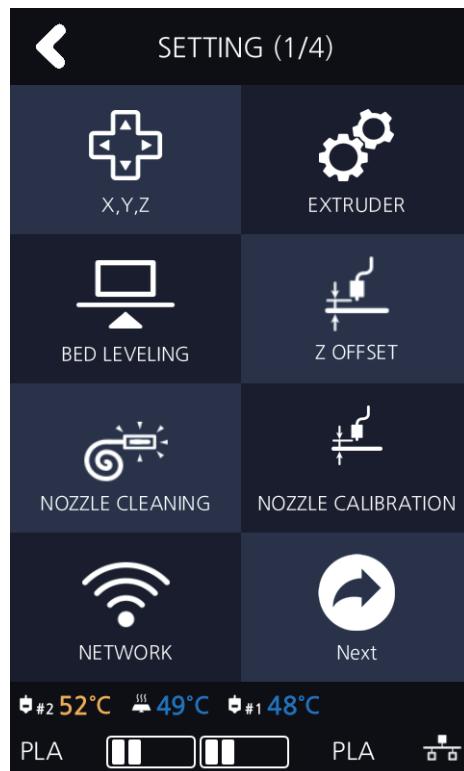
X, Y, Z

Use to change the position on the X, Y, and Z axes of the Nozzle.

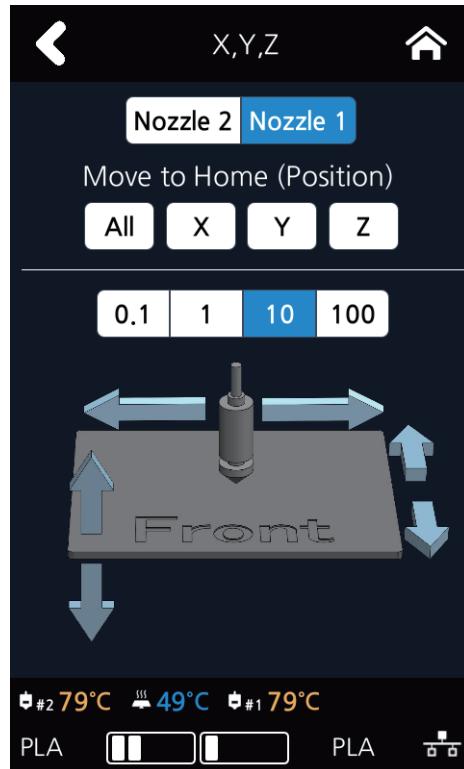
- 1 From home screen press [SETTING].



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



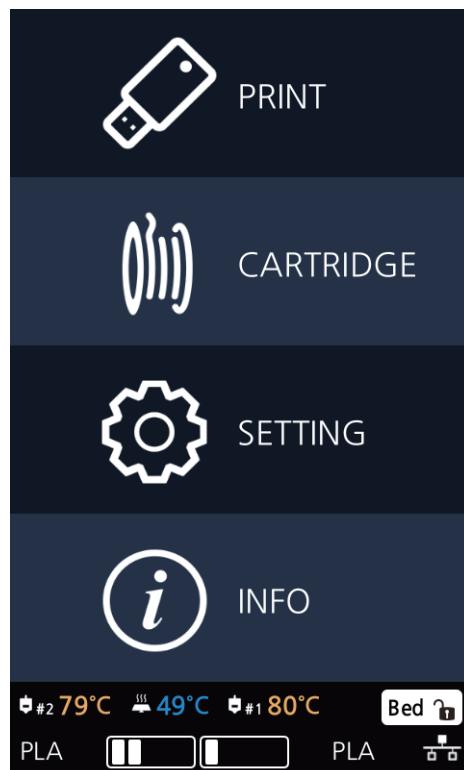
- 3** Press either [0.1], [1], [10], or [100] to select the length of transfer, and press the arrows to move the Bed and the Nozzle in the respective position.
To move to each axis' home location, press [All], [X], [Y] or [Z].



EXTRUDER

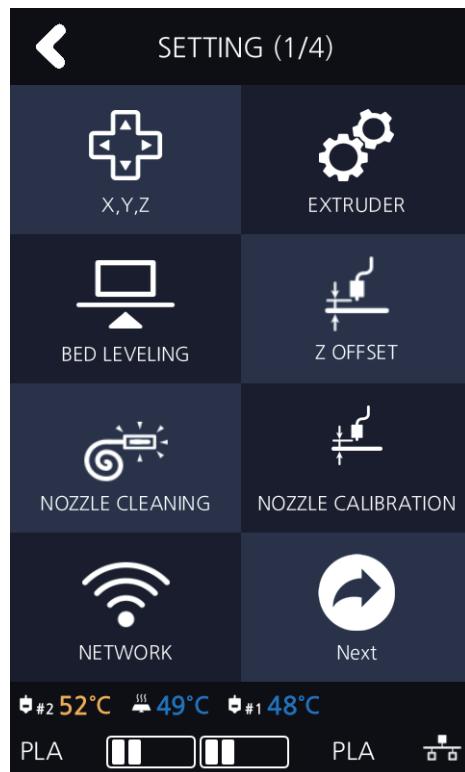
This function is used to fine control the filament to its position.

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

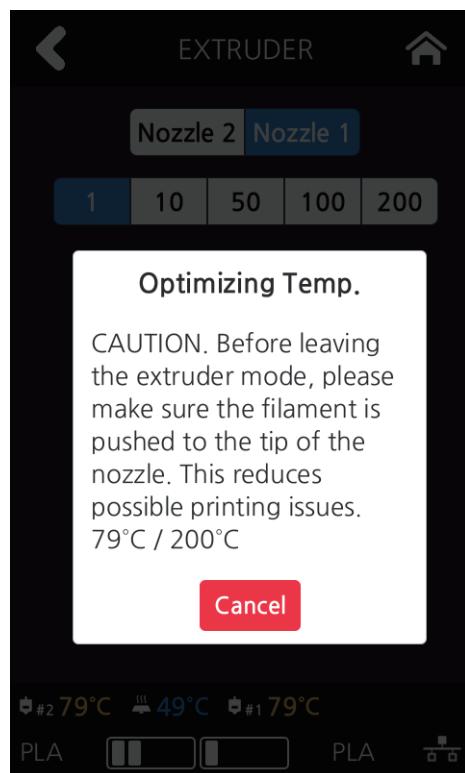


2 UI Menu Function

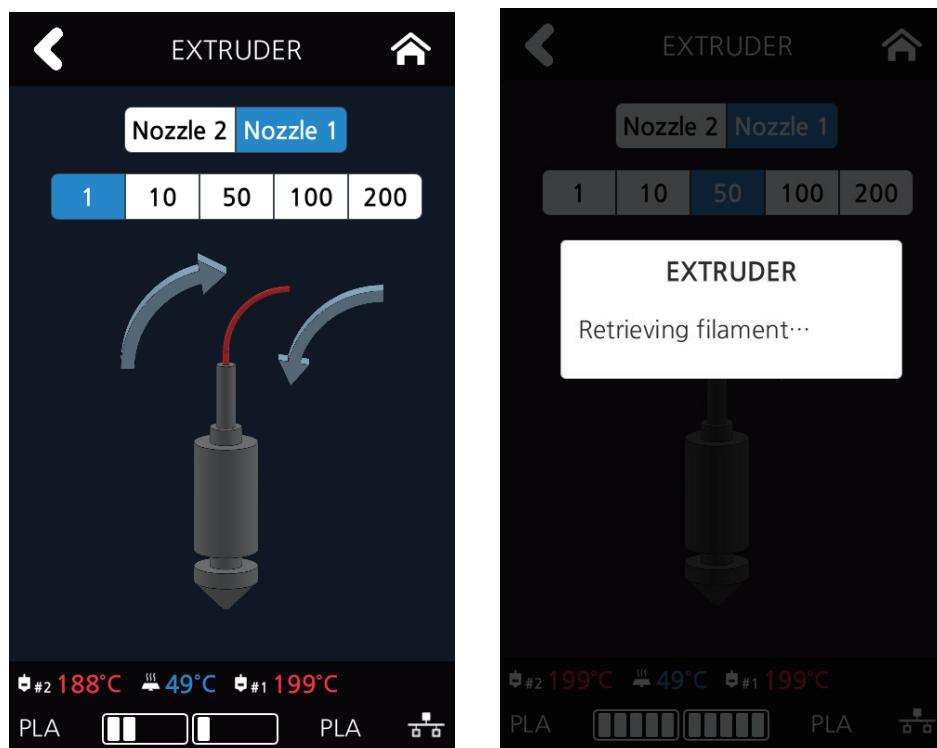
2 Press [EXTRUDER] to enter EXTRUDER settings.



3 To Control [EXTRUDER], Nozzle temperature needs to be raised.



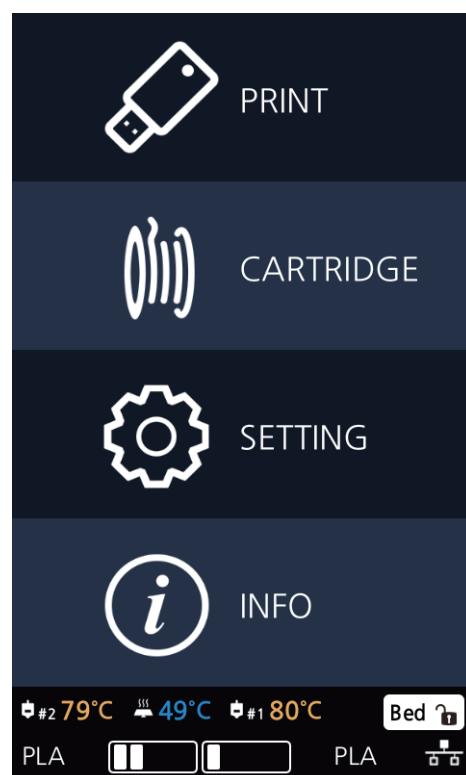
- 4** Select the nozzle that you will use to move the filament.
 Press **[1]**, **[10]**, **[50]**, **[100]**, **[200]** to select an amount.
 In the image shown below, press the direction to move the filament.



BED LEVELING

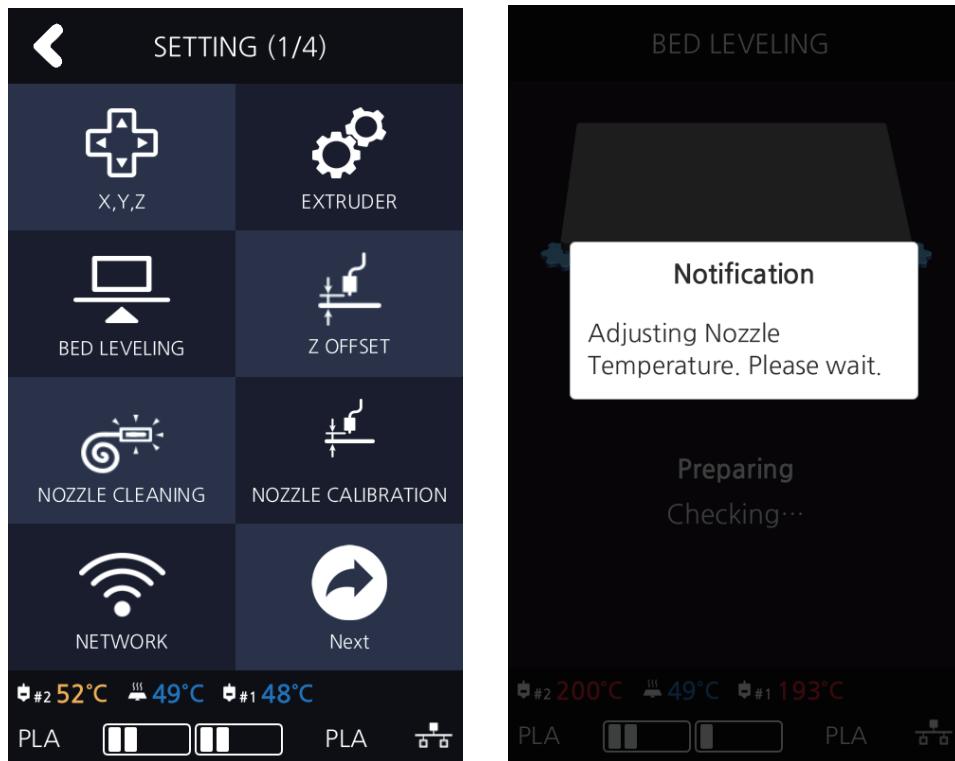
This function is used to perform the leveling of the bed.

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

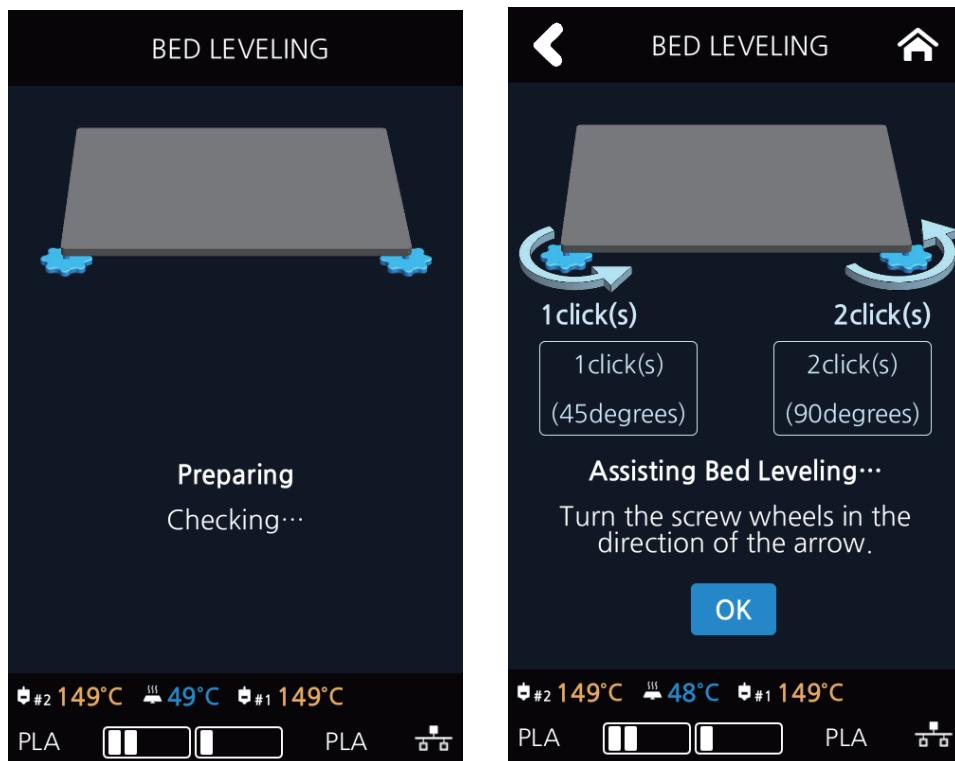


2 UI Menu Function

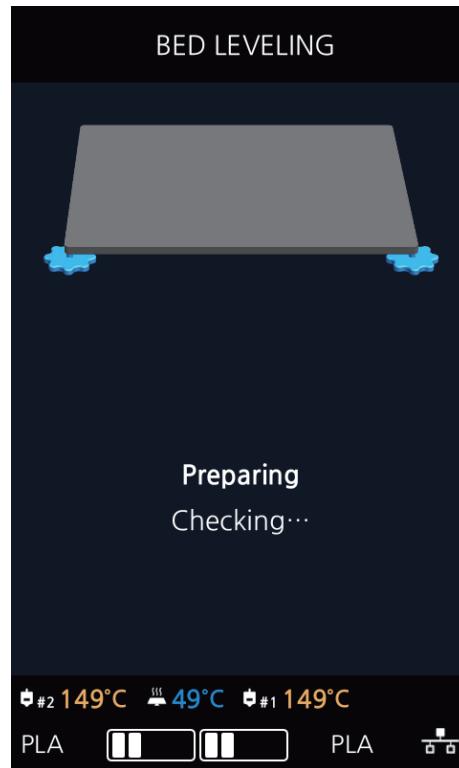
- 2 Press the [BED LEVELING] button to enter BED LEVELING settings.
If the current Nozzle temperature is too high, process for cooling down the Nozzle temperature is added.



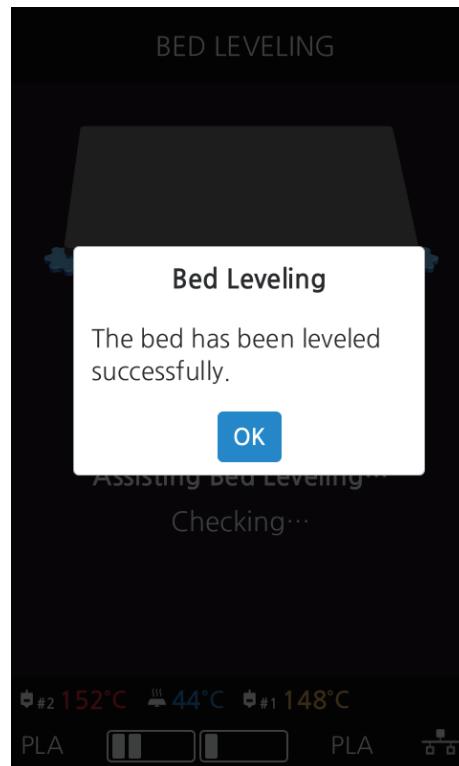
- 3 On the SETTING page, user is able to perform bed leveling. The bed leveling process consists of 3 steps. From the center, the top side is measured first, and then both sides of the bottom level are measured. If the height of the bed is perfect then levelling process will be finished but if the height of the bed and nozzle does not match, screws will appear informing user the direction and the number of screw rotation.



- 4 If you turn the screw and press [OK], the measuring is performed and the value to fix appears again.



- 5 When all settings are done the program returns to the previous screen.



Z OFFSET

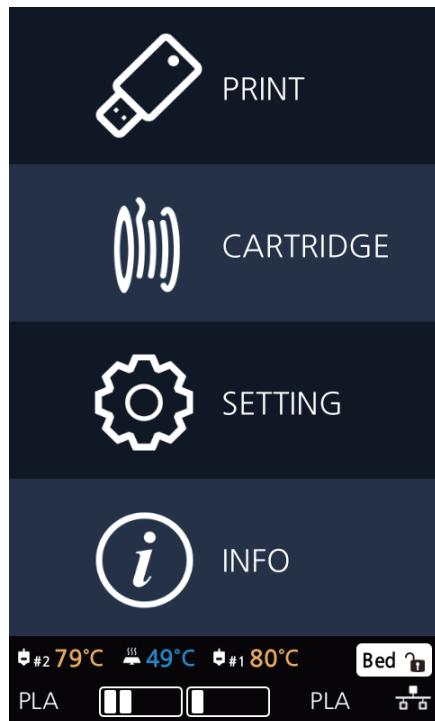
※ After bed leveling, it is highly recommended to check the z-offset.

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.

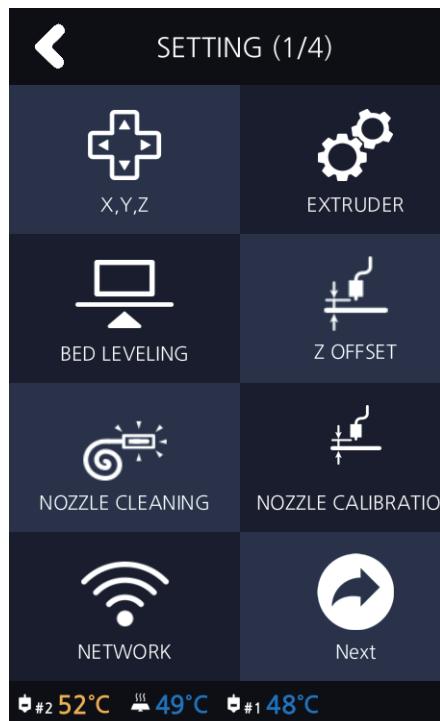
※ For higher adhesive strength between the print output and the bed, shorten the distance of the z-offset.

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

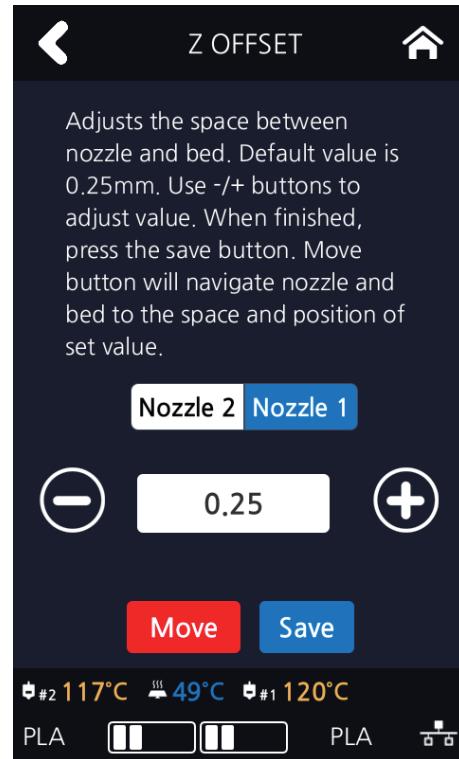
- From home screen press [SETTING].



- Press the [Z OFFSET] button to access Z Offset screen.



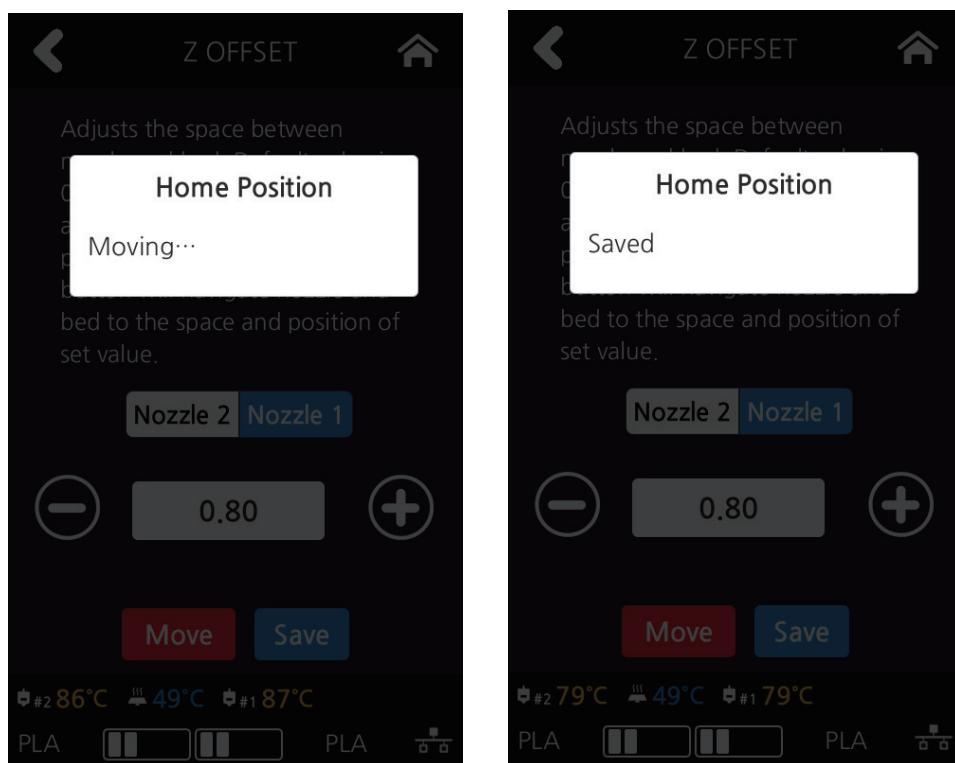
- 3** Select the nozzle that you will use to adjust the gap. Default value is 0.25mm, Use [+], [-] buttons to move in 0.05 mm unit.



- 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.

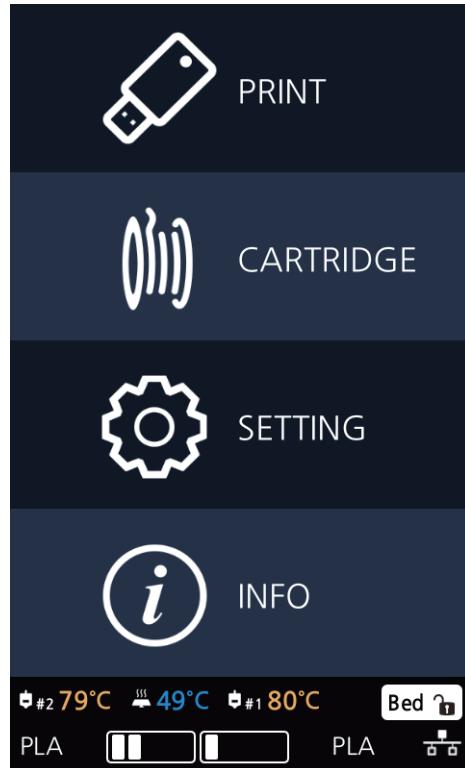


2 UI Menu Function

NOZZLE CLEANING

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

- 1 From home screen press [SETTING].



- 2 Press the [NOZZLE CLEANING] button to access nozzle cleaning settings.

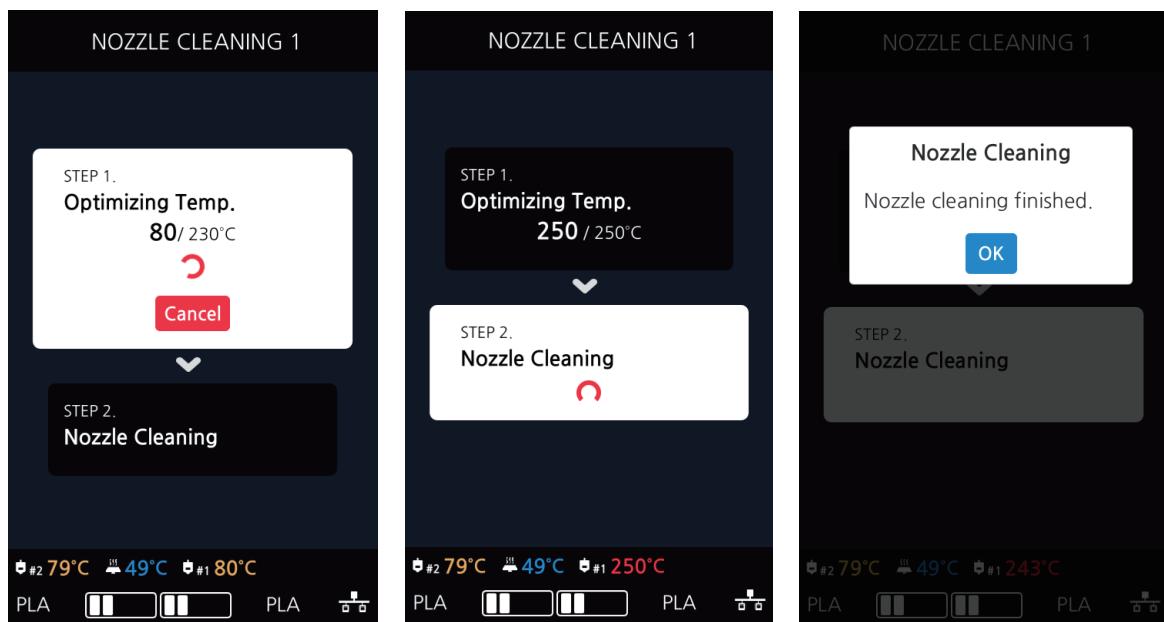
Select the nozzle that you want to clean.



- 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.

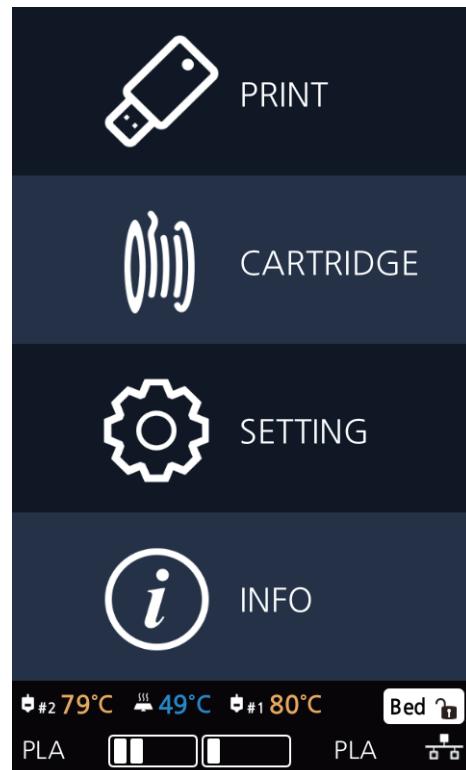
Once finished message will appear press **[OK]**, printer will return to the settings screen.



NOZZLE CALIBRATION

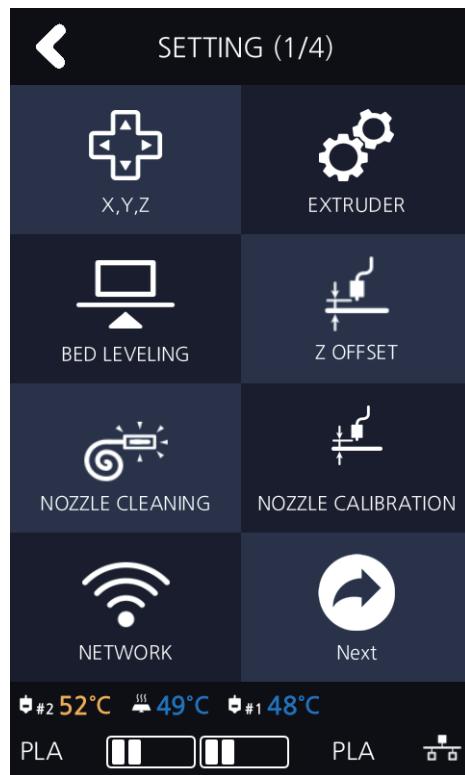
■ Printing of the XY Calibration Pattern

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

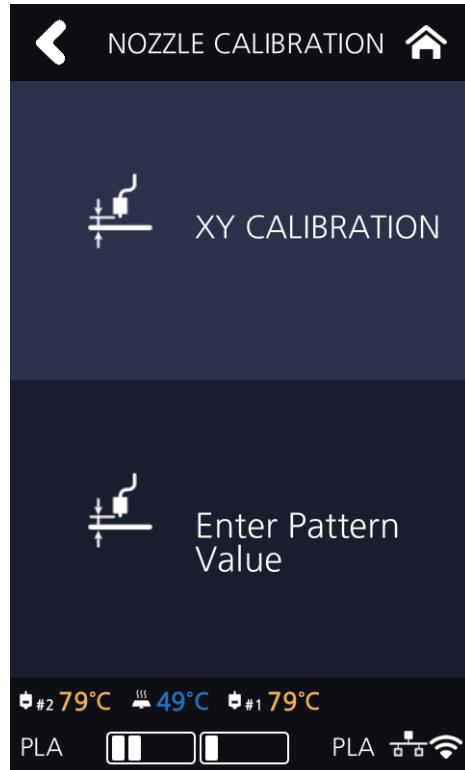


2 UI Menu Function

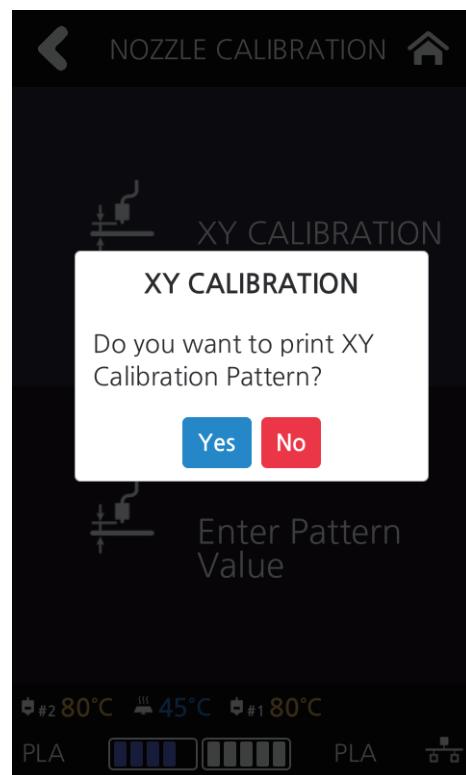
2 Press the [Nozzle Calibration] button to access the Nozzle Calibration screen.



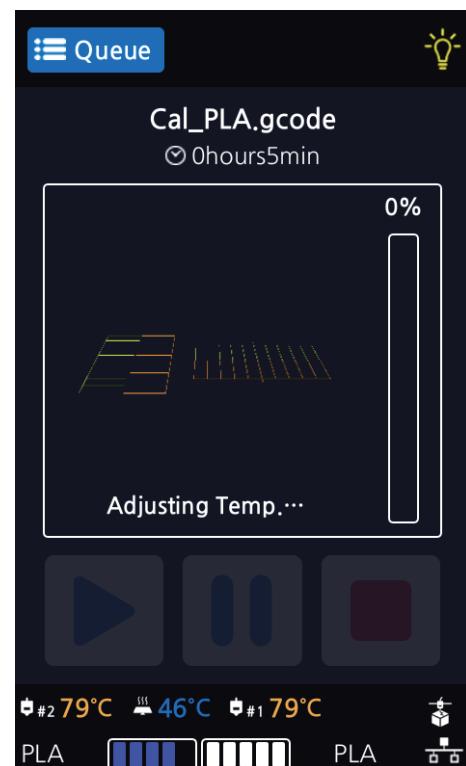
3 To print the XY calibration pattern, press the [XY-Calibration] button.



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

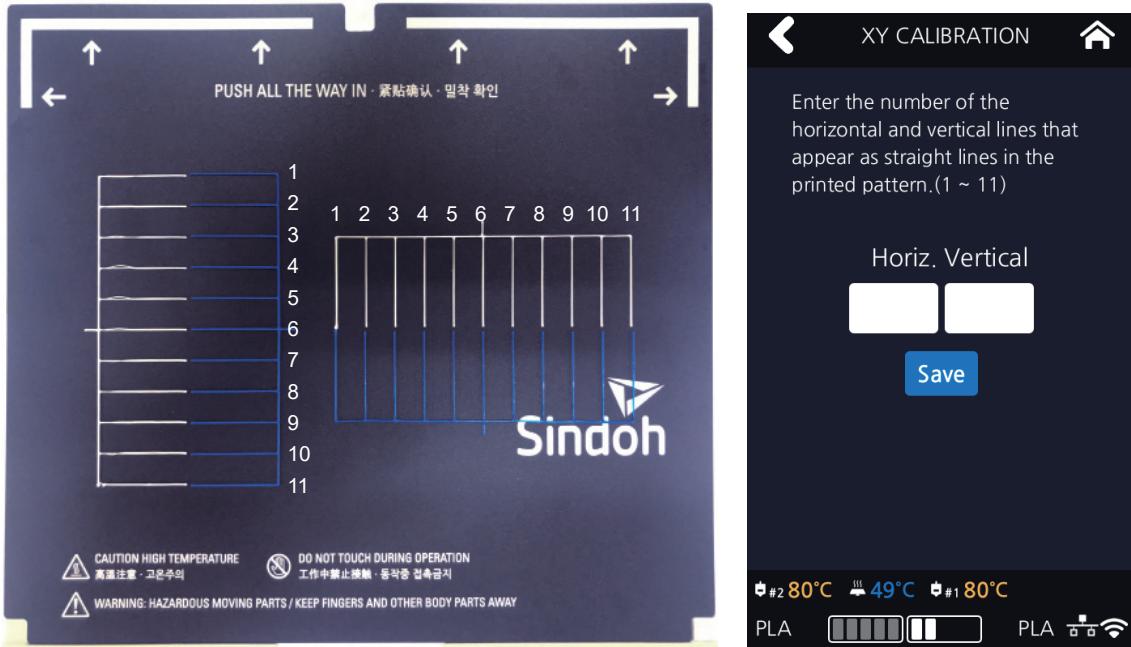


- 5 When the temperature of the nozzle and the bed rises and reaches the target temperature, printing will begin.

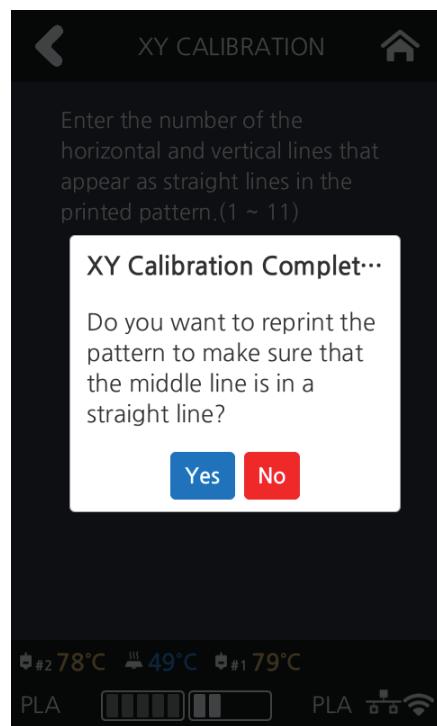


2 UI Menu Function

- 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 left for vertical lines and from the top for horizontal lines).



- 7 To print the pattern for the calibrating nozzle again, press the [OK] button. Press the [Cancel] button to return to the Home screen.



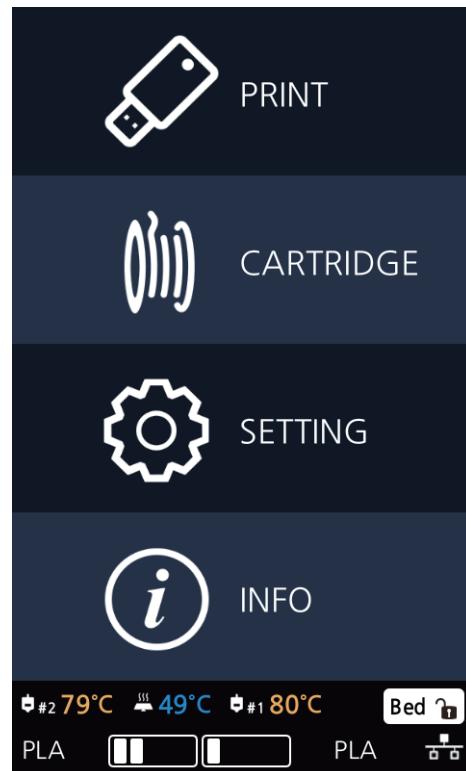
Note

- Generally, the use of PLA material is recommended when performing XY-Calibration. Inevitably, XY-Calibration using ABS material is also possible.

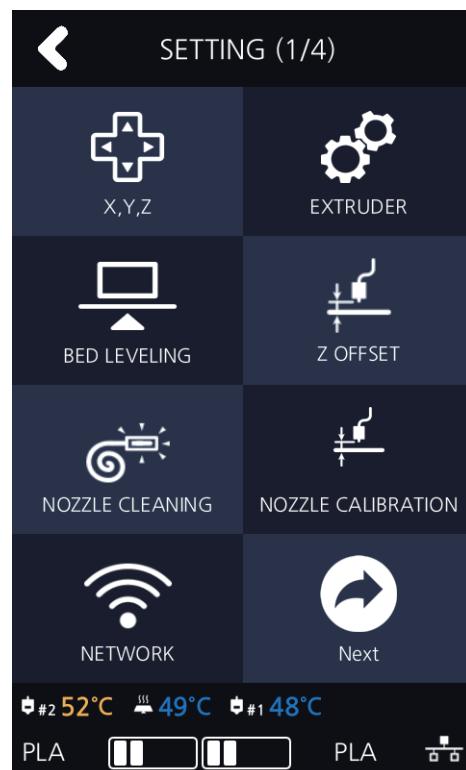
After the calibration is complete, there may be remainders on the bed during the process of removing the calibration pattern. (Pattern marks do not affect the function of the bed.)

□ Entering the Pattern Value

- From home screen press [SETTING].

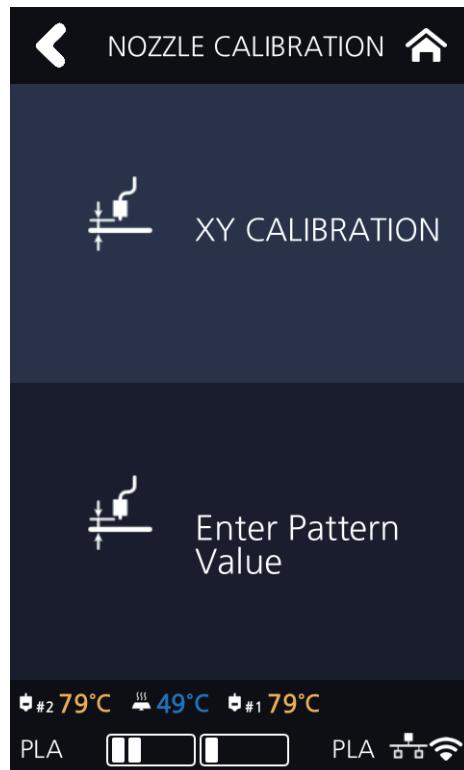


- Press the [Nozzle Calibration] button to access the Nozzle Calibration screen.

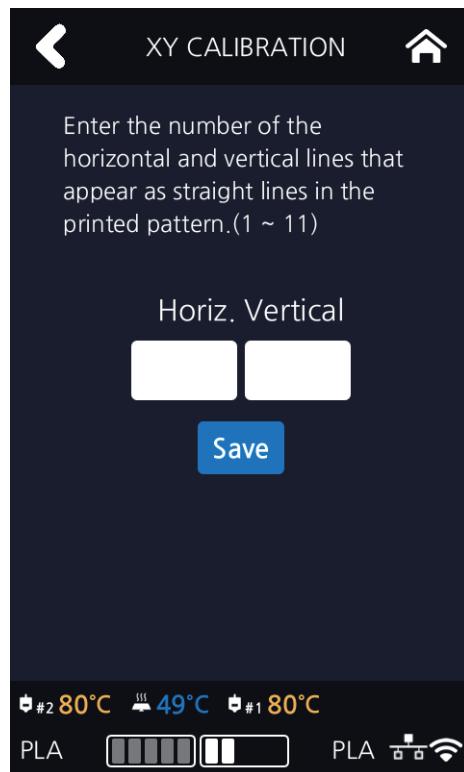


2 UI Menu Function

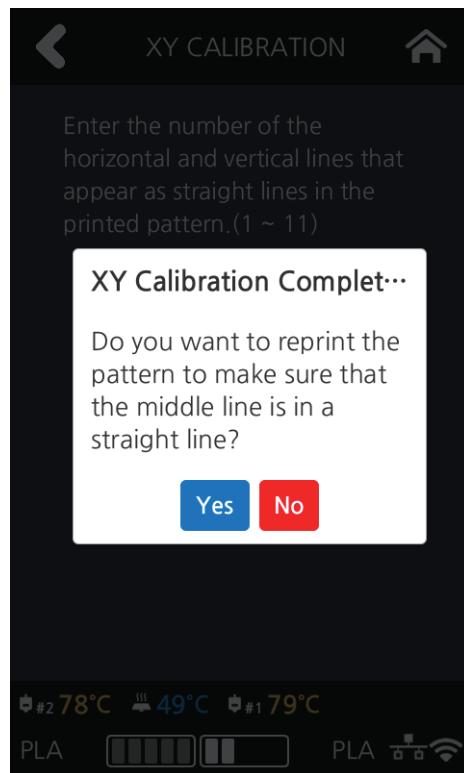
- 3 Press the [Enter Pattern Value] button to access the Enter Pattern Value.



- 4 Enter the values for the horizontal and vertical lines.



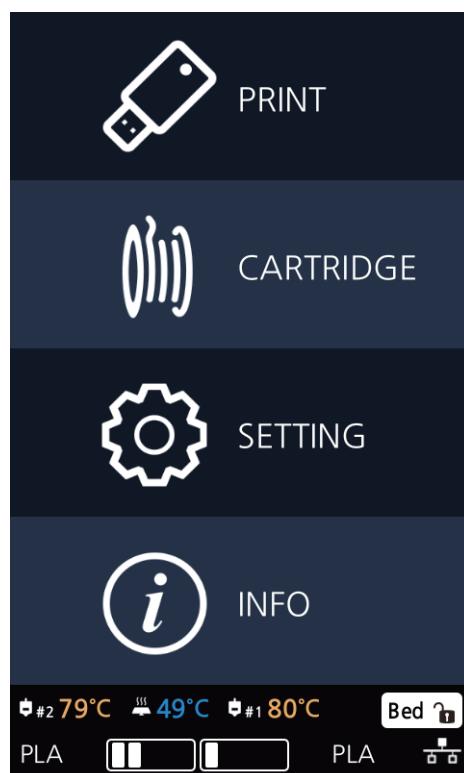
- 5 To print the pattern for the calibrating nozzle, press the [OK] button. Press the [Cancel] button to return to the Home screen.



NETWORK

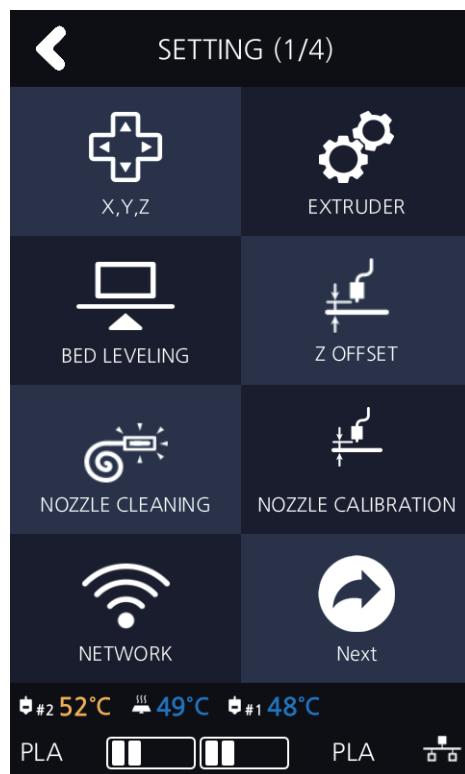
This is a menu to configure users network setting. IP address can be set up manually or automatically via DHCP setting. Wifi network is also supported.

- 1 From home screen press [SETTING].



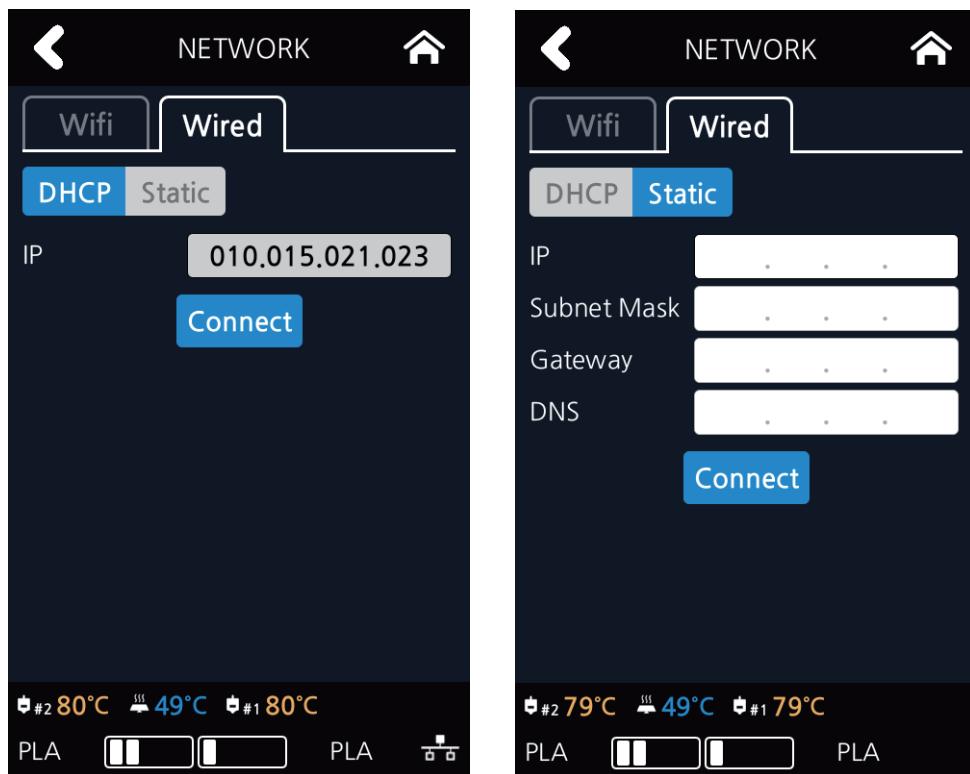
2 UI Menu Function

2 Press the [NETWORK] button to access network configuration screen.

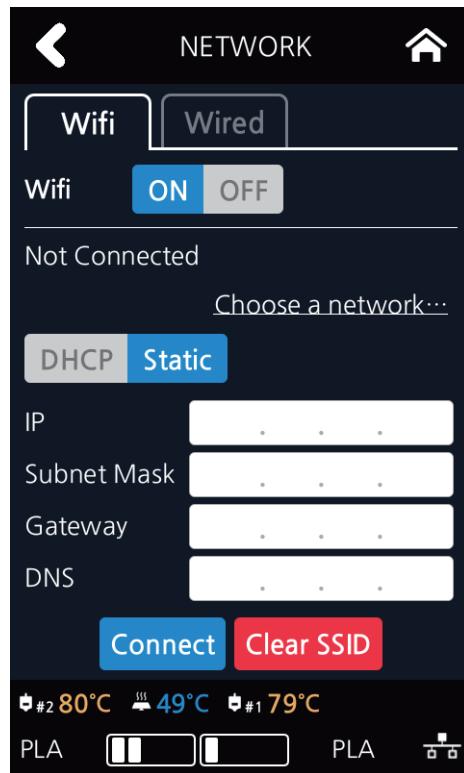


3 The default network setting is Wired (connection using LAN line).

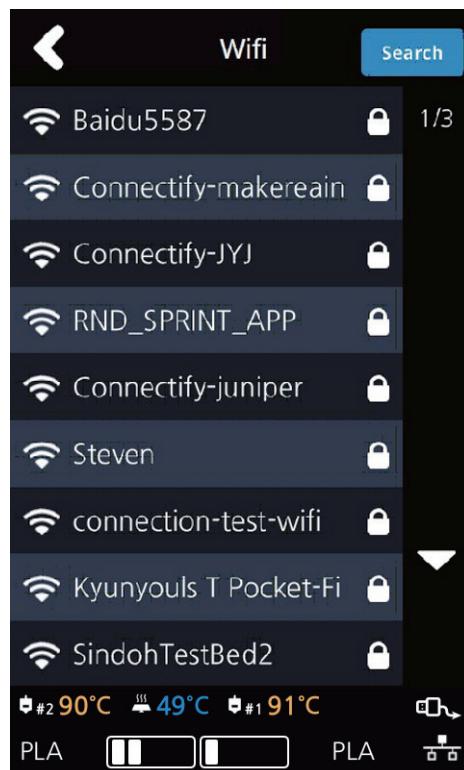
Press [DHCP] for automatic IP address setup. To manually input a fixed IP address press [Static] and enter an IP address. Press [Connect] to save the changes.



- 4 In any case to use Wifi press the [Wifi] tab.
Wifi setting can be turned ON or OFF.

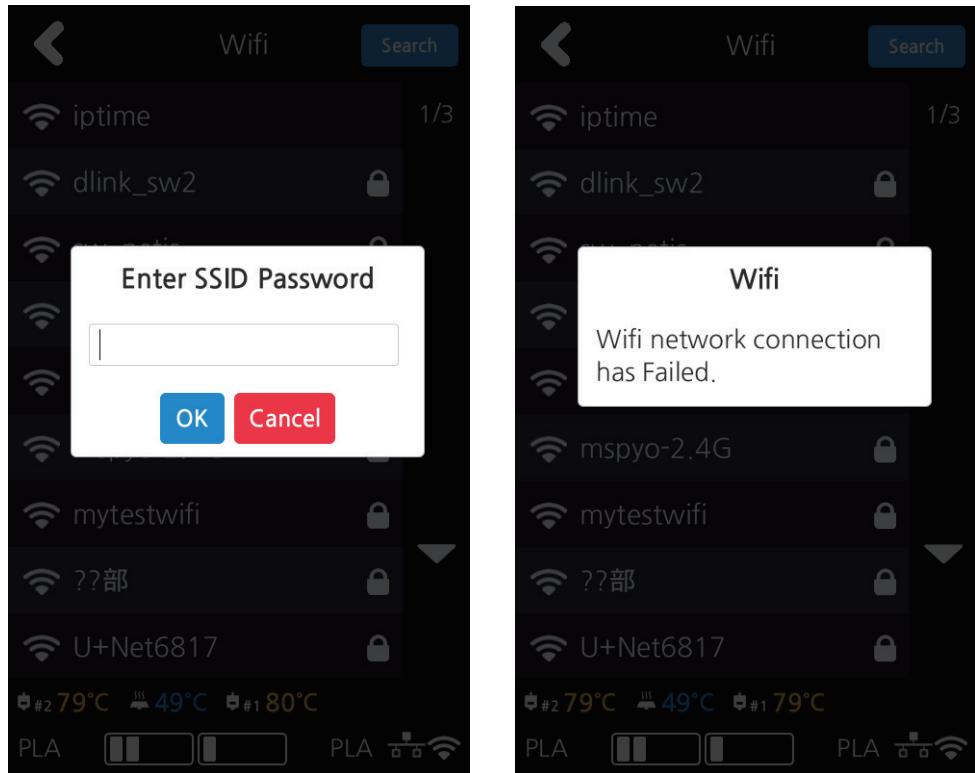


- 5 To select a Wifi network, click [Choose a network...] and the printer shows all available Wifi connections.



2 UI Menu Function

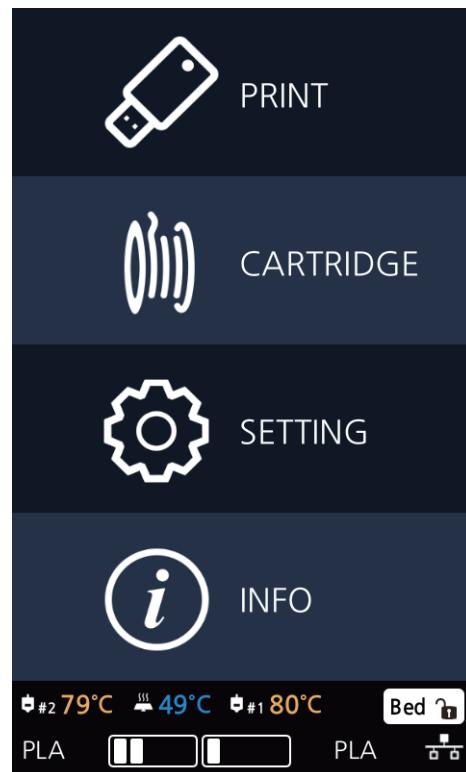
- 6 Select a wireless network from the list to connect to the network. For a password-protected network, a dialog pops up and asks for the password.
You can refresh the network list by clicking [Search].



CLEANING CASE

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

- From home screen press [SETTING].

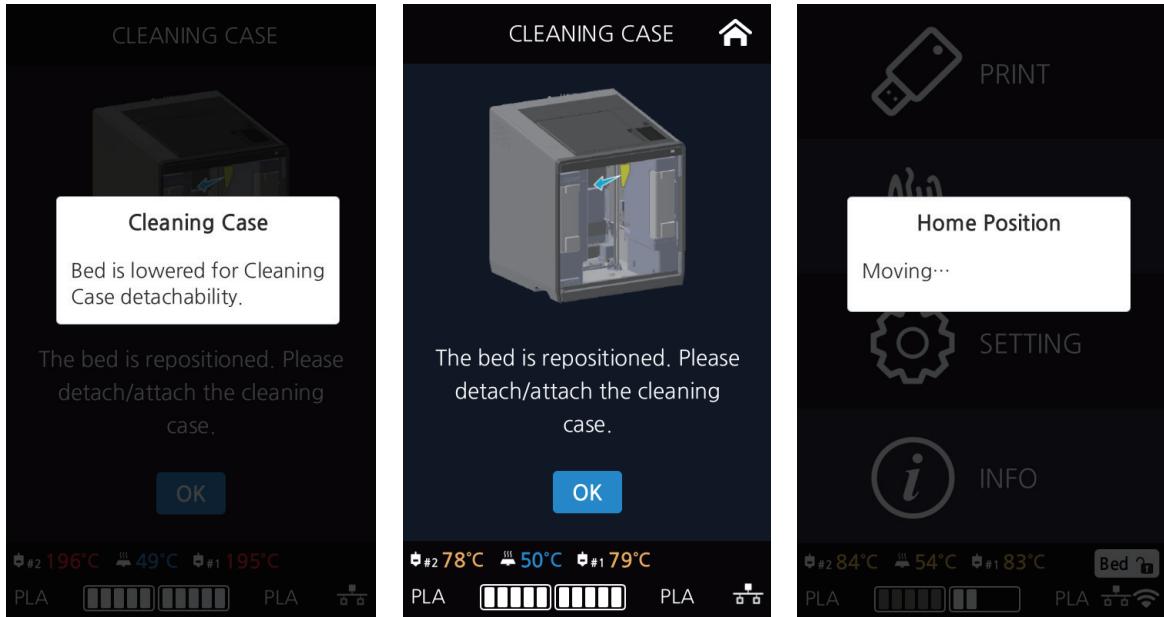


- Press the [CLEANING CASE] button to enter CLEANING CASE settings.



2 UI Menu Function

- 3 Entering Cleaning Case, the nozzle will automatically position itself to the left 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 settings screen.

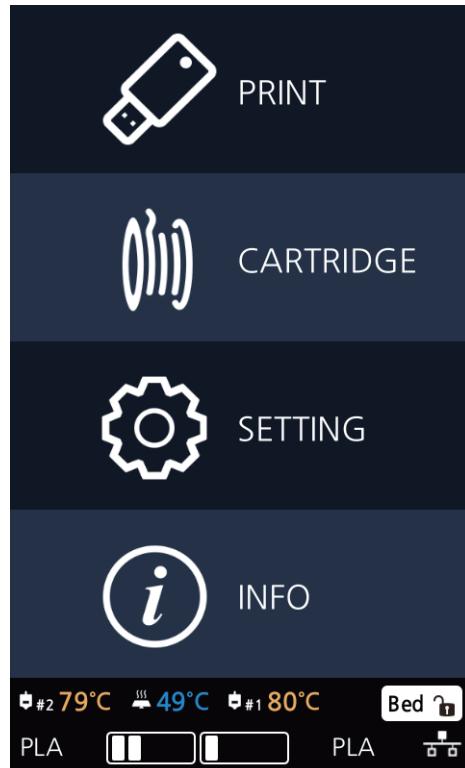


BED LOWERING

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.

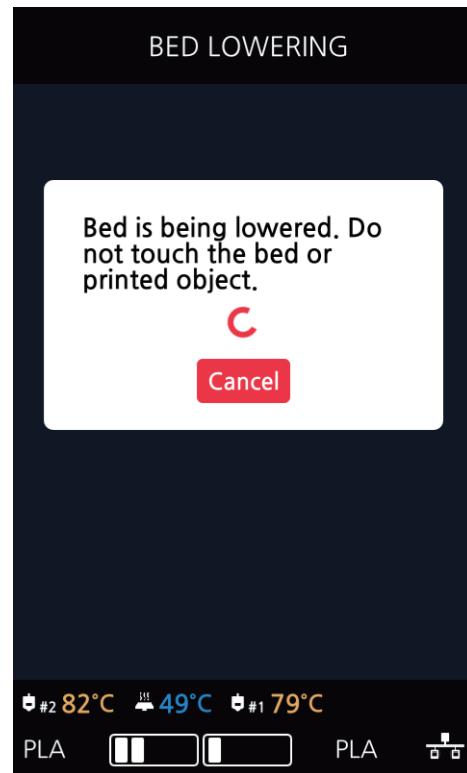
- 1 Press [SETTING] from the home screen.



- 2 Press [Next] to move to next page, where the [BED LOWERING] button is located.



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

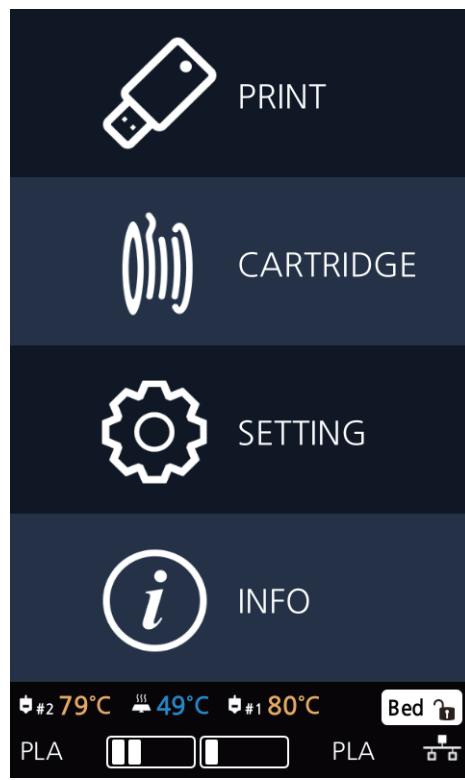


2 UI Menu Function

TEST PRINT

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

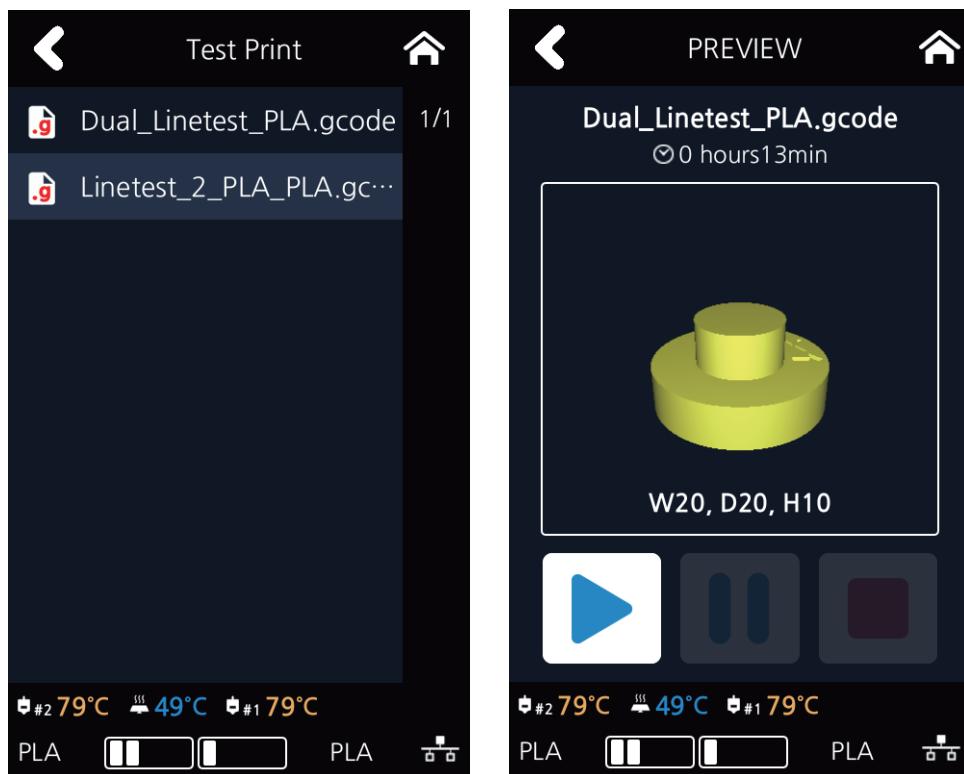
- 1 From home screen press [SETTING].



- 2 Press [Next] button to move to the next page and press [TEST PRINT].

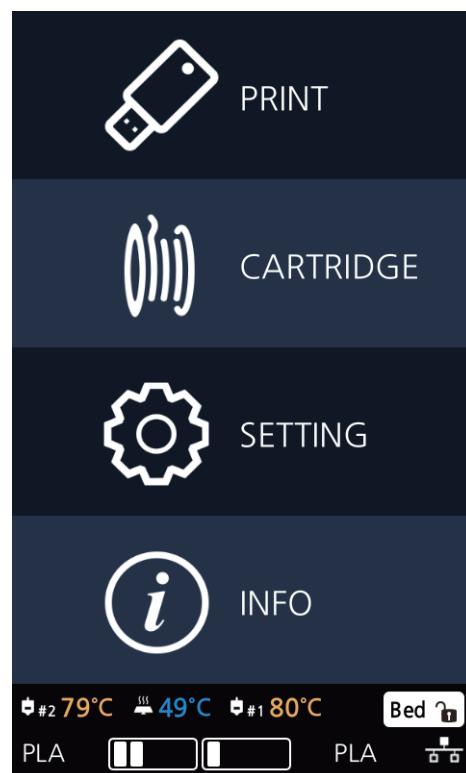


- 3 Select the test file to print.



ACTIVE LEVELING

- 1 From home screen press [SETTING].

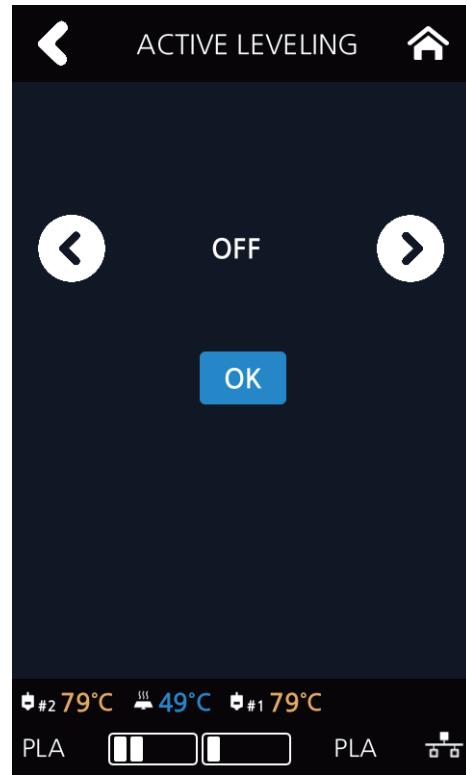


2 UI Menu Function

2 Press the [Next] button to access [ACTIVE LEVELING].

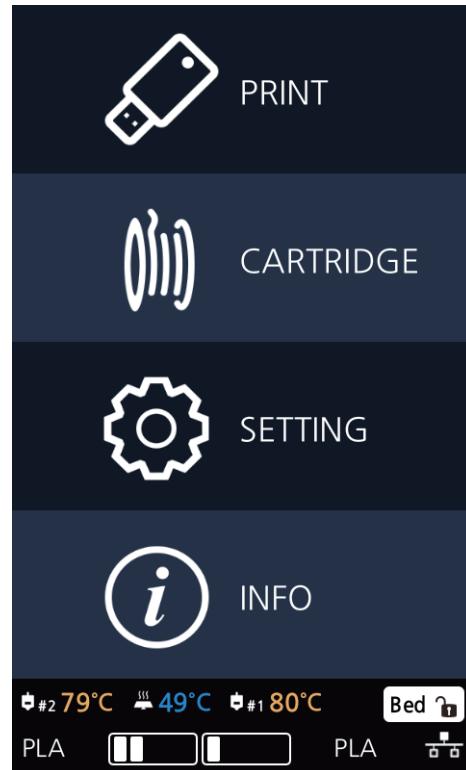


3 After setting [On/Off] of the Active Leveling, and then press the [OK] button.

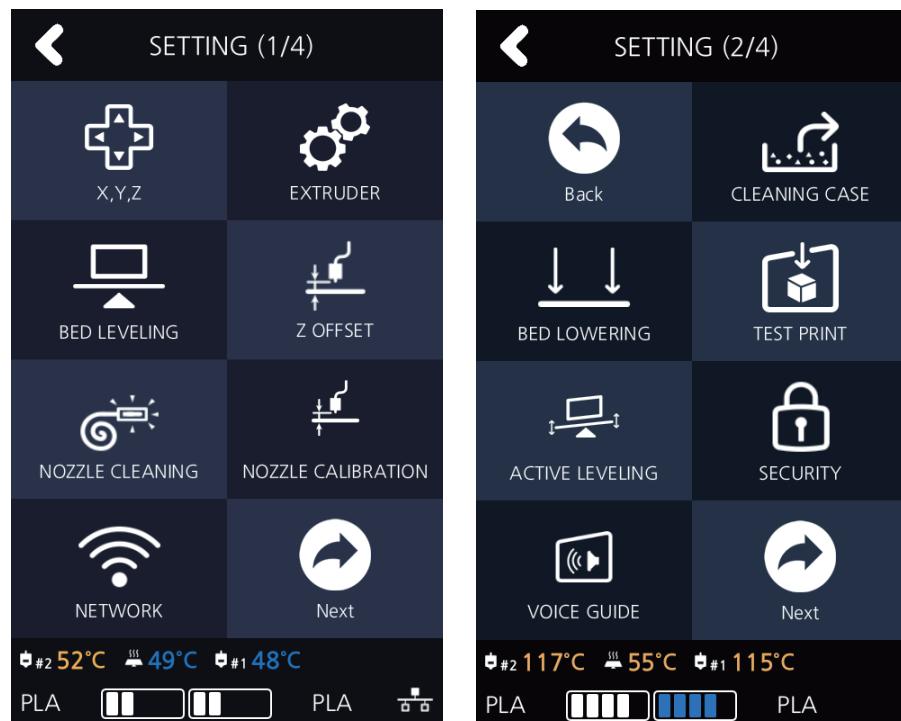


SECURITY

- 1 From home screen press [SETTING].

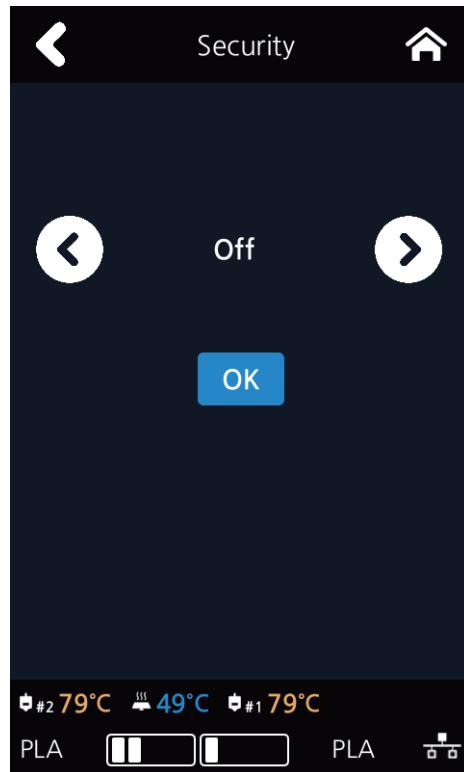


- 2 Press the [Next] button to access the [SECURITY] Screen.



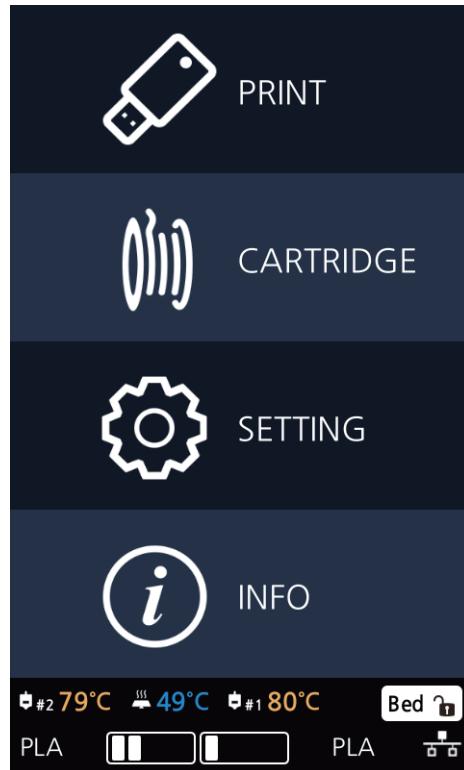
2 UI Menu Function

- 3 After setting [On/Off] of the Security, and then press the [OK] button.

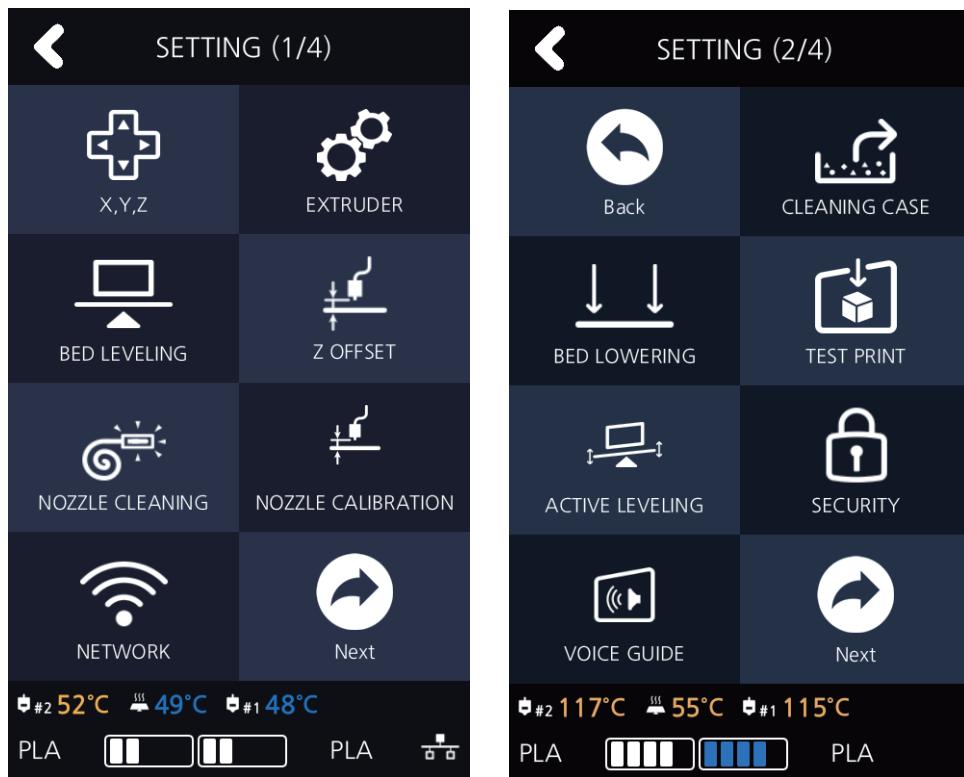


VOICE GUIDE

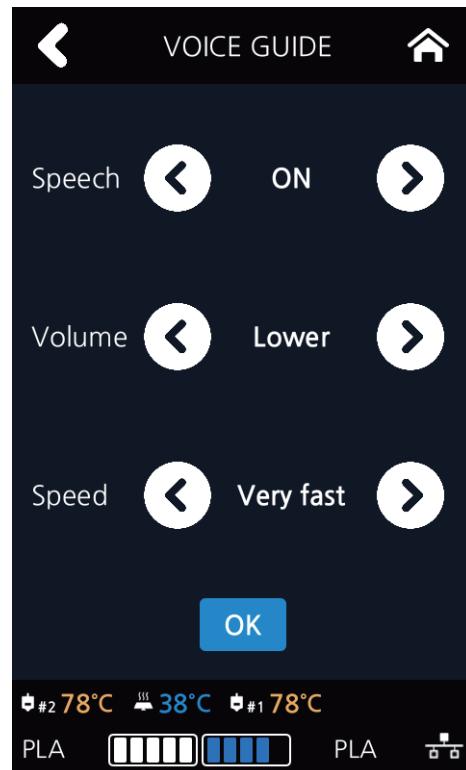
- 1 From home screen press [SETTING].



- 2 Press the [Next] button to access the [VOICE GUIDE] screen.



- 3 After setting your printer's speech, volume, and speed, press the [OK] button.

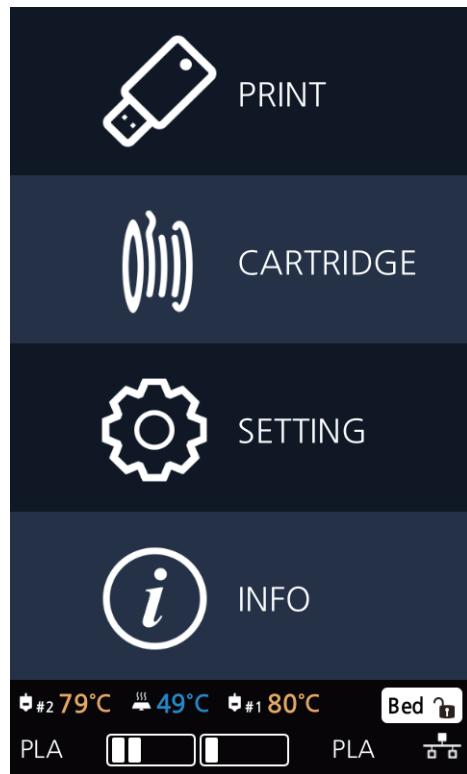


2 UI Menu Function

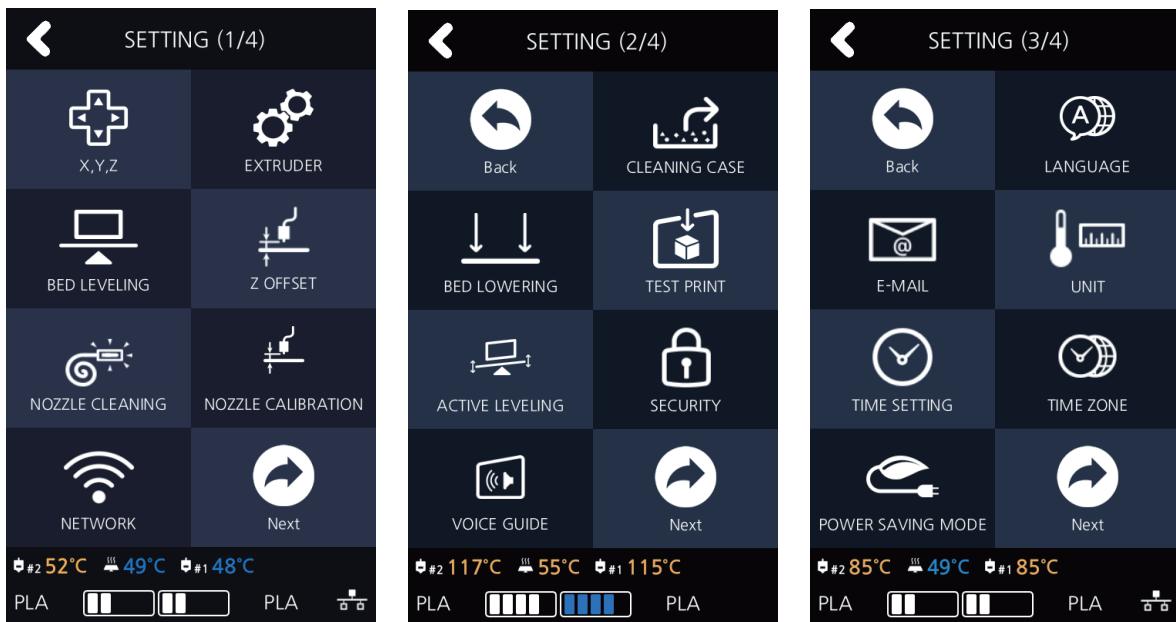
LANGUAGE

Menu to set language for machine.

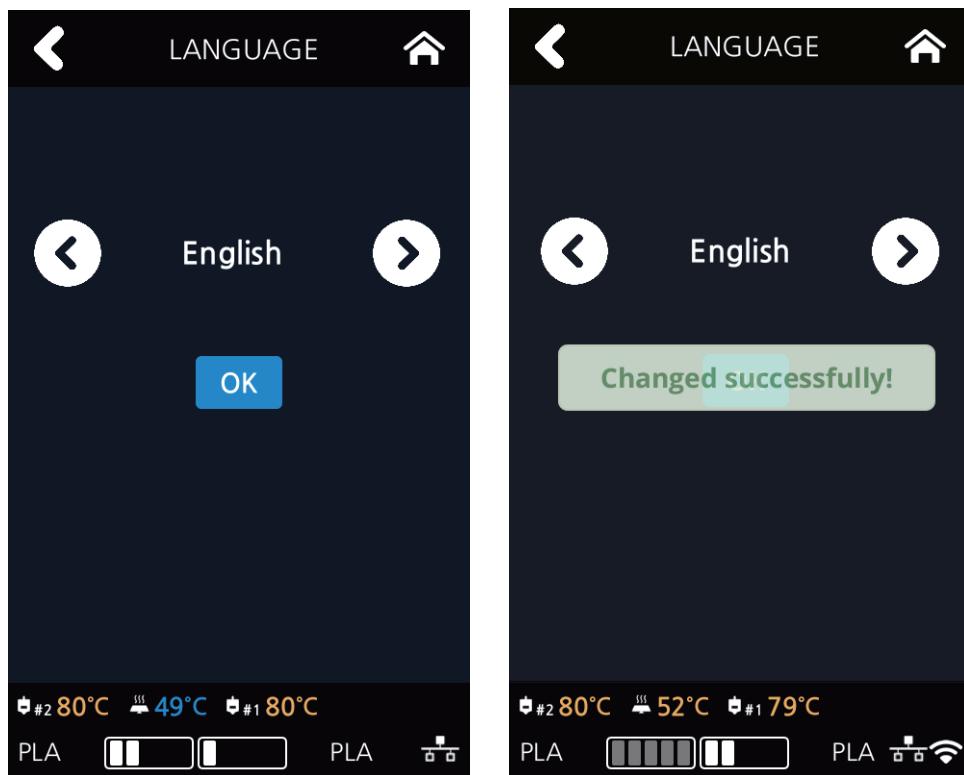
- From home screen press [SETTING].



- Press [Next] 2 times to go to the screen where the [LANGUAGE] menu is.



- 3 Using the arrows select a language and press [OK].



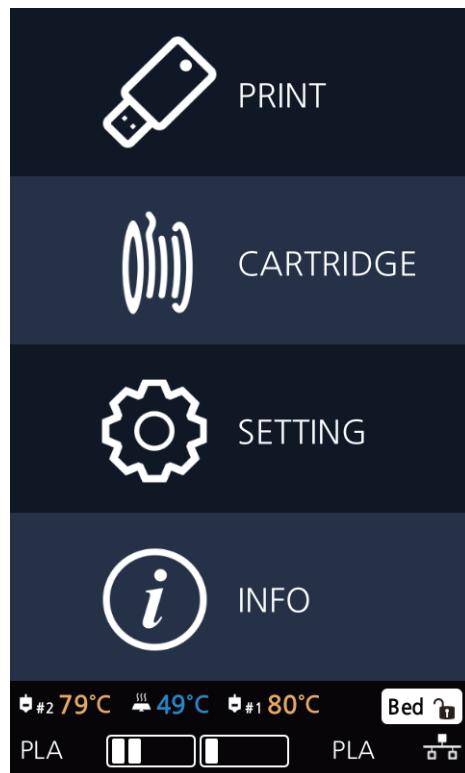
2 UI Menu Function

E-MAIL

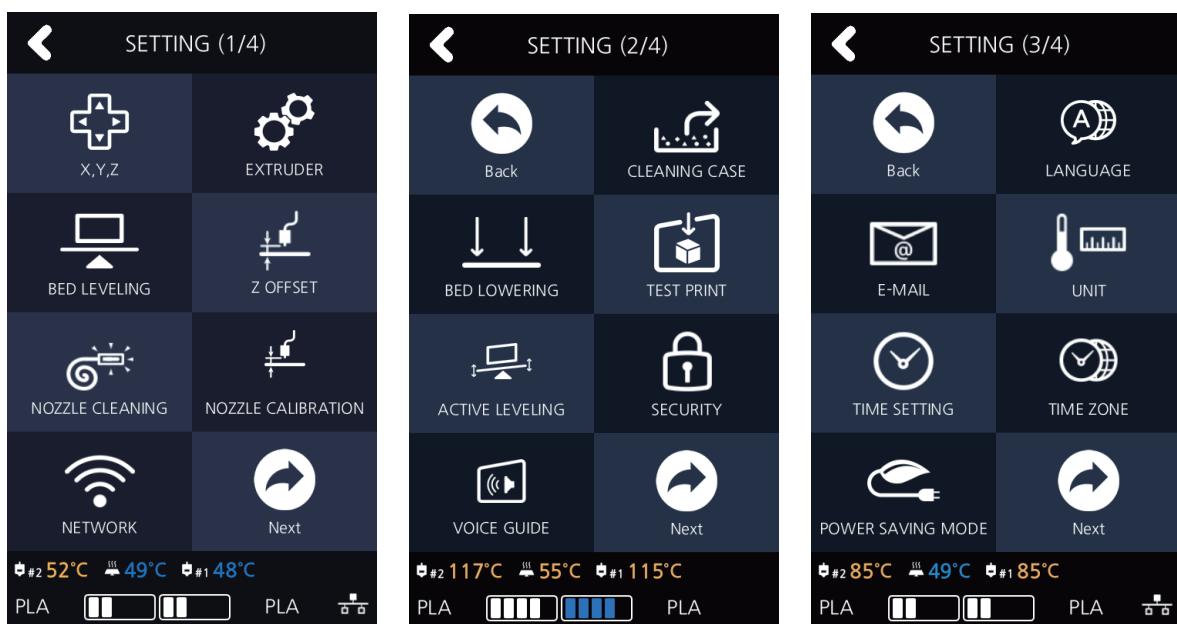
The printer takes an image of the current printing status and sends the information to the email address specified.

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

- From the home screen, press [SETTING].

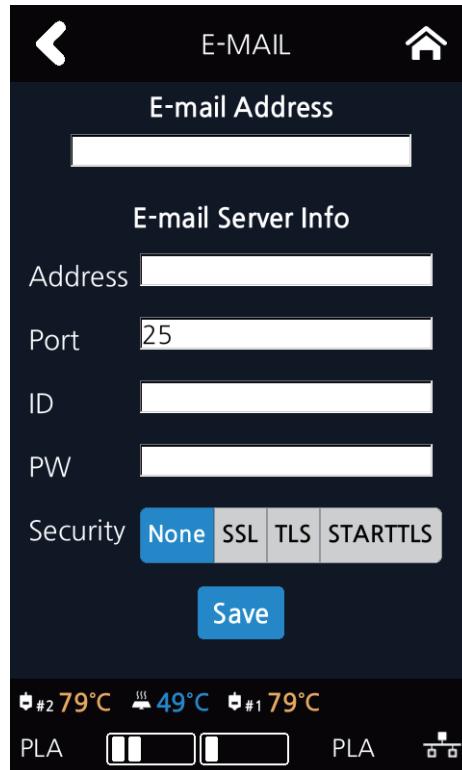


- Press the [Next] 2 times and select [E-MAIL].



- 3 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.



Catergory	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
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

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.

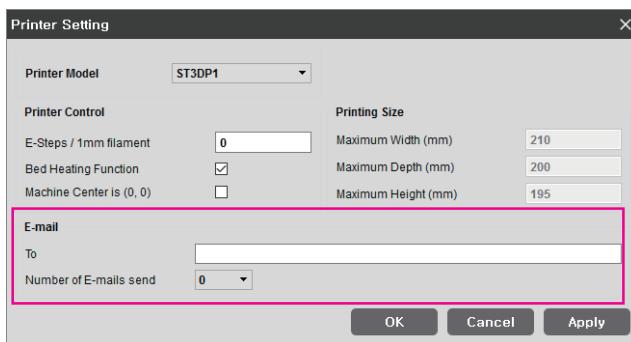
This setting is for the SMTP (Simple Mail Transfer Protocol) server to be used for sending emails. The SMTP setting may have to be enabled depending on the system.

2 UI Menu Function

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.

- 4 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; recipient2@test.com; 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.

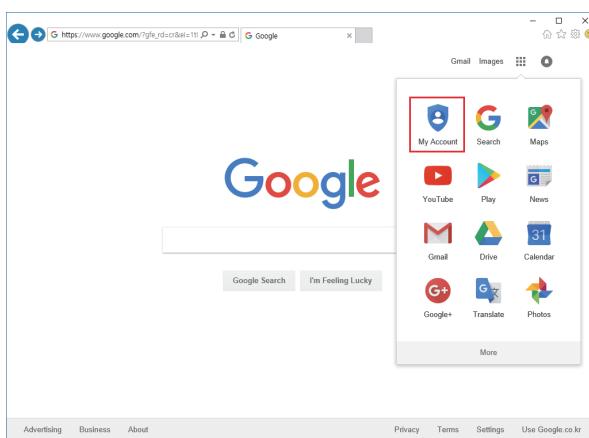
According to Gmail policies, the following settings have to be met.

□ Google account setting

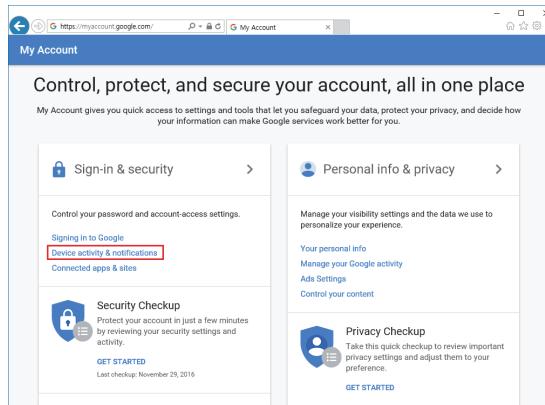
- 1 Log into your Google account that you are planning to use.

- 2 Click on the apps button on the top right hand corner.

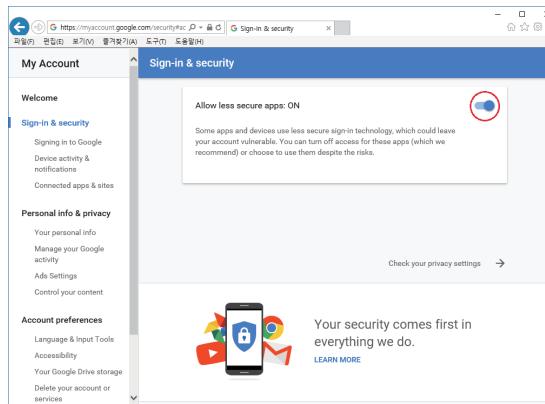
After click on "My Account"



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.**

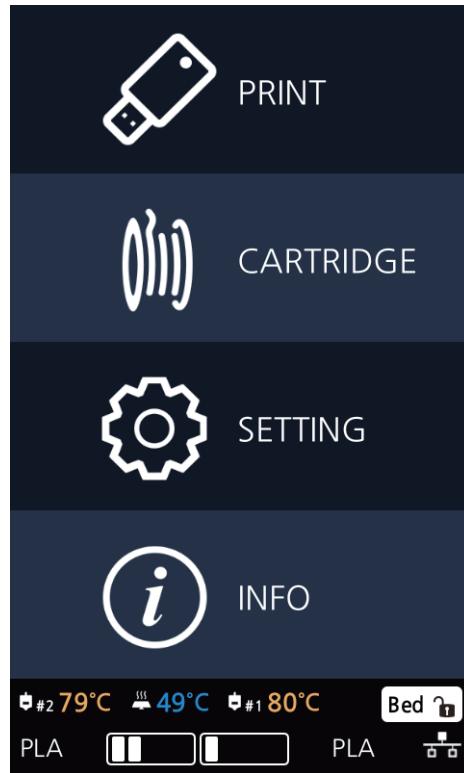
⚠ Caution

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

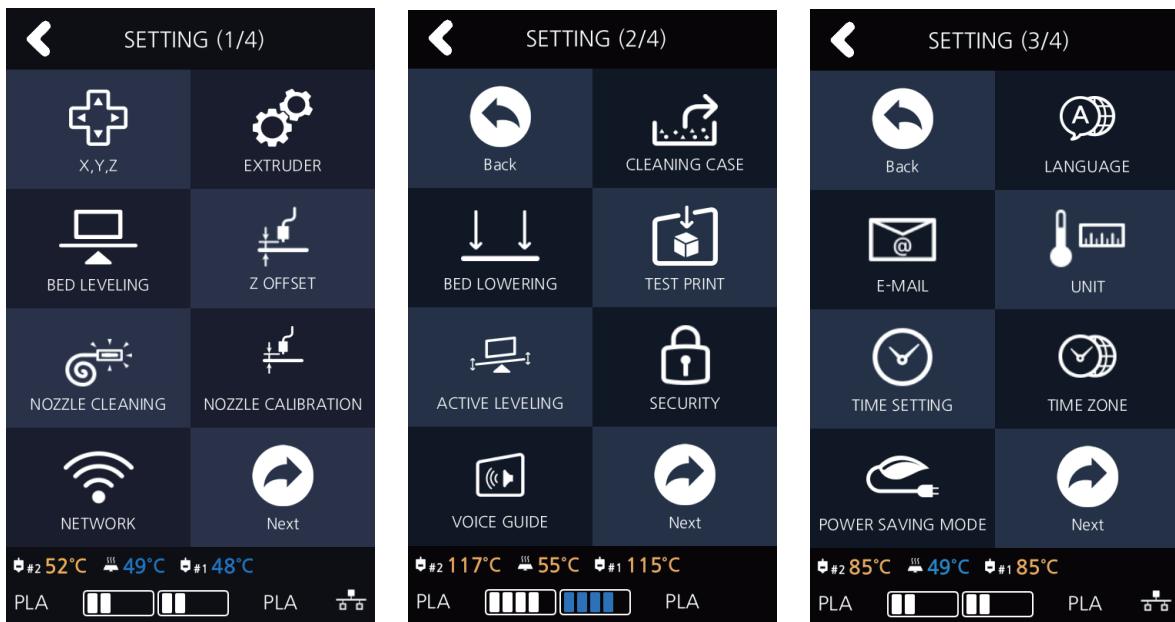
UNIT

Settings for the units of measurements displayed on the printer.

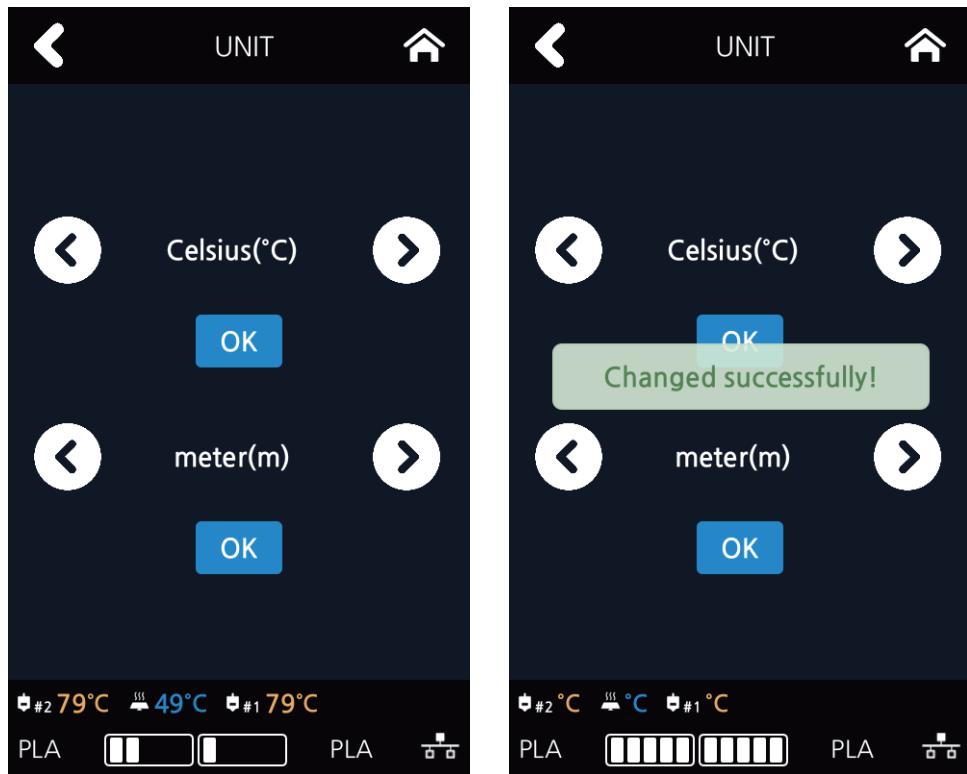
- From the home screen, press [SETTING].



- Press [Next] 2 times and select [UNIT].



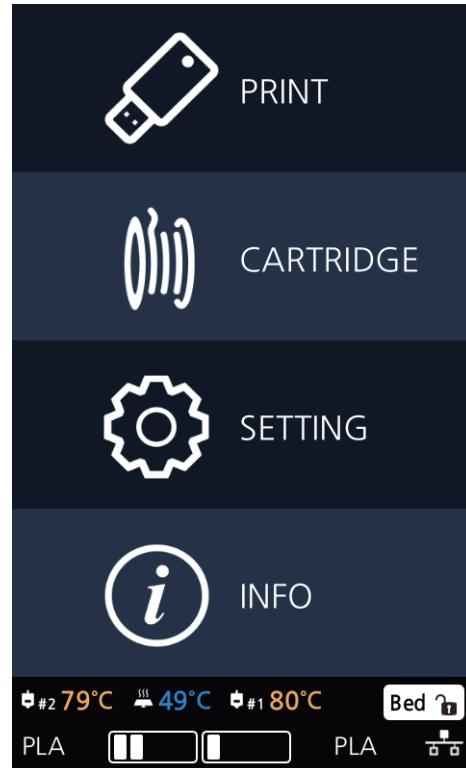
- 3 The units for temperature and length can be changed.



TIME SETTING

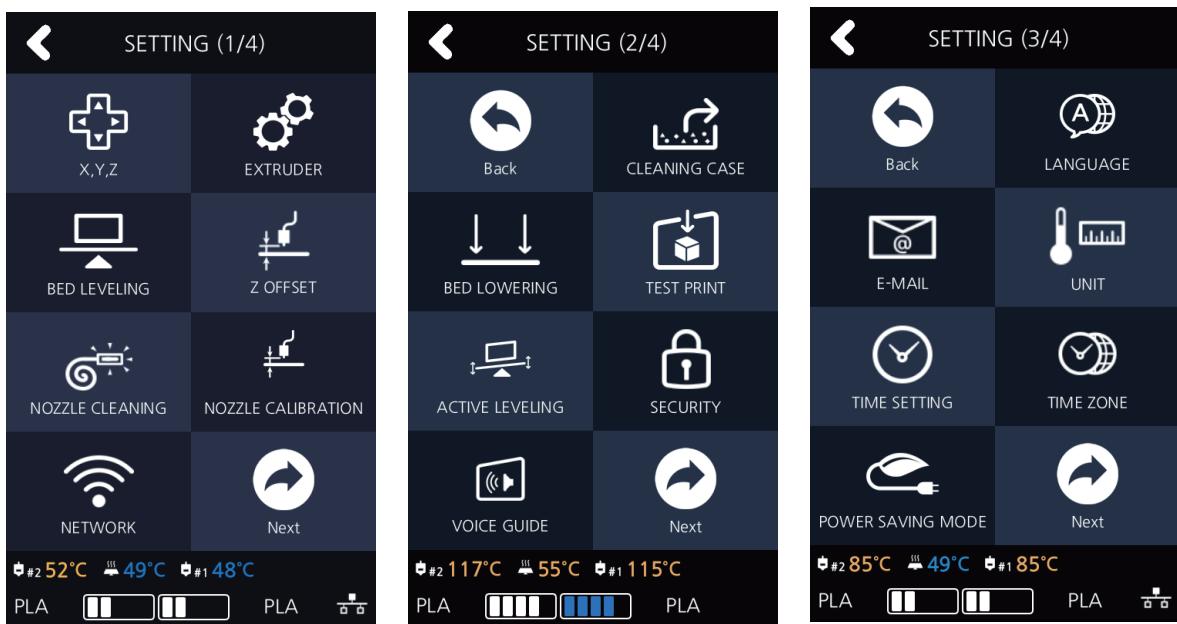
You can view or change the time setting.

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

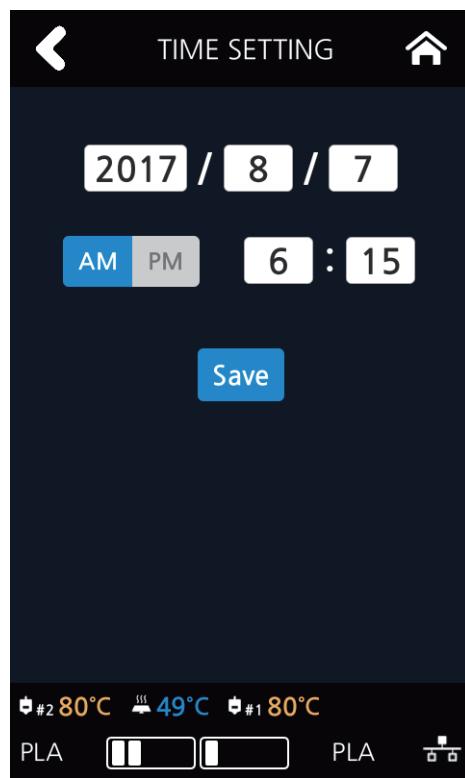


2 UI Menu Function

- 1 Press [Next] 2 times and select [TIME SETTING].



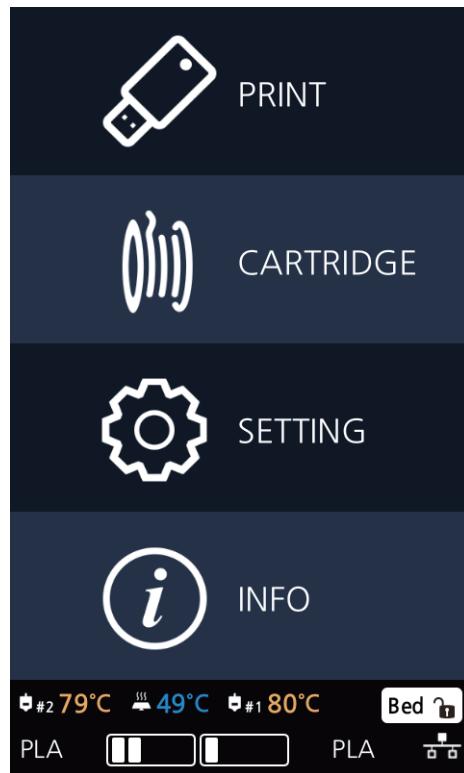
- 3 The time setting can be changed in this screen.



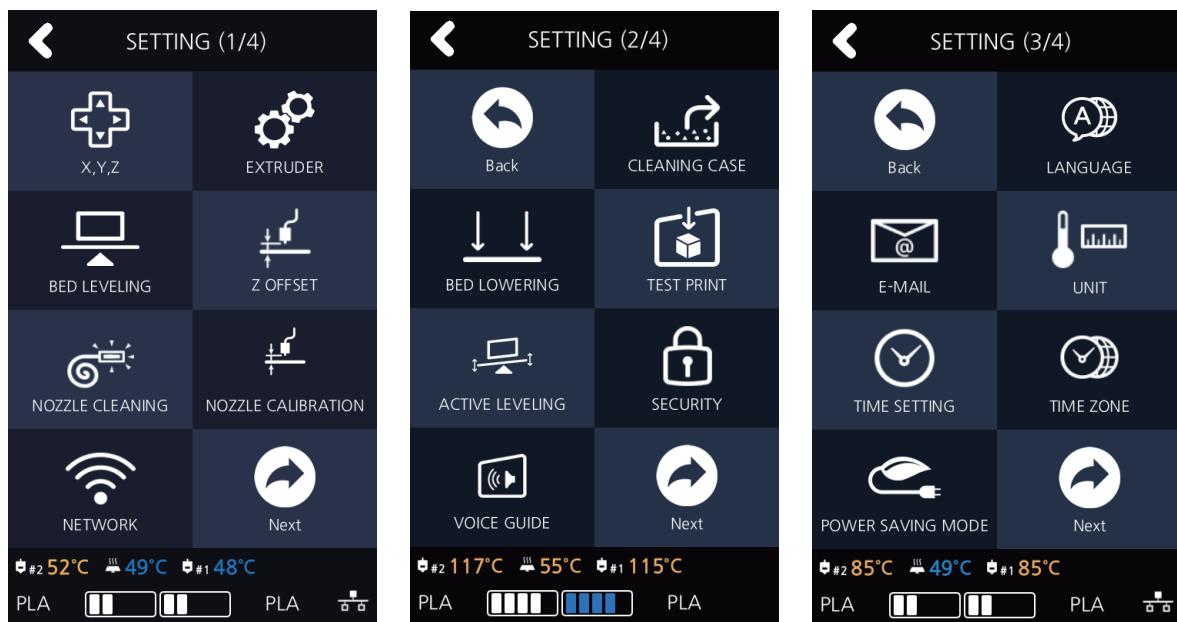
TIME ZONE

You can view or change the time zone setting.

- From the home screen, press [SETTING].

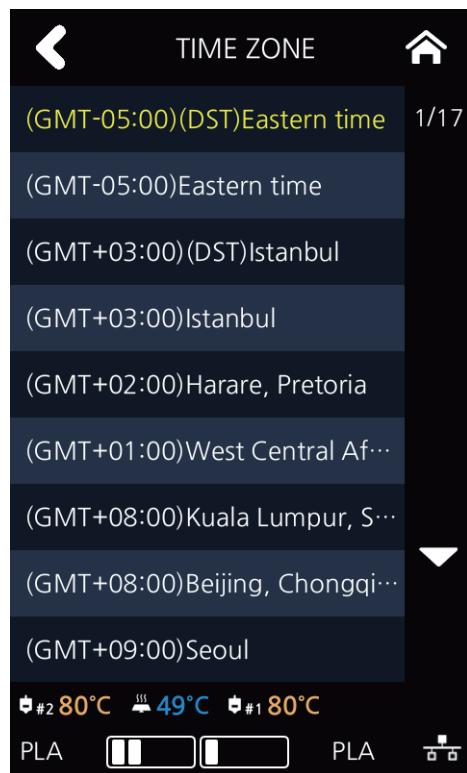


- Press [Next] 2 times and select [TIME ZONE].



2 UI Menu Function

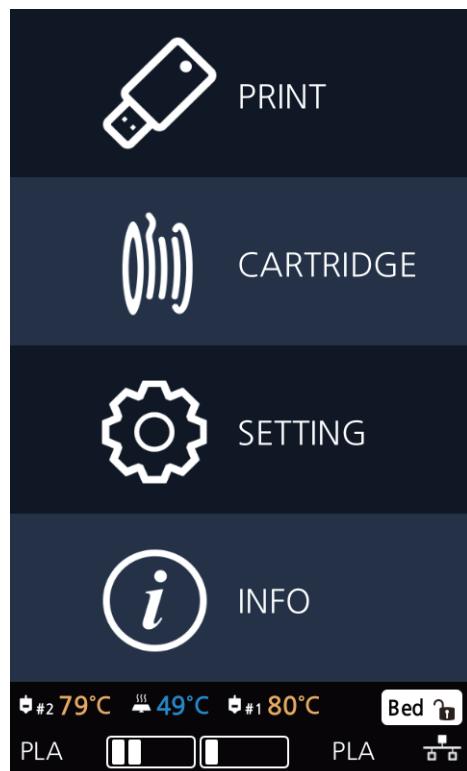
- 3 A preferred time zone can be selected from the time zone list.
Once Time Zone has been set, the printer will restart to apply the new settings.



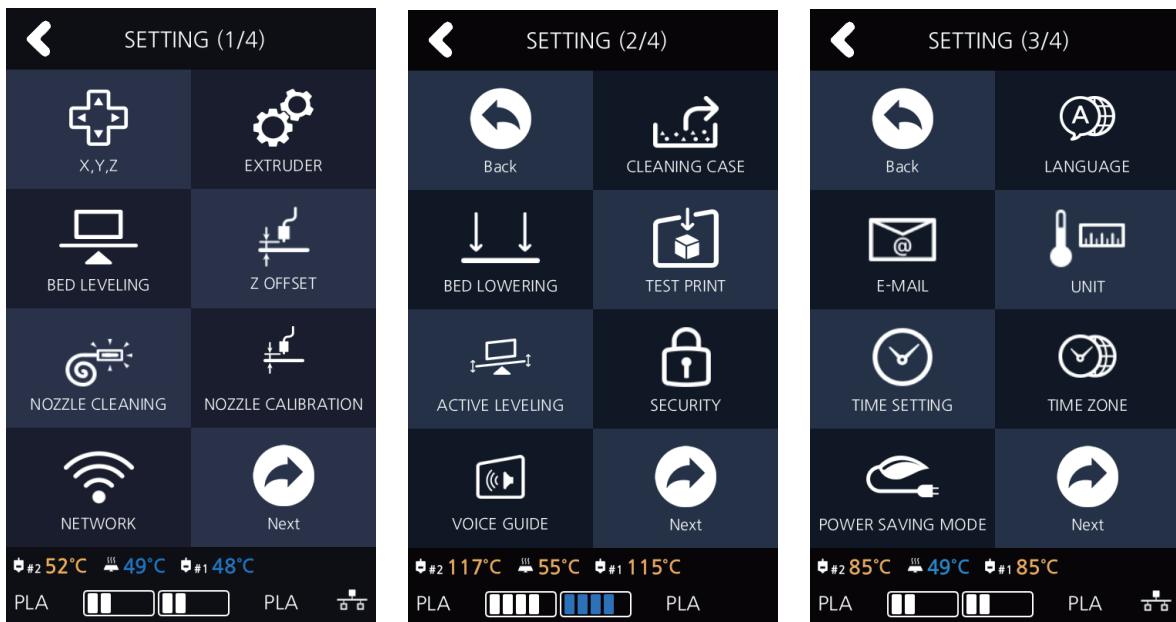
POWER SAVING MODE

Function to set timer for printer energy saver mode.

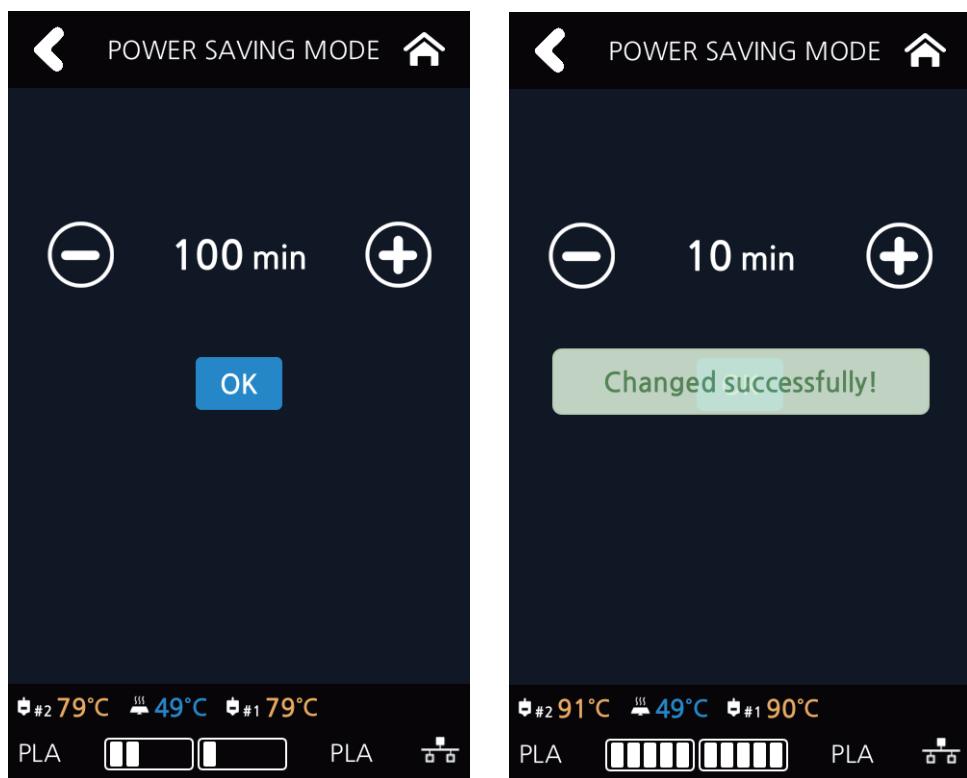
- 1 From home screen press [SETTING].



- 2 Press [Next] button to move to the next page and press [POWER SAVING MODE].



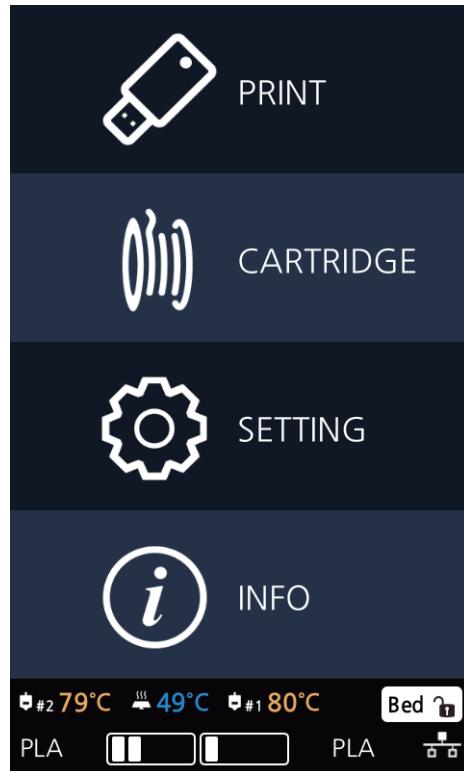
- 3 The adjustable values of energy savor mode are [0 ~ 100 min]. The time can be adjusted in 5 min unit, select the desired time using the [+, -] then press [OK] button to save changes.
- 0 Min : Do not use Energy Saving Mode
 - 5~100Min : Energy Saving Mode in 5 ~ 100 Min. of Inactivity.



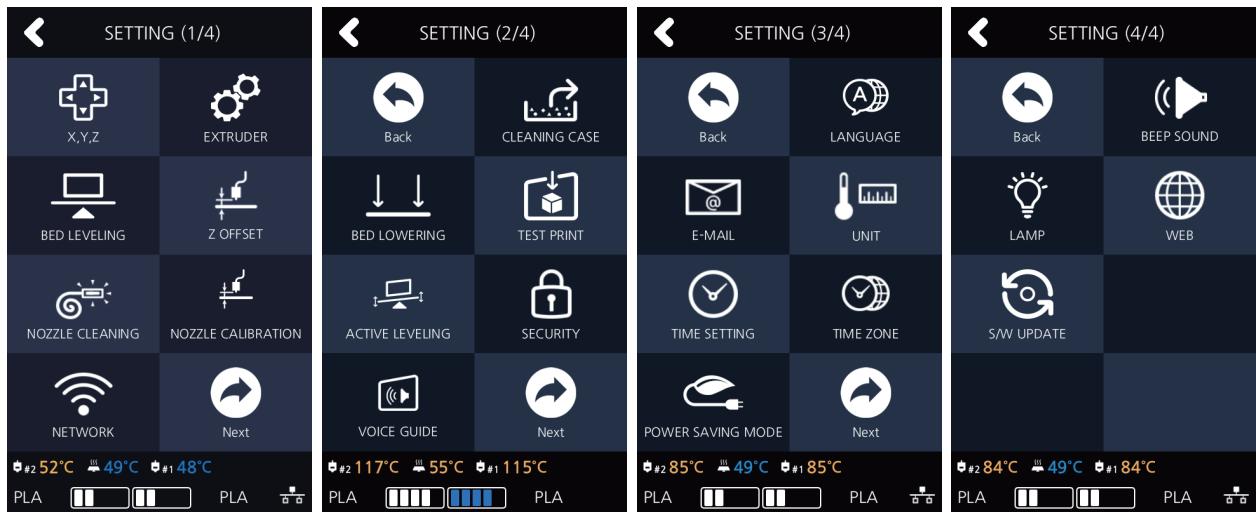
BEEP SOUND

The volume level of beep sound can be adjusted using this menu.

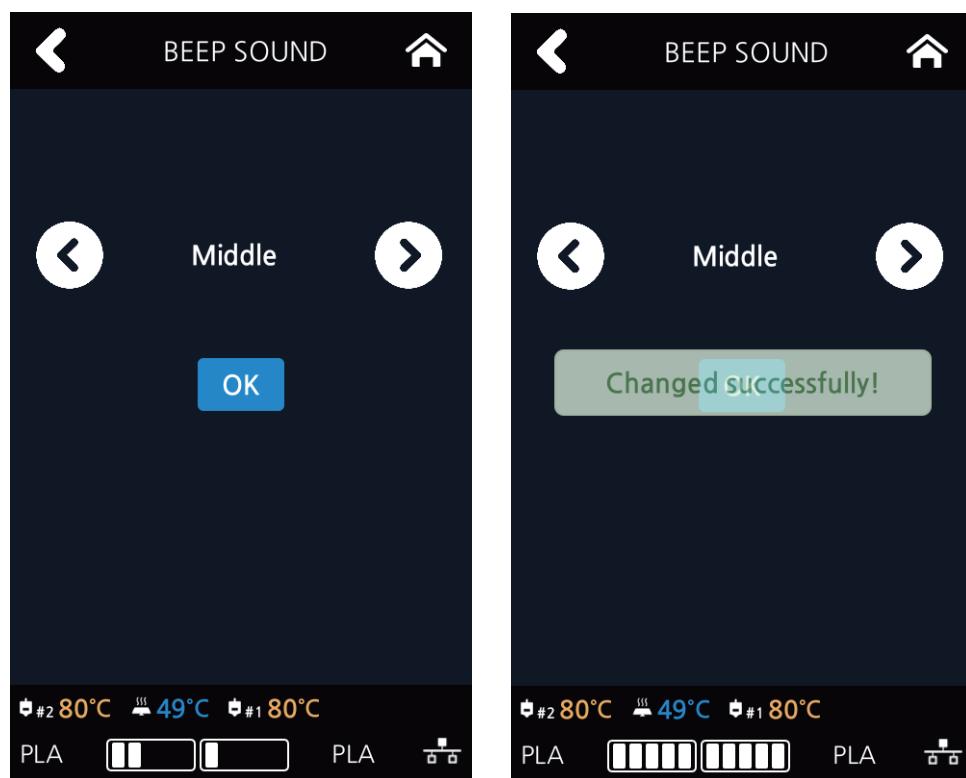
- Press [SETTING] button from the home screen.



- Tap on the [Next] button to move to next page, and press [BEEP SOUND].



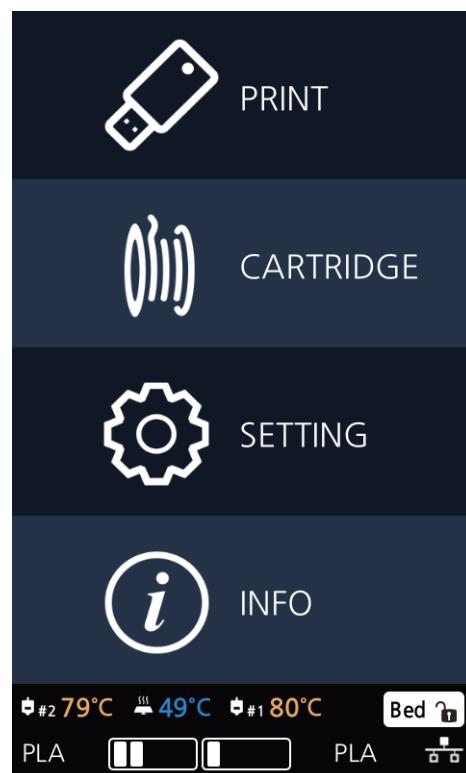
- 3 Currently available sound settings are Low, Middle, High and Off.
Select the desired setting and press the [OK] button to save settings.



LAMP

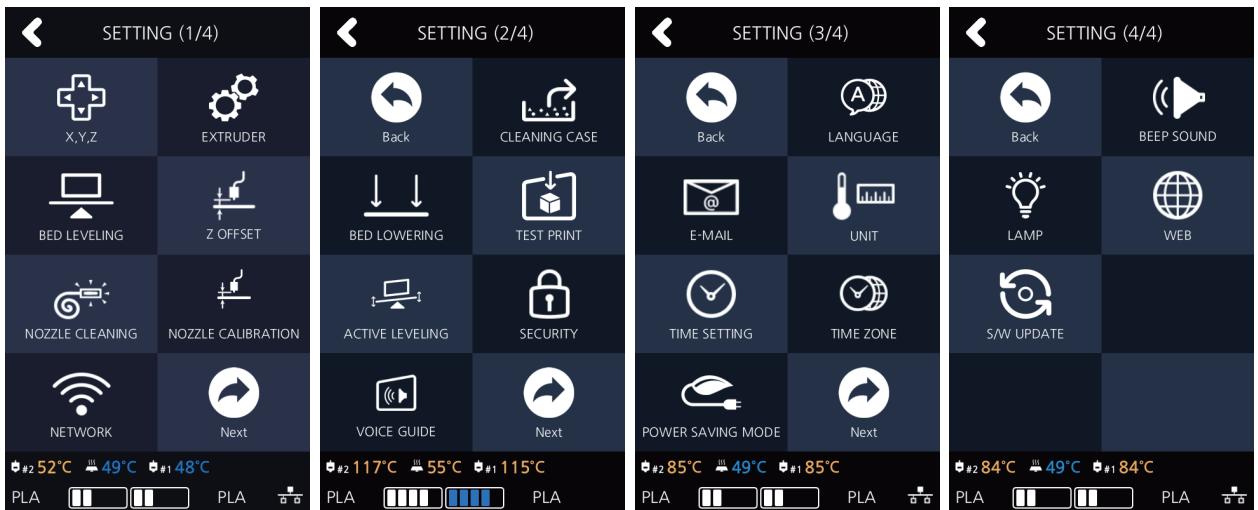
Menu to configure settings for machine lamp.

- 1 From home screen press [SETTING].

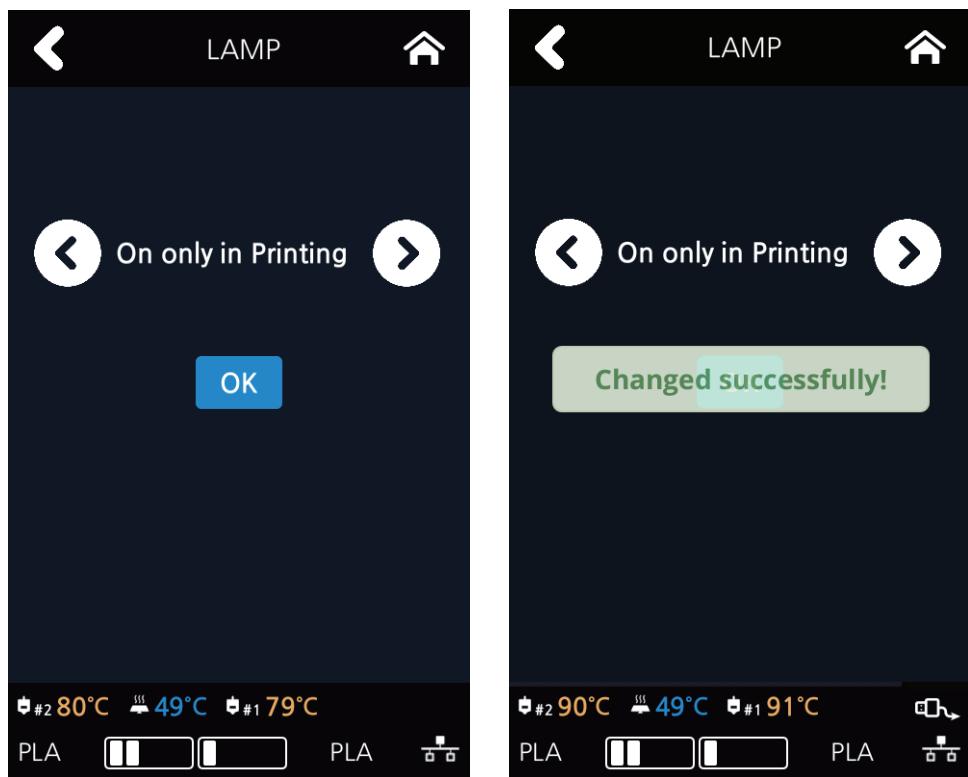


2 UI Menu Function

2 Press [Next] to enter [LAMP] setting screen.



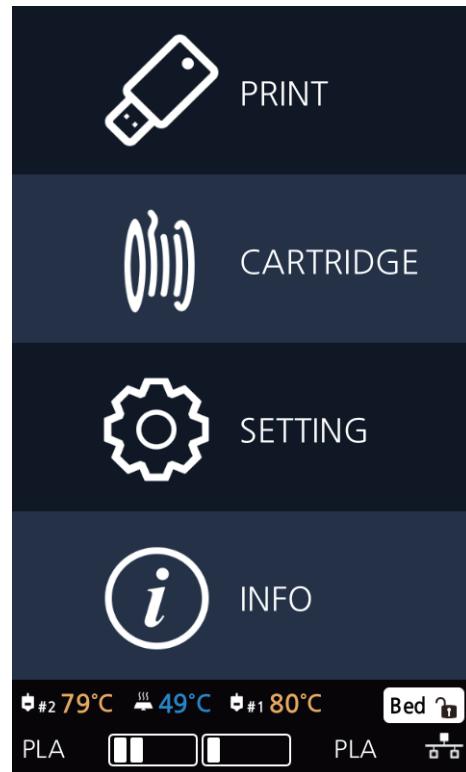
3 Settings available for [LAMP] are [Always On], [Always Off], and [On only in printing]. Use arrow buttons to select an option and press [OK].



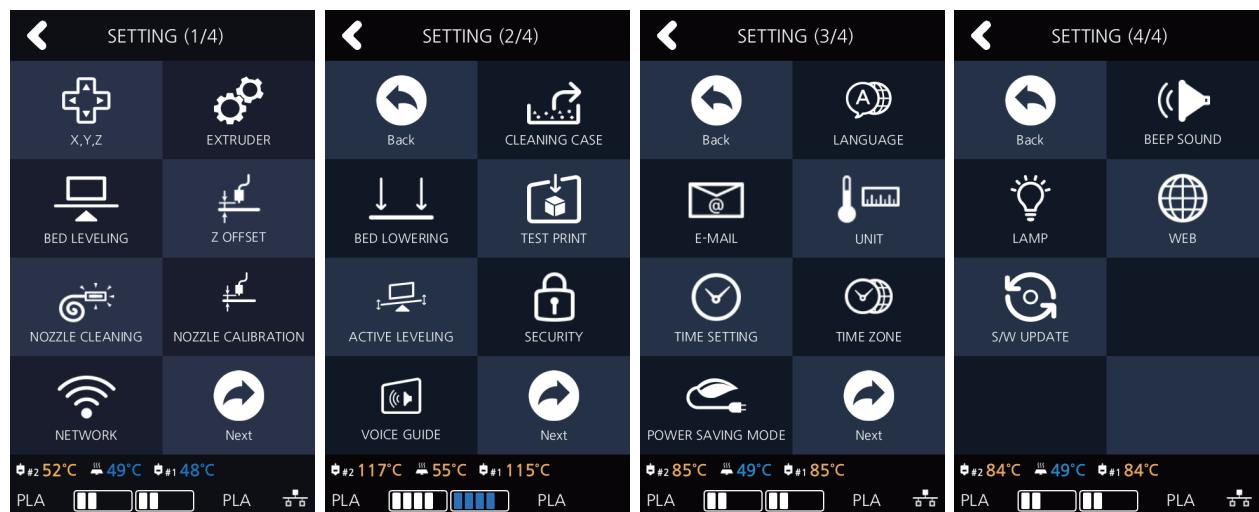
WEB

3dprinter homepage for the user to view.

- From the home screen, enter the settings menus by pressing the [SETTING] button.



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



2 UI Menu Function

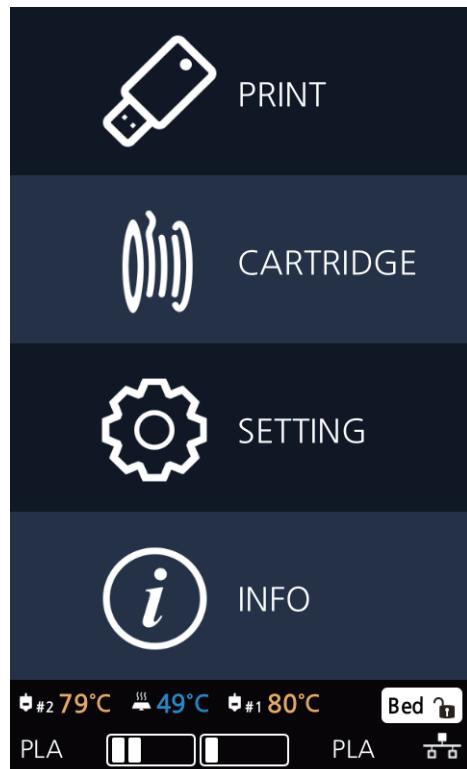
- 3 The 3dprinter homepage will be opened and user can view the information of user preference.
The company website address is <http://3dprinter.sindoh.com/>



S/W UPDATE

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

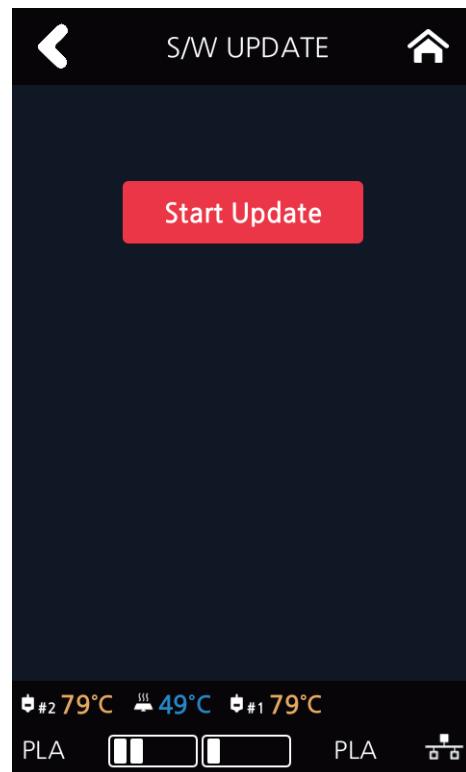
- 1 From the home screen, press [SETTING].



- 2 Press [Next] 2 times and select [S/W UPDATE].



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



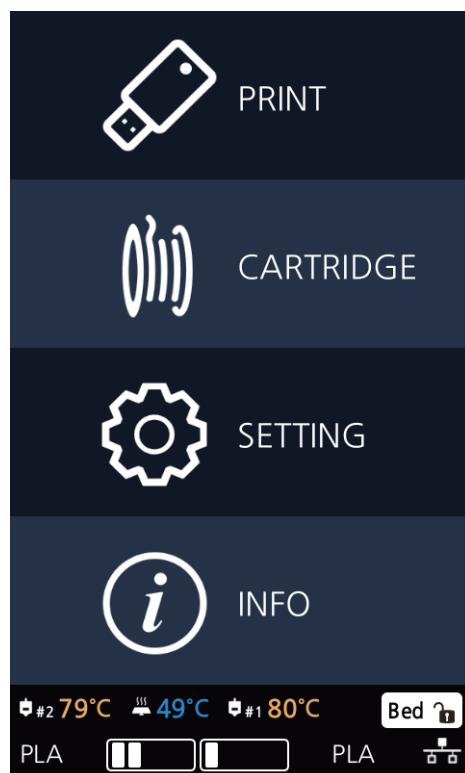
1.3 Information

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

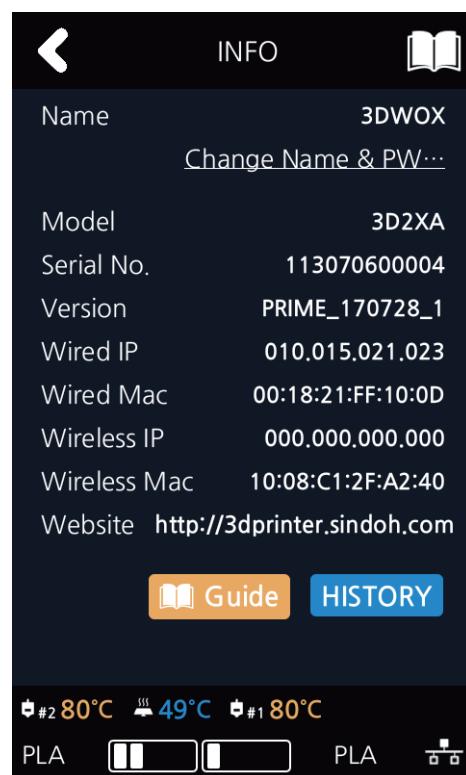
In this menu user is able to view the detail information of the printer, and set device name & password.

In [HISTORY] screen, user is able to view all the records of past works.

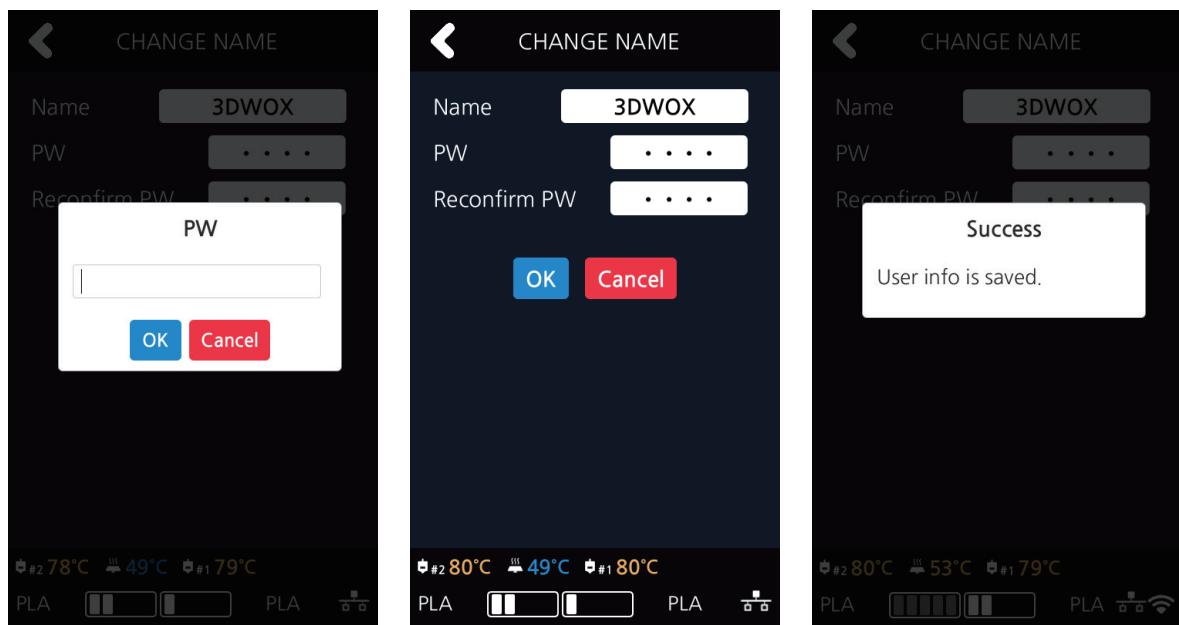
- 1 From home screen, press [INFO].



- 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 [OK] saves the changes.

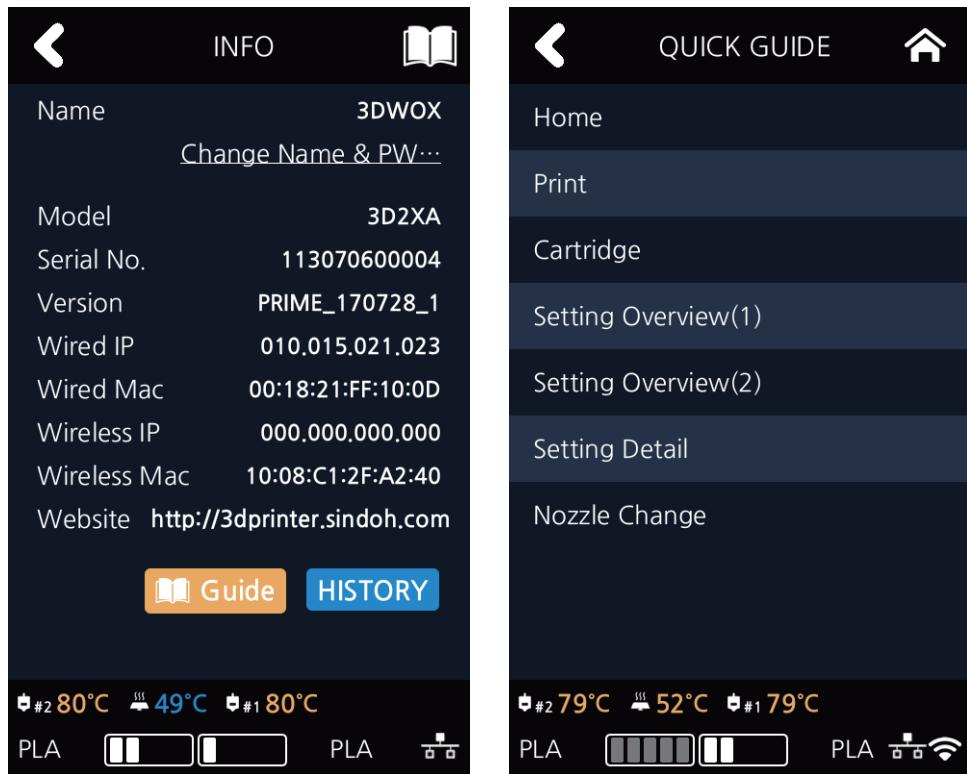


Reference

- *Initial password is '0000'.

2 UI Menu Function

- 4 In [INFO] screen, press [Guide] to access to the "Quick Guide" for the printer.



- 5 Other useful information is also available in [INFO] screen.

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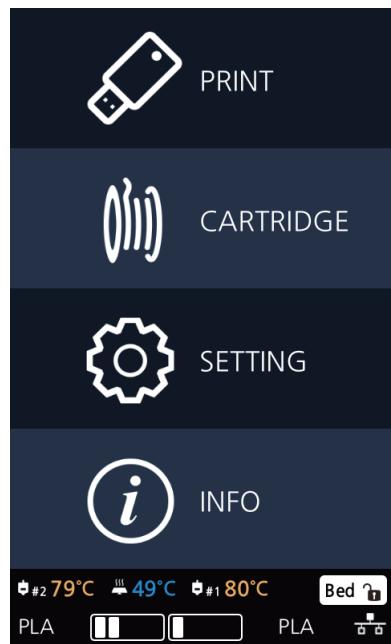
Printing

3

1. Printing

User can print printables via USB flash drive, USB cable, or over the network.

The following on the printer means it is ready to start print.



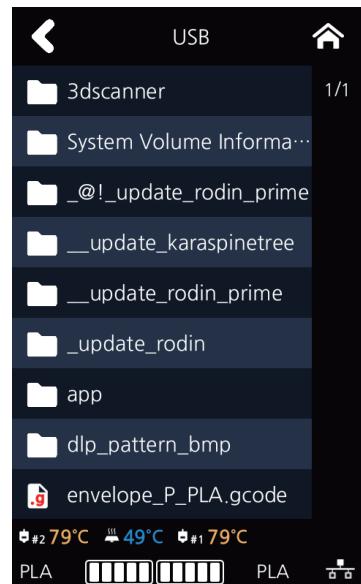
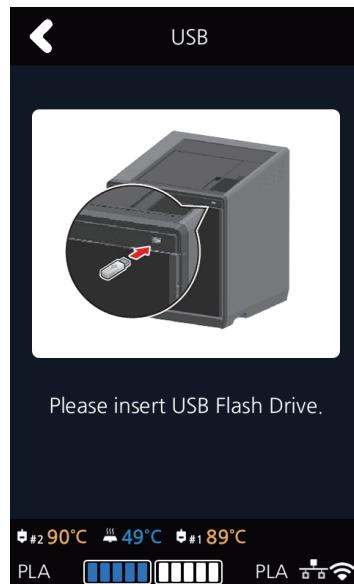
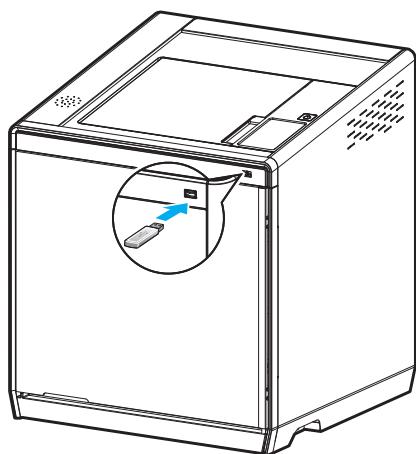
1.1 Printing from USB Flash Drive

- 1 Connecting USB flash drive to the printer.

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

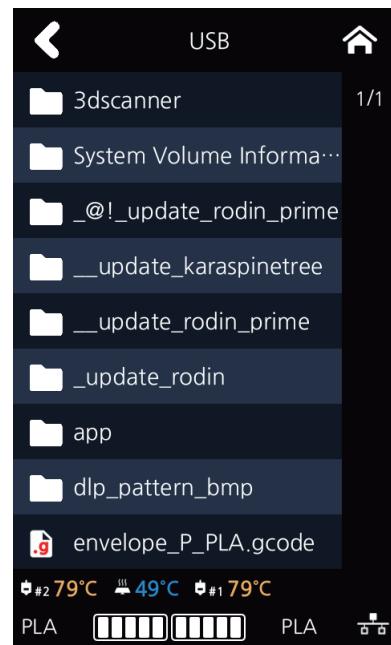
When the USB flash drive is connected while in the home screen, a list of files in the USB appears.

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

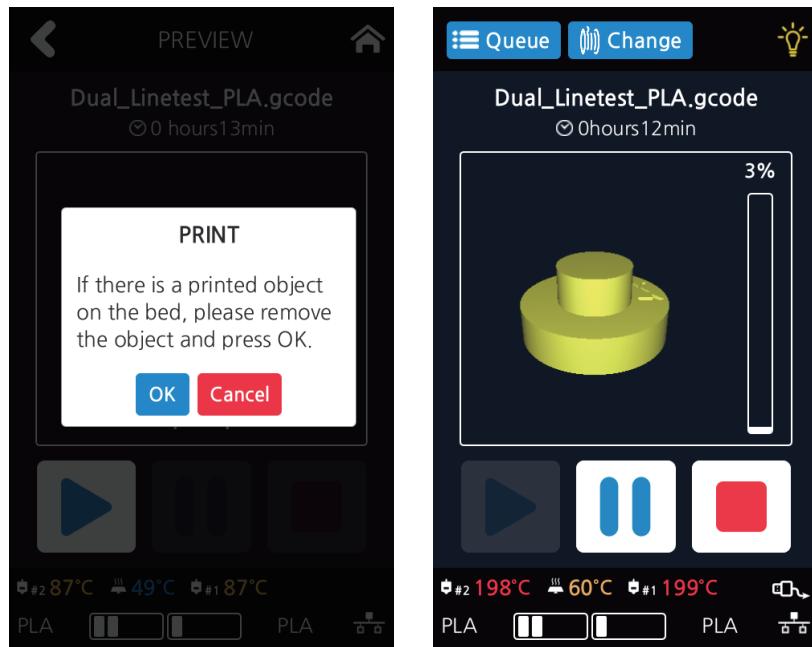
Once selected, a preview of the model appears on the screen.



3 Printing

4 Printing

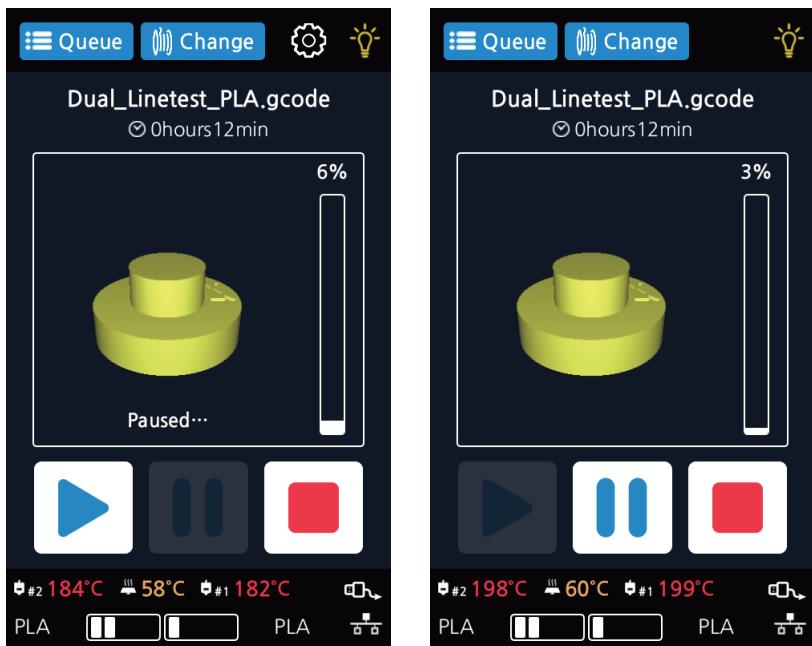
Once [▶] is pressed the nozzle starts to be heated. When the specified temperature is reached, the printing starts.



5 Pausing Print

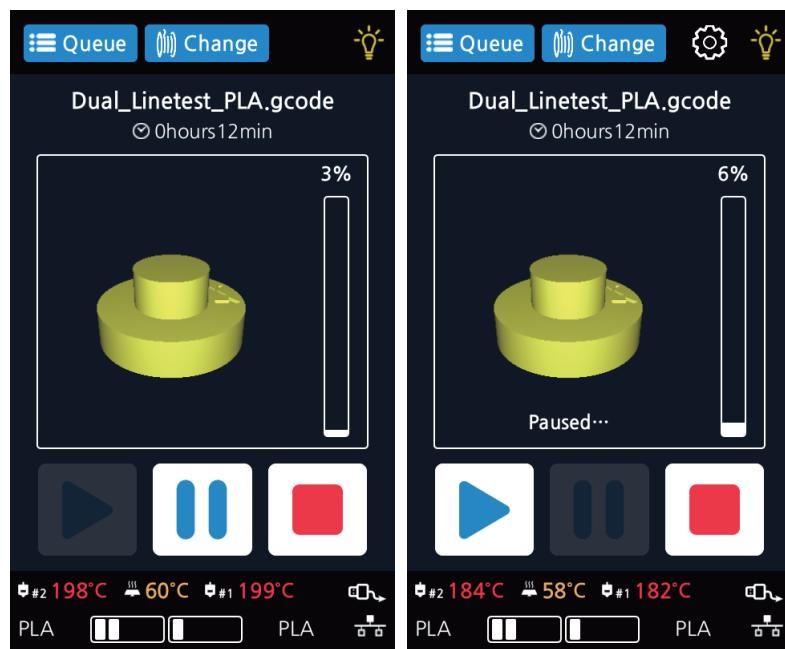
Pressing [⏸] during a print will pause the progress.

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

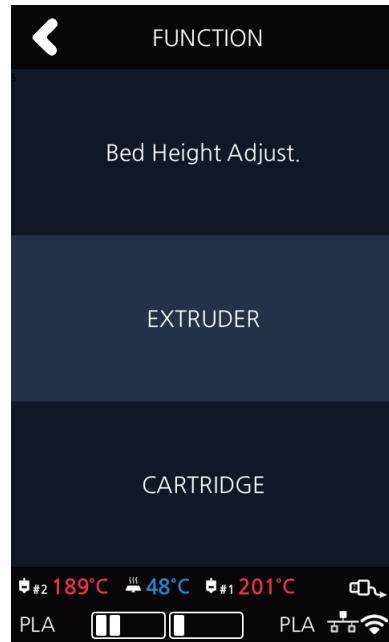


6 Additional Functions of Pausing

Press the [II] button during printing to pause it, and then press the [Setting] icon to run additional functions.

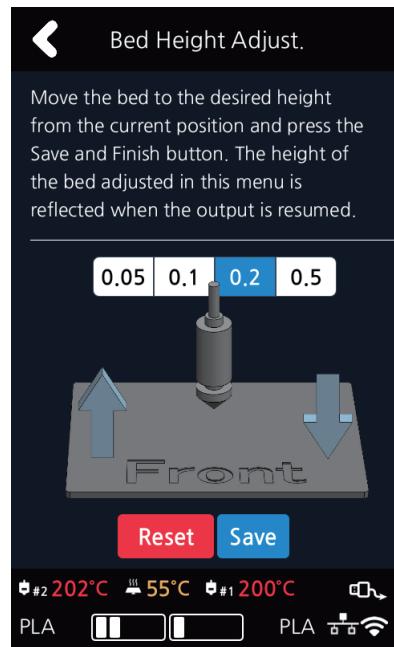


These additional functions include **[Bed Height Adjustment]**, **[Extruder]**, and **[Cartridge-Load, Unload, and Unlock]**. These additional functions are used for any mechanical problem or if the user needs them.



■ 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.

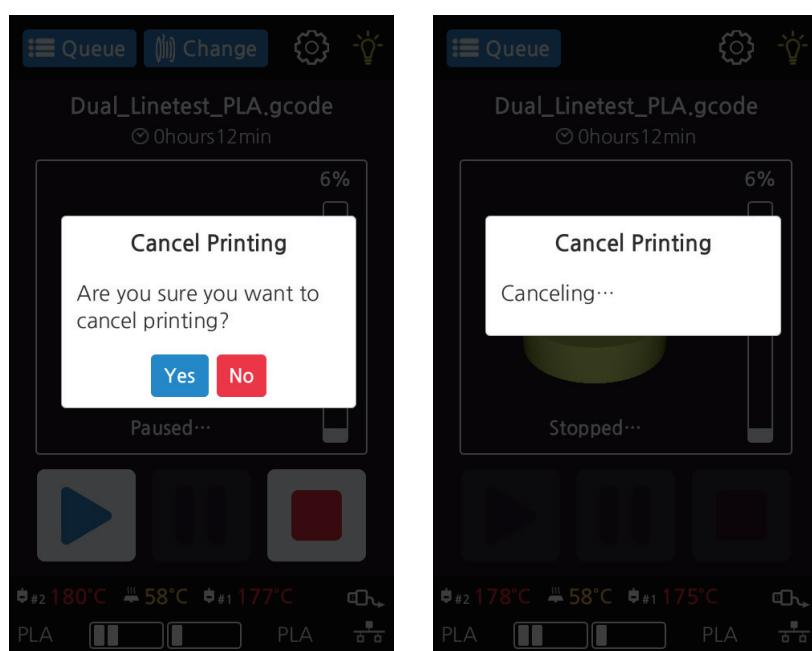
7 Exchanging Cartridge during print

Press [**Change**] to switch the currently using cartridge into a different cartridge.

8 Print Cancellation

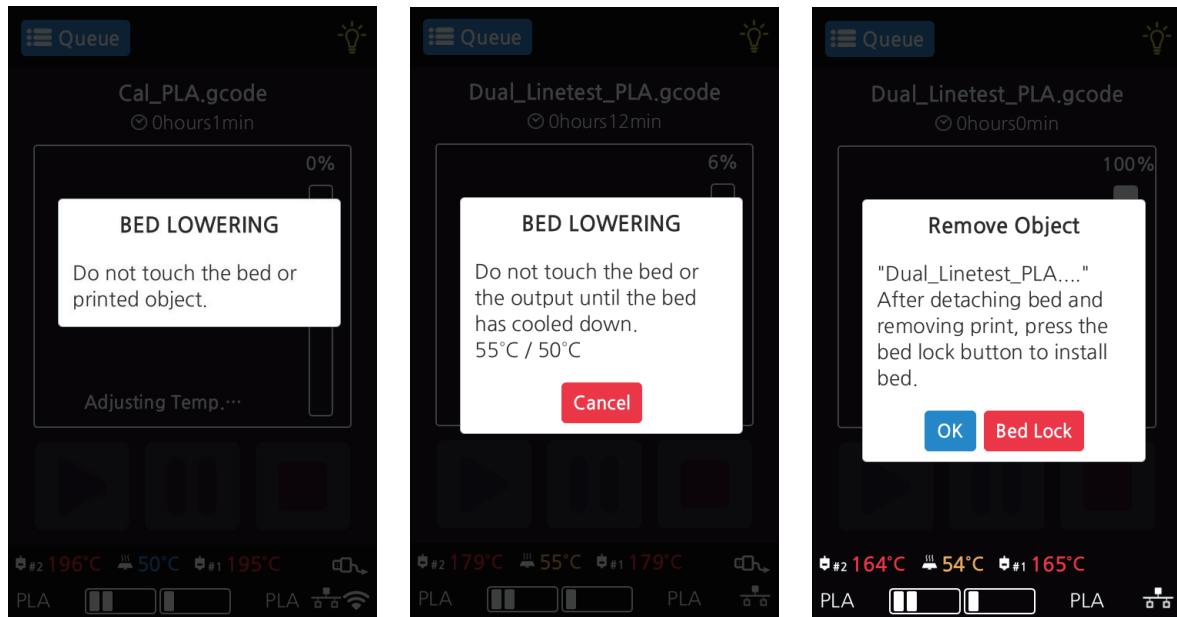
During print pressing [] button a message pops up and asks for confirmation on the print canceling.
When confirmed, the rest printing job is canceled.

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)

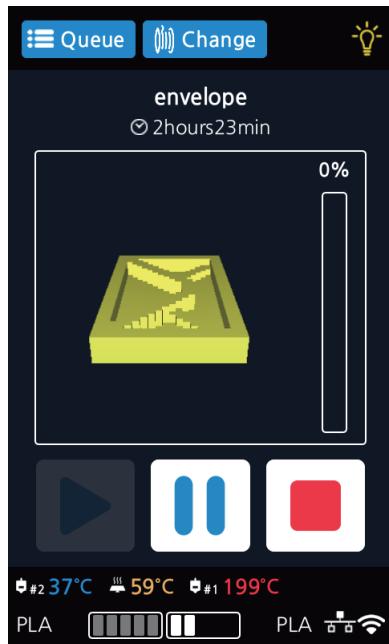
Note

- Pause, print cancelation, please refer to "USB printing" section.

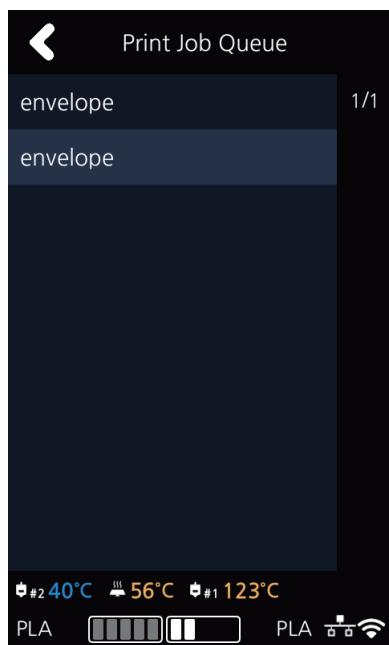
1.3 Print Job Management

You can manage print jobs in queue.

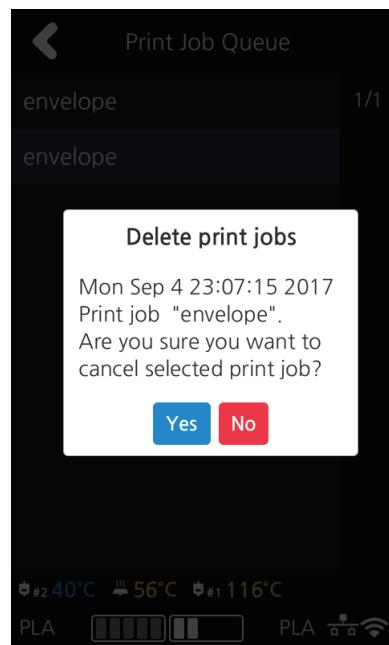
- 1 Press the [Queue] button on the upper left hand corner while printing.



- 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 and PLA
- ABS and ABS
- FLEX and FLEX

- 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	O	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.

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USER MANUAL

Printed Output Check

4

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

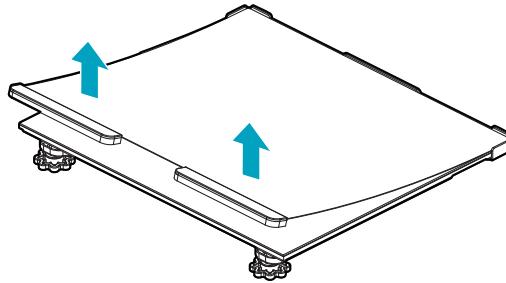
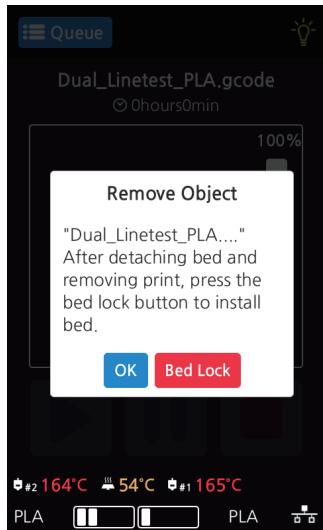
- Without sufficient cooling the bed can be very hot. Please be cautious coming into contact . It may cause burns.

1 Cooling the Bed

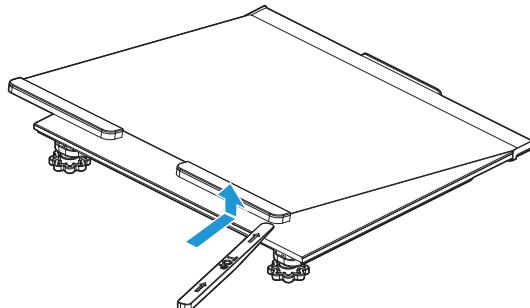
After the printer has finished printing, check the LCD screen and built-in speaker. Wait until temperature goes below 50°C or 122°F. Do not touch the bed or the bed handle until you are told you can touch the bed.

2 Detaching Bed

Press [Bed Lock] on the screen to fix the bed in place. 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 hera in a direction of lower left corner of the bed as shown in the picture.



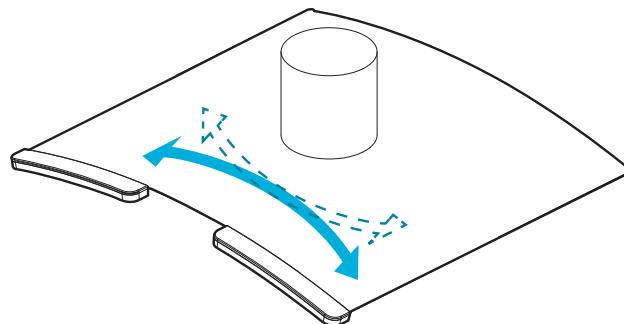
3 Detaching the printed output

⚠ 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.

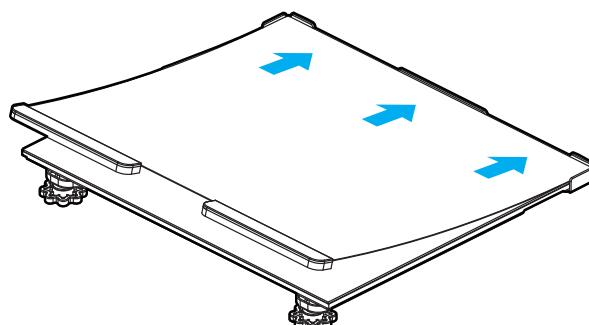
Be careful not to apply too much pressure while using the scrapper could damage the bed sheet and the bed. Depending on the filament material the printed output may easily break or damage, please be cautious.



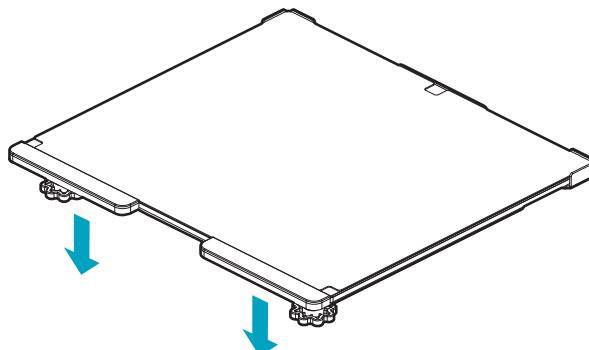
4 Flexible Bed Installation

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 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	40 °C ~ 60 °C
ABS	210 °C ~ 240 °C	Above 80 °C
FLEXIBLE	210 °C ~ 240 °C	50 °C ~ 60 °C
PVA	190 °C ~ 210 °C	50 °C ~ 60 °C

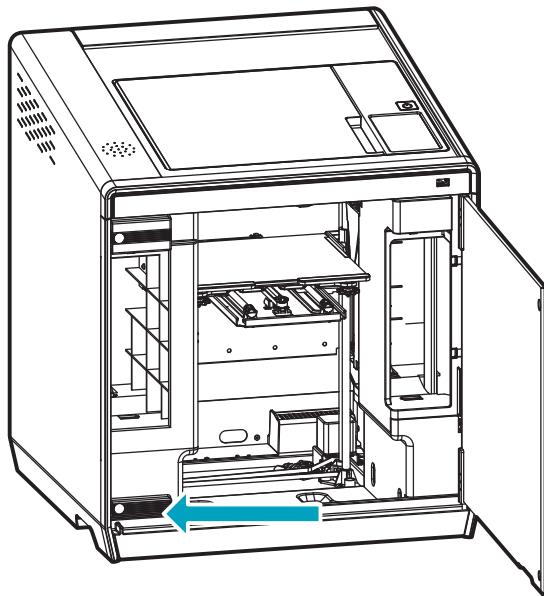
2 Support

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.

2. When Printer Cannot be Turned On

- 1** Open the Front door shown below and turn the belt counter-clockwise.
- 2** After the bed is lowered, remove printed output and turn the power on.



3. If problems persist

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

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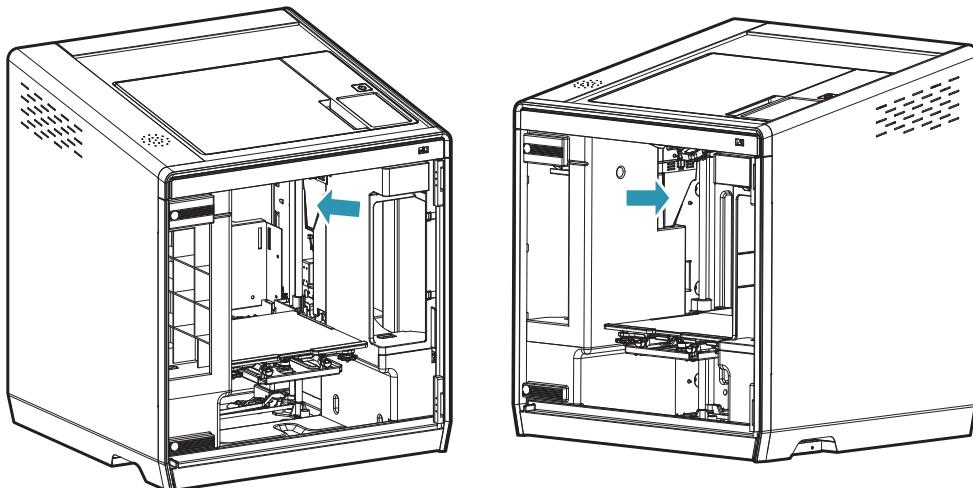
Maintenance

5

1. Machine Cleaning

1.1 Cleaning Case Maintenance

- 1 On the LCD, if a message requesting for the cleaning of the cleaning case pops up, detach the cleaning case and clean all the filament residue inside the case.



- If in need for further cleaning, on the menu, under settings, select cleaning case. The cleaning case can be detached.

1.2 Printer Interior Cleaning

Over time, there will be a build up of filament residue within the printer.

If the residue goes into conveyor belt or fan wings, it can cause printer malfunction.

Please clean the inside of the printer regularly or right after a print job.

1.3 Periodical Inspection

Oil/Grease Inspection

During manufacturing grease/oil is applied to the gears.

After a period of time, grease and oil can dry and cause printer noises during operation.

At least once a month inspect the condition of grease and oil.

Especially, If printer begins to make noises during operation, immediately check if oil and grease are applied properly. If necessary contact service center for inspection.

1.4 Flexible bed and Nozzle Cleaning

If there are filament residue or foreign matter on the exposed surface of the metal on the bed or on the end of the nozzle tip, Bed leveling may not work properly and the output quality may be affected due to foreign matter.

Regularly clean the metal exposed surface of the bed and the tip of nozzle.

1.5 Cleaning the inside of the Nozzle

The leftover in the nozzle interferes with filaments transfer. This interference can cause problems with printing and filament loading.

The leftover makes the printing filament uneven or clogs the nozzle.

Once melted, the filament can have different properties from the original.

If the leftover in the nozzle is repeatedly heated / cooled, the properties will be changed.

The changed leftover is harder to pull out, and easily stacked in the nozzle.

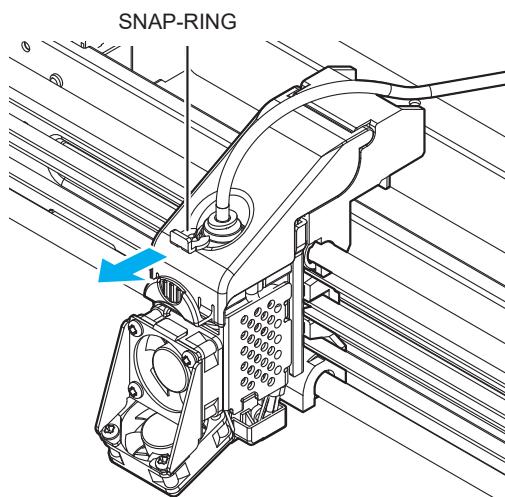
Therefore, it is recommended to clean the nozzle regularly if you want to use nozzle for a long time.

Nozzle cleaning is recommended when replacing it to another material of filament. This is because each material has different properties.

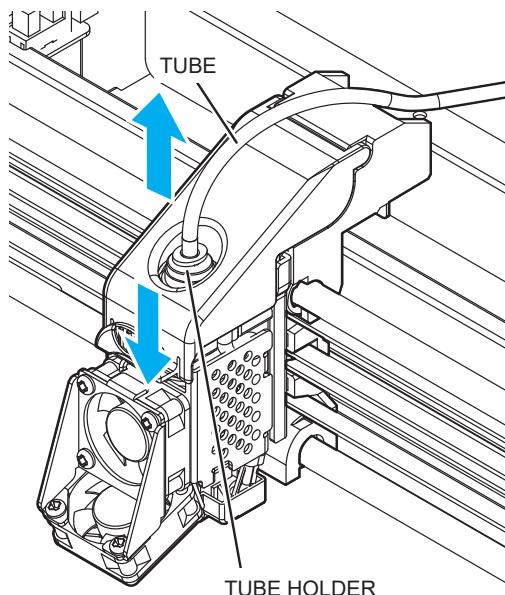
Especially, be sure to clean the nozzle before and after using PVA or flexible material.

Please clean the nozzle as the following instruction.

- 1 Remove the snap ring from the nozzle.

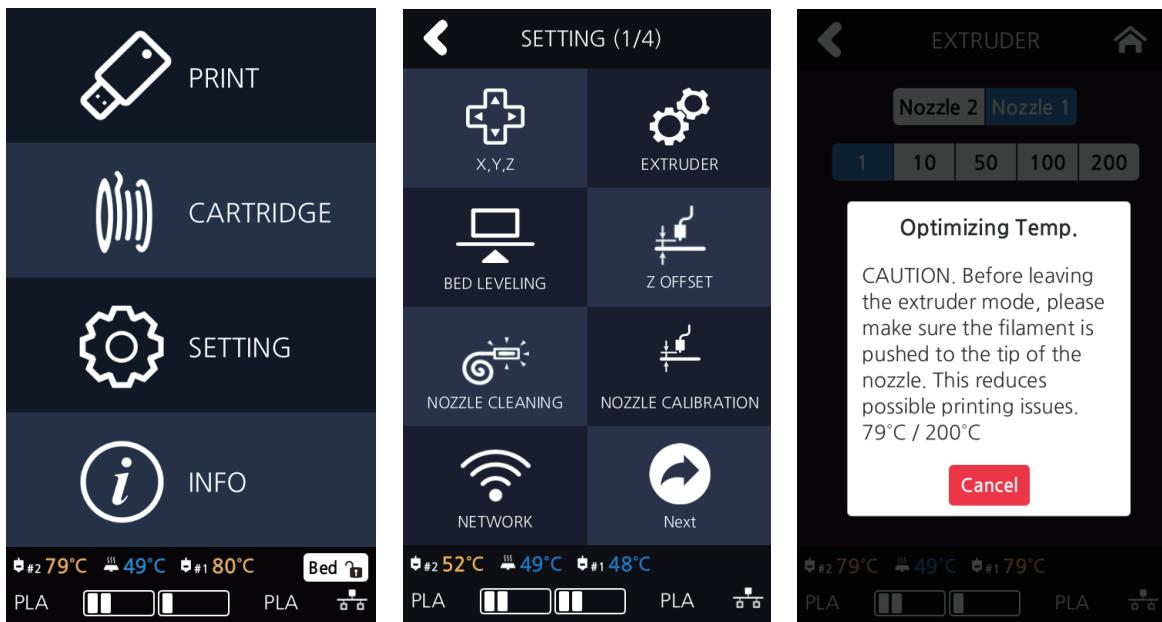


- 2 Remove the tube from the nozzle.

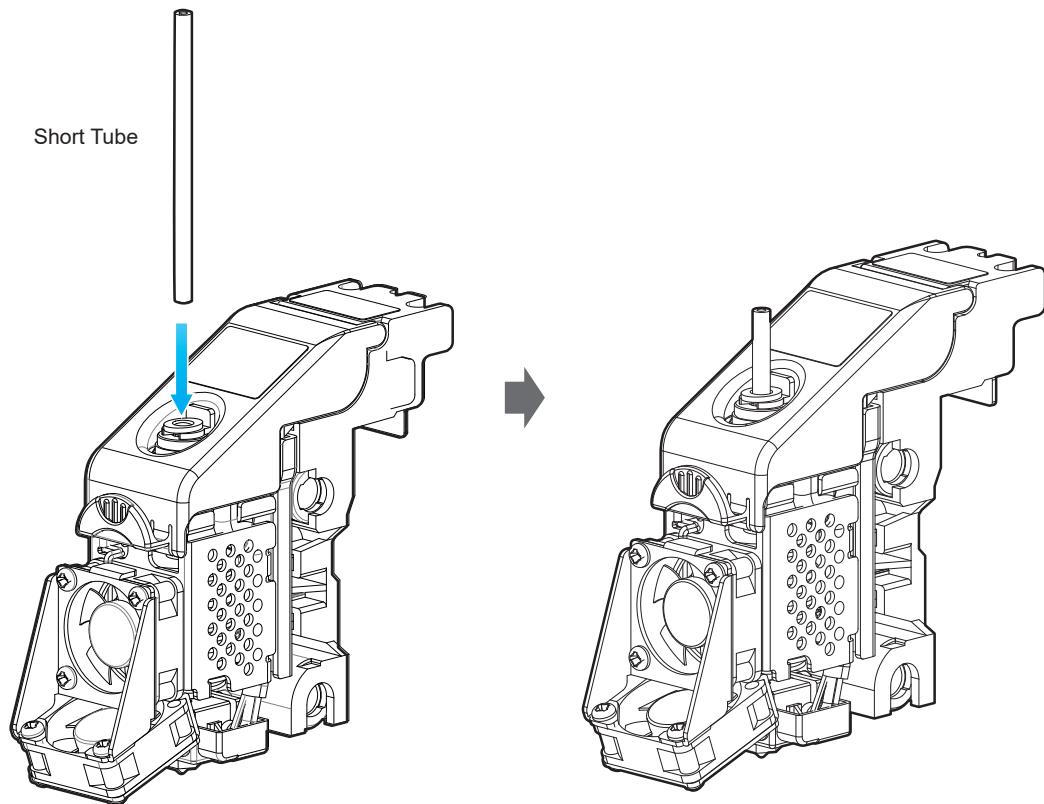


5 Maintenance

- 3 Press [Setting] - [Extruder] to enter Extruder mode.



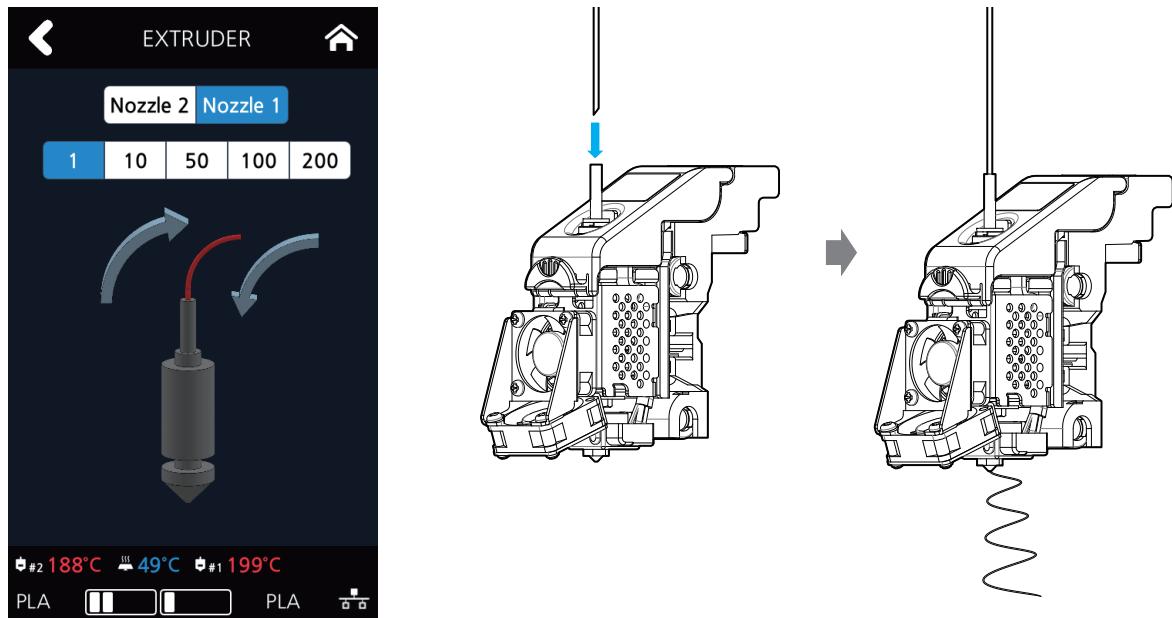
- 4 After positioning the nozzle in the center, insert the enclosed short tube into the nozzle.



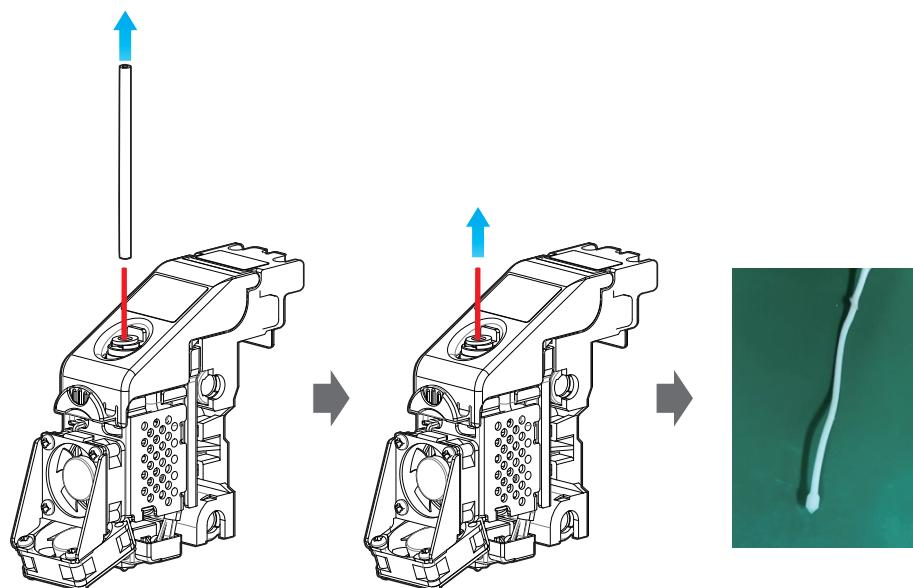
- 5 After reaching the target temperature of the extruder mode and the UI screen appears as below, insert the **PLA filament** into the tube and let it out through the nozzle.

 **Note**

- White PLA filament is recommended for nozzle cleaning. It is easy to see that contaminant come out from the nozzle. The properties of the material are slightly different for each filament color.
- Using non-white PLA filaments can cause filaments to break when pulling out the filaments.



- 6 Press the home button in the UI to lower the temperature of the nozzle. Slowly push the PLA filament until the nozzle temperature is 180 °C.
- 7 If the nozzle temperature is between 80 ~ 90 ° C, remove the tube and pull out the PLA filament.
(If the PLA filament is disconnected inside, retry extruder mode and repeat the each procedure from step 5.)



5 Maintenance

8 Repeat from step 2 until the filaments are free of contaminants as shown below.

If cleaned filament comes out with no contaminants as shown in the figure on the left below, the nozzle cleaning is complete.



Cleaned Filament



Contaminated Filament

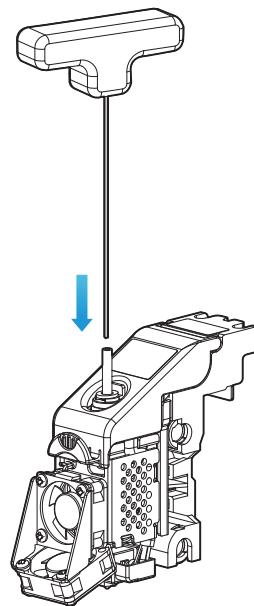
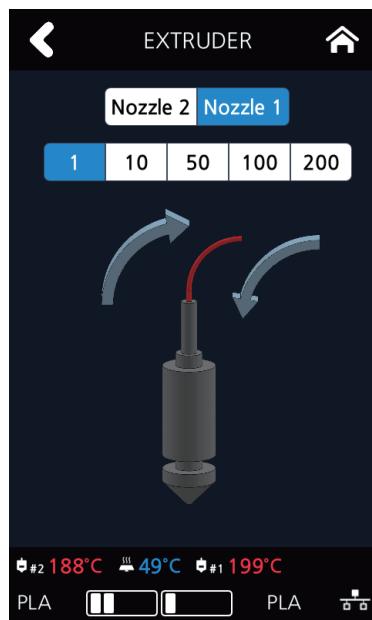
USING NOZZLE CLEAN TOOL

If the filament does not come out of the nozzle well in step 5, proceed as follows.

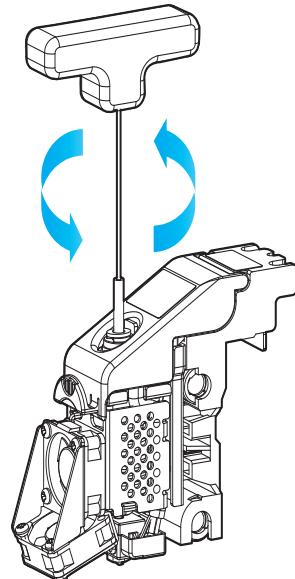
Once you have completed the steps below, proceed to step 5 again.

A. Using Nozzle Cleaner

1 When the UI shown below is displayed, insert the nozzle cleaner into the nozzle tube.



- 2** Slowly turn left and right while pushing the nozzle cleaner inside the nozzle so that the inside of the nozzle can come out.



△ Caution

- When you pull out the filament, if you can not pull it out well, please heat the nozzle after removing it.

B. Using Nozzle Spring Pin

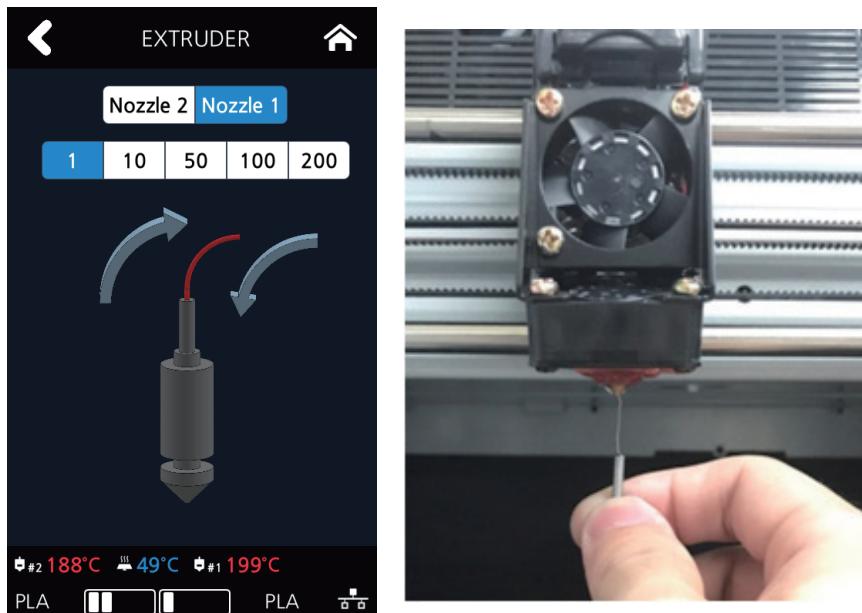
If the filament does not come out of the nozzle even though the nozzle cleaner is used, use the nozzle spring pin to drill the nozzle inlet.



Nozzle Spring Pin

5 Maintenance

When the temperature of the nozzle is raised and the UI as shown below is displayed, insert the nozzle spring pin at the nozzle inlet side and turn it to the left and right to drill it.

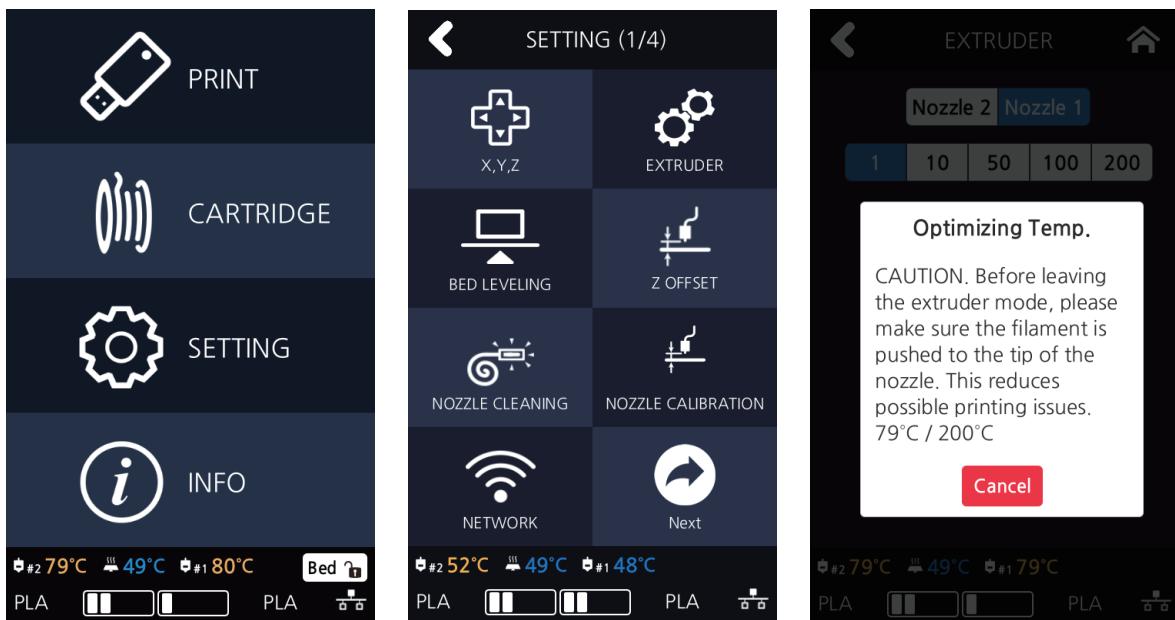


⚠ Caution

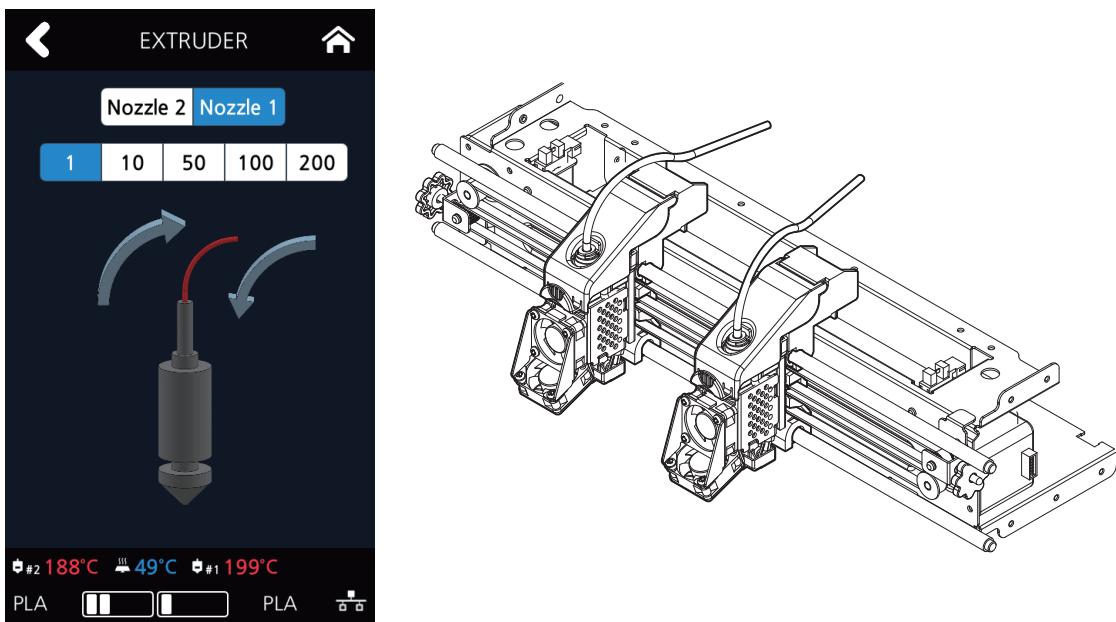
- Be careful. It may cause burns.
- The tip of the nozzle may be hot. Please wear it with heat-resistant gloves.

1.6 NOZZLE TIP CLEANING

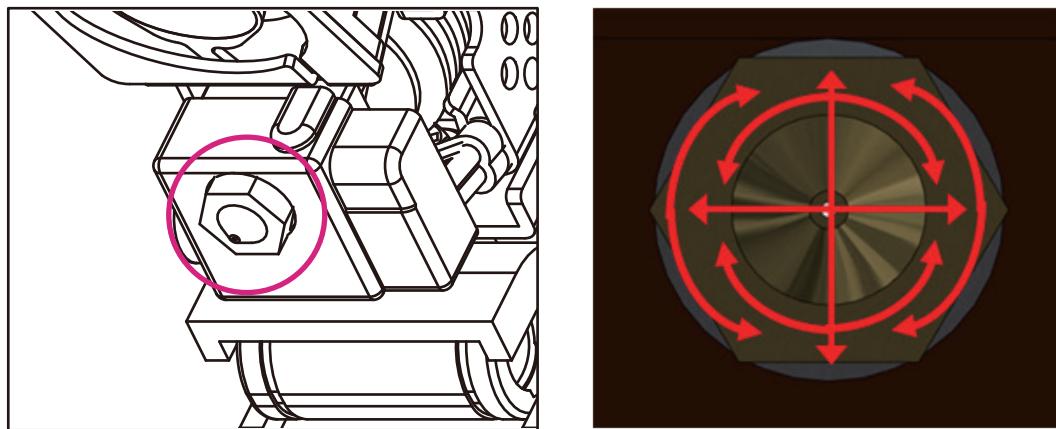
- 1 Press [Setting]-[Extruder] to enter the Extruder mode.



- 2** After reaching the target temperature in the Extruder mode, the UI screen appears as shown below.
Please move the nozzles to the center.



- 3** Wipe the tip of the nozzle with cotton or leather cloth in the direction shown below.



⚠ Caution

- To prevent burns, wipe the nozzle tip by folding the cloth several times.
- Be careful not to damage the silicone adhesive between the nozzle and the silicon cap.

2. Error Message and Solutions

Message	Description	What To Do
Booting Please wait until booting is complete.	Message means on the first boot user must wait until the booting is finished.	Once the boot up process is over and machine is ready, this message disappears automatically.
EC 301, 302, 303, 304, 305, 306, and 308	There is a problem with the nozzle temperature sensor or heater	If the problem persists after rebooting the printer, request for A/S.
EC 314 and 315 Please Reboot Machine.	There is a problem with the current flow leveling.	Check the tip of the nozzle for any debris or foreign substance, and the bed surface for any foreign substance, and remove any substance that you may find. Reboot the device and level it or request for A/S.
EC321 Please Reboot Machine.	There is a problem with the output cooling fan.	Check if any foreign substance hinders the operation of the fan, and remove any foreign substance that you may find. If the problem persists after rebooting the printer, request for A/S.
EC322 Please Reboot Machine.	There is a problem with the output cooling fan.	Check if any foreign substance hinders the operation of the fan, and remove any foreign substance that you may find. If the problem persists after rebooting the printer, request for A/S.
EC401	Filament is not transferred properly.	Follow the directions listed in the “3.5 Solution for EC 401” section.
EC 411, 412, 413 and 414	The filament was not loaded properly.	Remove the cartridge according to the UI instructions, and then remove the filament.
EC 422, 423 and 424	The filament was not unloaded properly.	Remove the cartridge according to the UI instructions, and then remove the filament.
Filament End Not enough filament.	Message appears when there is not enough filament in cartridge.	Following the instructions on the LCD, first clean any filament debris, then install and load a new cartridge.
Filament Break Filament break has been detected. Please remove.	There remain some filament but it's cut in the middle.	Following the instructions on the LCD, first clean any filament debris, then install and load a new cartridge.
Cartridge is already loaded.	Filament is loaded already and the load button was pushed again.	Automatically return to normal state.
Cartridge is already unloaded.	Filament is unloaded already and the unload button was pushed again.	Automatically return to normal state.
EC 351, 353, 354, 355, and 356	There is a problem with the bed temperature sensor or heater.	If the problem persists after rebooting the printer, request for A/S.
EC 431	The printer does not recognize the cartridge's smart chip.	Check if the cartridge has a smart chip, and re-install it.
EC 432	The printer recognizes the filament but not the cartridge.	Press the [OK] button to unload it, and then re-install it.

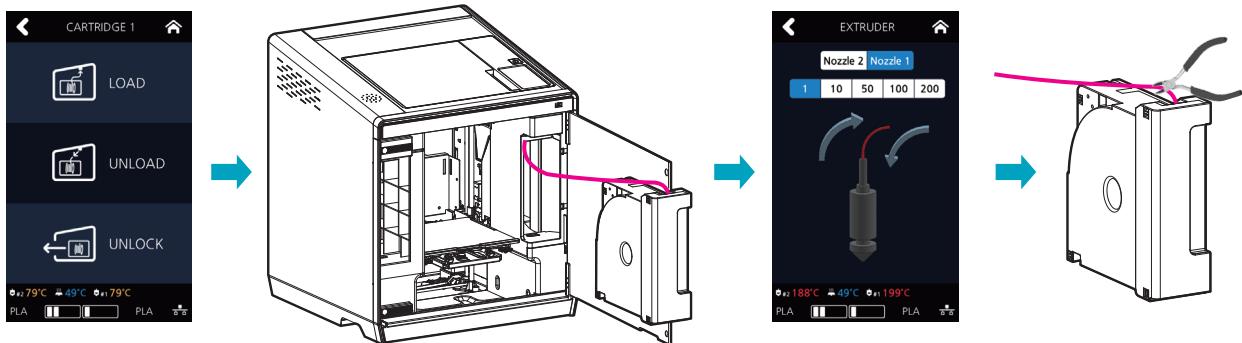
Message	Description	What To Do
EC 434	The filament has already been consumed.	Replace the smart chip. (Check if the smart chip was replaced with the filament.)
EC 471	Loading was not confirmed after booting.	Pressing [OK] displays EXTRUDER screen. Feed the filament to the end of Nozzle.
EC 481	Unloading was not successful.	Press the [OK] button to restart unloading.
EC 433	Message will appear if there are more than 5% difference between the cartridge quantity and recorded usage levels.	Replace Cartridge.
EC 472, 473, 476, 482, 483, 484, 488	Remove the remaining filament because of a problem during loading/unloading.	Follow the UI instructions in removing the remaining filament. (Refer to P.5-5.)
EC 487	Remove the remaining filament because of a problem during loading.	Remove any filament located outside of the cartridge. (Refer to the label on the cartridge.)
EC461 and 462	The printer does not recognize the extruder's sensor of pressurization controller.	'Refer to the "Cautions for Using the Device" section to check the state of the extruder located at the back of the device.
EC 357, 358, and 359	There is a problem in the power supply of the bed heater or the CTL board of the heater.	If the problem persists after rebooting the printer, request for A/S.
EC 500, 501, 502, and 503	The X1, X2, Y, or Z axis motor has a problem; that is why it cannot move to the home position.	Check the bed and the nozzle for any foreign substance.

3. Problems and Solutions

3.1 If filament does not come out of the nozzle

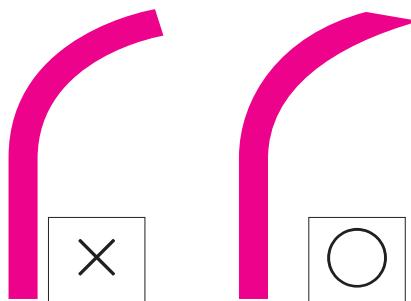
Follow the on-screen instructions and start the auto recovery process. After the recovery process if problem persists follow the below steps.

- 1 Initiate cartridge unlock. Remove the cartridge from the printer. Use the extruder jog mode to remove the filament. Cut the removed filament, (Use below image as reference) re-install the cartridge and run LOAD.

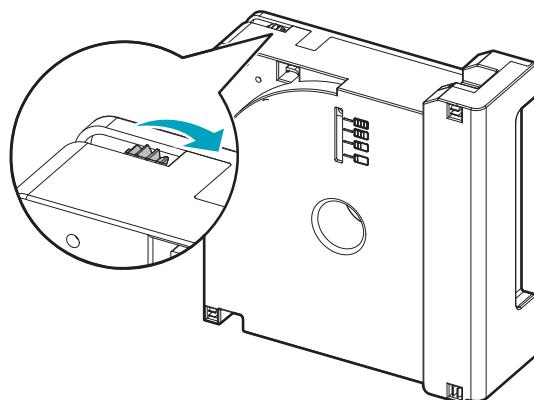


Note Cutting Filament Tip

- Cut the filament in the way the cut end is sharp as shown below. It makes the filament run through easier.



- After unloading, turn the cartridge gears for the filament to come out, cut the dented part (approx 50~60cm) this makes the LOAD easier.



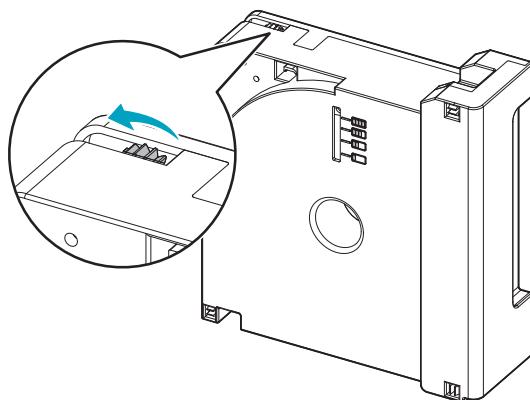
3.2 In Cases where Filament is Cut Between the Extruder and Nozzle

- 1** Remove the Snap-Ring on the fitting in the nozzle and pull out the tube.
 - Use Extruder mode and move the filament towards the nozzle to push out the cut filament.
 - After removing all cut pieces of filament, insert the tube into the nozzle and attach the snap ring.
 - * Push the tube in until the tube under the black indicator cannot be seen.
 - After attaching the Snap-Ring, gently push the tube in (Approx 1.5mm)
 - Use Extruder mode to transfer the filament towards the nozzle and check that filament is coming out of the end of the nozzle to make sure it is working properly.



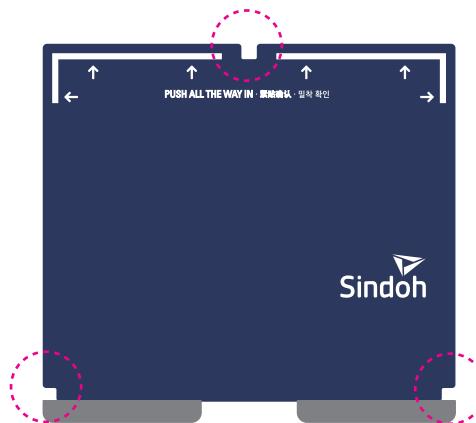
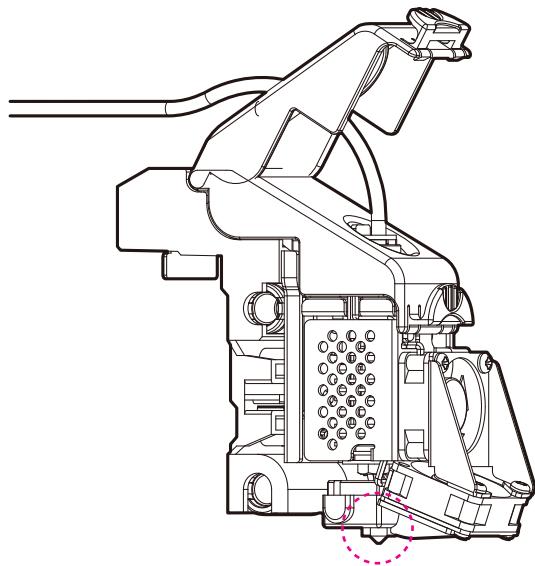
3.3 When Filament End is Visible Outside the Cartridge After Unloading

- 1** Pull out the filament approximately 50~60cm, and cut the filament. (Reference to 3.1 filament cutting tip)
- 2** Like the image below turn the gears and the filament will retrieve back to cartridge. Insert until filament is invisible, reinstall the cartridge into the printer and activate LOAD.



3.4 If the bed leveling does not operate normally

- 1** Make sure the bed is not tilted at an angle. According to the bed installation method (Chapter 4. Printed Output 2 Check) adjust to match the base.
- 2** Check the filament residue or foreign matter on the metal exposed surface of the bed and remove it.
 - Clean the area 4 or 5 times with 800 grit sandpaper or so.
- 3** Check the filament residue or foreign matter on the Nozzle tip and remove with a cleaning tool.
 - After lowering the bed, enter the extrude mode and wipe it with cotton or leather cloth.
 - Since the tip of the nozzle is very hot, fold the cloth and use it to avoid getting burns.

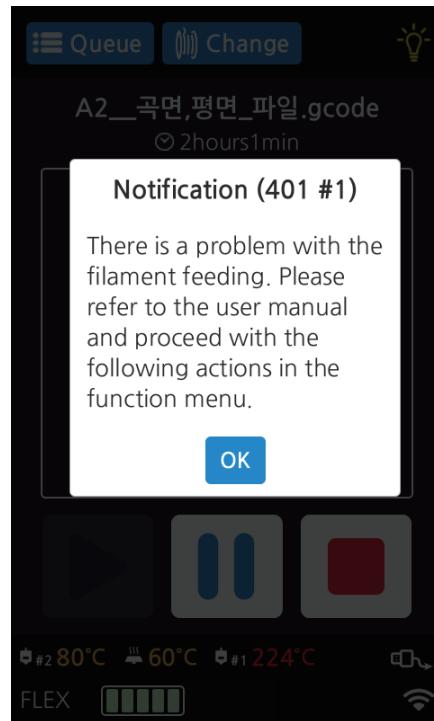


3.5 Solution for EC 401

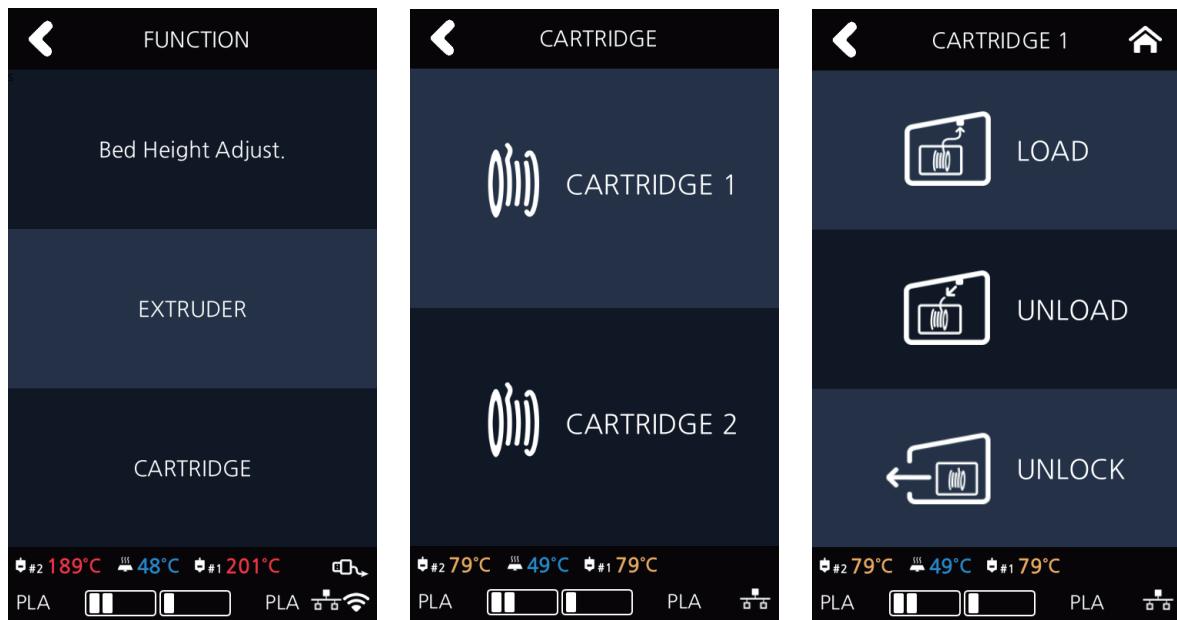
The EC 401 error code occurs if the filament was not correctly transferred.

There are many possible reasons why the filament was not properly transferred. To solve this issue, follow the instructions below.

- 1** Press the [OK] button to move the printing screen. Then, press the [Pause] button followed by the [Function] button located on the top of the screen.



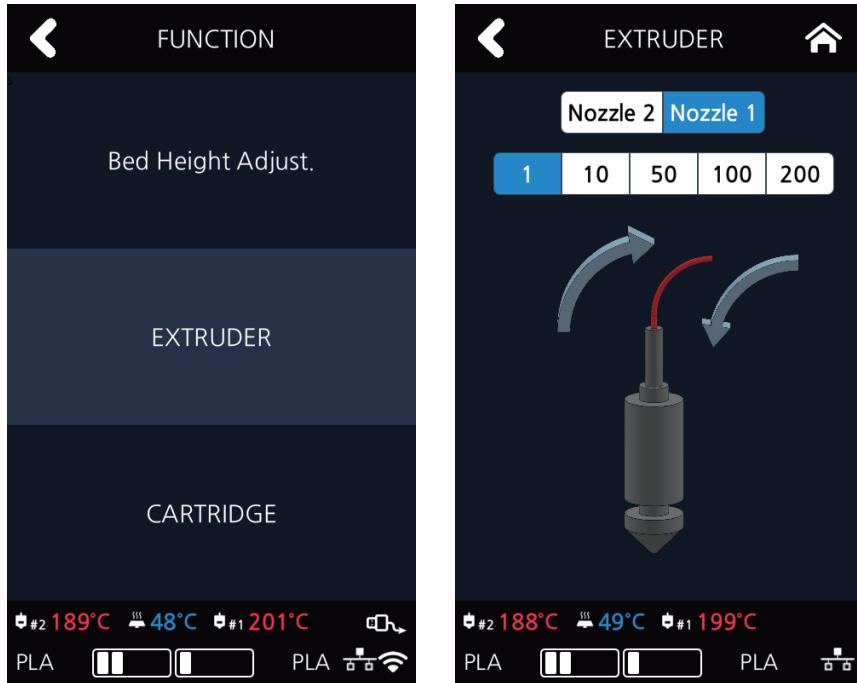
- 2** The EC 401 error code selects the cartridge with the number of the detected nozzle and unloads it.
 → Remove the cartridge from the printer. → Open the cartridge and check if the filament is tangled.
 → If the filament is tangled, untangle it and re-insert the cartridge. Cut the end of the filament.
 → Re-insert the cartridge into the printer. → Load it.



5 Maintenance

3 Select the [Extruder] menu.

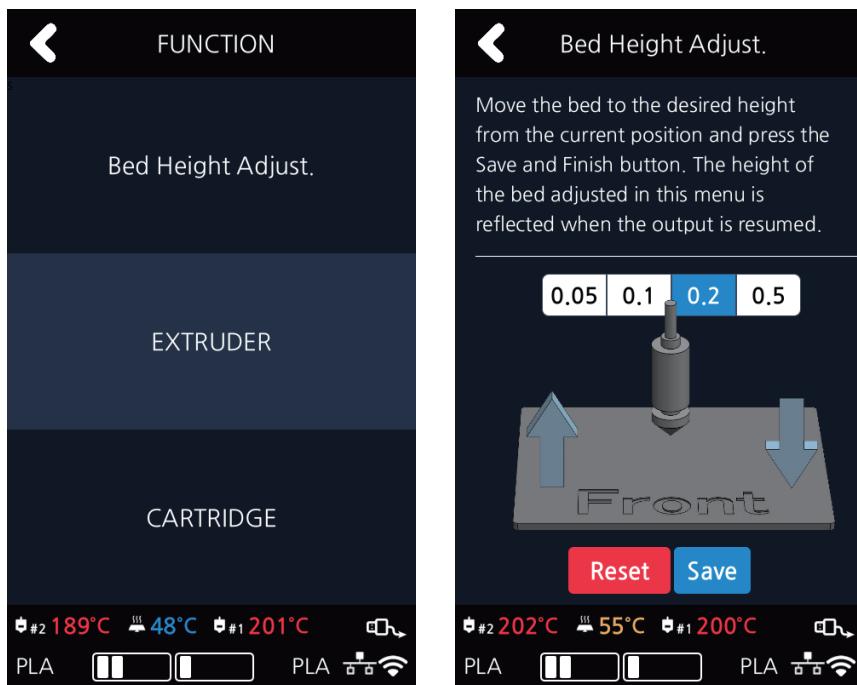
- Wait until the nozzle's temperature reaches your target temperature. → Operate the extruder to insert the filament by 50 mm. → Check if the filament was inserted and injected through the nozzle.
(If the filament was not injected, repeat step 2 for two to three times. If this does not work, please contact our customer service hotline, and submit a video or image of this issue to a customer service representative.)



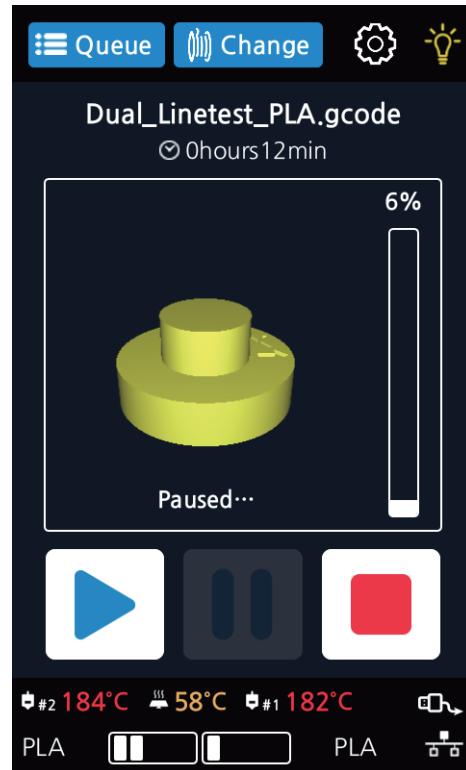
4 A persistent EC 401 error code may be caused by an insufficient space between the nozzle and the bed, which causes the filament not to be correctly transferred.

In such a case, select the [**Bed Height Adjustment**] menu to change the height of the bed, and create an ample space between the nozzle and the bed.

※ You can also cancel printing and re-execute “**Setting**” – “**Bed Leveling**” to set the correct space between the nozzle and the bed.



- 5 Press the [Start] button to continue printing.



4. Replenishing Consumables

4.1 Bed Replacement

Removing Flexible Bed

Reference

- Please refer to P. 4-2 "1.1 Detaching Printed Output".

Installing Flexible Bed

Reference

- Please refer to P. 4-2 "1.1 Detaching Printed Output".

Note

- Small Scratches on the bed made during normal usage will not affect the print quality but if the bed sheet is ripped off or contaminated, the printed output may not adhere on the bed properly and should consider exchanging the bed to a new one.
- Bed sheet is a consumable.
- Please replace the bed sheet if models don't get attached to it due to a significant scratch or defected parts of the bed.

4.2 Filter Replacement

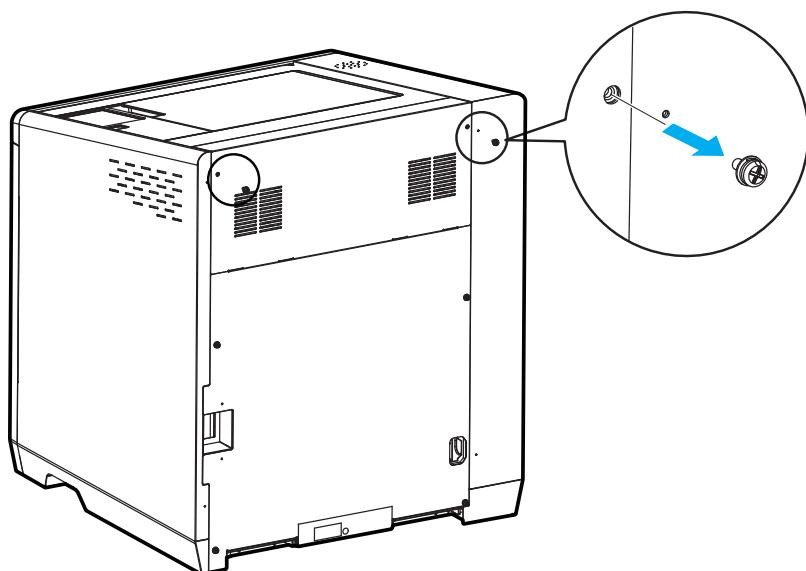
Caution

- Turn the machine power off before starting the replacement.

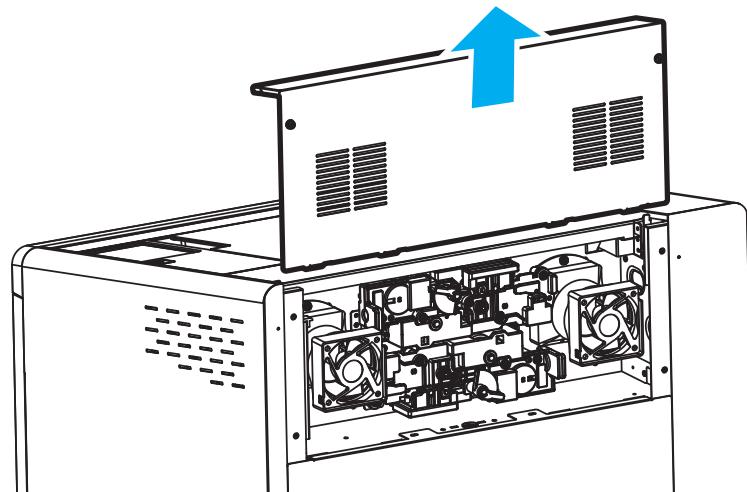
Note

- It is recommended to exchange filter and nozzle together.
- Depending on environment, replacement interval may differ. If you smell odor from the filter, please replace the filter.

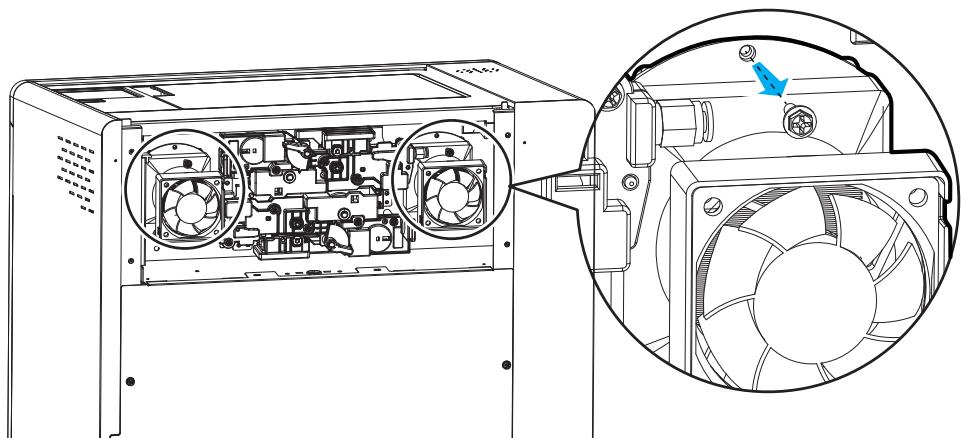
- 1 Remove the bolts by using the plus screwdriver to fix the extruder cover.



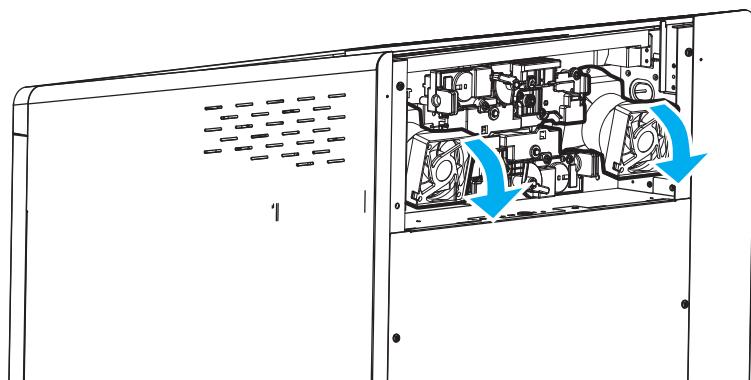
- 2 Remove the cover by pulling it up.



- 3 Remove the bolts by using the plus screwdriver to fix the duct.

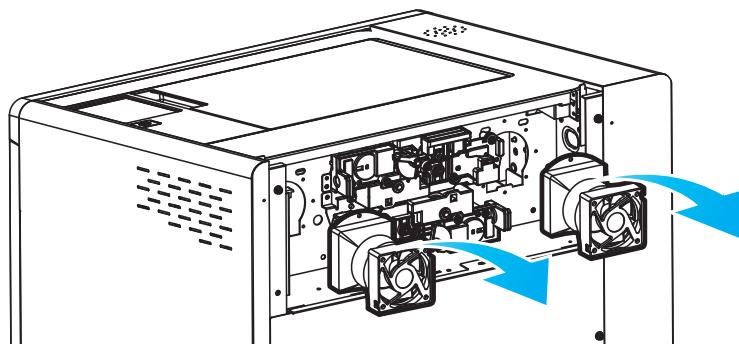


- 4 Rotate and lower the duct to the indicated direction.

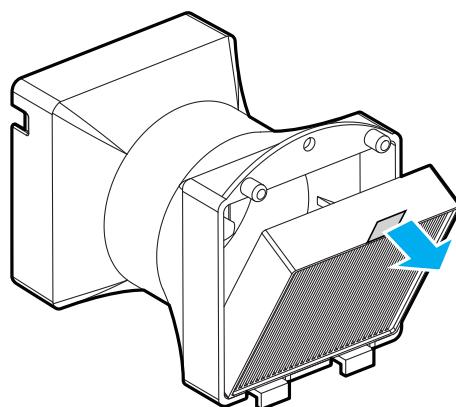


5 Maintenance

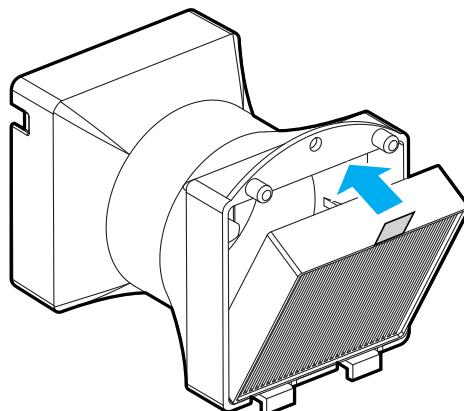
- 5 Release the hook, and remove the duct from the device.



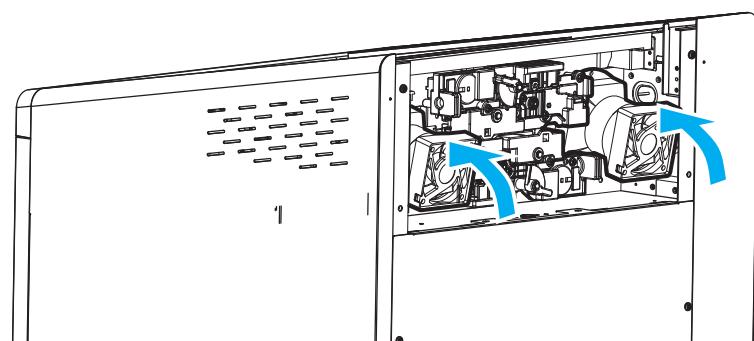
- 6 Remove the consumed filter from the duct.



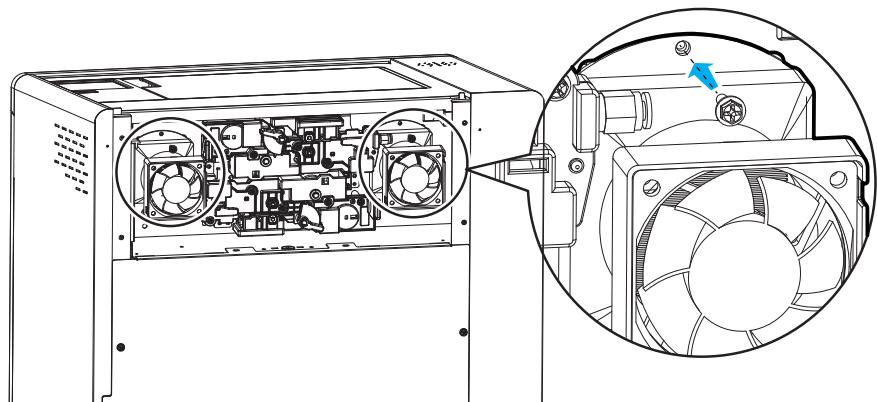
- 7 Install a new filter on the duct as shown in the image.



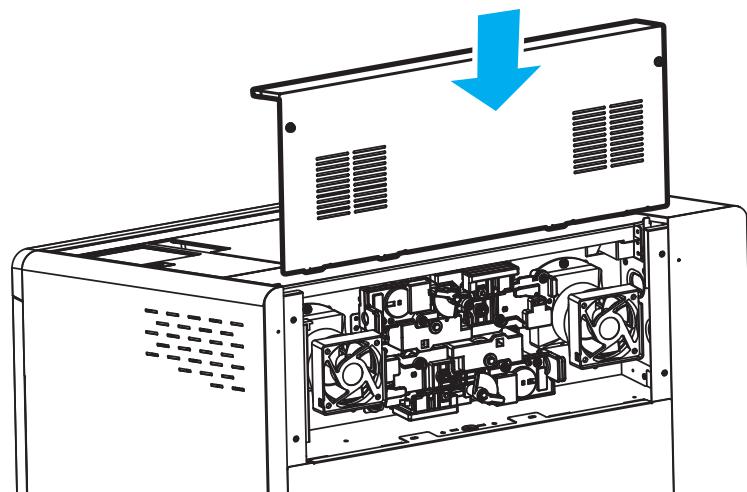
- 8 Connect the hook of the duct as shown in the image.



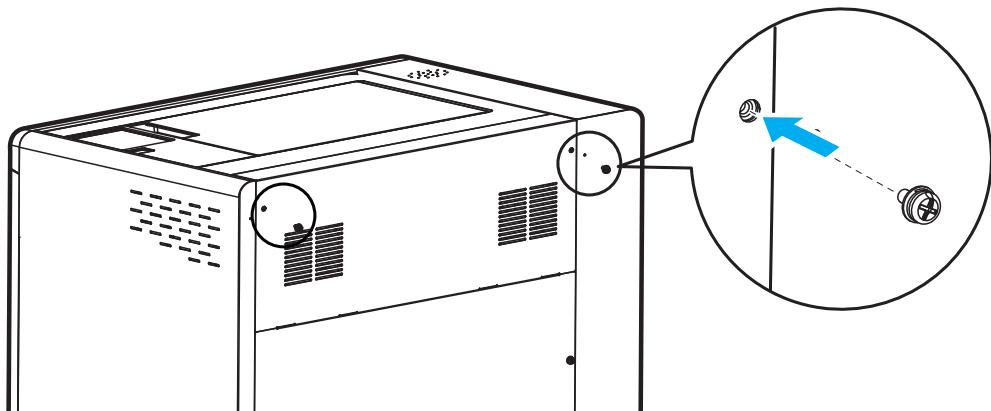
- 9 Fasten the duct to the device by tightening the bolts using the plus screwdriver.



- 10 Lower the extruder cover to install it on the device.



- 11 Fasten the extruder cover to the device by using the plus screwdriver.



4.3 Cartridge Replacement

Replace cartridge when a cartridge is used up or a different color/material is needed.

- 1 Initiate Cartridge Unload.

Reference

- For details on cartridge unload, please refer to P. 2-5 "UNLOAD"

- 2 Please switch the cartridge first and then load.

Reference

- For details on cartridge load, please refer to P. 2-4 "LOAD"

Note

- When replaced with a different color, the previously used color may be seen in the beginning of printing.
If the color is the only difference from the previous filament, it doesn't affect the printing quality.
Difference in material, however, may affect the printing quality.
To fix problem, after changing cartridge, please run nozzle cleaning (Refer to P. 2-19 "NOZZLE CLEANING") before printing.

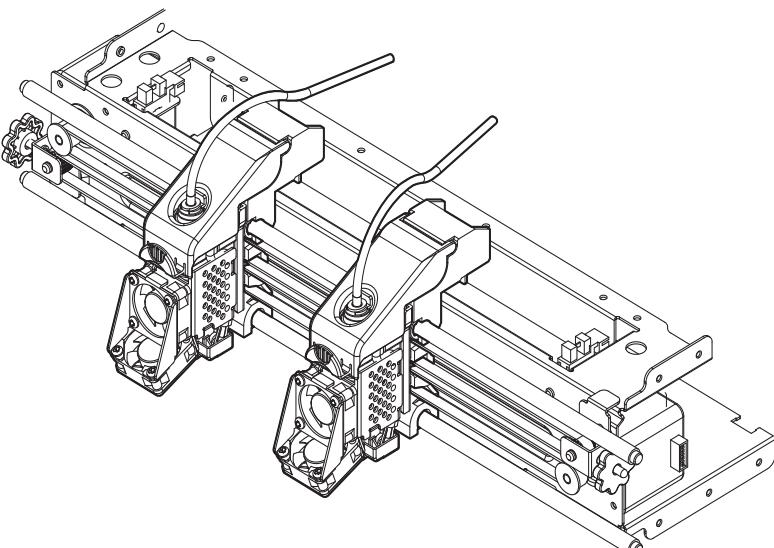
4.4 Nozzle Replacement

Methods of Detaching Nozzle

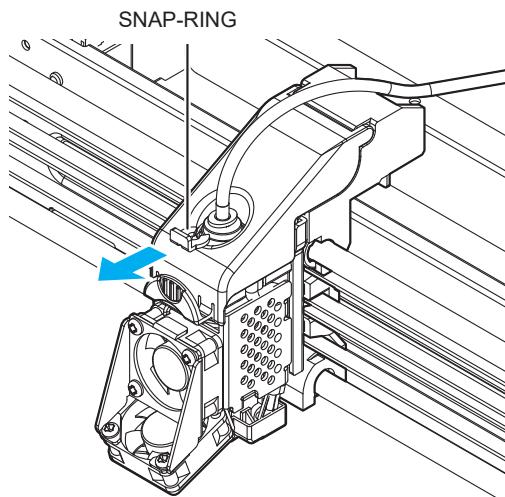
In the UI, press [Cartridge] – [(Select a cartridge to unload)] – [Cartridge to unload], and check if the nozzle is below 30°C on the liquid crystal display (LCD). Turn off the power, and remove the power cord from the body before starting work.

Caution

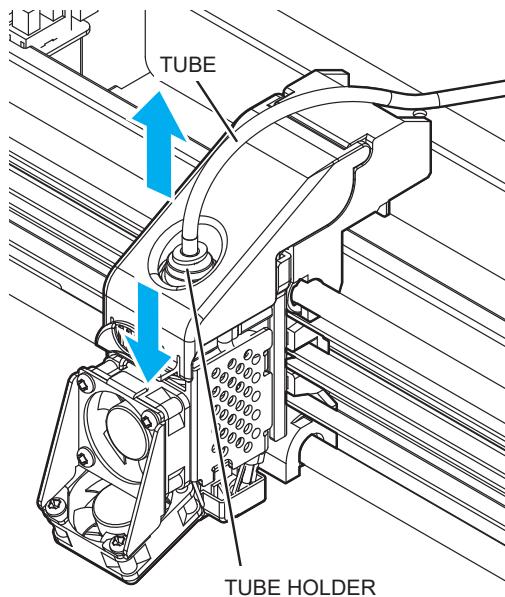
- If the temperature of the nozzle is above 30°C, it may cause burns to a part of your body during replacement.



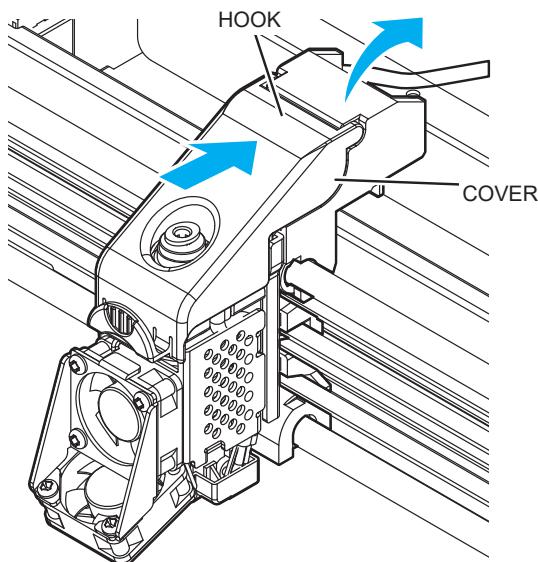
- 1 Remove Snap-Ring.



- 2 Press the tube holder and pull the tube to remove.

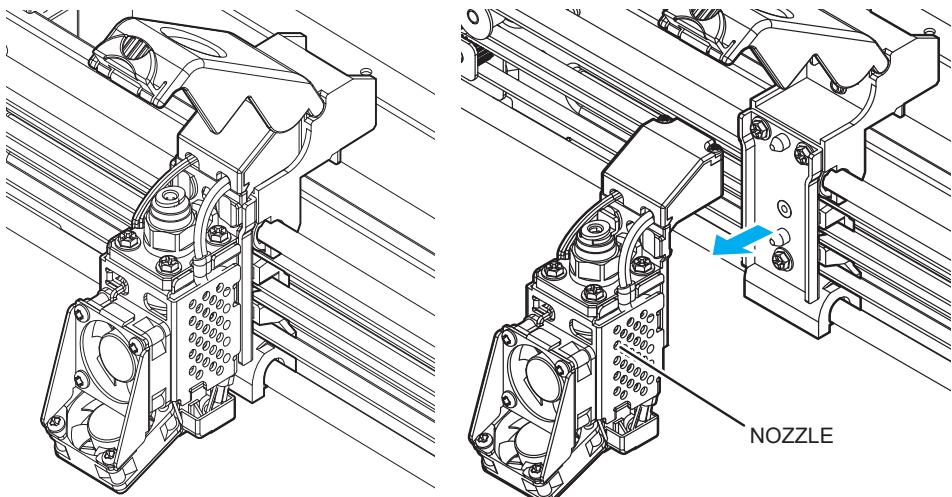


- 3 Push the top of the front handle, and lift it up to open the cover.



5 Maintenance

- Pull the nozzle component to detach.



Assembling the Nozzle

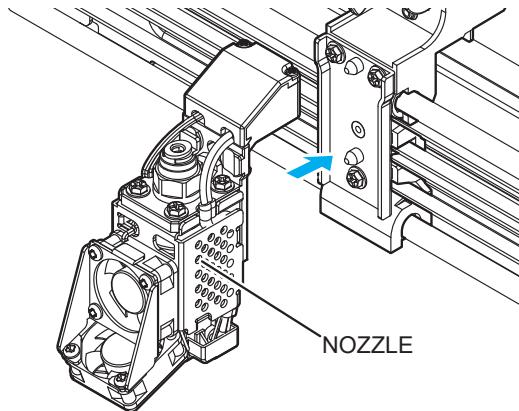
Initiate process ONLY after power of machine is turned OFF, and after all power cables are disconnected.

- With the cover lifted up attach the nozzle.

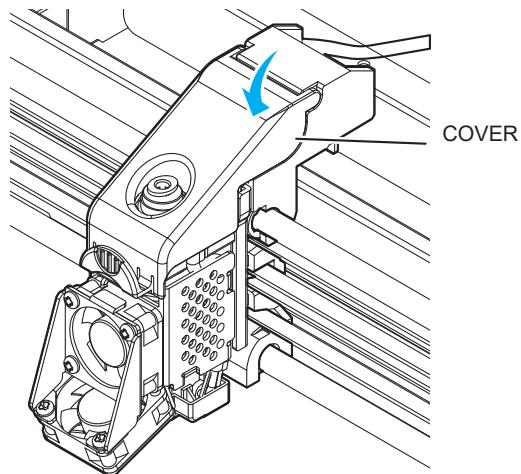
The magnet of the nozzle attaches to the surface, but check if it is fully attached by shaking it. Also, inspect the spring pin and see if it is connected properly.

Note

- If the spring pin is not connected properly, the nozzle may malfunction.

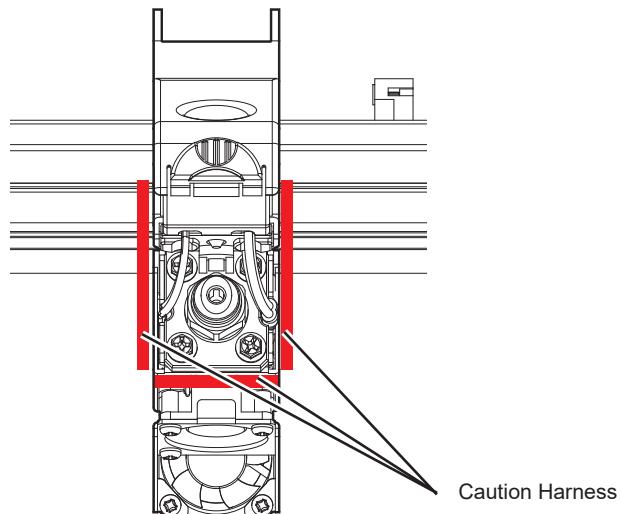


- Push the cover down and make sure to hear the clicking sound.

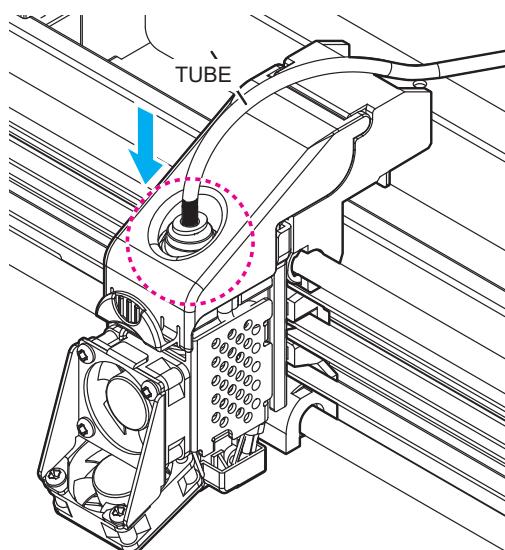


⚠ Caution

- Please be careful not to position the harness near the left, right and center section of the cover. The harness can get caught in between covers when closing.

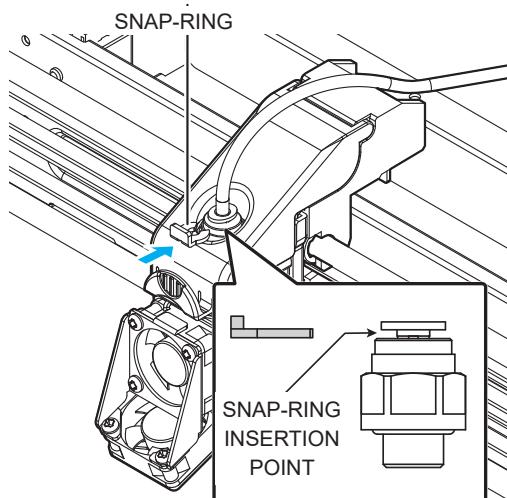
**3 Insert Tube.****>Note**

- Push the tube in about 50mm until the tube under the black indicator cannot be seen.

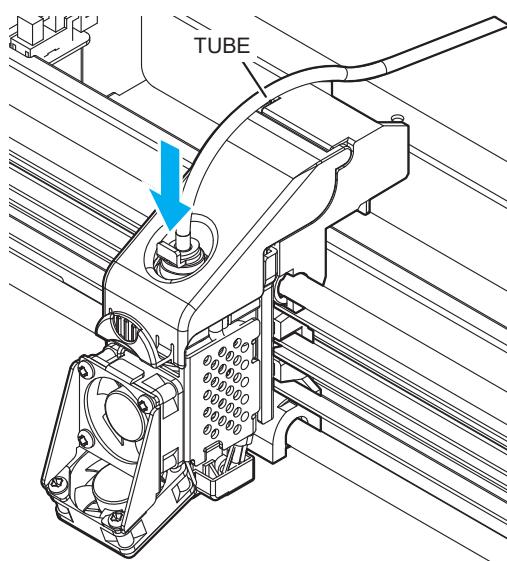


5 Maintenance

- 4 Slightly lifting the tube and insert the Snap-Ring.
Insert the Snap-Ring in between the Fitting and Holder.



- 5 Finally, push tube in all the way through.
– Approximately 1.5mm can be additionally inserted.



- 6 Use the [Cartridge] – [(Select a cartridge to load)] – [Cartridge to load] command to finish the cartridge loading process.

2X Series
USER MANUAL

Appendix

6

1. Type of Consumables (Material, Color)

Material: PLA, ABS, FLEXIBLE and PVA are compatible

Color: white, black, gray, green, blue, yellow, red, Pink(PLA), Purple(PLA)

Notice to Users

Type	Notice
<ul style="list-style-type: none">• Class A equipment (commercial telecast equipment)	This equipment is a Class A EMC (electromagnetic compatible) equipment, and should not be used in household locations
<ul style="list-style-type: none">• Class B equipment (domestic telecast equipment)	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.

