Sindoh
Unmistakable

3DWOX *5X / 7X*

USER MANUAL

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

3dprinter.sindoh.com

Safety Instructions

Be sure to observe the followlng 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.
- This machine is not suitable for use in areas that are easily accessible by children.

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.
- Naver Nanum font is applied to the GUI of the device and the user manual.

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.

Other Information

Some of the pictures used in this manual have been omitted to make it easier to see.
The contents of the UI in this manual may differ from what it actually appears.

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

- When you touch your body with this part, you are burned.
- To avoid burns, follow the instructions below.
  - 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 unitl you are told you can touch the bed.

⚠ Caution Electric Shock

- Contact with this part may result in electric shock.
- To avoid electric shock, follow the instructions below.
  - 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 requirementsof 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 Pain

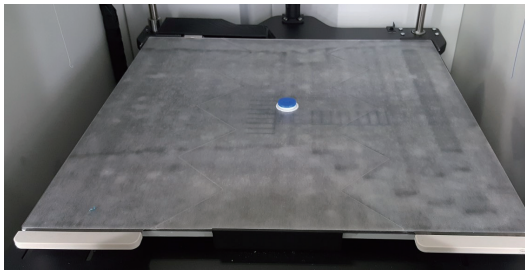
- Do not twist, fold, step or place heavy objects on the power cord.
- Be careful with the power cord peeled off or overloaded.
- Do not let the power cord pinched by furniture or walls.
- Misusing the cord could result in fire or electrical shock.
- Check the cord regularly. When checking the cord,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

⚠ Caution **Pain**

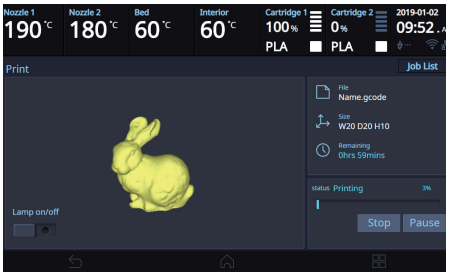
- To prevent personal injuries or damages to the machine, you need to follow the below instructions before moving the machine.
  - Do not open the front and top door during machine operation.
  - When the power is on, do not let any of your body touch the machine except the bed.
  - If you have to touch 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 on the touch screen.

Nozzle

Bed



UI



⚠ Caution **Pain**

- When you put the head in the machine during operation, it may cause pain.
- To prevent pain or damage to the equipment, follow the instructions below.
  - This part moves up and down. Do not put the head in the machine during operation.
  - Do not open the front door during printing.
  - If you have to get in the machine for maintenance, 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.

⚠ Caution **Pain**

- When working on the top of the machine, you may get caught or fall and cause pain.
- To prevent pain or damage to the equipment, follow the instructions below.
  - Be careful not to fall when operating the top door or nozzles from the top of the machine.
  - Be careful of pain or nozzle tube jamming when closing the top door.

⚠ Caution **Pain**

- Contact with this part may cause pain.
- To prevent injury or damage to the equipment, keep away from this part during operation.

4. Precautions

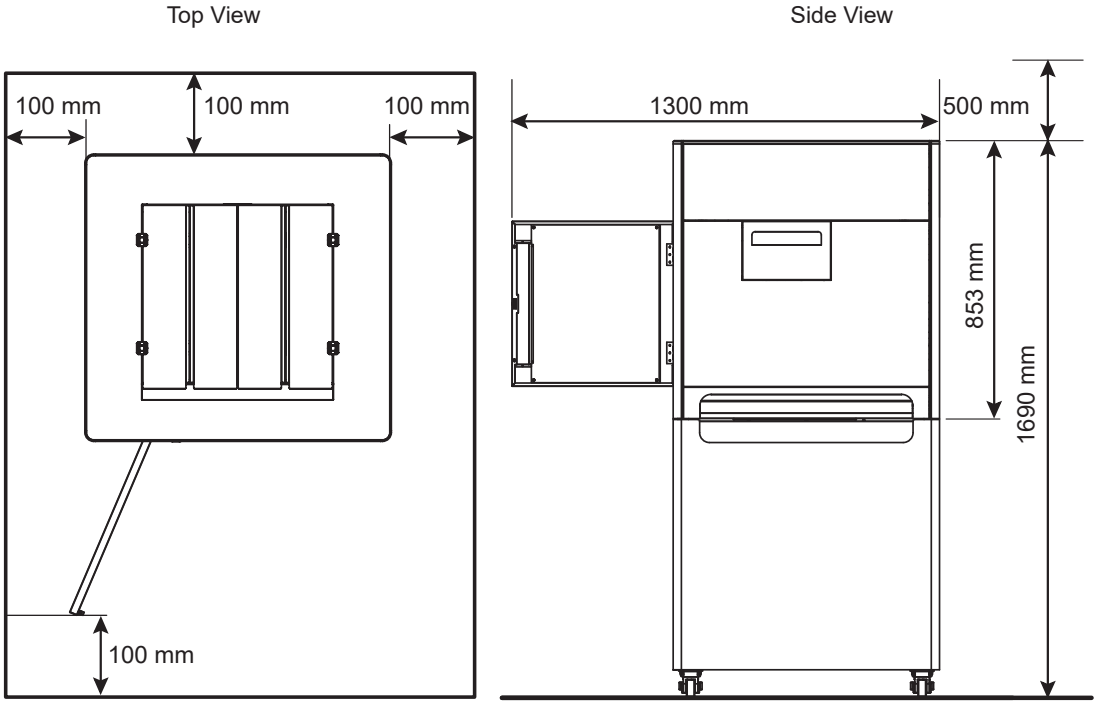
4.1 Installation

⚠ Warning

- **Install the machine in a well ventilated area.**
  You can small odor during machine operation. It should not be harmful; however, if the area of 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.

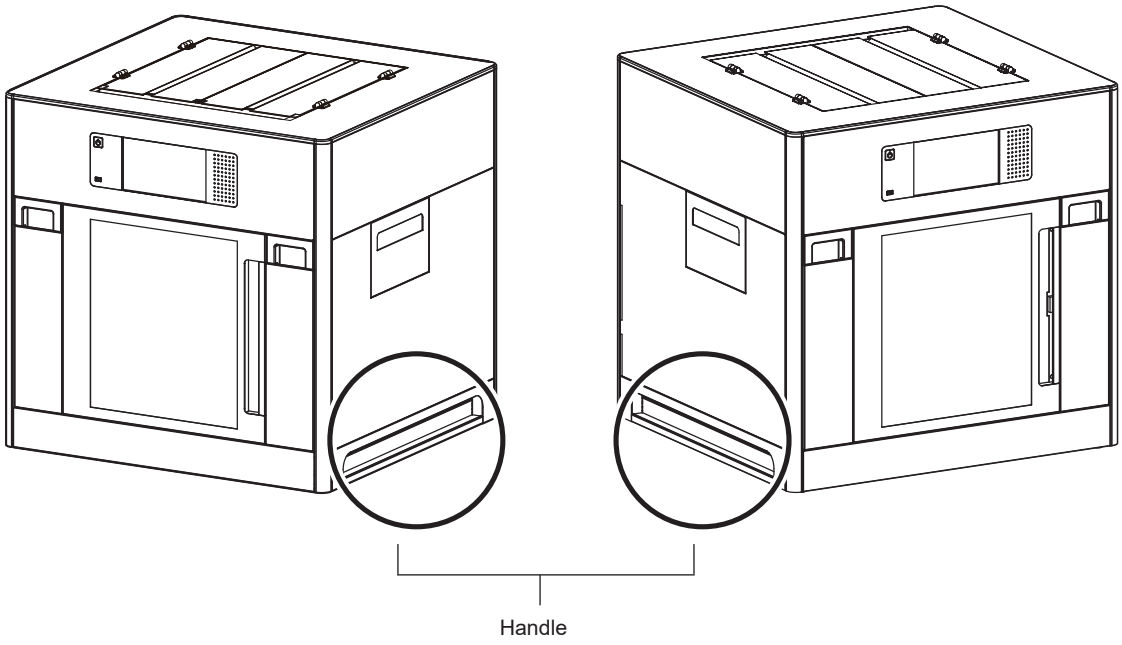


4.2 Moving the Machine

1. Power off the device.
2. Disconnect the power cord and cables from the device.
3. Make sure that the FLEXIBLE bed and cartridge are installed in the device, and close the front and top doors.
4. Four people are required to hold the transport handles on both sides to move the device with the bottom facing down.

⚠ Warning

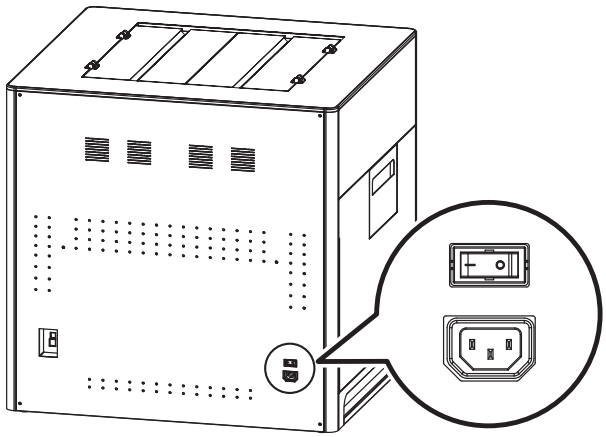
- **Before moving the machine, be sure to unplug the power cord from the outlet.**
  When moving the printer, it is recommended that two people lift and move the printer for safety.
- **Hold the bottom handles of the machine when moving it.**
  Bend your knees enough to protect your spine when lifting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



4.3 Power Switch

Before turning the power switch on, check that the power cord is connected to the socket tightly. Then, turn the power on by push the power switch to "|"(ON) position at the right on rear side of the Machine. To turn the power off, push the power switch to "○"(OFF) position.
| for "ON" IEC 60417-5007 (DB:2002-10)
○ for "OFF" IEC 60417-5008 (DB:2002-10)

The Switch used for this machine meets the requirements on the symbols and complies with its standard. But the horizontal straight bar is meaning the Power "ON" because its orientation is turned 90º to the counterclockwise. Plea se don't confuse the meaning of the horizontal straight bar "—".
Switch standard
IEC 61058-1
Symbol for the "OFF" position or the direction of actuation to the "OFF" position – circle, ○
Symbol for the "ON" position or the direction of actuation to the "ON" position - straight bar, |



⚠ Warning

- **Do not plug or unplug the power cord or touch the power switch with wet hands. It may cause an electrical shock.**

Important

- Once you turn the power off, wait 5 seconds or longer to turn the power on again.
- If you are not using the device for a long time or if you are moving the device, turn the power off and unplug the power cord from the outlet.

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.

5.1 PLA

It is a material that can be easily printed by the users using the 3D printer for the first time. You can easily print various colors and complex shapes. Ambient temperatures above 50 ° C can cause material properties to change, causing the material to expand or scatter. PVA can be used as a support material.

Nozzle temperature: 200 ° C
Bed temperature: 55 ° C
Recommended direction of the bed : Side A
Color: White, Black, Gray, Red, Yellow, Green, Blue, Pink, Purple
Storage : Store in cartridges with the silica gel that was included in the purchase.

5.2 ABS

Widely used in 3D printers, it has more rigidity and heat resistance than PLA. Due to the high temperature of the nozzle and the air when printing, printing are not available with other materials. ABS material can be deformed by shrinkage when the temperature in the cabin drops during printing. Particularly when printing a wide output surface to the bed, shrinkage may occur at the corners.
If printing ABS material on Side A of the bed sheet, the Printed Output may not detached from the bed sheet easily.
It is recommended to using Side B of the bed sheet when printing ABS material.
(If using Side B on the bed sheet, adjust the profile in the slicer program to create a G-code.)

Nozzle temperature: 230 ° C
Bed temperature: 90 ° C(Side A), 100 ° C(Side B)
Color: white, black, gray, red, yellow, green, blue
Storage: Store in cartridges with the silica gel that was included in the purchase.

5.3 Flexible

When using flexible materials, clean the inside of the nozzle after the filament load. Even if the inside of the nozzle is cleaned, if the inside of the nozzle has debris, the nozzle may be clogged or the filament may be transported. (Refer to P. 5-3 “1.5 Cleaning the Inside of the Nozzle”.)
Be careful because it is difficult to set the output condition compared with PLA and ABS materials. Warp or spider web may occur at output.
Flexible materials can cause twists in the extruder or inside the cartridge rollers. (Refer to P. 5-16 “3.3 Solution for Notification 401”.)

Nozzle temperature: 235 ° C
Bed temperature: 60 ° C
Recommended direction of the bed : Side A
Color: white, red, yellow, green, black, orange
Storage: Store in cartridges with the silica gel that was included in the purchase.

5.4 PVA, PVA+

PVA is a water-soluble support material. PVA can be used with PLA and it can be removed from the print by dissolving it under the water (refer to P. 4-4 “1.2 PVA Filament Removal Guide”).

This material is very sensitive to moisture, so it should only be used in environments with humidity below 50%.
Be careful when using in a humid environment because it may cause problems in filament transport (refer to P. 5-16 “3.5 Solution for Notification 401”.).
Carbonization may occur inside the nozzle during long hour printing. Please periodically clean the inside of the nozzle (refer to P. 5-3 “1.5 Cleaning the inside of the Nozzle”).

Storage : When not in use, put the PVA filament and silica gel in the zipper bag that was included in the purchase, and keep it away from outside air. If the PVA filament is already exposed to moisture for a long time, it should be stored for 48 hours or more with silica gel in a sealed container.

Nozzle temperature: 215 ° C(PVA), 200 ° C(PVA+),
Bed temperature: 55 ° C
Recommended direction of the bed : Side A

Important

- Please note that you shall follow our technical information or support in this manual at your own discretion and risk.
  We are not responsible for the use and handling of PVA filaments other than those described in this manual.
  PVA filament specifications can be changed without any notice.

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 objected 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

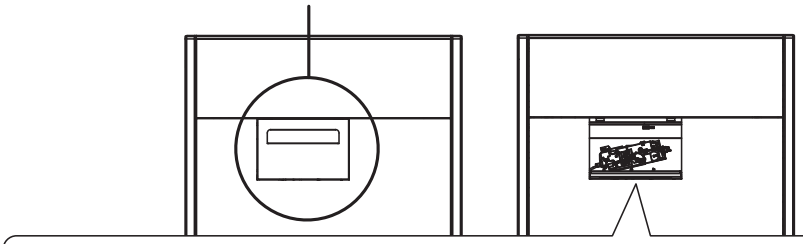
⚠ Warning

- **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

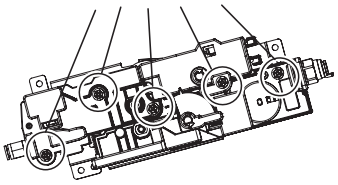
- **Do not open the side cover or touch any parts of the extruder unit during machine operation to prevent personal injuries of damages.**
- **If you need inspection of the extruder unit, turn off the power and disconnect the power cord and follow the instructions below.**

Open the side door.

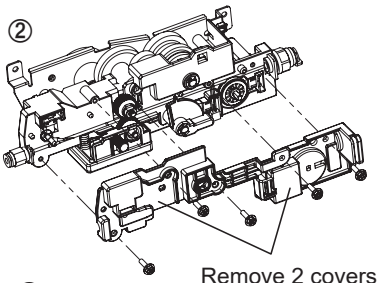


If the filament is clogged in the extruder while using the device, follow the instructions below.

① Remove 5 screws.

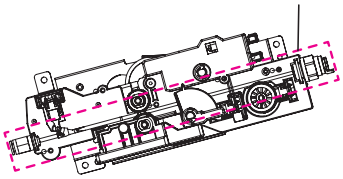


② Remove 2 covers

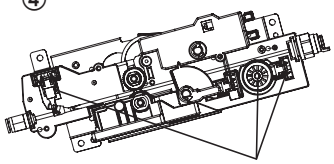


Removing filaments in the path

③

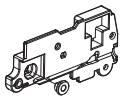


④



Make sure that there are no missing parts during filament removal, then reassemble

* If the brass bushing comes out of the cover, insert the bushing as shown in the right figure and then assemble the cover.



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	55dBA(Normal Print Condition - Printing speed 40 mm/s, Travel speed 130 mm/s)
Standby	under 40 dBA

❖ Temperature/Humidity

Operation	16 °C ~ 29 °C 20%RH~70%RH
Storage	-30 °C ~ 40 °C, 15%RH~85%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 STATEMET

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 m ore 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.	Max. 1000W
Standby	A device is in standby mode.	Max. 750W
Power On	A power plug is plugged into the outlet with the machine's switch on.	15W
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

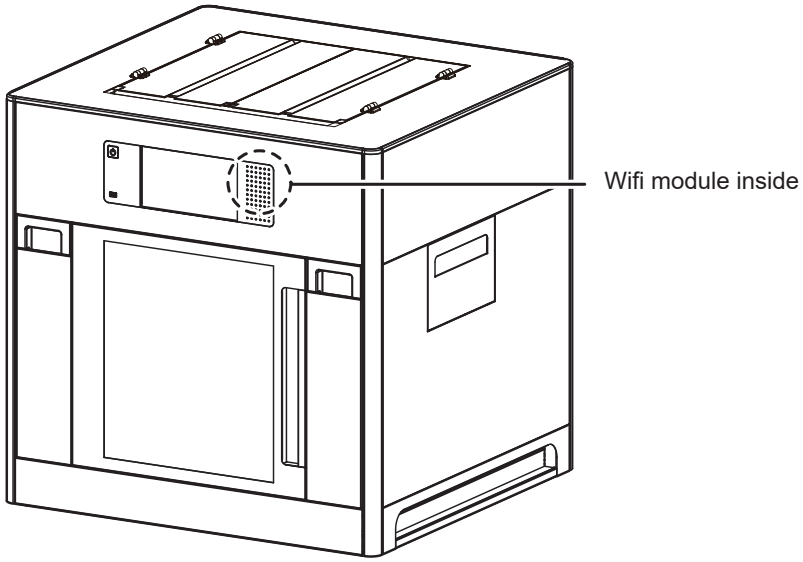
Dramatic change of the ambient temperature may produces water droplets on the interior and exterior of the machine. Wipe the water droplets on the outer surface, but for the inside please let them dry off by leaving front door and cover opened.

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.**



Important

- **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 : 2412MHz ~ 2462MHz IEEE 802.11g : 2412MHz ~ 2462MHz IEEE 802.11n(20MHz) : 2412MHz ~ 2462MHz IEEE 802.11n(40MHz) : 2422MHz ~ 2452MHz
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 : 11 IEEE 802.11g : 11 IEEE 802.11n(20MHz) : 11 IEEE 802.11n(40MHz) : 7
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

3DWOX 5X / 7X
USER MANUAL

Preparations for Machine Operation

1

1. Machine Specifications

1.1 Printing

Printing Method	Fused Filament Fabrication
Max. Print Length(mm)	5X : W(max):350, D(max):350, H(max):350 7X : W(max):370, D(max):390, H(max):450 W(max):380, D(max):390, H(max):450 (Expanded print mode)
Print Layer Thickness Setting	0.05~0.4mm
Basic Nozzle diameter	0.4mm
Filament width	1.75mm
Printable materials	* Sindoh : PLA, ABS, FLEXIBLE, PVA(Water-soluble) PVA+(Water-soluble) * Open Material : PLA, ABS, FLEXIBLE, PVA(Water-soluble), ASA, PETG, etc
Printable color	White, Black, Gray, Red, Yellow, Green, Blue, Pink(PLA), Purple(PLA)
Bed leveling	Auto leveling
Print Head	Two Nozzle

* Using filament containing abrasive additives (e.g. metal component, carbon fiber) may cause the breakdown of the machine and will shorten its life time drastically.

1.2 Temperature/Speed

Continuous Nozzle Usage/ Maximum Temperature	Recommended Temperature(Nozzle): PLA 200℃, ABS 230℃, Flexible 235℃, PVA 215℃, PVA+ 200℃ / Max 250℃
Continuous Bed Usage/ Maximum Temperature	Recommended Temperature(Bed): PLA 55℃, ABS(Side A) 90℃, ABS(Side B) 100℃, Flexible 55℃ , PVA(PVA+) 55℃ / Max 110℃
Recommended printing speed/ maximum speed	PLA 80mm/s, ABS 80mm/s, PVA(PVA+) 25mm/s, FLEXIBLE 30mm/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	Max. 1000W
Dimensions	864 x 810 x 1690(W x D x H)
Weight	167kg (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+ / VRAM 2 GB+ (5X, 7X model only)

Note

- Graphics must support OpenGL 2.0 or higher.
- This product can be utilized with Alexa Echo for hands-free control. Please refer to the below URL for more details on how to use.(https://3dprinter.sindoh.com/support/downloads)

1.5 Default Setting of Print layer Width

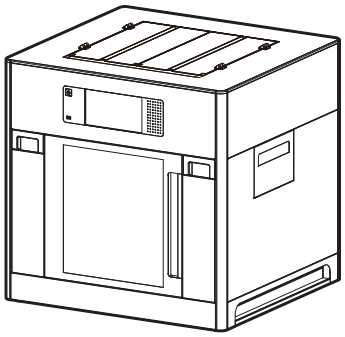
Nozzle Width	0.4mm
Print Layer Width	0.2mm

2. Basic Components

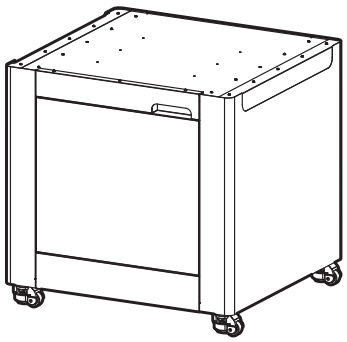
Please check all basic components are in the box.

⚠ Caution

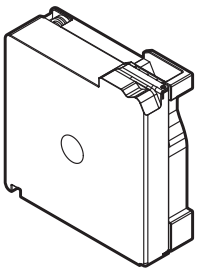
- **Please keep the box and packaging material; they are needed for product exchange or repair service.**



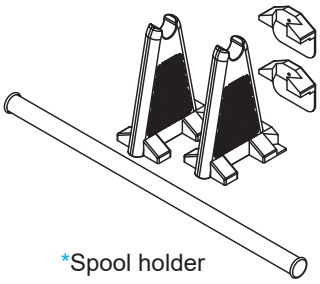
3D Printer



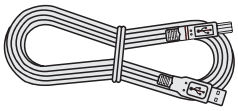
Table



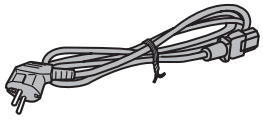
Cartridge



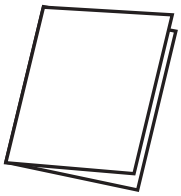
*Spool holder



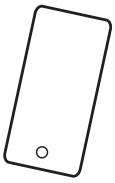
USB Cable



Power Cable(3EA)



Reference Guide



Z-offset Calibration Sheet(2EA)

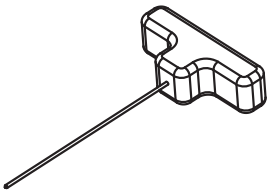
Scrapper

Spring Nozzle Cleaner

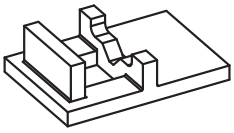
USB Drive

Tube for Cleaning(4EA)

Encoder Cleaning Brush



Nozzle Cleaner



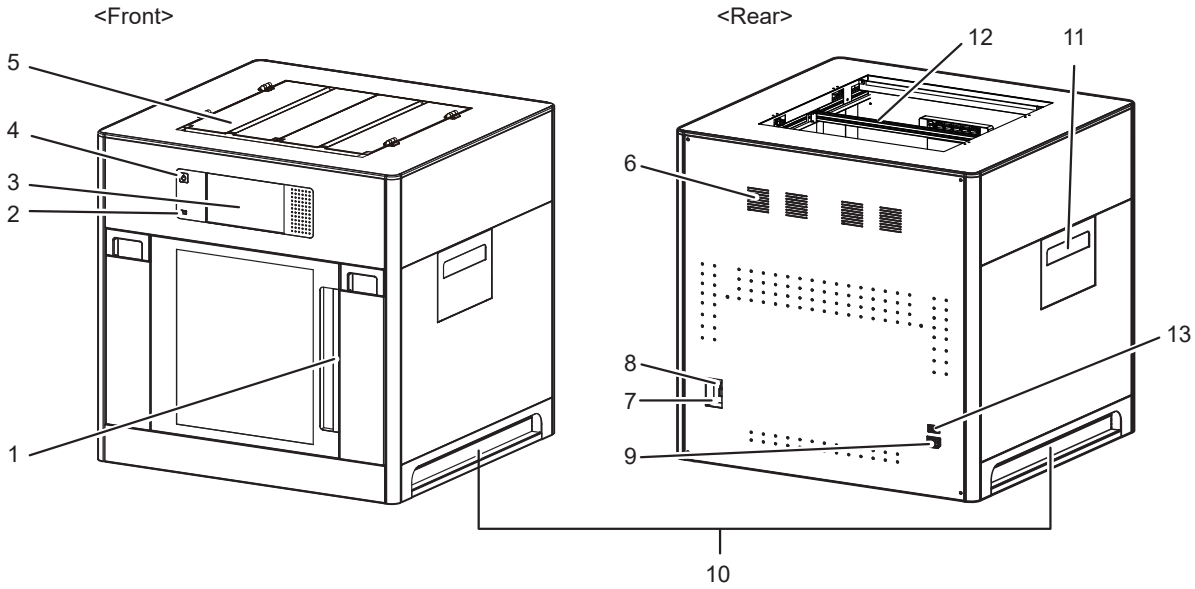
Nozzle Cleaning Pads (5EA for replacement)

*Included only on 7X model.

⚠ Warning

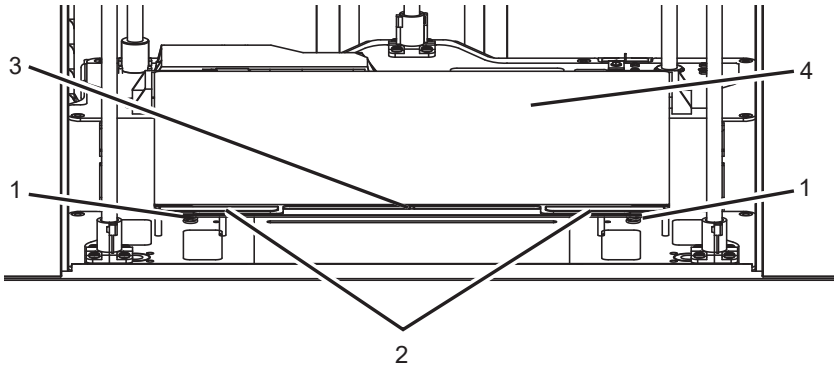
- **The blades of the scrapper can be very sharp. Please be cautious. Please do not use for other than removing printables.**
  Please do not touch the blade of the scrapper.

3. Understanding the Device Parts



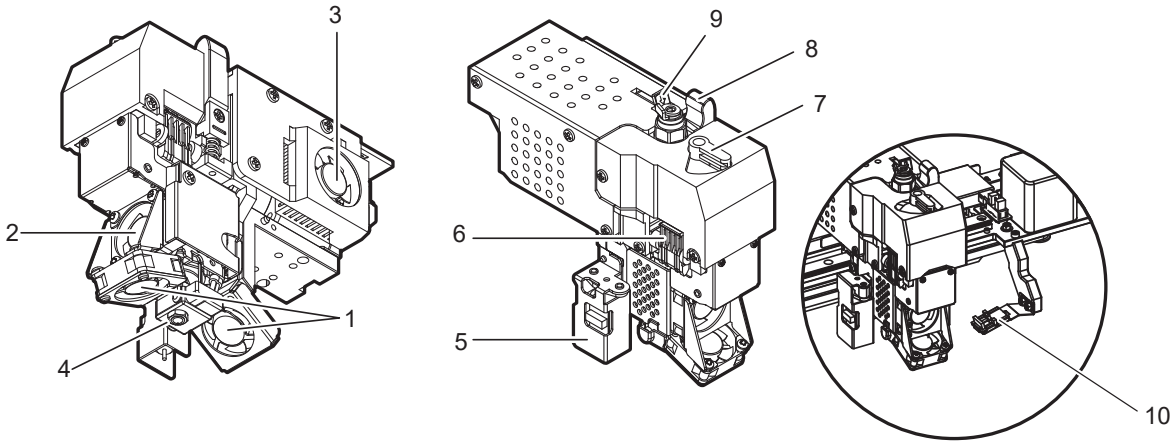
No.	Part Name	Description	
1	Front door handle	A handle to open the front door.	
2	USB port	Connect USB flash drive containing printing information and print directly from USB flash drive.	
3	LCD Control panel	Screen used to control printer. ⚠ Caution – Usage of printer is recommended after removing 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.	
11	Extruder door	Door for maintaining extruder unit.	
12	Nozzle tube guiding rod	Prevents the nozzle tube from twisting.	
13	Main power switch (I /O)	Turn the power on or off by pressing “I” (ON) or “O” (OFF).	

<Interior>



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. It has both sides of A and B. - Side A is a general purpose sheet for various materials. - Side B is recommended for printing materials which requires high temperature of the bed, such as ABS etc.

<Nozzle>



No.	Part Name	Description
1	Fan 1	Used to cool down models
2	Fan 2	Used to cool down the heat sink of the nozzle part
3	Fan 3	Used to cool down the nozzle motor
4	Nozzle	Used to print.
5	Sensor	Used to level the bed
6	Nozzle mount hook	Used to mount and fix the nozzle
7	Nozzle fixing handle	Used to fix the nozzle
8	Nozzle drive pressurization handle	Pressurizing handle to drive the filament
9	Depressurization handle lever	Used to depressurize the nozzle drive pressurization handle
10	Nozzle cleaning pads	These are used for removing foreign matters from the nozzle.

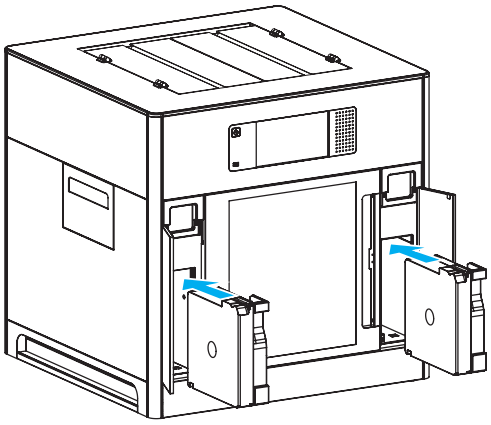
4. Installation(Product connection, Cartridge Setup and Software installation)

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"**).

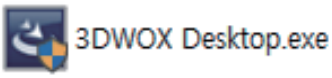


4 Connection to PC
1) Direct Connection: Connect one end of the enclosed USB cable to the back of the 3DWOX and the other end to the PC.
2) Network Connection: Refer to 2-34(Network) of the User Manual.

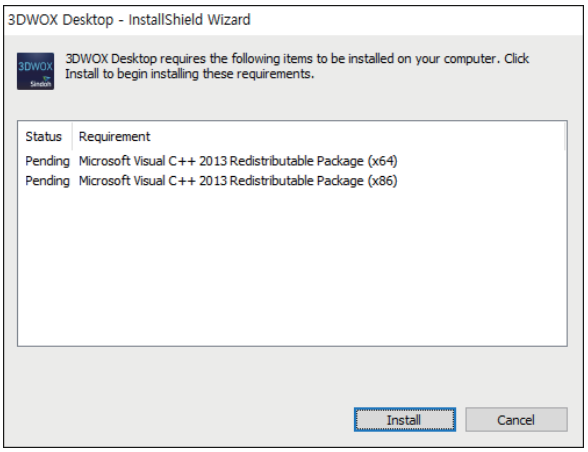
5 Plug USB flash drive in, and install machine drivers and Slicer program.

4.2 Program Installation

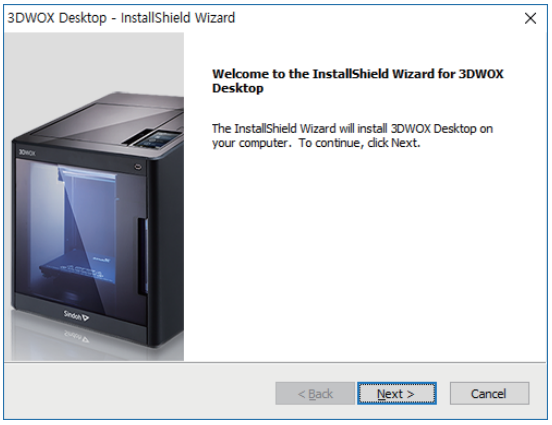
1 Start the installation of 3DWOX Desktop program by clicking on **"3DWOX Desktop.exe"** file in the enclosed USB.



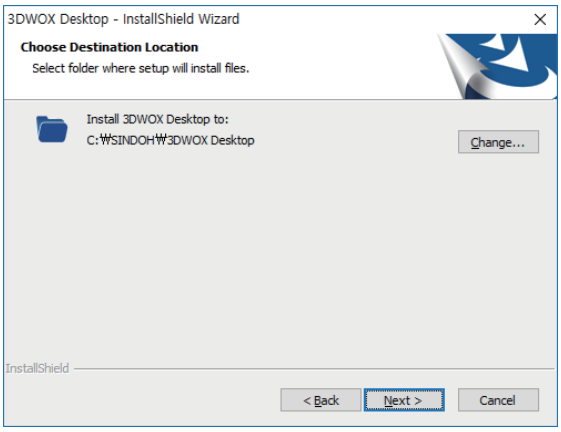
2 Install the additional files required by the software first.



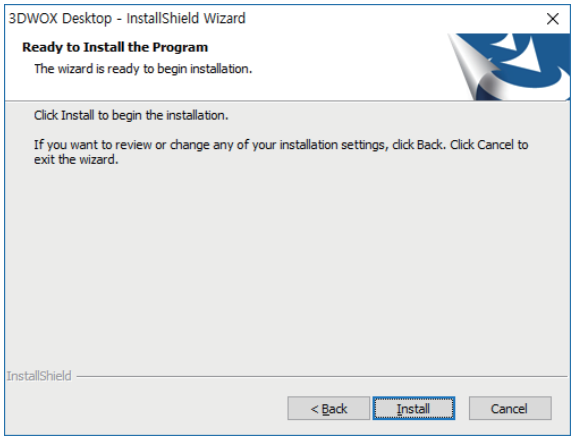
3 When installation of the file is complete, a pop-up window shows up as picture below.
Press **[Next]** button to initiate the installation of 3DWOX Desktop program.

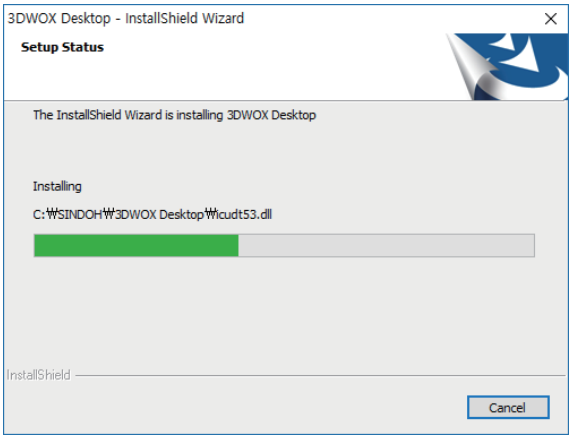


4 Choose the destination location of the file and press **[Next]** to proceed.

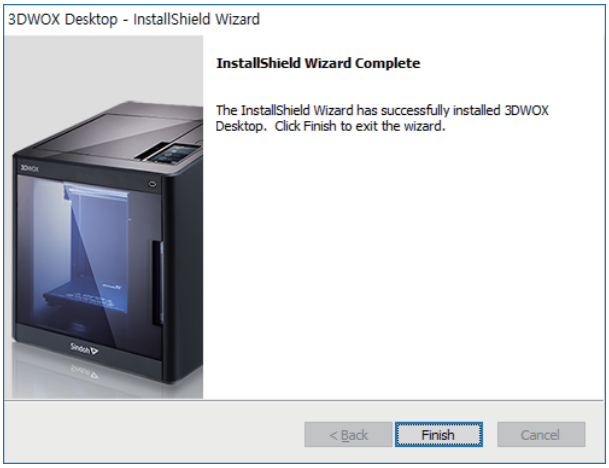


5 The file gets saved and the installation starts.





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



3DWOX 5X / 7X
USER MANUAL

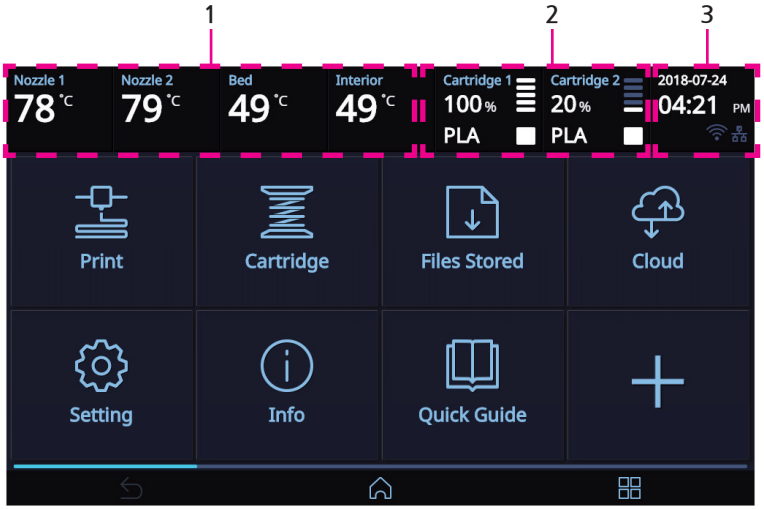
UI Menu Function

2

1. UI Home Screen Functions

1.1 Device Status Display

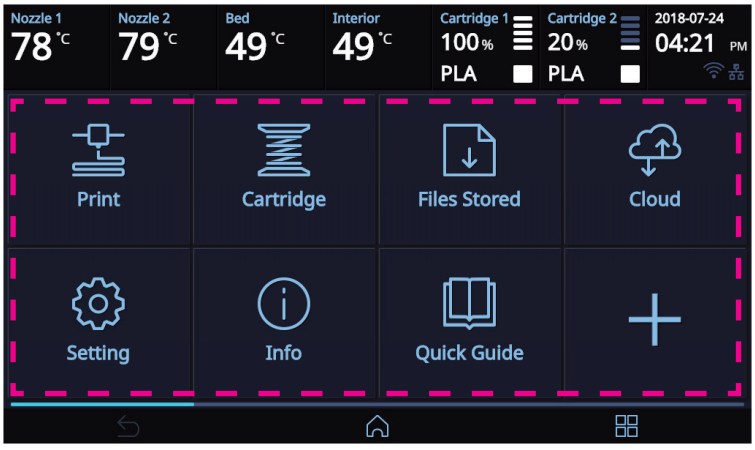
Displays information about the current state of the device.



No.	Name	Description	
1	Termperature Display	Displays the current temperature inside the nozzle, bed and device.	
2	Cartridge Status Display	Displays the material, color, and remaining amount of the filament. Reference - Does not display the remaining amount while operating under "Open Material Mode".	
3	Time and Connection Status Display	Displays the current time and various connection status set on the device.	
		USB Memory Connection	Not connected / Connected Important - The dotted line blinks during the file transfer. While the dotted line is flashing, do not remove the USB Flash Drive.
		Wifi Connection	Not connected / Connected
		LAN Connection	Not connected / Connected

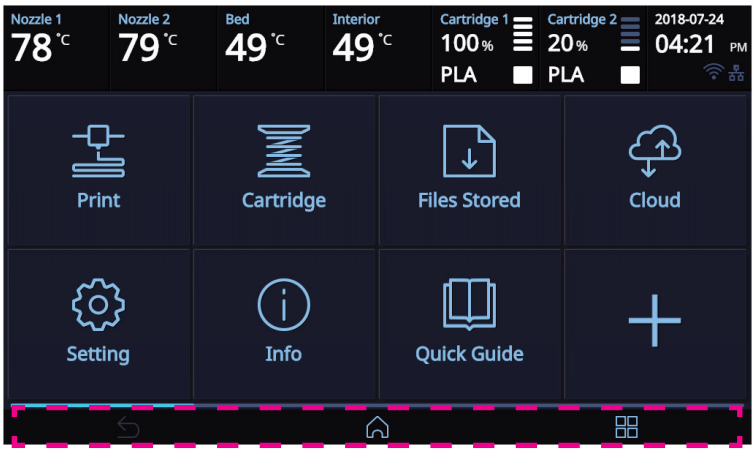
1.2 UI Function Control

Under this menu, various UI functions can be operated.
You can run the functions you want to use by tapping the screen.



1.3 Changing Screen / Application Functions

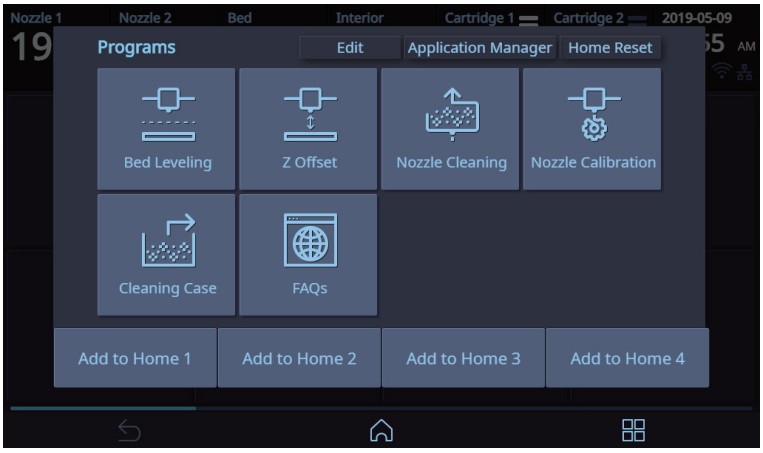
You can change the screens or go to the application management screen for additional functions.



Display	Name	Description
	Return	Return to the previous page
	Home	Return to the home screen
	Programs	Enter to the program management screen.

Programs

You can change the screens or go to the application management screen for additional functions.



No.	Name	Description
1	Edit	You can edit the layout of the function buttons on the Home screen. Press Edit and drag the function button to place it on the home screen you want to place between the home 1 ~ home 4.
2	Application Manager	Installs or removes programs for add-ons.
3	Home Reset	Initializes the layout of the Home screen.

2. UI Menu Function description

PRINT	USB		
	FILES STORED		
CARTRIDGE	CARTRIDGE 1, CARTRIDGE 2	LOAD	
		UNLOAD	
		UNLOCK	
CLOUD			
SETTING	Extruder		
	Bed Leveling		
	Z Offset		
	Nozzle Control	Nozzle Cleaning Auto	
		Nozzle Cleaning Manual	
		Nozzle Calibration	XY Calibration
			Enter Pattern Value
		Nozzle change	
	X,Y,Z		
	Network	Wifi	
		Wired	
	Bed Lowering		
	Cleaning Case		
	Open Material		
	Test Print		
	S/W Update		
	General	Active Leveling	
		Lamp	
		Power Saving	
		Beep	
		Unit	Temperature
			Length
		Voice Guide	Speech
			Volume
			Speed
		Language	
		Time setting	
		Time zone	
		E -mail	
		Security	
		Camera Frame Rate Setting	
		*SSD Format	
Programs	FAQ		

* Included only on 7X models.

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

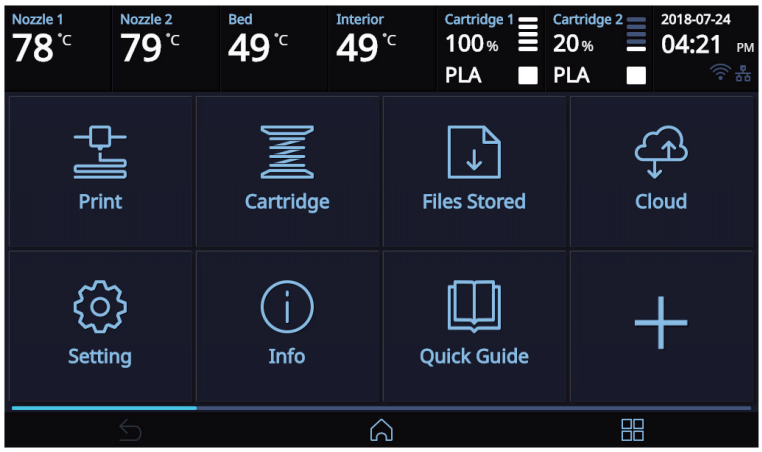
2.1 PRINT

PRINT	USB
	FILES STORED

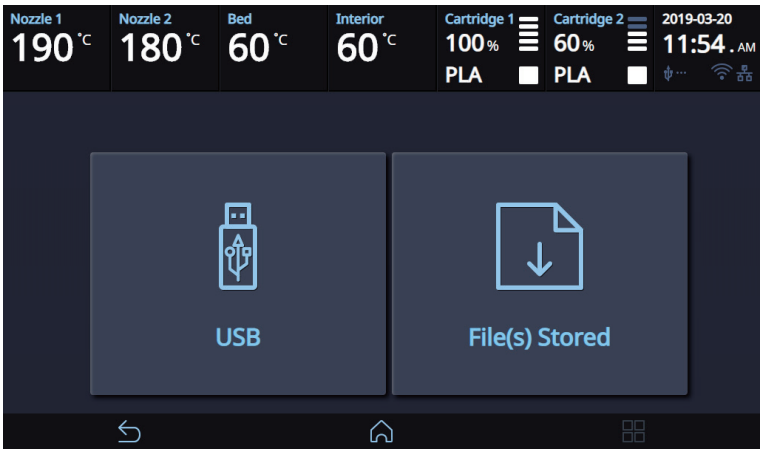
USB

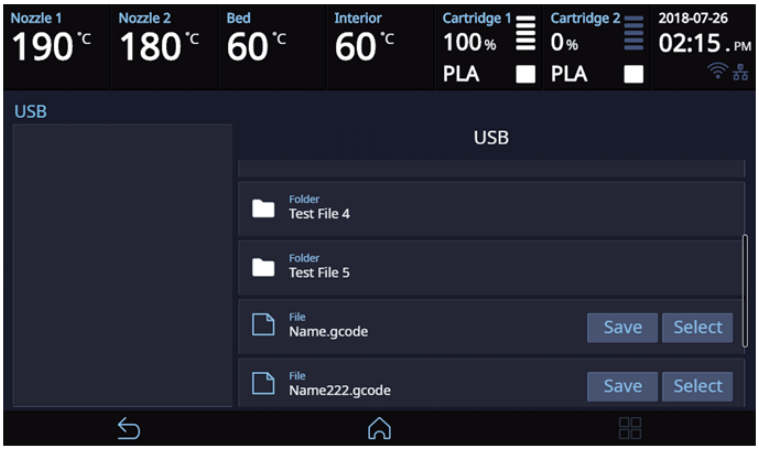
This function is to print files stored in the USB memory.

1 From the HOME screen press **[Print]**.



2 Press the **[USB]** button, and select the file you want to print from the list.

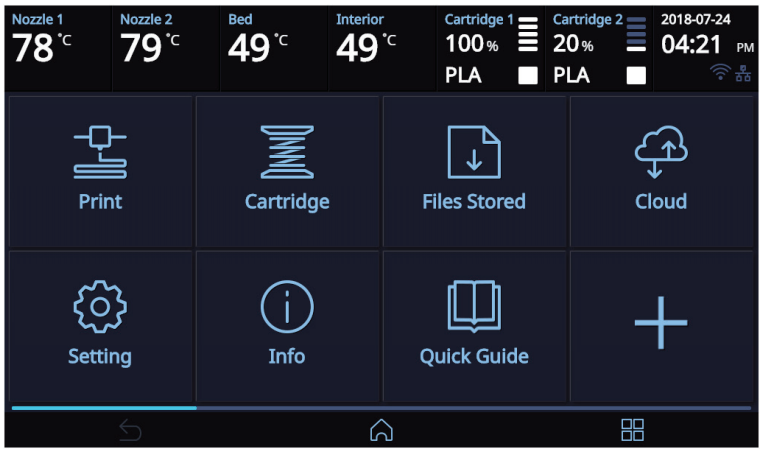




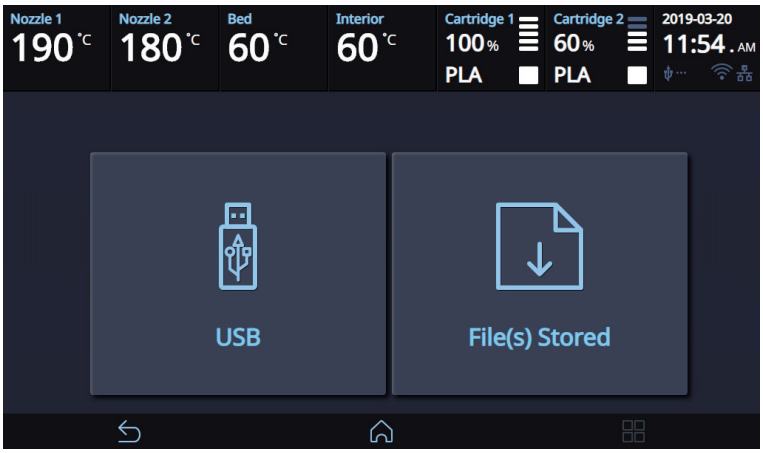
FILES STORED

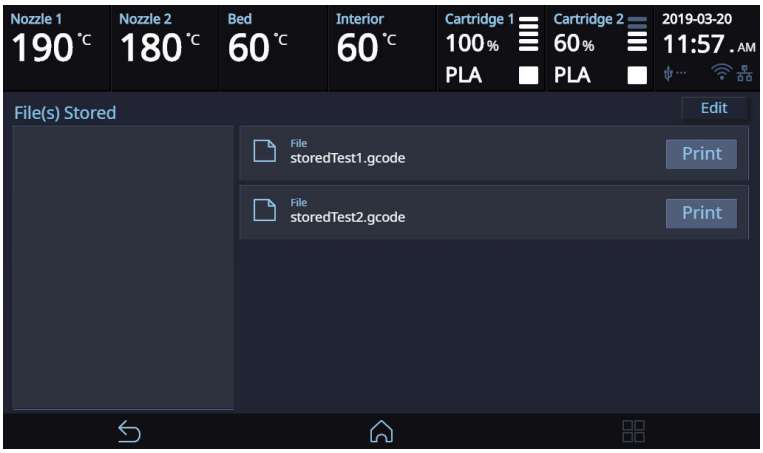
This function is to print files stored in the machine.

1 From the HOME screen press **[Print]**.



2 Press the **[Files Stored]** button, and select the file you want to print from the list.





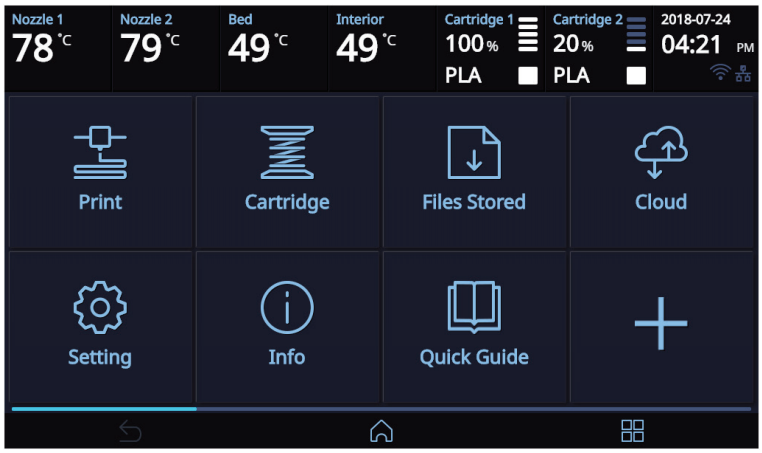
2.2 CARTRIDGE

CARTRIDGE	CARTRIDGE 1, CARTRIDGE 2	LOAD
		UNLOAD
		UNLOCK

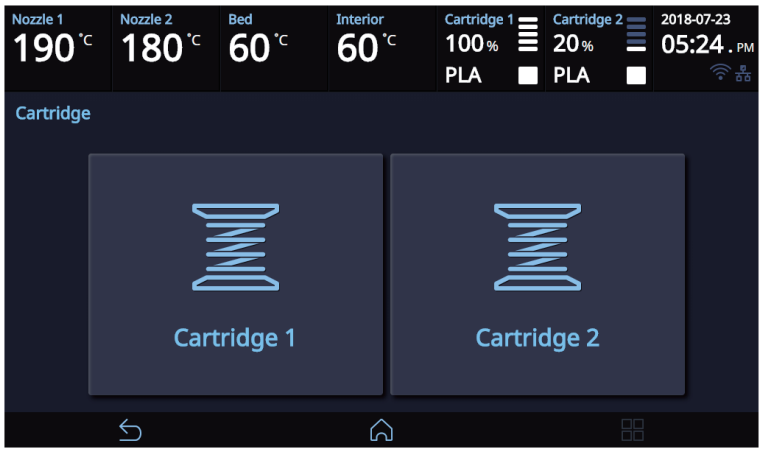
LOAD

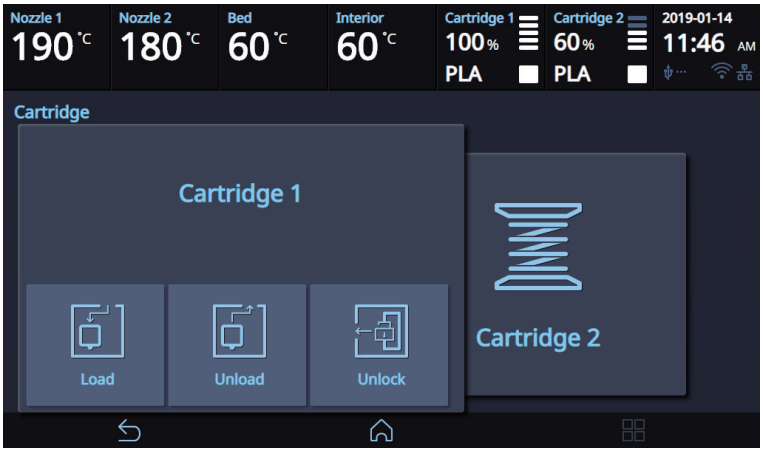
This function automatically loads filament to the Nozzle.

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

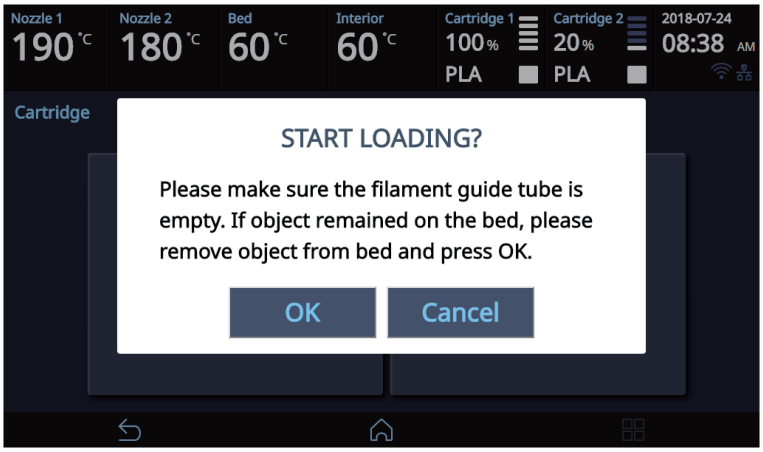


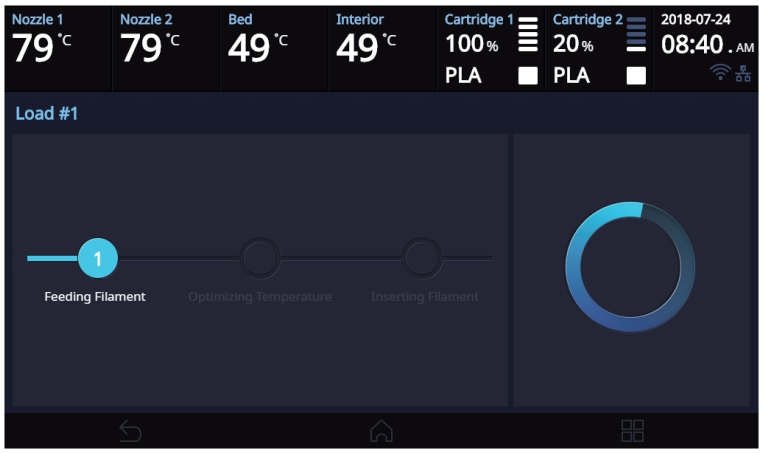
2 Select the cartridge and press **[Load]** to load the cartridge.





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

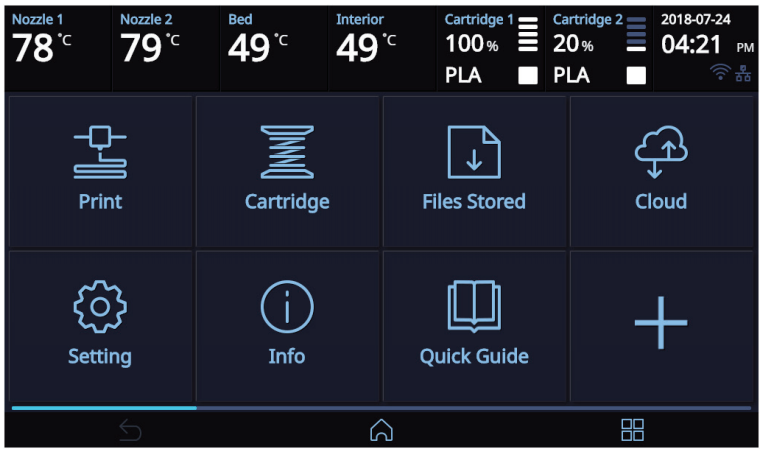




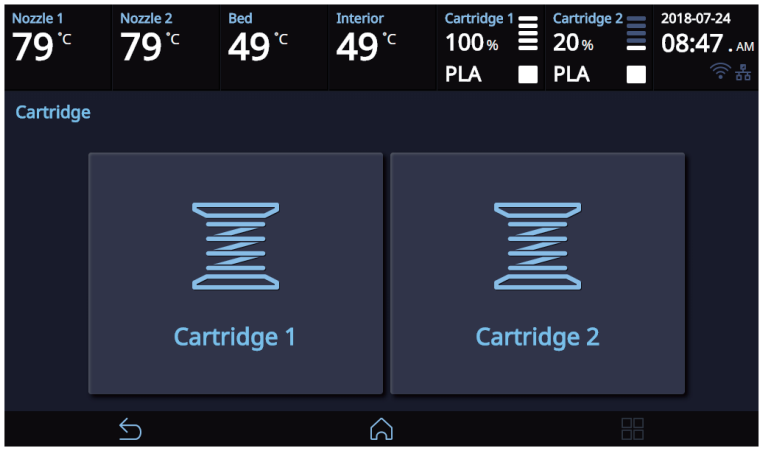
UNLOAD

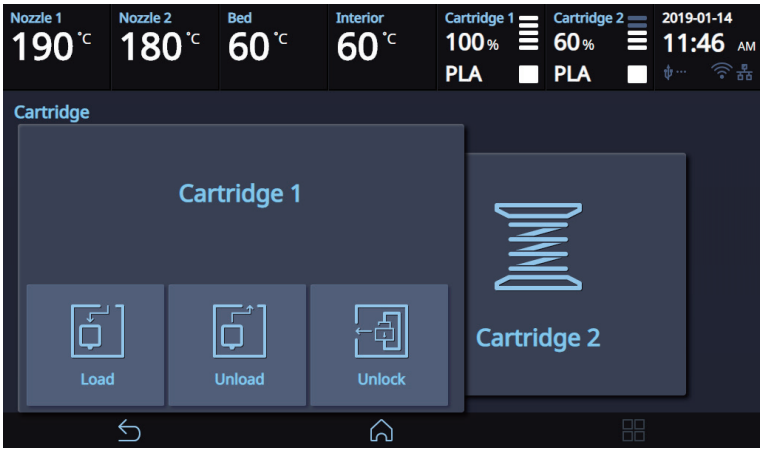
This function automatically unloads filament from the nozzle.

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

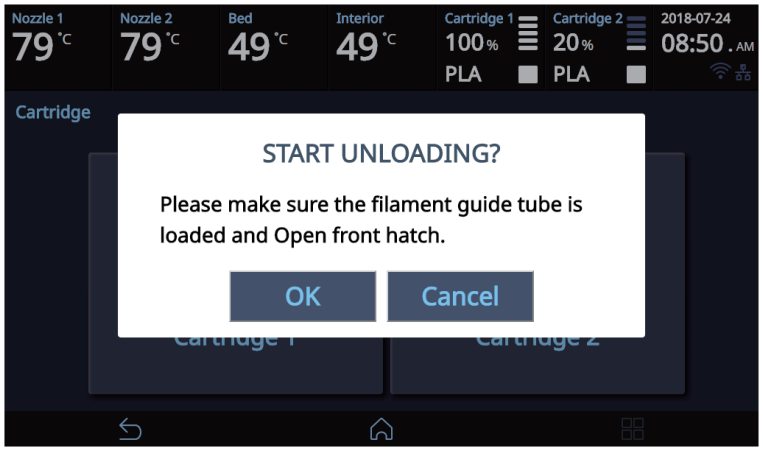


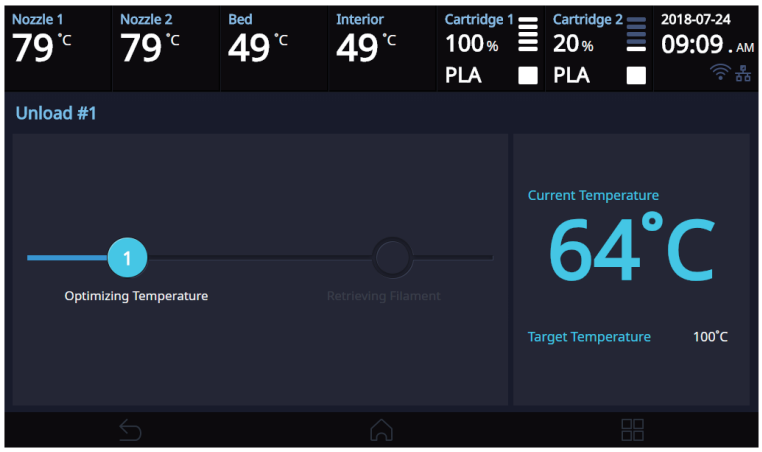
2 Select the cartridge and press **[Unload]** to unload the cartridge.





3 When **[OK]** is pressed at the cartridge unload confirming message, cartridge unloading will automatically procceed. 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.

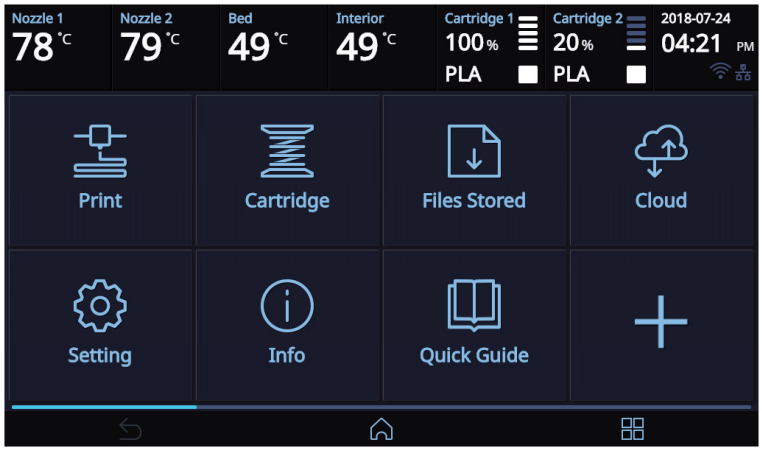




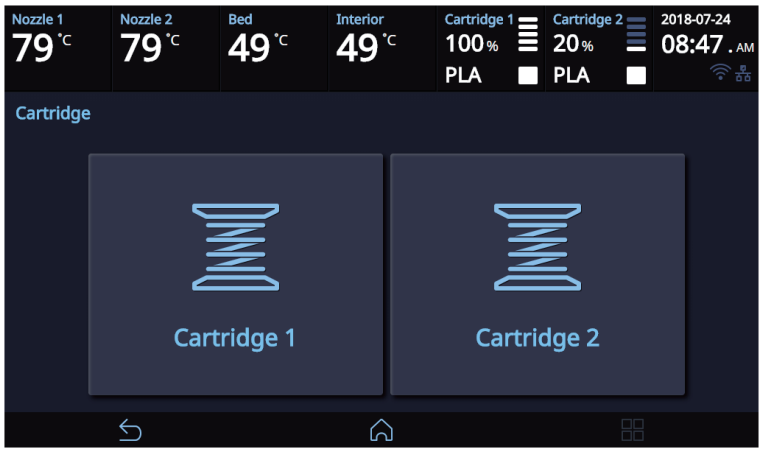
❖ Unload PVA(PVA+), Flexible Filament.

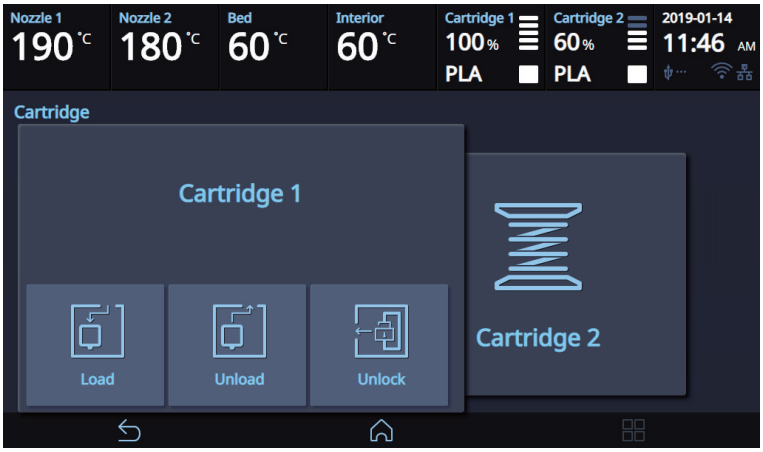
Follow the instructions when you unload soft-materials such as PVA(PVA+), Flexible.

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

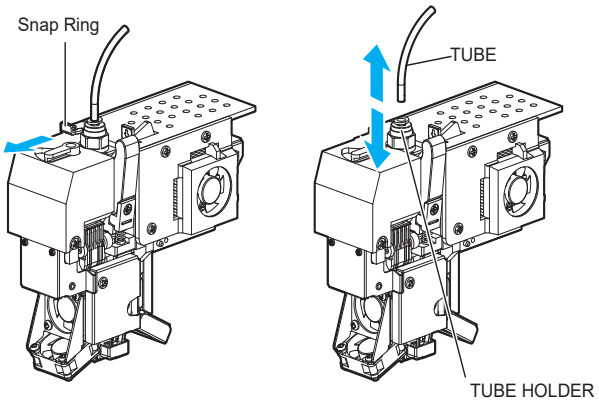


2 Select the cartridge and press **[Unload]** to unload the cartridge.

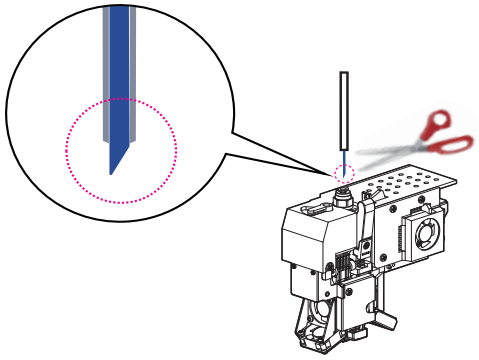




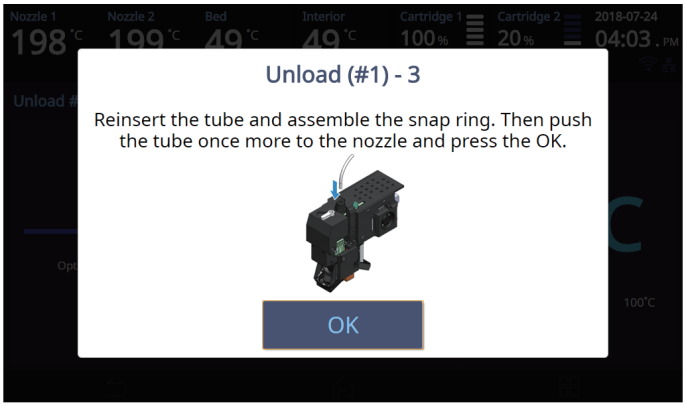
3 As shown in the following UI screen, remove the snap ring and tube from the nozzle and then press the **[OK]** button.

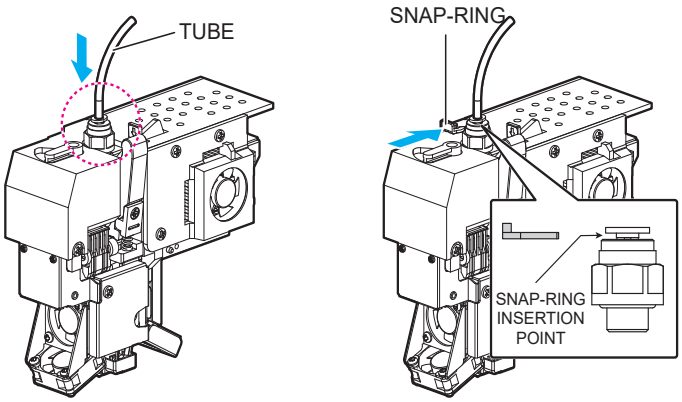


4 Cut the filament that came out of the tube as shown below and press the **[OK]** button.

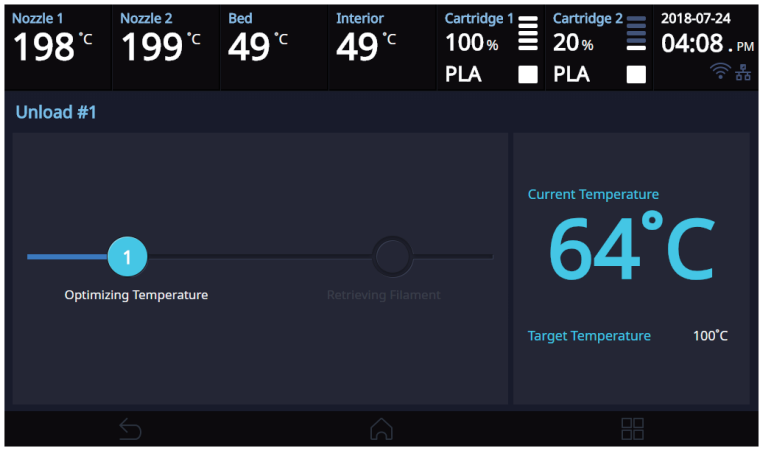


5 Reinsert the tube into the nozzle and then install the snap ring. Push the tube toward the nozzle again. Then, press the **[OK]** button.





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

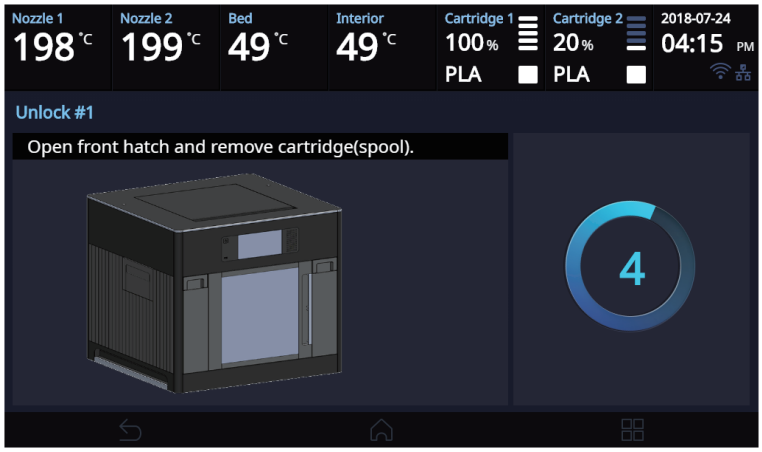


UNLOCK

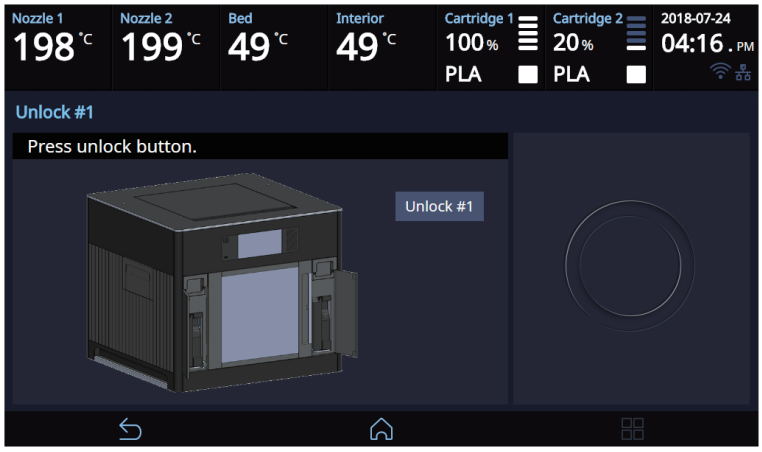
This Function is to remove the cartridge out of the printer. Cartridge unlock automatically initiates when filament unload is finished. Cartridge unlock can also be manually done by the user.

❖ When unlock screen automatically appears after cartridge unload.

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

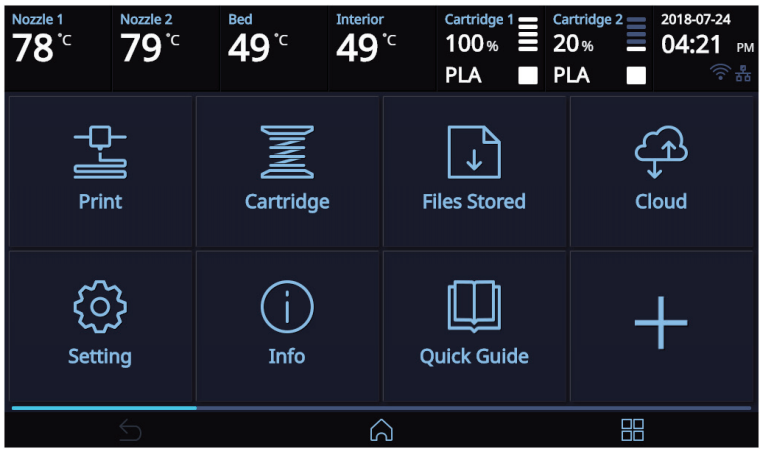


2 After 10 seconds printer will automatically change to **[Lock]** state and **[Unlock]** appears.

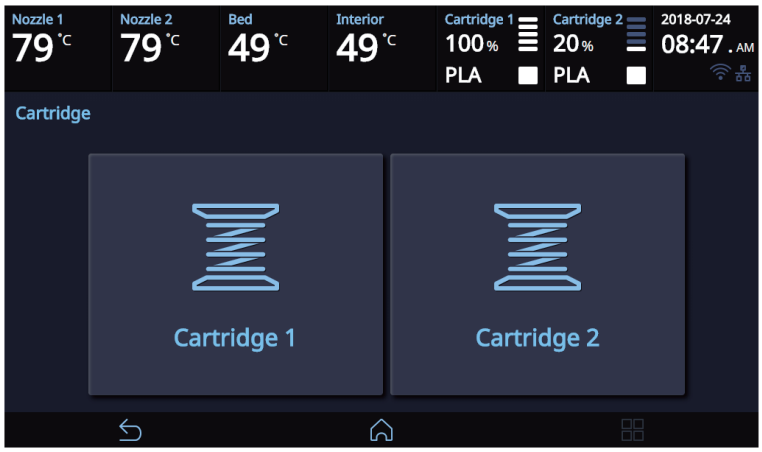


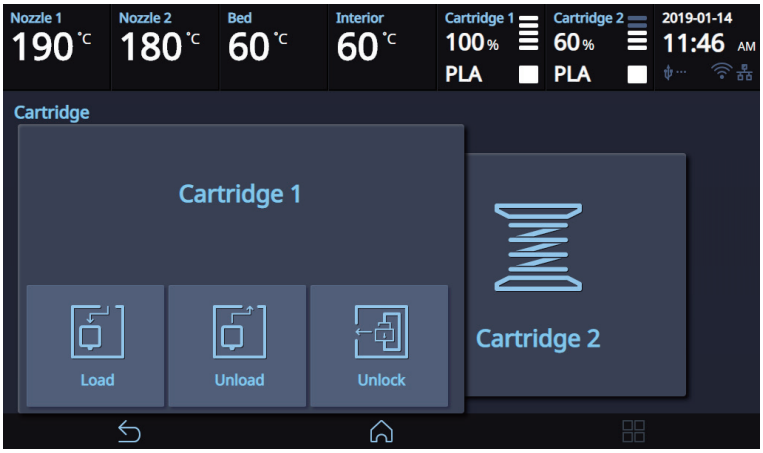
❖ To manually unlock later.

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

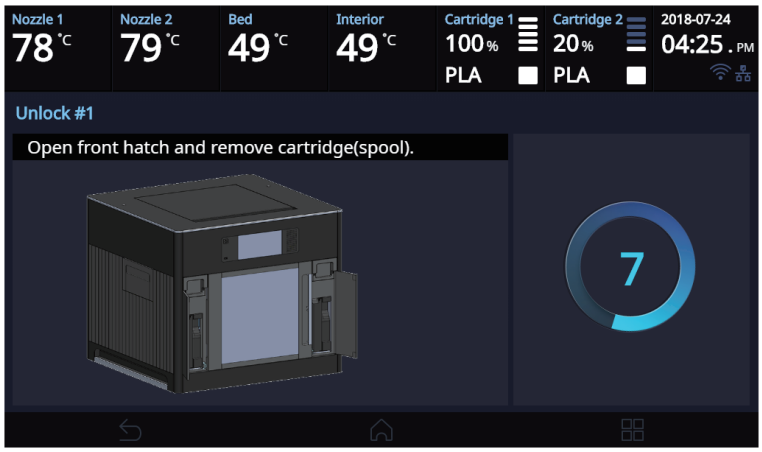


2 Select the cartridge and press **[Unlock]** to unlock the cartridge.

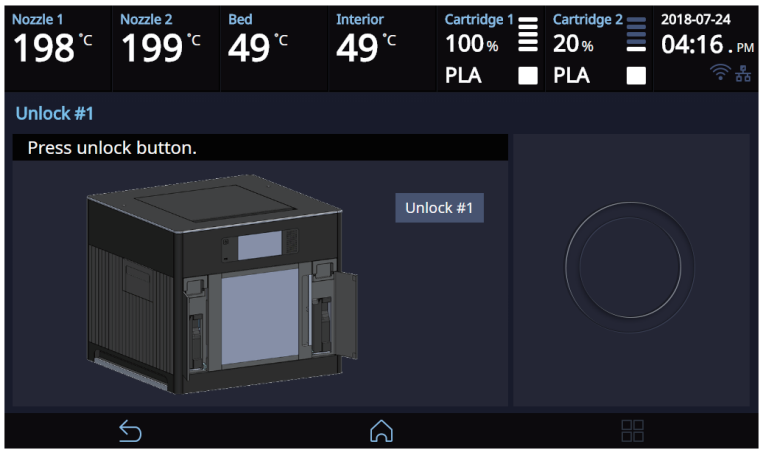




3 For 10 seconds **[Lock]** state is deactivated and the user can detach cartridge from printer.
If the cartridge can't be pulled out even after **"unlock"**, gently push it forward and then try to pull out again.



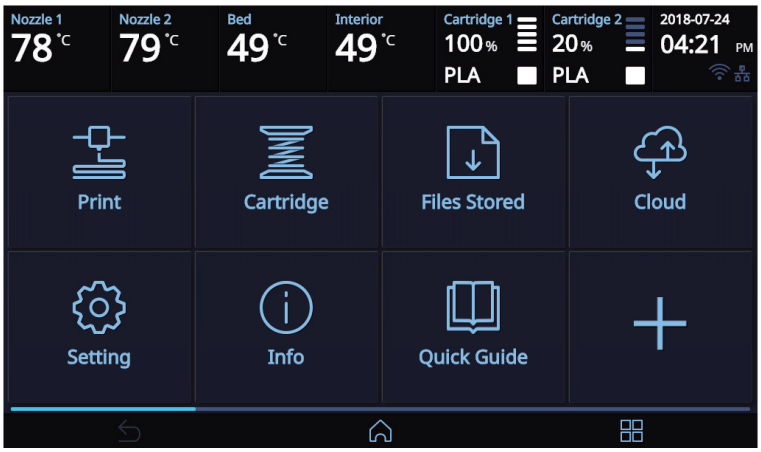
4 After 10 seconds printer will automatically change to **[Lock]** state and **[Unlock]** appears.



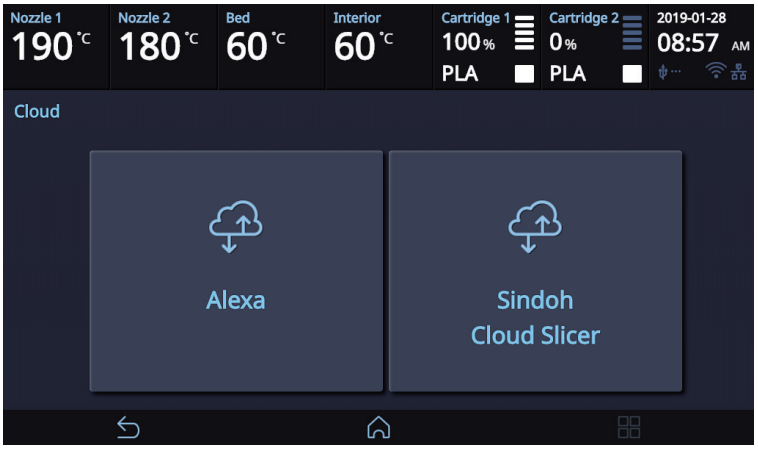
2.3 CLOUD

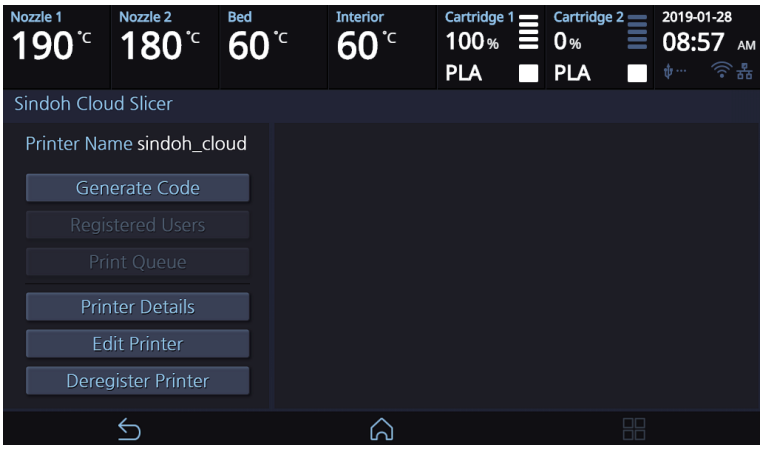
This function enables calling and printing files stored in the server using cloud apps under network connection.

1 On the Home window, click the **[Cloud]** button.



2 Cloud apps available for users will be listed.





Reference

- For more details on the cloud function, see p. 3–8, “Cloud-based printing.”

2.4 Settings

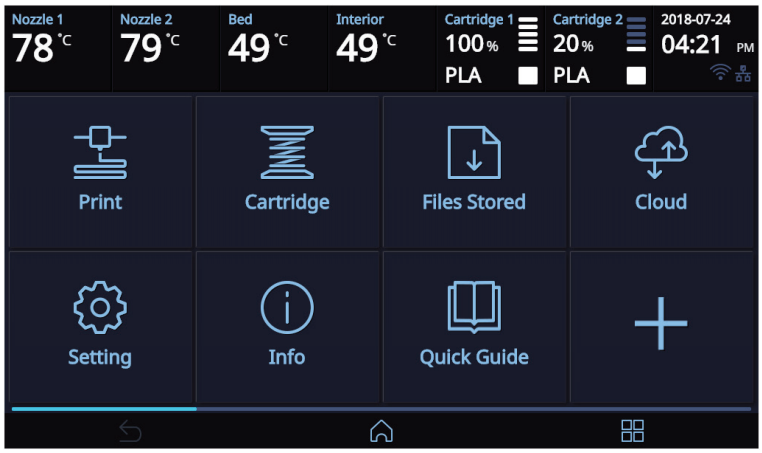
Setting	Extruder		
	Bed Leveling		
	Z Offset		
	Nozzle Control	Nozzle Cleaning Auto	
		Nozzle Cleaning Manual	
		Nozzle Calibration	XY Calibration
			Enter Pattern Value
		Nozzle change	
	X,Y,Z		
	Network	Wifi	
		Wired	
	Bed Lowering		
	Cleaning Case		
	Open Material		
	Test Print		
	S/W Update		
	General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

* Included only on 7X models.

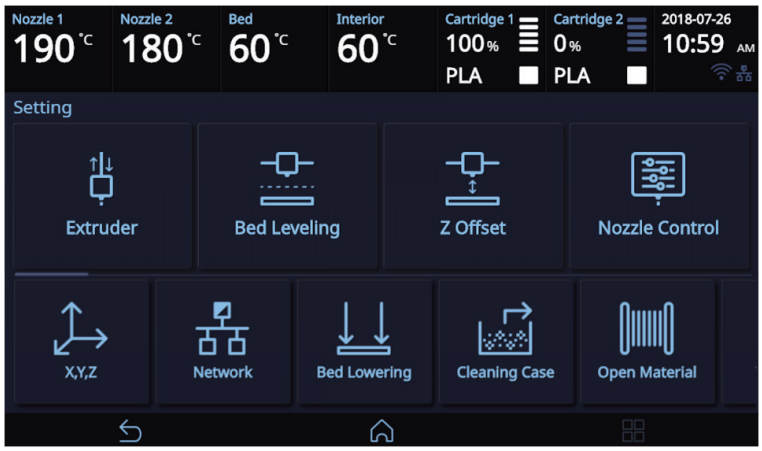
Extruder

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

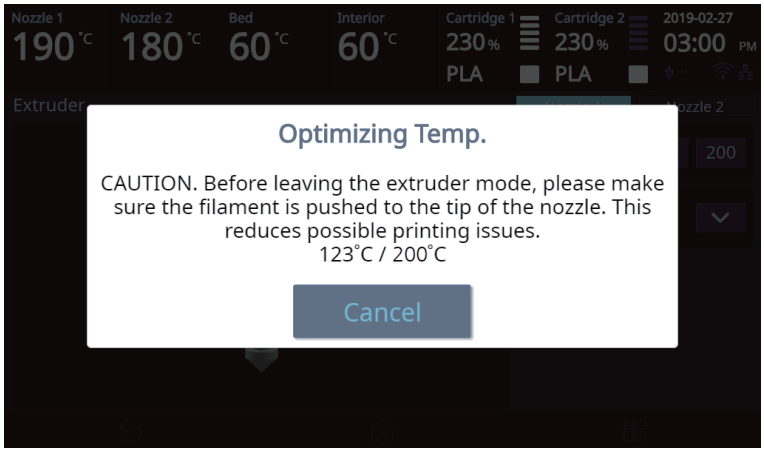
1 From home screen press **[Setting]**.



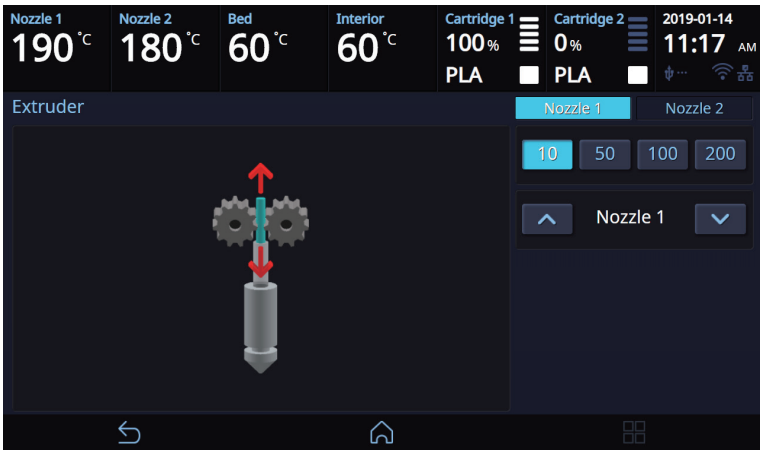
2 Press **[Extruder]** to enter Extruder settings.

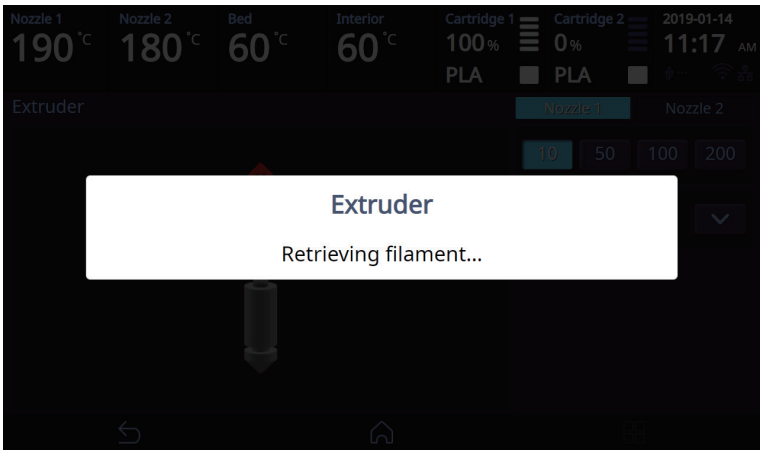


3 To Control **[Extruder]**, Nozzle temperature needs to be raised.
Press the **[Cancel]** button to cancel temperature increase during the operation.



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

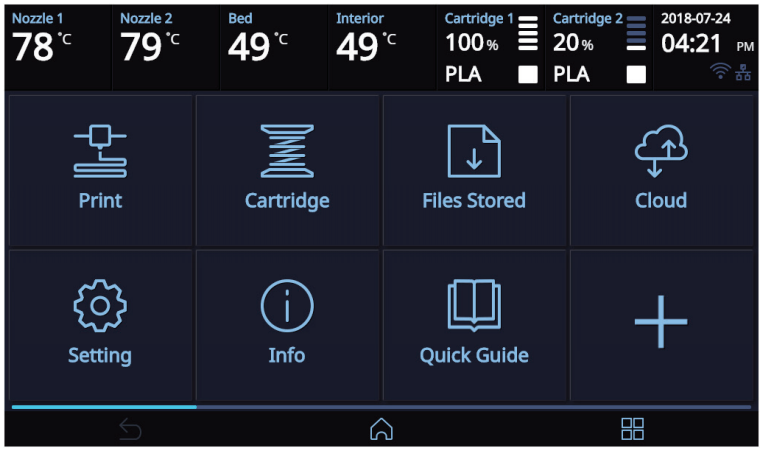




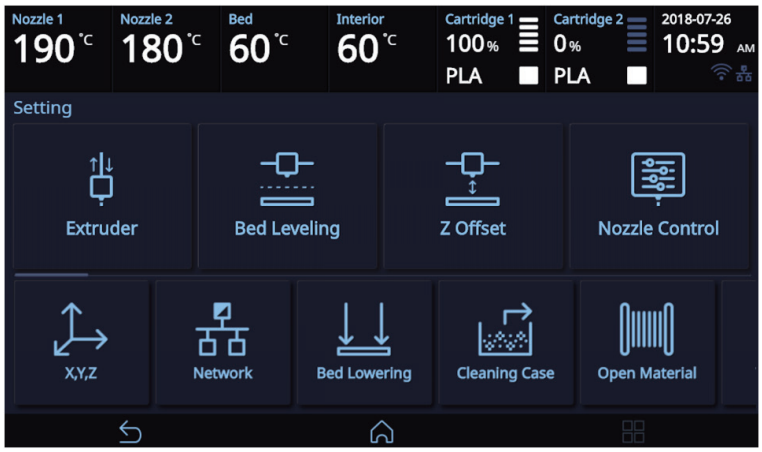
Bed Leveling

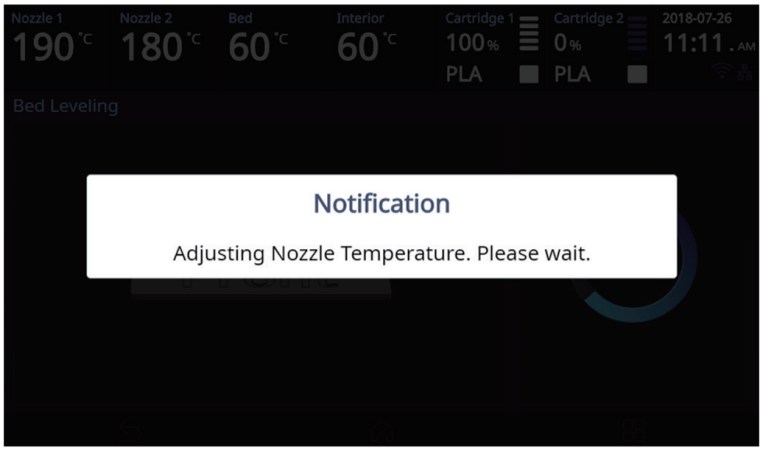
This function is used to perform the leveling of the bed.

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

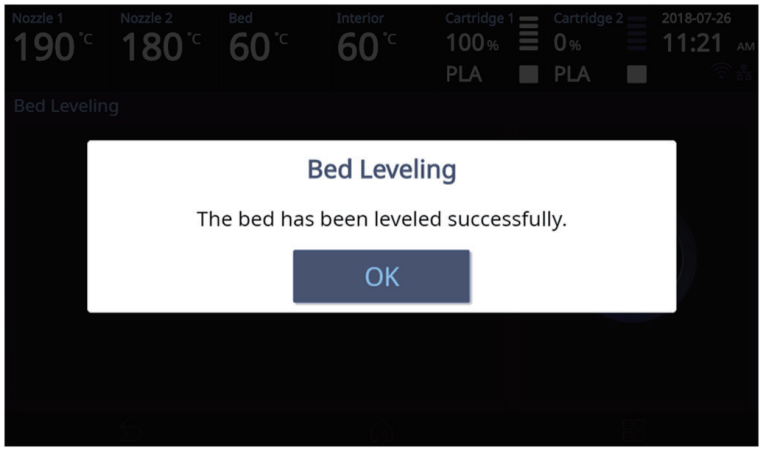


2 Press the **[Bed Leveling]** button to enter Bed Leveling settings.
If the current Nozzle temperature is too high, process for cooling down the Nozzle temperature is added.





3 Leveling will be automatically done and after completion, the screen will return to its previous page.

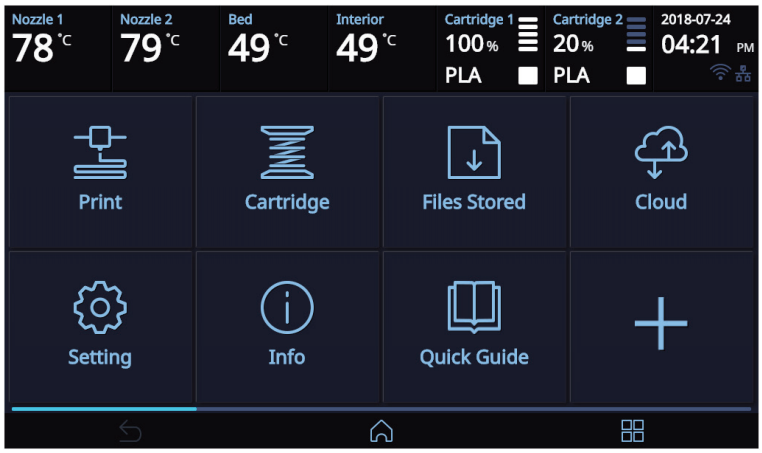


Z Offset

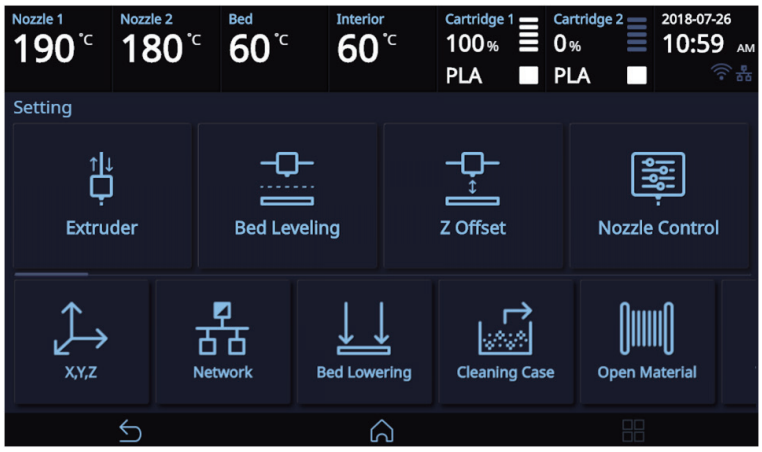
※ After bed leveling, it is highly recommended to check the z-offset.
This Menu allows user to control the GAP in between Nozzle and BED. Standard is 0.25mm and can be customi zed. **[+]** button widens the GAP, **[-]** button shortens the GAP.

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

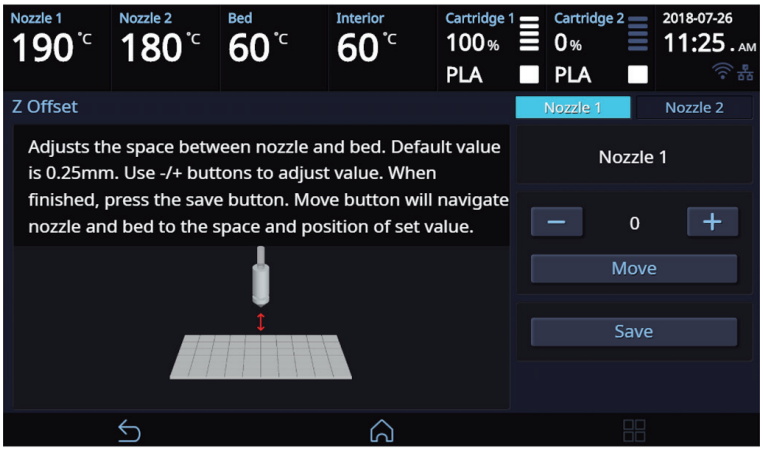
1 From home screen press **[Setting].**



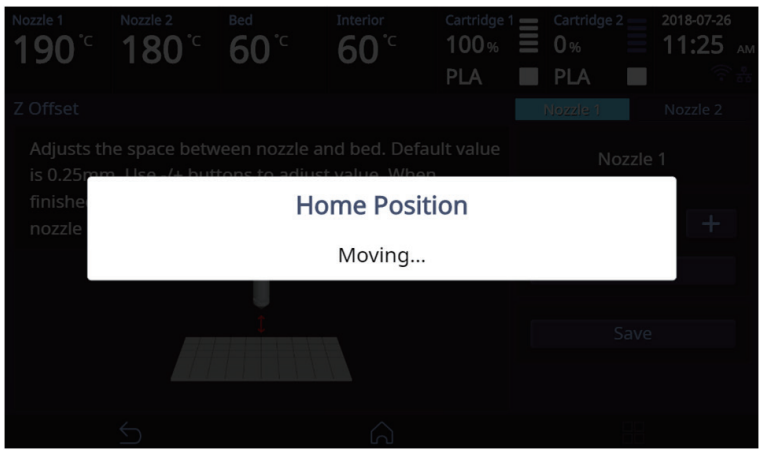
2 Press the **[Z Offset]** button to access Z Offset screen.

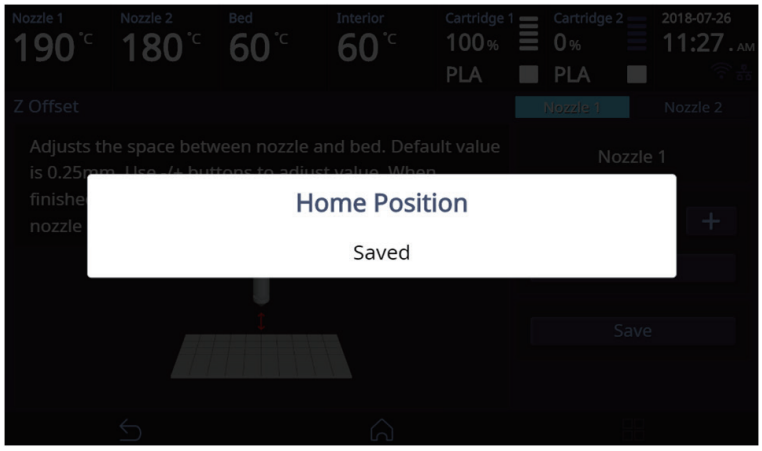


3 Select the nozzle that you will use to adjust the gap.
Default value is 0.25mm, Use **[+]**, **[-]** buttons to move in 0.05 mm unit.



4 Use the **[Move]** and **[Save]** buttons to adjust the gap and to save the setting.
The saved value is applied when next time the print starts.

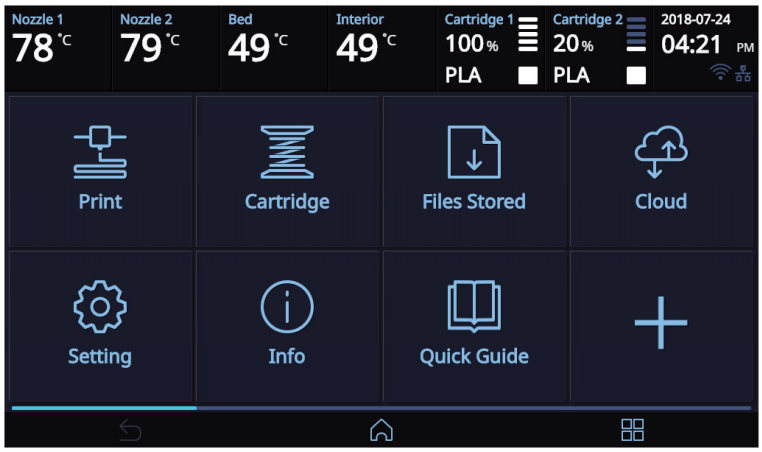




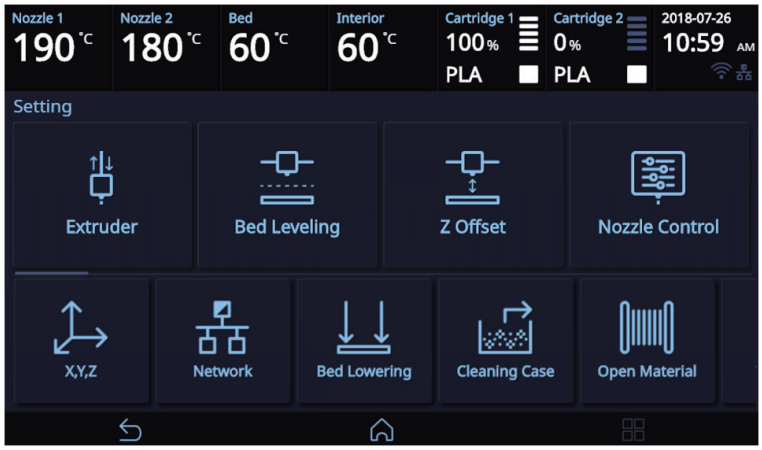
Nozzle Control

Nozzle controls include **[Nozzle Cleaning (Auto)]**, **[Nozzle Cleaning (Manual)]**, **[Nozzle Calibration]**, and **[Nozzle Replacement]**.
Nozzle controls can be used to clean, correct the location of, and replace nozzles.

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



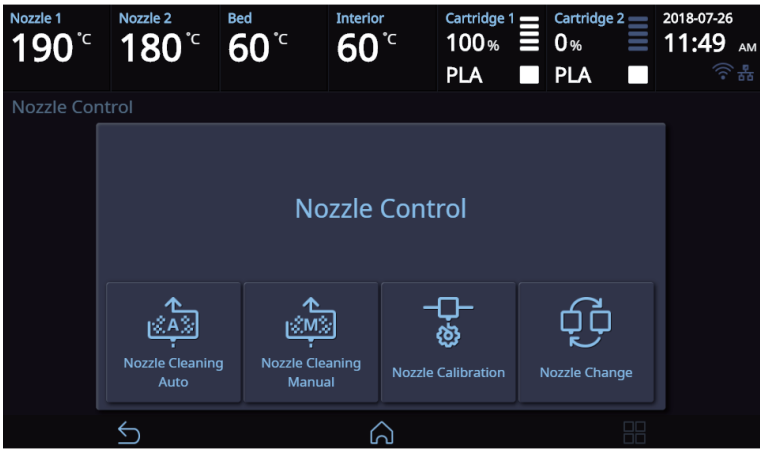
2 Press the **[Nozzle Control]**.

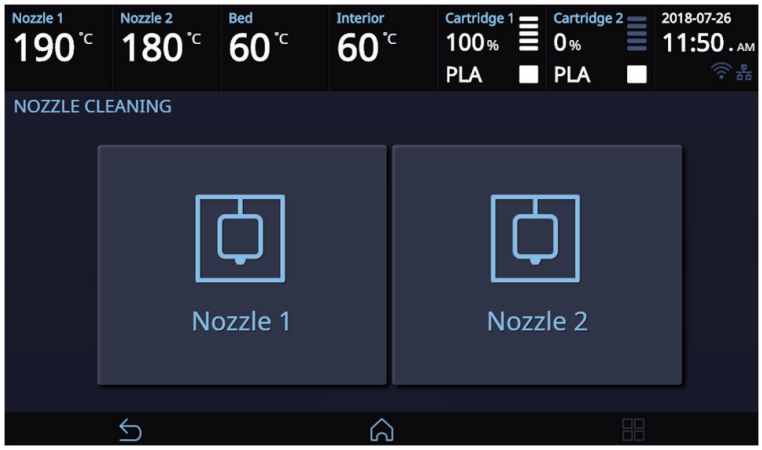


❖ Nozzle Cleaning (Auto)

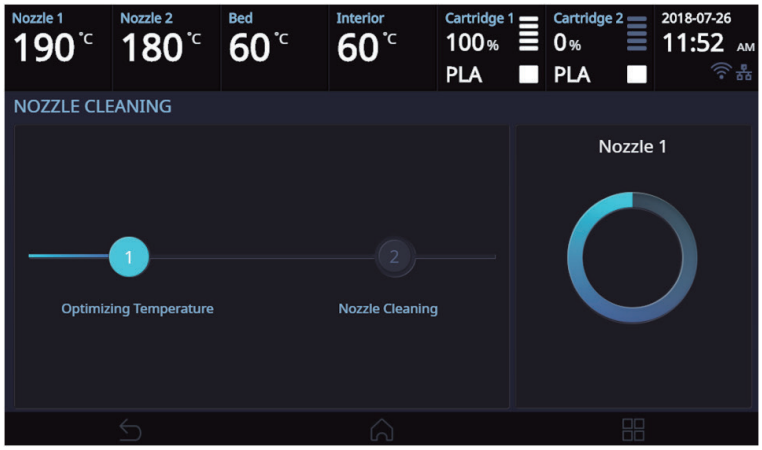
Use Automatic nozzle cleaning to remove the remaining debris inside the nozzle.

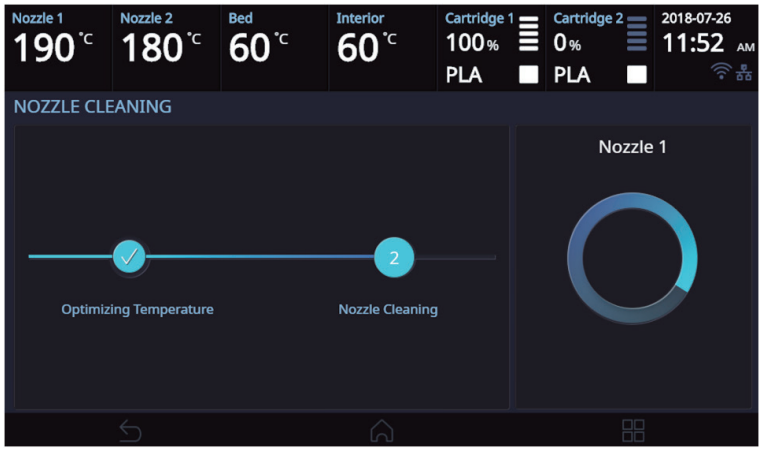
1 Press **[Nozzle Cleaning Auto]** button to access nozzle cleaning settings.
Select the nozzle that you want to clean.

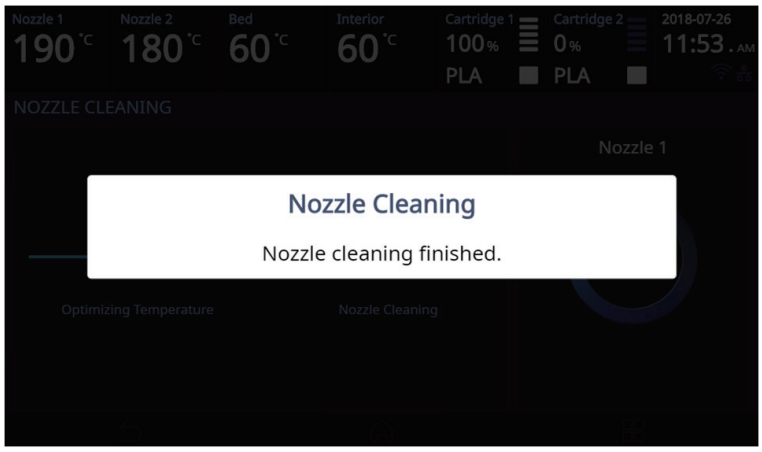




3 In order to get rid of filament residue, the nozzle needs to be heated.
When the specified temperature is reached, it moves on to the next step to remove filament residue.
Once finished message will appear, printer will return to the settings screen.



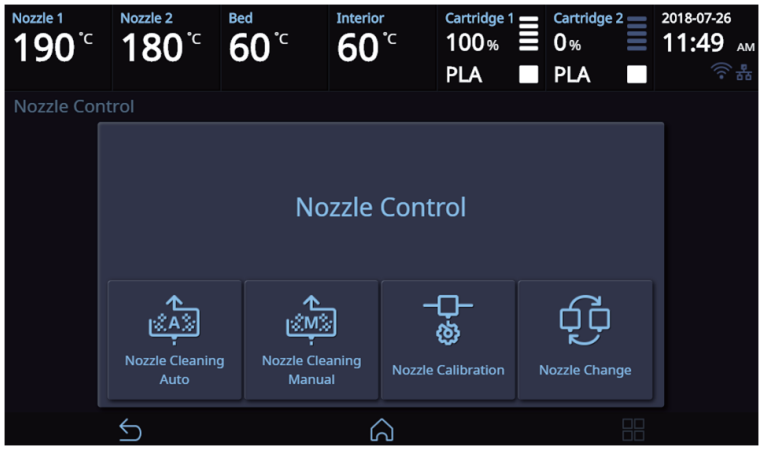


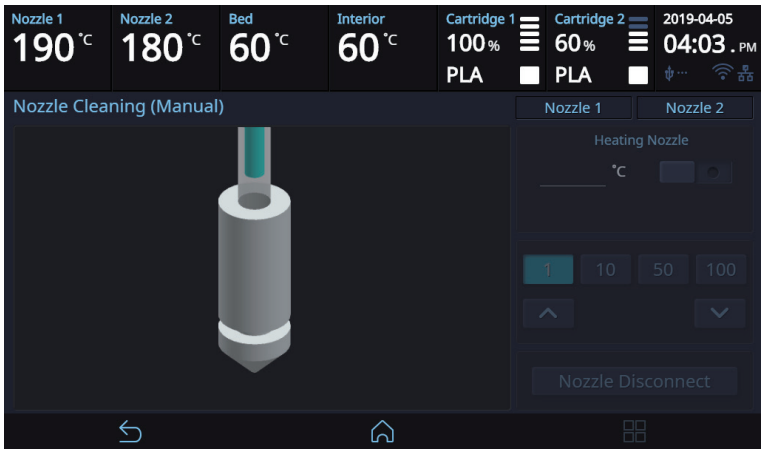


❖ Nozzle Cleaning (Manual)

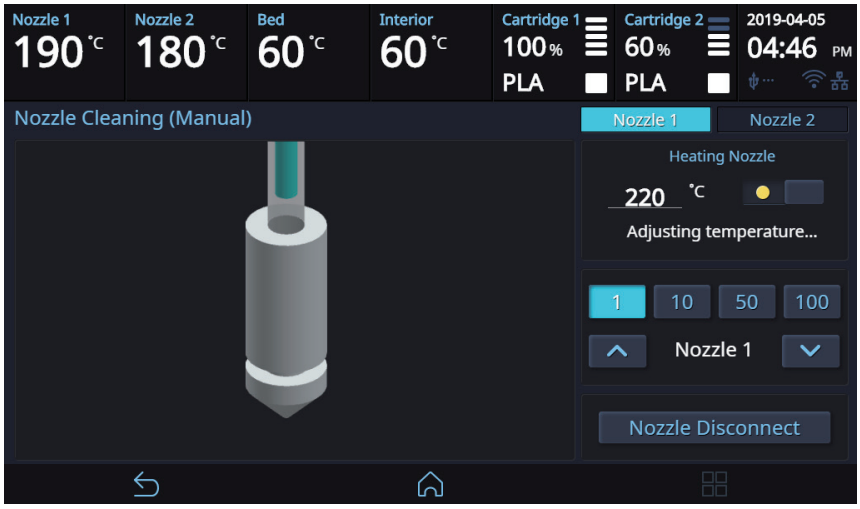
Use Manual nozzle cleaning to remove the remaining debris inside the nozzle.

1 Press **[Nozzle cleaning Manual]** button to access nozzle cleaning settings. Select the nozzle that you want to clean.





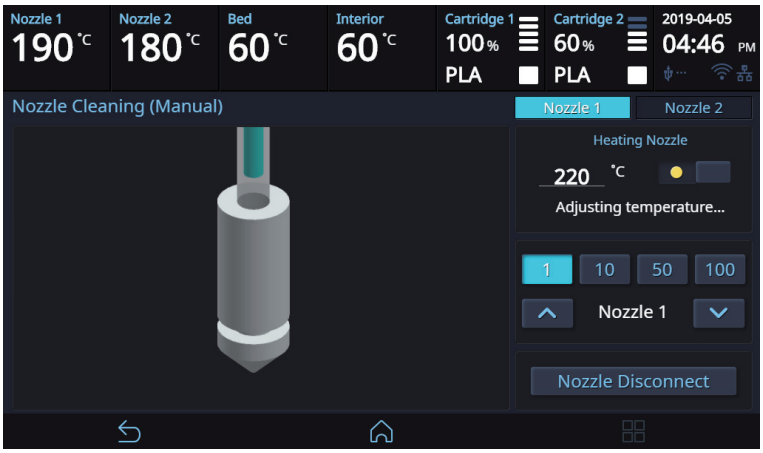
2 Enter the temperature and press the **[OK]** button. Press the heating nozzle button to set the temperature of the nozzle.

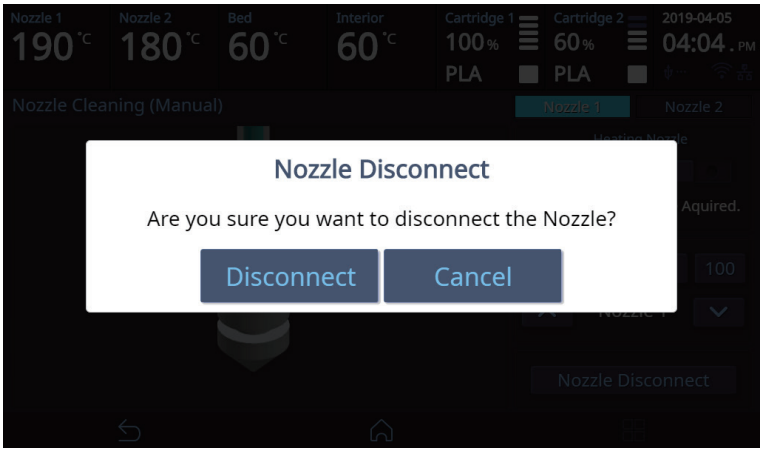


3 Remove the nozzles to clean its interior.
Press the **[Nozzle Disconnect]** and **[Disconnect]** button to disconnect the nozzle.

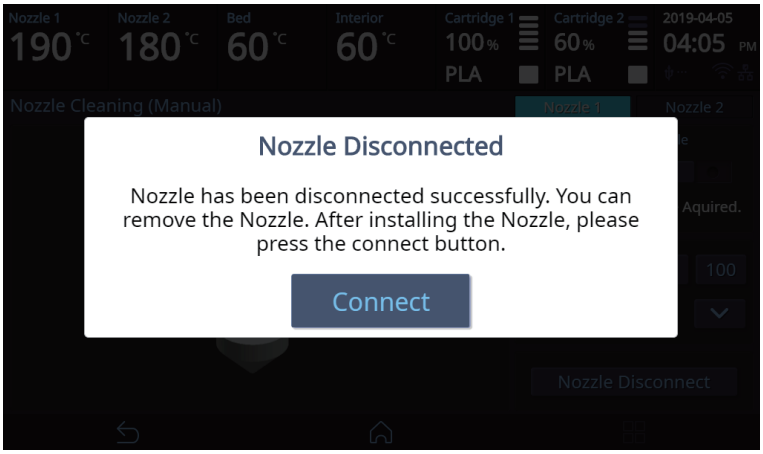
Note

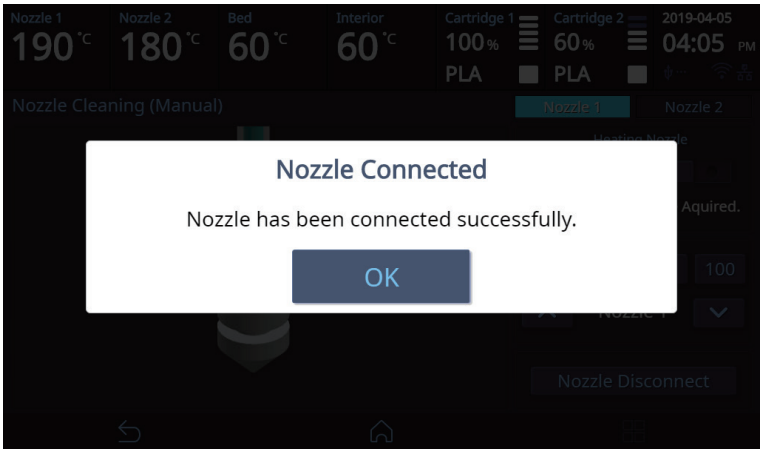
- Refer to P.3-6 “Nozzle Cleaning” for the details of the operation of each button.
- Refer to P.5-3 “1.5 Nozzle Inside Cleaning” for the details of cleaning inside nozzles.





4 Then press the **[Connect]** button to connect the nozzle.



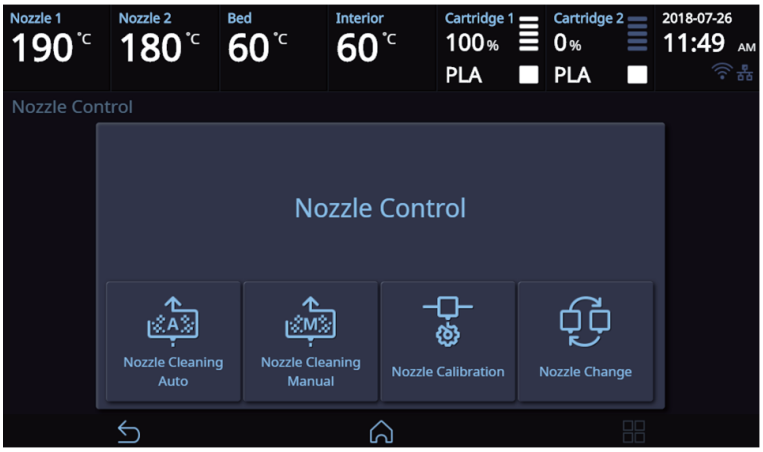


❖ Nozzle Calibration

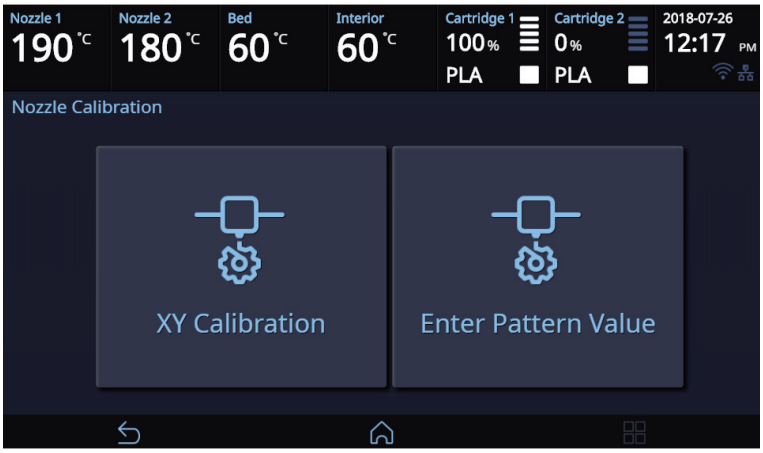
The location of the nozzle can be corrected.

▣ Printing of the XY Calibration Patt

1 Press **[Nozzle Calibration]** button to access the Nozzle Calibration screen.



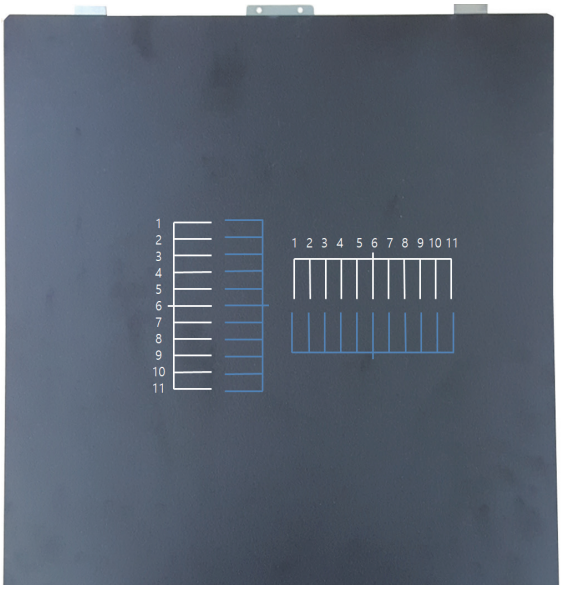
2 To print the XY calibration pattern, press the **[XY Calibration]** button.

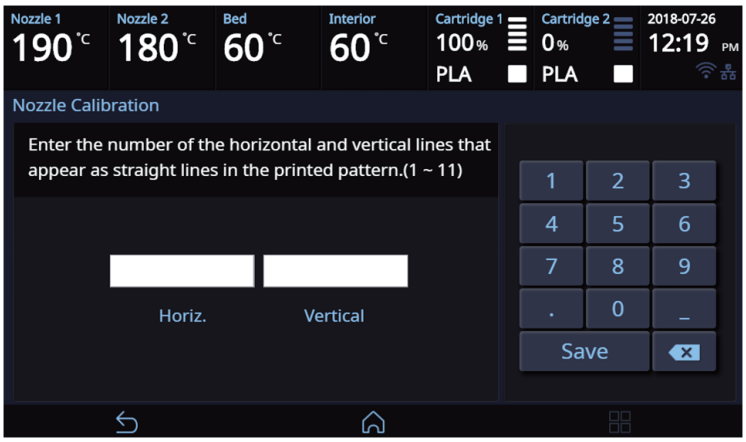


3 Press the **[Yes]** button to access the XY Calibration printing screen.

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

5 When printing pattern is completed, enter the number of the line that is the most straight line among the lines printed by Nozzle # 1 and # 2 and press [Save] button. If there is no straight line, enter the number of the nearest straight line. (The line number starts from the top for horizontal line and left for vertical line).





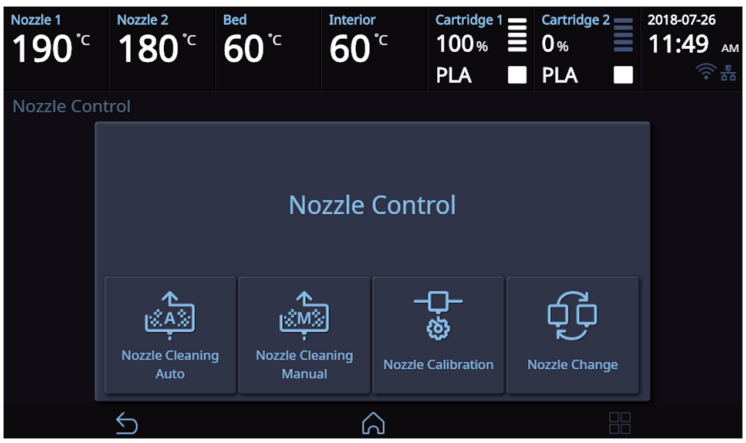
6 To print the pattern for the calibrating nozzle again, press the **[Yes]** button. Press the **[No]** button to return to the Home screen.

Note

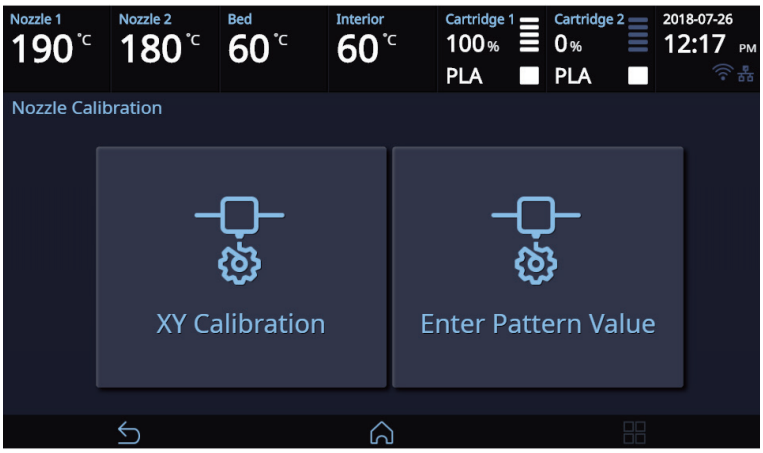
- Generally, the use of PLA material is recommended when performing XY-Calibration. Inevitably, XY-Calibration using ABS material is also possible.
  After the calibration is complete, there may be remainders on the bed during the process of removing the calibration pattern. (Pattern marks do not affect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

▣ Entering the Pattern Value

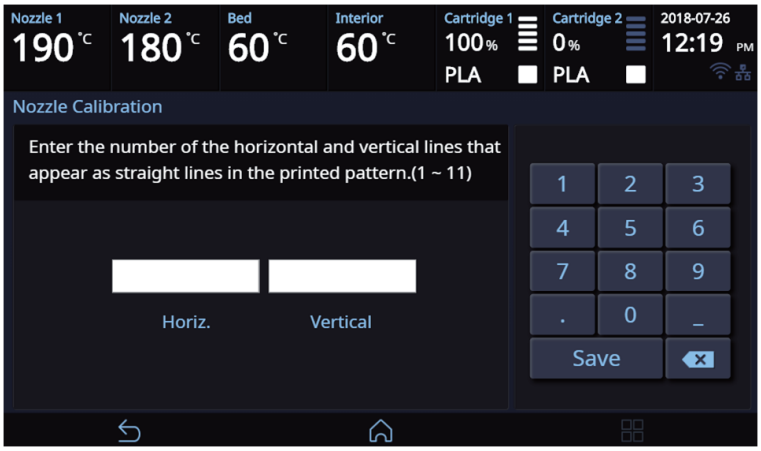
1 Press the **[Nozzle Calibration]** button to access the Nozzle Calibration screen.



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



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

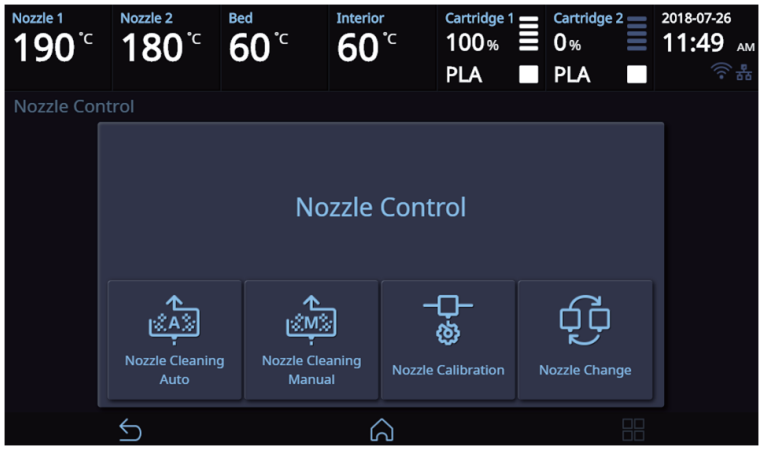


4 To print the pattern for the calibrating nozzle, press the **[Yes]** button. Press the **[No]** button to return to the previous screen.

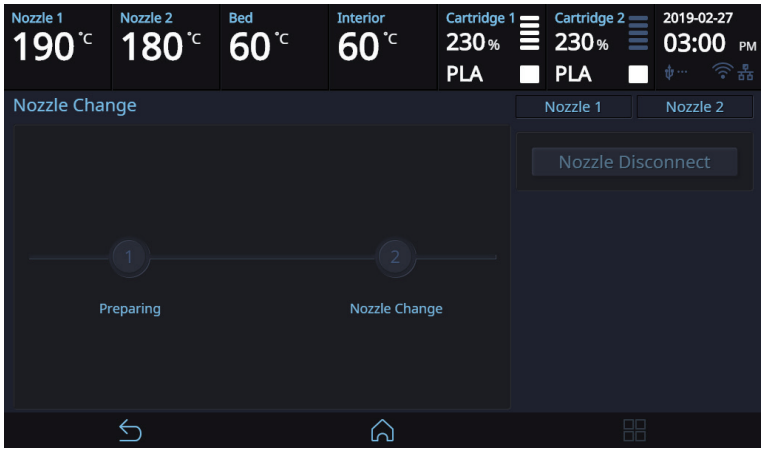
❖ Nozzle Change

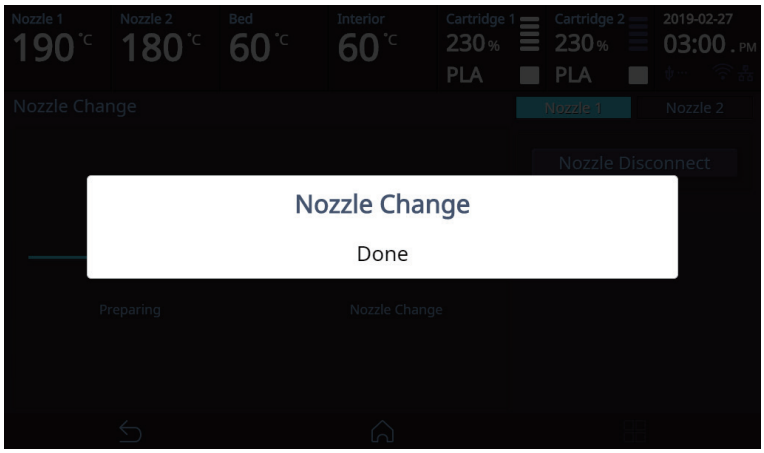
Follow the steps below when replacing a nozzle.

1 Press [Nozzle Change] button and access Nozzle Change screen.

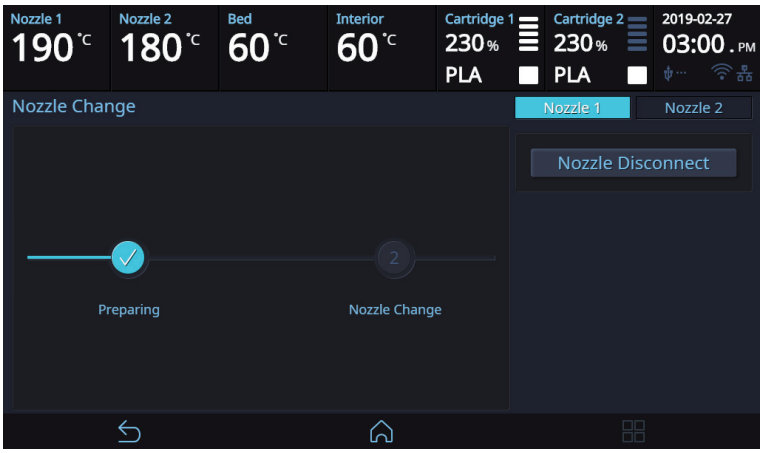


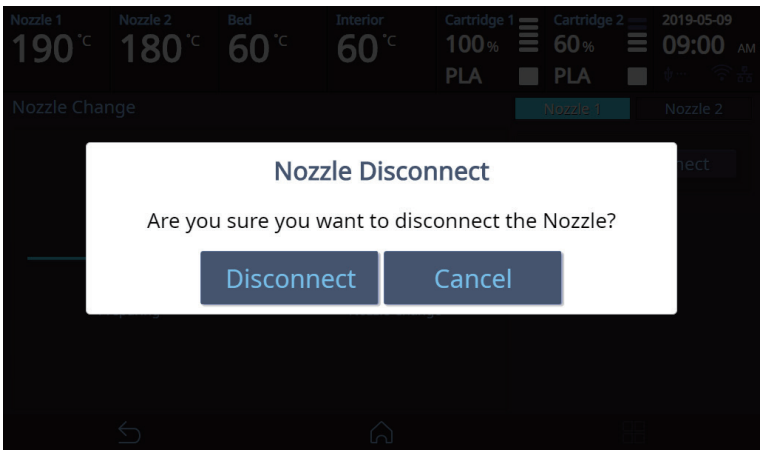
2 Choose the nozzle for replacement. Once selected, the nozzle will move to a proper position for replacement.





3 Press the **[Nozzle Disconnect]** and **[Disconnect]** to disconnect the nozzle.

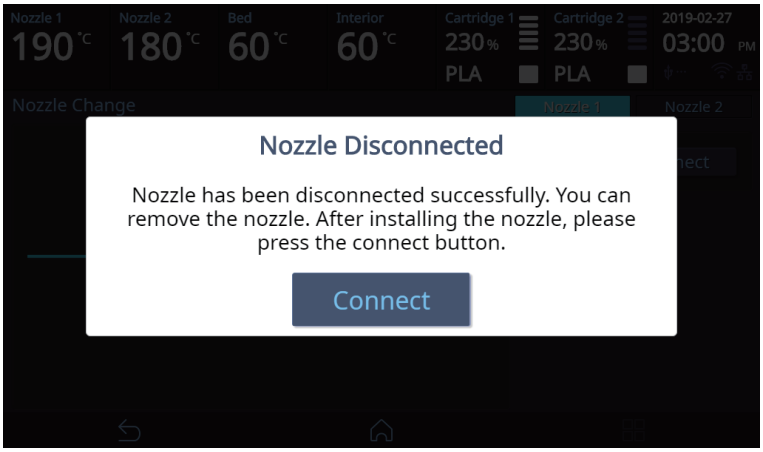


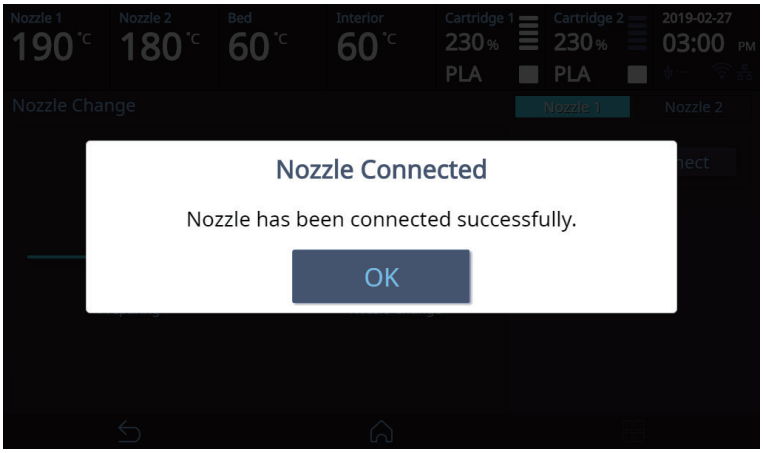


4 Once released, replace the nozzle. After installing the nozzle, press the **[Connect]** button to connect the nozzle.

Note

– Refer to P.5-21 “4.4 Nozzle Change” for the details.

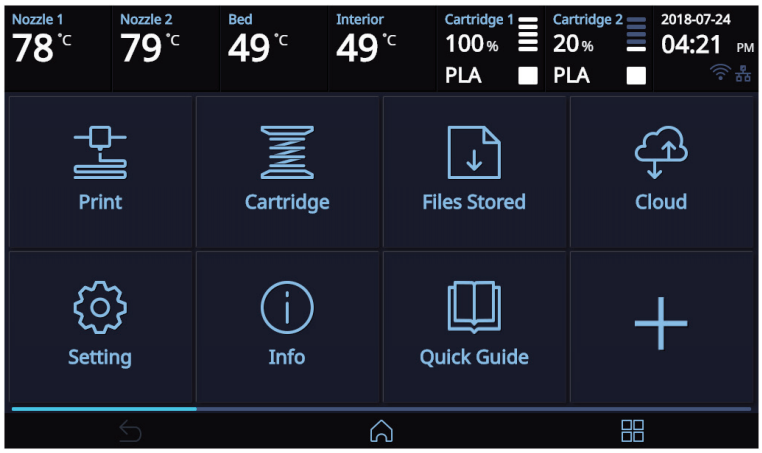



Nozzle 1
190 °C
Nozzle 2
180 °C
Bed
60 °C
Interior
60 °C
Cartridge 1
230 %
PLA
Cartridge 2
230 %
PLA
2019-02-27
03:00 PM
Nozzle Change
Nozzle 1
Nozzle 2
Nozzle Connected
Nozzle has been connected successfully.
OK

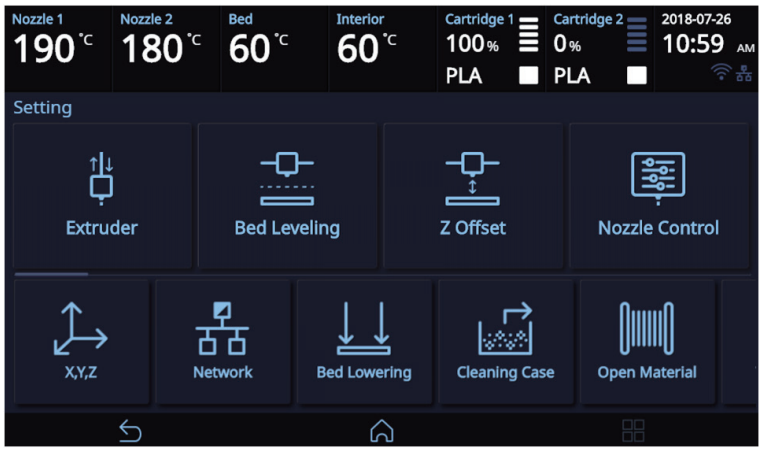
X, Y, Z

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

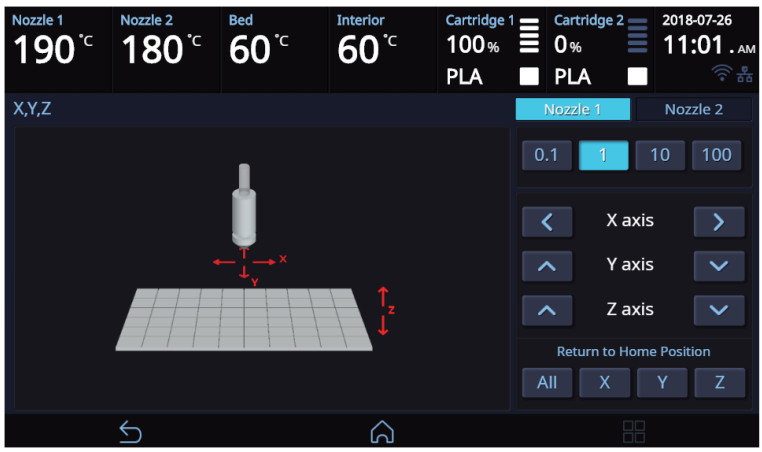
1 From home screen press **[Setting]**.



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



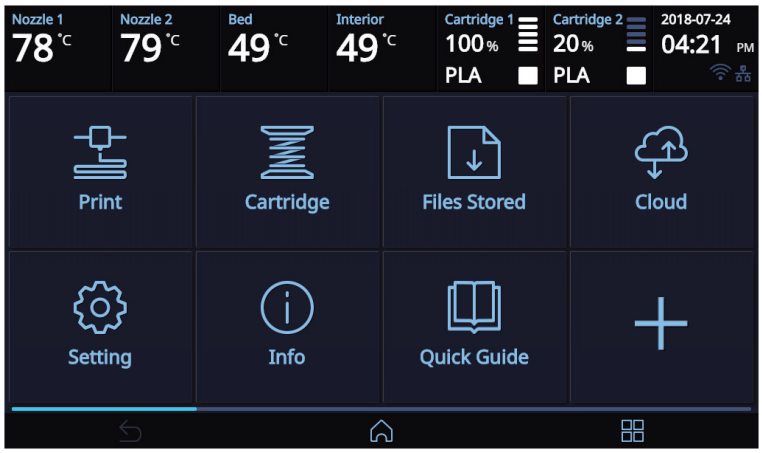
3 Press either **[0.1]**, **[1]**, **[10]**, **[100]**to select the length of trasnfer, and press the arrows to move the Bed and the Nozzle in the respective position.
To move to each axis' home location, press **[All]**, **[X]**, **[Y]** or **[Z]**.



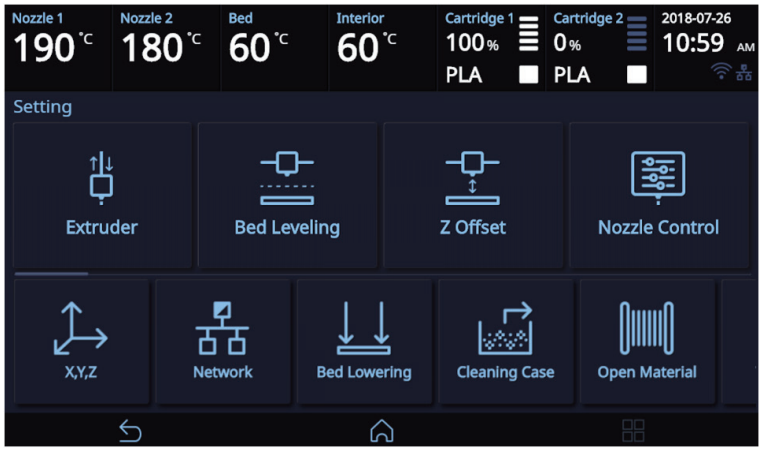
NETWORK

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

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

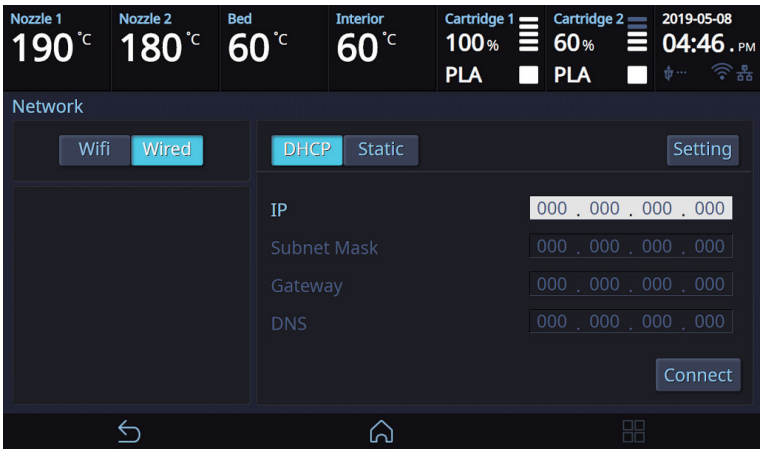


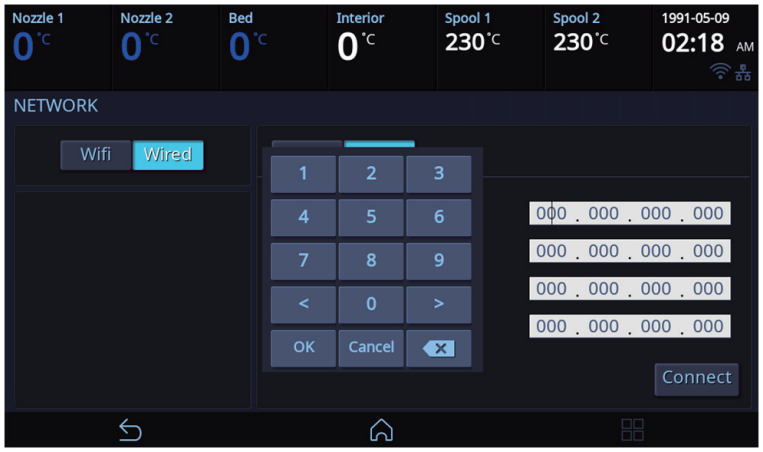
2 Press the **[Network]** button.

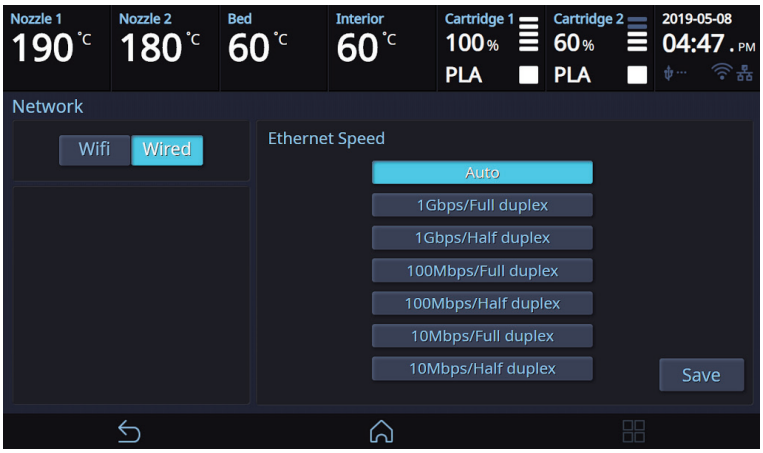


3 The default network setting is Wired (connection using LAN line).
Press **[DHCP]** for automatic IP address setup. To manually input a fixed IP address press **[Static]** and enter an IP address. Press **[Connect]** to save the changes.

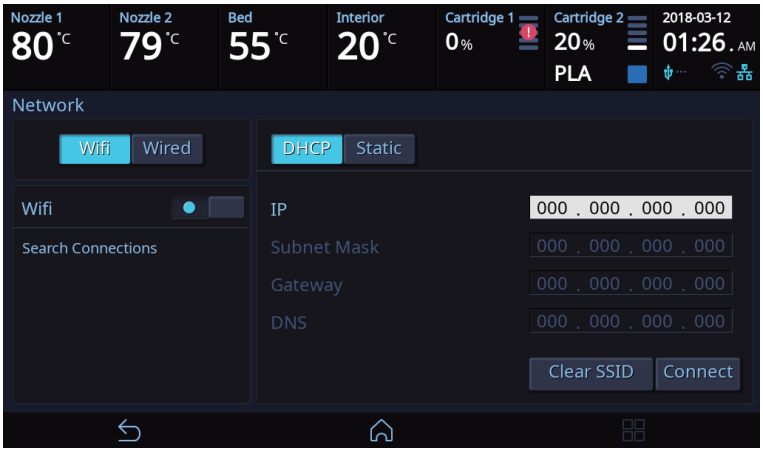
Press the **[Setup]** button to set the Ethernet speed and full/half duplex mode for the network environment. In general, when set to **[Auto]**, the speed and duplex/half-duplex mode are automatically selected for the network environment.



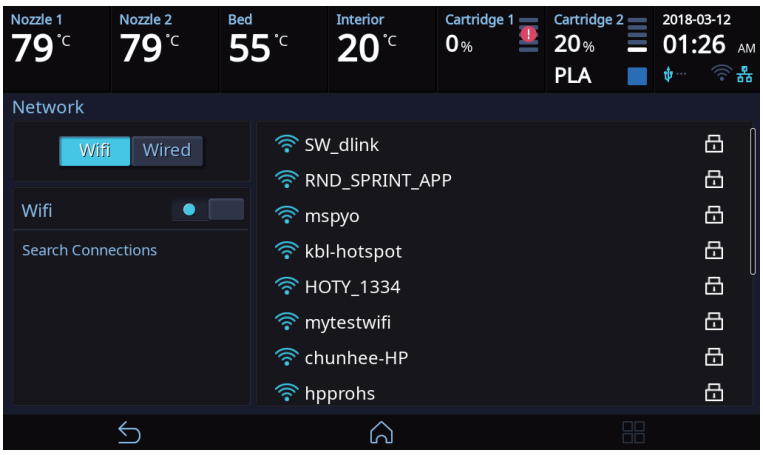




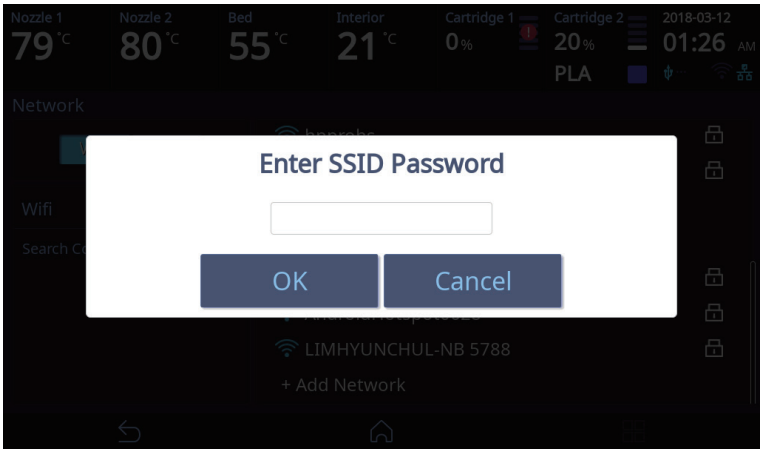
4 In any case to use Wifi press the **[Wifi]** button.
Wifi setting can be turned **ON** or **OFF**.



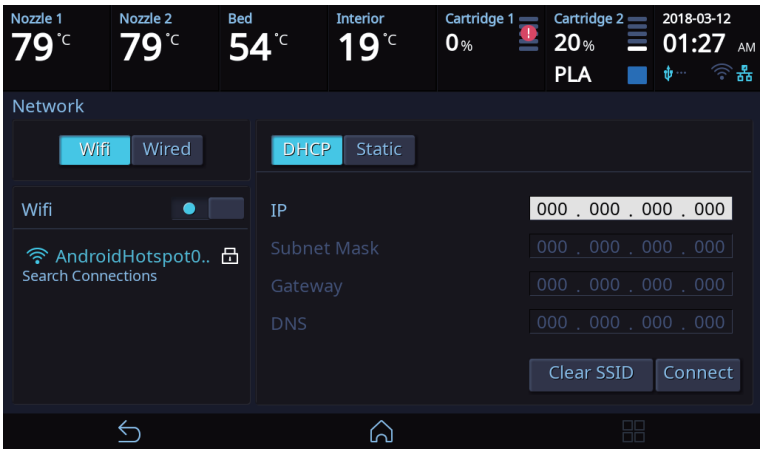
5 To select a Wifi network, you can call up the list of available Wifi by pressing **[Search Connections]**.



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 Connections]**.



7 Once successfully connected to the selected Wi-Fi, **[DHCP]** and **[Fixed]** can be set the same as the wired setting.
Once set, press the **[OK]** button to save the setting.



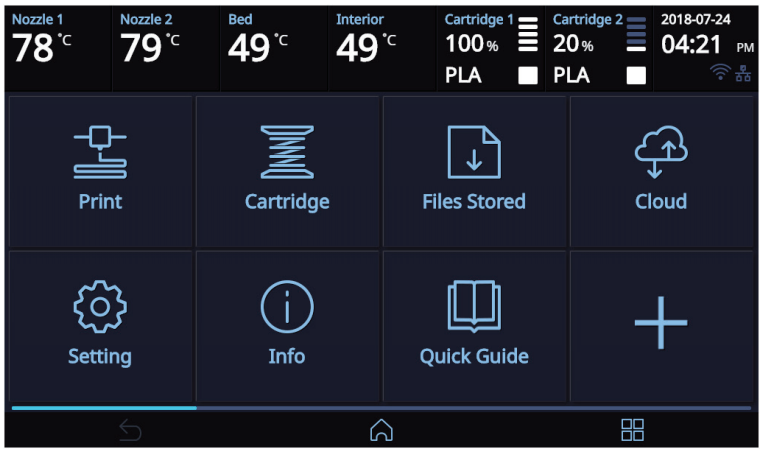
Important

- Using both network cable and Wifi module together is not recommended for electronic devices which can be connected to a network. Due to characteristics of network communication, data may not be processed properly when data is coming in via both wired and wireless network.
  Using both wired and wireless network is not recommended for this device.

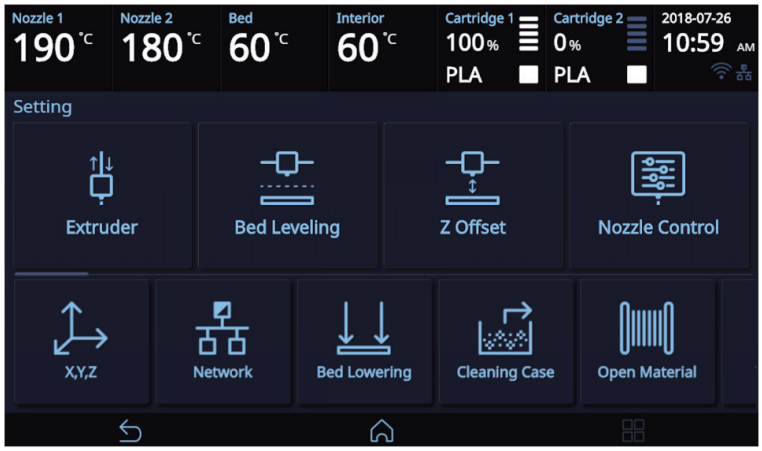
Bed Lowering

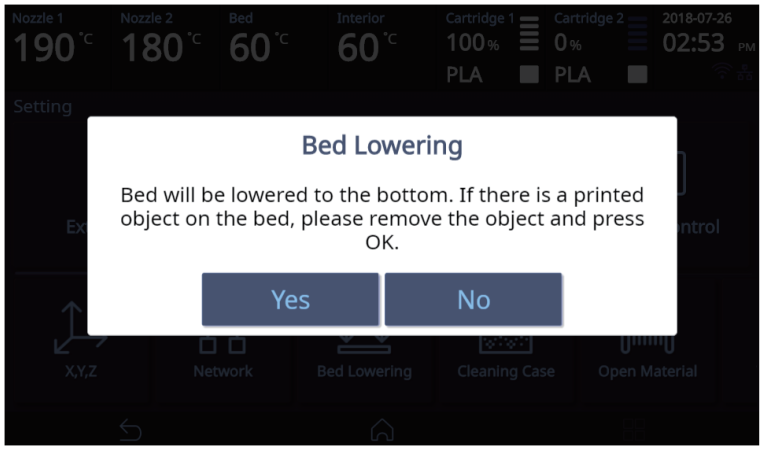
Use this function, in times of moving printer to a different location.
Bed will be lowered to the bottom and will be locked into position.

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

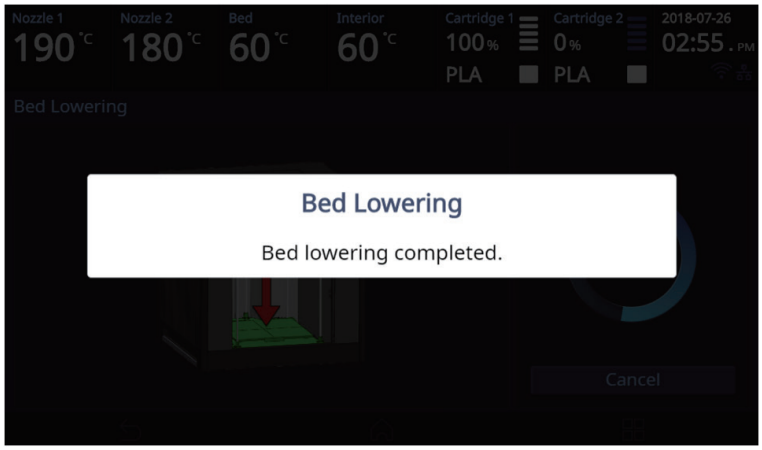


2 Press the **[Bed Lowering]** button to enter Bed Lowering settings.





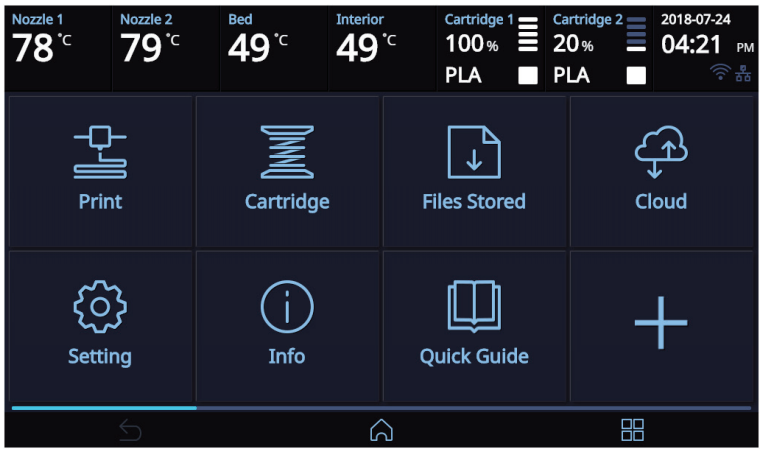
3 The bed will automatically be lowered.



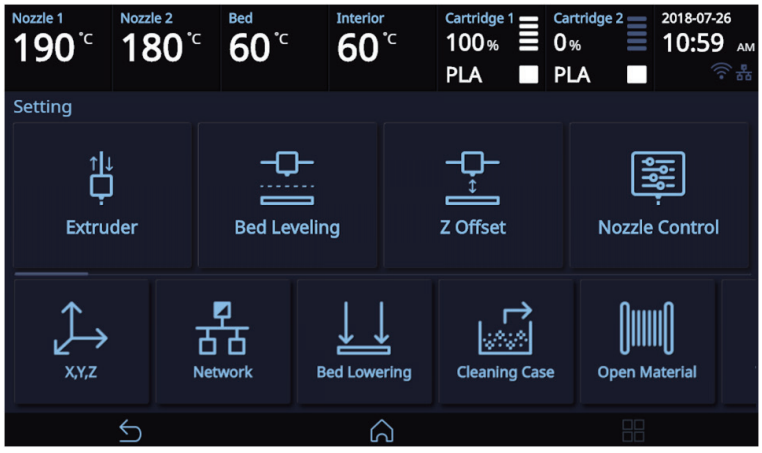
Cleaning Case

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

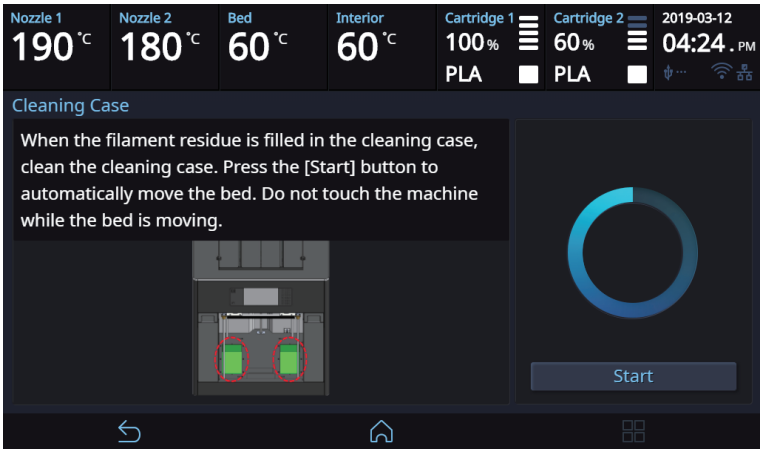
1 From home screen press **[Setting]**.

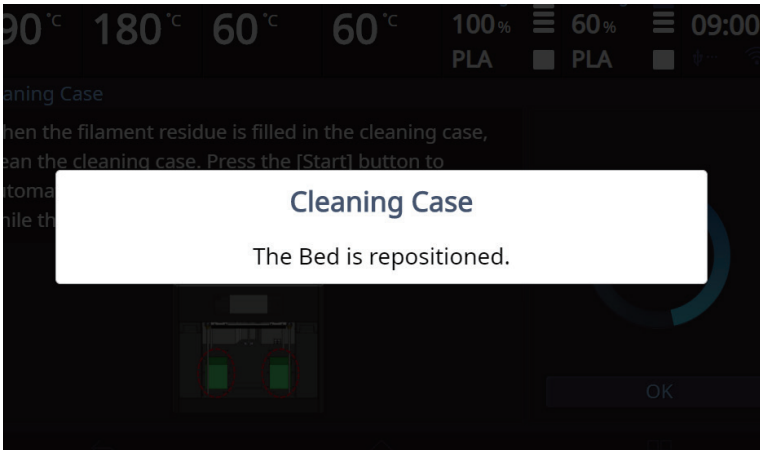


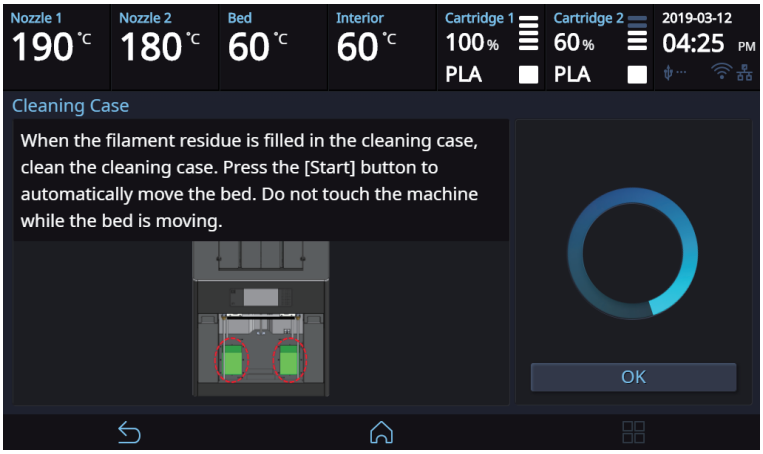
2 Press the **[Cleaning Case]** button to enter Cleaning Case settings.



3 After entering the screen, press **[Start]** button to automatically move the bed.
Clear the case according to the image on the screen and press **[OK]** button to return to the home screen.







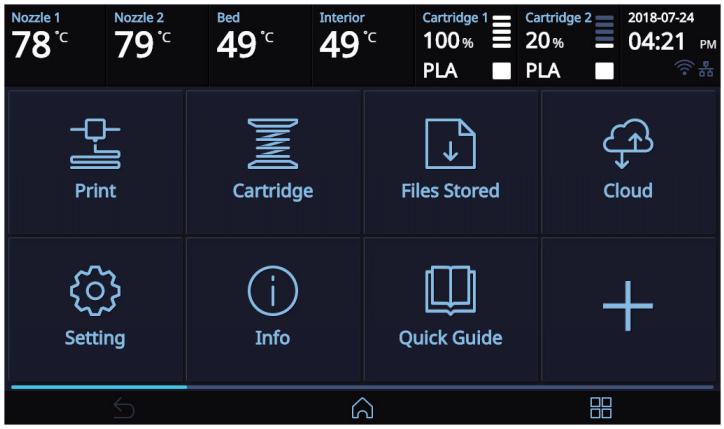
OPEN MATERIAL

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

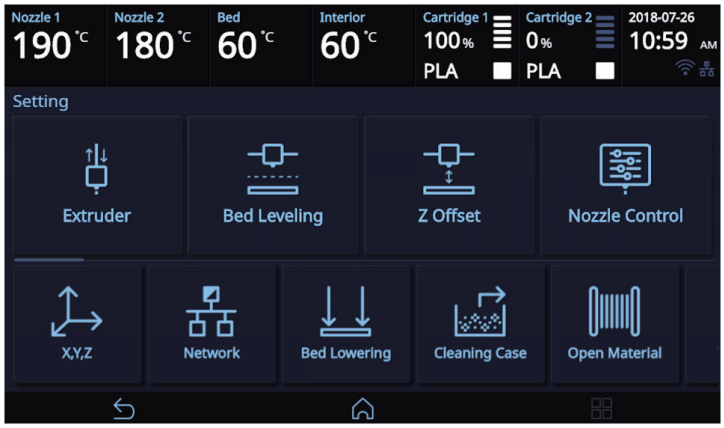
In the cartridge mode, the filament is automatically loaded and unloaded in optimal conditions, with our filament and smart chip. On the other hand, the OPEN MATERIAL requires some manual operations by users for loading and unloading the filament.

To use the OPEN MATERIAL, change the machine settings in the following procedure. Then, follow the UI guide to load the filament.

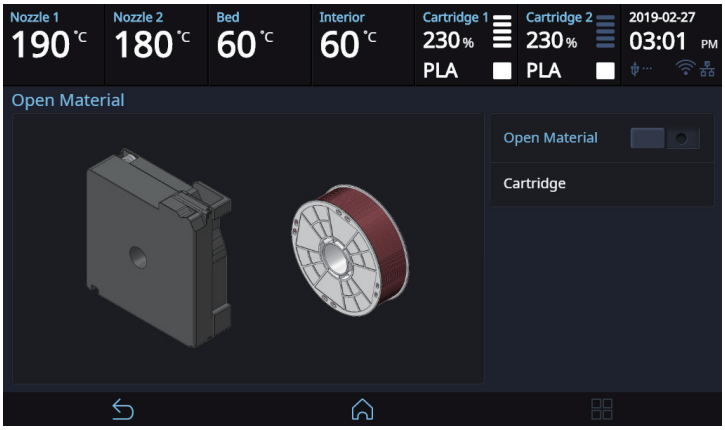
1 Press the **[Setting]** button on the home screen to access the settings.



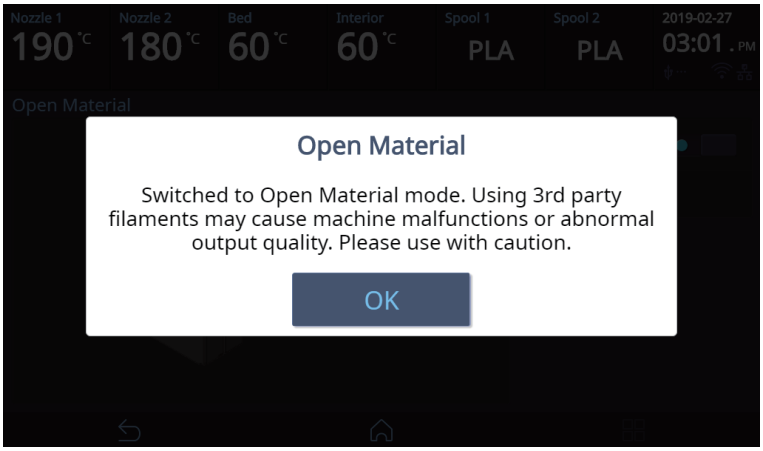
2 Press the **[Open Material]** button to access the open material screen.



3 Press the **[Open Material]** button to set the open material.



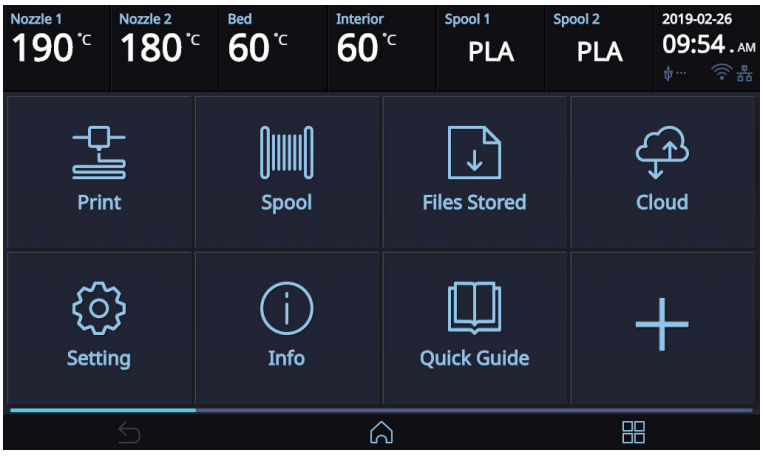
4 Check the pop-up notice and press the **[OK]** button.



⚠ Caution

- **Improper usage of a third-party filament may cause device failure and poor printing quality. Therefore, it is important to create a correct gcode and apply it to a device by fully understanding the characteristics of a third-party filament, including the recommended printing temperature and speed.**
- **As soft filament with shore hardness of 65 D or less (TPU, TPE, etc.) may cause transfer problem, it is not applicable. (TPE is not available for the 5X model, but it needs to be directly inserted into a nozzle after opening the top door for the 7X model.)**
  A filament containing abrasive additives (metal component, carbon fiber) may cause transfer problem and reduce the service life of nozzles. (Wear-resistance nozzles are optional.)
- **If a third-party filament has a too large spool, it would not be usable with it inserted.**
  Make sure that the spool to be used has the width of 95 mm or less and an outer diameter of 265 mm or less.
- **When 3rd Party Filament gets all consumed, the filament end sometimes gets stuck in the machine and this tends to cause the filament feeding problem (Notification 401). If Notification 401 occurs, in order to continue printing, please load new filament spool after unloading the left-over filament previously used in the machine.**

5 **[Spool]** will be displayed on top of the screen.



Although the supports open material mode, we recommend the use of Sindoh filament on the printer.

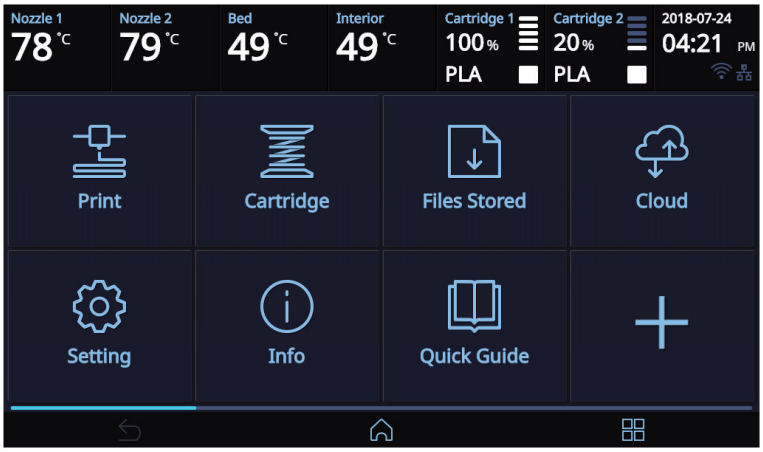
The filament available for use in Open Material Mode is shown below.

Filament	Recommended Nozzle Temp(℃)	Recommended Bed Temp(℃)	Remark
PLA	200	55	Sindoh / 3rd party
ABS	230	Side A : 90 Side B : 100	Sindoh / 3rd party
FLEX	235	60	Sindoh / 3rd party
PVA(PVA+)	215	55	Sindoh / 3rd party
PETG	230-250	80	3rd party
ASA	235-255	100	3rd party

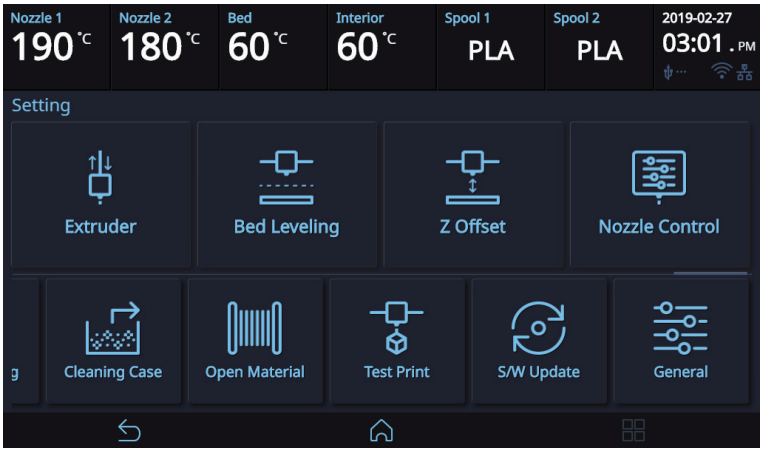
Test Print

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

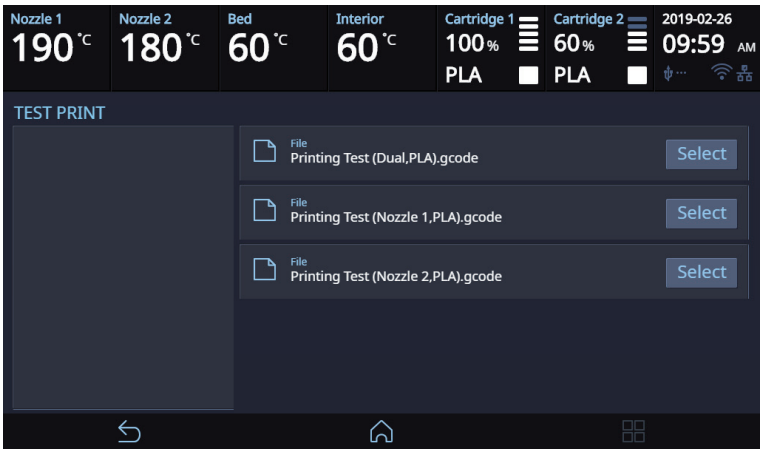
1 From home screen press **[Setting]**.

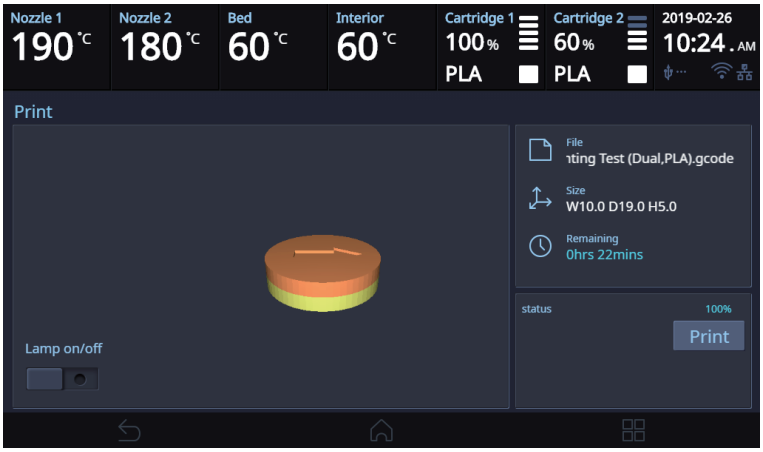


2 Press the **[Test Print]** button.



3 Select the test file to print.

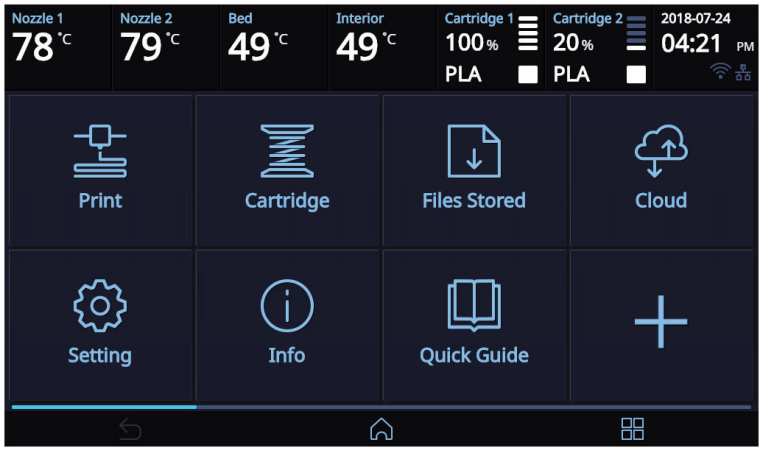




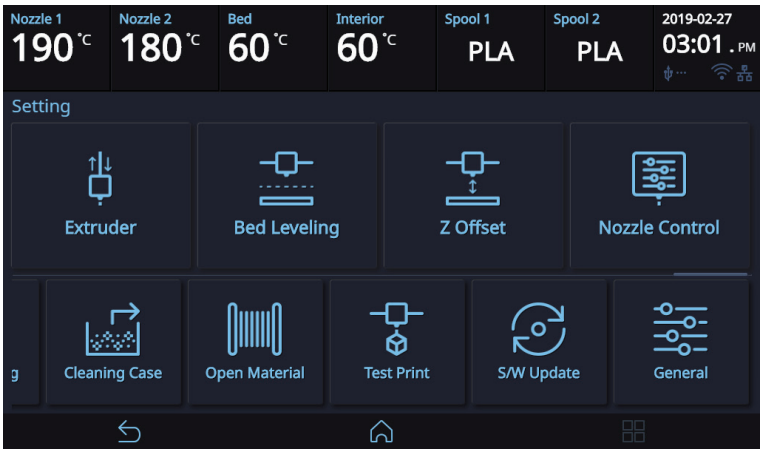
S/W Update

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

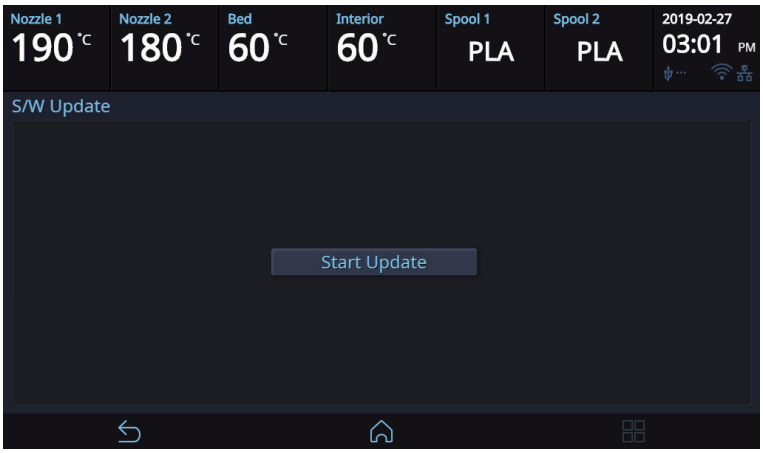
1 From the home screen, press **[Setting]**.



2 Press **[Software Update]** button.



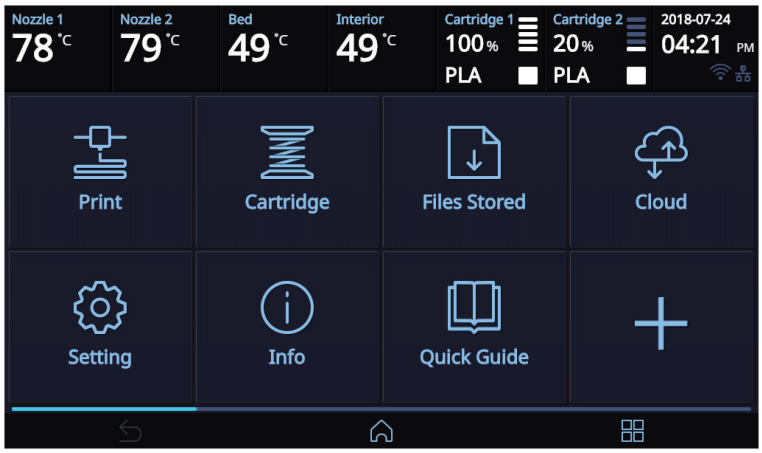
3 Press the **[Start Update]** button, and printer will start updating. After it has finished, restart the printer and updates will be applied.



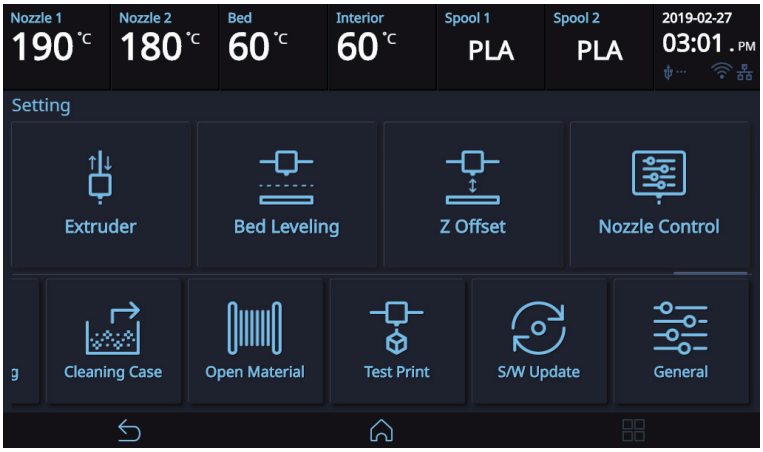
General Setting

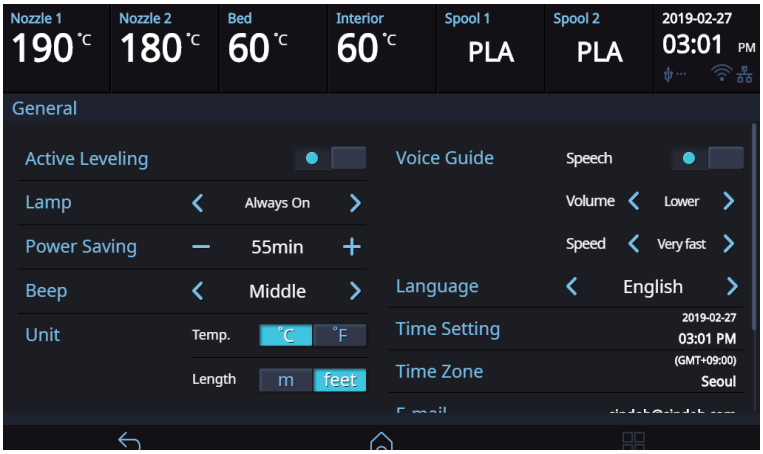
This menu is used to set various statuses of the printer.

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



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



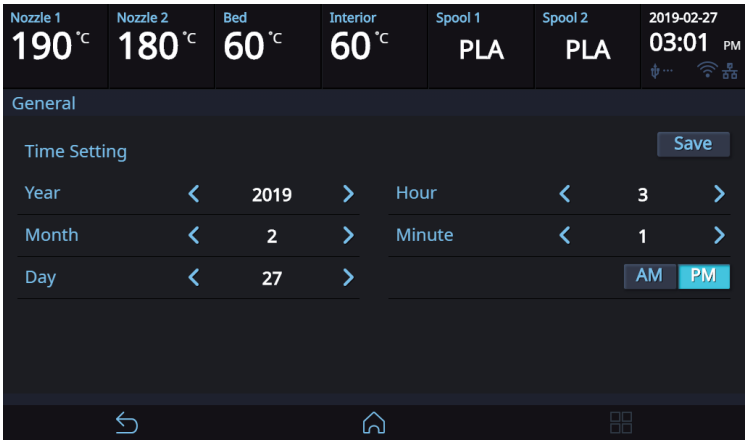


Menu	Description	Value
Active Leveling	This function executes Bed leveling before printing starts and offset the bed leveling by moving the bed in the direction the Z-axis during the printing.	On, Off
Lamp	Menu to configure settings for machine lamp. Note - Lamp will be activated as connecting the Web Monitor	Always On, On only in Printing, Always Off,
Power Saving	The volume level of beep sound can be adjusted using this menu.	0 ~ 100 Min 0 Min : Do not use Power Saving Mode. 5~100Min : Power Saving Mode in 5~100Min. of Inactivity.
Beep	Settings for the units of measurments displayed on the printer.	Off, Low, Middle, High
Unit	This menu enables you to configure the sound of Voice Guide in the machine.	Temp : ˚C, ˚F Length : m, feet
Voice Guide	This menu enables you to configure the sound of Voice Guide in the machine.	Speech : On, Off Volume : Lower, Low, Normal, High, Highest Speed : Very Slow, Slow, Normal, Fast, Very Fast
Language	Menu to set language for machine.	English, 한국어, 中文, Español, Français, 日本語, Deutsch
Time Setting	You can view or change the time setting.	Refer to “Time Setting” section
Time Zone	You can view or change the time zone setting.	Refer to “Time Zone” section
E-mail	The printer takes an image of the current printing status and sends the information to the email address specified. Printer will send information of completion (%) based on the PC program standard settings. Maximum of 10 emails can be sent.	Refer to “E-Mail” section
Security	This menu enables you to set up the Security menu whether to use the 3D printer or not.	On, Off
Camera Frame Rate Setting	You can set the frame rate of the web monitor camera.	1 ~ 5 fps
***SSD Format**	Format the machine's storage memory.	Start

* Included only on 7X model.

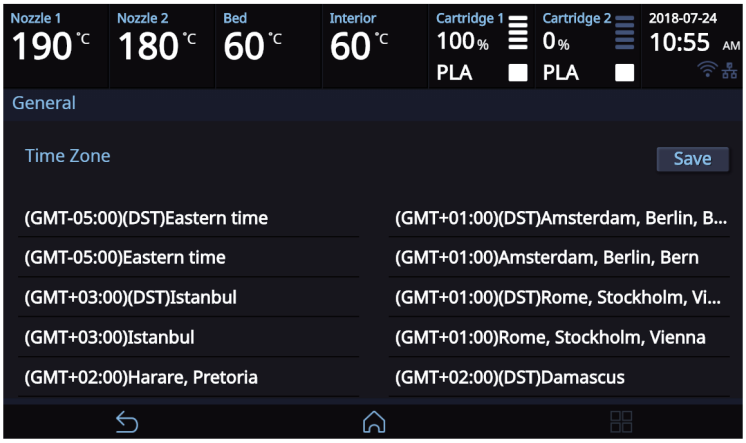
❖ Time Setting

It shows the time of the current device, which can be changed by a user.
If set and the current times are different, it can be changed.



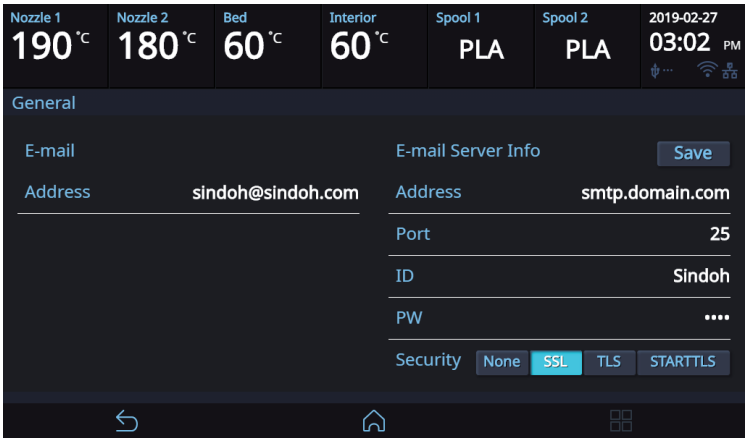
❖ Time Zone

The current time zone is displayed, and it can be changed by a user.
The current time zone is displayed, and it can be selected and changed by a user.
Once a time zone is set, the device will reboot to set the time zone.



❖ E-mail

The current printing state of the device will be captured and then e-mailed.
Configure the settings to send an e-mail from the 3DWOX device.
The device provides settings to send mails only, while information to receive mails can be set with the Slicer program.



Menu	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.
Security	Security method used when sending mail to SMTP server - The default value is [None]. For further details, contact your server hosting company or mail service provider.

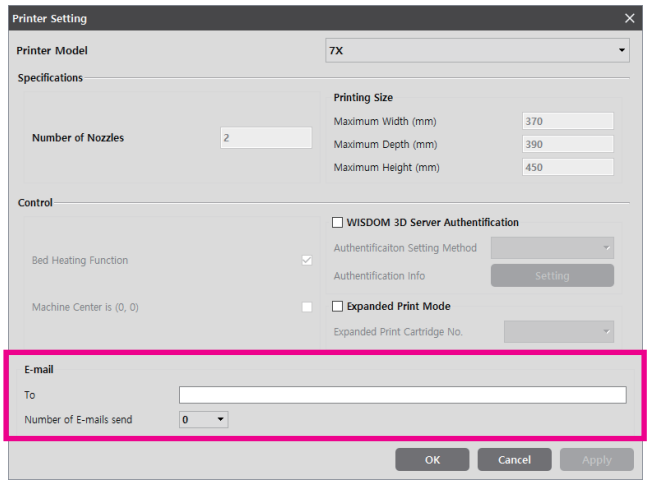
Inquire your email server administrator or services provider for detailed information of the input information on each category. Especially for SMTP server log in ID, it may be needed to enter the entire email address which includes the domain name.

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

To check the detailed setting values, please refer to the setup information from your email service provider.
For the set up to use the outgoing email service, please find information by internet search or your email service provider's instructions.
A certain amount of interval time may be required after setting up the SMTP service before using. For more details, please inquire your email provider for the service policies.

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

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)

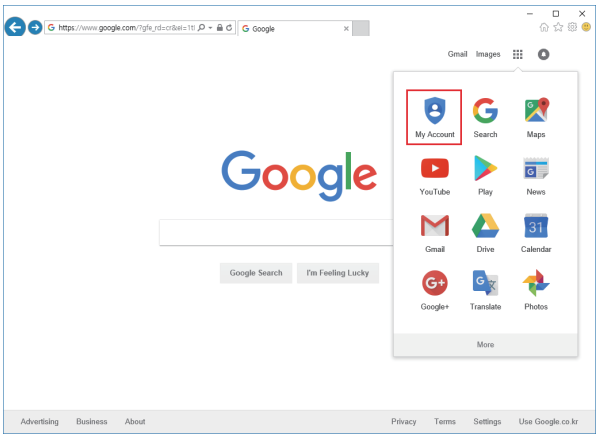
❖ In the case of using a Google email account.

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

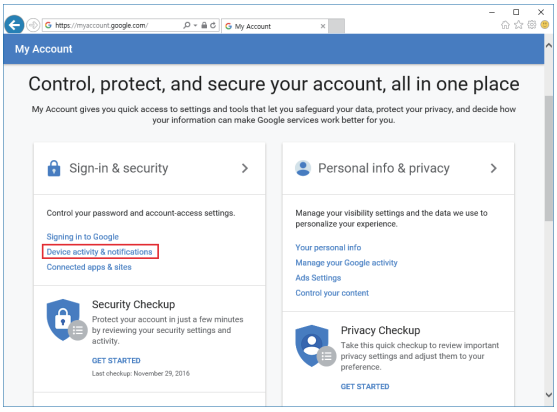
▣ Google account setting

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

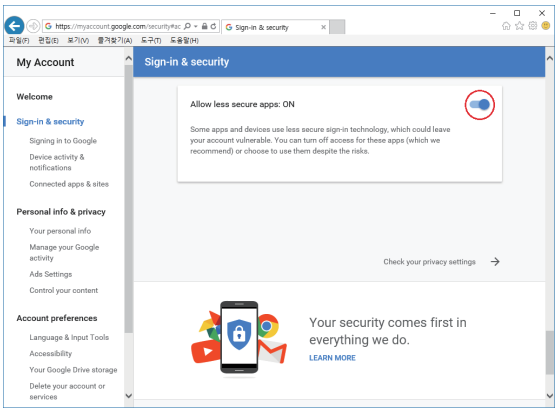
2 Click on the apps button on the top right hand corner.
After click on **"My Account"**



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



4 Scroll down and there is a "Allow less scure 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.

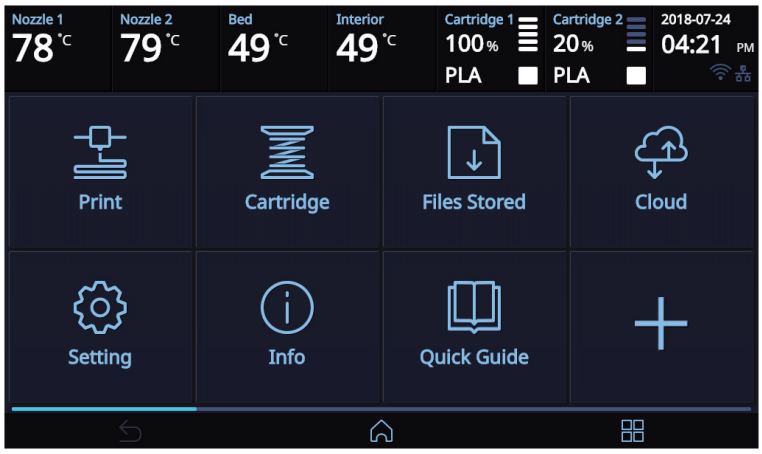
⚠ Caution

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

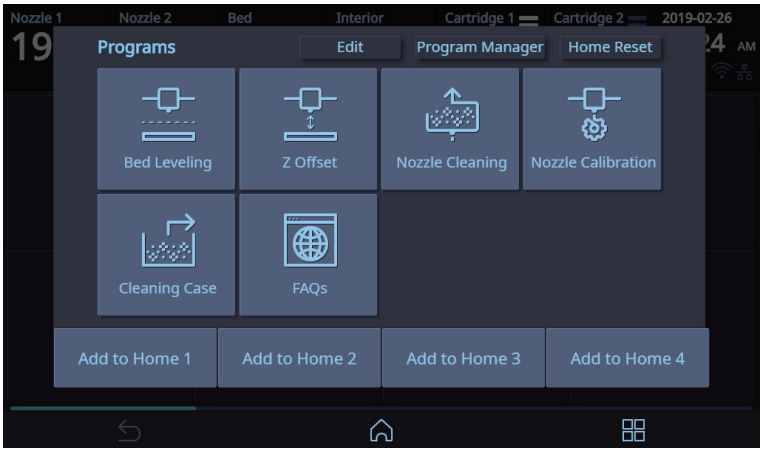
FAQ

With a network connection, the FAQ home page can be connected to check information.

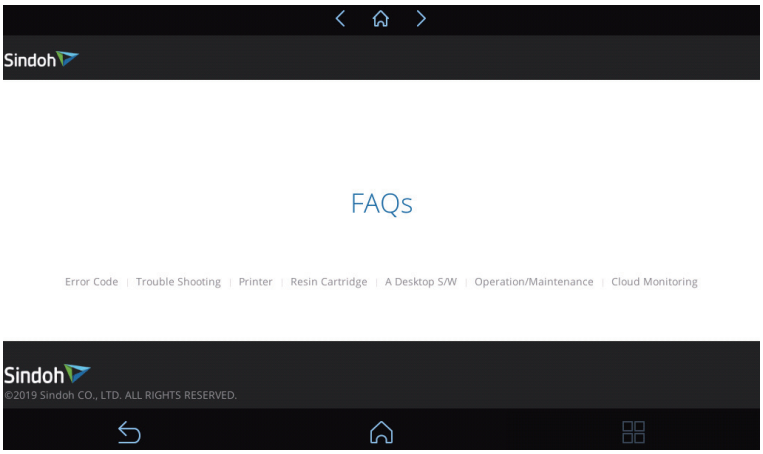
1 Press a rectangle button on the bottom right side of the home screen to access the program menu.



2 Press the **[FAQs]** button to connect to the FAQ home page.



3 The FAQ home page will be displayed, and the user can check any information.

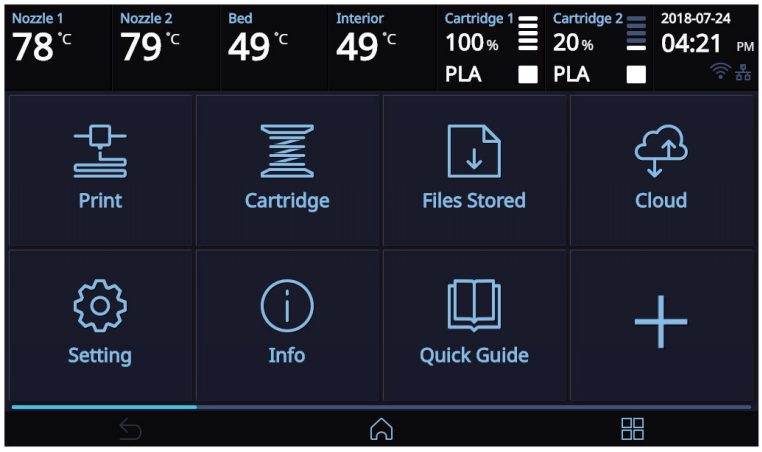


2.5 Information

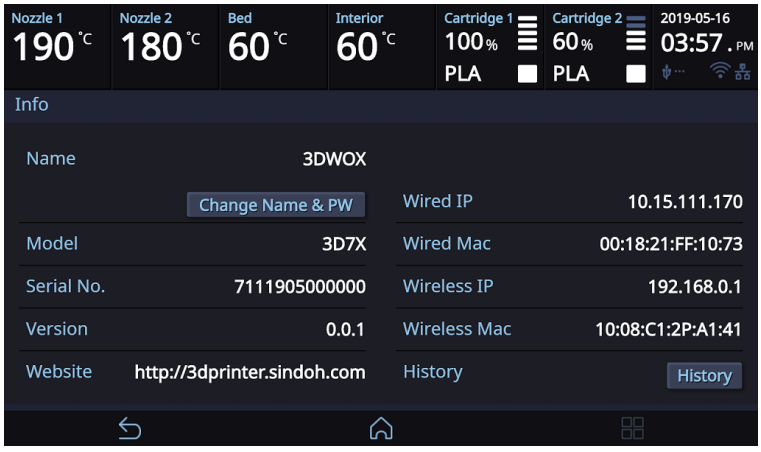
INFORMATION	NAME
	CHANGE NAME & PW
	MODEL NAME
	SERIAL NO.
	VERSION
	WEB SITE
	WIRED IP
	WIRED MAC IP
	WIRELESS IP
	WIRELESS MAC IP
	HISTORY
Quick Guide	

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

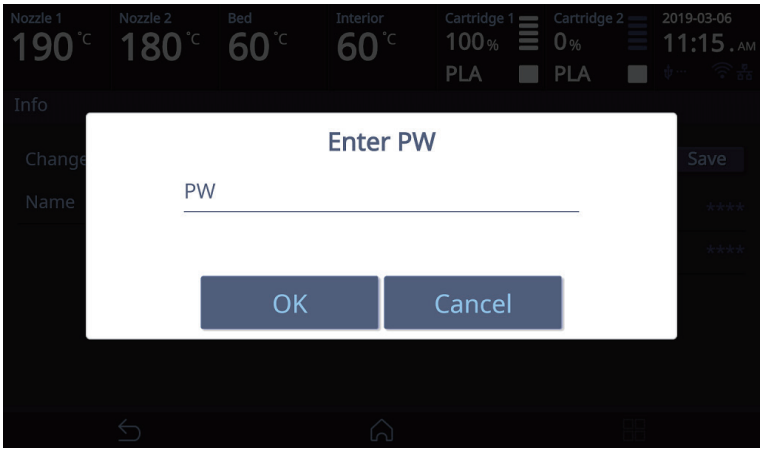
1 From home screen, press **[Info]**.

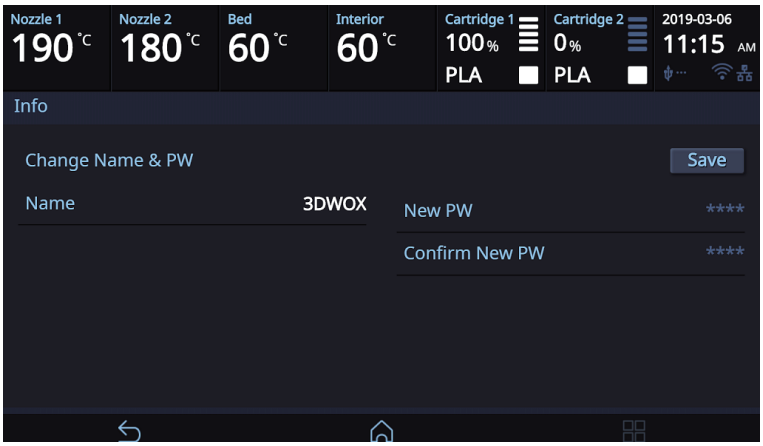


2 To set password and name for printer, select **[Change Name & PW]**.



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

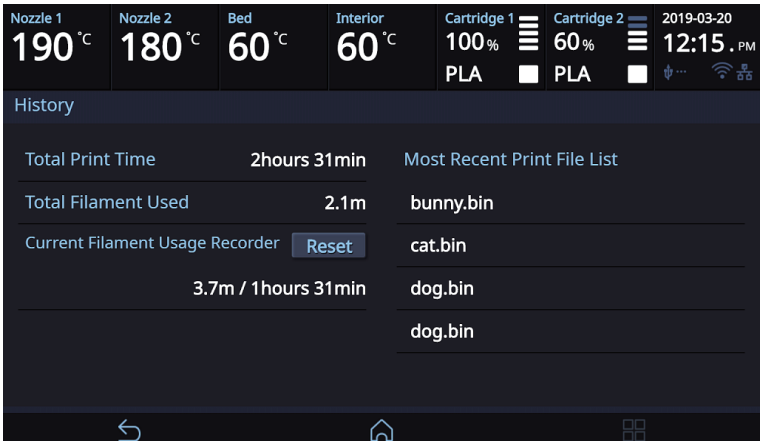




Reference

- Initial password is '0000'.
- Password is used for security function and web monitoring function.

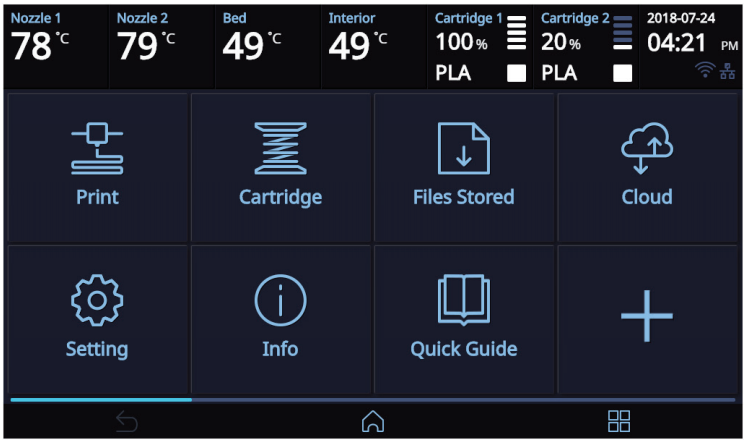
4 In **[Info]** screen, press **[History]** to access to view all the records of past works.



Quick Guide

The quick guide for this device can be glanced at.

1 Press the **[Quick Guide]** button in the home screen to access the quick guide screen.



2 Press a button on the left side to see the description of individual items.

3DWOX 5X / 7X
USER MANUAL

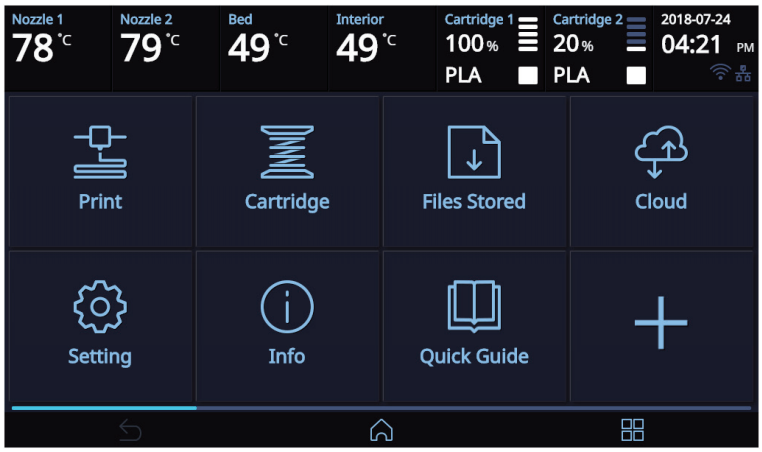
Printing

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.



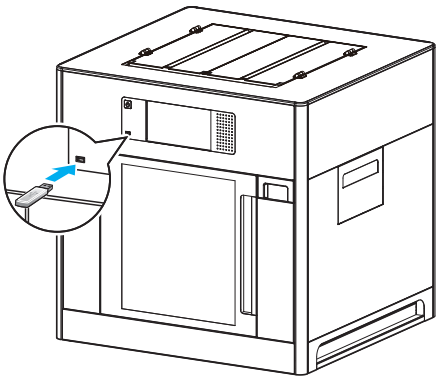
1.1 Printing from USB Flash Drive

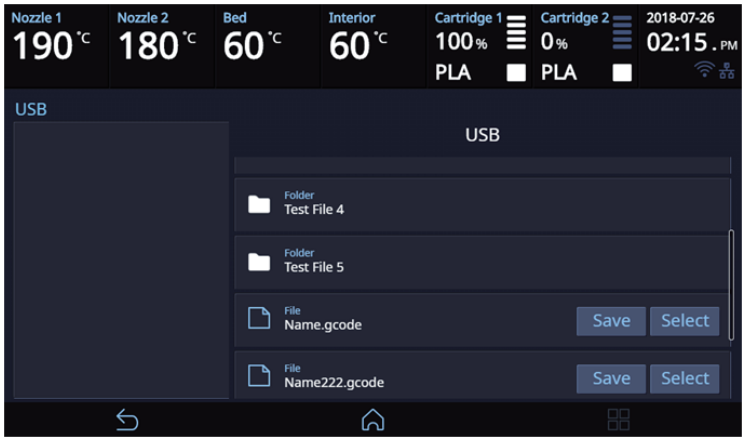
1 Connecting USB flash drive to the printer.

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.

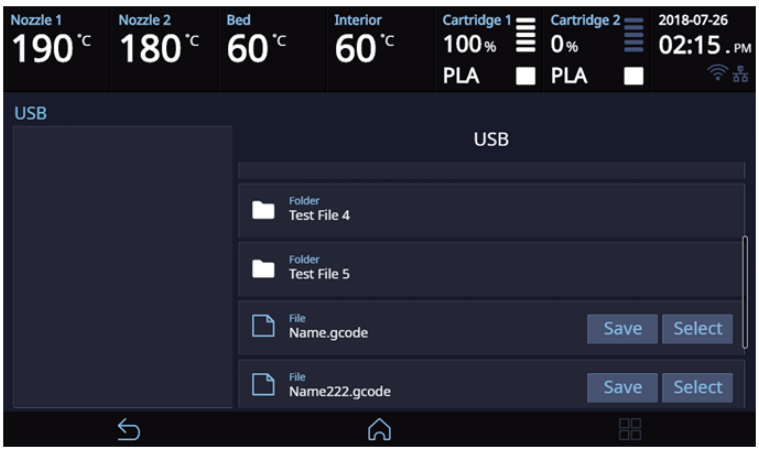
When **[Print]** is selected without the USB flash drive connected, a message requesting for USB connection will pop up and once USB flash drive is connected a list of the USB files will emerge.





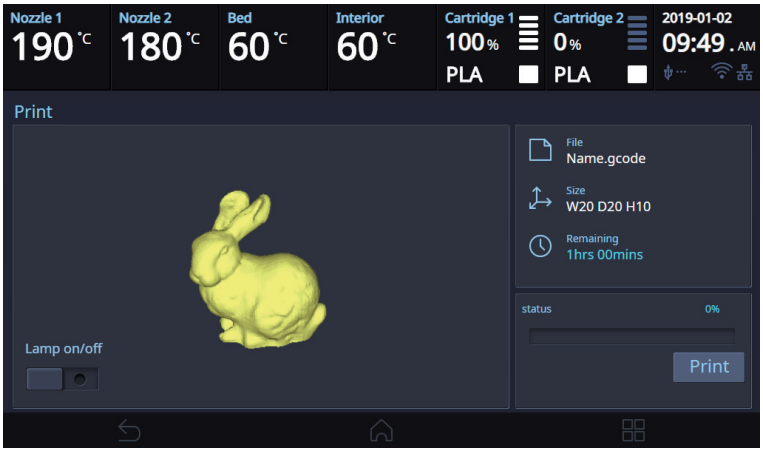
2 Printing Files

Select a file to print in the USB list.



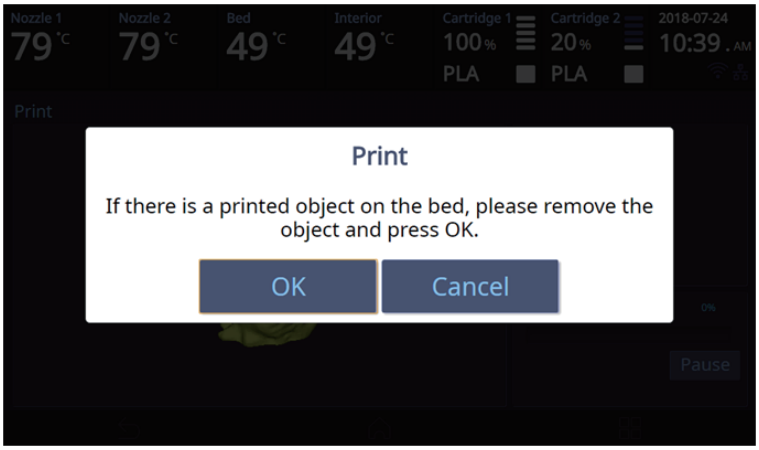
3 Print Preview

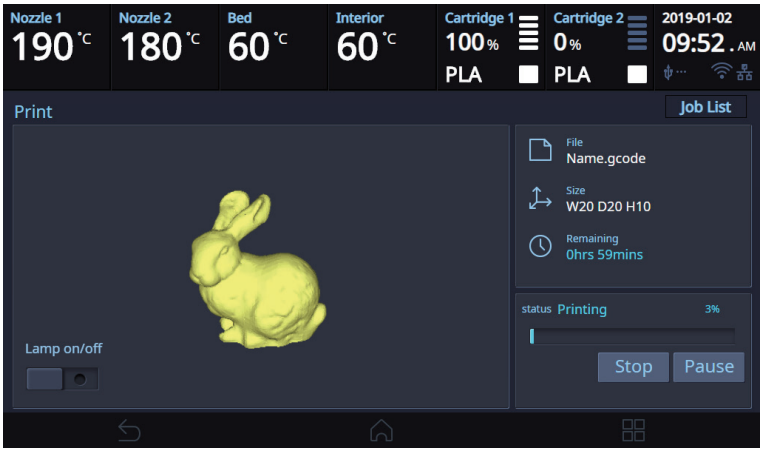
Once selected, a preview of the model appears on the screen.



4 Printing

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

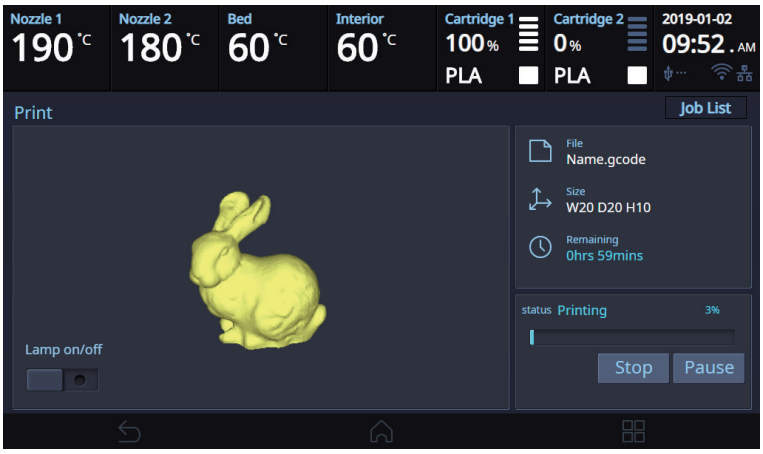




5 Pausing Print

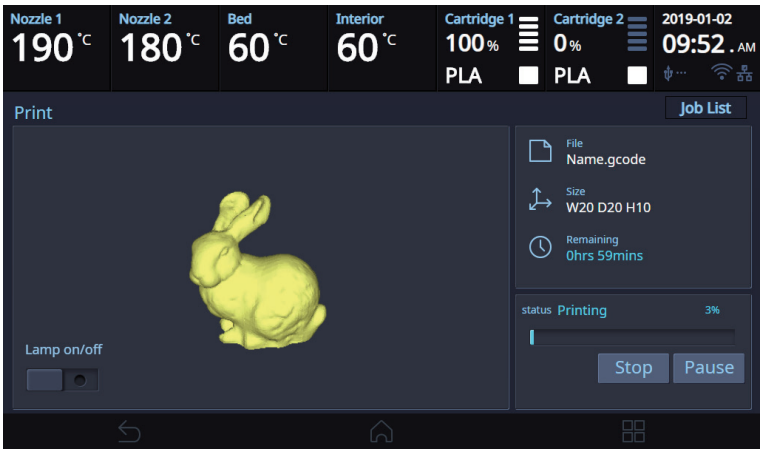
Pressing **[Pause]** during a print will pause the progress.

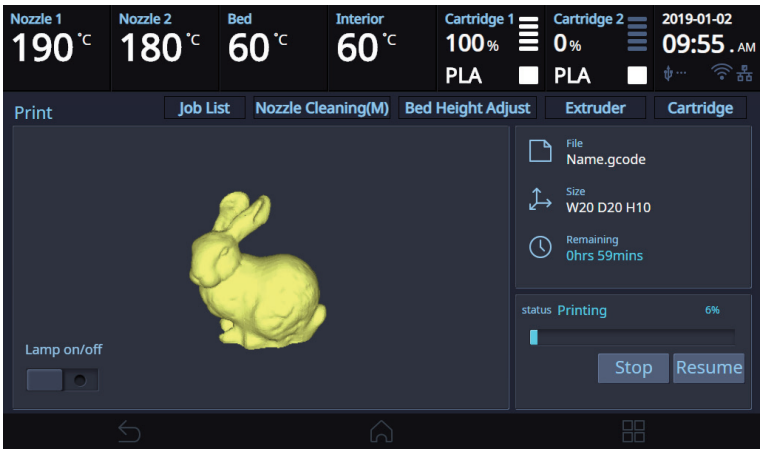
Press **[Resume]** again and nozzle is heated again, and the printer will continue printing.



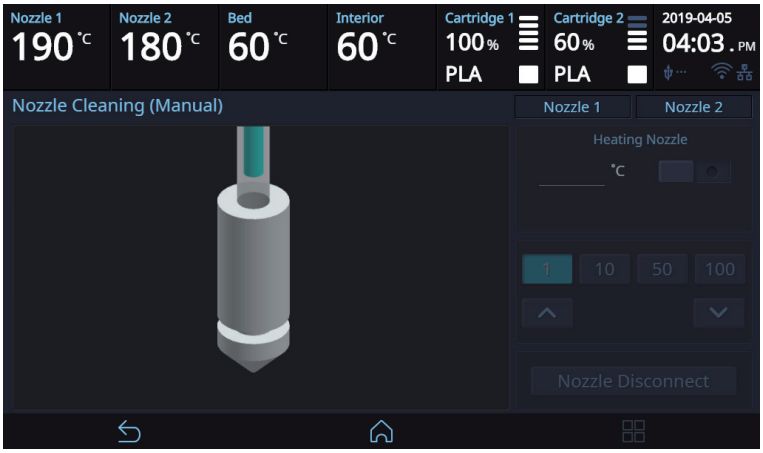
6 Additional Functions of Pausing

When the [Pause] button is pressed during printing, buttons appear in the upper right corner to execute additional function actions.





Additional functions include **[Nozzle cleaning], [Bed Height Adjustment], [Extruder], [Cartridge]** and so on. These additional functions are used for any mechanical problem or if the user needs them.

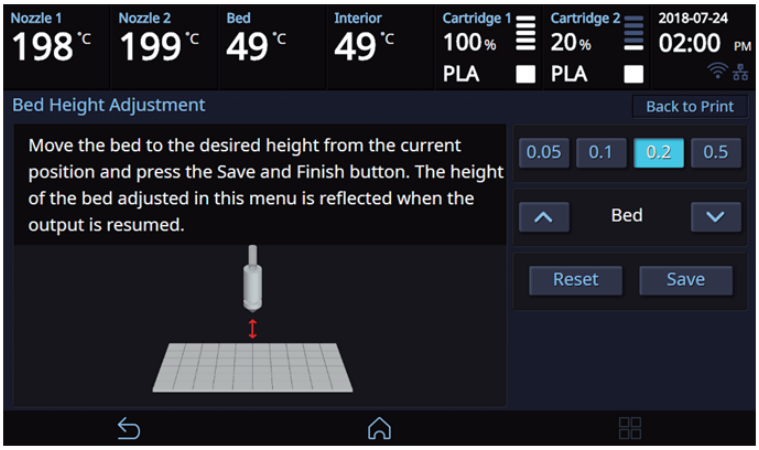


❖ Nozzle Cleaning

① This menu can be used to clean a nozzle manually if the filament does not come out of the nozzle for printing.
② Select a nozzle to clean.
③ Enter the temperature and press the **[OK]** button. Press the heating nozzle button to set the temperature of the nozzle.
④ Press the **[1], [10], [50],** or **[100]** button to select the desired moving amount.
⑤ Press an arrow button to move the filament to a desired direction.
⑥ Press the **[Disconnect Nozzle]** and **[Disconnect]** buttons to disconnect the nozzles if they need to be cleaned.

❖ 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.

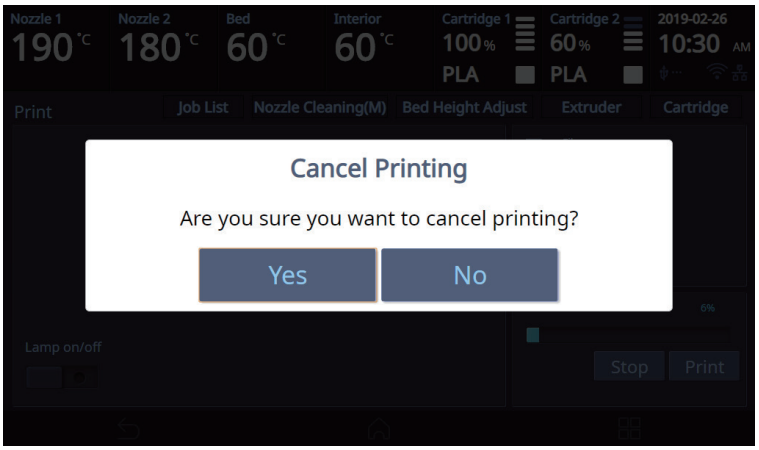
❖ Cartridge

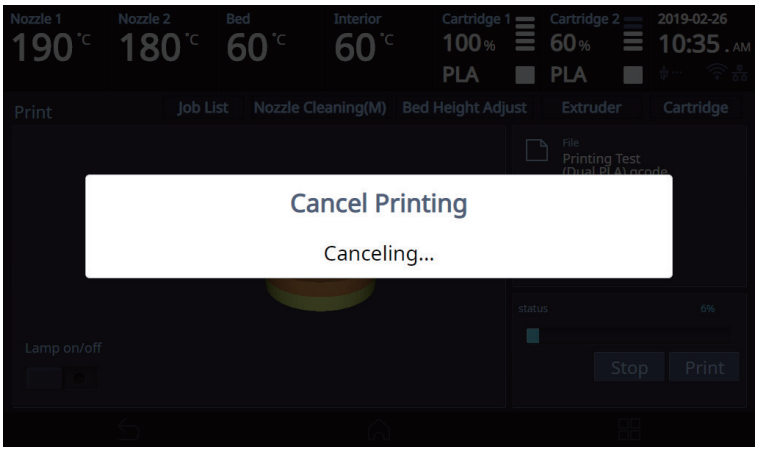
The cartridge can be loaded, unloaded, or unlocked during printing.

7 Print Cancelation

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

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



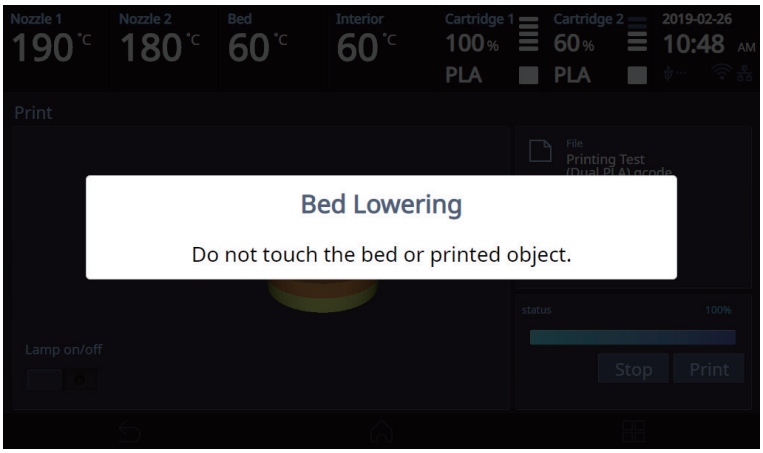


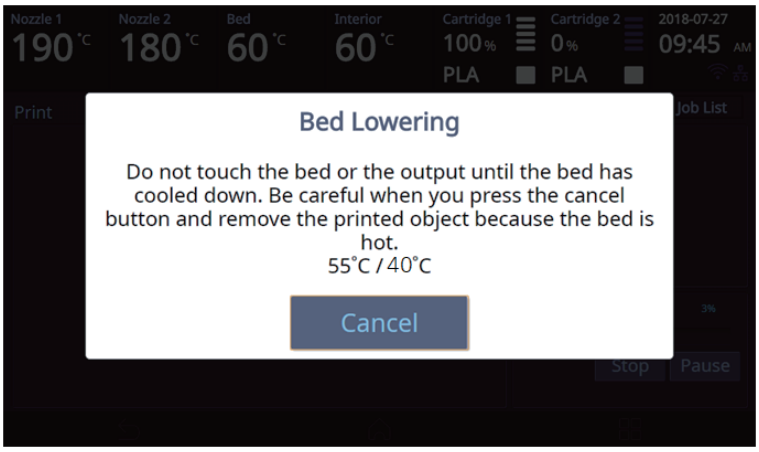
8 Printing Completion

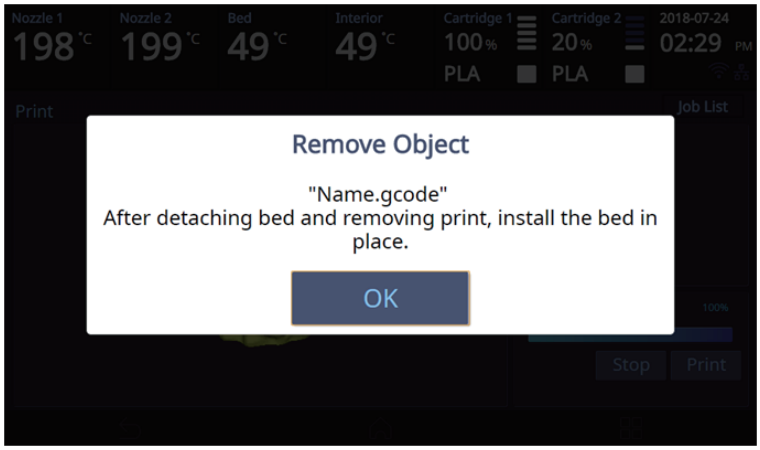
After printing has completed, follow the instructions and remove the printed product. Press the **[OK]** to return to home screen.

⚠ Caution

- **Do not touch the bed or the output until the bed has cooled down.**
- **To remove the printed output before the bed is cold, press the [Cancel] button, wear protective gear, and then remove the output.**







Reference

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

1.2 Printing Via PC

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

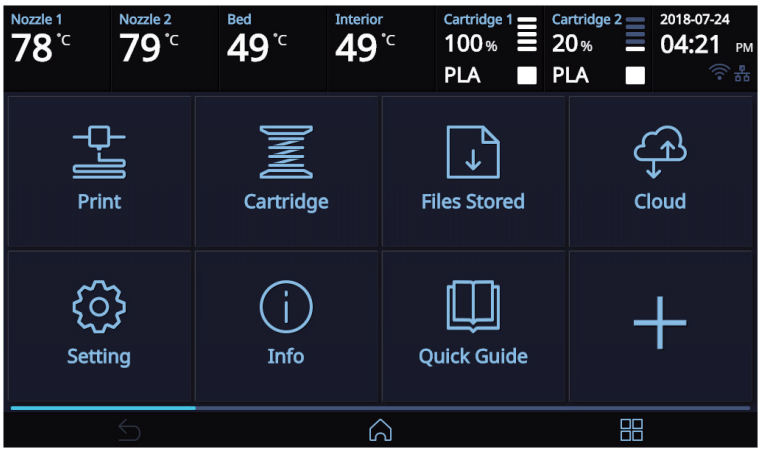
Note

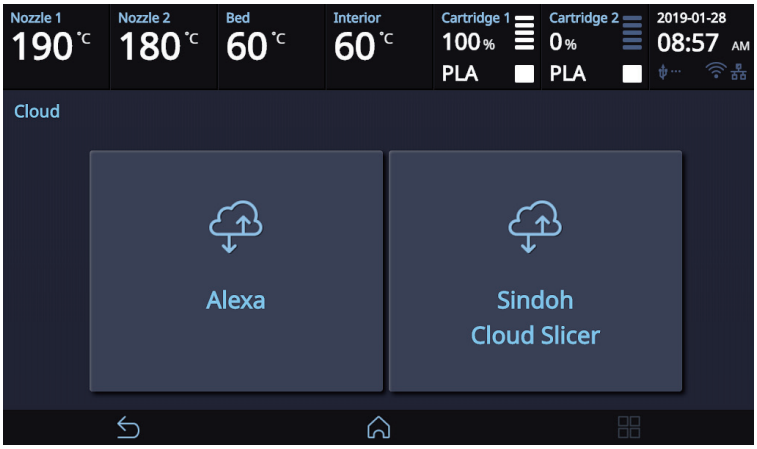
- Pause, print cancelation, please refer to P.3-2 Printing from USB Flash Drive.
- Refer to “3DWOX Desktop Manual” for the details.

1.3 CLOUD Printing

To begin using the Cloud Print function, users must register the printer to the server.

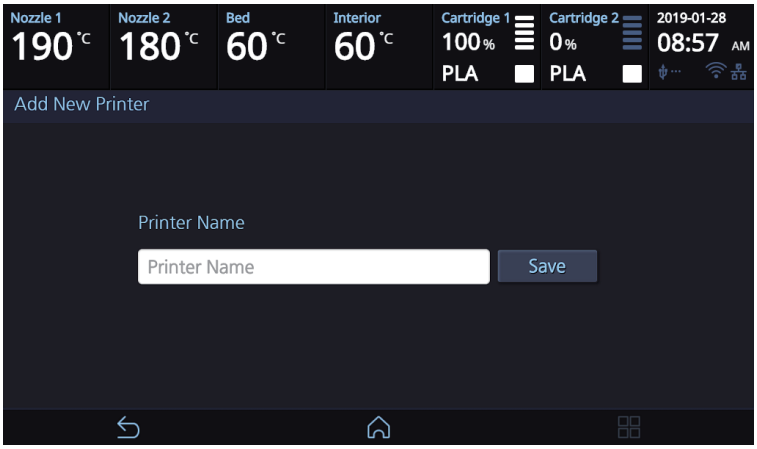
1. On the Home window, click the **[Cloud]** button.
   - When the user clicks **[CLOUD]** on the Home screen, the available CLOUD App is listed.





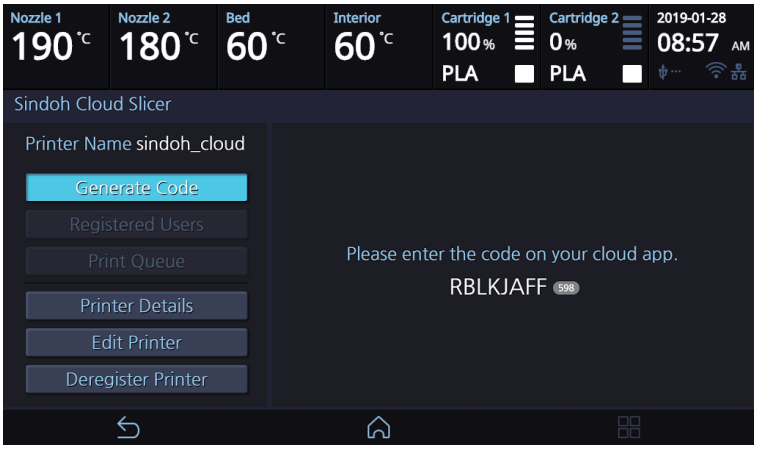
*Additional cloud apps can be added later.

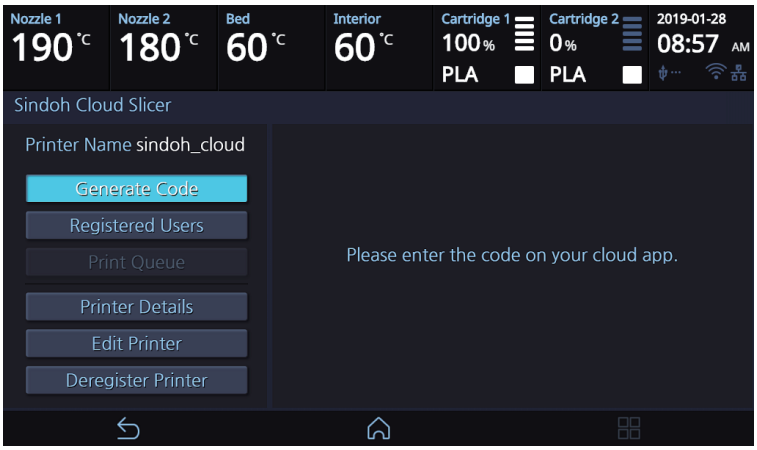
2 When using **[CLOUD]** for the first time, users must register their printer.



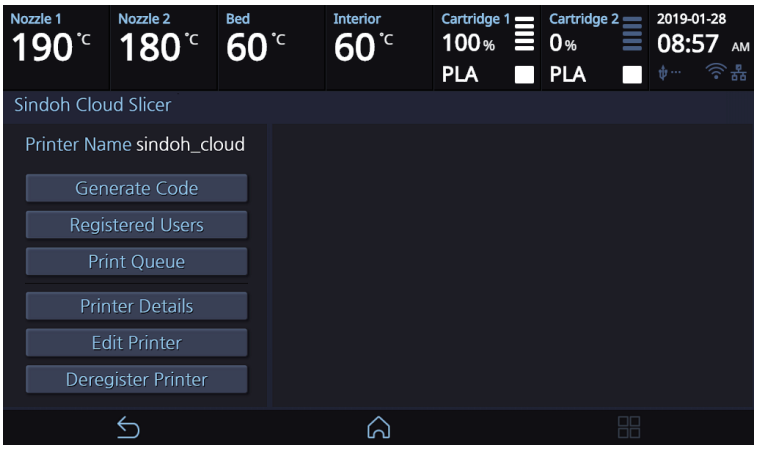
* Alexa and Sindoh Cloud Slicer app share Printer registration information.

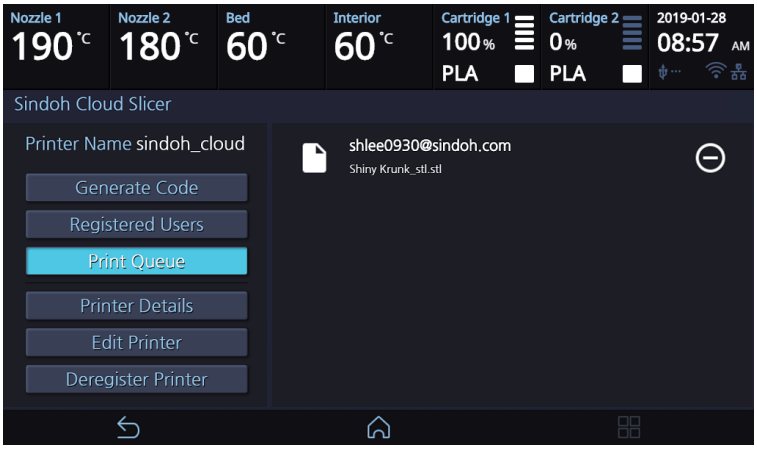
3 **[Generate Code]** allows you to connect the device with the account of the user registered in the App. If there is a user registered on the device, **[Registered Users]** appears, listing the registered users and deleting them by clicking the **[-]** button.



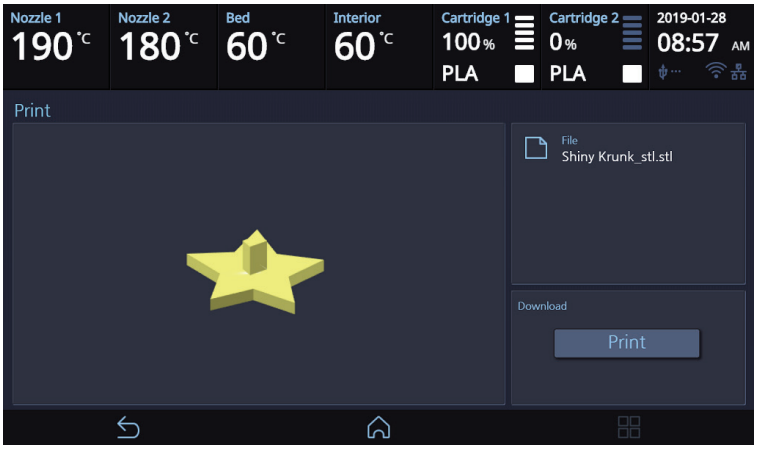


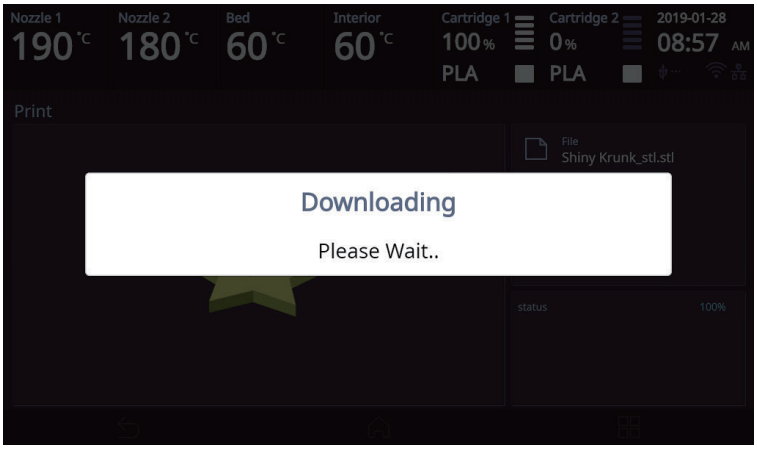
4 When the print job is sent to the printer registered in the app, a menu called **[Print Queue]** appears, and the names of the sender and the transmitted print job are displayed in the list when the menu is entered. The transferred print job can be deleted with the **[-]** button.

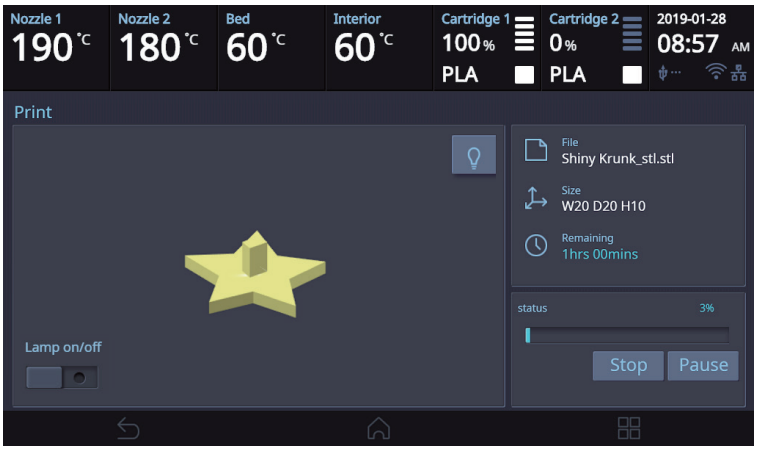




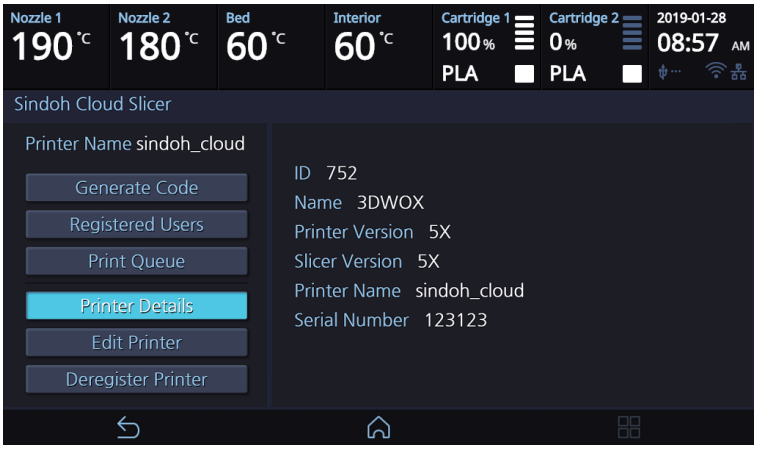
5 When you select the print job you want to print, the preview image of the print job will be displayed, and by clicking the **[Print]** button, the print job starts immediately after downloading the corresponding output. When the printing is started, the print job in **[Print Queue]** will be deleted from the list.



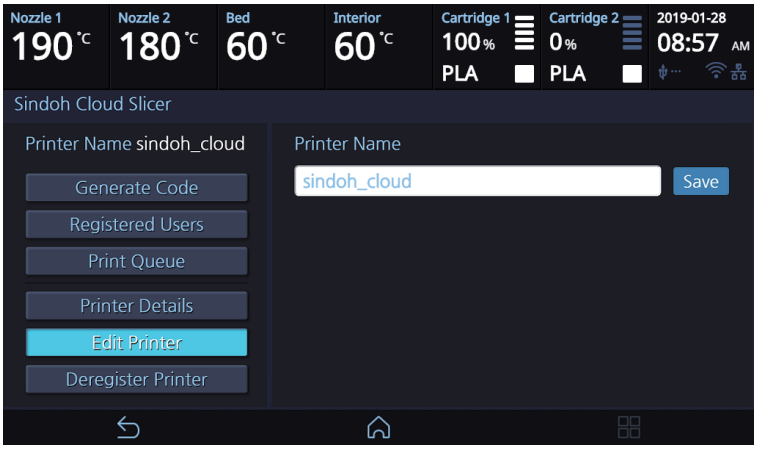




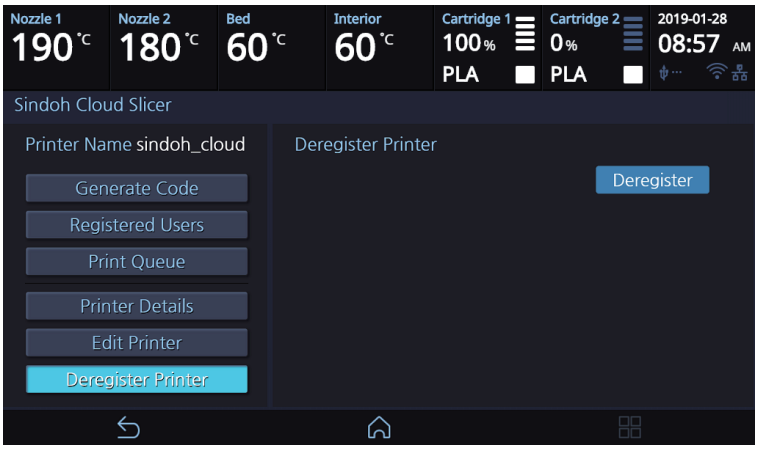
6 **[Printer Detail]** menu lets users check the printer information.



7 **[Edit Printer]** menu lets users change the **[Display name].**



8 **[Deregister Printer]** menu lets users delete the registered printer in the server.

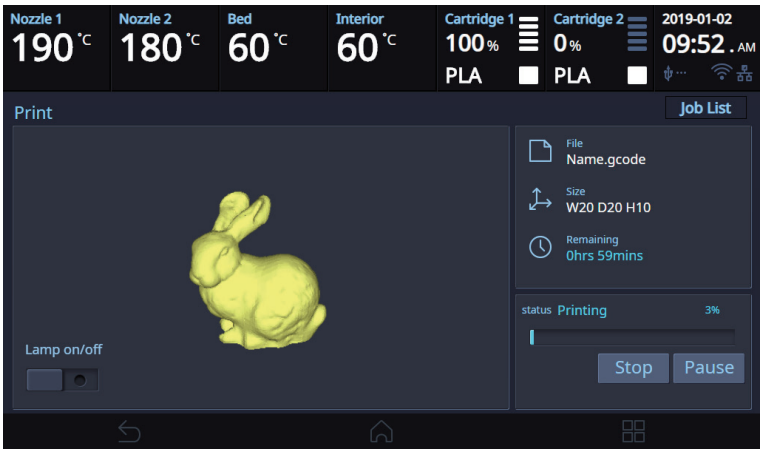


* If users delete the printer information, the **[Print queue]** list and the registered user list will be initialized.
* If users want to use the **[CLOUD]** function again after deletion, printer must be re-registered in the server.

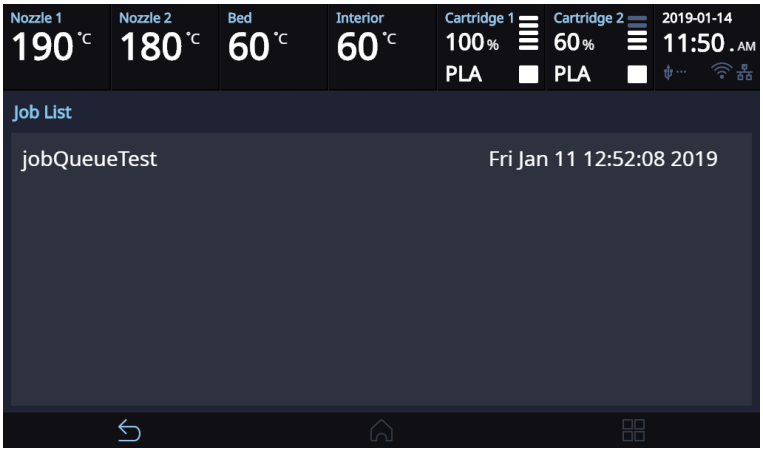
1.4 Print Job Management

You can manage print jobs in queue.

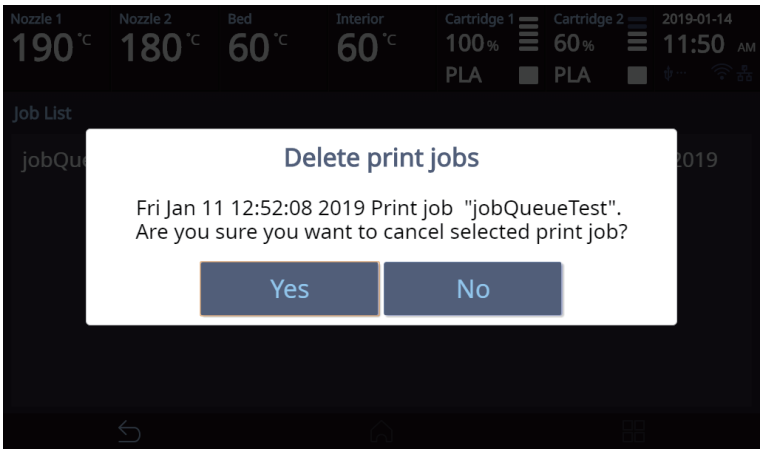
1 Press the **[Job List]** button on the upper right hand corner while printing.



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.



1.5 Printing with Two Types of Filaments

1 Two nozzles can cross print the same material.
- PLA & PLA
- ABS & ABS

2 Two nozzles can cross print the same material.
- PLA and PVA(PVA+)

	PLA	ABS	FLEXIBLE	PVA(PVA+)
PLA	O	X	X	O
ABS	X	O	X	X
FLEXIBLE	X	X	X	X
PVA(PVA+)	O	X	X	X

1.6 Changing Filaments

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

Printed Output Check

4

1. Printed Output Check

1.1 Detaching Printed Output

Note

- If Side B of the FLEXIBLE bed is used, the Printed Output can be detached when the bed cooled down, without detaching the FLEXIBLE bed.
- If Printed Output is large that doesn't detached on its own, detach the flexible bed after the bed has cooled down, and detach the Printed Output by bending the bed up and down. (Scraper is not required).

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

⚠ Caution **Hot Surface**

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

⚠ Caution **Heavy Risk**

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

1 Cooling the Bed

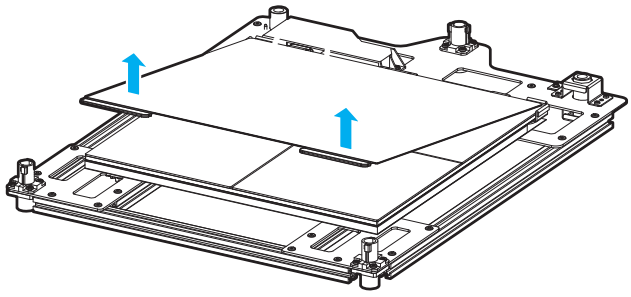
After the printer has finished printing, check the LCD screen and built-in speaker. Wait until temperature goes below 40ºC or 104ºF. Do not touch the bed or the bed handle until you are told you can touch the bed.

⚠ Caution

- **Do not touch the output until the bed is cooled down.**
- **To remove the output before the bed is cooled down, press the [Cancel] button and wear protective gear and remove.**

2 Detaching Bed

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

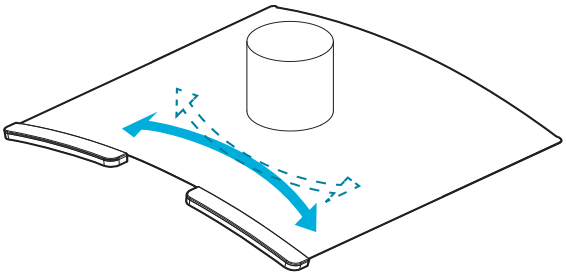


3 Detaching the printed output

⚠ Caution **Risk of Injuries**

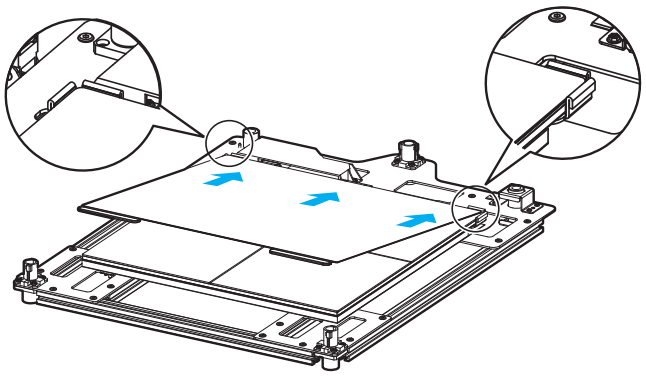
- **The scrapper is very sharp. Handle with care. Please be cautious of inuries when removing printed objects with the scrapper.**
- **When you have printed the large object, be careful when removing the bed so that the object does not touch the interior of the printer.**

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.

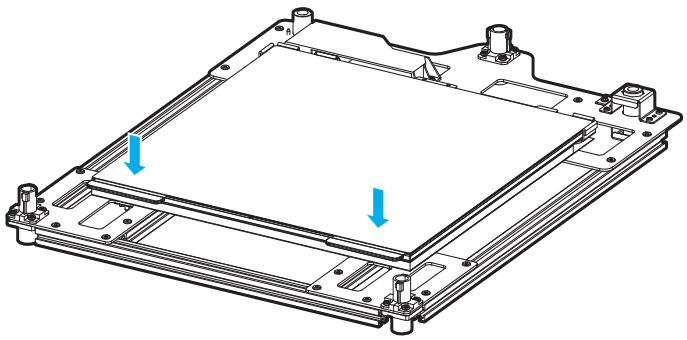


4 Flexible Bed Installation

① After facing upwards the side to be used between side A or B of the bed sheet, push the Flexible Bed all the way in as shown in the picture.



② Place Flexible Bed fix to position.



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

⚠ Caution

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

1.2 PVA(PVA+) Filament Removal Guide

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

Note

- If the water is warm, the dissolution time can be shorten. Make sure to keep the water temperature doesnot exceed 35°C; otherwise, the shape of the PLA can be deformed due to hot temperature..
- Able to shorten the dissolution time by Stirring or flowing the soaking water.
- After 10 min of dipping the output in the water, the PVA(PVA+) support will become soft and easy to remove. Use a tweezer type tool to remove the support.

2 Remove any remaining PVA(PVA+) from the output by rinsing it.

3 Wastewater Handling

- Dispose of Wastewater in accordance with your local and national waste posed through the drain only if the waste water distribution network is connected to a waste water treatment plant. The water with dissolved PVA(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(PVA+) residue.

1.3 Improving Printing Quality

1 Nozzle, Bed temperature

Depending on the material (PLA, ABS etc.), optimum temperature for the nozzle and bed can be different.
Environmental factors (temperature, humidity) can affect the quality of the printed product.
There is no absolute value for optimum temperature. Testing various temperatures and finding the optimum temperature are needed.
Temperature options can be changed in the 3DWOX Desktop slicer.

Material	Appropriate nozzle temperature	Appropriate bed temperature
PLA	190 °C ~ 210 °C	50 °C ~ 60 °C
ABS	220 °C ~ 240 °C	Above 90 °C (Above 100°C for Side B)
FLEXIBLE	220 °C ~ 245 °C	50 °C ~ 60 °C
PVA	200 °C ~ 225 °C	50 °C ~ 60 °C

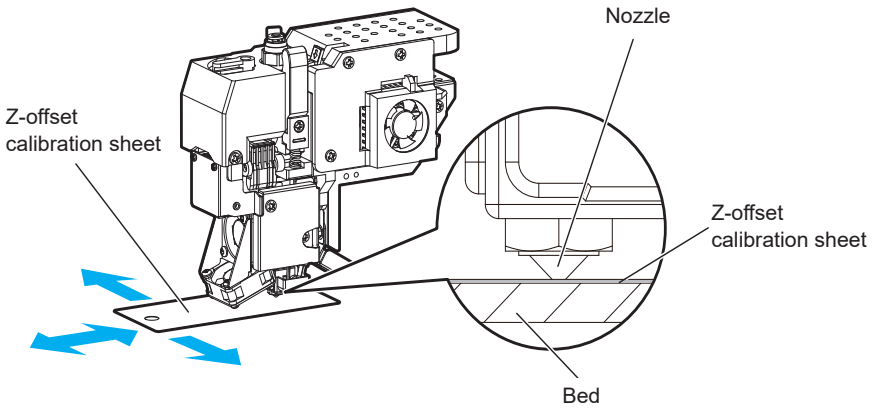
2 Support

For higher printing quality, minimize the use of supports.
However, shapes that are located in midair needs a support. If it's the case, control the distance so it can easily separate.

3 Bed Leveling

If outputs are not properly or too-tightly attached to the bed, please try the following procedures.

① Check whether foreign matters have been deposited on the bed, and clean the bed by referring to "1.4 Flexible bed and nozzle cleaning" in P5-2.
② Carry out bed leveling again by referring to "Bed leveling" in P2-20.
③ When bed leveling is completed, check the gap between the nozzle and the bed by referring to "Z-Offset" in P2-22.
Move the nozzle by touching the [Move] button, and adjust the gap, so that the enclosed "Z-Offset adjustment sheet" can barely pass through the gap between the nozzle and the bed.



Note

- When ABS materials are output
- If outputs are not properly attached to Side B, use only Side A, or carry out printing by adding the raft setting at the slicer.
- When one or more arranged small outputs (50 mm × 50 mm or smaller) that have a small area at which they attach to the bed are printed out, it is recommended to print by adding the raft setting to Side A.

4 Correcting Output Model

Output quality may vary depending on the shapes of the output model. To get the optimal quality, carry out printing by changing the shape or output direction of the model or by adjusting the output condition at the slicer.

5 Recommended Direction of the Bed

Material	PLA	ABS	FLEX	PVA(PVA+)
Direction	Side A	Side A or Side B	Side A	Side A

2. If problems persist

1 Please visit http://3dprinter.sindoh.com.

3DWOX 5X / 7X
USER MANUAL

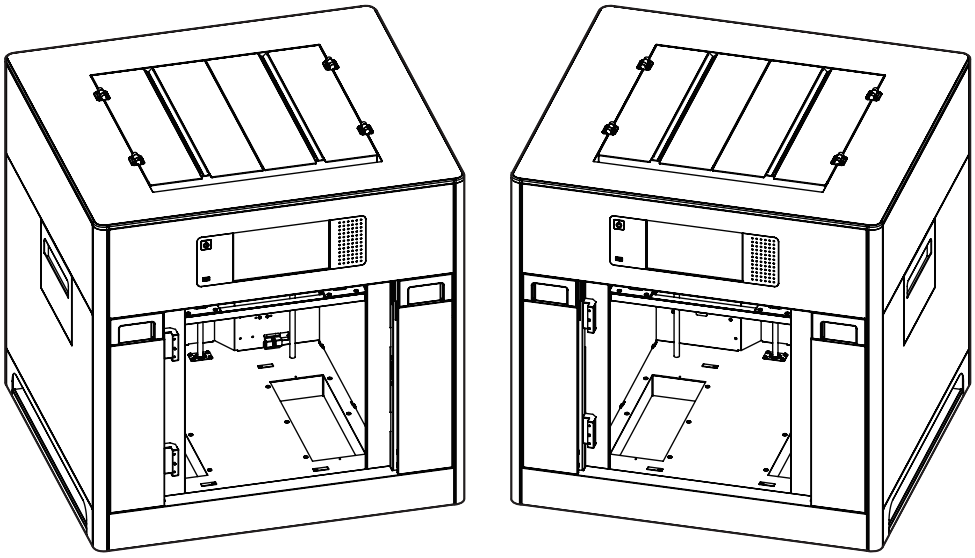
Maintenance

5

1. Machine Cleaning

1.1 Cleaning Case Maintenance

When the filament residue is filled in the cleaning case, use the “Setup - Cleaning Case” menu to clean the cleaning case.



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

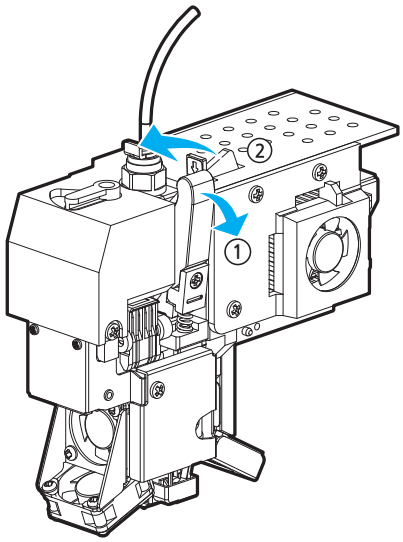
Bed leveling may not work properly if there are filament residues or foreign matter on the top of the bed, and impurities may get on the printing object, which may affect the printing quality. Regularly clean the top of the bed and the end of the nozzle tip.

If the attaching force of the side A bed sheet is reduced when printing the PLA material object, rub it with sandpaper(#400 - 600), and wiping with alcohol.

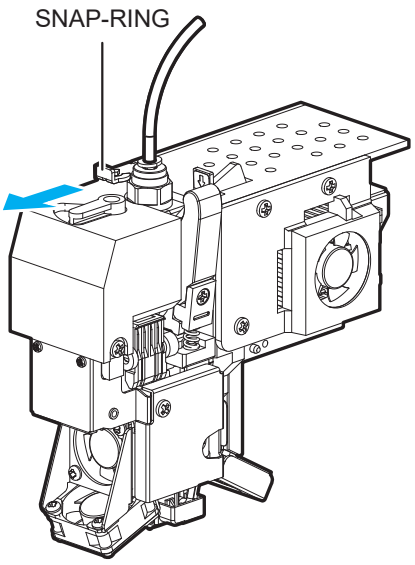
1.5 Cleaning the inside of the Nozzle

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(PVA+) or FLEXIBLE.
Please follow the instructions below when cleaning.

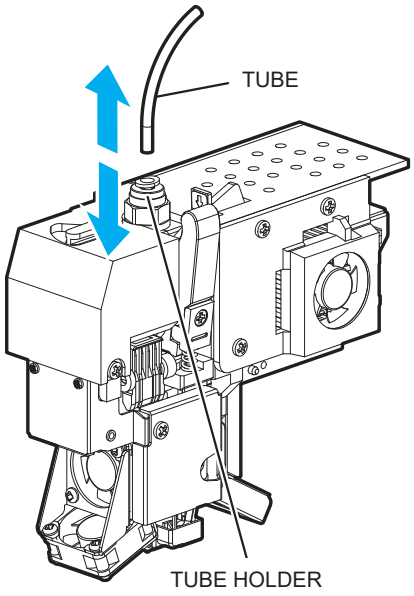
1 Pull the lever on the right side of the nozzle and then the top lever to the direction of the arrow to lock the lever.



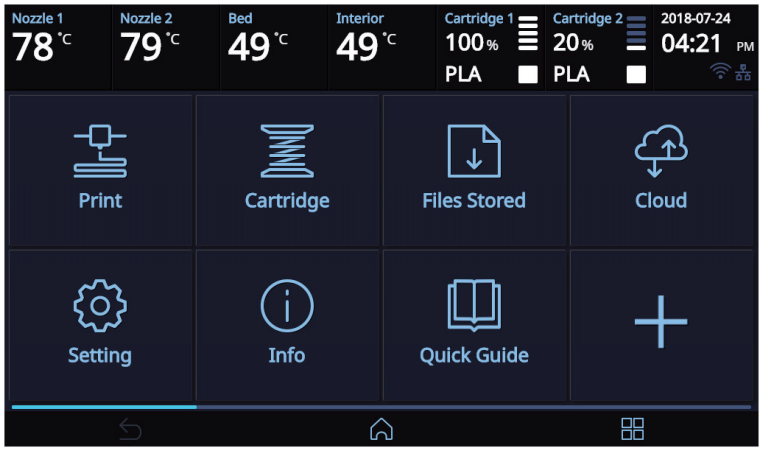
2 Remove the snap ring from the nozzle.

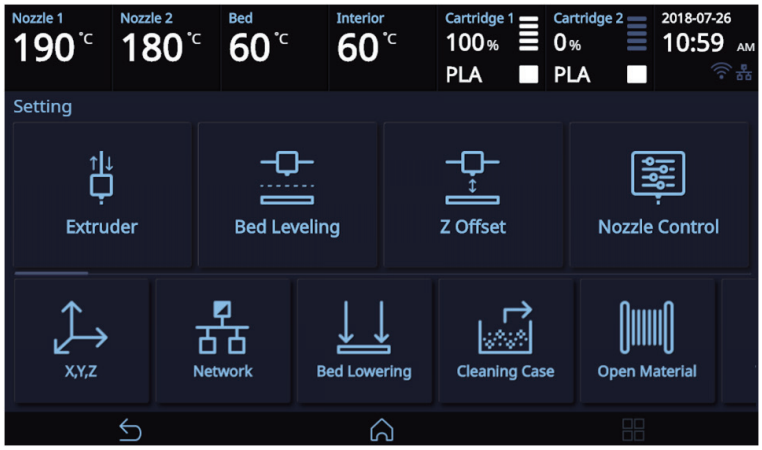


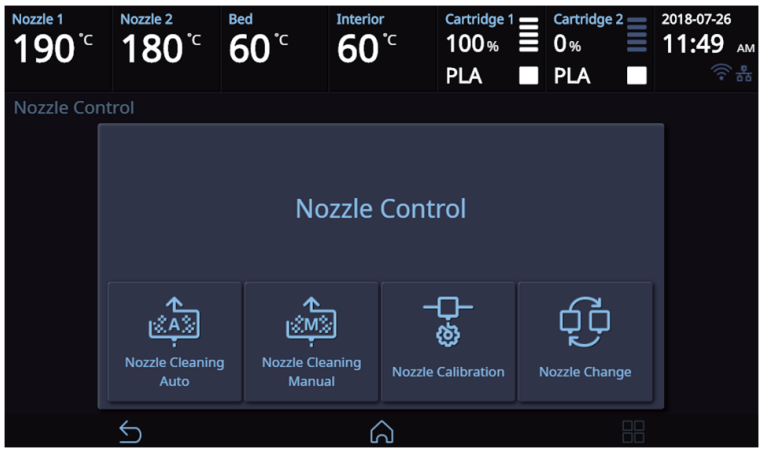
3 Remove the tube from the nozzle..

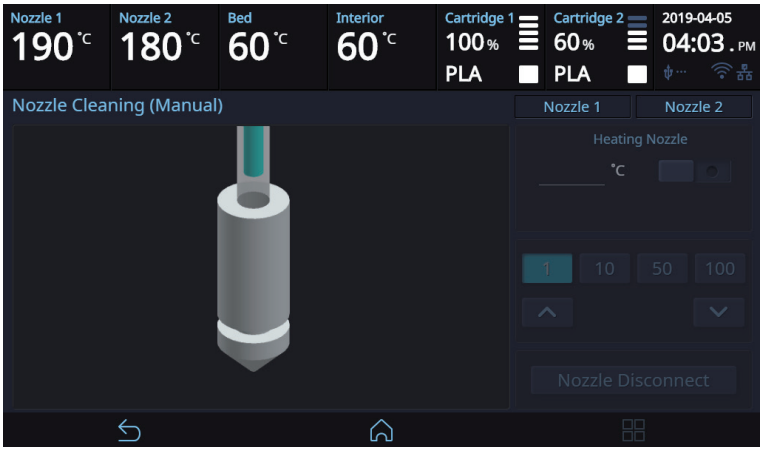


4 In the home screen, press the **[Settings]-[Nozzle Control]-[Nozzle Cleaning (Manual)]** buttons to access the nozzle cleaning menu.

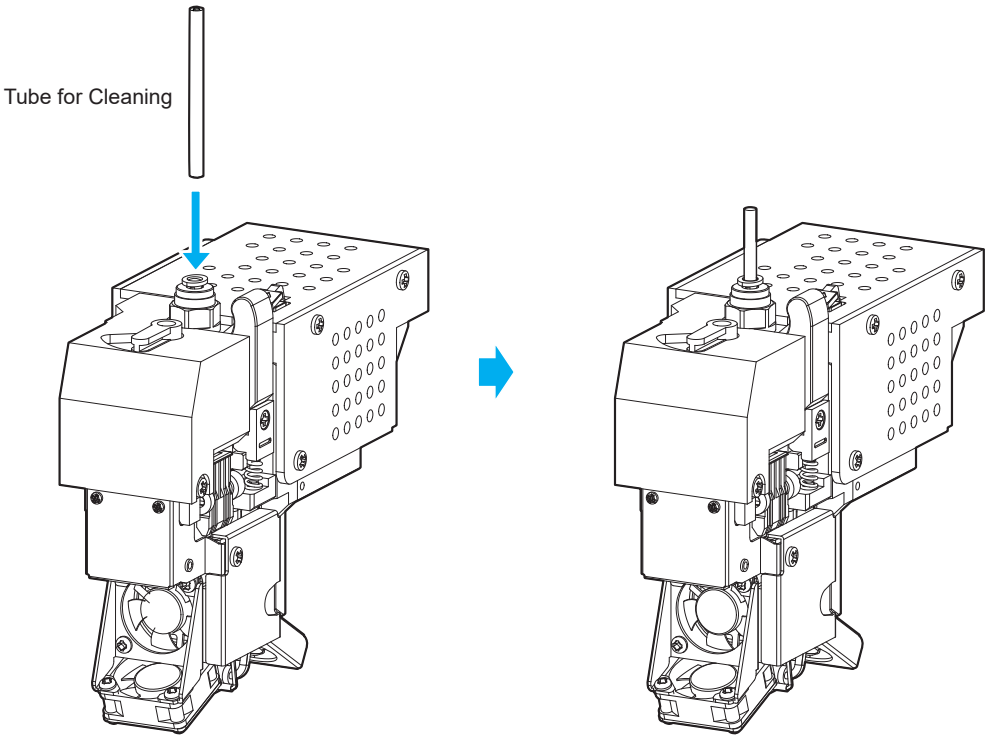








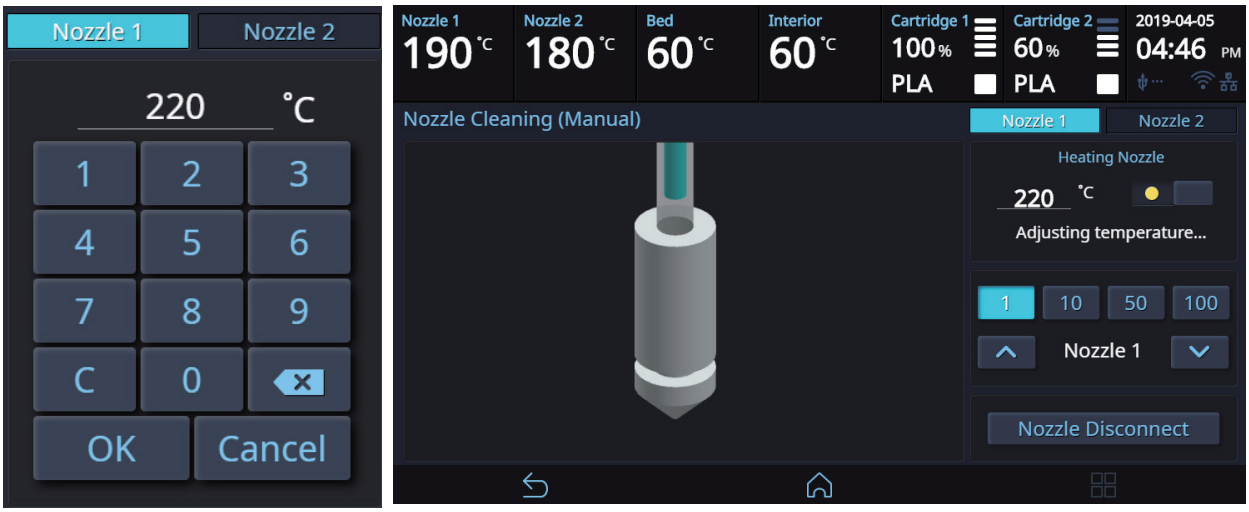
5 After positioning the nozzle in the center, insert the enclosed Tube for Cleaning into the nozzle.

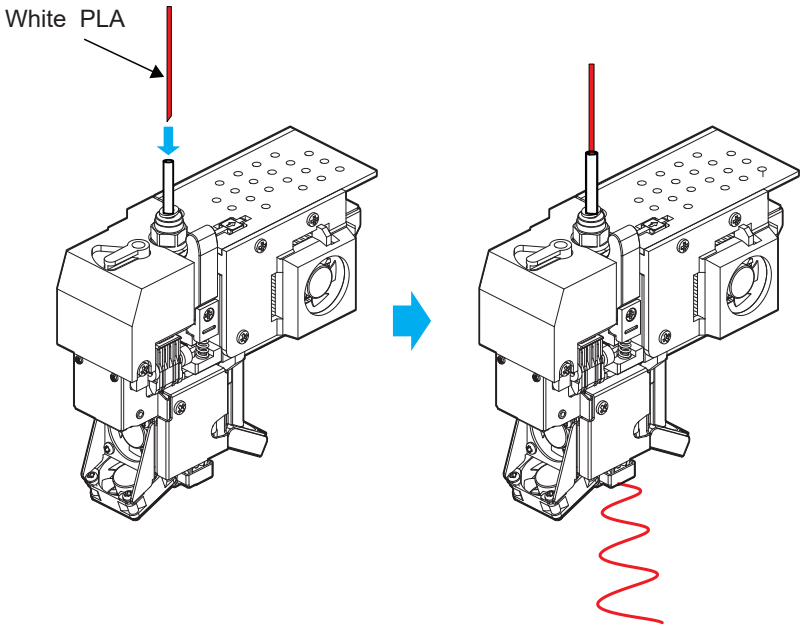


6 Enter the temperature and press the **[OK]** button. Press the heating nozzle button to set the temperature of the nozzle. Once the target temperature is reached, put a PLA filament into the tube and make it come through the nozzle.

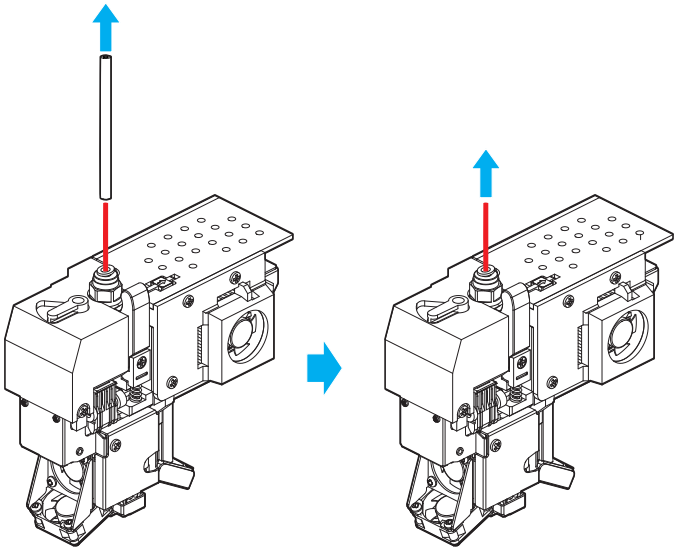
Note

- Use a white PLA filament longer than 50cm for cleaning.
- Use a white PLA filament to distinguish dirt from the nozzle easily.
- Filaments have different characteristics based on their colors. If you pull out a filament other than the white one, it may break inside the nozzle.





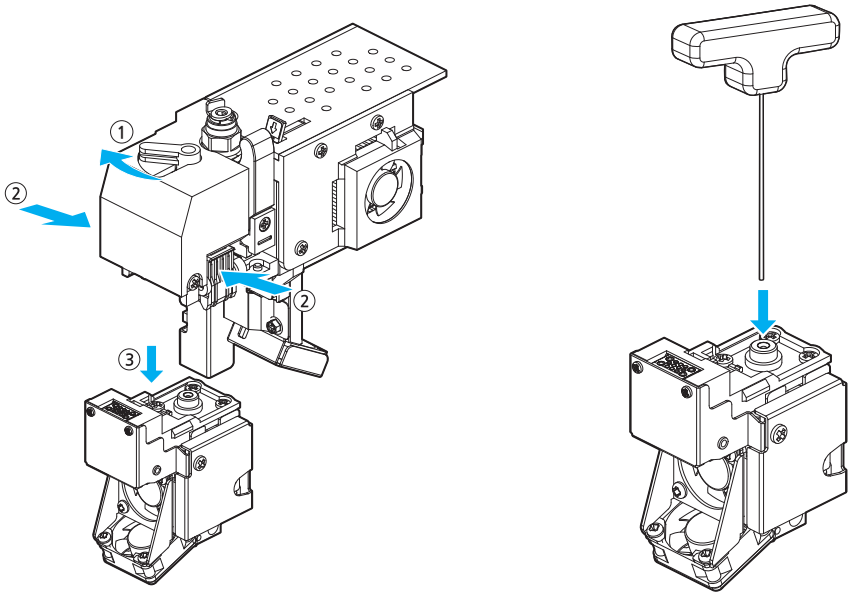
7 Remove the tube for cleaning and then pull out the PLA filament.



8 Press the **[Disconnect Nozzle] - [Disconnect]** buttons to remove the nozzle.
As shown in the image, insert a nozzle cleaning tool into the top hole to remove dirt.

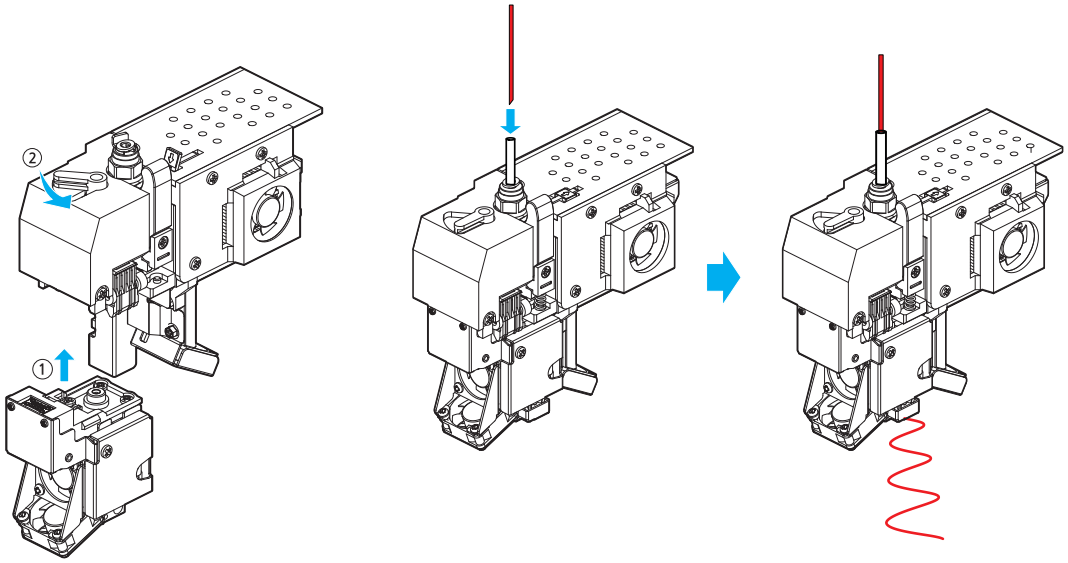
⚠ Caution

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



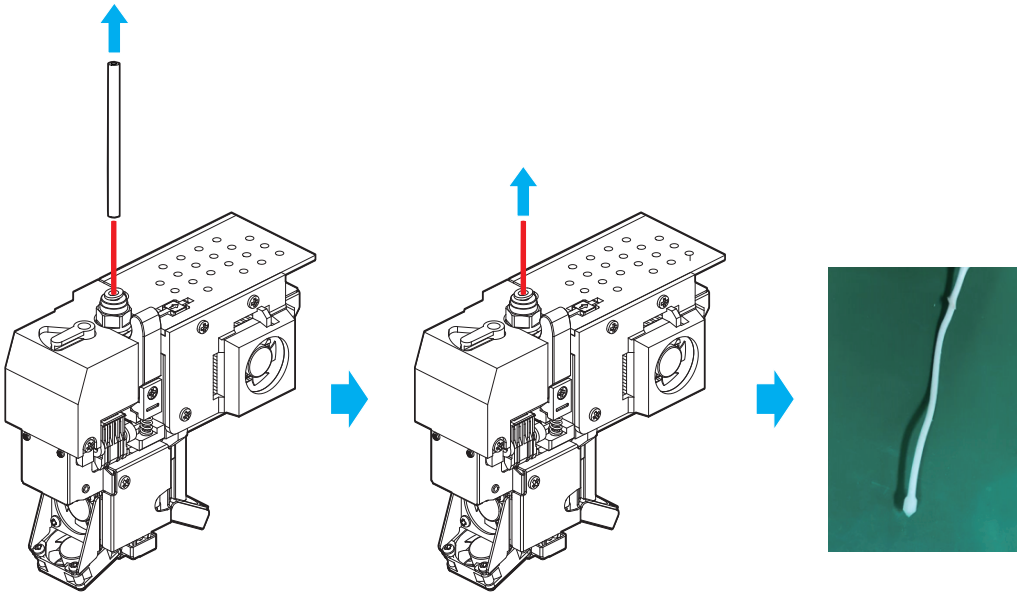
9 Remove the nozzle cleaning tool and reassemble the nozzle. Assemble the nozzle and then press the **[Connect]** button in the UI to reconnect it.

Once connected, heat the nozzle again, as explained in Step 6.



10 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

11 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.)



12 Repeat from step 3 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

13 Assemble the tube and the snap ring in reverse order from step 3 to step 1, and then turn the lever to its original position.

⚠ Caution

- **Make sure to place the lever to its original position since this may affect the print quality.**

14 Check whether the filament is extruded properly from the **[Setting]-[Extruder]** menu.

Note

- Refer to P.2-19 “Extruder” for the details.

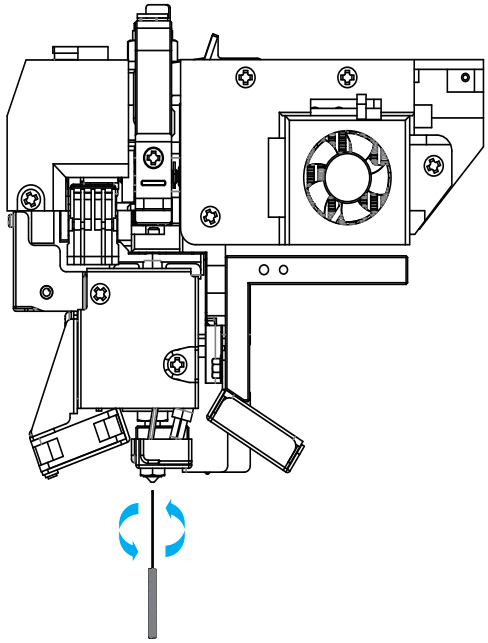
❖ USING NOZZLE CLEAN TOOL

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.

❖ 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.

In the nozzle cleaning (manual) menu, with the nozzle heated, insert the nozzle cleaning spring from the nozzle inlet side and pivot it from side to side.

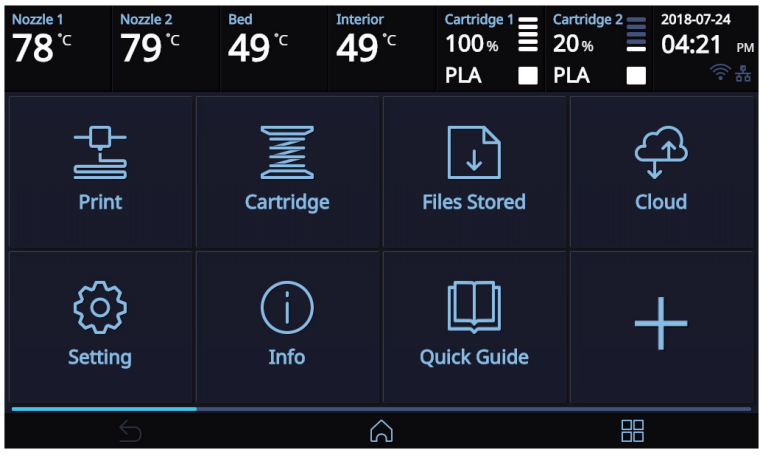


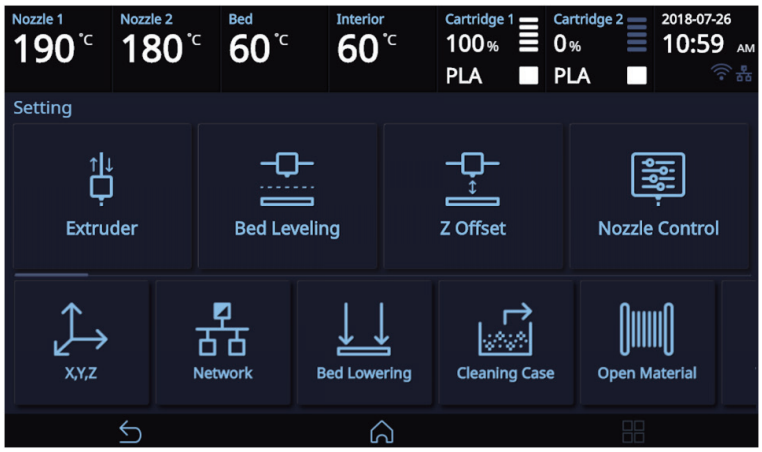
⚠ Caution

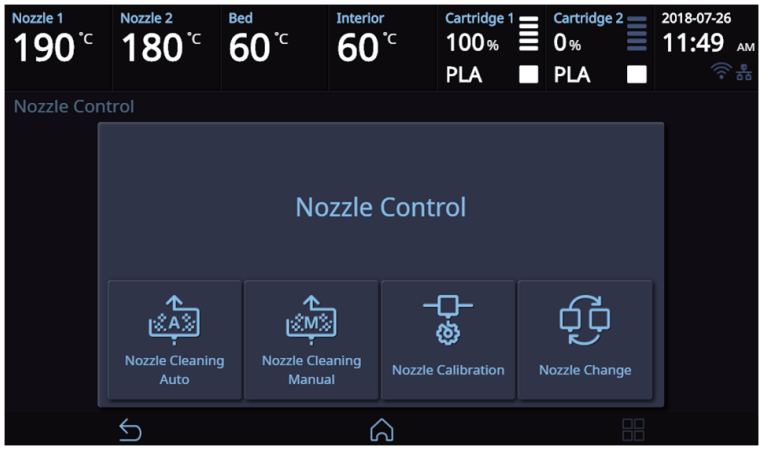
- **Be careful. It may cause burns.**
- **The tip of the nozzle may be hot. Please wear it with heat-resistant gloves.**

1.6 Nozzle Tip Cleaning

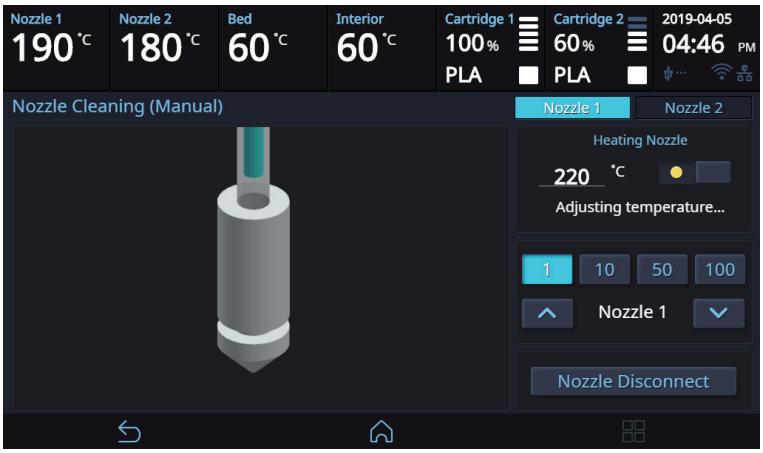
1 In the home screen, press the **[Settings]-[Nozzle Control]-[Nozzle Cleaning (Manual)]** buttons to access the nozzle cleaning menu.

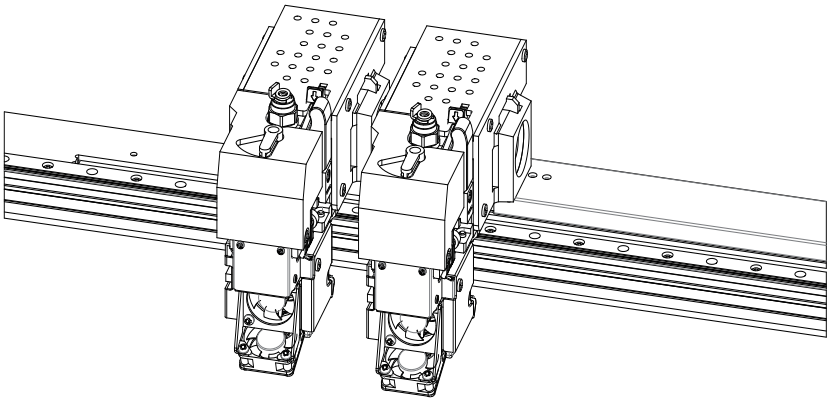




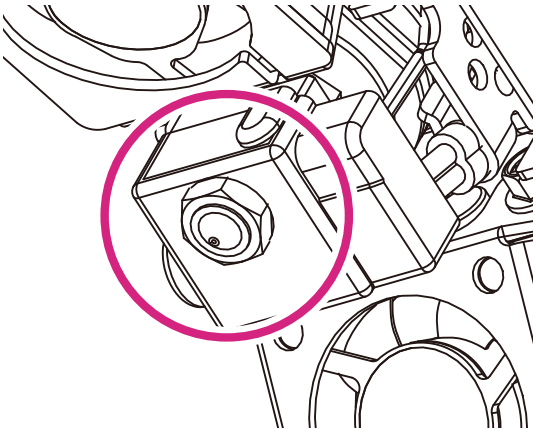


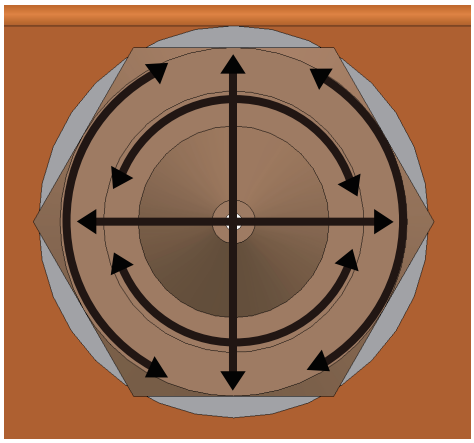
2 Press the **[Heat Nozzle]** button, and center it once the nozzle reaches the target temperature.





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, 308, 351, 353, 355	There is a problem with the nozzle temperature sensor or heater	If the problem persists after rebooting the printer, request for A/S.
EC 311, 312, 314 Please Reboot Machine.	There is a problem with the leveling.	Check 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.
EC 321, 324 Please Reboot Machine.	There is a problem with the the heat sink fan of the nozzle or the nozzle motor 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.
EC 325, 326 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.
EC 354, 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 391, 392, 393, 394	Cooling Fan Errors	Contact us for A/S if the errors still occur after rebooting the printer.
EC 407, 408, 409	G-Code File Error	If you press **[OK]** button, the alert pop-up will be closed.
EC 500, 501, 502, 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.
Notification 401, 601	Filament is not transferred properly.	Follow the directions listed in the “3.5 Solution for EC 401” section.
Filament is exhausted. Filament break has been detected.	Appears if the filament of the cartridge is exhausted or broken.	Following the instructions on the LCD, first clean any filament debris, then install and load a new cartridge.
Notification 403, 411, 412, 413, 414, 415 and 417	The filament was not loaded properly.	Remove the cartridge according to the UI instructions, and then remove the filament.
Notification 404, 421, 422, 423 and 424	The filament was not unloaded properly.	Remove the cartridge according to the UI instructions, and then remove the filament.
Notification 431	The printer does not recognize the cartridge's smart chip.	Check if the cartridge has a smart chip, and re-install it.
Notification 432	The printer recognizes the filament but not the cartridge.	Press the **[OK]** button to unload it, and then re-install it.
Notification 433	Message will appear if there are more than 5% difference between the cartridge quantity and recorded usage levels.	Replace Cartridge.

Message	Description	What To Do
Notification 434	The filament has already been consumed.	Replace the smart chip. (Check if the smart chip was replaced with the filament.)
Notification 438, 439	Cartridge Smartchip Error	Smartchip Replacement Required. (Check if the smartchip was replaced as replacing the filament.)
Notification 447	This error occurs if a newly loaded filament material differs from the previous printing filament material.	Insert the same filament material type with the one previously used into the cartridge.
Notification 461 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 side of the device.
Notification 481	Unloading was not successful.	Press the **[OK]** button to restart unloading.
Notification 471, 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.)
Notification 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.)

3. Problems and Solutions

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

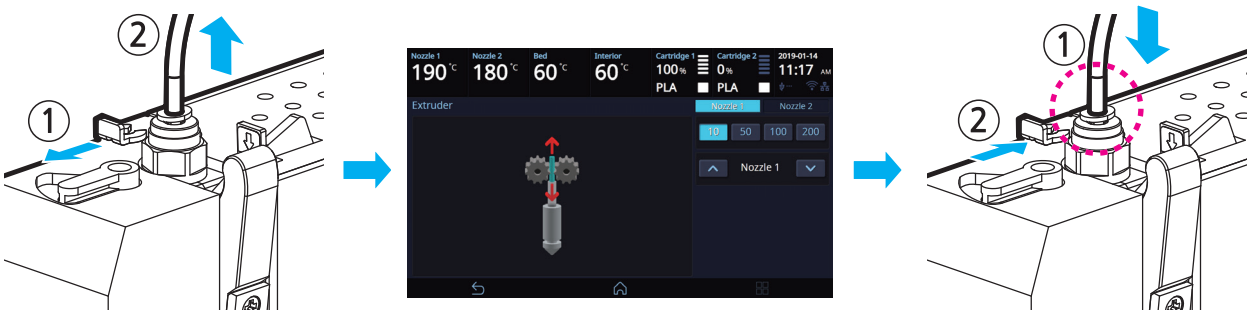
1 Remove the snap ring from the fitting of the nozzle part and then the tube.

➞ Move the filament toward the nozzle to push out the broken part in the extruder operation mode.

➞ Remove all broken parts, install the nozzle to the tube, and install the snap ring.

※ Push in the tube until the black section of it is fully inserted.
After installing the snap ring, push in the tube slightly more (by 1.5 mm).

➞ Transfer the filament toward the nozzle and make sure that it comes out of the nozzle in the extruder operation mode.



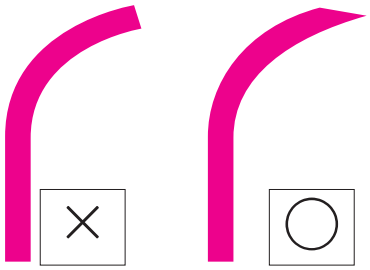
3.2 When Filament End is Visible Outside the Cartridge After Unloading

1 Pull out the filament approximately 50~60cm, and cut the filament.

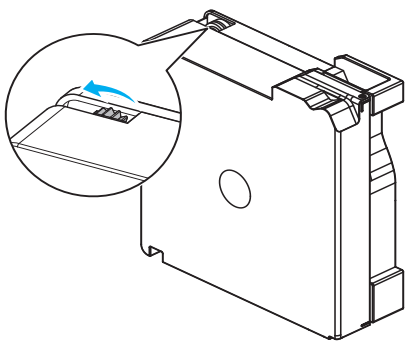
Note

Cutting Filament Tip

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



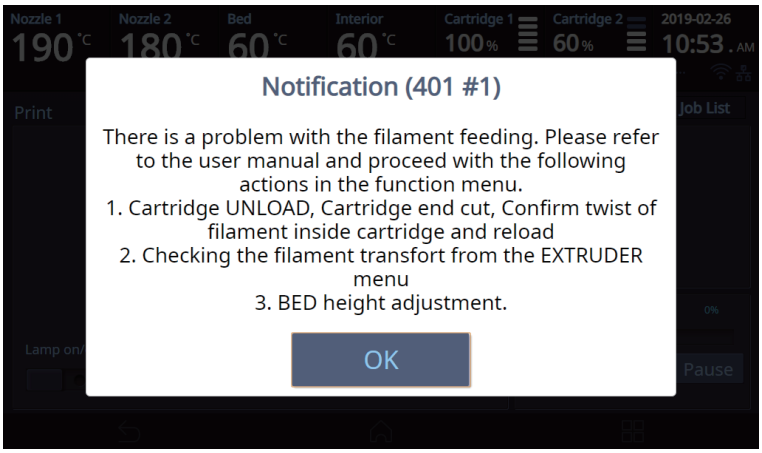
2 Like the image below turn the gears and the filament will retrieve back to cartridge. Insert until filament is invisible, reinstall the cartridge into the printer and activate LOAD.



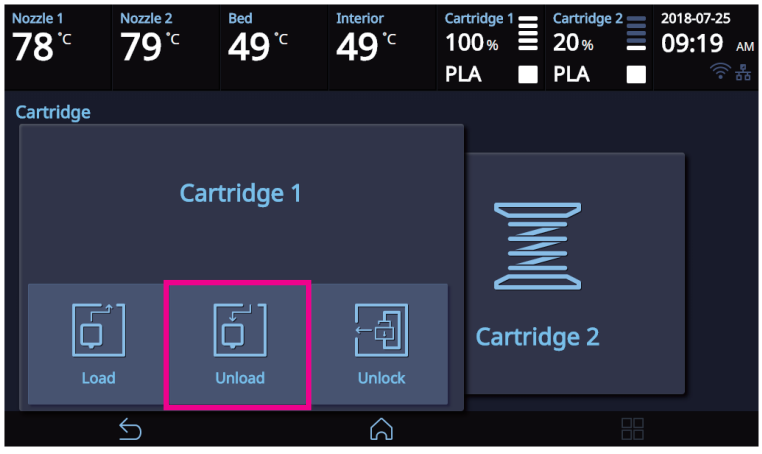
3.3 Solution for Notification 401, 601

The Notification 401, 601 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 Select and unload the cartridge with the same number that the notification 401, 601 was detected.
➞ Remove the cartridge from the printer.
➞ Open the cartridge and check if the filament is tangled.

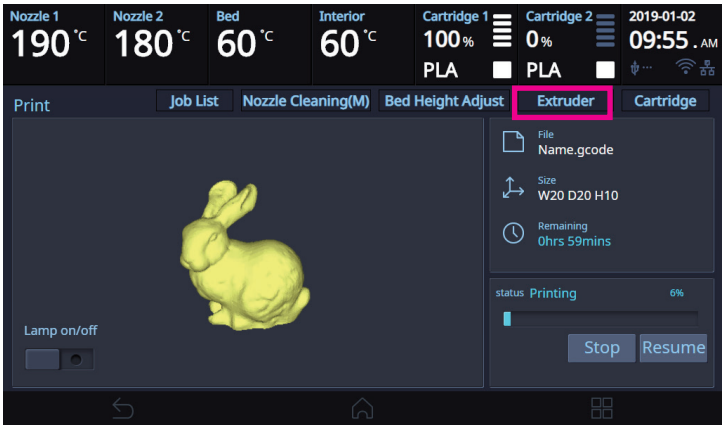


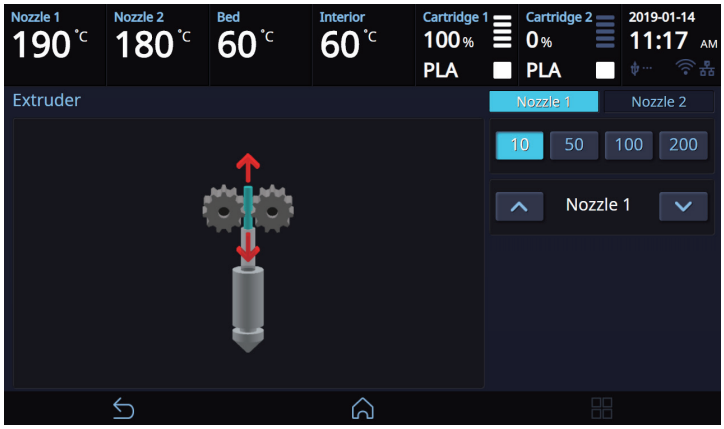
3 Select the **[Extruder]** menu.

➞ Wait until the nozzle's temperature reaches the target temperature.

➞ Operate the extruder to insert the filament by 50 mm.

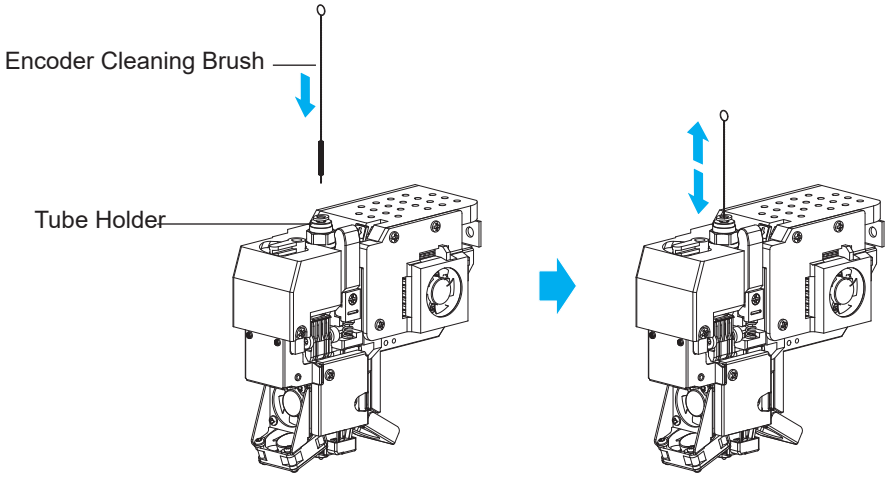
(If the filament was not injected, repeat step 2 for two to three times. If this does not work, please contact our customer service hotline, and submit a video or image of this issue to a customer service representative.)





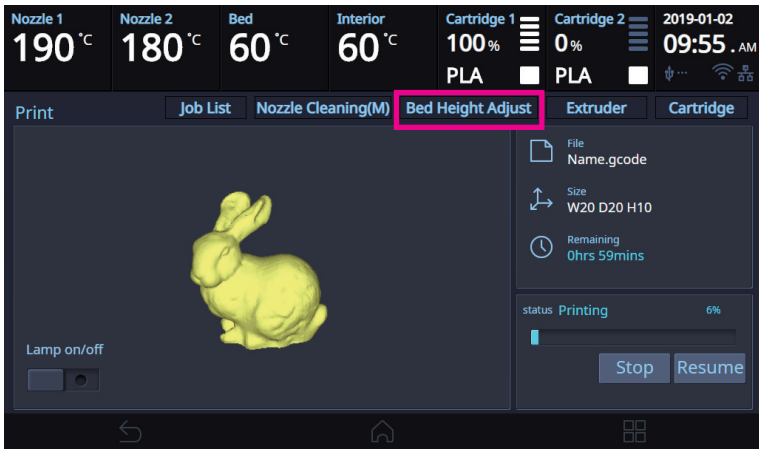
Note

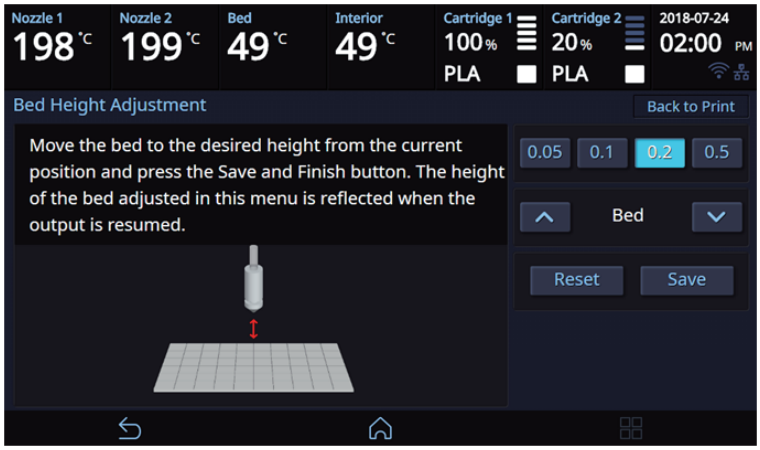
- When the filament is normally extruded (when notification 601 occurs)
  - Remove the snap ring from the nozzle and remove the tube.
  - Insert the encoder cleaning brush into the tube holder and move it up and down about 10 times to clean it.
  - After cleaning, insert the tube again and assemble the snap ring.
    For details on how to remove and assemble the snap ring and tube, refer to "1.5 Cleaning the Inside of the Nozzle" in Chapter 5 of the User Manual.



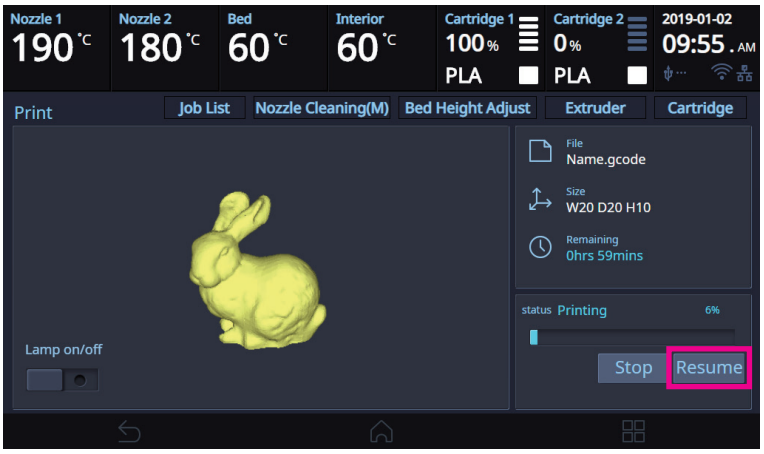
4 A persistent Notification 401, 601 error code may be caused by an insufficient space between the nozzle and the bed, which causes the filament not to be correctly transferred.
In such a case, select the [Bed Height Adjustment] menu to adjust the height of the bed so that there is adequate space between 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 After finishing the response to Notice 401, 601 press the **[Resume]** 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

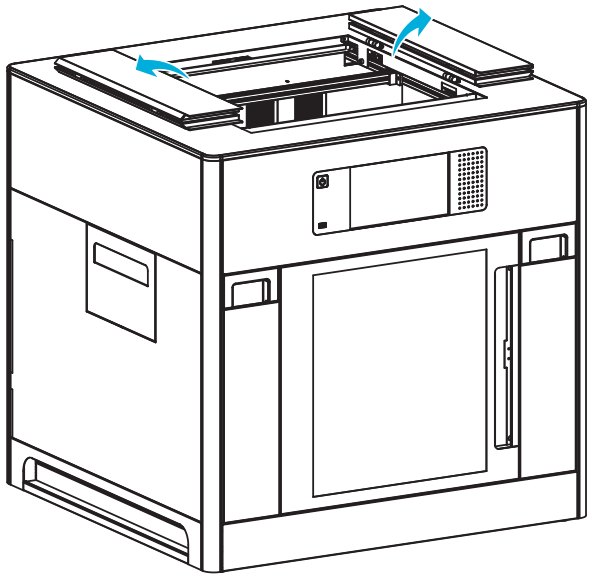
⚠ Caution

- **Turn the machine power off before starting the replacement.**

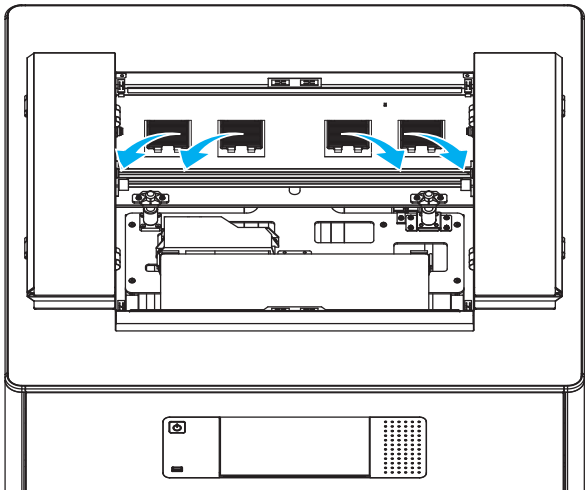
Note

- 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.

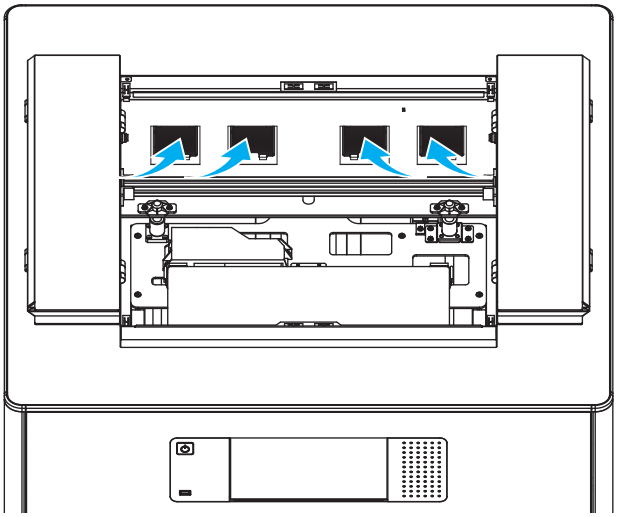
1 Open the top door.



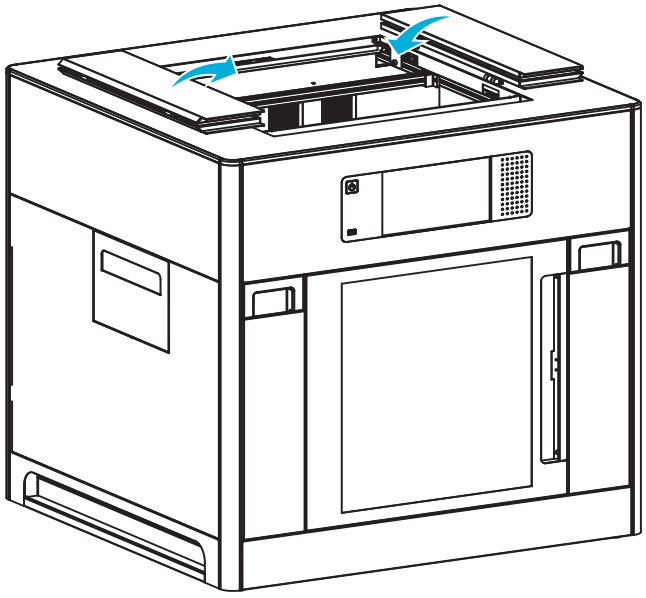
2 Pull the filter toward the direction of the arrow to remove it.



3 Install a new filter, as shown in the image.



4 Close the top door.



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. 2-7 “UNLOAD”

2 Please switch the cartridge first and then load.

Reference

- For details on cartridge load, please refer to P. 2-5 “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.

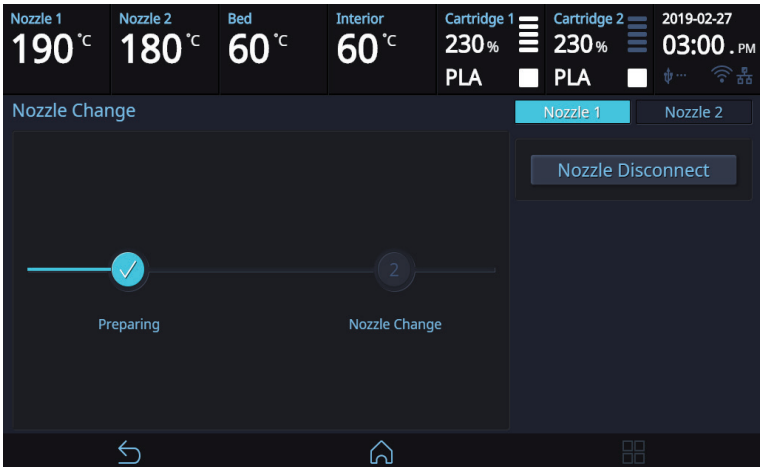
4.4 Nozzle Replacement

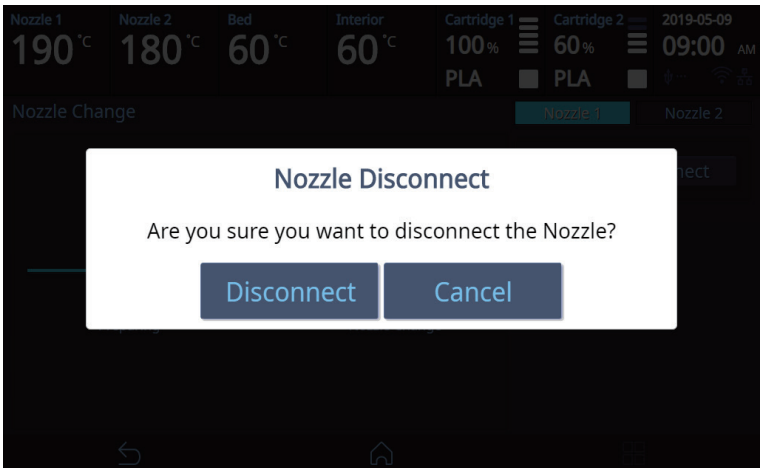
In the home screen, press the **[Settings] - [Nozzle Control] - [Nozzle Replacement]** buttons to access the nozzle cleaning menu.

Caution

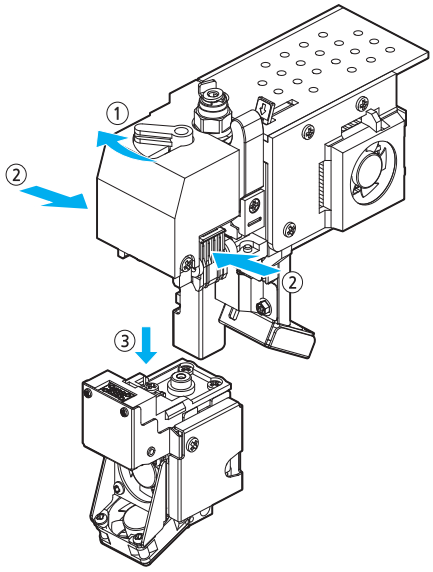
- **If the temperature of the nozzle is above 30°C, it may cause burns to a part of your body during replacement.**

1 Select a nozzle to replace. Select a nozzle to move it to facilitate operation.
Press the **[Disconnect Nozzle] – [Disconnect]** buttons to disconnect the nozzle.

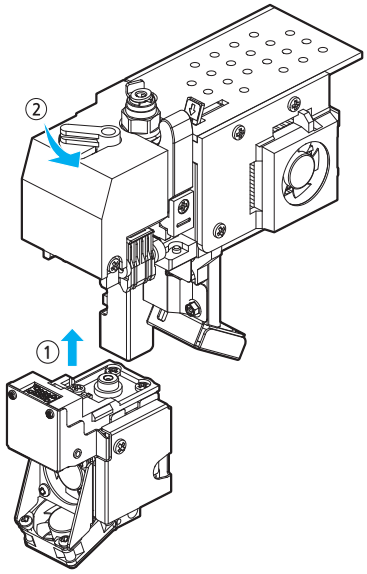


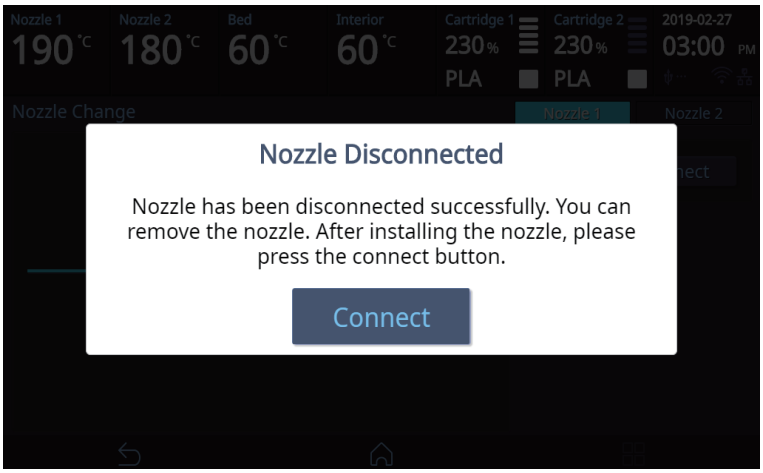


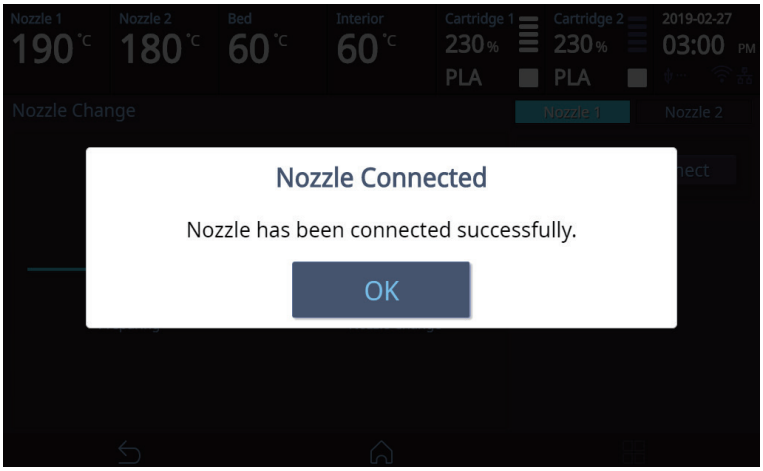
2 As shown in the image, turn left the nozzle fixing lever on top and then pull down the nozzle while pressing both hooks to remove it.



3 Install a new nozzle and then turn right the nozzle fixing lever on top.
Once the nozzle is installed, press the **[Connect]** button in the UI to reconnect it.



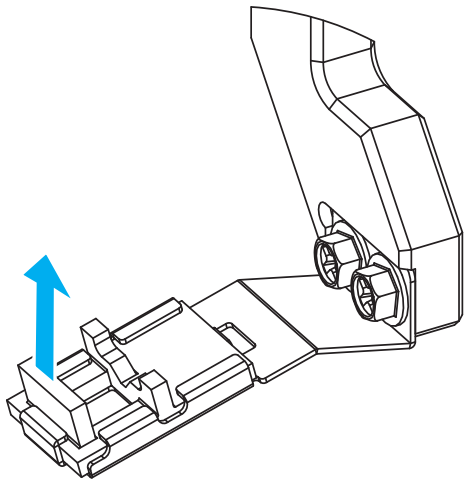




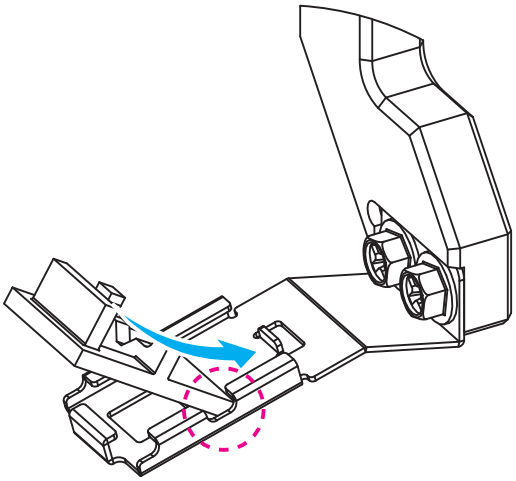
4.5 Nozzle Cleaning Pads Replacement

When the nozzle is not cleaned properly because the cleaning pad is damaged, replace the pad by performing the following procedure:

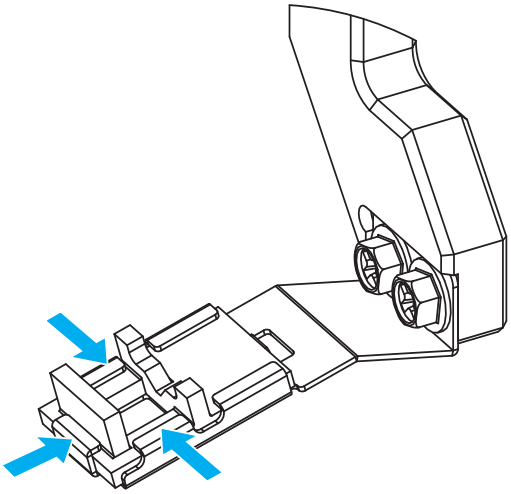
1 Hold the end of the pad, and remove it by pulling it hard in the arrowed direction



2 Match one end of a new pad as shown in the following figure, and push it in the arrowed direction.



3 After inserting the pad, check that the pad is held by the hooks in three directions, as shown in the following figure.



⚠ Caution

– When replacing pads, be careful not to damage or deform adjacent parts.

Appendix

6

1. Type of Filaments (Material, Color)

PLA(700g)
Color: White, Black, Gray, Red, Yellow, Green, Blue, Pink, Purple

PLA(1.5kg)
Color: White, Blue

ABS(600g)
Color: white, black, gray, red, yellow, green, blue

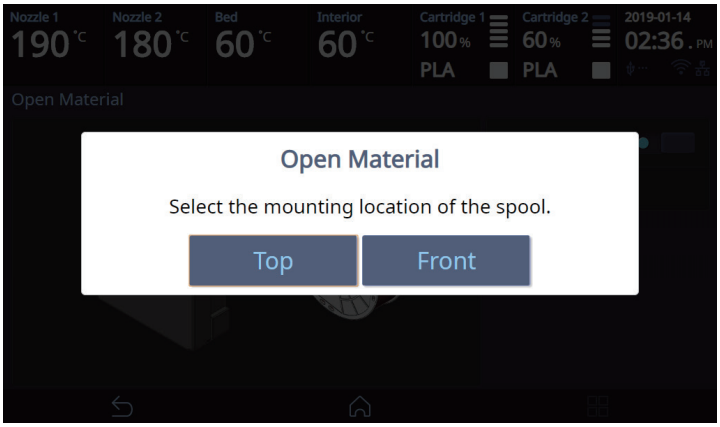
Flexible(500g)
Color: white, black, red, green, yellow, orange

PVA(PVA+)(500g)
Color: Translucent White

2. Using an open material

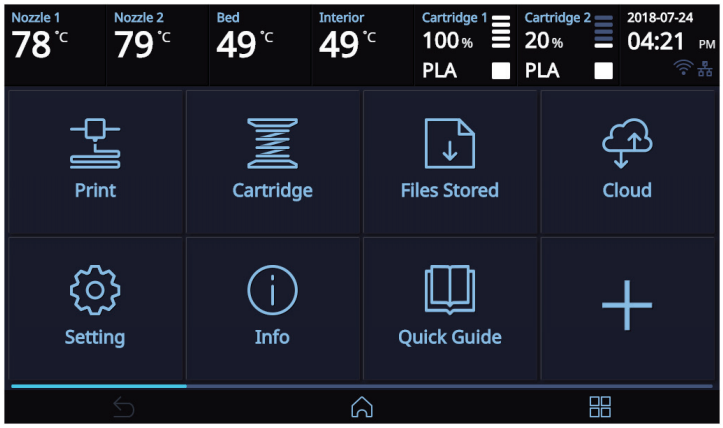
Note

- For setting the product on using an open material, see p. 2–39, “Open material.”
- In the case of the 7X model, you can select a position to insert the spool during the setting of the Open Material mode.
  If you are to use any soft or brittle material, make sure to select **[Top]**.

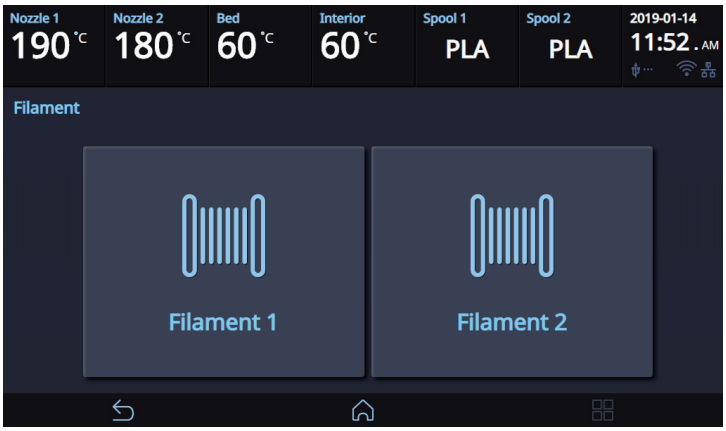


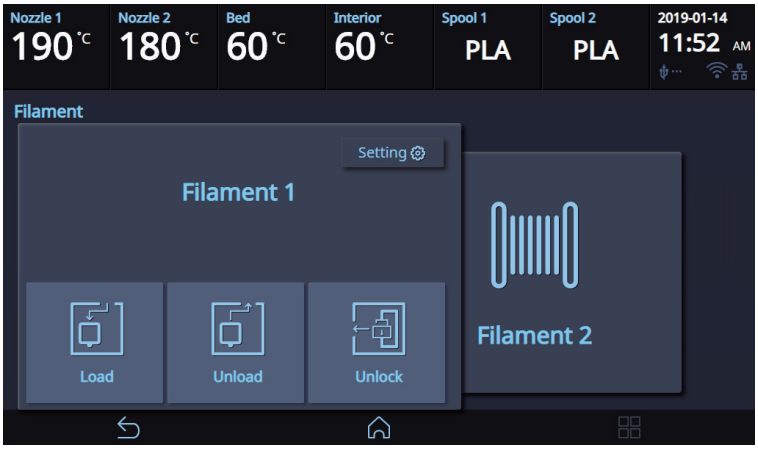
2.1 Installing from the front

1 On the Home window, click the **[Spool]** button.



2 Select the filament to be activated by clicking either **[Filament 1]** or **[Filament 2]**.

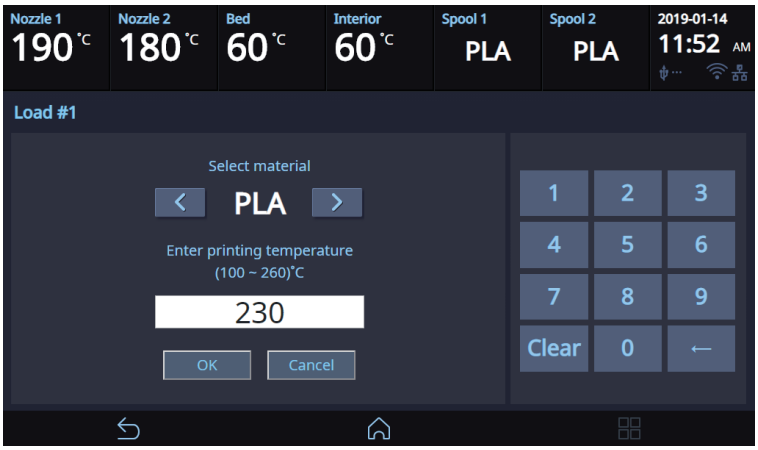




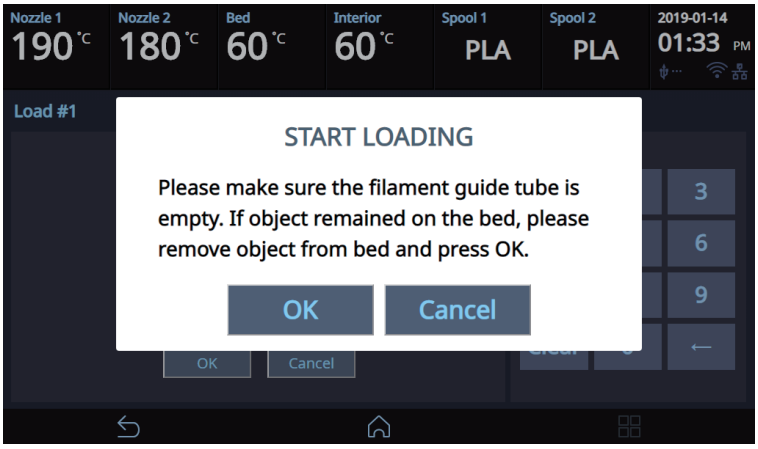
3 Enter the material and output temperature of the filament, then click **[OK]**.

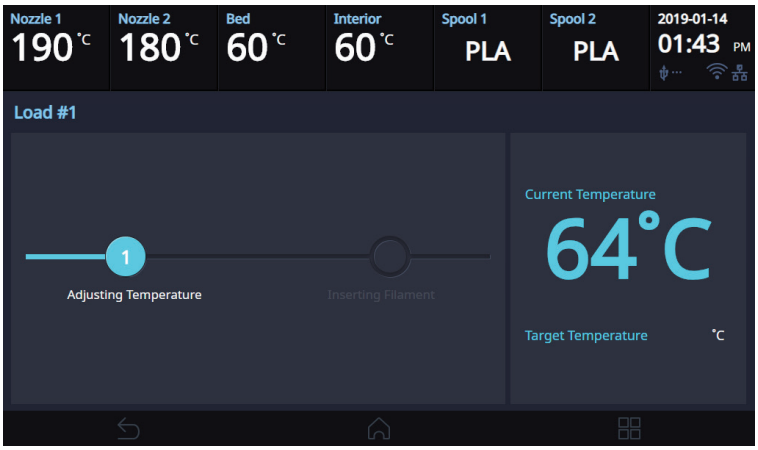
⚠ Caution

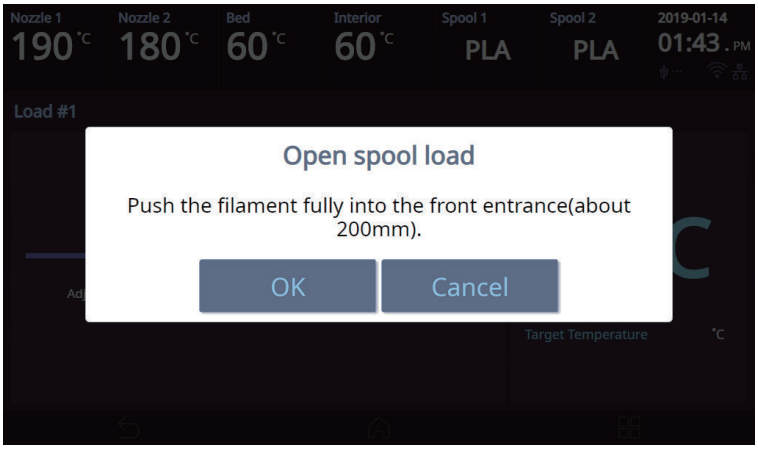
- **If the material and temperature are entered incorrectly, the machine may be damaged during the loading process.**

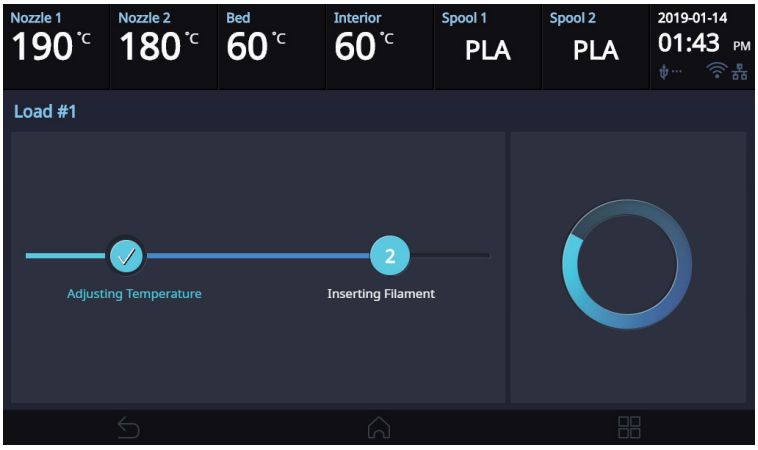


4 After confirming that you will run cartridge loading, clicking **[OK]** will run filament loading.
When the temperature reaches the specified target value, push the filament in fully through the front entry, then click **[OK]**.
Filament loading will run automatically, and upon completion, it will automatically return to the Home window.




Nozzle 1
190 °C
Nozzle 2
180 °C
Bed
60 °C
Interior
60 °C
Spool 1
PLA
Spool 2
PLA
2019-01-14
01:43 PM
Load #1
1
Adjusting Temperature
Inserting Filament
Current Temperature
64°C
Target Temperature
°C


Nozzle 1
190 °C
Nozzle 2
180 °C
Bed
60 °C
Interior
60 °C
Spool 1
PLA
Spool 2
PLA
2019-01-14
01:43 PM
Load #1
Open spool load
Push the filament fully into the front entrance(about 200mm).
OK
Cancel
Target Temperature
°C

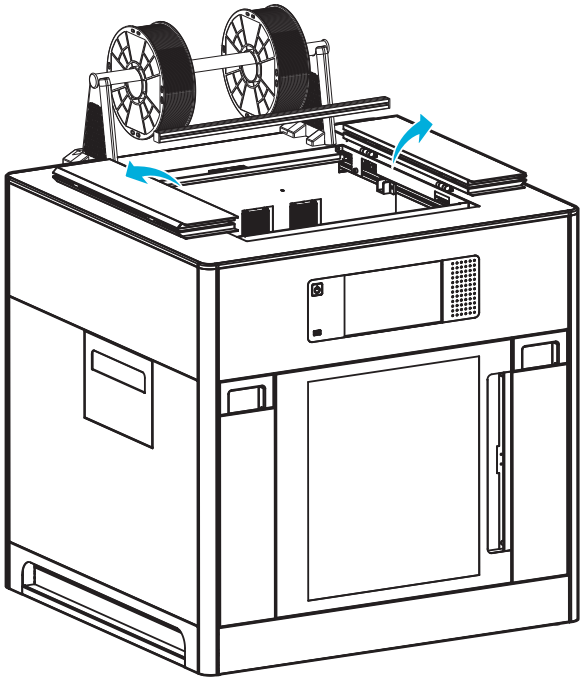

Nozzle 1
190 °C
Nozzle 2
180 °C
Bed
60 °C
Interior
60 °C
Spool 1
PLA
Spool 2
PLA
2019-01-14
01:43 PM
Load #1
Adjusting Temperature
2
Inserting Filament

2.2 Installing from the top

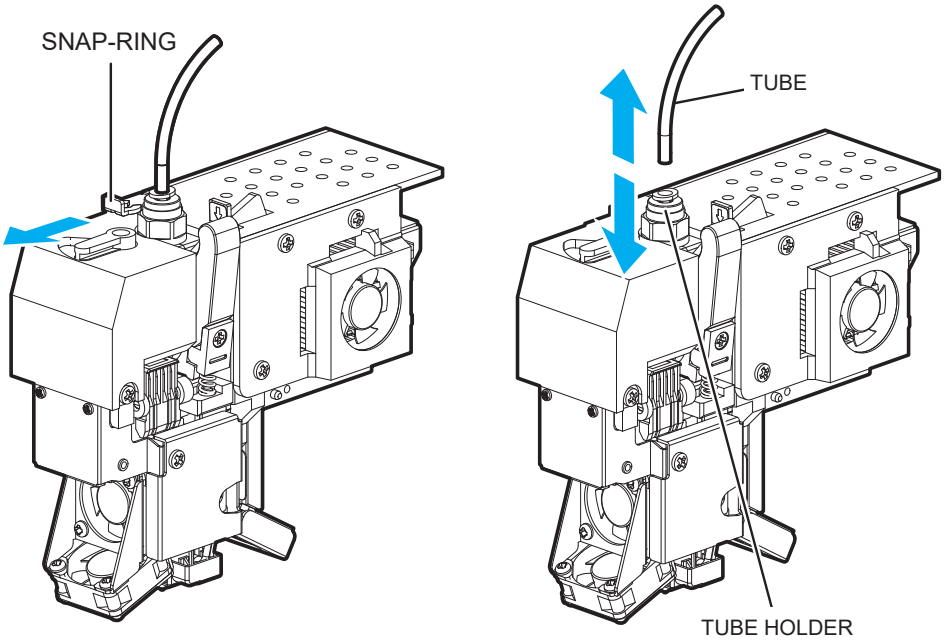
Important

- **In the case of the 5X model, follow the “Installing from the front” procedure because installing from the top is not possible.**
- **Referring to the enclosed “Spool stand instructions,” install the spool stand at the top of the machine, then carry out the following procedure.**

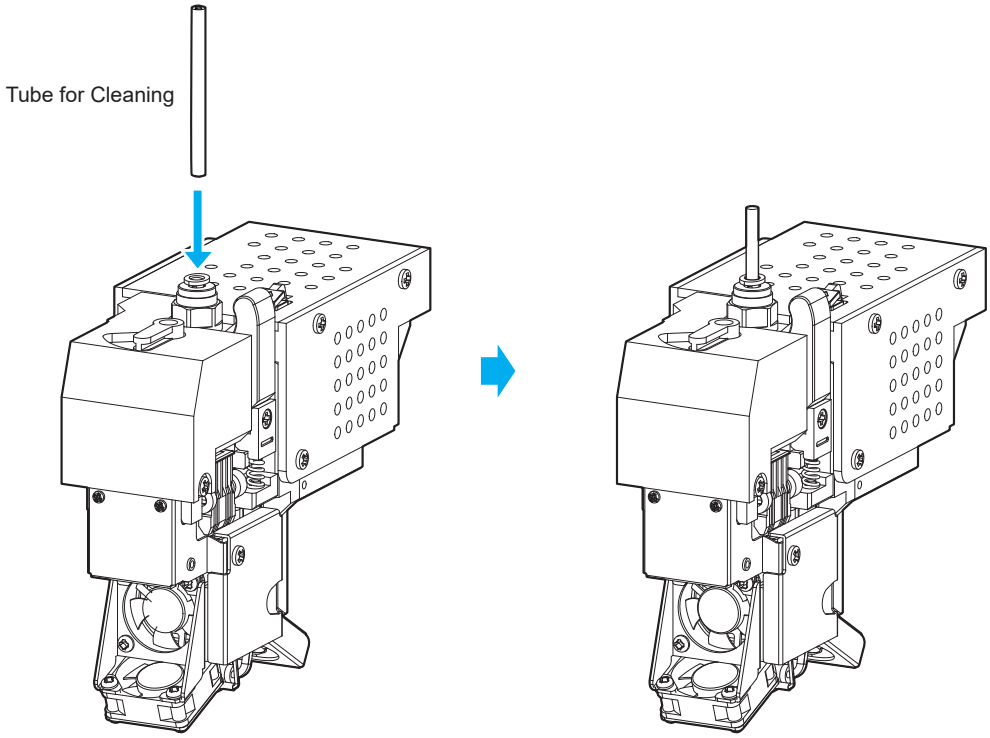
1 Open the top door, and remove the tube guiding rod.



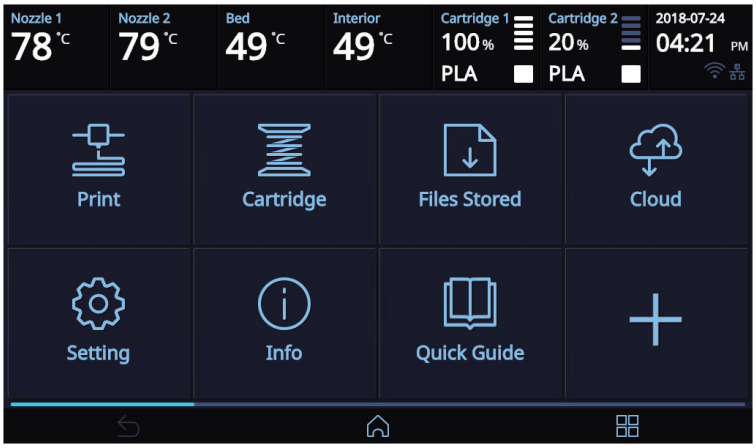
2 Pull the snap rings out from the nozzles, then pull the tubes out.



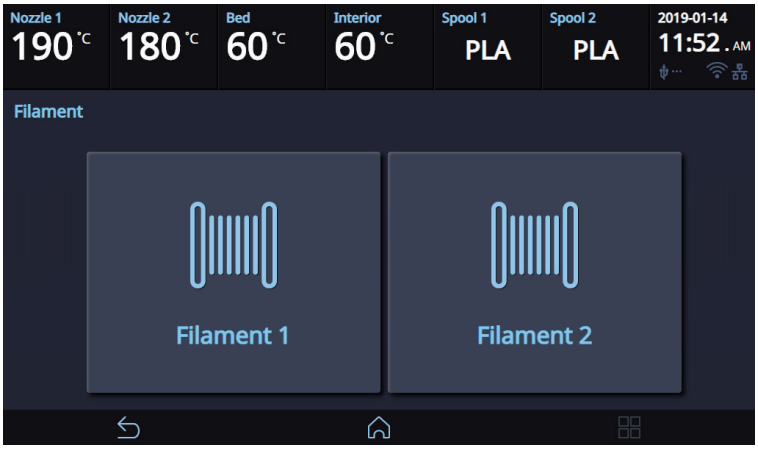
3 Insert the enclosed cleaning tubes into the nozzles.

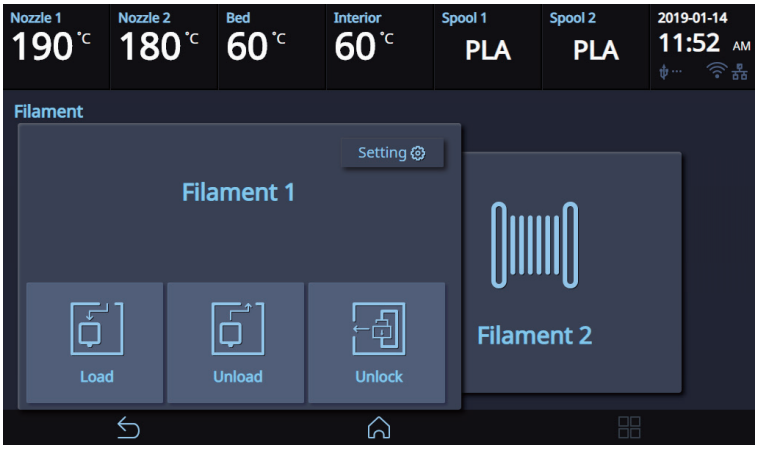


4 Click the **[Spool]** button on the Home window.

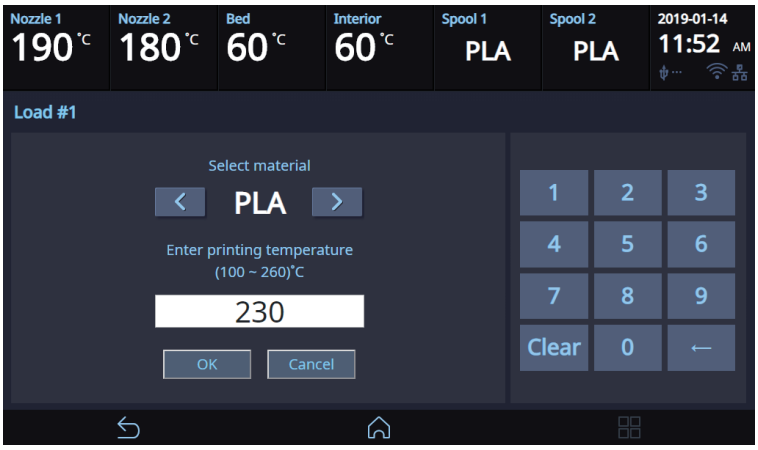


5 Select the filament to be activated by clicking either **[Filament 1]** or **[Filament 2]**.

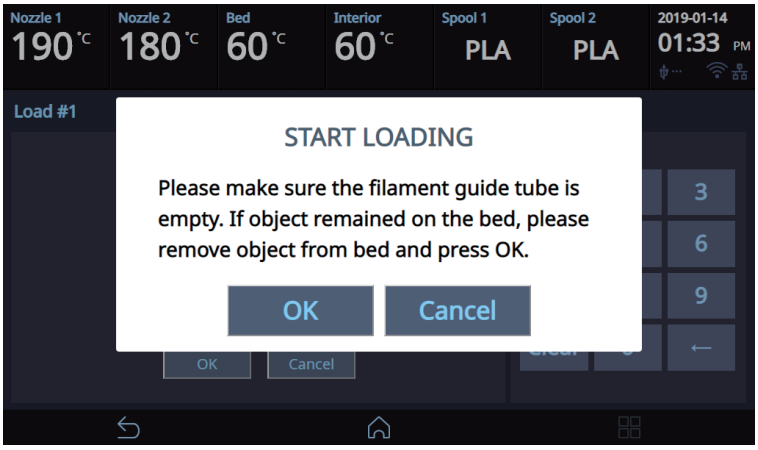


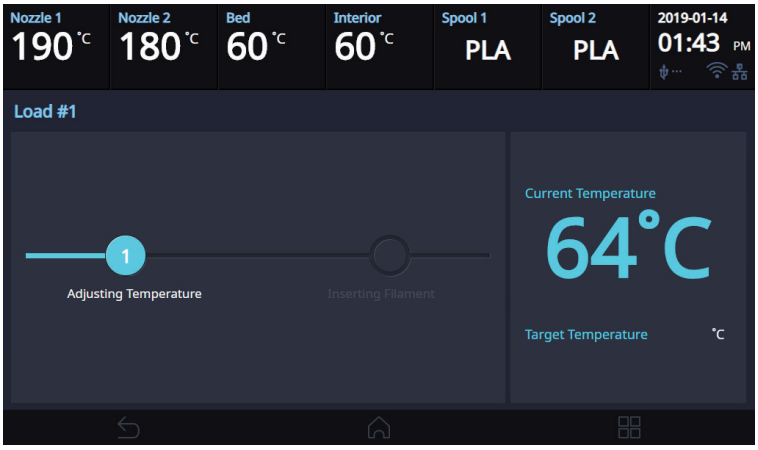


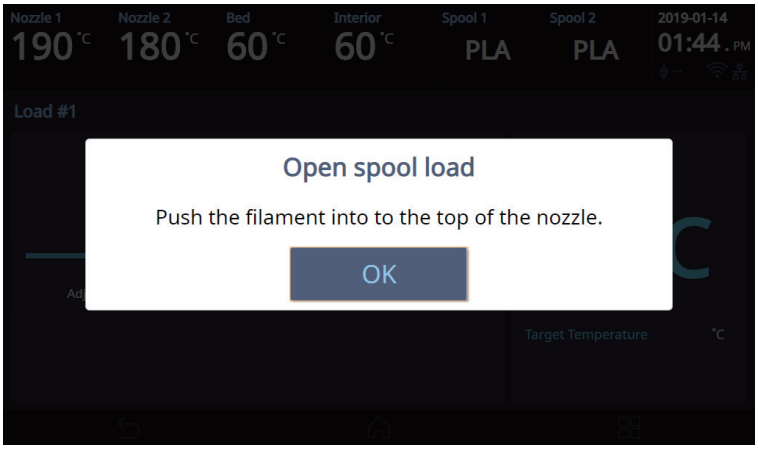
6 Enter the material and output temperature of the filament, then click **[OK]**.

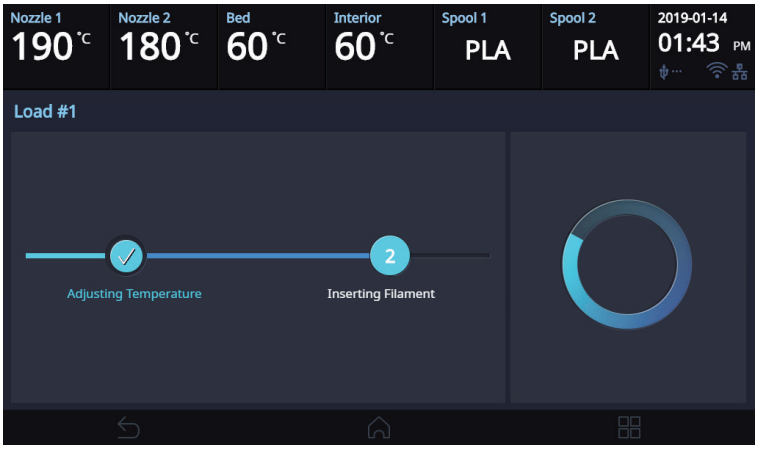


7 After confirming that you will run cartridge loading, clicking **[OK]** will run filament loading.
When the temperature reaches the specified target value, push the filament in fully through the front entry, then click **[OK]**.
Filament loading will run automatically, and upon completion, it will automatically return to the Home window.




Nozzle 1
190 °C
Nozzle 2
180 °C
Bed
60 °C
Interior
60 °C
Spool 1
PLA
Spool 2
PLA
2019-01-14
01:43 PM
Load #1
1
Adjusting Temperature
Inserting Filament
Current Temperature
64°C
Target Temperature
°C

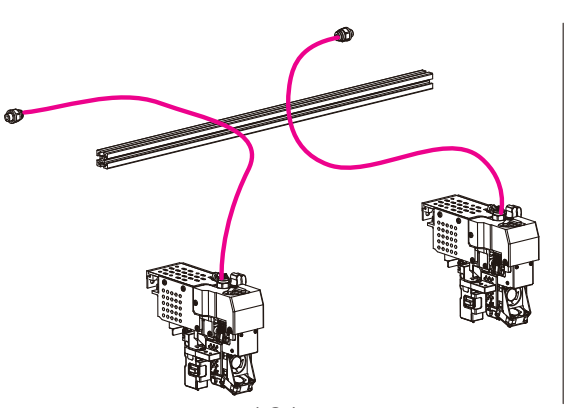

Nozzle 1
190 °C
Nozzle 2
180 °C
Bed
60 °C
Interior
60 °C
Spool 1
PLA
Spool 2
PLA
2019-01-14
01:44 PM
Load #1
Open spool load
Push the filament into to the top of the nozzle.
OK
Target Temperature
°C


Nozzle 1
190 °C
Nozzle 2
180 °C
Bed
60 °C
Interior
60 °C
Spool 1
PLA
Spool 2
PLA
2019-01-14
01:43 PM
Load #1
2
Adjusting Temperature
Inserting Filament

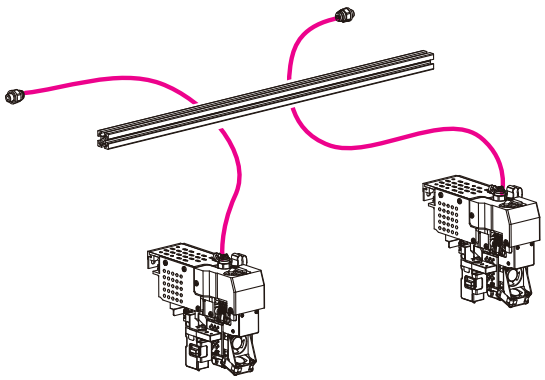
Important

- **To return to the Cartridge mode, carry out the following procedure:**
  - **Install the tube guiding rod at the original position.**
  - **Remove the cleaning tubes that were inserted into the nozzles, then reconnect the existing tubes.**
    In reconnecting the existing tubes to the nozzles, make sure that the tubes span on the guiding rod.
    Connect the left tube to the left nozzle then the right tube to the right nozzle.

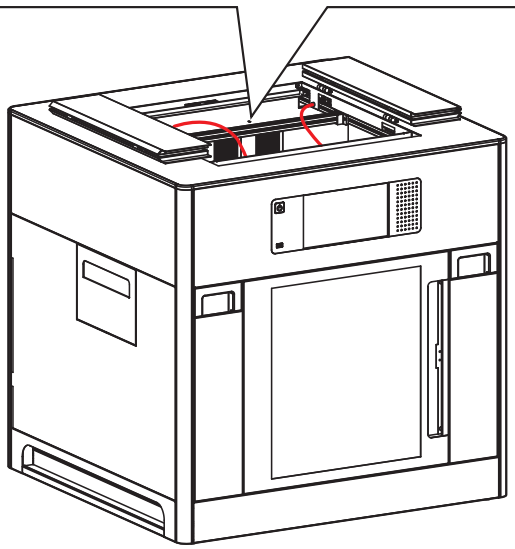
Move the nozzle to the front of machine, and assemble the tube as shown below.



(O)



(X)



Notice to Users

Type	Notice
• **Class A equipment (commercial telecast equipment)**	This equipment is a Class A EMC (electromagnetic compatible) equipment, and should not be used in household locations
• **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.

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