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# Cubicon

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## Cubicon Style Plus-A15



# Style Plus-A15

Thank you for purchasing CUBICON Style Plus.

CUBICON Style Plus is the quietest and perfect FFF 3D printer.

## Features

- It has been self-developed for the first time in Korea, and modularized extruder design has been applied.
  - The extruder can be easily disassembled.
  - Replicable nozzle unit design has been applied.
  - It offers higher convenience by making the replacement of damaged nozzle easier.
  - Printing stability has been secured through a chamber type structure.
  - A triple layer clean filter has been applied for the first time in Korea which makes it outstanding in removing nano-particles and the odor.
  - Enhanced Auto Leveling Plus function has been applied.
  - 5 inch color touch screen with English language UI has been applied.
  - Various interfaces such as USB / Ethernet / WIFI are offered.
  - Filament NFC has been applied.
- The printing failure rate has been minimized by checking the material and consumption amount of the filament as the contactless wireless communication technology has been applied.

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This user manual describes entire progress from the installation to the printing of a sample model by stages. Be sure to read the user manual thoroughly even if you have a lot of experience of using 3D printers in order to use new functions and special technologies exclusively for CUBICON 3D printer series and become used to them.

Experience new 3D printing with CUBICON Style Plus.

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# 1. Service & Safety

## Service

If any problem that is not specified in this document occurs, contact us through the following contact info for an inquiry.

### Phone

+82-1661-4371 / +82-70-4601-6355

### Email

[as\\_cubicon@3dcubicon.com](mailto:as_cubicon@3dcubicon.com)

### Website

[www.3dcubicon.com](http://www.3dcubicon.com)

→ Customer Center → Inquiry of Warranty and Technical Support

When requesting a warranty service, we would like to ask you to write down the following info for smoother and faster processing of the task along with the request.

- Customer (School/Company/Individual)
- Brief Symptom  
(If you take a picture or video of the situation when a problem occurs or the internal LCD screen of the printer and sent it to us, it can be processed more promptly.)
- Serial No. → It can be viewed in the rating label on the side of the product.
- H/W Version: It can be viewed in [Setting\(System > Info\)](#).
- S/W Version: It can be viewed in [Setting\(System > Info\)](#).
- Address
- Telephone no.
- Name of a person in charge

## Caution for the Safety

Before using the printer, be sure to read 'Safety Manual' and comply with the instruction. It is an instruction to prevent the injury of the user or the third party and the damage of the printer. If this instruction is not complied, a serious injury or damage to the printer may occur.

	<b>Warning: Failure to comply may cause a serious injury or a property loss.</b>
	<b>Caution: Failure to comply may cause an injury or a property loss.</b>
	<b>Note: A useful tip or additional info for the use is displayed.</b>



**Connect the printer only to the power outlet with a ground connection.**



**Connect the printer only to the independent single phase power at 220V 10A or higher.**



**Since high heat is generated while the printer is operating, there is a risk of burn if a body part or an object is inserted into the printer while it is operating. If there is a need to insert a body part or an object into the printer, make sure to fully cool it down after stopping the operation completely.**



**Since high current power is applied to the heating bed, be cautious about an electric shock when touching the bed (especially when touching the power supply module of the bed).**



**The printer uses moving parts such as a motor, a belt, gears, and fans. There is a risk of injury due to the jamming if a body part or an object is inserted into the printer while it is operating.**



**Since there is a risk of fire or shock if water, other liquid, a piece of metal or other conductive substance gets into the product, be cautious. Also, since there is a risk of fire or electric shock, do not operate it with a wet hand.**



**Since there is a risk of injury to children or pets by the printer, be cautious about the place of the installation. If there is any child or pet around the printer, observation and protection are required.**



**The printer and accessories include parts with sharp edges. Be cautious about an injury to the human body or damage to the printer.**



Since filament which is a material used in the printer has a risk of fire or injury, do not attempt to heat it with other devices or deform it. Also handle it with care since there is a risk of suffocation if the printout or the filament residue is swallowed.



Since there is a risk of fire/explosion if a volatile material is used in the printer, do not use it. Also, since there is a risk of fire if ignitable substance or flammable substance is left unattended around the printer, remove it.



Since a high intensity LED is used as an illumination LED, do not directly look at it in order to protect your eyes.



Do not damage or deform the power or the cable of the printer, and do not supply power that is outside of designated voltage.



When moving the printer, remove the power cord and cables while the main power is turned off after the printer operation is stopped and the temperature of the internal parts cools down sufficiently.



Since there is a risk of damage to the printer or fire, do not put a filament or any other article in the empty space of the printer.



Do not turn off the power when the heating bed or the extruder is heated. Since a cooling fan can't be operated, the device may break down or a fire may break out due to the high temperature.



Since the printer uses a material after melting it, peculiar odor may be generated during the process. Therefore, be sure to install the printer in a well ventilated place.



Do not install the printer outdoor or in a place under direct sunlight or a place with a lot of vibration, humidity, and dust.



Do not install the printer on an unstable place such as vibrating or uneven place. Also, remove any article around the printer which can be damaged by the heat or the vibration during the operation of the printer.



If filaments or parts that are not supplied by our company are used in the printer, it may cause damage to the product, or the quality can't be assured. The problem that has occurred due to it is exempted from the free warranty coverage.



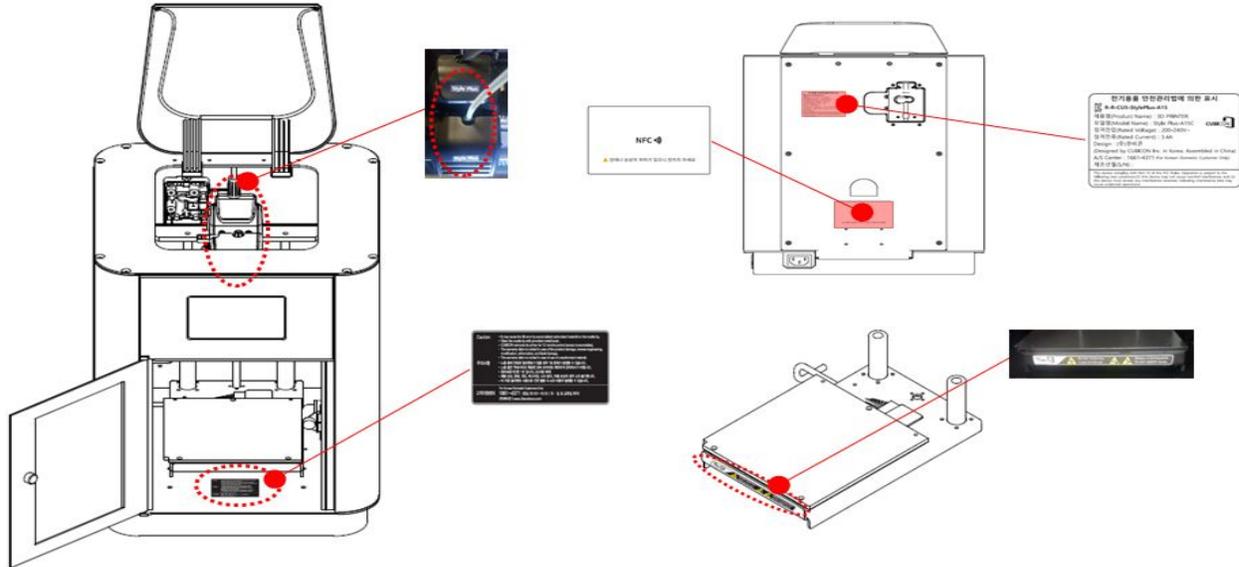
Do not arbitrarily disassemble or modify the printer on user's own beside the parts that have been approved in the user manual. Failure to comply may cause an injury or damage to the printer, and the problem that has occurred in such case is exempted from the free warranty coverage.



Do not apply an excessive force or a shock to the printer. There is a risk of breakdown, damage, or injury. Also, read all cautions in the user manual carefully before using the printer.

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Location of Labels



	<p><b>Heating Bed Part</b></p>	<p>If it is touched during the operation, there is a risk of burn due to high temperature. There is a risk of finger injury.</p>
	<p><b>Model Name Display Part</b></p>	<p>A display part for the distinction from the previous Style product <b>(Extruders of Style and Style Plus are not compatible.)</b></p>
	<p><b>Safety Control Act Label</b></p>	<p>Display of the product specification according to the Safety Control Act</p>
	<p><b>Service and Warning Part</b></p>	<p>A display part for cautions regarding the use of the product and business hours of the Service Center</p>
	<p><b>NFC Warning Part</b></p>	<p>A display part for cautions regarding the damage to NFC</p>

**Since high current power is applied to the heating bed, be cautious about an electric shock when touching the bed (especially when touching the power supply module of the bed).**

## Cautions for the Use

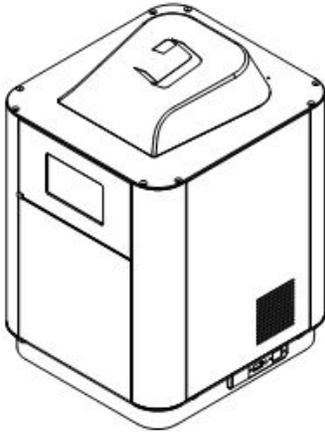
Before using the printer, read 'Cautions for the Use' as mandatory, and follow the instructions.

<b>Filament</b>	Use a genuine filament that is sold by our company. * The breakdown that occurs during the use of a non-genuine filament would not be covered by free warranty.
	Use the filament that has been opened as fast as possible. If it is inevitable to be stored, the filament shall be fixed to the spool so that it wouldn't get loosened, and stored after it is sealed.
	Be cautious not to damage/separate NFC TAG that is attached on the spool
<b>Mounting and Unmounting the Filament Spool</b>	After mounting it while paying attention to the rotation direction of the filament and the direction of NFC tag, check the locking status of the door.
	When unmounting the filament spool from the printer, be cautious not to let the filament get loosened from the spool.
<b>Filament Replacement Loading</b>	Be cautious about the configuration of the extruder temperature * If the temperature is not properly set up, the extruder would break down due to the clogging of the nozzle or cracking of the filament.
	Be cautious about the temperature setting and sufficiently remove the previous filament in the inside of the nozzle when replacing it with new filament.
<b>Temperature Condition for the Nozzle and the Heating Bed</b>	Use it by heating the nozzle/the heating bed to the temperature that is appropriate for the filament that is used.
	If the temperature of the filament that is used is not in a proper range, poor printing quality and device failure such as a carbonization of the filament, improper extruding, cracking, a gap on the base may occur.
	The sculpture that the printing has been completed must be separated after the heating bed cools down sufficiently.
<b>Cleaning of the Removable Extruder Nozzle</b>	It is necessary to regularly check the extrusion status and clean the nozzle. * Replacement of the nozzle that has been worn out in a usual condition of the use is not covered by a free warranty.
	As for the cleaning of the outer part of the nozzle, clean it with pure cotton cloth after heating up the nozzle.
	Repetition of cooling and heating of the nozzle while the filament is inside of it is prohibited.
<b>Assemble/Disassembly of the Removable Extruder</b>	Assembly/disassembly must be performed only when the power is turned off (Power OFF).
	Do not shut off the power while the removable extruder is heated. (The case that the removable extruder is separated immediately after the power is turned off for the repair/replacement is allowed.)

<p><b>Cleaning of the Heating Bed</b></p>	<p>As for the typical cleaning, clean the pollutant on the surface with a scraper and dry cotton cloth.</p> <p>* Replacement of the heating bed of which the coating has damaged due to the usual use is excluded from the free warranty coverage.</p> <hr/> <p>If it is highly polluted, clean it only with high purity acetone.</p> <p>* Since cleansers (wet wipes) available in the market may contain an element that damages the coating of the bed, never use it.</p>
<p><b>Auto Leveling</b></p>	<p>If an error occurs during Auto Leveling, check whether the nozzle accurately contacts the heating bed, and retry after cleaning the heating bed and the tip of the nozzle. (Cleaning with an iron brush is recommended.)</p> <p>If the error continues, the inspection/repair through a service center are recommended.</p>
<p><b>Preparation for Requesting a Warranty Service</b></p>	<p>If any abnormality occurs, record the file, the inner part of the printer, and LCD display with a photo/video, which shall be sent along with the recent logs by saving them in a USB memory stick through Settings -&gt; System -&gt; System Log.</p>

## 2. Components & Preparation for the Use

### Components and Accessories



3D Printer Main Body



User Manual



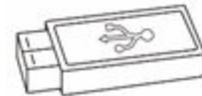
Power Cord



Filament



8mm Box Wrench



USB Memory Stick



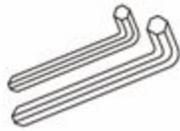
Anti-static Brush



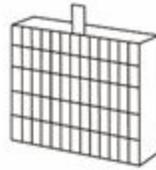
Scraper



Tweezers



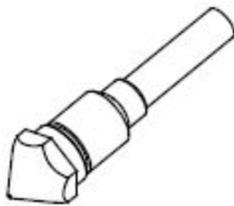
Three Types of Wrenches  
(Φ2, Φ2.5, Φ3)



Filter



LAN Cable



Nozzle Kit



If filaments or parts that are supplied by our company are not used, it may cause damage to the product. Since a problem that occurs from it is not covered by the free warranty, only use genuine parts that are supplied by our company.



- \* A filament spool and a clean filter are included in the packaging, but they are packed separately without being assembled in the printer.
- \* Types and specifications of the accessories that are included in the product can be changed without a prior notice for the purpose of the improvement of the product.
- \* If you want to additionally purchase accessories, visit our website or contact our agency for an inquiry.
- \* Since the accessories are provided for the user convenient, it is not covered under a warranty.
- \* Nozzle/Heating Bed/Teflon Tube among the printer parts that are normally worn out during the use are consumables.
- \* Material and color of the initially supplied filament are supplied in random.
- \* The manual and Cubicreator are contained in a USB memory stick. The latest version can be downloaded at our website ([www.3dcubicon.com](http://www.3dcubicon.com)).

## Opening of Packaging



When opening the packaging and installing the product, be cautious since the contents may get damaged if you apply excessive force or tear the packaging forcibly.



When opening the packaging, be cautious not to damage the operation cable of the extruder or the Teflon tube by pulling, folding, or pressing since they are used for the extruder operation and the supply passage for the filament.

① Put the product packaging on a flat surface, open a box, remove a packaging material on the top, and then take out a packaging material on the side which contains accessories.

Since heavy items such as a filament spool are contained, be cautious not to drop them.

Be cautious not to let a feeder and an accessory box collide with each other.



② Take out a product inside of the packaging vinyl, and move it to the place of the installation.

Since there is a risk of dropping the product due to the tear of the vinyl if the product is taken out by only holding the vinyl, take out the product by holding the product.

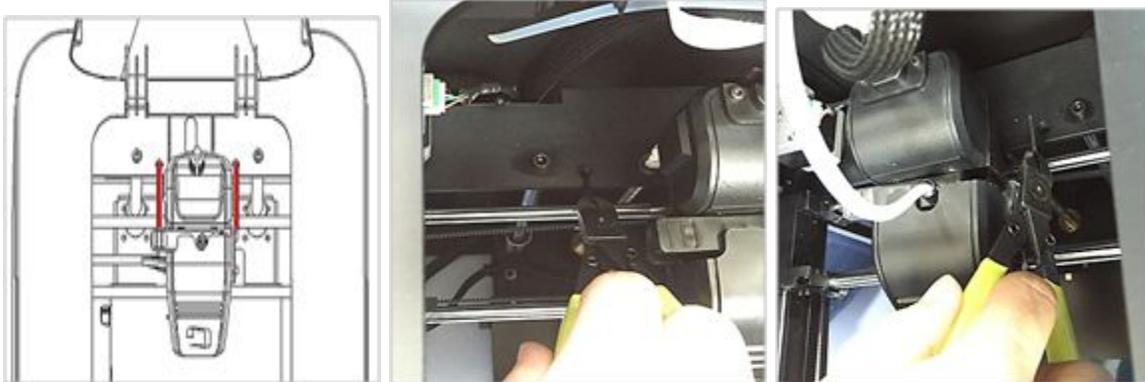


③ Remove fixing tapes inside and outside of the product. (There may be tapes in places that are not shown in the picture.)



④ Remove extruder fixing straps (Cable Tie) –Remove fixing straps on the both side of the extruder by cutting them with scissors.

**Be cautious not to damage the product such as a driving belt when removing the fixing straps.**



Remove the fixing strap in two locations marked in red in the drawing.

⑤ Remove a packing material for the heating bed at the bottom

Lift the heating bed and remove the packing material.

In case it is difficult to lift the heating bed manually, turn on the power and remove the packing material after lifting the bed using the Motion function; Bed -> Up.



**If the printer is operated without removing fixing strap (cable tie), fixing tape, or subsidiary packing, it may cause a breakdown. Remove all the fixing items until none of them is left so that it would not cause a problem in the operation of the printer.**

Name of Each Part



All printers get packed after a total inspection regarding the printing status. Therefore the heating bed or the nozzle may have a trace of the use when it is initially installed or operated, but there is no need to be concerned since it is a trace of the inspection.

※ Names of Each Part on the Exterior of the Front Part of the Printer (Front)

	<p><b>[1] Top Cover</b></p>	<p>It is used for the maintenance such as replacement of the filament (loading/unloading)</p>
	<p><b>[2] Front Door</b></p>	<p>It is used when taking out a sculpture</p>
	<p><b>[3] Display</b></p>	<p>5"(inch) display for controlling the printer</p>
	<p><b>[4] Filter Fan Vent</b></p>	<p>A passage that emits internal air when the filter fan is operated</p>
	<p><b>[5] Interface Part</b></p>	<p>Interface and power switch</p>
	<p><b>[5A] Power Switch</b></p>	<p>A main power switch of the printer</p>
	<p><b>[5B] USB Port (Type-A)</b></p>	<p>Printing can be done by connecting a USB memory stick.</p>
	<p><b>[5C] Ethernet Socket</b></p>	<p>A terminal for connecting a LAN cable.</p>

※ Names of Each Part on the Exterior of the Rear Part of the Printer (Back)

	<p><b>[1] Auto Feeding Device</b></p>	<p>A device that supplies filament automatically</p>
	<p><b>[2] Spool Holder Mounting Hole</b></p>	<p>A spool holder mounting hole for mounting the filament spool</p>
	<p><b>[3] NFC</b></p>	<p>It is used for checking the type of a filament and the remaining amount.</p>
	<p><b>[4] Power Inlet</b></p>	<p>A terminal that is used to connect the power to the printer</p>

 **Do not plug in the power cord with a wet hand. There is a risk of electric shock.**

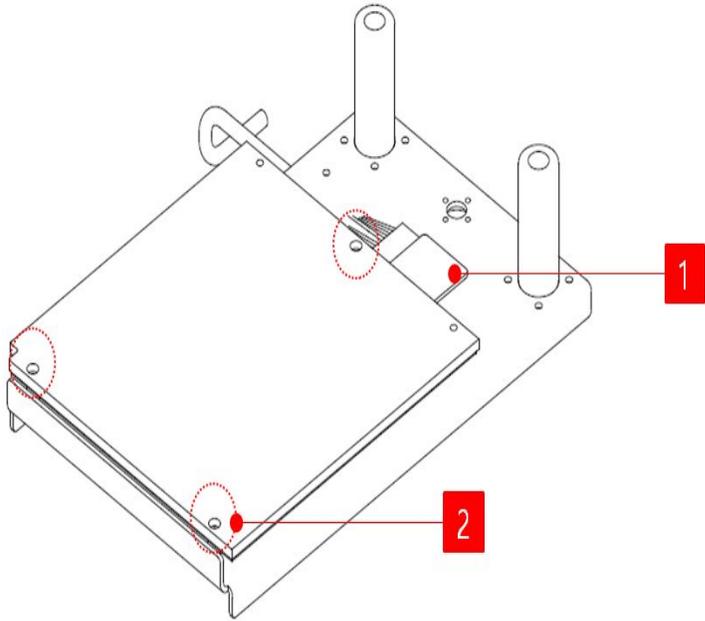
※ Names of Each Part inside of the Printer (Inside)

	<p><b>[1] Teflon Tube</b></p>	<p>A passage to supply a filament to the extruder of the printer (Be cautious not to be folded.)</p>
	<p><b>[2] Extruder</b></p>	<p>An extruder that moves the filament and melts it with a nozzle.</p>
	<p><b>[3] Clean Filter Case</b></p>	<p>Casing part that the clean filter is mounted</p>
	<p><b>[4] Heating Bed</b></p>	<p>A platform where the printout is printed during printing</p>
	<p><b>[5] Internal LED Lamps</b></p>	<p>LED lamps that show the internal condition of the printer</p>



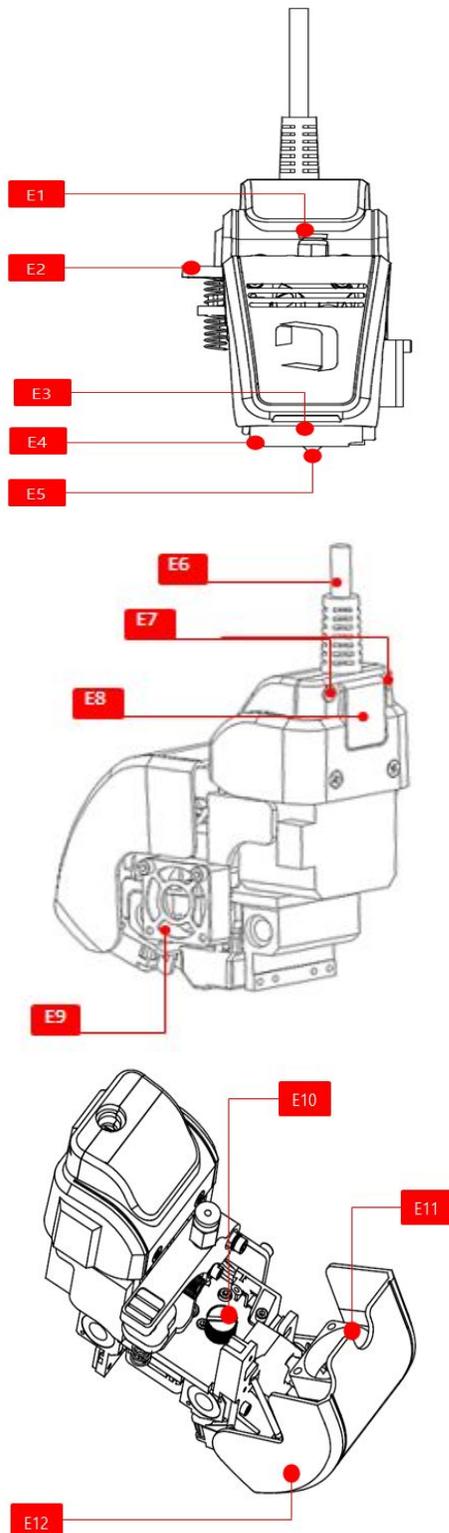
Since the nozzle and heating bed of the extruder part get heated to high temperature during printing, be sure not to touch them.

Names of Each Part of the Heating Bed (Heating Bed)

	<p><b>[1] Bed Power Supply Part</b></p>	<p>A part that the power to the bed is supplied</p>
	<p><b>[2] Bed Position Fixing Part (3 places)</b></p>	<p>These are locations of bolts to locate a position of the heating bed and fix it: if 3 places are unfastened during the replacement to a new bed, it can be replaced.</p>

	<p>Since the temperature of the heating bed is extremely high during printing or after printing, be cautious about a risk of burn which can occur when it is contacted by skin.</p>
	<p>Since high current power is applied to the heating bed, be cautious about an electric shock when touching the bed (especially when touching the power supply module of the bed).</p>

Names of Each Part of the Extruder (Extruder)



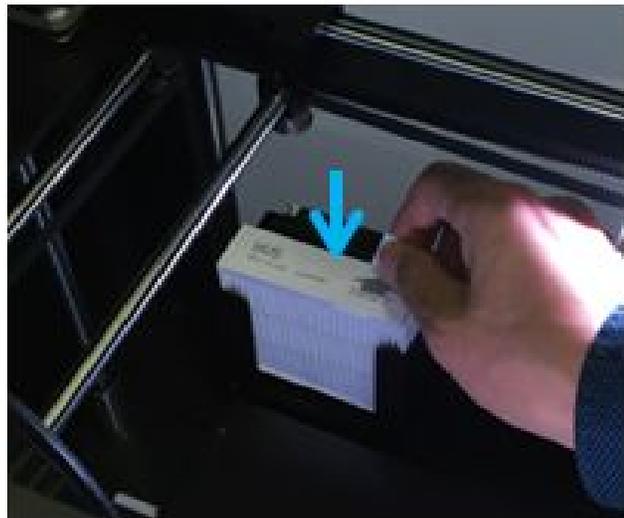
<b>[E1] Filament Inlet</b>	It is an inlet that is used to insert a filament into the extruder. Teflon tube is inserted. The filament hose is fixed using one-touch fitting so that it wouldn't be taken off.
<b>[E2] Filament Push Handle</b>	A handle that is pushed when the filament inside of the extruder is manually taken out or inserted.
<b>[E3] Mold Fan</b>	A fan that sends air toward a sculpture
<b>[E4] Heating Block Cover</b>	A cover that surrounds the nozzle heating block (heat-resisting rubber)
<b>[E5] Nozzle</b>	A nozzle that a filament which has been melted gets pushed out
<b>[E6] Extruder Cable</b>	A cable that has a role of supplying power and transmitting a signal as it is connected to the extruder
<b>[E7] Cable Fixing bolts</b>	Bolts for fixing a cable to the extruder (M2.5)
<b>[E8] Cable Fixing Block</b>	A device that fixes the extruder cable to the extruder so that it would not be taken off
<b>[E9] Cool End Fan</b>	A fan that cools down the heating block
<b>[E10] Extruder Module Fixing Bolt</b>	A fixing bolt that is used when separating the extruder module
<b>[E11] Gear Fan</b>	A fan that cools down gears inside of the extruder
<b>[E12] Extruder Cover</b>	A cover for checking inside of the extruder



Since the temperature of the Extruder part raises during printing, do not touch it.  
When opening the Extruder cover, check whether there is any obstacle underneath the Extruder.  
Disassemble or assemble the Extruder model only after the power is turned off and the temperature of the nozzle is sufficiently cooled down.

### Mounting the Clean Filter

After removing vinyl packing of the clean filter, insert the clean filter into the clean filter case on the right side inside the main body of the printer.



Mount a clean filter into the case in the correct direction. (The arrow must point to the outside)  
If the mounting direction is incorrect, the performance of the filter would be lowered, and it may cause a failure of the filter fan.)



Replacement of a clean filter must take place after confirming that the power is turned off.  
During the replacement, be cautious not to let any foreign substance get in.

## Turing on the Printer

- 1** Set the power switch on the side of the main body to [OFF] position, (O).



- 2** Insert the power cable in the power input terminal at the lower part of the rear of the main body, and plug in it into a power outlet after organizing it in a way that would not be tangled.

**Before turning on the power, be sure to check following items once again.**

- 1) Check whether there is any problem in the power connection including the twisting or folding of the power cable and the connection to the power outlet.**

**; As for the power outlet, use only the independent single phase power at 220V 10A or higher with a ground connection.**

- 2) Check the mounting state/rotating direction/rotating state of the filament spool** (Be cautious about the rotating direction of the spool.)

- 3) Check whether it doesn't affect the movement of the Teflon tube.**

- 4) Check the cable of the Extruder and the bed.**

- 5) Check the mounting status of the Extruder module.**

; Since fixing bolts of the extruder module may have been loosened during the transport, check the fixing state.

- 6) Check whether the heating bed is mounted at the accurate position.**

; Since the position may have been shifted during the transportation, check the fixing state.

- 7) Check whether there is any damaged part.**

- 3** Set the power switch on the side of the main body to [ON] position, (—).



- 4** Check whether the LCD screen is correctly displayed.



- \* When pulling out a power cord or LAN cable, pull out by holding the connector instead of the cable.
- \* When the power is turned on, major parts related to the heating are automatically checked.

If an error appears in the info display area , go to the inspection screen, check the detail of the error, and take a necessary action.



**Do not turn off the power of the printer while the extruder is heated.**  
**The printer may break down due to the damage of the electronic part as the cooling fan stops operating.**

## Mounting the Filament Spool

- 1 Prepare the filament spool to be used. Remove a fixing tape on the filament, and cut off the filament that has been bent. Be cautious not to damage NFC tag (marked with a red dotted circle) during the process. Also be cautious not to let the filament get loosened until the spool is mounted. Check whether the direction of the NFC tag is correct, which is to be in the opposite direction from the label.



- 2 Insert the spool holder into the spool holder mounting hole at the rear of the printer. Mount the spool holder accurately so that it doesn't fall out.

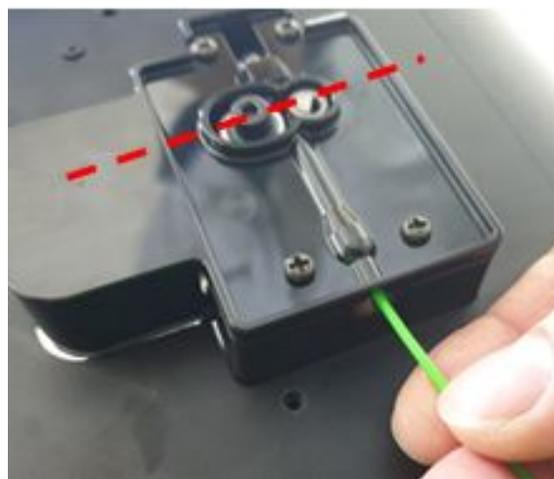


- ③ Insert the filament spool into the spool holder, and insert the filament into the filament inlet of the automatic feeder up to the dotted line.

Be cautious about the rotation of the spool and the insertion direction of the filament when mounting the spool. Also, be cautious not to damage NFC.

- ④ Insert the filament into the filament feeder up to the dotted line so that auto loading can be operated.

Maintain the state of the Teflon tube as it is mounted to the extruder module.

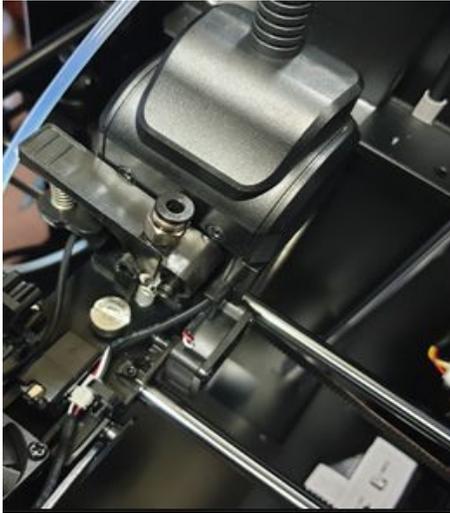




	<ul style="list-style-type: none"> <li>* The filament spool has directivity.</li> <li>* The NFC tag that is mounted on the filament spool also has directivity. (The direction of the NFC tag is the opposite direction of the company logo and the product sticker.)</li> </ul> <p>The filament spool is designed to supply the filament while rotating counterclockwise. If the mounting direction changes, it would cause a failure to the product as a problem in the supply occurs.</p> <p>Be sure to use the printer after checking whether it is mounted correctly.</p> <ul style="list-style-type: none"> <li>* If there is any obstacle between the spool mounting location and the spool that interrupts the rotation of the spool during the mounting of the spool, it would cause a failure to the product as a problem in the supply occurs.</li> </ul> <p>Remove a foreign substance on the spool holder if there is any during mounting of the spool into the spool holder.</p> <ul style="list-style-type: none"> <li>* Teflon tube is a moving passage from the automatic feeder to the extruder.</li> </ul> <p>Since the length of the Teflon tube is optimized for the printer, if you pull the tube with an excessive force, it may cause a breakdown as the movement of the filament becomes unsmooth as the tube would be folded or tangled inside the printer. Do not fold, cut, or pull the Teflon tube that has been mounted with an excessive force.</p>
	<ul style="list-style-type: none"> <li>* Be cautious not to let a filament be loosened when taking off the filament spool that the filament is remaining, and fix the filament to the spool so that it wouldn't get loosened during the storage. If the filament gets loosened, it would cause a tangle when it is used again.</li> <li>* Be cautious not to expose the filament that has been left after the use to the external environment such as humidity and dusts by sealing it. The filament shall be used as much as possible once it is opened.</li> </ul> <p>If the filament is exposed to the external environment for a long time, the printing quality may get lowered or the problem of the adherence to the bed may occur due to the pollution by the humidity or other causes. In more severe cases, the extruder may fail to discharge.</p>

## Assembling and Disassembling the Filament Hose

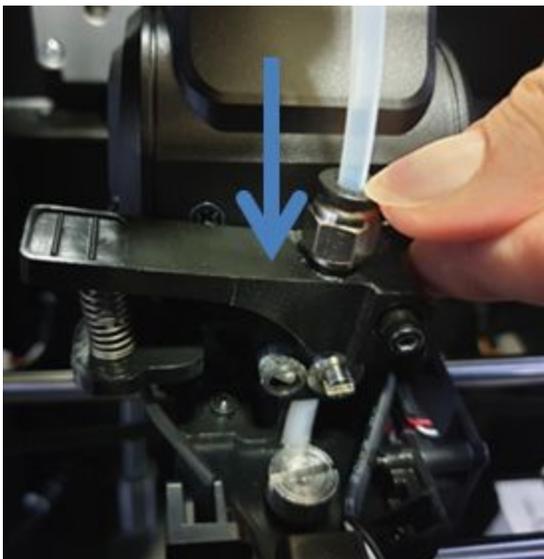
- 1 After opening the Ext cover as shown in the picture, check whether the filament hose that is attached to the feeder is twisted.



- 2 Fix the filament hose to the fitting. After fixing it, check whether the fitting is correctly fixed by checking whether it is fixed.



- 3 In case the filament hose needs to be removed, press the fitting in the direction of the arrow so that the hose can be removed. Be cautious that there is a risk of damage to the fitting or the hose if you pull the filament hose with an excessive force.

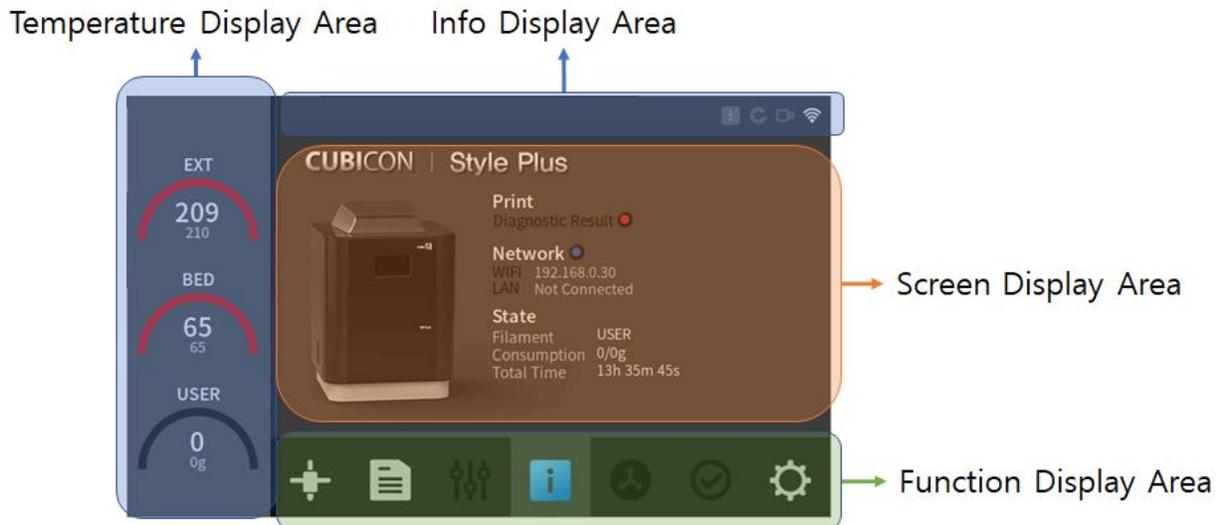


## User Interface

In this chapter, the overview of the user interface (UI) of Style Plus-A15 is provided.

### Overview

Style Plus-A15 features 5 Inch touch screen, and each screen is distinguished into 4 areas.

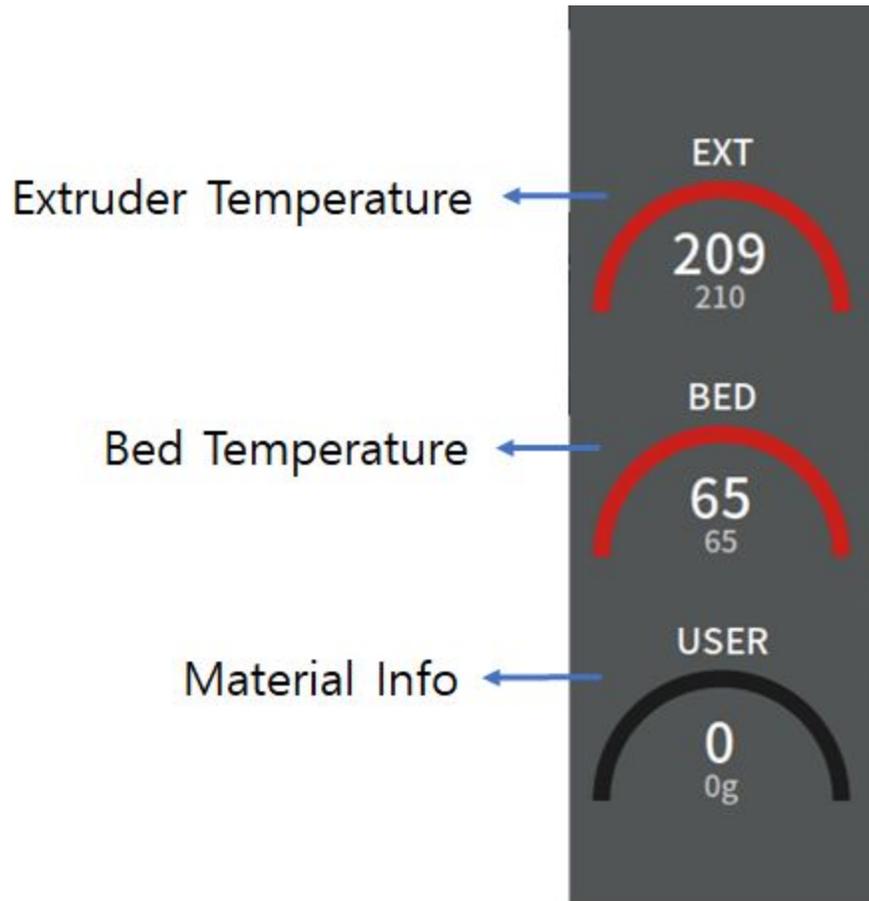


The touch screen is located on the center of top of the device, but the display may not be clearly visible if it is seen from some other angles.

Tasks such as followings can be executed through the touch screen UI.

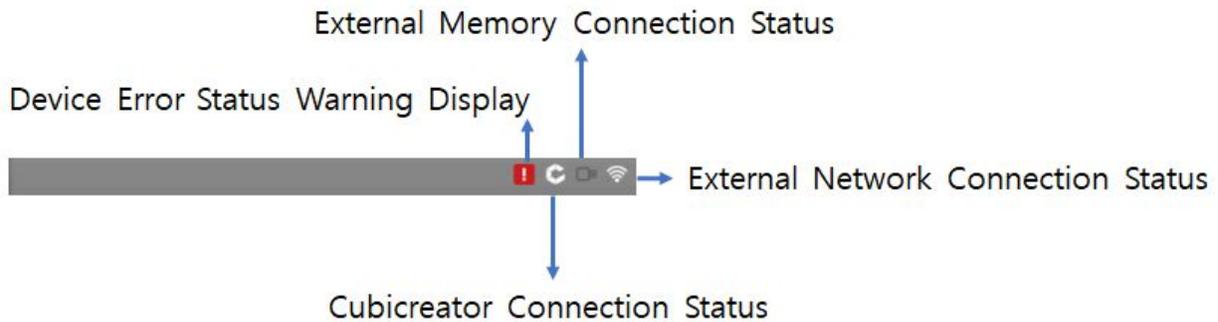
- Monitoring of printer status/printing status
- Loading/unloading of a filament
- Preheating function
- Display of the remaining amount of a filament / the extruder temperature / the bed temperature
- Viewing of sliced file info and execution of printing/copying functions
- Motion control function of each operating part
- Execution of the self-inspection function for repair
- Setting of various device configuration values and initialization function
- Setting of LAN and Wi-Fi access
- Setting of each language
- Supporting the upgrade of the device
- Printing history viewing function
- Device info viewing function
- System log viewing function and copying function

Temperature Display Area



- **Extruder Temperature:** Current temperature/setting temperature of the extruder are displayed.
- **Bed Temperature:** Current temperature/setting temperature of the bed are displayed.
- **Material Info:** Types of materials and remaining amount/maximum capacity info are displayed.

## Info Display Area



- **Device Error Status Display:** It is an icon that is displayed when a problem occurs in the device, and the detailed problem status can be checked through Inspection menu.
- **External Memory Connection Status:** It shows the connection status to the external memories such as a USB memory stick.
- **Cubicreator Connection Status:** It shows the connection status to the Cubicreator program. This device supports the connection to the Cubicreator 4 or higher version.
- **External Network Connection Status:** It shows the connection status to the external network such as LAN and Wi-Fi.

## Screen Display Area

Info on the Screen display area in the touch screen displays different contents according to the icon that has been selected in the function display area.

Basically, when the power is on, the printer status is displayed as the default screen.

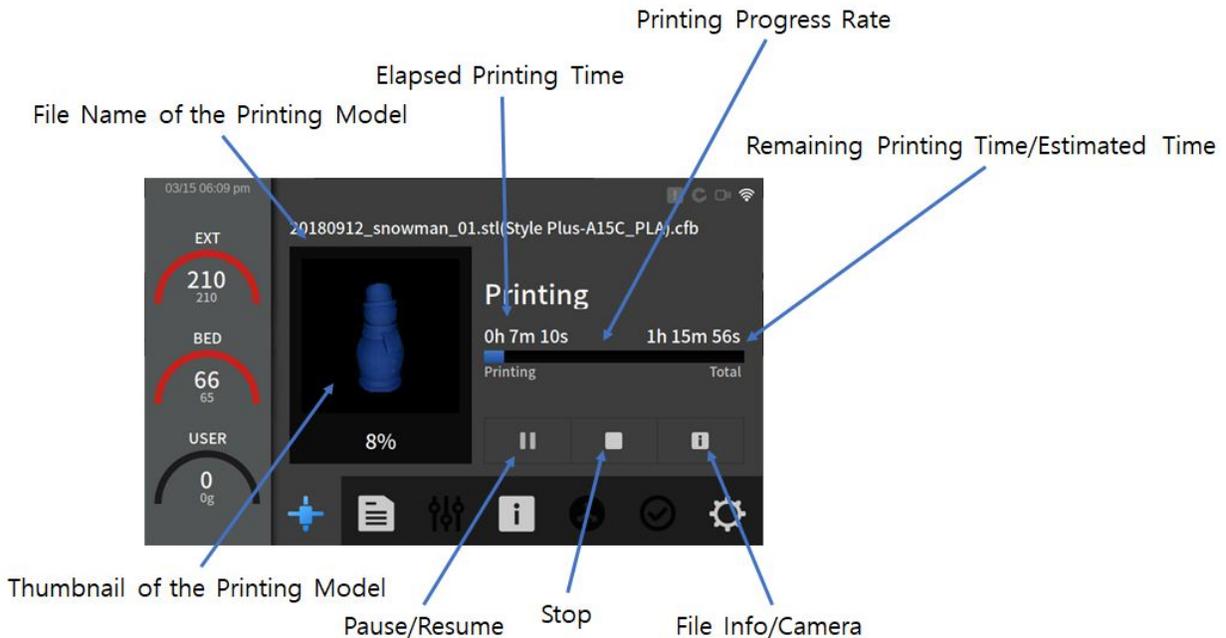
## Function Display Area

It is displayed as a focused icon regarding the info that is currently displayed on the screen, and a user can move to other screens by touching each function button. The 'Print' icon is deactivated when it is not printing as a default.



## Print

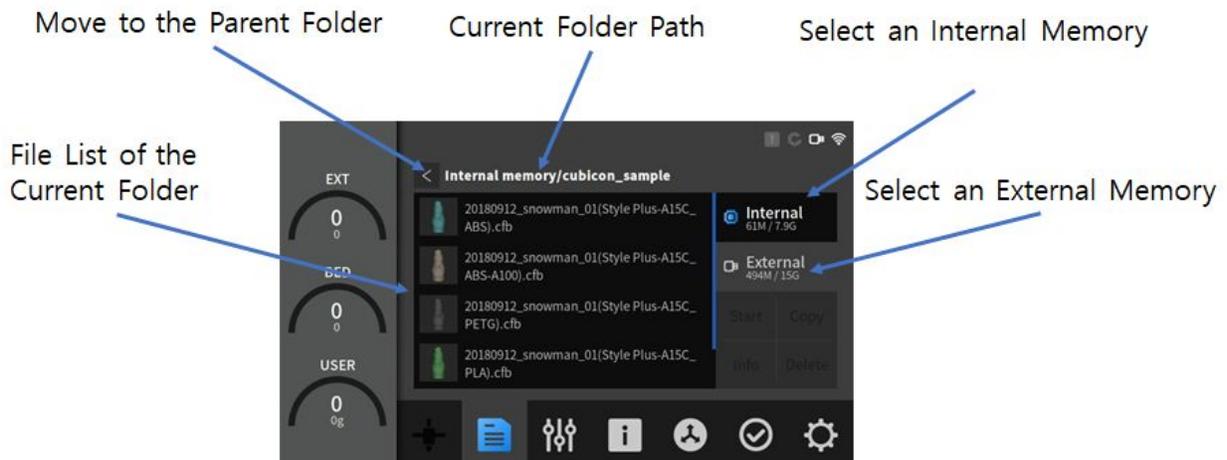
Print is a screen that can monitor the printing status in real-time when the printer is printing.



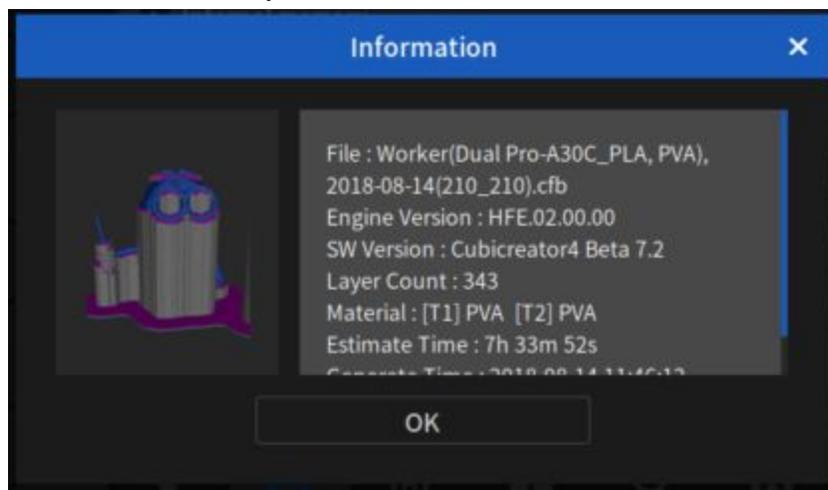
- **File Name:** Only the data that has been created in Cubicreator is supported, and Style Plus-A15 only supports a file with .cfb as the file extension.
- **Thumbnail:** It displays the shape of actual printout as a thumbnail.
- **Elapsed time:** The time that the printing actually has progressed is displayed.
- **Progress Rate:** Actual printing progress rate is displayed as a bar graph.
- **Remaining Time/Estimated Time:** Remaining time or estimated time for the current printout is displayed. As for the switching of info, the info type changes when the related text is touched.
- **Pause/Resume:** Current printing state can be paused or resumed. When it is paused, the printing can be restarted from the point that was printed through Resume.
- **Stop:** Current printing is completely stopped. It can't be restored to the previous state, and it must be restarted from the start.
- **File Info:** Info of the current printout can be viewed.
- **Camera:** A video of printing can be viewed in real-time through the built-in camera. (For models that support a camera only)

## File

File is a screen that can perform Copy/Delete/Print functions from an internal memory or an external memory.



- **Select an Internal Memory:** A file list inside of the internal memory area can be viewed. (Maximum 8 GB can be supported)
- **Select an External Memory:** It gets activated when a USB memory stick is inserted, and a file list inside of the external memory area can be viewed when the button is touched.
- **Move to the Parent Folder:** Touch this button to move to the parent folder in the file list.
- **Current Folder Path:** It is the name of the folder that is currently being explored.
- **File List:** It shows a file list in the current folder.
- **Copy:** The file that has been selected can be copied between internal memory <-> external memory.
- **Delete:** It deletes the file that has been selected from the related memory.
- **Start:** It prints the file that has been selected.
- **Info:** It shows the brief summary info of a slice file.

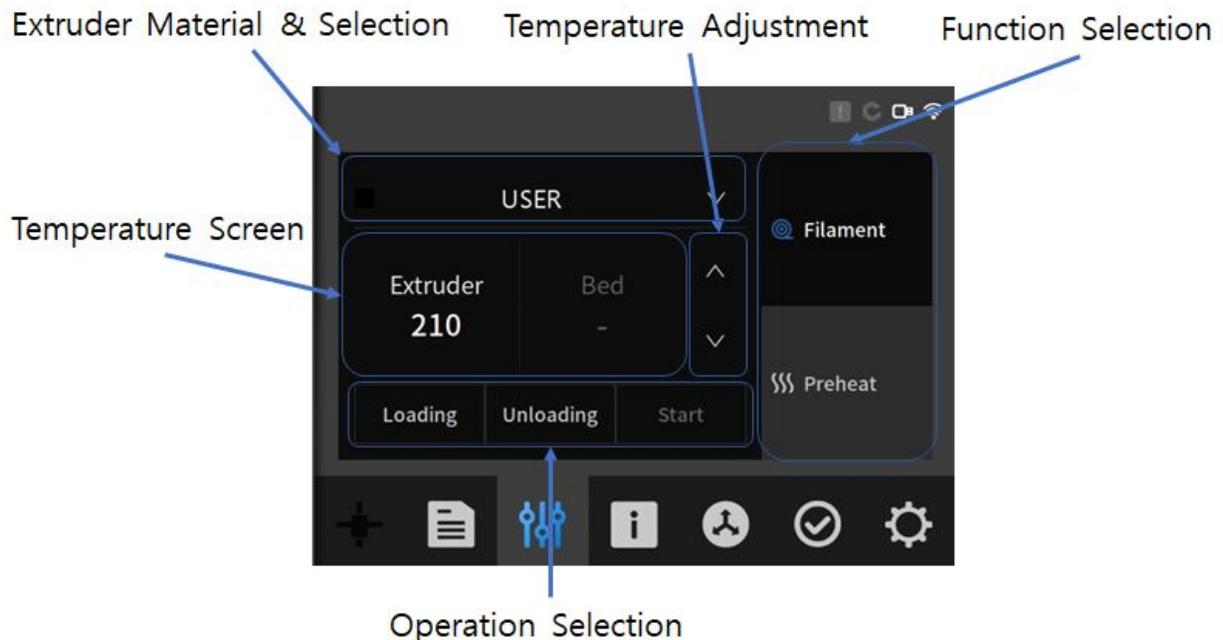


<Info>

## Control

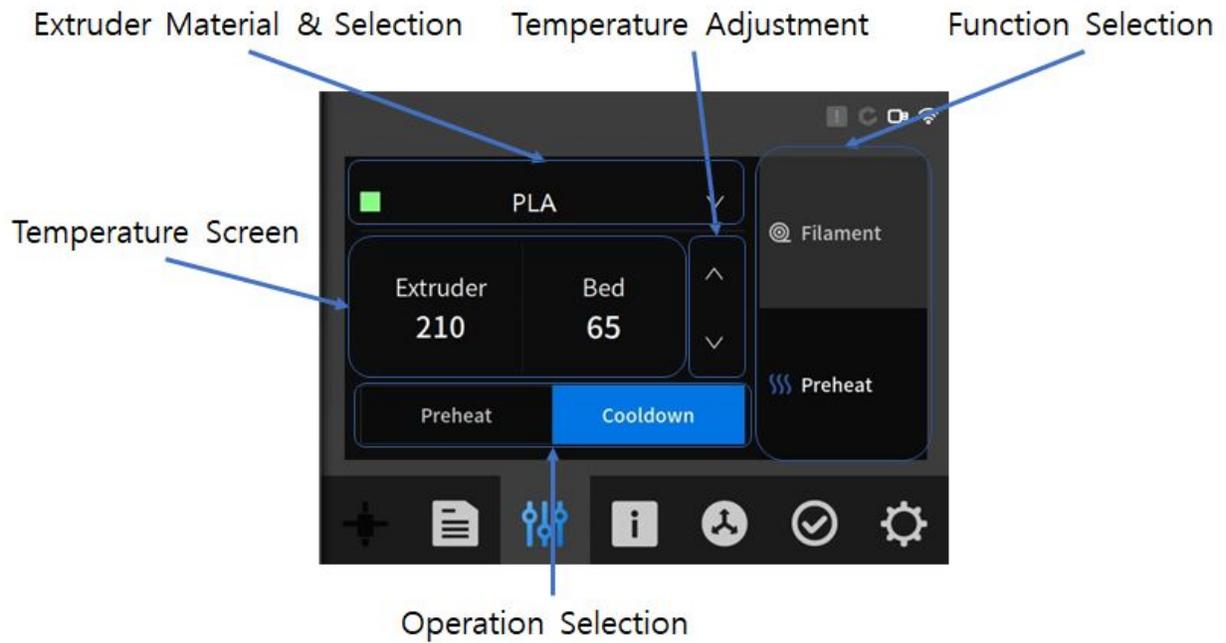
Control is a screen that can execute Filament Loading/Unloading and Preheat operations. Each internal function gets configured by sharing the control screen so that the extruder and bed temperature would be able to be set according to the material.

## Control(Filament)



- **Function Selection:** One among Filament / Preheat screens can be selected.
- **Extruder Material:** It is a button for selecting a type of filament that would be used to execute each function. Since NFC tag is built into Cubicon filament, it is designed to detect it automatically.
- **Extruder Selection:** It is a button for selecting an extruder that would execute Loading / Unloading tasks.
- **Temperature Screen:** Current temperature/setting temperature that are appropriate for the selected material are expressed for each element. Bed gets activated only when it is under Preheat operation.
- **Temperature Adjustment:** A user can arbitrarily increase or decrease the temperature of the selected material. As for the method, it can be adjusted after touching each element of the temperature screen.
- **Operation Selection:** After selecting an operation to perform such as loading/unloading, the operation can be started by pressing the Start button (which gets activated after the preheating is completed) after the preheating is sufficiently executed.

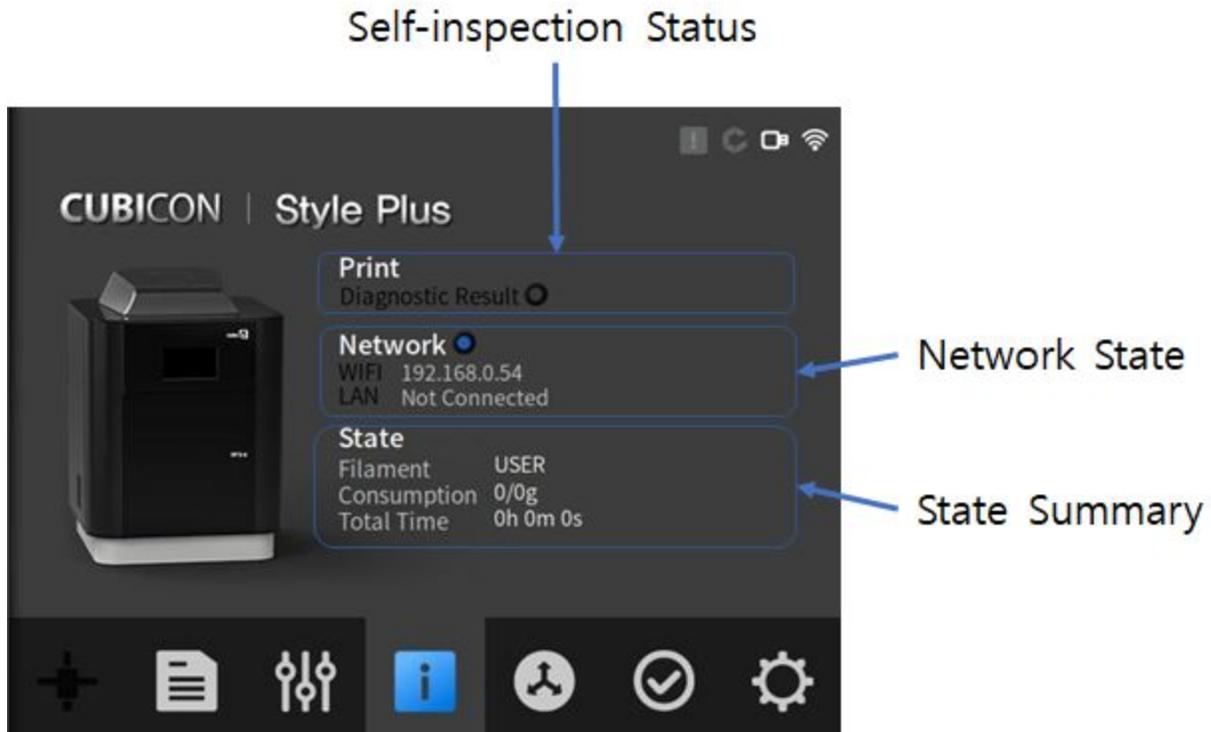
## Control(Preheat)



- **Heating:** Heating operation starts at the temperature that has been set up.
- **Cooldown:** All heating operations get stopped, and the device gets cooled down by turning on the cooling fan.

## State

It is a screen that shows the current status on the screen visually by monitoring the device in the State screen in real time.



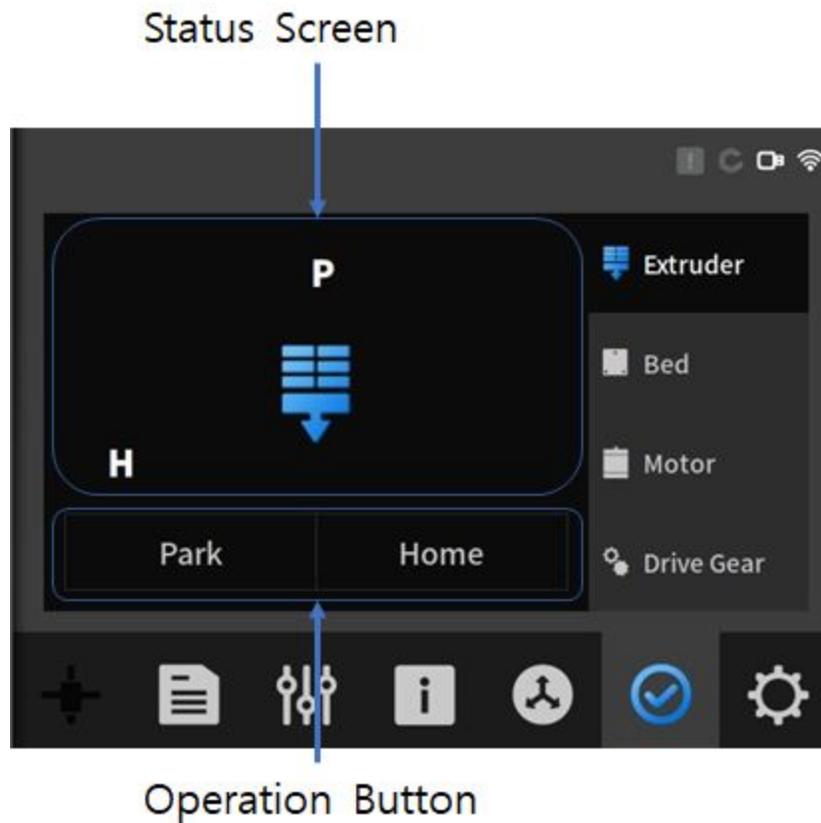
- **Self-inspection Status:** Printer self-inspection result can be checked.
- **Network State:** IP address of currently connected network is displayed.
- **State Summary:** Summary info regarding the filament type that is mounted and the state of the printer are displayed.

## Motion

Motion is a screen that enables a user to directly operate the operation part of the device for the purpose of the maintenance or the test.

## Motion(Extruder)

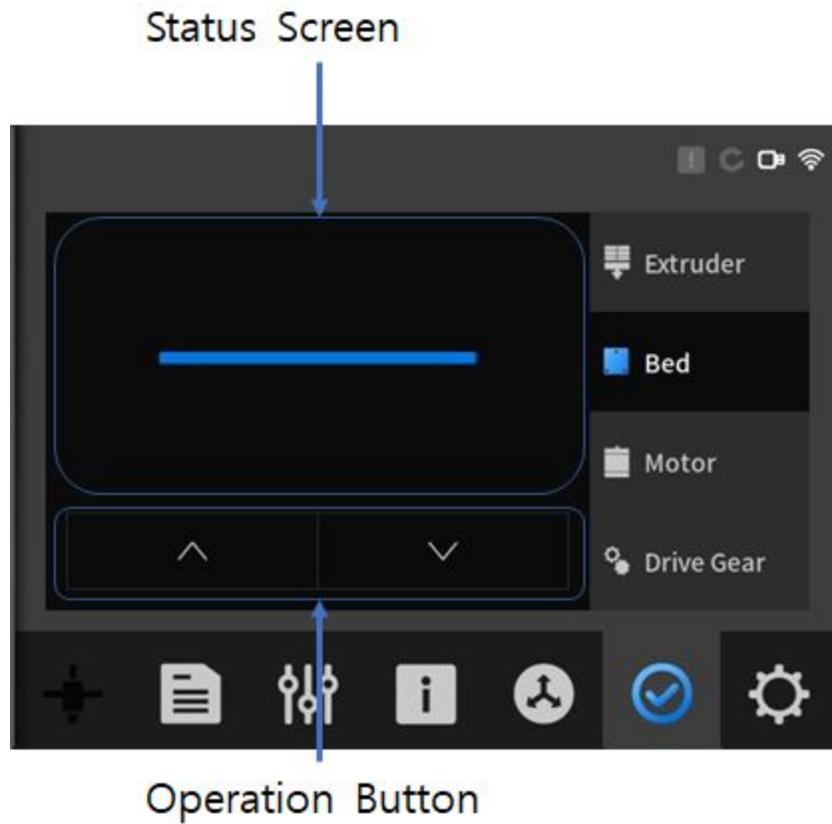
It is a screen that can test Home operation and Parking operation of the Extruder.



- **Park button:** Moves the Extruder to the parking position.
- **Home button:** Moves the Extruder to the home position.
- **Status screen:** It is a screen that visualizes the position of the Extruder.

## Motion(Bed)

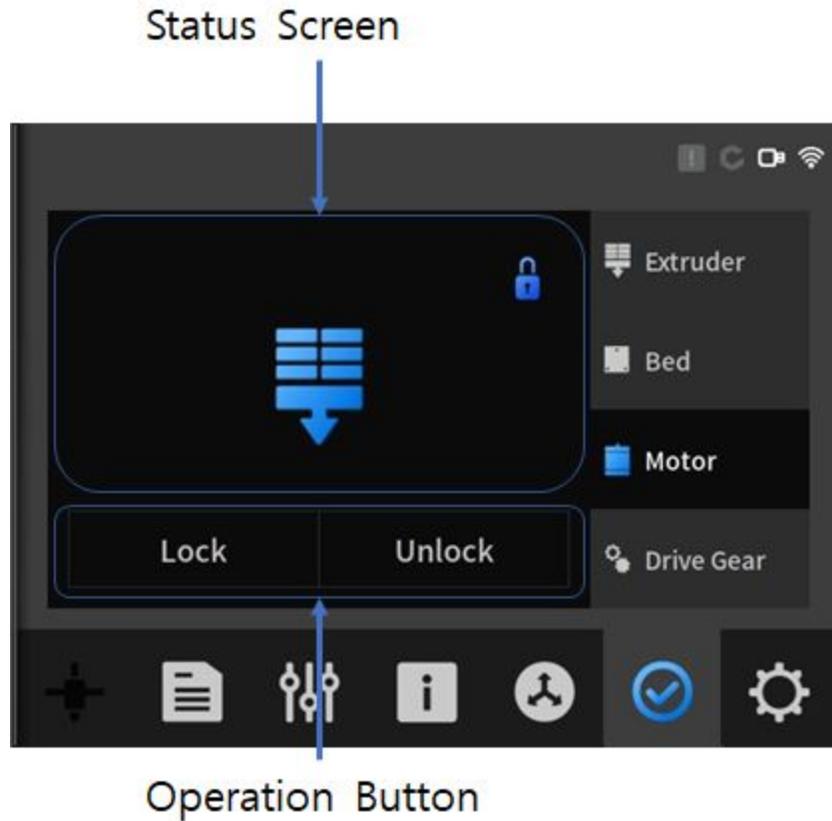
It is a screen that can test Up/Down operation of the bed.



- **Up button:** Performs the operation of moving the bed up.
- **Down button:** Performs the operation of moving the bed down.
- **Status screen:** It is a screen that illustrates the position of the bed.

## Motion(Motor)

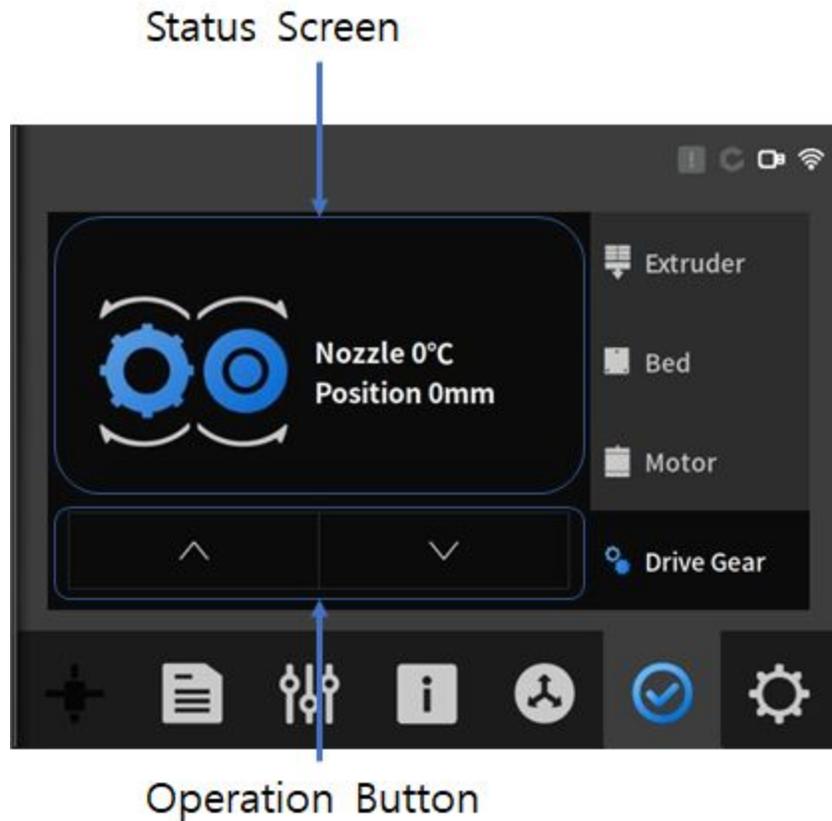
It is a screen that can test the operation by setting/clearing the lock of an extruder operation motor.



- **Lock button:** Sets motors of X/Y and Z axes to a lock state.
- **Unlock button:** Sets motors of X/Y and Z axes to an unlock state, and allows the Extruder and the bed to move manually.

## Motion(Drive gear)

It is a screen that can test the actual discharging and rewinding functions by operating the filament drive gear of the Extruder.



- **Status screen:** It is a status screen that displays the nozzle temperature and the length that has been discharged.
- **Operation screen:** It is a button for discharging through the nozzle or rewinding.



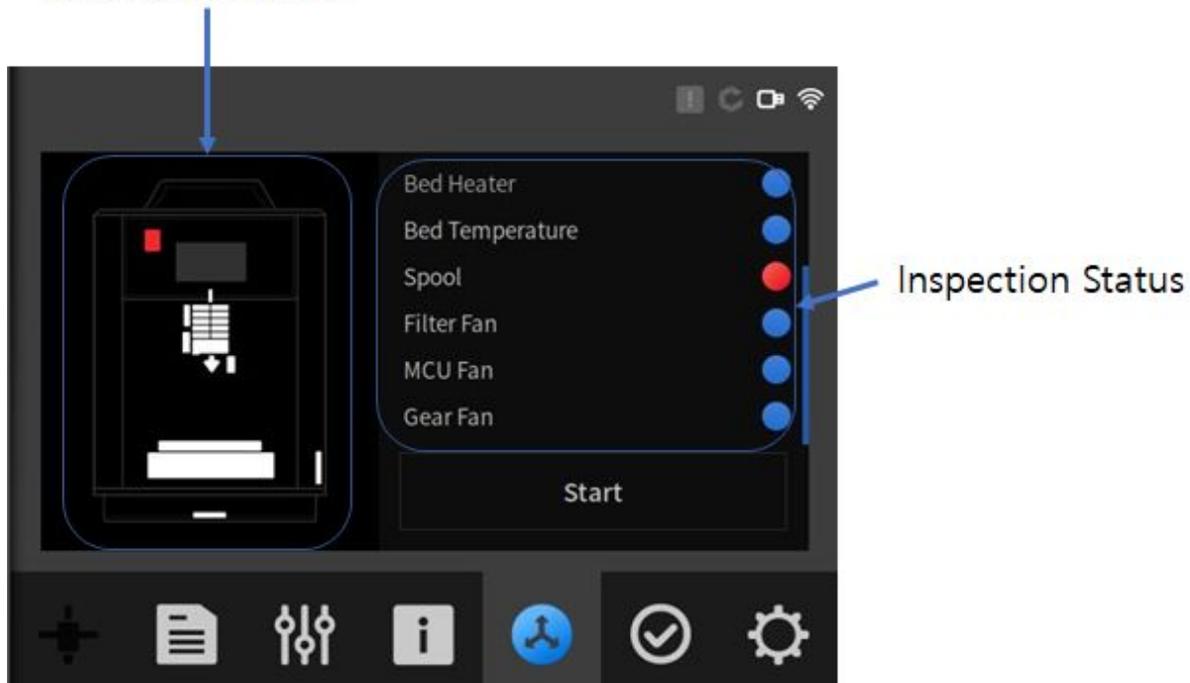
Since cracking or clogging may occur if the temperature of the nozzle doesn't match that of the inserted filament and the nozzle is not sufficiently heated, be cautious during the use.

## Inspection

It is a function to show the abnormalities to a user through the self-test of various sensors/heater/filter/operating parts that are attached on the device.

The self-test starts when the Start button is pressed.

### Inspection Screen



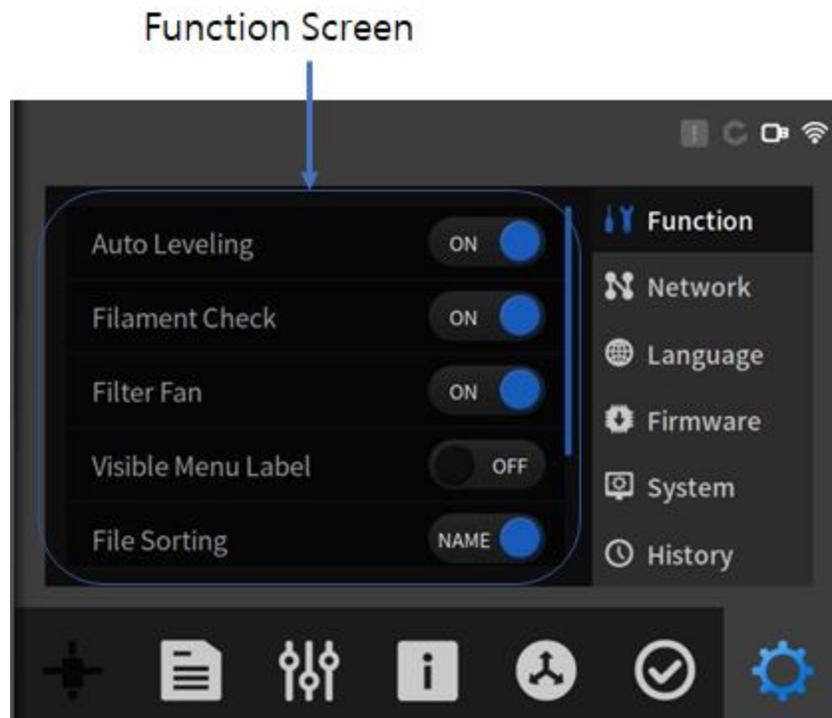
- Inspection Screen:** The device inspection status and the result are shown through UI. If there is abnormality, the abnormal part would be displayed in red as shown in the picture.
- Inspection Status:** The detail of the inspection screen on the left is displayed in detail with the names of the related part. Ones without a problem from the inspection are marked 'PASS' in blue color, and ones with a problem from the inspection are marked 'FAIL' in red color.

## Settings

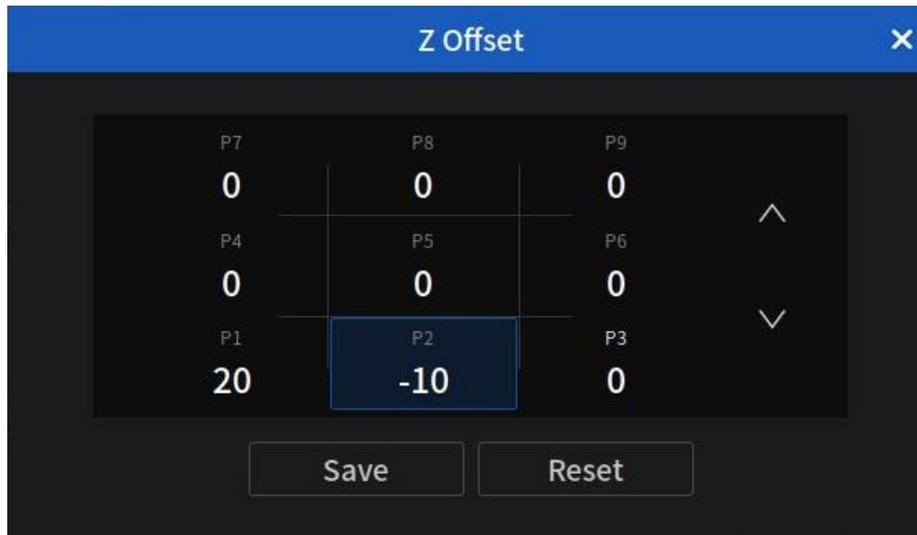
It is a screen that can check/set up various setting values of the device and configure the functions such as communication network settings and language settings.

Also, the upgrade of the device can be supported and the printing history info can be checked.

## Settings(Function)



- **Auto Leveling:** It configures the Auto Leveling function during printing. It is performed only once initially after the power is applied if it is configured to be OFF.
- **Filament Check:** It configures the detection whether the filament exists. After it is configured to be ON, a user can't proceed with the printing if the filament does not exist or it is not detected. If the material is used up, the printing would get suspended automatically in Pause state.
- **Filter Fan:** It is a function to turn ON/OFF the filter fan that is attached on the device.
- **Visible Menu Label:** It can configure whether to display the function display area label.
- **File Sorting:** It decides the list sorting method of the File screen.
- **Sound:** It can adjust the sound volume of the device.
- **Z Offset:** It can adjust the 9 point Z-axis offset values of the bed.

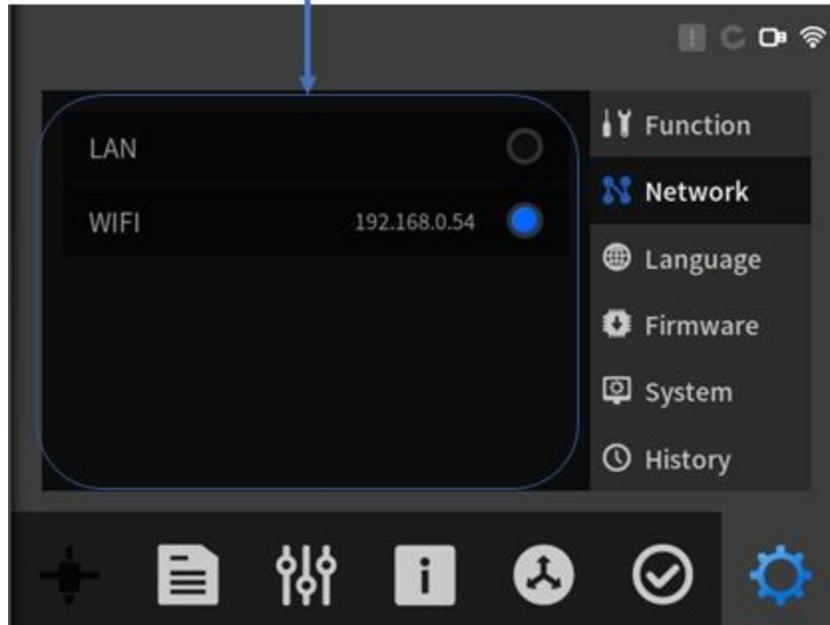


&lt;Z Offset Setup Screen&gt;

- **Z Offset:** Z offset values can be configured to the front of the bed (P1~P3), the middle of the bed (P4~P6), and the rear of the bed (P7~P9) each. The unit is  $\mu\text{m}$ , and the range is between  $-150\mu\text{m}$  and  $1000\mu\text{m}$ . If the filament doesn't get adhered to the bed as the bed and the nozzle are far apart during the printing, it needs to be set to negative (-) value, and if the filament doesn't get discharged as the bed and the nozzle are too close during the printing, it needs to be set to positive (+) value. Set to the desired value and press the Save button to apply.

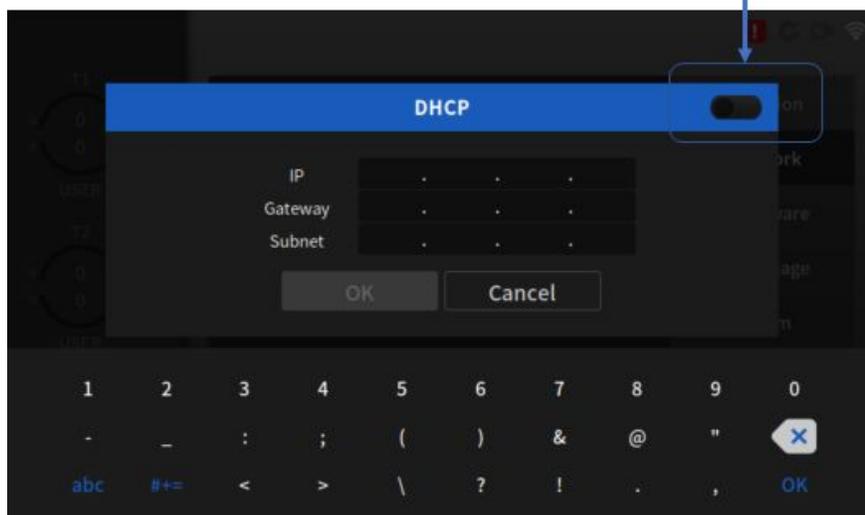
## Settings(Network)

Function Screen



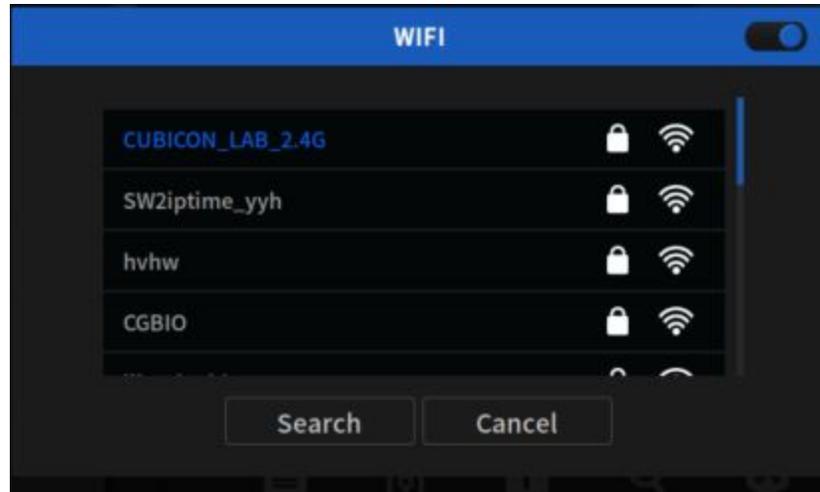
- LAN:** Wired LAN can be configured. If DHCP is activated and the network (router) environment supports DHCP, the IP would be automatically allocated and configured. If the network environment such as your company doesn't support DHCP, the DHCP configuration needs to be cleared, and the network needs to be configured manually.

DHCP ON/OFF

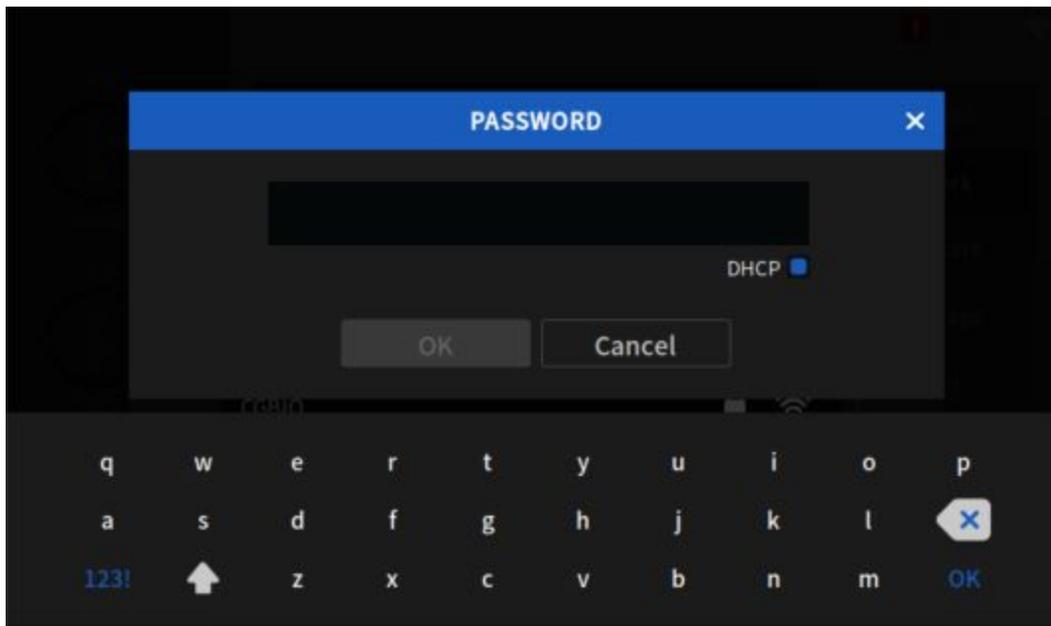


<LAN Setup Screen>

- **WIFI:** The network can be configured through wireless LAN environment.



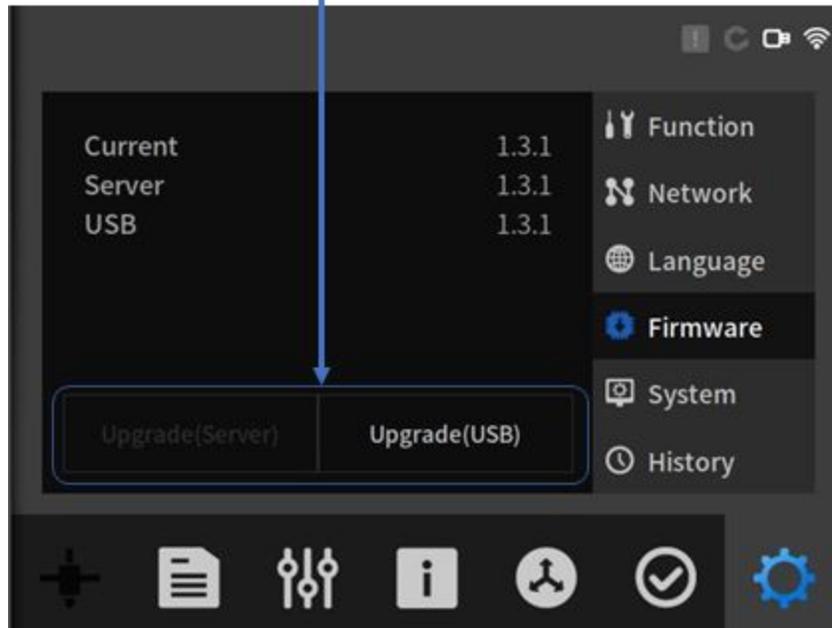
<WIFI Search Screen>



<WIFI Password Input Screen>

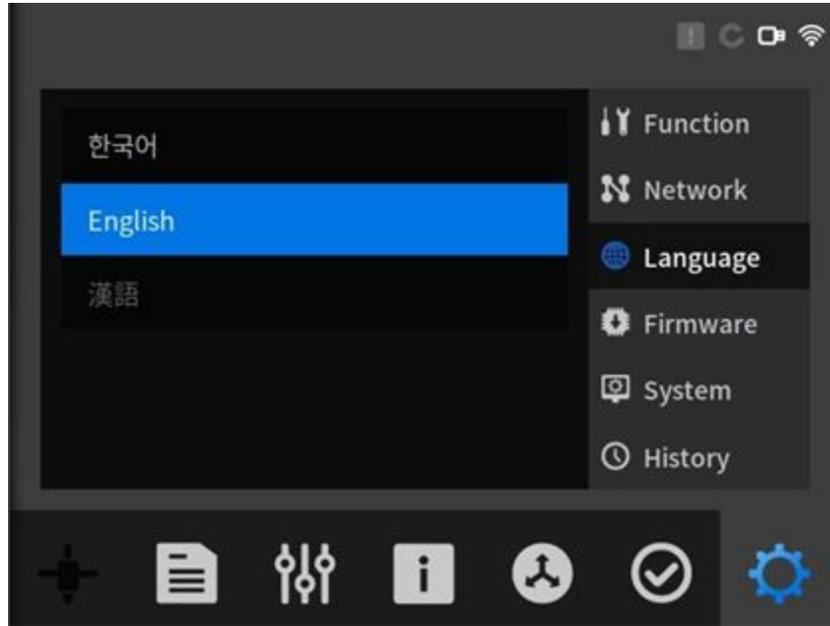
## Settings(Firmware)

### Function Screen



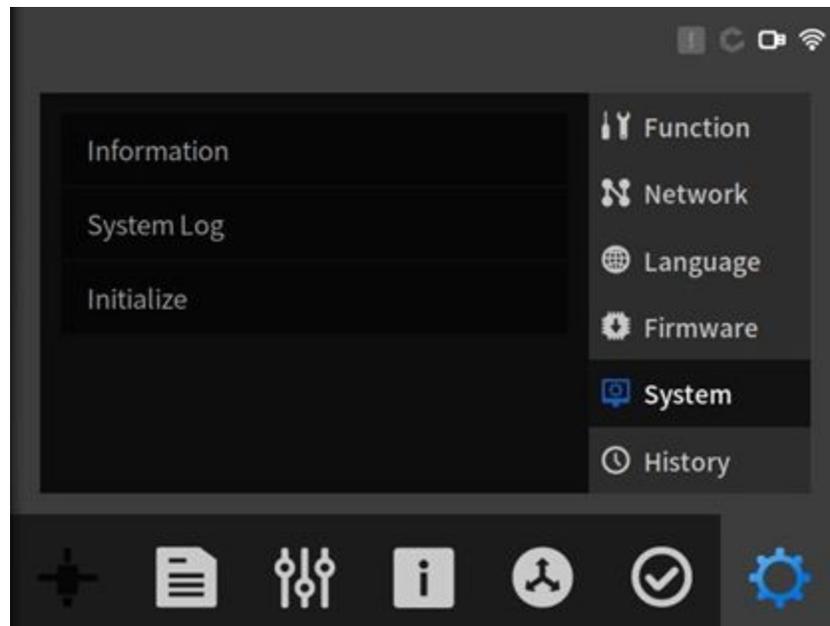
- **Current:** It is version info that is currently applied to the device.
- **Server:** It is version info that is registered in the update server.
- **Upgrade(Server):** It is a button to upgrade through a server.
- **Upgrade(USB):** It is a button to upgrade through a USB memory stick.

## Settings(Language)

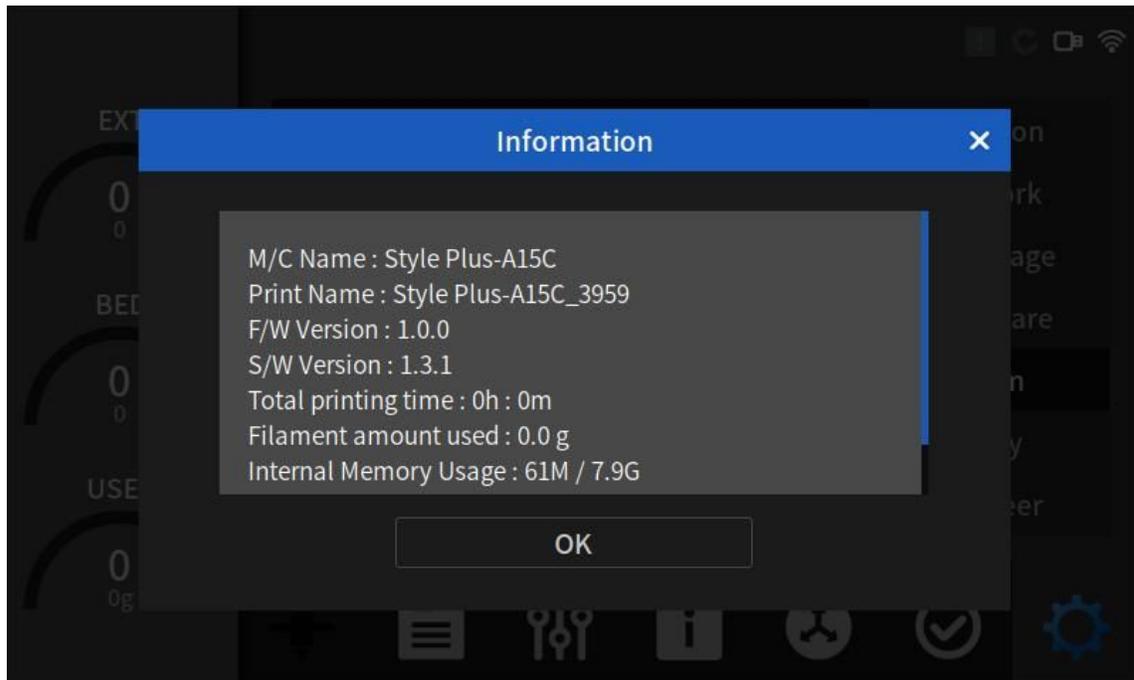


- Change of the language is supported.

## Settings(System)



- **Information:** The info of the current device can be viewed.  
S/W version info, firmware version info, and total printing time can be checked.

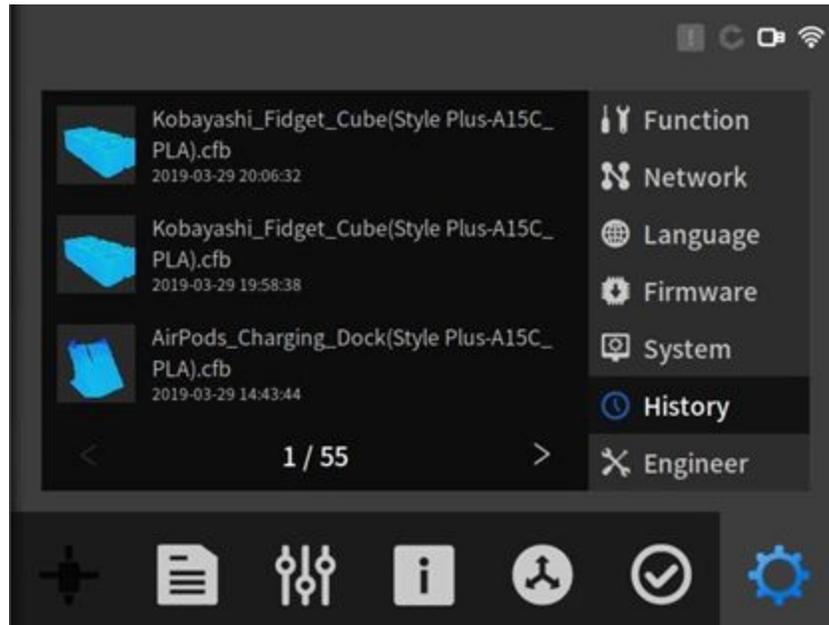


<System Information>

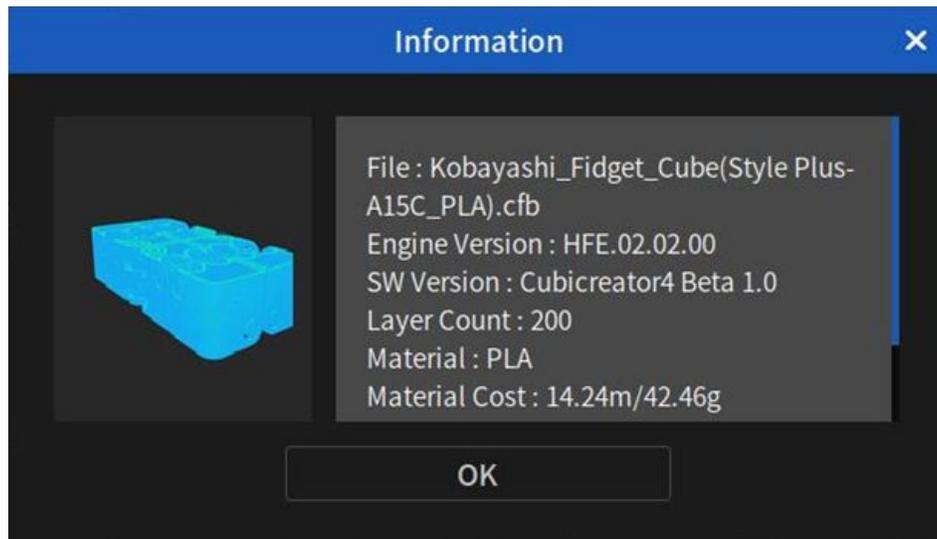
- **System Log:** The logs that have been generated during the operation can be checked. The logs can be saved when a USB memory stick is connected.
- **Initialize:** It resets all settings and setting values to the factory settings.

## Settings(History)

The history info of the files that have been printed by the device can be viewed.



If the related list is clicked, the detailed summary info can be viewed.



<Detailed History Info>

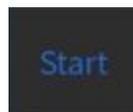
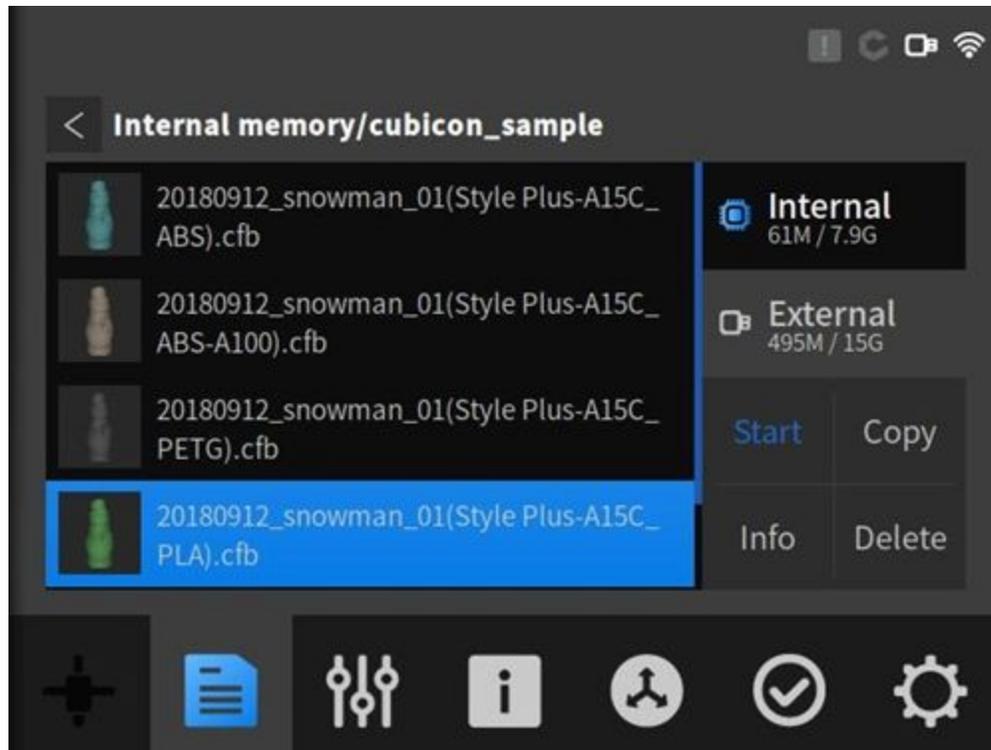
### 3. Printing

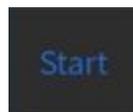
If you have successfully installed the product according to [Chapter 2. Components and Installation](#) earlier, it is recommended to print a sample that is stored in the internal memory in order to test whether the device operates normally.

After selecting Internal Memory under File, go to the sample folder. Among files, select the [20180912\\_snowman\\_01\(Style Plus-A15\\_PLA\).cfb](#) file.

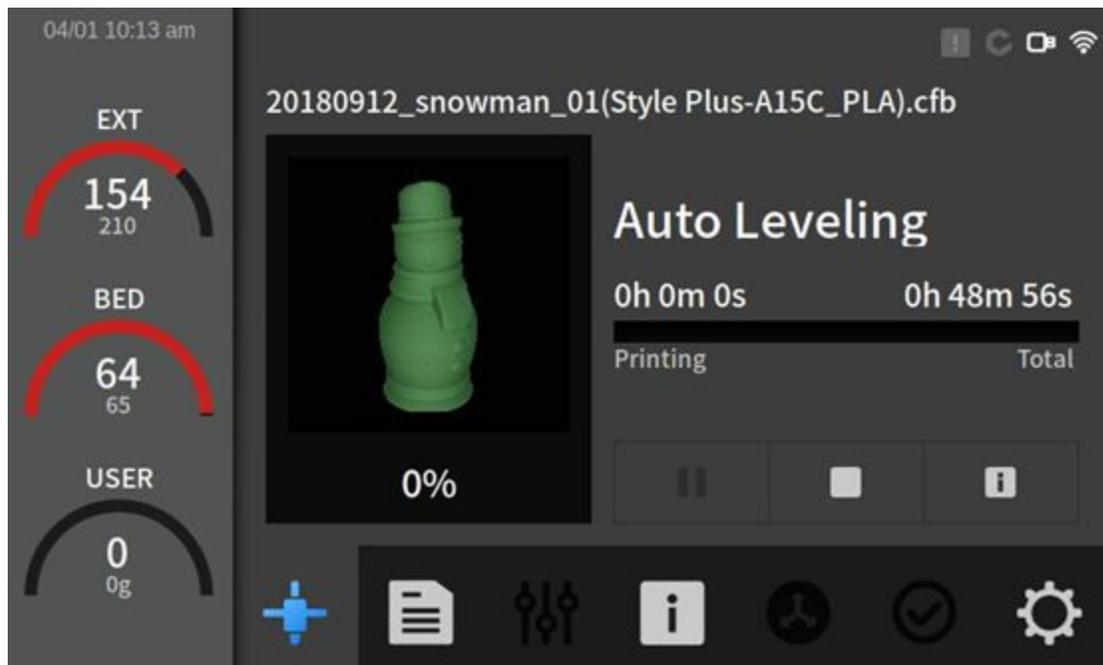


PLA material must be mounted on the filament spool.



If the preparation is completed, start printing by pressing the  button.

Once transmission of the printing file is completed, the following Print screen would be activated, and the printing progress status can be monitored in real-time.



Printing would be proceeded in the following order:

Heating → Z-axis Auto Leveling → Filament Existence/Flow Detection → Printing

- Heating: Heating operation is performed according to the data that has been configured in Cubicreator.

Heating is performed on the Extruder and the Bed simultaneously.

- Z-axis Auto Leveling: It makes precise printing possible by measuring the height of 9 points of the Bed. However, the leveling takes place only once initially after the power is supplied if Setting > Function > Auto Leveling is set to OFF.

When leveling, preheat the extruder to a temperature lower than 50 °C based on the printing temperature and perform leveling. Preheating at printing temperature Pre-heating and leveling at output The waiting time may be longer due to temperature setting.

- Filament Existence/Flow Detection: It checks whether the filament exists/flows, and it performs the auto loading if there is no filament in the Extruder.
- Printing: It prints stably at high quality by applying the enhanced PGM algorithm.

## 4. Maintenance

A 3D printer contains a lot of driving parts and consumable parts. Therefore, just like most of driving system devices, a 3D printer also has certain areas that require the management by a user.

### Maintenance of the Extruder

	<p>* If the removable Extruder is disassembled or assembled while the power is on, the printer may break down due to an electric shock. Assembly/disassembly of the removable Extruder should be performed after the temperature of the nozzle is lowered to the room temperature while the power is turned off.</p> <p>* In case there is a need to disassemble it while it is hot, be cautious since entire extruder is hot, and be sure to wear gloves during the task.</p>
	<p>* Be cautious since the sensor or other devices may be damaged if the removable Extruder is disassembled while a filament is inserted in the Extruder.</p> <p>* In case unloading fails due to the breakdown or other causes, separate the filament tube from the Extruder, cut off the filament from the filament inlet, and then separate the Extruder module.</p>

The Extruder module can be disassembled from the main body of the printer just by untightening a few bolts and pulling out the Extruder cable.

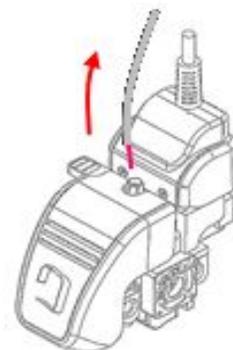
If a problem occurs in the Extruder module, a user can disassemble just the Extruder module from the main body of the printer and request the warranty service, and therefore, the user can conveniently manage the device.

If it is difficult to disassemble the Extruder module, request the warranty service by sending entire body of the printer rather than attempting to disassemble it forcibly.

The assembly sequence is in the reverse order of the disassembly sequence.

### Disassembly of the Extruder Module

① In order to disassemble the Extruder, **remove the filament in the Extruder by taking out the Teflon tube that is inserted in the filament inlet of the Extruder and performing the unloading.**



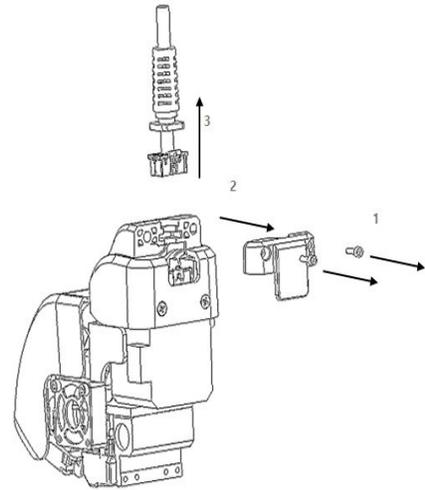


If the Extruder module gets separated while the filament is inserted inside of the Extruder, it may not be able to get separated as the filament is hardened inside of the nozzle.  
If the unloading (removing a filament from the Extruder) can't be executed due to the breakdown or other causes, cut off the filament from the filament inlet of the Extruder and disassemble the Extruder module.

② **Turn [OFF](O) the power of the main body of the printer.** If you disassemble the Extruder module while the power is [ON], the printer may break down due to an electric shock.

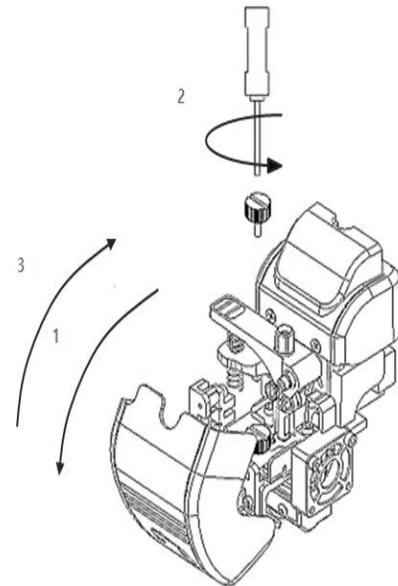


③ After untightening the cable fixing bolts (2 places) using the 2mm hex key wrench that is supplied as an accessory (1), remove the Extruder cable fixing block (2), and then pull out the Extruder cable from the Extruder module (3). **Since the cable is locking type (Locking Type Connector), the cable connector and the cable would be damaged if it is pulled out forcibly. Unlock it by pressing the locking device and pull out carefully.**

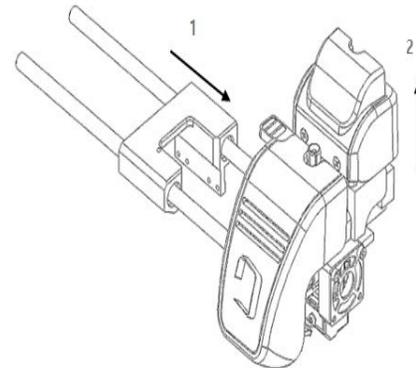


④ Open the Extruder cover (1), untighten the Extruder module fixing bolt (2), and then close the Extruder cover (3).

Since the cable fixing bolts, the Extruder module fixing bolt, and the cable fixing block must be used when assembling the module, be sure to store them securely so that they don't get lost.



⑤ The Extruder module can be separated from the printer by pulling it up (2) after separating it from the fixing device at the bottom of the Extruder by pushing it from the front of the printer to the right (1). Be cautious not to damage the bar or the belt in the main body of the printer during the disassembly.



	<p>Clean pollutants in the Extruder regularly.</p>
	<ul style="list-style-type: none"> <li>* When opening the Extruder cover, the sculpture may get damaged as it collides with the cover, if the sculpture is place under the cover. When opening the cover, check whether there is any obstacle under the Extruder.</li> <li>* When handling the Extruder cover, be cautious not to damage the wires inside of the device. If the wires get damaged, it wouldn't operate properly and it would lead to the breakdown.</li> <li>* <b>Assembly/disassembly of the Extruder module must be performed only when the power of the printer is turned off, and the temperature of the nozzle has been completely cooled down.</b></li> <li>* <b>If the assembly/disassembly must be performed while the temperature of the nozzle is high, be cautious not to get a burn.</b></li> <li>* Be cautious not to damage the parts in the Extruder part since they can be damaged if an</li> </ul>

excessive power is applied during the disassembly/assembly of the Extruder module.  
\* If printing is done while the Extruder module is not accurately mounted to the printer, the module fixing bolts are not fastened, or the Extruder cable is incorrectly connected, it may fail to print or cause a breakdown. Use the printer after accurately mounting it.  
\* Since the Extruder module contains an electronic device, be cautious not to touch with a wet hand and be careful not to get an electric shock.

## Extruder(Management)

The nozzle of the Extruder is located at the very bottom of the Extruder, and it is a part that creates a sculpture as the filament gets melted and pushed out.

The nozzle is a consumable part in the printer, and it needs to be replaced after it is used for a long time due to the normal wear or due to the accumulation of carbonized residues of the filament and foreign substances inside of the nozzle. However, if it is not appropriately managed, the printing quality becomes poor as the problem occurs a lot earlier than the estimated lifecycle, and in severe case, the nozzle needs to be replaced as the hole of the nozzle gets clogged. In order to use the nozzle with stable printing quality for a long time, clean the nozzle regularly.

### 1. How to Maintain the Nozzle in a Good Condition

Once the clogging of the nozzle occurs, there is a high probability that the problem constantly occurs until it is replaced. Since the nozzle can be maintained cleanly according to user's care, keep in mind the following items.

- ① Check and manage the condition of the nozzle regularly
- ② If the thickness of the filament that is discharged from the nozzle is too thin or the discharged amount is not consistent during the printing, stop printing and proceed with the nozzle cleaning. Since it is unknown when the foreign substances inside of the nozzle would deteriorate the condition of the nozzle, the counter measure must be taken immediately when the symptom appears.
- ③ When replacing a filament, clean the nozzle sufficiently as much as possible. Especially **when the filament is changed to a filament with different printing temperature condition, the nozzle must be cleaned as mandatory.**
- ④ In general, the filament causes more and more pollution on the nozzle as it has colors (including white) and as it gets darker. If such filament is mainly used, frequently clean the nozzle.
- ⑤ If a filament gets hardened after getting melt once, it gets different characteristic from the initial state. In other word, if the filament inside of the nozzle continues to repeat being heated/cooled without being discharged, it turns into a pollutant that can't be discharged normally. Therefore, do not let the filament in the nozzle repeat being heated/cooled without being used.
- ⑥ Once the vacuumed packaging of a filament gets opened, the filament starts to be polluted by the humidity and dusts. If such pollutants get accumulated a lot, it causes the clogging of the nozzle. Therefore, use it as fast as possible once it is opened, and it is very helpful to use a dust filter in order to filter the dust on the surface of the filament.

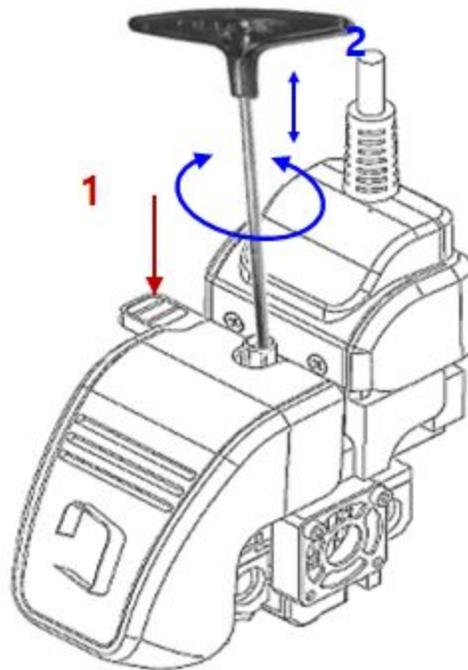
### 2. Cleaning the Inside of the Nozzle using the Loading

- ① Take out the filament sufficiently by using **{Control → Filament → Loading}** of the function menu. If a user doesn't stop it, the loading automatically stops after a certain amount of the filament gets discharged. Set the temperature of the Load Filament to the temperature of the filament to be used.
- ② If the printing condition is not satisfactory even with the method in ①, repeat the process of ① once again after setting the temperature of the Load Filament higher than the temperature of the filament that is used.

	<p>Do not raise the temperature by more than 10% compared to the filament discharging temperature which is a temperature during the normal use. The clogging of the nozzle may get worse as the component of the filament gets changed.</p>
	<p>If the filament doesn't come out of the nozzle at all or it comes out very thin, do not perform '<a href="#">2. Cleaning the Inside of the nozzle using the Loading</a>'. It may cause a breakdown as the filament gets cracked or it gets tangled in the Extruder.</p>

### 3. Cleaning the Inside of the Nozzle Using the Nozzle Management Pin

If the printing quality doesn't get enhanced only through the Loading or if the Loading can't be executed, it may be a case that the residues which can't be removed only by the Loading still remain the inside of the nozzle or a case that the clogging of the nozzle hole is severe. Clean the inside of the nozzle using the nozzle management pin that has been supplied as an accessory by considering the below items.



- ① Remove the filament inside the Extruder using the Unloading.
- ② Heat up the Extruder by raising the temperature of the Extruder nozzle by at most 10% above the discharging temperature of the filament that is expected to be remaining in the nozzle. It is to sufficiently melt the filament that is remaining in the nozzle. If the Extruder nozzle is heated with the temperature that is too high, the nozzle may get clogged as the filament that is remaining in the nozzle gets carbonized, and therefore be cautious about the temperature.
- ③ While pressing down the filament push button (1), insert the nozzle management pin into the nozzle (2), and clean the nozzle by pushing foreign substances in the nozzle down by moving it

up and down or turning it slowly. It can be done more easily if you insert the nozzle management pin by considering the distance between the filament inlet and the tip of the nozzle.

④ Once the removal of foreign substances in the nozzle is done to some degree, wait a while in the state where the temperature of the nozzle is raised, and repeat the cleaning of the foreign substances as in ③. This is to remove the foreign substances that have been melted down by waiting until the foreign substances that had been adhered to the inner wall of the nozzle to melt down.

⑤ Insert the filament to be used by melting it into the nozzle by Loading/Unloading the filament, and repeat the processes from ①. This is to remove the foreign substances by adhering them to the normal filament that has been melted.

If the filament doesn't get discharged (if the filament doesn't get pushed out as it is melted) or the printing quality is poor even after the use of the nozzle management pin, replace the nozzle since the nozzle has been damaged. Contact the designated service center for the replacement of the nozzle

#### **4. Cautions regarding the Use of the nozzle Management Pin**

Proper use of the nozzle management pin would be very helpful for the management of the nozzle. However, since the nozzle management pin goes through the passage in the Extruder that the filament goes through when the nozzle management pin is used, it may cause damage or pollution in the inside of the Extruder, which may lead to the breakdown of the Extruder or make the clogging of the nozzle even more severe. Since the breakdown of the Extruder due to the improper use of the nozzle management pin as shown below would become a reason for the charged repair, be cautious.

##### **① Occurrence of Clogging due to Damage of the Device**

If the nozzle management pin is excessively used, it may damage the device in the passage or cause the clogging of the nozzle as the device gets cut off by the nozzle management pin and falls into the nozzle. Since it is difficult to clear the clogging of the nozzle that has occurred in such way, the entire nozzle needs to be replaced, and therefore, be cautious not to damage the device inside.

##### **② Secondary Pollution Due to Residues that Are Attached on the Nozzle Management Pin**

If the nozzle management pin is used, a filament residue would be attached to the tip of the nozzle management pin, and the nozzle management pin or the filament may not be able to be inserted as the filament residues adhere to the inlet of the nozzle or the filament passage in the inside of the Extruder while taking out the nozzle management pin. In order to prevent the

secondary pollution due to the use of the nozzle management pin, remove the filament that is adhered to the nozzle management pin time to time during its use.



- \* Since the nozzle management pin is used while the nozzle is hot, the tip of the nozzle management pin is highly heated. Be cautious not to get a burn.
  - \* Be careful during the use of the nozzle management pin until it can be used smoothly by acquiring sufficient experiences.
- Since the improper use of the nozzle management pin can damage the Extruder part to the extent that can't be restored, it is recommended to refrain from the use of it if it is expected to be difficult to use.**

## **5. Cleaning the Outside of the nozzle**

The nozzle is a part that is heated to a high temperature during printing, and it is usual that a filament residue is melted and adhered to its surface. The filament that has been melted and adhered on the surface of the nozzle would lower the quality by contaminating the sculpture as it is adhered to the sculpture during printing.

- ① After heating up the nozzle to the degree that the filament on the surface would melt, remove the residues on the surface with tweezers or wipe it with cotton cloth that doesn't melt.
- ② If the surface of the nozzle is severely polluted, cool down the nozzle completely, and wipe the pollutant on the surface of the nozzle with the cloth after applying a small amount of highly pure acetone as if the pollutant is being melted while the power is shut off. And then, use the printer after the acetone gets completely evaporated.
- ③ During the Loading process or Auto Tilt process before printing, a certain amount of filament would be discharged by force in order to print with a clean filament. If such residues are adhered to the nozzle, it would affect the sculpture; therefore, remove them before printing an actual sculpture.



- \* Be cautious since the printing quality gets lowered due to the damage of the nozzle if the nozzle hole is pressed by tweezers.
- \* When acetone is used for cleaning the nozzle, be cautious not to apply acetone on the part other than metal part of the nozzle. The product may melt by the acetone, and it would cause damage.
- \* When using acetone, use it in a place that is well ventilated, and be cautious about the care.  
(Be sure to follow the safety regulations that are marked on the packaging of the acetone.)



In case of cleaning the nozzle while it is heated, be cautious not to get a burn by the nozzle that is hot.

## Replacing the Nozzle Kit of the Extruder Module

If the nozzle is used for a long time, the lifecycle of the nozzle is limited by the cracking of the nozzle due to the continuous printing, the carbonization of the filament that remains inside, and the foreign substances. Therefore, if problems such as the failure to discharge and the severe crack in the filament occur due to the occurrence of the problem in the nozzle, the nozzle unit needs to be replaced for the maintenance.

Especially, if the problem doesn't get solved by the items that are stated in the 'Extruder(Management)' section above, it is better to solve the problem by replacing the nozzle kit.

<p>① Remove the nozzle kit by turning it counterclockwise by using an 8mm box wrench.          If it is removed with an excessive force, there is a risk of damaging the part.          If the nozzle kit is removed at a high temperature, it can be easily executed.</p>	
<p>② After fixing a new nozzle by turning it with a hand, fasten the nozzle by turning it clockwise using an 8mm box wrench.</p>	



- \* Be cautious not to get injured by the nozzle that is at a high temperature when replacing the nozzle kit.
- \* If there is any difficulty in replacing the nozzle kit or there is a risk of damaging the Extruder, please request a service to our designated service center.

## Maintenance of the Heating Bed

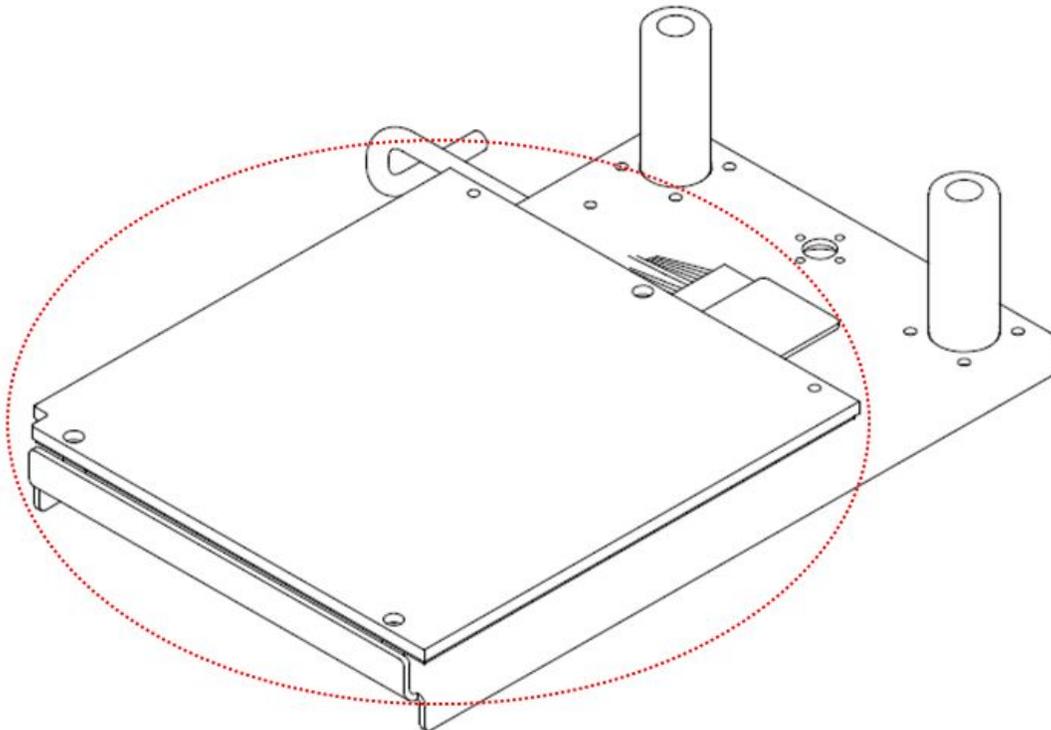
### Cleaning for Normal Auto Leveling

Style Plus measures the difference in height that is created by pressing the tip of the nozzle. It is developed to make the precise printing possible through measuring the Z-axis height of the 9 points on the heating bed.

While the nozzle is measuring and printing through such way, some residues from some printouts may adhere to the surface of heating bed. If such foreign substances adhere to the surface of heating bed, the printing may not be done correctly as a problem occurs in the Auto Leveling due to the interference to the nozzle.

Therefore, regular cleaning of the bed and accessories are required after printing.

As for the removal of pollutants on the heating bed, always keep it clean using a scraper and tweezers that are supplied as accessories. When using tools, be cautious not to damage the surface of heating bed. If the surface gets damaged, the printout would not adhere well as the coating gets peeled off.



The area that is marked with a red circle in the picture is a heating bed part to be cleaned.



**When cleaning the heating bed, be sure to perform the task while keeping the power in the off state.**

	<ul style="list-style-type: none"> <li>• Although a pattern that looks like a stain may be seen on the surface of heating bed, it is the pattern that occurs during the coating process, and you don't need to worry about using it since it doesn't have any effect on the characteristics of the heating bed.</li> <li>• The lifecycle of the coating on the heating bed may vary according to the printing habit of a user. If the printout is taken off easily, replace the heating bed.</li> <li>• The heating bed of the Style Plus makes the printing without a Kapton tape possible under appropriate temperature condition when printing with ABS/PLA that is sold by our company. However, if it is desired to print using the Kapton tape due to the printing habit of a user or the model to be printed, the user shall purchase the Kapton tape individually and use it.</li> </ul>
	<p>In case of a printing method of melting a filament, melted filament would get contracted as it gets hardened, and it may lead to a gap underneath the base of printout. Although it can be improved by changing the printing temperature condition, adhesive power of the heating bed, or the slicing option, it is a phenomenon that frequently appears even though the degree of the contraction may vary. When designing a 3D model, consider the designing method that can distribute the contraction force.</p>
	<ul style="list-style-type: none"> <li>• Do not use any solvent other than acetone on the heating bed. It would cause damage to the coating.</li> <li>• When acetone is used for cleaning the heating bed, be cautious not to apply acetone on the part other than the heating bed. It would cause damage to the product.</li> <li>• When using acetone, use it in a place that is well ventilated, and be cautious about the care.</li> </ul> <p>(Be sure to follow the safety regulations that are marked on the packaging of the acetone.)</p> <ul style="list-style-type: none"> <li>• Since the cleansing component of some wet wipes may pollute the coating of heating bed, never use wet wipes.</li> <li>• Do not disassemble the heating bed or apply excessive force in order to take off a sculpture. It may cause the breakdown due to a shock.</li> </ul>

## Replacing the Clean Filter

Style Plus uses a clean filter in triple layers of Purafil catalyst, HEPA filter and deodorizing filter in order to filter the pollutant that may be generated in a FFF type printer.

If excessive pollutants get attached to the clean filter, it not only lowers the performance of the filter but also may cause a breakdown by interfering the operation of a filter fan.

If excessive pollutants get attached to the clean filter, replace the filter rather than cleaning it.

Even though the replacement cycle of the clean filter may vary by the environment of the use and the printing habits of a user, it is recommended to replace it in every 6 months under the typical environment.

**As for the replacement method, refer to [‘Replacing the Clean Filter’](#) above.**

	<p><b>Be sure to mount the clean filter in the correct direction.</b> <b>If the mounting direction is incorrect, the filter performance would be lowered and it may cause a breakdown of the ventilation fan.</b></p>
	<p><b>Replacement of a clean filter must take place after confirming that the power is turned off.</b> <b>During the replacement, be cautious not to let any foreign particle get in.</b></p>

## Update

Cubicon Style Plus-A15 can be updated through the following 2 methods.  
For smooth and stable use of the device, the latest update is recommended at all times.

## Using a USB Memory Stick



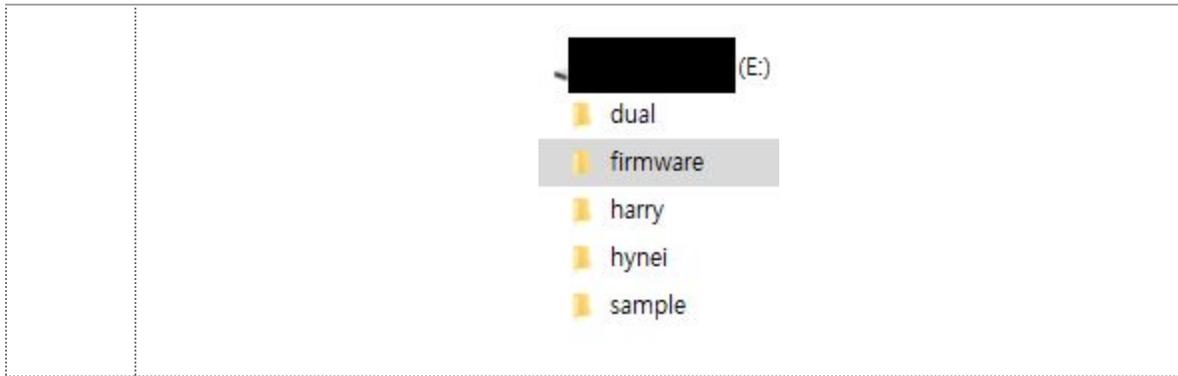
FAT32 / NTFS formats are supported for a USB memory stick.  
It can be viewed by placing a mouse cursor on the USB memory stick icon in Windows Explorer, right clicking it and selecting Properties.

Type:	USB Drive	
File System:	FAT32	
Space Used:	6,928,121,856Byte	6.45GB
Space Available:	24,431,804,416Byte	22.7GB
Capacity:	31,359,926,272Byte	29.2GB
<div style="text-align: center; border-top: 1px solid gray; margin-top: 10px;">                     Drive E:                 </div>		

1. Create a firmware folder in the root of the USB memory stick.



The firmware folder must be in the root folder.



2. Copy the firmware file that has been distributed in the firmware folder.
3. Insert a USB memory stick into the port of Style Plus-A15 where the external memory is inserted.
4. Move to Settings → Firmware.
5. Proceed with the upgrade by pressing the Upgrade(USB) button.

## Automatic Update

If the Auto Firmware Update function is activated, and the network of the device has been configured, it offers a function to automatically upgrade the firmware if there is an upgraded version when the device is restarted.

1. Move to Settings → Firmware.
2. Proceed with the upgrade by pressing the Upgrade(Server) button.

## 5. Trouble Shooting

	<p>* The printer hardware problem can be solved by initializing through {Setting &gt; System &gt; Initialize} of the function menu or by updating the firmware.</p> <p>* Since the printing quality may change due to the printing condition or Cubicreator option settings during the creation of G-Code, check the quality by using various printing conditions or options.</p>
	<p>If a problem occurs in the device, it is important to clearly identify the situation of the problem occurrence. Store a modeling file (STL) or .cfb file, take a picture of the problem, or record the video so that they can be referred during the customer support.</p>

### Defect of the Device

#### Filament Can't Be Discharged through the Nozzle.

- Check whether the filament is a genuine filament. Some filaments may cause a problem during the extrusion due to their temperature condition that is different from the genuine filament or severe deformation by the heat when they are used in Style Plus-A15, which may lead to the breakdown of the Extruder. **The breakdown of the printer due to the use of non-genuine filament will be exempted from the free warranty coverage.**
- Check whether the supply of the filament is smooth. If the filament is tangled or loosened in the spool, the filament must be unwound and reorganized. Since the filament that has been tangled or loosened once may continuously cause the problem, it is recommended to organize it for certain.
- A filament that has been polluted by humidity or dusts may have different characteristics compared to the characteristics at the time of the initial opening. The use of such filament may cause a breakdown such as clogging of the Extruder. Use the filament as fast as possible once it is opened, and if it needs to be stored, block the humidity and dusts using vinyl while fixing it to the spool so that it doesn't get loosened, and then store it for only a short period of time.
- Check whether the filament that has been supplied is too thick or thin. Only a filament with 1.75mm of diameter must be used for Style Plus to ensure the accurate supply. If a thinner or thicker filament is used, the device may break down as the filament gets jammed in the device during the use.
- In case the filament gets tangled in the Extruder or the jamming occurs, it would not be able to extrude as a problem occurs on the extrusion. It must be used after removing the filament with

the problem by separating the removable Extruder. Especially in case of a filament with a low printing temperature, the tangling problem inside of the Extruder may occur easily. The tangling problem may be improved by using the device after lowering the temperature inside of the device.

- Check whether the removable Extruder is correctly mounted. If there is any problem with the mounting, an error message may appear on the LCD screen.
- Check whether the temperature conditions of the filament that is used and the Extruder of the printer are appropriate.
- Replace the nozzle if it is damaged. A nozzle is a consumable item. Replace it by using a warranty service (→ [Refer to Replacing the Nozzle.](#))
- The nozzle may get clogged due to the internal pollution of the Extruder. It is recommended to regularly manage the Extruder. (→ [Refer to Management of the Extruder.](#))

### Data in a USB Drive Can't Be Viewed.

- Style Plus-A15 only supports FAT32 and NTFS file system formats.
- Style Plus-A15 only supports CFB file format that has been created in Cubicreator. Check whether the file exists normally through a PC.

### Data in a USB Drive Can't Be Printed.

- Check whether the file that has been selected is G-Code with \*.cfb file extension.
- Style Plus-A15 can only use the G-Code (\*.cfb) file that has been sliced by using Cubicreator. G-Code file that some other slicing programs have been used can't be printed, and it can cause damage to the device.
- The data in the USB drive may be damaged. Create G-Code file again and use it.
- If a problem occurs in the process of copying the file to the memory after slicing using Cubicreator, it may not be printed. Check whether the G-Code file is normal using Cubicreator. If the printing path that can be viewed through G-Code is shown to be an abnormal path, G-Code is invalid.
- Check whether there is a problem in the slicing by opening the original 3D model in Cubicreator and check whether it is normal during the conversion of the G-Code. And then, check whether there is a problem in the 3D model using a separate 3D model inspection program.
- There may be a problem in saving the data in the USB drive due to a security program in the PC of a user or a virus. Take a necessary action after checking the problem and retry.

### When Printing, the Printing Doesn't Progress as Auto Leveling Fails.

- Check whether a vibration of the surrounding environment affects the device during Auto Leveling. If the vibration around the device reaches the device, the Auto Level may fail.
- Before starting the printing, the printer proceeds with the Auto Level of the bed. If Auto Leveling fails due to a certain reason (it is retried a few time automatically), the printer stops printing.

- Continuously maintain the cleaned state for the tip of the nozzle.
- If a problem continues to occur, replace the Extruder cleaning brush or the heating bed, or a warranty service is necessary.
- **The Auto Leveling may fail due to the temperature during the use of the non-genuine filament and the difference in the filament.**

## The Function of Filament Existence Detection Sensor Doesn't Work Normally.

- Check whether the diameter of the filament that is supplied is 1.75mm and then use it.
- Since the existence detection sensor is located in the starting part of the spool feeder, try the operation after inserting the filament by about 10cm.
- If the existence detection sensor can't recognize it after the insertion of the filament, contact us for the warranty service since the existence detection sensor may have been broken down.

## Filament Auto Loading Function Doesn't Work.

- Try to operate the printer after inserting a filament by more than 10cm into the filament inlet. If the filament is not inserted, Auto Loading Function would not operate.
- If it is not loaded from the start of the inlet even if the filament is inserted, contact us for an inquiry about a warranty service since it may be a failure of the sensor in the starting part or the motor.
- If the tip of the filament is deformed (deformation due to a folding or a heat), use it after cutting off the tip of the filament neatly since it may cause the jamming in the loading path.
- If the filament is loaded from the starting part of the inlet to the Extruder and fed to the drive gear normally, it would be confirmed that it has been normally loaded as the encoder detects the rotation of the idler while the idler rotates at the same time.
- If the idler doesn't rotate, check and contract us for an inquiry about a warranty service since it may be a case that the filament is jammed in the starting part of the Extruder or the filament fails to be discharged due to the load.

## It Can't Recognize a Genuine Filament

- The device judges whether a filament is genuine by reading NFC tag that is attached on the Spool.
- Check whether NFC tag that is attached on the Spool is damaged.
- If NFC tag is not damaged and the device fails to recognize the Spool, contact us for the warranty service since it may be a failure of NFC module inside of the device.

## Operation Gets Interrupted during Printing

- Check the power supply.

## Problems in the Printout and the Operation Errors

### Network Connection Can't Be Made between Cubicreator and the Device

- Check the network settings of both Cubicreator and the device. Both must reside on the same local network.
- If the PC or the device is connected through wireless network, check whether the signal becomes weak due to a long distance to the router.
- The connection can be blocked by the security program or Windows firewall in the PC. Make an adjustment on the related security program or firewall settings.
- The network failure may occur according to the model of the wireless router.

### A Sculpture Doesn't Get Adhered to the Base (Heating Bed) and It Gets Taken Off.

- Check whether it is a genuine filament. Some filaments don't adhere to the heating bed of our company, which may cause a breakdown of the device during printing.
- A filament that has been polluted by humidity or dusts may have different characteristics compared to the characteristics at the time of the initial opening. The use of such filament may cause a poor adherence to the heating bed. Use the filament as fast as possible once it is opened, and if it needs to be stored, block the humidity and dusts using vinyl while fixing it to the spool so that it doesn't get loosened, and then store it for only a short period of time.
- **Remove pollutants on the heating bed. Wet wipes that are available in the market may damage the coating of the bed. Never use wet wipes on the heating bed. ( → [Refer to Bed Management](#) )**
- Check whether the temperature conditions of the heating bed and the Extruder are appropriate for the filament used. The heating bed of Style Plus-A15 would be adhered well when the temperature condition is appropriate for the filament used, and this temperature may vary according to the type of the filament or the model, and the printing environment.
- Check whether the area that adheres to the heating bed is too small or the base of a sculpture is uneven. If the base support option is used during the creation of G-Code or the first layer printing speed is slowed down, it can be improved.
- If necessary, use an appropriate masking tape. In case of some molded models or filament types, it may be helpful for the adherence of a sculpture to apply a separate heat-resisting tape such as Kapton tape on the heating bed. Apply the tape in a way that the contacting point at the edge to

which the auto leveling can be applied would be exposed, and calibrate the tilt offset as much as the thickness of the tape.

- Check whether a coating of the heating bed is damaged or it is severely bent. In such case, the heating bed must be replaced. The heating bed is a consumable. Replace it through a warranty service.

## The Part of a Sculpture, Mostly the Edge of the Base Gets Taken Off from the Bottom

- Check the situation in "[A Sculpture Doesn't Get Adhered to the Base \(Heating Bed\) and It Gets Taken Off.](#)" and take a necessary measure.
- It can be partially improved through options such as the internal filling density during the creation of the G-Code.
- The contraction of the material that occurs in the printer that uses heat melting method is the cause of it.
- Either adjust the printing condition (internal temperature of the extruder, the heating bed, and the printer) or use a material that contracts less. Even though the contraction can be improved by a little according to the material, it is a natural phenomenon that occurs while the melted filament gets solidified, and therefore, the most effective way is to revise a model to the shape that the contraction can be enhanced.

## Middle of a Sculpture Gets Cracked.

- The contraction of the material that occurs in the printer that uses heat melting method is the cause of it.
- Either adjust the printing condition (internal temperature of the extruder, the heating bed, and the printer) or use a material that contracts less. Even though the contraction can be improved by a little according to the material, it is a natural phenomenon that occurs while the melted filament gets solidified, and therefore, the most effective restraining method is to revise a model to the shape that the contraction can be enhanced.
- It can be partially improved through options such as the internal filling density during the creation of the G-Code.

## A Sculpture Can't Be Taken off from the Floor (Heating Bed).

- Wait until the heating bed is sufficiently cooled down. If you take it off forcibly, it may damage the heating bed.
- As for the heating bed of Style Plus-A15, the sculpture is being attached on the floor during printing, and it can be easily taken off when the heating bed cools down after printing. The

temperature that the sculpture could be taken off may vary by the filament that has been used, a molded model, and the surrounding environment.

- If the sculpture doesn't get taken off even if the heating bed is sufficiently cooled off (in room temperature), take it off by inserting an object with a flat edge underneath the base of the sculpture.
- If residues from the sculpture continue to stay adhered to the heating bed, the sculpture may not be taken off the bed as it is adhered to the residues that are fixed on the bed. Manage the surface of the heating bed cleanly.
- If the coating of the heating bed is damaged, the heating bed must be replaced. Use a warranty service.

### Even though the Printing Is Completed, only a Part of a Sculpture Has Been Printed and Some Parts Haven't Been Printed or Have Printed Abnormally.

- Check the situation in '[Filament Is Not Discharged through the Nozzle](#)', and take a necessary measure.
- Check the printed model and the G-Code. If a model is abnormal, there may be a problem in the creation of G-Code. Retry after revising the model.
- A problem in printing may occur as the printed part of the sculpture interferes with the supports depending on models or supports used. It can be enhanced if the slicing method (adjustment of the slicing option or the change of the direction) is changed.
- Remove the pollutants in the nozzle. ('[Filament Is Not Discharged through the Nozzle.](#)')
- If a problem continues to occur even though a model doesn't have a problem, a warranty service such as the replacement of the nozzle is necessary.
- If a problem continues to occur, use the warranty service after taking a picture or recording a video of the situation that the problem has occurred.

## 6. Product Specifications

Dimension	
Product Size	322(W)x350(D)x486(H) mm
Product Weight	~ 16 Kg
Packing Box	490(W)x405(D)x555(H) mm
Packing Weight	19 Kg (Included accessories)
Temperature	
Surrounding Operation Temperature	15 - 35 °C
Storage Temperature	0 - 35 °C
Electricity Related	
AC Input	200-240V~, 60Hz, 3.4A (Single Phase 220V only)
Display	5 inch Touch type TFT LCD
Memory Stick used and Communication Environment	USB Memory(FAT32/NTFS), Ethernet, WIFI
Software	
Supplied Slicing Software	Cubicreator v4.0 (for Windows)
Input 3D Design File Formats	.stl , .obj, 3mf
Supported Operating System	Windows 7 (64bit) or higher version
Printing	
Printer Technology	FFF (Fused Filament Fabrication)
Sculpture Size	150x150x150mm (5.9x5.9x5.9 inch)
Molding Speed	Max 150mm/sec (Low Noise & High Quality Mode)

Layer Height Setting	150~300um, Min 100um
Sculpture Wall Thickness	Optimal 400um+
Filament Diameter	1.75mm
Filament Types	ABS, PLA, Flexible Filament
Nozzle Diameter	0.4mm
Degree of Precision of XY Position	3.125um
Degree of Precision of Z Position	1.25um
Max Nozzle Temperature	260°C
Max Heating Bed Temperature	120°C
Certificate	KC Certification