

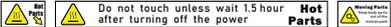


INFINITY **X3**

- User Manual -

⌘ CAUTION ⌘

**This manual describes the application operation of the precision electronic machine.
Please read and understand the user manual carefully.
Failure to read the manual may lead to personal injury, or damage to the INFINITY3DP X3.**

- 1.Unpacking the X3 out of the cardboard box before doing the rest of actions.
- 2.Keep the X3 in a clean, dust-free and dry environment that away from fire is essential for proper operation.
- 3.Keep the X3 with a clean and free of obstacles build plate as to ensure a successful leveling.
- 4.X3 generates high temperatures as the nozzle can reach up to 500°C(932°F), the build plate up to 180°C (356°F) and the heated chamber up to 100°C (212°F) that may cause injury. Never reach inside of the X3 while it is in operation.
- 5.Avoiding vibrate the components or open the cabinet door during printing by improper operation as to prevent any damages.
- 6.Leave the machine do certain action automatically should protect the mainboard caused by reverse current.
- 7.Remain the structural integrity of the X3 as to ensure the safety and the utility of authorized maintenance.
- 8.Please aware of the warning labels and operate the X3 carefully. 
- 9.Always read the safety statements, and be aware of the following safety signs when you see them on the printer. Warnings and Cautions precede the paragraph to which they pertain.

**If any errors in operating or specific problems,
please contact our technical team via website or Facebook for timely support.**

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SPECIFICATIONS



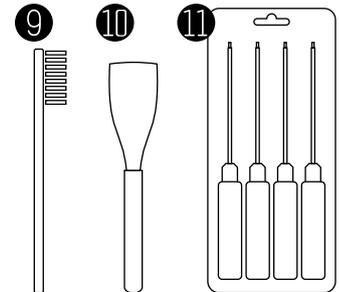
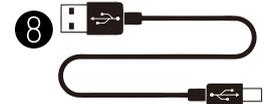
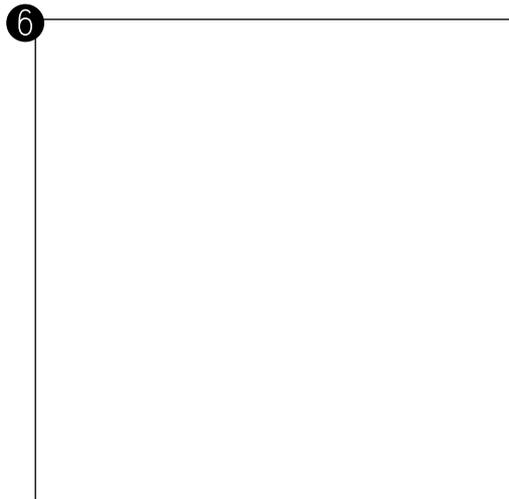
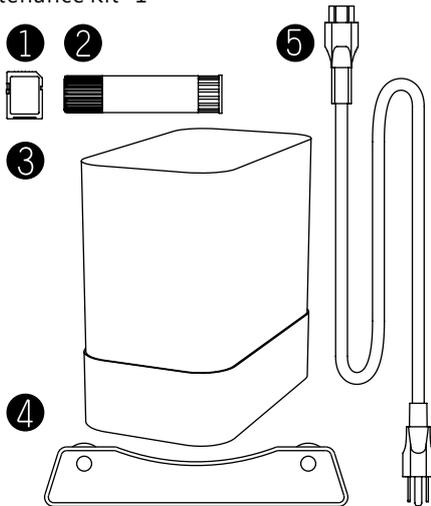
X3

Professional /Industrial-grade

Dimensions	W646 x D605 x H890 mm (25.4 x 23.8 x 35 in.)
Build Volume	300 x 300 x 400mm (11.8 x 11.8 x 15.7 in.)
Language Support	Chinese English Japanese
Print Technology	FDM
Printer Structure	Heated Chamber *up to 100°C (212°F)
Layer Resolution	0.01mm
Nozzle Diameter	0.5mm (default) 0.2,0.4,0.6,0.8mm
Nozzle Temperature	up to 500°C(932°F)
Nozzle Clean Function	Capable
Extruder Type	Independent Dual Extruders
Build Plate Temperature	up to 180°C (356°F)
Build Plate Leveling	Pre-calibration
Fan Cooler	Dual / 45mm
Driver	Infinity3DP GT81
XY Axis	Japan,THK Linear Motion Guide (Model SRS)
Z Axis	Japan, THK Ball Screws (Accuracy Grades C3) Japan, THK Caged Ball LM Guide (Model SHS) *2
Stepper Motor	57mm 0.9°
Electrical Control	32 bit MCU
Electrical Cable	Germany, igus Chainflex® Flexible Cables
Emergency Recovery	Filament Run-out Sensor
Filament Diameter	1.75 mm
Supported Filament	PLA/ABS/Nylon/Carbon-Nylon/PETG/PC/Flexible/Glass Wool Filled PP/ASA PEEK/PEEK+CF/PEEK+GF/PEKK/PPSU/PPS
Flexible Material	Printable (Shore 50A)
Connectivity	SD card /USB
Power Input	[100-120 V; 50/60 Hz; 12A or 200-240 V; 50/60 Hz; 7.5A]*2, total 1200W
Slicer	Cura Infinity3DP Edition
Net Weight	67kg / 148 lbs

《Please review and check the included accessories packed as below:》

1. SD card *1 <plug on 3D printer>
2. Glue Sticks *1
3. PolyBox™ Edition II *1
4. Filament Holder *2
5. Power Cord (NEMA 5-15P to IEC C13) *2 (Option - 110v or 220v.)
6. Build Plate_Borosilicate Glass*1 <assembled on 3D printer>
7. Warranty Card *1
8. USB Cable *1
9. Cleaning Brush (Steel) *1
10. Scraper *1
11. Maintenance Kit *1





BUILD PLATE INSTALLATION/REMOVE

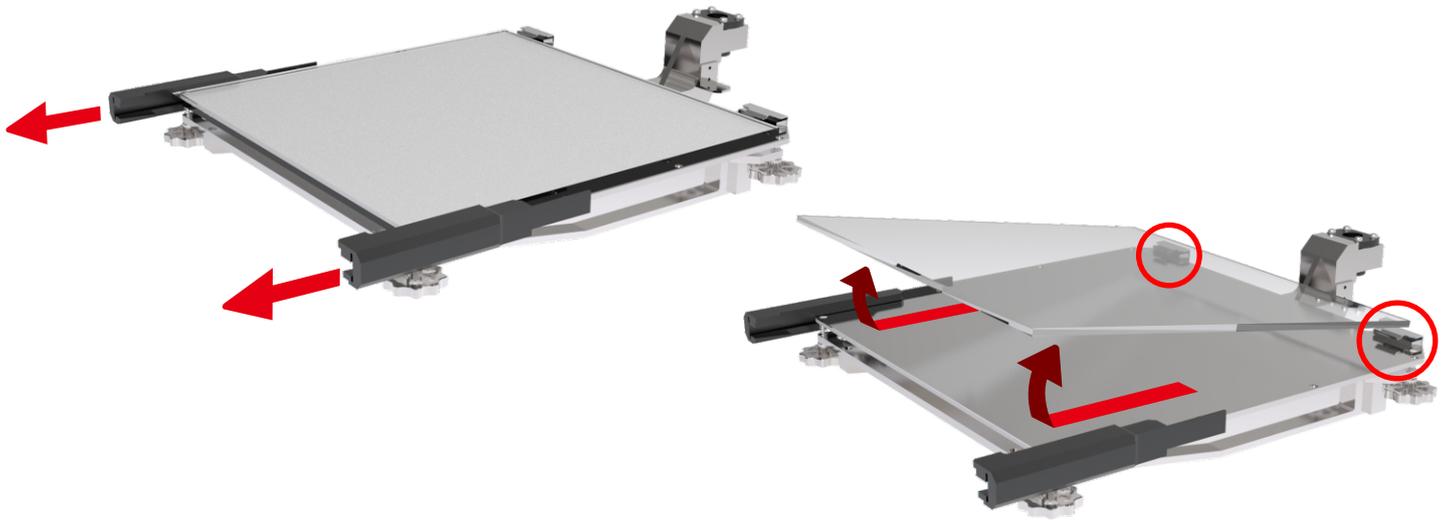


《The actions are limited to the cool-down (room temperature) build platform.》

REMOVE

Step 1: Pull the board clip toward front as to loosen the build plate and platform.

Step 2: Pull slightly up the build plate and apart the clips behind.





BUILD PLATE INSTALLATION/REMOVE

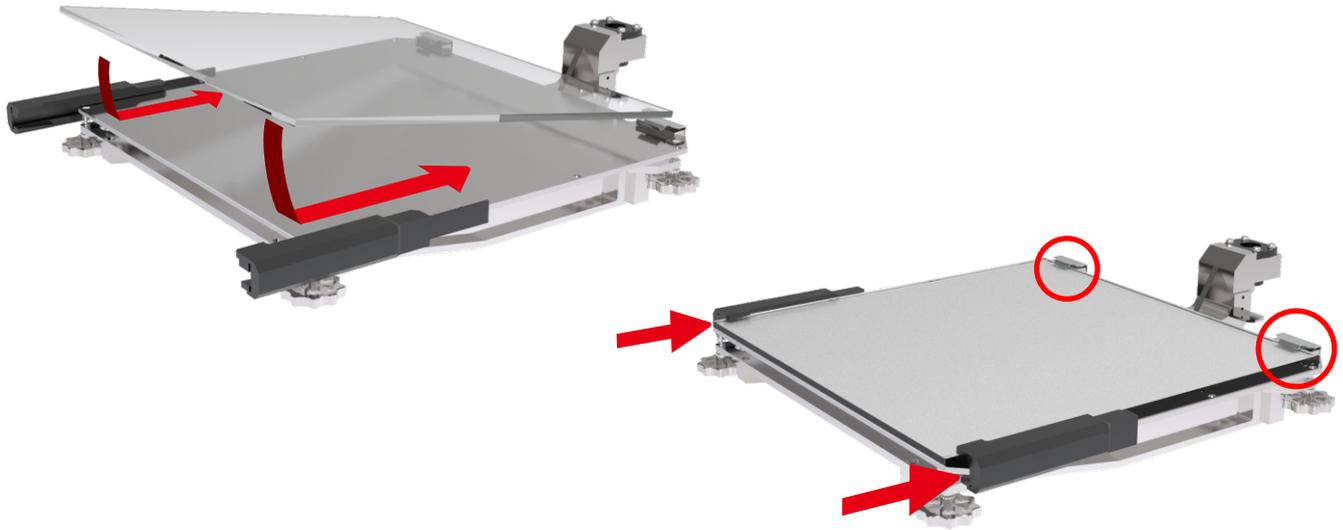


《The actions are limited to the cool-down (room temperature) build platform.》

INSTALLATION

Step 1: Insert with build plate to the clean build platform and tighten with the clips behind.

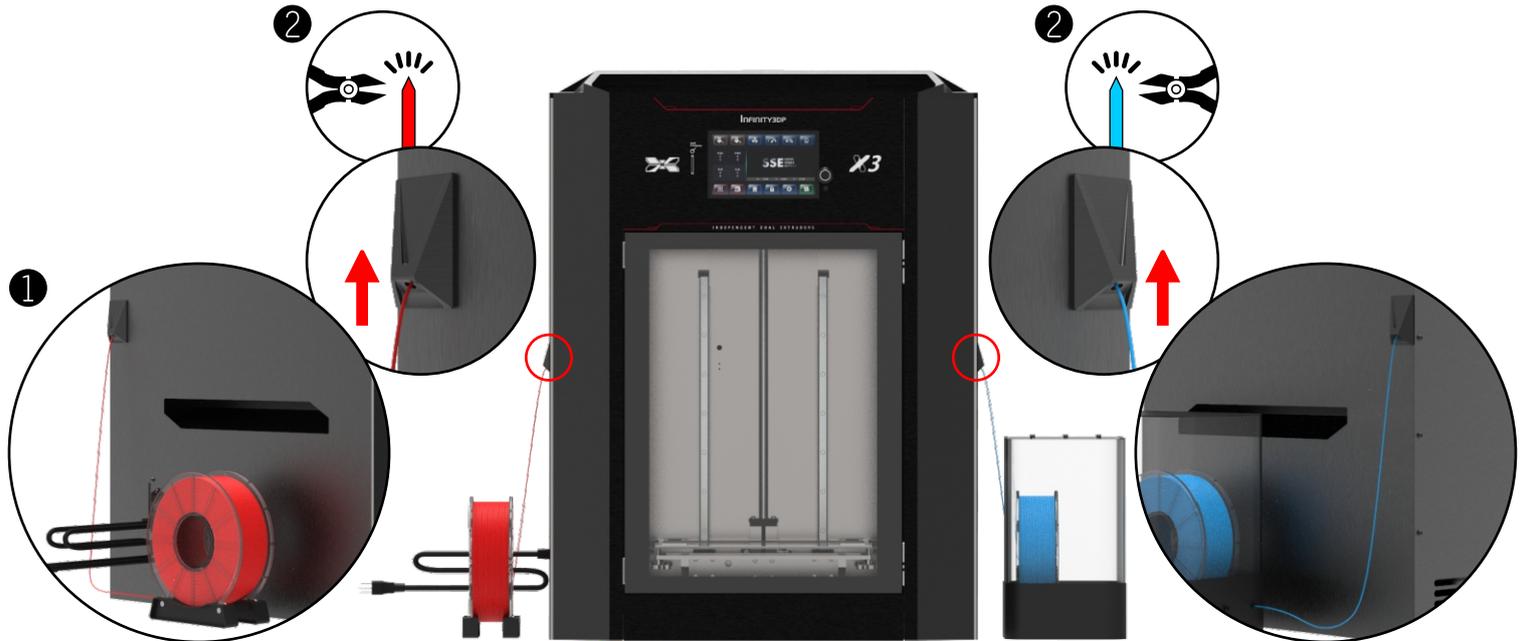
Step 2: Buckle the board clips on the sides.



《Please ensure the filament has a sharp tip before loading.》

Step 1: Connect two power cords to the side of X3.

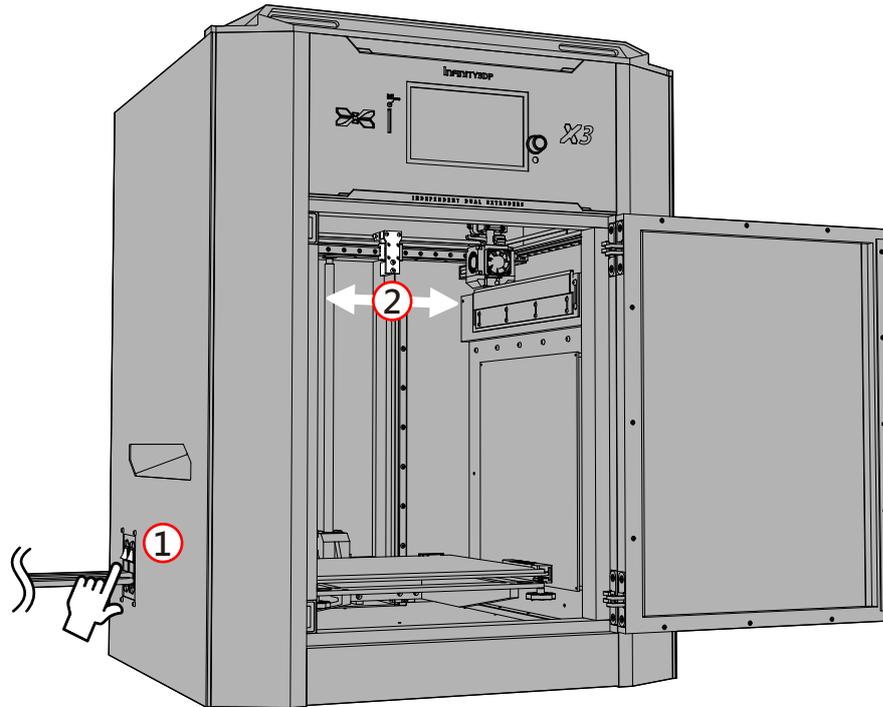
Step 2: Place filaments separately in the box and holder; insert the sharp-pointed tip of filaments into the side feedings until the extruder grabs the material.





Step 1: Turn on the printer using the power switches on the side of X3.

Step 2: The Actuator would move from side to side and back to home position. X, Y, Z-axis would run to home position and ready to print.





《Take the left hotend module as an example.》

Step 1: Select the “Left Nozzle” icon. If read successfully by X3, the control knob will be lighted-up.

Step 2: Rotate the control knob allows you to set the temperature.

Step 3: Press the control knob to complete the temperature settings; The nozzle would be heated up when the temperature is reached as setting.

※ The unit of temperature could be managed from the “gray toolbar” on menu.

※ It would be better take the median of suggested temperature when printing with unfamiliar material for the first time.





FILAMENT LOADING



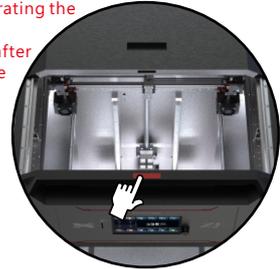
《Take the left hotend module as an example.》

Step 1: Press the clip on the hotend module till the **RED release button** up.

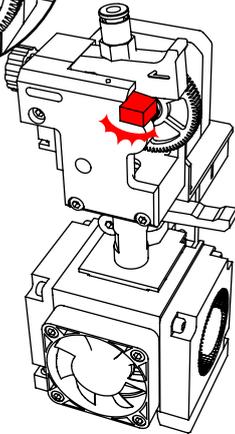
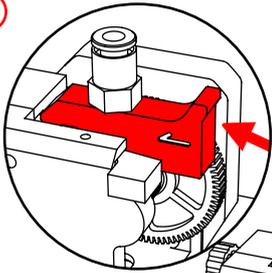
Step 2: Insert and push the filament gently until it comes out of the nozzle.

Step 3: Press the **RED release button** and the clip would back to grab the filament for completing the loading.

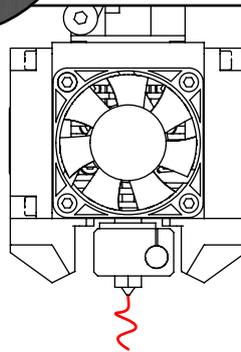
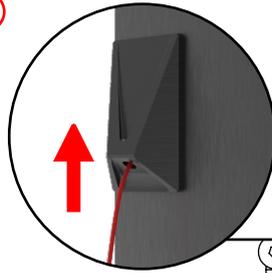
※ It is available to open the top cover by pressing the RED button before operating the mentioned procedures. Please close the top cover after printing for maintaining the temperature in chamber.



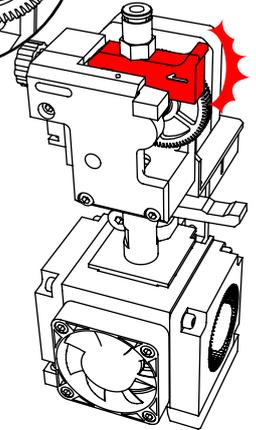
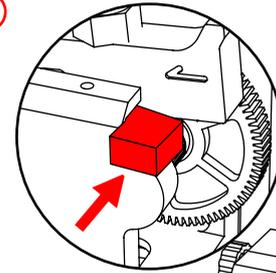
①



②



③





FILAMENT UNLOADING/REPLACEMENT



※ Temperature set-up procedure, see P.07.

《Take the left hotend module as an example.》

Step 1: Heat up the nozzle until the filament melted with its target temperature.

Step 2: Press the clip on the hotend module till the **RED release button** up as to loosen the filament.

Step 3: (A) Pull out the existed filament firstly.

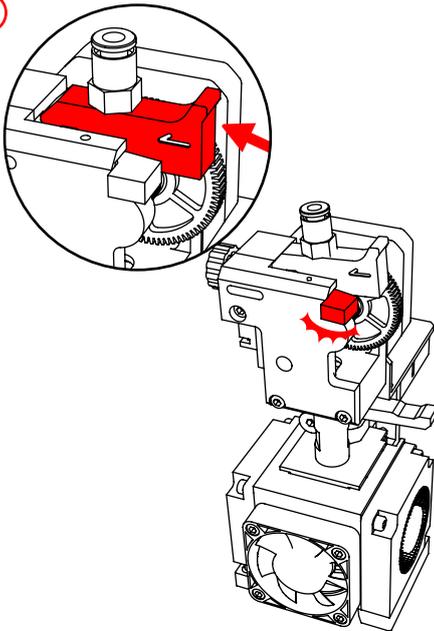
(B) Insert and push gently the sharp-pointed filament until it comes out of the nozzle.

Step 4: Press the **RED release button** and the clip would back to grab the filament for completing the changing.

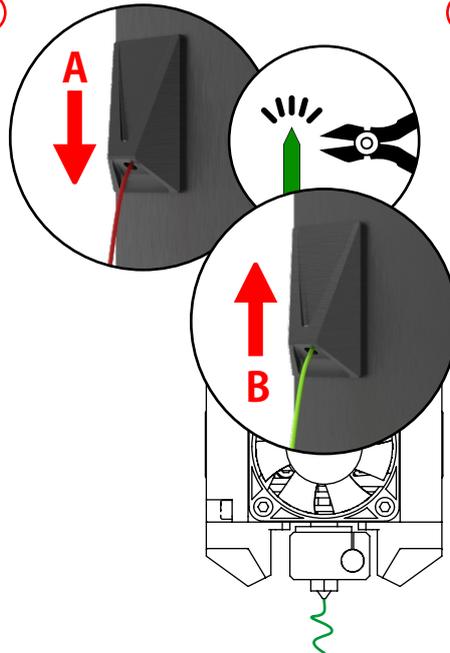
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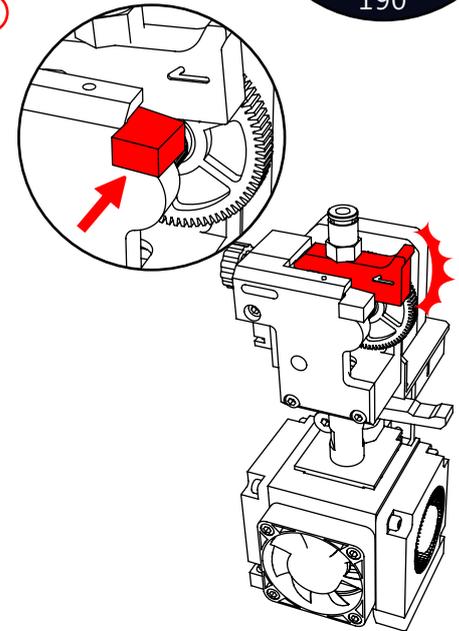
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④



START A PRINT



Step 1: Insert SD card; select the "SD Card" icon.

Step 2: Select one of the files (gcode) .

Step 3: Press the control knob to start.

Step 4: Or you can keep pressing the control knob during printing till the

"Pause" and "Stop" items showed on the "gray toolbar" .

(■ : Stop ; ▶ : Pause) Press the control knob again to cancel the action.

Selected "Pause" and keep pressing the control knob to recall the menu items.

(■ : Stop ; ▶ : Continue)

※ The unit of parameters could be managed from the "gray toolbar" on menu.

※ The default print files (gcode) on the SD card are ABS particular;
Please loading ABS for your initial tested print.

※ Print with filament-PLA: We suggest opening the front door and top cover while
printing. Otherwise, keep it closing while printing.



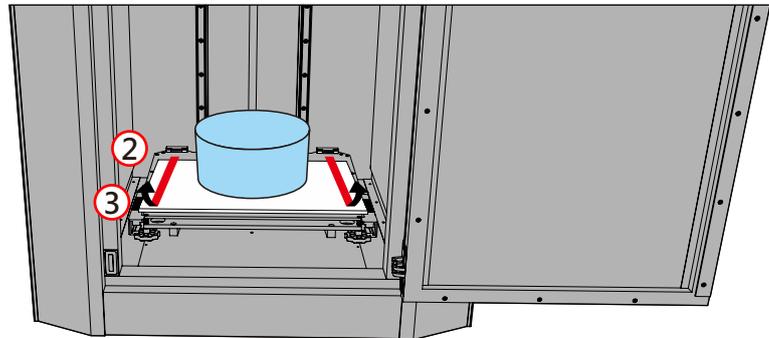
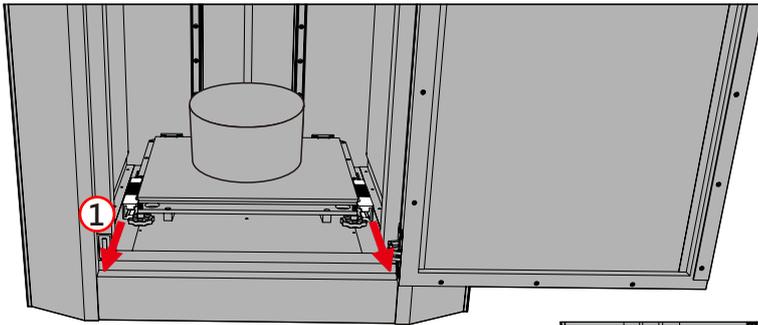


COMPLETE A PRINT



When the print finished, wait for the build plate cooling down and back to home position;
take the print and build plate out of X3 then grab the print from it.

※ Once take apart the print from “heating build plate” ,there would be possible injure or print defect.





HEAT UP NOZZLE



《Take the left hotend module as an example.》

Step 1: Select the “Left Nozzle” icon for setting temperature. If read successfully by X3, the control knob will be lighted-up.

Step 2: Rotate the control knob to set the temperature.

Step 3: Press the control knob to complete the temperature settings; The current temperature of nozzle would meet the target temperature.

Current TEMP.: ④ Target TEMP.: ⑤

※ The unit of temperature could be managed from the “gray toolbar” on menu.

※ It would be better take the median of suggested temperature when printing with unfamiliar material for the first time.



Above setting is particular for the prompt adjustment.
We suggest setting the parameter via the slicing software.

HEAT UP BUILD PLATE



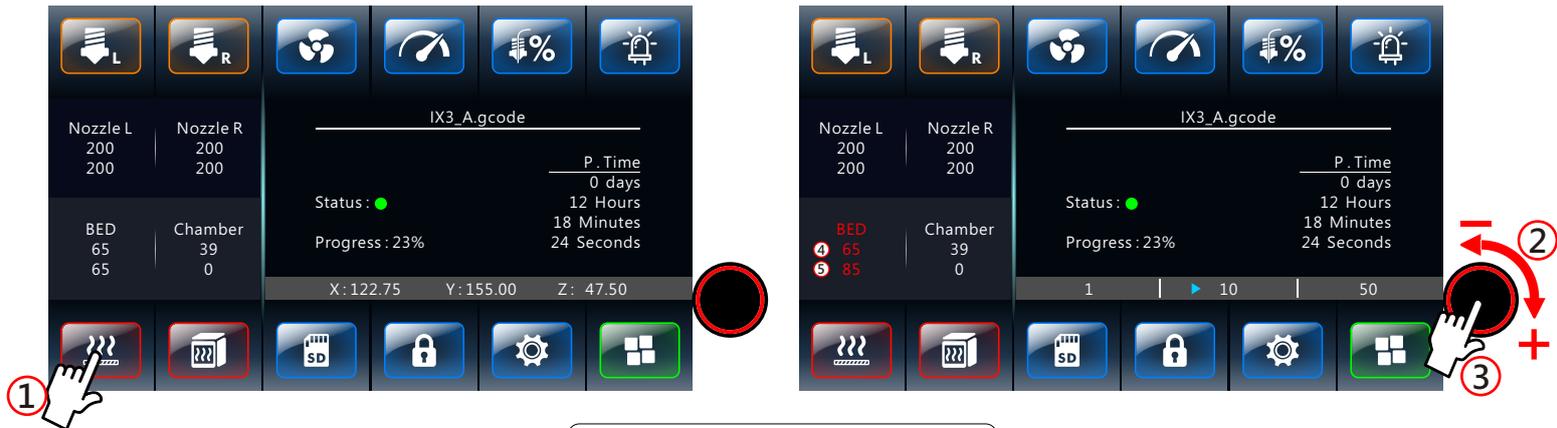
Step 1: Select the "Build Plate" icon. If read successfully by X3, the control knob will be lighted-up and allow to set the temperature.

Step 2: Rotate the control knob to set the temperature.

Step 3: Press the control knob to complete the temperature settings; Current temperature of build plate would meet the target temperature.

Current TEMP.: ④ Target TEMP.: ⑤

※ The unit of temperature could be managed from the "gray toolbar" on menu.



Above setting is particular for the prompt adjustment.
We suggest setting the parameter via the slicing software.



Step 1: Select the "Chamber" icon. If read successfully by X3, the control knob will be lighted-up and allow to set the temperature.

Step 2: Rotate the control knob to set the temperature.

Step 3: Press the control knob to complete the temperature settings; The current temperature of chamber would meet the target temperature.

Current TEMP.: ④ Target TEMP.: ⑤

※ The unit of temperature could be managed from the "gray toolbar" on menu.



Above setting is particular for the prompt adjustment.
We suggest setting the parameter via the slicing software.



Step 1: Select “Fan” icon. If read successfully by X3, the control knob will be lighted-up.

Step 2: Rotate the control knob to set the fan speed (0%-100%).

Step 3: Press the control knob to complete the setting.

※ The unit of temperature could be managed from the “gray toolbar” on menu.



Above setting is particular for the prompt adjustment.
We suggest setting the parameter via the slicing software.



Step 1: Select “Print Speed” icon. If read successfully by X3, the control knob will be lighted-up.

Step 2: Rotate the control knob to set the print speed (0%-300%).

Step 3: Press the control knob to complete the setting.

- ✘ The initial print speed on printer will show 100%; the current print speed would meet the target speed.
- ✘ The unit of parameters could be managed from the “gray toolbar” on menu.
- ✘ If the print speed is too high, it will lead to possible impact on quality.



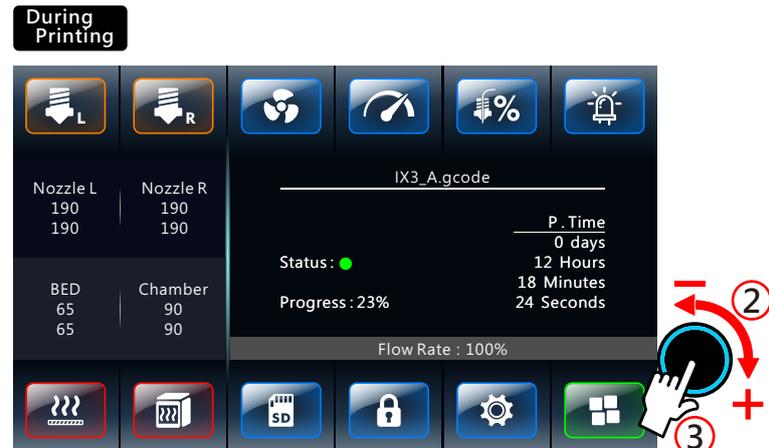
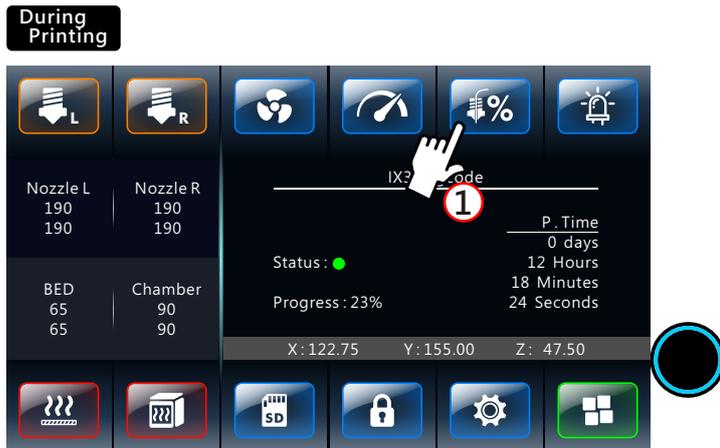
Above setting is particular for the prompt adjustment.
We suggest setting the parameter via the slicing software.

Step 1: Select “Flow” icon. If read successfully by X3, the control knob will be lighted-up.

Step 2: Rotate the control knob to set the flow rate(0%-200%).

Step 3: Press the control knob to complete the setting.

※ The unit of parameters could be managed from the “gray toolbar” on menu.



Above setting is particular for the prompt adjustment.
We suggest setting the parameter via the slicing software.

Step 1: Select the "Light" icon and the chamber would be lighted up; off the light by press it again.



LOCK (CHAMBER DOORS)



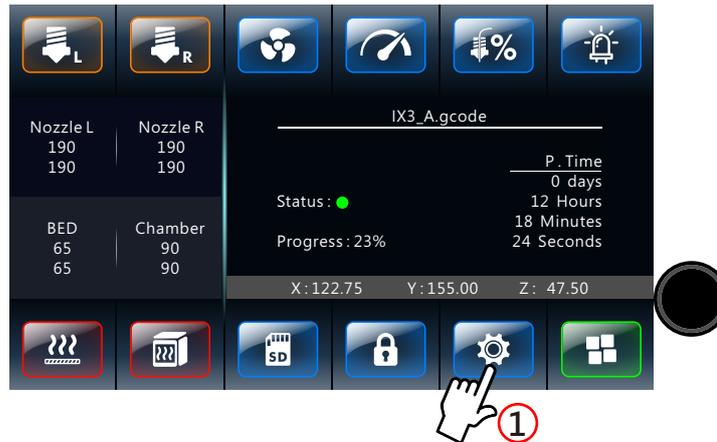
Step 1: Select the "Lock" icon and the chamber door would be magnetic lock; unlock by press it again.



SET UP *To be completed



The function will be completed soon.





Step 1: Select the "Calibration" icon, more items as following pages would be showed on the menu.

Step 2: Select the "Return" icon to back to the homepage.



MOVEMENT OF RIGHT HOTEND MODULE (X, Y, Z, E)



Step 1: Select the "Movement" icon for moving the right hotend module.

Step 2: If read successfully by X3, you can select below items and the control knob will be lighted-up.
(A)X Axis (B)Y Axis (C)Z Axis (D)Extruder

Step 3: Adjust the parameter by rotating the control knob.

Step 4: Press the control knob to complete the movement setting.

※ You can navigate the unit of moving parameters from the "gray toolbar" on menu.



Z-AXIS ZERO POSITION



CALIBRATION_Z-AXIS ZERO POSITION (INITIAL)

※ Two nozzles (Left & Right) of X3 are both completed calibration before shipped out.

※ Please do the “Z-Axis Zero Position” after below actions:

1. Change right hotend module 2. Change build plate 3. Update firmware

※ Please be noted that once run through the “Z-Axis Zero Position” process, all the record will be cleared and updated.

Step 1: Select “Z-Axis Zero Position” icon, the build plate will automatically level to a designated height.

Step 2: Put a piece of standard paper (thickness of 100gsm) between the nozzle and build plate.

Step 3: Adjust the parameters through the “gray toolbar” on the panel display.

(Set 0.01 initially as recommend to avoid exaggerated Z-Axis movement.)

Step 4: Rotate the control knob until tighten the paper between the nozzle and the build plate.

Step 5: Press the control knob to complete the setting.

※CALIBRATION(IDLE STATE)_Z-AXIS ZERO POSITION

Please DO NOT select “Z-Axis Zero Position” icon randomly during idle state (it will clear all the record of Z-Axis), except for necessary calibration.



CALIBRATION_DYNAMICITC Z OFFSET (ACCURATE)

※Please do the “Dynamicic Z Offset” after below conditions happened:

1. The thickness of first layer is too thin, or rough surface.

2. Gaps on layers.

Step 1: Select test file - “Right Nozzle Test_Column” and print.

Step 2: Select “Dynamicic Z Offset” icon.

Step 3: Rotate the control knob to adjust the distance between nozzle and build plate.

Step 4: Press the control knob to complete the setting.

※This page is mainly aimed at calibrating the Right Nozzle.

Please continue operating the “Hotend Calibration” (Left Nozzle) on next page (24) as to finish the completed calibration.

※CALIBRATION(DURING PRINTING)_DYNAMIC Z OFFSET



Above setting is particular for the prompt adjustment.
We suggest setting the parameter via the slicing software.

LEFT HOTEND CALIBRATION



- ※ Please operate the “Z-Axis Zero Position” on the prior page (23) before proceed the “Hotend Calibration” of this page;
- ※ Please proceed the “Hotend Calibration” if changed one of the hotend modules or nozzles.

Step 1: Select test file - “Dual Material_Layer Test” and **print**.

Step 2: Two hotends will operate separately.

Mainly check the distance between the “Left Nozzle” and build plate.

Step 3:

(1)The calibration would be completed if the left nozzle operate steadily.

(2)Please **STOP** printing if below conditions exist and continue proceed the Step 4.

(A)The distance of left nozzle and build plate – Narrow/Near:

The thickness of print object is too thin, or rough surface.

(B)The distance of left nozzle and build plate – Wide/Far: Gaps on layers.

Step 4: (1) **STOP** printing (printer would be at idle state) and select “Left Hotend Calibration” icon.

If read successfully by X3, the control knob will be lighted-up.

(2) Select “Z-Axis” .

(3) Adjust the parameters through the “gray toolbar” on menu. (Set 0.01 initially as recommend.)

(4) Rotate the control knob to adjust the Z-Axis parameter of left nozzle.

Narrow/Near: Decrease the parameter

Wide/Far: Increase the parameter

(5) Confirmed as saving the parameters and back to Step 1

(Select test file - “Dual Material_Layer Test” and **print**.)

Repeat above printing procedures as to ensure correct distance between nozzles (left&right) and build plate.

※ DURING PRINTING – Calibration unavailable(Available for checking parameters).



※ IDLE STATE – Calibration available.



X,Y,Z-AXIS HOME POSITION



Step 1: Select the "Home" icon for homing all three axis (X,Y,Z).





※ Please ensure unloading the filament before operating the process. (see P. 33)

※ Please re-loading the filament (see P. 07-08) and operate the "Z-AXIS ZERO POSITION" (see P. 23) & "LEFT HOTEND CALIBRATION" (see P. 24) after finished hotend replacement.

《Take the left hotend module as an example.》

Step 1: Select "Change Nozzle" icon. Left hotend module would move to designated position and stop; turn off the power switch.



HOTEND REPLACEMENT

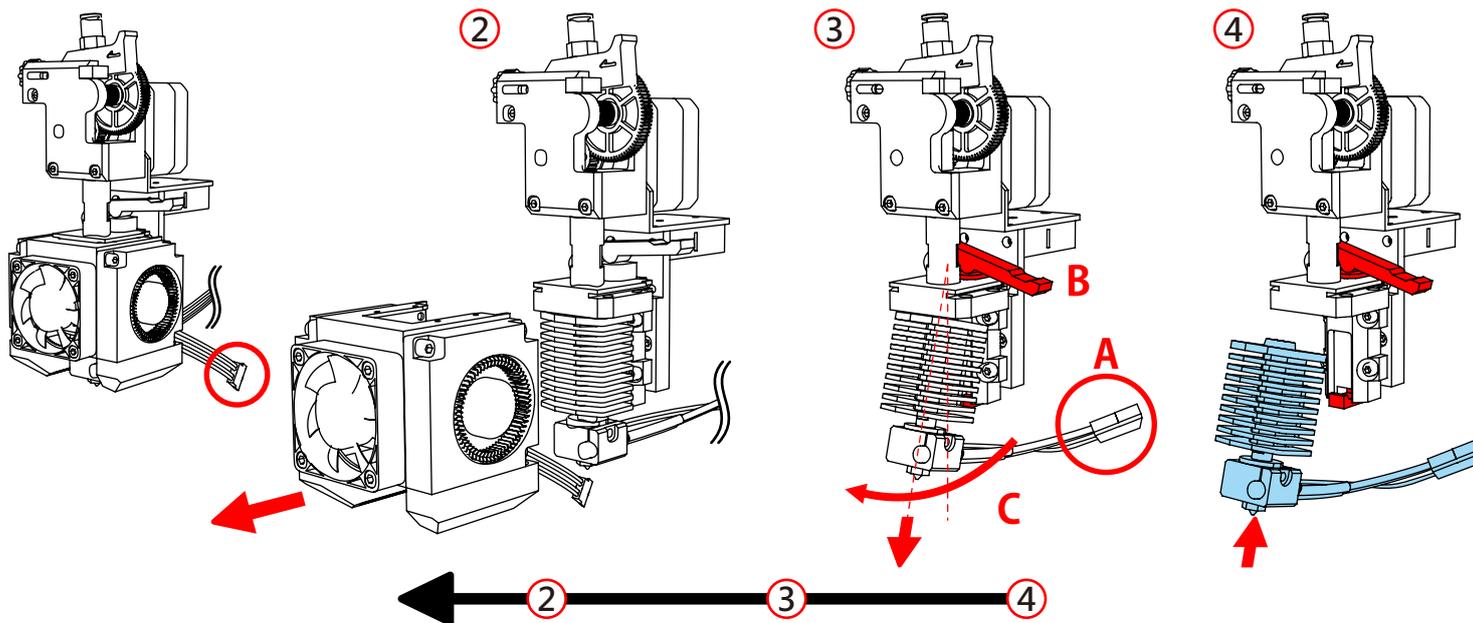


※ Please ensure having the cool-down hotend and power off the X3 before operating the process.

Step 2: Unplug the fan cable carefully and remove the fan module.

Step 3: (A)Unplug the hotend cable/connector carefully (B)press the **RED lever** and (C)grab the hotend bottom slightly pull out.

Step 4: Assemble the new hotend followed the above pattern procedure reversely.



BUILD PLATE LEVELING



※ Please ensure having the glass build plate well locked with platform before operating the process.

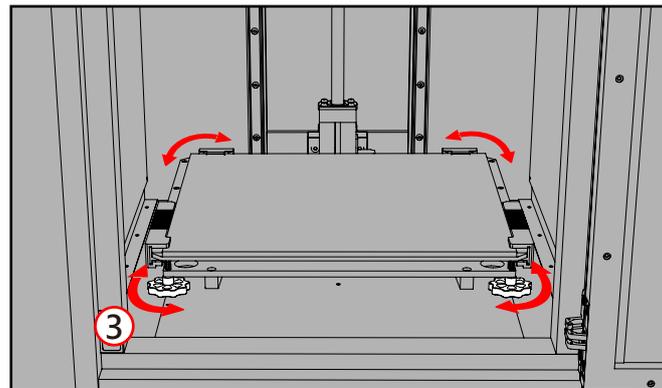
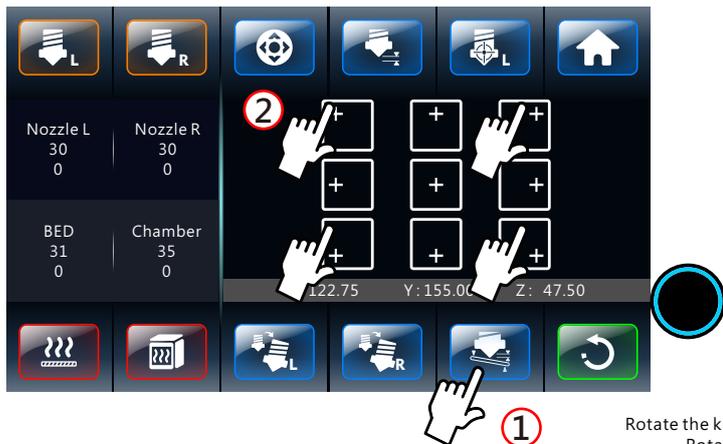
Step 1: Select “Build Plate Leveling” icon. If read successfully by X3, the control knob will be lighted-up and you can see the next page on menu. Build plate will automatically level to a designated height.

Step 2: Select one corner of the nine-square grid, hotend module would move to the designated position.
Put a piece of standard paper (thickness of 100gsm) between the nozzle and the build plate after platform leveled.

Step 3: Rotate the bottom knurled nut to roughly adjust the distance between the nozzle and the build plate until tighten the paper.

Step 4: Repeat for all four corners with above procedures and verify the leveling has not changed.

Step 5: Select test file -“ IX3_28028002” and print.



Rotate the knurled nut in **counterclockwise** would **increase** the distance between the nozzle and the build plate.
Rotate the knurled nut in **clockwise** would **decrease** the distance between the nozzle and the build plate.

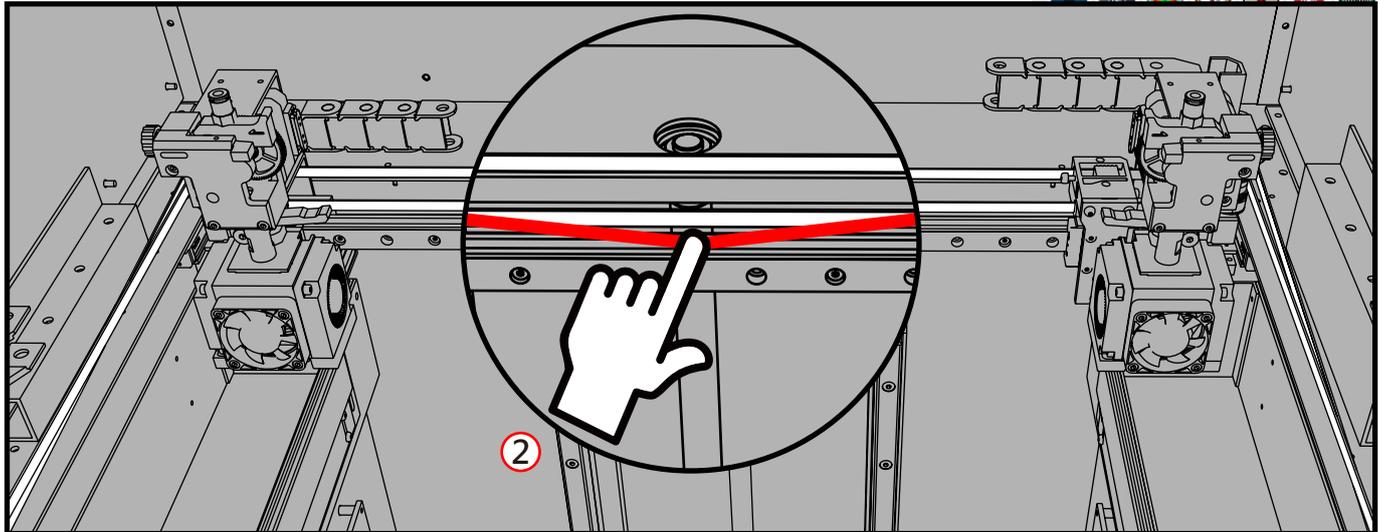
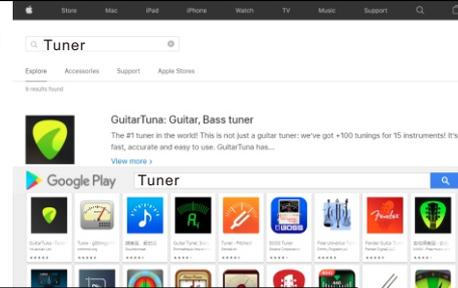
※Please ensure the power switch is in the “off” position.

Step 1: Download tuning Apps. (Key search “Tuner”)

Step 2: Separate two hotend modules to the sides.

Slightly pulling the belt until reach the **E major** on tuning Apps as completed.

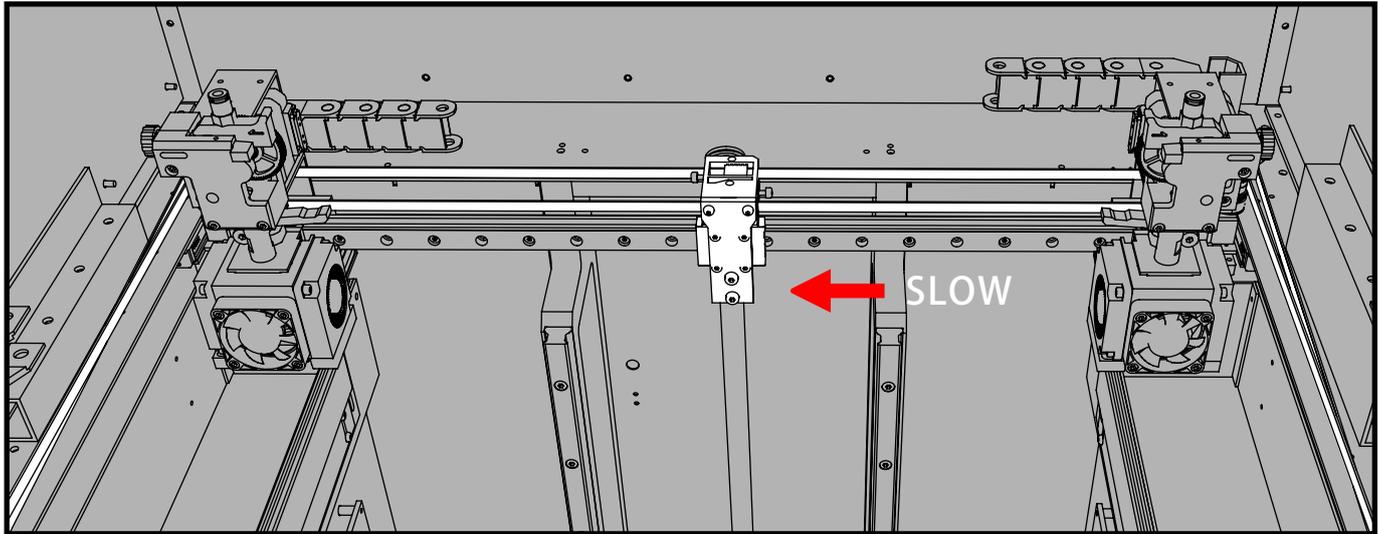
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《Failure to reach E major》

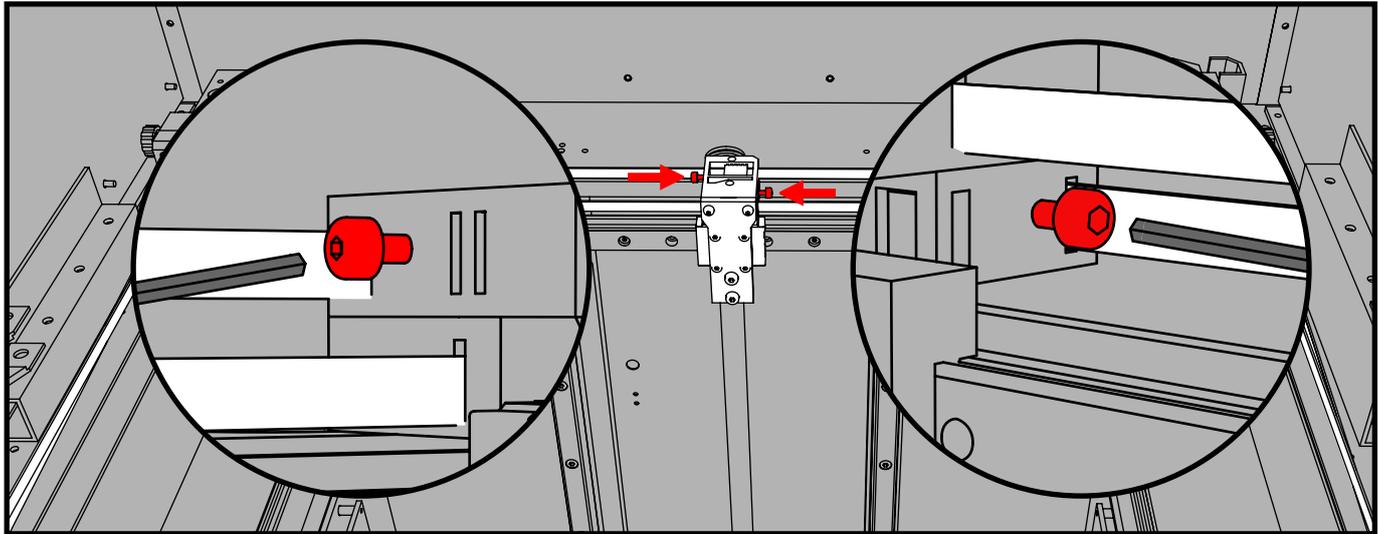
Step 3: Slowly move the Actuator to the center.

(Please **DO NOT** quickly push the Actuator. This will lead to damages by causing reverse current.)

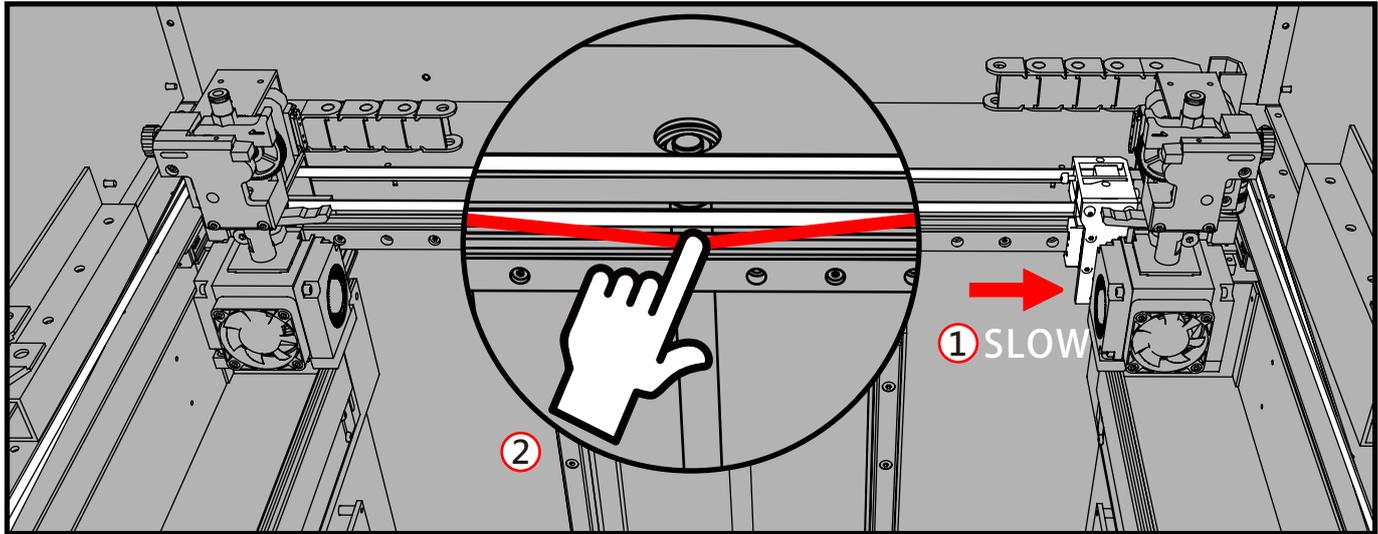


Step 4: Use the 2.5 mm hex wrench to loosen the screws on sides of the Actuator and adjust the belts.

- *Clockwise: Tighten the belt
- *Counterclockwise: Loosen the belt
- *Top-side screw of the Actuator: control the upper belt
- *Bottom-side Screw of the Actuator: control the bottom belt.



Step 5: Slowly move the Actuator back to side and repeat the steps above until it reaches **E major**.



《Take the left hotend module as an example.》

Step 1: Heat up the nozzle until the filament melted.

Step 2: Press the clip on the hotend module till the **RED release button** up as to loosen the filament.

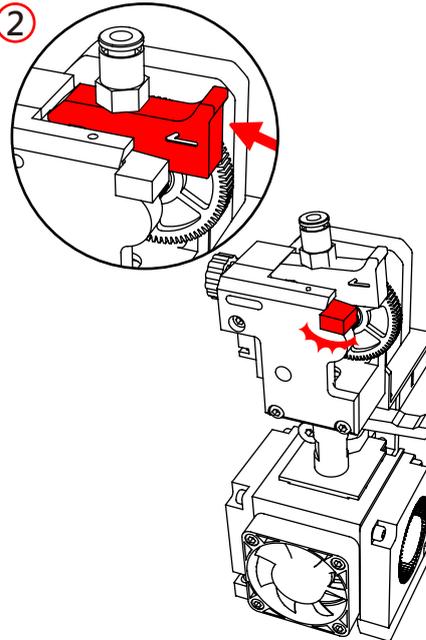
Step 3: Insert gently with the existed filament (A), and pull it out (B); turn off the X3.

①

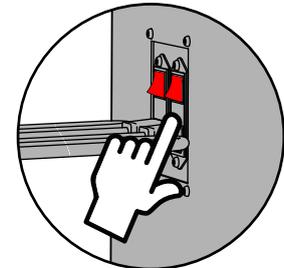
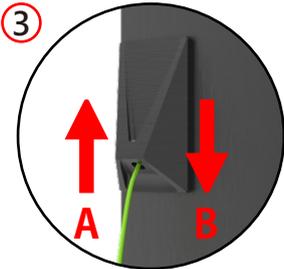


※ Temperature set-up procedure, see P.07.

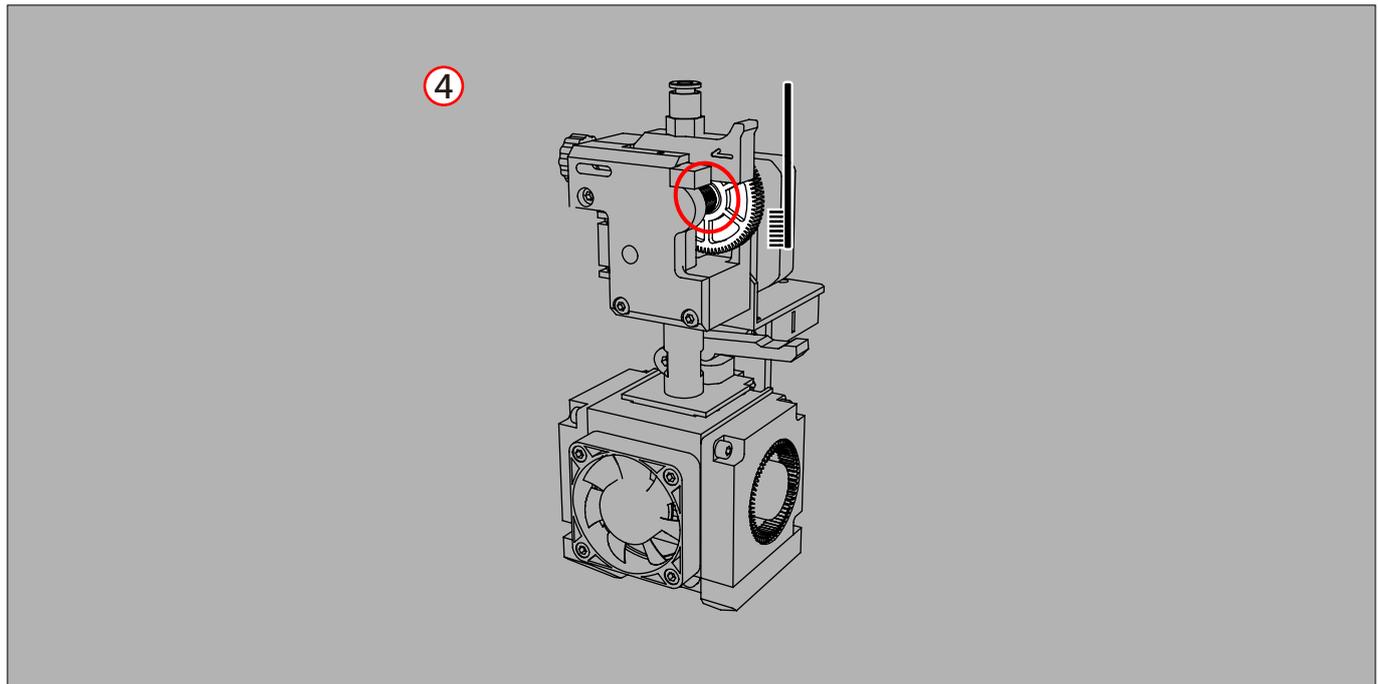
②



③



Step 4: Clean the gears (in **RED** circle as figure) with steel brush, pin or utility knife as to pick out small filament particles.





Daily Maintain

- Wipe the enclosure of X3 with dry towel.
- DO NOT clean the panel display with alcohol.
- Remove dust or plastic particle on fan blades by tweezers.

Print Issues

3D Printer Stringing

- (1)Reduce the print speed.
- (2)Increase the travel speed.
- (3)Modify the retraction speed and distance.

Nozzle Jam

- (1)Heat up the nozzle until the filament melted with its target temperature.
- (2)Press the clip on the hotend module till the [RED release button](#) up as to loosen the filament.
- (3)Push gently with the filament until all the residue comes out of the nozzle.
- (4)Make sure the nozzle is clean and free of clogs.

Under Extrusion

- (1)Adjust the distance between the nozzle and the build plate (Z-axis) with proper height as to ensure well adhesive of material.